

**GENOA CHARTER TOWNSHIP  
PLANNING COMMISSION  
PUBLIC HEARING  
MAY 11, 2015  
6:30 P.M.  
AGENDA**

CALL TO ORDER:

PLEDGE OF ALLEGIANCE:

APPROVAL OF AGENDA:

WORK SESSION:

CALL TO THE PUBLIC:

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

OLD BUSINESS:

**OPEN PUBLIC HEARING #1**... Review of a special use, environmental impact assessment, and site plan for a proposed remote bank ATM in an existing parking lot, located at 3599 E. Grand River Avenue, Howell, Michigan, parcel # 4711-05-400-031. The request is petitioned by Chase Bank.

**Planning Commission recommendation of petition**

- A. Recommendation of Special Use
- B. Recommendation of Environmental Impact Assessment (04-23-15)
- C. Recommendation of Site Plan (04-22-15)

**OPEN PUBLIC HEARING #2**... Review of a special use, sketch plan, and environmental impact assessment for a proposed K-12 Livingston Christian School to be located within the Brighton Church of the Nazarene, located at 7669 Brighton Road, Brighton, Michigan, parcel # 4711-25-400-058. The request is petitioned by Brighton Nazarene Church.

**Planning Commission recommendation of petition**

- A. Recommendation of Special Use
- B. Recommendation of Environmental Impact Assessment (03-16-15)
- C. Recommendation of Sketch Plan (05-14-14)

NEW BUSINESS:

**OPEN PUBLIC HEARING #3**... Review of a site plan and environmental impact assessment for a proposed 60,000 sq. ft., three-story medical office building, located

at 1201 S. Latson Road, Howell, Michigan, 48843, parcel # 4711-09-100-036.  
The request is petitioned by Providence Health System.

**Planning Commission recommendation of petition**

- A. Recommendation of Environmental Impact Assessment (05-04-15)
- B. Recommendation of Site Plan (04-23-15)

**OPEN PUBLIC HEARING #4...** Review of a site plan and environmental impact assessment proposing a 19,202 sq. ft. building addition and 152 new parking spaces, located at 7526 Grand River Avenue, Brighton, Michigan 48116, parcel # 4711-13-400-018. The request is petitioned by 2|42 Community Church.

**Planning Commission recommendation of petition**

- A. Recommendation of Environmental Impact Assessment. (04-22-15)
- B. Recommendation of Site Plan. (04-22-15)

**OPEN PUBLIC HEARING #5...**Request for review of amendments to the Genoa Charter Township Capital Improvement Plan.

**Planning Commission disposition of petition**

- A. Disposition of Capital Improvement Plan

**Administrative Business:**

- *Staff report*
- *Approval of April 27, 2015 Planning Commission meeting minutes*
- *Member discussion*
- *Adjournment*



10. Further, this recommendation is conditioned upon the petitioner obtaining the easement to the property to the immediate west and the residential properties to the north;
11. The petitioner will comply with the requirements of the Township Engineer in his letter of 04/2/15. These requirements will be accomplished prior to the submission of the packet to the Board;
12. The requirements of the Livingston County Drain Commissioner in his letter of 03/25/15 will be complied with;
13. The requirements of the Brighton Area Fire Authority in their letter of 03/16/15 shall be complied with. It is understood that the petitioner will be discussing the requirements of a sprinkler system with the fire chief and that item may change.

Support by Barbara Figurski. **Motion carried unanimously.**

**OPEN PUBLIC HEARING #3...** Review of a special use, environmental impact assessment, and site plan for a proposed remote bank ATM in an existing parking lot, located at 3599 E. Grand River Avenue, Howell, Michigan, parcel # 4711-05-400-031. The request is petitioned by Chase Bank.

Andy Andre from Bud Design and John Krissoff from Chase Bank addressed the Planning Commission. They are hoping to install a remote ATM within the Grand River Plaza. The proposed light is smaller than the existing poles in the parking lot. There are three branch offices within 10 miles. They previously had a branch within Meijers, but no longer do.

Mr. Borden addressed the Planning Commission. Because it is a stand-alone ATM, it requires special scrutiny and a special use permit. The general special use standards have been met. The number of stacking spaces caused him concern. He believes a summary of the queuing study should be provided to the Township Board. It would be preferable to have a branch at this site, but the Township cannot require that. Mr. Mortensen inquired as to whether this site interfered with traffic. Mr. Rauch agreed.

Mr. Borden addressed the potential of a blind spot and traffic conflict. He believes it to be the most important consideration. The petitioner will install a "No Right Turn" sign. He believes this is an underutilized portion of the property and therefore, it should not be an issue. Mr. Mortensen disagrees. Moving it down a few traffic spots was discussed. The petitioner indicated that their margin for profit may not allow it.

Mr. Grajek inquired as to whether petitioner would be amenable to adding brick or another material to dress it up. Mr. Rauch asked about the six signs that are currently proposed. Mr. Rauch suggested moving the angle of the drive thru and ATM.

The construction would take approximately three weeks.

A call was made to the public. Rob Vedro from Blue Frog Books addressed the Planning Commission. He would like to see the road between the parking lot and the

Meijers parking lot finished. There is approximately 12 feet unconnected. He feels it would be a better location for the ATM.

**Planning Commission disposition of petition**

- A. Recommendation of Special Use
- B. Recommendation of Environmental Impact Assessment (03-05-15)
- C. Recommendation of Site Plan (02-20-15)

The petitioner requests to table this review. **Motion** by James Mortensen to table this matter until the 05/11/15 Planning Commission meeting. Support by Barbara Figurski. **Motion carried unanimously.**

**OPEN PUBLIC HEARING #4...** Review of a site plan, environmental impact assessment, and PUD amendment for a proposed redevelopment of an existing outparcel to create two (2) outlots and construct a 4,283 sq. ft. restaurant building, located at 3950 E. Grand River Avenue, Howell, Michigan 48443, parcel # 4711-05-400-047. The request is petitioned by RG Properties, Inc.

Jim Blair of RG Properties, Dan Cook with Panera, and Matthew with Arc Vision addressed the Planning Commission. They are seeking approval for the demolishing of a building and to erect a Panera Bread restaurant building with a drive-thru restaurant building next door.

Panera is undergoing design changes for their standard buildings. A materials board was provided. There is a patio planned at this location, as well.

There are two parking spaces that should be deleted. Additionally, the curb should be mountable in order to escape the drive-thru. Mr. Rauch expressed his concerns about the driving lanes. Bo Gunlock pointed out that the curb cuts are existing. Chairman Brown indicated that's already understood. Mr. Rauch showed the petitioner his suggested changes.

Mr. Borden addressed the unresolved issues in his letter of April 6, 2015. There should be some sort of signage about pedestrians, such as "Ped X'ing" on the pavement. The petitioner is proposing to retain existing landscaping in the green belt. There are no details to determine if ordinance has been met. The lighting plan is not specific as to what lights will be used. More detail is needed. There are three monument signs proposed.

A call to the public was made with no response.

**Motion** by James Mortensen to table the petition to April 27. Support by Barbara Figurski.

Ayes: Lowe, Mortensen, Figurski, Rauch (4)

Nays: Grajek (1)

**Motion carried.**



May 5, 2015

Planning Commission  
Genoa Township  
2911 Dorr Road  
Brighton, Michigan 48116

<b>Attention:</b>	Kelly Van Marter, AICP Assistant Township Manager and Community Development Director
<b>Subject:</b>	Stand-alone ATM at Grand River Plaza – Special Land Use and Site Plan Review #2
<b>Location:</b>	3669 E. Grand River Avenue – north side of E. Grand River, west of Latson Road
<b>Zoning:</b>	RCD Regional Commercial District

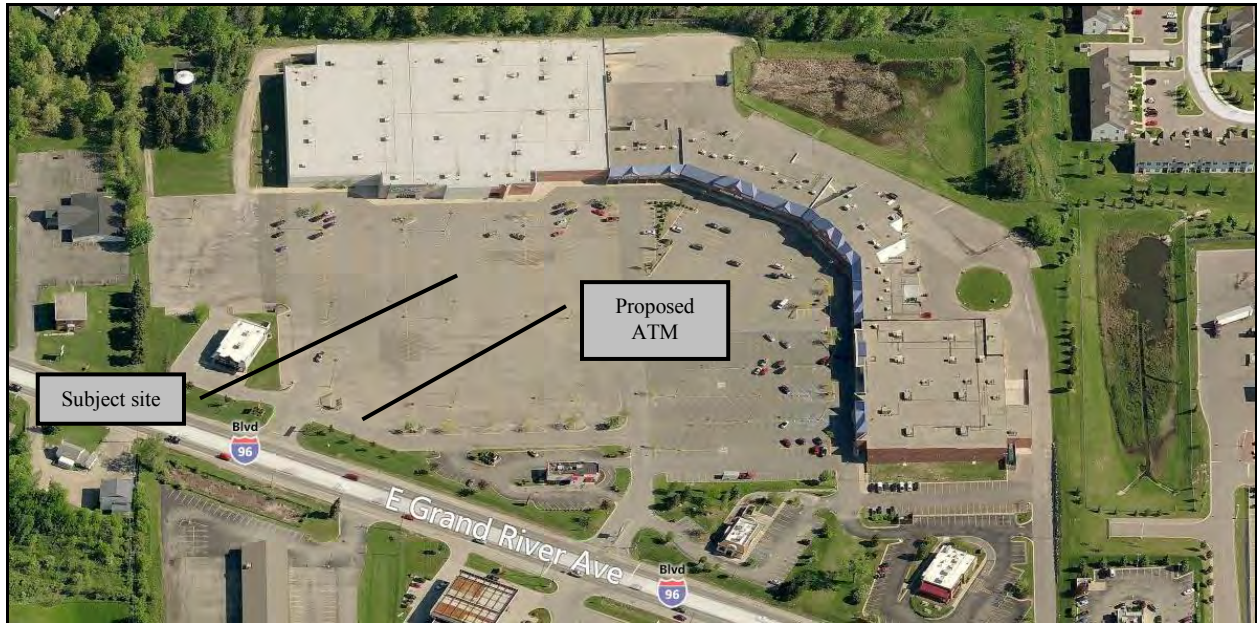
Dear Commissioners:

At the Township’s request, we have reviewed the revised submittal, including the application for special land use and site plan (dated 4/23/15) proposing a new stand-alone ATM at the Grand River Plaza. The site is located on the north side of E. Grand River Avenue, west of Latson Road, and is within the RCD Regional Commercial District.

We have reviewed the proposal in accordance with the applicable provisions of the Genoa Township Zoning Ordinance and Master Plan.

**A. Summary**

1. From a planning and zoning perspective, the special land use standards are generally met, although we believe the project could be improved by use of an outlot for an actual bank or relocation of the ATM such that it is not so visible from Grand River Avenue.
2. Any comments/concerns raised by the Township Engineer or Fire Department must be addressed as part of this project.
3. Requests for a new special land use on a developed site provide the opportunity for improvements to any existing site design deficiencies. The Commission may wish to request details of existing site design features to ensure compliance with current standards and require upgrades where appropriate.
4. It would be preferable if the machine/canopy structure was built of materials compatible with the existing development, although there is no specific requirement.
5. The proposed wheel stops must be placed properly to account for vehicle overhang.
6. We believe the proposed vehicular circulation pattern is an improvement to the original design, but will defer to the Township Engineer for any remaining concerns they may have.
7. In our opinion, the proposed sign package does not meet Ordinance standards (4 or 5 provided, while 1 is permitted and a 2<sup>nd</sup> may be allowed by the Planning Commission; although the roof sign is prohibited).



*Aerial view of site and surroundings (looking north)*

## **B. Proposal**

The applicant proposes to install a stand-alone ATM within the parking lot of the existing shopping center. Table 7.02 lists stand-alone automatic drive-up teller machines as a special land use in the RCD. As shown on the revised plan, the drive-up ATM would replace 7 existing parking spaces in the Grand River front yard near the westernmost driveway to the site.

## **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 and Future Land Use map identify the site as Regional Commercial, which is planned for higher intensity commercial uses that rely on higher traffic volumes and easy access.

Given the use is part of an existing shopping center and within the most intensive commercial land use classification, we are of the opinion that the proposed project is consistent with the Township Master Plan for this site and area.

With that being said, as was discussed at the April 13, 2015 Planning Commission meeting, based on goals and objectives in the Plan, we are of the opinion that this shopping center could benefit from the creation of an outlet and the proposed ATM location appears to be an appropriate area for such an outlet. In our opinion, the establishment of an actual bank (with an ATM) would be preferable to a stand-alone ATM, especially given the highly visible nature of this site.

- 2. Compatibility.** The project is located within an existing shopping center and is minimally invasive to the existing site layout – it replaces 7 parking spaces in a rather large parking lot. Surrounding uses along Grand River are developed with, zoned and planned for commercial uses, including several existing drive-through facilities.

As was discussed at the April 13, 2015 Planning Commission meeting, our primary concern under this criterion is the highly visible nature of the proposed machine. We are unaware of any other stand-alone ATMs in this corridor that are located so near the property's frontage; particularly along the Township's most highly traveled commercial corridor. The vast parking lot has ample room to consider alternate locations.

3. **Public Facilities and Services.** Given the site's location and the nature of the proposed use, we do not expect any concerns with public facilities and services. However, we defer to the Township Engineer and Fire Department for any specific comments/concerns they may have.
4. **Impacts.** The proposed ATM will replace 7 existing parking spaces in a relatively large parking lot. The amount of impervious surface will not be increased and the project is not anticipated to adversely impact natural features, public services/utilities, surrounding land uses or traffic.
5. **Mitigation.** The Township may require mitigation necessary to limit or alleviate any potential adverse impacts as a result of the proposed project.

#### **D. Site Plan Review**

1. **Building Materials and Design.** The revised submittal does not identify the materials used for the ATM/canopy. Per the discussion at the April 13, 2015 Planning Commission meeting, we believe the structure is to be constructed of metal and plastic materials. While there are no specific requirements, it would be preferable if the project incorporated materials consistent with the existing development.
2. **Parking.** The proposed project will result in the removal of 7 existing parking spaces. Although parking calculations are not provided, the site appears to provide more than sufficient parking and the loss of 7 spaces is not expected to have an impact on the site.

Wheel stops are proposed for the 7 spaces adjacent to the back side of the proposed machine/canopy structure to keep vehicles from hitting the structure; however, their placement does not appear to account for vehicle overhang. As such, there appears to be potential for vehicles to hit the back side of the structure from these spaces.

Based on Ordinance standards, 76-90 degree parking spaces are to be at least 18 feet deep. These spaces appear to be within this range, in which case, the wheel stops should be shifted back to better accommodate vehicle overhang.

3. **Pedestrian Circulation.** There is an existing public sidewalk along Grand River. The proposed ATM placement is not expected to impact established pedestrian circulation, although we do request confirmation that walk-up use of the machine is prohibited.
4. **Vehicular Circulation.** No changes are proposed to the existing driveways or traffic circulation pattern. Access to/from the machine will follow the established one-way circulation pattern of the parking lot. In short, we view the proposed layout as an improvement to the original design, but will defer to the Township Engineer for any remaining concerns they may have.
5. **Stacking Spaces.** As was discussed at the April 13, 2015 Planning Commission meeting, stacking spaces are necessary to prevent vehicles from backing up and interfering with traffic circulation and/or parking spaces. The revised plan provides space for two vehicles (one active, one waiting) with more length than the original submittal (36' deep vs. 40').

Additionally, the revised submittal includes a queuing study that indicates the average queue length is less than 1 car. Based on the study, there is a “maximum theoretical” queue of 6 vehicles, though the study states the probability of this occurrence is very unlikely.

6. **Landscaping.** The revised plan identifies 4 existing trees in the greenbelt between Grand River Avenue and the project area. The new plan also includes a 2’ tall hedgerow within that same greenbelt.
7. **Exterior Lighting.** The revised plan identifies a proposed light pole with 2 fixtures. Details submitted show the use of downward directed LED fixtures mounted at a height of 16.5’.
8. **Signs.** Article 16 does not specifically address signage for this particular use. In our opinion, the best fit is to utilize conventional wall sign standards which would restrict the applicant to 1 sign of not more than 10% of the canopy/machine area. A 2<sup>nd</sup> sign may be permitted by the Planning Commission per Footnote 2(b) of Table 16.1.

Based on the submittal there are at least 4 signs and likely a 5<sup>th</sup> on the south side (a south side rendering was provided at the April 13, 2015 Planning Commission meeting, but was not included in the revised submittal).

Additionally, as was previously discussed, we are of the opinion that the sign mounted atop the canopy structure is not permitted (closest fit is a roof sign, which is a prohibited sign).

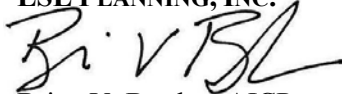
The applicant needs to provide details in terms of the number and size of each sign proposed for the Commission’s consideration.

9. **Impact Assessment.** The submittal includes a revised Impact Assessment (dated April 23, 2015). In summary, the Assessment notes that the project is not anticipated to adversely impact natural features, public services/utilities, surrounding land uses or traffic.

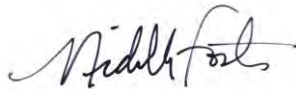
Should you have any questions concerning this matter, please do not hesitate to contact our office. We can be reached by phone at (248) 586-0505, or via e-mail at [borden@lslplanning.com](mailto:borden@lslplanning.com) and [foster@lslplanning.com](mailto:foster@lslplanning.com).

Sincerely,

**LSL PLANNING, INC.**



Brian V. Borden, AICP  
Principal Planner



Michelle Foster  
Project Planner





May 5, 2015

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

**Re: Chase ATM  
Site Plan and Impact Assessment Review**

Dear Ms. Van Marter:


We have reviewed the sketch plan submittal from Bud Design and Engineering Services, Inc. dated April 23, 2015. The petitioner is proposing to construct a remote drive-up bank ATM in the parking lot of the existing Grand River Plaza, 3669 E. Grand River Avenue, and has provided additional documentation including a rendered elevation, traffic queuing study, environmental impact study and lighting plan for the Township's review.


The facility is being proposed in the outer extant of the existing parking lot and will replace several existing parking spaces. There are no proposed sewer or water service needs for this development and there will be no negative impacts to the existing site drainage patterns. We recommend that a concrete curb be installed along the east side of the concrete island as a more permanent solution in lieu of the concrete bumper blocks.

Our review found no engineering-related impacts to the existing site from the proposed changes indicated on the site plan and, aside from the comments above, we have no objections to approval.

Please call if you have any questions.

Sincerely,

  
Gary J. Markstrom, P.E.  
Unit Vice President

  
Joseph C. Siwek, P.E.  
Project Engineer

Copy: Andrew Andre, PE – Bud Design & Engineering Services Inc.



# BRIGHTON AREA FIRE AUTHORITY

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

April 29, 2015

Kelly VanMarter  
Genoa Township  
2911 Dorr Road  
Brighton, MI 48116

RE: Chase Remote ATM – (in Grand River Plaza parking lot)  
3669 E. Grand River  
Site Plan & Special Use Review

Dear Kelly:

The Brighton Area Fire Department has reviewed the above mentioned site plan. The plans were received for review on March 11, 2015 and the drawings are dated February 13, 2015 with latest revisions dated February 20, 2015. The project is based on a new remote ATM located in the parking lot of the Grand River plaza. The plan review is based on the requirements of the International Fire Code (IFC) 2012 edition. Previous comments appear to be addressed by the applicant in the revised submittal.

1. If the structure is provided with an address it must be provided to the fire department, and shall be included on the building. The address shall be a **minimum of 6"** high letters of contrasting colors and be clearly visible from the street (Grand River). The location and size shall be verified prior to installation. **(Corrected on Plan)**
2. Provide names, addresses, phone numbers, emails of contractor, architect, on-site project supervisor during construction. The owner and owner's agent contact information must be provided to the fire authority following construction; in the event of an emergency. **(Corrected on Plan)**

IFC 505.1

Additional comments will be given during the building plan review process (specific to the building plans and occupancy). 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 that reads "D Bunge".

Derrick Bunge  
Lieutenant-Fire Inspector





Bud Design & Engineering Services, Inc.

10775 S. Saginaw St. Suite B | Grand Blanc, MI 48439 | Ph: 810.695.0793 | Fax: 810.695.0569 | www.buddesign.com

## **ENVIRONMENTAL IMPACT ASSESSMENT**

### CHASE BANK REMOTE ATM

#### **A. NAME AND ADDRESS OF PERSON RESPONSIBLE FOR PREPARATION**

ANDREW ANDRE, PE

BUD DESIGN & ENGINEERING SERVICES, INC.

10775 S. SAGINAW ST, SUITE B

GRAND BLANC, MI 48439

MR. ANDRE IS A PROFESSIONAL ENGINEER IN THE STATE OF MICHIGAN AND HAS 19-YEARS OF EXPERIENCE WITH SITE DEVELOPMENT PROJECTS. SEVERAL PROJECTS HAVE BEEN WITHIN GENOA TOWNSHIP.

#### **B. MAP AND WRITTEN DESCRIPTION/ANALYSIS OF THE PROJECT SITE**

THE PROPOSED PROJECT IS A REMOTE BANK ATM THAT WOULD BE PLACED WITHIN THE EXISTING PARKING LOT OF THE GRAND RIVER PLAZA. SEVERAL PARKING SPACES WOULD BE REMOVED FOR THE PROPOSED REMOTE ATM, WITH THOSE PARKING SPACES BEING SOME OF THE FURTHEST REMOVED FROM THE RETAIL CENTER AND RARELY USED. THE PROPOSED PROJECT WOULD BE CONSISTENT WITH THE BUSINESS USES OF THE AREA AND WOULD PROVIDE A CONVENIENT BANKING OPPORTUNITY FOR CUSTOMERS. THE PROPERTY IS ZONED RCD, WHICH WAS ESTABLISHED TO ACCOMMODATE RETAIL SERVICES FOR THE TOWNSHIP AND SURROUNDING COMMUNITIES.





Bud Design & Engineering Services, Inc.

---

10775 S. Saginaw St. Suite B | Grand Blanc, MI 48439 | Ph: 810.695.0793 | Fax: 810.695.0569 | www.buddesign.com

**C. IMPACT ON NATURAL FEATURES**

THE LOCATION OF THE PROPOSED PROJECT DOES NOT IMPACT ANY NATURAL FEATURES. THE REMOVAL OF ASPHALT PAVING IS PROPOSED FOR THE INSTALLATION OF THE REMOTE ATM.

**D. IMPACT ON STORMWATER MANAGEMENT**

A SMALL AREA OF ASPHALT PAVEMENT WILL BE SAWCUT AND REMOVED FOR INSTALLATION OF THE REMOTE ATM. A SMALL AMOUNT OF SOIL WILL BE REMOVED AND REPLACED DURING CONSTRUCTION, SO BEST-MANAGEMENT-PRACTICES SUCH AS NOT LEAVING THE REMOVAL AREA EXPOSED FOR ANY SIGNIFICANT PERIOD WILL BE EMPLOYED. THE EXISTING AREA IS COVERED WITH ASPHALT PAVEMENT AND NO ADDITIONAL IMPERVIOUS SURFACE IS PROPOSED, THEREFORE SURFACE WATER RUNOFF WILL NOT INCREASE AS A RESULT OF THIS PROJECT.

**E. IMPACT ON SURROUNDING LAND USE**

THE PROPOSED PROJECT WOULD BE CONSISTENT WITH THE SURROUNDING COMMERCIAL AND RETAIL DEVELOPMENTS WITHIN THE AREA. NO INCREASE IN LIGHT, NOISE, OR AIR POLLUTION IS ANTICIPATED WITH THE PROPOSED REMOTE ATM.

**F. IMPACT ON PUBLIC FACILITIES AND SERVICES**

PUBLIC SERVICES SUCH AS FIRE AND POLICE WILL HAVE DIRECT ACCESS TO THE PROPOSED PROJECT AREA. BEING SITUATED WITHIN AN EXISTING PARKING AREA PROVIDES VISIBILITY TO PUBLIC SERVICE AGENCIES AND THE ABILITY TO GAIN ACCESS IF REQUIRED.

**G. IMPACT ON PUBLIC UTILITIES**

NO PUBLIC UTILITIES ARE PROPOSED AS PART OF THIS PROJECT.

**H. STORAGE AND HANDLING OF ANY HAZARDOUS MATERIALS**

NO HAZARDOUS MATERIALS WILL BE HANDLED OR STORED AS PART OF THIS PROJECT.

**I. IMPACT ON TRAFFIC AND PEDESTRIANS**

THE PROPOSED PROJECT IS LOCATED WITHIN THE EXISTING PARKING AREA OF THE GRAND RIVER PLAZA, WHICH IS LOCATED NORTH OF GRAND RIVER AVENUE. THERE IS AN EXISTING COMMERCIAL DRIVEWAY TO GRAND RIVER AVENUE LOCATED WITHIN APPROXIMATELY 150-FEET OF THE PROPOSED PROJECT. THE REMOTE ATM LOCATION HAS BEEN LOCATED SUCH THAT VEHICULAR ACCESS IS EASILY PROVIDED FOR INGRESS AND EGRESS. THE REMOTE ATM IS A SERVICE LOCATION THAT WILL NOT HAVE ANY EMPLOYEES. NO ADDITIONAL TRAFFIC GENERATION IS ANTICIPATED ON THE PUBLIC STREETS AS A RESULT OF THE PROPOSED PROJECT.

## ATM Queuing Study

**Site Under Study**

**JPMC Remote Drive-up ATM**  
3663 E. Grand River Rd.  
Howell, Michigan

**Intended Use**

Drive Up ATM

**Primary ATM Contact**

Jon Krissoff  
Market Director of Real Estate  
312.325.3393

# Overview

- Purpose of Study

- Understand the average queue length and wait times experienced by Chase customers at remote drive-up ATMs
- Using advanced queuing simulation, to project the expected queue length and stacking requirement for Grand River Plaza, and to demonstrate that there will not be an adverse impact to traffic flow in the parking lot.

# Overview

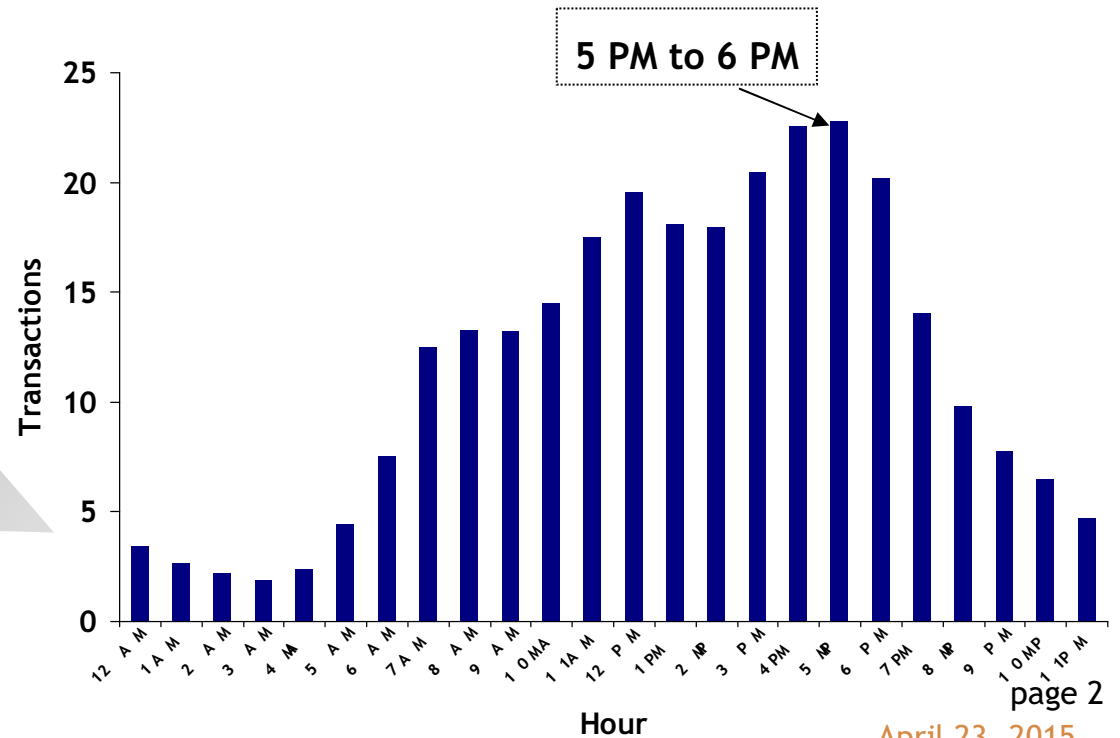
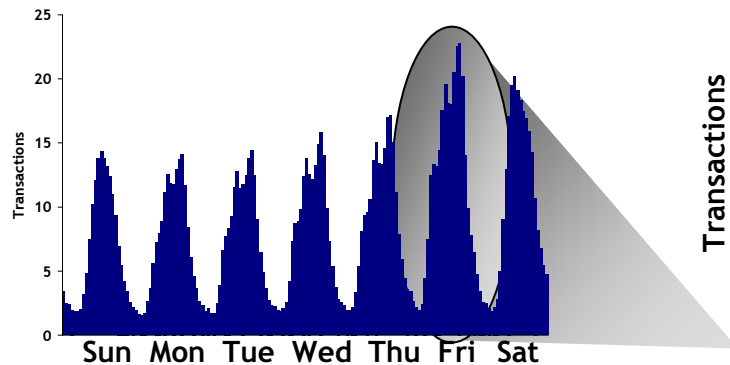
## Methodology

- A study of 118 off-premise, drive-up ATMs accounting for 4.8mm annual transactions - majority are in parking lots

- ATMs split into 6 tiers:

Tier	Transactions per Month
1	less than 2,000
2	2,000 to 2,999
3	3,000 to 3,999
4	4,000 to 4,999
5	5,000 to 6,999
6	7,000+

- Determine the peak hour as basis for maximum queue experienced



# Queuing Simulation

- Uses peak hour in each tier for the interarrival times (Friday, 5 p.m.)
- Service times based on time-in-motion studies of Chase ATM transactions - actual experience is 45 seconds; conservatively assume 1 minute
- **Does not assume that transactions are evenly distributed, but are random events, which is a more accurate reflection of stacking requirements**
- Simulation Model to determines:
  - Expected queue length
  - Maximum queue length
  - Expected time in queue
  - Expected time in system
  - ATM utilization
  - Probability of various queue lengths
- Model Validity
  - Simulates historical transactions from 3 pm to 5 pm as a “warm-up”
  - Then simulates the peak hour from 5 pm to 6 pm

■ Model Inputs >>

Tier	Transactions per Month	Peak Arrivals Per Hr	Interarrival Time	Service Time
1	less than 2,000	7.89	7.61 min	1 min
2	2,000 to 2,999	10.93	5.49 min	1 min
3	3,000 to 3,999	14.91	4.03 min	1 min
4	4,000 to 4,999	19.64	3.05 min	1 min
5	5,000 to 6,999	23.43	2.56 min	1 min
6	7,000+	32.03	1.87 min	1 min

# Simulation Results and Recommendation

- The table below displays the overall results:

Tier	Avg Q Length (Cars)	Max Q Length (Cars)*	Avg Time in Queue (min)	Avg Time in System (min)	ATM Utilization
1	0.02	2	0.11	1.15	13%
2	0.04	4	0.17	1.16	18%
3	0.07	5	0.25	1.25	24%
4	0.14	6	0.40	1.41	33%
5	0.26	10	0.59	1.56	38%
6	0.63	10	1.11	2.10	53%

\* Maximum observed over 100 simulated hours of activity.

- This ATM is projected to perform 4k monthly transactions, which places it in Tier 4.
- The maximum theoretical queue that *could* result is 6 cars, although with a statistical probability of less than 0.03%, it is highly unlikely (bottom chart). The average expected queue length is actually less than 1 car (top chart).
- Conservative recommendation at this location is stacking capability of 1-2 cars which would easily handle the peak periods.

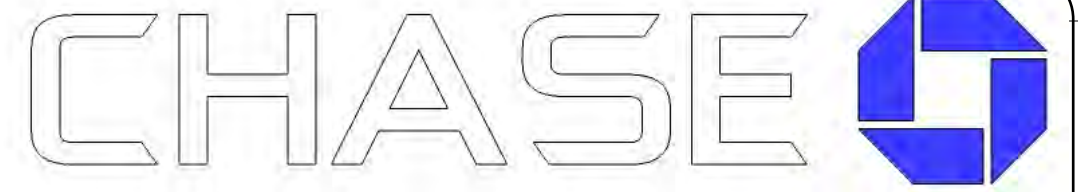
- The table below displays the probability of observing a certain # of cars in queue by tier.

Tier	Cars in Queue									
	1	2	3	4	5	6	7	8	9	10
1	1.50%	0.20%	0.03%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2	2.72%	0.49%	0.09%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3	4.64%	1.15%	0.29%	0.07%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%
4	7.21%	2.36%	0.77%	0.25%	0.08%	0.03%	0.01%	0.00%	0.00%	0.00%
5	9.29%	3.63%	1.42%	0.55%	0.22%	0.08%	0.03%	0.01%	0.01%	0.00%
6	13.29%	7.09%	3.79%	2.02%	1.08%	0.58%	0.31%	0.16%	0.09%	0.05%





**PROJECT OVERVIEW:  
NEW CHASE ATM - WEST FACING  
RENDERED ELEVATION**



**GRAND RIVER AND LATSON  
3663 E Grand River Ave  
Howell, MI 48843**



<b>A</b>	<b>:: NEW CHASE ATM - WEST ELEVATION / RENDERING</b>
01	NO SCALE











## DESCRIPTION

The Galleon™ LED luminaire delivers exceptional performance in a highly scalable, low-profile design. Patented, high-efficiency AccuLED Optics™ system provides uniform and energy conscious illumination to walkways, parking lots, roadways, building areas and security lighting applications. IP66 rated.

<b>Catalog #</b>		<b>Type</b>
<b>Project</b>		
<b>Comments</b>		<b>Date</b>
<b>Prepared by</b>		

## SPECIFICATION FEATURES

### Construction

Extruded aluminum driver enclosure thermally isolated from Light Squares for optimal thermal performance. Heavy-wall, die-cast aluminum end caps enclose housing and die-cast aluminum heat sinks. A unique, patent pending interlocking housing and heat sink provides scalability with superior structural rigidity. 3G vibration tested. Optional tool-less hardware available for ease of entry into electrical chamber. Housing is IP66 rated.

### Optics

Choice of 16 patented, high-efficiency AccuLED Optics. The optics are precisely designed to shape the distribution maximizing efficiency and application spacing. AccuLED Optics create consistent distributions with the scalability to meet customized application requirements. Offered standard in 4000K (+/- 275K) CCT and minimum 70 CRI. Optional 6000K CCT and 3000K CCT. For the ultimate level of spill light control, an optional house side shield accessory can

be field or factory installed. The house side shield is designed to seamlessly integrate with the SL2, SL3, SL4 or AFL optics.

### Electrical

LED drivers are mounted to removable tray assembly for ease of maintenance. 120-277V 50/60Hz, 347V 60Hz or 480V 60Hz operation. Standard with 0-10V dimming. Shipped standard with Cooper Lighting proprietary circuit module designed to withstand 10kV of transient line surge. The Galleon LED luminaire is suitable for operation in -40°C to 40°C ambient environments. For applications with ambient temperatures exceeding 40°C, specify the HA (High Ambient) option. Light Squares are IP66 rated. Greater than 90% lumen maintenance expected at 60,000 hours. Available in standard 1A drive current and optional 530mA and 700mA drive currents.

### Mounting

Extruded aluminum arm includes internal bolt guides allowing for

easy positioning of fixture during assembly. Designed for pole or wall mounting. When mounting two or more luminaires at 90° or 120° apart, the EA extended arm may be required. Refer to the arm mounting requirement table on page 3. Round pole top adapter included. For wall mounting, specify wall mount bracket option. 3G vibration rated.

### Finish

Housing finished in super durable TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Heat sink is powder coated black. Standard colors include black, bronze, grey, white, dark platinum and graphite metallic. RAL and custom color matches available. Consult the McGraw-Edison Architectural Colors brochure for the complete selection.

### Warranty

Five-year warranty.



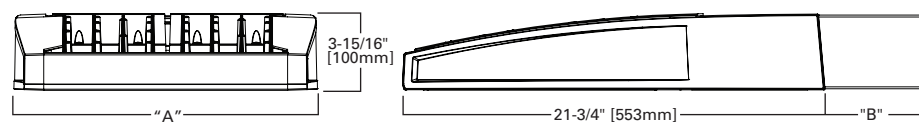
## GLEON GALLEON LED

1-10 Light Squares  
Solid State LED

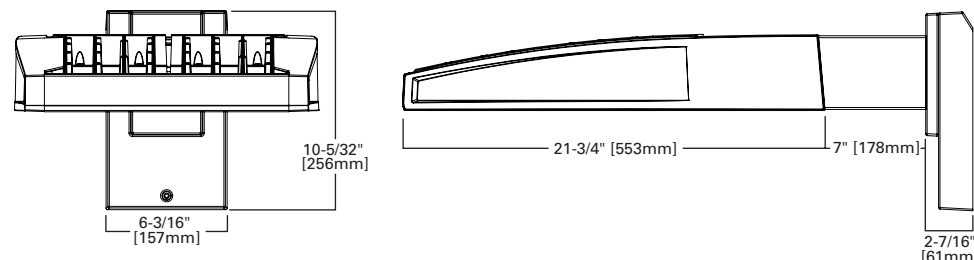
AREA/SITE LUMINAIRE

## DIMENSIONS

### POLE MOUNT



### WALL MOUNT



### DIMENSION DATA

Number of Light Squares	"A" Width	"B" Standard Arm Length	"B" Optional Arm Length <sup>1</sup>	Weight with Arm (lbs.)	EPA with Arm <sup>2</sup> (Sq. Ft.)
1-4	15-1/2" (394mm)	7" (178mm)	10" (254mm)	33 (15.0 kgs.)	0.96
5-6	21-5/8" (549mm)	7" (178mm)	10" (254mm)	44 (20.0 kgs.)	1.00
7-8	27-5/8" (702mm)	7" (178mm)	13" (330mm)	54 (24.5 kgs.)	1.07
9-10	33-3/4" (857mm)	7" (178mm)	16" (406mm)	63 (28.6 kgs.)	1.12

NOTES: 1 Extended arm option may be required when mounting two or more fixtures per pole at 90° or 120°. Refer to arm mounting requirement table. 2 EPA calculated with optional arm length.

**Cooper Lighting**

by **F.T.N**



### CERTIFICATION DATA

UL/cUL Wet Location Listed  
ISO 9001  
LM79 / LM80 Compliant  
3G Vibration Rated  
IP66 Rated  
DesignLights Consortium® Qualified\*

### ENERGY DATA

Electronic LED Driver  
>0.9 Power Factor  
<20% Total Harmonic Distortion  
120V-277V 50/60Hz  
347V & 480V 60Hz  
-40°C Min. Temperature  
40°C Max. Temperature  
50°C Max. Temperature (HA Option)



LAW OFFICES OF  
**MANCUSO & CAMERON, P.C.**  
ATTORNEYS AND COUNSELORS

FRANK J. MANCUSO, JR.  
DOUGLAS D. CAMERON

VICTORIA L. LESNER  
BRUCE A. MAYRAND, JR., of Counsel

---

May 7, 2015

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

Re: Brighton Nazarene Church  
Parcel No. 4711-25-400-058

Dear Ms. VanMarter:

As requested, I have reviewed the Township's Zoning Ordinance with regard to the Brighton Nazarene Church's Special Land Use Application for use of the Church property (parcel 4711-25-400-058) for the Livingston Christian Day School. I have also reviewed the Application, the Planning Commission meeting minutes of April 27, 2015, Attorney Catherine Riesterer's letter dated April 28, 2015 and the letter from Steven Moore/Brighton Nazarene Church dated April 30, 2015.

The subject property is zoned Suburban Residential, or SR. Article 3 of the Zoning Ordinance entitled "Residential and Agricultural Districts" governs SR zoning. Section 3.03.01 provides in pertinent part:

3.03.01. **List of Uses:** In the residential districts, land buildings and structures shall be used only for one or more of the following uses. . . Land and/or buildings in the districts indicated at the top of Table 3.03 may be used for the purposes denoted by "S" after special land use approval in accordance with the general and specific standards of Article 19 Special Land Uses. . . . *The "Req." column indicates additional . . . conditions applicable to the use.* (emphasis added). Under the heading "**Institutional Uses**" in Table 3.03 the first category is "Churches, temples and similar places of worship." Naturally, the Brighton Nazarene Church comes under this heading. In the column "**Req.**" the table references Section 3.03.02(I). According to Section 3.03.01, this reference indicates additional conditions applicable to the use.

Section 3.03.02(l) provides in pertinent part:

- (l) Churches, temples, and similar places of worship and related facilities shall comply with the following requirements:
  - (4) Private schools and child 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.

I will address Attorney Riesterer's concerns. Ms. Riesterer expresses two main issues. First, is the use of the subject property permitted in the SR zoning district because the school is K-12 which of course includes high school. Second, if the School is permitted as an accessory use, does the school become a principal use under the Zoning Ordinance due to square footage or traffic. Each of these concerns is addressed below.

1. Is the use of the subject property by Livingston Christian Day School permitted under the Zoning Ordinance due to the fact that the school will be a K-12 school, including high school. Ms. Riesterer states in her letter that "I believe it is relevant to consider whether it [high school] would be permitted in the underlying zoning district (which in this case it would not)." I believe what Ms. Riesterer is referring to is Table 3.03, page 3-4, under the heading "**Institutional Uses**", the table lists "Elementary schools, public, private or parochial . . ." as uses permitted by a special land use permit and Appendix A to the Zoning Ordinance which, under the heading "**Education**" provides that "Junior and senior high schools . . ." are only permitted in PRF and OSD zoning districts.

(a) Table 3.03. As pointed out above, on page 3-4 of Table 3.03 and under Section 3.03.02(l), where the principal use is a church, temple or similar place of worship, private schools are allowed. Section 3.03.02(l) does not provide that "private schools" excludes high schools or junior high schools.

(b) Appendix A. Appendix A, pages A-1 through A-6 include a list of principal uses and the zoning districts that such uses are permitted in. Page A-7 contains a list of Accessory Uses. Page A-3 does provide that junior high schools and high schools are permitted only in zoning districts PRF and OSD *as a principal use*.

Therefore, the Township's Zoning Ordinance does permit a K-12 school in the SR district subject to special land use approval.

2. Is the use of the subject property as a K-12 school an accessory use or a principal use. Section 25.02 of Article 25 entitled "**DEFINITIONS**" provides the following definitions that are relevant to this analysis:

---

**Accessory Use:** A use which is clearly incidental to, customarily found in connection with and located on the same zoning lot, unless otherwise specified, as the principal use to which it is related. . .

- k. Uses customarily and clearly incidental to a principal use . . . Where two or more activities take place within a principal building, the accessory use shall generally be the use occupying the least square footage or generating the least amount of traffic or other external impacts. *Interpretation of accessory v. principal use shall be made by the Zoning Administrator. (emphasis added).*

**Principal Building Structure or Use:** The main building, structure or use to which the premises are devoted and the principal purpose for which the premises exist. In cases where there is more than one use, the use comprising the greatest floor area shall be generally considered the Principal Use, except in cases where a use comprising a secondary amount of floor area is considered to have a greater impact in terms of traffic generated; noise levels, disruption of views and similar impacts.

In reading the definition of "Accessory Use" and "Principal Building Structure or Use" together, there are two primary factors that will determine whether or not the Livingston Christian Day School is an accessory use or a principal use. First, is the amount of floor area that comprises the school as compared to the amount of floor area that comprises the church; and second is traffic generated, noise levels, disruption of views and similar impacts. The determination of whether or not the school is considered a principal use is to be determined by the Zoning Administrator.

- (a) Floor area. According to Mr. Steve Morgan, the church occupies a total of 36,900 square feet of the building exclusively whereas the school occupies a total of 25,500 square feet which is also used by the church. Clearly, the church uses more floor area of the building than the school.
- (b) Traffic generated, noise levels, disruption of views and similar impacts. Under the definition of Accessory Use, the question is not whether the school generates more traffic than the church but, which use occupies "the least square footage or generating the least amount of traffic or other external impacts." (emphasis added). However, under the definition of "Principal . . . Use," the determination is based on "traffic generated, noise levels, disruption of views and similar impacts." This does not necessarily mean that the focus is on the total amount of traffic generated during a week but, rather the impact of the traffic generated, noise levels, disruption of view and similar impacts by
-

Ms. Kelly VanMarter  
May 7, 2015  
Page 4

MANCUSO & CAMERON, PC

the school. The Zoning Administrator must consider all of these factors in making his determination. My understanding is that the petitioner will be providing a traffic study which should help in this determination.

Ms. Riesterer raises some other concerns such as the church is separate from the school and allegedly other churches in the county do not have a high school. It is my opinion that under the Zoning Ordinance, these factors are not relevant.

If you or any members of the Planning Commission have any questions, please let me know.

Sincerely,

MANCUSO & CAMERON, PC



Frank J. Mancuso, Jr.

FJM/kdt

---

April 30,2015

Kelly VanMarter AICP  
Genoa Township Asst. Township Manager  
2911 Dorr Road  
Brighton Michigan 48116

RE: Brighton Naz Principal/Accessory Use

**PRINCIPAL USE:** (Genoa Township Zoning Ordinance Definitions)

*“.....use to which the premises are devoted and the principal purpose for which the premises exist. In cases where there is more than one use, the use comprising the greatest floor area shall generally be considered the Principal Use, except in cases where a use comprising a secondary amount of floor area is considered to have greater impact in terms of traffic generated, noise levels, disruption of views and similar impacts.”*

**ACCESSORY USE:** (Genoa Township Zoning Ordinance Definitions)

*k. “Uses customary and clearly incidental to a principal use such as .....use contained in the same principal structure. Where two or more activities take place within a principal building, the accessory use shall generally be the use occupying the least square footage or generating the least amount of traffic or other external impacts.”*

***“...Principal purpose for which premises exist...”***

The Principal purpose of the Church of the Nazarene Property at 7669 Brighton Road has and will continue to be a Church facility and campus that is a place of Worship and Gathering to proclaim the gospel of Jesus Christ.

This is the overarching use for any and all ministries that will function on this site. The following are a cross-section of Organizations that the Naz provides facilities and “pairs with” to meet the Christian and social needs of our community. The people ministering and being helped in these examples are members of many Churches and are not exclusive to Brighton Naz., Each of the following are examples of Accessory Uses at the Church facility.

- Pregnancy Helpline—This is a National Christian Organization that meets the needs for women across the nation. The Naz provides meeting space and support for the local chapter.
- Celebrate Recovery-----This is a National Christian Organization that meets the needs for Men, Women and Children throughout the community. The Organization provides opportunities to heal for the entire family that suffers from the effects of Divorce, substance abuse, etc. The Naz has the largest chapter of this organization in the State.



- LOVE INC.-----This is a regional/local Christian organization that provides for the less fortunate population in our community. LOVE INC was formed to allow many of the Christian Churches in our community to “pool resources” to accomplish this necessary and Spiritually required outreach. LOVE INC, uses Naz facilities for meetings, storage, etc.
- Livingston Christian School (proposed)----This School is a Christian School that is not affiliated with one particular Church, however many of the students and families are members of The Naz. Similar to the above examples, this School meets the needs for many smaller Churches by “pooling resources” to provide the opportunity for Christian Education.

### **Livingston Christian School as extension of Brighton Nazarene Church**

- Both entities are of the same Mission and Organization—Universal Church of Jesus Christ
- Many LCS members attend the NAZ
- Mission for reaching children in the community is extension of Church Christian Education Program
- LCS and the NAZ are connected in our philosophy of leadership. Only those who believe in Jesus Christ and follow Him with life mission are allowed leadership positions.

### **Examples of a community of Christian Churches that house the School in separate Facilities**

- Livingston Christian School---2002 to present
- Tri-Unity Christian School, 5353 Wilson Avenue, SW, Grandville, MI,-- approx 40 years
  - Vision and Mission---(partial)
    - Partners with the Church and Home to graduate academically excellent disciples of Jesus Christ
    - To cooperate with Christian parents in their God given responsibility to train their children
    - To work in conjunction with Churches regarding physical Facilities and Spiritual grow
  - Evansville Christian School, 4400 Lincoln Avenue, Evansville, Indiana
    - Evansville Christian School is a multi-campus private school with an independent board of directors. The school has a partnership with three independent Churches
    - Purpose is to “Bridge the relationship between the education experience and the dynamics of the Christian life.”

These are two of many and these were chosen because they were used as models for LCS.

## **Facility Use and Impact**

The following is a breakdown of the use of the facility as, a Church, and a proposed Private Christian School.

The entire campus Facilities comprise 62,400 sq. feet. The Church is open generally from 7 am thru 9 pm.

35,900 sq. ft. is used exclusively by The Church and this portion is “locked” from the use of the Private School. 100% Church use—0% School use---by agreement

1000 sq. ft. of the Facility is for exclusive use of the School for office and storage. 2% of Facilities.

25,500 sq. ft. of this facility (classrooms, worship area and gymnasium) is shared use by the Private School and the Church as follows:

- School Use (including after school and events)---during 9 months year--- 1800 hours(35%)
- Church Use of this 25,500---Saturday, Sunday, summer months and non-school nights using the gymnasium and classrooms.-----3300 hours(65%)

## **Parking Lot Use**

### **Church Parking (weekly average)**

- Staff, Worship, Outreach, Gymnasium and other-----1075/week
- Yearly use---1050 X 50 = 52,500 use 50,000 74% of total

### **School Parking (weekly average)**

- Staff, Students, afterschool activities, other -----500 week
- Yearly use---- 500 X 36 weeks = 18,000 26% of total

Prepared by:

Brighton Nazarene Church by:

Steve Morgan

4432 Glen Eagles Court

Brighton, Michigan 48116

586-942-9751

April 30,2015

**GENOA TOWNSHIP**

**MAY 04 2015**

---

Kelly VanMarter AICP  
Genoa Township Asst. Township Manager  
2911 Dorr Road  
Brighton Michigan 48116

RE: Brighton Naz Permitted Uses

The Brighton Church of the Nazarene is used primarily for direct Church related events however we also make it available for events and uses that benefit the community. We welcome these additional uses and believe they are what we are called to be as a Church.

Two of these uses have recently been questioned and the Church believes are similar and permitted. We would ask that you review and consider them as acceptable permitted uses per the Genoa Township Zoning Ordinance. We believe these are permitted as "Government Services"

**Genoa Township Voting Precinct**

- The Church currently offers and would like to continue offering the Brighton Naz facility for this use. This has been a Voting location for many years. The Church offers the Facility "free of charge", however Genoa Township has been very generous in providing a donation for the Facility use.

**Secretary of State Drivers Testing Site**

- The northerly portion of the existing Church parking lot has been a certified Secretary of State (SOS) Drivers Test Site since 1995. (see current certification) The site criteria is very specific, hence, the majority of Secretary of State Drivers Test Sites are located in Church parking lots.(see attached criteria)
- Secretary of State, trains, certifies, and audits yearly, the examiners employed by AK Services. (see attached Certification).
- AK Services is a SOS certified testing organization only; not a driver's training school. (see Attached Certification)
- The Brighton Naz Lot is not used for Drivers Training. AK Services utilizes the Church Lot as a test facility only. (Government Service Facility)
- AK Services' office is located off-site
- The NAZ does not charge the Secretary of State for the use of this certified Test Site. AK Services however is very generous in donating to the NAZ for several programs.

We believe these were the only two uses of the Facility that were questioned.

Prepared for Brighton Nazarene Church by:  
Steve Morgan  
4432 Glen Eagles Court

Brighton, Michigan 48116

586-942-9751



STATE OF MICHIGAN  
 RUTH JOHNSON, SECRETARY OF STATE  
 DEPARTMENT OF STATE  
 LANSING

REF



**Third Party Examiner  
 Identification Card**

Mirsha Kach  
 AK Services  
 Examiner # 5665  
 Organization # 746

The person named above is certified by the Michigan Department of State,  
 Driver Training and Testing Division, to conduct Michigan Driver Skills Tests.

TPP-10503

IM

REF



**Third Party Examiner  
 Identification Card**

Andrew Kach  
 AK Services LLC  
 Examiner # 5556  
 Organization # 746

The person named above is certified by the Michigan Department of State,  
 Driver Programs Division, to conduct Michigan Driver Skills Tests

**AGREEMENT**  
between the  
**MICHIGAN DEPARTMENT OF STATE**  
and a  
**THIRD PARTY TESTING ORGANIZATION**

This agreement (Agreement) between the Michigan Department of State (the Department) and  
A K Services Driver Testing, LLC (the Organization),  
5412 Daniel Brighton, Michigan 48114 (address),  
authorizes the Organization to administer driving skills tests on behalf of the Department.

**ORGANIZATION OWNERSHIP**

Ownership type (check box):

- Individual     Partnership     Corporation     LLC  
 Municipal corporation     Public transportation corporation  
 Other (describe):

The following individual(s) are the owner(s), member(s), stockholders, officer(s) or partner(s) of the Organization (attach additional names as needed):

Name: Andrew Joseph Kach  
Title: Owner & Designated Representative  
Driver's License Number: XXXXXXXXXX  
Telephone: (810)-220-8110    Cell (517)-304-2817

---

Name:  
Title:  
Driver's License Number:  
Telephone:

---

Name:  
Title:  
Driver's License Number:  
Telephone:

---

Name:  
Title:  
Driver's License Number:  
Telephone:

**AGREEMENT**  
**between the**  
**MICHIGAN DEPARTMENT OF STATE**  
**and a**  
**COMMERCIAL DRIVER LICENSE THIRD PARTY TESTER**

THIS AGREEMENT is made and entered into this 4th day of November,  
1996,

BY AND BETWEEN the MICHIGAN DEPARTMENT OF STATE (hereinafter the Department)

AND A K Services  
(hereinafter the Third Party Tester)

LOCATED AT [THIRD PARTY TESTER ADDRESS]

5412 Daniel Dr.  
Brighton, MI 48116

THIS AGREEMENT is intended to authorize the above named Third Party Tester to administer Commercial Driver License skills tests on behalf of the Department.

NOW, THEREFORE, the Department and the Third Party Tester, for good and valuable consideration and pursuant to the terms and conditions set forth herein, mutually agree as follows:

**I. TERM OF AGREEMENT**

This agreement is effective on the date of execution of this agreement, and shall replace any comparable agreement previously executed between the parties. This agreement shall expire on December 31, 1997 but may be renewed for additional annual periods extending from January 1 through December 31 of subsequent years, provided that any such renewal is set forth in writing and is signed by a duly authorized representative of each party. Upon proper execution, a renewal shall be automatically incorporated herein by reference.

**II. THE DEPARTMENT AGREES TO:**

**A. Testing**

Permit the Third Party Tester to administer commercial driver license skills tests pursuant to the terms of this agreement, and applicable provisions of state and federal law.

**AGREEMENT**  
between the  
**MICHIGAN DEPARTMENT OF STATE**  
and a  
**DRIVER LICENSE AND MOTORCYCLE INDORSEMENT**  
**THIRD PARTY TESTER**

**THIS AGREEMENT** is made and entered into this 4th day of November,  
1996,

**BY AND BETWEEN** the MICHIGAN DEPARTMENT OF STATE (hereinafter the Department)

**AND** A K Services  
(hereinafter the Third Party Tester)

**LOCATED AT** [THIRD PARTY TESTER ADDRESS]

5412 Daniel Dr.  
Brighton, MI 48116

**THIS AGREEMENT** is intended to authorize the above named Third Party Tester to administer driver license and motorcycle indorsement skills tests on behalf of the Department.

**NOW, THEREFORE**, the Department and the Third Party Tester, for good and valuable consideration and pursuant to the terms and conditions set forth herein, mutually agree as follows:

**I. TERM OF AGREEMENT**

This agreement is effective on the date of execution of this agreement and shall replace any comparable agreement previously executed between the parties. This agreement shall expire on December 31, 1997 but may be renewed for additional annual periods extending from January 1 through December 31 of subsequent years, provided that any such renewal is set forth in writing and is signed by a duly authorized representative of each party. Upon proper execution, a renewal shall be automatically incorporated herein by reference.

**II. THE DEPARTMENT AGREES TO:**

**A. Testing**

Permit the Third Party Tester to administer driver skills tests pursuant to the terms of this agreement, and applicable provisions of state and federal law.





May 5, 2015

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

**Re: Livingston Christian School  
Special Land Use Permit Application and Sketch Plan Review #3  
Traffic Study and Site Circulation Plan Review**

Dear Ms. VanMarter:

At the last planning commission meeting the petitioner for the subject property was asked to present a traffic study and site circulation plan for Township review. On Friday May 1, 2015, we received the requested information via email. Tetra Tech has reviewed the information and has the following comments for the Township's consideration on the proposed special use permit for a Christian Day School at the existing Nazarene Church Facility, located at 7669 Brighton Road:

- Study should be based on future 250 students; info on only 150 students was presented.
- Documentation on all information obtained from existing site should be provided: Where families come from, occupancy of vehicles, number of students who drive themselves, anything based on existing site (and not from national sources). Study currently just states data with no backup information.
- If no backup data is presented then the trips generated by the proposed use should be based on the ITC Manual, which for private schools is 0.9 trips per student in the morning and 0.6 trip/student in the afternoon. For proposed year-one conditions this would result in 135 morning trips, which is slightly more than the study is based on.
- Determine the area growth rate from historic LCRC counts, and apply annual rate to project background traffic in year 2020 – analysis was only done for current conditions.
- Provide operational analysis of unsignalized driveway intersection. A level of service analysis should be completed for each turning movement in accordance with Highway Capacity Manual guidelines.
- Neither the site plan nor the study showed or discussed any way-finding signage/how staff will direct cars dropping off or picking up students. Signage directing drivers to queue areas should be provided.
- How will pick-up be handled? Parents may arrive early and park to wait for students. Once parked, how do they get out? Again, this refers to on-site signage to direct vehicles around the site.
- Site plan provided showed a capacity for 68 vehicles stacked-up around the site. This is less than the number of cars indicated in the study. The petitioner should provide a plan that will eventually be distributed to parents indicating where they are to wait when picking up students, how will they keep aisles clear to allow parked vehicles out, and how they will be directed around site.

**Tetra Tech**

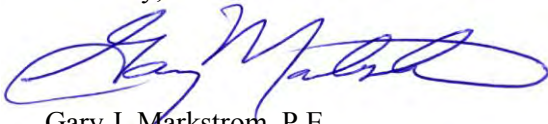
401 South Washington Square, Suite 100, Lansing, MI 48933  
Tel 517.316.3930 Fax 517.484.8140 [www.tetrattech.com](http://www.tetrattech.com)

**Mr. Kelly VanMarter**  
**Livingston Christian School**  
**Special Land Use Permit Application and Sketch Plan Review**  
**May 5, 2015**  
**Page 2**

The traffic study provides the level of service for Brighton Road for the current conditions and only 150 students. Currently, the road operates at Level of Service D and will remain at that level with the additional trips generated by the 150 student level. This analysis needs to be projected to the year 2020 with background traffic increases and student population increases to fully understand the impacts to the roadway and drives. It is probable that the level of service for the roadway will drop to F with future background and 250 student capacity. The same projections need to be done for the site circulation and driveway turning movements to completely understand the traffic impacts of the proposed use.

We trust this meets your needs at this time. We will be at the May 11, 2015, Planning Commission meeting to answer any questions.

Sincerely,



Gary J. Markstrom, P.E.  
Unit Vice President

Copy: Steve Morgan

TRAFFIC IMPACT STUDY  
FOR  
LIVINGSTON CHRISTIAN SCHOOL

May 1, 2015

PREPARED FOR:

LIVINGSTON CHRISTIAN SCHOOL/BRIGHTON NAZARENE CHURCH  
7669 BRIGHTON ROAD  
BRIGHTON, MI.

PREPARED BY:

BRENT LAVANWAY, P.E.  
BOSS ENGINEERING  
3121 EAST GRAND RIVER  
HOWELL, MI

## **BACKGROUND**

The Livingston Christian School (LCS) intends to move to the Brighton Nazarene Church for the fall semester 2015. The LCS has been located in Pinckney, Michigan for a number of years and currently has approximately 150 students and 25 staff. It is expected for the 2015/2016 school year that approximately the same number of students and staff will be housed in the new location.

Potential growth of the school in its new location could bring the student population to 250 students and 35 staff. The horizon year for the purpose of this study is five years (2020/2021 school year).

The Brighton Nazarene Church is located on Brighton Road in Genoa Township. The Church is on the north side of Brighton Road. The driveway is approximately 300 feet west of the intersection of the Brighton High School driveway which is a signalized three way intersection. Aljoann Drive is a public road located on the north side of Brighton Road between the Brighton High School driveway and the Church driveway. The nearest signalized intersection to the west is the Brighton Road/Bauer Road intersection which is approximately ½ mile west of the Church.

The purpose of this study is to evaluate potential traffic impacts associated with the LCS occupying a portion of the Brighton Nazarene Church. The focus of the study is the anticipated impact of the School on the public road network in immediate proximity to the LCS. Additionally a discussion regarding internal circulation during dropoff and pick up times is included.

## **EXISTING CONDITIONS**

Brighton Road is a three lane road in proximity to the proposed LCS. It consists of eastbound, westbound and center turn lanes through the LCS drive and extending east and west from the drive. The Church driveway consists of one inbound lane and two exiting lanes designated as right and left turn lanes. There is a deceleration lane for the Church driveway on Brighton Road.

The most current available traffic counts for Brighton Road were taken on May 19 and 20 of 2014. The counts were initiated at 11:00 a.m. on May 19, 2014 and were completed at 11:00 a.m. on May 20, 2014. The results indicate a 24 hour traffic volume of 16,881 vehicles. The a.m. peak hour occurred between 7:00 a.m. and 8:00 a.m. with 1432 vehicles being recorded and the p.m. peak occurred between 5:00 p.m. and 6:00 p.m. with 1484 vehicles being recorded.

The Brighton Road traffic counts in this location are heavily influenced by Brighton High School and Maltby Middle School traffic, in particular the a.m. peak traffic counts.



Brighton High School classes begin at 7:35 a.m. and end at 2:35 p.m. Maltby Middle School classes begin at 8:30 a.m. and end at 3:30 p.m. According to Mike Goryl at the Livingston County Road Commission the schools typically experience a 20 minute "peak". This a.m. peak begins approximately 15 minutes before school begins and ends 5 minutes after school starts. Similarly the p.m. peak begins 10 minutes before school finishes and ends 10 minutes after it finishes. When a school or other high volume facility such as a Church or an automotive plant is located within the study area a factor of 0.30 to 0.35 is applied to the peak hour meaning that the "peak hour" traffic isn't proportional throughout the hour. There is actually a peak within the peak hour. Approximately 30 to 35% higher traffic counts occur in the 20 minute window of school traffic than the proportional peak hour traffic. For the high school this a.m. peak will occur from 7:20 to 7:40. The p.m. peak will occur from 2:20 to 2:40. For the middle school this a.m. peak will occur from 8:15 to 8:35. The p.m. peak will occur from 3:20 to 3:40.

According to the American Association of State Highway and Transportation Officials (AASHTO) the Level of Service for a roadway is categorized on a scale from A to F. Level of Service A being unimpeded free flow at the designated speed limit and Level of Service F being congested flow with travel speeds well below the designated speed limit. Based on the AASHTO "Policy on Geometric Design of Highways and Streets" the existing Level of Service for the a.m. and p.m. peaks is between C and D. This is based on a one hour threshold of 1400 vehicles for Level of Service C and 1700 vehicles for Level of Service D.

### **PROPOSED CONDITIONS**

As previously indicated Livingston Christian School intends to occupy a portion of the Brighton Nazarene Church. The School will be in operation Monday through Friday from September to June. The School is anticipating an initial occupancy of 150 students and 25 staff which is the same as their current school located in Pinckney, Michigan. This study also projects a student population of 250 and a staff count of 35 in the horizon year of 2020/2021.

The recommended start time to avoid overlapping peaks with the Brighton High School and Maltby Middle School is 8:00 a.m. The recommended school completion time is 3:00 p.m. to avoid the overlapping peaks. These times aim to split the difference in start and finish times between the High School and Middle School.

Based on data gathered at the current LCS location in Pinckney it is known that all 25 staff will drive individually however the correlation between students and vehicles is not 1 to 1. The 150 students will generate approximately 100 vehicles. The reasons for this include parent dropoff of multiple siblings and also staff transporting their own students. Of these 100 vehicles approximately 25 will be students driving to school thus they will



arrive and park just as the staff will do. The result is that of the 125 vehicles arriving during the a.m. peak only 75 will be exiting. For the p.m. peak only 75 vehicles will be arriving and 125 vehicles will be departing.

According to an LCS survey approximately 2/3 of the student and staff traffic will be arriving from the west and 1/3 from the east on Brighton Road. Similarly it is anticipated that 2/3 of the student and staff traffic will exit to the west and 1/3 to the east.

Brighton Road Impact- The resultant 2015/2016 traffic will increase the Brighton Road a.m. peak by 200 vehicles (125 arriving and 75 departing). The p.m. peak increase will also be 200 vehicles (75 arriving and 125 departing).

With the center turn lane on Brighton Road and the deceleration lane for westbound Brighton Road the school will have minimal impact on the a.m. peak or the p.m. peak. The Level of Service for Brighton Road in the a.m. peak will remain acceptable between C and D.

As previously noted the p.m. peak for Brighton Road is between 5 p.m. and 6 p.m. This count is 1484 vehicles over the one hour period. The 3 p.m. to 4 p.m. traffic count on Brighton Road is 1281 vehicles. This corresponds to a Level of Service between B and C. The Level of Service with LCS operating will be at approximately Level of Service C during this time period.

Brighton Nazarene Church Parking Lot-The level of use of the Church parking lot increases substantially during the hours of operation of the LCS. A typical Monday through Friday use is currently approximately 10 vehicles for Church staff. The parking lot will see an increase of approximately 50 vehicles (25 students and 25 staff). Please reference the Boss Engineering Site Plan indicating the locations of the Church and LCS parking spaces within the Church parking lot. This plan also indicates the available queing lengths for the dropoff/pickup and exiting lines. Based on the volume of vehicles internal to the parking lot and the Level of Service on Brighton Road at approximately C there will be delays occurring for people attempting to exit the lot and turn left or eastbound onto Brighton Road. Minimal delays are anticipated for people that exit turning right onto Brighton Road.

Intersection Impacts. The nearest signalized intersection to the Church is east approximately 300 feet at the Brighton High School entrance. The nearest intersection west is at Bauer Road and is approximately ½ mile from the Church entrance. The Brighton High School signal will not see significant impact due to the small increase in percentage of traffic from the east. The Bauer road signal is far enough from the Church that no impact is anticipated. The Livingston County Road Commission has jurisdiction over the two signals and has the ability to modify signal timing should the need arise.



### **Conclusions and Recommendations**

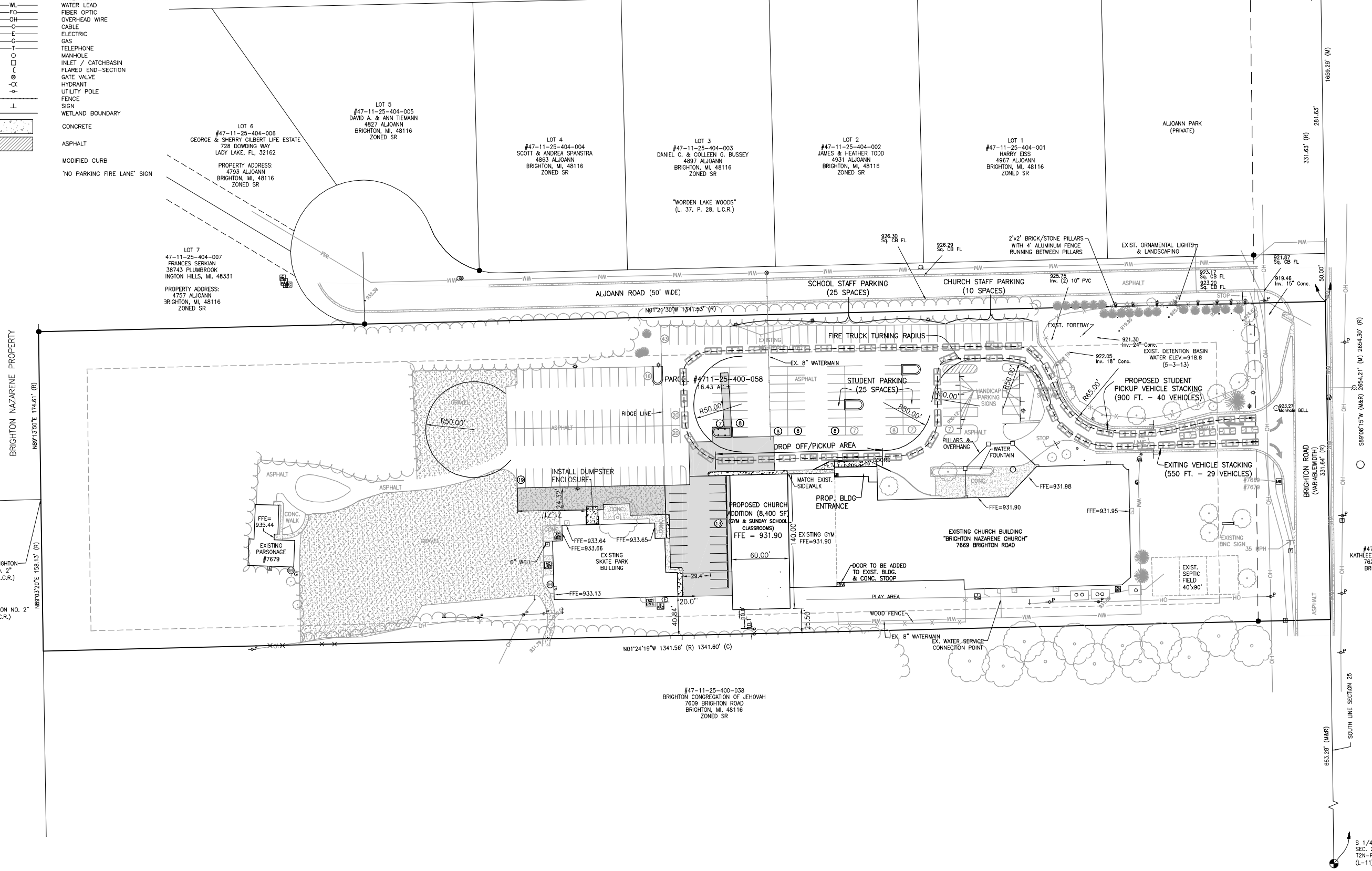
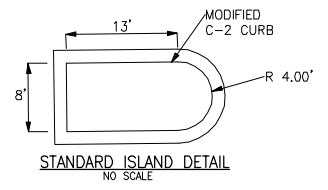
- The Livingston Christian School will have minimal impact on Brighton Road in the a.m. and p.m. peak traffic hours for the school.
- The Livingston Christian School will have no impact on the traffic signals located at Brighton High School and Bauer Road.
- There will be a significant impact on the Monday through Friday use of the Church parking lot during the September to June time period when the school is in session.
- Information shall be provided to students, parents and staff during orientation that recommends right turns out of the parking lot after drop off and pick up to limit delays within the parking lot.
- Due to potentially long delays within the parking lot and at the driveway exit to Brighton Road school staff must be posted at critical locations to monitor the delays and to prohibit left turns out of the parking lot if the delays become excessive.
- Boss Engineering will be contracted by Livingston Christian School to observe a.m. and p.m. traffic every October through the 2020/2021 school year to evaluate traffic flow/queing and delays both on Brighton Road and within the parking lot and issue a letter of findings to the School and Township. The letter shall provide recommendations on improving traffic management if necessary.



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	REAR YARD STRUCTURE
ES	ES	END-SECTION
GV	GV	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
●	○	MANHOLE
□	□	INLET / CATCHBASIN
△	△	FLARED END-SECTION
◇	◇	GATE VALVE
+	+	HYDRANT
+	+	UTILITY POLE
+	+	FENCE
+	+	SIGN
---	---	WETLAND BOUNDARY
---	---	CONCRETE
---	---	ASPHALT
---	---	MODIFIED CURB
---	---	'NO PARKING FIRE LANE' SIGN

SITE DATA	EXISTING/REQUIRED	PROPOSED
ZONING	SUBURBAN RESIDENTIAL(SR)	SUBURBAN RESIDENTIAL(SR)
AREA (GROSS)	3 ACRES(=15000SQFT PER 100 PERSON SEATING CAPACITY)	16.43 ACRES
AREA (NET)	3 ACRES(=15000SQFT PER 100 PERSON SEATING CAPACITY)	15.86 ACRES
LOT WIDTH	100 FT	331.64 FT
USE	CHURCH	CHURCH
SETBACKS		
FRONT	40 FT	207.2 FT
SIDE	20 FT	26.83 FT
REAR	50 FT	214.6 FT
PARKING	50 FT	50.05 FT
MAX. LOT COVERAGE	20% BUILDING (6.99%)	8.19%
	35% IMPERVIOUS (23.07%)	23.95%
PARKING - 1 SPACE PER 3 SEATS IN WORSHIP AREA (520 SEATS/3 = 174 SPACES)		
	174 SPACES	201 SPACES
	8 BARRIER FREE SPACES	8 BARRIER FREE SPACES
	(FOR MAX CAPACITY SERVICES ARRANGEMENTS ARE MADE TO UTILIZE BRIGHTON HIGH SCHOOLS PARKING LOT)	
SOILS (PER U.S.D.A. SOIL SURVEY)	BOYER-OSHTEMO LOAMY SANDS, 0 TO 2 PERCENT SLOPES	
	NO NEW SIGNAGE PROPOSED	

NOTE: ACTIVITIES WILL NOT TAKE PLACE IN THE GYM CONCURRENT WITH WORSHIP SERVICES IN THE SANCTUARY



THE LOCATION AND ELEVATION OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS PLAN ARE BASED ON RECORD DRAWINGS AND FIELD SURVEY. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ANY UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO UTILITIES CAUSED BY CONSTRUCTION.

BEFORE YOU BEGIN WORK, CHECK WITH THE CITY ENGINEER FOR THE LOCATION AND DEPTH OF ANY UTILITIES PRIOR TO CONSTRUCTION.

BOSS ENGINEERING  
ENGINEERS • SURVEYORS • PLANNERS  
LANDSCAPE ARCHITECTS  
3115 E. GRAND PARKWAY  
BRIGHTON, MI 48116  
(800) 248-9735 FAX (313) 548-1670

**BOSS ENGINEERING**  
ENGINEERS • SURVEYORS • PLANNERS  
LANDSCAPE ARCHITECTS

PROJECT: **B.N.C. FACILITY EXPANSION**  
PREPARED FOR: **BRIGHTON NAZARENE CHURCH**  
7669 BRIGHTON ROAD  
BRIGHTON, MI 48116  
810-227-6600

NO	BY	REVISION PER	DATE
1	ST	PLANNING COM.	7/30/13
2	ST	PER CITY REVIEW	8/26/13
3	ST	PER CLIENT REVIEW	5/14/14
4	ST	SCHOOL	5-1-15
5	ST	PER CITY REVIEW	10/2/13
6	ST	SCHOOL	5-1-15

DESIGNED BY: ST  
DRAWN BY: AEB  
CHECKED BY:  
SCALE: 1" = 50'  
JOB NO. 13-100  
DATE 5-31-13  
SHEET NO. 3

May 7, 2015

Genoa Township Board and Naz Church Members,

**Matthew 22:36**

"Teacher, which is the great commandment in the Law?" And he said to him, "You shall love the Lord your God with all your heart and with all your soul and with all your mind. This is the great and first commandment. And a second is like it: You shall love your neighbor as yourself. On these two commandments depend all the Law and the Prophets."

This may be a verse that the Naz Church preaches to its members, but after 13 years of living as neighbors in the adjacent neighborhood, I have come to the conclusion that this statement is far from true within their core values.

I moved into Worden Lake Woods in 2002 with two small children. Within months of living in my new home, within the Brighton Community, I began having problems with the "small church" that was located across my quiet, public street. In this 13-year span, The Naz has asked for four renovations and expansions with total disregard to the surrounding Brighton Community and its members. The Naz, in order to have their wishes granted, have made numerous promises that haven't been kept, nor followed up on with the Genoa Township Board members that have allowed these expansions and renovations in our small community neighborhood.

Some of the alarming church activities, after the opening of a skate park, ok'd by the township after numerous stated concerns by Genoa Township Board members, include:

- Young adult children roaming the streets to smoke and drink and return back to the skate park afterwards.
- Physical altercations on my street between these young adults where authorities had to be called.
- Theft of homeowner's personal belongings in cars in the neighborhood. When asked to obtain video surveillance Pastor Walls turned me down.
- Cars racing through the parking lot at all hours of the night.
- Skateboarding in the parking lot.
- No maintenance of dying trees that was outlined specifically in the agreement in 2000, upon expansion of the church.
- Continuous noise from car, bus and motorcycle testing
- Litter coming from the parking lot
- Cars parked facing homes with adults in them during the day, smoking illegal substances until authorities were called once again

All these issues have been brought to the attention of the Pastor and the Genoa Township Board members numerous times within the past 13 years. Numerous promises have been made that these issues would be resolved, because The Naz Church wants to be great neighbors. Many of these issues have never been resolved, yet the Genoa Township Board has continued

to allow The Naz to expand and grow and allow these types of unsafe, un-neighborly practices to continue. I am at a loss for understanding how this is possible. I am a member of the Brighton Community, I have children that attend the schools and am a schoolteacher myself in this community. How is it possible that the Genoa Township Board continues to deny me and my family of a safe and quiet living area in our own community?

Please see the enclosed comments by Genoa Board members throughout the last 13 years each time The Naz Church has asked for special permits.

I hope all of the Genoa Township board members consider very carefully what they are doing to their own Brighton Community members. What they are doing for the safety of the pedestrians and families that live and travel in the surrounding area. I challenge each of you each to put yourself in my shoes, our shoes! I truly believe that if one of your members lived in my community, none of this approval would be taking place. Additionally, as you vote to add more traffic volume to the already over-crowded Brighton Road, I ask you to consider carefully if you want to be held directly responsible for that one accident that takes the life of a Brighton Community member/members due to the avoidable allotment of 250 additional drivers in an already congested area.

Andrea Spaanstra

(Brighton Resident 39 Years, Brighton Area Schools Teacher 23 years, Concerned Parent)

# Brighton

## Nazarene Church

Frank & Margaret  
McCroskey  
610 280 7186

cf. 25  
JSM - 754

RED TILMANN  
107 S. GLEN KID

8/11/11 I read the didn't remove  
E replacement press paper  
replants: 1 Sep 1-7

April 29, 2003

- My wife and I  
would like to see you at  
your office

Dear Neighbors,

DEAR FRANK MARGARET MCCRUSKEY

6/22 3:00 @

11/17/03 1-7/10/03

6/27 ADDRESS 2010 2 WILSON

I am writing you about the concerns you have had about the Churches' Indoor Skate Park. I apologize for the problems you feel have been caused by the community kids who have attended the park. We, as the church, want to do all we can to be better neighbors. Many problems associated with our skaters when the park was outdoors in our parking lot, were answered with the indoor park. I had hoped that most of them, in fact, had gone away. Obviously, they have not, and we hope the plans we are now making will take care of these issues.

I would like to share these plans with you at a "face to face" meeting - if at all possible. I am suggesting Saturday, May 3<sup>rd</sup>, at 10:00 a.m. My office is near the main front doors of our church. I would like to invite you to come and listen to our plans for better security for the neighborhood. You can ask any questions about our future plans at that time.

I want you to know that when we started this Skate park concept, now six years ago, it was with one goal in mind: give the community kids a safe place to skate and to teach them how to make better, healthy & wholesome lifestyle choices. Sixty percent of our attendees to the park do not pay any entrance fees. Those who pay are the ones who do not attend our Saturday meetings. We aggressively try to get all of the kids to attend...so that no one would pay. It is not our goal to make money - it never has been & never will be a money making venture.

By our actions, we plan to prove that a "new" goal, which we've added to this whole concept, is to make it as trouble free to the neighborhood as possible. Realistically, every neighborhood in Livingston County has its vandalism and other problems at times. With that in mind, we are willing to work with you to keep those problems to a minimum.

Thanks for your understanding. Hope you can attend the meeting.

Sincerely,

Rev. Ben Walls  
Rev. Ben Walls

6/27/03 TW GARY GRIFFIN  
LAFER - GORDON - EDWARDS  
HAS - BROS - TREES - SHOULD BE SOON  
ASK TO GIVE ME AS TO EXACTLY WHAT  
THESE INTENTIONS ARE TO THE PASTOR

**OPEN PUBLIC HEARING # 1 . . . CPR Collision is requesting an extension of site plan approval for lot 4, Parcel #4711-05-303-004, in Grand Oaks West Industrial Park. (PC 00-31)**

**Planning Commission disposition of an extension request**

A. Recommendation regarding extension request.

Mr. Carl Keifer of 6511 Crandall in Howell, Michigan and Ms. Linda Keifer of 1820 Aldred in Milford, Michigan were present to represent this proposal. Mr. Keifer noted that this extension was requested because they need to secure additional financing. It has been one year since their last approval and they would like to request a one-year extension.

**Moved** by Litogot, seconded by McCririe to approve the site plan approval extension request for CPR Collision until October of 2001. **The motion carried unanimously.**

**OPEN PUBLIC HEARING #2 . . . Review of a site plan application for a 6960 square foot activity building addition to the Brighton Church of the Nazarene, Section 25, 7679 Brighton Road, petitioned by Pastor Ben Walls. (PC 00-29)**  
**Tabled from 8-14-00 meeting.**

**Planning Commission disposition of Walls Petition**

- A. Recommendation regarding impact assessment.
- B. Disposition of site plan.

Mr. Henry Cornell and Mr. Dennis Stamm of 7669 Brighton Road were present to represent this proposal. Mr. Cornell noted that the proposed activity building is for kids to use Thursday, Friday and Saturday nights for skate boarding and in-line skating. The building is 60' x 116' and has 14' sidewalls. Mr. Cornell noted that the building height is lower than the present gym. The siding, brick and shingles are to be the same color as the existing buildings. The purpose of this pavilion type building is to try to keep things under control by regulating the hours that the youth will be able to utilize the facilities. Mr. Cornell explained that the revised site plan is in accordance with the consultant's recommendations and that it will be located behind the building in a secluded area. The petitioner also pointed out that the parking would not change. The church has the capacity to accommodate 150 vehicles for Sunday morning service. This amount of parking will be sufficient to handle the proposed activities building traffic.

Chairman Pobuda asked Mr. Cornell if the brick would be the same as the brick on the existing building. Mr. Cornell stated that the brick would be identical to the existing brick. Chairman Pobuda also asked how high the brick would go on the building. The petitioner responded by stating that the brick will cover the lower 4 feet of the building. The colors and exteriors of the buildings will be matching.

Commissioner Litogot asked for clarification as to the purpose of the large overhead door on the plans. The petitioner responded by stating that the door was necessary for construction purposes. The other doors are provided for ventilation purposes as well as

for circulation of the skaters in and out of the building. Commissioner Litogot asked if the skating would be loud outside. Mr. Cornell stated that this would be an insulated building. Commissioner Litogot stated that the insulation would not be sufficient when the doors are open. He pointed out that the doors will be open most of the time because the building is not air conditioned or ventilated. Commission Litogot again questioned the purpose of the large overhead-door. The petitioner clarified his earlier comments by stating that the door is necessary during construction to put down the concrete and to get the trucks in and out. There was some general discussion about the necessity of this large door. Commissioner Litogot asked if there are any other planned activities for this proposed building. Mr. Cornell stated that the building could possibly be used for volleyball or picnics in the future, but that nothing has been planned. Commissioner Litogot asked if there would be a charge for the youth to utilize these facilities. The petitioner stated that there would be no charge for the use of this building. *NOT TRUE*

Chairman Pobuda asked if there is any intent to use the proposed building between Sunday and Wednesday. Mr. Cornell stated that there is nothing currently planned for these days, but it is possible that the building could be used for activities such as volleyball or reunions in the future. *APPROX 7 DAYS TIL 10 PM*

Commissioner McCririe asked what the hours of operation would be. The petitioner stated that the building would be open from 6 to 10 p.m. Commissioner McCririe asked if the petitioners were aware that the outdoor skating that has been occurring was keeping their neighbors awake at night. The petitioners stated that is the reason why they want to construct this activities building. By building this facility, the petitioners feel as though they will be able to control the hours and locations of skating. Commissioner McCririe expressed his concern with this building not fitting into the neighborhood. He points out that there are residential developments adjacent to the rear and east property lines. He states that he is unsure whether or not this building is compatible with these surrounding uses. Commissioner McCririe also expressed his concern in regards to these activities being moved outside due to the lack of air conditioning in the building. *NOT TRUE*

Commissioner Figurski asked if there would be water and a bathroom. Mr. Cornell stated that these facilities would be provided in the future. Commissioner Figurski asked if the existing barn would be retained. The petitioner stated yes, but there are plans to eventually replace this barn with an education center.

Commissioner Jerrold Joseph questioned whether or not there would be any storage uses in the building. Mr. Cornell stated that the only material being stored would be the equipment associated with the skating. These items include things such as barrels, ramps, etc. The petitioner explained that they are just trying to provide youth with a place to go have fun and feel safe.

Chairman Pobuda asked if this would be a type of recruitment outreach ministry. The petitioner responded yes. Chairman Pobuda then asked whether the facilities will be available to youths of all denominations. Mr. Cornell stated that they welcome those of all denominations and of all ages.



Mr. Jeff Purdy of Langworthy, Strader, LeBlanc and Associates, Inc. stated that the revised plans do meet the majority of comments addressed in their July 19, 2000 review letter. However, there are still outstanding issues. The first issue that the Planning Commission needs to address is whether or not the proposed use is accessory to and incidental to the existing use.

Commissioner Joseph states that he believes this is a bit of a stretch. He states that he is unsure about whether or not this use goes along with church uses. Commissioner Figurski states that she is having a hard time with this. She knows that it is good for the youth, but is unsure whether it is good for the area. Commissioner McCrie also states that he is struggling with this decision. He believes that this effort is commendable and admirable, but is concerned with the impact on neighboring uses. Commissioner McCrie also expressed concerns regarding the future use of the proposed building and whether or not those uses would be considered appropriate. Commissioner Litogot states that this is a business. He asked the petitioner if this would be an outreach ministry. The petitioner responded yes. Commissioner Litogot is concerned with the neighborhood behind the proposed building and is also concerned with the noise that will be created when the doors to the building are open. He states that he wants this to fit in with the neighboring and adjacent uses. Chairman Pobuda states that he is in support of this project.

Commissioner Joseph asked if the neighbors are in favor of this project. Mr. Cornell states that he knows of two neighbors to the west that are in favor of the facility because their children currently come to skate. Township Manager, Michael Archinal stated that he has had one neighbor call that was concerned with the noise and one neighbor came in to look at the site plan and seemed to be in favor of the project.

Commissioner McCrie asked what would be the color of the garage doors. Mr. Cornell responded that they would match the existing buildings. He showed a sample of the color and referred to it as "earth brown". Commissioner McCrie questions why the doors are shown 4' off the ground. The petitioner's response is that the doors are high to keep the kids inside of the building. The doors are necessary for ventilation. The petitioner states that the doors can be replaced by mechanical ventilation if necessary for approval.

Commissioner Joseph stated that he thinks the noise issue is the biggest problem. He asked if there could be any assurance that the noise will not be a problem. Commissioner Litogot states that he believes this is a good idea because it gets kids off the streets. *will a HANGOUT*

Township Planner, Jeff Purdy suggests that the following conditions be established: require mechanical ventilation, limit the hours of operation and limit or restrict amplified music.

All Commissioners agree that they are prepared to support this use as being accessory to and incidental to the existing use.



Mr. Purdy of Langworthy, Strader, LeBlanc and Associates, Inc. recommends that the petitioner use more brick and provide horizontal vinyl siding to give the proposed building a more residential appearance.

Mr. Cornell stated that the horizontal siding would not match the existing buildings and that due to the length of the building, it would not look very well. He also stated that they could go higher with the brick, but that would increase their costs.

Mr. Purdy suggested that the petitioners increase the height of the bricks to the top of the small doors, which is 7' high. The petitioner agrees to this, but notes that it will cause a substantial increase in their costs.

All Commissioners agree that they would rather see the brick than the siding. They state they are satisfied with this change.

Township Planner, Jeff Purdy raised the issue of the Church providing a performance bond for the future installation of a bike path. Township Manager, Michael Archinal notes that the Township has secured some funding for the creation of a bike path. He asks the Commission if they want to ask for additional funds.

There is general discussion about the requirement of a performance bond for a bike path. Mr. Purdy states that this property is master planned for a bike path, but it is not required. The petitioner stated that they have plans to come before the Township in a few years to construct a sanctuary in front of the church. He suggests that this would be a better time to require the bond for the bike path. Commissioner McCririe states that he is not inclined to force this issue at this time. There was consensus among the commissioners.

- ✓ Mr. Purdy points out that the Township has the discretion to require any existing non-conformity to be changed at this time. There is some discussion on this and it is determined that there are no nonconformity's at this location. Commissioner Litogot asked about changes in the lighting of the site. Mr. Cornell stated that they will be moving one existing post with 1 light fixture and replacing it with a pole light that has 4 fixtures. Commissioner Litogot asked if the lights will be pointing straight down and the petitioner responded yes. Mr. Purdy suggests that details of the lighting be provided.

Melissa Talley of Tetra Tech, MPS noted that the grading shall not exceed a 4:1 slope. Mr. Cornell stated that this will not be a problem. Mrs. Talley noted that sewer and water are indicated on the site plan and she asks to verify that this is a low-pressure system. The petitioner verifies that it is indeed a low-pressure system. Mrs. Talley stated to the petitioner that Health Department approval will be required.

Commissioner McCririe stated that mechanical ventilation can be provided. With mechanical ventilation, all doors on the building can be removed except for the exit or pedestrian doors. This would leave 3 doors on the building. These doors would be located on the west, south and east sides. All Commissioners state that they are in favor of these changes. The petitioner stated that they will comply with this request.

The petitioner is asked whether or not there will be any amplifiers used in the facility. Mr. Cornell responds that there is usually a portable P.A. system used on Friday nights, but that it will be inside. Mr. Cornell assures the Commission that there will be no outside amplification. Mr. Purdy suggests that the Commission place limits on decibels allowed at property lines. Township Manager, Michael Archinal reminds the Commissioners that the Township has an existing ordinance that regulates decibels allowed at property lines.

Mr. Purdy suggests that the hours of operation be established. The petitioner states that they are currently operating from 6 p.m. to 10 p.m. Commissioner McCririe asked if they would ever be open past 10 p.m. Mr. Cornell states that they will not.

*They  
1:10:00 / people*

The call to the public was made with no response.

Moved, by Litogot, seconded by Joseph, to recommend to the Township Board approval of the Impact Assessment for a 6960 square foot activity building addition to the Brighton Church of the Nazarene, Section 25, 7679 Brighton Road, petitioned by Pastor Ben Walls (PC 00-29) with the following conditions:

1. Add dust control measures under Item D.
2. Clarify what is meant by "bathroom facilities are excepted" under Item G.
3. State the hours of operation as being 7 days a week no later than 10:00 p.m.

~~The motion carried unanimously.~~

Moved, by McCririe, seconded by Litogot, to recommend to the Township Board approval of the Site Plan for a 6960 square foot activity building addition to the Brighton Church of the Nazarene, Section 25, 7679 Brighton Road, petitioned by Pastor Ben Walls (PC 00-29) with the following conditions:

1. Township Board approval of the Impact Assessment as recommended by motion this evening.
2. Township Engineers review and approval of all plans.
3. Use of the building shall be limited to skateboarding and other uses accessory to the church.
4. There shall be no outdoor-amplified music or public address system.
5. The materials and colors as presented are satisfactory.
6. The brick shall run seven (7) feet above grade.
7. All lighting fixtures shall meet Township Zoning Ordinance requirements and details shall be provided to the Board.
8. The northeast and west overhead doors shall be eliminated.
9. There is to be no outside skating after the facility is built.


The motion carried unanimously.

~~OPEN PUBLIC HEARING #3. Review of a site plan for interior modifications to 2250 East Grand River (former McDonalds restaurant) for an auto sales and leasing center, petitioned by Lamb Development, (PC 00-23) Tabled from 8-14-00 meeting.~~

*Noe Purda - Youth rally -*

7. Any other structure to be affixed to the tower shall require site plan approval from Genoa Township.
8. The setbacks as depicted on the drawing are satisfactory.
9. In accordance with the Township Planner, a six-foot high fence surrounding the perimeter, with additional landscaping requirements of 13 Green Colorado Spruce trees, shall be erected.
10. The transformer that is located five feet northeast of the proposed tower shall be screened with landscaping.
11. The developer shall comply with all Township Engineer requirements, which shall include submission of the detailed construction plans of the water tower prior to a Land Use Permit being issued.
12. A shroud will be placed over the tank during painting.
13. The City of Brighton will maintain the tower.

The motion carried (Litogot - Yes; Burchfield - Yes; Pobuda - Yes; Mortensen - Yes; Brown - No).

 **OPEN PUBLIC HEARING # 2...** Review of special use application, site plan, and environmental impact assessment for proposed 17,600 sq. ft. sanctuary addition to existing church facility (Brighton Nazarene Church) located at 7679 Brighton Road, Section 25, petitioned by Brivar Construction. (PC 03-08)

- **Planning Commission disposition of petition**
  - A. Recommendation regarding special use application.
  - B. Recommendation regarding impact assessment.
  - C. Recommendation regarding site plan.

Mr. Steve Varilone from Brivar Construction Company and Pastor Ben Walls were present to represent the petitioner. They are proposing to add a 17,600 square foot sanctuary to the front of their existing building. They have made the following changes to the site plan based on discussions at the last Planning Commission meeting.

1. The color of the ornamental fencing will be black.
2. The landscape plantings on the south side and southwest corner of the detention basin has been supplemented to provide a "continuous hedgerow" between the new trees.
3. The proposed new sign and associated detail was removed.
4. The Impact Statement was revised to include a description of the use of the activities building.
5. The church will be approximately 172 feet from Brighton Road.

Mr. Varilone noted the discussion that was held at the last meeting regarding the operation of the indoor skate park. They have modified the Impact Assessment as requested to describe the use of the park. The church has also added a security guard to the existing operation.

Pastor Ben advised that he met with residents on May 3, 2003 and they had a good meeting. There were discussions on how the church can be a better neighbor. The church will make the following improvements:

1. A tree barrier will be planted and maintained. The original developer of the residential subdivision asked the church for permission to plant trees and now the developer is gone from the area and has not maintained the trees. The church will maintain the trees on their side of the fence. They will add three trees to help screen the building as well as replace the 16 trees that have died.
2. → A security guard has been hired and they are in the process of purchasing a security camera to monitor the activity in the parking area 24 hours a day and 7 days a week.
3. The rules of the skate park will be included in the liability statement that the kids sign. The rules include such things as no profanity, no skating in the parking lot, no loitering outside of the building
4. Two signs stating, "no skating" will be erected in the parking lot.
5. The outdoor lighting will be turned out at 11:00 pm in the back of the parking lot.

Mr. Purdy reviewed his letter of May 7, 2003.

1. With regard to the ornamental fencing proposed for the storm water detention pond, it was decided that the fencing will be the same as what is used for the neighboring subdivision.
2. The expanded church is being proposed to be connected to the City of Brighton water supply. This will require an agreement between Genoa Township and the City.
3. The proposed new septic system needs to be approved by the Livingston County Health Department.

Ms. Huntley advised they have met all of their concerns.

The call to the public was held at 9:55 p.m.

Mr. Jamie Todd of 4931 Aljoann asked to speak on behalf of the neighboring subdivision. They are questioning the following:

1. The hours of operation for the skate park have expanded beyond what was originally approved.
2. There is not supposed to be a fee charged for attendance into the skate park. They charge some of the kids to skate and Pastor Walls advised them they may be renting out the center for other activities.
3. The noise in the evening needs to be resolved.

He noted the following discussions and agreements that were made at their meeting with the church.

1. The church will maintain the trees.
2. There will be a security guard there from 9:00 pm until 12:00 am
3. The rules of the skate park shall be included in the liability waiver that is signed by the skaters.
4. They are not sure that they agreed on a time that the lights will be turned off at night.
5. They like the "No Skating" signs that have been erected, however the "zero tolerance" rule that was in place in the past has not been enforced.

Mr. Sam Raguso of 4793 Aljoann noted the stipulation agreement that the church asked the residents to sign, which states that if the church makes all of the previously stated changes, legal action cannot be taken by the residents against them. He does not feel the Planning Commission should approve an additional special use for this site when the petitioner is currently in violation of their original special use and if it is approved, the specific use of the addition should be outlined.

He noted the concerns of the Commissioners at the August 28, 2000 meeting, which was when the activity center special use was originally approved. All of the commissioners were concerned with the proposed use of this building as it does not appear to fit into the use of the church. They were also concerned about the noise, etc. and how it will affect the surrounding neighbors.

Mr. Todd asked the Planning Commission to list the points that they made this evening as conditions of the recommendation for approval, if it is approved.

The call to the public was closed at 10:11 p.m.

Mr. Purdy stated that when the Planning Commission approved the activities center, they made a determination that it was an incidental accessory to the main use and that should not be addressed with regard to this approval.

Pastor Walls advised that he was not aware of the hours of operation for the activities center. He was not at the meeting when the original special use was approved and he did not know that his representative agreed to certain hours of operation. Mr. Varilone noted that the Planning Commission approved the hours of operation as 7 days a week until 10:00 p.m.

Pastor Walls addressed the concern of them renting out the activities center. Some parents want to rent it for birthday parties. Commissioner Litogot feels that as long as it is maintained inside, they have the right to use their activities building. Pastor Walls advised they rent out the sanctuary, gym, etc. all of the time and have written policies for these purposes. It is a common practice for churches to rent their facilities. Commissioner Burchfield would be opposed to



Pastor  
Ben  
Wells

rental of the activities building only outside of the church's current use. He feels the other rentals are within the concept of what a church could be used for.

Chairman Pobuda asked if the charge for the rental is profitable. Pastor Wells advised they only charge what they will need to cover their costs. He added that if this is a problem with the Township, then they will not offer rental of the activities center.

Chairman Pobuda advised that the agreement between the homeowners and the church is not a concern of the Planning Commission or the Township.

There was a discussion regarding the security guard and the security camera. All commissioners would like to have the security cameras in place.

Moved by Burchfield, seconded by Brown, to recommend to the Township Board approval of the Special Use Application for a proposed 17,600 sq. ft. sanctuary addition to existing church facility (Brighton Nazarene Church) located at 7679 Brighton Road, Section 25, petitioned by Brivar Construction with the following conditions:

1. The petitioner shall replace the 16 trees that have died or been removed along the east property line.
2. The petitioner will add three additional Austrian Pine trees to the east property line.
3. The petitioner shall maintain the tree line along the east property line.
4. The petitioner shall include the skate park rules on the liability waiver required for admittance.
5. The lights shall be turned off at 11:00 p.m.
6. The petitioner shall maintain not less than two signs prohibiting outdoor skating.
7. No commercial activities shall be allowed in regard to the use of the skate park nor shall such activities be delegated, assigned, or leased by the petitioner.
8. The petitioner shall provide a security guard to patrol the parking lot area on the days the skate park is open between the hours of 9:00 p.m. and 12:00 a.m.

The motion carried unanimously.

Moved by Mortensen, seconded by Litogot, to recommend to the Township Board approval of the Impact Assessment with a revision date of April 29, 2003 for a proposed 17,600 sq. ft. sanctuary addition to existing church facility (Brighton Nazarene Church) located at 7679 Brighton Road, Section 25, petitioned by Brivar Construction subject to the following changes:

1. Appendix A will be modified to indicate that with regard to the paid security person patrolling the parking lot from 9:00 p.m. until 12:00 a.m., the petitioner may seek a waiver of this condition upon providing satisfactory evidence to the Planning Commission and Board that alternative

surveillance and security measures are adequate to assure quiet and peaceful enjoyment of the area.

2. "The activities building use will end at or before 10:00 p.m." shall be added.
3. The last sentence in the fifth paragraph shall be changed to "Parking lot lighting will be turned off at 11:00 p.m."

**The motion carried unanimously.**

**Moved** by Burchfield, seconded by Mortensen to recommend to the Township Board approval of the Site Plan for a proposed 17,600 sq. ft. sanctuary addition to existing church facility (Brighton Nazarene Church) located at 7679 Brighton Road, Section 25, petitioned by Brivar Construction subject to the following conditions:

1. Township Board approval of the Special Use Permit as recommended by motion this evening.
2. Township Board approval of the Impact Assessment as amended and recommended by motion this evening.
3. The brick face colors and accents shall be as presented to the Planning Commission at its April 14, 2003 meeting.
4. Architectural colored renderings of the elevations shall be as provided to the Planning Commission at its April 14, 2003 meeting.
5. The petitioner will endeavor to obtain a waiver of the Livingston County Drain Commissioner's fencing requirement for the detention pond area.
6. Absent the petitioner obtaining that waiver, the petitioner shall provide a black ornamental fence around the perimeter of the pond and in front of the fence a hedgerow with the hedges spaced to provide minimal visual impact of the fencing and detention area.
7. The current sign will remain as is with any changes requiring a new sign permit.
8. The proposed new septic system must be approved by the Livingston County Health Department.
9. The petitioner shall connect the church's facilities to the municipal water supply system provided by the City of Brighton.

**The motion carried unanimously.**

~~OPEN PUBLIC HEARING # 3...Rezoning application, environmental impact assessment, conceptual PUD plan, and PUD agreement to rezone 73.1 acres located west of Chilson Road, north of Coon Lake Road in Section 20 and Section 29. The request is to rezone property from CE (country estates) to RR (RPUD) (rural residential PUD) petitioned by Chestnut Development. (PC 03-09)~~

- ~~Planning Commission disposition of petition~~
  - A. ~~Recommendation regarding PUD rezoning application.~~
  - B. ~~Recommendation regarding conceptual PUD plan.~~
  - C. ~~Recommendation regarding PUD agreement.~~
  - D. ~~Recommendation regarding impact assessment.~~



7 May 2015

## Genoa Township Planning Commission

I have been a resident of Aljoann for a year. The following are my concerns about the petition for the NAZ church petition. For simplicity there is a summary of my requests at the end (bold for ease of reading, not intended to be inflammatory). My overall concerns are for safety of students within the residential area as well as improving the privacy of our residential area from this commercial use. Despite what it may be defined as, a school lease payment to the NAZ is commercial use, the NAZ itself is no starting a school. They are becoming a landlord.

I would like the planning commission to consider this excerpt from the minutes of the 5-12-03 PC meeting that was held to approve the skate park building. 12 years ago almost to the date.

There was a discussion regarding the security guard and the security camera. All commissioners would like to have the security cameras in place.

**Moved** by Burchfield, seconded by Brown, to recommend to the Township Board approval of the Special Use Application for a proposed 17,600 sq. ft. sanctuary addition to existing church facility (Brighton Nazarene Church) located at 7679 Brighton Road, Section 25, petitioned by Brivar Construction with the following conditions:

1. The petitioner shall replace the 16 trees that have died or been removed along the east property line.
2. The petitioner will add three additional Austrian Pine trees to the east property line.

3. The petitioner shall maintain the tree line along the east property line.
4. The petitioner shall include the skate park rules on the liability waiver required for admittance.
5. The lights shall be turned off at 11:00 p.m.
6. The petitioner shall maintain not less than two signs prohibiting outdoor skating.
7. No commercial activities shall be allowed in regard to the use of the skate park nor shall such activities be delegated, assigned, or leased by the petitioner.
8. The petitioner shall provide a security guard to patrol the parking lot area on the days the skate park is open between the hours of 9:00 p.m. and 12:00 a.m.

**The motion carried unanimously.**

**Moved** by Mortensen, seconded by Litogot, to recommend to the Township Board approval of the Impact Assessment with a revision date of April 29, 2003 for a proposed 17,600 sq. ft. sanctuary addition to existing church facility (Brighton Nazarene Church) located at 7679 Brighton Road, Section 25, petitioned by Brivar Construction subject to the following changes:

1. AppendixA will be modified to indicate that with regard to the paid security person patrolling the parking lot from 9:00 p.m. until 12:00 a.m., the petitioner may seek a waiver of this condition upon providing satisfactory evidence to the Planning Commission and Board that alternative surveillance and security measures are adequate to assure quiet and peaceful enjoyment of the area.

2. "The activities building use will end at or before 10:00 p.m." shall be added.
3. The last sentence in the fifth paragraph shall be changed to "Parking lot lighting will be turned off at 11:00 p.m."

**The motion carried unanimously.**

Conditions 1-3 to date have not been complied with. At the Apr 27 2015 meeting (twelve years later) the petitioner had the audacity to imply the neighbors should be responsible for maintaining the bushes based on the initial install. At the 27 Apr 15 meeting the township engineer (I think that was who stated this) said the rules require a class B buffer Zone. When the skate park extension was approved there were buffer zone (plantings, see 1-3 above) requirements. As I stated in my last letter, my fiancé almost hit kids running through the current (unacceptable and substandard) barrier. This current petition will create even greater use of the facility and as such should require even more buffer from the neighboring houses. The fact that the petitioner has not complied with those 2003 conditions indicates an unwillingness to comply with PC conditions. Please do not approve the petition until after the 2003 conditions are complied with.

If there is a security guard on premise from 9pm until 12 am it has been ineffective. Just last week, 28 April 2015 around 930 pm there was a car revving its engine for about 20 seconds and then it raced off through the parking lot. I believe in follow on meetings there was a discussion about islands being placed to prevent this type of activity. There needs to be a clearly stated role for the security guard with regards to what activity is allowed. Earlier minutes have indicated that since it is private property the police will not

respond to this type of activity since it is not “Illegal” on private property.

See attached traffic impact statement below. In the latest petition there is reference to the LCRC review stating the school will generate 75 ingress/egress from the west and 50 ingress/regress vehicles at that little of this will occur at “peak” traffic. The traffic study was in May of 2011, the high school is pretty much out of session by then. What good is a summer traffic study to evaluate road use during the school year.

Its is also hard to believe there are only 125 vehicles driving 167 students and 25 staff plus whatever increased student body count due to the more desirable location. Commissioner Rauch himself will be adding to the count let alone whatever other new parents enroll.

Looking at Attachment B from the petitioner (impact assessment) there seems to be a discrepancy as to the traffic study. First it is dated 2011, so it is based on 4 year old data. Second, the ingress period to the proposed school is purported to be between the times of the High School and Maltby times. As we all know there will be early drop off and late pickup to accommodate working parents. Thus the assertion that it will not be during peak hour is false. Early drop off and late pickup is a part of the LCS program now. There will also be afternoon and evening sporting, extracurricular events, graduations and parent teacher conferences as well as other school activities that the petitioner failed to discuss. The LCS website discusses graduation activities as well as picnics and auctions.

The LCRC review was based on faulty(outdated) summer data and faulty input from the petitioner and as such it cannot be considered a true reflection on the impact. Using

student data from the old facility is not a true reflection on the true use and student count at the new facility. One of the stated purposes for the move (personal discussion with Ted Nast the school administrator) was to be able to draw from a larger population base for student enrollment.

I request the planning commission require a more accurate disclosure as to planned activities and student enrollment with the new facility.

I request the PC to require a new traffic count study based on the age of the data evaluated.

At the PC meeting on 27 Apr 2015 there was discussion but no action on the driver testing in the parking lot. This area is zoned residential and as of today 7 May 2015 the testing continues. That is a commercial enterprise. It must stop. The discussion about where and how testing can occur is a moot point. Testing started there before there were houses on Aljoann. It needs to stop. Discussion of backup beepers or not is also moot. This area is zoned residential, that is a commercial enterprise. This is somewhat unrelated to the petition but it speaks to the fact that the petitioner does not wish to abide by the laws within the township concerning following PC decisions. The petitioner has the ability to disallow the use for testing yet it continues.

**In Summary I have requests the following 6 items for the planning commission.**

- 1. Do not approve the petition until the conditions from the 2003 meeting be put in place (trees planted as per direction). Not based on promise. The current proposed landscape plan does not address the current barrier that is not sufficient at the southern section of the parking lot. It addresses all**

- existing dead evergreens be replaced. Many of the dead evergreens have long since been removed so the plan needs to specify exactly how many will be installed along the entire parking lot area. See attached photo.
2. Receive further information from the petitioner as to what the role of the security guard is and how to better mitigate the noise issues generated by current use keeping in mind there will be even greater use of the facility with approval of the petition.
  3. Require a more accurate student/staff count from LCS (they did not even speak at the 27 Apr 15 meeting) as well as before/after school activity use for all activities. There will most likely be outdoor activities associated with the school that were not mentioned. Lake front/park area of the property.
  4. Require a current traffic flow count during the school year, the report provided by the petitioner was 2011 and May 25 when the seniors and many of the students are no longer at the school.
  5. Determine if the church is allowed to lease out a portion of its property to a school entity in a residentially zoned area. This may not be the same as the church requesting to start a school and as such their initial petition may be invalid.
  6. Require the petitioner to stop the illegal driver testing at their facility.

**Thank you for your consideration**

**Walter Jay Johnston**

**4931 Aljoann**

- J. Impact on traffic and pedestrians: A description of the traffic volumes to be generated based on national reference documents, such as the most recent edition of the Institute of Transportation Engineers Trip Generation Manual, other published studies or actual counts of similar uses in Michigan.

(Add to existing comment)

-The existing Brighton High School, to the east, starts at 7:35 am and ends at 2:35 pm. The existing Maltby School, to the west, starts at 8:30 am and ends at 3:31 pm.

-The Livingston Christian School will start/end at a median time between Brighton High School and Maltby Middle School times.

-The Christian School is expected to generate 75 ingress/egress trips from the west and 50 ingress/egress trips from the east prior/after these start times. ( Survey of current school staff and students) Little of this traffic will occur during "peak" traffic hours.

-The Livingston County Road Commission (LCRC) reviewed the potential traffic impact of these start/end times at the Nazarene Church facility, in a meeting on 3/17/2015, and have determined that the traffic at the Brighton Road and the Church driveway intersection is defined as "Minor Impact". (per LCRC data, see Attachment B)

-Livingston Christian School will not operate during the "peak hour" morning nor afternoon.

-A traffic count and traffic model of the Nazarene Church entrance was made by the LCRC in 2010. (see Attachment C)

K. No Change

L. No Change



Current tree line does not adequately provide a safe private barrier for the students or residence.





FROM PREVIOUS MEETING. NEW  
LETTER WAS NOT ISSUED.

April 22, 2015

Planning Commission  
Genoa Township  
2911 Dorr Road  
Brighton, Michigan 48116

<b>Attention:</b>	Kelly Van Marter, AICP Assistant Township Manager and Planning Director
<b>Subject:</b>	Brighton Nazarene Church – Special Land Use and Sketch Plan Review #2
<b>Location:</b>	7669 Brighton Road – northwest corner of Brighton and Aljoann Roads
<b>Zoning:</b>	SR Suburban Residential

Dear Commissioners:

As requested, we have reviewed the submittal, including a 4/9/15 response letter, requesting inclusion of the Livingston Christian Day School within the existing Brighton Nazarene Church facility at 7669 Brighton Road.

Specifically, the applicant proposes to incorporate a private school with 25 employees and 150 students to the existing church building(s). The school would operate from 8AM to 3PM Monday through Friday, although the submittal also notes the potential for other activities outside of these hours.

We have reviewed the proposal in accordance with the applicable provisions of the Genoa Township Zoning Ordinance and provide the following comments for your consideration.

**A. Summary**

1. The applicant should be clear in their intent with the size of the school. Expansion beyond that proposed will likely result in the need for additional approvals.
2. There appears to be outstanding issues remaining that were to be addressed as part of the project approval/discussion for this site in 2013. Although, the applicant has indicated they are in the process of implementing the approved landscape plan.
3. From a planning and zoning perspective, the special land use standards are generally met; however:
  - The quality/quantity of buffering between the site and adjacent neighborhood must be planted/maintained to ensure compatibility of land uses;
  - We request a more detailed description of the primary uses (school and church) to ensure each will occur at different peak times; and
  - Any issues raised by the Township Engineer or Fire Department must be addressed.
4. The project does not include any exterior changes to the plans approved in 2013.
5. The Township may wish to request details of existing light fixtures to ensure compliance with current standards.
6. New signage is not proposed at this time. Approval and a permit will be required if new signage is proposed at a later date.
7. We defer to the Township Engineer for their input as to whether a traffic impact study is needed/warranted.



*Aerial view of site and surroundings (looking west)*

## **B. Proposal/Process**

The applicant requests special land use and sketch plan review/approval for the inclusion of a private school within the existing Brighton Nazarene Church facility. The submittal notes that the school will house 25 employees and 150 students. The applicant should be aware of this limitation as an increase in the school population (planned or otherwise) will likely result in the need for re-review of the special land use and/or site plan.

Table 3.03 of the Township Zoning Ordinance lists churches as special land uses in the SR District, with private schools allowed as accessory to the church. In accordance with Section 19.06, the proposed use has been deemed a major amendment to an existing special land use. Therefore, a new application for special land use approval is required in addition to the need for sketch plan review/approval.

In 2013, the Township granted special land use and site plan approval for an addition. Subsequent to approval, the applicant modified the request such that the addition would be handled in two phases. Accordingly, only a portion of what was originally approved has been built.

Furthermore, during the 2013 project review process, several concerns were raised by residents of the adjacent neighborhood. The primary issues were tied to use of the parking lot for drivers training/education and the quality/quantity of landscaping intended to buffer the church site from the residential neighborhood.

At that time it was suggested to the applicant that the drivers training program was not a permitted use in the SR District and that its operation should cease. However, it is our understanding that this use has continued, if not expanded. The applicant should be prepared to discuss this with the Commission.

Furthermore, additional landscape islands in the parking lot and additional/replacement plantings in the east buffer zone were required. In their response letter, the applicant indicates that:

- The required landscaping from the 2013 project has been started;
- The majority of the dead trees in the screening/buffer have been removed;
- The replacement trees are scheduled to be installed within the next 90 days; and
- The remainder of the new traffic islands and required landscaping will be installed within the same 90-day timeframe.

### **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 Master Plan and Future Land Use Map identify the site and adjacent properties to the east and west as Low Density Residential. This classification is generally intended for single-family development on lots of at least 1-acre in area.

While the land use description in the Plan does not reference institutional uses specifically, there is an overall goal to “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.”

Similar to our findings in the 2013 project review, we believe the proposal is consistent with this goal as a further expansion of an existing institutional use in an area containing a mix of residential and other non-residential uses.

- 2. Compatibility.** The site is located on the north side of Brighton Road in an area already developed with a mix of institutional and single-family residential land uses, including Brighton High School southeast of the subject site. The submittal indicates that the school’s start/end time were chosen such that it would not coincide with the hours for the other two nearby schools.

As referenced above, concerns were previously raised by residents in the adjacent neighborhood regarding landscaping and use of the parking lot. If these concerns were not mitigated, the Township may wish to apply conditions and/or enforce conditions of the previous approval.

- 3. Public Facilities and Services.** The physical features of the site are to remain as they currently exist; however, use of the facility will increase by approximately 175 people per week day.

The applicant has stated that the Livingston County Road Commission indicated that the additional traffic generated by the proposed use will be in “off peak” time and is of “minimal impact.” We defer to the Township Engineer for a more detailed review of this information and confirmation as to whether a more detailed traffic study is necessary or warranted.

The applicant must also address any other comments/concerns raised by the Township Engineer and Brighton Area Fire Department under this criterion.

- 4. Impacts.** Aside from an increase in traffic, the most likely impact will be the increased use of the site in general. The submittal indicates that school use(s) will not coincide with church use(s); however, we believe a more detailed plan/description of uses is necessary to ensure the two will not be at peak usage at the same time.

Similar to comments above, a buffer zone on the east side of the property is required to help protect the adjacent neighborhood from impacts of activities occurring on-site. This is particularly important given the request to further increase/intensify use of the site.

Additionally, use of the outdoor play area is expected to increase. The applicant has indicated that the play area will remain in its current location, but has not provided information of the timing of its use and how many children will occupy the space at any given time. The Commission may also wish to request additional details of the outdoor play area, if deemed necessary.

5. **Mitigation.** If any additional concerns arise as part of this review, the Township may require efforts necessary to limit or alleviate any potential adverse impacts as a result of the proposal.

#### **D. Use Conditions**

Section 3.03.02(1) provides the following use conditions related to churches:

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 submittal notes a capacity of 520 seats in the worship area, which results in the need for approximately 5 acres of lot area. The site provides 15.86 net acres of lot area. This standard is met.

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.**

Since no exterior building modifications are proposed, the submittal does not include elevation drawings. However, based on information contained in our 2013 review letter, this standard is met.

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 site is adjacent to residential zoning on each side. The entire row of parking along the east side of the site encroaches into the 50-foot setback, although there is existing landscaping between the parking lot and neighborhood. However, similar to comments above, residents in the adjacent neighborhood previously voiced concerns over the condition of the landscape screen/buffer. Project approval in 2013 included additional plantings and maintenance/replacement of existing landscaping.

As noted above, the applicant has indicated that they have begun implementation of the previously approved landscape plan. If issues still remain, the Commission may wish to request additional details, further update on planting status and/or require additional plantings.

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 site has access to a paved public roadway. This standard is met.

#### **E. Sketch Plan Review**

1. **Dimensional Requirements.** As previously noted, the project entails a new use for the existing facility, though no exterior changes are proposed.
2. **Building Materials and Design.** Similar to the statement above, no exterior building changes are proposed.



- 3. Parking.** Based on the information provided, as an individual use the church requires a greater amount of parking than the private school. It is our understanding that peak use of the church and school will not occur at the same time, though additional detail/description has been requested (as noted above).

New parking calculations have not been provided; however, based on our 2013 review, the site provides more than enough parking for the church use. In fact, the Township granted an increase in the amount of parking provided as part of that project approval.

No further changes are proposed as part of this project. The 2013 project approval included the need to install landscape islands within the parking lot to help break up the large expanse of pavement. As noted above, the applicant has stated that the landscape islands and plantings are expected to be completed in the next 90 days.

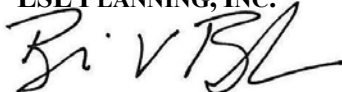
- 4. Pedestrian and Vehicular Circulation.** No changes are proposed to the existing/previously approved circulation patterns.
- 5. Landscaping.** As previously mentioned, landscaping was an important discussion item during the 2013 project. The current submittal does not propose additional landscaping; however, should the Commission find there are outstanding issues, they may require additional plantings (either new or replacement).
- 6. Waste Receptacle and Enclosure.** The waste receptacle and enclosure approved as part of the 2013 project were compliant with current standards. The current submittal does not identify any changes.
- 7. Exterior Lighting.** The applicant is not proposing any changes to exterior lighting. Similar to our 2013 review, the Township may wish to request details and/or a photometric plan to ensure that existing lighting complies with current requirements.
- 8. Signs.** The applicant is not proposing any new signage at this time. If proposed, the applicant should submit details for the Commission's consideration. A sign permit is required prior to the installation of any new signage.
- 9. Impact Assessment.** In summary, the amended Impact Assessment (3/16/15) notes that the project is not anticipated to adversely impact natural features, public services/utilities, surrounding land uses or traffic.

As noted above, the applicant has stated that the Livingston County Road Commission considers the additional traffic generation to be in "off peak" and of "minimal impact." However, the applicant should provide additional detail in terms of maintaining different peak periods for the main uses (church and school) and input should be sought from the Township Engineer regarding the need for further traffic analysis.

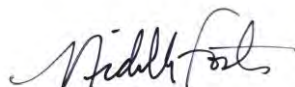
Should you have any questions concerning this matter, please do not hesitate to contact our office. We can be reached by phone at (248) 586-0505, or via e-mail at [borden@lslplanning.com](mailto:borden@lslplanning.com) and [foster@lslplanning.com](mailto:foster@lslplanning.com).

Sincerely,

**LSL PLANNING, INC.**



Brian V. Borden, AICP  
Principal Planner



Michelle Foster  
Project Planner



# BRIGHTON AREA FIRE AUTHORITY

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

April 22, 2015

FROM PREVIOUS MEETING.  
NEW LETTER WAS NOT  
ISSUED.

Kelly VanMarter  
Genoa Township  
2911 Dorr Road  
Brighton, MI 48116

RE: Brighton Nazarene Church Expansion  
for Livingston Christian School  
7669 Brighton Rd.  
Site Plan Review

Dear Kelly:

The Brighton Area Fire Department has reviewed the comments regarding the sketch plan for the Nazarene Church use as Livingston Christian School. The original plan was reviewed on June 24, 2013 and again on July 15, 2013. The current plans were received for review on March 20, 2015 and the revised drawings are dated July 2, 2013. The project is based on building a 16,120 S.F. expansion to the existing church building (size of existing building not provided). The new addition is being requested for approval as an educational use. The plan review is based on the requirements of the International Fire Code (IFC) 2012 edition.

The applicant has attempted to address the fire department's concerns by submitting a letter from a Mr. Steven Morgan identifying that the fire authority concerns are noted and under evaluation by an engineer and that other items were existing and previously approved.

1. The access to the building appears to be limited by an overhang that may not meet the minimum standard of 13.5'. Additional details of this canopy/overhang shall be provided. **(Noted, not to be used by emergency vehicles. Previously approved in 2001)**  
IFC 503.2.1
2. Access to and from the building shall provide emergency vehicles with an outside turning radius of 50' and a minimum vertical clearance of 13½ feet. **(Provide a plan with a truck turning template applied would satisfy the turning radius requirement.)**  
IFC 503.2.4
3. Fire apparatus roads shall be provided to extend to within 150' of all portions of the facility's outer walls. The entire west perimeter wall does not meet this standard. The fire code allows an exception where the entire building is protected with an automatic sprinkler system. The building shall be provided with an automatic sprinkler system in accordance with NFPA 13, *Standard for the Installation of Automatic Sprinkler Systems* in order to have relief from the access requirement. **(Sprinkler plans have been submitted for the addition, and are under review locally until the State of Michigan Bureau of Fire Services and Bureau of OCnstruction Codes formally obtain jurisdiction.)**  
IFC 503.1.1, 903
4. Provide names, addresses, phone numbers, emails of owner or owner's agent, contractor, architect, on-site project supervisor. **(No information has been received to date with the exception of fire system trades.)**





*Page 2*  
*Brighton Nazarene Church Expansion*  
*Livingston Christian School*  
*7669 Brighton Rd.*  
*Site Plan Review*

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".

Capt. Rick Boisvert  
Fire Inspector



# CITY OF BRIGHTON

"Providing quality service"

April 27, 2015

**City Hall**

200 N. First St.  
Brighton, MI 48116-1593  
(810) 227-1911  
Fax# 227-6420  
TDD Phone: (810) 227-8357

**City Manager**

225-8022  
City Clerk  
227-0463

**Human Resources Director**

225-9251  
Cemetery/ Voter  
Registration  
227-0463

**Community Development**

**Building**  
227-9005  
**Building Inspection Line**  
227-0419

**Planning / Zoning**  
225-9257

**Community Development/  
DDA**  
225-8025

**Finance**

**Accounts Payable**  
225-8019  
**Assessing Assistant**  
227-9006

**City Assessor**  
225-8024

**City Treasurer**  
225-8023

**Finance Director**  
225-9283

**Assistant Finance Director**  
227-7738

**Property Taxes**  
227-0179

**Utility Billing**  
225-8041

**Police Department**

440 S. Third St.  
(810) 227-2700  
Fax# 227-2063

**Department of Public  
Services**

420 S. Third St.  
(810) 225-8001

Fax# 225-9249

**DPS Director**  
225-9284

**Assistant DPS Director**  
225-9282

**Water Plant**  
227-2968

**Wastewater Plant**  
227-9479

Kelly VanMarter, AICP

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

RE: REU's for Brighton Church of the Nazarene Change of Use - **REVISED**

Dear Ms. VanMarter:

It has been brought to the City of Brighton's attention that the Brighton Church of the Nazarene located at 7669 Brighton Road is requesting to convert roughly 37,620 square feet of existing church use to a K-12 school use. **Per the Livingston Christian Schools paperwork submittal there will be 18 classrooms.** The Brighton Church of the Nazarene is connected to the City's water supply system.

**The proposed change of use will result in the following REU payment requirement prior to the issuance of a building permit for the change in use:**

Use	Location	Square Footage	REU's Credit
Church	7669 Brighton Road	37,620*	9.41
Based on .25 REU per 1,000 sq ft of floor area			

\*square footage must be confirmed with a detailed, dimensioned architectural drawing that is sealed and signed by a registered architect.

Below is the calculation for the change of use:

Use	Location	Classrooms	Total REU's
K-12 School	7669 Brighton Road	18	18
REU Credit for church use detailed above			9.41
<b>TOTAL REU's DUE</b>			<b>8.59</b>
Based on 1 REU per classroom			

Below is the calculation for the required payment:

REU's Owed	Cost per REU	Required Payment
8.59	<b>\$2,662</b>	<b>\$22,866.58</b>

\*\* payment subject to increase on July 1, 2015

Should you have any questions, please feel free to contact me at 810-225-9257.



# CITY OF BRIGHTON

*"Providing quality service"*

**City Hall**  
200 N. First St.  
Brighton, MI 48116-1593  
(810) 227-1911  
Fax# 227-6420  
TDD Phone: (810) 227-8357

**City Manager**  
225-8022  
**City Clerk**  
227-0463  
**Human Resources Director**  
225-9251  
**Cemetery/ Voter  
Registration**  
227-0463

**Community Development  
Building**  
227-9005  
**Building Inspection Line**  
227-0419  
**Planning / Zoning**  
225-9257  
**Community Development/  
DDA**  
225-8025

**Finance**  
**Accounts Payable**  
225-8019  
**Assessing Assistant**  
227-9006  
**City Assessor**  
225-8024  
**City Treasurer**  
225-8023  
**Finance Director**  
225-9283  
**Assistant Finance Director**  
227-7738  
**Property Taxes**  
227-0179  
**Utility Billing**  
225-8041

**Police Department**  
440 S. Third St.  
(810) 227-2700  
Fax# 227-2063

**Department of Public  
Services**  
420 S. Third St.  
(810) 225-8001  
Fax# 225-9249  
**DPS Director**  
225-9284  
**Assistant DPS Director**  
225-9282  
**Water Plant**  
227-2968  
**Wastewater Plant**  
227-9479

Sincerely,

Amy Cyphert  
Planning & Zoning Director

CC: Address file

Jim Rowell, Livingston County Building Department  
Kelly Hanna, City of Brighton, Finance Director  
Dana Foster, City of Brighton, City Manager  
Mike Archinal, Genoa Charter Township, Township Manager

GENOA TOWNSHIP  
MAR 18 2015

AMENDMENT  
TO  
IMPACT ASSESSMENT  
"BRIGHTON NAZARENE CHURCH FACILITY EXPANSION"

Dated: May 31, 2013

\*(see Attachment A for copy)

Prepared for:

BRIGHTON NAZARENE CHURCH  
7669 BRIGHTON ROAD  
BRIGHTON, MICHIGAN 48116  
(810) 227-6600

Prepared by:

STEVEN R. MORGAN  
4432 GLEN EAGLES COURT  
BRIGHTON, MI 48116  
(586) 942-9751

March 16, 2015

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

The Amendment was Prepared By:  
Steven R. Morgan, RLS Tenn.  
4432 Glen Eagles Ct.  
Brighton, Michigan 48116  
586-942-9751

B. No Change

C. No Change

D. No Change

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

(Add to existing comment)

- The site is and will remain the home of the Brighton Nazarene Church. The classrooms, as noted, will also be used Monday thru Friday, from September thru May, as School classrooms for Livingston Christian Schools. The School will add an increase of approximately 50 cars using the existing parking facilities on Monday thru Friday.
- There will be, on occasion, late afternoon or early evening activities, I.E., Parent/Teacher conferences, and athletic events within the facility.
- The existing playground on the western side of the existing facility will be used by the Christian School on Monday-Friday during the mid-day.
- The existing parking lot will be used, on occasion, by the Christian School, for daytime activities.

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

(Add to existing comment)

- The Livingston Christian School will increase the number of employees at the facility by approx. 25 people. The student population will increase the use of the facility by approx. 150 people.

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

(Add to existing comment)

- The City of Brighton has been notified of the additional public water supply.
- The existing septic system is private and has no impact on public sewer facilities.  
The private septic system has been designed and installed to the requirements of the Livingston County Health Department and will accommodate the additional usage.

H. No Change

I. No Change

- J. Impact on traffic and pedestrians: A description of the traffic volumes to be generated based on national reference documents, such as the most recent edition of the Institute of Transportation Engineers Trip Generation Manual, other published studies or actual counts of similar uses in Michigan.

(Add to existing comment)

-The existing Brighton High School, to the east, starts at 7:35 am and ends at 2:35 pm. The existing Maltby School, to the west, starts at 8:30 am and ends at 3:31 pm.

-The Livingston Christian School will start/end at a median time between Brighton High School and Maltby Middle School times.

-The Christian School is expected to generate 75 ingress/egress trips from the west and 50 ingress/egress trips from the east prior/after these start times. ( Survey of current school staff and students) Little of this traffic will occur during "peak" traffic hours.

-The Livingston County Road Commission (LCRC) reviewed the potential traffic impact of these start/end times at the Nazarene Church facility, in a meeting on 3/17/2015, and have determined that the traffic at the Brighton Road and the Church driveway intersection is defined as "Minor Impact". (per LCRC data, see Attachment B)

-Livingston Christian School will not operate during the "peak hour" morning nor afternoon.

-A traffic count and traffic model of the Nazarene Church entrance was made by the LCRC in 2010. (see Attachment C)

- K. No Change

- L. No Change

GENOA TOWNSHIP

MAR 18 2015

# Brighton High School Entrance

Default Titles

Change These in The Preferences Window  
Select File/Preference in the Main Scree  
Then Click the Titles Tab

(morning)

File Name : BRIGHT~2  
Site Code : 11111111  
Start Date : 11/27/2007  
Page No : 1

Groups Printed- CAR - TRUCK BUS

Start Time Factor	BRIGHTON From East		HIGH SCHOOL 1 From South		BRIGHTON From West		Int. Total
	Thru	Left	Right	Left	Right	Thru	
	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	5	0	0	0	0	28	33
06:35 AM	4	2	1	0	0	37	44
06:40 AM	5	2	0	0	1	43	51
06:45 AM	6	3	0	0	0	47	56
06:50 AM	15	1	1	0	3	47	67
06:55 AM	7	9	0	1	5	54	76
Total	42	17	2	1	9	256	327
07:00 AM	7	15	0	1	10	53	86
07:05 AM	9	36	0	2	10	46	103
07:10 AM	10	37	0	6	39	47	139
07:15 AM	25	30	2	11	67	32	167
07:20 AM	31	25	0	12	74	27	169
07:25 AM	28	40	1	6	62	44	181
07:30 AM	32	20	1	4	19	64	140
07:35 AM	20	4	1	4	1	40	70
07:40 AM	28	3	0	1	1	55	88
Grand Total	232	227	7	48	292	664	1470
Apprch %	50.5	49.5	12.7	87.3	30.5	69.5	
Total %	15.8	15.4	0.5	3.3	19.9	45.2	

Attachment  
"B"  
No. 1 of 4



# Brighton High School Entrance

Default Titles

Change These in The Preferences Window  
 Select File/Preference in the Main Scee  
 Then Click the Titles Tab

(afternoon)

File Name : BRIGHT~3  
 Site Code : 11111111  
 Start Date : 11/26/2007  
 Page No : 1

Groups Printed- CAR - TRUCK BUS

Start Time Factor	BRIGHTON From East		<del>HIGH SCHOOL</del> From South		BRIGHTON From West		Int. Total
	Thru	Left	Right	Left	Right	Thru	
	1.0	1.0	1.0	1.0	1.0	1.0	
01:45 PM	90	0	2	0	1	80	173
02:00 PM	84	7	0	0	4	64	159
02:15 PM	84	17	47	30	13	79	270
02:30 PM	119	8	107	118	8	64	424
02:45 PM	122	11	10	12	4	87	246
03:00 PM	101	13	10	10	12	101	247
Grand Total	600	56	176	170	42	475	1519
Apprch %	91.5	8.5	50.9	49.1	8.1	91.9	
Total %	39.5	3.7	11.6	11.2	2.8	31.3	

Page 2 of 4

"B"  
 Attachment

# Brighton Rd. / Bauer Rd. (morning)

Default Titles

Change These in The Preferences Window  
 Select File/Preference in the Main Scree  
 Then Click the Titles Tab

File Name : BAUERB~1  
 Site Code : 11111111  
 Start Date : 05/25/2011  
 Page No : 1

Groups Printed- CAR - TRUCK BUS

Start Time	BAUER From North				BRIGHTON From East				BAUER From South				BRIGHTON From West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
07:00 AM	0	0	6	6	4	8	0	12	4	1	0	5	1	51	13	65	88
07:05 AM	6	3	21	30	3	4	0	7	4	7	0	11	0	56	11	67	115
07:10 AM	1	3	16	20	5	5	0	10	2	4	0	6	2	59	19	80	116
07:15 AM	3	2	3	8	4	14	2	20	4	5	1	10	5	61	23	89	127
07:20 AM	3	1	2	6	5	10	1	16	2	1	0	3	3	39	14	56	81
07:25 AM	4	3	4	11	5	7	0	12	0	4	2	6	3	36	23	62	91
07:30 AM	4	0	3	7	4	4	1	9	1	4	5	10	3	35	18	56	82
07:35 AM	7	0	5	12	6	6	0	12	1	2	1	4	2	37	13	52	80
07:40 AM	3	1	4	8	6	11	0	17	1	4	1	6	0	41	20	61	92
07:45 AM	9	0	2	11	6	12	0	18	1	6	4	11	0	45	24	69	109
07:50 AM	4	2	7	13	10	4	1	15	1	2	1	4	1	48	22	71	103
07:55 AM	8	1	8	17	11	10	0	21	3	14	2	19	1	41	30	72	129
Total	52	16	81	149	69	95	5	169	24	54	17	95	21	549	230	800	1213
08:00 AM	4	6	10	20	19	10	0	29	0	7	0	7	1	42	27	70	126
08:05 AM	8	6	23	37	22	9	0	31	0	8	2	10	0	35	16	51	129
08:10 AM	6	4	25	35	32	6	0	38	0	12	1	13	2	30	19	51	137
08:15 AM	6	4	18	28	18	7	0	25	2	9	1	12	0	39	12	51	116
08:20 AM	14	8	32	54	11	12	0	23	1	15	0	16	1	30	24	55	148
08:25 AM	9	3	34	46	8	10	0	18	1	7	3	11	0	33	29	62	137
08:30 AM	11	0	9	20	9	4	0	13	0	3	0	3	2	27	25	54	90
08:35 AM	12	5	10	27	14	8	0	22	1	10	1	12	0	28	35	63	124
08:40 AM	17	3	18	38	11	9	1	21	1	16	0	17	3	27	33	63	139
08:45 AM	16	7	17	40	7	22	1	30	1	10	1	12	2	42	28	72	154
08:50 AM	15	3	18	36	5	5	0	10	3	4	0	7	0	30	24	54	107
08:55 AM	15	1	6	22	6	11	2	19	1	4	0	5	0	27	18	45	91
Total	133	50	220	403	162	113	4	279	11	105	9	125	11	390	290	691	1498

Attachment B  
 page 3 of 4

# Brighton Rd / Bauer Rd (Afternoon)

Default Titles

Change These in The Preferences Window  
 Select File/Preference in the Main Scree  
 Then Click the Titles Tab

File Name : BAUERB~3  
 Site Code : 11111111  
 Start Date : 05/25/2011  
 Page No : 1

Groups Printed- CAR - TRUCK BUS

Start Time	BAUER From North				BRIGHTON From East				BAUER From South				BRIGHTON From West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
02:30 PM	12	5	2	19	9	28	0	37	1	2	0	3	1	18	7	26	85
02:35 PM	11	6	3	20	11	44	3	58	1	1	0	2	1	25	10	36	116
02:40 PM	14	1	5	20	8	56	14	78	0	4	1	5	2	13	12	27	130
02:45 PM	21	2	3	26	13	38	3	54	0	3	1	4	1	28	12	41	125
02:50 PM	18	2	3	23	8	28	0	36	0	5	1	6	0	16	11	27	92
02:55 PM	20	2	7	29	5	32	0	37	0	1	1	2	0	18	12	30	98
Total	96	18	23	137	54	<u>226</u>	20	300	2	16	4	22	5	<u>118</u>	64	187	646
03:00 PM	14	3	5	22	9	22	0	31	1	4	3	8	0	10	11	21	82
03:05 PM	25	3	1	29	6	26	1	33	1	6	3	10	3	17	13	33	105
03:10 PM	18	0	9	27	10	25	3	38	3	9	2	14	0	24	10	34	113
03:15 PM	16	2	6	24	11	22	1	34	0	4	3	7	0	20	27	47	112
03:20 PM	11	2	2	15	18	29	1	48	0	6	1	7	0	17	20	37	107
03:25 PM	22	1	7	30	24	40	0	64	0	10	1	11	1	21	19	41	146
03:30 PM	14	2	7	23	20	32	0	52	3	5	0	8	0	23	22	45	128
03:35 PM	17	5	12	34	16	37	0	53	1	10	0	11	5	36	14	55	153
03:40 PM	21	9	32	62	13	38	0	51	1	5	0	6	3	17	14	34	153
03:45 PM	24	7	22	53	9	34	0	43	0	11	2	13	2	20	16	38	147
03:50 PM	26	10	24	60	15	30	0	45	0	10	1	11	1	16	18	35	151
03:55 PM	21	5	16	42	7	26	2	35	0	2	2	4	0	15	18	33	114
Total	229	49	143	421	158	<u>361</u>	8	527	10	82	18	110	15	<u>236</u>	202	453	1511
04:00 PM	42	11	20	73	7	36	1	44	0	5	1	6	1	22	13	36	159
04:05 PM	34	11	17	62	8	33	1	42	0	4	1	5	1	15	13	29	138
04:10 PM	25	10	9	44	9	32	2	43	0	1	2	3	0	29	12	41	131
04:15 PM	28	2	15	45	7	46	1	54	3	3	1	7	0	20	15	35	141
04:20 PM	17	1	6	24	4	32	2	38	0	1	0	1	1	31	20	52	115
04:25 PM	19	3	6	28	9	32	1	42	0	3	0	3	0	21	16	37	110
04:30 PM	15	1	2	18	5	27	1	33	3	2	1	6	6	24	13	43	100
04:35 PM	15	4	3	22	8	42	1	51	1	4	1	6	1	22	14	37	116
04:40 PM	18	6	7	31	6	51	0	57	0	4	3	7	0	28	7	35	130
04:45 PM	14	9	9	32	4	45	0	49	0	3	2	5	0	31	10	41	127
04:50 PM	26	9	9	44	7	34	0	41	2	3	0	5	1	19	8	28	118
04:55 PM	19	1	4	24	6	38	0	44	3	6	5	14	3	26	10	39	121
Total	272	68	107	447	80	<u>448</u>	10	538	12	39	17	68	14	<u>288</u>	151	453	1506

Attachment B Page 4 of 4

Default Titles  
 Change These in The Preferences Window  
 Select File/Preference in the Main Scree  
 Then Click the Titles Tab

File Name : BRIGHT~4  
 Site Code : 22222222  
 Start Date : 05/16/2010  
 Page No : 1

Start Time	Naz Church From North			Brighton From East			Brighton From West			Int. Total
	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	
Factor	1.0	1.0		1.0	1.0		1.0	1.0		
12:05 PM	0	2	2	1	37	38	29	1	30	70
12:10 PM	25	21	46	0	32	32	40	2	42	120
12:15 PM	18	27	45	2	45	47	33	0	33	125
12:20 PM	24	25	49	0	48	48	49	1	50	147
12:25 PM	14	23	37	0	61	61	33	1	34	132
12:30 PM	9	14	23	2	42	44	38	0	38	105
Grand Total	90	112	202	5	265	270	222	5	227	699
Apprch %	44.6	55.4		1.9	98.1		97.8	2.2		
Total %	12.9	16.0	28.9	0.7	37.9	38.6	31.8	0.7	32.5	

*Page 1 of 1*  
*Attachment "C"*



# SITE PLAN FOR BRIGHTON NAZARENE CHURCH FACILITY EXPANSION

## PART OF SE 1/4 SEC. 25, T.2N., R.5E. GENOA TOWNSHIP, LIVINGSTON COUNTY, MI

### PROPERTY DESCRIPTION:

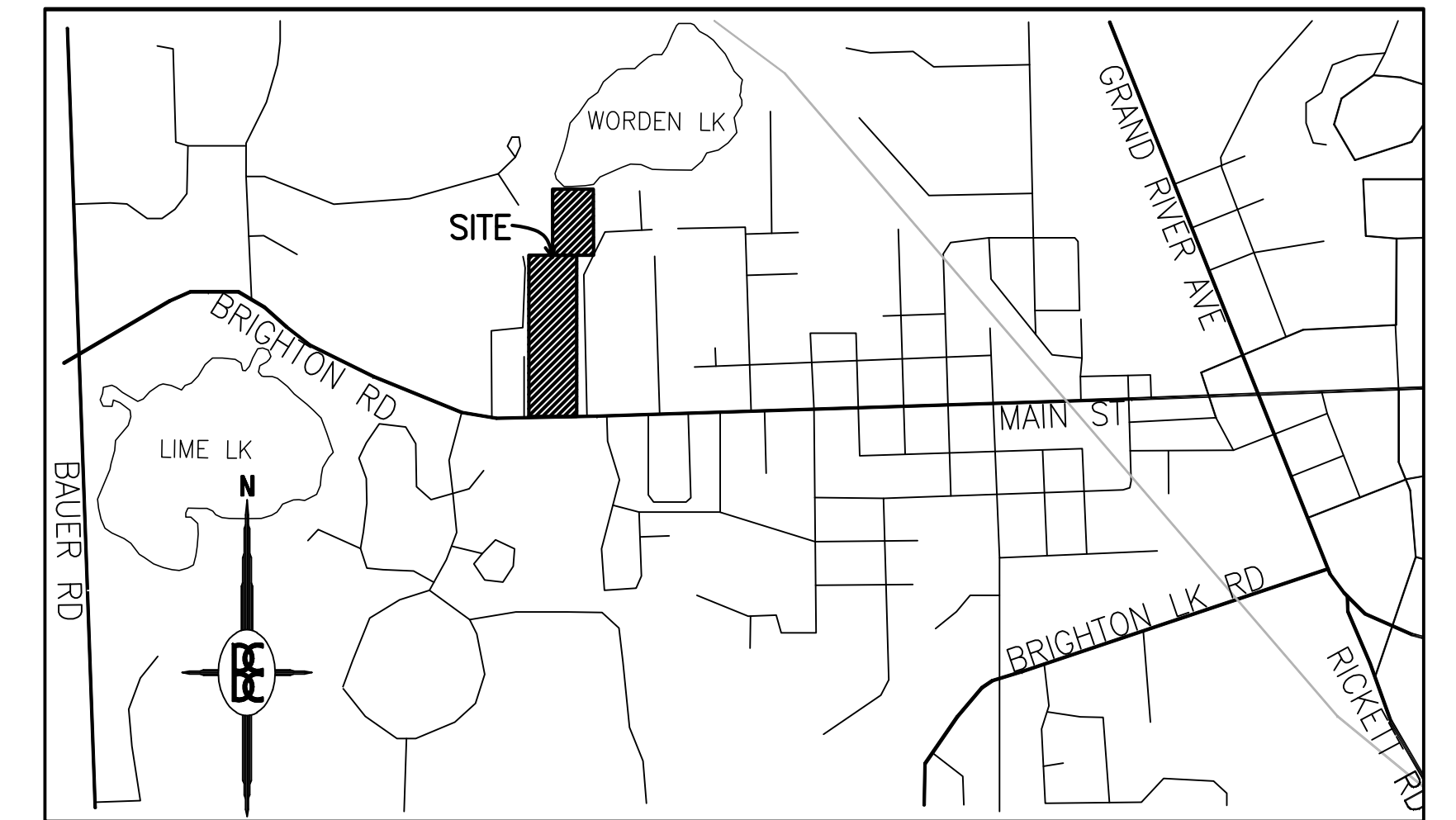
A part of the SE 1/4 of Section 25, T2N-R5E thence N 89°08'13" E 663.28 feet to Point of Beginning, thence continue E 331.64 feet, thence N 01°21'30" W 1341.53 feet, thence S 89°03'20" E 332.74 feet, thence S 01°24'19" E 1341.56 feet to Point of Beginning and also Section 25, T2N-R5E Beginning at the SE 1/4 corner, thence N 01° W 1340.63 feet thence N 89° E 823.63 feet to Point of Beginning, thence N 01° W 891.73 feet, thence N 88° E 400.81 feet, thence S 01° E 893.61 feet, thence S 89° W 400.83 feet to Point of Beginning, containing 16.43 acres, more or less split on 01/23/2012 with 4711-25-400-027 into 4711-25-400-058

### CONSTRUCTION NOTES

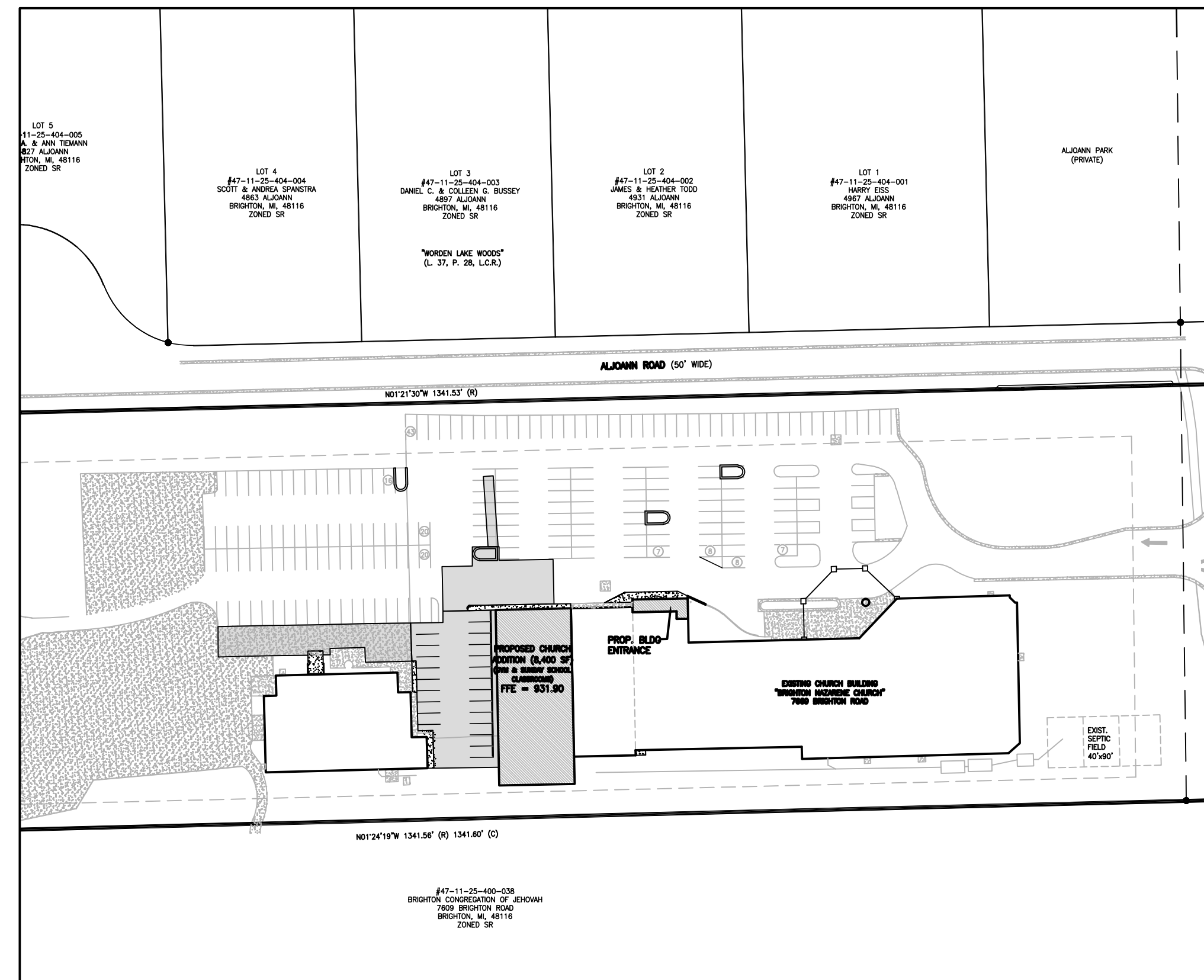
- THE CONTRACTOR SHALL COMPLY WITH THE FOLLOWING NOTES AND ANY WORK INVOLVED SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
- THE CONTRACTOR SHALL HOLD HARMLESS THE DESIGN PROFESSIONAL, MUNICIPALITY, COUNTY, STATE AND ALL OF ITS SUB CONSULTANTS, PUBLIC AND PRIVATE UTILITY COMPANIES, AND LANDOWNERS FOR DAMAGES TO INDIVIDUALS AND PROPERTY, REAL OR OTHERWISE, DUE TO THE OPERATIONS OF THE CONTRACTOR AND/OR THEIR SUBCONTRACTORS.
  - DO NOT SCALE THESE DRAWINGS AS IT IS A REPRODUCTION AND SUBJECT TO DISTORTION.
  - A GRADING PERMIT FOR SOIL EROSION-SEDIMENTATION CONTROL SHALL BE OBTAINED FROM THE GOVERNING AGENCY PRIOR TO THE START OF CONSTRUCTION.
  - IF DUST PROBLEM OCCURS DURING CONSTRUCTION, CONTROL WILL BE PROVIDED BY AN APPLICATION OF WATER, EITHER BY SPRINKLER OR TANK TRUCK.
  - ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH LOCAL MUNICIPAL STANDARDS AND SPECIFICATIONS.
  - THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED TOWNSHIP, COUNTY, AND STATE OF MICHIGAN PERMITS.
  - PAVED SURFACES, WALKWAYS, SIGNS, LIGHTING AND OTHER STRUCTURES SHALL BE MAINTAINED IN A SAFE, ATTRACTIVE CONDITION AS ORIGINALLY DESIGNED AND CONSTRUCTED.
  - ALL BARRIER-FREE FEATURES SHALL BE CONSTRUCTED TO MEET ALL LOCAL, STATE AND A.D.A. REQUIREMENTS.
  - 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.
  - THE CONTRACTOR SHALL CONTACT ALL OWNERS OF EASEMENTS, UTILITIES AND RIGHTS-OF-WAY, PUBLIC OR PRIVATE, PRIOR TO THE START OF CONSTRUCTION.
  - 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.
  - THE CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE SITE UPON COMPLETION OF THE PROJECT.
  - 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.
  - THE CONTRACTOR SHALL KEEP THE AREA OUTSIDE THE "CONSTRUCTION LIMITS" BROOM CLEAN AT ALL TIMES.
  - THE CONTRACTOR SHALL CALL MISS DIG A MINIMUM OF 72 HOURS PRIOR TO THE START OF CONSTRUCTION.
  - ALL EXCAVATION UNDER OR WITHIN 3 FEET OF PUBLIC PAVEMENT, EXISTING OR PROPOSED SHALL BE BACKFILLED AND COMPACTED WITH SAND (MDOT CLASS II).
  - 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.
  - THE CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE TO EXISTING UTILITIES.
  - 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.
  - DURING THE CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL NOT PERFORM WORK BY PRIVATE AGREEMENT WITH PROPERTY OWNERS ADJACENT TO THE PROJECT.
  - 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.
  - NO TREES ARE TO BE REMOVED UNTIL MARKED IN THE FIELD BY THE ENGINEER.
  - 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.
  - ALL AREAS DISTURBED BY THE CONTRACTOR BEYOND THE NORMAL CONSTRUCTION LIMITS OF THE PROJECT SHALL BE SODDED OR SEEDDED AS SPECIFIED OR DIRECTED BY THE ENGINEER.
  - 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.
  - 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.
  - 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.
  - AFTER REMOVAL OF TOPSOIL, THE SUBGRADE SHALL BE COMPACTED TO 95% OF ITS UNIT WEIGHT.
  - 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.
  - NO SEEDING SHALL BE DONE AFTER OCTOBER 15 WITHOUT APPROVAL OF THE ENGINEER.
  - ANY EXISTING APPURTENANCES SUCH AS MANHOLES, GATE VALVES, ETC. SHALL BE ADJUSTED TO THE PROPOSED GRADE AND SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
  - SOIL EROSION MEASURES SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL VEGETATION HAS BEEN RE-ESTABLISHED.
  - 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.

### 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.



**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
4	GRADING, DRAINAGE & SOIL EROSION CONTROL PLAN
5	UTILITY PLAN
6	LANDSCAPE & LIGHTING PLAN
7	CONSTRUCTION NOTES & DETAILS
8	CONSTRUCTION NOTES & DETAILS
9	WATERMAIN PLAN & PROFILE
10	FLOOR PLAN
11	ELEVATION VIEWS

## BRIGHTON NAZARENE CHURCH FACILITY EXPANSION

PREPARED FOR:

BRIGHTON NAZARENE CHURCH  
7669 BRIGHTON ROAD  
BRIGHTON, MI 48116  
CONTACT: PASTOR BEN WALLS  
810.227.6600

### ARCHITECT

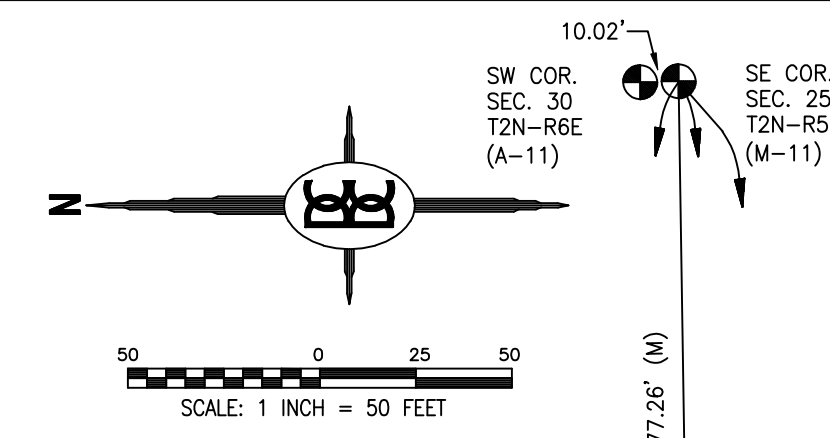
SAHBA LA'AL, ARCHITECT  
MACMULLAN ARCHITECTS  
308 NORTH RIVER STREET  
YPSILANTI, MICHIGAN 48198

PREPARED BY:



5	ST	PER CLIENT REVIEW	5/14/14	<b>1</b>
4	ST	PER TWP. REVIEW	10/2/13	
3	ST	PER TWP. REVIEW	8/26/13	
2	ST	PER PLANNING COM.	7/30/13	
1	ST	TWP. REVIEW	7/2/13	
NO	BY	CK	REVISION	

ISSUE DATE: 5/31/13  
JOB NO. 13-100



THE INFORMATION CONTAINED HEREON IS FOR THE EXCLUSIVE USE OF THE CLIENT AND IS NOT TO BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM. THE CLIENT AGREES TO HOLD BOSS ENGINEERING, SURVEYORS & PLANNERS, LANDSCAPE ARCHITECTS, INC. HARMLESS FROM ALL LIABILITY, DAMAGES, LOSSES, AND EXPENSES, INCLUDING ATTORNEY'S FEES, ARISING FROM OR RESULTING FROM THE USE OF THIS INFORMATION. THE CLIENT'S USE OF THIS INFORMATION IS AT THE CLIENT'S SOLE RISK AND WITHOUT WARRANTY. THE CLIENT'S USE OF THIS INFORMATION IS AT THE CLIENT'S SOLE RISK AND WITHOUT WARRANTY. THE CLIENT'S USE OF THIS INFORMATION IS AT THE CLIENT'S SOLE RISK AND WITHOUT WARRANTY.

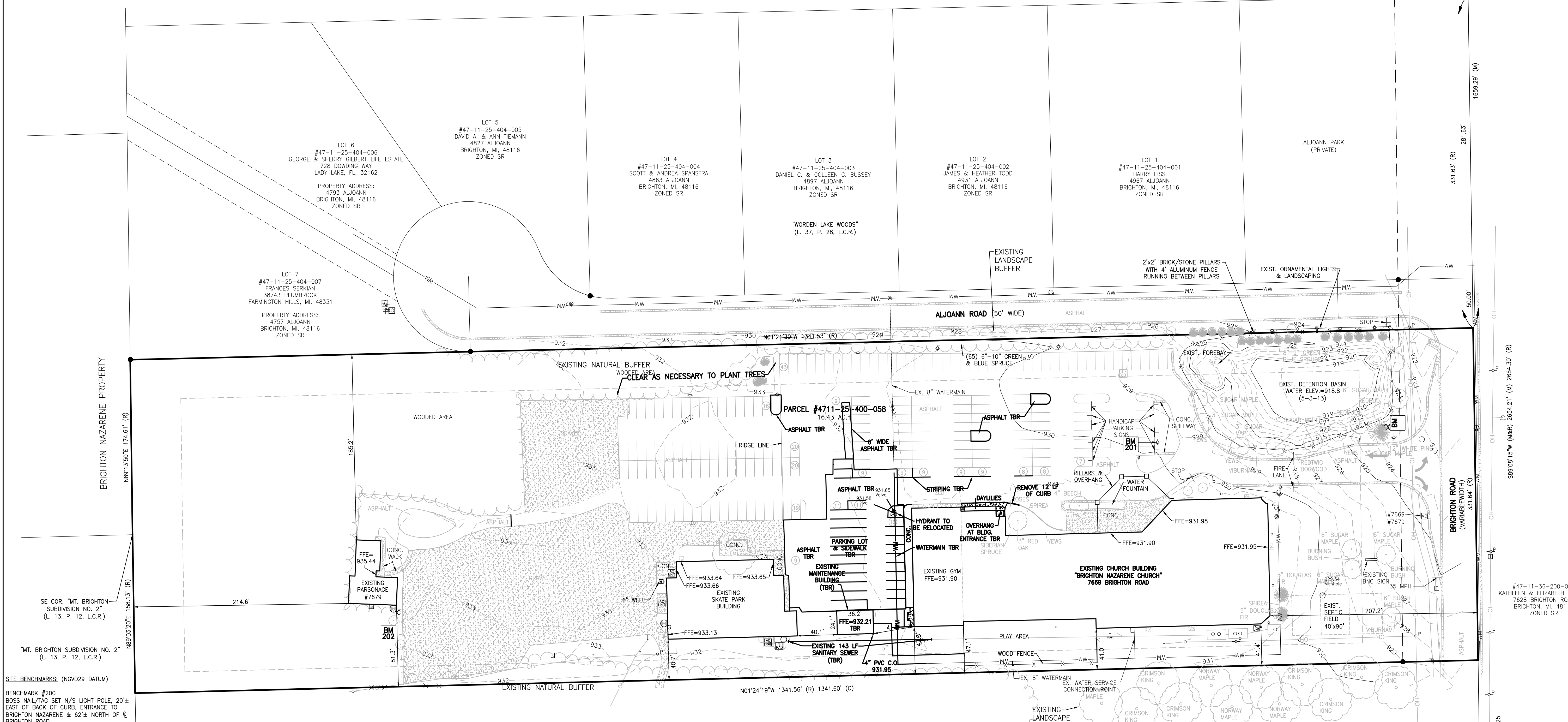
**BOSS ENGINEERING**  
ENGINEERS • SURVEYORS • PLANNERS  
LANDSCAPE ARCHITECTS

(E-MAIL: [boss@bosseng.com](mailto:boss@bosseng.com))  
3121 E. GRAND RIVER AVE.  
HOWELL, MI. 48843  
(800) 246-6735 FAX (517) 548-1670

**B.N.C. FACILITY EXPANSION**  
**BRIGHTON NAZARENE CHURCH**  
7669 BRIGHTON ROAD  
BRIGHTON, MI 48116  
810-227-6600

**EXISTING CONDITIONS & DEMOLITION**

PROJECT:	B.N.C. FACILITY EXPANSION
PREPARED FOR:	BRIGHTON NAZARENE CHURCH
DATE:	5/14/14
PER CLIENT REVIEW:	10/22/13
PER CITY REVIEW:	7/25/13
PER PLANNING COM.:	6/28/13
TWP. REVIEW:	
REVISION PER:	
NO. BY:	DATE
DESIGNED BY:	ST
DRAWN BY:	AEB
CHECKED BY:	
SCALE:	1" = 50'
JOB NO.:	13-100
DATE:	5-31-13
SHEET NO.:	2



**GENERAL SURVEY NOTES:**

- BEARINGS WERE ESTABLISHED FROM THE PLAT OF "MT. BRIGHTON SUBDIVISION NO. 2", AS RECORDED IN LIBER 13 OF PLATS, PAGE 12, LIVINGSTON COUNTY RECORDS.
- 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.
- EASEMENTS OR RESTRICTIONS OF RECORD NOT DEPICTED ON THIS DRAWING MAY EXIST.
- ELEVATIONS WERE ESTABLISHED FROM BENCHMARK INFORMATION AS SHOWN ON BOSS ENGINEERING AS-BUILT PLANS FOR WORDEN LAKE WOODS UNDER JOB NO. 98011, AS-BUILT DATE OF 4-6-2000. (NGVD29 DATUM)
- CONTOURS ARE SHOWN AT 1 FOOT INTERVALS.
- ALL ELEVATIONS ARE SHOWN TO THE NEAREST 0.01 FOOT; HOWEVER SOFT-SURFACE ELEVATIONS CAN ONLY BE PRESUMED ACCURATE TO THE NEAREST 0.1 FOOT.
- 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 ALONG WITH RECORD DRAWINGS. SEPTIC TANKS, PUMP CHAMBER & FIELD AS SHOWN ON THIS SURVEY ARE DEPICTED FROM A PREVIOUS SITE PLAN BY BOSS ENGINEERING, JOB NO. 88603, DATED 10-25-89. LOCATIONS AS SHOWN ARE APPROXIMATE AND WILL NEED FIELD VERIFICATION.
- ALL WORK SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE MUNICIPALITY, THE COUNTY, AND THE STATE OF MICHIGAN.
- ALLOW THREE WORKING DAYS BEFORE YOU DIG, CALL MISS DIG TOLL FREE 1-800-482-7171.

**DESCRIPTION OF PARCEL #4711-25-400-058:**

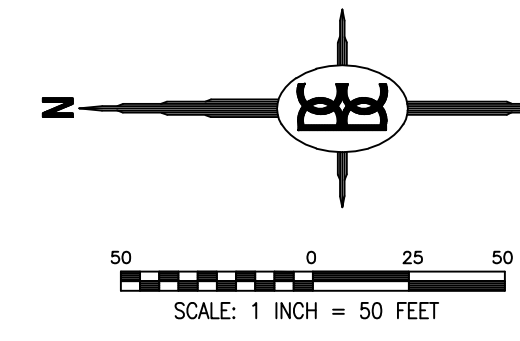
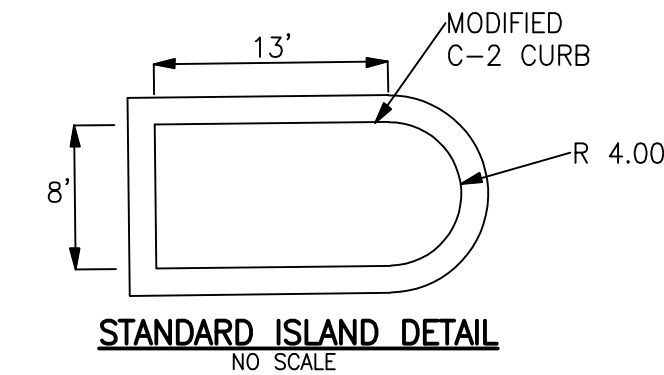
A part of the SE 1/4 of Section 25, T2N-R5E thence N 89°08'13" E 663.28 feet to Point of Beginning, thence continue E 331.64 feet, thence N 01°21'30" W 1341.53 feet, thence S 89°03'20" E 332.74 feet, thence S 01°24'19" E 1341.56 feet to Point of Beginning and also Section 25, T2N-R5E Beginning at the SE 1/4 corner, thence N 01° W 1340.63 feet thence N 89° E 823.63 feet to Point of Beginning, thence N 01° W 891.73 feet, thence N 88° E 400.81 feet, thence S 01° E 893.61 feet, thence S 89° W 400.83 feet to Point of Beginning, containing 16.43 acres, more or less split on 01/23/2012 with 4711-25-400-027 into 4711-25-400-058



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
RIM	RIM	RIM ELEVATION
INV	INV	INVERT ELEVATION
MH	MH	MANHOLE STRUCTURE
IN	IN	INLET STRUCTURE
CB	CB	CATCHBASIN STRUCTURE
RY	RY	REARYARD STRUCTURE
ES	ES	END-SECTION
GV	GV	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
MH	MH	MANHOLE
IN	IN	INLET / CATCHBASIN
FL	FL	FLARED END-SECTION
GV	GV	GATE VALVE
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
MH	MH	MANHOLE
IN	IN	INLET / CATCHBASIN
FL	FL	FLARED END-SECTION
GV	GV	GATE VALVE
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

SITE DATA	EXISTING/REQUIRED	PROPOSED
ZONING	SUBURBAN RESIDENTIAL(SR)	SUBURBAN RESIDENTIAL(SR)
AREA (GROSS)	3 ACRES(=15000SQFT PER 100 PERSON SEATING CAPACITY) 16.43 ACRES	
AREA (NET)	15.86 ACRES	
LOT WIDTH	100 FT	331.64 FT
USE	CHURCH	CHURCH
SETBACKS		
FRONT	40 FT	207.2 FT
SIDE	20 FT	26.83 FT
REAR	50 FT	214.6 FT
PARKING	50 FT	50.05 FT
MAX. LOT COVERAGE	20% BUILDING (6.99%)	8.19%
	35% IMPERVIOUS (23.07%)	23.95%
PARKING - 1 SPACE PER 3 SEATS IN WORSHIP AREA (520 SEATS/3 = 174 SPACES)		201 SPACES
		8 BARRIER FREE SPACES
		8 BARRIER FREE SPACES
	(FOR MAX CAPACITY SERVICES ARRANGEMENTS ARE MADE TO UTILIZE BRIGHTON HIGH SCHOOLS PARKING LOT)	
SOILS (PER U.S.D.A. SOIL SURVEY)	BOYER-OSHTEMO LOAMY SANDS, 0 TO 2 PERCENT SLOPES	
	NO NEW SIGNAGE PROPOSED	

NOTE: ACTIVITIES WILL NOT TAKE PLACE IN THE GYM CONCURRENT WITH WORSHIP SERVICES IN THE SANCTUARY



SW COR. SEC. 30 T2N-R5E (A-11)  
SE COR. SEC. 25 T2N-R5E (M-11)

BEFORE YOU BEGIN ANY CONSTRUCTION, YOU MUST OBTAIN THE NECESSARY PERMITS FROM THE CITY OF BRIGHTON. THESE PERMITS ARE ONLY APPROVED IF YOU OBTAIN THE NECESSARY PERMITS FROM THE CITY OF BRIGHTON. THE CITY OF BRIGHTON IS NOT RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION PROVIDED HEREON. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND FOR THE ACCURACY OF THE INFORMATION PROVIDED HEREON. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY CHANGES TO THE LOCATION OR DEPTH OF ANY UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY CHANGES TO THE LOCATION OR DEPTH OF ANY UTILITIES PRIOR TO CONSTRUCTION.

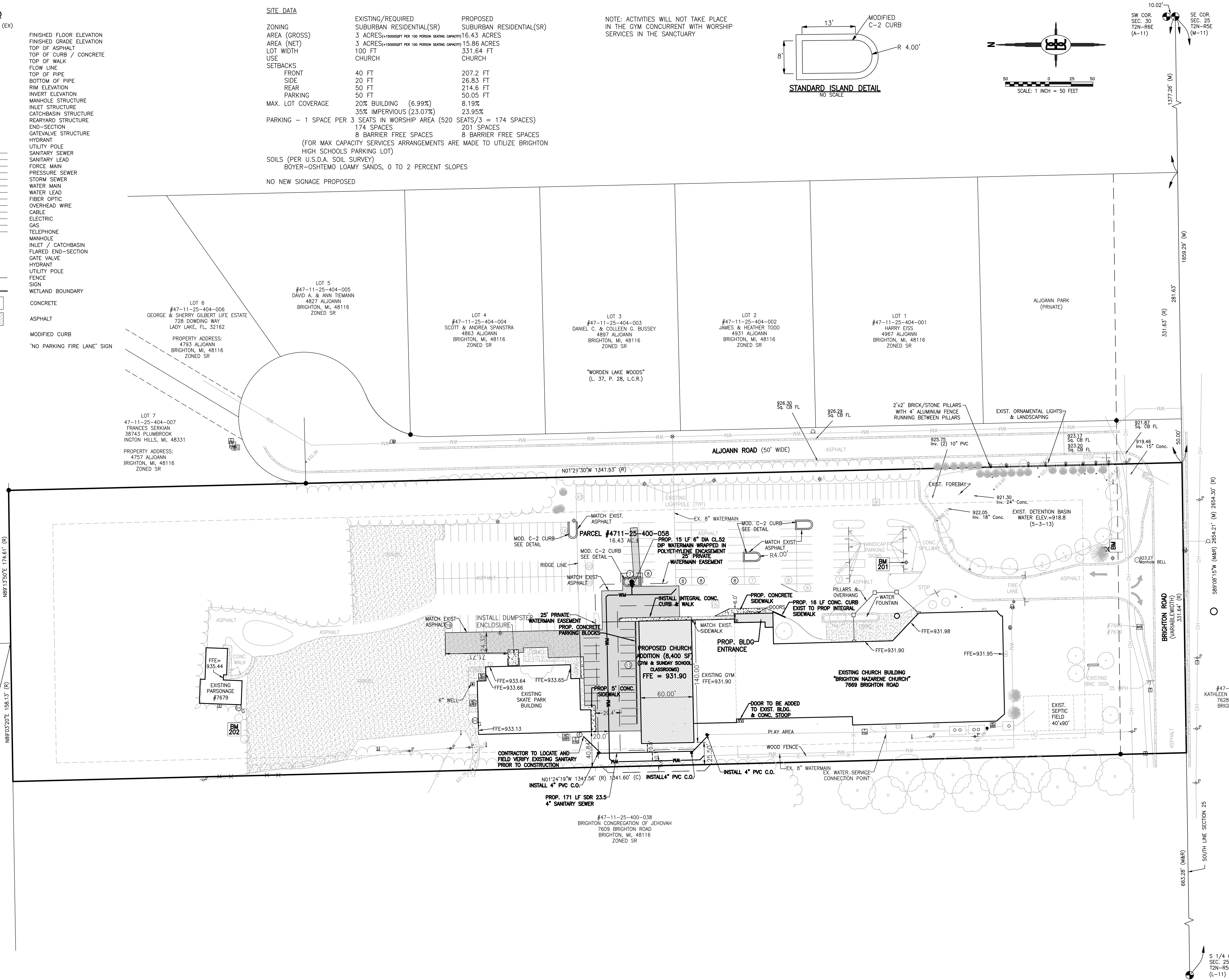
**BOSS ENGINEERING**  
ENGINEERS • SURVEYORS • PLANNERS  
LANDSCAPE ARCHITECTS  
(E-MAIL: boss@bosseng.com)  
3121 E. GRAND RIVER AVE.  
BRIGHTON, MI 48843  
(800) 246-6735 FAX (517) 548-1670

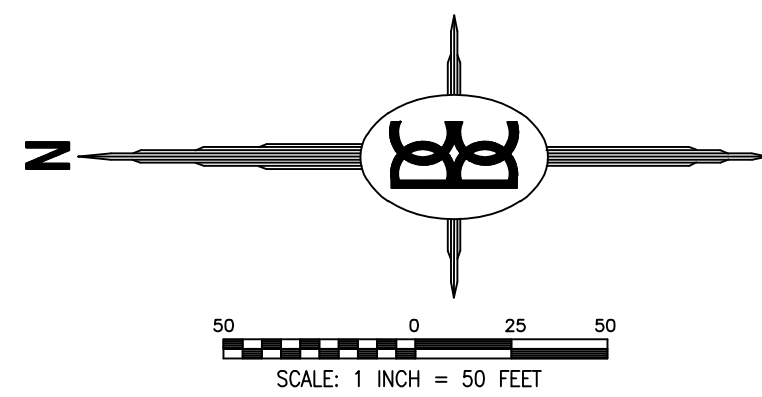
**B.N.C. FACILITY EXPANSION**  
**BRIGHTON NAZARENE CHURCH**  
7669 BRIGHTON ROAD  
BRIGHTON, MI 48116  
810-227-6600

NO	BY	DATE	REVISION PER
1	ST	7/25/13	
2	ST	7/25/13	
3	ST	8/26/13	
4	ST	10/2/13	
5	ST	5/14/14	

DESIGNED BY: ST  
DRAWN BY: AEB  
CHECKED BY:  
SCALE: 1" = 50'  
JOB NO. 13-100  
DATE 5-31-13  
SHEET NO. 3

BRIGHTON NAZARENE PROPERTY





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	DISPOSE OF WITH INLET DEBRIS.
SWEEP PARKING LOT	REMOVE MUD, DIRT, GREASE AND OIL WITH PERIODIC SWEEPING.
DUST CONTROL	SPRINKLE WATER AS NEEDED.

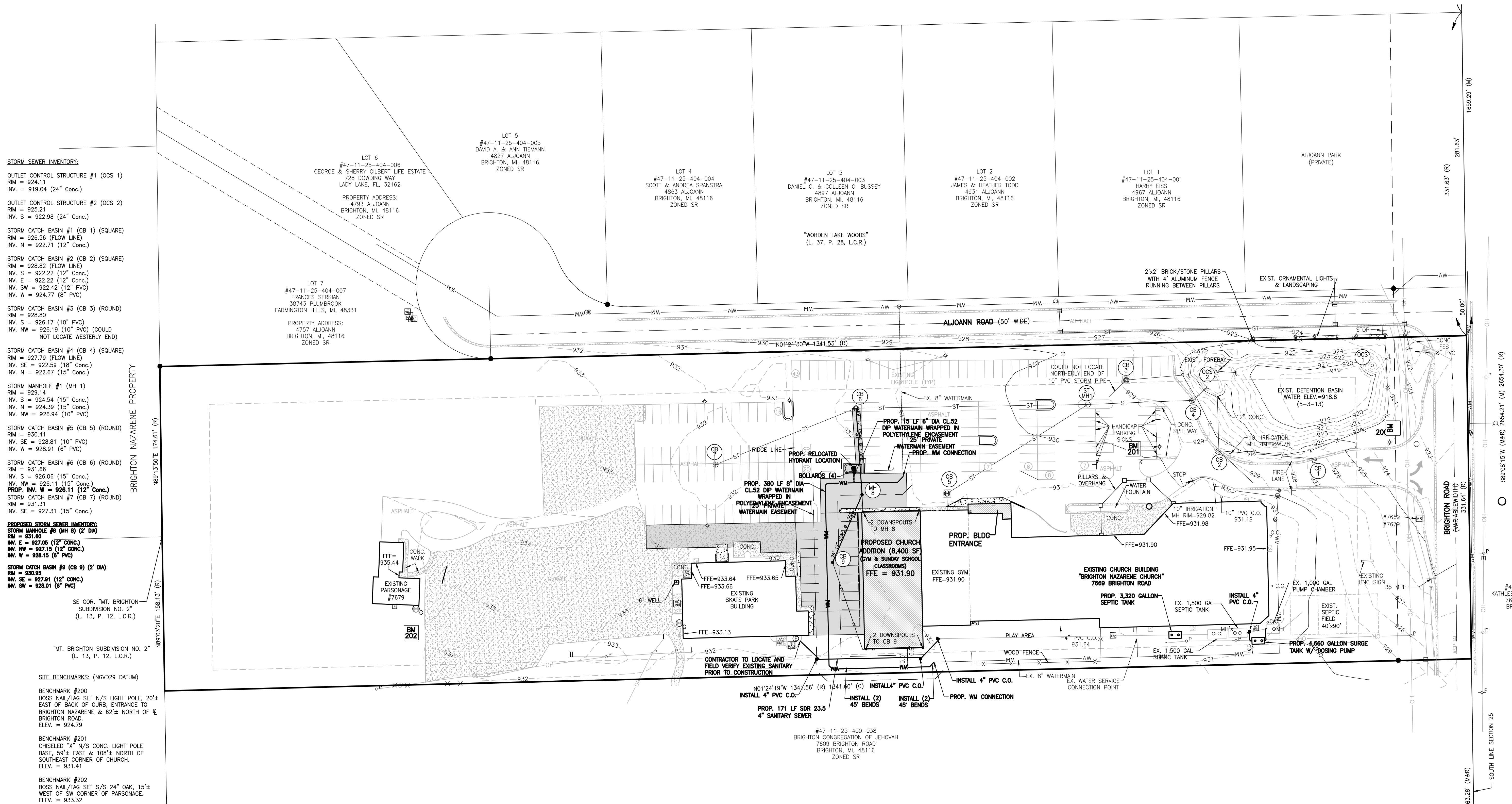
CONTROLS & MEASURES POST CONSTRUCTION SEQUENCE			
ACTIVITY	WEEKLY	MONTHLY	AS REQUIRED
MAINTAIN LANDSCAPING, REPLACE MULCH	X	X	X
CLEAN INLETS		X	X
COLLECT LITTER	X		X
SWEEP PARKING LOT		X	X

CONSTRUCTION SEQUENCE	
1 DAY	1. INSTALL SILT FENCE & INLET FILTERS AS SHOWN ON PLANS.
4 DAYS	2. SAWCUTTING & REMOVING ASPHALT AS SHOWN ON PLANS.
6 DAYS	3. ROUGH GRADE AND INSTALL STORM DRAINAGE AND WATERMAIN.
1 DAY	4. INSTALL INLET PROTECTION ON STORM INLETS.
180 DAYS	5. START BLDG. CONSTRUCTION.
4 DAYS	6. INSTALL PAVEMENT.
2 DAYS	7. FINE GRADE AROUND BUILDING, SPREAD TOPSOIL, SEED OR SOD AS APPLICABLE.
1 DAY	8. REMOVE ALL EROSION CONTROL STRUCTURES.
1 DAY	9. REMOVE ACCUMULATED SILT FROM ALL EXISTING DRAINAGE.

- NOTES:
- EXISTING WATERMAIN TO BE CUT AND REMOVED AT POINTS INDICATED ON PLANS. PROPOSED WATERMAINS TO BE CONNECTED TO CUT-ENDS OF EXISTING WATERMAIN. CONNECT PROPOSED WATERMAIN TO NEAREST JOINT OF EXISTING WATERMAIN.
  - EXISTING WATERMAIN IS TO BE TEMPORARILY CAPPED AT CONNECTION LOCATIONS WHILE EXTENDED LOOP IS BEING CONSTRUCTED.
  - FIRE SUPPRESSION LINE AND DOMESTIC SUPPLY FOR PROPOSED ADDITION TO BE INTERNALLY SUPPLIED FROM EXISTING BUILDING.
  - EXISTING 6" WELL ON NORTH SIDE OF EXISTING SKATE PARK IS SOLELY USED FOR IRRIGATION.
  - THERE ARE NO SERVICE CONNECTIONS OR BUILDING FIRE SUPPRESSION SYSTEMS TO BE REPLACED ALONG THE PORTION OF RELOCATED WATER MAIN.

LEGEND		LEGEND	
PROPOSED (PR)	EXISTING (EX)	PROPOSED (PR)	EXISTING (EX)
900	900	CONTOUR	SILT FENCE
T/C		STORM DRAINAGE FLOW	LIMITS OF GRADING/CLEARING
XXXXXX		SPOT ELEVATION	CONCRETE
FF	FF	FINISHED FLOOR ELEVATION	ASPHALT
FG	FG	FINISHED GRADE ELEVATION	GRAVEL
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	RM 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	
GV	GV	GATEVALVE STRUCTURE	
HY	HY	HYDRANT	
UP	UP	UTILITY POLE	
SN	SN	SANITARY SEWER	
SL	SL	SANITARY LEAD	
FM	FM	FORCE MAIN	
ST	ST	STORM SEWER	
WM	WM	WATER MAIN	
WL	WL	WATER LEAD	
OH	OH	OVERHEAD WIRE	

STRUCTURE FRAMES & COVERS				
COVER	TYPE	USE	MANUFACTURER OR EQUIV.	TYPE OF COVER OR GRATE
A	MH	ALL	EAST JORDAN R-1415	SANITARY-SELF SEALING STORM-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" OPEN THROAT
C	CB & INLET	VALLEY CURB	7065 R-3034-B	
D	CB & INLET	PARKING LOTS	1020-MI R-2560-D	FLAT GRATE
E	CB & INLET	LAWN AREA OR BENCH	1020-01	BEEHIVE GRATE 4" HIGH



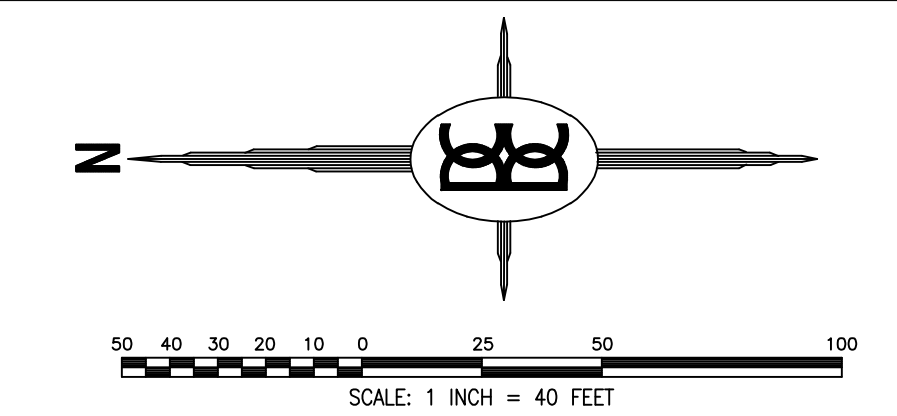
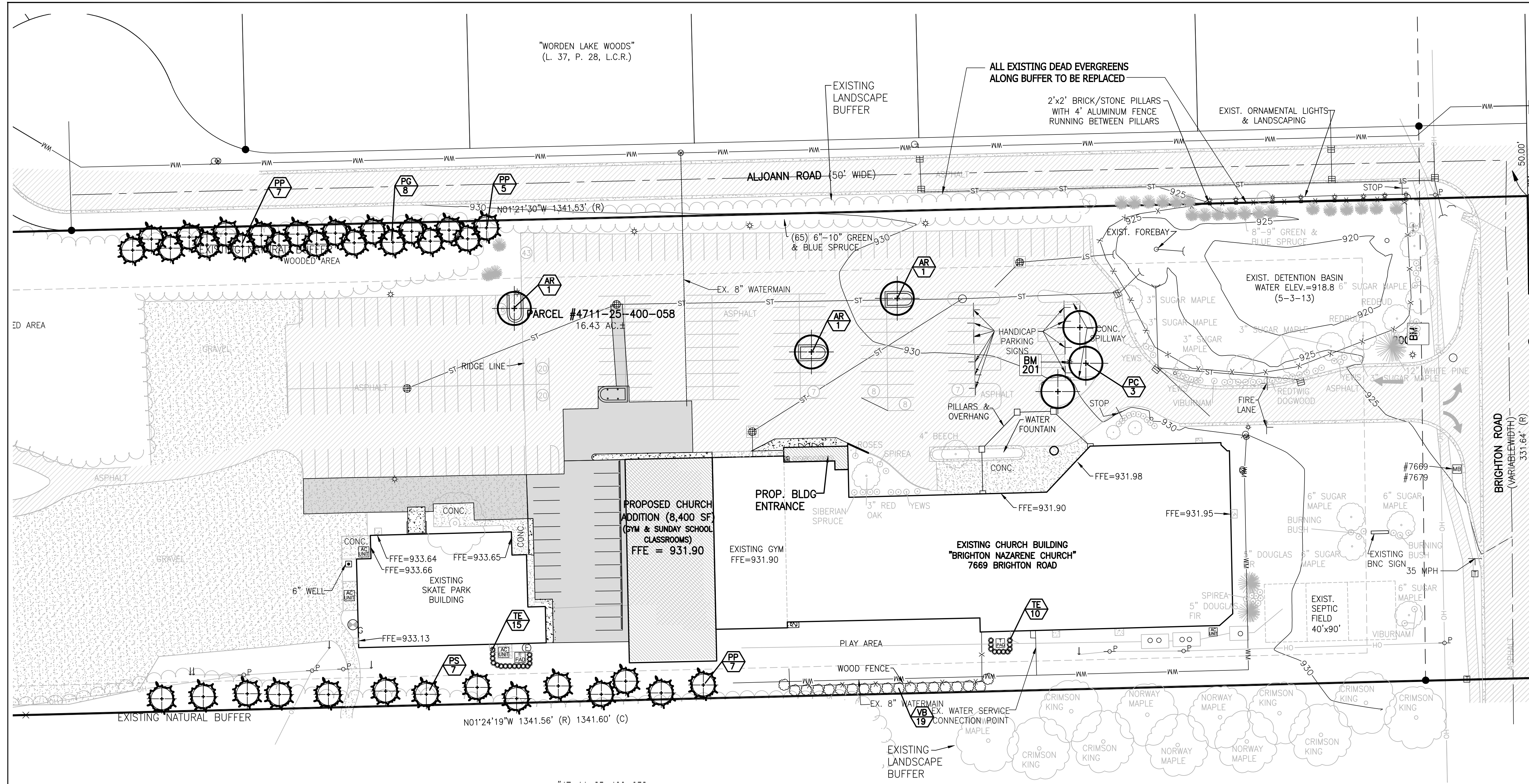
**BOSS ENGINEERING**  
ENGINEERS • SURVEYORS • PLANNERS  
LANDSCAPE ARCHITECTS  
3121 E. GRAND RIVER AVE.  
HOWELL, MI 48843  
(800) 246-6735 FAX (517) 948-1670

**B.N.C. FACILITY EXPANSION**  
BRIGHTON NAZARENE CHURCH  
7669 BRIGHTON ROAD  
BRIGHTON, MI 48116  
810-227-6600

NO	BY	DATE	REVISION PER
1	ST	5/14/14	PER CLIENT REVIEW
2	ST	10/2/13	PER CITY REVIEW
3	ST	8/26/13	TWP. REVIEW
4	ST	7/20/13	PER PLANNING COM.
5	ST	7/2/13	TWP. REVIEW

DESIGNED BY: ST  
DRAWN BY: AEB  
CHECKED BY:  
SCALE: 1" = 50'  
JOB NO. 13-100  
DATE: 5-31-13  
SHEET NO. 5





PROPOSED (PR)	EXISTING (EX)	
FF	FF	FINISHED FLOOR 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
RIM	RIM	RIM ELEVATION
INV	INV	INVERT ELEVATION
MH	MH	MANHOLE STRUCTURE
IN	IN	INLET STRUCTURE
CB	CB	CATCHBASIN STRUCTURE
RY	RY	REARWAY STRUCTURE
ES	ES	END-SECTION
ES	ES	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
MANHOLE	MANHOLE	MANHOLE
INLET / CATCHBASIN	INLET / CATCHBASIN	INLET / CATCHBASIN
FLARED END-SECTION	FLARED END-SECTION	FLARED END-SECTION
GATE VALVE	GATE VALVE	GATE VALVE
HYDRANT	HYDRANT	HYDRANT
UTILITY POLE	UTILITY POLE	UTILITY POLE
FENCE	FENCE	FENCE
SIGN	SIGN	SIGN
CONCRETE	CONCRETE	CONCRETE
ASPHALT	ASPHALT	ASPHALT
DOUBLE FIXTURE LIGHT POLE	DOUBLE FIXTURE LIGHT POLE	DOUBLE FIXTURE LIGHT POLE
SINGLE FIXTURE LIGHT FIXTURE	SINGLE FIXTURE LIGHT FIXTURE	SINGLE FIXTURE LIGHT FIXTURE
WALL MOUNTED LIGHT FIXTURE	WALL MOUNTED LIGHT FIXTURE	WALL MOUNTED LIGHT FIXTURE
GROUND LIGHT FIXTURE	GROUND LIGHT FIXTURE	GROUND LIGHT FIXTURE
FOOT CANDLES ON SITE	FOOT CANDLES ON SITE	FOOT CANDLES ON SITE
FOOT CANDLES OFF SITE	FOOT CANDLES OFF SITE	FOOT CANDLES OFF SITE
FOOT CANDLES CONTOURS	FOOT CANDLES CONTOURS	FOOT CANDLES CONTOURS

KEY	QUAN.	BOTANICAL NAME	COMMON NAME	SIZE	REMARK
<b>TREES</b>					
AR	3	Acer rubrum 'Red Sunset'	Red Sunset Maple	2 1/2" cal.	B-B
PC	3	Pyrus calleryana 'Bradford'	Bradford Callery Pear	2 1/2" cal.	B-B
PG	8	Picea glauca	White Spruce	6'-8" ht.	B-B
PP	19	Picea pungens var. 'Glauca'	Colorado Blue Spruce	6'-8" ht.	B-B
PS	7	Pinus strobus	Eastern White Pine	6'-8" ht.	B-B
<b>SHRUBS</b>					
TE	25	Thuja occidentalis 'Emerald'	Emerald Arborvitae	24"-36" ht.	B-B
VB	19	Viburnum x burkwoodii	Burkwood Viburnum	36" ht.	B-B

BOSS ENGINEERING  
 ENGINEERS SURVEYORS PLANNERS  
 LANDSCAPE ARCHITECTS  
 3121 E. GRAND RIVER AVE.  
 HOWELL, MI 48843  
 (800) 246-6335 FAX (517) 948-1670

---

**B.N.C. FACILITY EXPANSION**  
**BRIGHTON NAZARENE CHURCH**  
 7669 BRIGHTON ROAD  
 BRIGHTON, MI 48116  
 810-227-6600

---

**LANDSCAPE & LIGHTING PLAN**

---

NO.	DATE	BY	REVISION
5	5/14/14	ST	PER CLIENT REVIEW
1	7/20/13	TD	PC MEETING

---

DESIGNED BY: TD  
 DRAWN BY: TD  
 CHECKED BY:  
 SCALE: 1" = 40'  
 JOB NO. 13-100  
 DATE: 5-31-13  
 SHEET NO. 6



**GENOA CHARTER TOWNSHIP**  
**Application for Site Plan Review**

**TO THE GENOA TOWNSHIP PLANNING COMMISSION AND TOWNSHIP BOARD:**

APPLICANT NAME & ADDRESS: Frauenshuh Health Care Real estate Solutions, 3601 Minnesota Drive, Suite 800, Minneapolis, MN 55435  
*If applicant is not the owner, a letter of Authorization from Property Owner is needed.*

OWNER'S NAME & ADDRESS: St. John Providence Health System, a Michigan nonprofit corporation; 18000 West Nine Mile Road, Suite 1200, Southfield, MI 48075

SITE ADDRESS: 1201 S. Latson Road; Genoa Township, MI 48843 PARCEL #(s): 2012R-020056

APPLICANT PHONE: 952-829-3489 OWNER PHONE: 248-331-4667

OWNER EMAIL: John.Yagerlener@ascensionhealth.org; Applicant Email: chris.lambrecht@frauenshuh.com

LOCATION AND BRIEF DESCRIPTION OF SITE: NE corner of the intersection of Latson Rd and I 96.

Previously developed Howell Public Schools site for Latson Elementary. The site has since been cleared  
and a portion of the original parcel was aquired by MDOT for construction of the Latson Rd interchange.

There are two existing and improved drive entry points near the NW property cornaer and another at Grand Oaks Dr.

BRIEF STATEMENT OF PROPOSED USE: The site will be developed as a Non-Residential PUD with the first  
phase including a 60,000 sf, 3 story medical office building including parking, MRI dock and required infrastructure.

Future phases may include additional healthcare related facilities north of Grand Oaks and retail/office  
commerical uses south of Grand Oaks. The first phase of development will include a site-wide stormwater basin.

THE FOLLOWING BUILDINGS ARE PROPOSED: 1 - 60,000 square foot, 3 story medical office building.

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

BY: Chris Lambrecht

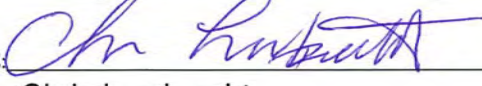
ADDRESS: 3601 Minnesota Drive, Suite 800, Minneapolis, MN 55435

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

1.) Chris Lambrecht of Frauenschuh Health Care Real Estate Solutions at Chris.lambrecht@frauenschuh.com  
Name Business Affiliation E-mail Address

**FEE EXCEEDANCE AGREEMENT**

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

SIGNATURE:  DATE: 3/27/15  
PRINT NAME: Chris Lambrecht PHONE: 952-829-3489  
ADDRESS: 3601 Minnesota Drive, Suite 800, Minneapolis, MN 55435



May 5, 2015

Planning Commission  
Genoa Township  
2911 Dorr Road  
Brighton, Michigan 48116

<b>Attention:</b>	Kelly Van Marter, AICP Assistant Township Manager and Community Development Director
<b>Subject:</b>	Livingston Ambulatory – PUD Plan Review #2
<b>Location:</b>	East side of Latson Road, between Grand River Avenue and I-96
<b>Zoning:</b>	NR-PUD Non-Residential Planned Unit Development District

Dear Commissioners:

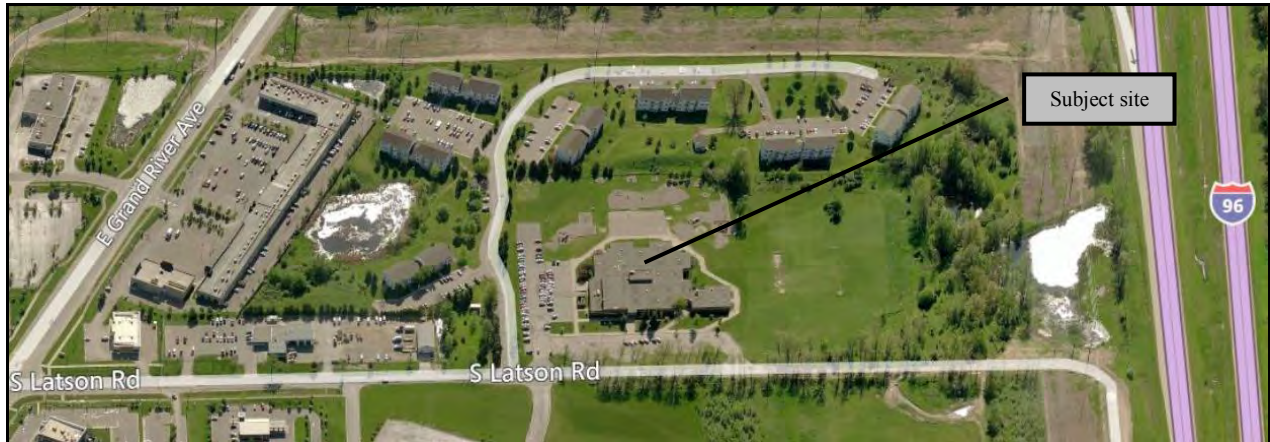
At the Township's request, we have reviewed the revised site plan (dated 4/23/2015) proposing a new 60,000 square foot medical office building for the 14.57-acre site as the first phase of a Non-Residential Planned Unit Development (NR-PUD).

The site is located north of the new I-96 interchange on the east side of Latson Road. We have reviewed the proposal in accordance with the applicable provisions of the Genoa Township Zoning Ordinance and PUD Agreement for this site.

**A. Summary**

1. The proposed site plan provides more parking (and less building) along the Latson Road frontage than envisioned by the PUD Concept Plan.
2. Proposed elevations, including colors and materials, are subject to review and approval by the Planning Commission.
3. The applicant seeks a reduction of 7 parking spaces for Phase I development based on their history with medical development.
4. The loading space is within the front yard, which is not permitted. The applicant must either relocate the space or seek an amendment to the PUD Agreement allowing such.
5. We believe the pavement markings proposed for pedestrian safety when crossing through the parking lot warrant further discussion.
6. The Phase I landscape plan is deficient by 3 shrubs within the northerly buffer zone; however, there is an excess of 41 canopy trees in the parking lot.
7. There are minor clean-up items on the landscape plan and it should be noted that the conceptual layout of future phases does not leave sufficient depth for fully compliant south and east side buffer zones.
8. There are inconsistencies between the lighting plan and electrical site plan with respect to exterior site lighting.
9. The Planning Commission may allow a 2<sup>nd</sup> wall sign.
10. Further discussion is warranted with respect to the required Township entranceway landmark.
11. We request the applicant identify the hours of operation for the mobile imaging unit and note whether there is exterior lighting associated with its use.





*Aerial view of site and surroundings prior to interchange construction and building demo (looking east)*

**B. Proposal/Process**

The applicant requests site plan review/approval for Phase I development of the former Latson Elementary School property. The project entails a new medical office building with a mobile MRI dock. The proposed building is 3 stories in height with a ground floor area of 20,500 square feet.

Hospitals, medical centers and medical offices are all permitted by right via the PUD Agreement for this site. Additionally, the PUD allows for buildings of up to 5 stories in height.

Procedurally, the Planning Commission is to review the PUD site plan and Environmental Impact Assessment and provide a recommendation to the Township Board. Since this is a PUD project, the Board has the final approval authority over both items.

**C. Site Plan Review**

**1. PUD Concept Plan.** Phase I of the project is generally consistent with the approved concept plan for this PUD, although we should point out that the concept(s) developed envisioned a greater proportion of building frontage along Latson Road (and subsequently less parking). The proposed layout does not preclude future development along the northerly portion of the Latson Road frontage, but this does not appear to be part of future plans at this time. The applicant has acknowledged this comment in their response letter (dated 4/23/15).

**2. Dimensional Requirements.** As described in the table below, Phase I complies with the dimensional requirements for this PUD:

District	Lot Size		Minimum Setbacks (feet)				Max. Height	Lot Coverage
	Lot Area (acres)	Width (feet)	Front Yard	Side Yard	Rear Yard	Parking		
NR-PUD	1	120	20	10	20	10 front 5 side/rear	75	50% building 85% impervious
Proposed	14.57	627	240	80 (N) 700+ (S)	260 (E)	35 front 40 side (N) 370 side (S) 125 rear	56.5	3.2% building 27.8% impervious

- 3. Buildings Materials and Design.** Proposed elevations, including colors and materials, are subject to review and approval by the Planning Commission.

The submittal includes elevation drawings showing a three-story building constructed of brick and stone with EIFS predominantly on the third story. The amount of EIFS proposed is within that allowed by Section 12.01.

Architectural elements include varying building lines, windows, brick banding between stories, and an entrance designed with large windows and a hipped roof. The entrance canopy is not connected to the building and seems like a freestanding pavilion. It could be better integrated into the overall building design, especially as it relates to the multi-story glass atrium it abuts.

The two facades that face existing residential (north and east) both lack the same vertical architectural elements that exist on the more public facades that face the interstate and Latson Road; however, the applicant has noted their intent “to create feature elements on those facades of the building facing the main road (Latson) and the highway.”

- 4. Parking.** Based on the requirement for medical office, Phase I requires 300 parking spaces, while only 293 are proposed.

Section 14.02.04 allows the Planning Commission to reduce the total amount of parking required when two or more uses/buildings with different peak demands share parking. In response, the applicant has noted a long history of medical development whereby a 4.5 spaces per 1,000 square feet has proven adequate and that the proposed ratio is 4.88 spaces per 1,000 square feet. If the Commission finds this ratio to be acceptable, they may allow the slight reduction.

Proposed parking spaces and drive aisles meet the minimum standards of Section 14.06, although the applicant should be aware that spaces are required to be double striped.

The number of barrier free spaces (31) exceeds the minimum amount required (8), which is typical (and generally advisable) for medical office uses.

- 5. Loading.** A 9’ by 36’ loading space is provided in the front yard. The location and dimensional requirements do not meet the standards of Section 14.08.

The Planning Commission has discretion to modify the size requirements based upon evidence from the applicant that the space will function properly for the use; however, the Ordinance does not provide discretion for the yard location.

In their response letter, the applicant indicates that the loading area is intended for short term deliveries (UPS, FedEx) with close proximity to a main entrance. Additionally, the space has been designed so as to not disrupt traffic flow through the parking lot.

If the Township is open to the proposed placement, this matter could be mitigated by an amendment to the PUD Agreement allowing a limited loading/unloading space in the front yard. Conversely, the applicant could relocate the space to a side or rear yard.

- 6. Vehicular Circulation.** The northerly driveway provides insufficient spacing from the adjacent driveway on the multiple-family property; however, these are both existing drives and the applicant proposes to restrict egress turning movements to right turns only.

During preliminary discussions with the applicant, it was suggested they contact the owner/manager of the multiple-family development to investigate a shared driveway between the two uses. It is our understanding that these discussions did not progress to a mutual agreement.

Our only additional comment is that the future side yard parking to the north will need to be modified to accommodate a 24-foot wide drive aisle and the mobile imaging unit.

7. **Pedestrian Circulation.** An 8-foot wide pathway is proposed along the east side of Latson Road, as required. Internal sidewalks are proposed between the parking lot and building entrances with future connections shown for future phases. Additionally, there are pedestrian aisles noted by pavement markings within the parking lot.

The NR-PUD site design standards require protection of pedestrians from vehicular circulation, and while these designated aisles are intended to assist pedestrians, we believe that there is potential for conflict between motorists and pedestrians. There could be an opportunity to increase safety for pedestrians by improving these aisles with a raised surface, alternative pavement material, additional signage and/or additional crossings.

In response, the applicant notes the use of similar treatments to pedestrian safety on nearby developments, although no specific examples are provided. If the Township is agreeable to this design, we are amenable; however, we felt it was worth discussion.

8. **Landscaping.** The table below contains our review of the proposed landscape plan for Phase I only:

Location	Requirements	Proposed	Comments
Front yard greenbelt	13 canopy trees 20' width	14 canopy trees 35' width	Requirements met
Detention pond	17 trees 170 shrubs	13 canopy trees 4 evergreen trees 170 shrubs	Requirements met
Parking lot	20 canopy trees 1,950 SF landscaped area Hedgerow or masonry wall	61 canopy trees 5,800 SF landscaped area Hedgerow	Requirement met
Buffer Zone "B" (north)	20 canopy trees 20 evergreen trees 78 shrubs 6' wall/fence or 3' berm 20' width	20 canopy trees 22 evergreen trees 75 shrubs berm 20' width	Deficient by 3 shrubs
Buffer Zone "B" (partial along I-96)	11 canopy trees 11 evergreen trees 44 shrubs 6' wall/fence or 3' berm 20' width	11 canopy trees 11 evergreen trees 44 shrubs 20' width	Wall/fence or berm required – applicant requests to defer this in conjunction with development of the south side of the site

There are two clean-up items on the landscape plan:

- The shrubs in northerly buffer zone are not identified by type; and
- There is a note of 3 River Birch trees on the north side of the building that are not depicted.

Lastly, it should be noted that future phases do not leave sufficient buffer zone depths to the south or east. In response, the applicant has indicated that their depiction of future phases is only conceptual at this time.

**9. Waste Receptacle and Enclosure.** Phase I includes a waste receptacle area north of the proposed building, in a permitted location. The enclosure and concrete base pad also comply with Ordinance requirements.

**10. Exterior Lighting.** The revised submittal includes two different lighting plans – one of which is the electrical site plan. Complicating review is the fact that the two plans contain different information. The applicant must correct these plans for consistency and to avoid any future confusion.

The lighting plan includes 19 pole mounted light fixtures throughout the parking lot and 10 bollard fixtures on the south side of the proposed building (though the electrical site plan shows only 7 bollards).

Fixture details, pole heights and photometric readings comply with Ordinance standards.

Lastly, the PUD Agreement and NR-PUD site design standards require ornamental lighting along Latson Road – the electrical site plan provides 2 decorative acorn-style fixtures (but these are not shown on the lighting plan).

**11. Signage.** The submittal proposes a number of signs, including 1 highway sign, 2 wall signs, 1 monument sign and several directional signs (which are exempt from the sign regulations).

The highway sign meets the provisions of the PUD Agreement, although it appears to be mislabeled as a directional sign on Sheet C1.0. Additionally, the main wall sign and monument sign comply with the standards of Table 16.1, while the Planning Commission may allow the 2<sup>nd</sup> wall sign per Footnote (2).

Additionally, the site design standards for an NR-PUD require inclusion of a Township entranceway landmark at the intersection of an arterial street and expressway ramp. In response, the applicant notes that this was discussed with the Township previously and that they are “willing to explore the idea of providing land for a Township funded gateway.” This item likely warrants further discussion, as it is a requirement of the Ordinance and not something, in our opinion, that necessitates Township funding.

**12. Impact Assessment.** The submittal includes a revised Impact Assessment (dated 5/4/15). In summary, the Assessment notes that the project is not anticipated to adversely impact natural features, public services/utilities or surrounding land uses. Given the size and nature of the proposal, a traffic impact study was also prepared.

Additionally, we previously requested that the Assessment address the potential impacts of the mobile imaging unit, which is included as paragraph (K). In summary:

- The unit will be on site 2 days per week and will arrive during normal business hours (8AM to 6PM);
- The tractor that drives the unit will not run during operation, while power is supplied by the building;
- There is noise associated with the unit that “may” be heard from up to 150’ away, but a berm is proposed along the north side lot line which should help mitigate the noise.

Our only remaining concerns are tied to the hours of operation for the imaging unit when located on site and any exterior lighting associated with its use.

**13. Additional Considerations.** Additional NR-PUD site design standards (not already noted above) include:

- Pedestrian gathering and seating plazas;
- Site amenities, such as bike racks, benches, information kiosks, art, planters and streetscape elements; and
- Visible detention areas shall be designed to have a natural appearance (such as variable shape, natural arrangement or landscape materials, aerated fountains, and boulder accent walls).

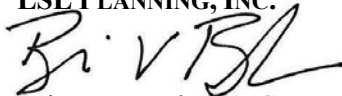
The revised plan includes bike racks and seating areas in Phase I and the response letter provided by the applicant states that “the stormwater basin is natural in form and includes a naturalized planting scheme to enhance its appearance.”

The applicant also indicates that future amenities will be evaluated during individual site plan reviews.

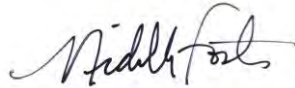
Should you have any questions concerning this matter, please do not hesitate to contact our office. We can be reached by phone at (248) 586-0505, or via e-mail at [borden@lslplanning.com](mailto:borden@lslplanning.com) and [foster@lslplanning.com](mailto:foster@lslplanning.com).

Sincerely,

**LSL PLANNING, INC.**



Brian V. Borden, AICP  
Principal Planner



Michelle Foster  
Project Planner





May 6, 2015

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

**Re: Livingston Ambulatory Facility Site Plan Review**

Dear Ms. Van Marter:

We have reviewed the updated site plan documents for the Livingston Ambulatory Facility by Frauenshuh Healthcare Real Estate Solutions dated April 23, 2015. The site is located on the east side of Latson Road, just north of the I-96 off ramps on the previous Latson Elementary School site. The petitioner is planning to construct a new 20,500 sq. ft. (footprint) medical office facility as the first phase of a development planned to include up to 74,700 square feet of additional building coverage on the site.

Tetra Tech has reviewed the documents and offers the following comments for consideration by the planning commission:

**SUMMARY**

1. Impact statement should include the petitioned building usage(s) on site and associated water usage calculations for the current proposed development. A development of this size will likely require an impact determination, consisting of a development-wide water main basis of design.
2. New valve required on existing water main to complete loop.
3. Existing sewer and manhole on site isn't currently owned and operated by MHOG.
4. On-site sanitary layout concerns.

**SITE PLAN**

1. The petitioner responded to our previous comment regarding our recommendation that they provide anticipated water demands for the entire build out of the site. They provided documentation through email correspondence from MHOG and Tetra Tech that there would be adequate water supply capacity on the site with a looped distribution network, as shown in the attached sketches. What is being sought out is a development-wide basis of design for the projected usage off this distribution line. Based on the Genoa Township Equivalent User Table, Doctor's Offices are considered to account for 0.6 REUs per 1,000 sq. ft. of floor space. For this phase of the development, that calculation would be  $0.6 \text{ REU} / 1000 \text{ sft} \times 56,060 \text{ sft (usable space)} = \text{approximately } 33.6 \text{ REU's}$ . Using the approved/assumed usage for the other lots within the overall development, a table could be generated showing all potential usage rates upon ultimate build-out. This may impact the size of piping needed to provide adequate service. These calculations will also be used to estimate the taps fees for this site. The

**Tetra Tech**

401 South Washington Square, Suite 100, Lansing, MI 48933  
Tel 517.316.3930 Fax 517.484.8140 [www.tetrattech.com](http://www.tetrattech.com)

petitioner should include the information in the impact assessment for discussions with the Township Utility Departments.

2. Per correspondence with the Township Engineer on March 30, 2015, in order to complete the looping of the water main on site, a new isolation valve will be required on the existing water main, as shown on the drawings attached to the emails. The petitioner shows notes to utilize a tapping sleeve and valve for the eastern looped connection and to connect to an existing valve for the western connection. A review of MHOG record drawings showed that there is no existing valve to connect to for the western connection, requiring a tapping sleeve and valve for that tie-in also. Additionally, the isolation valve MHOG requested has not been included in the site plan. This valve is needed to provide a normally-closed isolation point between the two loop connections. See the attached sketch for clarification on the existing and proposed connections.
3. The existing manhole the petitioner is planning to connect to for reuse was previously a private manhole. The local municipality does not have any record of ownership or maintenance, and found the structure to be out of standard. If the petitioner is planning to reuse the existing manhole and sewer on site, a note on the drawings must be included to inspect and rehab the existing sewer as necessary and to repair the existing manhole to meet current Township Standards. This portion of sewer will also need to have an easement granted to the Township to perform future maintenance work.
4. The petitioner should work closely with the Township Utility Department during development of construction plans for the route and discharge location of the proposed force main(s) to serve future phases on the south side of the site. The proposed gravity manhole to accept the future force main discharge will require an interior corrosion-resistant lining, per standards. There is no location for the sanitary service lateral for Building 2, so in order to avoid removing pavement in the future, the manhole should be moved east, or a lateral be stubbed outside of the Phase I paving limits. Consideration of having a single, larger force main extended across the parking lot to limit only one discharge pipe into the manhole is preferred.

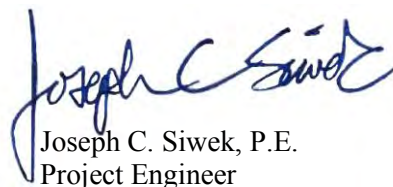
The Township should consider these issues in your discussion of the site plan application. Since the water improvements will be public infrastructure and require a plan review and permitting through MHOG and the MDEQ, we suggest the petitioner address the above comments in their construction plan submittal. We have no other engineering-related objections to the site plan as proposed.

Please call if you have any questions.

Sincerely,



Gary J. Markstrom, P.E.  
Unit Vice President



Joseph C. Siwek, P.E.  
Project Engineer

Copy: Chris Lambrecht, Frauenshuh Health Care Real Estate Solutions



# BRIGHTON AREA FIRE AUTHORITY

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

April 28, 2015

Kelly VanMarter  
Genoa Township  
2911 Dorr Road  
Brighton, MI 48116

RE: Providence Medical Office – Phase 1  
1201 S. Latson Rd.  
Revised Site Plan Review

Dear Kelly:

The Brighton Area Fire Department has reviewed the above mentioned site plan. The plans were received for review on April 24, 2015 and the drawings are dated April 23, 2015. The project is based on a new 3-story, 60,000 square foot Medical Office Building. This is Phase 1 of a multi-phase project with multiple out lot building planned for the future. The plan review is based on the requirements of the International Fire Code (IFC) 2012 edition. Previous comments appear to be addressed by the applicant in the revised submittal.

The applicant's revised plans and rebuttal letter have addressed the majority of the fire code issues and the submittal is now in general conformity with the adopted fire prevention code with the following items to be verified.

1. **CORRECTED:** The access roads to the buildings shall be a minimum of 26' wide. This should include the access drive on the north side, south side, and the two primary north/south drives through the parking lots to the building. The proposed location of the Mobile Imaging Trailer will impede the traffic flow on the north side of the building. ***The applicant needs to re-dimension the north access drive to show that it is 26' wide.***  
IFC D105.1
2. **TO BE VERIFIED:** Access roads shall be constructed to be capable of supporting the imposed load of fire apparatus weighing at least 75,000 pounds and shall be designed to accommodate a 50' outside turning radius. ***The applicant needs to add a note to the paving notes that reflects this design standard.***  
IFC 503.2
3. **TO BE VERIFIED:** The access roads to the building shall posted as "No Parking – Fire Lane". ***Additional signage is need on the north access drive.***  
IFC D103.6
4. **CORRECTED:** The drive under the canopy at the building main entrance shall be confirmed to have a minimum clearance of 13' 6" above the finish grade.  
IFC 503.2.1
5. **CORRECTED:** The following modifications shall be made to the proposed hydrant locations:
  - A. The hydrant at the northeast corner of the property should be relocated to the end of the cul-de-sac turnaround or to future parking island approximately 60' to the south of its current location. The current location would be blocked future parked cars.



- B. The hydrant proposed near the dumpster enclosure can be eliminated. The hydrant spacing is adequate without this hydrant.

IFC C105

6. **CORRECTED:** The building will be provided with an automatic sprinkler system in accordance with NFPA 13, *Standard for the Installation of Automatic Sprinkler Systems*. The following revisions shall be made regarding this proposed system.

A. The Fire Department Connection shall be relocated to the front/address side of the building (S. Latson Rd). Suggested to remain in the area of the northwest corner of the building in an accessible location within 100' of the hydrant.

B. The size and a controlling gate valve for the fire protection lead shall be indicated on the utility site plan. ***The size of the FP main is shown as 4". The applicant will verify with their FP designer that this is adequate.***

IFC 903

7. **CORRECTED:** During the construction process the building will be evaluated for approved emergency responder radio coverage. If coverage is found to be inadequate, the contractor, building owner will need to provide an approved system in the building. This is to ensure that public safety agencies have adequate radio coverage while operating inside the building. ***Applicant has acknowledged the need to evaluate the radio coverage.***

IFC 510

8. **CORRECTED:** A KNOX rapid access box shall be located adjacent to the front door of the structure. The location of a key box (Knox Box) should be indicated on future submittals.

IFC 506.1

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 "Michael Evans".

Michael Evans, EFO, CFPS  
Deputy Fire Chief

IMPACT ASSESSMENT  
“LIVINGSTON AMBULATORY FACILITY”  
GENOA TOWNSHIP  
LIVINGSTON COUNTY, MI

03.23.15  
Rev. 05.04.15

The following assessment follows the requirements of Section 18.07 “Written Impact Assessment Requirements” of The Genoa Township Zoning Ordinance

**A. Prepared for:**

FRAUENSHUH HEALTHCARE REAL ESTATE SOLUTIONS  
c/o Mr. Chris Lambrecht  
3601 Minnesota Drive, Suite 800  
Minneapolis, MN 55435

Prepared by:  
VIRIDIS Design Group  
313 North Burdick St.  
Kalamazoo, MI 49007  
269.978.5143

**B. Description of the site including improvements, natural feature, and location.**

The 14.57 acre former Latson Elementary School site (1201 S. Latson Road) is located northeast of the new I-96 interchange at Latson Road. The previous buildings have been removed from the site with the exception of minor sanitary structure and related pipe which will be removed as part of the development of the first phase of the site. There are two (2) existing commercial drives located on the west side of the site at the Grand Oaks intersection and at the northwest corner of the site. The concrete drives have been constructed for three lanes each.

The site is relatively flat and gently slopes from the Northwest to the Southeast eventually surface draining into the MDOT R.O.W. for I-69 and the west bound Latson Road off ramp. The elevations range from 1017 at the Grand Oaks drive entry to 994 at the southeast corner of the parcel

Existing on-site utilities include an 8” sanitary sewer along Latson Road. An 8” public water main is located approximately 15 feet south of the north property line. And there are existing stormwater catch basins that previously conveyed runoff to the southern portion of the property.

Adjacent properties include:

North – Genoa Place Apartments – Zoned - HDR  
East – Genoa Place Apartments – Zoned - HDR  
South – MDOT – I-96  
West – Lowes Home Centers – Zoned – NRPUD



### **C. Impact on Natural Features:**

The site is relatively flat gently sloping from the NW to the SE. USDA Soil conservation Service "Soil Survey of Livingston county, Michigan", indicates native soils consist of:

1. MoB – Miami loam, 2-6 percent slopes. Surface runoff is slow, permeability is moderate and erosion hazard is slight.

Vegetative cover for the includes low grasses and beginning succession growth. There are no canopy trees present on the parcel.

The national wetland inventory indicates no regulated wetland areas exist on the site.

### **D. Impact on stormwater management and description of soil erosion control measures during construction.**

Surface runoff during construction will utilize BMPs and methods set forth by The Livingston County Drain Commissioner. These methods will include phased development, temporary and permanent seeding, mulching/blanketing, silt fence, silt sacks.

Construction may include periods of dust, vibration noise and smoke but will be controlled to the extent possible. Dust will be controlled using appropriate dust suppression measures.

The proposed development will include the construction of a site-wide stormwater detention basin in the southeast quadrant of the site. This basin has been sized for the entire build out and will include a slow release into the MDOT R.O.W. This has been design to current stormwater management requirements (100 year event). Runoff will be collected in a site-wide piped system and delivered to the basin where the first flush will be treated in a forebay before entering the storage facility.

### **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 would negatively impact adjacent properties.**

This parcel is identified as Regional Commercial in Master Plan and will be developed as a Non-Residential Planned Unit Development. The first phase is planned as a 3 story, 60,000 SF medical office building located on the northern portion of the site. This building will house physician offices and medical support services related to medical practice. The offices are compatible with normal business hours associated with retail or other allowable uses within the NRPUS classification. The north side of the first phase building will include a recessed dock for a mobile MRI trailer unit which will be periodically stationed at the site for scheduled patient services. The second (approximately - 10,000 SF) and third phases (approximately - 40,000 SF) are planned to be medical related facilities and may include additional medical office floor space as well as an outpatient surgical center. All of these services are consistent with similar and allowable uses within the NRPUD designation. The configuration of the medical portion of the development shields the main parking area from the adjacent residential uses. The site plan includes generous buffers between the adjacent uses to provide adequate separation from

adjoining properties.

The south portion of the site will be developed to include allowable uses such as retail, restaurants or financial services. These uses generally operate within normal business hours between 8 AM and 10 PM. The locations of these facilities places later hour businesses further from the adjacent residential development. In addition the location of these services is well suited to the I-96 access thus reducing additional traffic impacts further north on Latson Road.

Site lighting has been designed to meet current Township standards and minimize impacts on adjacent properties by utilizing cut-off fixtures.

**F. Impact on public facilities and services.**

This development will support its share of the service costs through appropriate taxing methods.

**G. Impact on public utilities.**

The development will be served by public water and sewer systems currently located on the site. Per the South Latson Utility Study Prepared by Tetra Tech, the existing systems have sufficient capacity to serve the anticipated development (See attached email from MHOG). The site plan includes a future looped water service main and a individual lift stations to serve the southern development pads. The medical related buildings will be served by gravity sanitary sewer.

**H. Storage or handling of hazardous materials.**

All hazardous wastes related to medical services will comply with current health requirements and include required emergency planning procedures and protocols. No other hazardous waste related uses are planned for the site. .

**I. Traffic Impact Study.**

Please see attached traffic impact study.

**J. Historical and Cultural Resources.**

There are no historical or culturally significant features related to this site.

**K. Mobile Imaging Unit.**

The mobile imaging unit is scheduled to be on site 2 days per week. The unit would arrive on site sometime during the night and would operate between 8 AM and 6 PM during those days. The tractor does not run during operations and the power is supplied from the building. There is a slight chirping sound associated with the imaging unit that may be heard from up to 150' away. The unit is recessed and there is a berm to the north of the dock which creates a 4' earth wall which should help to deflect/absorb a majority of the sound.

**Water Usage Calculation Worksheet - Genoa Twsp - 1201 N. Latson Road**

REU = 218 Gallons per Day  
 REU Cost = \$5000/unit (Water)  
 REU Cost = \$5500/unit (Sewer)

	Current Property	Add. Twsp. Allowance	Total REUs Available at No Cost
Current Property San REUs:	22	5	27
Current Property Wtr REUs:	20	5	25

**Proposed Frauenshuh Medical Office Bldg. (1201 N. Latson Road - Howell, MI)**

**Comparative Analysis**

Similar Facilities		
Facility 1: Alexander Bldg. Castle Rock, CO Size: 57,550 SF	Facility 2: Bellevue Bldg. Omaha, NE Size: 58,169 SF	Facility 3: Boardman Bldg. Boardman, OH Size: 57,508 SF
<b>Usage Data</b>	<b>Usage Data</b>	<b>Usage Data</b>
Q1: 111,000 Gallons	Q1: 109,208 Gallons	Q1: 49,200 Gallons
Q2: 92,000 Gallons	Q2: 118,932 Gallons	Q2: 65,900 Gallons
Q3: 105,000 Gallons	Q3: 92,004 Gallons	Q3: 63,200 Gallons
Q4: 125,000 Gallons	Q4: 95,744 Gallons	Q4: 68,300 Gallons
Days: 90/Quarter	Days: 90/Quarter	Days: 90/Quarter
Daily Usage (gal) 1389	Daily Usage (gal) 1321	Daily Usage (gal) 759
Bldg. Usage (REUs) (Daily Usage/ 218 GPD) 6.37	Bldg. Usage (REUs) (Daily Usage/ 218 GPD) 6.06	Bldg. Usage (REUs) (Daily Usage/ 218 GPD) 3.48
Bldg. REUs/Bldg SF/1,000 0.11	Bldg. REUs/Bldg SF/1,000 0.10	Bldg. REUs/Bldg SF/1,000 0.06
Average of 0.11, 0.10, 0.06		
0.09		

Avg. Daily Usage (gallons)

Avg. Daily Usage (REUs)

Daily REUs/1000 SF

Avg. Daily REUs/1000 SF

Recommended Factor

Proposed Latson Road Facility: 61,116 SF  
**REU Assessment: 5.61**  
 (0.09 REU/1000 SF X 60000 SF)

Available Water REUs w/ Parcel: **25**  
 Available Sanitary REUs w/ Parcel: **27**

**Net Available REUs After Phase 1 MOB (Water): 19.39**  
**Net Available REUs After Phase 1 MOB (Sanitary): 21.39**

**Future Site Development**

Future MOB: 10,700 SF  
**Estimated REU Assessment: 1.00** \*Based on Comp. REU Value Calc. Above

Future Sugery Center: 22,400 SF  
**Estimated REU Assessment: 7.56** \*No Comparable Facility in Twsp. Table so use Urgent Care/Medical Clinics (0.27 REU/Doctor)

Future Bank w/ Drive-thru: 3600 SF  
**Estimated REU Assessment: 1.00** (Use 5 doctors/4000 SF)  
 \*Equiv. User Table - 0.12 REU/employee but total not less than 1.0

Future Restaurant (Fast Food) w/ Drive-thru: 3600 SF  
**Estimated REU Assessment: 7.5** \*Equiv. User Table - 7.5 REU/premise

Future Restaurant (w/ Liquor License): 6700 SF  
**Estimated REU Assessment: 26.8** \*Equiv. User Table - 4.0 REU/1000 SF

Future Restaurant (w/ Liquor License): 7200 SF  
**Estimated REU Assessment: 28.8** \*Equiv. User Table - 4.0 REU/1000 SF

**Net Available REUs After Future Development (Water): -53.27**  
**Net Available REUs After Future Development (Sanitary): -51.27**

**Estimated REU Cost (Water): \$266,357.08**  
**Estimated REU Cost (Sanitary): \$281,992.79**  
**Total Estimated Future REU Cost: \$548,349.87**

February 27, 2015

Chris Lambrecht  
Vice President Construction and Development  
Frauenshuh Healthcare Real Estate Solutions  
3601 Minnesota Drive, Suite 800  
Minneapolis, MN 55435

Regarding: Revised Traffic Impact Study for Providence Medical Building, Genoa Township, Michigan

Mr. Lambrecht,

The services of RS Engineering, LLC (RSE) were retained by Frauenshuh Healthcare Real Estate Solutions to provide a traffic impact study (TIS) for the proposed Providence Medical Building development in Genoa Township, Michigan. The objective of this study was to determine the impact of the trips generated by the proposed site development on the existing and proposed adjacent roadways and intersections. A focus of this study was the operations of the North Site Driveway and the impact on the adjacent existing Prentis Apts. driveway to determine if they would operate safely, with adequate mobility, access and circulation.

The final TIS dated February 3, 2015 was reviewed by both the Genoa Township (represented by their traffic consultant, Tetra Tech) and the Livingston County Road Commission (LCRC). The comments provided by both organizations and the responses to those comments from RSE are provided herein. In addition, these comments were also discussed verbally with both Tetra Tech and the LCRC to ensure all parties agreed upon these responses to the comments and the subsequent traffic impact study revisions.

#### **Genoa Township Review Comments (Tetra Tech)**

**Comment #1:** *For the trip generation forecast, why were the medical office building sizes split out, but the restaurants were combined? If the medical office sizes are combined to a single 120,000 sq. ft., the trip generation forecasts are the same (AM peak hour) or higher (Daily; PM peak hour).*

**Response:** The site plan shows the MOB in phases, it was assumed that each phase would generate trips as each building came on board. The restaurant land uses are currently undetermined. A total sqft for the outlots was provided by the developer. Since restaurant trip generation use rates calculate trips they may be combined into a total amount, whereas equations are used to calculate the medical offices trip generation and need to be separate.

**Comment #2:** *The pass-by rate for the restaurant uses does not match the rate provided by ITE Trip Generation Handbook, 2<sup>nd</sup> Edition. Additionally, the rate that is provided is only for the PM peak hour, yet the "assumed" rate was applied to Daily, AM and PM peak forecasts. Similarly, a generic rate was applied to the Daily, AM and PM peak hours for the background developments, even though some have separate rates for the AM and PM peak hours. Finally, some pass-by rates were applied to uses that don't have published rates in the ITE Trip Generation Handbook, 2<sup>nd</sup> Edition.*

**Response:** The PM pass-by rates have a range between 23-63%, with an average of 43%. It is expected that the majority of people that would access the proposed restaurants would be site generated, however

some of the traffic may be pass-by on their way home from work and stop at the restaurant. For this site location it was determined that a pass-by rate of 43% is too high, and a conservative number of 25% was applied to the PM peak hour trips only. The use of pass-by trips during the AM and reference to daily pass-by calculations will be removed from the revised analysis and table.

**Comment #3:** *The internal capture reductions seemed a bit high, considering there are only two different land uses on the site, the great difference in sizes of those uses, and the relatively low rates provided by the ITE Trip Generation Handbook, 2<sup>nd</sup> Edition. Additionally, no rates are provided by the AM peak hour (although reductions were applied), there appeared to be internal capture between the medical office buildings (which I do not agree with), and internal capture rates were applied to the background developments, which I don't believe are on the same, interconnected site.*

**Response:** The internal trip capture was between the medical office and the restaurants. The internal trip capture will be removed from this site to provide a conservative analysis.

**Comment #4:** *I don't agree with the same trip distributions being applied during both the AM and PM peak hours. There are likely different patterns during these times.*

**Response:** The site distribution show is a regional distribution. Additional trip generation exhibits will be created to clarify the site traffic distribution.

**Comment #5:** *The LOS analysis sheets in the back of the report were not 2010 HCM Signalized reports; rather the default reports provided by Synchro. However, results likely would not be significantly different.*

**Response:** The signalized intersections timing plans provided by LCRC and MDOT do not conform to HCM standard phasing; including the yellow time, red time and phases. Therefore, to evaluate the operations with the phasing provided, the Synchro methodology was used at the signalized intersections.

**Comment #6:** *Overall intersection operational results were not provided for signalized intersections, nor were overall approach results. It would have been nice to have these documented in the tables in the report.*

**Response:** The overall intersection LOS and Approach LOS will be added to the tables.

---

**LCRC Comments** (responses per conversation with Mike Goryl on 02/24/15)

**Comment #1:** *Table 1 shows very few trips in the a.m. peak for the restaurants. Restaurants open for breakfast would generate about 227 trips in the a.m. versus the 29 shown. Not sure why such a low rate was shown, unless I am missing some info on the future use that would exclude them being open for breakfast.*

**Response:** It will be assumed for analysis purposes the proposed restaurants will not be open during the AM peak period and therefore no trips will be generated. If at a later date the proposed restaurants are open for breakfast, the township may request the restaurants to be further evaluated.



**Comment #2:** *It seems like the volumes on Exhibit 5 are high. I agree with growing the existing Latson volumes per page 9, but it appears that the Table 3 volumes were also grown to get the numbers on Exhibit 5. Need more info on how these numbers were obtained. Also would be nice to have a distribution exhibit for Table 3.*

**Response:** Additional exhibits will be provided to show the trips generated for the adjacent land uses.

**Comment #3:** *Don't agree with the premise on Exhibit 6 that 60 percent of the trips from the north will use the south drive and only 10 percent will use the north drive. The signal at the south drive should create adequate gaps for left turns at the north driveway. I believe that most of the medical office trips will enter at the north drive (unless of course there are restrictions to do so) and most of the restaurant trips will enter at the south drive. Likewise, there should be plenty of gaps for most of the medical office right-turn exiting trips to do so at the north driveway.*

**Response:** Per conversation with Mike Goryl, the revised distribution for the north driveway will include 70% MOB trips enter/exiting from the north at this driveway and 30% enter/exiting from Grand Oaks.

**Comment #4:** *The entering and exiting volumes on Exhibit 7 don't match the totals shown in Table 2. The a.m. trips shown on Exhibit 7 are very close to the total new trips shown in Table 2, but the p.m. trips are much closer to the unadjusted p.m. trips shown in Table 2.*

**Response:** The exhibit will be reviewed to ensure the volumes are correct.

---

The traffic study was revised to incorporate the recommendations and revisions outlined the comments and provided during the conversations. The revised traffic study is attached for your use.

If you have any questions, comments or need anything additional, please do not hesitate to contact me.

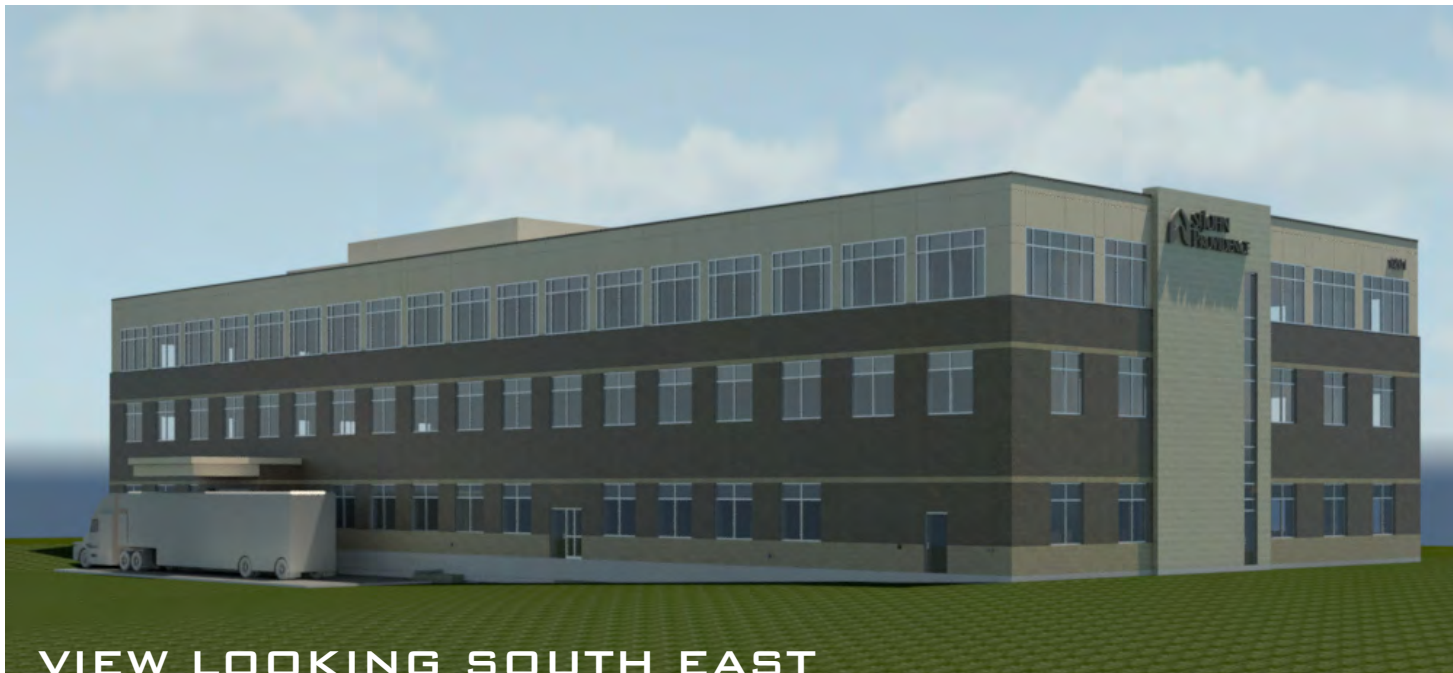
Regards,  
RS Engineering, LLC

Julie Kroll, PE, PTOE  
Traffic Engineer, Project Manager

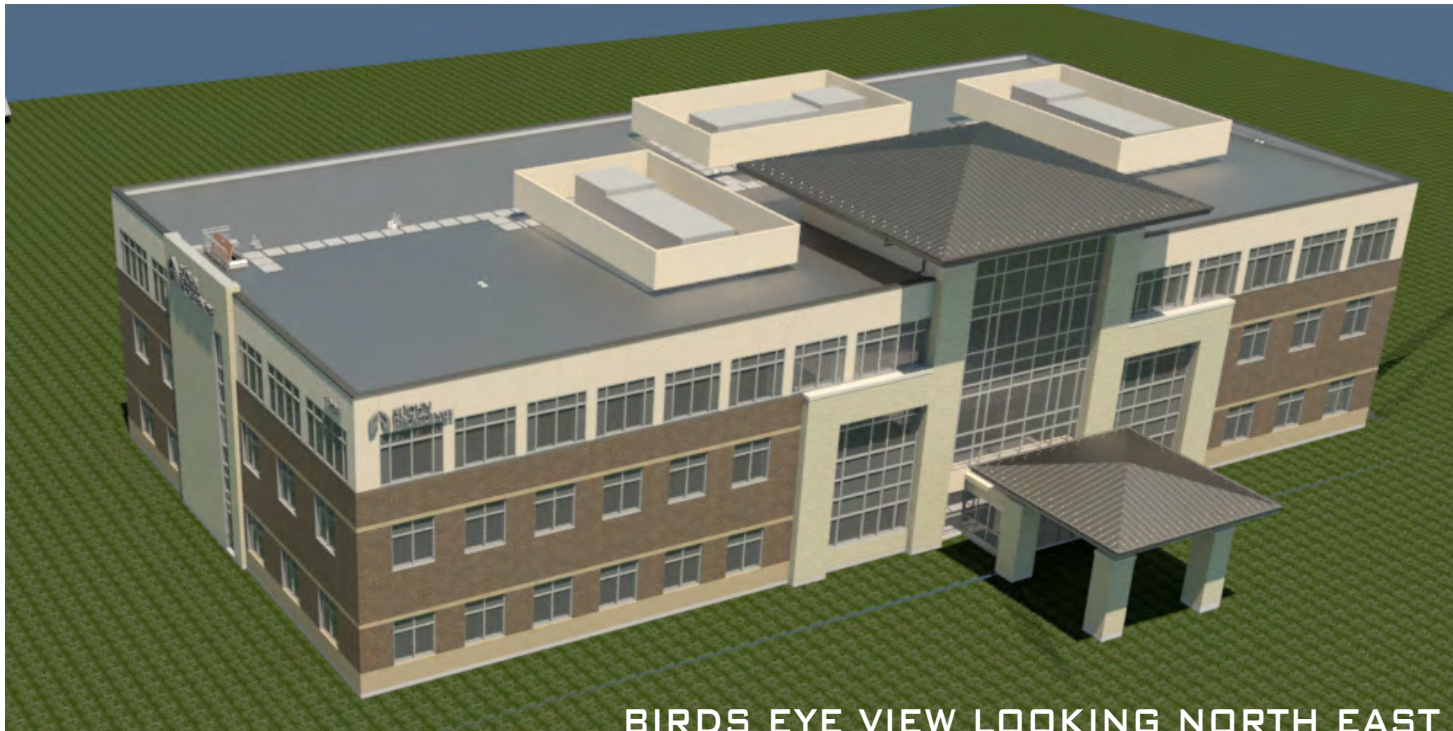
JMK/jmk

Attachments





VIEW LOOKING SOUTH EAST



BIRDS EYE VIEW LOOKING NORTH EAST



# NEW MEDICAL OFFICE BUILDING - NON-RESIDENTIAL PUD: FRAUENSHUH HEALTH CARE DEVELOPMENT GENOA TOWNSHIP, MICHIGAN

## SITE PLAN REVIEW DOCUMENTS

### PROJECT TEAM

**OWNER:**  
FRAUENSHUH HEALTH CARE  
REAL ESTATE SOLUTIONS  
3601 MINNESOTA DRIVE, SUITE 800  
MINNEAPOLIS, MN 55435

**ARCHITECTURE:**  
DIEKEMA HAMANN ARCHITECTURE  
612 SOUTH PARK STREET  
KALAMAZOO, MI 49007  
PH: 269.373.1108  
FX: 269.373.1186  
WEB: DHAE.COM

**LANDSCAPE ARCHITECTURE/CIVIL ENGINEERING (Site Plan Review document preparation):**  
VIRIDIS Design Group  
313 N. BURDICK STREET  
KALAMAZOO, MI 49007  
PH: 269.978.5143  
FX: 866.683.5060  
WEB: www.virdg.com

**MECHANICAL / ELECTRICAL ENGINEERING:**  
DIEKEMA HAMANN ENGINEERING  
KALAMAZOO, MI

**CONSTRUCTION MANAGER:**  
CSM GROUP  
444 W. MICHIGAN AVENUE, SUITE 100  
KALAMAZOO, MI 49007  
PH: 269.746.5600  
FX: 269.746.5699  
WEB: CSMGROUP.COM

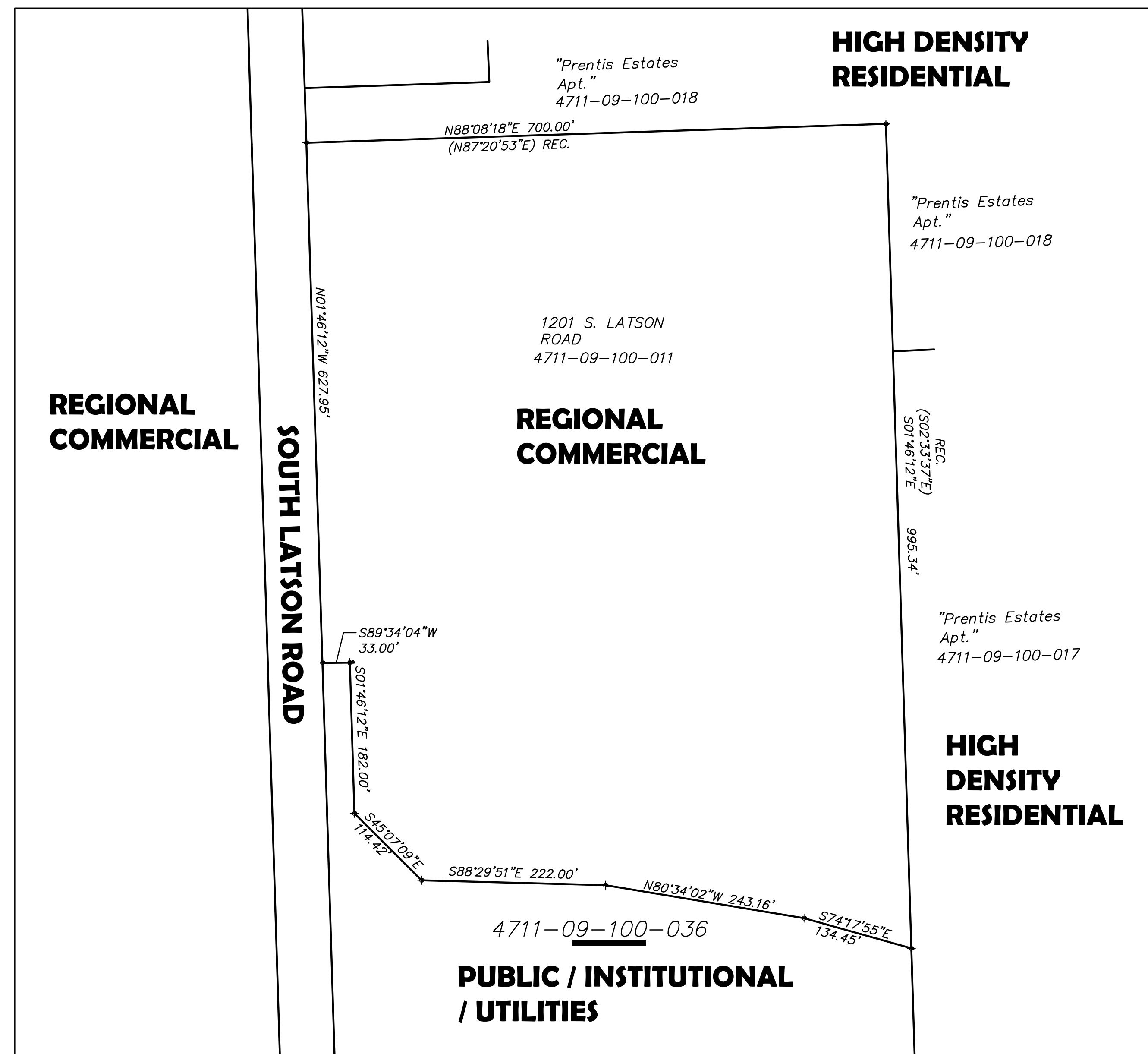
### DRAWING SHEET INDEX

SHEET	DESCRIPTION	ISSUE DATE	NOTE
C0.0	SITE SURVEY / EXISTING CONDITIONS PLAN	APRIL 1, 2015	
C1.0	SITE LAYOUT PLAN	APRIL 1, 2015	
C2.0	SITE GRADING AND DRAINAGE PLAN	APRIL 1, 2015	
C2.1	OVERALL SITE GRADING AND DRAINAGE PLAN (FINAL PUD)	APRIL 1, 2015	
C3.0	LANDSCAPE PLAN	APRIL 1, 2015	
C4.0	STANDARD SANITARY DETAILS	APRIL 23, 2015	
C4.1	STANDARD WATER MAIN DETAILS	APRIL 23, 2015	
A1.1	FIRST FLOOR PLAN	APRIL 1, 2015	
A1.2	SECOND FLOOR PLAN	APRIL 1, 2015	
A1.3	ATHIRD FLOORS PLAN	APRIL 1, 2015	
A1.4	ROOF PLAN AND DETAILS	APRIL 1, 2015	
A3.1	EXTERIOR ELEVATIONS	APRIL 1, 2015	
A3.2	EXTERIOR ELEVATIONS	APRIL 1, 2015	
A3.3	EXTERIOR 3D VIEWS	APRIL 1, 2015	
E0.1	SITE LIGHTING	APRIL 1, 2015	

APRIL 1, 2015  
REV. APRIL 23, 2015

### SITE / ZONING M A P

1" = 100'



### LEGAL DESCRIPTION

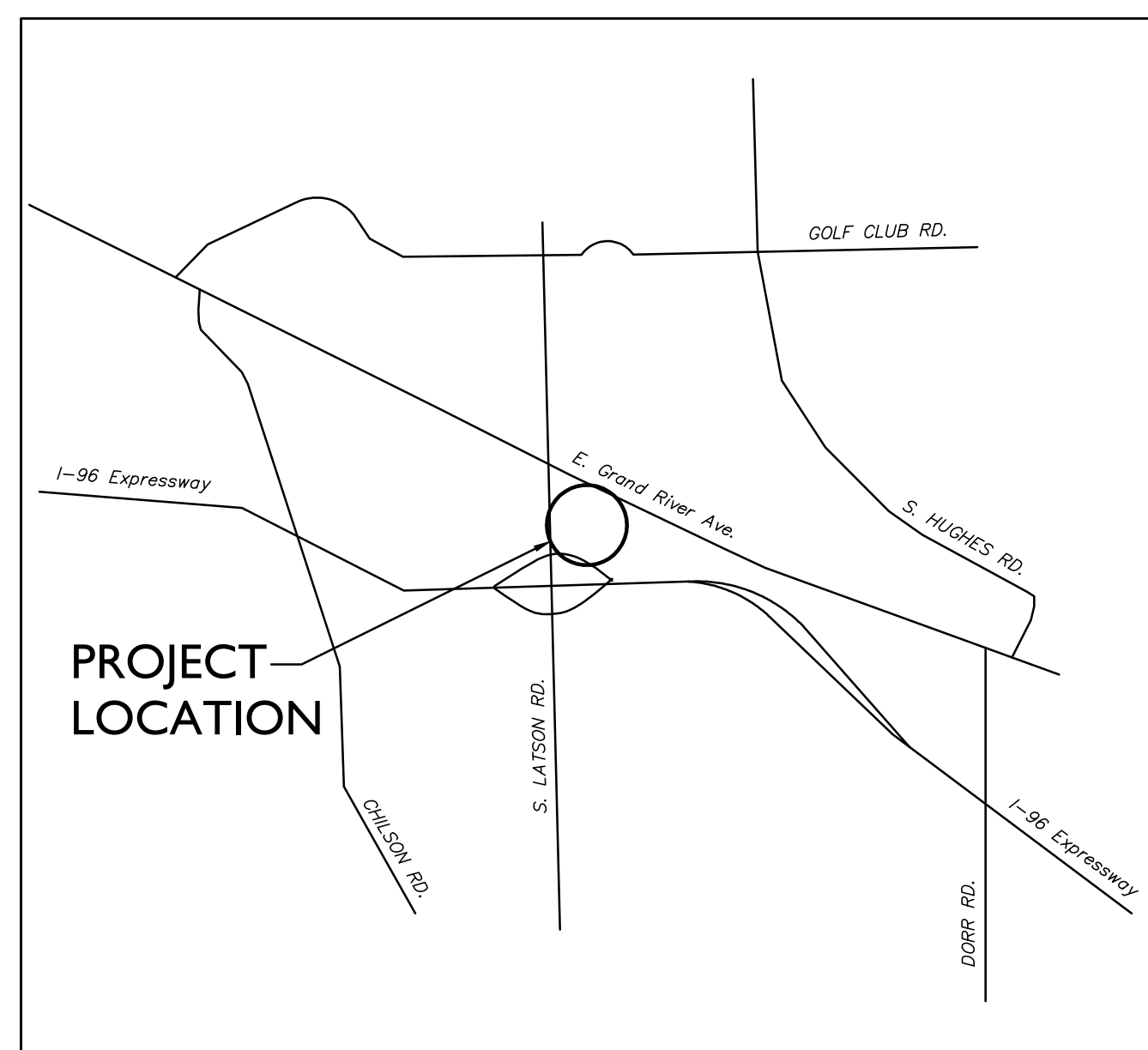
PART OF THE NORTHWEST 1/4 OF SECTION 9, TOWN 2 NORTH, RANGE 5 EAST, GENOA TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN, MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT THE NORTHWEST CORNER OF SECTION 9; THENCE ALONG THE NORTH LINE OF SECTION 8, T2N-R5E, GENOA TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN, S 87°15'42" W, 3.27 FEET; THENCE ALONG THE PROPOSED LATSON ROAD CONSTRUCTION CENTERLINE, THE FOLLOWING THREE (3) COURSES: 1) SOUTHERLY ALONG AN ARC RIGHT, HAVING A LENGTH OF 159.72 FEET, A RADIUS OF 10000.00 FEET, A CENTRAL ANGLE OF 00°54'55", AND A LONG CHORD WHICH BEARS S 00°40'20" W, 159.72 FEET; 2) S 01°07'48" W, 913.15 FEET; 3) SOUTHERLY ALONG AN ARC LEFT, HAVING A LENGTH OF 273.34 FEET, A RADIUS OF 10000.00 FEET, A CENTRAL ANGLE OF 01°33'58", AND A LONG CHORD WHICH BEARS S 00°20'49" W, 273.33 FEET; THENCE N 89°34'04" E, 66.39 FEET, TO THE POINT OF BEGINNING TO THE PARCEL TO BE DESCRIBED; THENCE ALONG THE EXISTING CENTERLINE OF LATSON ROAD & THE WEST LINE OF SECTION 9, N 01°46'12" W (RECORDED AS N 02°33'37" W), 627.95 FEET, SAID POINT BEING THE FOLLOWING COURSE FROM THE NORTHWEST CORNER OF SECTION 9: ALONG THE EXISTING CENTERLINE OF LATSON ROAD AND WEST LINE OF SECTION 9, S 01°46'12" E (RECORDED AS S 02°33'37" E), 718.36 FEET; THENCE N 88°08'18" E (RECORDED AS 87°20'53" E), 700.00 FEET; THENCE S 01°46'12" E (RECORDED AS S 02°33'37" E), 995.34 FEET; THENCE ALONG THE PROPOSED LIMITED ACCESS RIGHT OF WAY LINE, THE FOLLOWING FIVE (5) COURSES: 1) N 74°17'55" W, 134.50 FEET (RECORDED AS 134.45 FEET) 2) N 0°34'02" W, 243.16 FEET; 3) N 88°29'51" W, 222.00 FEET; 4) N 45°07'09" W, 114.42 FEET; 5) N 01°46'12" W, 182.00 FEET; THENCE S 89°34'04" W, 33.00 FEET, TO THE POINT OF BEGINNING, CONTAINING 14.57 ACRES, MORE OR LESS, AND INCLUDING THE USE OF LATSON ROAD. ALSO SUBJECT TO ANY OTHER EASEMENTS OR RESTRICTIONS OF RECORD.

### SOILS INFORMATION

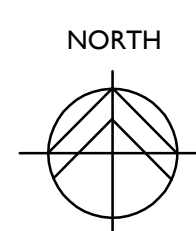
ACCORDING TO USDA SOIL SURVEY, ENTIRE SITE IS COMPOSED OF MIAMI LOAM, 2 TO 6 PERCENT SLOPES.

### LOCATION MAP

NOT TO SCALE



GENOA TOWNSHIP, MICHIGAN



DIEKEMA | HAMANN architecture+engineering



Landscape Architecture - Planning - Design Services  
www.virdg.com

set number

NEW MOB  
GENOA TWP

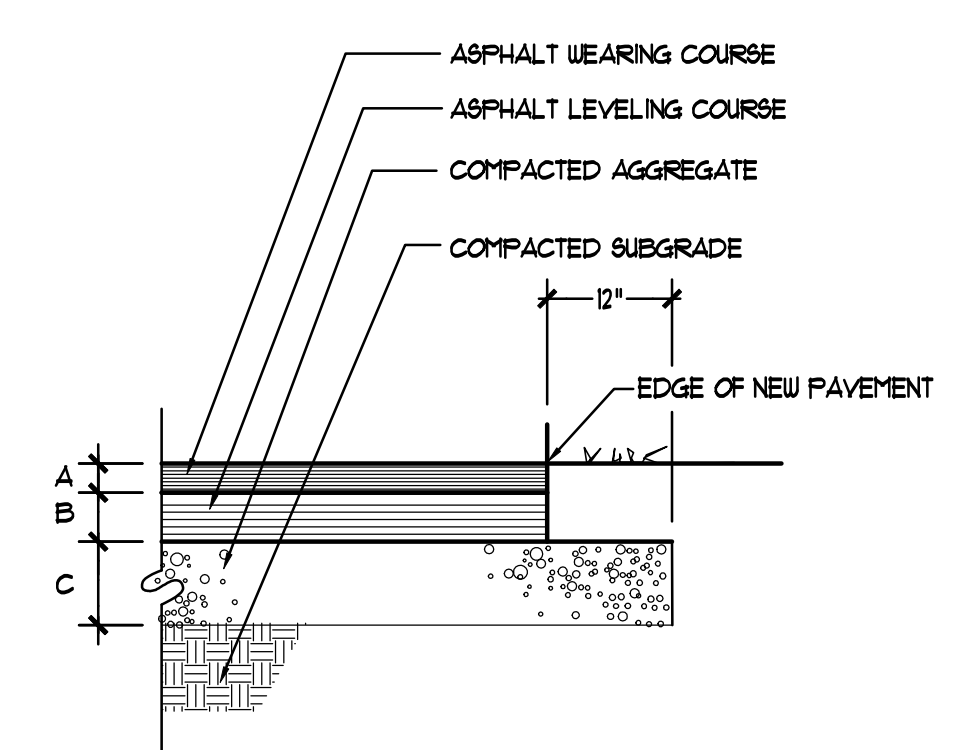
project no.

14094.00



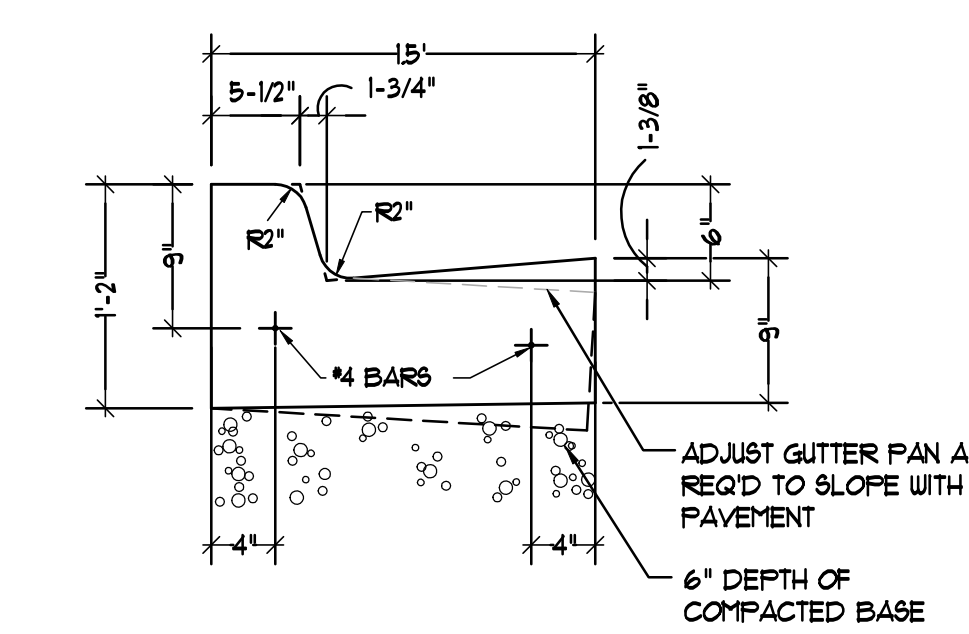
DIP.	DRIVEWAYS	PARKING LOTS
A	2"	2"
B	3"	2"
C	1"	10"

NOTE: PAVEMENT SECTION TO BE CONFIRMED WITH SOIL BORINGS AND GEOTECHNICAL ENGINEERING RECOMMENDATIONS. PAVEMENTS MAY BE DECREASED IN THICKNESS IF APPROPRIATE BASED ON SOIL CONDITIONS.



**Asphalt Paving Detail**

Not to Scale

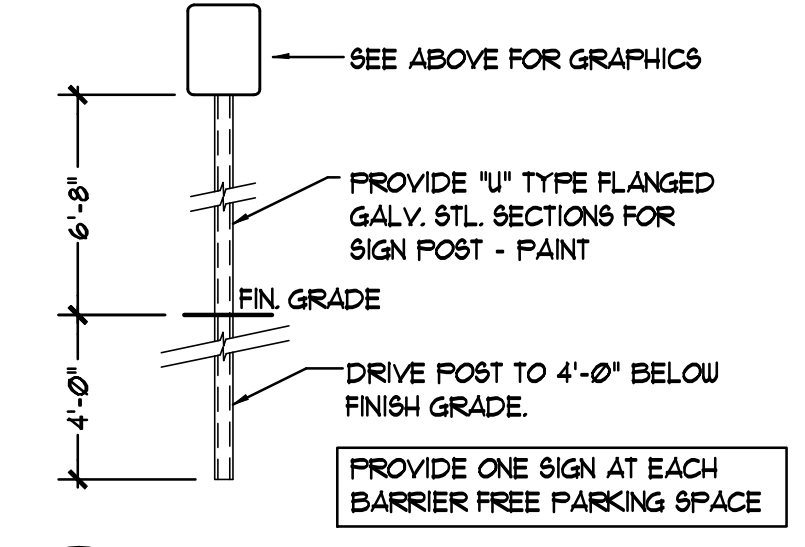


**Concrete Curb & Gutter**

Not to Scale

NOTE: SIGN PANELS SHALL BE 0.020\"/>

- 1. BARRIER FREE PARKING ONLY SIGN (12\"/>
- 2. VAN ACCESSIBLE SIGN (12\"/>



**Barrier Free Signage Detail**

**TRAFFIC SIGN LEGEND**

Symbol	Sign Description	Sign Sided	MDOT Code
(A)	STOP SIGN	SINGLE SIDED	MDOT
(B)	ONE WAY	SINGLE SIDED WITH DIRECTIONAL ARROW	MDOT
(C)	ONE WAY - DO NOT ENTER	SINGLE SIDED	MDOT
(D)	RIGHT TURN ONLY	SINGLE SIDED	MDOT
(E)	BARRIER FREE PARKING SIGN	SINGLE SIDED	SEE ABOVE
(F)	POST SIGN	DOUBLE SIDED	A31
(G)	MONUMENT SIGN	DOUBLE SIDED	A31
(H)	DIRECTIONAL SIGN	DOUBLE SIDED	A31
(J)	NO PARKING - FIRE LANE	SINGLE SIDED	MDOT

**BUILDING / LOT STATISTICS**

TOTAL SITE AREA: 14.51 ACRES

Category	Area (SF)
PHASE I BUILDING COVERAGE:	20,500
OTHER PAVED SURFACES:	156,333
LOT COVERAGE:	176,833
IMPERVIOUS SURFACE RATIO:	28%
<b>FUTURE PHASES:</b>	
BUILDING COVERAGE:	54,200
OTHER PAVED SURFACES:	200,428
<b>TOTAL:</b>	
BUILDING COVERAGE:	74,700
OTHER PAVED SURFACES:	356,761
LOT COVERAGE:	431,461
IMPERVIOUS SURFACE RATIO:	68%
OPEN SPACE:	32%
<b>GROSS FLOOR AREA, PHASE I:</b>	
USABLE FLOOR AREA, PHASE I:	56,060

**PARKING PROVIDED - PHASE I**

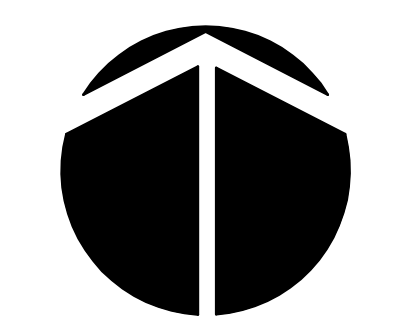
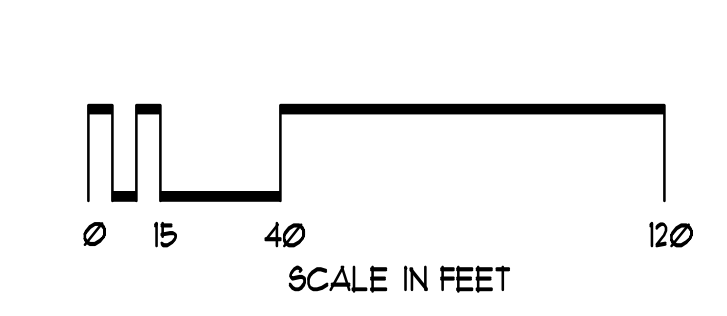
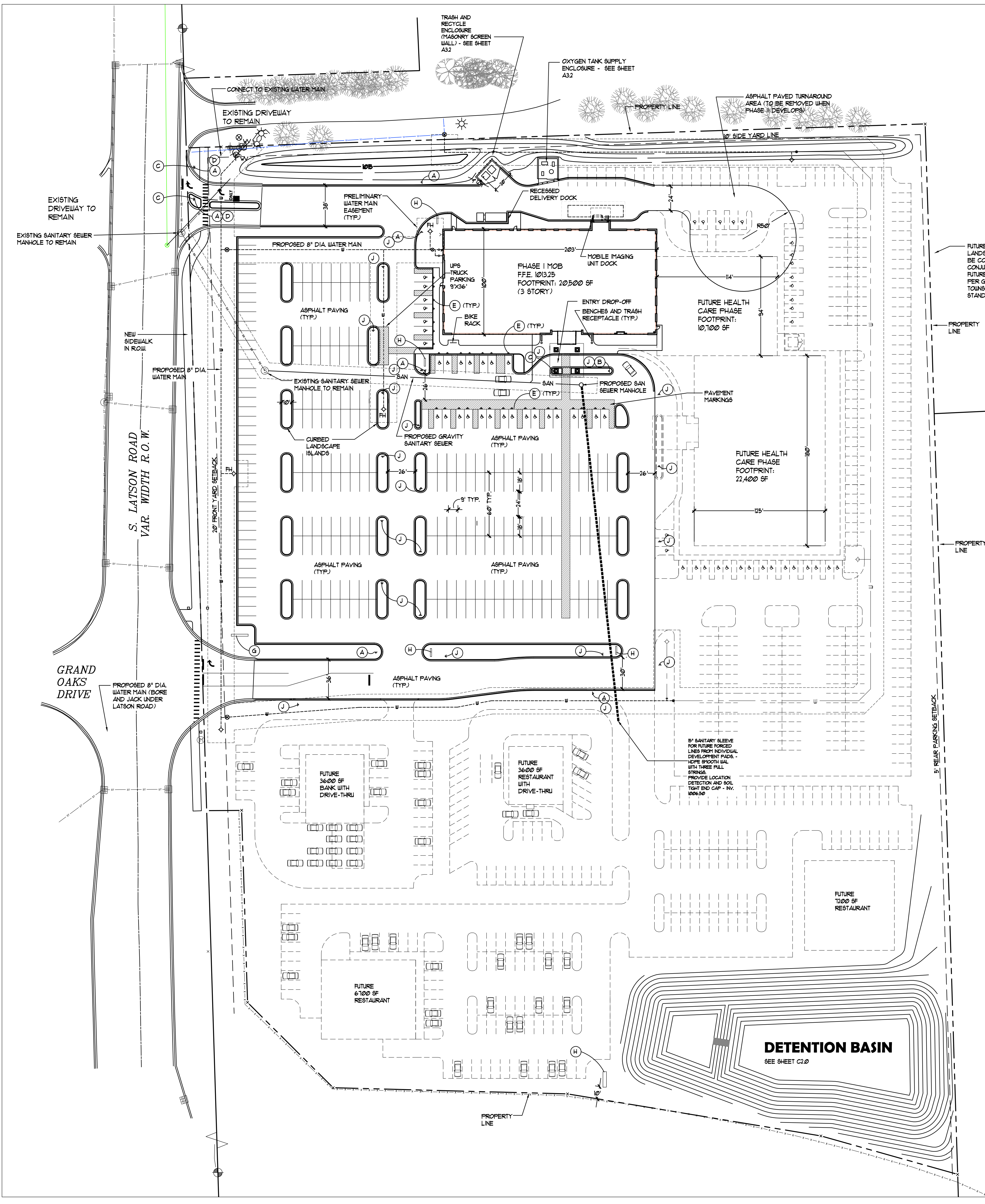
BARRIER-FREE SPACES	31
STANDARD SPACES	262
<b>TOTAL</b>	<b>293</b>

**GENERAL NOTES**

- ALL UTILITY LOCATIONS SHOWN ARE APPROXIMATE. CALL "MISS DIG" AND VERIFY ALL UNDERGROUND UTILITIES BEFORE EXCAVATION AT THE SITE. ANY UTILITIES DISTURBED BY CONSTRUCTION SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE. USE PRIVATE UTILITY LOCATOR SERVICE FOR ANY UTILITIES MISS DIG WILL NOT TRACE.
- ANY DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS SHOULD BE REPORTED TO THE OWNER'S REPRESENTATIVE IMMEDIATELY FOR RESOLUTION.
- ALL DIMENSIONS ARE GIVEN TO OUTSIDE EDGE (FACE) OF CURB OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED. ALL RADII ARE 5' UNLESS OTHERWISE NOTED.
- ALL UNPAVED AREAS DISTURBED BY CONSTRUCTION SHALL RECEIVE 6" TOPSOIL AND LAWN ESTABLISHMENT PER SPECIFICATIONS (UNLESS OTHER PLANTINGS ARE SHOWN). SUPPLEMENT WITH IMPORTED TOPSOIL AS REQUIRED TO PROVIDE 6" DEPTH.
- PROVIDE EXPANSION JOINTS IN NEW CONCRETE WALKS AND CURBS AT 50' MAXIMUM SPACING (AS SPECIFIED) AND CONTROL JOINTS AS SHOWN ON PLANS. PROVIDE EXP. JOINTS WHERE NEW CONCRETE MEETS EXISTING CONCRETE OR OTHER STRUCTURES.
- ALL EXISTING VALVE BOXES, STORM AND SANITARY STRUCTURES TO REMAIN WITHIN THE AREA UNDER CONSTRUCTION SHALL BE ADJUSTED TO NEW FINISH GRADE ELEVATIONS.
- THE EXISTING AND PROPOSED STORM DRAINAGE SYSTEM SHALL BE CLEANED AND FREE FROM SEDIMENT AT THE END OF CONSTRUCTION. THE PROPOSED STORM DRAINAGE SYSTEM IS PRIVATE AND THE PROPERTY OWNER IS RESPONSIBLE FOR ONGOING MAINTENANCE OF THE SYSTEM.
- ALL NEW SIDEWALKS AND PAVEMENTS SHALL BE PLACED AT AN ELEVATION THAT PROVIDES POSITIVE DRAINAGE AND CONSISTENT SLOPES. ENSURE NO LOW SPOTS ARE CREATED. NEW WALKS SHALL MEET EXISTING WALKS FLUSH AT EXISTING GRADE. NOTIFY OWNER AND/OR ENGINEER IF GRADES ON PLAN CANNOT BE MET TO ENSURE POSITIVE DRAINAGE.
- MATCH ADJACENT PAVEMENT GRADES WHERE NEW PAVEMENT BUTTS TO EXISTING PAVING.
- PLACE SILT FENCE ALONG EDGE OF PAVEMENT OR BACK OF CURB FOLLOWING GRADING OPERATIONS UNTIL SLOPES ARE STABILIZED.
- ALL CONSTRUCTION SHALL COMPLY WITH THE SOIL EROSION AND SEDIMENTATION CONTROL REQUIREMENTS OF LIVINGSTON COUNTY AND THE STATE OF MICHIGAN. PROTECTIVE MEASURES SHALL BE PROVIDED AT A MINIMUM AND CONFIRMED WITH LOCAL AGENCY REQUIREMENTS.
- ALL TEMPORARY EROSION CONTROL DEVICES SHALL BE REMOVED AFTER PERMANENT GROUND COVER IS ESTABLISHED. TEMPORARY EROSION CONTROL DEVICES SHOULD BE IN PLACE PRIOR TO EXCAVATION, TO THE EXTENT POSSIBLE.

**BARRIER-FREE NOTES**

- BARRIER-FREE PARKING AND ACCESSIBLE ROUTE(S) MUST COMPLY WITH THE AMERICANS WITH DISABILITIES ACT, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
- 1:48 (2%) MAXIMUM CROSS-SLOPE ON ACCESSIBLE ROUTE.
  - NO CHANGES IN LEVEL GREATER THAN 1/4" ALONG ACCESSIBLE ROUTE.
  - 1:20 (5%) MAXIMUM LONGITUDINAL SLOPE ON ACCESSIBLE ROUTE (EXCEPT WHERE RAMPS ARE PROVIDED).
  - 1:50 (2%) MAXIMUM SLOPE (IN ANY DIRECTION) IN BF. PARKING AND ACCESSIBLES.





**GRADING AND DRAINAGE LEGEND**

SYMBOL	DESCRIPTION
	EXISTING DECIDUOUS TREE
	EXISTING EVERGREEN TREE
	EXISTING SANITARY SEWER
	EXISTING CONTOURS
	PROPOSED 1' CONTOURS
	PROPOSED 5' CONTOURS
	PROPOSED PHASE I STORM SEWER
	PROPOSED PHASE I STORM SEWER CATCH BASIN
	PROPOSED PHASE I WATER MAIN AND SERVICE
	PROPOSED PHASE I HYDRANT
	PROPOSED PHASE I SANITARY FORCED MAIN
	PROPOSED PHASE I SANITARY MANHOLE
	PROPOSED PHASE I SANITARY GRAVITY SEWER
	PROPOSED PHASE II WATER MAIN AND SERVICE
	PROPOSED PHASE II HYDRANT
	PROPOSED PHASE II STORM SEWER AND CATCH BASIN

**Frauenshuh Storm Water Calculations**

1 Pre Development Watershed Area, A <sub>p</sub>	14.566 acres
2 Undeveloped, C <sub>d</sub>	0.30
3 Overland Flow Distance, D	1215 ft
4 Elevation at Top of Overland Flow	1014.00
5 Elevation at Bottom of Overland Flow	994.00
6 Slope, S [(Line 4 - Line 5) / Line 3] x 100	1.65 %
7 Time of Concentration, T <sub>c</sub> [(1.81 - C <sub>d</sub> ) / S] <sup>0.25</sup>	9 min
8 Pre Development Runoff Rate (Q <sub>pc</sub> x A x S)	13.68 cfs
9 Post Development Watershed Area	14.566 acres
10 Composite C developed, C <sub>c</sub>	0.50
11 Design Constant (K) = A x C	7.28
12 Allowable Release Rate (0.2 cfs/acre)	2.91 cfs

**Computation Sheet for Storm Water Storage Calculations**

Storm Duration (T <sub>c</sub> ) (Mins)	Storm Duration (T <sub>c</sub> ) (Secs)	Intensity (I) (In/Hr)	Col #2 x Col #3 (In x Col #3)	Inflow Volume (Col #2 x Col #4) (cfs)	Outflow Volume (Col #2 x Col #5) (cfs)	Storage Volume (Col #6 - Col #5) (cfs)
5	300	9.17	2751.00	26567.73	873.97	25693.76
10	600	7.86	4716.00	45544.68	1747.94	43796.75
15	900	6.88	6192.00	59799.13	2621.90	57177.22
20	1200	6.11	7332.00	70808.66	3495.87	67312.78
30	1800	5.00	9000.00	86917.33	5243.81	81673.52
60	3600	3.24	11664.00	112644.87	10487.62	102157.25
90	5400	2.39	12906.00	124639.46	15731.43	108908.03
120	7200	1.90	13680.00	133114.35	20975.24	112139.11
180	10800	1.34	14472.00	139763.07	28462.86	111300.21

Elev.	Area (sqft)	Volume (cft)	Accd. Vol. (cft)
993.00	9,605	11,241	11,241
994.00	12,877	13,431	24,672
995.00	13,985	15,897	40,569
996.00	17,809	19,183	59,752
997.00	20,556	22,033	81,785
998.00	23,510	25,072	106,858
999.00	26,633	28,239	135,095
1000.00	29,845	33,095	168,190

Provided Basin Volume = 135,095 cft

**BARRIER-FREE NOTES**

BARRIER-FREE PARKING AND ACCESSIBLE ROUTE(S) MUST COMPLY WITH THE AMERICANS WITH DISABILITIES ACT, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:  
 - 1:48 (2%) MAXIMUM CROSS-SLOPE ON ACCESSIBLE ROUTE.  
 - NO CHANGES IN LEVEL GREATER THAN 1/4" ALONG ACCESSIBLE ROUTE, RAMPS OR LANDINGS.  
 - 1:20 (5%) MAXIMUM LONGITUDINAL SLOPE ON ACCESSIBLE ROUTE (EXCEPT WHERE RAMPS ARE PROVIDED).  
 - 1:50 (2%) MAXIMUM SLOPE (IN ANY DIRECTION) IN B.F. PARKING AND ACCESSIBLES.

**GENERAL NOTES**

- ALL UTILITY LOCATIONS SHOWN ARE APPROXIMATE. CALL "MISS DIG" AND VERIFY ALL UNDERGROUND UTILITIES BEFORE EXCAVATION. AT THE SITE. ANY UTILITIES DISTURBED BY CONSTRUCTION SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE. USE PRIVATE UTILITY LOCATOR SERVICE FOR ANY UTILITIES MISS DIG WILL NOT TRACE.
- ANY DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS SHOULD BE REPORTED TO THE OWNER'S REPRESENTATIVE IMMEDIATELY FOR RESOLUTION.
- ALL DIMENSIONS ARE GIVEN TO OUTSIDE EDGE (FACE) OF CURB OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED. ALL RADII ARE 5' UNLESS OTHERWISE NOTED.
- ALL UNPAVED AREAS DISTURBED BY CONSTRUCTION SHALL RECEIVE 6" TOPSOIL AND LAWN ESTABLISHMENT PER SPECIFICATIONS (UNLESS OTHER PLANTINGS ARE SHOWN). SUPPLEMENT WITH IMPORTED TOPSOIL AS REQUIRED TO PROVIDE 6" DEPTH.
- PROVIDE EXPANSION JOINTS IN NEW CONCRETE WALKS AND CURBS AT 50' MAXIMUM SPACING (AS SPECIFIED) AND CONTROL JOINTS AS SHOWN ON PLANS. PROVIDE EXP. JOINTS WHERE NEW CONCRETE MEETS EXISTING CONCRETE OR OTHER STRUCTURES.
- ALL EXISTING VALVE BOXES, STORM AND SANITARY STRUCTURES TO REMAIN WITHIN THE AREA UNDER CONSTRUCTION SHALL BE ADJUSTED TO NEW FINISH GRADE ELEVATIONS.
- THE EXISTING AND PROPOSED STORM DRAINAGE SYSTEM SHALL BE CLEANED AND FREE FROM SEDIMENT AT THE END OF CONSTRUCTION. THE PROPOSED STORM DRAINAGE SYSTEM IS PRIVATE AND THE PROPERTY OWNER IS RESPONSIBLE FOR ONGOING MAINTENANCE OF THE SYSTEM.
- ALL NEW SIDEWALKS AND PAVEMENTS SHALL BE PLACED AT AN ELEVATION THAT PROVIDES POSITIVE DRAINAGE AND CONSISTENT SLOPES. ENSURE NO LOW SPOTS ARE CREATED. NEW WALKS SHALL MEET EXISTING WALKS FLUSH AT EXISTING GRADE. NOTIFY OWNER AND/OR ENGINEER IF GRADES ON PLAN CANNOT BE MET TO ENSURE POSITIVE DRAINAGE.
- MATCH ADJACENT PAVEMENT GRADES WHERE NEW PAVEMENT BUTTS TO EXISTING PAVING.
- PLACE SILT FENCE ALONG EDGE OF PAVEMENT OR BACK OF CURB FOLLOWING GRADING OPERATIONS UNTIL SLOPES ARE STABILIZED.
- ALL CONSTRUCTION SHALL COMPLY WITH THE SOIL EROSION AND SEDIMENTATION CONTROL REQUIREMENTS OF LIVINGSTON COUNTY AND THE STATE OF MICHIGAN. PROTECTIVE MEASURES SHALL BE PROVIDED AT A MINIMUM AND CONFIRMED WITH LOCAL AGENCY REQUIREMENTS.
- ALL TEMPORARY EROSION CONTROL DEVICES SHALL BE REMOVED AFTER PERMANENT GROUND COVER IS ESTABLISHED. TEMPORARY EROSION CONTROL DEVICES SHOULD BE IN PLACE PRIOR TO EXCAVATION, TO THE EXTENT POSSIBLE.

**Appendix B: Outlet Control Structure Sample Calculations**

Tributary Area (A) = 14.566 Acres  
 Run-off Coefficient (C) = 0.66  
 Design Constant (K) = A x C = 9.66  
 Allowable Outflow Rate (Q<sub>a</sub>) = 0.2 cfs/acre x A = 2.91 cfs  
 Required Volume (From Table on A-1) = 111,139 cubic feet  
 Bankfull Flood Volume (V<sub>b</sub>) = 8160 x A x C = 78,447 cubic feet  
 First Flush Volume (V<sub>f</sub>) = 1815 x A x C = 17,449 cubic feet

**Detention Basin Elevations**

Bottom of Basin (elev<sub>bb</sub>) = 993.00 feet  
 First Flush Volume Elevation (elev<sub>ff</sub>) = 994.46 feet  
 Bankfull Volume Elevation (elev<sub>bv</sub>) = 997.32 feet  
 100 Year Storm Volume Elevation (elev<sub>100</sub>) = 999.35 feet  
 Spillway Elevation = 100 Year Storm + 0.5' = 999.85 feet  
 Top of Basin = Spillway + 0.5' = 1000.35 feet

**First Flush Volume Orifice Calculations**

First Flush Flow (Q<sub>f</sub>) = V<sub>f</sub> / 86400 = 0.20 cfs  
 h<sub>ff</sub> = 2.5(86400 - elev<sub>ff</sub>) = 0.97 feet  
 Orifice Area (A<sub>o</sub>) = Q<sub>f</sub> / (0.62 x (84.4 x h<sub>ff</sub>)<sup>0.5</sup>) = 0.041 ft<sup>2</sup>  
 d = (4A<sub>o</sub>)<sup>0.5</sup> = 0.223 ft = 2.74 in "use 3/4"

Choose the size and amount of holes necessary to meet the orifice area calculated above. Place openings in A<sub>o</sub> = 0.0412 ft<sup>2</sup> standpipes at bottom of basin. Determine the new detention time based on orifice area of holes (at least 24 hours is required).

Orifice Flow (Q<sub>or</sub>) = A<sub>o</sub> x 0.62 x (84.4 x h<sub>ff</sub>)<sup>0.5</sup> = 0.202 cfs  
 Detention Time (T<sub>d</sub>) = V<sub>b</sub> / Q<sub>or</sub> = 24 hr  
 85.381 sec

**Bankfull Volume Orifice Calculations**

The bankfull volume shall be detained for 36-48 hours. The discharge through the first flush holes shall be checked to see if additional holes are necessary.

h<sub>bv</sub> = 2.5(86400 - elev<sub>bv</sub>) = 4.87 ft  
 Q = 0.62A<sub>o</sub> x (84.4 x h<sub>bv</sub>)<sup>0.5</sup> = 0.452 cfs  
 Holding Time (T) = V<sub>b</sub> / Q = 48.21 hr  
 173.555 sec

**Appendix B: Outlet Control Structure Sample Calculations**

Tributary Area (A) = 14.566 Acres  
 Run-off Coefficient (C) = 0.66  
 Design Constant (K) = A x C = 9.66  
 Allowable Outflow Rate (Q<sub>a</sub>) = 0.2 cfs/acre x A = 2.91 cfs  
 Required Volume (From Table on A-1) = 111,139 cubic feet  
 Bankfull Flood Volume (V<sub>b</sub>) = 8160 x A x C = 78,447 cubic feet  
 First Flush Volume (V<sub>f</sub>) = 1815 x A x C = 17,449 cubic feet

**Detention Basin Elevations**

Bottom of Basin (elev<sub>bb</sub>) = 993.00 feet  
 First Flush Volume Elevation (elev<sub>ff</sub>) = 994.46 feet  
 Bankfull Volume Elevation (elev<sub>bv</sub>) = 997.32 feet  
 100 Year Storm Volume Elevation (elev<sub>100</sub>) = 999.35 feet  
 Spillway Elevation = 100 Year Storm + 0.5' = 999.85 feet  
 Top of Basin = Spillway + 0.5' = 1000.35 feet

**First Flush Volume Orifice Calculations**

First Flush Flow (Q<sub>f</sub>) = V<sub>f</sub> / 86400 = 0.20 cfs  
 h<sub>ff</sub> = 2.5(86400 - elev<sub>ff</sub>) = 0.97 feet  
 Orifice Area (A<sub>o</sub>) = Q<sub>f</sub> / (0.62 x (84.4 x h<sub>ff</sub>)<sup>0.5</sup>) = 0.041 ft<sup>2</sup>  
 d = (4A<sub>o</sub>)<sup>0.5</sup> = 0.223 ft = 2.74 in "use 3/4"

Choose the size and amount of holes necessary to meet the orifice area calculated above. Place openings in A<sub>o</sub> = 0.0412 ft<sup>2</sup> standpipes at bottom of basin. Determine the new detention time based on orifice area of holes (at least 24 hours is required).

Orifice Flow (Q<sub>or</sub>) = A<sub>o</sub> x 0.62 x (84.4 x h<sub>ff</sub>)<sup>0.5</sup> = 0.202 cfs  
 Detention Time (T<sub>d</sub>) = V<sub>b</sub> / Q<sub>or</sub> = 24 hr  
 85.381 sec

**Bankfull Volume Orifice Calculations**

The bankfull volume shall be detained for 36-48 hours. The discharge through the first flush holes shall be checked to see if additional holes are necessary.

h<sub>bv</sub> = 2.5(86400 - elev<sub>bv</sub>) = 4.87 ft  
 Q = 0.62A<sub>o</sub> x (84.4 x h<sub>bv</sub>)<sup>0.5</sup> = 0.452 cfs  
 Holding Time (T) = V<sub>b</sub> / Q = 48.21 hr  
 173.555 sec

**Appendix B: Outlet Control Structure Sample Calculations**

Tributary Area (A) = 14.566 Acres  
 Run-off Coefficient (C) = 0.66  
 Design Constant (K) = A x C = 9.66  
 Allowable Outflow Rate (Q<sub>a</sub>) = 0.2 cfs/acre x A = 2.91 cfs  
 Required Volume (From Table on A-1) = 111,139 cubic feet  
 Bankfull Flood Volume (V<sub>b</sub>) = 8160 x A x C = 78,447 cubic feet  
 First Flush Volume (V<sub>f</sub>) = 1815 x A x C = 17,449 cubic feet

**Detention Basin Elevations**

Bottom of Basin (elev<sub>bb</sub>) = 993.00 feet  
 First Flush Volume Elevation (elev<sub>ff</sub>) = 994.46 feet  
 Bankfull Volume Elevation (elev<sub>bv</sub>) = 997.32 feet  
 100 Year Storm Volume Elevation (elev<sub>100</sub>) = 999.35 feet  
 Spillway Elevation = 100 Year Storm + 0.5' = 999.85 feet  
 Top of Basin = Spillway + 0.5' = 1000.35 feet

**First Flush Volume Orifice Calculations**

First Flush Flow (Q<sub>f</sub>) = V<sub>f</sub> / 86400 = 0.20 cfs  
 h<sub>ff</sub> = 2.5(86400 - elev<sub>ff</sub>) = 0.97 feet  
 Orifice Area (A<sub>o</sub>) = Q<sub>f</sub> / (0.62 x (84.4 x h<sub>ff</sub>)<sup>0.5</sup>) = 0.041 ft<sup>2</sup>  
 d = (4A<sub>o</sub>)<sup>0.5</sup> = 0.223 ft = 2.74 in "use 3/4"

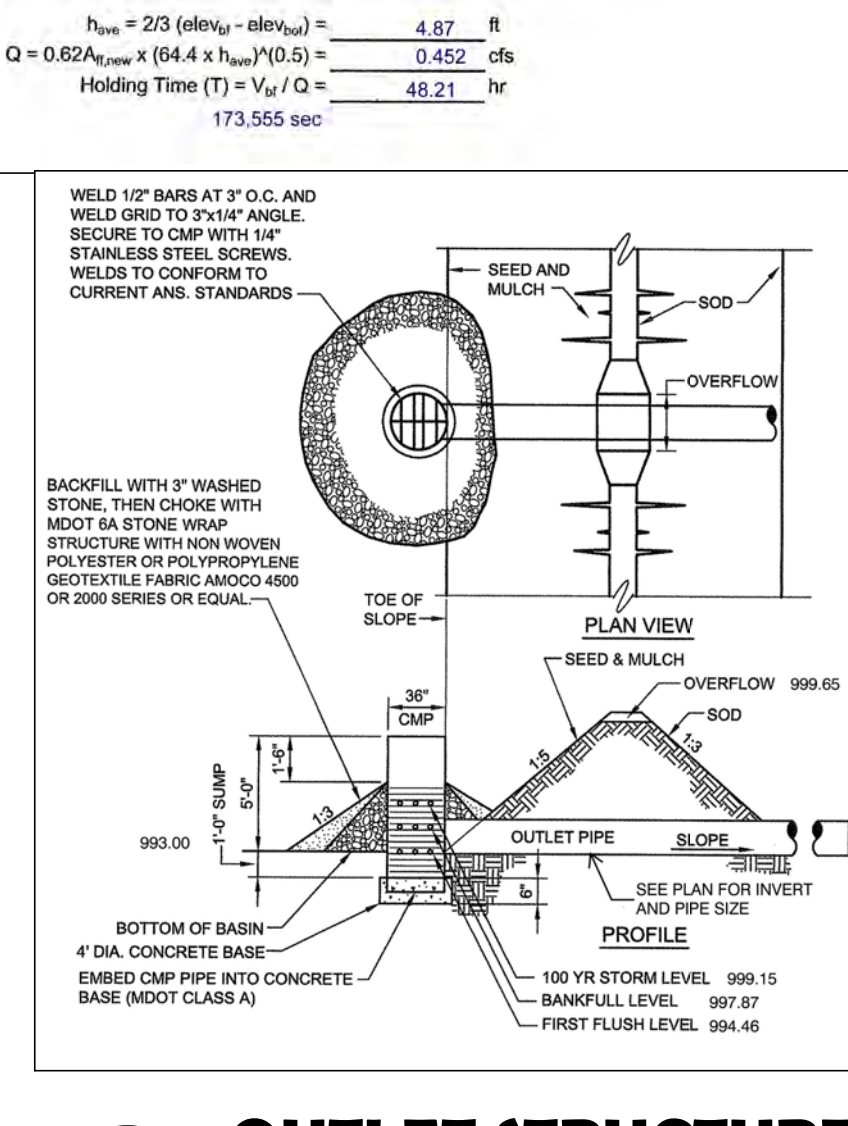
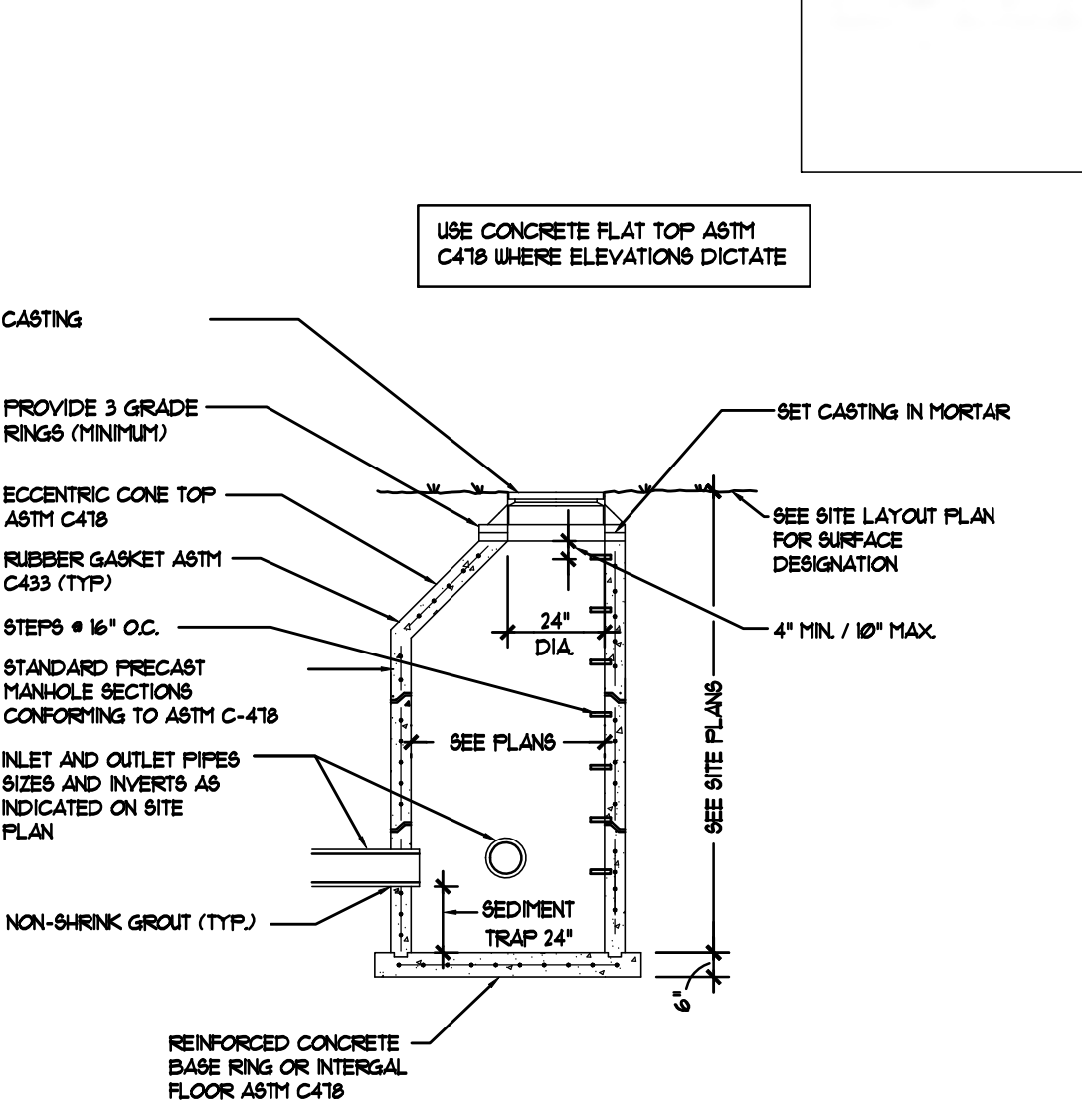
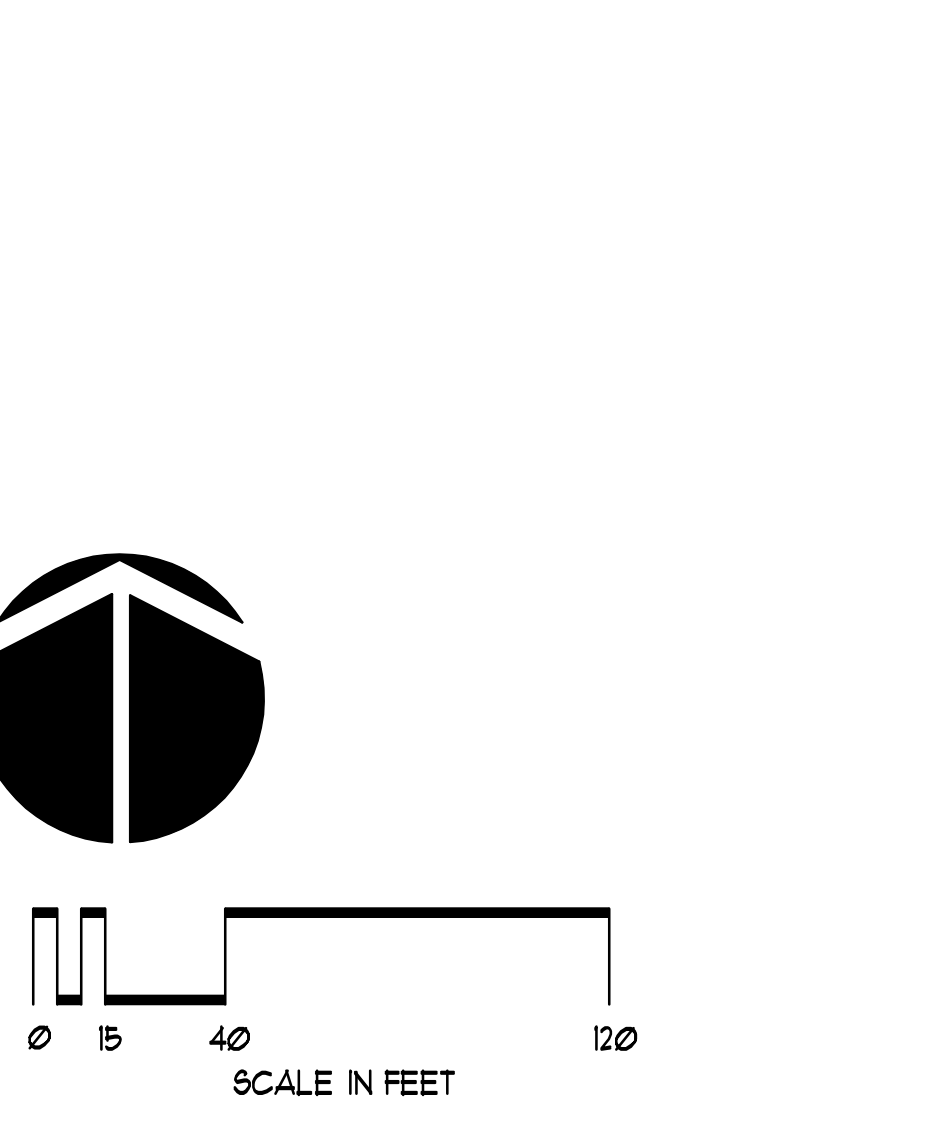
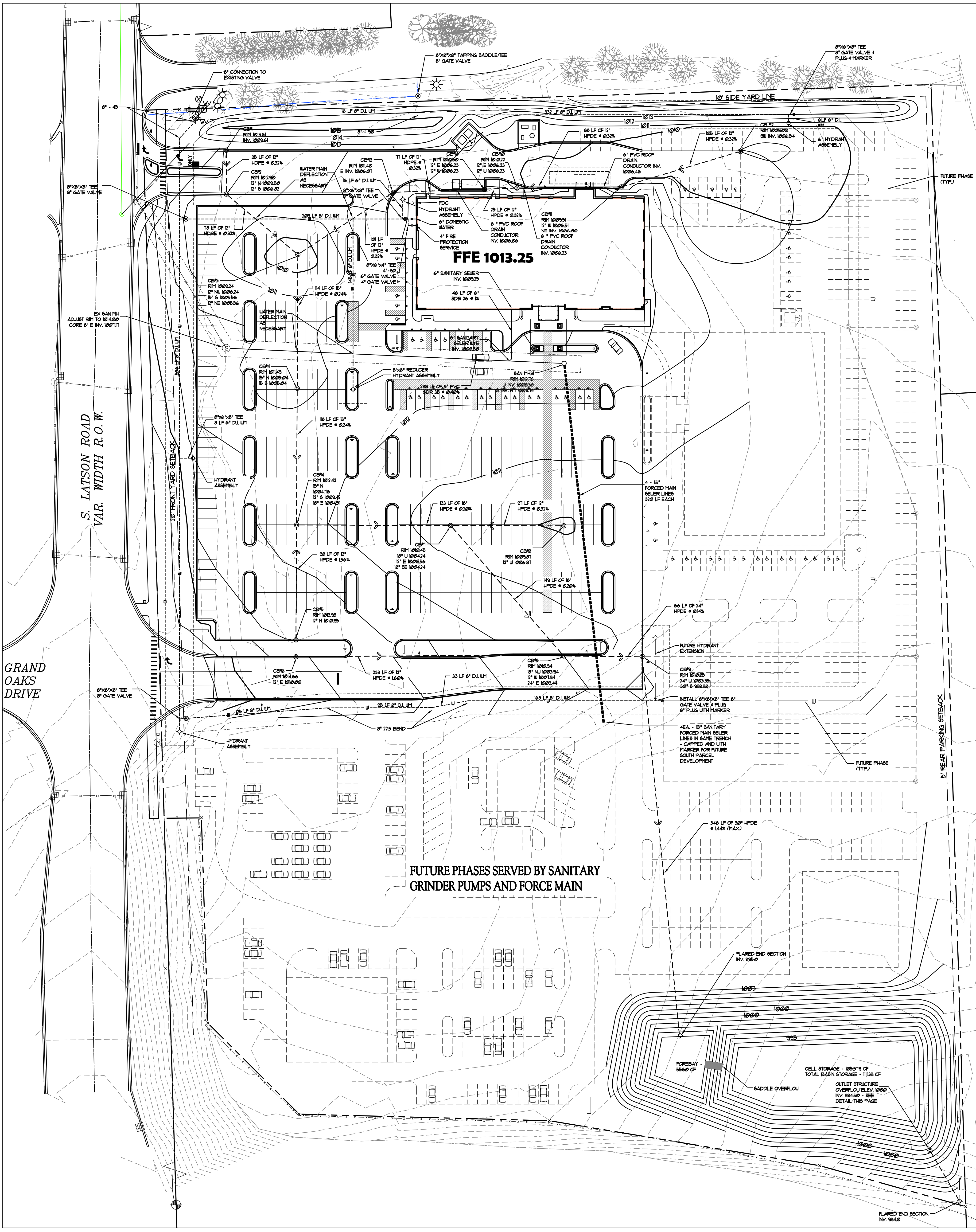
Choose the size and amount of holes necessary to meet the orifice area calculated above. Place openings in A<sub>o</sub> = 0.0412 ft<sup>2</sup> standpipes at bottom of basin. Determine the new detention time based on orifice area of holes (at least 24 hours is required).

Orifice Flow (Q<sub>or</sub>) = A<sub>o</sub> x 0.62 x (84.4 x h<sub>ff</sub>)<sup>0.5</sup> = 0.202 cfs  
 Detention Time (T<sub>d</sub>) = V<sub>b</sub> / Q<sub>or</sub> = 24 hr  
 85.381 sec

**Bankfull Volume Orifice Calculations**

The bankfull volume shall be detained for 36-48 hours. The discharge through the first flush holes shall be checked to see if additional holes are necessary.

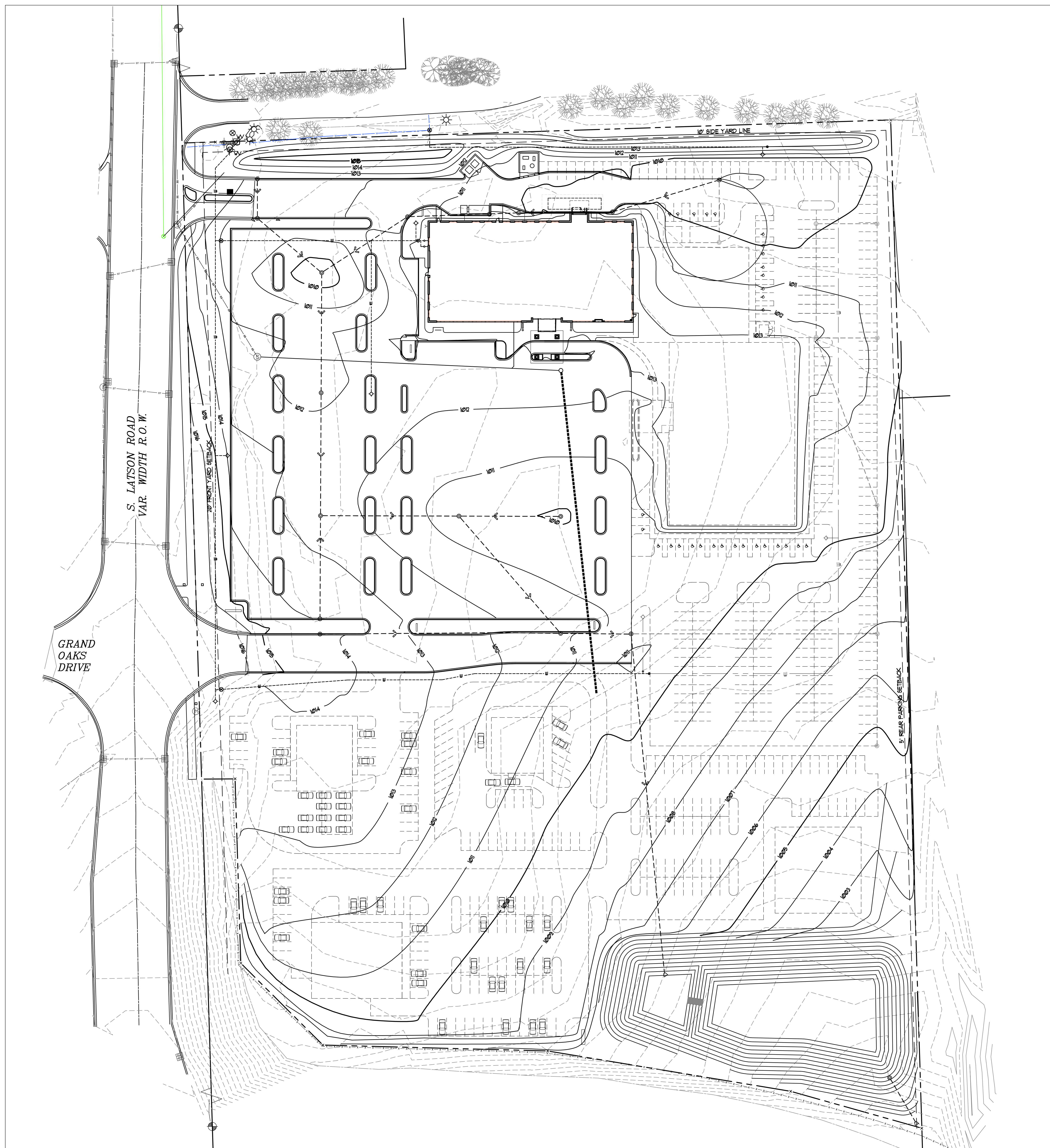
h<sub>bv</sub> = 2.5(86400 - elev<sub>bv</sub>) = 4.87 ft  
 Q = 0.62A<sub>o</sub> x (84.4 x h<sub>bv</sub>)<sup>0.5</sup> = 0.452 cfs  
 Holding Time (T) = V<sub>b</sub> / Q = 48.21 hr  
 173.555 sec



**Catch Basin Detail**  
 Not to scale

**OUTLET STRUCTURE**  
 Not to scale





### GRADING AND DRAINAGE LEGEND

SYMBOL	DESCRIPTION
	EXISTING DECIDUOUS TREE
	EXISTING EVERGREEN TREE
	EXISTING SANITARY SEWER
	EXISTING CONTOURS
	PROPOSED 1' CONTOURS
	PROPOSED 5' CONTOURS
	PROPOSED PHASE I STORM SEWER
	PROPOSED PHASE I STORM SEWER CATCH BASIN
	PROPOSED PHASE I WATER MAIN AND SERVICE
	PROPOSED PHASE I HYDRANT
	PROPOSED PHASE I SANITARY FORCED MAIN
	PROPOSED PHASE I SANITARY MANHOLE
	PROPOSED PHASE I SANITARY GRAVITY SEWER
	PROPOSED PHASE II WATER MAIN AND SERVICE
	PROPOSED PHASE II HYDRANT
	PROPOSED PHASE II STORM SEWER AND CATCH BASIN

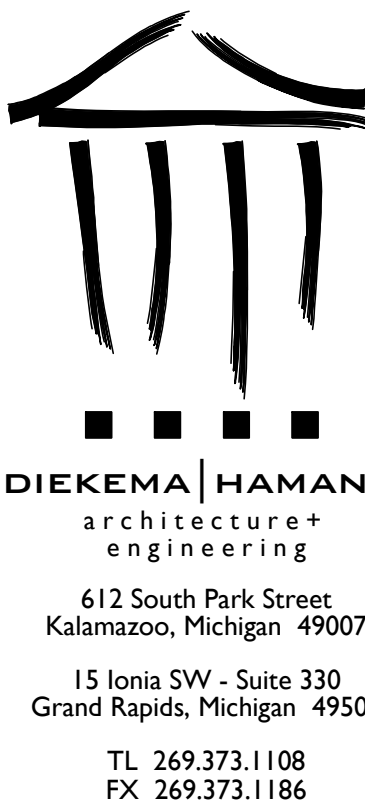
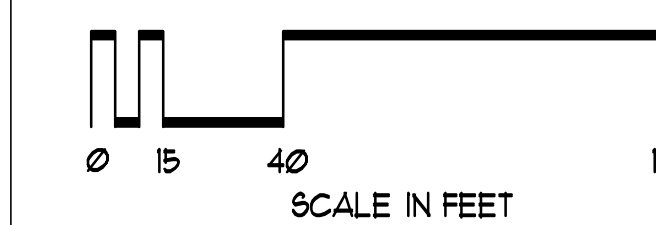
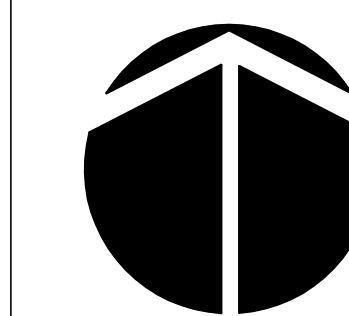
### BARRIER-FREE NOTES

BARRIER-FREE PARKING AND ACCESSIBLE ROUTE(S) MUST COMPLY WITH THE AMERICANS WITH DISABILITIES ACT, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

- 1:48 (2% MAXIMUM CROSS-SLOPE ON ACCESSIBLE ROUTE.
- NO CHANGES IN LEVEL GREATER THAN 1/4" ALONG ACCESSIBLE ROUTE, RAMPS OR LANDINGS.
- 1:20 (5% MAXIMUM LONGITUDINAL SLOPE ON ACCESSIBLE ROUTE (EXCEPT WHERE RAMPS ARE PROVIDED).
- 1:50 (2% MAXIMUM SLOPE (IN ANY DIRECTION) IN B.F. PARKING AND ACCESSIBLES.

### GENERAL NOTES

- ALL UTILITY LOCATIONS SHOWN ARE APPROXIMATE. CALL "MISS DIG" AND VERIFY ALL UNDERGROUND UTILITIES BEFORE EXCAVATION AT THE SITE. ANY UTILITIES DISTURBED BY CONSTRUCTION SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE. USE PRIVATE UTILITY LOCATOR SERVICE FOR ANY UTILITIES MISS DIG WILL NOT TRACE.
- ANY DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS SHOULD BE REPORTED TO THE OWNER'S REPRESENTATIVE IMMEDIATELY FOR RESOLUTION.
- ALL DIMENSIONS ARE GIVEN TO OUTSIDE EDGE (FACE) OF CURB OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED. ALL RADII ARE 5' UNLESS OTHERWISE NOTED.
- ALL UNPAVED AREAS DISTURBED BY CONSTRUCTION SHALL RECEIVE 6" TOPSOIL AND LAWN ESTABLISHMENT PER SPECIFICATIONS (UNLESS OTHER PLANTINGS ARE SHOWN). SUPPLEMENT WITH IMPORTED TOPSOIL AS REQUIRED TO PROVIDE 6" DEPTH.
- PROVIDE EXPANSION JOINTS IN NEW CONCRETE WALKS AND CURBS AT 30' MAXIMUM SPACING (AS SPECIFIED) AND CONTROL JOINTS AS SHOWN ON PLANS. PROVIDE EXP. JOINTS WHERE NEW CONCRETE MEETS EXISTING CONCRETE OR OTHER STRUCTURES.
- ALL EXISTING VALVE BOXES, STORM AND SANITARY STRUCTURES TO REMAIN WITHIN THE AREA UNDER CONSTRUCTION SHALL BE ADJUSTED TO NEW FINISH GRADE ELEVATIONS.
- THE EXISTING AND PROPOSED STORM DRAINAGE SYSTEM SHALL BE CLEANED AND FREE FROM SEDIMENT AT THE END OF CONSTRUCTION. THE PROPOSED STORM DRAINAGE SYSTEM IS PRIVATE AND THE PROPERTY OWNER IS RESPONSIBLE FOR ONGOING MAINTENANCE OF THE SYSTEM.
- ALL NEW SIDEWALKS AND PAVEMENTS SHALL BE PLACED AT AN ELEVATION THAT PROVIDES POSITIVE DRAINAGE AND CONSISTENT SLOPES. ENSURE NO LOW SPOTS ARE CREATED. NEW WALKS SHALL MEET EXISTING WALKS FLUSH AT EXISTING GRADE. NOTIFY OWNER AND/OR ENGINEER IF GRADES ON PLAN CANNOT BE MET TO ENSURE POSITIVE DRAINAGE.
- MATCH ADJACENT PAVEMENT GRADES WHERE NEW PAVEMENT BUTTS TO EXISTING PAVING.
- PLACE BILT FENCE ALONG EDGE OF PAVEMENT OR BACK OF CURB FOLLOWING GRADING OPERATIONS UNTIL SLOPES ARE STABILIZED.
- ALL CONSTRUCTION SHALL COMPLY WITH THE SOIL EROSION AND SEDIMENTATION CONTROL REQUIREMENTS OF LIVINGSTON COUNTY AND THE STATE OF MICHIGAN. PROTECTIVE MEASURES SHALL BE PROVIDED AT A MINIMUM AND CONFIRMED WITH LOCAL AGENCY REQUIREMENTS.
- ALL TEMPORARY EROSION CONTROL DEVICES SHALL BE REMOVED AFTER PERMANENT GROUND COVER IS ESTABLISHED. TEMPORARY EROSION CONTROL DEVICES SHOULD BE IN PLACE PRIOR TO EXCAVATION, TO THE EXTENT POSSIBLE.



**DIEKEMA HAMANN**  
architecture  
engineering  
612 South Park Street  
Kalamazoo, Michigan 49007  
15 Ionia SW - Suite 330  
Grand Rapids, Michigan 49503  
TL 269.373.1108  
FX 269.373.1186

LIVINGSTON AMBULATORY FACILITY  
**FRAUENSHUH HEALTHCARE REAL ESTATE SOLUTIONS**  
1701 N. LATSON ROAD  
GENOA TOWNSHIP, MICHIGAN

ISSUED	4/11/2015
REVISIONS	4/23/15
PROJECT NUMBER	14094.00
SHEET TITLE	OVERALL SITE GRADING AND DRAINAGE PLAN
SHEET NUMBER	<b>C2.1</b>
	PUD SUBMITTAL

This drawing, as an instrument of service, is owned by the Diekema Hamann Architecture, Inc. Reproduction of this document is prohibited without express authorization from the architect.  
© 2014 DIEKEMAHAMANN ARCHITECTURE



### GENERAL NOTES

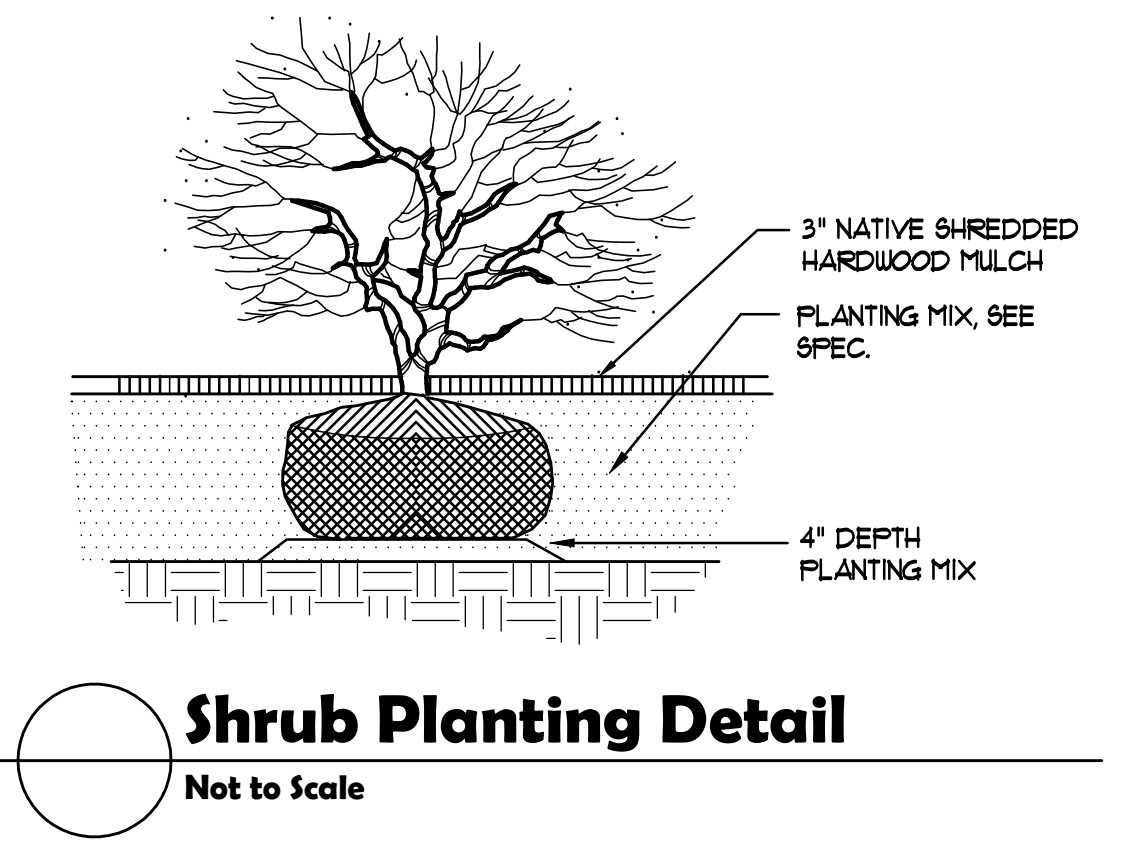
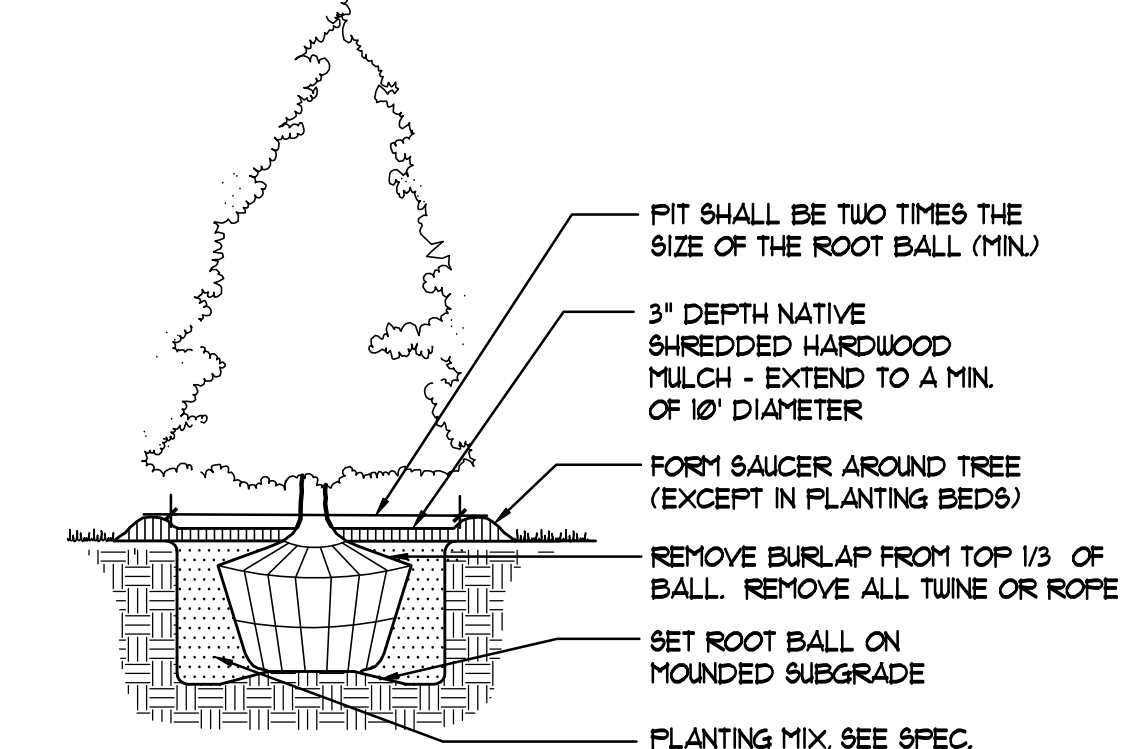
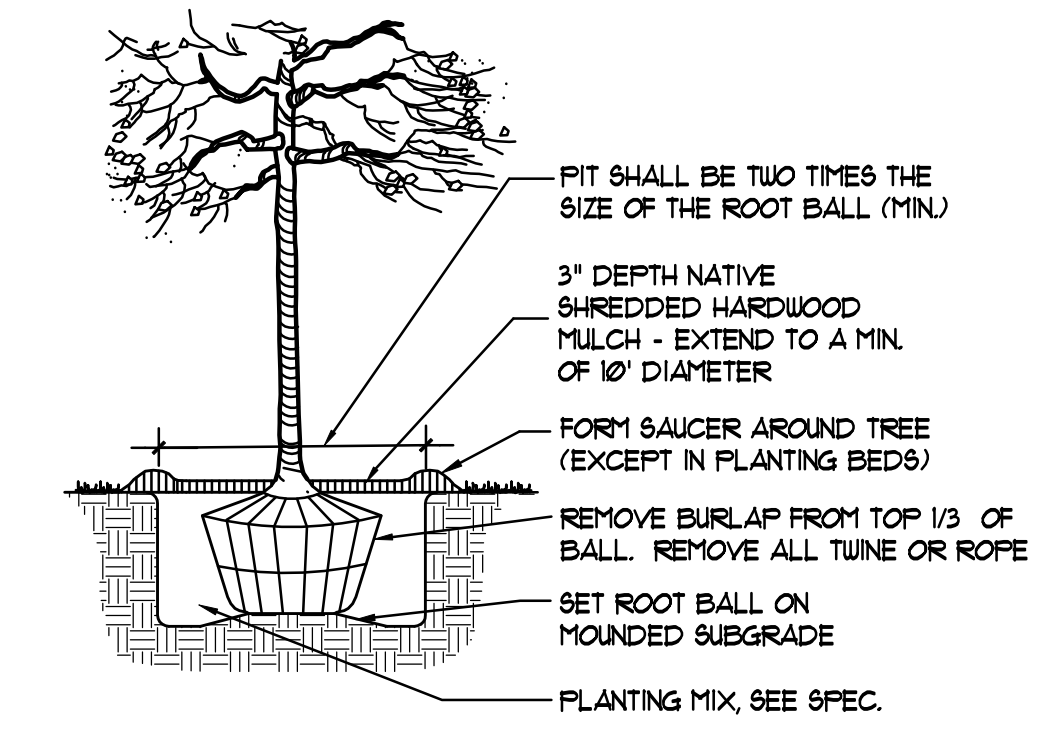
1. ALL UTILITY LOCATIONS SHOWN ARE APPROXIMATE. CALL "1188 DIG" AND VERIFY ALL UNDERGROUND UTILITIES BEFORE EXCAVATION AT THE SITE. ANY UTILITIES DISTURBED BY CONSTRUCTION SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE. USE PRIVATE UTILITY LOCATOR SERVICE FOR ANY UTILITIES 1188 DIG WILL NOT TRACE.
2. ANY DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS SHOULD BE REPORTED TO THE OWNER'S REPRESENTATIVE IMMEDIATELY FOR RESOLUTION.
3. EROSION SHALL BE CONTROLLED AS SPECIFIED AND AS REQUIRED BY LOCAL, STATE OR FEDERAL AUTHORITIES HAVING JURISDICTION.
4. ALL DIMENSIONS ARE GIVEN TO OUTSIDE EDGE OF CURB OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED. ALL RADII ARE 8' UNLESS OTHERWISE NOTED.
5. ALL UNPAVED AREAS DISTURBED BY CONSTRUCTION SHALL RECEIVE 6" TOPSOIL AND LAWN PER SPECIFICATIONS. SUPPLEMENT WITH IMPORTED TOPSOIL AS REQUIRED TO PROVIDE 6" DEPTH.

### LANDSCAPE NOTES:

1. PLACE SHREDDED HARDWOOD MULCH TO A 3" DEPTH IN ALL TREE & SHRUB BEDS 4 TO A 2" DEPTH IN ALL GROUNDCOVER BEDS.
2. REPAIR AND RESTORE ANY DAMAGE OUTSIDE OF LIMIT OF WORK TO ORIGINAL CONDITION.
3. ALL NURSERY STOCK SHALL BE TRUE TO TYPE AND NAME. ALL STOCK SHALL BE FIRST CLASS QUALITY WITH WELL DEVELOPED BRANCH SYSTEMS AND VIGOROUS HEALTHY ROOT SYSTEMS. ALL STOCK SHALL BE WELL FORKED AND THE TRUNKS OF TREES SHALL BE UNIFORM AND STRAIGHT.
4. ALL UNPAVED AREAS WILL BE SEEDED AND INCLUDE IRRIGATION. PARKING LOT ISLANDS SHALL BE COBBLESTONE WITH DRIPP IRRIGATION FOR TREES.

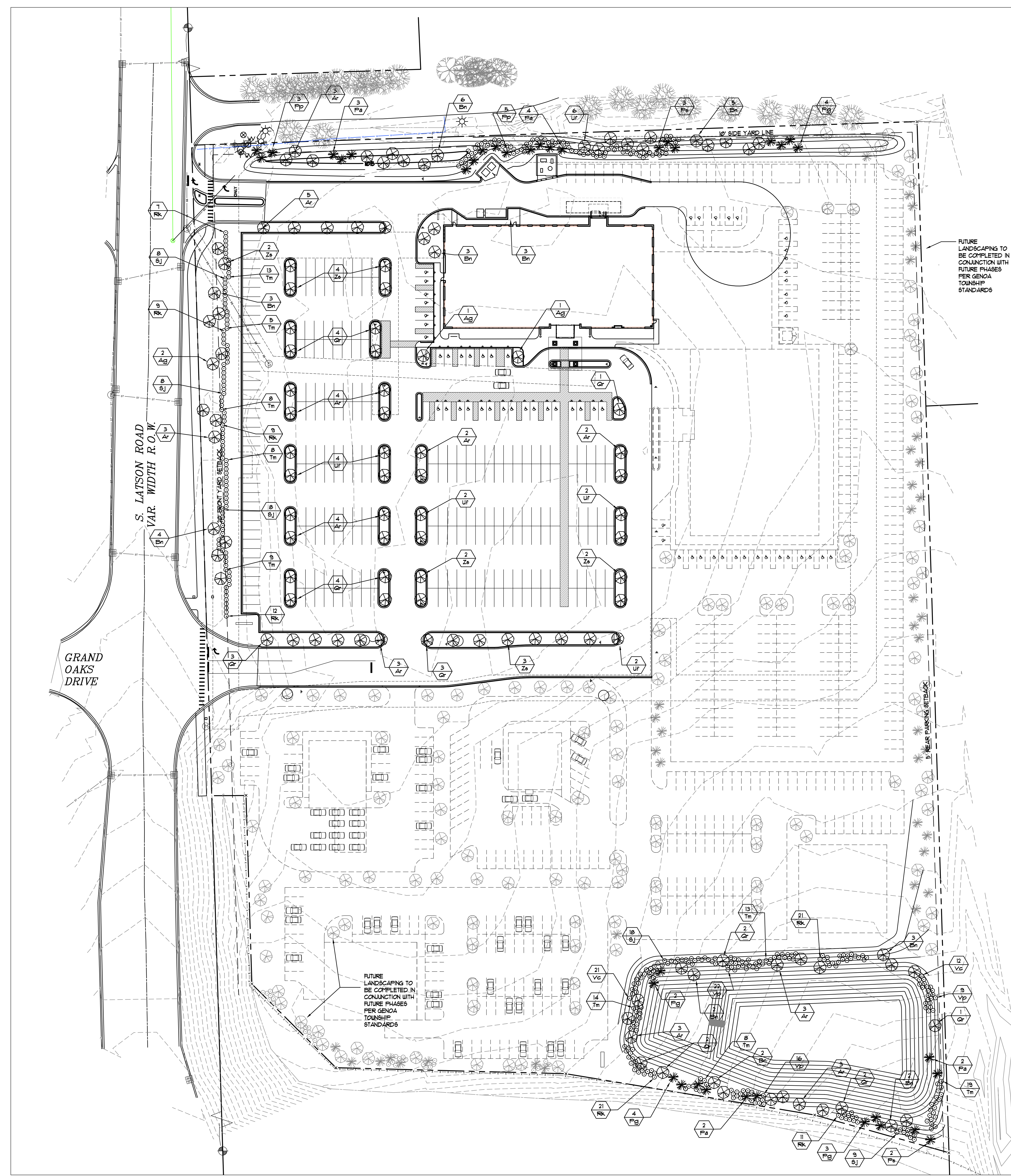
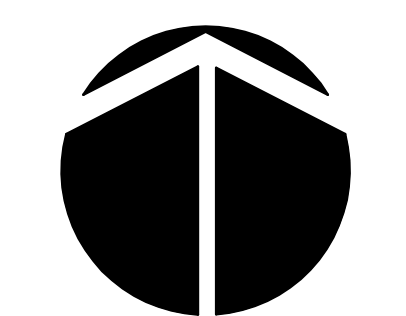
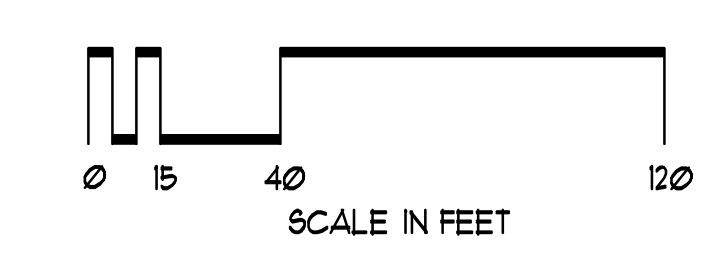
### LANDSCAPE LEGEND:

	SYM.	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	COM.
DECIDUOUS TREES	Ag	<i>Aster sp.</i>	Aster	12'-14" HT.	B&B	HEAVY CLUMP
	Bn	<i>Betula nigra</i>	River Birch	12'-14" HT.	B&B	HEAVY CLUMP
	Gr	<i>Quercus rubra</i>	Red Oak	2'-1/2' Cal.	B&B	
	Uf	<i>Ulmus x 'Frontier'</i>	Frontier Elm	2'-1/2' Cal.	B&B	
	Za	<i>Zelkova serrata</i>	Green Vase Zelkova	2'-1/2' Cal.	B&B	
EVERGREEN TREES	Pp	<i>Picea pungens</i>	Colorado Blue Spruce	6' HT.	B&B	
	Pa	<i>Picea canadensis</i>	Norway Spruce	6' HT.	B&B	
	Ps	<i>Picea strobus</i>	Eastern White Pine	6' HT.	B&B	
SHRUBS	Rk	<i>Rosa 'Knockout'</i>	Knockout Shrub Rose Varieties	24" HT.	B&B	3' O.C.
	Sj	<i>Spiraea japonica</i>	Neon Flash Spiraea	24" HT.	B&B	3' O.C.
	Ta	<i>Taxus x media</i>	Everlure Yew	30" SP.	B&B	4' O.C.
	Vc	<i>Viburnum carlesii</i>	Cayuga Viburnum	30" HT.	B&B	4' O.C.
	Vp	<i>Viburnum p. 'Shasta'</i>	Shasta Doublefile Viburnum	36" HT.	B&B	7' O.C.



### LANDSCAPING STATISTICS

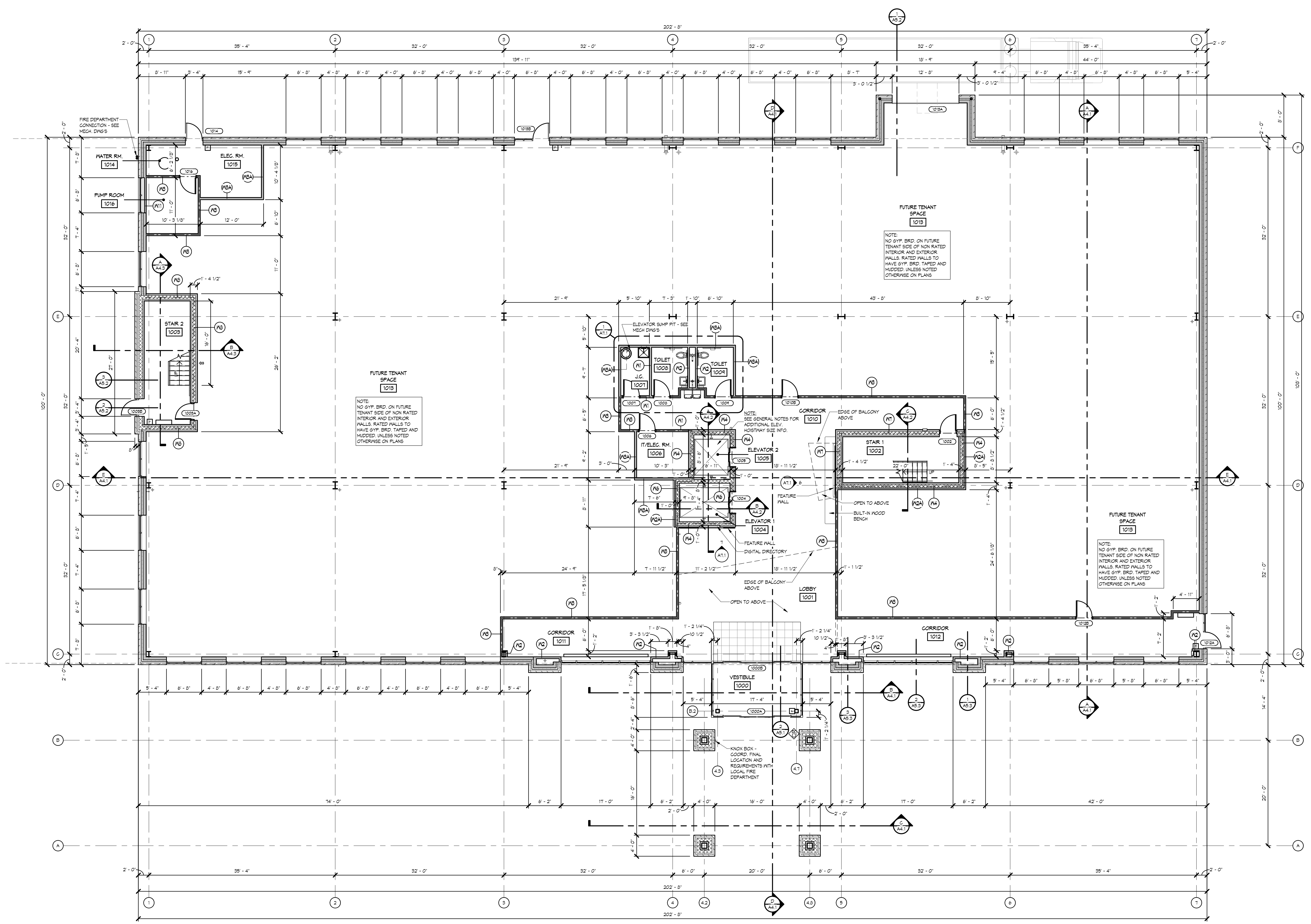
PHASE I	REQUIRED TREES	PROPOSED TREES	REQUIRED SHRUBS	PROPOSED SHRUBS	REQUIRED GREEN SPACE	PROPOSED GREEN SPACE
LATSON ROAD FRONTAGE	20	20	HEDGE ROW	96		
NORTH PROPERTY BUFFER	40	40	NA	NA	BERM1	BERM1
PARKING LOT	20	58	78	78	2,000 SF	5,000 SF
1-36 BUFFER (PHASE I)	22	22	44	44		
DETENTION BASIN LANDSCAPING	11	11	110	110		





FLOOR PLAN LEGEND	
	NON-FIRE RATED WALL
	1-HOUR FIRE RATED SEPARATION
	2-HOUR FIRE RATED SEPARATION
	1-HOUR SMOKE BARRIER - NFPA 101 - 6.5
	NEW DOOR

WALL TYPES	
(N1)	TYP. WALL FIN. RM. SIDE - 5/8" GYP. BRD. - 3/8" METAL STUDS AT 16" O.C. W/ACOUSTICAL BATT INSULATION - 5/8" GYP. BRD. FIN. RM. SIDE WALL ASSEMBLY TO BE FULL HEIGHT TO DECK ABOVE. PROVIDE RATED WALL ASSEMBLY WHERE SHOWN ON PLANS.
(N2)	PLUMBING / FURRING WALL FIN. ROOM SIDE - 5/8" GYP. BRD. - 3/8" METAL STUDS AT 16" O.C. W/ACOUSTICAL BATT INSULATION SHAFT / BACK SIDE WALL ASSEMBLY TO BE FULL HEIGHT TO DECK ABOVE. MOISTURE RESISTANT FIRECORE GYP. BRD. IN NET LOCATIONS UNLESS OTHERWISE NOTED. SEE FINISH SCHEDULE.
(N3A)	FURRING WALL (TENANT FINISH) FIN. ROOM SIDE - 3/8" METAL STUDS AT 16" O.C. W/ACOUSTICAL BATT INSULATION SHAFT / BACK SIDE WALL ASSEMBLY TO BE FULL HEIGHT TO DECK ABOVE.
(N3B)	TENANT SEPARATION WALL (RATED) PUBLIC SIDE - 5/8" GYP. BRD. - 3/8" METAL STUDS AT 16" O.C. W/ACOUSTICAL BATT INSULATION - 5/8" GYP. BRD. FIRE TAPED (AT RATED WALLS ONLY) TENANT SIDE WALL ASSEMBLY TO BE FULL HEIGHT TO DECK ABOVE. PROVIDE RATED WALL ASSEMBLY WHERE SHOWN ON PLANS.
(N3C)	TENANT SEPARATION WALL (NOT RATED) PUBLIC SIDE - 5/8" GYP. BRD. - 3/8" METAL STUDS AT 16" O.C. W/ACOUSTICAL BATT INSULATION TENANT SIDE WALL ASSEMBLY TO BE FULL HEIGHT TO DECK ABOVE.
(N4)	FURRED OUT ELEVATOR SHAFT WALL PUBLIC SIDE - 5/8" GYP. BRD. - 3/8" METAL STUDS AT 16" O.C. W/ACOUSTICAL BATT INSULATION - 5" CMU WALL SHAFT SIDE WALL ASSEMBLY TO BE FULL HEIGHT TO ROOF DECK. PROVIDE RATED WALL ASSEMBLY WHERE SHOWN ON PLANS.
(N5)	NOT USED
(N6)	ELEVATOR SHAFT WALL ELEVATOR SIDE - 5" CMU WALL ELEVATOR SIDE WALL ASSEMBLY TO BE FULL HEIGHT TO ROOF DECK. PROVIDE RATED WALLS WHERE SHOWN ON PLANS.
(N7)	STAR SHAFT WALL PUBLIC SIDE - 5/8" GYP. BRD. - 3/8" METAL STUD WALL WITH STUDS AT 16" O.C. WITH ACOUSTICAL BATT INS. - 5" CMU - 3/8" METAL STUD WALL WITH STUDS AT 16" O.C. WITH ACOUSTICAL BATT INS. - 5/8" GYP. BRD. STAR SHAFT WALL ASSEMBLY TO BE FULL HEIGHT TO ROOF DECK. PROVIDE RATED WALL ASSEMBLY WHERE SHOWN ON PLANS.
(N8)	STAR SHAFT WALL TENANT SIDE - 3/8" METAL STUD WALL WITH STUDS AT 16" O.C. WITH ACOUSTICAL BATT INS. - 5" CMU - 3/8" METAL STUD WALL WITH STUDS AT 16" O.C. WITH ACOUSTICAL BATT INS. - 5/8" GYP. BRD. STAR SHAFT WALL ASSEMBLY TO BE FULL HEIGHT TO ROOF DECK. PROVIDE RATED WALL ASSEMBLY WHERE SHOWN ON PLANS.
(N9)	NOT USED
(N10)	NOT USED
(N11)	FURRING WALL AT SPANDREL LOCATIONS - 3/8" METAL STUDS AT 16" O.C. W/ FOL FACED BATT INSULATION TYP. AT ALL FUTURE TENANT BUILT OUT SPANDREL LOCATIONS. SETUP AND PREP FOR FUTURE GYP. BRD. FIN.



**FIRST FLOOR PLAN**  
SCALE: 1/8" = 1'-0"

GENERAL NOTES	
1.	ALL WALL TYPES ARE (N1) UNLESS NOTED OTHERWISE.
2.	ALL WALL TYPES ARE (N2) AT ALL NON-RATED TOILET/PLUMBING CHASES, UNLESS NOTED OTHERWISE.
3.	ALL WALLS SCHEDULED TO RECEIVE EPOXY PAINT SHALL BE 5/8" MOISTURE RESISTANT FIRECORE GYP. BOARD UNLESS OTHERWISE NOTED. REFER TO FINISH SCHEDULE.
4.	ALL WALLS CARRYING PLUMBING FIXTURES SHALL BE 5/8" MOISTURE RESISTANT FIRECORE GYP. BOARD UNLESS OTHERWISE NOTED. REFER TO FINISH SCHEDULE.
5.	PROVIDE BLOCKING IN WALLS FOR OWNER PROVIDED EQUIPMENTS SHOWN IN INTERIOR ELEVATIONS AND DIMANDED FLOOR PLANS.
6.	ELEVATOR HOISTWAY CONTRACTOR TO VERIFY HOISTWAY DIMENSIONS OF ELEVATOR MANUFACTURER SELECTED PRIOR TO CONSTRUCTION OF HOISTWAY WALLS AND FOUNDATION.
7.	SEE PLANS FOR RATED WALL REQUIREMENTS.

**PRELIMINARY NOT FOR CONSTRUCTION**

**FRAUENSHUH HEALTHCARE REAL ESTATE SOLUTIONS**  
LIVINGSTON AMBULATORY FACILITY  
1701 S. LATSON ROAD  
GENOA TOWNSHIP, MI 48843

ISSUED	APRIL 23, 2015
REVISIONS	
PROJECT NUMBER	14094.00
SHEET TITLE	FIRST FLOOR PLAN
SHEET NUMBER	A1.1
	PUD SUBMITTAL





**DIEKEMA HAMANN**  
architecture  
612 South Park Street  
Kalamazoo, Michigan 49007  
100 Grandville SW  
Grand Rapids, Michigan 49503  
TL 269.373.1108  
FX 269.373.1186

PERMANENTLY NOT  
FOR CONSTRUCTION

LIVINGSTON AMBULATORY FACILITY  
**FRAUENSHUH HEALTHCARE REAL ESTATE SOLUTIONS**  
1701 S. LATSON ROAD  
GENOA TOWNSHIP, MI 48843

ISSUED  
**APRIL 1, 2015**

REVISIONS

PROJECT NUMBER  
14094.00

SHEET TITLE  
**SECOND FLOOR PLAN**

SHEET NUMBER  
**A1.2**

**PUD SUBMITTAL**

This drawing is an instrument of service, is owned by the designer herein and shall not be reproduced or used in any other project without express authorization from the architect.  
© 2015 DIEKEMA HAMANN ARCHITECTURE

**FLOOR PLAN LEGEND**

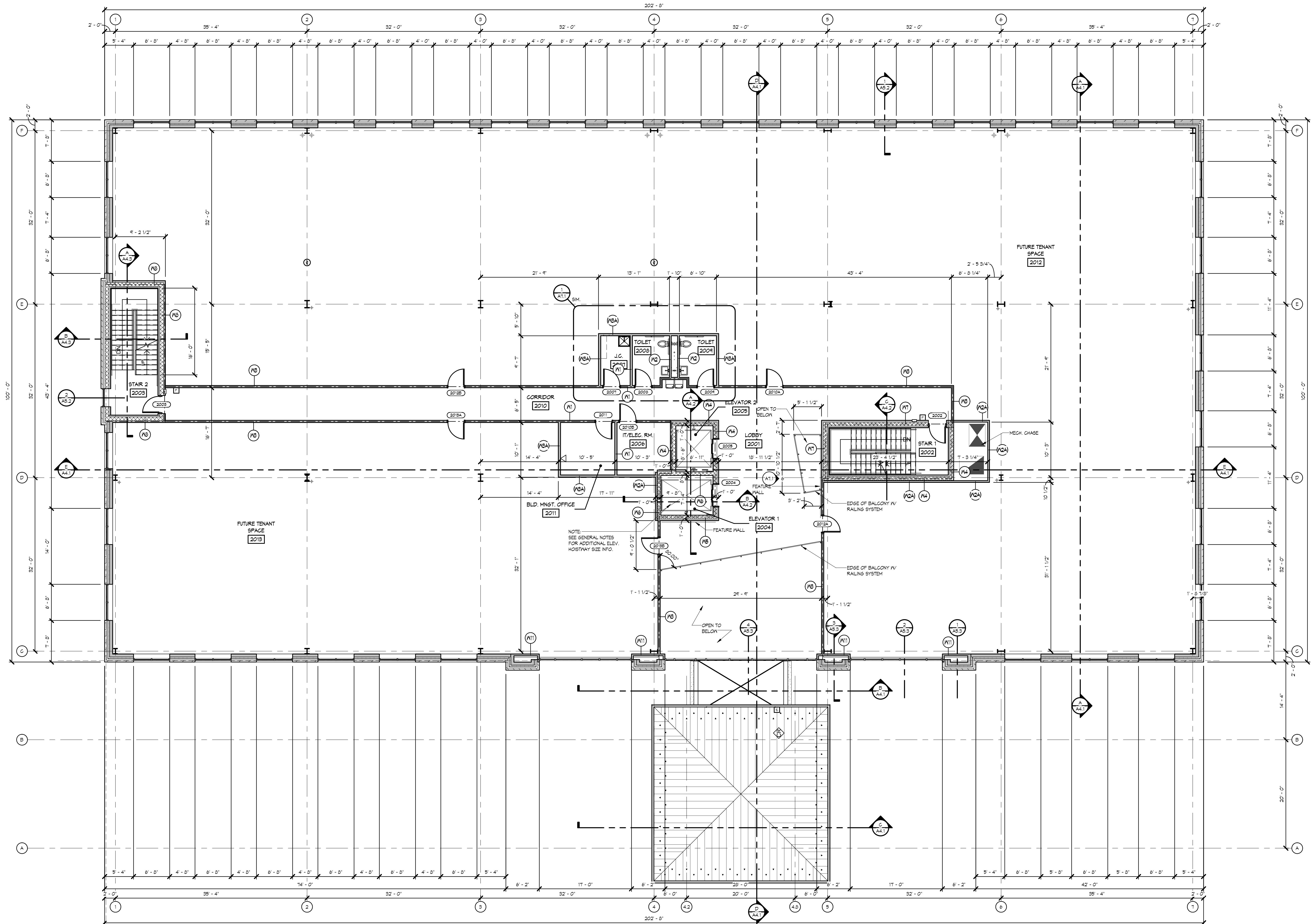
- NON-FIRE RATED WALL
- - - 1-HOUR FIRE RATED SEPARATION
- - - - 2-HOUR FIRE RATED SEPARATION
- ◆◆◆◆◆ 1-HOUR SMOKE BARRIER - NFPA 101 - 8.3
- U NON DOOR

**WALL TYPES**

- (N1) TYP. WALL:  
FIN. RM. SIDE  
- 5/8" GYP. BRD.  
- 3/8" METAL STUDS AT 16" O.C. W/ACOUSTICAL BATT INSULATION  
- 5/8" GYP. BRD.  
FIN. RM. SIDE
- (N2) PLUMBING / FURRING WALL:  
FIN. ROOM SIDE  
- 5/8" GYP. BRD.  
- 3/8" METAL STUDS AT 16" O.C. W/ACOUSTICAL BATT INSULATION  
SHAFT / BACK SIDE
- (N2A) FURRING WALL (TENANT FINISH):  
FIN. ROOM SIDE  
- 5/8" METAL STUDS AT 16" O.C. W/ACOUSTICAL BATT INSULATION  
SHAFT / BACK SIDE
- (N2B) WALL ASSEMBLY TO BE FULL HEIGHT TO DECK ABOVE. PROVIDE RATED WALL ASSEMBLY WHERE SHOWN ON PLANS.
- (N3) TENANT SEPARATION WALL (RATED):  
PUBLIC SIDE  
- 5/8" GYP. BRD.  
- 3/8" METAL STUDS AT 16" O.C. W/ACOUSTICAL BATT INSULATION  
- 5/8" GYP. BRD. FIRE TAPED (AT RATED WALLS ONLY)  
TENANT SIDE
- (N3A) WALL ASSEMBLY TO BE FULL HEIGHT TO DECK ABOVE. PROVIDE RATED WALL ASSEMBLY WHERE SHOWN ON PLANS.
- (N3B) TENANT SEPARATION WALL (NOT RATED):  
PUBLIC SIDE  
- 5/8" GYP. BRD.  
- 3/8" METAL STUDS AT 16" O.C. W/ACOUSTICAL BATT INSULATION  
TENANT SIDE
- (N3C) WALL ASSEMBLY TO BE FULL HEIGHT TO DECK ABOVE.
- (N4) FURRED OUT ELEVATOR SHAFT WALL:  
PUBLIC SIDE  
- 5/8" GYP. BRD.  
- 3/8" METAL STUDS AT 16" O.C. W/ACOUSTICAL BATT INSULATION  
- 2" CMU WALL  
SHAFT SIDE
- (N4A) WALL ASSEMBLY TO BE FULL HEIGHT TO ROOF DECK. PROVIDE RATED WALL ASSEMBLY WHERE SHOWN ON PLANS.
- (N4B) FURRED OUT ELEVATOR SHAFT WALL:  
TENANT SIDE  
- 5/8" GYP. BRD. TAPE AND MUD (NO SANDING OR FINISHING)  
- 3/8" METAL STUDS AT 16" O.C. W/ACOUSTICAL BATT INSULATION  
- 2" CMU WALL  
SHAFT SIDE
- (N4C) WALL ASSEMBLY TO BE FULL HEIGHT TO ROOF DECK. PROVIDE RATED WALL ASSEMBLY WHERE SHOWN ON PLANS.
- (N5) ELEVATOR SHAFT WALL:  
ELEVATOR SIDE  
- 2" CMU WALL  
ELEVATOR SIDE
- (N5A) WALL ASSEMBLY TO BE FULL HEIGHT TO ROOF DECK. PROVIDE RATED WALLS WHERE SHOWN ON PLANS.
- (N6) STAIR SHAFT WALL:  
PUBLIC SIDE  
- 5/8" GYP. BRD.  
- 3/8" METAL STUD WALL WITH STUDS AT 16" O.C.  
- 2" CMU  
- 3/8" METAL STUD WALL WITH STUDS AT 16" O.C.  
- 5/8" GYP. BRD.  
STAIR SHAFT
- (N6A) WALL ASSEMBLY TO BE FULL HEIGHT TO ROOF DECK. PROVIDE RATED WALL ASSEMBLY WHERE SHOWN ON PLANS.
- (N6B) STAIR SHAFT WALL:  
TENANT SIDE  
- 5/8" GYP. BRD. TAPE AND MUD (NO SANDING OR FINISHING)  
- 3/8" METAL STUD WALL WITH STUDS AT 16" O.C.  
- 2" CMU  
- 3/8" METAL STUD WALL WITH STUDS AT 16" O.C.  
- 5/8" GYP. BRD.  
STAIR SHAFT
- (N6C) WALL ASSEMBLY TO BE FULL HEIGHT TO ROOF DECK. PROVIDE RATED WALL ASSEMBLY WHERE SHOWN ON PLANS.
- (N7) SHAFT WALL:  
TENANT SIDE  
- 5/8" GYP. BRD. TAPE AND MUD (NO SANDING OR FINISHING)  
- 4" C-METAL STUDS AT 16" O.C. WITH 1" GYP. LINER PANEL.  
SHAFT SIDE
- (N7A) WALL ASSEMBLY TO BE FULL HEIGHT TO ROOF DECK. PROVIDE RATED WALL ASSEMBLY WHERE SHOWN ON PLANS.
- (N8) SHAFT WALL:  
PUBLIC SIDE  
- 5/8" GYP. BRD.  
- 4" C-METAL STUDS AT 16" O.C. WITH 1" GYP. LINER PANEL.  
SHAFT SIDE
- (N8A) WALL ASSEMBLY TO BE FULL HEIGHT TO ROOF DECK. PROVIDE RATED WALL ASSEMBLY WHERE SHOWN ON PLANS.
- (N9) SHAFT WALL:  
- 3/8" METAL STUDS AT 16" O.C. W/ACOUSTICAL BATT INSULATION

**GENERAL NOTES**

1. ALL WALL TYPES ARE (N1) UNLESS NOTED OTHERWISE.
2. ALL WALL TYPES ARE (N2) AT ALL NON-RATED TOILET/ PLUMBING CHASES, UNLESS NOTED OTHERWISE.
3. ALL WALLS SCHEDULED TO RECEIVE EPOXY PAINT SHALL BE 5/8" MOISTURE RESISTANT FIRECORE GYP BOARD UNLESS OTHERWISE NOTED - REFER TO FINISH SCHEDULE.
4. ALL WALLS CARRYING PLUMBING FIXTURES SHALL BE 5/8" MOISTURE RESISTANT FIRECORE GYP BOARD UNLESS OTHERWISE NOTED - REFER TO FINISH SCHEDULE.
5. PROVIDE BLOCKING IN WALLS FOR OWNER PROVIDED EQUIPMENT AS SHOWN IN INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS.
6. ELEVATOR HOISTWAY CONTRACTOR TO VERIFY HOIST-WAY DIMENSIONS OF ELEVATOR MANUFACTURER'S SELECTED PRIOR TO CONSTRUCTION OF HOIST-WAY WALLS AND FOUNDATION.
7. SEE PLANS FOR RATED WALL REQUIREMENTS.



**SECOND FLOOR PLAN**  
SCALE: 1/8" = 1'-0"



**DIEKEMA HAMANN**  
architecture  
612 South Park Street  
Kalamazoo, Michigan 49007  
100 Grandville SW  
Grand Rapids, Michigan 49503  
TL 269.373.1108  
FX 269.373.1186

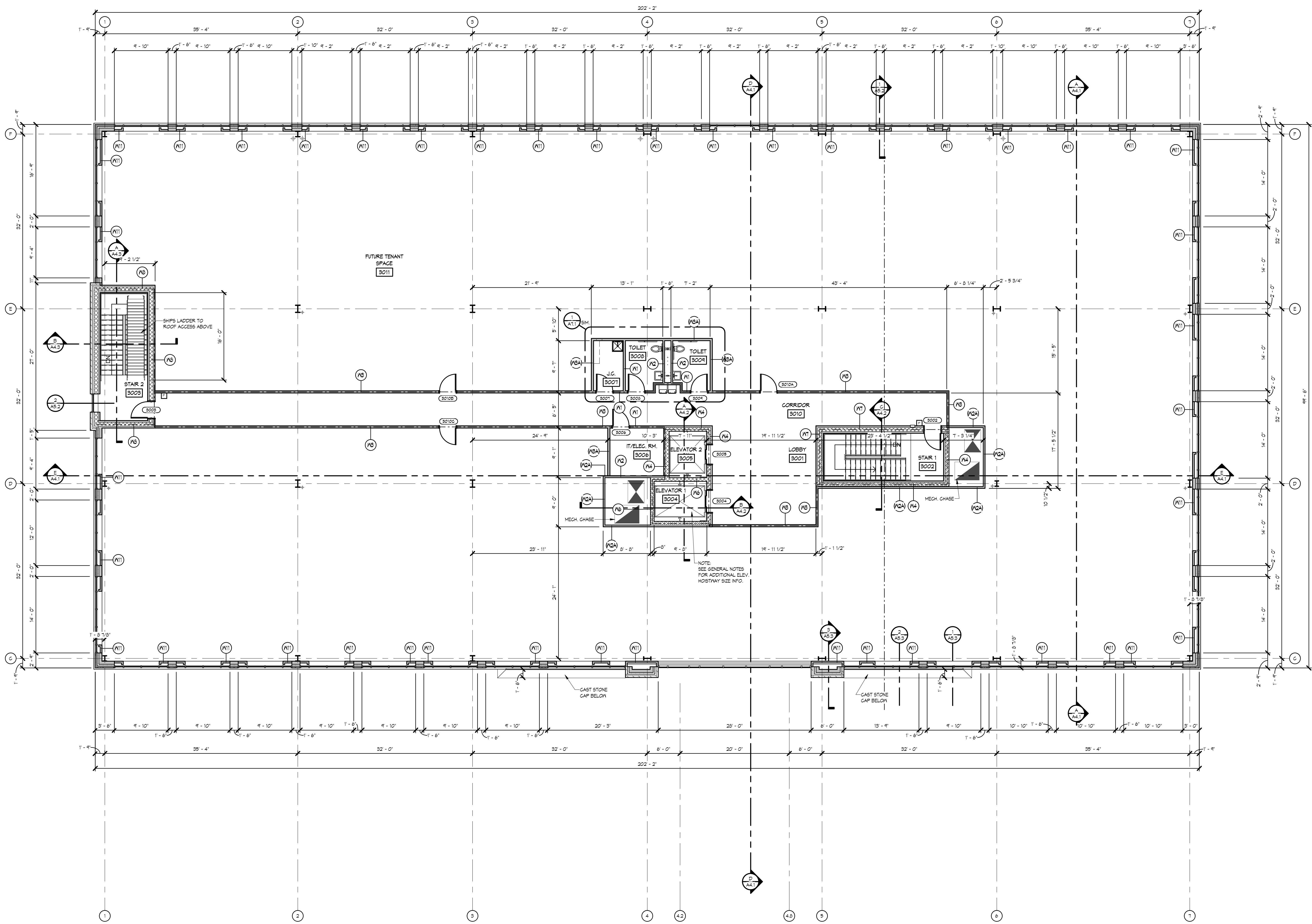
PERLIMINARY NOT  
FOR CONSTRUCTION

LIVINGSTON AMBULATORY FACILITY  
**FRAUENSHUH HEALTHCARE REAL ESTATE SOLUTIONS**  
1701 S. LATSON ROAD  
GENOA TOWNSHIP, MI 48843

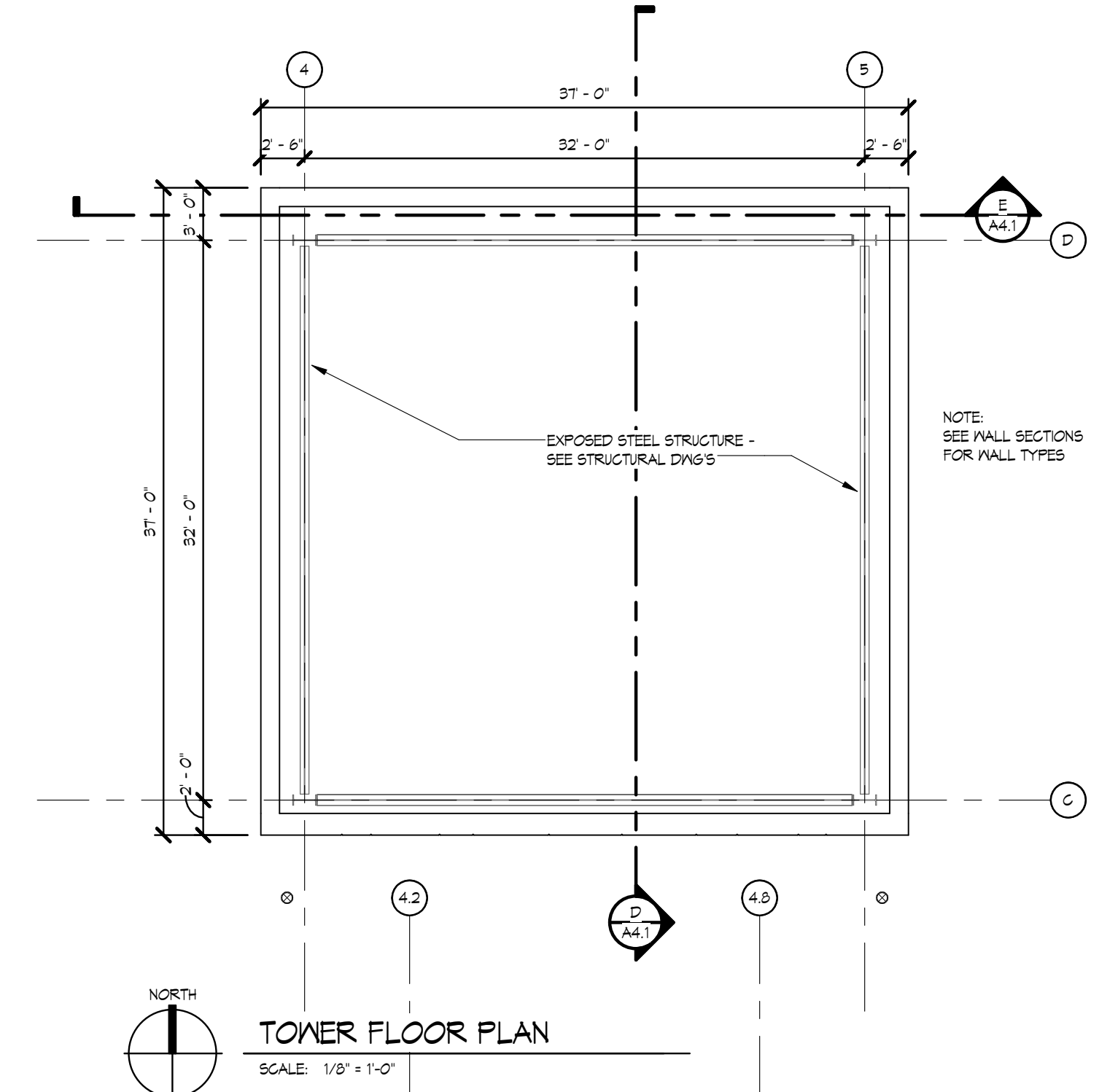
FLOOR PLAN LEGEND	
	NEW NON-FIRED RATED WALL
	1-HOUR FIRE RATED SEPARATION
	2-HOUR FIRE RATED SEPARATION
	1-HOUR SMOKE BARRIER - NFPA 101 - 8.3
	NEW DOOR

WALL TYPES	
(N1)	TYP. WALL FIN. RM. SIDE - 5/8" GYP. BRD. - 3/8" METAL STUDS AT 16" O.C. /ACOUSTICAL BATT INSULATION - 5/8" GYP. BRD. FIN. RM. SIDE WALL ASSEMBLY TO BE FULL HEIGHT TO DECK ABOVE. PROVIDE RATED WALL ASSEMBLY WHERE SHOWN ON PLANS.
(N2)	PLUMBING / FURRING WALL FIN. ROOM SIDE - 5/8" GYP. BRD. - 3/8" METAL STUDS AT 16" O.C. /ACOUSTICAL BATT INSULATION SHAFT / BACK SIDE WALL ASSEMBLY TO BE FULL HEIGHT TO DECK ABOVE. MOISTURE RESISTANT FIRECORE GYP. BRD. IN NET LOCATIONS UNLESS OTHERWISE NOTED. SEE FINISH SCHEDULE.
(N2A)	FURRING WALL (TENANT FINISH) FIN. ROOM SIDE - 3/8" METAL STUDS AT 16" O.C. /ACOUSTICAL BATT INSULATION SHAFT / BACK SIDE WALL ASSEMBLY TO BE FULL HEIGHT TO DECK ABOVE.
(N3)	TENANT SEPARATION WALL (RATED) PUBLIC SIDE - 5/8" GYP. BRD. - 3/8" METAL STUDS AT 16" O.C. /ACOUSTICAL BATT INSULATION - 5/8" GYP. BRD. FIRE TRIMMED (AT RATED WALLS ONLY) TENANT SIDE WALL ASSEMBLY TO BE FULL HEIGHT TO DECK ABOVE. PROVIDE RATED WALL ASSEMBLY WHERE SHOWN ON PLANS.
(N3A)	TENANT SEPARATION WALL (NOT RATED) PUBLIC SIDE - 5/8" GYP. BRD. - 3/8" METAL STUDS AT 16" O.C. /ACOUSTICAL BATT INSULATION TENANT SIDE WALL ASSEMBLY TO BE FULL HEIGHT TO DECK ABOVE.
(N4)	FURRED OUT ELEVATOR SHAFT WALL PUBLIC SIDE - 5/8" GYP. BRD. - 3/8" METAL STUDS AT 16" O.C. /ACOUSTICAL BATT INSULATION - 0" CMU WALL SHAFT SIDE WALL ASSEMBLY TO BE FULL HEIGHT TO ROOF DECK. PROVIDE RATED WALL ASSEMBLY WHERE SHOWN ON PLANS.
(N5)	FURRED OUT ELEVATOR SHAFT WALL TENANT SIDE - 5/8" GYP. BRD. TAPE AND MUD (NO SANDING OR FINISHING) - 3/8" METAL STUDS AT 16" O.C. /ACOUSTICAL BATT INSULATION - 0" CMU WALL SHAFT SIDE WALL ASSEMBLY TO BE FULL HEIGHT TO ROOF DECK. PROVIDE RATED WALL ASSEMBLY WHERE SHOWN ON PLANS.
(N6)	ELEVATOR SHAFT WALL ELEVATOR SIDE - 0" CMU WALL ELEVATOR SIDE WALL ASSEMBLY TO BE FULL HEIGHT TO ROOF DECK. PROVIDE RATED WALLS WHERE SHOWN ON PLANS.
(N7)	STAIR SHAFT WALL PUBLIC SIDE - 5/8" GYP. BRD. - 3/8" METAL STUD WALL WITH STUDS AT 16" O.C. - 0" CMU - 3/8" METAL STUD WALL WITH STUDS AT 16" O.C. - 5/8" GYP. BRD. STAIR SHAFT WALL ASSEMBLY TO BE FULL HEIGHT TO ROOF DECK. PROVIDE RATED WALL ASSEMBLY WHERE SHOWN ON PLANS.
(N8)	STAIR SHAFT WALL TENANT SIDE - 5/8" GYP. BRD. TAPE AND MUD (NO SANDING OR FINISHING) - 3/8" METAL STUD WALL WITH STUDS AT 16" O.C. - 0" CMU - 3/8" METAL STUD WALL WITH STUDS AT 16" O.C. - 5/8" GYP. BRD. STAIR SHAFT WALL ASSEMBLY TO BE FULL HEIGHT TO ROOF DECK. PROVIDE RATED WALL ASSEMBLY WHERE SHOWN ON PLANS.
(N9)	SHAFT WALL TENANT SIDE - 5/8" GYP. BRD. TAPE AND MUD (NO SANDING OR FINISHING) - 4" CMU METAL STUDS AT 16" O.C. WITH 1" GYP. LINER PANEL. SHAFT SIDE WALL ASSEMBLY TO BE FULL HEIGHT TO ROOF DECK. PROVIDE RATED WALL ASSEMBLY WHERE SHOWN ON PLANS.
(N10)	SHAFT WALL PUBLIC SIDE - 5/8" GYP. BRD. - 4" CMU METAL STUDS AT 16" O.C. WITH 1" GYP. LINER PANEL. SHAFT SIDE WALL ASSEMBLY TO BE FULL HEIGHT TO ROOF DECK. PROVIDE RATED WALL ASSEMBLY WHERE SHOWN ON PLANS.
(N11)	SHAFT WALL - 3/8" METAL STUDS AT 16" O.C. /ACOUSTICAL BATT INSULATION TYP. AT ALL FUTURE TENANT BUILT OUT SPANDREL LOCATIONS. SETUP AND PREP FOR FUTURE GYP. BRD. FIN.

GENERAL NOTES	
1.	ALL WALL TYPES ARE (N1) UNLESS NOTED OTHERWISE.
2.	ALL WALL TYPES ARE (N2) AT ALL NON-RATED TOILET/PLUMBING CHASES, UNLESS NOTED OTHERWISE.
3.	ALL WALLS SCHEDULED TO RECEIVE EPOXY PAINT SHALL BE 5/8" MOISTURE RESISTANT FIRECORE GYP. BOARD UNLESS OTHERWISE NOTED - REFER TO FINISH SCHEDULE.
4.	ALL WALLS CARRYING PLUMBING FIXTURES SHALL BE 5/8" MOISTURE RESISTANT FIRECORE GYP. BOARD UNLESS OTHERWISE NOTED - REFER TO FINISH SCHEDULE.
5.	PROVIDE BLOCKS IN WALLS FOR OWNER PROVIDED EQUIPMENT AS SHOWN IN INTERIOR ELEVATIONS AND ENLARGED FLOOR PLANS.
6.	ELEVATOR HOISTWAY CONTRACTOR TO VERIFY HOISTWAY DIMENSIONS OF ELEVATOR MANUFACTURER SELECTED PRIOR TO CONSTRUCTION OF HOISTWAY WALLS AND FOUNDATION.
7.	SEE PLANS FOR RATED WALL REQUIREMENTS.



**THIRD FLOOR PLAN**  
SCALE: 1/8" = 1'-0"



**TOWER FLOOR PLAN**  
SCALE: 1/8" = 1'-0"

ISSUED: APRIL 1, 2015  
REVISIONS:

PROJECT NUMBER: 14094.00

SHEET TITLE: THIRD FLOOR PLAN

SHEET NUMBER: **A1.3**  
PUD SUBMITTAL

This drawing is an instrument of service, is owned by the designers herein and shall remain the property of Diekema Hamann Architecture, Inc. Reproduction of this document is prohibited without express authorization from the architect.  
© 2015 DIEKEMA HAMANN ARCHITECTURE

PERMANENT NOT  
FOR CONSTRUCTION

LIVINGSTON AMBULATORY FACILITY  
**FRAUENSHUH HEALTHCARE REAL ESTATE SOLUTIONS**  
1701 S. LATSON ROAD  
GENOA TOWNSHIP, MI 48843

ISSUED: APRIL 1, 2015  
REVISIONS:



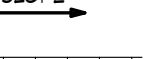
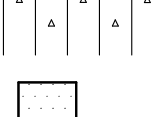
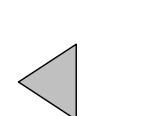
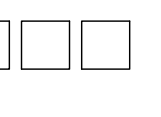
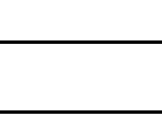
PROJECT NUMBER:  
14094.00

SHEET TITLE:  
ROOF PLAN AND DETAILS

SHEET NUMBER:  
**A1.4**  
PUD SUBMITTAL

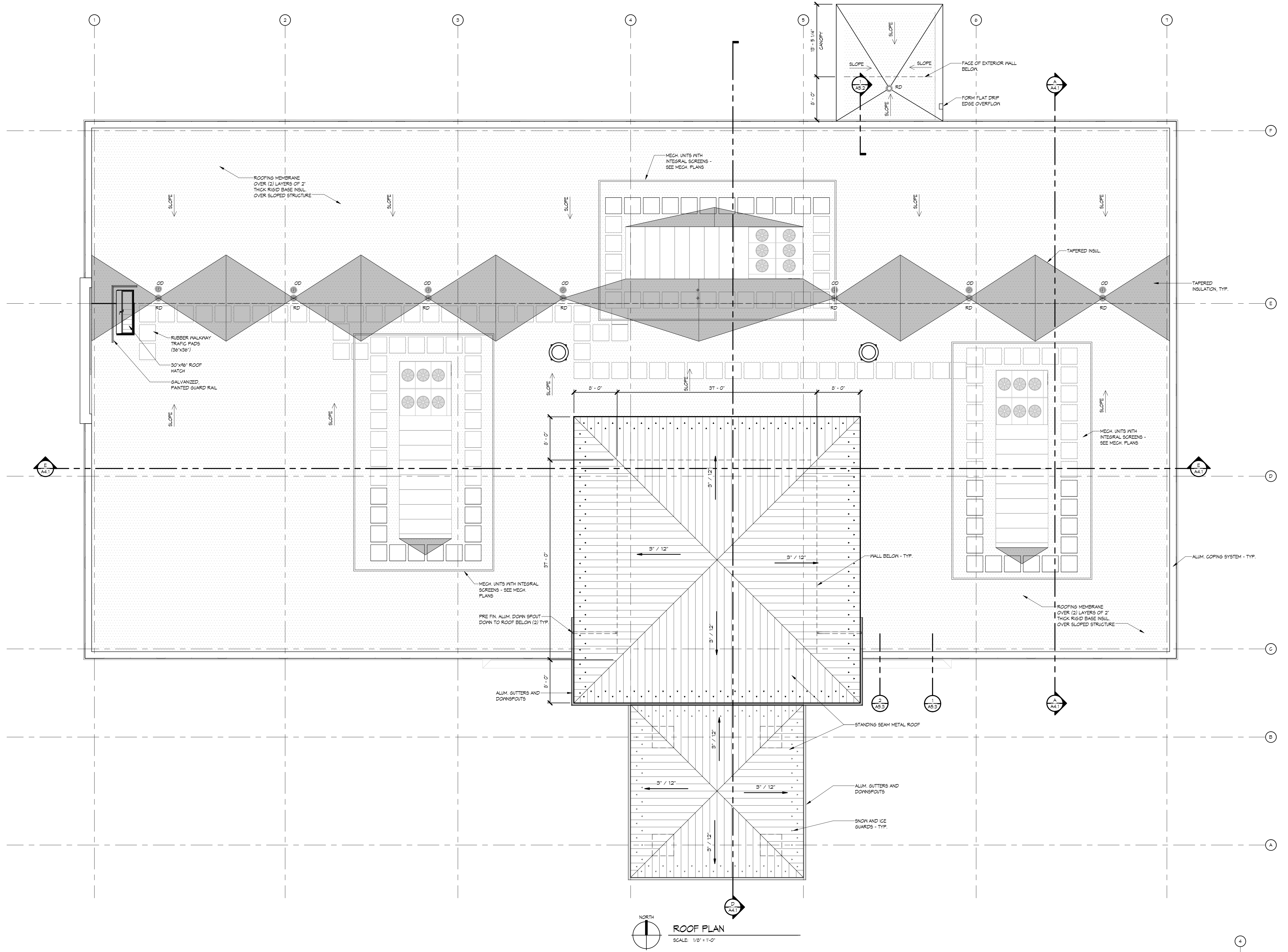
This drawing is an instrument of service, is owned by the designer herein and shall not be reproduced or used in any way without express authorization from the architect.  
© 2015 DIEKEMA|HAMANN ARCHITECTURE

### ROOF PLAN LEGEND

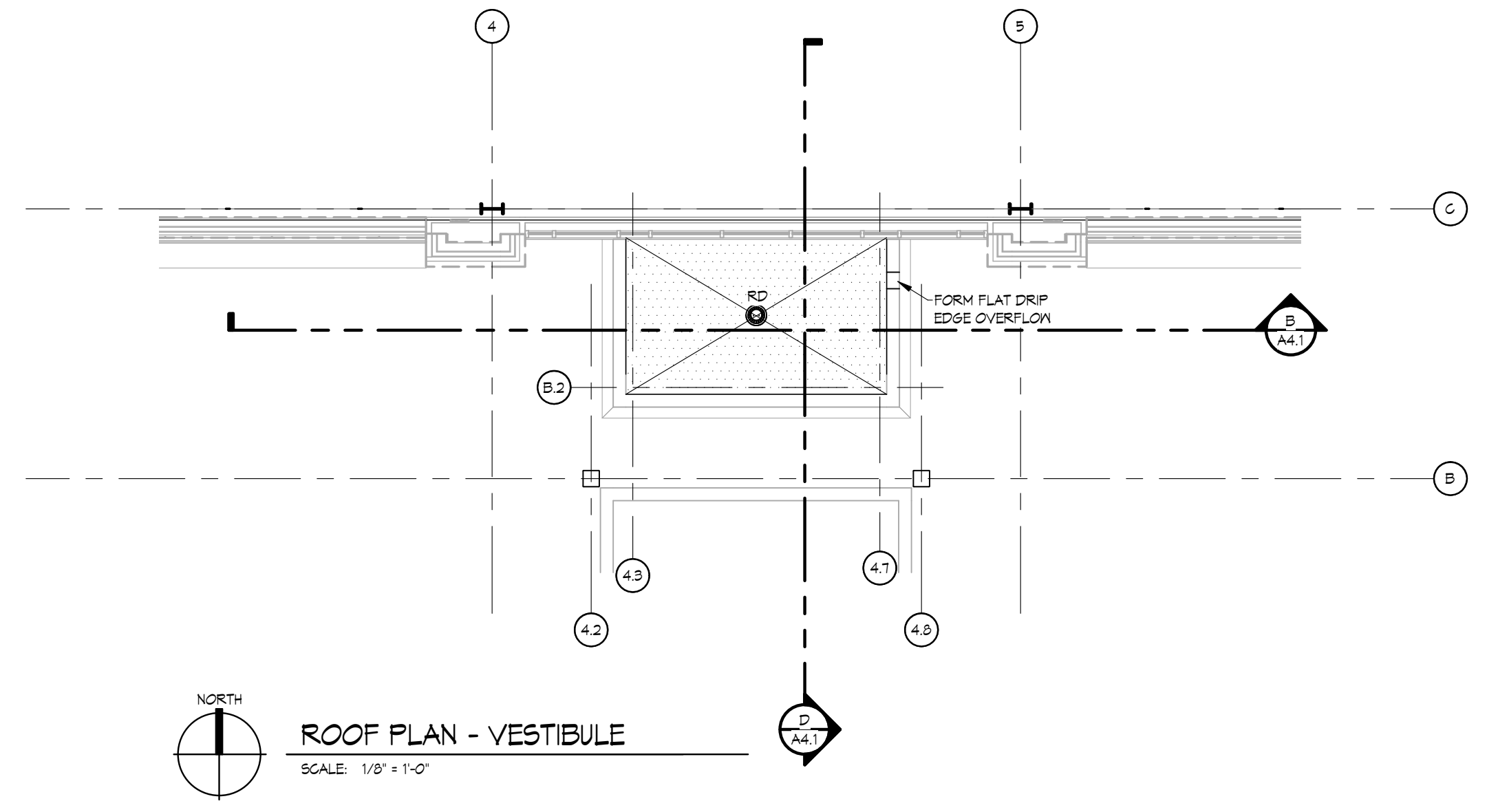
-  R.D. ROOF DRAIN WITH OVERFLOW
-  E.F. EXISTING EXHAUST FAN (E.F.) OR RELIEF VENT (R.V.) IN ROOF AREA
-  SLOPE INDICATES ROOF PITCH
-  STANDING SEAM METAL ROOF WITH ICE AND SNOW GUARDS
-  TYPICAL ROOF IS FULLY ADHERED OR MECHANICALLY FASTENED SINGLE-PLY MEMBRANE ROOFING ON RIGID INSULATION ON METAL DECK.
-  AREAS OF TAPERED ROOF - TAPERED ROOF INSULATION
-  RUBBER MAT/WAY PADS ADHERE PADS TO ROOF MEMBRANE

### GENERAL NOTES - ROOF PLAN

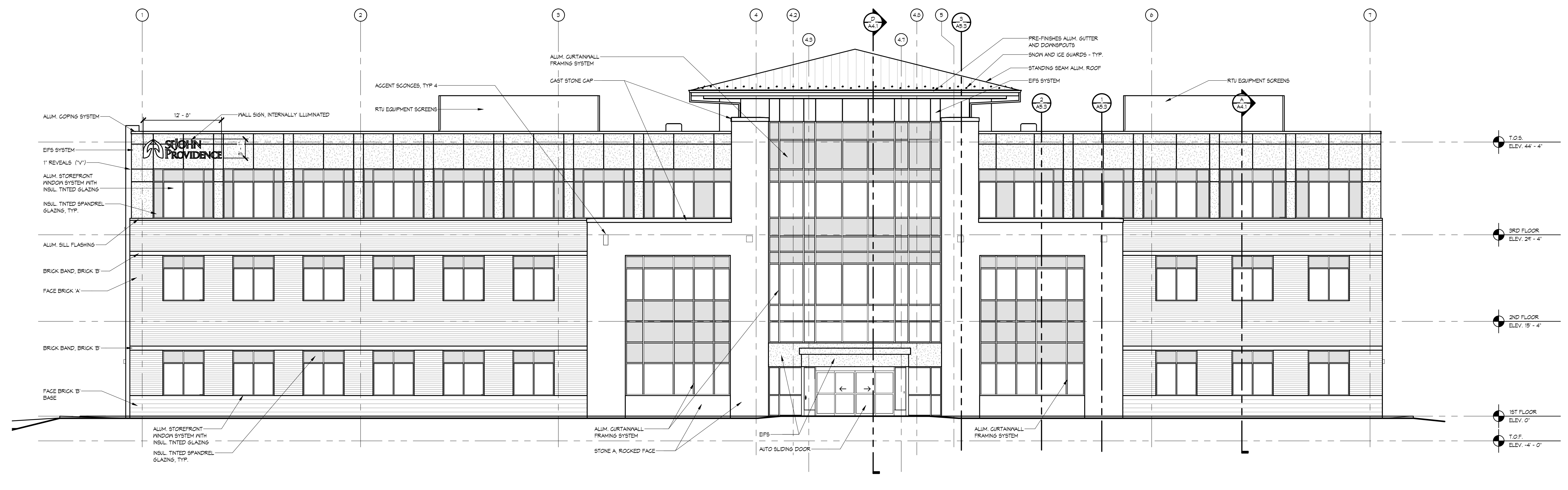
1. SEE MECHANICAL DRAWINGS FOR LOCATIONS OF PLUMBING VENTS FLASH AS SPECIFIED.
2. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL OPENINGS, IF ANY, IN ROOFS.
3. TYPICAL ROOF IS SINGLE-PLY MEMBRANE ROOFING ON RIGID INSULATION ON METAL DECK. (PROVIDE TAPERED INSULATION TO CREATE SLOPES TO DRAINS)
4. TAPERED INSULATION LAYOUTS ARE SCHEMATIC ONLY. FINAL LAYOUT FOR THE PROPOSED AREA SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
5. MINIMUM 1/4" PER FOOT SLOPE AT ALL NON-LONG SLOPE ROOF AREAS.



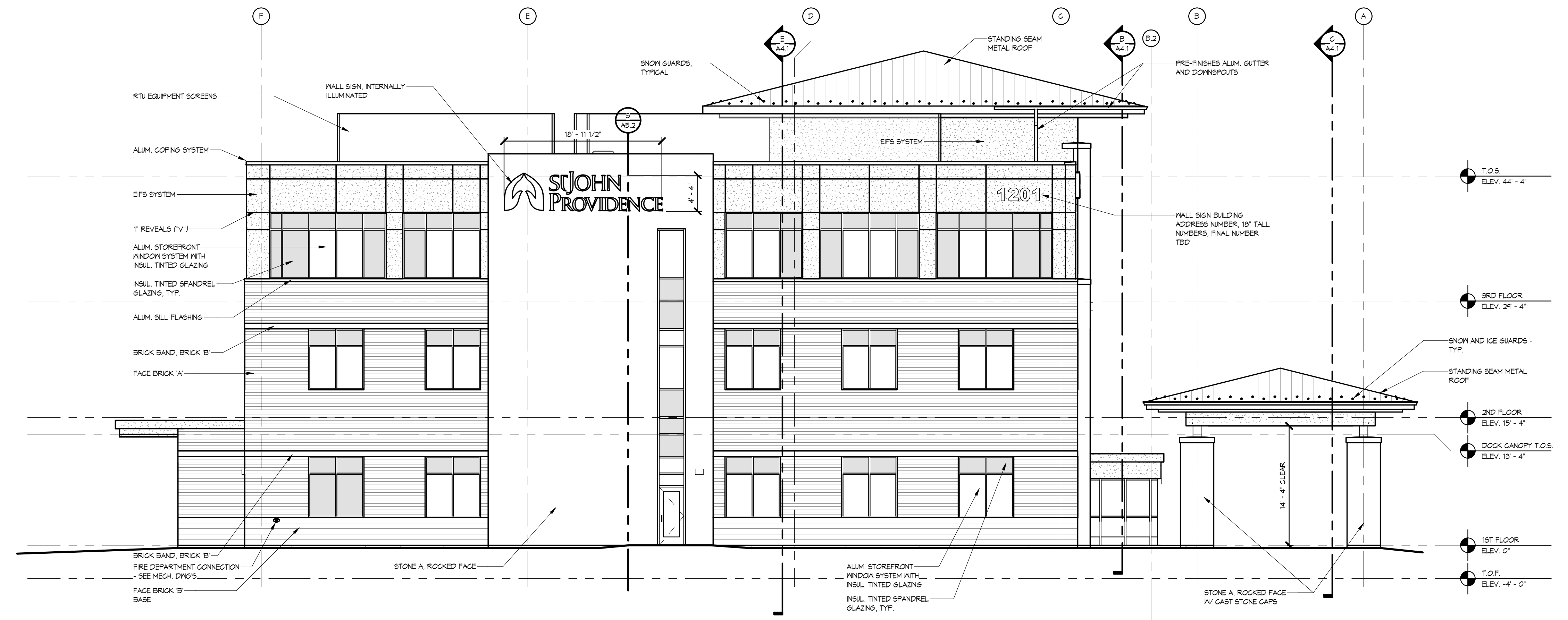
**ROOF PLAN**  
SCALE: 1/8" = 1'-0"



**ROOF PLAN - VESTIBULE**  
SCALE: 1/8" = 1'-0"



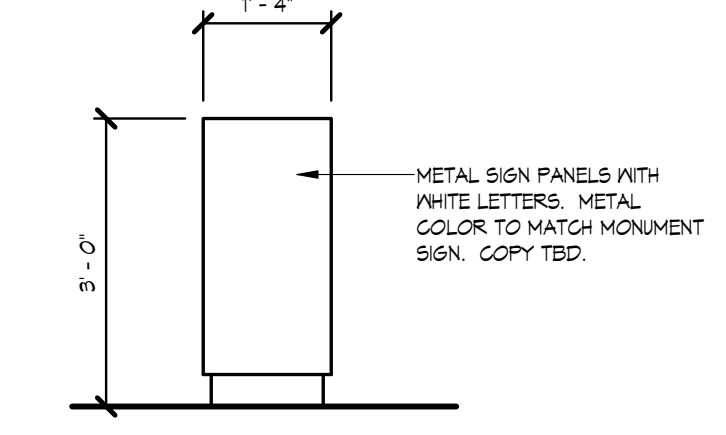
**SOUTH ELEVATION**  
 SCALE: 1/8" = 1'-0"



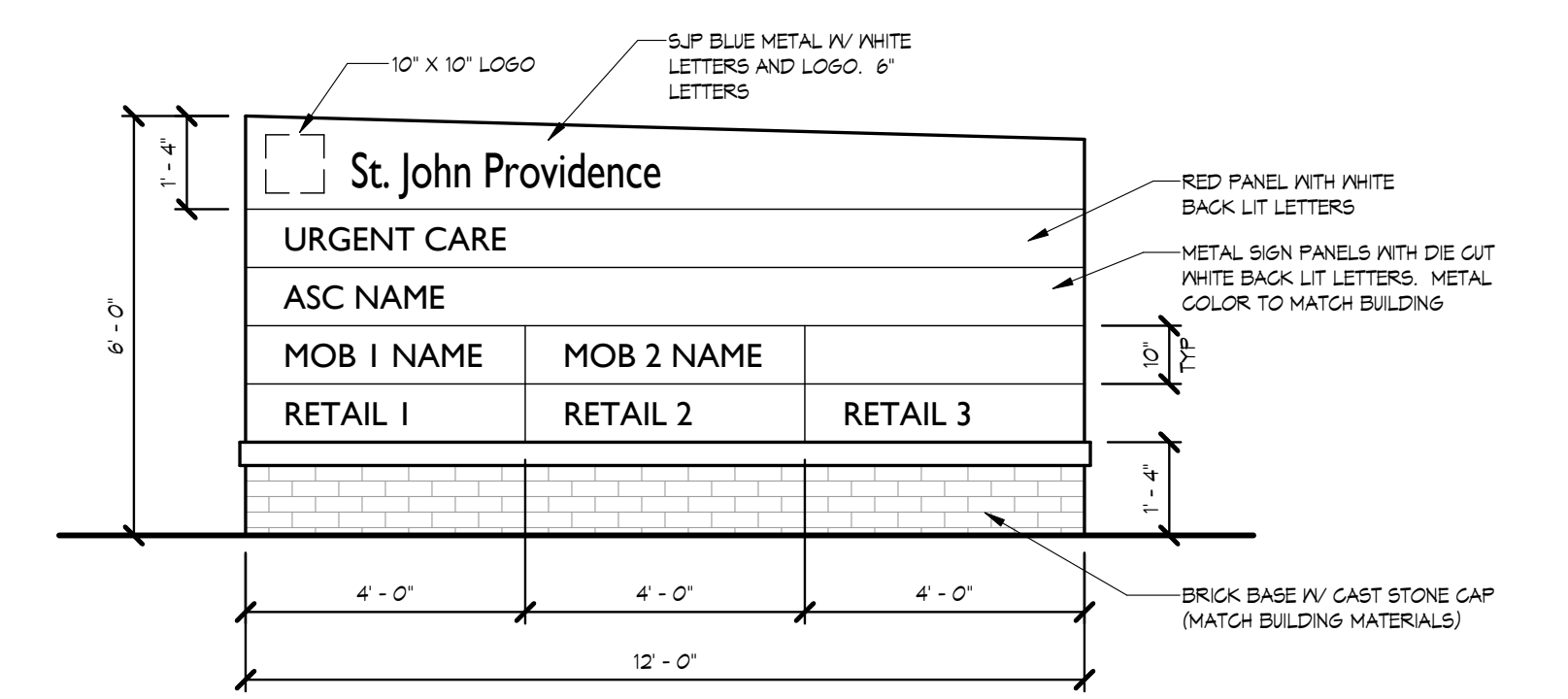
**WEST ELEVATION**  
 SCALE: 1/8" = 1'-0"

	FACADE SUMMARY			
	TOTAL EIFS	TOTAL FACADE	TOTAL WINDOW AREA	PERCENTAGE OF EIFS
WEST FACADE	783.00	5,350.00	990.00	18%
SOUTH FACADE	1,353.00	9,940.00	3,930.00	23%
EAST FACADE	968.00	5,257.00	852.00	22%
NORTH FACADE	1,649.00	9,940.00	2,940.00	24%
<b>TOTAL</b>	<b>4,753.00</b>	<b>30,487.00</b>	<b>8,712.00</b>	<b>22% &lt; 25%</b>

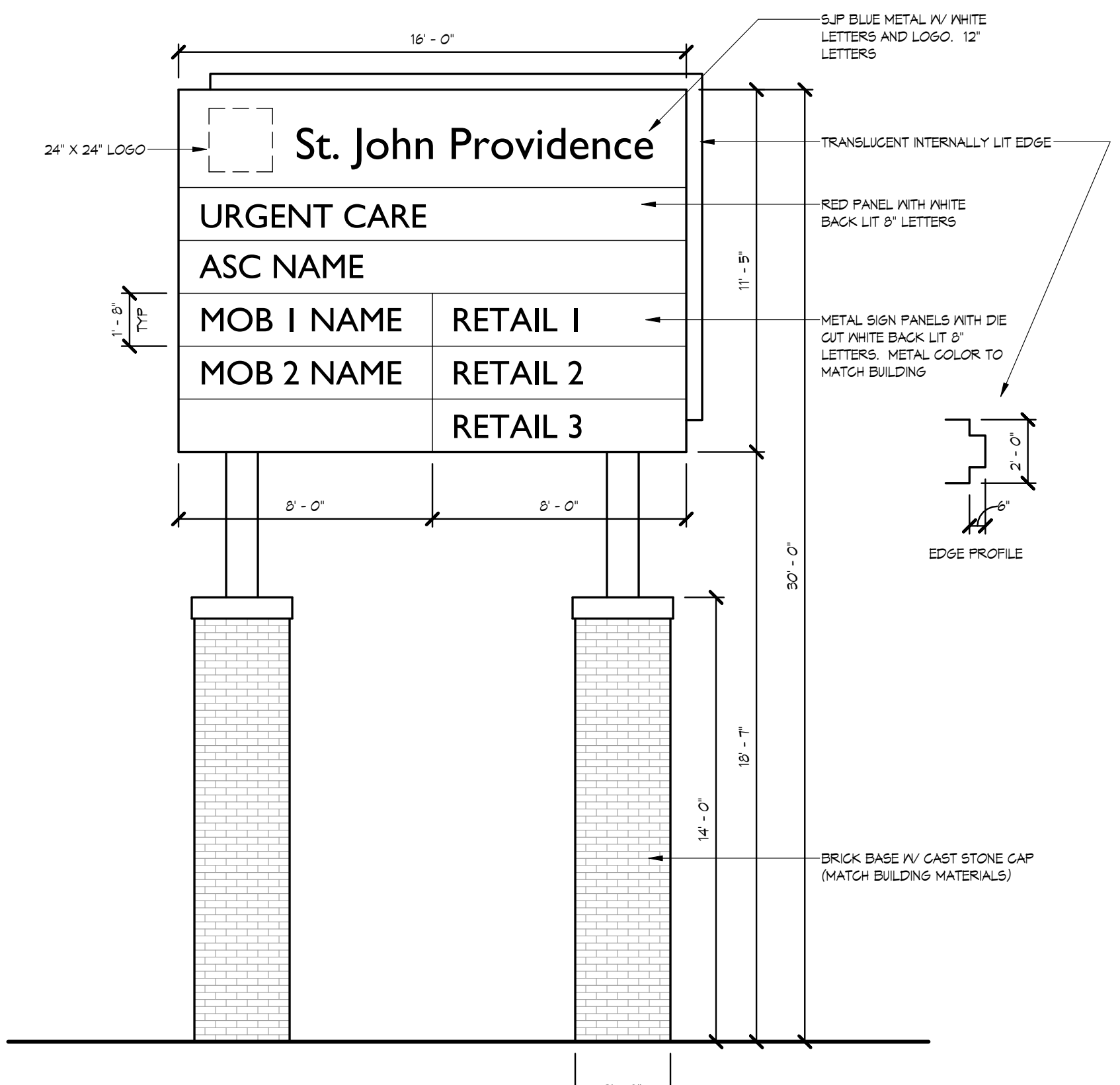
NOTE:  
 TOTAL EIFS / (TOTAL FACADE - TOTAL WINDOW AREA) = PERCENTAGE OF EIFS



**3 DIRECTIONAL SITE SIGN (TYP 4)**  
 SCALE: 1/2" = 1'-0"



**2 MONUMENT SIGN ELEVATION**  
 SCALE: 3/8" = 1'-0"



**1 POST SIGN ELEVATION**  
 SCALE: 1/4" = 1'-0"

PRELIMINARY NOT FOR CONSTRUCTION

LIVINGSTON AMBULATORY FACILITY  
**FRAUENSHUH HEALTHCARE REALESTATE SOLUTIONS**  
 1701 S. LATSON ROAD  
 GENOA TOWNSHIP, MI 48843

ISSUED: APRIL 23, 2015

PROJECT NUMBER: 14094.00

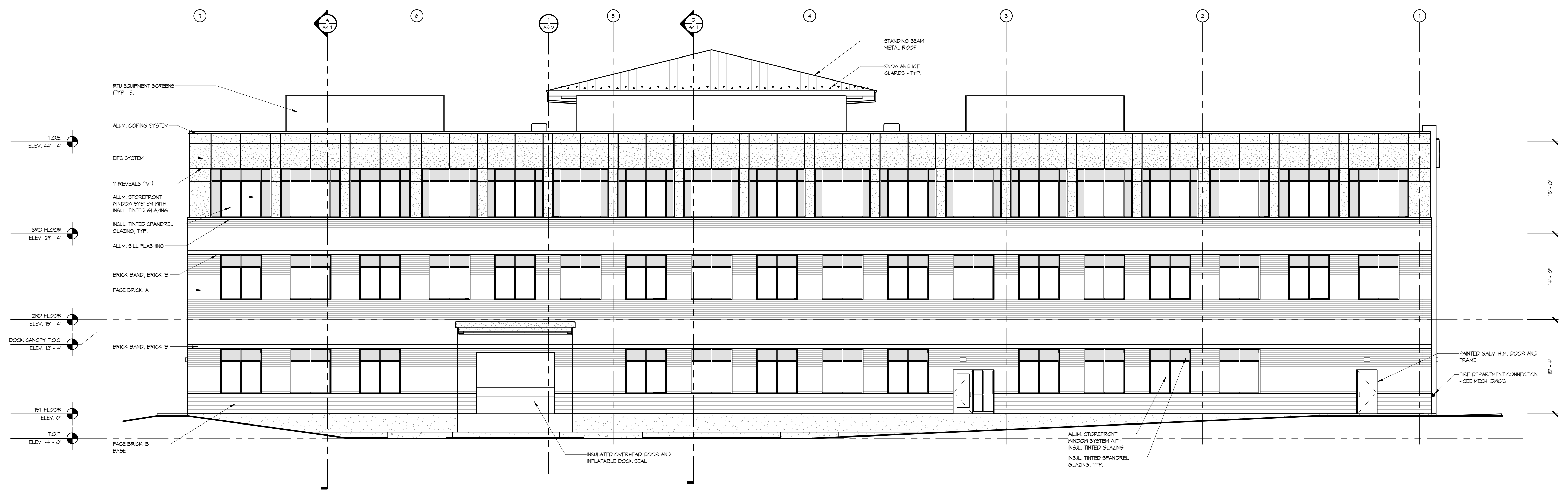
SHEET TITLE: EXTERIOR ELEVATIONS

SHEET NUMBER: **A3.1**

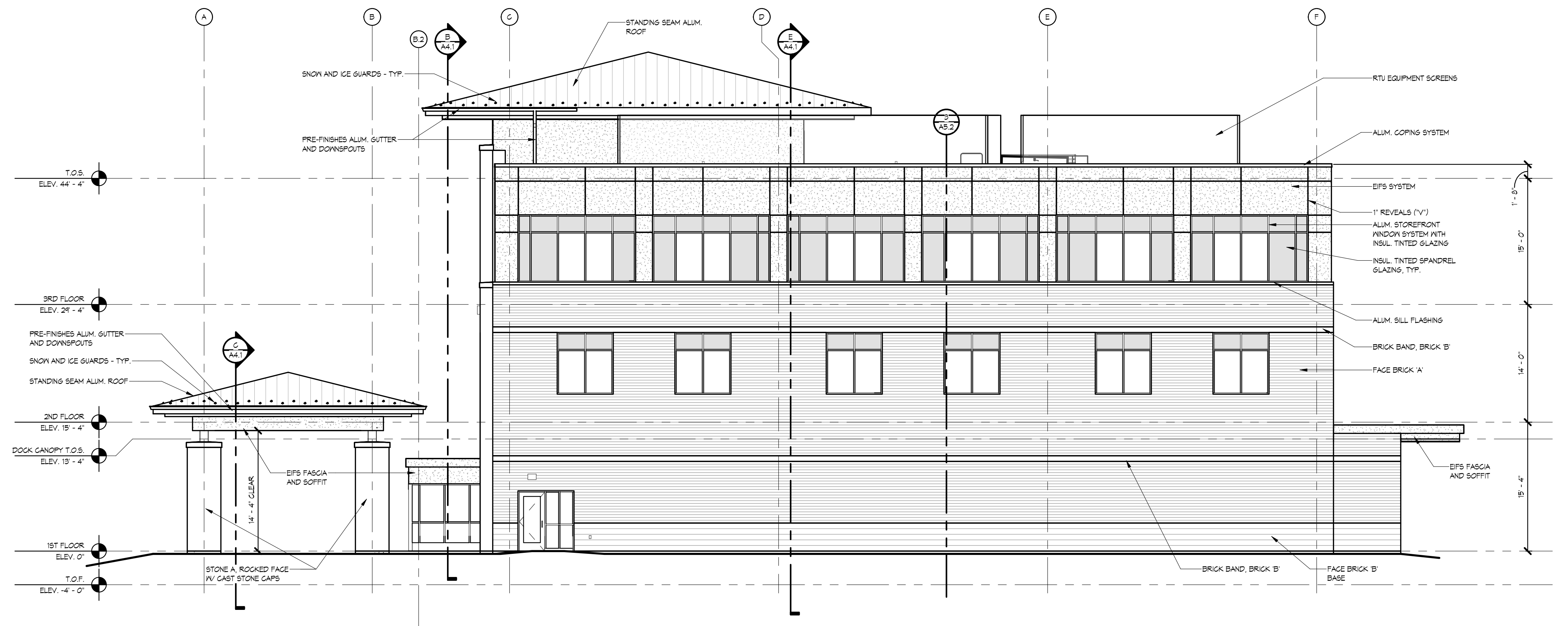
PUD SUBMITTAL

© 2015 DIEKEMA|HAMANN ARCHITECTURE

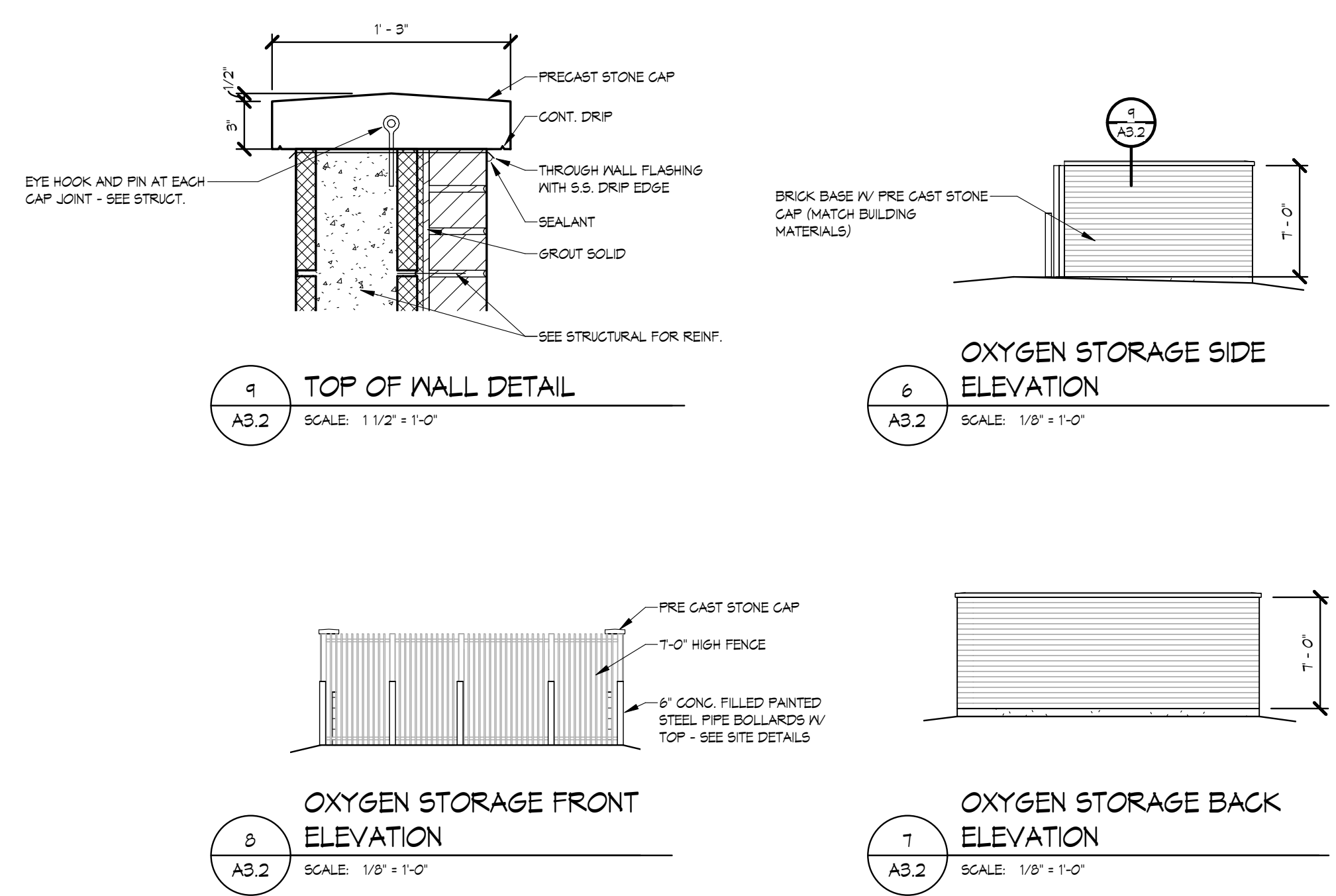




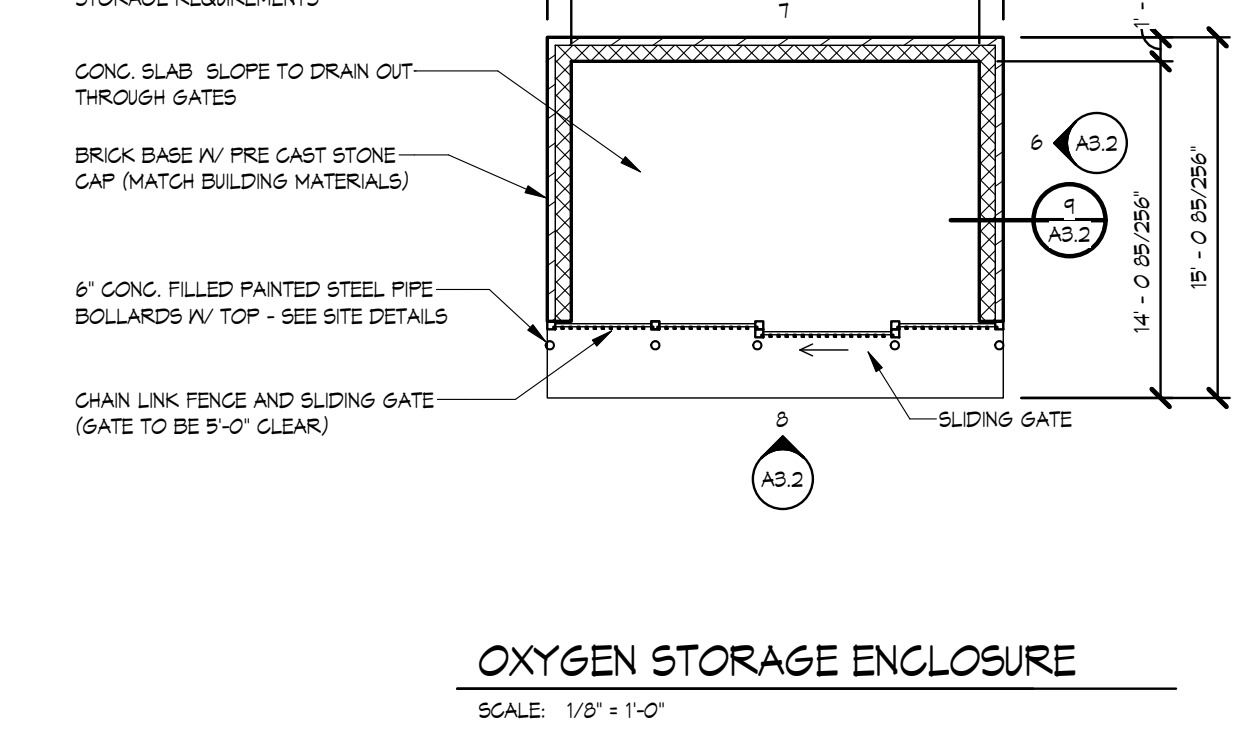
**NORTH ELEVATION**  
SCALE: 1/8" = 1'-0"



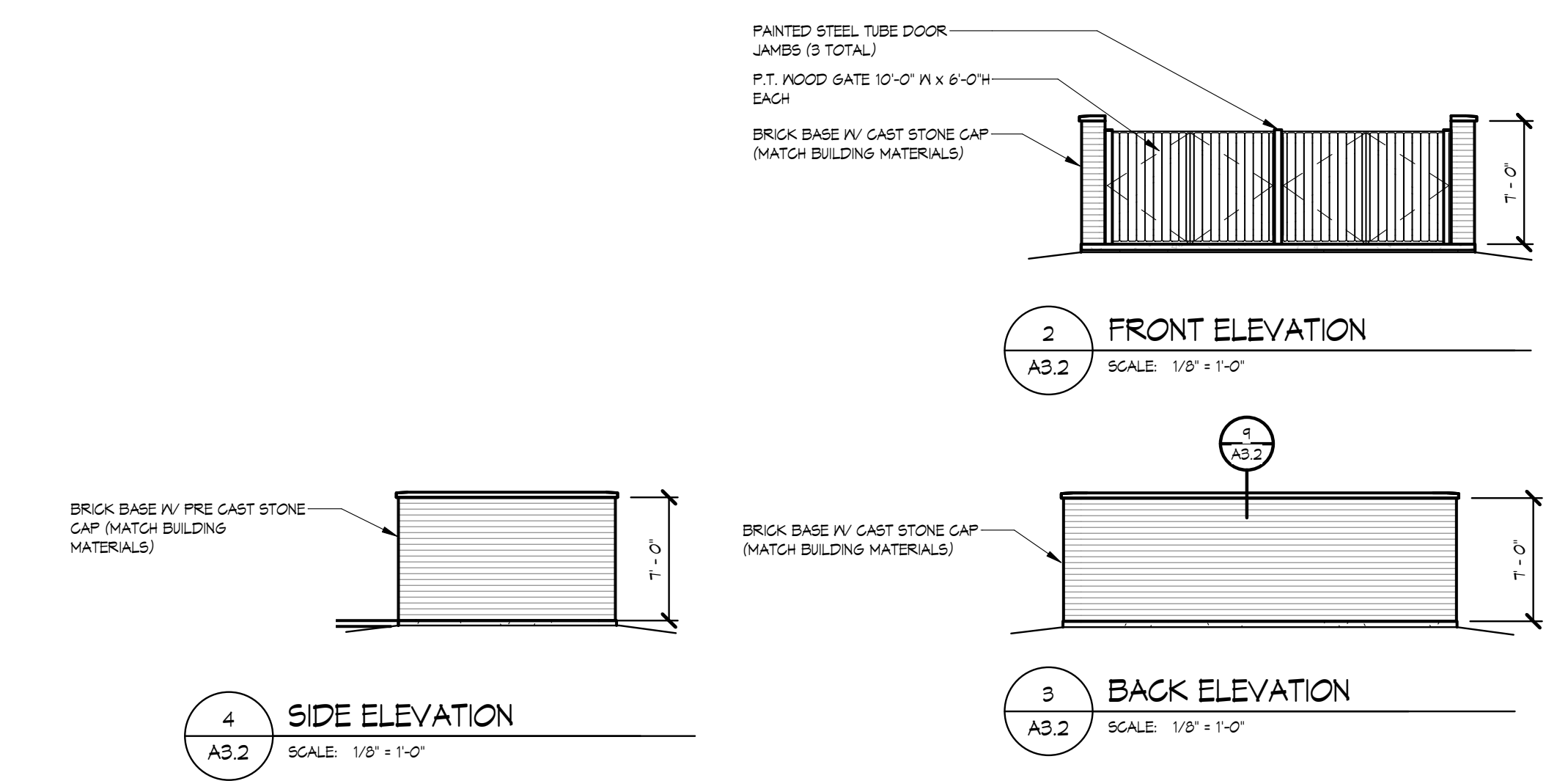
**EAST ELEVATION**  
SCALE: 1/8" = 1'-0"



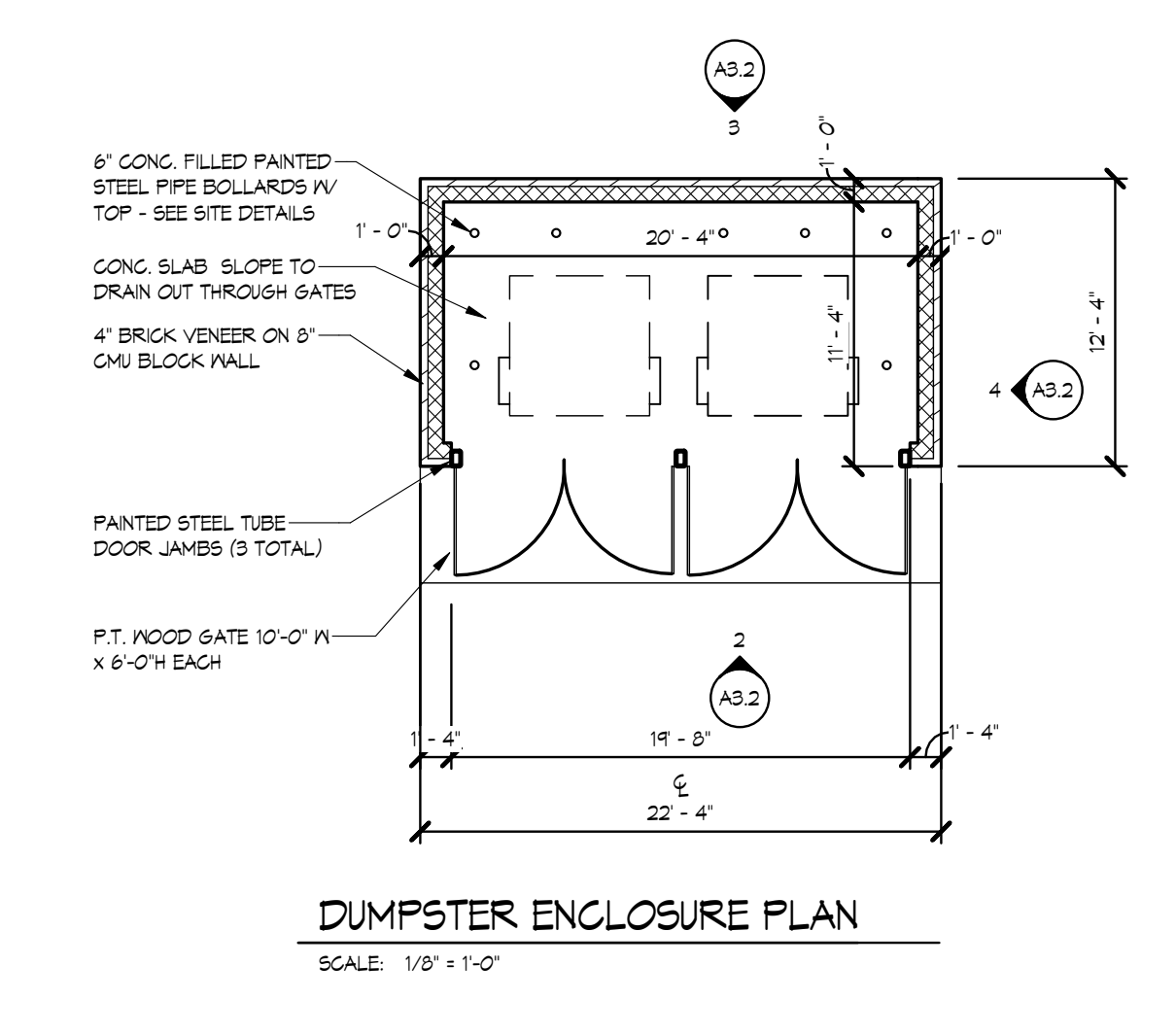
NOTE:  
FINAL SIZE TO BE COORD. IN FIELD  
TO ACCOMMODATE FINAL OXYGEN  
STORAGE REQUIREMENTS



**OXYGEN STORAGE ENCLOSURE**  
SCALE: 1/8" = 1'-0"



**BACK ELEVATION**  
SCALE: 1/8" = 1'-0"



**DUMPSTER ENCLOSURE PLAN**  
SCALE: 1/8" = 1'-0"

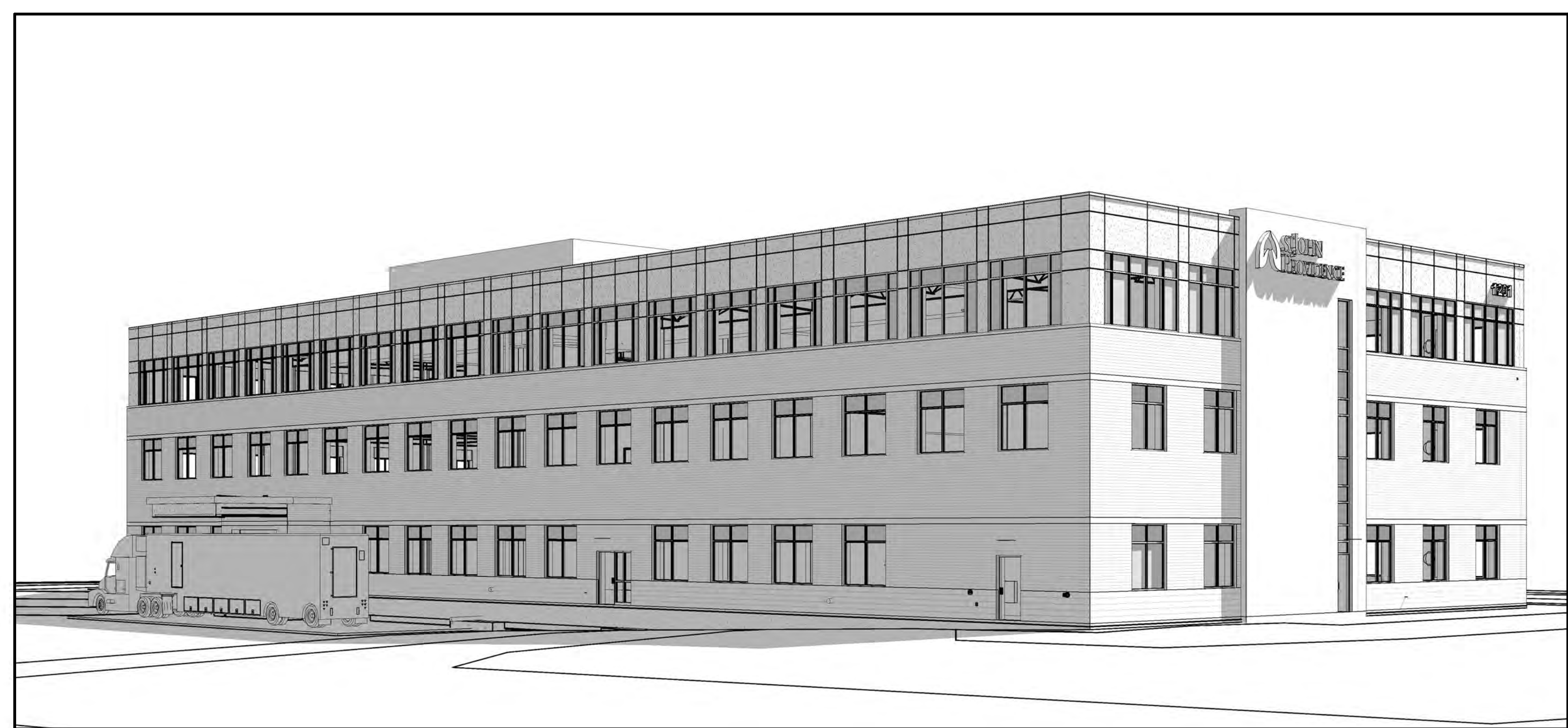
PRELIMINARY NOT  
FOR CONSTRUCTION

LIVINGSTON AMBULATORY FACILITY  
**FRAUENSHUH HEALTHCARE REAL ESTATE SOLUTIONS**  
1701 S. LATSON ROAD  
GENOA TOWNSHIP, MI 48843





3D VIEW - BIRDS EYE LOOKING NORTH EAST



3D VIEW - LOOKING SOUTH EAST



3D VIEW - LOOKING NORTH EAST



3D VIEW - LOOKING NORTH WEST



**DIEKEMA | HAMANN**  
architecture  
612 South Park Street  
Kalamazoo, Michigan 49007  
100 Grandville SW  
Grand Rapids, Michigan 49503  
TL 269.373.1108  
FX 269.373.1186

PERMANENTLY NOT  
FOR CONSTRUCTION

LIVINGSTON AMBULATORY FACILITY  
**FRAUENSHUH HEALTHCARE REAL ESTATE SOLUTIONS**  
1701 S. LATSON ROAD  
GENOA TOWNSHIP, MI 48843

ISSUED: APRIL 1, 2015

REVISIONS:

PROJECT NUMBER:

14094.00

SHEET TITLE:

EXTERIOR 3D VIEWS

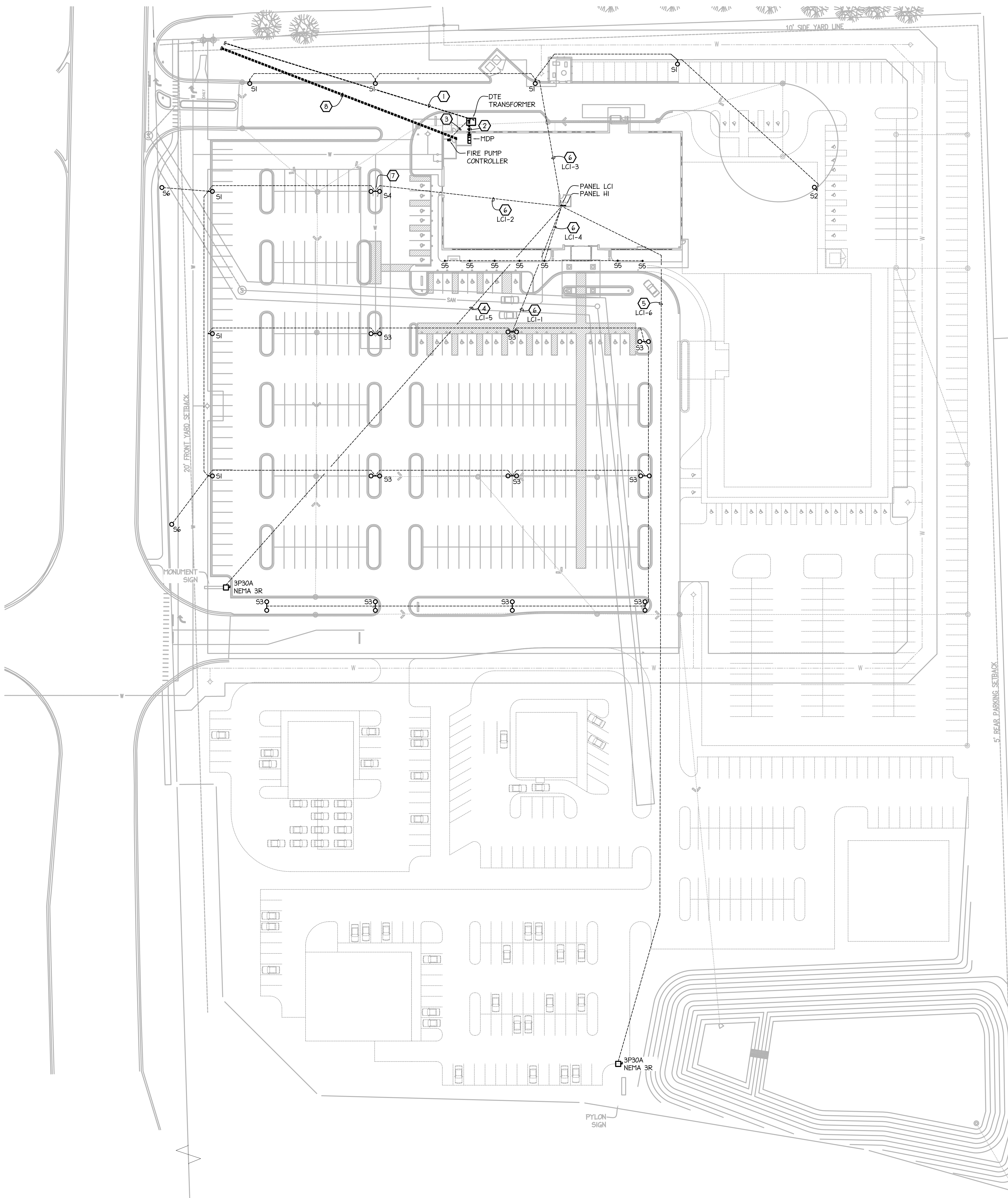
SHEET NUMBER:

**A3.3**

PLD SUBMITTAL

This drawing, as an instrument of service, is owned by the designer herein and shall remain the property of the designer. No part of this drawing may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or by any information storage and retrieval system, without express authorization from the architect.  
© 2015 DIEKEMA|HAMANN ARCHITECTURE





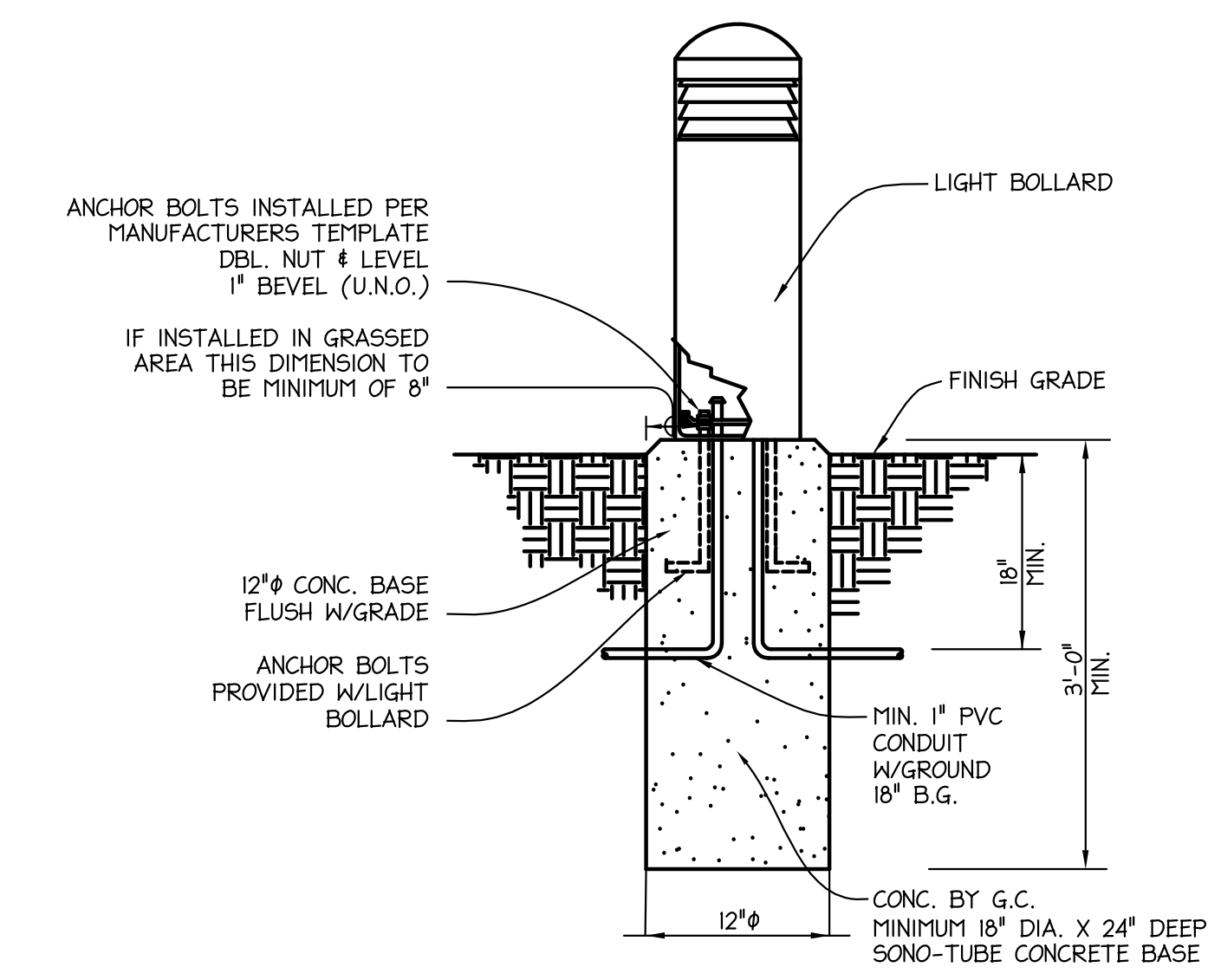
NORTH  
**ELECTRICAL SITE PLAN**  
 SCALE: 1" = 40'-0"

TAG	DESCRIPTION	MANUFACTURER	CATALOG NUMBER	LAMP DATA				NOTES
				TYPE	QTY	WATTS	INPUT VOLTS	
S1	LED AREA LUMINAIRE - SINGLE UNIT	LITHONIA	DSXI LED 40C 700 40K T3M MVOLT SPA HS DBLXD	LED	1	89	277	1,3
S2	LED AREA LUMINAIRE - SINGLE UNIT	LITHONIA	DSXI LED 40C 700 40K T3M MVOLT SPA HS DBLXD	LED	1	89	277	1,3
S3	LED AREA LUMINAIRE - 2 AT 180°	LITHONIA	DSXI LED 40C 700 40K T3M MVOLT SPA HS DBLXD	LED	2	89	277	2,3
S4	LED AREA LUMINAIRE - 2 AT 180°	LITHONIA	FIXTURE 1 - DSXI LED 40C 700 40K T3M MVOLT SPA HS DBLXD FIXTURE 2 - DSXI LED 40C 700 40K T3M MVOLT SPA HS DBLXD	LED	2	89	277	2,3
S5	LED BOLLARD	LITHONIA	DSXB LED 12C 350 40K ASY MVOLT DBLXD	LED	1	16	277	4
S6	LED DECORATIVE ACORN	ANTIQUE STREET LAMPS	AL25 A 32LED 525MA 4K ACT VOLT MT NS DBL	LED	1	77	277	5

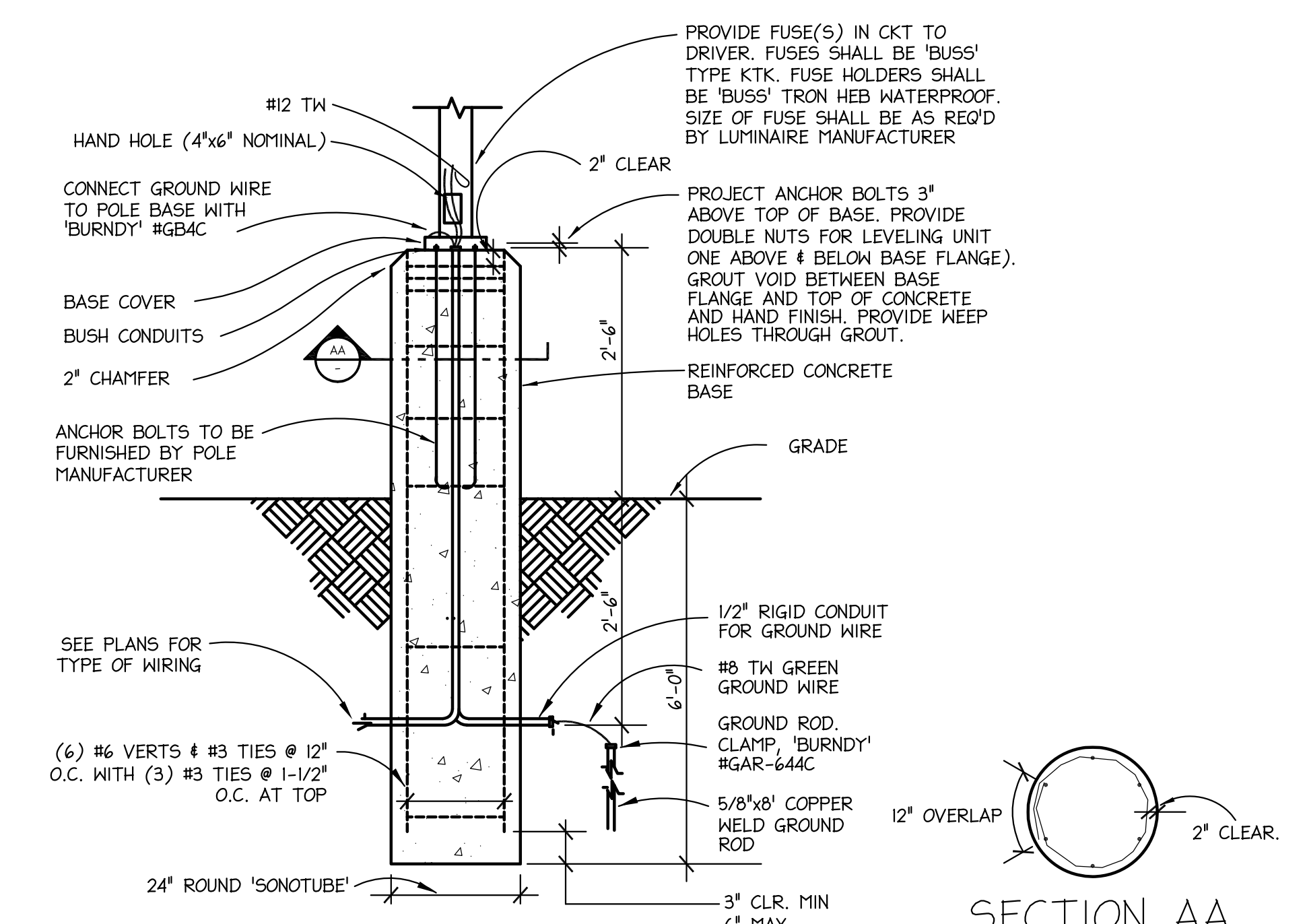
- NOTES:**
- NOMINAL MOUNTING HEIGHT OF 20'. POLE: LITHONIA 555 20 5G D198AS DBL.
  - NOMINAL MOUNTING HEIGHT OF 20'. POLE: LITHONIA 555 20 5G D128AS DBL.
  - REFER TO DETAIL 01/E01 FOR POLE BASE DETAIL.
  - REFER TO DETAIL 02/E01 FOR BOLLARD BASE DETAIL.
  - NOMINAL MOUNTING HEIGHT OF 10'. POLE: ANTIQUE STREET LAMPS PX PTFB18 10 F4

**ELECTRICAL SITE PLAN NOTES:**

- GENERAL NOTES:**
- COORDINATE EXACT LOCATION OF ISLANDS AND PARKING SPACE WITH CIVIL TRADES. POLES SHALL BE CENTERED IN ISLANDS AND UNDER NO CIRCUMSTANCES, SHALL NOT INFRINGE ON PARKING SPACES.
  - BRANCH CIRCUIT FOR SITE LIGHTING SHALL BE (2)#10+RGND IN MIN 1" CONDUIT.
  - REFER TO LUMINAIRE SCHEDULE - FIXTURE 1 SHALL BE POSITIONED TO THE WEST AND FIXTURE 2 SHALL BE POSITIONED TO THE EAST.
  - PROVIDE (4)4" AND (1)2" DIRECT BURIED SCHEDULE 40 PVC FROM MAIN ELECTRICAL ROOM TO THE PROPERTY LINE FOR TELECOMMUNICATIONS AND CABLE TV SERVICE.
- KEYED NOTES:**
- PROVIDE UNDERGROUND CONDUIT PER UTILITY'S REQUIREMENTS FOR UNDERGROUND PRIMARY FEED TO PADMOUNT TRANSFORMER.
  - SERVICE ENTRANCE CONDUCTORS TO THE MAIN DISTRIBUTION PANEL (MDP). REFER TO ELECTRICAL ONE-LINE DIAGRAM FOR SIZING.
  - SERVICE ENTRANCE CONDUCTORS TO THE FIRE PUMP CONTROLLER. REFER TO ELECTRICAL ONE-LINE DIAGRAM FOR SIZING.
  - POWER FEED TO MONUMENT SIGN. BRANCH CIRCUIT FOR SITE LIGHTING SHALL BE (2)#8+RGND IN MIN 1-1/4" CONDUIT. BRANCH CIRCUIT SHALL BE METERED.
  - POWER FEED TO PYLON SIGN. BRANCH CIRCUIT FOR SITE LIGHTING SHALL BE (2)#8+RGND IN MIN 1-1/4" CONDUIT. BRANCH CIRCUIT SHALL BE METERED.



**02**  
**01.1**  
 LIGHT BOLLARD  
 INSTALLATION DETAIL  
 NOT TO SCALE



**01**  
**01.1**  
 SITE LIGHT  
 RAISED POLE BASE DETAIL  
 NOT TO SCALE

- GENERAL NOTES:**
- FOR INSTALLATION IN ALL LOCATIONS ADJACENT TO PARKING SPACES, DRIVEWAYS, ROADS, OR WHERE SUSCEPTIBLE TO VEHICLE TRAFFIC.

**PRELIMINARY**  
 NOT FOR CONSTRUCTION

ISSUED: APRIL 23, 2015

REVISIONS:

PROJECT NUMBER:  
 14094.00

SHEET TITLE:  
 ELECTRICAL  
 SITE PLAN

SHEET NUMBER:  
**E0.1**  
 PUD SUBMITTAL



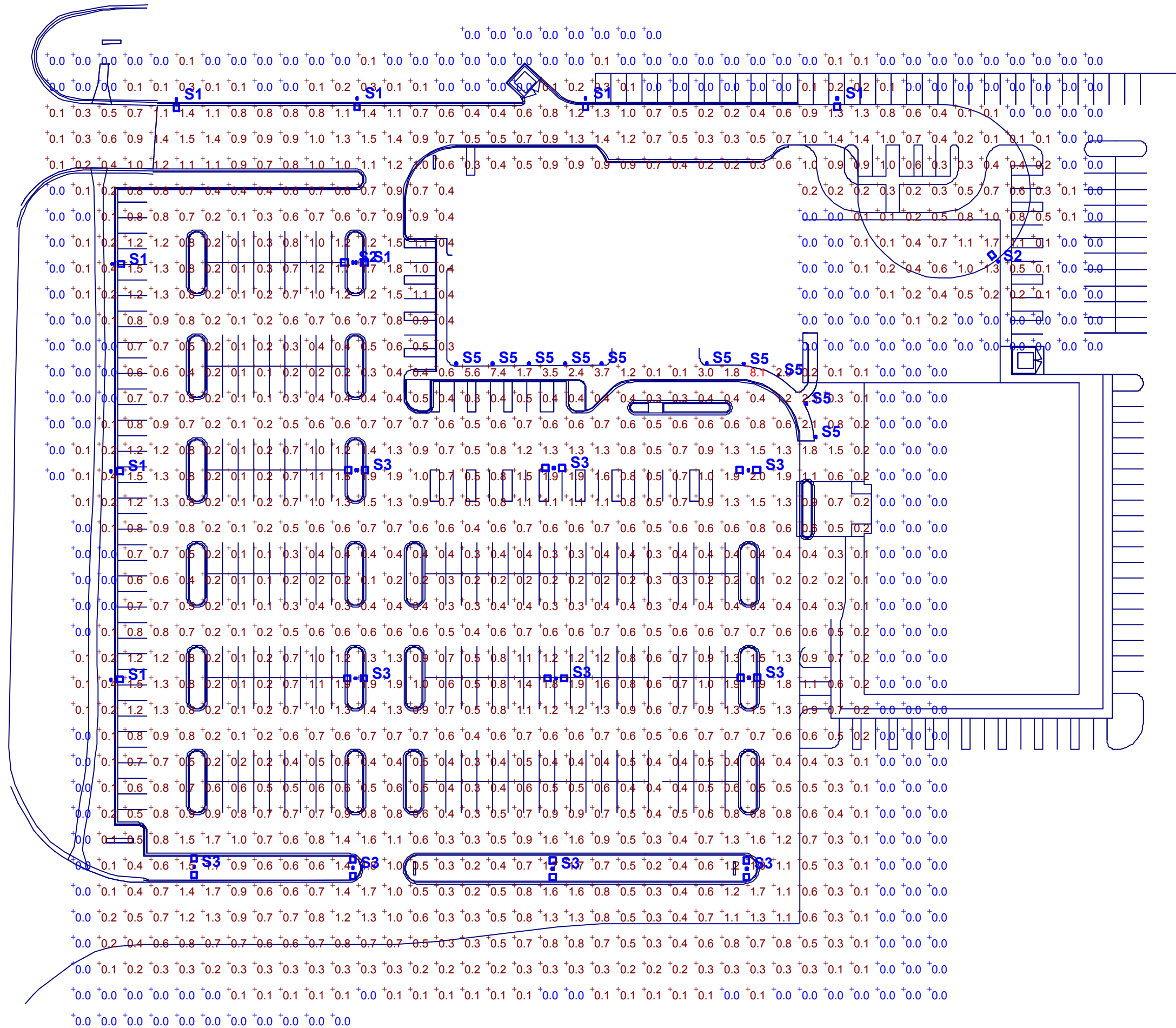
LIVINGSTON AMBULATORY FACILITY  
FRAUNSHUH HEALTHCARE REALESTATE SOLUTIONS

Designer  
BCM

Date  
Apr 1, 2015

Scale  
None

Drawing No.







STATISTICS						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Parking	+	0.5 fc	8.1 fc	0.0 fc	N / A	N / A

LUMINAIRE SCHEDULE									
Symbol	Label	Qty	Catalog Number	Description	Lamp	File	Lumens	LLF	Watts
	S1	8	DSX1 LED 40C 700 30K T3M MVOLT HS	DSX1 LED WITH (2) 20 LED LIGHT ENGINES, TYPE T3M OPTIC, 3000K, @ 700mA WITH HOUSE SIDE SHIELD	LED	DSX1_LED_40 C_700_30K_T3 M_MVOLT_HS .ies	Absolute	1.00	89
	S2	2	DSX1 LED 40C 700 30K TFTM MVOLT HS	DSX1 LED WITH (2) 20 LED LIGHT ENGINES, TYPE TFTM OPTIC, 3000K, @ 700mA WITH HOUSE SIDE SHIELD	LED	DSX1_LED_40 C_700_30K_TF TM_MVOLT_H S.ies	Absolute	0.95	89
	S3	10	DSX1 LED 40C 700 30K TFTM MVOLT HS	DSX1 LED WITH (2) 20 LED LIGHT ENGINES, TYPE TFTM OPTIC, 3000K, @ 700mA WITH HOUSE SIDE SHIELD	LED	DSX1_LED_40 C_700_30K_TF TM_MVOLT_H S.ies	Absolute	0.95	178
	S5	10	DSXB LED 12C 350 40K ASY	D-SERIES BOLLARD WITH 12 4000K LEDS OPERATED AT 350mA AND ASYMMETRIC DISTRIBUTION	LED	DSXB_LED_12 C_350_40K_A SY.ies	Absolute	0.95	16

**Designer**  
BCM

**Date**  
Apr 1, 2015

**Scale**  
None

**Drawing No.**

**Proposed Site Luminaire Package at:**

**Livingston Ambulatory Facility**  
Howell, Michigan

4/1/2015  
DHAE Project # 14094.00

**PREPARED BY: Brent Meyer**



DIEKEMA | HAMANN  
architecture+engineering



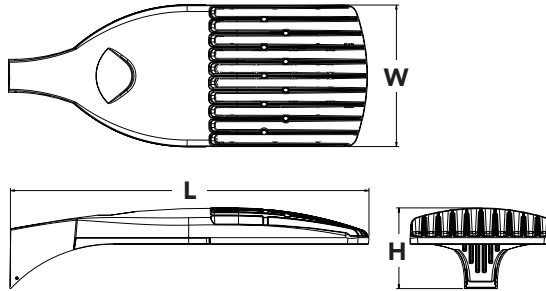
# D-Series Size 1 LED Area Luminaire



d<sup>series</sup>

## Specifications

<b>EPA:</b>	1.2 ft <sup>2</sup> (0.11 m <sup>2</sup> )
<b>Length:</b>	33" (83.8 cm)
<b>Width:</b>	13" (33.0 cm)
<b>Height:</b>	7-1/2" (19.0 cm)
<b>Weight (max):</b>	27 lbs (12.2 kg)



Catalog Number

Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

## Introduction

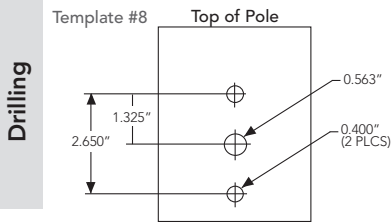
The modern styling of the D-Series is striking yet unobtrusive - making a bold, progressive statement even as it blends seamlessly with its environment.

The D-Series distills the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire. The outstanding photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. It is ideal for replacing 100 – 400W metal halide in pedestrian and area lighting applications with typical energy savings of 65% and expected service life of over 100,000 hours.

## Ordering Information

EXAMPLE: DSX1 LED 60C 1000 40K T3M MVOLT SPA DDBXD

Series	LEDs	Drive current	Color temperature	Distribution	Voltage	Mounting	Control options	Other options	Finish (required)
DSX1 LED	<b>Forward optics</b>	530 530 mA	30K 3000 K (80 CRI min.)	T1S Type I short	MVOLT <sup>3</sup>	<b>Shipped included</b>	<b>Shipped installed</b>	<b>Shipped installed</b>	DDBXD Dark bronze
	30C 30 LEDs (one engine)	700 700 mA	40K 4000 K (70 CRI min.)	T2S Type II short	120 <sup>3</sup>	SPA Square pole mounting	PER NEMA twist-lock receptacle only (no controls) <sup>7</sup>	HS House-side shield <sup>14</sup>	DBLXD Black
	40C 40 LEDs (two engines)	1000 1000 mA (1 A)	50K 5000 K (70 CRI)	T2M Type II medium	208 <sup>3</sup>	RPA Round pole mounting	DMG 0-10V dimming driver (no controls) <sup>8</sup>	WTB Utility terminal block <sup>15</sup>	DNAXD Natural aluminum
	60C 60 LEDs (two engines)		AMBPC Amber phosphor converted <sup>2</sup>	T3S Type III short	240 <sup>3</sup>	WBA Wall bracket	DCR Dimmable and controllable via ROAM <sup>9</sup> (no controls) <sup>9</sup>	SF Single fuse (120, 277, 347V) <sup>16</sup>	DWHXD White
	<b>Rotated optics<sup>1</sup></b>			T3M Type III medium	277 <sup>3</sup>	SPUMBA Square pole universal mounting adaptor <sup>5</sup>	DS Dual switching <sup>10,11</sup>	DF Double fuse (208, 240, 480V) <sup>16</sup>	DDBTXD Textured dark bronze
	60C 60 LEDs (two engines)			T4M Type IV medium	347 <sup>4</sup>	RPUMBA Round pole universal mounting adaptor <sup>5</sup>	PIR Motion sensor, 8-15' mounting height <sup>12</sup>	L90 Left rotated optics <sup>17</sup>	DBLBXD Textured black
				TFTM Forward throw medium	480 <sup>4</sup>	<b>Shipped separately<sup>6</sup></b>	PIRH Motion sensor, 15-30' mounting height <sup>12</sup>	R90 Right rotated optics <sup>17</sup>	DNATXD Textured natural aluminum
				T5VS Type V very short		KMA8 Mast arm mounting bracket adaptor (specify finish)	BL30 Bi-level switched dimming, 30% <sup>11,13</sup>		DWHGXD Textured white
				T5S Type V short			BL50 Bi-level switched dimming, 50% <sup>11,13</sup>		
				T5M Type V medium					
				T5W Type V wide					



<b>Drilling</b>	Template #8	Top of Pole
<b>Accessories</b> <small>Ordered and shipped separately.</small>	DLL127F 1.5 JU	Photocell - SSL twist-lock (120-277V) <sup>18</sup>
	DLL347F 1.5 CUL JU	Photocell - SSL twist-lock (347V) <sup>18</sup>
	DLL480F 1.5 CUL JU	Photocell - SSL twist-lock (480V) <sup>18</sup>
	SC U	Shorting cap <sup>18</sup>
	DSX1HS 30C U	House-side shield for 30 LED unit
	DSX1HS 40C U	House-side shield for 40 LED unit
	DSX1HS 60C U	House-side shield for 60 LED unit
	PUMBA DDBXD U*	Square and round pole universal mounting bracket adaptor (specify finish)
	KMA8 DDBXD U	Mast arm mounting bracket adaptor (specify finish) <sup>6</sup>

DSX1 shares a unique drilling pattern with the AERIS™ family. Specify this drilling pattern when specifying poles, per the table below.

<b>DM19AS</b>	Single unit	<b>DM29AS</b>	2 at 90°*
<b>DM28AS</b>	2 at 180°	<b>DM39AS</b>	3 at 90°*
<b>DM49AS</b>	4 at 90°*	<b>DM32AS</b>	3 at 120°**

Example: SSA 20 4C DM19AS DDBXD

Visit Lithonia Lighting's POLES CENTRAL to see our wide selection of poles, accessories and educational tools.

\*Round pole top must be 3.25" O.D. minimum.  
\*\*For round pole mounting (RPA) only.

## Tenon Mounting Slipfitter\*\*

Tenon O.D.	Single Unit	2 at 180°	2 at 90°	3 at 120°	3 at 90°	4 at 90°
2-3/8"	AST20-190	AST20-280	AST20-290	AST20-320	AST20-390	AST20-490
2-7/8"	AST25-190	AST25-280	AST25-290	AST25-320	AST25-390	AST25-490
4"	AST35-190	AST35-280	AST35-290	AST35-320	AST35-390	AST35-490

## NOTES

- Rotated optics only available with 60C.
- AMBPC only available with 530mA or 700mA.
- MVOLT driver operates on any line voltage from 120-277V (50/60 Hz). Specify 120, 208, 240 or 277 options only when ordering with fusing (SF, DF options).
- Not available with single board, 530mA product (30C 530, or 60C 530 DS). Not available with DCR, BL30 or BL50.
- Available as a separate combination accessory: PUMBA (finish) U; 1.5 G vibration load rating per ANCI C136.31.
- Must be ordered as a separate accessory; see Accessories information. For use with 2-3/8" mast arm (not included).
- Photocell ordered and shipped as a separate line item from Acuity Brands Controls. See accessories. Not available with DS or DCR.
- DMG option for 347v or 480v requires 1000mA
- Specifies a ROAM® enabled luminaire with 0-10V dimming capability; PER option required. Not available with 347 or 480V. Additional hardware and services required for ROAM® deployment; must be purchased separately. Call 1-800-442-6745 or email: sales@roamservices.net. N/A with BL30, BL50, DS, PIR or PIRH.
- Requires 40C or 60C. Provides 50/50 luminaire operation via two independent drivers on two separate circuits. N/A with PER, DCR, WTB, PIR, or PIRH.
- Requires an additional switched circuit.
- PIR specifies the SensorSwitch SBGR-10-ODP control; PIRH specifies the SensorSwitch SBGR-6-ODP control; see Motion Sensor Guide for details. Dimming driver standard. Not available with DS or DCR.
- Dimming driver standard. MVOLT only. Not available with DCR.
- Also available as a separate accessory; see Accessories information.
- WTB not available with DS.
- Single fuse (SF) requires 120, 277 or 347 voltage option. Double fuse (DF) requires 208, 240 or 480 voltage option.
- Available with 60 LEDs (60C option) only.
- Requires luminaire to be specified with PER option. Ordered and shipped as a separate line item from Acuity Brands Control.





## FEATURES & SPECIFICATIONS

**INTENDED USE** — Square straight steel pole for up to 39-foot mounting height.

**CONSTRUCTION** — Weldable-grade, hot-rolled, commercial-quality carbon steel tubing with a minimum yield of 55,000 psi (11-gauge), or 50,000 psi (7-gauge). Uniform wall thickness of .1196" or .1793". Shaft is one-piece with a full-length longitudinal high-frequency electric resistance weld. Uniformly square in cross-section with flat sides, small corner radii and excellent torsional qualities. Available shaft widths are 4, 5 and 6 inches.

Anchor base is fabricated from hot-rolled carbon steel plate conforming to ASTM A36, that meets or exceeds a minimum-yield strength of 36,000 psi. Base plate and shaft are circumferentially welded top and bottom. Base cover is finished to match pole.

A handhole having nominal dimensions of 3" x 5" for all shafts. Included is a cover with attachment screws.

Top cap provided with all drill-mount and open top "PT" poles.

Fasteners are high-strength galvanized, zinc-plated or stainless steel.

Finish: Must specify finish.

Grounding: Provision located immediately inside handhole rim. Grounding hardware is not included (provided by others).

Anchor bolts: Top portion of anchor bolt is galvanized per ASTM A-153. Made of steel rod having a minimum yield strength of 55,000 psi.

Note: Specifications subject to change without notice.

Actual performance may differ as a result of end-user environment and application.

Catalog Number
Notes
Type



**Anchor Base Poles**

# SSS

**SQUARE STRAIGHT STEEL**

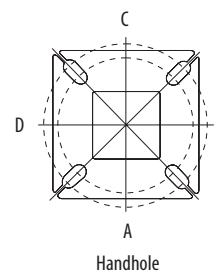
**ORDERING INFORMATION** Lead times will vary depending on options selected. Consult with your sales representative. **Example: SSS 20 5C DM19 DDB**

SSS Series	Nominal fixture mounting height	Nominal shaft base size/wall thickness	Mounting <sup>1</sup>	Options	Finish <sup>10</sup>	
SSS	10 – 39 feet (See back page.)	(See back page.)	<p><b>Tenon mounting</b></p> <p>PT Open top (includes top cap)</p> <p>T20 2-3/8" O.D. (2" NPS)</p> <p>T25 2-7/8" O.D. (2-1/2" NPS)</p> <p>T30 3-1/2" O.D. (3" NPS)</p> <p>T35 4" O.D. (3-1/2" NPS)</p> <p><b>Drill mounting<sup>2</sup></b></p> <p>DM19 1 at 90°</p> <p>DM28 2 at 180°</p> <p>DM28 PL 2 at 180° with one side plugged</p> <p>DM29 2 at 90°</p> <p>DM39 3 at 90°</p> <p>DM49 4 at 90°</p> <p><b>CSX/DSX/AERIS™/OMERO™ Drill mounting<sup>2</sup></b></p> <p>DM19AS 1 at 90°</p> <p>DM28AS 2 at 180°</p> <p>DM29AS 2 at 90°</p> <p>DM39AS 3 at 90°</p> <p>DM49AS 4 at 90°</p>	<p><b>AERIS™ Suspend drill mounting<sup>2,3</sup></b></p> <p>DM19AST_ 1 at 90°</p> <p>DM28AST_ 2 at 180°</p> <p>DM29AST_ 2 at 90°</p> <p>DM39AST_ 3 at 90°</p> <p>DM49AST_ 4 at 90°</p> <p><b>OMERO™ Suspend drill mounting<sup>2,3</sup></b></p> <p>DM19MRT_ 1 at 90°</p> <p>DM28MRT_ 2 at 180°</p> <p>DM29MRT_ 2 at 90°</p> <p>DM39MRT_ 3 at 90°</p> <p>DM49MRT_ 4 at 90°</p>	<p><b>Shipped installed</b></p> <p>L/AB Less anchor bolts</p> <p>VD Vibration damper</p> <p>TP Tamper proof</p> <p>H1-18Sxx Horizontal arm bracket (1 fixture)<sup>4,5</sup></p> <p>FDLxx Festoon outlet less electrical<sup>4</sup></p> <p>CPL12xx 1/2" coupling<sup>4</sup></p> <p>CPL34xx 3/4" coupling<sup>4</sup></p> <p>CPL1xx 1" coupling<sup>4</sup></p> <p>NPL12xx 1/2" threaded nipple<sup>4</sup></p> <p>NPL34xx 3/4" threaded nipple<sup>4</sup></p> <p>NPL1xx 1" threaded nipple<sup>4</sup></p> <p>EHHxx Extra handhole<sup>4,6</sup></p> <p>MAEX Match existing<sup>7</sup></p> <p>USPOM United States point of manufacture<sup>8</sup></p> <p>IC Interior coating<sup>9</sup></p>	<p><b>Standard colors</b></p> <p>DDB Dark bronze</p> <p>DWH White</p> <p>DBL Black</p> <p>DMB Medium bronze</p> <p>DNA Natural aluminum</p> <p><b>Classic colors</b></p> <p>DSS Sandstone</p> <p>DGC Charcoal gray</p> <p>DTG Tennis green</p> <p>DBR Bright red</p> <p>DSB Steel blue</p> <p><b>Architectural colors (powder finish)<sup>10</sup></b></p>

**NOTES:**

- PT open top poles include top cap. When ordering tenon mounting and drill mounting for the same pole, follow this example: DM28/T20. The combination includes a required extra handhole.
- The drilling template to be used for a particular luminaire depends on the luminaire that is used. Refer to the Technical Data Section of the Outdoor Binder for Drilling Templates.
- Insert "1" or "2" to designate fixture size; e.g. DM19AST2.
- Specify location and orientation when ordering option.  
For 1st "x": Specify the height in feet above base of pole.  
Example: 5ft = 5 and 20ft = 20  
For 2nd "x": Specify orientation from handhole (A,B,C,D)  
Refer to the Handhole Orientation diagram above.
- Horizontal arm is 18" x 2-3/8" O.D. tenon standard.
- Combination of tenon-top and drill mount includes extra handhole.
- Must add original order number
- Use when mill certifications are required.
- Provides enhanced corrosion resistance.
- Additional colors available; see [www.lithonia.com/archcolors](http://www.lithonia.com/archcolors) or Architectural Colors brochure (Form No. 794.3). Powder finish standard.

**HANDHOLE ORIENTATION**



**IMPORTANT INSTALLATION NOTES:**

- Do not erect poles without having fixtures installed.
- Factory-supplied templates must be used when setting anchor bolts. Lithonia Lighting will not accept claim for incorrect anchorage placement due to failure to use Lithonia Lighting factory templates.
- If poles are stored outside, all protective wrapping must be removed immediately upon delivery to prevent finish damage.
- Lithonia Lighting is not responsible for the foundation design.



# D-Series LED Bollard



d#series

## Specifications

**Diameter:** 8" Round  
(20.3 cm)

**Height:** 42"  
(106.7 cm)

**Weight (max):** 27 lbs  
(12.25 kg)



Catalog  
Number

Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

## Introduction

The D-Series LED Bollard is a stylish, energy-saving, long-life solution designed to perform the way a bollard should—with zero uplight. An optical leap forward, this full cut-off luminaire will meet the most stringent of lighting codes. The D-Series LED Bollard's rugged construction, durable finish and long-lasting LEDs will provide years of maintenance-free service.

## Ordering Information

**EXAMPLE:** DSXB LED 16C 700 40K SYM MVOLT DDBXD

DSXB LED	Series	LEDs	Drive current	Color temperature	Distribution	Voltage	Control options	Other options	Finish <i>(required)</i>
DSXB LED	Asymmetric	12C 12 LEDs <sup>1</sup>	350 350 mA	30K 3000 K	ASY Asymmetric <sup>1</sup>	MVOLT <sup>5</sup>	PE Photoelectric cell, button type	SF Shipped installed Single fuse (120, 277, 347V) <sup>4,7</sup>	DWHXD White
		450 450 mA <sup>3,4</sup>	40K 4000 K	SYM Symmetric <sup>2</sup>	120 <sup>5</sup>	DNAXD Natural aluminum			
DSXB LED	Symmetric	530 530 mA	50K 5000 K	AMBPC Amber phosphor converted	208 <sup>5</sup>	DMG 0-10V dimming driver (no controls)	DF Double fuse (208, 240V) <sup>4,7</sup>	DDBXD Dark bronze	
		700 700 mA	50K 5000 K						240 <sup>5</sup>
DSXB LED	Symmetric	16C 16 LEDs <sup>2</sup>	700 700 mA	AMBLW Amber limited wavelength <sup>3,4</sup>	277 <sup>5</sup>	ELCW Emergency battery backup <sup>6</sup>	H30 30" overall height	DBLXD Black	
									347 <sup>4</sup>
DSXB LED	Symmetric	16C 16 LEDs <sup>2</sup>	700 700 mA	AMBLW Amber limited wavelength <sup>3,4</sup>	277 <sup>5</sup>	ELCW Emergency battery backup <sup>6</sup>	FG Ground-fault festoon outlet	DBLBXD Textured black	
									347 <sup>4</sup>
DSXB LED	Symmetric	16C 16 LEDs <sup>2</sup>	700 700 mA	AMBLW Amber limited wavelength <sup>3,4</sup>	277 <sup>5</sup>	ELCW Emergency battery backup <sup>6</sup>	L/AB4 4-bolt retrofit base without anchor bolts <sup>8</sup>	DWHGXD Textured white	
									347 <sup>4</sup>

## Accessories

Ordered and shipped separately.

MRAB U Anchor bolts for DSXB<sup>8</sup>

## NOTES

- Only available in the 12C, ASY version.
- Only available in the 16C, SYM version.
- Only available with 450 AMBLW version.
- Not available with ELCW.
- MVOLT driver operates on any line voltage from 120-277V (50/60 Hz). Specify 120, 208, 240 or 277 options only when ordering with fusing (SF, DF options), or photocontrol (PE option).
- Not available with 347V. Not available with fusing. Not available with 450 AMBLW.
- Single fuse (SF) requires 120, 277, or 347 voltage option. Double fuse (DF) requires 208 or 240 voltage option.
- MRAB U not available with L/AB4 option.



# ANTIQUE STREET LAMPS™

## AL25 LED ACORN STYLE

CATALOG # \_\_\_\_\_

PROJECT \_\_\_\_\_

TYPE \_\_\_\_\_



This acorn styled luminaire consists of a decorative luminaire base with an integral globe holder/ballast housing and an acorn shaped globe.

- Acorn globe in clear textured acrylic
- Optional Caged Globe available
- Stainless steel hardware
- 9 different styles of bases coordinate with this luminaire
- TGIC powder coat finish
- 3" O.D. x 3" tall tenon required for mounting
- Rated for -40° to 50° ambient (based on driver)
- ≥ 50,000 hrs. L70 40°C
- ≥ 70,000 hrs L70 25°C
- Performance Comparable to 70W-100W MH (3600-5600 delivered lumens)
- Input watts of 77 @ 700mA
- Driver life of 100,000hrs.at 25° C - all drive currents
- Optional surge protection to C62.41 C-Low (SPDL option)
- 5 year limited warranty



Max EPA: 1.30 sq feet  
 Max Height: 36-1/2 (92.7cm)  
 Max Width: 18-1/4" (46.4cm)  
 Max Weight: 27 lbs (12.2 kg)

Sample Catalog number:

<b>AL25</b> Fixture	<b>E</b> Base	<b>32LED 525MA</b> Source & Wattage	<b>3K</b> Color Temp	<b>ACT</b> Lens Option	<b>MVOLT</b> Voltage	<b>FPF</b> Trim	<b>N5</b> Distrib.	<b>SF</b> Electrical Options
<b>DBL</b> Finish								

### Ordering Guide:

Fixture	Base	Source & Wattage	Color Temp	Lens Option	Voltage	Trim	Distribution	Electrical Options
AL25	A AU D E K M N W X	32LED 525MA 32LED 700MA 24LED 700MA	3K 4K 5K	ACT	MVOLT 347 480	FPF MT DCP	N5 N3*	SF DF PER PE1 PE3 PE4 PE7 PEB1 PEB2

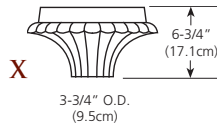
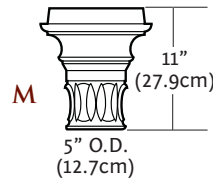
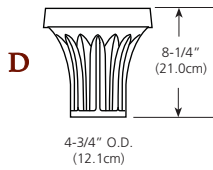
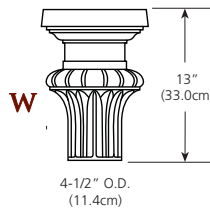
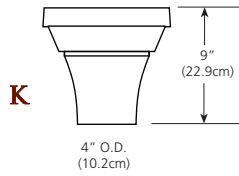
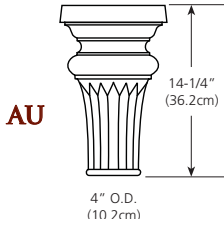
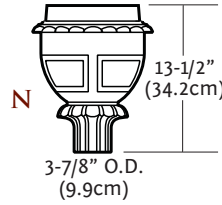
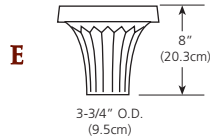
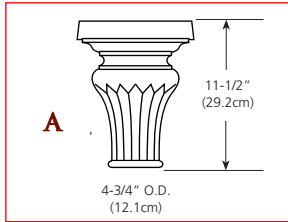
- DBL
- DDB
- DNA
- DWH
- CS
- CM
- ANBK
- ANDB
- ANDG
- ANVG

\*N3 distribution only available with 24 LED 700MA source and wattage selection

## AL25 LED



## BASE



### SELECT YOUR CHOICE FROM

Mount to 3" O.D. x 3" tall tenon: 3T3

- A**     **K**     **X**  
 **AU**     **M**  
 **D**     **N**  
 **E**     **W**

#### Notes:

- Items in bold have shorter lead times.
- Consult factory for wattages available for LDB option.
- LDB option is not available with photocontrol options PEB1 and PEB2.

## SOURCE & WATTAGE

### SELECT YOUR OPTIONS FROM

- 32LED 525MA**  
 **32LED 700MA**  
 **24LED 700MA** (Available in N3 Distribution Only)

## COLOR TEMP

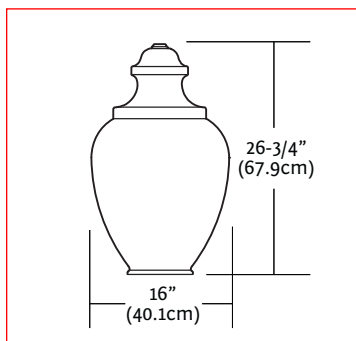
### SELECT YOUR OPTIONS FROM

- 3K**    3000K  
 **4K**    4000K  
 **5K**    5000K

## LENS OPTION

### ANTIQUE STREET LAMPS™

The luminaire has an acorn globe in clear textured acrylic or optional clear or white textured polycarbonate with a cast-aluminum base/ballast housing.



### SELECT YOUR CHOICE FROM

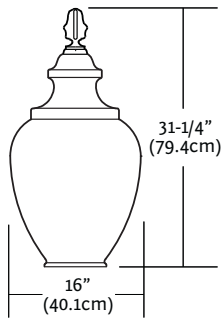
- ACT**    Acrylic, Clear Textured (Standard)

## AL25 LED

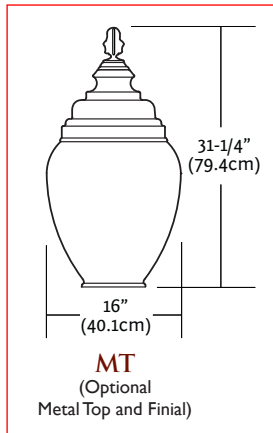
SELECT YOUR OPTIONS FROM

- MVOLT      MVOLT
- 347          347V
- 480          480V

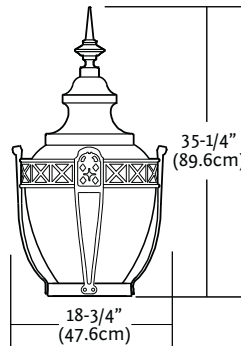
TRIM



**FPF**  
(Optional Cast Aluminum Finial)



**MT**  
(Optional Metal Top and Finial)



**DCP**  
(Optional Decorative Cage and Finial)

SELECT YOUR OPTIONS FROM

- FPF          Finial
- MT          Metal Top and Finial
- DCP          Decorative Cage & Finial

Medallion & Finial are matched to luminaire finish

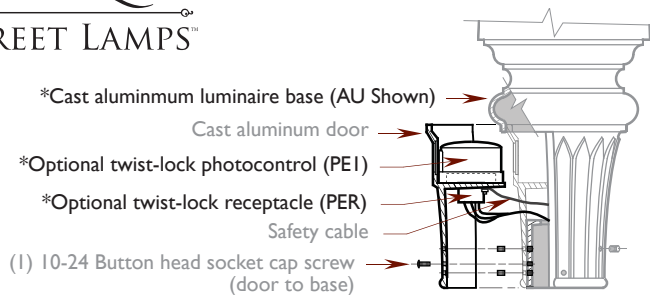
SELECT YOUR OPTIONS FROM

- N5          No Refractor, Type V
- N3\*        No Refractor, Type III

Notes:

\*Available in only 24 LED 700MA selection

ANTIQUE STREET LAMPS™



\*TWIST & LOCK PHOTOELECTRIC CELL OPTIONS  
available with luminaire bases AU only.



SELECT YOUR OPTIONS FROM

- Fuse Not Included*
- SF          Single Fuse
  - DF          Double Fuse
  - PER        Twist-Lock Photocontrol Receptacle
  - PE1        NEMA Twist & Lock PE 120, 208, 240 volt
  - PE3        NEMA Twist & Lock PE 347 volt
  - PE4        NEMA Twist & Lock PE 480 volt
  - PE7        NEMA Twist & Lock PE 277 volt
  - PEB1      Photoelectric Cell Button 120 volt
  - PEB2      Photoelectric Cell Button 208, 240, 277 volt









Notes:

- Twist-lock photocontrol only available with AU base.
- PER is required when PE1, PE3, PE4 or PE7 is used.

The luminaire has a powder coat finish utilizing a premium TGIC polyester powder. The finish is a three-stage process which consists of drying, powder application and curing. Before coating, the parts are treated with a five-stage pretreatment process, consisting of a heated alkaline cleaner; rinse, phosphate coating, rinse and sealant.

For a complete listing of colors, visit:  
[www.acuitybrandslighting.com/architecturalcolors](http://www.acuitybrandslighting.com/architecturalcolors)

SELECT YOUR CHOICE FROM

- DBL** Black 
- DDB** Dark Bronze 
- DNA** Natural Aluminum 
- DWH** White 
- CS** Custom Select (RAL colors)
- CM** Custom Match
- ANBK** ASL Black 
- ANDB** ASL Dark Bronze 
- ANDG** ASL Dark Green 
- ANVG** ASL Verde Green 

Notes:  
• Consult factory for CM option.



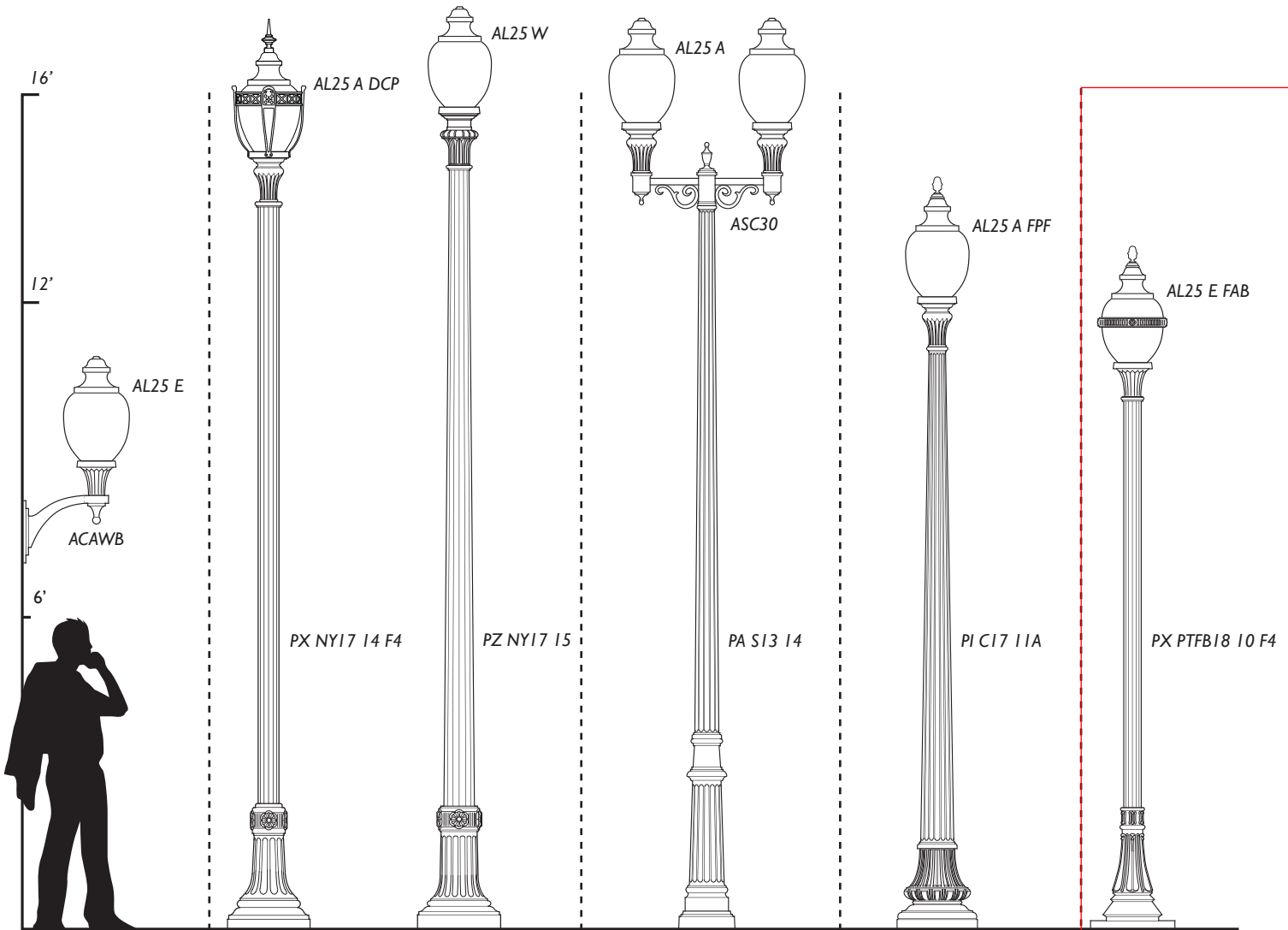
**ACA SERIES**  
CROSSARMS &  
WALL BRACKETS

**NEW YORK SERIES**  
CAST ALUMINUM POST  
IRON & STEEL POST

**SUSSEX SERIES**  
CAST ALUMINUM POST

**CAPITOL SERIES**  
IRON & STEEL POST

**PEACHTREE  
SERIES**  
CAST ALUMINUM POST



For detailed product specifications for Poles and Arm/Wall Mount see the Antique Street Lamps website.



**GENOA CHARTER TOWNSHIP**  
**Application for Site Plan Review**

**GENOA TOWNSHIP**  
**APR 01 2015**

**TO THE GENOA TOWNSHIP PLANNING COMMISSION AND TOWNSHIP BOARD:**

**APPLICANT NAME & ADDRESS:** 2142 Community Church

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

**OWNER'S NAME & ADDRESS:** 2142 Community Church

**SITE ADDRESS:** 7526 Grand River **PARCEL #(s):** 13-400-018

**APPLICANT PHONE:** ( 810 ) 231-0190 **OWNER PHONE:** ( 734 ) 652-8086

**OWNER EMAIL:** eric@242community.com

**LOCATION AND BRIEF DESCRIPTION OF SITE:** South side of Grand River  
between Bendix and Euler Roads. Building and Parking  
lot expansion to the existing 2142 Community Church  
facility.

**BRIEF STATEMENT OF PROPOSED USE:** The proposed expansion  
would add 152 new parking spaces to the facility  
and build an addition of a new youth facility and other  
interior modifications.

**THE FOLLOWING BUILDINGS ARE PROPOSED:** Expansion of the existing  
building with additions that total 19,202 square feet.

**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:** \_\_\_\_\_

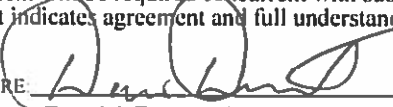
**ADDRESS:** 7526 Grand River, Brighton, MI 48114

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

1.) Eric Rauch of 2142 Community Church at eric@242community.com  
Name Business Affiliation E-mail Address

**FEE EXCEEDANCE AGREEMENT**

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

SIGNATURE:  DATE: March 26th, 2015  
PRINT NAME: David Dummitt PHONE: 734-652-8086  
ADDRESS: 7526 Grand River, Brighton, MI 48114



May 4, 2015

Planning Commission  
Genoa Township  
2911 Dorr Road  
Brighton, Michigan 48116

<b>Attention:</b>	Kelly Van Marter, AICP Assistant Township Manager and Community Development Director
<b>Subject:</b>	2142 Community Church –Site Plan Review #2
<b>Location:</b>	7526 W. Grand River – south side of Grand River, between Hacker and Euler Roads
<b>Zoning:</b>	GCD General Commercial District

Dear Commissioners:

At the Township’s request, we have reviewed the revised site plan (dated 4/22/15) proposing expansion of the existing 2 | 42 Community Church facility. The site is located on the south side of Grand River, between Hacker and Euler Roads, and is zoned GCD General Commercial District. Surrounding zoning includes MHP Manufactured Housing Park to the west, GCD to the east, and NRPUD Nonresidential PUD to the north. The request has been reviewed in accordance with the Genoa Township Zoning Ordinance.

**A. Summary**

1. The proposed building additions will match the existing building in terms of materials, colors and design.
2. Building elevations are subject to Planning Commission review and approval.
3. The applicant proposes to preserve an existing wooded area with a steep slope in lieu of new plantings for the west buffer zone. The Planning Commission has the discretion to permit this under the Zoning Ordinance.
4. The Traffic Impact Study recommends continuation of and enhancement to the traffic management plan developed for the original project. If favorable action is considered on the site plan, these recommendations should be included as a condition to approval.

**B. Proposal**

The applicant requests site plan review/approval of building and parking lot additions for the 2|42 Community Church. The project includes 19,258 square feet of building expansion and an increase of 182 parking spaces, as well as interior modifications. The overall project will increase seating capacity in the main auditorium to 1,656 people.

Section 7.02 lists churches, temples and similar places of worship and related facilities as permitted uses in the GCD. Accordingly, the project requires only site plan review and approval by the Planning Commission, although the Township Board has final approval authority over the Impact Assessment.





*Aerial view of site and surroundings (looking east)*

**C. Site Plan Review**

**1. Dimensional Requirements.** As shown in the table below, the proposed site plan complies with the dimensional standards of the Zoning Ordinance for the GCD.

District	Lot Size		Minimum Setbacks (feet)				Max. Height	Lot Coverage
	Lot Area (acres)	Width (feet)	Front Yard	Side Yard	Rear Yard	Parking		
GCD	1	150	70	15	50	20 front 10 side/rear	35'	35% building 75% impervious
Proposed	11.3 (net)	683	95	295 (E) 33.8 (W)	285.4	21.5 front 20 side 114 rear	34' 8"	19% building 67% impervious

**2. Building Elevations.** The proposed elevations, including colors and materials are subject to review and approval by the Planning Commission. Since this is an existing building, the provisions of Section 12.01.08 apply to the request. More specifically, this section states that “the Planning Commission may allow the use of existing wall materials for the addition provided that the design of the alteration is consistent with the existing building wall design.”

The proposed additions include a variety of unique materials (burnished concrete block, corrugated and weathered metal siding, and wood siding) and colors intended to match the existing building.

**3. Pedestrian Circulation.** The site plan shows the existing 5-foot wide concrete sidewalk along the site’s frontage, with a connection aligned with the Woodland Health sidewalk across Grand River.

Additional walkways, ranging in width from 7 to 11 feet, are provided along the front, east, and south sides of the building, as well as around and within the large landscape island in the middle of the parking lot. Crosswalk connections are also provided between the public and private sidewalks.

**4. Landscaping.** The table below is a summary of the landscaping required by Section 12.02:

Location	Requirements	Proposed	Comments
Front yard greenbelt (N)	17 canopy trees 20-foot width 2-foot tall hedgerow	17 canopy trees 20-foot width 2-foot tall hedgerow (174 shrubs)	Requirement met
Buffer zone "B" (W)	21 canopy trees 21 evergreens 83 shrubs 20-foot width Wall or berm	Existing wooded area and steep slope to be preserved	PC may allow preservation of existing landscaping in lieu of new plantings (Sec. 12.02.13)
Buffer zone "C" (E)	19 canopy trees OR 19 evergreens OR 74 shrubs 10-foot width	9 existing canopy trees 10 proposed canopy trees 20-foot width	Requirement met
Detention pond	9 canopy OR evergreen trees 86 shrubs	9 evergreens 86 shrubs Existing wooded area to be preserved where possible	Requirement met
Parking	37 trees 3,680 s.f. of landscaped area	13 existing; 24 proposed trees 163 existing; 29 proposed shrubs 4,422 s.f. of existing landscaped area	Requirement met

**5. Parking and Circulation.** The church component requires 552 spaces based on the number of seats in the main auditorium. While there are other components to the facility, such as a community center and recreational facility, they were not accounted for in the parking calculations. Based on previous reviews and discussions, it is our understanding that peak usage of the different components will not occur at the same time. The applicant has confirmed this to be the case in the revised submittal.

The plan identifies 552 spaces, although 3 spaces are in front of the rear yard waste receptacle. The applicant has acknowledged this situation; noting that refuse removal will occur during the week, while use of these spaces is only needed for peak use on Sundays.

The total number of spaces includes 17 barrier free spaces, which exceeds the number required (14). Spaces and drive aisles meet the dimensional requirements for perpendicular parking and two-way traffic. Additionally, the Traffic Impact Study includes recommendations to enhance the Traffic Management Plan approved as part of the 2011 project.

**6. Loading.** Given the size of the building, Section 14.08.08 requires 3 loading spaces, which are to be located in a rear or side yard not directly visible to a public street. The table and notes on Sheet C2.0 state the required spaces are provided; however, they are not shown on the plan. To help avoid any conflicts, the notes indicate that no deliveries will be provided during peak Sunday worship services.

There appears to be ample space at the rear of the building to accommodate loading/unloading during off-peak hours.

**7. Waste Receptacle and Enclosure.** The site plan identifies two primary trash areas – a smaller one on the west side of the building and a larger one at the rear of the building. The former will house smaller push carts that will be transferred on a regular basis to the dumpster at the rear of the building. Both are screened with 6-foot tall screen walls. The screening for the smaller area will utilize siding that matches the building, while the larger area will be enclosed with cedar fencing. Both areas provide a concrete base as required.

**8. Exterior Lighting.** The site plan identifies 11 new pole mounted light fixtures; 7 of which are standard parking lot lights and the remainder are a more decorative style. Details and cut sheets provided show that all proposed fixtures are downward directed metal halide, as required. There are also 14 illuminated bollards along the east side of the proposed addition that are indicated on the site plan, but not the lighting plan.

The maximum on-site intensity is 9.6 foot-candles, which is within the maximum allowed (10). Readings along property lines are also within acceptable limits.

The majority of the fixtures are mounted at a height of 30 feet (8), while the remainder (6) are at 20 feet. Fixtures nearer the west lot line, adjacent to residential, are mounted at 20 feet per Ordinance requirements.

**9. Signs.** The submittal indicates that existing signage is to remain and no additional signage is proposed as part of this project with the exception of permitted directional signage.

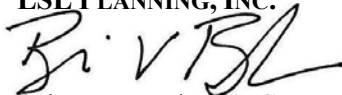
**10. Impact Assessment.** An updated Impact Assessment (4/22/15) is included with the submittal. In summary, the Assessment notes that the project is not anticipated to create any adverse impacts upon natural features, public services/utilities, surrounding land uses or traffic.

**11. Traffic Study.** Given the anticipated increase in traffic generation, the applicant has prepared an updated traffic impact study update (3/24/15), which includes recommendations to enhance the traffic management plan implemented with the 2011 project. We will defer to the Township Engineer for any additional comments.

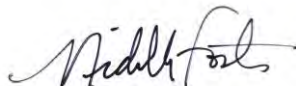
Should you have any questions concerning this matter, please do not hesitate to contact our office. We can be reached by phone at (248) 586-0505, or via e-mail at [borden@lslplanning.com](mailto:borden@lslplanning.com) and [foster@lslplanning.com](mailto:foster@lslplanning.com).

Sincerely,

LSL PLANNING, INC.



Brian V. Borden, AICP  
Principal Planner



Michelle Foster  
Project Planner



May 5, 2015

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

**Re: 242 Church Site Additions  
Site Plan Review #2**

Dear Ms. Van Marter:

We have reviewed the updated site plan documents from Desine Inc. dated April 22, 2015, which were provided by the Township April 23, 2015. The petitioner is planning to construct three building additions totaling 19,258 sft, a parking lot expansion, and significant modifications to the existing stormwater management system at the existing 242 Church. Tetra Tech has reviewed the documents and we offer the following additional comments:

**SUMMARY**

1. Review vertical clearances for utility crossings.

**SITE PLAN**

1. The water main crossing of the storm sewer is less than 18 inches of clearance and should be revised for the construction plan review. With water main going beneath the storm sewer it would be nearly 10 feet deep, which is not desirable. The petitioner can achieve approximately 0.5 feet of clearance if the water main is routed above the storm sewer with 5.5 feet of cover. We suggest exploring this option in conjunction with a concrete collar between the pipes.

The petitioner addressed all other previous comments to our satisfaction. The drawings will require a MHOG construction plan review, at which time the comment above must be addressed. Please call if you have any questions.

Sincerely,

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

Gary J. Markstrom, P.E.  
Unit Vice President

A handwritten signature in blue ink, appearing to read 'Joseph C. Siwek'.

Joseph C. Siwek, P.E.  
Project Engineer

Copy: Eric Rauch, 242 Church  
Wayne Perry, P.E., Desine Inc.





# BRIGHTON AREA FIRE AUTHORITY

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

April 29, 2015

Kelly VanMarter  
Genoa Township  
2911 Dorr Road  
Brighton, MI 48116

RE: 2/42 Community Church Addition & Parking Lot Expansion  
7526 Grand River  
Site Plan Review

Dear Kelly:

The Brighton Area Fire Department has reviewed the above mentioned site plan. The plans were received for review on April 1, 2015 and the drawings are dated April 1, 2015. The project is based on numerous additions amounting to 19,202 square feet. The building will also undergo a large interior alteration of previous unfinished space. The building parking will undergo a large expansion. The plan review is based on the requirements of the International Fire Code (IFC) 2012 edition. Previous comments appear to be addressed by the applicant in the revised submittal.

1. The new building additions shall be provided with an automatic sprinkler system in accordance with NFPA 13, *Standard for the Installation of Automatic Sprinkler Systems*.  
**IFC 903**
2. The new access drive/aisles into the new southern parking area shall be a minimum 26' wide to accommodate emergency vehicles. This width must be maintained through the parking area. 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 75,000 pounds. Special attention shall be for area of parking areas constructed over underground storm water management system. (Corrected on Plan)  
**IFC D 103**
3. Access around building shall provide emergency vehicles with an outside turning radius up to 55' and an inside radius of at least 30'. A minimum vertical clearance of 13 ½ feet shall also be maintained. (Corrected on Plan)

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 that reads "D Bunge".

Derrick Bunge  
Lieutenant-Fire Inspector

April 22, 2015

**2|42 Community Church  
Genoa Township, Michigan  
Site Plan Application**

**IMPACT ASSESSMENT  
TRAFFIC IMPACT STUDY**

**GENOA TOWNSHIP**

**APR 23 2015**

**Owner:**

2|42 Community Church  
7526 Grand River  
Brighton, Michigan 48114

**Prepared by:**

DESINE INC.  
2183 Pless Drive  
Brighton, Michigan 48114

## A. INTRODUCTION

This impact assessment has been prepared pursuant to Article 18 – SITE PLAN REVIEW of the Zoning Ordinance for the Township of Genoa, Livingston County, Michigan. This assessment addresses the impact of the proposed building additions and parking expansion on the surrounding community and the economic condition and social environment of the Township. The site consists of 12.09 acres of property, currently zoned General Commercial (GCD) district, and located on the South side of Grand River, West of Bendix Road, across from the Woodland Medical Center in Section 13, as shown on Figure 1.

The site plan as submitted presents the proposed additions and improvements to the existing 2|42 Community Church site. Additions and improvements consist of two additions on the East side of the existing facility and one addition on the South side of the building, new drives, an expanded parking area East and South of the building, an underground storm detention system and related site improvements. The existing building has an area of 73,859 square feet. Proposed building additions provide an additional 19,258 square feet containing an additional entry, community areas, meeting rooms, performance spaces, recreation areas and storage. The Northerly addition on the East side of the building will contain a new child care area. The Southerly addition on the East side will contain a small performance auditorium, meeting room, recreation area and related improvements. The addition on the South side of the building will provide additional enclosed storage. Building floor plans included as a part of the site plan submittal, depict interior building spaces and uses in greater detail.

Parking areas and access drives are located on the East and South side of the building, and cafe parking is located to the North. The site currently contains 370 paved parking spaces. An additional 182 spaces will be constructed on the site providing a total of 552 on-site parking spaces. Appurtenant features including commercial access drives, drive aisles/drop-off lanes, unloading/loading area, patios, sidewalks and landscaping are also presented in the site plan. An aerial photograph depicting the proposed site improvements is provided in Figure 2.

This Impact Assessment has been prepared under the direction of Wayne Perry, P.E., DESINE INC., 2183 Pless Drive, Brighton, Michigan 48114. Mr. Perry is a licensed Civil Engineer, providing professional engineering services in Livingston County since 1988 with experience in private and municipal development including projects within Genoa Township and Livingston County.

## B. SITE LOCATION / DESCRIPTION

The site is 12.09 acres in area, currently zoned General Commercial (GCD), contains a 73,859 square foot commercial building, parking lot and storm water detention basin, as shown on Figure 1. A portion of Morse Lake is included within the property, at the South side of the site. The Existing Conditions Plan provides a detailed overview of the existing site features.



Adjacent uses within 100-feet of the property include a three-story office building to the East, the Woodland Health Center to the North, a manufactured home community to the West and Morse Lake to the South. An aerial photograph depicting the proposed site improvements is provided in Figure 2.

### C. IMPACT ON NATURAL FEATURES

Natural features on the subject parcel consist of re-established field grasses and shrub/scrub brush in the Southerly portion of the parcel, adjacent to Morse Lake and along the East and West property boundaries. Existing topography of the site is generally flat to gently sloping terrain in the North 2/3 of the property. The South 1/3 of the site consists of rolling terrain characteristic to the existing storm water detention basin and Morse Lake shoreline. The elevation of the property varies from 972.00 adjacent to Grand River on the North, to a water elevation of approximately 949.50 at Morse Lake at the South end of the parcel. Surface water drainage on the property generally flows to the South, toward Morse Lake.

The soils on the upland portions of the property are primarily Boyer-Oshtemo loamy sands. These soils are generally well-drained, moderately permeable, loamy sands. Soil classifications are prepared by the United States Department of Agriculture, Soil Conservation Service, and "Soil Survey of Livingston County". The Soils Map, shown in Figure 3, shows the locations of specific soil types as classified.

The proposed additions to the building and expansion to the parking areas will require filling and grading on the South side of the existing parking lot to fill a large portion of the existing detention basin. Excavation will be required to construct the proposed underground storm water detention system.

The limits of disturbance have been depicted on the grading plan. Grading for this project will maintain the general character of the existing site. Development of this project will result in an overall balancing of the useable materials available on the site, requiring the exporting of excess topsoil and importing of additional structural fill material. The proposed elevations and grading of the site mesh with the existing grades at the property lines and adjacent to Morse Lake.

Landscaping is proposed for the developed portion of the site to reduce the visual impact of the proposed project. The existing vegetative buffer along Morse Lake will be preserved to minimize the impact on the surrounding properties. All proposed landscaping areas meet or exceed the planting requirements of Genoa Township's current Zoning Ordinance and have been designed to improve the aesthetics of the property. Within the developed portion of the site, areas not otherwise covered, shall have lawn or other vegetative surface cover established. A wetland area is located adjacent to Morse Lake. No work is proposed within the existing wetland on the property.

Surface drainage characteristics on the property will be affected by the construction of

the proposed building expansions and parking lots. Construction of the proposed improvements will reduce the permeable area of the property resulting in an increase in the surface water runoff generated. An underground storm water management system has been designed to collect and control the surface water runoff, reducing the discharge rate from the property to that of the pre-development condition. Use of StormTech storm water storage chambers will allow for the infiltration of surface water runoff beneath the proposed parking lot surface.

The proposed changes and modifications to the surface drainage conditions will not significantly impact local aquifer characteristics or groundwater recharge capacity. Surface water runoff from the site will be directed into the proposed underground detention system, with all runoff ultimately being discharged into Morse Lake. Changes in the surface permeability will affect onsite infiltration, surface water flow path and duration. No significant impact to offsite surface water flow or area aquifer changes are anticipated from the proposed construction and re-development of the site.

Upland wildlife habitats on the property include primarily field grass and shrub/scrub brush areas adjacent to Morse Lake. Wildlife supported in this area is generally smaller woodland creatures, field animals, and birds. Larger animals, such as deer, may traverse the site. Previous development and the existing use of the property, the adjoining developments and the proximity of Grand River, limits the quality of the upland habitats available. Additionally, the parcel includes a portion of Morse Lake and the adjacent wetland area. The open water and wetland habitats support a variety of wildlife, including fish, waterfowl and various wetland animals. The lowland and water habitats will remain undisturbed during construction and re-development of the property.

The project site does not currently support significant wildlife habitats and the proposed expansion will not have a significant impact on the overall habitat quality. No significant adverse impact to existing natural features is anticipated due to the proposed re-development of this property.

#### **D. IMPACT ON STORM WATER MANAGEMENT**

Excavation and grading will be undertaken to construct the additions and expanded parking areas proposed. Earthwork will be required to direct storm water flow into the storm water collection system. This system will discharge surface water runoff generated by development of the property to the proposed sedimentation basin and underground detention. Grading on the site will mesh with existing grades on adjoining properties. No adverse impact to adjoining properties is anticipated due to the construction and grading of the property.

Surface water runoff generated from all improved areas of the site will be collected by catch basins, conveyed through a storm sewer system, and discharged to the sedimentation basin located at the South end of the property. The discharge control structure located within the basin restricts the rate storm water is discharged from the basin into Morse Lake. Storm water generated from the site that exceeds the discharge

rate allowed by the control structure, will be detained within the sedimentation basin and interconnected underground storm water detention chamber system. Multiple equalization pipes connect the underground detention chambers to the sedimentation basin allowing detained storm water to flow into the storage system during a storm event. Storm water will be stored within the detention system during a storm event and then released through the control structure following the storm event.

The proposed underground detention system will provide adequate detention of surface water runoff with the installation of a new discharge control structure and modifications to the basin embankment elevation adjacent to Morse Lake. The storm water outlet is designed to discharge storm water at a rate equal to the pre-development discharge rate in accordance with the Livingston County Drain Commissioner's standards and regulations.

Soil erosion and sedimentation are controlled by the Soil Erosion Control Act No. 347 of the Public Acts of 1972, as amended and is administered by the Livingston County Drain Commissioner. Silt fencing will be required around the majority of the site. The Contractor shall comply with all regulations including control during and after construction.

Impact on adjoining properties due to the construction of this site will be minimized by implementing soil erosion control methods. No adverse impact to adjacent properties due to surface water runoff will be created as a result of the proposed improvements.

#### **E. IMPACT ON SURROUNDING LAND USES**

The property to the North of this site is zoned Non-residential Planned Unit Development (NR-PUD) and is occupied by the Woodland Health Center. To the East is an Office Service District (OSD) and contains a multi-tenant office building. Property to the West is used for a Mobile Home Park (MHP) district and to the South is Morse Lake with a Medium Density Residential (MDR) district on the other side being utilized as attached condominiums.

The Genoa Township Future Land Use Plan designates this property for General Commercial uses. The surrounding property is designated for a mix of Office, Private Recreational and Medium Density Residential uses.

The existing use is consistent with the development occurring in the area and is consistent with the long term planning within the Township. The community center provides recreational activities for use by the public, including sports courts, gym, teen center and an indoor children's playscape. The café, classrooms, auditoriums, teaching rooms and meeting spaces are also available for use by the public. The community center is available for the public to use Monday through Saturday 7:00 am to 11:00 pm. The facility is used by 2|42 Community Church on Sunday's from 7:00 am to 2:00 pm for services and return for use as a community center from 2:00 pm to 10:00 pm. On Sundays, the main auditorium is utilized for the adult church services, the small auditoriums / teaching rooms utilized by the children and youth ministries, and the

activity spaces for the attendees before and after services.

The landscaping and architecture proposed will allow this site to be developed to compliment the surrounding areas and provide unique and inspiring spaces to the community. The impact of the improvements to the surrounding area has been minimized.

Outdoor spaces have been designed to allow for events when permitted by Genoa Township. Activities may include outdoor services, picnics, children's events (I.E. egg hunts, etc.). The site layout has been created to provide adequate access, parking and buffering for these events. The creation of two large parking areas with a pocket park feature between them allows for the back parking area to provide activities that are sufficiently screened from the neighbors and for the front parking areas to be utilized for vehicular traffic. Outdoor activities and events shall obtain a permit from Genoa Township where required by ordinance.

Ambient noise levels on and around the property are largely generated by Grand River vehicle traffic. The daily activities within the proposed building expansion are not anticipated to create an increase in the sound level generated by the community center. Relocation of some uses from the existing building into the proposed additions on the East side of the community center will help to reduce the sound levels at the West wall of the building. Outdoor activities and events shall obtain a permit from Genoa Township where required by ordinance.

The location of the existing building provides a significant buffer between site activities and the mobile home park to the West. Preservation of the existing vegetative buffer along the property line provides additional protection from activities on the property.

All site lighting shall meet the requirements of the Genoa Township Zoning Ordinance. Existing exterior building mounted site lighting is shielded and down directed. Pole mounted site lighting is proposed for this project. All pole mounted lighting will be shielded and down directed on the site. Pedestrian bollard lighting will be located near the building entrance to enhance the aesthetics and provide a safer pedestrian walkway. General site lighting, excluding safety and emergency lighting, shall be used between the times from dusk to 12:01 a.m. and from 5:00 a.m. to dawn.

Interior building lighting that may be visible from the exterior is limited to the North and East Elevations of the building. The West and South elevations, adjacent to residential uses, do not have any large glass areas. Light from the building interior is seen from the building frontage, but does not provide any adverse glare or light pollution to the area. General interior lighting, excluding safety and emergency lighting is used during the regular building hours.

The existing building façade along the building front (North side) and the East side elevations are most visible from Grand River. The East side of the building provides a main entrance feature and an inviting façade. A two-story glass corridor is located from



the East entry to the front of the building, allowing both light into the building and the ability for people to see activity inside of the building from the outside. An indoor children's playscape is adjacent to this glass corridor and was constructed using re-conditioned steel shipping containers for a portion of the structure. Use of the containers as part of the structure provides the basis for the theme of the children's play area. Moving West through the corridor is the café' and general gathering spaces including an outdoor patio area. These two features were placed next to each other with the intentions to provide a place where parents could gather in the café and allow children to play throughout the week. The building interior flows with the additions and allows for the different features and spaces to be used efficiently. The proposed location and additions to the existing building, will follow the high quality aesthetics, character and inspiration from the existing structure. The locations and adjacencies of the different building addition features have been carefully thought through and allow for a unique place for community activities. The floor plans and elevations submitted provide detail of these areas.

The use of the property as a church and community center does not create any significant emissions of smoke, airborne solids, odors, gases, vibrations, noise or glare discernable and substantially annoying or injurious to person and/or property beyond the lot lines. No significant change in air pollution is anticipated.

The Contractor shall be responsible for initiating and maintaining adequate dust control measures during and after construction until the project site is fully stabilized and a vegetative cover established. Dust control measures used during construction may consist of site watering, mulching of completed areas, installation of windbreak fencing, and application of chemical dust control materials. The site will comply with the performance standards contained in Section 13.05 of the Township Zoning Ordinance.

#### **F. IMPACT ON PUBLIC FACILITIES AND SERVICES**

The Livingston County Sheriff and Michigan State Police will provide Police protection. Public safety services required to accommodate the proposed use are anticipated to be minor.

The Brighton Area Fire Department as a part of an existing governmental agreement will provide fire protection service. A fire hydrant exists on the property within the Grand River Avenue Right-of-way and two additional hydrants are located within the subject property to provide adequate fire protection capabilities. The relocation of Hydrant "B" with its 6 inch valve in box will be performed per the new proposed site plan. The building is provided with an internal fire suppression system. A Fire Department Connection is located near the front of the building along with a Knox box and required address labeling to meet the Fire Departments requirements. No significant increase in fire protection services are anticipated as a result of the additions to the building.

The property is accessed from Grand River at two locations, the existing traffic signal and near the East property line, providing adequate access for emergency vehicles. A wide drive aisle adjacent to the building serves as a fire lane.

The proposed additions to this building will not create any direct adverse impact on the public schools.

#### **G. IMPACT ON PUBLIC UTILITIES**

The property is presently within municipal sewer and water districts and is connected to the municipal utilities.

Water service to the building is provided from a water main along the East side of the building. A water service lead is connected to this main to supply the building and a fire suppression line is also provided from this main. A portion of the existing water main providing service to the southerly fire hydrant will be removed and replaced to accommodate the proposed building addition. An easement for repair, maintenance and access are provided for this connecting water main. Capacity is available within the existing water system to provide adequate service to this site.

A section of the existing sanitary service located on the East side of the main building will be removed and replaced to accommodate the proposed addition. Construction will include a new sanitary manhole, extension of the six inch sanitary lead and additional 8-inch diameter sanitary sewer. Capacity is available within the existing sanitary sewer system to provide adequate service for the site.

The site is currently serviced by electric, gas, phone and cable systems located along Grand River Avenue.

All solid wastes will be properly disposed of through a licensed disposal firm on a regular basis. A dumpster enclosure and screen wall is located South of the building. A pull-cart screen wall is located West of the café that provides an area for solid waste to be disposed of adjacent to that use. The pull-carts are then be emptied either by the refuse company or into the dumpster in back when needed. This screening area has been designed to utilize the same building materials and compliments the adjacent architecture as to provide pull-cart screening that looks like part of the building. Additional landscaping is provided in this area to further enhance its aesthetics.

Delivery services are generally limited to parcel trucks, such as UPS, and similar single axle vehicles. These delivery service providers use available parking and drop off areas during their deliveries. Use of the site as a community center and church necessitates a very limited need for loading / unloading of semi trucks and large, multi axle delivery vehicles. Any large vehicle accessing the site will be capable of maneuvering on the proposed parking area located at the rear of the building and will utilize the proposed storage building for loading and unloading purposes.

#### **H. STORAGE AND HANDLING OF ANY HAZARDOUS MATERIALS**

The proposed church and community center uses within the building will not use, store,

generate and/or discharge potentially polluting materials. Small quantities of hazardous material such as cleaning products and lawn care chemicals may be stored on-site.

**I. TRAFFIC IMPACT STUDY**

A traffic impact study for the development has been prepared by Fleis & Vandenbrink and is submitted with the Site Plan packet.

Pedestrian access to the property is provided by a sidewalk constructed along Grand River. This sidewalk is connected to the front of the building with a designated sidewalk and crosswalk to the patio area. Sidewalks throughout the property provide safe and efficient means for pedestrians to access the church and community center. The pocket park feature located between the two large parking areas provides a safe way for pedestrian traffic to funnel through the parking lot and into the main entrance. A raised pedestrian crosswalk provides a visual barrier and a safer traversing directly in front of the side entry. Lighted bollards in this location add to the safety at night. No adverse impact on pedestrian traffic in the area is anticipated as a result of developing the proposed project.

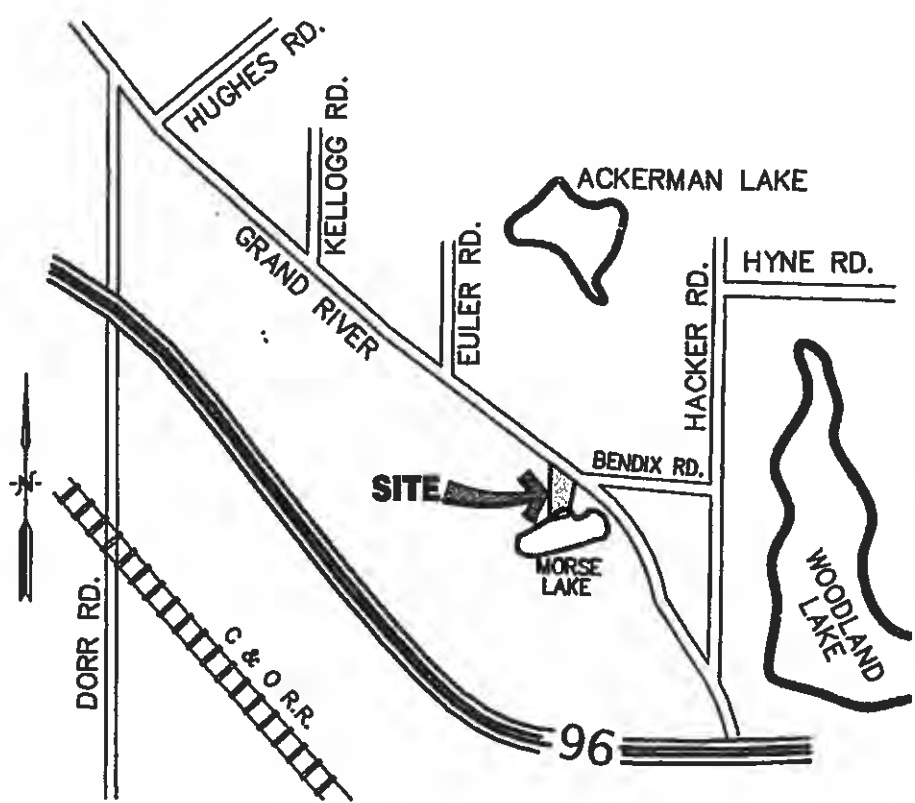
**J. HISTORIC AND CULTURAL RESOURCES**

The existing facility was constructed in the late 1970's and does not have any major historic significance on a local, regional or state level.

**K. SPECIAL PROVISIONS**

No special provisions or requirements are currently proposed for this facility.

**FIGURE 1**



**LOCATION MAP**  
NOT TO SCALE



**FIGURE 2**



**PHOTO DEPICTING SITE IMPROVEMENTS**

NOT TO SCALE

**FIGURE 3**



Map Unit Symbol	Map Unit Name
B1B	Boyer-Oshtemo loamy sands, 2 to 6 percent slopes
B1C	Boyer-Oshtemo loamy sands, 6 to 12 percent slopes
B1E	Boyer-Oshtemo loamy sands, 18 to 25 percent slopes
BwA	Bronson loamy sand, 0 to 2 percent slopes
CvA	Conover loam, 0 to 2 percent slopes
FrB	Fox-Boyer complex, 2 to 6 percent slopes
FrC	Fox-Boyer complex, 6 to 12 percent slopes
FrD	Fox-Boyer complex, 12 to 18 percent slopes
FrE	Fox-Boyer complex, 18 to 25 percent slopes
Ho	Houghton muck
MoB	Miami loam, 2 to 6 percent slopes
W	Water

**SOILS MAP**

**NOT TO SCALE**



# MEMO

VIA EMAIL

**To:** Mr. Eric Rauch  
2 | 42 Community Church

---

**From:** Michael J. Labadie, PE  
Steven J. Russo, E.I.T.  
Fleis & VandenBrink

---

**Date:** March 24, 2015

---

**Re:** 2 | 42 Community Church Expansion  
Genoa Township, Michigan  
Traffic Impact Study (TIS) Update

## Introduction

This memorandum presents the results of a Traffic Impact Study (TIS) update for the 2 | 42 Community Church in Genoa Township, Michigan. The project site is located on the south side of Grand River Avenue approximately 1 ½ miles northwest of the I-96 interchange. The Church is currently operating with a 1208 seat worship space and is proposing to expand the seating capacity to 1,656 seats. Saturday services currently begin at 4:30 PM and 6:00 PM and Sunday services currently begin at 8:45 AM, 10:15 AM, and 11:45 AM.

In 2011, Fleis & VandenBrink (F&V) staff completed (with Wilcox) a TIS which evaluated the potential traffic-related impacts for the proposed full buildout of the Church including a 1,200 seat capacity. Additionally, site access operations were analyzed for the initial 800 seat phase. The results of the TIS indicated that traffic operations with full buildout of the Church would be acceptable with implementation of 1) a traffic signal timing plan to operate during service times and 2) a Traffic Management Plan (TMP).

In 2013, F&V completed an update to the 2011 study and evaluated existing 2013 conditions, validated the original study assumptions and recommendations, and recommended further improvements / modifications to the original TMP. The Township is requiring an update to the 2013 study in order to evaluate current conditions, and ensure that acceptable traffic operations will be maintained with the proposed 448 seat expansion. The study scope includes the existing signalized and unsignalized Church driveways on Grand River Avenue, as well as the adjacent office driveway. Traffic operations, parking, and the TMP were also again evaluated with this update.

## Data Collection

On Saturday February 28<sup>th</sup> and Sunday March 1<sup>st</sup>, 2015 F&V and F&V subconsultant Traffic Data Collection, Inc. (TDC) collected traffic volume data at the study intersections. Data were collected in 15-minute intervals on Saturday between 4:00 PM and 7:15 PM and on Sunday between 8:15 AM and 1:15 PM. The data collected were used to establish the existing 2015 peak hour traffic volumes. F&V also collected an inventory of existing lane use and traffic control at the study intersections and obtained existing traffic signal timing information from the Livingston County Road Commission (LCRC).

Peak Hour Factors (PHFs) at the study intersections were also calculated at the study intersections. Typically PHFs are calculated by approach and PHFs less than 0.60 and greater than 0.95 should not be utilized; however, given the subject site is a Church with strong peaking characteristics, PHFs were calculated by

27725 Stansbury Boulevard, Suite 150  
Farmington Hills, MI 48334  
P: 248.536.0080  
F: 248.536.0079  
www.fveng.com

movement at the study intersections and PHFs less than 0.6 were determined to be appropriate for use in this study.

**Existing Conditions**

The existing Saturday and Sunday peak hour traffic volumes were identified based on the data collected. For the original 2011 study, Sunday Church traffic generation was conservatively assumed to occur during the same hour that traffic volumes on Grand River Avenue peak. Review of existing 2015 volumes indicates that the Church traffic volumes on Saturday peak between 5:15 PM and 6:15 PM (between services) and Grand River Avenue traffic peaks between 4:00 PM and 5:00 PM. Additionally, Church traffic volumes on Sunday peak between 11:15 AM to 12:15 PM (between 2<sup>nd</sup> and 3<sup>rd</sup> service) while Grand River Avenue traffic peaks between 12:15 PM and 1:15 PM. Therefore, both Church and Grand River Avenue peak periods for both Saturday and Sunday were analyzed for this update.

Existing peak hour vehicle delays and Levels of Service (LOS) were calculated at the study intersections using Synchro (Version 9) traffic analysis software. This analysis was based on the existing land use and traffic control shown on the attached Figure 1, the 2015 peak hour traffic volumes shown on the attached Figures 2 and 3, and the methodologies presented in the *Highway Capacity Manual 2010* (HCM). Typically, LOS D is considered acceptable, with LOS A representing minimal delay, and LOS F indicating failing conditions. Additionally, SimTraffic simulations were utilized to evaluate network operations and vehicle queues. The existing conditions results are attached and summarized in Table 1.

**Table 1**  
**Existing Intersection Operations**

Intersection	Control	Approach	SAT Church Peak		SAT GR Peak		SUN Church Peak		SUN GR Peak	
			Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
1. Grand River Avenue & 2-42 Church Drive / St. Joe Drive	Signalized	EB	9.9	A	6.3	A	13.0	B	13.3	B
		WB	9.0	A	5.5	A	11.1	B	12.3	B
		NB	36.8	D	37.6	D	30.4	C	31.5	C
		SB	39.8	D	40.0	D	38.3	D	37.6	D
		Overall	15.6	B	7.3	A	16.1	B	17.6	B
2. Grand River Avenue & 2-42 Church Drive	STOP (Minor)	EB	Free		Free		Free		Free	
		WB LT	9.9	A	10.6	B	10.3	B	9.0	A
		NB	17.2	C	10.4	B	13.6	B	17.6	C
3. Grand River Avenue & Office Drive	STOP (Minor)	EB	Free		Free		Free		Free	
		WB LT	0.0*	A	0.0*	A	10.0	B	0.0*	A
		NB	14.0	B	11.8	B	17.3	C	20.1	C

\* - No Demand traffic demand present.

The results of the existing 2015 conditions analysis indicate that during the Saturday and Sunday peak periods, the Grand River Avenue approaches at the signalized driveway will operate at a LOS B or better. All minor approaches and unsignalized movements will operate at a LOS D or better during all peak periods. Review of network simulations also indicates acceptable traffic operations during all study periods. During the Church peak periods, brief periods of vehicle queues are observed for the Church driveways egress approaches; however, these queues dissipate and are not present throughout the duration of the peak periods.

**Background Conditions**

As this expansion is proposed to be constructed within the next year, and based on stagnant traffic growth patterns in Southeast Michigan, the future background traffic growth rate is assumed to be zero percent for this study. Additionally, no approved development projects yet to be constructed were identified within the





vicinity of the study area. Therefore, the background conditions **without the proposed Church expansion** are assumed equal to existing conditions.

*Note: The Community Bible Church located on Grand River Avenue approximately ¼ mile west of the 2-42 Church is also currently planning an expansion; however, at this time they have not made a formal submission to the Township and their schedule / timing is unknown. Therefore, they were not included as a background development.*

**Site Trip Generation & Assignment**

The number of peak hour vehicle trips that are generated by the existing Church were compared with the trip generation forecasts outlined in the original TIS and 2013 update. The numerical comparisons are outlined in Table 2.

**Table 2  
 2015 Trip Generation Comparison**

	IN	<u>Saturday</u> OUT	TOTAL	IN	<u>Sunday</u> OUT	TOTAL
<b>2015 Existing Data</b>						
Signalized	100	156	256	215	196	411
STOP	91	158	249	172	201	373
Office	2	9	11	50	67	117
<b>TOTAL</b>	<b>193</b>	<b>323</b>	<b>516</b>	<b>437</b>	<b>464</b>	<b>901</b>
<b>% IN / OUT</b>	<b>37%</b>	<b>63%</b>		<b>49%</b>	<b>51%</b>	
<b>2015 Forecast (1208 seats)</b>						
Difference				480	344	824
<b>% IN / OUT</b>				<b>58%</b>	<b>42%</b>	

The results of this comparison indicate that the Church is currently generating a higher amount of Sunday trips than was originally forecast. The trip generation rate applied for the original TIS was equal to 0.69 vehicle trips per seat; however, existing 2015 data indicates the Church is currently generating 0.75 vehicle trips per seat. Furthermore, the Sunday peak directional distribution of vehicle trips has shifted to a more even distribution of 49% inbound versus 51% outbound. As a result, the site trip generation forecast for the proposed 448 seat expansion was calculated based on the existing 2015 data and is shown in Table 3.

**Table 3  
 Site Trip Generation <sup>1</sup>**

Land Use	Amount	Units	<u>SAT Peak Hour</u>			<u>SUN Peak Hour</u>		
			In	Out	Total	In	Out	Total
Church	448	Seats	71	122	193	165	171	336

1. Trip generation based on 2015 Church data.

The 2015 peak hour vehicle trips generated by the existing Church were also compared with the traffic assignment outlined in the original TIS. The traffic assignment outlined in the original TIS was calculated based on demographic information from the Church and indicated 65% of the membership will travel to / from the Brighton area and I-96 to the east and 35% will travel to / from the Howell area to the west. Existing 2015 Church counts indicate slight shifts in distribution as currently 62% of trips are to / from the east and 38% of trips are to / from the west as shown in Table 4. Therefore, the peak hour site trips shown in Table 3 were assigned to the study road network based on existing peak hour traffic patterns with 62% of trips forecast to travel to / from the east.

**Table 4  
 2015 Trip Distribution**

	Saturday				Sunday				AVG %
	TO	%	FROM	%	TO	%	FROM	%	
East	401	67%	343	61%	751	66%	677	56%	62%
West	197	33%	222	39%	379	34%	530	44%	38%
Total	598		565		1,130		1,207		

The site-generated traffic volumes were then assigned to the on-site driveways based on existing turning movement percentages and the proposed increase in on-site parking. Currently, parking for the Church is accommodated via 370 on-site paved parking spaces, 50 parking spaces in the gravel lot behind the church, and 150 parking spaces in the adjacent office building lot to the east which the Church has a shared parking agreement with. The proposed seating expansion plans also include expansion of existing on-site parking from the current 420 spaces to 549 spaces resulting in a 31% increase in on-site parking.

Therefore, the number of vehicle trips in and out of the Church driveways was also assumed to increase in the future by 31%. Based on an existing total of 784 vehicle trips at the Church driveways during the Sunday peak hour, 242 of the future Sunday site-generated trips were assigned to the Church driveways based on the trip distribution shown on Table 4, and a weighted average of turning movements at the signalized and unsignalized Church driveways. The remaining future site-generated trips were assigned to the adjacent office building driveway. For the Saturday analysis, all trips were assigned to the Church driveways as the total number of future Saturday peak hour vehicle trips indicates all vehicles can park on-site. The site-generated vehicle trips are shown on the attached Figure 4. The site-generated trips were added to the existing traffic volumes to calculate the future traffic volumes shown on the attached Figure 5.

**Future Conditions**

Traffic operations with the proposed expansion to 1,656 seats were evaluated based on the findings outlined above. This analysis focuses on the Saturday (5:15 PM to 6:15 PM) and Sunday (11:15 AM to 12:15 PM) peak hour between services (11:15 AM to 12:15 PM) when the site is generating both inbound and outbound traffic volumes. The future conditions results are attached and summarized in Table 5.

The future conditions results indicate that all study intersection approaches and movements would continue to operate acceptably at a LOS D or better during both peak periods except the northbound Office driveway approach which would operate at a LOS E during the Sunday peak period. Review of network simulations also indicates acceptable traffic operations during the Saturday peak period. During the Sunday peak period, vehicle queues on the Church driveways are observed to be processed acceptably while a long vehicle queue is observed for the egress Office driveway approach during the peak 10-minute period.

The poor traffic operations and vehicle queues experienced at the office driveway egress approach are due to low PHFs. The PHF represents the traffic volume flow variation during the peak hour, with a higher PHF indicating a more uniform traffic flow and lower PHF indicating a more concentrated traffic flow. Consistent with Church uses, the low PHFs are attributed to the large amount of traffic that enters and exits the site in a short duration of time. Therefore, poor traffic operations and brief periods of vehicle queues are not uncommon for these types of development. Should the poor traffic operations and vehicle queues be experienced in the future, the Church should consider a shared parking agreement with St. Joseph Mercy hospital across the street to allow more vehicles to utilize the traffic signal at Grand River Avenue & St. Joseph / 2-42 Drive.

**Table 5**  
**Future intersection Operations**

Intersection	Control	Approach	SAT Church Peak		SUN Church Peak	
			Delay (s/veh)	LOS	Delay (s/veh)	LOS
1. Grand River Avenue & 2-42 Church Drive / St. Joe Drive	Signalized	EB	12.2	B	15.9	B
		WB	11.1	B	13.7	B
		NB	39.1	D	30.0	C
		SB	<u>39.8</u>	<u>D</u>	<u>38.3</u>	<u>D</u>
		Overaff	18.4	B	18.6	B
2. Grand River Avenue & 2-42 Church Drive	STOP (Minor)	EB	Free		Free	
		WB LT	11.1	B	11.8	B
		NB	22.1	C	16.6	C
3. Grand River Avenue & Office Drive	STOP (Minor)	EB	Free		Free	
		WB LT	0.0*	A	11.4	B
		NB	14.6	B	39.7	E

\* - No Demand traffic demand present.

### Traffic Management Plan

The Church should continue to follow the previous TIS update TMP enhancements as outlined below and currently implemented. In addition to these enhancements, the hospital lot should be utilized for workers and late arrivals if the other lots are filled.

- Continue to fill the on-site lot front to back, but do not delay inbound vehicles to fill 1 or 2 spaces in the northern portion as first service patrons exit. These spaces can be filled after second service begins and peak traffic calms.
- Currently, flaggers are working in the on-site lot to direct traffic. As the lot begins to fill, station flaggers at Grand River Avenue to direct traffic to the office lot.
- Station a flagger at the office driveway and Grand River Avenue to flag westbound traffic into the office lot.
- Implement "Lot Full" and "Overflow Parking" signs that are visible to traffic on Grand River Avenue that can be placed as the on-site lot fills.
- Distribute the TMP information to the Church membership and post the 2 | 42 website.

### Conclusions

Based on the results of this TIS update, the trip generation and assignment assumptions of the original TIS have changed slightly. The study intersections currently operate acceptably, and will continue to operate acceptably with full buildout to 1,656 seats except the office driveway approach which will operate at a LOS E during the Sunday peak period. This approach will experience a long vehicle queue during the peak 10 minute period; however, the queue dissipates and is not present throughout the duration of the peak period.

The Church is currently implementing the TMP outlined in the previous TIS update. With implementation of the enhanced TMP items outlined above, the proposed project will not have an adverse impact on the adjacent road and intersection network.

Any questions related to this study and memorandum should be directed to Fleis & VandenBrink.





HOBBS + BLACK ARCHITECTS





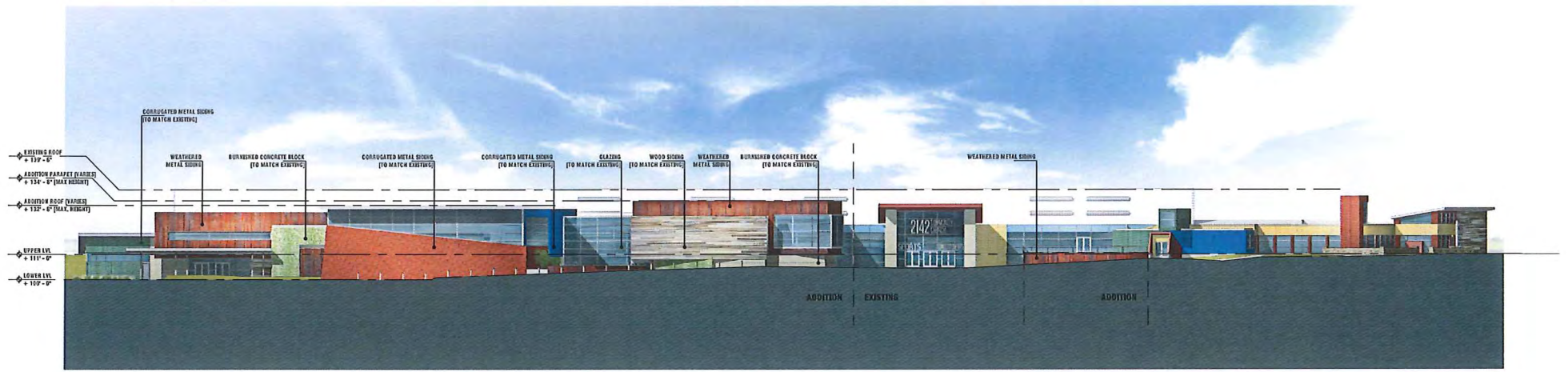
KID  
COMMUNITY

FAMILY  
ENTRANCE

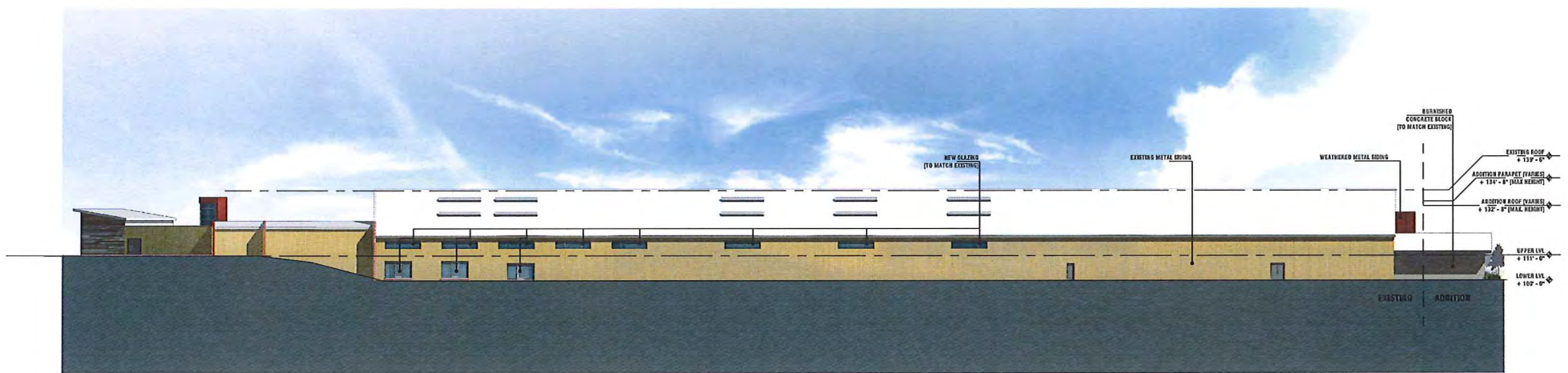
2142  
SPORTS

2142  
COMMUNITY  
CENTER

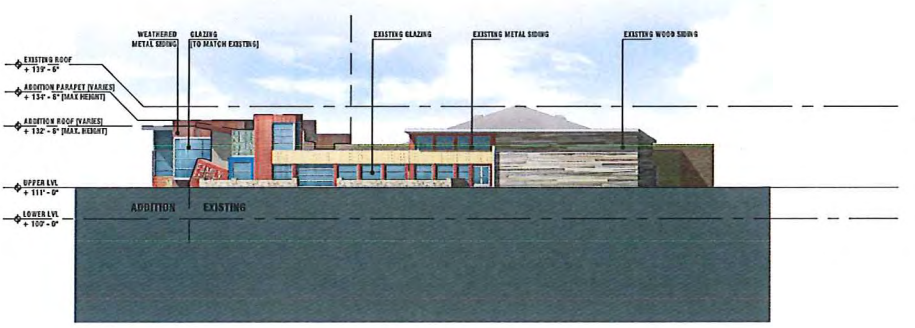




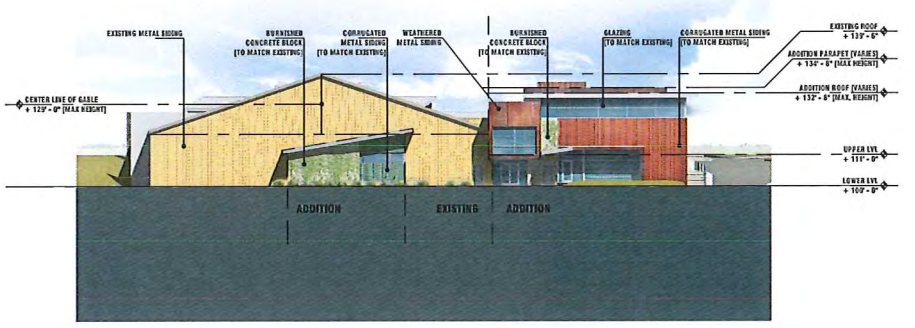
**EAST ELEVATION**  
SCALE: 1" = 30'



**WEST ELEVATION**  
SCALE: 1" = 30'



**NORTH ELEVATION**  
SCALE: 1" = 30'



**SOUTH ELEVATION**  
SCALE: 1" = 30'

Drawing: P:\2014\149060\Drawings\Architect\150330 - elevations.dwg  
Date: Mar 31, 2015, 3:16pm Layer: Layout1 Plotted by: dms

DATE ISSUED  
DRAWN BY  
CHECKED BY

**HOBBS + BLACK ARCHITECTS**  
100 N. State St.  
Ann Arbor, MI 48104  
P.734.663.4189  
www.hobbs-black.com

**2|42 COMMUNITY CHURCH**  
BRIGHTON CAMPUS  
7526 GRAND RIVER  
BRIGHTON 48114  
P.248.251.0190

PROJECT

CONSULTANT

SHEET TITLE

14-906

PROJECT NUMBER

A-200

SHEET NUMBER



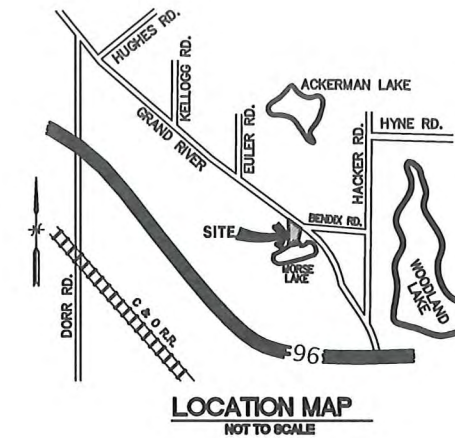
PROPOSED SITE PLAN FOR



# 2|42 COMMUNITY CHURCH

helping.people.take.next.steps.with.God

GENOA CAMPUS - 7526 GRAND RIVER  
 PART OF THE NORTHWEST 1/4 AND PART OF THE SOUTHEAST 1/4  
 OF SECTION 13, T2N-R5E, GENOA TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN



**LEGAL DESCRIPTION**

Part of the Northwest 1/4 and part of the Southeast 1/4 of Section 13, T2N-R5E, Genoa Township, Livingston County, Michigan more particularly described as follows:  
 Commencing at the East 1/4 Corner of Section 13; thence along the East-West 1/4 line of Section 13, N88°18'07" W, 2058.55 feet, to the POINT OF BEGINNING of the Parcel to be described, said point being S 12°11'15" W, 105.46 feet from a point previously described as the point of beginning, (said point having been previously described as bearing the following three (3) courses from the East 1/4 Corner of Section 13: 1) S 01°07'10" W, 474.50 feet; 2) N 76°44'40" W, 1543.60 feet; 3) N 63°15'40" W, 584.62 feet); thence S 12°11'15" W, 718.10 feet; thence S 77°00'00" W, 294.03 feet; thence along the North line of "Lake Edgewood Townhomes", Replat No. 3 of Livingston County Condominium Subdivision Plan No. 11, as recorded in Liber 2069, Page 989, Livingston County Records, S 78°05'18" W, 182.10 feet; thence N 00°03'21" E (recorded as due North), 823.89 feet the Center of Section 13, as recorded in L.S.C. #1299, Livingston County Records; thence along the North-South 1/4 line of Section 13, as monumented, N 00°45'59" E 315.10 feet; thence in Grand River Avenue, along the South Line of the area conveyed in fee to the County of Livingston, as recorded in Liber 153, Page 81, Livingston County Records, on the following two (2) courses: 1) S 66°36'10" E, 415.73 feet; 2) southeasterly on an arc right, having a length of 267.51 feet, a radius of 3353.83 feet, a central angle of 04°34'12", and a long chord which bears S 64°19'04" E, 267.44 feet; thence S 12°11'15" W, 53.53 feet, to the POINT OF BEGINNING.

TAX I.D. 4711-13-400-018

**SITE AREA - 12.09 ACRES**  
**AREA OF DISTURBANCE - 3.54 AC.**



**SHEET INDEX**

- C10 EXISTING CONDITIONS PLAN
- C11 DEMOLITION PLAN AND NOTES
- C20 SITE DEVELOPMENT PLAN
- C30 GRADING AND PAVING PLAN (NORTH)
- C31 GRADING AND PAVING PLAN (SOUTH)
- C40 UTILITY PLAN (NORTH)
- C41 UTILITY PLAN (SOUTH)
- C42 UNDERGROUND STORMWATER STORAGE PLAN
- C43 STORM SEWER CALCULATIONS
- C50 SOIL EROSION AND WATERSHED PLAN
- C51 SOIL EROSION NOTES AND DETAILS
- C60 LANDSCAPE PLAN
- C61 LANDSCAPE NOTES AND DETAILS
- C70 LIGHTING PLAN
- C71 LIGHTING DETAILS
- C100 SITE DEVELOPMENT NOTES AND DETAILS
- C101 STORM SEWER NOTES AND DETAILS
- C102 SANITARY SEWER STANDARD DETAILS
- C103 WATER MAIN STANDARD DETAILS
- A100 FLOOR PLANS
- A200 ELEVATIONS

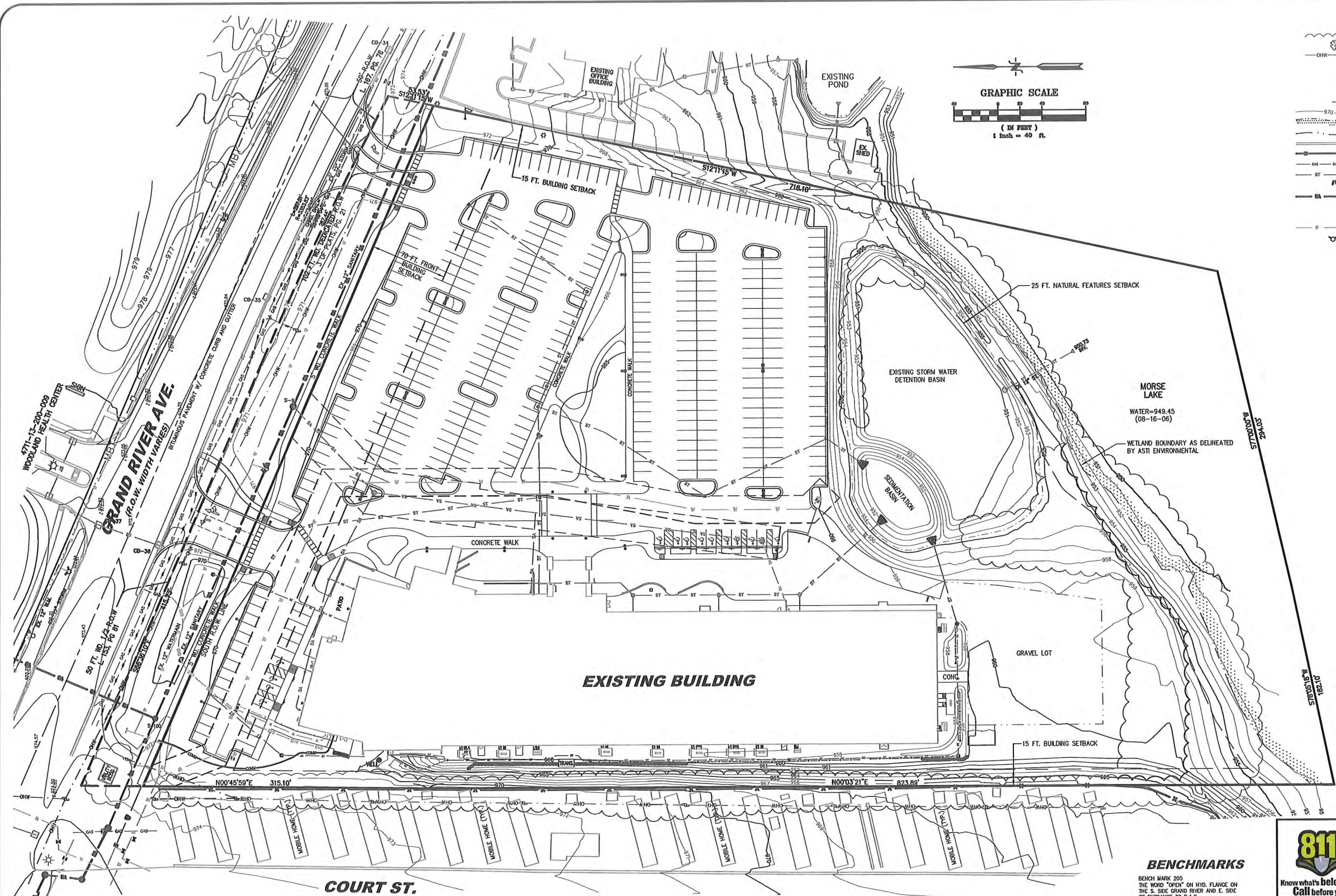
**OWNER/DEVELOPER**  
 2|42 COMMUNITY CHURCH  
 7526 GRAND RIVER  
 BRIGHTON, MI. 48114  
 (810) 231-0190

**ARCHITECT**  
 HOBBS + BLACK ARCHITECTS  
 100 N. STATE STREET  
 ANN ARBOR, MI. 48104  
 (734) 663-4189

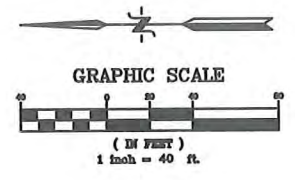
**CIVIL ENGINEER/LAND SURVEYOR**  
 DESINE INC.  
 2183 PLESS DRIVE  
 BRIGHTON, MI. 48114  
 (810) 227-9533

REVISED	SCALE: N/A
04-22-15	PROJECT No.: 9152540
	DWG NAME: 2540-COV
	PRINT: APR. 22, 2015





- LEGEND**
- EXISTING BRUSH/TREE LINE
  - EXISTING TREE
  - EXISTING OVERHEAD WIRES
  - EXISTING POLE AND GUY
  - EXISTING POWER POLE
  - EXISTING AMERITECH RISER
  - EXISTING LIGHT POLE
  - EXISTING SIGNS
  - EXISTING CONTOURS
  - EXISTING EDGE OF WETLAND
  - EXISTING EDGE OF WATER
  - EXISTING CURB AND GUTTER
  - EXISTING FENCE LINE
  - EXISTING GAS LINE
  - EXISTING STORM SEWER
  - EXISTING STORM STRUCTURES
  - EXISTING SANITARY SEWER
  - EXISTING SANITARY MANHOLE
  - EXISTING SANITARY CLEANOUT
  - EXISTING WATER MAIN
  - EXISTING WATER MAIN STRUCTURES



**BENCHMARKS**

BENCH MARK 205  
THE WORD "OPEN" ON HYD. FLANGE ON  
THE S. SIDE GRAND RIVER AND E. SIDE  
OF ENTRANCE TO S.A.C.  
ELEVATION=968.19 (NGVD 29 DATUM)

BENCH MARK 208  
S. ANCHOR BOLT OF LIGHT POLE BASE ON THE  
E. SIDE OF PARKING AREA  
ELEVATION=965.55 (NGVD 29 DATUM)



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

3 WORKING DAYS  
BEFORE YOU DIG  
CALL 811 OR 1-800-482-7171  
(TOLL FREE)  
OR VISIT CALL811.COM



DESIGN: WMP	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: L.F.						
CHECK: WMP						
	04-22-15		REVISED FOR REVIEW COMMENTS			



**EXISTING  
CONDITIONS  
PLAN**

CLIENT:  
242 COMMUNITY CHURCH

7526 GRAND RIVER  
BRIGHTON, MI 48114  
(810) 231-0190

SCALE: 1"=40'  
PROJECT No.: 9152540  
DWG NAME: 2540-EX  
ISSUED: APR. 22, 2015

**C1.0**

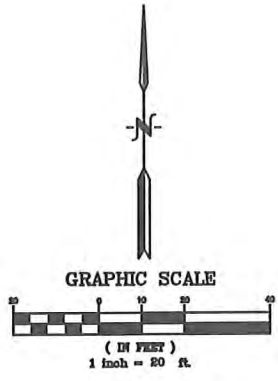












**LEGEND**

	EXISTING BRUSH/TREE LINE
	EXISTING TREE
	EXISTING OVERHEAD WIRES
	EXISTING POLE AND GUY
	EXISTING POWER POLE
	EXISTING AMERITECH RISER
	EXISTING LIGHT POLE
	EXISTING SIGNS
	EXISTING CONTOURS
	EXISTING EDGE OF WETLAND
	EXISTING EDGE OF WATER
	EXISTING CURB AND GUTTER
	EXISTING FENCE LINE
	EXISTING GAS LINE
	EXISTING STORM SEWER
	EXISTING STORM STRUCTURES
	EXISTING SANITARY SEWER
	EXISTING SANITARY MANHOLE
	EXISTING SANITARY CLEANOUT
	EXISTING WATER MAIN
	EXISTING WATER MAIN STRUCTURES
	PROPOSED STORM SEWER
	PROPOSED STORM STRUCTURES
	PROPOSED SANITARY SEWER
	PROPOSED SANITARY MANHOLE
	PROPOSED SANITARY CLEANOUT
	PROPOSED WATER MAIN
	PROPOSED WATER MAIN STRUCTURES
	PROPOSED CURB & GUTTER W/STD. PITCH
	PROPOSED CURB & GUTTER W/REV. PITCH
	PROPOSED PARKING AREA PAVEMENT
	PROPOSED MAIN AISLE PAVEMENT
	PROPOSED CONCRETE PAVEMENT
	PROPOSED CONTOURS
	TOP OF CURB
	EDGE OF METAL
	TOP OF BULK
	TOP OF GRAVEL
	GROUND ELEVATION
	PAVEMENT ELEVATION
	PROPOSED SPOT ELEVATIONS
	PROPOSED DRAINAGE FLOW ARROWS

**PROPOSED BUILDING ADDITION**

**EXISTING BUILDING**

F.F. - 965.82

**PROPOSED BUILDING ADDITION**

**MATCH LINE - SEE SHEET C3.1 FOR CONTINUATION**

**BENCHMARKS**

BENCH MARK 205  
THE WORD "OPEN" ON HYD. FLANGE ON THE S. SIDE GRAND RIVER AND E. SIDE OF ENTRANCE TO B.A.C. ELEVATION=969.19 (NGVD 29 DATUM)

BENCH MARK 208  
S. ANCHOR BOLT OF LIGHT POLE BASE ON THE E. SIDE OF PARKING AREA ELEVATION=965.55 (NGVD 29 DATUM)

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

3 WORKING DAYS BEFORE YOU DIG  
CALL 811 OR 1-800-482-7171 (TOLL FREE)  
OR VISIT CALL811.COM

**DESIGN, INC.**

(810) 227-9533  
CIVIL ENGINEERS  
LAND SURVEYORS  
2183 PLESS DRIVE  
BRIGHTON, MICHIGAN 48114

DESIGN: WMP	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: L.F.		04-22-18	REVISED PER REVIEW COMMENTS			
CHECK: WMP						

**242 COMMUNITY CHURCH**

**GRADING AND PAVING PLAN (NORTH)**

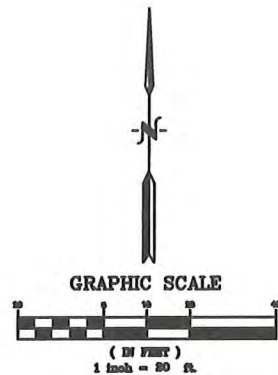
CLIENT:  
242 COMMUNITY CHURCH  
7526 GRAND RIVER  
BRIGHTON, MI 48114  
(810) 231-0190

SCALE: 1"=20'  
PROJECT No.: 9152540  
DWG NAME: 2540-GR  
ISSUED APR. 22, 2015

**C3.0**



MATCH LINE - SEE SHEET C3.0 FOR CONTINUATION



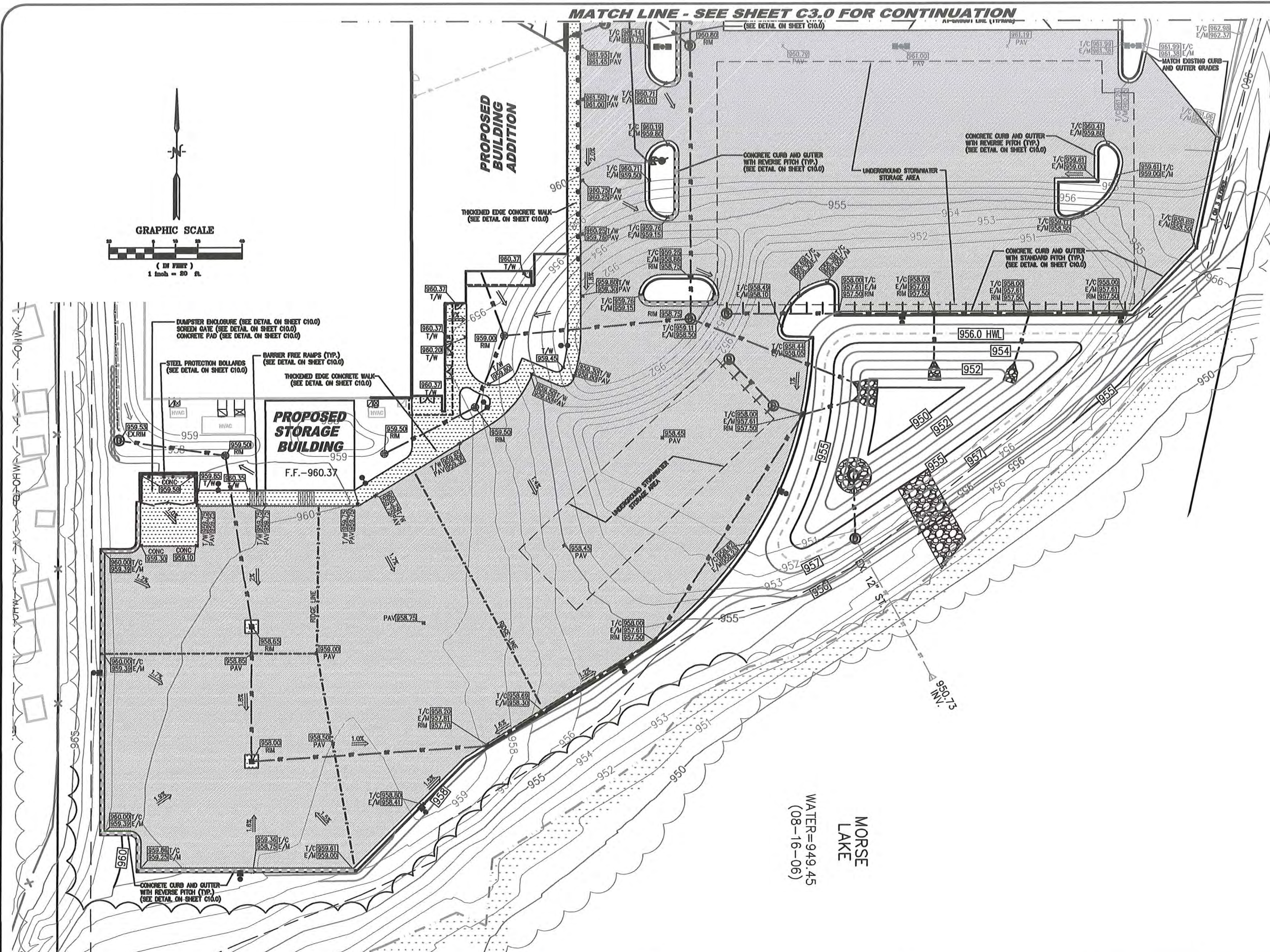
LEGEND

- EXISTING BRUSH/TREE LINE
- EXISTING TREE
- EXISTING OVERHEAD WIRES
- EXISTING POLE AND GUY
- EXISTING POWER POLE
- EXISTING AMERITECH RISER
- EXISTING LIGHT POLE
- EXISTING SIGNS
- EXISTING CONTOURS
- EXISTING EDGE OF WETLAND
- EXISTING EDGE OF WATER
- EXISTING CURB AND GUTTER
- EXISTING FENCE LINE
- EXISTING GAS LINE
- EXISTING STORM SEWER
- EXISTING STORM STRUCTURES
- EXISTING SANITARY SEWER
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY CLEANOUT
- EXISTING WATER MAIN
- EXISTING WATER MAIN STRUCTURES
- PROPOSED STORM SEWER
- PROPOSED STORM STRUCTURES
- PROPOSED SANITARY SEWER
- PROPOSED SANITARY MANHOLE
- PROPOSED SANITARY CLEANOUT
- PROPOSED WATER MAIN
- PROPOSED WATER MAIN STRUCTURES
- PROPOSED CURB & GUTTER W/STD. PITCH
- PROPOSED CURB & GUTTER W/REV. PITCH
- PROPOSED PARKING AREA PAVEMENT
- PROPOSED MAIN AISLE PAVEMENT
- PROPOSED CONCRETE PAVEMENT
- PROPOSED CONTOURS
- TOP OF CURB
- EDGE OF METAL
- TOP OF WALK
- TOP OF MANHOLE
- GROUND ELEVATION
- PAVEMENT ELEVATION
- PROPOSED SPOT ELEVATIONS
- PROPOSED DRAINAGE FLOW ARROWS

BENCHMARKS

BENCH MARK 205  
THE WORD "OPEN" ON HYD. FLANGE ON  
THE S. SIDE GRAND RIVER AND E. SIDE  
OF ENTRANCE TO B.A.C.  
ELEVATION=959.19 (NGVD 29 DATUM)

BENCH MARK 208  
S. ANCHOR BOLT OF LIGHT POLE BASE ON THE  
E. SIDE OF PARKING AREA  
ELEVATION=955.55 (NGVD 29 DATUM)



MORSE  
LAKE  
WATER=949.45  
(08-16-06)

DESIGN	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
WMP		04-22-15	REVISED PER REVIEW COMMENTS			
DRAFT						
WMP						

GRADING AND PAVING PLAN (SOUTH)

CLIENT:  
242 COMMUNITY CHURCH  
7526 GRAND RIVER  
BRIGHTON, MI. 48114  
(810) 231-0190

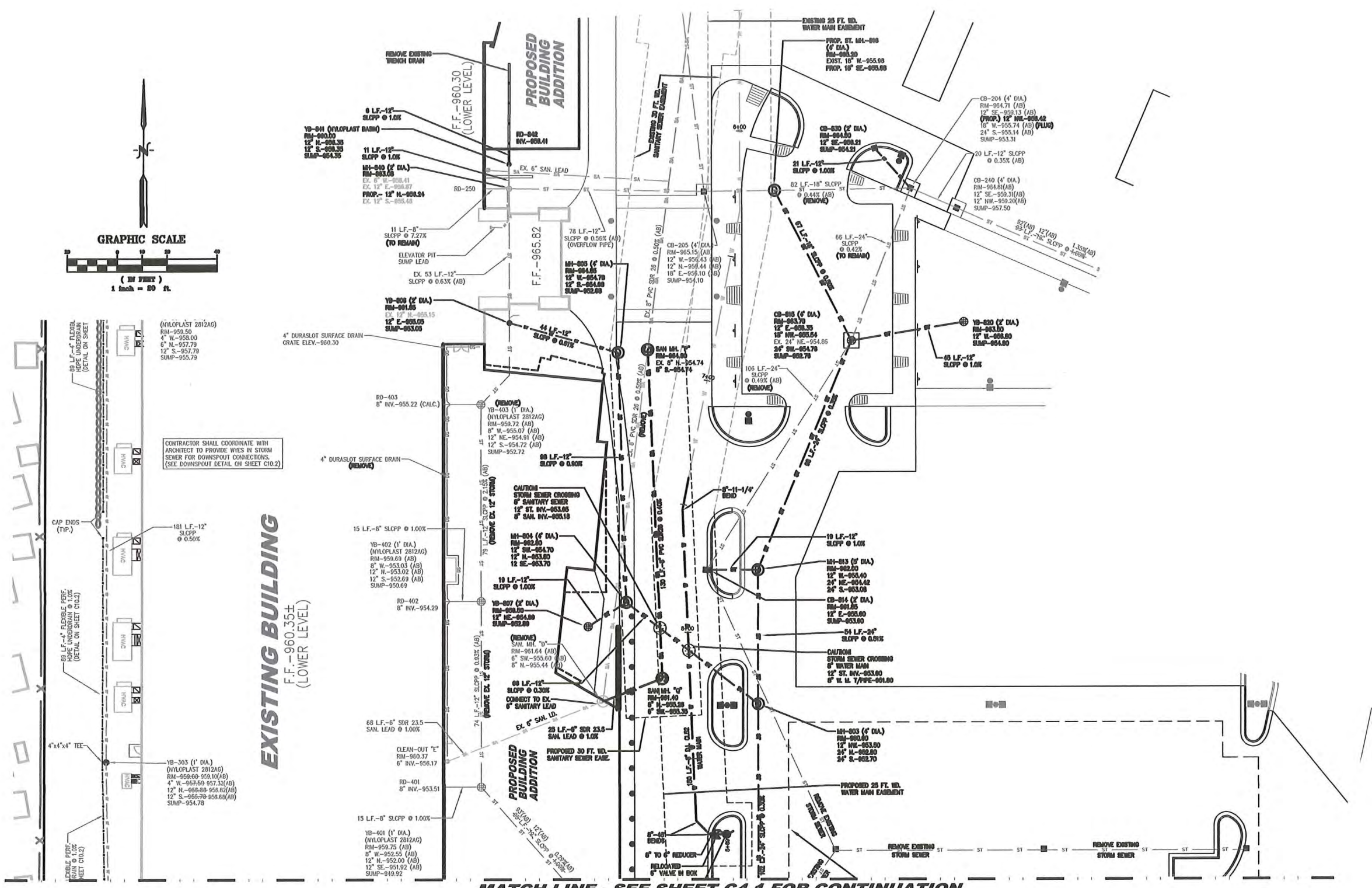
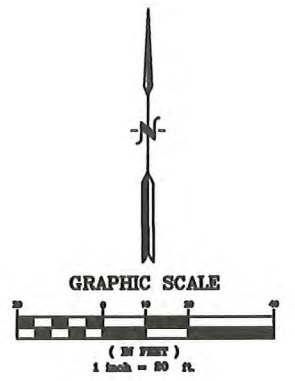
SCALE: 1"=20'  
PROJECT No.: 9152540  
DWG NAME: 2540-GR  
ISSUED: APR. 22, 2015

C3.1



**LEGEND**

- CHW — CHW — EXISTING OVERHEAD WIRES
- (---) — (---) — EXISTING POLE AND GUY
- (---) — (---) — EXISTING POWER POLE
- (---) — (---) — EXISTING AMERITECH RISER
- (---) — (---) — EXISTING LIGHT POLE
- (---) — (---) — EXISTING SIGNS
- (---) — (---) — EXISTING EDGE OF WETLAND
- (---) — (---) — EXISTING EDGE OF WATER
- (---) — (---) — EXISTING CURB AND GUTTER
- (---) — (---) — EXISTING FENCE LINE
- (---) — (---) — EXISTING GAS LINE
- (---) — (---) — EXISTING STORM SEWER
- (---) — (---) — EXISTING STORM STRUCTURES
- (---) — (---) — EXISTING SANITARY SEWER
- (---) — (---) — EXISTING SANITARY MANHOLE
- (---) — (---) — EXISTING SANITARY CLEANOUT
- (---) — (---) — EXISTING WATER MAIN
- (---) — (---) — EXISTING WATER MAIN STRUCTURES
- (---) — (---) — PROPOSED STORM SEWER
- (---) — (---) — PROPOSED STORM STRUCTURES
- (---) — (---) — PROPOSED SANITARY SEWER
- (---) — (---) — PROPOSED SANITARY MANHOLE
- (---) — (---) — PROPOSED SANITARY CLEANOUT
- (---) — (---) — PROPOSED WATER MAIN
- (---) — (---) — PROPOSED WATER MAIN STRUCTURES
- (---) — (---) — PROPOSED CURB & GUTTER



CONTRACTOR SHALL COORDINATE WITH ARCHITECT TO PROVIDE WIRES IN STORM SEWER FOR DOWNSPOUT CONNECTIONS. (SEE DOWNSPOUT DETAIL ON SHEET C10.2)

**MATCH LINE - SEE SHEET C4.1 FOR CONTINUATION**

**BENCHMARKS**

BENCHMARK 205  
THE WORD "OPEN" ON HYD. FLANGE ON THE S. SIDE GRAND RIVER AND E. SIDE OF ENTRANCE TO B.L.C.  
ELEVATION=959.19 (NOVO 29 DATUM)

BENCHMARK 208  
S. ANCHOR BOLT OF LIGHT POLE BASE ON THE E. SIDE OF PARKING AREA  
ELEVATION=955.55 (NOVO 29 DATUM)

REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DESIGN: WMP	04-22-15	REVISED PER REVIEW COMMENTS			
DRAFT: L.F.					
CHECK: WMP					

**UTILITY PLAN (NORTH)**

CLIENT: 242 COMMUNITY CHURCH	SCALE: 1"=20'
7526 GRAND RIVER BRIGHTON, MI. 48114 (810) 231-0190	PROJECT No.: 9152540
	DWG NAME: 2540-UT
	ISSUED: APR. 22, 2015

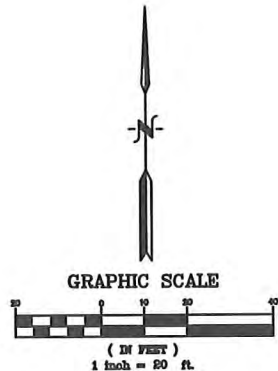
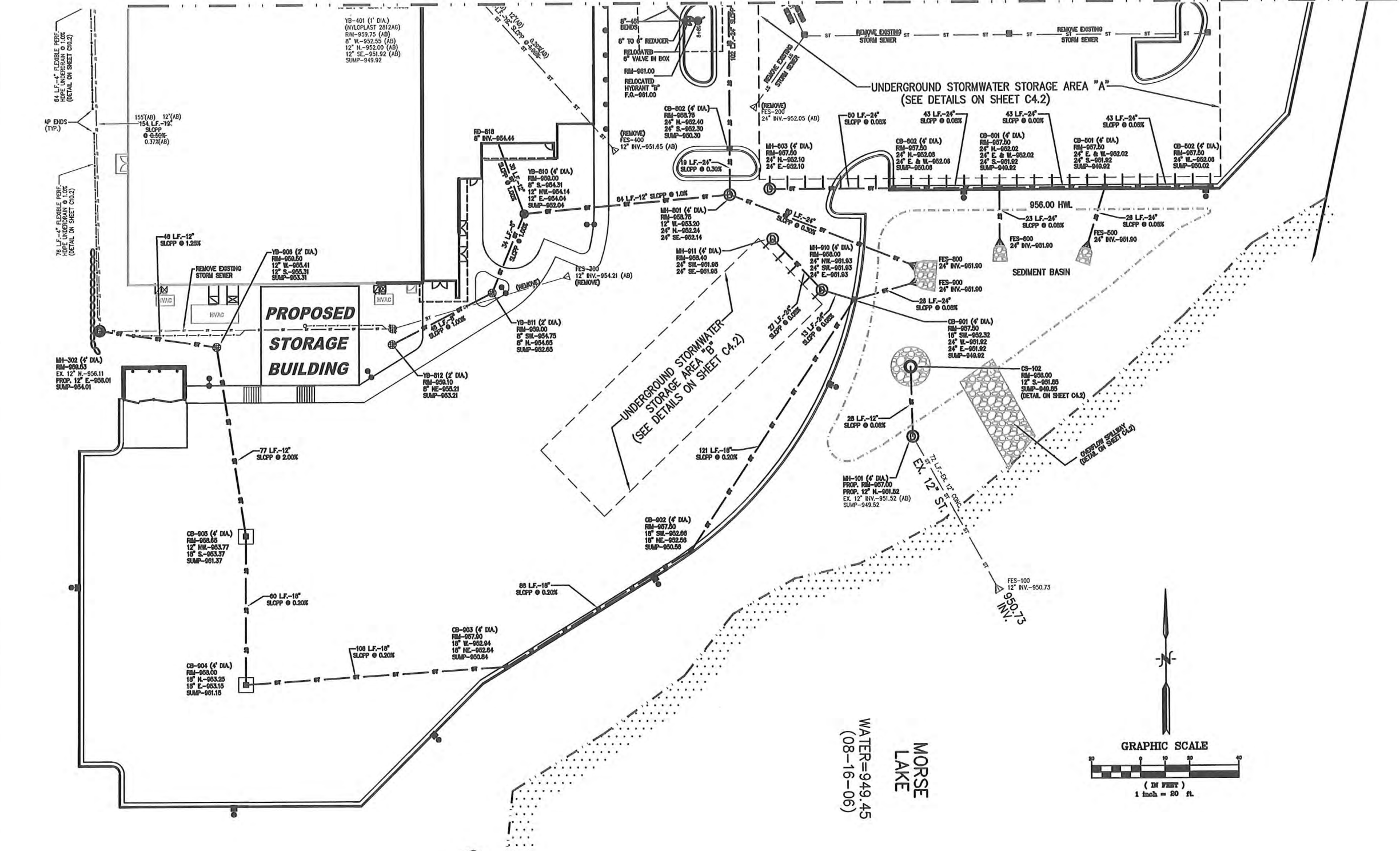
**C4.0**



**LEGEND**

- OHW — OHW — EXISTING OVERHEAD WIRES
- (C)-39 — EXISTING POLE AND GUY
- (P) — EXISTING POWER POLE
- (F) — EXISTING AMERTECH FIBER
- (L) — EXISTING LIGHT POLE
- (S) — EXISTING SIGNS
- (W) — EXISTING EDGE OF WETLAND
- (C) — EXISTING CURB AND GUTTER
- (L) — EXISTING FENCE LINE
- (G) — EXISTING GAS LINE
- (S) — EXISTING STORM SEWER
- (S) — EXISTING STORM STRUCTURES
- (S) — EXISTING SANITARY SEWER
- (M) — EXISTING SANITARY MANHOLE
- (C) — EXISTING SANITARY CLEANOUT
- (W) — EXISTING WATER MAIN
- (W) — EXISTING WATER MAIN STRUCTURES
- (S) — PROPOSED STORM SEWER
- (S) — PROPOSED STORM STRUCTURES
- (S) — PROPOSED SANITARY SEWER
- (M) — PROPOSED SANITARY MANHOLE
- (C) — PROPOSED SANITARY CLEANOUT
- (W) — PROPOSED WATER MAIN
- (W) — PROPOSED WATER MAIN STRUCTURES
- (C) — PROPOSED CURB & GUTTER

MATCH LINE - SEE SHEET C4.0 FOR CONTINUATION



MORSE LAKE  
WATER=949.45  
(08-16-06)

**BENCHMARKS**

BENCH MARK 205  
THE WORD "OPEN" ON HYD. FLANGE ON  
THE S. SIDE GRAND RIVER AND E. SIDE  
OF ENTRANCE TO B.A.C.  
ELEVATION=869.19 (NGVD 29 DATUM)

BENCH MARK 208  
S. ANCHOR BOLT OF LIGHT POLE BASE ON THE  
E. SIDE OF PARKING AREA  
ELEVATION=865.55 (NGVD 29 DATUM)

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

3 WORKING DAYS  
BEFORE YOU DIG  
CALL 811 OR 1-800-482-7171  
(TOLL FREE)  
OR VISIT CALL811.COM

**D&S INC**

(810) 227-9533  
CIVIL ENGINEERS  
LAND SURVEYORS  
2183 PLESS DRIVE  
BRIGHTON, MICHIGAN 48114

DESIGN: WMP	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: L.F.						
CHECK: WMP						
	01-22-15		REVISED PER REVIEW COMMENTS			

**242 COMMUNITY CHURCH**

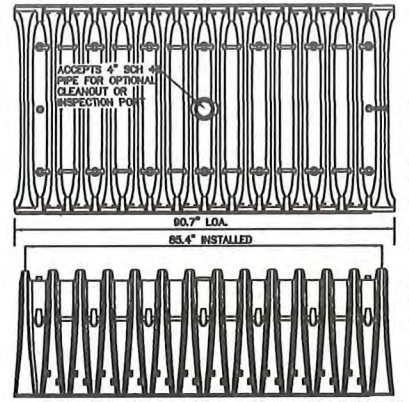
UTILITY PLAN  
(SOUTH)

CLIENT:  
242 COMMUNITY CHURCH  
7526 GRAND RIVER  
BRIGHTON, MI 48114  
(810) 231-0190

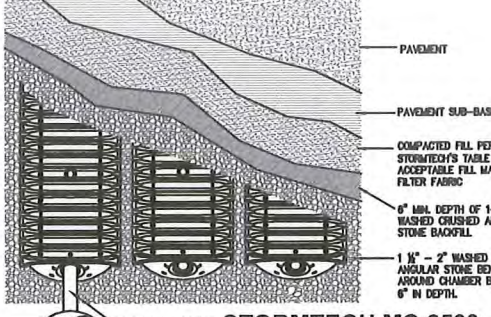
SCALE: 1"=20'  
PROJECT No.: 9152540  
DWG NAME: 2540-UT  
ISSUED APR. 22, 2015

**C4.1**

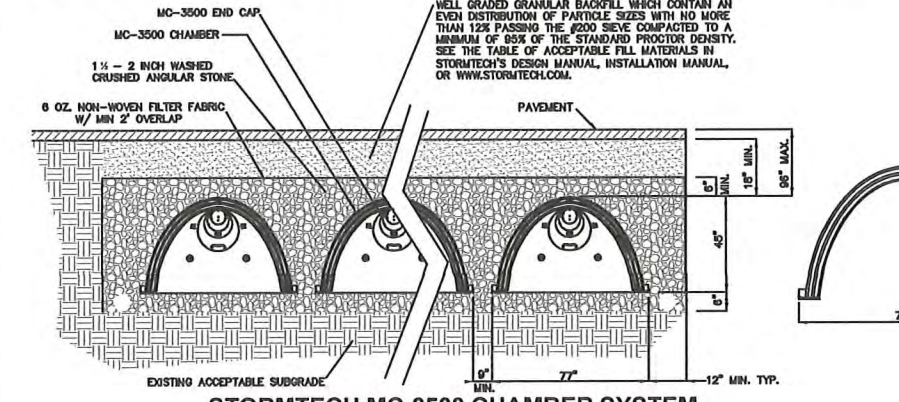




**STORMTECH MC-3500 CHAMBER**  
NOT TO SCALE  
NOMINAL CHAMBER SPECIFICATIONS  
SIZE (W x H x INSTALLED LENGTH) 77" x 45.0" x 65.4"

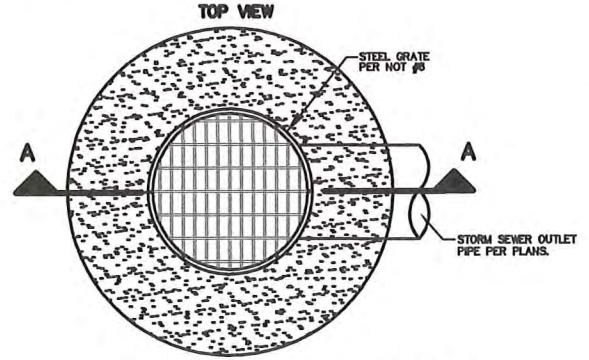


**STORMTECH MC-3500 CHAMBER SYSTEM PLAN VIEW DETAIL**  
NOT TO SCALE



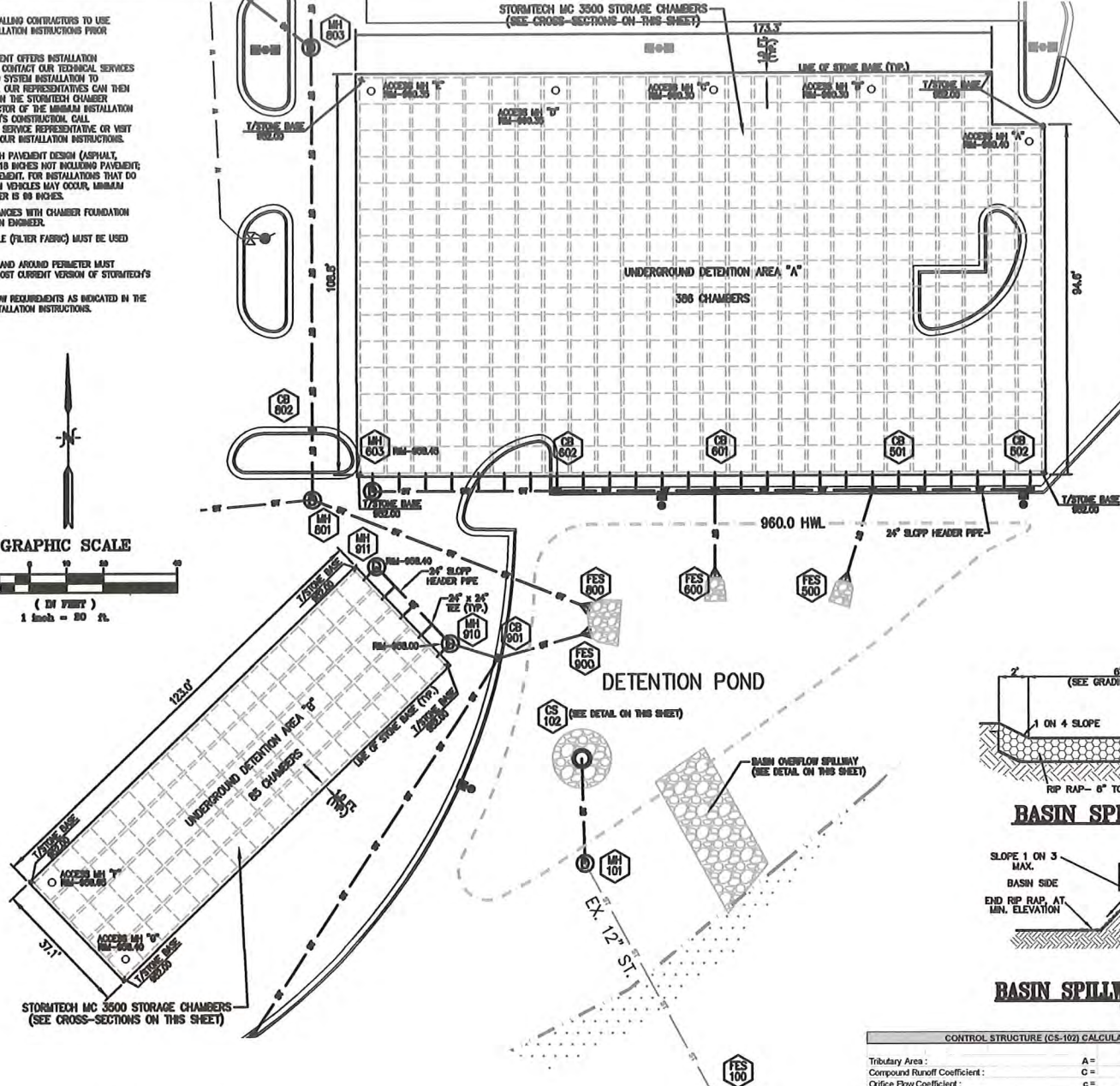
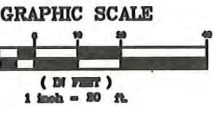
**STORMTECH MC-3500 CHAMBER SYSTEM TYPICAL CROSS SECTION DETAIL**  
NOT TO SCALE

KEY	
CONTROL STRUCTURE DESIGNATION	CS-102
A MATERIAL TYPE, SEE NOTE 2	HDPE
B STRUCTURE INSIDE DIAMETER	4'
C RIM ELEVATION WITHOUT GRATE	958.00
D INVERT ELEVATION OUTLET PIPE	951.85
E TOP OF STONE ELEVATION	955.00
F OUTLET PIPE DIAMETER	12"
G OUTLET PIPE MATERIAL	RCP
H STRUCTURE HEIGHT WITHOUT GRATE	4.15'
J SUMP HEIGHT	2'
K RESTRICTOR OPENING DIA. IN OUTLET PIPE	N/A
L FIRST ROW OF HOLES	
CENTERLINE ELEVATION	952.00
HOLE DIAMETER	1.5"
NUMBER OF HOLES IN ROW	4
M SECOND ROW OF HOLES	
CENTERLINE ELEVATION	952.57
HOLE DIAMETER	1.5"
NUMBER OF HOLES IN ROW	6
N THIRD ROW OF HOLES	
CENTERLINE ELEVATION	954.62
HOLE DIAMETER	1.5"
NUMBER OF HOLES IN ROW	5



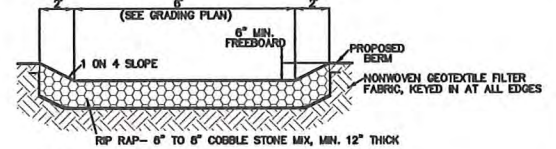
**CROSS-SECTION A-A BASIN CONTROL STRUCTURE DETAIL (CS)**  
NOT TO SCALE

- STORMTECH GENERAL NOTES:**
- STORMTECH LLC (STORMTECH) REQUIRES INSTALLING CONTRACTORS TO USE AND UNDERSTAND STORMTECH'S LATEST INSTALLATION INSTRUCTIONS PRIOR TO BEGINNING SYSTEM INSTALLATION.
  - STORMTECH LLC TECHNICAL SERVICES DEPARTMENT OFFERS INSTALLATION CONSULTATIONS TO INSTALLING CONTRACTORS. CONTACT OUR TECHNICAL SERVICES REPRESENTATIVE AT LEAST 30 DAYS PRIOR TO SYSTEM INSTALLATION TO ARRANGE A PRE-INSTALLATION CONSULTATION. OUR REPRESENTATIVES CAN THEN ANSWER QUESTIONS OR ADDRESS COMMENTS ON THE STORMTECH CHAMBER SYSTEM AND INFORM THE INSTALLING CONTRACTOR OF THE MINIMUM INSTALLATION REQUIREMENTS BEFORE BEGINNING THE SYSTEM'S CONSTRUCTION. CALL 1-888-892-2884 TO SPEAK TO A TECHNICAL SERVICE REPRESENTATIVE OR VISIT WWW.STORMTECH.COM TO RECEIVE A COPY OF OUR INSTALLATION INSTRUCTIONS.
  - STORMTECH'S REQUIREMENTS FOR SYSTEMS WITH PAVEMENT DESIGN (ASPHALT, CONCRETE PAVING, ETC.), MINIMUM COVER IS 18 INCHES NOT INCLUDING PAVEMENT. MAXIMUM COVER IS 80 INCHES INCLUDING PAVEMENT. FOR INSTALLATIONS THAT DO NOT INCLUDE PAVEMENT, WHERE HITTING FROM VEHICLES MAY OCCUR, MINIMUM REQUIRED COVER IS 24 INCHES, MAXIMUM COVER IS 80 INCHES.
  - THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEING SUPPLIED TO THE DESIGN ENGINEER.
  - ASPHALT MASH CLASS 2 NON-WOVEN GEOTEXTILE (FILTER FABRIC) MUST BE USED AS INDICATED IN THE PROJECT PLANS.
  - STONE PLACEMENT BETWEEN CHAMBERS ROWS AND AROUND PERIMETER MUST FOLLOW INSTRUCTIONS AS INDICATED IN THE MOST CURRENT VERSION OF STORMTECH'S INSTALLATION INSTRUCTIONS.
  - BACKFILLING OVER THE CHAMBERS MUST FOLLOW REQUIREMENTS AS INDICATED IN THE MOST CURRENT VERSION OF STORMTECH'S INSTALLATION INSTRUCTIONS.

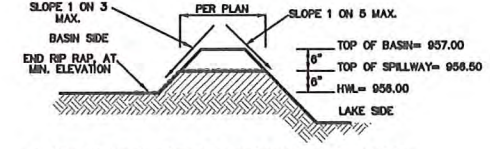


- LEGEND**
- EXISTING OVERHEAD WIRES
  - EXISTING POWER AND GUY
  - EXISTING POLE POLE
  - EXISTING AMERITECH RISER
  - EXISTING LIGHT POLE
  - EXISTING SIGNS
  - EXISTING EDGE OF WETLAND
  - EXISTING EDGE OF WATER
  - EXISTING CURB AND GUTTER
  - EXISTING FENCE LINE
  - EXISTING GAS LINE
  - EXISTING STORM SEWER
  - EXISTING STORM STRUCTURES
  - EXISTING SANITARY SEWER
  - EXISTING SANITARY MANHOLE
  - EXISTING SANITARY CLEANOUT
  - EXISTING WATER MAIN
  - EXISTING WATER MAIN STRUCTURES
  - PROPOSED STORM SEWER
  - PROPOSED STORM STRUCTURES
  - PROPOSED SANITARY SEWER
  - PROPOSED SANITARY MANHOLE
  - PROPOSED SANITARY CLEANOUT
  - PROPOSED WATER MAIN
  - PROPOSED WATER MAIN STRUCTURES
  - PROPOSED CURB & GUTTER

- BENCHMARKS**
- BENCH MARK 205  
THE WORD "OPDH" ON HYD. FLANGE ON THE S. SIDE GRAND RIVER AND E. SIDE OF ENTRANCE TO B.A.C. ELEVATION=969.19 (NGVD 29 DATUM)
- BENCH MARK 208  
S. ANCHOR BOLT OF LIGHT POLE BASE ON THE E. SIDE OF PARKING AREA ELEVATION=955.55 (NGVD 29 DATUM)



**BASIN SPILLWAY ELEVATION**  
NOT TO SCALE



**BASIN SPILLWAY CROSS SECTION**  
NOT TO SCALE

- CONTROL STRUCTURE NOTES:**
- Control Structure and Grate shall be factory built. Contractor shall provide Engineer with Shop Drawings for Control Structure and Grate. Contractor shall obtain Engineer's Approval of Shop Drawings prior to Control Structure installation.
  - Control Structure shall be constructed of material noted in Item A of KEY. CMP shall be corrugated metal pipe with corrosion resistant coating and shall conform to the specifications for corrugated metal pipe per AASHTO Designation M36. HDPE shall be high density polyethylene pipe with a smooth interior and shall conform to the specifications for high density polyethylene pipe per AASHTO Designation M294 Type S.
  - Control Structure Base shall be a reinforced 3000 PSI air entrained concrete base. Control Structure shall be embedded into the concrete base providing a full strength water tight connection as illustrated in the Basin Control Structure Detail.
  - Provide a watertight connection between the Control Structure and Outlet Pipe as follows:  
For a CMP Outlet Pipe from a CMP Control Structure: Factory weld a CMP Pipe Stub to the Control Structure with full strength PE weld all around pipe both inside and outside of Control Structure. OR Provide a bolted HDPE saddle with watertight gasket.  
For an HDPE Outlet Pipe from an HDPE Control Structure: Factory weld an HDPE pipe stub to the Control Structure with full strength PE weld all around pipe both inside and outside of Control Structure. OR Provide a bolted HDPE saddle with watertight gasket.  
For an RCP Outlet Pipe from a CMP or HDPE Control Structure: Seal Outlet Pipe to outside of Control Structure with an 18" minimum thickness 2500 PSI cast in place concrete donut all around Outlet Pipe. AND Seal Outlet Pipe to inside of Control Structure with a 2" minimum thickness lead of bitumastic tar all around Outlet Pipe.
  - Construct berm over Outlet Pipe as necessary to provide 12" minimum cover.
  - Grate shall be built to fit over the outside edge of the Control Structure and to be secured to the Control Structure with six (6) 1/4" minimum diameter removable galvanized screws. All joints shall be welded full strength per current AWS code. Grate shall be factory coated with bitumastic or corrosion resistant paint. Grate shall be constructed of 1/2" minimum diameter round or square steel bar creating a square grid pattern with a maximum 3"x 3" opening size. Outside of Grate shall be wrapped with a 1/4" minimum x 3" minimum flat stock steel.

**CONTROL STRUCTURE (CS-102) CALCULATIONS**

Tributary Area:	A =	10.94 Acres
Compound Runoff Coefficient:	C =	0.66
Orifice Flow Coefficient:	c =	0.60
Allowable Outflow Rate:	Qa =	2.19 CFS
100 Year Flood Volume:	V100 =	85226 CF
Bankfull Flood Volume:	Vbf =	60778 CF
First Flush Volume:	Vff =	13502 CF
Low Water Level:	LWL =	952.00
First Flush Elevation:	Xff =	952.57
Bankfull Flood Elevation:	Xbf =	954.62
100 Year Flood Elevation:	X100 =	955.97
(Use available high water elevation for X100)	HWL =	956.00
FIRST FLUSH:		
Qff =	Vff / (1/24 hrs) * (1/3600 sec) =	0.1963 CFS
Hff =	(2/3) * (Xff - LWL) =	0.38 FT
Aff =	Qff / (c * SQRT(2 * 32.2 * Hff)) =	0.0527 SF
Nff =	Aff / 0.0123 =	4.28 1.5" Holes
Use Nff =	4 1.5" Holes at Elevation =	952.00
BANKFULL FLOOD:		
H =	(2/3) * (Xbf - LWL) =	1.7486667 FT
Qbf =	c * Hff * 0.0123 * SQRT(2 * 32.2 * H) =	1.0291 CFS
Vbf =	Qbf * 24 hrs * (3600 sec / 1 hr) =	27050.67 CF
Vffed =	Vbf - Vff =	33727.59 CF
Qbf =	Vffed * (1/24 hrs) * (1/3600 sec) =	0.3904 CFS
Hbf =	(2/3) * (Xbf - LWL) =	1.37 FT
Abf =	Qbf / (c * SQRT(2 * 32.2 * Hbf)) =	0.0693 SF
Nbf =	Abf / 0.0123 =	5.64 1.5" Holes
Use Nbf =	6 1.5" Holes at Elevation =	952.57
100 YEAR FLOOD:		
Hff + Qbf =	(c * Nff * 0.0123 * SQRT(2 * 32.2 * (X100 - LWL))) + (c * Nbf * 0.0123 * SQRT(2 * 32.2 * (X100 - Xff))) =	1.1319 CFS
Q100 =	Ca * (Qff + Qbf) =	1.0291 CFS
H100 =	(2/3) * (X100 - LWL) =	0.92 FT
A100 =	Q100 / (c * SQRT(2 * 32.2 * H100)) =	0.2287 SF
N100 =	A100 / 0.0491 =	4.66 3" Holes
Use N100 =	5 3" Holes at Elevation =	954.62

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

3 WORKING DAYS BEFORE YOU DIG  
CALL 811 OR 1-800-482-7171 (TOLL FREE)  
OR VISIT CALL811.COM

**DESIGN INC**  
DESIGN INC  
CIVIL ENGINEERS  
LAND SURVEYORS  
2183 PLESS DRIVE  
BRIGHTON, MICHIGAN 48114

DESIGN: WMP	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: L.F.		01-22-15	REVISED PER REVIEW COMMENTS			
CHECK: WMP						

**242 COMMUNITY CHURCH**

**UNDERGROUND DETENTION PLAN, NOTES & DETAILS**

CLIENT:  
242 COMMUNITY CHURCH

7526 GRAND RIVER  
BRIGHTON, MI 48114  
(810) 231-0190

SCALE: 1"=20'

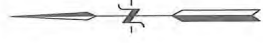
PROJECT No.: 9152540

DWG NAME: 2540.CH

ISSUED: APR. 22, 2015

**C4.2**





**LEGEND**

- 970 EXISTING CONTOURS
- EXISTING EDGE OF WETLAND
- EXISTING EDGE OF WATER
- EXISTING CURB AND GUTTER
- EXISTING STORM SEWER
- EXISTING STORM STRUCTURES
- PROPOSED STORM SEWER
- PROPOSED STORM STRUCTURES
- PROPOSED CONTOURS

**SOIL EROSION MEASURES**

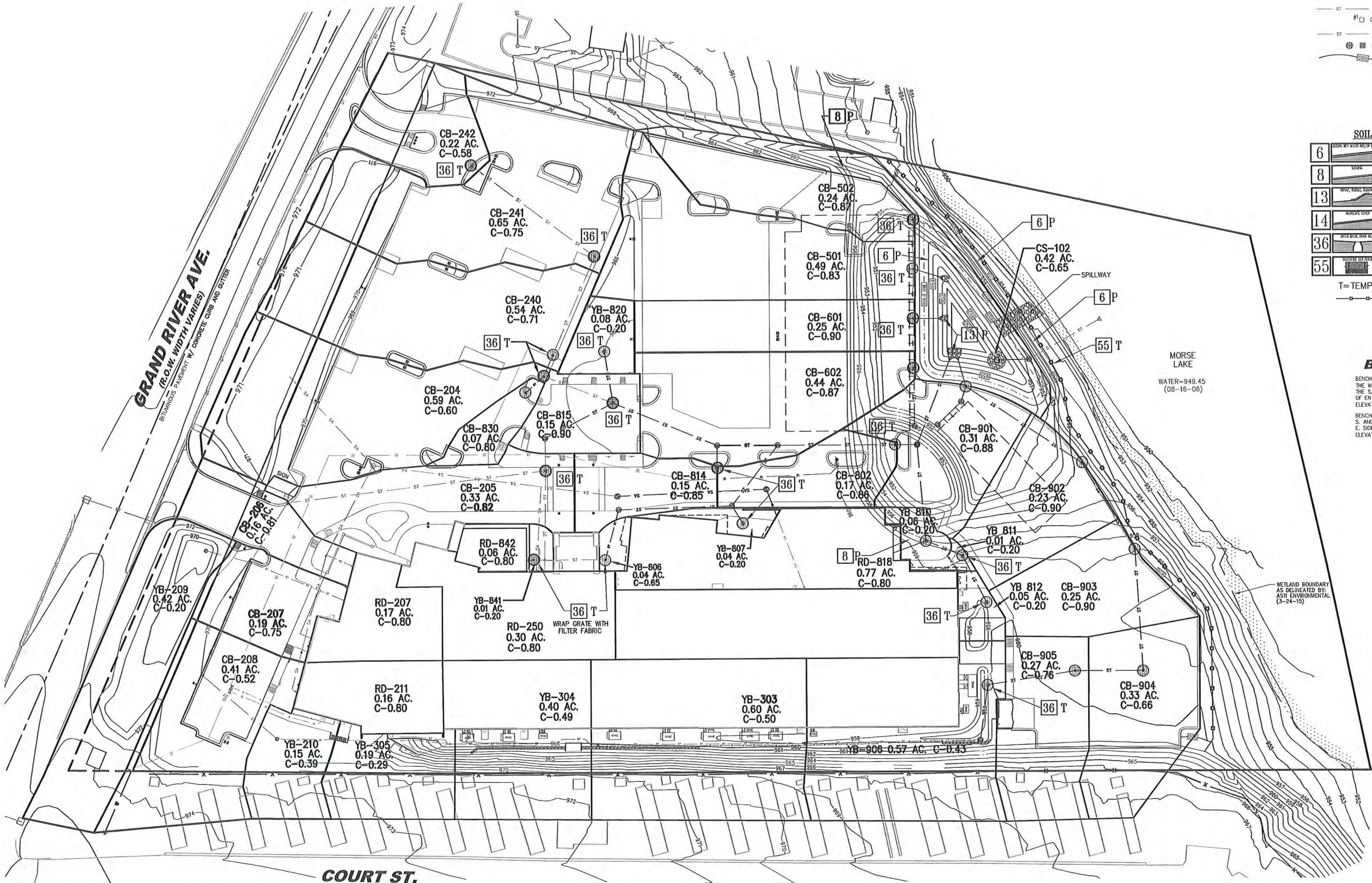
6	ROCK MAT WITH ROCK CURB	INSTALLATION OF ROCKING CURB FOR EROSION CONTROL ON HIGH SLOPE AREAS IN SOIL QUALITY TO PREVENTED PROPOSED SOILS TO BE PROTECTED FROM EROSION
8	SLOTTED	PROTECT SLOPE FROM EROSION ON SLOPE ON STEEP SLOPE WHERE SLOPE MAY BE DIFFICULT TO ESTABLISH SOIL TO HOLD. MAY BE REMOVED IF SOILS SOILS TO BE PROTECTED FROM EROSION
13	TRUSS, BRICK, BLOCK	TRUSS BRICK, BLOCK EROSION CONTROL MEASURE TO BE USED ON SLOPE WHERE SLOPE MAY BE DIFFICULT TO ESTABLISH EROSION CONTROL MEASURE TO BE USED ON SLOPE WHERE SLOPE MAY BE DIFFICULT TO ESTABLISH EROSION CONTROL MEASURE TO BE USED ON SLOPE WHERE SLOPE MAY BE DIFFICULT TO ESTABLISH
14	WOODEN CURB	WOODEN CURB EROSION CONTROL MEASURE TO BE USED ON SLOPE WHERE SLOPE MAY BE DIFFICULT TO ESTABLISH EROSION CONTROL MEASURE TO BE USED ON SLOPE WHERE SLOPE MAY BE DIFFICULT TO ESTABLISH EROSION CONTROL MEASURE TO BE USED ON SLOPE WHERE SLOPE MAY BE DIFFICULT TO ESTABLISH
36	CONCRETE CURB	CONCRETE CURB EROSION CONTROL MEASURE TO BE USED ON SLOPE WHERE SLOPE MAY BE DIFFICULT TO ESTABLISH EROSION CONTROL MEASURE TO BE USED ON SLOPE WHERE SLOPE MAY BE DIFFICULT TO ESTABLISH EROSION CONTROL MEASURE TO BE USED ON SLOPE WHERE SLOPE MAY BE DIFFICULT TO ESTABLISH
55	CONCRETE CURB	CONCRETE CURB EROSION CONTROL MEASURE TO BE USED ON SLOPE WHERE SLOPE MAY BE DIFFICULT TO ESTABLISH EROSION CONTROL MEASURE TO BE USED ON SLOPE WHERE SLOPE MAY BE DIFFICULT TO ESTABLISH EROSION CONTROL MEASURE TO BE USED ON SLOPE WHERE SLOPE MAY BE DIFFICULT TO ESTABLISH

T=TEMPORARY P=PERMANENT  
 36" SILT FENCE

**BENCHMARKS**

BENCHMARK 205  
 THE WORD "OPEN" ON HYD. FLANGE ON  
 THE S. SIDE GRAND RIVER AND E. SIDE  
 OF ENTRANCE TO B.A.C.  
 ELEVATION=969.19 (NGVD 29 DATUM)

BENCHMARK 208  
 S. ANCHOR BOLT OF LIGHT POLE BASE ON THE  
 E. SIDE OF PARKING AREA  
 ELEVATION=965.55 (NGVD 29 DATUM)



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

3 WORKING DAYS  
 BEFORE YOU DIG  
 CALL 811 OR 1-800-482-7171  
 (TOLL FREE)  
 OR VISIT CALL811.COM

**DESIGN INC**

(810) 227-9533  
 CIVIL ENGINEERS  
 LAND SURVEYORS  
 2183 PLESS DRIVE  
 BRIGHTON, MICHIGAN 48114

DESIGN: WMP	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: L.F.		04-22-15	REVISED PER REVIEW COMMENTS			
CHECK: WMP						

**242 COMMUNITY CHURCH**

**SOIL EROSION AND WATERSHED PLAN**

CLIENT:  
 242 COMMUNITY CHURCH  
 7526 GRAND RIVER  
 BRIGHTON, MI. 48114  
 (810) 231-0190

SCALE: 1"=40'  
 PROJECT No.: 9152540  
 DWG NAME: 2540-EROSION  
 ISSUED: APR. 22, 2015

**C5.0**



**LANDSCAPING REQUIREMENTS**  
GENOA TOWNSHIP ZONING ORDINANCE (GCD ZONING DISTRICT)

**LEGEND**

- OHW — OHW EXISTING OVERHEAD WIRES
- P — P EXISTING POLE AND GUY
- A — A EXISTING AMERITECH RISER
- L — L EXISTING LIGHT POLE
- S — S EXISTING SIGNS
- C — C EXISTING CONTOURS
- W — W EXISTING EDGE OF WETLAND
- E — E EXISTING EDGE OF WATER
- C — C EXISTING CURB AND GUTTER
- F — F EXISTING FENCE LINE
- G — G EXISTING GAS LINE
- S — S EXISTING STORM SEWER
- S — S EXISTING STORM STRUCTURES
- S — S EXISTING SANITARY SEWER
- S — S EXISTING SANITARY MANHOLE
- S — S EXISTING SANITARY CLEANOUT
- S — S EXISTING WATER MAIN
- S — S EXISTING WATER MAIN STRUCTURES
- S — S PROPOSED STORM SEWER
- S — S PROPOSED STORM STRUCTURES
- S — S PROPOSED SANITARY SEWER
- S — S PROPOSED SANITARY MANHOLE
- S — S PROPOSED SANITARY CLEANOUT
- S — S PROPOSED WATER MAIN
- S — S PROPOSED WATER MAIN STRUCTURES
- S — S PROPOSED CONC. CURB AND GUTTER

**SEE SHEET C6.1 FOR  
PLANT MATERIAL LIST**

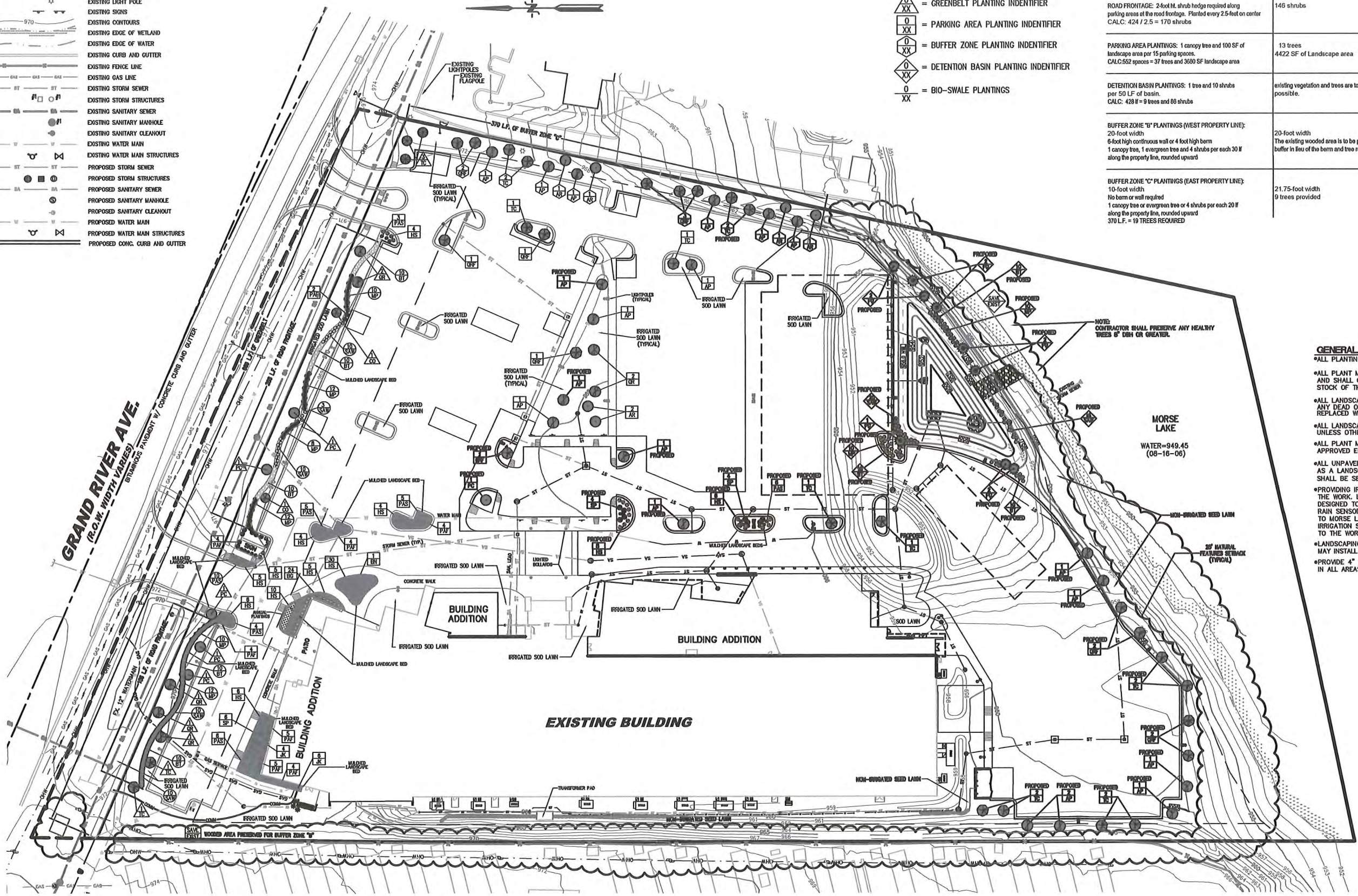
**PLANTING KEY**

- ⊙ XX = ROAD FRONTAGE PLANTING IDENTIFIER
- ⊙ XX = GREENBELT PLANTING IDENTIFIER
- ⊙ XX = PARKING AREA PLANTING IDENTIFIER
- ⊙ XX = BUFFER ZONE PLANTING IDENTIFIER
- ⊙ XX = DETENTION BASIN PLANTING IDENTIFIER
- XX = BIO-SWALE PLANTINGS

REQUIRED:	EXISTING:	PROPOSED:
GREENBELT: 20-foot wide and 1 tree per 40 LF CALC: 660 / 40 = 17 trees required	20-foot wide greenbelt 17 trees provided	
ROAD FRONTAGE: 2-foot H.L. shrub hedge required along parking areas of the road frontage. Planted every 2.5-feet on center CALC: 424 / 2.5 = 170 shrubs	146 shrubs	28 SHRUBS PROPOSED
PARKING AREA PLANTINGS: 1 canopy tree and 100 SF of landscape area per 15 parking spaces. CALC: 552 spaces = 37 trees and 3680 SF landscape area	13 trees 4422 SF of Landscape area	24 TREES PROPOSED
DETENTION BASIN PLANTINGS: 1 tree and 10 shrubs per 50 LF of basin. CALC: 428 lf = 9 trees and 88 shrubs	existing vegetation and trees are to be preserved where possible.	9 TREES PROPOSED 86 SHRUBS PROPOSED
BUFFER ZONE 'B' PLANTINGS (WEST PROPERTY LINE): 20-foot width 6-foot high continuous wall or 4 foot high berm 1 canopy tree, 1 evergreen tree and 4 shrubs per each 30 lf along the property line, rounded upward	20-foot width The existing wooded area is to be preserved to provide a vegetated buffer in lieu of the berm and tree requirements.	
BUFFER ZONE 'C' PLANTINGS (EAST PROPERTY LINE): 10-foot width No berm or wall required 1 canopy tree or evergreen tree or 4 shrubs per each 20 lf along the property line, rounded upward 370 LF = 19 TREES REQUIRED	21.75-foot width 9 trees provided	10 TREES PROPOSED

**GENERAL NOTES:**

- ALL PLANTING SIZES SHOWN SHALL BE AT TIME OF PLANTING.
- ALL PLANT MATERIAL SHALL BE FREE OF DISEASE AND INSECTS AND SHALL CONFORM TO THE AMERICAN STANDARD FOR NURSERY STOCK OF THE AMERICAN ASSOCIATION OF NURSERYMEN.
- ALL LANDSCAPING SHALL BE MAINTAINED A HEALTHY CONDITION, ANY DEAD OR DISEASED PLANTINGS SHALL BE REMOVED AND REPLACED WITHIN 1 YEAR.
- ALL LANDSCAPE BEDS TO BE MULCHED WILL HAVE CYPRESS MULCH UNLESS OTHERWISE NOTED OR APPROVED BY OWNER.
- ALL PLANT MATERIAL TO BE USED SHALL BE AS SPECIFIED OR APPROVED EQUAL.
- ALL UNPAVED AREAS AND AREAS NOT OTHERWISE PROPOSED AS A LANDSCAPE BED OR AN AREA TO BE CYPRESS MULCHED SHALL BE SEEDED TO ESTABLISH A VEGETATIVE LAWN COVER.
- PROVIDING IRRIGATION SYSTEM IN AREAS NOTED IS A PART OF THE WORK. LANDSCAPE CONTRACTOR SHALL PROVIDE SYSTEM DESIGNED TO MEET THE OWNER'S NEEDS AND PROVIDE EXTERNAL RAIN SENSORS. IRRIGATION CONTRACTOR SHALL PROVIDE A PUMP TO MORSE LAKE THAT MEETS THE SUPPLY REQUIREMENTS OF THE IRRIGATION SYSTEM. POWER SUPPLY LINE TO PUMP IS INCIDENTAL TO THE WORK.
- LANDSCAPING SHOWN IS MINIMUM PLANTING REQUIRED. OWNER MAY INSTALL MORE PLANTINGS MEETING ALL MUNICIPAL STANDARDS.
- PROVIDE 4" OF SCREENED TOPSOIL ON TOP OF SUITABLE SOILS IN ALL AREAS SPECIFIED FOR SOO OR SEED LAWN.



**811**  
Michigan's National  
Call before you dig.

3 WORKING DAYS  
BEFORE YOU DIG  
CALL 811 OR 1-800-482-7171  
(TOLL FREE)  
OR VISIT CALL811.COM

**DRIVING INC.**  
(810) 227-9533  
CIVIL ENGINEERS  
LAND SURVEYORS  
2183 PLESS DRIVE  
BRIGHTON, MICHIGAN 48114

REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DESIGN: WMP	04-22-15	REVISED PER REVIEW COMMENTS			
DRAFT: L.F.					
CHECK: WMP					

**242 COMMUNITY CHURCH**

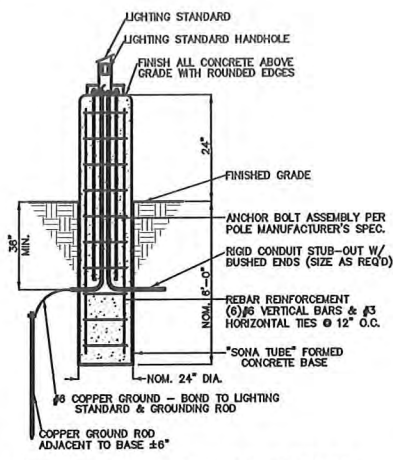
**LANDSCAPE PLAN**

CLIENT:  
242 COMMUNITY CHURCH  
7526 GRAND RIVER  
BRIGHTON, MI. 48114  
(810) 231-0190

SCALE: 1"=40'  
PROJECT No.: 9152540  
DWG NAME: 2540-LA  
ISSUED: APR. 22, 2015

**C6.0**





**LIGHT BASE STANDARD DETAIL**  
NOT TO SCALE

- NOTES
1. FOUNDATION SHOWN IS A TYPICAL DESIGN. WIND LOADS MORE THAN 100 MPH AND UNSTABLE SOIL CONDITIONS MAY REQUIRE AN ALTERNATE DESIGN. VERIFY CONDITION OF SOILS WITH SOILS REPORT.
  2. FOUNDATIONS SHALL EXTEND BELOW FROST DEPTH PER LOCAL CODES.
  3. CONCRETE SHALL HAVE MIN 2500 PSI COMPRESSIVE STRENGTH AT 28 DAYS.

Note

1. SEE MH COLUMN OF LUMINAIRE LOCATIONS FOR MOUNTING HEIGHTS.
2. SEE LUMINAIRE SCHEDULE FOR LIGHT LOSS FACTORS.
3. CALCULATIONS ARE SHOWN IN FOOTCANDLES GRADE.

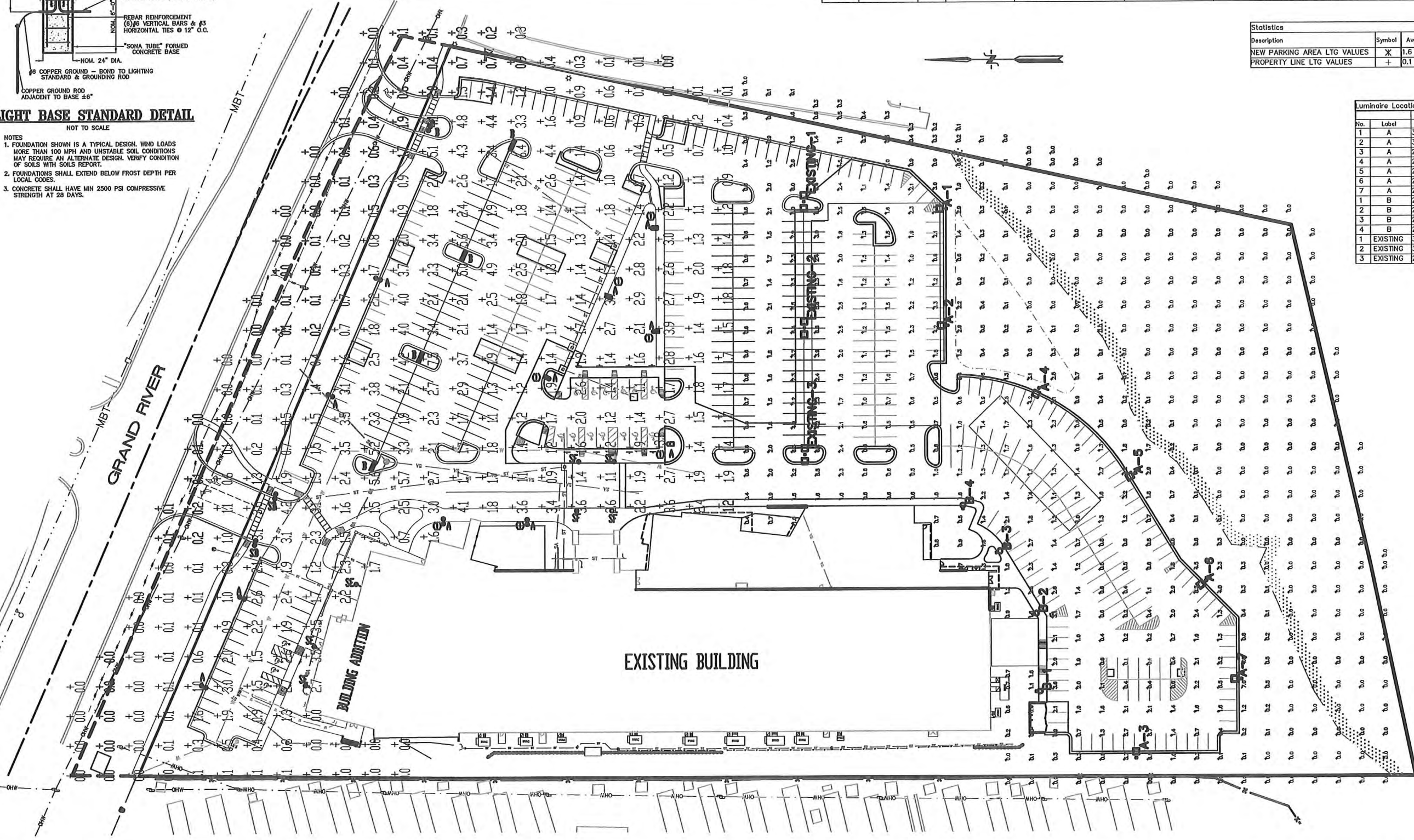
THE ENGINEER AND/OR ARCHITECT MUST DETERMINE APPLICABILITY OF THE LAYOUT TO EXISTING / FUTURE FIELD CONDITIONS. THIS LIGHTING LAYOUT REPRESENTS ILLUMINATION LEVELS CALCULATED FROM LABORATORY DATA TAKEN UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY APPROVED METHODS. ACTUAL 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.

Symbol	Label	Quantity	Manufacturer	Description	Catalog Number	Lamp	Number Lamps	Filename	Lumens Per Lamp	Light Loss Factor	Wattage
	A	7	Lithonia Lighting	Area Luminaire, 400W MH, R4 Reflector, Full Cutoff MEETS NIGHTTIME FRIENDLY CRITERIA	KAD 400M R4 (PULSE START) (T5ART)	ONE 400-WATT CLEAR 37 PULSE START METAL HALIDE, HORIZONTAL POSITION.	1	KAD_400M_R4_(PULSE_START).ies	38000	0.7	456
	B	4	VISIONAIRE LIGHTING, LLC	ODEN SIZE 2 T4 250PS	ODN-2 T4-250PS-SEG	VERTICAL POSITION ED28 CLEAR	1	bdn-2_T4_250_p.ies	25000	0.7	291
	EXISTING	3	Lithonia	Area Luminaire, 400W MH, R4 Reflector, Full Cutoff MEETS NIGHTTIME FRIENDLY CRITERIA (EXISTING LOCATIONS)	KAD 400M R4 (PULSE START) (T5ART)	ONE 400-WATT CLEAR 37 PULSE START METAL HALIDE, HORIZONTAL POSITION.	1	KAD_400M_R4_(PULSE_START).ies	38000	0.7	912

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min	Avg/Max
NEW PARKING AREA LTG VALUES	*	1.6 fc	9.6 fc	0.1 fc	96.0:1	16.0:1	0.2:1
PROPERTY LINE LTG VALUES	+	0.1 fc	1.4 fc	0.0 fc	N/A	N/A	0.1:1

No.	Label	Location		MH	Orientation	TILT
		X	Y			
1	A	3137.90	3976.80	30.00	0.00	0.00
2	A	3039.90	3976.00	30.00	0.00	0.00
3	A	2675.45	3817.55	20.00	90.76	0.00
4	A	2986.90	3898.60	30.00	296.02	0.00
5	A	2915.10	3817.30	30.00	328.69	0.00
6	A	2824.60	3757.80	20.00	322.00	0.00
7	A	2741.70	3728.20	20.00	0.00	0.00
1	B	2731.98	3901.75	20.00	180.00	0.00
2	B	2796.65	3904.41	20.00	159.44	0.00
3	B	2848.88	3934.98	20.00	155.18	0.03
4	B	2885.79	3963.76	30.00	90.00	0.00
1	EXISTING	3144.20	4096.90	30.00	90.00	0.00
2	EXISTING	3038.30	4096.90	30.00	90.00	0.00
3	EXISTING	2931.70	4096.90	30.00	90.00	0.00



DESIGN: WMP	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: L.F.		04-22-15	REVISED PER REVIEW COMMENTS			
CHECK: WMP						

**242 COMMUNITY CHURCH**

**LIGHTING PLAN**

CLIENT:  
242 COMMUNITY CHURCH  
7526 W. GRAND RIVER  
BRIGHTON, MI. 48114  
(810) 231-0190

SCALE: 1"=40'  
PROJECT No.: 9152540  
DWG NAME: 2540-LIGHT  
ISSUED: APR. 22, 2015

**C7.0**

**DESIGN INC**  
(810) 227-9533  
CIVIL ENGINEERS  
LAND SURVEYORS  
2183 PLESS DRIVE  
BRIGHTON, MICHIGAN 48114







DATE ISSUED  
DRAWN BY  
CHECKED BY

**HOBBS + BLACK**  
ARCHITECTS  
100 N. State St.  
Ann Arbor, MI 48104  
P. 734.463.4189  
www.hobbs-black.com

**2|42 COMMUNITY CHURCH**  
BRIGHTON CAMPUS  
7536 GRAND RIVER  
BRIGHTON 48114  
P. 810.231.0150

PROJECT

CONSULTANT

SHEET TITLE

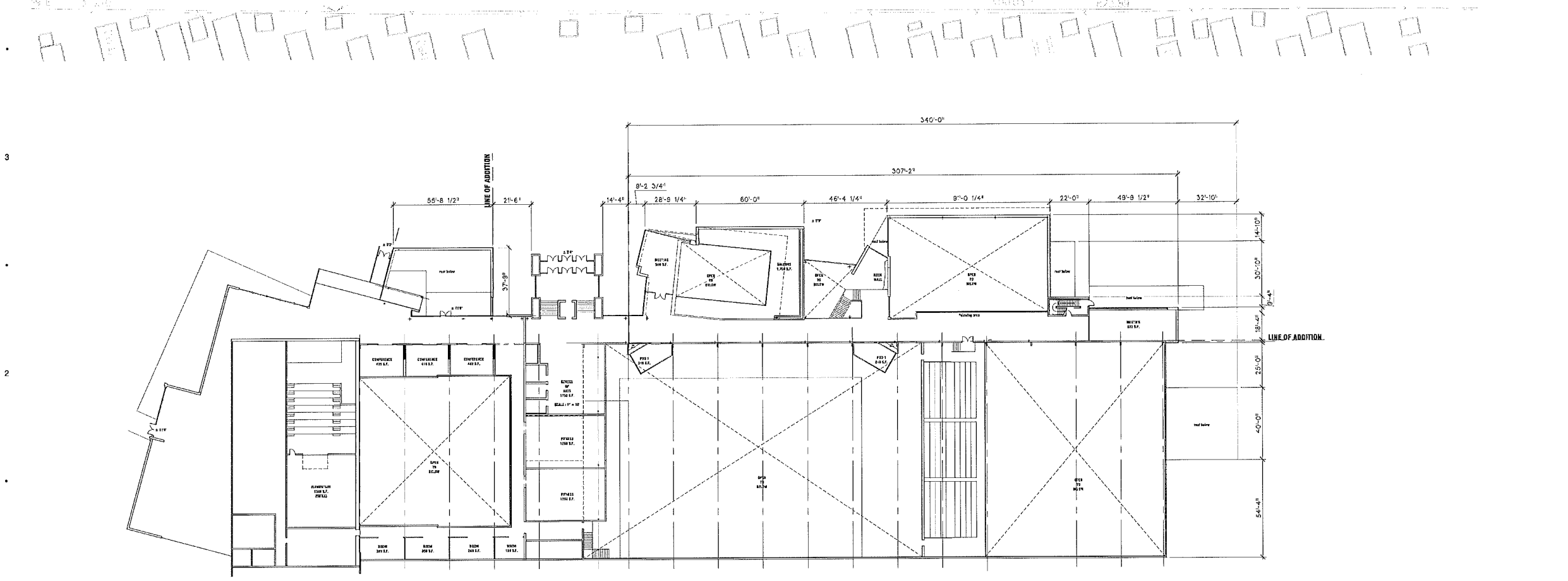
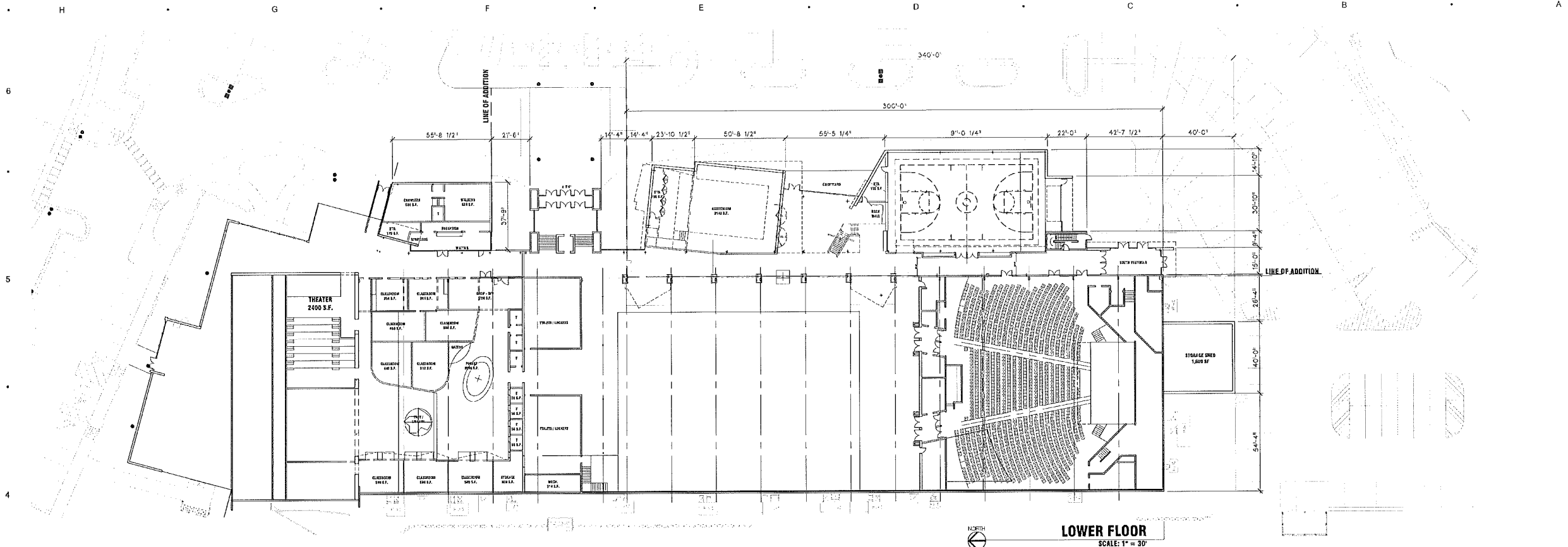
14-906

PROJECT NUMBER

A-100

SHEET NUMBER

Drawn: P:\320141\4900\Draw\344616101\150327 - BRIGHTON CAMPUS\DWG\150330 - 24x36\A-100.dwg  
Date: Mar 31, 2015, 3:11pm Layout: Layout1 Plotter: pldm







## MEMORANDUM

**TO:** Planning Commission  
**FROM:** Ron Akers, Zoning Official  
**DATE:** 5/6/15  
**RE:** 2015-2021 Capital Improvement Program

**Manager Review:** \_\_\_\_\_

2911 Dorr Road  
Brighton, MI 48116  
810.227.5225  
810.227.3420 fax  
genoa.org

Based on the comments and feedback received at the March 30, 2015 Joint Township Board/Planning Commission Meeting, please find attached to this memo the revised Capital Improvement Program for 2015-2021. The revisions made to this plan from discussion at the previous meeting are as follows:

- A. Land and Major Facilities
  - a. Based on interest for more senior focused activity at the Township Hall Park, Outdoor Fitness Equipment was replaced with a senior citizen playground. More information about this can be found at the following link:  
<http://www.noahsplay.com/playground-equipment-needs/developer/seniorfit-wellness-motion-equipment-gold-pkg/>
  - b. Solar Panel Installation was moved from future projects to 2016-17. The analysis for cost savings is discussed below.
  - c. Shaded Benches were added as a project in 2019-20.
  - d. The installation of a Park Informational Sign was moved from future projects to 2020-21.
- B. Services Support
  - a. No changes
- C. Sidewalks
  - a. For sidewalk installation on Crooked Lake Road, Dorr Road, and Challis Road, additional funds were added for tree installation. The funds were calculated estimating the installation of one (1) tree per fifty (50) linear feet of sidewalk. The cost of the tree was estimated at \$350 per tree.
- D. Gravel Road Improvements
  - a. Moved the installation of Crushed Limestone at Herbst Road to fiscal year 2017-18.
- E. Paved Road Improvements
  - a. Removed the installation of Mast Arms at the Grand Oaks Road and S. Latson Road intersection.
  - b. Added estimated Livingston County Road Commission Cost for Round-about installation at the Chilson Road and Coon Lake Road intersection.

### **SUPERVISOR**

Gary T. McCririe

### **CLERK**

Paulette A. Skolarus

### **TREASURER**

Robin L. Hunt

### **MANAGER**

Michael C. Archinal

### **TRUSTEES**

H. James Mortensen

Jean W. Ledford

Todd W. Smith

Linda Rowell

### Solar Panel Cost/Payback Analysis

According to the information provided by The Green Panel, approximate annual cost savings on a 7.28kW solar panel system would be \$1,090 in year 1. At a cost of \$27,193 and an estimated 4% rate of inflation on energy costs, the payback period for the investment would be approximately 18 years and the total energy savings over a 30 year system life would be \$58,131.

### Inclusion of Road Projects Included in the 2013 Genoa Township Road Master Plan

At the April 6, 2015 Township Board meeting there was a question from a resident regarding why some projects that were included in the recent road millage request were listed as future projects in this plan. The reason for doing this is that we have a current plan in place which lists these projects as being important to the community. Due to the substantial negative feedback from the adjacent residents we have removed the paving of Cunningham Lake Road and Bauer Road from the Capital Improvement Program. With regards to the remaining projects, they will require some type of funding from an outside organization to be completed. It is unknown at this time how these projects would be funded or who would be the outside agency allocating those funds. This plan in no way binds the Township to invest in these projects. The reason why they were included is simply that we have a plan that lists them as projects that are important to the community.

To make the packet smaller, I have provided a link to the Capital Improvement Plan rather than include it within the packet. Please click on the logo on the following page to download the Capital Improvement Plan as proposed. Thank you! - Kelly VanMarter



# Genoa Charter Township Capital Improvement Program 2015-2021

CLICK ON LOGO BELOW TO DOWNLOAD THE PLAN



May 2015

**GENOA CHARTER TOWNSHIP  
PLANNING COMMISSION  
SPECIAL MEETING  
APRIL 27, 2015  
6:30 P.M.  
MINUTES**

CALL TO ORDER: The meeting of the Genoa Township Planning Commission was called to order at 6:33 p.m. Present were Chair Doug Brown, James Mortensen, Barbara Figurski, Eric Rauch, Diana Lowe, John McManus, and Chris Grajek. Also present were Kelly VanMarter, Community Development Director / Assistant Township Manager; Brian Borden of LSL Planning; and Gary Markstrom of Tetra Tech Engineering. Approximately 80 people were in the audience.

PLEDGE OF ALLEGIANCE: The Pledge of Allegiance was recited.

APPROVAL OF AGENDA: Upon motion by Commissioner Mortensen and support of Chris Grajek, the agenda was approved with the addition of introductions. **Motion carried unanimously.** Planning Commission members, staff, and consultants were introduced by Chairman Brown

CALL TO THE PUBLIC: A call to the public was made at 6:37 p.m. with no response.

**OPEN PUBLIC HEARING #1... Review of a site plan, environmental impact assessment, and PUD amendment for a proposed redevelopment of an existing outparcel to create two (2) outlots and construct a 4,283 sq. ft. restaurant building, located at 3950 E. Grand River Avenue, Howell, Michigan 48443, parcel # 4711-05-400-047, petitioned by RG Properties, Inc.**

Mr. Jim Blair was present on behalf of the petitioner. With the project previously tabled, Mr. Blair stated they have worked to accommodate the fire department request for reconfiguration of traffic. A curb was eliminated and the drive thru lane was reduced. This should help keep people from heading in the wrong direction. A redundant parking stall was eliminated. A pedestrian crossing was modified to improve pedestrian access. Landscaping was evaluated along the right of way. Additional plantings are planned to bring landscaping into conformance. Concerns were present on rooftop equipment sight lines. Plans have been provided to show that this equipment is concealed and will not be seen. Traditional patio furniture is planned as before.

Chairman Doug Brown indicated that the traffic flow appears to be improved. Planner Brian Borden indicated the petitioner has done a good job. Red Olive inclusion is a plus. Front yard parking concerns were present. If additional parking is permitted, then we want to make sure that landscaping screening is sufficient to mitigate the impact of the parking. Greenbelts are a little shy on tree



plantings. A hedgerow will help to buffer. The petitioner has responded to address screening of mechanical equipment. Confusion at the intersection seems resolved.

Mr. Blair indicated that the two additional trees on the site plan brings the trees into compliance.

Engineer Gary Markstrom indicated that the petitioner has taken care of their items of concern. A traffic impact study does not appear to be relevant at this point. Water runoff will be looked at in future submittals for the next door vacant lot.

Mr. Blair indicated that the fire department letter has been complied with. The address will be clearly evident on the building. Chairman Brown and Jim Mortensen indicated that consistency of the outlot parking areas should be reviewed. Mr. Rauch indicated that directional signage might help folks understand traffic direction. It was agreed that signage would be seen after the fact and would not change driver behavior.

A call to the public was made at 6:56 p.m. with no response.

**Planning Commission recommendation of petition**

- A. Recommendation regarding PUD Agreement Amendment. (03-12-15)
- B. Recommendation of Environmental Impact Assessment. (03-27-15)
- C. Recommendation of Site Plan. (04-20-15)

**Motion** by Commissioner Mortensen to recommend approval of the PUD agreement of Livingston Commons, dated March 12, 2015, subject to the following:

1. Approval of the Township attorney as to the language in the PUD agreement.
2. The petitioner will provide the township in recordable form a document regarding the Red Olive site, indicating that no drive thru will be permitted and limiting access to Grand River will be right in, right out.

Motion was supported by Commissioner Figurski. **Motion carried unanimously.**

**Motion** by Commissioner Figurski to recommend to the Township Board approval of the environmental impact assessment dated March 27, 2015, subject to the following conditions:

1. In 18.07.02 the Shell gas station is now a BP gas station.
2. In 18.07.05 Bennigan's is currently not open for breakfast. The proposed development would be opened for breakfast.
3. Subject to approval of the PUD amendment and site plan by the Township Board.

Support by Commissioner Lowe. **Motion carried unanimously.**

**Motion** by Commissioner Mortensen to recommend approval of the site plan application, subject to the following conditions:

1. Approval by The township board of the PUD amendment and the environmental impact assessment,
2. Umbrella signs will not be permitted on the tables on the patio.
3. The building colors and materials for the Panera Bread restaurant are approved and the renderings will become Township property.
4. The building depicted on lot 4B is regarded as a conceptual plan and when the details are finalized, it will be subject to further review by the planning commission and the Township board.
5. The requirements of the Township engineer spelled out in his April 24, 2015 letter will be complied with.
6. The requirements of the fire department, spelled out in the April 22, 2015 letter will be complied with.

Support by Barbara Figurski. **Motion carried unanimously.**

**OPEN PUBLIC HEARING #2... Review of a special use, sketch plan, and environmental impact assessment, for proposed outdoor storage, sales, and display, including mulch, landscape supplies, and brick pavers, located at 7949 W. Grand River, Brighton, Michigan, parcel # 4711-13-400-025. The request is petitioned by Nelligan's Outdoor Services.**

Mr. Don Nelligan and Ms. Lisa Nelligan were present on behalf of the petitioner Nelligan's Outdoor Services. The reason for the petition is that they wanted a building which could serve as a landscape display store to ease the process for customers. They sell mulch and pavers and need a location where people can come in and do their designs.

Planner Borden indicated that some existing conditions do not comply; however, the previous use was of greater impact. It is a tough site to work with and this use does improve the site. The site is lined with brick screen wall which limits the property. The ordinance has specific use requirements tied to outdoor mulch and display. There does not appear to be any huge issue. Covers of mulch are recommended to keep debris from blowing around as they are stored. Some of the front area does encroach on the setback. This area may or may not have been used for display. There does appear to be some flexibility here.

Commissioner Mortensen indicated that boats were stored in that area, including one pontoon and 3 or 4 boats in total. Borden indicated that technically this does not meet the requirement of the ordinance but the use existed before.

Mr. Nelligan would like to do a patio with a non-working fireplace and a seat wall to entice people to want to come in and see the product they offer. The display



area will be smaller than the previous boat display area. They want to give it some color and flair. Chairman Brown indicated that the displays inside the store are of high quality and that if the quality of the exterior matches the interior, it will be impressive.

Mr. Borden indicated that there is residential land use immediately east at Hacker. The gravel storage lot is allowable in the ordinance. There does not appear to be an adverse impact proposed. The height of the wall was confirmed as compliant. The turnaround space might be tight if the lot is at full load but it appears doable.

Mr. Nelligan indicated that a monument sign is planned. A large sign was placed today but it is too large a smaller one will replace it.

Mr. Borden indicated that he wasn't sure that they want large vehicles on Hacker Road. Chairman Brown indicated that they do not necessarily want the large trucks on Grand River either. Mr. Nelligan indicated that entering from Grand River goes more quickly and entrance is more difficult from Hacker Road.

Mr. Markstrom stated that since this was an existing use, the biggest comment is that some items appear on site plan as new but are carry overs from the previous site plan. This is more of an issue of preparation than of content of the plan. No drainage issues are known. There is no increase anticipated that would affect this. Ms. VanMarter indicated she is not aware of a history of drainage issues at this site.

Chairman Brown indicated that the fire department letter indicates that there are no objections to this use of the site. No environmental impacts are anticipated.

Commissioner Mortensen asked about the height of the materials. Mr. Nelligan is anticipating two piles of mulch, stretching it out so that it is not taller than the wall. Commissioner Mortensen indicated that there is a need to ensure that mulch does not blow into neighboring properties. Mr. Nelligan indicated that mulch that is piled is not prone to movement any more than mulch installed in home landscaping.

Commissioner Grajek asked about pallet height. Mr. Nelligan stated that the Pallets are 2' tall and would be stacked two high along the northwest property line.

A call to the public was made at 7:24 p.m. with no response.

#### **Planning Commission disposition of petition**

- A. Recommendation of Special Use
- B. Recommendation of Environmental Impact Assessment (04-09-15)
- C. Recommendation of Sketch Plan (04-09-15)

**Moved** by Commissioner Mortensen to recommend approval of the special use to permit Nelligan's Outdoor services to sell and stock landscaping supplies and related materials at 7949 Grand River, subject to the following:

1. This special use permit will be granted for one year and if the site remains in compliance, Township staff can approve it on an annual basis without a special use fee.
2. The display in front is permitted and will be maintained.
3. Mulch stored in the rear and other materials such as pavers will be kept below the height of the brick fence.
4. Steps will be taken by the petitioner to prevent blowing and other dispersing of the materials into neighboring properties.
5. Trucks delivering materials to the site will arrive at the Grand River entrance and depart on the Hacker Road entrance.
6. Signage will be within Township ordinance and will require Township approval.
7. This recommendation is made because it meets the requirements of section 19.03 of the ordinance and is consistent with prior use of the property and with adjacent properties.

Supported by Commissioner Grajek. **Motion carried unanimously.**

**Motion** by Commissioner Figurski to recommend to the Township Board adoption of the environmental impact assessment dated March 27, 2015, dependent on approval by the Township board of the special use permit.

Supported by Commissioner Grajek. **Motion carried unanimously.**

Motion by Commissioner Mortensen to recommend approval of the proposed sketch plan dated April 9, 2015 for outdoor storage, sales, and display, including mulch, landscape supplies, and brick pavers, located at 7949 W. Grand River, Brighton, Michigan, parcel # 4711-13-400-025, petitioned by Nelligan's Outdoor Services, subject to:

1. Approval of the Township board of the special use permit and environmental impact assessment.
2. Signage will be within the limits of the Township ordinance and will require the approval of Township staff.
3. Recommendations of the Township engineer, spelled out in his letter April 22, 2015 will be complied with and it is noted that the Brighton Area Fire Authority had no issues to raise in their letter.

Support by Commissioner Figurski. **Motion carried unanimously.**

Chairman Brown indicated that Commissioner Rauch asked to be recused from agenda item #3. Commissioner Rauch stated that he and his wife have interest in having their children attend the Livingston Christian School at the proposed



location and he requests to withdraw from decision making related to this project case because he does not feel he can objectively review the request.

**Moved** by Commissioner Lowe to excuse Commissioner Rauch from discussion of agenda Item #3. Supported by Commissioner Figurski. **Motion carried unanimously.** Commissioner Rauch removed himself from the Board table.

**OPEN PUBLIC HEARING #3... Review of a special use, sketch plan, and environmental impact assessment for a proposed K-12 Livingston Christian School to be located within the Brighton Church of the Nazarene, located at 7669 Brighton Road, Brighton, Michigan, parcel # 4711-25-400-058. The request is petitioned by Brighton Nazarene Church.**

Mr. Steve Morgan, a long-time member of the Brighton Nazarene Church, was present on behalf of the petitioner. Mr. Morgan stated that a special use permit was approved in 2013 and they are asking for an amendment to that special use to include a day school. Livingston Christian School began in 1986 and merged with another school several years later. The school was in Howell, then in Pinckney and has fluctuated in size. The school is currently Pre-K through grade 12. The impact assessment was amended to reflect the school arrival. The site plan offered is the site plan approved 18 months ago. There are no site plan changes. The church is currently in "the final stages of finishing up" the fifth building phase on that site. There are some conditions existing that must be completed in order to be in compliance with the previously approved special use.

Mr. Borden indicated that this is a request for a special land use approval. The Planning Commission is making a recommendation to the Township board and the determination made this evening is not of final authority. The request is for 150 students and 25 employees and there may be a subsequent review process which comes back to this commission as growth occurs. There is a 25% threshold. Anything above a 25% threshold of expansion and the petitioner might need to come back for additional permits.

Mr. Morgan indicated that the school wants to grow. The building will accommodate more use. Chairman Brown asked how many people can be safely in that building at one time and with 14 classrooms that would be 280 students. The classrooms are designed for approximately 20 students per classroom. It would be easy to expand to 250 students which the school has not reached up to this point. Mr. Morgan indicated that with 250 students and 35 staff, the site could accommodate 285.

Mr. Borden indicated that the petitioner was before the commission two years ago for an expansion of the facility. The petitioner is still in the process of implementing a number of the proposed items. They did not fully implement their landscape plan. Dead trees have been removed, specifically the east buffer zone. Replacement trees were to be added. They were also going to install landscape islands.

Mr. Morgan responded that the landscape is in process and they expect those items to be completed in the next 90 days.

Mr. Borden indicated that compatibility of uses is paramount regarding the neighbors to the east. He states that if we can get past a few very important issues we will find general compliance with the ordinance is met. The quantity and quality of buffering with the neighborhood to the east is in question. There is no berm or wall or fence present which is a requirement of a Buffer Zone B. We need to make sure that we have compatibility of land use which is the primary purpose of special land use criteria. To put a berm in, the existing trees would need to be removed. A wall or fence might provide additional screening, which would be preferred. We are not encouraging that trees be removed.

Additional concerns include existing peak days and hours. The school and church can operate independently but the concerns might be when there is overlap in events between the two entities. Also, public utilities and services need to be reviewed. This is an important standard under special land use criteria. There are no other external changes to the site. It is a request to utilize existing building space. The light fixtures might be worth review, ensuring that current standards are met.

Mr. Morgan indicated that light fixtures were approved in 2013. The equipment has not changed. Commissioner McManus indicated that the minutes stated that the commission was not going to require change to the lighting not that the lighting was up to date.

Signage was discussed and it was agreed that future sign permits would be sought. Mr. Borden stated that the change in size does offer the planning commission the right to request a traffic study.

Mr. Markstrom indicated that there are no physical changes to the site requested. Utility impacts are met with their 2013 site plan proposed. The biggest concern is the need for a traffic study for this site, given the number of trips to the site. Peak hour is either on the receiving public road or the generator on the property. This should not coincide with Brighton High School or Hornung on Bauer road. They do generate more than 100 directional trips which the ordinance states requires a traffic study. The Road Commission has provided traffic counts in the impact assessment, which appear to be from 2010 and these might be done every couple of years. The road commission indicated that the impact to Brighton Road will be minor during off peak times. There is a three lane road and three lanes in the driveway. Physical improvements may be difficult to make but the queuing and impact should be understood. They meet the threshold in ordinance for requiring a traffic study. They have data in their study and can update traffic counts. Site circulation should be analyzed as well as Brighton Road impacts and parking lot impacts. Traffic management plans may also be beneficial.



Chairman Brown asked about what road construction might occur on Brighton Road. Ms. VanMarter indicated that in 2017 the road is scheduled to be milled and replaced. There are no plans to widen the road. Regarding the fire department letter, the overhang, though not in current compliance, was approved in 2001. The remainder of the letter is in good shape.

Mr. Morgan indicated that the school changed the requirements for a sprinkling system in the building. The entire building is being "sprinkled." They will provide the requested turning radius.

Mr. Morgan stated that a traffic assessment, a traffic statement, and a traffic study are referred to in the ordinance: what does the Township want to see? A traffic study can be completed. Mr. Morgan indicated that Mike Goryl, the Livingston County traffic engineer, has indicated in a recent letter that a traffic study would not be required since Brighton Road has existing geometry needs in place.

Chairman Brown asked Mr. Borden what the Township wants to see. Mr. Borden indicated that an assessment is a lighter version of a traffic statement. Both are traffic studies. Chairman Brown indicated that the wording in the ordinance will be reviewed.

Mr. Markstrom says that a traffic study would show whether the roadway can be improved or whether the use should be at that location or whether the community can live with the conditions. Mr. Morgan indicated that the road can change category throughout the day depending on traffic counts. Commissioner Mortensen indicated that he is less concerned with the site than he is the impact on Brighton Road. Mr. Markstrom indicated that traffic flow out of the site can mitigate the queue on Brighton Road. Commissioner Mortensen asked what load on the site would require a traffic study.

Mr. Morgan indicated that the church is a traffic generator. The wording of the ordinance needs to be looked at very carefully. Perhaps an onsite traffic circulation study might be approved by the Township engineer. Mr. Morgan indicated that the letter from the Road Commission is clear. "We would consider this a relatively minor impact on Brighton Road." Commissioner Mortensen indicated that it is the Commission's responsibility to be comfortable with the traffic conditions. He is not as concerned with the Road Commission as he is with meeting Township ordinances. Chairman Brown indicated that Brighton Road is a major artery. Are there going to be busses? Mr. Morgan indicated there would be no busses.

Mr. Morgan indicated that there are three items in Mr. Borden's letter that appear to need a response. Mr. Morgan indicated that the school has maintained the current size for many years. The hope is to grow. The building can accommodate some growth. There are far more parking spots on the property than are needed. The parking lot is at 134%. Mr. Morgan indicated that the 2,000 capacity high school has been in existence for 25 years. The church was built in 1990, offering

many community activities. The subdivision was built in 2000. The church has planted many trees throughout the years. Many trees have done well.

Ms. VanMarter indicated that staff will do a search of minutes for a record of the trees the Worden Lake Woods subdivision developer agreed to plant.

Chairman Brown indicated a concern for the playground. Can the playground accommodate the needs of the school? Mr. Morgan indicated that it is a very large playground. The playground is on the west side of the church. The Worden Lake Woods subdivision is on the east. Chairman Brown asked about "utility area" on the property. Mr. Morgan indicated that there are underground septic tanks on site.

Commissioner Mortensen asked about driver training at the site. Will this accessory uses continue if the school arrives?

Commissioner Morgan responded saying that the parking lot is a state licensed course for driver certifications. There are two certified courses in Livingston County, which operate Monday thru Friday, 8 to 5; the hours are a requirement of the state. Ninety-Five percent of the courses in the state of Michigan are at churches. Few large tracks of paved lots meet the requirements of an unobstructed 178' x 320' area. One requirement is that alcohol cannot be sold on the site. Also, ninety-five percent of the school buses in Livingston county are tested at this site, between 10-noon, Monday thru Friday. No motorcycle certifications have taken place since the Commission met in July of 2013. Back up beepers were also stopped.

Commissioner Mortensen asked if there were issues with the size of the septic system. Mr. Morgan indicated there was a substantial upgrade in the size of the septic area. There is a substantial holding capacity.

The question arose as to whether the use of the driver training was ever a legal use. The church has been using the parking lot for training for more than 20 years.

Chairman Brown noticed that the County Building Official was present and asked if he had anything to add.

Mr. Jim Rowell, director of the Livingston County Building Department, spoke. The septic system may need more capacity. The State of Michigan does a review of schools. There are not a lot of changes that the County sees. However, the state needs to be approached. The County does not have authority to issue a C of O for a school. The department has reservations about issuing a C of O for a church that is actively enrolling and promoting to be a school.

Mr. Morgan indicated that there is potentially a separate set of requirements from the State. Mr. Rowell indicated that some minor changes are needed.



Mr. Morgan responded to neighbor letters. The church has six adjacent neighbors. The neighbors who are sending the letters all reside across a public road. There appear to be seven points the neighbors are making. Neighbors wanted more screening at the northeast corner of the parking lot. They wanted to clean up the buffer zone which was done in 2014. There were issues with traffic, motorcycle certification, and driver's training certifications. The motorcycle certification has ceased. They expressed concerns about cars parked along Aljoann drive and the unobstructed parking lot.

Mr. Morgan continued saying that cars parked on the road are a police issue. No functions are allowed at the church after 10:00 p.m. A security guard was hired and has not had any issues. There have not been any police calls in the past two years from the Aljoann neighborhood. Skateboard tournaments were held before the subdivision was built. Approximately 600 kids go to the skate park per week. The skate park is highly organized and very safe. The church has not seen a problem. They have had security cameras. The football games are very loud across the street as are marching band practices. There have been three outdoor functions since July 2013 at the church, including a Trunk or Treat, which ended before dark. There was a large back to school celebration in the parking lot where back packs were given out. Overflow parking is permitted for the high school's homecoming. Community concerts take place. The location serves as an election precinct for Genoa Township. Mr. Morgan indicated that there are no paths worn between the trees and that 2,000 people let out of Brighton High School in the afternoon. The kids who participate in the skate park are required to sign an agreement which outlines expected behavior. Mr. Morgan asked audience members in attendance in support of the school to stand. Approximately 60 people stood.

Mr. Morgan indicated that he owned a surveying and engineering firm for many years and is a former Genoa Township Planning Commission member. The letters mentioned two things which are of great concern. There was a suggestion for a 10-foot-tall brick wall. The church has chosen not to use the public road. Other churches in the area have not been required to build a 10-foot wall. The church has reached out to children who flock to the church and they love to be there. The church has the largest Celebrate Recovery program in the state. Hundreds of kids are worked with each month and there is no charge for these offerings. There is "not a church in this County" that is more of a healing church or a caring church than Brighton Nazarene. Other churches send their people to The Naz for help. They are a 1,000 member congregation. Along with Celebrate Recovery and the skate park, the church helps provide funerals for people in the community. He suggests that the residents of Aljoann privatize their public road so they can install a gate and build their own fence.

A call to the public was made with the following response:

Ms. Catherine Riesterer of 2533 Spring Grove Drive, spoke as a representative for the Worden Lake Woods Homeowners Association. Ms. Riesterer stated that the residents do feel that the use of the church is not appropriate. The neighbors

have not felt the same type of compassion from the church which others may have experienced. Take note of what the experts have said. The things required in the 2013 site plan still are not done. This is a pattern. The church has grown and added this program and that program, a continual add-on. The church was told in 2013 by this Commission that they are doing an illegal use with driver training. The Commission decided it was not their role to enforce. The track record is not good. The data in the application is not clear. Their website indicates a student count of 167. They are actively seeking registrations. They are soliciting new students. An ad ran today on WHMI.

Ms. Riesterer continued asking what exactly are they going to be using? We don't have enough data for an accurate analysis. A school is not allowed in this zoning. High schools are only allowed in two zoning areas. There are too many uses existing on this one property. The consultants have said the zoning allows an accessory use. It may be allowed. This was not originally considered appropriate. Is this an accessory use? Which use takes up most of the space on the property? The school is doing a more intensive use than the church. Which use has the biggest impact on surrounding areas? This is not a school which is affiliated with the church. It is completely independent. They are not an adjunct or extension of the church. They are leasing the facilities. There is great care being taken to make sure they don't clash. They are telling parents that the lease agreement permits much access to the property. More information is needed for the commission to make a decision.

Mr. Borden stated that the Township has the discretion. The ordinance states "shall generally be." Commissioner McManus asked whether or not the school being a religious school has any bearing on what is permitted.

Ms. Sherry Osterman of Brighton Township stated that she doesn't know a lot about The Naz church but that she has used the parking lot many times when attending Brighton High School football games. Her biggest concern is traffic. The church next door is looking at opening a school. There is a potential school wanting to be a charter in the old Lindbom facility. All of these facilities are looking at using the same road. She is concerned about the impact of emissions on the local environment and traffic jam conditions.

Mr. Jay Johnston, a neighbor who lives off Aljoann in the Worden Lake Woods subdivision indicated that he has lived in the neighborhood for one year. He has attended Celebrate Recovery and knows it is a good program. He has a son who has participated in the skate park and loves it. Driving down Aljoann, his fiancé almost hit a child who was running through the trees and then on to the road. The school might cause a 25% increase in traffic flow. Cars are going in and coming out. There will be a lot of wear and tear on that road. The traffic signal is difficult. Staggering is a great plan. But there will never be a dead zone so that they can get out of their neighborhood.

Ms. Sue Ellen Ikens spoke. She owns two properties on State Street. She has four kids and the older one has enjoyed the skate park. Ms. Ikens stated that she



thinks it's important to recognize the timing of the traffic, from 7:25 a.m. until 4:00 p.m. when Hornung closes. First they were told the hours would be 8:00 a.m. to 3:00 p.m. Then they were told the time would be staggered. What exactly are the precise times? Maltby has 900 students. Hornung has 400 students. And the high school has 1200 students. Traffic gets diverted into residential streets when the Brighton Road traffic increases. All these extra schools aren't using busses. She saw a young woman hit a young boy when he was riding his bicycle. The boy was okay but people are not paying attention. They are texting. They are reading texts. They are on the phone. Ms. Ikens is afraid that someone is going to get hurt.

Mr. Harry Eiss, resident on Aljoann spoke. He indicated that he wrote two letters and sent a second letter because there was no response to the first letter. Car engines are revving and motorcycles wake him up. He lives in the neighborhood and sees it every day. He's been watching it for 12 years. Mr. Eiss stated that when they moved in they knew there was a church across the street but they didn't know they were going to expand. It's too much. There is too much activity going on right now. We have to turn right in order to turn left right now. The church offers endless lies. "They are full of contradictions. They say 'we don't have kids in the parking lot' but then talk about the large playground." Trees aren't going to work as a screen. The trees are almost attracting the kids rather than stopping the kids. Considering the kinds of money they are throwing around, a fence isn't going to cost much.

Ms. Andrea Spanstra of Aljoann spoke saying, "I've given up." She stated that things aren't being done. They aren't following through. I'm here for the safety of children. The traffic is horrid. I fear for my kids as they walk home. They took the busses away. Then a student got hit by a car and suddenly the bussing was back.

Mr. Mike Barrett of Aljoann stated his thanks to the board for their hard work. He appreciates the church. There is a lot of emotion in the room. We are talking about a school in a residential area and traffic. He asked who in the room lives near the church and supports the expansion. One hand was raised.

Mr. Andy Koch, state rep for AK services spoke. He stated that it is driver testing which takes place, not driver training. We don't do training. We are available Saturday morning from 8:00 a.m. until noon. This is a public service. Only three organizations in Livingston County do this. We look at churches because it is a safe environment. We didn't know we were violating the ordinance when it began 21 years ago.

Commissioner Mortensen asked Mr. Koch if it bothered him that there is a school being proposed where the testing takes place. Mr. Koch stated they are on the lot for 15 minutes per vehicle. We use a smaller area of the lot. We are the state authorized examiners which look at your school bus driver to determine if they are qualified to do that job. The state reviews the site once a year to ensure that it meets their requirements. There can be no alcohol sold or served on the

property used. Restrooms are available. Fax machines are helpful. If we had to build a parking lot to do this, we would have to charge \$300-400 per test to cover costs like insurance and more. For the most part we have removed the backup beepers and the motorcycles are no longer at this location.

Mr. Morgan read Commissioner Mortensen's statement from the 2013 minutes which reads, "Commissioner Mortensen believes if the driver license testing is not an approved use, then it cannot be assumed to be an unapproved use—it's a limbo item."

David Tiemann of Aljoann spoke. As the church has grown, our problems have grown. We just want a little bit of privacy. We were unaware that all the expansion would take place. The trees that were there were double wide. The trees were killed by snow that had salt in it after plowing. They owed it to us to replace those trees. I had three kids show up on bikes that came through the trees. You have very little time to hit your brakes. The church needs to do more to control these kids that are coming from their parking lot. We want a little privacy. We are entitled to privacy and safety. Give us something—a six foot fence, something to buffer us. We are taxpayers. We are having a very difficult time selling our house. People do not want to live near this activity. I belong to a great church but there's a lot of activity here, sometimes 24 hours a day.

The call to the public was closed at 10:04 p.m.

Mr. Mortensen sees two issues, landscaping and privacy which we can go back to. The big issue, the elephant in the room, is traffic. We need the petitioner to define "in and out" and the timing. How are they going to coordinate with all the things going on at Brighton Road? Is a traffic study a reasonable request? Mr. Markstrom indicated that he had enough information so that he recommended a traffic study.

Commissioner McManus indicated that there was a differentiation between the type of studies and we would do a more intense study.

Commissioner Mortensen asked whether the Commission has the authority to recommend approval of a high school. Commissioner McManus said if it's an accessory use, then we do have the authority. Mr. Borden stated that we need to answer whether or not this constitutes an accessory use. Chairman Brown and Commissioner Mortensen agreed that the Township attorney should be consulted.

Commissioner McManus asked the pastor how the school benefits the church. Pastor Ben Walls stated that we started the process because our core values were the same. We care about kids. The Christian school shares our values. We believe we will benefit them and they believe they will benefit us.

Commissioner Grajek indicated that there is no voice here from the school. With clear conscience can you say to the parents that they can get in and off our site



with relative ease. There are going to be parents going to the school, dropping the kids off, and then commuting to work. The parents are the ones who are going to be suffering the hardship of the traffic.

Mr. Morgan stated that he is not a traffic engineer but has worked with traffic concerns through the years more than most. He stated, "I have stood in that driveway at 8:00 in the morning and at 3:00 in the afternoon and the impact is minimal. It is a nightmare to get out of Aljoann drive. The left is difficult depending on whether the light is turned on or turned off. The letter from the head of the County at the Road Commission, Mr. Mike Goryl, has stated that he has computer modeling. He has already modeled the geometry of the exits and intersection. He has stated that the traffic impact is minor. I live on Brighton Rd. I understand Brighton Rd. Mr. Morgan says that 15 minutes makes a big difference. He did the modeling in 2010. In 2013 they had new traffic counts and plugged that data in. They re-configure the traffic counts every two years. Recently it was every three years.

#### **Planning Commission disposition of petition**

- A. Recommendation of Special Use
- B. Recommendation of Environmental Impact Assessment (03-16-15)
- C. Recommendation of Sketch Plan (05-14-14)

**Motion** by Commissioner Mortensen to table the request of the Nazarene Church to sub-lease to the Livingston Christian School to the May 11, 2015 planning commission meeting, so that the petitioner can complete the traffic study for review by the Township engineer and to obtain an opinion relative to the Township's "approval authority" for a high school as an accessory use. Supported by Commissioner Figurski. **Motion carried unanimously.**

#### **Administrative Business:**

- *Staff report. There are several items on the May 11 agenda.*
- *Approval of April 13, 2015 Planning Commission meeting minutes.*  
**Motion** by Commissioner Figurski to approve the minutes as corrected.  
*Support by Commissioner Lowe. **Motion carried unanimously.***
- *Member Discussion*
- *Adjournment. **Motion** by Commissioner Figurski to adjourn this meeting.*  
*Support by Commissioner McManus. **Motion carried unanimously.***  
**Meeting adjourned at 10:32 p.m.**