

**GENOA CHARTER TOWNSHIP
PLANNING COMMISSION PUBLIC HEARING
MONDAY, JUNE 13, 2016
6:30 P.M.
AGENDA**

CALL TO ORDER:

PLEDGE OF ALLEGIANCE:

APPROVAL OF AGENDA:

CALL TO THE PUBLIC:

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

OPEN PUBLIC HEARING #1... Review of special use applications, impact assessment and site plan for proposed 9,200 square feet contractor's office, warehouse and storage yard. Special land use approvals are requested for outdoor storage, storage of hazardous materials, and grading activities within 25-foot natural features setback. The property is located on the east side of Victory Drive, south of Grand River Avenue on vacant parcel# 11-05-303-025. The request is petitioned by Seaside Seawalls.

Planning Commission disposition of petition:

- A. Recommendation of Special Use Application
- B. Recommendation of Impact Assessment (5-25-16)
- C. Recommendation of Site Plan (5-25-16)

OPEN PUBLIC HEARING #2...Review of site plan and impact assessment for a proposed 16,053 sq. ft. addition to an existing industrial building known as Michigan Rod Products, Inc. which is located at 1326 Grand Oaks Drive, Howell. The request is petitioned by Asselin, McLane Architectural Group, LLC.

Planning Commission disposition of petition:

- A. Recommendation of Impact Assessment (3-29-16)
- B. Disposition of Site Plan (5-25-16)

ADMINISTRATIVE BUSINESS:

- *Staff Report*
- *Approval of May 9, 2016 Planning Commission meeting minutes*
- *Member discussion*
- *Adjournment*



GENOA CHARTER TOWNSHIP
Application for Site Plan Review

TO THE GENOA TOWNSHIP PLANNING COMMISSION AND TOWNSHIP BOARD:

APPLICANT NAME & ADDRESS: Seaside Seawalls, LLC

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

OWNER'S NAME & ADDRESS: Aaron Wallace, 9868 East Grand River, Suites 110-225, Brighton, MI 48116

SITE ADDRESS: Victory Drive, Howell, MI 48843 PARCEL #(s): 4711-05-303-025

APPLICANT PHONE: (248) 207-1984 OWNER PHONE: (248) 207-1984

OWNER EMAIL: AARON@SEASIDESEAWALLS.COM

LOCATION AND BRIEF DESCRIPTION OF SITE: The site is located on the east side of Victory Drive, approximately

1,625 feet southwest of the E. Grand River Ave. intersection. The property has a total area of 5.85 AC and is currently undeveloped.


The subject property and adjacent properties are all zoned within the Industrial district, with the subject property having

approximately 660 feet of frontage along Victory Dr.

BRIEF STATEMENT OF PROPOSED USE: The proposed use for the property is to store and maintain
construction equipment.

THE FOLLOWING BUILDINGS ARE PROPOSED: Seaside Seawalls, LLC - 9,200 SF

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: AARON WALLACE, 9868 E. GRAND RIVER, SUITES 110-225, BRIGHTON, MI 48116

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

1.) Brent LaVanway of Boss Engineering at brentl@bosseng.com
Name Business Affiliation E-mail Address

FEE EXCEEDANCE AGREEMENT

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

SIGNATURE  DATE: 4-24-16
PRINT NAME: AARON WALLACE PHONE: (248) 207-1984
ADDRESS: 9868 East Grand River, Suites 110-225, Brighton, MI 48116



GENOA CHARTER TOWNSHIP
Special Land Use Application

GENOA TOWNSHIP

MAY 19 2016

RECEIVED

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

APPLICANT NAME & ADDRESS: Seaside Seawalls, LLC

Submit a letter of Authorization from Property Owner if application is signed by Acting Agent.

APPLICANT PHONE: (248) 207-1984 EMAIL: aaron@seasideseawalls.com

OWNER NAME & ADDRESS: Aaron Wallace, 9868 E. Grand River, Suites 110-225, Brighton, MI 48116

SITE ADDRESS: Victory Drive, Howell, MI 48843 PARCEL #(s): 4711-05-303-025

OWNER PHONE: (248) 207-1984 EMAIL: aaron@seasideseawalls.com

Location and brief description of site and surroundings:

The site is located on the east side of Victory Drive, approximately 1,625 feet southwest of the E. Grand River Ave. intersection

The property has a total area of 5.85 acres and is currently undeveloped. The subject property and adjacent properties are all zoned within the industrial district, with the subject property having approximately 660 feet of frontage along Victory Drive.

Proposed Use:

The proposed use for the property is to store and maintain construction equipment.

Special Use: Fuel Storage Tanks

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

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

The special land use application is for fuel storage tanks. The site will contain two 300 gallon fuel tanks on a concrete pad with a built in containment curb. The use is consistent with the zoning district.

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

The proposed tanks will be designed and constructed to comply with all standards and regulations of the Genoa Township ordinance, section 13.07 and will be in accordance with state and federal requirements.

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

The site will be able to be served adequately by all public facilities and services. The subject property will be located and accessible from Victory Drive for police and fire protection. The site will be service by public sanitary sewer and connect to the existing sanitary lead on site. The development lies outside of the municipal water main district and will be serviced by well.

Stormwater management will meet all local, county and state stormwater and erosion control requirements.

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

No, the site will not have any potentially detrimental uses, activities, processes, or materials to either the natural environment, public health, safety, or welfare. Fuel storage will be contained within secondary containment structure.

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

No, the special use does not have specific criteria as listed in section 8.02.02 of the zoning ordinance. The fuel tanks however will comply with all standards set forth in section 13.07 of the zoning ordinance. The tanks will be 300 gallon capacity, located more than 75-feet from any occupied building or lot line and is being mounted on a concrete pad with a built in curb.

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

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

BY: _____

ADDRESS: _____

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

Brent LaVanway of Boss Engineering at BRENTL@BOSSENG.COM
Name Business Affiliation Email

FEE EXCEEDANCE AGREEMENT

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SIGNATURE:  DATE: 5-19-16

PRINT NAME: Aaron Wallace PHONE: 248-207-1984



GENOA CHARTER TOWNSHIP
Special Land Use Application

GENOA TOWNSHIP

MAY 19 2016

RECEIVED

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

APPLICANT NAME & ADDRESS: Seaside Seawalls, LLC

Submit a letter of Authorization from Property Owner if application is signed by Acting Agent.

APPLICANT PHONE: (248) 207-1984 EMAIL: aaron@seasideseawalls.com

OWNER NAME & ADDRESS: Aaron Wallace, 9868 E. Grand River, Suites 110-225, Brighton, MI 48116

SITE ADDRESS: Victory Drive, Howell, MI 48843 PARCEL #(s): 4711-05-303-025

OWNER PHONE: (248) 207-1984 EMAIL: aaron@seasideseawalls.com

Location and brief description of site and surroundings:

The site is located on the east side of Victory Drive, approximately 1,625 feet southwest of the E. Grand River Ave. intersection

The property has a total area of 5.85 acres and is currently undeveloped. The subject property and adjacent properties are all zoned within the industrial district, with the subject property having approximately 660 feet of frontage along Victory Drive.

Proposed Use:

The proposed use for the property is to store and maintain construction equipment.

Special Use: Grading within 25-feet of a wetland

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

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

The special land use application is for grading within 25-feet of a wetland. No permanent structure will be within the required 25' wetland setback. The minimal grading being done within this 25' setback will not negatively impact the wetland and is to ensure proper

stormwater management with the use of sedimentation basins. The sedimentation basins will allow for stormwater to be treated and outlet into existing wetlands at a controlled rate. The use will conform with all requirements set forth by Genoa Township.

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

The proposed grading will be designed and constructed to comply with all grading standards and regulations of Genoa Township.

The site is 5.85 acres, however the majority of this acreage consists of wetlands which limits upland area.

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

The site will be able to be served adequately by all essential public facilities and services. The subject property will be located and accessible from Victory Drive for police and fire protection. The site will be service by public sanitary sewer and connect to the existing sanitary lead on site. The development lies outside of the municipal water main district and will be serviced by well.

Stormwater management will meet all local, county and state stormwater and erosion control requirements.

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

No, the site will not have any potentially detrimental uses, activities, processes, or materials to either the natural environment, public health, safety, or welfare. A special use permit for fuel storage has been applied for.

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

The special use grading does not have specific criteria as listed in section 8.02.02 of the zoning ordinance. However the grading will follow all standards and regulations set forth by Genoa Township. Once the setback area is graded it will be seeded and mulched and remain lawn.

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

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

BY: _____

ADDRESS: _____

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

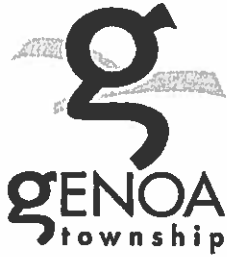
Brent LaVanway of Boss Engineering at BRENTL@BOSSENG.COM
Name Business Affiliation Email

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SIGNATURE: *AW* DATE: 5-19-16

PRINT NAME: Aaron Wallace PHONE: 248-207-1984



**GENOA CHARTER TOWNSHIP
Special Land Use Application**

GENOA TOWNSHIP
MAY 19 2016
RECEIVED

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

APPLICANT NAME & ADDRESS: Seaside Seawalls, LLC

Submit a letter of Authorization from Property Owner if application is signed by Acting Agent.

APPLICANT PHONE: (248) 207-1984 EMAIL: aaron@seasideseawalls.com

OWNER NAME & ADDRESS: Aaron Wallace, 9868 E. Grand River, Suites 110-225, Brighton, MI 48116

SITE ADDRESS: Victory Drive, Howell, MI 48843 PARCEL #(s): 4711-05-303-025

OWNER PHONE: (248) 207-1984 EMAIL: aaron@seasideseawalls.com

Location and brief description of site and surroundings:

The site is located on the east side of Victory Drive, approximately 1,625 feet southwest of the E. Grand River Ave. intersection

The property has a total area of 5.85 acres and is currently undeveloped. The subject property and adjacent properties are all zoned within the industrial district, with the subject property having approximately 660 feet of frontage along Victory Drive.

Proposed Use:

The proposed use for the property is to store and maintain construction equipment.

Special Use: Outdoor Storage

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

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

The outdoor storage use will comply with all requirements set forth by Genoa Township. This is a common use within the industrial zoning district.

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

The proposed use of the site is for storage purposes, with hours of operation between 7am and 7pm. The subject site conforms with current surrounding land being zoned in the industrial district. The increase in light, noise or air pollution will be minimal with what is typically associated with an industrial development.

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

The site will be able to be served adequately by all essential public facilities and services. The subject property will be located and accessible from Victory Drive for police and fire protection. The site will be service by public sanitary sewer and connect to the existing sanitary lead on site. The development lies outside of the municipal water main district and will be serviced by well. Stormwater management will meet all local, county and state stormwater and erosion control requirements.

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

No, the site will not have any potentially detrimental uses, activities, processes, or materials to either the natural environment, public health, safety, or welfare. A special use permit for fuel storage has been applied for.

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

The special use of outdoor storage for the site will comply with all of the criteria listed in 8.02.02 section "b".

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

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BY: _____

ADDRESS: _____

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SIGNATURE: AW DATE: 5-19-16

PRINT NAME: Aaron Wallace PHONE: 248-207-1984



June 7, 2016

Planning Commission
Genoa Township
2911 Dorr Road
Brighton, Michigan 48116

Attention:	Kelly Van Marter, AICP Planning Director and Assistant Township Manager
Subject:	Seaside Seawalls – Special Land Use and Site Plan Review #2
Location:	Victory Drive – east side of Victory Drive, south of Grand River Avenue
Zoning:	IND Industrial District

Dear Commissioners:

At the Township's request, we have reviewed the revised site plan (dated 5/25/16) proposing a new industrial building on a vacant 5.85-acre lot on Victory Drive. The project also includes outdoor storage, fuel storage tanks and grading within 25 feet of a wetland, each of which requires special land use approval. We have reviewed the proposal in accordance with the applicable provisions of the Genoa Township Master Plan and Zoning Ordinance.

A. Summary

1. Provided the applicant complies with the specific use requirements (items 2-5 below) and any issues identified by Engineering and Fire are addressed, the project is expected to comply with the general special land use criteria.
2. Additional details and screening are needed for full compliance with the outdoor storage requirements.
3. Additional information is needed for full compliance with the fuel storage requirements.
4. Planning Commission approval is required for the sedimentation basin outlets, which encroach to the edge of the wetland.
5. A variance from ZBA is required to extend fencing to the edge of the wetland. We encourage the applicant to stop the fence at the 25-foot wetland setback, as opposed to seeking a variance.
6. The proposed elevations, including colors and materials, are subject to review and approval by the Planning Commission. We request the applicant present a material and color sample board.
7. We recommend the applicant consider some additional architectural treatments to help break up the wall surface and provide a more aesthetic elevation along the street frontage.
8. The waste receptacle must be screened in accordance with Section 12.04.
9. A sign permit will be required prior to installation.

B. Proposal

The applicant has applied for site plan review and approval of a 9,200 square foot building on a vacant 5.85-acre site. The application indicates that the proposed use is to store and maintain construction equipment.

Based on our understanding of the proposal, it best fits a contractor's office and building with indoor storage of equipment and machinery, which is a permitted use. The submittal also includes outdoor storage, fuel storage tanks and grading within 25 feet of a wetland, each of which requires a separate special land use approval.

Given the need for special land use approval, Planning Commission is to make a recommendation on the special land uses, site plan and Impact Assessment for consideration by the Township Board.



Aerial view of site and surroundings (looking north)

C. Special Land Use Review

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

- 1. Master Plan.** The Township Master Plan and Future Land Use map identify the site and surrounding properties as Industrial. This category is intended for “industrial uses such as research, wholesale and warehouse activities and light industrial operations which manufacture, compounding, process, package, assemble and/or treat finished or semi-finished products from previously prepared material.” Provided the specific use requirements are met, the location and nature of the site are generally consistent with this category and description.
- 2. Compatibility.** Surrounding properties are generally developed with industrial uses or are undeveloped. Review of aerial photos indicates existing outdoor storage that is accessory to other industrial operations in the vicinity.

As described in Paragraphs D-F below, the host of uses are subject to specific requirements of Section 8.02.02(b) and Article 13, which are intended to protect surrounding properties and the environment from potential adverse impacts. Additional information and/or modifications are needed to fully comply with these requirements.

- 3. Public Facilities and Services.** We defer to the Township Engineer and Fire Department for any specific comments/concerns they may have.
- 4. Impacts.** The site contains a large amount of wetland area – approximately 3 acres of the 5.85-acre site. The Impact Assessment states that the wetland areas are of low quality. As such, it is unclear whether any permits/approvals from MDEQ are necessary.

Our primary concern under this criterion is the fact that the northerly fence line extends to the edge of the wetland, which is not permitted under the Township's wetland protection regulations (described further in Paragraph F below). As noted below, we recommend the applicant end the fence line at the 25-foot wetland setback.

- 5. Mitigation.** The Township may deem mitigation necessary to limit or alleviate any potential adverse impacts as a result of the proposed project.

D. Outdoor Storage Standards

Section 8.02.02(b) identifies the specific requirements for commercial outdoor display sales or storage as follows:

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

The submittal identifies a lot area of 5.85 acres. This standard is met.

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

The submittal does not identify what exactly will be stored outdoors. We request the applicant confirm that this standard will be met.

- 3. All outdoor storage areas shall be paved with a permanent, durable and dustless surface and shall be graded and drained to dispose stormwater without negatively impact adjacent property. The Township Board, following a recommendation of the Planning Commission and the Township Engineer, may approve a gravel surface for all or part of the display or storage area for low intensity activities, upon a finding that neighboring properties and the environment will not be negatively impacted.**

The site plan includes a 20' x 52' concrete pad for storage and waste receptacles. The larger area to the west is proposed as gravel. Given the proximity of wetland areas to the site, the use of gravel is likely to reduce stormwater run-off, which could be a benefit; however, we defer to the Township Engineer for specific comments on this aspect of the proposal.

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

Section 8.03 requires setbacks of 40 feet (rear) and 25 feet (side). This standard is met.

- 5. The site shall include a building of at least five hundred (500) feet of gross floor area for office use in conjunction with the use.**

The proposed building contains 9,200 square feet of gross floor area. This standard is met.

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

The site plan provides access to/from Victory Drive, with sufficient area for truck maneuvering. This standard is met.

- 7. All outdoor storage area property lines adjacent to a residential district shall provide a buffer zone A as described in Section 12.02. A buffer zone B shall be provided on all other sides. The Planning Commission may approve a six (6) foot high screen wall or fence, or a four (4) foot high landscaped berm as an alternative.**

The site is surrounded by Industrial zoning; therefore, a Buffer Zone B is required around the outdoor storage area.

The spacing standards on all sides and planting requirements on the south side are met; however, the planting requirements for the north and east side are not met and there is no screen wall/fence or berm.

- 8. The height of all material and equipment stored in an outdoor storage area shall not exceed the height of any landscape screening, wall or fence. Boats and recreational vehicles may exceed the height of the fence provided that they are setback from the fence a distance equal to their height. Storage of materials up to the height of the adjacent building wall may be permitted in the rear yard if it is illustrated on the site plan, the rear yard does not abut a residential district or face an expressway, and such storage is confined to within twenty (20) feet of the building.**

The submittal does not describe the height of materials to be stored outdoors. The applicant needs to provide this information.

E. Fuel Storage Standards

Section 13.07 identifies the specific requirements for fuel storage as follows:

- 1. Above Ground Storage Tanks.** The project includes 2 above ground storage tanks, each with 300 gallon capacity. The tanks will be mounted on a concrete base pad that is located well away from the building and property lines. These standards are met.
- 2. Below Ground Storage Tanks.** The project entails above ground storage; therefore, these standards are not applicable.
- 3. Secondary Containment.** The application form notes the use of a containment curb on the concrete base pad. This standard also requires “documentation of compliance with state and federal regulations, as required.” The applicant must provide such documentation.
- 4. Pollution Incident Prevention Plan.** Section 13.07.04 lists all of the information required for a PIP Plan. The applicant has indicated that this document will be provided at a later date.
- 5. Permits.** Given the nature of the proposed use, the applicant may be required to obtain additional permits.

F. Wetland Protection Standards

Grading is allowed within 25 feet of a regulated wetland with special land use approval; however, no activities are allowed within 10 feet of a regulated wetland, unless otherwise approved by the Planning Commission.

The outlet for both sedimentation basins encroach to the edge of the wetland. As such, Commission approval is required. The remainder of the grading is more than 10 feet away from the wetland; however, the northerly fence line extends all the way to the edge of the wetland.

The applicant would need to obtain a variance from ZBA for a structure within the 25-foot setback, per Section 13.02.05. Alternatively, we encourage the applicant to stop the fence at the setback line, similar to the southerly fence.

Lastly, the Commission should consider any comments from the Township Engineer related to these activities.

G. Site Plan Review

1. Dimensional Requirements. As shown in the table below, the proposal has been reviewed for compliance with the dimensional standards of the IND:

District	Lot Size		Minimum Setbacks (feet)				Max. Height	Lot Coverage
	Lot Area (acres)	Width (feet)	Front Yard	Side Yard	Rear Yard	Parking		
IND	1	150	50	25	40	20 front 10 side/rear	30' / 2 stories	40% building 85% impervious
Proposal	5.85	497	50.3	336 (N) 143 (S)	293	50.3 front 267 side 180 rear	24.67' / 1 story	3.29% building 18.79% impervious

2. Building Materials and Design. The proposed elevations, including colors and materials, are subject to review and approval by the Planning Commission. We request the applicant present the Commission with material and color samples.

The proposed building consists of concrete block with different color treatments and a metal roof. Overhead doors are proposed on the rear and side of the building, as required.

Lastly, the front of the building is mostly a blank surface. We recommend the applicant consider some additional architectural treatments to help break up the wall surface and provide a more aesthetic elevation along the street frontage.

3. Parking. The proposed project results in the need for 18 parking spaces, which are provided. The one required barrier free space is also provided and spaces are designed with looped striping, per Ordinance standards. Parking space and drive aisle dimensions also comply with Ordinance standards.

4. Pedestrian Circulation. A 7-foot wide sidewalk is proposed between the main parking lot and building entrance. Because this is an industrial site, a public sidewalk is not required.

5. Vehicular Circulation. The site plan proposes two driveways that align with the existing drives across Victory Drive. We see no issues with internal circulation, as drive aisle widths are compliant and there is ample maneuvering space behind the building for large vehicles/equipment.

6. Landscaping. As shown in the table below, the plan complies with the standards of Section 12.02:

Location	Requirements	Proposed	Comments
Front yard greenbelt	17 canopy trees 20' width	17 canopy trees 50' width	Requirements met
Parking lot	2 canopy trees 180 SF landscaped area	2 canopy trees 190 SF landscaped area	Requirements met

- 7. Waste Receptacle and Enclosure.** The site plan identifies a concrete pad in the rear yard with a note that it is intended for storage bins and a dumpster. However, the note also states that screening is not proposed due to limited visibility.

In our opinion, the requirement for screening around dumpsters still must be met, as we do not see any Township discretion within Section 12.04. The standard is intended not only to protect views, but also to establish a proper containment area for waste receptacles.

- 8. Exterior Lighting.** The lighting plan proposes 2 pole-mounted and 4 wall-mounted light fixtures. Intensities on-site and at the property lines, as well as pole heights, are all compliant.
- 9. Signs.** The site plan does not identify a ground sign; however, the elevation drawings show an approximately 100 square foot wall sign. The proposed sign complies with the standards of Article 16, although the applicant will be required to obtain a sign permit prior to its installation.
- 10. Fencing.** The rear yard is enclosed by security fencing, including gates at the two driveways. The revised plan includes a detail showing a 6-foot tall chain link fence with 1-foot of barbed wire across the top. The proposed fencing, including the barbed wire, complies with the standards of Section 11.04.04. As a side note, the northerly fence line runs all the way to the edge of the wetland, thus encroaching into the 25-foot wetland setback.
- 11. Impact Assessment.** The submittal includes a revised Impact Assessment (dated 5/25/16). 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 and penn@lslplanning.com.

Respectfully,

LSL PLANNING, A SAFE BUILT LLC COMPANY



Brian V. Borden, AICP
Planning Manager



Josh Penn
Project Planner I



June 8, 2016

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

Re: Seaside Seawalls Site Plan Review 2

Dear Ms. Van Marter:

We have reviewed the resubmitted impact assessment and site plan documents prepared by Boss Engineering for an approximate 9,200 square-foot building and storage yard located on east side of Victory Drive, south of Grand River Avenue. Tetra Tech has reviewed the updated documents and see that they have acknowledged the previous comments and recommend the site plan for approval.

Please call if you have any questions.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Gary 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: Brent LaVanway, P.E. Boss Engineering



BRIGHTON AREA FIRE AUTHORITY

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

June 3, 2016

Kelly VanMarter
Genoa Township
2911 Dorr Road
Brighton, MI 48116

RE: Seaside Seawalls, LLC
Victory Drive (SW of E. Grand River)
Genoa Twp., MI

Dear Kelly:

The Brighton Area Fire Department has reviewed the above mentioned site plan. The plans were received for review on May 6, 2016 and the drawings are dated May 4, 2016. The project is for the proposed construction of a new 9,200 square foot B/S-1 mixed-use Occupancy that appears to be Type III B construction. The plan review is based on the requirements of the International Fire Code (IFC) 2015 edition.

1. The proposed diesel fuel containment area must be provided with impact protection in accordance with IFC 312.
2. The water main location is not indicated on the submittal. Provide the location of the water main and the nearest hydrants to the site. **(Noted that site is not serviced by municipal water, although the nearest hydrant to the site approximately 1,000 feet to the North)**
IFC 912.2
3. Once issued, future project submittals shall include the address and street name of the project in the title block. **(Noted on plan response)**
IFC 105.4.2
4. The building shall include the building address on the building. The address shall be a **minimum of 6"** high letters of contrasting colors and be clearly visible from the street. The location and size shall be verified prior to installation. **(Noted on plan response to be added to building when issued)**
IFC 505.1
5. The access road at the rear of the building needs to be widened to 26' to ensure clear access around to building. With a width of 26' wide, the building side of the drive shall be marked as a fire lane. Include the location of the proposed fire lane signage and include a detail of the fire lane sign in the submittal. Access roads to site shall be provided and maintained during construction. Access roads shall be constructed to be capable of supporting the imposed load of fire apparatus weighing at least 75,000 pounds. **(Construction noted on response)**
IFC 503
6. Access around building shall provide emergency vehicles with a turning radius of 30' inside and 50' outside and maintain a minimum vertical clearance of 13 ½ feet. **(Vehicle circulation shown to meet radius)**
7. The location of a key box (Knox Box) shall be indicated on future submittals. The Knox box will be located adjacent to the front door of the structure. In addition, the access gate shall



June 3, 2016

Page 2

Seaside Seawalls, LLC

Victory Drive (SW of E. Grand River)

Site Plan Review

be provided with a Knox padlock or key switch in conjunction with the owners locking arrangement. **(Noted that gates and building to be provided with Knox box and locks)**

IFC 506.1

8. Provide names, addresses, phone numbers, emails of owner or owner's agent, contractor, architect, on-site project supervisor. **(Noted on response)**

Additional comments will be given during the building plan review process (specific to the building plans and occupancy). The applicant is reminded that the fire authority must review the fire protection systems submittals (sprinkler & alarm) prior to permit issuance by the Building Department and that the authority will also review the building plans for life safety requirements in conjunction with the Building Department.

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

Cordially,

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

Capt. Rick Boisvert, CFPS
Fire Inspector

Livingston County Road Commission

3535 Grand Oaks Drive • Howell, Michigan 48843-8575
Telephone: (517) 546-4250 • Facsimile: (517) 546-9628
Internet Address: www.livingstonroads.org

May 6, 2016

Brent LaVanway, P.E.
Boss Engineering
3121 E. Grand River Ave
Howell, MI 48843

Re: Seaside Seawalls LLC, Genoa Township, Section 5/6
LCRC# C-16-06

Dear Mr. LaVanway:

I have completed the review of the plans, dated May 4, 2016, for the above-referenced project and offer the following comments.

1. A contractor must be selected and the contractor must submit a certificate of insurance to the LCRC with the following language: "The Board of Livingston County Road Commissioners, the Livingston County Road Commission, and their officers, agents, and employees are listed additional insured parties with respects to General Liability." Please note that this item is not required for plan approval but will be needed prior to the issuance of an approach permit.
2. Since Victory Drive is not a curb and gutter road, the proposed concrete curb at the approach shall terminate at least 5 feet from the edge of the Victory Drive pavement.
3. Proposed approach grades at the connection to Victory Drive and around the radii need to be provided on the plan to verify that no portion of the approach exceeds a grade of 5% and to verify that there is sufficient cover over top of the proposed approach culverts.

Please submit two (2) copies of revised plans for review. If you have any questions, please do not hesitate to contact me.

Sincerely,



Kim Hiller, P.E.
Utilities and Permits Engineer

Cc: File
Kelly VanMarter, Genoa Township (via email)
Ken Recker, Livingston County Drain Commissioner's office (via email)

Amy Ruthig

From: Michael Bartlett <b-bartlett@sbcglobal.net>
Sent: Monday, June 06, 2016 2:21 PM
To: Amy Ruthig
Cc: Christine Bartlett
Subject: June 13, 2016 Public Hearing - Seaside Seawalls

We are unable to attend the June 13, 2016 public hearing, so these are our written comments submitted to the Genoa Township Planning Commission.

In regarding to the Special Land Use Permit for parcel #11-05-303-025 requested by Seaside Seawalls. We own parcel #11-05-300-021, and 11-05-303-026, and 11-05-300-051 which are adjacent to the subject property.

We do not object to the outside storage requested, except we feel **strongly that the entire outside storage area** should be enclosed with a fence by adding fencing along the East side of the outside storage area, as is proposed for the North and South side of the outside storage.

We also have concerns and question regarding the storage of hazardous materials. Are all state, county and municipal requirements being complied with in regard to storage of hazardous materials and what measures are proposed to contain any leaks or spills?

Sincerely,
Christine Bartlett
Managing Partner - DeChris Limited Partnership

**IMPACT ASSESSMENT
FOR
SITE PLAN PETITION
“SEASIDE SEAWALLS, LLC”
GENOA TOWNSHIP, LIVINGSTON COUNTY
MICHIGAN**

Prepared for:

**SEASIDE SEAWALLS, LLC
9868 EAST GRAND RIVER
SUITES 110-225
BRIGHTON, MI 48116
(248) 207-1984**

Prepared by:

**BOSS ENGINEERING COMPANY
3121 E. GRAND RIVER
HOWELL, MI 48843
(517) 546-4836**

MAY 04, 2016
Revised: 05/25/2016

16-049 EIA

INTRODUCTION

The purpose of this Impact Assessment (IA) report is to show the effect that this proposed development may have on various factors in the general vicinity of the project. The format used for presentation of this report conforms to the *Submittal Requirements for Impact Assessment* guidelines in accordance with Section 18.07 of the published Zoning Ordinance for Genoa Township, Livingston County, Michigan.

DISCUSSION ITEMS

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

Prepared For:
SEASIDE SEAWALLS, LLC
9868 East Grand River
Suites 110-225
Brighton, MI 48116
(248) 207-1984

Prepared By:
BOSS ENGINEERING COMPANY
Civil Engineers, Land Surveyors, Landscape Architects and Planners
3121 E. Grand River
Howell, MI 48843
(517) 546-4836

Boss Engineering has been successfully providing engineering, surveying, planning and landscape architecture services on land development projects since 1969. Since its beginning, Boss Engineering has strived to provide unparalleled professional services with integrity and respect to every client. Today, Boss provides a complete lineup of consulting services for each project, ranging from conceptual design through final construction. The company currently employs a variety of professions including civil engineers, surveyors, landscape architects and sanitarians.

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

The site is located on the east side of Victory Drive approximately 1,625 feet southwest of the E. Grand River Ave intersection. The property has a total area of 5.85 AC and is currently undeveloped. The subject property and adjacent properties are all zoned within the Industrial District (IND), with the subject property having approximately 660 feet of frontage along Victory Drive.

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

The total site area is 5.85 acres. Approximately 3.03 acers of the site are designated as wetland, that surround the site along the north and east property lines. The wetland is considered low quality and part of the county drain system with excavated ditches being connected by culverts and draining into the wetland. The woodlands on site contain dogwood (scrub), cottonwood (1+20+), boxelder (1+8+), and silver maple (1+8+). The common wetland vegetation consists of reed canary grass with cattails and common reed grass within open water.

The site gradually drains towards the wetlands with the buildable area consisting of slopes of up to approximately 5.0% The USDA Soil Conservation Service soil classification for the site with Bronson Loamy Sand, Brookston Loam, Carlisle Muck, and Miami Loam.

The proposed development will not have any negative impact on the surrounding wetlands or vegetation and will help clean the site of significant debris. All storm water will be collected in two separate sedimentation basins and outlet at a controlled rate into the wetlands.

D. Impact on storm water management: Description of measures to control soil erosion and sedimentation during grading and construction operations and until a permanent ground cover is established. Recommendations for such measures may be obtained from County Soil Conservation Service.

Surface runoff during periods of construction will be controlled by proper methods set forth by the Livingston County Drain Commissioner, including silt fence, inlet protection devices, and seed and mulch.

At the time of construction, there may be some temporary dust, noise, vibration and smoke, but these conditions will be of relatively short duration and shall be controlled by applying appropriate procedures to minimize the effects, such as watering if necessary for dust control.

The Site Plan documents show the proposed locations of all site improvements along with detailed soil erosion control information. The plans will be reviewed by the Livingston County Drain Commissioner's office for compliance with their regulations prior to issuance of a Soil Erosion Control permit.

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.

The proposed primary use of the site is for storage purposes, with hours of operations between 7am and 7pm Monday through Friday. The subject site conforms with current surrounding land being zoned in the industrial district. The increase in light, noise or air pollution will be minimal with what is typically associated with an industrial development.

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.

The anticipated occupancy of approximately 6 employees, will have very little impact to nearby properties.

There is no expected impact on Howell Area Schools and very minimal impact on the police and fire departments.

G. Impact on public utilities: Description of the method to be used to service the development with water and sanitary sewer facilities, the method to be used to control drainage on the site and from the site, including runoff control during periods of construction. For sites service with sanitary sewer, calculations for pre- and post development flows shall be provided in equivalents to a single family home. Where septic systems are proposed, documentation or permits from the Livingston County Health Department shall be provided.

For sanitary, the development is to be served by public sanitary sewer and connect to the existing sanitary lead on site. The development lies outside of the municipal water main district and will be serviced by well.

The pre-development sanitary flow from this site is zero. Post-development flows based on MHOG sewer standards for industrial buildings is equivalent to 0.46 REU c .

Warehouse & Storage: Unit factor = 0.05 per 1,000 sq ft

REU c = (9,200 sq ft / 1,000 sq ft) x 0.05 = 0.46 REU c

With regards to storm water management, the project will be required to meet all local, county and state storm water and erosion control requirements. All of the required information is included in the Site Plan documents. All storm water will be directed towards either the proposed north or south sedimentation basins and outlet at a controlled rate into the onsite wetland.

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

There will be two 300-gallon diesel tanks on site both residing on concrete pads within a secondary containment structure. A pollution incident prevention plan is currently in process and will be submitted once it is completed. No hazardous materials will be disposed of on this site.

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

The anticipated number of trips that will be generated based on the number of employees will be 6 trips between 7 AM - 9 AM and 6 trips between 5 PM - 7 PM.

J. A detailed traffic impact study shall be submitted for any site over ten (10) acres in size which would be expected to generate 100 directional vehicle trips (i.e. 100 inbound or 100 outbound trips) during the peak hour of traffic of the generator or on the adjacent streets.

The site is under 10 acres and therefore a detailed traffic impact study is not necessary.

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

None at this time.

L. A list of all sources shall be provided.

Genoa Township c Submittal Requirements for Impact Assessment

Genoa Township Zoning Ordinances

Soil Survey of Livingston County, Michigan, U.S.D.A. Soil Conservation Service

National Wetland Inventory Plan, United States Department of the Interior, Fish and Wildlife Service

Trip Generation manual, 6th edition, Institute of Transportation Engineers

SITE PLAN FOR SEASIDE SEAWALLS, LLC

PART OF THE SW. 1/4 SEC. 5 & THE SE. 1/4 SEC 6, T2N-R5E GENOA TOWNSHIP, LIVINGSTON COUNTY, MI

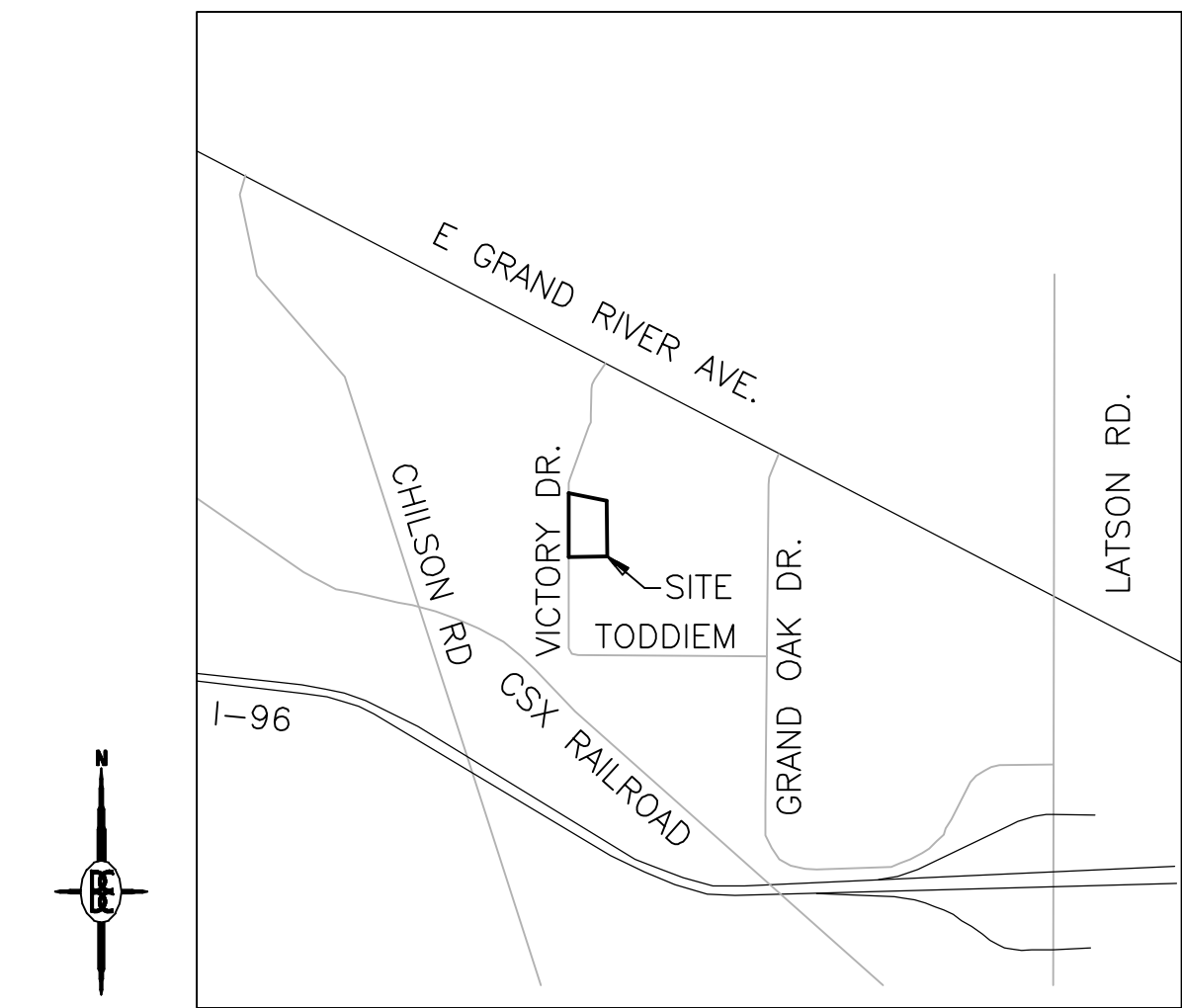
PROPERTY DESCRIPTION:

Part of Lot 18 and part of Lot 19 of "GRAND OAKS WEST INDUSTRIAL PARK", as recorded in Liber 30 of Plats, Pages 1-5, Livingston County Records and being a part of the Southwest 1/4 of Section 5 and part of the Southeast 1/4 of Section 6, T2N-R5E, Genoa Township, Livingston County, Michigan, more particularly described as follows: Beginning at the Northwest Corner of said Lot 19 of "GRAND OAKS WEST INDUSTRIAL PARK"; thence along the North line of said Lot 19, S 80°36'27" E, 435.57 feet; thence S 02°07'51" W, 581.16 feet; thence S 88°58'54" W, 379.75 feet; thence along the East line of Victory Drive (66 foot wide Right of Way) on the following three (3) courses:

- 1) Northerly on an arc left, having a length of 62.39 feet, a radius of 650.15 feet, a central angle of 05°29'55", and a long chord which bears N 08°06'52" W, 62.37 feet;
- 2) Northerly on an arc right, having a length of 99.88 feet, a radius of 584.15 feet, a central angle of 09°47'49", and a long chord which bears N 05°57'55" W, 99.76 feet;
- 3) N 01°04'01" W, 497.72 feet, to the POINT OF BEGINNING, containing 5.85 acres, more or less, and subject to the rights of the public over the existing said Victory Drive. Also subject to any other easements or restrictions of record.

CONSTRUCTION NOTES

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



LOCATION MAP

NO SCALE



OVERALL SITE MAP

NO SCALE

SHEET INDEX	
SHEET NO.	DESCRIPTION
1	COVER SHEET
2	EXISTING CONDITIONS
3	SITE PLAN
4	GRADING, DRAINAGE & SOIL EROSION CONTROL PLAN
5	DRAINAGE AREA & UTILITY PLAN
6	STORM SEWER CALCULATIONS
7	LANDSCAPE PLAN
8	LIGHTING PLAN
9	SANITARY SEWER DETAILS
10	CONSTRUCTION DETAILS
DRAWINGS PREPARED BY ARCHITECT	
A1	EXTERIOR ELEVATIONS
A2	PROPOSED FLOOR PLAN

SEASIDE SEAWALLS, LLC

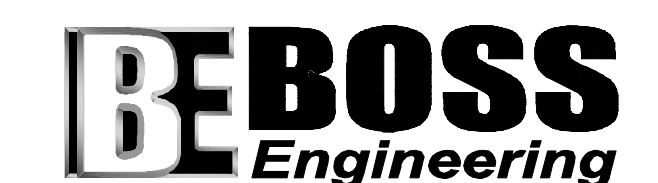
ARCHITECT:

PUCCI & VOLLMAR ARCHITECTS, PC
508 E. GRAND RIVER AVE #100B
BRIGHTON, MI 48116
CONTACT: KARL VOLLMAR
PHONE: (810) 225-2930
E-MAIL: KARL@PV-ARCHITECTS.COM

PREPARED FOR OWNER:

SEASIDE SEAWALLS, LLC
9868 EAST GRAND RIVER
SUITES 110-225
BRIGHTON, MI 48116
CONTACT: AARON WALLACE
PHONE: (248) 207-1984
E-MAIL: AARON@SEASIDeseawalls.com

PREPARED BY:



Engineers Surveyors Planners Landscape Architects

3121 E. GRAND RIVER AVE.
HOWELL, MI. 48843

800.246.6735 FAX 517.548.1670

INDEMNIFICATION STATEMENT

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

FOR SITE PLAN APPROVAL ONLY!
NOT FOR CONSTRUCTION

1			
1	KS	GENOA TOWNSHIP	05/25/16
NO	BY	CK	REVISION
		ISSUE DATE: 5/4/2016	
		DATE	JOB NO. 16-049

THE LOCATION AND ELEVATION OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS SURVEY ARE BASED ON RECORD DRAWINGS AND FIELD SURVEY. THE USER SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO ANY CONSTRUCTION. THE USER SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO ANY CONSTRUCTION. THE USER SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO ANY CONSTRUCTION.

BEFORE YOU DIG
CALL MISS DIG
1-800-482-7171
www.missdig.com

BEBOSS
Engineering
Engineers Surveyors Planners Landscape Architects

3121 E. GRAND RIVER AVE.
HOWELL, MI. 48843
800.246.6735 FAX 517.548.1670

SEASIDE SEAWALLS, LLC
SEASIDE SEAWALLS, LLC
9868 EAST GRAND RIVER, SUITE 110-225
BRIGHTON, MI 48116
(248) 207-1884

EXISTING CONDITIONS

PROJECT: SEASIDE SEAWALLS, LLC
PREPARED FOR: SEASIDE SEAWALLS, LLC
TITLE: EXISTING CONDITIONS

DESIGNED BY: GAW
DRAWN BY: GAW
CHECKED BY: GAW

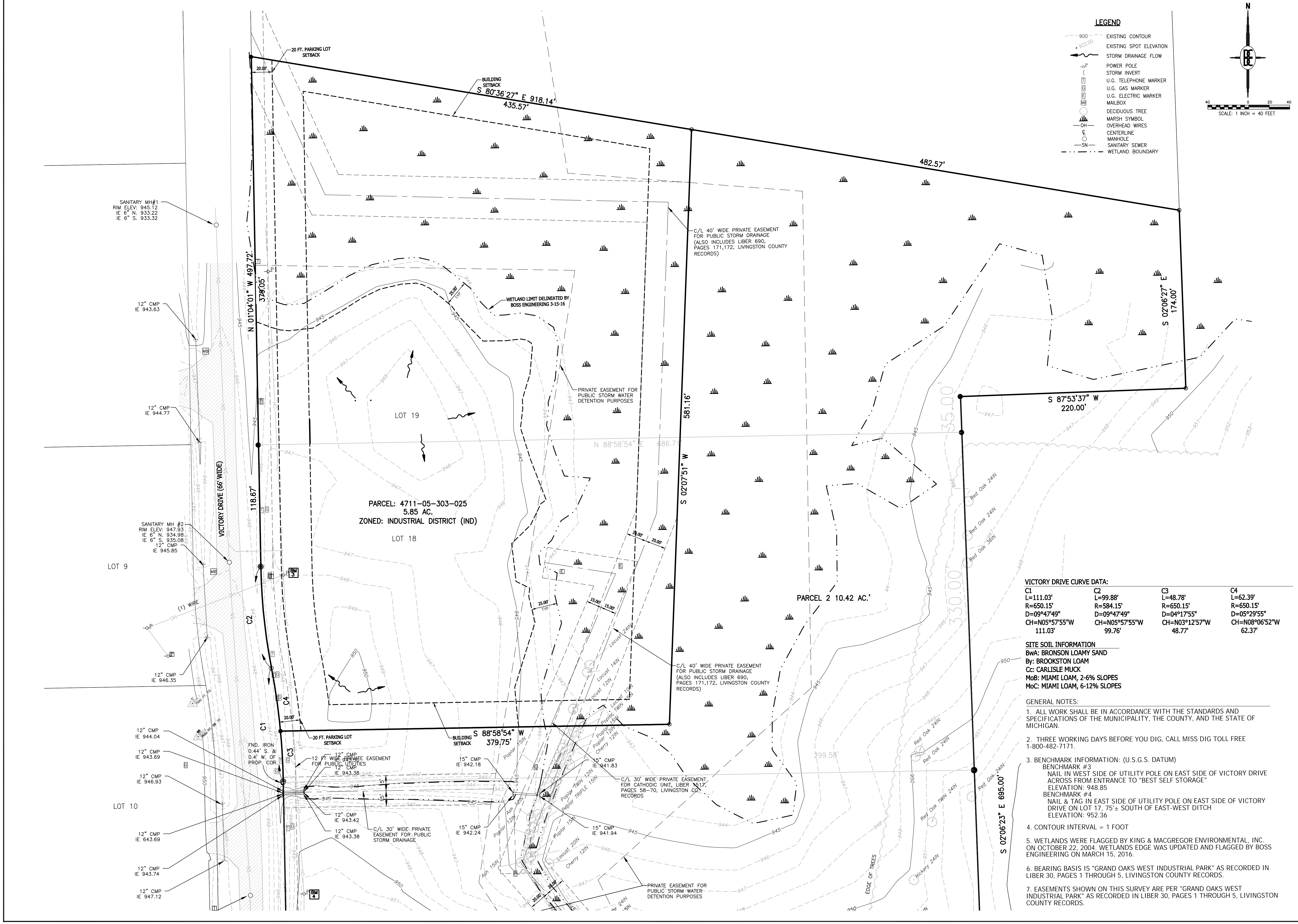
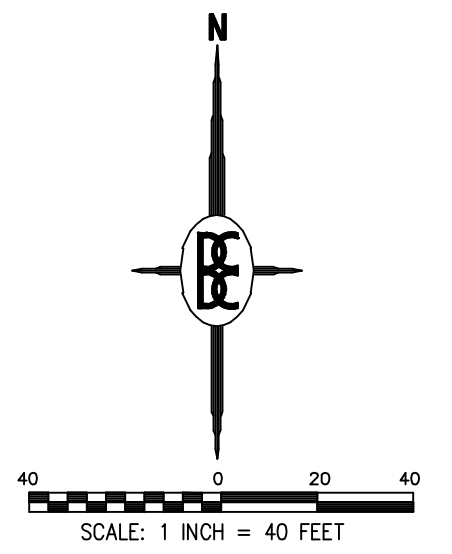
SCALE: 1" = 40'
JOB NO. 16-049
DATE: 03/30/16
SHEET NO. 2

NO. BY: 1 KS
REVISION PER: GENOA TOWNSHIP

DATE: 05/25/16

LEGEND

- 900- EXISTING CONTOUR
- EXISTING SPOT ELEVATION
- STORM DRAINAGE FLOW
- ⊕ POWER POLE
- STORM INVERT
- ⊕ U.G. TELEPHONE MARKER
- ⊕ U.G. GAS MARKER
- ⊕ U.G. ELECTRIC MARKER
- ⊕ MAILBOX
- ⊕ DECIDUOUS TREE
- ⊕ MARSH SYMBOL
- OVERHEAD WIRES
- CENTERLINE
- MANHOLE
- SANITARY SEWER
- - - WETLAND BOUNDARY

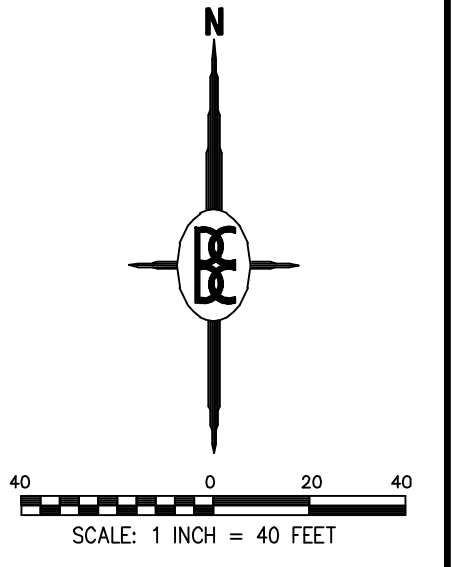
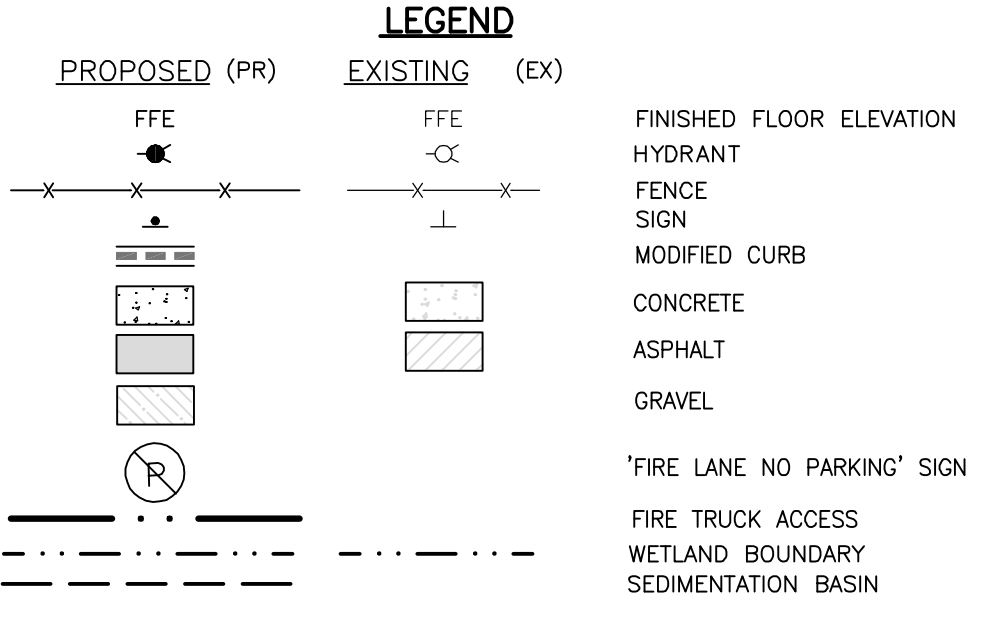
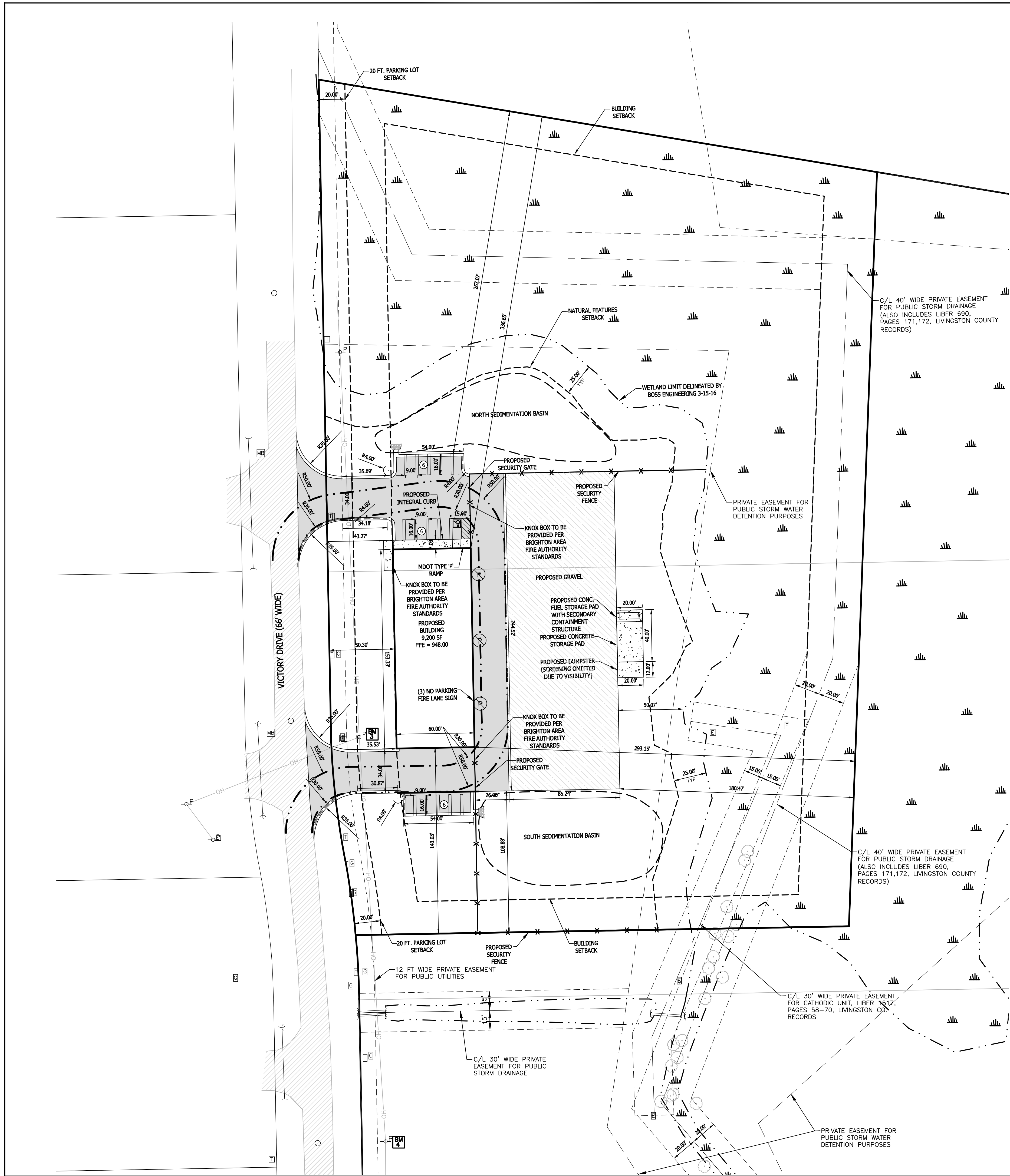


VICTORY DRIVE CURVE DATA:

C1	C2	C3	C4
L=111.03'	L=99.88'	L=48.78'	L=62.39'
R=650.15'	R=584.15'	R=650.15'	R=650.15'
D=09°47'49"	D=09°47'49"	D=04°17'55"	D=05°29'55"
CH=N05°57'55"W 111.03'	CH=N05°57'55"W 99.76'	CH=N03°12'57"W 48.77'	CH=N08°06'52"W 62.37'

SITE SOIL INFORMATION
 BwA: BRONSON LOAMY SAND
 By: BROOKSTON LOAM
 Cc: CARLISLE MUCK
 MoB: MIAMI LOAM, 2-6% SLOPES
 MoC: MIAMI LOAM, 6-12% SLOPES

- GENERAL NOTES:**
1. ALL WORK SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE MUNICIPALITY, THE COUNTY, AND THE STATE OF MICHIGAN.
 2. THREE WORKING DAYS BEFORE YOU DIG, CALL MISS DIG TOLL FREE 1-800-482-7171.
 3. BENCHMARK INFORMATION: (U.S.G.S. DATUM)
 BENCHMARK #3
 NAIL IN WEST SIDE OF UTILITY POLE ON EAST SIDE OF VICTORY DRIVE ACROSS FROM ENTRANCE TO "BEST SELF STORAGE"
 ELEVATION: 948.85
 BENCHMARK #4
 NAIL & TAG IN EAST SIDE OF UTILITY POLE ON EAST SIDE OF VICTORY DRIVE ON LOT 17, 75'± SOUTH OF EAST-WEST DITCH
 ELEVATION: 952.36
 4. CONTOUR INTERVAL = 1 FOOT
 5. WETLANDS WERE FLAGGED BY KING & MACGREGOR ENVIRONMENTAL, INC. ON OCTOBER 22, 2004. WETLANDS EDGE WAS UPDATED AND FLAGGED BY BOSS ENGINEERING ON MARCH 15, 2016.
 6. BEARING BASIS IS "GRAND OAKS WEST INDUSTRIAL PARK" AS RECORDED IN LIBER 30, PAGES 1 THROUGH 5, LIVINGSTON COUNTY RECORDS.
 7. EASEMENTS SHOWN ON THIS SURVEY ARE PER "GRAND OAKS WEST INDUSTRIAL PARK" AS RECORDED IN LIBER 30, PAGES 1 THROUGH 5, LIVINGSTON COUNTY RECORDS.



THE LOCATION AND ELEVATION OF EXISTING UNDERGROUND UTILITIES AS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY DETERMINING THE EXACT LOCATION AND ELEVATION OF EXISTING UTILITIES AND PROPOSED UTILITY CROSSINGS SHALL BE THE FIELD PRIOR TO CONSTRUCTION APPROPRIATE TO THE LOCATION OR DEPTH DIFFERS SIGNIFICANTLY FROM THE PLANS.

BEFORE YOU DIG
CALL MISS DIG
1-800-368-5000
www.missdig.com

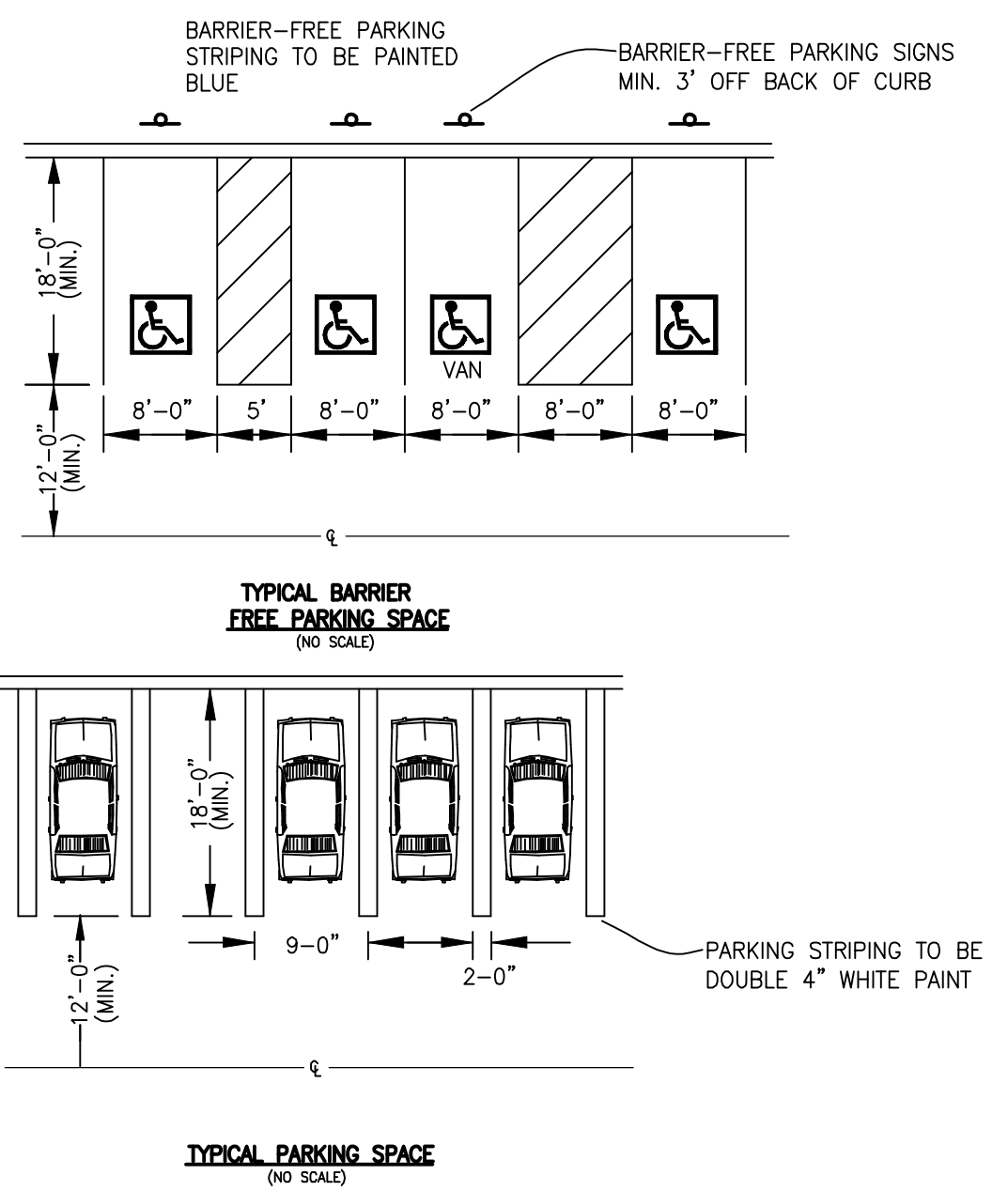
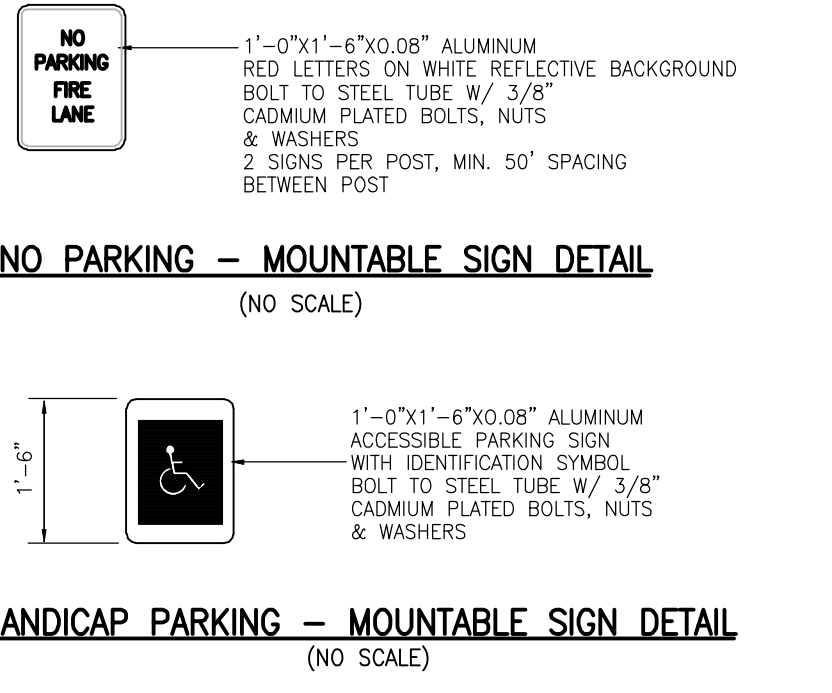
SITE DATA

ZONING	INDUSTRIAL DISTRICT (IND)	
SITE AREA	5.85 AC (254,930 SF)	
SETBACKS	REQUIRED	PROVIDED
	FRONT	50.00 FT
	SIDE	25 FT
	REAR	40 FT
	NATURAL FEATURES	25 FT
PERVIOUS SURFACE	207033 SF	
IMPERVIOUS SURFACE	47,897 SF	
MAX COVERAGE	REQUIRED	PROVIDED
	BUILDING	40%
IMPERVIOUS SURFACE	85%	18.79%

PARKING LOT DATA

SETBACKS	REQUIRED	PROVIDED
FRONT	20 FT	22.30 FT
SIDE	10 FT	11.11 FT N. 264 FT
REAR	10 FT	180 FT
PARKING SPACES	18	18
BARRIER FREE SPACES	1	1

- PARKING SPACES REQUIRED
SPACES REQUIRED FOR THE SUBJECT SITE IS BASED ON THE GREATER OF THE FOLLOWING TWO SCENARIOS:
- 1.5 SPACES/1,000 SQ. FT. FLOOR AREA PLUS 1 SPACE PER CORPORATE VEHICLE
- 1.5 SPACES x (9,200 SQ. FT./1,000 SQ. FT.) + 4 SPACES = 18 SPACES
 - 1.2 SPACES PER EMPLOYEE AT PEAK HOUR PLUS 1 SPACE PER CORPORATE VEHICLE
- 1.2 SPACES x 5 SPACES + 4 SPACES = 10 SPACES

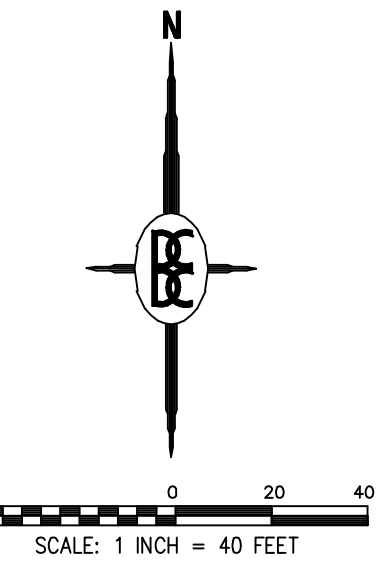
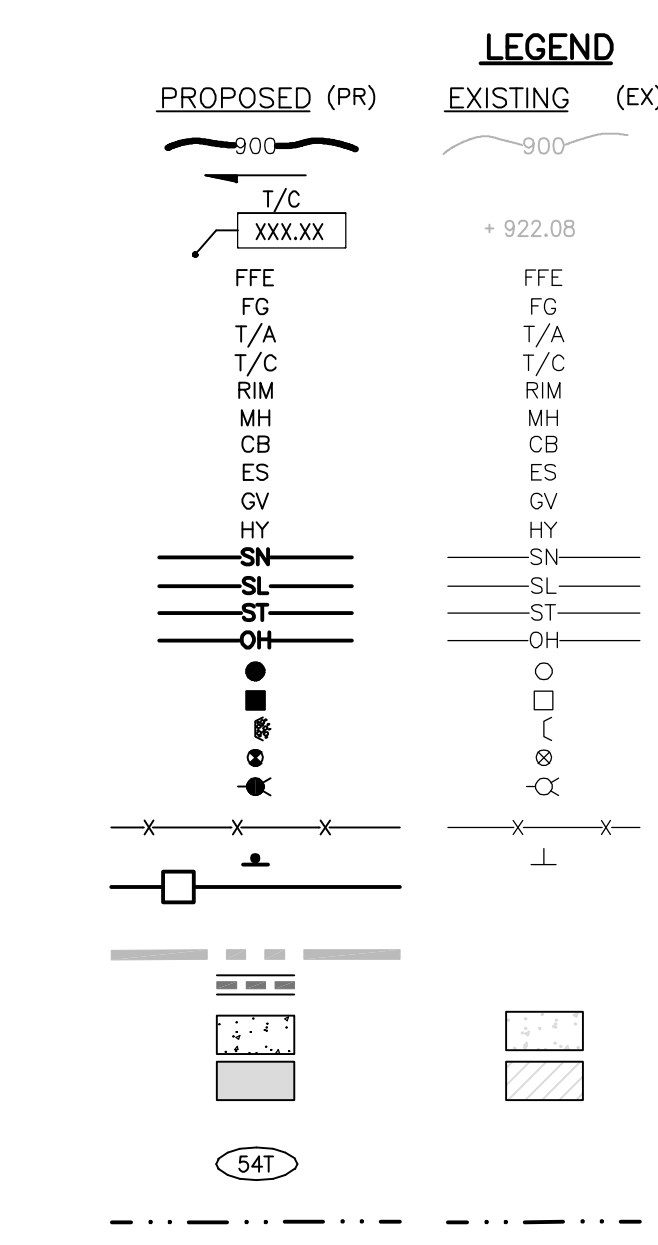
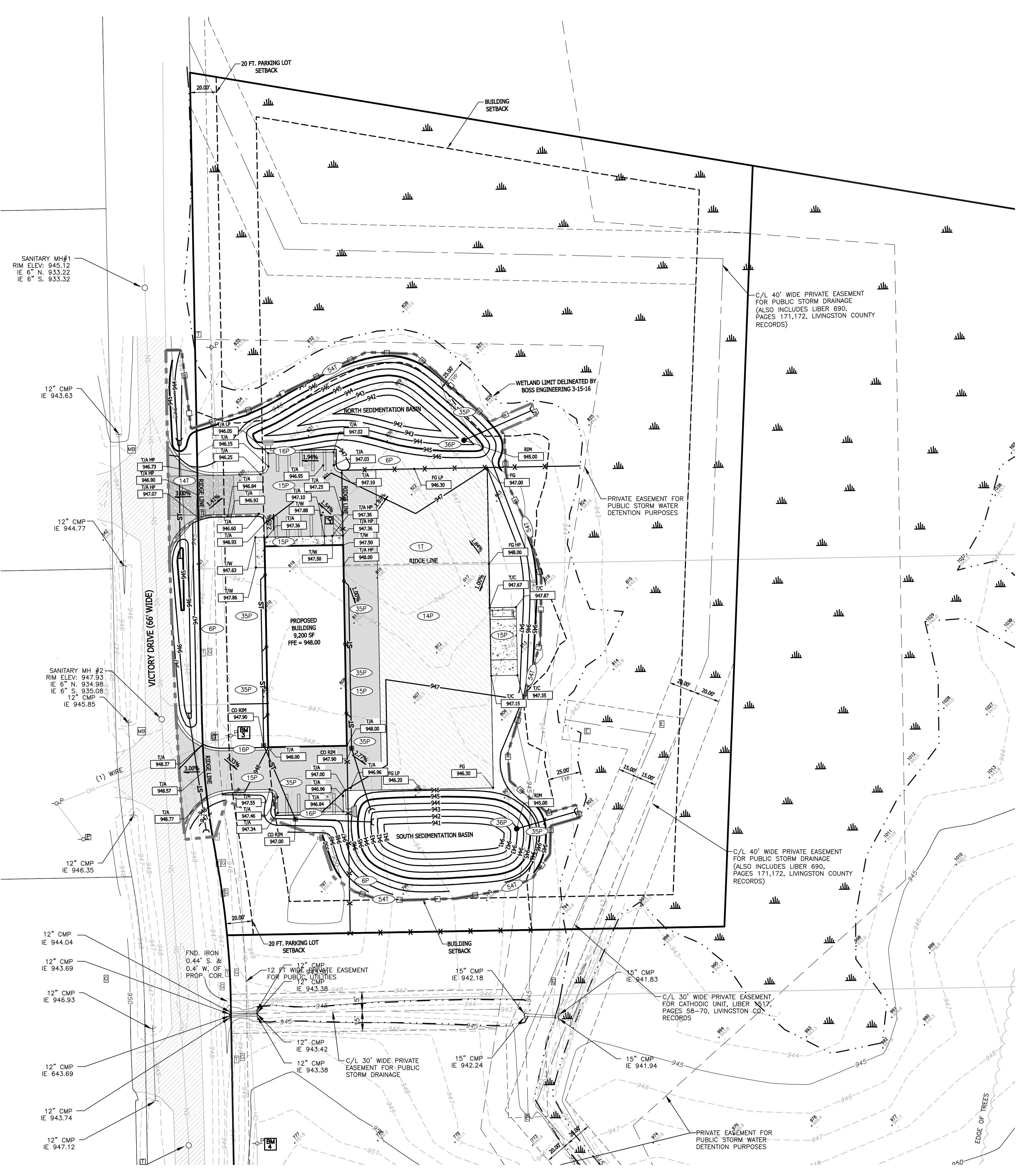


BEBOSS Engineering

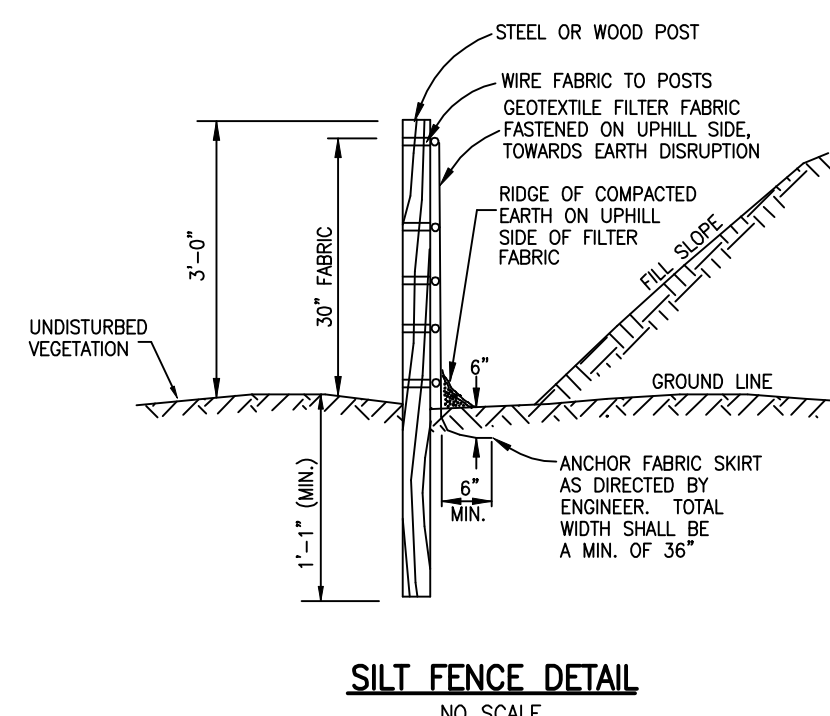
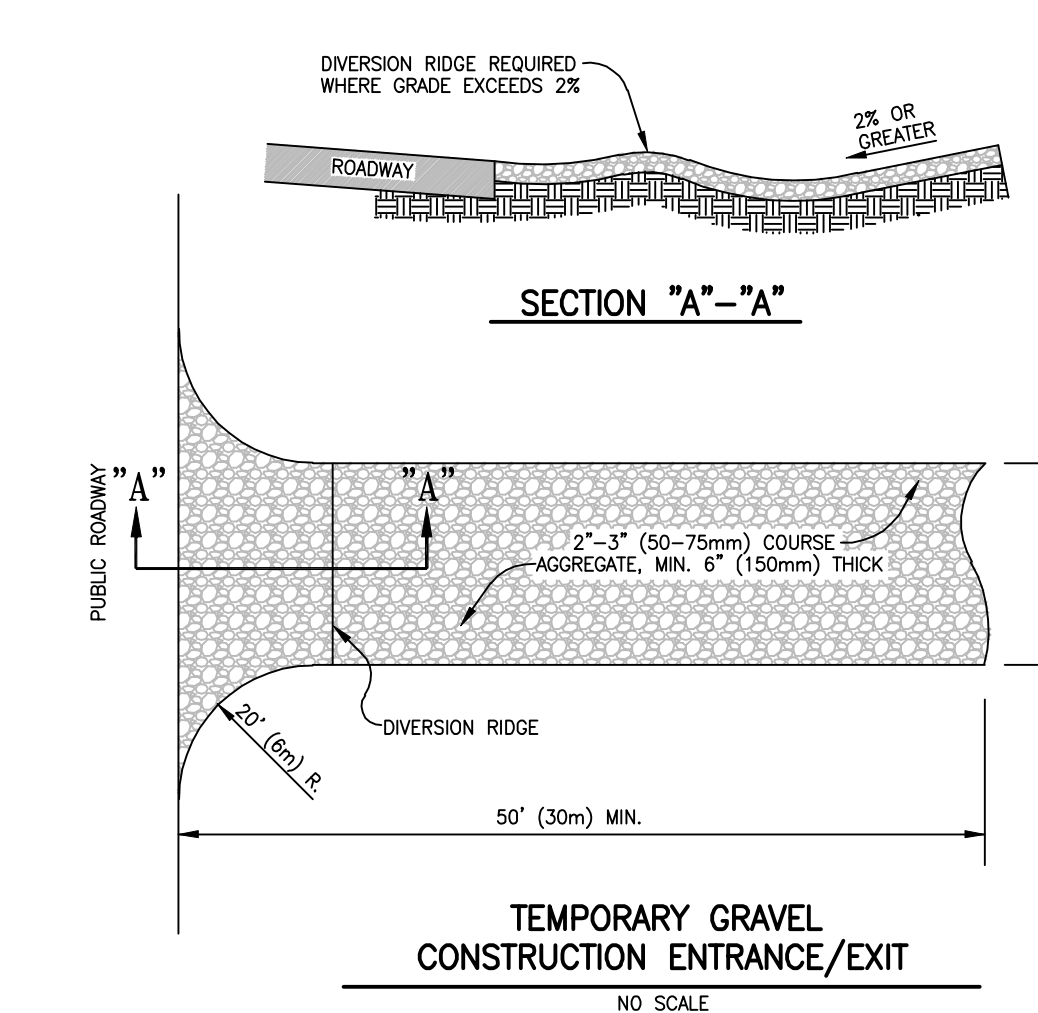
Engineers Surveyors Planners Landscape Architects
3121 E. GRAND RIVER AVE.
HOWELL, MI. 48843
800.246.6735 FAX 517.548.1670

PROJECT	TITLE
SEASIDE SEAWALLS, LLC SEASIDE SEAWALLS, LLC 9888 EAST GRAND RIVER, SUITE 110-225 BRIGHTON, MI 48116 (248) 207-1984	SITE PLAN
DESIGNED BY: KS	DATE: 03/25/16
DRAWN BY: KS	REVISION PER
CHECKED BY:	NO BY
SCALE: 1" = 40'	1 KS
JOB NO. 16-049	GENOA TOWNSHIP
DATE: 03/30/16	REVISION PER
SHEET NO. 3	DATE

BENCHMARK INFORMATION: (U.S.G.S. DATUM)
BENCHMARK #3
NAIL IN WEST SIDE OF UTILITY POLE ON EAST SIDE OF VICTORY DRIVE ACROSS FROM ENTRANCE TO 'BEST SELF STORAGE'
ELEVATION: 948.85
BENCHMARK #4
NAIL & TAG IN EAST SIDE OF UTILITY POLE ON EAST SIDE OF VICTORY DRIVE ON LOT 17, 75'± SOUTH OF EAST-WEST DITCH
ELEVATION: 952.36



THE LOCATION AND ELEVATION OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS PLAN IS BASED ON RECORD DRAWINGS AND FIELD SURVEY. BEBOSS ENGINEERING, PLLC HAS NOT VERIFIED THE EXISTENCE, LOCATION, DEPTH, OR ELEVATION OF EXISTING UTILITIES. THE USER OF THIS PLAN SHALL VERIFY THE LOCATION AND ELEVATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION. BEBOSS ENGINEERING, PLLC IS NOT RESPONSIBLE FOR ANY DAMAGE TO OR INTERFERENCE WITH EXISTING UTILITIES. BEFORE YOU DIG CALL MISS DIG 800.468.7355



CONTROLS & MEASURES NARRATIVE

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

CONTROLS & MEASURES POST CONSTRUCTION SEQUENCE

ACTIVITY	DAILY	WEEKLY	MONTHLY	AS REQUIRED
MAINTAIN LANDSCAPING, REPLACE MULCH		X	X	X
CLEAN INLETS		X	X	X
COLLECT LITTER		X	X	X
SWEEP PAVED AREAS		X	X	X
SCRAPE PAVED AREAS	X			X

STORM WATER NARRATIVE

PER THE LIVINGSTON COUNTY DRAIN COMMISSION THIS SITE MUST PROVIDE SEDIMENTATION CONTROL. THE STORM WATER IS DIRECTED TO TWO ON SITE SEDIMENTATION BASINS PRIOR TO DISCHARGE INTO THE LARGE WETLAND NETWORK ON AND ADJACENT TO THE SUBJECT PROPERTY WHICH IS WITHIN A PUBLIC DRAINAGE EASEMENT.

SOIL EROSION CONTROL MEASURES

1	STRIPPIG & STOCKPILING TOPSOIL	TOPSOIL MAY BE STOCKPILED ALONG BORROW AREAS TO ACT AS A DIVERSION SLOOPILE SHOULD BE TEMPORARILY SEEDED.
6	SEEDING WITH MULCH AND/OR MATING	FACILITATES ESTABLISHMENT OF VEGETATIVE COVER EFFECTIVE FOR BRANCHED WITH LOW VELOCITY. EASILY PLACED IN SMALL QUANTITIES BY INEXPERIENCED PERSONNEL. SHOULD INCLUDE PREPARED TOPSOIL (30).
14	AGGREGATE COVER	STABILIZES SOIL SURFACE. THIS MINIMIZES EROSION. PERMITS CONSTRUCTION TRAFFIC IN ADVERSE WEATHER. MAY BE USED AS PART OF PERMANENT BASE CONSTRUCTION OF PAVED AREAS.
15	FABRIC	PROTECTS AREAS WHICH CANNOT OTHERWISE BE PROTECTED, BUT INCREASES RUNOFF VELOCITY. REGULAR SURFACE WILL HELP SLOW VELOCITY.
16	EDGES & CUTTER	KEEPS HIGH VELOCITY RUNOFF ON PAVED AREAS FROM LEAVING PAVED SURFACE. COLLECTS AND CONVEYS RUNOFF TO ENCLOSED DRAINAGE SYSTEM OR PREPARED DRAINAGEWAY.
35	STORM SEWER	SYSTEM REMOVES COLLECTED RUNOFF FROM SITE, PARTICULARLY FROM PAVED AREAS. CAN ACCEPT LARGE CONCENTRATIONS OF RUNOFF. CONDUITS RUNOFF TO MANHOLE. SEWER SYSTEM OR STABILIZED OUTFALL LOCATION USE CATCH BASINS TO COLLECT SEDIMENT.
36	CATCH BASIN, DRAIN INLET	COLLECTS HIGH VELOCITY CONCENTRATED RUNOFF. MAY USE FILTER CLOTH OVER INLET.
54	SILT FENCE	USES GEOTEXTILE FABRIC AND POST OR POLES. EASY TO CONSTRUCT AND LOCATE AS NECESSARY. (SEE DETAIL THIS SHEET)

P = PERMANENT, T = TEMPORARY
TOTAL DISTURBED AREA = 2.26 AC (98,421 SF)

BENCHMARK INFORMATION: (U.S.G.S. DATUM)

BENCHMARK #3
NAIL IN WEST SIDE OF UTILITY POLE ON EAST SIDE OF VICTORY DRIVE ACROSS FROM ENTRANCE TO "BEST SELF STORAGE"

ELEVATION: 948.85

BENCHMARK #4
NAIL & TAG IN EAST SIDE OF UTILITY POLE ON EAST SIDE OF VICTORY DRIVE ON LOT 17, 75'± SOUTH OF EAST-WEST DITCH

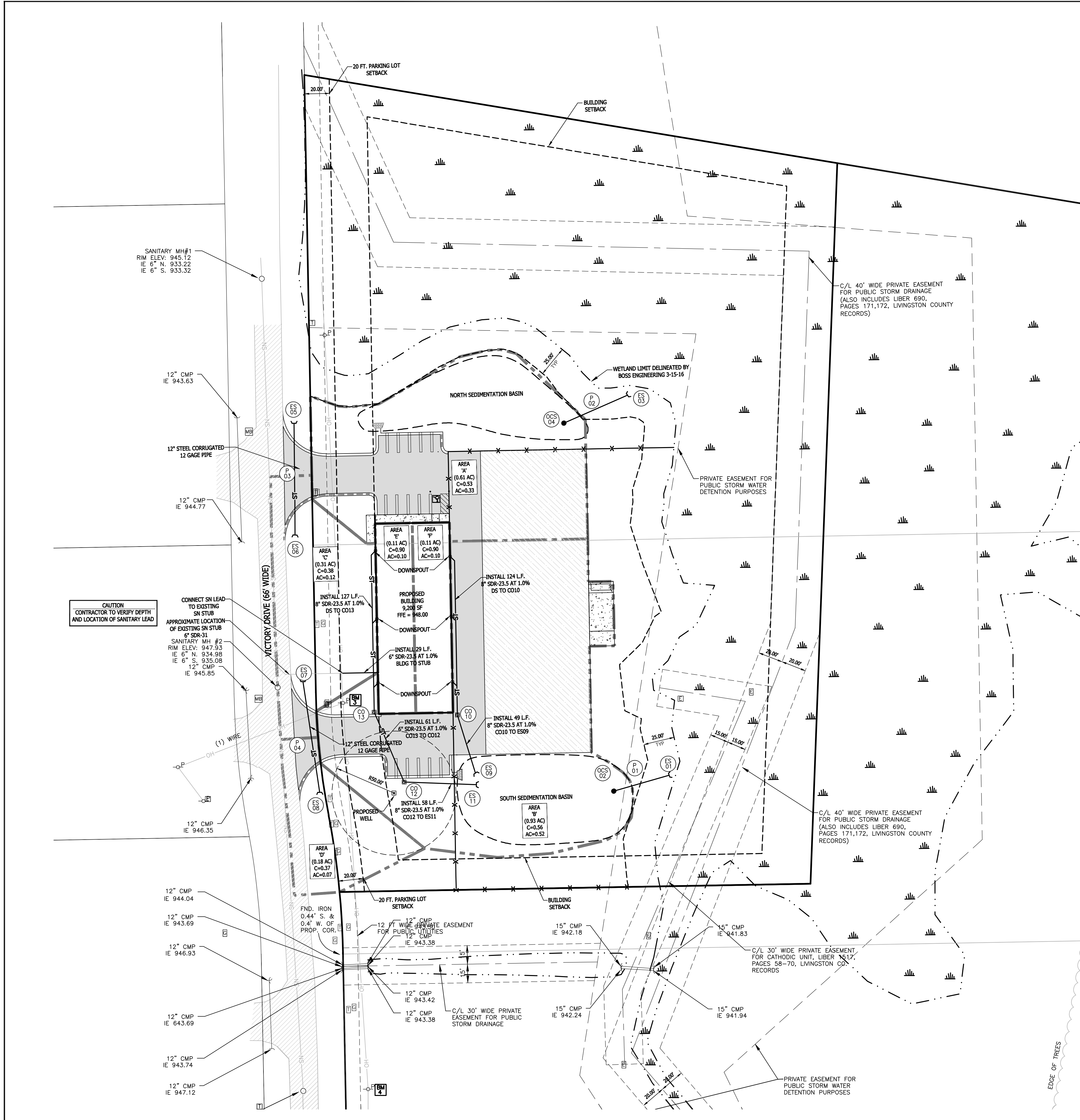
ELEVATION: 952.36

SEASIDE SEAWALLS, LLC
SEASIDE SEAWALLS, LLC
9868 EAST GRAND RIVER, SUITE 110-225
BRIGHTON, MI 48116
(248) 207-1884

BEBOSS Engineering
Engineers Surveyors Planners Landscape Architects
3121 E. GRAND RIVER AVE.
HOWELL, MI. 48843
800.246.6735 FAX 517.548.1670

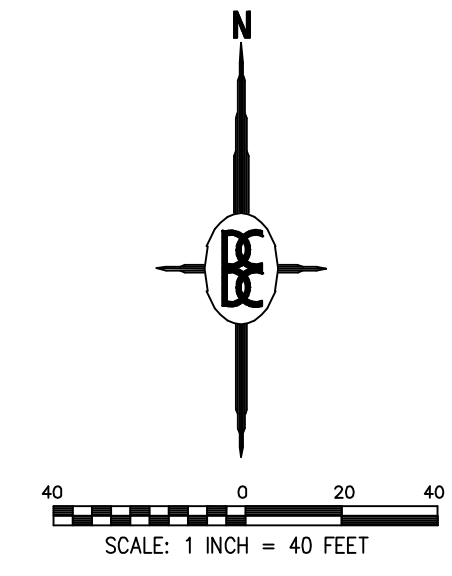
PROJECT:
PREPARED FOR:
DATE: 05/25/16
GENOA TOWNSHIP PER
REVISION NO. BY:
DESIGNED BY:
DRAWN BY: GAW
CHECKED BY:
SCALE: 1" = 40'
JOB NO. 16-049
DATE: 03/30/16
SHEET NO. **4**

GRADING & SOIL EROSION CONTROL PLAN



LEGEND

PROPOSED (PR)	EXISTING (EX)	
RIM	RIM	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
CV	CV	GATEVALVE STRUCTURE
HY	HY	HYDRANT
UP	UP	UTILITY POLE
DS	DS	DOWNSPOUT
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
O	O	MANHOLE
□	□	INLET / CATCHBASIN
⊕	⊕	FLARED END-SECTION
⊕	⊕	GATE VALVE
⊕	⊕	HYDRANT
⊕	⊕	UTILITY POLE
⊕	⊕	FENCE
⊕	⊕	SIGN
⊕	⊕	STORM SEWER LABEL
---	---	LIMITS OF DRAINAGE
---	---	WETLAND BOUNDARY



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BEBOSS Engineering
 3121 E. GRAND RIVER AVE.
 HOWELL, MI. 48843
 800.246.6735 FAX 517.548.1670

STORM STRUCTURE SCHEDULE

STRUCTURE	SECTION	SIZE	ELEVATION
ES 01	FLARED END SECTION	12"	942.73
ES 02	FLARED END SECTION	12"	942.88
ES 03	FLARED END SECTION	12"	943.32
ES 04	FLARED END SECTION	12"	943.50
ES 05	FLARED END SECTION	12"	943.90
ES 06	FLARED END SECTION	12"	944.19
ES 07	FLARED END SECTION	12"	945.85
ES 08	FLARED END SECTION	12"	946.14
ES 09	FLARED END SECTION	8"	943.50
ES 10	FLARED END SECTION	8"	943.99
ES 11	FLARED END SECTION	8"	942.88
ES 12	FLARED END SECTION	8"	943.49
ES 13	FLARED END SECTION	8"	943.96

STORM PIPE SCHEDULE

PIPE	LENGTH	SIZE	TYPE	SLOPE
1	47	12	C-78 CLV	0.32%
2	56	18	C-78 CLV	0.32%
3	90	12	CMP	0.32%
4	90	12	CMP	0.32%

CULVERT DRAINAGE AREA SUMMARY

STRUCTURE	DRAINAGE AREA(S)	AREA (AC)
ES 06 TO ES 05	C,D	0.49
ES 08 TO ES 07	D	0.18

SEDIMENTATION BASIN DRAINAGE AREA SUMMARY

NORTH BASIN DRAINAGE AREA			
DRAINAGE AREA	AREA (AC)	C	AxC
A	0.62	0.54	0.33
SOUTH BASIN DRAINAGE AREAS			
DRAINAGE AREA	AREA (AC)	C	AxC
B	0.93	0.54	0.50
E	0.11	0.90	0.10
F	0.11	0.90	0.10

NOTE
 DRAINAGE AREA C IS GREENBELT THAT DRAINS TO THE VICTORY DRIVE ROADSIDE DITCH.

BENCHMARK INFORMATION: (U.S.G.S. DATUM)
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 NAIL IN WEST SIDE OF UTILITY POLE ON EAST SIDE OF VICTORY DRIVE ACROSS FROM ENTRANCE TO "BEST SELF STORAGE"
 ELEVATION: 948.85
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 NAIL & TAG IN EAST SIDE OF UTILITY POLE ON EAST SIDE OF VICTORY DRIVE ON LOT 17, 75± SOUTH OF EAST-WEST DITCH
 ELEVATION: 952.36

SEASIDE SEAWALLS, LLC
 SEASIDE SEAWALLS, LLC
 9868 EAST GRAND RIVER, SUITE 110-225
 BRIGHTON, MI 48116
 (248) 207-1884

DRAINAGE AREA & UTILITY PLAN

PROJECT	PREPARED FOR	TITLE
DESIGNED BY:	KS	
DRAWN BY:	KS	
CHECKED BY:		
SCALE	1" = 40'	
JOB NO.	16-049	
DATE	03/30/16	
SHEET NO.	5	

NORTH SEDIMENTATION BASIN

SEDIMENTATION POND 50-YEAR STORM
 SITE: SEASIDE SEAWALLS, LLC DATE: 4/21/2016
 TWP/SEC: GENOA TWP. DESIGN: KS

AREA	IMPERV. FACTOR	ACRE-IMPERV
0.19	0.9	0.17
0.14	0.7	0.10
0.28	0.2	0.06

C COMPOUND C: 0.53
 AREA TOTAL DRAINAGE AREA: 0.61 AC

50 YEAR STORM

$Q_4 = \text{MAX. ALLOW OUTFLOW (0.1CFS/ACRE)} = 0.06 \text{ CFS}$
 $Q_2 = Q_4 / (\text{AREA} \times C) = 0.19 \text{ CFS/ACRE IMPERVIOUS}$

STORAGE TIME (ORIFICE OUTLET)

$T = -25 \times \text{SQRT} (9187.5/Q_4) = 195.45 \text{ MIN}$

VOLUME OF STORAGE PER ACRE IMPERVIOUS

$V_4 = \frac{14700T}{T+25} - 40Q_4T = 11554.96 \text{ CF/ACRE IMPERVIOUS}$

TOTAL VOLUME OF STORAGE REQUIRED

$V_1 = V_4 \times \text{AREA} \times C = 3757 \text{ CF}$

BANKFULL FLOOD VOLUME

$V_{BF} = 5160 \times A \times C = 1678 \text{ CF}$

FIRST FLUSH VOLUME

$V_{FF} = 1815 \times A \times C = 590 \text{ CF}$

BASIN STORAGE PROVIDED

ELEV	AREA	VOLUME	TOTAL VOLUME	FREEBOARD VOLUME
946	9000	7254	13451	
945	5500	4579	8197	DESIGN HIGH WATER
944	3648	1619	1619	
943.5	2827	0	0	
941.5	0	0	0	

STORAGE VOLUME = 6197 CF

BOTTOM OF STORAGE = 943.50

FIRST FLUSH $X_{FF} = 943.68$

BANKFULL $X_{BF} = 944.01$

50 YEAR $X_{50} = 944.47$

OUTLET CONTROL STRUCTURE

FIRST FLUSH OF RUNOFF
 THE AVERAGE ALLOWABLE RELEASE RATE FOR RUNOFF IS 0.5" OVER AREA OF SITE IN 24 HRS.

$Q_{FF} = V_{FF} \times (1/24 \text{ HRS}) \times (1 \text{ HR} / 3600 \text{ SEC}) = 0.007 \text{ CFS}$

PLACE OPENINGS IN STANDPIPE AT BOTTOM OF BASIN = **943.50**

HEAD = $h_{FF} = X_{FF} - \text{BOTTOM BASIN ELEV} = 0.18 \text{ FT}$

$A = Q_{FF} / (0.62 \times (2 \times 32.2 \times h_{FF})^{0.5}) = 0.003 \text{ FT}^2$

$A / 0.0055 = 0.59$

THEREFORE, USE THE FOLLOWING NUMBER OF **1** INCH DIAMETER HOLES

$Q_{FF} \text{ MAX} = 0.027 \text{ CFS}$

BANKFULL FLOOD

FOR THE ALLOWABLE RELEASE RATE OF 24-40 HOURS, CHECK THE DISCHARGE THROUGH THE FIRST FLUSH ORIFICE TO SEE IF ADDITIONAL HOLES ARE NECESSARY.

HEAD = $h = X_{BF} - \text{BOTTOM OF BASIN} = 0.51 \text{ FT}$

$Q_{B0.5} = 0.62 \times \# \text{HOLES} \times (\text{AREA EACH HOLE}) \times (2 \times 32.2 \times h)^{0.5} = 0.019 \text{ CFS}$

$T_{B0.5} = (1 \text{ SEC} / Q_{B0.5}) \times V_{FF} \times (1 \text{ HR} / 3600 \text{ SEC}) = 13.49 \text{ HRS}$

SINCE HOLDING TIME IS LESS THAN 40 HRS, ADDITIONAL ORIFI IN STANDPIPE ARE NOT REQUIRED AT THE BANKFULL ELEVATION

50 YEAR FLOOD

$Q_4 = \text{ALLOWABLE RELEASE RATE} \times \text{AREA SITE IN ACRES} = 0.06 \text{ CFS}$

Q_4 IS A PEAK OR MAXIMUM FLOW. CALCULATE THE MAXIMUM FLOW PASSING THROUGH FIRST FLUSH AND BANKFULL ORIFICES, USING THE TOTAL HEAD, AND SUBTRACT FROM Q_4 TO DETERMINE THE ORIFICE SIZE TO RELEASE THE 100 YEAR STORM VOLUME.

$Q_{FF} \text{ MAX} + Q_{BF} \text{ MAX} = 0.03 \text{ CFS}$

$Q_4 - (Q_{FF} \text{ MAX} + Q_{BF} \text{ MAX}) = 0.03 \text{ CFS}$

$A = Q_4 / (0.62 \times (2 \times 32.2 \times (X_{50} - X_{FF}))^{0.5}) = 0.010 \text{ SF}$

$A / 0.005 = 1.90$

THEREFORE, USE THE FOLLOWING NUMBER OF **1** INCH DIAMETER HOLES:

$Q_{50} = 0.02 \text{ CFS}$
 $Q_2 = Q_{50} + Q_{FF} \text{ MAX} + Q_{BF} \text{ MAX} = 0.04 \text{ CFS}$

SUMMARY OF REQUIRED STANDPIPE HOLES:

ELEVATION	# OF HOLES	DIAMETER OF HOLES
944.47	1	1 INCHES
943.50	1	1 INCHES

SOUTH SEDIMENTATION BASIN

SEDIMENTATION POND 50-YEAR STORM
 SITE: SEASIDE SEAWALLS, LLC DATE: 4/21/2016
 TWP/SEC: GENOA TWP. DESIGN: KS

AREA	IMPERV. FACTOR	ACRE-IMPERV
0.42	0.9	0.38
0.34	0.7	0.24
0.39	0.2	0.08

C COMPOUND C: 0.60
 AREA TOTAL DRAINAGE AREA: 1.15 AC

50 YEAR STORM

$Q_4 = \text{MAX. ALLOW OUTFLOW (0.1CFS/ACRE)} = 0.12 \text{ CFS}$
 $Q_2 = Q_4 / (\text{AREA} \times C) = 0.17 \text{ CFS/ACRE IMPERVIOUS}$

STORAGE TIME (ORIFICE OUTLET)

$T = -25 \times \text{SQRT} (9187.5/Q_4) = 210.47 \text{ MIN}$

VOLUME OF STORAGE PER ACRE IMPERVIOUS

$V_4 = \frac{14700T}{T+25} - 40Q_4T = 11744.25 \text{ CF/ACRE IMPERVIOUS}$

TOTAL VOLUME OF STORAGE REQUIRED

$V_1 = V_4 \times \text{AREA} \times C = 8151 \text{ CF}$

BANKFULL FLOOD VOLUME

$V_{BF} = 5160 \times A \times C = 3581 \text{ CF}$

FIRST FLUSH VOLUME

$V_{FF} = 1815 \times A \times C = 1260 \text{ CF}$

BASIN STORAGE PROVIDED

ELEV	AREA	VOLUME	TOTAL VOLUME	FREEBOARD VOLUME
946	8993	8117	20494	
945	7240	6443	12378	DESIGN HIGH WATER
944	5645	4926	5935	
943	4206	1010	1010	
942.75	3972	0	0	

STORAGE VOLUME = 12378 CF

BOTTOM OF STORAGE = 942.75

FIRST FLUSH $X_{FF} = 943.05$

BANKFULL $X_{BF} = 943.52$

50 YEAR $X_{50} = 944.34$

OUTLET CONTROL STRUCTURE

FIRST FLUSH OF RUNOFF
 THE AVERAGE ALLOWABLE RELEASE RATE FOR RUNOFF IS 0.5" OVER AREA OF SITE IN 24 HRS.

$Q_{FF} = V_{FF} \times (1/24 \text{ HRS}) \times (1 \text{ HR} / 3600 \text{ SEC}) = 0.015 \text{ CFS}$

PLACE OPENINGS IN STANDPIPE AT BOTTOM OF BASIN = **942.75**

HEAD = $h_{FF} = X_{FF} - \text{BOTTOM BASIN ELEV} = 0.30 \text{ FT}$

$A = Q_{FF} / (0.62 \times (2 \times 32.2 \times h_{FF})^{0.5}) = 0.005 \text{ FT}^2$

$A / 0.0055 = 0.98$

THEREFORE, USE THE FOLLOWING NUMBER OF **1** INCH DIAMETER HOLES

$Q_{FF} \text{ MAX} = 0.024 \text{ CFS}$

BANKFULL FLOOD

FOR THE ALLOWABLE RELEASE RATE OF 24-40 HOURS, CHECK THE DISCHARGE THROUGH THE FIRST FLUSH ORIFICE TO SEE IF ADDITIONAL HOLES ARE NECESSARY.

HEAD = $h = X_{BF} - \text{BOTTOM OF BASIN} = 0.77 \text{ FT}$

$Q_{B0.5} = 0.62 \times \# \text{HOLES} \times (\text{AREA EACH HOLE}) \times (2 \times 32.2 \times h)^{0.5} = 0.024 \text{ CFS}$

$T_{B0.5} = (1 \text{ SEC} / Q_{B0.5}) \times V_{FF} \times (1 \text{ HR} / 3600 \text{ SEC}) = 10.99 \text{ HRS}$

SINCE HOLDING TIME IS LESS THAN 40 HRS, ADDITIONAL ORIFI IN STANDPIPE ARE NOT REQUIRED AT THE BANKFULL ELEVATION

50 YEAR FLOOD

$Q_4 = \text{ALLOWABLE RELEASE RATE} \times \text{AREA SITE IN ACRES} = 0.12 \text{ CFS}$

Q_4 IS A PEAK OR MAXIMUM FLOW. CALCULATE THE MAXIMUM FLOW PASSING THROUGH FIRST FLUSH AND BANKFULL ORIFICES, USING THE TOTAL HEAD, AND SUBTRACT FROM Q_4 TO DETERMINE THE ORIFICE SIZE TO RELEASE THE 100 YEAR STORM VOLUME.

$Q_{FF} \text{ MAX} + Q_{BF} \text{ MAX} = 0.03 \text{ CFS}$

$Q_4 - (Q_{FF} \text{ MAX} + Q_{BF} \text{ MAX}) = 0.08 \text{ CFS}$

$A = Q_4 / (0.62 \times (2 \times 32.2 \times (X_{50} - X_{FF}))^{0.5}) = 0.018 \text{ SF}$

$A / 0.005 = 3.28$

THEREFORE, USE THE FOLLOWING NUMBER OF **3** HOLES AT ELEV. = **944.34**

$Q_{50} = 0.07 \text{ CFS}$
 $Q_2 = Q_{50} + Q_{FF} \text{ MAX} + Q_{BF} \text{ MAX} = 0.11 \text{ CFS}$

SUMMARY OF REQUIRED STANDPIPE HOLES:

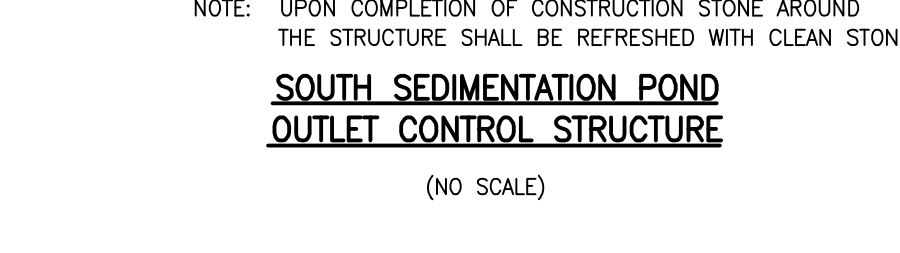
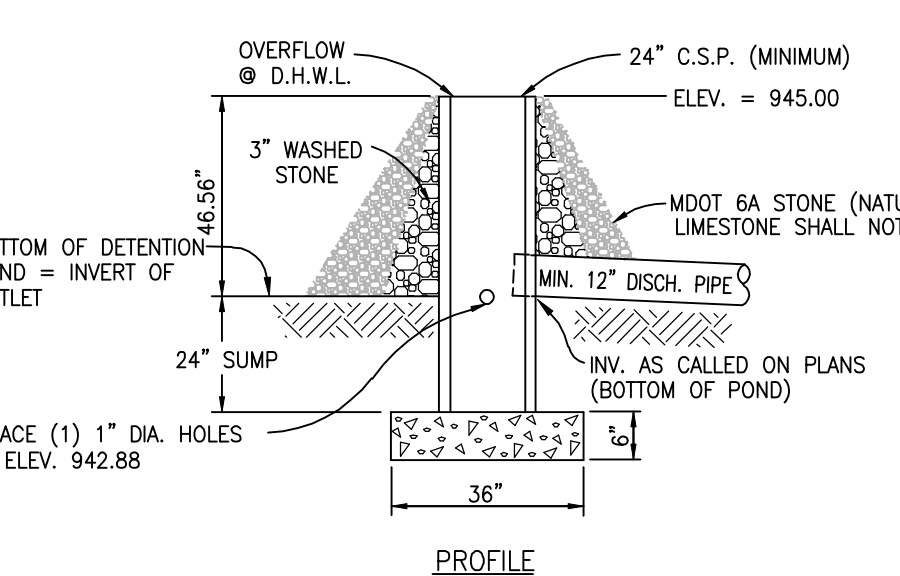
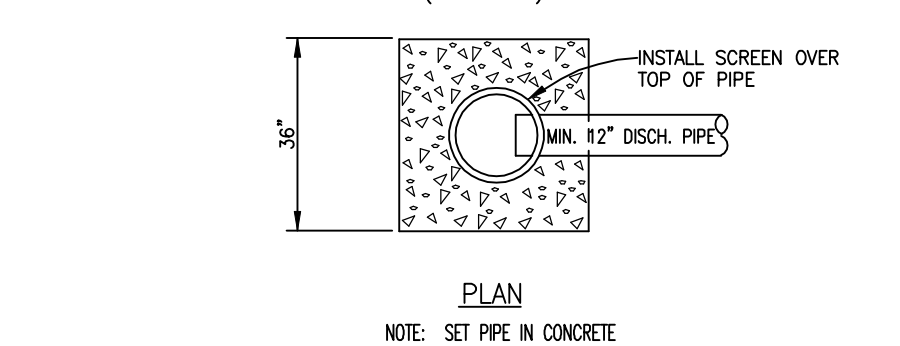
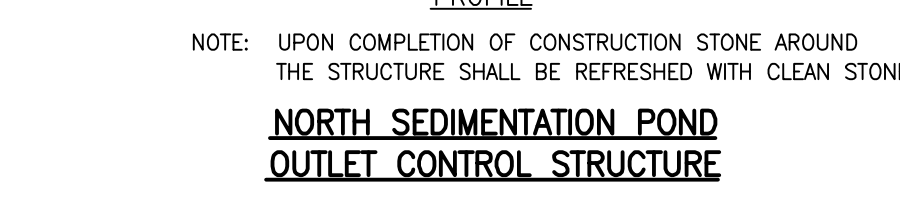
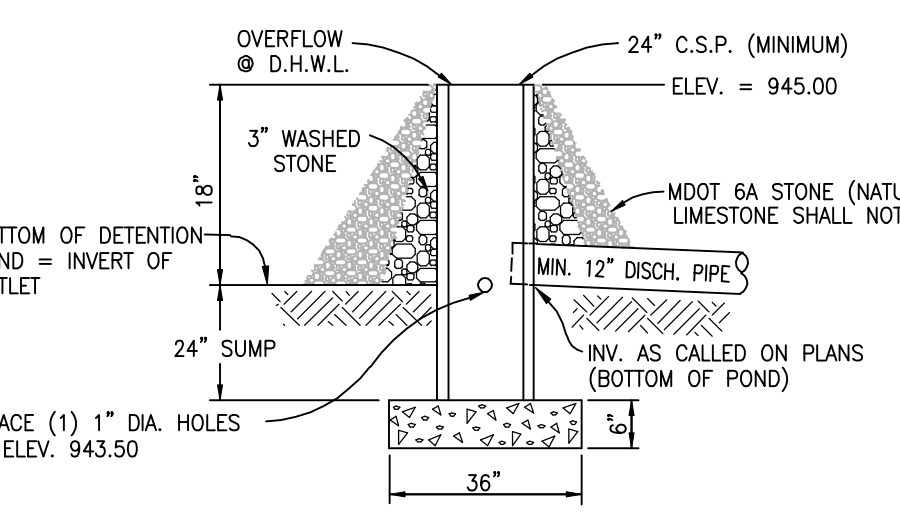
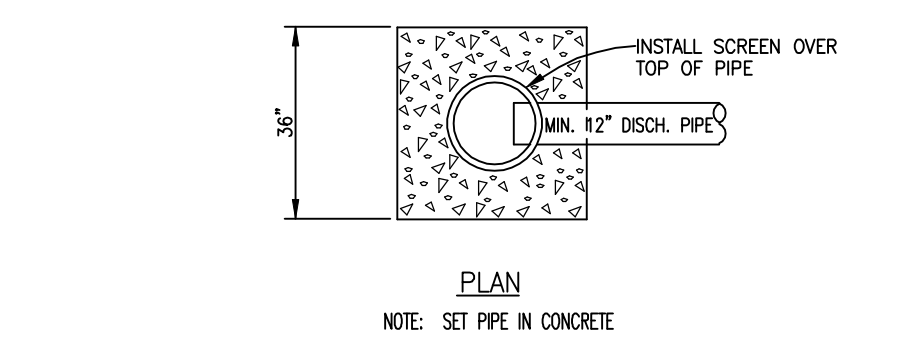
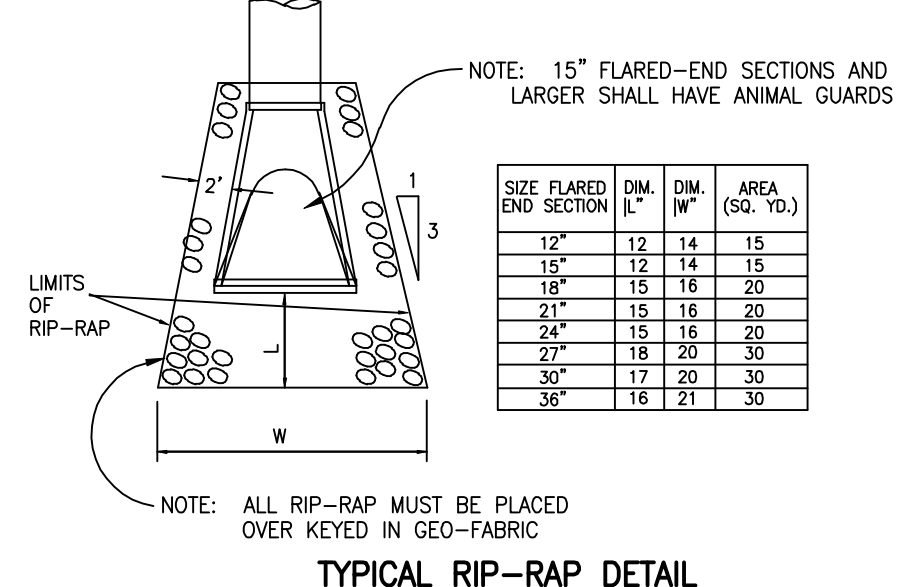
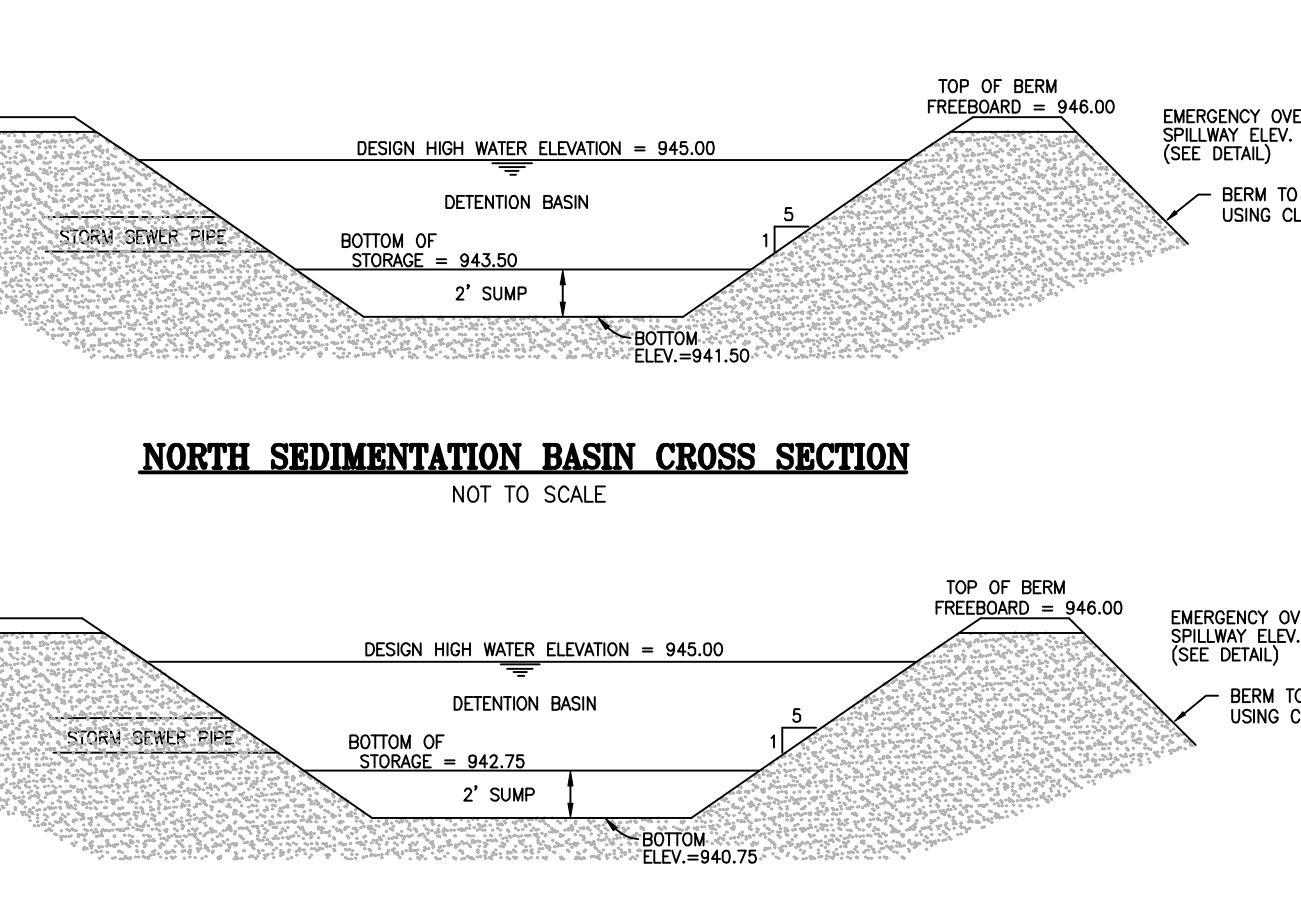
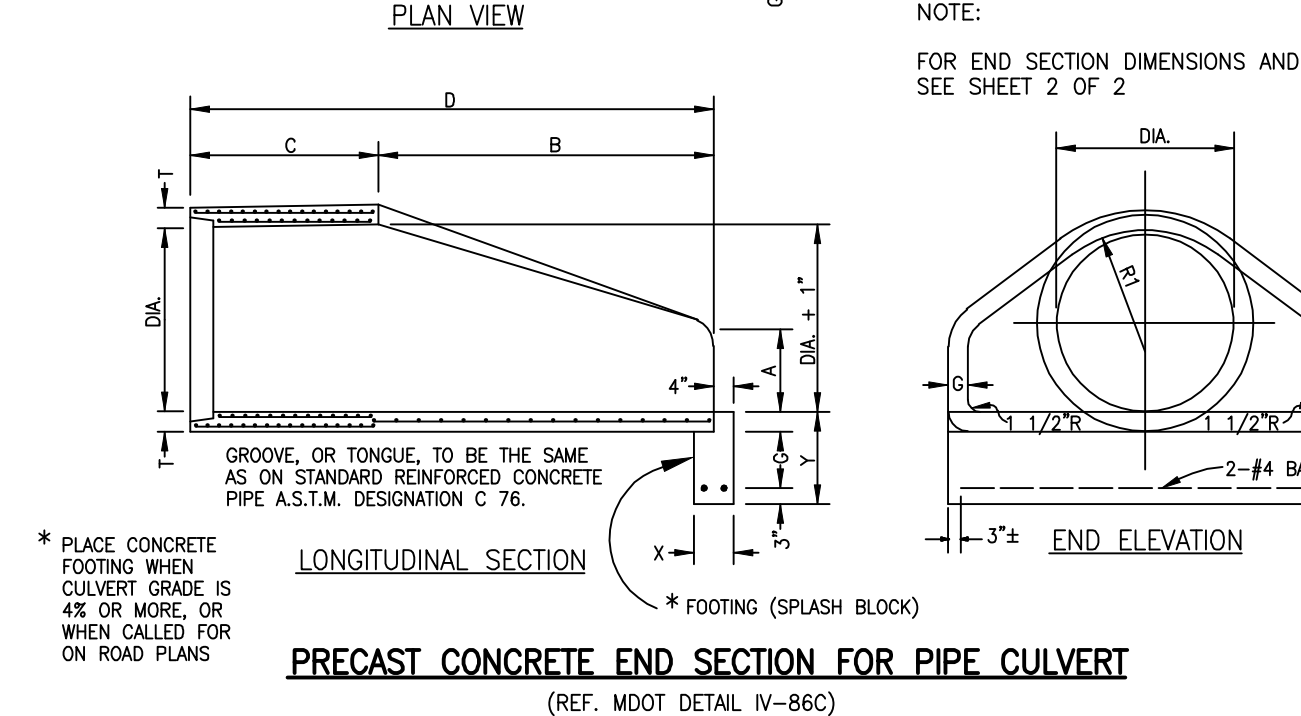
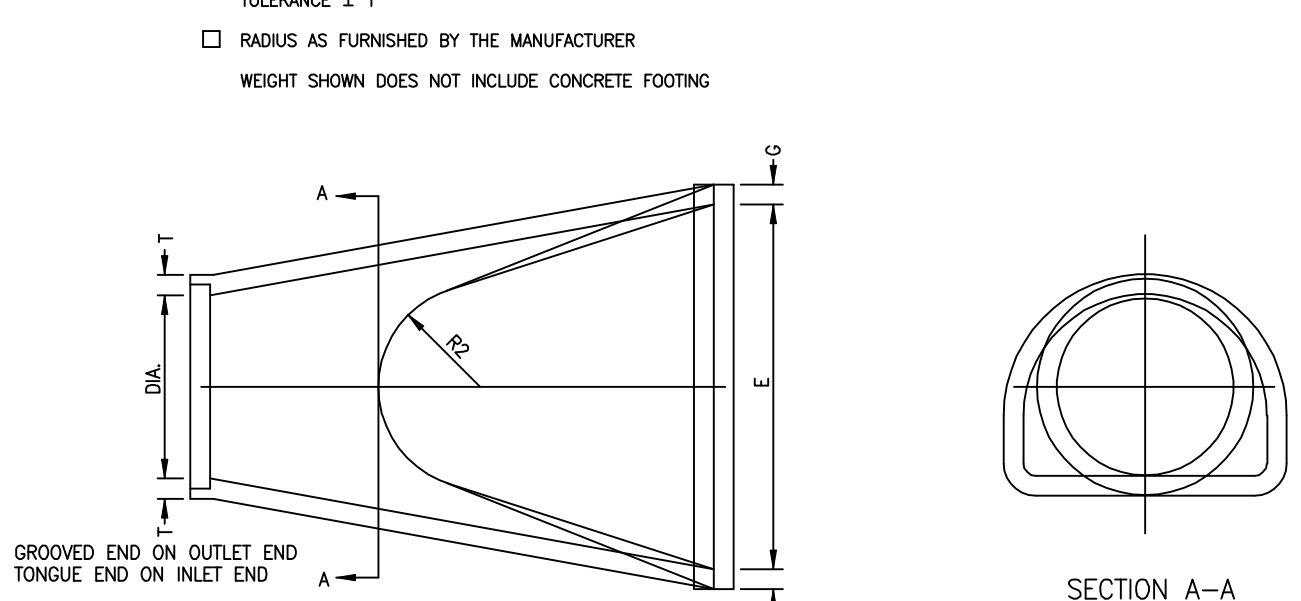
ELEVATION	# OF HOLES	DIAMETER OF HOLES
944.34	3	1 INCHES
942.75	1	1 INCHES

STORM SEWER DESIGN COMPUTATIONS

PROJECT: SEASIDE SEAWALLS, LLC DATE: 4/21/2016
 LOCATION: LIVINGSTON COUNTY DESIGNER: KS

FROM	TO	DRAIN AREA	AREA IMPERV	AREA PERV	RUNOFF COEFF	EQUIV. AREA A * C	INTEN-SITY I	TIME OF CONC. Tc	ADDD. RUNOFF Q	RUNOFF (CFS) Q	PIPE LENGTH (LF)	PIPE DIA. (IN)	VELOCITY FLOWING FULL (FPS)	HYDRAULIC GRADIENT SLOPE %	ACTUAL SLOPE USED	MANNING FLOW CAPACITY	MANNING'S VELOCITY (FT/SEC)	HG ELEV UPPER END	HG ELEV LOWER END	RIM ELEV UPPER END	INVERT UPPER END	INVERT LOWER END	DROP DISTANCE (FT)	RIM-INV	RIM-HG	PIPE COVER
OCS02	ES01			0.00	0.00	0.00	4.38	15.00	0.12	47	12	1.20	0.07%	0.32%	2.02	2.57	0.30	943.68	943.53	945.00	942.88	942.73	2.12	1.32	1.12	
OCS04	ES03			0.00	0.00	0.00	4.38	15.00	0.06	56	12	1.20	0.07%	0.32%	2.02	2.57	0.36	944.30	944.12	945.00	943.50	943.32	1.50	0.70	0.50	
ES06	ES05	C	0.31	0.08	0.23	0.38	0.12	4.38	0.30	0.82	90	12	2.06	0.20%	0.32%	2.02	2.57	0.58	944.99	944.70	946.51	944.19	943.90	2.32	1.52	1.32
ES08	ES07	D	0.18	0.05	0.14	0.37	0.07	4.38	0.30	0.90	12	1.54	0.12%	0.32%	2.02	2.57	0.58	946.94	946.65	948.41	946.14	945.85	2.27	1.47	1.27	
DS	CO10	F	0.11	0.11	0.00	0.90	0.10	4.38	0.42	1.24	8	2.69	0.60%	1.00%	1.21	3.47	0.60	945.76	944.52	947.95	945.23	943.99	2.72	2.19	2.05	
CO10	ES09				0.00	0.00	4.31	15.60	0.42	49	8	2.69	0.60%	1.00%	1.21	3.47	0.24	944.52	944.03	947.90	943.99	943.50	3.91	3.38	3.24	
DS	CO13	E	0.11	0.11	0.00	0.90	0.10	4.38	0.42	1.27	8	2.69	0.60%	1.00%	1.21	3.47	0.61	945.74	944.47	947.90	945.21	943.94	2.69	2.16	2.02	
CO13	CO12				0.00	0.00	4.31	15.61	0.42	61	8	2.69	0.60%	1.00%	1.21	3.47	0.29	945.47	943.86	947.90	943.94	943.33	3.96	3.43	3.29	
CO12	ES11				1.00	0.00	4.28	15.90	0.42	58	8	2.69	0.60%	1.00%	1.21	3.47	0.28	943.86	943.28	947.75	943.33	942.75	4.42	3.89	3.75	

DIA.	T(MIN)	A(MIN.)	B*	C*	D*	E*	G	R1	R2	X	Y	APPROX. WT. LBS.
12"	2"	5"	23"	51"	74"	24"	2"	10-1/8"	9"	8"	18"	800
15"	2-1/4"	7"	27"	48"	75"	30"	2"	2-1/4"	12-1/2"	11"	8"	1100
18"	2-1/2"	11"	29"	49"	74"	36"	2-1/2"	15-1/2"	12"	8"	1300	
21"	2-3/4"	11"	33"	42"	75"	42"	2-3/4"	16-1/8"	13"	8"	1500	
24"	3"	12"	43"	32"	75"	48"	3"	16-3/16"	14"	8"	1800	
30"	3-1/2"	14"	53"	22"	75"	60"	3-1/2"	18-1/2"	15"	8"	2400	
36"	4"	17"	62"	39"	99"	72"	4"	24-5/16"	20"	8"	4200	
42"	4-1/2"	22"	62"	37"	99"	78"	4-1/2"	27-1/2"	22"	10"	24"	5600
48"	5"	24"	72"	26"	98"	84"	5"	28-1/2"	22"	10"	24"	7400
54"	5-1/2"	27"	65"	33-1/4"	98-1/4"	100"	90"	5"	30"	10"	24"	8040
60"	6"	30"	60"	39"	99"	96"	6"	30"	12"	24"	8730	
66"	6-1/2"	24"	72"-78"	21"-27"	99"	102"	5-1/2"	0"	12"	24"	10,630	
72"	7"	24"	78"	21"	99"	108"	6"	0"	12"	24"	12,250	
78"	7-1/2"	24"	78"	21"	99"	114"	6-1/2"	0"	12"	24"	14,430	
84"	8"	36"	90-1/2"	21"	111-1/2"	120"	6-1/2"	0"	12"	24"	18,160	



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SEASIDE SEAWALLS, LLC
SEASIDE SEAWALLS, LLC
 9868 EAST GRAND RIVER, SUITE 110-225
 BRIGHTON, MI 48116
 (248) 207-1894

STORM SEWER CALCULATIONS

PROJECT: SEASIDE SEAWALLS, LLC
 PREPARED FOR: LIVINGSTON COUNTY
 TITLE: STORM SEWER CALCULATIONS
 DATE: 05/25/16
 DESIGNED BY: KS
 DRAWN BY: KS
 CHECKED BY:
 SCALE:
 JOB NO. 16-049
 DATE: 03/30/16
 SHEET NO. 6

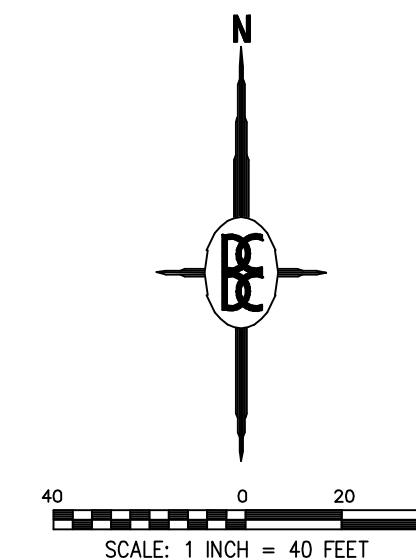
LANDSCAPE SUMMARY

Location	Ordinance Requirement	Landscaping Required	Proposed
Front Yard Greenbelt (660 ft.)	20' width 1 canopy tree every 40'	17 canopy trees required	50' width 17 canopy trees
Parking Lot (18 Spaces)	1 tree & 100 SF landscaped area per 10 spaces	2 canopy trees and 180 SF landscaping. 1 tree must be interior parking lot.	2 canopy trees 190 SF landscaping

NOTE
ADDITIONAL LANDSCAPING AND EXISTING VEGETATION WITHIN WETLAND USED FOR SCREENING PURPOSES OF SEDIMENTATION BASINS.

LEGEND

	PROPOSED (PR)		EXISTING (EX)
	SANITARY LEAD		SANITARY SEWER
	STORM SEWER		MANHOLE
	FLARED END-SECTION		MODIFIED CURB
	CONCRETE		ASPHALT
	FENCE		WETLAND BOUNDARY
	SEDIMENTATION BASIN		



PLANT LIST

KEY	QUAN.	BOTANICAL NAME	COMMON NAME	SIZE	REMARK
AC	6	Abies concolor	White Fir	6' Hgt	B&B
AG	5	Acer ginnala	Amur Maple	2.5" cal	B&B
AS	4	Acer saccharum 'Legacy'	Legacy Sugar Maple	2.5" cal	B&B
PG	6	Picea glauca 'Densata'	White Spruce	6' hgt	B&B
QR	12	Quercus robur 'Fastigiata'	Columnar English Oak	2.5" cal	B&B

EVERGREEN TREE PLANTING DETAIL
(NO SCALE)

DECIDUOUS TREE PLANTING DETAIL
(NO SCALE)

NOTE: SEE SHEET 10 FOR GENERAL LANDSCAPE NOTES

BENCHMARK INFORMATION: (U.S.G.S. DATUM)
BENCHMARK #3
NAIL IN WEST SIDE OF UTILITY POLE ON EAST SIDE OF VICTORY DRIVE ACROSS FROM ENTRANCE TO "BEST SELF STORAGE"
ELEVATION: 948.85
BENCHMARK #4
NAIL & TAG IN EAST SIDE OF UTILITY POLE ON EAST SIDE OF VICTORY DRIVE ON LOT 17, 75± SOUTH OF EAST-WEST DITCH
ELEVATION: 952.36

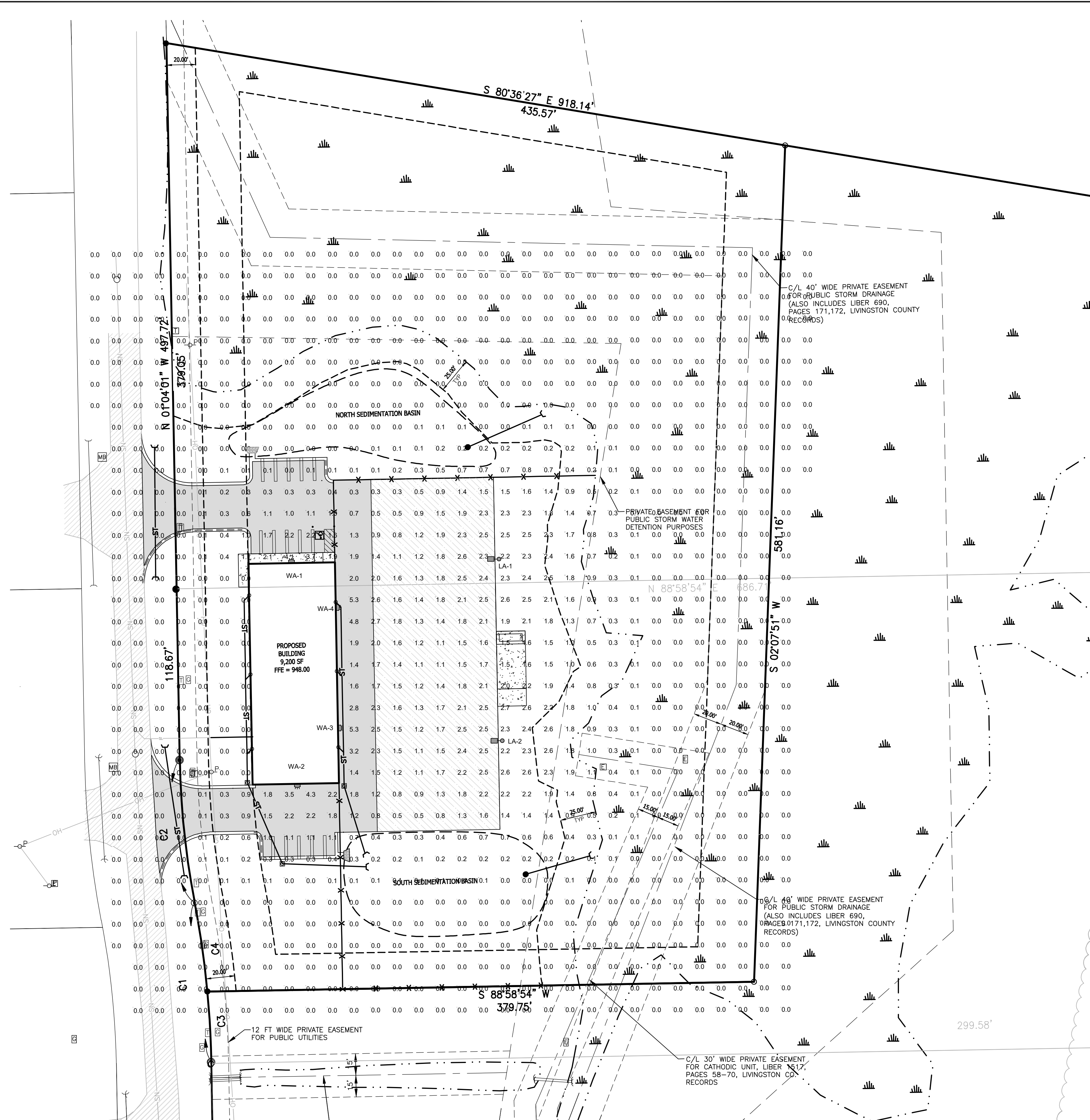
THE LOCATION AND ELEVATION OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS PLAN ARE BASED ON RECORD DRAWINGS, FIELD SURVEY, AND OTHER INFORMATION PROVIDED TO THE ENGINEER. THE ENGINEER HAS NOT BEEN ADVISED OF ANY CHANGES TO THE LOCATION OR DEPTH OF EXISTING UTILITIES SINCE THE DATE OF THE SURVEY. THE ENGINEER IS NOT RESPONSIBLE FOR THE LOCATION AND ELEVATION OF EXISTING UTILITIES AND PROPOSED UTILITIES. THE USER OF THIS PLAN SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND ELEVATION OF EXISTING UTILITIES AND PROPOSED UTILITIES PRIOR TO CONSTRUCTION. THE ENGINEER'S LIABILITY IS LIMITED TO THE PROFESSIONAL SERVICES RENDERED AND DOES NOT INCLUDE THE LOCATION OR DEPTH OF EXISTING UTILITIES UNLESS SPECIFICALLY NOTED ON THE PLANS.

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SEASIDE SEAWALLS, LLC
SEASIDE SEAWALLS, LLC
9868 EAST GRAND RIVER, SUITE 110-225
BRIGHTON, MI 48116
(248) 207-1884

PROJECT	PREPARED FOR	TITLE
		LANDSCAPE PLAN
DESIGNED BY:	DRAWN BY:	CHECKED BY:
	GAW	
SCALE	JOB NO.	DATE
1" = 40'	16-049	03/30/16
		SHEET NO.
		7



LEGEND

EXISTING	PROPOSED	DESCRIPTION
(Symbol)	(Symbol)	SINGLE BOX
(Symbol)	(Symbol)	SINGLE BOX 2
(Symbol)	(Symbol)	SINGLE BOX FORWARD THROW
(Symbol)	(Symbol)	DOUBLE BOX
(Symbol)	(Symbol)	DOUBLE BOX FORWARD THROW
(Symbol)	(Symbol)	GROUND LIGHT
(Symbol)	(Symbol)	POLE FIXTURE
(Symbol)	(Symbol)	POLE / CANOPY FIXTURE
(Symbol)	(Symbol)	WALL FIXTURE
(Symbol)	(Symbol)	WALL FIXTURE
(Symbol)	(Symbol)	WALL FIXTURE
(Symbol)	(Symbol)	WALL FIXTURE
(Symbol)	(Symbol)	FOOT CANDLES ON SITE

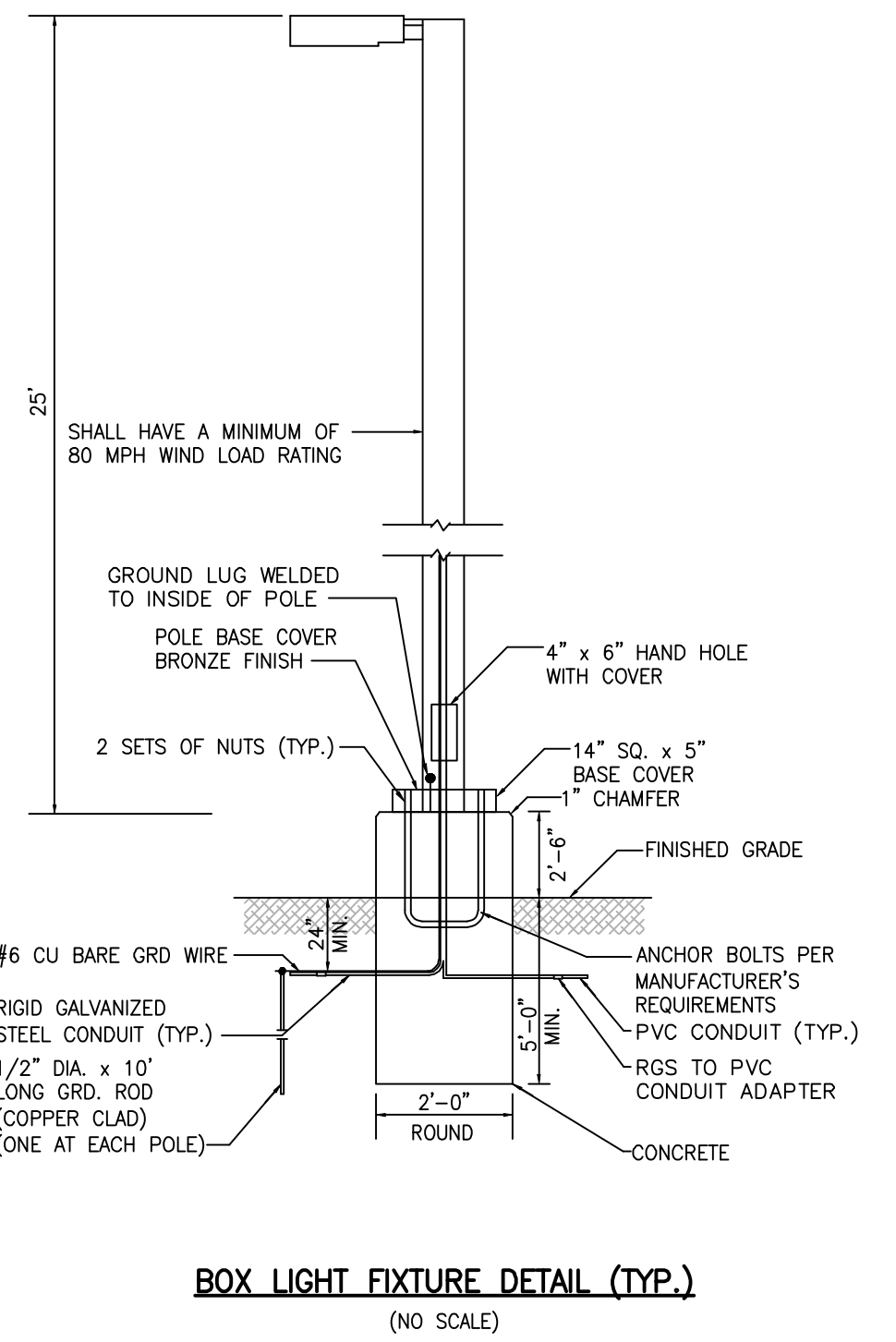
- MUNICIPAL REQUIREMENTS**
1. MAXIMUM 0.5 FOOTCANDLE AT RESIDENTIAL LOT LINE.
 2. MAXIMUM 1.0 FOOTCANDLE AT NON-RESIDENTIAL LOT LINE.
 3. MAXIMUM 20 FT. HT. ADJACENT TO RESIDENTIAL
 4. MAXIMUM 30 FT. HT. ADJACENT TO NON-RESIDENTIAL

SITE LIGHTING SUMMARY

LIGHTING LEVELS ARE SHOWN IN FOOTCANDLES AT GRADE

MAX. LIGHT LEVEL AT THE PROPERTY LINE: 0.00 FC.
MIN. LIGHT LEVEL AT THE PROPERTY LINE: 0.00 FC.

- GENERAL LIGHTING NOTES**
1. THE LIGHTING PATTERN REPRESENTS ILLUMINATION LEVELS CALCULATED FROM LABORATORY DATA TAKEN UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY APPROVED METHODS. ACTUAL PERFORMANCE OF ANY MANUFACTURER'S LUMINAIRE MAY VARY DUE TO VARIATION IN ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS, AND OTHER VARIABLE FIELD CONDITIONS.
 2. ALL POLES ARE TO BE MOUNTED ON CONCRETE PEDESTALS 2' ABOVE GRADE IN PARKING LOTS AS SHOWN IN DETAIL.
 3. ALL POLES LOCATED OUTSIDE OF THE PARKING AREA SHALL BE LOCATED 3' FROM BACK OF CURB OR EDGE OF SIDEWALKS.
 4. SHOP DRAWINGS FOR THE ELECTRICAL WIRING OF THE POLES NEED TO BE SUBMITTED TO THE ENGINEER FOR COORDINATION OF UNDERGROUND CONDUIT AND APPROVAL OF LAYOUT.



LUMINAIRE SCHEDULE

SYMBOL	LABEL	QTY.	DESCRIPTION	CATALOG NUMBER	LAMP	FILE	LUMENS	LLF	POLE DESCRIPTION	POLE HEIGHT	BASE HEIGHT	TOTAL HEIGHT
LA	2	2	DSX2 LED W/2 LARGE & 2 SMALL LIGHT ENGINES, (2) 1050mA DRIVERS, 4000K LED, TYPE T5M OPTICS	LITHONIA #DSX2 LED 80C 1000 40K T5M MVOLT	LED	ABSOLUTE	.92			25'	2'-6"	27'-6"
WA	4	4	DSX1 LED WITH 3 LIGHT ENGINES, 30 LED'S, 1000mA DRIVER, 4000K LED, TYPE T4M OPTICS	LITHONIA #DSX1 LED 30C 1000 40K T4M MVOLT	LED	ABSOLUTE	.92			14'		14'

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

D-Series Size 2 LED Area Luminaire

Specifications

- KPA: 1.15
- Length: 42"
- Width: 15"
- Height: 7.34"
- Weight: 36.6lb

Introduction

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

The D-Series distills the benefits of the latest in LED technology into a high performance, high-efficiency, long-life luminaire. The outstanding photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. The Size 2 is ideal for replacing 400-500W metal halide in area lighting applications with energy savings of up to 50% and expected service life of over 100,000 hours.

Ordering Information

EXAMPLE: DSX2 LED 80C 1000 40K T4M MVOLT SPA DDBXD

Series	LED	Color	Temp	Beam	Optics	Mount	Accessories
DSX2 LED	80C	1000	40K	T4M	MVOLT	SPA	DDBXD

Controls & Shields

DSX2 LED luminaire is shipped with a 14' pole. Pole height may be adjusted to 14', 20', 25', 30', 35', 40', 45', 50', 55', 60', 65', 70', 75', 80', 85', 90', 95', 100', 105', 110', 115', 120', 125', 130', 135', 140', 145', 150', 155', 160', 165', 170', 175', 180', 185', 190', 195', 200', 205', 210', 215', 220', 225', 230', 235', 240', 245', 250', 255', 260', 265', 270', 275', 280', 285', 290', 295', 300', 305', 310', 315', 320', 325', 330', 335', 340', 345', 350', 355', 360', 365', 370', 375', 380', 385', 390', 395', 400', 405', 410', 415', 420', 425', 430', 435', 440', 445', 450', 455', 460', 465', 470', 475', 480', 485', 490', 495', 500', 505', 510', 515', 520', 525', 530', 535', 540', 545', 550', 555', 560', 565', 570', 575', 580', 585', 590', 595', 600', 605', 610', 615', 620', 625', 630', 635', 640', 645', 650', 655', 660', 665', 670', 675', 680', 685', 690', 695', 700', 705', 710', 715', 720', 725', 730', 735', 740', 745', 750', 755', 760', 765', 770', 775', 780', 785', 790', 795', 800', 805', 810', 815', 820', 825', 830', 835', 840', 845', 850', 855', 860', 865', 870', 875', 880', 885', 890', 895', 900', 905', 910', 915', 920', 925', 930', 935', 940', 945', 950', 955', 960', 965', 970', 975', 980', 985', 990', 995', 1000'.

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SEASIDE SEAWALLS, LLC

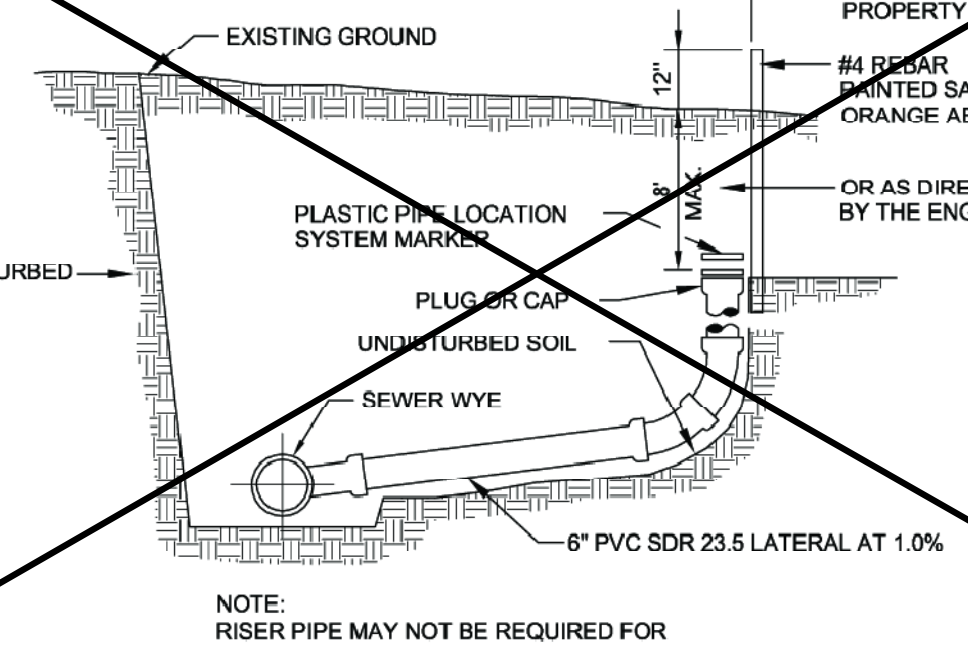
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9868 EAST GRAND RIVER, SUITE 110-225
BRIGHTON, MI 48116
(248) 207-1884

SITE LIGHTING PLAN

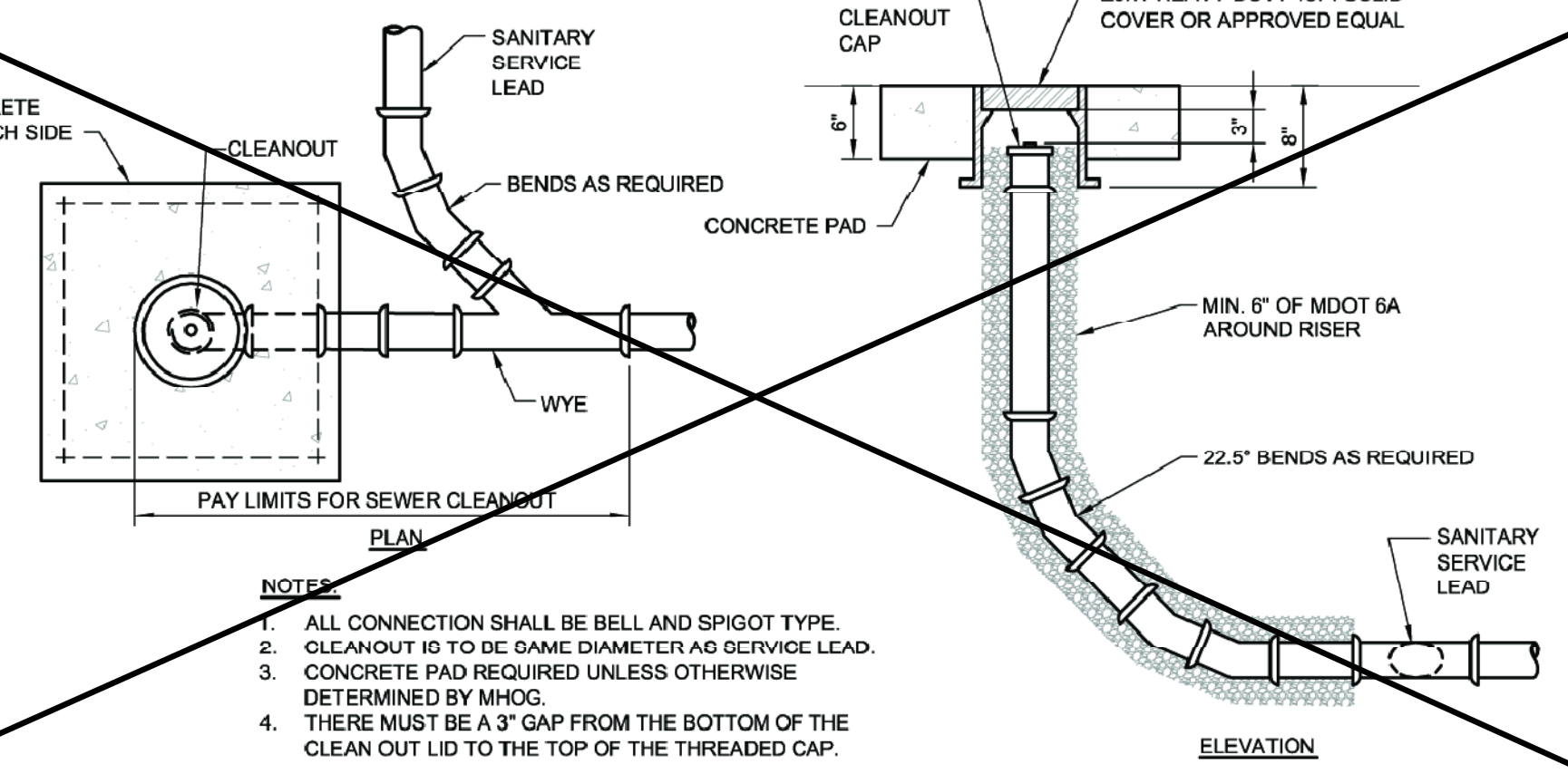
PROJECT	DATE
3121 E. GRAND RIVER AVE.	05/25/16

NO.	BY	DATE	REVISION
1	KS	05/25/16	GENOA TOWNSHIP PER

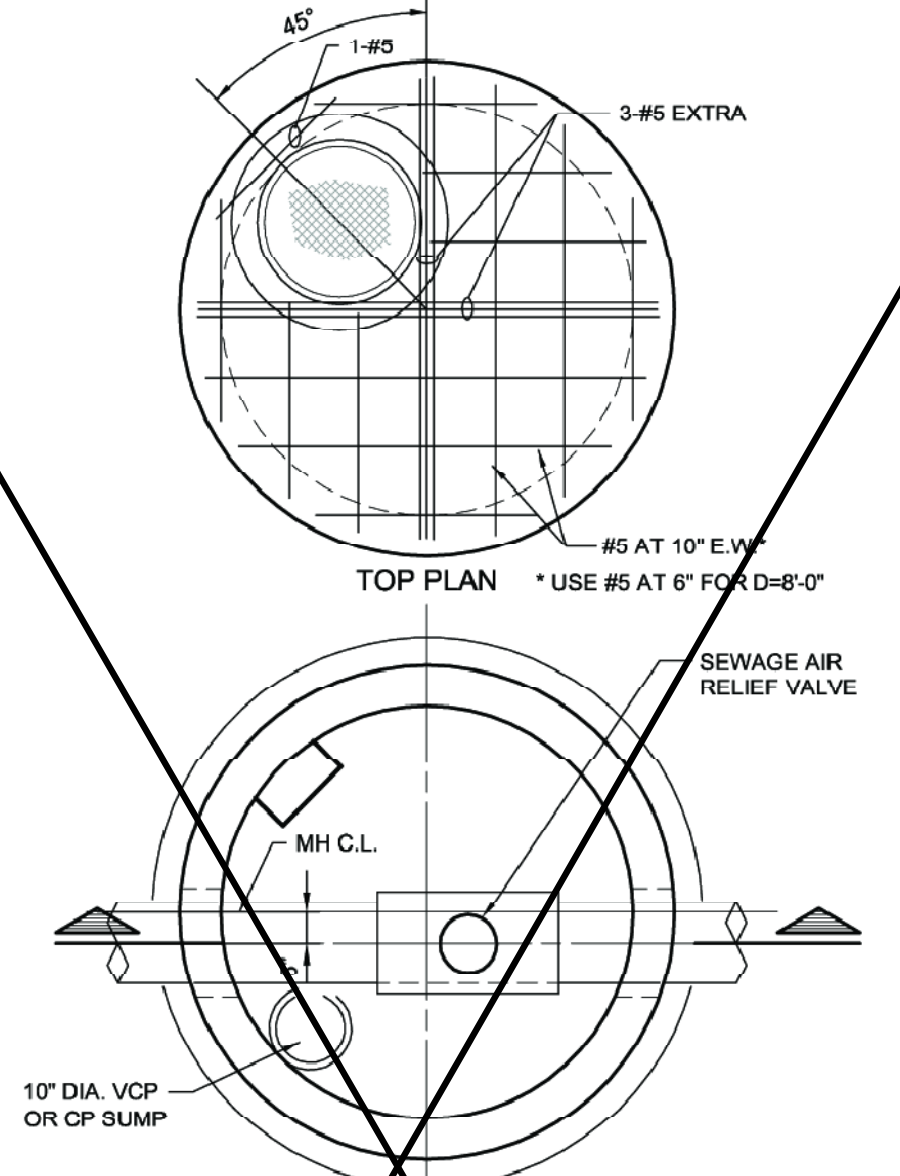
DESIGNED BY: GAW
CHECKED BY:
SCALE: 1" = 40'
JOB NO. 16-049
DATE 03/30/16
SHEET NO. 8



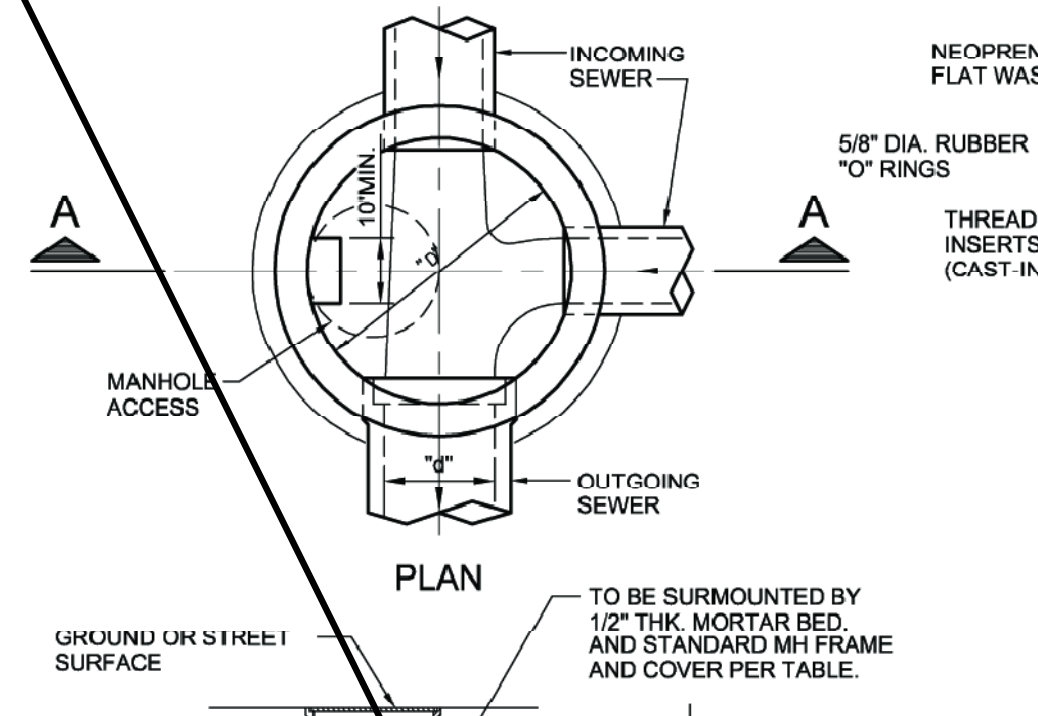
SANITARY SEWER LATERAL



SEWER CLEANOUT DETAIL

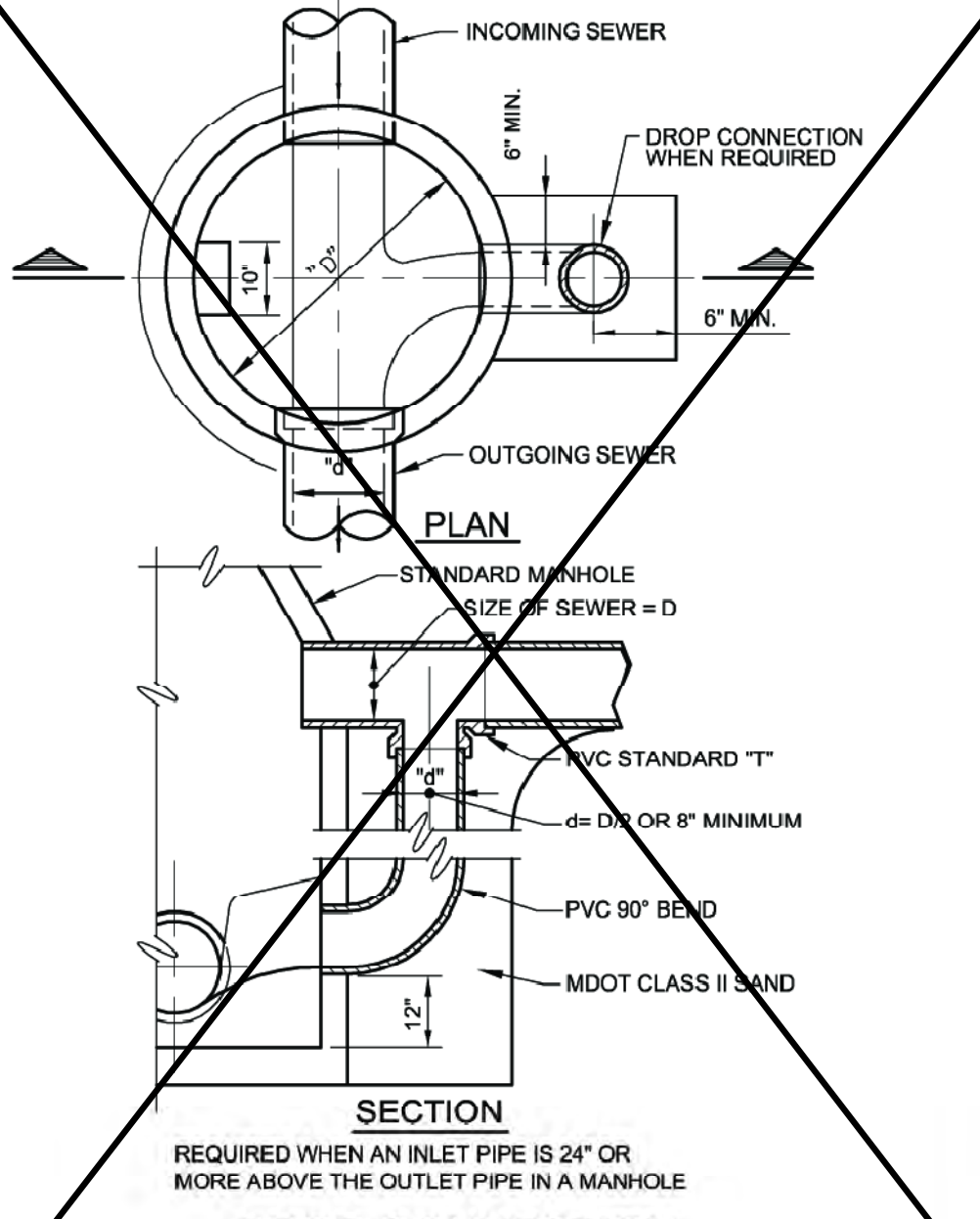


AIR RELIEF STRUCTURE

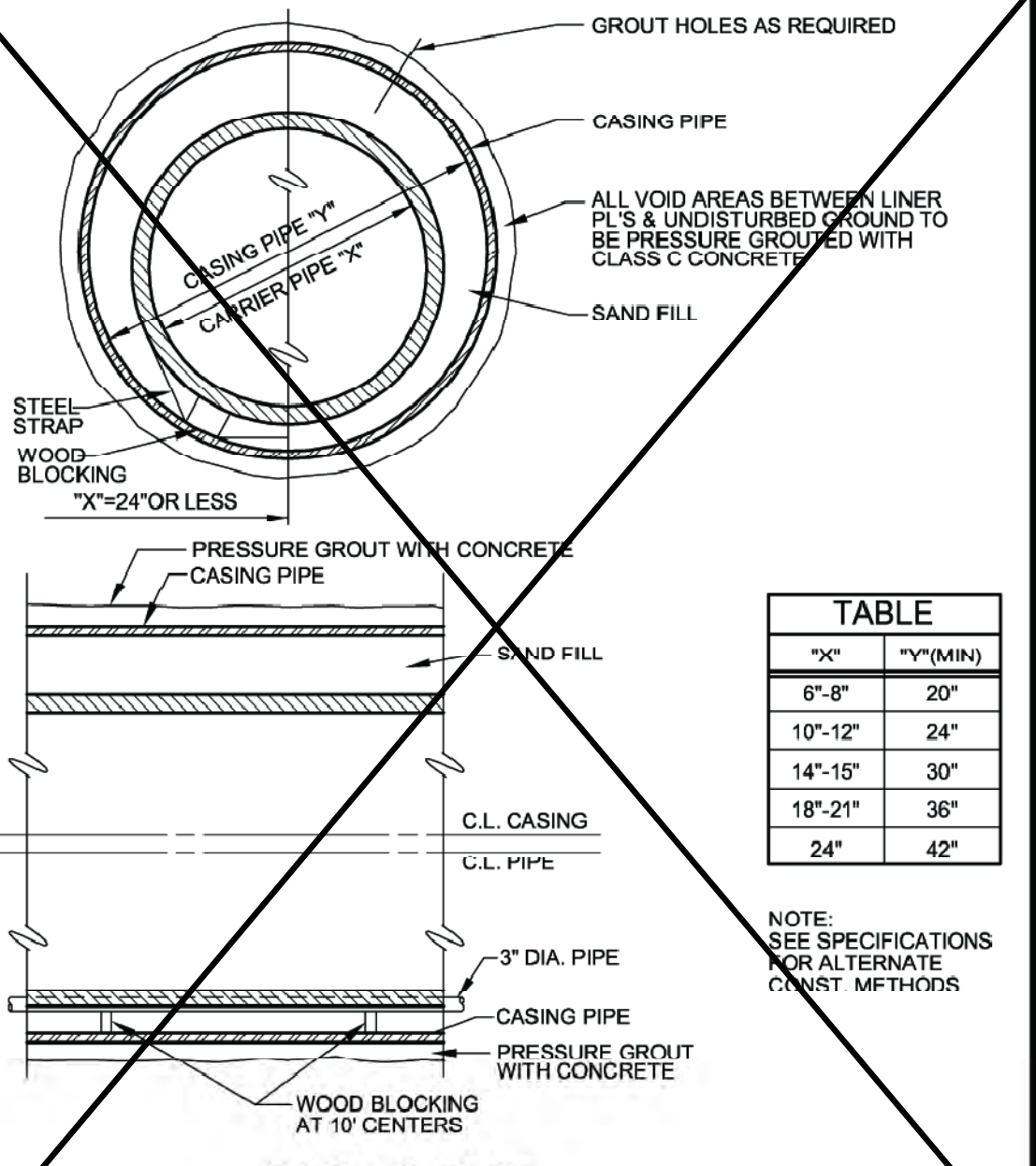


WATERTIGHT COVER ANCHORAGE

PIPE SIZE ("d")	D
8"-24"	48"
27"-36"	60"
42"-48"	72"
54"	84"

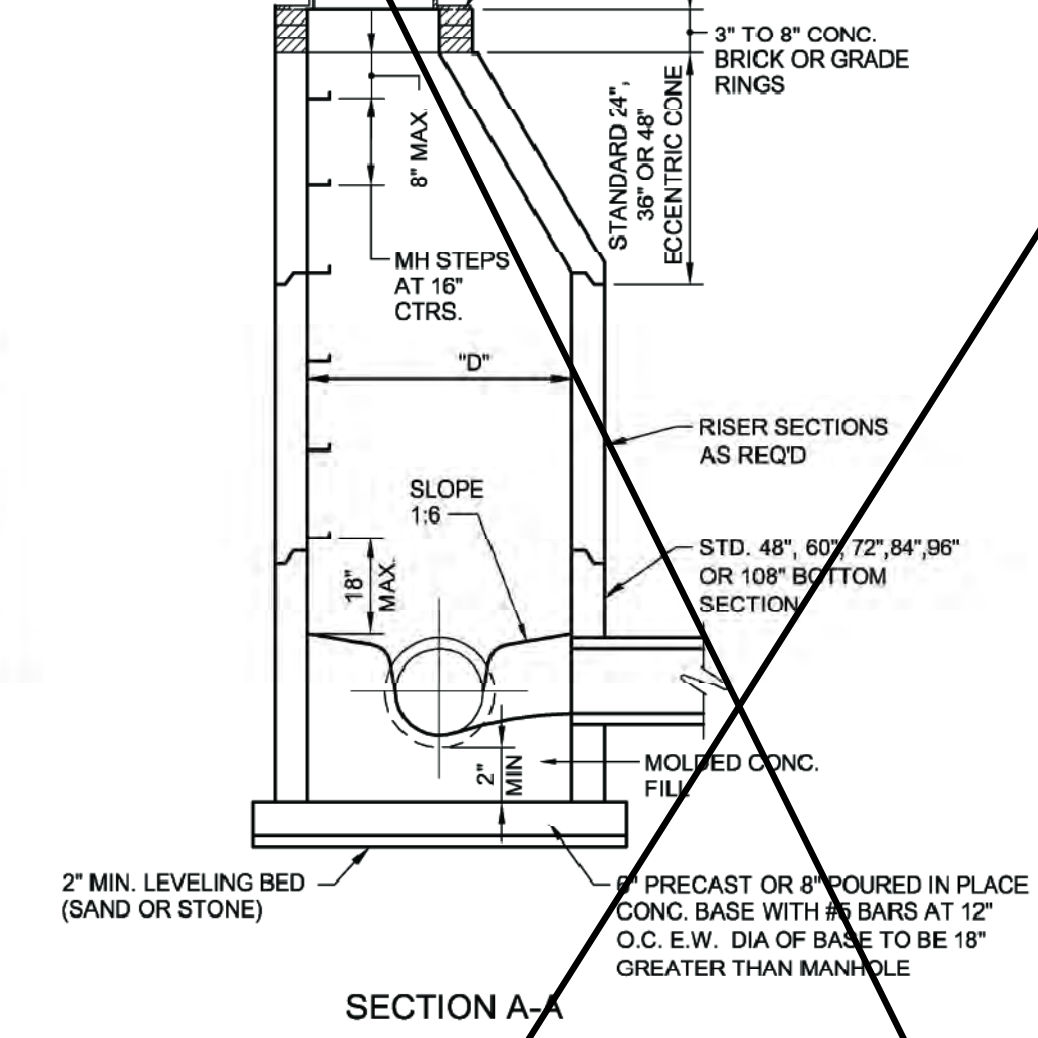


DROP CONNECTION



CASING PIPE

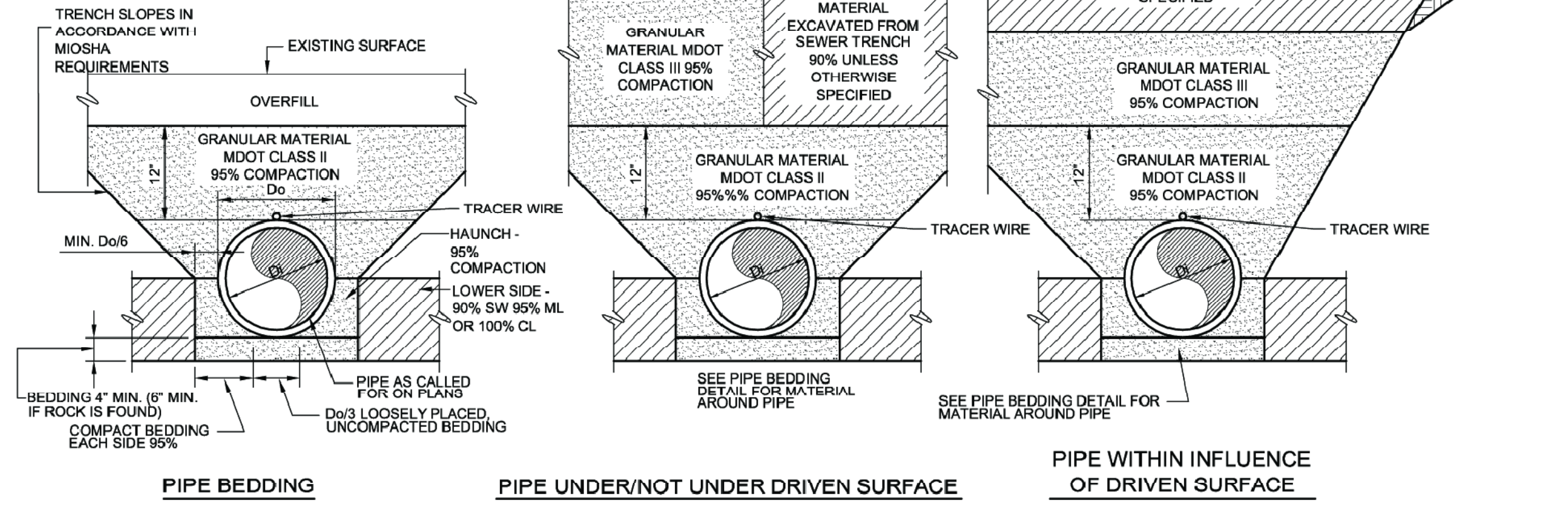
"x"	"y"(MIN)
6"-8"	20"
10"-12"	24"
14"-15"	30"
18"-21"	36"
24"	42"



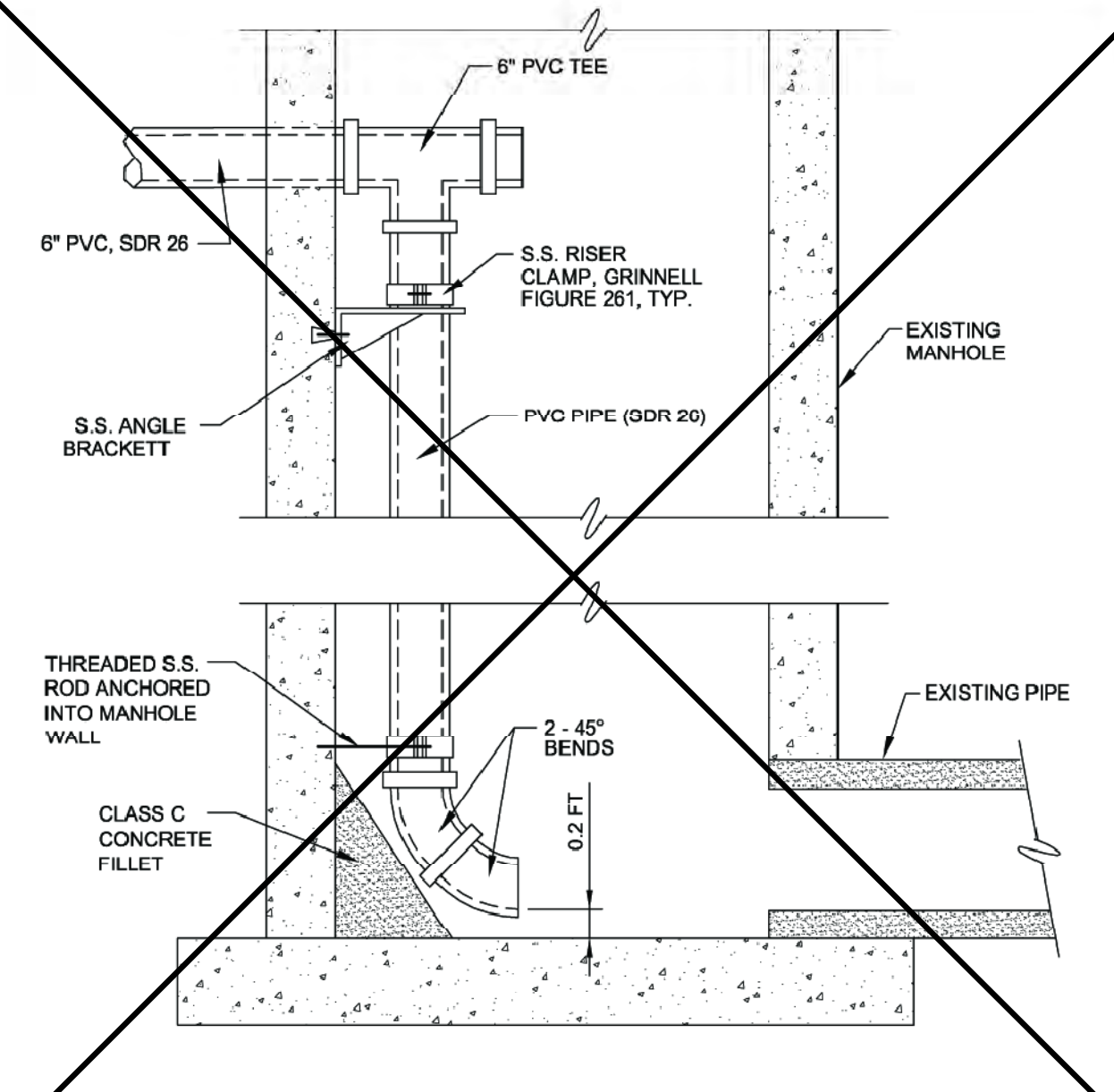
STANDARD MANHOLE

FRAME & COVER FOR SANITARY SEWER MANHOLES		MANUFACTURER OR EQUAL	
TYPE	TYPE OF COVER	EAST JORDAN	NEENAH
MH	SANITARY - SOLID SELF-SEALING	1040.0000	R-1642
MH	SANITARY - SOLID WATERTIGHT	1040-APT	R-1916-F
CO	SOLID	1574A	R-1973-A

- NOTES:
1. COMPACTION PRESENTED AS MINIMUM STANDARD PROCTOR VALUES.
 2. MATERIALS AROUND THE PLASTIC PIPE WITH DIAMETER < 6 INCHES SHALL PASS 0.5 INCH SIEVE, MATERIALS AROUND OTHER PIPES SHALL PASS 1.6 INCH SIEVE.
 3. MATERIALS AROUND HDPE PIPE TO BE MDOT 6A OR 21AA.
 4. DRIVEN SURFACE IS DRIVEWAY, PARKING AREA, ROAD BED OR SHOULDER.
 5. UTILITY TRENCHES LOCATED WITHIN A MDOT ROW SHALL CONFORM TO MDOT STANDARD DETAIL R-83.
 6. TRACER WIRE IS REQUIRED ON FORCE MAIN ONLY AND SHALL BE BROUGHT TO GRADE AT A MINIMUM EVERY 100 FEET IN AN APPROVED CAST IRON TRACER WIRE BOX ENCASED IN CONCRETE OR WITH AN APPROVED GREEN MARKER POST.



TRENCH EXCAVATION & PIPE BEDDING



INTERIOR SEWER LATERAL DROP CONNECTION



GENOA OCEOLA
Sewer and Water Authority

Scale: NONE
Issued Date: JANUARY - 2014

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SEASIDE SEAWALLS, LLC
SEASIDE SEAWALLS, LLC
9868 EAST GRAND RIVER, SUITE 110-225
BRIGHTON, MI 48116
(248) 207-1984

PROJECT: _____
PREPARED FOR: _____
DATE: 05/25/16
JOB NO. 16-049
DATE 03/30/16
SHEET NO. 9

LIVINGSTON COUNTY SOIL EROSION PERMIT TEMPLATE

TEMPORARY CONTROLS AND SEQUENCE

- NOTIFY LIVINGSTON COUNTY DRAIN COMMISSIONER'S OFFICE 24 HOURS PRIOR TO START OF GRADE WORK.
- IN ACCORDANCE WITH PUBLIC ACT NO. 53, OF 1974 THE PERMIT HOLDER SHALL CALL MISS DIG FOR STAKING AND LOCATING OF UTILITIES, AT LEAST 72 HOURS IN ADVANCE OF THE START OF ANY WORK.
- PERMITTING STANDARDS
 - 36" M.D.O.T SPECIFICATION TYPE SILT FABRIC FENCE AS SHOWN ON PLANS SHALL BE PLACED AND MAINTAINED ALONG PERIMETER ON ALL LOW LYING AREAS OF THE CONSTRUCTION SITE TO FILTER RUNOFF BEFORE LEAVING PROJECT SITE.
 - ALL TEMPORARY EROSION CONTROL DEVICES AS NOTED ON PLANS SHALL BE INSTALLED PRIOR TO THE START OF MASSIVE EARTH DISTRIBUTION.
 - PLAN DOES DENOTE A DETAILED EROSION CONTROL DEVICE TO RESTRICT TRACKING OF MATERIAL ONTO THE HIGHWAY. STONE DIAPERS SHALL BE INSTALLED AT ALL INGRESS/EGRESS AREAS OF THE SITE PRIOR TO THE START OF MASSIVE EARTH DISRUPTION. DIAPERS SHALL BE OF CRUSHED STONE AND SHALL HAVE A MINIMUM LENGTH OF 100' LINEAL FEET.
 - SLOPES
 - SLOPES IN EXCESS OF 3 HORIZONTAL TO 1 VERTICAL SHALL NOT BE USED EXCEPT WITH A MECHANICAL DEVICE SUCH AS A RETAINING WALL, TERRACING, OR OTHER PRIOR APPROVED DEVICE.
 - STORM DRAINS
 - ALL STORM WATER STRUCTURES, CATCH BASINS AND/OR MANHOLES, IF BLOCK, SHALL BE PLASTERED ON BOTH THE INSIDE AND OUTSIDE OF THE STRUCTURES. GROUTING AND POINTING WILL BE NECESSARY AT THE CASTING AND STRUCTURE JOINT TO PREVENT LEAKAGE AND THE RESULTING SOIL MOVEMENT, AROUND THE STRUCTURE.
 - STORM WATER INLETS SHALL HAVE AS A TEMPORARY CONTROL A STRAW BALE BARRIER AND STONE FILTER INSTALLED AROUND THE INLET DURING CONSTRUCTION. AS AN ALTERNATIVE TO THE STRAW BALE BARRIER, A BURLAP AND PEA STONE FILTER MAY BE USED. THREE LAYERS OF BURLAP FIBER AND A FILTER OF PEA STONE MINIMUM 1 FT. IN DEPTH CAN BE USED. DUE TO THE POROSITY OF THE BURLAP FILTER THE MINIMUM OF 1 FT. OF STONE IS VERY IMPORTANT. THE CONTROL SHALL BE INSTALLED AS SOON AS THE STRUCTURE IS BUILT AND INSPECTED DAILY.
 - BURLAP AND PEA STONE FILTERS WILL NEED TO BE CHANGED AFTER EACH RAINFALL.
 - COUNTY CODE REQUIRES A MINIMUM PIPE SIZE OF 12" IN DIAMETER. IF SMALLER PIPE IS NEEDED FOR OUTLET PURPOSES THE 12" CAN BE BAFFLED TO THE CORRECT SIZE. ALL PIPE SHALL MEET THE 12" DIAMETER CODE SIZE.
 - ALL STORM DRAINAGE PIPE 30" IN DIAMETER OR LARGER SHALL BE POINTED, AT THE JOINTS ON THE INSIDE WITH MORTAR, AFTER BACKFILLING.
 - IT WILL BE NECESSARY FOR THE DEVELOPER TO HAVE THE STORM DRAINAGE LINES CLEANED PRIOR TO FINAL INSPECTION BY THE LIVINGSTON COUNTY DRAIN COMMISSIONER'S OFFICE. IF REQUIRED, THIS WORK SHALL BE DONE BY A PROFESSIONAL SEWER CLEANING FIRM AND CERTIFIED IN WRITING BY THE PROJECT ENGINEER. ALL SUMPS AND TEMPORARY SILT TRAPS SHALL ALSO BE CLEANED AT THIS TIME.

- STABILIZATION
 - ALL UNIMPROVED DISTURBED AREAS SHALL BE RE-TOP SOILED, WITH A MINIMUM OF 3" OF MATERIAL, SEEDED, MULCHED AND TACKED WITHIN 15 DAYS OF THE COMPLETION OF THE MASSIVE EARTH DISRUPTION. IN THE NON-GROWING SEASON STRAW MATTING WILL SUFFICE. HYDROSEEDING WILL BE AN ACCEPTABLE ALTERNATE FOR MULCHING. EXTREME CARE SHOULD BE EXERCISED IN SPRING AND FALL PERIODS AS A FROST WILL BREAK THE BIND OF THE HYDROSEEDING, WHICH WILL AFFECT THE EFFECTIVENESS OF THIS PROCEDURE.
 - IN THE NON-GROWING SEASON, TEMPORARY STABILIZATION OF MASSIVELY EXPOSED AREAS FOR WINTER STABILIZATION SHALL BE DONE WITH STRAW MATTING.
 - PERMIT FEES DURING THE WINTER PERIOD OF NON-CONSTRUCTION, (DECEMBER 1 THROUGH MARCH 31), SHALL NOT BE IMPOSED IF THE PERMIT HOLDER TEMPORARILY STABILIZES THE EXPOSED AREAS WITH STRAW MATTING, AND OTHER APPROVED CONTROLS, AND OBTAINS A WINTER STABILIZATION CERTIFICATE FROM THIS OFFICE.
 - PERIODIC INSPECTIONS WILL BE MADE THROUGHOUT THE COURSE OF THE PROJECT. IT WILL BE THE RESPONSIBILITY OF THE MANAGERS OF THE PROJECT TO CONTACT THIS OFFICE FOR THE FINAL INSPECTION AT THE END OF THE PROJECT.
 - THIS COMMERCIAL PERMIT IS VALID FOR THE MASS EARTH MOVEMENT, THE INSTALLATION OF ROADS, DRAINS, AND UTILITIES AND IS NOT FOR ANY SINGLE FAMILY RESIDENCE. ALL RESIDENTIAL BUILDERS WILL NEED TO SECURE WAIVERS AND OR PERMITS AS NECESSARY FOR EACH LOT IN THIS DEVELOPMENT AT THE TIME APPLICATION FOR SINGLE FAMILY RESIDENCE IS MADE.
 - THE ISSUING BUILDING DEPARTMENT SHALL NOT ISSUE THE CERTIFICATE OF OCCUPANCY UNTIL THE FINAL INSPECTION LETTER FROM THE LIVINGSTON COUNTY DRAIN COMMISSIONER'S OFFICE HAS BEEN OBTAINED.
 - PER THE LIVINGSTON COUNTY DRAIN COMMISSIONER THE SEEDING, FERTILIZER AND MULCH MINIMUM QUANTITIES SHALL BE AS FOLLOWS:

TOP-SOIL	3" IN DEPTH
GRASS SEED	210 LBS. PER ACRE
FERTILIZER	150 LBS. PER ACRE
STRAW MULCH	3" IN DEPTH 1.5 TO 2 TONS PER ACRE (ALL MULCHING MUST HAVE A TIE DOWN, SUCH AS TACKIFIER, NET BINDING, ETC.)
 - HYDRO-SEEDING

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

GENERAL LANDSCAPE NOTES:

- ALL PLANT MATERIAL SHALL CONFORM TO THE REQUIREMENTS AND SPECIFICATIONS OF THE GOVERNING MUNICIPALITY AND SHALL BE NURSERY GROWN. ALL SIZES AND MEASUREMENTS SHALL CONFORM TO THE AMERICAN ASSOCIATION OF NURSERYMEN STANDARDS. ALL PLANT MATERIAL SHALL BE OF SELECTED SPECIMEN QUALITY AND HAVE A NORMAL HABIT OF GROWTH. ALL PLANT MATERIAL IS SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT.
- ALL PLANT MATERIALS SHALL BE BALLED AND BURLAPPED STOCK OR CONTAINER STOCK. NO BARE ROOT STOCK IS PERMITTED. ALL PLANT BALLS SHALL BE FIRM, INTACT AND SECURELY WRAPPED AND BOUND.
- ALL PLANT BEDS SHALL BE EXCAVATED OF ALL BUILDING MATERIALS AND OTHER EXTRANEOUS OBJECTS AND POOR SOILS TO A MINIMUM DEPTH OF 12 INCHES AND BACKFILLED TO GRADE WITH PLANTING MIX (SEE BELOW).
- PLANTING MIXTURE SHALL CONSIST OF 4 PARTS TOPSOIL FROM ON SITE, 1 PART PEAT, AND 5 POUNDS OF SUPERPHOSPHATE PER CUBIC YARD OF MIX. INGREDIENTS SHALL BE THOROUGHLY BLENDED TO A UNIFORM CONSISTENCY.
- ALL PLANT BEDS AND INDIVIDUAL PLANTS SHALL BE MULCHED WITH A 4 INCH LAYER OF SHREDDED BARK MULCH.
- ALL PLANTS AND PLANT BEDS SHALL BE THOROUGHLY WATERED UPON COMPLETION OF PLANTING AND STAKING OPERATIONS.
- THE CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIALS FOR A PERIOD OF 1 YEAR FROM THE DATE THE WORK IS ACCEPTED, IN WRITING, BY THE LANDSCAPE ARCHITECT. THE CONTRACTOR SHALL REPLACE, WITHOUT COST TO THE OWNER, WITHIN A SPECIFIED PERIOD TIME, ALL DEAD PLANTS, AND ALL PLANTS NOT IN A VIGOROUS, THRIVING CONDITION, AS DETERMINED BY THE LANDSCAPE ARCHITECT DURING AND AT THE END OF THE GUARANTEE PERIOD. REPLACEMENT STOCK SHALL CONFORM TO THE ORIGINAL REQUIREMENTS.
- EDGING, WHERE NOTED ON THE PLANS, SHALL BE BLACK ALUMINUM EDGING, 3/16" X 4". INSTALL PER MANUFACTURER'S INSTRUCTIONS. ALL EDGING SHALL BE INSTALLED IN STRAIGHT LINES OR SMOOTH CURVES WITHOUT IRREGULARITIES.
- SOD SHALL BE DENSE, WELL ROOTED TURF, FREE OF WEEDS. IT SHALL BE COMPRISED OF A BLEND OF AT LEAST TWO KENTUCKY BLUEGRASSES AND ONE FESCUE. IT SHALL HAVE A UNIFORM THICKNESS OF 3/4 INCH, AND CUT IN UNIFORM STRIPS NOT LESS THAN 10 INCHES BY 18 INCHES. SOD SHALL BE KEPT MOIST AND LAID WITHIN 36 HOURS AFTER CUTTING.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH A DENSE LAWN OF PERMANENT GRASSES, FREE OF LUMPS AND DEPRESSIONS. ALL SODDED AREAS THAT BROWN OUT OR HAVE NOT FIRMLY KNITTED TO THE SOIL BASE WITHIN A PERIOD OF ONE MONTH SHALL BE REPLACED BY THE CONTRACTOR, AT NO COST TO THE OWNER.

SEED MIXTURE SHALL BE AS FOLLOWS:

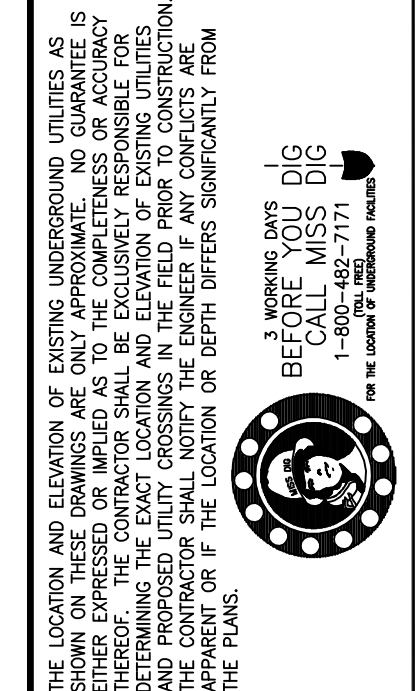
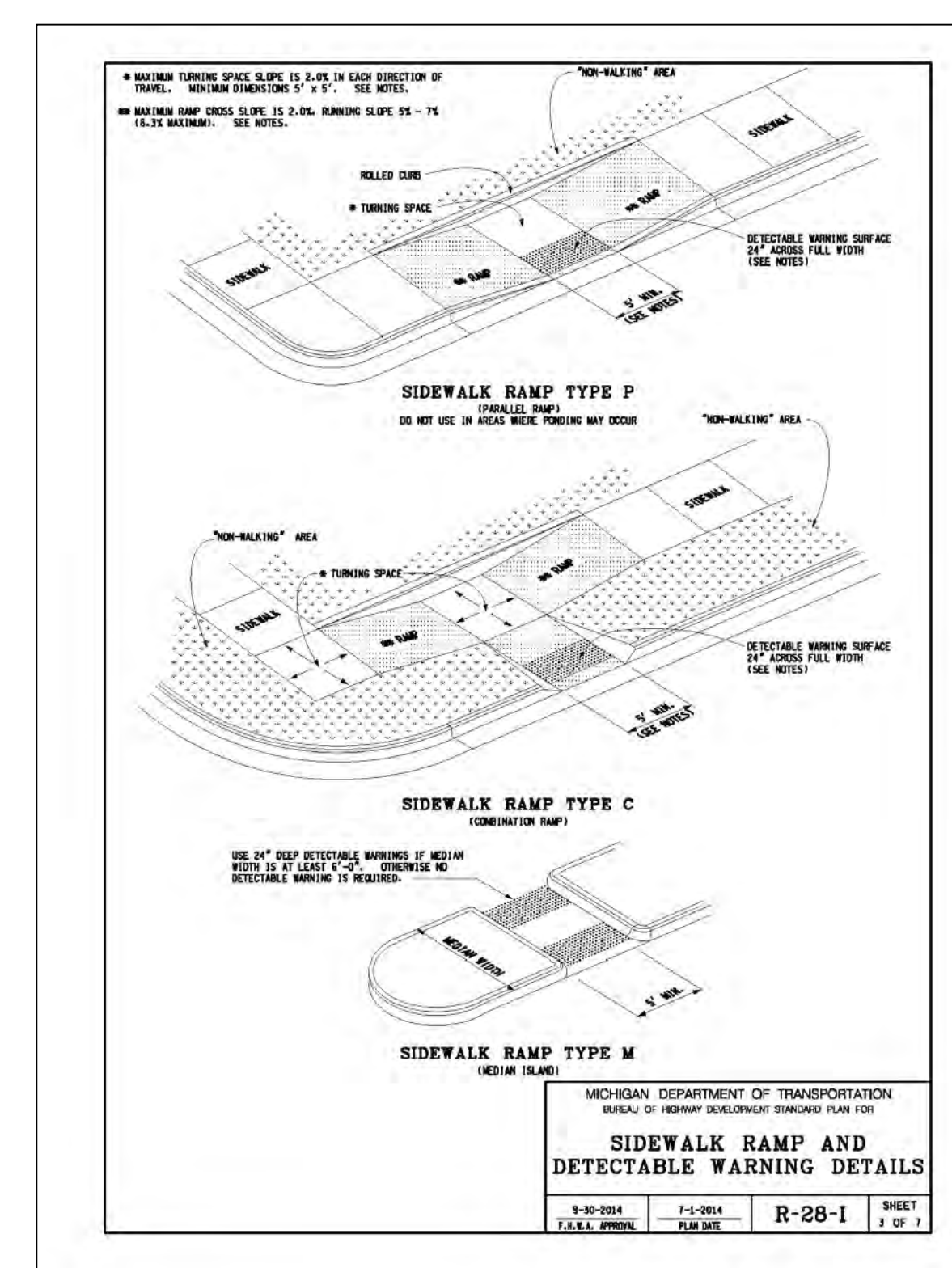
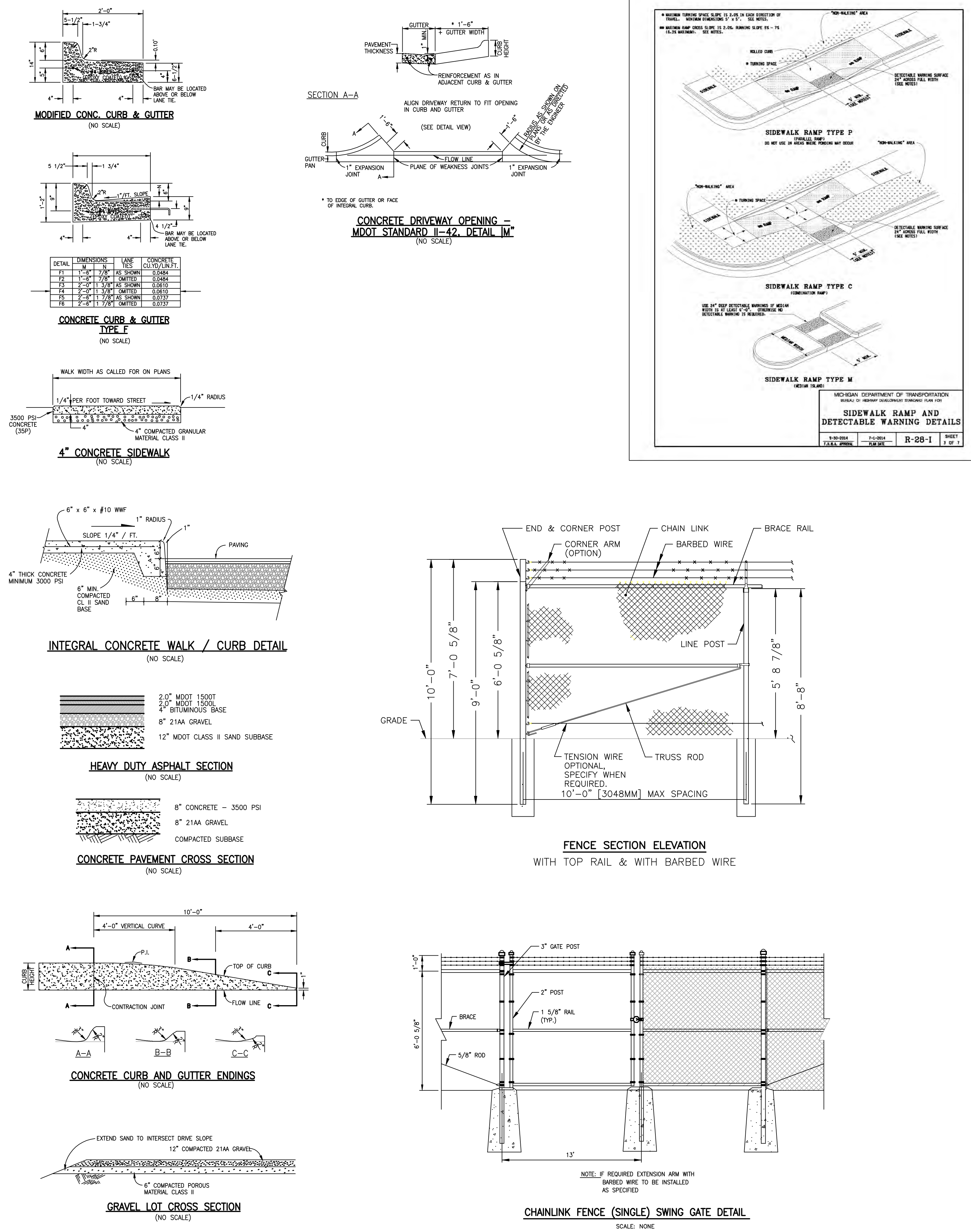
KENTUCKY BLUEGRASS (CHOOSE 3 VARIETIES: ADELPHI, RUGBY, GLADE OR PARADE)	30%
RUBY RED OR DAWSON RED FINE FESCUE	30%
ATLANTA RED FESCUE	20%
PENNFINE PERENNIAL RYE	20%

THE ABOVE SEED MIXTURE SHALL BE SOWN AT A RATE OF 250 POUNDS PER ACRE. PRIOR TO SEEDING, THE TOPSOIL LAYER SHALL BE FERTILIZED WITH A COMMERCIAL FERTILIZER WITH A 10-0-10 ANALYSIS:

10% NITROGEN: A MINIMUM OF 25% FROM A UREA/FORMALDEHYDE SOURCE
0% PHOSPHATE
10% POTASH: SOURCE TO BE POTASSIUM SULFATE OR POTASSIUM NITRATE

THE FIRST FERTILIZER APPLICATION SHALL BE AT A RATE OF 10 POUNDS OF BULK FERTILIZER PER 1000 SQUARE FEET.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH A DENSE LAWN OF PERMANENT GRASSES, FREE OF LUMPS AND DEPRESSIONS. ANY PART OF THE AREA THAT FAILS TO SHOW A UNIFORM GERMINATION SHALL BE RESEDED AND SUCH RESEEDING SHALL CONTINUE UNTIL A DENSE LAWN IS ESTABLISHED. DAMAGE TO SEEDED AREAS RESULTING FROM EROSION SHALL BE REPAIRED BY THE CONTRACTOR.
- ALL AREAS OF THE SITE SCHEDULED FOR SEEDING OR SODDING SHALL FIRST RECEIVE A 4 INCH LAYER OF CLEAN, FRIABLE TOPSOIL. THIS SOIL SHALL BE DISCED AND SHALL BE GRADED IN CONFORMANCE WITH THE GRADING PLAN.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF ALL UTILITIES AND TO INFORM THE LANDSCAPE ARCHITECT OF ANY CONFLICTS PRIOR TO COMMENCING LANDSCAPING.
- ALL PLANT MATERIALS SHALL BE FREE OF WEEDS, INSECTS AND DISEASE.
- ALL LANDSCAPE AREAS ARE TO IRRIGATED WITH AN AUTOMATIC UNDERGROUND IRRIGATION SYSTEM.



BEBOSS Engineering
 Engineers Surveyors Planners Landscape Architects
 3121 E. GRAND RIVER AVE.
 HOWELL, MI. 48843
 800.246.6735 FAX 517.548.1670

PROJECT PREPARED FOR	TITLE	DATE	NO. BY	REVISION PER	DESIGNED BY:
					DRAWN BY:
SEASIDE SEAWALLS, LLC	SEASIDE SEAWALLS, LLC	8868 EAST GRAND RIVER, SUITE 110-225 BRIGHTON, MI 48116 (248) 207-1884	1	KS	CHECKED BY:
					SCALE
JOB NO. 16-049	DATE 03/30/16	SHEET NO. 10	BOSS Engineering		

2012 MICHIGAN BUILDING CODE NOTES:

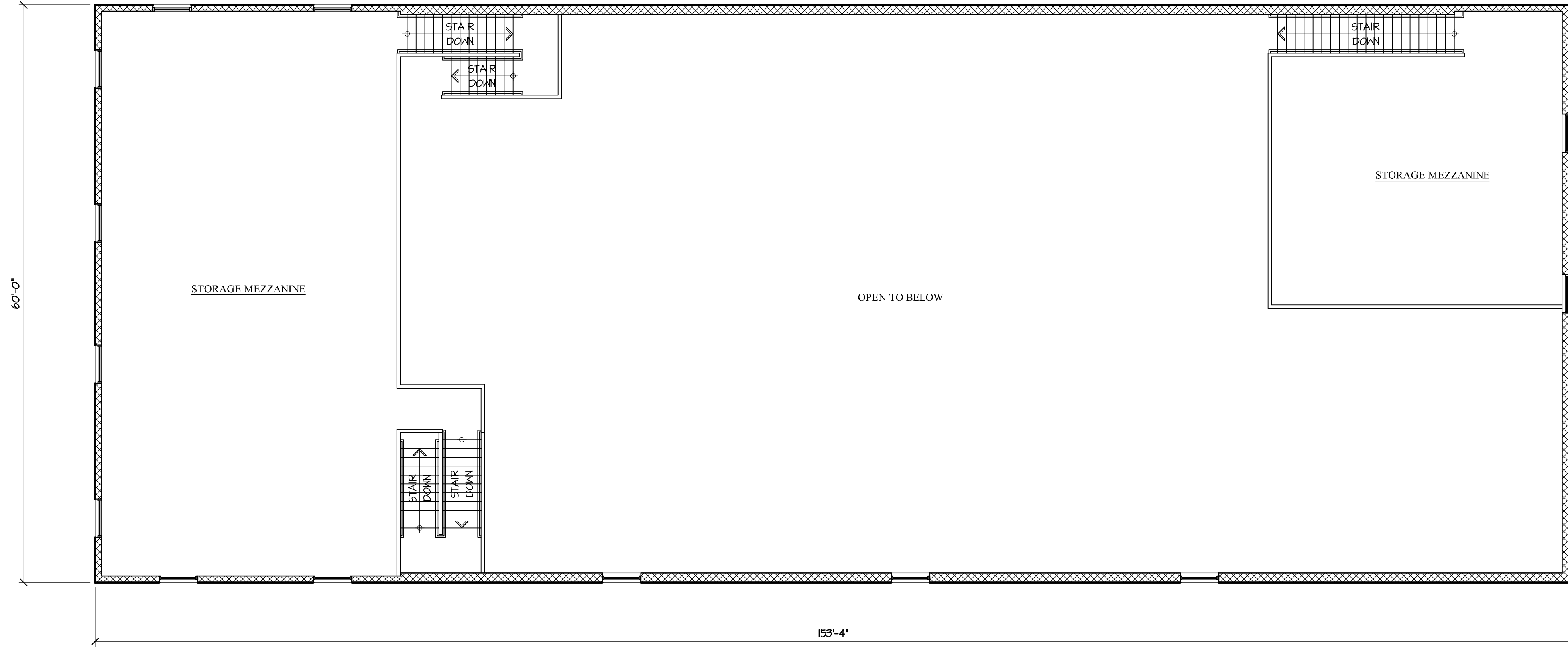
NON-SEPARATED MIXED USE GROUPS (508.3) OF:
 BUSINESS = B (304) AND
 WAREHOUSING = S-1 (311.2)

ALLOWABLE HEIGHT AND AREA (TABLE 503)
 WORST CASE SCENARIO (508.3.2) OF USE GROUPS (B) AND (S-1)
 AND A CONSTRUCTION TYPE = SB (602.5)
 ALLOWABLE HEIGHT = 1 STORY / 40' MAX.
 PROPOSED HEIGHT = 1 STORY / 23'-4" (COMPLIES)
 ALLOWABLE AREA = 4,000 GSF
 PROPOSED AREA = 8,111 GSF (PER THE BLDG. CODE - COMPLIES)

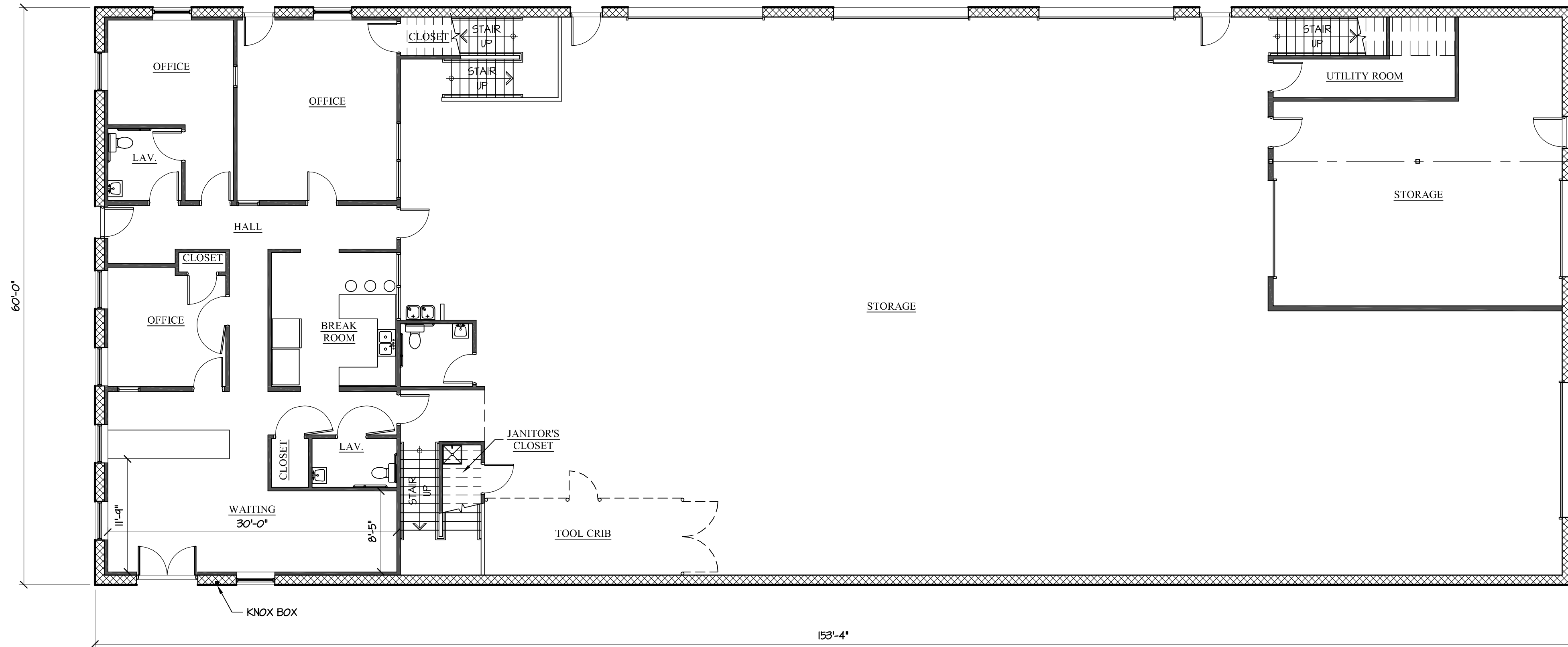
THE BUILDING IS NOT REQUIRED TO BE EQUIPPED WITH AN NFPA-B FIRE SUPPRESSION SYSTEM PER:
 903.2 FOR USE GROUP (B),
 903.2 FOR USE GROUP (S-1)

ALL STORAGE SHALL BE LIMITED TO 12' HIGH MAX.

A FIRE ALARM SYSTEM IS NOT REQUIRED PER:
 901.2.2 FOR USE GROUP (B) AND
 901.2 FOR USE GROUP (S-1)



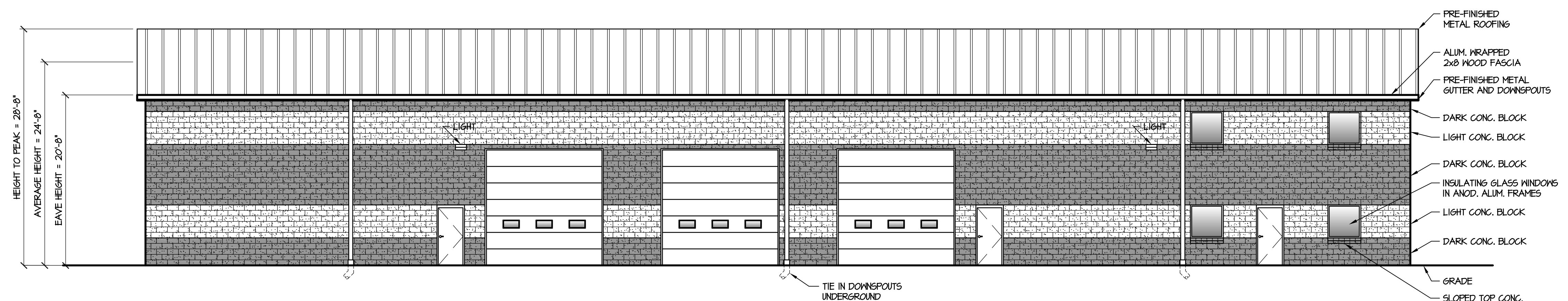
PROPOSED MEZZANINE PLAN
 SCALE: 1/8" = 1'-0" TOTAL MEZZANINE FLOOR AREA = 1,920 S.F.



PROPOSED FLOOR PLAN
 SCALE: 1/8" = 1'-0" 4,200 G.S.F. (PER ZONING ORDINANCE)
 8,111 G.S.F. (PER THE BUILDING CODE)

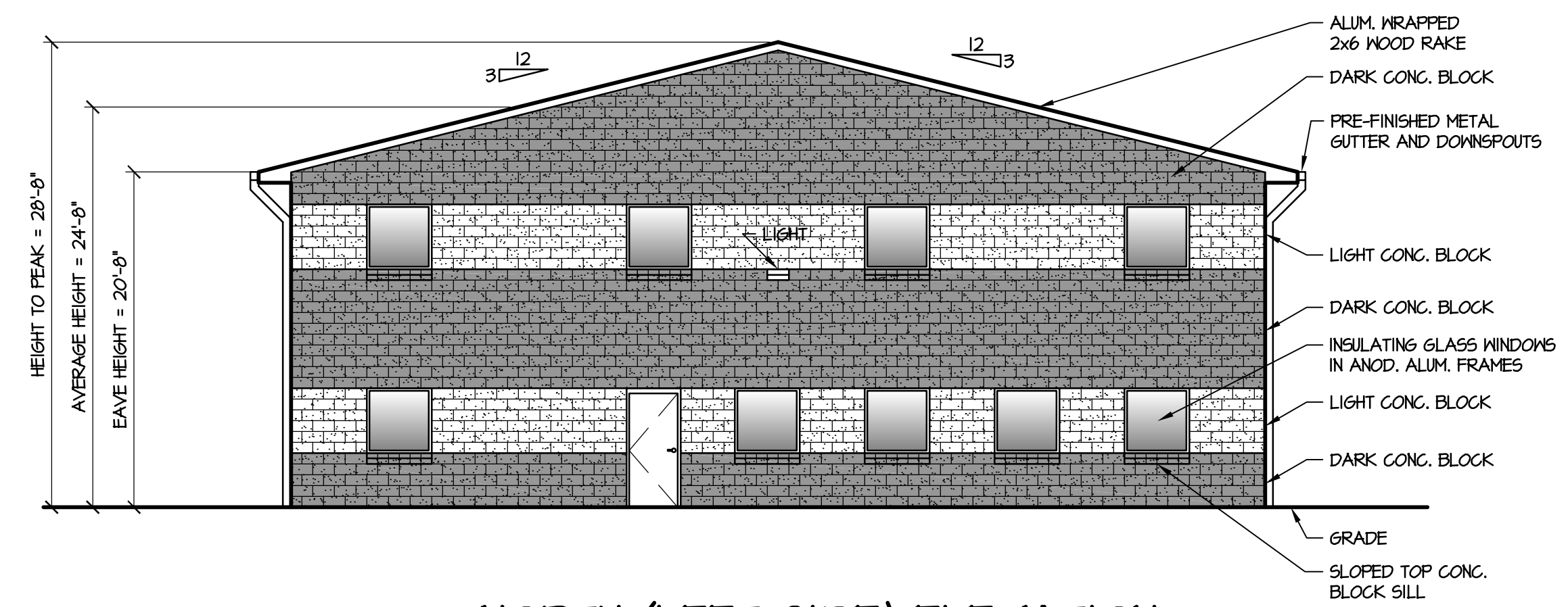
DO NOT SCALE THIS PRINT, USE DIMENSIONS SHOWN ONLY	
DRAWN BY: KV	ISSUED FOR SITE PLAN SUBMITTAL
APPROVED BY: KV	ISSUED FOR:
PROJECT: 1616	DATE: 5-9-2016
SHEET:	
A1	





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

MATERIALS:
GROSS SQUARE FOOTAGE = 3,061 SF
DOORS AND WINDOWS = 124 SF
NET SQUARE FOOTAGE = 2,937 SF - 124 SF = 2,813 SF
SPLIT FACED CONG. BLOCK = 2,338 SF / 2,813 = 83% (COMPLIES)
SMOOTH FACED CONG. BLOCK = 5 SF / 2,813 = 0% (COMPLIES)



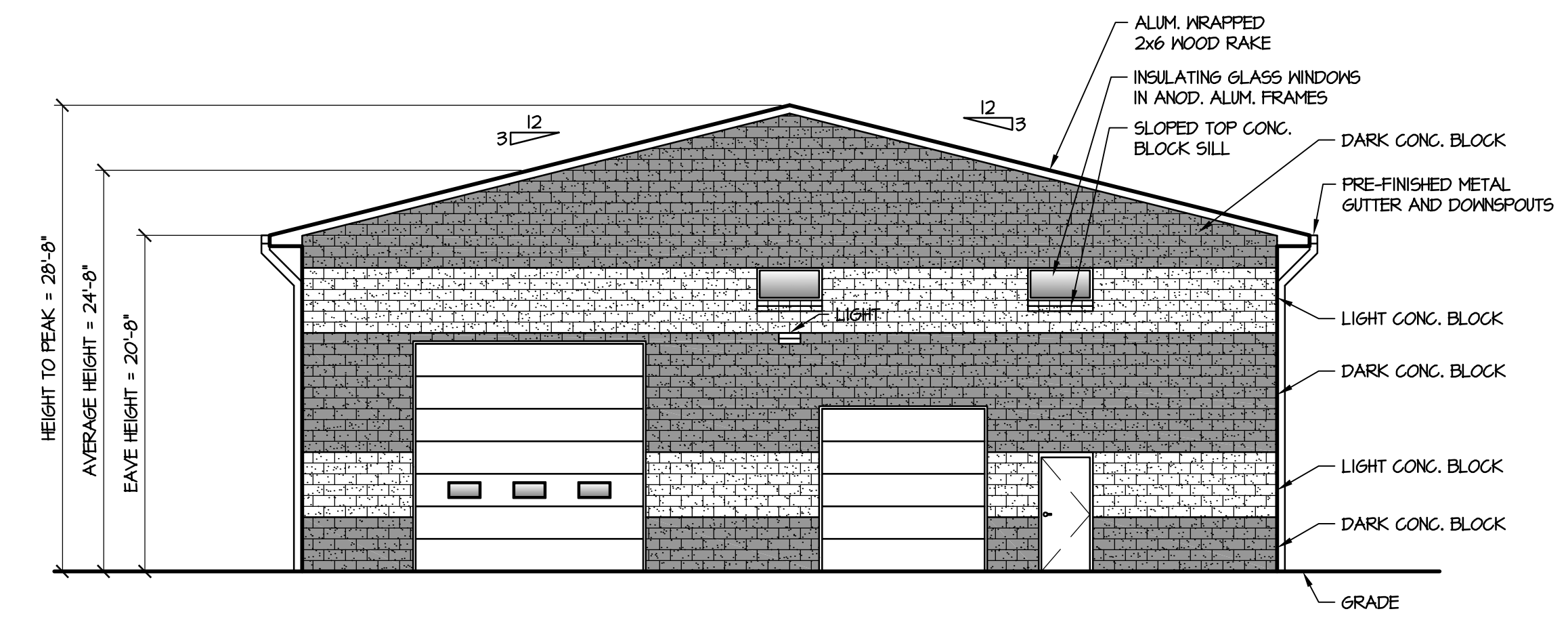
NORTH (LEFT SIDE) ELEVATION
SCALE: 1/8" = 1'-0"

MATERIALS:
GROSS SQUARE FOOTAGE = 1,464 SF
DOORS AND WINDOWS = 169 SF
NET SQUARE FOOTAGE = 1,295 SF - 169 SF = 1,126 SF
SPLIT FACED CONG. BLOCK = 1,281 SF / 1,126 = 114% (COMPLIES)
SMOOTH FACED CONG. BLOCK = 4 SF / 1,126 = 0% (COMPLIES)

MATERIALS:

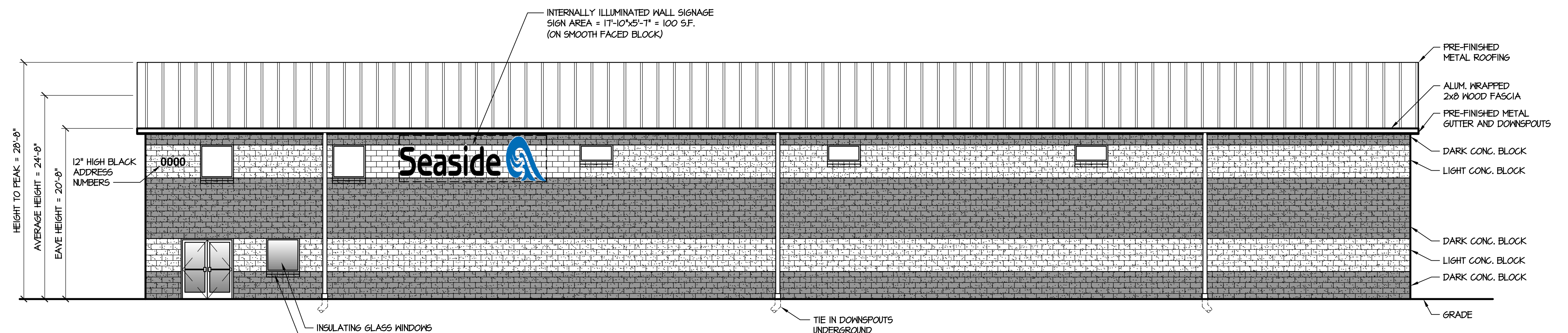
- DARK CONCRETE BLOCK = GRAND BLANC CEMENT PRODUCTS SPLIT-FACED CONCRETE BLOCK INTEGRAL COLOR = CHARCOAL (WITH SEALANT)
- LIGHT CONCRETE BLOCK = GRAND BLANC CEMENT PRODUCTS SPLIT-FACED AND SMOOTH-FACED CONCRETE BLOCK (SEE ELEVATIONS) INTEGRAL COLOR = LIGHT GREY (WITH SEALANT)
- SLOPED TOP CONCRETE BLOCK SILL = GRAND BLANC CEMENT PRODUCTS SPLIT-FACED CONCRETE BLOCK FACE WITH SMOOTH SLOPED TOP INTEGRAL COLOR TO MATCH SURROUNDING BLOCK (WITH SEALANT)
- WINDOWS = 1" LOW-E INSULATING GLASS W/ GREY TINT IN CLEAR ANODIZED ALUMINUM FRAMES
- PRE-FINISHED METAL ROOFING, GUTTERS, FASCIAS, AND RAKES = 'ATAS', COLOR = DOVE GREY
- PRE-FINISHED METAL DOWNSPOUTS = COLOR TO MATCH DARK BLOCK
- HOLLOW METAL DOORS = PAINTED TO MATCH LIGHT BLOCK
- PRE-FINISHED INSULATED METAL OVERHEAD DOORS = COLOR TO MATCH LIGHT BLOCK

TOWNSHIP REGULATIONS:
HEIGHT: 30 FT. / 2 STORIES MAX.
WALL SIGNS: AREA = 10% OF BUILDING FACADE OR 100 S.F. (WHICHEVER IS LESS)
WEST FACADE = 3,061 S.F. x 0.10 = 306 S.F. MAX.
WALL SIGNS SHALL NOT PROJECT MORE THAN 12" FROM THE WALL.
NOTE: A MONUMENT SIGN IS NOT PROPOSED.
MATERIALS: SPLIT FACED CONCRETE BLOCK = 100% ALLOWABLE (ZONED, IND)



SOUTH (RIGHT SIDE) ELEVATION
SCALE: 1/8" = 1'-0"

MATERIALS:
GROSS SQUARE FOOTAGE = 1,464 SF
DOORS AND WINDOWS = 336 SF
NET SQUARE FOOTAGE = 1,128 SF - 336 SF = 792 SF
SPLIT FACED CONG. BLOCK = 1,125 SF / 792 = 142% (COMPLIES)
SMOOTH FACED CONG. BLOCK = 3 SF / 792 = 0% (COMPLIES)

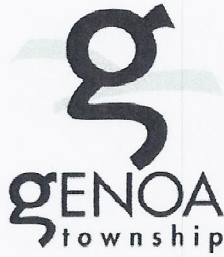


WEST (FRONT) ELEVATION
SCALE: 1/8" = 1'-0"

MATERIALS:
GROSS SQUARE FOOTAGE = 3,061 SF
DOORS AND WINDOWS = 118 SF
NET SQUARE FOOTAGE = 2,943 SF - 118 SF = 2,825 SF
SPLIT FACED CONG. BLOCK = 2,831 SF / 2,825 = 100% (COMPLIES)
SMOOTH FACED CONG. BLOCK = 12 SF / 2,825 = 0% (COMPLIES)



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DRAWN BY: KV
APPROVED BY: KV
PROJECT: 1616
SHEET: A2
ISSUED FOR SITE PLAN SUBMITTAL
DATE: 5-9-2016
ISSUED FOR:



GENOA CHARTER TOWNSHIP
Application for Site Plan Review

TO THE GENOA TOWNSHIP PLANNING COMMISSION AND TOWNSHIP BOARD:
Asselin, McLane Architectural Group, LLC

APPLICANT NAME & ADDRESS: 4488 W. Bristol Rd., Flint, MI 48507

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

OWNER'S NAME & ADDRESS: 1326 Grand Oaks Dr., Howell, MI 48843

SITE ADDRESS: 1326 Grand Oaks Dr., Howell, MI 48843 PARCEL #(s): 4711-08-100-011

APPLICANT PHONE: (810) 230-9311 OWNER PHONE: (517) 552-9812

OWNER EMAIL: _____

LOCATION AND BRIEF DESCRIPTION OF SITE: _____

West side of Grand Oaks Drive wooded 20 acre parcel with existing building, between Grand River Avenue and I-96.

BRIEF STATEMENT OF PROPOSED USE: _____

Fabrication of steel components for automotive industry (manufacturing)

THE FOLLOWING BUILDINGS ARE PROPOSED: _____

16,053 sq ft addition

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: 4488 W. Bristol Rd., Flint, MI 48507

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

1.) John L. Asselin, Jr. of Asselin, McLane Arcitectoral Group, LLC at jasselin@amarchitecturalgroup.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: 5-2-16

PRINT NAME: Raymond Embach IV PHONE: 810.230.9311

ADDRESS: 4488 W. Bristol Road, Flint, MI 48507



June 1, 2016

Planning Commission
Genoa Township
2911 Dorr Road
Brighton, Michigan 48116

Attention:	Kelly Van Marter, AICP Planning Director and Assistant Township Manager
Subject:	Michigan Rod Products – Site Plan Review #2
Location:	1326 Grand Oaks Drive – west side of Grand Oaks Drive, south of Cleary Drive
Zoning:	IND Industrial District

Dear Commissioners:

At the Township's request, we have reviewed the revised site plan (dated 5/25/16) proposing expansion of the existing industrial building at 1326 Grand Oaks Drive. We have reviewed the proposal in accordance with the applicable provisions of the Genoa Township Zoning Ordinance.

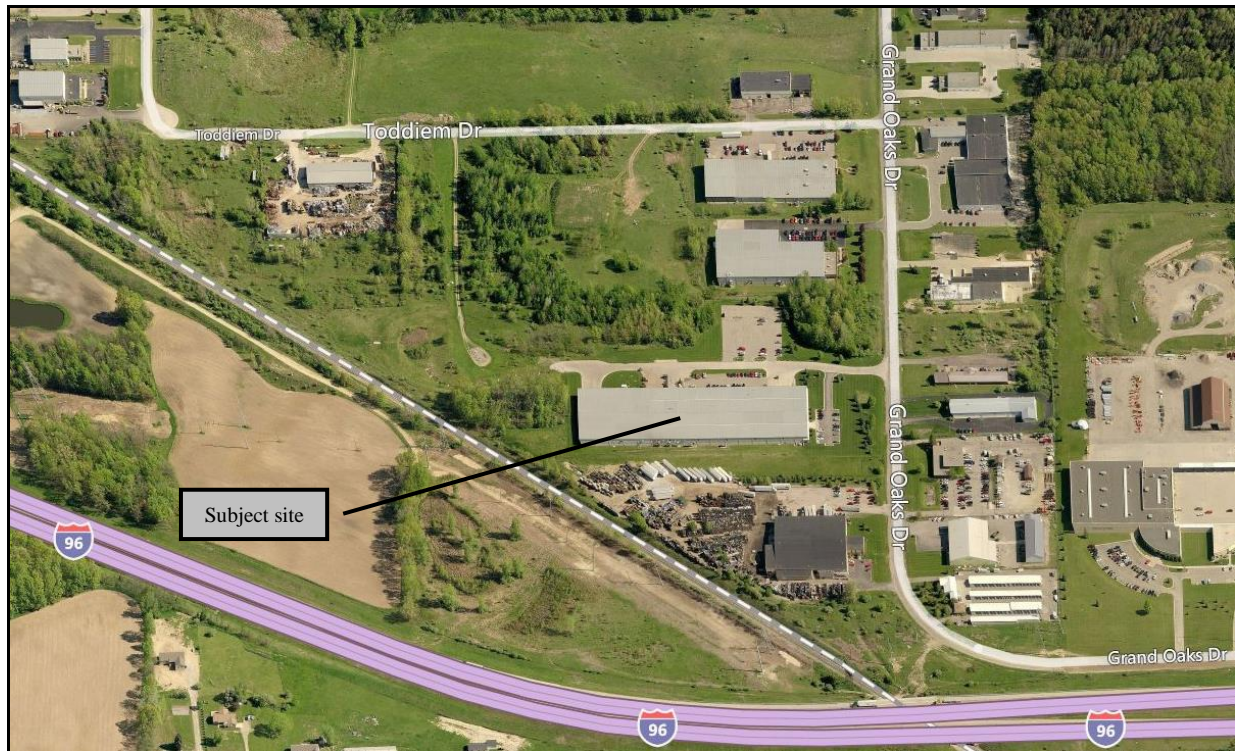
A. Summary

1. The proposed elevations, including colors and materials, are subject to review and approval by the Planning Commission. We request the applicant present a material and color sample board at the upcoming meeting.
2. The applicant proposes to land-bank 143 parking spaces based on the fact that they have only 75 employees across 3 shifts.
3. The Township may wish to require a written agreement to land-bank parking. Alternatively, they may attach a condition to site plan approval (if granted).
4. If there are deficiencies in existing landscaping, the Commission may wish to require additional plantings.

B. Proposal

The applicant requests site plan review and approval for a 16,053 square foot addition to an existing industrial building. The application indicates that the business manufactures steel components for the automotive industry. General manufacturing uses are permitted by right in the IND; therefore, the applicant only needs site plan review/approval.

Procedurally, the Planning Commission has approval authority over the site plan; however, the Township Board has approval authority over the Impact Assessment (with a recommendation provided by the Planning Commission).



Aerial view of site and surroundings (looking north)

C. Site Plan Review

1. Dimensional Requirements. As described in the table below, the project complies with the dimensional standards of the IND District:

District	Lot Size		Minimum Setbacks (feet)				Max. Height	Lot Coverage
	Lot Area (acres)	Width (feet)	Front Yard	Side Yard	Rear Yard	Parking		
IND	1	150	85	25	40	20 front 10 side/rear	30' / 2 stories	40% building 85% impervious
Proposal	20	650	195 (existing)	320 (N)(existing) 50 (S)	90	105 front 45 side/rear	22' / 1 story	19% building 31% impervious

2. Building Materials and Design. The proposed elevations, including colors and materials, are subject to review and approval by the Planning Commission.

The proposed addition will match the existing building in terms of materials and design. We request the applicant present the Commission with material and color samples at the upcoming meeting.

3. Parking. In accordance with Section 14.04, the proposed site plan results in the need for 265 parking spaces. The applicant proposes to utilize the 131 existing parking spaces and to land-bank an additional 143 spaces.

Section 14.02.05 allows the Planning Commission to grant banked parking where an applicant demonstrates that the minimum requirement is excessive. In this instance, the applicant has indicated they have a total of 75 employees across 3 shifts.

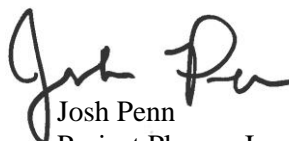
The plan includes a layout for the banked parking as an extension west of the existing parking lot. The applicant should be aware that the Township may require the construction of additional parking based on observed usage. The Township may wish to require an agreement documenting such, or simply attach a condition to site plan approval (should it be granted).

4. **Pedestrian Circulation.** No changes are proposed to existing pedestrian circulation.
5. **Vehicular Circulation.** With the exception of a new fire lane near the proposed building addition, no changes are proposed to existing vehicular circulation.
6. **Landscaping.** The applicant does not propose any new landscaping as part of this project. If there are deficiencies in existing plantings, the Commission may wish to require improvements.
7. **Waste Receptacle and Enclosure.** There are existing waste receptacles east and west of the office building and no changes are proposed as part of this project.
8. **Exterior Lighting.** The submittal includes a lighting plan showing existing site lighting and 3 new wall mounted fixtures for the proposed addition. The light intensities noted comply with Ordinance limitations and the proposed fixtures are downward directed, as required.
9. **Signs.** The submittal indicates that no new signage is proposed as part of this project.
10. **Impact Assessment.** The submittal includes an Impact Assessment (March 29, 2016). In summary, the Assessment notes that the proposed building addition 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 and penn@lslplanning.com.

Respectfully,
LSL PLANNING, A SAFE BUILT LLC COMPANY


Brian V. Borden, AICP
Planning Manager


Josh Penn
Project Planner I



June 8, 2016

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

Re: Michigan Rod Addition Site Plan Review #2

Dear Ms. Van Marter:

We have reviewed the resubmitted impact assessment and site plan documents prepared by Asselin, McLane Architectural Group LLC. for an approximate 16,053 square-foot addition to an existing manufacturing building located on west side of Grand Oaks Drive, south of Grand River Avenue. Tetra Tech has reviewed the updated documents and site plan and found that the petitioner has satisfied all of the previous comments and recommend approval.

Additionally, in their response letter the petitioner has indicated they will pay any updated tap fee as necessary due to the expansion of their facility, which was estimated to be approximately 2 REUs.

Please call if you have any questions.

Sincerely,

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

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

A blue ink signature of Joseph C. Siwek, written in a cursive style.

Joseph C. Siwek, P.E.
Project Engineer

copy: John Asselin Jr., Asselin, McLane Architectural Group



BRIGHTON AREA FIRE AUTHORITY

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

June 3, 2016

Kelly VanMarter
Genoa Township
2911 Dorr Road
Brighton, MI 48116

RE: Michigan Rod Products Addition
1326 Grand Oaks Drive
Genoa Twp., MI

Dear Kelly:

The Brighton Area Fire Department has reviewed the above mentioned site plan. The plans were received for review on May 26, 2016 and the drawings are dated May 25, 2016. The project is for a 16,053 square foot addition to an existing 128,000 square foot manufacturing/storage facility. The plan review is based on the requirements of the International Fire Code (IFC) 2015 edition.

1. The existing building is provided with and automatic fire suppression system. The system shall be evaluated by a fire suppression designer for compliance with NFPA 13 as it relates to square footage and design density. **(Noted to be evaluated prior to construction)**
IFC 903
2. The 20' secondary access road to West end of the building shall be constructed of a maintainable surface and be installed prior to construction. Access roads shall be capable of supporting the imposed load of fire apparatus weighing at least 75,000 pounds. **(Noted to be compliant when constructed)**
3. Egress door location and configuration along the exterior walls shall be revised to meet the High Pile Storage requirements of Chapter 32. Three additional doors need to be added and the two existing proposed doors relocated to meet the spacing requirement of 100 lineal feet between. Door locations shall be measured from the nearest existing doors. **(Locations revised and additional doors added on floor plan drawings)**
4. Provide names, addresses, phone numbers, emails of owner or owner's agent, contractor, architect, on-site project supervisor. **(Provided on response sheet)**

Additional comments will be given during the building plan review process (specific to the building plans and occupancy). The applicant is reminded that the fire authority must review the fire protection systems submittals (sprinkler & alarm) prior to permit issuance by the Building Department and that the authority will also review the building plans for life safety requirements in conjunction with the Building Department.

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

Cordially,

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

Capt. Rick Boisvert, CFPS
Fire Inspector

**IMPACT ASSESSMENT
MICHIGAN ROD PRODUCTS
MARCH 29, 2016**

INTRODUCTION

The proposed development is a 16,053 sq. ft. addition to the West side of the existing manufacturing facility of Michigan Rod Products at 1326 Grand Oaks Drive. Potential areas of concern are noted along with the proposed methods of addressing each tem. The format conforms to the impact assessment requirements as outlined in Section 18.07 of the published Zoning Ordinance for Genoa Township.

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

Prepared by:
Asselin, McLane Architectural Group, LLC
Commercial/Industrial Architecture
4488 West Bristol Road
Flint, Michigan 48507
(810) 230-9311
(810) 230-2831 Fax

Prepared for:
Michigan Rod Products
1326 Grand Oaks Drive
Howell, Michigan 48843

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

The site is located on the west side of Grand Oaks Drive (2100 feet R.O.W.) approximately 2,000 feet south of Grand River Avenue, in the Southwest ¼ of Section 5, T2N-R5E, Genoa Township, Livingston County, Michigan. The approximate gross area of the parcel is 20 acres. The site slopes generally from the Southeast toward the Northwest. The site ultimately drains toward the Northwest and thence West into an unnamed drain that flows to the West for approximately 1.5 miles into the Marion and Genoa drain. An existing detention basin was designed in a previous project in the northwest corner of the site. A site plan has been prepared which provides a more detailed description of the site. There is significant existing vegetation on the site and is shown on the Site Plan. All significant vegetation lies outside the construction boundary. It is

intended to have little grading done on the site except in the building footprint and a fire land extension to serve the addition. All of the surrounding property is part of the Grand Oaks Industrial Park and is zoned Industrial (IND).

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

As shown on the Site Plan, there will be little or no impact on the vegetation. The topography will be raised at the footprint of the building. After a short, smooth transition from the building, the existing topography will remain as presently existing.

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

There will be a minimal increase of impervious surface of 16,053 square feet for this addition which will result in a increase of the weighted runoff coefficient (Cw) from 0.39 to 0.42. The existing detention basin enlarged during the last construction project (2013/2015) to accommodate the site.

Surface runoff during periods of construction will be controlled by proper methods set by the Livingston County Soil Erosion Control and Drain Commissioner, including silt fence, pea stone filters, seed, and mulch.

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

The applicant is proposing to construct a 16,053 square foot building addition. The site is located in the Industrial District (IND). The proposed use is compatible with surrounding zonings, as the site is located in an industrial part and is surrounded by Industrial zoning and uses. The expected impact due to construction of the building will be minimized because of the following:

1. There are no woodlands or other significant features on the site to be disturbed to facilitate construction of the site improvements. The existing detention basin was enlarged during the last construction project and approved by the Livingston County Drain Commission.
2. The site plan was prepared taking into account existing topography to minimize the amount of earthwork required for the building and parking areas. Current, well-developed landscaping to remain and is in accordance with Genoa Township standards.
3. Soil erosion control measures such as silt fence, straw bale filters, and pea stone filters at catch basins will be utilized during construction to control siltation and sedimentation from entering the detention areas.
4. An existing dumpster is on the site that is screened using an eight (8) foot masonry enclosure.
5. Existing Outdoor storage of steel coils screened by existing, well-developed vegetation.

There is no significant noise or air pollutant increases anticipated for the proposed use on this site. The only pollution and noise will come from car and truck traffic into and out of the site, which will be minimal for an industrial storage use such as this. No additional site lighting is proposed.

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

The facility is anticipated to employ the same number of people as existing.

- G. Impact on public utilities: Describe the method to be used to service the development with water and sanitary sewer facilities, the method to be used to control drainage on the site and from the site, including runoff control during periods of construction. For sites serviced with sanitary sewer, calculations for pre- and post development flows shall be provided in comparison with sewer line capacity. Expected sewage rates shall be provided in equivalents to a single family home. Where septic systems are proposed, documentation or permits from the Livingston County Health Department shall be provided.**

No additional service requirements are proposed for this parcel. Water service is provided via connection to a 12" DI extension of the water main currently within the Grand Oaks Drive right-of-way. Sanitary sewer will not be used in the proposed addition. Storm water runoff from the proposed onsite detention basin will be restricted to an agricultural runoff rate from all developed areas. Underground gas, electric, and telephone are also available.

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

No hazardous materials will be used, stored, or disposed of on-site.

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

The impact on traffic and pedestrians from this use will be minimal due to the location and nature of the use. The site is located within an industrial park, which will not be a primary location for pedestrian traffic. The use of automobile storage will constitute a minimal amount of additional vehicular traffic for the area on a daily basis.

No new access to Grand Oaks Drive is needed.

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

None. Current easements for a gas well on the Northwest side of the property will remain.

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

A list of all sources will be provided.

Proposed Addition for:

Michigan Rod Products

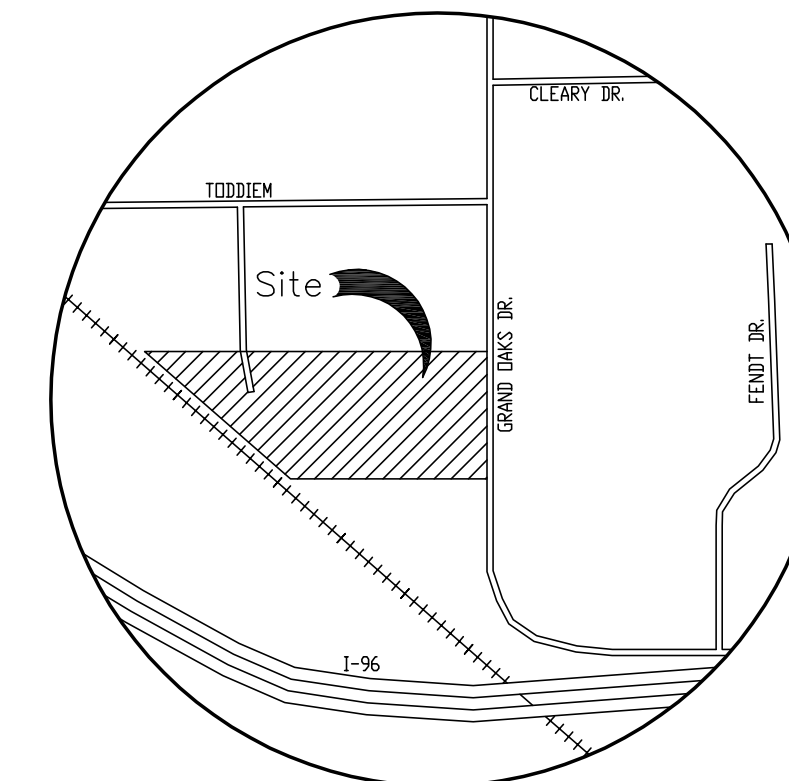
1326 Grand Oaks Drive, Genoa Township, Livingston Co. MI



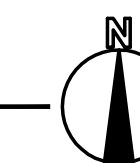
ASSELIN | MCLANE

ARCHITECTURAL GROUP

4498 West Bristol Road | Flint | MI | 48507 | PHONE: (810) 230-9311 | FAX: (230)-2831
WWW.AMARCHITECTURALGROUP.COM



LOCATION MAP
SCALE: N.T.S.



LEGAL DESCRIPTION

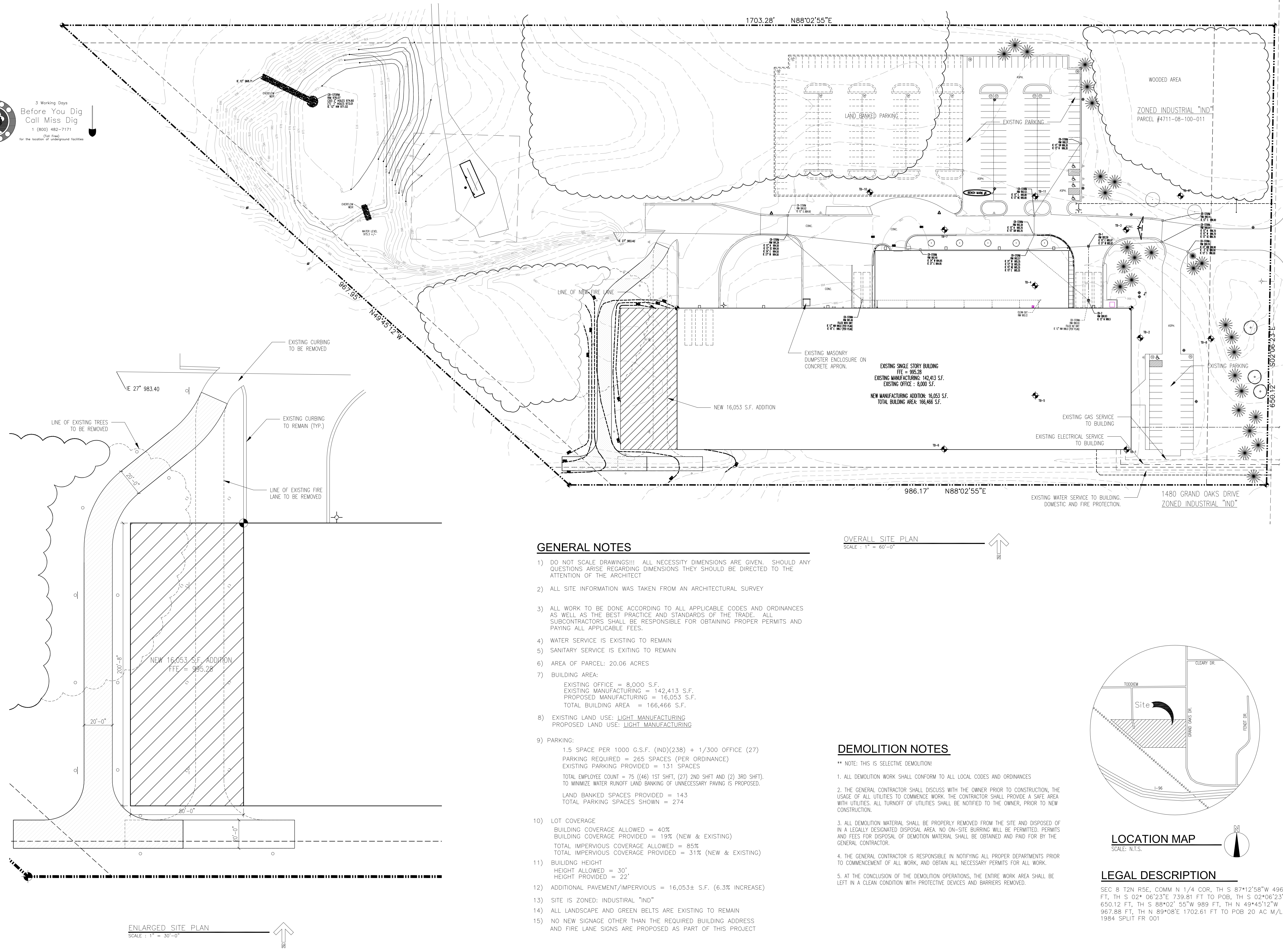
SEC 8 T2N R5E, COMM N 1/4 COR, TH S 87°12'58"W 496.99 FT, TH S 02° 06'23"E 739.81 FT TO POB, TH S 02°06'23"E 650.12 FT, TH S 88°02' 55"W 989 FT, TH N 49°45'12"W 967.88 FT, TH N 89°08'E 1702.61 FT TO POB 20 AC M/L 1984 SPLIT FR 001



Issued For Revised Site Plan Approval 05-25-16

Schedule of Drawings

	Sheet Name	Revision Date
	COVER SHEET	05-25-16
C1.1	OVERALL & ENLARGED SITE PLAN	05-25-16
C1.2	ENLARGED GRADING PLAN	05-25-16
C1.3	FIRE SAFETY SITE PLAN	05-25-16
C1.4	SOIL EROSION PLAN	05-25-16
CE1.1	PHOTOMETRIC LAYOUT	05-25-16
A1.1	FLOOR PLAN & ELEVATIONS	05-25-16



ASSELIN | MCLANE
ARCHITECTURAL GROUP
4488 WEST BROADWAY (SUITE 101) LANSING, MI 48202
WWW.ASSELINMCLANE.COM

Rhoads & Johnson
ARCHITECTS
WWW.RHOADSJOHNSON.COM

Proposed Addition for:
Michigan Rod Products
1326 Grand Oaks drive, Genoa Township,
Livingston Co. MI

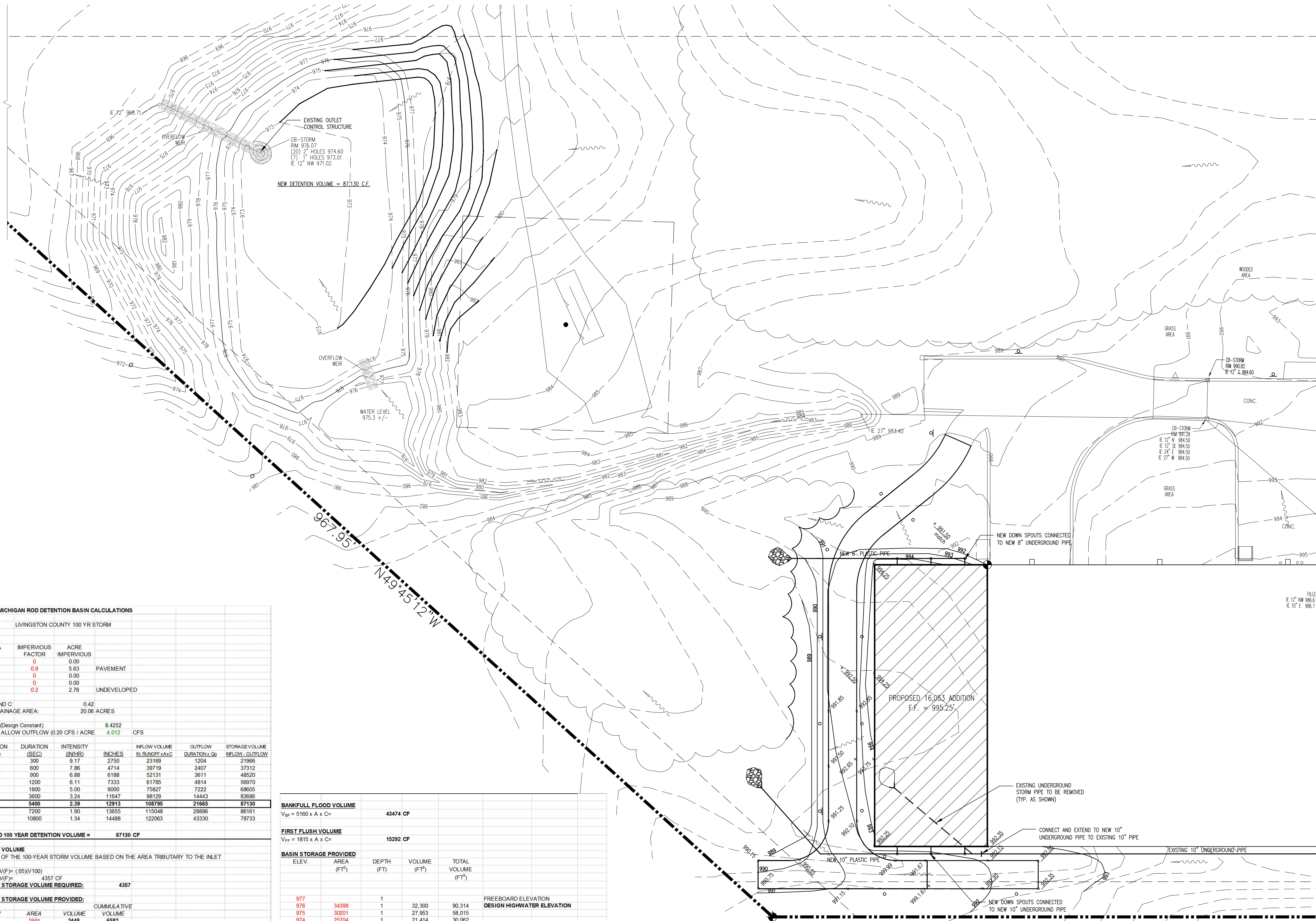
No.	Description	Date
1	REVISED FOR PRICING	04-18-16
2	SITE PLAN REVIEW	05-02-16
3	REV. FOR SITE PLAN REVIEW	05-25-16

SITE PLAN

Project number **16031**

C1.1

Scale 1" = 60'



MICHIGAN ROD DETENTION BASIN CALCULATIONS

LIVINGSTON COUNTY 100 YR STORM

AREA (AC)	IMPERVIOUS FACTOR	ACRE IMPERVIOUS	
0.00	0	0.00	
6.25	0.9	5.63	PAVEMENT
0.00	0	0.00	
0.00	0	0.00	
13.81	0.2	2.76	UNDEVELOPED

COMPOUND C: 0.42
TOTAL DRAINAGE AREA: 20.06 ACRES

K1 = AxC (Design Constant) 8.4252
Qa = MAX ALLOW OUTFLOW (0.20 CFS / ACRE) 4.012 CFS

DURATION (MIN)	DURATION (SEC)	INTENSITY (IN/HR)	INCHES	INFLOW VOLUME IN RUNOFF X A X C	OUTFLOW DURATION x Qa	STORAGE VOLUME INFLOW - OUTFLOW
5	300	9.17	2750	23199	1204	21996
10	600	7.86	4714	39719	2407	37312
15	900	6.88	6188	52131	3611	48520
20	1200	6.11	7333	61785	4814	56970
30	1800	5.00	9000	75827	7222	68605
60	3600	3.24	11647	98129	14443	83686
90	5400	2.39	12913	108795	21665	87130
120	7200	1.90	13655	115048	28886	86161
180	10800	1.34	14488	122063	43330	78733

REQUIRED 100 YEAR DETENTION VOLUME = 87130 CF

FOREBAY VOLUME
V(F) = 5% OF THE 100-YEAR STORM VOLUME BASED ON THE AREA TRIBUTARY TO THE INLET
V(F) = (0.05)(V100)
V(F) = 4357 CF
FOREBAY STORAGE VOLUME REQUIRED: 4357

FOREBAY STORAGE VOLUME PROVIDED:

ELEV	AREA	VOLUME	CUMMULATIVE VOLUME
977	2591	2448	6582
976.5	2304	1080	4135
976	2016	1765	3055
975	1514	1290	1290
974	1085		

BANKFULL FLOOD VOLUME
 $V_{BF} = 5160 \times A \times C = 43474 \text{ CF}$

FIRST FLUSH VOLUME
 $V_{FF} = 1815 \times A \times C = 15292 \text{ CF}$

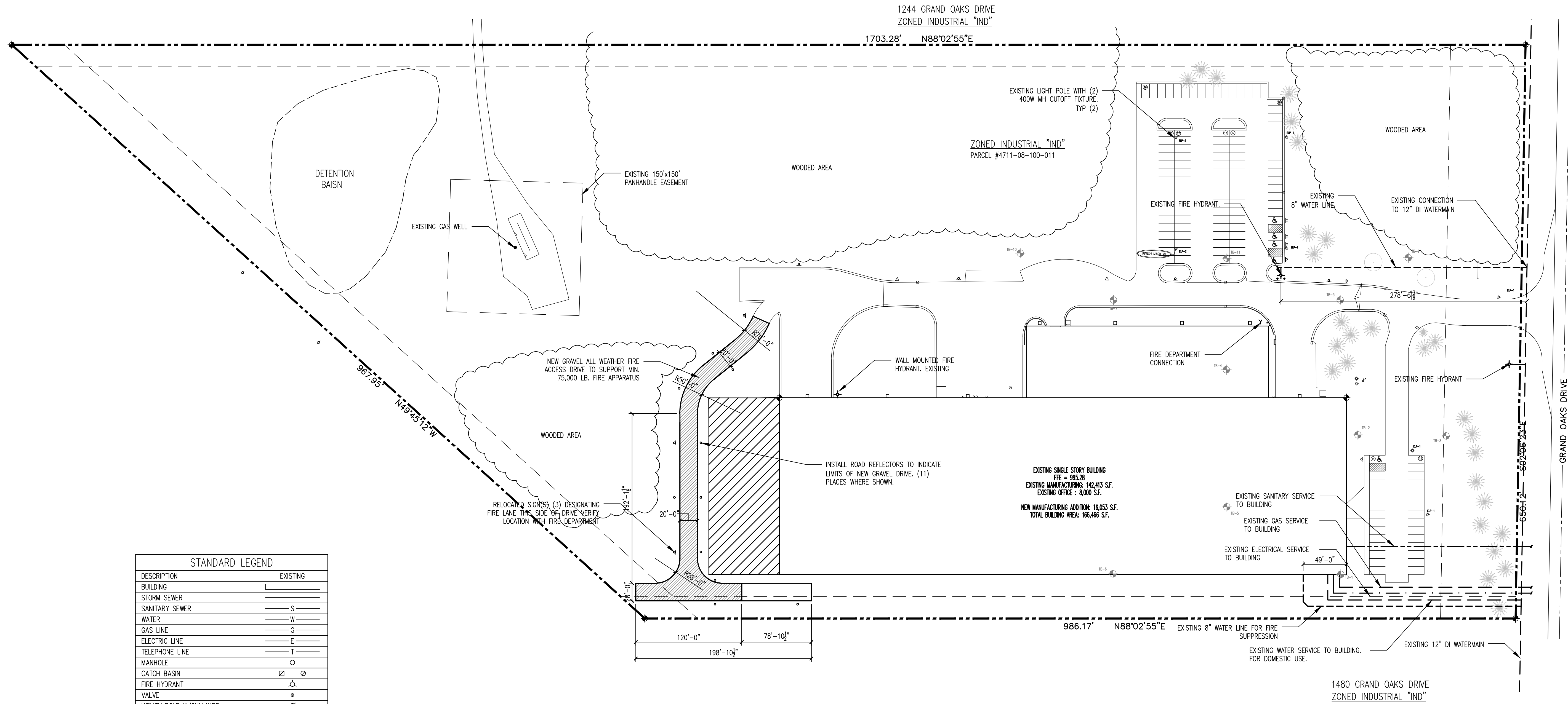
BASIN STORAGE PROVIDED

ELEV.	AREA (FT ²)	DEPTH (FT)	VOLUME (FT ³)	TOTAL VOLUME (FT ³)
977		1	32,300	90,314
976	34398	1	27,953	58,015
975	30201	1	21,414	30,062
974	25704	1	8,605	8,648
973	17124	1	43	43
972	86	1	0	0
971	0	1	0	0

FREEBOARD ELEVATION DESIGN HIGHWATER ELEVATION

No.	Description	Date
1	REVISED FOR PRICING	04-18-16
2	SITE PLAN REVIEW	05-02-16
3	REV. FOR SITE PLAN REVIEW	05-25-16

ENLARGED GRADING PLAN
SCALE: 1" = 30'-0"

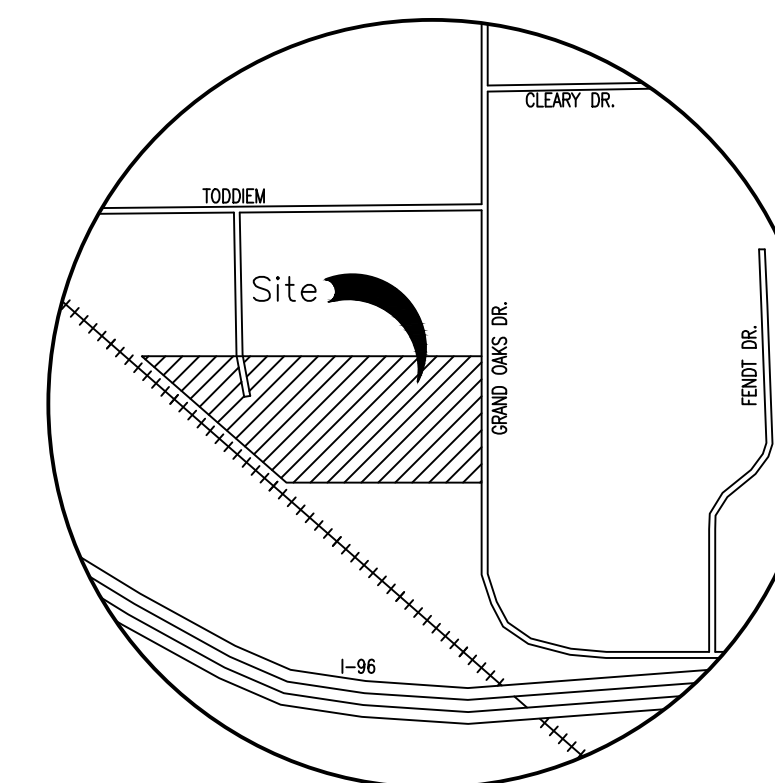
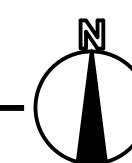


STANDARD LEGEND	
DESCRIPTION	EXISTING
BUILDING	—
STORM SEWER	—S—
SANITARY SEWER	—S—
WATER	—W—
GAS LINE	—G—
ELECTRIC LINE	—E—
TELEPHONE LINE	—T—
MANHOLE	○
CATCH BASIN	⊗
FIRE HYDRANT	△
VALVE	•
UTILITY POLE W/GUY WIRE	⊕
UTILITY RISER	⊠
LIGHT POLE	⊙
SIGN	△
CURB & GUTTER	—x—
FENCE	—x—x—
GUARD RAIL	—x—x—
INVERT ELEVATION	IE 6" 750.00
CONTOUR	—750—
SPOT ELEVATION	+750.00
ASPHALT SURFACE	▒
CONCRETE SURFACE	▒ CONC. ▒
GRAVEL SURFACE	▒ GRAY ▒
TREE LINE	—
TREE	⊕ ⊙

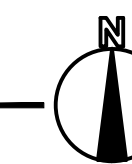
LEGAL DESCRIPTION

SEC 8 T2N R5E, COMM N 1/4 COR, TH S 87°12'58"W 496.99 FT, TH S 02° 06'23"E 739.81 FT TO POB, TH S 02°06'23"E 650.12 FT, TH S 88°02' 55"W 989 FT, TH N 49°45'12"W 967.88 FT, TH N 89°08'E 1702.61 FT TO POB 20 AC M/L 1984 SPLIT FR 001

FIRE SITE PLAN
SCALE: 1" = 60'-0"



LOCATION MAP
SCALE: N.T.S.



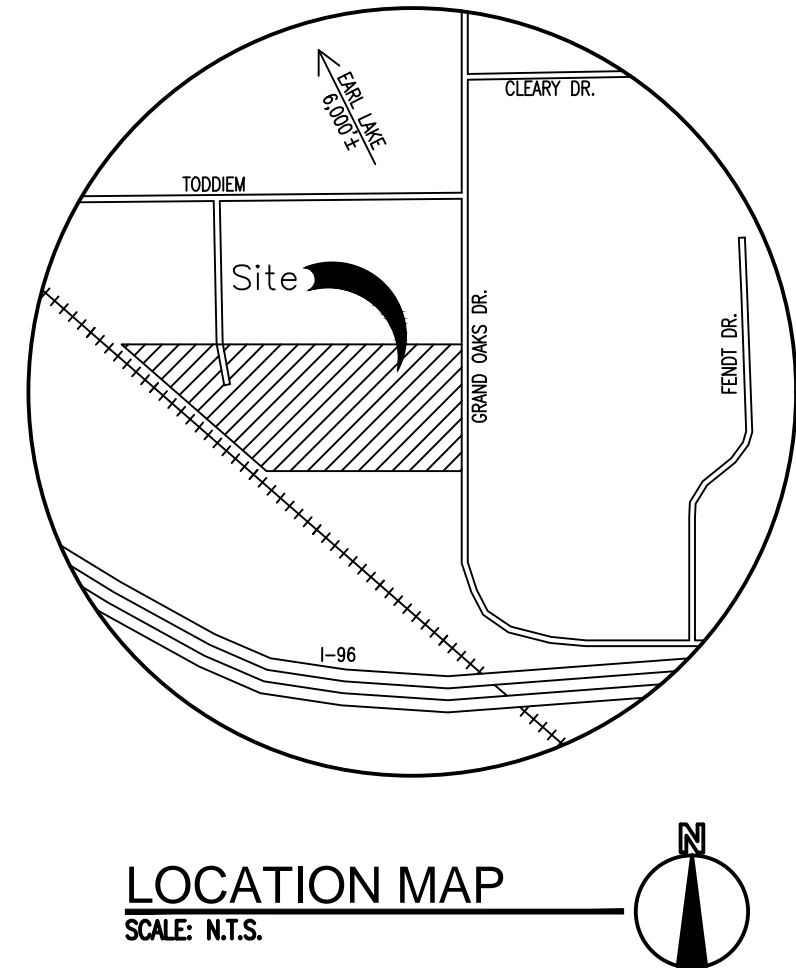
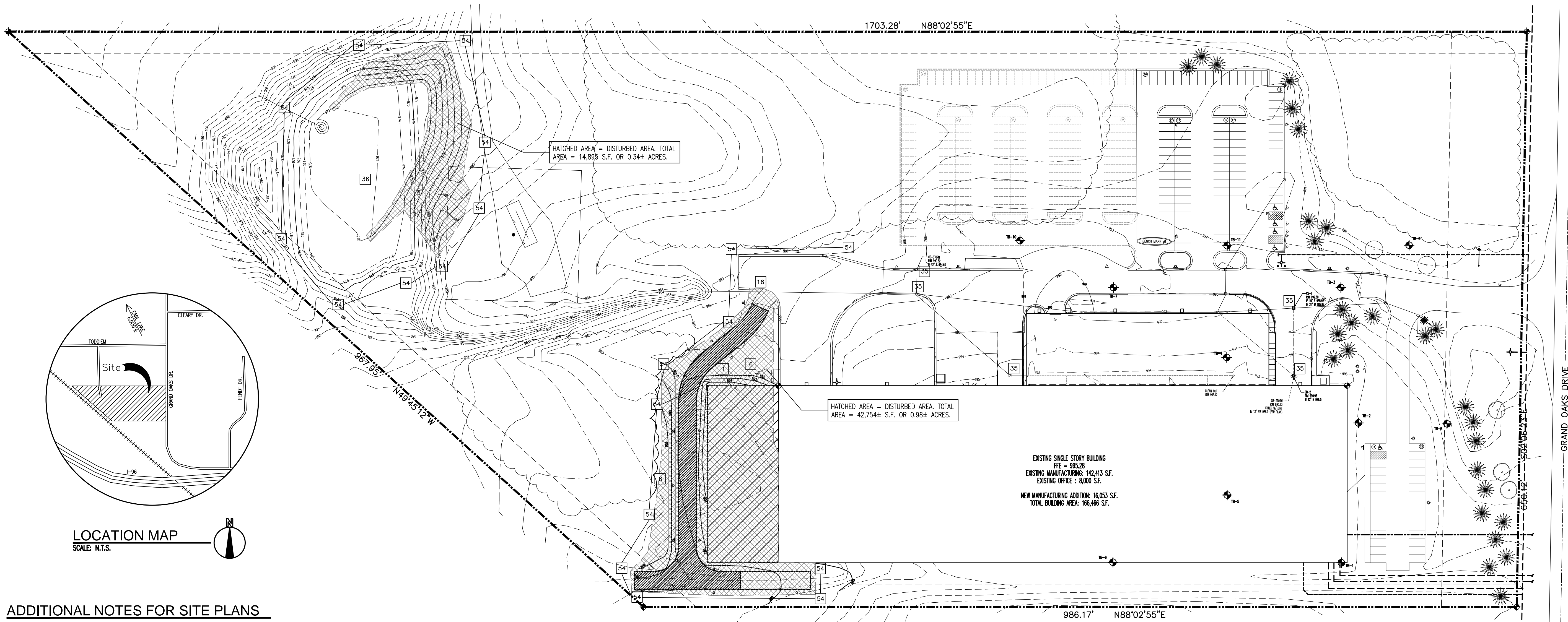
No.	Description	Date
1	REVISED FOR PRICING	04-18-16
2	SITE PLAN REVIEW	05-02-16
3	REV. FOR SITE PLAN REVIEW	05-25-16

SITE FIRE PLAN

Project number 16031

C1.3

Scale 1" = 60'



ADDITIONAL NOTES FOR SITE PLANS

- THE FOLLOWING NOTES ARE TO BE USED AS APPLICABLE WHEN SUBMITTING PLANS FOR REVIEW BY LCDC-WWS. USE ONLY THOSE APPLICABLE AND ADAPT THEM FOR THE SPECIFIC PROJECT.
- A. SANITARY SEWER SADDLE TAPS SHALL BE MADE BY LCDC-WWS PERSONNEL. THE DEVELOPER SHALL OBTAIN THE REQUIRED FEE FOR A SADDLE TAP.
 - B. THE CONTRACTOR SHALL VERIFY THE SANITARY SWER DEPTH AND BE RESPONSIBLE FOR PROVIDING ADEQUATE SLOPE OF SEWER TOWARD THE MAINLINE SEWER IN STRICT ACCORDANCE WITH LCDC-WWS STANDARD DETAILS AND SPECIFICATIONS.
 - C. SANITARY SERVICE LEADS SHALL BE ENCASED IN 6AA CRUSHED LIMESTONE (A1) IN ACCORDANCE WITH LCDC-WWS STANDARD DETAILS AND SPECIFICATIONS.
 - D. WATER SERVICE CONNECTION AND CURB BOX SHALL BE INSTALLED IN ACCORDANCE WITH LCDC-WWS STANDARD DETAILS AND SPECIFICATIONS.
 - E. ALL WATER SERVICE LEADS SHALL BE "K" COPPER. THE MINIMUM SIZE SHALL BE 3/4".
 - F. ALL WATERMAIN PRESSURE TAPS AND CUT IN VALVES 4" AND LARGER SHALL BE CONSTRUCTED WITH A CAST IRON OR STAINLESS STEEL TAPPING SLEEVES AND WITH A MANHOLE PER LCDC-WWS STANDARD DETAILS AND SPECIFICATIONS.
 - G. SAND FILL UNDER ANY FLOOR SLAB, WALKS, PAVED AREAS, ETC. SHALL BE A MINIMUM MDOT CLASS II SAND BACKFILL (A5). THE SAND SHALL BE COMPACTED 95% OF MATERIAL THE UNIT WEIGHT BY MODIFIED PROCTOR.
 - H. ALL EXISTING UTILITIES SERVING THE PROPERTY SHALL BE PROPERLY TERMINATED IN COMPLIANCE WITH LOCAL AND/OR COUNTY REGULATIONS. REMOVE ALL TREES, INCLUDING ROOT STRUCTURES, EXCEPT THOSE SPECIFICALLY NOTED TO REMAIN AND THOSE ON PROPERTY LINES. DO NOT CLEAR SITE PRIOR TO COORDINATING WITH THE OWNER AND THE LANDSCAPING PLAN TO DETERMINE WHICH TREES ARE TO REMAIN.
 - I. FOR ANY DEMOLITION WORK, PLEASE SEE DEMOLITION NOTES ATTACHED HERewith.
 - J. VERIFY EXACT LOCATION OF UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION.
 - K. CONTRACTOR IS TO ADJUST ANY UTILITY ELEMENT MEANS TO FLUSH WITH GRADE (CLEAN OUT, VALVE BOXES, MANHOLES, CATCH BASINS, INLETS, ETC.) THAT IS AFFECTED BY SITE WORK OR GRADE CHANGES, WHETHER SPECIFICALLY NOTED ON PLANS OR NOT. THE CONTRACTOR SHALL OBTAIN ANY NECESSARY PERMITS FOR ADJUSTMENT AT THE CONTRACTOR'S EXPENSE.
 - L. THE WATER SUPPLY FOR ALL COMMERCIAL AND INDUSTRIAL BUILDINGS SHALL BE EQUIPPED WITH A BACKFLOW PREVENTION DEVICE IN ACCORDANCE WITH BUILDING CODES.
 - M. ALL ON SITE WATER SERVICE SHALL MEET THE REQUIREMENT OF LCDC-WWS STANDARD DETAILS AND SPECIFICATIONS.
 - N. THE CONTRACTOR SHALL NOTIFY MISS DIG (1-800-482-7171) THREE (3) WORKING DAYS PRIOR TO STARTING ANY EXCAVATION WITH POWER EQUIPMENT.
 - O. THE CONTRACTOR SHALL COMPLY WITH ALL LOCAL, COUNTY, AND STATE REGULATIONS FOR ALL WORK THAT TAKES PLACE ON THE SITE.
 - P. THE CONTRACTOR/DEVELOPER SHALL PAY FOR AND OBTAIN ALL PERMITS REQUIRED BY FEDERAL, STATE, LOCAL, OR PRIVATE AGENCIES AND PAY ALL CHARGES FOR INSPECTION AND TESTING.
 - Q. THE CONTRACTOR SHALL PROVIDE ALL CONSTRUCTION LINES AND GRADE FOR THEIR WORK.
 - R. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING UP THE PREMISES, AND UPON COMPLETION OF THE PROJECT, LEAVE THE SITE IN AN ACCEPTABLE CONDITION AS DETERMINED BY LCDC-WWS.
 - S. COMMERCIAL BUILDINGS SHALL USE A 6" SANITARY RISER FROM THE MAIN TO THE STRUCTURE. THE SERVICE RISER SHALL CONNECT TO THE MAINLINE AND NOT AT A MANHOLE.
 - T. FOR COMMERCIAL ESTABLISHMENTS THAT GENERATE GRIT OR GREASE, AN EXTERNAL GREASE/GRIT TRAP SHALL BE PROVIDED. SHOW THE DETAIL ON THE PLANS WITH APPROPRIATE NOTES. THE DOMESTIC SEWAGE SHALL BE DESIGNED TO BYPASS THE GREASE/GRIT TRAP.
 - U. THE MINIMUM SLOPE FOR A COMMERCIAL LEAD IS 1" OF FALL PER 100 FEET OF PIPE. SHOW THE INVERT AT THE STRUCTURE AND THE SLOPE TO THE PROPERTY LINE.
 - V. ALL SANITARY SEWER RISERS SHALL BE SDR-26 PVC.
 - W. EACH PARCEL OF LAND SHALL HAVE AN INDIVIDUAL RISER.

LIVINGSTON COUNTY STANDARD NOTES FOR SITE PLAN REVIEW

1. ALL PUBLIC SANITARY SEWER AND/OR WATER MAIN SHALL BE EXTENDED TO THE FURTHEST LIMITS OF THE PROPERTY, INCLUDING CORNER LOTS, WITH THE PIPE SIZE AND MATERIAL APPROVED BY LCDC-WWS. THIS IS NECESSARY FOR PLAN APPROVAL. FOR WATER SERVICE OF 1" OR LESS OR A BUILDING ON A CORNER LOT, THE REQUIREMENTS TO EXTEND THE PUBLIC WATER MAIN AND/OR SANITARY SEWER ALONG BOTH PROPERTY LINES WILL BE REVIEWED. FINAL DETERMINATION SHALL BE MADE BY LIVINGSTON COUNTY.
2. ALL PUBLIC WATER MAINS SHALL BE LOOPED WHENEVER POSSIBLE. THE PIPE SIZING SHALL BE APPROVED BY LIVINGSTON COUNTY.
3. A INDUSTRIAL PRETREATMENT PERMIT PERMIT IS REQUIRED FOR ALL COMMERCIAL AND INDUSTRIAL DISCHARGES. THE OWNER SHALL OBTAIN AN INDUSTRIAL PRETREATMENT DISCHARGE PERMIT PRIOR TO THE ISSUANCE OF A SEWER CONNECTION PERMIT. INDUSTRIAL DISCHARGE PERMITS ARE NON-TRANSFERABLE. CHANGES IN FACILITY USE WILL REQUIRE A NEW INDUSTRIAL DISCHARGE PERMIT.
4. THE DEVELOPER SHALL SUBMIT A DETAILED SOIL EROSION AND SEDIMENTATION CONTROL PLAN AND OBTAIN AN ACT 451 PART 91, SOIL EROSION AND SEDIMENTATION PERMIT. THIS INCLUDES THE PAYMENT OF FEES AND THE PROVIDING OF NECESSARY BONDS. NO EARTH CHANGES OR EXCAVATION SHALL BE STARTED PRIOR TO THE ISSUANCE OF THIS PERMIT. THE DEVELOPER SHALL PROTECT ALL EXISTING AND PROPOSED STORM SEWER FACILITIES ON AND ADJACENT TO THE SITE DURING EXCAVATION AND CONSTRUCTION. ALL SEDIMENT SHALL BE CONTAINED ON SITE. ANY SILT IN COUNTY DRAINS, STORM SEWER, CULVERTS, ETC. AS A RESULT OF THIS PROJECT, SHALL BE REMOVED BY THE DEVELOPER AT THE COST OF THE DEVELOPER.
5. THE DEVELOPER SHALL APPLY TO THE STATE OF MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY FOR A PERMIT FOR THE ALTERATION AND/OR OCCUPATION OF A FLOOD PLAIN OR FLOOD WAY, AS REQUIRED UNDER PA 451. EVIDENCE OF THIS PERMIT MAY BE REQUIRED PRIOR TO PLAN APPROVAL BY LIVINGSTON COUNTY.
6. THE OWNER OF THE PROPERTY SHALL OBTAIN A NPDES STORM WATER DISCHARGE PERMIT FOR CONSTRUCTION ACTIVITIES FROM MDEQ AS REQUIRED UNDER PUBLIC ACT 451. THE NOTICE OF COVERAGE FORM SHALL BE SUBMITTED THROUGH LIVINGSTON COUNTY WITH THE SOIL EROSION CONTROL PERMIT APPLICATION. ALL MDEQ FEES SHALL ACCOMPANY THE NOTICE OF COVERAGE. EVIDENCE OF THIS PERMIT MAY BE REQUIRED PRIOR TO PLAN APPROVAL BY LIVINGSTON COUNTY.
7. AFTER THE APPROVAL OF THIS PRELIMINARY PLAN OR SITE PLAN, THE DEVELOPER SHALL SUBMIT A DETAILED PLAN FOR CONSTRUCTION OF ALL PUBLIC SANITARY SEWER AND WATERMAIN. THE PLANS MUST HAVE LIVINGSTON COUNTY APPROVAL, A S-PERMIT ISSUED, AND APPROVAL FROM THE MDEQ PRIOR TO BEGINNING CONSTRUCTION.
8. THE DEVELOPER SHALL OBTAIN A PERMIT FROM THE LIVINGSTON COUNTY ROAD COMMISSION TO PERFORM WORK WITHIN THE LIVINGSTON COUNTY ROAD COMMISSION RIGHT-OF-WAY. ALL FEES FOR THE PERMIT, BONDS AND INSURANCE ARE THE RESPONSIBILITY OF THE DEVELOPER.
9. PRIOR TO THE ISSUANCE OF A BUILDING PERMIT BY THE LOCAL MUNICIPALITY, THE DEVELOPER SHALL BE REQUIRED TO OBTAIN A SANITARY SEWER AND/OR WATER TAP-IN PERMIT FROM THE LOCAL MUNICIPALITY, IF AUTHORIZED, OR LIVINGSTON COUNTY.
10. THE SANITARY SEWER AND WATERMAIN CONSTRUCTION PERMIT APPLICATION FROM THE MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY (MDEQ) SHALL BE SUBMITTED TO THE MDEQ AFTER RECEIVING APPROVAL FROM LIVINGSTON COUNTY. CONSTRUCTION SHALL NOT BEGIN UNTIL THESE STATE PERMITS ARE ISSUED.

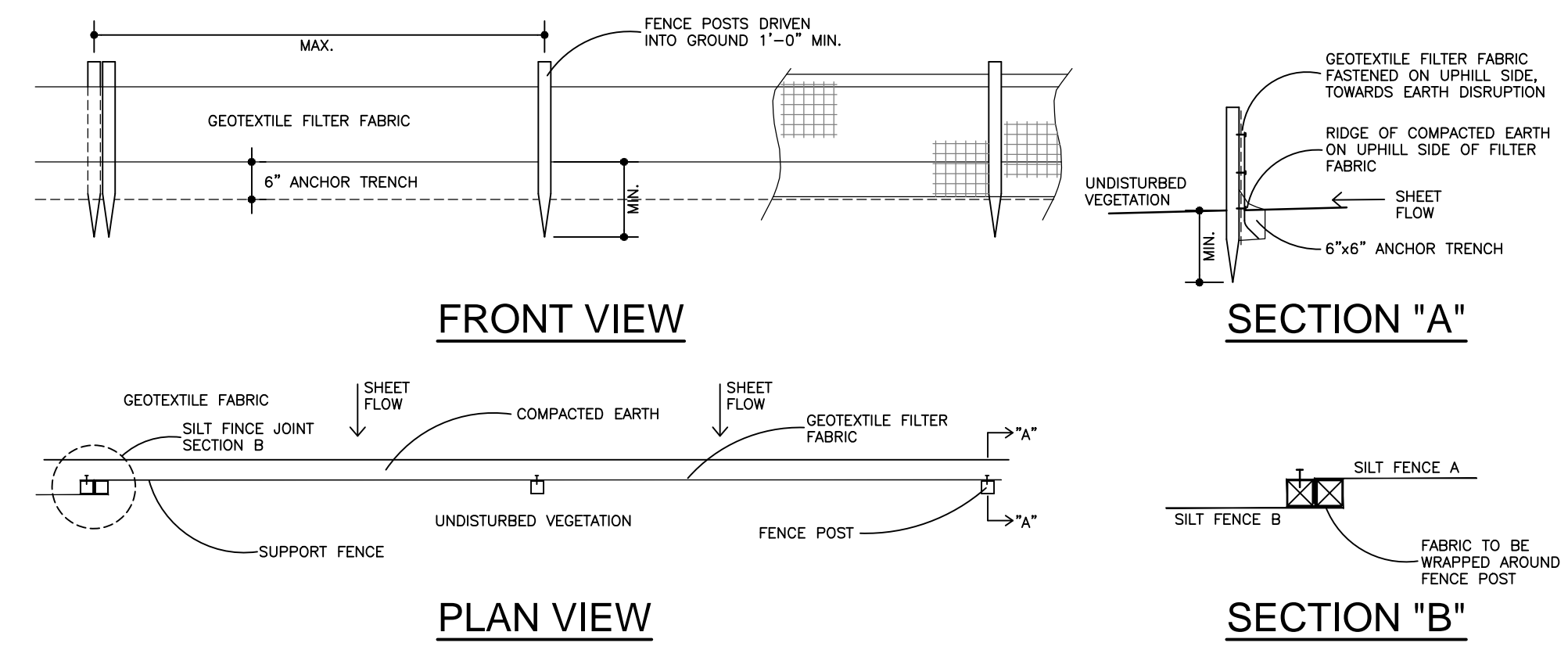
TOTAL DISTURBED AREA = 57,649 S.F. OR 1.32± ACRES

MICHIGAN UNIFIED KEYING SYSTEM

- 1 STRIPPING AND STOCKPILEING TOPSOIL
- 2 GRADING & SHAPING (TYP. ENTIRE SITE)
- 6 SEED & MULCH
- 8 SOD (TYP. ALL EXPOSED AREAS)
- 13 RIP-RAP
- 14 STONE CONSTRUCTION ACCESS 20'x50' MIN. OVER GEOTEXTILE
- 15 HARD SURFACE PAVING
- 16 CURB & GUTTER
- 35 CATCH BASIN W/ FILTER
- 36 STORMWATER COLLECTION SYSTEM
- 54 SILT FENCE

NOTE
CONTRACTOR SHALL CHECK AND MAINTAIN ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES, INCLUDING INSPECTING SILT FENCE DAILY AND REPAIRING AND RIPS AND TEARS, CHECKING STRAW BAIL FILTERS AND REPLACING IF NECESSARY. ALSO AFTER A HARD RAIN ALL CONTROL MEASURES WILL BE CHECKED AND REPAIRED IF NECESSARY INCLUDING ALL SLOPES ON SITE

SOIL EROSION PLAN
SCALE: 1" = 60'-0"



SILT FENCE DETAILS
SCALE: 1/2" = 1'-0"

SOIL EROSION IMPLEMENTATION SCHEDULE

SOIL EROSION AND SEDIMENTATION CONTROL MEASURES ARE TO TAKE PLACE IN THE FOLLOWING ORDER

A) INSTALLATION OF SILT FENCE	07-15 THRU 07-16
B) ROUGH GRADE / SEDIMENTATION CONTROL	07-16 THRU 07-22
C) TEMP. CONSTRUCTION ROADS	N/A
D) STRIP AND STOCKPILE TOPSOIL	07-16 THRU 07-22
E) STORM FACILITIES	N/A
F) TEMP. CONTROL MEASURES	07-22 THRU 08-8
G) FOUNDATION / BUILDING RENOVATION	07-15 THRU 09-21
H) SITE IMPROVEMENTS	07-16 THRU 09-22
I) FINISH GRADING	08-15 THRU 09-21
J) PERMANENT CONTROL MEASURES	09-10 THRU 09-25
K) LANDSCAPING	09-1 THRU 09-15

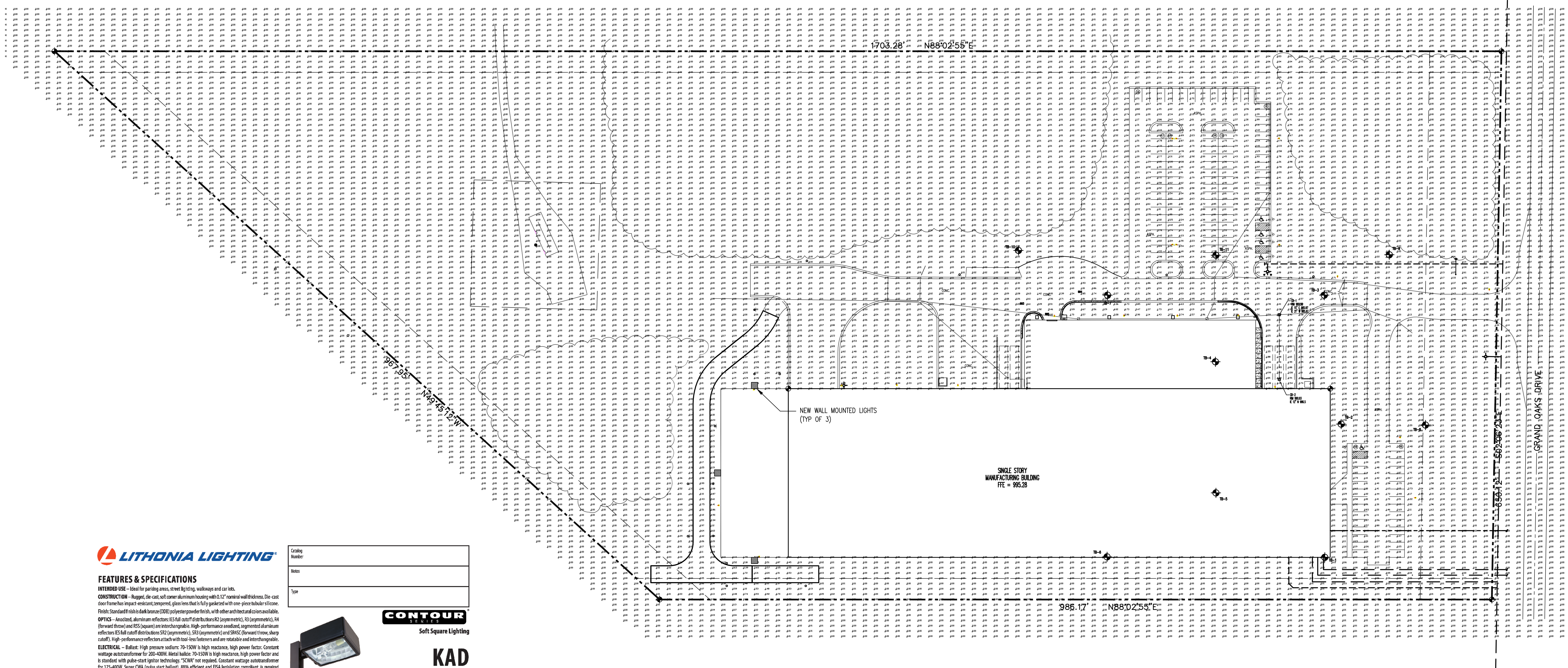
Date	Description
04-18-16	REVISED FOR PRICING
05-02-16	SITE PLAN REVIEW
05-25-16	REV. FOR SITE PLAN REVIEW

No.	Description	Date
1	SITE PLAN REVIEW	05/05/16
2	REV. FOR SITE PLAN REVIEW	05/25/16

PHOTOMETRIC PLAN

Project number 16031

CE1.1
Scale 1" = 60'



NOTE:
EXCEPT WHERE NOTED AT NEW
ADDITION, ALL EXTERIOR LIGHTING IS
EXISTING TO REMAIN

PHOTOMETRIC PLAN
SCALE: 1" = 60'-0"



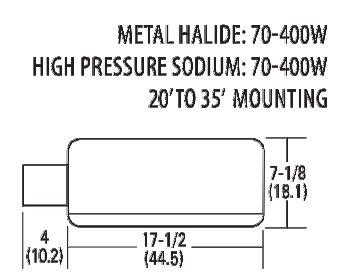
FEATURES & SPECIFICATIONS

INTERIOR USE – Ideal for parking areas, street lighting, walkways and car lifts.
CONSTRUCTION – Rugged, die cast, soft corner aluminum housing with 0.12" nominal wall thickness. Die cast door frame has impact resistant, tempered, glass lens that is fully gasketed with one-piece tubular silicone. Plastic Standard finish in dark bronze (D8) system powder finish, with other finishes and colors available.
OPTICS – Anodized, aluminum reflectors: IES full cutoff beam fixture R2 (symmetric), R3 (asymmetric), R4 (forward throw) and R5 (square) are interchangeable. High performance anodized, segmented aluminum reflectors IES full cutoff distribution SR2 (asymmetric), SR3 (asymmetric) and SR4C (forward throw, sharp cutoff). High performance reflectors slash without hot-foot features and are reliable and interchangeable.
ELECTRICAL – Ballast: High pressure sodium: 70-150W is high reactance, high power factor, constant voltage auto transformer for 200-400W. Metal halide: 70-150W is high reactance, high power factor and is standard with pulse-start ignitor technology. SCWV not required. Constant voltage auto transformer for 15-400W. Super CWV (pulse start ballast, 80% efficient and EISA regulator compliant, is required for metal halide 151-400W (SCWA option) for US shipments only. CSA, NOM or IRL required for probe start shipments outside of the US. Pulse start ballast (SCWA) required for 200W, 320W, or 350W. Ballast is 100% factory tested.
Socket: Porcelain, horizontally oriented medium base socket for 70-150W. Mogul base socket for 175W and above, and 70-400W, with copper alloy, nickel-plated screw shell and center contact. UL listed 1500W, 600V.
LISTINGS – UL Listed (standard), CSA Certified (see Options). UL Listed for 25°C ambient wet locations. IP65 used in accordance with standard IEC 60529.
WARRANTY – 1 year limited warranty. Complete warranty terms located at www.asselinmclane.com/CustomerResources/Terms_and_conditions.aspx
Note: Specifications subject to change without notice.



CONTOUR
Soft Square Lighting

KAD



METAL HALIDE: 70-400W
HIGH PRESSURE SODIUM: 70-400W
20 TO 35' MOUNTING

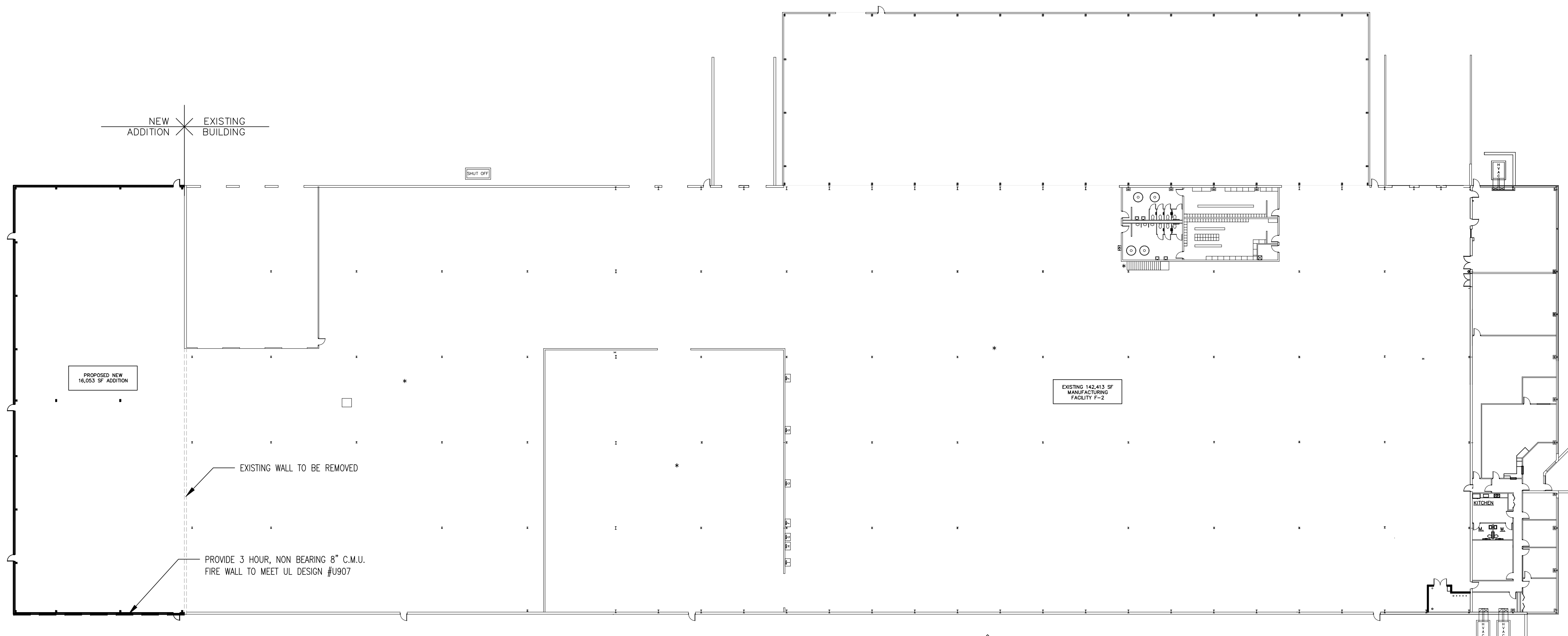
ORDERING INFORMATION For shortest lead times, configure product using **bolded options**.

Series	Wattage	Distribution	Ballast	Mounting*	Arm length				
KAD	Metal halide 70W ¹ 250W ² 100W ³ 320W ⁴ 150W 350W ⁴ 175W 400W ⁴ 200W ⁴	High pressure sodium ⁵ 705 1055 1505 2095 4995	Ceramic metal halide 70W/MH-C ³ 100W/MH-C ³ 150W/MH-C ³ 200W/MH-C ³	Standard reflectors R2 IES type II asymmetric ⁶ R3 IES type II asymmetric ⁶ R4 IES type IV forward throw ⁶ R5 IES type IV square	High performance reflectors ⁷ SR2 IES type II asymmetric ⁶ SR3 IES type II asymmetric ⁶ SR4C IES type IV forward throw ⁶ SR5 IES type IV square	120 208 ⁸ 240 ⁸ 277 347 480 ⁸ TB ⁹ 230/242 ¹⁰	(D=K) Magnetic ballast CWI Contact wiring isolate ¹¹ ProStart SCWA Super CWV pulse-start ballast NOTE: For high pressure sodium, magnetic ballast is required to comply with EISA.	Ships in fixture carton SPD Square pole RPD Round pole WPD Wood or pole-wall Ship separately ¹⁴ DAD12P Degree arm (pole) DAD12WB Degree arm (wall) WBA Decorative wall bracket ¹⁵ BKA Most arm returned after KMB Twin mounting bar	04 4' arm 06 6' arm 09 9' arm 12 12' arm

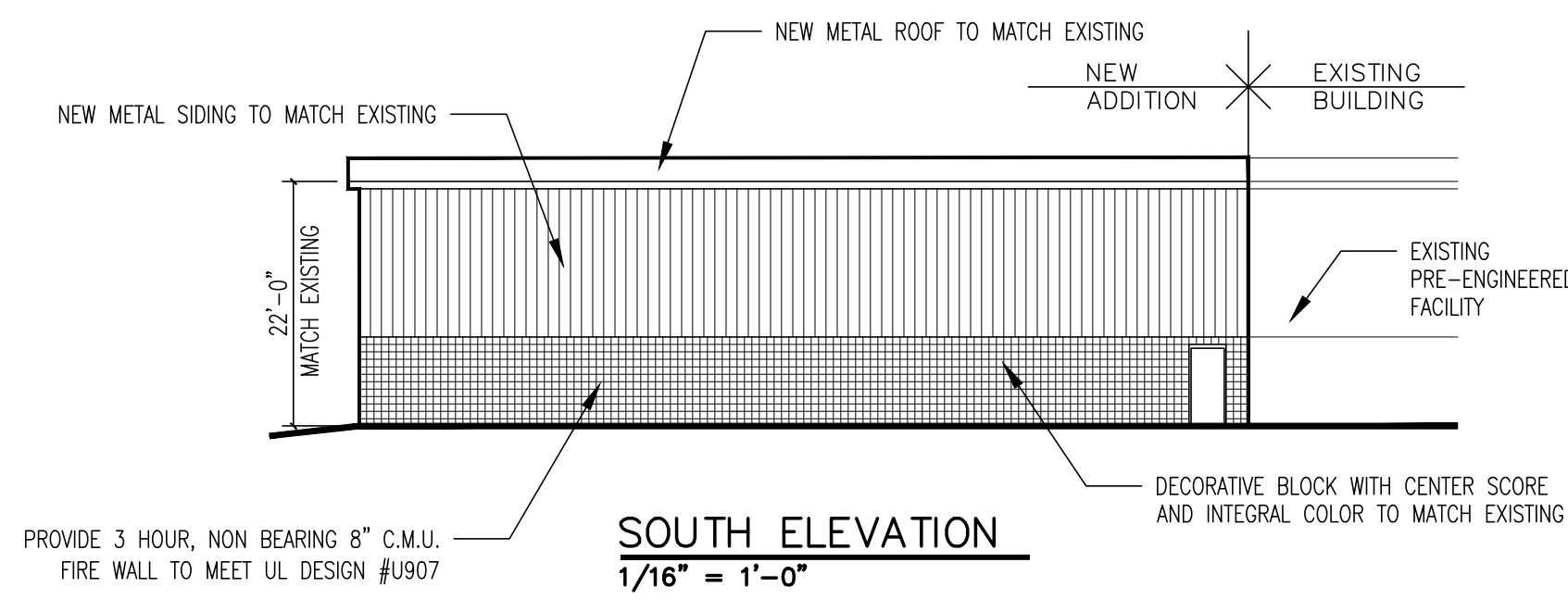
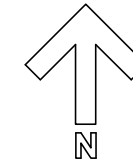
Example: KAD 400W R3 TB SCWA SPD4-LPI

Options	Finish ¹⁶	Lamp ¹⁷
Shipped installed in fixture SF Single fixture (120, 277, 347W) ¹⁸ DF Double fixture (200, 240, 480W) ¹⁸ PR Power tray ¹⁹ PDR MHA twin-lock receptacle only (no photocontrols) QRS Quartz resistor system ²⁰ QRSD QRS time delay ²⁰ WTB Terminal wiring block ²¹	(Blank) Dark bronze DWH White DBL Black DMB Medium bronze DMA Natural aluminum SQA Square Double Finishes DBR Dark bronze DRD Dark	LP1 Lamp Included LAP LAMP LAP Lamp

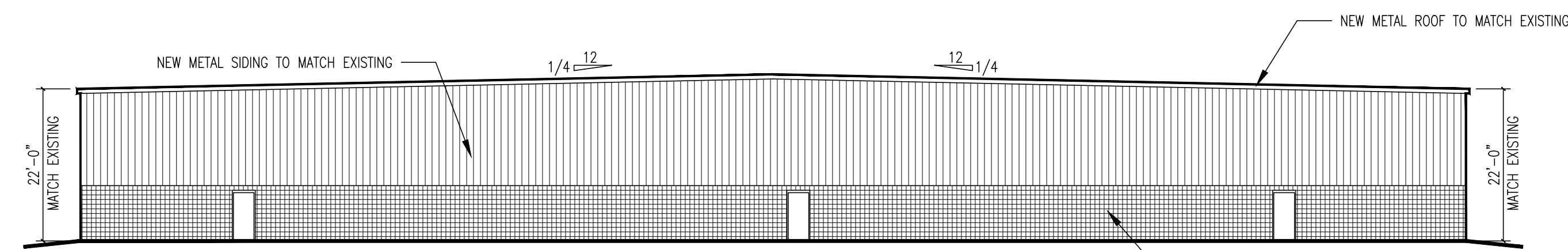
Accessories: Neon Mounting Slipfitter (RPOs required.)	Notes																								
<p>1 Not available with SCWV</p> <p>2 Not available with DMH</p> <p>3 These wattages do not comply with California fire code</p> <p>4 Must be ordered with SCWV</p> <p>5 These wattages require the IESCA option to be chosen for shipment into California for this 20 compliance. D5M R2CA is not available @ 277 or 480W.</p> <p>6 Reduced order ID10 required for SR2, SR3 and SR4C options</p> <p>7 House-side shield available.</p> <p>8 High performance reflectors not available with DMH.</p> <p>9 Must specify CWV for use in Canada.</p> <p>10 Contact factory for outside wattages. 240, 277W in Canada, 120, 277, 347W.</p> <p>11 Contact factory for outside wattages.</p> <p>12 9' arm is required when two or more luminaires are ordered as a 9' fitting option.</p> <p>13 May be ordered as an accessory.</p> <p>14 Must specify finish when ordered as an accessory.</p> <p>15 Available with SP04 and SP100.</p> <p>16 Most specify voltage, IFA with TB.</p> <p>17 Only available with SR2, SR3 and SR4C optics.</p> <p>18 New aluminum lighting lamp included accessory.</p> <p>19 See www.lithonia.com/interlockers for additional order options.</p> <p>20 Must be specified. LAMP not available with WMA.</p> <p>21 Must use #P000.</p>	<p>Number of fixtures</p> <table border="1"> <tr> <td>One</td> <td>Two@180°</td> <td>Two@90°</td> <td>Three@120°</td> <td>Three@90°</td> <td>Four@90°</td> </tr> <tr> <td>2-1/8"</td> <td>T20-190</td> <td>T20-280</td> <td>T20-290²²</td> <td>T20-390²²</td> <td>T20-490²²</td> </tr> <tr> <td>2-7/8"</td> <td>T25-190</td> <td>T25-280</td> <td>T25-290²²</td> <td>T25-390²²</td> <td>T25-490²²</td> </tr> <tr> <td>4"</td> <td>T35-190</td> <td>T35-280</td> <td>T35-290²²</td> <td>T35-390²²</td> <td>T35-490²²</td> </tr> </table>	One	Two@180°	Two@90°	Three@120°	Three@90°	Four@90°	2-1/8"	T20-190	T20-280	T20-290 ²²	T20-390 ²²	T20-490 ²²	2-7/8"	T25-190	T25-280	T25-290 ²²	T25-390 ²²	T25-490 ²²	4"	T35-190	T35-280	T35-290 ²²	T35-390 ²²	T35-490 ²²
One	Two@180°	Two@90°	Three@120°	Three@90°	Four@90°																				
2-1/8"	T20-190	T20-280	T20-290 ²²	T20-390 ²²	T20-490 ²²																				
2-7/8"	T25-190	T25-280	T25-290 ²²	T25-390 ²²	T25-490 ²²																				
4"	T35-190	T35-280	T35-290 ²²	T35-390 ²²	T35-490 ²²																				



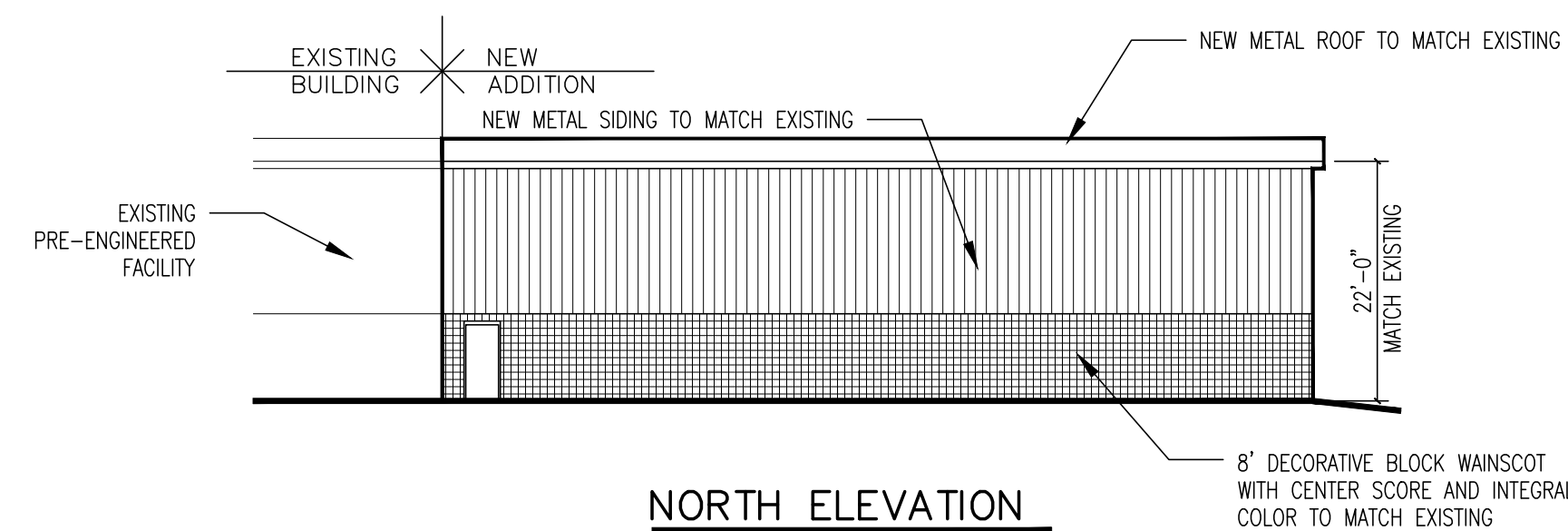
OVERALL FLOOR PLAN
1/32" = 1'-0"



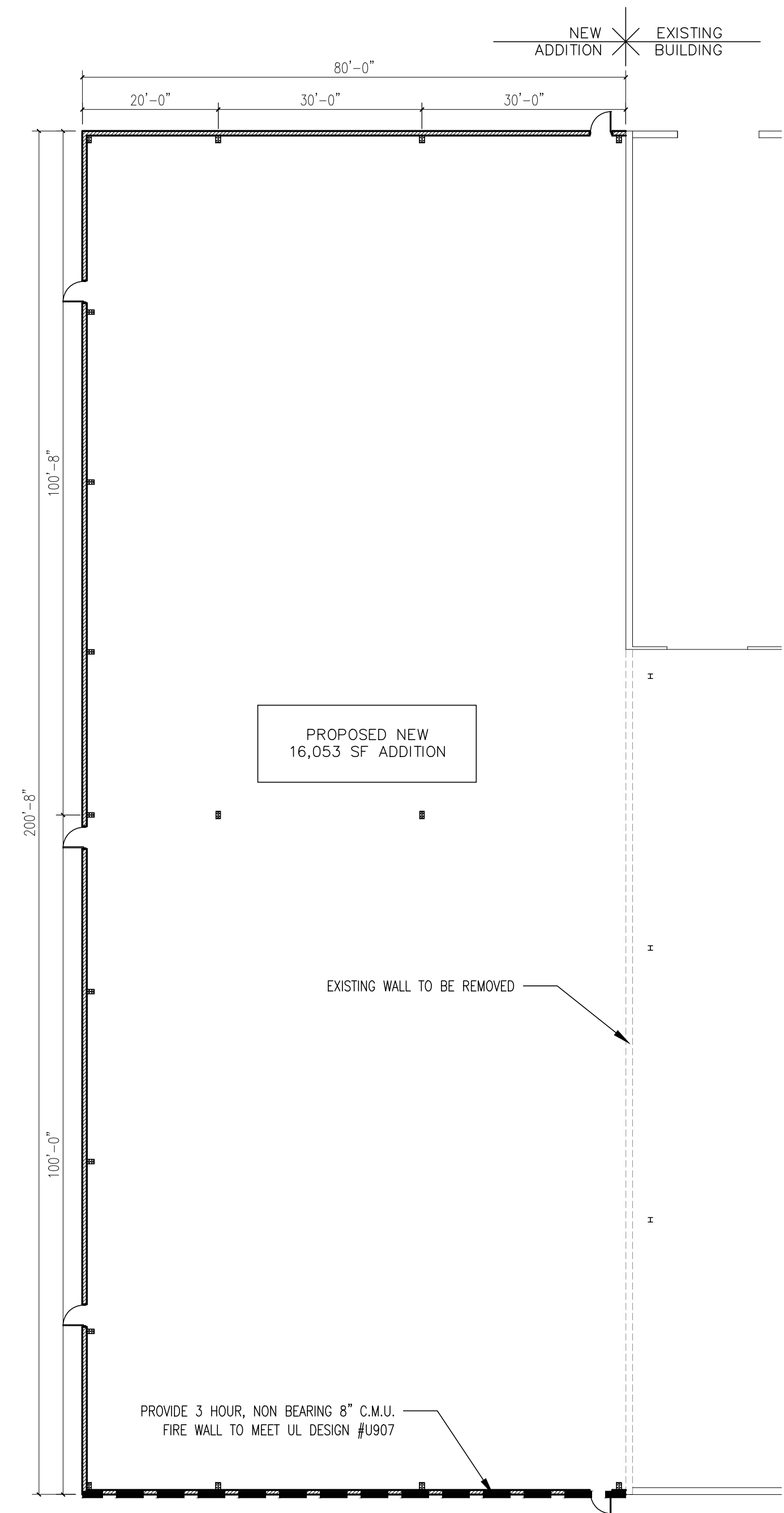
SOUTH ELEVATION
1/16" = 1'-0"



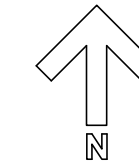
WEST ELEVATION
1/16" = 1'-0"



NORTH ELEVATION
1/16" = 1'-0"



ENLARGED FLOOR PLAN
1/16" = 1'-0"



No.	Description	Date
1	REVISED FOR PRICING	04-18-16
2	SITE PLAN REVIEW	05-02-16
3	REV. FOR SITE PLAN REVIEW	05-25-16

**GENOA CHARTER TOWNSHIP
PLANNING COMMISSION
PUBLIC HEARING
May 9, 2016
6:30 P.M.
MINUTES**

CALL TO ORDER: The meeting of the Genoa Charter Township Planning Commission was called to order at 6:30 p.m. Present were Chairman Doug Brown, Barbara Figurski, Diana Lowe, James Mortensen, Chris Grajek, John McManus, and Eric Rauch. Also present was Kelly VanMarter, Community Development Director/Assistant Township Manager, Brian Borden of LSL Planning, and an audience of six.

PLEDGE OF ALLEGIANCE: The pledge of allegiance was recited.

APPROVAL OF AGENDA: **Moved** by Commissioner McManus, seconded by Commissioner Grajek, to approve the agenda as presented. **The motion carried unanimously.**

CALL TO THE PUBLIC: The call to the public was made at 6:32 pm.

Mr. Dan Wholihan of PO Box 182, Brighton is concerned about Item #1 on tonight's agenda. He is not sure there is room for 16 units to be developed in this area as most of it is swamp land. Ms. VanMarter showed Mr. Wholihan where the property is located. He is satisfied as he believed it was in a different location.

The call to the public was closed at 6:35 pm.

OPEN PUBLIC HEARING #1...Review of a request for an extension to the Mountain Top Estates Site Plan dated 3-17-06 and Impact Assessment dated 4-20-06 for a proposed 16-unit, single-family site condominium located north of Cunningham Lake Road and east of Sundance Trail, known as Mountain Top Estates. The request is petitioned by Robert Moore. This project has been granted extensions by the Planning Commission on 5-14-07, 4-13-09, 4-12-10, and 3-25-13.

Planning Commission disposition of petition:

A. Disposition of Site Plan Extension

Chairman Brown noted that in addition to the extensions stated on the agenda, other administrative extensions have been granted for this project.

Mr. Moore stated he has owned this property for 30 years and it was purchased by Doyle Homes, who was going to develop the proposed site plan. Because the economy went down in 2008, it was not done. Mr. Moore has since purchased the property and taken on the project. Now that the economy has turned around, he would like to once

again sell the property to someone who will develop it. Mr. Moore addressed the concerns of the planner, engineer and the Brighton Area Fire Authority's review letters.

Mr. Borden stated he is recommending approval of the extension; however, he wants the applicant to be aware that if any changes to the ordinance are made in the future, they will need to be addressed and the site plan will need to be amended.

Commissioner Mortensen asked Mr. Moore if he is agreeable of not allowing parking on any street. He stated he is and it will become part of the master deed.

Commissioner Mortensen stated that the item noted in the Brighton Area Fire Authority's letter regarding the on-site water needs and the suggestion of the Township requiring well-filled cisterns should be determined by the developer and property owners and not part of the site plan approval.

The call to the public was made at 6:46 pm with no response.

Moved by Commissioner Mortensen, seconded by Commissioner Figurski, to approve the Site Plan Extension for Mountain Top Estates with the following conditions:

- The master deed will be amended to prohibit on-street parking.
- The letter from Ace Civil Engineering, Inc. shall be reviewed by the Township engineer to ensure it meets their requirements.
- The requirement for on-site water, such as cisterns, will be optional and be considered by the developer and home owners.

The motion carried unanimously

OPEN PUBLIC HEARING #2...Review of an Impact Assessment and Site Plan and for the proposed Misty Meadows Drive private road located on the west side of S. Latson Road, south of Crooked Lake Road. The private road will serve nine lots. The request is petitioned by GFG Investments Properties.

Planning Commission disposition of petition:

- A. Recommendation of Environmental Impact Assessment (3-23-16)
- B. Disposition of Site Plan (4-20-16)

Chairman Brown stated that the Site Plan does not need to be approved by the Planning Commission as it meets the requirements of the Subdivision Act. The private road needs to be approved.

Mr. Brent LaVanway of Boss Engineering and Mr. Guy Genzel, the property owner, were present.

Mr. LaVanway gave a brief history and description of the property and project. He stated the Livingston County Road Commission has approved the location of the road. He addressed the cistern requirement in the Brighton Area Fire Authority's letter. He would like to address this at a later date to determine if the demand is there, and if so, then it can be installed. They will install evergreen trees as a buffer between the road and the property to the south as requested by Mr. Borden. They can submit a plan to staff for their review.

Mr. Borden feels the conditions are present that warrant consideration of a private road not built to Road Commission standards. He also recommended that a "Private Road Maintenance Agreement" be provided. He noted that this was given to the Commissioners by the applicant this evening.

Commissioner Grajek questioned the need for cisterns for homes greater than 3,600 square feet as recommended by the Brighton Area Fire Authority. Commissioner Mortensen stated he has been on the Planning Commission for 20 years and the Township has never required a cistern. He would recommend making this optional for consideration by the developer and future homeowners. Commissioner Grajek wants to ensure that the Township is in compliance with the BAFA. Commissioner Mortensen stated the Fire Authority is making a recommendation.

Ms. VanMarter stated that this comment on the letters from the BAFA for both items on tonight's agenda were a surprise to staff. She has set up a meeting with them to discuss these new requirements and to determine who has jurisdiction and how they should be addressed. She noted that adding municipal water and sewer to these developments could change the rural nature of the Township.

Chairman Brown suggested that the applicant strike the second sentence to the response in Item "F" of the Environmental Impact Assessment. Mr. LaVanway agrees.

Moved by Commissioner McManus, seconded by Commissioner Figurski, to recommend to the Township Board approval of the Environmental Impact Assessment dated March 23, 2016 with the removal of the second sentence of the response to Item "F". **The motion carried unanimously.**

Moved by Commissioner Mortensen, seconded by Commissioner Lowe, to approve the Site Plan for Misty Meadows dated April 20, 2016 with the following conditions:

- The Private Road Maintenance Agreement provided this evening shall be reviewed and approved by the Township Attorney.
- Evergreen plantings shall be provided along the roadway adjacent to the road at the southeast corner of the property and reviewed and approved by Township Staff.
- The requirement in the Brighton Area Fire Authority's letter dated May 14, 2016, Paragraph 1, regarding the water related fire suppression issues are to be regarded as optional by the Township, subject to review by Township Staff and the Township Attorney.

The motion carried unanimously.

Administrative Business:

- Staff Report

Mr. VanMarter stated there will be two items on next month's agenda.

- Approval of the April 11, 2016 Planning Commission meeting minutes:

It was noted that Commission McManus was present at the meeting.

Moved by Commissioner McManus, seconded by Commissioner Lowe, to approve the minutes of the April 11, 2016 Planning Commission Meeting as amended.

The motion carried unanimously.

- Member Discussion:

Chairman Brown stated there is a possibility that Commissioner Mortensen will not be on the Planning Commission after November. He may not be re-elected as a Trustee or the new Township Supervisor may not appoint him as the liaison to the Planning Commission. Commissioner Mortensen makes a lot of the motions for the Commission so he would like others to begin making motions, specifically for site plan dispositions.

Commissioner Lowe feels all Commissioners are able to make the motions.

Ms. VanMarter suggested that if a Commissioner feels he or she would like to make a motion on an item, they could alert the Commission during the discussion.

Commissioners McManus and Lowe will not be at the July meeting.

- Adjournment

Moved by Commissioner Lowe, seconded by Commissioner Figurski, to adjourn the meeting at 7:22 pm. **The motion carried unanimously.**