

**GENOA CHARTER TOWNSHIP
PLANNING COMMISSION PUBLIC HEARING
MARCH 12, 2018
MONDAY
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.*)

OLD BUSINESS:

OPEN PUBLIC HEARING # 1... Review of a special use, site plan and environmental impact assessment for a proposed commercial outdoor display, sales and storage area for a new Family Farm and Home store. The property in question is located in the former TJ Maxx retail space at 3685 E. Grand River Avenue, Howell 48843. The request is petitioned by Family Farm and Home.

Planning Commission Recommendation of Petition:

- A. Recommendation of Special Use Application.
- B. Recommendation of Environmental Impact Assessment (1/4/18).
- C. Recommendation of Site Plan (2/22/18).

NEW BUSINESS:

OPEN PUBLIC HEARING #2...Review of site plan and environmental impact assessment for a proposed 2,254 sq. ft. addition to the existing ALDI Food Market located at 2260 E. Grand River Ave., Howell. The request is petitioned by ALDI Inc.

Planning Commission Recommendation of Petition:

- A. Recommendation of Environmental Impact Assessment (2-23-18)
- B. Disposition of Site Plan (2-21-18)

OPEN PUBLIC HEARING #3... Review of site plan amendment to add 4 additional apartment units and relocate the fitness center for Lakeshore Village Apartments located at 2812 Ontario Ct., Howell. The request is petitioned by Coponen Architects.

Planning Commission Disposition of Petition:

- A. Disposition of Site Plan (2-22-18)

ADMINISTRATIVE BUSINESS:

- *Staff Report*
- *Approval of February 12, 2018 Planning Commission meeting minutes*
- *Member discussion*
- *Adjournment*



GENOA CHARTER TOWNSHIP

Special Land Use Application

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

APPLICANT NAME & ADDRESS: Martin Renel, ASHMARK Construction

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

APPLICANT PHONE: (248)855-1575

EMAIL: martin@ashmark.com

OWNER NAME & ADDRESS: ASHMARK Construction llc, 5640 West Maple Road Suite 300, West Bloomfield, MI 48322

SITE ADDRESS: 3685 E Grand River Ave

PARCEL #(s): 4711-05-400-032

OWNER PHONE: 248 855-1575

EMAIL: _____

Location and brief description of site and surroundings:

The site is An existing shopping center known as Grand River Plaza located north of S Latson Road on Grand River Road.

The tenant wishes to improve and occupy a retail space once occupied by TJ Maxx.

Proposed Use:

Hard scaping a side yard (7,331 SF OR .17 AC) to the south for a fenced exterior storage area, a reuse of an existing parking area as storage and the removal of a trash compactor enclosure screen fencing at the existing building entry and new loading dock door The requested outdoor fenced areas are for the purpose of storing products for sale.

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

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

This project is located in a regional commercial district which allows for outdoor storage under 7.02.02 (d) of the Genoa Township Zoning Ordinance. Further this proposal provides 8 foot and 4 foot high screen walls where storage of products are to be stored or displayed. All stored items will not be stored higher than the screen provided and will not be visible from any residential district or expressway

- 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 storage area will screen all equipment and products with a fence area as proposed and is in keeping with providing retail offerings in a regional commercial district

- 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?

There will be no change in complete access that currently exists to the site as no changes to vehicular and emergency circulation, drive isle or parking configurations is being requested.

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

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.

Yes, this proposal fully complies with 7.02.02 (d) as required for outdoor storage areas

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 Martin Renel for property ownership 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: ASHMARK Construction llc, 5640 West Maple Road Suite 300, West Bloomfield, MI 48322

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

Martin Renel of ASHMARK Construction LLC at martin@ashmark.com
Name Business Affiliation Email

FEE EXCEEDANCE AGREEMENT

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

SIGNATURE: _____ DATE: January 3, 2018

PRINT NAME: Martin Renel PHONE: 248 855-1575



GENOA CHARTER TOWNSHIP
Application for Site Plan Review

TO THE GENOA TOWNSHIP PLANNING COMMISSION AND TOWNSHIP BOARD:

APPLICANT NAME & ADDRESS: Family Farm and Home
If applicant is not the owner, a letter of Authorization from Property Owner is needed.

OWNER'S NAME & ADDRESS: ASHMARK Construction for Family Farm and Home

SITE ADDRESS: 3685 E Grand River Ave PARCEL #(s): _____

APPLICANT PHONE: (248 855-1575) OWNER PHONE: (_____)

OWNER EMAIL: martin@ashmark.com

LOCATION AND BRIEF DESCRIPTION OF SITE: The site is An existing shopping center known as Grand River Plaza located north of S Latson Road on Grand River Road. The tenant wishes to improve a retail space once occupied by TJ Maxx.

BRIEF STATEMENT OF PROPOSED USE: The building use will remain as it now exists, Mercantile / Retail No expansion of the building foot print is planned. The improvements include the renovation of the interior retail space as well as hard scaping a side yard (7,331 SF OR .17 AC) to the south for a fenced exterior storage area, a reuse of an existing parking area as storage and the removal of a trash compactor enclosure, screen fencing at the existing building entry and new loading dock door The requested outdoor fenced areas are for the purpose of storing products for sale.

THE FOLLOWING BUILDINGS ARE PROPOSED: no new buildings are proposed.

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

BY: _____

ADDRESS: ASHMARK Construction llc, 5640 West Maple Road Suite 300, West Bloomfield, MI 48322

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

1.) Martin Renel of ASHMARK Construction at martin@ashmark.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: January 3, 2018

PRINT NAME: Martin Renel PHONE: 248 855-1575

ADDRESS: 5640 West Maple Road Suite 300, West Bloomfield, MI 48322

- The petitioner agrees that they will maintain the landscape around the dog walk area to keep the vegetation alive.
- All requirements of the Brighton Area Fire Authority's letter of February 1, 2018 shall be met.
- Township Board approval of the Impact Assessment and sketch plan.

The motion carried unanimously.

Moved by Commissioner McManus, seconded by Commissioner Grajek, to recommend to the Township Board approval of the Environmental Impact Assessment dated January 22, 2018 for Four Seasons Veterinary Services veterinary clinic. The property in question is located at 6936 Grand River Avenue, Brighton, 48114. **The motion carried unanimously.**

Moved by Commissioner McManus, seconded by Commissioner Mortensen, to recommend to the Township Board approval of the Sketch Plan for Four Seasons Veterinary Services veterinary clinic. The property in question is located at 6936 Grand River Avenue, Brighton, 48114, conditioned upon the following:

- The sketch plan is sufficient instead of a Site Plan. This is an existing building with a modest amount of exterior and landscaping changes.
- Six deciduous trees shall to be planted in the spring in the easement along Grand River
- The petitioner will add a hedge row to screen the dogs using the area. The hedge row shall be reviewed and approved by Township staff.
- Township Board approval of the Special Land Use and Impact Assessment.

The motion carried unanimously.

OPEN PUBLIC HEARING # 3... Review of a special use, site plan and environmental impact assessment for a proposed commercial outdoor display, sales and storage area for a new Family Farm and Home store. The property in question is located in the former TJ Maxx retail space at 3685 E. Grand River Avenue, Howell 48843. The request is petitioned by Family Farm and Home.

Planning Commission Recommendation of Petition:

- A. Recommendation of Special Use Application.
- B. Recommendation of Environmental Impact Assessment (01/04/18).
- C. Recommendation of Site Plan (01/24/18).

Mr. Martin Renel of Ashmark Construction and Robert Kerr of Metro Group Architects were present.

Mr. Renel provided a review of the project and the proposed use. They would be performing minor renovations on the interior of the building. They would be adding an outdoor display area and reconstructing the dumpster enclosure.

Mr. Borden reviewed his letter of February 6, 2018.

They find that the general standards of the Special Land Use have been met.

The screening for the outdoor storage area is required to be six-feet high and the applicant is proposing four-foot high fencing. The Planning Commission can approve the difference.

He is asking for clarification for what the applicant is calling the outdoor staging area. It appears to be an additional outdoor storage area. Mr. Renel stated that since the submittal was made, they have confirmed with Family Farm and Home that this area will be storage so the fencing will need to be extended to include this, which is an additional 19 feet.

There was a discussion regarding the removal of some of the grass area and then the same amount of grass area being replaced by removing parking spaces and adding turf. Commissioner Mortensen questioned if this would affect the parking. Ms. VanMarter stated there is sufficient parking on this site.

Commissioner Mortensen asked that the proposed white PVC fencing being redesigned. Mr. Borden noted that this fencing is also being proposed for the dumpster enclosure area and it is not an approved material. Mr. Eugene Franks of Family Farm and Home stated that there are dumpsters along the back of the building and none of them have enclosures. Mr. Renel stated they could use wood for the enclosure.

Commissioner Rauch asked staff for their experience with other commercial businesses in the Township who have outdoor storage. Ms. VanMarter stated the Township has had continued problems with businesses that have not complied with the ordinance as it pertains to outdoor storage for retail uses. Commissioner Rauch wants to ensure that there is sufficient screening on the front of this building so the same problem does not occur here.

Mr. Borden noted that the architectural plan and the engineering plan are not consistent.

There was a discussion regarding the completion of the cross access driveway to the property to the east. The applicant has declined to finish the driveway to connect the

two properties. Ms. VanMarter stated that the connection is the responsibility of Meijer; however, at the time it was developed, they were not given an easement from Kroger. Mr. Markstrom stated there is a large grade change in this area so significant work would need to be done to connect these two properties.

Mr. Markstrom reviewed his letter dated January 30, 2018. He would like to see flow direction shown for the storm-water runoff. The trade-off of the paving and turf is a viable alternative; however, he suggested the applicant look at the entire site it could possibly be determined that there may be sufficient impervious surface so there may not be a need to remove the parking spaces.

He needs to see a complete site plan with details, such as foundation details, curbing details, etc.

Chairman Brown reviewed the Brighton Area Fire Authority letter dated February 1, 2018. The applicant has agreed to meet all of their requirements.

The call to the public was made at 8:08 pm.

Mr. Eric Unatin with Mid-American Real Estate has been working on this lease. Their experience over the past 18 months since this site has been vacant has been that Family Farm and Home has been the only company interested. He noted the discussion regarding the material for the fencing and the dumpster enclosure and stated there are costs associated for both the property owner and the tenant when a new owner moves into a space and it must be economical for both of them.

The call to the public was closed at 8:12 pm.

Commissioner McManus agrees with what Mr. Unatin said; however, the Planning Commission needs to ensure that the ordinance is met. He agrees that the proposed fencing needs to be upgraded.

Moved by Commissioner Mortensen, seconded by Commissioner Rauch, table the request for a special use, site plan and environmental impact assessment for a proposed commercial outdoor display, sales and storage area for a new Family Farm and Home store located at 3685 E. Grand River Avenue, Howell 48843 until the March 12, 2018 meeting.

The motion carried unanimously.



March 6, 2018

Planning Commission
Genoa Township
2911 Dorr Road
Brighton, Michigan 48116

Attention:	Kelly Van Marter, AICP Planning Director and Assistant Township Manager
Subject:	Family Farm and Home – Special Land Use and Site Plan Review #3
Location:	3685 East Grand River Avenue – north side of Grand River, west of S. Latson Road
Zoning:	RCD Regional Commercial District

Dear Commissioners:

At the Township’s request, we have reviewed the revised submittal from Family Farm and Home for special land use (application dated 1/30/18) and site plan (plans dated 2/22/18) review and approval.

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

A. Summary

1. In our opinion, the special land use standards of Section 19.03 are generally met; however:
 - a. the use conditions of Section 7.02.02(d) must be met; and
 - b. any comments provided by the Township Engineer or Fire Department must be addressed.
2. The use conditions of Section 7.02.02(d) are not entirely met. More specifically:
 - a. the setback requirement for the proposed trailer storage area is not provided;
 - b. the Planning Commission may allow screen fencing in lieu of a buffer zone B; and
 - c. the trailer storage area is only screened on 3 sides.
3. The applicant must provide impervious surface calculations.
4. The applicant must confirm the amount of parking remaining after the removal of spaces to accommodate their project.
5. We suggest a cross-access easement be provided on the subject site allowing future connection with the development to the east.
6. We recommend the applicant be required to maintain at least 5’ of clearance along the front of the building.
7. The parking blocks proposed along the south side of the 8’ screen fencing reduce the drive aisle width below Ordinance standards and could pose problems for snow plowing.
8. At such time as new signage is proposed, the applicant must obtain approval and a permit from the Township prior to installation.

B. Proposal/Process

The project entails a new business within an existing multi-tenant commercial center (the space was formerly home to a TJ Maxx store), as well as outdoor display, sales and storage. Table 7.02 lists outdoor commercial display, sales or storage as a special land use in the RCD. Such uses are also subject to the use conditions of Section 7.02.02(d).

Procedurally, the Planning Commission is to review the special land use, site plan and impact assessment and provide a recommendation on each to the Township Board following a public hearing. (A hearing was held at the February 12, 2018 Planning Commission meeting, though the request was tabled.)



Aerial view of site and surroundings (looking north)

C. Special Land Use Review

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

- 1. Master Plan.** The Township Master Plan identifies the subject site, as well as the adjacent properties along Grand River, as Regional Commercial. This category is intended for “higher intensity commercial uses that serve the comparison shopping needs of the entire community and the regional market.”

The description does not mention anything with respect to outdoor display, sales or storage, though it is worth noting that the large commercial store to the east has a similar accessory outdoor element.

- 2. Compatibility.** The area is developed with a variety of commercial uses. While outdoor uses do not appear to be overly prevalent in this area, the development adjacent to the east has a similar outdoor component (as noted above). Provided the use conditions for outdoor display, sales and storage are met, the proposal is generally expected to be compatible with the character of the area.
- 3. Public Facilities and Services.** As a developed site along the main commercial corridor through the Township, we anticipate necessary public facilities and services are in place; however, the Commission should consider any comments provided by the Township Engineer and Brighton Area Fire Department.
- 4. Impacts.** The use conditions of Section 7.02.02(d) are intended to limit on- or off-site impacts of outdoor display, sales and storage. Provided those standards are met, the proposal should not adversely impact adjacent or surrounding properties and/or uses.
- 5. Mitigation.** If additional concerns arise as part of the review process, the Township may require efforts to mitigate potential adverse impacts.

D. Use Conditions

Commercial outdoor display, sales or storage uses are subject to the following use conditions of Section 7.02.02(d):

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

The subject site contains a total 12.74 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 previous submittal noted that any such materials will be kept in the manufacturer's packaging; thus, there will not be any loosely stored materials.

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

The site plan identifies paved surfaces for each of the outdoor storage and display areas – the main storage area (south of the building), the newly proposed trailer storage area, and the display area in front of the building.

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 7.03 requires setbacks of 50 (rear) and 20 feet (side). The main storage area provides 43-foot setbacks from both the east (side) and south (side) lot lines. The display area in front of the store is also well outside of required setbacks. However, the newly proposed trailer storage area is located adjacent to the south (side) lot line and does not comply with this standard.

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 plans note that the building space for the proposed business contains 28,151 square feet of floor area.

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

The site has existing vehicular access from Grand River and no changes are proposed. The plans show a new overhead door and loading area on the east side of the building facing north.

Sheet 2 of the submittal includes a truck turning movement diagram demonstrating that truck maneuvering can be accommodated on-site.

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

The areas of the site impacted are to the south, east and west and include 3 separate outdoor storage/display areas – the main storage area south of the building; the trailer storage area further south; and the display area along the front of the building.

None of these areas provide a full buffer zone B, but are all proposed to be screened with privacy fencing of varying heights – 8-foot for the main outdoor storage area and 4-foot for the trailer storage and display area in front of the building. The current plans also incorporate brick piers into the fencing to help break up the long stretches of white vinyl.

As noted under this criterion and previously discussed, the Planning Commission may allow screen fencing in lieu of a buffer zone B. (In our opinion, Section 12.02.13 gives the Commission the ability to allow 4-foot fencing.)

Lastly, it should be noted that the trailer storage area is screened only on 3 sides.

- 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 special land use application states that “all stored items will not be stored higher than the screen provided.”

E. Site Plan Review

- 1. Dimensional Requirements.** The only dimensional standards affected by the request are setbacks for the outdoor storage area (addressed above) and an increase in impervious surface lot coverage due to the removal of the landscaped area.

A note on the current submittal states that “the applicant proposes to enlarge the existing detention basin to accommodate the increase in impervious area if necessary. Additional information to be provided in the detailed engineering stage.”

In our opinion, this information is pertinent to the site plan review and should not be pushed off to a later date. As such, the applicant must provide impervious surface coverage calculations to ensure Ordinance requirements are met.

- 2. Building Materials and Design.** The proposal includes repairs to and painting of the building. The submittal states that the repairs will match the existing building.
- 3. Parking.** The project will result in the loss of 43 spaces (19 for the outdoor storage area and another 24 for the trailer storage). The submittal includes parking calculations noting that the site requires 428 parking spaces.

The current submittal notes that 487 spaces are provided, although the previous submittal noted 447. We request the applicant confirm how many spaces will be provided after the removal of the 43 spaces to ensure the required amount of parking will be provided.

- 4. Pedestrian and Vehicular Circulation.** As discussed at the previous Planning Commission meeting, we suggest the applicant be required to provide a cross-access easement for a future connection to the development east of the subject site.

Additionally, the applicant must maintain a clear pedestrian area in front of the building given the presence of outdoor display. We recommend a minimum clearance of at least 5 feet be provided at all times.

Lastly, the plans indicate that the south side of the main outdoor storage area will be lined with parking blocks. Based on the drawing provided, these blocks will reduce the travel lane width to 22', which is deficient for two-way travel, and could pose problems for snow plowing.

- 5. Landscaping.** The submittal identifies two new planters along the south side of the outdoor storage area. The planters will each contain a 10' tall Arborvitae.
- 6. Waste Receptacle and Enclosure.** The plan includes a new waste receptacle/enclosure on the east side of the building. The details on Sheet A5.1 note the use of a wooden enclosure (cedar). The current submittal also identifies the concrete base pad, as required by Section 12.04.
- 7. Exterior Lighting.** The revised submittal states that existing site lighting will remain and does not identify any new lighting proposed.
- 8. Signs.** Sign details are not provided, although the building elevation drawing (Sheet A5.1) identifies an area for a new wall sign.

When a new sign is desired for the business, the applicant will need to obtain approval and a permit from the Township prior to installation.

- 9. Impact Assessment.** The original submittal included an Impact Assessment prepared by Ashmark Construction, LLC (not dated). 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. I can be reached by phone at (248) 586-0505, or via e-mail at borden@lslplanning.com.

Respectfully,

LSL PLANNING, A SAFE BUILT COMPANY



Brian V. Borden, AICP
Planning Manager



March 7, 2018

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

Re: Family Farm and Home Site Plan Review #3

Dear Ms. Van Marter:

Tetra Tech conducted a third site plan review of the Family Farm and Home proposed site located at 3685 East Grand River Avenue (Grand River Plaza Shopping Center) in Howell. The petitioner is proposing to modify an existing retail outlet to meet the retail needs of a Family Farm and Home store. The submission included site plans dated February 22, 2018.

In the previous planning commission meeting the possibility of a cross access connection with Meijer was discussed. Although the current grades may be difficult to facilitate connection with the existing stub road on the Meijer site, the concept of a cross access drive should be maintained. The Planning Commission should consider requiring an easement from the Family Farm and Home parcel that allows for future construction of the access drive when and if the Meijer parcel proposes additional site improvements.

The petitioner has added several notes referencing a detailed engineering plan stage for submittal of the storm water management improvements and survey and grading information. Since the Township doesn't have this plan review stage in the site plan process we recommend any motion related to the site plan include a contingency that these plans be submitted and approved prior to the land use permit being issued. The biggest concern is the storm water drainage as they have removed the construction of offsetting green space for the area proposed for the outside storage.

The remaining comment from the second site plan review regarding the slope of the proposed concrete area has been addressed in the revised drawings on sheet SP1.0. The plans direct the contractor to appropriately slope the new paved area to the existing storm water catch basins and underground conveyance system. With the addition of this information to the site plan we have no further engineering related concerns.

Please call if you have any questions.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Gary Markstrom', written over a blue circular stamp.

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

copy: Martin Renel, Ashmark Construction



BRIGHTON AREA FIRE AUTHORITY

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

March 1, 2018

Kelly VanMarter
Genoa Township
2911 Dorr Road
Brighton, MI 48116

RE: Family Farm & Home
3685 E. Grand River Avenue
Howell, MI 48843

Dear Kelly:

The Brighton Area Fire Department has reviewed the above mentioned site plan. The plans were received for review on February 27, 2018 and the drawings are dated January 23, 2018 with latest revisions dated February 22, 2018. The project is for the redevelopment of an existing 28,151 square foot Mercantile use occupancy that will changing occupant and renovating the structure to meet their needs. They are also proposing to redevelop a large greenbelt area and 19 parking spaces to be utilized as an outside storage and staging area.. The plan review is based on the requirements of the International Fire Code (IFC) 2018 edition.

The applicant contacted the fire authority for clarification and revised the submittal. All concerns identified on the previous submittal are shown to be corrected and or addressed.

The fire authority has no further comments for the project at this time.

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

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

Cordially,

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

Rick Boisvert, CFPS
Fire Marshal

Family Farm & Home Impact Assessment

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

Martin J. Renel
Principal at ASHMARK Construction LLC
5640 West Maple Suite 300
West Bloomfield, MI 48322
28 years of Commercial Development and Construction experience.

- 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.

See submitted plans by Metro Group Architects detailing these areas.

- 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 current site is an existing shopping center; the tenant is taking over the previous TJ Maxx location. We are requesting approval of creating an outside storage area for Family, Farm & Home Store. We do not intend any impact on the existing environmental conditions.

- 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.

We will install soil erosion control as required by Livingston County Drain Commission during construction activities of the exterior storage area. We will insure proper dust control during construction activities.

- 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.

We do not intend to have any impact on surrounding lands; since the use is not changing.

- 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 impact on public facilities and services shall be consistent with the former use.

- 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.

Please see Alpine Engineering letter dated January 3rd 2018 stating no impact on the existing stormwater system.

- 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,

Outside storage area to consist of: landscape mulch & bark, landscape products, patio stone/rock/gravel, peat/soil/earth products, Pots & Planters.

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

Description of existing daily and peak hour traffic on adjacent street(s) and a description of any sight distance limitations along the right-of-way frontage of the site.

The impact on traffic and Pedestrians shall be consistent with the former use.

Forecasted trip generation of the proposed use for the a.m. and p.m. peak hour and average daily traffic generated.

The impact on trip generation shall be consistent with the former use.

For any project with a completion date beyond one year at the time of site plan approval, the analysis shall also include a scenario analyzing forecasted traffic at date of completion along the adjacent street network using a forecast based either on historic annual percentage increases and/or on expected development in the area.

Our Completion date will not be beyond one year of approval.

Projected traffic generated shall be distributed (inbound v. outbound, left turn v. right turn) onto the existing street network to project turning movements at site driveways and nearby intersections. Rationale for the distribution shall be provided.

The impact on traffic (inbound/outbound, left/right turns) shall be consistent with the former use.

Capacity analysis at the proposed driveway(s) using the procedures outlined in the most recent edition of the *Highway Capacity Manual* published by the Transportation Research Board. Capacity analyses shall be provided for all street intersections where the expected traffic will comprise at least five-percent (5%) of the existing intersection capacity.

The capacity analysis shall be consistent with the previously approved shopping center.

Accident data for the previous three (3) years for roadway sections and intersections experiencing congestion or a relatively high accident rate, as determined by the township or staff from the Livingston County Road Commission or Michigan Department of Transportation.

N/A – Since this site has been previously approved.

Analysis of any mitigation measures warranted by the anticipated traffic impacts. Where appropriate, documentation shall be provided from the appropriate road agency regarding time schedule for improvements and method of funding.

N/A – Since this site has been previously approved.

A map illustrating the location and design of proposed access, including any sight distance limitations, dimensions from adjacent driveways and intersections within 250 feet of the edge of the property frontage, and other data to demonstrate that the driveway(s) will provide safe and efficient traffic operation and be in accordance with Article 15.

N/A – Since this site has been previously approved.

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

None required.



46892 West Road, Suite 109
Novi, Michigan 48377
Phone: (248) 926-3701
Fax: (248) 926-3765
Web: www.alpine-inc.net

January 2, 2018

Martin Renel
Ashmark Construction, LLC.
5640 West Maple Road, Suite 300
West Bloomfield, MI 48322

Re: **Proposed Family Farm & Home Interior Renovation**
3685 East Grand River Ave.
Howell, MI 48843

Dear Martin:

It's our understanding you desire to pave the existing greenbelt area located south of and adjacent to the proposed tenant's building space. There is an existing catch basin located south of the greenbelt area in the parking lot drive aisle which would receive the storm water runoff from the area to be paved. The 1996 Site Plan for the existing development shows an existing 18" diameter storm sewer outlet for the existing catch basin. Per your request we reviewed the existing 18" storm sewer capacity against the proposed paving improvement and found it to have adequate capacity. Drainage map and storm sewer calculation is attached.

If you have any questions or require additional information, please feel free to call our office at (248) 926-3701.

Regards,
Alpine Engineering, Inc.

Thomas Gizoni, PE

Attachment: Drainage Map
Storm Sewer Calculation



ALPINE
ENGINEERING, INC.
CIVIL ENGINEERS & LAND SURVEYORS

46892 WEST ROAD
SUITE 109
NOVI, MICHIGAN 48377
(248) 926-3701 (BUS)
(248) 926-3765 (FAX)

CLIENT: ASHMARK CONSTRUCTION, LLC		DATE: 2018-01-02
DRAINAGE MAP		DRAWN BY: TG
		CHECKED BY: TG/SD
3685 E. GRAND RIVER AVE.		
SECTION: 5	TOWNSHIP: 2N	RANGE: 5E
GENOA TOWNSHIP LIVINGSTON COUNTY MICHIGAN		FBK: 1/2 CHF: 17-516
		SCALE HOR 1" = 100 FT. VER 1" = 10 FT.

EXISTING 18" STORM SEWER CAPACITY ANALYSIS

POST-DEVELOPMENT RUNOFF COEFFICIENT CALCULATION

LAND USE	AREA (A) (acres)	RUNOFF COEFFICIENT (C)
PAVEMENT	2.11	0.90
GRASS	0.59	0.20
AREA	2.70	

CALCULATE THE WEIGHTED RUNOFF COEFFICIENT:

$$C = \frac{\text{SUM} (A_i \times C_i)}{A} = \frac{(2.11 \times 0.90) + (0.59 \times 0.20)}{2.70}$$

$$= 0.75$$

CALCULATE THE 10-YR DESIGN STORM FLOW RATE TRIBUTARY TO THE EXISTING 18" STORM SEWER HEADING WEST:

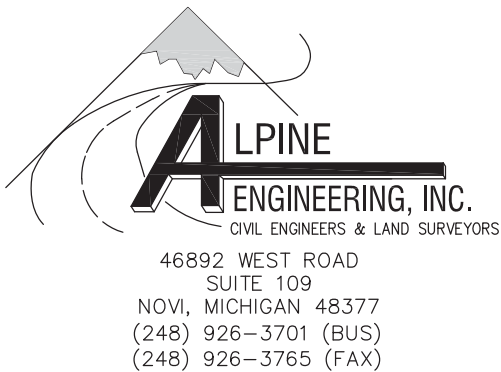
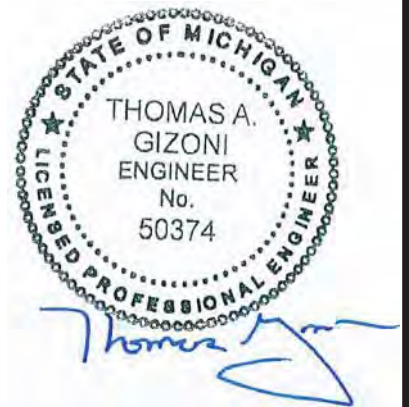
$$Q = C_w \cdot I \cdot A$$

$C_w =$	0.75		
$I =$	$(175 / (T + 25))$	$T =$	15
$A =$	2.70		

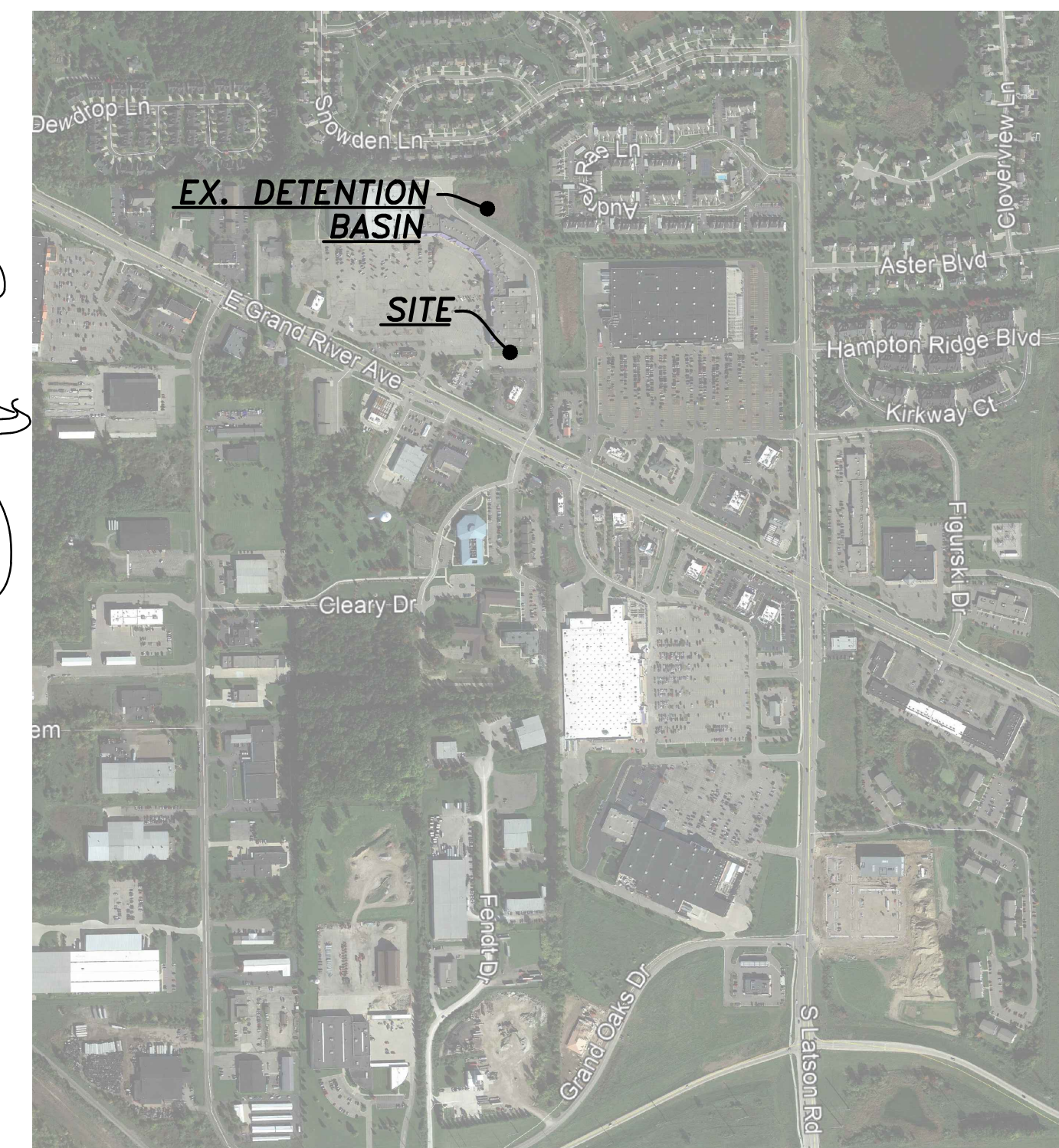
10 YEAR FLOW: = 8.82 cfs

EX. 18" PIPE CAPACITY

10 YEAR FLOW FROM CALC.'S:	8.82	cfs	
PIPE SIZE:	18	inch	
SLOPE:	0.75	%	
AREA:	1.77	s.f.	
n:	0.013		
CAPACITY:	9.12	c.f.s.	OK



CLIENT: ASHMARK CONSTRUCTION, LLC		DATE: 2018-01-02
STORM SEWER CALCULATION		DRAWN BY: TG
		CHECKED BY: TG/SD
3685 E. GRAND RIVER AVE.		0
SECTION: 5	TOWNSHIP: 2N	RANGE: 5E
GENOA TOWNSHIP LIVINGSTON COUNTY MICHIGAN		2/2
FBK:		17-516
CHF:		
SCALE HOR 1" = FT. VER 1" = FT.		



LOCATION MAP:
NOT TO SCALE

SITE DATA:

SITE AREA: 12.74 ACRES± (GROSS)
 PARCEL ID: 4711-05-400-032
 EXISTING/PROPOSED ZONING: RCD REGIONAL COMMERCIAL DISTRICT
 BUILDING AREA: 28,151 S.F. FAMILY FARM AND HOME RENOVATION
 75,706 S.F. EXISTING RETAIL
 103,857 S.F. BUILDING TOTAL

REQUIRED PARKING:
 1 SPACE FOR EACH 250 SQUARE FEET OF GROSS RETAIL FLOOR AREA FOR THE FIRST 50,000 SQUARE FEET.
 ONE FOR EACH 275 SQUARE FEET FOR THE NEXT 50,000 TO 450,000 SQUARE FEET OF GROSS RETAIL FLOOR
 AREA. ONE FOR EACH 300 SQUARE FEET FOR THAT AREA IN EXCESS OF 450,000 SQUARE FEET OF GROSS
 RETAIL FLOOR AREA. NON-RETAIL USES SUCH AS RESTAURANTS, BARS AND THEATERS SHALL BE CALCULATED
 SEPARATELY BASED UPON THEIR RESPECTIVE REQUIREMENTS

$50,000 \text{ S.F. (RETAIL)} / 250 + 48,857 \text{ S.F. (RETAIL)} / 275 + 5,000 \text{ S.F. (ASIAN FUSION)} / 100 = 428$

428 TOTAL PARKING SPACES REQUIRED
 487 TOTAL PARKING SPACES PROVIDED (INCLUDES 18 B.F. SPACES)

NOTE: THE APPLICANT PROPOSES TO ENLARGE THE EXISTING DETENTION BASIN TO ACCOMMODATE THE
 INCREASE IN IMPERVIOUS AREA IF NECESSARY. ADDITIONAL INFORMATION TO BE PROVIDED IN THE DETAILED
 ENGINEERING PLAN STAGE.

SITE PLAN GENERAL NOTES:

- 1) ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF GENOA TOWNSHIP.
- 2) THE CONTRACTOR SHALL NOTIFY "MISS DIG" AT LEAST THREE (3) WORKING DAYS PRIOR TO START OF CONSTRUCTION.
- 3) CONTRACTOR TO FIELD VERIFY LOCATION, ELEVATION, AND SIZE OF EXISTING UTILITIES.
- 4) PRELIMINARY SITE STUDY ONLY. A SURVEY WILL BE PROVIDED AT DETAILED ENGINEERING PLAN STAGE.
- 5) GRADING AND STORM WATER MANAGEMENT DETAILS WILL BE PROVIDED AT DETAILED ENGINEERING PLAN STAGE.

NOTICE:

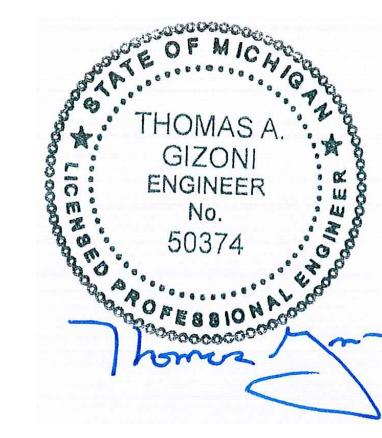
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

NOTE:

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

SHEET INDEX

1	SITE PLAN
2	TRUCK CIRCULATION PLAN



PRELIMINARY
NOT FOR CONSTRUCTION

ALPINE ENGINEERING, INC.
 CIVIL ENGINEERS & LAND SURVEYORS

RESIDENTIAL
 SUBDIVISIONS
 SITE CONDOMINIUM
 MULTI-FAMILY
 PLOT PLANS
 CONSTRUCTION LAYOUT

SURVEYING
 ALTA SURVEYS
 BOUNDARY SURVEYS
 TOPOGRAPHIC SURVEYS
 PARCEL SPLITS

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

48692 WEST ROAD
 SUITE 109
 NOVI, MICHIGAN 48377

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

811
 Know what's below
 Call before you dig.

CLIENT: ASHMARK CONSTRUCTION, LLC

SITE PLAN

FAMILY FARM AND HOME - 3685 E. GRAND RIVER AVE.
 SECTION: 5 E TOWNSHIP: 5 RANGE: 2 N
 GENOA TOWNSHIP
 LIVINGSTON COUNTY
 MICHIGAN

REVISED
 2018-02-22 REVISED PER CLIENT

DATE: 2018-01-23

DRAWN BY: TG

CHECKED BY: TG/SD

SCALE: HOR 1"=60 FT.
 VER 1"=6 FT.

FBK: 1

CHF: 1

17-516

Family Farm & Home Interior Renovation

3685 East Grand River Ave
Howell MI 48843

Tenant:
Family Farm and Home
c/o ASHMARK Construction LLC

5640 West Maple, Suite 101
West Bloomfield, MI 48332
P: (248) 855-1575- Martin Renel

Contractor :
ASHMARK Construction LLC

5640 West Maple, Suite 101
West Bloomfield, MI 48332
P: (248) 855-1575- Martin Renel

Architect:
Metro Group Architects

P.O. Box 7363
Ann Arbor, MI 48107
P: (734) 747-8999 - Robert Kerr



Location Map

No Scale
3

At	Amperes	JB	Junction box
ABV	Above	JST	Joist
AC	Alternating Current	JT	Joint
ACOUS	Acoustical	L	Long or Length
ADA	Americans w/Disabilities Act	LAM	Laminate
ADJ	Adjacent or adjustable	LAV	Lavatory
AFF	Above finish floor	LP	Low Point
AISC	American Institute of Steel Construction		
APPROX	Approximately	MAT'L	Material
ARCH	Architect(ural)	MAX	Maximum
ASTM	American Society of Testing Materials	MECH	Mechanical
		MIN	Minimum or minute
BD	Board	MTD	Mounted
BLK	Block	M.O.	Masonry Opening
BM	Beam		
BOCA	Building Officials & Code Administrator International	N	North
BOT	Bottom	N/A	Not applicable
		NEC	National Electrical Code
CABT	Cabinet	NECES	Necessary
CFM	Cubic feet per minute	NIC	Not in contract
CF	Cast iron pipe or Cast-in-Place	NTS	Not to scale
CJ	Control Joint		
CL	Centerline	OC	On center
CLG	Ceiling	OH	Overhead
CNTR	Counter	OPG	Opening
CO	Clean out	OPP	Opposite Hand
CPT	Carpet	OS	Overflow Scupper
COL	Column		
CONC	Concrete	PART	Partition
CONT	Continuous	PART BD	Partic board
CRS	Carpet Reducer Strip	P. LAM	Plastic Laminate
C.T.	Ceramic Tile	PLBG	Plumbing
CW	Cold water or Cool white	PR	Pair
		PSF	Pounds per square foot
D	Deep	PSI	Pounds per square inch
DET	Detail	PTD	Pointed
DEMO	Demolition	PVC	Polyvinylchloride pipe
DR	Door	Q.T.	Quarry Tile
DS	Down Spout		
DSS	Down Spout w/ Scupper	R	Riser
DRWG	Drawing	RA	Return air
		REF	Reference
EA	Each	REJ	Roof Expansion Joint
EF	Exhaust Fan	REINF	Reinforced
EJ	Expansion Joint	REQ'D	Required
EIFS	Exterior Wall Insulation and Finish System	RET	Return
ELEV	Elevation	REV	Revised
ELEC	Electrical	RM	Room
EMER	Emergency	RO	Rough opening
EQ	Equal	RS	Roof Sump
EQUIP	Equipment	RTU	Roof-top unit
EXIST or EX	Existing		
EXP	Exposed	S	South
EXT	Exterior	SA	Supply air
FD	Floor Drain	SECT	Section
FFE	Finish Floor Elevation	SF	Supply fan or Square foot
FIN	Finish	SHT	Sheet
FL	Floor	SIM	Similar
FR	Frame	SPEC	Specifications
FRMG	Framing	STD	Standard
FRP	Fiberglass Reinforced Panel	STRUCT	Structural
FT	Foot; Feet		
FTG	Footing	T&B	Top and Bottom
FV	Field Verify	T&G	Tongue & Groove
		TEMP	Tempered (Glass)
G	Gas or Gutter	TH	Thick
GC	General Contractor	TOS	Top of Steel
GA	Gauge	TS	Tube steel
GFI	Ground fault interrupter	TWS	Through-wall Scupper
GR	Grade	TYP	Typical
GYP	Gypsum		
GYP BD	Gypsum board	UL	Underwriters Laboratories
		UNFIN	Unfinished
H	Hot or High	UON	Unless otherwise noted
HD	Fire Alarm Heat Detector		
HC	Hollow core	V	Vent or Volt
HDWE	Hardware	VCT	Vinyl composition tile
HGT	Height	VERT	Vertical
HM	Hollow metal	VIF	Verify In Field
HORIZ	Horizontal	VTR	Vent Through Roof
HP	High Point or Horsepower		
HT	Height	w/	With
HVAC	Heating, Ventilation & Air Conditioning	WD	Wood
HW	Hot water	w/o	Without
		WH	Water Heater
IN	Inch		
INCL	Include	NOTE:	See Mechanical & Electrical Drawings for additional abbreviation listings.
INS	Insulation		
INT	Interior		
IPS	Inch per second		

DTL	ELEVATION NUMBER	DOOR	DOOR NUMBER (ROOM #) - (DOOR)	A	COLUMN GRID (EXISTING)
DTL	SHEET WHERE DETAIL IS DRAWN	BUBBLE		A	COLUMN GRID (NEW)
DTL	ELEVATION BUBBLE	FIN	FLOOR FINISH DENOTATION		
DTL	DETAIL NUMBER	FLOOR	FLOOR FINISH NUMBER		
DTL	DIRECTION OF DETAIL	WB	WALL BASE DENOTATION		
DTL	SHEET WHERE DETAIL IS DRAWN	FINISH BUBBLE	FINISH NUMBER		
DTL	DETAIL BUBBLE	WB	WALL BASE FINISH NUMBER		
DTL	ELEVATION NUMBER	WB	WALL FINISH DENOTATION		
DTL	AREA ENLARGED	FIN	WALL FINISH DENOTATION		
DTL	SHEET WHERE DETAIL IS DRAWN	FINISH BUBBLE	FINISH NUMBER		
ENLARGED PLAN	BUBBLE	WB	WALL FINISH DENOTATION		
1/4"=1'-0"	DRAWING SCALE	FIN	WALL FINISH DENOTATION		
MGA-d101	DETAIL NUMBER	FINISH BUBBLE	FINISH NUMBER		

Abbreviation Index

No Scale
FFH Abbrev 2

Drawing Sheet Index

SHEET	TITLE	12/22/17 Owner Review	01/03/18 Site Plan	1/24/18 Addendum #1	2/22/18 Addendum #2															
Architectural																				
A0.0	Cover Sheet / Code / Notes	0/C/P/T/0/C/P/T/0/C/P/T/0/C/P/T																		
A0.1	Accessibility Guidelines	0/C/P/T/0/C/P/T																		
SP1.0	Architectural Site Plan	0/C/P/T/0/C/P/T/0/C/P/T/0/C/P/T																		
SP1.1	Aerial Site Plan	0/C/P/T/0/C/P/T																		
A1.0	Keyed Notes and Legends	0/C/P/T/0/C/P/T																		
A1.1	Demolition Plan	0/C/P/T/0/C/P/T																		
A2.1	Dimensioned/Keyed Note Plan	0/C/P/T/0/C/P/T																		
A3.1	Reflected Ceiling Plan	0/C/P/T/0/C/P/T																		
A4.1	Details			0/C/P/T																
A5.1	Exterior Elevations	0/C/P/T/0/C/P/T/0/C/P/T/0/C/P/T																		

Legend: O: Owner C: Contractor L: Landlord T: Tenant P: Permits (Building/Health Departments)

Sheet Index

					No Scale	2
					Detail I. D.	
<p>MBC 2015 (Michigan Building Code 2015) Effective April 20, 2017 ICC/ANSI A117.1-2009 & Michigan Barrier Free Design Law of Public Act 1 of 1966 as amended. MIC 2015 (Michigan Building Code 2015) - Chapter 13 & MIC 2015 (Michigan Uniform Energy Code 2015) - Chapter 4 & Michigan Uniform Energy Code, Part 10a, Rules (ANSI/ASHRAE 90.1-2013) Effective September 20, 2017 MPC 2015 (Michigan Plumbing Code 2015) Effective April 20, 2017 MMEC 2015 (Michigan Mechanical Code 2015) Effective April 22, 2017 IFGC 2015 (International Fuel Gas Code 2015) Effective April 20, 2017 MARCES 2015 (Michigan Rehabilitation Code for Existing Buildings 2015) Effective December 13, 2016 IFC 2012 (International Fire Code 2012), 2015 Michigan Building Code references the 2015 IFC (but that document has not been adopted at this time by the fire code official) NEC 2014 (State of Michigan Electrical Code) 2014 National Electrical Code with Part 8 Amendments Effective June 18, 2015 Fire Suppression: Commercial: NFPA 13 (2013) Fire Alarm Commercial: NFPA 72 (2013)</p>						
Building Type	II-B	Sprinklered	TBL 507 Unlimited Building Area			
Use Group	M	Assembly				
Tenant Area	28,151	Gross Area	Unlimited Area Building			
SPRINKLERED	Fullly					
Common Path of travel	75'	W/Sprinklers TM 1017.2				
EXIT Distance	250'	W/Sprinklers TM 1017.2				
Bearing Walls- Exterior	0	Hr Rating Required				
Bearing Walls-Interior	0	Hr Rating Required				
Tenant Separation Walls	0	Hr Rating Required				
Roof Assembly	0	Hr Rating Required				
Floor Assembly	0	Hr Rating Required				
Structural Framing	0	Hr Rating Required				
Occupant Load	Gross Factor	Area / Num	OCCUPANTS	Men	Women	
Site Area	60	23,774	356	198	158	M
Restrooms / Offices	30	1,022	34	17	17	M
Stock Room	300	2,924	10	5	5	M
			440	220	220	
Egress Width Required	Occupants	Factor per Occ (Inches)	Total Width Required (Inches)	Provided Egress Width (Inches)		
	440	0.2	88,011	180		
Min Number Exits Required	440	1-500	2,00	Exits req. Per 1006.2.1.1		
Egress Width Provided	Width in "	Adjusted Width *	Factor	Exits Provided		
Exit 1	72	66	0.2	330 1 sets- Double 36" Exit Doors		
Exit 2	36	33	0.2	165 Single 36" Exit Door		
Exit 3	36	33	0.2	165 Single 36" Exit Door		
Exit 4	36	33	0.2	165 Single 36" Exit Door		
SEE SHEET A2.4	180	165		825 Total Occupsnts Provided Exits		
Plumbing Features Required						
Merchandise	Male	Water Closets	Female	Male	Lavatories	Female
Factor	500	500	750	750	330	330
Calculated Occupants	220	220	220	220	440	440
Occupants / Factor	0.44	0.44	0.29	0.29	0.44	0.44
	1	1	1	1	0	1
Provided						
Standard Bathrooms	3	3	2	2	1	1

CODE REVIEW

No Scale
Detail I. D. 1

METRO GROUP ARCHITECTS
P.O. Box 7363
Ann Arbor, Michigan 48107
Phone: (734) 747-8999



**Family Farm and Home
Interior Renovation**
3685 East Grand River Ave
Howell, MI 48843

2/22/18 Addendum #2
1/24/18 Addendum #1
1/3/18 Site Plan Submission
12/22/17 Owner Review

Drawn: MMH Checked: RDK

171129

Sheet Index
Location Map
Abbreviations

A0.0

General Site Plan Notes:

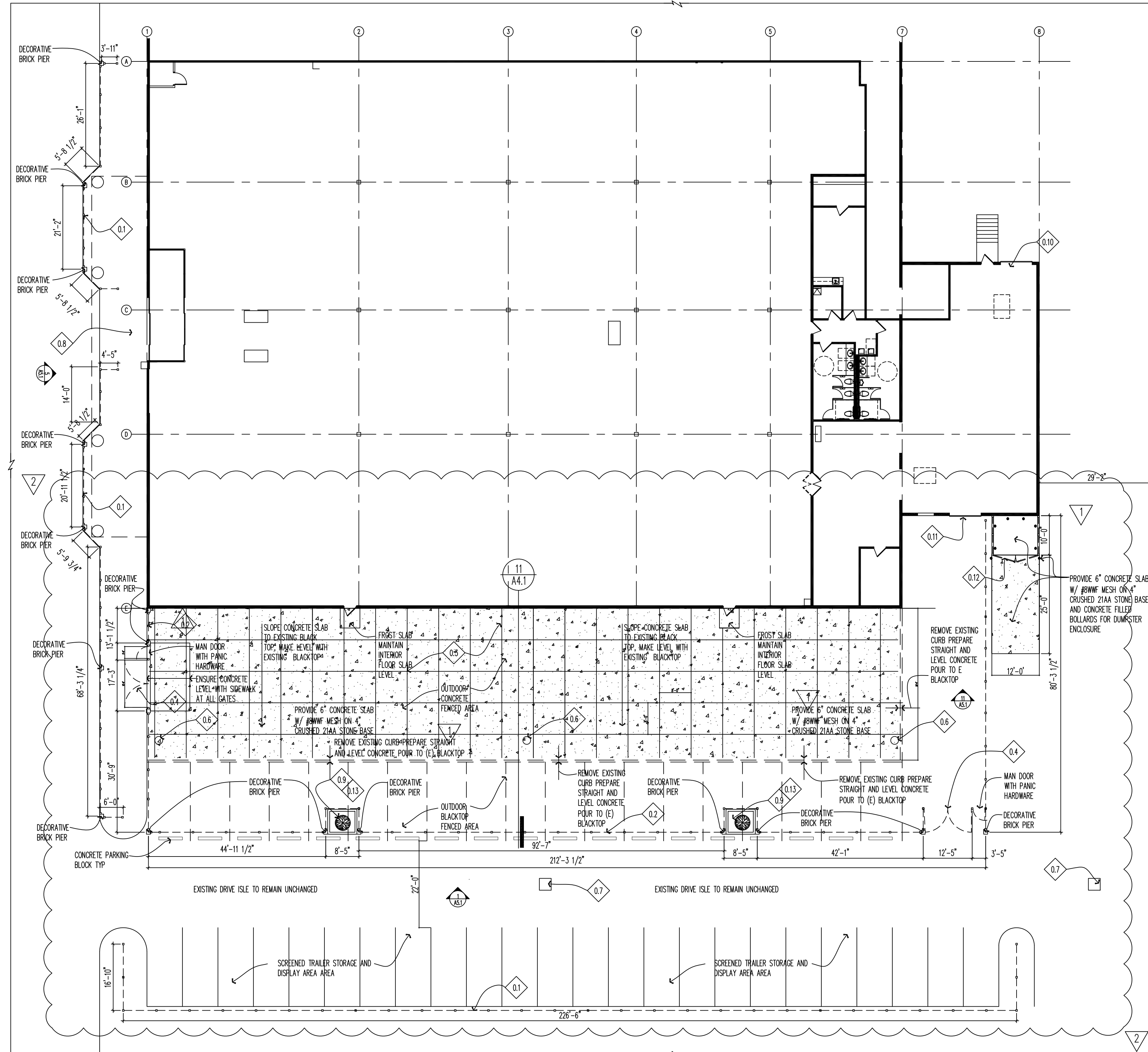
1. PLANS AND SPECIFICATIONS DO NOT FULLY REPRESENT ALL NEW WORK. THE CONSTRUCTION DOCUMENTS ARE INTENDED TO SERVE AS GENERAL GUIDELINES.
2. REPORT ANY DISCREPANCIES BETWEEN STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING & ARCHITECTURAL DRAWINGS TO ARCHITECT IMMEDIATELY.
3. COORDINATE ALL WORK WITH STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL CONSTRUCTION DOCUMENTS, AND WITH APPLICABLE STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL CONTRACTORS.
4. REFERENCE THE FOLLOWING SHEETS: GENERAL CONDITIONS & PLAN SYMBOLS, ACCESSIBILITY GUIDELINES, GENERAL SPECIFICATIONS.
5. MASONRY CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES.
6. SEE STRUCTURAL DRAWINGS FOR STRUCTURAL INFORMATION.
7. SEE MEP DRAWINGS FOR MECHANICAL, ELECTRICAL, & PLUMBING INFORMATION.
8. MASONRY STEEL LINTELS ABOVE DOORS WINDOWS, ETC TO BE SHOP PRIMED & PAINTED TO MATCH COLORS OF FRAMES.
9. PRIOR TO START OF WORK CONTRACTOR TO VERIFY DIMENSIONS OF BUILDING AND SITE & NOTIFY ARCHITECT IMMEDIATELY OF ANY CONFLICTS.

General:

- ◊ 0.1 NEW 48" HIGH SCREEN
- ◊ 0.2 NEW 8'-0" HIGH PVC FENCE
- ◊ 0.3 NEW CONCRETE PAD FOR EXTERIOR STORAGE AREA
- ◊ 0.4 NEW 12'-0" WIDE GATE
- ◊ 0.5 REMOVE STRIPING FOR STAGING AREA
- ◊ 0.6 EXISTING 40'-0" HIGH LIGHT POLE
- ◊ 0.7 EXISTING STORM DRAIN
- ◊ 0.8 PATCH, REPAIR AND/OR REPLACE ALL DAMAGED SIDEWALK
- ◊ 0.9 NEW PLANTER
- ◊ 0.10 EXISTING LOADING DOCK
- ◊ 0.11 NEW LOADING AREA
- ◊ 0.12 NEW DUMPSTER ENCLOSURE
- ◊ 0.13 NEW 10'-0" ARBORVITAE

Legend:

- ⊙ COLUMN DESIGNATION
- NEW FENCING
- ▬ NEW WALL
- EXISTING LIGHT POLE
- ▬ EXISTING DOOR (TO REMAIN)
- ▬ EXISTING WALL (TO REMAIN)

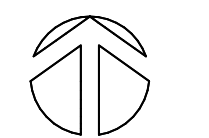


Family Farm and Home
Interior Renovation

3685 East Grand River Ave
Howell, MI 48843

2/22/18 Addendum #2
1/24/18 Addendum #1
1/3/18 Site Plan Submission
12/22/17 Owner Review

Drawn: MMH Checked: RDK



Reference North

171129

Architectural
Site
Plan



Family Farm and Home
 Interior Renovation

3685 East Grand River Ave
 Howell, MI 48843

2/22/18 Addendum #2

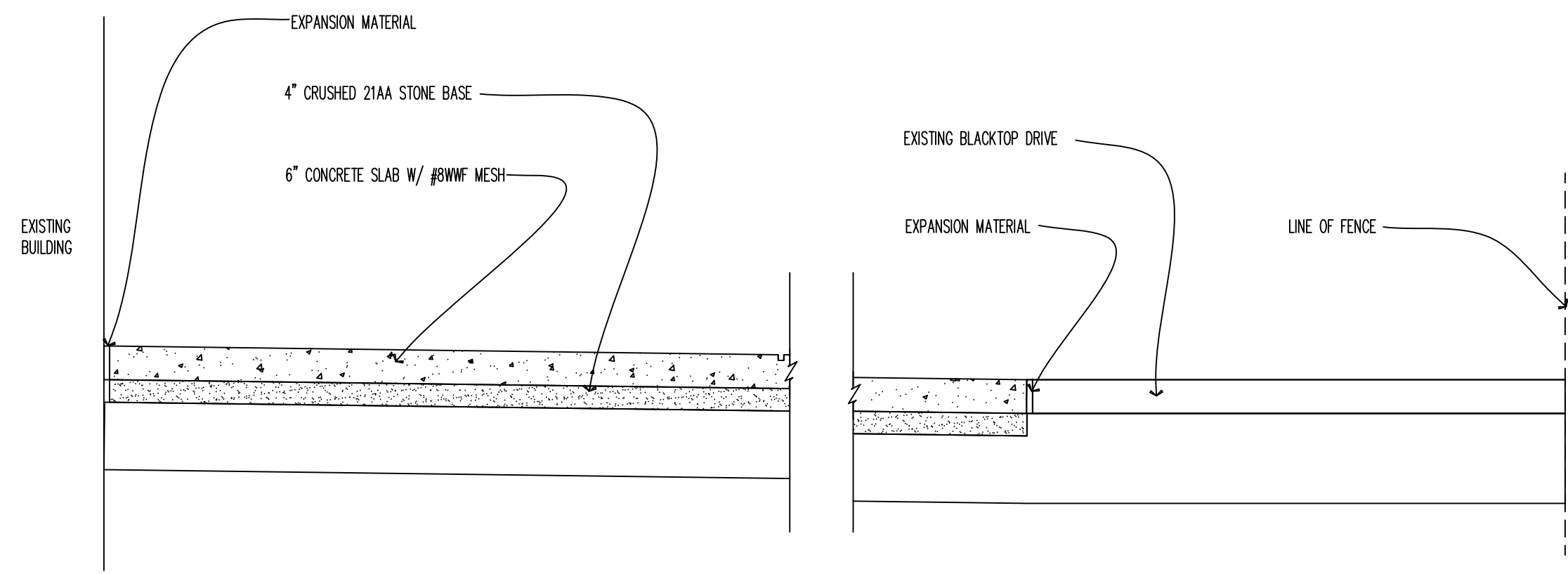
Revisions

Drawn: MMH Checked: RDK

171129

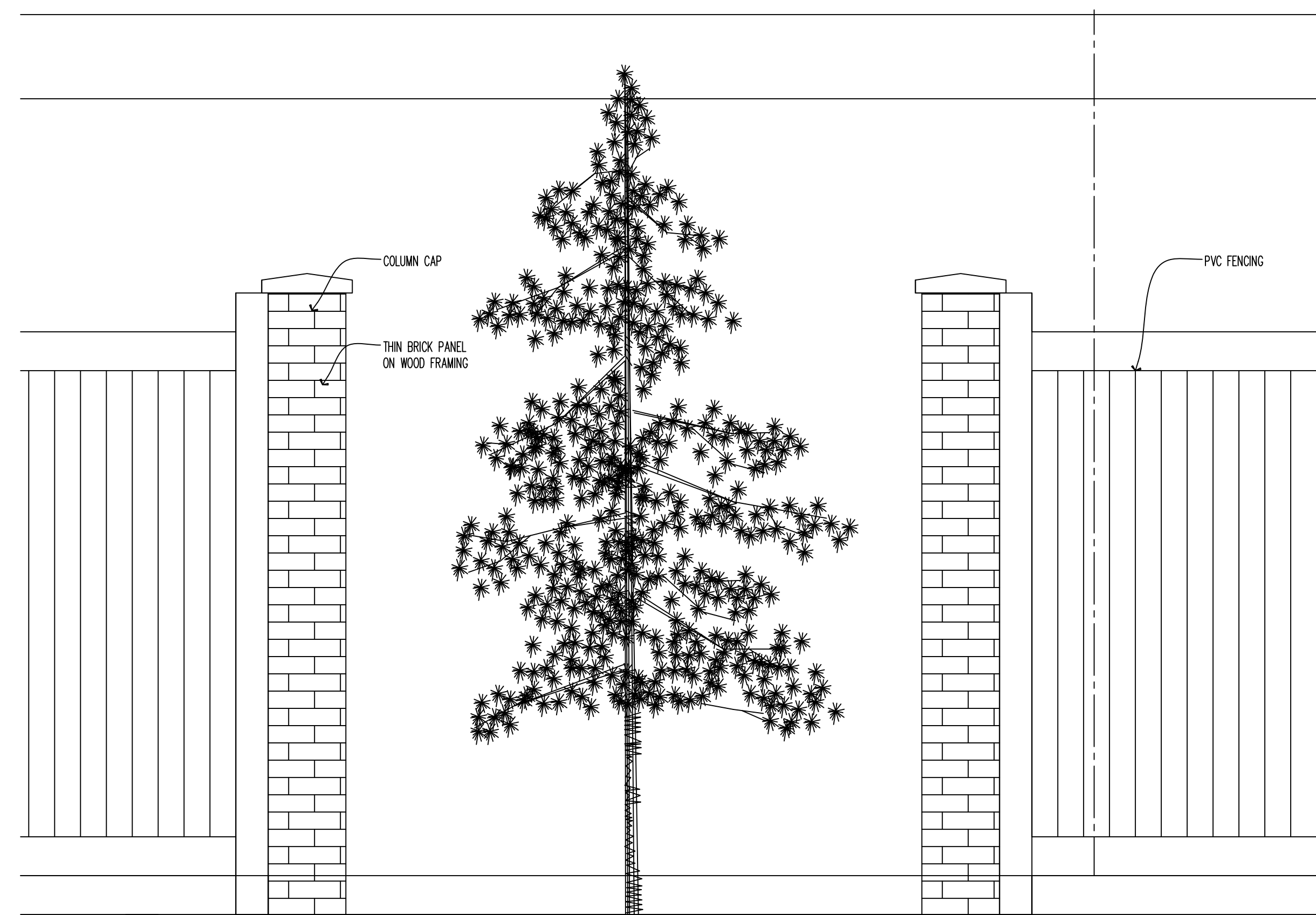
Details

A4.1



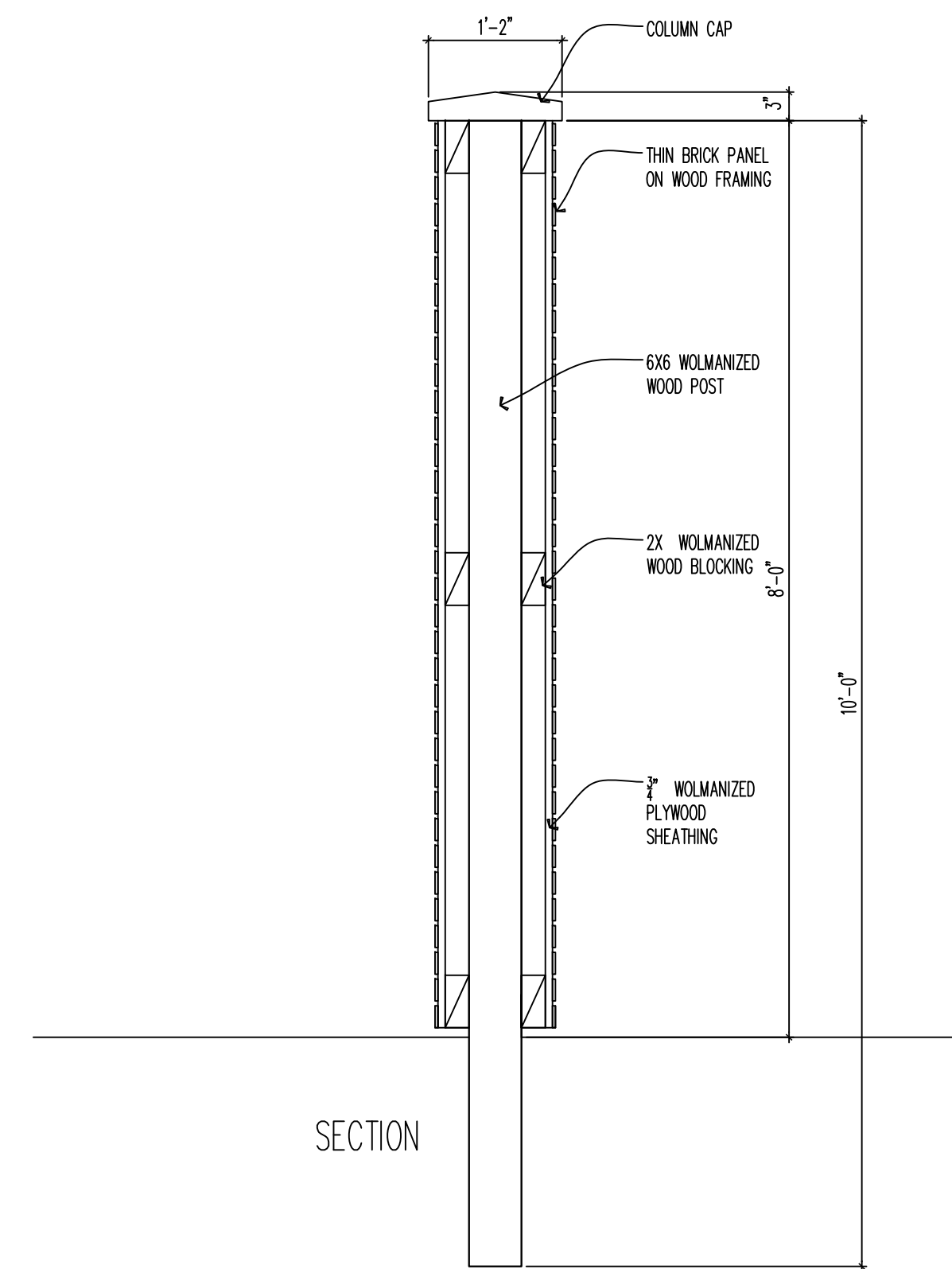
Concrete Slab Detail

1/2"=1'-0"
 FF&H-dt104 11



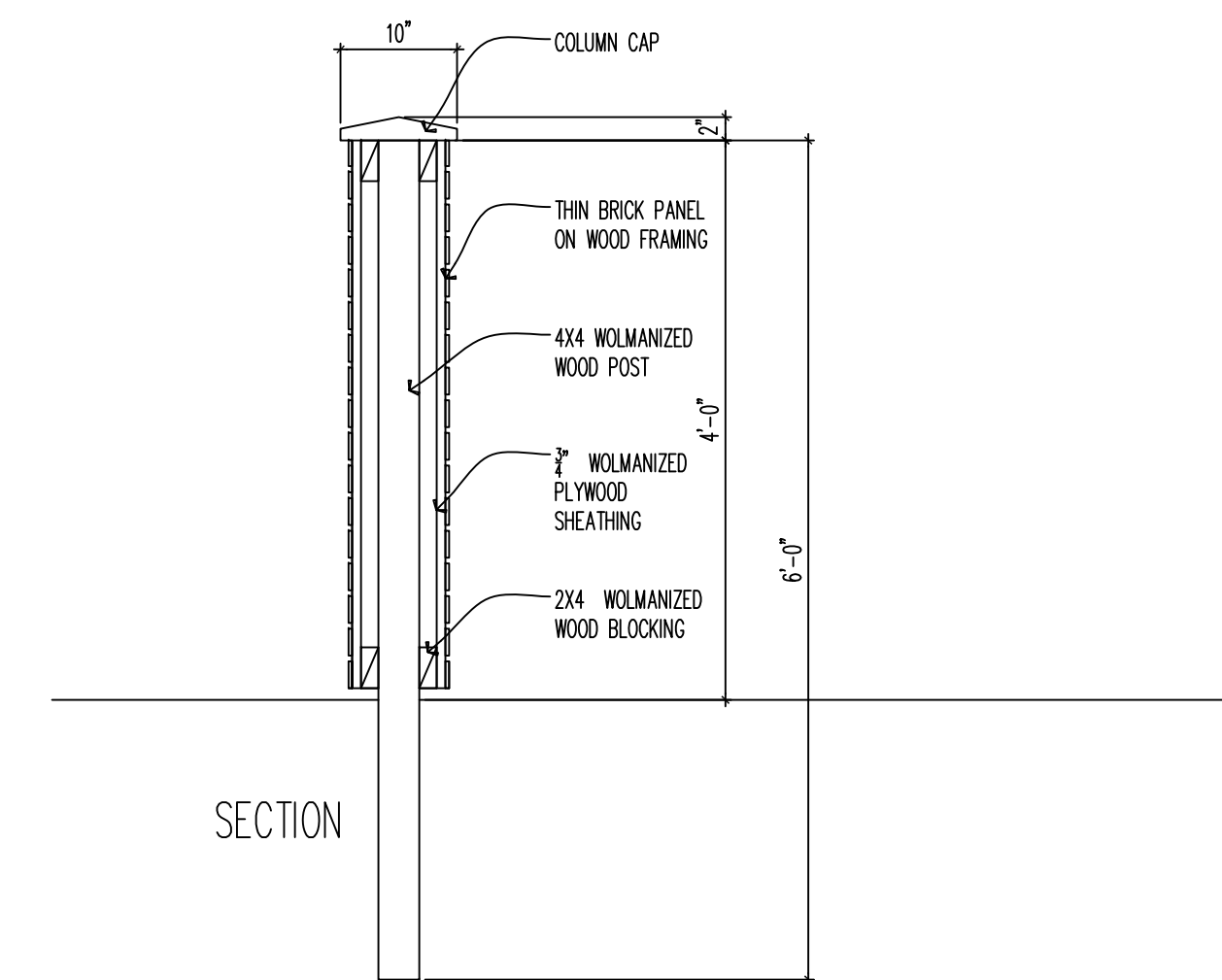
Enlarged Elevation at Fence Pier

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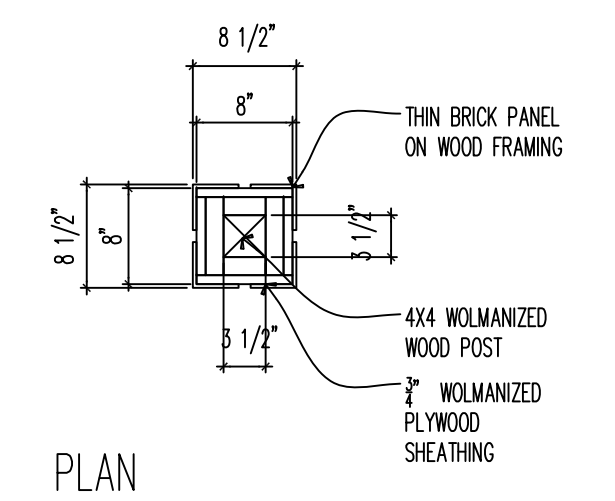
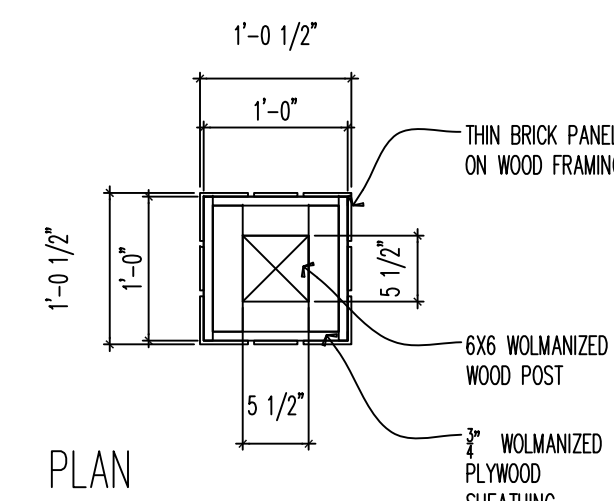
Detail at Fence Pier

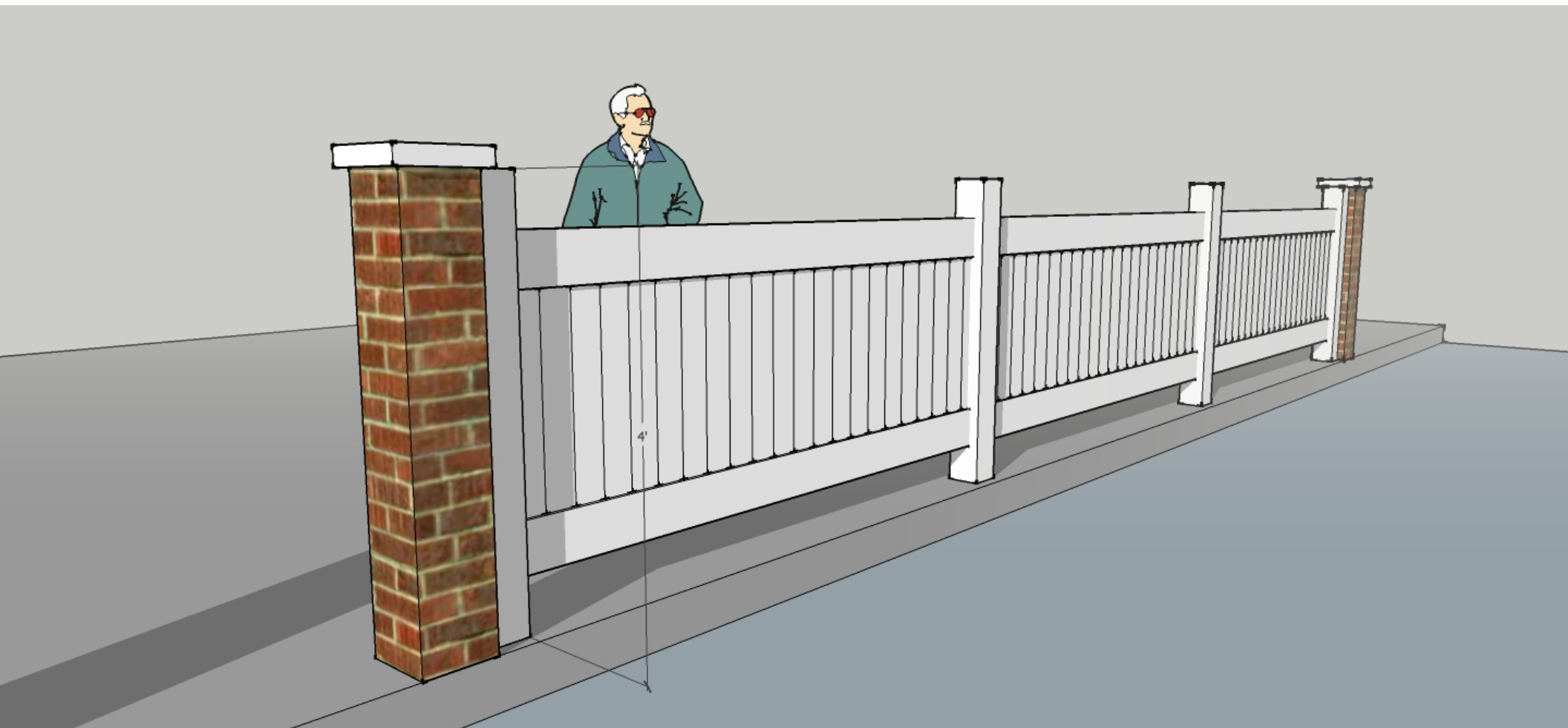
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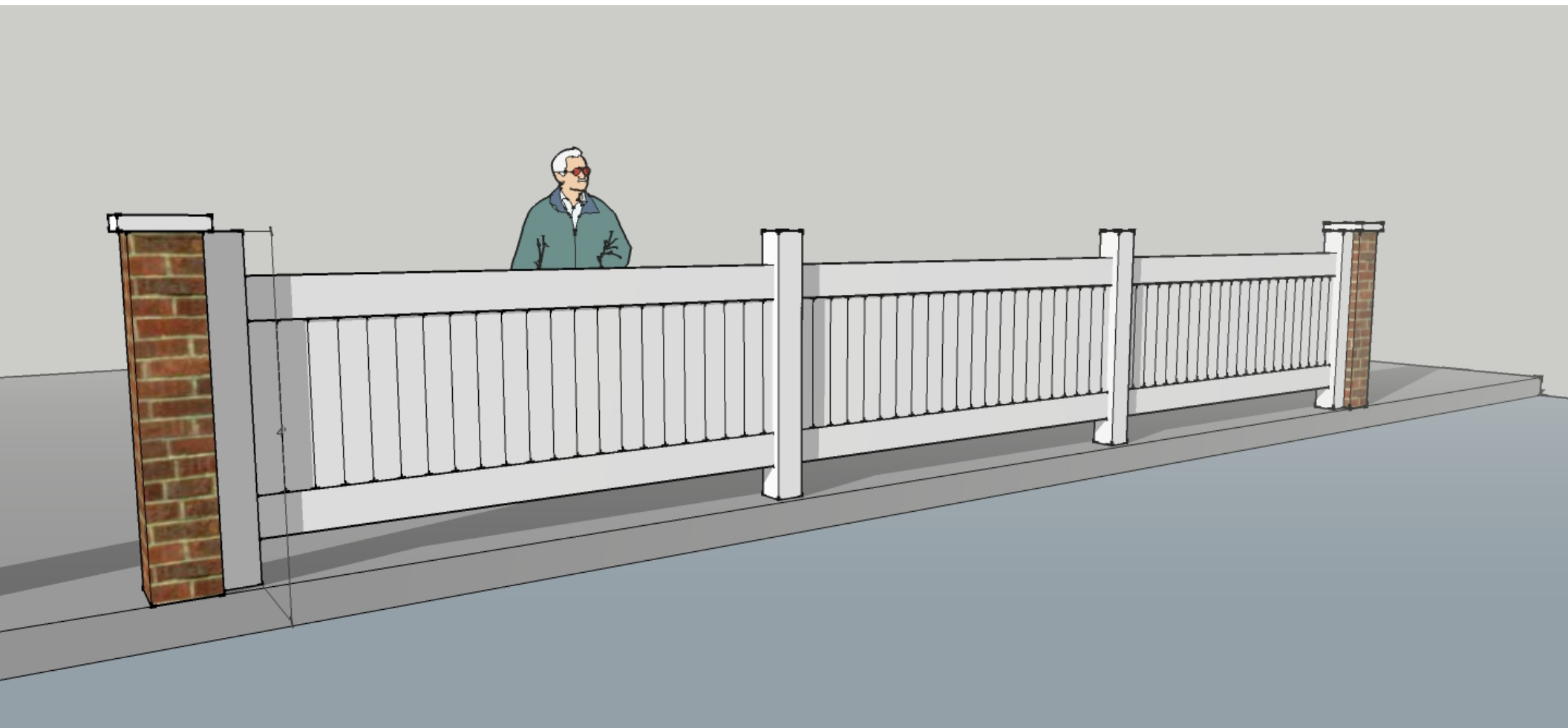


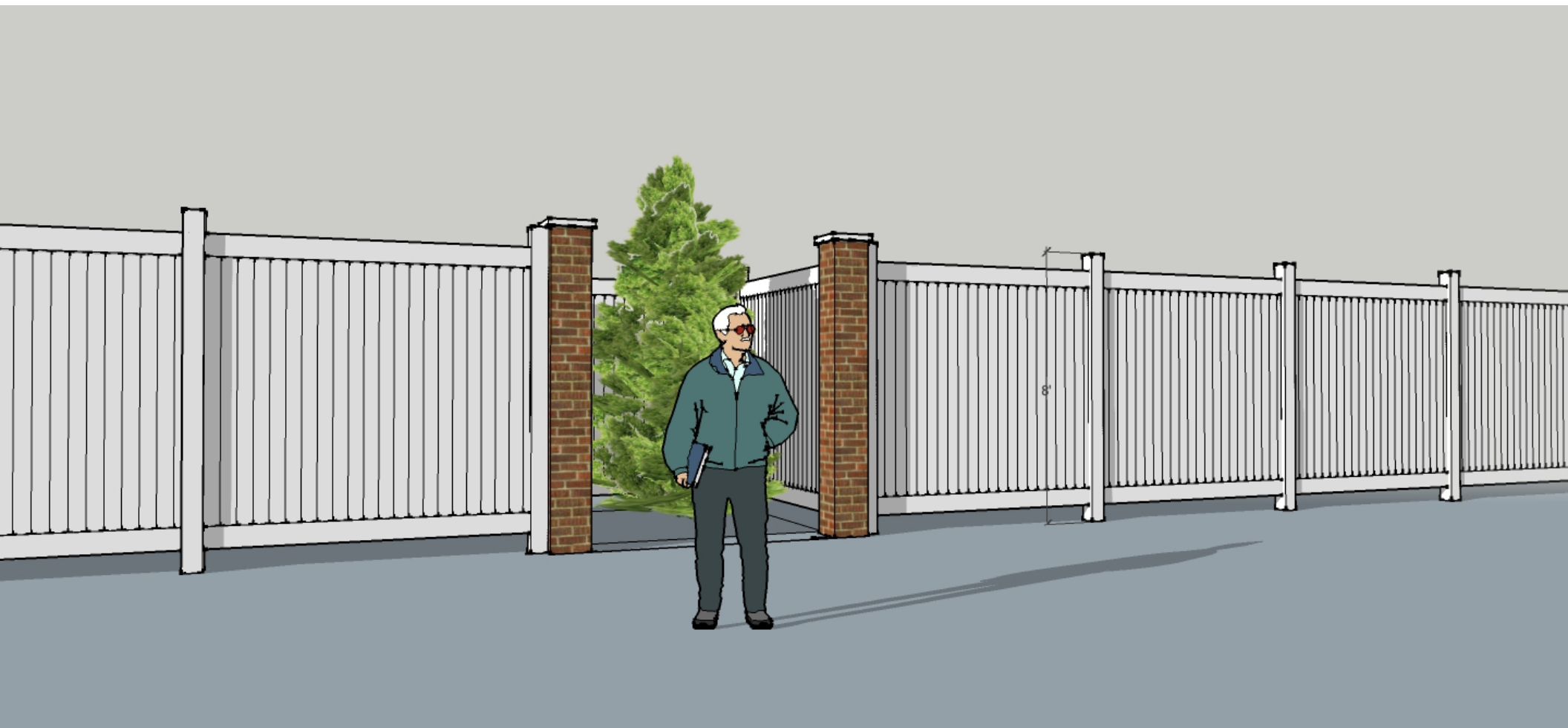
Detail at Fence Pier

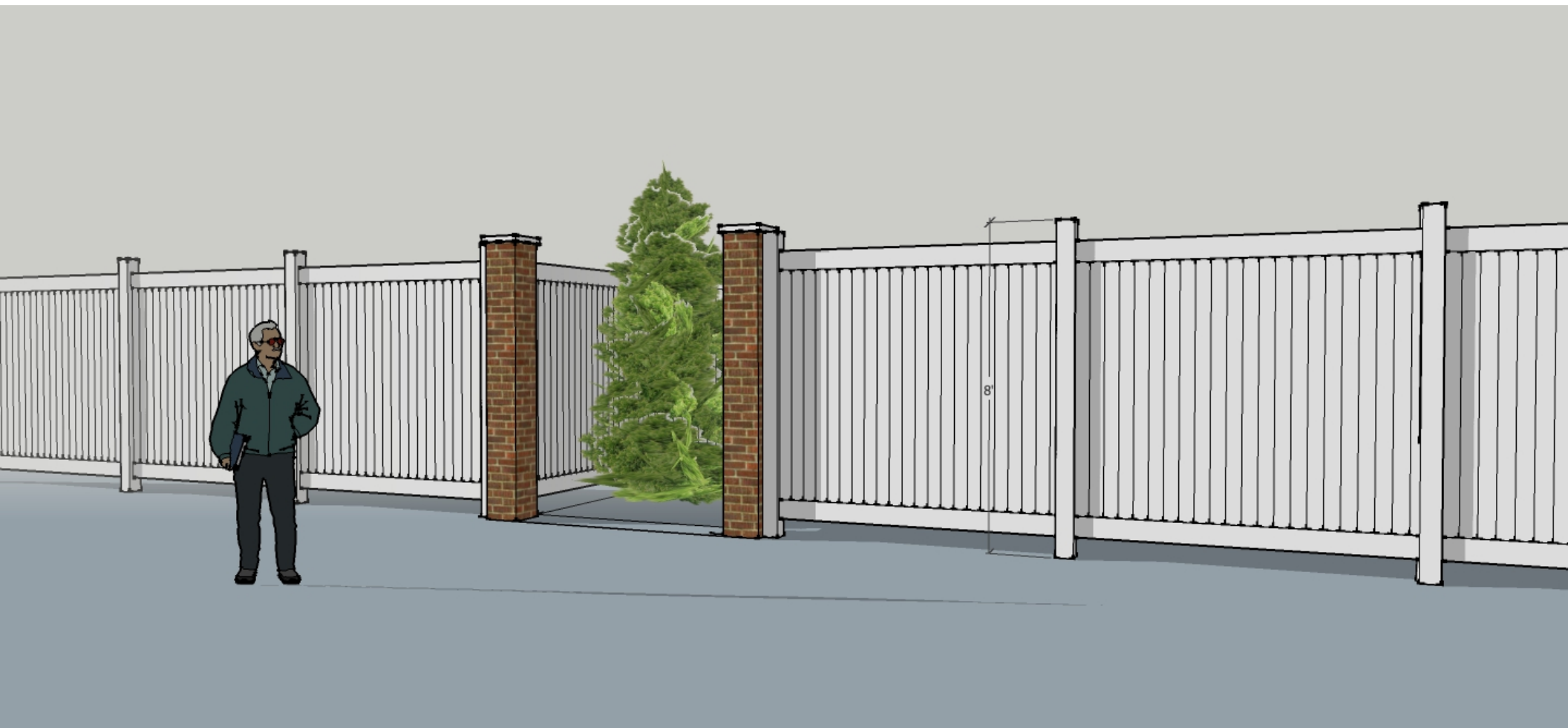
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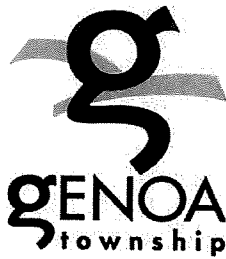












GENOA CHARTER TOWNSHIP
Application for Site Plan Review

TO THE GENOA TOWNSHIP PLANNING COMMISSION AND TOWNSHIP BOARD:

APPLICANT NAME & ADDRESS: ALDI Inc. 2625 N. Stockbridge Road Webberville, MI 48892
If applicant is not the owner, a letter of Authorization from Property Owner is needed.

OWNER'S NAME & ADDRESS: ALDI Inc. 2625 N. Stockbridge Road Webberville, MI 48892

SITE ADDRESS: 2260 E. Grand River PARCEL #(s): 4711-06-100-044

APPLICANT PHONE: (517) 521-3907 OWNER PHONE: (517) 521-3907

OWNER EMAIL: sam.glennen@aldi.us

LOCATION AND BRIEF DESCRIPTION OF SITE: Southwest corner of Grand River and Golf Club Road intersection. Site contains an existing ALDI Food Market, parking area and associated infrastructure.

BRIEF STATEMENT OF PROPOSED USE: Continue existing use as an ALDI Food Market.

THE FOLLOWING BUILDINGS ARE PROPOSED: +/- 2,254 SF addition to east side of existing building.

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

BY: Sam Glennen, Director of Real Estate, ALDI Inc.


ADDRESS: 2625 N. Stockbridge Road Webberville, MI 48892

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

1.) Chris Grzenkowicz of DESINE Inc. at chrisg@desineinc.com
Name Business Affiliation E-mail Address

FEE EXCEEDANCE AGREEMENT

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

SIGNATURE:  DATE: 1-17-18
PRINT NAME: Sam Glennen PHONE: (517) 521-3907
ADDRESS: 2625 N. Stockbridge Road Webberville, MI 48892



February 28, 2018

Planning Commission
Genoa Township
2911 Dorr Road
Brighton, Michigan 48116

Attention:	Kelly Van Marter, AICP Planning Director and Assistant Township Manager
Subject:	Aldi Food Market – Site Plan Review #2
Location:	2260 E. Grand River Avenue - south side of Grand River, west of Chilson Road
Zoning:	GCD General Commercial District

Dear Commissioners:

At the Township’s request, we have reviewed the revised site plan (cover sheet dated 2/21/18) proposing an expansion of the existing Aldi Food Market at 2260 E. Grand River Avenue.

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

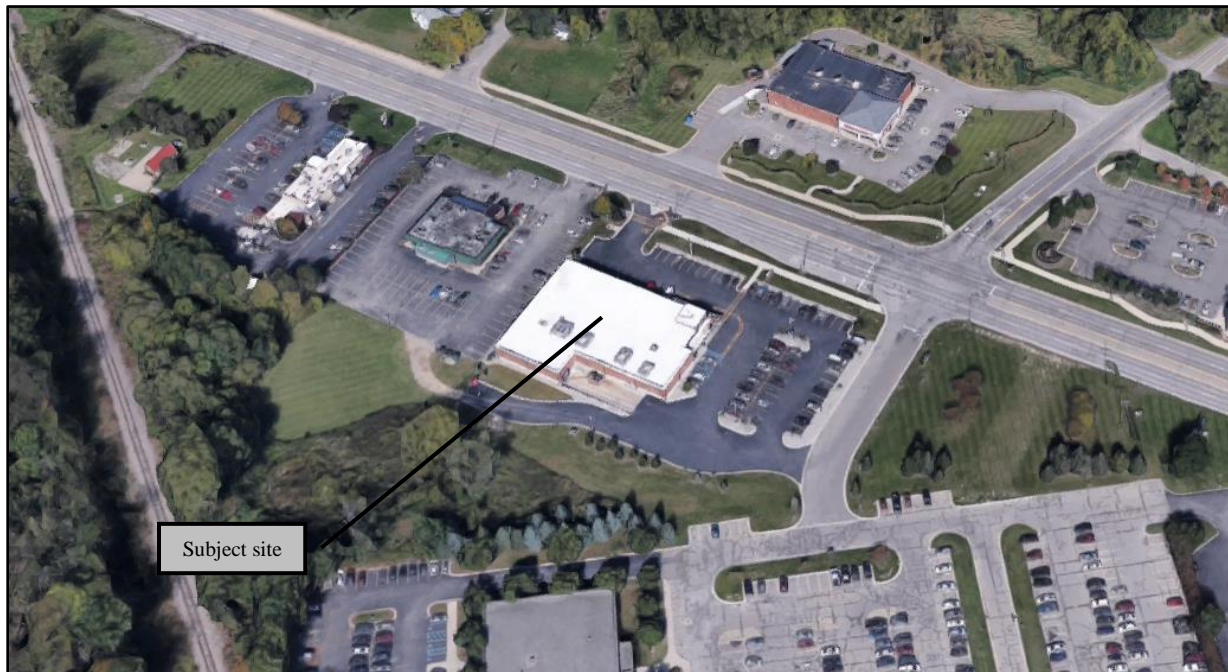
A. Summary

1. Planning Commission has the discretion to waive the side and rear parking setback where a shared access/parking easement is provided – 6 of the proposed spaces are within such an easement.
2. Planning Commission has approval authority over the building elevations, including materials and colors.
3. Planning Commission approval is needed for the amount of parking proposed (125% of the minimum Ordinance standard). The applicant notes that the 4 additional spaces are needed to meet a corporate requirement.

B. Proposal

The applicant requests site plan review and approval for a 2,254 square foot addition to the existing 16,657 square foot grocery store.

Retail establishments with up to 30,000 square feet of gross floor area are permitted by right in the GCD. As such, the project requires site plan review/approval given that the size of the expansion (approximately 13%) exceeds the threshold for a “minor” deviation from an approved plan.



Aerial view of site and surroundings (looking north)

C. Site Plan Review

1. Dimensional Requirements. The proposal has been reviewed for compliance with the dimensional standards of the GCD, as follows:

District	Lot Size		Minimum Setbacks (feet)				Max. Height	Lot Coverage
	Lot Area (acres)	Width (feet)	Front Yard	Side Yard	Rear Yard	Parking		
GCD	1	150	70	15	50	20 front 10 side/rear	35' 2 stories	35% building 75% impervious
Proposal	2.66	358	91.2	15.4 (W) 135 (E)	57.6	4-29 front 10 side/rear*	24.5' 1 story	16.3% building 61.8% impervious

* The majority of the existing and proposed parking meets the side/rear setback standard; however, there are 6 spaces proposed at the rear of the site that cross over the property line. This area is noted as being covered by an easement for “parking, landscaping and public utilities.” As such, Section 14.06.11 gives the Planning Commission discretion to waive or modify the parking setback requirement.

With the exception of the east side yard, the building and parking setbacks noted are existing conditions. The reduced parking front setback was allowed as part of the original development in 2008 via variance from the ZBA.

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

Building materials include brick and a CMU base to match the existing building. New materials include decorative wood panels and metal architectural panels (replacing glass) on the upper level of the store entrance.

In our opinion, the proposed building provides a complementary mix of materials that match the existing building, while also introducing new materials to modernize the overall design.

- 3. Parking.** Per Section 14.04, 76 parking spaces are required, while 95 are proposed, including the 5 required barrier free spaces.

The amount of parking proposed slightly exceeds that allowed by Ordinance. More specifically, Section 14.02.06 requires Planning Commission approval for parking that exceeds 120% of the minimum requirement.

The proposal is 125% of the minimum requirement. The applicant has indicated that the 4 additional spaces are needed to meet the current corporate requirement.

The parking spaces and drive aisles meet or exceed the dimensional standards of Section 14.06 and the use of looped striping is proposed.

- 4. Pedestrian Circulation.** There is an existing public sidewalk along Grand River, as well as existing walks along the north and east sides of the building. The proposal includes widening of the sidewalk along the east side of the building and crosswalk striping across the parking lot connecting the public and private walks.
- 5. Vehicular Circulation.** The site has direct access to Grand River via a restricted turning movement drive, as well as indirectly by a shared access easement with the County complex to the east. No changes are proposed to the existing circulation patterns.
- 6. Loading.** The development has an existing truck well at the rear of the building for deliveries. The size, design and location are all in accordance with current standards and no changes are proposed.
- 7. Waste Receptacle and Enclosure.** There is an existing waste receptacle and enclosure within the truck well at the rear of the building. Our original review of the site plan (2008) indicated that the receptacle/enclosure complied with the standards of Section 12.03 and no changes are currently proposed.
- 8. Landscaping.** We reviewed the landscape plan for compliance with the standards of Section 12.02, as noted in the following table:

Location	Requirements	Proposed	Comments
Greenbelt	20' width 9 canopy trees 2' tall hedgerow	0-29' width (existing) 4 existing trees 5 canopy trees (proposed)	Requirements met
Buffer Zone C (E)	10' width 23 canopy trees OR 23 evergreen trees OR 90 shrubs	10' width 7 existing trees 3 canopy trees (proposed) 6 evergreen trees (proposed) 28 shrubs (proposed)	Requirements met
Buffer Zone C (W)	10' width 16 canopy trees OR 16 evergreen trees OR 64 shrubs	10' width 8 existing trees 2 evergreen trees (proposed) 24 existing shrubs	Requirements met
Parking lot	950 SF landscaped area 10 canopy trees	1,458 SF landscaped area 2 existing trees 5 canopy trees (proposed) 2 evergreen trees 1 ornamental tree	Requirements met
Detention pond	8 trees (deciduous or evergreen) 80 shrubs	10 trees (existing) 73 shrubs (existing) 7 shrubs (proposed)	Requirements met

- 9. Exterior Lighting.** The submittal includes a lighting plan (Sheet LT1), which includes 9 light poles throughout the parking lot, as well as 24 wall mounted/under canopy fixtures.

The proposed lighting plan, including pole heights, fixture details and light intensities, complies with current Township standards.

- 10. Signs.** The existing monument sign is to remain, though replacement of the existing sign cabinet is proposed. This will not alter the sign height or area, both of which comply with current standards.

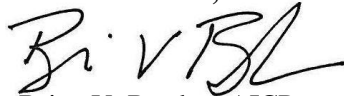
The building elevation drawings show the two existing wall signs in the northeast corner of the building. As a side note, the 2nd wall sign was allowed by the Planning Commission as part of the 2008 approval.

- 11. Impact Assessment.** The submittal includes an amended Impact Assessment (January 25, 2018). 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. I can be reached by phone at (248) 586-0505, or via e-mail at borden@lsplanning.com.

Respectfully,

LSL PLANNING, A SAFE BUILT COMPANY



Brian V. Borden, AICP
Planning Manager



February 28, 2018

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

Re: Aldi Expansion Site Plan Review #2

Dear Ms. Van Marter:

Tetra Tech conducted a site plan review of the updated Aldi expansion plans submitted by Desine, Inc. The revised plans are dated February 21, 2018.

The petitioner has updated the stormwater calculations to show that more storage is provided in the existing detention basin than originally submitted and provided a detail to modify the outlet control structure to adequately meet the new storage amounts. The third concern, adequate free board, was addressed by providing updated spot elevations along the top of the detention basin embankment. These spot elevations all meet the 1-foot free board amount required by the Livingston County Drain Commission. With the corrections to the stormwater calculations and heavy-duty pavement section we have no further engineering related comments for the Aldi expansion site plan.

Please call if you have any questions.

Sincerely,

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

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

A blue ink signature of Marguerite K. Davenport, written in a cursive style.

Marguerite K. Davenport
Project Engineer

copy: Christopher A. Grzenkowicz, P.E., DESINE, Inc.

Tetra Tech

401 South Washington Square, Suite 100, Lansing, MI 48933
Tel 517.316.3930 Fax 517.484.8140 www.tetrattech.com



BRIGHTON AREA FIRE AUTHORITY

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

March 1, 2018

Kelly VanMarter
Genoa Township
2911 Dorr Road
Brighton, MI 48116

RE: Aldi expansion
2260 E. Grand River
Genoa Twp., MI

Dear Kelly:

The Brighton Area Fire Authority has reviewed the above mentioned site plan. The plans were received for review on February 27, 2018 and the drawings are dated February 21, 2018. The project is based on an existing 16,657 sq.ft. Mercantile occupancy that will undergo site alteration to accommodate a new 2,254 sq.ft. addition. The plan review is based on the requirements of the International Fire Code (IFC) 2018 edition.

The applicant contacted the fire authority for clarification and revised the most recent submittal. All concerns identified on the previous submittal are shown to be corrected and or addressed.

The fire authority has no further comments for the project at this time.

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

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

Cordially,

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

Rick Boisvert, CFPS
Fire Marshal

IMPACT ASSESSMENT
for the
ALDI FOOD MARKET
SITE DEVELOPMENT

Developer:
ALDI Inc.
2625 North Stockbridge Road
Webberville, Michigan 48892

Prepared by:
DESINE Inc.
2183 Pless Drive
Brighton, Michigan 48114

April 30, 2008
Amended January 25, 2018

January 25, 2018

Introduction

This impact assessment has been prepared pursuant to Section 18.07 of the Genoa Township Zoning Ordinance. This assessment addresses the impact of development of the proposed ALDI Food Market Commercial Development on the natural features, economic condition and social environment of the Township.

The project site consists of approximately 3.13 acres of property zoned **General Commercial District (GCD)** located on the south side of Grand River Avenue, west of Golf Club Road, in Section 6 as shown in Figure 1. The site is currently developed with a 16,657 SF single story commercial building, paved parking area and associated infrastructure. The existing building contains an ALDI Food Market limited assortment grocery store. The existing parking area has a limited access right in / right out driveway on Grand River Avenue and a full access driveway along the Livingston County Complex driveway.

The existing building, paved parking area and infrastructure will remain. A 2,254 SF building addition is proposed along the east side of the existing building within a portion of the existing parking area to provide a total of 18,911 SF that will continue to be utilized as an ALDI Food Market. Minor modifications of the existing parking area are proposed to accommodate the proposed building addition. 24 new parking spaces are proposed along the existing rear drive. The proposed site improvements will increase the parking count from 71 to 95 spaces to accommodate the increase in customer base since 2008. Additional site improvements include site lighting and landscaping improvements as depicted on the Site Plan.

The subject property is located in a significantly developed area, surrounded by restaurant, retail, office and industrial uses. An aerial photograph (circa 2017) of the surrounding area and existing conditions is provided in Figure 2.

January 25, 2018

This impact assessment has been prepared under the direction of and by:

Christopher A. Grzenkowicz, P.E.
DESINE Inc.
2183 Pless Drive
Brighton, Michigan 48114
(810) 227-9533

The civil engineering / surveying firm of DESINE Inc. has been in practice since 1989. Mr. Grzenkowicz is a licensed Civil Engineer with experience in private and municipal developments including a number of projects within Genoa Township and Livingston County.

A. IMPACT ON NATURAL FEATURES

Prior to the construction of the existing ALDI Food Market, the subject property was previously developed with a fast food restaurant and a bank. The majority of the site had been disturbed during the construction of the previous development. The previous buildings, parking areas and infrastructure was removed to allow for construction of the existing ALDI Food Market development. The southern portion of the site contained brush and small trees prior to the existing development. This area was utilized to construct a detention basin for treatment of storm water runoff from the ALDI development. Following construction of the detention basin, this area was stabilized with vegetative growth and now contains a mixture of grasses, shrubs and mature trees. The existing topography of the site generally slopes from Grand River in the northeast to the railroad corridor in the southwest. Slopes are ranging from 1 percent to 5 percent. Elevation difference across the property is approximately 8 feet. Surface water runoff from the subject and adjacent properties flows generally from northeast to southwest toward the existing drainage swale adjacent to the railroad tracks. An existing underground storm sewer system collects runoff from the subject property and directs it to an existing detention basin which discharges at an agricultural rate to the serving the existing drainage swale adjacent to the railroad tracks. The existing site topography is depicted on the Existing Conditions Plan.

The soils on the subject property are primarily Boyer-Oshtemo loamy sands. These soils are generally well-drained, moderately permeable, loamy sands. Soil classifications are prepared by the United States Department of Agriculture, National Resource Conservation Service. The Soils Map, shown in Figure 3, shows the locations of specific soil types as classified.

Previous development of the subject property required land balancing to establish final

January 25, 2018

grades and provide proper drainage. The proposed building addition and parking improvements are designed to mesh with the existing site improvements as close as possible. Minimal demolition and site grading is necessary to accommodate the proposed building and site improvements.

The limits of disturbance have been depicted on the Soil Erosion and Sedimentation Control Plan. Grading for this project will maintain the general character of the existing site conditions. Development of the proposed site improvements will require minimal exporting of excess topsoil and minimal importing of additional granular fill material.

Vegetation in the area of the proposed parking area improvements will be disturbed. Existing vegetation in these areas consists of open lawn and landscape trees planted during the original development of the existing ALDI Food Market. No landmark trees have been identified on the site. Existing landscape trees consist of spruce, pine, pear, locust, maple and ginko. Existing on-site mature trees consist of elm, cottonwood, box elder, poplar, apple, aspen and oak. The existing mature trees are located in southwestern portion of the property surrounding the existing detention basin. No existing mature trees will be removed as a part of this project. Existing landscape trees within the proposed building addition area and proposed parking areas will be removed to accommodate the proposed site improvements. Those trees to be removed will be replaced with new plantings. Additional landscaping is proposed to ensure the site is in conformance with the current Zoning Ordinance requirements. Existing trees, including those trees to be removed, are depicted on the Existing Conditions Plan. Proposed replacement trees and other proposed landscaping improvements are depicted on the Landscape Plan.

No wetland areas are present on the project site.

Surface drainage characteristics of the site will not be significantly impacted. The proposed site improvements are designed to direct storm water runoff to the existing storm water management system. The proposed site improvements will result in a minimal reduction of permeable area on the subject property as compared to existing conditions and a minimal increase in the surface water runoff generated from the development site. The proposed increase in lot coverage is approximately 2.8%. The overall proposed lot coverage is 61.8%, well below the 75% allowable. Surface water runoff generated by the proposed site improvements will be directed to the existing detention basin.

The existing detention basin was designed and constructed to accept storm water runoff from the project site in accordance with Genoa Township and Livingston County Drain Commissioner rules and regulations. An analysis of the existing storm water management system has been performed to verify that the existing storm water management system can

January 25, 2018

accommodate the runoff to be generated by the proposed site improvements. The storm sewer analysis calculations are provided on sheet UT2 of the Site Plan.

The minimal impact of surface drainage alterations will not significantly impact local aquifer characteristics or groundwater recharge capacity. Surface water runoff from the developed site will flow into the existing detention basin which discharges along the historical drainage path adjacent to the railroad tracks.

Wildlife habitats exist primarily on the southern portion of the property which includes the existing detention basin, tall grasses, brush, shrubs and mature trees. Wildlife supported in these habitats are generally smaller woodland creatures, field animals and birds. Larger animals, such as deer, may traverse the site. The existing developed portion of the site does not contain any significant wildlife habitat areas. The proposed site improvements do not result in a significant impact to the existing wildlife habitats. No site improvements or disturbance is proposed in the southern portion of the site.

The project site does not currently support significant wildlife habitats and development of the proposed site improvements will not have a significant impact on the overall habitat quality. No significant adverse impact to existing natural features are anticipated due to the proposed site improvements for this property.

B. IMPACT ON STORM WATER MANAGEMENT

The subject property contains an existing storm water management system consisting of an underground storm sewer network, a sedimentation basin and a detention basin. Minimal earthwork and site grading is necessary to accommodate the proposed site improvements and to direct surface drainage from the proposed site improvements to the existing storm water management system. Earthwork will be limited to the areas of proposed building and parking improvements.

Catch basins will collect surface water from parking and drive areas, building areas, and open space areas. Grading for the proposed site improvements will mesh with existing grades immediately surrounding the improvement areas. No adverse impact to adjoining properties is anticipated due to grading or construction of the proposed site improvements.

Soil erosion and sedimentation control is governed by the Soil Erosion Control Act No. 347 of the Public Acts of 1972, as amended as administered by the Livingston County Drain Commissioner. Silt fencing, sediment inlet filters and other soil erosion control measures will be required around the areas of the proposed site improvements as depicted on the Soil Erosion and Sedimentation Control Plan. The Contractor shall be responsible for initiating

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and maintaining adequate dust control measures during construction. The Contractor shall also be responsible for complying with all soil erosion and sedimentation control regulations during and after construction until the project site is fully stabilized and vegetative cover is established within the disturbed areas outside of hard surfacing.

Impact to adjoining properties due to the construction of the site improvements will be minimized by implementing soil erosion and sedimentation control measures. No adverse impact to adjacent properties due to surface water runoff will be created as a result of the proposed site improvements.

C. IMPACT ON SURROUNDING LAND USES

Property to the North of the site is zoned Neighborhood Service (NS) and is occupied by CVS Pharmacy. Property to the East is zoned General Commercial District (GCD) and serves as the entryway to the Livingston County East Complex, east of that is PNC Bank. The Livingston County East Complex is located south of the subject parcel and is zoned GCD. West of the property is Mourad's Grill, also zoned GCD.

The Genoa Township Future Land Use Plan designates the subject property for General Commercial uses. The surrounding property is also designated for General Commercial use.

The existing use is consistent with the existing development in the surrounding area and is consistent with the long term planning within the Township. The proposed landscaping and architecture is consistent with the existing site development to allow this site to continue to be in harmony with the surrounding area. No adverse impact to the surrounding area is anticipated due to the proposed site improvements. All areas disturbed by construction will require restoration.

The continued use of the property as a general commercial use will not create any significant emissions of smoke, airborne solids, odors, gases, vibrations, noise or glare discernable and substantially annoying or injurious to persons and/or property beyond the lot lines. Radioactive emissions and electromagnetic radiation shall not be emitted in excess of quantities established as safe in accordance with the ordinance when measured at the property lines. No flammable liquids, gases or explosives shall be stored or used on the property. No underground or aboveground storage tanks are proposed on the property.

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D. IMPACT ON PUBLIC FACILITIES AND SERVICES

Police protection is and will continue to be provided by the Livingston County Sheriff and the Michigan State Police. Additional services required to accommodate the proposed site improvements are anticipated to be minimal.

Fire protection is provided by the Brighton Area Fire Department. The subject property is within the water district and fire hydrants are readily accessible for utilization in the event of a fire. Adequate fire protection systems are provided within the existing building and are proposed within the building addition. Additional fire protection services required to accommodate the proposed site improvements are anticipated to be minor.

Construction of the proposed site improvements will not create any direct adverse impact on the schools.

E. IMPACT ON PUBLIC UTILITIES

The subject property is located within the municipal sewer and water districts. Existing water main and sanitary sewer are located in easements to the south and east of the existing building. The existing building is connected to the existing sanitary sewer and water main.

Water service to the building is provided from the existing water main located within an easement that traverses the property south of the existing building. No significant increase in water use is anticipated as a result of the proposed site improvements. Capacity is available within the existing water system to provide adequate service to this development.

Sanitary sewer service for the development is provided by the existing sanitary sewer main which traverses the site south of the existing building. No significant increase in sanitary sewage flow is anticipated as a result of the proposed site improvements. Capacity is available within the existing sanitary sewer system to provide adequate service to this development.

The site is serviced by electric, gas, phone and cable TV systems located along Grand River Avenue. No significant increase in demand or use of the existing public utility systems is anticipated as a result of the proposed site improvements.

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F. STORAGE AND HANDLING OF ANY HAZARDOUS MATERIALS

The proposed general commercial space will not utilize or store any potentially hazardous or polluting materials other than standard household type cleaning products. All solid wastes should be properly disposed of through a licensed waste disposal firm on a regular basis.

G. IMPACT ON TRAFFIC AND PEDESTRIANS

The project site is located along the Grand River Avenue corridor. Grand River Avenue, in the area of the proposed development, is major arterial public street consisting of four directional traffic lanes and a center left turn lane. Access to the site from Grand River Avenue is provided via a limited access, right in – right out driveway near the west side of the site and thru the driveway serving the Livingston County East Complex.

Traffic Engineering Associates, Inc. located in Lansing Michigan has prepared a Traffic Assessment for the existing development (Attachment 1). The Traffic Assessment has been provided to and reviewed by both the Livingston County Road Commission and Michigan Department of Transportation.

The Traffic Assessment projected the ALDI development to generate 49 vehicle trips in the AM Peak hour, 208 vehicle trips in the PM peak hour and 1534 vehicle trips daily. A significant amount of the trips are classified as Pass-By Trips. Pass-by trips are already present in the existing passing traffic.

The actual traffic generated by the development of the ALDI Food Market is now existing in the traffic stream. The existing ingress and egress points and signalized intersection of Grand River / Golf Club / Livingston County Complex Driveway operate at an acceptable level of service. The proposed site improvements are not anticipated to result in a significant increase in traffic. No significant impact on the major thoroughfares of Livingston County is anticipated as a result of the proposed site improvements.

The existing development provides service to pedestrian traffic through a pedestrian sidewalk connection from the existing sidewalk along Grand River to the building entrance. The pedestrian access will be maintained as a part of the proposed site improvements. No significant increase in pedestrian traffic or adverse impact upon pedestrian traffic is anticipated as a result of the proposed site improvements.

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H. SPECIAL PROVISIONS

A variance has been obtained for the reduction of the parking setback from the Right-of-Way of Grand River Avenue. A reduction of 16 feet was granted to allow the 4-foot parking setback from the R.O.W for the portion of the parking area adjacent to the 75-foot wide ½ R.O.W.

An easement agreement to utilize the driveway to the Livingston County East Complex has been entered into. No additional special provisions or requirements are currently proposed for this facility.

I. SITE LIGHTING

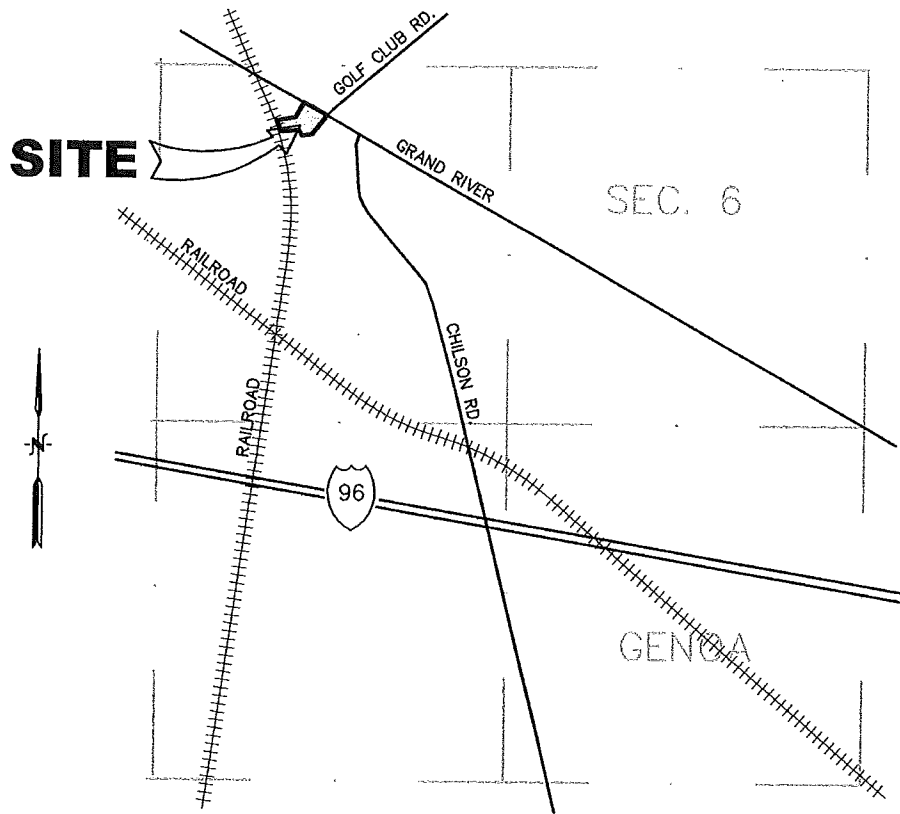
All site lighting shall meet the requirements of the Genoa Township ordinances. Exterior building mounted site lighting shall be shielded and down directed. Pole mounted site lighting is proposed for this project. All pole-mounted lighting shall be shielded and down directed on the site. General site lighting, excluding safety and emergency lighting, shall be used between the times from dusk to 12:00 a.m. and from 5:00 a.m. to dawn.

J. HOURS OF OPERATION

Hours of operation will generally be between 9:00 am to 8:00 pm seven (7) days a week. Corporate deliveries are the bulk of the product line and are scheduled when the store is closed. Corporate deliveries typically do not exceed one (1) delivery per day. Supplier delivery trucks deliver milk, bread, pop and similar products periodically during regular business hours. Supplier deliveries typically occur once or twice a week depending on the product delivered.

January 25, 2018

FIGURE #1



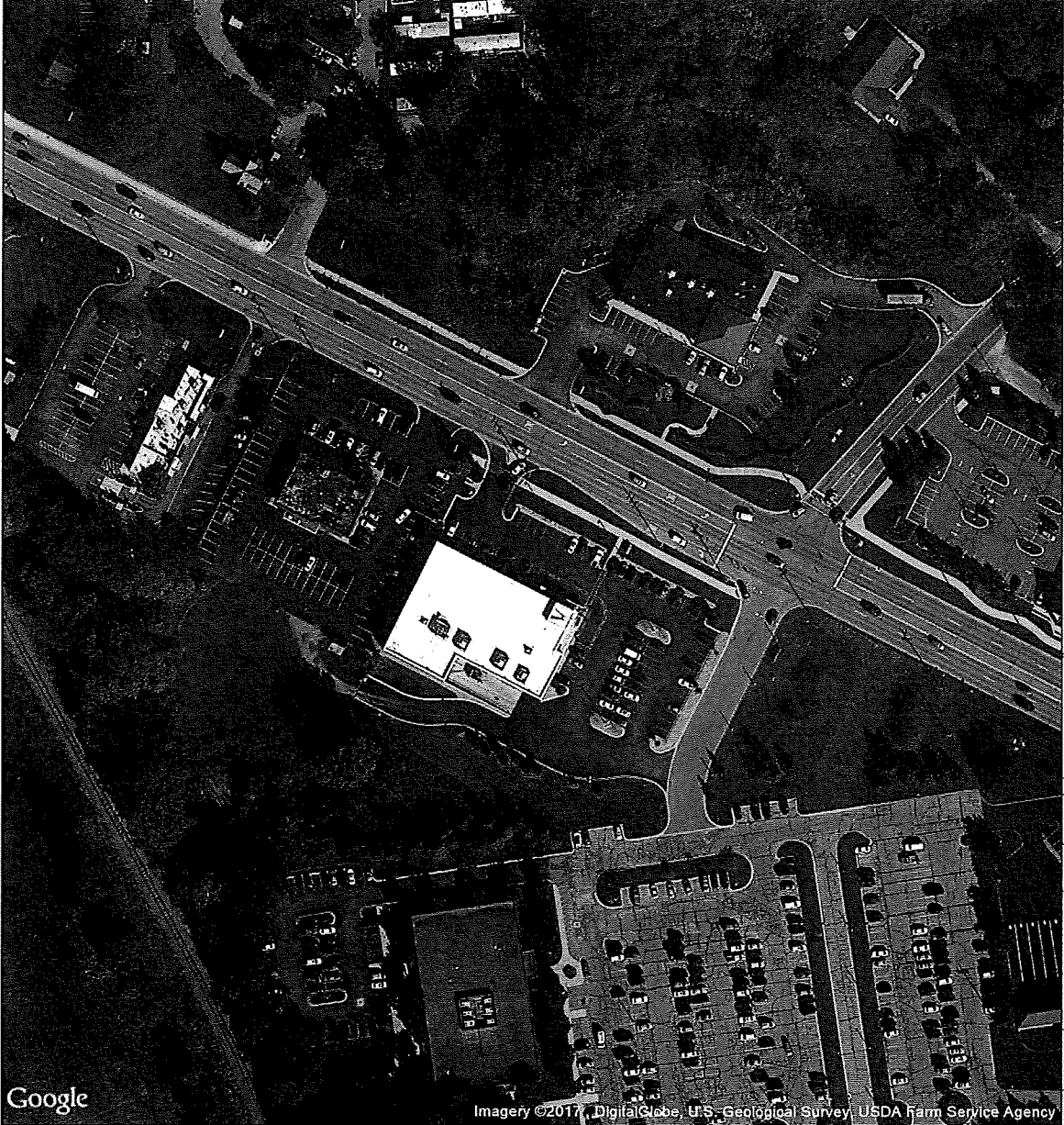
LOCATION MAP

NOT TO SCALE

Site Address
2260 E. Grand River Avenue
Howell, MI 48843

January 25, 2018

FIGURE #2



AERIAL PHOTOGRAPH

NO SCALE

January 25, 2018

FIGURE #3



SITE SOILS

NO SCALE

Source: Web Soil Survey
United States Department of Agriculture,
Natural Resources Conservation Service

Soil Legend:

BtE Boyer-Oshtemo loamy sands, 18 to 25 percent slopes
BtA Boyer-Oshtemo loamy sands, 0 to 2 percent slopes
MoE Miami loam, 18 to 25 percent slopes

January 25, 2018

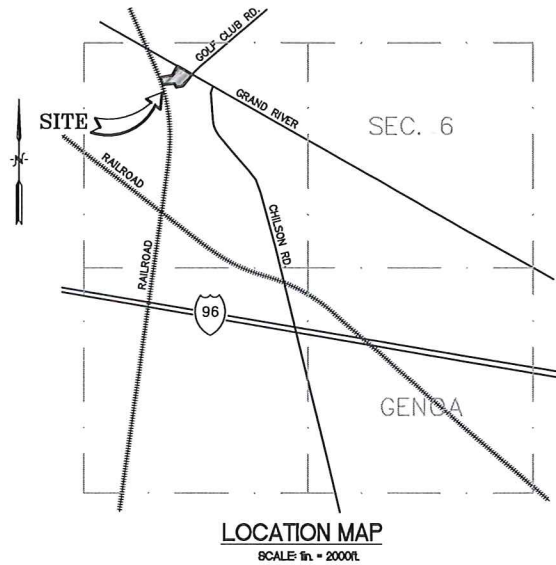
ATTACHMENT #1

SITE PLAN

FOR

ALDI FOOD MARKET #51

REMODEL AND EXPANSION
 2260 EAST GRAND RIVER AVENUE HOWELL, MI 48843
 A PART OF THE NORTHWEST 1/4 OF SECTION 6, T2N, R5E
 GENOA TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN



LEGAL DESCRIPTION:

Commencing at the Northwest Corner of Section 6, Town 2 North, Range 5 East, Genoa Township, Livingston County, Michigan; thence S87°07'30"E 841.85 feet (S87°02'00"E 844.70 feet record) along the North line of said Section 6; thence S60°06'45"E 609.89 feet (606.69 feet record) along the centerline of Grand River Avenue to the PLACE OF BEGINNING; thence continuing S60°06'45"E 358.81 feet along said centerline of Grand River Avenue (variable width Right-of-way); thence S50°33'30"W 64.79 feet; thence S29°56'47"W 193.35 feet; thence S84°35'37"W 100.61 feet; thence N03°34'18"W 14.51 feet; thence N60°06'45"W 85.63 feet; thence S69°20'23"W 346.13 feet (S69°14'28"W 346.09 feet record, also recorded as S69°20'02"W 345.92 feet, also recorded as S69°18'10"W 346.39 feet); thence N25°35'10"W 120.00 feet along the Easterly line of the Tuscola and Saginaw Bay Railway (66 foot wide Right-of-Way), formerly known as Ann Arbor Railroad; thence N68°26'35"E 254.80 feet; thence N29°53'15"E 300.00 feet to the Place of Beginning. Being a part of the Northwest 1/4 of Section 6, Town 2 North, Range 5 East, Genoa Township, Livingston County, Michigan. Containing 3.14 acres of land, more or less. Subject to the rights of the public over that portion thereof taken for Grand River Avenue, also subject to and together with all easements and restrictions affecting title to the above described premises.

BENCHMARKS:

DATUM BASED ON PREVIOUS BENCHMARK AS DEPICTED ON AS-BUILT PLANS PREPARED BY DESINE INC., JOB No. 81389, REVISED DATE DECEMBER 3, 2008.
 DATUM AS DEPICTED = NGVD

PRIMARY (OFF SITE)

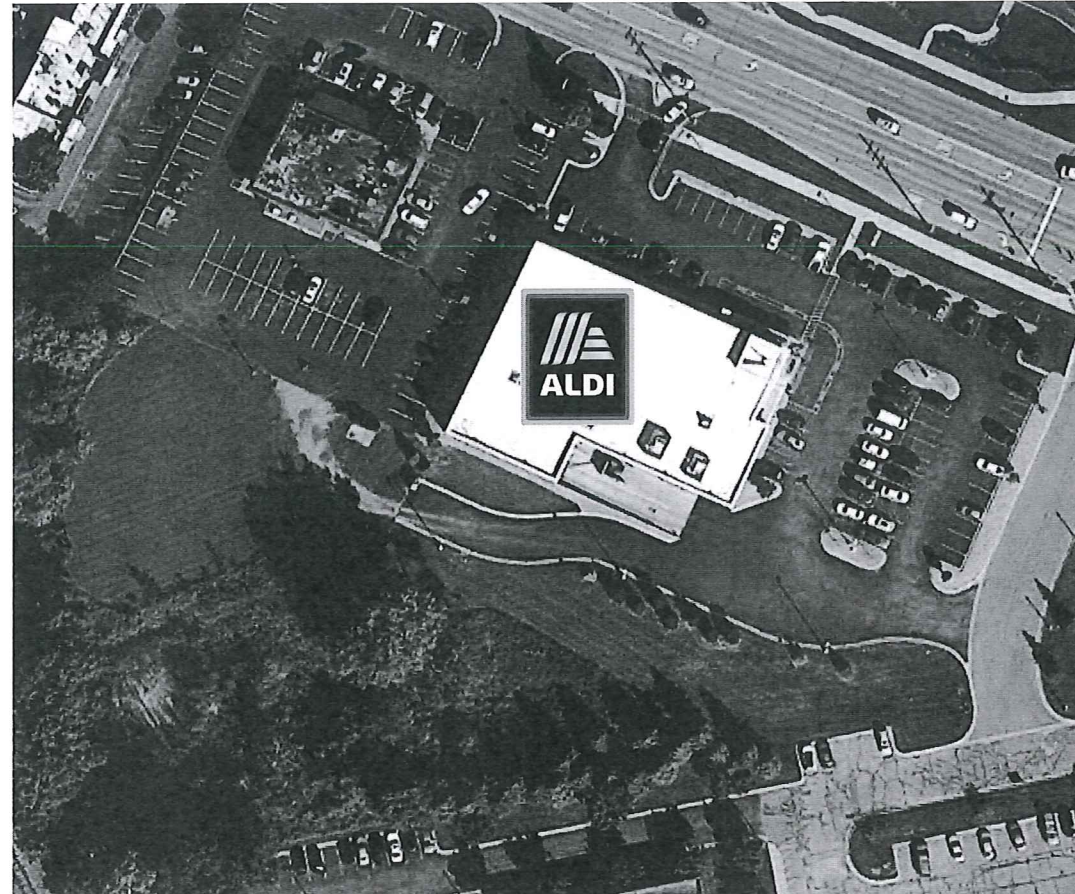
AT HOWELL, LIVINGSTON COUNTY, ON THE ANN ARBOR RAILROAD, 35 YARDS EAST OF THE NORTHEAST CORNER OF THE STATION; 60 YARDS WEST OF A HIGHWAY BRIDGE OVER THE TRACK; 7 YARDS NORTH OF THE WEST RAIL; A STANDARD TABLET STAMPED "G 105 1934" AND SET IN THE TOP OF A CONCRETE POST.
 ELEVATION = 921.931 (NGVD) REF: SEE ABOVE

BENCHMARK #201

PREVIOUSLY DESCRIBED AS:
 RAILROAD SPIKE IN THE NORTH SIDE OF AN UTILITY POLE, LOCATED ON THE SOUTH SIDE OF GRAND RIVER AND NEAR ABANDONED McDONALDS RESTAURANT.
 CURRENTLY:
 LOCATED NEAR THE EASTERLY SIDE OF THE NORTHERLY ENTRANCE FROM GRAND RIVER TO "ALDI" STORE.
 ELEVATION = 925.46 (NGVD)
 REF: SEE ABOVE
 FIELD BOOK D405, PG. 43
 POINT #201

BENCHMARK #200

ARROW OF HYDRANT, LOCATED 57± FEET NORTHERLY OF THE NORTHEASTERLY BUILDING CORNER "ALDI."
 ELEVATION = 930.09 (NGVD) REF: POINT #200



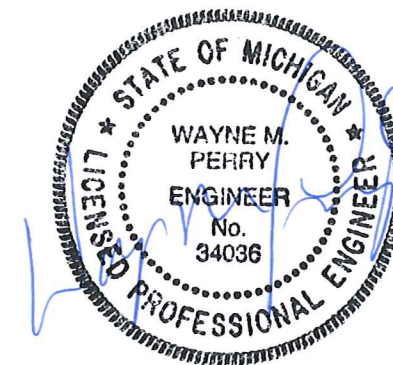
AERIAL PHOTOGRAPH
SCALE: NOT TO SCALE

AERIAL PHOTOGRAPHY BY:
 Google maps

Aerial photographic underlay is an unrectified image and is oriented to the engineering line work with reasonable accuracy and precision, and may not accurately depict current site conditions.

SHEET INDEX

- EX1 EXISTING CONDITIONS & DEMOLITION PLAN
- EX2 EXISTING SITE DATA & DEMOLITION NOTES
- SP SITE PLAN
- UT1 UTILITY PLAN
- UT2 STORM WATER MANAGEMENT CALCULATIONS
- GR GRADING PLAN
- SE1 SOIL EROSION & SEDIMENTATION CONTROL PLAN
- SE2 SOIL EROSION & SEDIMENTATION CONTROL NOTES & DETAILS
- LA1 LANDSCAPE PLAN
- LA2 LANDSCAPE NOTES & DETAILS
- LT1 SITE LIGHTING PLAN
- LT2 SITE LIGHTING NOTES AND DETAILS
- DT1 SITE PAVEMENT NOTES & DETAILS
- DT2 SIGNAGE & PAVEMENT MARKING NOTES & DETAILS
- DT3 STORM SEWER NOTES & DETAILS
- DT4 WATER MAIN & SANITARY SEWER NOTES & DETAILS
- DT5 M.H.O.G. STANDARD DETAILS
- DT6 M.H.O.G. STANDARD DETAILS
- A-131 BUILDING FLOOR PLAN / OPERATIONS PLAN
- A-201 EXTERIOR ELEVATIONS



ENGINEER/SURVEYOR

DESINE INC.
 2183 PLESS DRIVE
 BRIGHTON, MICHIGAN 48114
 PHONE: (810) 227-9533

DEVELOPER / APPLICANT

ALDI Inc.
 2625 N. STOCKBRIDGE ROAD
 WEBBERVILLE, MICHIGAN 48892
 PHONE: (517) 521-3907

ARCHITECT

APD ENGINEERING AND ARCHITECTURE, PLLC
 615 FISHERS RUN
 VICTOR, NEW YORK 14564
 PHONE: (585) 742-2222



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REVISED	SCALE: N/A
FEB 21, 2018	PROJECT No.: 9173290
	DWG NAME: 3290-COV
	PRINT: FEB 21, 2018



BENCHMARK
 DATUM BASED ON PREVIOUS BENCHMARK AS
 DEPICTED ON AS-BUILT PLANS PREPARED BY
 DESNE INC., JOB No. 81389, REVISED DATE
 DECEMBER 3, 2008.
 DATUM AS DEPICTED = NGVD

PRIMARY (OFF SITE)
 AT HOWELL, LIVINGSTON COUNTY, ON THE ANN
 ARBOR RAILROAD, 35 YARDS EAST OF THE
 NORTHEAST CORNER OF THE STATION; 80
 YARDS WEST OF A HIGHWAY BRIDGE OVER THE
 TRACK; 7 YARDS NORTH OF THE WEST RAIL; A
 STANDARD TABLE STAMPED "G 105 1934" AND
 SET IN THE TOP OF A CONCRETE POST.
 ELEVATION = 921.931 (NGVD)
 REF: SEE ABOVE

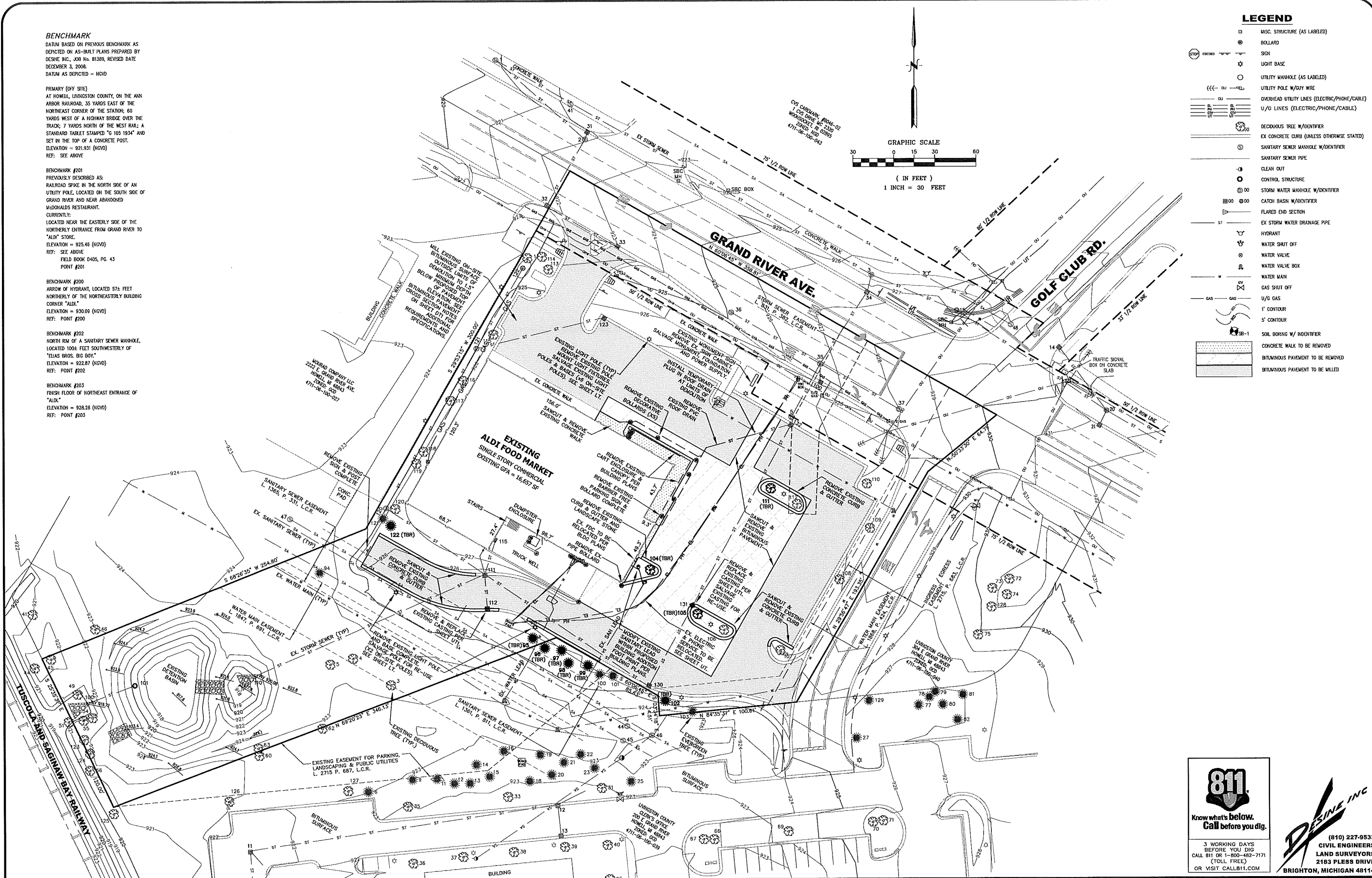
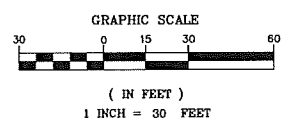
BENCHMARK #201
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 CURRENTLY:
 LOCATED NEAR THE EASTERLY SIDE OF THE
 NORTHERLY ENTRANCE FROM GRAND RIVER TO
 "ALDI" STORE.
 ELEVATION = 925.46 (NGVD)
 REF: SEE ABOVE
 FIELD BOOK D405, PG. 43
 POINT #201

BENCHMARK #200
 ARROW OF HYDRANT, LOCATED 57.4 FEET
 NORTHERLY OF THE NORTHEASTERLY BUILDING
 CORNER "ALDI."
 ELEVATION = 930.09 (NGVD)
 REF: POINT #200

BENCHMARK #202
 NORTH RM OF A SANITARY SEWER MANHOLE,
 LOCATED 100.1 FEET SOUTHWESTERLY OF
 "ELIAS BROS. BIG BOY."
 ELEVATION = 922.87 (NGVD)
 REF: POINT #202

BENCHMARK #203
 FRESH FLOOR OF NORTHEAST ENTRANCE OF
 "ALDI."
 ELEVATION = 928.28 (NGVD)
 REF: POINT #203

- LEGEND**
- MISC. STRUCTURE (AS LABELED)
 - BOLLARD
 - ☆ SIGN
 - LIGHT BASE
 - UTILITY MANHOLE (AS LABELED)
 - UTILITY POLE W/GUY WIRE
 - OVERHEAD UTILITY LINES (ELECTRIC/PHONE/CABLE)
 - U/G LINES (ELECTRIC/PHONE/CABLE)
 - DECIDUOUS TREE W/IDENTIFIER
 - EX CONCRETE CURB (UNLESS OTHERWISE STATED)
 - SANITARY SEWER MANHOLE W/IDENTIFIER
 - SANITARY SEWER PIPE
 - CLEAN OUT
 - CONTROL STRUCTURE
 - STORM WATER MANHOLE W/IDENTIFIER
 - CATCH BASIN W/IDENTIFIER
 - FLARED END SECTION
 - EX STORM WATER DRAINAGE PIPE
 - HYDRANT
 - WATER SHUT OFF
 - WATER VALVE
 - WATER VALVE BOX
 - WATER MAIN
 - GAS SHUT OFF
 - U/G GAS
 - 1' CONTOUR
 - 5' CONTOUR
 - SOIL BORING W/ IDENTIFIER
 - ▨ CONCRETE WALK TO BE REMOVED
 - ▨ BITUMINOUS PAVEMENT TO BE REMOVED
 - ▨ BITUMINOUS PAVEMENT TO BE MILLED



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 BRIGHTON, MICHIGAN 48114

DESIGN: FAF	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION	<p>ALDI FOOD MARKET #51 HOWELL, MI</p> <p>EXISTING CONDITIONS AND DEMOLITION PLAN</p>	CLIENT:	SCALE: 1"=30'
DRAFT: SES	1	02-21-18	REVISED PER TOWNSHIP REVIEW COMMENTS					ALDI Inc.	PROJECT No.: 9173290
CHECK: CAG								2625 N. STOCKBRIDGE RD. WEBBERVILLE, MICHIGAN 48892 (517) 521-3907	DWG NAME: 3290 EX ISSUED: FEB 21, 2018

EX1

EXISTING TREE SCHEDULE:

- 1 8" MAPLE
- 3 18" ELM
- 4 24" COTTONWOOD
- 5 18" COTTONWOOD
- 6 9" PINE
- 9 8" PINE
- 11 9" PINE
- 12 8" PINE
- 13 9" PINE
- 14 8" PINE
- 15 9" PINE
- 16 8" PINE
- 18 8" PINE
- 19 9" PINE
- 20 9" PINE
- 21 10" PINE
- 22 10" PINE
- 23 6" PINE
- 25 6" PINE
- 27 6" PINE
- 31 11" CRABAPPLE
- 33 12" CRABAPPLE
- 35 9" CRABAPPLE
- 36 8" CRABAPPLE
- 37 12" CRABAPPLE
- 38 9" CRABAPPLE
- 39 9" CRABAPPLE
- 40 7" CRABAPPLE
- 41 10" BOX ELDER
- 44 7" TWIN OAK
- 45 11" BOX ELDER
- 46 12" TWIN BOX ELDER
- 47 12" TWIN BOX ELDER
- 48 24" TWIN LOCUST
- 49 18" POPLAR
- 50 18" LOCUST - DEAD
- 51 12" POPLAR
- 52 12" POPLAR
- 54 20" POPLAR
- 55 22" POPLAR
- 56 13" TWIN BOX ELDER
- 60 12" POPLAR - DEAD
- 62 10" APPLE
- 63 19" ASPEN
- 64 7" CRABAPPLE
- 65 7" CRABAPPLE
- 66 3" CHERRY
- 67 3" CHERRY
- 69 3" CHERRY
- 70 4" CHERRY
- 71 4" CHERRY
- 72 9" CRABAPPLE
- 73 5" CRABAPPLE
- 74 9" CRABAPPLE
- 75 7" CRABAPPLE
- 77 7" PINE
- 78 8" PINE
- 79 8" PINE
- 80 8" PINE
- 81 8" PINE
- 82 6" PINE
- 83 6" TWIN PINE
- 84 9" PINE
- 85 9" PINE
- 86 9" PINE
- 87 9" PINE
- 88 9" PINE
- 89 6" CRABAPPLE
- 90 6" CRABAPPLE
- 91 6" CRABAPPLE
- 92 6" CRABAPPLE
- 93 6" CRABAPPLE
- 94 6" PINE
- 95 6" PINE (TBR)
- 96 6" PINE (TBR)
- 97 6" PINE (TBR)
- 98 6" PINE (TBR)
- 99 6" PINE (TBR)
- 100 6" PINE
- 101 6" PINE
- 102 6" SPRUCE (TBR)
- 103 6" SPRUCE
- 104 5" PEAR (TBR)
- 105 4" LOCUST (TBR)
- 106 4" LOCUST
- 107 4" PEAR
- 108 5" GINKO
- 109 3" GINKO
- 110 6" PEAR
- 111 4" LOCUST (TBR)
- 112 3" LOCUST
- 113 6" PEAR
- 114 6" PEAR
- 115 5" PEAR
- 116 6" PEAR
- 117 6" PEAR
- 118 6" PEAR
- 119 6" PEAR
- 120 6" PEAR
- 121 6" SPRUCE
- 122 6" SPRUCE (TBR)
- 123 11" TRIPLE OAK
- 124 9" TWIN OAK
- 125 9" TWIN OAK
- 126 12" TWIN OAK
- 127 12" TWIN OAK
- 128 7" CRABAPPLE
- 129 6" PINE

EXISTING STRUCTURE INVENTORY

STORM MANHOLE #1 RM 920.89	CATCH BASIN #14 RM 928.13	CB-100 RM 926.60
STORM MANHOLE #2 RM 921.58	YARDBASIN #15 RM 926.12	CS-101 RM 922.67 15" SW RCP 919.92
STORM MANHOLE #3 RM 926.74	YARDBASIN #20 RM 930.43	CB-111 RM 925.06 12" N PVC 920.58 12" NW HDPE-5 920.75 12" NE RCP 920.74 15" SE RCP 920.75 12" S RCP 921.00 18" SW RCP 920.45
STORM MANHOLE #5 RM 926.44 NORTHEAST 15" RCP 914.69 SOUTH 8" RCP 914.64	CATCH BASIN #21 RM 931.09	CB-112 RM 925.07 12" N RCP 921.08
CATCH BASIN #31 RM 921.77 SOUTHWEST 15" RCP	CATCH BASIN #22 RM 934.08	CB-115 RM 923.97 12" SW RCP 921.87
CATCH BASIN #32 RM 921.69 NORTHEAST 15" RCP 916.29 SOUTHWEST 15" RCP 916.49	YARDBASIN #23 RM 934.28	CB-116 RM 925.07 12" N RCP 921.08
CATCH BASIN #33 RM 922.96 NORTHWEST 15" RCP 920.96	CATCH BASIN #24 RM 934.60	CB-117 RM 923.97 12" SW RCP 921.87
CATCH BASIN #34 RM 926.63 SOUTHWEST 15" RCP	CATCH BASIN #25 RM 933.14	CB-118 RM 925.07 12" N RCP 921.08
MANHOLE #35 RM 926.70 NORTHWEST 12" RCP 920.60 NORTHEAST 15" RCP 914.10 SOUTHWEST 12" RCP 922.10 SOUTHWEST 15" RCP 914.25	CATCH BASIN #26 RM 921.38 SOUTHWEST 15" HDPE 918.24 NORTHWEST 24" RCP 918.24	CB-119 RM 925.07 12" N RCP 921.08
MANHOLE #36 RM 925.01 SOUTHWEST 12" RCP 921.86	SANITARY SEWER MANHOLE #41 RM 922.15	CB-120 RM 925.07 12" N RCP 921.08
MANHOLE #37 RM 927.96 NORTHWEST 12" RCP 922.61	SANITARY SEWER MANHOLE #42 RM 925.13	CB-121 RM 925.07 12" N RCP 921.08
CATCH BASIN #11 RM 921.31 E-NORTHEAST 24" RCP 916.11 SOUTH 24" RCP 916.11 SOUTHWEST 8" PVC 917.06	SANITARY SEWER MANHOLE #43 RM 924.83	CB-122 RM 925.07 12" N RCP 921.08
CATCH BASIN #12 RM 921.42 W-SOUTHWEST 24" RCP 917.37 E-NORTHEAST 24" RCP 917.22 S-SOUTHWEST 12" RCP 917.37	SANITARY SEWER MANHOLE #44 RM 923.14 NORTHWEST SDR TOP OF PIPE 918.04 SOUTHWEST SDR TOP OF PIPE 917.79	CB-123 RM 925.07 12" N RCP 921.08
CATCH BASIN #13 RM 921.09 N-NORTHEAST 12" RCP 917.94	SANITARY SEWER MANHOLE #45 RM 923.37	CB-124 RM 925.07 12" N RCP 921.08
	SANITARY SEWER MANHOLE #46 RM 923.03 SOUTHWEST 8" PVC 913.67 SOUTH 24" RCP 916.11 SOUTHWEST 8" PVC 913.61	CB-125 RM 925.07 12" N RCP 921.08
	SANITARY SEWER MANHOLE #47 RM 923.57 SOUTHWEST 8" PVC 912.02 NORTHWEST 8" CLAY 911.92	CB-126 RM 925.07 12" N RCP 921.08
	SANITARY SEWER MANHOLE #48 RM 928.05	CB-127 RM 925.07 12" N RCP 921.08

DEMOLITION NOTES:

1. The demolition specifications of the Local Municipality are a part of this work. Refer to the General Notes on the project plans for additional requirements.
2. Contractor shall contact the 811 Underground Public Utility Locating System or other appropriate local underground utility locating Agency, a minimum of three (3) working days prior to performing demolition work. Existing utility information on the project plans may be from information disclosed to this firm by the Utility Companies, Local, County or State Agencies, and/or various other sources. No guarantee is given as to the completeness or accuracy thereof. Prior to construction, locations and depths of all existing utilities (in possible conflict with the proposed improvements) shall be verified in the field.
3. Contractor shall contact the appropriate Agencies to coordinate disconnect of the electric, gas, phone, cable and other public utilities as necessary prior to performing demolition work.
4. Contractor shall contact the appropriate Agencies to coordinate removal and/or relocation of any underground and/or overhead public utility lines as necessary prior to performing demolition work.
5. Contractor shall recycle and/or dispose of all demolition material and debris in accordance with the appropriate Local, County, State and Federal regulations.
6. All bituminous and concrete pavement to be removed shall be saw cut at the limits of removal to provide for a clean straight edge for future abutment. The existing pavement that is to be removed, shall remain in place as long as possible to be used as a soil erosion control measure. Contractor shall coordinate the pavement removal work with the appropriate stages of construction. Coordination work shall include removing the existing pavement in sections / stages as necessary to minimize impacts to the adjacent parcel.
7. All existing irrigation lines to be removed shall be terminated at the limits of demolition or as necessary to allow for construction of the proposed site improvements. Ends of pipe shall be capped and the location of marked for future connection.
8. All existing water main and sanitary sewer to be removed shall be terminated at the limits of demolition or as indicated on the project plans. Temporary plugs shall be installed in the ends of pipe in accordance with the appropriate Agency and the locations of marked for future connection. Permanent plugs shall be installed in the ends of pipe in accordance with the appropriate Agency. The Contractor shall record the location of all permanent plugs and provide the location information to the appropriate Agency.
9. All existing storm sewer to be removed shall be terminated at the limits of demolition or as indicated on the project plans. Temporary plugs shall be installed in the ends of pipe in accordance with the appropriate Agency and the locations of marked for future connection. Permanent bulkheads shall be installed in the ends of pipe and/or openings in terminating structures in accordance with the appropriate Agency. The Contractor shall record the location of all permanent bulkheads and provide the location information to the appropriate Agency.
10. All existing light sources to be removed shall have their power cables removed up to the power source or properly terminated for future connection at the limits of demolition or as necessary to allow for construction of the proposed site improvements. Removal and termination of power cables shall be performed in accordance with local electric codes.
11. All existing utility meters to be removed shall be properly removed to allow for reuse. Any existing utility meters that are not to be reused as a part of this project shall be returned to the appropriate Agency.
12. All trenches and/or excavations resulting from the demolition of underground utilities, building foundations, etc., that are located within the 1 on 1 influence zone of proposed structures, paved areas and/or other areas subject to vehicular traffic shall be backfilled with MDOT Class III granular material (or better) to the proposed subgrade elevation. Backfill shall be placed using the controlled density method (12" maximum lifts, compacted to 95% maximum unit weight, Modified Proctor).

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2183 PLESS DRIVE
BRIGHTON, MICHIGAN 48114

DESIGN: FAF	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: SES	1	02-21-18	REVISED PER TOWNSHIP REVIEW COMMENTS			
CHECK: CAG						

ALDI FOOD MARKET #51
HOWELL, MI

EXISTING SITE DATA & DEMOLITION NOTES

CLIENT:
ALDI Inc.
2625 N. STOCKBRIDGE RD.
WEBBERVILLE, MICHIGAN 48892
(517) 521-3907

SCALE: NONE
PROJECT No.: 9173290
DWG NAME: 3290 EX
ISSUED: FEB 21, 2018

EX2

BENCHMARK
 DATUM BASED ON PREVIOUS BENCHMARK AS DEPICTED ON AS-BUILT PLANS PREPARED BY DESINE INC., JOB No. 81368, REVISED DATE DECEMBER 3, 2008.
 DATUM AS DEPICTED = NGVD

PRIMARY (XIT SITE)
 AT HOWELL, LIVINGSTON COUNTY, ON THE ANN ARBOR RAILROAD, 35 YARDS EAST OF THE NORTHEAST CORNER OF THE STATION; 60 YARDS WEST OF A HIGHWAY BRIDGE OVER THE TRACK; 7 YARDS NORTH OF THE WEST RAIL; A STANDARD TABLE STAMPED "G 105 1934" AND SET IN THE TOP OF A CONCRETE POST.
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 ELEVATION = 925.46 (NGVD)
 REF: SEE ABOVE
 FIELD BOOK 0465, PG. 43
 POINT #201

BENCHMARK #200
 ARROW OF HYDRANT, LOCATED 57 1/2 FEET NORTHERLY OF THE NORTHEASTERLY BUILDING CORNER "ALDI."
 ELEVATION = 930.09 (NGVD)
 REF: POINT #200

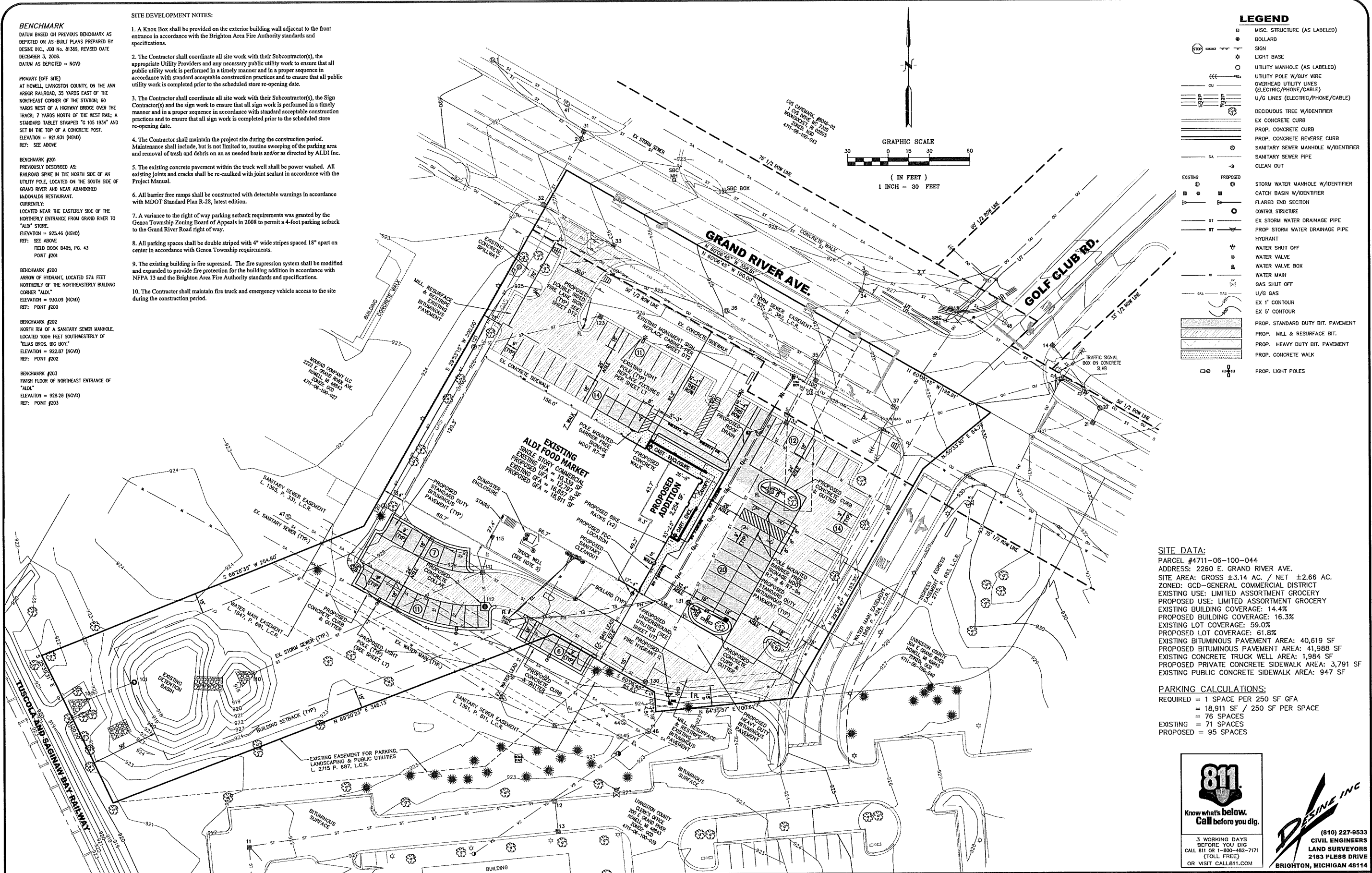
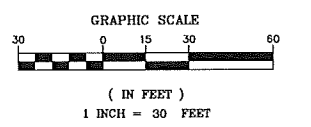
BENCHMARK #202
 NORTH END OF A SANITARY SEWER MANHOLE, LOCATED 100+ FEET SOUTHWESTERLY OF "ELIAS BROS. BIG BOY."
 ELEVATION = 922.87 (NGVD)
 REF: POINT #202

BENCHMARK #203
 FINISH FLOOR OF NORTHEAST ENTRANCE OF "ALDI."
 ELEVATION = 928.28 (NGVD)
 REF: POINT #203

- SITE DEVELOPMENT NOTES:**
1. A Knox Box shall be provided on the exterior building wall adjacent to the front entrance in accordance with the Brighton Area Fire Authority standards and specifications.
 2. The Contractor shall coordinate all site work with their Subcontractor(s), the appropriate Utility Providers and any necessary public utility work to ensure that all public utility work is performed in a timely manner and in a proper sequence in accordance with standard acceptable construction practices and to ensure that all public utility work is completed prior to the scheduled store re-opening date.
 3. The Contractor shall coordinate all site work with their Subcontractor(s), the Sign Contractor(s) and the sign work to ensure that all sign work is performed in a timely manner and in a proper sequence in accordance with standard acceptable construction practices and to ensure that all sign work is completed prior to the scheduled store re-opening date.
 4. The Contractor shall maintain the project site during the construction period. Maintenance shall include, but is not limited to, routine sweeping of the parking area and removal of trash and debris on an as needed basis and/or as directed by ALDI Inc.
 5. The existing concrete pavement within the truck well shall be power washed. All existing joints and cracks shall be re-caulked with joint sealant in accordance with the Project Manual.
 6. All barrier free ramps shall be constructed with detectable warnings in accordance with MDOT Standard Plan R-28, latest edition.
 7. A variance to the right of way parking setback requirements was granted by the Genoa Township Zoning Board of Appeals in 2008 to permit a 4-foot parking setback to the Grand River Road right of way.
 8. All parking spaces shall be double striped with 4" wide stripes spaced 18" apart on center in accordance with Genoa Township requirements.
 9. The existing building is fire suppressed. The fire suppression system shall be modified and expanded to provide fire protection for the building addition in accordance with NFPA 13 and the Brighton Area Fire Authority standards and specifications.
 10. The Contractor shall maintain fire truck and emergency vehicle access to the site during the construction period.

LEGEND

- MISC. STRUCTURE (AS LABELED)
- BOLLARD
- SIGN
- LIGHT BASE
- UTILITY MANHOLE (AS LABELED)
- UTILITY POLE W/GUY WIRE
- OVERHEAD UTILITY LINES (ELECTRIC/PHONE/CABLE)
- U/G LINES (ELECTRIC/PHONE/CABLE)
- GEODUCOUS TREE W/IDENTIFIER
- EX CONCRETE CURB
- PROP. CONCRETE CURB
- PROP. CONCRETE REVERSE CURB
- SANITARY SEWER MANHOLE W/IDENTIFIER
- SANITARY SEWER PIPE
- CLEAN OUT
- STORM WATER MANHOLE W/IDENTIFIER
- CATCH BASIN W/IDENTIFIER
- FLARED END SECTION
- CONTROL STRUCTURE
- EX STORM WATER DRAINAGE PIPE
- PROP STORM WATER DRAINAGE PIPE
- HYDRANT
- WATER SHUT OFF
- WATER VALVE
- WATER VALVE BOX
- WATER MAIN
- GAS SHUT OFF
- U/G GAS
- EX 1' CONTOUR
- EX 5' CONTOUR
- PROP. STANDARD DUTY BIT. PAVEMENT
- PROP. MILL & RESURFACE BIT.
- PROP. HEAVY DUTY BIT. PAVEMENT
- PROP. CONCRETE WALK
- PROP. LIGHT POLES



SITE DATA:
 PARCEL #4711-06-100-044
 ADDRESS: 2260 E. GRAND RIVER AVE.
 SITE AREA: GROSS ±3.14 AC. / NET ±2.66 AC.
 ZONED: GCD-GENERAL COMMERCIAL DISTRICT
 EXISTING USE: LIMITED ASSORTMENT GROCERY
 PROPOSED USE: LIMITED ASSORTMENT GROCERY
 EXISTING BUILDING COVERAGE: 14.4%
 PROPOSED BUILDING COVERAGE: 16.3%
 EXISTING LOT COVERAGE: 59.0%
 PROPOSED LOT COVERAGE: 61.8%
 EXISTING BITUMINOUS PAVEMENT AREA: 40,619 SF
 PROPOSED BITUMINOUS PAVEMENT AREA: 41,988 SF
 EXISTING CONCRETE TRUCK WELL AREA: 1,984 SF
 PROPOSED PRIVATE CONCRETE SIDEWALK AREA: 3,791 SF
 EXISTING PUBLIC CONCRETE SIDEWALK AREA: 947 SF

PARKING CALCULATIONS:
 REQUIRED = 1 SPACE PER 250 SF GFA
 = 18,911 SF / 250 SF PER SPACE
 = 76 SPACES
 EXISTING = 71 SPACES
 PROPOSED = 95 SPACES

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 2163 PLESS DRIVE
 BRIGHTON, MICHIGAN 48114

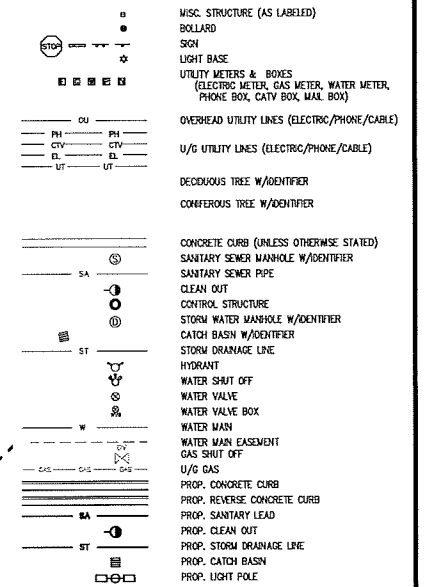
DESIGN: FAF	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION	ALDI FOOD MARKET #51	SITE PLAN	CLIENT:	SCALE: NONE	PROJECT No: 9173290	SP
DRAFT: SES	1	02-21-18	REVISED PER TOWNSHIP REVIEW COMMENTS				HOWELL, MI		ALDI Inc.		DWG NAME: 3290 SP	
CHECK: CAG								2625 N. STOCKBRIDGE RD.		ISSUED: FEB 21, 2018		
								WEBBERVILLE, MICHIGAN 48892	(517) 521-3907			

EXISTING STRUCTURE INVENTORY

STORM MANHOLE #1 RM 920.89	CATCH BASIN #14 RM 928.13	CO-100 RM 926.60
STORM MANHOLE #2 RM 921.58	YARDBASIN #15 RM 926.12	CS-101 RM 922.67 15' SW RCP 919.92
STORM MANHOLE #3 RM 926.74	YARDBASIN #20 RM 930.43	CO-111 RM 925.08
STORM MANHOLE #5 RM 926.44	CATCH BASIN #21 RM 931.09	12' N PVC 920.58 12' NW HOPE-S 920.75
NORTHEAST 15' RCP 914.69	CATCH BASIN #22 RM 934.08	12' NE RCP 920.74 15' SE RCP 920.73
SOUTH 8' RCP 914.64	YARDBASIN #23 RM 934.28	12' S RCP 921.00 18' SW RCP 920.45
CATCH BASIN #31 RM 921.77	CATCH BASIN #24 RM 934.60	CO-112 RM 925.07 12' N RCP 921.08
SOUTHWEST 15' RCP	CATCH BASIN #25 RM 933.14	CO-115 RM 923.97 12' SW RCP 921.87
CATCH BASIN #32 RM 921.69	CATCH BASIN #26 RM 924.97	MH-120 RM 924.97
NORTHEAST 15' RCP 916.29	SOUTHEAST 15' HOPE 918.24	12' NE HOPE-S 921.15
SOUTHEAST 15' RCP 916.49	NORTHWEST 24' RCP 918.24	12' SE HOPE-S 921.11
CATCH BASIN #33 RM 922.96	SANITARY SEWER MANHOLE #41 RM 922.15	MH-121 RM 925.01
NORTHWEST 15' RCP 920.96	SANITARY SEWER MANHOLE #42 RM 925.13	12' NE RCP 921.51
CATCH BASIN #34 RM 926.63	SANITARY SEWER MANHOLE #43 RM 924.83	12' E RCP 921.49
SOUTHWEST 15' RCP	SANITARY SEWER MANHOLE #44 RM 923.14	12' SW HOPE-S 921.45
MANHOLE #35 RM 926.70	SANITARY SEWER MANHOLE #45 RM 923.37	YB-122 RM 923.89
NORTHEAST 12' RCP 920.60	SANITARY SEWER MANHOLE #46 RM 923.03	CO-123 RM 926.02
NORTHEAST 15' RCP 914.10	SOUTHEAST 8' PVC 913.67	12' NE RCP 921.39
SOUTHEAST 12' RCP 922.10	SOUTHWEST 8' PVC 913.47	15' NW RCP 921.23
SOUTHWEST 15' RCP 914.25	SOUTHWEST 8' PVC 913.61	CO-131 RM 928.60
MANHOLE #36 RM 925.01	SANITARY SEWER MANHOLE #47 RM 923.57	12' NE RCP 921.67
NORTHWEST 12' RCP 921.86	SOUTHEAST 8' PVC 912.02	12' SW RCP 921.58
E-NORTHEAST 24' RCP 918.11	NORTHWEST 8' CLAY 911.92	CO-132 RM 928.50
SOUTH 24' RCP 916.11	SANITARY SEWER MANHOLE #48 RM 928.05	8' W PVC 922.51
SOUTHEAST 8' PVC 917.06		12' SW RCP 922.16
CATCH BASIN #12 RM 921.42		
W-SOUTHWEST 24' RCP 917.37		
E-NORTHEAST 24' RCP 917.22		
S-SOUTHWEST 12' RCP 917.37		
CATCH BASIN #13 RM 921.09		
N-NORTHEAST 12' RCP 917.94		

STORM SEWER CASTING SCHEDULE	
MANHOLE (MH):	EJW 1040Z-A-STORM
PAVEMENT CATCH BASIN (CB):	EJW 1040Z-M1
CURB LINE CATCH BASIN (CB):	EXISTING SALVAGED
8" DIA. ROOF DRAIN CLEANOUT (CO):	EJW 1576Z-A

LEGEND



BENCHMARK

DATUM BASED ON PREVIOUS BENCHMARK AS DEPICTED ON AS-BUILT PLANS PREPARED BY DESINE INC. JOB NO. 81389, REVISED DATE DECEMBER 3, 2008. DATUM AS DEPICTED = NGVD

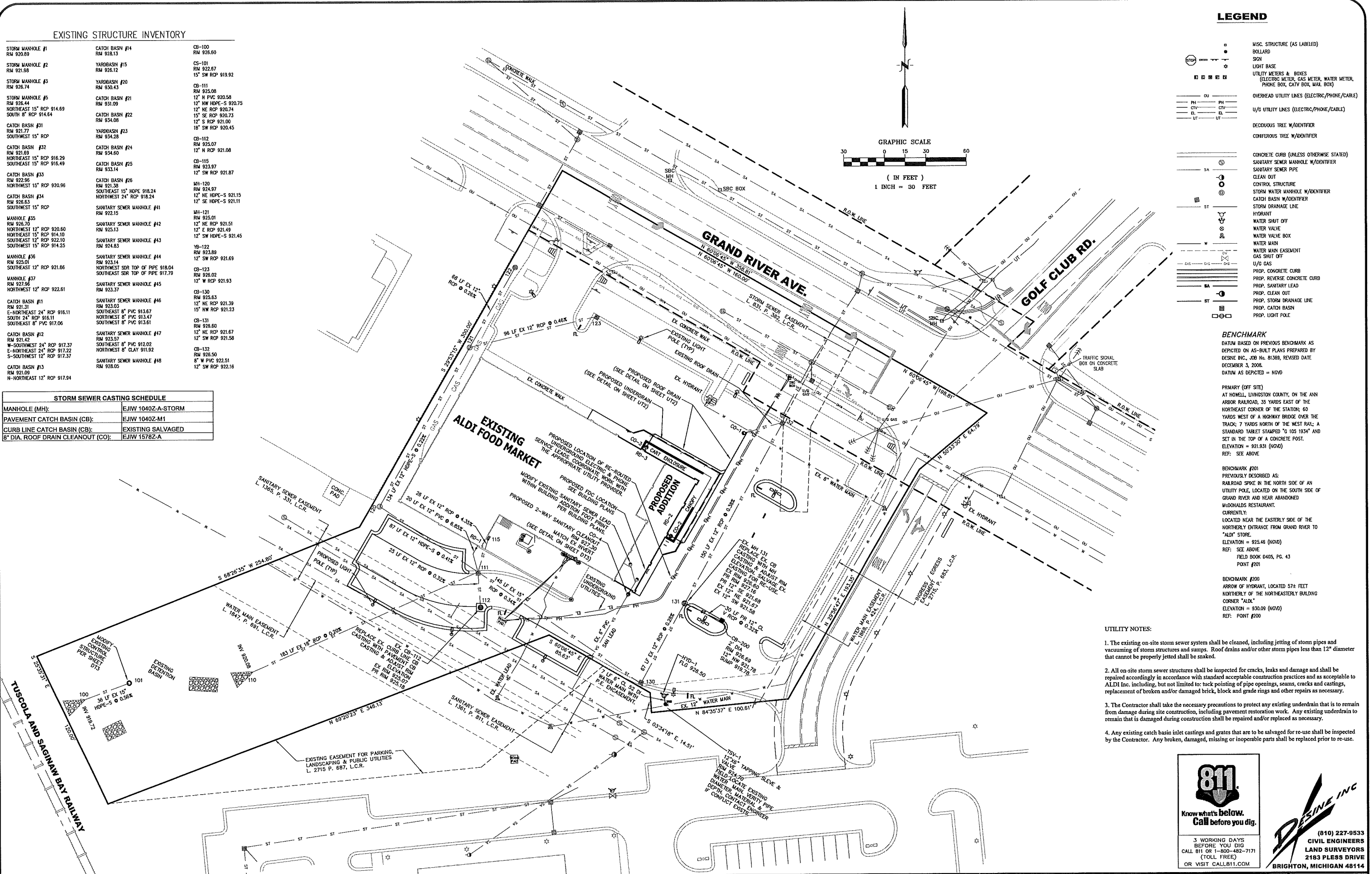
PRIMARY (OFF SITE) AT HOWELL, LIVINGSTON COUNTY, ON THE ANN ARBOR RAILROAD, 35 YARDS EAST OF THE NORTHEAST CORNER OF THE STATION, 60 YARDS WEST OF A HIGHWAY BRIDGE OVER THE TRACK, 7 YARDS NORTH OF THE WEST RAIL; A STANDARD TABLE STAMPED "105 1934" AND SET IN THE TOP OF A CONCRETE POST. ELEVATION = 921.931 (NGVD). REF: SEE ABOVE.

BENCHMARK #201 PREVIOUSLY DESCRIBED AS: RAILROAD SPIKE IN THE NORTH SIDE OF AN UTILITY POLE, LOCATED ON THE SOUTH SIDE OF GRAND RIVER AND NEAR ABANDONED MCDONALD'S RESTAURANT. CURRENTLY: LOCATED NEAR THE EASTERLY SIDE OF THE NORTHERLY ENTRANCE FROM GRAND RIVER TO "ALDI" STORE. ELEVATION = 925.46 (NGVD). REF: SEE ABOVE. FIELD BOOK 0405, PG. 43 POINT #201

BENCHMARK #200 ARROW OF HYDRANT, LOCATED 57+ FEET NORTHERLY OF THE NORTHEASTERLY BUILDING CORNER "ALDI". ELEVATION = 930.09 (NGVD). REF: POINT #200

UTILITY NOTES:

- The existing on-site storm sewer system shall be cleaned, including jetting of storm pipes and vacuuming of storm structures and sumps. Roof drains and/or other storm pipes less than 12" diameter that cannot be properly jetted shall be snaked.
- All on-site storm sewer structures shall be inspected for cracks, leaks and damage and shall be repaired accordingly in accordance with standard acceptable construction practices and as acceptable to ALDI Inc. including, but not limited to: tuck pointing of pipe openings, seams, cracks and castings, replacement of broken and/or damaged brick, block and grade rings and other repairs as necessary.
- The Contractor shall take the necessary precautions to protect any existing underdrain that is to remain from damage during site construction, including pavement restoration work. Any existing underdrain to remain that is damaged during construction shall be repaired and/or replaced as necessary.
- Any existing catch basin inlet castings and grates that are to be salvaged for re-use shall be inspected by the Contractor. Any broken, damaged, missing or inoperable parts shall be replaced prior to re-use.



REVISION #	DATE	REVISION-DESCRIPTION
1	02-21-18	REVISED PER TOWNSHIP REVIEW COMMENTS

ALDI FOOD MARKET #51
HOWELL, MI

UTILITY PLAN

CLIENT:
ALDI Inc.
2625 N. STOCKBRIDGE RD.
WEBBERVILLE, MICHIGAN 48892
(517) 521-3907

SCALE: NONE
PROJECT No.: 9173290
DWG NAME: 3290 UT
ISSUED: FEB 21, 2018

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 2183 PLESS DRIVE
 BRIGHTON, MICHIGAN 48114

**ALDI FOOD MARKET #51
DRAINAGE AREA CALCULATIONS**

EXISTING CONDITIONS						
Structure	0.90 Pavement	0.80 Building	0.20 Lawn (ACRES)	*C* Factor	C x A	
RD-3	0.00	0.01	0.00	0.01	0.80	0.01
RD-2	0.00	0.01	0.00	0.01	0.80	0.01
RD-1	0.00	0.39	0.00	0.39	0.80	0.31
132	0.13	0.00	0.04	0.17	0.74	0.13
131	0.31	0.00	0.03	0.34	0.84	0.29
130	0.20	0.00	0.01	0.21	0.87	0.18
123	0.19	0.00	0.00	0.18	0.90	0.14
122	0.08	0.00	0.03	0.11	0.71	0.08
121	0.00	0.00	0.00	0.00	0.00	0.00
120	0.00	0.00	0.00	0.00	0.00	0.00
115	0.05	0.00	0.00	0.05	0.90	0.05
112	0.06	0.00	0.02	0.08	0.73	0.06
111	0.04	0.00	0.06	0.10	0.46	0.05
BASIN	0.00	0.00	0.51	0.51	0.20	0.10
TOTAL	1.03	0.41	0.70	2.14	0.65	

PROPOSED CONDITIONS						
Structure	0.90 Pavement	0.80 Building	0.20 Lawn (ACRES)	*C* Factor	C x A	
RD-3	0.00	0.01	0.00	0.01	0.80	0.01
RD-2	0.00	0.01	0.00	0.01	0.80	0.01
RD-1	0.00	0.43	0.00	0.43	0.80	0.34
200	0.26	0.00	0.02	0.28	0.85	
132	0.14	0.00	0.04	0.18	0.74	0.13
131	0.00	0.00	0.00	0.00	0.00	0.00
130	0.20	0.00	0.01	0.21	0.87	0.18
123	0.16	0.00	0.01	0.17	0.95	0.15
122	0.08	0.00	0.03	0.11	0.71	0.08
121	0.00	0.00	0.00	0.00	0.00	0.00
120	0.00	0.00	0.00	0.00	0.00	0.00
115	0.05	0.00	0.00	0.05	0.90	0.05
112	0.11	0.00	0.01	0.12	0.84	0.10
111	0.07	0.00	0.03	0.10	0.69	0.07
BASIN	0.00	0.00	0.49	0.49	0.20	0.10
TOTAL	1.07	0.45	0.64	2.16	0.67	

Project: ALDI FOOD MARKET #51 REMODEL & EXPANSION
Design Criteria: 10 year event (I = 175ft + 25) RCP (n=0.013) *HDPE-S (n=0.010) **PVC (n=0.013)

Project: # 173290
Date: 2/20/2018

From MH#	To MH#	Inc. Acres	Eqv. Area 100% CA	Total Area 100% CA	T Time Min.	I Inch Per Hour	Q (CIA) c.f.s.	Dia. of pipe inch	Slope pipe %	Slope H.G. %	Length of line ft.	Vel. Flow full ft/sec.	Time of flow min.	Cap of pipe c.f.s.	H.G. Elev. upper end	Ground Elev. Upper end	Ground Elev. Lower end	Invert Elev. Upper end	Invert Elev. Lower end	
RD 3	WYE 1	0.01	0.80	0.01	0.01	15.0	4.38	0.04	8**	1.00	0.01	73	3.46	0.4	1.31	923.67	928.28	927.92	923.72	922.99
RD 2	WYE 1	0.01	0.80	0.01	0.01	15.0	4.38	0.04	8**	0.80	0.01	75	3.10	0.4	1.08	923.67	928.28	927.92	923.59	922.99
WYE 1	CO 1	0.00	0.00	0.00	0.02	15.4	4.33	0.09	8**	0.80	0.01	32	3.10	0.2	1.08	923.19	927.45	927.45	922.99	922.73
CO 1	EX 132	0.00	0.00	0.00	0.02	15.6	4.31	0.09	8**	0.80	0.01	27	3.10	0.1	1.08	923.18	927.45	927.45	922.73	922.51
EX 132	EX 131	0.18	0.74	0.13	0.15	15.7	4.30	0.65	12	0.33	0.03	150	2.61	1.0	2.05	922.72	926.50	927.16	922.16	921.67
200	EX 131	0.28	0.85	0.24	0.24	15.0	4.38	1.05	12	0.32	0.09	30	2.57	0.2	2.02	922.71	926.69	927.16	921.78	921.68
EX 131	EX 130	0.00	0.00	0.00	0.39	16.7	4.20	1.84	12	0.28	0.21	67	2.40	0.5	1.89	922.53	927.16	925.63	921.58	921.39
EX 130	EX 111	0.21	0.87	0.18	0.57	17.2	4.15	2.37	15	0.34	0.13	145	3.07	0.8	3.77	922.28	925.63	925.08	921.23	920.73
EX 123	EX 121	0.17	0.86	0.15	0.15	15.0	4.38	0.66	12	0.46	0.03	96	3.08	0.5	2.42	922.52	926.02	925.01	921.93	921.49
EX 122	EX 121	0.11	0.71	0.08	0.08	15.0	4.38	0.35	12	0.26	0.01	68	2.31	0.5	1.82	922.52	923.89	925.01	921.69	921.51
EX 121	EX 120	0.00	0.00	0.00	0.23	15.5	4.32	0.99	12*	0.22	0.05	134	2.77	0.8	2.17	922.22	925.01	924.97	921.45	921.15
EX 120	EX 111	0.00	0.00	0.00	0.23	16.3	4.24	0.98	12*	0.41	0.04	87	3.78	0.4	2.97	922.12	924.97	925.08	921.11	920.75
EX RD 1	EX 111	0.43	0.80	0.34	0.34	15.0	4.38	1.49	12**	6.85	0.17	20	11.87	0.1	9.32	922.12	926.74	925.08	921.95	920.58
EX 115	EX 111	0.05	0.90	0.05	0.05	15.0	4.38	0.22	12	4.35	0.01	26	9.46	0.1	7.43	922.09	923.97	925.08	921.87	920.74
EX 112	EX 111	0.12	0.84	0.10	0.10	15.0	4.38	0.44	12	0.32	0.02	25	2.57	0.2	2.02	922.10	925.07	925.08	921.08	921.00
EX 111	EX 110	0.10	0.69	0.07	1.36	18.0	4.07	5.54	18	0.20	0.28	183	2.66	1.1	4.70	922.09	925.08	920.08	920.45	920.08
EX 101	EX 100	2.16	0.67	1.45	1.45	120.0	1.90	78.00	15*	0.56	0.11	36	5.12	0.1	6.28	921.01	922.67	919.72	919.92	919.72

OUTLET PIPE SIZED TO CARRY 100 YEAR STORM EVENT (I = 275ft + 25):

**ALDI FOOD MARKET #51
100 YEAR STORM DETENTION CALCULATIONS**

1	2	3	4	5	6	7
Duration (Minutes)	Duration (Seconds)	Intensity (100-yr Storm) (in/hr)	Col. #2 x Col. #3 (Inches)	Inflow Volume Col. #4 x K1 (Cu. Ft.)	Outflow Volume Col. #2 x Qo (Cu. Ft.)	Storage Volume Col. #5 - Col. #6 (Cu. Ft.)
5	300	9.17	2750	3980	130	3850
10	600	7.86	4714	6823	259	6563
15	900	6.88	6188	8955	389	8566
20	1200	6.11	7333	10613	518	10094
30	1800	5.00	9000	13025	778	12247
60	3600	3.24	11647	16856	1555	15300
90	5400	2.39	12913	18888	2333	16555
120	7200	1.90	13855	19762	3110	16651
180	10800	1.34	14488	20967	4666	16301

Note: Figures in Columns (3) and (4) are valid where the intensity is computed by the formula $I = 275 / (t + 25)$ (i.e. 100-yr Curve); appropriate revisions should be made for geographical areas where this formula does not apply.

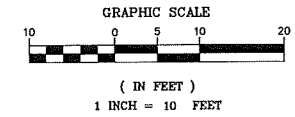
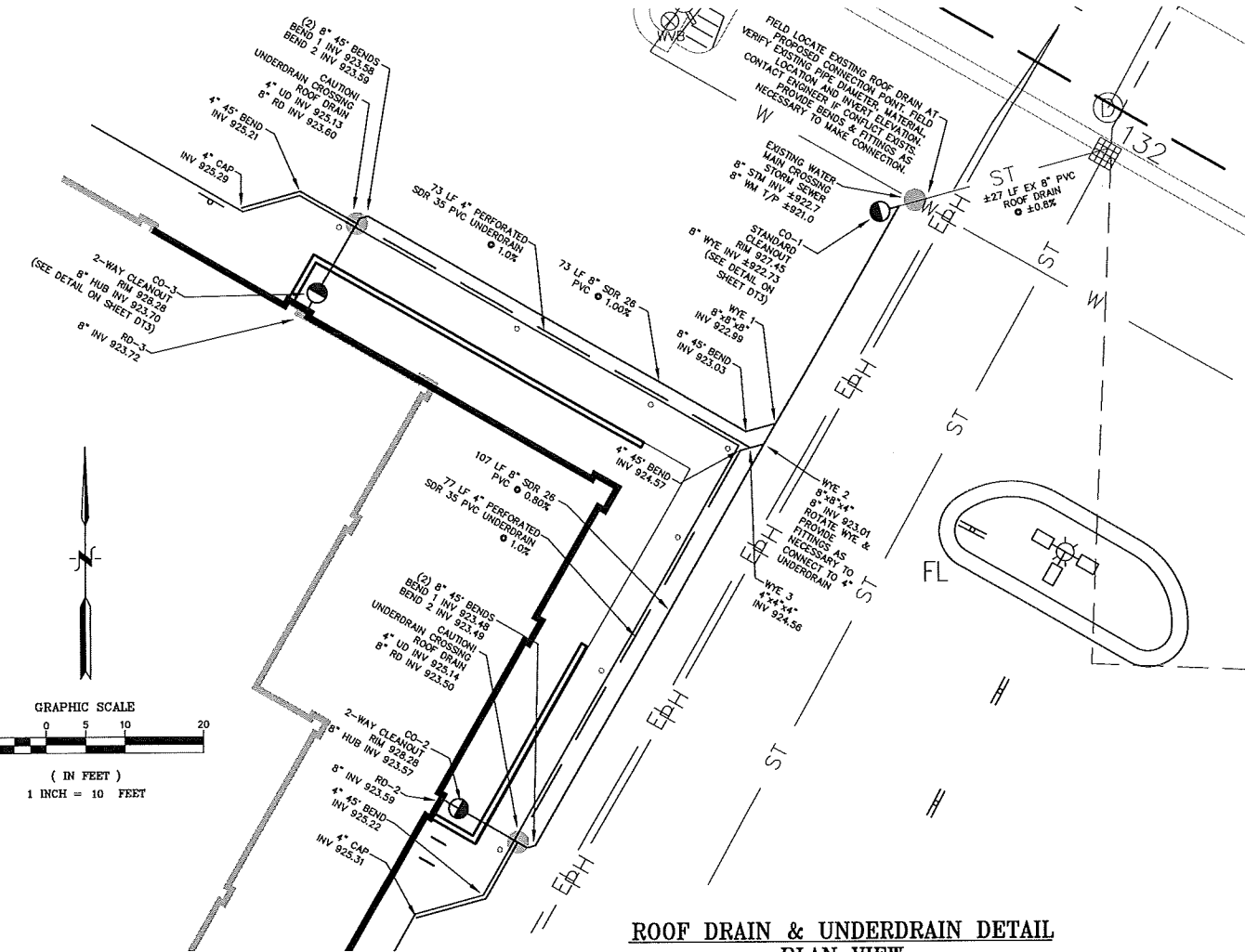
*Allowable outflow rate Qo to be one of the following:
Case 1: Qo = capacity of existing discharge conduit or channel.
Case 2: Qo = q * A where q = Permissible discharge rate per acre of tributary area = 0.2 cfs/Acre

**ALDI FOOD MARKET #51
DETENTION VOLUME CALCULATIONS**

Elevation	Area (SF)	Average Area (SF)	Depth (FT)	Volume (CF)	Cumulative Volume (CF)
922.75	8,809	7,980	0.75	5,985	15,290
922	7,150	6,695	0.5	3,348	9,305
921.5	6,240	5,825	0.5	2,263	5,958
921	4,210	3,695	1.0	3,695	3,695
920	3,180	3,180	1.0	3,180	0
Existing Detention Basin Volume =					15,290

Elevation	Area (SF)	Average Area (SF)	Depth (FT)	Volume (CF)	Cumulative Volume (CF)
921.5	1,400	1,240	0.5	620	1,470
921	1,080	850	1.0	850	850
920	620	620	1.0	620	0
Existing Sedimentation Forebay Volume =					1,470
Total Existing Detention Volume =					16,760

ALDI Food Market #51 Remodel & Expansion
Control Structure Calculations
CS - 101:
Tributary Area: A = 2.16 Acres
Compound Runoff Coefficient: C = 0.67
Orifice Flow Coefficient: c = 0.6
Allowable Outflow Rate: Qa = 0.43 CFS
100 Year Flood Volume: V100 = 16651 CF
Bankfull Flood Volume = 8160 x A x C
First Flush Volume = 1815 x A x C
Low Water Level: LWL = 919.94
First Flush Elevation: Xff = 920.54
Bankfull Flood Elevation: Xbf = 922.13
100 Year Flood Elevation: X100 = 922.74
(Use available high water elevation for X100) HWL = 922.75
FIRST FLUSH:
Qff = Vff / (1/24 hrs) * (1/3600 sec) = 0.0304 CFS
Hff = Xff - LWL = 0.60 FT
Aff = Qff / (c * SQRT(2 * 32.2 * Hff)) = 0.0682 SF
Nff = Aff / 0.0055 = 1.48 1" Holes
Use Nff = 1 1" Holes at Elevation = 919.94
BANKFULL FLOOD:
H = Xbf - LWL = 2.19 FT
Qbf = c * Nbf * 0.0055 * SQRT(2 * 32.2 * h) = 0.0392 CFS
Vprovided = Qbf * 24 hrs * (3600 sec / 1 hr) = 3386.04 CF
Vneeded = Vbf - Vprovided = 8423.11 CF
Qbf = Vneeded * (1/24 hrs) * (1/3600 sec) = 0.0975 CFS
Hbf = Xbf - Xff = 1.59 FT
Abf = Qbf / (c * SQRT(2 * 32.2 * Hbf)) = 0.0161 SF
Nbf = Abf / 0.0055 = 2.92 1" Holes
Use Nbf = 2 1" Holes at Elevation = 920.54
100 YEAR FLOOD:
Qff + Qbf = [c * Nff * 0.0055 * SQRT(2 * 32.2 * (X100 - LWL))] + [c * Nbf * 0.0055 * SQRT(2 * 32.2 * (X100 - Xff))] = 0.1231 CFS
Q100needed = Qa - (Qff + Qbf) = 0.3069 CFS
H100 = X100 - Xbf = 0.62 FT
A100needed = Q100needed / (c * SQRT(2 * 32.2 * H100)) = 0.0809 SF
N100needed = A100needed / 0.0218 = 3.71 2" Holes
Use N100 = 3 2" Holes at Elevation = 922.13



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(810) 227-9533
CIVIL ENGINEERS
LAND SURVEYORS
2183 PLESS DRIVE
BRIGHTON, MICHIGAN 48114

DESIGN: FAF	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: SES	1	02-21-18	REVISED PER TOWNSHIP REVIEW COMMENTS			
CHECK: CAG						

**ALDI FOOD MARKET #51
HOWELL, MI**

**STORM WATER MANAGEMENT
CALCULATIONS**

CLIENT: ALDI Inc.
2625 N. STOCKBRIDGE RD.
WEBBERVILLE, MICHIGAN 48892
(517) 521-3907

SCALE: NONE
PROJECT No.: 9173290
DWG NAME: 3290 UT
ISSUED: FEB 21, 2018

UT2

BENCHMARK
 DATUM BASED ON PREVIOUS BENCHMARK AS DEPICTED ON AS-BUILT PLANS PREPARED BY DESNE INC. JOB No. 81368, REVISED DATE DECEMBER 3, 2008.
 DATUM AS DEPICTED = NGVD

PRIMARY (OFF SITE)
 AT HOWELL, LIVINGSTON COUNTY, ON THE ANN ARBOR RAILROAD, 35 YARDS EAST OF THE NORTHEAST CORNER OF THE STATION; 60 YARDS WEST OF A HIGHWAY BRIDGE OVER THE TRACK; 7 YARDS NORTH OF THE WEST RAIL; A STANDARD TABLET STAMPED "O 105 1934" AND SET IN THE TOP OF A CONCRETE POST.
 ELEVATION = 921.931 (NGVD)
 REF: SEE ABOVE

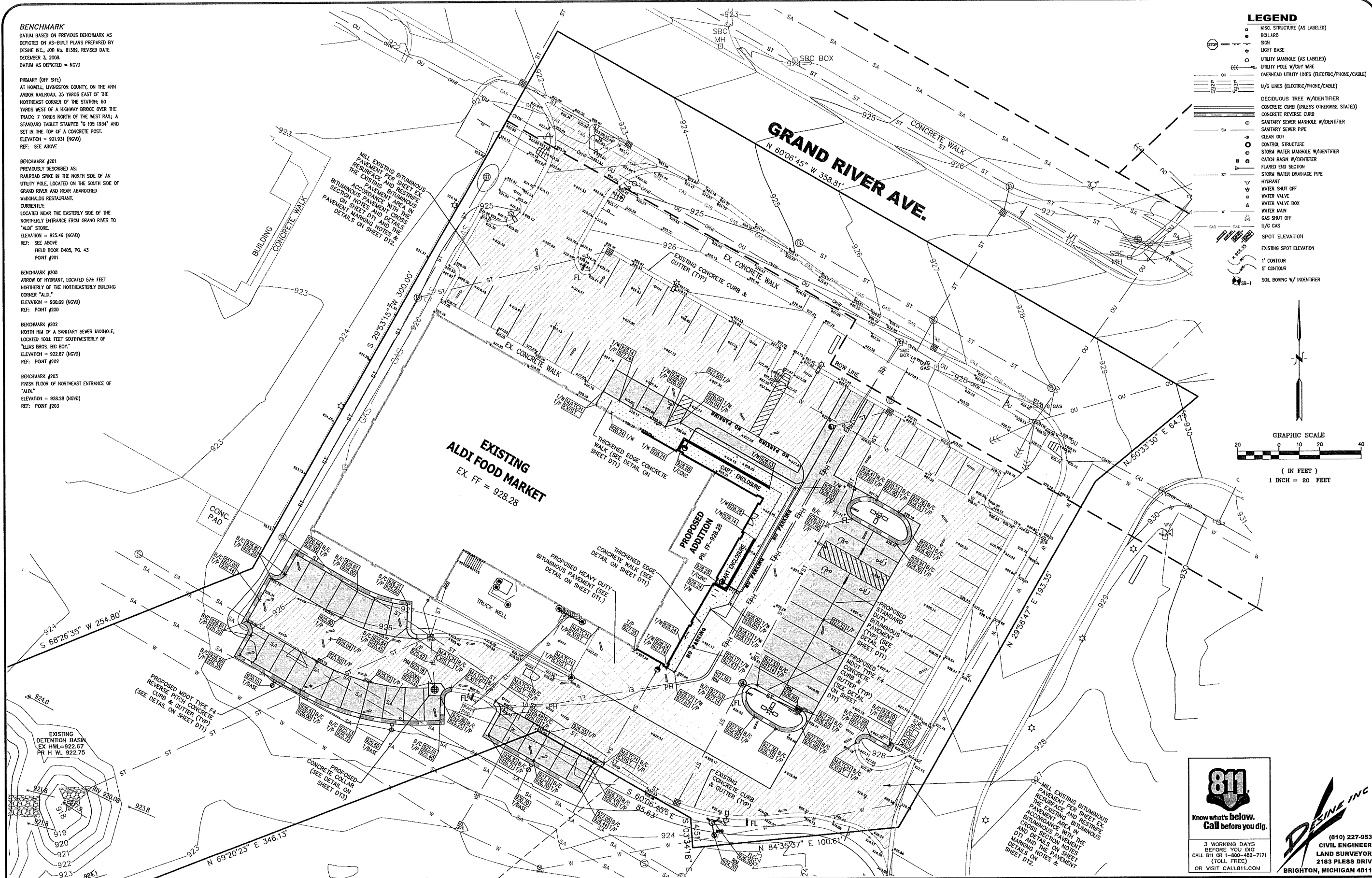
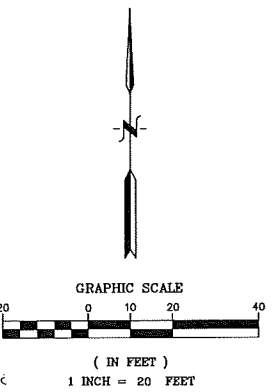
BENCHMARK #201
 PREVIOUSLY DESCRIBED AS:
 RAILROAD SPIKE IN THE NORTH SIDE OF AN UTILITY POLE, LOCATED ON THE SOUTH SIDE OF GRAND RIVER AND NEAR ABANDONED MCDONALD'S RESTAURANT.
 CURRENTLY:
 LOCATED NEAR THE EASTERLY SIDE OF THE NORTHERLY ENTRANCE FROM GRAND RIVER TO "ALDI" STORE.
 ELEVATION = 923.46 (NGVD)
 REF: SEE ABOVE
 FIELD BOOK D425, PG. 43
 POINT #201

BENCHMARK #200
 ARROW OF HYDRANT, LOCATED 574 FEET NORTHERLY OF THE NORTHEASTLY BUILDING CORNER "ALDI."
 ELEVATION = 930.09 (NGVD)
 REF: POINT #200

BENCHMARK #202
 NORTH RM OF A SANITARY SEWER MANHOLE, LOCATED 1006 FEET SOUTHWESTERLY OF "ELIAS BROS. BIG BOX".
 ELEVATION = 922.87 (NGVD)
 REF: POINT #202

BENCHMARK #203
 FINISH FLOOR OF NORTHEAST ENTRANCE OF "ALDI."
 ELEVATION = 928.28 (NGVD)
 REF: POINT #203

- LEGEND**
- MISC. STRUCTURE (AS LABELED)
 - BOLLARD
 - SIGN
 - LIGHT BASE
 - UTILITY MANHOLE (AS LABELED)
 - UTILITY POLE W/JOY WIRE
 - OVERHEAD UTILITY LINES (ELECTRIC/PHONE/CABLE)
 - U/G LINES (ELECTRIC/PHONE/CABLE)
 - DECIDUOUS TREE W/IDENTIFIER
 - CONCRETE CURB (UNLESS OTHERWISE STATED)
 - CONCRETE REVERSE CURB
 - SANITARY SEWER MANHOLE W/IDENTIFIER
 - SANITARY SEWER PIPE
 - CLEAR OUT
 - CONTROL STRUCTURE
 - STORM WATER MANHOLE W/IDENTIFIER
 - CATCH BASIN W/IDENTIFIER
 - FLARED END SECTION
 - STORM WATER DRAINAGE PIPE
 - HYDRANT
 - WATER SHUT OFF
 - WATER VALVE
 - WATER VALVE BOX
 - WATER MAIN
 - GAS SHUT OFF
 - U/G GAS
 - SPOT ELEVATION
 - EXISTING SPOT ELEVATION
 - 1' CONTOUR
 - 5' CONTOUR
 - SOL BORING W/ IDENTIFIER



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DESIGN: FAF	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: SES	1	02-21-18	REVISED PER TOWNSHIP REVIEW COMMENTS			
CHECK: CAG						

ALDI FOOD MARKET #51
 HOWELL, MI

GRADING AND PAVING PLAN

CLIENT:
 ALDI Inc.
 2625 N. STOCKBRIDGE RD.
 WEBBERVILLE, MICHIGAN 48892
 (517) 521-3907

SCALE: 1"=20'
 PROJECT No.: 9173290
 DWG NAME: 3290 GR
 ISSUED: FEB 21, 2018

BENCHMARKS:

DATUM BASED ON PREVIOUS BENCHMARK AS DEPICTED ON AS-BUILT PLANS PREPARED BY DESINE INC., JOB No. B1389, REVISED DATE DECEMBER 3, 2008.
 DATUM AS DEPICTED = NGVD

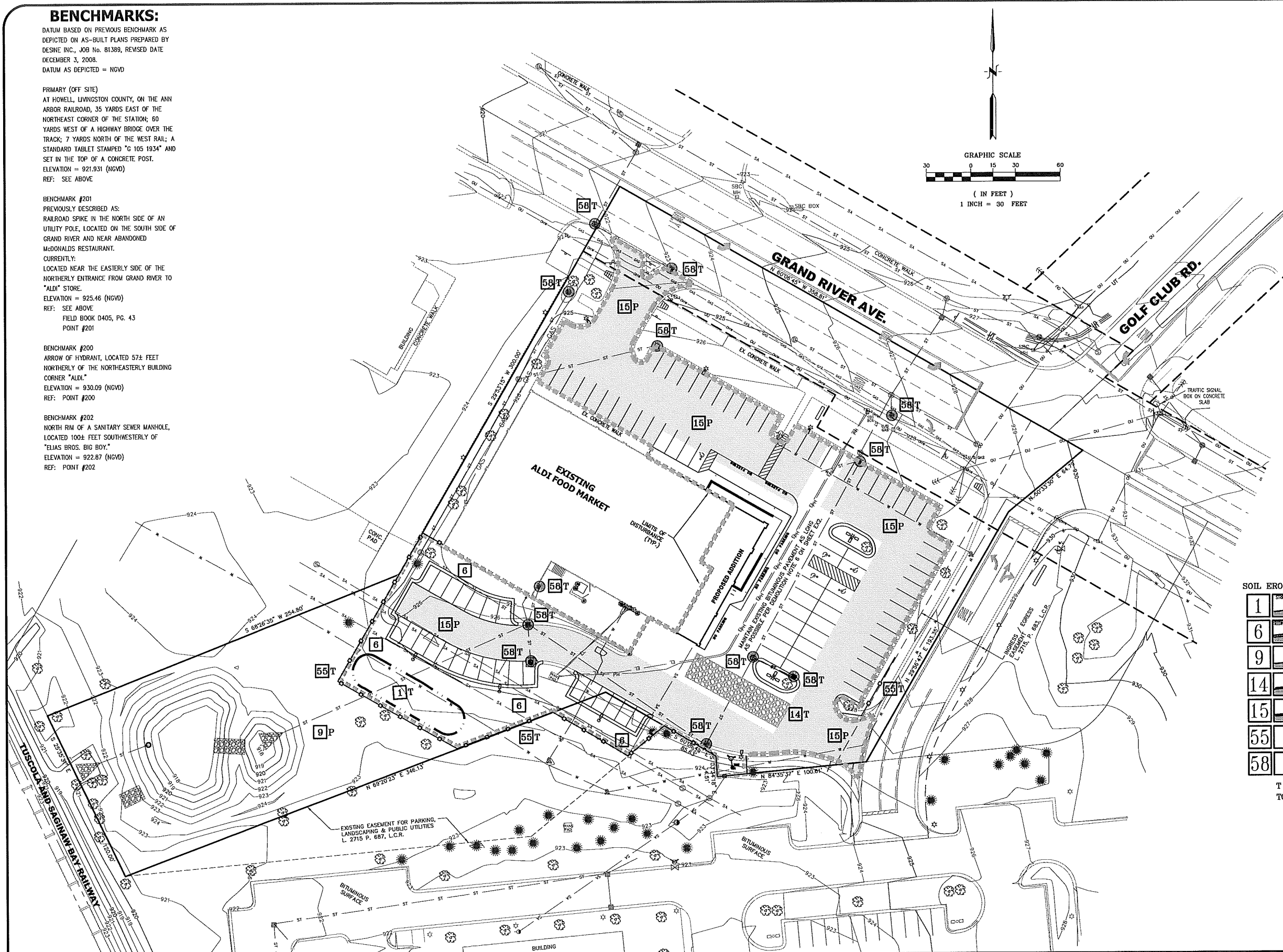
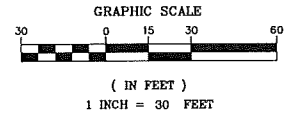
BENCHMARK #201
 PREVIOUSLY DESCRIBED AS:
 RAILROAD SPIKE IN THE NORTH SIDE OF AN UTILITY POLE, LOCATED ON THE SOUTH SIDE OF GRAND RIVER AND NEAR ABANDONED McDONALDS RESTAURANT.
 CURRENTLY:
 LOCATED NEAR THE EASTERLY SIDE OF THE NORTHERLY ENTRANCE FROM GRAND RIVER TO "ALDI" STORE.
 ELEVATION = 925.46 (NGVD)
 REF: SEE ABOVE
 FIELD BOOK D405, PG. 43
 POINT #201

BENCHMARK #200
 ARROW OF HYDRANT, LOCATED 57± FEET NORTHERLY OF THE NORTHEASTERLY BUILDING CORNER "ALDI."
 ELEVATION = 930.09 (NGVD)
 REF: POINT #200

BENCHMARK #202
 NORTH RIM OF A SANITARY SEWER MANHOLE, LOCATED 100± FEET SOUTHWESTERLY OF "ELIAS BROS. BIG BOY."
 ELEVATION = 922.87 (NGVD)
 REF: POINT #202

LEGEND

- MISC. STRUCTURE (AS LABELED)
- BOLLARD
- ⊕ SIGN
- ☆ LIGHT BASE
- UTILITY MANHOLE (AS LABELED)
- U—U— UTILITY POLE W/DUTY WIRE
- O—O— OVERHEAD UTILITY LINES (ELECTRIC/PHONE/CABLE)
- U/G—U/G— U/G LINES (ELECTRIC/PHONE/CABLE)
- ⊗ DECIDUOUS TREE W/IDENTIFIER
- EX CONCRETE CURB (UNLESS OTHERWISE STATED)
- ⊙ SANITARY SEWER MANHOLE W/IDENTIFIER
- SANITARY SEWER PIPE
- ⊙ CLEAN OUT
- ⊙ CONTROL STRUCTURE
- ⊙ STORM WATER MANHOLE W/IDENTIFIER
- ⊙ CATCH BASIN W/IDENTIFIER
- FLARED END SECTION
- ST EX STORM WATER DRAINAGE PIPE
- ⊕ HYDRANT
- ⊕ WATER SHUT OFF
- ⊕ WATER VALVE
- ⊕ WATER VALVE BOX
- WATER MAIN
- ⊕ GAS SHUT OFF
- GAS U/G GAS
- 1' CONTOUR
- 5' CONTOUR



SOIL EROSION AND SEDIMENTATION CONTROL MEASURES

1	STRIPE & SLOPPING TORSION	TORSION MAY BE STIPPED ABOVE BARRIERS TO ACT AS A DIVERSION. STROPPLE SHOULD BE TEMPORARILY SEED.
6	STRIPES WITH MULCH MATS OR WYING	INCLUDES ESTABLISHMENT OF VEGETATION COVER. STRIPES FOR BARRIERS WITH LOW VELOCITY. MULCH PLACED IN SMALL QUANTITIES BY EXPERIENCED PERSONNEL. STRIPES SHOULD BE PROTECTED FROM TRAFFIC.
9	VEGETATIVE BATTERY STRIP	SLOWS RUNOFF VELOCITY. FILLS SEDIMENT FROM RUNOFF. REDUCES VOLUME OF RUNOFF ON SLOPES.
14	AGGREGATE COVER	STABILIZES SOIL SURFACE, BIAS WINDING EROSION. PLANS CONSTRUCTION WHERE IN AVERAGE WEATHER. MAY BE USED AS FINE OF FINEST BENEATH CONSTRUCTION OF PAVED AREAS.
15	FRAG	PROTECTS AREAS WHICH CANNOT OTHERWISE BE PROTECTED, BUT INCREASES RUNOFF, VOLUME AND VELOCITY. FRODOING SURFACE WILL HELP SLOW VELOCITY.
55	DEBRIS NET FENCE	USES DEBRIS NETS AND POSTS OR POLES. MAY BE CONSTRUCTED ON PREPARED. MUST BE CONSTRUCTED AND LOCATED AS NECESSARY.
58	NET SEWMENT FILTER	USES PREPACKAGED RESEALABLE SACKS. FILLS SEDIMENT FROM RUNOFF AT CATCH BASIN INLET. BEST TO INSTALL AND MAINTAIN.

T = TEMPORARY P = PERMANENT
 TOTAL DISTURBED AREA 1.32 AC.

DESIGN: FAF	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: SES	1	02-21-18	REVISED PER TOWNSHIP REVIEW COMMENTS			
CHECK: CAG						

ALDI FOOD MARKET #51
 HOWELL, MI

SOIL EROSION AND SEDIMENTATION CONTROL PLAN

CLIENT:
 ALDI Inc.
 2825 N. STOCKBRIDGE RD.
 WEBBERVILLE, MICHIGAN 48892
 (517) 521-3907

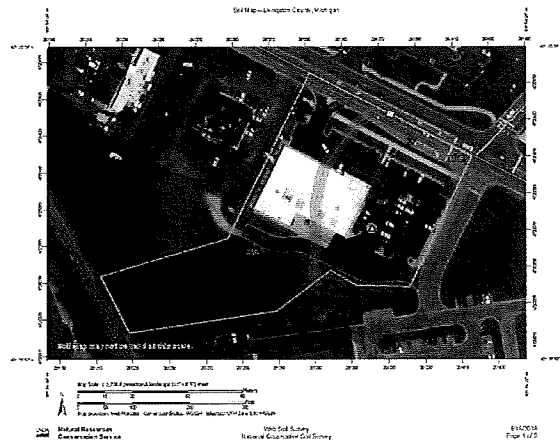
SCALE: 1"=30'
 PROJECT No.: 9173290
 DWG NAME: 3290 SE
 ISSUED: FEB 21, 2018

SE1

TIME LINE OF SOIL EROSION CONTROL AND CONSTRUCTION SEQUENCE

CONSTRUCTION & WORK CATEGORIES*	CONSTRUCTION PERIOD																				
	Month	March			April			May			June			July			August				
		Week	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3
1. OBTAIN PERMITS																					
2. INSTALL INITIAL SESC MEASURES																					
3. INSPECT & MAINTAIN SESC MEASURES																					
4. DEMOLITION WORK																					
5. BUILDING CONSTRUCTION																					
6. UNDERGROUND UTILITY WORK																					
7. SITE LIGHTING WORK																					
8. CURB, SIDEWALK & PAVEMENT WORK																					
9. BACKFILL & FINISH GRADE WORK																					
10. TOPSOIL, SEED & MULCH																					
11. LANDSCAPE WORK																					
12. REMOVE TEMPORARY SESC MEASURES																					

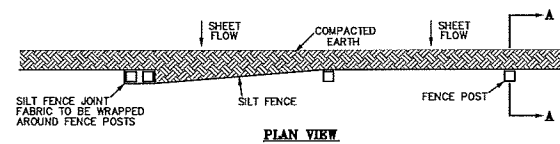
*REFER TO THE MAJOR WORK ITEMS OUTLINED IN THE SOIL EROSION CONTROL AND CONSTRUCTION SEQUENCE NOTES.



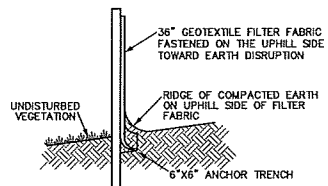
SOILS MAP

Map Unit Legend

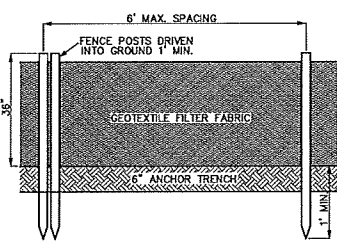
Map Unit Symbol	Map Unit Name	Area in AOI	Percent of AOI
EA	Boyer-Orlando loamy sands, 0 to 2 percent slopes	1.8	55.8%
BE	Boyer-Orlando loamy sands, 18 to 25 percent slopes	1.4	42.6%
MAE	Miami loam, 18 to 25 percent slopes	0.0	1.2%
Totals for Area of Interest		3.2	100.0%



PLAN VIEW



SECTION A-A

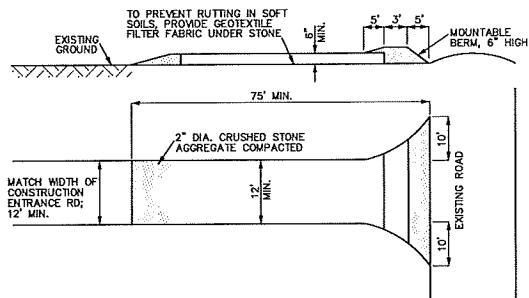


FRONT VIEW

55 SILT FENCE

NOT TO SCALE

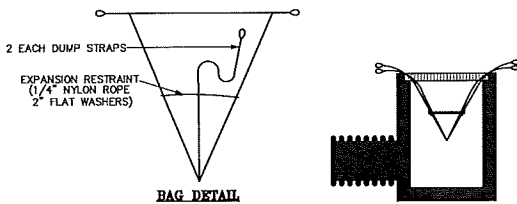
- NOTES:
- REPAIR AND REPLACE SILT FENCE AS NEEDED, INCIDENTAL.
 - FIELD LOCATE SILT FENCE TO FOLLOW CONSTANT CONTOUR ELEVATIONS.
 - OVERLAP FENCES AT JOINTS.
 - INSTALL FILTER BERM AT LOW POINTS WHERE INDICATED ON PLANS.



14 MUD TRACKING CONTROL DEVICE

NOT TO SCALE

NOTE: WHEN ACCEPTABLE TO ENGINEER, CONTRACTOR MAY INSTALL STONE BELOW THE SUBGRADE ELEVATION; THIS STONE MAY BE LEFT IN PLACE BELOW PAVEMENT.



58 INLET SEDIMENT FILTER

NOT TO SCALE

SOIL EROSION CONTROL AND CONSTRUCTION SEQUENCE:

- Obtain all necessary Soil Erosion and Sedimentation Control related permits from the appropriate Local, County and/or State Agencies. Refer to the General Notes on the Project Plans for additional requirements.
- Prior to commencement of any earth disruption, install Mud Tracking Control Devices and Inlet Sediment Filters at existing storm sewer catch basins in accordance with the Soil Erosion and Sedimentation Control Plan and the Soil Erosion and Sedimentation Control Permit.
- Inspect and maintain all Soil Erosion Control Measures daily. Maintain all Soil Erosion Control Measures as necessary and as directed by the Engineer and/or the Permitting Agency.
- Perform demolition work. Install appropriate Soil Erosion Control Measures in accordance with the Soil Erosion and Sedimentation Control Plan and/or as directed by the Engineer and/or the Permitting Agency.
- Construct building in accordance with the Site Plan and Architectural Plans. Install appropriate Soil Erosion Control Measures in accordance with the Soil Erosion and Sedimentation Control Plan and/or as directed by the Engineer and/or the Permitting Agency.
- Construct underground utilities including roof drains and underdrains. Install appropriate Soil Erosion Control Measures in accordance with the Soil Erosion and Sedimentation Control Plan and/or as directed by the Engineer and/or the Permitting Agency.
- Install light pole bases and fixtures and underground electric. Install appropriate Soil Erosion Control Measures in accordance with the Soil Erosion and Sedimentation Control Plan and/or as directed by the Engineer and/or the Permitting Agency.
- Construct curb & gutter, sidewalk and paved parking and roadway areas. Install appropriate Soil Erosion Control Measures in accordance with the Soil Erosion and Sedimentation Control Plan and/or as directed by the Engineer and/or the Permitting Agency.
- Backfill curb and sidewalks and finish grade all disturbed areas outside of pavement areas. Install appropriate Soil Erosion Control Measures in accordance with the Soil Erosion and Sedimentation Control Plan and/or as directed by the Engineer and/or the Permitting Agency.
- Place topsoil, seed, and mulch within 5 days of finish grade for establishment of vegetative ground cover outside of pavement and decorative stone landscape bed areas. Install appropriate Soil Erosion Control Measures in accordance with the Soil Erosion and Sedimentation Control Plan and/or as directed by the Engineer and/or the Permitting Agency.
- Landscape site in accordance with the Project Landscape Plan. Install appropriate Soil Erosion Control Measures in accordance with the Soil Erosion and Sedimentation Control Plan and/or as directed by the Engineer and/or the Permitting Agency.
- Following establishment of sufficient vegetative ground cover and receipt of approval from the Permitting Agency, remove all temporary Soil Erosion Control Measures, clean all storm sewer structures, and repair any permanent Soil Erosion Control Measures as directed by the Engineer and/or the Permitting Agency.

SOIL EROSION AND SEDIMENTATION CONTROL NOTES:

- The Soil Erosion and Sedimentation Control Specifications of the appropriate Local, County and/or State Agencies are a part of this work. Refer to the General Notes on the Project Plans for additional requirements.
- The Soil Erosion and Sedimentation Control (SESC) Permit Holder shall be responsible for compliance with the SESC Permit requirements for the duration of the project and until receipt of final approval from the Permitting Agency. For any site with an earth disturbance area of 1 acre or greater, the SESC Permit Holder shall retain a Certified Storm Water Operator in accordance with the SESC Permit requirements. The Certified Storm Water Operator shall perform routine inspections of the site and the SESC measures and file inspection reports in accordance with the SESC permit requirements. For any site with an earth disturbance area of 5 acres or greater, the SESC Permit Holder shall file a National Pollutant Discharge Elimination System (NPDES) Notice of Coverage Form with the State DEQ prior to any earth disruption.
- The Contractor shall install the appropriate Soil Erosion Control Measures in accordance with the Project Plans prior to massive earth disruption, including but not limited to: mud tracking control mats and sediment filters on existing storm sewer structures. Demolition work may be necessary prior to installation of some soil erosion control measures. In such cases, postpone installation of affected soil erosion control measures until immediately following demolition work. Refer to the Project Plans and the Soil Erosion Control and Construction Sequence for additional requirements.
- The Contractor shall schedule work so as to minimize the period of time that an area is exposed and disturbed. The Contractor shall observe the grading limits and limits of disturbance in accordance with the Project Plans. The Contractor shall maintain an undisturbed vegetative buffer around the work when shown on the Project Plans.
- The Contractor shall install and maintain Soil Erosion Control Measures in accordance with the Project Plans during the appropriate phases of construction. The Project Plans show the minimum requirements for Soil Erosion Control Measures. The Contractor shall install additional Soil Erosion Control Measures as necessary due to site conditions and as directed by the Permitting Agency and/or Engineer. The Contractor shall perform routine inspection and maintenance of all Soil Erosion Control Measures to ensure compliance with the permit requirements and proper operation of the Soil Erosion Control Measures.
- All disturbed areas outside of paved areas shall be restored within 5 days of finish grading. Proposed vegetative areas shall be restored with a minimum of 3-inches of topsoil, then seeded and mulched, unless noted otherwise on the Project Plans. During the non-growing season, temporary stabilization shall be provided using straw matting or as directed by the Permitting Agency and/or the Engineer.
- Following complete site restoration and stabilization; sediment shall be removed from all storm sewer structures, paved areas and storm basins. The SESC Permit Holder shall contact the Permitting Agency to request closure of the SESC Permit. For any site with an earth disturbance area of 5 acres or greater, the SESC Permit Holder shall file a NPDES Notice of Termination Form with the State DEQ.

SOIL EROSION AND SEDIMENTATION CONTROL MEASURES

1	STRIPPING & STOCKPILE TOPSOIL	TOPSOIL MAY BE STOCKPILED AGAIN BEFORE AREAS TO ACT AS A DRUMSON STOCKPILE SHOULD BE TEMPORARILY SEED
6	SEEDING WITH MULCH MAJOR WORKING	INCLUDES DEVELOPMENT OF VEGETATIVE COVER (SEE PLAN FOR DIMENSIONS) WITH LOW VELOCITY FLOW PLACES IN SMALL QUANTITIES BY RESPONSIBLE PERSONNEL SHOULD INCLUDE DISTURBED TOPSOIL BED
9	VEGETATIVE BUFFER STRIP	SLOWS RUNOFF VELOCITY FILTERS SEDIMENT FROM RUNOFF REDUCES VOLUME OF RUNOFF ON SLOPES
14	ADSORBER COVER	STABILIZES SOIL SURFACE, PLUGS WASHING PASSAGE PERMITS CONSTRUCTION TO PROTECT ADVERSE WEARER MAY BE USED AS PART OF PAVEMENT BASE CONSTRUCTION OF PAVED AREAS
15	FRANG	PREVENTS AREAS WHICH CANNOT OTHERWISE BE PROTECTED, BY MOVING RUNOFF, VOLUME AND VELOCITY REGULAR SURFACE WILL HELP SLOW VELOCITY
55	GEOTEXTILE SILT FENCE	USES GEOTEXTILE AND POSTS OR PILES MAY BE CONSTRUCTED OR PREPACKAGED DESIGNED TO CONSTRUCT AND LOCK AS NECESSARY
58	INLET SEDIMENT FILTER	USES PREPACKAGED REEFERABLE SODS FILTERS SEDIMENT FROM RUNOFF AT CATCH BASIN INLET DESIGNED TO INSTALL AND MAINTAIN

T = TEMPORARY P = PERMANENT
TOTAL DISTURBED AREA 1.32 AC.

MAINTENANCE NOTES FOR SOIL EROSION CONTROL MEASURES:

The Construction Site and all Soil Erosion Control Measures shall be inspected periodically in accordance with the appropriate local municipality/authority and the MDEQ NPDES rules and regulations. At a MINIMUM, inspections shall be performed once a week and within 24 hours following a storm event resulting in 1" of rainfall or greater. Inspections shall be performed throughout the duration of the construction process and until the site is completely stabilized. Following construction, the owner (or its assigned) shall periodically inspect all permanent soil erosion control measures to ensure proper operation.

BASIN PERFORATED STANDPIPES / CONTROL STRUCTURES: Standpipes shall be inspected for soil accumulation, soil caking and mechanical failure/damage. The filter stone around the standpipe shall be removed and replaced each time it becomes clogged with sediment. All mechanical failure/damage shall be repaired immediately.

CATCH BASINS: Catch basins shall be inspected for accumulation of solids and sediment. Solids and sediment shall be removed from the catch basins by vacuum or suction cleaning. Cleaning should be performed before the catch basin sumps are half full.

MUD TRACKING CONTROL DEVICE / CONSTRUCTION ACCESS: Mud tracking control devices shall be inspected for significant mud accumulation and to ensure the access is not eroding into public rights of way or drainage features. Add additional layers of stone or remove and replace stone as needed each time the stone becomes covered with mud. All sediment dropped or eroded onto public rights of way shall be removed immediately. Sweeping of the public rights of way and/or paved access route shall be performed as necessary to maintain the access route free of sediment and debris.

DETENTION BASIN (WET BOTTOM): Wet bottom detention basins shall be inspected to ensure erosion is not occurring along the inlet locations, banks and/or bottom of the basin and for sediment accumulation. Regular maintenance of the basin includes routine mowing of the buffer/filter strip and side slopes and removal of litter and debris accumulation. Address vegetation and/or erosion concerns as soon as weather permits. Remove sediment from basin every 5 to 10 years or sooner if sediment accumulation adversely affects the operation of the basin. Sediment that is removed shall be disposed of offsite or at an upland area and stabilized so that it does not re-enter the drainage course. Excessive algae shall be removed as necessary to prevent odors and to maintain nutrient removal capacity.

SEDIMENTATION BASINS: Sedimentation basins shall be inspected to ensure erosion is not occurring along the inlet locations, banks and/or bottom of the basin and for piping, seepage, sediment accumulation and/or other mechanical damage. Regular maintenance of the basin includes routine mowing of the buffer/filter strip, side slopes and basin floor and removal of litter and debris accumulation. Address vegetation and/or erosion concerns as soon as weather permits. Sediment shall be removed before it accumulates to 50% of the design depth of the basin. Sediment that is removed shall be disposed of offsite or at an upland area and stabilized so that it does not re-enter the drainage course.

RIPRAP: Inspect riprap immediately following the first rainfall event following installation of the riprap. Continue to perform inspections of the riprap at each periodic site inspection. Riprap shall be inspected to ensure erosion is not occurring within and/or around the riprap. The discharge point shall be inspected to ensure that concentrated flows are not causing erosion downstream. Displaced riprap shall be removed from downstream locations and the riprap beds shall be repaired or replaced. Significant sediment buildup shall be removed from riprap beds. Repair or replace failing or displaced riprap immediately. Address vegetation and/or erosion concerns as soon as weather permits.

SEEDING: Newly seeded areas shall be inspected until substantial vegetative growth is obtained. Seeded areas shall be inspected to ensure erosion is not occurring in the seeded area and vegetative growth is promoted. Eroded areas shall be finish graded as necessary to remove erosion channels or gulleys and new seed placed as soon as weather permits.

SILT FENCE: Silt fencing shall be inspected for soil accumulation/clogging, undercutting, overtopping and sagging. Soil accumulation shall be removed from the face of the silt fence each time it reaches half the height of the fence. Removed sediment shall be disposed of in a stable upland site or added to a spoils stockpile. When undercutting occurs, grade out areas of concentrated flow upstream of the silt fence to remove channels and/or gulleys and repair or replace silt fence ensuring proper trenching techniques are utilized. Silt fencing, which sags, falls over or is not staked in shall be repaired or replaced immediately. Silt fencing fabric, which decomposes or becomes ineffective, shall be removed and replaced with new fabric immediately. Silt fencing shall be removed once vegetation is well established and the up-slope area is fully stabilized.

SOD: Newly sodded areas shall be inspected to ensure sod is maturing. Sod shall be inspected for failure, erosion or damage. Slipping or eroding sod on steep slopes shall be immediately repaired or replaced and staked in place. Damaged or failed sod shall be immediately replaced.

SPILLWAYS: Spillways shall be inspected to ensure that erosion is not occurring within and/or around the spillway. The discharge point shall be inspected to ensure that concentrated flows are not causing erosion downstream. Inspect the spillway for cracked concrete, uneven and/or excessive settling and proper function. Repair or replace failing spillways immediately. Address vegetation and/or erosion concerns as soon as weather permits.

STOCKPILES: Temporary and permanent topsoil and spoils stockpiles shall be seeded to promote vegetative growth. Stockpiles shall be inspected to ensure excessive erosion has not occurred. When runoff or wind erosion is evident, reduce the side slopes of the stockpile or stabilize the stockpile with pieces of staked sod laid perpendicular to the slope. When filter fencing is used around a stockpile, the silt fence shall be inspected to ensure piping has not occurred under the fencing and to ensure the fencing has not collapsed due to soil slippage or access by construction equipment. Repair or replace damaged fencing immediately. Berms at the base of stockpiles, which become damaged, shall be replaced.

STORM STRUCTURE INLET FILTER: Inlet filters shall be inspected for sediment accumulation, clogging and damage. When stone is used in conjunction with inlet filter fabric, replace the stone each time it becomes clogged with sediment. Clean or replace the inlet filter fabric each time it becomes clogged with sediment. Reinstall or replace fallen filter fabrics immediately. Replace damaged filter fabrics immediately.

NOTE:
SEE LANDSCAPE PLAN FOR SEED AND SOD REQUIREMENTS.

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DESIGN: FAF	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: SES	1	02-21-18	REVISED PER TOWNSHIP REVIEW COMMENTS			
CHECK: CAG						

ALDI FOOD MARKET #51
HOWELL, MI

SOIL EROSION AND
SEDIMENTATION CONTROL
NOTES & DETAILS

CLIENT: ALDI Inc. 2625 N. STOCKBRIDGE RD. WEBBERVILLE, MICHIGAN 48892 (517) 521-3907	SCALE: NONE PROJECT No.: 9173290 DWG NAME: 3290 SE ISSUED: FEB 21, 2018
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SE2

LANDSCAPING CALCULATIONS

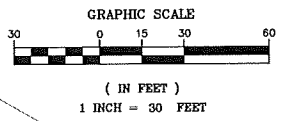
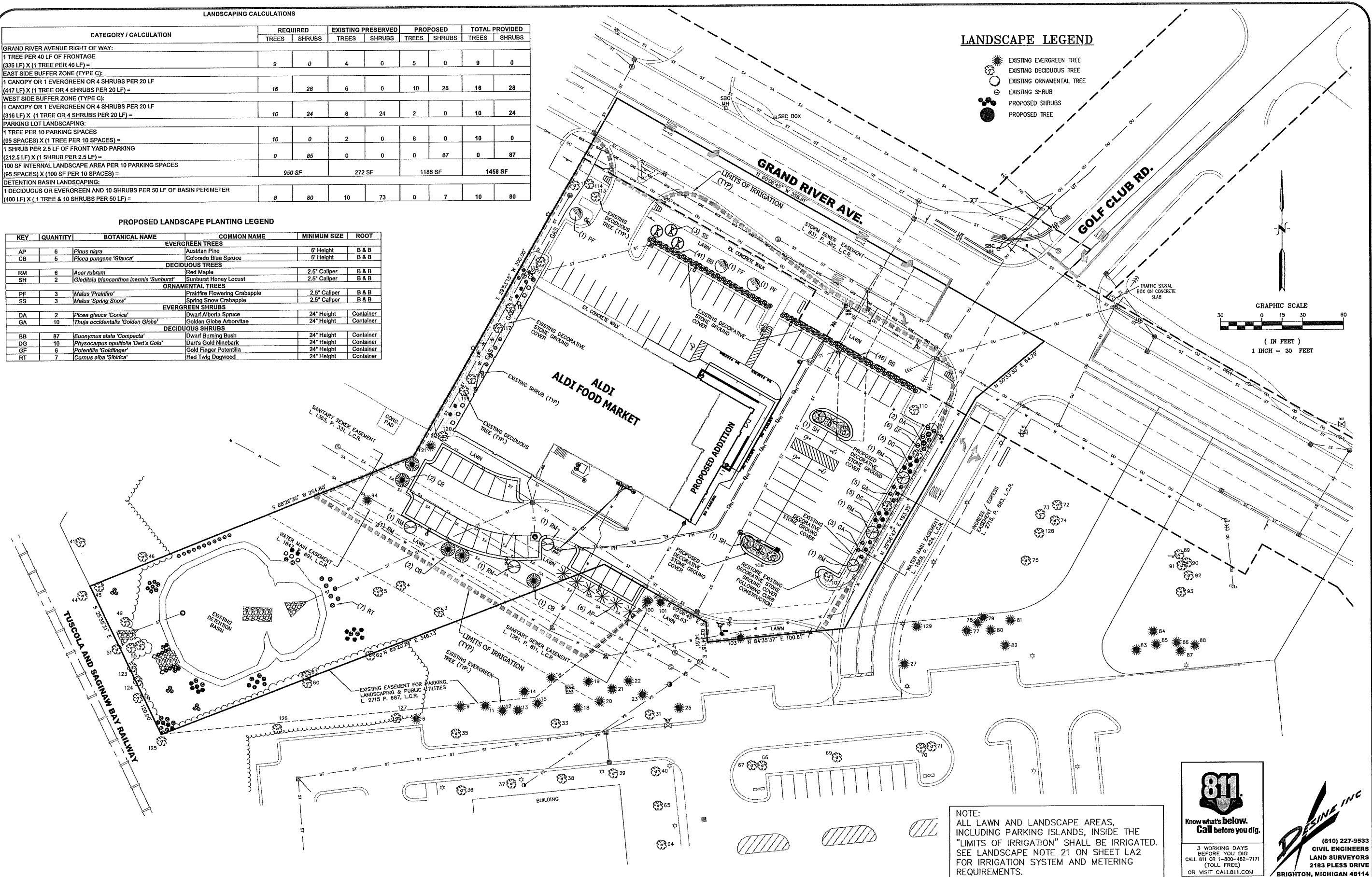
CATEGORY / CALCULATION	REQUIRED		EXISTING PRESERVED		PROPOSED		TOTAL PROVIDED	
	TREES	SHRUBS	TREES	SHRUBS	TREES	SHRUBS	TREES	SHRUBS
GRAND RIVER AVENUE RIGHT OF WAY:								
1 TREE PER 40 LF OF FRONTAGE (336 LF) X (1 TREE PER 40 LF) =	9	0	4	0	5	0	9	0
EAST SIDE BUFFER ZONE (TYPE C):								
1 CANOPY OR 1 EVERGREEN OR 4 SHRUBS PER 20 LF (447 LF) X (1 TREE OR 4 SHRUBS PER 20 LF) =	16	28	6	0	10	28	16	28
WEST SIDE BUFFER ZONE (TYPE C):								
1 CANOPY OR 1 EVERGREEN OR 4 SHRUBS PER 20 LF (316 LF) X (1 TREE OR 4 SHRUBS PER 20 LF) =	10	24	8	24	2	0	10	24
PARKING LOT LANDSCAPING:								
1 TREE PER 10 PARKING SPACES (85 SPACES) X (1 TREE PER 10 SPACES) =	10	0	2	0	8	0	10	0
1 SHRUB PER 2.5 LF OF FRONT YARD PARKING (212.5 LF) X (1 SHRUB PER 2.5 LF) =	0	85	0	0	0	87	0	87
100 SF INTERNAL LANDSCAPE AREA PER 10 PARKING SPACES (85 SPACES) X (100 SF PER 10 SPACES) =	950 SF		272 SF		1186 SF		1458 SF	
DETENTION BASIN LANDSCAPING:								
1 DECIDUOUS OR EVERGREEN AND 10 SHRUBS PER 50 LF OF BASIN PERIMETER (400 LF) X (1 TREE & 10 SHRUBS PER 50 LF) =	8	80	10	73	0	7	10	80

PROPOSED LANDSCAPE PLANTING LEGEND

KEY	QUANTITY	BOTANICAL NAME	COMMON NAME	MINIMUM SIZE	ROOT
EVERGREEN TREES					
AP	6	<i>Pinus nigra</i>	Austrian Pine	6' Height	B & B
CB	5	<i>Picea pungens 'Glauca'</i>	Colorado Blue Spruce	6' Height	B & B
DECIDUOUS TREES					
RM	6	<i>Acer rubrum</i>	Red Maple	2.5" Caliper	B & B
SH	2	<i>Gleditsia triancanthos inermis 'Sunburst'</i>	Sunburst Honey Locust	2.5" Caliper	B & B
ORNAMENTAL TREES					
PF	3	<i>Malus 'Praediff'</i>	Prairie Flowering Crabapple	2.5" Caliper	B & B
SS	3	<i>Malus 'Spring Snow'</i>	Spring Snow Crabapple	2.5" Caliper	B & B
EVERGREEN SHRUBS					
DA	2	<i>Picea glauca 'Conica'</i>	Dwarf Alberta Spruce	24" Height	Container
GA	10	<i>Thuja occidentalis 'Golden Globe'</i>	Golden Globe Arborvitae	24" Height	Container
DECIDUOUS SHRUBS					
BB	87	<i>Euonymus alata 'Compacta'</i>	Dwarf Burning Bush	24" Height	Container
DG	10	<i>Physocarpus opulifolius 'Dart's Gold'</i>	Dart's Gold Ninebark	24" Height	Container
GF	6	<i>Potentilla 'Goldfinger'</i>	Gold Finger Potentilla	24" Height	Container
RT	7	<i>Cornus alba 'Sibirica'</i>	Red Twig Dogwood	24" Height	Container

LANDSCAPE LEGEND

- EXISTING EVERGREEN TREE
- EXISTING DECIDUOUS TREE
- EXISTING ORNAMENTAL TREE
- EXISTING SHRUB
- PROPOSED SHRUBS
- PROPOSED TREE



NOTE:
ALL LAWN AND LANDSCAPE AREAS,
INCLUDING PARKING ISLANDS, INSIDE THE
"LIMITS OF IRRIGATION" SHALL BE IRRIGATED.
SEE LANDSCAPE NOTE 21 ON SHEET LA2
FOR IRRIGATION SYSTEM AND METERING
REQUIREMENTS.

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LAND SURVEYORS
2183 PLESS DRIVE
BRIGHTON, MICHIGAN 48114

DESIGN: FAF	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: SES	1	02-21-18	REVISED PER TOWNSHIP REVIEW COMMENTS			
CHECK: CAG						

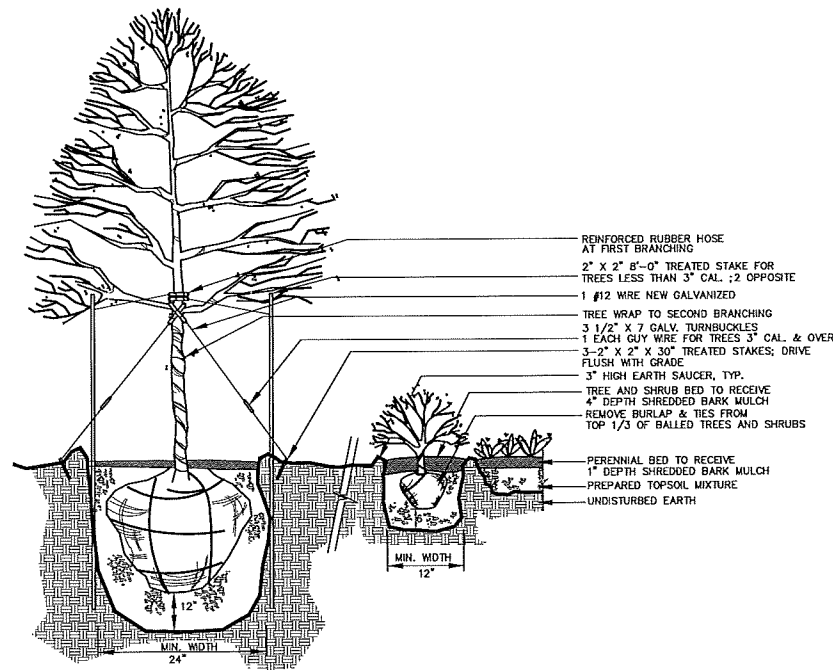
ALDI FOOD MARKET #51
HOWELL, MI

LANDSCAPE PLAN

CLIENT:
ALDI Inc.
2625 N. STOCKBRIDGE RD.
WEBBERVILLE, MICHIGAN 48892
(517) 521-3907

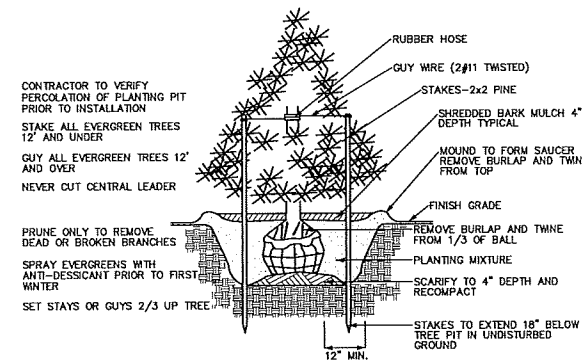
SCALE: 1"=30'
PROJECT No.: 9173290
DWG NAME: 3290 LA
ISSUED: FEB 21, 2018

LA1



TYPICAL TREE/SHRUB/PERENNIAL PLANTING

NOT TO SCALE



TYPICAL EVERGREEN TREE PLANTING

NOT TO SCALE

MAINTENANCE-FREE BIKE RACKS

Easy to install, environmentally safe, non-toxic, and available in unlimited colors in matte or high-gloss finish. S&G Bike Racks are built to withstand the rigors of hard outdoor use yet aesthetically pleasing in any environment. Our bike racks are made from structural grade steel pipe coated with durable, weather-resistant PVC.

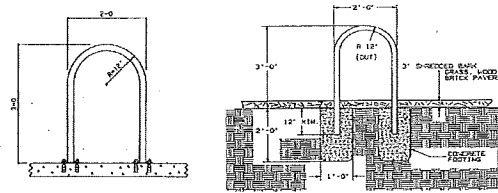
Material: 1 1/2 Schedule 40 1.80 O.D. Coating: PVC Thermoplastic over Thermoset Vinyl Primer

Excellent Resistance to:
 Weather Acid Alkali Impact Abrasion Mildew

Installation Options

SURFACE MOUNT
 Secured with two steel flange bases and three anchors at each base.

IN GROUND MOUNT
 Secured using concrete footings.



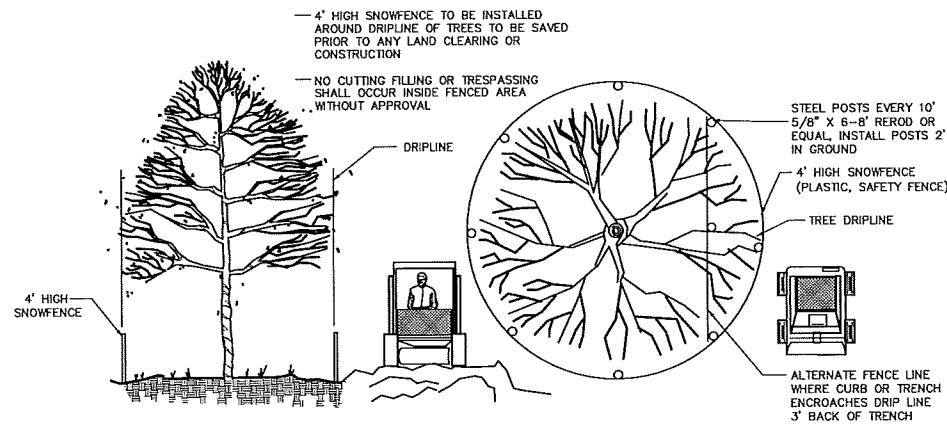
How to Specify Bike Racks

Bike racks to be Model No. 2447-S as manufactured by S&G Products, Dexter, Michigan (517-546-9240). 1 1/2" SCHD 40 PIPE (1.90" O.D.), rolled in the shape of an inverted "U" to a 12" outside radius standing 4" high with legs parallel in both planes. Mounting flanges to have minimum three holes for attachment. Coating to be polyvinyl chloride thermoplastic over a thermoset vinyl primer to ensure a complete crosslink bond. Thickness to be a minimum of 100 mils. Color selection by owner.

Bike racks to be Model No. 2447 as manufactured by S&G Products, Dexter, Michigan (517-546-9240). 1 1/2" SCHD 40 PIPE (1.90" O.D.), rolled in the shape of an inverted "U" to a 12" outside radius standing 4" high with legs parallel in both planes. Coating to be polyvinyl chloride thermoplastic over a thermoset vinyl primer to ensure a complete crosslink bond. Thickness to be a minimum of 100 mils. Color selection by owner.

S & G Products
 2055 N. Lima Center Rd, Dexter, Michigan 48130
 PO Box 615, Manchester, Michigan 48158
 Phone (517)546-9240 Fax (517)546-8720
 Email: sales@sandproducts.com
 Website: sandproducts.com

NOTE:
 SEE SHEET SP FOR PROPOSED BIKE RACK LOCATIONS



TREE PROTECTION DETAIL

NOT TO SCALE

EXISTING TREE SCHEDULE:

- 1 8" MAPLE
- 3 18" ELM
- 4 24" COTTONWOOD
- 5 18" COTTONWOOD
- 6 9" PINE
- 9 8" PINE
- 11 9" PINE
- 12 8" PINE
- 13 9" PINE
- 14 8" PINE
- 15 9" PINE
- 16 8" PINE
- 18 8" PINE
- 19 9" PINE
- 20 9" PINE
- 21 10" PINE
- 22 10" PINE
- 23 6" PINE
- 25 6" PINE
- 27 6" PINE
- 31 11" CRABAPPLE
- 33 12" CRABAPPLE
- 35 9" CRABAPPLE
- 36 8" CRABAPPLE
- 37 12" CRABAPPLE
- 38 9" CRABAPPLE
- 39 9" CRABAPPLE
- 40 7" CRABAPPLE
- 41 10" BOX ELDER
- 44 7" TWIN OAK
- 45 11" BOX ELDER
- 46 12" TWIN BOX ELDER
- 47 12" TWIN BOX ELDER
- 48 24" TWIN LOCUST
- 49 18" POPLAR
- 50 18" LOCUST - DEAD
- 51 12" POPLAR
- 52 12" POPLAR
- 54 20" POPLAR
- 55 22" POPLAR
- 56 13" TWIN BOX ELDER
- 60 12" POPLAR - DEAD
- 62 10" APPLE
- 63 19" ASPEN
- 64 7" CRABAPPLE
- 65 7" CRABAPPLE
- 66 3" CHERRY
- 67 3" CHERRY
- 69 3" CHERRY
- 70 4" CHERRY
- 71 4" CHERRY
- 72 9" CRABAPPLE
- 73 5" CRABAPPLE
- 74 9" CRABAPPLE
- 75 7" CRABAPPLE
- 77 7" PINE
- 78 8" PINE
- 79 8" PINE
- 80 8" PINE
- 81 8" PINE
- 82 6" PINE
- 83 6" TWIN PINE
- 84 9" PINE
- 85 9" PINE
- 86 9" PINE
- 87 9" PINE
- 88 9" PINE
- 89 6" CRABAPPLE
- 90 6" CRABAPPLE
- 91 6" CRABAPPLE
- 92 6" CRABAPPLE
- 93 6" CRABAPPLE
- 94 6" PINE
- 95 6" PINE (TBR)
- 96 6" PINE (TBR)
- 97 6" PINE (TBR)
- 98 6" PINE (TBR)
- 99 6" PINE (TBR)
- 100 6" PINE
- 101 6" PINE
- 102 6" SPRUCE (TBR)
- 103 6" SPRUCE
- 104 5" PEAR (TBR)
- 105 4" LOCUST (TBR)
- 106 4" LOCUST
- 107 4" PEAR
- 108 5" GINKO
- 109 3" GINKO
- 110 6" PEAR
- 111 4" LOCUST (TBR)
- 112 3" LOCUST
- 113 6" PEAR
- 114 6" PEAR
- 115 5" PEAR
- 116 6" PEAR
- 117 6" PEAR
- 118 6" PEAR
- 119 6" PEAR
- 120 6" PEAR
- 121 6" SPRUCE
- 122 6" SPRUCE (TBR)
- 123 11" TRIPLE OAK
- 124 9" TWIN OAK
- 125 9" TWIN OAK
- 126 12" TWIN OAK
- 127 12" TWIN OAK
- 128 7" CRABAPPLE
- 129 6" PINE

LANDSCAPING NOTES:

1. All minimum planting sizes specified on the Project Plans shall be at the time of planting.
2. All landscape materials shall be as specified on the Project Plans or approved equal. Substitutions shall not be made without prior written approval from the Project Engineer and receipt of the Owner's Authorization.
3. All plant material shall be free of disease and insects and shall conform to the American Standard of Nursery Stock of the American Association of Nurserymen.
4. All landscape plantings shall be planted and maintained in a healthy condition and shall be guaranteed by the Landscape Contractor and/or Supplier for a minimum period of 1 year from the time of planting. Any plantings that die or become diseased during the guarantee period shall be removed and replaced by the Landscape Contractor and/or Supplier at no cost to the Owner.
5. Excavations for container or balled plantings shall be no deeper than the root ball or container and shall be at least twice the diameter of the root ball or container.
6. Excavations for bare root plantings shall be no deeper than the longest roots and shall be at least twice the diameter of the root spread.
7. The sides of planting excavations in heavy and/or wet soils shall be scarified with a fork, pick or shovel to eliminate glazing.
8. Landscape planting backfill shall consist of a prepared mixture of peat moss, composted manure and topsoil or suitable excavated native soil material mixed with the appropriate soil conditioners that are compatible with the native soil and plant species. The type and mixture ratio of soil conditioners shall be in accordance with the Landscape Supplier's recommendations.
9. The Landscape Contractor shall stake and reinforce all trees to prevent wind damage. The Landscape Contractor shall remove all tree reinforcement and stakes upon expiration of the guarantee period.
10. Perennials shall be planted on a 3" minimum bed of prepared peat moss, composted manure and topsoil mixture.
11. Landscape beds shall be separated from lawn areas with landscape edging. Landscape edging shall be black heavy-duty polyethylene type with UV protection and a double V-lip bottom edge to prevent frost heave. Landscape edging shall be staked in accordance with the Manufacturer's recommendations to prevent frost heave. Landscape edging shall be installed in strict accordance with the Manufacturer's specifications and recommendations.
12. Ground cover within landscape beds shall be decorative stone. Decorative stone shall be 2" to 4" diameter washed river rock placed 4" deep.
13. Ground cover within landscape beds shall be placed over a landscape fabric weed barrier. Landscape fabric shall be non-woven, 4 oz. per sq. yd. minimum weight, with UV protection. Landscape fabric shall be installed in strict accordance with the Manufacturer's specifications and recommendations. Landscape fabric shall not be installed over or within 12 inches of perennial plantings.
14. Lawn areas shall be established with 3" minimum depth of prepared topsoil and hydroseeded. The Landscape Contractor shall guarantee all lawn areas for a minimum period of 1 year from time of seeding. All lawn areas that do not take root or die during the guarantee period shall be re-hydroseeded as appropriate by the Landscape Contractor at no cost to the Owner. All lawn areas that become diseased during the guarantee period shall be removed and re-hydroseeded as appropriate by the Landscape Contractor at no cost to the Owner.
15. Topsoil shall be a dark, organic, natural surface soil free of clay lumps, peat, muck, subsoil, noxious weeds and other foreign material such as roots, sticks and rocks over 1/2" diameter. Topsoil shall not be frozen or muddy. All earthen areas to receive topsoil shall be finish graded and properly trimmed. Topsoil shall be spread on the prepared areas to a depth of 3 inches. After spreading, any large clods and lumps of topsoil shall be broken up and pulverized. Stones and rocks over 1/2" in diameter, roots, litter and all foreign matter shall be raked up and disposed of by the Landscape Contractor. Seed and mulch shall be placed within 5 days of topsoil placement.
16. Seed mixture for lawn areas shall consist of 10% Kentucky Blue Grass, 20% Perennial Rye Grass, 30% Hard Fescue and 40% Creeping Red Fescue. Hydroseed shall be placed within 5 days of topsoil placement and shall be placed to provide complete and uniform coverage. Fertilizer shall be placed at 80 pounds per acre, hydro mulch at 1,200 pounds per acre and water at 500 gallons per acre unless otherwise specified by the Seed Distributor/Manufacturer. All over spray areas shall be properly cleaned and restored at no expense to the contractor.
17. Seed and mulch may be substituted for hydroseed when authorized by the Owner. Seed mixtures shall meet the requirements for lawn areas as outlined above. Seed shall be uniformly applied at a rate of 220 lbs per acre unless otherwise recommended by the Seed Distributor/Manufacturer. Seed mixture shall be fertilized. Fertilizer shall be uniformly applied at of 240 pounds per acre of chemical fertilizer nutrients in equal portions (10-10-10) of Nitrogen, Phosphoric Acid and Potash.
18. All seeded areas with a slope less than 1:4 shall be stabilized with straw mulch placed at 2 tons per acre unless otherwise recommended by the Seed Distributor/Manufacturer. Erosion control blankets shall be substituted for straw mulch in roadway greenbelts, lawn areas adjacent to heavy traffic, lawn areas subject to high winds, slopes of 1:4 or greater and within ditches, swales and other areas exposed to concentrated overland storm water flow. Erosion control blankets shall consist of 100% straw fiber matrix with photodegradable polypropylene netting and have a 12-month minimum longevity rating. Erosion control blankets shall be pinned with biodegradable pins and shall be installed in accordance with the Manufacturer's recommendations.
19. Sod shall only be utilized where specified on the project plans. (Sod may be substituted for hydroseed when required by the Municipality or if necessary for site stabilization late in the growing season. Sod shall not be substituted without receipt of the Owner's Authorization.) Sod shall be a drought tolerant species consisting primarily of Fine Leafed Fescues including Red Fescue, Chewings Fescue and Hard Fescue with Kentucky Bluegrass filler for hardness. Sod shall be placed on a prepared subgrade. Subgrade shall be finish graded and tilled to a depth of 4" to 6". All foreign material, roots, sticks, large soil clumps and rocks over 2" diameter shall be removed from the subgrade. Sod shall not be placed on frozen or saturated subgrade. Fertilizer, lime and/or compost shall be placed over the prepared subgrade in accordance with the Sod Supplier/Manufacturer's recommendations. Sod shall be placed in accordance with the Sod Supplier/Manufacturer's recommendations. Sod shall be installed with biodegradable stakes on slopes of 1:4 or greater and within ditches, swales and other areas exposed to concentrated overland storm water flow. All sod shall be planted and maintained in a healthy condition and shall be guaranteed by the Landscape Contractor and/or Supplier for a minimum period of 1 year from the time of planting. Any sod that dies or becomes diseased during the guarantee period shall be removed and replaced by the Landscape Contractor and/or Supplier at no cost to the Owner.
20. The Landscape Contractor shall be responsible for watering non-irrigated plantings and sod during dry weather conditions throughout the guarantee period as necessary to promote growth and establishment.
21. The existing irrigation system shall be modified as a part of this project. The existing irrigation system shall be inspected and tested to determine the limits of irrigation and condition of the irrigation system. The irrigation system shall be modified as necessary to accommodate the proposed site improvements and to provide irrigation to all lawn and landscape areas within the limits of irrigation as shown on the Landscape Plan. All broken, damaged and/or inoperable portions of the existing irrigation system shall be repaired or replaced as necessary. All existing sprinkler heads that are to remain shall be adjusted as necessary for proper operation and coverage. The Contractor shall submit an irrigation system design and shop drawings to the Owner for review and approval prior to installation. Irrigation systems shall be designed to utilize the minimum amount of water necessary to provide sufficient irrigation, satisfy the Local Municipal requirements and site conditions and shall include a rain sensor. A separate water meter, if not already existing, shall be installed as a part of the irrigation system modification to allow for reduced rate metering by the Local Municipality and/or Water Authority. The Contractor shall be responsible for coordinating installation of irrigation lines, sleeves, plumbing connections, controls and appurtenances at the appropriate stages of construction. All existing irrigation lines and systems that are to remain that are cut, plugged, spliced, damaged and/or otherwise modified during demolition and/or construction activities shall be properly repaired, replaced, reconnected and/or adjusted as necessary to ensure proper operation.
22. All existing on-site trees shall be trimmed / pruned as directed by ALDI Inc.

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 LAND SURVEYORS
 2183 PLESS DRIVE
 BRIGHTON, MICHIGAN 48114

DESIGN#	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
FAF	1	02-21-18	REVISED PER TOWNSHIP REVIEW COMMENTS			
SES						
CAG						

ALDI FOOD MARKET #51
 HOWELL, MI

LANDSCAPE NOTES & DETAILS

CLIENT:
 ALDI Inc.
 2625 N. STOCKBRIDGE RD.
 WEBBERVILLE, MICHIGAN 48892
 (517) 521-3907

SCALE: AS NOTED
 PROJECT No.: 9173290
 DWG NAME: 3290.LA
 ISSUED: FEB 21, 2018

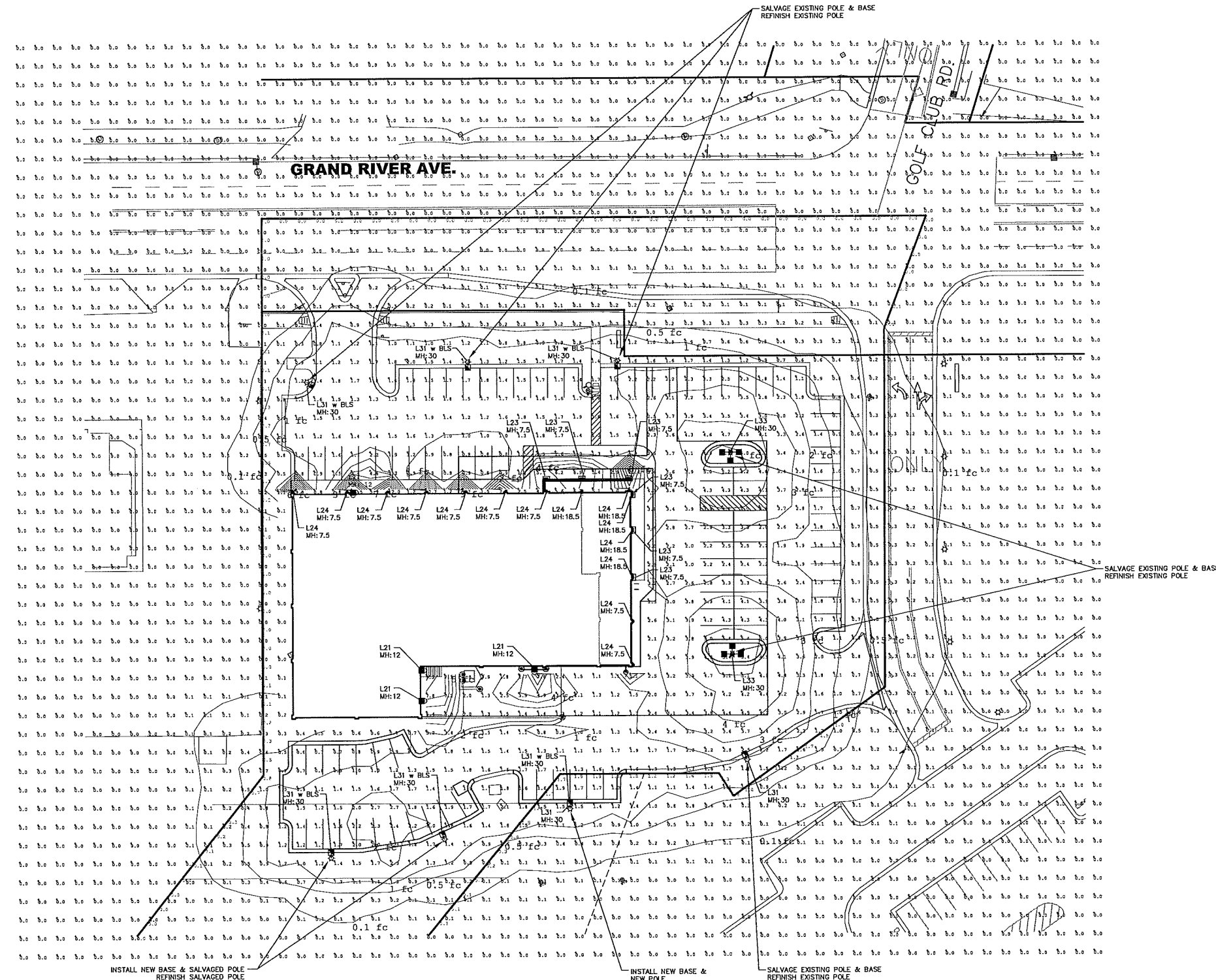
LA2

Symbol	Qty	Label	Arrangement	Lumens/Lamp	LLF	Total Watts	Description
⬢	4	L21	SINGLE	4109	1.000	168	XSPW403AC-UCSP
⬢	6	L23	SINGLE	N.A.	1.000	258.42	AL-21VLED-UD-OS-120
⬢	7	L31 w BL	SINGLE	1950	1.000	602	OSQ-A-NM-4ME-B-5FK-UL-CS WOSQ-DACS OSQ-BLSMF
⬢	2	L33	3 @ 90°	11648	1.000	516	OSQ-A-NM-4ME-B-5FK-UL-CS WOSQ-DACS
⊙	14	L24	SINGLE	N.A.	1.000	824.8	CL-P5423-30-50K

Footcandles calculated using predicted lumen values after 50K hours of operation					
Label	Avg	Max	Min	Avg/Min	Max/Min
PROPERTY LINE	0.34	1.8	0.0	N.A.	N.A.
PARKING LOT	2.32	9.5	0.4	5.60	23.75

Pole Schedule
 (1) CL-554-4011-26-D1-XX (26' X 4" STEEL SQUARE POLE)
 Proposed poles meet 120 MPH sustained winds.

ADDITIONAL EQUIPMENT
 (1) OSQ-DACS (DIRECT ARM MOUNT)
 (7) OSQ-BLSMF (BACKLIGHT SHIELD)



DLC V4 is in effect as of April 1, 2017, which impacts the rebate eligibility of many LED products. If you require DLC-qualified fixtures, please reference <https://www.designlights.org/search/> for updated qualified product listings. Email rebates@cree.com or rebates@cree.com for assistance.



Project Name: ALDI - HOWELL, MI	Scale: 1"=30'	Footcandles calculated at grade
Date: 1/18/2018	Layout by: CHRIS BOSANEC	
Filename: V:\CommonAppEng\NATVALD-180118HR\MCB AGI		

Illustration results shown on this lighting design are based on project parameters provided to Cree, Inc. used in conjunction with Cree's test procedures conducted under laboratory conditions. Actual project conditions differing from these design parameters may affect field results. The customer is responsible for verifying dimensional accuracy along with compliance with any applicable electrical, lighting, or energy codes.

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 CIVIL ENGINEERS
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 BRIGHTON, MICHIGAN 48114

DESIGN: FAF	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: SES						
CHECK: CAG						

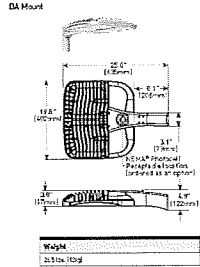
ALDI FOOD MARKET #51
HOWELL, MI
SITE LIGHTING PLAN

CLIENT: ALDI Inc. 2625 N. STOCKBRIDGE RD. WEBBERVILLE, MICHIGAN 48892 (517) 521-3907	SCALE: NONE PROJECT No: 9173290 DWG NAME: 3290.LT ISSUED: JAN 29, 2018	LT1
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OSQ Series
OSQ™ LED Ceiling Luminaire - Medium

Product Description
The OSQ™ Area Flood Luminaire is a recessed ceiling luminaire with a wide beam angle. It is designed for use in commercial and industrial applications. The luminaire is constructed from die-cast aluminum and features a clear polycarbonate lens. The OSQ™ Area Flood Luminaire is available in two sizes: 18" and 24". The luminaire is designed for use in areas where high ceilings are required. The luminaire is available in two finishes: white and black. The luminaire is designed for use in areas where high ceilings are required. The luminaire is available in two finishes: white and black.

Performance Summary
Made in the U.S.A. of U.S. and imported parts
Listed luminaire per UL 159
Efficiency: 90 lm/W
CRI: 90
Color: 3000K, 4000K, 5000K
Input Power: 27W
Output Power: 27W
Beam Angle: 120°
Voltage: 120V
Frequency: 60Hz
Dimensions: 18" x 18" x 4.5" (457mm x 457mm x 114mm)



Accessories	Part Number	Description
Flat Lens	FL-1818	18" x 18" Flat Lens
Drop Lens	DL-1818	18" x 18" Drop Lens

Ordering Information
Part Number: OSQ-1818-3000K
Part Number: OSQ-1818-4000K
Part Number: OSQ-1818-5000K

Part Number	Description
OSQ-1818-3000K	OSQ™ LED Ceiling Luminaire - 18" x 18" - 3000K
OSQ-1818-4000K	OSQ™ LED Ceiling Luminaire - 18" x 18" - 4000K
OSQ-1818-5000K	OSQ™ LED Ceiling Luminaire - 18" x 18" - 5000K

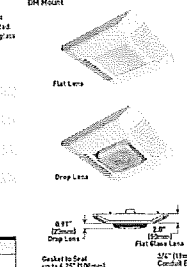
Part Number	Description	Part Number	Description
OSQ-1818-3000K	OSQ™ LED Ceiling Luminaire - 18" x 18" - 3000K	OSQ-1818-4000K	OSQ™ LED Ceiling Luminaire - 18" x 18" - 4000K
OSQ-1818-5000K	OSQ™ LED Ceiling Luminaire - 18" x 18" - 5000K	OSQ-2424-3000K	OSQ™ LED Ceiling Luminaire - 24" x 24" - 3000K
OSQ-2424-4000K	OSQ™ LED Ceiling Luminaire - 24" x 24" - 4000K	OSQ-2424-5000K	OSQ™ LED Ceiling Luminaire - 24" x 24" - 5000K



CPY Series
CPY™ LED Ceiling Luminaire

Product Description
The CPY™ Area Flood Luminaire is a recessed ceiling luminaire with a wide beam angle. It is designed for use in commercial and industrial applications. The luminaire is constructed from die-cast aluminum and features a clear polycarbonate lens. The CPY™ Area Flood Luminaire is available in two sizes: 18" and 24". The luminaire is designed for use in areas where high ceilings are required. The luminaire is available in two finishes: white and black. The luminaire is designed for use in areas where high ceilings are required. The luminaire is available in two finishes: white and black.

Performance Summary
Made in the U.S.A. of U.S. and imported parts
Listed luminaire per UL 159
Efficiency: 90 lm/W
CRI: 90
Color: 3000K, 4000K, 5000K
Input Power: 27W
Output Power: 27W
Beam Angle: 120°
Voltage: 120V
Frequency: 60Hz
Dimensions: 18" x 18" x 4.5" (457mm x 457mm x 114mm)



Accessories	Part Number	Description
Flat Lens	FL-1818	18" x 18" Flat Lens
Drop Lens	DL-1818	18" x 18" Drop Lens

Ordering Information
Part Number: CPY-1818-3000K
Part Number: CPY-1818-4000K
Part Number: CPY-1818-5000K

Part Number	Description
CPY-1818-3000K	CPY™ LED Ceiling Luminaire - 18" x 18" - 3000K
CPY-1818-4000K	CPY™ LED Ceiling Luminaire - 18" x 18" - 4000K
CPY-1818-5000K	CPY™ LED Ceiling Luminaire - 18" x 18" - 5000K

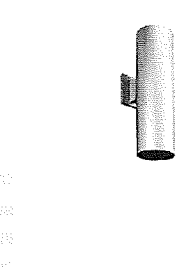
Part Number	Description	Part Number	Description
CPY-1818-3000K	CPY™ LED Ceiling Luminaire - 18" x 18" - 3000K	CPY-1818-4000K	CPY™ LED Ceiling Luminaire - 18" x 18" - 4000K
CPY-1818-5000K	CPY™ LED Ceiling Luminaire - 18" x 18" - 5000K	CPY-2424-3000K	CPY™ LED Ceiling Luminaire - 24" x 24" - 3000K
CPY-2424-4000K	CPY™ LED Ceiling Luminaire - 24" x 24" - 4000K	CPY-2424-5000K	CPY™ LED Ceiling Luminaire - 24" x 24" - 5000K



18" Cylinder LED Sconce
Decorative Outdoor - Wall Mount

Product Description
The 18" Cylinder LED Sconce is a decorative outdoor wall-mounted luminaire. It is designed for use in commercial and industrial applications. The luminaire is constructed from die-cast aluminum and features a clear polycarbonate lens. The 18" Cylinder LED Sconce is available in two finishes: white and black. The luminaire is designed for use in areas where high ceilings are required. The luminaire is available in two finishes: white and black.

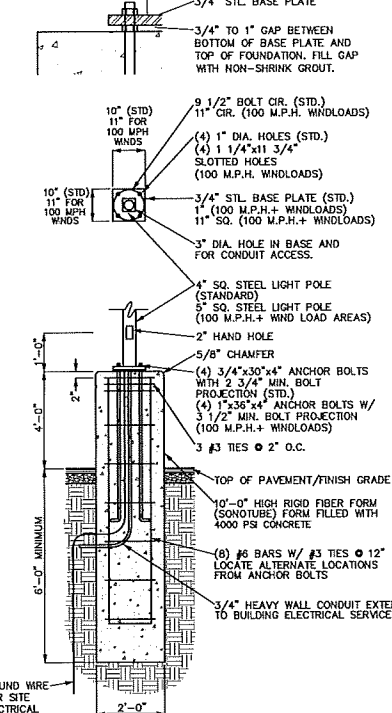
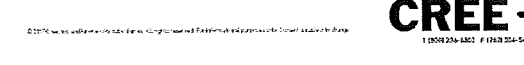
Performance Summary
Made in the U.S.A. of U.S. and imported parts
Listed luminaire per UL 159
Efficiency: 90 lm/W
CRI: 90
Color: 3000K, 4000K, 5000K
Input Power: 27W
Output Power: 27W
Beam Angle: 120°
Voltage: 120V
Frequency: 60Hz
Dimensions: 18" x 6" x 6" (457mm x 152mm x 152mm)



Accessories	Part Number	Description
Flat Lens	FL-1818	18" x 18" Flat Lens
Drop Lens	DL-1818	18" x 18" Drop Lens

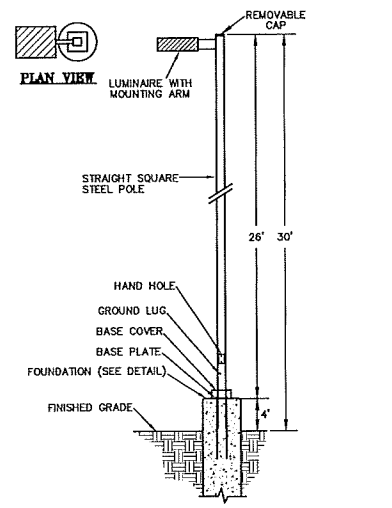
Ordering Information
Part Number: 18-CYL-3000K
Part Number: 18-CYL-4000K
Part Number: 18-CYL-5000K

Part Number	Description
18-CYL-3000K	18" Cylinder LED Sconce - 3000K
18-CYL-4000K	18" Cylinder LED Sconce - 4000K
18-CYL-5000K	18" Cylinder LED Sconce - 5000K



LIGHT POLE BASE STANDARD DETAIL
NOT TO SCALE

- NOTES**
- FOUNDATION SHOWN IS A TYPICAL DESIGN. WIND LOADS MORE THAN 100 MPH AND/OR UNSTABLE SOIL CONDITIONS MAY REQUIRE AN ALTERNATE DESIGN. VERIFY CONDITION OF SOILS WITH SOILS REPORT.
 - FOUNDATIONS SHALL EXTEND BELOW FROST DEPTH PER LOCAL CODES.
 - CONCRETE SHALL HAVE MIN 3000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
 - SEE SITE LIGHTING ELECTRICAL PLAN WITH ARCHITECTURAL PLANS FOR ADDITIONAL REQUIREMENTS.
 - VERIFY BASE PLATE BOLT PATTERN WITH POLE MANUFACTURER AND / OR SUPPLIER PRIOR TO CONSTRUCTION.



LIGHT POLE DETAIL
NOT TO SCALE

SITE LIGHTING NOTES:

- All existing on-site pole mounted light fixtures are to be removed in accordance with the project plans. The existing light poles and bases are to be salvaged where feasible. The existing electric supply is to be salvaged unless noted otherwise on the Site Electrical Plan.
- All existing light poles shall be refinished. Remove all existing rust, scale, chipped and/or peeling finish. Prepare the surface, prime and paint all light poles in accordance with the Project Manual painting specifications and requirements for exterior finishes. Paint color shall be slate gray.
- The proposed pole mounted light fixtures shall be mounted onto the existing light poles in accordance with the light fixture manufacturer's recommendations. Any new mounting holes shall be drilled and all other necessary modifications to the existing poles shall be performed prior to refinishing of the existing poles.
- Existing exterior building mounted light fixtures shall be removed and replaced in accordance with the project plans. See the building plans for additional information and specifications.
- Contact the ALDI National Account Lighting Distributor to order fixtures, mounting accessories and pole(s):
Mike Kreiner
Strategic Director - National Accounts
Cree Lighting
9201 Washington Avenue
Racine, WI 53406
Office: 262-504-5037
Cell: 224-250-1561
mike_kreiner@cree.com <mailto:mike_kreiner@cree.com>
- CAUTION!**
This site contains existing underground public and private utilities. See the project plans for locations of the known existing and proposed underground utility locations. Existing utility information provided on the project plans may be from information disclosed to this firm by the Utility Companies, Local, County or State Agencies, and/or various other sources. No guarantee is given as to the completeness or accuracy thereof. The Site Electrical Contractor shall contact the 811 Underground Public Utility Locating System or other appropriate local underground utility locating Agency, a minimum of three (3) working days prior to performing the site electrical work. The Site Electrical Contractor shall field locate all potential utility conflicts and take the necessary precautions to avoid damage to the existing underground utilities. Any damage to the existing utilities as a result of the site electrical work shall be immediately brought to the attention of the General Contractor and shall be repaired as acceptable to the Owner, the General Contractor and the Appropriate Utility Provider. If the existing site conditions create a conflict and/or prevent the Site Electrical Contractor from performing the site electrical work, then contact the Engineer of Record.
- Any existing light pole that cannot be salvaged due to damage, corrosion and/or other conditions shall be replaced. Replacement poles shall be CREE Straight Steel Poles 26"x4", unless directed otherwise by CREE. The Contractor shall field measure the bolt pattern of the existing base and order the replacement pole with the correct base installed. The Contractor shall provide ALDI with an alternate bid price per pole to remove an existing pole and install a new replacement pole in lieu of refinishing. The bid price shall include a credit for light pole refinishing.
- Any existing anchor bolts, within an existing light pole base that is to remain, that are in need of replacement due to corrosion, damage and/or other circumstances, shall be removed and replaced with retrofit anchor bolts (Hilti or equal) in accordance with the light pole and anchor bolt manufacturer's specifications and recommendations. The Contractor shall provide ALDI with an alternate bid price per anchor bolt to remove an existing anchor bolt from an existing light pole base and install a retrofit anchor bolt.
- Any existing light pole bases that cannot be salvaged due to damage, corrosion and/or other conditions shall be replaced. Replacement bases shall be constructed in accordance with the specifications provided on the project plans. The Contractor shall provide ALDI with an alternate bid price per base to remove an existing light pole base and install a new cast in place concrete light pole base in accordance with details provided on the project plans.
- No Alternate Work shall be performed without written receipt of authorization from ALDI to complete said alternate work.

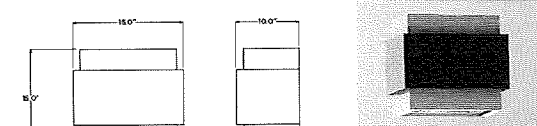
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BRIGHTON, MICHIGAN 48114

Outdoor Wall Sconce LED Exterior Series

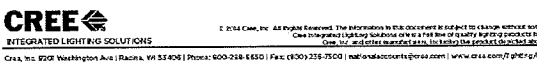
Applications: Security, pathway and perimeter lighting; ideal for entryways, walkways, and parking facilities



CATALOG #	WATTAGE / LUMENS	INPUT/OUTPUT VOLTAGE
AL-4204-EX-120-120	25W LED, 2495 Lumens	120V

DISTRIBUTION	FINISH	FEATURES
Up & Down Distribution	Polycarbonate Clear Finish GG - Silver with Gray Band	• CREE LED • 75 CRI • 5700K (+/- 5000K CCT)

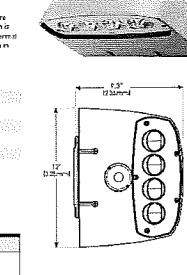
ACCESSORIES	WARRANTY
899063-DD-CSA - Uplight cover kit to convert luminaire to down light distribution	5-year limited warranty. Certain exclusions apply. For warranty terms, visit: www.cree.com/lighting/products/warranty



XSP Series
XSP™ LED Wall Mount Luminaire

Product Description
The XSP™ LED Wall Mount Luminaire is a decorative outdoor wall-mounted luminaire. It is designed for use in commercial and industrial applications. The luminaire is constructed from die-cast aluminum and features a clear polycarbonate lens. The XSP™ LED Wall Mount Luminaire is available in two finishes: white and black. The luminaire is designed for use in areas where high ceilings are required. The luminaire is available in two finishes: white and black.

Performance Summary
Made in the U.S.A. of U.S. and imported parts
Listed luminaire per UL 159
Efficiency: 90 lm/W
CRI: 90
Color: 3000K, 4000K, 5000K
Input Power: 27W
Output Power: 27W
Beam Angle: 120°
Voltage: 120V
Frequency: 60Hz
Dimensions: 18" x 6" x 6" (457mm x 152mm x 152mm)



Accessories	Part Number	Description
Flat Lens	FL-1818	18" x 18" Flat Lens
Drop Lens	DL-1818	18" x 18" Drop Lens

Ordering Information
Part Number: XSP-1818-3000K
Part Number: XSP-1818-4000K
Part Number: XSP-1818-5000K

Part Number	Description
XSP-1818-3000K	XSP™ LED Wall Mount Luminaire - 18" x 18" - 3000K
XSP-1818-4000K	XSP™ LED Wall Mount Luminaire - 18" x 18" - 4000K
XSP-1818-5000K	XSP™ LED Wall Mount Luminaire - 18" x 18" - 5000K



DESIGN: FAF	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: SES						
CHECK: CAG						

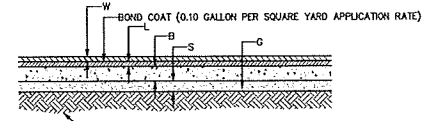
ALDI FOOD MARKET #51
HOWELL, MI

SITE LIGHTING NOTES AND DETAILS

CLIENT: ALDI Inc.
2625 N. STOCKBRIDGE RD.
WEBBERVILLE, MICHIGAN 48892
(517) 521-3907

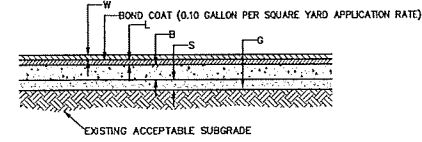
SCALE: N/A
PROJECT No.: 9173290
DWG NAME: 3290 LT
ISSUED: JAN 29, 2018

LT2



STANDARD DUTY BITUMINOUS PAVEMENT CROSS SECTION
NOT TO SCALE

KEY	DESCRIPTION	MATERIAL SPECIFICATION	MINIMUM COMPACTED THICKNESS
W	WEARING COURSE	MDOT 4E3 OR 1100T	1.5"
L	LEVELING COURSE	MDOT 13A	1.5"
B	AGGREGATE BASE	MDOT 21AA (SEE NOTE 4)	8"
S	GRANULAR SUBBASE	MDOT CLASS II (SEE NOTE 4)	12"
G	GEOGRID	N/A	N/A

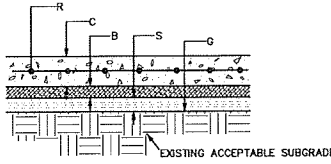


HEAVY DUTY BITUMINOUS PAVEMENT CROSS SECTION
NOT TO SCALE

KEY	DESCRIPTION	MATERIAL SPECIFICATION	MINIMUM COMPACTED THICKNESS
W	WEARING COURSE	MDOT 4E3 OR 1100T	1.5"
L	LEVELING COURSE	MDOT 13A	4"
B	AGGREGATE BASE	MDOT 21AA (SEE NOTE 4)	8"
S	GRANULAR SUBBASE	MDOT CLASS II (SEE NOTE 4)	12"
G	GEOGRID	N/A	N/A

BITUMINOUS PAVEMENT CROSS SECTION NOTES:

- The construction specifications of the Local Municipality are a part of this work. Refer to the General Notes and the Bituminous Pavement Cross Section Details on the Project Plans for additional requirements.
- The Geotechnical Evaluation Report for the project site is a part of this work. The General Contractor, Earthwork Subcontractor, and Bituminous Pavement Subcontractor shall obtain, review and become familiar with the Geotechnical Evaluation Report.
- The bituminous pavement cross section specifications are based on typical weather conditions during the June through September Construction Season. If the bituminous parking area and/or bituminous driveways are to be constructed during any other time of the year and/or if weather conditions are unseasonably wet, then modifications to the bituminous pavement cross section specifications may be necessary. If either of these conditions exists, then contact the Material Testing Engineer and/or the Project Engineer for additional requirements.
- The existing granular subbase and aggregate base materials are to be left in place and salvaged for reuse to the greatest extent feasible. The existing aggregate base material shall be finished graded and compacted to a minimum of 95% of the maximum unit weight, Modified Proctor, prior to placement of the bituminous leveling course. In areas of new pavement and in locations where the existing granular subbase and/or aggregate base materials cannot be salvaged, provide the appropriate subbase/base materials in accordance with the Bituminous Pavement Cross Section Details and Specifications provided on the Project Plans. In locations where proposed changes in surface grades require the placement of additional aggregate base material, provide the appropriate aggregate base material in accordance with the Bituminous Pavement Cross Section Details and Specifications provided on the Project Plans.
- Any existing subgrade soils that are exposed during construction procedures shall be prepared in accordance with the Geotechnical Evaluation Report prior to placement of the granular subbase material, including fine grading and compaction to a minimum of 95% of the maximum unit weight, Modified Proctor. Unsuitable soils found within the 1 on 1 influence zone of the proposed pavement areas, such as muck, peat, topsoil, marl, silt or other unstable materials shall be excavated and replaced with structural fill. Structural fill shall be MDOT Class II granular material placed in accordance with the General Notes on the Project Plans and the Geotechnical Evaluation Report. The bituminous pavement subgrade shall be proof rolled in accordance with the Geotechnical Evaluation Report. The Material Testing Engineer and/or the Project Engineer shall observe the subgrade proof roll. Areas of subgrade that do not pass a proof roll inspection shall be undercut in accordance with the Subgrade Undercut Notes and Details on the Project Plans. Alternative means of subgrade stabilization may be considered when recommended by the Material Testing Engineer. Alternative methods shall not be performed without receipt of the Owner's Authorization.
- The bituminous pavement granular subbase material shall be MDOT Class II sand. No granular subbase material substitutions shall be permitted without prior written approval of the Project Engineer and receipt of the Owner's Authorization. The granular subbase shall be compacted to a minimum of 95% of the maximum unit weight, Modified Proctor.
- The bituminous pavement aggregate base material shall be MDOT 21AA crushed angular limestone or crushed angular natural stone aggregate material. Crushed concrete shall NOT be utilized for the standard or heavy duty bituminous pavement aggregate base. No aggregate base material substitutions shall be permitted without prior written approval of the Project Engineer and receipt of the Owner's Authorization. The aggregate base shall be compacted to a minimum of 95% of the maximum unit weight, Modified Proctor.
- The bituminous pavement leveling course material shall be MDOT 13A bituminous material placed in 1 lift. The bituminous pavement wearing course material shall be MDOT 4E3 or MDOT 1100T bituminous material placed in 1 lift. The bituminous pavement leveling and wearing courses shall NOT be combined into a single course. No bituminous material substitutions shall be permitted without prior written approval of the Project Engineer and receipt of the Owner's Authorization. Compaction of the leveling course shall be achieved prior to placement of the wearing course. Any sediment, soil, debris and other foreign materials that accumulate on the leveling course shall be removed prior to placement of the wearing course. The bond coat shall be sprayed on the leveling course within 24 hours of placement of the wearing course. The bituminous pavement material shall be compacted to a minimum of 95% of the 50-blow Marshall Density.
- Placement of the bituminous pavement leveling course and bituminous pavement wearing course shall be performed in two separate mobilizations. Placement of the bituminous pavement wearing course shall be postponed as directed by the General Contractor and/or the Owner until the majority of the construction activities are complete. Repair of the bituminous leveling course may be necessary due to construction traffic and/or any delay in placement of the bituminous wearing course. The bituminous leveling course shall be repaired as directed by Material Testing Engineer and/or Owner prior to placement of the bituminous wearing course.
- The existing bituminous pavement to remain shall be resurfaced where specified on the project plans. In areas where the proposed top of pavement elevation is less than 1.5" above the existing top of pavement elevation, the existing bituminous pavement shall be milled to a depth of 1.5" below the PROPOSED top of pavement elevation. In areas where the proposed top of pavement elevation is 1.5" or greater above the existing top of pavement elevation, no milling shall be required. In locations where the proposed top of pavement elevation is 2.5" or greater above the existing top of pavement elevation, a leveling wedge of bituminous pavement leveling course material shall be placed over the existing bituminous pavement in accordance with bituminous pavement cross section note 8 prior to placement of the final bituminous pavement wearing course. In locations where the compacted thickness of the leveling wedge will exceed 2.5", then the leveling wedge shall be placed in multiple courses not to exceed 2.5" compacted thickness per course.
- Bituminous mix designs shall be developed in accordance with the MDOT HMA Production Manual. The Contractor shall submit the bituminous pavement mix designs to the Material Testing Engineer for review and approval a minimum of 3 business days prior to use. Bituminous pavement work shall not commence without receipt of the Material Testing Engineer's approval of the bituminous mix designs. The bituminous pavement mix design shall be a virgin mix. RAP mixtures shall not be utilized without prior written approval of the Material Testing Engineer and receipt of the Owner's authorization. RAP mixtures, if authorized, shall be designed and produced in accordance with MDOT Tier I or Tier II RAP Mixture Specifications. In no instance shall MDOT Tier III or non-MDOT RAP mixtures be permitted or utilized.

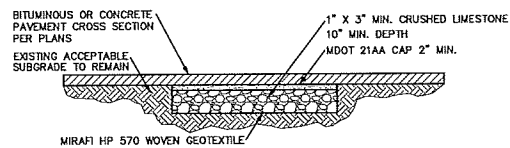


HEAVY DUTY CONCRETE PAVEMENT CROSS-SECTION
NOT TO SCALE

KEY	DESCRIPTION	MATERIAL SPEC.	MIN. THICKNESS
R	REINFORCEMENT	SEE NOTE 8	SEE NOTE 8
C	CONCRETE	MDOT P1-1A - 6 SACK	8"
B	AGGREGATE BASE	N/A	N/A
S	GRANULAR SUBBASE	MDOT CLASS II	12"
G	GEOGRID	N/A	N/A

CONCRETE PAVEMENT CROSS SECTION NOTES:

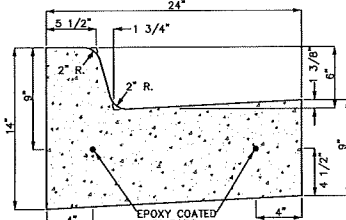
- The construction specifications of the Local Municipality are a part of this work. Refer to the General Notes and the Heavy Duty Concrete Pavement Cross Section Detail on the Project Plans for additional requirements.
- The Geotechnical Evaluation Report for the project site, is a part of this work. The General Contractor, Earthwork Subcontractor and Concrete Pavement Subcontractor shall obtain, review and become familiar with the Geotechnical Evaluation Report.
- The concrete pavement cross section specifications are based on typical weather conditions during the June through September Construction Season. If the concrete pavement areas are to be constructed during any other time of the year and/or if weather conditions are unseasonably wet, then modifications to the concrete pavement cross section specifications may be necessary. If either of these conditions exists, then contact the Material Testing Engineer and/or the Project Engineer for additional requirements.
- The existing subgrade soils shall be prepared in accordance with the Geotechnical Evaluation Report. Unsuitable soils found within the 1 on 1 influence zone of the proposed pavement areas, such as muck, peat, topsoil, marl, silt or other unstable materials shall be excavated and replaced with structural fill. Structural fill shall be MDOT Class II granular material placed in accordance with the General Notes on the Project Plans and the Geotechnical Evaluation Report.
- The concrete pavement subgrade shall be prepared and proof rolled in accordance with the Geotechnical Evaluation Report. The Material Testing Engineer and/or the Project Engineer shall observe the subgrade proof roll. Areas of subgrade that do not pass a proof roll inspection shall be undercut in accordance with the Subgrade Undercut Notes and Details on the Project Plans. Alternative means of subgrade stabilization may be considered when recommended by the Material Testing Engineer. Alternative methods shall not be performed without receipt of the Owner's Authorization.
- The concrete pavement compacted subbase material shall be MDOT Class II granular material. No subbase material substitutions shall be permitted without prior written approval of the Project Engineer and receipt of the Owner's Authorization. The subbase shall be compacted to a minimum of 95% of the maximum unit weight, Modified Proctor.
- Concrete material shall be MDOT P1 (I-A) 6.0 sack concrete pavement mixture with a minimum 28-day design compressive strength of 4,000 PSI and 6.5% (+/-1.5%) entrained air. The Contractor shall submit concrete mix design and aggregate mechanical analysis report to the Material Testing Engineer for review and approval prior to use.
- Heavy Duty Concrete Pavement placed within the Truck Well shall be Reinforced with epoxy coated deformed #5 bars at 12" on center each way placed at mid-depth of the concrete, unless noted otherwise on the Project Structural Plans.
- Install transverse contraction joints and longitudinal contraction joints at the locations specified on the Project Structural Plans. Joints shall be 2" deep, unless noted otherwise on the Project Structural Plans. Tool joints in fresh concrete or saw cut within 4 hours after placement with soft cut saws.
- Provide 1" asphalt fiber control joint between concrete pavement and all other concrete structures such as concrete building foundations, concrete curb and concrete sidewalks.
- The Concrete Pavement shall not be exposed to vehicular traffic until the concrete has reached at least 75% of the design flexural strength.



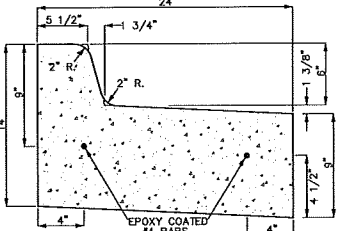
SUBGRADE UNDERCUT AND REPLACEMENT CROSS-SECTION
NOT TO SCALE

PAVEMENT SUBGRADE UNDERCUT NOTES:

- Areas of pavement subgrade that do not pass a proof roll inspection shall be undercut when directed by the Material Testing Engineer and/or Project Engineer. All undercut work shall be witnessed and field measured by the Material Testing Engineer and/or Project Engineer. Copies of the field notes depicting the field measurements of the undercut areas shall be provided to the General Contractor and/or Earthwork Subcontractor and ALDI Inc.
- Undercut areas shall be excavated to a depth of 12" below the proposed subgrade elevation using an Excavator or Backhoe with a Smooth Edged Ditching Bucket so as not to scarify the underlying soils. Undercut areas shall remain free of all construction traffic and equipment to avoid rutting and/or tracking of the underlying soils.
- Mirafix HP 570 Woven Geotextile Fabric (or approved equal) shall be placed over all undercut areas per the Manufacturer's specifications. Overlap all seams a minimum of 12" unless specified otherwise by the Manufacturer.
- Backfill the undercut areas with 1' x 3" minimum size crushed angular limestone up to the proposed subgrade elevation. Crushed concrete material shall NOT be substituted for crushed limestone material. The backfill material shall be spread with a Wide Track Dozer to minimize loading on the underlying soils. Static roll the backfill material with a large smooth drum roller.
- Construct the appropriate Bituminous or Concrete Pavement Cross Section over the undercut areas per the Project Plans.
- The General Contractor and/or Earthwork Subcontractor shall provide ALDI Inc with unit pricing to perform subgrade undercut work per square yard (SY) of undercut area. Undercut Unit Pricing SHALL include excavation, loading, hauling and offsite disposal of excess spoils, placement of geotextile fabric and backfill including all labor, equipment and materials necessary to complete pavement subgrade undercut work as specified on the Project Plans.



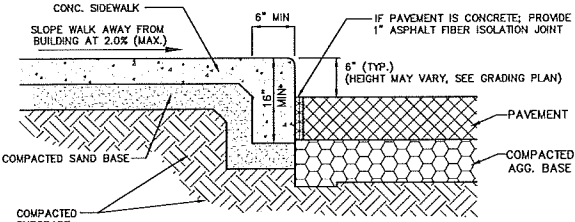
MDOT TYPE F4 CURB
NOT TO SCALE



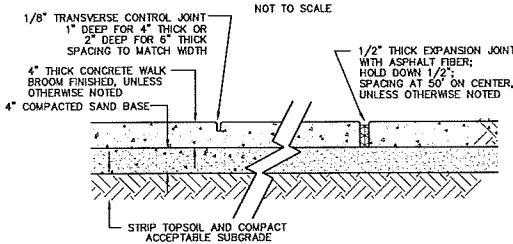
MDOT TYPE F4 CURB REVERSE PITCH
NOT TO SCALE

CONCRETE CURB NOTES:

- Refer to the project plans for the proposed locations of the specific curb types.
- The construction specifications of the appropriate Local Municipality are a part of this work. Refer to the General Notes and Curb Cross Section Details on the project plans for additional requirements.
- Extend the base and/or subbase material of the appropriate adjacent pavement cross-section horizontally to 1 foot behind the back of curb. Concrete curb shall be constructed on no less than 6" of combined depth of compacted base/subbase material.
- Concrete material shall be MDOT P1 (I-A) 6.0 sack concrete pavement mixture with a minimum 28 day design compressive strength of 4,000 PSI and 6.5% (+/-1.5%) entrained air. Contractor shall submit concrete mix design and aggregate mechanical analysis report to the Local Municipality and Engineer for review and approval prior to use.
- Install transverse contraction control joints in concrete curb with 1" minimum depth at 10' on center. Tool joints in fresh concrete or saw cut within 8 hours.
- Install transverse expansion control joints in concrete curb as follows: 400' maximum on center, at spring points of intersecting streets and within 10' on each side of catch basins. Transverse expansion control joints shall be 1" thick asphalt fiber joint filler matching entire curb cross section.
- Provide 1" asphalt fiber control joint between back of curb and all other concrete structures, such as concrete sidewalks and concrete driveways.
- Curb Contractor shall provide final adjustment of catch basin castings in curb. Castings shall be tucked pointed to structure water tight with concrete or mortar inside and outside of casting.
- Install curb cuts for all existing and proposed sidewalks and pedestrian ramps in accordance with the American Disabilities Act and the Barrier Free Design requirements of the appropriate Local, County and/or State Agency. Refer to MDOT Standard Plan R-28, latest revision. Install curb cuts for all existing and proposed vehicular ramps and drives as noted on the project plans.



SIDEWALK WITH INTERGAL CURB & ISOLATION JOINT DETAIL
NOT TO SCALE



SIDEWALK CROSS SECTION
NOT TO SCALE

SIDEWALK CROSS SECTION NOTES:

- The construction specifications of the Local Municipality are a part of this work. Refer to the General Notes and the Sidewalk Cross Section Details on the Project Plans for additional requirements.
- Sidewalk widths may vary. See the Project Plans for the proposed sidewalk width at each location. Increase sidewalks to 6" minimum thickness at driveways and other areas exposed to vehicular traffic.
- The existing subgrade soils shall be prepared prior to placement of the granular subbase. Unsuitable soils found within the 1 on 1 influence zone of the proposed sidewalk areas, such as muck, peat, topsoil, marl, silt or other unstable materials shall be excavated and replaced with structural fill. Structural fill shall be MDOT Class II granular material placed in accordance with the General Notes on the Project Plans.
- The sidewalk compacted subbase material shall be MDOT CL II sand. No subbase material substitutions shall be permitted without prior written approval of the Project Engineer and receipt of the Owner's Authorization. The subbase shall be compacted to a minimum of 95% of the maximum unit weight, modified proctor.
- Concrete material shall be MDOT P1 (I-A) 6.0 sack concrete pavement mixture with a minimum 28 day design compressive strength of 4,000 PSI and 6.5% (+/-1.5%) entrained air. The Contractor shall submit concrete mix design and aggregate mechanical analysis report to the Material Testing Engineer and/or Project Engineer for review and approval prior to use.
- Install transverse contraction control joints in accordance with the Sidewalk Cross Section Detail. Space contraction control joints at match sidewalk width, but no greater than 10' on center. Tool joints in fresh concrete or saw cut within 8 hours.
- Install transverse expansion control joints in accordance with the Sidewalk Cross Section Detail. Space expansion control joints at 50 feet on center maximum. Transverse expansion control joints shall be 1/2" thick asphalt fiber joint filler matching entire sidewalk cross section.
- Provide 1" asphalt fiber control joint between concrete sidewalks and all other concrete structures, such as concrete building foundations, concrete curb and concrete driveways.
- Construct all Barrier Free Sidewalk Ramps in accordance with the American Disabilities Act and the Barrier Free Design Requirements of the appropriate Local, County or State Agency with jurisdiction over the project. Refer to MDOT Standard Plan R-28, latest revision.
- The Concrete Pavement shall not be exposed to vehicular traffic until the concrete has reached at least 75 % of the design flexural strength.

GENERAL NOTES:

- Contractor shall perform the work in accordance with the requirements of the appropriate Local, County and State Agencies and all other Government and Regulatory Agencies with jurisdiction over the project. Contractor shall notify the appropriate Agencies in advance of each stage of work in accordance with each Agency's requirements.
- Contractor shall comply with all permit, insurance, licensing and inspection requirements associated with the work. Prior to construction, Contractor and Owner/Developer shall determine who is responsible for obtaining each required permit. Contractor shall verify that the each required permit has been obtained prior to commencement of the stage of work associated with the required permit(s).
- Contractor shall furnish liability insurance and property damage insurance to save harmless the Owner, Developer, Architect, Engineer, Surveyor and Government Agencies for any accident occurring during the construction period. Refer to the appropriate Local, County and State Agencies for additional requirements. Copies of insurance certifications shall be made available to the Owner/Developer.
- Contractor shall conduct and perform work in a safe and competent manner. Contractor shall perform all necessary measures to provide for traffic and pedestrian safety from the start of work and through substantial completion. Contractor shall determine procedures and provide safety equipment such as traffic controls, warning devices, temporary pavement markings and signs as needed. Contractor shall comply with the safety standards of the State Department of Labor, the occupational health standards of the State Department of Health and safety regulations of the appropriate Local, County, State and Federal Agencies. Refer to the safety specifications of the appropriate Regulatory Agencies. The Contractor shall designate a qualified employee with complete job site authority over the work and safety precautions; said designated employee shall be on site at all times during the work.
- Contractor shall coordinate scheduling of all work in the proper sequence, including work by Subcontractors. Additional costs due to improper planning by Contractor or work done out of sequence as determined by standard acceptable construction practices, shall be Contractor's responsibility.
- Contractor shall contact the 811 Public Underground Utility Locating System or other appropriate local underground utility locating Agency, a minimum of three (3) working days prior to construction. Existing utility information on the project plans may be from information disclosed to this firm by the Utility Companies, Local, County or State Agencies, and/or various other sources. No guarantee is given as to the completeness or accuracy thereof. Prior to construction, locations and depths of all existing utilities (in possible conflict with the proposed improvements) shall be verified in the field.
- Contractor shall coordinate scheduling a Pre-Construction Meeting with Engineer prior to commencement of work.
- The Local Municipality, County and/or State in which the project is located may require an Engineer's Certification of construction of the proposed site improvements. Contractor shall verify the certification requirements with Engineer prior to commencement of work. Contractor shall coordinate construction staking, testing, documentation submittal and observation with the appropriate Agency, Surveyor and/or Engineer as required for Engineer's Certification and Government Agency Acceptance. All materials used and work done shall meet or exceed the requirements of certification and acceptance, the contract documents and the material specifications noted on the project plans. Any materials used or work done that does not meet said requirements, contract documents and/or specifications shall be replaced and/or redone at Contractor's expense. The Owner/Developer may wait for test results, certifications and/or Agency reviews prior to accepting work.
- Engineer may provide subsurface soil evaluation results, if available, to Contractor upon request. Subsurface soil evaluation results, soils maps and/or any other documentation does NOT guarantee existing soil conditions or that sufficient, acceptable on-site granular material is available for use as structural fill, pipe bedding, pipe backfill, road subbase or use as any other granular material specified on the project plans. On-site granular material that meets or exceeds the material specifications noted on the project plans may be used as structural fill, pipe bedding, pipe backfill and/or road subbase material. On-site granular material shall be stockpiled and tested as acceptable to the appropriate Agency and/or Engineer prior to use.
- During the performance of their work, Contractor shall be solely responsible for determining soil conditions and appropriate construction methods based on the actual field conditions. Contractor shall furnish, install and maintain sheeting, shoring, bracing and/or other tools and equipment and/or construction techniques as needed for the safety and protection of the workers, pedestrians and vehicular traffic and for protection of adjacent structures and site improvements.
- Contractor shall install temporary and permanent soil erosion and sedimentation control devices at the appropriate stages of construction in accordance with the appropriate regulatory Agencies. Refer to Soil Erosion and Sedimentation Control Plans and Notes on the project plans.
- Structural fill shall be placed as specified on the project plans and within the 1 on 1 influence zone of all structures, paved areas and other areas subject to vehicular traffic. Structural fill shall be placed using the controlled density method (12" maximum lifts, compacted to 95% maximum unit weight, modified proctor). Fill material shall meet or exceed the specifications noted on the project plans or as directed by Engineer when not specified on the project plans.
- All existing monuments, property corners, ground control and benchmarks shall be protected and preserved; and if disturbed by Contractor, shall be restored at Contractor's expense. Contractor shall notify Surveyor of any conflicts between existing monuments, property corners, ground control and/or benchmarks and the proposed site improvements.
- Contractor shall notify Owner/Developer and Engineer immediately upon encountering any field conditions, which are inconsistent with the project plans and/or specifications.
- When noted on the project plans for demolition and/or removal, Contractor shall remove existing structures, building and debris and recycle and/or dispose of in accordance with Local, County, State and Federal regulations.
- Contractor shall remove excess construction materials and debris from site and perform restoration in accordance with the project plans and specifications. Disposing of excess materials and debris shall be performed in accordance with Local, County, State and Federal regulations.
- Construction access to the site shall be located as acceptable to the Owner/Developer and to the appropriate Local, County and/or State Agency with jurisdiction over the road(s) providing access to the site. Construction access shall be maintained and cleaned in accordance with the appropriate Local, County and/or State Agencies and as directed by Owner/Developer and/or Engineer.
- Contractor shall take necessary precautions to protect all site improvements from heavy equipment and construction procedures. Damage resulting from Contractor actions shall be repaired at Contractor's expense.

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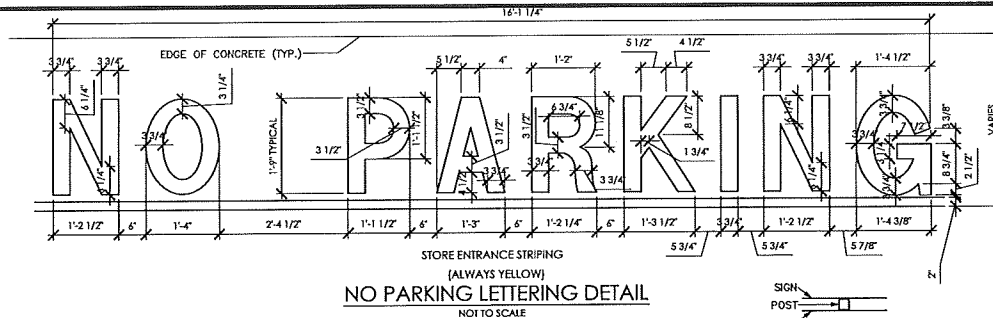
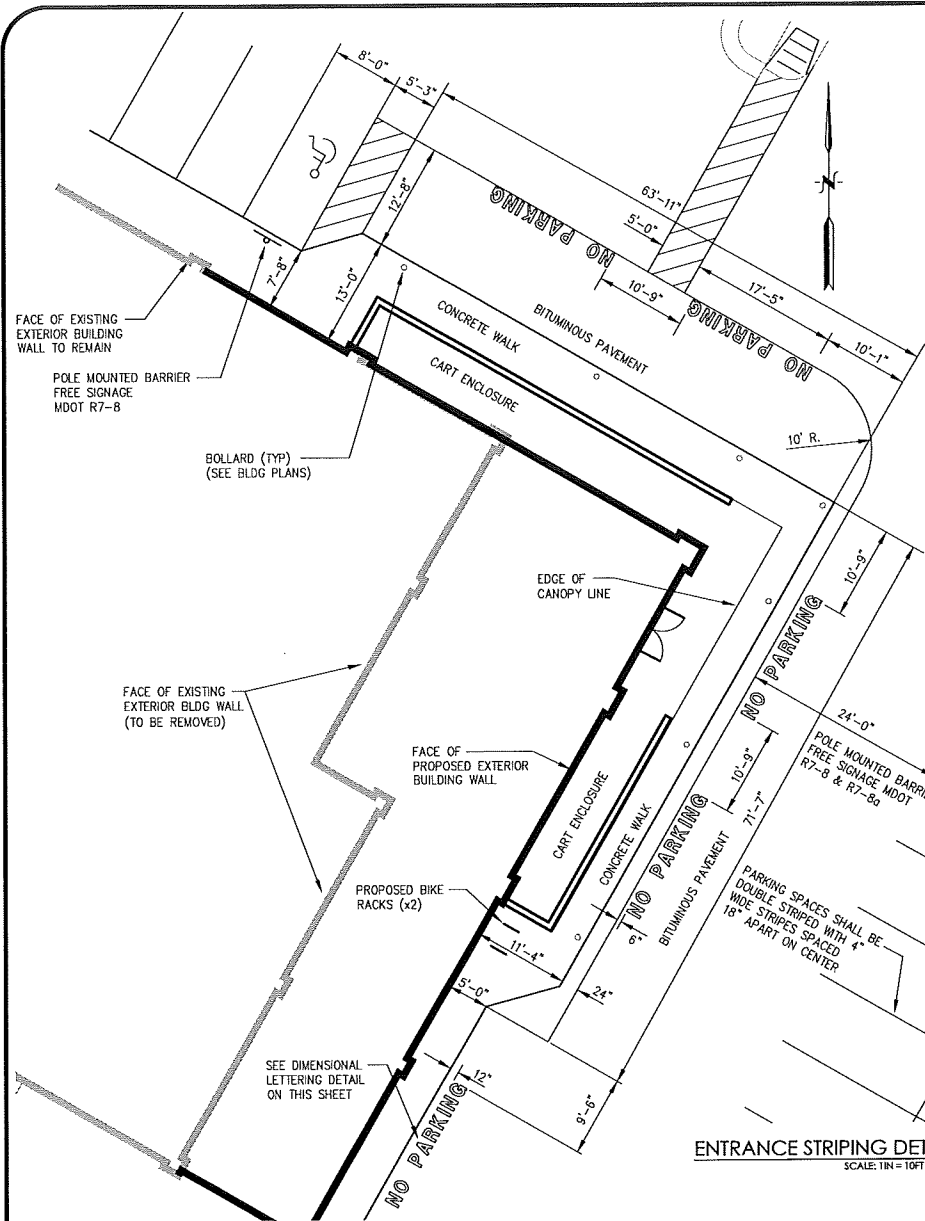
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DRAFT: SES						
CHECK: CAG						

ALDI FOOD MARKET #51
HOWELL, MI

SITE PAVEMENT NOTES & DETAILS

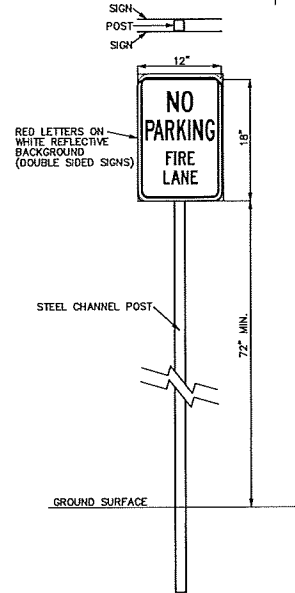
CLIENT:	SCALE: NO SCALE
ALDI Inc. 2625 N. STOCKBRIDGE RD. WEBBERVILLE, MICHIGAN 48892 (517) 621-3907	PROJECT No.: 9173290 DWG NAME: 3290 DT ISSUED: JAN 29, 2018

DT1



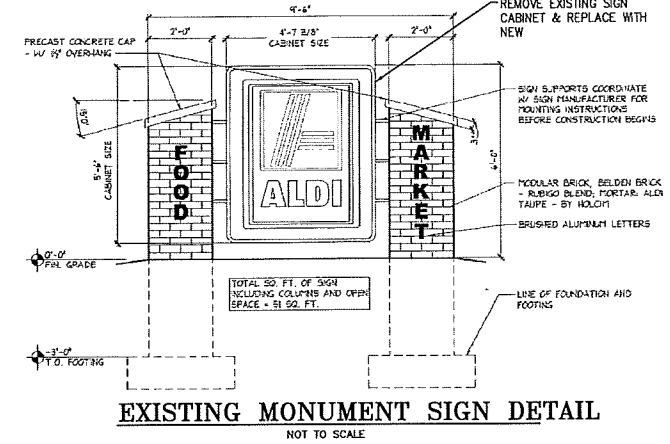
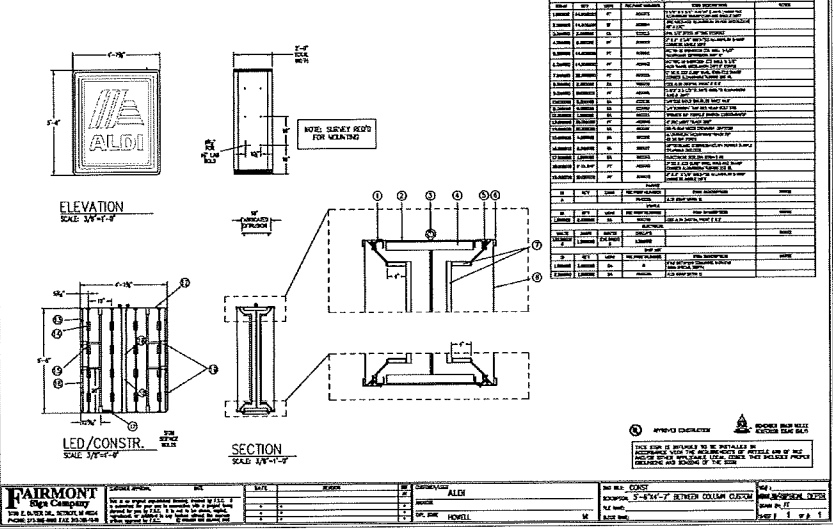
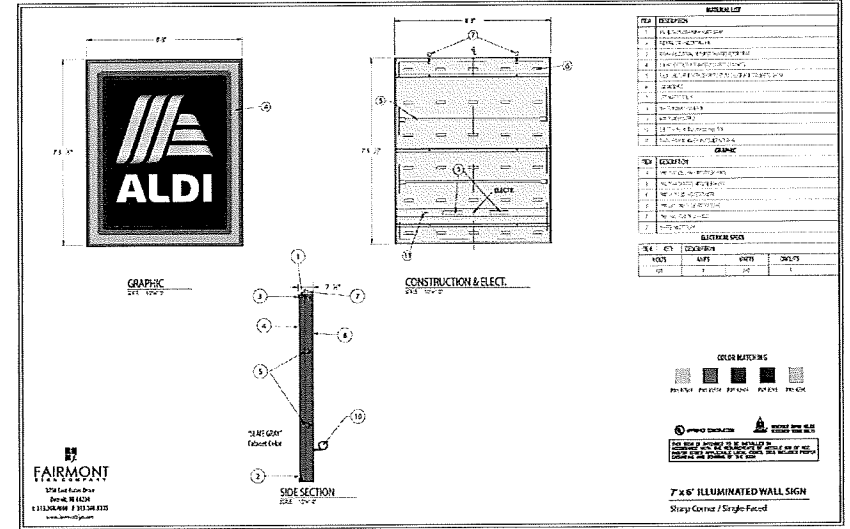
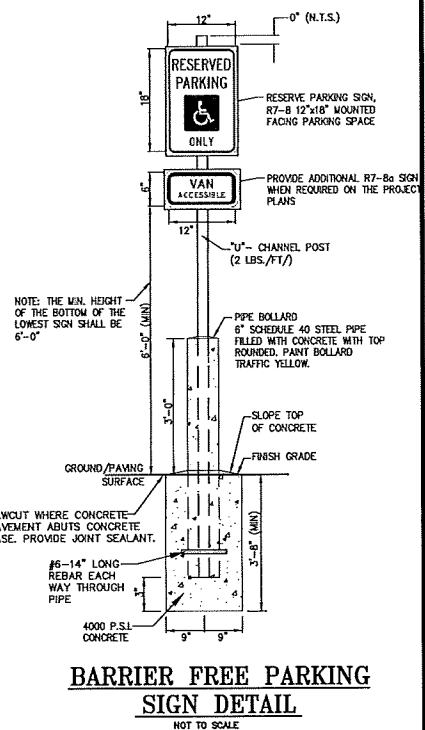
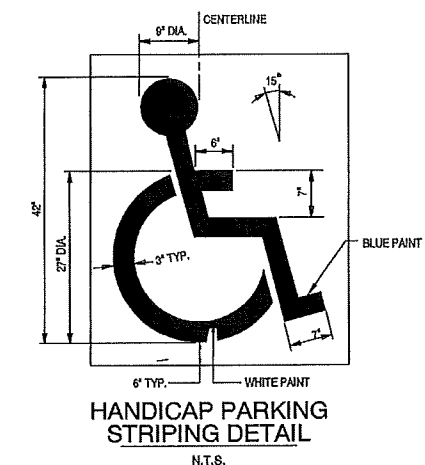
SIGNAGE AND PAVEMENT MARKING NOTES:

- Pavement markings shall be in accordance with the type, color, size and locations shown on the plans. If the information on the plans is not complete and the authority having jurisdiction does not have specific requirements, then use the following: Paint shall be supplied in accordance with AASHTO: M 248 latest addition. Colors shall be as follows: (YELLOW - parking stalls, loading zones, no parking zones and fire lanes) (WHITE - stop bars, pedestrian crossings, lane demarcations, directional arrows and lettering) (BLUE - handicap parking stalls and symbols). Stripe widths shall be as follows: (4" - parking spaces, driveway lanes, barrier free loading zones and no parking zones) (12" - crosswalks) (24" - stop bars).
- The pavement shall be clean and free of dirt, dust, moisture, oils and other foreign materials at time of marking application. Any old pavement markings shall be removed unless paints are compatible and overlay identically. The surface of the pavement prior to application shall be a minimum of 45 degrees F and rising unless the Manufacturer's recommendations are greater.
- The signage shall be in accordance with the type, color, size and locations shown on the plans in accordance with AASHTO M268. The signage shall be provided in accordance with the Local Municipality and the Michigan Manual of Uniform Traffic Devices latest edition.
- Posts, brackets and frames shall be steel per ASTM A-36, A-242, A-441, A-572, A588, Grade 50 and hot dip galvanized in accordance with ASTM A123. All cutting, drilling and/or other pole modifications shall be painted with galvanized paint. All mounting hardware shall be stainless steel.
- Sign post footings shall be a minimum of 3'-6" deep and 8" in diameter unless poor soils or frost conditions require greater depth and/or diameter. Sign posts shall be kept plumb, 6 inches off the bottom of footing excavation and centered as 3000-psi concrete is placed under and around the sign post. The overall sign and post system should be able to withstand 33 pounds per square foot. All signs located in paved areas or with less than 3 feet of clearance between the centerline of sign post and the back of curb and/or edge of pavement shall be installed in a pipe bollard. Pipe bollards shall be 6" diameter schedule 40 steel pipe. Pipe bollards shall be filled with concrete that is rounded at the top of the bollard. Bollards shall be painted traffic yellow. Increase the sign post footing diameter to 14" minimum for pipe bollards and embed the bollard into the concrete footing a minimum of 3 feet below proposed finish grade.
- Signs shall not be mounted on posts until after concrete has cured for a minimum of seven days or 3/4 strength is achieved.
- All barrier free striping and signage shall meet the Americans with Disabilities Act (ADA) requirements.
- All Fire Lane signs shall have a Red Border and Red Letters on White Background. All Fire Lane signs shall be Reflective. Fire lane striping and signage shall meet the requirements of the Local Building Inspector and Fire Department.
- "Mounting Height" shall be the minimum height of the bottom of the sign above finish grade. When signs are located downhill from the roadway, driveway and/or parking area, then the "Mounting Height" shall be the height of the bottom of the sign above the top of pavement finish grade at the nearest edge of pavement adjacent to the sign.
- All Traffic Control and Fire Lane signs shall be installed at 3 feet behind the back of curb (and/or edge of pavement) to the centerline of the sign post unless noted otherwise on the project plans.
- The Contractor(s) and/or Subcontractor(s) responsible for installation of the sign posts shall contact the 811 Public Underground Utility Locating System a minimum of three (3) working days prior to installation of the signposts. Install the sign posts in the locations specified on the project plans. When underground utilities conflict with the proposed sign post locations, field adjust the sign locations the minimum amount necessary to safely clear the underground utilities. Maintain a minimum of 2 feet of clearance between the edge of sign and the back of curb and/or edge of sidewalk.



SIGN SCHEDULE

SGN	KEY	SIZE (W x H)	TYPE OR MOUNT	MOUNTING HEIGHT	QUANTITY
RESERVED PARKING ONLY	R7-8	12' x 18'	POST MOUNTED	7'-6"	5
			BUILDING MOUNTED	7'-6"	0
VAN ACCESSIBLE	R7-8a	12' x 6'	POST MOUNTED	7'-0"	4
NO PARKING FIRE LANE	FIRE LANE	12' x 18'	POST MOUNTED	6'-0"	10



- MONUMENT SIGN NOTES:**
- The existing monument sign cabinet shall be removed in accordance with the project plans. The existing monument and foundation shall be salvaged for reuse. The existing monument sign electric supply shall be salvaged for reuse unless noted otherwise on the Site Electrical Plan with the Building Plans. See the Site Electrical Plan for additional requirements and/or specifications.
 - The existing monument shall be power washed.
 - The proposed monument sign cabinet shall be mounted onto the existing monument in accordance with the monument sign cabinet manufacturer's recommendations.

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DESIGN: FAF	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: SES	1	04/10/17	REVISED PER CITY AND CLIENT REVIEW COMMENTS			
CHECK: CAG						

ALDI FOOD MARKET #51
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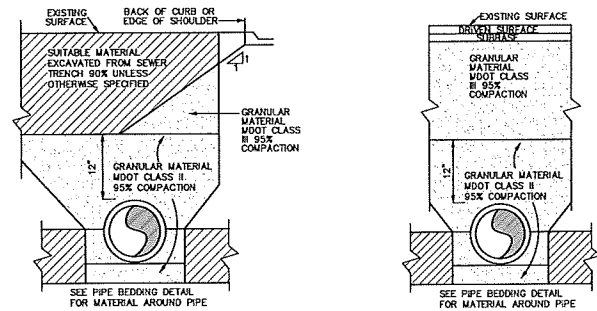
SIGNAGE & PAVEMENT MARKING NOTES & DETAILS

CLIENT:
ALDI Inc.
2625 N. STOCKBRIDGE RD.
WEBBERVILLE, MICHIGAN 48892
(517) 521-3907

SCALE: AS NOTED
PROJECT No.: 9173290
DWG NAME: 3290 DT
ISSUED: FEB 21, 2018

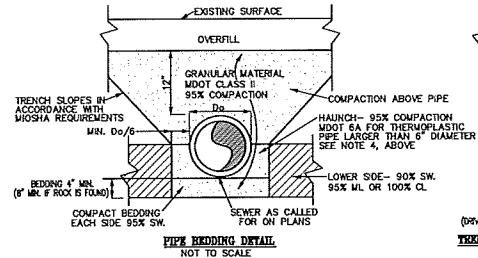
DT2

CLEANOUT DIA.	FRAME AND COVER
4"-8"	E&W 1578Z-A
10"-18"	E&W 1040Z-A-STORM

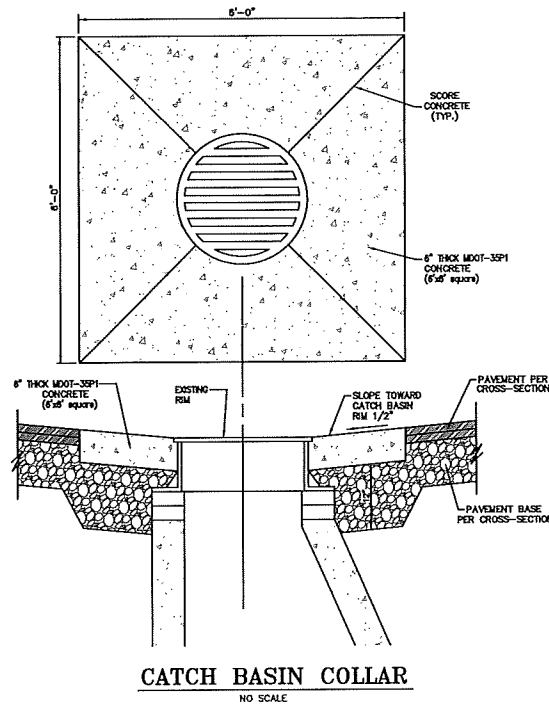


TRENCH A - PIPE UNDER OR WITHIN INFLUENCE OF DRIVE SURFACE
NOT TO SCALE

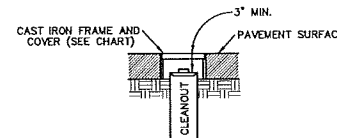
- NOTES:
- COMPACTION PRESENTED AS STANDARD PROCTOR VALUES.
 - SOIL TYPES: AASHTO DESIG. GRAVEL SANDY (SW) A1, A3 SANDY SILTY (UL) A2, A4 SILTY CLAY (CL) A5, A6, A7
 - SOIL IN HAUNCH AND LOWER SIDE ZONES OUTSIDE OF D₀/6 FROM SPRING LINE SHALL BE COMPACTED TO AT LEAST THE SAME COMPACTION AS THE SOIL IN THE OVERFILL ZONE.
 - MATERIALS AROUND THERMO. PLASTIC PIPE WITH DIAMETER 6 INCHES SHALL PASS 0.5 INCH SEVE. MATERIALS AROUND OTHER PIPES SHALL PASS 1.5 INCH SEVE.



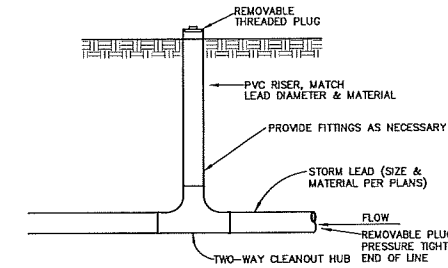
TRENCH DETAILS
NOT TO SCALE



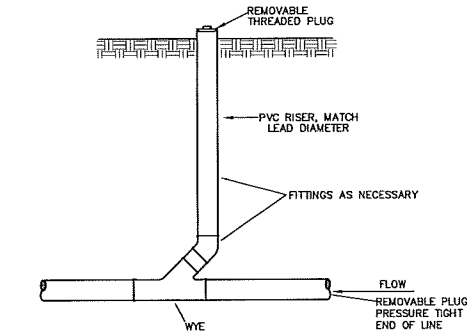
CATCH BASIN COLLAR
NO SCALE



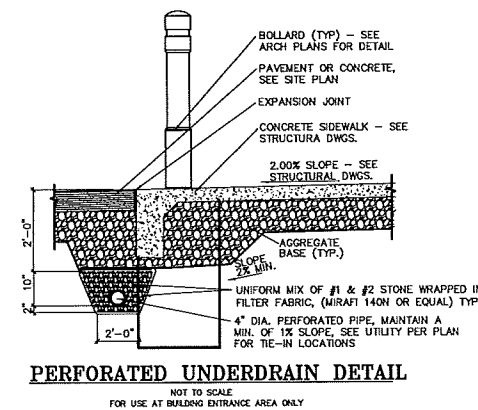
CLEANOUT IN PAVED AREA
NOT TO SCALE



TWO-WAY CLEANOUT FOR ROOF DRAIN
NOT TO SCALE



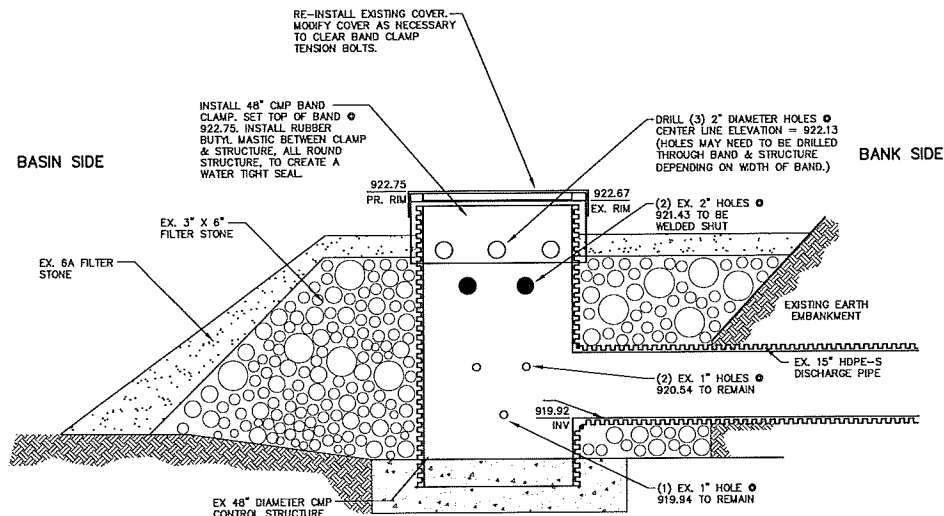
STANDARD CLEANOUT FOR ROOF DRAIN
NOT TO SCALE



PERFORATED UNDERDRAIN DETAIL
NOT TO SCALE

STORM SEWER NOTES:

- The storm sewer and stormwater management specifications of the Local Municipality are a part of this work. Refer to the General Notes on the project plans for additional information and requirements.
- Storm sewer work shall include clearing of vegetation and tree stumps, stripping and stockpiling of topsoil for reuse, excavation of pipe trench, placement of pipe bedding, placement of pipe and structures including castings, connection to existing structures, tuck pointing of structures, backfill of pipe trench, compaction of backfill, finish grading to provide positive drainage to structures, adjustment of castings to match finish grade, topsoil placement, seed & mulch, site cleanup and restoration, and other storm sewer related work as shown on the project plans and specifications.
- Existing and proposed grades shown in profile view, when provided on the project plans, may be in relation to the centerline of road or item other than the centerline of pipe. The pipe lengths and grades shown in profile view on the project plans may not be to scale.
- RCP when shown on the project plans shall be reinforced concrete pipe and shall conform to the specifications for reinforced concrete pipe per ASTM C76. RCP pipe joints shall be bell-and-spigot with rubber gaskets conforming to ASTM C433. Non-gasketed joints shall only be utilized when authorized by the Owner, Engineer AND Municipality. Non-gasketed joints of pipe having a diameter of 30 inches or greater shall be tuck-pointed on the inside with cement mortar after the backfill process is complete. Install reinforced concrete end sections incidental to work. Saw cut pipes to length as needed. When pipe class is not shown on the project plans, provide the following:
Pipe cover to proposed grade: 0 to 4 feet Class V
4.1 to 10 feet Class III*
10.1 to 18 feet Class IV
18.1 feet and greater Class V
* Use Class IV under paved surfaces
- CMP when shown on the project plans shall be corrugated metal pipe and shall conform to the specifications for corrugated metal pipe per AASHTO Designation M36. CMP shall be 16-gauge steel minimum for 24 inch diameter or smaller and 14-gauge steel minimum for 30 inch diameter or greater. Install galvanized steel end sections and connection bands, incidental to work. Connection bands for CMP pipe joints located under paved surfaces shall be gasketed couplers. Saw cut pipes to length as needed.
- HDPE - Type S when shown on the project plans shall be high density polyethylene pipe with a smooth interior and shall conform to the specifications for high density polyethylene pipe per AASHTO Designation M252 Type S for pipes of 3" to 10" diameter and per AASHTO Designation M294 Type S for pipes of 12" to 60" diameter. HDPE - Type S pipe joints shall be bell-and-spigot type conforming to ASTM D3212 with rubber gaskets conforming to ASTM F477. Tamp backfill at spring line of HDPE - Type S pipe. Install high density polyethylene end sections incidental to work. Saw cut pipes to length as needed.
- HDPE - Type C when shown on the project plans shall be high density polyethylene pipe with a corrugated interior and shall conform to the specifications for high density polyethylene pipe per AASHTO Designation M252 for pipes of 3" to 10" diameter and per AASHTO Designation M294 for pipes of 12" to 60" diameter. HDPE - Type C pipe joints shall be bell-and-spigot type conforming to ASTM D3212 with rubber gaskets conforming to ASTM F477. Tamp backfill at spring line of HDPE - Type C pipe. Install high density polyethylene end sections incidental to work. Saw cut pipes to length as needed.
- CPVC when shown on the project plans shall be corrugated polyvinyl chloride pipe and shall conform to the specifications for corrugated polyvinyl chloride pipe per ASTM F794 and F949. CPVC pipe joints shall be bell-and-spigot type conforming to ASTM D3212 with rubber gaskets conforming to ASTM F477. Tamp backfill at spring line of CPVC pipe. Install high density polyethylene end sections incidental to work. Saw cut pipes to length as needed.
- PVC when shown on the project plans shall be polyvinyl chloride pipe and shall conform to the specifications for polyvinyl chloride pipe per ASTM D251, maximum SDR of 26. PVC pipe joints shall be bell-and-spigot type conforming to ASTM D3212 with rubber gaskets conforming to ASTM F477 or solvent welded type conforming to ASTM D2564. Tamp backfill at spring line of PVC pipe. Saw cut pipes to length as needed.
- Concrete storm structures shall be pre-cast and shall conform to the specification of pre-cast concrete structures per ASTM C478. Joints of concrete storm structure sections shall be bell-and-spigot with rubber gaskets conforming to ASTM C433. Brick, concrete block or cast in place storm structures may be substituted for pre-cast storm structures ONLY when authorized by the Owner, Engineer AND Municipality; refer to MDOT standard plan R-1, latest revision. All pipe openings in pre-cast structures shall be factory installed and shall include a rubber boot resilient pipe to manhole connector conforming to ASTM C1478-07. All clamps, bands and hardware shall be stainless steel or other non-corrosive material. Provide the appropriate adapter(s) as necessary for corrugated pipe. Pipe to storm structure connections shall be performed in accordance with the rubber boot connector manufacturer's recommendations. All temporary openings and seams in storm structures shall be tuck-pointed watertight with cement mortar. Refer to MDOT standard plan R-2, latest revision, for alternate on-line storm structure details when pipe exceeds 42 inch diameter.
- Tap existing structures as acceptable to the Engineer and Municipality, incidental to work. All temporary openings in storm structures shall be tuck-pointed watertight with cement mortar.
- Backfill all storm sewer in accordance with the Pipe Trench details provided on the project plans. Provide pipe bedding that meets or exceeds both the specifications of the Pipe Trench details on the project plans and the recommendation of the pipe manufacturer, incidental to work.
- When edge drains and/or under drains are shown on the project plans, connection to storm structures is incidental to work. During storm sewer construction, install first 10 linear feet of edge drain and/or under drain from the storm structures in each specified direction and install temporary cap at end. Complete installation of edge drain following preparation of the subgrade when under paved surface or following finish grade when not under paved surface.
- Install removable plugs in storm sewer stubs as acceptable to Engineer and Municipality, incidental to work. Mark the end of all storm sewer stubs with a 2" x 4" wooden stake extending a minimum of 12" above finish grade, incidental to work.
- Storm structure castings shall be coated with water based asphaltic paint by the manufacturer. Seams and temporary openings between storm structures and castings shall be tuck-pointed water tight with cement mortar. Coordinate correct curb box / hood / "T" back as needed to match curb profile. See casting schedule on project plans for additional requirements.
- Provide 3.5' minimum cover from the top of pipe of all roof drain pipes to the proposed finish grade when site conditions allow. When pipe cover is less than 3.5', install 2" thick by 24" wide Styrofoam insulation centered over the top of pipe at 12" above top of pipe or as required by the Local Municipality.



CONTROL STRUCTURE CS-101 MODIFICATION DETAIL
NOT TO SCALE

CS-101 NOTES:

- Any existing filter stone removed to perform structure modifications shall be replaced upon completion of structure modifications.
- Place 1" additional washed MDOT 6A stone over the top of the filter stone to match new rim elevation.
- Crushed concrete is not acceptable for use as filter stone.
- Contact Engineer if conflict exists.

DESIGN: FAF	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: SES	1	02-21-18	REVISED PER TOWNSHIP REVIEW COMMENTS			
CHECK: CAG						

ALDI FOOD MARKET #51
HOWELL, MI

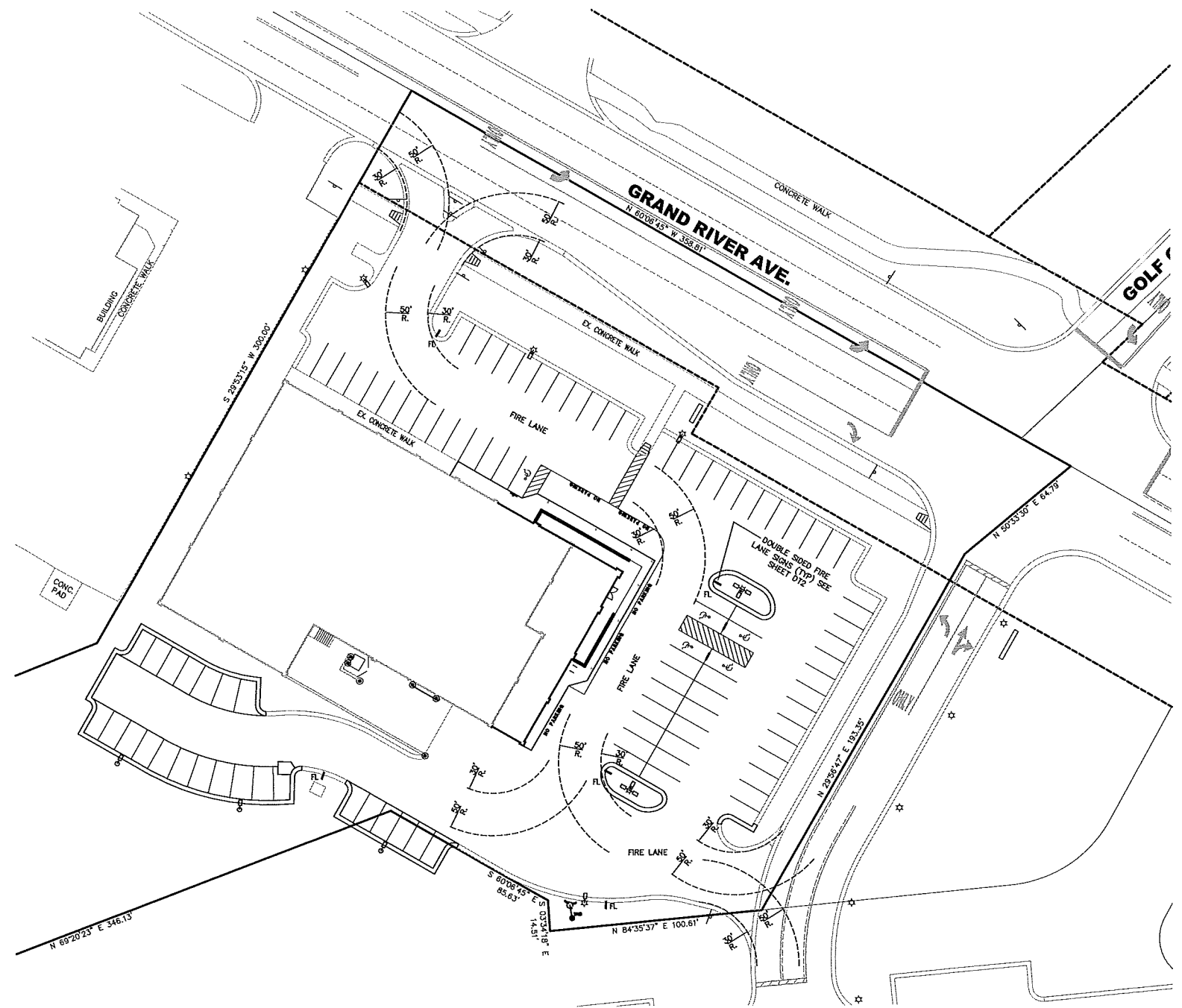
STORM SEWER
NOTES & DETAILS

CLIENT:	SCALE: NO SCALE
ALDI, Inc.	PROJECT No: 9173290
2625 N. STOCKBRIDGE RD.	DWG NAME: 3290 DT
WEBBERVILLE, MICHIGAN 48892	ISSUED: FEB 21, 2018
(517) 521-3907	

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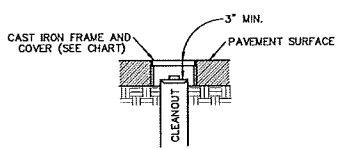


EMERGENCY VEHICLE CIRCULATION PLAN
SCALE: 1" = 30'

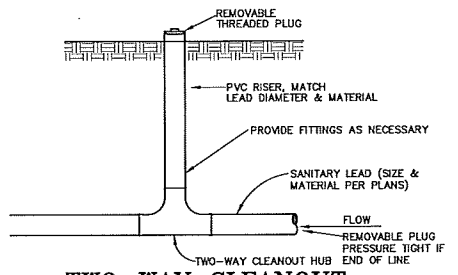
SANITARY SEWER LEAD NOTES:

- The Local Plumbing Code and sanitary sewer specifications of the M.H.O.G. Sewer and Water Authority are a part of this work. Refer to the General Notes on the project plans and the M.H.O.G. Standard Details for additional information and requirements.
- Sanitary Sewer Leads shall be PVC pipe conforming to ASTM D3034, maximum SDR of 23.5. Pipe joints shall be push on bell-and-spigot type joints conforming to ASTM D3212 with factory installed flexible elastomeric gaskets conforming to ASTM F477. Solvent cemented joints shall only be used when noted on the project plans for specific applications and shall conform to ASTM D2855. Provide pipe diameter and slope per project plans.
- Contractor shall field locate all existing utilities prior to work. Contractor shall provide all bends and fittings as needed, incidental to work, to install the sanitary sewer leads and to provide the required clearance between the sanitary sewer leads and all existing and proposed utilities while maintaining the proposed minimum pipe slope and proposed lead end invert elevation. Contractor shall notify the Engineer immediately of any utility crossing conflicts.
- Provide 4.0' minimum cover from the top of the sanitary sewer lead pipe to the proposed finished grade when site conditions allow. When pipe cover is less than 4.0', install 2" thick by 24" wide Styrofoam insulation centered over pipe at 12" above top of pipe or as required by Local Code. Backfill all sanitary sewer leads in accordance with the trench details on the project plans.

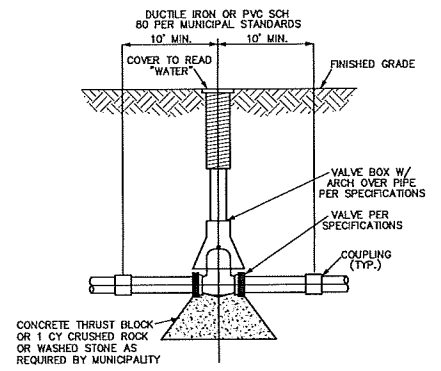
CLEANOUT DIA.	FRAME AND COVER
4"-8"	E.I.W 1574
10"-18"	E.I.W 1040Z-A-SANITARY



CLEANOUT IN PAVED AREA
NOT TO SCALE



TWO-WAY CLEANOUT FOR SANITARY LEAD
NOT TO SCALE

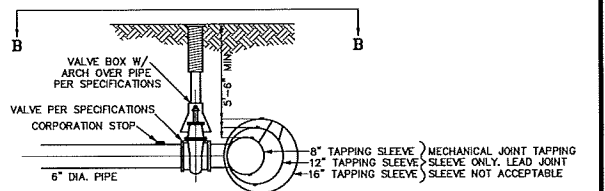


VALVE AND BOX DETAIL
NOT TO SCALE

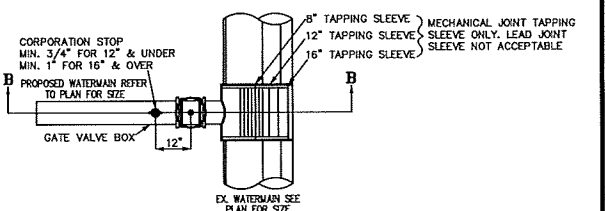
- NOTE:
- FOR PLASTIC PIPE, WRAP TRACER WIRE AROUND TOP OF VALVE BOX.
 - INSTALL COUPLINGS/FITTINGS AS NEEDED.
 - PROVIDE MECHANICAL JOINT RESTRAINTS FOR ALL GATE VALVES.

WATER MAIN NOTES:

- The water main specifications of the M.H.O.G. Sewer and Water Authority are a part of this work. Refer to the General Notes on the project plans and the M.H.O.G. Standard Details for additional information and requirements.
- DIP shall be ductile iron pipe conforming to ANS/AWWA C151/A21.51-02. DIP shall have a cement lining conforming to ANS/AWWA C104/A21.4-95. DIP shall be class 52 unless noted otherwise on the project plans. Provide polyethylene wrap in accordance with M.H.O.G. standards and specifications.
- Fittings shall be cast ductile iron Class 52, or Pressure Class 350 and shall conform to ANS/AWWA C153/A21.53-00 and shall have a cement lining conforming to ANS/AWWA C104/A21.4-95.
- Joints shall push-on type conforming to ANS/AWWA C111/A21.11-00. Sealing gaskets, retainer glands and lubricants shall be in accordance with the pipe manufacturer's specifications.
- Provide approved mechanical restraint systems at all bends of 11.25 degrees or greater, tees, crosses and hydrant shoes in accordance with the M.H.O.G. Standard Details. Thrust blocks shall only be utilized when authorized by M.H.O.G..
- Water gate main valves shall be nonrising-stem, resilient-seated gate valves with box, conforming to AWWA C515-01, 250 psig minimum working pressure rating with interior coating conforming to AWWA C550. All gate valves shall open counter clockwise (left).
- Fire Hydrant Assemblies shall include all necessary piping and fittings for a complete assembly. Fire hydrants shall conform to AWWA C502. Fire hydrants shall be East Jordan Iron Works 5BR-250 Watermaster with an integrated 5" Storz coupling or as otherwise specified by M.H.O.G. and/or the Brighton Area Fire Authority. Provide 5'-6" minimum cover.
- Tapping Sleeve and Valve shall meet the requirements of the M.H.O.G. Sewer and Water Authority. See Tapping Sleeve and Valve detail for additional requirements.
- Connect to existing water mains in accordance with the project plans and M.H.O.G. standards and specifications. Provide all materials and labor required for a complete watertight connection, incidental to work. Taps to existing water main shall be performed under pressure and without interruption of service.
- Backfill all water main in accordance with the Pipe Trench details provided on the project plans. Provide pipe bedding that meets or exceeds both the specifications of the Pipe Trench details on the project plans and the recommendation of the pipe manufacturer, incidental to work. Provide 5'-6" minimum cover for all water main.
- Provide 10' minimum horizontal separation and 1.5' minimum vertical separation between water main and both sanitary sewer and storm sewer.
- Contractor shall flush, test and chlorinate the water main in accordance with M.H.O.G. standards and specifications.



SECTION B-B
16"X6", 12"X6", 8"X6"*
TAPPING SLEEVE, VALVE & WELL
NOT TO SCALE



PLAN TAPPING SLEEVE
NOT TO SCALE

- NOTES:
- SIZE OF TAPPING SLEEVE MAY VARY AS NECESSARY TO MATCH SIZES OF EXISTING AND PROPOSED WATERMAIN. REFER TO SIZES SHOWN ON PLAN.
 - ALL JOINTS TO BE RESTRAINED PER MUNICIPAL STANDARDS OR TO MANUFACTURER'S SPECIFICATION, WHICHEVER IS GREATER.

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2183 PLESS DRIVE
BRIGHTON, MICHIGAN 48114

DESIGN #	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
FAF						
SES						
CAG						

ALDI FOOD MARKET #51
HOWELL, MI

WATER MAIN AND SANITARY SEWER NOTES & DETAILS

CLIENT:
ALDI, Inc.
2625 N. STOCKBRIDGE RD.
WEBBERVILLE, MICHIGAN 48892
(517) 521-3907

SCALE: NO SCALE
PROJECT No.: 9173290
DWG NAME: 3290 DT
ISSUED: FEB 21, 2018

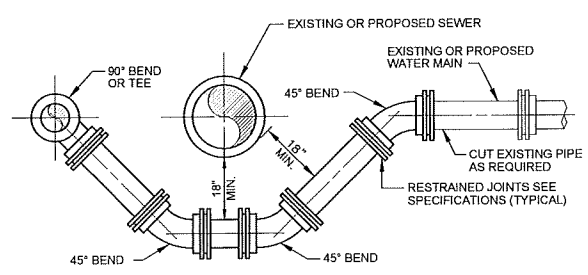
DT4

PIPE RESTRAINT SCHEDULE

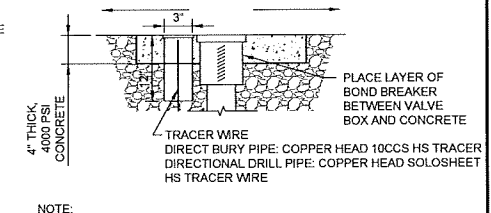
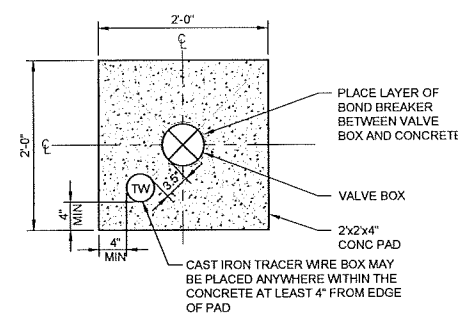
GROUND BURIED PRESSURE PIPE - POLYETHYLENE ENCASED DUCTILE IRON PIPE

PIPE DIAMETER	TEES, 90° BENDS	45° BENDS	22-1/2° BENDS	11-1/4° BENDS	DEAD ENDS	REDUCERS (ONE SIZE REDUCTION)*	REDUCERS (TWO SIZE REDUCTION)*
4	13	5	3	1	40	--	--
6	19	8	4	2	58	31	--
8	24	10	5	2	75	30	70
12	34	14	7	3	107	57	116
16	43	18	9	4	139	59	137
20	52	22	10	5	169	59	134
24	61	25	12	6	199	60	132
30	73	30	15	7	242	85	168
36	84	35	17	8	281	84	168

- LENGTHS OF PIPE RESTRAINT ARE GIVEN IN FEET.
 - IF REQUIRED PIPE DIAMETER IS NOT LISTED IN THIS TABLE, THE NEXT LARGEST PIPE DIAMETER SHALL BE USED.
 - THIS TABLE IS BASED ON A TEST PRESSURE OF 180 PSI (OPERATING PRESSURE PLUS WATER HAMMER). FOR OTHER TEST PRESSURES, ALL VALUES TO BE INCREASED OR DECREASED PROPORTIONALLY.
 - THE VALUES PROVIDED OF RESTRAINT LENGTH ARE IN EACH DIRECTION FROM THE POINT OF DEFLECTION OR TERMINATION EXCEPT FOR TEES, AT WHICH ONLY THE BRANCH IN THE DIRECTION OF THE STEM.
 - IF TIE RODS ARE USED, USE FOUR RODS MINIMUM AND ADD 1/8-INCH TO BAR DIAMETER AS CORROSION ALLOWANCE.
 - SIZE REDUCTION IS BASED UPON THE PIPE DIAMETER SHOWN IN THIS TABLE.
- BASED UPON:
 INTERNAL PRESSURE: 180
 PIPE DEPTH: 5
 BEDDING CLASS: TYPE 4
 SOIL TYPE: GOOD SAND
 SAFETY FACTOR: 2

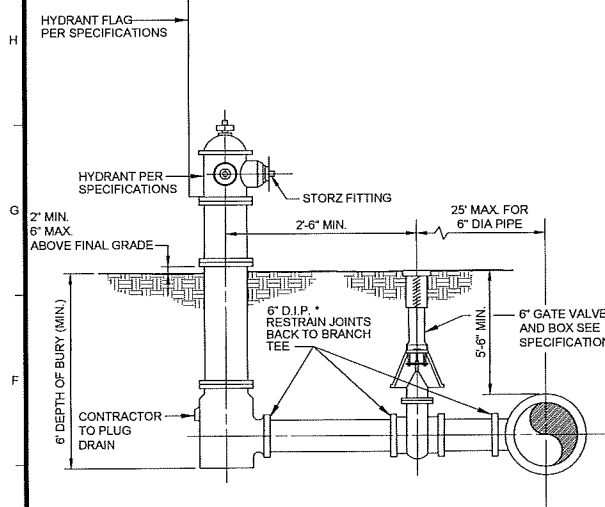


WATER MAIN UTILITY OFFSET



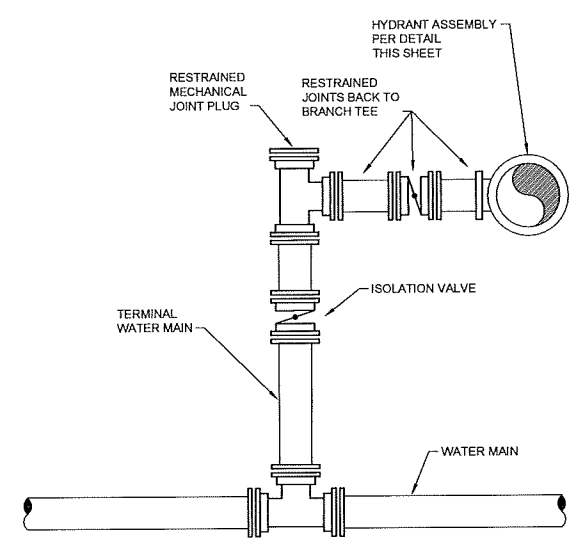
- NOTE: ALL BOXES & ADJOINING TW BOXES SHALL BE ENCASED IN A CONC. PAD UNLESS OTHERWISE DETERMINED BY MHOG.
- TRACER WIRE BOXES LOCATED WITHOUT A VALVE BOX ONLY REQUIRE AN 18" X 18" CONCRETE PAD.
 - TRACER WIRE BOX SHALL HAVE A LOCKING LID W/ STANDARD AWWA PENTAGON KEY.
 - TRACER WIRE BOX SHALL BE COPPERHEAD RB14" TP IN ASPHALT INSTALLATIONS AND CD14" TP FOR ALL OTHER INSTALLATIONS.

PLAN
VALVE/TRACER WIRE BOX IN CONCRETE DETAIL
 NO SCALE

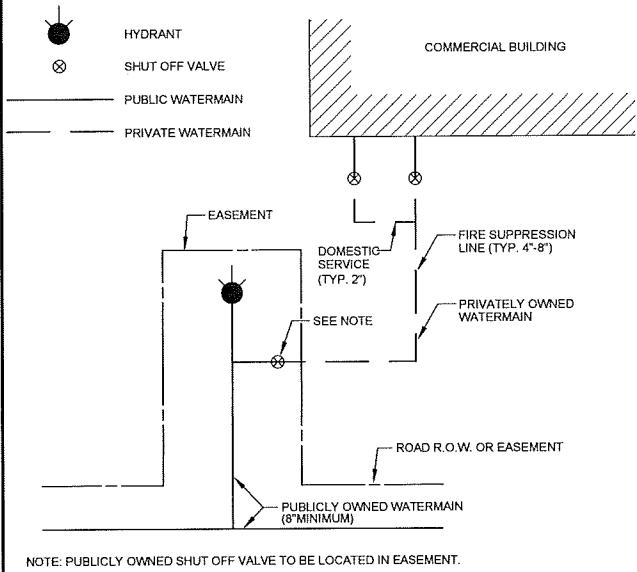


FIRE HYDRANT ASSEMBLY

* THE LENGTH OF 6" PIPE FROM THE MAIN TO THE HYDRANT ASSEMBLY CANNOT EXCEED 25'. ANY PIPE OVER 25 FEET SHALL BE 8" DIAMETER MINIMUM AND DESIGNED PER MHOG SPECIFICATIONS.

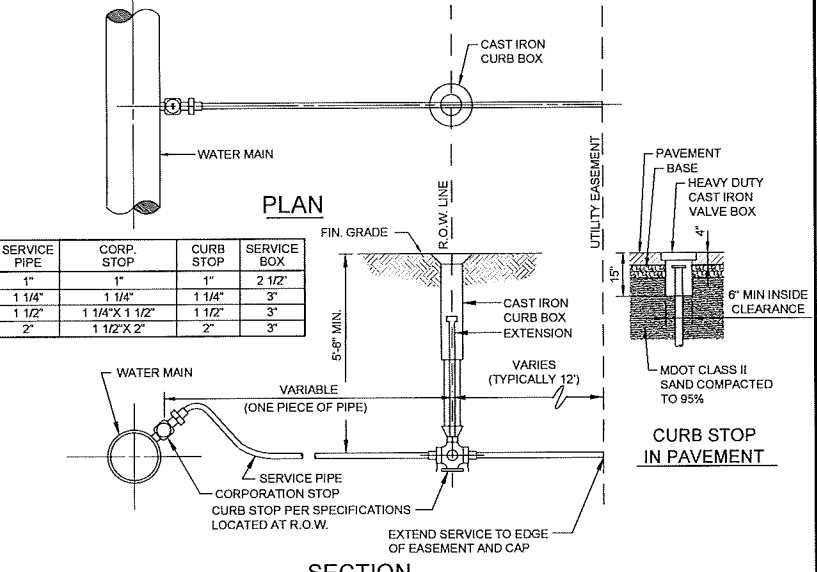


TERMINAL HYDRANT DETAIL

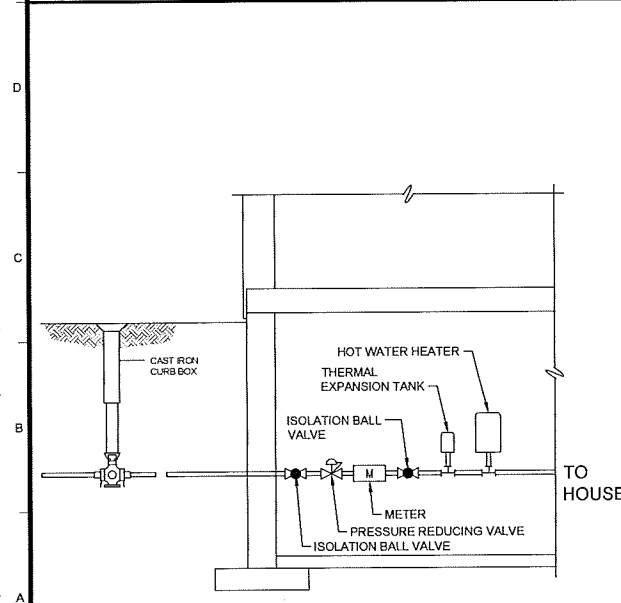


COMMERCIAL BUILDING WATER SERVICE LAYOUT

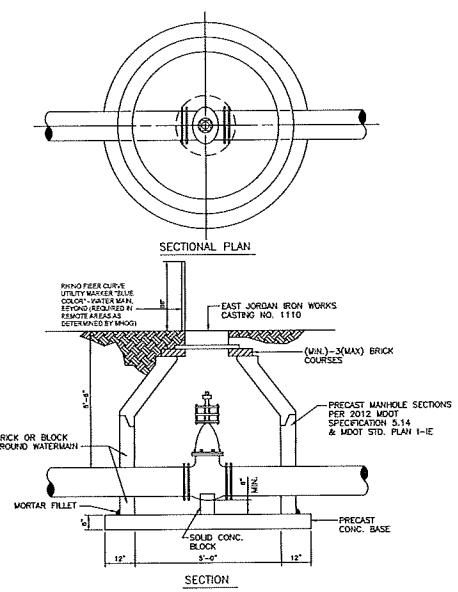
NOTE: PUBLICLY OWNED SHUT OFF VALVE TO BE LOCATED IN EASEMENT.



SECTION
WATER SERVICE LATERAL

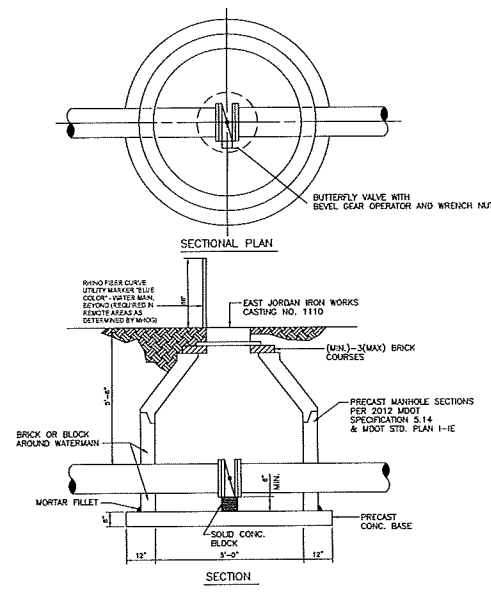


PRIVATE RESIDENCE
PRESSURE REDUCING VALVE (PRV)



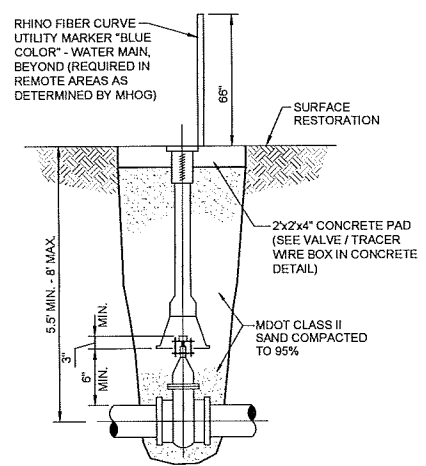
GATE VALVE AND WELL

- NOTES:
 1. ALL LIFT HOLES AND JOINTS SHALL BE MORTARED BOTH INSIDE AND OUTSIDE.
 2. BLOCK MANHOLES TO BE USED ONLY WITH ENGINEER'S PERMISSION.
 3. NO STEPS PERMITTED.



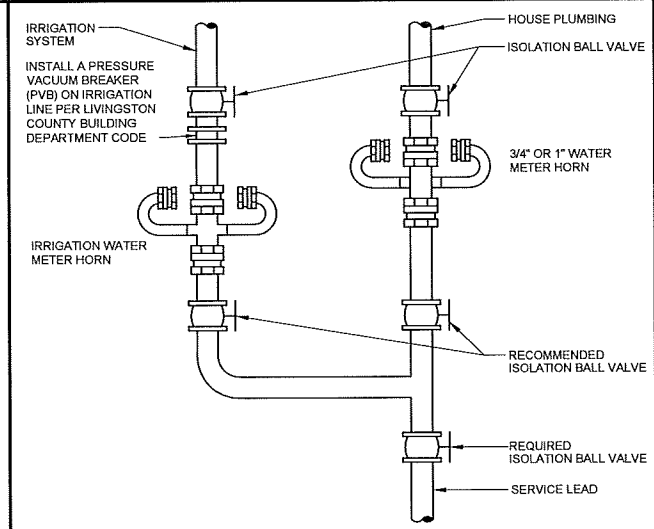
BUTTERFLY VALVE AND WELL

- NOTES:
 1. ALL LIFT HOLES AND JOINTS SHALL BE MORTARED BOTH INSIDE AND OUTSIDE.
 2. BLOCK MANHOLES TO BE USED ONLY WITH ENGINEER'S PERMISSION.
 3. NO STEPS PERMITTED.



GATE VALVE AND BOX

- NOTES:
 1. VALVE BOX SHALL NOT REST ON VALVE OR MAIN LINE PIPE.
 2. A VALVE STEM EXTENSION WITH CENTERING RING IS REQUIRED FOR VALVES BURIED DEEPER THAN 6'.



- NOTES:
 1. ALL METERS ARE TO BE INSTALLED HORIZONTALLY IN A DRY, CLEAN, SANITARY LOCATION THAT IS READILY ACCESSIBLE. THIS DRAWING IS NOT TO SCALE & IS ONLY A REPRESENTATION OF HOW THE METERS SHOULD BE INSTALLED. THE SECOND METER IS OPTIONAL FOR IRRIGATION USAGE. METERS SHOULD NOT BE INSTALLED IN LINE (ONE RIGHT AFTER THE OTHER).
 2. PROPERTIES DESIGNATED "HIGH HAZARD" PER THE MHOG CROSS CONNECTION RULES MANUAL WILL REQUIRE THE INSTALLATION OF A REDUCED PRESSURE ZONE (RPZ) BACK FLOW PREVENTION DEVICE.

TYPICAL METER HORN INSTALLATION

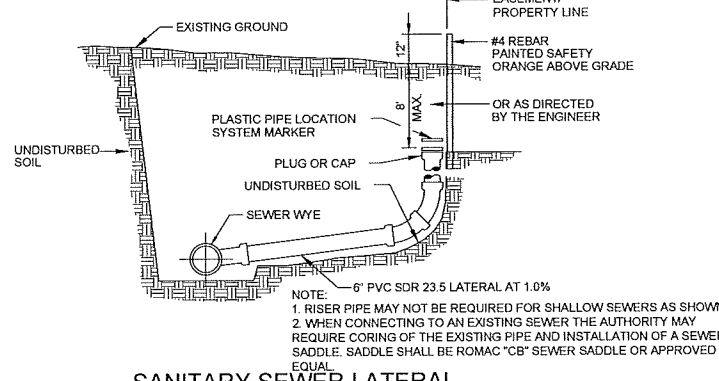


MARION HOWELL OCEOLA GENOA
 Sewer and Water Authority

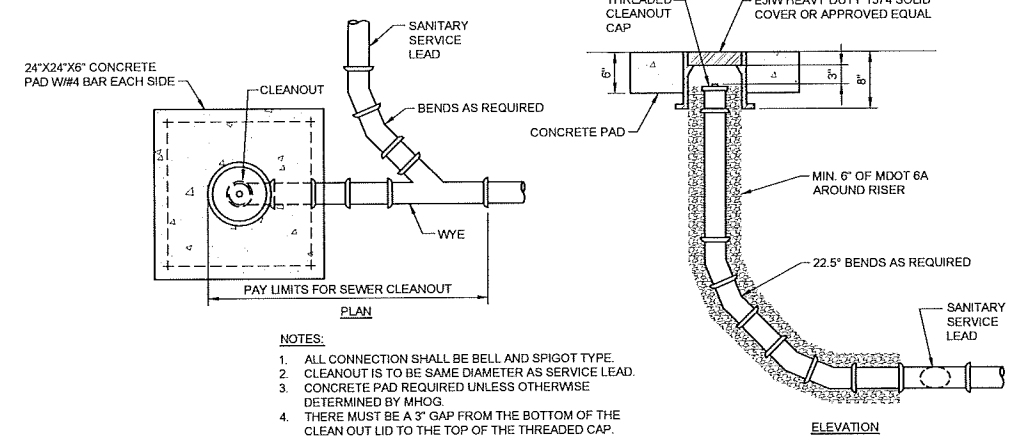
STANDARD DETAILS

Scale: NONE
 Issued Date: JANUARY - 2014
 UPDATED: MAY 2015
 UPDATED: FEBRUARY 2016
 UPDATED: APRIL 2016
 UPDATED: OCTOBER 2017

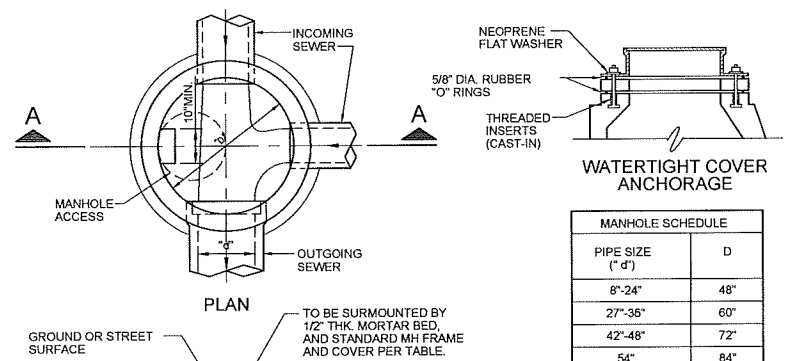
Wednesday, October 18, 2017 2:20:05 PM DRAWING: C:\Projects\Landring\IER\1719200-12719-0000\CAD\SheetFiles\Wmg-sld.dwg



SANITARY SEWER LATERAL

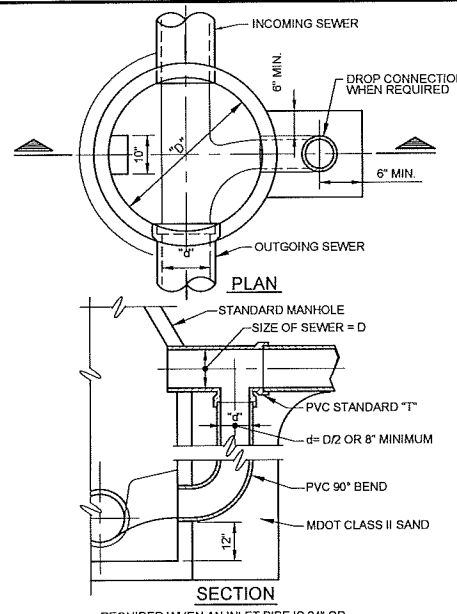


SEWER CLEANOUT DETAIL

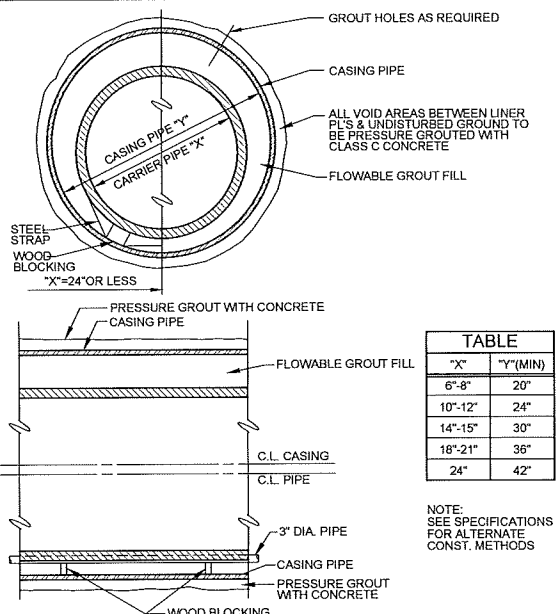


WATERTIGHT COVER ANCHORAGE

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



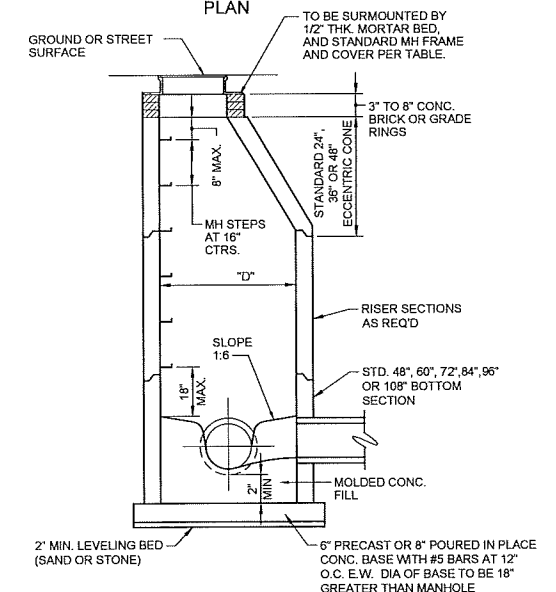
DROP CONNECTION



CASING PIPE

TABLE	
X	*Y*(MIN)
6\"-8\"	20\"
10\"-12\"	24\"
14\"-15\"	30\"
18\"-21\"	36\"
24\"	42\"

NOTE: SEE SPECIFICATIONS FOR ALTERNATE CONST. METHODS

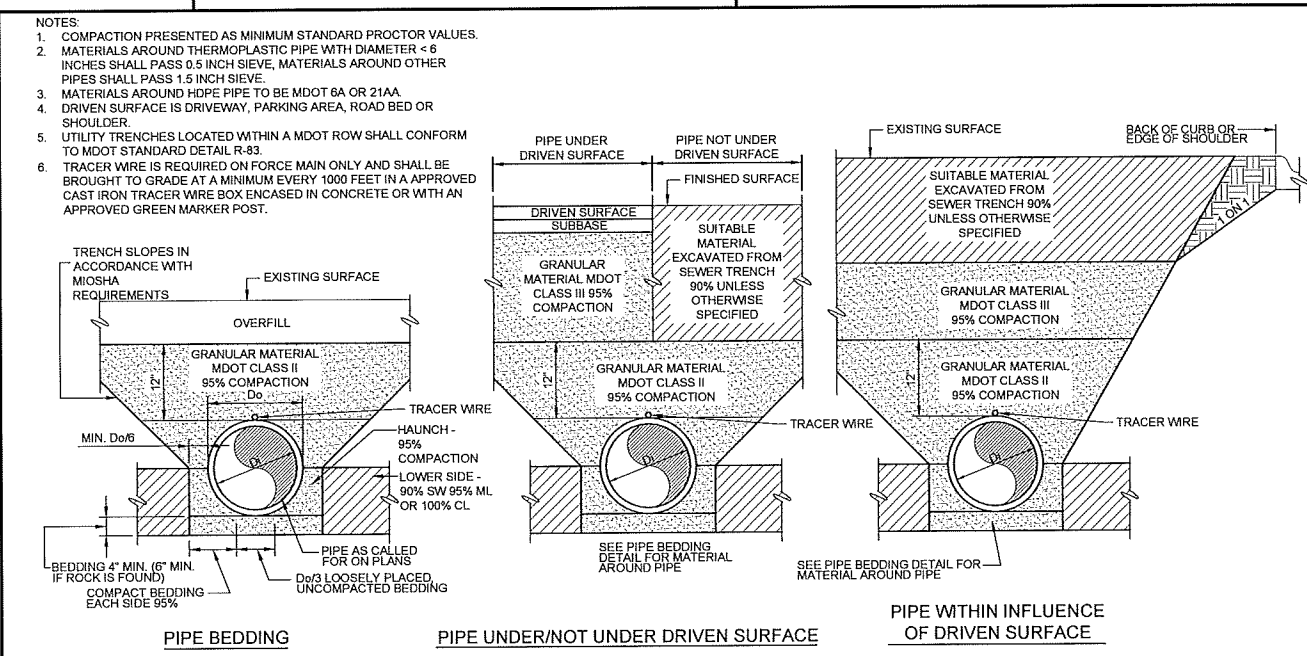


SECTION A-A

- NOTES:
1. ALL SANITARY MANHOLES TO BE PRECAST REINFORCED CONCRETE WITH PREMIUM JOINTS. SEE SPECIFICATIONS FOR BASE SLAB AND PIPE OPENINGS AND CONNECTIONS.
 2. MANHOLE CONES SHALL BE THE ECCENTRIC TYPE.
 3. PROVIDE 6\"/>

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

STANDARD MANHOLE

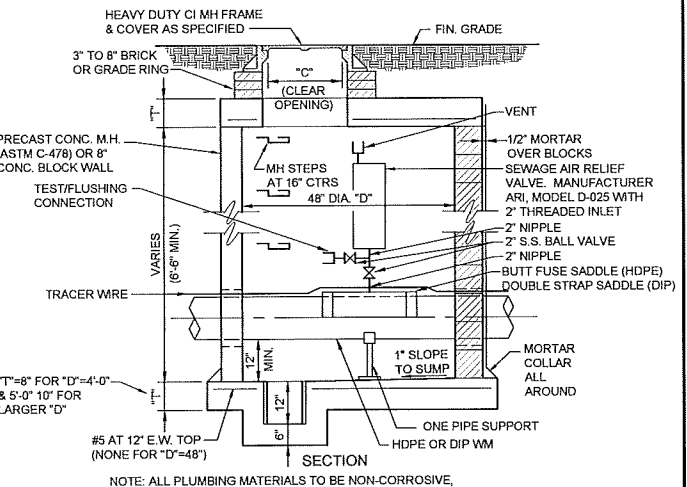


PIPE BEDDING

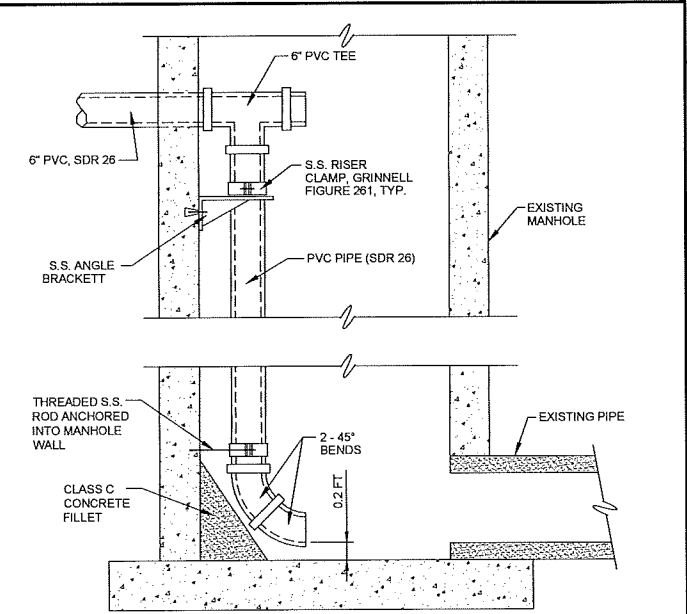
PIPE UNDER/NOT UNDER DRIVEN SURFACE

PIPE WITHIN INFLUENCE OF DRIVEN SURFACE

TRENCH EXCAVATION & PIPE BEDDING



AIR RELIEF STRUCTURE



INTERIOR SEWER LATERAL DROP CONNECTION



MARION HOWELL OCEOLA GENOA
Sewer and Water Authority

STANDARD DETAILS

Scale: NONE
Issued Date: JANUARY - 2014
UPDATED MAY 2015
UPDATED APRIL 2016
UPDATED OCTOBER 2017

Wednesday, October 18, 2017 2:20:51 PM DRAWING: C:\Projects\lanning\IER\2719200-12719-0000\CAD\Sheet\Final\Hog.sld.DWG

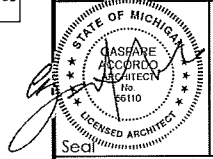
REAR DOCK AREA SUMMARY		
OCCUPANCY USE	ROOM NAME	SQUARE FOOTAGE
MARKETPLACE UNIT - SEE CH-DWG'S	SALES / VESTIBULE	12,108
	MEN'S ROOM	85
	WOMEN'S ROOM	83
	HALL	132
SUBTOTAL (MARKETPLACE)		12,408
BUSINESS UNIT - SEE B-C-DWG'S	OFFICE	252
	BREAK ROOM	305
SUBTOTAL (BUSINESS)		557
STORAGE / STOCK	BACKROOM	3,082
	COOLER	1,313
	FREEZER	734
SUBTOTAL (STORAGE / STOCK)		5,129
SUBTOTAL (OCCUPANCIES)		18,094
EXTERIOR INTERIOR WALLS / UNOCCUPIED SPACE		960
BUILDING SQUARE FOOTAGE		19,054
EXTERIOR CANOPY		733
TOTAL SQUARE FOOTAGE (INCLUDING CANOPY)		19,787

REAR DOCK OPERATIONS DATA		
ITEM	V7.0 PROTOTYPE	
LINEAR FOOTAGE OF BASE (PRODUCE INCLUDED)	845'-10"	77'-3" V.L.F.
ASSUMED PALLET STORAGE	62	
BUILDING DIMENSIONS	119'-4" x 153'-4"	
SALES FLOOR DIMENSIONS	74'-6" x 151'-1"	
LENGTH OF MULTIDECK	108	
COOLER MILK DOORS	4	
COOLER GENERAL DOORS	12	
FREESTER GENERAL DOORS	16	
SPOT MERCHANDISERS	8	
CART STORAGE	(119) MODEL 563W	

- NOTES:
- THIS DRAWING IS FOR GENERAL FIXTURE/LAYOUT AND REFERENCE TO EQUIPMENT ONLY. ALL INFORMATION IS FOR ALDI OPERATIONAL USE ONLY AND SHALL NOT BE USED FOR CONSTRUCTION OR BIDDING PURPOSES.
 - ALL DIMENSIONS TO WALLS ARE TO FACE OF STUD.
 - ALL SHELVING DIMENSIONS ARE TO FACE OF GONDOLA.
 - THIS FACILITY DOES NOT CONTAIN A BAKERY, A BUTCHER, A DELI OR FISH COUNTER.
 - ALL FOOD IS PREPACKAGED. THERE IS NO ON-SITE FOOD PREPARATION.
 - GONDOLA LOCATIONS ARE MEASURED FROM THE FACE OF THE STAINLESS STEEL PRICE TAG MOLDING (SSPTM).

Issued:	Date:
A Issued for Client Review	11/08/17
B Issued for Client Review	11/20/17
C Issued for Client Review	12/01/17
D Issued for Client Review	12/04/17
E Issued for Client Review	12/06/17

Revisions:	Date:
1	
2	
3	
4	
5	
6	
7	
8	
9	



Seal PROJECT ARCHITECT/ENGINEER DATE

Seal PROJECT LEAD DATE

Seal PROJECT DESIGNER DATE

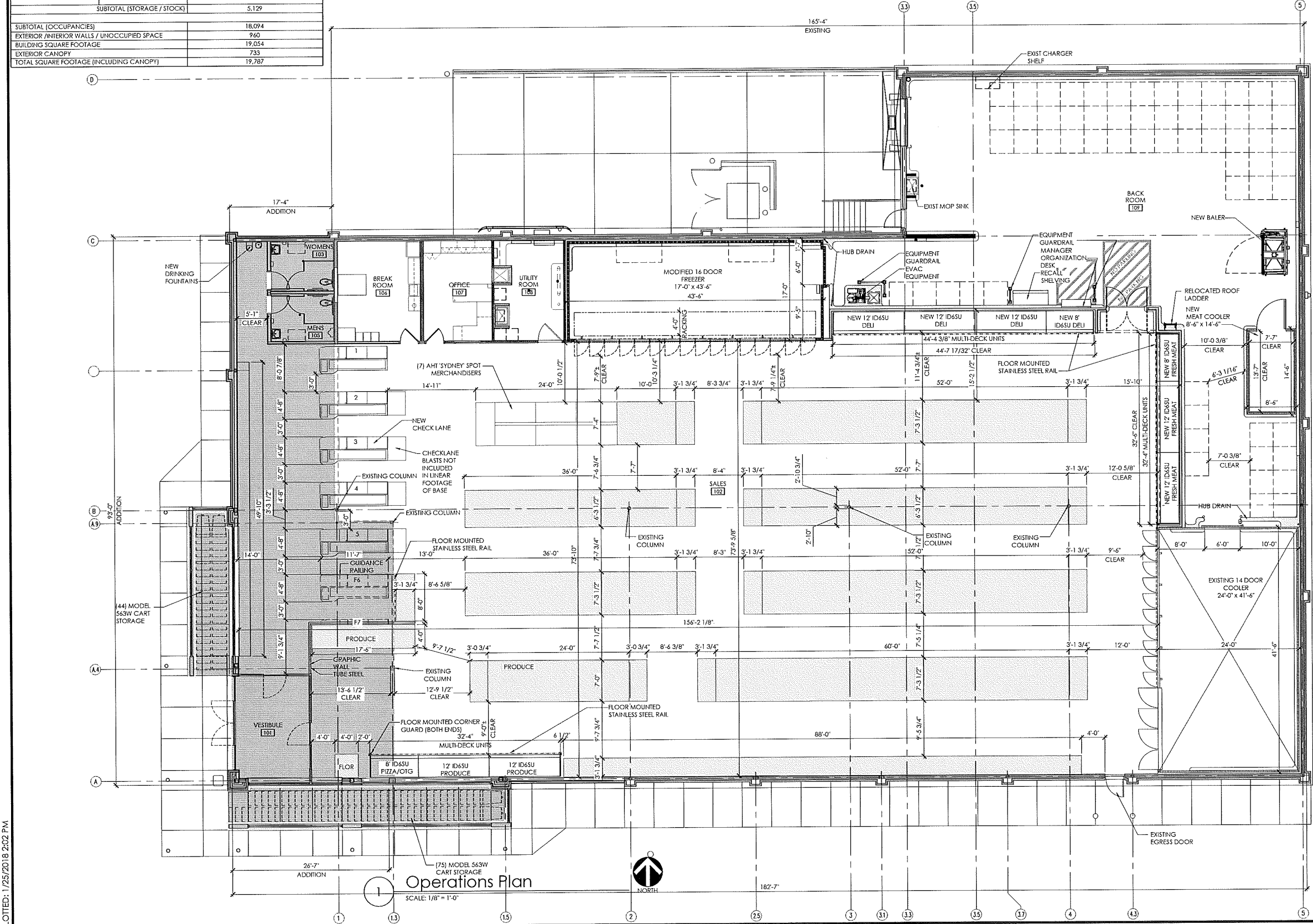
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Gaspare Accordo,
AIA, NCARB
 615 Fishers Run
 Victor, NY 14564
 585.742.2222
 585.924.4914 fax



ALDI Inc. Store #: 51
 ALDI Howell, MI
 2250 East Grand River Ave
 Genoa Township, MI 48843
 Livingston County
 Project Name & Location:

Operations Plan
 Drawing Name:
 Date: 09/05/17 Project No. 17-0156A
 Type: V2.7
 Drawn By: JBS A-131
 Scale: As Noted Drawing No.



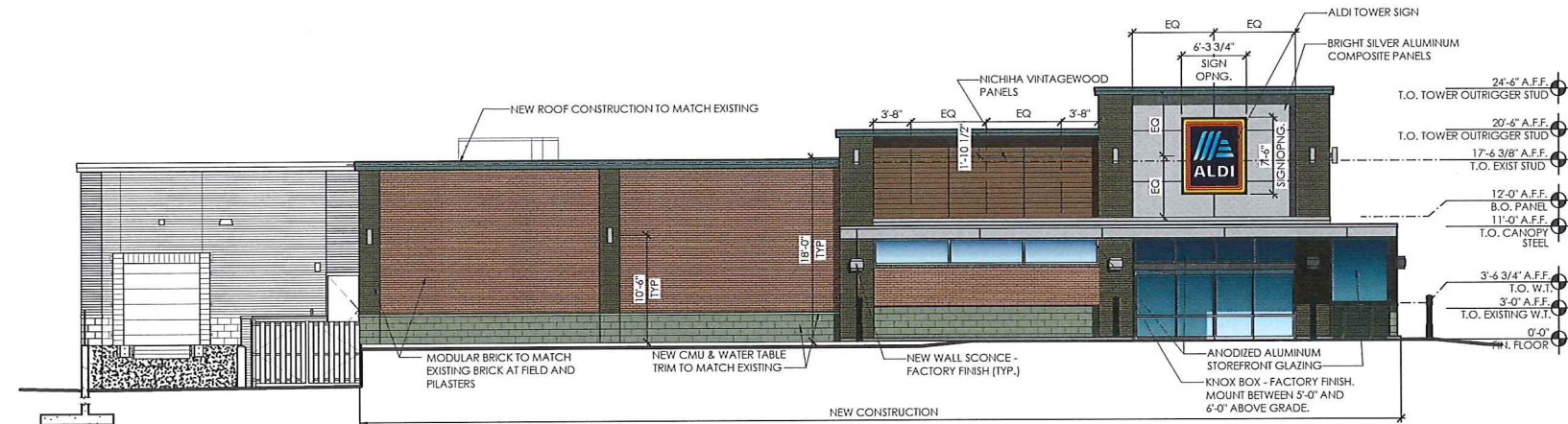
PLOTTED: 1/25/2018 2:02 PM

SIGNAGE			
DESCRIPTION	QUANTITY	SQ. FT. PER SIGN	TOTALS
TOWER SIGN	2	46.6	93.2
TOTAL SIGNAGE			93.2

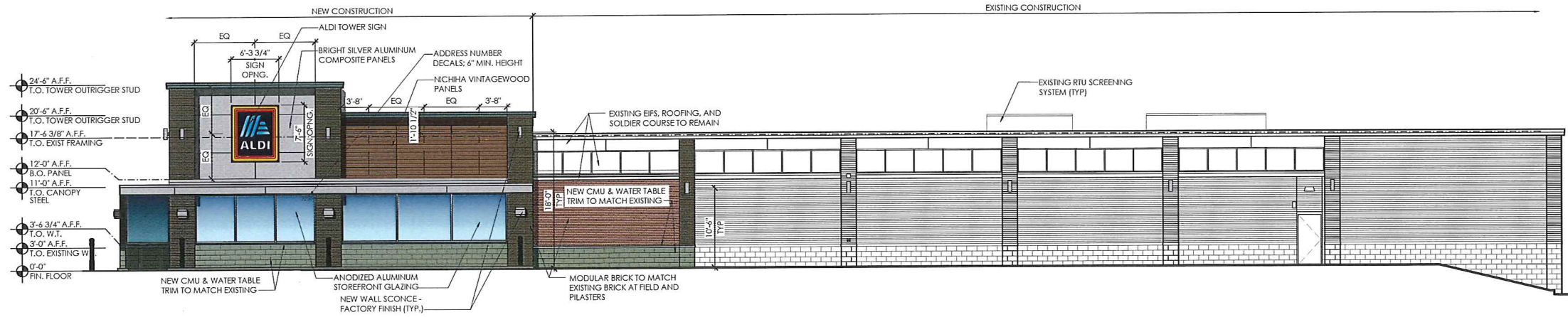
SIGNAGE IS SHOWN FOR REFERENCE ONLY AND SHALL BE UNDER SEPARATE PERMIT SUBMITTAL.

Please note that the colors shown here are a graphical representation to show contrast in materials only. Due to the nature of electronic media, colors may vary depending on computer or printer used.

For review of actual colors, a material sample board should be created on a project specific basis.



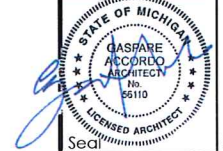
2 Side Elevation - Chillson Rd
SCALE: 1/8" = 1'-0"



1 Front Elevation - East Grand River Rd
SCALE: 1/8" = 1'-0"

Issued:	Date:
A	Issued for Client Review 11/20/17
B	Issued for Client Review 12/01/17
C	Issued for Client Review 12/04/17
D	Issued for Client Review 12/06/17
E	Issued per Township Comments 02/21/18

Revisions:	Date:
1	
2	
3	
4	
5	
6	
7	
8	
9	



PROJECT ARCHITECT/ENGINEER	DATE
PROJECT LEAD	DATE
PROJECT DESIGNER	DATE

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DO NOT SCALE PLANS
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Gaspare Accordo,
AIA, NCARB

615 Fishers Run
Victor, NY 14564
585.742.2222
585.924.4914 fax



ALDI Inc. Store #: 51
ALDI Howell, MI
2250 East Grand River Ave
Genoa Township, MI 48843
Livingston County
Project Name & Location:

Exterior Elevations Drawing Name:	
Date: 09/05/17	Project No. 17-0156A
Type: V2.7	
Drawn By: VLV	A-201
Scale: As Noted	Drawing No.

FEB 22 2018

RECEIVED



GENOA CHARTER TOWNSHIP

Application for Site Plan Review - LAKE SHORE VILLAGE PH 3 Amendment

TO THE GENOA TOWNSHIP PLANNING COMMISSION AND TOWNSHIP BOARD:

WALTER COPONEN

APPLICANT NAME & ADDRESS: COPONEN ARCHITECTS 8002 W. GRAND RIVER, BRIGHTON, MI. 48114
If applicant is not the owner, a letter of Authorization from Property Owner is needed. LAKESHORE VILLAGE L.T.D HOUSING ASSOCIATION
OWNER'S NAME & ADDRESS: 27777 FRANKLIN RD. SUITE 1410 SOUTHFIELD, MI. 48034
LAKESHORE VILLAGE APARTMENTS MI.
SITE ADDRESS: 2812 ONTARIO CT. HOWELL, PARCEL #(s): PHASE III

APPLICANT PHONE: (810) 225-4141 OWNER PHONE: ()

OWNER EMAIL: coponenarchitects@sbcglobal.net

LOCATION AND BRIEF DESCRIPTION OF SITE: LAKESHORE VILLAGE APARTMENTS PHASE THREE CONSISTS OF 144 APARTMENTS ALONG WITH A BUSINESS/FITNESS CENTER. THE PROJECT WAS APPROVED LAST OCTOBER AND IS CURRENTLY UNDER CONSTRUCTION.

BRIEF STATEMENT OF PROPOSED USE: LAKESHORE VILLAGE APARTMENTS IS A RESIDENTIAL RENTAL COMMUNITY CONSISTING OF ONE, TWO, AND THREE BEDROOM APARTMENTS WITH CLUB HOUSE AND SWIMMING POOL.

THE FOLLOWING BUILDINGS ARE PROPOSED: THE PROPOSED AMENDED SITE PLAN WILL ADD (4) FOUR ONE BEDROOM APARTMENT UNITS AND MOVE THE BUSINESS/FITNESS CENTER 30 FEET TO ALLOW FOR FUTURE EXPANSION OF THE BUILDING, SEE LETTER ATTACHED.

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: Walter F. Coponen, Coponen Architects, P.C.

ADDRESS: 8002 W. Grandriver, Suite A, Brighton, MI. 48114

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

1.) WALTER COPONEN of COPONEN ARCHITECTS at _____
Name Business Affiliation E-mail Address
coponenarchitects@sbcglobal.net

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: Walter F. Coponen DATE: 2.26.18
PRINT NAME: WALTER F. COPONEN PHONE: 810.225.4141
ADDRESS: 8002 W. Grandriver suite A, Brighton, Mi. 48114



GENOA TOWNSHIP

FEB 22 2018

RECEIVED

February 15, 2018

Genoa Township
2911 Dorr Road
Brighton, MI 48116

Re: Lakeshore III Site Plan Approval

To Whom It May Concern:

Lakeshore Village Limited Dividend Housing Association Limited Partners is the owner for the construction of Lakeshore Village Apartments Phase III. This 144 unit project will be located on the east side Chilson Rd, south of Grand River in Genoa Twp, MI.

The purpose of this letter is to authorize Walt Coponen of Coponen Architects, P.C. to act as our agent to coordinate site plan approval with Genoa Township for changes made to the original site plan, which was approved in October 2016.

Should you need to contact me, I can be reached by telephone at 248-703-0145.

Sincerely,

A handwritten signature in black ink, appearing to read 'M. Lockwood', written over a horizontal line.

Mark Lockwood
President and CEO

27777 Franklin Rd Suite 1410
Southfield, MI 48034-2337
248.203.0991



March 7, 2018

Planning Commission
Genoa Township
2911 Dorr Road
Brighton, Michigan 48116

Attention:	Kelly Van Marter, AICP Planning Director and Assistant Township Manager
Subject:	Lakeshore Village Apartments – Site Plan Review #1
Location:	Chilson Road - east side of Chilson, between Grand River and C&O Railroad
Zoning:	HDR High Density Residential District

Dear Commissioners:

At the Township’s request, we have reviewed the site plan (cover sheet dated 2/22/18) proposing an amendment to the previously approved plans for Phase 3 of the Lakeshore Village Apartments.

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

A. Summary

1. We request the applicant confirm that no changes from the originally approved plan are proposed to:
 - building design and materials;
 - carport structures;
 - vehicular circulation;
 - waste receptacle enclosures;
 - site lighting; and
 - entry signage.
2. The Commission may wish to consider the appropriateness of adding a sidewalk along the south side of the main drive connection to Chilson.
3. The Commission may wish to require that the applicant submit the missing landscape sheet for a complete review.

B. Proposal

The applicant proposes an amendment to Phase 3 of their development with the inclusion of 4 additional units (each 1-bedroom) and relocation of the business/fitness center.

Multiple family dwellings are permitted by right in the HDR; however, since the proposed amendment does not constitute a “minor” change (Section 18.10), site plan review/approval by the Planning Commission is required.



Aerial view of site and surroundings (looking north)

C. Site Plan Review

- 1. General Comments.** Based on the cover letter and application form included with the submittal, the proposal entails only an expansion of Building 22 (to accommodate 4 additional one-bedroom units) and relocation of the business/fitness center building by approximately 30 feet.

Accordingly, the amended site plan includes only a limited amount of detail. In order to ensure nothing is missed, we request the applicant confirm that no changes are proposed to:

- building design and materials;
- carport structures;
- vehicular circulation;
- waste receptacle enclosures;
- site lighting; and
- entry signage.

- 2. Dimensional Requirements.** The only dimensional requirements impacted by the request are a slight increase in density and lot coverage.

More specifically, the inclusion of 4 additional units results in a density to 5.3 units/acre, which is well within that allowed (8 units/acre).

Additionally, the resulting building coverage (7.5%) and impervious coverage (23.3%) are well within the maximum allowed (35% and 50%, respectively).

- 3. Parking.** Per Section 14.04, a total of 295 spaces are required (286 for the dwelling units and 9 for the business/fitness center). The proposed plan provides a total of 334 spaces, including 20 barrier free spaces.

Proposed parking spaces and drive aisles meet or exceed the minimum standards of Section 14.06 and the use of looped striping is proposed.

- 4. Pedestrian Circulation.** The plan includes 5 to 7-foot wide sidewalks throughout the development with pedestrian connections between buildings, parking areas, the mailbox cluster and waste receptacles. Crosswalk striping is also provided at appropriate locations.

The Commission may wish to consider the appropriateness of adding a sidewalk along the south side of the main drive connection to Chilson. This would provide better pedestrian access for those units in the southerly portion of the site to the business/fitness center.

- 5. Landscaping.** We are unable to conduct a complete review of the landscape plan due to the fact that Sheet LS-103 is not provided.

However, based on the plant list (Sheet LS-101), the type, quantity and size of plantings proposed meets Ordinance requirements for greenbelt, detention pond, parking lot and buffer zone landscaping.

If deemed necessary by the Commission, the applicant must provide the missing landscape sheet for review.

Should you have any questions concerning this matter, please do not hesitate to contact our office. I can be reached by phone at (248) 586-0505, or via e-mail at borden@lsplanning.com.

Respectfully,

LSL PLANNING, A SAFE BUILT COMPANY



Brian V. Borden, AICP
Planning Manager



March 7, 2018

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

Re: Lakeshore Village Apartments Phase 3 Amendment Plan Review #1

Dear Ms. Van Marter:

Tetra Tech conducted a site plan review of the Lakeshore Village Apartments Phase 3 amended Boss Engineering construction plans submitted by Walter Coponen of Coponen Architects. The developer has added 4 single-unit apartments to one of their buildings to address greater than expected demand for that type of unit, in addition to moving the physical location of one of the buildings on site approximately 30 feet east. Included in the submission were the site plan review application, a letter from the architect explaining the changes, and a revised impact assessment. We offer the following comments:

- The increase in the overall number of units will have an impact on the property's utility usage estimates used to compute the connection fees. The Township should review if the connection fee should be revised.

The petitioner should contact the Township to confirm their usage and connection fees are correct prior to approval. We have no further engineering related concerns. Please call or email if you have any questions.

Sincerely,

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

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

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

Joseph C Siwek
Project Engineer

copy: Walter Coponen, Coponen Architects



BRIGHTON AREA FIRE AUTHORITY

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

March 6, 2018

Kelly VanMarter
Genoa Township
2911 Dorr Road
Brighton, MI 48116

RE: Lakeshore Village Phase 3
2812 Ontario Court
Howell (Genoa Twp.), MI 48843

Dear Kelly:

The Brighton Area Fire Department has reviewed the above mentioned site plan. The plans were received for review on February 27, 2018 and the drawings are dated February 3, 2016 with latest revisions dated February 22, 2018. The submittal is for the proposed relocation of the business center and Building 22 to accommodate additional 1-bedroom units. The project is already under construction and this is a request to modify the previous approved drawings.

The fire authority has no objection to the proposed relocation or additions as there is little to no effect on the site fire protection features and access.

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

Cordially,

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

Rick Boisvert, CFPS
Fire Marshal

AMENDED SITE PLAN FOR LAKESHORE VILLAGE APARTMENTS PHASE 3

PART OF SE 1/4, SECTION 8, T2N R5E
GENOA TOWNSHIP, LIVINGSTON COUNTY, MI

LEGAL DESCRIPTIONS

LAND IN THE TOWNSHIP OF GENOA, LIVINGSTON COUNTY, MICHIGAN, DESCRIBED AS FOLLOWS:

PARCEL 2-B:

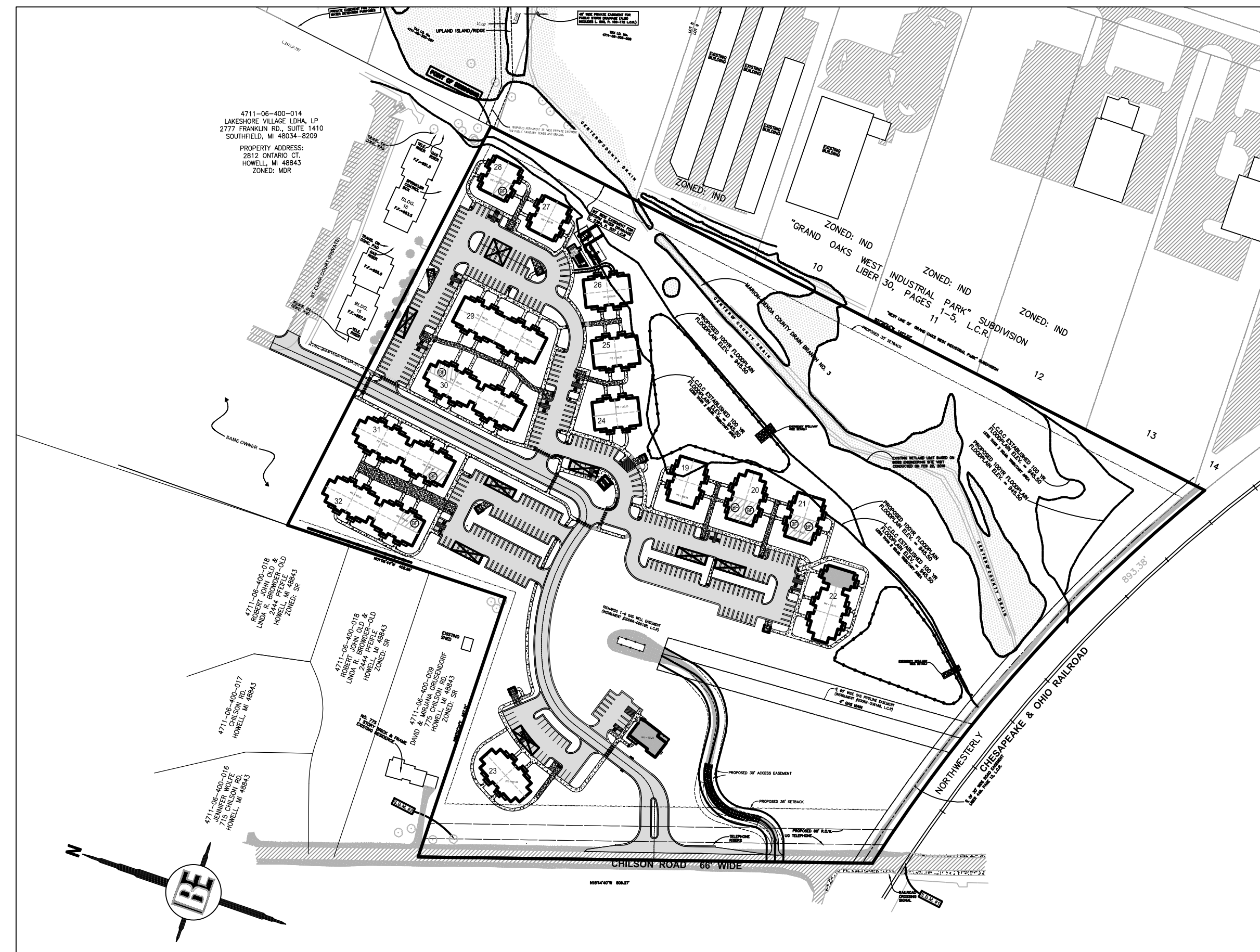
PART OF THE SOUTHEAST ¼ OF SECTION 6, TOWN 2 NORTH, RANGE 5 EAST, GENOA TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN, MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT THE EAST ¼ CORNER OF SAID SECTION 6; THENCE ALONG THE NORTH LINE OF "GRAND OAKS WEST INDUSTRIAL PARK," A SUBDIVISION AS RECORDED IN LIBER 30 OF PLATS ON PAGES 1-5 OF LIVINGSTON COUNTY RECORDS, SOUTH 86 DEGREES 35 MINUTES 09 SECONDS WEST, 330.00 FEET; THENCE ALONG THE WEST LINE OF SAID SUBDIVISION, SOUTH 01 DEGREE 04 MINUTES 01 SECOND EAST, 351.89 FEET; THENCE CONTINUING ALONG SAID WEST LINE, SOUTH 86 DEGREES 35 MINUTES 09 SECONDS WEST, 100.00 FEET; THENCE CONTINUING ALONG SAID WEST LINE, SOUTH 07 DEGREES 28 MINUTES 54 SECONDS WEST, 658.72 FEET TO THE POINT OF BEGINNING OF THE PARCEL TO BE DESCRIBED; THENCE CONTINUING ALONG SAID WEST LINE, SOUTH 07 DEGREES 28 MINUTES 54 SECONDS WEST, 1427.53 FEET; THENCE ALONG THE NORTHERLY RIGHT-OF-WAY LINE OF THE C&O RAILROAD, NORTHWESTERLY ON AN ARC LEFT, HAVING A LENGTH OF 893.38 FEET, A RADIUS OF 2834.50 FEET, A CENTRAL ANGLE OF 18 DEGREES 03 MINUTES 31 SECONDS AND A LONG CHORD WHICH BEARS NORTH 67 DEGREES 50 MINUTES 07 SECONDS WEST, 889.69 FEET; THENCE ALONG THE CENTERLINE OF CHILSON ROAD (66 FOOT WIDE RIGHT-OF-WAY), NORTH 18 DEGREES 44 MINUTES 40 SECONDS WEST, 809.27 FEET; THENCE NORTH 89 DEGREES 00 MINUTES 29 SECONDS EAST, 487.21 FEET; THENCE NORTH 01 DEGREE 06 MINUTES 44 SECONDS WEST, 408.86 FEET; THENCE SOUTH 82 DEGREES 31 MINUTES 05 SECONDS EAST, 797.47 FEET, TO THE POINT OF BEGINNING. CONTAINING 27.80 ACRES

TAX ITEM NO.: 11-06-400-015-201-47070

CONSTRUCTION NOTES

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

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



OVERALL SITE MAP

NO SCALE

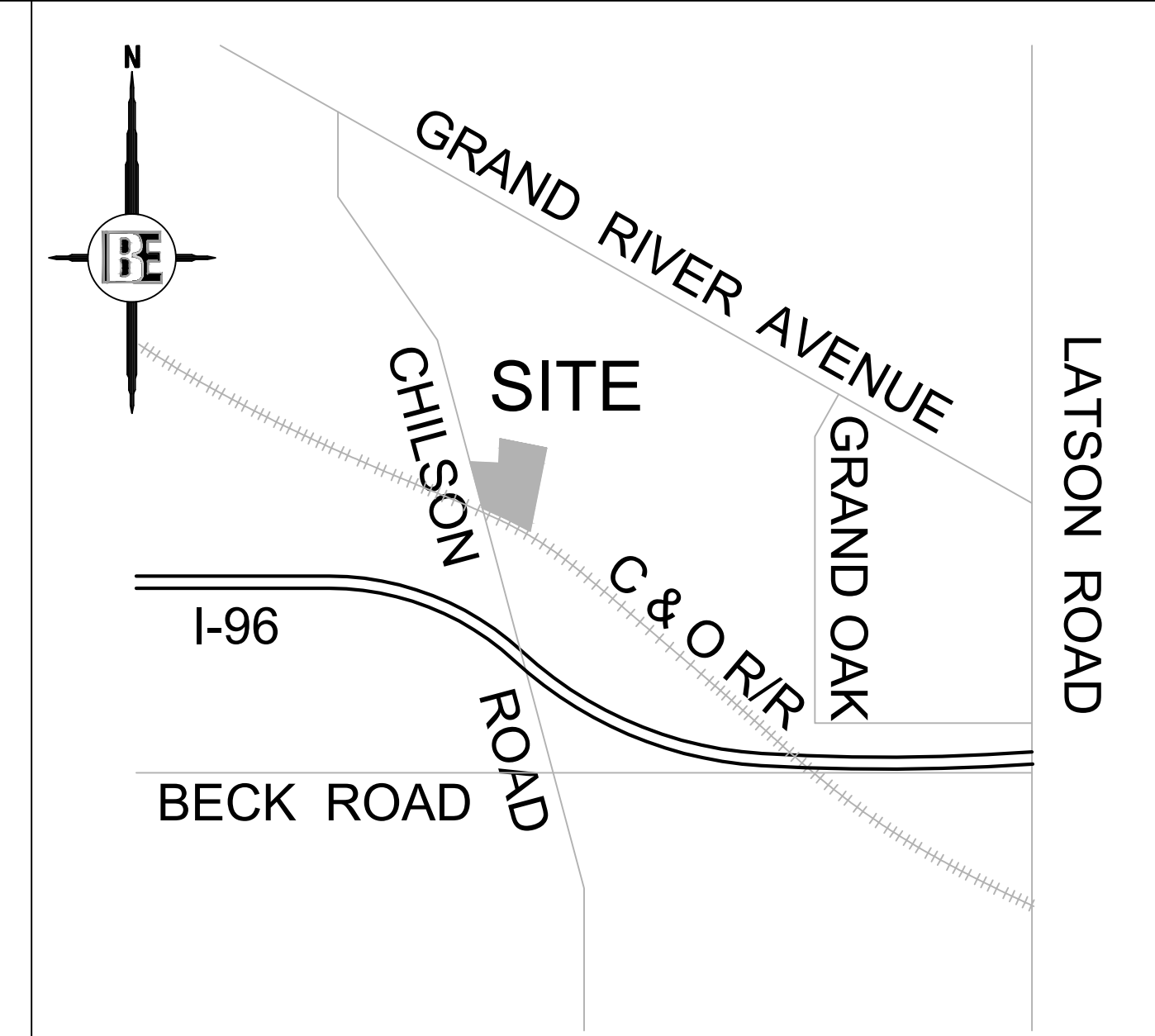
PROJECT TEAM:

COPONEN ARCHITECTS
8002 W. GRAND RIVER, SUITE A
BRIGHTON, MI 48114
CONTACT: WALTER COPONEN
PHONE: 810.225.4141

KENNETH WEIKAL LANDSCAPE ARCHITECTURE
33203 BIDDESTONE LANE
FARMINGTON HILLS, MI 48334
CONTACT: KEN WEIKAL
PHONE: 248.477.3600

INDEMNIFICATION STATEMENT

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



LOCATION MAP

NO SCALE

SHEET INDEX

SHEET NO.	DESCRIPTION
*C1	COVER SHEET
C2	EXISTING CONDITIONS & DEMOLITION PLAN
C3	OFF-SITE EXISTING CONDITIONS & DEMOLITION PLAN
C4	NATURAL FEATURES PLAN
*C5	SITE PLAN
C6	OFF-SITE SITE PLAN
*C7	GRADING, DRAINAGE, & SOIL EROSION CONTROL PLAN
*C8	GRADING, DRAINAGE, & SOIL EROSION CONTROL PLAN
C9	GRADING, DRAINAGE, & SOIL EROSION CONTROL PLAN
C10	OFF-SITE GRADING, DRAINAGE, & SOIL EROSION CONTROL PLAN
C11	OVERALL DRAINAGE SHEET
*C12	UTILITY PLAN
C13	OFF-SITE UTILITY PLAN
C14	LIGHTING PLAN
C15	FIRE PROTECTION PLAN
C16	CONSTRUCTION DETAILS
*C17	CONSTRUCTION DETAILS
C18	CONSTRUCTION DETAILS / FLOODPLAIN MITIGATION CALCULATIONS
C19	M.H.O.G. STANDARD DETAILS
C20	M.H.O.G. STANDARD DETAILS
L100	SHEET INDEX
*L101	SITE LANDSCAPE PLAN
*L102	SITE LANDSCAPE PLAN
L103	SITE LANDSCAPE PLAN
L104	PLAY AREA
A1	FLOOR PLANS
A2	FLOOR PLANS
A3	UNIT FLOOR PLANS
A4	UNIT ELEVATIONS
A5	HEALTH AND WEALTH CENTER BUILDING
A7	BUILDING FLOOR PLAN
A8	BUILDING FLOOR PLAN AND ELEVATIONS
A13	HEALTH AND WEALTH CENTER ELEVATIONS
TS-1	REFUSE COLLECTION STATION
MP-1	MAIL PAVILION
*A29	BLDG. TYPE IV FLOOR PLAN
*A30	BLDG. TYPE IV ELEVATION

LAKESHORE VILLAGE APARTMENTS PHASE 3

PREPARED FOR:

THE LOCKWOOD COMPANIES
27777 FRANKLIN ROAD, SUITE 1410
SOUTHFIELD, MI 48034
CONTACT: MARK LOCKWOOD
PHONE: 248.433.7401

PREPARED BY:

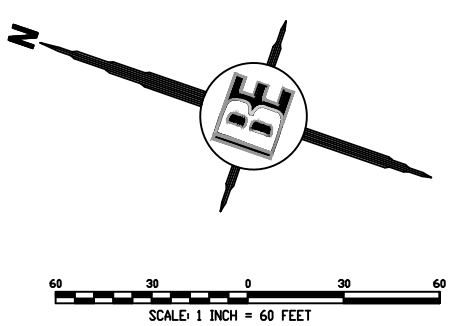
BEBOSS Engineering
Engineers Surveyors Planners Landscape Architects
3121 E. GRAND RIVER AVE.
HOWELL, MI. 48843
800.246.6735 FAX 517.548.1670

NO	BY	CK	REVISION	PER	DATE	JOB NO.
3	TE	BL	PER CLIENT - ADD 4 UNITS		2/22/18	C1
2	RD	MJ	PER TOWNSHIP ENGINEER		5/9/16	
1	RD	BL	TOWNSHIP ENGINEER, FIRE DEPT., TOWNSHIP PLANNERS		2/24/16	
NO	BY	CK	REVISION	PER	DATE	

C1

2777 FRANKLIN RD., SUITE 1410
SOUTHFIELD, MI 48034-8209

PROPERTY ADDRESS:
2812 ONTARIO CT.
HOWELL, MI 48843
ZONED: MDR



LEGEND	
PROPOSED (PR)	EXISTING (EX)
FFE	FFE
FINISHED FLOOR ELEVATION SIGN	FINISHED FLOOR ELEVATION SIGN
4" CONCRETE	4" CONCRETE
8" CONCRETE	8" CONCRETE
ASPHALT	ASPHALT
GRAVEL	GRAVEL
FENCE	FENCE
WETLAND LIMIT	WETLAND LIMIT
L.C.O.C FLOODPLAIN	L.C.O.C FLOODPLAIN
MODIFIED CURB	MODIFIED CURB
MOUNTABLE MODIFIED CURB	MOUNTABLE MODIFIED CURB
CARPURT	CARPURT

4711-06-400-016
JENNIFER WOLFE
715 CHILSON RD.
HOWELL, MI 48843

PROPOSED REDI-ROCK
RETAINING WALL W/
RAILING

NO. 775
1 STORY
EXISTING RESIDENCE

DAVID & MIRIANA GRUSENDORF
775 CHILSON RD.
HOWELL, MI 48843
ZONED: SR

SITE DATA

SITE AREA: 27.80 ACRES
EXISTING ZONING: HDR (HIGH DENSITY RESIDENTIAL)

SETBACKS (MIN.):
FRONT - 35' MIN PROPOSED = 40.29'
SIDE - 15' (TOTAL 30') PROPOSED = 22.71'
REAR - 30' PROPOSED = 42.55'

MAX BUILDING HEIGHT:
3 STORY (40' HEIGHT) PROPOSED = 2 STORY (25' HIGH)

LOT WIDTH: 165' MIN PROPOSED = 809.27'

DENSITY: (8 UNITS PER ACRE MAX.)
27.8 AC x 8 = 222 UNITS MAX PROPOSED = 148 UNITS
1 BEDROOM UNITS 20 UNITS
2 BEDROOM UNITS 84 UNITS
3 BEDROOM UNITS 44 UNITS

PARKING CALCULATIONS:
2.0 SPACES PER EACH FAMILY (NON-ELDERLY) UNIT
1 SPACE FOR EVERY 200 SFT USEABLE FLOOR AREA FOR BUSINESS CENTER

2 SPACES/UNIT x 144 FAMILY UNITS = 296 SPACES
1/200 SFT x 1785 SFT U.F.A BUSINESS CENTER = 9 SPACES
TOTAL REQUIRED SPACES = 305 (INCLUDES 12 BARRIER-FREE)
TOTAL SPACES PROVIDED = 334 SPACES (20 BARRIER-FREE)
% OF PARKING SPACES PROVIDED ABOVE REQUIRED IS 10%

LOT COVERAGE:
35% MAX. BUILDING FOOTPRINT (9.73 AC MAX ALLOWED) = 2.10 AC (7.55%) PROVIDED
50% MAX. IMPERVIOUS SURFACE (13.9 AC MAX ALLOWED) = 6.48 AC (23.31%) PROVIDED

BEFORE YOU DIG
CALL MISS DIG
1-800-487-7171
CITY OF HOWELL

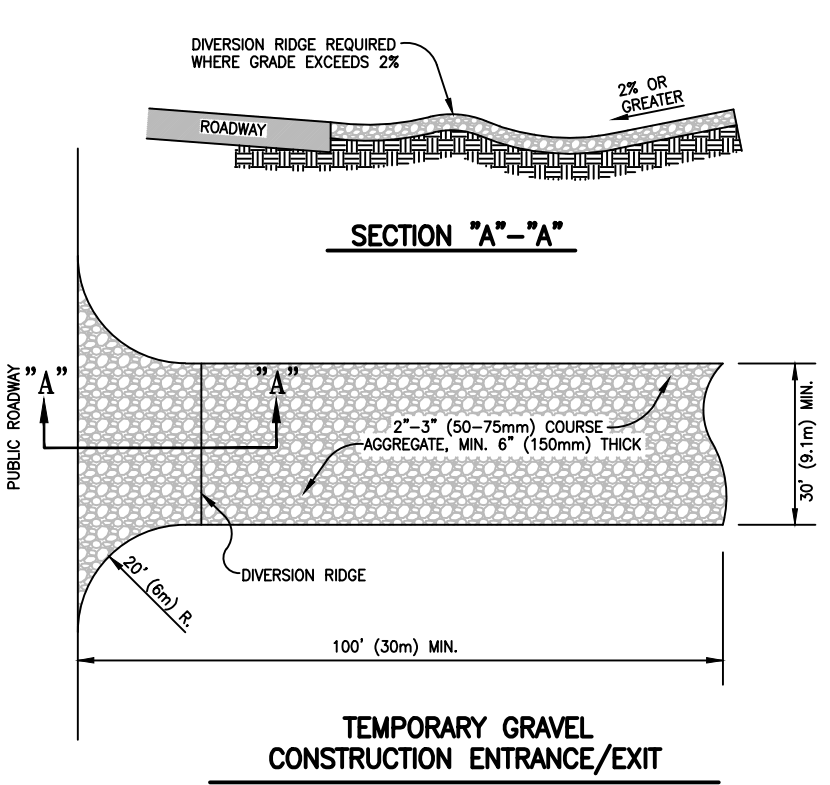
BEBOSS
Engineering
Engineers Surveyors Planners Landscape Architects
3121 E. GRAND RIVER AVE.
HOWELL, MI 48843
800.246.6735 FAX 517.548.1670

PROJECT: **LAKESHORE VILLAGE APARTMENTS - PHASE 3**
PREPARED FOR: **THE LOCKWOOD COMPANIES**
27777 FRANKLIN ROAD, SUITE 1410
SOUTHFIELD, MI 48034
248.433.7401

TITLE: **SITE PLAN**

NO	BY	DATE	REVISION
1	TD	2/22/18	DESIGNED BY
2	RD	2/24/2016	DRAWN BY
3	TD		CHECKED BY
SCALE 1" = 60'			
JOB NO. 16-010			
DATE 2-3-2016			
SHEET NO. C5			

PROPOSED (PR)	EXISTING (EX)	LEGEND
900	900	CONTOUR
T/C XXX.XX	+ 922.08	SPOT ELEVATION
FF	FF	FINISHED FLOOR ELEVATION
FG	FG	FINISHED GRADE ELEVATION
T/A	T/A	TOP OF ASPHALT
T/C	T/C	TOP OF CURB / CONCRETE
T/G	T/G	TOP OF GRAVEL
T/P	T/P	TOP OF PIPE
B/P	B/P	BOTTOM OF PIPE
RIM	RIM	RIM ELEVATION
INV	INV	INVERT ELEVATION
MH	MH	MANHOLE STRUCTURE
IN	IN	INLET STRUCTURE
CB	CB	CATCHBASIN STRUCTURE
ES	ES	END-SECTION
GV	GV	GATEVALVE STRUCTURE
HY	HY	HYDRANT
UP	UP	UTILITY POLE
SN	SN	SANITARY SEWER
SL	SL	SANITARY LEAD
FM	FM	FORCE MAIN
PS	PS	PRESSURE SEWER
ST	ST	STORM SEWER
WM	WM	WATER MAIN
WL	WL	WATER LEAD
FO	FO	FIBER OPTIC
OH	OH	OVERHEAD WIRE
C	C	CABLE
E	E	ELECTRIC
G	G	GAS
T	T	TELEPHONE
MH	MH	MANHOLE
IN	IN	INLET / CATCHBASIN
FL	FL	FLARED END-SECTION
GV	GV	GATE VALVE
HY	HY	HYDRANT
UP	UP	UTILITY POLE
SN	SN	SIGN
CONCRETE	CONCRETE	CONCRETE
ASPHALT	ASPHALT	ASPHALT
GRAVEL	GRAVEL	GRAVEL
SILT FENCE	SILT FENCE	SILT FENCE
DRAINAGE AREA LIMIT	DRAINAGE AREA LIMIT	DRAINAGE AREA LIMIT
MATCH LINE	MATCH LINE	MATCH LINE
CARPORIT	CARPORIT	CARPORIT



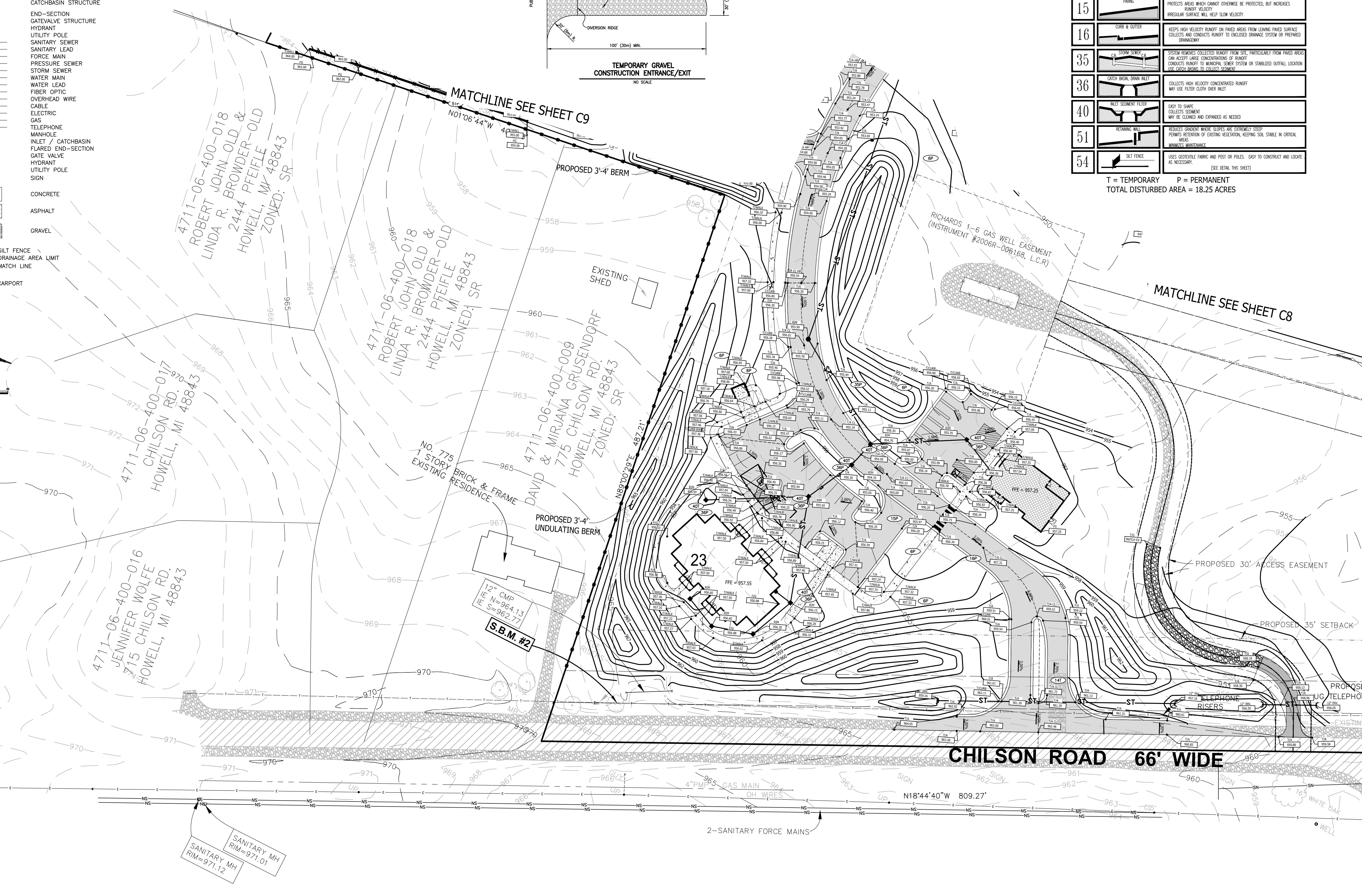
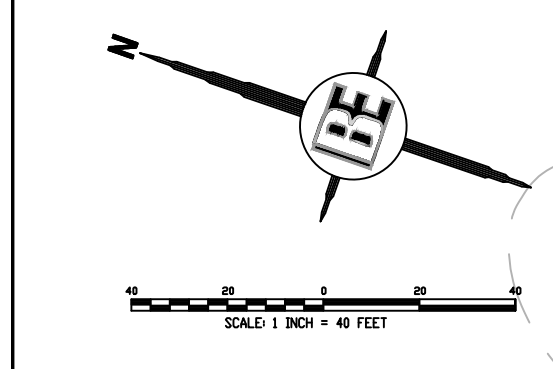
- SOIL EROSION CONTROL NOTES:
1. ALL CATCH BASINS TO HAVE INLET SEDIMENT FILTERS (40T)
 2. ALL DISTURBED AREAS TO BE TOPSOILED, SEEDED, AND MULCHED.

SOIL EROSION CONTROL MEASURES:

6	SEEDING WITH MULCH AND/OR MATING	FACILITATES ESTABLISHMENT OF VEGETATION COVER EFFECTIVE FOR DRAMAENANS WITH LOW VELOCITY SOILS PLACED IN SMALL QUANTITIES BY EXPERIENCED PERSONNEL SHOULD INCLUDE PREPARED TOPSOIL (S)
14	AGGREGATE COVER	STABILIZES SOIL SURFACE THAT MINIMIZES EROSION PERMITS CONSTRUCTION TRAFFIC IN ADVERSE WEATHER MAY BE USED AS PART OF PERMANENT BASE CONSTRUCTION OF PAVED AREAS
15	STRIPING	PROTECTS AREAS WHICH CANNOT OTHERWISE BE PROTECTED, BUT INCREASES RUNOFF VELOCITY
16	CURB & GUTTER	KEEPS HIGH VELOCITY RUNOFF ON PAVED AREAS FROM LEAVING PAVED SURFACE COLLECTS AND CONDUCTS RUNOFF TO ENCLOSED DRAINAGE SYSTEM OR PREPARED DRAINAGEWAY
35	STRIPING	SYSTEM REMOVES COLLECTED RUNOFF FROM SITE, PARTICULARLY FROM PAVED AREAS ON SLOPE LARGE CONCENTRATIONS OF RUNOFF CONDUCTS RUNOFF TO MUNICIPAL SEWER SYSTEM OR STABILIZED OUTFALL LOCATION USE CARE TO PROTECT COLLECTOR
36	CATCH BASIN, DRAIN INLET	COLLECTS HIGH VELOCITY CONCENTRATED RUNOFF MAY USE FILTER CLOTH OVER INLET
40	INLET SEDIMENT FILTER	EASY TO SHAPE COLLECTS SEDIMENT MAY BE CLEANED AND EXPANDED AS NEEDED
51	RETAINING WALL	RETARDS GRADIENT WHERE SLOPES ARE EXTREMELY STEEP PERMITS RETENTION OF EXISTING VEGETATION, KEEPING SOIL STABLE IN CRITICAL AREAS
54	SILT FENCE	USES RECYCLABLE FABRIC AND POSTS OR POLES. EASY TO CONSTRUCT AND LOCATE AS NECESSARY (SEE DETAIL THIS SHEET)

T = TEMPORARY P = PERMANENT
TOTAL DISTURBED AREA = 18.25 ACRES

BEFORE YOU DIG
CALL MISS DIG
1-800-482-7171
MISSISSIPPI
MISSISSIPPI



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

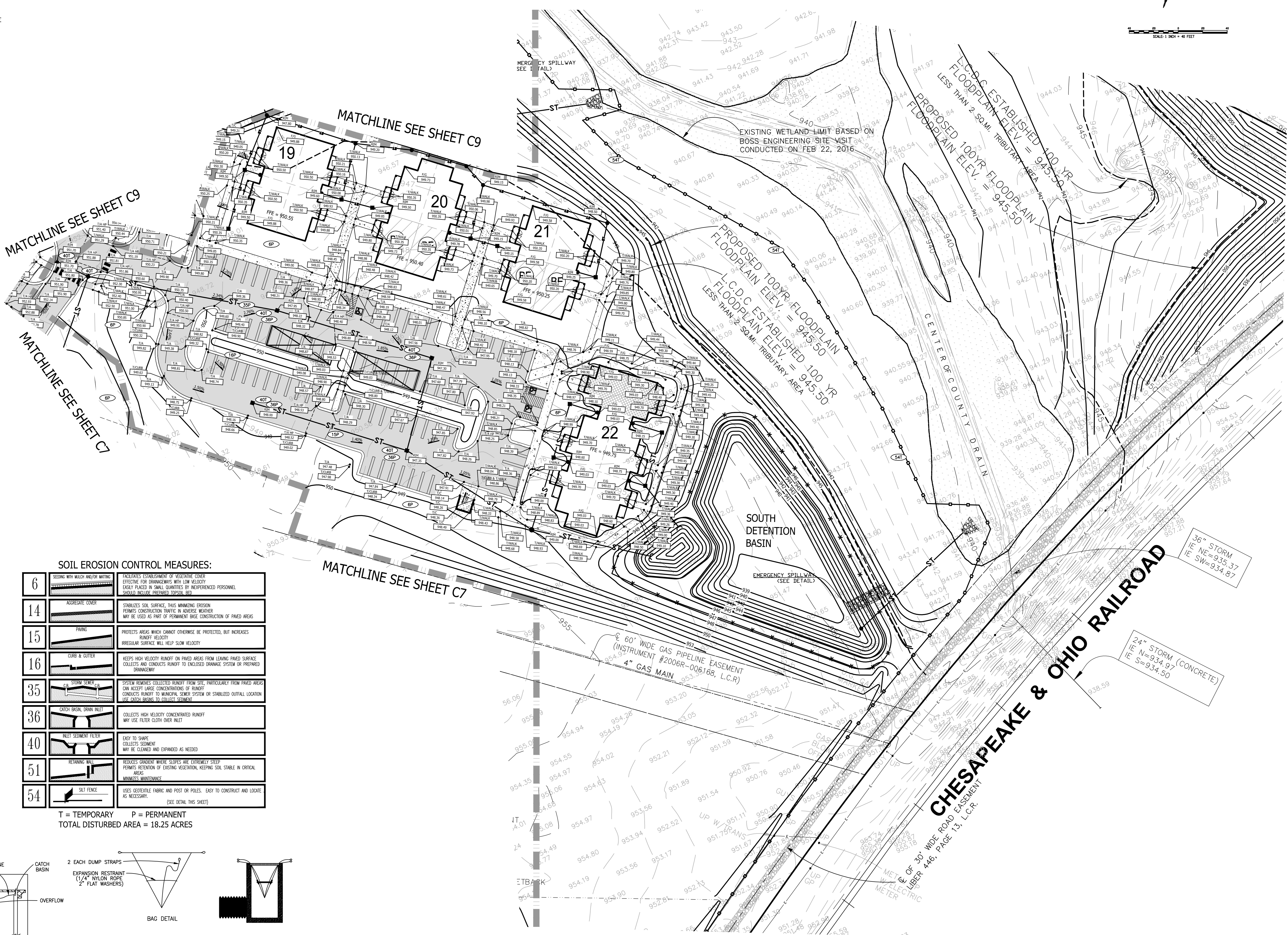
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27777 FRANKLIN ROAD, SUITE 1410
SOUTHFIELD, MI 48034
248.433.7401

NO	BY	DATE	REVISION
1	TD	2/22/18	ISSUE FOR PERMIT
2	TD	2/24/2016	ISSUE FOR PERMIT
3	TD	2/22/18	ISSUE FOR PERMIT

DESIGNED BY: TD
DRAWN BY: RD
CHECKED BY:
SCALE: 1" = 40'
JOB NO. 16-010
DATE: 2-3-2016
SHEET NO. **C7**

PROPOSED (PR)	EXISTING (EX)	LEGEND
900	900	CONTOUR
T/C	T/C	STORM DRAINAGE FLOW
XXXX	922.08	SPOT ELEVATION
FF	FF	FINISHED FLOOR ELEVATION
FG	FG	FINISHED GRADE ELEVATION
T/A	T/A	TOP OF ASPHALT
T/C	T/C	TOP OF CURB / CONCRETE
T/G	T/G	TOP OF GRAVEL
T/P	T/P	TOP OF PIPE
B/P	B/P	BOTTOM OF PIPE
RM	RM	RIM ELEVATION
INV	INV	INVERT ELEVATION
MH	MH	MANHOLE STRUCTURE
IN	IN	INLET STRUCTURE
CB	CB	CATCHBASIN STRUCTURE
ES	ES	END-SECTION
GV	GV	GATEVALVE STRUCTURE
HY	HY	HYDRANT
UP	UP	UTILITY POLE
SN	SN	SANITARY SEWER
SL	SL	SANITARY LEAD
FM	FM	FORCE MAIN
PS	PS	PRESSURE SEWER
ST	ST	STORM SEWER
WM	WM	WATER MAIN
WL	WL	WATER LEAD
FO	FO	FIBER OPTIC
OH	OH	OVERHEAD WIRE
C	C	CABLE
E	E	ELECTRIC
G	G	GAS
T	T	TELEPHONE
MH	MH	MANHOLE
IN	IN	INLET / CATCHBASIN
FL	FL	FLARED END-SECTION
GV	GV	GATE VALVE
HY	HY	HYDRANT
UP	UP	UTILITY POLE
SN	SN	SIGN
CONCRETE	CONCRETE	CONCRETE
ASPHALT	ASPHALT	ASPHALT
GRAVEL	GRAVEL	GRAVEL
SILT FENCE	SILT FENCE	SILT FENCE
DRAINAGE AREA LIMIT	DRAINAGE AREA LIMIT	DRAINAGE AREA LIMIT
MATCH LINE	MATCH LINE	MATCH LINE

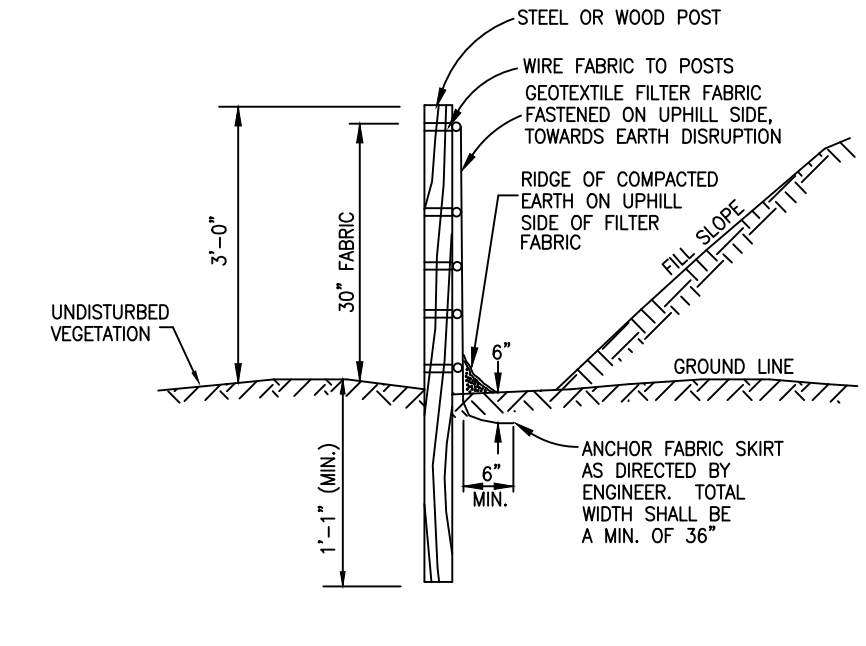
SOIL EROSION CONTROL NOTES:
 1. ALL CATCH BASINS TO HAVE INLET SEDIMENT FILTERS (40T)
 2. ALL DISTURBED AREAS TO BE TOPSOILED, SEEDED, AND MULCHED.



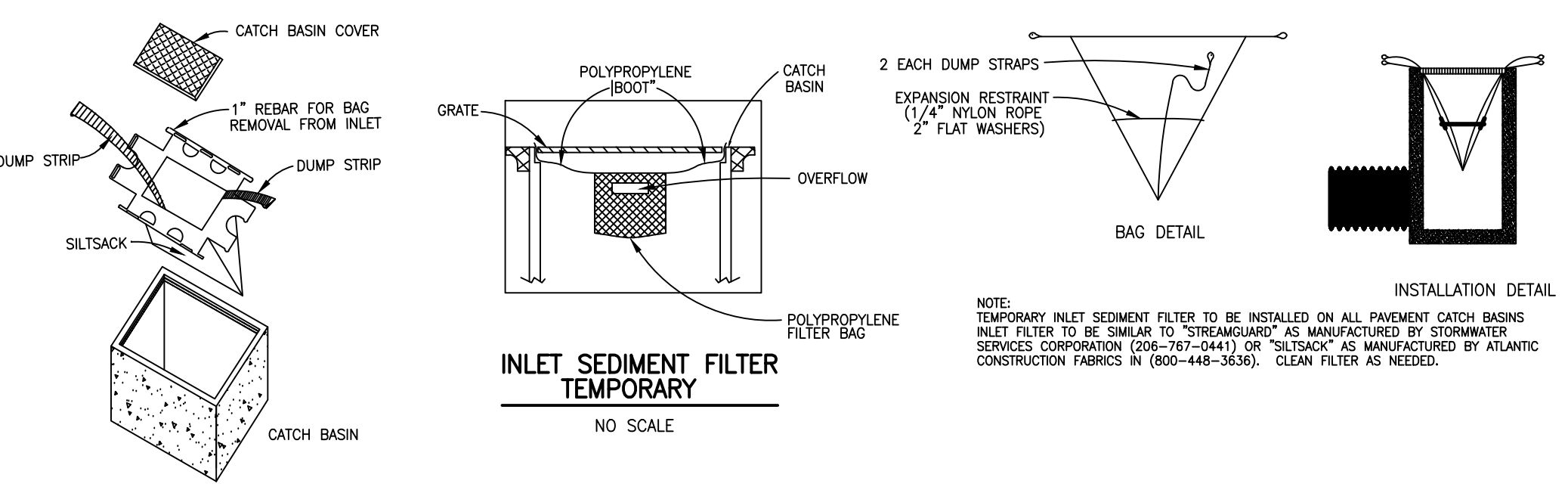
SOIL EROSION CONTROL MEASURES:

6	SEEDING WITH MULCH AND/OR MATS	FACILITATES ESTABLISHMENT OF VEGETATION COVER. EFFICIENT FOR DRIVINGWAYS WITH LOW VELOCITY. EASILY PLACED IN SMALL QUANTITIES BY UNEXPERIENCED PERSONNEL. SHOULD INCLUDE PREPARED TOPSOIL. SEE 6.
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	PAVING	PROTECTS AREAS WHICH CANNOT OTHERWISE BE PROTECTED, BUT INCREASES RUNOFF VELOCITY. IRREGULAR SURFACES WILL HELP SLOW VELOCITY.
16	CURB & GUTTER	KEEPS HIGH VELOCITY RUNOFF ON PAVED AREAS FROM LEAVING PAVED SURFACE. COLLECTS AND CONDUITS RUNOFF TO ENCLOSED DRAINAGE SYSTEM OR PREPARED DRAINAGEWAY.
35	GRAVEL SLOPE	SYSTEM REMOVES SOLICULATED RUNOFF FROM SLOPE, PARTICULARLY FROM PAVED AREAS. CAN ACCEPT LARGE CONCENTRATIONS OF RUNOFF. CONDUITS RUNOFF TO MUNICIPAL SEWER SYSTEM OR STABILIZED OUTFALL LOCATION. USE CATCH BASINS TO COLLECT SEDIMENT.
36	GRASS SEED, ERAB TULI	COLLECTS HIGH VELOCITY CONCENTRATED RUNOFF. MAY USE FILTER CLOTH OVER INLET.
40	INLET SEDIMENT FILTER	EASY TO SHAKE. COLLECTS SEDIMENT. MAY BE CLEANED AND EXPANDED AS NEEDED.
51	RETAINING WALL	REDUCES GRADIENT WHERE SLOPES ARE EXTREMELY STEEP. PERMITS RETENTION OF EXISTING VEGETATION, KEEPING SOIL STABLE IN CRITICAL AREAS. MAINTAINANCE.
54	SILT FENCE	USES GEOTEXTILE FABRIC AND POST OR PILES. EASY TO CONSTRUCT AND LOCATE AS NECESSARY. (SEE DETAIL THIS SHEET)

T = TEMPORARY P = PERMANENT
 TOTAL DISTURBED AREA = 18.25 ACRES

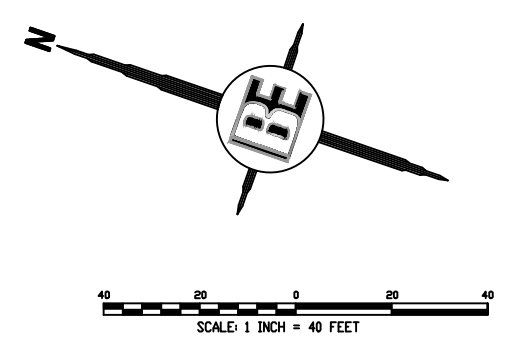


SILT FENCE DETAIL
NO SCALE



INLET SEDIMENT FILTER TEMPORARY
NO SCALE

NOTE:
 TEMPORARY INLET SEDIMENT FILTER TO BE INSTALLED ON ALL PAVED CATCH BASINS. INLET FILTER TO BE SIMILAR TO "STREANGUARD" AS MANUFACTURED BY STORMWATER SERVICES CORPORATION (800-767-9447) OR "SILTACK" AS MANUFACTURED BY ATLANTIC CONSTRUCTION FABRICS IN (800-448-3636). CLEAN FILTER AS NEEDED.



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

PROJECT: LAKESHORE VILLAGE APARTMENTS - PHASE 3
 PREPARED FOR: THE LOCKWOOD COMPANIES
 27777 FRANKLIN ROAD, SUITE 1410
 SOUTHFIELD, MI 48034
 248.433.7401

NO	BY	DATE	REVISION PER
3	TD	2/22/18	PER CLIENT
1	RD	2/24/2016	TEMPORARY CHANGES TO THE DPT, PLANNERS

DESIGNED BY: TD
 DRAWN BY: RD
 CHECKED BY:
 SCALE 1" = 40'
 JOB NO. 16-010
 DATE 2-3-2016
 SHEET NO. C8



LAKESHORE VILLAGE LDHA,
2777 FRANKLIN RD., SUITE 1410
SOUTHFIELD, MI 48034-8209

SEE OFF-SITE UTILITY PLAN SHEET C13

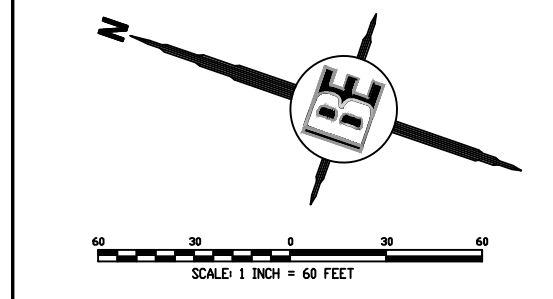
PROPERTY ADDRESS:
2812 ONTARIO CT.
HOWELL, MI 48843
ZONED: MDR

LEGEND
PROPOSED (PR) EXISTING (EX)

- FF FINISHED FLOOR ELEVATION
- FC FINISHED GRADE ELEVATION
- T/A TOP OF ASPHALT
- T/C TOP OF CURB / CONCRETE
- T/G TOP OF GRAVEL
- T/P TOP OF PIPE
- B/P BOTTOM OF PIPE
- RIM RIM ELEVATION
- INV INVERT ELEVATION
- MH MANHOLE STRUCTURE
- IN INLET STRUCTURE
- CB CATCHBASIN STRUCTURE
- ES END-SECTION
- GV GATEVALVE STRUCTURE
- HY HYDRANT
- UP UTILITY POLE
- SN SANITARY SEWER
- SL SANITARY LEAD
- FM FORCE MAIN
- PS PRESSURE SEWER
- ST STORM SEWER
- WM WATER MAIN
- WL WATER LEAD
- FO FIBER OPTIC
- OH OVERHEAD WIRE
- C CABLE
- E ELECTRIC
- G GAS
- TELEPHONE MANHOLE
- INLET / CATCHBASIN
- FLARED END-SECTION
- GATE VALVE
- HYDRANT
- UTILITY POLE
- SIGN

- CONTOUR
- STORM DRAINAGE FLOW
- SPOT ELEVATION
- FINISHED FLOOR ELEVATION
- FINISHED GRADE ELEVATION
- TOP OF ASPHALT
- TOP OF CURB / CONCRETE
- TOP OF GRAVEL
- TOP OF PIPE
- BOTTOM OF PIPE
- RIM ELEVATION
- INVERT ELEVATION
- MANHOLE STRUCTURE
- INLET STRUCTURE
- CATCHBASIN STRUCTURE
- END-SECTION
- GATEVALVE STRUCTURE
- HYDRANT
- UTILITY POLE
- SANITARY SEWER
- SANITARY LEAD
- FORCE MAIN
- PRESSURE SEWER
- STORM SEWER
- WATER MAIN
- WATER LEAD
- FIBER OPTIC
- OVERHEAD WIRE
- CABLE
- ELECTRIC
- GAS
- TELEPHONE MANHOLE
- INLET / CATCHBASIN
- FLARED END-SECTION
- GATE VALVE
- HYDRANT
- UTILITY POLE
- SIGN

- CONCRETE
- ASPHALT
- GRAVEL
- WETLAND LIMIT
- LCDC FLOODPLAIN



SANITARY SEWER LEAD DATA TABLE

UNIT	RISER (FT)	LENGTH (FT)	SLOPE (%)	DIST. FROM DOWNSTREAM STRUCTURE
1	4	17	2.00%	75.19
2	3	17	2.00%	184.55
3	0	17	2.00%	293.91
4	0	94	1.00%	0.00
5	3	197	2.00%	120.98
6	2	19	2.00%	9.53
7	6	18	3.00%	21.10
8	6	38	3.00%	84.40
9	8	53	3.00%	52.07
10	8	27	3.00%	161.80
11	5	67	2.00%	26.01
12	4	58	2.00%	72.28
13	4	49	2.00%	85.50
14	2	37	2.00%	0.00
CLUB HOUSE	2	260	2.00%	0.00

SANITARY SEWER PIPE SCHEDULE
PROPOSED PIPES (LABEL BASED ON UPSTREAM STRUCTURE)

PIPE	LENGTH	SIZE	TYPE	SLOPE
2	123 FT.	8 IN.	PVC SDR 26	0.50%
3	375 FT.	8 IN.	PVC SDR 26	0.50%
4	236 FT.	8 IN.	PVC SDR 26	0.50%
5	180 FT.	8 IN.	PVC SDR 26	0.50%
6	161 FT.	8 IN.	PVC SDR 26	0.50%
7	145 FT.	8 IN.	PVC SDR 26	0.50%
8	45 FT.	8 IN.	PVC SDR 26	0.50%
9	161 FT.	8 IN.	PVC SDR 26	1.00%
10	250 FT.	8 IN.	PVC SDR 26	1.25%
11	160 FT.	8 IN.	PVC SDR 26	0.00%
12	151 FT.	8 IN.	PVC SDR 26	1.50%
13	213 FT.	8 IN.	PVC SDR 26	1.50%
14	299 FT.	8 IN.	PVC SDR 26	1.00%

STORM SEWER PIPE SCHEDULE
PROPOSED PIPES (LABEL BASED ON UPSTREAM STRUCTURE)

PIPE	LENGTH	SIZE	TYPE	SLOPE
1	99 FT.	24 IN.	RCP C-76 CLV	0.50%
2	121 FT.	24 IN.	RCP C-76 CLV	0.50%
3	132 FT.	12 IN.	RCP C-76 CLV	0.32%
4	78 FT.	21 IN.	RCP C-76 CLV	0.50%
5	132 FT.	18 IN.	RCP C-76 CLV	0.50%
6	157 FT.	18 IN.	RCP C-76 CLV	0.50%
7	28 FT.	12 IN.	RCP C-76 CLV	0.32%
8	158 FT.	18 IN.	RCP C-76 CLV	1.00%
9	44 FT.	12 IN.	RCP C-76 CLV	0.32%
10	39 FT.	12 IN.	RCP C-76 CLV	0.32%
11	190 FT.	15 IN.	RCP C-76 CLV	1.50%
12	24 FT.	12 IN.	RCP C-76 CLV	1.50%
13	45 FT.	12 IN.	RCP C-76 CLV	2.00%
13A	87 FT.	12 IN.	RCP C-76 CLV	1.00%
14	91 FT.	12 IN.	RCP C-76 CLV	2.00%
14A	8 FT.	8 IN.	PVC SCH40	2.00%
14B	32 FT.	8 IN.	PVC SCH40	2.00%
15	81 FT.	12 IN.	PVC SCH40	1.00%
15A	76 FT.	8 IN.	PVC SCH40	1.00%
17	104 FT.	30 IN.	RCP C-76 CLV	0.35%
18	100 FT.	30 IN.	RCP C-76 CLV	0.35%
19	28 FT.	24 IN.	RCP C-76 CLV	1.50%
20	36 FT.	24 IN.	RCP C-76 CLV	1.00%
20A	74 FT.	6 IN.	PVC SCH40	1.25%
20B	102 FT.	6 IN.	PVC SCH40	1.25%
20C	40 FT.	6 IN.	PVC SCH40	1.00%
20D	101 FT.	6 IN.	PVC SCH40	1.00%
21	133 FT.	21 IN.	RCP C-76 CLV	1.00%
22	60 FT.	18 IN.	RCP C-76 CLV	1.00%
22A	62 FT.	6 IN.	PVC SCH40	3.50%
22B	98 FT.	6 IN.	PVC SCH40	3.50%
22C	72 FT.	6 IN.	PVC SCH40	1.00%
22D	102 FT.	6 IN.	PVC SCH40	2.50%
23	100 FT.	24 IN.	RCP C-76 CLV	0.35%
23A	50 FT.	6 IN.	PVC SCH40	2.75%
23B	94 FT.	6 IN.	PVC SCH40	5.00%
23C	78 FT.	6 IN.	PVC SCH40	2.75%
23D	99 FT.	6 IN.	PVC SCH40	2.75%
24	134 FT.	18 IN.	RCP C-76 CLV	0.50%
24A	47 FT.	6 IN.	PVC SCH40	2.50%
24B	94 FT.	6 IN.	PVC SCH40	4.00%
24C	74 FT.	6 IN.	PVC SCH40	2.50%
24D	92 FT.	6 IN.	PVC SCH40	2.50%
25	87 FT.	18 IN.	RCP C-76 CLV	0.30%
26	188 FT.	15 IN.	RCP C-76 CLV	0.30%
27	131 FT.	12 IN.	RCP C-76 CLV	0.32%
28	50 FT.	12 IN.	RCP C-76 CLV	0.32%
28A	52 FT.	6 IN.	PVC SCH40	1.00%
28B	50 FT.	6 IN.	PVC SCH40	1.00%
29	92 FT.	12 IN.	RCP C-76 CLV	0.32%
29A	24 FT.	6 IN.	PVC SCH40	1.00%
29B	47 FT.	6 IN.	PVC SCH40	1.00%
30	107 FT.	12 IN.	RCP C-76 CLV	0.50%
32	121 FT.	12 IN.	RCP C-76 CLV	0.50%
101	29 FT.	8 IN.	PVC SCH40	1.00%
102	64 FT.	8 IN.	PVC SCH40	1.00%
201	39 FT.	8 IN.	PVC SCH40	1.00%
202	37 FT.	8 IN.	PVC SCH40	1.00%
203	67 FT.	8 IN.	PVC SCH40	1.00%
204	40 FT.	8 IN.	PVC SCH40	1.00%
205	64 FT.	8 IN.	PVC SCH40	1.00%
206	48 FT.	8 IN.	PVC SCH40	1.00%
301	28 FT.	8 IN.	PVC SCH40	1.00%
302	46 FT.	8 IN.	PVC SCH40	1.00%
303	63 FT.	8 IN.	PVC SCH40	1.00%
304	46 FT.	8 IN.	PVC SCH40	1.00%
305	64 FT.	8 IN.	PVC SCH40	1.00%
306	46 FT.	8 IN.	PVC SCH40	1.00%



NOTE:
STORM SEWER AND WATER MAIN
ARE INSTALLED AS OF 2/16/18

UTILITY DATA:
A RATIO OF 0.57 R.E.U.'S PER UNIT WAS
DEVELOPED BY THE TOWNSHIP FOR PHASE 3.
144 UNITS x 0.57 = 82 REUS

BEFORE YOU DIG
CALL MISS DIG
1-800-487-7171
CALL 800-487-7171
BEFORE YOU DIG

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

PROJECT
LAKESHORE VILLAGE APARTMENTS - PHASE 3
PREPARED FOR
THE LOCKWOOD COMPANIES
27777 FRANKLIN ROAD, SUITE 1410
SOUTHFIELD, MI 48034
248.433.7401

UTILITY PLAN

NO	BY	DATE	REVISION PER
1	RD	2/24/2016	DATE
2	RD	2/24/2016	DATE
3	TE	2/22/18	PER CLIENT

DESIGNED BY: TD
DRAWN BY: RD
CHECKED BY:
SCALE: 1" = 60'
JOB NO. 16-010
DATE: 2-3-2016
SHEET NO. C12

Table with columns: PIPE, FROM, TO, DRAIN AREA, AREA IMPERVIOUS, AREA PERVIOUS, RUNOFF COEFF, EQUIV AREA, INTENSITY, TIME OF CONC, ADDL RUNOFF, RUNOFF (CFS), PIPE LENGTH (FT), PIPE DIA (IN), VELOCITY FLOWING (FPS), HYDRAULIC GRADELINE SLOPE %, ACTUAL SLOPE USED, MANNING FLOW CAPACITY, MANNINGS VELOCITY (FT/SEC), TIME (MIN), HG ELEV UPPER END, HG ELEV LOWER END, RM ELEV UPPER END, INVERT UPPER END, INVERT LOWER END, DROP DISTANCE (FT), RM INV, RM-HG >1, PIPE COVER >0.87, FLOW THRU COVER.

Table with columns: PIPE, FROM, TO, DRAIN AREA, AREA IMPERVIOUS, AREA PERVIOUS, RUNOFF COEFF, EQUIV AREA, INTENSITY, TIME OF CONC, ADDL RUNOFF, RUNOFF (CFS), PIPE LENGTH (FT), PIPE DIA (IN), VELOCITY FLOWING (FPS), HYDRAULIC GRADELINE SLOPE %, ACTUAL SLOPE USED, MANNING FLOW CAPACITY, MANNINGS VELOCITY (FT/SEC), TIME (MIN), HG ELEV UPPER END, HG ELEV LOWER END, RM ELEV UPPER END, INVERT UPPER END, INVERT LOWER END, DROP DISTANCE (FT), RM INV, RM-HG >1, PIPE COVER >0.87, FLOW THRU COVER.

STORM SEWER INVENTORY

Grid of storm sewer inventory boxes for various catch basins (CB00, CB01, CB02, etc.) and manholes (MH01, MH02, etc.). Each box lists manhole numbers, elevations, and sump details.

*NOTE: STRUCTURES 9 AND 10 INTENTIONALLY OMITTED

LIVINGSTON COUNTY DETENTION BASIN CALCULATIONS NORTH BASIN. Table showing IMPERVIOUS AREA, IMPERVIOUS FACTOR, IMPERVIOUS ACRE, and other basin parameters.

Table for FOREBAY VOLUME calculations. Includes formulas like V(F) = (.05)(V/100) and required volume of 2822 CF.

DESIGN HIGHWATER ELEVATION table. Columns: ELEV, AREA, VOLUME, CUMULATIVE VOLUME. Lists elevations from 945 to 939.

BANKFULL FLOOD VOLUME table. Columns: ELEV, AREA, VOLUME, CUMULATIVE VOLUME. Lists elevations from 945 to 939.

DESIGN HIGHWATER ELEVATION table (continued). Lists elevations from 944 to 940.

BANKFULL FLOOD VOLUME table (continued). Lists elevations from 945 to 940.

DESIGN HIGHWATER ELEVATION table (continued). Lists elevations from 944 to 940.

BANKFULL FLOOD VOLUME table (continued). Lists elevations from 945 to 940.

DESIGN HIGHWATER ELEVATION table (continued). Lists elevations from 944 to 940.

BANKFULL FLOOD VOLUME table (continued). Lists elevations from 945 to 940.

DESIGN HIGHWATER ELEVATION table (continued). Lists elevations from 944 to 940.

BANKFULL FLOOD VOLUME table (continued). Lists elevations from 945 to 940.

DESIGN HIGHWATER ELEVATION table (continued). Lists elevations from 944 to 940.

BANKFULL FLOOD VOLUME table (continued). Lists elevations from 945 to 940.

DESIGN HIGHWATER ELEVATION table (continued). Lists elevations from 944 to 940.

Summary table for required standpipe holes. Columns: ELEVATION, # OF HOLES, DIAMETER OF HOLES.

LIVINGSTON COUNTY DETENTION BASIN CALCULATIONS SOUTH BASIN. Table showing IMPERVIOUS AREA, IMPERVIOUS FACTOR, IMPERVIOUS ACRE, and other basin parameters.

Table for FOREBAY VOLUME calculations. Includes formulas like V(F) = (.05)(V/100) and required volume of 3889 CF.

DESIGN HIGHWATER ELEVATION table. Columns: ELEV, AREA, VOLUME, CUMULATIVE VOLUME. Lists elevations from 945 to 939.

BANKFULL FLOOD VOLUME table. Columns: ELEV, AREA, VOLUME, CUMULATIVE VOLUME. Lists elevations from 945 to 939.

DESIGN HIGHWATER ELEVATION table. Lists elevations from 944 to 940.

BANKFULL FLOOD VOLUME table. Lists elevations from 945 to 940.

DESIGN HIGHWATER ELEVATION table. Lists elevations from 944 to 940.

BANKFULL FLOOD VOLUME table. Lists elevations from 945 to 940.

DESIGN HIGHWATER ELEVATION table. Lists elevations from 944 to 940.

BANKFULL FLOOD VOLUME table. Lists elevations from 945 to 940.

DESIGN HIGHWATER ELEVATION table. Lists elevations from 944 to 940.

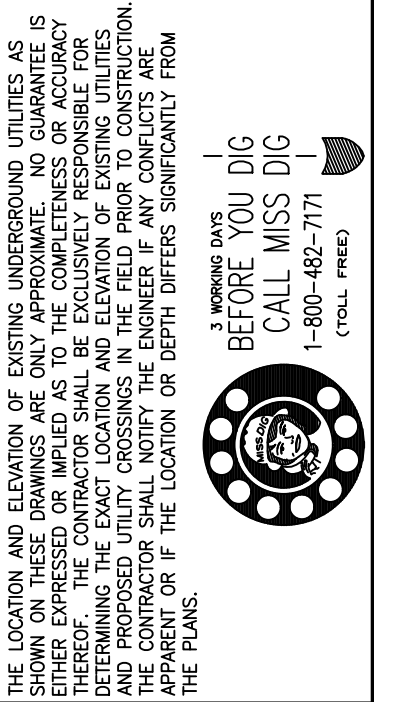
BANKFULL FLOOD VOLUME table. Lists elevations from 945 to 940.

DESIGN HIGHWATER ELEVATION table. Lists elevations from 944 to 940.

BANKFULL FLOOD VOLUME table. Lists elevations from 945 to 940.

DESIGN HIGHWATER ELEVATION table. Lists elevations from 944 to 940.

Summary table for required standpipe holes. Columns: ELEVATION, # OF HOLES, DIAMETER OF HOLES.



BEFORE YOU DIG CALL MISS DIG 1-800-487-7171

BEBOSS Engineering logo and contact information: 3121 E. GRAND RIVER AVE., HOWELL, MI, 48843. Phone: 800-246-6735, Fax: 517-548-1670.

LAKESHORE VILLAGE APARTMENTS - PHASE 3. PREPARED FOR: THE LOCKWOOD COMPANIES. 27777 FRANKLIN ROAD, SUITE 1410, SOUTHFIELD, MI 48034.

CONSTRUCTION DETAILS table. Columns: DATE, PER CLIENT, REVISION PER. Includes a grid for revisions.

DESIGNED BY: DRAWN BY: RD CHECKED BY: SCALE: N/A JOB NO. 16-010 DATE: 2-3-2016 SHEET NO. C17





SEED MIX NOTES

- THE SEED MIXES SHALL BE APPLIED AT THE SPECIFIED RATE OF FOR EACH MIX.
- MUST BE INSTALLED TO MANUFACTURER SPECIFICATION AND REQUIREMENTS.

MANUFACTURER: CARNO NATIVE PLANT NURSERY
605 SOUTH MAIN STREET, #1
ANN ARBOR, MICHIGAN 48104
734-222-9690

SEED MIX KEY: SEE SHEET LS-102 FOR MIX INFORMATION

- MEADOW SEED MIX WITH EROSION FABRIC - SEE 1/LS-102
- STORM WATER SEED MIX WITH EROSION FABRIC - SEE 1/LS-102
- BASIN BOTTOM SEED MIX WITH EROSION FABRIC - SEE 1/LS-102

LOCKWOOD COMPANIES
27777 FRANKLIN ROAD
SUITE 1410
SOUTHFIELD, MI 48304

LAKESHORE VILLAGE APARTMENTS PHASE 3

GENOA TWP., MI
LANDSCAPE CONSTRUCTION DOCUMENTS

SHEET SITE PLANTING PLAN

PRELIMINARY DATE
2016-02-02 SPA
2016-02-24 SPA

ISSUE DATE
2016-03-18 CD

REVISION DATE
2016-05-09 SPA
2016-06-28 REV.
2016-08-18 REVISED
2016-09-20 REVISED
2016-12-05 PERMIT
2018-02-28 TWP. REV.

SHEET NUMBER
LS-101

PLANT LIST - (BS) SR ZONING

QUAN.	KEY	COMMON/BOTANICAL NAME	SIZE	SPEC.
7	AB12	Autumn Blaze Maple - clump <i>Acer x. fremanii 'Autumn Blaze'</i>	12' Ht.	B&B
6	AB	Autumn Blaze Maple <i>Acer x. fremanii 'Autumn Blaze'</i>	3" Cal.	B&B
5	CO	Hackberry <i>Celtis occidentalis</i>	3" Cal.	B&B
5	GT	Thornless Honeylocust <i>Gleditsia 'Skyline'</i>	3" Cal.	B&B
7	QB	Swamp White Oak <i>Quercus bicolor</i>	3" Cal.	B&B
8	PA10	Norway Spruce <i>Picea abies</i>	10' Ht.	B&B
9	PA6	Norway Spruce <i>Picea abies</i>	6' Ht.	B&B
5	PD10	Black Hill Spruce <i>Picea glauca var. densata</i>	10' Ht.	B&B
8	PD6	Black Hill Spruce <i>Picea glauca var. densata</i>	6' Ht.	B&B
35	CM	Cornelian Cherry - clump <i>Cornus mas</i>	4' Ht.	Cont.
40	SV	Common Lilac <i>Syringa vulgaris</i>	4' Ht.	Cont.
45	VD	Arrowwood Viburnum <i>Viburnum dentatum</i>	36" Ht.	Cont.

PLANT LIST - (I) INTERIOR

QUAN.	KEY	COMMON/BOTANICAL NAME	SIZE	SPEC.
11	AB	Autumn Blaze Maple <i>Acer x. fremanii 'Autumn Blaze'</i>	3" Cal.	B&B
4	AB12	Autumn Blaze Maple - clump <i>Acer x. fremanii 'Autumn Blaze'</i>	12' Ht.	B&B
9	CO	Hackberry <i>Celtis occidentalis</i>	3" Cal.	B&B
34	GT	Thornless Honeylocust <i>Gleditsia 'Skyline'</i>	3" Cal.	B&B
10	LT	Tulip Tree <i>Liriodendron tulipifera</i>	3" Cal.	B&B
7	UA	Accolade Elm <i>Ulmus parviflora 'Morton'</i>	3" Cal.	B&B
5	UR	Regal Elm <i>Ulmus carpinifolia 'Regal'</i>	3" Cal.	B&B
29	PA6	Norway Spruce <i>Picea Abies</i>	6' Ht.	B&B
13	PA10	Norway Spruce <i>Picea Abies</i>	10' Ht.	B&B
27	PD6	Black Hill Spruce <i>Picea glauca var. densata</i>	6' Ht.	B&B
25	PW6	White Spruce <i>Picea glauca</i>	6' Ht.	B&B
122	CS	Redtwig Dogwood <i>Cornus sericea</i>	36" Ht.	BB
34	FI	Forsythia <i>Forsythia x. intermedia</i>	36" Ht.	B&B
57	JK6	Ketler Juniper <i>J. 'Ketterli'</i>	6' Ht.	B&B
66	JSG	Sea Green Juniper <i>Juniperus 'Sea Green'</i>	24" Spr.	Cont.
24	LA	Amur Privet <i>Ligustrum amurense</i>	36" Ht.	B&B Full
52	SAW	Anthony Waterer Spirea <i>Spirea 'Anthony Waterer'</i>	24" Ht.	Cont.
9	JNB	New Blue Tams Juniper <i>Juniperus t. 'New Blue'</i>	24" Spr.	Cont.
169	VD	Arrowwood Viburnum <i>Viburnum dentatum</i>	36" Ht.	Cont.

PLANT LIST - (P) PARKING LOT TREES

QUAN.	KEY	COMMON/BOTANICAL NAME	SIZE	SPEC.
7	GT	Thornless Honeylocust <i>Gleditsia 'Skyline'</i>	3" Cal.	B&B
9	UA	Accolade Elm <i>Ulmus parviflora 'Morton'</i>	3" Cal.	B&B
12	UR	Regal Elm <i>Ulmus carpinifolia 'Regal'</i>	3" Cal.	B&B

PLANT LIST - (F) FRONTAGE TREES

QUAN.	KEY	COMMON/BOTANICAL NAME	SIZE	SPEC.
2	GT	Thornless Honeylocust <i>Gleditsia 'Skyline'</i>	3" Cal.	B&B
8	UA	Accolade Elm <i>Ulmus parviflora 'Morton'</i>	3" Cal.	B&B
16	PA7	Norway Spruce <i>Picea abies</i>	7' Ht.	B&B

PLANT LIST - (D) DETENTION BASINS

QUAN.	KEY	COMMON/BOTANICAL NAME	SIZE	SPEC.
6	AB12	Autumn Blaze Maple - clump <i>Acer x. fremanii 'Autumn Blaze'</i>	12' Ht.	B&B
8	GD	Kentucky Coffee Tree - fully branched <i>Gymnocladus dioica</i>	4 stem min	B&B
3	GT	Thornless Honeylocust <i>Gleditsia 'Skyline'</i>	3" Cal.	B&B
14	QB	Swamp White Red Oak <i>Quercus bicolor</i>	3" Cal.	B&B
150	CB	Buttonbush <i>Cephalanthus occidentalis</i>	36" Ht.	B&B
90	CR	Grey Dogwood <i>Cornus racemosa</i>	36" Ht.	B&B
70	SC	American Elderberry <i>Sambucus canadensis</i>	36" Ht.	B&B

PLANT MIX

PLANTING BEDS TO RECEIVE 70% LOAM TOPSOIL, 10% COMPOST, 20% SAND; EXCAVATE PLANT BED, DISPOSE OF SPOILS OFF SITE, INSTALL PLANT MIX

HAND TILL INTO PLACED PLANT MIX:

- (1) 6 CU. FT. BALE CANADIAN PEAT
- (1) 40 LB BAG COMPOSTED POULTRY MANURE "CHICK MAGIC" 5-3-2 WWW.CHICKMAGIC.NET (262)495-6220
- (1) 10 LB BAG SHERMANS 13-13-13 MULTI PURPOSE FERTILIZER

PER 100 SQ FT BED AREA

HAND TILL INTO PROVIDED PLANT MIX TO A DEPTH OF 12" MINIMUM

PLANT BEDS

ALL PLANT BEDS TO BE FULLY EXCAVATED TO DEPTH SHOWN ON DETAILS AND AREAS SHOWN ON PLANS, AND TO RECEIVE CONTINUOUS PLANT MIX AS SPECIFIED (NOT INDIVIDUAL PLANT HOLES)

MULCH

MULCH TO BE DOUBLE SHREDDED HARDWOOD BARK MULCH

NO GROUND WOOD PALETTE MULCH PERMITTED

LAWNS:

ALL PROPOSED LAWN AREAS TO BE NON IRRIGATED SEED - SEE SPECIFICATION 02486 IN THE PROJECT MANUAL.

TOPSOIL

CONTRACTOR TO TILL OR DISK SUBGRADE TO 6" DEPTH AND INSTALL 4" COMPACTED DEPTH TOPSOIL IN ALL LAWN AREAS - FROM ONSITE STOCKPILE OR PROVIDED TO COMPLETE THE PROJECT

LANDSCAPE EDGING

ALL LANDSCAPE EDGES ARE SHOVEL CUT

PLANT SPACING

FILL BED WITH PLANTS SPECIFIED. KEEP PLANTS AWAY FROM BUILDING 12" MATURE SIZE

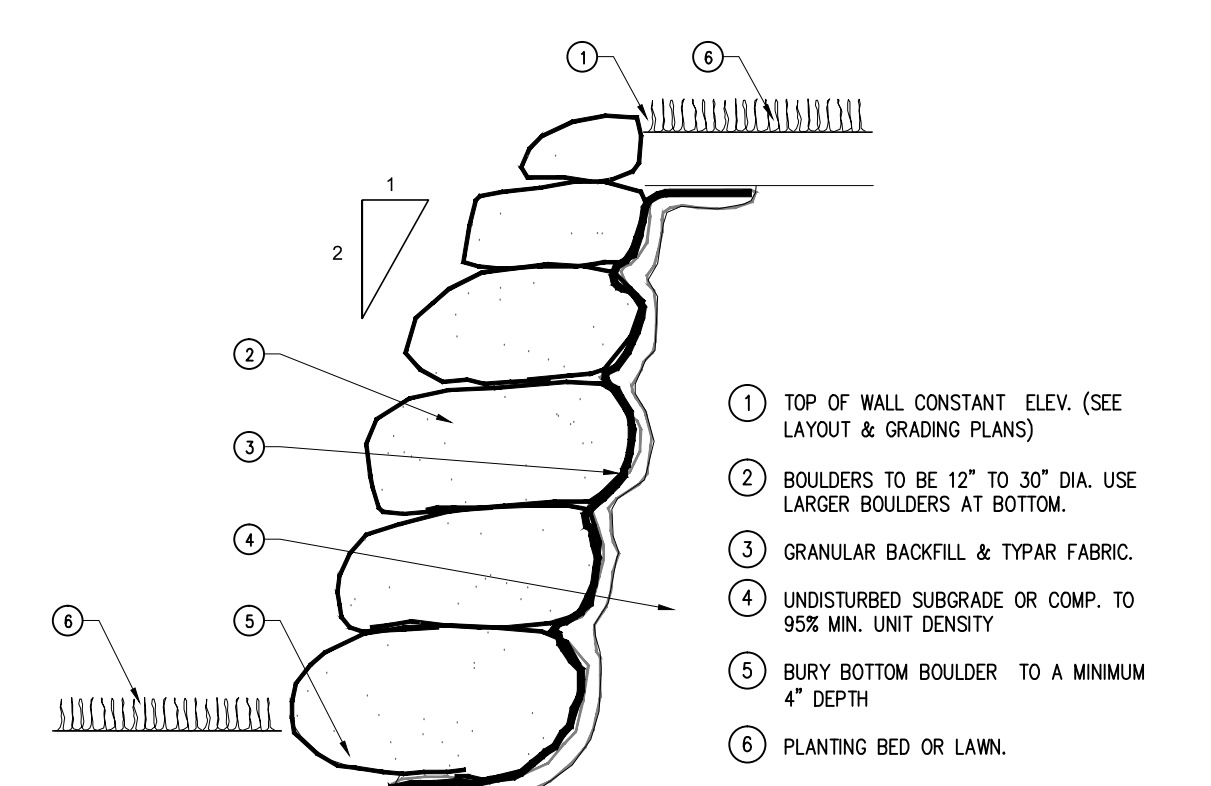
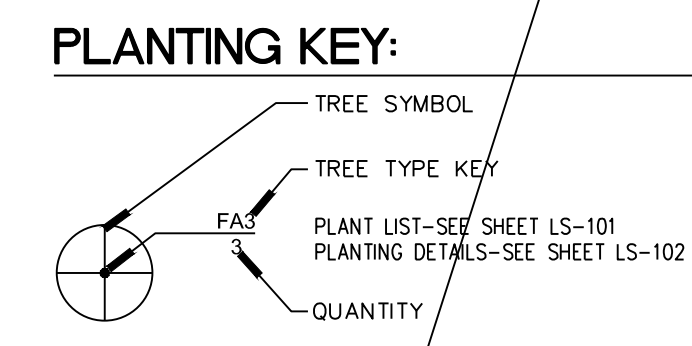
WATERING

CONTRACTOR RESPONSIBLE FOR WATERING ALL PLANTINGS THROUGH THE CONSTRUCTION PERIOD, AND FOR ONE YEAR FROM THE START OF THE WARRANTY PERIOD.

PLANTINGS THAT PERISH DUE TO LACK OF WATER/ TOO MUCH WATER DO NOT QUALIFY AS THE ONE REQUIRED REPLACEMENT PLANT AS STATED IN THE SPECIFICATION, AND SHALL BE REPLACED.

CONTRACTOR IS ALSO RESPONSIBLE FOR WATERING ALL NEWLY PLANTED LAWN AREAS THROUGH THE CONSTRUCTION PERIOD AND FOR ONE YEAR FROM THE START OF THE WARRANTY PERIOD. NEWLY PLANTED LAWN AREAS THAT PERISH DUE TO LACK OF WATER/ TOO MUCH WATER DO NOT QUALIFY AS THE ONE REQUIRED REPLACEMENT TO ESTABLISH A HEALTHY FULL DENSE LAWN AS STATED IN THE SPECIFICATION, AND SHALL BE REPLACED.

SEE SPECIFICATIONS IN THE PROJECT MANUAL.



2 BOLDER RETAINING WALL
LS-101 NOT TO SCALE

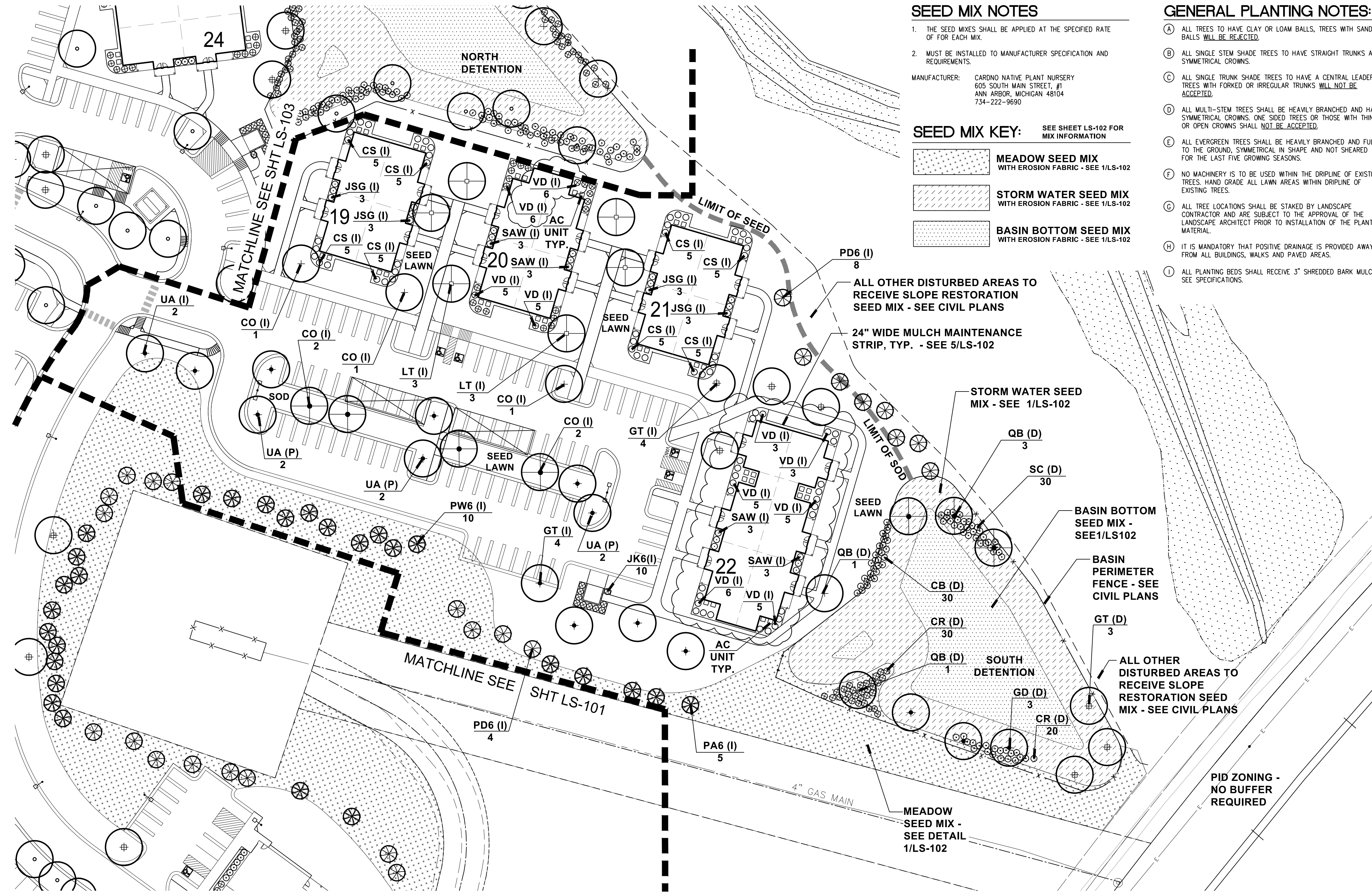
1 SITE PLANTING PLAN
LS-101 SCALE 1" = 40' NORTH



STORMWATER SEED MIX				
Botanical Name	Common Name	Ounces/Acre	Seeds/Oz	Seeds/SQ FT
Permanent Grasses/Sedges/Rushes:				
<i>Carex cristatella</i>	Crested Oval Sedge	1.00	59000	1.35
<i>Carex lurida</i>	Bottlebrush Sedge	2.00	12000	0.55
<i>Carex vulpinoidea</i>	Brown Fox Sedge	6.00	125000	17.22
<i>Elymus virginicus</i>	Virginia Wild Rye	12.00	4375	1.21
<i>Glyceria striata</i>	Fowl Manna Grass	1.25	125000	3.59
<i>Juncus effusus</i>	Common Rush	1.00	281000	6.45
<i>Juncus torreyi</i>	Torrey's Rush	0.25	1134000	6.51
<i>Leersia oryzoides</i>	Rice Cut Grass	1.00	94500	2.17
<i>Panicum virgatum</i>	Switch Grass	8.00	28356	5.21
<i>Scirpus atrovirens</i>	Dark Green Rush	1.00	187500	4.30
<i>Scirpus cyperinus</i>	Wool Grass	0.50	562500	6.46
<i>Scirpus fluviatilis</i>	River Bulrush	0.25	27500	0.16
<i>Scirpus validus</i>	Great Bulrush	6.00	37813	5.21
Total		40.25		60.38
Temporary Cover:				
<i>Avena sativa</i>	Common Oat	360.00	8125	67.15
<i>Lolium multiflorum</i>	Annual Rye	100.00	14188	32.57
Total		460.00		99.72
Forbs & Shrubs:				
<i>Alisma spp.</i>	Water Plantain (Various Mix)	4.25	70175	6.85
<i>Asclepias incarnata</i>	Swamp Milkweed	1.50	4540	0.16
<i>Bidens spp.</i>	Bidens (Various Mix)	2.00	14175	0.65
<i>Helenium autumnale</i>	Sneezeweed	2.00	141750	6.51
<i>Lycopus americanus</i>	Common Water Horehound	0.25	235000	1.35
<i>Mimulus ringens</i>	Monkey Flower	1.00	283500	6.51
<i>Penthorum sedoides</i>	Ditch Stonecrop	0.50	36063	0.41
<i>Polygonum pensylvanicum</i>	Pinkweed	4.00	4063	0.37
<i>Rudbeckia subtomentosa</i>	Sweet Black-Eyed Susan	1.00	46000	1.06
<i>Sagittaria latifolia</i>	Common Arrowhead	1.00	56700	1.30
<i>Senna hebecarpa</i>	Wild Senna	1.00	1400	0.03
<i>Thalictrum dasycarpum</i>	Purple Meadow Rue	2.00	13500	0.62
Total		20.50		25.82

MEADOW SEED MIX				
Botanical Name	Common Name	Ounces/Acre	Seeds/Oz	Seeds/SQ FT
Permanent Grasses:				
<i>Bouteloua curtipendula</i>	Side Oats Grama	10.00	8375	2.15
<i>Carex spp.</i>	Prairie Carex Mix	4.00	33422	3.07
<i>Elymus canadensis</i>	Canada Wild Rye	32.00	4258	3.13
<i>Koeleria cristata</i>	June Grass	1.00	150000	3.44
<i>Panicum virgatum</i>	Switch Grass	1.00	28356	0.65
<i>Schizachyrium scoparium</i>	Little Bluestem	32.00	8800	6.46
Total		80.00		18.91
Temporary Cover:				
<i>Avena sativa</i>	Common Oat	360.00	8125	67.15
<i>Lolium multiflorum</i>	Annual Rye	100.00	14188	32.57
Total		460.00		99.72
Forbs:				
<i>Anemone cylindrica</i>	Thimbleweed	0.50	20938	0.24
<i>Asclepias tuberosa</i>	Butterfly Milkweed	2.00	3500	0.16
<i>Aster ericoides</i>	Heath Aster	0.25	140000	0.80
<i>Aster laevis</i>	Smooth Blue Aster	0.75	48000	0.83
<i>Aster novae-angliae</i>	New England Aster	0.25	76000	0.44
<i>Baptisia lactea</i>	White Wild Indigo	2.00	1600	0.07
<i>Chamaecrista fasciculata</i>	Partridge Pea	14.00	3800	1.22
<i>Ceropegia lanceolata</i>	Sand Coreopsis	5.00	12500	1.43
<i>Coreopsis palmata</i>	Prairie Coreopsis	1.00	115000	0.26
<i>Dalea candida</i>	White Prairie Clover	1.50	26250	0.90
<i>Dalea purpurea</i>	Purple Prairie Clover	1.50	20000	0.69
<i>Echinacea purpurea</i>	Broad-Leaved Purple Coneflower	7.00	6600	1.06
<i>Eryngium yuccifolium</i>	Rattlesnake Master	2.50	8000	0.46
<i>Lespedeza capitata</i>	Round-Head Bush Clover	2.00	10000	0.46
<i>Liatris aspera</i>	Rough Blazing Star	13000	0.15	0.15
<i>Lupinus perennis</i>	Wild Lupine	2.00	1000	0.06
<i>Monarda fistulosa</i>	Wild Bergamot	0.75	78000	1.34
<i>Parthenium integrifolium</i>	Wild Quinine	1.00	6800	0.16
<i>Penstemon digitalis</i>	Foxglove Beard Tongue	0.50	115000	1.32
<i>Pycnanthemum virginianum</i>	Common Mountain Mint	1.00	331250	7.60
<i>Ratibida pinnata</i>	Yellow Coneflower	4.00	25250	2.32
<i>Rudbeckia hirta</i>	Black-Eyed Susan	5.00	110000	12.63
<i>Rudbeckia subtomentosa</i>	Sweet Black-Eyed Susan	1.00	46000	1.06
<i>Silphium integrifolium</i>	Rosin Weed	3.00	4000	0.28
<i>Silphium terebinthinaceum</i>	Prairie Dock	0.50	1100	0.01
<i>Solidago nemoralis</i>	Old-Field Goldenrod	0.50	240000	2.75
<i>Solidago rigida</i>	Stiff Goldenrod	1.00	46000	1.06
<i>Tradescantia ohioensis</i>	Common Spiderwort	0.75	8000	0.14
<i>Verbena spp.</i>	Ironweed (Various Mix)	1.75	936	0.36
<i>Veronicastrum virginianum</i>	Culvers Root	0.25	750000	4.30
Total		63.75		45.16

BASIN BOTTOM SEED MIX				
Botanical Name	Common Name	Ounces/Acre	Seeds/Oz	Seeds/SQ FT
Permanent Grasses/Sedges:				
<i>Andropogon gerardii</i>	Big Bluestem	4.00	8188	0.75
<i>Carex comosa</i>	Bristly Sedge	2.50	41183	2.36
<i>Carex cristatella</i>	Crested Oval Sedge	2.00	59000	2.71
<i>Carex lurida</i>	Bottlebrush Sedge	2.50	12000	0.69
<i>Carex spp.</i>	Prairie Sedge Mix	8.00	33422	6.14
<i>Carex vulpinoidea</i>	Brown Fox Sedge	4.00	125000	11.48
<i>Elymus virginicus</i>	Virginia Wild Rye	8.00	4375	0.80
<i>Glyceria striata</i>	Fowl Manna Grass	1.00	125000	2.87
<i>Panicum virgatum</i>	Switch Grass	2.00	28356	1.30
<i>Scirpus atrovirens</i>	Dark Green Rush	2.00	187500	8.61
<i>Scirpus cyperinus</i>	Wool Grass	1.00	562500	12.91
<i>Spartina pectinata</i>	Prairie Cord Grass	3.00	15750	1.08
Total		40.00		51.71
Temporary Cover:				
<i>Avena sativa</i>	Common Oat	360.00	8125	67.15
<i>Lolium multiflorum</i>	Annual Rye	100.00	14188	32.57
Total		460.00		99.72
Forbs:				
<i>Alisma spp.</i>	Water Plantain (Various Mix)	1.00	70175	1.61
<i>Asclepias incarnata</i>	Swamp Milkweed	2.00	4540	0.21
<i>Ceropegia tripteris</i>	Tall Coreopsis	1.00	11500	0.26
<i>Eutrochium maculatum</i>	Spotted Joe-Pye Weed	0.25	78125	0.45
<i>Iris virginica</i>	Blue Flag	4.00	1400	0.13
<i>Liatris spicata</i>	Marsh Blazing Star	1.00	12000	0.28
<i>Lobelia cardinalis</i>	Cardinal Flower	0.25	437000	2.51
<i>Lobelia siphilitica</i>	Great Blue Lobelia	0.50	520000	5.97
<i>Lycopus americanus</i>	Common Water Horehound	0.25	235000	1.35
<i>Pycnanthemum virginianum</i>	Common Mountain Mint	0.50	331250	3.80
<i>Rudbeckia triloba</i>	Brown-Eyed Susan	0.50	33000	0.38
<i>Sagittaria latifolia</i>	Common Arrowhead	0.25	56700	0.33
<i>Senna hebecarpa</i>	Wild Senna	1.00	1400	0.03
<i>Silphium terebinthinaceum</i>	Prairie Dock	1.00	1100	0.03
<i>Symphoricarpon novae-angliae</i>	New England Aster	1.00	76000	1.74
<i>Verbena hastata</i>	Blue Vervain	1.50	125000	4.30
<i>Zizia aurea</i>	Golden Alexanders	0.75	12000	0.21
Total		16.75		23.37



SEED MIX NOTES

- THE SEED MIXES SHALL BE APPLIED AT THE SPECIFIED RATE OF FOR EACH MIX.
- MUST BE INSTALLED TO MANUFACTURER SPECIFICATION AND REQUIREMENTS.

MANUFACTURER: CARDNO NATIVE PLANT NURSERY
605 SOUTH MAIN STREET, #1
ANN ARBOR, MICHIGAN 48104
734-222-9690

SEED MIX KEY: SEE SHEET LS-102 FOR MIX INFORMATION

- MEADOW SEED MIX WITH EROSION FABRIC - SEE 1/LS-102
- STORM WATER SEED MIX WITH EROSION FABRIC - SEE 1/LS-102
- BASIN BOTTOM SEED MIX WITH EROSION FABRIC - SEE 1/LS-102

GENERAL PLANTING NOTES:

- ALL TREES TO HAVE CLAY OR LOAM BALLS, TREES WITH SAND BALLS WILL BE REJECTED.
- ALL SINGLE STEM SHADE TREES TO HAVE STRAIGHT TRUNKS AND SYMMETRICAL CROWNS.
- ALL SINGLE TRUNK SHADE TREES TO HAVE A CENTRAL LEADER, TREES WITH FORKED OR IRREGULAR TRUNKS WILL NOT BE ACCEPTED.
- ALL MULTI-STEM TREES SHALL BE HEAVILY BRANCHED AND HAVE SYMMETRICAL CROWNS, ONE SIDED TREES OR THOSE WITH THIN OR OPEN CROWNS SHALL NOT BE ACCEPTED.
- ALL EVERGREEN TREES SHALL BE HEAVILY BRANCHED AND FULL TO THE GROUND, SYMMETRICAL IN SHAPE AND NOT SHEARED FOR THE LAST FIVE GROWING SEASONS.
- NO MACHINERY IS TO BE USED WITHIN THE DRILLPIE OF EXISTING TREES, HAND GRADE ALL LAWN AREAS WITHIN DRILLPIE OF EXISTING TREES.
- ALL TREE LOCATIONS SHALL BE STAKED BY LANDSCAPE CONTRACTOR AND ARE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION OF THE PLANT MATERIAL.
- IT IS MANDATORY THAT POSITIVE DRAINAGE IS PROVIDED AWAY FROM ALL BUILDINGS, WALKS AND PAVED AREAS.
- ALL PLANTING BEDS SHALL RECEIVE 3" SHREDDED BARK MULCH, SEE SPECIFICATIONS.

ALL OTHER DISTURBED AREAS TO RECEIVE SLOPE RESTORATION SEED MIX - SEE CIVIL PLANS

24" WIDE MULCH MAINTENANCE STRIP, TYP. - SEE 5/LS-102

STORM WATER SEED MIX - SEE 1/LS-102

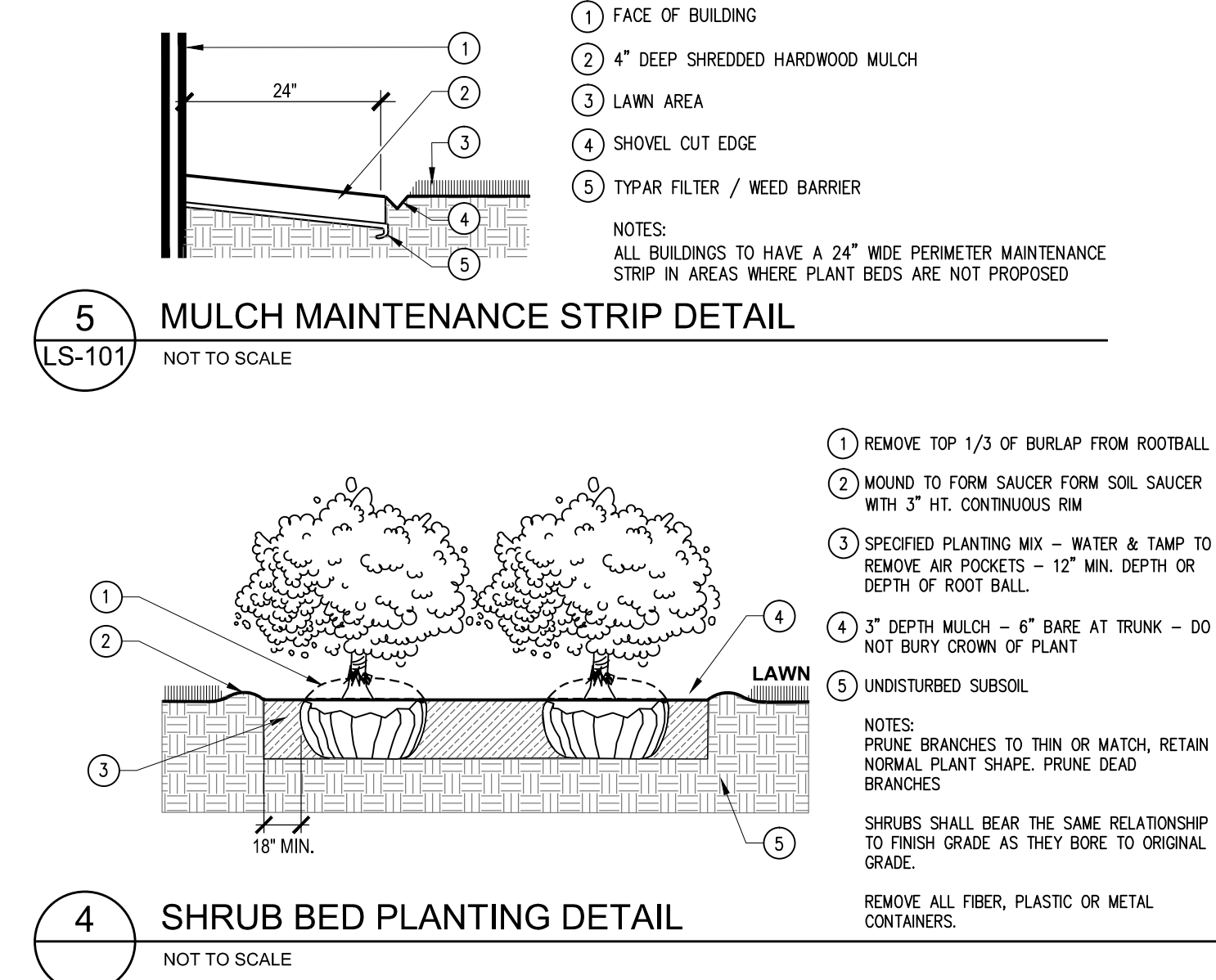
BASIN BOTTOM SEED MIX - SEE 1/LS-102

BASIN PERIMETER FENCE - SEE CIVIL PLANS

ALL OTHER DISTURBED AREAS TO RECEIVE SLOPE RESTORATION SEED MIX - SEE CIVIL PLANS

PID ZONING - NO BUFFER REQUIRED

SITE PLANTING PLAN
SCALE 1" = 40'
NORTH



1 DETENTION BASIN AND MEADOW SEED MIXES
ALL SEED MIX AREAS TO HAVE EROSION MAT
SEE 1/LS-103

2 DECIDUOUS TREE PLANTING
NOT TO SCALE

3 EVERGREEN TREE PLANTING
NOT TO SCALE

4 SHRUB BED PLANTING DETAIL
NOT TO SCALE

LOCKWOOD COMPANIES
2777 FRANKLIN ROAD
SUITE 1410
SOUTHFIELD, MI 48304

LAKESHORE VILLAGE APARTMENTS PHASE 3
GENOA TWP., MI

LANDSCAPE CONSTRUCTION DOCUMENTS

SHEET

SITE PLANTING PLAN

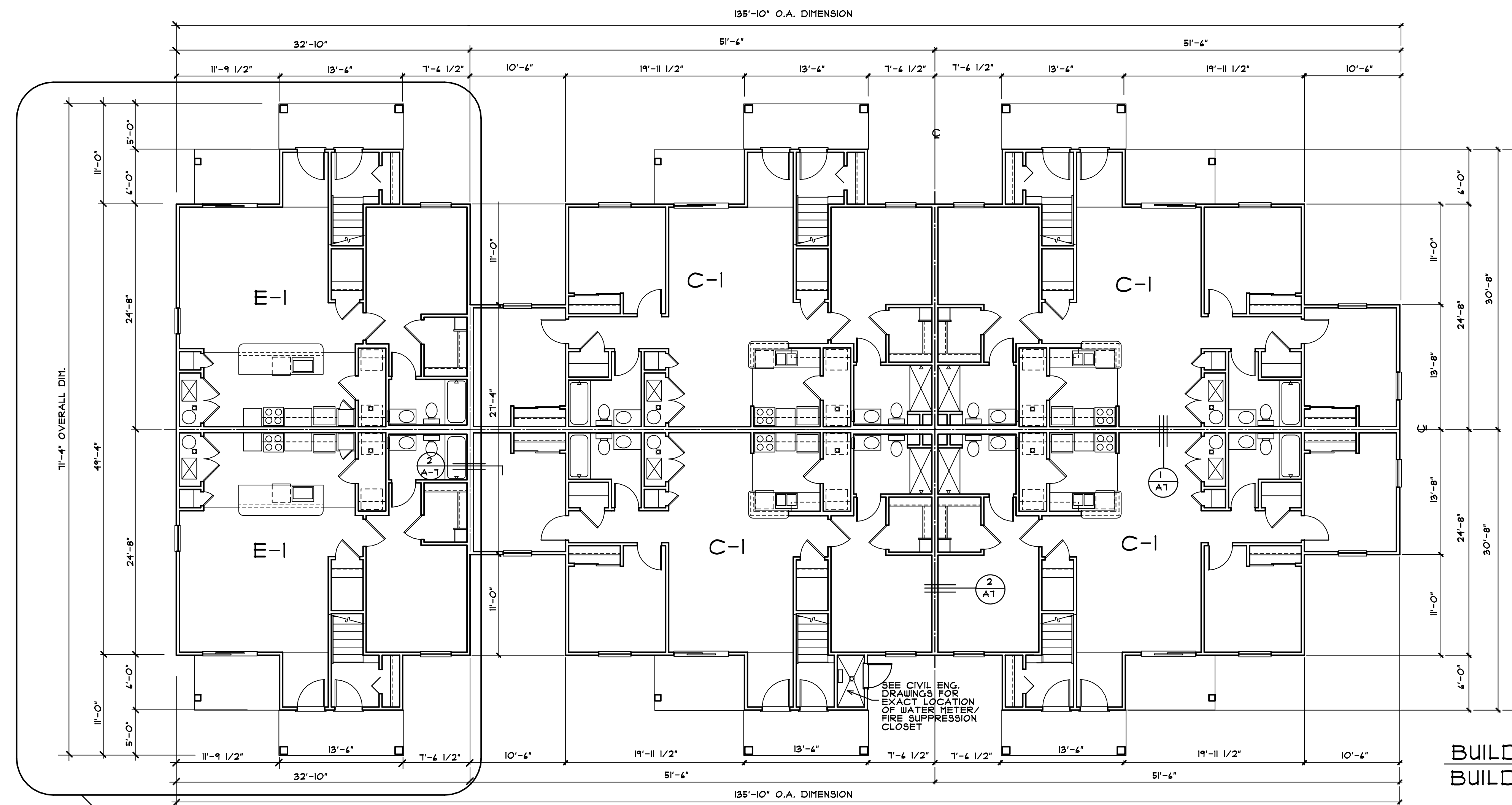
PRELIMINARY DATE
2016-02-02 SPA
2016-02-24 SPA

ISSUE DATE
2016-03-18 CD

REVISION DATE
2016-05-09 SPA
2016-06-28 REV.
2016-08-10 REVISED
2016-09-20 REVISED
2016-12-05 PERMIT
2018-02-28 TWP. REV.

SHEET NUMBER

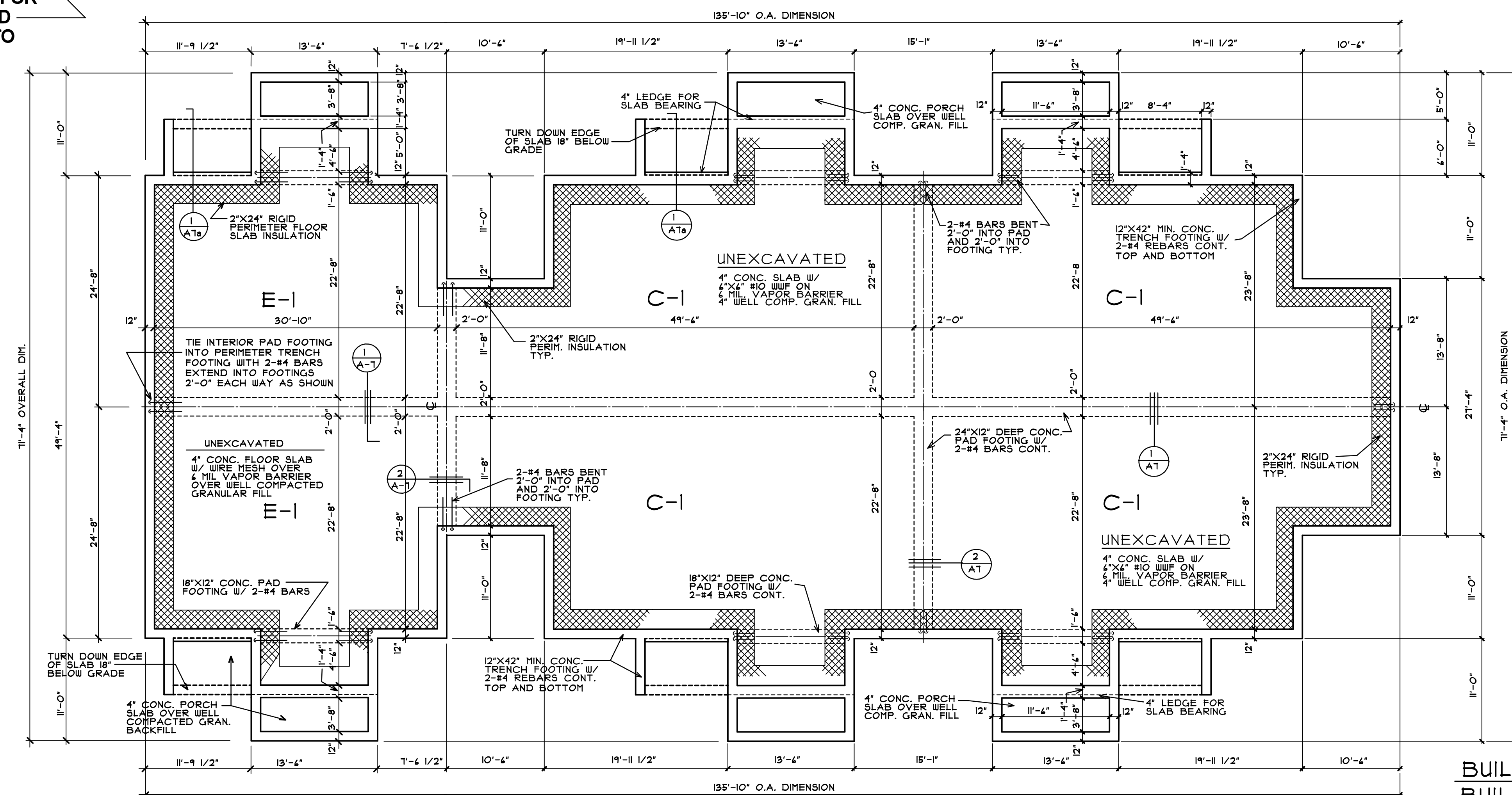
Lakeshore Village Apartments
Phase III
 Genoa Township, Livingston County, Michigan



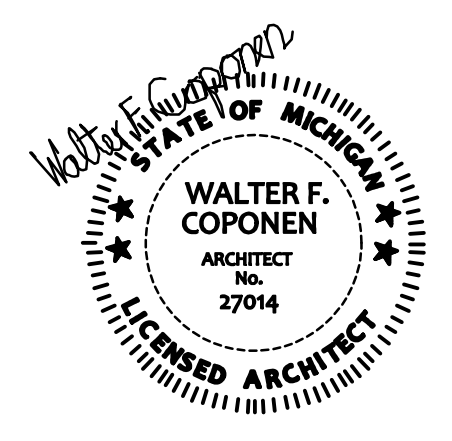
NOTE:
 SEE 1/4" SCALE UNIT PLANS
 FOR EXACT LAYOUT,
 ADDITIONAL NOTES,
 DIMENSIONS AND DETAILS.

BUILDING FIRST FLOOR PLAN
BUILDING TYPE VII SCALE 1/8"=1'-0"

**BUILDING MODIFICATION FOR
 SITE PLAN APPROVAL ADD
 4 ONE BEDROOM UNITS TO
 BUILDING #22**



BUILDING FOUNDATION PLAN
BUILDING TYPE VII SCALE 1/8"=1'-0"
BUILDING #22

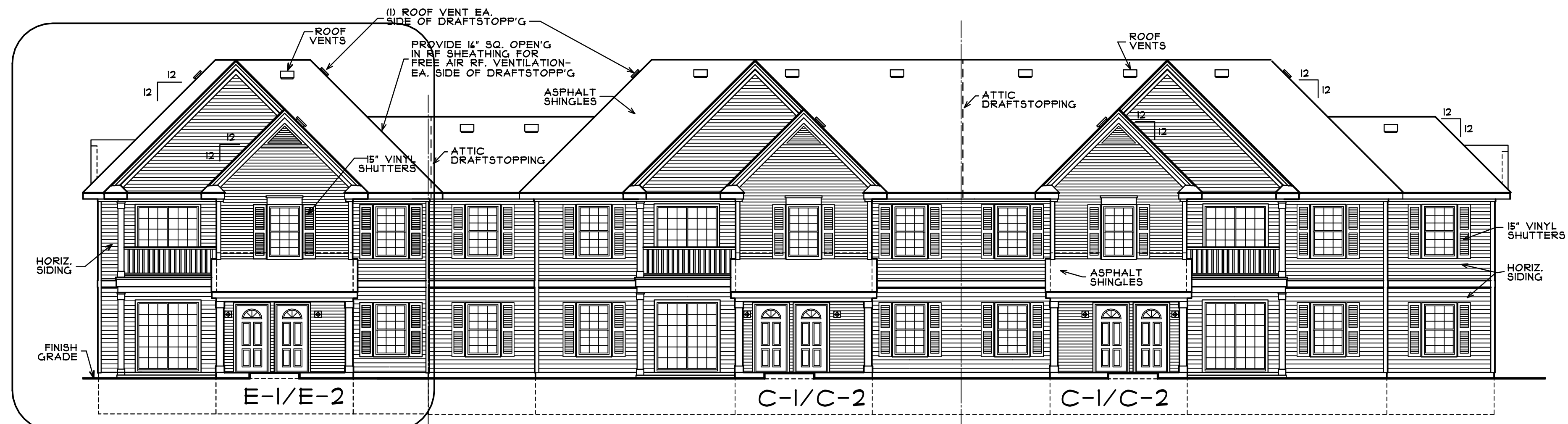


sheet
BUILDING TYPE VII
BUILDING PLANS

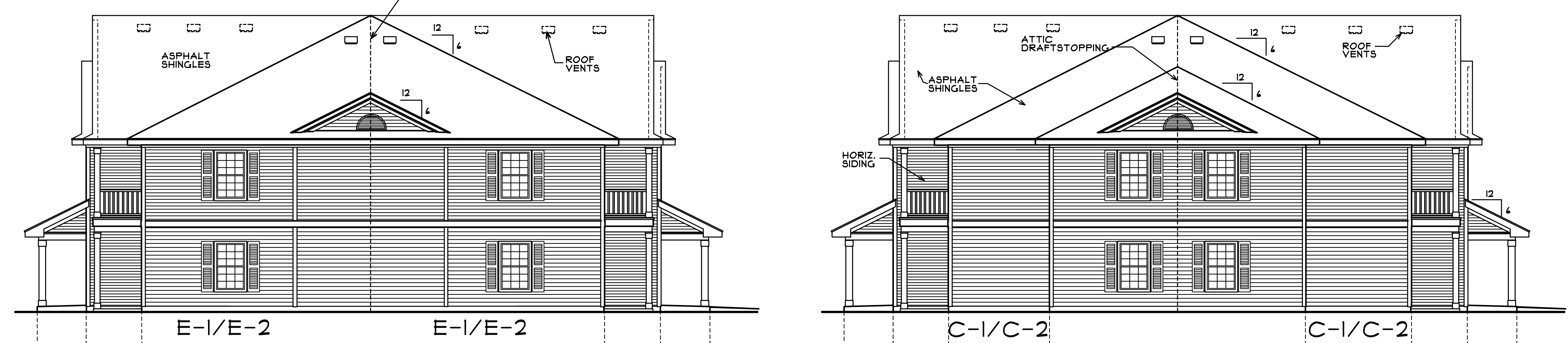
drawing
 revisions

issue date
 FEBRUARY 12, 2018

sheet
 number

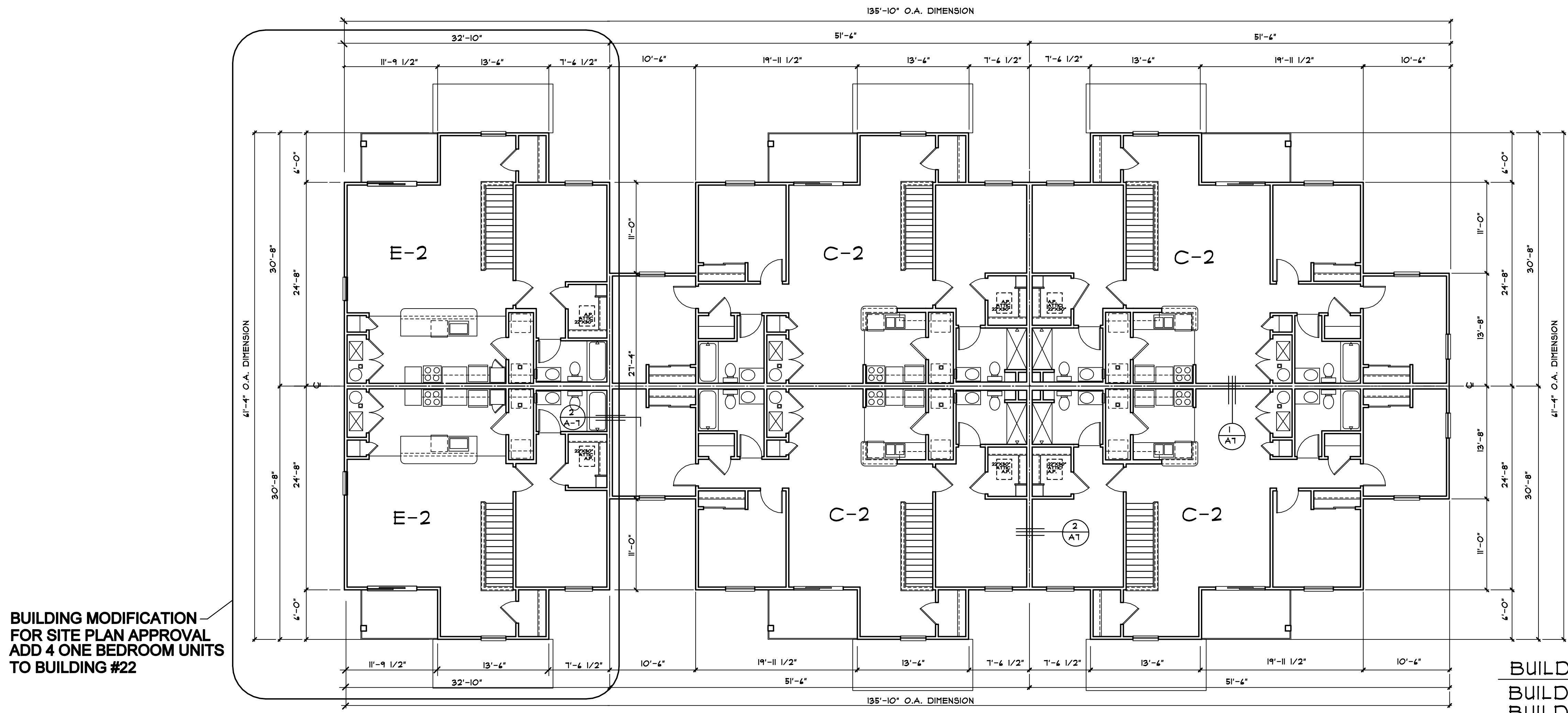


BUILDING MODIFICATION FOR SITE PLAN APPROVAL **BUILDING FRONT/REAR ELEVATION**
SCALE 1/8"=1'-0"



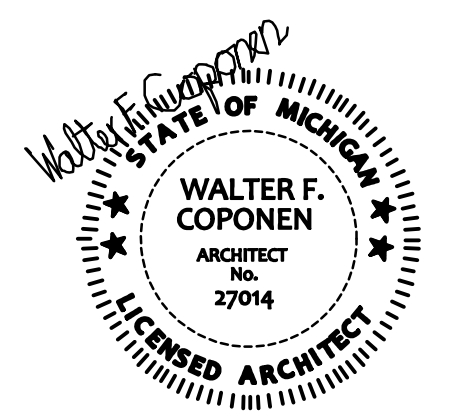
BUILDING LEFT END ELEVATION **BUILDING RIGHT END ELEVATION**
SCALE 1/8"=1'-0"

SEE DETAILED 1/4" SCALE BUILDING ELEVATIONS SHEET A-1 FOR ADDITIONAL NOTES AND DIMENSIONS.



BUILDING SECOND FLOOR PLAN
BUILDING TYPE VII
BUILDING #22
 SCALE 1/8"=1'-0"

NOTE: SEE 1/4" SCALE UNIT PLANS FOR EXACT LAYOUT, ADDITIONAL NOTES, DIMENSIONS AND DETAILS.



sheet
 BLDG. TYPE VII
 BUILDING PLAN
 + ELEVATIONS

drawing
 revisions

issue date
 FEBRUARY 12, 2018

sheet
 number

**GENOA CHARTER TOWNSHIP
PLANNING COMMISSION
PUBLIC HEARING
FEBRUARY 12, 2018
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, Jim Mortensen, Eric Rauch, Chris Grajek, John McManus, and Marianne McCreary. Absent was Jill Rickard. Also present was Kelly VanMarter, Community Development Director/Assistant Township Manager, Brian Borden of LSL Planning, Gary Markstrom of Tetra Tech, and an audience of 21.

PLEDGE OF ALLEGIANCE: The pledge of allegiance was recited.

ELECTION OF OFFICERS:

Moved by Commissioner Grajek, seconded by Commissioner Mortensen, to nominate Doug Brown for Chairperson, Eric Rauch for Vice Chairperson, and Marianne McCreary for Secretary. **The motion carried unanimously.**

APPROVAL OF AGENDA:

Moved by Commissioner McManus, seconded by Commissioner Grajek, to approve the agenda as presented.

CALL TO THE PUBLIC: The call to the public was made at 6:34 pm with no response.

OPEN PUBLIC HEARING #1... REQUEST TO POSTPONE INDEFINITELY (due to failure to submit) review of a special use, site plan and environmental impact assessment for a proposed used automobile sale facility located at 3439 E. Grand River Avenue, Howell 48843. The request is petitioned by Car Nation, LLC.

Planning Commission Disposition of Petition:

- A. Disposition of request to Postpone Indefinitely.

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

Mr. Walt Cieslik of 501 Snowfall Court lives behind the proposed car dealership. He is a board member of his homeowner's association. They want to know what type of lighting and landscaping would be used at the rear of the property. They would like to ensure that all drainage from the car dealership site does not negatively affect their properties.

Mr. Jim Strand of 3445 Dewdrop Lane agrees with what Mr. Cieslik stated. He wants to ensure that there is proper security. Automobile dealerships are notorious for theft.

The call to the public was closed at 6:40 pm.

Moved by Commissioner McManus, seconded by Commissioner Grajek to postpone indefinitely review of a special use, site plan and environmental impact assessment for Car Nation, LLC. **The motion carried unanimously.**

OPEN PUBLIC HEARING #2... Review of a special use, sketch plan and environmental impact assessment for a proposed Four Seasons Veterinary Services veterinary clinic. The property in question is located at 6936 Grand River Avenue, Brighton, 48114. The request is petitioned by Dr. Michelle Bradford, DVM.

Planning Commission Recommendation of Petition:

- A. Recommendation of Special Use Application.
- B. Recommendation of Environmental Impact Assessment (01/22/18).
- C. Recommendation of Sketch Plan.

Dr. Michelle Bradford was present. She would like to build a veterinary clinic in a commercial lease space to offer medical veterinary services. She would not have overnight boarding or grooming at her clinic.

Mr. Borden reviewed his letter dated February 6, 2018.

The applicant has met the requirements of the Special Land Use standards; however, he defers to the Township Engineer and Fire Department regarding any of their concerns.

The applicant has submitted a sketch plan and not a Site Plan. He had requested that the dog walk area be depicted on the plans. The applicant submitted updated plans showing this.

The required tree plantings in the Grand River greenbelt are not shown on the plan. The requirement is six trees. The Planning Commission has the discretion to require

this waive the requirement. Mr. Gary Laundroche, who represents the property owner, stated they are aware of this deficiency and assured the Planning Commission that the six trees will be installed in the spring.

Commissioner Mortensen does not want the dog walk in the front of the site along Grand River. Dr. Bradford stated it will not be a dedicated area where dogs will be walked. The area would be used when a dog is coming to or leaving from their appointment. She typically has one to two appointments per hour. She would also use it occasionally for patients after surgery.

Commissioner Grajek is concerned that the grass in this area will die if it is being used by the dogs. He suggested using the rear of the building.

Commissioner Rauch does not believe that the intensity of the use is as high as it is being discussed this evening.

Commissioner Mortensen suggested a hedgerow be placed in the front of the building to screen the dogs from Grand River. Mr. Laundroche agrees to adding the hedgerow for patients coming into the building as well as special grass that is appropriate for areas where dogs use the bathroom. Staff could use the rear of the site for patients they bring outside.

Commissioner McCreary questioned what occurs when a patient needs to spend the night after surgery. Dr. Bradford stated those animals are transferred to an emergency clinic or sent home with the owner.

Mr. Markstrom stated he has determined the discharge from the area of the proposed dog walk does not discharge into the storm sewer. He noted that the signage and clean-up plan noted in the Impact Assessment must be maintained.

Chairman Brown reviewed the Fire Department's letter dated February 1, 2018.

The call to the public was made at 7:12 pm with no response.

Moved by Commissioner McManus, seconded by Commissioner Mortensen, to recommend to the Township Board approval of the Special Use Application for Four Seasons Veterinary Services veterinary clinic located at 6936 Grand River Avenue, Brighton, 48114 as The Planning Commission finds that the Special Use Application meets all of the requirements of Section 19.03 of the Township Ordinance, based on the following conditions:

- Six deciduous trees shall to be planted in the spring along Grand River.
- The petitioner will add a hedge row to screen the dogs using the area. The hedge row shall be reviewed and approved by Township staff.

- The petitioner agrees that they will maintain the landscape around the dog walk area to keep the vegetation alive.
- All requirements of the Brighton Area Fire Authority's letter of February 1, 2018 shall be met.
- Township Board approval of the Impact Assessment and sketch plan.

The motion carried unanimously.

Moved by Commissioner McManus, seconded by Commissioner Grajek, to recommend to the Township Board approval of the Environmental Impact Assessment dated January 22, 2018 for Four Seasons Veterinary Services veterinary clinic. The property in question is located at 6936 Grand River Avenue, Brighton, 48114. **The motion carried unanimously.**

Moved by Commissioner McManus, seconded by Commissioner Mortensen, to recommend to the Township Board approval of the Sketch Plan for Four Seasons Veterinary Services veterinary clinic. The property in question is located at 6936 Grand River Avenue, Brighton, 48114, conditioned upon the following:

- The sketch plan is sufficient instead of a Site Plan. This is an existing building with a modest amount of exterior and landscaping changes.
- Six deciduous trees shall to be planted in the spring in the easement along Grand River
- The petitioner will add a hedge row to screen the dogs using the area. The hedge row shall be reviewed and approved by Township staff.
- Township Board approval of the Special Land Use and Impact Assessment.

The motion carried unanimously.

OPEN PUBLIC HEARING # 3... Review of a special use, site plan and environmental impact assessment for a proposed commercial outdoor display, sales and storage area for a new Family Farm and Home store. The property in question is located in the former TJ Maxx retail space at 3685 E. Grand River Avenue, Howell 48843. The request is petitioned by Family Farm and Home.

Planning Commission Recommendation of Petition:

- A. Recommendation of Special Use Application.
- B. Recommendation of Environmental Impact Assessment (01/04/18).
- C. Recommendation of Site Plan (01/24/18).

Mr. Martin Renel of Ashmark Construction and Robert Kerr of Metro Group Architects were present.

Mr. Renel provided a review of the project and the proposed use. They would be performing minor renovations on the interior of the building. They would be adding an outdoor display area and reconstructing the dumpster enclosure.

Mr. Borden reviewed his letter of February 6, 2018.

They find that the general standards of the Special Land Use have been met.

The screening for the outdoor storage area is required to be six-feet high and the applicant is proposing four-foot high fencing. The Planning Commission can approve the difference.

He is asking for clarification for what the applicant is calling the outdoor staging area. It appears to be an additional outdoor storage area. Mr. Renel stated that since the submittal was made, they have confirmed with Family Farm and Home that this area will be storage so the fencing will need to be extended to include this, which is an additional 19 feet.

There was a discussion regarding the removal of some of the grass area and then the same amount of grass area being replaced by removing parking spaces and adding turf. Commissioner Mortensen questioned if this would affect the parking. Ms. VanMarter stated there is sufficient parking on this site.

Commissioner Mortensen asked that the proposed white PVC fencing being redesigned. Mr. Borden noted that this fencing is also being proposed for the dumpster enclosure area and it is not an approved material. Mr. Eugene Franks of Family Farm and Home stated that there are dumpsters along the back of the building and none of them have enclosures. Mr. Renel stated they could use wood for the enclosure.

Commissioner Rauch asked staff for their experience with other commercial businesses in the Township who have outdoor storage. Ms. VanMarter stated the Township has had continued problems with businesses that have not complied with the ordinance as it pertains to outdoor storage for retail uses. Commissioner Rauch wants to ensure that there is sufficient screening on the front of this building so the same problem does not occur here.

Mr. Borden noted that the architectural plan and the engineering plan are not consistent.

There was a discussion regarding the completion of the cross access driveway to the property to the east. The applicant has declined to finish the driveway to connect the

two properties. Ms. VanMarter stated that the connection is the responsibility of Meijer; however, at the time it was developed, they were not given an easement from Kroger. Mr. Markstrom stated there is a large grade change in this area so significant work would need to be done to connect these two properties.

Mr. Markstrom reviewed his letter dated January 30, 2018. He would like to see flow direction shown for the storm-water runoff. The trade-off of the paving and turf is a viable alternative; however, he suggested the applicant look at the entire site it could possibly be determined that there may be sufficient impervious surface so there may not be a need to remove the parking spaces.

He needs to see a complete site plan with details, such as foundation details, curbing details, etc.

Chairman Brown reviewed the Brighton Area Fire Authority letter dated February 1, 2018. The applicant has agreed to meet all of their requirements.

The call to the public was made at 8:08 pm.

Mr. Eric Unatin with Mid-American Real Estate has been working on this lease. Their experience over the past 18 months since this site has been vacant has been that Family Farm and Home has been the only company interested. He noted the discussion regarding the material for the fencing and the dumpster enclosure and stated there are costs associated for both the property owner and the tenant when a new owner moves into a space and it must be economical for both of them.

The call to the public was closed at 8:12 pm.

Commissioner McManus agrees with what Mr. Unatin said; however, the Planning Commission needs to ensure that the ordinance is met. He agrees that the proposed fencing needs to be upgraded.

Moved by Commissioner Mortensen, seconded by Commissioner Rauch, table the request for a special use, site plan and environmental impact assessment for a proposed commercial outdoor display, sales and storage area for a new Family Farm and Home store located at 3685 E. Grand River Avenue, Howell 48843 until the March 12, 2018 meeting.

The motion carried unanimously.

OPEN PUBLIC HEARING # 4... Review for preliminary and final site condominium approval for a proposed 6 unit site condominium. The property in question is located on the east side of the Latson Road and Grand Oaks Drive intersection, Howell 48843. The request is petitioned by St. John Providence.

Planning Commission Recommendation of Petition:

- A. Recommendation of Environmental Impact Assessment (01/04/18).
- B. Recommendation of Preliminary site condominium.
- C. Recommendation of Final site condominium.

Mr. Mark Yagerlender, Regional Director of Real Estate for St. John Providence, was present. Their new location has been successful and they are now requesting approval for their site condominium, which will allow them to develop the outlots on their site.

Mr. Borden reviewed his letter of February 7, 2018. The applicant is requesting to develop a site condominium complex. All of the required documents and plans have been submitted so he is recommending that the preliminary and final site plans be approved this evening.

There was a discussion between the Commission and the applicant's engineers regarding how each of the outlots would be developed, connecting roadways, the ownership and maintenance of the interior roadways, etc. It was noted that Flagstar Bank has already been approved. Each individual site will be before the Planning Commission and Township Board for approval.

Mr. Markstrom reviewed his letter dated January 29, 2018. He noted that when each individual site is to be developed, there will be engineering reviews. This may require that the buildings, etc. to be redesigned.

The call to the public was made at 9:15 pm with no response.

Moved by Commissioner Mortensen, seconded by Commissioner Grajek, to recommend to the Township Board approval of Environmental Impact Assessment dated January 4, 2018 for a six-unit site condominium for St. John Providence located on the east side of the Latson Road and Grand Oaks Drive intersection, Howell 48843. **The motion carried unanimously.**

Moved by Commissioner Mortensen, seconded by Commissioner McManus, to recommend to the Township Board approval of the Preliminary Site Condominium dated January 23, 2018 for a six-unit site condominium for St. John Providence located on the

east side of the Latson Road and Grand Oaks Drive intersection, Howell 48843 with the following conditions:

- Approval of the Master Deed by the Township Attorney
- Acknowledgement by the petitioner that the Master Deed for St. John Providence Site Condominium does not supersede the Planned Unit Development or the Genoa Township Zoning Ordinance.

The motion carried unanimously.

Moved by Commissioner Mortensen, seconded by Commissioner Grajek, to recommend to the Township Board approval of the Final Site Plan dated January 23, 2018 for a six-unit site condominium for St. John Providence located on the east side of the Latson Road and Grand Oaks Drive intersection, Howell 48843 with the following conditions:

- Approval of the Master Deed by the Township Attorney
- Acknowledgement by the petitioner that the Master Deed for St. John Providence Site Condominium does not supersede the Planned Unit Development or the Genoa Township Zoning Ordinance.

The motion carried unanimously.

OPEN PUBLIC HEARING #5...Consideration of Zoning Ordinance Text amendments to Article 10 of the Zoning Ordinance, entitled "Planned Unit Development" is proposed to be amended to add standards related to "Interchange Commercial PUD" and "Interchange Campus PUD".

Planning Commission Recommendation of Petition:

A. Recommendation of Zoning Ordinance Text Amendment.

Ms. VanMarter provided details of the proposed text amendments to Article 10 of the Township's Zoning Ordinance. She showed maps that depicted the locations of the proposed changes. She and the engineers have developed the plan for the water and sewer services for this area. These changes are needed because to the continued demand due to the installation of the Latson Road / I-96 Interchange.

Mr. Todd Wyatt, who owns 200 acres of property in this area, stated that he is interested in developing the property with low-intensity industrial uses. He has been assisting with the development of the text amendments. He would like to show the Planning Commission some proposed designs.

The Planning Commission is interested in seeing Mr. Wyatt's ideas for the area. It was suggested to have him return to a future meeting.

The call to the public was made at 10:08 pm with no response.

Moved by Commissioner McManus, seconded by Commissioner Mortensen, to table the consideration of Zoning Ordinance Text amendments to Article 10 of the Zoning Ordinance to allow staff and the Planning Commission to do some additional studies.

The motion carried unanimously.

Administrative Business:

- Staff Report : Ms. VanMarter had nothing to report.
- Approval of the December 11, 2017 Planning Commission meeting minutes

Moved by Commissioner McManus, seconded by Commissioner Rauch, to approve the minutes of the December 11, 2017 Planning Commission Meeting as presented. **The motion carried unanimously.**

- Annual Report: Ms. VanMarter submitted the Annual Report of action taken by the Planning Commission in 2017.
- Member Discussion: There were not items discussed.
- Adjournment

Moved by Commissioner McManus, seconded by Commissioner Rauch, to adjourn the meeting at 10:11 pm. **The motion carried unanimously.**

Respectfully Submitted,

Patty Thomas, Recording Secretary