

AGENDA
Cascade Charter Township Planning Commission
Monday, December 3, 2018
7:00 pm
Cascade Library Wisner Center
2870 Jacksmith Ave. SE

- ARTICLE 1. Call the meeting to order
Record the attendance**
- ARTICLE 2. Pledge of Allegiance to the flag**
- ARTICLE 3. Approve the current Agenda**
- ARTICLE 4. Approve the Minutes of the October 15, 2018 meeting**
- ARTICLE 5. Approve the Minutes of the November 12, 2018 meeting**
- ARTICLE 6. Acknowledge visitors and those wishing to speak to non-agenda items.
(Comments are limited to five minutes per speaker.)**
- ARTICLE 7. Case # 18:3502 Dusty Martin/Scholten Landscape
Public Hearing
Property Address: 1459 Spaulding Ave SE
Requested Action: The Applicant is requesting a Type I special use permit to allow a 2,400 sq ft storage building.**
- ARTICLE 8. Case #18:3501 Lacks Enterprises
Property Address: 5675 Kraft Ave SE
Requested Action: The Applicant is requesting Site Plan approval for a new molder facility.**
- ARTICLE 9. Cascade Charter Township
Resolution of support to adopt the Cascade Charter Township Capital Improvement Plan 2019-2024.**
- ARTICLE 10. Cascade Charter Township
Memorandum of the Kent County Road Commission 5 year Road Improvement Plan**
- ARTICLE 11. Any other business**
- ARTICLE 12. Adjournment**

Meeting Format

1. **Staff Presentation** *Staff report and recommendation*
2. **Project presentation-** *Applicant presentation and explanation of project*
 - a. **PUBLIC HEARINGS**
 - i. *Open Public Hearing. Comments are limited to five minutes per speaker; exception may be granted by the chair for representative speakers and applicants*
 - ii. *Close public hearing*
3. **Commission discussion** – *May ask for clarification from applicant, staff or public*
4. **Commission decision - Options**
 - a. *Table the decision*
 - b. *Deny*
 - c. *Approve*
 - d. *Approve with conditions*
 - e. *Recommendation to Township Board*

MINUTES
Cascade Charter Township
Planning Commission
Monday, October 15, 2018
7:00 P.M.

ARTICLE 1. Chairman Sperla called the meeting to order at 7:00 P.M.
Members Present: Johnson, Katsma, Krieter, Lewis, Noordyke, Rissi and Sperla
Members Absent: Pennington
Others Present: Community Development Director, Steve Peterson and those listed on the sign in sheet.

ARTICLE 2. Pledge of Allegiance.

ARTICLE 3. Approve the current Agenda.

Motion was made by Member Lewis to approve the Agenda. Supported by Member Johnson. Motion carried 7 to 0.

ARTICLE 4. Approve the Minutes of the October 1, 2018 meeting.

Motion was made by Member Johnson to approve the minutes of October 1, 2018 meeting. Supported by Member Rissi. Motion carried 7 to 0.

ARTICLE 5. Acknowledge visitors and those wishing to speak to non-agenda items.

No visitors came forward.

**ARTICLE 6. Case #18:3486 Thomas DeMeester
Public Hearing**

Property Address: 9478 Grand River Dr.

Requested Action: The Applicant is requesting a special use permit to construct an accessory building over 832 sq ft.

Director Peterson stated that the Applicant is requesting an accessory building over 832 sq ft on his 12 acre property. He has been granted a variance through the township to construct the building prior to the house being built. The building is about 3100 sq ft total including the covered porch. The property is zoned Agriculture.

Director Peterson recommends approval of the special use permit as required with the following conditions:

1. The building cannot be used for living space or to run a business; and
2. Any outdoor lighting meets township regulations.

Chairman Sperla invited the applicant to come forward with comments.

Kelly Kuiper from Nederveld came forward representing Mr. DeMeester and added that the home and barn will be custom built.

Motion was made by Member Rissi to open public hearing. Supported by Member Krieter. Motion carried 7 to 0.

No members of the public wish to speak on this matter.

Motion was made by Member Rissi to close public hearing. Supported by Member Katsma. Motion carried 7 to 0.

Motion was made by Member Rissi to approve the special use permit to construct an accessory building over 832 sq ft with the conditions stated above by Director Peterson. Supported by Member Johnson. Motion carried 7 to 0.

ARTICLE 7. Case #18:3492 Copper Rock Construction

Property Address: 5500 Executive Parkway

Requested Action: The Applicant is requesting Site Plan Review for a new 55,000 sq. ft distribution facility building.

Director Peterson stated that the Applicant is requesting Site Plan Review for a new building in the Meadowbrook Business Park. The project has been reviewed to meet the Meadowbrook site requirements and the Kent County Road Commission has approved the driveway location. The plan has been approved by the township engineer. Meadowbrook has reviewed and approved the project.

Director Peterson recommends approval of the site plan with the condition that they record the stormwater maintenance agreement.

Chairman Sperla invited the applicant to come forward with comments.

Mr. Sinnott from Paradigm Design added the drain commissioner has signed off and the road commission has approved the plan.

Motion was made by Member Johnson to approve the Site Plan Review for a new 55,000 sq ft distribution facility building with the condition that the staff has indicated. Supported by Member Rissi. Motion carried 7 to 0.

ARTICLE 8. Any other business

Director Peterson reminded the members to attend the Master Plan open house meetings tomorrow October 16.

ARTICLE 9. Adjournment

**Motion was made by Member Rissi to adjourn. Supported by Member Johnson.
Motion carried 7 to 0. The meeting was adjourned at 7:30 p.m.**

Respectfully submitted,
Phil Johnson, Secretary

DRAFT

MINUTES
Cascade Charter Township
Planning Commission
Monday, November 12, 2018
7:00 P.M.

ARTICLE 1. Chairman Sperla called the meeting to order at 7:00 P.M.
Members Present: Johnson, Katsma, Krieter, Lewis, Noordyké, Pennington, Rissi and Sperla
Members Absent: None
Others Present: Community Development Director, Steve Peterson and those listed on the sign in sheet.

ARTICLE 2. Pledge of Allegiance.

ARTICLE 3. Approve the current Agenda.

Motion was made by Member Rissi to approve the Agenda. Supported by Member Lewis. Motion carried 8 to 0.

ARTICLE 4. Approve the Minutes of the October 15, 2018 meeting.

The minutes will be approved pending a change to Article 9 updating the name of the Member who supported the adjournment of the meeting.

ARTICLE 5. Acknowledge visitors and those wishing to speak to non-agenda items.

No visitors came forward.

**ARTICLE 6. Case #18:3496 Tom Eisen
Public Hearing**

Property Address: 7233 60th St

Requested Action: The Applicant is requesting a special use permit to construct an accessory building over 832 sq ft.

Director Peterson stated that the Applicant is requesting an accessory building in the front yard which is necessary because the property is on the river. It is 48' x 36' with a 17' midpoint and a 90 ft sideyard setback on 4 1/2 acres. The building will be used for storage.

Director Peterson recommends approval of the special use permit as required with the following conditions:

1. The building cannot be used for living space or to run a business; and
2. Any outdoor lighting meets township regulations.

Chairman Sperla invited the applicant to come forward with comments.

The Applicant did not have any additional comments.

Motion was made by Member Rissi to open public hearing. Supported by Member Katsma. Motion carried 8 to 0.

No members of the public wish to speak on this matter.

Motion was made by Member Rissi to close public hearing. Supported by Member Katsma. Motion carried 8 to 0.

Motion was made by Member Noordyke to approve the special use permit to construct an accessory building over 832 sq ft with the conditions stated above by Director Peterson. Supported by Member Johnson. Motion carried 8 to 0.

ARTICLE 7. Case #18:3494 Chris Stibitz

Public Hearing

Property Address: 3394 Bloomington Hills

Requested Action: The Applicant is requesting a special use permit to construct an accessory building over 832 sq ft.

Director Peterson stated that the Applicant is requesting a special use permit for a 50' x 30' building with a 14' high midpoint. The property is 1 ½ acres and in a PUD zoned agriculture with common areas.

Director Peterson recommends approval of the special use permit as required with the following conditions:

1. The building cannot be used for living space or to run a business; and
2. Any outdoor lighting meets township regulations.

Chairman Sperla invited the applicant to come forward with comments.

The Applicant did not have any additional comments.

Motion was made by Member Rissi to open public hearing. Supported by Member Krieter. Motion carried 8 to 0.

No members of the public wish to speak on this matter.

Motion was made by Member Rissi to close public hearing. Supported by Member Krieter. Motion carried 8 to 0.

Motion was made by Member Rissi to approve the special use permit to construct an accessory building over 832 sq ft with the conditions stated above by Director Peterson. Supported by Member Pennington. Motion carried 8 to 0.

ARTICLE 8. Any other business

ARTICLE 9. Adjournment

**Motion was made by Member Rissi to adjourn. Supported by Member Johnson.
Motion carried 8 to 0. The meeting was adjourned at 7:30 p.m.**

Respectfully submitted,
Phil Johnson, Secretary

DRAFT

STAFF REPORT

STAFF REPORT: Case #18-3502
REPORT DATE: November 27, 2018
PREPARED FOR: Cascade Charter Township Planning Commission
MEETING DATE: December 3, 2018
PREPARED BY: Steve Peterson, Planning Director

APPLICANT:
Dusty Martin
1459 Spaulding
Cascade MI 49546

STATUS
OF APPLICANT: Property Owner

REQUESTED ACTION: The applicant is requesting to a Type I special use permit to allow a larger 2,400 sq ft storage building.

EXISTING ZONING OF
SUBJECT PARCEL(S): ARC, Agricultural Rural Conservation

GENERAL LOCATION:

PARCEL SIZE: Approximately 6

EXISTING LAND USE
ON THE PROPERTY: Agricultural/nursery

ADJACENT AREA
LAND USES: Residential

ZONING ON
ADJOINING PARCELS: ARC /R1

STAFF COMMENTS:

1. The applicant is requesting permission to construct a 2,400 salt storage building.
2. With 6 acres they are considered legal non-conforming. A nursery is required to have 15 acres. However, a nursery was located at this location before the

applicant bought it and was not abandoned for more than 180 days so the use can continue. They are making some changes to the property but it will remain a nursery and in compliance with all of our other requirements for a nursery. As a nursery that would also like to offer snow plowing with salt. This requires the salt storage building.

3. We had another similar situation in the township that only just recently moved out of the township because they quit the nursery business and wanted to mainly perform snow plowing. This would be similar if this applicant changed plans and did mainly snow plowing.
4. The building itself is in the rear of the property and is about 20 feet tall. This requires a minimum of 60-foot setbacks which they are meeting.
5. The plan does not indicate outdoor lighting. Any outdoor lighting added will have to meet our standards, requiring it to be shielded and downcast or at a level that is exempted.
6. The applicant is well aware that the only way the snow plowing would be permitted from here is that they offer it as a part of the main nursery business. If that changes, they would have to eliminate the snow plowing from this location.
- 7.
8. Given the size of the building, the location, which is primarily residential, and the fact that the use is already legal non-conforming, I would suggest that the building be reduced in size to ½ the size proposed. This would also help to ensure that the snow plowing portion of the business is accessory to the main nursery use.

Upon review of a Type I Special Use Permit for an accessory building, Section 17.03(1)(a) of the Zoning Ordinance requires the Planning Commission to consider several factors. I have listed those items for your consideration followed by my comments for each.

<i>Factors</i>	<i>Comments</i>
The intended use of the building.	Salt Storage for business
The proposed location, type and kind of construction and general architectural character of the building.	The building is located in back of the property. It is a vinyl structure that is not consistent with the residential uses but is consist with the agricultural uses.
The size of the building in relation to the house, lot and zoning district.	The building is 2,400 sq ft on a 6-acre farm.
The type and kind of principal and accessory buildings and structures	The other landscape businesses on the road have large accessory buildings.

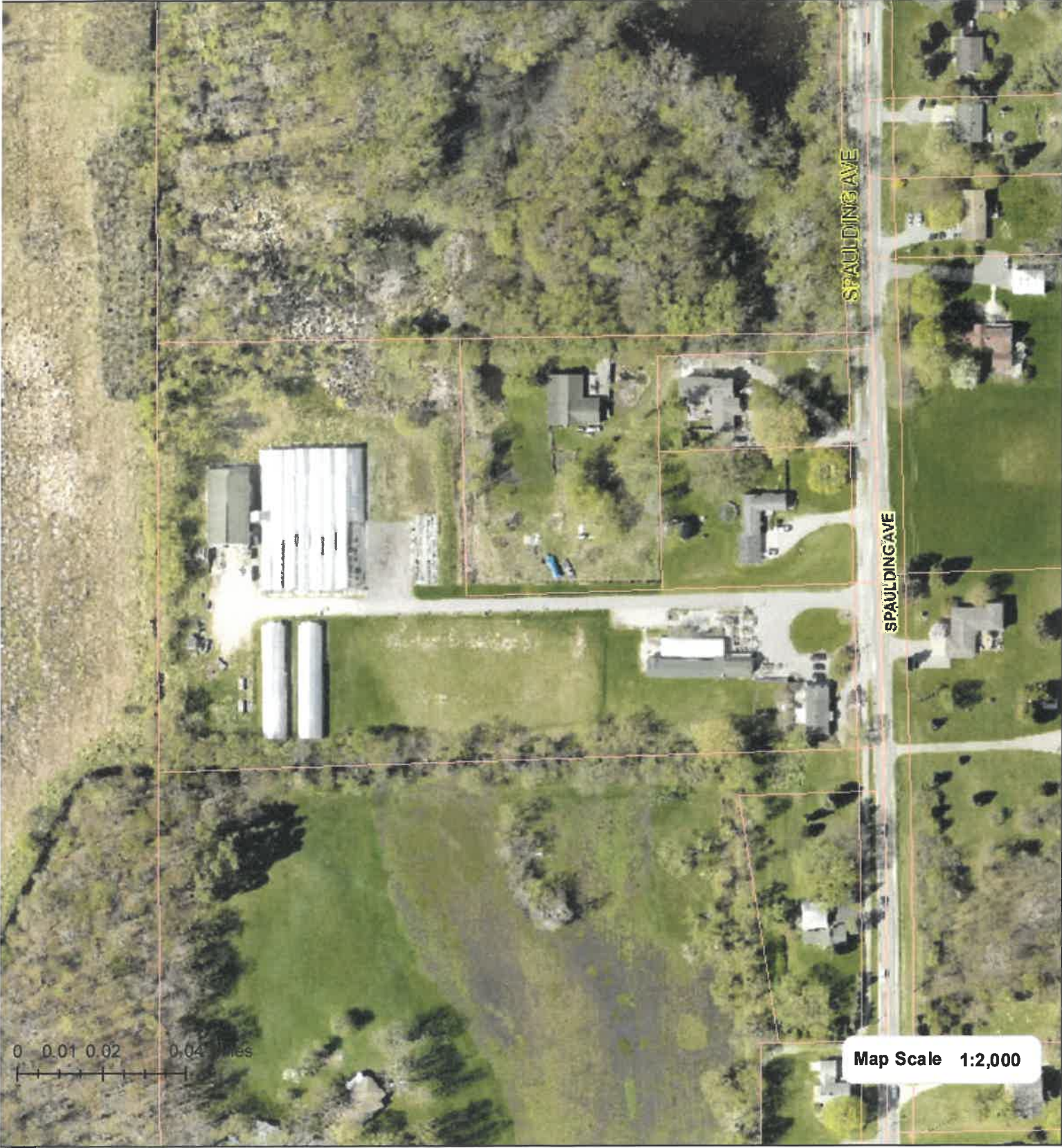
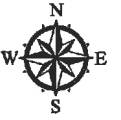
located on properties which are adjoining and in the general area.	
The topography and vegetation in the area.	The property is relatively flat
Whether the proposed building will affect the light and air circulation of any adjoining properties.	The location of the building, size of the lot will not cause a problem with the light and air circulation.
Whether the proposed building will adversely affect the view of any adjoining property owner or occupant.	The size of the building will make it easy to see from adjoining property.
Points of access to the proposed building and their relationship to adjoining properties and the view from the adjacent streets.	No new access will be created.

STAFF RECOMMENDATION

Staff recommends approval of a maximum of 1,200 sq ft accessory building for salt storage.

Attachments: Application
 Site Plan

TITLE



0 0.01 0.02 0.04 Miles

Map Scale 1:2,000



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Printed 11/6/2018 10:43:20 AM

Scholten Landscape 2018/2019

Some of
This will be done
By end of November

These
plants
will be in
here next
month

Salt Bin (Winter)
Plant storage in
Spring & Summer

- Pines
- Maples
- Pairs
- Perennial Plants

Greenhouse
plant &
equipment
storage

Office

these
greenhouse areas
not open sales
yet are
for April

Greenhouse
Spring Plant Sales
Fall pumpkin Sales
Winter X-mass trees

Plant area
with landscape
Spring/Summer Sales

Empbees
Parking

This is what we are in the
works of what happen.

Bulk
Material
Bins

Wall to Black
View from Road

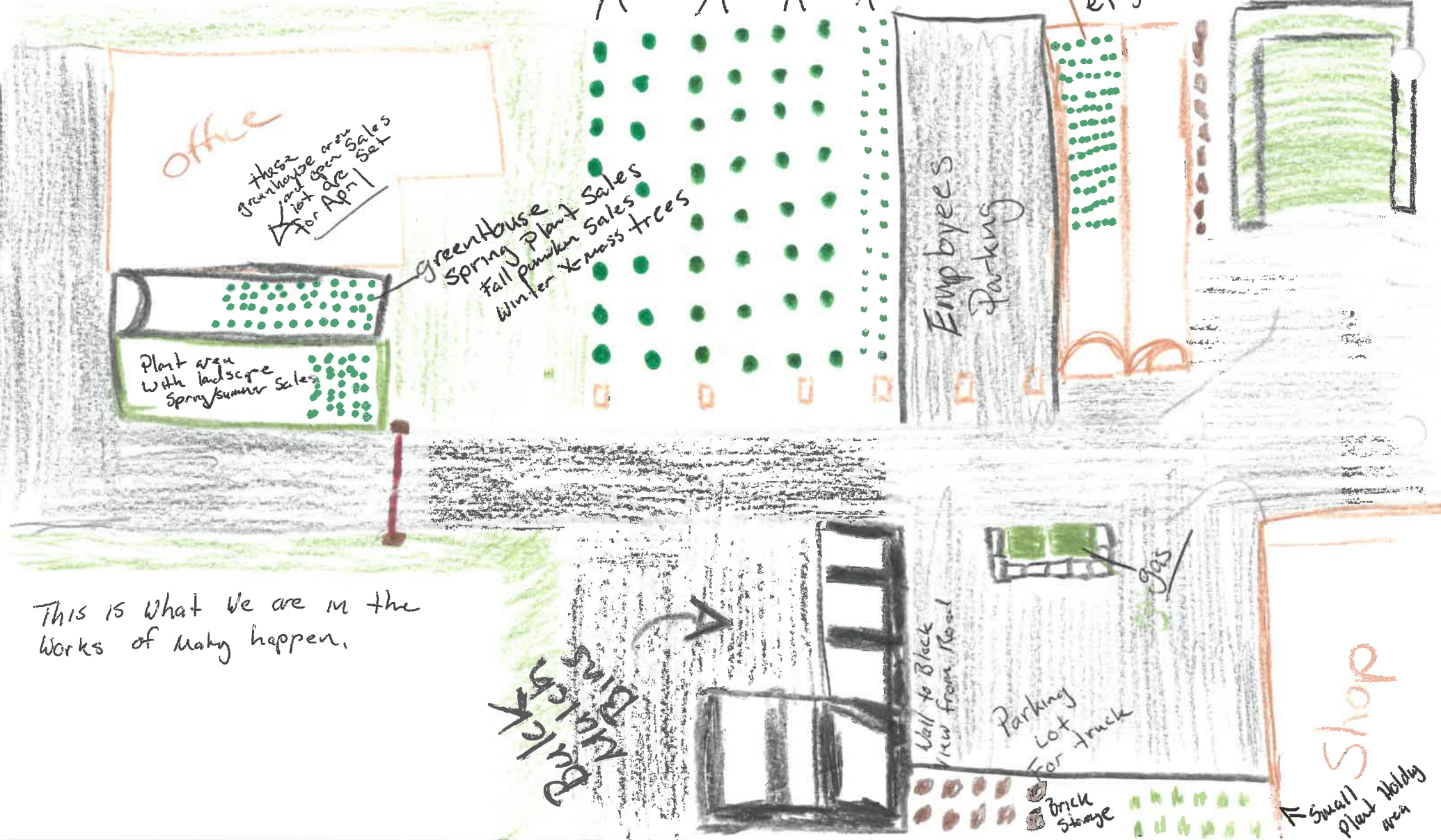
Parking
Lot
for truck

Gas

Brick
Storage

Shop

Small
Plant Holiday
area





CASCADE CHARTER TOWNSHIP

2865 Thornhills SE Grand Rapids, Michigan 49546-7140

PLANNING & ZONING APPLICATION

APPLICANT: Name: Scholten landscape
Address: 1459 Spaulding Ave SE
City & Zip Code: GR Mi. 49546
Telephone: 616-755-2479 office 616-897-2083
Email Address: Dusty@Scholtenlandscape.com

OWNER: * (if different from Applicant)
Name: Dusty Martin
Address: 3556 Apple Hill Dr A
City & Zip Code: Ada Mi. 49301
Telephone: 616-755-2479
Email Address: Dusty@Scholtenlandscape.com

NATURE OF THE REQUEST: (Please check the appropriate box or boxes)

- | | | | |
|-------------------------------------|-----------------------------|--------------------------|---------------------------------|
| <input type="checkbox"/> | Administrative Appeal | <input type="checkbox"/> | Administrative Site Plan Review |
| <input type="checkbox"/> | Deferred Parking | <input type="checkbox"/> | P.U.D. - Rezoning * |
| <input type="checkbox"/> | P.U.D. - Site Condominium * | <input type="checkbox"/> | Rezoning |
| <input type="checkbox"/> | Site Plan Review * | <input type="checkbox"/> | Sign Variance |
| <input checked="" type="checkbox"/> | Special Use Permit | <input type="checkbox"/> | Subdivision Plat Review * |
| <input type="checkbox"/> | Zoning Variance | <input type="checkbox"/> | Other: _____ * |

*** Requires an initial submission of 5 copies of the completed site plan**

BRIEFLY DESCRIBE YOUR REQUEST:**

(**Use Attachments if Necessary)

-SEE OTHER SIDE-

LEGAL DESCRIPTION OF PROPERTY:**

See Attached Survey

(**Use Attachments if Necessary)

PERMANENT PARCEL (TAX) NUMBER: 41-19 - 06-176-006

ADDRESS OF PROPERTY: 1459 Spaulding

PRESENT USE OF THE PROPERTY: Nursery + Landscape Design Center

NAME(S) & ADDRESS(ES) OF ALL OTHER PERSONS, CORPORATIONS, OR FIRMS HAVING A LEGAL OR EQUITABLE INTEREST IN THE PROPERTY:

Name(s)

Address(es)

SIGNATURES

I (we) the undersigned certify that the information contained on this application form and the required documents attached hereto are to the best of my (our) knowledge true and accurate. I (we) also agree to reimburse the Cascade Charter Township for all costs, including consultant costs, to review this request in a timely manner. I (we) understand that these costs may also include administrative reviews which may occur after the Township has taken action on my (our) request.

I (we) the undersigned also acknowledge that the proposed project does not violate any known property restrictions (i.e. plat restrictions, deed restrictions, covenants, etc.)

Joel P. Harner

Owner – Print or Type Name
(*If different from Applicant)

Joel P Harner 10-29-18

Owner's Signature & Date
(*If different from Applicant)

Dusty Martin

Applicant – Print or Type Name

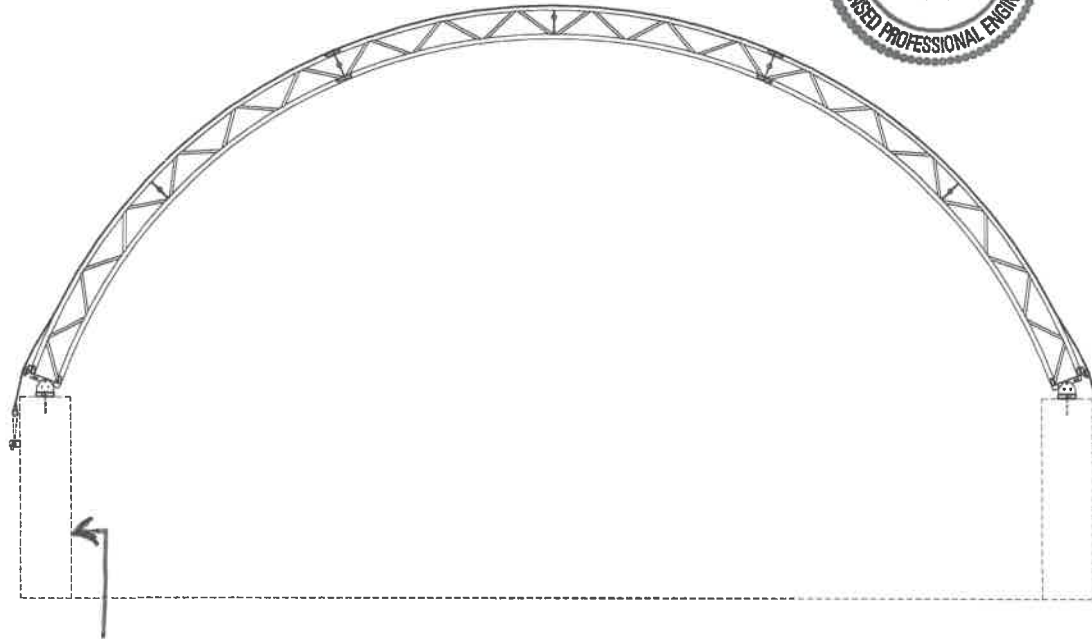
Dusty Martin

Applicant's Signature & Date

PLEASE ATTACH ALL REQUIRED DOCUMENTS NOTED IN THE PROCESS REVIEW SHEET – THANK YOU

Rev. 7/24/14

42' CC SUPERSTRUCTURE



Bunkers 6ft tall.

P:\CONTRACTS\CONTRACTS\CONTRACTS\10/2/2016 2:38 PM
 10/2/2016 2:38 PM
 P:\CONTRACTS\CONTRACTS\CONTRACTS\10/2/2016 2:38 PM
 10/2/2016 2:38 PM

BASIS FOR DESIGN		
SITE LOCATION	LATITUDE / LONGITUDE	APPROX. 42°56'13.15"N, 85°32'34.20"W
	ADDRESS	1459 Spaulding Ave. SE
	CITY/TOWN	Grand Rapids
	STATE	MI
	COUNTRY	USA
PROJECT DESCRIPTION		
DEALER	H.G.C. Inc. Construction	
OWNER'S NAME	Scholten Landscape	
STRUCTURE TYPE	MODEL	CC - BAG COVER
	WIDTH X LENGTH	42' x 60'
	TRUSS SPACING	12' o/c
DESIGN CRITERIA	FABRIC TYPE	12.1 oz/yd ² PE NON-FR
	GOVERNING BUILDING CODE	International Building Code (IBC) 2015
ROOF LOADS	USE AND OCCUPANCY	COMMERCIAL - LOW HAZARD
	DEAD LOAD	1.1 PSF
	COLLATERAL LOAD	0.25 PSF
	LIVE LOAD	32 PSF
	SNOW LOAD	35 PSF
	IMPORTANCE FACTOR	0.8
	C _s	1.2
	C _e	0.9
	WIND	21.17 PSF
	WIND DESIGN	BASIC ULTIMATE WIND SPEED
WIND EXPOSURE		C
BASIC CLADDING (EXCLUDING GCD FIG 6-11)		20.58 / 31.96 PSF
IMPORTANCE FACTOR		1
ROOF HEIGHT		29'-6"
SEISMIC DESIGN	DESIGN ENCLOSURE	PARTIALLY ENCLOSED
	S _s	0.085
	S ₁	0.046
	IMPORTANCE FACTOR	1
	SITE CLASS	D
	USE GROUP	1
	R LONGITUDINAL	*3.0
	R TRANSVERSE	*3.0
OCCUPANCY STANDARD - SEISMIC	I	

*CONSERVATIVELY TAKEN SMALLER THAN REQUIRED PER 12.2-1

REVISION TABLE

No.	DESCRIPTION	DATE
0	ISSUED APPROVAL AND FINAL RELEASE	10/17/2016

DRAWING INDEX

SHEET NAME	SHEET No.	TITLE
TS	1 OF 10	TITLE SHEET
GSN	2 OF 10	GENERAL STRUCTURAL NOTES
REA	3 OF 10	DETAILED REACTIONS
FOL	4 OF 10	FOUNDATION PLAN
FRA	5 OF 10	FRAMING PLAN
EL-A	6 OF 10	ELEVATION A
EL-B	7 OF 10	ELEVATION B
EL-C	8 OF 10	ELEVATION C
DET1	9 OF 10	DETAILS
DET2	10 OF 10	DETAILS

Calhoun Design Structures Ltd.
2702 Brown Rd SW
17th Century Center
1001 SW
1-800-378-2844
www.calhoun.ca
www.structuralengineers.com



DATE: 10/17/2016
DRAWN: S O B
CHECKED: L E B

TITLE SHEET
42' CC SERIES
406197 CC42x60 R0

IF ANY CHANGES TO THIS DRAWING ARE MADE, THE ENGINEER SHALL BE NOTIFIED BY THE ARCHITECT OR OWNER. THE ARCHITECT OR OWNER SHALL BE RESPONSIBLE FOR OBTAINING NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES.

TS
N T S 1 OF 10

GRID(S) 1		Horizontal			Moment			
Node	L/C	Fx kip	Fy kip	Fz kip	Mx kip-in	My kip-in	Mz kip-in	
Max Fx	313	41 D+CL+BSL	1.6	2.26	0.15	0.89	-0.13	-9.62
Min Fx	314	41 D+CL+BSL	-1.6	2.26	0.1	0.62	0.42	9.6
Max Fy	314	41 D+CL+BSL	-1.6	2.26	0.1	0.62	0.42	9.6
Min Fy	313	61.6D+WIND PAR (-Z) +EDGE STRIP PAR (-Z) +IP PAR	-1	-2.34	0.73	4.39	3.44	5.99
Max Fz	313	61.6D+WIND PAR (-Z) +EDGE STRIP PAR (-Z) +IP PAR	-1	-2.34	0.73	4.39	3.44	5.99
Min Fz	314	50 D+CL+WIND PAR (+Z) +EDGE STRIP PAR (+Z) +IP PAR	-0.64	1.16	-0.2	-1.18	0.68	3.82
Max Mx	313	61.6D+WIND PAR (-Z) +EDGE STRIP PAR (-Z) +IP PAR	-1	-2.34	0.73	4.39	3.44	5.99
Min Mx	314	50 D+CL+WIND PAR (+Z) +EDGE STRIP PAR (+Z) +IP PAR	-0.64	1.16	-0.2	-1.18	0.68	3.82
Max My	313	47 D+CL+WIND PAR (-Z) +EDGE STRIP PAR (-Z) +IP PAR	-0.93	-2.03	0.72	4.34	3.44	5.6
Min My	314	47 D+CL+WIND PAR (-Z) +EDGE STRIP PAR (-Z) +IP PAR	-0.94	-2.03	0.68	4.07	-3.15	-5.62
Max Mz	314	41 D+CL+BSL	-1.6	2.26	0.1	0.62	0.42	9.6
Min Mz	313	41 D+CL+BSL	1.6	2.26	0.15	0.89	-0.13	-9.62

GRID(S) 2		Horizontal			Moment			
Node	L/C	Fx kip	Fy kip	Fz kip	Mx kip-in	My kip-in	Mz kip-in	
Max Fx	311	41 D+CL+BSL	2.79	3.88	-0.1	-0.61	0.27	-16.71
Min Fx	312	41 D+CL+BSL	-2.78	3.89	-0.14	-0.84	-0.15	16.71
Max Fy	312	42 D+CL+USL	-1.8	4.08	-0.2	-1.19	-0.09	10.8
Min Fy	312	61.6D+WIND PAR (+Z) +EDGE STRIP PAR (+Z) +IP PAR	0.5	-1.8	0.12	0.7	-0.46	-2.99
Max Fz	311	43 D+CL WIND PERP (+CP) AS ARCH +IP PERP	-1.48	-1.08	0.21	1.24	0.99	8.88
Min Fz	312	64.6D+WIND PAR (+Z) +EDGE STRIP PAR (+Z) +IP PAR	-0.07	0.68	-0.34	-2.03	-0.38	0.42
Max Mx	311	43 D+CL WIND PERP (+CP) AS ARCH +IP PERP	-1.48	-1.08	0.21	1.24	0.99	8.88
Min Mx	312	64.6D+WIND PAR (+Z) +EDGE STRIP PAR (+Z) +IP PAR	-0.07	0.68	-0.34	-2.03	-0.38	0.42
Max My	311	45 D+CL WIND PERP (+CP) AS ARCH +IP PERP	-1.29	-0.94	0.17	1.03	1.05	7.73
Min My	312	45 D+CL WIND PERP (+CP) AS ARCH +IP PERP	0.21	-0.5	0.03	0.15	-0.5	-1.24
Max Mz	312	41 D+CL+BSL	-2.79	3.89	-0.14	-0.84	-0.15	16.71
Min Mz	311	41 D+CL+BSL	2.79	3.88	-0.1	-0.61	0.27	-16.71

GRID(S) 3 & 4		Horizontal			Moment			
Node	L/C	Fx kip	Fy kip	Fz kip	Mx kip-in	My kip-in	Mz kip-in	
Max Fx	307	41 D+CL+BSL	3.88	4.07	0	0	0	-17.34
Min Fx	308	41 D+CL+BSL	-3.89	4.08	0	0	0	17.33
Max Fy	308	41 D+CL+BSL	-3.89	4.08	0	0	0	17.33
Min Fy	310	61.6D+WIND PAR (-Z) +EDGE STRIP PAR (-Z) +IP PAR	0.78	-2.14	0.12	0.74	0.36	-6.67
Max Fz	309	43 D+CL WIND PERP (+CP) AS ARCH +IP PERP	-1.93	-1.68	0.19	1.12	0.43	11.57
Min Fz	305	50 D+CL+WIND PAR (+Z) +EDGE STRIP PAR (+Z) +IP PAR	0.17	0.46	-0.21	-1.24	0.32	-1.02
Max Mx	309	43 D+CL WIND PERP (+CP) AS ARCH +IP PERP	-1.93	-1.68	0.19	1.12	0.43	11.57
Min Mx	305	50 D+CL+WIND PAR (+Z) +EDGE STRIP PAR (+Z) +IP PAR	0.17	0.46	-0.21	-1.24	0.32	-1.02
Max My	306	47 D+CL+WIND PAR (-Z) +EDGE STRIP PAR (-Z) +IP PAR	-0.46	-1.36	0.04	0.25	0.54	-2.73
Min My	305	47 D+CL+WIND PAR (-Z) +EDGE STRIP PAR (-Z) +IP PAR	-0.46	-1.34	0.02	0.14	-0.59	2.73
Max Mz	308	41 D+CL+BSL	-3.89	4.08	0	0	0	17.33
Min Mz	307	41 D+CL+BSL	2.89	4.07	0	0	0	-17.34

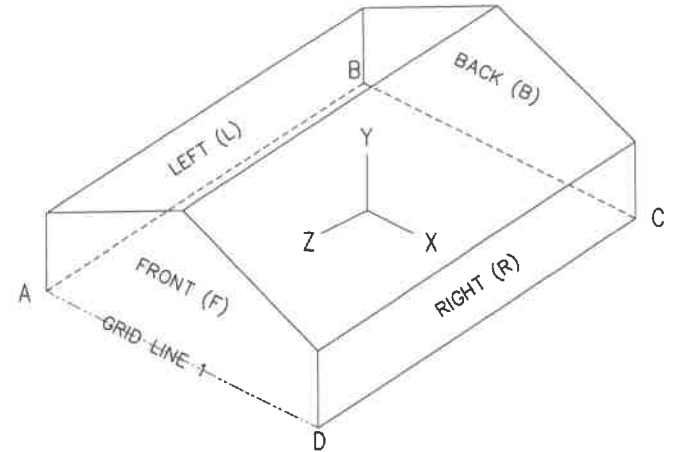
GRID(S) 5		Horizontal			Moment			
Node	L/C	Fx kip	Fy kip	Fz kip	Mx kip-in	My kip-in	Mz kip-in	
Max Fx	303	41 D+CL+BSL	2.79	3.88	0.1	0.61	-0.27	-16.71
Min Fx	304	41 D+CL+BSL	-2.79	3.89	0.14	0.84	0.15	16.71
Max Fy	304	42 D+CL+USL	-1.8	4.08	0.2	1.19	0.09	10.8
Min Fy	304	62.6D+WIND PAR (+Z) +EDGE STRIP PAR (+Z) +IP PAR	0.66	-2.11	0.03	0.18	0.35	-3.97
Max Fz	304	61.6D+WIND PAR (-Z) +EDGE STRIP PAR (-Z) +IP PAR	0.63	-1.47	0.35	2.08	0.21	-3.75
Min Fz	303	50 D+CL+WIND PAR (+Z) +EDGE STRIP PAR (+Z) +IP PAR	0.34	0.48	-0.26	-1.56	-0.68	-2.03
Max Mx	304	61.6D+WIND PAR (-Z) +EDGE STRIP PAR (-Z) +IP PAR	0.63	-1.47	0.35	2.08	0.21	-3.75
Min Mx	303	50 D+CL+WIND PAR (+Z) +EDGE STRIP PAR (+Z) +IP PAR	0.34	0.48	-0.26	-1.56	-0.68	-2.03
Max My	304	50 D+CL+WIND PAR (+Z) +EDGE STRIP PAR (+Z) +IP PAR	-0.34	0.48	-0.21	-1.26	0.54	2.04
Min My	303	45 D+CL WIND PERP (+CP) AS ARCH +IP PERP	-1.48	-0.57	-0.03	-0.2	-1	8.74
Max Mz	304	41 D+CL+BSL	-2.79	3.89	0.14	0.84	0.15	16.71
Min Mz	303	41 D+CL+BSL	2.79	3.88	0.1	0.61	-0.27	-16.71

GRID(S) 6		Horizontal			Moment			
Node	L/C	Fx kip	Fy kip	Fz kip	Mx kip-in	My kip-in	Mz kip-in	
Max Fx	301	41 D+CL+BSL	1.6	2.26	-0.15	-0.89	0.13	-9.62
Min Fx	302	41 D+CL+BSL	-1.6	2.26	-0.1	-0.62	-0.42	9.6
Max Fy	302	41 D+CL+BSL	-1.6	2.26	-0.1	-0.62	-0.42	9.6
Min Fy	301	62.6D+WIND PAR (+Z) +EDGE STRIP PAR (+Z) +IP PAR	-0.8	-1.86	-0.69	-3.76	-3.41	4.79
Max Fz	301	43 D+CL WIND PERP (+CP) AS ARCH +IP PERP	-1.1	-1.01	0.14	0.87	-1.09	6.58
Min Fz	301	64.6D+WIND PAR (+Z) +EDGE STRIP PAR (+Z) +IP PAR	-0.48	-0.76	-0.64	-3.68	-2.11	2.89
Max Mx	301	43 D+CL WIND PERP (+CP) AS ARCH +IP PERP	-1.1	-1.01	0.14	0.87	-1.09	6.58
Min Mx	301	64.6D+WIND PAR (+Z) +EDGE STRIP PAR (+Z) +IP PAR	-0.48	-0.76	-0.64	-3.68	-2.11	2.89
Max My	302	48 D+CL+WIND PAR (+Z) +EDGE STRIP PAR (+Z) +IP PAR	0.74	-1.75	-0.57	-3.43	3.08	-4.48
Min My	301	48 D+CL+WIND PAR (+Z) +EDGE STRIP PAR (+Z) +IP PAR	-0.79	-1.75	-0.62	-3.7	-3.33	4.41
Max Mz	302	41 D+CL+BSL	-1.6	2.26	-0.1	-0.62	-0.42	9.6
Min Mz	301	41 D+CL+BSL	1.6	2.26	-0.15	-0.89	0.13	-9.62

Component Load Cases US

- DEAD (D)
 - COLLATERAL (CL)
 - ROOF LIVE (RL)
 - BALANCED SNOW (BSL)
 - UNBALANCED SNOW LEFT TO RIGHT (USL L2R)
 - WIND PERPENDICULAR +CP LEFT TO RIGHT AS ARCH +IP (AWPerp +CP L2R +IP)
 - WIND PERPENDICULAR -CP LEFT TO RIGHT AS ARCH +IP (AWPerp -CP L2R +IP)
 - WIND PERPENDICULAR +CP LEFT TO RIGHT AS ARCH -IP (AWPerp +CP L2R -IP)
 - WIND PERPENDICULAR -CP LEFT TO RIGHT AS ARCH -IP (AWPerp -CP L2R -IP)
 - WIND PARALLEL FRONT TO BACK +IP (WPar F2B +IP)
 - WIND PARALLEL FRONT TO BACK -IP (WPar F2B -IP)
 - WIND PARALLEL BACK TO FRONT +IP (WPar B2F +IP)
 - WIND PARALLEL BACK TO FRONT -IP (WPar B2F -IP)
 - SEISMIC TRANSVERSE LEFT TO RIGHT (Etrans L2R)
 - SEISMIC LONGITUDINAL FRONT TO BACK (Elong F2B)
- * Cases Analyzed Cases This Project
 Odd Nodes Left Even Nodes Right Ascending Back to Front

Gable Uprights Left to Right	Gable Location	Horizontal Ultimate		
		Fx kip	Fy kip	Fz kip (+/-)
1	(F)/B	---	---	---
1	(B)	---	---	1.47
2	(B)	---	---	1.47
SIDEWALL LASHING WINCH		---	2.35	---



FOUNDATION DESIGNED AND SUPPLIED BY OTHERS

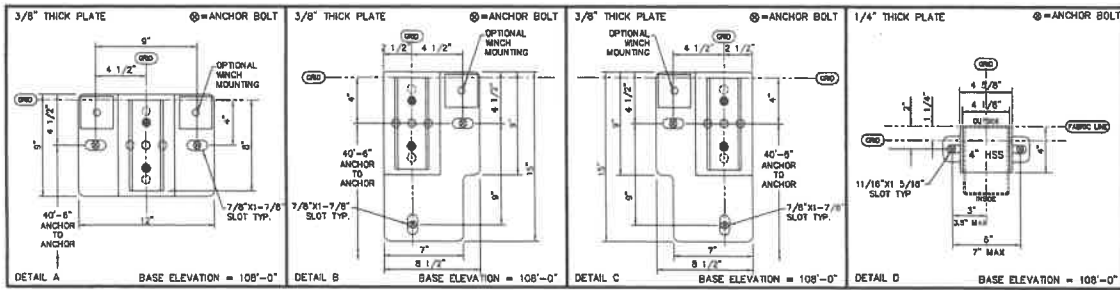
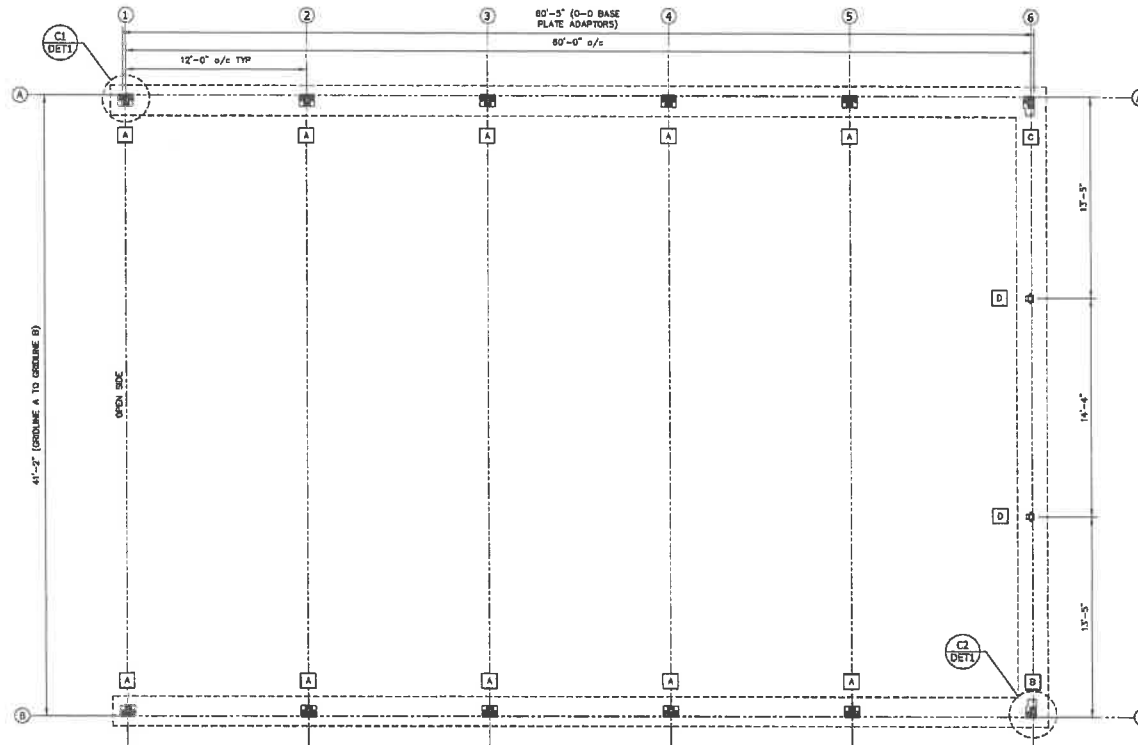
Calhoun Super Structures Ltd.
 2705 Bower Rd. #10
 Troy, Ontario, Canada
 M7B 1G6
 1-800-363-3994
 www.calhoun.ca
 www.usa.calhoun.com

CALHOUN

REACTIONS
 42' CC SERIES
 408197 CC42x60 R0

REA

N T S 3 OF 10



NOTE:
 THE FOUNDATION DESIGNER MAY CHOSE ANCHORS OF VARIOUS DIAMETERS WHERE APPROPRIATE. IF THE ANCHOR IS MORE THAN 1/16"
 SMALLER THAN THE PROVIDED HOLE, THE CONTRACTOR SHALL USE A MINIMUM 2" DIAMETER, 1/4" THICK WASHER WITH A STANDARD HOLE.

FOUNDATION DESIGNED AND SUPPLIED BY OTHERS

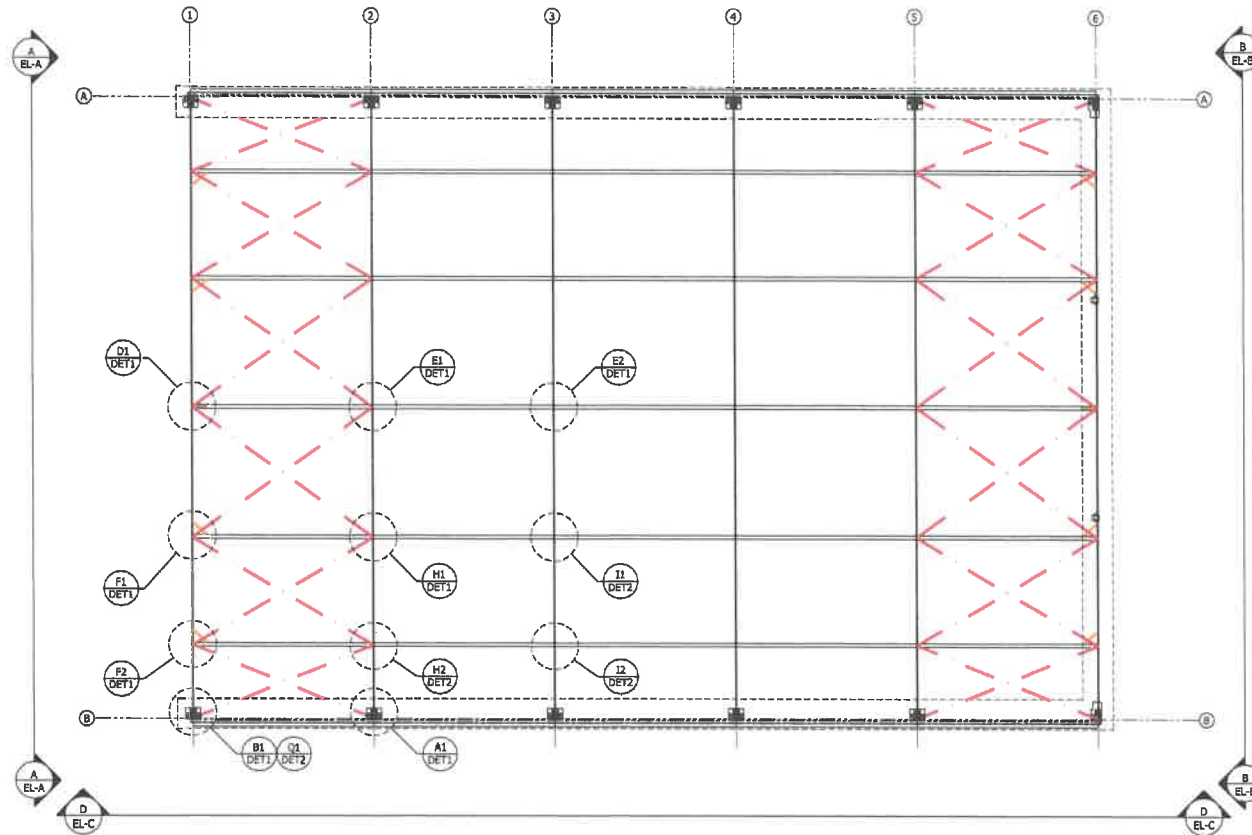
CALHOUN

FOUNDATION PLAN
 42' CC SERIES
 405197 CC42x80 R0

NO.	DATE	DESCRIPTION
1	03/15/2012	ISSUED FOR PERMIT
2	03/15/2012	ISSUED FOR PERMIT

DATE: 03/15/2012
 TIME: 10:02 AM
 USER: gregory.l.riley
 PLOT: 1/4"=1'-0" 4 OF 10

R:\CC\2019 CC\405197 42x60x60 RD CW FC - Section Landscape Draw Panels\A\Drawings\405197 CC-2-60 RD.dwg
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FRAMING SCHEDULE				
LEGEND	DESCRIPTION	SECTION	QA/LOAD	COMMENTS
	TYPICAL PURLIN	2-7/8"	14	ALL BAYS / RIDGE
	BRACE PURLIN	U 2"x2"	11	END BAYS ONLY
	TENSION RUSE	2-7/8"	14	ALL BAYS

CABLE SCHEDULE					
LEGEND	DESCRIPTION	SECTION	QA/LOAD	PROOF TURNS	PRE-TENSION TURNS
	ROOF TRUSS	3/16" DIA 7X19	600	8-1/4	2-

CABLE TENSIONING SEQUENCE:

1. HAND TIGHT
2. PLUS SPECIFIED TURNS, AS ABOVE, USING A CHEATER BAR OR WRENCH (TO STRETCH CABLE)
3. LOOSEN TO SLACK
4. HAND TIGHT
5. PLUS SPECIFIED TURNS, AS ABOVE, USING A CHEATER BAR OR WRENCH (FINAL TENSIONING 600 LBS UNO)

MAIN BUILDING COVER INFORMATION	
FABRIC TYPE	COVER INFORMATION
BAG COVER	1 PIECE BAG COVER, TENSION AS PER DETAILS

FOUNDATION DESIGNED AND SUPPLIED BY OTHERS

Calhoun Super Structures Ltd
 2760 Snow Rd. #10
 Farm, Ontario, Canada
 N0B 2P0
 1-800-962-2996
 www.calhounss.com



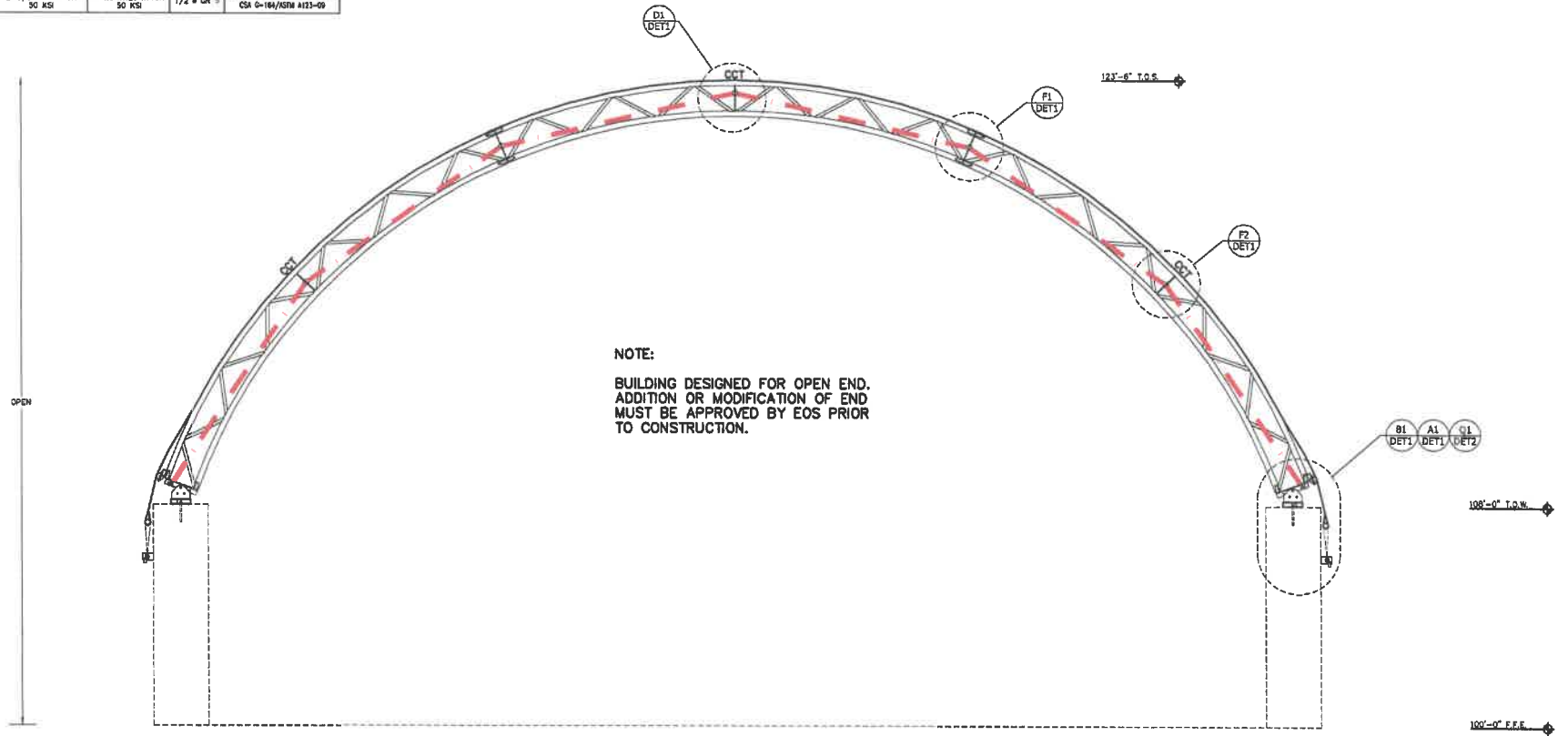
FRAMING PLAN
 42' CC SERIES
 405197 CC42x60 RD

DATE: 10/1/2019
 DRAWN BY: J. J. CALHOUN
 CHECKED BY: A. J. CALHOUN
 ALL DIMENSIONS SHOWN IN THIS DRAWING ARE TO FACE UNLESS SPECIFIED OTHERWISE.
 CALHOUN SUPER STRUCTURES LTD.
 100% RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL DIMENSIONS AND CONDITIONS OF THE SITE PRIOR TO CONSTRUCTION.

PROJECT NO: FRA
 1/4"=1'-0" 5 OF 10

0:12:12:18 CC 405197 426012 HOC CW PC - Section Line, Grand Rapids MI (Engineering) 405197 CC426012 R0.dwg
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COMPONENT SCHEDULE					
MARK	DESCRIPTION	CHORDS	WEBS	BOLTS	COMMENTS
CCT	CC SERIES TRUSS COMPONENT	2-3/8" x 14 GA 50 KSI	1-1.5" x 1.25" x 1/4 GA 50 KSI	1/2" GR 5	PL STEEL NOT BPP GALVANIZED TO CSA G-184/ASTM A113-09



END 1-GRIDLINE 1

CABLE SCHEDULE					
LEGEND	DESCRIPTION	SECTION	GA/LOAD	PROOF TURNS	PRE-TENSION TURNS
—	ROOF TRUSS	3/16" DIA 7X19	600	8-1/4	2-

CABLE TENSIONING SEQUENCE:

- HAND TIGHT
- PLUS SPECIFIED TURNS, AS ABOVE, USING A CHEATER BAR OR WRENCH (TO STRETCH CABLE)
- LOOSEN TO SLACK
- HAND TIGHT
- PLUS SPECIFIED TURNS, AS ABOVE, USING A CHEATER BAR OR WRENCH (FINAL TENSIONING 600 LBS UNO)



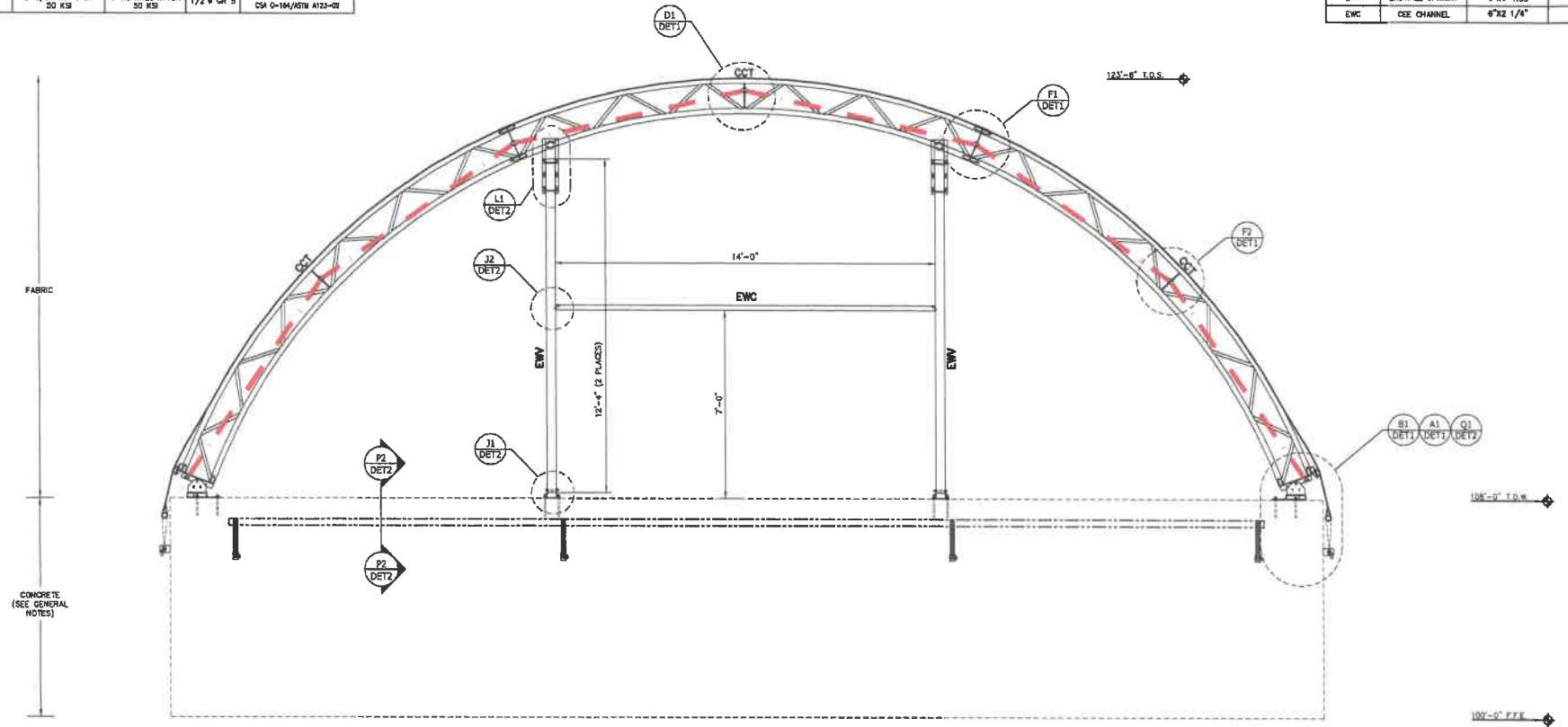
FOUNDATION DESIGNED AND SUPPLIED BY OTHERS

Calhoun Super Structures LLC 3742 Brown Rd #10 York, Ontario, Canada N0Y 2M0 1-800-390-2096 www.calhoun.ca www.superstructures.com		
DRAWN: R.D.B. CHECKED: J.S.B.	ELEVATION A 42' CC SERIES 405197 CC42x60 R0	
D 1/2"=1'-0" 6 OF 10		EL-A

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COMPONENT SCHEDULE				
MARK	DESCRIPTION	CHORDS	WEBS	COMMENTS
CCT	CC SERIES TRUSS COMPONENT	2-3/8" x 14 GA 50 KSI	U 1.5" x 2.5" x 14GA 50 KSI	1/2" GR 5 ALL STEEL NOT DR GALVANIZED TO CSA 9-194/ASTM A133-02

END WALL FRAMING SCHEDULE			
LEGEND	DESCRIPTION	SECTION	GA./LOAD
EWU	ENDWALL UPRIGHT	4"x4" HSS	1/8"
EWV	CEE CHANNEL	6"x2 1/4"	14



FRAMING SCHEDULE				
LEGEND	DESCRIPTION	SECTION	GA./LOAD	COMMENTS
	TYPICAL PURLIN	2-7/8"	14	ALL BAYS / RIDGE
	BRACE PURLIN	U 3"x2"	11	END BAYS ONLY
	TENSION TUBE	2-7/8"	14	ALL BAYS

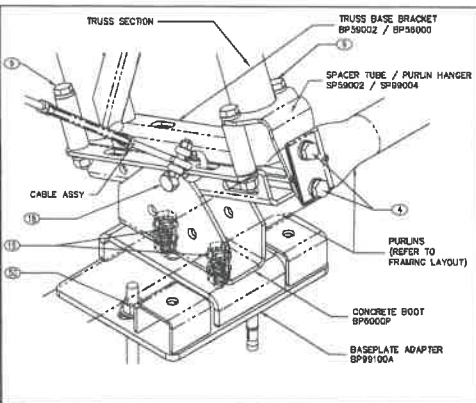
END WALL FABRIC INFORMATION	
FABRIC TYPE	FABRIC INFORMATION
1 PIECE END PANEL	CONNECTED TO OTHER CHORD USING SCHEDULE 80 PIPE WITH CHAMBUCKLES @ 20" o/c. TENSION AS PER DETAILS.



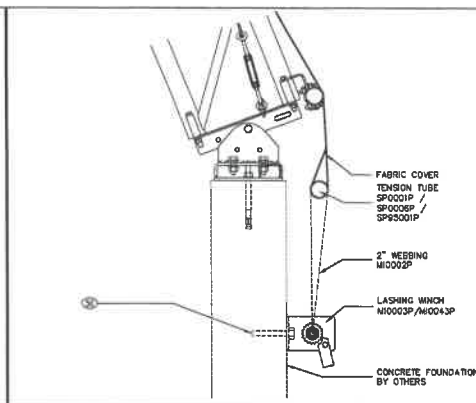
FOUNDATION DESIGNED AND SUPPLIED BY OTHERS

Calhoun Super Structures Ltd. 3702 Bruce Rd. #10 New, Ontario, Canada N0B 2B0 1-800-385-3994 www.calhounss.com		
DATE: 11/19/15 DRAWN BY: JLR CHECKED BY: JLR APPROVED BY: JLR	ELEVATION B 42' CC SERIES 405197 CC42x60 R0	
ALL DIMENSIONS CONTAINED IN THIS DRAWING TO BE SUPPLIED BY OTHERS UNLESS OTHERWISE SPECIFIED. CALHOUN SUPER STRUCTURES LTD. IS NOT RESPONSIBLE FOR THE ACCURACY OF DIMENSIONS OR MATERIALS PROVIDED BY OTHERS.		EL-B 1/2"=1'-0" 7 OF 10

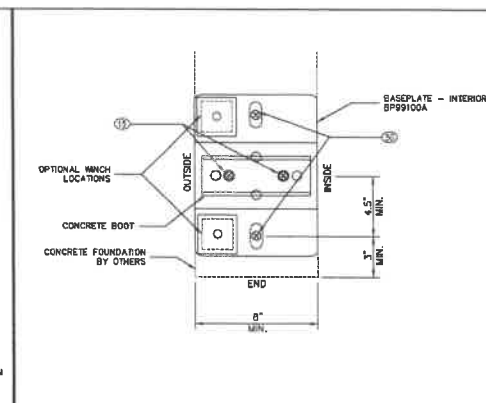
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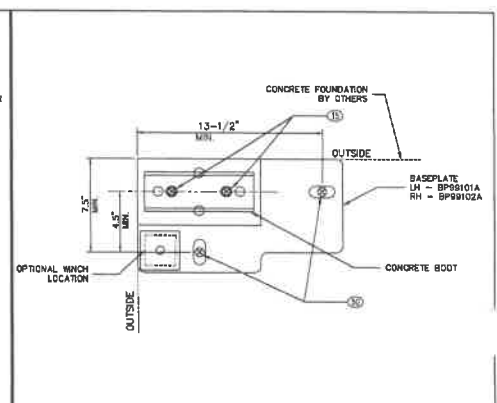
DETAIL A1 CONCRETE BOOT MOUNT - BAG COVER



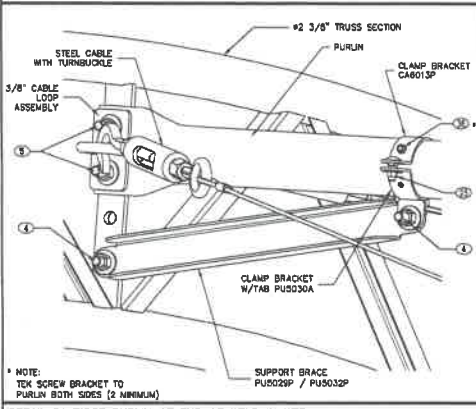
DETAIL B1 BAG COVER STANDARD FABRIC TERMINATION



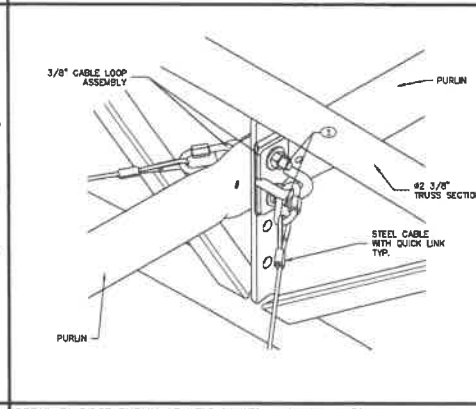
DETAIL C1 CONC WALL BOOT MOUNT - INTERIOR - GRIDS 1 - 5



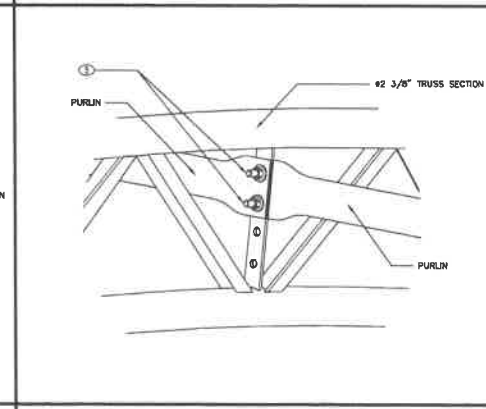
DETAIL C2 CONC WALL BOOT MOUNT CORNER - GRID 6 ONLY



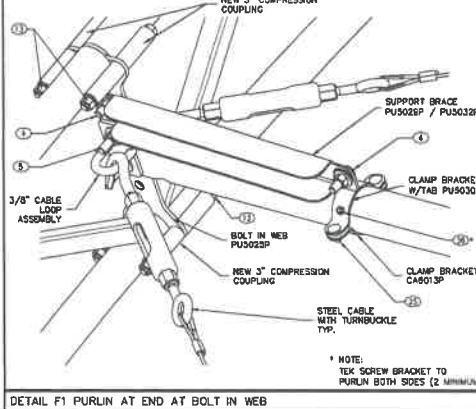
DETAIL D1 RIDGE PURLIN AT END AT WELD IN WEB



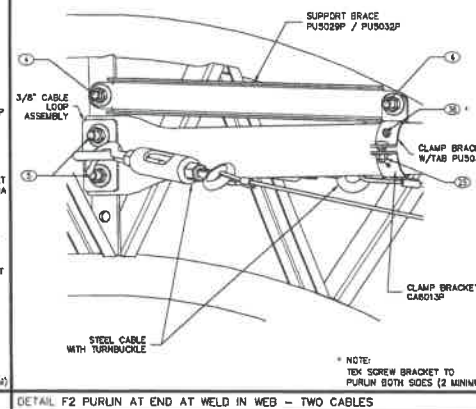
DETAIL E1 RIDGE PURLIN AT WELD IN WEB - 2 CABLES TO RIDGE



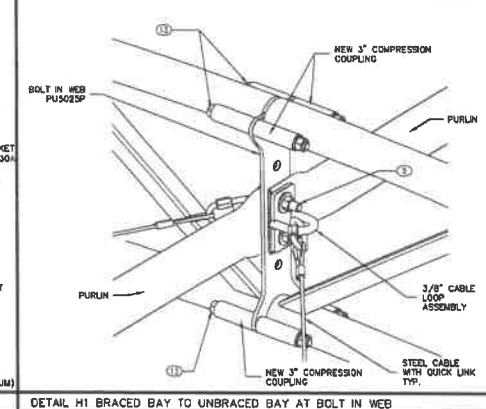
DETAIL E2 RIDGE PURLIN AT WELD IN WEB



DETAIL F1 PURLIN AT END AT BOLT IN WEB



DETAIL F2 PURLIN AT END AT WELD IN WEB - TWO CABLES



DETAIL H1 BRACED BAY TO UNBRACED BAY AT BOLT IN WEB

HARDWARE SCHEDULE (AS OCCURS)

ITEM No.	DESCRIPTION	PART No.	ITEM No.	DESCRIPTION	PART No.
1	HEX BOLT 3/8 X 1-1/2	FA0022P	25	CARRIAGE BOLT 3/8 X 1-1/2	FC060100G5G
2	---	---	26	CARRIAGE BOLT 3/8 X 4	FA0103P
3	---	---	27	CARRIAGE BOLT 3/8 X 4-1/2	FA0102P
4	HEX BOLT 1/2 X 1-1/2	FA0011P	28	CARRIAGE BOLT 1/2 X 2	FA0148P
5	HEX BOLT 1/2 X 2-1/2	FA0181P	29	CARRIAGE BOLT 1/2 X 4-1/2	FA0138P
6	HEX BOLT 1/2 X 2-1/2 GR5	FA0021P	30	CARRIAGE BOLT 1/2 X 5	FA0127P
7	HEX BOLT 1/2 X 3-1/2	FA0008P	31	CARRIAGE BOLT 1/2 X 5-1/2	FA0101P
8	HEX BOLT 1/2 X 4	FA0009P	32	CARRIAGE BOLT 5/8 X 1-1/2	FA0142P
9	HEX BOLT 1/2 X 4-1/2	FA0076P	33	CARRIAGE BOLT 5/8 X 6	FA0107P
10	HEX BOLT 1/2 X 5	FA0010P	34	LAG BOLT 3/8 X 1-1/2	FA0030P
11	HEX BOLT 1/2 X 5-1/2	FA0036P	35	LAG BOLT 1/2 X 3-1/2	FA0007P
12	HEX BOLT 1/2 X 6-1/2	FN080800G5G	36	TEK SCREWS 1/4 X 1	FA2201P
13	HEX BOLT 1/2 X 7-1/2	FN080700G5G	37	TEK SCREWS 1/4 X 1-1/4 GASK	FA2204P
14	HEX BOLT 5/8 X 1-1/2	FA0039P	38	TEK SCREWS 1/4 X 1 WHITE	FA2203P
15	HEX BOLT 5/8 X 2	FA0081P	39	TEK SCREWS 1/4 X 1-1/4	FA0147P
16	HEX BOLT 5/8 X 2-1/2	FA0082P	40	TEK SCREWS 1/4 X 2-1/2	FA0089P
17	HEX BOLT 5/8 X 3	FA0083P	41	TEK SCREWS 1/4 X 1-1/2	FA2203P
18	HEX BOLT 5/8 X 4	FA0083P	42	THREADED ROD 5/8 X 5	FR100000G2G
19	HEX BOLT 5/8 X 5	FA0074P	43	CARRIAGE BOLT 5/8 X 2	FC100200G2G
20	HEX BOLT 5/8 X 6	FA0181P	44	HEX BOLT 1/2 X 1	FN080100G5G
21	HEX BOLT 3/4 X 3	FA0077P	45	LAG BOLT 3/4 X 3-1/2	FG120350G2G
22	HEX BOLT 3/4 X 5	FA0083P	46	BLIND BOLT 1/2	FA1033P
23	HEX BOLT 7/8 X 2-1/2	FA0120P	48	BLIND BOLT 5/16 X 2"	FA1034P
24	HEX BOLT 1-1/4 X 4-1/2	FA0181P	50	CONNECTION BY OTHERS	

NOTES: REFERENCE TO BOLTS AND/OR U-BOLTS INCLUDES ASSOCIATED NUT AND WASHER ALWAYS INSTALL WASHER ON TURN SIDE OF BOLT - UNO

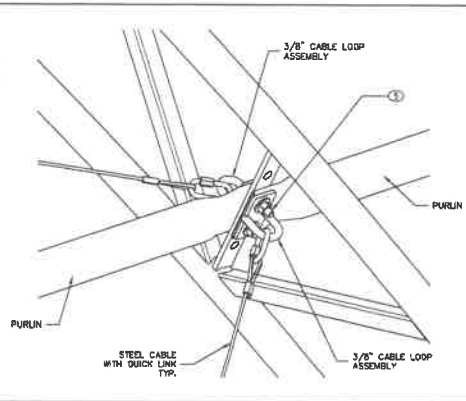
FOUNDATION DESIGNED AND SUPPLIED BY OTHERS

CALHOUN

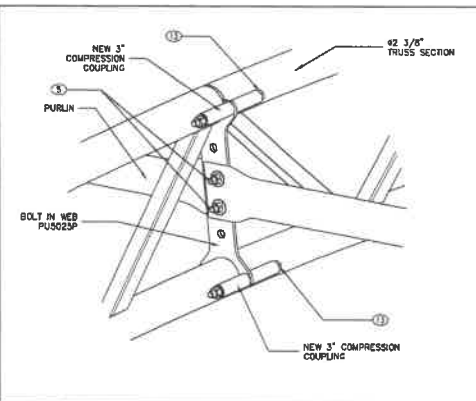
DETAILS
42' CC SERIES
405197 CC42x50 R0

DET1
N T S 9 OF 10

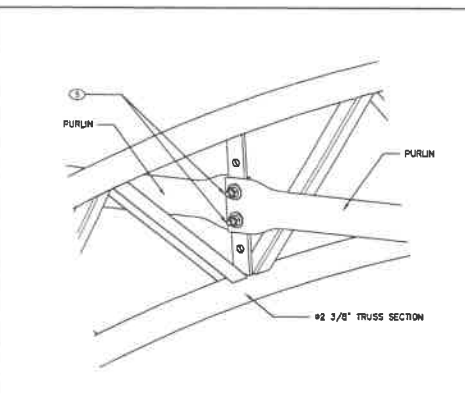
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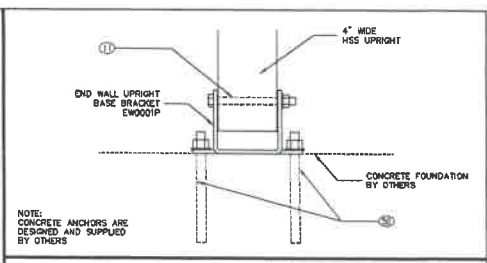
DETAIL H2 BRACED BAY TO UNBRACED BAY AT WELD IN WEB - TWO CABLES



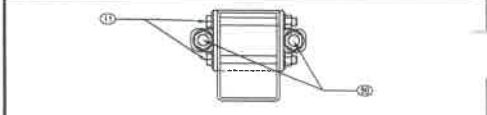
DETAIL I1 UNBRACED BAY TO UNBRACED BAY AT BOLT IN WEB



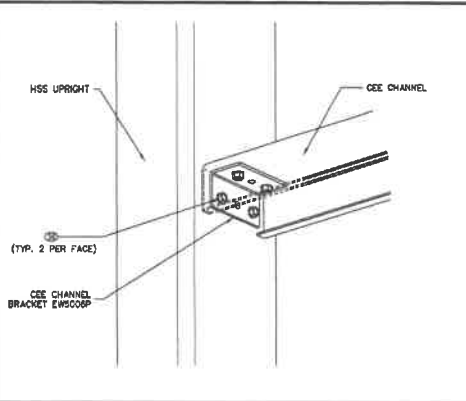
DETAIL I2 UNBRACED BAY TO UNBRACED BAY AT WELD IN WEB



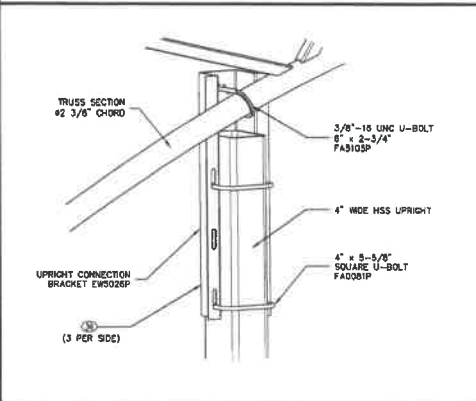
DETAIL J1 ENDWALL UPRIGHT BASE CONNECTION - 4"



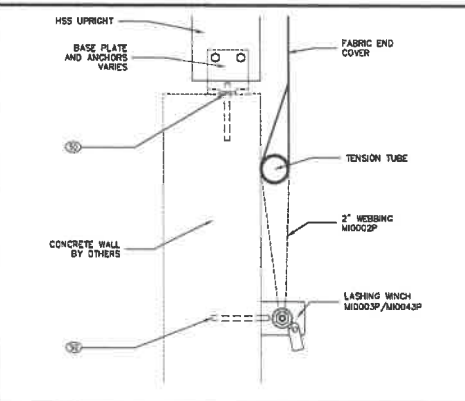
PLAN VIEW J1



DETAIL J2 ENDWALL UPRIGHT TO CEE CHANNEL CONNECTION



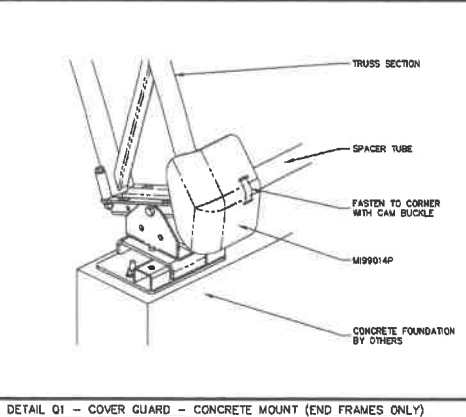
DETAIL L1 ENDWALL HSS UPRIGHT CONNECTION AT TRUSS - 4X4 HSS



DETAIL P1 END WALL FABRIC ON HSS ON CONG. WALL AT UPRIGHT

HARDWARE SCHEDULE (AS OCCURS)					
ITEM No.	DESCRIPTION	PART No.	ITEM No.	DESCRIPTION	PART No.
1	HEX BOLT 3/8 X 1-1/2	FA029P	25	CARRIAGE BOLT 3/8 X 1-1/2	FC080150G5G
2	----	----	26	CARRIAGE BOLT 3/8 X 4	FA0103P
3	----	----	27	CARRIAGE BOLT 3/8 X 4-1/2	FA0102P
4	HEX BOLT 1/2 X 1-1/2	FA0011P	28	CARRIAGE BOLT 1/2 X 2	FA0148P
5	HEX BOLT 1/2 X 2-1/2	FA0015P	29	CARRIAGE BOLT 1/2 X 4-1/2	FA0138P
6	HEX BOLT 1/2 X 2-1/2 GRB	FA0221P	30	CARRIAGE BOLT 1/2 X 5	FA0127P
7	HEX BOLT 1/2 X 3-1/2	FA0008P	31	CARRIAGE BOLT 1/2 X 5-1/2	FA0101P
8	HEX BOLT 1/2 X 4	FA0009P	32	CARRIAGE BOLT 3/8 X 1-1/2	FA0142P
9	HEX BOLT 1/2 X 4-1/2	FA0078P	33	CARRIAGE BOLT 5/8 X 8	FA0171P
10	HEX BOLT 1/2 X 5	FA0010P	34	LAG BOLT 3/8 X 1-1/2	FA0030P
11	HEX BOLT 1/2 X 3-1/2	FA0080P	35	LAG BOLT 1/2 X 3-1/2	FA0007P
12	HEX BOLT 1/2 X 6-1/2	FR080630G5G	36	TEX SCREWS 1/4 X 1	FA2201P
13	HEX BOLT 1/2 X 2-1/2	FR080730G5G	37	TEX SCREWS 1/4 X 1-1/4 GASK	FA2204P
14	HEX BOLT 5/8 X 1-1/2	FA0009P	38	TEX SCREWS 1/4 X 1 WHITE	FA2202P
15	HEX BOLT 5/8 X 2	FA0081P	39	TEX SCREWS 1/4 X 1-1/4	FA0147P
16	HEX BOLT 5/8 X 2-1/2	FA0082P	40	TEX SCREWS 1/4 X 2-1/2	FA0089P
17	HEX BOLT 5/8 X 3	FA0083P	41	TEX SCREWS 1/4 X 1-1/2	FA2203P
18	HEX BOLT 5/8 X 4	FA0085P	42	THREADED ROD 5/8 X 2	FR10030G2G
19	HEX BOLT 5/8 X 5	FA0074P	43	CARRIAGE BOLT 5/8 X 5	FC10020G5G
20	HEX BOLT 5/8 X 6	FA0018P	44	HEX BOLT 1/2 X 1	FR08010G5G
21	HEX BOLT 3/4 X 3	FA0077P	45	LAG BOLT 3/4 X 3-1/2	FG12030G2G
22	HEX BOLT 3/4 X 5	FA0005P	46	BLIND BOLT 1/2	FA1053P
23	HEX BOLT 7/8 X 2-1/2	FA0120P	48	BLIND BOLT 5/8\"/>	
24	HEX BOLT 1-1/4 X 4-1/2	FA0191P	50	CONNECTION BY OTHERS	

NOTES: REFERENCE TO BOLTS AND/OR U-BOLTS INCLUDES ASSOCIATED NUT AND WASHER ALWAYS INSTALL WASHER ON TURN SIDE OF BOLT - UNO



DETAIL Q1 - COVER GUARD - CONCRETE MOUNT (END FRAMES ONLY)



FOUNDATION DESIGNED AND SUPPLIED BY OTHERS

Calhoun Super Structures Ltd
 3702 Bruce Rd #10
 York, Ontario, Canada
 M3J 2K6
 1-800-362-2644
 www.calhoun.ca
 email: sales@calhoun.ca

CALHOUN
 DETAILS
 42' CC SERIES
 405197 CC4260 RD

NAME: DATE: 10/17/2018
 DRAWN BY: 10/17/2018
 CHECKED BY: 10/17/2018
 DESIGNED BY: 10/17/2018
 ALL DIMENSIONS UNLESS OTHERWISE NOTED
 UNLESS OTHERWISE NOTED, ALL DIMENSIONS ARE IN MILLIMETERS
 UNLESS OTHERWISE NOTED, ALL DIMENSIONS ARE IN INCHES
 UNLESS OTHERWISE NOTED, ALL DIMENSIONS ARE IN FEET AND INCHES
 UNLESS OTHERWISE NOTED, ALL DIMENSIONS ARE IN METERS

D
 N T S 10 OF 10

STAFF REPORT: Case # 18-3501
REPORT DATE: November 27, 2018
PREPARED FOR: Cascade Charter Township Planning Commission
MEETING DATE: December 3, 2018
PREPARED BY: Steve Peterson, Community Development Director

APPLICANT:
Lacks Enterprises
Attn: Pat Knight
5460 Cascade Rd
Grand Rapids MI 49546

STATUS
OF APPLICANT: owner

REQUESTED ACTION: Site plan approval for new molder facility.

EXISTING ZONING OF
SUBJECT PARCEL: PUD 50 – Meadowbrooke Business Park

GENERAL LOCATION: West side of Kraft between 52nd and 60th.

PARCEL SIZE: approximately 60 acres

EXISTING LAND USE
ON THE PARCEL: multiple building for Lacks

ADJACENT AREA
LAND USES: North, Lacks manufacturing
South, Residential
East, Residential
West, Lacks Manufacturing/warehouse

ZONING ON ADJOINING
PARCELS: Meadowbrooke PUD

STAFF COMMENTS:

1. The applicant is requesting site plan approval in order to construct a new 150,000 sq.ft. building.

2. The development is very similar to what we were shown when they did the previous buildings. Although we do not approve future buildings it is what we were expecting to see in this location.
3. The building conforms to the setback, building height and parking regulations of the Meadowbrooke PUD zoning district.
4. The applicant has submitted a landscape plan for the area around the new building. As part of the previous buildings they have already installed some of the landscaping along the south to help shield the existing home. some of this landscaping will have to be removed and replanted to accommodate some of the drain system.
5. No new access is being proposed for the site. We had them install some curbing at the southern entrance to help with any drainage that might have gone to towards the home. The curbing will direct the water into the detention pond.
6. The light plan meets our light level requirements.
7. The Township Fire Department has reviewed and approved the plans.
8. The Township Engineer has reviewed and approved the plans with a few conditions. The Engineer has noted that a MDEQ permit will be required which the applicant is already working on. This permit will allow them to reconstruct the drainage ditch around the building that runs through the site.
9. The applicant will need to obtain a SESC permit from the KCRC prior to grading.

STAFF RECOMMENDATION

Staff recommends that the Planning Commission **APPROVE** the Site Plan for the new building under the following conditions:

1. Submit a landscape bond of \$5,000
2. Obtain the MDEQ permit
3. Comply with the Township Engineer letter.

Attachments: Application
 Site Plan
 Twp Engineer Letter

November 29, 2018
Project No. 170168



Mr. Steve Peterson
Cascade Charter Township
2865 Thornhills Avenue, SE
Grand Rapids, MI 49546-7192

Re: Lacks 5801 Kraft Avenue
Site Plan Review

Dear Steve:

We have reviewed the site plan for Lacks Enterprises, Inc. located at 5801 Kraft Avenue, prepared by Moore and Bruggink. The current site plan and the basis of this review are dated October 24, 2018. The proposed project is a 149,000-square-foot industrial warehouse building with associated site improvements. The site has three existing warehouse buildings. The site is in the Plaster Creek watershed, sub-drainage district 60th Street.

Stormwater and Drainage

Flood Control

The proposed project is a new development, so all improvements shall comply with the requirements of the Cascade Charter Township (Township) and Stormwater Ordinance (SWO). The site is located in Stormwater Management Zone B, which requires detention of the 25-year storm event. The SWO also requires the first 0.5 inch of stormwater runoff be detained and released over a 24-hour period.

The proposed project is the fourth industrial warehouse building on the Lacks Enterprises property. The entire site is separated into two drainage districts. The northern portion of the site is located within the Meadowbrook South Drainage District and drains to the northwest to an existing regional detention basin. The southern portion of the site is not included in the Meadowbrook South Drainage District and drains to the south to an existing stormwater detention basin adjacent to the Wenger and Nulty Drain.

At the time the three existing warehouse buildings were constructed, stormwater detention was provided for the entire site, including the proposed warehouse building project. The stormwater management design was reviewed by Fishbeck, Thompson, Carr & Huber, Inc. (FTCH) in a letter dated September 9, 2015. Stormwater runoff from the proposed project will drain to the existing stormwater detention basin. Additional stormwater detention is not required. The proposed stormwater management design is in accordance with the Township SWO.

Water Quality Control

The SWO requires the first 0.5 inch of stormwater runoff be detained and infiltrated where conditions permit or released over a 24-hour period. The existing detention basin has an outlet structure with low flow outlet designed to detain the first 0.5 inch of runoff from the site and release it over a 24-hour period. The outlet structure discharges to the Wenger and Nulty Drain. This requirement has been satisfied.

Stormwater Runoff

The applicant provided stormwater calculations to size the onsite storm sewer system and detention basin. All stormwater runoff from the impervious areas of the site will be captured by the detention basin. Therefore, the site will not see an increase in rate of stormwater leaving the site.

Drainage Plan

The applicant has submitted plans, calculations, and additional documentation as required in SWO Section 2.03, Drainage Plan. Please refer to the attached checklist for items and comments on each item. Please note a maintenance



agreement is required before construction begins. The agreement should be submitted to the Township for review. The maintenance agreement and plan should include at a minimum, cleaning of catch basin sumps, sediment and debris removal from the detention basin and outlet structure, and landscape maintenance of the detention basin to maintain the design volume and ensure the system is operating as it was designed.

Offsite Drainage

An area of offsite drainage enters the site from the east. The applicant provided a figure indicating this offsite drainage area to be 59.6 acres. A drainage swale traverses the property from the northeast to the southwest. The site plan proposes to enclose this drainage swale in a 36-inch storm sewer pipe and route it around the proposed development. The applicant provided stormwater runoff calculations for the offsite area and sized the storm sewer pipe for the 10-year storm event.

Enclosing the drainage swale in a storm sewer pipe may require a permit from the Michigan Department of Environmental Quality (MDEQ). The applicant has stated they are coordinating permit requirements with their environmental consultant and the MDEQ. Prior to construction, all required local and state permits shall be in place.

Utilities

No new public water main or sanitary sewer main are proposed for the development. A 2-inch domestic water service, 8-inch fire protection service, and 6-inch sanitary sewer lateral are proposed for the building. City of Grand Rapids permits will be required for the water and sanitary sewer connections prior to construction taking place.

Soil Erosion and Sedimentation Control

Soil Erosion and Sedimentation Control (SESC) measures are provided on the plan drawings. The applicant has included silt fence along the limits of clearing and grading, and silt sacks in catch basins. SESC falls under the review and approval of the Kent County Road Commission and a permit is required before construction can begin. The SESC measures indicated on the drawings appear appropriate, given the expected work.

Summary

The proposed stormwater management design meets the Township SWO requirements for new developments. The applicant will need to apply for and obtain several permits (SESC, water and sanitary sewer from the City of Grand Rapids, MDEQ) prior to beginning construction. We recommend approval of the site plan from an engineering standpoint.

If you have any questions or require additional information, please contact me at 616.464.3786 or nrtorrey@ftch.com.

Sincerely,

FISHBECK, THOMPSON, CARR & HUBER, INC.

A handwritten signature in black ink, appearing to read 'N. Torrey', is positioned above the printed name.

Nathan R. Torrey, PE

nac
Attachments
By email



Cascade Charter Township

Storm Water Ordinance, Ordinance 7 of 2002, as amended by Ordinance No. 2 of 2008, 5/14/2008

Reviewing Engineer Comments are Italicized

OK – Received and Acceptable

NA – Not Applicable

NR – Not Received, Needs Follow-up, See Comments

Lacks 5801 Kraft Avenue

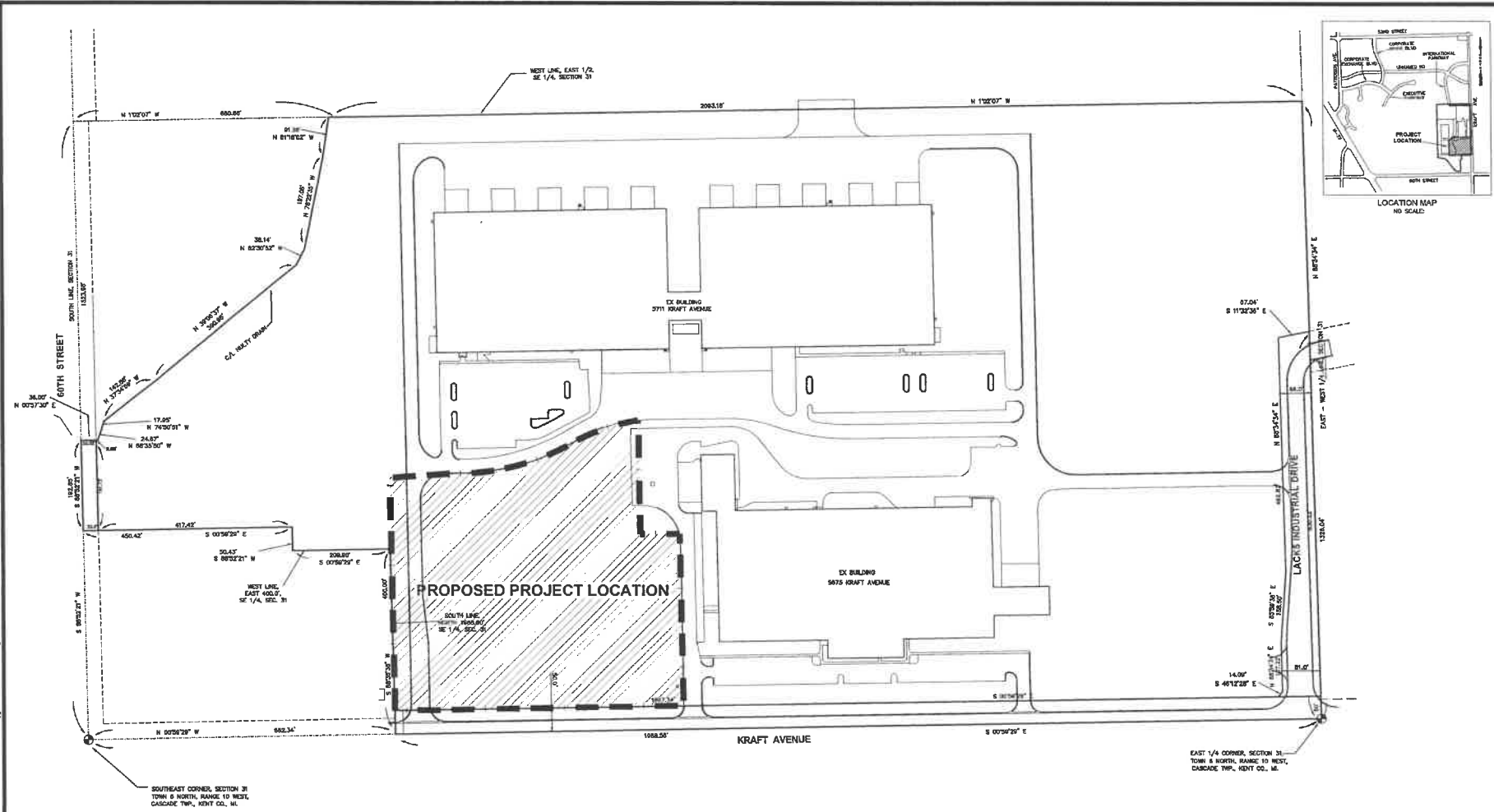
Drainage Plan Checklist

- OK (1) Location of the development site and water bodies that will receive storm water runoff
Stormwater runoff from the site discharges to an existing detention basin designed for the entire property.
- OK (2) Existing and proposed topography of the development site, including the alignment and boundary of the natural drainage courses, with contours having a maximum interval of one foot (using USGS datum). The information shall be superimposed on the pertinent Kent County soil map
Existing and proposed contours have been provided. Soil map information is not required.
- OK (3) Development tributary area to each point of discharge from the development.
The applicant provided a drainage plan tributary areas for the site.
- OK (4) Calculations for the final peak discharge rates
The applicant provided stormwater calculations to size the onsite storm sewer system.
- OK (5) Calculations for any facility or structure size and configuration
The applicant provided stormwater calculations to size the onsite storm sewer system.
- OK (6) Drawing showing all proposed storm water runoff facilities with existing and final grades
The applicant provided plans showing all proposed storm water runoff facilities.
- OK (7) The sizes and locations of upstream and downstream culverts serving the major drainage routes flowing into and out of the development site. Any significant off-site and on-site drainage outlet restrictions other than culverts should be noted on the drainage map
Offsite drainage enters the site from the east and traverses the property to the southwest. The applicant provided stormwater runoff calculations for the offsite area and sized a storm sewer pipe for the 10-year storm event to route the offsite flows around the development.
- OK (8) An implementation plan for construction and inspection of all storm water runoff facilities necessary to the overall drainage plan, including a schedule of the estimated dates of completing construction of the storm water runoff facilities shown on the plan and an identification of the proposed inspection procedures to ensure that the storm water runoff facilities are constructed in accordance with the approved drainage plan
A construction schedule was included on the plans.



- OK (9) Plan to ensure the effective control of construction site storm water runoff and sediment track-out onto roadways
The SESC measures shown on the plan appear appropriate given the expected work. SESC falls under the review and approval of the Kent County Road Commission and a permit is needed before construction can begin.
- OK (10) Drawings, profiles, and specifications for the construction of the storm water runoff facilities reasonably necessary to ensure that storm water runoff will be drained, stored, or otherwise controlled in accordance with this ordinance
The applicant provided a plan and design details for construction of the onsite drainage system.
- NR (11) Maintenance agreement, in form and substance acceptable to the Township, for ensuring maintenance of any privately owned storm water runoff facilities. The maintenance agreement shall include the developer's written commitment to provide routine, emergency, and long-term maintenance of the facilities and, in the event that the facilities are not maintained in accordance with the approved drainage plan, the agreement shall authorize the Township to maintain any on-site storm water runoff facility as reasonably necessary, at the developer's expense
Maintenance agreement was not provided and is required.
- OK (12) Name of the engineering firm and the registered professional engineer that designed the drainage plan and that will inspect final construction of the storm water runoff facilities
- NA (13) All design information must be compatible for conversion to Grand Valley Regional Geographic Information System (REGIS)
This is a privately owned system and will not be uploaded to REGIS.
- OK (14) Other information necessary for the Township to verify that the drainage plan complies with the Township's design and performance standards for drains and storm water management systems

P:\ADMIN\10 LACES MOORE - 88 KRAFT AVENUE\BOUNDARY\0011_01_Laces+Moore-Fab-1st-DESIGN\88KRAFT.DWG, 1/20/2018 8:48:23 AM, BERTIN LONGSTREETS



PLAN SCALE: 1" = 60'



PLAN REVISIONS
 10-14-18-BIT PLAN SUBMISSION

PROPERTY DESCRIPTION (BY TAX DESCRIPTION)

PART OF THE EAST ONE HALF OF THE SOUTHEAST ONE-QUARTER, SECTION 31, TOWN 6 NORTH, RANGE 10 WEST, CASCADE TOWNSHIP, KENT COUNTY, MICHIGAN, COMMENCING AT THE EAST ONE-QUARTER CORNER, THENCE SOUTH 88°34'34" WEST 833.22 FEET ALONG THE EAST-WEST ONE-QUARTER LINE; THENCE SOUTH 11°32'36" EAST 67.04 FEET; THENCE NORTH 88°34'34" EAST 492.82 FEET; THENCE SOUTH 85°59'36" EAST 158.50 FEET; THENCE NORTH 88°34'34" EAST 107.22 FEET; THENCE SOUTH 49°12'28" EAST 14.06 FEET TO THE WEST LINE OF KRAFT AVENUE; THENCE SOUTH 0°59'28" EAST ALONG SAID WEST LINE 1887.34 FEET TO THE SOUTH LINE OF THE NORTH 1988.80 FEET OF THE SOUTHEAST ONE-QUARTER; THENCE SOUTH 88°33'06" WEST ALONG SAID SOUTH LINE TO THE WEST LINE OF THE EAST 400.0 FEET OF THE SOUTHEAST ONE-QUARTER; THENCE SOUTH 0°59'28" EAST 208.89 FEET; THENCE SOUTH 88°32'21" WEST 58.43 FEET; THENCE SOUTH 0°59'28" EAST 458.42 FEET TO THE SOUTH LINE OF SECTION 31, TOWN 8 NORTH, RANGE 10 WEST; THENCE SOUTH 88°32'21" WEST ALONG SAID SOUTH LINE 192.85 FEET TO THE CENTERLINE OF THE COUNTY DRAIN; THENCE NORTH 0°57'30" EAST 36.00 FEET; THENCE NORTH 68°36'50" WEST 24.67 FEET; THENCE NORTH 74°50'51" WEST 17.95 FEET; THENCE NORTH 37°34'36" WEST 142.88 FEET; THENCE NORTH 38°07'37" WEST 390.95 FEET; THENCE NORTH 62°30'52" WEST 381.4 FEET; THENCE NORTH 78°22'28" WEST 187.05 FEET; THENCE NORTH 81°18'02" WEST 81.28 FEET TO THE WEST LINE OF THE EAST ONE-HALF OF THE SOUTH EAST ONE-QUARTER; THENCE NORTH 01°02'07" WEST ALONG SAID WEST LINE 2083.16 FEET TO THE EAST-WEST ONE-QUARTER LINE; THENCE NORTH 88°34'34" EAST ALONG THE EAST-WEST ONE-QUARTER LINE 495.82 FEET TO THE PLACE OF BEGINNING

88.50 ACRES

SHEET SCHEDULE

1	OVERALL BOUNDARY SURVEY
2	PROJECT TOPOGRAPHIC SURVEY
3	REMOVAL PLAN
4	SITE PLAN
5	GRADING & SOIL EROSION CONTROL
6	UTILITY PLAN
7	DRAIN ENCLOSURE PLAN
8	LANDSCAPE & LIGHTING PLAN
9	CONSTRUCTION DETAILS

PREPARED FOR:
 LACIS ENTERPRISES, INC
 1488 CASCADE ROAD, SE
 GRAND RAPIDS, MI 49504
 P.O. BOX 884821
 FAX: (616) 795-2267

OVERALL BOUNDARY SURVEY
 FOR
8801 KRAFT AVENUE
 CASCADE TWP, KENT COUNTY, MICHIGAN

FIELD SURVEY DATE: 09-19-18
 PROJECT NO.: 502011.07
 DESIGN DRAWING BY: JSP
 DESIGNED BY: JPL
 CHECKED BY: JPL

PLAN DATE: 10-25-18

SHEET NUMBER
1 OF 9

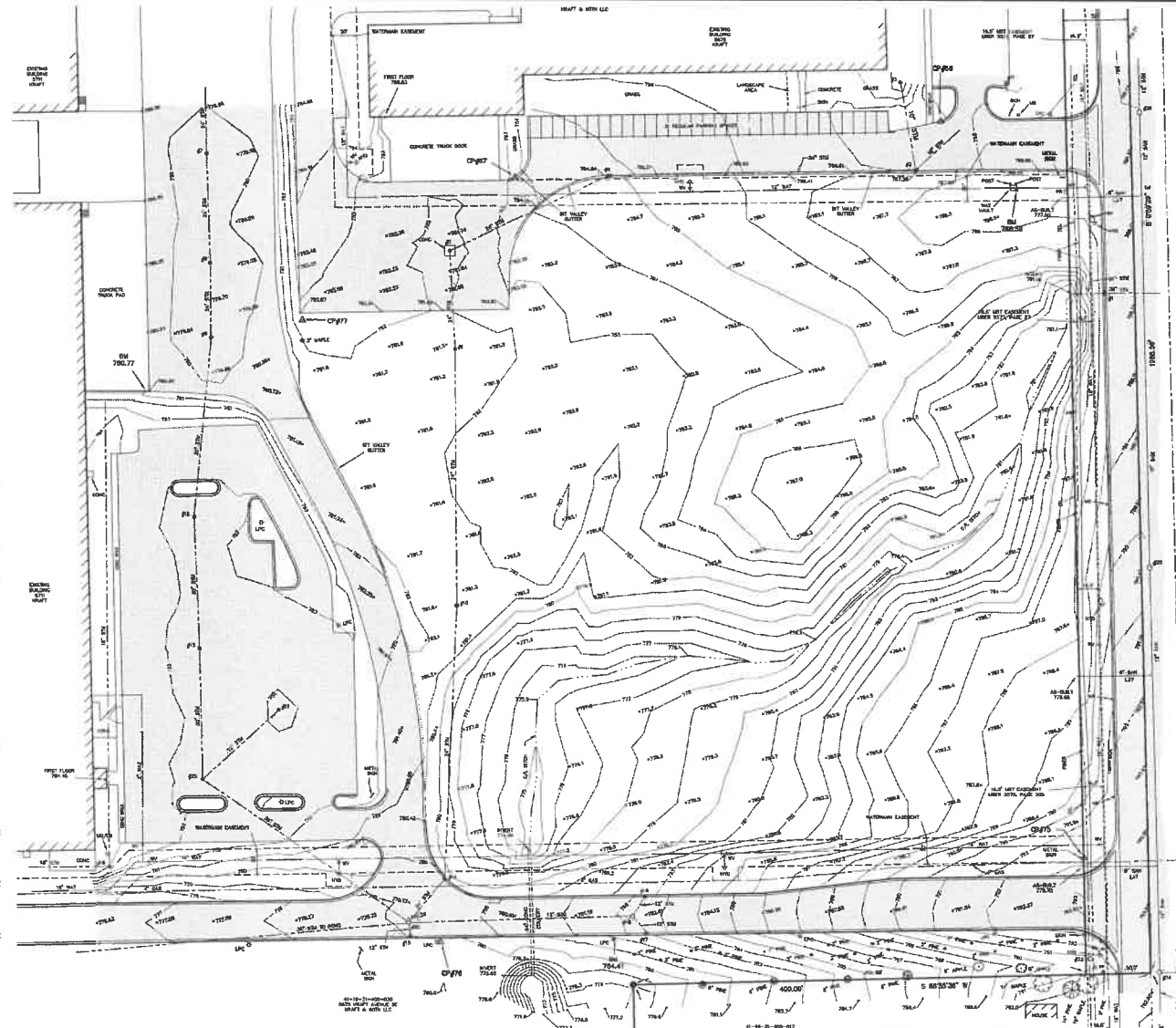
Moore+Bruggink
 Consulting Engineers
 2000 E. Grand Ave., 2nd Floor
 Grand Rapids, MI 49503
 (616) 395-6801 mab@moorebruggink.com

PROJECT: 1811 CCE MALDEN, KRAFT AVENUE/GRANDVIEW DRIVE, 1102001048282, JAM JUSTIN LONGSTRETH

BENCHMARKS
 ELEVATION = 786.88
 55 CORNER 4x4" WATERMARK VAILT,
 LOCATED 1062' WEST OF C/O, KRAFT
 AVENUE, & 107' SOUTH AND 100' EAST
 OF SE CORNER OF 80075 KRAFT AVENUE.
 ELEVATION = 784.87
 SQUARE CUT IN NORTH SIDE OF 24"
 CONCRETE LIGHT POLE BASE, LOCATED NORTH
 SIDE OF MOST SOUTH ACCESS ROAD & 400' S
 WEST OF SE CORNER OF 18000 DODD PAD ON
 THE EAST SIDE OF BUILDING 20TH KRAFT
 AVENUE.
 ELEVATION = 783.77
 SQUARE CUT IN TOP OF CURB, LOCATED 3'
 WEST OF SE CORNER OF 18000 DODD PAD ON
 THE EAST SIDE OF BUILDING 20TH KRAFT
 AVENUE.

CONTROL POINTS
 CP#88 CP#87 CP#85
 PC NAIL PC NAIL MUD BED CAP
 N 3006.3300 E 3854.8130 N 3006.0406
 E 4078.0215 E 4548.0831 E 4081.3533
 ELEV 787.25 ELEV 783.68 ELEV 788.11
 CP#86 CP#87
 MUD BED CAP MUD BED CAP
 N 3006.3302 E 3854.8118
 E 4078.0215 E 4548.0831
 ELEV 779.00 ELEV 783.81

EXISTING UNDERGROUND UTILITY DATA
 STORM CP#1
 RM 780.05
 30" CONC INV E 781.05
 36" CONC INV W 780.85
 2' DIA RM,
 4" DIA PRECAST STRUCTURE
 STORM CP#2
 RM 780.16
 10" PVC INV N 781.10
 18" COP INV SE 772.80
 24" COP INV W 777.80
 2' DIA RM,
 4" DIA PRECAST STRUCTURE
 STORM CP#3
 RM 780.21
 10" PVC INV E 785.44
 BOTTOM STRUCTURE 781.58
 2" DIA RM,
 4" DIA PRECAST STRUCTURE
 STORM CP#4
 RM 784.77
 24" COP INV E 276.12
 24" COP INV W 776.67
 BOTTOM STRUCTURE 775.72
 2' DIA RM,
 4" DIA PRECAST STRUCTURE
 STORM CP#5
 RM 781.45
 24" COP INV SE 776.00
 24" COP INV S 775.90
 BOTTOM STRUCTURE 773.05
 2" DIA RM,
 4" DIA PRECAST STRUCTURE
 STORM CP#6
 RM 781.42
 24" COP INV W 775.33
 24" COP INV S 775.23
 BOTTOM STRUCTURE 772.82
 2" DIA RM,
 4" DIA PRECAST STRUCTURE
 STORM CP#7
 RM 778.52
 30" COP INV N 772.40
 24" COP INV S 772.37
 BOTTOM STRUCTURE 769.53
 2" DIA RM,
 4" DIA PRECAST STRUCTURE
 STORM CP#8
 RM 778.50
 24" COP INV N 772.58
 24" COP INV S 772.16
 2" DIA RM,
 4" DIA PRECAST STRUCTURE
 STORM CP#9
 RM 778.51 (E/LT SACK)
 AG-BUILT INFO
 30" COP INV S 772.52
 30" COP INV S 772.05
 BOTTOM STRUCTURE 768.00
 2" DIA RM,
 4" DIA PRECAST STRUCTURE
 STORM CP#10
 RM 781.51
 24" COP INV N 774.31
 24" COP INV S 774.21
 BOTTOM STRUCTURE 771.61
 2" DIA RM,
 4" DIA PRECAST STRUCTURE
 STORM CP#11
 RM 781.78
 12" COP INV W 773.28
 BOTTOM STRUCTURE 768.06
 2" DIA RM,
 4" DIA PRECAST STRUCTURE
 STORM CP#12
 RM 780.81
 30" COP INV N 773.62
 30" COP INV S 773.52
 BOTTOM STRUCTURE 763.72
 2" DIA RM,
 4" DIA PRECAST STRUCTURE
 STORM CP#13
 RM 780.83
 30" COP INV N 768.75
 30" COP INV S 780.05
 BOTTOM STRUCTURE 767.06
 2" DIA RM,
 4" DIA PRECAST



KRAFT AVENUE
 (A VARIABLE WIDTH PUBLIC RIGHT OF WAY)

- SHEET SCHEDULE**
- 1 OVERALL BOUNDARY SURVEY
 - 2 PROJECT TOPOGRAPHIC SURVEY
 - 3 REMOVAL PLAN
 - 4 SITE PLAN
 - 5 GRADINGS & SOIL EROSION CONTROL
 - 6 UTILITY PLAN
 - 7 DRAIN ENCLOSURE PLAN
 - 8 LANDSCAPE & LIGHTING PLAN
 - 9 CONSTRUCTION DETAILS



PLAN SCALE: 1" = 40'



PLAN REVISIONS
 10-29-18 SITE PLAN SUBMISSION

Moore+Bruggink
 Consulting Engineers
 2000 Franklin, WI 53002
 (414) 333-5801 mbruggink@moore.com

PROJECT TOPOGRAPHIC SURVEY
 FOR
5801 KRAFT AVENUE
 CASCADE TWP, KENT COUNTY, MICHIGAN

FIELD SURVEY DATE: 08-18-18
 PROJECT NO.: 220011.07
 DESIGN DRAWN BY: TTT
 DESIGNED BY: JTL
 CHECKED BY:
 PLAN DATE: 10-29-18
 SHEET NUMBER: 2 OF 9

PREPARED FOR:
 LARRY DUNFRIES, INC
 10000 CANTON CENTER RD
 GRAND RAPIDS, MI 49508
 PH: 616-844-4444
 FAX: 616-844-2827

PROSPECT PLACES INCLUDE: KRAFT AVENUE CORNER (SOUTH); LANE MARKS AND DESIGN ELEMENTS; UPGRADE BARRIS AND JUSTIN CONNECTIONS

BENCHMARKS

ELEVATION = 788.99
 SE CORNER 4"X4" WATERMAIN VALVE,
 LOCATED 100' S. WEST OF C/A KRAFT
 AVENUE & 100' S. SOUTH AND 100' EAST
 OF SE CORNER OF 49875 HUNDT AVENUE.

ELEVATION = 784.47
 SQUARE CUT IN NORTH SIDE OF 24"
 CONCRETE LIGHT POLE BASE, LOCATED SOUTH
 SIDE OF MOST SOUTH ACCESS ROAD & 100'
 WEST OF C/A KRAFT AVENUE. 3RD LIGHT POLE
 WEST OF HUNDT.

ELEVATION = 780.77
 SQUARE CUT IN TOP OF CURB, LOCATED 3'
 WEST OF SE CORNER OF TRUCK PICK UP PAD ON
 THE EAST SIDE OF BUILDING 49701 HUNDT
 AVENUE.

CONTROL POINTS

CP#80 CP#87 CP#75
 PA MARK PA MARK MISS RED CAP
 N 5068.876 E 1254.830 N 5068.846
 E 4974.021 E 4644.023 E 4943.552
 ELEV 782.31 ELEV 783.88 ELEV 784.11

CP#81 CP#77
 M&B RED CAP M&B RED CAP
 N 3004.388 E 4303.915
 E 4482.378 E 4304.103
 ELEV 779.00 ELEV 785.81

EXISTING UNDERGROUND UTILITY DATA

STORM CS#1 STRUCTURE/STORM CS#4
 RM 781.05 RM 776.73
 24" COP INV N 780.05 24" COP INV N 775.53
 36" CONC INV N 780.05 24" COP INV SW 787.83
 2' DA RM BOTTOM STRUCTURE 785.73
 4" DIA PRECAST STRUCTURE 2" DA RM
 STORM CS#2 2" DA RM
 RM 782.14 4" DIA PRECAST STRUCTURE
 10" PVC INV N 781.10 RM 778.04 (21" S&O)
 16" COP INV NE 777.30 RM 778.04 (21" S&O)
 24" COP INV W 777.68 16" COP INV W 774.87
 2" DA RM BOTTOM STRUCTURE 771.64
 4" DIA PRECAST STRUCTURE

STORM CS#3 STORM CS#6
 RM 781.05 RM 780.05
 10" PVC INV S 782.44 12" COP INV SW 774.62
 BOTTOM STRUCTURE 781.59 18" COP INV W 774.87
 2" DA RM BOTTOM STRUCTURE 771.72
 4" DIA PRECAST STRUCTURE 2" DA BODIAC RM

STORM CS#4 STORM CS#7
 RM 781.05 RM 780.23
 24" COP INV E 776.71 12" COP INV SW 777.40
 24" COP INV SW 774.17 12" COP INV SW 776.30
 BOTTOM STRUCTURE 773.72 2" DA RM BOTTOM STRUCTURE 774.30
 2" DA RM 4" DIA PRECAST STRUCTURE
 4" DIA PRECAST STRUCTURE

STORM CS#5 STORM CS#8
 RM 781.05 RM 780.23
 24" COP INV NE 776.00 12" COP INV NE 776.08
 24" COP INV S 775.90 12" COP INV SE 776.80
 BOTTOM STRUCTURE 773.05 2" DA RM 12" COP INV SE 776.80
 2" DA RM 4" DIA PRECAST STRUCTURE
 4" DIA PRECAST STRUCTURE

STORM CS#6 STORM CS#9
 RM 781.05 RM 782.22
 24" COP INV N 775.32 12" COP INV SW 777.32
 24" COP INV S 775.32 BOTTOM STRUCTURE 774.22
 BOTTOM STRUCTURE 772.62 2" DA RM
 2" DA BODIAC RM 4" DIA PRECAST STRUCTURE

STORM CS#7 STORM CS#10
 RM 776.52 RM 779.18
 24" COP INV N 772.47 12" COP INV S 774.81
 24" COP INV S 772.37 12" COP INV SE 774.81
 BOTTOM STRUCTURE 769.52 16" CONC PIPE S MANHOLE
 2" DA RM THAT ARE NOT VISIBLE
 2" DA RM OFFICAL
 4" DIA PRECAST STRUCTURE

STORM CS#8 STORM CS#11
 RM 774.58 RM 780.23
 24" COP INV N 772.26 12" COP INV S 774.81
 24" COP INV S 772.16 12" COP INV SE 774.81
 2" DA RM 30" COP INV SE 788.22
 4" DIA PRECAST STRUCTURE
 4" DIA PRECAST STRUCTURE

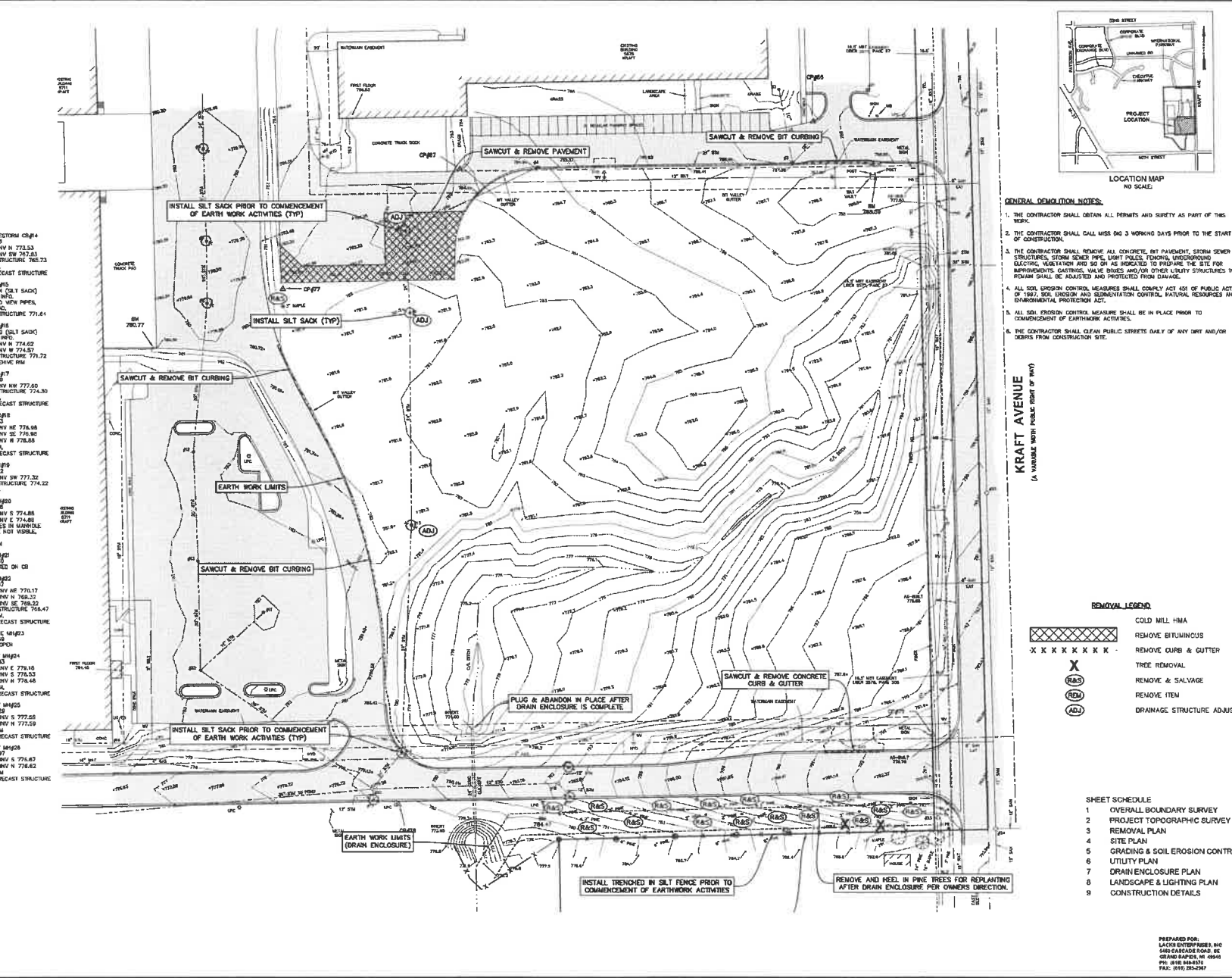
STORM CS#9 STORM CS#12
 RM 779.25 (21" S&O) RM 778.53
 AS-BUILT RIFL. RM 782.17
 24" COP INV N 776.00 30" COP INV S 776.53
 24" COP INV N 775.05 12" COP INV S 778.48
 BOTTOM STRUCTURE 768.00 2" DA RM
 2" DA RM 4" DIA PRECAST STRUCTURE

STORM CS#10 STORM CS#13
 RM 781.05 RM 781.83
 24" COP INV N 774.31 12" COP INV E 779.16
 24" COP INV S 774.21 12" COP INV S 776.53
 BOTTOM STRUCTURE 771.61 12" COP INV S 778.48
 2" DA BODIAC RM 4" DIA PRECAST STRUCTURE

STORM CS#11 STORM CS#14
 RM 781.74 RM 780.23
 24" COP INV N 772.26 12" COP INV S 777.55
 24" COP INV S 772.16 12" COP INV N 777.59
 2" DA RM 2" DA RM
 4" DIA PRECAST STRUCTURE

STORM CS#12 STORM CS#15
 RM 782.51 RM 780.67
 30" COP INV N 772.62 12" COP INV S 776.87
 30" COP INV S 772.92 12" COP INV N 776.86
 BOTTOM STRUCTURE 767.72 4" DIA PRECAST STRUCTURE

STORM CS#13 STORM CS#16
 RM 782.05 RM 780.67
 10" COP INV N 788.75 12" COP INV S 778.65
 BOTTOM STRUCTURE 767.05 2" DA RM
 2" DA RM 4" DIA PRECAST



GENERAL DEMOLITION NOTES:

1. THE CONTRACTOR SHALL OBTAIN ALL PERMITS AND SURETY AS PART OF THIS WORK.
2. THE CONTRACTOR SHALL CALL MISS DIG 3 WORKING DAYS PRIOR TO THE START OF CONSTRUCTION.
3. THE CONTRACTOR SHALL REMOVE ALL CONCRETE, BIT PAVEMENT, STORM SEWER STRUCTURES, STORM SEWER PIPE, LIGHT POLES, FENCING, UNDERGROUND ELECTRIC VEGETATION AND SO ON AS INDICATED TO PREPARE THE SITE FOR IMPROVEMENTS. GASTINGS, WALK BIKES AND/OR OTHER UTILITY STRUCTURES TO REMAIN SHALL BE ADJUSTED AND PROTECTED FROM DAMAGE.
4. ALL SOIL EROSION CONTROL MEASURES SHALL COMPLY ACT 451 OF PUBLIC ACTS OF 1987, SOIL EROSION AND SEDIMENTATION CONTROL, NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT.
5. ALL SOIL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO COMMENCEMENT OF EARTHWORK ACTIVITIES.
6. THE CONTRACTOR SHALL CLEAN PUBLIC STREETS ONLY IF ANY DIRT AND/OR DEBRIS FROM CONSTRUCTION SITE.

REMOVAL LEGEND

- COLD MILL HMA
- REMOVE BITUMINOUS
- REMOVE CURB & GUTTER
- TREE REMOVAL
- REMOVE & SALVAGE
- REMOVE ITEM
- DRAINAGE STRUCTURE ADJUST

REMOVAL PLAN FOR 6801 KRAFT AVENUE

800 KRAFT AVENUE
 GRAND RAPIDS, MI 49504
 PREPARED FOR: LACON ENTERPRISES, INC.
 5400 GARDNER ROAD NE
 GRAND RAPIDS, MI 49504
 PH: 616-966-1960
 FAX: 616-962-2967

SHEET SCHEDULE

1. OVERALL BOUNDARY SURVEY
2. PROJECT TOPOGRAPHIC SURVEY
3. REMOVAL PLAN
4. SITE PLAN
5. GRADING & SOIL EROSION CONTROL UTILITY PLAN
6. DRAIN ENCLOSURE PLAN
7. LANDSCAPE & LIGHTING PLAN
8. CONSTRUCTION DETAILS

PLAN SCALE: 1"=40'



10-20-18 SITE PLAN REVISION

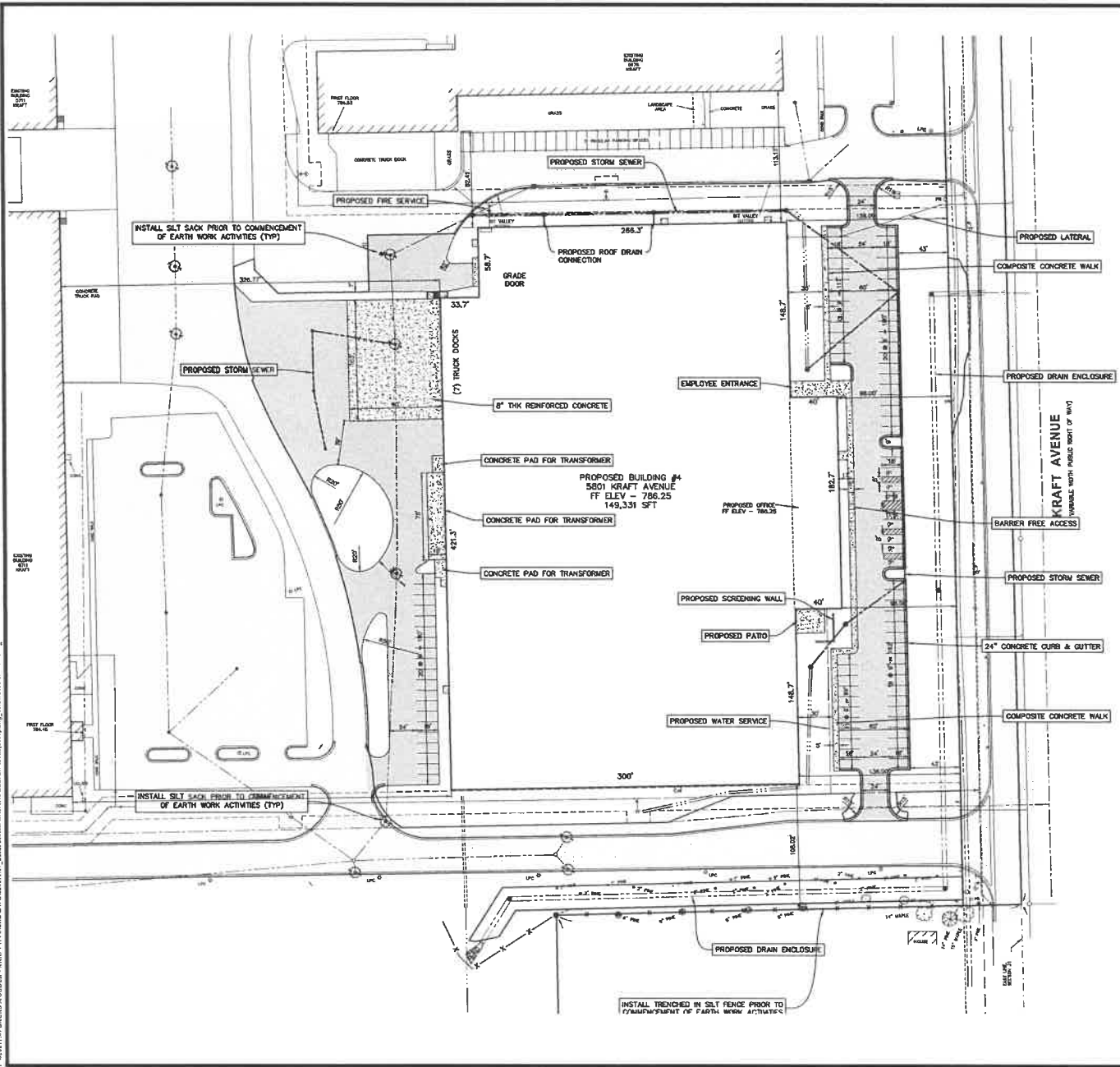
Moore+Bruggink
 Consulting Engineers
 2000 KRAFT AVENUE
 GRAND RAPIDS, MI 49504
 (616) 962-2967
 moore@mbce.com

REMOVAL PLAN FOR 6801 KRAFT AVENUE
 CASSADAGA TWP., KENT COUNTY, MICHIGAN

FIELD SURVEY DATE: 08-19-18
 PROJECT NO.: 202111.02
 DESIGN DRAWN BY: FTF
 DESIGNED BY: JFL
 CHECKED BY: JFL

PLAN DATE: 10-25-18
 SHEET NUMBER: 3 OF 9

10/2011 DELTA/CSS/ROUSE - KRAFT - AT/CAD/DBR/GB/STL/ST_L/MS/BLK/EXP/AN/DESIGN/4/4/13/13/AM/USTIN/CON/STRETH



- SITE PLAN GENERAL NOTES.**
1. THE CONTRACTOR SHALL OBTAIN ALL PERMITS AND SURETY AS PART OF THIS WORK.
 2. THE CONTRACTOR SHALL CALL MISS DIG 3 WORKING DAYS PRIOR TO THE START OF CONSTRUCTION.
 3. ALL STORM SEWER PIPE SHALL BE ADS 11-12 PLASTIC PIPE UNLESS OTHERWISE SPECIFIED.
 4. ALL CATCH BASINS AND MANHOLES SHALL BE MINIMUM 4' DIAMETER PRECAST CONCRETE UNLESS NOTED OTHERWISE.
 5. THE PAVED AREAS SUBJECT TO TRUCK TRAFFIC SHALL BE CONSTRUCTED WITH:
 - 12\"/>
 6. ALL OTHER PAVED AREAS SHALL BE CONSTRUCTED WITH:
 - 12\"/>
 7. THE CONTRACTOR SHALL BED AND BACKFILL ALL UNDERGROUND PIPING WITH MOIST CL-2 SAND TO A MINIMUM OF 85% MAXIMUM DRY DENSITY FOR ASTM - 1567.
 8. THIS SITE PLAN SHALL NOT BE USED TO STATE THE LOCATION OF PROPOSED BUILDING COLUMN LINES. THE SURVEYORS ARE TO USE THE BUILDING FOUNDATION PLANS.
 9. THE CONTRACTOR SHALL PLACE AND COMPACT FILL UNDER THE PROPOSED BUILDING AREA IN ACCORDANCE WITH SPECIFICATIONS IN THE SOILS REPORT. ALL OTHER AREAS SHALL BE COMPACTED TO A MINIMUM OF 80% MAXIMUM DRY DENSITY.
 10. THE CONTRACTOR SHALL PIPE ALL BUILDING ROOF WATER TO THE STORM WATER DETENTION POND AS SHOWN AND SPECIFIED.
 11. THE CONTRACTOR SHALL REQUEST CONSTRUCTION STAGING BY FAX USING THE MOORE & BRUGGINK CONSULTING ENGINEERS CONSTRUCTION STAGING REQUEST FORM. ONLY COMPLETED REQUESTS WILL BE SCHEDULED. NOTE THE PROJECT OWNER WILL PAY THE SURVEYOR TO PLACE STAKES ONLY ONCE. ALL LOST AND DAMAGED STAKES ARE THE CONTRACTORS RESPONSIBILITY.
 12. TOTAL PROPOSED BUILDING SQUARE FOOTAGE:
 - MANUFACTURING: 142,232 SFT
 - OFFICE AREA: 14,614 SFT (7207 SFT/FLOOR X 2)
 13. TOTAL PROPOSED PARKING PROVIDED: 72 (8 OF WHICH ARE BARRIER FREE)

SHEET SCHEDULE

1	OVERALL BOUNDARY SURVEY
2	PROJECT TOPOGRAPHIC SURVEY
3	REMOVAL PLAN
4	SITE PLAN
5	GRADING & SOIL EROSION CONTROL
6	UTILITY PLAN
7	DRAIN ENCLOSURE PLAN
8	LANDSCAPE & LIGHTING PLAN
9	CONSTRUCTION DETAILS

PLAN SCALE: 1" = 48'



PLAN REVISIONS
10-24-18 - SITE PLAN REVISION

Moore+Bruggink
Consulting Engineers
2000 Moore Ave
Ann Arbor, MI 48105
(810) 335-3801
mab@moore-engineers.com

SITE PLAN FOR 5801 KRAFT AVENUE
CASCADE TWP, KENT COUNTY, MICHIGAN

FIELD SURVEY/DATE: 09-18-18
PROJECT NO.: 2202011.07
DESIGN DRAWING: P17
CHECKED BY: JPL
PLANNED BY: JPL
SHEET NUMBER: 4 OF 9

PREPARED FOR:
LACOR ENTERPRISES, INC
6400 CASCADIA ROAD, SE
GRAND RAPIDS, MI 49504
PH: (616) 949-9100
FAX: (616) 786-2287

BENCHMARKS
 ELEVATION = 788.50
 SE CORNER 4" X 4" WATERMAN VALVE,
 LOCATED 10' S, WEST OF C.A. KRAFT
 AVENUE & 10' S, SOUTH AND 15' E
 OF CORNER OF 80673 HOUST AVENUE.
 ELEVATION = 784.47
 CORNER OF 1" X 1" NORTHS USE OF 24"
 CONCRETE LIGHT POLE BASE LOCATED SOUTH
 SIDE OF 10' S, SOUTH ADDRESS ROAD & 40' S
 WEST OF C.A. KRAFT AVENUE, 3RD LIGHT POLE
 WEST OF 80673.
 ELEVATION = 780.77
 SQUARE 1/4" X 1/4" TOP OF CURB, LOCATED 3'
 WEST OF SE CORNER OF TRUCK DOCK PAD ON
 THE EAST SIDE OF BUILDING 80673 HOUST
 AVENUE.

CONTROL POINTS

CP#64	CP#67	CP#75
PK. 100	PK. 100	M&S RES. CAP
N 3088.2291	N 3088.4130	N 3088.9446
E 4875.0251	E 4548.0831	E 4963.3333
ELEV 791.33	ELEV 790.98	ELEV 793.91

CP#76
 M&S RES. CAP
 N 3024.3503 N 3013.5118
 E 4465.3739 E 4361.1031
 ELEV 779.80 ELEV 782.81

EXISTING UNDERGROUND UTILITY DATA

STORM CP#1	STRUCTURE STORM CP#4
RM 784.06	RM 776.23
24" CONC RIV E 781.05	24" CP RIV N 775.53
36" CONC RIV W 780.55	24" CP RIV SW 787.65
21" SD	BOTTOM STRUCTURE 785.73
4" DIA PRECAST STRUCTURE	2" SD RIL
4" DIA PRECAST STRUCTURE	4" DIA PRECAST STRUCTURE

STORM CP#2	STORM CP#3
RM 787.02	RM 784.06
18" PVC RIV N 781.10	18" PVC RIV S 782.44
18" CP RIV NW 777.80	BOTTOM STRUCTURE 784.59
34" CP RIV W 777.80	2" DIA RIL
2" SD RIL	4" DIA PRECAST STRUCTURE
4" DIA PRECAST STRUCTURE	

STORM CP#3	STORM CP#6
RM 784.06	RM 784.06
18" PVC RIV S 782.44	18" CP RIV NW 777.80
BOTTOM STRUCTURE 784.59	2" SD RIL
2" DIA RIL	4" DIA PRECAST STRUCTURE
4" DIA PRECAST STRUCTURE	

STORM CP#4	STORM CP#7
RM 784.06	RM 784.06
24" CP RIV NW 777.80	18" CP RIV NW 777.80
24" CP RIV SW 776.47	BOTTOM STRUCTURE 774.30
BOTTOM STRUCTURE 773.72	2" SD RIL
2" SD RIL	4" DIA PRECAST STRUCTURE
4" DIA PRECAST STRUCTURE	

STORM CP#5	STORM CP#8
RM 784.06	RM 784.06
24" CP RIV NW 777.80	18" CP RIV NW 777.80
24" CP RIV S 775.95	18" CP RIV SW 776.85
BOTTOM STRUCTURE 773.05	18" CP RIV W 774.57
2" DIA RIL	BOTTOM STRUCTURE 771.72
4" DIA PRECAST STRUCTURE	2" DIA BEDDING RIL
	4" DIA PRECAST STRUCTURE

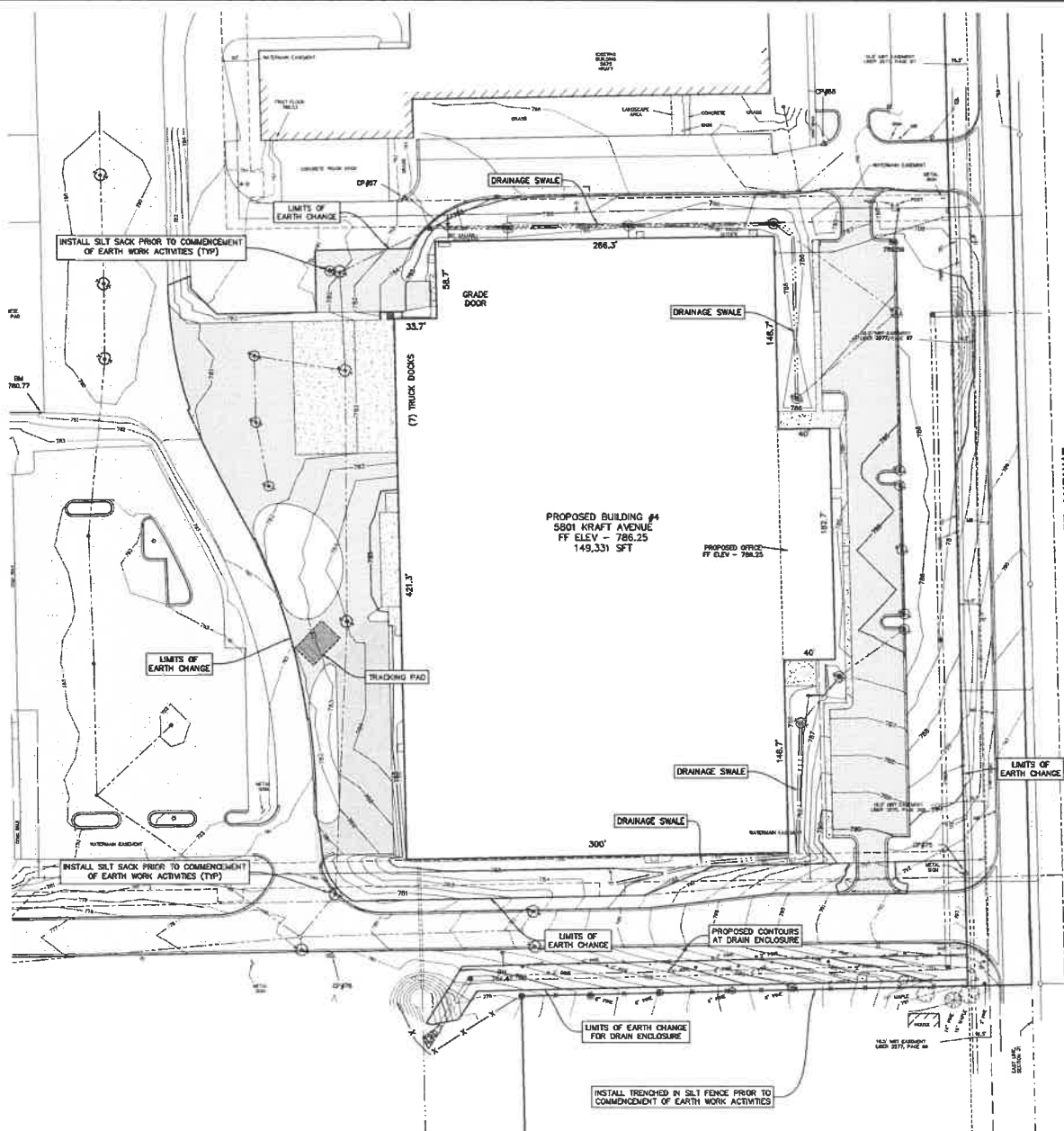
STORM CP#6	STORM CP#9
RM 784.06	RM 784.06
24" CP RIV NW 777.80	18" CP RIV S 774.88
24" CP RIV S 775.95	18" CP RIV SE 774.88
BOTTOM STRUCTURE 773.05	18" CP RIV W 774.57
2" DIA RIL	BOTTOM STRUCTURE 771.72
4" DIA PRECAST STRUCTURE	2" DIA RIL
	4" DIA PRECAST STRUCTURE

STORM CP#7	STORM CP#10
RM 778.27	RM 778.27
24" CP RIV NW 777.80	18" CP RIV S 774.88
24" CP RIV S 772.37	18" CP RIV SE 774.88
BOTTOM STRUCTURE 769.52	18" CP RIV W 774.57
2" DIA RIL	BOTTOM STRUCTURE 771.72
4" DIA PRECAST STRUCTURE	2" DIA RIL
	4" DIA PRECAST STRUCTURE

STORM CP#8	STORM CP#11
RM 778.27	RM 778.27
24" CP RIV NW 777.80	18" CP RIV S 774.88
24" CP RIV S 772.37	18" CP RIV SE 774.88
BOTTOM STRUCTURE 769.52	18" CP RIV W 774.57
2" DIA RIL	BOTTOM STRUCTURE 771.72
4" DIA PRECAST STRUCTURE	2" DIA RIL
	4" DIA PRECAST STRUCTURE

STORM CP#9	STORM CP#12
RM 778.27	RM 778.27
24" CP RIV NW 777.80	18" CP RIV S 774.88
24" CP RIV S 772.37	18" CP RIV SE 774.88
BOTTOM STRUCTURE 769.52	18" CP RIV W 774.57
2" DIA RIL	BOTTOM STRUCTURE 771.72
4" DIA PRECAST STRUCTURE	2" DIA RIL
	4" DIA PRECAST STRUCTURE

STORM CP#10	STORM CP#13
RM 778.27	RM 778.27
24" CP RIV NW 777.80	18" CP RIV S 774.88
24" CP RIV S 772.37	18" CP RIV SE 774.88
BOTTOM STRUCTURE 769.52	18" CP RIV W 774.57
2" DIA RIL	BOTTOM STRUCTURE 771.72
4" DIA PRECAST STRUCTURE	2" DIA RIL
	4" DIA PRECAST STRUCTURE



- GRADING AND SOIL EROSION CONTROL NOTES:**
1. THE CONTRACTOR SHALL OBTAIN ALL PERMITS AND SURETY AS PART OF THIS WORK.
 2. THE CONTRACTOR SHALL CALL MISS DIG 3 MORNING DAILY PRIOR TO THE START OF CONSTRUCTION.
 3. THE CONTRACTOR SHALL REQUEST CONSTRUCTION STAKES BY FAX USING THE WORKING ADDRESS. ALL CONTRACTORS CONSTRUCTION STAKES REQUEST FORMS, ONLY COMPLETED REQUESTS WILL BE SERVICED. NOTE THE PROJECT OWNER WILL PAY THE SURVEYOR TO PLACE STAKES ONLY ONCE. ALL LOT AND DAMAGED STAKES ARE THE CONTRACTORS RESPONSIBILITY.
 4. THE CONTRACTOR SHALL REMOVE ALL CONDUIT, BIT PAVEMENT, STORM SEWER STRUCTURES, STORM SEWER PIPES, LIGHT POLES, TRENCH UNDERGROUND ELECTRIC VEGETATION AND SO ON TO PREPARE THE SITE FOR IMPROVEMENTS. EXISTING VALUE BONES AND/OR OTHER UTILITY STRUCTURES TO REMAIN SHALL BE LOCATED AND PROTECTED FROM DAMAGE.
 5. NORTH AMERICAN GREEN 36-150 EROSION CONTROL MAT SHALL BE PLACED ON ALL SLOPES 1:3 OR GREATER. SECURE BLANKET TO SLIDE PER MANUFACTURER'S SPECIFICATIONS.
 6. ALL SILT FENCING SHALL BE TRENCHED IN PRIOR TO COMMENCEMENT OF EARTHWORK ACTIVITIES.
 7. SILT FENCING IS REQUIRED ALONG ALL DOWNSTREAM EDGES OF THE GRADING LIMITS AND MUST REMAIN IN PLACE UNTIL VEGETATION IS UNIFORMLY RE-ESTABLISHED.
 8. ALL SOIL EROSION CONTROL MEASURES SHALL COMPLY WITH ACT 451 OF PUBLIC ACTS OF 1997, SOIL EROSION AND SEDIMENTATION CONTROL, NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT.
 9. NEW & EXISTING STORM SEWER INLET POINTS SHALL BE PROTECTED FROM SEDIMENT INFILTRATION WITH INLET FABRIC DRAIN (SILT SACK).
 10. ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSPECTED AND MAINTAINED ON A DAILY BASIS, AND IMMEDIATELY FOLLOWING EVERY SIGNIFICANT RAINFALL EVENT.
 11. ALL EXCESS SPILLS ARE TO BE REMOVED FROM THE SITE. OTHERWISE STABILIZATION MEASURES.
 12. IF EXCESS GROUT IS TO BE PLACED ON SITE, THE LOCATION SHALL BE APPROVED BY THE PROPERTY OWNER & ENGINEER.
 13. ALL TEMPORARY EROSION CONTROLS MUST REMAIN IN PLACE UNTIL VEGETATION IS UNIFORMLY RE-ESTABLISHED.
 14. DUST CONTROL SHALL BE PROVIDED BY MEANS OF WATER DISTRIBUTION ON A REGULAR BASIS OVER AREAS THAT COULD POTENTIALLY PRODUCE DUST CONTROL.
 15. A TRACKING PAD MUST BE PROVIDED AT CONSTRUCTION ACCESS POINTS TO PREVENT SOILS FROM BEING TRACKED OFF-SITE, PER DETAIL THIS SHEET.
 16. CONTRACTOR SHALL SUEP PAVED AREAS EACH DAY (OR WORK AS NEEDED) BY MECHANICAL MEANS FOR ALL PAVED AREAS IN AND AROUND THE PERIMETER OF THE PROJECT AFFECTED BY TRACKING OPERATIONS.
 17. CONSTRUCTION ENTRANCE SHALL BE PROVIDED FROM THE PRIVATE DRIVE OFF KRAFT AVENUE.

(1) VARIABLE WIDTH FIELD (RIGHT OF HWY)

KRAFT AVENUE
 (1) VARIABLE WIDTH FIELD (RIGHT OF HWY)

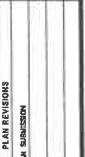
CONSTRUCTION SCHEDULE

ITEM	DATE
TEMP. EROSION CONTROL	11/15/18
TOPSOIL STRIPPING	11/15/18
SITE GRADING	11/15/18
SITE UTILITIES	11/15/18
DETENTION POND	11/15/18
BUILDING CONSTRUCTION	11/15/18
PERMITS CONTROL	11/15/18
LANDSCAPING	11/15/18
REMOVE TEMP. EROSION CONTROL	11/15/18

- SOIL EROSION CONTROL LEGEND**
1. SECTION W/ MARK
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 3. SECTION
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SHEET SCHEDULE

NO.	DESCRIPTION
1	OVERALL BOUNDARY SURVEY
2	PROJECT TOPOGRAPHIC SURVEY
3	REMOVAL PLAN
4	SITE PLAN
5	GRADING & SOIL EROSION CONTROL
6	UTILITY PLAN
7	DRAIN ENCLOSURE PLAN
8	LANDSCAPE & LIGHTING PLAN
9	CONSTRUCTION DETAILS



PLAN REVISIONS

NO.	DATE	DESCRIPTION
10-31-18	10-31-18	10-31-18-SITE PLAN SUBMISSION

Moore+Bruggink
 Consulting Engineers
 2000 Moore Ave #600
 Grand Rapids, MI 49503
 (616) 235-2547
 info@moorebruggink.com

GRADING & SOIL EROSION CONTROL
 FOR
8801 KRAFT AVENUE
 CASCADE TWP., WEST COUNTY, MICHIGAN

FIELD SURVEY/DATE: 09-18-18
 PROJECT NO.: 020201.07
 DESIGN DRAWN BY: MT
 CHECKED BY: JF
 PLAN DATE: 10-29-18
 SHEET NUMBER: 5 OF 9

PREPARED FOR:
 LACKA ENTERPRISES, INC.
 1588 CASCADE ROAD, SE
 GRAND RAPIDS, MI 49508
 P.O. BOX 16408
 FAX: (616) 235-2547

18090111 05 LACKA MOORE - 8801 KRAFT AVENUE GRADING AND SOIL EROSION CONTROL.dwg - 10/31/18 8:41 AM, AUSTIN CONVERSE

BENCHMARKS
 ELEVATION - 760.00
 SE CORNER 4" DIA WATERMAIN VALET
 LOCATED 100% WEST OF C/L KRAFT
 AVENUE & 100% SOUTH AND 100% EAST
 OF SE CORNER OF 26778 KRAFT AVENUE

ELEVATION - 764.00
 SHAWNEE CUT IN NORTH END OF 34"
 CONCRETE LIGHT RAIL BASE (LOCATED SOUTH
 SIDE OF MOST SOUTH ACCESS ROAD & 400'S
 WEST OF C/L KRAFT AVENUE. 3RD LIGHT POLE
 WEST OF RAIL.

ELEVATION - 760.77
 SQUARE CUT IN TOP OF CURB, LOCATED 2'
 WEST OF SE CORNER OF TRUCK RACK PAD ON
 THE EAST SIDE OF BUILDING 30TH KRAFT
 AVENUE.

CONTROL POINTS

CP#14	CP#17	CP#75
PK NAIL N 3052.231	PK NAIL N 3024.930	MSD REZ CAP N 3094.667
E 4673.021	E 4548.031	E 4663.353
ELEV 772.75	ELEV 759.96	ELEV 773.11

CP#78
 MSB REZ CAP
 N 3034.393
 E 4633.739
 ELEV 774.80

CP#77
 MSB REZ CAP
 N 3013.915
 E 4543.578
 ELEV 766.81

EXISTING UNDERGROUND UTILITY DATA

STORM CP#1
 RM 780.02
 30" CONC INV N 781.05
 2' DIA RAIL
 4" DIA PRECAST STRUCTURE

STORM CP#2
 RM 787.62
 10" PVC INV N 781.10
 15" CP INV N 779.80
 24" CP INV N 777.80
 2' DIA RAIL
 4" DIA PRECAST STRUCTURE

STORM CP#3
 RM 784.00
 10" PVC INV S 783.44
 BOTTOM STRUCTURE 791.58
 2" DIA RAIL
 4" DIA PRECAST STRUCTURE

STORM CP#4
 RM 784.72
 14" CP INV N 778.72
 24" CP INV N 776.47
 BOTTOM STRUCTURE 773.72
 2' DIA RAIL
 4" DIA PRECAST STRUCTURE

STORM CP#5
 RM 781.43
 14" CP INV NE 776.00
 24" CP INV S 775.00
 2' DIA RAIL
 4" DIA PRECAST STRUCTURE

STORM CP#6
 RM 781.42
 14" CP INV N 776.39
 24" CP INV S 775.52
 BOTTOM STRUCTURE 772.52
 2" DIA BEDDING RAIL
 4" DIA PRECAST STRUCTURE

STORM CP#7
 RM 778.52
 14" CP INV N 772.47
 24" CP INV S 772.37
 BOTTOM STRUCTURE 769.53
 2" DIA RAIL
 4" DIA PRECAST STRUCTURE

STORM CP#8
 RM 778.52
 14" CP INV N 772.28
 24" CP INV S 772.18
 2" DIA RAIL
 4" DIA PRECAST STRUCTURE

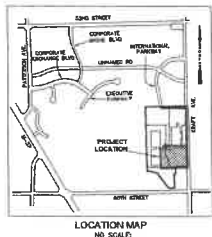
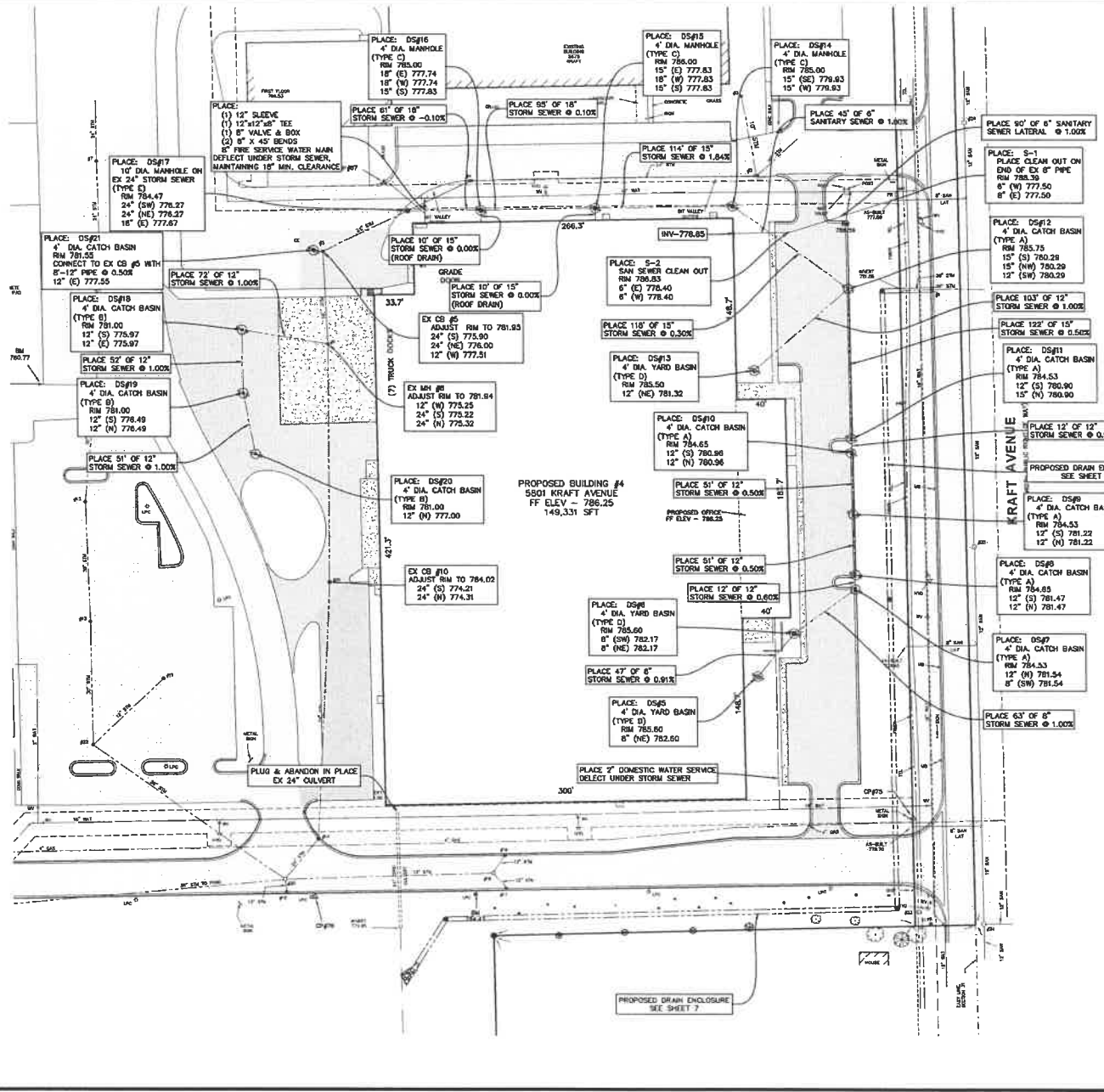
STORM CP#9
 RM 778.52
 14" CP INV N 772.28
 24" CP INV S 772.18
 2" DIA RAIL
 4" DIA PRECAST STRUCTURE

STORM CP#10
 RM 778.52
 14" CP INV N 772.28
 24" CP INV S 772.18
 2" DIA RAIL
 4" DIA PRECAST STRUCTURE

STORM CP#11
 RM 778.52
 14" CP INV N 772.28
 24" CP INV S 772.18
 2" DIA RAIL
 4" DIA PRECAST STRUCTURE

STORM CP#12
 RM 778.52
 14" CP INV N 772.28
 24" CP INV S 772.18
 2" DIA RAIL
 4" DIA PRECAST STRUCTURE

STORM CP#13
 RM 778.52
 14" CP INV N 772.28
 24" CP INV S 772.18
 2" DIA RAIL
 4" DIA PRECAST STRUCTURE



- UTILITY PLAN GENERAL NOTES:**
1. THE CONTRACTOR SHALL OBTAIN ALL PERMITS AND SURETY AS PART OF THIS WORK.
 2. THE CONTRACTOR SHALL CALL MISE D.C. 3 WORKING DAYS PRIOR TO THE START OF CONSTRUCTION.
 3. ALL STORM SEWER PIPE SHALL BE ADS N-12 PLASTIC PIPE UNLESS OTHERWISE SPECIFIED.
 4. ALL CATCH BASINS AND MANHOLES SHALL BE MINIMUM 4' QUARTER PRECAST CONCRETE UNLESS NOTED OTHERWISE.
 5. THE CONTRACTOR SHALL SET AND BOND ALL UNDERGROUND PIPING WITH SLOTT CL-2 SAND TO A MINIMUM OF 30% HORIZONTAL DRY DENSITY FOR ASTM 1307.
 6. THE CONTRACTOR SHALL RISE ALL BUILDING ROOF WATER TO THE STORM WATER DETENTION POND AS SHOWN AND SPECIFIED.
 7. THE CONTRACTOR SHALL HIGHEST CONSTRUCTION STAKING BY FAX USING THE MADCO & BRUNSON, INC. CONTRACTORS CONSTRUCTION STAKING REQUEST FORM. ONLY COMPLETED REQUESTS WILL BE SCHEDULED. NOTE THE PROJECT OWNER WILL PAY THE SURVEYOR TO PLACE STAKES ONLY ONCE ALL LOST AND DAMAGED STAKES ARE THE CONTRACTORS RESPONSIBILITY.
 8. THE PROPOSED DRAIN ENCLOSURE SHALL BE CONSTRUCTED PER KENT COUNTY ROAD COMMISSION SPECIFICATIONS.



- PROPOSED DRAIN ENCLOSURE**
 SEE SHEET 7
- Additional notes and details for the drain enclosure, including dimensions and material specifications.

SHEET SCHEDULE

1	OVERALL BOUNDARY SURVEY
2	PROJECT TOPOGRAPHIC SURVEY
3	REMOVAL PLAN
4	SITE PLAN
5	GRADINGS & SOIL EROSION CONTROL
6	UTILITY PLAN
7	DRAIN ENCLOSURE PLAN
8	LANDSCAPE & LIGHTING PLAN
9	CONSTRUCTION DETAILS

FIELD SURVEY/DATE: 01-19-16
 PROJECT NO.: 022021.07
 DESIGN DRAWN BY: RTT
 CHECKED BY: JLS
 PREPARED FOR: LACUS ENTERPRISES, INC.
 2000 CASCADIA ROAD, SE
 GRAND RAPIDS, MI 49548
 P.O. BOX 164841
 FAX: (616) 251-2587

PLAN SCALE: 1" = 40'

811
 Know what's below
 Call before you dig

MOORE + BRUGLINK
 Consulting Engineers
 2000 CASCADIA AVE. SUITE 200
 GRAND RAPIDS, MI 49548
 (616) 251-2587

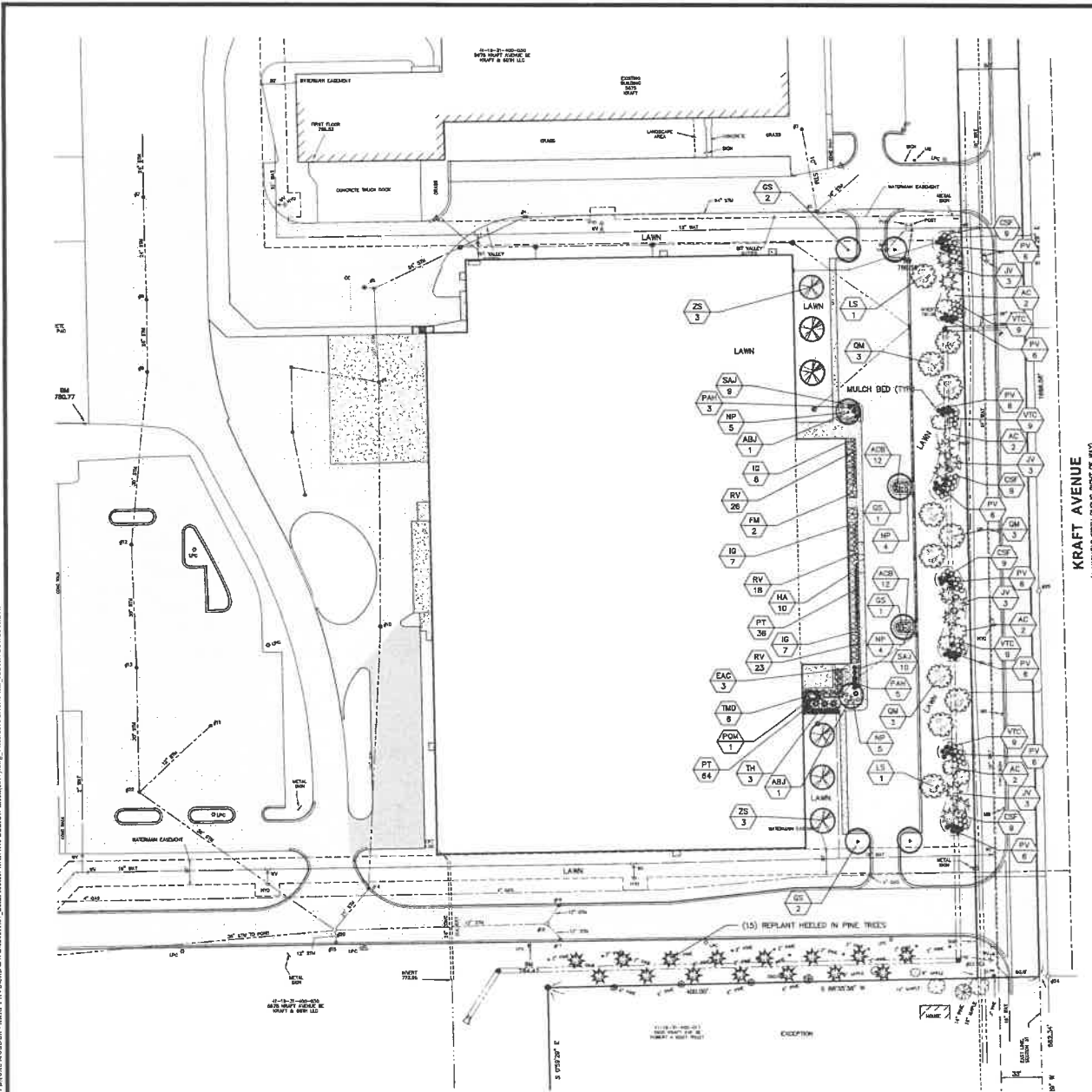
UTILITY PLAN FOR 6801 KRAFT AVENUE
 CASCADE TWP., KENT COUNTY, MICHIGAN

FIELD SURVEY/DATE: 01-19-16
PROJECT NO.: 022021.07
DESIGN DRAWN BY: RTT
CHECKED BY: JLS
PREPARED FOR: LACUS ENTERPRISES, INC.
 2000 CASCADIA ROAD, SE
 GRAND RAPIDS, MI 49548
 P.O. BOX 164841
 FAX: (616) 251-2587

PLANNED FOR: LACUS ENTERPRISES, INC.
2000 CASCADIA ROAD, SE
GRAND RAPIDS, MI 49548
P.O. BOX 164841
FAX: (616) 251-2587

PLANNED FOR: LACUS ENTERPRISES, INC.
2000 CASCADIA ROAD, SE
GRAND RAPIDS, MI 49548
P.O. BOX 164841
FAX: (616) 251-2587

6 OF 9



KRAFT AVENUE
 (4' WIDE WITH SLOPE EAST OF HWY)



PLANT LIST					
CODE	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	DESCR.
DECIDUOUS CANOPY TREES					
AC	5	Acer Complanata	Hedge Maple	2 1/2"	B&B
OS	6	Quercus prinus 'Imicola'	Swamp Honey Locust	2-2 1/2"	B&B
LS	2	Liquidambar styraciflua	Sweetgum	2-2 1/2"	B&B
OM	9	Quercus macrocarpa	Bur Oak	2-2 1/2"	B&B
ZS	6	Zelkova serotina 'Green Vase'	Green Vase Zelkova	2-2 1/2"	B&B
EVERGREEN TREES					
JV	12	Juniperus virginiana	Eastern Red Cedar	6"	B&B
ORNAMENTAL TREES					
DECIDUOUS SHRUBS					
ABJ	2	Amelanchier canadensis 'Autumn Brilliance'	Autumn Brilliance Amelanchier	7'-8' (young)	B&B
EVERGREEN SHRUBS					
CP	36	Caryopteris nervosa 'Tarae'	Arclic Fire Red Tarp Dogwood	24"	B&B
EAC	3	Corylus alba 'Immaculata'	Dwarf Burning Bush	24"	B&B
FM	2	Fothergilla major 'M. Jolly'	M. Jolly Fothergilla	36"	B&B
HA	10	Hydrangea arborescens 'Annabelle'	Annabelle Hydrangea	24"	B&B
PAN	1	Physocarpus opulifolius 'Little Leaf'	Coppertone Ribes	24"	B&B
VIC	26	Viburnum trilobum 'Compactum'	Compact American Cranberry	36"	B&B
EVERGREEN SHRUBS					
IC	22	Ilex glabra Compacta	Compact Ineberry Holly	24"	B&B
THD	6	Taxus x media densiformis	Dense Yew	24"	B&B
TH	3	Thuja occidentalis 'Nitida'	Dark Green Arborvitae	5'	B&B
ORNAMENTAL GRASSES					
PV	46	Panicum virgatum 'Northwind'	Northwind Switch Grass	3'	Per.
PAN	5	Pennisetum dimorphopoides 'Hemah'	Hemah Fountain Grass	24"	B&B
PERENNIALS					
ACB	24	Alumina aconitifolia 'Cosmic Blue'	Cosmic Blue Ornamental Chives	8" Pot	18" occ.
MP	13	Mertensia aconitifolia 'Mertens Law'	Mertens Low Columbine	3"	Pot
PT	100	Polydrum sp. 'Spartina'	Polydrum	8"	Pot
RV	18	Rudbeckia hirta 'Sax's Little Toss'	Little Jolly Dwarf Orange Coneflower	8"	14" occ.
SAJ	18	Sedum 'Autumn Joy'	Autumn Joy Sedum	8"	Pot

- LANDSCAPING GENERAL NOTES:**
- ALL TREES TO HAVE CLAY OR CLAY LOAM BALLS. TREES WITH SAND BALLS WILL BE REJECTED.
 - ALL SINGLE STEM SHADE TREES TO HAVE STRAIGHT TRUNKS AND SYMMETRICAL CROWNS.
 - ALL SINGLE STEM 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 70% OF OPEN CROWNS SHALL NOT BE ACCEPTED.
 - ALL EVERGREEN TREES SHALL BE HEAVILY BRANCHED AND FULL TO THE GROUND. SYMMETRICAL IN SHAPE AND NOT SHOWING FOR THE LAST FIVE GROWING SEASONS.
 - SHRUBS AND PERENNIALS SHALL BE FULL AND WELL ROOTED. INSTALLATION SHALL BE JANUARY 1 - NOVEMBER 30, ANNUALLY.
 - ALL PLANT MATERIALS SHALL BE BIRTHDAY HEDGERY GROWN, NO. 1 GRADE AND INSTALLED ACCORDING TO ACCEPTED PLANTING PROCEDURES. ALL PLANT MATERIALS SHALL MEET CURRENT AMERICAN ASSOCIATION OF HEDGERY/CUTTING STANDARDS.
 - ALL INPROCESSED MULCH TO BE NATURAL COLOR, DOUBLE PROCESSED, SHREDDED HARDWOOD BARK. 4" THICK BARK MULCH FOR TREES IN A 4-FOOT DIAMETER CIRCLE WITH 3" FILLED AWAY FROM THE TRUNK. 2" THICK BARK MULCH FOR SHRUBS AND 2" THICK BARK FOR PERENNIALS, TYP.
 - THE CONTRACTOR SHALL GUARANTEE ALL PLANTINGS FOR A ONE YEAR PERIOD. AFTER FINAL ACCEPTANCE OF ALL WORK ITEMS. DURING THIS GUARANTEE PERIOD, THE CONTRACTOR SHALL IMMEDIATELY REPLACE ALL PLANT MATERIALS THAT DIE OR ARE DISEASED.
 - VARIOUS AREAS ARE TO BE RESTORED WITH 4" OF TOPSOIL, CLASS A SEED AT 20#/1000, FERTILIZER @ MULCH (MULCH BLANKET ON SLOPES 1:3 ON STEEPER).
- SHEET SCHEDULE**
- OVERALL BOUNDARY SURVEY
 - PROJECT TOPOGRAPHIC SURVEY
 - REMOVAL PLAN
 - SITE PLAN
 - GRADING & SOIL EROSION CONTROL
 - UTILITY PLAN
 - DRAIN ENCLOSURE PLAN
 - LANDSCAPE & LIGHTING PLAN
 - CONSTRUCTION DETAILS



PLAN SCALE: 1" = 40'



Know what's below.
Call before you dig.

PLAN REVISIONS
 15-25-11-RETE PLAN REVISIONS

Moore+Bruggink

Consulting Engineers

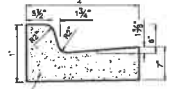
2000 Monroe Ave. #600
Ann Arbor, MI 48105
(313) 963-8800 moore@moorebruggink.com

LANDSCAPE PLAN
 IN
6801 KRAFT AVENUE
 OShtade Twp, Kent County, Michigan

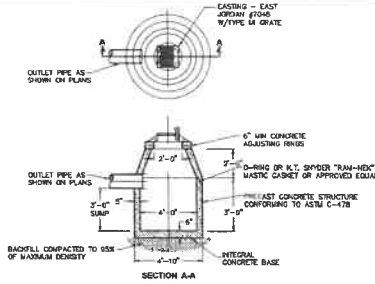
FIELD SURVEY DATE: 09-18-10
 PROJECT NO.: 1020811.03
 DESIGN DRAWN BY: FFY
 DESIGNED BY: JS
 CHECKED BY: JS
 PLAN DATE: 10-29-10

PREPARED FOR:
 LADY'S ENTERPRISES, INC
 SAN JOSE CIRCLE, SE
 GRAND RAPIDS, MI 49504
 P.O. BOX 16204
 FAX: (616) 955-2567

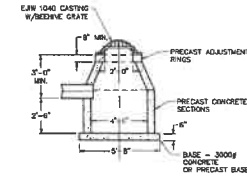
8 OF **9**



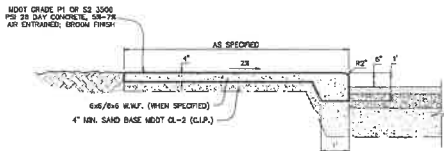
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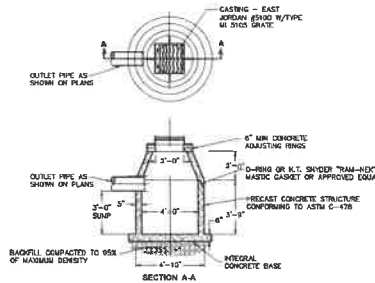
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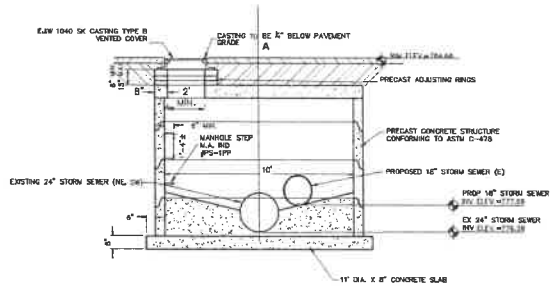
**YARD BASIN DETAIL
TYPE D
SCALE: 1\"/>**



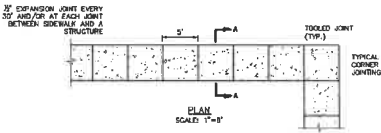
**COMPOSITE CONCRETE WALK & CURB DETAIL
SCALE: 1\"/>**



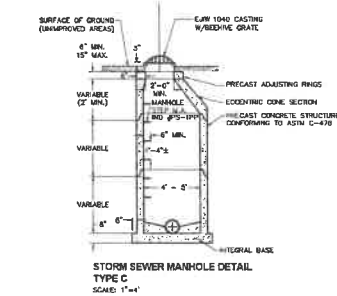
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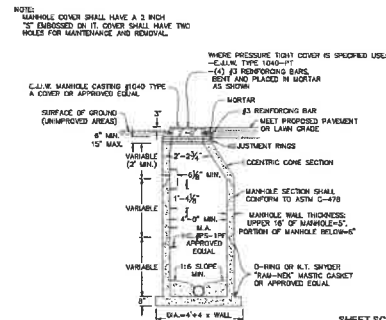
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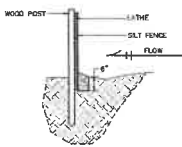
4\"/>



**STORM SEWER MANHOLE DETAIL
TYPE C
SCALE: 1\"/>**



**SANITARY MANHOLE DETAIL
SCALE: 1\"/>**



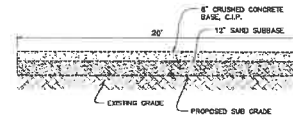
**SILT FENCE DETAIL
SCALE: 1\"/>**



SPLICE DETAIL



**INLET PROTECTION DETAIL
SCALE: 1\"/>**



**CONSTRUCTION TRACKING PAD
SCALE: 1\"/>**

SHEET SCHEDULE

1	OVERALL BOUNDARY SURVEY
2	PROJECT TOPOGRAPHIC SURVEY
3	REMOVAL PLAN
4	SITE PLAN
5	GRADING & SOIL EROSION CONTROL
6	UTILITY PLAN
7	DRAIN ENCLOSURE PLAN
8	LANDSCAPE & LIGHTING PLAN
9	CONSTRUCTION DETAILS

PREPARED FOR:
LARRY EISENBERGER, INC.
500 S. CALDWAY ROAD, SE
GRAND RAPIDS, MI 49504
P.O. BOX 188031
GRAND RAPIDS, MI 49518-8031



PLAN SCALE: 1" = 30'



PLAN REVISIONS
10-20-18-RE-DATE PLAN SUBMISSION

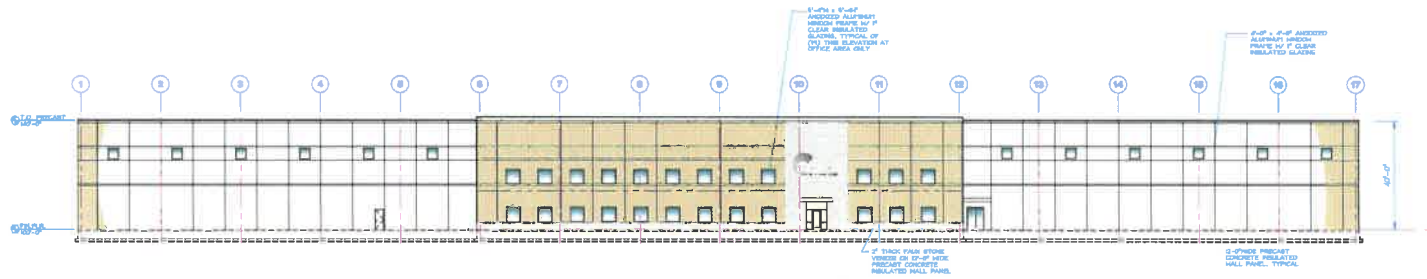
Moore+Bruggink
Consulting Engineers
2000 Marina View, Suite 100
Grand Rapids, MI 49503
(616) 455-5257
mbr@moorebruggink.com

CONSTRUCTION DETAILS
FOR
5801 KRAFT AVENUE
CASCADIA TWP., WEST COAST, MICHIGAN

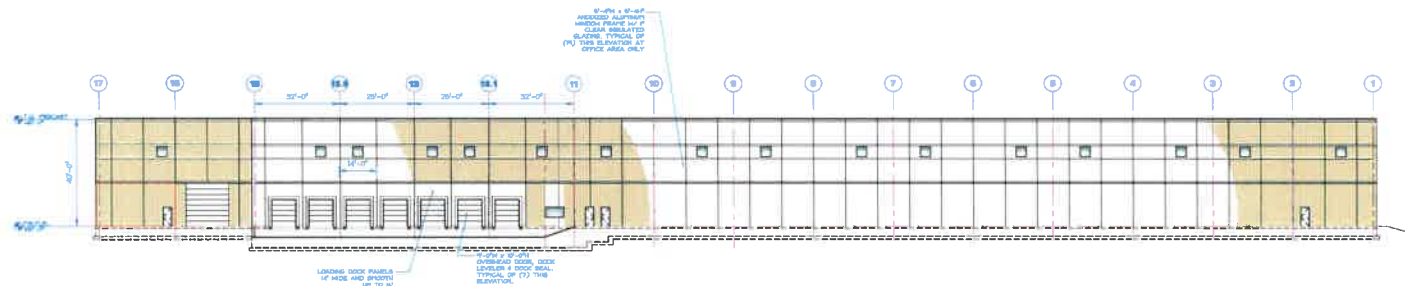
FIELD SURVEY DATE: 10-18-18
PROJECT NO.: 002017147
DESIGN DRAWN BY: EJP
DESIGNED BY: JFL
CHECKED BY: JFL

PLAN DATE: 10-20-18
SHEET NUMBER: 9 OF 9

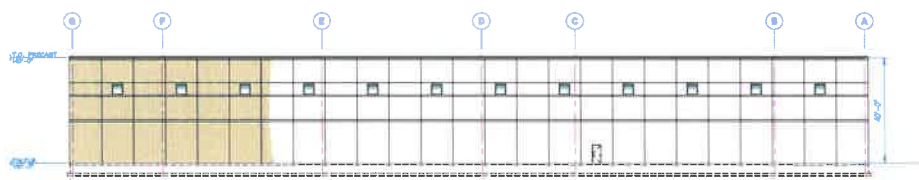
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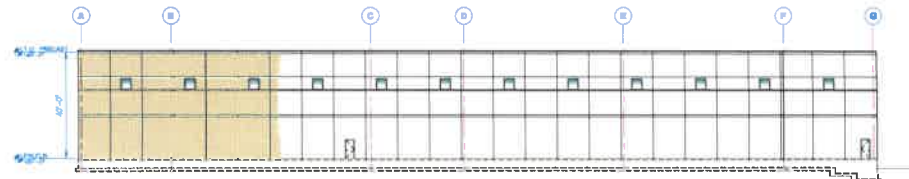
EAST ELEVATION
SCALE 1/8" = 1'-0"



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



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



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

Tailored
CONCRETE CONTRACTORS OF MICHIGAN
NO. 1001000-01-17 - 10/10/2010

Pioneer
CONCRETE CONTRACTORS OF MICHIGAN
NO. 1001000-01-17 - 10/10/2010

THIS DRAWING IS AN INSTRUMENT OF SERVICE. IT IS THE PROPERTY OF PIONEER CONCRETE CONTRACTORS OF MICHIGAN. IT IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREON. ANY REUSE OR MODIFICATION OF THIS DRAWING WITHOUT THE WRITTEN PERMISSION OF PIONEER CONCRETE CONTRACTORS OF MICHIGAN IS PROHIBITED BY LAW.

DATE	REVISION	BY	DATE	REVISION
	ISSUED FOR PERMITS			
	ISSUED FOR PERMITS			
	ISSUED FOR PERMITS			
	ISSUED FOR PERMITS			
	ISSUED FOR PERMITS			

ELEVATIONS
LACKS ENTERPRISES
KRAFT MOLD PLANT
KENTWOOD, MICHIGAN

DESIGNED BY: PSC
JOB NUMBER: 009-71
CADD REFERENCE: 10-09-1001000-01-17
PLOTTED: 8/25/11
SHEET #

Planning Commission
Cascade Charter Township
Kent County Michigan

RESOLUTION ____ OF 2018

RESOLUTION OF SUPPORT TO ADOPT THE CASCADE CHARTER TOWNSHIP
CAPITAL IMPROVEMENT PLAN 2019-2024

Whereas, a Capital Improvement Plan is a tool that can be used to implement the Township Master Plan.

Whereas, the Capital Improvement Plan is a budgeting process used to determine public improvement needs over a 6-year period.

Whereas, the Capital Improvement Plan will assist the Township in making decisions for Improvements to its roads, parks, utilities and public buildings.

Whereas, the Capital Improvement Plan represents sound planning and management techniques that improve the efficiency and economy of local government.

Now Therefore Be It Resolved, that the Cascade Charter Township Planning Commission adopts the 2019-2024 Capital Improvement Plan for Cascade Charter Township and that it be forwarded to the Township Board for their adoption as well.

The foregoing Resolution was offered by Member _____, supported by Member _____. The roll call vote being as follows:

YEAS: _____

NAYS: _____

ABSENT: _____

RESOLUTION DECLARED ADOPTED.

John Sperla
Planning Commission, Chairperson

Cascade Charter Township

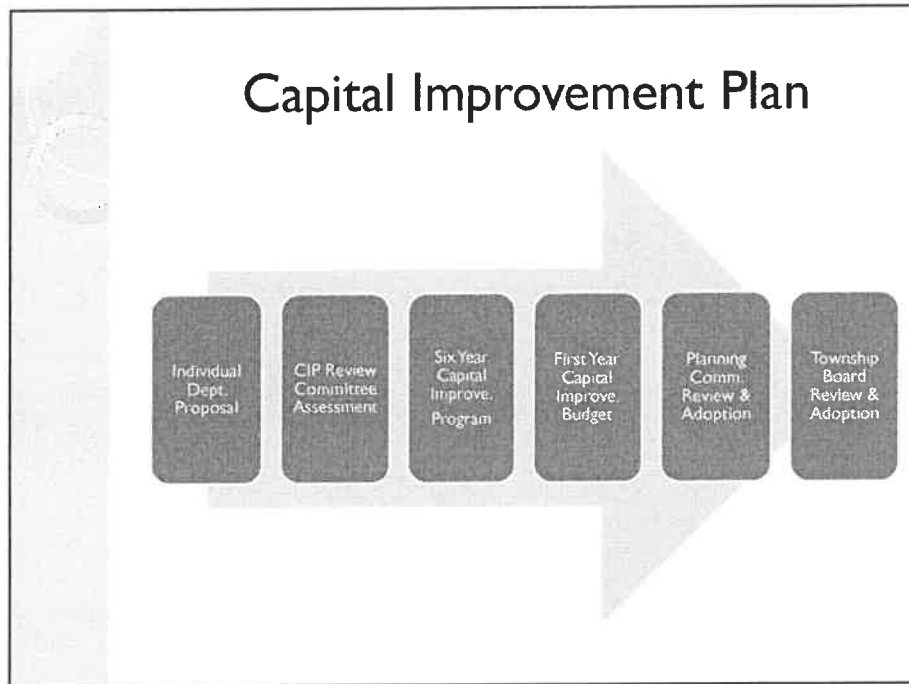
Capital Improvement Plan

2019 - 2024



Capital Improvement Plan

- Capital Improvements Plan (CIP) outlines a schedule of potential capital expenditures for the next 6 years
 - CIP is a **PLANNING** document, not a **BUDGET** document
 - In order for a CIP project to be completed, it must be budgeted for and approved by the Township Board.
- To be included, must be consistent with:
 - Master Plan
 - State/Federal Requirement
 - Township Approved Policy
- Typically should be at least \$10,000



- ## Capital Improvement Plan
- **Six-Year Capital Improvement Plan**
 - Mid-range planning document
 - Describes all proposals submitted by departments
 - Assessment & prioritization of each project
 - Adopted by Planning Commission
 - Approved by Township Board
 - **First-Year Capital Improvements Budget**
 - Short-range budget document
 - Recommends capital needs to be funded
 - Identifies expected revenue sources
 - Submitted by Township Manager to Township Board for adoption

Capital Improvement Plan

- The Benefits of a Capital Improvement Plan
 - Focuses attention on community goals, needs and capabilities
 - Optimizes use of the taxpayer's dollar
 - Guides future growth and development
 - Encourages the most efficient government
 - Improves the basis for intergovernmental and regional cooperation
 - Maintains a sound and stable financial program
 - Enhances federal and state grant opportunities

Capital Improvement Plan

- Project Prioritization
 - **Essential** – Urgent, high priority project that should be done if at all possible
 - **Desirable** – High priority project that should be done as funding becomes available
 - **Acceptable** – Worthwhile project to be considered if funding is available
 - **Deferrable** – Low priority project which can be postponed

Capital Improvement Plan

- **Funding Sources**
 - **Millage Funding**
 - General, Fire, Police, Pathways, Open Space, Library
 - **General Obligation & Revenue Bonds**
 - G.O. Bonds – Taxing power pledged to retire debt
 - Revenue Bonds – User charges and other income to pay debt – backed by “Full faith and credit”
 - **Tax Increment Financing**
 - DDA funding – tax collections above “base” taxable value

Capital Improvement Plan

- **Funding Sources (Con't)**
 - **Federal & State Funds**
 - Grants (DNR Trust Fund, etc...)
 - Entitlements (Revenue Sharing)
 - **Special Assessments**
 - Oak Terrace Water, Kraft Ave. Water/Sewer, etc...
 - **Developer Contributions**
 - Dedicated Infrastructure
 - Payments for Improvements
 - **Utility System Funding**
 - Township approved improvement
 - Paid for through utility bills
 - **Other Funds**
 - Capital leases, dedicated revenues, sale of assets, community partners, etc...

Capital Improvement Plan

The total capital need over the next six years includes 51 projects, totaling \$21,925,000

Project Type	Number of Projects	Six-Year Plan FY2019-2024
GF - Administration	4	\$3,565,000
GF - Building & Grounds	6	\$590,000
GF - Cemeteries	3	\$1,000,000
GF - Parks	2	\$60,000
GF - Community Development	4	\$1,345,000
Fire Fund	8	\$1,520,000
Dam Repair Fund	4	\$195,000
Pathways Fund	8	\$4,400,000
Utility Fund	2	\$1,350,000
DDA Fund	8	\$7,000,000
Building Fund	0	\$0
Library Fund	2	\$900,000
TOTALS	51	\$21,925,000

Capital Improvement Plan

General Fund - Administration (101)							
Project Title:	Project Costs						TOTAL
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	
Local Road Maintenance	1,200,000	400,000	400,000	400,000	400,000	400,000	3,200,000*
Schoolhouse Creek Rehab. Project	325,000						325,000
Administrative Copier				15,000			15,000
Township Server(s) Replacement				25,000			25,000
Totals	1,525,000	400,000	400,000	440,000	400,000	400,000	3,565,500

Capital Improvement Plan

General Fund - Cemetery (101)							
Project Title:	Project Costs						TOTAL
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	
30 th Street Cemetery Expansion	900,000						900,000
Whitneyville Cemetery Improvements	50,000						50,000
Snow Cemetery Improvements		50,000					50,000
Totals	950,000	50,000	0	0	0	0	1,000,000

Capital Improvement Plan

General Fund - Buildings & Grounds (101)							
Project Title:	Project Costs						TOTAL
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	
Rec. Park Facility Improvements		130,000					130,000
P-250 Crew Cab Replacement (3)				60,000	60,000	60,000	180,000
John Deere Tractor Replacement	60,000						60,000
Toolcat Vehicle Replacement (2)	65,000	65,000					130,000
Mower Replacement (3)	20,000		20,000		20,000		60,000
Bucket Truck Purchase	30,000						30,000
Totals	175,000	195,000	20,000	60,000	80,000	60,000	590,000

Capital Improvement Plan

General Fund - Parks (101)							
Project Costs							
Project Title:	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	TOTAL
Tassel Park Fishing Pier				30,000			30,000
McGraw Park Fishing Pier				30,000			30,000
Totals	0	0	0	60,000	0	0	60,000

Capital Improvement Plan

General Fund - Community Development (101)							
Project Costs							
Project Title:	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	TOTAL
36 th Street Interchange Streetscape/Signage		275,000					275,000
Bus Stop Installations		30,000	30,000	30,000	30,000	30,000	150,000
Entryway Sign & Landscape Program			80,000	80,000	80,000	80,000	320,000
Railroad Right-of-Way Acquisition			300,000		300,000		600,000*
Totals	0	305,000	410,000	110,000	410,000	110,000	1,345,000

Capital Improvement Plan

Fire Department Fund - 209							
Project Title:	Project Costs						TOTAL
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	
Department Training Facility						500,000	500,000
Bullax Satellite Attack Fire Package		10,000					10,000
Genesis Rescue System		40,000					40,000
Chief Vehicle Replacement			60,000				60,000
Snow Plow/Grass Truck Replacement				60,000			60,000
Water Rescue Boat Replacement	35,000						35,000
Medic 11 Suburban Replacement			65,000				65,000
Engine #6 Replacement						750,000	750,000
Totals	35,000	50,000	125,000	60,000	0	1,250,000	1,520,000

Capital Improvement Plan

Cascade Dam Repair Fund (211)							
Project Title:	Project Costs						TOTAL
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	
Headgate Replacement	25,000						25,000
Quad Blocks & Hydraulic System Repair	20,000						20,000
Tainter Gate Seals (2&3)		25,000		25,000			50,000
Concrete Repairs			50,000			50,000	100,000
Totals	45,000	25,000	50,000	25,000	0	50,000	195,000

Capital Improvement Plan

Pathway Fund (216)							
Project Title:	Project Costs						TOTAL
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	
Pathway Extension - Cascade Rd (36 th to Whiteyville)	600,000						600,000
Pathway Extension - Thornapple River Dr. (Berger to Thornhills)		300,000					300,000
Pathway Extension - Cascade Rd (DDA)		280,000					280,000
Pathway Extension - Cascade Road (Hall to Watermark)		615,000					615,000
Pathway Extension - Barton Street			2,200,000				2,200,000
Pathway Extension - Thornapple Elem.						120,000	120,000
Pathway Extension - Pine Ridge Elem. (I)						150,000	150,000
Pathway Extension - Pine Ridge Elem. (J)						135,000	135,000
Totals	600,000	1,195,000	2,200,000	0	0	405,000	4,400,000

Capital Improvement Plan

Utility Revolving Fund (216)							
Project Title:	Project Costs						TOTAL
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	
Burton St. Highway Crossing - Watermain			350,000				350,000
Water/Sewer Extension - 52 nd Street				1,000,000			1,000,000
Totals	0	0	350,000	1,000,000	0	0	1,350,000

Capital Improvement Plan

Downtown Development Authority Fund (248)							
Project Title:	Project Costs						TOTAL
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	
Purchase of Riverfront Properties	TBD	TBD	TBD	TBD	TBD	TBD	3,000,000**
Centennial Park – Orchard Vista Walks	650,000						650,000
Centennial Park – Median Islands	350,000						350,000
Pathway Extension – Cascade Rd (DDA)		400,000					400,000
Cascade Office Park Property Purchase			400,000				400,000
Community Gathering Space - Amphitheater			1,400,000				1,400,000
Village Aron Gateway Improvements						500,000	500,000
28th Street Mid-Block Crossing				300,000			300,000
Totals	1,000,000	400,000	1,800,000	300,000	0	500,000	7,000,000

Capital Improvement Plan

Building Department Fund (249)							
Project Title:	Project Costs						TOTAL
	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	
Totals	0	0	0	0	0	0	

Capital Improvement Plan

Library Fund (270)							
Project Costs							
Project Title:	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	TOTAL
Library Refresh Project		500,000					500,000
Trail Loop & Children's/Sound Garden			400,000				400,000
Totals	0	500,000	400,000	0	0	0	900,000

Questions?

MEMORANDUM

TO: Cascade Township Planning Commission
 FROM: Steve Peterson, Community Development Director
 DATE: November 12, 2018
 RE: Kent County Road Commission Five-Year Road Improvement Plans

For your information, I have reviewed the Kent County Road Commission's five-year (2019 - 2023) road improvement plan for Cascade Township and have listed the proposed projects in Cascade Township in the following table.

<i>ROAD</i>	<i>PROJECT LIMITS</i>	<i>IMPROVEMENT</i>
2019		
Kraft Ave	36 th St to 28 th St	Resurface
Bridge over Thornapple River Dr (Bridge #27)	Just north of 60 th st (approximately .35 miles)	Culvert Rehabilitation
Patterson Ave	44 th St north 750 feet	Duel left turns – Capacity/safety Improvements
Whitneyville Ave	48 th St to 60 th St (60 th to 66 th in Caledonia Twp)	resurface
Local road overlays will be reviewed by KCRC maintenance department and Township Manager in the spring.		
2020		
None		
2021		
None		
2022		
None		
2023		
None		