

GENOA CHARTER TOWNSHIP
Board of Trustees
Regular Meeting
April 15, 2013
6:30 p.m.

AGENDA

Call to Order:

Pledge of Allegiance:

Call to the Public*:

Approval of Consent Agenda:

1. Payment of Bills.
2. Request to approve minutes: April 1, 2013.
3. Request for approval of the Sewage Treatment agreement between Genoa Charter Township and the Genoa Ocoola Sewer and Water Authority as provided by the Utility Director.

Approval of Regular Agenda:

4. Request for approval of special use application, environmental impact assessment and site plan for a proposed 20,680 sq. ft. office building located on the South side of Grand River Avenue between Hughes Road and Kellogg Road in Section 14, petitioned by Dakkota Integrated Systems.

- A. Disposition of Special Use
- B. Disposition of Environmental Impact Assessment
- C. Disposition of Site Plan

5. Request for approval of environmental impact assessment for a proposed site excavation and stockpile related to the Latson Road Interchange Project, located on the Northwest corner of Nixon and Crooked Lake Road in Section 17, petitioned by Rudolph C. Hauss.

- A. Disposition of Environmental Impact Assessment

6. Consider request from Pine Creek Homeowner's Association for the privatization and closure of roads within the plat.

7. Discussion regarding MTA Retreat

Correspondence
Member Discussion
Adjournment

*Citizen's Comments- In addition to providing the public with an opportunity to address the Township Board at the beginning of the meeting, opportunity to comment on individual agenda items may be offered by the Chairman as they are presented.

CHECK REGISTERS FOR TOWNSHIP BOARD MEETING

DATE: April 15, 2013

TOWNSHIP GENERAL EXPENSES: Thru April 15, 2013	\$119,805.40
April 12, 2013 Bi Weekly Payroll	\$70,008.01
OPERATING EXPENSES: Thru April 15, 2013	\$164,912.69
TOTAL:	<u>\$354,726.10</u>

<u>Check Number</u>	<u>Vendor No</u>	<u>Vendor Name</u>	<u>Check Date</u>	<u>Check Amount</u>
29551	Equitabl	Equivest Unit Annuity Lock Box	03/29/2013	660.00
29553	SOM-TRE	State Of Mich- Dept Of Treasur	03/27/2013	8,068.37
29554	AT&T Fax	AT&T	03/27/2013	55.07
29555	COMCAST	Comcast	03/27/2013	202.08
29556	DTE EN	DTE Energy	03/27/2013	203.99
29557	Genworth	Genworth Financial	03/27/2013	371.17
29558	MASTER M	Master Media Supply	03/27/2013	361.37
29559	PETTYCAS	Petty Cash	03/27/2013	104.38
29560	PRINTING	Printing Systems	03/27/2013	510.94
29561	SPIRIT L	Spirit Of Livingston	03/27/2013	236.00
29562	Stonebri	SBS Group	03/27/2013	5,000.00
29563	TRI COUN	Tri County Supply, Inc.	03/27/2013	219.46
29564	VERIZONW	Verizon Wireless	03/27/2013	339.06
29565	ARCHINAL	Michael Archinal	04/01/2013	500.00
29566	Duncan	Duncan Disposal Systems	03/28/2013	640.00
29567	Schindle	Schindler Elevator Corporation	03/28/2013	745.00
29568	LC REG D	Livingston Co. Register Of Dee	04/05/2013	159.10
29569	Equitabl	Equivest Unit Annuity Lock Box	04/12/2013	660.00
29570	AmerAqua	American Aqua	04/08/2013	103.80
29571	BUS IMAG	Business Imaging Group	04/08/2013	341.68
29572	Clearwat	Clearwater Systems	04/08/2013	54.00
29573	CONTINEN	Continental Linen Service	04/08/2013	96.43
29574	DTE LAKE	DTE Energy	04/08/2013	35.16
29575	Duncan	Duncan Disposal Systems	04/08/2013	76,260.60
29576	GORDONFO	Gordon's Food Services	04/08/2013	190.06
29577	LANGWORT	Langworthy Strader Leblanc	04/08/2013	4,201.89
29578	LexJet	LexJet	04/08/2013	140.00
29579	MASTER M	Master Media Supply	04/08/2013	1,284.06
29580	MICHAS	Michigan Assoc. of Planning	04/08/2013	420.00
29581	MROCZKA	Laura Mroczka	04/08/2013	161.45
29582	Net serv	Network Services Group, L.L.C.	04/08/2013	45.00
29583	Perfect	Perfect Maintenance Cleaning	04/08/2013	778.00
29584	Schindle	Schindler Elevator Corporation	04/08/2013	838.68
29585	DTE LAKE	DTE Energy	04/10/2013	1,097.27
29586	EHIM	EHIM, INC	04/10/2013	7,511.44
29587	GANNETT	Livingston Press & Argus	04/10/2013	880.40
29588	LINDHOUT	Lindhout Associates Architects	04/10/2013	123.00
29589	LivCTrea	Livingston County Treasurer	04/10/2013	431.24
29590	Mancuso	Mancuso & Cameron, P.C.	04/10/2013	4,781.25
29591	NEEDHAM	J. Needham & Sons Plumbing	04/10/2013	639.00
29592	Tetra Te	Tetra Tech Inc	04/10/2013	355.00

Report Total: 119,805.40

**First National
Direct Deposit
APRIL 12, 2013
Bi-Weekly Payroll**

<u>Employee Name</u>	<u>Debit Amount</u>	<u>Credit Amount</u>
Genoa Township	\$47,953.88	
Aaron Korpela		\$1,238.57
Adam Van Tassell		\$1,071.76
Alex Chimpouras		\$1,922.47
Amy Ruthig		\$978.06
Angela Williams		\$342.07
Ashley Repke		\$1,101.42
Caitlin Nims		\$1,116.50
Carol Hanus		\$1,210.14
Craig Bunkoske		\$1,649.60
Daniel Schlack		\$1,366.20
Dave Estrada		\$1,542.23
David Miller		\$1,869.16
Deborah Rojewski		\$1,594.92
Diane Zerby		\$609.68
Erin Daksiewicz		\$249.34
Greg Tatara		\$2,766.71
Jacob Mitchell		\$860.80
James Aulette		\$1,421.55
Jeffrey Meyers		\$1,409.89
Jenifer Kern		\$353.71
Jonathan Morton		\$1,129.23
Judith Smith		\$3,268.25
Kathryn Poppy		\$388.04
Karen J. Saari		\$985.44
Kelly VanMarter		\$2,100.83
Kimberly MacLeod		\$1,269.51
Kristen Sapienza		\$573.44
Kristi Cox		\$141.52
Laura Mroccka		\$1,711.32
Martin Reich		\$1,568.52
Michael Archinal		\$2,726.27
Robin Hunt		\$1,355.10
Ryan Kaiser		\$483.13
Scott Lowe		\$0.00
Steven Anderson		\$1,560.23
Susan Sitner		\$865.63
Tammy Lindberg		\$995.57
Tesha Humphriss		\$2,157.07
Total Deposit		\$47,953.88

Accounts Payable
Computer Check Register

Genoa Township

2911 Dorr Road
Brighton, MI 48116

(810) 227-5225

User: diane

Printed: 04/05/2013 - 12:42

Bank Account: 101CH

Check	Vendor No	Vendor Name	Date	Invoice No	Amount
11076	AETNA LI	Aetna Life Insurance & Annuity	04/12/2013		25.00
Check 11076 Total:					25.00
11077	EFT-FED	EFT- Federal Payroll Tax	04/12/2013		7,904.84 4,063.08 4,063.08 950.26 950.26
Check 11077 Total:					17,931.52
11078	EFT-PENS	EFT- Payroll Pens Ln Pyts	04/12/2013		1,914.76
Check 11078 Total:					1,914.76
11079	EFT-TASC	EFT-Flex Spending	04/12/2013		871.10
Check 11079 Total:					871.10
29569	Equitabl	Equivest Unit Annuity Lock Box	04/12/2013		660.00
Check 29569 Total:					660.00
11080	FIRST NA	First National Bank	04/12/2013		250.00 2,465.00 45,163.88 75.00

Check 11080 Total:

47,953.88

Report Total: † (1) check
12041

69,356.26
651.75

K. Galinac

70,008.01

Genoa Charter Township
User: diane

Payroll
Computer Check Register

Printed: 04/05/13 11:39
Batch: 602-04-2013

<u>Check No</u>	<u>Check Date</u>	<u>Employee Information</u>	<u>Amount</u>
12041	04/12/2013	Galinac Kristina Galinac	651.75
Total Number of Employees: 1			Total for Payroll Check Run: 651.75

**#503 DPW UTILITY FUND
PAYMENT OF BILLS
March 21 through April 11, 2013**

<u>Type</u>	<u>Date</u>	<u>Num</u>	<u>Name</u>	<u>Memo</u>	<u>Amount</u>
Check	03/27/2013	2392	Applied Imaging	Inv #'s 178547-1 & 178780-1	-17.39
Check	03/27/2013	2393	Verizon Wireless	Inv 9701457082	-199.47
Check	03/27/2013	2394	Occupational Health Centers	Inv 708758987	-95.50
Check	03/27/2013	2395	GNeil	Inv 0792472	-59.99
Check	03/27/2013	2396	Shell Fleet Plus	March 2013 fuel charges	-4,689.01
Check	03/28/2013	2397	Absolute Auto Repair	Inv 77508	-447.27
Check	03/28/2013	2398	Victory Lane Quick Oil Change	Inv 23626	-59.46
Check	03/28/2013	2399	EJ USA, Inc.	Inv 357128	-692.86
Check	03/28/2013	2400	Grainger	Inv 9092294140	-1,295.56
Check	04/01/2013	2401	Tesha Humphriss	April 2013 auto allowance	-500.00
Check	04/01/2013	2402	Greg Tataara	April 2013 auto allowance	-500.00
Check	04/08/2013	2403	Joshua Juhl	Mileage reimbursement - interview	-329.40
Check	04/08/2013	2404	Carl Geoffrion	Mileage reimbursement - interview	-494.94
Check	04/08/2013	2405	Applied Imaging	Inv 179250-1	-8.42
Check	04/08/2013	2406	Cunningham, Inc.	Inv 1311	-1,460.00
Check	04/08/2013	2407	Carol Hanus	Reimbursement for toll free number	-61.30
Check	04/08/2013	2408	Occupational Health Centers	Aaron Korpela - Acct I04-0225064572	-167.98
Check	04/08/2013	2409	PAETEC	Acct 2119355	-24.24
Check	04/08/2013	2410	Red Wing Shoe Store	Inv 1816	-390.98
Check	04/08/2013	2411	Greg Tataara	Reimbursement for computer supplies	-369.71
Check	04/08/2013	2412	Tractor Supply Co.	Acct 6035 3012 0324 0252	-227.35
Check	04/11/2013	2413	LOWE'S	Acct 99006416418	-371.44
Check	04/11/2013	2414	Occupational Health Centers	Inv 708796232	-95.50
Check	04/11/2013	2415	Press & Argus	Advertisement for Meter Reader	-185.24
Check	04/11/2013	2416	TalentWise	Inv 90221069	-101.00
Check	04/11/2013	2417	Staples Credit Plan	Acct 6035 5178 6145 0400	-519.27
GRAND TOTAL					-13,363.28

**#595 PINE CREEK W/S FUND
PAYMENT OF BILLS
March 21 through April 11, 2013**

<u>Type</u>	<u>Date</u>	<u>Num</u>	<u>Name</u>	<u>Memo</u>	<u>Amount</u>
Check	03/27/2013	2107	GENOA-TWSP-ADMIN FEES	Utility billing Dec 2012 - Feb 2013	-3,463.06
Check	04/11/2013	2108	City of Brighton	Acct 003054-000 Jan - March 2013	-33,499.29
GRAND TOTAL					-36,962.35

#592 OAK POINTE WATER/SEWER FUND**PAYMENT OF BILLS**

March 21 through April 11, 2013

<u>Type</u>	<u>Date</u>	<u>Num</u>	<u>Name</u>	<u>Memo</u>	<u>Amount</u>
Check	03/28/2013	2651	BRIGHTON ANALYTICAL, LLC	Inv #'s 0313-80388 & 80403	-134.00
Check	03/28/2013	2652	DUBOIS COOPER ASSOCIATES INC	Inv 155244	-3,294.10
Check	03/28/2013	2653	FONSON, INC.	Inv 10485	-2,512.50
Check	03/28/2013	2654	G/O SEWER AUTHORITY	Direct Disposal Costs	-304.06
Check	03/28/2013	2655	K & J Electric, INC	Inv #'s 6098, 6109, 6110	-3,723.00
Check	03/28/2013	2656	Specter Instruments	Inv 1303024782	-395.00
Check	03/28/2013	2657	Utilities Instrumentation Service	Inv 530340909	-2,682.00
Check	03/28/2013	2658	Wolverine Power Systems, Inc.	Inv 0073568-IN	-510.00
Check	04/11/2013	2659	CONSUMERS ENERGY	Billing from 2/28 - 3/28/2013	-818.92
Check	04/11/2013	2660	DTE ENERGY	Billing from 2/26 - 3/27/2013	-7,828.20
Check	04/11/2013	2661	GENOA TWP UTILITY FUND	Maintenance/Billing April 2013	-35,986.34
GRAND TOTAL					-58,188.12

#593 LAKE EDGEWOOD W/S FUND**PAYMENT OF BILLS**

March 21 through April 11, 2013

<u>Type</u>	<u>Date</u>	<u>Num</u>	<u>Name</u>	<u>Memo</u>	<u>Amount</u>
Check	03/27/2013	2328	GENOA TOWNSHIP-ADMIN FEES	Utility billing Dec 2012 - Feb 2013	-1,007.98
Check	03/28/2013	2329	Brighton Analytical L.L.C.	Inv 0313-80387	-77.00
Check	03/28/2013	2330	Genoa/Oceola Sewer Authority	Direct Disposal Costs	-891.70
Check	04/11/2013	2331	City Of Brighton	Northstar #1 & 2/Lake Edge Jan - March 2013	-17,866.94
Check	04/11/2013	2332	Charter Township of Brighton	Davita Dialysis Center Jan - March 2013	-852.50
Check	04/11/2013	2333	Consumers Energy	Acct 1000 2370 3554	-322.67
Check	04/11/2013	2334	DTE Energy	Service from 2/28 - 3/28/2013	-4,403.86
Check	04/11/2013	2335	GENOA TWP-DPW FUND	Maintenance/billing fees April 2013	-9,300.17
Check	04/11/2013	2336	PRESS & ARGUS	Rate Change - Lake Edgewood	-60.00
GRAND TOTAL					-34,782.82

11:03 AM

#504 DPW RESERVE FUND**PAYMENT OF BILLS**

March 21 through April 11, 2013

<u>Type</u>	<u>Date</u>	<u>Num</u>	<u>Name</u>	<u>Memo</u>	<u>Amount</u>
Check	03/21/2013	1306	Brighton Ford	F150 VIN: 1FTMF1EM2DKE32794	-21,616.12
GRAND TOTAL					-21,616.12

GENOA CHARTER TOWNSHIP BOARD
Regular Meeting & Public Hearing
April 1, 2013

MINUTES

Call to Order: Supervisor McCririe called the regular meeting of the Genoa Charter Township Board to order at 6:30 p.m. Present constituting a quorum were: Gary McCririe, Jean Ledford, Todd Smith, Linda Rowell, Paulette Skolarus, James Mortensen, Also present were Assistant Township Manager Kelly VanMarter; Township Attorney Frank Mancuso and approximately 40 persons in the audience.

Pledge of Allegiance: The Pledge of Allegiance was recited.

Call to the Public: A call to the public was made with the following response: Jim Delcamp - I believe the 6 million dollar bond is enough to provide soft water as requested. He asks that the bond be re-purposed.

Approval of Consent Agenda:

Moved by Smith and support by Skolarus to approve all items listed under the consent agenda with the athletic agreement being moved to the regular agenda for discussion. The motion carried unanimously.

1. Payment of Bills.

2. Request to approve minutes: March 18, 2013.

3. Request to approve a proposal from Telecom Wiring Services and Network Services Group for Township Hall re-cabling at a net cost of \$5,564

4. Request to approve a proposal from American Video Transfer for upgrades to the Board room audio system at a cost of \$6,325.

Approval of Regular Agenda:

Moved by Smith and support by Ledford to approve the regular agenda with the addition of the lease agreement as amended above. The motion carried unanimously.

5. Request for approval of a three year extension to the athletic field lease agreement with Howell Area Parks and Recreation Authority.

Moved by Mortensen and supported by Skolarus to approve the athletic field agreement as requested. The motion carried unanimously.

6. Public Hearing for the Lake Chemung Aquatic Weed Control Special Assessment District.

Skolarus – Three additional letters were received from property owners. Copies were provided to the board. This is a renewal of a special assessment district that has been in place for ten years. The annual cost will be less than \$95.00 annually. Approximately 25% to 30% are back lot owners with pedestrian or boat access to the lake. Mortensen – I will be voting no on this project because I do not believe the back parcels should have to pay the same fee as lakefront.

A. Call to the property owners

The following people addressed the Board:

1. Diana Rencszak who is a property owner and also manages two parcels of property in the district. She advises prospective purchasers to assume a tax assessment for weed control. She would like to see the weed assessment continued.
2. David Pickett addressed the Board. He agrees with the existing weed control program. He was told the Lake Chemung Riparian Association contracts with the biologist; not the Township.
3. Mark Jones addressed the Board. He supports the weed control program.
4. Kevin Cote addressed the Board. He supports the weed control program.
5. Jim Rider addressed the Board. He supports the weed control program.
6. Rob Belowitz addressed the Board in support of the weed control program.
7. John Palmer addressed the Board in support of the weed control program.
8. Michael Sucia addressed the Board in support of the weed control program.
9. Steve Wildman addressed the Board in support of the weed control program.
10. Eric Martin addressed the Board in support of the weed control program.
11. Jim Green addressed the Board in support of the weed control program.
12. Dave Knievilla addressed the Board in support of the weed control program.
13. A shareholder from the International Society spoke in support of the weed control program, but did ask for more information. She was directed to the LCRA.
14. Karen Arsel spoke in support of the weed control program.
15. Barbara Figurski spoke in support of the weed control program.
16. Linda Gellarannie spoke in support of the weed control program, individually and on behalf of Outdoor Resorts.
17. Roger Wickstrom addressed the Board. He indicated that the accesses are poorly marked. He would like to see that better defined. He does support the weed control program.
18. Dan Donald addressed the Board. The access near Edward Drive is not clearly marked.
19. Larry Trainor addressed the Board. He supports weed control.
20. Ron Wilson supports the weed control program.

B. Call to the public

Jeff Dhaenens addressed the Board in support of the weed control program. He also supports the people who are seeking clarifications of lake access points. Smith agreed to provide clarification to the audience members who need lake access clarifications.

C. Request for approval of Resolution #5 confirming the Special Assessment Roll

Moved by Skolarus and supported by Ledford to approve resolution number five, subject to a change to exhibit B, adding \$267,000.00 as item #2. The motion carried by roll call vote as follows: Ayes - Ledford, Smith, Rowell, Skolarus and McCririe. Nay – Mortensen. Absent – Hunt.

7. Request to approve a proposal from LSL Planning to authorize \$4,000 in additional expenses for the Master Plan Update.

Moved by Smith and supported by Skolarus to authorize the expenditure as requested by VanMarter. The motion carried unanimously.

8. Consider approval of a proposal from the Livingston County Road Commission for the crushed limestone improvements to Brighton Road between King and Treasure Lake and Beck Road between Fisk and the railroad tracks at a total cost of \$215,000.00.

Moved Skolarus and supported by Ledford to approve the expenditure as requested by Archinal. The motion carried unanimously.

Member Discussion: Skolarus indicated there is a sufficient amount of petitions from Timberview and that soil borings would be done. Mortensen introduced his grandson, Tripp, who is visiting from Ann Arbor for his Boy Scout group. Smith indicated the marshmallow drop was successful. The 242 Church had a successful Easter. Mortensen will be unable to attend the next meeting.

The meeting was adjourned at 7:20 p.m.

Paulette A. Skolarus
Paulette A. Skolarus (fmo)
Genoa Charter Township Clerk



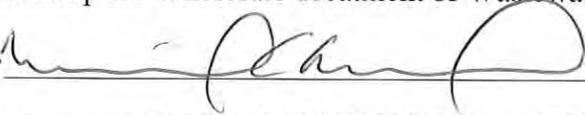
MEMO

TO: Honorable Members of the Genoa Charter Township Board

FROM: Greg Tatara, Utility Director
Tesha Humphriss, Utility Engineer

DATE: April 10, 2013

RE: Oak Pointe Wastewater Treatment Plant Consolidation Project
Agreement between Genoa-Oceola Sewer and Water Authority and Genoa
Charter Township for Wholesale Treatment of Wastewater from Oak Pointe

MANAGER REVIEW: 

.....

The Genoa Township Utility Department is pleased to present for Genoa Township Board's consideration an Agreement between the Genoa-Oceola Sewer and Water Authority and Genoa Charter Township that ratifies the relationship and treatment methodology for Oak Pointe Flows at the Genoa-Oceola Wastewater Treatment Plant (WWTP).

Please find as *Attachment 1* an updated project schedule. In follow-up to the items approved at the February 18th Township Board meeting, our staff has been busy addressing comments and questions from the public during the 45 Day Referendum Period, which expired on April 10, 2013. Additionally, in working with our engineering firm, we are nearing completion of the Basis of Design Document. The next item for approval by the Genoa Township Board is the Sewage Treatment Agreement between Genoa and G-O, which will provide the foundation for guaranteeing that the Genoa-Oceola WWTP will treat Oak Pointe Flows and secure the long term treatment methodology. With this agreement as the foundation, staff can continue with design and financing of the project as presented in the attached schedule.

Presented as *Attachment 2*, is the agreement for consideration tonight. This agreement has been reviewed by Genoa Township Legal Counsel, Bond Counsel, and the Genoa-Oceola Sewer and Water Authority. Changes have been tracked to reflect the modifications to the draft of the agreement presented to the Township Board on February 18th. In addition, we will seek approval of this agreement by the G-O Authority at their April 17, 2013 Board Meeting.

Based on the above information, we ask the Genoa Township Board to consider the following motion:

Moved by _____, supported by _____ to approve the Sewage Treatment agreement between Genoa Charter Township and the Genoa Oceola Sewer and Water Authority Dated March 13, 2013.

Attachment 1

Project Timeline

**Oak Pointe to Genoa-Oceola WWTP
Project Task List and Schedule
Updated April 2013**

Complete Items	
Project Task Items	Timeframe
Citizen's Advisory Support	January – Sept. 2012
Feasibility Study	August 2012
Oak Pointe Homeowner's Association Presentation	September 2012
Finalizing Cost Estimates	October 2012
Initial Meeting with Financial Advisor, Bond Counsel, and Accountant on Financial Feasibility	October 2012
Financial Advisor Preparation of Engagement Letter P&I Schedule	October 15, 2012
Brochure Summary of Cost and Project to All Oak Pointe, Tri-Lake's, and North Shore Residents	October 22, 2012
Bond Counsel Preparation of Financing Timetable	October 30, 2012
Open House Meeting for all Affected Residents	November 8, 2012
Genoa Township Board Meeting Presentation	December 3, 2012
Review of O&M Rates for OP Collection, G-O Treatment, and DPW Allocation Presentation	January 15, 2013
Meeting with Jim Kiefer on Draft Agreement and Notice of Intent	January 16, 2013
Citizens Advisory Meeting	January 30, 2013
Genoa Township Board Meeting	February 18, 2013
Approval of Notice of Intent to Issue Bonds and 45 Day Referendum by Genoa Township	February 18, 2013
Approval of Basis of Design Agreement	February 18, 2013
Expiration of 45 Day Referendum Period	April 10, 2013
Project Task Items	Timeframe
Genoa Township Board Meeting <ul style="list-style-type: none"> • Approval of Agreement Between Genoa-Oceola and Oak Pointe (Genoa Township) & Oceola Township 	April 15, 2013
G-O Board Meeting – <ul style="list-style-type: none"> • Approval of Agreement Between Genoa-Oceola and Oak Pointe (Genoa Township) & Oceola Township 	April 17, 2013
Completion of Basis of Design	April 30, 2013
Financing Team Meeting and Draft Financing Plan	May 15, 2013
Genoa Township Board Meeting Design Proposal	June 3, 2013
Design and Permitting	June – September 2013
Genoa Township Board Meeting <ul style="list-style-type: none"> • Bond Authorizing Resolution 	October, 2013
Bidding	December 2013
Sale of Bonds	January 2014
Construction	Spring 2014

Attachment 2

Form of Agreement

SEWAGE TREATMENT AGREEMENT

3/13/13

Revised per 2/18 Genoa Township and 2/20 G-O Board Meeting

THIS SEWAGE AGREEMENT is dated as of _____, 2013 by Genoa-Oceola Sewer and Water Authority whose principal office is located at 2911 Dorr Road, Brighton, MI 48116 (“G-O”), and Genoa Charter Township (“Township”), whose principal office is located at 2911 Dorr Road, Brighton, Michigan 48116.

ARTICLE I – RECITALS

WHEREAS, Genoa Charter Township (“the Township”) owns and operates the Oak Pointe Sewer System; and,

WHEREAS, the Townships of Genoa and Oceola have organized the Genoa – Oceola Sewer and Water Authority (G-O) pursuant to the provisions of Act 233, Michigan Public Acts of 1955, as amended for the purpose of acquiring, owning, managing, and operating a sanitary collection and treatment system; and,

WHEREAS, the Township and Authorities have concluded that the operation of sanitary systems is needed to promote and improve the health and welfare of the residents of the Townships; and,

WHEREAS, to alleviate ground water contamination from sodium and chloride discharge in the Oak Pointe System the governing bodies determined that it is in the best interest of both systems to enter into an agreement for the treatment of sewage from the Oak Pointe System at the Genoa-Oceola System under the provision of Act 258, Michigan Public Acts of 2011; and,

WHEREAS, consolidating wastewater systems, in addition to solving the sodium and chloride problem, saves money, reduces energy usage, reduces chemical usages, and improves efficiency of operation.

NOW, THEREFORE, in consideration of the promises below, the parties mutually agree as follows:

ARTICLE II – PROJECT DESCRIPTION

The project, and defined by this agreement, will consist of improvements to the Genoa-Township Oak Pointe System and the G-O System. Improvements to the Genoa-Oceola System will be funded by Genoa Township’s Oak Pointe District as defined in Articles II and III.

Genoa Township (Oak Pointe) Improvements	Genoa –Oceola Improvements
Conversion of OP WWTP to a Pump Station	Sludge Processing Equipment Additions
Installation of an Influent Mag Meter	Variable Frequency Drives at the G-O Main Lift Station
Installation of force main from Oak Point to G-O	Dissolved Oxygen Meters and Controllers in the Existing Oxidation Ditch
Connecting the New Force Main to the Existing G-O Force Main	Installation of a Effluent Mag Meter to be installed at the Oak Pointe WWTP

ARTICLE III – COST ESTIMATES

The cost of the improvements to the G-O System to accommodate the Genoa Oak Pointe flow has a cost estimate of \$1,000,000 based on preliminary design estimate performed by HRC, Inc., in a document entitled “Analysis of Existing Operations Genoa Oceola Wastewater Treatment Plant, for the addition of flows from Oak Pointe Wastewater Treatment Plant and Latson Road Interchange, dated August 2012.

ARTICLE IV – CONSTRUCTION BIDS AND CONTRACTS

The parties hereto agree that the project will be competitively bid. The bidding of the project will be divided into three phases as follows:

- **Division A** – Conversion of Oak Pointe WWTP to a Pump Station
- **Division B** - Construction of the Force Main from the Oak Pointe WWTP to the Connection to the G-O WWTP existing force main in the approximate location of I-96 and Chilson Road as shown in Exhibit 1
- **Division C**- Sludge handling and process control improvements to the Genoa-Oceola System will bid by Genoa Township on behalf of the G-O Sewer and Water Authority.

Genoa Township will contract with the successful low bidder on Divisions A and B. G-O Sewer and Water Authority will contract directly with the successful low bidder of Division C. Prior to G-O entering into a contract for Division C, Genoa Township will deposit into the G-O expansion fund the bid amount plus a 10% contingency plus budget engineering inspection fees.

ARTICLE V – HANDLING EXCESS COSTS AND EXCESS FUNDS

In the event that the aggregate amount of any change orders, when combined with prior change orders, will exceed the 10% construction contingency, then such change orders must be approved by both Genoa Township and the G-O Sewer and Water Authority. Following any such

approval, Genoa Township shall provide an additional deposit to the Construction Costs Deposit to pay for the additional costs from such change orders.

Following completion of the construction of the Project as defined as the receipt and approval of the final pay application, G-O shall reimburse Genoa Township for the portion, if any, of the Construction Costs Deposit, including any interest earned in that account, that G-O has not spent on construction costs or other expenses related to the Project.

ARTICLE VI – CAPACITY

~~The current capacity of the G-O WWTP is 1.9 MGD, and Genoa and Oceola Townships share 50% of the current plant capacity equally. However, the Township's existing usage is not equal, with Genoa Township having a higher percentage of the existing flow. Exhibit 1 is an excerpt from the HRC document referenced in Article III showing the existing capacity by Township in the G-O WWTP.~~

~~Per this agreement, the G-O WWTP covenants 250,000 gallons per day (gpd) of capacity, to be used as a dedicated portion of Genoa Township's share of capacity for the term of this agreement.~~ Genoa Township Oak Pointe cannot exceed ~~250,000~~ 300,000 gallons per day of equalized flow from the Oak Pointe System without an amendment to this agreement. The line constructed to connect Oak Pointe to the G-O WWTP shall be dedicated for the sole purpose of transporting Oak Pointe Flows to the G-O Plant and shall not be utilized to transport other flows originating in Genoa Township to the G-O WWTP without amendment of this agreement by both Governing Boards.

As part of future expansions to the G-O plant, the Oak Pointe System will have the option to become integrated into the G-O System should the governing Boards of Genoa Township and the G-O Sewer and Water Authority determine that unified operation is in the interest of both systems.

ARTICLE VII - OPERATION OF THE SYSTEMS

During the term of the Agreement, the Township agrees to provide, through the Township Utilities Department, the staff, vehicles, supplies and materials needed to operate the Oak Pointe Collection System as defined by the map presented in **Exhibit 21**, up to the connection point. **Exhibit 2-1** includes the existing Oak Pointe Sanitary Service Area and defines the infrastructure that will be maintained by Oak Pointe and G-O in the future. The G-O Authority agrees to provide facilities, energy, staff, and supplies necessary to treat the sewage originating from the Oak Pointe Wastewater System. The Parties agree to operate the Systems in accordance with the terms and conditions of this Agreement, applicable law, and the permits, licenses, manufacturer's protocols, and specifications applicable to the operation and maintenance of the Systems. The ultimate responsibility for the operation of each such System shall remain with the governing body of each respective System. Each party hereby agrees that it will cooperate in good faith with the other and its agents, employees, representatives, officers, contractors, and subcontractors to facilitate the performance of the mutual obligations set forth in this Agreement.

ARTICLE VIII- ORDINANCES

Genoa Township hereby agrees to comply with the Genoa-Oceola Sewer and Water Authority Sewer Use Ordinance adopted February 12, 1992, as amended. A copy hereto is attached as **Exhibit 32**. Flows from the Oak Pointe System must be in compliance with the ordinance and Genoa-Oceola reserves all rights as provided in the ordinance to assure compliance.

ARTICLE IX – AUTHORITY SCOPE OF SERVICES

Following is a description of the services the Authority shall provide to Genoa Township under the terms of this agreement.

Section 9.1 -Billing Services

The Genoa-Oceola Sewer and Water Authority will read the G-O meter installed on the effluent line at the Oak Pointe WWTP as described in Article II on a monthly basis on the last regular business day of the month. The G-O Authority shall bill Genoa Township quarterly for the aggregate monthly usage for that quarter. Bills will be submitted to Genoa-Township on or near the 15th of the month of January, April, July, and October.

If the Effluent meter is not functioning properly, the G-O Authority shall utilize the influent flow meter readings to the Oak Pointe Facility. If flow readings are greater than 5% variable between the influent and effluent flow measurements, the G-O Authority shall notify Genoa Township prior to submitting the bill; however, the effluent meter reading will be used for billing purposes. The G-O Authority reserves to the right to estimate monthly readings should the effluent and influent meters fail to operate for more than a period of 24 hours.

The G-O Authority shall make prompt repair to the repair effluent meter if the meter is not functioning properly. No more than two successive months of utilizing influent meter readings or estimated volumes shall be permitted by the Genoa-Oceola Authority due to meter malfunction.

Section 9.2 -Sewage Treatment Services

The Authority shall treat Oak Pointe flow in accordance with Permits, Laws, and Standard of Care that is used for treating all other flow entering the Genoa-Oceola WWTP, including the resulting process residuals.

ARTICLE X - CAPITAL PROJECTS

This agreement does not prevent either the G-O Authority or the Genoa Township Oak Pointe Systems from designing, financing, or constructing capital improvement projects for the continued operation of the systems. Funding for these improvements can occur from O&M Funds, Reserve Funds, Developer Financed Improvements, or Municipal Bond Proceeds.

ARTICLE XI -PAYMENT FOR SERVICES

The G-O Authority shall receive compensation from Genoa Township for providing staff, vehicles, supplies and material necessary to provide the operational, maintenance and billing services contemplated by this Agreement, and Genoa Township shall be billed quarterly. Payment shall be received within 45 days of the date of the invoice. Payment not made within 45 Days shall be subject to a 10% penalty.

The G-O Authority will not accept an offset in lieu of payment for treatment services rendered.

Section 11.1 - Calculation of Bulk Rate

The annual bulk rate as defined as the \$1.~~7274~~/1,000 gallons of flow received shall be calculated utilizing the methodology presenting in **Exhibit 43**.

Section 11.2 – Annual Rate Adjustments

The bulk rate charged to Genoa Township Oak Pointe System shall be reviewed and subject to adjustment annually. Based on the methodology presented in **Exhibit 43**, the bulk rate will be Adjusted as necessary in August of each year. Notice of the rate increase shall be provided to Genoa Township within 30 days of the G-O Board adopting the rate increase. The rate adjustment shall occur in October of each year and shall not increase by an amount greater than the rate of increase for all other customers of the G-O Authority.

Section 11.3 Procedures for the Authority Providing Services to Additional Systems or Wholesale Users

This agreement shall not preclude the Genoa-Oceola Sewer and Water Authority from providing Services to additional systems or Wholesale Users, ~~provided that these services do not negatively impact the Oak Pointe Systems treatment or capacity at the G-O WWTP.~~

ARTICLE XII –OAK POINTE WASTEWATER QUALITY

The flows from Oak Pointe shall comply with the provisions of the Genoa-Oceola Sewer Use Ordinance as presented in Exhibit #2. Additionally, Oak Pointe shall not accept any flows that would constitute the G-O Authority having to implement an Industrial Pre Treatment Program.

ARTICLE XIII –CHANGE IN LAWS AND REGULATIONS

The Oak Pointe users shall be treated the same as all other users connected to the G-O WWTP with respect to Federal and State Laws and Regulations governing the wastewater treatment industry.

ARTICLE XIV -TERM AND TERMINATION

Section 14.1 Term

This Agreement begins on the "Commencement Date" and ends 20 years after, which is the defined useful life of the improvements. The term of the agreement will automatically renew for successive periods of two years each, unless notice of termination is provided by a party to this Agreement to the other parties to this Agreement not more than 720 days and not less than 360 days prior to the end of the initial term or any subsequent term of this Agreement.

Section 14.2 Events of Default and Remedies

The failure of any party to comply with payment terms or covenants in this Agreement, or to breach the representations of this Agreement, shall constitute a default. Upon default by a party, the complaining party shall send written Notice of Default. Such notice shall clearly specify the nature of the default and provide the defaulting party sixty (60) days to cure the default. If the default is capable of being cured within sixty (60) days, but is not cured within the sixty (60) days, the Agreement shall terminate at midnight of the sixtieth (60th) day following receipt of the Notice of Default. In the case of default that cannot be cured within sixty (60) days, the Agreement shall not terminate so long as the defaulting party has given written notice of the extension to the other party and the defaulting party has commenced and is diligently pursuing a remedy. Evidence of such remedy and its diligent pursuit shall be provided from the party determined to be in default to the satisfaction of the other party, and in any event such extension may not extend for more than one hundred eighty (180) days.

In the event of the termination of this Agreement under the terms outlined above, the Systems shall pay the Township for the services provided and invoiced up to the effective date of termination. Payment shall be made within thirty (30) days of the date of termination. Additionally, the non-breaching party or parties shall retain and may pursue all other remedies that may be available under applicable law.

ARTICLE XV - INSURANCE

Section 15.1- Insurance Provided by Genoa Township

The Township shall provide and maintain the following levels of insurance coverage at all times during the term of this Agreement:

- (1) General Liability and Vehicle Liability Insurance with a combined single limit in the amount of \$5,000,000.
- (2) Worker's Compensation Insurance in compliance with the laws of the State of Michigan, covering Township Employees engaged in the performance of Services, to the required statutory amount.
- (3) Sewer Backup Coverage in the amount of \$250,000.

Section 15.2 - Genoa-Oceola Insurance

G-O shall provide and maintain the following levels of insurance coverage at all times during the term of this Agreement:

- (1) General Liability Insurance with a combined single limit in the amount of \$5,000,000.
- (2) Property insurance in amounts sufficient to cover real property in G-O.
- (3) Sewer Backup Coverage in the amount of \$250,000.

ARTICLE XVI - DISPUTE RESOLUTION

Section 16.1 - Appointment of Panel

The parties agree that any and all claims, controversies or actions arising out of the terms, provisions or subject matter of this Agreement shall be referred to a panel (the "Panel") consisting of three (3) representatives (the "Representatives"). The Utilities Staff shall appoint one representative to the Panel, the governing bodies of the Systems shall collectively appoint one representative to the Panel and the two representatives shall mutually agree on a third representative for the Panel. Such appointments shall be made by the parties within ~~fifteen~~ **forty five (45)** days of written notice of a dispute or claim.

Section 16.2 - Additional Remedies and Arbitration

Notwithstanding the provisions of Section 8.1, if the claim or dispute is not resolved by the good faith negotiations of the Representatives within thirty (30) days of appointment, ~~or if a party fails or refuses to appoint a representative, then upon expiration of 45 days from the date of written notice,~~ any of the parties to this Agreement, subject to the following, may seek any remedies available at law and/or in equity to resolve the dispute. Additionally, the parties to this Agreement may, if they mutually agree in writing, submit any claims, disputes or other matters in question arising out of or relating to this Agreement or breach thereof to arbitration in accordance with the Arbitration Rules of the American Arbitration Association currently in effect, or such other rules of arbitration to which they may mutually agree. The arbitration shall be conducted in a location selected by mutual agreement of the parties. The costs of the arbitrator shall be shared equally by the parties. Each party shall be responsible for the costs of its own legal counsel, witnesses and documents it submits to the arbitrator. The arbitrator shall have no authority to change any provision of this Agreement, and the arbitrator's sole authority shall be to interpret or apply the provisions of this Agreement in accordance with the laws of the State of Michigan. If the parties mutually agree to settle a claim, dispute or other matters in question between them by arbitration, the award rendered by the arbitrator(s) shall be final and judgment may be entered upon it in accordance with the applicable law and any court having jurisdiction thereof. Any and all awards shall be in writing and shall give the arbitrator's supporting reasons for the award. It is expressly understood and agreed that any agreement to submit a particular claim, dispute or matter to arbitration shall apply only to that claim, dispute

or matter and shall not be binding upon any other claims, disputes or matters which may arise between the parties.

Section 16.3 - Covenant to Continue Work

During resolution of any dispute under this Article, the Township and the Authority's governing boards shall each continue to perform their respective obligations under this Agreement without interruption or delay.

ARTICLE XVII - MISCELLANEOUS

Section 17.1 - Assignment

This Agreement is binding on the parties here to, and their permitted successors and assigns. The parties agree not to transfer or assign their respective interests in this Agreement without the written consent of the other parties hereto. Any unauthorized assignment shall be void.

Section 17.2 - Choice of Law and Forum

This Agreement shall be subject to and governed by the laws of the State of Michigan. The parties agree that the venue for the bringing of any legal or equitable action under this Agreement shall be established in accordance with the statutes of the State of Michigan and/or Michigan Court Rules. In the event that any action is brought under this Agreement in Federal Court, the venue for such action shall be the Federal Judicial District of Michigan, Eastern District, Southern Division.

Section 17.3 - Entire Agreement

This Agreement and the attached exhibits represent the entire agreement between the parties with respect to the subject matter hereof and supersedes all prior representations, negotiations or agreements whether written or oral.

Section 17.4 - Notices

All notices shall be in writing and shall be deemed given when mailed by first class mail or delivered in person. Notices to be given to Genoa Charter Township will be addressed to:

Genoa Charter Township
2911 Dorr Road
Brighton, MI 48116
Attention: Supervisor

Notices to be Genoa-Oceola will be addressed to:

Genoa-Oceola Sewer and Water Authority
2911 Dorr Road

Brighton, MI 48116
Attention: Secretary

Section 17.5 - Severability

Should any part of this Agreement for any reason be declared invalid or void, such declaration will not affect the remaining parts of this Agreement, which will remain in full force and effect as if the Agreement had been executed with the invalid portion eliminated.

Section 17.6 - Amendment or Modification of Agreement

No change in or modification, termination or discharge of this Agreement, in any form whatsoever, shall be valid or enforceable unless it is in writing and signed by the party to be charged therewith or its duly Authorized Representative.

Section 17.7 -Third Party Beneficiaries

Except as expressly provided herein, this Agreement does not create, and is not intended to create, by implication or otherwise, any direct or indirect obligation, duty, promise, benefit, or any other right in favor of any person other than the parties.

Section 17.8 - Counterparts

This Agreement may be executed in several counterparts each of which shall be deemed one and the same agreement. It shall be binding upon and inure the benefit of the parties to it and their respective successors and assigns.

Section 17.9 - Required Taxes, Insurances, Fees and Documents

Both parties agree that they will operate legally and pay all federal, state, local, social security, Medicare and unemployment taxes, liability and workers' compensation insurance premiums, and license or permit fees necessary to conduct business.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed and delivered, by their respective duly authorized officers, all as the day and year first above written.

GENOA-OCEOLA SEWER AND WATER
AUTHORITY

Date: _____

By: Lance Schuhmacher
Secretary

GENOA CHARTER TOWNSHIP

Date: _____

By: Gary McCririe
Its: Supervisor

DRAFT

EXHIBITS

| ~~Exhibit 1 – Capacity Summary in Existing G-O WWTP by Township per August 2012 HRC Study~~

| Exhibit ~~2~~1 – Map of Route from Oak Pointe to G-O WWTP, with OP Collection System Boundary Defined

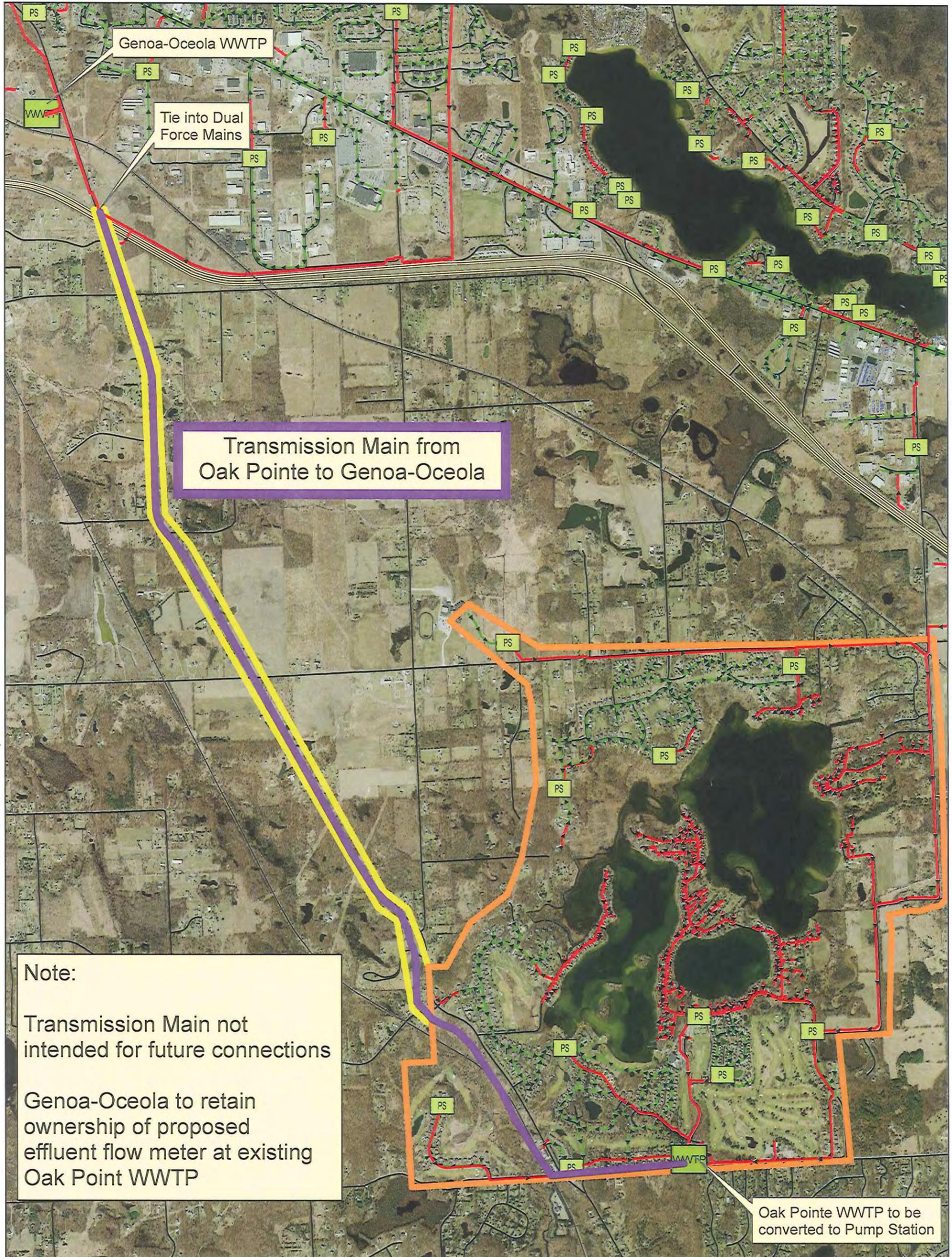
| Exhibit ~~3~~2 – Genoa Oceola Sewer Use Ordinance, February 12, 1992 as Amended

| Exhibit ~~4~~3 – Wholesale Rate Methodology

DRAFT

EXHIBIT 1

Map of Connection of Oak Pointe WWTP with the Genoa-Oceola WWTP



Legend

- Proposed Route
- Force Main
- Gravity
- WWTP
- PS
- Existing OP Collection System Boundary
- OP Collection System Expanded Boundary

Consolidation of Oak Point WWTP with the Genoa-Oceola WWTP

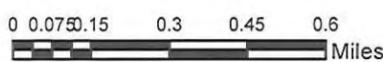


EXHIBIT 2

Genoa-Oceola Sewer and Water Authority Ordinance

GENOA-OCEOLA SEWER AND WATER AUTHORITY

SEWER USE ORDINANCE

Adopted February 13, 1991

TABLE OF CONTENTS

		<u>Page</u>
SECTION 1.	PURPOSE AND POLICY	1
SECTION 2	DEFINITIONS	2
SECTION 3	ABBREVIATIONS	7
SECTION 4	UNSANITARY DEPOSITS, DISCHARGE TO NATURAL OUTLETS PROHIBITED	8
SECTION 5	PROCESS WASTEWATER	8
SECTION 6	PRIVATE SEWAGE DISPOSAL, DUTY TO USE PUBLIC SEWER	13
SECTION 7	BUILDING SEWER AND CONNECTIONS	13
SECTION 8	USE OF PUBLIC SEWERS	14
SECTION 9	DISPOSAL OF WASTE AND INDIVIDUAL SEWAGE SYSTEMS AT POTW TREATMENT PLANT	20
SECTION 10	FEES FOR IMPLEMENTATION OF PRETREATMENT PROGRAM	20
SECTION 11	PROTECTION FROM DAMAGE	21
SECTION 12	POWER AND AUTHORITY OF INSPECTORS	21
SECTION 13	ENFORCEMENT	21
SECTION 14	PENALTIES	23
SECTION 15	RECORDS RETENTION	24
SECTION 16	RECORDS	24
SECTION 17.	VARIANCES	24
SECTION 18	RATES AND CHARGES FOR TOWNSHIP SERVICES	25
SECTION 19	VALIDITY, SEVERABILITY, CONFLICT	25
SECTION 20	EFFECTIVE DATE	28

ORDINANCE 1-89

ORDINANCE FOR SEWERS AND SEWAGE DISPOSAL

THE GENOA-OCEOLA SEWER AND WATER AUTHORITY ORDAINS:

Sec. 1. Purpose and Policy

An ordinance regulating private and public sewers, sewer connections, industrial waste pretreatment facilities and discharge of industrial waste into the following Genoa-Oceola Sewer and Water Authority publicly operated treatment works: Genoa-Oceola Sanitary Sewer Drainage District No. 1; and providing for pollutant limitations, data collection, monitoring and sampling, and providing for penalties of the violation thereof. The Ordinance is enacted pursuant to Act 246 of the Public Acts of 1945 as amended by Act 375 of the Public Acts of 1974.

The objectives of this Ordinance are:

1. To prevent the introduction of pollutants into the wastewater system which will interfere with the normal operation of the system or contaminate the resulting municipal sludge;
2. To prevent the introduction of pollutants into the wastewater system which do not receive adequate treatment in the POTW, and which will pass through the system into receiving waters or the atmosphere, or otherwise be incompatible with the system;
3. To improve the opportunity to recycle and reclaim wastewater and sludge from the system;
4. To provide sanitary sewer services to specific areas of the Genoa-Oceola Sanitary Sewer Drainage District No. 1 and the regulation and control of the sewer treatment facilities and appurtenances.

Sec. 2. Definitions

Unless the context specifically indicates otherwise, the following terms and phrases, as used in this ordinance, shall have the meanings hereinafter designated.

- Act or "the Act". The Federal Water Pollution Control Act, also known as the Clean Water Act, as amended, 33 U.S.C. 1251, et. seq.
- Applicable County Health Department shall mean the Livingston County Health Department.
- Authority. The Genoa-Oceola Sewer and Water Authority.
- Authorized Representative of Industrial User. An authorized representative of an Industrial User may be: (a) a principal executive officer of at least the level of vice-president, if the Industrial User is a corporation; (b) a general partner or proprietor if the industrial user is a partnership or proprietorship, respectively; or (c) a duly authorized representative of the individual designated above if such representative is

responsible for the overall operation of the facilities from which the indirect discharge originates.

- Biochemical Oxygen Demand (BOD). The quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure, five (5) days at 20^o centigrade expressed in terms of weight and concentration (milligrams per liter).
- Building Drain shall mean that part of the lowest horizontal piping of a drainage system which receives discharge from drainage pipes inside the walls of the building and conveys it to the building sewer, beginning five (5) feet outside the inner face of the building wall.
- Building Sewer shall mean the extension from the building drain to the public sewer or other place of disposal.
- Categorical Standards, National Categorical Pretreatment Standards or Pretreatment Standard.
- Chemical Oxygen Demand (COD). A measure of the oxygen-consuming capacity of inorganic and organic matter present in water or wastewater. It is expressed as the amount of oxygen consumed from a chemical oxidant in a specified test. It does not differentiate between stable and unstable organic matter and thus does not necessarily correlate with biochemical oxygen demand. Also known as OC and DOC, oxygen consumed and dichromate oxygen consumed, respectively.
- Combined Sewer shall mean a sewer receiving both surface runoff and sewage.
- Commercial Waste shall mean a liquid or water-carried waste material from a commercial business engaged in buying, selling, exchanging goods or engaging in said goods or services.
- Compatible Pollutant. A substance amenable to treatment in the wastewater treatment plant such as biochemical oxygen demand, suspended solids, pH and fecal coliform bacteria, plus additional pollutants identified in the NPDES Permit if the publicly owned treatment works was designed to treat such pollutants, and in fact does remove such pollutant to a substantial degree. Examples of such additional pollutants may include: chemical oxygen demand, total organic carbon, phosphorus and phosphorus compounds, nitrogen compounds, fats, oils and greases of animal or vegetable origin.
- Composite Sample. A series of samples taken over a specific time period whose volume is proportional to the flow in the waste stream, which are combined into one sample.
- Cooling Water. The water discharged from any use such as air conditioning, cooling or refrigeration, or to which the only pollutant added is heat.
- Debt Service Charge means charges levied to customers of the wastewater system which are used to pay principal, interest and administrative costs of retiring the debt incurred for construction of the wastewater system. The debt service charge shall be in addition to the user charge specified below.
- Direct Discharge. The discharge of treated or untreated wastewater directly to the waters of the State.

- Director shall mean the Director of Public Works, or his authorized representative. The Director is the person designated by the Authority to supervise the operation of the publicly owned treatment works who is charged with duties and responsibilities under this Ordinance.
- Discharge Permit. Shall mean the groundwater discharge permit or the NDPEs discharge permit, whichever is applicable.
- Environmental Protection Agency, or EPA. The U.S. Environmental Protection Agency, Administrator or other duly authorized official.
- Garbage shall mean solid wastes from the preparation, cooking and dispensing of food and from the handling, storage and sale of produce.
- Genoa-Oceola Sanitary Sewer Drainage District No. 1. Shall mean the sewer service area described in Exhibit 1 of this Ordinance.
- Genoa-Oceola Sewer and Water Authority. An Authority, created by the incorporating municipalities, whose purpose is to acquire, construct, purchase, finance, own, improve, enlarge, extend, operate, maintain, administer and manage sewage disposal systems and water supply systems in the Townships of Genoa and Oceola in accordance with the authorization of Act 233, Public Acts of Michigan, 1955, as amended.
- Grab Sample. A sample which is taken from a waste stream on a one-time basis with no regard to the flow in the waste stream and without consideration of time.
- Groundwater Discharge Permit. Shall mean a permit issued by the Michigan Water Resources commission for discharge of wastewater to the groundwater of the State.
- Holding Tank Waste. Any waste from holding tanks such as vessels, chemical toilets, campers, trailers, septic tanks, and vacuum-pump tank trucks.
- Incompatible Pollutants. Any pollutant which is not a compatible pollutant.
- Indirect Discharge. The discharge or the introduction of nondomestic pollutants into the POTW (including holding tank waste discharged into the system).
- Industrial Wastes. The wastewater discharges from industrial, manufacturing, trade or business processes, or wastewater discharge from any structure with these characteristics, as distinct from their employee's domestic wastes or wastes from sanitary conveniences.
- Interference. The inhibition or disruption of the POTW treatment processes or operations which contributes to a violation of any requirement of the Authority's NPDES Permit or reduces the efficiency of the POTW. The term also includes prevention of sewage sludge use or disposal by the POTW.
- Laboratory Determination. The measurements, tests and analyses of the characteristics of waters and wastes in accordance with the methods contained in the latest edition at the time of any such measurement, test, or analysis of "Standard Methods for Examination of Water and Waste Water," a joint publication of the American Public Health Association, the American Waterworks Association and the Water Pollution Control Federation or in accordance with any other method prescribed by the rules and regulations promulgated pursuant to this division.

- National Categorical Pretreatment Standard or Pretreatment Standard. Any Federal regulation containing pollutant discharge limits promulgated by the EPA which applies to a specific category of Industrial Users.
- National Pollution Discharge Elimination System or NPDES Permit. A permit issued pursuant to Section 402 of the Act (33 U.S.C. 1342).
- National Prohibitive Discharge Standard or Prohibitive Discharge Standard. Any regulation developed under the authority of 307(b) of the Act and 40 CFR, Section 403.5.
- Natural Outlet shall mean any outlet into a watercourse, pond, ditch, lake or other body of surface or groundwater.
- New Source. Any source, the construction of which is commenced after the adoption of this ordinance.
- Normal Domestic Sewage (NDS). Wastewater which, when analyzed, shows a daily average concentration of not more than 200 mg/l of BOD; nor than 200 mg/l of suspended solids; nor more than 12 mg/l of phosphorus; nor more than 40 mg/l of total Kjeldahl nitrogen.
- Operation and Maintenance means all work, materials, equipment, utilities and other effort required to operate and maintain the wastewater transportation and treatment system consistent with insuring adequate treatment of wastewater to produce an effluent in compliance with the NPDES Permit and other applicable State and Federal regulations, and includes the cost of replacement.
- Owner or owners of record of the freehold of the premises or lesser estate therein, a mortgagee or vendee in possession, assignee of rents, receiver, executor, trustee, lessee, or other person, firm or corporation in control of a building.
- Person. Any individual, partnership, copartnership, firm, company, corporation, association, joint stock company, trust, estate, governmental entity or any other legal entity, or its legal representatives, agents or assigns. The masculine gender shall include the feminine, the singular shall include the plural where indicated by the context.
- pH. The logarithm (base 10) of the reciprocal of the concentration of hydrogen ions expressed in grams per liter of solution.
- Pollutant. Any of various chemicals, substances, and refuse materials such as solid waste, sewage, garbage, sewage sludge, chemical wastes, biological materials, radioactive materials, heat, and industrial, municipal and agricultural wastes which impair the purity of the water and soil.
- Pollution. The man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water.
- POTW Treatment Plant. That portion of the POTW designed to provide treatment to wastewater.
- Pretreatment or Treatment. The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutants, or the alteration of the

nature of pollutant properties in wastewater to a less harmful state prior to or in lieu of discharging or otherwise introducing such pollutants into a POTW. The reduction or alteration can be obtained by physical, chemical or biological processes, or process changes other means, except as prohibited by 40 CFR Section 403.6(d).

- Pretreatment Requirements. Any substantive or procedural requirement for treating of a waste prior to inclusion in the POTW.

- Properly Shredded Garbage shall mean the wastes from the preparation, cooking and dispensing of food that have been shredded to such degree that all particles will be carried freely under the flow conditions normally prevailing in public sewers, with no particle greater than one-half (1/2) inch in any dimension.

- Publicly Owned Treatment Works (POTW). A treatment works as defined by Section 212 of the Act (33 U.S.C. 1292), which is owned in this instance by the Authority. This definition includes any sewers that convey wastewater to the POTW treatment plant. For the purposes of this ordinance, "POTW" shall also include any sewers that convey wastewaters to the POTW from persons outside the Authority who are, by contract or agreement with the Authority, users of the Authority's POTW.

- Public Sewer shall mean a sewer in which all owners of abutting properties have equal rights, and is controlled by public authority.

- Replacement means the replacement in whole or in part of any equipment, appurtenances and accessories in the wastewater transportation or treatment systems to insure continuous treatment of wastewater in accordance with the NPDES Permit and other applicable State and Federal regulations.

- Sanitary Sewage shall mean a liquid or water-carried waste discharged from the sanitary conveniences of dwellings including but not limited to residential homes, apartment houses and hotels, office buildings, commercial businesses or industrial plants.

- Sanitary Sewer shall mean a sewer which carries sewage and to which storm, surface and groundwaters are not intentionally admitted.

- Sewage shall mean a combination of the water-carried wastes from residences, business buildings, institutions and industrial establishments, together with such groundwaters as may be present.

- Sewage Treatment Plant or Wastewater Treatment Plant shall mean any arrangement of devices and structures used for treating sewage.

(a) Sewage Works shall mean all facilities for collecting, pumping, treating and disposing of sewage.

- Sewer Service Charge means the sum of the applicable user charge, surcharges and debt service charges.

- Shall is mandatory; May is permissive.

- Significant Industrial User. Any Industrial User of the Authority's wastewater disposal system who (a) has a discharge flow of 25,000 gallons or more per average work day; or (b) has a flow greater than 5% of the flow in the Authority's wastewater treatment

system; or (c) has in his wastes toxic pollutants as defined pursuant to Section 307 of the Act State Statutes and rules; or (d) is found by the Authority, Michigan Department of Natural Resources, or the U.S. Environmental Protection Agency (EPA) to have significant impact, either singly or in combination with other contributing industries, on the wastewater treatment system, the quality of sludge, the system's effluent quality, or air emissions generated by the system.

- Slug Load. Any substance released in a discharge at a rate and/or concentration which causes interference to a POTW.
- Standard Industrial Classification (SIC). A classification pursuant to the Standard Industrial Classification Manual issued by the Executive Office of the President, Office of Management and Budget, 1972.
- State. State of Michigan.
- Storm Sewer or Storm Drain shall mean a sewer which carries storm and surface waters and drainage, but excludes sewage and polluted industrial wastes.
- Storm Water. Any flow occurring during or following any form of natural precipitation and resulting therefrom.
- Surcharge. As part of the service charge, any customer discharging wastewater having strength in excess of limits set forth by the Authority shall be required to pay an additional charge to cover the cost of treatment of such excess strength wastewater.
- Suspended Solids. The total suspended matter that floats on the surface of, or is suspended in, water, wastewater or other liquids, and which is removable by laboratory filtering.
- Township. Oceola Township, a general law township located in Livingston County, State of Michigan.
- Toxic Pollutant. Any pollutant or combination of pollutants which is or can potentially be harmful to public health or environment including those listed as toxic in regulations promulgated by the Administrator of the Environmental Protection Agency under the provisions of CWA 307(a) or other Acts.
- Uncontaminated Industrial Waste shall mean wastewater which has not come into contact with any substance used in or incidental to industrial processing operations and to which no chemical or other substance has been added.
- User. Any person who contributes, causes or permits the contribution of wastewater into the POTW.
- User Charge means a charge levied on users of a treatment works for the cost of operation and maintenance of sewerage works pursuant to Section 204(b) of PL 92-500 and includes the cost of replacement.
- User Class means the kind of user connected to sanitary sewers including, but not limited to, residential, industrial, commercial, institutional and governmental.

Residential User shall mean a user of the treatment works whose premises or buildings are used primarily as a domicile for one or more persons, including

dwelling units such as detached, semi-detached and row houses, mobile homes, apartments, or permanent multi-family dwellings (transit lodging is not included, it is considered commercial).

Industrial User shall mean any user who discharges "industrial wastes" as defined in this ordinance.

Commercial User shall mean an establishment listed in the Office of the Management and Budget's "Standard Industrial Classification Manual" (SICM), involved in a commercial enterprise, business or service which, based on a determination by the Authority, discharges primarily segregated domestic wastes or wastes from sanitary conveniences and which is not a residential user or an industrial user.

Institutional User shall mean any establishment listed in the SICM involved in a social, charitable, religious, or educational function which, based on a determination by the Authority, discharges primarily segregated domestic wastes or wastes from sanitary conveniences.

Governmental User shall mean any Federal, State or local government user of the wastewater treatment works.

Wastewater. The liquid and water-carried industrial or domestic wastes from dwellings, commercial buildings, industrial facilities and institutions, together with any groundwater, surface water, and storm water that may be present, whether treated or untreated, which is contributed into or permitted to enter the POTW.

Sec. 3. Abbreviations

The following abbreviations shall have the designated meanings:

1. BOD - Biochemical Oxygen Demand
2. CFR - Code of Federal Regulations
3. COD - Chemical Oxygen Demand
4. EPA - Environmental Protection Agency
5. l - liter
6. mg - milligrams
7. mg/l - milligrams per liter
8. NDS- Normal Domestic Sewage
9. NPDES - National Pollutant Discharge Elimination System
10. P-Phosphorus
11. POTW - Publicly Owned Treatment Works
12. SIC - Standard Industrial Classification
13. SICM - Standard Industrial Classification Manual
14. SS - Suspended Solids

15. SWDA - Solid Waste Disposal Act, 42 U.S.C. 6901, et. seq.
16. O&M - Operation and Maintenance
17. CWA - Clean Water Act

Sec. 4. Unsanitary Deposits, Discharge to Natural Outlets Prohibited

1. It shall be unlawful, when sewage and/or treatment facilities are available, to discharge to any natural outlet within the Authority, or in any area under the jurisdiction of said Authority, any sanitary sewage, industrial wastes, or other polluted waters, unless specifically permitted by the Livingston County Health Department.
2. It shall be unlawful when sewage and/or treatment facilities are available to construct or maintain any privy, privy vault, septic tank, cesspool or other facility intended or used for the disposal of sewage, unless specifically permitted by the Livingston County Health Department, or as hereinafter provided.
3. The owner of all houses, buildings or properties used for human occupancy, employment, recreation or other purposes, situated within the Authority and abutting on any street, alley, or right-of-way in which there is now located or may in the future be located a public sanitary or combined sewer of the Authority, is hereby required at his expense to install suitable sewage facilities therein, and to connect such facilities directly with the proper public sewer in accordance with the provisions of this article, within ninety (90) days after date of official notice to do so.

Sec. 5. Process Wastewater

1. Wastewater Contribution Information

Any industry or structure discharging process flow to the sanitary sewer, storm sewer or receiving stream shall file the material listed below with the Director. Any industry which does not normally discharge to the sanitary sewer, storm sewer or receiving stream, but has the potential to do so from accidental spills or similar circumstances, shall also file the material listed below.

The Director may require each person who applies for or receives sewer service, or through the nature of the enterprise creates a potential environmental problem, to file the material listed below on a disclosure form prescribed by the Authority:

- a. Name, address and location (if different from the address)
- b. SIC number according to the Standard Industrial Classification Manual, Bureau of the Budget, 1972, as amended.
- c. Wastewater constituents and characteristics including but not limited to those mentioned in Section 2 of this Ordinance as determined by a reliable analytical laboratory; sampling and analysis shall be performed in accordance with the procedures and methods detailed in:
 - "Standard Methods for the Examination of Water and Wastewater," American Public Health Association, current edition.

- "Manual of Methods for Chemical Analysis of Water and Wastes," United States Environmental Protection Agency, current edition.
 - "Annual Book of Standards, Part 131, Water, Atmospheric Analysis," American Society of Testing Materials, current edition.
- d. Time and duration of contribution
 - e. Average daily wastewater flow rates, including daily, monthly and seasonal variations, if any
 - f. Industries identified as significant industries or subject to the National Categorical Pretreatment Standards or those required by the Authority must submit site plans, floor plans, mechanical and plumbing plans and details to show all sewers, sewer connections, and appurtenances by the size, location and elevation.
 - g. Description of activities, facilities and plant processes on the premises including all materials which are or could be discharged
 - h. Where known, the nature and concentration of any pollutants in the discharge which are limited by any Township, State, or Federal Pretreatment Standards, and a statement regarding whether or not the pretreatment standards are being met on a consistent basis and if not, whether additional Operation and Maintenance and/or additional pretreatment is required by the Industrial User to meet applicable Pretreatment Standards
 - i. If additional pretreatment and/or O&M will be required to meet the Pretreatment Standards; the shortest schedule by which the User will provide such additional pretreatment. The completion date in this schedule shall not be later than the compliance date established for the applicable Pretreatment Standard. The following conditions shall apply to this schedule:
 - (1) The schedule shall contain increments of progress in the form of dates for the commencement and completion of major events leading to the construction and operation of additional pretreatment required for the User to meet the applicable Pretreatment Standards.
 - (2) No increment referred to in paragraph (1) shall exceed 9 months.
 - (3) Not later than fourteen (14) days following each date in the schedule and the final date for compliance, the User shall submit a progress report to the Director including, as a minimum, whether or not it complied with the increment of progress to be met on such date and, if not, the date on which it expects to comply with this increment of progress, the reason for delay, and the steps being taken by the User to return the construction to the schedule established. In no event shall more than 9 months elapse between such progress reports to the Director.
 - j. Each product produced by type, amount, process or processes and rate of production
 - k. Type and amount of raw materials processed, average and maximum per day

- l. Number and type of employees, hours of operation of plant and proposed or actual hours of operation of pretreatment system
 - m. Any other information as may be deemed by the Authority to be necessary to evaluate the impact of the discharge on the POTW.
 - n. The disclosure form shall be signed by a principal executive officer of the User and a qualified engineer.
 - o. The Authority will evaluate the complete disclosure form and data furnished and may require additional information. Within 90 days after full evaluation and acceptance of the data furnished, the Authority shall notify the User of the acceptance thereof.
2. Discharge Modifications
Within nine (9) months of the promulgation or revision of a National Categorical Pretreatment Standard, all affected users must submit to the Authority the information required by paragraphs 1.h and 1.i of Section 5.
3. Discharge Conditions
Wastewater discharges shall be expressly subject to all provisions of this Ordinance and all other applicable regulations, user charges and fees established by the Authority. The Authority may:
- a. Set unit charges or a schedule of user charges and fees for the wastewater to be discharged to the POTW;
 - b. Limit the average and maximum wastewater constituents and characteristics;
 - c. Limit the average and maximum rate and time of discharge or make requirements for flow regulations and equalization;
 - d. Require the installation and maintenance of inspection and sampling facilities;
 - e. Establish specifications for monitoring programs which may include sampling locations, frequency of sampling, number, types and standards for tests and reporting schedule;
 - f. Establish compliance schedules;
 - g. Require submission of technical reports or discharge reports;
 - h. Require the maintaining, retaining and furnishing of plant records relating to wastewater discharge as specified by the Authority, and affording Authority access thereto, and copying thereof;
 - i. Require notification of the Authority for any new introduction of wastewater constituents or any substantial change in the volume or character of the wastewater constituents being introduced into the wastewater treatment system;
 - j. Require notification of slug discharges;
 - k. Require other conditions as deemed appropriate by the Authority to ensure compliance with this Ordinance.

1. Require waste treatment facilities, process facilities, waste streams, or other potential waste problems to be placed under the specific supervision and control of persons who have been certified by an appropriate State agency as properly qualified to supervise such facilities.
- m. Require records and file reports to be maintained on the final disposal of specific liquids, solids, sludges, oils, radioactive materials, solvents, or other wastes.

4. Compliance Date Report

Within 90 days following the date for final compliance with applicable Pretreatment Standards or, in the case of a New Source, following commencement of the introduction of wastewater into the POTW, any User subject to Pretreatment Standards and Requirements shall submit to the Director a report indicating the nature and concentration of all pollutants in the discharge from the regulated process which are limited by Pretreatment Standards and Requirements and the average and maximum daily flow for these process units in the User facility which are limited by such Pretreatment Standards or Requirements. The report shall state whether the applicable Pretreatment Standards or Requirements are being met on a consistent basis and, if not, what additional O&M and/or pretreatment is necessary to bring the User into compliance with the applicable Pretreatment Standards or Requirements. This statement will be signed by an authorized representative of the Industrial User, and certified to by a qualified representative.

5. Periodic Compliance Reports

- a. Any User or New Source discharging into the POTW, shall submit to the Director during the months of June and December, unless required more frequently in Pretreatment Standard or by the Director, a report indicating the nature and concentration of pollutants in the effluent which are limited by such Pretreatment Standards or this Ordinance. In addition, this report shall include a record of all daily flows which during the reporting period exceeded the average daily flow reported in paragraph 3.c. of this section. At the discretion of the Director and in consideration of such factors as local high or low flow rates, holidays, budget cycles, etc., the Director may agree to alter the months during which the above reports are to be submitted.
- b. The Director may also impose mass limitations on Users which are using dilution to meet applicable Pretreatment Standards or Requirements, or in other cases in which the imposition of mass limitations is appropriate. In such cases, the report required by subparagraph a. of this paragraph shall also indicate the mass of pollutants regulated by Pretreatment Standards in the effluent of the User.

6. Monitoring Facilities

The Authority may require to be provided and operated at the User's own expense, monitoring facilities to allow inspection, sampling, and flow measurement of the building sewer and/or internal drainage systems. The monitoring facility should normally be situated on the User's premises, but the Authority may, when such a location would be impractical or cause undue hardship on the User, allow the facility to be constructed in the public street or sidewalk area and located so that it will not be obstructed by landscaping or parked vehicles. There shall be ample room in or near such sampling manhole or facility to allow accurate sampling and preparation of samples for analysis. The facility, sampling, and measuring equipment shall be maintained at all times in a safe and proper operating condition at the expense of the User. Whether constructed on public or private property, the sampling and monitoring facilities shall

be provided in accordance with plans and specifications submitted to and approved by the Authority and all applicable local construction standards and specifications. Construction shall be completed within 90 days following written notification by the Authority.

7. **Inspection and Sampling**

The Authority shall inspect the facilities of any User to ascertain whether the purpose of this Ordinance is being met and all requirements are being complied with. Persons or occupants of premises where wastewater is created or discharged shall allow the Authority or its representative ready access at all reasonable times to all parts of the premises for the purposes of inspection, sampling, records examination, records copying or in the performance of any of their duties. The Authority, Michigan Department of Natural Resources and EPA shall have the right to set up on the User's property such devices as are necessary to conduct sampling inspection, compliance monitoring and/or metering operations. Where a User has security measures in force which would require proper identification and clearance before entry into their premises, the User shall make necessary arrangements with their security guards so that upon presentation of suitable identification, personnel from the Authority, Michigan Department of Natural Resources and EPA will be permitted to enter, without delay, for the purposes of performing their specific responsibilities.

8. **Pretreatment**

Industrial Users shall provide necessary wastewater treatment as required to comply with this Ordinance and shall achieve compliance with all National Categorical Pretreatment Standards within the time limitations as specified by the Federal Pretreatment Regulations and as required by the Authority. Any facilities required to pretreat wastewater to a level acceptable to the Authority shall be provided, operated, and maintained at the User's expense. Detailed plans showing the pretreatment facilities and operating procedures shall be submitted to the Authority for review, and shall be approved by the Authority before construction of the facility. The review of such plans and operating procedures will in no way relieve the User from the responsibility of modifying the facility as necessary to produce an effluent acceptable to the Authority under the provisions of this Ordinance. Any subsequent changes in the pretreatment facilities or method of operation shall be reported to and be acceptable to the Authority prior to the User's initiation of the changes.

The Authority shall annually publish in the major local newspaper a list of the Users which were not in compliance with any Pretreatment Requirements or Standards at least once during the twelve (12) previous months. The notification shall also summarize any enforcement actions taken against the User(s) during the same twelve (12) months.

All records relating to compliance with Pretreatment Standards shall be made available to officials of the EPA or Michigan Department of Natural Resources upon request.

9. **Confidential Information**

Information and data on a User obtained from reports, questionnaires, permit applications, permits and monitoring programs and from inspections shall be available to the public or other governmental agency without restriction unless the User specifically requests and is able to demonstrate to the satisfaction of the Authority that the release of such information would divulge information, processes or methods of production entitled to protection as trade secrets of the User.

When requested by the person furnishing a report, the portion of a report which might disclose trade secrets or secret processes shall not be made available for inspection by the public but shall be made available upon written request to governmental agencies for uses related to this Ordinance, the National Pollutant Discharge Elimination System (NPDES) Permit, or the Pretreatment Programs; provided, however, that such portions of a report shall be available for use by the State or any State agency in judicial review or enforcement proceedings involving the person furnishing the report. Wastewater constituents and characteristics will not be recognized as confidential information.

Information accepted by the Authority as confidential shall not be transmitted to any governmental agency or to the general public by the Authority until and unless a ten-day notification is given to the User.

Sec. 6. Private Sewage Disposal, Duty to Use Public Sewer

1. Where a public sewer is not available under the provisions of Section 4, the building sewer shall be connected to an approved private sewage disposal system to be located, constructed and inspected according to the rules and regulations of the Livingston County Health Department.
2. At such time as a public sewer becomes available to a property served by a private sewage disposal system as provided in Section 4.4, a direct connection shall be made to the public sewer in compliance with this article, and any septic tanks, cesspools and similar private sewage disposal facilities shall be abandoned for sanitary use and filled in accordance with Livingston County Health Department rules and regulations.
3. The owner shall operate and maintain the private sewage disposal facilities in a sanitary manner at all times at no expense to the Authority.
4. No statement contained in this section shall be construed to interfere with any additional requirements that may be imposed by any other agency having legal jurisdiction.

Section 7. Building Sewer and Connections

1. No person shall uncover, make any connections with or opening into, use, alter or disturb any public sewer or appurtenance thereof, without first obtaining a written permit from the director. No building sewer shall be covered until after it has been inspected and approved by the Director.
2. All cost and expense incident to the installation, connection and maintenance of the building sewer to the public sewer connection shall be borne by the Owner. All users (except single family residential users) shall install, at their cost, an Authority-approved water meter.
3. A separate and independent building sewer shall be provided for every building; except where one building stands at the rear of another or an interior (lot) and no private sewer is available or can be constructed to the rear building through an adjoining alley, yard or driveway, the building sewer from the front building may be extended to the rear building.
4. Old building sewers may be used in connection with new buildings only when they are found, on examination and test by the director, to meet all requirements of this article.

5. The building sewer shall be constructed of Schedule 40 PVC or cast iron soil pipe, as approved by the Director. The Authority reserves the right to specify and require the encasement of any sewer pipe with concrete, or the installation of the sewer pipe in concrete cradle if foundation and construction are such as to warrant such protection in the opinion of the Director.
6. The size and slope of the building sewer shall be subject to approval by the Director, but in no event shall the diameter be less than four (4) inches. The slope of such four (4) inch pipe shall be not less than one-quarter (1/4) inch per foot, unless otherwise permitted. The slope of pipe, the diameter of which is six (6) inches or more, shall be not less than one-eighth (1/8) inch per foot unless otherwise permitted.
7. Whenever possible, the building sewer shall be brought to the building at an elevation below the basement floor. No building sewer shall be laid parallel to or within three (3) feet of any bearing wall, which might thereby be weakened. The depth shall be sufficient to afford protection from frost. The building sewer shall be laid at uniform grade. The line shall be straight or laid with properly curved pipe and fittings. Changes in direction greater than forty-five (45) degrees shall be provided with cleanouts accessible for cleaning.
8. In all buildings in which any building drain is too low to permit gravity flow to the public sewer, sanitary sewage carried by such drain shall be lifted by artificial means approved by the Director, and discharged to the building sewer.
9. All joints and connections shall be made gastight and watertight. All joints shall be approved by the Director.
10. No sewer connection will be permitted unless there is capacity available in all downstream sewers, lift stations, force mains and the sewage treatment plant, including capacity for treatment of BOD and suspended solids.
11. All newly constructed building sewers shall have a properly sized cleanout at the head of said sewer that is accessible at all times. This cleanout shall allow access of sewer cleaning equipment of a size equivalent to the size of the building sewer.
12. All sewers shall be constructed in accordance with the latest edition of the "Ten State Standards."

Sec. 8. Use of the Public Sewers.

1. General Discharge Prohibitions

No User shall contribute or cause to be contributed, directly or indirectly, any pollutant or wastewater which will interfere with the operation or performance of the POTW. These general prohibitions apply to all such Users of a POTW whether or not the User is subject to the National Categorical Pretreatment Standards or any other national, State or local Pretreatment Standards or requirements. The Authority may refuse to accept any wastes which will cause the POTW to violate its NPDES discharge limits. A User may not contribute the following substances to any POTW:

- a. Any liquids, solids or gases which by reason of their nature and quantity are, or may be, sufficient either alone or by interaction with other substances to cause fire or explosion or be injurious in any other way to the POTW or to the operation

- of the POTW. Prohibited materials include, but are not limited to, gasoline, kerosene, naphtha, benzene, toluene, xylene, ethers, alcohols, ketones, aldehydes, peroxides, chlorates, perchlorates, bromates, carbides, hydrides and sulfides.
- b. Solid or viscous substances which may cause obstruction to the flow in a sewer or other interference with the operation of the wastewater treatment facilities such as, but not limited to: grease, garbage with particles greater than one-half inch (1/2") in any dimension, animal guts or tissues, paunch manure, bones, hair, hides or fleshings, entrails, whole blood, feathers, ashes, cinders, sand, spent lime, stone or marble dust, metal, glass, straw, shavings, grass clippings, rags, spent grains, spent hops, waste paper, wood, plastics, gas, tar, asphalt residues, residues from refining or processing of fuel or lubricating oil, mud, or glass grinding or polishing wastes.
 - c. Any wastewater having a pH less than 6.0 or greater than 9.5, or wastewater having any other corrosive property capable of causing damage or hazard to structures, equipment, or personnel of the POTW.
 - d. Any wastewater containing toxic pollutants in sufficient quantity, either singly or by interaction with other pollutants, to injure or interfere with any wastewater treatment process, constitute a hazard to humans or animals, create a toxic effect in the receiving waters of the POTW, or exceed the limitation set forth in a Categorical Pretreatment Standard. This prohibition of toxic pollutants will conform to Section 307(a) of the Act.
 - e. Any noxious or malodorous liquids, gases, or solids which either singly or by interaction with other wastes are sufficient to create a public nuisance or hazard to life or are sufficient to prevent entry into the sewers for maintenance and repair.
 - f. Any substance which may cause the POTW's effluent or any other product of the POTW such as residues, sludges, or scums, to be unsuitable for reclamation and reuse or to interfere with the reclamation process.
 - g. Any substance which will cause the POTW to violate its NPDES Permit or the receiving water quality standards.
 - h. Any wastewater with objectionable color not removed in the treatment process, such as, but not limited to, dye wastes and vegetable tanning solutions.
 - i. Any wastewater having a temperature which will inhibit biological activity in the POTW resulting in Interference, but in no case wastewater with a temperature at the introduction into the POTW which exceeds 40°C (104°F).
 - j. Any pollutants, including oxygen demanding pollutants (BOD, etc.) released at a flow rate and/or pollutant concentration which will cause Interference to the POTW.
 - k. Any wastewater containing any radioactive wastes or isotopes of such half-life or concentration as may exceed limits established by the Director in compliance with applicable State or Federal regulations.
 - l. Any wastewater which causes a hazard to human life or creates a public nuisance.

- m. Any unpolluted water including, but not limited to, storm water, groundwater, roof water, or noncontact cooling water.
 - n. Any waters or wastes containing suspended solids or any constituent of such character and quantity that unusual attention or expense is required to handle such materials at the sewage treatment plant.
 - o. Any waste from individual sewage disposal systems except at the POTW Treatment Plant as provided in Section 9 except that waste from any individual sewage disposal system may be disposed of directly into a sanitary sewer upon entering into an agreement with the Authority, which agreement shall specify the site of disposal, sewage disposal charge and such other conditions as may be required to satisfy the sanitation and health requirements of the Authority. For the purpose of this subsection, "individual sewage disposal system" is defined to include every means of disposing of industrial, commercial, household, domestic or other water-carried sanitary waste or sewage other than a public sanitary sewer.
 - p. Any sludge, precipitate or congealed substances resulting from an industrial or commercial process, or resulting from the pretreatment of wastewater or air pollutants.
 - q. Any water or wastes containing more than 80 mg/l sodium.
2. **National Categorical Pretreatment Standards**
Upon the promulgation of the National Categorical Pretreatment Standards for a particular subcategory, the Pretreatment Standard, if more stringent than limitations imposed under this Ordinance for sources in that subcategory, shall immediately supersede the limitations imposed under this Ordinance and shall be considered part of this Ordinance. The Director shall notify all affected Users of the applicable reporting requirements.
 3. **State Requirements**
State requirements and limitations on discharges shall apply in any case where they are more stringent than Federal requirements and limitations or those in this ordinance.
 4. **Authority's Right of Revision**
The Authority reserves the right to establish by ordinance more stringent limitations or requirements on discharges to the wastewater disposal system if deemed necessary to comply with the objectives presented in Section 1 of this Ordinance.
 5. **No user shall discharge or cause to be discharged any storm water, surface water, groundwater, water from footing drains, or roof water to any sanitary sewer or sewer connection. Any premise connected to a storm sewer shall comply with county, State and Federal requirements as well as those of the Authority.**

Downspouts and roof leaders shall be disconnected from sanitary sewers within six (6) months of the date of this Ordinance. If this is not done, the Authority shall perform this work and bill the user.

Storm water, groundwater and all other unpolluted drainage shall be discharged to such sewers as are specifically designed as combined sewers or storm sewers. Discharge of cooling water or unpolluted process water to a natural outlet shall be approved only by the Michigan Water Resources Commission.

7. Grease, oil and sand interceptors shall be provided when, in the opinion of the Director, they are necessary for the proper handling of liquid wastes containing grease in excessive amounts or any flammable wastes, sand and other harmful ingredients; except that such interceptors shall not be required for private living quarters or dwelling units. All interceptors shall be located as to be readily and easily accessible for cleaning and inspection. Grease and oil interceptors shall be constructed of impervious material capable of withstanding abrupt and extreme changes in temperature. They shall be of substantial construction, watertight and equipped with easily removable covers, which when bolted in place shall be gastight and watertight.
8. Where installed, all grease, oil and sand interceptors shall be maintained by the Owner, at his expense, in continuously efficient operation at all times.
9. The admission into the public sewers or any waters or wastes containing:
 - a. Five (5) day BOD greater than 350 parts per million by weight, or
 - b. Containing more than 350 parts per million by weight of suspended solids, or
 - c. Containing more than 12 parts per million by weight of phosphorus, or
 - d. Containing more than 40 parts per million by weight of total Kjeldahl nitrogen, or
 - e. Containing any quantity of substances having the characteristics described in Section 8.1, or
 - f. Having an average daily flow greater than two percent (2%) of the average daily sewage flow of the Authority, or having a rate of flow (gallons per day) greater than ten percent (10%) of the average daily Authority flow for a period of one hour or more, shall be subject to review and approval of the Director.

Where necessary in the opinion of the Authority, the Owner shall provide at his expense, such preliminary treatment as may be necessary to reduce the five (5) day BOD, suspended solids, phosphorus and total Kjeldahl nitrogen to the concentrations given in a., b., c. and d. above; or to reduce objectionable characteristics of constituents to within the maximum limits provided for in Section 8.1, or control the quantities and rates of discharge of such waters or wastes.

10. Where the strength of sewage from an industrial, commercial or institutional establishment exceeds (1) 350 parts per million of biochemical oxygen demand or (2) 350 parts per million by weight of suspended solids or (3) twelve (12) parts per million by weight of phosphorus or (4) forty (40) parts per million by weight of total Kjeldahl nitrogen and where such wastes are permitted to be discharged to the sewer system by the Director, an added charge, as noted below, will be made against such establishment according to the strength of such wastes. The strength of such wastes shall be determined by composite samples taken over a sufficient period of time to insure a representative sample. The cost of taking and making the first of these samples shall be borne by the Authority. The cost of any subsequent sampling and testing shall be borne by the industry or establishment, whether Owner or lessee. Tests shall be made by an independent laboratory or at the Authority wastewater treatment plant.

Added charges shall be determined by the Authority. These charges shall be based on the cost of operation, maintenance, and equipment replacement for the sewage works.

10. All measurements, tests and analyses of the characteristics of water to which reference is made in Subsections 1 and 8 of Section 8, shall be determined in accordance with the latest edition at the time of "Standard Methods for Examination of Water and Sewage," and shall be determined at the control manhole provided for in Subsection 6, Section 5, or upon suitable samples taken at said control manhole. In the event that no special manhole has been required, the control manhole shall be considered to be the nearest downstream manhole in the public sewer to the point at which the building sewer is connected.
11. To determine the sewage flow from any establishment, the Director may use one of the following methods:
 - a. The amount of water supplied to the premises by the Authority or a private water company as shown upon the water meter if the premises are metered, or
 - b. The number of gallons of sewage discharged into the sewer system as determined by measurements and samples taken at a manhole installed by the owner of the property served by the sewer system at his own expense in accordance with the terms and conditions of the permit issued by the Director pursuant to Section 7, or
 - c. A figure determined by the Director by any combination of the foregoing or by any other equitable method.
12. **Excessive Discharges**
No User shall ever increase the use of process water or, in any way, attempt to dilute a discharge as a partial or complete substitute for adequate treatment to achieve compliance with the limitations contained in the National Categorical Pretreatment Standards, or in any other pollutant-specific limitation developed by the Authority or State. Dilution may be an acceptable means of complying with some of the prohibitions set forth in Section 8.1, upon prior written approval of the Director.
13. **Accidental Discharge**
Where required a User shall provide protection from accidental discharge of prohibited materials or other substances regulated by this Ordinance. Facilities to prevent accidental discharge or prohibited materials shall be provided and maintained at the owner's or user's own cost and expense. Detailed plans showing facilities and operating procedures to provide this protection shall be submitted to the Authority for review, and shall be approved by the Authority, before construction of the facility. All required Users shall complete such a plan within 180 days after the adoption of this Ordinance. If required by the Authority a User who commences contribution to the POTW after the effective date of this ordinance shall not be permitted to introduce pollutants into the system until accidental discharge procedures have been approved by the Authority. Review and approval of such plans and operating procedures shall not relieve the industrial user from the responsibility to modify the User's facility as necessary to meet the requirements of this Ordinance. In the case of an accidental discharge, it is the responsibility of the User to immediately telephone and notify the POTW of the incident. The notification shall include location of discharge, type of waste, concentration and volume, and corrective actions.
 - a. **Written Notice.** Within five (5) days following an accidental discharge, the User shall submit to the Director a detailed written report describing the cause of the discharge and the measures to be taken by the User to prevent similar future occurrences. Such notification shall not relieve the User of any expense, loss,

damage, or other liability which may be incurred as a result of damage to the POTW, fish kills, flora and fauna, or any other damage to person or property; nor shall such notification relieve the user of any fines, civil penalties, or other liability which may be imposed by this article or other applicable law.

- b. Notice to Employees. A notice shall be permanently posted on the User's bulletin board or other prominent place advising employees of whom to call in the event of a dangerous discharge. Employers shall insure that all employees who may cause or suffer such a dangerous discharge to occur are advised of the emergency notification procedure.
14. No statement contained in this section shall be construed as preventing any special agreement or arrangement between the Authority and any person, firm or corporation whereby waste of unusual strength or character may be accepted by the Authority, subject to payment therefor by the person, firm or corporation, provided such waste will not damage the sanitary sewer or storm sewer or sewage treatment plant or the receiving waters.

Sec. 9 Disposal at Waste from Individual Sewage Systems at POTW Treatment Plant

Waste from individual sewage systems may be accepted with permission of the Director at the POTW Treatment Plant.

Rates for disposal at the POTW Treatment Plant shall be determined by the Superintendent at the time of acceptance.

Sec. 10. Fees for Implementation of Pretreatment Program

1. Purpose

It is the purpose of this chapter to provide for the recovery of costs from Users of the POTW for the implementation of the pretreatment program established herein. The applicable charges or fees shall be set forth in the Authority's Schedule of Charges and Fees.

2. Description of Charges and Fees

- a. Charges and fees shall be made to the Users of the POTW for reimbursement of costs of setting up and operating the Pretreatment Program,
- b. for monitoring, inspections and surveillance procedures,
- c. for reviewing accidental discharge procedures and construction,
- d. for filing appeals,
- e. for consistent removal by the Authority of pollutants otherwise subject to Federal Pretreatment Standards,
- f. and others as the Authority may deem necessary to carry out the requirements contained herein.

- g. Additional surcharges may be made by the Authority to compensate the Authority for the cost of treatment of pollutant loadings not normally treated at or in excess of those treated by the POTW.
- h. There shall be additional charges for laboratory testing of wastewater. The laboratory charge shall be for the cost thereof and will be determined for each Industrial User.

The charges and fees for the services provided by the system shall be levied upon any user which may have any sewer connections with the POTW and which discharges industrial waste to the POTW or any part thereof. Such charges shall be based upon the quantity and quality of industrial wastewater used thereon or therein.

Sec. 11. Protection from Damage

No unauthorized person shall enter or maliciously, willfully or negligently break, damage, destroy, uncover, deface or tamper with any structure, appurtenance or equipment which is a part of the municipal sewage works. No person shall tamper with, alter, break, damage, destroy, uncover, or deface a privately owned water meter or a sewage flowmeter installed as required by this Ordinance for the purpose of providing quantitative measurement of water flow and/or sewage flow.

Sec. 12. Power and Authority of Inspectors

The Director and other duly authorized employees of the Authority acting as his duly authorized agent, bearing proper credentials and identification, shall be permitted to enter upon such properties as may be necessary for the purposes of inspection, observation, measurement, sampling and testing in accordance with provisions of this article.

Sec. 13. Enforcement

1. Wastewater Discharges

It shall be unlawful to discharge to the waters of the State within Ocoola Township or in any area under the jurisdiction of said Authority, and/or to the POTW any wastewater except as authorized by the Director in accordance with the provisions of this Ordinance, except as provided by an NPDES or Groundwater Discharge Permit.

2. Harmful Contributions

The Authority may suspend the wastewater treatment service when such suspension is necessary, in the opinion of the Authority, in order to stop an actual or threatened discharge which presents or may present an imminent or substantial endangerment to the health or welfare of persons or the environment, causes interference to the POTW or causes the Authority to violate any condition of its Discharge Permit.

The Authority may seek to terminate the wastewater treatment services to any User which (a) fails to factually report the wastewater constituents and characteristics of its discharge; (b) fails to report significant changes in wastewater constituents or characteristics; (c) refuses reasonable access to the User's premises by representatives of the Authority for the purpose of inspection or monitoring; or (d) violates the conditions of this Ordinance, or any final judicial order entered with respect thereto.

Any person notified of a suspension of the wastewater treatment service shall immediately stop or eliminate the contribution. In the event of a failure of the person to comply voluntarily with the suspension order, the Authority shall take such steps as deemed necessary including immediate severance of the sewer connection, to prevent or minimize damage to the POTW system or endangerment to any individuals. The Authority shall reinstate the wastewater treatment service upon proof of the elimination of the noncomplying discharge. A detailed written statement submitted by the user describing the causes of the harmful contribution and the measures taken to prevent any future occurrence shall be submitted to the Authority within 15 days of the date of occurrence.

3. Notification of Violation

Whenever the Authority finds that any User has violated or is violating this Ordinance, or any prohibition, limitation of requirements contained herein, the Authority may serve upon such person a written notice stating the nature of the violation. Within thirty (30) days of the date of the notice, a plan for the satisfactory correction thereof shall be submitted to the Authority by the User.

4. Show Cause Hearing

- a. Any user subject to enforcement action under the provisions of this Ordinance may request a hearing before the Director within ten (10) days of receipt of notification of proposed enforcement action. A hearing is to be held by the Director concerning the violation, the reasons why the action is to be taken, the proposed enforcement action, and directing the User to show cause before the Director why the proposed enforcement action should not be taken.
- b. The Director may conduct the hearing and take the evidence, or may designate any officer or employee to:
 - 1) Issue in the name of the Director notices of hearing requesting the attendance and testimony of witnesses and the production of evidence relevant to any matter involved in such hearings;
 - 2) Take the evidence;
 - 3) Transmit a report of the evidence and hearing, including transcripts and other evidence, together with recommendations to the Director for action thereon.
- c. At any hearing held pursuant to this Ordinance, testimony taken must be under oath and recorded. The transcript, so recorded, will be made available to any member of the public or any party to the hearing upon payment of the usual charges thereof.
- d. After the Director has reviewed the evidence, he may issue an order to the User responsible for the discharge directing that, following a specified time period, the sewer service be discontinued unless adequate treatment facilities, devices or other related appurtenances shall have been installed on existing treatment facilities, and that said devices or other related appurtenances are properly operated. Further orders and directives as are necessary and appropriate may be issued.

- e. The Director shall also establish appropriate surcharges or fees to reimburse the Authority for the additional cost of operation and maintenance of the wastewater treatment works due to the violations of this Ordinance.
 - f. Any action by the Director may be appealed to the Authority Council.
 - g. Any user for any reason can use this same appeals procedure.
5. **Legal Action**
If any user discharges sewage, industrial wastes or other wastes into the Authority's wastewater disposal system, or violates any other provision of this Ordinance contrary to the provisions of this Ordinance, the Authority Attorney may commence an action for appropriate legal and/or equitable relief in the Court of this county.

Sec. 14. Penalties

- 1. Any person found to be violating any provision of this article except Section 11, shall be served by the Authority with written notice stating the nature of the violation and providing a reasonable time limit for the satisfactory correction thereof. The offender shall, within the period of time stated in such notice, permanently cease all violations.
- 2. Any person who shall continue any violation beyond the time limit provided for in Subsection 1, Section 14 shall, upon conviction thereof, be guilty of a misdemeanor, and shall be fined in an amount not exceeding five hundred dollars (\$500.00) or by imprisonment in the county jail for not more than ninety (90) days or both such fine and imprisonment in the discretion of the court, for each violation. Each day in which any such violation shall continue, shall be deemed a separate offense.
- 3. Any person violating Section 11 shall, upon conviction thereof, be guilty of a misdemeanor and in addition to making restitution as provided in Subsection 4, Section 14, shall be fined in an amount not exceeding five hundred dollars (\$500.00) or by imprisonment in the applicable county jail for not more than ninety (90) days or by both such fine and imprisonment at the discretion of the court.
- 4. Any person violating any of the provisions of this article shall become liable to the Authority for any expense, loss or damage caused the Authority by reason of such violation, including actual, reasonable attorney fees and all costs of litigation.
- 5. **Falsifying Information**
Any person who knowingly makes any false statements, representation or certification in any application, record, report, plan or other document filed or required to be maintained pursuant to this Ordinance, or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required under this Ordinance, shall, upon conviction, be punished by a fine of not more than five hundred dollars (\$500.00) or by imprisonment for not more than ninety (90) days, or by both.

Sec. 15. Records Retention

All Users subject to this Ordinance shall retain and preserve for no less than three (3) years, any records, books, documents, memoranda, reports, correspondence and any and all summaries thereto, relating to monitoring, sampling and chemical analyses made by or in behalf of a User in connection with its discharge. All records which pertain to matters which

are the subject of Administrative Adjustment or any other enforcement or litigation activities brought by the Authority pursuant hereto shall be retained and preserved by the User until all enforcement activities have concluded and all periods of limitation with respect to any and all appeals have expired.

Sec. 16 Records

The Authority or its duly authorized agents will maintain and keep proper books of records and accounts, separate from all other records and accounts, in which shall be made full and correct entries of all transactions relating to the System. The Authority will cause an annual audit of such books of record and account for the preceding operating year to be made by a recognized independent certified public accountant, and will supply such audit report to authorized public officials on request.

Classification of old and new industrial users shall also be reviewed annually.

The Authority will maintain and carry insurance on all physical properties of the System, of the kinds and in the amounts normally carried by public utility companies and municipalities engaged in the operation of sewage disposal systems.

Sec. 17. Variances

Any person, upon written application to the Director's Office within ninety (90) days after the effective date of the ordinance, as amended, who shows, in the case of the activity being conducted or operated, that compliance with Section 8 of this ordinance would either be impossible or constitute an undue hardship because of time limitations, may be granted a variance by the Director for a reasonable time, not to extend beyond two (2) years from the effective date of this Ordinance, as amended, at which date all variances shall terminate and after which date no new variances will be granted. Any variance granted by the Authority Manager within six (6) months from the date of the granting of the variance shall make reports to the Authority Manager periodically as to the progress being made toward compliance with Section 8 of this Ordinance. A variance shall not be granted under the provisions of this Section where a person applying therefor is causing a public nuisance or other injury to the general public, or is subject to a National Categorical Standard, and any such variances shown to have been granted under these circumstances shall be immediately terminated. Any variance granted under the provisions of this Section shall not be construed to relieve the person who shall receive it from any liability or penalties imposed by other law for the commission or maintenance of a nuisance.

Sec. 18. Rates and Charges for Township Services

1. Established, to Whom Applicable, Basis for Computations.

The rates for total sewer service charges are to be established by resolution of the Authority, which may be enacted apart from the published ordinances as necessary to ensure sufficiency of revenues in meeting operation, maintenance and replacement costs, as well as debt service. Such charges and rates shall be made against each lot, parcel of land or premises which may have any sewer connections with the sewer system of the Authority, or which may otherwise discharge sewage or industrial waste, either directly or indirectly, into such system or any part thereof. Such charges shall be based upon the quantity of water used thereon or therein.

2. Amounts, Billings, Sewer Service Charges

The rates and charges for service furnished by such system shall be levied upon each lot or parcel of land, building or premises, having any sewer connection with such system, on the basis of the quantity of water used thereon or therein as the same is measured therein used, or in the absence thereof, by such equitable method as shall be determined by the Authority, including a flat rate, and shall be collected at the same time, and in the same manner as provided for the payment of charges for water used, except in cases where the character of the sewage from a manufacturing or industrial plant, building or premises is such that unreasonable additional burden is placed upon the system, greater than that imposed by the normal domestic sewage delivered to the system plant, the additional cost of treatment created thereby shall be an additional charge over the regular rates; or the Authority may, if it deems it advisable, compel such manufacturing or industrial plant, building or premises, to treat such sewage in such manner as shall be specified by the Authority before discharging such sewage into the sewage disposal system. Rates for all users obtaining all or part of their water supply from sources other than the Authority's water system may be determined by gauging or metering the actual sewage entering the system or by metering the water used by them, in a manner acceptable to the Authority.

The rates and fees to be billed for use of the System shall be as established by the Authority and shall include the following for all Users within the various sanitary sewer service areas of the Authority, except as otherwise provided herein:

- a. Each User, upon Application for a permit to connect the POTW, shall pay a fee as established by the Authority.
- b. Operation, Maintenance, and Administration Cost.
- c. Surcharge for wastewater in excess of 350 mg/l of BOD.
- d. Surcharge for wastewater in excess of 350 mg/l of Suspended Solids.
- e. Surcharge Phosphorus for wastewater in excess of 12 mg/l of Phosphorus.
- f. Surcharge for wastewater in excess of 40 mg/l of total Kjeldahl nitrogen.
- g. When, in the opinion of the Director, a User may potentially or actually discharge non-sanitary wastewater to the POTW or potentially or actually store, use or otherwise have on the premise bulk chemicals, cleaning agents, or other materials which may interfere with the POTW and which may require protection from accidental discharge, the user shall pay a fee as established by the Authority. Said fee shall be paid at the time of application for a permit to connect to the POTW, and shall be used to administer this industrial pretreatment and spill prevention program.
- h. There shall be an additional charge for laboratory testing of wastewater sample. The laboratory charge shall be for the cost thereof and will be determined for each User.

The above charges for each separate district may vary from one district to another.

3. Annual Audit

The rates hereby fixed are estimated to be sufficient to provide for the expenses of operation, maintenance and replacement of the system as are necessary to preserve the same in good repair and working order. Such rates shall be fixed and revised from time to time as may be necessary to produce these amounts. An annual audit shall be prepared. Based on said audit, rates for sewage services shall be reviewed annually and revised as necessary to meet system expenses.

4. No Free Service

No free service shall be allowed for any user of the Authority's wastewater system.

5. Billing

Billing for wastewater service shall be the Authority's responsibility. All water meters shall be read quarterly and bills rendered quarterly.

6. Termination of Service for Nonpayment

If payment is not received or satisfactory arrangements have not been made within thirty (30) days of the due date on the bill, a shutoff notice will be sent by first class mail to inform the user that failure to respond will result in termination of sewer service. If payment is not received or satisfactory arrangements have not been made within seven (7) days after the shutoff notice is sent to the user, the sewer service shall be shut off. No sewer service that has been discontinued due to nonpayment shall be restored until all past-due bills are paid or satisfactory arrangements for such payment are made.

7. Collection of Delinquent Accounts

Charges for sewage disposal service furnished to any premise within the Authority shall be a lien against the premise. Enforcement of this lien shall be made pursuant to Authority Ordinance. This lien remedy does not preclude any other remedy provided by law. In addition thereto, the Authority may collect said sums due to a court of competent jurisdiction.

Sec. 19. Validity, Severability, Conflict

1. The provisions of this article are severable, and if any of the provisions, words, phrases, clauses or terms, or the application thereof to any person, firm or corporation, or to any circumstances, shall be held invalid, illegal, or unconstitutional by any court of competent jurisdiction, such decision or findings shall not in any way affect the validity, legality or constitutionality of any other provision, word, phrase, clause or term, and they shall continue in full force and effect.
2. All laws and parts of laws, all ordinances, codes and regulations which are inconsistent with or in conflict with or repugnant to any provisions of this article, shall be deemed not to apply; provided that nothing herein contained shall be construed to prevent the adoption and enforcement of a law, ordinance, code or regulation which is more restrictive or establishes a higher standard than those provided in this article.

Sec. 20. Effective Date

This revised Ordinance shall be effective thirty (30) days after publication of said Ordinance as provided by law.

PASSED and adopted by the Genoa-Oceola Sewer and Water Authority on the 13th day of February, 1991

EXHIBIT 3

Bulk Rate Calculation Methodology

Sewage Treatment Agreement
Exhibit 3

GENOA/OCEOLA SEWER & WATER AUTHORITY

Portion of Treatment Charges Associated with Treatment vs Collection & Administration

Methodology for Wholesale Treatment Cost:

Note: Methodology Utilized Budget Values Approved for FY2013 - Wholesale Rate Consists of Line Items for Treatment only, no collections or administrative expenses

LINE #	DESCRIPTION	ADOPTED G-O O&M BUDGET FOR 9/30/2013	PERCENT OF BUDGET FOR TREATMENT ONLY	EXPLANATION
REVENUES				
400	BILLINGS (Genoa-Oceola)	1,733,732		
410	OAK POINTE TREATMENT COSTS	0*		* Projected at \$132,412 (76 Million Gallons * \$1.74/1,000 gallons)
420	INCOME - OTHER/REIMBURSEMENTS	12,500		
425	INCOME - VACTOR PAD FEES	19,000		
430	INCOME - RENT	5,252		
435	INCOME - LAB SUPPLIES REIMB.	5,000		
440	INTEREST INCOME			
	TOTAL INCOME	1,775,484		
EXPENSES				
600	ACCOUNTING & AUDIT FEES	19,600	0	Administrative
606	BOOKKEEPING FEES	6,550	0	Administrative
607	BOOKKEEPING FEES - PAYROLL SERVICE	900	0	Administrative
609	CHEMICALS	20,000	20,000	100% Plant Expenses
615	CONSENT ORDER - GROUNDWATER DISCH.	22,000	22,000	100% Plant Expenses
618	CONTINGENCY	1,000	0	Administrative
624	ENGINEERING FEES - SEPARATE PROJ.	15,000	0	Administrative
627	ENGINEERING FEES - GENERAL	10,000	0	Administrative
633	GIS	15,000	0	All collection system
639	INSURANCE	25,000	8,500	33% of Plant Expenses
640	LATSON RD. INTERCHANGE - MAINTENANCE	20,000	0	Collection System
641	LATSON RD. INTERCHANGE - COLL SYST RELOC	15,000	0	Collection System
642	LABOR - FIXED	518,000	212,925	37.5% staff for WWTP
648	LABORATORY SUPPLIES	15,000	15,000	All plant expenses
648.1	LAB SUPPLIES - O/S ANALYTICAL	3,500	3,500	All plant expenses
648.2	LAB EQUIPMENT	5,000	5,000	All plant expenses
651	LABORATORY WATER	3,500	2,500	All plant expenses
654	LEGAL FEES	1,000	0	Generally assoc. w/ collection system
657	LICENSES, FEES, PERMITS	3,500	3,500	All plant expenses
660	MISS DIG EXPENSES	0	0	Hold
663	OFFICE EXPENSES/PUBLISHING	1,300	1,300	All plant expenses
665	PAYROLL TAXES	1,200	0	Administrative
667	PER DIEM - BOARD MEMBERS	12,500	0	Administrative
669	REFUNDS AND ADJUSTMENTS	500	500	All plant expenses
672	R & M - BUILDING	7,500	7,500	All plant expenses
674	R & M - GENERATOR	25,000	5,000	20% is Plant expense
676	R & M - GROUNDS	5,000	3,350	Plant 2/3 of total
677	R & M - SCADA	45,000	11,250	Plant 25%of total
678	R & M - OTHER	1,000	500	Plant half of total
679	R & M - SEWER BACKUPS	1	1	Hold
680	R & M - PLANT EQUIPMENT	70,000	70,000	All plant expenses
681	R & M - GRINDER PUMPS	10,000	0	Collection System
682	R & M - PUMP STATIONS	75,000	0	Collection System
684	R & M - SEWER LINES	60,000	0	Collection System
686	R & M - SEWER LINES CLEANING	25,000	0	Collection System
688	R & M - SNOW PLOWING/LAWN MAINT.	6,500	5,500	Plant most of expense
689	R & M - ALL SHARED SYSTEM MAINT.	35,000	17,500	Plant half of total
690	SLUDGE DISPOSAL	90,000	90,000	All plant expenses
692	TELEPHONE	26,000	1,300	Mostly Collection System Phone #
694	TOOLS/SUPPLIES	1,000	500	Plant half of total
696	TRANSFERS OUT - CAPITAL IMPROVE RESERVE	100,000	0	Administrative
698	TRANSFERS OUT - CAPITAL REPL. RESERVE	200,000	0	Administrative
699	TRANSFERS OUT - SODIUM CHLORIDE RESERVE	0	0	Administrative
702	UTILITIES - ELECTRIC	200,000	110,000	Plant is 55% of electric usage
704	UTILITIES - GAS	8,500	8,500	All plant expenses
710	VACTOR PAD EXPENSES	40,000	0	Collection System
750	DEBT - SLUDGE THICK PAYBACK TO GENOA	0	30,000	All plant expenses
751	DEBT - OVERAGE CAP EXP PROJ TO GENOA	15,000	0	Collection System
	TOTAL EXPENSES	1,780,551	655,626	
<p>% of Budget that is Treatment =</p> <p>FY 2013 Genoa-Oceola Treatment Rate</p>		<p>35.06% Equals Treatment Only Costs / Total G-O Operational Costs</p> <p>\$4.97 / 1,000 Gal.</p>		
<p>Per 1,000 Wholesale Treatment Cost =</p>		<p>\$1.74 Note: Calculated By Taking % Budget That is Treatment Multiplied by the Existing Rate: (\$4.97*35.06%)</p>		



MEMORANDUM

TO: Honorable Board of Trustees
FROM: Kelly VanMarter, Assistant Township Manager
DATE: April 11, 2013
RE: Dakkota Integrated Systems - Special Land Use & Site Plan Approval

MANAGER'S REVIEW: 

I have reviewed the special land use request, revised site plan and environmental impact assessment for the proposed 20,680 sq. ft. office building for Dakkota Integrated Systems located on the south side of Grand River Avenue between Hughes Road and Kellogg Road in Section 14. This project was recommended for approval by the Planning Commission on March 25th, 2013. My review of the revised submittal was focused on compliance with the outstanding items discussed at the Planning Commission and my recommendation is as follows:

Special Land Use Permit: I recommend approval of the Special Land Use for grading within the natural features setback for the construction of the driveway. This Special Land Use is recommended for approval because it is a temporary minor encroachment and complies with the standards provided in Sections 19.03.

Environmental Impact Assessment: I recommend approval of the impact assessment dated February 6, 2013 subject to the preparer's name being added to the document.

Site Plan: I recommend approval of the site plan with the following conditions:

1. There will be no roof top equipment on the building.
2. The Utility System and Township Engineer shall be consulted regarding the method of landscape irrigation in an effort to preserve public water and utilize on-site surface water if feasible.
3. Prior to issuance of a land use permit, a performance guarantee in compliance with Section 21.03 shall be provided towards the cost of building a sidewalk along the eastern site frontage. The amount of the guarantee shall be based on the cost for constructing the sidewalk on the west side of the property and approved by the Township Engineer.
4. A sidewalk easement shall be provided to accommodate construction of a boardwalk or sidewalk along the properties eastern Grand River Avenue frontage. The depth of the easement shall be recommended by the Township Engineer and the legal description and drawing shall be provided by the applicant. The easement shall be provided prior to issuance of a Land Use Permit.
5. All requirements of the Brighton Area Fire Department shall be met.

SUPERVISOR

Gary T. McCririe

CLERK

Paulette A. Skolarus

TREASURER

Robin L. Hunt

MANAGER

Michael C. Archinal

TRUSTEES

H. James Mortensen

Jean W. Ledford

Todd W. Smith

Steven Wildman

2911 Dorr Road
Brighton, MI 48116
810.227.5225
810.227.3420 fax
genoa.org

6. The items within the Township Engineer's letter dated March 5, 2013 shall be complied with.
7. A recordable agreement shall be provided that documents the private ownership and maintenance of the pump station. This is required to ensure the proposed private pump station does not become the responsibility of the Township in the future. Said agreement shall be provided prior to issuance of the Land Use permit.

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

Sincerely,

A handwritten signature in cursive script that reads "Kelly VanMarter". The signature is written in black ink and is positioned above the typed name.

Kelly VanMarter
Assistant Township Manager/Community Development Director

MEMORANDUM

TO: Dakkota Integrated Systems
Site Plan File

FROM: Kelly VanMarter, Assistant Township Manger/Community
Development Director

DATE: April 11, 2013

RE: Dakkota Integrated Systems
20,680 sq. ft. office
4711-14-100-014 (vacant Grand River)

In regards to the above mentioned the tap fees will be as follows:

Assuming a 20,680 sq. ft. office building:

Office (20,680 sq. ft. @ 0.40 REU per 1,000 sq. ft.)	8.3 REU
<u>Less previously paid:</u>	<u>21 REU's assessed</u>
Remaining Balance:	12.7 REU credit

Connection Fees must be paid at time of land use permit issuance.

A meter package will also need to be purchased including the appropriate sized meter and a MIU (meter interface unit) prior to land use permit issuance. I trust this satisfies your request. Should you have any questions please feel free to contact me at 227-5225.

MEMORANDUM

To: File
From: Kelly VanMarter
Date: April 11, 2013
Re: Glenn Miller Property – REU's



This memo shall describe the REU credits assessed to the properties owned by the late Glenn Miller. At the time of his death, Mr. Miller owned the following 2 properties and their REU credits are described below:

Parcel 4711-14-100-014

30.74 Acres (split from 100-003 in Jan. 2007))

Assessed: 21 REU's in both Lake Edgewood West Water and the Grand River Sewer Gap.

(Note – no REU's were transferred to parcel 013 with 2007 split)

Parcel 4711-14-200-011

0.34 Acres

Assessed: 1 REU in both Lake Edgewood West Water and Grand River Sewer Gap.

6



2013R-012192
RECORDED ON
03/28/2013 1:49:44 PM
SALLY REYNOLDS
REGISTER OF DEEDS
LIVINGSTON COUNTY, MI 48843
RECORDING: 25.00
REMON: 4.00
PAGES: 6

STATE OF MICHIGAN
COUNTY OF LIVINGSTON
CHARTER TOWNSHIP OF GENOA

Rezoning Agreement

This Rezoning Agreement (hereafter referred to as "Agreement") is made and entered into on this 7th day of January 2013, by and between the Board of the Charter Township of Genoa, 2911 Dorr Road Brighton, Michigan 48116 (hereafter referred to as "Township") and the Dakkota Integrated Systems, LLC (hereafter referred to as "Owner").

The Owner possesses fee title to certain real property located in Genoa Township, Livingston County, Michigan, which is more particularly described in **Exhibit A** attached hereto incorporated by reference (hereafter referred to as "Property"). The Township has determined that an amendment to the Official Zoning Map of the Township of Genoa to rezone the property from Rural Residential (RR) with Town Center Overlay to Office Service District (OSD) without Town Center Overlay is in keeping with the goals and objectives of the Township, provided that the conditions offered by the Owner under this Agreement to ensure consistency with the Township Master Plan are put in place.

Therefore, in accordance with Act 110 of 2006, as amended, entitled "Michigan Zoning Enabling Act," the Owner voluntarily offers in writing an agreement for certain use and development of the Property as a condition to an amendment to the Official Zoning Map of the Township of Genoa to rezone said property from Rural Residential (RR) with Town Center Overlay to Office Service District (OSD) without Town Center Overlay.

At a properly noticed public hearing held on December 10, 2012, the Planning Commission, having reviewed a draft of this Agreement, recommended to the Township Board that the Property be rezoned from Rural Residential (RR) with Town Center Overlay to Office Service District (OSD) without Town Center Overlay in accordance with the applicable provisions of the Township Zoning Ordinance and with the conditions offered by the Owner.

On January 7, 2013, the Township Board at a properly noticed public hearing and in accordance with the Township Zoning Ordinance rezoned the Property from Rural Residential (RR) with Town Center Overlay to Office Service District (OSD) without Town Center Overlay, based upon this Agreement.

ARTICLE I
General Terms of Agreement

- 1.1 The Owner and Township acknowledge and represent that the foregoing recitals are true and accurate and said recitals and the terms of this Agreement are binding on the respective parties.
- 1.2 The Owner and the Township acknowledge and agree to the following:

January 7, 2013

- (a) The Owner has voluntarily requested a change in zoning of the Property from Rural Residential (RR) with Town Center Overlay to Office Service District without Town Center Overlay with conditions. The Township has relied upon the agreement and may not grant the Rezoning but for the conditions offered in this Rezoning Agreement.
 - (b) This Rezoning Agreement and its terms and conditions are authorized by all applicable state and federal laws and constitutions, and this Rezoning Agreement is valid and was entered into on a voluntary basis.
 - (c) The Property shall only be developed and used in a manner that is consistent with this Rezoning Agreement.
 - (d) This rezoning is conditioned upon site plan approval under Article 18 of the Genoa Township Zoning Ordinance or subdivision approval under the Township Subdivision control ordinance and obtaining other necessary approvals required by the Township and all applicable county, and state agencies.
 - (e) Notwithstanding any provision in this agreement to the contrary, no part of this Rezoning Agreement shall permit any activity, use or condition that would otherwise not be permitted in the Office Service District (OSD) zoning district.
 - (f) The approval of the conditional rezoning and the Rezoning Agreement shall be binding and inure to the benefit of the Owner and the Township, and also their respective heirs, successors, assigns receivers or transferees.
 - (g) If the rezoning with this Rezoning Agreement becomes void in accordance with Article 22 of the Genoa Township Zoning Ordinance, that no further development shall take place and the land shall revert back to its original zoning classification.
- 1.3 The rezoning to Office Service District (OSD) without Town Center Overlay is hereby granted, having been duly approved by the Township, based upon this Agreement, in accordance with all applicable Township ordinances.
 - 1.4 All formal actions necessary or expedient to carry out this Agreement shall be taken by the parties without undue delay.
 - 1.5 Except as specifically provided for in this Agreement, all site plans will comply with the Zoning Ordinance and other applicable ordinance requirements.

ARTICLE II
Land Use Authorization

In addition to the applicable requirements of the district, the Owner agrees to the following items as a condition of rezoning the property:

- 2.1 Permitted use of the property shall be limited to the uses described below:
 - a. Studios of photographers and artists;
 - b. Offices of non-profit professional, civic, social, political and religious organizations;

January 7, 2013

- c. Medical offices of doctors, dentists, optometrists, chiropractors, psychiatrists, psychologists and similar or allied professions, excluding hospitals, and urgent care centers;
 - d. Offices of lawyers, engineers, architects, insurance, and real estate agents, financial consultants, and brokers, advertising offices, accounting, and bookkeeping services, clerical, and stenographic services, sales offices, other types of corporate, executive, or administrative offices and similar or allied professions;
 - e. Public parks and open space;
 - f. Essential public services and structures, not including buildings and storage yards;
 - g. Public/government buildings such as; township/state/county offices, public museums, libraries and community centers; and,
 - h. Accessory uses, buildings and structures customarily incidental to any of the above including, but not limited to, fitness trails and outdoor meeting spaces.
- 2.2 Child care centers, preschool and commercial day care may be allowed with a special land use permit from the Township, in accordance with the review procedures and approval criteria stated in the Zoning Ordinance.
- 2.3 Outdoor storage shall be prohibited.
- 2.4 If the Property owner desires to expand the parking lot, buildings or pursue any other significant construction activities, as determined by the Township's Zoning Administrator, application for site plan and environmental impact assessment approval shall be submitted to the Township, in accordance with the review procedures and requirements stated in the Zoning Ordinance prior to the commencement of any such construction activities.
- 2.5 The Property owner agrees to provide necessary easements for any future water and/or sewer improvements across the Property requested by the Township. Such easements shall not unreasonably burden the Property. After construction of utilities by the Township, the Township agrees to restore the Property back to the condition that existed prior to construction.
- 2.6 The Property owner agrees to comply with the following regulations of the Genoa Town Center Overlay District:
- a. Side yard, rear yard, and building height requirements of Sec. 9.04.01;
 - b. Sidewalks, street trees and street lights requirements of Sec. 9.06.01 for the western frontage of the Property;
 - c. Parking requirements of Sec. 9.07.01;
 - d. Non-residential open space requirements of Sec. 9.08.02; and
 - e. Signs requirements of Sec. 9.09.03.

The Property owner also agrees to utilize the building materials provided in Sec. 9.05.01, for front facades and facades facing a street or parking area, but without a fixed percentage. The Property owner reserves the right to utilize other materials not listed in Sec. 9.05.01, such as metal panels, horizontal metal siding, metal trim, stucco and similar material.

ARTICLE III Miscellaneous Provisions

- 3.1 The requirements of this agreement shall be required for any use or development of the Property. If the conditions under this agreement are violated, the Property shall be rezoned to its former zoning classification of Rural Residential with Town Center Overlay. Continued use of the

January 7, 2013

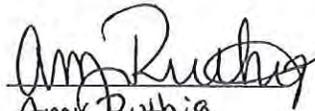
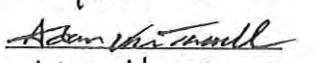
property in violation of the terms of this Agreement shall be considered a violation of the Zoning Ordinance. The remedies of Township for a violation shall be such remedies as are provided by and for a violation of the Zoning Ordinance.

- 3.2 The invalidity or unenforceability of any particular provision of this Agreement shall not affect the other provisions, and this Agreement shall be construed in all respects as if such invalid or unenforceable provisions were omitted.
- 3.3 This agreement shall be recorded with the Livingston County Register of Deeds.
- 3.4 This Agreement shall run with the land and shall be binding upon all heirs, successors, assigns, receivers and transferees of the Property.
- 3.5 This Agreement may not be modified, replaced, amended or terminated without the written consent of the Township Board.

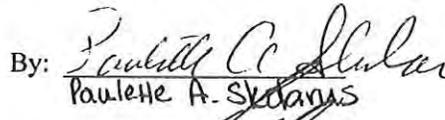
The undersigned acknowledge that the conditions imposed upon the rezoning of the property are reasonable conditions necessary to ensure compatibility with adjacent uses of the land and promote the use of the land in a socially and economically desirable manner. Further, it is acknowledged that the Agreement meets all the requirements of Section 405 of P.A. 110 of 2006, as amended.

Approved by the Township Board for the Charter Township of Genoa on the 7th day of January, 2013, at a meeting duly called and held.

WITNESSES

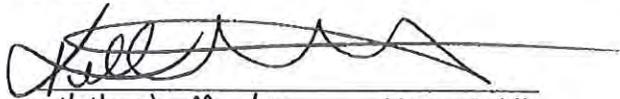

 Amy Rothig

 Adam Van Cassell

TOWNSHIP OF GENOA:

By: 
 Paulette A. Skolarus
 By: 
 Gary McCrie

STATE OF MICHIGAN)
)SS
 COUNTY OF LIVINGSTON)

The foregoing instrument was acknowledged before me this 2/26/13 by Gary McCrie, Supervisor of Genoa Charter Township and Paulette A. Skolarus, Clerk of Genoa Charter Township, a Michigan municipal corporation by authority of its Board of Trustees.


 Kelly Van Marter, Notary Public
 LIVINGSTON County, MI
 My Commission expires: 3-8-13
 Acting in LIVINGSTON County, MI

January 7, 2013

Approved by Brian McDonald Dakkota Integrated Systems, LLC on the 07 day of February, 2013, at a meeting duly called and held.

WITNESSES

[Signature]
[Signature]

DAKKOTA INTEGRATED SYSTEMS, LLC:

By: [Signature]
Brian McDonald

STATE OF MICHIGAN)
)SS
COUNTY OF LIVINGSTON)Ingham (A.R.)

The foregoing instrument was acknowledged before me this Feb 07, 2013 by Brian McDonald Dakkota Integrated Systems, LLC, on behalf of the corporation, with authority to do so.

Marianne Owens
_____, Notary Public
Livingston County, MI
My commission expires: 01-03-2016
Acting in Ingham County, MI

5645024_2.DOC



January 7, 2013

EXHIBIT A

SEC 14 T2N R5E COMM AT W 1/4 COR, BEING 2681.56 FT TH S02*16'19"E FROM NW COR TH N02*16'19"W 1330.95 FT TH N87*12'41"E 1335.68 FT TO POB TH N02*03'48"W 627.98 FT TH N70*54'48"E 125.92 FT TH N30*08'19"E 74.01 FT TH N04*55'59"E 106.46 FT TH N27*13'52"E 94.96 FT TH N10*53'03"E 190.20 FT TH N32*01'45"E 158.67 FT TH N00*37'14"W 231.55 FT TH N17*27'52"E 48.61 FT TH S70*21'38"E 241.01 FT TH S02*25'07"E 450 FT TH S70*21'38"E 701.45 FT TH S02*20'18"E 1.68 FT TH S69*24'15"E 100 FT TH N02*20'18"W 450 FT TH ALONG ARC OF A CURVE RIGHT CHORD BEARING S68*33'53"E 194.91 FT S68*04'39"E 454.53 FT TH S21*55'21"W 150 FT TH N68*04'39"W 100 FT TH S21*55'21"W 483.63 FT TH S82*59'37"W 1268.16 FT TH S02*01'19"E 207.19 FT TH S87*12'41"W 323 FT TO POB EXCEPT BEG N00*15'00"W 557.20 FT TH N89*30'56"E 1833.66 FT TH NORTH 518.76 FT WEST 175 FT TH NORTH 462.18 FT TH N85*11'00"E 1218.16 FT TH N23*47'00"E 500 FT FROM WEST 1/4 COR FOR POB TH N23*47'00"E 150 FT TH S66*13'00"E 100 FT TH S23*47'00"W 150 FT TH N66*13'00"W 100 FT TO POB.

CONT 29.63 AC M/L
SPLIT ON 01/16/2007 INTO 4711-14-100-013, 4711-14-100-014;
CORR LEGAL 1/13

APPLICATION FOR SPECIAL LAND USE
GENOA TOWNSHIP

APPLICANT NAME* & ADDRESS: Dakota Integrated Systems, LLC
1875 Holloway Dr. Holt, MI 48842
OWNER NAME* & ADDRESS: Same as Applicant
SITE ADDRESS: Proposed Dakota Office PARCEL #(s): 11-14-100-014
APPLICANT PHONE: (517) 594-6500 OWNER PHONE: (517) 594-6500

Location and brief description of site and surroundings:

The site is located on the south side of Grand River with
frontage west of Trends in Tiles and east of Northwest Pipe &
Supply. The site contains significant woodlands and wetlands.

Proposed Use:

20,000+ Square foot corporate office building for
Dakota Integrated Systems, LLC

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

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

The proposed office building is a permitted use within
the OS District. The Special Use Permit is for minor
encroachment into the wetland buffer for grading.

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

All structures (building, entrance drive, parking lot and
storm sewer) are located outside the wetland buffers.
Minor grading will occur within the wetland buffer. Full
restoration will take place.

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

The site is located on Grand River Ave and is serviced
by public sewer and water. There will be minimal demand on
police and fire departments.

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

No- The only use will be a corporate office building.

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

No - The Special Land Use is requested per Section
13-02-04 (d), Wetland Buffer.

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

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

X BY: [Signature]
Dakota Integrated Systems, LLC
ADDRESS: 1875 Holloway Dr, Holt, Mi 48842

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

Contact Information - Review Letters and Correspondence shall be forwarded to the following:		
<u>1) Brent Lavanway</u>	<u>of Boss Engineering</u>	<u>at (517) 548-1670</u>
Name	Business Affiliation	Fax No.

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



FEE EXCEEDANCE AGREEMENT	
As stated on the site plan review fee schedule, all site plans are allocated two (2) consultant reviews and one (1) Planning Commission meeting. If additional reviews or meetings are necessary, the applicant will be required to pay the actual incurred costs for the additional reviews. If applicable, additional review fee payment will be required concurrent with submittal to the Township Board. By signing below, applicant indicates agreement and full understanding of this policy.	
SIGNATURE: <u>[Signature]</u>	DATE: <u>2-26-13</u>
PRINT NAME: <u>MARK McCauley</u>	PHONE: <u>517 594-6500</u>
ADDRESS: <u>1875 Holloway Dr. Holt, Mi 48842</u>	

GENOA TOWNSHIP
APPLICATION FOR SITE PLAN REVIEW

GENOA TOWNSHIP

FEB - 6 2013

TO THE GENOA TOWNSHIP PLANNING COMMISSION AND TOWNSHIP BOARD:

APPLICANT NAME & ADDRESS*: Dakota Integrated Systems (Owner)

OWNER'S NAME & ADDRESS: 1875 Holloway Dr., Holt, MI 48842

SITE ADDRESS: Vacant Land - Grand River PARCEL #(s): 11-14-100-014

APPLICANT PHONE: () Same as Owner OWNER PHONE: (517) 594-6500

LOCATION AND BRIEF DESCRIPTION OF SITE: Vacant land on S. side of Grand River east of Hughes Road

BRIEF STATEMENT OF PROPOSED USE:

20,680 SF Office Building and associated parking for Dakota Integrated Systems Corporate Office

THE FOLLOWING BUILDINGS ARE PROPOSED:

one 20,680 SF Office Building

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

BY: [Signature]

ADDRESS: Dakota Integrated Systems 1875 Holloway Dr. Holt, MI 48842

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

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

1) Brent Lavenway of Boss Engineering at (517) 548-1670
Name Business Affiliation Fax No.

FEE EXCEEDANCE AGREEMENT

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

SIGNATURE: _____ DATE: _____

PRINT NAME: _____ PHONE: _____

ADDRESS: _____

REQUIRED SITE PLAN CONTENTS

Each site plan submitted to the Township Planning Commission shall be in accordance with the provisions of the Zoning Ordinance. No site plan shall be considered until reviewed by the Zoning Administrator. The following information shall be included in the site plan submittal packet:

<u>SUBMITTED</u>	<u>NOT APPLICABLE</u>	<u>ITEM</u>												
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Application form and fee: A completed application form and payment of a non-refundable application fee. (A separate escrow fee may be required for administrative charges to review the site plan submittal.)												
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Applicant information: The name and address of the property owner and applicant, interest of the applicant in the property, the name and address of the developer, and current proof of ownership of the land to be utilized or evidence of a contractual ability to acquire such land, such as an option or purchase agreement.												
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Scale: The site plan should be drawn at an engineers scale on sheets measuring 24x36 inches at the scale noted below:												
		<table border="0"> <thead> <tr> <th><u>ACREAGE</u></th> <th><u>SCALE</u></th> </tr> </thead> <tbody> <tr> <td>160 or more</td> <td>1" = 200'</td> </tr> <tr> <td>5- 159.9</td> <td>1" = 100'</td> </tr> <tr> <td>2- 4.99</td> <td>1" = 50'</td> </tr> <tr> <td>1- 1.99</td> <td>1" = 30'</td> </tr> <tr> <td>0- .99</td> <td>1" = 20'</td> </tr> </tbody> </table>	<u>ACREAGE</u>	<u>SCALE</u>	160 or more	1" = 200'	5- 159.9	1" = 100'	2- 4.99	1" = 50'	1- 1.99	1" = 30'	0- .99	1" = 20'
<u>ACREAGE</u>	<u>SCALE</u>													
160 or more	1" = 200'													
5- 159.9	1" = 100'													
2- 4.99	1" = 50'													
1- 1.99	1" = 30'													
0- .99	1" = 20'													
		<u>COVER SHEET CONTAINING</u>												
<input checked="" type="checkbox"/>	<input type="checkbox"/>	The name and address of the project.												
<input checked="" type="checkbox"/>	<input type="checkbox"/>	The name, address and professional seal of the architect, engineer, surveyor or landscape architect responsible for preparation of the site plan.												
<input checked="" type="checkbox"/>	<input type="checkbox"/>	A complete and current legal description and size of property in acres and square feet. Where a metes and bound description is used, lot line angles or bearings shall be indicated on the plan. Lot line dimensions and angles or angles or bearings shall be based upon a boundary survey and shall correlate with the legal description.												
<input checked="" type="checkbox"/>	<input type="checkbox"/>	A small location sketch of sufficient size and scale to locate the property within the Township.												
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Title block with north arrow, date of preparation and any revisions.												
		<u>EXISTING CONDITION SHEETS ILLUSTRATING</u>												
<input checked="" type="checkbox"/>	<input type="checkbox"/>	All existing lot lines and dimensions, including setback lines and existing or proposed easements.												
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Existing topography (minimum contour interval of two feet)												

Existing natural features such as streams, marshes, ponds; wetlands labeled with size and type (upland, emergent, etc)

Existing woodlands shall be shown by an approximate outline of the total canopy; individual deciduous trees of eight inch caliper or larger and individual evergreen trees six feet in height or higher, where not a part of a group of trees, shall be accurately located and identified by species and size (caliper for deciduous, height for evergreen).

Soil characteristics of the parcel to at least the detail as provided by the Soil Conservation Service Soil Survey of Livingston County. A separate map or overlay at the same scale as the site plan map may be used.

Zoning and current land use of applicants property and all abutting properties and of properties across any public or private street from the site.

Indication of existing drainage patterns, surface or water bodies.

The limits of any wetland regulated by the MDEQ, including attachment of any MDEQ approved wetland determination or documentation that an application for an MDEQ review has been submitted. If an MDEQ regulated wetland is to be impacted, an indication of the status of application for an MDEQ wetland permit or copy of a permit including description of any wetland migration required attached.

Aerial photograph indicating the limits of the site, surrounding land uses and street system.

PROPOSED PROJECT INFORMATION

Base information: The location of all existing buildings, structures, street names and existing right-of-way, utility poles, towers, drainage ditches, culverts, pavement, sidewalks, parking areas and driveways on the property and within one-hundred feet of the subject property (including driveways on the opposite side of any street). Notes shall be provided indicating those which will remain and those which are to be removed.

Building information: Footprints, dimensions, setbacks, typical floor plans, and a sketch of any rooftop or ground mounted equipment to scale.

Building elevations: Elevation drawings shall be submitted illustrating the building design and height, and describing construction materials for all proposed structures. Elevations shall be provided for all sides visible from an existing or proposed public street or visible to a residential district. The Planning commission may require color renderings of the Building. Proposed materials and colors shall be specified on the Plan and color chips or samples shall also be provided at the time of site plan review. These elevations, colors, and materials shall be considered part of the approval site plan. (as amended 4/15/95)

Building and lot coverage: Percentage of building coverage and impervious surface ratio (all paved areas and building v. total lot area) compared to the percentages specified in the Table of Dimensional Standards Article 4.

N/A

For residential developments: Number of residential unit for each project phase divided by acreage exclusive of any public right-of-way or private road access easement; lot area for each lot; and a description of the number of each unit by size and number of bedrooms; if a multi-phase development is proposed, identification of the areas included in each phase.

For commercial and office uses: The Gross Floor Area and Useable Floor Area of each use or lease space. For industrial uses: The floor area devoted to industrial uses and the area intended for accessory office use.

Streets, driveways, and circulation: The layout and dimensions of proposed lots, streets and drives (including grades, existing or proposed right-of-way or easement and pavement width, number of lanes and typical cross section showing surface and sub base materials and dimensions, grades of all entrances and exits, location and typical detail of curbs, intersection radii), access points (including deceleration or passing lanes, distance from adjacent driveways or street intersection), sidewalks (width, pavement type and distance from street) and recreation areas. Written verification of any access easements or agreements for shared access or driveway curb return extending beyond the property line shall be required.

Utilities: Existing and proposed locations of utility services (with sizes), degrees of slope of sides of retention/ detention ponds; calculations for size of storm drainage facilities; location of electricity and telephone poles and wires; location and size of surface mounted equipment for electricity and telephone services; location and size of underground tanks where applicable; location and size of outdoor incinerators; location and size of wells, septic tanks and drain fields; location of manholes, catch basins and fire hydrants; location, size, and inverts for storm and sanitary sewers, any public or private easements; notes shall be provided clearly indicating which existing services will remain and which will be removed.

Grading and drainage: A site grading plan for all developments where grading will occur, with existing and proposed topography at a minimum of two (2) foot contour intervals and with topography extending a minimum of twenty (20) feet beyond the site in all directions and a general description of grades within fifty (50), and further where required to indicate stormwater runoff into an approved drain or detention/ retention pond so as to clearly indicate cut and fill required. All finished contour lines are to be connected to existing contour lines

at or before the property lines. A general description and location of the stormwater management system shall be shown on the grading plan. The Township Engineer may require detailed design information for any retention/detention ponds and stormwater outfall structures or basins. If MDEQ regulated wetlands are to be used, status of MDEQ permit application or copy of permit with attached conditions shall be provided.

Landscape and screening: A landscape plan indicating proposed ground cover and plant locations and with common plant name, number, and size at installation. For any trees over eight (8) inch caliper to be preserved. A detail shall be provided to illustrate protection around the tree's drip line. Berms, retaining walls or fences shall be shown with elevations or cross section from the surrounding average grade. The location, type and height of proposed fences shall be described.

Waste receptacles: Location of proposed outdoor trash container enclosures; size, typical elevation, and vertical section of enclosures; showing materials and dimensions in compliance with Zoning Ordinance Standards.

Signs: Locations of all signs including location, size, area type, height, and method of lighting. Note that all regulatory signs shall meet the standards from the Michigan Manual of Uniform Traffic Control Devices (MMUTCD).

Lighting: Details of exterior lighting including location, height, method of shielding and style of fixtures.

Parking: Parking, storage and loading/unloading areas, including the dimensions of typical space, aisle, and angle of spaces. The total number of parking and loading/unloading spaces to be provided and the method spaces to be provided and the method by which the required parking was calculated shall be noted.

The applicant shall erect flagged stakes at the perimeter points of the property to assist Township officials and staff in reviewing the site.

Dave Zimmerman, owner of the property and developing company addressed the Planning Commission. He is proposing a 96 unit development. He is requesting an extension of the site plan and environmental impact assessment. He was unable to break ground prior to the economic troubles. He has not even tried to obtain construction loans because he feels that there is no market for it right now.

Planning Commission disposition of petition

A. Disposition of site plan extension

Motion by James Mortensen that a one year extension be approved. Support by Barbara Figurski. **Motion carried unanimously.**

OPEN PUBLIC HEARING #2...Review of request for an extension of a site plan and environmental impact assessment for a proposed 16-unit single family site condominium development located north of Cunningham Lake Road, East of Sundance Trail in Section 34, petitioned by Mr. Moore.

Robert Moore, owner of the property, addressed the Planning Commission. He is proposing an extension of the site plan for a 16 unit single family condominium development. It is not economically feasible right now.

Planning Commission disposition of petition

A. Disposition of site plan extension

Motion by James Mortensen that a one year extension be approved. Support by Barbara Figurski. **Motion carried unanimously.**

OPEN PUBLIC HEARING #3...Review of special use application, environmental impact assessment and site plan for a proposed 20,680 sq. ft. office building located on the South side of Grand River Avenue between Hughes Road and Kellogg Road in Section 14, petitioned by Dakkota Integrated Systems.

Brian McDonnell of Dakkota, Tony Delicolli of CityScape, and Brent Lavanway of Boss Engineering addressed the Planning Commission. Mr. Lavanway provided a brief background regarding the selection of the site and a brief overview. The parking lot will accommodate 80 vehicles, which is the anticipated need. A full basement/lower level will be included. There is a small driveway to the building to serve as fire truck access location, as well as a method to deliver items for storage in the basement. A monument sign is proposed, as well as a concrete sidewalk alongside Grand River. The building is roughly 300 yards from Grand River, south of the Trends in Tile parcel. The proposed dumpster location backs up to the storage area for Northwest Area Pipe and Supply.

Tony Deliccolli addressed the architectural features of the plan. The building is slightly over 20,000 square feet. The lower level is approximately 5,000 square feet and consists of storage, conference area and fitness area. The base of the building will feature stone and the rest is primarily brick. Samples were shown to the Planning Commission. The accent is architectural metal in blue. Passive solar heating will be used. If any rooftop equipment exists, it will be screened.

Brian Borden gave his report to the Planning Commission. He reviewed his letter dated March 14, 2013. Special land use approval is tied with the grading plan. The grading is so close to the wet land due to the location of the driveway being less than 10 feet from the wet land. The applicant is responsible for any DEQ permits if it's necessary. The site plan elements were addressed next.

Dean Tengel asked about the percentages of metal and whether it meets the ordinance. It is not visible from Grand River, so the Planning Commission has ability to waive this requirement according to Brian Borden.

Brian Borden explained that there are issues with regard to driveway spacing, but movement of the driveway would be difficult due to the wetlands. Gary Markstrom indicated that approval to move it would need to come from the Road Commission. Brian Borden indicated it is not a significant issue and the Planning Commission has wide latitude in allowing it as is. Mr. Lavanway indicated that the only deliveries expected are Fed Ex or postal deliveries.

The landscape plan was addressed. Brian Borden indicated he does not think the issue of plantings was a huge issue. He did indicate that he would like to see green belt plantings. It's a tight area, so he doesn't think requiring them to adhere to the ordinance is required, but he believes there is room for a few more trees to be incorporated.

There are a few discrepancies between the plan and the depiction. These should be reconciled. The newly planted areas should be irrigated in areas where needed. The petitioner indicated that they understand that and will provide for that. It will be primarily around the building.

The waste receptacle encroaches onto the side yard required setback by less than ten feet. This must be approved by the Planning Commission.

The sidewalk requirements were addressed by Brian Borden. The petitioner agrees to work with the owner of the property that adjoins the petitioners at the county drain in developing a method of sidewalk/walk way over the county drain. Gary Markstrom addressed this issue and asked about jogging the sidewalk over a bit to go over the existing culvert. The petitioner will speak with the Road Commission about that possibility. The sidewalk on the east side of the property was discussed. Mr. Lavanway believes a sidewalk is not possible there due to wetlands. A boardwalk would be challenging at best. The petitioner agrees to

cost-share the expense of a boardwalk if the petitioner's cost is no greater than the cost a sidewalk would have been for the same area. An easement may be needed to accomplish this.

The light fixture detail sheets should be submitted to the Township. Mr. Lavanway indicated they are on sheet 11. The petitioner will re-submit sheet 11.

Brian Borden indicated that two wall signs have been requested. The sign area calculations are fine, but approval of the second must be approved by the Planning Commission.

Gary Markstrom addressed the Planning Commission. He discussed his letter of March 5, 2013. The Fire Department connection will be taken care of by the petitioner. It must be on the construction plans. The sanitary sewer must cross Grand River. Irrigation was discussed. If there is standing water in the ponds, the petitioner may want to use that for irrigation. Dean Tengel asked if a water well would be permitted for irrigation. Kelly VanMarter indicated it is against the ordinance. Any irrigation system from the pond must be a separate system.

The Brighton Area Fire Department letter of February 27th was discussed. The petitioner indicated that all items except 1, 4, and 9 were addressed in the re-submittal. The petitioner plans to install a full sprinkler system, so they do not believe that a fire hydrant at the rear of the building is necessary. The smaller driveway would be deleted from the plan if the Fire Department permits it. It is not required for deliveries.

The petitioner indicated a natural gas line will be installed parallel to the driveway.

The environmental impact assessment does not bear Mr. Lavanway's name and it should.

- A. Recommendation of Special Use.
- B. Recommendation of Environmental Impact Assessment.
- C. Recommendation of Site Plan.

Motion by James Mortensen to recommend to the Township Board approval of a special use permit to permit Dakkota Systems to grade in the natural features setback for the wetland on the northwest side of the site which is to be fully restored to its original condition following installation of the driveway. This recommendation is made because it is a very minor encroachment into the wetland setback area with total restoration being provided. It fully complies with section 19.03 of the Township ordinance. Support by Barbara Figurski. **Motion carried unanimously.**

Motion by Barbara Figurski to approve the environmental impact assessment dated February 6, 2013, subject to the preparer's name being added. Support by James Mortensen. **Motion carried unanimously.**

Motion by James Mortensen to recommend to the Township Board approval of the site plan dated February 6, 2013, subject to the following:

1. If subsequent to this review, rooftop equipment is added, there will be appropriate screening to be reviewed by Township staff in advance of the 4/15/13 Township Board meeting;
2. The small driveway to the building from the main driveway may be removed prior to the 4/15/13 Township Board meeting if the decision is made to include a sprinkler system for the building;
3. The rendering and materials reviewed with the Planning Commission this evening are acceptable and will become property of the Township following Township Board review;
4. The landscape plan is accepted as presented. Irrigation will be provided excluding the wetland area. The Township Engineer will be consulted regarding the method of landscape irrigation in an effort to preserve public water and utilize wetland water if feasible;
5. The location of the waste receptacle, which is a 13' deviation from the side yard setback is acceptable;
6. The petitioner will attempt to relocate the sidewalk on the west side to minimize the boardwalk and will provide a performance guarantee acceptable to Township staff for construction of the boardwalk eventually;
7. The petitioner will provide a performance guarantee regarding the sidewalk on the east side in an amount acceptable to Township staff and shall provide an easement should the Township eventually seek construction of a boardwalk or relocation of a wetland;
8. The applicant must provide details of the light fixtures;
9. A second wall sign, the total of which for both equals less than 100 feet, is approved;
10. The requirements of the Township Engineer's letter of March 5, 2013 shall be complied with;
11. The petitioner shall work with the Engineer to determine if the wetland waters can be used for irrigation;
12. The requirements of the February 27, 2013 letter from the Brighton Area Fire Department will be complied with.

Support by Lauren Brookins. **Motion carried unanimously.**

GENOA CHARTER TOWNSHIP BOARD

Special Meeting
January 14, 2013

MINUTES

Supervisor McCririe called the special meeting of the Genoa Charter Township Board to order at 6:00 p.m. The Pledge of Allegiance was then said. The following persons were present constituting a quorum for the transaction of business: Gary McCririe, Paulette Skolarus, Robin Hunt, Linda Rowell, Jim Mortensen, Todd Smith and Jean Ledford. Also present were Township Manager Michael Archinal; Township Assistant Manager Kelly VanMarter and eight persons in the audience.

A Call to the Public was made with no response.

Approval of Regular Agenda:

1. Request for approval of rezoning agreement, impact assessment, rezoning plan and adoption of Ordinance #Z-13-01 to amend the zoning map of Genoa Charter Township by rezoning property located on the south side of Grand River Avenue between Hughes Road and Kellogg Road involving parcel numbers 11-14-100-014 and 11-14-200-011 from Rural Residential/Town Center (RR/TC) to Conditional Office Service District (conditional OSD) petitioned by Dakkota Integrated Systems.

VanMarter was asked to review the residential equivalent users and bike/walk path for this site.

A. Disposition of Rezoning Agreement.

Moved by Skolarus and supported by Ledford to approve the Rezoning Agreement with reference to Attorney Frank Mancuso's letter of Jan. 4, 2013. The motion carried unanimously.

B. Disposition of Impact Assessment.

Moved by Ledford and supported by Smith to approve the Environmental Impact Assessment (11/26/2012) correcting typographical errors. The motion carried unanimously.

C. Disposition of Rezoning Site Plan.

Moved by Hunt and supported by Skolarus to approve the Rezoning Site Plan as submitted. The motion carried unanimously.

D. Approval and adoption of Ordinance Z-13-01.

Moved by Ledford and supported by Hunt to approve Ordinance Z-13-01 amending the Zoning Map of the township on the south side of Grand River between Hughes and Kellogg Roads from

RR/TC to conditional OSD. The motion carried by roll call vote as follows: Ayes – Ledford, Smith, Hunt, Rowell, Mortensen, Skolarus and McCririe. Nays – None. Absent – None.

The Special Meeting of the Genoa Charter Township Board was adjourned at 6:13 p.m.



Paulette A. Skolarus
Genoa Township Clerk

(Press/argus 01/18/2013)

**GENOA CHARTER TOWNSHIP
PLANNING COMMISSION
PUBLIC HEARING
DECEMBER 10th, 2012
6:30 P.M.**

AGENDA

CALL TO ORDER : The meeting of the Genoa Charter Township Planning Commission was called to order at 6:30 p.m. Present constituting a quorum were Dean Tenge, Lauren Brookins, Chairman Doug Brown, Diana Lowe, John McManus, James Mortensen and Barbara Figurski. Also present were Assistant Manager, Kelly VanMarter, Gary Markstrom from Tetra Tech, and Brian Borden of LSL.

PLEDGE OF ALLEGIANCE: The Pledge of Allegiance was recited.

APPROVAL OF AGENDA: Upon motion by Barbara Figurski and support by Diana Lowe, the agenda was approved as submitted. **Motion carried unanimously.**

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

OPEN PUBLIC HEARING#1... Review of rezoning application, rezoning agreement, impact assessment and site plan for property located on the south side of Grand River Avenue between Hughes Road and Kellogg Road, Brighton, Sec. 14, from Rural Residential/Town Center (RR/TC) to Office Service District (OSD), petitioned by Dakkota Integrated Systems.

Brian McDonnell, Chief Officer of Dakkota Integrated Systems addressed the Planning Commission. Dakkota is interested in setting an office up in Livingston County because the area is convenient for 80% of their employees. They have 12 locations in the US and one in Canada. They are a community involved company.

Brent Lavanway of Boss Engineering addressed the Planning Commission. He laid out the location of the site at issue. He presented a drawing which reflects ~~four possible potential locations for the office building on the site at issue.~~

Tony Dellicolli of Cityscapes addressed the Planning Commission. The preferred location for the building would allow for a southwest orientation of the building to best utilize the natural sun for solar panel purposes. Additionally, this would disrupt as few trees as possible. A handout was provided to the Planning

Commission that reflected imagery of the proposed materials, which would be consistent with the natural amenities on site.

Brian Borden addressed the Planning Commission and reminded them that this is a request for conditional rezoning. The request does include a zoning agreement. Therefore, the Planning Commission can't make suggested changes or edits to the plans. The Planning Commission is not requested to accept it as submitted either.

Any rezoning needs to maintain consistency with master plan. This application is consistent. A OSD would restrict the uses of the site and the design of the site. Brian Borden is concerned with the building materials referred to in the zoning agreement. The site has many natural features that could be tricky to develop. He believes it would be difficult to apply zoning requirements as required by the current zoning. There may be some justification for re-zoning. Strict compliance with Town Center Overlay standards would be very difficult. This would be a good transitional use to buffer the more intense (Grand River) to the less intense use (residential). The concept plan protects and preserves many natural features. They may attempt to fill in wetlands and create a different development but approval from MDEQ would be difficult to obtain. There are two points of frontage on Grand River. Utilities should not be a problem. The zoning agreement does contain all information required by the ordinance. It is a binding, legal document if approved. Therefore, it should be reviewed by the Township Attorney prior to the Township Board approving it. The agreement applies to the entire property.

Any further building on the site would need site plan approval.

Gary Markstrom of Tetra Tech addressed the Planning Commission. His comments apply more to the site plan. He feels storm water will not be an issue. During the site plan, impervious areas would be limited to make sure no downstream problem is created.

Municipal water is available and the sanitary sewer is available at that location. A pump may be necessary because it is shallow. The uses on the proposal are limited to low flow uses, so Gary Markstrom perceives no stress on the sanitary sewer systems or water systems. He sees no red flags to be raised tonight.

The fire department reported no issues at this time.

No adjacent properties have ingress/egress rights being recorded on this property.

The subdivision control ordinance was addressed. Chairman Brown asked why that language was in subsection (d). Brian Borden indicates that was taken verbatim from the ordinance. Kelly VanMarter confirmed that.

There is no sidewalk reflected on the site plan at this time. That can be addressed at the site plan review.

Barbara Figurski asks how much overflow would go into Lake Chemung. Gary Markstrom indicated all of it, but there are many restrictions that will prevent overflow that would be utilized and addressed in a site plan. Mr. Markstrom indicated there is a lot of room to put in preventative measures.

No one from the public wished to address the Planning Commission regarding this project.

Planning Commission disposition of petition

- A. Recommendation of Rezoning Agreement.
- B. Recommendation of Impact Assessment dated 11-26-12.
- C. Recommendation of Site Plan dated 11-26-12.

Motion by James Mortensen to recommend to the Township Board approval of a conditional rezoning agreement to rezone the property located on the south side of Grand River between Hughes and Kellogg Roads from rural residential town center overlay to office service district as petitioned by the petitioner. This rezoning and acceptance of the conditional rezoning agreement is recommended because the change to an office service district is compatible with surrounding sites and continuation in the town center overlay would be difficult because of the topography and wetlands on this site. This recommendation requires the review of the Township Attorney prior to submission to the Township Board.

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

Motion by Barbara Figurski to recommend to the Township Board approval of the impact assessment dated November 26, 2012.

Support by John McManus. **Motion carried unanimously.**

Motion by James Mortensen to recommend to the Township Board approval of the site plan dated November 26, 2012.

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

Administrative Business:

- *Staff report.* Kelly VanMarter gives a staff report to the Planning Commission.
- *Approval of October 9, 2012 Planning Commission meeting minutes.* **Motion** by Barbara Figurski and support by Diana Lowe to approve the minutes of the October 9, 2012 meeting minutes. **Motion carried unanimously.**



LSL Planning, Inc.

Community Planning Consultants

March 14, 2013

Planning Commission
Genoa Township
2911 Dorr Road
Brighton, Michigan 48116

Attention:	Kelly Van Marter, AICP Assistant Township Manager and Planning Director
Subject:	Dakkota Integrated Systems – Special Land Use and Site Plan Review #1
Location:	Vacant property on the south side of Grand River Avenue, east of Dorr Road
Zoning:	OSD Office Service District

Dear Commissioners:

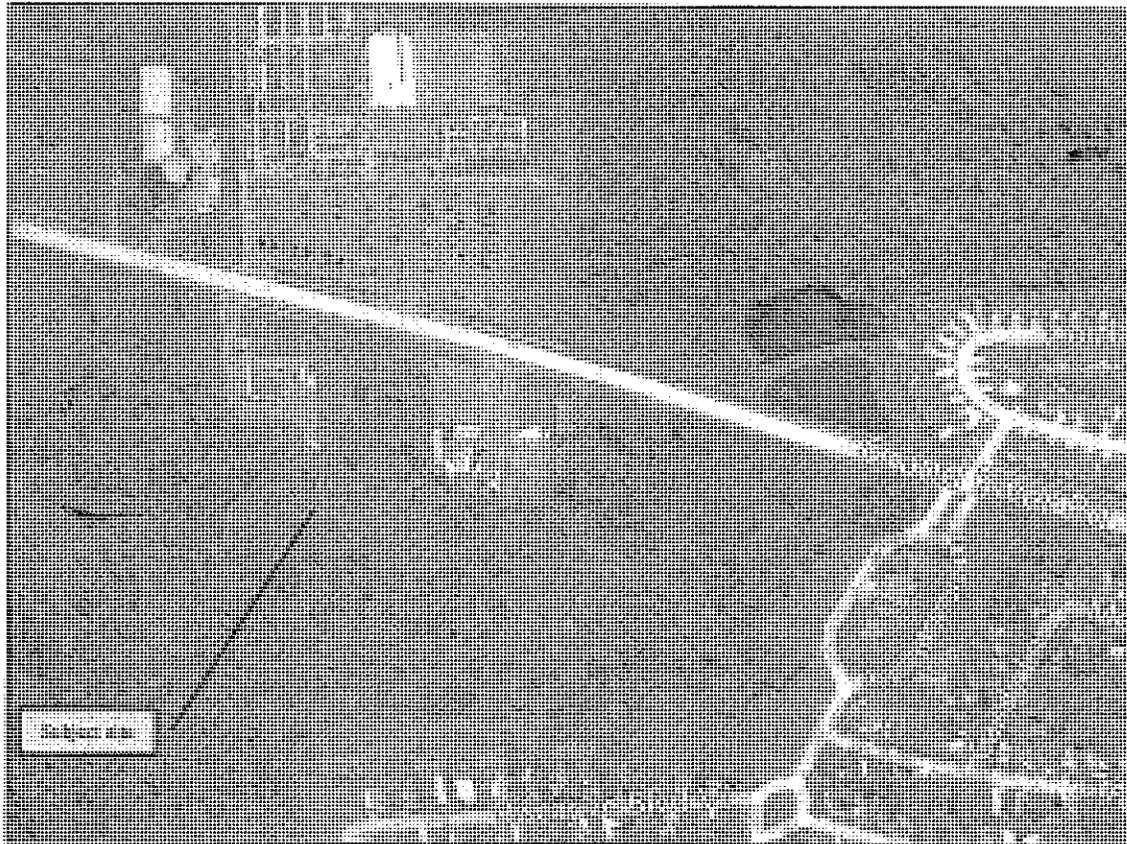
At the Township’s request, we have reviewed the site plan and architectural drawings (both dated 2/6/13), as well as the application for special land use (dated 2/26/13) proposing a new office building for the vacant 28.7-acre site located on the south side of Grand River Avenue, east of Dorr Road. The subject site was recently rezoned from RR/TCOD to OSD. We have reviewed the proposal in accordance with the applicable provisions of the Genoa Township Zoning Ordinance.

A. Summary

1. In our opinion, the general special land use standards of Article 19 are met; however, any issues raised by the Township Engineer must be addressed and/or mitigated. Additionally, if required by MDEQ, the applicant must obtain any permits needed in relation to the wetland areas.
2. The Planning Commission has approval authority over the building elevations, including materials and colors.
3. We recommend the Township Engineer review driveway alignment and spacing.
4. The site plan does not identify the required loading space.
5. The applicant requests Commission authorization to modify landscaping requirements given the presence of existing natural vegetation and wetlands.
6. There are minor discrepancies on the landscape plan that need to be corrected.
7. The applicant must confirm that irrigation will be provided for all proposed landscaped areas.
8. Planning Commission approval is needed for the proposed waste receptacle placement within the required side yard, or an alternate location must be provided.
9. In our opinion, the applicant is required to install sidewalks along the site’s entire Grand River frontage unless there are significant site constraints that prevent construction at this time.
10. The applicant must provide detail sheets for the proposed light fixtures.
11. Planning Commission approval is needed for the second wall sign.
12. We request the applicant provide sign area calculations for the proposed wall signs.

B. Proposal

The applicant requests site plan review and approval for a new 20,680 square foot office building intended for use by Dakkota Integrated Systems. Table 7.02 of the Zoning Ordinance lists office buildings with between 15,000 and 55,000 square feet as permitted uses in the OSD. However, the project also proposes grading within the required 25-foot setback from wetland areas. As such, special land use approval is also needed in accordance with Section 13.02.04(d).



aerial view of site and surroundings (looking north)

C. Special Land Use Review

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

1. **Master Plan.** The Township Master Plan and Future Land Use map designate the site as Mixed-Use Town Center; however, given the nature of the request, the Environmental Conditions chapter of the Plan is more pertinent than the Future Land Use chapter.

The natural feature setback regulations are supported by the Master Plan to prevent activities that could harm features, such as wetlands, and restrict their ability to perform their natural functions. In this particular instance, the applicant proposes grading within 25 feet of wetland areas, but does not propose any permanent structures and notes that disturbed areas will be restored upon completion of the project. As such, we are of the opinion that the proposal is in keeping with Master Plan in that it will not result in a permanent disturbance to a natural feature.

2. **Compatibility.** Given the nature of the subject site (size, shape and presence of natural features) the proposed development is well buffered from surrounding uses. Furthermore, the portion of the project subject to special land use review (grading within 25 feet of a wetland) does not occur near the surrounding properties, but rather is generally internal to the site itself, and such areas are to be restored upon project completion.

The activities proposed are not expected to result in a disturbance to the wetland areas themselves, or to adjacent and surrounding properties.

3. **Public Facilities and Services.** Aside from any stormwater management concerns, the proposal for minor grading activities within 25 feet of a wetland is not anticipated to impact public facilities and services. We defer to the Township Engineer for review of the stormwater management and grading plans and any impact it may have under this criterion.
4. **Impacts.** As noted above, the proposal entails grading within 25 feet of wetland areas, which the applicant notes will be restored fully upon completion of the project. Given the nature of the request and the fact that the disturbance will only be temporary, the proposal is not expected to result in adverse impacts.
5. **Mitigation.** The Township may require mitigation necessary to limit or alleviate any potential adverse impacts as a result of the proposed activities; however, the submittal already notes that the disturbed areas will be fully restored upon project completion. With that being said, any comments provided from an engineering perspective should be addressed as part of this criterion. Lastly, if necessary, the applicant will also be responsible for any permits required by MDEQ.

D. Site Plan Review

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

District	Lot Size		Minimum Setbacks (feet)				Max. Height	Lot Coverage
	Lot Area (acres)	Width (feet)	Front Yard	Side Yard	Rear Yard	Parking		
OSD	1	100	35	20	40	20 front 10 side/rear	35	35% building 60% impervious
Proposal	28.7	790	448	80 (N) 810 (E) 494 (W)	390	13 side (N)	32'-2" (max)	1.06% building 5.05% impervious

2. **Building Materials and Design.** The proposed elevations, including colors and materials, are subject to review and approval by the Planning Commission. The drawings include a variety of materials and design elements. Materials include brick, stone, metal and expansive window areas. The applicant must confirm colors for Planning Commission consideration and may wish to provide a color rendering, along with material samples for their review.
3. **Parking and Vehicular Circulation.** Based upon the size of the building (20,680 square feet) and proposed use (general office), the project requires 69 parking spaces. The site plan provides 80 spaces, including the required number of barrier free spaces (4).

The parking spaces and drive aisles meet or exceed the dimensional standards of Section 14.06, while the details on Sheet 2 also provide for looped (or double) striped spaces, as required.

4. **Vehicular Circulation.** Vehicular access to the site is proposed via a single driveway along Grand River Avenue. The Township's Access Management standards (Article 15) require 300-foot spacing between commercial driveways on Grand River, as well as alignment or a 250-foot offset from opposing driveways.

The proposed placement does not meet the spacing requirement from the nearest driveway to the east (Trends in Tile; approximately 200-foot spacing). The driveway is generally aligned with the opposing driveway on the north side of Grand River, although a slight shift to the east could better prevent "left turn lockup." However, this would also reduce the already deficient driveway spacing noted above. We recommend the Township Engineer review the driveway location to ensure it will function properly without causing disruption to Grand River traffic.

5. **Loading.** Given the size of the building, Section 14.08.08 requires 1 loading space, which is to be located in a rear or side yard not directly visible to a public street. The site plan does not identify the required space, which is to contain 500 square feet, unless otherwise approved by the Planning Commission.

The applicant must either provide the required space, or request that the Commission waive this requirement based upon a lack of need. In order to demonstrate a lack of need, the applicant should describe the nature of a typical delivery for the business.

6. **Landscaping.** The following table is a summary of the landscaping required by Section 12.02:

Location	Requirements	Proposed	Comments
Front yard greenbelt	20 canopy trees 20-foot width (based upon full property street frontage; submittal calculations are based on partial frontage)	Retain existing trees 20-plus foot width	In our opinion, the site would benefit from some greenbelt trees near the driveway, while any gaps along the easterly frontage could be filled in. Section 12.02.13 allows the PC to modify landscaping requirements based on presence of existing natural vegetation and wetlands.
Buffer zone "B" (W) adjacent to MDR zoning	89 canopy trees 89 evergreens 355 shrubs 6' wall or 3' berm 20-foot width	Retain existing vegetation and wetland areas 20-plus foot width	Section 12.02.13 allows the PC to modify landscaping requirements based on presence of existing natural vegetation and wetlands.
Buffer zone "C" (S & E) adjacent to MHP zoning	104 canopy trees OR 104 evergreens OR 415 shrubs (OR combination therefor) 10-foot width	Retain existing vegetation and wetland areas 14 evergreen trees 10-plus foot width	Section 12.02.13 allows the PC to modify landscaping requirements based on presence of existing natural vegetation and wetlands.
Detention ponds (4)	Total of 32 canopy OR evergreen trees Total of 318 shrubs	Retain existing vegetation 12 trees 114 shrubs	Section 12.02.13 allows the PC to modify landscaping requirements based on presence of existing natural vegetation and wetlands.
Parking lot	10 canopy trees 800 s.f. of landscaped area	15 canopy trees 4,473 s.f. of landscaped area	Requirement met

Additionally, there are some minor discrepancies between the landscape plan and table on Sheet 6. Specifically, the following items must be corrected for consistency:

- The table identifies 7 "QR" trees, although the plan depicts only 6;
- The plan notes 1 "PS" tree southeast of the building, although 2 are shown;
- The table identifies 31 "FIS" shrubs, although the plan depicts 37;
- The table identifies 15 "HPL" shrubs, although the plan depicts only 8;
- The table identifies 12 "HB" perennials, although the plan depicts only 7; and
- The plan identifies a shrub noted as "CAK" that is not described in the table.

The plan also shows 14 evergreen trees along the southerly lot line to fill in gaps between existing plantings; however, there is no indication as to their size or type. These plantings must be included in the table along with their details. Lastly, the applicant must confirm that irrigation will be provided for all landscaped areas in accordance with Section 12.02.11.

7. **Waste Receptacle and Enclosure.** The project includes a new waste receptacle and enclosure northeast of the building. Section 12.04 requires a rear yard or non-required side yard location, unless otherwise approved by the Planning Commission. Given the proposed placement within the required side yard (7.8-foot setback provided; 20-foot required), the location requires Commission approval.

The applicant proposes a concrete base and masonry enclosure matching materials used on the building in accordance with current requirements.

- 8. Pedestrian Circulation.** Section 12.05 requires sidewalks and pathways along certain road frontages, including a 5-foot sidewalk along Grand River Avenue east of the 141 interchange. Accordingly, the site plan provides the required sidewalk with the connection to the existing sidewalk in front of the adjacent business to the east (Trends in Tile).

Our only additional comments on this item are that: 1) the sidewalk ends short of the westerly lot line (likely due to the presence of a wetland); and 2) no sidewalk is shown along the site's easterly Grand River frontage. In our opinion, the Ordinance requires a sidewalk along the full frontage and design options should be considered such that the sidewalk extends all the way to the edge of each side lot line. The Ordinance allows an exception for a performance guarantee in lieu of construction where there are "significant site constraints."

- 9. Exterior Lighting.** The submittal includes a photometric plan (Sheet 7), which proposes the installation of 5 light poles in the parking lot (3 of which have double fixtures), 25 bollards along the driveway and 2 fixtures used to illuminate the proposed ground sign. The pole mounted fixtures are at a height of 20 feet and the photometric readings are well within Ordinance limitations. Our only comment is that the applicant needs to provide detail sheets for the proposed fixtures.
- 10. Signs.** The submittal proposes a monument sign near the driveway, as well as two wall signs on the building itself. The ground sign complies with Ordinance standards for height, area and setback; however, the inclusion of two wall signs requires Commission approval in accordance with Footnote 2(b) of Table 16.1.

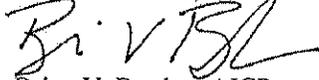
More specifically, the Commission may permit a two wall signs for businesses on interior lots, which requires additional visibility due to obstructed views or building orientation. If both signs are allowed, their area cannot exceed a total of 100 square feet. We estimate this standard to be met, but request the applicant provide area calculations to confirm compliance. If approved, the applicant must obtain a sign permit prior to installation of any signage.

- 11. Impact Assessment.** As required by Ordinance, the submittal includes an Impact Assessment (dated 2/6/13). In summary, the Assessment notes that the project is not anticipated to adversely impact natural features, public services/utilities, surrounding land uses or traffic.

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

Sincerely,

LSL PLANNING, INC.



Brian V. Borden, AICP
Senior Planner



March 5, 2013

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

**Re: Dakkota Integrated Systems Corporate Office
Site Plan Review #2**

Dear Ms. Van Marter:

We have reviewed the resubmitted site plan documents for the Dakkota Integrated Systems Corporate Office and the letter from Boss Engineering dated February 28, 2013, which was sent to us by the Township on February 27, 2013. The site is on the south side of Grand River immediately west and south of Trends in Tile. It is proposed for office building and associated parking facilities. Tetra Tech has reviewed the documents and offers the following comments for consideration by the planning commission:

SITE PLAN

1. The minimum listed setback along parking areas is 10 feet, yet there is only a 7.8-foot setback from the dumpster enclosure to the north property line adjacent to 6430 Grand River Avenue. If a variance is being requested, it should be stated on the plans.
2. Water main is shown connecting off the existing water main stub on the property of 6300 Grand River Avenue. The connection is proposed as a tapping sleeve and valve. This section of line can be isolated, so the connection should be revised to be a cutting-in sleeve and tee on the 8-inch water main. Calculations are needed for water usage and fire flow demand to confirm that the necessary capacity is available at the proposed tapping location for the MDEQ water main permit.
3. A fire department connection has been added to the NW corner of the building. Is piping to connection going to be all internal to building? If not, show exterior piping and provide a detail for the fire department connection and how it is isolated with a check valve from the public system.
4. Sanitary sewer service lateral will require a permit from the Livingston County Road Commission (LCRC) for installation across the road. We recommend from past projects with the LCRC that the portion in the road right-of-way be perpendicular to the roadway. An isolation valve should be placed on the southern right-of-way of Grand River, as this will be the limits of the sanitary sewer lead. There is an existing sign and sidewalk in the area that need to be accounted for on the drawings, along with existing sewer information.

Tetra Tech

1921 East Miller Road, Suite A, Lansing, MI 48911
Tel 517.394.7900 Fax 517.394.0011 www.tetrattech.com

Ms. Kelly Van Marter
Site Plan Review #2 – Dakota Integrated Systems Corporate Office
March 5, 2013
Page 2

Show limits of proposed bore pits on both sides of the road as the bore pit locations currently shown are in conflict with existing water mains.

The Township should consider these issues in your discussion on the site plan application. From an engineering viewpoint, the overall site plan appears to be acceptable once the aforementioned concerns are addressed.

Please call if you have any questions.

Sincerely,



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



Joseph C. Siwek, P.E.
Project Engineer

copy: Brent LaVanway, P.E., Boss Engineering



Brighton Area Fire Department

615 W. Grand River

Brighton, Michigan 48116

810-229-6640 Fax: 810-229-1619

February 27, 2013

Kelly VanMarter
Genoa Township
2911 Dorr Road
Brighton, MI 48116

RE: Dakkota Office Building
Grand River
Site Plan Review

Dear Kelly:

The Brighton Area Fire Department has reviewed the above mentioned site plan. The revised plans were received for review on February 26, 2013 and the drawings are dated February 6, 2013 with a revision date of February 25, 2013. The project is based on a new 20,680 square foot building (business). The plan review is based on the requirements of the International Fire Code (IFC) 2012 edition.

1. The use group and type of construction was not indicated in the initial submittal. Provide this information to the Brighton Area Fire Department.
2. The water main shall be sized in such a way as to meet the requirement set out in the International Fire Code 2012 Appendix B Table B105.1 and Table C105.1. Provide the location of the water main and the closest hydrant to the site. A hydrant shall be located within 100' of the fire department connection.

IFC 912.2
3. Depending on the type of construction, the building may be required to provide an automatic sprinkler system in accordance with NFPA 13, *Standard for the Installation of Automatic Sprinkler Systems*.

IFC 903

 - A. The location, size, gate valve, and connection of the fire protection lead shall be indicated on the utility site plan.
4. Future project submittals shall include the address and street name of the project in the title block.

IFC 105.4.2

5. The building shall include the building address on the building. The address shall be a **minimum of 6"** high letters of contrasting colors and be clearly visible from the street. The location and size shall be verified prior to installation.

IFC 505.1

6. The access road into the site shall be a minimum of 26' wide. With a width of 26' wide, one side of the street shall be marked as a fire lane. Include the location of the proposed fire lane signage and include a detail of the fire lane sign in the submittal. Access roads to site shall be provided and maintained during construction. Access roads shall be constructed to be capable of supporting the imposed load of fire apparatus weighing at least 75,000 pounds.

IFC D 103.6

IFC D103.1

IFC D 102.1

IFC D 103.3

7. Access around building shall provide emergency vehicles with a turning radius up to 55' wall to wall and a minimum vertical clearance of 13 ½ feet.

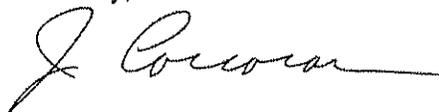
8. The location of a key box (Knox Box) shall be indicated on future submittals. The Knox box will be located adjacent to the front door of the structure.

IFC 506.1

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

Additional comments will be given during the building plan review process (specific to the building plans and occupancy). If you have any questions about the comments on this plan review please contact me at 810-229-6640.

Sincerely,



Jim Corcoran
Captain – Fire Inspector

**IMPACT ASSESSMENT
FOR
SITE PLAN PETITION
“DAKKOTA INTEGRATED SYSTEMS OFFICE BUILDING”
GENOA TOWNSHIP, LIVINGSTON COUNTY
MICHIGAN**

Prepared for:

**DAKKOTA INTEGRATED SYSTEMS
1875 HOLLOWAY DRIVE
HOLT, MICHIGAN 48842
(517) 594-6500**

Prepared by:

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

February 6, 2013

12-183EIA

INTRODUCTION

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

DISCUSSION ITEMS

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

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

Prepared For :
DAKKOTA INTEGRATED SYSTEMS
Owner of property
1875 Holloway Drive
Holt, MI 48842
(517) 594-6500

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

The site is located on the south side of Grand River Avenue, approximately 1,100 feet east of the Hughes Road intersection. The property has frontage on Grand River at two different locations. There are 5 parcels along Grand River under separate ownership which divide the road frontage. Across Grand River there exist both commercial and industrial uses. The western property line runs along the Grand Beach Lake county drain. West of the drain is vacant property. To the south and east is the Sylvan Glen manufactured home community. The subject property is currently undeveloped, currently zoned Office Service District (OSD) and governed by a Rezoning Agreement.

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

The total site area is 29.64 acres. There are 10.25 acres of wetlands and 1.02 acres of right-of-way for Grand River Avenue leaving a total of 18.37 acres of upland. With regards to the wetlands, there are two large areas on the property. One area is on the west of the property associated with the drain running along the west property line. The other large area is on the east side of the site adjacent to the aforementioned manufactured community. There are two smaller areas towards the center of the property. Because of their size and proximity to the drain, all of the wetlands appear to be regulated by the Michigan Department of Environment Quality. The upland areas on the site are rolling with approximately 25 feet of relief from the center of the property to the wetlands. Most of the upland area is

covered with medium to large trees. Most of the trees are black cherry, with a few white oak, red maple, apple, and a few other species.

The proposed office building will be located in the central wooded area on the property south of the existing commercial properties fronting Grand River Avenue. There will be some tree removal associated with construction of the office building and parking lot. The trees being removed are indicated in the Site Plan documents.

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

Surface runoff during periods of construction will be controlled by proper methods set forth by the Livingston County Drain Commissioner, including silt fence, pea stone filters, and seed and mulch. A meeting was held with the Drain Commissioner's office to discuss stormwater management. Their primary recommendation is to maintain the existing drainage patterns as closely as possible.

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

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

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

The applicant is planning on constructing a single office building totaling 20,680 square feet in size, with the required parking, pedestrian circulation and storm water management system associated with it. The applicant is proposing an entrance drive extending from Grand River Avenue to the building and associated parking which will both be placed near the center of the property. This placement will allow a large vegetative buffer around the east, south and west sides of the project to screen the building from any existing or future residential.

The applicant is anticipating constructing the development in one phase.

With the proposed use being office, most of the activity on the property would be weekdays 8 AM to 5 PM. Unlike a commercial use, there would be limited evening or weekend traffic.

The increase in light, noise or air pollution would be far less than what is typically associated with a commercial development. Developing a single smaller office building on the property will have minimal impact on surrounding properties.

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

The developer anticipates bringing up to 70 jobs to the area. This will lead to people moving to the area to be closer to their jobs, therefore purchasing homes in the area. This would also mean addition children enrolling in one the school systems in the area. With most of the schools having seen a steady decline in

enrollment over the last 5 to 7 years, an increase in students would be seen as a positive for the community.

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

The development will be served by both public water and sanitary sewer. With regards to storm water management, the project would be required to meet all local, county and state storm water and erosion control requirements. All of the required information is included in the Site Plan documents.

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

There will be no hazardous materials used or disposed of on this site.

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

According to the Institute of Transportation Engineers Trip Generation 6th addition, the number of trips generated by this development would be an average of 52 vehicle trips per hour during the AM peak hours, and 50 vehicle trips per hour during the PM peak hours. This is based on a Single Tenant Office Building.

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

The anticipated number of directional vehicle trips during the peak hour of traffic is 52. Therefore a detailed traffic impact study is not necessary.

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

The property is zoned OSD and subject to the Rezoning Agreement executed by Genoa Charter Township and Dakkota Integrated Systems, LLC.

L. A list of all sources shall be provided.

Genoa Township's *Submittal Requirements For Impact Assessment*

Genoa Township Zoning Ordinances

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

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

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

APPENDIX



Aerial Photograph



1 **NORTHEAST (FRONT) ELEVATION**
1/8" = 1/8' @ 24'00"



2 **SOUTHWEST (REAR) ELEVATION**
1/8" = 1/8' @ 24'00"



3 **NORTHWEST ELEVATION**
1/8" = 1/8' @ 24'00"



4 **SOUTHEAST ELEVATION**
1/8" = 1/8' @ 24'00"



1 **NORTHEAST (FRONT) ELEVATION**
1/8" = 1/8' @ 24'x00"



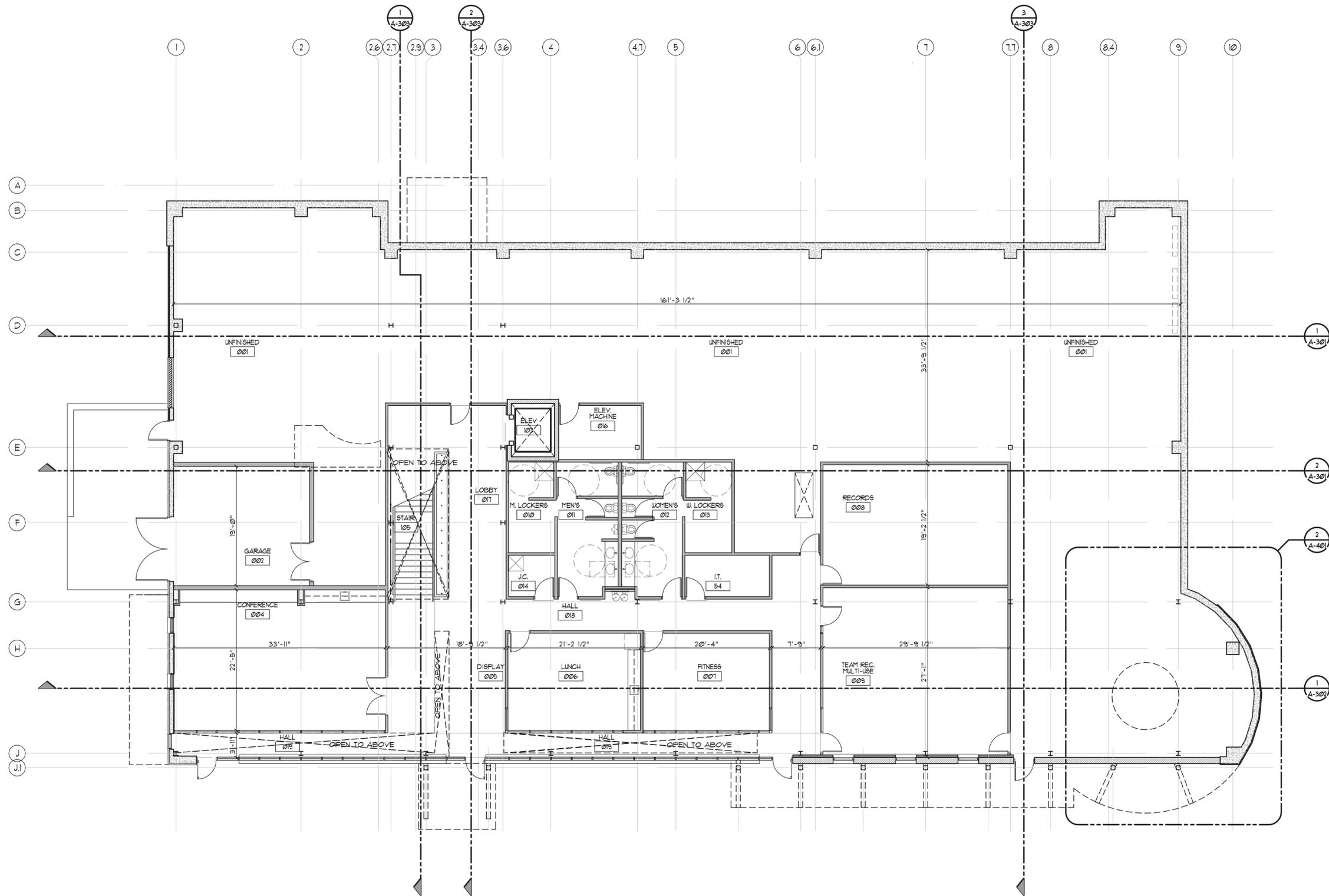
2 **SOUTHWEST (REAR) ELEVATION**
1/8" = 1/8' @ 24'x00"



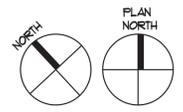
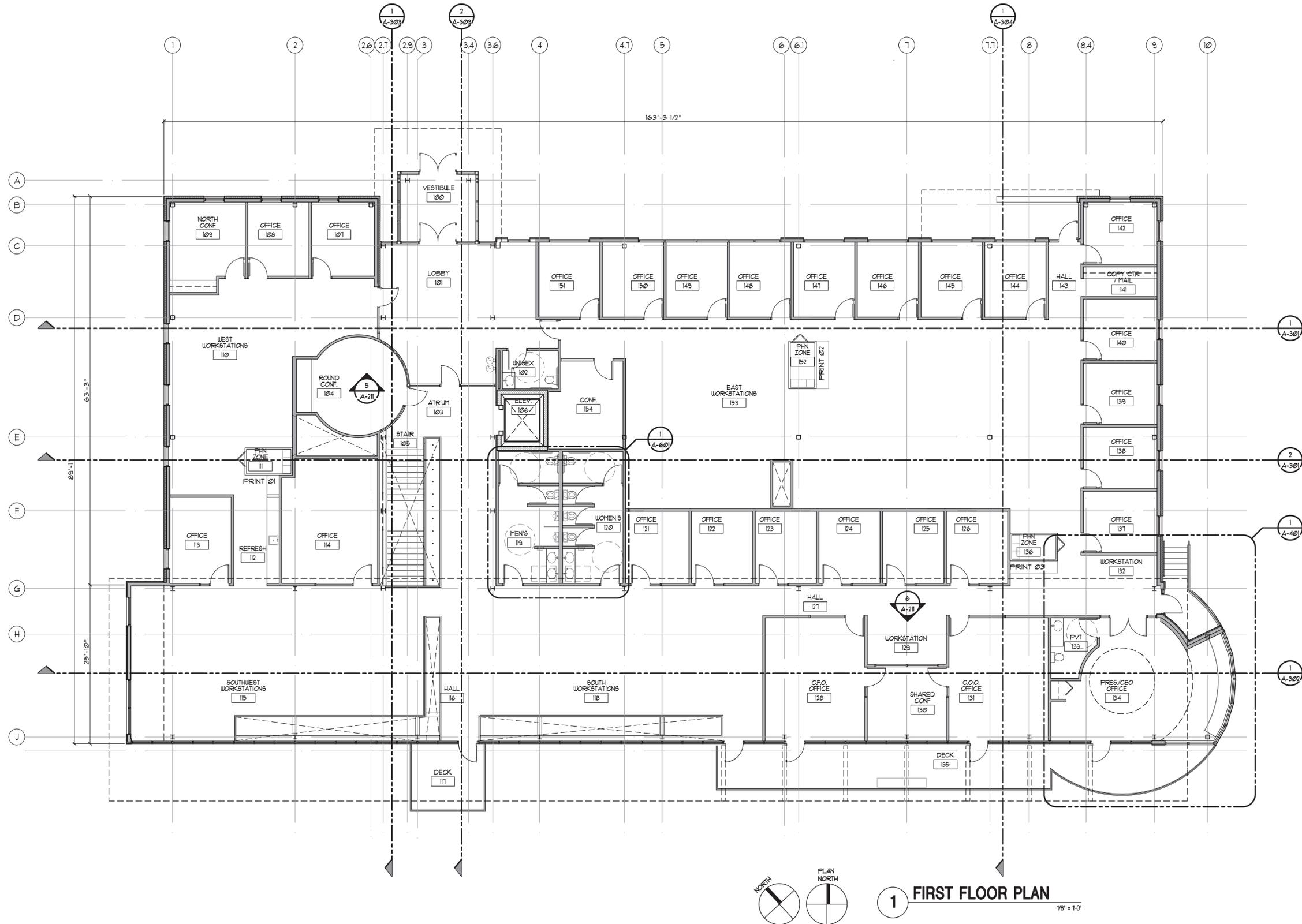
3 **NORTHWEST ELEVATION**
1/8" = 1/8' @ 24'x00"



4 **SOUTHEAST ELEVATION**
1/8" = 1/8' @ 24'x00"



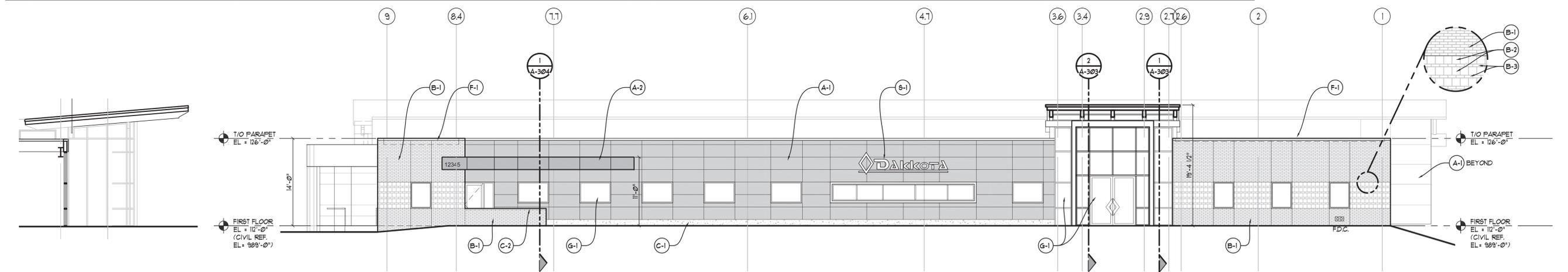
1 LOWER FLOOR PLAN
1/8" = 1'-0"



1 FIRST FLOOR PLAN
1/8" = 1'-0"

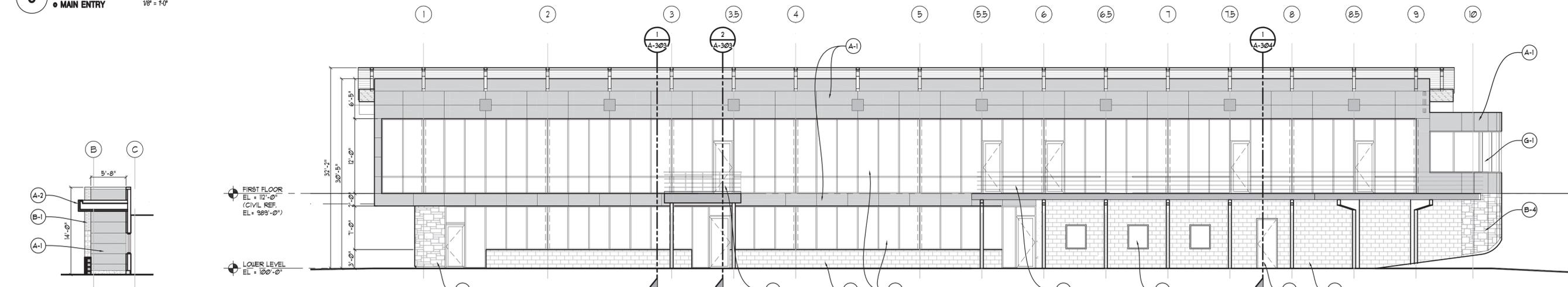
EXTERIOR FINISH SCHEDULE

A-1	DESCRIPTION: ALUMINUM METAL PANEL SYSTEM W/ RAINSCREEN INSTALLATION MFR: DRI-DESIGN COLOR: BLUE	B-2	DESCRIPTION: WINDOW INFILL BRICK MFR.: ENDICOTT CLAY COLOR: COPPERTONE TEXTURE: VELOUR SIZE: TRIPLE BRICK (8X8)	C-1	DESCRIPTION: SPLIT FACE CONCRETE BLOCK INTEGRALLY COLORED	C-2	DESCRIPTION: PRE-CAST CONC. SILL MFR.: COLOR:	G-1	DESCRIPTION: 1" CLEAR INSULATED VIRACON SOLARSCREEN LOW "E" CLASS(VV 1-2M) NOTE: IN CLEAR ANODIZED ALUMINUM FRAME, STOREFRONT SYTEM	P-2	DESCRIPTION: PAINT MFR.: COLOR:
A-2	DESCRIPTION: ALUMINUM METAL PANEL SYSTEM W/ RAINSCREEN INSTALLATION MFR: DRI-DESIGN COLOR: SILVER	B-3	DESCRIPTION: WINDOW ACCENT BRICK MFR.: ENDICOTT CLAY COLOR: MEDIUM 77 TEXTURE: MATT SIZE: MODULAR			D-1	DESCRIPTION: HOLLOW METAL DOOR NOTE: REFER TO DOOR SCHEDULE ON SHEET #A-6XX	L-1	DESCRIPTION: LIGHT FIXTURE NOTE: CENTER OVER DOORS UNLESS OTHERWISE NOTED - REFER TO ELECTRICAL DRAWINGS	R-1	DESCRIPTION: CABLE GUARD RAIL MFR.: COLOR:
B-1	DESCRIPTION: FIELD BRICK MFR: WATSONTOWN BRICK CO. COLOR: KENSINGTON T2 / NO PINK TEXTURE: SMOOTH MUDBOX SIZE: MODULAR BOND: RUNNING	B-4	DESCRIPTION: STONE VENEER MFR.: LANDMARK STONE COLOR: ASFORD BOND: ASHLAR THICKNESS: 1 - 1 1/2 "			F-1	DESCRIPTION: PREFINISHED CAP FLASHING MFR.: COLOR:	P-1	DESCRIPTION: PAINT MFR.: COLOR:	S-1	G.C. TO COORDINATE EXACT SIZE, LOCATION, POWER AND MOUNTING REQUIREMENTS WITH SIGNAGE SUPPLIER THRU OWNER. AT M-1, PROVIDE ICE AND WATER BARRIER BEHIND METAL PANEL APPROXIMATELY 12" LARGER THAN SIGN FIELD. SEE SHEET #A-XXX



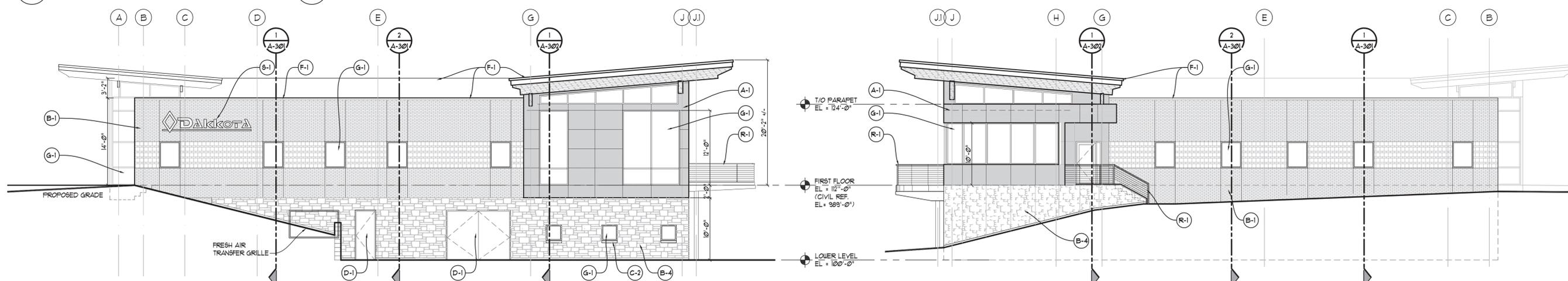
1 NORTHEAST (FRONT) ELEVATION
1/8" = 1'-0"

5 SE ELEVATION
● MAIN ENTRY
1/8" = 1'-0"



2 SOUTHWEST (REAR) ELEVATION
1/8" = 1'-0"

6 NW ELEVATION
● TEAM ENTRY
1/8" = 1'-0"



3 NORTHWEST ELEVATION
1/8" = 1'-0"

4 SOUTHEAST ELEVATION
1/8" = 1'-0"



40850 Grand River Ave Suite 200
Novi, MI, 48375
248 471 7877 ph
248 471 7868 fax



notice
THIS ARCHITECTURAL DRAWING IS GIVEN IN STRICT CONFIDENCE. NO USE, IN WHOLE OR PART, MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF CITYSCAPE ARCHITECTS, INC. ALL RIGHTS ARE HEREBY RESERVED.

CITYSCAPE ARCHITECTS, INC.
COPYRIGHT YEAR 2013

client
Dakkota Integrated Systems

sheet title
EXTERIOR ELEVATIONS

DO NOT SCALE DRAWINGS
USE FIGURED DIMENSIONS ONLY

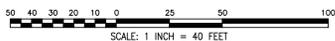
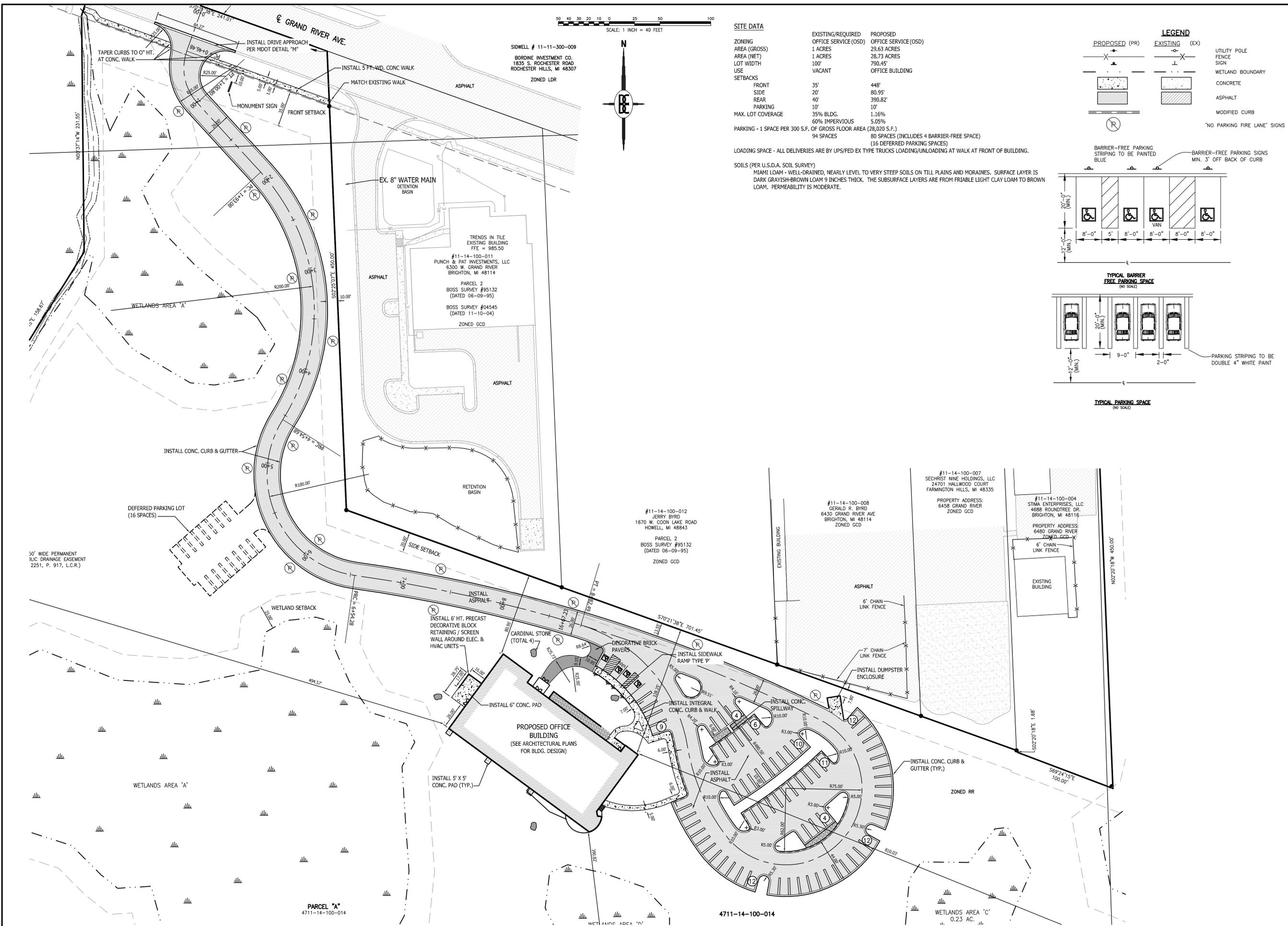


contractor
THE WIELAND-DAVCO CORPORATION

project number
12031

drawn	
approved	DJM
issued	date
SITE PLAN APPROVAL	02-06-13
SPA RESUBMITTAL	02-25-13
SCHEMATIC DESIGN	02-27-13
DESIGN DEVELOPMENT	04-02-13

sheet number
A-201

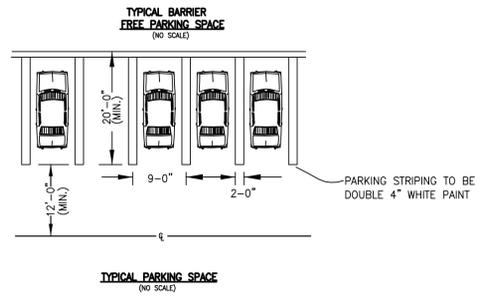
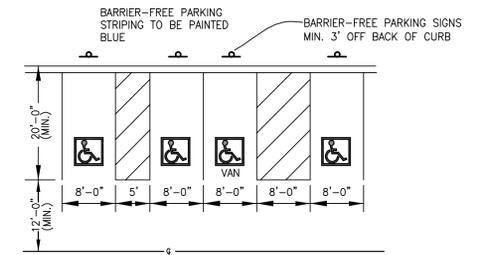
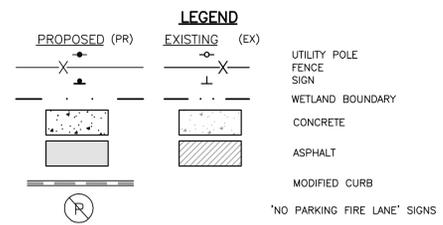


SITE DATA

ZONING	EXISTING/REQUIRED OFFICE SERVICE (OSD)	PROPOSED OFFICE SERVICE (OSD)
AREA (GROSS)	1 ACRES	29.63 ACRES
AREA (NET)	1 ACRES	28.73 ACRES
LOT WIDTH	100'	790.45'
USE	VACANT	OFFICE BUILDING
SETBACKS		
FRONT	35'	448'
SIDE	20'	80.95'
REAR	40'	390.82'
PARKING	10'	10'
MAX. LOT COVERAGE	35% BLDG.	1.16%
	60% IMPERVIOUS	5.05%
PARKING - 1 SPACE PER 300 S.F. OF GROSS FLOOR AREA (28,000 S.F.)	94 SPACES	80 SPACES (INCLUDES 4 BARRIER-FREE SPACE)
		(16 DEFERRED PARKING SPACES)

LOADING SPACE - ALL DELIVERIES ARE BY UPS/FED EX TYPE TRUCKS LOADING/UNLOADING AT WALK AT FRONT OF BUILDING.

SOILS (PER U.S.D.A. SOIL SURVEY)
 MIAMI LOAM - WELL-DRAINED, NEARLY LEVEL TO VERY STEEP SOILS ON TILL PLAINS AND MORAINES. SURFACE LAYER IS DARK GRAYISH-BROWN LOAM 9 INCHES THICK. THE SUBSURFACE LAYERS ARE FROM FRIABLE LIGHT CLAY LOAM TO BROWN LOAM. PERMEABILITY IS MODERATE.



THE DESIGN AND CONSTRUCTION OF THIS PROJECT IS BASED ON THE INFORMATION PROVIDED TO THE ENGINEER BY THE CLIENT. THE ENGINEER HAS CONDUCTED VISUAL INSPECTIONS OF THE SITE AND HAS REVIEWED THE RECORD DRAWINGS AND ONLY APPROVES THE INFORMATION SHOWN ON THESE DRAWINGS AND ONLY APPROVES THE INFORMATION SHOWN ON THESE DRAWINGS AS SHOWN ON THESE DRAWINGS. THE ENGINEER DOES NOT GUARANTEE THE ACCURACY OF THE INFORMATION SHOWN ON THESE DRAWINGS. THE ENGINEER DOES NOT GUARANTEE THE ACCURACY OF THE INFORMATION SHOWN ON THESE DRAWINGS. THE ENGINEER DOES NOT GUARANTEE THE ACCURACY OF THE INFORMATION SHOWN ON THESE DRAWINGS.

BEFORE YOU DIG CALL MISS DIG
 1-800-368-5848
 MISS DIG MIAMI

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

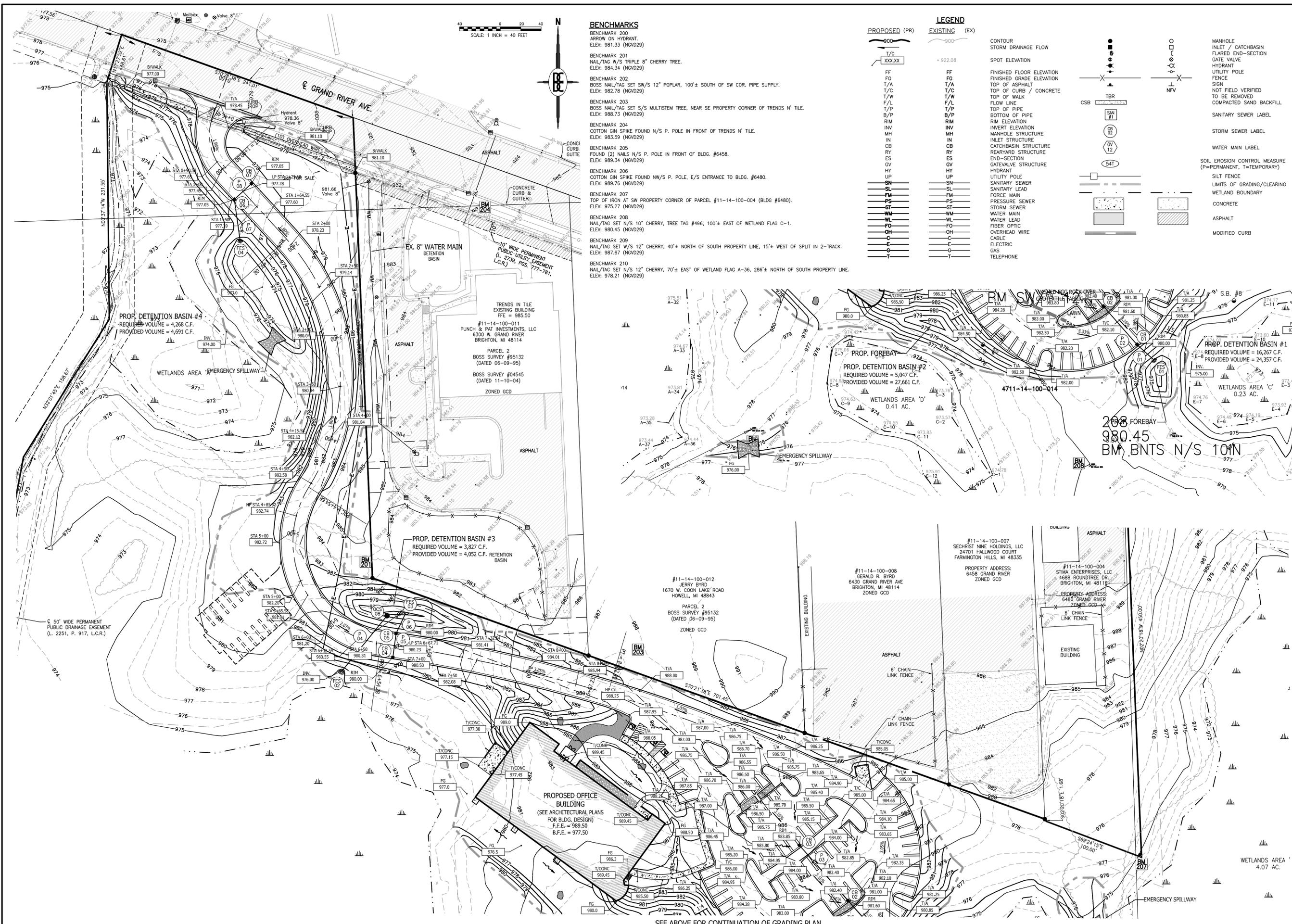
PROJECT: DAKOTA OFFICE BUILDING
 PREPARED FOR: DAKOTA INTEGRATED SYSTEMS, INC.
 1875 HOLLOWAY DRIVE
 HOLT, MI 48842
 (517) 594-6500

TITLE: SITE PLAN

NO.	BY	REVISION PER	DATE
2	TD	TWP. REVIEW	4-4-13
1	TD	TWP. REVIEW	2-25-13
NO	BY	REVISION PER	DATE

DESIGNED BY: TD
 DRAWN BY: TD
 CHECKED BY:

SCALE: 1" = 40'
 JOB NO.: 12-183
 DATE: 2-6-13
 SHEET NO.: 2



BENCHMARKS

BENCHMARK 200
ARROW ON HYDRANT.
ELEV. 981.33 (NGVD29)

BENCHMARK 201
NAIL/TAG W/S TRIPLE 8" CHERRY TREE.
ELEV. 984.34 (NGVD29)

BENCHMARK 202
BOSS NAIL/TAG SET SW/S 12" POPLAR, 100'± SOUTH OF SW COR. PIPE SUPPLY.
ELEV. 982.78 (NGVD29)

BENCHMARK 203
BOSS NAIL/TAG SET S/S MULTISTEM TREE, NEAR SE PROPERTY CORNER OF TRENDS N' TILE.
ELEV. 988.73 (NGVD29)

BENCHMARK 204
COTTON GIN SPIKE FOUND N/S P. POLE IN FRONT OF TRENDS N' TILE.
ELEV. 983.59 (NGVD29)

BENCHMARK 205
FOUND (2) NAILS N/S P. POLE IN FRONT OF BLDG. #6458.
ELEV. 989.34 (NGVD29)

BENCHMARK 206
COTTON GIN SPIKE FOUND NW/S P. POLE, E/S ENTRANCE TO BLDG. #6480.
ELEV. 989.76 (NGVD29)

BENCHMARK 207
TOP OF IRON AT SW PROPERTY CORNER OF PARCEL #11-14-100-004 (BLDG #6480).
ELEV. 975.27 (NGVD29)

BENCHMARK 208
NAIL/TAG SET N/S 10" CHERRY, TREE TAG #496, 100'± EAST OF WETLAND FLAG C-1.
ELEV. 980.45 (NGVD29)

BENCHMARK 209
NAIL/TAG SET W/S 12" CHERRY, 40'± NORTH OF SOUTH PROPERTY LINE, 15'± WEST OF SPLIT IN 2-TRACK.
ELEV. 987.67 (NGVD29)

BENCHMARK 210
NAIL/TAG SET N/S 12" CHERRY, 70'± EAST OF WETLAND FLAG A-36, 286'± NORTH OF SOUTH PROPERTY LINE.
ELEV. 978.21 (NGVD29)

LEGEND	
PROPOSED (PR)	EXISTING (EX)
900	900
T/C	T/C
XXXXXX	XXXXXX
FF	FF
FG	FG
T/A	T/A
T/C	T/C
T/W	T/W
F/L	F/L
T/P	T/P
B/P	B/P
RIM	RIM
INV	INV
MH	MH
IN	IN
ES	ES
CB	CB
GV	GV
HY	HY
UP	UP
SN	SN
FM	FM
PS	PS
ST	ST
WM	WM
WL	WL
FO	FO
OH	OH
C	C
E	E
T	T

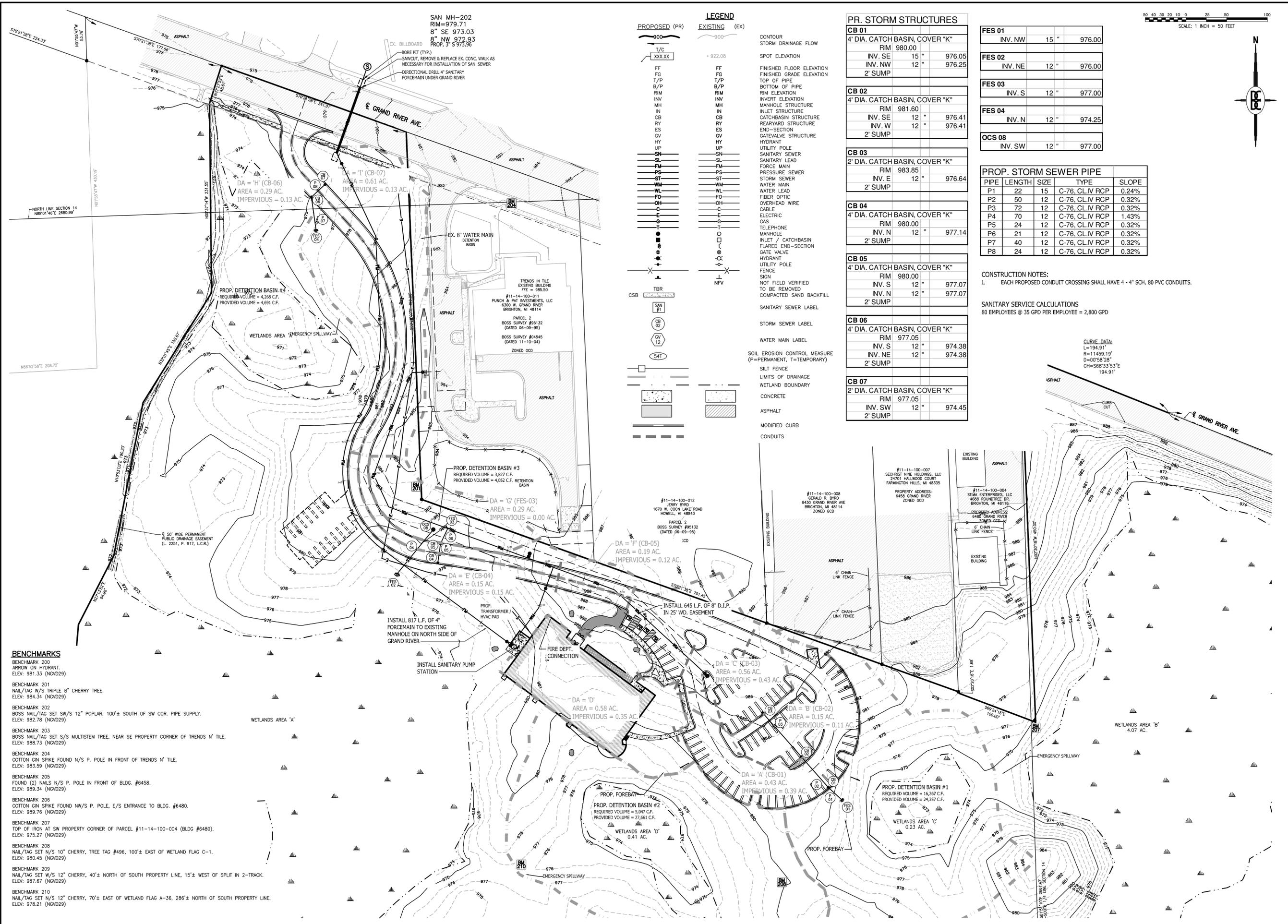
MANHOLE
INLET / CATCHBASIN
FLARED END-SECTION
GATE VALVE
HYDRANT
UTILITY POLE
FENCE
SIGN
NOT FIELD VERIFIED
TO BE REMOVED
COMPACTED SAND BACKFILL

SANITARY SEWER LABEL
STORM SEWER LABEL
WATER MAIN LABEL
SOIL EROSION CONTROL MEASURE
(P=PERMANENT, T=TEMPORARY)
LILT FENCE
LIMITS OF GRADING/CLEARING
WETLAND BOUNDARY
CONCRETE
ASPHALT
MODIFIED CURB

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

PROJECT:	DAKOTA OFFICE BUILDING
PREPARED FOR:	DAKOTA INTEGRATED SYSTEMS, INC. 1875 HOLLOWAY DRIVE HOLT, MI 48842 (517) 594-6500
TITLE:	GRADING & DRAINAGE PLAN
DATE:	4-4-13
REVISION PER:	2-25-13
NO:	1
BY:	TD
DESIGNED BY:	TD
DRAWN BY:	TD
CHECKED BY:	TD
SCALE:	1" = 50'
JOB NO.:	12-183
DATE:	2-6-13
SHEET NO.:	3

SEE ABOVE FOR CONTINUATION OF GRADING PLAN



- BENCHMARKS**
- BENCHMARK 200
ARROW ON HYDRANT.
ELEV: 981.33 (NGVD29)
 - BENCHMARK 201
NAIL/TAG W/S TRIPLE 8" CHERRY TREE.
ELEV: 984.34 (NGVD29)
 - BENCHMARK 202
BOSS NAIL/TAG SET SW/S 12" POPLAR, 100'± SOUTH OF SW COR. PIPE SUPPLY.
ELEV: 982.78 (NGVD29)
 - BENCHMARK 203
BOSS NAIL/TAG SET S/S MULTISTEM TREE, NEAR SE PROPERTY CORNER OF TRENDS N' TILE.
ELEV: 988.73 (NGVD29)
 - BENCHMARK 204
COTTON GIN SPIKE FOUND N/S P. POLE IN FRONT OF TRENDS N' TILE.
ELEV: 983.59 (NGVD29)
 - BENCHMARK 205
FOUND (2) NAILS N/S P. POLE IN FRONT OF BLDG. #6458.
ELEV: 989.34 (NGVD29)
 - BENCHMARK 206
COTTON GIN SPIKE FOUND NW/S P. POLE, E/S ENTRANCE TO BLDG. #6480.
ELEV: 989.76 (NGVD29)
 - BENCHMARK 207
TOP OF IRON AT SW PROPERTY CORNER OF PARCEL #11-14-100-004 (BLDG #6480).
ELEV: 975.27 (NGVD29)
 - BENCHMARK 208
NAIL/TAG SET N/S 10" CHERRY, TREE TAG #496, 100'± EAST OF WETLAND FLAG C-1.
ELEV: 980.45 (NGVD29)
 - BENCHMARK 209
NAIL/TAG SET W/S 12" CHERRY, 40'± NORTH OF SOUTH PROPERTY LINE, 15'± WEST OF SPLIT IN 2-TRACK.
ELEV: 987.67 (NGVD29)
 - BENCHMARK 210
NAIL/TAG SET N/S 12" CHERRY, 70'± EAST OF WETLAND FLAG A-36, 286'± NORTH OF SOUTH PROPERTY LINE.
ELEV: 978.21 (NGVD29)

LEGEND

PROPOSED (PR)	EXISTING (EX)
900	900
T/C	+ 922.08
XXX.XX	
FF	FF
FC	FC
T/P	T/P
B/P	B/P
INV	INV
MH	MH
IN	IN
CB	CB
RY	RY
ES	ES
OV	OV
HY	HY
UP	UP
SN	SN
SL	SL
FM	FM
PS	PS
ST	ST
WM	WM
WL	WL
FO	FO
OH	OH
C	C
E	E
G	G
T	T
CSB	CSB
TBR	TBR
SAN 1	SAN 1
CB 01	CB 01
OV 12	OV 12
SAT	SAT
	NFV

PR. STORM STRUCTURES

STRUCTURE	TYPE	SIZE	INVERT	RIM	AREA	IMPERVIOUS
CB 01	4' DIA. CATCH BASIN, COVER "K"	15"	976.05	980.00	0.29 AC.	0.13 AC.
CB 02	4' DIA. CATCH BASIN, COVER "K"	12"	976.41	981.60	0.29 AC.	0.13 AC.
CB 03	2' DIA. CATCH BASIN, COVER "K"	12"	976.64	983.85	0.29 AC.	0.13 AC.
CB 04	4' DIA. CATCH BASIN, COVER "K"	12"	977.14	980.00	0.29 AC.	0.13 AC.
CB 05	4' DIA. CATCH BASIN, COVER "K"	12"	977.07	980.00	0.29 AC.	0.13 AC.
CB 06	4' DIA. CATCH BASIN, COVER "K"	12"	974.38	977.05	0.29 AC.	0.13 AC.
CB 07	2' DIA. CATCH BASIN, COVER "K"	12"	974.45	977.05	0.29 AC.	0.13 AC.

FES 01

INV. NW	15"	976.00
---------	-----	--------

FES 02

INV. NE	12"	976.00
---------	-----	--------

FES 03

INV. S	12"	977.00
--------	-----	--------

FES 04

INV. N	12"	974.25
--------	-----	--------

OCS 08

INV. SW	12"	977.00
---------	-----	--------

PROP. STORM SEWER PIPE

PIPE	LENGTH	SIZE	TYPE	SLOPE
P1	22'	15"	C-76, CL.IV RCP	0.24%
P2	50'	12"	C-76, CL.IV RCP	0.32%
P3	72'	12"	C-76, CL.IV RCP	0.32%
P4	70'	12"	C-76, CL.IV RCP	1.43%
P5	24'	12"	C-76, CL.IV RCP	0.32%
P6	21'	12"	C-76, CL.IV RCP	0.32%
P7	40'	12"	C-76, CL.IV RCP	0.32%
P8	24'	12"	C-76, CL.IV RCP	0.32%

CONSTRUCTION NOTES:

- EACH PROPOSED CONDUIT CROSSING SHALL HAVE 4" - 4" SCH. 80 PVC CONDUITS.

SANITARY SERVICE CALCULATIONS
80 EMPLOYEES @ 35 GPD PER EMPLOYEE = 2,800 GPD

CURVE DATA:
L=194.91'
R=11459.19'
D=0°58'28"
CH=568°33'53"
194.91'

BOSS ENGINEERING
ENGINEERS • SURVEYORS • PLANNERS
LANDSCAPE ARCHITECTS
(E-MAIL: boss@bosseng.com)
3121 E. GRAND RIVER AVE.
HOWELL, MI 48843
(517) 594-6500
(800) 246-6735 FAX (517) 546-1670

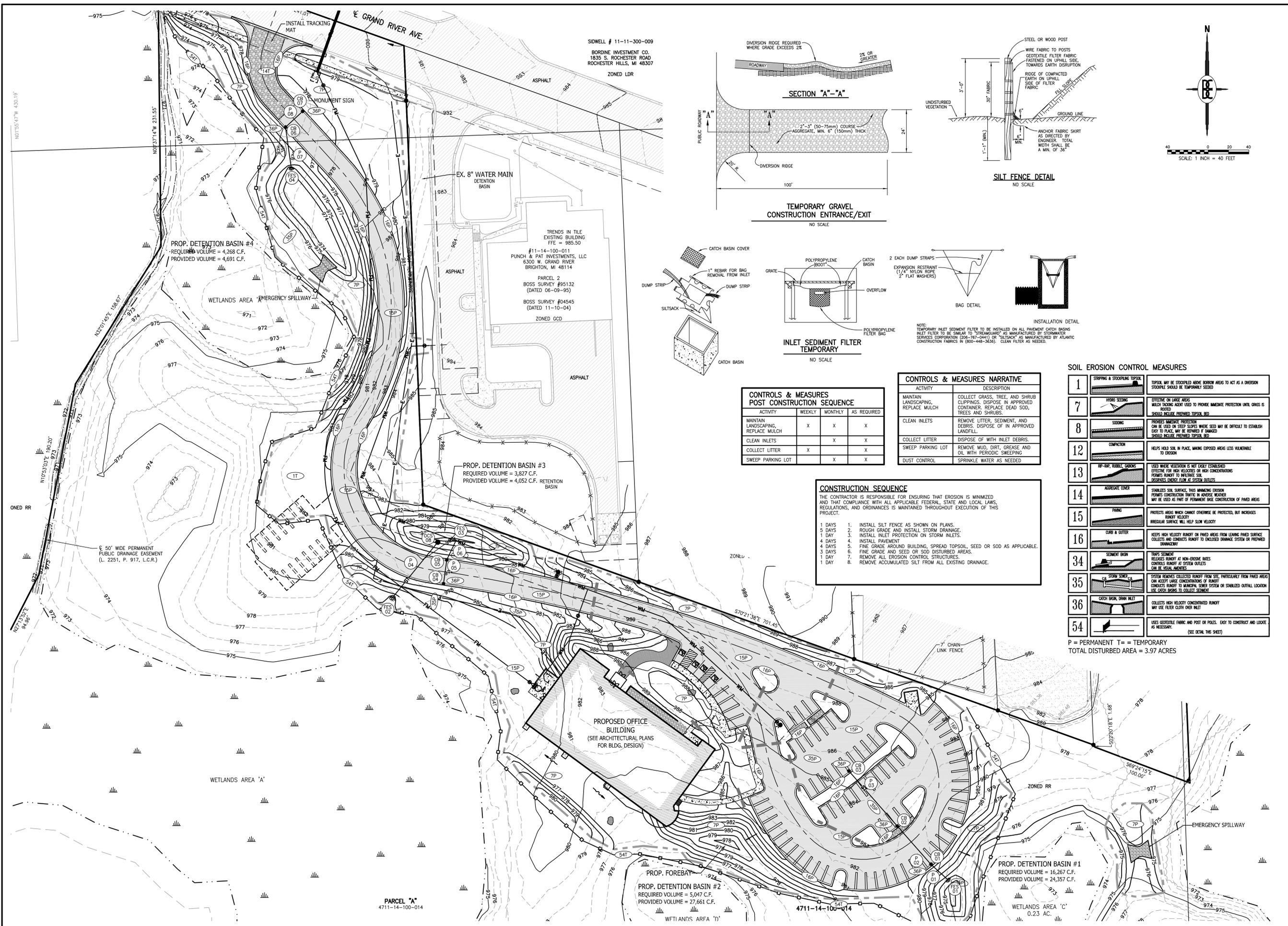
PROJECT: DAKOTA OFFICE BUILDING
PREPARED FOR: DAKOTA INTEGRATED SYSTEMS, INC.
1875 HOLLOWAY DRIVE
HOLT, MI 48842
(517) 594-6500

TITLE: UTILITY & DRAINAGE PLAN

NO	BY	DATE	REVISION PER
1	TD	4-4-13	2-25-13
2	TD		

DESIGNED BY: TD
DRAWN BY: TD
CHECKED BY: TD

SCALE: 1" = 50'
JOB NO. 12-183
DATE 2-6-13
SHEET NO. 4



SIDWELL # 11-11-300-009
 BORDINE INVESTMENT CO.
 1835 S. ROCHESTER ROAD
 ROCHESTER HILLS, MI 48307

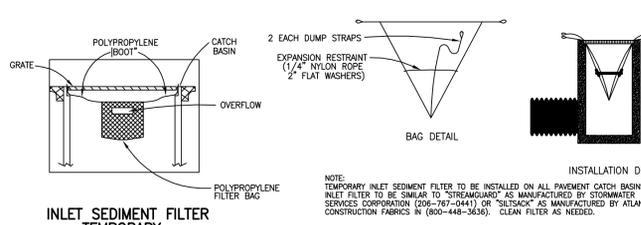
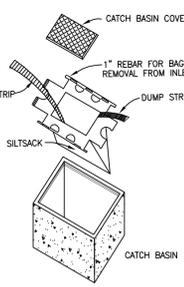
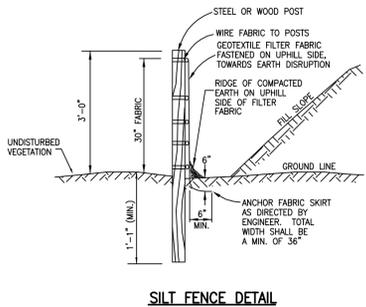
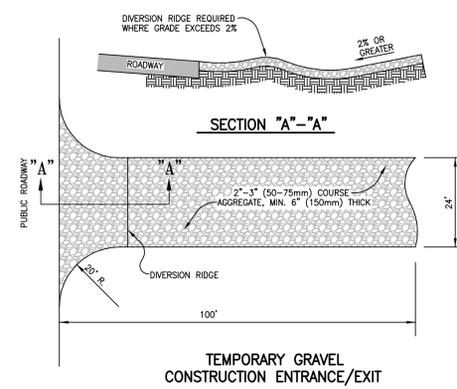
TRENDS IN TILE EXISTING BUILDING
 ETE = 985.50
 #11-14-100-011
 PUNCH & PAT INVESTMENTS, LLC
 6300 W. GRAND RIVER
 BRIGHTON, MI 48114
 BOSS SURVEY #95132
 (DATED 06-09-95)
 BOSS SURVEY #04545
 (DATED 11-10-04)

PROP. DETENTION BASIN #4
 REQUIRED VOLUME = 4,268 C.F.
 PROVIDED VOLUME = 4,691 C.F.

PROP. DETENTION BASIN #3
 REQUIRED VOLUME = 3,827 C.F.
 PROVIDED VOLUME = 4,052 C.F.

PROP. FOREBAY
 PROP. DETENTION BASIN #2
 REQUIRED VOLUME = 5,047 C.F.
 PROVIDED VOLUME = 27,661 C.F.

PROP. DETENTION BASIN #1
 REQUIRED VOLUME = 16,267 C.F.
 PROVIDED VOLUME = 24,357 C.F.



**CONTROLS & MEASURES
 POST CONSTRUCTION SEQUENCE**

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

CONTROLS & MEASURES NARRATIVE

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

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

1 DAY	1. INSTALL SILT FENCE AS SHOWN ON PLANS.
5 DAYS	2. ROUGH GRADE AND INSTALL STORM DRAINAGE.
1 DAY	3. INSTALL INLET PROTECTION ON STORM INLETS.
4 DAYS	4. INSTALL PAVEMENT.
4 DAYS	5. FINE GRADE AROUND BUILDING, SPREAD TOPSOIL, SEED OR SOD AS APPLICABLE.
3 DAYS	6. FINE GRADE AND SEED OR SOD DISTURBED AREAS.
1 DAY	7. REMOVE ALL EROSION CONTROL STRUCTURES.
1 DAY	8. REMOVE ACCUMULATED SILT FROM ALL EXISTING DRAINAGE.

SOIL EROSION CONTROL MEASURES

1		TOPSOIL MAY BE STOCKPILED ALONG BARRON AREAS TO ACT AS A DIVERSION SLOPPES SHOULD BE TEMPORARILY SEEDED
7		EFFECTIVE ON LARGE AREAS MAY BE USED TO PROVIDE IMMEDIATE PROTECTION UNTIL GRASS IS ROOTED SHOULD INCLUDE PREPARED TOPSOIL BED
8		PROVIDES IMMEDIATE PROTECTION CAN BE USED ON STEEP SLOPES WHERE SEED MAY BE DIFFICULT TO ESTABLISH EASY TO PLACE, MAY BE REPAIRED IF DAMAGED SHOULD INCLUDE PREPARED TOPSOIL BED
12		HELPS HOLD SOIL IN PLACE, MAKING EXPOSED AREAS LESS VULNERABLE TO EROSION
13		USE WHERE EROSION IS NOT GREAT ESTABLISHED EFFECTIVE FOR HIGH VELOCITIES OR HIGH CONCENTRATIONS PERMITS RUNOFF TO INFILTRATE SOIL DISPERSES ENERGY AT SYSTEM INLETS
14		STABILIZES SOIL SURFACE, THIS MINIMIZING EROSION FORMS CONSTRUCTION TRAFFIC IN WINDY WEATHER MAY BE USED AS PART OF PERMANENT BASE CONSTRUCTION OF PAVED AREAS
15		PROTECTS AREAS WHICH CANNOT OTHERWISE BE PROTECTED, BUT INCREASES RUNOFF VELOCITY REGULAR SURFACE WILL HELP SLOW VELOCITY
16		KEEPS HIGH VELOCITY RUNOFF ON PAVED AREAS FROM LEAVING PAVED SURFACE COLLECTS AND CONDUCTS RUNOFF TO ENCLOSED DRAINAGE SYSTEM OR PREPARED DRAINAGEWAY
34		TRAPS SEDIMENT RELIEVES RUNOFF AT NON-EROSIVE AREAS CONCENTRATES RUNOFF IN A SINGLE WEATHER CAN BE VISUAL MONITORED
35		SYSTEM REMAINS COLLECTED RUNOFF FROM SITE, PARTICULARLY FROM PAVED AREAS ON ACCEPTABLE CONCENTRATIONS OF RUNOFF CONDUCTS RUNOFF TO MANHOLE, SEWER SYSTEM OR STABILIZED OUTFALL LOCATION USE CATCH BASINS TO COLLECT SEDIMENT
36		COLLECTS HIGH VELOCITY CONCENTRATED RUNOFF MAY USE FILTER FABRIC OVER INLET
54		USES GEOTEXTILE FABRIC AND POSTS OR PALES. EASY TO CONSTRUCT AND LOCATE, AS NECESSARY. (SEE DETAIL THIS SHEET)

P = PERMANENT T = TEMPORARY
 TOTAL DISTURBED AREA = 3.97 ACRES

THESE PLANS HAVE BEEN PREPARED BY THE SIGNATURED PROFESSIONAL ENGINEER, ARCHITECT, OR SURVEYOR SHOWN ON THESE DRAWINGS AND ONLY APPROVED BY HIM. NO GUARANTEE IS MADE BY THE ENGINEER, ARCHITECT, OR SURVEYOR FOR THE ACCURACY OF THE INFORMATION SHOWN ON THESE DRAWINGS OR FOR THE CONSTRUCTION OF THE PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND FOR THE LOCATION OF ALL UTILITIES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR OMISSIONS BEFORE THE COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR OMISSIONS BEFORE THE COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR OMISSIONS BEFORE THE COMMENCEMENT OF CONSTRUCTION.

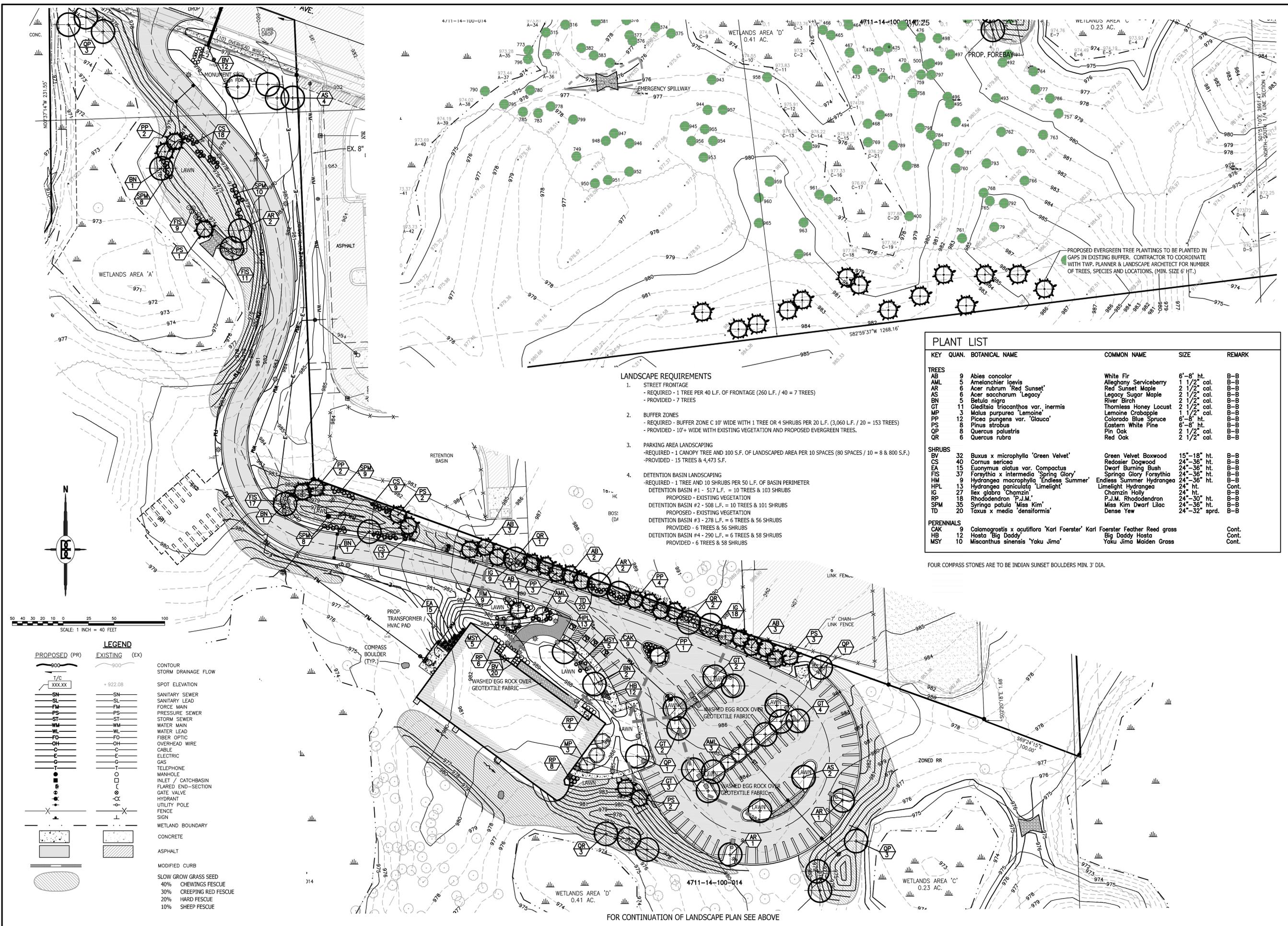
BOSS ENGINEERING
 ENGINEERS • SURVEYORS • PLANNERS
 LANDSCAPE ARCHITECTS
 (E-MAIL: boss@bosseng.com)
 3121 E. GRAND RIVER AVE.
 HUNTSVILLE, MI 48843
 (800) 246-6735 FAX (517) 548-1670

PROJECT: DAKOTA OFFICE BUILDING
 PREPARED FOR: DAKOTA INTEGRATED SYSTEMS, INC.
 1875 HOLLOWAY DRIVE
 HOLT, MI 48842
 (517) 594-6500

TITLE: SOIL EROSION CONTROL PLAN

NO	BY	DATE	REVISION PER
1	TD	4-4-13	
2	TD	2-25-13	

DESIGNED BY: TD
 DRAWN BY: TD
 CHECKED BY: TD
 SCALE: 1" = 40'
 JOB NO.: 12-183
 DATE: 2-6-13
 SHEET NO.: 5



LANDSCAPE REQUIREMENTS

- STREET FRONTAGE
- REQUIRED - 1 TREE PER 40 L.F. OF FRONTAGE (260 L.F. / 40 = 7 TREES)
- PROVIDED - 7 TREES
- BUFFER ZONES
- REQUIRED - BUFFER ZONE C 10' WIDE WITH 1 TREE OR 4 SHRUBS PER 20 L.F. (3,060 L.F. / 20 = 153 TREES)
- PROVIDED - 10'+ WIDE WITH EXISTING VEGETATION AND PROPOSED EVERGREEN TREES.
- PARKING AREA LANDSCAPING
- REQUIRED - 1 CANOPY TREE AND 100 S.F. OF LANDSCAPED AREA PER 10 SPACES (80 SPACES / 10 = 8 & 800 S.F.)
- PROVIDED - 15 TREES & 4,473 S.F.
- DETENTION BASIN LANDSCAPING
- REQUIRED - 1 TREE AND 10 SHRUBS PER 50 L.F. OF BASIN PERIMETER
DETENTION BASIN #1 - 517 L.F. = 10 TREES & 103 SHRUBS
PROPOSED - EXISTING VEGETATION
DETENTION BASIN #2 - 508 L.F. = 10 TREES & 101 SHRUBS
PROPOSED - EXISTING VEGETATION
DETENTION BASIN #3 - 278 L.F. = 6 TREES & 56 SHRUBS
PROVIDED - 6 TREES & 56 SHRUBS
DETENTION BASIN #4 - 290 L.F. = 6 TREES & 58 SHRUBS
PROVIDED - 6 TREES & 58 SHRUBS

PLANT LIST

KEY	QUAN.	BOTANICAL NAME	COMMON NAME	SIZE	REMARK
TREES					
AB	9	<i>Abies concolor</i>	White Fir	6'-8' ht.	B-B
AM	5	<i>Amelanchier laevis</i>	Allegheny Serviceberry	1 1/2' cal.	B-B
AR	5	<i>Acer rubrum 'Red Sunset'</i>	Red Sunset Maple	2 1/2' cal.	B-B
AS	6	<i>Acer saccharum 'Legacy'</i>	Legacy Sugar Maple	2 1/2' cal.	B-B
BN	5	<i>Betula nigra</i>	River Birch	2 1/2' cal.	B-B
GT	11	<i>Gleditsia triacanthos var. inermis</i>	Thornless Honey Locust	2 1/2' cal.	B-B
MP	3	<i>Malus purpurea 'Lemoine'</i>	Lemoine Crabapple	1 1/2' cal.	B-B
PP	12	<i>Picea pungens var. 'Glauca'</i>	Colorado Blue Spruce	6'-8' ht.	B-B
PS	8	<i>Pinus strobus</i>	Eastern White Pine	6'-8' ht.	B-B
QR	6	<i>Quercus palustris</i>	Pin Oak	2 1/2' cal.	B-B
QR	6	<i>Quercus rubra</i>	Red Oak	2 1/2' cal.	B-B
SHRUBS					
BV	32	<i>Buxus x microphylla 'Green Velvet'</i>	Green Velvet Boxwood	15"-18" ht.	B-B
CS	40	<i>Cornus sericea</i>	Redosier Dogwood	24"-36" ht.	B-B
EA	15	<i>Euonymus alatus var. Compactus</i>	Dwarf Burning Bush	24"-36" ht.	B-B
FIS	37	<i>Forsythia x intermedia 'Spring Glory'</i>	Spring Glory Forsythia	24"-36" ht.	B-B
HM	9	<i>Hydrangea macrophylla 'Endless Summer'</i>	Endless Summer Hydrangea	24"-36" ht.	B-B
HPL	13	<i>Hydrangea paniculata 'Limelight'</i>	Limelight Hydrangea	24" ht.	Cont.
IG	27	<i>Ilex glabra 'Chamin'</i>	Chaminz Holly	24" ht.	B-B
RP	18	<i>Rhododendron 'P.J.M.'</i>	P.J.M. Rhododendron	24"-30" ht.	B-B
SP	35	<i>Syringa patula 'Miss Kim'</i>	Miss Kim Dwarf Lilac	24"-36" ht.	B-B
TD	20	<i>Taxus x media 'densiformis'</i>	Dense Yew	24"-32" sprd.	B-B
PERENNIALS					
CAK	9	<i>Calamagrostis x acutiflora 'Karl Foerster'</i>	Karl Foerster Feather Reed grass		Cont.
HB	12	<i>Hosta 'Big Daddy'</i>	Big Daddy Hosta		Cont.
MSY	10	<i>Miscanthus sinensis 'Yaku Jima'</i>	Yaku Jima Maiden Grass		Cont.

FOUR COMPASS STONES ARE TO BE INDIAN SUNSET BOULDERS MIN. 3' DIA.

LEGEND

PROPOSED (PR)	EXISTING (EX)	
900	900	CONTOUR
T/C		STORM DRAINAGE FLOW
XXX.XX	+ 922.08	SPOT ELEVATION
SN	SL	SANITARY SEWER
SL	SL	SANITARY LEAD
FM	FM	FORCE MAIN
PS	PS	PRESSURE SEWER
ST	ST	STORM SEWER
WM	WM	WATER MAIN
WL	WL	WATER LEAD
FO	FO	FIBER OPTIC
OH	OH	OVERHEAD WIRE
C	C	CABLE
E	E	ELECTRIC
G	G	GAS
T	T	TELEPHONE
MANHOLE	MANHOLE	MANHOLE
INLET / CATCHBASIN	INLET / CATCHBASIN	INLET / CATCHBASIN
FLARED END-SECTION	FLARED END-SECTION	FLARED END-SECTION
GATE VALVE	GATE VALVE	GATE VALVE
HYDRANT	HYDRANT	HYDRANT
UTILITY POLE	UTILITY POLE	UTILITY POLE
FENCE	FENCE	FENCE
SIGN	SIGN	SIGN
		WETLAND BOUNDARY
		CONCRETE
		ASPHALT
		MODIFIED CURB
		SLOW GROW GRASS SEED
		40% CHEWINGS FESCUE
		30% CREEPING RED FESCUE
		20% HARD FESCUE
		10% SHEEP FESCUE

THE DRAWING AND ALL INFORMATION THEREON ARE THE PROPERTY OF BOSS ENGINEERING ARCHITECTS, P.C. NO PART OF THIS DRAWING IS TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT THE WRITTEN PERMISSION OF BOSS ENGINEERING ARCHITECTS, P.C. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF ANY DISCREPANCY IS FOUND BETWEEN THE DRAWING AND THE FIELD CONDITIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL UTILITIES BEFORE ANY CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.

BOSS ENGINEERING ARCHITECTS, P.C.
ENGINEERS • SURVEYORS • PLANNERS
LANDSCAPE ARCHITECTS
(E-MAIL: boss@bossarch.com)
3121 E. GRAND RIVER AVE.
HOLT, MI 48842
(800) 246-6735 FAX (517) 548-1670

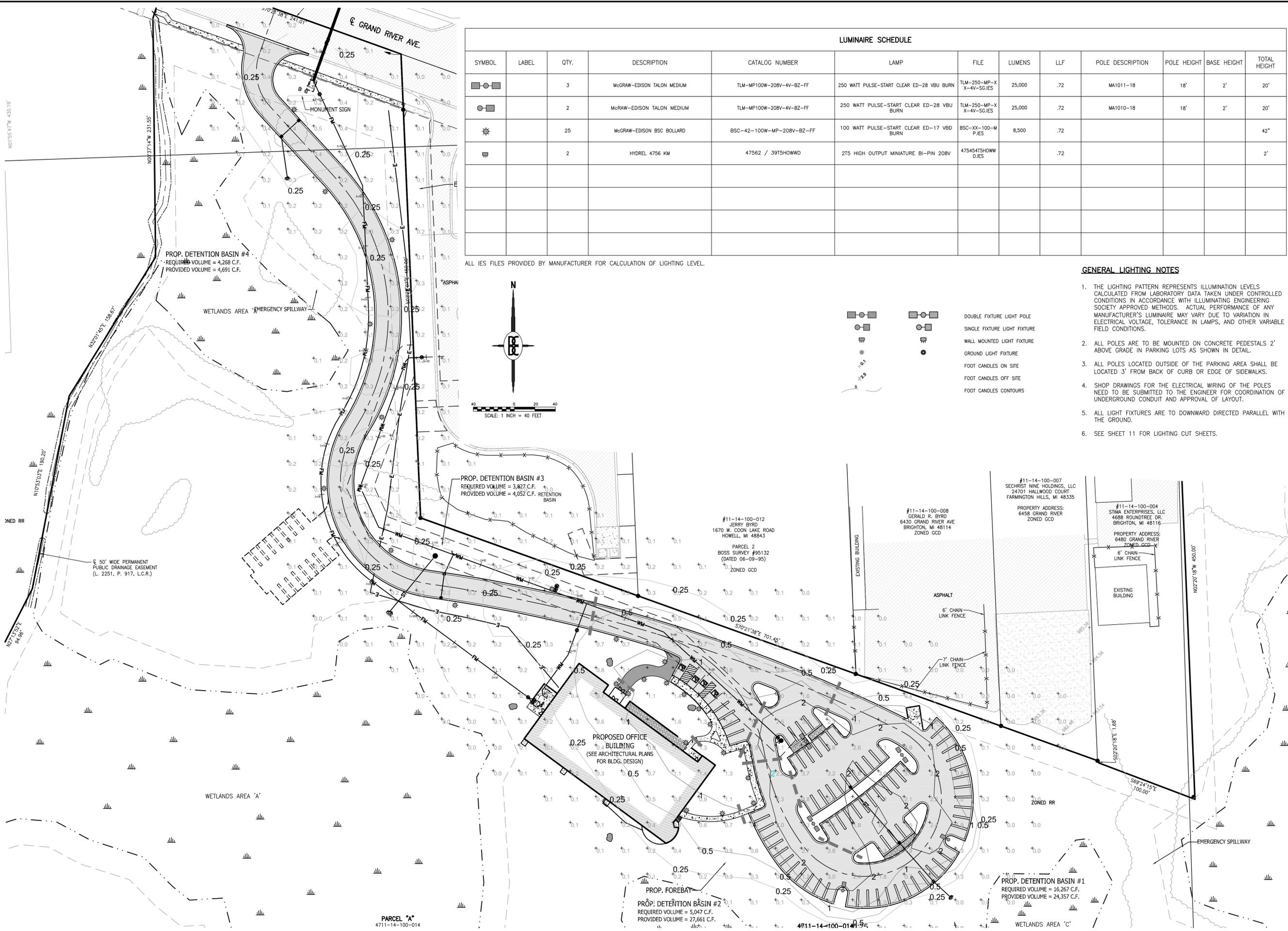
PROJECT: DAKOTA OFFICE BUILDING
PREPARED FOR: DAKOTA INTEGRATED SYSTEMS, INC.
1875 HOLLOWAY DRIVE
HOLT, MI 48842
(517) 594-6500

TITLE: LANDSCAPE PLAN

NO.	BY	DATE	REVISION PER
2	TD	4-4-13	TMP. REVIEW
2	TD	4-4-13	TMP. REVIEW
1	TD	2-25-13	TMP. REVIEW

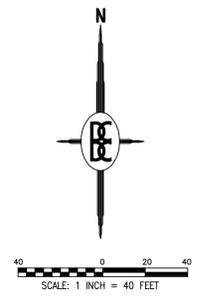
DESIGNED BY: TD
DRAWN BY: TD
CHECKED BY: TD

SCALE: 1" = 40'
JOB NO. 12-183
DATE 2-6-13
SHEET NO. 6



LUMINAIRE SCHEDULE												
SYMBOL	LABEL	QTY.	DESCRIPTION	CATALOG NUMBER	LAMP	FILE	LUMENS	LLF	POLE DESCRIPTION	POLE HEIGHT	BASE HEIGHT	TOTAL HEIGHT
		3	McGRAW-EDISON TALON MEDIUM	TLM-MP100W-208V-4V-BZ-FF	250 WATT PULSE-START CLEAR ED-28 VBU BURN	TLM-250-MP-X-4V-SG-IES	25,000	.72	MA1011-18	18'	2'	20'
		2	McGRAW-EDISON TALON MEDIUM	TLM-MP100W-208V-4V-BZ-FF	250 WATT PULSE-START CLEAR ED-28 VBU BURN	TLM-250-MP-X-4V-SG-IES	25,000	.72	MA1010-18	18'	2'	20'
		25	McGRAW-EDISON BSC BOLLARD	BSC-42-100W-MP-208V-BZ-FF	100 WATT PULSE-START CLEAR ED-17 VBD BURN	BSC-XX-100-M-PI-IES	8,500	.72				42"
		2	HYDREL 4756 KM	47562 / 39TSHOWWD	2T5 HIGH OUTPUT MINIATURE BI-PIN 208V	475454TSHOWW D-IES		.72				2'

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



- DOUBLE FIXTURE LIGHT POLE
- SINGLE FIXTURE LIGHT FIXTURE
- WALL MOUNTED LIGHT FIXTURE
- GROUND LIGHT FIXTURE
- FOOT CANDLES ON SITE
- FOOT CANDLES OFF SITE
- FOOT CANDLES CONTOURS

GENERAL LIGHTING NOTES

- THE LIGHTING PATTERN REPRESENTS ILLUMINATION LEVELS CALCULATED FROM LABORATORY DATA TAKEN UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY APPROVED METHODS. ACTUAL PERFORMANCE OF ANY MANUFACTURER'S LUMINAIRE MAY VARY DUE TO VARIATION IN ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS, AND OTHER VARIABLE FIELD CONDITIONS.
- ALL POLES ARE TO BE MOUNTED ON CONCRETE PEDESTALS 2' ABOVE GRADE IN PARKING LOTS AS SHOWN IN DETAIL.
- ALL POLES LOCATED OUTSIDE OF THE PARKING AREA SHALL BE LOCATED 3' FROM BACK OF CURB OR EDGE OF SIDEWALKS.
- SHOP DRAWINGS FOR THE ELECTRICAL WIRING OF THE POLES NEED TO BE SUBMITTED TO THE ENGINEER FOR COORDINATION OF UNDERGROUND CONDUIT AND APPROVAL OF LAYOUT.
- ALL LIGHT FIXTURES ARE TO DOWNWARD DIRECTED PARALLEL WITH THE GROUND.
- SEE SHEET 11 FOR LIGHTING CUT SHEETS.

THE DESIGN AND CONSTRUCTION OF THIS PROJECT IS BASED ON THE INFORMATION PROVIDED TO THE ENGINEER BY THE CLIENT. THE ENGINEER IS NOT RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION PROVIDED. THE ENGINEER'S LIABILITY IS LIMITED TO THE DESIGN AND CONSTRUCTION OF THIS PROJECT. THE ENGINEER IS NOT RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION PROVIDED. THE ENGINEER'S LIABILITY IS LIMITED TO THE DESIGN AND CONSTRUCTION OF THIS PROJECT.

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

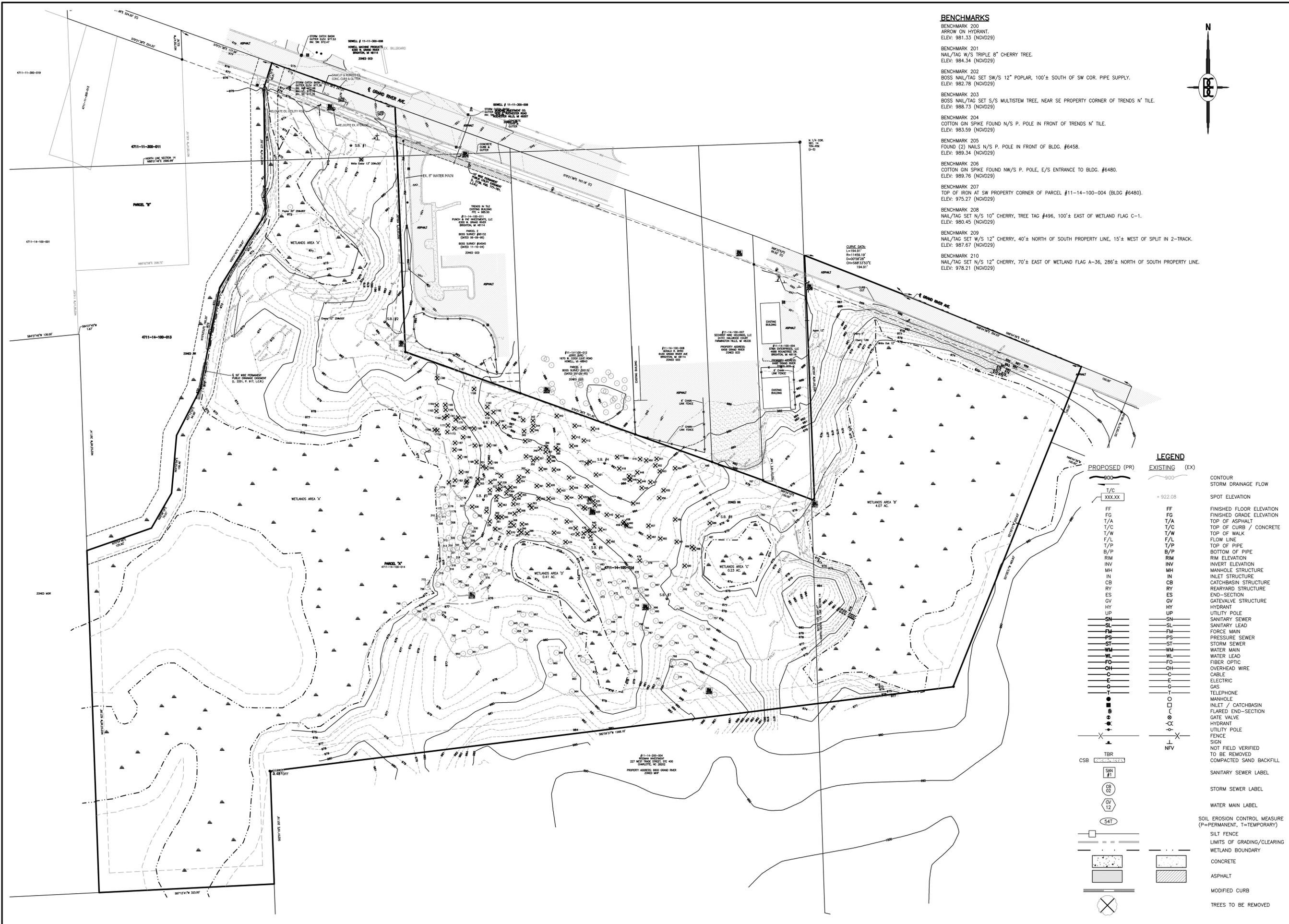
PROJECT: DAKOTA OFFICE BUILDING
 PREPARED FOR: DAKKOTA INTEGRATED SYSTEMS, INC.
 1875 HOLLOWAY DRIVE
 HOLT, MI 48842
 (517) 594-6500

TITLE: LIGHTING PLAN

NO.	BY	DATE	REVISION PER
1	TD	2-25-13	
2	TD	4-4-13	

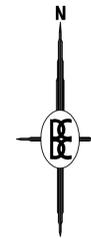
DESIGNED BY: TD
 DRAWN BY: TD
 CHECKED BY: TD

SCALE: 1" = 40'
 JOB NO. 12-183
 DATE 2-6-13
 SHEET NO. 7



BENCHMARKS

- BENCHMARK 200
ARROW ON HYDRANT.
ELEV: 981.33 (NGVD29)
- BENCHMARK 201
NAIL/TAG W/S TRIPLE 8" CHERRY TREE.
ELEV: 984.34 (NGVD29)
- BENCHMARK 202
BOSS NAIL/TAG SET SW/S 12" POPLAR, 100'± SOUTH OF SW COR. PIPE SUPPLY.
ELEV: 982.78 (NGVD29)
- BENCHMARK 203
BOSS NAIL/TAG SET S/S MULTISTEM TREE, NEAR SE PROPERTY CORNER OF TRENDS N' TILE.
ELEV: 988.73 (NGVD29)
- BENCHMARK 204
COTTON GIN SPIKE FOUND N/S P. POLE IN FRONT OF TRENDS N' TILE.
ELEV: 983.59 (NGVD29)
- BENCHMARK 205
FOUND (2) NAILS N/S P. POLE IN FRONT OF BLDG. #6458.
ELEV: 989.34 (NGVD29)
- BENCHMARK 206
COTTON GIN SPIKE FOUND NW/S P. POLE, E/S ENTRANCE TO BLDG. #6480.
ELEV: 989.76 (NGVD29)
- BENCHMARK 207
TOP OF IRON AT SW PROPERTY CORNER OF PARCEL #11-14-100-004 (BLDG #6480).
ELEV: 975.27 (NGVD29)
- BENCHMARK 208
NAIL/TAG SET N/S 10" CHERRY, TREE TAG #496, 100'± EAST OF WETLAND FLAG C-1.
ELEV: 980.45 (NGVD29)
- BENCHMARK 209
NAIL/TAG SET W/S 12" CHERRY, 40'± NORTH OF SOUTH PROPERTY LINE, 15'± WEST OF SPLIT IN 2-TRACK.
ELEV: 987.67 (NGVD29)
- BENCHMARK 210
NAIL/TAG SET N/S 12" CHERRY, 70'± EAST OF WETLAND FLAG A-36, 286'± NORTH OF SOUTH PROPERTY LINE.
ELEV: 978.21 (NGVD29)



THE USER SHALL BE RESPONSIBLE FOR VERIFYING THE ACCURACY OF THE DATA SHOWN ON THESE DRAWINGS AND FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS.

BOSS ENGINEERING
ENGINEERS • SURVEYORS • PLANNERS
LANDSCAPE ARCHITECTS

(E-MAIL: bossengr.com)
3121 E. GRAND RIVER AVE.
HOMER, MI 48843
(800) 246-6735 FAX (517) 594-6500

PROJECT: DAKOTA OFFICE BUILDING
PREPARED FOR: DAKOTA INTEGRATED SYSTEMS, INC.
1875 HOLLOWAY DRIVE
HOLT, MI 48842
(517) 594-6500

TITLE: TOPOGRAPHIC SURVEY & DEMOLITION PLAN

NO	BY	DATE	REVISION PER
1	TD	4-4-13	
2	TD	2-25-13	

DESIGNED BY: TD
DRAWN BY: TD
CHECKED BY: TD

SCALE 1" = 75'
JOB NO. 12-183
DATE 11-26-12
SHEET NO. 8

LEGEND

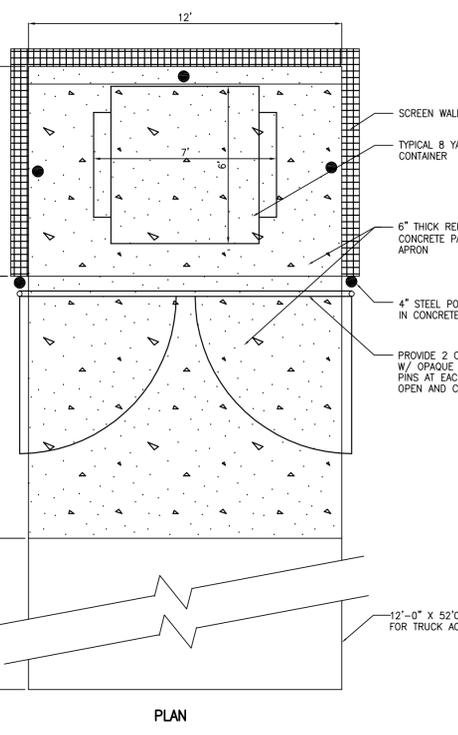
PROPOSED (PR)	EXISTING (EX)	
900	900	CONTOUR
T/C	XXXXXX	STORM DRAINAGE FLOW
XXXXXX	+ 922.08	SPOT ELEVATION
FF	FF	FINISHED FLOOR ELEVATION
FG	FG	FINISHED GRADE ELEVATION
T/A	T/A	TOP OF ASPHALT
T/C	T/C	TOP OF CURB / CONCRETE
T/W	T/W	TOP OF WALK
F/L	F/L	FLOW LINE
T/P	T/P	TOP OF PIPE
B/P	B/P	BOTTOM OF PIPE
RM	RM	RIM ELEVATION
INV	INV	INVERT ELEVATION
MH	MH	MANHOLE STRUCTURE
IN	IN	INLET STRUCTURE
CB	CB	CATCHBASIN STRUCTURE
RY	RY	REARWARD STRUCTURE
ES	ES	END-SECTION
GV	GV	GATEVALVE STRUCTURE
HY	HY	HYDRANT
UP	UP	UTILITY POLE
SN	SN	SANITARY SEWER
SL	SL	SANITARY LEAD
FM	FM	FORCE MAIN
PS	PS	PRESSURE SEWER
ST	ST	STORM SEWER
WM	WM	WATER MAIN
WL	WL	WATER LEAD
FO	FO	FIBER OPTIC
OH	OH	OVERHEAD WIRE
C	C	CABLE
E	E	ELECTRIC
G	G	GAS
T	T	TELEPHONE
○	○	MANHOLE
□	□	INLET / CATCHBASIN
○	○	FLARED END-SECTION
○	○	GATE VALVE
○	○	HYDRANT
○	○	UTILITY POLE
○	○	FENCE
○	○	SIGN
○	○	NOT FIELD VERIFIED
○	○	TO BE REMOVED
○	○	COMPACTED SAND BACKFILL
○	○	SANITARY SEWER LABEL
○	○	STORM SEWER LABEL
○	○	WATER MAIN LABEL
○	○	SOIL EROSION CONTROL MEASURE (P=PERMANENT, T=TEMPORARY)
○	○	SILT FENCE
○	○	LIMITS OF GRADING/CLEARING
○	○	WETLAND BOUNDARY
○	○	CONCRETE
○	○	ASPHALT
○	○	MODIFIED CURB
○	○	TREES TO BE REMOVED

**LIVINGSTON COUNTY SOIL EROSION PERMIT TEMPLATE
TEMPORARY CONTROLS AND SEQUENCE**

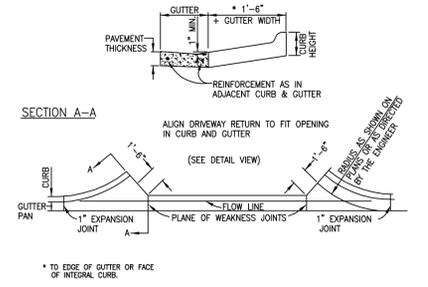
- NOTIFY LIVINGSTON COUNTY DRAIN COMMISSIONER'S OFFICE 24 HOURS PRIOR TO START OF GRADE WORK.
 - IN ACCORDANCE WITH PUBLIC ACT NO. 53, OF 1974 THE PERMIT HOLDER SHALL CALL MISS DIG FOR STAKING AND LOCATING OF UTILITIES, AT LEAST 72 HOURS IN ADVANCE OF THE START OF ANY WORK.
- PERMITTING STANDARDS**
-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

- ALL STORM DRAINAGE PIPE 30" IN DIAMETER OR LARGER SHALL BE POINTED, AT THE JOINTS ON THE INSIDE WITH MORTAR, AFTER BACKFILLING.
 - ALL STORM DRAIN OUTLETS THAT DO NOT EMPTY INTO THE RETENTION/DETENTION POND SHALL HAVE A TEMPORARY 5'X10'X3' SUMP INSTALLED AT THE TERMINATION OF THE STORM SEWER. UPON COMPLETION OF THE STABILIZATION WORK THE SUMP AREA SHALL BE FILLED AND RIP RAPPED WITH COBBLE STONE. SILT TRAPS SHALL BE INSPECTED AFTER EACH STORM.
 - STORM WATER OUTLETS DO DENOTE RIP RAP. ALL OUTLETS SHALL BE RIP RAPPED OVER KEVED FILTER FABRIC WITH A MINIMUM OF 15 SQ. YARDS OF 6" OR LARGER COBBLE STONE.
 - RIP RAP AS NOTED ON THE PLAN SHALL BE OF A FUNNEL SHAPE CONSTRUCTION, WIDTH SHALL INCREASE AS DISTANCE FROM THE OUTLET POINT INCREASES AT A 3:1 RATIO.
 - RIP RAP SHALL BE OF COBBLE STONE, 6" IN DIAMETER OR LARGER. GROUTING MAY BE NECESSARY, AND SHALL BE A MINIMUM OF 6" IN DEPTH WITH THE COBBLE SET IN THE CEMENT SLURRY.
 - STORM WATER OUTLET IS IN NEED OF A SPLASH BLOCK WHICH IS NOT NOTED ON THE PLAN. INSTALL SPLASH BLOCK IF SLOPE OF THE PIPE IS 4% OR GREATER.
 - IT WILL BE NECESSARY FOR THE DEVELOPER TO HAVE THE STORM DRAINAGE LINES CLEANED PRIOR TO FINAL INSPECTION BY THE LIVINGSTON COUNTY DRAIN COMMISSIONER'S OFFICE. IF REQUIRED, THIS WORK SHALL BE DONE BY A PROFESSIONAL SEWER CLEANING FIRM AND CERTIFIED IN WRITING BY THE PROJECT ENGINEER. ALL SUMPS AND TEMPORARY SILT TRAPS SHALL ALSO BE CLEANED AT THIS TIME.
- STABILIZATION**
- ALL UNIMPROVED DISTURBED AREAS SHALL BE RE-TOP SOILED, WITH A MINIMUM OF 3" OF MATERIAL, SEEDED, MULCHED AND TACKED WITHIN 15 DAYS OF THE COMPLETION OF THE MASSIVE EARTH DISRUPTION. IN THE NON-GROWING SEASON STRAW MATTING WILL SURFACE. HYDROSEEDING WILL BE AN ACCEPTABLE ALTERNATE FOR MULCHING. EXTREME CARE SHOULD BE EXERCISED IN SPRING AND FALL PERIODS AS A FROST WILL BREAK THE END OF THE HYDROSEEDING, WHICH WILL AFFECT THE EFFECTIVENESS OF THIS PROCEDURE.
 - IN THE NON-GROWING SEASON, TEMPORARY STABILIZATION OF MASSIVELY EXPOSED AREAS FOR WINTER STABILIZATION SHALL BE DONE WITH STRAW MATTING.
 - PERMIT FEES DURING THE WINTER PERIOD OF NON-CONSTRUCTION, (DECEMBER 1 THROUGH MARCH 31), SHALL NOT BE IMPOSED IF THE PERMIT HOLDER TEMPORARILY STABILIZES THE EXPOSED AREAS WITH STRAW MATTING, AND OTHER APPROVED CONTROLS, AND OBTAINS A WINTER STABILIZATION CERTIFICATE FROM THIS OFFICE.
 - PERIODIC INSPECTIONS WILL BE MADE THROUGHOUT THE COURSE OF THE PROJECT. IT WILL BE THE RESPONSIBILITY OF THE MANAGERS OF THE PROJECT TO CONTACT THIS OFFICE FOR THE FINAL INSPECTION AT THE END OF THE PROJECT.
 - THIS COMMERCIAL PERMIT IS VALID FOR THE MASS EARTH MOVEMENT, THE INSTALLATION OF ROADS, DRAINS, AND UTILITIES AND IS NOT FOR ANY SINGLE FAMILY RESIDENCE. ALL RESIDENTIAL BUILDERS WILL NEED TO SECURE WAIVERS AND/OR PERMITS AS NECESSARY FOR EACH LOT IN THIS DEVELOPMENT AT THE TIME APPLICATION FOR SINGLE FAMILY RESIDENCE IS MADE.
 - THE ISSUING BUILDING DEPARTMENT SHALL NOT ISSUE THE CERTIFICATE OF OCCUPANCY UNTIL THE FINAL INSPECTION LETTER FROM THE LIVINGSTON COUNTY DRAIN COMMISSIONER'S OFFICE HAS BEEN OBTAINED.
 - PER THE LIVINGSTON COUNTY DRAIN COMMISSIONER THE SEEDING, FERTILIZER AND MULCH MINIMUM QUANTITIES SHALL BE AS FOLLOWS:
TOP-SOIL 3" IN DEPTH 218 LBS. PER ACRE
GRASS SEED 150 LBS. PER ACRE
FERTILIZER 3" IN DEPTH 1.5 TO 2 TONS PER ACRE (ALL STRAW MULCH NET BINDING, ETC.)
HYDRO-SEEDING IS NOT ACCEPTABLE FOR SLOPES EXCEEDING 1% IN SUCH CASES STABILIZATION SHALL BE DONE WITH SEED AND STRAW MULCH WITH A TACKIFIER.

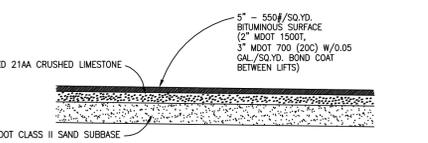
STRUCTURE FRAMES & COVERS					
COVER	TYPE	USE	MANUFACTURER OR EQUAL		TYPE OF COVER OR GRATE
			EAST JORDAN	MEENAH	
A	MH	ALL	1120	R-1415	SANITARY-SELF SEALING STORM-VENTED
B	CB & INLET	TYPE B2 CURB	7025	R-3038-A	
K	CB & INLET	TYPE C & I CURB	7045	R-3031-B	FLAT GRATE WITH VERT. 4" OPEN THROAT
C	CB & INLET	VALLEY CURB	7065	R-3034-B	
D	CB & INLET	PARKING LOTS	1020-MI	R-2560-D	FLAT GRATE
E	CB & INLET	LAWN AREA OR DITCH	1020-01		BEHVEY GRATE 4" HIGH



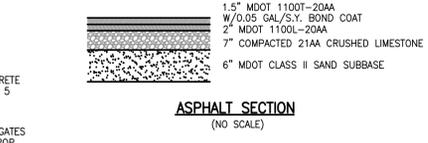
DUMPSTER ENCLOSURE DETAIL
(NO SCALE)



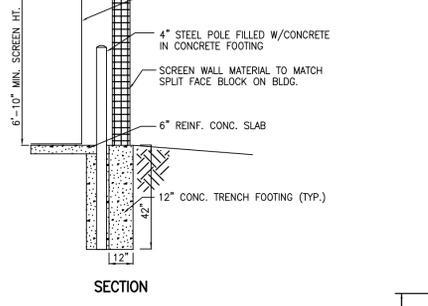
CONCRETE DRIVEWAY OPENING - MDOOT STANDARD II-42, DETAIL 'M'
(NO SCALE)



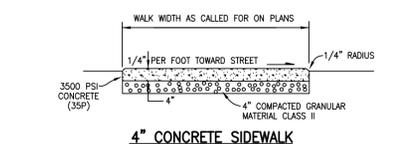
HEAVY-DUTY ASPHALT CROSS SECTION - GRAND RIVER R.O.W.
(NO SCALE)



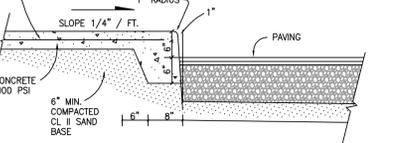
ASPHALT SECTION
(NO SCALE)



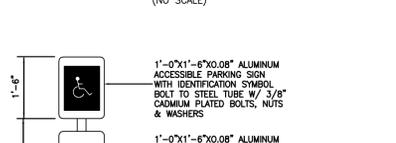
SECTION



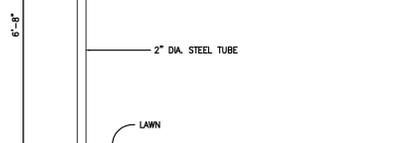
4\"/>



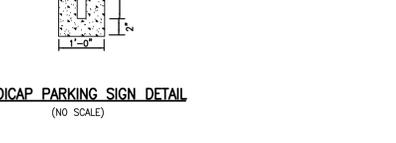
INTEGRAL CONCRETE WALK / CURB DETAIL
(NO SCALE)



MODIFIED BARRIER (M.D.O.T. TYPE F4)
(NO SCALE)



\"/>



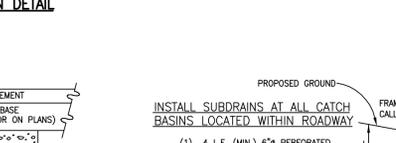
CONC. SPILLWAY DETAIL
(NO SCALE)



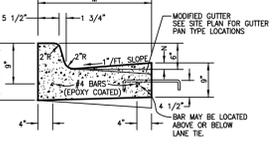
HANDICAP PARKING SIGN DETAIL
(NO SCALE)



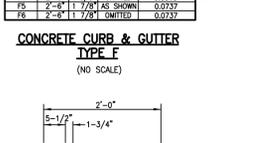
FORCE MAIN MANHOLE CONNECTION
(NO SCALE)



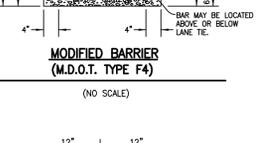
SEWER UNDER ROADBED OR WITHIN INFLUENCE OF ROADBED
(REF. MDOOT DETAIL W-830)
(NO SCALE)



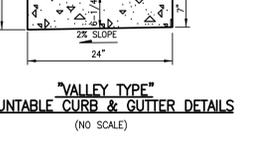
CONCRETE CURB & GUTTER
TYPE E
(NO SCALE)



MODIFIED BARRIER (M.D.O.T. TYPE F4)
(NO SCALE)



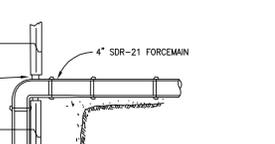
\"/>



CONC. SPILLWAY DETAIL
(NO SCALE)



FORCE MAIN MANHOLE CONNECTION
(NO SCALE)

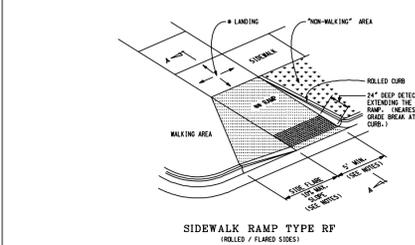


SEWER UNDER ROADBED OR WITHIN INFLUENCE OF ROADBED
(REF. MDOOT DETAIL W-830)
(NO SCALE)

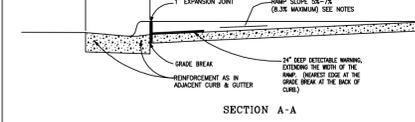


4 FT. DIA. CATCH BASIN W/SUMP
(NO SCALE)

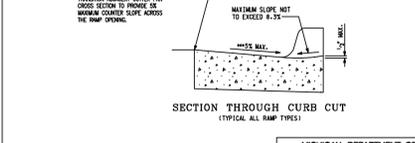
MINIMUM LANDSIDE SLOPE IN ANY DIRECTION IS 2:05. MINIMUM LANDSIDE DIMENSIONS 5' x 5'. SEE NOTES.
MINIMUM CROSS SLOPE ON RAMP IS THE SAME AS THAT FOR SIDEWALK (2:05). RAMPING SLOPE 5:1 - 7:1 IS 16:15. MINIMUM SEE NOTES.



SIDEWALK RAMP TYPE P
(NO SCALE)



SIDEWALK RAMP TYPE Rf
(ROLLED / FLARED SIDES)

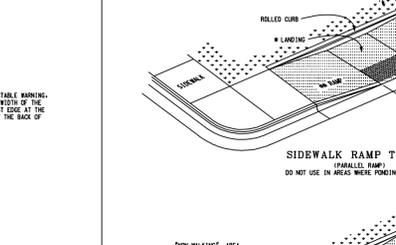


SIDEWALK RAMP TYPE C
(COMBINATION RAMP)

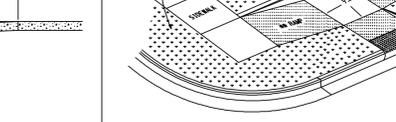


SIDEWALK RAMP TYPE M
(MEDIAN ISLAND)

MINIMUM LANDSIDE SLOPE IN ANY DIRECTION IS 2:05. MINIMUM LANDSIDE DIMENSIONS 5' x 5'. SEE NOTES.
MINIMUM CROSS SLOPE ON RAMP IS THE SAME AS THAT FOR SIDEWALK (2:05). RAMPING SLOPE 5:1 - 7:1 IS 16:15. MINIMUM SEE NOTES.



SIDEWALK RAMP TYPE P
(NO SCALE)



SIDEWALK RAMP TYPE Rf
(ROLLED / FLARED SIDES)

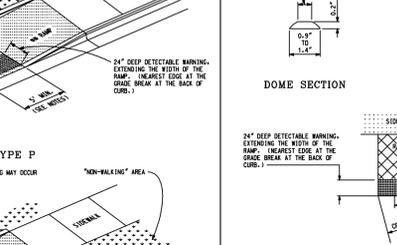


SIDEWALK RAMP TYPE C
(COMBINATION RAMP)

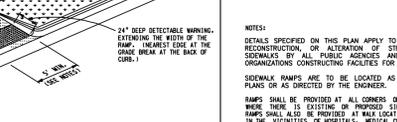


SIDEWALK RAMP TYPE M
(MEDIAN ISLAND)

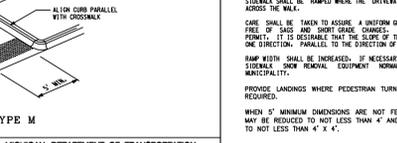
MINIMUM LANDSIDE SLOPE IN ANY DIRECTION IS 2:05. MINIMUM LANDSIDE DIMENSIONS 5' x 5'. SEE NOTES.
MINIMUM CROSS SLOPE ON RAMP IS THE SAME AS THAT FOR SIDEWALK (2:05). RAMPING SLOPE 5:1 - 7:1 IS 16:15. MINIMUM SEE NOTES.



SIDEWALK RAMP TYPE P
(NO SCALE)



SIDEWALK RAMP TYPE Rf
(ROLLED / FLARED SIDES)

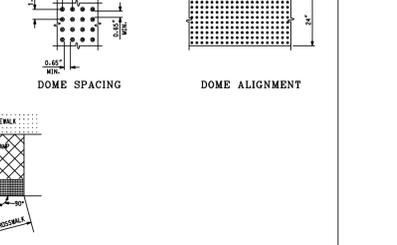


SIDEWALK RAMP TYPE C
(COMBINATION RAMP)

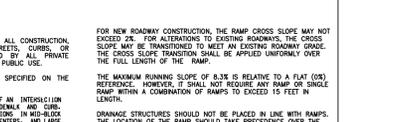


SIDEWALK RAMP TYPE M
(MEDIAN ISLAND)

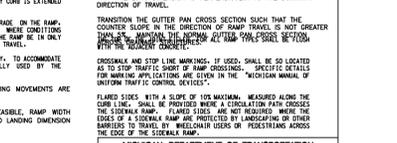
MINIMUM LANDSIDE SLOPE IN ANY DIRECTION IS 2:05. MINIMUM LANDSIDE DIMENSIONS 5' x 5'. SEE NOTES.
MINIMUM CROSS SLOPE ON RAMP IS THE SAME AS THAT FOR SIDEWALK (2:05). RAMPING SLOPE 5:1 - 7:1 IS 16:15. MINIMUM SEE NOTES.



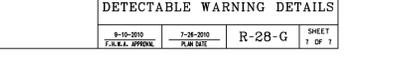
SIDEWALK RAMP TYPE P
(NO SCALE)



SIDEWALK RAMP TYPE Rf
(ROLLED / FLARED SIDES)

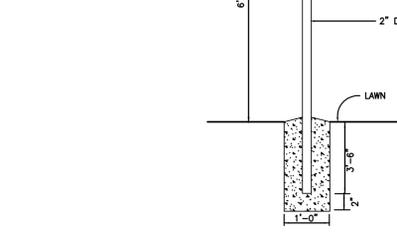


SIDEWALK RAMP TYPE C
(COMBINATION RAMP)

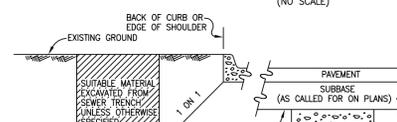


SIDEWALK RAMP TYPE M
(MEDIAN ISLAND)

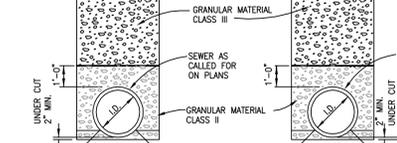
MINIMUM LANDSIDE SLOPE IN ANY DIRECTION IS 2:05. MINIMUM LANDSIDE DIMENSIONS 5' x 5'. SEE NOTES.
MINIMUM CROSS SLOPE ON RAMP IS THE SAME AS THAT FOR SIDEWALK (2:05). RAMPING SLOPE 5:1 - 7:1 IS 16:15. MINIMUM SEE NOTES.



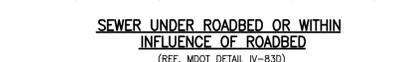
SIDEWALK RAMP TYPE P
(NO SCALE)



SIDEWALK RAMP TYPE Rf
(ROLLED / FLARED SIDES)

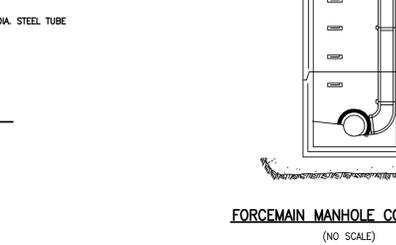


SIDEWALK RAMP TYPE C
(COMBINATION RAMP)

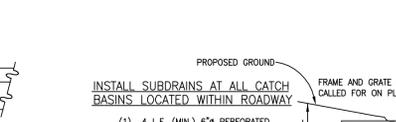


SIDEWALK RAMP TYPE M
(MEDIAN ISLAND)

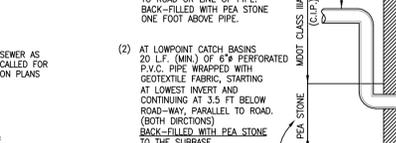
MINIMUM LANDSIDE SLOPE IN ANY DIRECTION IS 2:05. MINIMUM LANDSIDE DIMENSIONS 5' x 5'. SEE NOTES.
MINIMUM CROSS SLOPE ON RAMP IS THE SAME AS THAT FOR SIDEWALK (2:05). RAMPING SLOPE 5:1 - 7:1 IS 16:15. MINIMUM SEE NOTES.



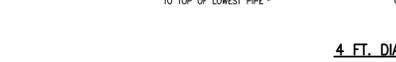
SIDEWALK RAMP TYPE P
(NO SCALE)



SIDEWALK RAMP TYPE Rf
(ROLLED / FLARED SIDES)

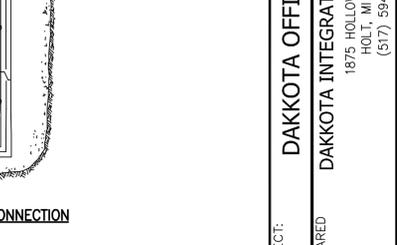


SIDEWALK RAMP TYPE C
(COMBINATION RAMP)



SIDEWALK RAMP TYPE M
(MEDIAN ISLAND)

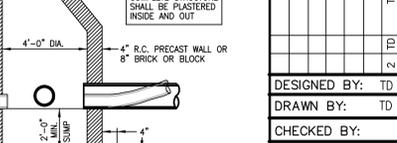
MINIMUM LANDSIDE SLOPE IN ANY DIRECTION IS 2:05. MINIMUM LANDSIDE DIMENSIONS 5' x 5'. SEE NOTES.
MINIMUM CROSS SLOPE ON RAMP IS THE SAME AS THAT FOR SIDEWALK (2:05). RAMPING SLOPE 5:1 - 7:1 IS 16:15. MINIMUM SEE NOTES.



SIDEWALK RAMP TYPE P
(NO SCALE)



SIDEWALK RAMP TYPE Rf
(ROLLED / FLARED SIDES)



SIDEWALK RAMP TYPE C
(COMBINATION RAMP)



SIDEWALK RAMP TYPE M
(MEDIAN ISLAND)

BOSS ENGINEERING
ENGINEERS • SURVEYORS • PLANNERS
LANDSCAPE ARCHITECTS
(E-MAIL: boss@bosseng.com)
3121 E. GRAND RIVER AVE.
HOLT, MI 48842
(810) 246-6735 FAX (517) 548-1670

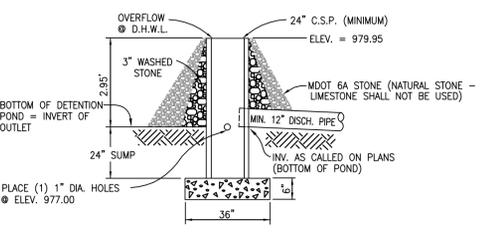
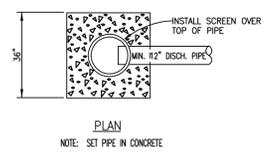
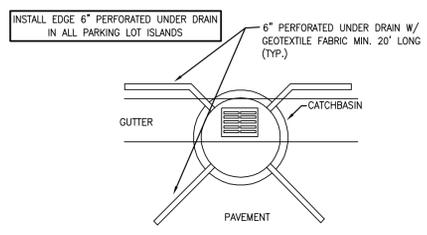
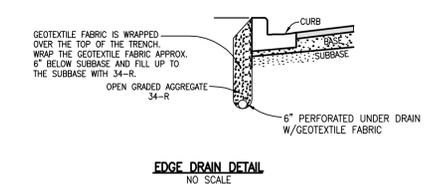
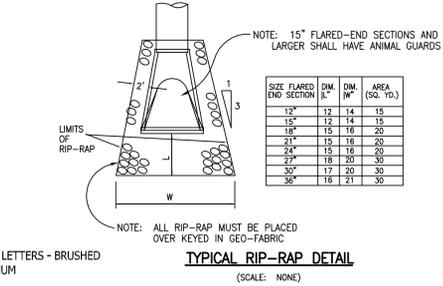
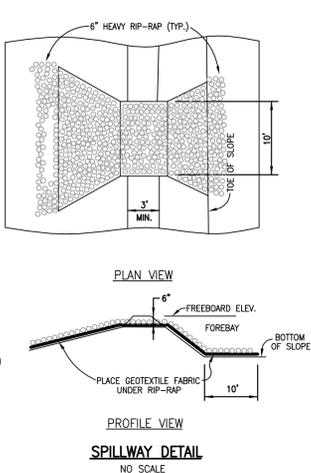
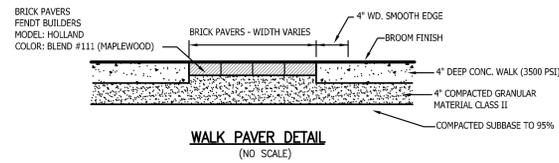
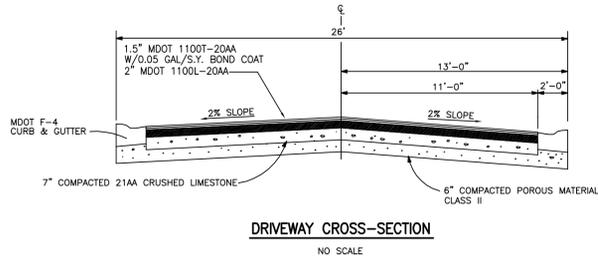
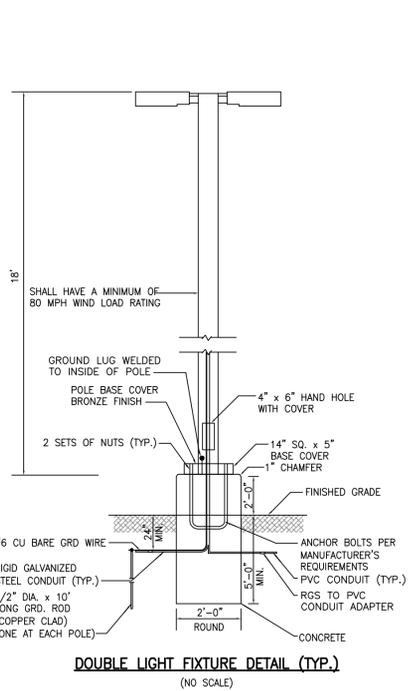
DAKOTA OFFICE BUILDING
DAKOTA INTEGRATED SYSTEMS, INC.
1875 HOLLOWAY DRIVE
HOLT, MI 48842
(517) 594-6500

CONSTRUCTION NOTES & DETAILS

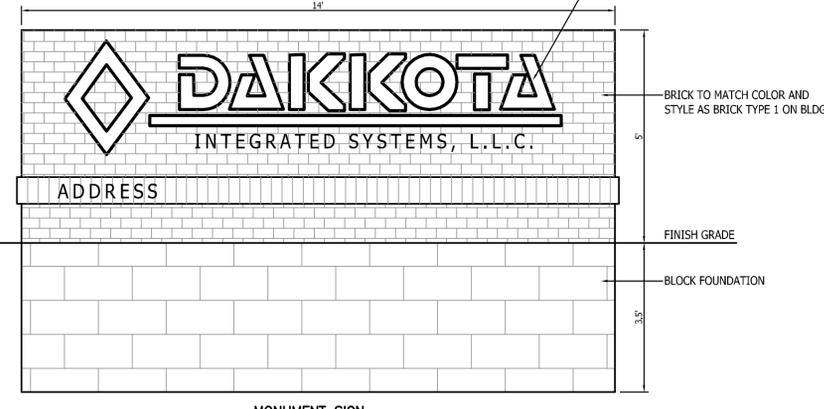
NO.	BY	DATE	REVISION PER
1	TD	4-1-13	
2	TD	2-25-13	

DESIGNED BY: TD
DRAWN BY: TD
CHECKED BY: TD

SCALE: 1" = 75'
JOB NO. 12-183
DATE 2-6-13
SHEET NO. 9



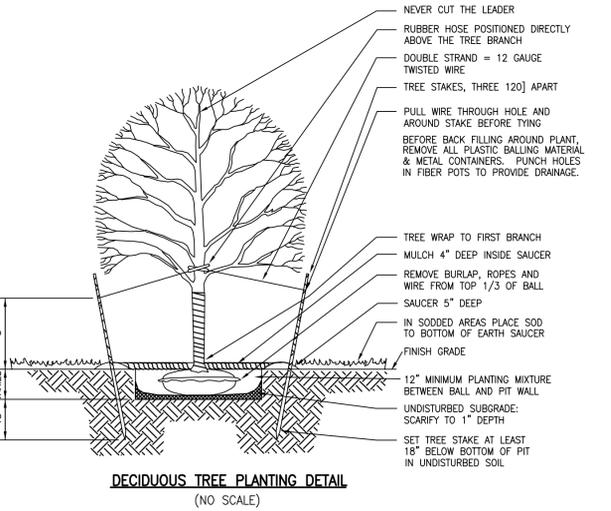
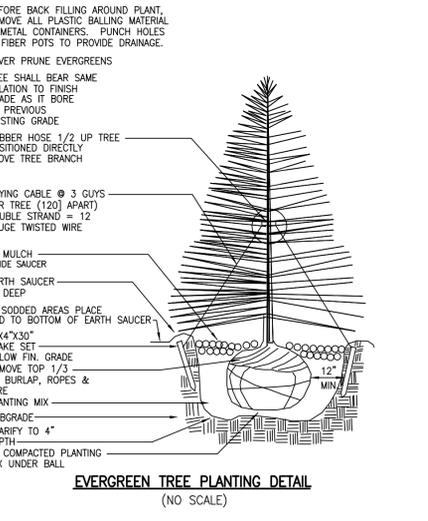
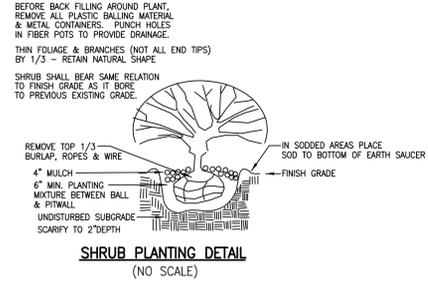
NOTE: UPON COMPLETION OF CONSTRUCTION STONE AROUND THE STRUCTURE SHALL BE REFRESHED WITH CLEAN STONE.
DETENTION BASIN #3
OUTLET CONTROL STRUCTURE
 (NO SCALE)



STORM SEWER DESIGN COMPUTATIONS																								
FROM	TO	DRAIN AREA	ACRES	AREA IMPERV	AREA PERV	RUNOFF COEFF	EQUIV. AREA A * C	INTEN-SITY I	TIME OF CONC. Tc	ADD'L RUNOFF Q	RUNOFF (CFS)	PIPE LENGTH (LF)	PIPE DIA. (IN)	VELOCITY FULL (FPS)	HYDRAULIC GRADIENT SLOPE %	ACTUAL SLOPE USED	MANNING FLOW CAPACITY	MANNING'S VELOCITY (FT/SEC)	TIME (MIN)	HG ELEV UPPER END	HG ELEV LOWER END	RIM ELEV UPPER END	INVERT UPPER END	INVERT LOWER END
CB03	CB02	C	0.56	0.43	0.13	0.74	0.413	4.38	15.00		1.81	72	12	2.30	0.26%	0.32%	2.02	2.57	0.47	977.46	977.28	983.85	976.64	976.41
CB02	CB01	B	0.15	0.11	0.04	0.71	0.107	4.32	15.47		2.27	50	12	2.89	0.40%	0.32%	2.02	2.57	0.32	977.28	977.08	981.60	976.41	976.25
CB01	ES01	A	0.43	0.39	0.04	0.83	0.359	4.29	15.79		3.81	22	15	3.10	0.35%	0.24%	3.17	2.59	0.14	977.08	977.00	980.00	976.05	976.00
CB04	CB05	E	0.15	0.15	0	0.90	0.135	4.38	15.00		0.59	24	12	0.75	0.03%	0.32%	2.02	2.57	0.16	979.93	979.92	980.00	977.14	977.07
CB05	ES02	F	0.19	0.12	0.07	0.64	0.122	4.36	15.16		1.12	21	12	1.43	0.10%	0.32%	2.02	2.57	0.14	979.92	979.90	980.00	977.07	977.00
CB07	CB06	I	0.61	0.13	0.48	0.35	0.213	4.38	15.00		0.93	24	12	1.19	0.07%	0.32%	2.02	2.57	0.16	976.09	976.08	977.05	974.45	974.38
CB06	ES04	H	0.29	0.13	0.16	0.51	0.149	4.36	15.16		1.58	40	12	2.01	0.20%	0.32%	2.02	2.57	0.26	976.08	976.00	977.05	974.38	974.25

GENERAL LANDSCAPE NOTES:

- ALL PLANT MATERIAL SHALL CONFORM TO THE REQUIREMENTS AND SPECIFICATIONS OF THE GOVERNING MUNICIPALITY AND SHALL BE NURSERY GROWN. ALL SIZES AND MEASUREMENTS SHALL CONFORM TO THE AMERICAN ASSOCIATION OF NURSERYMEN STANDARDS. ALL PLANT MATERIAL SHALL BE OF SELECTED SPECIMEN QUALITY AND HAVE A NORMAL HABIT OF GROWTH. ALL PLANT MATERIAL IS SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT.
- ALL PLANT MATERIALS SHALL BE BALLED AND BURLAPPED STOCK OR CONTAINER STOCK. NO BARE ROOT STOCK IS PERMITTED. ALL PLANT BALLS SHALL BE FIRM, INTACT AND SECURELY WRAPPED AND BOUND.
- ALL PLANT BEDS SHALL BE EXCAVATED OF ALL BUILDING MATERIALS AND OTHER EXTRANEOUS OBJECTS AND POOR SOILS TO A MINIMUM DEPTH OF 12 INCHES AND BACKFILLED TO GRADE WITH PLANTING MIX (SEE BELOW).
- PLANTING MIXTURE SHALL CONSIST OF 4 PARTS TOPSOIL FROM ON SITE, 1 PART PEAT, AND 5 POUNDS OF SUPERPHOSPHATE PER CUBIC YARD OF MIX. INGREDIENTS SHALL BE THOROUGHLY BLENDED TO A UNIFORM CONSISTENCY.
- ALL PLANT BEDS AND INDIVIDUAL PLANTS SHALL BE MULCHED WITH A 4 INCH LAYER OF SHREDDED BARK MULCH.
- ALL PLANTS AND PLANT BEDS SHALL BE THOROUGHLY WATERED UPON COMPLETION OF PLANTING AND STAKING OPERATIONS.
- THE CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIALS FOR A PERIOD OF 1 YEAR FROM THE DATE THE WORK IS ACCEPTED, IN WRITING, BY THE LANDSCAPE ARCHITECT. THE CONTRACTOR SHALL REPLACE, WITHOUT COST TO THE OWNER, WITHIN A SPECIFIED PERIOD TIME, ALL DEAD PLANTS, AND ALL PLANTS NOT IN A VIGOROUS, THRIVING CONDITION, AS DETERMINED BY THE LANDSCAPE ARCHITECT DURING AND AT THE END OF THE GUARANTEE PERIOD. REPLACEMENT STOCK SHALL CONFORM TO THE ORIGINAL REQUIREMENTS.
- EDGING, WHERE NOTED ON THE PLANS, SHALL BE BLACK ALUMINUM EDGING, 3/16" X 4". INSTALL PER MANUFACTURER'S INSTRUCTIONS. ALL EDGING SHALL BE INSTALLED IN STRAIGHT LINES OR SMOOTH CURVES WITHOUT IRREGULARITIES.
- SOD SHALL BE DENSE, WELL ROOTED TURF, FREE OF WEEDS. IT SHALL BE COMPRISED OF A BLEND OF AT LEAST TWO KENTUCKY BLUEGRASSES AND ONE FESCUE. IT SHALL HAVE A UNIFORM THICKNESS OF 3/4 INCH, AND CUT IN UNIFORM STRIPS NOT LESS THAN 10 INCHES BY 18 INCHES. SOD SHALL BE KEPT MOIST AND LAID WITHIN 36 HOURS AFTER CUTTING.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH A DENSE LAWN OF PERMANENT GRASSES, FREE OF LUMPS AND DEPRESSIONS. ALL SODDED AREAS THAT BROWN OUT OR HAVE NOT FIRMLY KNITTED TO THE SOIL BASE WITHIN A PERIOD OF ONE MONTH SHALL BE REPLACED BY THE CONTRACTOR, AT NO COST TO THE OWNER.
- ALL AREAS OF THE SITE THAT BECOME DISTURBED DURING CONSTRUCTION AND ARE NOT TO BE PAVED, STONED, LANDSCAPED, OR SODDED SHALL BE SEEDED AND MULCHED. SEED MIXTURE SHALL BE AS FOLLOWS:
 KENTUCKY BLUEGRASS (CHOOSE 3 VARIETIES:
 ADELPHI, RUGBY, GLADE OR PARADE) 30%
 RUBY RED OR DAWSON RED FINE FESCUE 30%
 ATLANTA RED FESCUE 20%
 PENNFINE PERENNIAL RYE 20%
 THE ABOVE SEED MIXTURE SHALL BE SOWN AT A RATE OF 250 POUNDS PER ACRE. PRIOR TO SEEDING, THE TOPSOIL LAYER SHALL BE FERTILIZED WITH A COMMERCIAL FERTILIZER WITH A 10-0-10 ANALYSIS:
 10% NITROGEN: A MINIMUM OF 25% FROM A UREA-FORMALDEHYDE SOURCE
 0% PHOSPHATE
 10% POTASH: SOURCE TO BE POTASSIUM SULFATE OR POTASSIUM NITRATE.
 THE FIRST FERTILIZER APPLICATION SHALL BE AT A RATE OF 10 POUNDS OF BULK FERTILIZER PER 1000 SQUARE FEET.
 IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH A DENSE LAWN OF PERMANENT GRASSES, FREE OF LUMPS AND DEPRESSIONS. ANY PART OF THE AREA THAT FAILS TO SHOW A UNIFORM GERMINATION SHALL BE RESEEDED AND SUCH RESEEDING SHALL CONTINUE UNTIL A DENSE LAWN IS ESTABLISHED. DAMAGE TO SEEDS AREAS RESULTING FROM EROSION SHALL BE REPAIRED BY THE CONTRACTOR.
- ALL AREAS OF THE SITE SCHEDULED FOR SEEDING OR SODDING SHALL FIRST RECEIVE A 4 INCH LAYER OF CLEAN, FRIABLE TOPSOIL. THIS SOIL SHALL BE DISCED AND SHALL BE GRADED IN CONFORMANCE WITH THE GRADING PLAN.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF ALL UTILITIES AND TO INFORM THE LANDSCAPE ARCHITECT OF ANY CONFLICTS PRIOR TO COMMENCING LANDSCAPING.
- ALL PLANT MATERIALS SHALL BE FREE OF WEEDS, INSECTS AND DISEASE.
- ALL LANDSCAPE AREAS ARE TO BE IRRIGATED WITH AN AUTOMATIC UNDERGROUND IRRIGATION SYSTEM.



THESE PLANS AND THE SERVICES OF BOSS ENGINEERING SURVEYORS & PLANNERS ARE SHOWN ON THESE DRAWINGS AS ONLY APPROXIMATE. NO GUARANTEE IS MADE AS TO THE ACCURACY OF THE INFORMATION PROVIDED HEREON. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF ANY CONFLICTS ARE FOUND. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE LOCAL OR STATE AGENCIES.

BOSS ENGINEERING SURVEYORS & PLANNERS
 LANDSCAPE ARCHITECTS
 (E-MAIL: bossdesigns.com)
 3121 E. GRAND RIVER AVE.
 HOLT, MI 48842
 (800) 246-6735 FAX (517) 548-1670

DAKOTA OFFICE BUILDING
DAKOTA INTEGRATED SYSTEMS, INC.
 1875 HOLLOWAY DRIVE
 HOLT, MI 48842
 (517) 594-6500

PROJECT: DAKOTA OFFICE BUILDING
 PREPARED FOR: DAKOTA INTEGRATED SYSTEMS, INC.
 TITLE: CONSTRUCTION NOTES & DETAILS

NO.	BY	DATE	REVISION PER
1	TD	4-4-13	2-25-13
2	TD	4-4-13	2-25-13

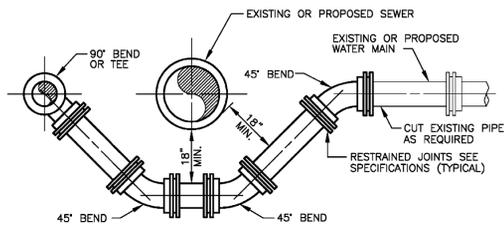
DESIGNED BY: TD
 DRAWN BY: TD
 CHECKED BY: TD

SCALE 1" = 75'
 JOB NO. 12-183
 DATE 2-6-13
 SHEET NO. 10

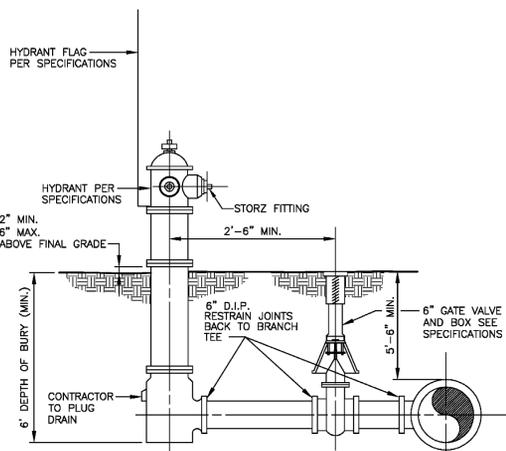
PIPE RESTRAINT SCHEDULE
GROUND BURIED PRESSURE PIPE - POLYETHYLENE ENCASED DUCTILE IRON PIPE

PIPE DIAMETER	TEES, 90° BENDS	45° BENDS	22-1/2° BENDS	11-1/4° BENDS	DEAD ENDS	REDUCERS (ONE SIZE REDUCTION)*	REDUCERS (TWO SIZE REDUCTION)*
4	13	5	3	1	40	--	--
6	19	8	4	2	58	31	--
8	24	10	5	2	75	30	70
12	34	14	7	3	107	57	116
16	43	18	9	4	139	59	137
20	52	22	10	5	169	59	134
24	61	25	12	6	199	60	132
30	73	30	15	7	242	85	168
36	84	35	17	8	281	84	188

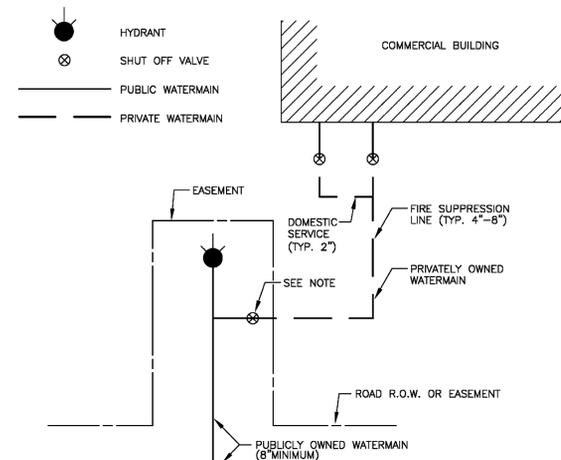
- LENGTHS OF PIPE RESTRAINT ARE GIVEN IN FEET.
 - IF REQUIRED PIPE DIAMETER IS NOT LISTED IN THIS TABLE, THE NEXT LARGEST PIPE DIAMETER SHALL BE USED.
 - THIS TABLE IS BASED ON A TEST PRESSURE OF 180 PSI (OPERATING PRESSURE PLUS WATER HAMMER). FOR OTHER TEST PRESSURES, ALL VALUES TO BE INCREASED OR DECREASED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



WATER MAIN RELOCATION

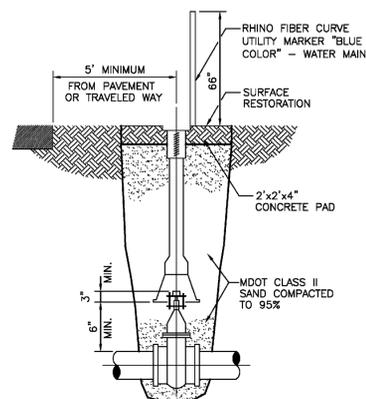


FIRE HYDRANT ASSEMBLY



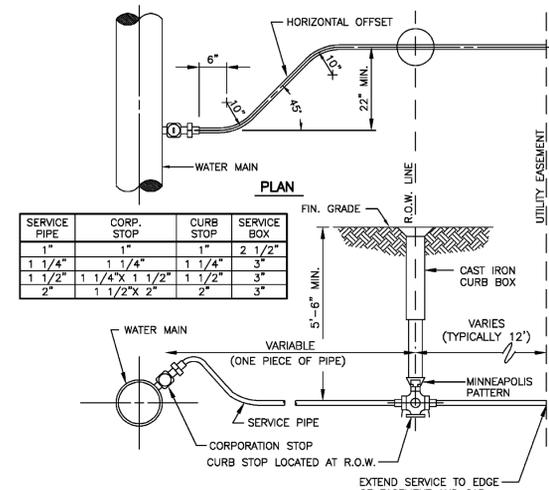
NOTE: PUBLICLY OWNED SHUT OFF VALVE TO BE LOCATED IN EASEMENT.

COMMERCIAL BUILDING WATER SERVICE LAYOUT



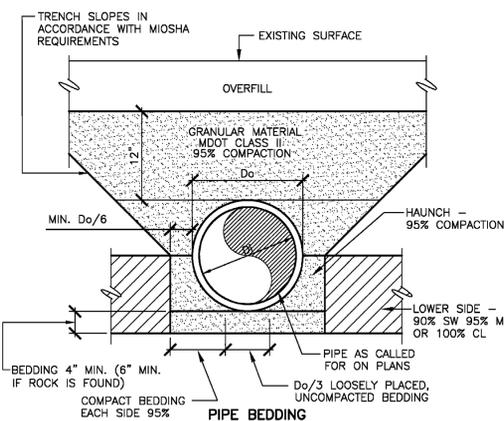
NOTE: VALVE BOX SHALL NOT REST ON VALVE OR MAIN LINE PIPE.

GATE VALVE AND BOX

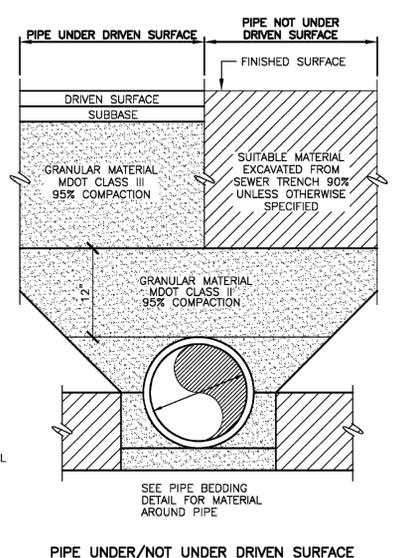


SECTION WATER SERVICE LATERAL

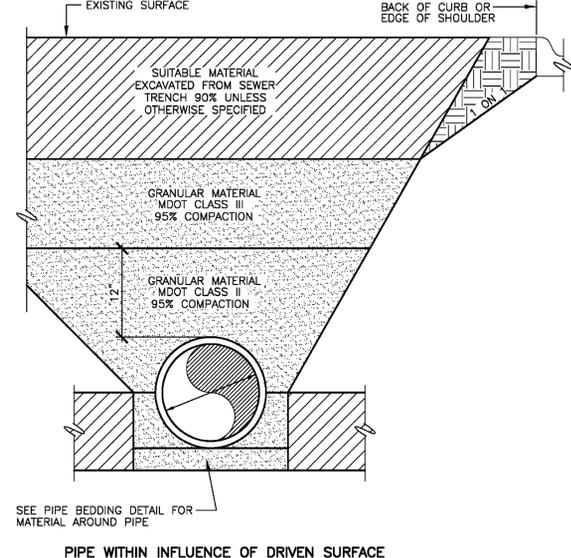
- NOTES:
- COMPACTION PRESENTED AS MINIMUM STANDARD PROCTOR VALUES.
 - MATERIALS AROUND THERMOPLASTIC PIPE WITH DIAMETER < 6 INCHES SHALL PASS 0.5 INCH SIEVE, MATERIALS AROUND OTHER PIPES SHALL PASS 1.5 INCH SIEVE.
 - MATERIALS AROUND HDPE PIPE TO BE MDOT 6A OR 21AA.
 - DRIVEN SURFACE IS DRIVEWAY, PARKING AREA, ROAD BED OR SHOULDER.



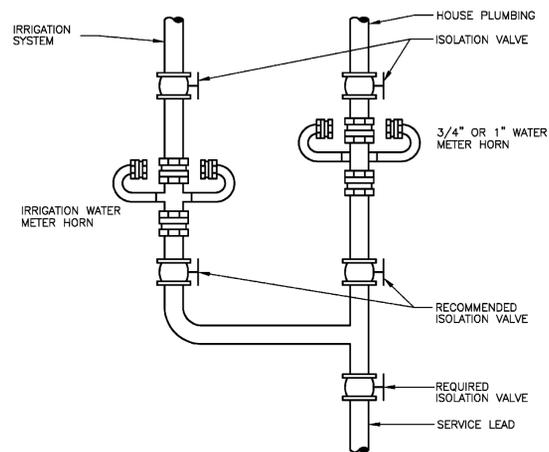
TRENCH EXCAVATION & PIPE BEDDING



PIPE UNDER/NOT UNDER DRIVEN SURFACE



PIPE WITHIN INFLUENCE OF DRIVEN SURFACE



NOTE: ALL METERS ARE TO BE INSTALLED HORIZONTALLY IN A DRY, CLEAN, SANITARY LOCATION THAT IS READILY ACCESSIBLE. THIS DRAWING IS NOT TO SCALE & IS ONLY A REPRESENTATION OF HOW THE METERS SHOULD BE INSTALLED. THE SECOND METER IS OPTIONAL FOR IRRIGATION USAGE. METERS SHOULD NOT BE INSTALLED IN LINE (ONE RIGHT AFTER THE OTHER).

TYPICAL METER HORN INSTALLATION

MARION HOWELL GENOVA OCEOLA
Sewer and Water Authority

**WATER MAIN
STANDARD DETAILS**

Scale: NONE
Issued Date: 10-22-2007

PROJECT: DAKOTA OFFICE BUILDING
PREPARED FOR: DAKOTA INTEGRATED SYSTEMS, INC.
1875 HOLLOWAY DRIVE
HOLT, MI 48842
(517) 594-6500

CONSTRUCTION NOTES & DETAILS

NO	BY	DATE	REVISION PER
1	TD	4-4-13	
2	TD	2-25-13	

DESIGNED BY: TD
DRAWN BY: TD
CHECKED BY:
SCALE: 1" = 75'
JOB NO.: 12-183
DATE: 2-6-13
SHEET NO.:

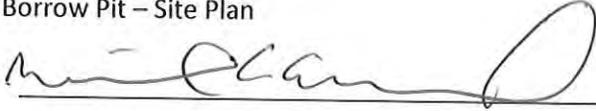
BEFORE YOU DIG
CALL MISS DIG
800-485-4343
www.missdig.com

BOSS ENGINEERING
ENGINEERS • SURVEYORS • PLANNERS
LANDSCAPE ARCHITECTS
3121 E. GRAND RIVER AVE.
HOWELL, MI 48843
(800) 246-6735 FAX (517) 546-1670
E-MAIL: boss@bosseng.com



MEMORANDUM

TO: Honorable Board of Trustees
FROM: Kelly VanMarter, Assistant Township Manager
DATE: April 11, 2013
RE: Hauss Borrow Pit – Site Plan

MANAGER'S REVIEW: 

I have reviewed the revised site plan and environmental impact assessment for the proposed temporary site excavation and stockpile related to the Latson Road interchange project located on the northwest corner of Nixon and Crooked Lake Roads in Section 17. This project was recommended for approval by the Planning Commission on April 8, 2013. My review of the revised submittal was focused on compliance with the outstanding items discussed at the Planning Commission and my recommendation is as follows:

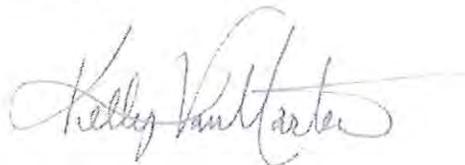
Environmental Impact Assessment: I recommend approval of the impact assessment revised on April 9, 2013 with the following condition:

1. Prior to issuance of a land use permit, a performance guarantee in the amount of \$1,500.00 per acre of disturbed area in a form approved by the Township Attorney shall be provided to ensure the restoration of the property. This requirement shall be waived if Township staff can be satisfied that the restoration will be guaranteed and funded by other sources such as the project contractor, the Department of Transportation, and/or the County Road Commission.

Site Plan: I recommend approval of the site plan dated 04-09-13 subject to the performance guarantee required in the approval of the environmental impact assessment being provided as indicated.

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

Sincerely,



Kelly VanMarter
Assistant Township Manager/Community Development Director

2911 Dorr Road
Brighton, MI 48116
810.227.5225
810.227.3420 fax
genoa.org

SUPERVISOR
Gary T. McCririe

CLERK
Paulette A. Skolarus

TREASURER
Robin L. Hunt

MANAGER
Michael C. Archinal

TRUSTEES
H. James Mortensen
Jean W. Ledford
Todd W. Smith
Steven Wildman

Kelly VanMarter

From: mike@bosseng.com
Sent: Tuesday, April 09, 2013 3:14 PM
To: Kelly VanMarter
Cc: 'Carl Hauss'
Subject: Bond

Kelly, here is K & R's bond. I think that because MDOT must approve all completed work, the Township can make any complaints to them and they should resolve. Also the soil erosion control bond is typically submitted to the Drain Commissioner's office as part of the soil erosion control permit. I'm not sure how and under what conditions the Township would get involved to the point of pursuing the remedies afforded by a bond.

The Hausses have just as big (if not bigger) a stake in making sure the site is left in good condition and it will be part of their agreement with K & R.

Michael Boss, P.E.

Boss Engineering
3121 E. Grand River Ave.
Howell, MI 48843
517.546.4836
f 517.548.1670
c 517.375.0945
mike@bosseng.com

1303 (11/96)

47065-101619

Bond No. 354-030-106

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, That We, Kamminga & Roodvoets, Inc., a Michigan Corporation as principal, and ~~Liberty Mutual Insurance Company~~ as surety, are held and firmly bound unto the State of Michigan, Michigan Department of Transportation, in the penal sum of

Twenty Four Million Four Hundred Ninety Four Thousand Seventy Eight Dollars And No Cents

lawful money of the United States, to be paid to the said State of Michigan, Michigan Department of Transportation, or to its certain attorney or assigns, to which payment, well and truly to be made, we bind ourselves, our heirs, executors, administrators and assigns, jointly and severally, firmly by these presents.

Sealed with our seals and dated this 26th day of September, A.D. 20 12

The condition of this obligation is such that if the above named principal shall and will, well and faithfully, and fully, do, execute and perform the contract to which this bond is attached, according to the terms and conditions thereof, including extensions of time, (notice of which is hereby waived by the surety), then this obligation is to be void, otherwise to remain in full force and effect.

Kamminga & Roodvoets, Inc.

By [Signature] Principal

By Kurt D. Poll, President

By _____

Liberty Mutual Insurance Company
Surety

By Marsha Toman
Marsha Toman, Attorney-in-Fact

NOTE If the principal is a co-partnership, each member must sign these bonds. If the principal is a corporation, evidence of the authority of the officer signing must be attached or be on file with the Michigan Department of Transportation. The Surety Company shall attach a valid Power of Attorney of person or persons executing bond for the company.

Commission Received by: Arthur J. Gallagher Risk Management Services

47065-101619

Bond No. 354-030-106

LIEN BOND

KNOW ALL MEN BY THESE PRESENTS, That We, Kamminga & Roodvoets, Inc., a Michigan Corporation as principal, and Liberty Mutual Insurance Company as surety, are held and firmly bound unto the State of Michigan, Michigan Department of Transportation, in the sum of

Twenty Four Million Four Hundred Ninety Four Thousand Seventy Eight Dollars And No Cents lawful money of the United States, to be paid to the said State of Michigan, Michigan Department of Transportation, or, to its assigns, or to any person, firm or corporation who may furnish labor, materials, supplies for equipment, for camp or construction, and equipment on a rental basis, on account of and actually used in the performance of the contract hereinafter mentioned, to which payment well and truly to be made, we bind ourselves, our heirs, executors, administrators and assigns, and each and every one of them firmly by these presents.

Sealed with our seals and dated this 26th day of September, A.D. 20 12

The condition of this obligation is such that if there shall be paid, as the same may become due and payable, all indebtedness which may arise from said principal to a sub-contractor or to any person, firm or corporation on account of any labor, material, supplies for equipment, for camp or construction, and rental of equipment, furnished and actually used in the performance of the contract to which this bond is attached, including extensions of time, (notice of which is hereby waived by the surety), then this obligation is to be void, otherwise to remain in full force and effect.

Kamminga & Roodvoets, Inc.

By [Signature] Principal

By Kurt D. Poll, President

By _____

~~Liberty Mutual Insurance Company~~ Surety

By Marsha Toman
Marsha Toman, Attorney-in-Fact

47065-101619

Bond No. 354-030-106

ENDORSEMENT

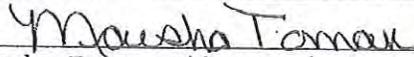
The provisions of the foregoing lien bond shall also apply to indebtedness described therein in the case of a subcontractor in which notice of reliance on the security of the bond is not furnished within the 60-day period provided in 1905 PA 187, § 2, MCLA 570.102; MSA 26.322 provided such notice is furnished within 60 days after notice of payment of the final estimate or the post final estimate having been made by the State of Michigan, Michigan Department of Transportation, or in the case of a supplier to the contractor or a subcontractor, within 120 days after the materials are last furnished. Nothing in this endorsement shall be considered so as to limit or narrow the coverage provided for in said lien bond, but is in addition thereto, and not in lieu thereof.

Kamminga & Roodvoets, Inc.

By  Principal

By KURT D. POLL, PRESIDENT

By _____
Liberty Mutual Insurance Company Surety

By 
Marsha Tomian, Attorney-in-Fact

GENOA TOWNSHIP
APPLICATION FOR SITE PLAN REVIEW

TO THE GENOA TOWNSHIP PLANNING COMMISSION AND TOWNSHIP BOARD:

APPLICANT NAME & ADDRESS: Rudolph C. Hauss, 16880 Hauss, Eastpointe, Mi. 48021

OWNER'S NAME & ADDRESS: LH&M LLC

SITE ADDRESS: NW Corner of Nixon Crooked Lake Roads PARCEL #(s): 4711-17-400-007

APPLICANT PHONE: (586) 574-0199 OWNER PHONE: ()

LOCATION AND BRIEF DESCRIPTION OF SITE: Vacant land on the NW corner of Nixon and Crooked Lake Roads

BRIEF STATEMENT OF PROPOSED USE: Temporary "borrow" area for Latson Road Interchange Construction project.

THE FOLLOWING BUILDINGS ARE PROPOSED: NONE

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

BY: Rudolph C. Hauss

ADDRESS: Rudolph C. Hauss, 16880 Hauss, Eastpointe, Mi. 48021

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

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

1) Mike Boss of Boss Engineering at (517) 548-1670
Name Business Affiliation Fax No.

FEE EXCEEDANCE AGREEMENT

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

SIGNATURE: Rudolph C. Hauss DATE: 9-5-13

PRINT NAME: Rudolph C. Hauss PHONE: 586-574-0199

ADDRESS: 16880 Hauss, Eastpointe, Mi. 48021

**GENOA CHARTER TOWNSHIP
PLANNING COMMISSION
PUBLIC HEARING
APRIL 8, 2013
6:30 P.M.
AGENDA**

CALL TO ORDER: The meeting of the Genoa Charter Township Planning Commission was called to order at 6:30 p.m. Present were Barbara Figurski, Lauren Brookins, James Mortensen, John McManus, Chairman Doug Brown, Dean Tengal and Diana Lowe. Also present were Kelly VanMarter, Assistant Township Manager, Brian Borden of LSL; and Gary Markstrom of Tetra Tech.

PLEDGE OF ALLEGIANCE: The Pledge of Allegiance was recited.

APPROVAL OF AGENDA: Upon motion by and support by, the agenda was approved with the change that no new business would begin after 9:15 a.m. **Motion** to approve the agenda subject to that change by Diana Lowe. Support by Barbara Figurski. **Motion carried unanimously.**

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

OPEN PUBLIC HEARING #1... Review of a site plan application, environmental impact assessment and site plan for a proposed site excavation and stockpile related to the Latson Road Interchange Project, located on the Northwest corner of Nixon and Crooked Lake Road in Section 17, petitioned by Rudolph C. Hauss.

Carl Hauss, Rudolph Hauss and Mike Boss of Boss Engineering addressed the Planning Commission. Mike Boss gave a brief description of the proposed project. When the construction project is complete, this project will be concluded. He suggests there is not a conflict caused by Nixon Road. The contractor will have access to site.

Brian Borden discussed the proposal with the Planning Commission. He advises that a performance guarantee may be requested. James Mortensen suggested the performance guarantee/bond be \$12,400.00 if approved. Mr. Boss indicated that is not appropriate because the contractor will be required to post the bond.

Gary Markstrom is unsure whether MDOT required a performance bond. If so, that bond would be many millions. Kelly is not comfortable without a letter from MDOT indicating they would be willing to work with the Township.

Brian Borden discussed the fact that some trees would need to be removed. He also addressed issues regarding maneuverability of trucks on the site.

Gary Markstrom addressed the Planning Commission regarding his letter of March 21st, which the petitioner has full addressed, and his subsequent letter. He believes the berm in section AA should be continued to a swail address emergency erosion. The construction sequence should stay in for a year so wetlands are protected for a season to allow things to take hold.

The Brighton Fire Department letter was satisfactory.

Dust control measures should be addressed in the petitioner's statement.

Planning Commission disposition of petition

- A. Recommendation of Environmental Impact Assessment.
- B. Disposition of Site Plan.

Motion by Barbara Figurski to improve the environment impact assessment of 3/27/13 subject to:

1. To include changes to item F as discussed by Mike Boss;
2. To include dust control.

Support by James Mortensen subject to a bond by petitioner in the amount of \$12,400.00 i a form satisfactory to the Township Attorey unless Towship is satisfied that the restoration will be provided and funded by other sources such as the highway contractor, State of Michigan, etcetera. **Motion carried unanimously.**

Motion by James Mortensen that the site plan for the property located at Nixon Road and Crooked Lake be approved by this committee dated March 27, 2013, subject to:

1. Compliance with the requirements of the Township Engineer as stated in their letter of April 4, 2013;
2. Approval by the Township Board of Trustees of the Environmental Impact Assessment.

Motion carried unanimously.

OPEN PUBLIC HEARING #2...Review of sketch plan application for approval of Chaldean Camp prayer houses, located at 1311 Kellogg Road, Brighton, petitioned by Sami Herfy on behalf of Chaldean Catholic Diocese USA.

Sami Herfy addressed the Planning Commission. He is proposing to add prayer houses at the camp. They need four – one for each of four saints.

Brian Borden addressed the Planning Commission. Due to the nature of the principle use of the property, the standards were reviewed. There has been no change in the standards at this site. The two drawings submitted do not match. The plan that has been submitted is the correct one per the petitioner. The petitioner will work with Township staff to clean up the documents to make them consistent. The petitioner will endeavor to match the colors of the chapel building. The path to the prayer houses will be open and navigable. It is an open field.

Gary Markstrom indicated his only request is that the trees lines and meadows should be more clearly marked in the drawings.

A. Disposition of Sketch Plan.

Motion by James Mortensen that the sketch plan dated March 22, 2013, subject to:

1. The supplemental plan's details should be amended to be consistent regarding the location of the prayer houses;
2. The color of the four structures will match the church;
3. Pedestrian access to the proposed structures will be generally across open grass fields and these four structures will be used periodically during the four months of summer weather;
4. No exterior lighting will be provided;
5. The Application has confirmed that the four structures are not located within 25 feet of the wetland;
6. The requirements of the Township Engineer of his 4/3/13 letter will be complied with particularly with reference to showing the limits of tree clearing on the plan;
7. The requirements of the 3/28/13 Brighton Fire Department letter regarding obtaining a building permit will be complied with.

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

Administrative Business:

- *Staff report. A staff report was given by Kelly VanMarter.*
- *Approval of March 25th, 2013 Planning Commission meeting minutes. Upon motion by Barbara Figurski and support by John McManus, the minutes of the 3/25/13 meeting were approved. **Motion carried unanimously.***
- *Member Discussion. Diana Lowe discussed the Dorr Road construction.*

- *Adjournment.* Upon motion by Barbara Figurski and support by Dean Tengel, the meeting was adjourned at 7:28 p.m. **Motion carried unanimously.**

DRAFT



LSL Planning, Inc.

Community Planning Consultants

April 3, 2013

Planning Commission
Genoa Township
2911 Dorr Road
Brighton, Michigan 48116

Attention:	Kelly Van Marter, AICP Assistant Township Manager and Planning Director
Subject:	Site Excavation and Stockpile (related to interchange project) – Site Plan Review #2
Location:	Northwest corner of Nixon and Crooked Lake intersection (vacant property)
Zoning:	CE Country Estate District

Dear Commissioners:

At the Township’s request, we have reviewed the revised site plan and response letter (both dated 3/27/13) proposing a “substantial site alteration” to the vacant property at the northwest corner of Nixon and Crooked Lake Roads. Specifically, the project entails a large scale excavation and stockpiling operation related to the new I-96 interchange that is currently under construction. We have reviewed the proposed project in accordance with the applicable standards of the Genoa Township Zoning Ordinance.

A. Summary

1. If approval is granted, the Township may wish to require a performance guarantee to ensure site restoration.
2. The Township may wish to request details of tree removal needed to accommodate the project.
3. The project has the potential to disrupt the flow of vehicular traffic along Nixon Road.
4. The applicant must address any issues raised by the Township Engineer.

B. Proposal/Process

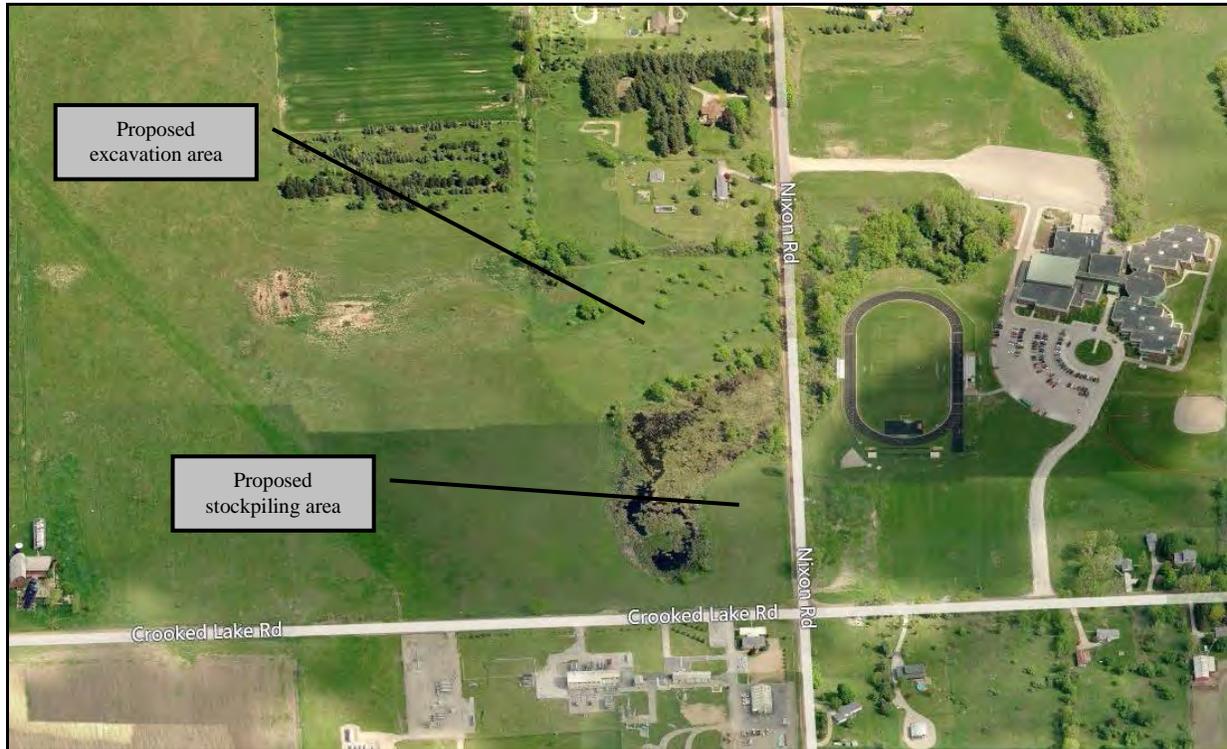
The applicant requests site plan approval to excavate 30,000 cubic yards of materials and to temporarily stockpile peat materials to be used for the current interchange construction project north of the subject site.

The stockpiling covers a 14,000 square foot area at a height of up to 15 feet. The submittal notes that the project is temporary in nature and that the land will be restored (“regraded, topsoiled, and seeded”) upon project completion. A construction sequence has also been included, noting a total project time of approximately 130 days from initiation to site restoration.

Given the nature of the project, site plan review and approval is required in accordance with Section 18.2 as a “substantial alteration of an important physical aspect of the site.”

C. Site Plan Review

1. **Dimensional Requirements.** Given the nature of the project, conventional dimensional requirements do not generally apply. However, the Township does require a 25-foot setback from a wetland for any work activities, including grading. The site plan identifies the 25-foot setback requirement, while both the site plan and Impact Assessment indicate that no work will take place within this area.



Aerial view of site and surroundings (looking north)

2. **Landscaping.** Given the nature of the project, landscaping is not proposed, nor does it appear to be required. Given the expected duration of the project, we do not feel that plantings are necessary; however, the Township may wish to request details of tree removal in accordance with Section 13.01.
3. **Pedestrian Circulation.** The site plan identifies a proposed 10-foot wide non-motorized pathway, which is to be installed by the Township in conjunction with the future improvements to Nixon Road. A note has been added to the revised plan indicating that measures will be taken to protect or restore the bike path if it is built prior to completion of the temporary activities.
4. **Vehicular Circulation.** The revised plan identifies two temporary entrance drives – one accessing the excavation area and another for the stockpile area. A note has been added to the plan indicating the number of trucks accessing the site and their duration on site will vary depending on the construction schedule and weather. While we understand this, there is still the chance that multiple trucks will show up at once and that stacking will back up into the roadway. In our opinion, it would be preferable if a measure were in place to prevent this situation.

Our only additional concern is that it appears as though trucks will have to back up into the roadway to exit the site. This could also disrupt traffic, particularly if it were to occur during peak times before and after school.

5. **Grading, Drainage and Utilities.** We defer to the Township Engineer for any comments related to grading, drainage and utilities.
6. **Environmental Impact Assessment.** The submittal includes a brief Impact Assessment (dated 3/27/13). The Assessment notes the activities are temporary in that they are tied to construction of the interchange and that the land will be restored upon project completion.

In summary, the Assessment does not expect the project to result in adverse impacts upon natural features, public facilities and infrastructure, traffic or nearby properties.

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

Sincerely,

LSL PLANNING, INC.

A handwritten signature in black ink, appearing to read "B. V. Borden". The signature is written in a cursive, flowing style.

Brian V. Borden, AICP
Senior Planner

April 4, 2013

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

**Re: Hauss Borrow Pit
Site Plan Review – 2nd Review**

Dear Ms. Van Marter:

We have reviewed the revised site plan documents for the Hauss Borrow Pit proposed for the parcel at the northwest corner of Crooked Lake and Nixon Roads. The revised site plan was prepared by Boss Engineering and is last dated 3-27-13. It appears that the petitioner has satisfactorily addressed our comments from our previous review letter. We do, however, have a couple of additional comments that were generated from this recent review:

SITE PLAN

1. The plan shows the proposed final grading once the extraction of the material is completed. The grading is shown tying into existing grade to continue the slope to the roadside ditch and the adjacent wetlands. We suggest the grading be revised slightly to create a swale or small berm along the perimeter of the disturbed area so that any unforeseen erosion can be caught in this swale prior to it entering the ditch or wetland. The intent is to be able to restore the slope without impacting the roadside ditch or having to excavate material from the wetlands.
2. The schedule on the plan shows the temporary erosion control being removed a day after the site is seeded and restored. The temporary control measures should stay in place until the grass has taken hold. Most likely this will be one growing season.
3. The plan sheet we received has the engineer's stamp on the drawing but is not signed. The petitioner should provide a stamped and signed drawing for the Township's files.

From an engineering viewpoint, we have no objections other than those stated above to approval of the site plan.

Please call if you have any questions.

Sincerely,



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

copy: Mike Boss, P.E., Boss Engineering



Brighton Area Fire Department

615 W. Grand River

Brighton, Michigan 48116

810-229-6640 Fax: 810-229-1619

March 22, 2013

Kelly VanMarter
Genoa Township
2911 Dorr Road
Brighton, MI 48116

RE: Hauss Borrow Pit & Stockpile Plan
Latson Rd. Interchange
Site Plan Review

Dear Kelly:

The Brighton Area Fire Department has reviewed the above mentioned site plan. The plans were received for review on March 11, 2013 and the drawings are dated March 7, 2013. The project is based on a temporary peat stockpile. The plan review is based on the requirements of the International Fire Code (IFC) 2012 edition.

The Fire Authority has no concerns subject to field evaluation. If you have any questions please contact me at 810-229-6640.

Cordially,

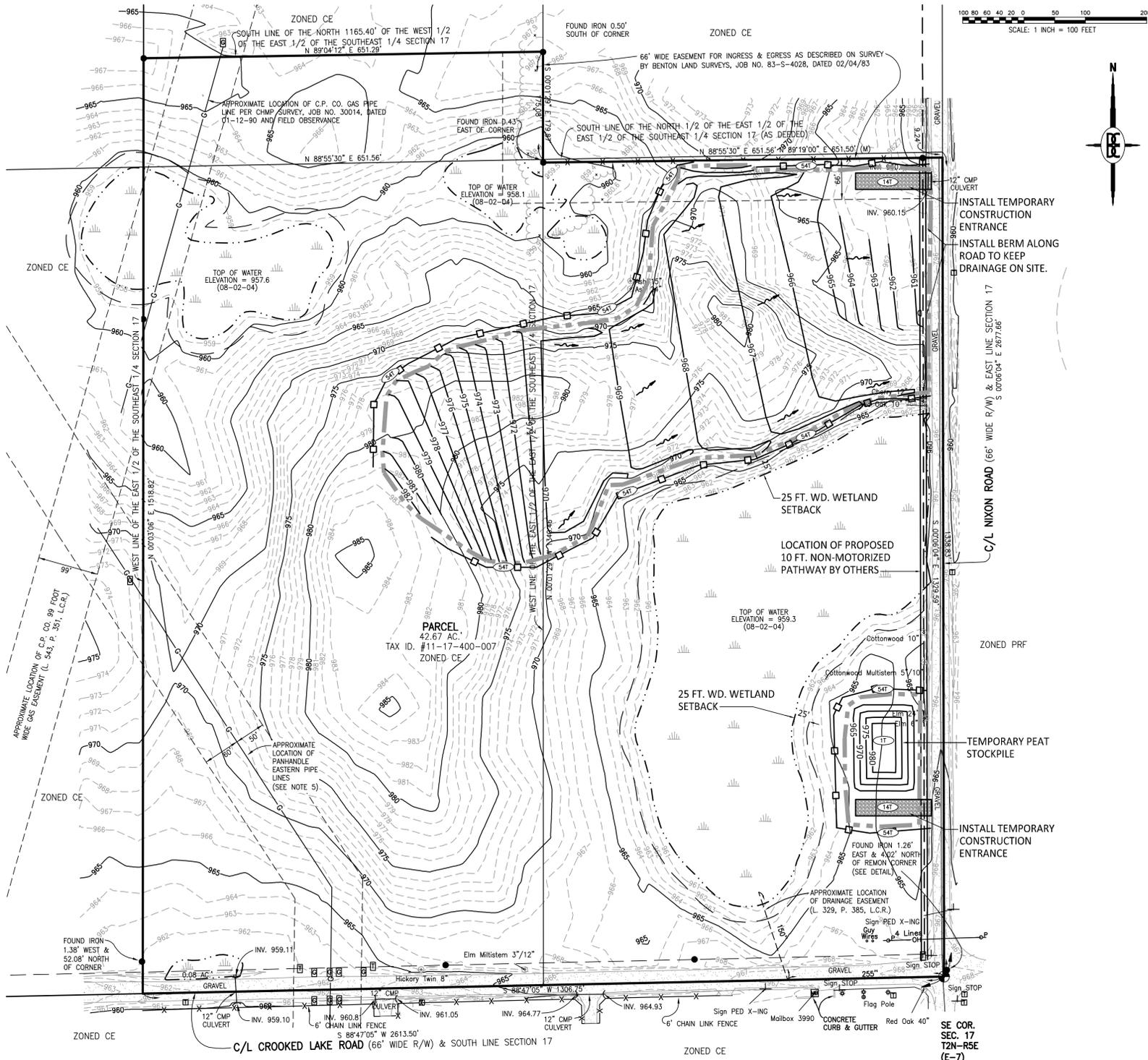
A handwritten signature in black ink, appearing to read "M. O'Brian".

Michael D. O'Brian
Fire Chief

ENVIRONMENTAL IMPACT ASSESSMENT

Revised April 9, 2013

- A. Name(s) and address(es) of person(s) responsible for preparation:**
Michael T. Boss, P.E. Boss Engineering Co. 3121 E. Grand River, Howell, Mi. 48843
- B. Map(s) and written description /analysis of the project site:** The proposed use is for a temporary "borrow" area and a temporary stockpile area for the Latson Road interchange project. The land will be regraded, topsoiled, and seeded upon completion of the "borrow" operation. This request is so that the general contractor (K & R) for the Latson Road Interchange project and South Latson Road paving project can use the adjacent material (on this site) as a staging and sand source for the road project. All work will be completed as part of the larger interchange and paving project and is subject to all permits and bonds held by K & R.
- C. Impact on natural features:** The existing "borrow" area and stockpile area is currently farm field and will be returned to farm field once the "borrow" and stockpile operation is complete. There will be no holes or low areas left once the final grading is complete. The 25' natural barrier around the existing wetland will be protected and maintained. There will be no impact on any other natural features.
- D. Impact on stormwater management:** Soil erosion control measures shall be incorporated as shown on the plan.
- E. Impact on surrounding land used:** Since this is a temporary operation that will take place only during the South Latson (Nixon Road) construction, there will be no impact on the surrounding land. The contractor is required to provide dust control on the entire project which will include this site as long as it is open. Any failure to keep up with dust control can be reported to the MDOT project engineer who will force immediate action.
- F. Impact on public facilities and services:** There will be no impact on public facilities or services.
- G. Impact on public utilities:** There will be no impact on public utilities.
- H. Storage and handling of any hazardous materials:** There will be no storage or handling of hazardous material.
- I. Impact on Traffic and Pedestrians:** The traffic generated will be from construction vehicles used in the construction of Latson Road. This project will reduce the number of truck movements over adjacent roads that would be needed if all this material was trucked in. There should be no impact on pedestrian traffic. The project is immediately adjacent to the South Latson Road construction project and will not impact any adjacent roadways other than to decrease potential traffic from what would be expected if the contractor is required to truck in the material he would get from this site, so no traffic study is needed. K & R will be responsible for coordinating traffic in and out of the site as well as all construction and temporary traffic on South Latson Road. Since this site is part of an active construction project, no driveway or access permits will be necessary.
- J. Special Provisions: General:** If K & R's existing erosion control bond does not satisfy the Township attorney, a separate bond in the amount of \$12,400 for soil erosion control must be submitted as part of the soil erosion control permit process.



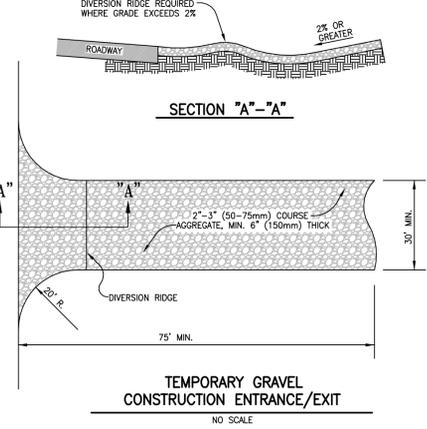
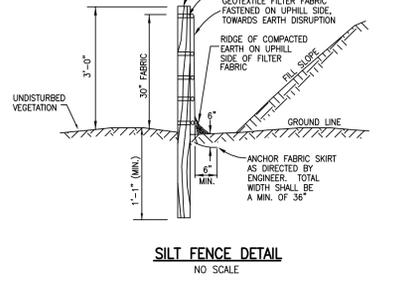
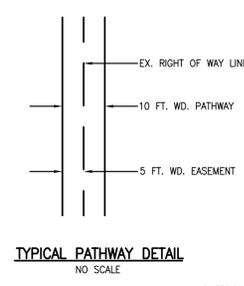
LEGEND

PROPOSED (PR)	EXISTING (EX)	
900	900	CONTOUR
T/C	+ 922.08	STORM DRAINAGE FLOW
XXX.XX		SPOT ELEVATION
FF	FF	FINISHED FLOOR ELEVATION
FG	FG	FINISHED GRADE ELEVATION
T/A	T/A	TOP OF ASPHALT
T/C	T/C	TOP OF CURB / CONCRETE
T/W	T/W	TOP OF WALK
F/L	F/L	FLOW LINE
T/P	T/P	TOP OF PIPE
B/P	B/P	BOTTOM OF PIPE
RIM	RIM	RIM ELEVATION
INV	INV	INVERT ELEVATION
MH	MH	MANHOLE STRUCTURE
IN	IN	INLET STRUCTURE
CB	CB	CATCHBASIN STRUCTURE
RY	RY	REARWARD STRUCTURE
ES	ES	END-SECTION
GV	GV	GATEVALVE STRUCTURE
HY	HY	HYDRANT
UP	UP	UTILITY POLE
SN	SN	SANITARY SEWER
SL	SL	SANITARY LEAD
FM	FM	FORCE MAIN
PS	PS	PRESSURE SEWER
ST	ST	STORM SEWER
WM	WM	WATER MAIN
WL	WL	WATER LEAD
FO	FO	FIBER OPTIC
OH	OH	OVERHEAD WIRE
C	C	CABLE
E	E	ELECTRIC
G	G	GAS
T	T	TELEPHONE
○	○	MANHOLE
□	□	INLET / CATCHBASIN
⊥	⊥	FLARED END-SECTION
⊥	⊥	GATE VALVE
⊥	⊥	UTILITY POLE
⊥	⊥	FENCE
⊥	⊥	SIGN
⊥	⊥	NOT FIELD VERIFIED
⊥	⊥	TO BE REMOVED
⊥	⊥	COMPACTED SAND BACKFILL
TBR		SANITARY SEWER LABEL
SAW		STORM SEWER LABEL
CB		WATER MAIN LABEL
GV		SOIL EROSION CONTROL MEASURE (P=PERMANENT, T=TEMPORARY)
54T		SILT FENCE
		LIMITS OF GRADING/CLEARING
		WETLAND BOUNDARY
		CONCRETE
		ASPHALT
		MODIFIED CURB

SOIL EROSION CONTROL MEASURES

1	STRIPPING & STOCKPILING TOPSOIL	TOPSOIL MAY BE STOCKPILED ABOVE BORROW AREAS TO ACT AS A DIMENSION STOCKPILE SHOULD BE TEMPORARILY SEED
14	AGGREGATE COVER	STABILIZES SOIL SURFACE, THIS MINIMIZING EROSION PERMS CONSTRUCTION TRAFFIC IN AREAS WHERE IT MAY BE USED AS PART OF PERMANENT BIKE CONSTRUCTION OF PAVED AREAS
54	GEOTEXTILE FABRIC AND POST OR POLES	USES GEOTEXTILE FABRIC AND POST OR POLES. EASY TO CONSTRUCT AND LOOKS AS NECESSARY. (SEE DETAIL THIS SHEET)

T = TEMPORARY P = PERMANENT
TOTAL DISTURBED AREA = 7.64 AC. (333,026 S.F.)



CONSTRUCTION SEQUENCE

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

1 DAY	1. INSTALL SOIL EROSION CONTROL AS SHOWN ON PLANS.
1 DAY	2. PERFORM DEMOLITION
120 DAYS	3. PERFORM EARTHWORK
5 DAYS	4. FINE GRADE, SPREAD TOPSOIL, SEED OR SOD AS APPLICABLE.
1 DAY	5. REMOVE TEMPORARY EROSION CONTROL STRUCTURES.
1 DAY	6. REMOVE ACCUMULATED SILT FROM ALL EXISTING DRAINAGE.

PARCEL DESCRIPTION AS SURVEYED:

Part of the Southeast 1/4 of Section 17, T2N-R5E, Genoa Township, Livingston County, Michigan, more particularly described as follows: Beginning at the Southeast Corner of said Section 17; thence along the South line of said Section 17 and the centerline of Crooked Lake Road (66 foot wide Right of Way), S 88°47'05\"/>

- ### CONSTRUCTION NOTES
- ALL DISTURBED AREAS ARE TO BE TOPSOILED, SEEDED AND MULCHED UPON COMPLETION OF CONSTRUCTION ACTIVITIES.
 - NO PERMANENT OR TEMPORARY LIGHTING OR SIGNAGE PROPOSED.
 - ALL TREES AND STUMPS DEMOLISHED AS PART OF THIS PROJECT ARE TO BE REMOVED FROM THE PROPERTY PRIOR TO FINALIZING THE PROJECT.
 - THE NUMBER, LENGTH OF STAY AND FREQUENCY OF TRUCKS ACCESSING THE SITE WILL VARY DEPENDING OF CONSTRUCTION SCHEDULE AND THE WEATHER.
 - IF THE PROPOSED BIKE PATH IS CONSTRUCTED PRIOR TO OR DURING BORROW PIT ACTIVITIES, BORROW PIT CONTRACTOR IS REQUIRED TO TAKE THE NECESSARY STEPS TO PROTECT THE BIKE PATH. CONTRACTOR IS RESPONSIBLE FOR REPAIRING OR REPLACING ANY PART OF THE BIKE PATH DAMAGED AS PART OF THEIR ACTIVITY.
 - REMOVE TEMPORARY SOIL EROSION CONTROL MEASURES 1 YEAR AFTER VEGETATION ESTABLISHED.

CONTROLS & MEASURES NARRATIVE

ACTIVITY	DESCRIPTION
COLLECT LITTER	DISPOSE OF WITH INLET DEBRIS.
DUST CONTROL	SPRINKLE WATER AS NEEDED

BOSS ENGINEERING
ENGINEERS • SURVEYORS • PLANNERS
LANDSCAPE ARCHITECTS

3121 E. GRAND RIVER AVE.
HOWELL, MI 48843
(800) 246-6735 FAX (517) 548-1670

PROJECT: LATSON ROAD INTERCHANGE BORROW & STOCKPILE PLAN
PREPARED FOR: HAUSS 16880 HAUSS AVE. EAST POINT, MI 48021
DESIGNED BY: MB
DRAWN BY: TD
CHECKED BY:
SCALE: 1" = 100'
JOB NO. 04116-6
DATE 03-07-13
SHEET NO. 1

NO	BY	DATE	REVISION PER
1	TD	4-9-13	
2	TD	3-27-13	

MEMORANDUM

TO: Township Board

FROM: Michael Archinal 

DATE: 4/11/13

RE: Pine Creek Roads

Before you this evening is a request to privatize and provide gated access to the roads within Pine Creek. As directed I have researched our records. Attached you will find a traffic study related to the original rezoning of the property. The study does not speak to the connection between Bauer and Hamburg Road. It mostly deals with geometrics and levels of service at the various intersections. After exhaustive research I did find direct reference to the matter at hand. Please see the attached letter from McNamee, Porter and Seeley dated September 1, 1988. Under **Traffic Flow §1** states in substantial part, "We question why an analysis of a possible connection from the development roadway system to Hamburg Road was not considered. We understand that the petitioner prefers not to have the connection, however, the issue should be reviewed for potential benefits." An October 3, 1988 letter from McNamee indicates that the connection was provided. Minutes from a June 14, 1989 special meeting include an interesting quote from Mike Craine, "When people are in their homes they want dead end streets and low density, slow traffic areas. They want in their new home and out of the sub in a hurry."

From a planning perspective cross connections such as Wyndam Lane take traffic and turning movements off of the County primary road system. I believe the legal issues are paramount to this discussion and I will defer to the Township Attorney on the steps necessary for this request to be successful.

Consider direction to staff as the Board deems appropriate.

McNAMEE
PORTER & SEELEY
ENGINEERS ARCHITECTS

September 1, 1988

Mr. James Stornant, Manager
Genoa Township
2980 Dorr Road
Brighton, MI 48116

Re: Pine Creek PUD
Preliminary Review

Dear Mr. Stornant:

We have reviewed the submitted information on the referenced project including the site plans and traffic study. We offer the following comments for your review and consideration:

General

1. According to Section 22.700 of the Zoning Ordinances for the Township, the percentage of one family dwellings under construction shall be in the same proportion multiple family dwellings under construction at any one time. The phasing of the development construction should be coordinated with this requirement unless modified by the Planning Commission.
2. Since a majority of the development area is currently zoned A-1, changes or modifications to the Zoning Ordinance could include lot sizes, open space areas, land use regulations, setback requirements, etc. subject to Planning Commission approval.

Traffic Flow

- 
1. A traffic analysis has been prepared to determine the impact of the development on the surrounding transportation system. The study indicates that the existing roadways can handle the additional traffic that this development will generate. The intersection of Bauer Road and Brighton Road will require a traffic signal and additional pavement for approach lanes. Geometric changes to Bauer Road such as lessening vertical curves and increasing stopping sight distances will be required. We question why an analysis of a possible connection from the development roadway system to Hamburg Road was not considered. We understand that the petitioner prefers not to have the connection, however, the issue should be reviewed for potential benefits.

3131 SOUTH STATE STREET
ANN ARBOR, MICHIGAN
48108 · (313) 665-6000

McNAMEE
PORTER & SEELEY

Mr. James Stornant
September 1, 1988
Page 2

2. The internal roadway system for the development utilizes much of the existing topography to create an efficient traffic flow pattern. A majority of the dwellings will be located along minor streets or cul-de-sacs to lessen the impact of traffic flow. Several cul-de-sacs are 900 feet or greater in length. Normally cul-de-sac lengths greater than 500 feet are not recommended. The two cul-de-sacs on the southwest side of the site could be linked together thereby eliminating any traffic circulation concerns. This can be addressed in detail during the detailed site plan review phase.

Grading

1. The proposed roadway system for the development conforms closely to the existing topography. Cut and fill areas of 10 feet or less have been indicated which will minimize the grading effort. Disturbance of the natural terrain will be minimal and will create attractive settings for the proposed dwellings.
2. Much of the development will continue to drain according to the existing drainage patterns. Storm sewers will be constructed along the roadways to direct runoff into the existing waterways or into proposed retention/detention areas. No sizing of lines or calculations have been submitted but the overall concept appears acceptable. Further review will be made during the site plan review process.

Utilities

1. A preliminary sanitary sewer plan has been provided. Wastewater flows are being collected through a network of gravity sewers flowing to 4 pump stations with 3 proposed discharge points into the City of Brighton force main which transmits flow to the City of Brighton WWTP. The phase limits indicated coincide with the sanitary sewer and pump station layout. As previously indicated, we cannot offer further comment on this issue until the City and Township agree on services to be provided.
2. A preliminary water main plan has been provided. Connections to the City of Brighton water system in Brighton Lake Road and Brighton Road are proposed. An elevated water storage tank is proposed in the area designated as Phase IV. Consideration should be given to move the elevated tank into the Hamburg Township portion of the development where existing contours are 40 feet greater than contours at the proposed storage tank site. In general the water system layout is acceptable. However, we recommend that three dead end water mains be interconnected between phase 3 and 4 construction with a crossing of Ore Creek and that phase 5 and phase 1 be provided with an additional interconnection. The phase limits indicated generally coincide with initial construction and expansion of the water

McNAMEE
PORTER & SEELEY

Mr. James Stornant
September 1, 1988
Page 3

system. As in the case of the sanitary sewers, we cannot offer further comments until the City and Township reach agreement on utility services.

All items required for a preliminary submittal of a Planned Unit Development have been addressed. There are some items though, as indicated above, that will require further attention and resolution before the applicant is granted final approval.

Very truly yours,



Don E. Lund, P.E.
Partner

DEL:bh
144.13.05

McNAMEE
PORTER & SEELEY
ENGINEERS ARCHITECTS

October 3, 1988

Mr. James Stornant, Manager
Genoa Township
2980 Dorr Road
Brighton, MI 48116

Re: Pine Creek PUD
Preliminary Review

Dear Mr. Stornant:

We have reviewed the updated PUD plans for the referenced project dated September 16, 1988. We offer the following comments for your review and consideration:

1. The petitioner has satisfactorily addressed a majority of our concerns from our previous review of this development. They are as follows:
 - a.) A future connection from the development roadway system to Hamburg Road has been depicted on the plan. This connection will allow residents more convenience regarding ingress and egress while avoiding increased traffic flow through the development.
 - b.) The cul-de-sacs on the southwest side of the phase 3 development have been connected to eliminate their excessive lengths. This will improve traffic circulation within this area of the development.
 - c.) The water main system has been provided with additional interconnections to prevent dead ends and create other flow possibilities in case of repairs or breakage. The looped system provided will be more reliable and effective for the entire development.
 - d.) The elevated water storage tank has been relocated to an area south of the previous location. This area is still 20 feet below the highest point on the site. Further detail on this concept will be made during the site plan review process.
2. Several minor items which still necessitate clarification are as follows:
 - a.) The fire hydrant locations on the site should be coordinated to provide fire protection for all proposed structures. The maximum radius for fire hydrant coverage is 350'. The locations should also be along roadways for easy accessibility. This issue will be resolved during later review stages.

3131 SOUTH STATE STREET
ANN ARBOR, MICHIGAN
48108 · (313) 665-6000

RECEIVED
OCT 04 1988
Ans'd.....

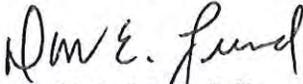
McNAMEE
PORTER & SEELEY

Genoa Township
Mr. James Stornant
October 3, 1988
Page 2

- b.) Certain roadway improvements and revisions to Bauer Road and Brighton Road have previously been addressed. These items should be detailed further during the site plan review phase.
- c.) Regarding the watermain and sanitary sewer services, we have stated that the layout appears acceptable to service the development. We cannot comment further until the City and Township reach agreement on utility services to be provided.

Overall, the items required for a preliminary submittal of this Planned Unit Development have been adequately addressed. The items indicated above will be resolved during review of construction plans.

Very truly yours,
McNamee, Porter and Seeley



Donald E. Lund, P.E.
Partner

DEL:ecc
144.13.05

Mr. Biegun: There will be ornamental lighting outside the ROW one foot. The association will maintain the lighting. They would contract with Detroit Edison and pay the bills. The relocation of Brighton Road is tying up the plans.

Mr. Craine: That will not be started until 1991 or 1992 because of money problems. In Phase I we should have an agreement. We would like to see preliminary schedule with curves.

Mr. Katzman: By 1991/92 we will have sold lots but will not need roads until then.

* Mr. Craine: When people are in their homes they want dead end streets and low density, slow traffic areas. They want in their new home and out of the sub in a hurry. We can live with the plan, but this kind of thing kills you for garbage collection and other such services.

Mr. Biegun: Re: Lot Layout (Lund letter): Plan has been adjusted and no roads exceed the length to width ratio of 4:1.

Mr. Brown: The setbacks along the creek would be 125 feet as prescribed by the ordinance for a water course.

Mr. Biegun: We may have to move lots 59 and 57.

Mr. Brown: The Township Board can make minor revisions, but they would have to agree it is a minor revision.

Mr. Biegun: Those lots are way above the stream. We will look at it so when we ask for a waiver, you will be familiar with the area.

Mr. Murray: Do you have to get a permit from the DNR to cross the creek.

Mr. Biegun: Yes. There will be a lift rather than a forced main system. We have to prove there will not be a negative impact on the City of Brighton system.

Re: Lot Layout (Lund Letter),

1. Common when development has common land. Lot lines have unusual topography with orientation parallel to the creek in some areas rather than to streets.

2. We have done that on the revision.

3. There is a 90 foot setback, and we have moved the road 20 feet.

4. We want to have the general sub people able to generate on a foot path. There would be a common easement for the property owner.

Re: Grading and Drainage

1. The two will follow natural contours and will be regraded so water will go down to the lake.

Livingston County Road Commission

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

February 26, 2010

Pine Creek Ridge Board of Directors
c/o Debbie Ziolkowski
7232 Forest Way
Brighton, MI 48116

Dear Board of Directors:

It is our understanding that you are again investigating the issue of privatizing roads within the Pine Creek Ridge subdivisions.

Please be advised that the position of the Livingston County Road Commission with respect to privatization has not changed. We have no objections to the roads changing from public to private so long as all of the public roads in each development phase become private. We recognize that private streets (and private access points) may provide the best way to control cut-thru traffic and reduce the speeding concerns.

As previously stated, in order to effect the change from public to private roads, the plats and/or site condos would have to be amended in circuit court. The circuit court process requires approval of any agency that signed the original plats and/or site condos. Additionally, you should consider any statutory requirements that may exist with respect to homeowner support for circuit court approval.

Sincerely,



Michael Goryl
Traffic and Safety Engineer

cc: Michael Craine, Managing Director

David R. Peckens • Chairman
Michael Craine • Managing Director

Richard I. Slayton • Vice Chairman
Jodie M. Tedesco • County Highway Engineer

John T. Dunleavy • Member
Steven J. Wasylk • Director of Operations

Polly

From: Victor Silles <jsilles@ameritech.net>
Sent: Tuesday, March 05, 2013 11:32 PM
To: Mike Archinal
Cc: Gary McCririe; Polly; Robin Hunt; Jean Ledford; Jim Mortensen; Linda Rowell; Todd Smith
Subject: Request to be put on Township Board Agenda--April 1, 2013
Attachments: Pine Creek Ridge Traffic Speeding and Vandalism Concerns92012.doc

The community of Pine Creek Ridge (PCR) wishes to be put on the agenda for April 1, 2013, to request approval to privatize the roadways of PCR. In April, 2011, representatives of PCR had an informal discussion about privatization with your administrative committee and left the meeting feeling that few on the Board understood the gravity of the problems that were created back in 1989 when the proposed development was approved contingent upon public roads, four entrances, and the removal of several cul-de-sacs. Purportedly, this was to improve the flow of traffic. Unfortunately, it is this improved flow of traffic that has resulted in excessive volumes of cut-through traffic, causing our residents multiple problems, the foremost of which is the severely compromised safety of our residents and their children.

Our Community covers 700 acres, with approximately 6 miles of roadbed. Unlike city neighborhoods, we do not have sidewalks. As a result, our children walk, or cycle, in the streets to visit their friends; the swimming pool and tennis courts; our Lodge (situated on Brighton Lake), with its beach, boats, and picnic area; and our numerous parks and hiking trails. While our community is idyllic in its offerings and layout, our residents have to worry about their children being in the streets with the sheer volume of cut-through traffic racing through our community to get to their destinations. All walkers, joggers and cyclists are at great risk with the increased traffic volume traveling at excessive speeds.

The ability to easily get in and out of our community has also vastly increased the amount of vandalism our homeowners have had to suffer, so we have had to spend thousands of dollars for security patrols as the Sheriff's Department is unable to respond adequately to our requests. The increased volume of traffic has also taken its toll on the roads themselves—last year PCR spent more than \$7,000 on road repair, and the Bluff's spent more than \$5,000. This is due to the fact that the Livingston County Road Commission cannot properly care for our roadways due to its increasing workload and decreasing funding. The volume of traffic and its related problems have negatively impacted our property values and compromised the safety and well being of our residents.

The attached document outlines the problems we are having in PCR so that each member of the Board can better understand the problems that our homeowners are now saddled with as a result of decisions that were made more than twenty years ago.

Allowing the PCR community to have privatized roadways would eliminate cut-through traffic, thereby reducing traffic volumes, speeding, as well as reducing wear and tear on our roads. It would also reduce vandalism, loitering, and instances of B & E's. In addition, it would allow us to eliminate, or at least significantly reduce, the patrols by our security service.

Pine Creek Ridge Homeowner's Association

September 2012

PINE CREEK RIDGE TRAFFIC, SPEEDING, AND VANDALISM REPORT

This report discusses the facts and circumstances related to the increase in traffic, speeding, and vandalism in the Pine Creek Ridge (PCR) community since its development in 1991.

BACKGROUND:

The developer originally envisioned PCR as a private community and in 1988 made a preliminary submittal to Genoa Township for a Planned Unit Development Rezoning District (PUD) with private roads. After discussions with representatives of the Township, the plat was changed to public roads and “several cul-de-sacs were eliminated to connect the roads so as to “provide better circulation of traffic”. This way the Township could avoid paving Bauer Road, which at the time was believed to cost over \$1,000,000. Phase 1 of the subdivision was opened in the early 1990’s and it took several years before any additional phases were started—there was only one entrance at Brighton Road and cut-through traffic was not possible. Once phase 6 was developed along with the entrances at Bauer Road and Brighton Lake Road, PCR became a major thoroughfare for those wanting to avoid the unpaved portion of Bauer Road, Third Street (in Brighton), or Grand River (and its numerous traffic lights). Cut-through traffic increased with the opening of other subdivisions in Hamburg Township, Green Oak Township, and Brighton (Oak Ridge—which is just a short drive from our Brighton Lake/Hamburg Road entrance). Traffic increased even more when Brighton High School greatly reduced school bussing and a large number of drivers began detouring though PCR to get to and from Oak Ridge and Green Oak Township areas to avoid Grand River and Third Street. This issue has been addressed by previous Boards.

TRAFFIC VOLUME AND SPEEDING:

In April, 2011, a traffic flow evaluation performed by the Livingston County Road Commission indicated that traffic has increased with more than 4,200 vehicles entering and exiting PCR on a daily basis. We have a total of 386 homes in our PCR community and it appears that most of this traffic is from non-residents.

The maximum speed limit in PCR is 25 mph. This maximum limit is not observed because there is no speed enforcement by the Livingston County Sheriff Department. Since there is no law enforcement there is no penalty for speeding. Many drivers exceed the speed limit at the expense of the safety of the residents. Since there are no sidewalks in PCR, jogging, biking, or even walking can be a life threatening experience.

Our residents, children and adults alike, must use our streets to walk, jog, and ride their bikes from home to various other locations in PCR. Locations include our swimming

pool, the Lodge with its beach and boats, our parks, nature trails, as well as visiting neighbors and going to school.

We fear it is only a matter of time, based on the volume of vehicles and the excessive speed of traffic, before we have a fatality involving a pedestrian, or cyclist. Once this happens we will all rue the day for not acting to prevent this from happening. Being proactive rather than reactive can prevent this from happening.

VANDALISM:

Over the past several years vandalism has become more prevalent. Our mail boxes have been smashed by vandals using baseball bats, bricks, boulders and whatever else they can find—recently a mail box was blown up by a so called “bottle bomb”. Vandals have also driven over the lawns of residents and common areas, and have shot out street lights and windows with pellet, or BB guns. The paddle boats at the Lodge have been vandalized and landscaping on cul-de-sacs has been driven over by pickup trucks, or SUV vehicles. The Livingston County Sheriff’s office has advised that they have only two cars on the road at night for the whole county and can’t come out to investigate vandalism—unless it involves a home invasion, threats with a weapon, or shots fired.

In recent years our pool grounds have been raided by large groups of teens late at night. They jump the fences and create mischief by throwing the chaise lounges in the pool and destroy whatever they can. They also congregate on the hiking trails or on those streets that still have vacant lots in the Bluffs. The Bluffs are in Hamburg Township and the Hamburg police have responded to their 911 calls. Teens have been caught using drugs and well as having bonfires. Trash and broken bottles are found on our streets and cul-de-sacs. Drug paraphernalia is frequently found on our streets and lawns where children, and adults have picked things up that should only be handled with extreme caution. With the number of large pine trees in PCR and the recent drought conditions this past year we have had to remind everyone to report bonfires that could lead to the destruction of many homes before being brought under control. We also have had some breaking and entering of homes and vehicles.

Due to the unresponsiveness of the Livingston County Sheriff the Board has hired a private security patrol this year to police our pool grounds, parks, Lodge, the Dam and streets to stop vandalism and deter property damage. Currently this is costing \$14,400 annually. Therefore, in order to continue the patrols we may have to raise our annual dues.

CONCLUSION:

The Traffic Committee considered several possible solutions to help resolve the speeding problem (e.g. speed humps, raised pedestrian walkways, traffic circles, etc.). We would need to have many of these throughout the community along the most heavily traveled streets. To reduce traffic volume, we considered adding more options (e.g. one-way streets, stop signs, etc.) in addition to those suggested to reduce speeding and to

discourage non-residents from cutting through PCR. However, the residents would have to maneuver through these same obstacles to come and go from their homes each day.

The hiring of our security firm has resulted in the apprehension of vandals along with teens doing drugs. The security firm's presence has reduced vandalism at the pool, and hopefully has discouraged some potential break-ins, but it has not stopped vandalism entirely. Lately we saw the destruction of the picnic table at the Dam along with trash and broken bottles littering our streets and lawns.

We believe the best and most cost effective solution to significantly reduce speeding, traffic volume, vandalism, and loitering, is to become a gated community.

Pine Creek Ridge HOA Board of Directors

MEMORANDUM

TO: Gary McCrie

COPY: Mike Archinal, Kelly VanMarter

FROM: Frank Mancuso

COPY: Mike Archinal; Kelly VanMarter

SUBJECT: Pine Creek Roads

DATE: March 15, 2013

The community of Pine Creek Ridge has asked to be put on the April 1, 2013 Township Board Agenda to request approval from the Board to privatize the roadways in Pine Creek Ridge subdivisions. I have been asked to provide a brief summary of the process that would be required if the request were to move forward. My findings and conclusions follow.

Background:

Pine Creek Ridge is located in Genoa Township and consists of 6 separately platted subdivisions: Pine Creek Ridge Subdivision No. 1; Pine Creek Ridge Subdivision No. 2; Pine Creek Ridge Subdivision No. 3; Pine Creek Ridge Subdivision No. 4; Pine Creek Ridge Subdivision No. 5; and Pine Creek Ridge Subdivision No. 6. The plats were approved by Genoa Township, the Livingston County Road Commission, the Livingston County Drain Commission, and the Livingston County Plat Board and filed between 1989 and 1998. Pine Creek Ridge is also governed by a Planned Unit Development (PUD) Agreement with Genoa Township dated February 9, 1989. Water and sewage service to Pine Creek Ridge is provided by the City of Brighton. A few of the roads in Pine Creek Ridge are located in Hamburg Township (for example, Wyndam Lane is mostly in Genoa Township but is partially in Hamburg Township). Lastly, Lake Villas at Pine Creek Condominium ("Lake Villas Condominium") is located on both sides of Lake Forest Blvd. The roads in Lake Villas Condominium are private with no direct access to any of the roads outside of Pine Creek Ridge.

The Process:

Privatizing the roads within Pine Creek Ridge involves all of the following steps: (1) Filing a Petition for Abandonment with the Livingston County Road Commission; (2) filing a Circuit Court Lawsuit to amend the Pine Creek Ridge plats; and (3) amending the PUD Agreement with Genoa Township. Each of these steps is further discussed below.

The roads in all of the Pine Creek Ridge Plats are dedicated to the public. The dedications of the roads appear to have been accepted by the Livingston County Road Commission. As such, under MCL 224.18, a Petition for Abandonment must be filed with the County Road Commission. The Petition must be signed by at least 7 persons owning property abutting the road to be abandoned. The next step is a public hearing. If after the hearing the County Road Commission decides to abandon the roads, the jurisdiction of the roads would then revert to the Township unless the Township decides to not retain jurisdiction in which case the roads would revert to the adjoining land owners. The Michigan Land Division Act (the "LDA") provides, however, that the title to the streets within a plat vacated by the Court vests in the property owners within the plat.

Under the LDA, the six (6) plats must be amended pursuant to MCL 560.221 – MCL 560.229. The amendments would provide that the roads are to be private and would require easements for ingress and egress (1) for public utilities, (2) between the various subdivisions, and (3) for the Lake Villas Condominium. To amend the plats, the LDA requires that a Circuit Court Lawsuit be filed. The necessary Defendants include every property owner within the plat(s) and within 300 feet of the plat(s), the Director of the Michigan Department of Licensing and Regulatory Affairs, the Drain Commissioner, the Chairman of the Board of County Road Commissioners, the Township, and each Utility that has an installation in the subdivision. In addition, the PUD Agreement would also have to be amended in accordance with Section 10.11 of the Genoa Township Zoning Ordinance since the PUD Agreement currently provides that all roads within Pine Creek Ridge shall be public.

Lastly, as mentioned above, some of Roads in Pine Creek Ridge are in Hamburg Township. As such, Genoa Township should require that the Pine Creek Ridge Association include Hamburg Township in the above processes. Pine Creek Ridge will have to consult with Hamburg Township and obtain the same approvals with regard to the portion of the roads that lie within Hamburg Township.

If anyone has any additional questions, please let me know.

Kathryn Poppy

From: Mike Archinal
Sent: Tuesday, April 09, 2013 3:31 PM
To: Kathryn Poppy
Subject: FW: Additional Information for April 15th Meeting
Attachments: PCR letter to BAS 3-1-2013.doc; Traffic Counts--Pine Creek Ridge.xps; Mailing List of Postcards=YPO3-21-2013.xls; Pine Creek Resolution 041513.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Categories: Red Category

Kathryn,

Please print out and include this information (including the email) for the 4/15/13 Board packet.

Thanks,

Mike

From: Victor Silles [mailto:jsilles@ameritech.net]
Sent: Tuesday, April 09, 2013 10:51 AM
To: Mike Archinal
Cc: Gary McCririe; Polly; Robin Hunt; Jean Ledford; Jim Mortensen; Linda Rowell; Todd Smith
Subject: Additional Information for April 15th Meeting

Attached are additional documents supporting our request to privatize the roads in the Pine Creek Ridge (PCR) community:

- Letter to Dr. Gray, Superintendent of Brighton Area Schools (BAS) indicating that the gating of the entrances to PCR is a non-issue to BAS and he would not oppose it.
- Traffic Counts from Livingston County Road Commission (LCRC) website, indicating average traffic volumes entering and exiting PCR in April, 2011. Unfortunately we were unable to highlight for you the important information in this attachment, which is a "screen shot" of the LCRC website. However, if you look at the traffic count shown for the North entrance (Lake Forest Blvd.) of 1,970, and 1,440 for the South entrance (Wyndam Ln.), and 820 for first West entrance (River Ridge Dr.), they total 4,320 vehicles a day, A count was not recorded for the second West entrance (Forest Way Dr.), but easily 400—500 cars a day come or go through this entrance because it matches up to Cunningham Lake Rd. For a community with only 386 homes, villas and condos—whatever method of calculation is used, the answer is that more than 50% of the traffic volume recorded is the result of cut-through traffic.

- Listing of Homeowners in Pine Creek Ridge, indicating their support for privatization of PCR roads. By clicking on the summary at the bottom, it indicates that more than 75% of PCR homeowners support privatization. We will bring all of the postcards signed by our homeowners and lot owners to the meeting for review and comparison, if you desire, to Township records.
- Resolution to Amend Planned Unit Development Agreement and Vacate a Portion of Roadways in Pine Creek Ridge.

Pine Creek Homeowners Association



Pine Creek Ridge Homeowners Association

P.O. Box 1694 Brighton, Michigan 48116-0596

www.pinecreekridge.org

Directors

President
Ron Paler

Vice President
Vic Silles

Secretary
Mark Garbacik

Treasurer
Vince Mileto

Directors at Large
Tom Enright
Janet Lee
Paul Lauinger

March 14, 2013

Dear Dr. Gray,

On behalf of the Pine Creek Ridge HOA and its Traffic Committee we would like to thank you for meeting with us on March 6. You were able to offer us your insight and views on the issue of increased traffic in Pine Creek Ridge due to changes made in re-assigning students to Maltby and Scranton Schools. This change has caused our roads to bear a heavy burden of cross-over school traffic which also includes young drivers from Brighton High School. Since PCR has no sidewalks pedestrians and children are at risk of being struck by speeding cars. We also discussed the issue of increased vandalism and property damage in PCR. You offered several options that you would pursue to assist in reducing the above problems that our residents are experiencing.

It was our understanding that you would bring the issue of speeding, property damage, and respect for the rights of our residents to enjoy a peaceful existence to the attention of the school administration, parents, and students by using your power of persuasion, access to a newsletter, assembly, and word of mouth.

In addition you would contact the school police officer to determine the cause and the people responsible for the increase in property damage and vandalism committed in PCR.

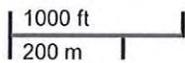
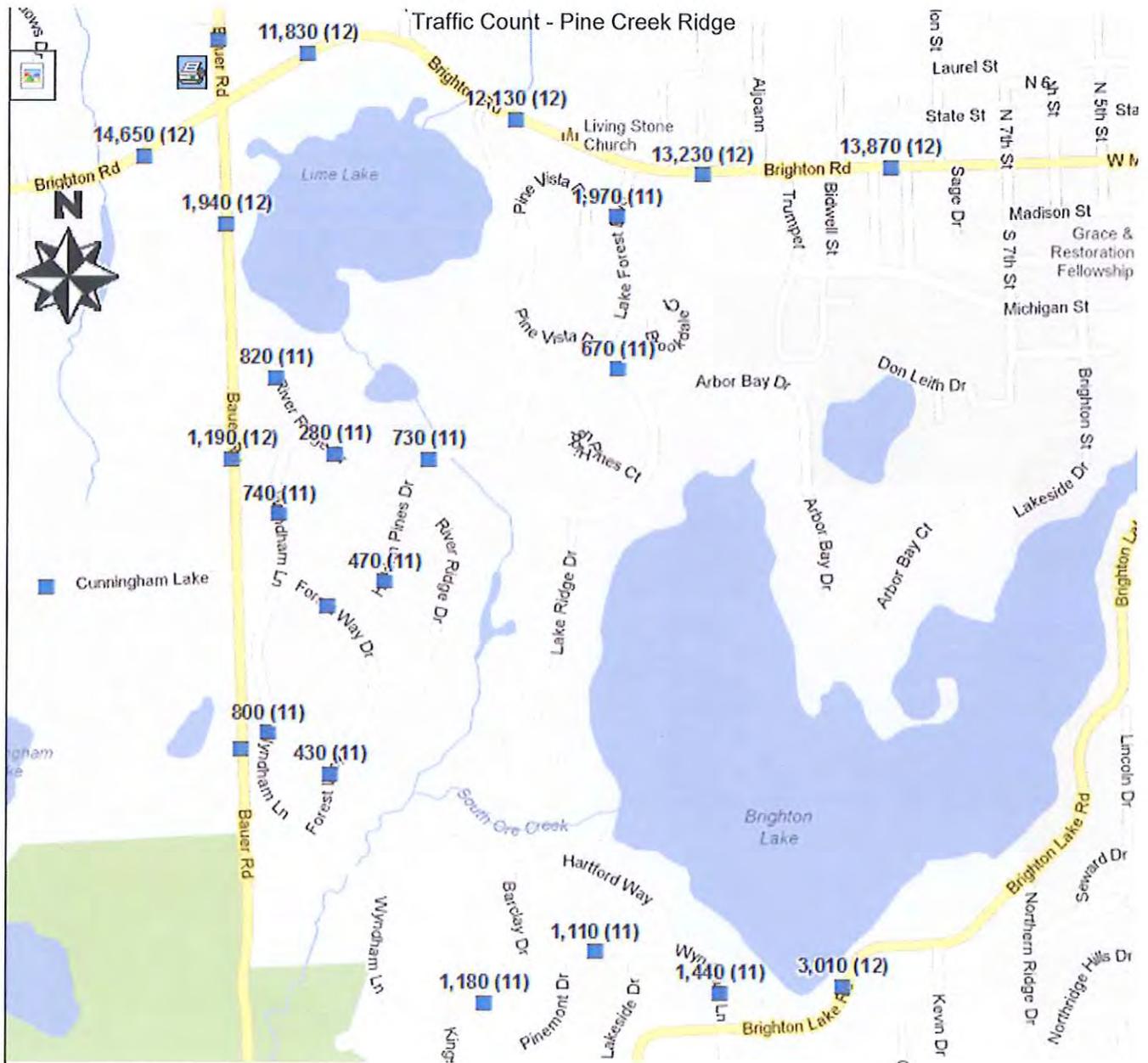
You also stated that the gating of the entrances to PCR is a non-issue to BAS and you would not oppose it.

We appreciate your help and assistance in working with us to resolve these problems.

Sincerely yours,

Ron Paler

President, PCRHOA



Map data ©2013 Google -

Total Lots	261
Total Yes Votes	197
Percent	75.5%

Total Lots	261
Total Vacant Lots	4
Total Yes Votes	197
Total Lots (less vacant)	257
Percent	76.7%

Total Lots	261
Total Yes Votes	193
Percent	73.9%

PINE CREEK RIDGE HOMEOWNERS

Lot Number	First Name	Last Name	Address	Vote Yes
0001		Wells Fargo Bank	5250 Hidden Pines Drive	
0002	Anthony	Bellotto Trust	5258 Hidden Pines Drive	Y
0003	Silvana	Davis	5266 Hidden Pines Drive	Y
0004	Michael	Schmidt	5274 Hidden Pines Drive	Y
0005	Jeffrey	Fletcher	5288 Hidden Pines Court	
0006	Samuel	Daniels	5294 Hidden Pines Court	Y
0007	Marc	O'Brian	5300 Hidden Pines Court	Y
0008	Jim	Smith	5306 Hidden Pines Court	Y
0009	Ryan	Lay	5312 Hidden Pines Court	
0010	Thomas	Frazee	5318 Hidden Pines Court	Y
0011	Terrence	Reese	5324 Hidden Pines Court	Y
0012	Ernie	Zack	5332 Hidden Pines Court	Y
0013	Victoria	Bauer	5366 Hidden Pines Court	Y
0014	Mimi	Cooney	5350 Hidden Pines Drive	
0015	Jeanne	Strickland	5358 Hidden Pines Drive	
0016	George	Kokalis	5370 Hidden Pines Drive	Y
0017	Thomas	Henstock	5374 Hidden Pines Drive	
0018	Jack	Allen	5382 Hidden Pines Drive	
0019	Paul	Lovett	5359 Lake Forest Blvd.	Y
0020	Victor	Silles	5337 Lake Forest Drive	Y
0021	Scott	Day	5315 Lake Forest Blvd.	Y
0022	Raymond	Smith	5293 Lake Forest Blvd.	Y
0023	Daniel	Hutcheson	5271 Lake Forest Blvd.	
0024	Joseph	Norton	5261 Hidden Pines Drive	
0025	Aidas	Grigaliunas	5269 Hidden Pines Drive	
0026	Kenneth	Lingenfelder	5277 Hidden Pines Drive	Y
0027	Steve	Cerovsky	5285 Hidden Pines Drive	
0028	Phil	Glebe	5293 Hidden Pines Drive	
0029	Steve	Rottinghaus	5341 Hidden Pines Drive	
0030	Al	Fisher	5349 Hidden Pines Drive	Y
0031	David	Kimball	5387 Lake Ridge Drive	Y
0032	Carol	Wilkop	5419 Lake Ridge Drive	
0033	Norman	Tucker	5451 Lake Ridge Drive	Y
0034	Bob	Sawyer	5483 Lake Ridge Drive	
0035	John	Martabano	5515 Lake Ridge Drive	
0036	Rosario	Criscuolo	5547 Lake Ridge Drive	Y
0037	Brian	O'Connor	5579 Lake Ridge Drive	Y
0038	Derek	Freund	5611 Lake Ridge Drive	Y
0039	William	Purdy	5643 Lake Ridge Drive	
0040	Ralph	Mezel	5675 Lake Ridge Drive	
0041	Robert	Dickow	5705 Lake Ridge Drive	Y
0042	Tom	Enright	5739 Lake Ridge Drive	Y
0043	Ronald	Paler	5771 Lake Ridge Drive	Y
0044	Robert	Hopman	5803 Lake Ridge Drive	Y
0045	Jeffrey	Brown	5810 Lake Ridge Drive	
0046	Vince	Mileto	5778 Lake Ridge Drive	Y
0047	Jeffery	LaBine	5746 Lake Ridge Drive	Y
0048	Robert	Lee	5714 Lake Ridge Drive	Y
0049	Charles	Berg	5682 Lake Ridge Drive	Y
0050	Mark	St. Germain	5650 Lake Ridge Drive	
0051	Dave	Skiven	5622 Lake Ridge Drive	

PINE CREEK RIDGE HOMEOWNERS

0052	Joseph	Rapai	5586 Lake Ridge Drive	Y
0053	Gregory	Reynolds	5554 Lake Ridge Drive	Y
0054	Carolyn	Mahalak	5522 Lake Ridge Drive	Y
0055	Desmond	Rafferty	5490 Lake Ridge Drive	
0056	Terry	Taylor	5458 Lake Ridge Drive	Y
0058	Ralph	Becker	5394 Lake Ridge Drive	Y
0059	Charles	Spinale	5360 Lake Ridge Drive	Y
0060	Bernard	Tekiele	5365 Hidden Pines Drive	Y
0061	Steve	Preston	5373 Hidden Pines Drive	Y
0062	John	Najjar	5381 Hidden Pines Drive	Y
0063	Joseph	Sloane, III	5389 Hidden Pines Drive	Y
0064	Craig	Tepper	5417 River Ridge Drive	Y
0065	Frank	Parcella	5433 River Ridge Drive	
0066	Vincent	Sammut	5445 River Ridge Drive	
0067	Chris	Klebba	5457 River Ridge Drive	Y
0068	Josif	Jancevski	5479 River Ridge Drive	
0069	Joseph	Spezia	5495 River Ridge Drive	
0070	Marcelyn	Amble	5515 River Ridge Drive	Y
0071	Curtis	Frahm	5533 River Ridge Drive	Y
0072	David	Mackool	5555 River Ridge Drive	Y
0073	Paul	Suber	5573 River Ridge Drive	Y
0074	Frank	Reed	5591 River Ridge Drive	Y
0075	Gregory	Pollock	5609 River Ridge Drive	
0076	John	Mekjian	7203 River Ridge Court	Y
0077	Gary	Pilchak	7215 River Ridge Court	Y
0078	Tim	Turner	7220 River Ridge Court	Y
0079	David	Hautamaki	7200 River Ridge Court	Y
0080	Daniel	Lovejoy	5631 River Ridge Drive	Y
0081	Richard	Clark	5632 River Ridge Drive	
0082	Paul	Kosaian	5610 River Ridge Drive	
0083	Michael	Tomburrini	5588 River Ridge Drive	Y
0084	Richard	White	5566 River Ridge Drive	
0085	Michael	Lipharot	5544 River Ridge Drive	Y
0086	David	Pfarr	5522 River Ridge Drive	Y
0087	Rodney	Kannisto	5500 River Ridge Drive	Y
0088	Michael	Wylie	5468 River Ridge Drive	Y
0089	Bryan	Russell	5453 Hidden Pines Drive	Y
0090	Martin	Shinsky	5467 Hidden Pines Drive	Y
0091	Thomas	Naab	5485 Hidden Pines Drive	Y
0092	Larry	Shock	5507 Hidden Pines Drive	
0093	Jonathan	Ross	5523 Hidden Pines Drive	Y
0094	Yan	Kwan	5531 Hidden Pines Drive	Y
0095	Victor	Pereira	5553 Hidden Pines Drive	Y
0096	Dave	Ziolkowski	7232 Forest Way Drive	Y
0097	Steve	Hayes	7204 Forest Way Drive	Y
0098	Tobias	Schoenherr	7176 Forest Way Drive	Y
0099	Mike	Schurig	7148 Forest Way Drive	Y
0100	Steven	Kehoe	7120 Forest Way Drive	Y
0101	Brian	Crouse	7119 Forest Way Drive	Y
0102	Brian	Crouse	5524 Hidden Pines Drive	Y
0103	William	Murlick	5498 Hidden Pines Drive	Y
0104	Jerome	Kowalski	5474 Hidden Pines Drive	

PINE CREEK RIDGE HOMEOWNERS

0157	Sam	Amine	5259 River Ridge Drive	
0158	Roy	Casteel	5237 River Ridge Dr.	
0159	Ronald	Teper	5215 River Ridge Drive	
0160	Nikola	Lajcaj	5193 River Ridge Dr.	Y
0161	Angus	Miller	5171 River Ridge Drive	Y
0162	David	Mika	5149 River Ridge Drive	Y
0163	Christopher	Eisenhart	5127 River Ridge Drive	Y
0164	Donald	Wiley	5150 River Ridge Drive	Y
0165	Robert	Hewitt	5190 River Ridge Drive	Y
0166	Robert	Lorence	5300 Wyndam Lane	Y
0168	Sanford	Ross	5318 Wyndam Lane	
0169	Joseph	Doa	5336 Wyndam Lane	Y
0170	Stephen	Smith	5354 Wyndam Lane	Y
0171	Sean	Hetherton	5372 Wyndam Lane	Y
0172	Kenneth	Hayes	5390 Wyndam Lane	Y
0173	Timothy	Quinnette	5408 Wyndam Lane	Y
0174	Matthew	Giuliani	5426 Wyndam Lane	Y
0175	Douglas	Henger	5444 Wyndam Lane	Y
0176	Paul	Bohr	5479 Wyndam Lane	
0177	Michael	Schwab	7036 Forest Way	Y
0178	Amy	Federico	7064 Forest Way	Y
0179	Michael	Tracy	7092 Forest Way Drive	Y
0180	George	Boreczky	7089 Forest Way Drive	Y
0181	Joseph	Meaney	7061 Forest Way Drive	Y
0182	Brian	Kinder	7033 Forest Way Drive	Y
0183	Michael	Douglas	5415 Wyndam Lane	Y
0184	Doak	Dyer	5397 Wyndam Lane	Y
0185	James	Gutting	5379 Wyndam Lane	
0186	Michael	Harman	5361 Wyndam Lane	Y
0187	Brian	Jones	5327 Wyndam Lane	Y
0188	Eric	Johnson	5268 River Ridge Drive	Y
0189	Stephen	Kingsley	5290 River Ridge Drive	Y
0190	Marc	Marlatt	5308 River Ridge Drive	
0191	William	Beitz	5330 River Ridge Drive	Y
0192	William	Beitz	5350 River Ridge Drive	Y
0193	Charles	Klein	5499 Wyndam Lane	
0194	Anthony	Dellicolli	5517 Wyndam Ln.	Y
0195	Iain	Gordon	5535 Wyndam Lane	Y
0196	Jason	Forcier	5553 Wyndam Lane	Y
0197	Anthony	Robinson	5571 Wyndam Lane	Y
0198	Stephen	Lamay	5589 Wyndam Lane	
0199	James	Cubr	5607 Wyndam Lane	Y
0200	Ryan	Maxey	5625 Wyndam Lane	Y
0201	David	Bongero	5643 Wyndam Lane	
0202	William	Peterson	7348 Forest Way	Y
0203	David	Koster	7326 Forest Way	Y
0204	Brett	Kucej	7304 Forest Way	Y
0205	Gary	Radtke	7280 Forest Way	Y
0206	Kevin	Prater	7256 Forest Way Drive	Y
0207	Blaine	Longsworth	7253 Forest Way Court	Y
0208	Steven	Mercatante	7125 Forest Way Court	Y
0209	Bradley	Stouffer	7143 Forest Way Court	Y

PINE CREEK RIDGE HOMEOWNERS

0210	Harold	Schock	7136 Forest Way Court	Y
0211	Jeffrey	Cook	7118 Forest Way Court	Y
0212	Richard	Hagenbach	7100 Forest Way Court	Y
0213	Matt	Malec	7335 Forest Way Drive	Y
0214	Burton Katzman vs	River Place	7359 Forest Way	Y
0215	Daniel	Cheresko	5732 Wyndam Lane	Y
0216	Greg	Henwood	5714 Wyndam Lane	Y
0217	Joseph	Halabicky	5696 Wyndam Lane	Y
0218	Todd	Richards	5678 Wyndam Lane	Y
0219	Jeffrey	Muzzell	5660 Wyndam Lane	
0222	John	Cherwak	5744 Wyndam Lane	
0224	Joseph	Abraham	5883 Wyndam Lane	Y
0225	Paul	Lauinger	6000 Barclay Dr.	Y
0226	Timothy	Gilleyn	5988 Barclay Drive	Y
0227	Anthony	Verrino	5953 Hartford Way	
0228	Thomas	Jaworski	5964 Barclay Drive	Y
0229	Evelyn	Longworth Trust	7341 Pine Vista Drive	Y
0230	Jeffrey	Daily	5858 Hartford Way	
0231	Frank	Croskey	5850 Hartford WAY	Y
0232	Matthew	DeMattos	5842 Hartford Way	Y
0233	Kosai	Shamoon	5830 Hartford Way	Y
0235	Edward	Loniewski.	5845 Hartford Way	
0236	Daniel	Oginsky	5853 Hartford Way	
0237	Jeffrey	Marsee	5861 Hartford Way	Y
0239	Thomas	Page	2413 Burcham Drive	Y
0240	Tom	Hickey	5885 Hartford Way	
0243	Timothy	Aylor	5909 Hartford Way	
0244	William	Stumphauzer	5853 Hartford Way	Y
0245	John	Bradley	5929 Hartford Way	Y
0246	David	Kennedy	5937 Hartford	
0247	Dobriła	Magdevski	5945 Hartford Way	
0248	Paul	Zaccagni	5953 Hartford Way	Y
0249	Victor	Ruiz	5961 Hartford Way	
0250	Ryan	Fritisch	5969 Hartford Way	Y
0251	Tedd	Handelsman	5977 Hartford Way	Y
0252	James	Moore	5985 Hartford Way	Y
0253	Stephen	Garagiola	6025 Wyndam Lane	Y
0254	Harold	Bulger	6037 Wyndam Ln.	Y
0255	Martin	Kramarz	5980 Hartford Way	Y
0256	Michael	Amine	5987 Wyndam Lane	Y
0257	Christopher	Harbrecht	5975 Wyndam Lane	
0258	Matthew	Coric	5963 Wyndam Ln.	
0259	Antonio	Sciore	5951 Wyndam Lane	Y
0260	Jake	Borota	5995 Barclay Dr.	
0261	Mark	Garbacik	5983 Barclay Drive	Y
0262	Siegfried	Roeck	5517 Wyndam Ln.	
0263	Tony	Mercieca	5959 Barclay Drive	Y
0264	Sorin	Cojocneanu	5906 Hartford Way	Y
0265	Richard	Messmann	5912 Hartford Way	Y
0266	Craig	Saline	5920 Hartford Way	Y
0267	Michael	LaMarra	5934 Hartford Way	Y
0268	Diar	Shipman	5950 Hartford Way	Y

PINE CREEK RIDGE HOMEOWNERS

0269	Michael	Katkic	5966 Hartford Way	Y
0272	Jeffrey	Herrell	5756 Wyndam Lane	Y

**RESOLUTION TO AMEND PLANNED UNIT DEVELOPMENT AGREEMENT AND
VACATE A PORTION OF ROADWAYS IN PINE CREEK RIDGE**

WHEREAS a Planned Unit Development Agreement was entered into on February 9, 1989 ("PUD Agreement") regarding a Planned Unit Development called Pine Creek Ridge ("Pine Creek Ridge PUD"); and

WHEREAS the Pine Creek PUD contains six (6) platted subdivisions with public roadways ("Pine Creek Ridge Subdivisions") and two (2) condominium developments with both private and public roadways; and

WHEREAS Section P of the PUD Agreement states that, with the exception of the private roads owned by the Condominium Association, all other roads shall be public; and

WHEREAS MCL 42.16, MCL 560.226, MCL 560.256, and MCL 224.18 gives the Township of Genoa jurisdiction and permits the vacation of public roadways by resolution of the Township of Genoa and amending of plats via Township Resolution and Court Order; and

WHEREAS the Livingston County Road Commission has no objection to the privatization of roadways throughout the Pine Creek Ridge Subdivisions; and

WHEREAS the Brighton public school superintendent has no has no objection to the privatization of roadways throughout the Pine Creek Ridge Subdivisions; and

WHEREAS in accordance with the Pine Creek Ridge Homeowners Association Amended Bylaws and Fifth Amended and Restated Declaration of Easements, Covenants and Restrictions a supermajority of members of Pine Creek Ridge have consented to privatizing roadways in Pine Creek Ridge Subdivision Nos. 1 through 6; and

WHEREAS the Pine Creek Ridge Homeowners Association has demonstrated to the satisfaction of the Township of Genoa that it is in the best interest of the health, safety and welfare of its residents to vacate the roadways within Pine Creek Ridge Subdivision Nos. 1 through 6;

NOW THEREFORE BE IT RESOLVED THAT:

The Township of Genoa hereby resolves to vacate the following roadways within the Township of Genoa, which roadways are highlighted on Exhibit A and are to be legally described by Pine Creek Ridge Homeowners Association on or before the date that the amendment to the PUD Agreement is finalized: Those portions of Wyndam Lane generally described as North of Brighton Lake Road, east of Bauer Road; Lake Forest Way South of Brighton Road and East of Bauer Road; River Ridge East of Bauer Road; and Hidden Pines Drive South of Brighton Road;

BE IT FURTHER RESOLVED that the PUD Agreement shall be modified and amended to reflect that all roadways within the Pine Creek Ridge PUD shall be private and shall be maintained by the homeowners of Pine Creek Ridge;

BE IT FURTHER RESOLVED that Pine Creek Ridge shall amend its Declaration of Easements, Covenants and Restrictions to provide that the aforementioned roadways are private and shall be maintained by Pine Creek Ridge Homeowners Association in accordance with the Township of Genoa Private Road Standards;

BE IT FURTHER RESOLVED that there shall remain an easement for public utilities.

Yeas:

Nays:

Absent:

This resolution was _____ on this _____ day of _____, 2013.

Paulette Skolaris, Township Clerk

Gary McCririe, Township Supervisor

Effective Date:

PINE CREEK RESIDENTIAL
GENOA AND HAMBURG TOWNSHIPS, MICHIGAN

Introduction

A proposal has been made to develop a residential complex, known as Pine Creek, on land located south of Brighton Road and east of Bauer Road. Parts of the site lie in both Genoa and Hamburg Townships. The development is planned to consist of 310 single family dwelling units and 220 residential condominiums (multi-family) dwelling units. The available land area (exclusive of lake areas) is approximately 451 acres in size. Plans call for a main access point to/from Brighton Road. Additionally, there will be two access points to/from Bauer Road and one access point to/from Brighton Lake Road. The internal roadways will be private rather than public.

Data Collection

The factual data utilized in our analysis was obtained through field studies at the site. Traffic counts and turning movement were collected through the use of manual (human) count techniques. Also machine count data was collected. This information can be found in the Appendix. Additionally, field measurements and observations were made to obtain roadway and traffic control information.

Study Procedure

Roadway operations are examined and analyzed by traffic flow and delay characteristics. This concept, and the methods of study, are detailed in the Transportation Research Board publication entitled Highway Capacity Manual. This manual formed the basis of our study on this project. We further utilized design and construction standards to identify if right turn lanes/tapers and left turn by-pass lanes were necessary to assist the ingress movements to the site.

Analysis

A) Existing Traffic - Figures 1 and 2 identify the existing A.M. and P.M. peak hour traffic volumes for the intersection of Brighton and Bauer Roads, while Figures 3 and 4 provide existing A.M. and P.M. peak hour traffic volumes for the Bauer/Challis Road intersection. These values are shown as code A data.

B) Background Growth and Other Development Data - This item is intended to provide an estimate of traffic increases in the area due to factors other than the subject project itself. An overall general increase of 10 percent was applied in this study. Further, an increase in traffic at the two intersections studied was included as a result of the Oak Point development which will be located west of the subject project. Traffic expected to be generated from that development is shown in Figure 5 while the assumed traffic distribution through the two studied intersections is shown in Figure 6. Values shown at code B represent code A values increased by these two factors identified above.

C) Project Data - The number of new trips expected to be generated was developed from information provided in the Institute of Transportation Engineers publication entitled Trip Generation (Fourth Edition). This data was then applied for the type and size of development proposed. Based on this, the following summary table was then developed with the full analysis shown in Figures 7, 8 and 9.

<u>Use</u>	<u>A.M. Peak Trips</u>		<u>P.M. Peak Trips</u>	
	<u>Enter</u>	<u>Exit</u>	<u>Enter</u>	<u>Exit</u>
Residential	75	244	273	153

These trip totals were then assigned to the public roadway network as shown in Figure 10. Those trips which will pass through the intersections of Brighton and Bauer Roads and Bauer and Challis Roads were then added to the code B trips to produce the final volumes shown as code C traffic (see Figures 1-4). These final volumes represent the input data utilized in our analysis.

It should be noted that some trips will enter/exit the site at the Brighton Lake Road access driveway (shown as D in Figure 10). For purposes of this report, however, we have assumed no traffic volumes at this location. This, therefore, results in a worst case scenario by assigning more traffic to the two intersections being studied.

The highway capacity study results for the total traffic scenario is summarized in the following table with the full analysis provided in the Appendix (Figures 11e-12e).

Level of Service - Brighton / Bauer Roads Intersection

<u>Approach</u>	<u>A.M. Peak (Fig. 11e) Delay (Sec/Veh)-LOS</u>	<u>P.M. Peak (Fig. 12e) Delay (Sec/Veh)-LOS</u>
Northbound	14.9 - B	12.3 - B
Southbound	16.8 - C	26.4 - D
Eastbound	5.8 - B	4.3 - A
Westbound	8.4 - B	26.8 - D
Average	8.8 - B	19.8 - C

It can be noted from the table presented below, that several (a-e) analyses were performed to achieve the desired results presented above. It is obvious that both the proposed Pine Creek development, and the Oak Point development, are adding traffic to the intersection of Brighton and Bauer Roads which require improvements to add capacity which will satisfactorily accommodate the total projected traffic demand.

<u>Condition</u>	<u>A.M.</u>	<u>P.M.</u>
Existing Volumes Existing Laneage	7.7-B Fig. 11a	14.3-B Fig. 11a
Existing Volumes + 10% increase + Pine Creek traffic Existing Laneage	11.4-B Fig. 11b	* Fig. 11b
Existing Volumes + 10% increase + Pine Creek traffic Proposed Laneage	7.0-B Fig. 11c	14.3-B Fig. 11c
Existing Volumes + 10% increase + Pine Creek traffic + Oak Point traffic Proposed Laneage	8.2-B Fig. 11d	* Fig. 11d
Existing Volumes + 10% increase + Pine Creek traffic + Oak Point traffic Ultimate Laneage + Ultimate Signal Phasing	7.6-B Fig. 11e	19.8-C Fig. 12e

Note: * Results are meaningless

To achieve the above identified (Fig. 11e and Fig. 12e) level of service it is necessary to add laneage at the intersection. In particular, additional lanes for both eastbound and westbound traffic are required. The intersection geometry for the approaches to the Brighton/Bauer Roads intersection becomes as follows: eastbound - left turn lane and through/right lane; westbound - left turn lane, through lane and right turn lane; northbound - a single left/through/right lane; and, southbound - left/through lane and through/right lane.

Levels of service A, B and C are considered acceptable during peak hour operations. Results from the above analysis indicate that with the geometric changes cited above and the addition of a traffic signal (see below), the intersection will operate at a desirable level of service during the peak hours.

The above intersection was analyzed as though the right-of-way is controlled by a traffic signal. Currently the intersection is controlled by stop signs. A signal warrant study (Figure 13) for the intersection of Brighton and Bauer Roads is provided and indicates that warrant eight, as identified in the Michigan Manual of Traffic Control Devices, is satisfied.

Level of Service

Unsignalized Intersection of Bauer / Challis Roads

Existing Conditions

<u>Movement</u>	<u>A.M. Peak</u>	<u>P.M. Peak</u>
NB Bauer Through Right	A A	A A
SB Bauer Left Through	A A	A A
WB Challis Left Right	A A	A A

With Background and Site Traffic Added

<u>Movement</u>	<u>A.M. Peak</u>	<u>P.M. Peak</u>
NB Bauer Through Right	A A	A A
SB Bauer Left Through	A A	A A
WB Challis Left Right	E A	F A

The above table identifies the existing and projected level of service for the six possible movements at the Bauer/Challis Roads intersection for both the A.M., and P.M. peak hours. The only movement that will experience increased delays is the westbound Challis Road left turn to southbound Bauer Road. By making the intersection a three-way stop, the level of service will be C (see table 10-7 of the Highway Capacity Manual).

D) Driveway - Newly projected driveway movements for the A.M. and P.M. peak hours are shown in the table below.

A.M. Peak Hour

<u>Driveway</u>	<u>Left In</u>	<u>Right In</u>	<u>Left Out</u>	<u>Right Out</u>
Brighton	30	30	98	98
Bauer (North)	8	0	0	24
Bauer (South)	8	0	0	24

P.M. Peak Hour

<u>Driveway</u>	<u>Left In</u>	<u>Right In</u>	<u>Left Out</u>	<u>Right Out</u>
Brighton	109	109	62	62
Bauer (North)	27	0	0	15
Bauer (South)	27	0	0	15

Information related to the above driveway movements and approximate average daily traffic volumes of 11,000 on Brighton Road and 100 on Bauer Road, were applied to the warrant graphs to determine if right turn deceleration tapers / lanes or left turn by-pass lanes are required at the project driveways. Results indicate that the main access driveway on Brighton Road warrants both an eastbound deceleration lane and a westbound by-pass lane. The Livingston County Road Commission has already anticipated this need and has included these features in the current design plans for improvements to Brighton Road. No other deceleration or by-pass lanes are deemed warranted.

A field review of driveway sight distance was performed utilizing a 3.5 foot eye height (located 15 feet from the edge of the roadways) viewing an object 4.25 feet in height. This test determined available sight distance as follows at the approximate location of the proposed driveways:

<u>Driveway</u>	<u>Clear Sight Distance</u>
Brighton	* feet to the east and * feet to the west
Bauer (North)	610 feet to the north and 335 feet to the south
Bauer (South)	515 feet to the north and 370 feet to the south

* unable to field measure, however design plans indicate adequate sight distance

Bauer Road is currently a gravel (soft surface) roadway and has no posted speed limit. While some may interpret this to allow 55 M.P.H. operating speeds, a more realistic vehicle speed on Bauer Road is 40 M.P.H. Utilizing that speed, desirable sight distance is approximately 700 feet. All field measured sight distance found fell below this so adjustments of vertical curves on Bauer Roads will be necessary.

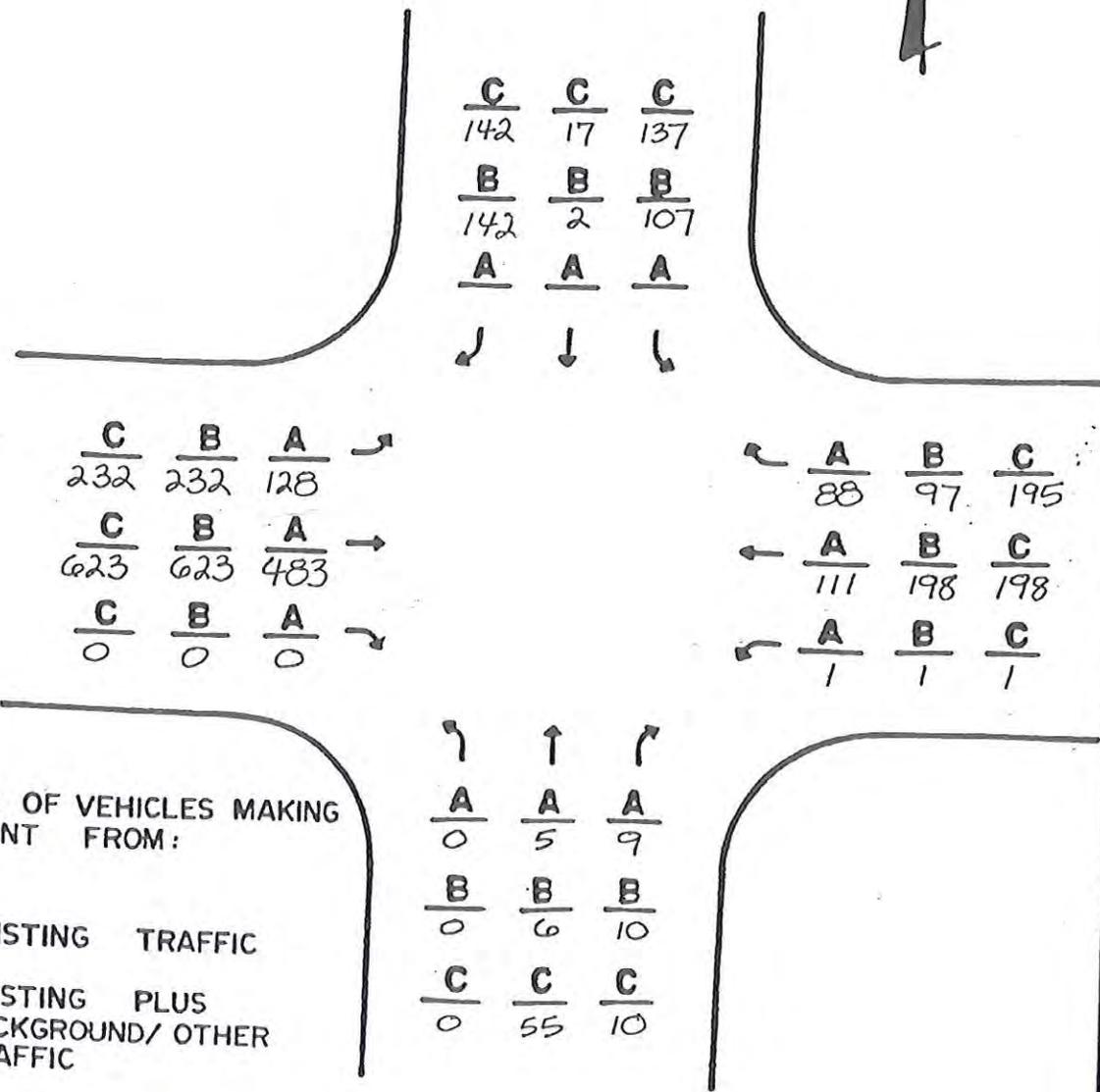
E) Recommended Improvements - The intersection capacity analysis results indicate the intersection of Brighton and Bauer Roads will require improvements in the form of change in right-of-way control (from stop signs to traffic signals) as well as the addition of one eastbound and two westbound approach lanes. These improvements are needed not only because of the subject project traffic, but also because of the Oak Point traffic. The intersection of Bauer and Challis Roads will operate at an acceptable overall level of service with the addition of new traffic without the need for improvements at this time other than making the intersection an all way stop.

Bauer Road currently is a gravel road with a twenty - four hour traffic volume estimated to be 100 vehicles. With the completion of the Pine Creek Residential development, traffic volumes are projected to increase to 923 daily trips. While Bauer Road is currently in a good maintained condition, it can be expected the additional traffic generated by the subject development will cause this soft surface roadway to require additional maintenance activities. A more permanent solution, and potentially a more cost effective solution in the long term, is to pave Bauer Road. Certain geometric improvements (cross-section, stopping sight distance, and other) would have to precede paving.

Summary

It is concluded that both intersections to have projected traffic increases due to the proposed development can continue to operate at a desirable level of service after full development of the Pine Creek Residential project. The intersection of Brighton and Bauer Roads, however, will require both operation and geometric improvements to attain an acceptable level of service.

A P P E N D I X



NUMBER OF VEHICLES MAKING MOVEMENT FROM:

- A. EXISTING TRAFFIC
- B. EXISTING PLUS BACKGROUND/ OTHER TRAFFIC
- C. EXISTING PLUS BACKGROUND/ OTHER PLUS PROJECT TRAFFIC

BRIGHTON RD. / BAUER RD.

CRITICAL INTERSECTION PHASE _____
 (IF APPLICABLE)

TITLE A.M. PEAK 7:15-8:15
 PROJECT PINE CREEK RESIDENTIAL
 9/22/88
 DRAWN BY P.F.S.
 SCALE N.T.S.
 PROJECT 70642
 FIGURE 1



$\frac{C}{285}$	$\frac{C}{64}$	$\frac{C}{190}$
$\frac{B}{285}$	$\frac{B}{9}$	$\frac{B}{81}$
$\frac{A}{164}$	$\frac{A}{8}$	$\frac{A}{74}$
↙	↓	↘

$\frac{C}{261}$	$\frac{B}{261}$	$\frac{A}{144}$	↘
$\frac{C}{413}$	$\frac{B}{413}$	$\frac{A}{282}$	→
$\frac{C}{1}$	$\frac{B}{1}$	$\frac{A}{1}$	↘

↙	$\frac{A}{97}$	$\frac{B}{107}$	$\frac{C}{168}$
←	$\frac{A}{506}$	$\frac{B}{662}$	$\frac{C}{662}$
↙	$\frac{A}{4}$	$\frac{B}{4}$	$\frac{C}{4}$

↙	↑	↘
$\frac{A}{1}$	$\frac{A}{9}$	$\frac{A}{3}$
$\frac{B}{1}$	$\frac{B}{10}$	$\frac{B}{3}$
$\frac{C}{1}$	$\frac{C}{41}$	$\frac{C}{3}$

NUMBER OF VEHICLES MAKING MOVEMENT FROM:

- A. EXISTING TRAFFIC
- B. EXISTING PLUS BACKGROUND/ OTHER TRAFFIC
- C. EXISTING PLUS BACKGROUND/ OTHER PLUS PROJECT TRAFFIC

BRIGHTON / BAUER

CRITICAL INTERSECTION PHASE _____
 (IF APPLICABLE)

TITLE: P.M. PEAK HOUR 5:00-6:00
 PROJECT: PINE CREEK RESIDENTIAL

DATE: 9/22/88
 DRAWN BY: P.F.S.
 SCALE: N.T.S.
 PROJECT: 70642
 FIGURE: 2



$\frac{C}{A}$	$\frac{C}{42}$	$\frac{C}{91}$
$\frac{B}{A}$	$\frac{B}{46}$	$\frac{B}{100}$
$\frac{C}{A}$	$\frac{C}{46}$	$\frac{C}{100}$

$\frac{A}{32}$	$\frac{B}{35}$	$\frac{C}{35}$
$\frac{A}{106}$	$\frac{B}{192}$	$\frac{C}{237}$

$\frac{A}{23}$	$\frac{A}{138}$
$\frac{B}{25}$	$\frac{B}{243}$
$\frac{C}{25}$	$\frac{C}{390}$

NUMBER OF VEHICLES MAKING MOVEMENT FROM:

- A. EXISTING TRAFFIC
- B. EXISTING PLUS BACKGROUND/ OTHER TRAFFIC
- C. EXISTING PLUS BACKGROUND/ OTHER PLUS PROJECT TRAFFIC

BAUER RD. / CHALLIS RD.

CRITICAL INTERSECTION PHASE _____
(IF APPLICABLE)



$\frac{C}{A}$	$\frac{C}{31}$	$\frac{C}{25}$
$\frac{B}{A}$	$\frac{B}{34}$	$\frac{B}{25}$
$\frac{C}{A}$	$\frac{C}{34}$	$\frac{C}{25}$

$\frac{A}{76}$	$\frac{B}{84}$	$\frac{C}{84}$
$\frac{A}{196}$	$\frac{B}{321}$	$\frac{C}{485}$

$\frac{A}{36}$	$\frac{A}{40}$	$\frac{A}{164}$
$\frac{B}{40}$	$\frac{B}{40}$	$\frac{B}{283}$
$\frac{C}{40}$	$\frac{C}{40}$	$\frac{C}{375}$

NUMBER OF VEHICLES MAKING MOVEMENT FROM:

- A. EXISTING TRAFFIC
- B. EXISTING PLUS BACKGROUND/ OTHER TRAFFIC
- C. EXISTING PLUS BACKGROUND/OTHER PLUS PROJECT TRAFFIC

BAUER / CHALLIS

CRITICAL INTERSECTION PHASE _____
(IF APPLICABLE)


Reid, Cool & Michelovski, Inc.
 Traffic & Transportation Engineers
 Southfield, Michigan 48034
 (313) 282-3378

TITLE P.M. PEAK HOUR 4:45 - 5:45
PROJECT PINE CREEK RESIDENTIAL

DATE 9/22/82
DRAWN BY P.F.S.
SCALE N.T.S.
PROJECT 70642
FIGURE 4

PINE CREEK RESIDENTIAL (OAK POINT TRAFFIC)
 SUMMARY OF AVERAGE VEHICLE TRIP GENERATION

AVERAGE WEEKDAY DRIVEWAY VOLUMES

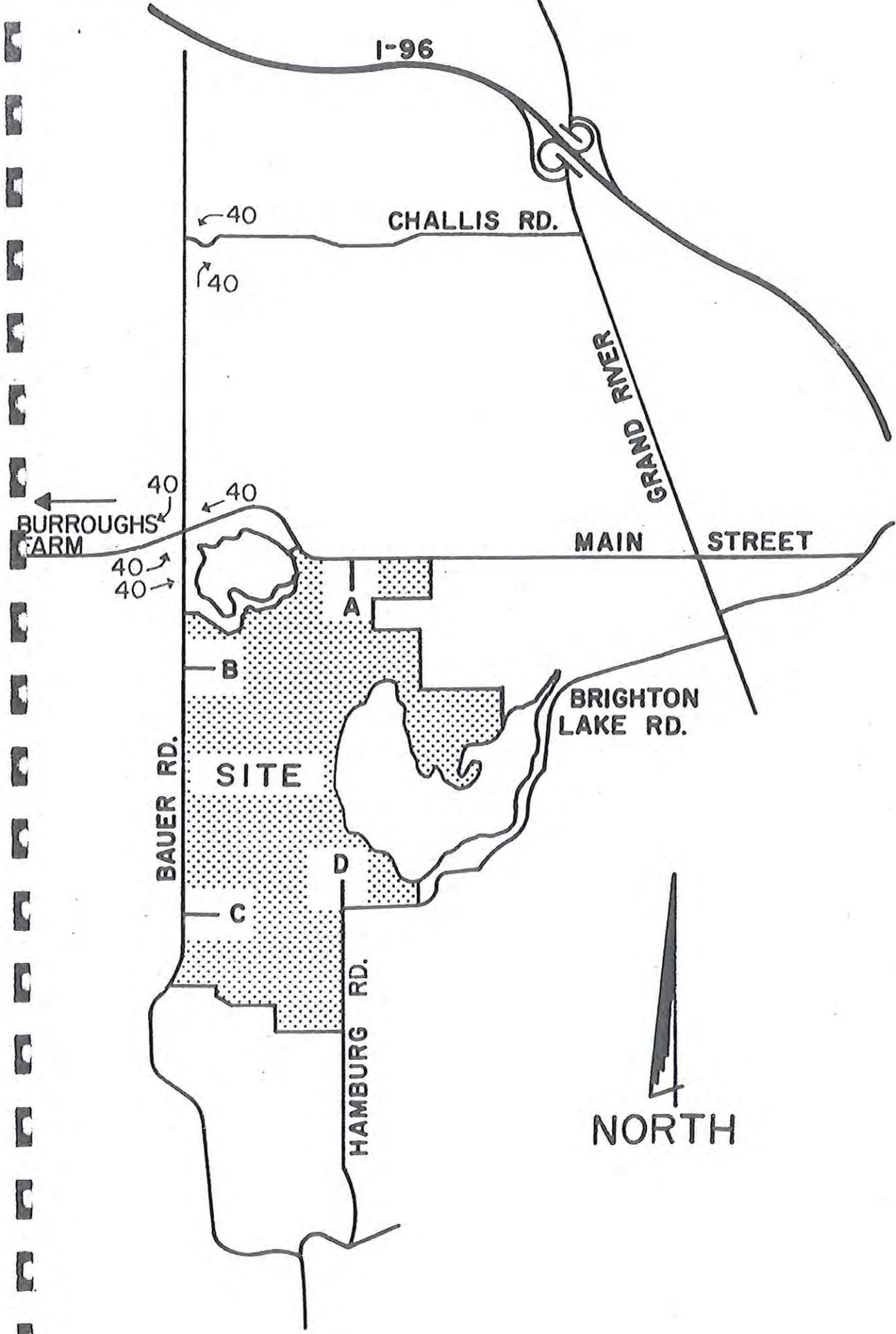
6/27/88

LAND USE	SIZE	24 HOUR TWO-WAY VOLUME	AM PK HOUR		PM PK HOUR	
			ENTER	EXIT	ENTER	EXIT
SINGLE FAMILY DWELLINGS	172 DWELLING UNITS	1700	36	96	114	67
RESIDENTIAL CONDOMINIUM	230 DWELLING UNITS	1297	17	87	85	42
CONFERENCE CENTER	400 PERSONS	620	64	8	16	32
24-HR CONVENIENCE MARKET	.65 T.G.L.A.	577	22	22	23	23
QUALITY RESTAURANT	200 SEAT	468	2	2	18	10
GOLF COURSE	230 ACRE	1916	48	14	7	83
TOTAL		6578	189	229	263	257

Note: A zero rate indicates no rate data available

TRIP GENERATION BY MICROTRANS

FIGURE 5



TITLE
DISTRIBUTION IN PERCENT
PROJECT
PINE CREEK RESIDENTIAL

DATE	9-22-88
DRAWN BY	R. HAIRE
SCALE	N. T. S.
PROJECT	70642
FIGURE	6

PINE CREEK RESIDENTIAL

SUMMARY OF TRIP GENERATION CALCULATION

FOR 300 DWELLING UNITS OF SINGLE FAMILY DWELLINGS

9/2/88

	AVERAGE RATE	ADJUSTMENT FACTOR	DRIVE WAY VOLUME
AVG WKDY 2-WAY VOL	9.56	1.00	2869
7-9 AM PK HR ENTER	0.20	1.00	59
7-9 AM PK HR EXIT	0.53	1.00	160
7-9 AM PK HR TOTAL	0.73	1.00	219
4-6 PM PK HR ENTER	0.64	1.00	192
4-6 PM PK HR EXIT	0.38	1.00	113
4-6 PM PK HR TOTAL	1.02	1.00	305
SATURDAY 2-WAY VOL	9.97	1.00	2990
PK HR ENTER	0.50	1.00	149
PK HR EXIT	0.44	1.00	132
PK HR TOTAL	0.94	1.00	281
SUNDAY 2-WAY VOL	8.75	1.00	2625
PK HR ENTER	0.44	1.00	133
PK HR EXIT	0.41	1.00	123
PK HR TOTAL	0.85	1.00	256

Note: A zero rate indicates no rate data available
 The above rates were calculated from these equations:

24-Hr. 2-Way Volume:	$LN(T) = .94LN(X) + 2.6, R^2 = .959$
7-9 AM Peak Hr. Total:	$LN(T) = .91LN(X) + .2$
	$R^2 = .885, .27 \text{ Enter}, .73 \text{ Exit}$
4-6 PM Peak Hr. Total:	$LN(T) = .94LN(X) + .36$
	$R^2 = .918, .63 \text{ Enter}, .37 \text{ Exit}$
AM Gen Pk Hr. Total:	$T = .71(X) + 13$
	$R^2 = .891, .28 \text{ Enter}, .72 \text{ Exit}$
PM Gen Pk Hr. Total:	$LN(T) = .92LN(X) + .46$
	$R^2 = .898, .64 \text{ Enter}, .36 \text{ Exit}$
Sat. 2-Way Volume:	$T = 9.19(X) + 233, R^2 = .924$
Sat. Pk Hr. Total:	$T = .87(X) + 20$
	$R^2 = .903, .53 \text{ Enter}, .47 \text{ Exit}$
Sun. 2-Way Volume:	$T = 8.84(X) + -27, R^2 = .941$
Sun. Pk Hr. Total:	$LN(T) = .83LN(X) + .81$
	$R^2 = .717, .52 \text{ Enter}, .48 \text{ Exit}$

Source: Institute of Transportation Engineers
 Trip Generation, 4th Edition, 1987.

PINE CREEK RESIDENTIAL

SUMMARY OF TRIP GENERATION CALCULATION

FOR 220 DWELLING UNITS OF RESIDENTIAL CONDOMINIUM

9/2/88

	AVERAGE RATE	ADJUSTMENT FACTOR	DRIVE WAY VOLUME
AVG WKDY 2-WAY VOL	5.68	1.00	1250
7-9 AM PK HR ENTER	0.07	1.00	16
7-9 AM PK HR EXIT	0.38	1.00	84
7-9 AM PK HR TOTAL	0.45	1.00	100
4-6 PM PK HR ENTER	0.37	1.00	81
4-6 PM PK HR EXIT	0.18	1.00	40
4-6 PM PK HR TOTAL	0.55	1.00	122
SATURDAY 2-WAY VOL	5.57	1.00	1224
PK HR ENTER	0.26	1.00	58
PK HR EXIT	0.22	1.00	49
PK HR TOTAL	0.49	1.00	107
SUNDAY 2-WAY VOL	4.75	1.00	1046
PK HR ENTER	0.22	1.00	49
PK HR EXIT	0.23	1.00	51
PK HR TOTAL	0.46	1.00	101

Note: A zero rate indicates no rate data available
 The above rates were calculated from these equations:

24-Hr. 2-Way Volume:	$LN(T) = .84LN(X) + 2.6, R^2 = .92$
7-9 AM Peak Hr. Total:	$LN(T) = .8LN(X) + .29$ $R^2 = .744, .10 \text{ Enter}, .84 \text{ Exit}$
4-6 PM Peak Hr. Total:	$LN(T) = .84LN(X) + .27$ $R^2 = .798, .67 \text{ Enter}, .33 \text{ Exit}$
AM Gen Pk Hr. Total:	$LN(T) = .82LN(X) + .18$ $R^2 = .781, .17 \text{ Enter}, .83 \text{ Exit}$
PM Gen Pk Hr. Total:	$LN(T) = .79LN(X) + .52$ $R^2 = .811, .66 \text{ Enter}, .34 \text{ Exit}$
Sat. 2-Way Volume:	$T = 3.62(X) + 428, R^2 = .937$
Sat. Pk Hr. Total:	$T = .29(X) + 43$ $R^2 = .836, .54 \text{ Enter}, .46 \text{ Exit}$
Sun. 2-Way Volume:	$T = 3.13(X) + 357, R^2 = .876$
Sun. Pk Hr. Total:	$T = .23(X) + 50$ $R^2 = .779, .49 \text{ Enter}, .51 \text{ Exit}$

Source: Institute of Transportation Engineers
 Trip Generation, 4th Edition, 1987.

PINE CREEK RESIDENTIAL

SUMMARY OF AVERAGE VEHICLE TRIP GENERATION

AVERAGE WEEKDAY DRIVEWAY VOLUMES

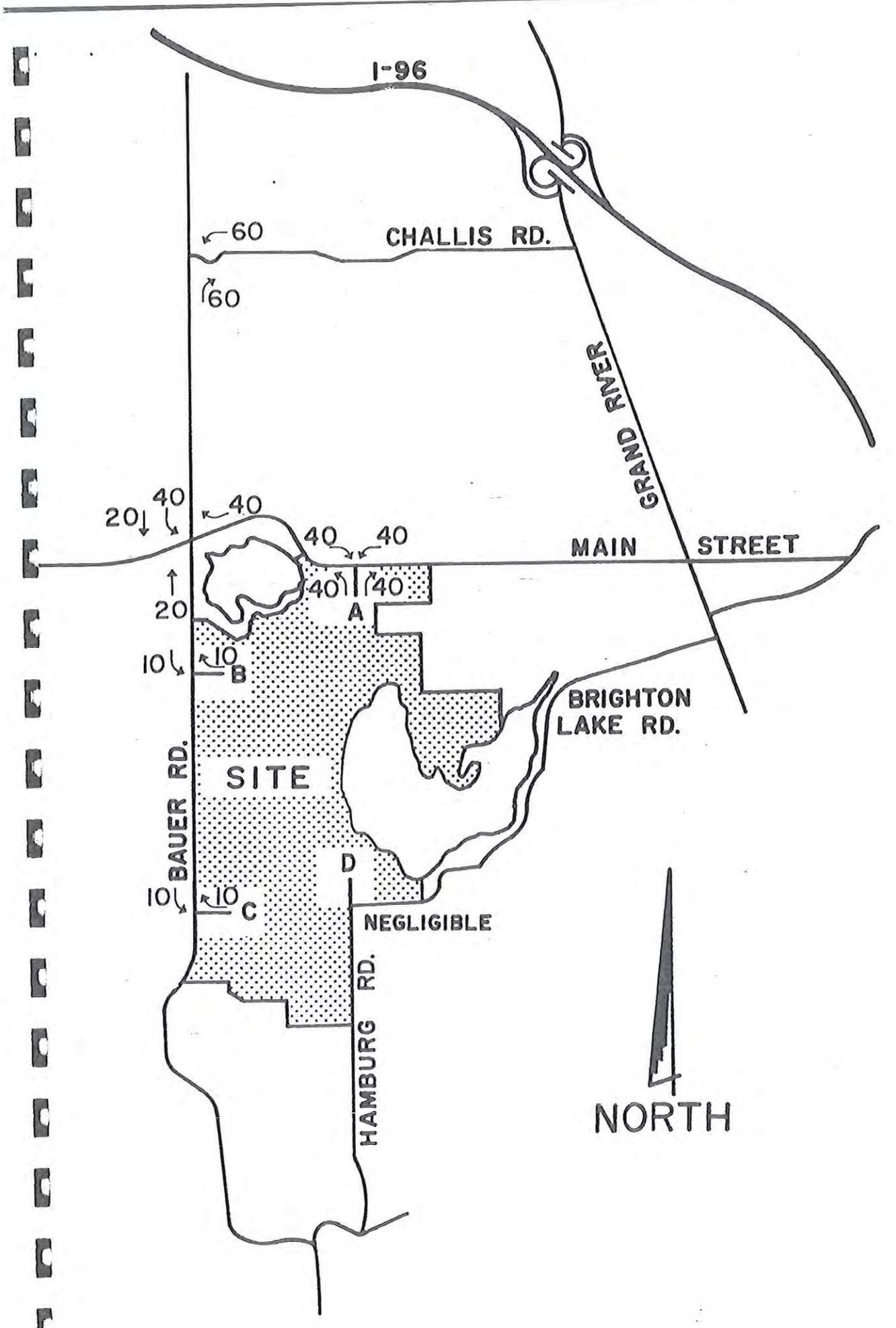
9/2/80

LAND USE	SIZE	24 HOUR TWO-WAY VOLUME	AM PK HOUR		PM PK HOUR	
			ENTER	EXIT	ENTER	EXIT
SINGLE FAMILY DWELLINGS	300 DWELLING UNITS	2869	59	160	192	113
RESIDENTIAL CONDOMINIUM	220 DWELLING UNITS	1250	16	84	61	40
TOTAL		4119	75	244	273	153

Note: A zero rate indicates no rate data available

TRIP GENERATION BY MICROTRANS

FIGURE 9



1985 HCM: SIGNALIZED INTERSECTIONS
SUMMARY REPORT

INTERSECTION..Brighton Road/Bauer Road
AREA TYPE.....OTHER
ANALYST.....Paul
DATE.....09/13/88
TIME.....7:15 - 8:15 AM
COMMENT.....Existing Conditions

	VOLUMES					GEOMETRY						
	EB	WB	NB	SB		EB	WB	NB	SB			
LT	128	1	0	97	LTR	12.0	LTR	12.0	LTR	12.0	LT	11.0
TH	483	111	5	2	:	12.0	:	12.0	:	12.0	TR	12.0
RT	0	88	9	61	:	12.0	:	12.0	:	12.0		12.0
RR	0	0	0	0	:	12.0	:	12.0	:	12.0		12.0
					:	12.0	:	12.0	:	12.0		12.0
					:	12.0	:	12.0	:	12.0		12.0

	GRADE (%)	HV (%)	ADJ Y/N	PKG Nm	BUSES Nb	PHF	PEDS	PED. Y/N	BUT. min T	ARR.	TYPE
EB	-3.00	2.00	N	0	0	0.83	0	N	11.3		3
WB	5.00	2.00	N	0	0	0.64	0	N	11.3		3
NB	6.00	2.00	N	0	0	0.88	0	N	8.5		3
SB	6.00	2.00	N	0	0	0.80	0	N	8.5		3

		SIGNAL SETTINGS					CYCLE LENGTH = 60.0						
		PH-1	PH-2	PH-3	PH-4		PH-1	PH-2	PH-3	PH-4			
EB	LT	X				NB	LT						
	TH	X					TH						
	RT	X					RT						
	PD						PD						
WB	LT	X				SB	LT						
	TH	X					TH						
	RT	X					RT						
	PD						PD						
GREEN		35.0	0.0	0.0	0.0	GREEN		0.0	15.0	0.0	0.0	0.0	0.0
YELLOW		5.0	0.0	0.0	0.0	YELLOW		0.0	5.0	0.0	0.0	0.0	0.0

	LANE GRP.	LEVEL OF SERVICE				LOS	APP. DELAY	APP. LOS
		V/C	G/C	DELAY				
EB	LTR	0.719	0.617	7.7		B	7.7	B
WB	LTR	0.347	0.617	4.4		A	4.4	A
NB	LTR	0.040	0.283	11.8		B	11.8	B
SB	L	0.259	0.283	12.7		B	12.6	B
	TR	0.188	0.283	12.4		B		

INTERSECTION: Delay = 7.7 (sec/veh) V/C = 0.574 LOS = B

FIGURE 11A

1985 HCM: SIGNALIZED INTERSECTIONS
SUMMARY REPORT

INTERSECTION..Brighton Road/Bauer Road

AREA TYPE.....OTHER

ANALYST.....Paul

DATE.....09/13/88

TIME.....7:15 - 8:15 AM

COMMENT.....with background and Pine Creek traffic added

	VOLUMES					GEOMETRY						
	EB	WB	NB	SB		EB	WB	NB	SB			
LT	141	1	0	137	LTR	12.0	LTR	12.0	LTR	12.0	LT	11.0
TH	531	122	55	17	:	12.0	:	12.0	:	12.0	TR	12.0
RT	0	195	10	67	:	12.0	:	12.0	:	12.0		12.0
RR	0	0	0	0	:	12.0	:	12.0	:	12.0		12.0
					:	12.0	:	12.0	:	12.0		12.0
					:	12.0	:	12.0	:	12.0		12.0

	ADJUSTMENT FACTORS									
	GRADE (%)	HV (%)	ADJ Y/N	PKG Nm	BUSES Nb	PHF	PEDS	PED. Y/N	BUT. min T	ARR. TYPE
EB	-3.00	2.00	N	0	0	0.83	0	N	11.3	3
WB	5.00	2.00	N	0	0	0.64	0	N	11.3	3
NB	6.00	2.00	N	0	0	0.88	0	N	8.5	3
SB	6.00	2.00	N	0	0	0.80	0	N	8.5	3

	SIGNAL SETTINGS								CYCLE LENGTH = 60.0			
		PH-1	PH-2	PH-3	PH-4		PH-1	PH-2	PH-3	PH-4		
EB	LT	X				NB	LT	X				
	TH	X					TH	X				
	RT	X					RT	X				
	PD						PD					
WB	LT	X				SB	LT	X				
	TH	X					TH	X				
	RT	X					RT	X				
	PD						PD					
GREEN		35.0	0.0	0.0	0.0	GREEN		15.0	0.0	0.0		
YELLOW		5.0	0.0	0.0	0.0	YELLOW		5.0	0.0	0.0		

	LEVEL OF SERVICE						
	LANE GRP.	V/C	G/C	DELAY	LOS	APP. DELAY	APP. LOS
EB	LTR	0.877	0.617	14.1	B	14.1	B
WB	LTR	0.567	0.617	5.8	B	5.8	B
NB	LTR	0.172	0.283	12.3	B	12.3	B
SB	L	0.404	0.283	13.6	B	13.2	B
	TR	0.244	0.283	12.6	B		

INTERSECTION: Delay = 11.4 (sec/veh) V/C = 0.728 LOS = B

1985 HCM: SIGNALIZED INTERSECTIONS
SUMMARY REPORT

INTERSECTION..Brighton Road/Bauer Road
AREA TYPE.....OTHER
ANALYST.....Paul
DATE.....09/13/88
TIME.....7:15 - 8:15 AM
COMMENT.....with background and Pine Creek Traffic and new laneage

VOLUMES				GEOMETRY							
	EB	WB	NB	SB	L	TR	WB	LTR	NB	LT	SB
LT	141	1	0	137	12.0	12.0	12.0	12.0	12.0	12.0	12.0
TH	531	122	55	17	12.0	12.0	12.0	12.0	12.0	12.0	12.0
RT	0	195	10	67	12.0	12.0	12.0	12.0	12.0	12.0	12.0
RR	0	0	0	0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
					12.0	12.0	12.0	12.0	12.0	12.0	12.0

ADJUSTMENT FACTORS										
	GRADE (%)	HV (%)	ADJ Y/N	PKG Nm	BUSES Nb	PHF	PEDS	PED. Y/N	BUT. min T	ARR. TYPE
EB	-3.00	2.00	N	0	0	0.83	0	N	16.8	3
WB	5.00	2.00	N	0	0	0.64	0	N	16.8	3
NB	6.00	2.00	N	0	0	0.88	0	N	19.8	3
SB	6.00	2.00	N	0	0	0.80	0	N	19.8	3

SIGNAL SETTINGS						CYCLE LENGTH = 60.0				
		PH-1	PH-2	PH-3	PH-4		PH-1	PH-2	PH-3	PH-4
EB	LT	X				NB	LT	X		
	TH	X					TH	X		
	RT	X					RT	X		
	PD						PD			
WB	LT	X				SB	LT	X		
	TH	X					TH	X		
	RT	X					RT	X		
	PD						PD			
GREEN		35.0	0.0	0.0	0.0	GREEN	0.0	15.0	0.0	0.0
YELLOW		5.0	0.0	0.0	0.0	YELLOW	0.0	5.0	0.0	0.0

LEVEL OF SERVICE							
	LANE GRP.	V/C	G/C	DELAY	LOS	APP. DELAY	APP. LOS
EB	L	0.310	0.617	4.2	A	5.4	B
	TR	0.574	0.617	5.7	B		
WB	L	0.004	0.617	3.4	A	5.3	B
	TR	0.509	0.617	5.3	B		
NB	LTR	0.172	0.283	12.3	B	12.3	B
SB	L	0.392	0.283	13.5	B	13.2	B
	TR	0.244	0.283	12.6	B		

INTERSECTION: Delay = 7.0 (sec/veh) V/C = 0.516 LOS = B

1985 HCM: SIGNALIZED INTERSECTIONS

SUMMARY REPORT

 INTERSECTION..Brighton Road/Bauer Road

AREA TYPE.....OTHER

ANALYST.....Paul

DATE.....09/02/88

TIME.....7:15 - 8:15 AM

COMMENT.....with background, Pine Creek and Oak Point traffic

	VOLUMES					GEOMETRY							
	EB	WB	NB	SB		EB	L	WB	LTR	NB	LT	SB	
LT	232	1	0	137	:	L	12.0	L	12.0	LTR	12.0	LT	11.0
TH	623	198	55	17	:	TR	12.0	TR	12.0		12.0	TR	12.0
RT	0	195	10	142	:		12.0		12.0		12.0		12.0
RR	0	0	0	0	:		12.0		12.0		12.0		12.0
					:		12.0		12.0		12.0		12.0
					:		12.0		12.0		12.0		12.0

	ADJUSTMENT FACTORS										ARR.	TYPE
	GRADE (%)	HV (%)	ADJ Y/N	PKG Nm	BUSES Nb	PHF	FEDS	FED. Y/N	BUT. min T			
EB	-3.00	2.00	N	0	0	0.83	0	N	11.3		3	
WB	5.00	2.00	N	0	0	0.64	0	N	11.3		3	
NB	6.00	2.00	N	0	0	0.88	0	N	14.5		3	
SB	6.00	2.00	N	0	0	0.80	0	N	14.5		3	

	SIGNAL SETTINGS								CYCLE LENGTH = 60.0				
	PH-1	PH-2	PH-3	PH-4		PH-1	PH-2	PH-3	PH-4				
EB	LT	X				NB	LT			X			
	TH	X					TH			X			
	RT	X					RT			X			
	PD						PD						
WB	LT	X				SB	LT			X			
	TH	X					TH			X			
	RT	X					RT			X			
	PD						PD						
GREEN		35.0	0.0	0.0	0.0	GREEN		0.0	15.0	0.0	0.0	0.0	0.0
YELLOW		5.0	0.0	0.0	0.0	YELLOW		0.0	5.0	0.0	0.0	0.0	0.0

	LEVEL OF SERVICE							
	LANE	GRP.	V/C	G/C	DELAY	LOS	APP. DELAY	APP. LOS
EB	L		0.620	0.617	7.3	B	7.0	B
	TR		0.673	0.617	6.9	B		
WB	L		0.005	0.617	3.4	A	6.3	B
	TR		0.619	0.617	6.3	B		
NB	LTR		0.172	0.283	12.3	B	12.3	B
SB	L		0.404	0.283	13.6	B	13.9	B
	TR		0.469	0.283	14.1	B		

INTERSECTION: Delay = 8.2 (sec/veh) V/C = 0.609 LOS = B

1985 HCM: SIGNALIZED INTERSECTIONS
SUMMARY REPORT

INTERSECTION..Brighton Road/Bauer Road
AREA TYPE.....OTHER
ANALYST.....Paul
DATE.....09/02/88
TIME.....7:15 - 8:15 AM
COMMENT.....with background, Pine Creek and Oak Point traffic

LT	VOLUMES				L	GEOMETRY				LT	SB
	EB	WB	NB	SB		EB	WB	NB	SB		
232	1	0	137	17	L	12.0	12.0	12.0	12.0	11.0	11.0
623	198	55	17	17	TR	12.0	12.0	12.0	12.0	12.0	12.0
0	195	10	142	0		12.0	12.0	12.0	12.0	12.0	12.0
0	0	0	0	0		12.0	12.0	12.0	12.0	12.0	12.0
						12.0	12.0	12.0	12.0	12.0	12.0
						12.0	12.0	12.0	12.0	12.0	12.0

	ADJUSTMENT FACTORS									
	GRADE (%)	HV (%)	ADJ Y/N	PKG Nm	BUSES Nb	PHF	PEDS	PED. Y/N	BUT. min T	ARR. TYPE
EB	-3.00	2.00	N	0	0	0.83	0	N	11.3	3
WB	5.00	2.00	N	0	0	0.64	0	N	11.3	3
NB	6.00	2.00	N	0	0	0.88	0	N	17.5	3
SB	6.00	2.00	N	0	0	0.80	0	N	17.5	3

SIGNAL SETTINGS										CYCLE LENGTH = 70.0			
		PH-1	PH-2	PH-3	PH-4			PH-1	PH-2	PH-3	PH-4		
EB	LT	X	X			NB	LT			X			
	TH	X	X				TH			X			
	RT	X	X				RT			X			
	PD						PD						
WB	LT		X			SB	LT			X			
	TH		X				TH			X			
	RT		X				RT			X			
	PD						PD						
GREEN		6.0	33.0	0.0	0.0	GREEN		0.0	0.0	17.0	0.0		
YELLOW		4.0	5.0	0.0	0.0	YELLOW		0.0	0.0	5.0	0.0		

LEVEL OF SERVICE							
	LANE GRP.	V/C	S/C	DELAY	LOS	APP. DELAY	APP. LOS
EB	L	0.041	0.643	3.5	A	5.8	B
	TR	0.646	0.643	6.7	B		
WB	L	0.008	0.500	6.7	B	8.4	B
	T	0.356	0.500	8.2	B		
	R	0.413	0.500	8.6	B		
NB	LTR	0.179	0.271	14.9	B	14.9	B
SB	L	0.436	0.271	16.5	C	16.8	C
	TR	0.489	0.271	17.0	C		

INTERSECTION: Delay = 8.8 (sec/veh) V/C = 0.599 LOS = B

1985 HCM: SIGNALIZED INTERSECTIONS
SUMMARY REPORT

INTERSECTION..Brighton Road/Bauer Road
AREA TYPE.....OTHER
ANALYST.....Paul
DATE.....09/13/88
TIME.....5:00 - 6:00 PM
COMMENT.....Existing Conditions

	VOLUMES					GEOMETRY				
	EB	WB	NB	SB		EB	WB	NB	SB	
LT	144	4	1	74	:	LTR 12.0	LTR 12.0	LTR 12.0	LT 11.0	
TH	282	506	9	8	:	12.0	12.0	12.0	TR 12.0	
RT	1	97	3	164	:	12.0	12.0	12.0	12.0	
RR	0	0	0	0	:	12.0	12.0	12.0	12.0	
					:	12.0	12.0	12.0	12.0	
					:	12.0	12.0	12.0	12.0	

	ADJUSTMENT FACTORS									
	GRADE (%)	HV (%)	ADJ Y/N	PKG Nm	BUSES Nb	PHF	PEDS	PED. Y/N	BUT. min T	ARR. TYPE
EB	-3.00	2.00	N	0	0	0.87	0	N	11.3	3
WB	5.00	2.00	N	0	0	0.78	0	N	11.3	3
NB	6.00	2.00	N	0	0	0.65	0	N	8.5	3
SB	6.00	2.00	N	0	0	0.77	0	N	8.5	3

SIGNAL SETTINGS						CYCLE LENGTH = 60.0				
		PH-1	PH-2	PH-3	PH-4		PH-1	PH-2	PH-3	PH-4
EB	LT	X				NB	LT	X		
	TH	X					TH	X		
	RT	X					RT	X		
	PD						PD			
WB	LT	X				SB	LT	X		
	TH	X					TH	X		
	RT	X					RT	X		
	PD						PD			
GREEN		35.0	0.0	0.0	0.0	GREEN	0.0	15.0	0.0	0.0
YELLOW		5.0	0.0	0.0	0.0	YELLOW	0.0	5.0	0.0	0.0

LEVEL OF SERVICE							
	LANE GRP.	V/C	G/C	DELAY	LOS	APP. DELAY	APP. LOS
EB	LTR	0.881	0.617	18.0	C	18.0	C
WB	LTR	0.827	0.617	11.2	B	11.2	B
NB	LTR	0.047	0.283	11.9	B	11.9	B
SB	LTR	0.386	0.283	13.3	B	15.8	C

INTERSECTION: Delay = 14.3 (sec/veh) V/C = 0.725 LOS = B

FIGURE 12A

1985 HCM: SIGNALIZED INTERSECTIONS
SUMMARY REPORT

INTERSECTION..Brighton Road/Bauer Road

AREA TYPE.....OTHER

ANALYST.....Paul

DATE.....09/13/88

TIME.....5:00 - 6:00 PM

COMMENT.....with background and Pine Creek traffic added

	VOLUMES				:	GEOMETRY				
	EB	WB	NB	SB		EB	WB	NB	SB	
LT	158	4	1	190	:	LTR 12.0	LTR 12.0	LTR 12.0	LT	11.0
TH	310	557	41	64	:	12.0	12.0	12.0	TR	12.0
RT	1	168	3	180	:	12.0	12.0	12.0		12.0
RR	0	0	0	0	:	12.0	12.0	12.0		12.0
					:	12.0	12.0	12.0		12.0
					:	12.0	12.0	12.0		12.0

	ADJUSTMENT FACTORS									
	GRADE (%)	HV (%)	ADJ Y/N	PKG Nm	BUSES Nb	PHF	PEDS	PED. Y/N	BUT. min T	ARR. TYPE
EB	-3.00	2.00	N	0	0	0.87	0	N	11.3	3
WB	5.00	2.00	N	0	0	0.78	0	N	11.3	3
NB	6.00	2.00	N	0	0	0.65	0	N	8.5	3
SB	6.00	2.00	N	0	0	0.77	0	N	8.5	3

		SIGNAL SETTINGS				CYCLE LENGTH = 60.0				
		PH-1	PH-2	PH-3	PH-4	PH-1	PH-2	PH-3	PH-4	
EB	LT	X				NB	LT	X		
	TH	X					TH	X		
	RT	X					RT	X		
	PD						PD			
WB	LT	X				SB	LT	X		
	TH	X					TH	X		
	RT	X					RT	X		
	PD						PD			
GREEN		35.0	0.0	0.0	0.0	GREEN	0.0	15.0	0.0	0.0
YELLOW		5.0	0.0	0.0	0.0	YELLOW	0.0	5.0	0.0	0.0

LEVEL OF SERVICE							
	LANE GRP.	V/C	G/C	DELAY	LOS	APP. DELAY	APP. LOS
EB	LTR	1.391	0.617	*	*	*	*
WB	LTR	1.004	0.617	32.4	D	32.4	D
NB	LTR	0.159	0.283	12.3	B	12.3	B
SB	L	0.576	0.283	15.4	C	17.4	C
	TR	0.728	0.283	18.9	C		

INTERSECTION: Delay = * (sec/veh) V/C = 1.182 LOS = *

1985 HCM: SIGNALIZED INTERSECTIONS
SUMMARY REPORT

INTERSECTION..Brighton Road /Bauer Road

AREA TYPE.....OTHER
ANALYST.....Paul
DATE.....09/13/88
TIME.....5:00 - 6:00 PM
COMMENT.....with background and Pine Creek traffic and new laneage

	VOLUMES					GEOMETRY							
	EB	WB	NB	SB		EB	L	WB	NB	LT	SB		
LT	158	4	1	190	:	L	12.0	L	12.0	LTR	12.0	LT	12.0
TH	310	557	41	64	:	TR	12.0	TR	12.0		12.0	TR	12.0
RT	1	168	3	180	:		12.0		12.0		12.0		12.0
RR	0	0	0	0	:		12.0		12.0		12.0		12.0
					:		12.0		12.0		12.0		12.0
					:		12.0		12.0		12.0		12.0

	ADJUSTMENT FACTORS									
	GRADE (%)	HV (%)	ADJ Y/N	PKG Nm	BUSES Nb	PHF	PEDS	PED. Y/N	BUT. min T	ARR. TYPE
EB	-3.00	2.00	N	0	0	0.87	0	N	16.8	3
WB	5.00	2.00	N	0	0	0.78	0	N	16.8	3
NB	6.00	2.00	N	0	0	0.65	0	N	19.8	3
SB	6.00	2.00	N	0	0	0.77	0	N	19.8	3

SIGNAL SETTINGS										CYCLE LENGTH = 60.0			
		PH-1	PH-2	PH-3	PH-4			PH-1	PH-2	PH-3	PH-4		
EB	LT	X				NB	LT		X				
	TH	X					TH		X				
	RT	X					RT		X				
	PD						PD						
WB	LT	X				SB	LT		X				
	TH	X					TH		X				
	RT	X					RT		X				
	PD						PD						
GREEN	35.0	0.0	0.0	0.0	GREEN	0.0	15.0	0.0	0.0	0.0			
YELLOW	5.0	0.0	0.0	0.0	YELLOW	0.0	5.0	0.0	0.0	0.0			

LEVEL OF SERVICE							
	LANE GRP.	V/C	G/C	DELAY	LOS	APP. DELAY	APP. LOS
EB	L	0.631	0.617	22.4	C	10.3	B
	TR	0.320	0.617	4.2	A		
WB	L	0.008	0.617	3.4	A	15.0	C
	TR	0.899	0.617	15.1	C		
NB	LTR	0.159	0.283	12.3	B	12.3	B
SB	L	0.559	0.283	15.1	C	17.2	C
	TR	0.728	0.283	18.9	C		

INTERSECTION: Delay = 14.3 (sec/veh) V/C = 0.845 LOS = B

1985 HCM: SIGNALIZED INTERSECTIONS
SUMMARY REPORT

INTERSECTION..Brighton Road /Bauer Road

AREA TYPE.....OTHER

ANALYST.....Paul

DATE.....09/13/88

TIME.....5:00 - 6:00 PM

COMMENT.....with background, Pine Creek and Oak Point Traffic

	VOLUMES				:	GEOMETRY				:	GEOMETRY			
	EB	WB	NB	SB		EB	WB	NB	SB		EB	WB	NB	SB
LT	261	4	1	190	:	L	12.0	L	12.0	LTR	12.0	LT	12.0	
TH	413	662	41	64	:	TR	12.0	TR	12.0		12.0	TR	12.0	
RT	1	168	3	285	:		12.0		12.0		12.0		12.0	
RR	0	0	0	0	:		12.0		12.0		12.0		12.0	
					:		12.0		12.0		12.0		12.0	
					:		12.0		12.0		12.0		12.0	

	ADJUSTMENT FACTORS									
	GRADE (%)	HV (%)	ADJ Y/N	PKG Nm	BUSES Nb	PHF	PEDS	PED. Y/N	BUT. min T	ARR. TYPE
EB	-3.00	2.00	N	0	0	0.87	0	N	11.5	3
WB	5.00	2.00	N	0	0	0.78	0	N	11.5	3
NB	6.00	2.00	N	0	0	0.65	0	N	14.5	3
SB	6.00	2.00	N	0	0	0.77	0	N	14.5	3

	SIGNAL SETTINGS					CYCLE LENGTH = 60.0			
	PH-1	PH-2	PH-3	PH-4		PH-1	PH-2	PH-3	PH-4
EB	LT	X			NB	LT	X		
	TH	X				TH	X		
	RT	X				RT	X		
	PD					PD			
WB	LT	X			SB	LT	X		
	TH	X				TH	X		
	RT	X				RT	X		
	PD					PD			
GREEN	35.0	0.0	0.0	0.0	GREEN	0.0	15.0	0.0	0.0
YELLOW	5.0	0.0	0.0	0.0	YELLOW	0.0	5.0	0.0	0.0

	LEVEL OF SERVICE						
	LANE GRP.	V/C	G/C	DELAY	LOS	APP. DELAY	APP. LOS
EB	L	2.118	0.617	*	*	*	*
	TR	0.427	0.617	4.7	A		
WB	L	0.009	0.617	3.4	A	36.6	D
	TR	1.024	0.617	36.7	D		
NB	LTR	0.159	0.283	12.3	B	12.3	B
SB	LTR	0.835	0.283	20.3	C	20.9	C

INTERSECTION: Delay = * (sec/veh) V/C = 1.714 LOS = *

1985 HCM: SIGNALIZED INTERSECTIONS

SUMMARY REPORT

INTERSECTION..Brighton Road /Bauer Road

AREA TYPE.....OTHER

ANALYST.....Paul

DATE.....09/13/88

TIME.....5:00 - 6:00 PM

COMMENT.....with background, Pine Creek and Oak Point Traffic

	VOLUMES					GEOMETRY							
	EB	WB	NB	SB		EB	WB	NB	SB	LT	TR		
LT	261	4	1	190	:	L	12.0	L	12.0	LTR	12.0	LT	12.0
TH	413	662	41	64	:	TR	12.0	T	12.0		12.0	TR	12.0
RT	1	168	3	285	:		12.0	R	12.0		12.0		12.0
RR	0	0	0	0	:		12.0		12.0		12.0		12.0
					:		12.0		12.0		12.0		12.0
					:		12.0		12.0		12.0		12.0

ADJUSTMENT FACTORS										
	GRADE (%)	HV (%)	ADJ Y/N	PKG Nm	BUSES Nb	PHF	PEDS	PED. Y/N	BUT. min T	ARR. TYPE
EB	-3.00	2.00	N	0	0	0.87	0	N	11.5	3
WB	5.00	2.00	N	0	0	0.78	0	N	11.5	3
NB	6.00	2.00	N	0	0	0.65	0	N	17.5	3
SB	6.00	2.00	N	0	0	0.77	0	N	17.5	3

SIGNAL SETTINGS											CYCLE LENGTH = 70.0				
		PH-1	PH-2	PH-3	PH-4			PH-1	PH-2	PH-3	PH-4				
EB	LT	X	X			NB	LT			X					
	TH	X	X				TH			X					
	RT	X	X				RT			X					
	PD						PD								
WB	LT		X			SB	LT			X					
	TH		X				TH			X					
	RT		X				RT			X					
	PD						PD								
GREEN		6.0	33.0	0.0	0.0	GREEN		0.0	0.0	17.0	0.0				
YELLOW		4.0	5.0	0.0	0.0	YELLOW		0.0	0.0	5.0	0.0				

LEVEL OF SERVICE							
	LANE GRP.	V/C	G/C	DELAY	LOS	APP. DELAY	APP. LOS
EB	L	0.099	0.643	3.6	A	4.3	A
	TR	0.409	0.643	4.7	A		
WB	L	0.013	0.500	6.7	B	26.8	D
	T	0.977	0.500	31.7	D		
	R	0.292	0.500	7.9	B		
NB	LTR	0.166	0.271	14.8	B	14.8	B
SB	LTR	0.884	0.271	26.5	D	26.5	D

INTERSECTION: Delay = 19.8 (sec/veh) V/C = 0.812 LOS = C

BRIGHTON RD.
BAUER RD.
INTERSECTION COUNT

HOUR OF DAY	M A I N TOTAL VOLUME	S T R E E T PEAK DIRECTN	BIAS PRCNT	S I D E TOTAL VOLUME	S T R E E T PEAK DIRECTN	PEAK VOLUME	INTER- SECTION VOLUME
12 AM	67	WEST	70	37	SOUTH	37	104
1 AM	49	WEST	84	26	SOUTH	26	75
2 AM	15	WEST	80	8	SOUTH	8	23
3 AM	8	WEST	88	5	SOUTH	5	13
4 AM	38	WEST	95	5	SOUTH	5	43
5 AM	175	WEST	98	13	SOUTH	13	188
6 AM	346	WEST	98	35	SOUTH	35	381
7 AM	513	WEST	95	59	SOUTH	59	572
8 AM	499	WEST	90	82	SOUTH	82	581
9 AM	506	WEST	75	96	SOUTH	96	602
10 AM	644	WEST	66	116	SOUTH	116	760
11 AM	610	WEST	61	121	SOUTH	121	731
12 PM	664	WEST	60	150	SOUTH	150	814
1 PM	610	WEST	61	130	SOUTH	130	740
2 PM	639	WEST	59	139	SOUTH	139	778
3 PM	708	WEST	53	153	SOUTH	153	861
4 PM	831	EAST	56	156	SOUTH	156	987
5 PM	876	EAST	57	220	SOUTH	220	1096
6 PM	754	WEST	53	202	SOUTH	202	956
7 PM	557	WEST	63	161	SOUTH	161	718
8 PM	482	WEST	64	156	SOUTH	156	638
9 PM	391	WEST	66	136	SOUTH	136	527
10 PM	205	WEST	74	84	SOUTH	84	289
11 PM	126	WEST	82	66	SOUTH	66	192

TOTAL INTERSECTION VOLUME IS 12,669
PROJECTED ANNUAL TRAFFIC IS 4,624,185

MAIN STREET TOTAL VOLUME IS 10,313
EASTBOUND APPROACH IS 3,710 (36%)
WESTBOUND APPROACH IS 6,603 (64%)

SIDE STREET TOTAL VOLUME IS 2,356

REPORT PRODUCED THURSDAY, JUNE 16, 1988.

BRIGHTON RD.
BAUER RD.
TRAFFIC SIGNAL WARRANT EVALUATION

INTRODUCTION

THIS REVIEW IS BASED ON THE METHODOLOGY PRESENTED IN THE 'MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 1978', AS AMENDED, BY THE FEDERAL HIGHWAY ADMINISTRATION. PLEASE REFER TO PART 4C OF THAT DOCUMENT.

THE INTERSECTION UNDER STUDY HAS THE FOLLOWING CHARACTERISTICS:

85TH PERCENTILE SPEED ON THE MAIN STREET IS 45 MPH.
EXISTING TRAFFIC CONTROL IS SIDE STREET STOP.
DAILY TRAFFIC VOLUME WAS 12,669 ON THURSDAY, JUNE 16, 1988
ESTIMATED ANNUAL TRAFFIC VOLUME IS 4,624,185 VEHICLES.

1. INTERSECTING TRAFFIC VOLUMES

THE INSTALLATION OF A TRAFFIC SIGNAL MAY BE NECESSARY TO CONTROL AN INTERSECTION WITH LARGE VOLUMES OF CONFLICTING TRAFFIC. THE REQUIRED TRAFFIC VOLUMES MUST BE PRESENT FOR AT LEAST EIGHT HOURS OF AN AVERAGE WEEKDAY. THE MINIMUM VOLUMES VARY ACCORDING TO THE NUMBER OF LANES ON THE INTERSECTING STREETS, THE SPEED OF TRAFFIC ON THE MAIN STREET, AND THE COMMUNITY SIZE.

NUMBER OF HOURS REQUIRED TRAFFIC PRESENT = 7
WARRANT IS NOT SATISFIED.

2. INTERRUPTION OF CONTINUOUS TRAFFIC

ON MAJOR STREETS WITH HIGH TRAFFIC VOLUMES, IT MAY BE NECESSARY TO USE TRAFFIC SIGNAL CONTROL TO PROVIDE AN ADEQUATE NUMBER OF GAPS IN TRAFFIC TO ALLOW VEHICLES TO ENTER FROM A SIDE STREET. THE APPLICATION OF THIS WARRANT IS IDENTICAL TO THAT OF WARRANT 1, ABOVE.

NUMBER OF HOURS REQUIRED TRAFFIC PRESENT = 7
WARRANT IS NOT SATISFIED.

3. COMBINATION OF WARRANTS

IN EXCEPTIONAL CASES, SIGNAL CONTROL MAY BE JUSTIFIED WHERE NO SINGLE WARRANT IS SATISFIED, BUT WHERE AT LEAST TWO OF WARRANTS 1, 2, OR 3 ARE MET WHEN THE REQUIRED VOLUMES ARE REDUCED TO 80% OF NORMAL. ADEQUATE TRIAL OF OTHER MEASURES WHICH CAUSE LESS DELAY AND INCONVENIENCE MUST BE TRIED AND ENFORCED FIRST.

NUMBER OF WARRANTS SATISFIED AT THE 80% LEVEL = 2
VOLUME REQUIREMENTS ARE SATISFIED.

TABLE 1
 TWENTY-FOUR HOUR VEHICULAR TRAFFIC EVALUATION
 WARRANTS 1, 2 & 8

HOUR OF DAY	MAIN ST. VOLUME	SIDE ST. VOLUME	WARRANT 1	WARRANT 2	WARRANT 8	
					PART 1	PART 2
12 AM	67	37				
1 AM	49	26				
2 AM	15	8				
3 AM	8	5				
4 AM	38	5				
5 AM	175	13				
6 AM	346	35				
7 AM	513	59	MAIN		MAIN	BOTH
8 AM	499	82	MAIN	SIDE	MAIN	SIDE
9 AM	506	96	MAIN	SIDE	MAIN	BOTH
10 AM	644	116	MAIN	BOTH	BOTH	BOTH
11 AM	610	121	MAIN	SIDE	BOTH	BOTH
12 PM	664	150	BOTH	BOTH	BOTH	BOTH
1 PM	610	130	MAIN	SIDE	BOTH	BOTH
2 PM	639	139	MAIN	BOTH	BOTH	BOTH
3 PM	708	153	BOTH	BOTH	BOTH	BOTH
4 PM	831	156	BOTH	BOTH	BOTH	BOTH
5 PM	876	220	BOTH	BOTH	BOTH	BOTH
6 PM	754	202	BOTH	BOTH	BOTH	BOTH
7 PM	557	161	BOTH	SIDE	BOTH	BOTH
8 PM	482	156	BOTH	SIDE	BOTH	SIDE
9 PM	391	136		SIDE	BOTH	SIDE
10 PM	205	84		SIDE		SIDE
11 PM	126	66				SIDE
REQUIRED VOLUMES: MAIN STREET			420	630	336	504
SIDE STREET			140	70	112	56

NOTE: SIDE STREET VOLUMES SHOWN ARE FOR EACH HOUR'S PEAK APPROACH.

CURRENT TRAFFIC COUNTS

SITE CODE : Genoa Township
 N/S Street: Bauer Road
 E/W Street: Brighton Road
 Day : Tuesday

PAGE: 1
 FILE: baubri
 DATE: 9/13/88

Primary Movements: Vehicles

Time Begin	From North			From East			From South			From West			Vehicle Total
	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	
7:00 AM	4	1	16	3	26	0	0	0	1	0	86	12	149
7:15	15	1	28	21	31	0	3	1	0	0	149	36	285
7:30	18	0	32	41	37	0	1	3	0	0	132	44	308
7:45	14	1	20	19	21	0	3	1	0	0	107	34	220
HR TOTAL	51	3	96	84	115	0	7	5	1	0	474	126	962
8:00 AM	14	0	17	7	22	1	2	0	0	0	95	14	172
8:15	6	0	10	3	28	1	2	1	0	0	88	34	173
8:30	7	0	13	11	24	1	0	1	2	0	76	32	167
8:45	11	2	30	12	18	1	1	0	1	0	71	48	195
HR TOTAL	38	2	70	33	92	4	5	2	3	0	330	128	707
----- Break -----													
4:00 PM	11	3	16	10	26	0	1	0	1	1	60	14	143
4:15	27	0	11	13	92	0	1	1	1	0	42	20	208
4:30	34	2	15	16	108	6	2	3	0	0	64	25	275
4:45	30	3	16	20	78	0	1	2	1	0	50	29	230
HR TOTAL	102	8	58	59	304	6	5	6	3	1	216	88	856
5:00 PM	54	2	24	28	164	2	1	2	0	1	64	32	374
5:15	42	1	10	17	104	0	0	3	0	0	66	30	273
5:30	41	4	22	22	128	1	0	2	0	0	66	45	331
5:45	27	1	18	30	110	1	2	2	1	0	86	37	315
HR TOTAL	164	8	74	97	506	4	3	9	1	1	282	144	1293
DAY TOTAL	355	21	298	273	1017	14	20	22	8	2	1302	486	3818

SITE CODE : Genoa Township
 N/S Street: Bauer Road
 E/W Street: Brighton Road
 Day : Tuesday

Primary Movements: Vehicles

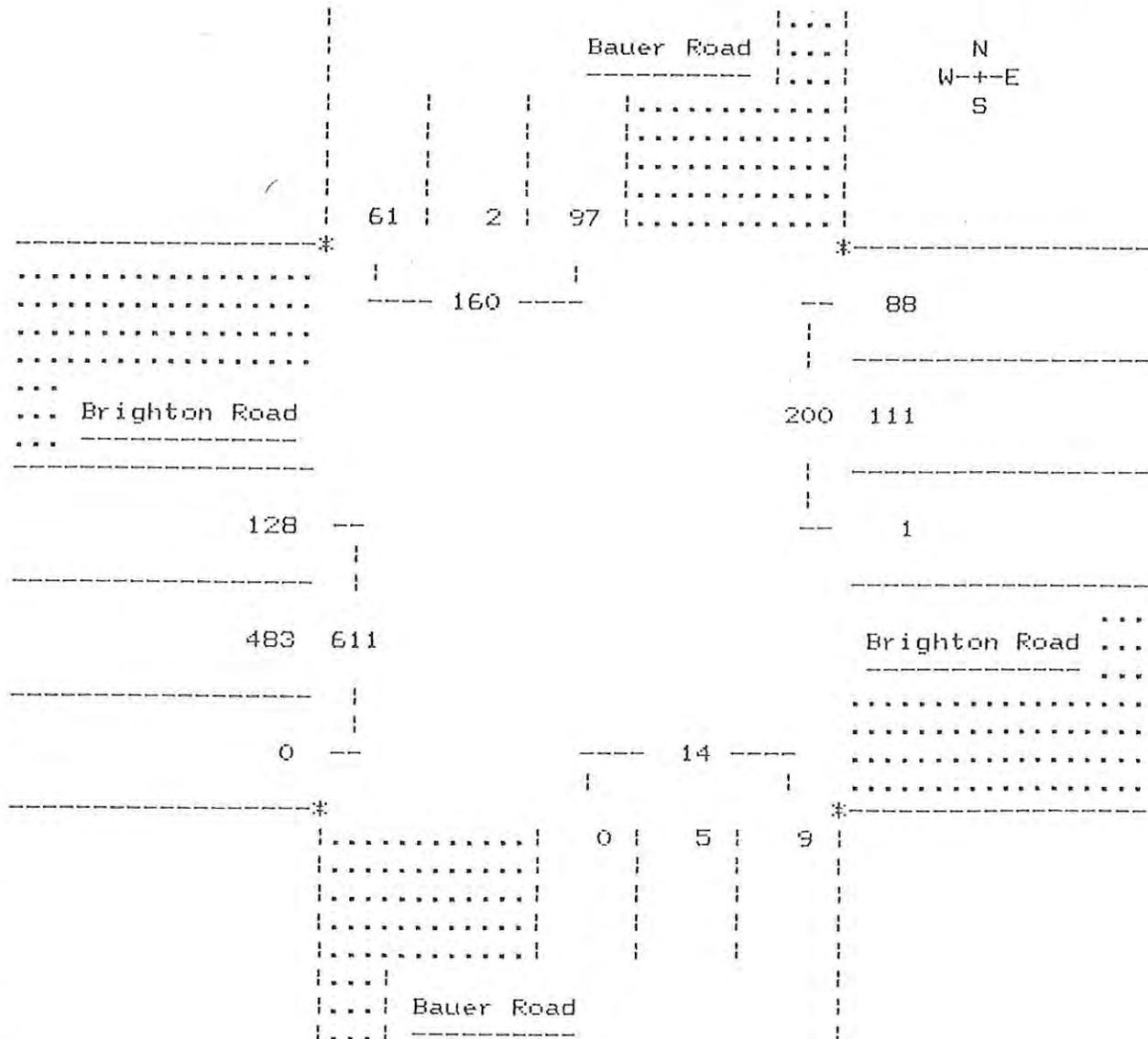
DATE: 9/13/88

PEAK PERIOD ANALYSIS FOR THE PERIOD: 7:00 AM - 9:00 AM

DIRECTION FROM	START PEAK HOUR	PEAK HR FACTOR VOLUMES PERCENTS ...		
			Right	Thru	Left	Total	Right	Thru	Left
North	7:15 AM	0.80	61	2	97	160	38	1	61
East	7:15 AM	0.64	88	111	1	200	44	56	1
South	7:15 AM	0.88	9	5	0	14	64	36	0
West	7:15 AM	0.83	0	483	128	611	0	79	21

Entire Intersection

North	7:15 AM	0.80	61	2	97	160	38	1	61
East		0.64	88	111	1	200	44	56	1
South		0.88	9	5	0	14	64	36	0
West		0.83	0	483	128	611	0	79	21



SITE CODE : Genoa Township
 N/S Street: Bauer Road
 E/W Street: Brighton Road
 Day : Tuesday

PAGE: 1
 FILE: baubri
 DATE: 9/13/88

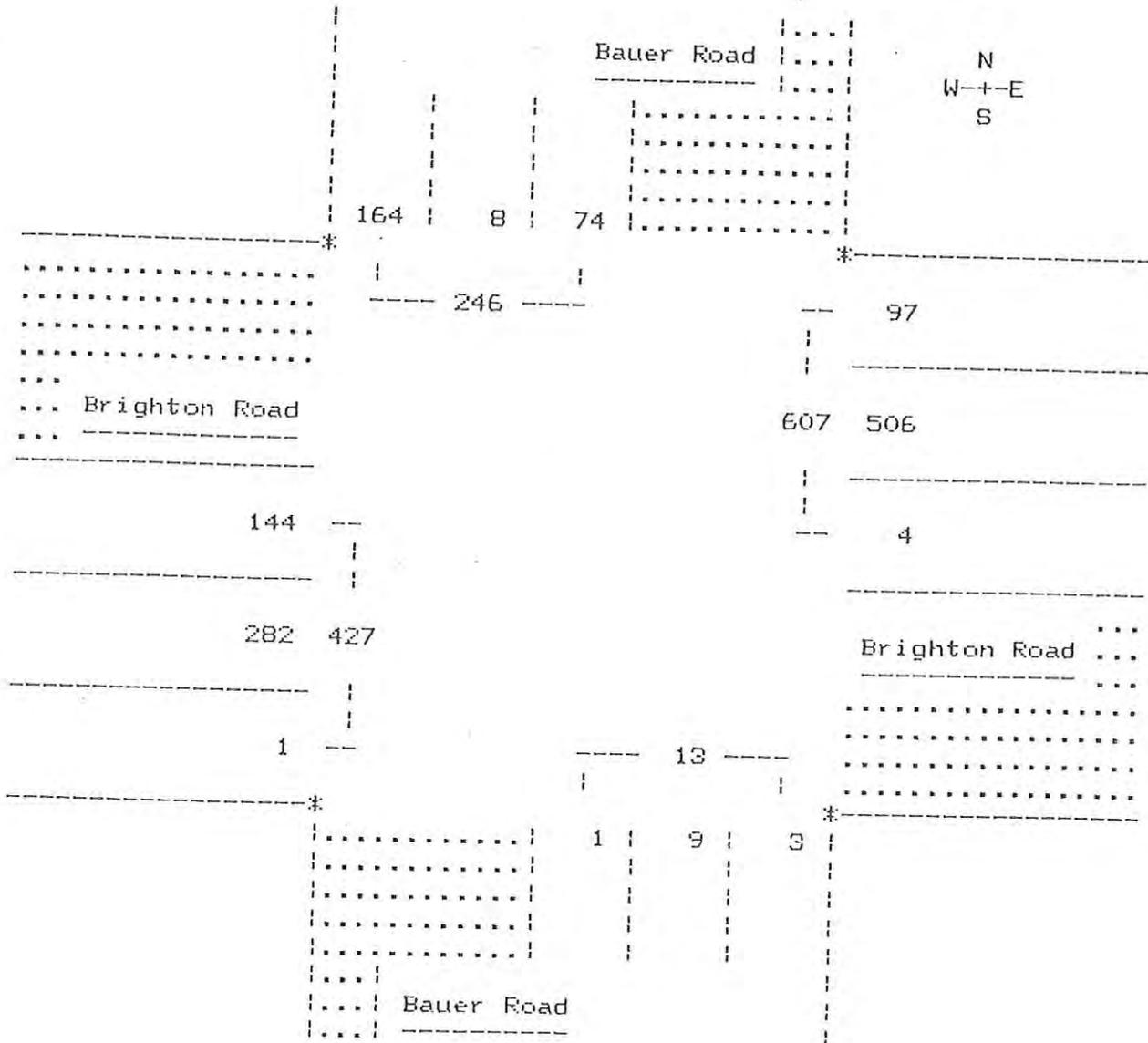
Primary Movements: Vehicles

PEAK PERIOD ANALYSIS FOR THE PERIOD: 4:00 PM - 6:00 PM

DIRECTION FROM	START PEAK HOUR	PEAK HR FACTOR VOLUMES PERCENTS ...		
			Right	Thru	Left	Total	Right	Thru	Left
North	4:45 PM	0.78	167	10	72	249	67	4	29
East	5:00 PM	0.78	97	506	4	607	16	83	1
South	4:15 PM	0.75	5	8	2	15	33	53	13
West	5:00 PM	0.87	1	282	144	427	0	66	34

Entire Intersection

North	5:00 PM	0.77	164	8	74	246	67	3	30
East		0.78	97	506	4	607	16	83	1
South		0.65	3	9	1	13	23	69	8
West		0.87	1	282	144	427	0	66	34



SITE CODE : Genoa Township

N/S Street: Bauer Road

E/W Street: Challis Road

Day : Tuesday

PAGE: 1

FILE: chabau

Primary Movements: Vehicles

DATE: 9/13/88

Time Begin	From North			From East			From South			From West			Vehicle Total
	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	
7:00 AM	0	14	22	8	0	19	17	3	0	0	0	0	83
7:15	0	9	19	6	0	31	34	7	0	0	0	0	106
7:30	0	13	24	10	0	32	53	6	0	0	0	0	138
7:45	0	6	26	8	0	24	34	7	0	0	0	0	105
HR TOTAL	0	42	91	32	0	106	138	23	0	0	0	0	432
8:00 AM	0	5	16	10	0	13	26	3	0	0	0	0	73
8:15	0	10	11	4	0	12	36	0	0	0	0	0	73
8:30	0	10	20	7	0	10	34	3	0	0	0	0	84
8:45	0	11	13	13	0	12	46	6	0	0	0	0	101
HR TOTAL	0	36	60	34	0	47	142	12	0	0	0	0	331
----- Break -----													
4:00 PM	0	4	5	10	0	48	29	5	0	0	0	0	101
4:15	0	9	6	14	0	38	26	7	0	0	0	0	100
4:30	0	9	6	12	0	40	31	9	0	0	0	0	107
4:45	0	10	3	21	0	48	35	9	0	0	0	0	126
HR TOTAL	0	32	20	57	0	174	121	30	0	0	0	0	434
5:00 PM	0	7	10	13	0	59	45	13	0	0	0	0	147
5:15	0	9	7	20	0	45	43	6	0	0	0	0	130
5:30	0	5	3	22	0	44	41	8	0	0	0	0	123
5:45	0	11	5	23	0	48	28	6	0	0	0	0	121
HR TOTAL	0	32	25	78	0	196	157	33	0	0	0	0	521
DAY TOTAL	0	142	196	201	0	523	558	98	0	0	0	0	1718

SITE CODE : Genoa Township
 N/S Street: Bauer Road
 E/W Street: Challis Road
 Day : Tuesday

PAGE: 1
 FILE: chabau
 DATE: 9/13/88

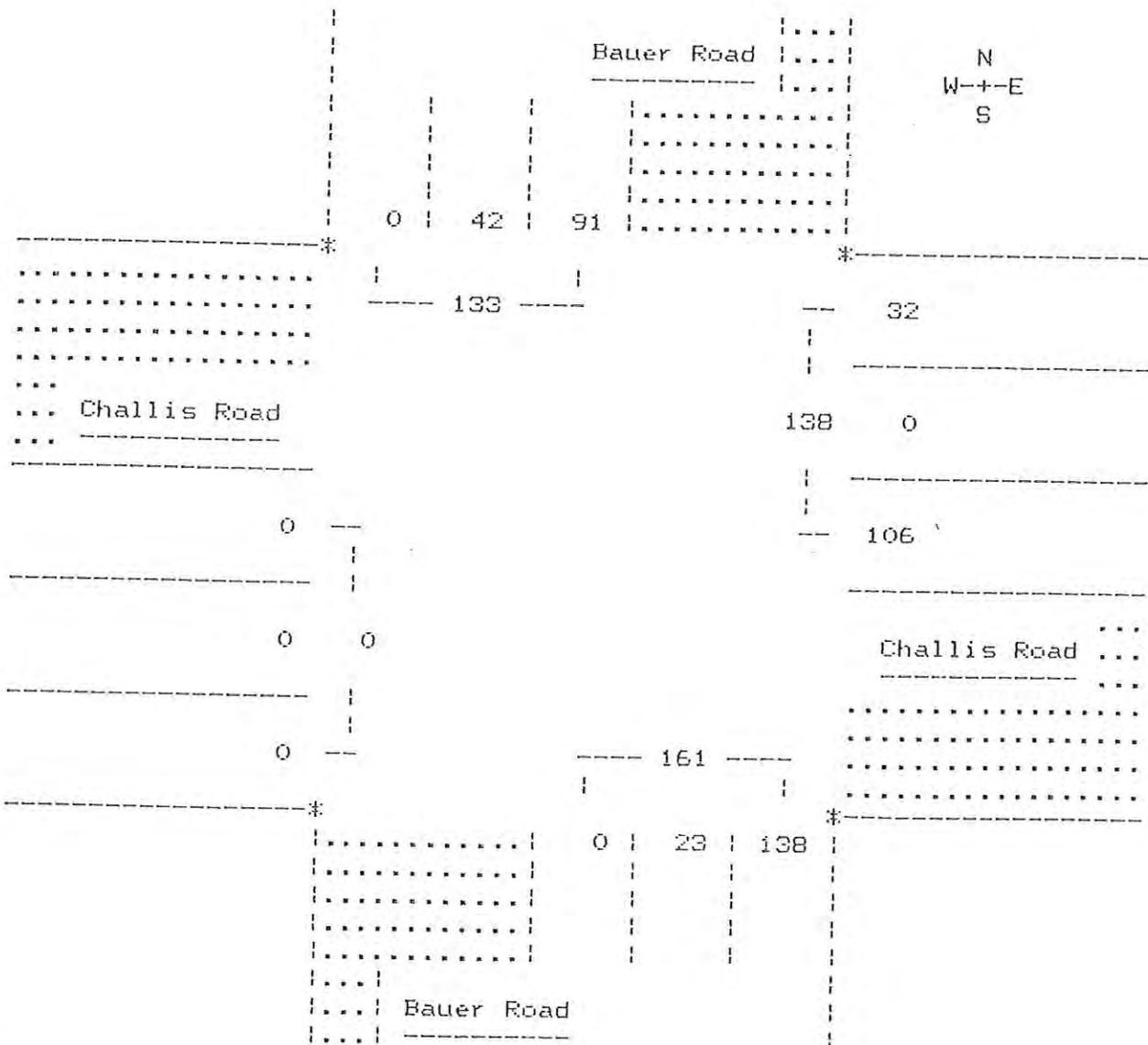
Primary Movements: Vehicles

PEAK PERIOD ANALYSIS FOR THE PERIOD: 7:00 AM - 9:00 AM

DIRECTION FROM	START PEAK HOUR	PEAK HR FACTOR VOLUMES PERCENTS ...		
			Right	Thru	Left	Total	Right	Thru	Left
North	7:00 AM	0.90	0	42	91	133	0	32	68
East	7:00 AM	0.82	32	0	106	138	23	0	77
South	7:15 AM	0.72	147	23	0	170	86	14	0
West	7:15 AM	0.00	0	0	0	0	0	0	0

Entire Intersection

North	7:00 AM	0.90	0	42	91	133	0	32	68
East		0.82	32	0	106	138	23	0	77
South		0.68	138	23	0	161	86	14	0
West		0.00	0	0	0	0	0	0	0



SITE CODE : Genoa Township
 N/S Street: Bauer Road
 E/W Street: Challis Road
 Day : Tuesday

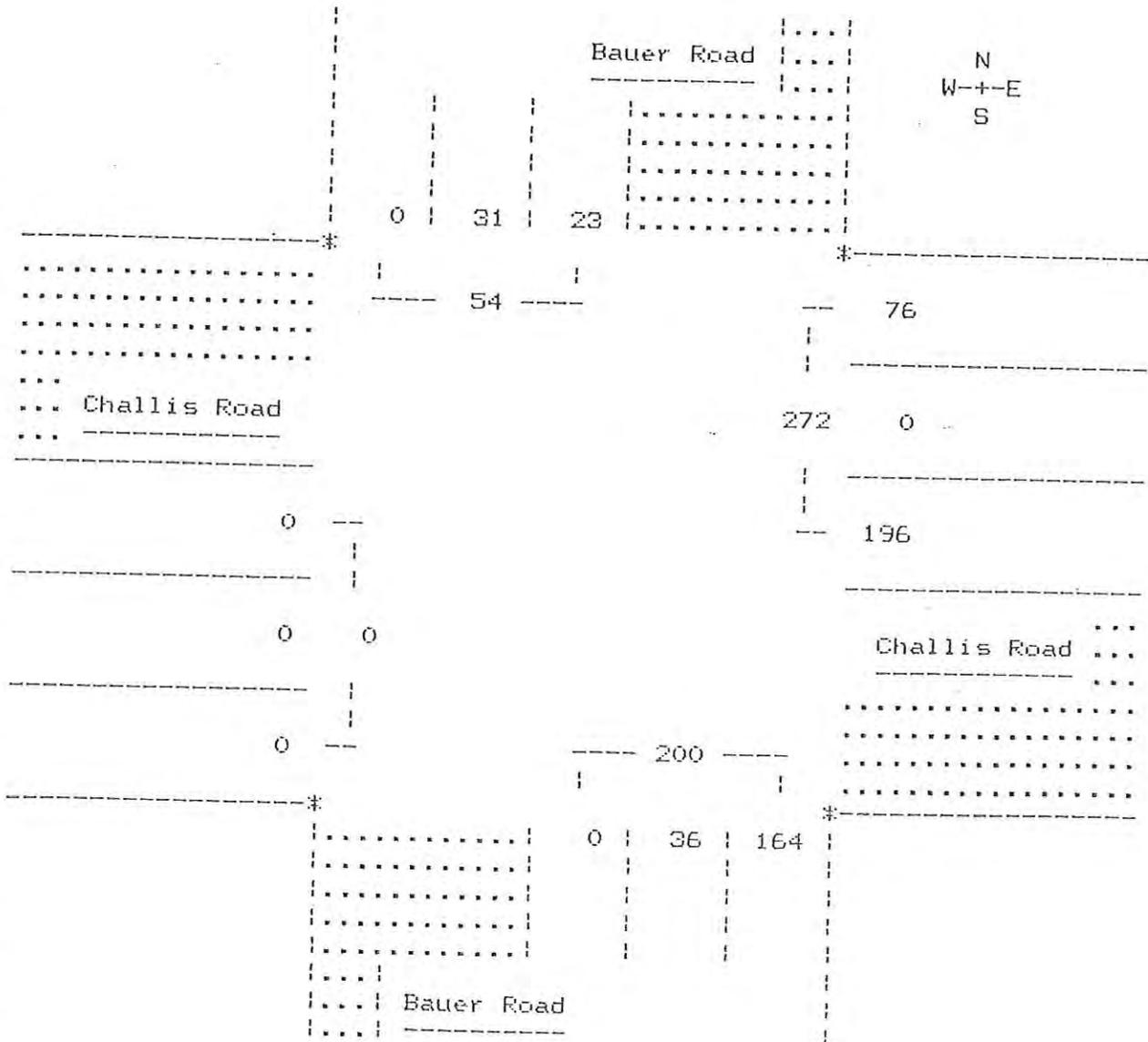
Primary Movements: Vehicles

PEAK PERIOD ANALYSIS FOR THE PERIOD: 4:00 PM - 6:00 PM

DIRECTION FROM	START PEAK HOUR	PEAK HR FACTOR VOLUMES PERCENTS ...		
			Right	Thru	Left	Total	Right	Thru	Left
North	4:30 PM	0.90	0	35	26	61	0	57	43
East	5:00 PM	0.95	78	0	196	274	28	0	72
South	4:45 PM	0.86	164	36	0	200	82	18	0
West	4:45 PM	0.00	0	0	0	0	0	0	0

Entire Intersection

North	4:45 PM	0.79	0	31	23	54	0	57	43
East		0.94	76	0	196	272	28	0	72
South		0.86	164	36	0	200	82	18	0
West		0.00	0	0	0	0	0	0	0



Mike Archinal

From: Tammy Lindberg
Sent: Friday, April 05, 2013 11:29 AM
To: Mike Archinal
Subject: FW: recycling tonnages 2013

From: Randy Duncan [<mailto:Randy@mygarbageguy.com>]
Sent: Thursday, April 04, 2013 5:11 PM
To: Tammy Lindberg
Subject: recycling tonnages 2013

Hi Tammy,

Here are the recycling tonnages for Genoa for 2013, we saw a 5-7.5 ton per month jump since launching our carts last summer.

Jan	107.69 tons
Feb	100.37 tons
Mar	104.25 tons

Thanks

Randy



To Board
4-15-13
correspondence

RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS
MICHIGAN LIQUOR CONTROL COMMISSION
ANDREW J. DELONEY
CHAIRMAN

STEVE ARWOOD
DIRECTOR

March 22, 2013

Genoa Township Board
Attn: Clerk
2911 Dorr Road
Brighton, MI 48116-9436

The purpose of this letter is to notify this local legislative body that the Michigan Liquor Control Commission has received an application for a license, as follows:

Request ID#: 699007

Transfer ownership of Class C 7 SDM Licenses

Name of applicant(s): Howell Auburn Holding, LLC

*Aubree's Pizzeria
& GRILL*

Business address and phone: 4433 E. Grand River, Howell, MI 48843, Genoa Township, Livingston County

Home address and phone number of partner(s)/subordinates:

Gjovalin Kacaj: 3861 Highview Dr. Oxford, MI 48371 (B) 248-854-4621

Matthew p. Morrison: 7531 Forest Street, Dexter, MI 48130 (B) 517-552-9999 (C) 734-417-9951

Under administrative rule R 436.1105, the Commission shall consider the opinions of the local residents, local legislative body, or local law enforcement agency with regard to the proposed business when determining whether an applicant may be issued a license or permit. Since this request is a transfer under MCL 436.1529(1), approval of the local unit of government is not required.

Under administrative rule R 436.1003, the licensee shall comply with all state and local building, plumbing, zoning, sanitation, and health laws, rules, and ordinances as determined by the state and local law enforcements officials who have jurisdiction over the licensee. The licensee must obtain all other required state and local licenses, permits, and approvals before using this license for the sale of alcoholic liquor.

Approval of this license by the Michigan Liquor Control Commission does not waive any of these requirements.

MICHIGAN LIQUOR CONTROL COMMISSION
Retail Licensing Division
(866) 813-0011

kaw