

**GENOA CHARTER TOWNSHIP
BOARD OF TRUSTEES
REGULAR MEETING
OCTOBER 3, 2011
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 for approval of minutes: 9-19-11
3. Request for approval to purchase 4 new computer workstations for the Township at the cost of \$2,887.43.
4. Request for approval of the purchase of 1 ARCVIEW GIS concurrent use license for the Township at the cost of \$3,150.00.

Approval of Regular Agenda:

5. Request for approval of special use, impact assessment and site plan for a proposed redevelopment of the former Brighton Athletic Club site into a church and community center located at 7526 W. Grand River Brighton. Sec. 13, petitioned by 2|42 Church.
 - a. Approval of Special Use
 - b. Approval of Impact Assessment
 - c. Approval of Site Plan.
6. Request for approval of a Sample Purchasing Policy as proposed by the Township Auditor.

Correspondence
Member Discussion
Adjournment

CHECK REGISTERS FOR TOWNSHIP BOARD MEETING

DATE : October 3, 2011

TOWNSHIP GENERAL EXPENSES: Thru October 3, 2011	\$45,051.05
September 29, 2011 Quarterly Payroll	\$5,612.77
September 30, 2011 Bi Weekly Payroll	\$75,693.05
October 3, 2011 Monthly Payroll	\$11,088.92
OPERATING EXPENSES: Thru October 3, 2011	\$36,763.75
TOTAL:	<u>\$174,209.54</u>

<u>Check Number</u>	<u>Vendor No</u>	<u>Vendor Name</u>	<u>Check Date</u>	<u>Check Amount</u>
27827	Equitabl	Equivest Unit Annuity Lock Box	09/29/2011	20.00
27828	AMERAWAR	American Awards & Engraving	09/20/2011	10.75
27829	Big Wate	Big Water Technologies Corp	09/20/2011	11,907.40
27830	BullsEye	BullsEye Telecom	09/20/2011	186.51
27831	DYKEMA	Dykema Gossett PLLC	09/20/2011	212.60
27832	Administ	Total Administrative Services	09/30/2011	869.19
27833	Equitabl	Equivest Unit Annuity Lock Box	09/30/2011	805.00
27834	MISDU	Michigan State Disbursement Un	09/30/2011	207.13
27835	SOM-TRE	State Of Mich- Dept Of Treasur	09/30/2011	8,330.82
27836	VION	Vion Holdings LLC	09/30/2011	76.12
27837	ARCHINAL	Michael Archinal	09/27/2011	153.88
27838	AT&TLONG	AT&T Long Distance	09/27/2011	103.03
27839	BULLET	Bullet Handyman Services	09/27/2011	175.00
27840	CARDM	Chase Card Services	09/27/2011	1,548.62
27841	DTE EN	DTE Energy	09/27/2011	206.92
27842	DTE LAKE	DTE Energy	09/27/2011	927.95
27843	FED EXPR	Federal Express Corp	09/27/2011	158.31
27844	GENOADPW	Genoa Township DPW Fund	09/27/2011	1,264.07
27845	HASTIAIR	Hasting Air-Energy Control	09/27/2011	519.95
27846	HowellPa	Howell Area Parks & Recreation	09/27/2011	2,437.50
27847	LEO'S CU	Leo's Custom Sprinkler Service	09/27/2011	3,500.00
27848	MASTER M	Master Media Supply	09/27/2011	157.93
27849	Mayday	Renee Mayday	09/27/2011	37.00
27850	Micro	Microsoft TechNet	09/27/2011	249.00
27851	Net serv	Network Services Group, L.L.C.	09/27/2011	2,828.10
27852	PFEFFER	Pfeffer, Hanniford, Palka	09/27/2011	1,600.00
27853	PITNEYBO	Pitney Bowes, Inc.	09/27/2011	644.00
27854	TRI COUN	Tri County Cleaning Supply Inc	09/27/2011	187.75
27855	VERIZONW	Verizon Wireless	09/27/2011	482.68
27856	WAL MART	Wal Mart Stores	09/27/2011	172.76
27857	WallaceD	Deborah Wallace	09/27/2011	37.00
27858	WyattJ	Johnathan Wyatt	09/27/2011	47.00
27859	ACCIDENT	Accident Fund Company	10/03/2011	3,022.50
27860	ARCHINAL	Michael Archinal	10/03/2011	500.00
27861	COMCAST	COMCAST	10/03/2011	94.04
27862	Lincoln	Lincoln National Life Ins Co.	10/03/2011	1,370.54

Report Total: 45,051.05

Accounts Payable

Computer Check Register

Genoa Township

2911 Dorr Road
Brighton, MI 48116

(810) 227-5225

User: diane

Printed: 09/15/2011 - 13:13

Bank Account: 101CH

Check	Vendor No	Vendor Name	Date	Invoice No	Amount
10153	EFT-FED	EFT- Federal Payroll Tax	09/29/2011		35.19
					222.00
					327.75
					76.64
					76.64
				Check 10153 Total:	738.22
27827	Equitabl	Equivest Unit Annuity Lock Box	09/29/2011		20.00
				Check 27827 Total:	20.00
10154	FIRST NA	First National Bank	09/29/2011		4,631.43
				Check 10154 Total:	4,631.43
				Report Total:	5,389.65
					5 checks + 223.12
					\$ 5612.77

Township of Genoa
User: diane

Payroll
Computer Check Register

Printed: 09/15/11 12:50
Batch: 605-09-2011

<u>Check No</u>	<u>Check Date</u>	<u>Employee Information</u>		<u>Amount</u>
11958	09/29/2011	KirshJohn	John Kirsch	45.04
11959	09/29/2011	LupiRobert	Robert Lupi	42.96
11960	09/29/2011	MatkinRona	Ronald Matkin	45.04
11961	09/29/2011	PetratPat	Patricia Petrat	45.04
11962	09/29/2011	TengelC	Carol Tengel	45.04
Total Number of Employees: 5		Total for Payroll Check Run:		223.12

**First National
Direct Deposit
Quarterly Payroll
SEPTEMBER 29, 2011**

<u>Employee Name</u>	<u>Credit Amount</u>	<u>Debit Amount</u>
Adam Van Tassell	\$389.18	
Barb Figurski	\$564.50	
John McManus	\$150.96	
Dean Tengel	\$301.92	
Diana Lowe	\$301.92	
Doug Brown	\$389.19	
Kristi Cox	\$283.05	
Genoa Township		\$4,631.43
H.J. Mortensen	\$301.92	
Marianne McCreary	\$452.88	
Jeffrey Dhaenens	\$467.03	
Steve Wildman	\$288.00	
Laura Brookins	\$288.00	
Chris Grajek	\$452.88	
Total Deposit	\$4,631.43	

EFT #: _____
Internet: _____
Date: _____

Accounts Payable
Computer Check Register

Genoa Township

2911 Dorr Road
Brighton, MI 48116

(810) 227-5225

User: angie

Printed: 09/23/2011 - 12:19

Bank Account: 101CH

Check	Vendor No	Vendor Name	Date	Invoice No	Amount
27832	Administ	Total Administrative Services	09/30/2011		869.19
				Check 27832 Total:	869.19
10158	AETNA LI	Aetna Life Insurance & Annuity	09/30/2011		25.00
				Check 10158 Total:	25.00
10159	EFT-FED	EFT- Federal Payroll Tax	09/30/2011		7,303.52 2,680.49 3,956.92 925.40 925.40
				Check 10159 Total:	15,791.73
10160	EFT-PENS	EFT- Payroll Pens Ln Pyts	09/30/2011		574.80
				Check 10160 Total:	574.80
27833	Equitabl	Equinvest Unit Annuity Lock Box	09/30/2011		805.00
				Check 27833 Total:	805.00
10161	FIRST NA	First National Bank	09/30/2011		300.00 2,825.00 45,888.26

Check 10161 Total: 49,013.26

27834 MISDU Michigan State Disbursement Un 09/30/2011 FIPS2616300 207.13

Check 27834 Total: 207.13

27835 SOM-TRE State Of Mich- Dept Of Treasur 09/30/2011 38-1904651 8,330.82

Check 27835 Total: 8,330.82

27836 VION Vion Holdings LLC 09/30/2011 09/30/2011 76.12

Check 27836 Total: 76.12

Report Total: 75,693.05

**First National
Direct Deposit
SEPTEMBER 30, 2011
Bi-Weekly Payroll**

<u>Employee Name</u>	<u>Debit Amount</u>	<u>Credit Amount</u>
Genoa Township	\$49,013.26	
Aaron Korpela		\$1,056.58
Adam Van Tassell		\$1,098.40
Alex Chimpouras		\$1,910.01
Amy Ruthig		\$1,062.86
Angela Williams		\$666.50
Caitlin Nims		\$896.16
Carol Hanus		\$1,224.56
Craig Bunkoske		\$1,598.51
Daniel Schlack		\$1,353.17
Dave Estrada		\$1,280.08
David Miller		\$1,919.20
Deborah Rojewski		\$2,394.05
Dennis Smith		\$268.27
Diane Zerby		\$298.11
Duane Chatterson		\$1,322.39
Eric Hartman		\$884.31
Greg Tatara		\$2,480.20
James Aulette		\$1,246.21
Jeffrey Meyers		\$1,037.51
Jenifer Kern		\$322.88
Joe Szabelski		\$814.46
Judith Smith		\$1,213.59
Karen J. Saari		\$974.00
Kelly VanMarter		\$1,995.97
Kimberly MacLeod		\$1,127.25
Kyle Mitchell		\$881.35
Laura Mroczka		\$1,789.26
Martin Reich		\$1,621.92
Michael Archinal		\$3,526.02
Michael Maahs		\$664.45
Renee Gray		\$1,049.27
Richard Bigham		\$1,721.59
Robin Hunt		\$1,364.41
Scott Lowe		\$1,312.01
Steven Anderson		\$1,697.08
Susan Sitner		\$662.59
Tammy Lindberg		\$955.38
Tesha Humphriss		\$1,322.70
Total Deposit		<u><u>\$49,013.26</u></u>

Accounts Payable
Computer Check Register

Genoa Township

2911 Dorr Road
Brighton, MI 48116

(810) 227-5225

User: angie

Printed: 09/20/2011 - 13:10

Bank Account: 101CH

Check	Vendor No	Vendor Name	Date	Invoice No	Amount
10155	EFT-FED	EFT- Federal Payroll Tax	10/03/2011		1,802.14 457.25 675.01 157.85 157.85
Check 10155 Total:					3,250.10
10156	EFT-PENS	EFT- Payroll Pens Ln Pyts	10/03/2011		212.66
Check 10156 Total:					212.66
10157	FIRST NA	First National Bank	10/03/2011		7,576.16 50.00
Check 10157 Total:					7,626.16
Report Total:					11,088.92

**First National
Direct Deposit
OCTOBER 3, 2011
Monthly Payroll**

<u>Employee Name</u>	<u>Debit Amount</u>	<u>Credit Amount</u>
Genoa Township	\$7,626.16	
Adam Van Tassel		\$547.06
Gary McCririe		\$2,285.26
H.J. Mortensen		\$433.06
Jean Ledford		\$323.90
Paulette Skolarus		\$3,362.49
Steve Wildman		\$330.49
Todd Smith		\$343.90
Total Deposit		<u><u>\$7,626.16</u></u>

12:22 PM

#595 PINE CREEK W/S FUND**Payment of Bills**

September 15 - 28, 2011

<u>Type</u>	<u>Date</u>	<u>Num</u>	<u>Name</u>	<u>Memo</u>	<u>Amount</u>
Check	09/26/2011	2082	Pfeffer, Hanniford & Palka	services provided May 30 -September 20, 2011	-300.00
Grand Total					-300.00

12:24 PM

#593 LAKE EDGEWOOD W/S FUND**Payment of Bills**

September 15 - 28, 2011

<u>Type</u>	<u>Date</u>	<u>Num</u>	<u>Name</u>	<u>Memo</u>	<u>Amount</u>
Check	09/22/2011	2011	AT&T Long Distance	long distance service# 053 465 1001 001	-47.27
Check	09/22/2011	2012	AT&T	Acct517 552-0012 882 3	-33.98
Check	09/22/2011	2013	Brighton Analytical L.L.C.	Sept 8, 2011 invoices	-77.00
Check	09/22/2011	2014	Bullseye Telecom	Inv #12694747 dated 9/9/2011	-357.87
Check	09/26/2011	2015	Pfeffer, Hanniford & Palka	services provided 05/30/2011-September 20, 2011	-1,325.00
Grand Total					-1,841.12

12:27 PM

#592 OAK POINTE WATER/SEWER FUND**Payment of Bills**

September 15 - 28, 2011

<u>Type</u>	<u>Date</u>	<u>Num</u>	<u>Name</u>	<u>Memo</u>	<u>Amount</u>
Check	09/22/2011	2181	AT & T Long Distance	Inv 053 465 0885 001 long distance	-12.03
Check	09/22/2011	2182	Bullseye Telecom	Inv # 12718114 09/10/2011-10/09/2011	-546.12
Check	09/22/2011	2183	FONSON, INC.	Inv # 9618 dated 09/13/2011	-1,604.50
Check	09/26/2011	2184	Pfeffer, Hanniford & Palka	Audit for period ending May 30, 2011-September 20	-1,950.00
Grand Total					-4,112.65

12:16 PM

#504 DPW RESERVE FUND
Payment of Bills
September 15 - 28, 2011

<u>Type</u>	<u>Date</u>	<u>Num</u>	<u>Name</u>	<u>Memo</u>	<u>Amount</u>
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no checks issued

12:13 PM

#503 DPW UTILITY FUND
Payment of Bills
September 15 - 28, 2011

<u>Type</u>	<u>Date</u>	<u>Num</u>	<u>Name</u>	<u>Memo</u>	<u>Amount</u>
Check	09/15/2011	1846	Carol Hanus	Toll free number, internet and postage	-135.93
Check	09/15/2011	1847	U.S. POSTMASTER	Lake Edgewood/Pine Creek quarterly billing Ju	-164.06
Check	09/22/2011	1848	TESHA HUMPHRISS		-200.00
Check	09/22/2011	1849	Genoa Township G/O New User Fund	repayment of loan for trucks	-16,037.00
Check	09/22/2011	1850	Michigan Municipal League	Website classified ads invoice # 5668	-84.80
Check	09/22/2011	1851	Shell Fleet Plus		-3,155.06
Check	09/22/2011	1852	Verizon Wireless	08/13/2011-09/12/2011	-233.13
Check	09/26/2011	1853	Pfeffer-Hanniford-Palka	services provided May 30 -September 20, 201	-500.00
Check	09/28/2011	1854	DPW RESERVE FUND #504	transfer funds per audit	-10,000.00
Grand Total					-30,509.98

GENOA CHARTER TOWNSHIP BOARD

Sept. 19, 2011
6:30 P.M.

MINUTES

Supervisor McCririe called the regular meeting of the Genoa Charter Township Board to order at 6:30 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, Steve Wildman, Jim Mortensen and Todd Smith. Also present were two persons in the audience.

A Call to the public was made with no response.

Approval of Consent Agenda:

Moved by Hunt, supported by Smith, to approve all items listed under the consent agenda, noting that the budget related to the Planning Conference was amended. The motion carried unanimously.

1. Payment of Bills

2. Request for approval of minutes: 9-6-11

3. Request for approval of the budget related to attendance at the Michigan Association of Planning Education Conference.

4. Consider approval of a contract with Pfeffer, Hanniford and Palka to provide professional auditing services.

Approval of Regular Agenda:

Moved by Wildman, supported by Hunt, to approve for action all items listed under the regular agenda. The motion carried unanimously.


5. Discussion regarding newsletter articles.

It was the consensus of the board that the newsletter articles as discussed and presented are approved for publication. No formal action was taken by the board.

6. Consider approval of a proposal from Fillion Construction to install heat in the Township pavilion at a cost of \$6,375.

Moved by Mortensen, supported by Skolarus, to approve the purchase and installation of the electric heaters in the pavilion. The motion carried unanimously.

The regular meeting of the Township Board was adjourned at 6:45 p.m.



Paulette A. Skolarus
Genoa Township Clerk

(Press/Argus 09/23/2011)

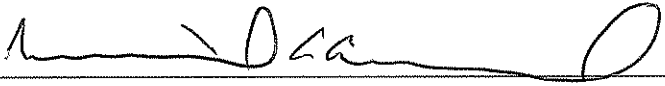
Memorandum

TO: Genoa Township Board

FROM: Adam VanTassell

DATE: September 26, 2011

RE: Additional Workstation Replacements for 2011-2

Manager Review:  _____

CONSIDER APPROVAL OF THE PURCHASE OF 4 NEW
COMPUTER WORKSTATIONS FOR THE TOWNSHIP AT THE
COST OF \$2, 887.43

Per the Township computer replacement schedule (see attached), four workstations are scheduled for replacement next fiscal year 2012. However, with the recent upgrades to Township software, we find that these last 4 workstations are not able to effectively handle the minimum daily workload. Staff proposes replacing these workstations this year.

**MOVE TO APPROVE THE PURCHASE OF 4 NEW COMPUTER
WORKSTATIONS FOR THE TOWNSHIP AT THE COST OF \$2,
887.43**

Dell recommends Windows® 7.

View/Print Cart

 Print Page

Description



OptiPlex 780 Mini Tower

Date & Time: September 26, 2011 2:53 PM CST

SYSTEM COMPONENTS

OptiPlex 780 Mini Tower

OptiPlex 780 Minitower for Standard PSU, Genuine Windows® 7 Professional, 64-bit, English, No Media

Qty 4
Unit Price \$939.00

Save \$258 on Select Optiplex 780 through Dell Small Business! Special Offer - \$1,032.00

Finance at a low rate of 3.25% on any OptiPlex \$799 or more! Promotional rate valid for life of qualifying purchase balance.

Catalog Number: 4 BO1SHFC

Module	Description	Show Details
OptiPlex 780 MT	OptiPlex 780 Minitower for Standard PSU	
Operating System(s)	Genuine Windows® 7 Professional, 64-bit, English, No Media	
Processors	Intel® Core™ 2 Duo E7500 with VT (2.93GHz, 3M, 1066MHz FSB)	
Memory	4GB DDR3 Non-ECC SDRAM, 1333MHz, (2 DIMM)	
Keyboard	Dell USB Entry Business Keyboard with Detachable Palmrest, English	
Monitors	No Monitor	
Video Cards	Integrated Video, Intel® GMA 4500, DisplayPort/ VGA	
Boot Hard Drives	320GB 7,200 RPM 3.5" SATA, 3.0Gb/s Hard Drive with NCQ and 16MB Cache	
Mouse	Dell MS111 USB Optical Mouse	
Systems Management Mode	No Out-of-Band Systems Management	
Hard Drive Mode	No RAID	
Removable Media Storage Device	16X DVD+/-RW SATA, Roxio Creator™ CyberlinkPowerDVD™, No Media	
Thermal	Heat Sink, Mainstream, Minitower	
Speakers	Internal Dell Business Audio Speaker	
Power Supply	Standard Power Supply	
Documentation	Opti 780 Documentation English	

Productivity Software	Microsoft Office Starter: reduced-functionality Word and Excel with ads. No PowerPoint or Outlook
Energy Efficiency Options	No Dell Energy Smart Power Management Settings
Resource DVD	No Resource DVD
Services & Warranty	3 Year Basic Limited Warranty and 3 Year NBD On-Site Service
Installation Services	No Onsite System Setup
Setup and Features Information Tech Sheet	No Tech Sheet
Shipping Packaging Options	Shipping Material for System, Minitower
Processor Branding	Vista Basic Sticker

TOTAL: \$2,724.00

Additional Discounts and Coupons

Free 3-5 Day Shipping & Handling on select Dell Desktops! Special Offer

	Total Price
Sub-total	\$2,724.00
Shipping & Handling	\$140.00
Shipping & Handling Discount	-\$140.00
Tax*	\$163.43
*Exemptions reflected in final checkout page only	
Total Price¹	\$2,887.43

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If you have a separate purchase agreement with Dell the terms and conditions in that agreement are not applicable to purchases of ink, toner or other printer supplies made by you via www.dell.com/supplies; all such sales are subject to Dell's Terms and Conditions of Sale located at dell.com/terms, except for the provision(s) regarding separate purchase agreements. All other sales are subject to Dell's Terms and Conditions of Sale located at www.dell.com/terms.

snCM02

<u>Asset ID</u>	<u>Employee</u>	<u>Date Acquired</u>	<u>Description</u>	<u>Date of Replacement</u>	<u>Serial #</u>	<u>Notes</u>
1	Hunt, Robin	7/1/2006	Pentium 2.4 Tower/2 Gig	7/1/2012		
2	Saari, Karen	12/1/2008	Pentium 733 Tower/128MB	7/1/2012		
3	Williams, Angie	7/1/2004	AMD Athlon XP 2600	7/1/2012		
4	Lindberg, Tammy	7/1/2008	AMD Athlon XP 2600	7/1/2012		
5	Zerby, Diane	12/1/2008	Pentium 733 Tower/128MB	7/1/2013		
6	Yielding, Tesha	7/1/2008		7/1/2013		
7	Gray, Renee	7/1/2011	Dell Optiplex	7/1/2016		
8	Smith, Judi	7/1/2011	Dell Optiplex	7/1/2016		
9	Archinal, Michael	7/1/2011	Dell Optiplex	7/1/2016		
10	VanTassell, Adam	7/1/2011	Dell Optiplex	7/1/2016		
11	Mrocza, Laura	7/1/2011	Dell Optiplex	7/1/2016		
12	Rojewski, Deborah	7/1/2011	Dell Optiplex	7/1/2016		
13	Van Marter, Kelly	7/1/2011	Dell Optiplex	7/1/2016		
14	Ruthig, Amy	7/1/2011	Dell Optiplex	7/1/2016		
15	Sitner, Sue		State supplied computer			
16	Clerk Front Counter	7/1/2009	Unknown	7/1/2015		
17	GIS Computer	7/1/2007	Unknown	7/1/2015		
18	Tax Front Counter	7/1/2005	Unknown	R		
19	Map Room	7/1/2005	Unknown	R		
20	Vacant clerk	7/1/2005	Unknown			
21	Vacant assessing	7/1/2005	Unknown			
	Skolarus, Polly		SEE LAPTOP			
	McCrie, Gary		SEE LAPTOP			

Memorandum

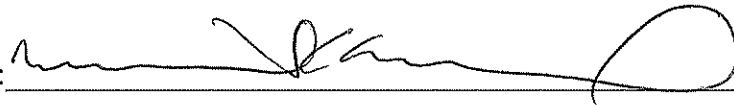
TO: Genoa Township Board

FROM: Adam VanTassell

DATE: September 26, 2011

RE: Additional GIS concurrent use license proposal

Manager Review:



**CONSIDER APPROVAL OF THE PURCHASE OF 1 ARCVIEW
CONCURRENT USE LICENSE FOR THE TOWNSHIP AT THE
COST OF \$3, 150.00**

Due to the increased need for the Township GIS system, Staff is proposing an additional concurrent license use to allow for an additional user to utilize the GIS system, bringing the capacity to 5 users at a time. The GIS system currently sees daily use from the Utility Department (3 users), Planning and Zoning (3 users) and Assessing (2 users).

**MOVE TO APPROVE THE PURCHASE OF 1 ARCVIEW
CONCURRENT USE LICENSE FOR THE TOWNSHIP AT THE
COST OF \$3, 150.00**



Quotation # 20393597

Date: September 23, 2011

ENVIRONMENTAL SYSTEMS RESEARCH INSTITUTE, INC.
380 New York St
Redlands, CA 92373-8100
Phone: (800) 447-9778 Fax: 909-307-3049
DUNS Number: 06-313-4175 CAGE Code: OAMS3

Customer # 292612 Contract # 2011MPA7115

TOWNSHIP OF GENOA
PLANNING DEPT
2911 DORR RD
BRIGHTON, MI 48116

ATTENTION: Adam VanTassell
PHONE: (810) 227-5225
FAX: (810) 227-3420

*To expedite your order, please attach a copy of this quotation to your purchase order.
Quote is valid from: 09/23/2011 To: 12/22/2011*

Material	Qty	Description	Unit Price	Total
87143	1	ArcView Concurrent Use License	3,150.00	3,150.00
			Item Total:	3,150.00
			Subtotal:	3,150.00
			Sales Tax:	0.00
			Estimated Shipping & Handling(2 Day Delivery) :	0.00
			Contract Pricing Adjust:	0.00
			Total:	\$3,150.00

This quote is subject to the terms and conditions of the State of Michigan contract # 071B1300270, Esri contract # 2011MPA7115. Please reference the contract on your Purchase Order; no other terms shall apply.

Once your order is processed, you will receive an email with your software authorization number(s) along with instructions on how to download the software and complimentary data & maps from customers.esri.com.

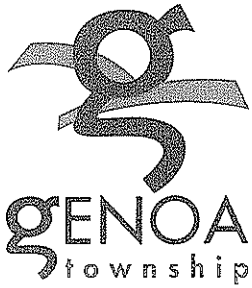
Please note that there are extensions available to add additional functionality to your core ArcGIS Desktop licenses (esri.com/extensions). ArcGIS instructor-led and self-paced training courses are available (esri.com/training). Feel free to contact me for further information or a revised quotation.

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For questions contact: Tanya Emershy Email: temershy@esri.com Phone: (800) 447-9778 x2717

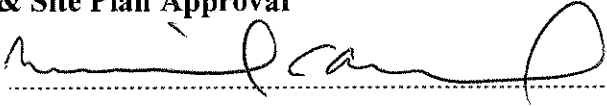
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2911 Dorr Road
Brighton, MI 48116
810.227.5225
810.227.3420 fax
genoa.org

TO: Township Board
FROM: Kelly VanMarter, Planning Director
DATE: September 29, 2011
RE: 242 Community Church - Special Use Application, Environmental Impact & Site Plan Approval

MANAGER REVIEW: 

Honorable Trustees,

I have reviewed the revised site plan (dated 9/21/11) proposing redevelopment of the former Brighton Athletic Club site into a church and community center. This review is based on compliance with the recommendations from the Planning Commission at their September 12, 2011 meeting. In regard to action on the aforementioned, I recommend the following:

Special Use Application: I recommend approval of the special use permit with the following conditions:

1. A cross access agreement shall be provided for the property to the east. This agreement shall require execution of an easement if and when a cross access easement is provided by the property owner to the east. The agreement and easement shall be subject to the review and approval of the Township Attorney;
2. A traffic impact study will be required if the church expands to greater than 800 seats in the auditorium;
3. The applicant will comply with the signalization requirements of the Road Commission;
4. As a condition of this special use permit, the petitioner agrees to comply with all Township Ordinances with particular reference to the noise ordinance;
5. The requirements spelled out in the Tetra Tech letter dated August 21, 2011 and the County Road Commission letter dated August 25, 2011 will be complied with.

Impact assessment: I recommend approval of the impact assessment.

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

1. Due to building orientation, a wall sign meeting Township Ordinance requirements shall be permitted on both the north and east elevations;
2. The gravel in the loading area will be maintained so that it will not have an adverse impact on the adjacent residential properties;
3. The recommendations of the Township Engineer and Livingston County Road Commission as referred to in the special use permit shall be complied with.

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

SUPERVISOR

Gary T. McCrie

CLERK

Paulette A. Skolarus

TREASURER

Rabin L. Hunt

TRUSTEES

H. James Mortensen

Jean W. Ledford

Todd W. Smith

Steven Wildman

MANAGER

Michael C. Archinal

**GENOA TOWNSHIP
APPLICATION FOR SITE PLAN REVIEW**

TO THE GENOA TOWNSHIP PLANNING COMMISSION AND TOWNSHIP BOARD:

APPLICANT NAME & ADDRESS: 2142 Community Church
1661 N. Latson Howell, MI 48843

OWNER'S NAME & ADDRESS: 2142 Community Church
1661 N. Latson; Howell, MI 48843

SITE ADDRESS: 7526 W. Grand River PARCEL #(s): 11-13-400-018

APPLICANT PHONE: (810) 231-0190 OWNER PHONE: (810) 231-0190

LOCATION AND BRIEF DESCRIPTION OF SITE: South side of Grand
River, across the street from the Woodland Health
Center. Former Brighton Athletic Club.

BRIEF STATEMENT OF PROPOSED USE: Re-develop existing building
and site into a Church and Community Center.

THE FOLLOWING BUILDINGS ARE PROPOSED: Re-develop existing building
and construct additions to provide a community center
worship auditorium, cafe, kids spaces and offices

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] Robert Smith

ADDRESS: 1661 N. Latson, Howell, MI 48843

** 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:		
<u>1.) Eric Raveh</u>	<u>of Desine Inc.</u>	<u>at (810) 227-9460</u>
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: <u>[Signature]</u>	DATE: _____
PRINT NAME: <u>Robert Smith</u>	PHONE: <u>810-231-0190</u>
ADDRESS: <u>1661 N. Latson, Howell, MI 48843</u>	

**APPLICATION FOR SPECIAL LAND USE
GENOA TOWNSHIP**

APPLICANT NAME* & ADDRESS: 2142 Community Church
1661 W. Latsen, Howell, MI 48843

OWNER NAME* & ADDRESS: 2142 Community Church
1661 W. Latsen, Howell, MI 48843

SITE ADDRESS: 7526 W. Grand River PARCEL #(s): 11-13-400-018

APPLICANT PHONE: (810) 231-0190 OWNER PHONE: (810) 231-0190

Location and brief description of site and surroundings:

South side of Grand River, across the street from
Woodland Health Center, Former Brighton Athletic
Club at 7526 W. Grand River.

Proposed Use:

Provide overflow spillway in 25' environmental impact setback
for re-development into a community center and church

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.

Construction of the overflow spillway is necessary to
comply with LCDC regulations. This feature is compatible
with the Township's goals and plans and integrates the
natural features into the site design.

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

The existing detention pond is being modified to
accommodate the proposed improvements. The proposal to
place an overflow spillway in the area won't have an
adverse impact upon the site or area.

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

The site is served by existing roadways, public facilities
and services. The proposed overflow spillway is not
anticipated to have an adverse impact upon public facilities

- 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?

The proposed overflow spillway is outside of the limits of
the wetland and no other impacts are anticipated.

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

The proposed overflow spillway does not have any specific criteria listed.

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

BY: [Signature], Robert Smith

ADDRESS: 1661 N. Latson, Howell, MI 48843

*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) Eric Rauch</u>	of <u>Designe Inc.</u>	at <u>(810) 227-9460</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>8-11-2011</u>
PRINT NAME: <u>Robert Smith</u>	PHONE: <u>810-231-0190</u>
ADDRESS: <u>1661 N. Latson, Howell, MI 48843</u>	

GENOA CHARTER TOWNSHIP
PLANNING COMMISSION
PUBLIC HEARING
SEPTEMBER 12, 2011
6:30 P.M.

MINUTES

CALL TO ORDER: At 6:30 p.m., the meeting of the Genoa Township Planning Commission was called to order. Present constituting a quorum were Barbara Figurski, James Mortensen, Chairman Doug Brown, Diana Lowe, Lauren Brookins, John McManus, and Dean Tengel. Also present were Tesha Humphriss, Township Engineer, Brian Borden of LSL, and Kelly VanMarter, Township Planner.

PLEDGE OF ALLEGIANCE: The Pledge of Allegiance was recited.

APPROVAL OF AGENDA: **Motion** by Barbara Figurski to approve the agenda as submitted. Support by John McManus. **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...Request for approval of special use, impact assessment and site plan for a proposed redevelopment of the former Brighton Athletic Club site into a church and community center located at 7526 W. Grand River Brighton. Sec. 13, petitioned by 2|42 Church.

Wayne Perry of Desine Engineering made a presentation to the Planning Commission. Ms. Yanna Simpson, Architect; Pastor Dave Dummit; Campus Pastor Bob Smith; TJ Likens of Wilcox and Eric Rout of Design were present, as well.

The drawings and writings that refer to Lake Edgewood should be amended to refer to Morse Lake.

Pastor Dummit addressed the Planning Commission and gave a brief overview of the proposed plan.

Mr. Perry gave a more detailed presentation. It was agreed that the site plan, special use permit and environmental impact statements discussed tonight would be based on the 2012 project.

It is proposed that the existing structure remain intact. There will be an addition of approximately 15,000 square feet, so most of the building will be used in its

existing form. Parking will be altered to add 369 parking spaces. There will be a large grassy island installed. There will be an additional access to Grand River. There would be a 5' walkway added along Grand River. The existing gravel loading area will be maintained. The existing detention basin will be expanded and adapted to meet current standards. Substantial landscaping will be installed. Most of the existing wooded area to the south of the building will remain untouched.

James Mortensen asked about the sufficiency of parking and off-site parking. Mr. Perry advised the Planning Commission that off-site parking is being discussed with St. Joseph Hospital (across Grand River) and Osprey (to the east of the property in question).

Ms. Simpson addressed the Planning Commission regarding the appearance of the outside of the building. It is proposed that elements be added to the existing building to break up the façade. She believes this would provide visual interest, as well. She gave a full description of the anticipated indoor plans for the building. She gave a brief overview of proposed materials and described where they would potentially be placed on the building.

Brian Borden of LSL discussed the presentation given by the petitioner. This is not a standard church project and is rather unique. The first thing that requires discussion is the detention basin and that it encroaches into the land use setback. He is of the opinion that the proposed improvements will not adversely affect the property and in fact, would improve it.

Brian Borden also discussed the architectural design and materials as proposed. He believes that the Planning Commission has the ability to approve the unique materials and that they would help the appearance of the building.

Brian Borden discussed the proposed landscape plan. He specifically addressed the area where the petitioner has asked that the existing landscaping remain in lieu of the addition of new plantings. Brian Borden believes this is under the purview of the Planning Commission.

Brian Borden discussed the proposed loading area. He believes that there is a requirement that there be a loading area. He believes there is ample room for maneuvering. However, Mr. Borden believes that the base is maintained if and when it is used. He suggests that there be a generic condition imposed requiring the petitioner to maintain the base.

Chairman Brown asked about a traffic management plan. He indicated he has not seen one. James Mortensen suggested that a traffic management plan agreed to by the Township Engineer be required as part of the package.

Brian Borden indicated that the petitioner is not necessarily proposing signage at this time. However, he does want to know what constitutes the "front" of the building for signage. The petitioner is requesting that the east elevation be considered the front since it is on a large curve on Grand River Avenue. Kelly VanMarter indicated it would be appropriate for the Planning Commission to consider that at this time. Chairman Brown asks why two signs would be appropriate. Pastor Dummit responded by indicating that he would like the sign in front to indicate what uses are available in the building, such as: coffee area, worship center, play areas, fields, etc. He thinks it's important for the community to understand that it's a community center and not merely a church where only congregants would be welcome. Additionally, with the angle of the road, he believes that two signs are warranted.

Chairman Brown asked how many business entities will be in the building. Pastor Dummit indicated it is his hope that the church would own all of the businesses, but believes that it is likely there will be at least one other entity leasing initially. James Mortensen indicated that perhaps two signs should be allowed at this time and thereafter, the sign ordinance would govern. Kelly VanMarter indicated that the request is for two wall signs and one monument sign. The ordinance currently allows for one of each.

Brian Borden indicated that the 5' concrete sidewalk is being installed and there is no issue with that. He thinks pedestrian signals at the traffic light would be a great idea to consider for the future. Tesha Humphriss believes it would be included in the traffic management plan for 2015. Kelly VanMarter indicated that the sidewalk/bike path efforts are now moving to the north side of the Grand River corridor in that area. She indicated a pedestrian bridge has not been considered at this point.

James Mortensen believes that it's significant that a curb cut onto Grand River is being added. He asked if the distance between the curb cuts is safe. Tesha Humphriss indicates it's at Bendix Road and therefore, is not a conflict. Mr. Mortensen believes an easement should be granted by this petitioner to the property to the east of the petitioner's property, such as a cross-access easement. The petitioner indicated they will consider it. The petitioner will agree to do it provided there is reciprocity.

Tesha Humphriss referred to the Tetra Tech letter dated August 21, 2011. Tetra Tech found the traffic study to be in compliance. There will be some modifications required for the traffic signals and that will be done by the Road Commission. The current plan calls for connection to the City of Brighton water system. She believes it should be connected to MHOG instead.

Chairman Brown asks what would trigger another study if the center becomes busy during the week. TJ Likens of Wilcox addressed the Planning Commission regarding this issue. The study that was provided addressed the plans for 2012

as well as 2015. Whether the year be 2012 or 2015, the study was designed to address the traffic of involved with a full 800 seat facility. This was agreed upon by the Road Commission and Tetra Tech. James Mortensen indicated a traffic study is not required under the ordinance when the traffic is as low as is anticipated at this time.

Mr. Perry indicated that the petitioner is willing to maintain the delivery area and that a concrete pad will be installed that will be 12' x 50'.

Mr. Tenge inquired about the requirement of masonry work on buildings. Chairman Brown indicated that the building has been on this site for a long time and given the current state of the building, he'd be willing to waive that requirement. The petitioner indicated that the zoning ordinance allows for the use of like materials to the existing building.

The Brighton Fire Department letter dated September 12, 2011 was read into the record. This letter supercedes the letter of August 4, 2011. The petitioner will comply with anything the Fire Department requires.

The petitioner must pay the permit fee of \$30.00. They committed to paying that. This is payable to the Livingston County Road Commission.

The petitioner explained storm water polishing to Chairman Brown at his request. Forebay was explained, as well.

Chairman Brown addressed parking again. He asked if the community service activities would ever occur on Sunday at the same time as church services. The petitioner indicated it is feasible. Brian Borden indicated that adjustments to parking under the ordinance is permissible.

Mr. Tenge asked what the occupancy goal is. The petitioner is hoping to occupy at the end of summer 2012. He inquired whether the project is funded. The petitioner indicated the church is a stand alone entity and is not fully funded yet.

A call was made to the public. No response was made.

Planning Commission disposition of petition

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

Motion by James Mortensen to recommend to the Township Board approval of the special use permit to encroach slightly into the natural features setback to meet the County requirements for the detention basin subject to:

1. A cross access agreement will be provided by the applicant for the property immediately to the east to be executed if and when a similar cross access agreement is provided by the property to the east, subject to the review of the Township Attorney;
2. Approval by the Township Board of the site plan and environmental impact assessments reviewed by Planning Commission this evening;
3. The applicant will perform a traffic impact study if and when the church expands to permit greater than 800 seats in the auditorium per service reviewed this evening;
4. The applicant will comply with the signalization requirements of the Road Commission;
5. The Planning Commission agrees that the site on which this building sits is unusual in view of the wide bend on Grand River Avenue and therefore, two frontages for sign purposes are permitted;
6. As a condition of this special use permit, the petitioner agrees to comply with all Township Ordinances with particular reference to sound amplification;
7. The requirements spelled out in the Tetra Tech letter dated August 21, 2011, the Fire Department letter dated September 12, 2011 and the County Road Commission letter dated August 25, 2011 will be complied with.

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

Motion by Barbara Figurski to recommend to the Township Board approval of the impact assessment, subject to:

1. That the petitioner must seek Township Approval for outdoor activities by way of permit;
2. Subject to approval by Township Board of Special Use Permit and Site Plan;
3. That the parking will be accurately reflected in the impact assessment;
4. Remove reference to outdoor events exceeding noise ordinance.

Support by James Mortensen. **Motion carried unanimously.**

Motion by James Mortensen to recommend to the Township Board approval of the Site Plan, subject to:

1. Review and approval by the Township Board of the special use permit and environmental impact assessments reviewed this evening;
2. The construction materials reviewed this evening are acceptable and will become the property of the Township;

3. The landscaping plan as contained on the site plan is acceptable and the Planning Commission is approving preserving the existing growth, trees and shrubbery, as part of the zoning requirements for landscaping;
4. The applicant will be required to request from the Township Board sign approval although two frontages on the building are recommended for approval;
5. The gravel in the loading area will be maintained so that it will not create dust and other impacts on other residential properties and the concrete pad in the loading area will be replaced;
6. The recommendations of the Township Engineer, Fire Marshall, and Livingston County Road Commission as referred to in the special use permit will be complied with.

Support by Diana Lowe. **Motion carried unanimously.**

Administrative Business:

- *Staff report. There will be an October meeting. It will be Tuesday October 11, 2011.*
- *Approval of July 11th, 2011 Planning Commission meeting minutes. Motion by to approve the meetings as amended. Support by Diana Lowe. **Motion carried unanimously.***
- *Member Discussion. Chairman Brown indicated everyone should download the new ordinances.*

Adjournment. **Motion** by Barbara Figurski to adjourn. Support by John McManus. **Motion carried unanimously.**



LSL Planning, Inc.

Community Planning Consultants

September 6, 2011

Planning Commission
Genoa Township
2911 Dorr Road
Brighton, Michigan 48116

Attention:	Kelly Van Marter, AICP Planning Director
Subject:	2142 Community Church – Special Use and Site Plan Review #2
Location:	7526 W. Grand River – south side of Grand River, between Hacker and Euler Roads
Zoning:	GCD General Commercial District
Applicant:	2142 Community Church 1661 N. Latson Howell, MI

Dear Commissioners:

At the Township’s request, we have reviewed the revised site plan (dated 8/22/11) proposing redevelopment of the former Brighton Athletic Club site into a church and community center. The project also includes improvements to an existing detention basin that will encroach into the required natural feature setback; a component that requires special use approval. The site is located on the south side of Grand River and is zoned GCD General Commercial District. The request has been reviewed in accordance with the Genoa Township Master Plan and Zoning Ordinance.

A. Summary

1. The activities within the natural feature setback are: required by the County; within an already disturbed area (existing detention basin); and are not expected to result in adverse impacts.
2. Proposed building elevations are subject to Planning Commission review and approval.
3. The applicant proposes to preserve existing wooded areas in lieu of new plantings for the east and west buffer zones and detention pond. The Commission may allow this per Section 12.02.13.
4. We recommend a condition that the gravel loading area at the rear of the building be maintained such that it will not impact the adjacent residential property.
5. The applicant requests a determination to allow a wall sign on the east building elevation.
6. The recommendations of the Traffic Impact Study should be included as conditions, if approval is considered.

B. Proposal

The applicant requests site plan approval for redevelopment of the former Brighton Athletic Club into the 2142 Community Church. The project includes a 14,550 square foot expansion of the existing 65,700 square foot building. The Zoning Ordinance lists “churches, temples and similar places of worship and related facilities” as permitted land uses. Beyond the church-related activities, the applicant describes the intended use as a community center. This includes indoor space for active and passive recreation activities and meeting space. This aspect of the project is also consistent with permitted land uses in the GCD.

As noted above, the project also includes grading and utility work for the stormwater detention pond that is to take place within the required natural feature setback. This portion of the project requires special use approval as noted in Section 13.02.04.

C. Special Use Review

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

1. **Master Plan.** The Master Plan and Future Land Use Map identify the site as General Commercial, while adjacent classifications include Manufactured Housing (west) and Office/Research (east). Current zoning designations are consistent with these Master Plan classifications. The detention basin was originally built for the former use (Brighton Athletic Club) and is in need of improvement in accordance with requirements of the County. In general, the proposed activities within the natural feature setback will be consistent with the goal of encouraging the integration of natural features into site design.
2. **Compatibility.** The site is located on the south side of Grand River and is situated between a manufactured housing development and an office center. The property across Grand River is a large medical complex, while the south side of the property is within Lake Edgewood. The improvements to the detention basin will not impact the adjacent or surrounding land uses and, as a requirement of the County, are ultimately intended to improve stormwater management. Because the area is already disturbed and used for stormwater management, the proposed activities within the natural feature setback are not expected to adversely impact the site, area or natural feature itself.
3. **Public Facilities and Services.** The proposed work within the natural feature setback is not expected to adversely impact public facilities and services. In fact, the work is required by the Livingston County Drain Commission and may be viewed as an improvement.
4. **Impacts.** The applicant performed a wetland delineation, which indicates the activities do not encroach into the wetland area – the only encroachment is into the 25-foot setback. As such, no approval is needed from MDEQ. Additionally, the natural area in question has already been disturbed and no additional impacts are anticipated.
5. **Mitigation.** If any potential concerns arise as part of the review process, the Township may require mitigation necessary to limit or alleviate any potential adverse impacts as a result of the proposed activities.

D. Site Plan Review

1. **Dimensional Requirements.** The site plan complies with the dimensional standards of the Zoning Ordinance for the GCD as outlined in the table below.

District	Lot Size		Minimum Setbacks (feet)				Max. Height (feet)	Lot Coverage
	Lot Area (acres)	Width (feet)	Front Yard	Side Yard	Rear Yard	Parking		
GCD	1	150	70	15	50	20 front 10 side/rear	35	35% building 75% impervious
Proposed	9.27 (net)	669	94.4	33.8 (E) 355 (W)	319.7	21.5 front 21.5 side 360 rear	30	18% building 67% impervious

2. **Building Elevations.** The existing building is relatively nondescript with a masonry front façade and metal paneling on the remaining elevations. The proposal includes several improvements to the existing building, including a new front and enhanced east side elevations. The portions of existing metal paneling that remain will be painted to improve their appearance. New materials include wood, metal and glass. One of the more unique aspects of the proposal is the use of recycled materials/items, such as wood and shipping containers. The proposed elevations, including colors and materials are subject to review and approval by the Planning Commission.

3. **Landscaping.** The table below is a summary of the landscaping required by Section 12.02. Provided the Commission agrees with allowing preserved wooded areas in lieu of additional buffer zone and detention pond plantings, the landscape plan is compliant.

Location	Requirements	Proposed	Comments
Front yard greenbelt (N)	17 canopy trees 20-foot width 2-foot tall hedgerow	17 canopy trees 20-foot width 2-foot tall hedgerow (174 shrubs)	Requirement met
Buffer zone "B" (W)	21 canopy trees 21 evergreens 83 shrubs 20-foot width Wall or berm	Existing wooded area and steep slope to be preserved	PC may allow preservation of existing landscaping in lieu of new plantings (Sec. 12.02.13)
Buffer zone "C" (E)	21 canopy trees OR 21 evergreens OR 84 shrubs 10-foot width	9 canopy trees Existing wooded area to be preserved 22-foot width	PC may allow preservation of existing landscaping in lieu of new plantings (Sec. 12.02.12)
Detention pond	15 canopy OR evergreen trees 150 shrubs	4 evergreens 40 shrubs Existing wooded area to be preserved	PC may allow preservation of existing landscaping in lieu of new plantings (Sec. 12.02.13)
Parking	25 trees 2,460 s.f. of landscaped area	26 trees 169 shrubs 5,232 s.f. of landscaped area	Requirement met

4. **Parking.** Given the relatively unique mixture of uses proposed (church and community center/public recreation), we have applied multiple parking standards to the project. The church component requires 267 spaces based on the number of seats in the main auditorium, while the community center/recreation component requires another 100 spaces. As such, the Zoning Ordinance requires 367 spaces for the full project, while 369 are provided. This total includes 14 barrier free spaces, which slightly exceeds the 12 required. Additionally, spaces and drive aisles meet the dimensional requirements for perpendicular parking and two-way traffic.
5. **Loading.** Given the size of the building, Section 14.08.08 requires 3 loading spaces, which are to be located in a rear or side yard not directly visible to a public street. The applicant proposes use of the existing gravel lot at the rear of the building, which provides more than sufficient area for the required loading spaces. The only potential concern is the use of gravel. The applicant has indicated that deliveries will generally be limited to parcel type trucks (UPS) that will not need to utilize the gravel lot. In those limited instances where the loading area will be used, the applicant notes they will be capable of maneuvering on the gravel surface. If the Commission considers approval, we recommend a condition whereby the applicant will monitor and maintain this area if and when used so as to not create a situation where the adjacent residential property is impacted by virtue of dust creation.
6. **Waste Receptacle and Enclosure.** The site plan identifies two primary trash areas – a smaller one on the west side of the building and a larger one at the rear of the building. The former will house smaller push carts that will be transferred on a regular basis to the larger dumpster at the rear of the building.

Both areas meet the required yard location and setback and are screened with 6-foot tall screen walls. The screening for the west side includes siding that matches the building, while the area at the rear will be enclosed with cedar fencing. Both areas provide a concrete base as required.

7. **Pedestrian Circulation.** A 5-foot wide concrete sidewalk is proposed along the property frontage within the Grand River right-of-way, as required. Additional walkways, ranging in width from 7 to 12 feet, are provided along the front and east side of the building, as well as around and within the "pocket park" in the middle of the parking lot. Internal crosswalk connections are also provided. As a side note, discussions have taken place between the Township and applicant regarding a signalized pedestrian crossing at the main drive that would connect the site to the hospital complex.
8. **Exterior Lighting.** The site plan identifies a variety of light fixtures, including pole mounted (23), wall mounted (3) and bollards (4). In terms of the pole mounted fixtures, 12 are standard parking lot lights, while the remaining 11 are a more decorative style. Details and cut sheets provided show that all proposed fixtures are downward directed metal halide, as required.


Given the adjacent property to the west contains a residential land use, the fixtures on that side of the property are mounted at 20 feet, while those on the east side are set at 30 feet. The maximum onsite intensity is 7.5 footcandles, which is within the maximum allowed (10). Readings along property lines are also within acceptable limits.

9. **Signs.** The submittal indicates that they are not seeking sign approval at this time, but will submit a sign package for review and approval at a later date. However, at this time the applicant does request a determination that would allow the east side elevation to be considered the wall that faces a public street for the future installation of a wall sign. (The Planning Director has addressed this matter in greater detail in her memo dated 8/31/11.)
10. **Impact Assessment.** A revised Impact Assessment (8/23/2011) is included with the submittal. In summary, the Assessment notes that the project is not anticipated to create any adverse impacts upon natural features, public services/utilities, surrounding land uses or traffic.
11. **Traffic Study.** Given the anticipated traffic generation, the applicant has included a traffic study (August 2011) with the submittal. In summary, the study recommends use of an internal Traffic Management Plan and modifications to signal timing. If the Commission considers approval, implementation of these recommendations should be included as conditions.
12. **Miscellaneous.** The project includes a number of unique items that are not necessarily regulated by the Zoning Ordinance, but are worth noting for informational purposes. Of note externally are the outdoor patio and sitting areas, a pocket park in the center of the parking lot and indoor/outdoor fireplaces and a fire pit. As a side note, we recommend review of the fireplace and fire pit by the Brighton Area Fire Department. Beyond the main auditorium, the floor plan notes inclusion of a café, office space, study, worship and game rooms, a picnic area and indoor recreation areas.

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



TETRA TECH

August 31, 2011

Ms. Tesha Humphriss, P.E.
Genoa Township
2911 Dorr Road
Brighton, MI 48116

**Re: 2/42 Community Church – Genoa Campus
Site Plan Review #2**

Dear Ms. Humphriss:

As requested, we have performed a second review of the above-referenced site plan as prepared by DESINE INC. dated August 3, 2011 and revised August 23, 2011. Our initial review comments were presented in our August 12, 2011 letter. It appears that the petitioner has satisfactorily addressed the majority of our previous comments with the exception of the following:

DRAINAGE AND GRADING

1. The proposed storm sewer around the building picks up the downspouts and roof drains. Due to the depth of the system and existing grades, the petitioner is proposing to use Nyloplast yard basins by ADS. Eight of the yard basins range from 6-inch diameter to 2-foot diameter with multiple pipes entering and exiting the basins. The petitioner needs to verify the size of the basins with the size and direction of the pipe to ensure that they are sized adequately.

UTILITIES

2. It is our understanding that the Township has discussed and obtained concurrence with the petitioner to connect to the MHOG water system at the entrance to Brighton Village MHP. The service extension is shown connecting to the City of Brighton water main. The revised route for the water service can be revised and submitted with the construction plans.

Since the remaining issue can be resolved throughout the construction plan review process, we have no engineering objections to the approval of the site plan.

Tetra Tech

123 Brighton Lake Road, Suite 203, Brighton, MI 48116
Tel 810.220.2112 Fax 810.220.0094 www.tetrattech.com

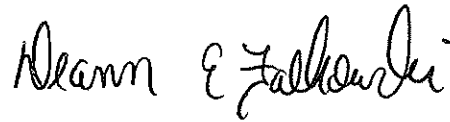
Ms. Tesha Humphriss, P.E.
Genoa Township
Re: 2/42 Community Church – Genoa Campus
Site Plan Review #2
August 31, 2011
Page 2 of 2

Please call if you have any questions.

Sincerely,



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



Deann E. Falkowski, P.E.
Project Engineer

200-12736-11007

Copy: Wayne M. Perry, P.E., DESINE INC.



Brighton Area Fire Department

615 W. Grand River

Brighton, Michigan 48116

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

September 12, 2011

Kelly VanMarter
Genoa Township
2911 Dorr Road
Brighton, MI 48116

RE: Culver's Restaurant
Grand River
Genoa Township
Site Plan Review

Dear Kelly:

The Brighton Area Fire Department has reviewed the above mentioned site plan. The plans were received for review on September 9, 2011 and the drawings are dated August 31, 2011. The project is based on a new 3,945 square foot building (A2 with automatic fire sprinklers). The plan review is based on the requirements of the International Fire Code (IFC) 2009 edition. Previous comments appear to be addressed by the applicant in the revised submittal.

1. The water main location is indicated on the submittal. Provide the location of the closest (2) hydrants to the site. A hydrant shall be located within 100' of the fire department connection.

IFC 912.2
2. The building shall be provided with 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.
3. Future project submittals shall include the address and street name of the project in the title block.

IFC 105.4.2
4. The building shall include the building address on the building. The address shall be a **minimum of 6"** high letters of contrasting colors and be clearly visible from the street. Provide a detail and indicate location on north elevation.

IFC 505.1

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

IFC 506.1

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

Cordially,



Michael D. O'Brian
Fire Marshal

GENOA TOWNSHIP

SEP 22 2011

RECEIVED

IMPACT ASSESSMENT
for
242 COMMUNITY CHURCH
GENOA CAMPUS

Owner:

242 Community Church
1661 N. Latson Road
Howell, Michigan 48843

Prepared by:

DESINE INC.
2183 Pless Drive
Brighton, Michigan 48114

August 3, 2011

Revised: August 23, 2011

Revised: September 19, 2011

A. INTRODUCTION

This impact assessment has been prepared pursuant to Article 18 – SITE PLAN REVIEW of the Zoning Ordinance for the Township of Genoa, Livingston County, Michigan. This assessment addresses the impact of the proposed re-development of the former Brighton Athletic Club on the natural features, economic condition, and social environment of the Township. The site consists of approximately 12.09 acres of property, currently zoned General Commercial (GCD) district, and located South of Grand River Avenue, West of the intersection of Bendix Road, across Grand River from the Woodland Medical Center in Section 13, as shown on Figure 1.

The site plan as submitted presents the applicant's proposal to re-develop the site and reuse the former Athletic Club building as a Church and Community Center. Re-development of this site will be accomplished by significantly remodeling the building interior and exterior, providing building additions and new facades along the North and East building frontage and constructing new drives, parking areas and site improvements. The existing building areas are to be remodeled and converted into worship, community center and office spaces consisting of 65,700 feet of remodeled area. Additions to the North and East sides of the building, consisting of an additional 14,550 square feet, will provide space for the new entry, additional community areas, and a café. A building floor plan layout, included as a part of the site plan submittal, depicts interior building spaces and uses in greater detail.

The existing structure is comprised of a 72 foot long section of brick faced, masonry block building with a 450 foot long steel framed structure with a metal exterior. Proposed building additions will be primarily steel frame structure with glass, wood, brick and metal exterior finishes.

Parking areas and access drives necessary to service this building will be located on the East side of the building, and a cafe parking area located to the North of the building, provides a total of 369 parking spaces on the property. Appurtenant features including new commercial access drives, drive aisles/drop-off lanes, unloading/loading area, patios, sidewalks, outdoor gathering spaces and landscaping are also presented in the site plan. An aerial photograph depicting the proposed site improvements is provided in Figure 2.

This Impact Assessment has been prepared under the direction of Wayne Perry, P.E., DESINE INC., 2183 Pless Drive, Brighton, Michigan 48114. Mr. Perry is a licensed Civil Engineer, providing professional engineering services in Livingston County since 1988 with experience in private and municipal development including projects within Genoa Township and Livingston County.

B. SITE LOCATION / DESCRIPTION

The site, approximately 12.09 acres in area, is currently zoned General Commercial (GCD) district, located South of Grand River Avenue, West of the intersection of Bendix Road across the street from the Woodland Medical Center in Section 13, as shown on Figure 1.

The parcel currently has a 63,072 square foot former athletic club building that has been vacant for several years. Site improvements include asphalt parking areas located along the East and North sides of the existing building, and a gravel service area located to the South of the existing building. A detention basin located in the South portion of the site provides storm water detention for the existing site improvements prior to discharge into Morse Lake. Wooded areas are present on the site around the detention pond, adjacent to Morse Lake and along the East and West property boundaries. The Existing Conditions Plan (sheet C2.0) provides a detailed overview of the existing site features.

Adjacent uses within 100-feet of the property include a three-story office building to the East, the Woodland Health Center to the North, a manufactured home community to the West and Morse Lake to the South. An aerial photograph depicting the proposed site improvements is provided in Figure 2.

C. IMPACT ON NATURAL FEATURES

Natural features on the subject parcel consist of re-established field grasses and shrub/scrub brush in the Northeast quadrant of the parcel, a wet detention basin in the Southeast quarter quadrant of the parcel, a portion of Morse Lake extends into the property along the South side and woodland areas around the detention basin and adjacent to the lake and along the East and West property boundaries.

Existing topography of the site is generally flat to gently rolling terrain in the North 2/3 of the property. The South 1/3 of the site consists of rolling terrain characteristic to the existing storm water detention basin and Morse Lake shoreline. The elevation of the property varies from 972.00 adjacent to Grand River on the North, to a water elevation of approximately 949.50 at Morse Lake at the South end of the parcel. Surface water drainage on the property generally flows from the North toward Morse Lake.

The soils on the upland portions of the property are primarily Boyer-Oshemo loamy sands. These soils are generally well-drained, moderately permeable, loamy sands. Soil classifications are prepared by the United States Department of Agriculture, Soil Conservation Service, and "Soil Survey of Livingston County". The Soils Map, shown in Figure 3, shows the locations of specific soil types as classified.

Re-development of the property will require land balancing in the parking and drive areas to establish final grades and provide proper drainage for reuse of the existing building. Reconstruction of the existing vehicle access, and construction of the new access to and from Grand River, will require adjustment of the existing grade within the road Right-of-way.

The limits of disturbance have been depicted on the grading plan. Grading for this project will maintain the general character of the existing site. Development of this project will result in an overall balancing of the useable materials available on the site with the exporting of excess topsoil and importing of additional fill material. The proposed

elevations and grading of the site mesh with the existing grades at the property lines.

Wooded areas within the site are generally located within the Southern portion of the site and adjacent to the East and West property lines as depicted on the plan. These areas are heavily wooded consisting of hardy, native species such as Oak, Hickory, Maple and Pine. Elm, Willow, Poplar and other less desirable tree species are also present. The proposed improvements will require the removal of limited areas of existing trees to allow for construction of the proposed improvements. These areas are depicted on the site plan within the limits of the disturbance line. Trees outside of the limits of the disturbance line will be preserved.

Landscaping is proposed for the developed portion of the site to reduce the visual impact of the proposed project. The existing vegetative buffer along the East, South and West property lines are to be preserved to minimize the impact on the adjoining properties. All proposed landscaping areas meet or exceed the planting requirements of Genoa Township's current Zoning Ordinance and have been designed to improve the aesthetics of the property. Within the developed portion of the site, areas not otherwise covered, shall have lawn or other vegetative surface cover established.

Wetland areas present on the site are located adjacent to Morse Lake. The existing detention basin has a designed permanent water elevation that will be preserved as a part of the proposed re-development and is operating sufficiently. Minor modifications to the existing detention basin will improve its functionality for the development and provide improved aesthetics in and around the pond area.

Surface drainage characteristics on the property will be affected by the proposed re-development. Construction of additional drives, parking areas and sidewalks will reduce the permeable area of the property resulting in an increase in the surface water runoff generated. A storm water management system has been designed to collect and control the surface water runoff, reducing the discharge rate from the property to that of the pre-development condition.

The proposed changes and modifications to the surface drainage conditions will not significantly impact local aquifer characteristics or groundwater recharge capacity. Surface water runoff from the site will continue to be directed into the existing detention basin, with all runoff ultimately being discharged into Morse Lake. Changes in the surface permeability will affect onsite infiltration, surface water flow path and duration. No significant impact to offsite surface water flow or area aquifer changes are anticipated from the proposed construction and re-development of the site.

Upland wildlife habitats on the property include primarily small woodland, field grass and shrub/scrub brush areas. Wildlife supported in these areas are generally smaller woodland creatures, field animals, and birds. Larger animals, such as deer, may traverse the site. Previous development and use of the property, the adjoining developments and the proximity of Grand River, limits the quality of the upland habitats available. Additionally, the parcel includes a portion of Morse Lake and the adjacent wetland area. The open water

and wetland habitats support a variety of wildlife, including fish, waterfowl and various wetland animals. The lowland and water habitats will remain undisturbed during construction and re-development of the property.

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

D. IMPACT ON STORM WATER MANAGEMENT

The site will require grading to accommodate the development as proposed. Earthwork will be required to direct storm water flow from the developed portions of the site into the storm water collection system. This system will discharge surface water runoff generated by development of the property to the existing detention basin. Grading on the site will mesh with existing grades on adjoining properties. No adverse impact to adjoining properties is anticipated due to the construction and grading of the property.

Surface water runoff generated by the improvements will be collected by catch basins, conveyed with subsurface storm sewer, and discharged to the existing detention basin. Surface water runoff generated by adjacent properties currently flowing onto or across the property have been included in the storm water drainage calculations for modification of the existing detention basin.

The existing detention basin will provide adequate sedimentation and detention of surface water runoff with the installation of a discharge control structure on the existing detention basin outlet pipe and minor changes to the embankment elevation near that new structure. The storm water outlet is designed to discharge storm water at a rate equal to the pre-development discharge rate. Vegetated bio-swales have been incorporated into the site re-development to provide additional storm water polishing and infiltration prior to discharge to the detention basin.

Soil erosion and sedimentation are controlled by the Soil Erosion Control Act No. 347 of the Public Acts of 1972, as amended and is administered by the Livingston County Drain Commissioner. Silt fencing will be required around the majority of the site. The Contractor shall comply with all regulations including control during and after construction.

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

E. IMPACT ON SURROUNDING LAND USES

The property to the North of this site is zoned Non-residential Planned Unit Development

(NR-PUD) and is occupied by the Woodland Health Center. To the East is an Office Service District (OCD) and contains a multi-tenant office building. Property to the West is used as a Mobile Home Park (MHP) district and to the South is Morse Lake with a Medium Density Residential (MDR) district on the other side being utilized as attached condominiums.

The Genoa Township Future Land Use Plan designates this property for General Commercial uses. The surrounding property is designated for a mix of Office, Private Recreational and Medium Density Residential uses.

The proposed use is consistent with the development occurring in the area and is consistent with the long term planning within the Township. The parcels previous use as an athletic club is similar to the petitioners proposed use as a community center.

The proposed community center would provide recreational activities for the greater public including sports courts, gym, racquetball courts, café, classrooms, teen center, indoor children's playscape, an 800 seat auditorium and smaller auditorium / teaching rooms. The community center would be available for the public to use Monday through Saturday 7:00 am to 11:00 pm. The facility would be used by 242 Community Church on Sunday's from 7:00 am to 2:00 pm for services and return for use as a community center from 2:00 pm to 10:00 pm. On Sundays, the main auditorium would be utilized for the adult church services, the small auditoriums / teaching rooms utilized by the children and youth ministries, and the activity spaces for the attendees before and after services.

The facility has the potential to expand to a 1200 seat auditorium with larger youth ministry areas without any exterior additions. Expansion of the seating capacity will require the construction of additional parking spaces South of the building. This expansion is not a part of this Site Plan request and will require future approval.

The landscaping and architecture proposed will allow this site to be developed to compliment the surrounding areas and provide unique and inspiring spaces to the community. The impact of the improvements to the surrounding area has been minimized. All areas disturbed by construction will require restoration.

The outdoor spaces have been designed to allow for community events when permitted by Genoa Township. Activities may include outdoor services, picnics, children's events (I.E. egg hunts, etc.). The site layout has been created to provide adequate access, parking and buffering for these events. The creation of two large parking areas with a pocket park feature between them allows for the back parking area to provide activities that are sufficiently screened from the neighbors and for the front parking areas to be utilized for vehicular traffic. Outdoor activities and events shall obtain a permit from Genoa Township where required by ordinance.

Ambient noise levels on and around the property are largely generated by Grand River vehicle traffic. The daily activities of the proposed church and community center uses are not anticipated to significantly increase or exceed the existing noise levels in the area.

Outdoor activities and events shall obtain a permit from Genoa Township where required by ordinance.

The location of the building provides a significant buffer between site activities and the mobile home park to the West. Preservation of the existing vegetative buffer along the property line provides additional protection from activities on the property.

All site lighting shall meet the requirements of the Genoa Township Zoning Ordinance. Exterior building mounted site lighting shall be shielded and down directed. Pole mounted site lighting is proposed for this project. All pole mounted lighting will be shielded and down directed on the site. Pedestrian bollard lighting will be located near the building entrance to enhance the aesthetics and provide a safer pedestrian walkway. General site lighting, excluding safety and emergency lighting, shall be used between the times from dusk to 12:01 a.m. and from 5:00 a.m. to dawn.

Interior building lighting that may be visible from the exterior will be limited to the North and East Elevations of the building. The West and South elevations, adjacent to residential uses, will not have any large glass areas. Light from the building interior will be seen from the building frontage, but will not provide any adverse glare or light pollution to the area. General interior lighting, excluding safety and emergency lighting, shall be used during the regular building hours.

The existing building façade is outdated and does not provide a desirable aesthetic character to the area. The architect has addressed this by proposing an addition along the building front (North side) and the East side elevations that are most visible from Grand River. The addition on the East side of the building will provide a main entrance feature and an inviting façade. A two-story glass corridor is proposed from the East entry to the front of the building, allowing both light into the building and the ability for people to see activity inside of the building from the outside. An indoor children's playscape is adjacent to this glass corridor and will be constructed using re-conditioned steel shipping containers for a portion of the structure. Use of the containers as part of the structure will provide the basis for the theme of the children's play area. Moving West through the corridor is the café' and general gathering spaces including an outdoor patio area. These two features were placed next to each other with the intentions to provide a place where parents could gather in the café and allow children to play throughout the week. The re-modeled building interior flows with the additions and allows for the different features and spaces to be used efficiently. The locations and adjacencies of the different building features have been carefully thought through and allow for a unique place for community activities. The floor plans and elevations submitted provide detail of these areas. The goal is to take a building providing a low quality of aesthetic character and create a high-quality and high-character space by drawing inspiration from the community and providing a building that compliments these qualities.

The proposed use of the property as a church and community center will not create any significant emissions of smoke, airborne solids, odors, gases, vibrations, noise or glare discernable and substantially annoying or injurious to person and/or property beyond the lot

lines. No significant change in air pollution is anticipated.

The Contractor shall be responsible for initiating and maintaining adequate dust control measures during and after construction until the project site is fully stabilized and a vegetative cover established. Dust control measures used during construction may consist of site watering, mulching of completed areas, installation of windbreak fencing, and application of chemical dust control materials. The site will comply with the performance standards contained in Section 13.05 of the Township Zoning Ordinance.

F. IMPACT ON PUBLIC FACILITIES AND SERVICES

The Livingston County Sheriff and Michigan State Police will provide Police protection. Public safety services required to accommodate the proposed use are anticipated to be minor.

The Brighton Area Fire Department as a part of an existing governmental agreement will provide fire protection service. A fire hydrant exists on the property within the Grand River Avenue Right-of-way and two additional hydrants are proposed within the subject property to provide additional fire protection capabilities. The building will require a fire suppression system throughout to provide protecting to the community center. A fire suppression line will be installed into the building to provide the appropriate water supply. A Fire Department Connection is located near the front of the building along with a Knox box and required address labeling to meet the Fire Departments requirements. No significant increase in fire protection services are anticipated as a result of the re-development of this building and the proposed uses.

An improved entrance at the traffic light and the installation of a new entrance at the East of the property will provide improved access for emergency vehicles. A wide drive aisle located adjacent to the building will serve as a fire lane and appropriate signage is designated along the back drive lane to restrict parking in designated drives.

Re-development and reuse of this building will not create any direct adverse impact on the public schools.

G. IMPACT ON PUBLIC UTILITIES

The property is presently within the municipal sewer and water districts. The existing building is currently connected to the municipal sewer system and is served by an on-site well.

Water service to the building will be provided from a new water main proposed along the East side of the building. A water service lead will be connected to this main to supply the building and a fire suppression line will also be provided from this main. An easement for repair, maintenance and access will be provided for this connecting water main. Capacity

is available within the existing water system to provide adequate service to this development.

The existing sanitary service to the building will be updated to provide an additional level of service for future demands for the building. A new tap at the existing manhole in Grand River is proposed to provide better maintenance and inspection capabilities. Capacity is available within the existing sanitary sewer system to provide adequate service for the proposed use.

The site is serviced by electric, gas, phone and cable systems located along Grand River Avenue. Utility companies have indicated the ability to provide the necessary utilities to operate the proposed building.

Collecting the surface water with catch basins, conveying it with storm sewer and detaining it in the updated detention pond will handle storm water management on-site. The existing detention pond can accommodate the proposed development with some minor upgrades including a control structure on the existing outlet and a small increase in the grade height along the South end of the pond. Storm water will be released into Morse Lake at a rate equal to that of the pre-developed conditions. Additional information on the storm water management plan can be found within the Site Plan and in section D above.

All solid wastes will be properly disposed of through a licensed disposal firm on a regular basis. A dumpster screen wall is proposed behind the building (South side) that will provide an area for solid waste disposal. A pull-cart screen wall is proposed West of the café that provides an area for solid waste to be disposed of adjacent to that use. The pull-carts will then be emptied either by the refuge company or into the dumpster in back when needed. This screening area has been designed to utilize the same building materials and compliments the adjacent architecture as to provide pull-cart screening that looks like part of the building. Additional landscaping is provided in this area to further enhance its aesthetics.

Delivery services will generally be limited to parcel trucks, such as UPS, and similar single axle vehicles. These delivery service providers will use available parking and drop off areas during their deliveries. Use of the site as a community center and church will necessitate a very limited need for loading / unloading of semi trucks and large, multi axle delivery vehicles. Any large vehicle accessing the site will be capable of maneuvering on the gravel surface located at the rear of the building and will utilize the concrete pad for loading and unloading purposes.

H. STORAGE AND HANDLING OF ANY HAZARDOUS MATERIALS

The proposed church and community center uses within the building will not use, store, generate and/or discharge potentially polluting materials. Small quantities of hazardous material such as cleaning products and lawn care chemicals may be stored on-site.

I. TRAFFIC IMPACT STUDY

Access to the parcel from Grand River Avenue will be provided at two locations. The Westerly access will be an updated driveway located at the existing traffic light currently servicing the property. This driveway will provide an ingress lane, a left turn egress lane and a straight/right turn egress lane. The proposed Easterly driveway will provide an ingress lane and a right turn only egress lane. Both access locations have been reviewed and approved by the Livingston County Road Commission.

A traffic impact study for the development has been prepared by Wilcox and is submitted with the Site Plan packet.

Pedestrian access to the property will be provided by a sidewalk to be constructed along Grand River Avenue. This sidewalk will be connected to the front of the building with a designated sidewalk and crosswalk to the patio area. Sidewalks throughout the property provide safe and efficient means for pedestrians to access the church and community center. The pocket park feature located between the two large parking areas provides a safe way for pedestrian traffic to funnel through the parking lot and into the main entrance. A raised pedestrian crosswalk provides a visual barrier and a safer traversing directly in front of the side entry. Lighted bollards in this location will add to the safety at night. No adverse impact on pedestrian traffic in the area is anticipated as a result of developing the proposed project.

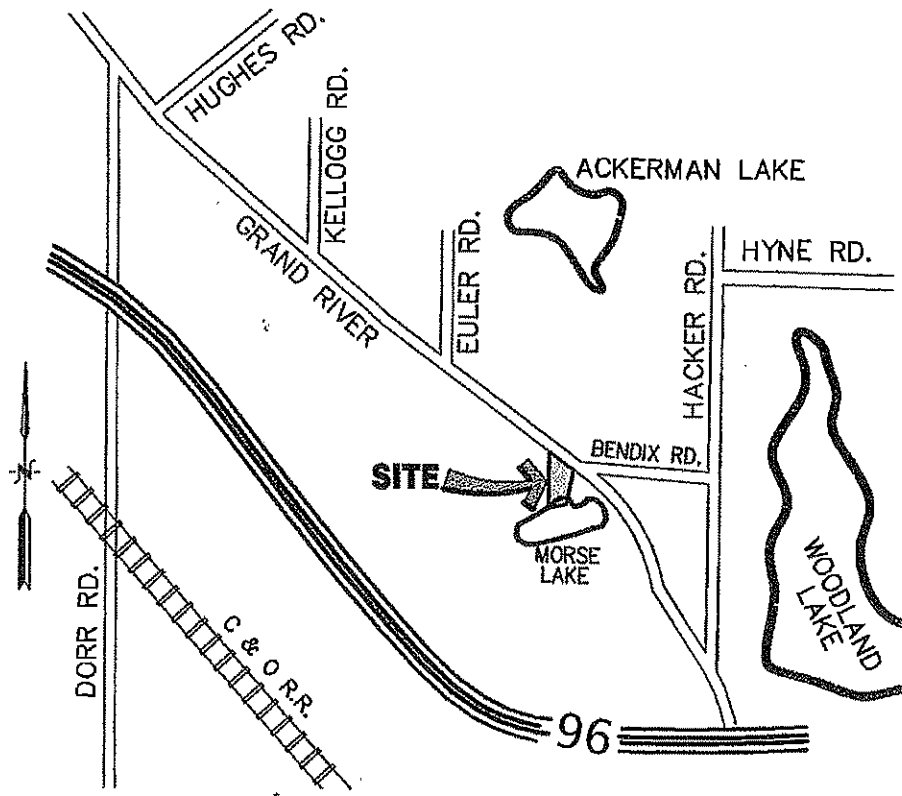
J. HISTORIC AND CULTURAL RESOURCES

The existing facility was constructed in the late 1970's and does not have any major historic significance on a local, regional or state level.

K. SPECIAL PROVISIONS

No special provisions or requirements are currently proposed for this facility.

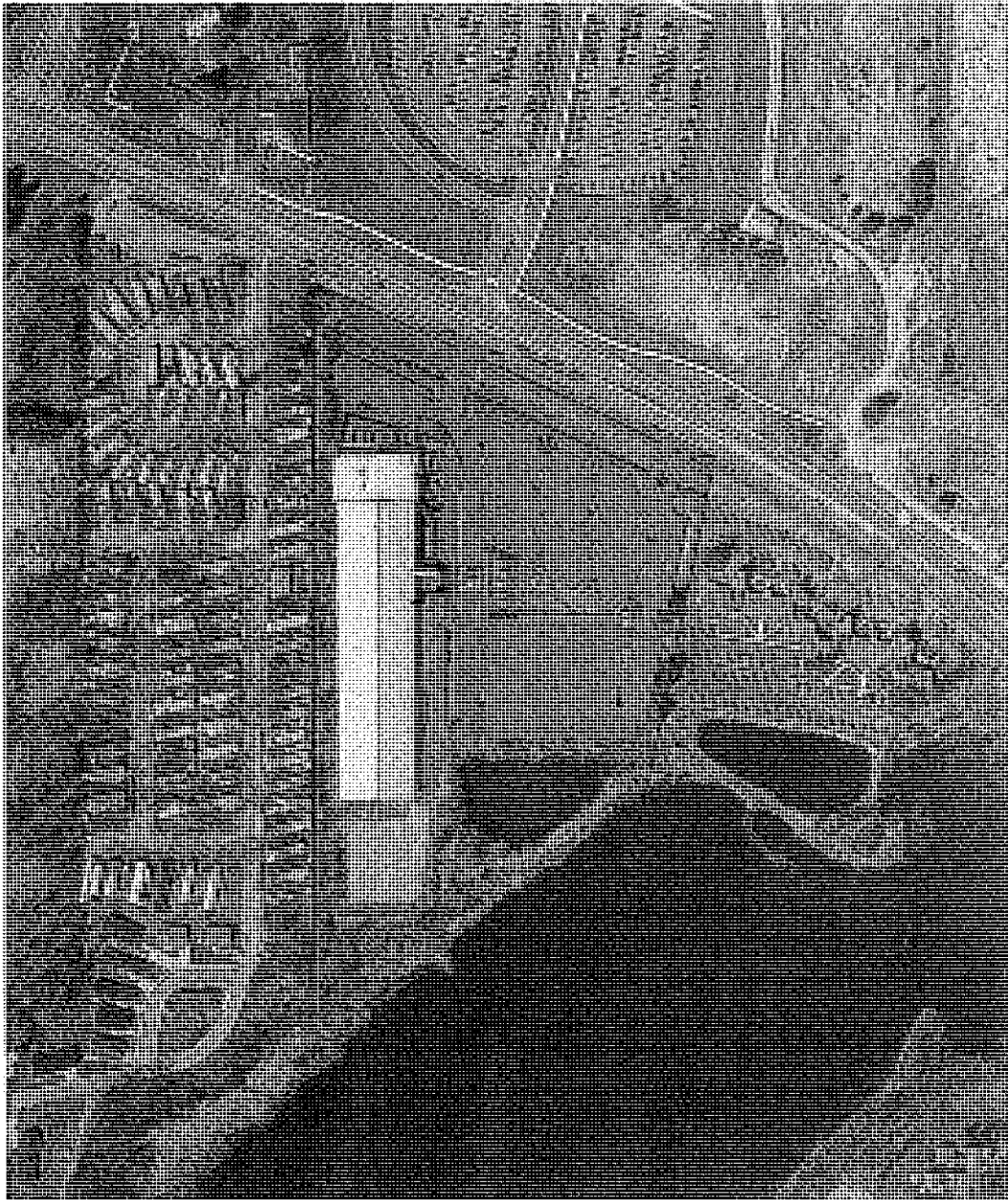
FIGURE 1



LOCATION MAP

NOT TO SCALE

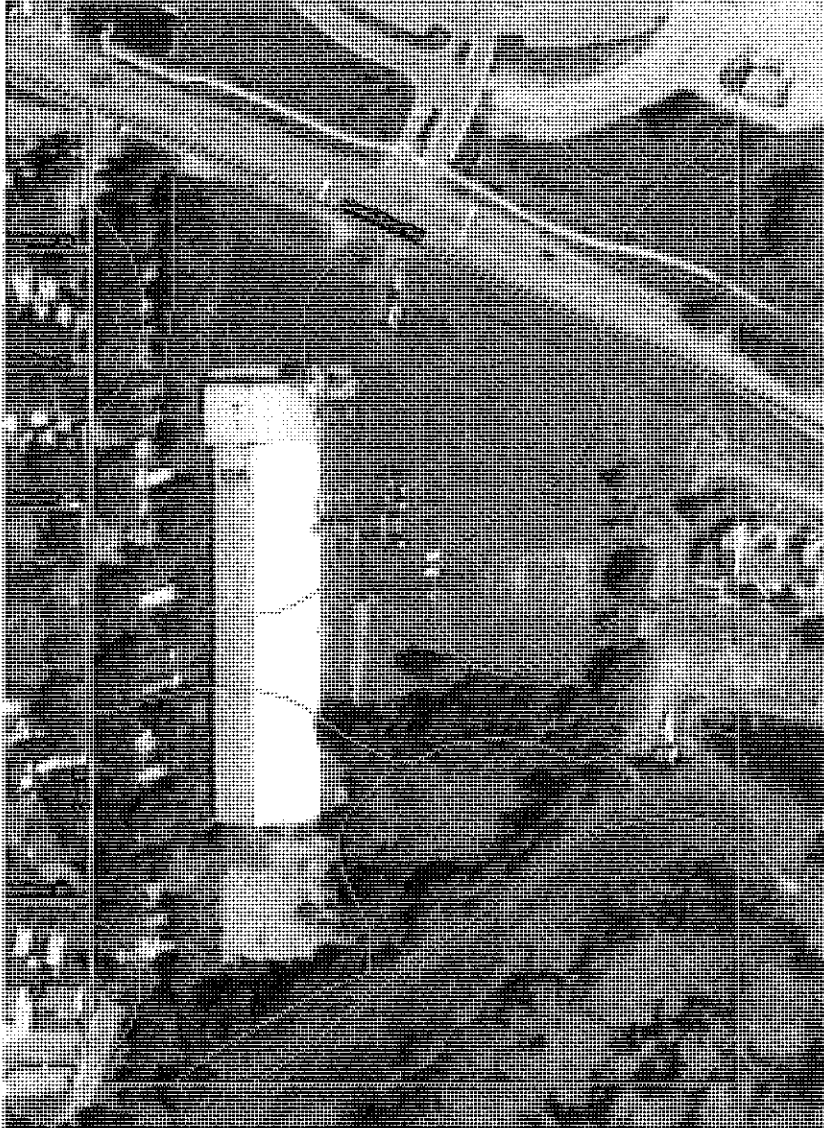
FIGURE 2



AIRPHOTO WITH SITE IMPROVEMENTS

NOT TO SCALE

FIGURE 3



Map Unit Symbol	Map Unit Name
BIB	Boyer-Oshlerno loamy sands, 2 to 6 percent slopes
BIC	Boyer-Oshlerno loamy sands, 6 to 12 percent slopes
BIE	Boyer-Oshlerno loamy sands, 16 to 25 percent slopes
BwA	Bronson loamy sand, 0 to 2 percent slopes
CvA	Conover loam, 0 to 2 percent slopes
FrB	Fox-Boyer complex, 2 to 6 percent slopes
FrC	Fox-Boyer complex, 6 to 12 percent slopes
FrD	Fox-Boyer complex, 12 to 18 percent slopes
FrE	Fox-Boyer complex, 16 to 25 percent slopes
Ho	Houghton muck
MoB	Miami loam, 2 to 6 percent slopes
W	Water

SOILS MAP

NOT TO SCALE

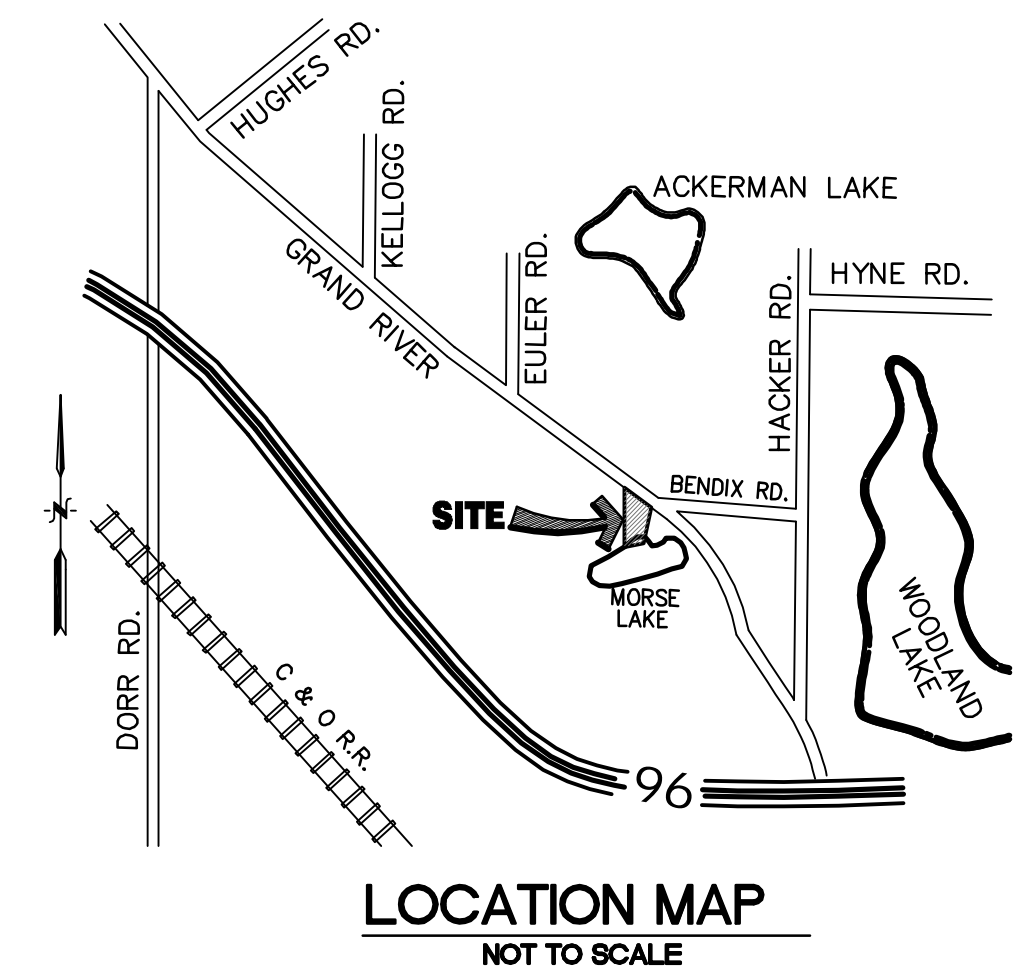
PROPOSED SITE PLAN FOR



2/42 COMMUNITY CHURCH

helping.people.take.next.steps.with.God

GENOA CAMPUS TO BE LOCATED AT 7526 W. GRAND RIVER
PART OF THE NORTHWEST 1/4 AND PART OF THE SOUTHEAST 1/4
OF SECTION 13, T2N-R5E, GENOA TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN

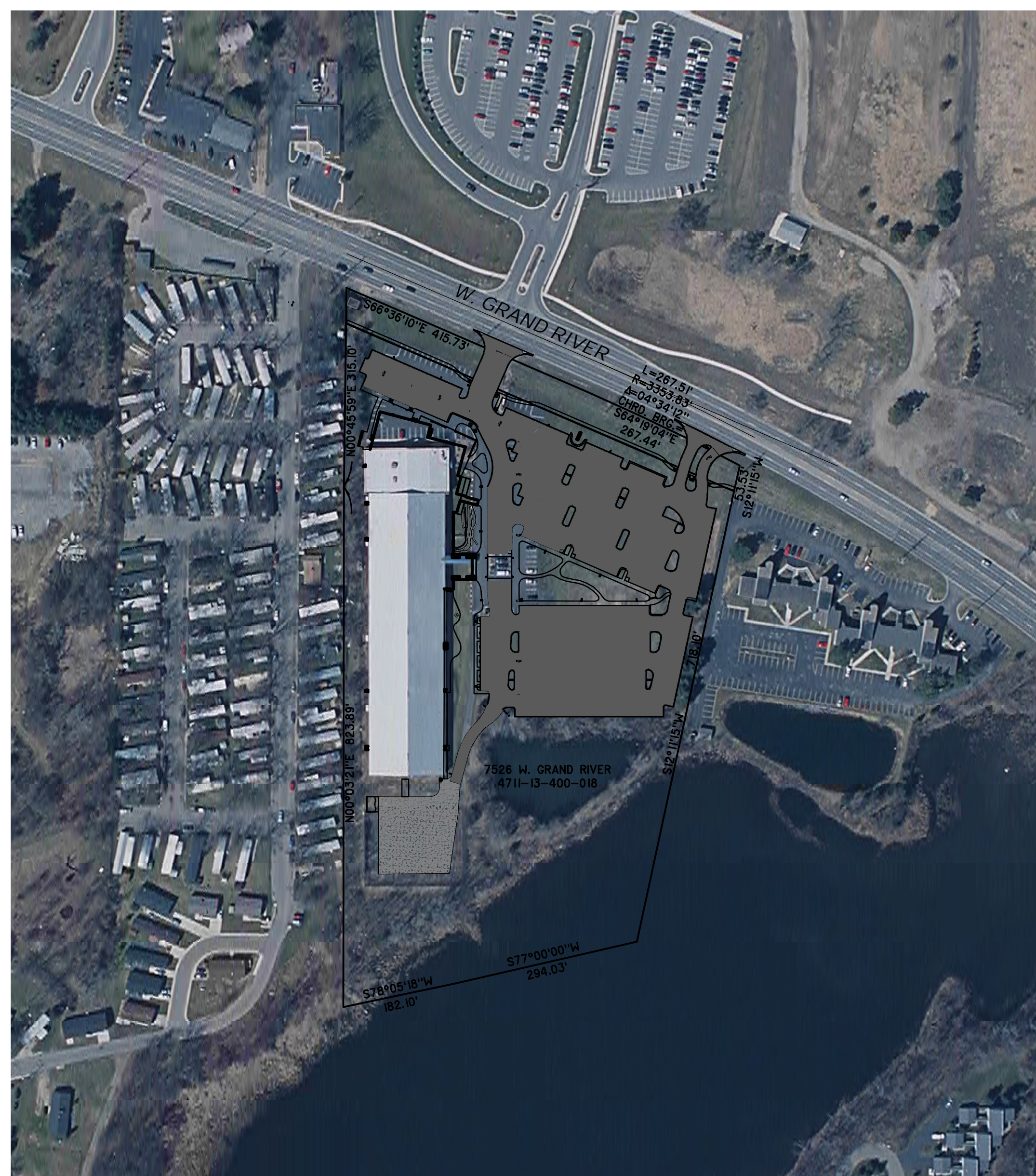


LEGAL DESCRIPTION

Part of the Northwest 1/4 and part of the Southeast 1/4 of Section 13, T2N-R5E, Genoa Township, Livingston County, Michigan more particularly described as follows: Commencing at the East 1/4 Corner of Section 13; thence along the East-West 1/4 line of Section 13, N88°18'07" W, 2058.55 feet, to the POINT OF BEGINNING of the Parcel to be described, said point being S 12°11'15" W, 105.46 feet from a point previously described as the point of beginning, (said point having been previously described as bearing the following three (3) courses from the East 1/4 Corner of Section 13: 1) S 01°07'10" W, 474.50 feet; 2) N 76°44'40" W, 1543.60 feet; 3) N 63°15'40" W, 584.62 feet); thence S 12°11'15" W, 718.10 feet; thence S 77°00'00" W, 294.03 feet; thence along the North line of "Lake Edgewood Townhomes", Replat No. 3 of Livingston County Condominium Subdivision Plan No. 11, as recorded in Liber 2069, Page 989, Livingston County Records, S 78°05'18" W, 182.10 feet; thence N 00°03'21" E (recorded as due North), 823.89 feet the Center of Section 13, as recorded in L.S.C. #1299, Livingston County Records; thence along the North-South 1/4 line of Section 13, as monumented, N 00°45'59" E 315.10 feet; thence in Grand River Avenue, along the South Line of the area conveyed in fee to the County of Livingston, as recorded in Liber 153, Page 81, Livingston County Records, on the following two (2) courses: 1) S 66°36'10" E, 415.73 feet; 2) southeasterly on an arc right, having a length of 267.51 feet, a radius of 3353.83 feet, a central angle of 04°34'12", and a long chord which bears S 64°19'04" E, 267.44 feet; thence S 12°11'15" W, 53.53 feet, to the POINT OF BEGINNING.

TAX I.D. 4711-13-400-018

**SITE AREA = 12.09 ACRES
(526,640 S.F.)
AREA OF DISTURBANCE = 8.25 AC.**



SHEET INDEX

- C2.0 EXISTING CONDITIONS PLAN
- C2.1 DEMOLITION PLAN
- C3.0 SITE DEVELOPMENT PLAN
- C4.0 GRADING AND PAVING PLAN (NORTH)
- C4.1 GRADING AND PAVING PLAN (SOUTH)
- C4.2 RETAINING WALL NOTES AND DETAILS
- C4.3 RETAINING WALL NOTES AND DETAILS
- C5.0 UTILITY PLAN (NORTH)
- C5.1 UTILITY PLAN (SOUTH)
- C5.2 UTILITY CALCULATIONS
- C6.0 SOIL EROSION AND WATERSHED PLAN
- C6.1 SOIL EROSION NOTES AND DETAILS
- C7.0 LANDSCAPE PLAN
- C7.1 LANDSCAPE AND BIO-SWALE NOTES AND DETAILS
- C8.0 APPROACH PLANS, NOTES AND DETAILS
- C9.0 LIGHTING PLAN
- C9.1 LIGHTING DETAILS
- C10.0 SITE DEVELOPMENT NOTES AND DETAILS
- C10.1 SITE DEVELOPMENT NOTES AND DETAILS
- C10.2 STORM SEWER NOTES AND DETAILS
- C10.3 SANITARY SEWER AND WATERMAIN NOTES AND DETAILS
- A 1 FLOOR PLANS
- A 2 ELEVATIONS
- A 3 ELEVATIONS

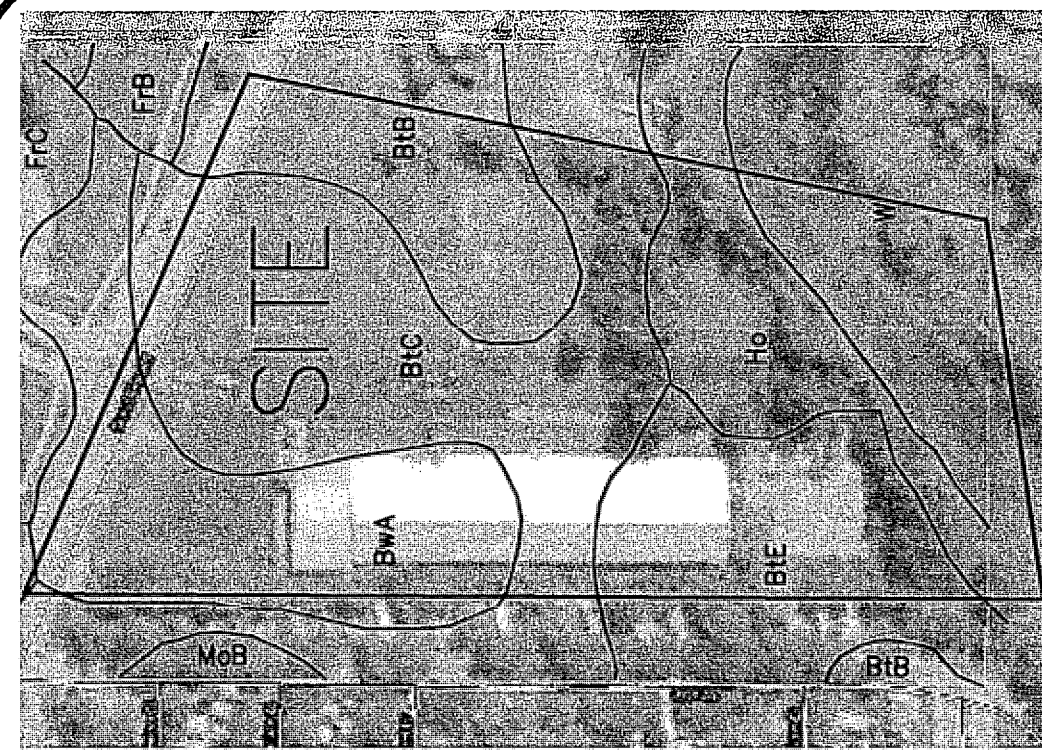
OWNER/DEVELOPER
2142 COMMUNITY CHURCH
1661 N. LATSON ROAD
HOWELL, MI. 48843
(810) 231-0190

ARCHITECT
VISIONEERING STUDIOS
P.O. BOX 19700
IRVINE, CA. 92623-9700
(877) 258-7879

CIVIL ENGINEER/LAND SURVEYOR
DESINE INC.
2183 PLESS DRIVE
BRIGHTON, MI. 48114
(810) 227-9533



REVISION DATE	SCALE:	N/A
8-22-11	PROJECT No.:	9101777
9-06-11	DWG NAME:	777-COV
9-21-11	PRINT:	



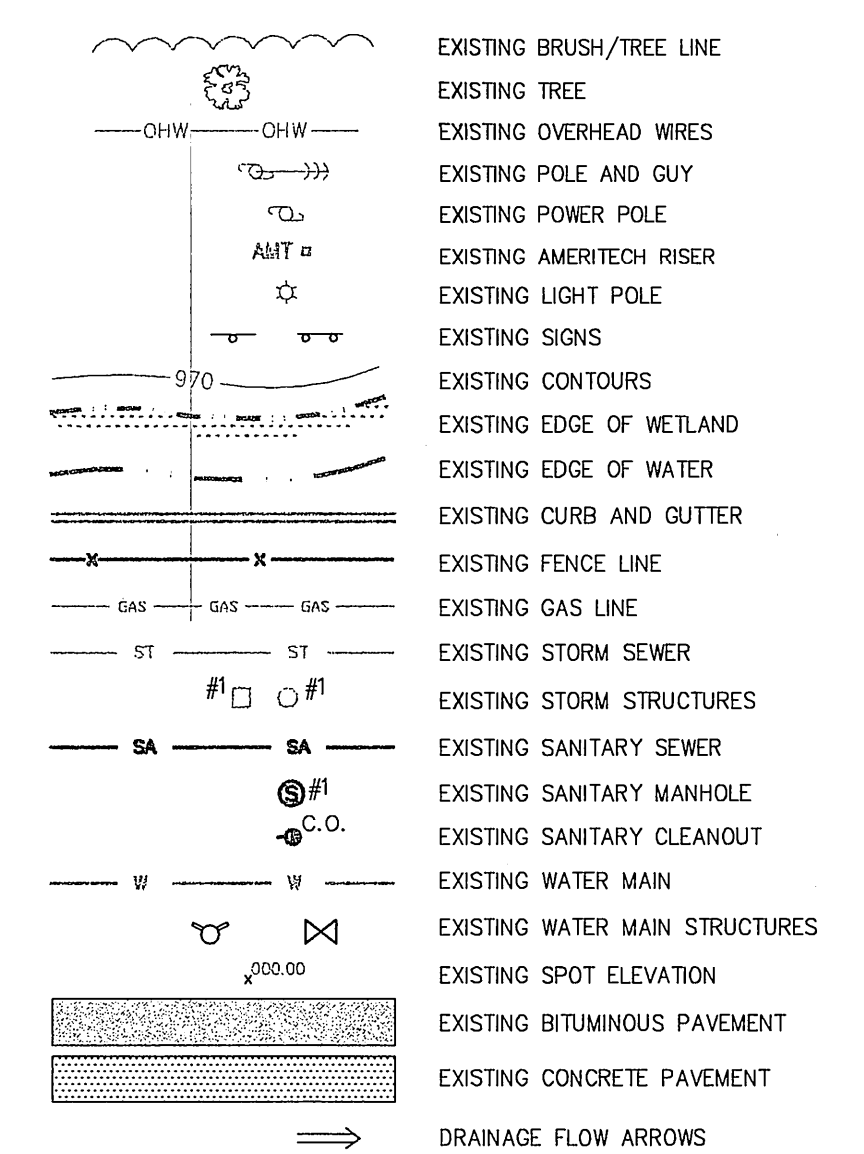
SOILS MAP

NOT TO SCALE
NOTE: REFER TO SHEET C6.1 FOR SOILS LEGEND

UTILITY STRUCTURE INVENTORY

S-9 RM 965.66 12" NW 953.10 12" SE 952.96	CB-34 RM 970.90 12" W 964.90 12" E 964.80
S-10 RM 975.74	CB-35 RM 970.90 12" W 965.90 12" E 965.20
S-11 RM 975.51 12" W 954.21 12" S 954.21	CB-36 RM 971.95 12" N 966.55 12" E 965.95
S-100 RM 969.26 8" N 953.99 12" W 953.66 12" E 953.62	CB-37 RM 972.28 12" N 967.18 12" W 967.48 12" S 967.38

LEGEND



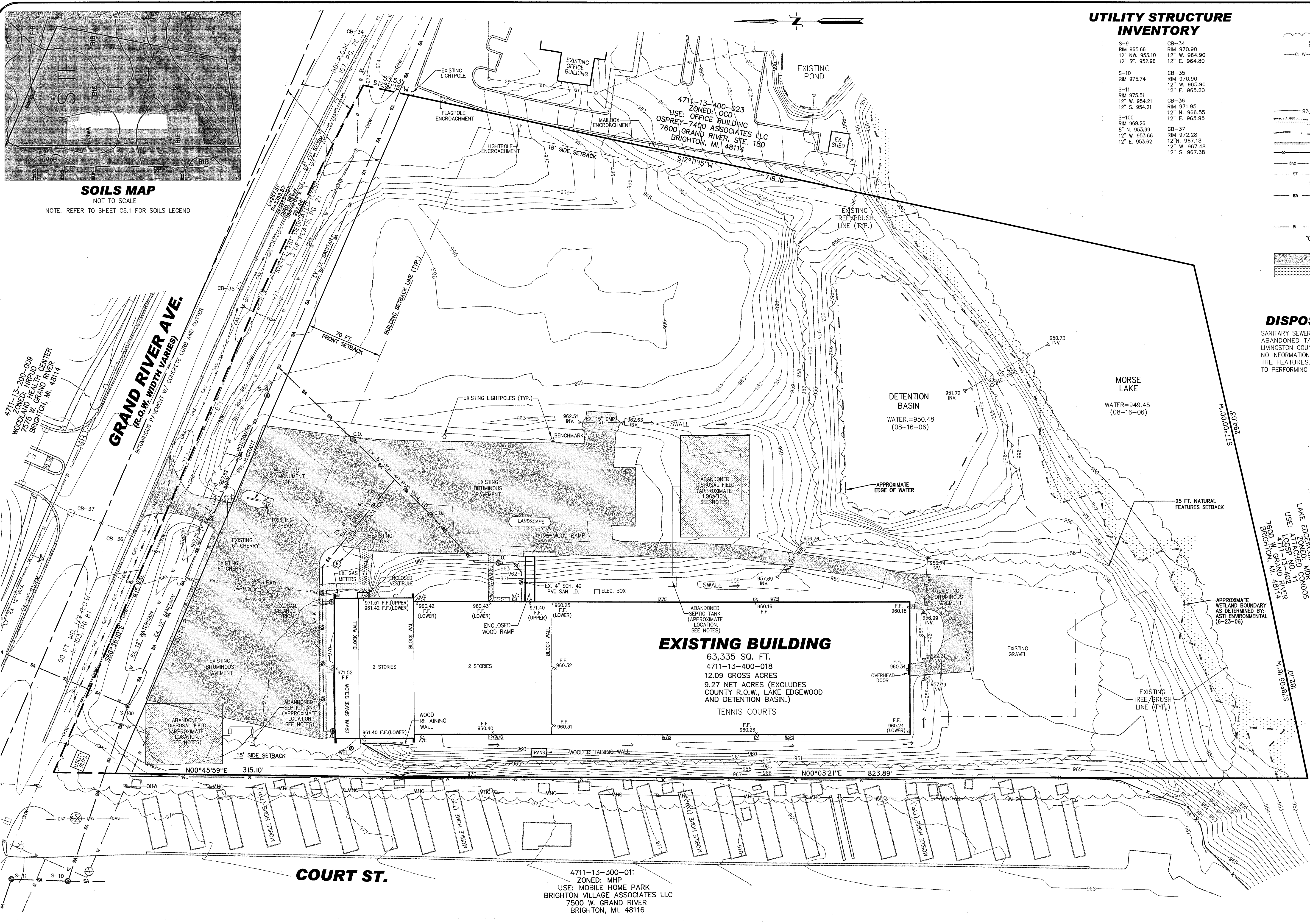
DISPOSAL FIELD NOTES:

SANITARY SEWER LEAD, ABANDONED DISPOSAL FIELD AND ABANDONED TANK LOCATIONS PER DOCUMENTS FROM LIVINGSTON COUNTY BUILDING DEPARTMENT DATED 9-27-93. NO INFORMATION IS AVAILABLE TO THE CURRENT STATE OF THE FEATURES. CONTRACTOR SHALL FIELD VERIFY PRIOR TO PERFORMING ANY WORK IN THOSE AREAS.

BENCHMARKS

BENCH MARK 205
THE WORD "OPEN" ON HYD. FLANGE ON THE S. SIDE GRAND RIVER AND E. SIDE OF ENTRANCE TO B.A.C. ELEVATION=969.19 (NGVD 29 DATUM)

BENCH MARK 208
S. ANCHOR BOLT OF LIGHT POLE BASE ON THE E. SIDE OF PARKING AREA. ELEVATION=965.55 (NGVD 29 DATUM)



3 WORKING DAYS BEFORE YOU DIG CALL MISS DIG 800-482-7171 (MI. FREE)

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CALL MISS DIG.



DESIGN: EDR/WMP	DATE	REVISION-DESCRIPTION
DRAFT: L.F.	8-22-11	REV. PER REVIEW COMMENTS RECEIVED 8-17-11
CHECK: EDR	9-21-11	REV. PER PLANNING COMMISSION COMMENTS OF 9-12-11

DATE	REVISION-DESCRIPTION	DATE	REVISION-DESCRIPTION

242 COMMUNITY CHURCH
GENOA CAMPUS
7526 W. GRAND RIVER

EXISTING
CONDITIONS
PLAN

CLIENT:
242 COMMUNITY CHURCH

1661 N. LATSON RD.
HOWELL, MI. 48843
(810) 231-0190

SCALE: 1"=40'
PROJECT No.: 9101777
DWG NAME: 777-C2.0
PRINT: SEP 21 2011

C2.0

LEGEND

- EXISTING BRUSH/TREE LINE
- EXISTING TREE
- EXISTING OVERHEAD WRES
- EXISTING POLE AND GUY
- EXISTING POWER POLE
- EXISTING AMERITECH RISER
- EXISTING LIGHT POLE
- EXISTING SIGNS
- EXISTING CONTOURS
- EXISTING EDGE OF WETLAND
- EXISTING EDGE OF WATER
- EXISTING CURB AND GUTTER
- EXISTING FENCE LINE
- EXISTING GAS LINE
- EXISTING STORM SEWER
- EXISTING STORM STRUCTURES
- EXISTING SANITARY SEWER
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY CLEANOUT
- EXISTING WATER MAIN
- EXISTING WATER MAIN STRUCTURES
- EXISTING SPOT ELEVATION
- EXISTING BITUMINOUS PAVEMENT TO BE REMOVED
- EXISTING CONCRETE PAVEMENT TO BE REMOVED
- AREA OF TREE/BRUSH REMOVAL

DEMOLITION NOTES:

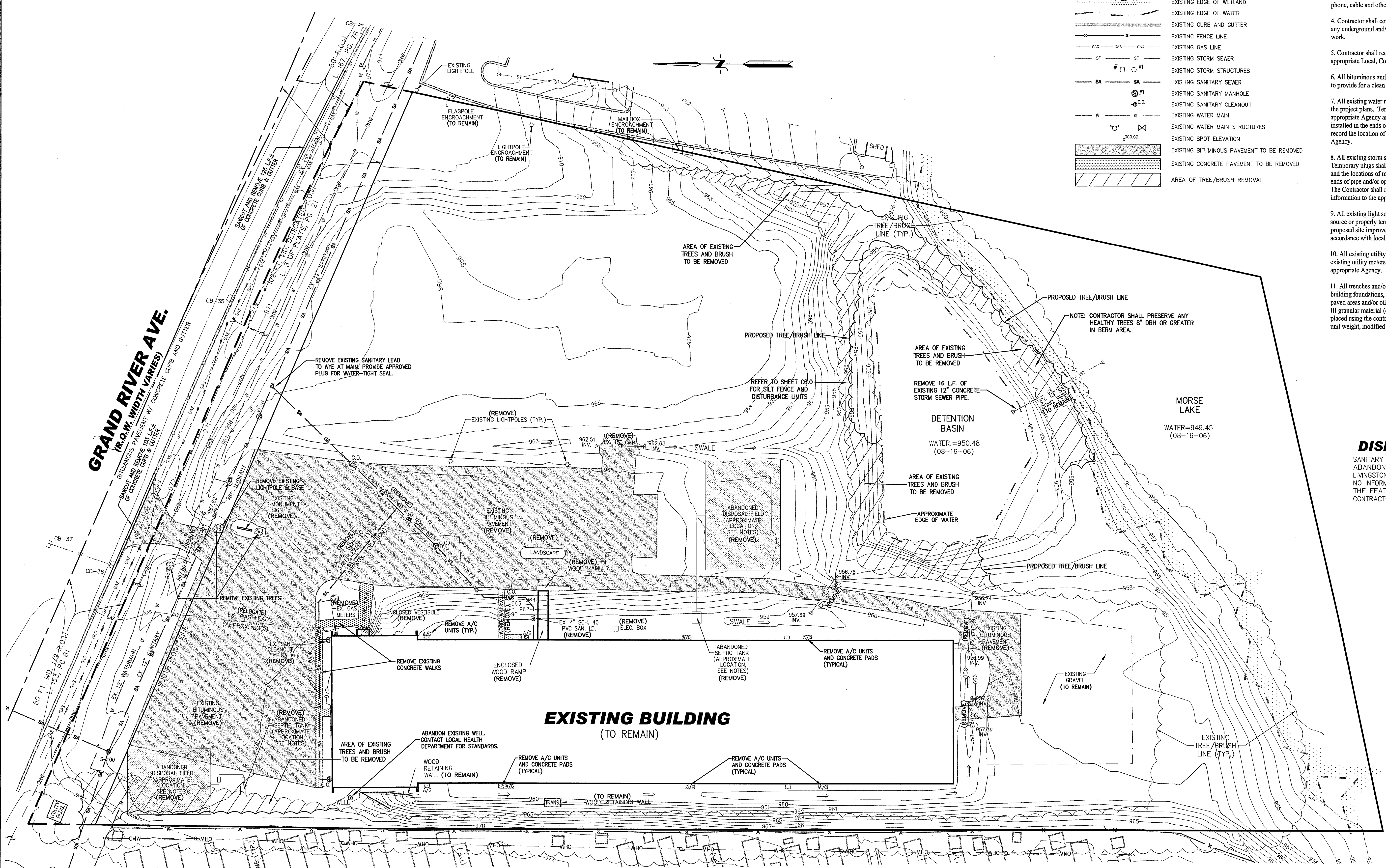
1. The demolition specifications of the Local Municipality are a part of this work. Refer to the General Notes on the project plans for additional requirements.
2. Contractor shall contact the MISS DIG locating system, DIGGERS HOTLINE or other appropriate local underground utility locating Agency, a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

DISPOSAL FIELD NOTES:

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DESIGN: EDR/WM
DRAFT: L.F.
CHECK: EDR

DATE	REVISION-DESCRIPTION	DATE	REVISION-DESCRIPTION
8-22-11	REV. PER REVIEW COMMENTS RECEIVED 8-17-11		
9-21-11	REV. PER PLANNING COMMISSION COMMENTS OF 9-12-11		

242 COMMUNITY CHURCH
GENOA CAMPUS
7526 W. GRAND RIVER

**DEMOLITION PLAN
PLAN**

CLIENT:
242 COMMUNITY CHURCH

1661 N. LATSON RD.
HOWELL, MI. 48843
(810) 231-0190

SCALE: 1"=40'
PROJECT No.: 9101777
DWG NAME: 777-DEMO
PRINT: SEP 21 2011

C2.1

LEGEND

	EXISTING BRUSH/TREE LINE
	EXISTING TREE
	EXISTING OVERHEAD WIRES
	EXISTING POLE AND GUY
	EXISTING POWER POLE
	EXISTING AMERITECH RISER
	EXISTING LIGHT POLE
	EXISTING SIGNS
	EXISTING CONTOURS
	EXISTING EDGE OF WETLAND
	EXISTING EDGE OF WATER
	EXISTING CURB AND GUTTER
	EXISTING FENCE LINE
	EXISTING GAS LINE
	EXISTING STORM SEWER
	EXISTING STORM STRUCTURES
	EXISTING SANITARY SEWER
	EXISTING SANITARY MANHOLE
	EXISTING SANITARY CLEANOUT
	EXISTING WATER MAIN
	EXISTING WATER MAIN STRUCTURES
	PROPOSED STORM SEWER
	PROPOSED STORM STRUCTURES
	PROPOSED SANITARY SEWER
	PROPOSED SANITARY MANHOLE
	PROPOSED SANITARY CLEANOUT
	PROPOSED WATER MAIN
	PROPOSED WATER MAIN STRUCTURES
	PROPOSED CONC. CURB AND GUTTER
	PROPOSED ASPHALT PAVEMENT
	PROPOSED CONCRETE PAVEMENT
	PROPOSED CONTOURS
	PARKING SPACE COUNT

SITE DATA
 TAX ID: 4711-13-400-018
GROSS AREA: 12.09 ACRES
NET AREA: 9.27 ACRES (EXCLUDES R.O.W., LAKE AND DETENTION BASIN)
 GENOA TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN
 REQUIREMENTS FOR A GENERAL COMMERCIAL DISTRICT (GCD) ZONING. CHURCHES, TEMPLES AND SIMILAR PLACES OF WORSHIP AND RELATED FACILITIES ARE A PERMITTED USE PER TABLE 7.02 (SCHEDULE OF COMMERCIAL USES).

FEATURE:	REQUIRED:	PROVIDED:
FRONT BUILDING SETBACK:	70-FEET (7.03.01)	94.4 FEET
SIDE BUILDING SETBACK:	15-FEET (7.03.01)	33.8 FEET
REAR BUILDING SETBACK:	50-FEET (7.03.01)	319.7 FEET
R.O.W. GREENBELT:	20-FOOT WIDE (12.02.01)	21.5-FOOT R.O.W. GREENBELT
WETLAND SETBACK:	25-FEET (13.02.04.4)	25-FOOT WETLAND SETBACK
BUILDING HEIGHT:	2 STORIES, 35-FEET (7.03.01) 60-FEET FOR CHURCHES (11.01.05)	2 STORIES
MIN. LOT AREA:	1 ACRE (7.03.01)	12.09 ACRES
MIN. LOT WIDTH:	150-FEET (7.03.01)	669.48-FEET (A RIGHT-OF-WAY LINE)
PARKING SETBACK:	20-FOOT FRONT (7.03.01) 10-FOOT SIDE & REAR (7.03.01)	21.5-FOOT FRONT SETBACK (FROM R.O.W.) 20-FOOT SIDE AND 114.78-FOOT REAR
MAX LOT COVERAGE:	35% BUILDING (7.03.01) 75% IMPERVIOUS SURFACE (7.03.01)	18% BUILDING 67% IMPERVIOUS SURFACE
REQ. PARKING IS 1 PARKING SPACE PER EVERY 3 SEATS OR 6 FEET OF PEWS IN THE MAIN UNIT OF WORSHIP	800 SEATS IN THE MAIN AUDITORIUM / 3 (14.04) = 267 REQUIRED PARKING SPACES	369 (INCLUDING 14 B.F. SPACES)
REQ. LOADING SPACES	THREE (14.08.08)	THREE

NOTES:

- 1) MONUMENT SIGN AND BUILDING MOUNTED SIGNS TO BE DESIGNED PER TOWNSHIP STANDARDS AND SUBMITTED FOR MUNICIPAL REVIEW AND APPROVAL IN A SEPARATE PROCESS.
- 2) STREET ADDRESS LABELING SHALL MEET FIRE DEPARTMENT STANDARDS.
- 3) FIRE PIT CONTAINER SHALL BE APPROVED BY DESIGN ENGINEER AND FIRE MARSHAL PRIOR TO INSTALLATION. FIRE PIT TO MEET THE INTERNATIONAL FIRE CODE (IFC) SECTION 307.
- 4) INSTALL KNOX BOX PER FIRE DEPARTMENT STANDARDS.

BENCHMARKS

BENCH MARK 205
 THE WORD "OPEN" ON HYD. FLANGE ON THE S. SIDE GRAND RIVER AND E. SIDE OF ENTRANCE TO S.A.C.
 ELEVATION=969.19 (NGVD 29 DATUM)

BENCH MARK 208
 S. ANCHOR BOLT OF LIGHT POLE BASE ON THE E. SIDE OF PARKING AREA
 ELEVATION=965.55 (NGVD 29 DATUM)

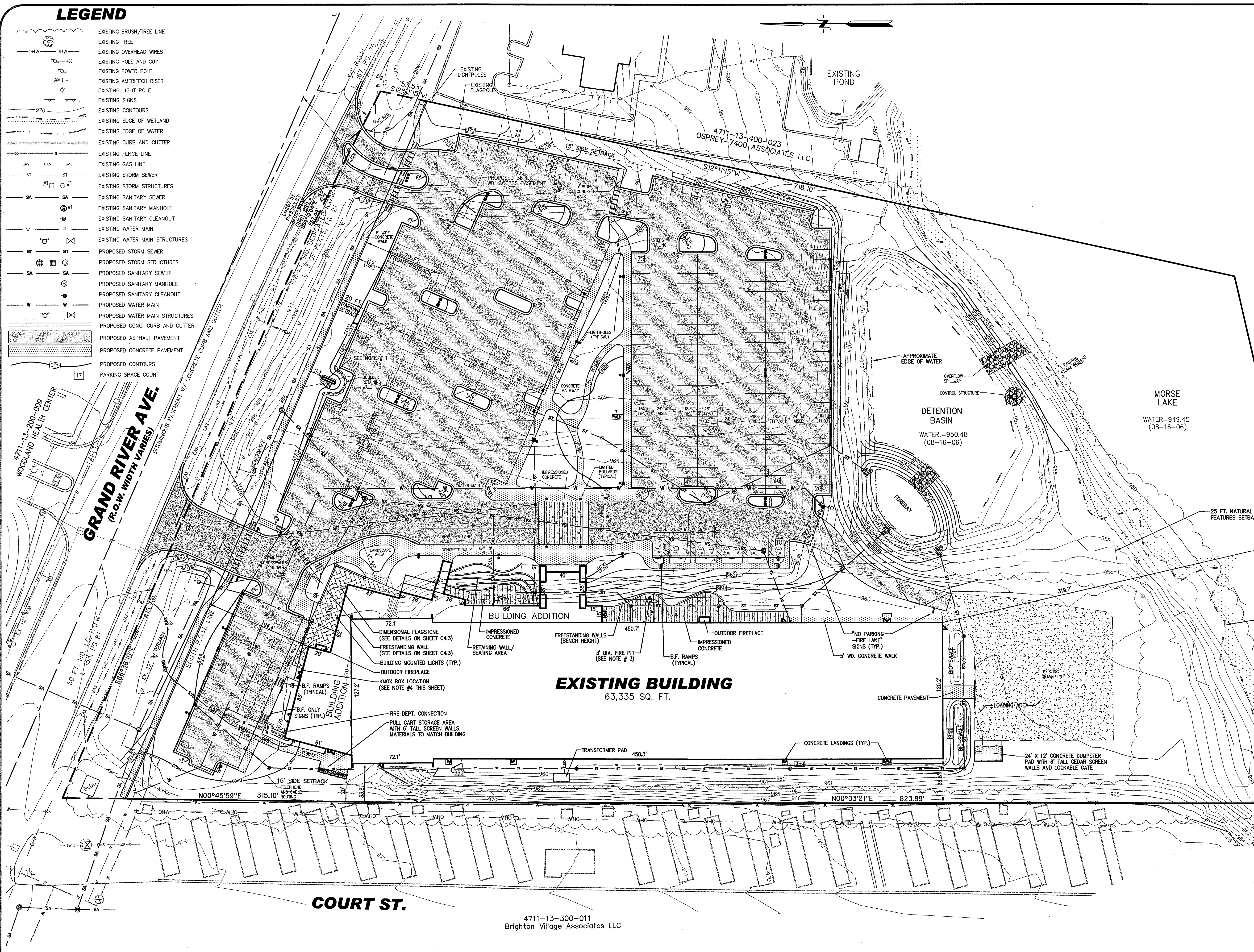


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CALL MISS DIG.

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



DESIGN: EDR/WMP
 DRAFT: L.F.
 CHECK: EDR

DATE	REVISION-DESCRIPTION	DATE	REVISION-DESCRIPTION
8-22-11	REV. PER REVIEW COMMENTS RECEIVED 8-17-11		
9-06-11	REV. WATER MAIN ROUTING TO CONNECT TO M.H.O.G.		
9-21-11	REV. PER PLANNING COMMISSION COMMENTS OF 9-12-11		

242 COMMUNITY CHURCH
 GENOA CAMPUS
 7526 W. GRAND RIVER

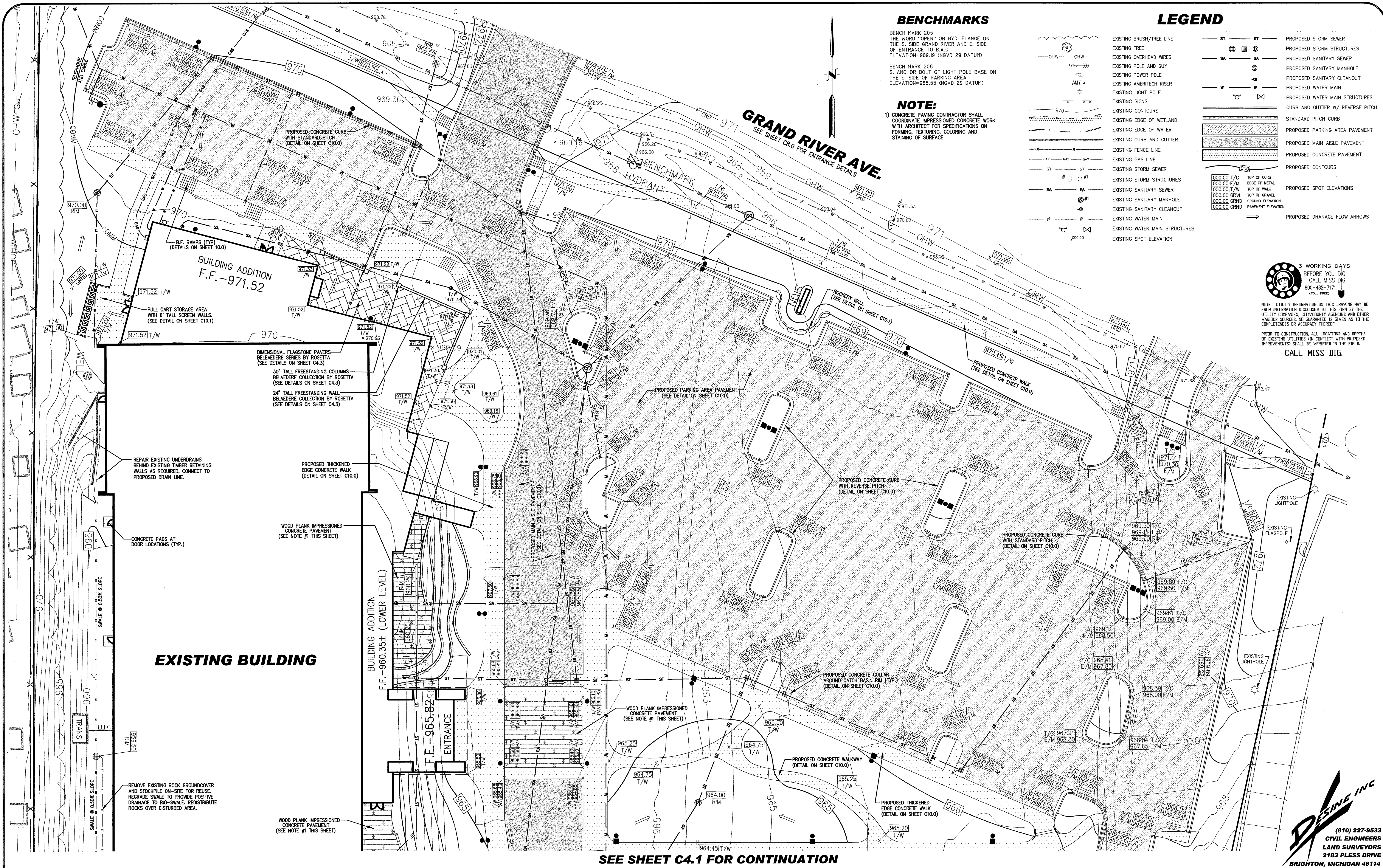
SITE PLAN

CLIENT:
 242 COMMUNITY CHURCH

1661 N. LATSON RD.
 HOWELL, MI. 48843
 (810) 231-0190

SCALE: 1"=40'
 PROJECT No.: 9101777
 DWG NAME: 777-C3.0
 PRINT: SEP 21 2011

C3.0



BENCHMARKS

BENCH MARK 205
THE WORD "OPEN" ON HYD. FLANGE ON THE S. SIDE GRAND RIVER AND E. SIDE OF ENTRANCE TO B.A.C. ELEVATION=969.19 (NGVD 29 DATUM)

BENCH MARK 208
S. ANCHOR BOLT OF LIGHT POLE BASE ON THE E. SIDE OF PARKING AREA. ELEVATION=965.55 (NGVD 29 DATUM)

NOTE:

1) CONCRETE PAVING CONTRACTOR SHALL COORDINATE IMPRESSIONED CONCRETE WORK WITH ARCHITECT FOR SPECIFICATIONS ON FORMING, TEXTURING, COLORING AND STAINING OF SURFACE.

LEGEND

- OHW — OHW — EXISTING BRUSH/TREE LINE
- SA — SA — EXISTING TREE
- GAS — GAS — EXISTING OVERHEAD WIRES
- ST — ST — EXISTING POLE AND GUY
- W — W — EXISTING POWER POLE
- W — W — EXISTING AMERITECH RISER
- W — W — EXISTING LIGHT POLE
- W — W — EXISTING SIGNS
- W — W — EXISTING CONTOURS
- W — W — EXISTING EDGE OF WETLAND
- W — W — EXISTING EDGE OF WATER
- W — W — EXISTING CURB AND CUTTER
- W — W — EXISTING FENCE LINE
- W — W — EXISTING GAS LINE
- W — W — EXISTING STORM SEWER
- W — W — EXISTING STORM STRUCTURES
- W — W — EXISTING SANITARY SEWER
- W — W — EXISTING SANITARY MANHOLE
- W — W — EXISTING SANITARY CLEANOUT
- W — W — EXISTING WATER MAIN
- W — W — EXISTING WATER MAIN STRUCTURES
- W — W — EXISTING SPOT ELEVATION
- ST — ST — PROPOSED STORM SEWER
- SA — SA — PROPOSED STORM STRUCTURES
- SA — SA — PROPOSED SANITARY SEWER
- W — W — PROPOSED SANITARY MANHOLE
- W — W — PROPOSED SANITARY CLEANOUT
- W — W — PROPOSED WATER MAIN
- W — W — PROPOSED WATER MAIN STRUCTURES
- W — W — PROPOSED CURB AND GUTTER W/ REVERSE PITCH
- W — W — STANDARD PITCH CURB
- W — W — PROPOSED PARKING AREA PAVEMENT
- W — W — PROPOSED MAIN AISLE PAVEMENT
- W — W — PROPOSED CONCRETE PAVEMENT
- W — W — PROPOSED CONTOURS
- W — W — PROPOSED SPOT ELEVATIONS
- W — W — PROPOSED GROUND ELEVATION
- W — W — PROPOSED PAVEMENT ELEVATION
- W — W — PROPOSED DRAINAGE FLOW ARROWS



3 WORKING DAYS BEFORE YOU DIG CALL MISS DIG 800-482-7171 (CALL 7822)

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SEE SHEET C4.1 FOR CONTINUATION

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DRAFT: L.F.
CHECK: EDR

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DATE	REVISION-DESCRIPTION	DATE	REVISION-DESCRIPTION

242 COMMUNITY CHURCH
GENOA CAMPUS
7526 W. GRAND RIVER

GRADING AND PAVING PLAN (NORTH)

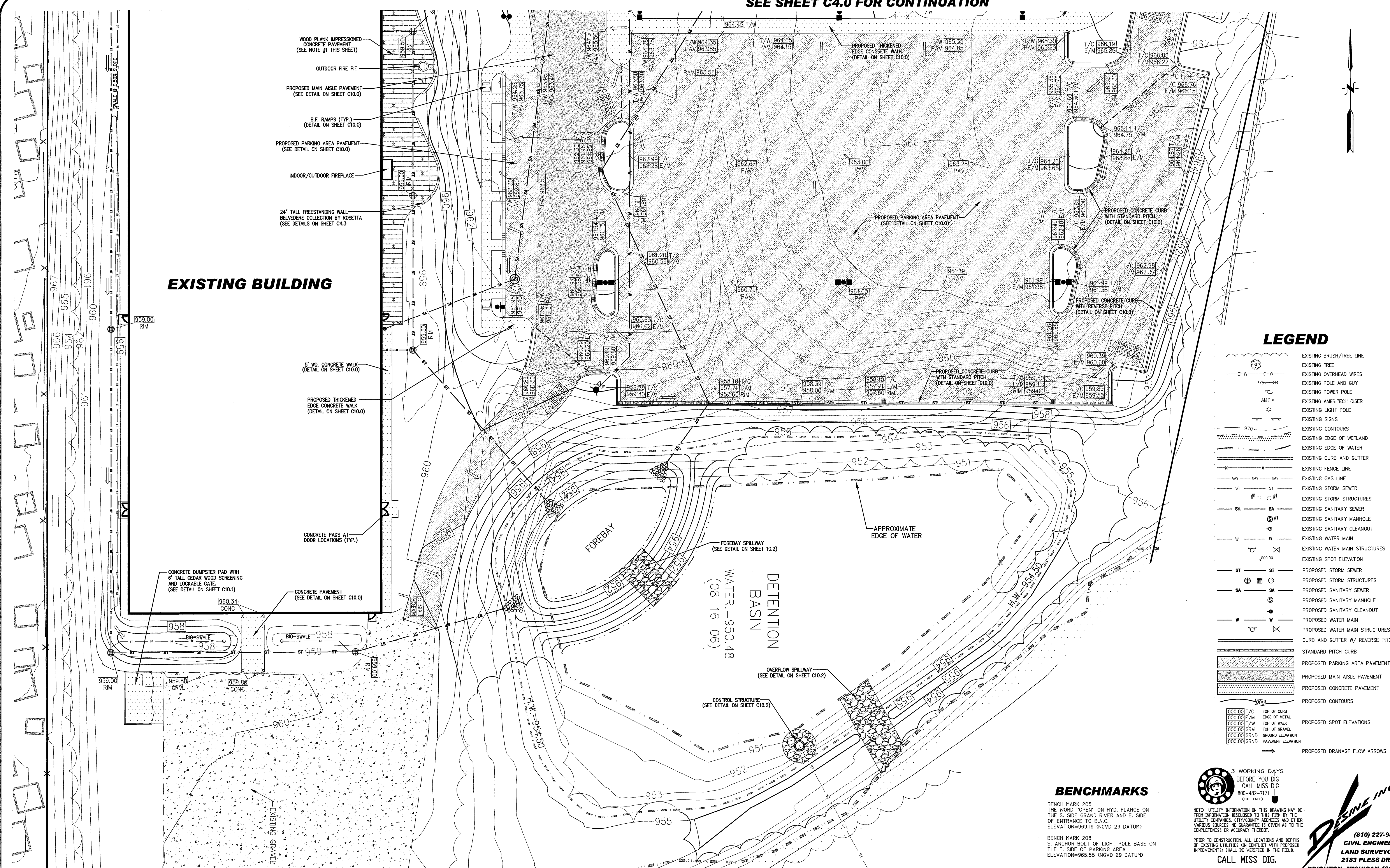
CLIENT:
242 COMMUNITY CHURCH
1661 N. LATSON RD.
HOWELL, MI. 48843
(810) 231-0190

SCALE: 1"=20'
PROJECT No.: 9101777
DWG NAME: 777-GR
PRINT: SEP 21 2011

C4.0

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

SEE SHEET C4.0 FOR CONTINUATION



EXISTING BUILDING

LEGEND

- EXISTING BRUSH/TREE LINE
- EXISTING TREE
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- EXISTING POLE AND GUY
- EXISTING POWER POLE
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- EXISTING LIGHT POLE
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- EXISTING WATER MAIN
- EXISTING WATER MAIN STRUCTURES
- EXISTING SPOT ELEVATION
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- PROPOSED STORM STRUCTURES
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- PROPOSED CURB AND GUTTER W/ REVERSE PITCH
- STANDARD PITCH CURB
- PROPOSED PARKING AREA PAVEMENT
- PROPOSED MAIN AISLE PAVEMENT
- PROPOSED CONCRETE PAVEMENT
- PROPOSED CONTOURS
- PROPOSED SPOT ELEVATIONS
- PROPOSED DRAINAGE FLOW ARROWS

BENCHMARKS

BENCH MARK 205
THE WORD "OPEN" ON HYD. FLANGE ON
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OF ENTRANCE TO B.A.C.
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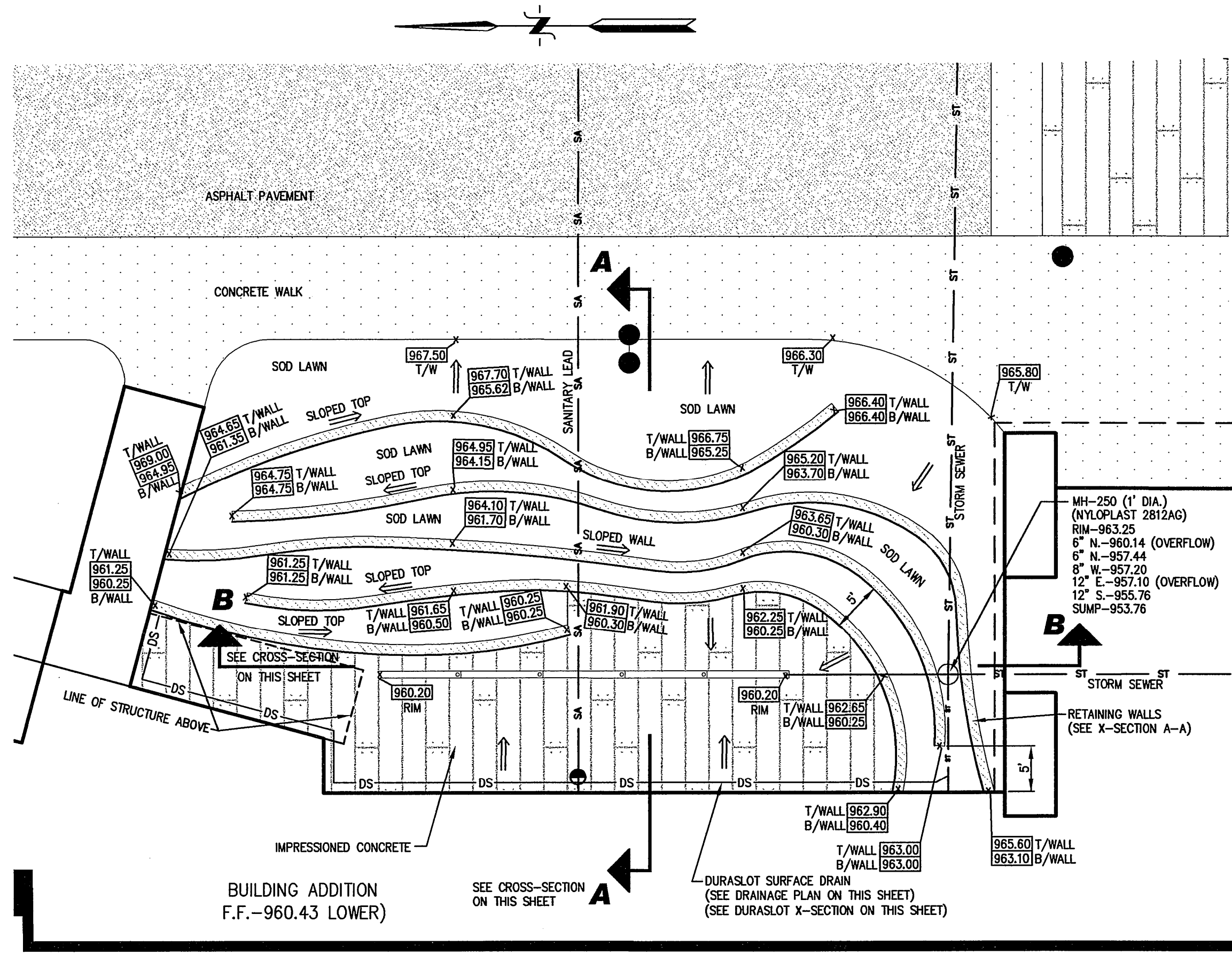
242 COMMUNITY CHURCH
GENOA CAMPUS
7526 W. GRAND RIVER

GRADING AND
PAVING PLAN
(SOUTH)

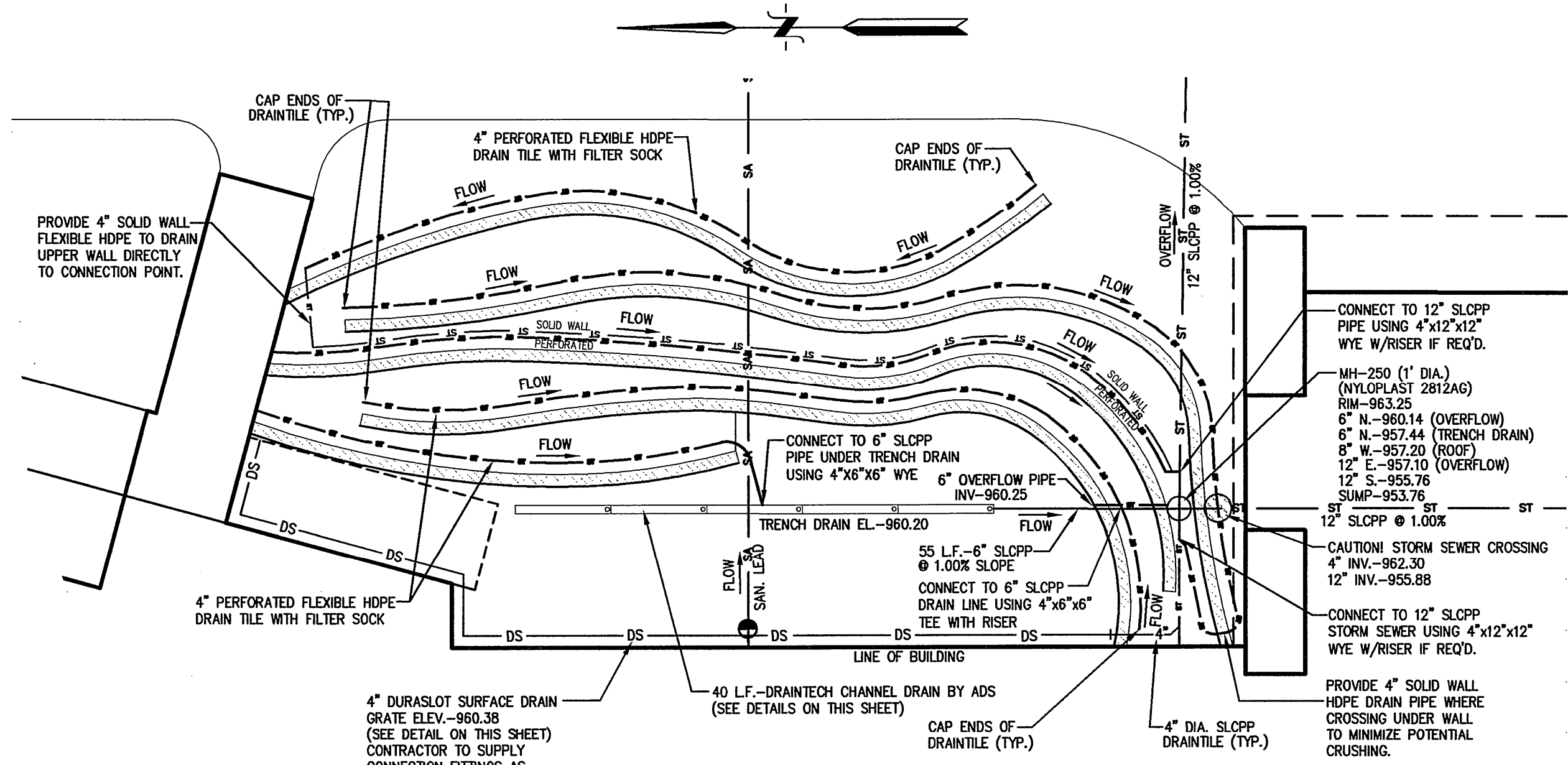
CLIENT:
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1661 N. LATSON RD.
HOWELL, MI. 48843
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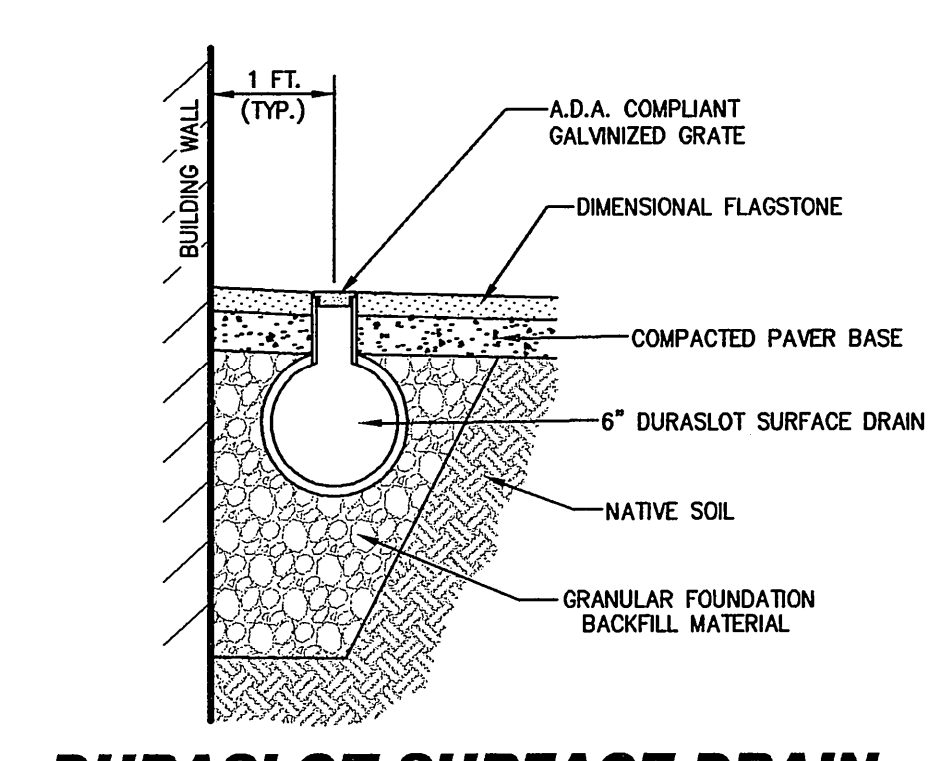
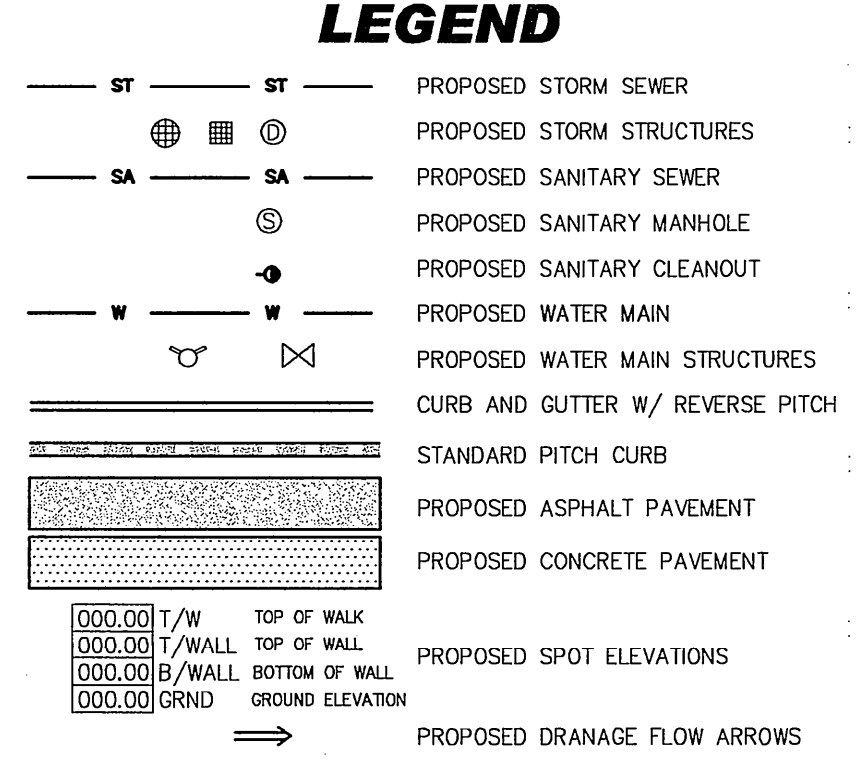
C4.1



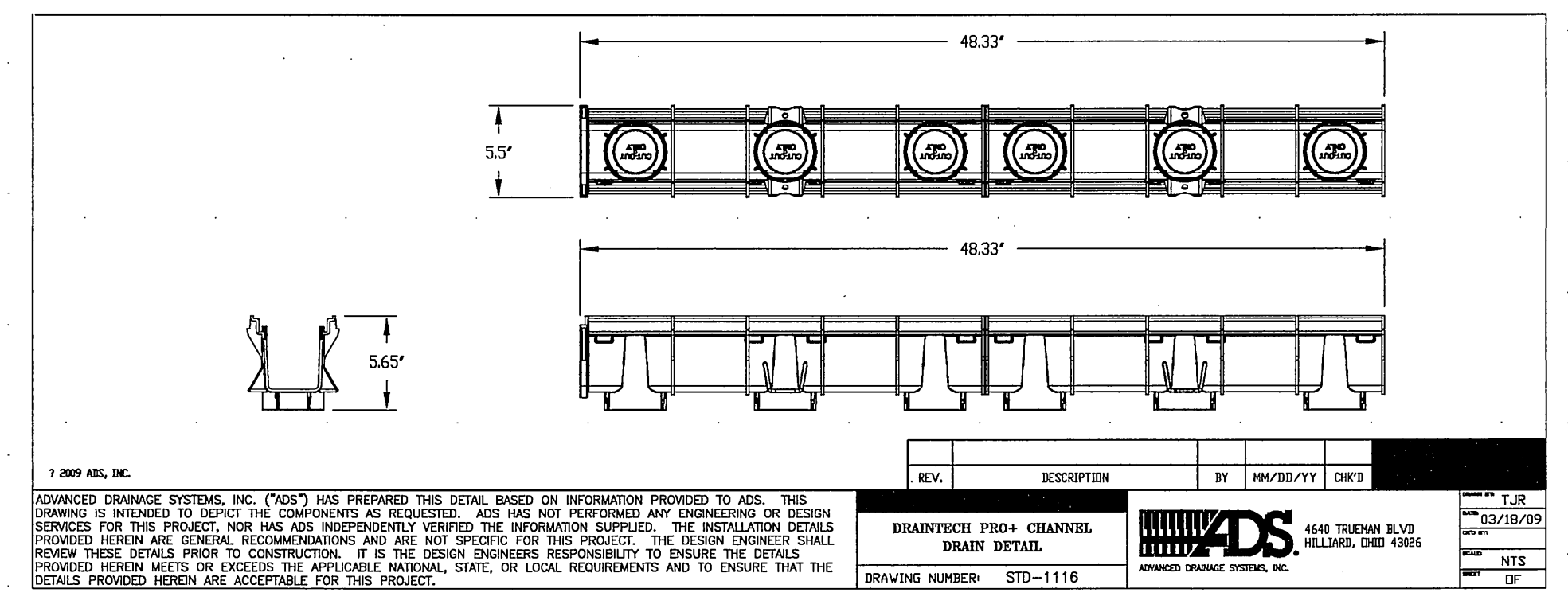
RETAINING WALL PLAN
SCALE: 1" = 10'



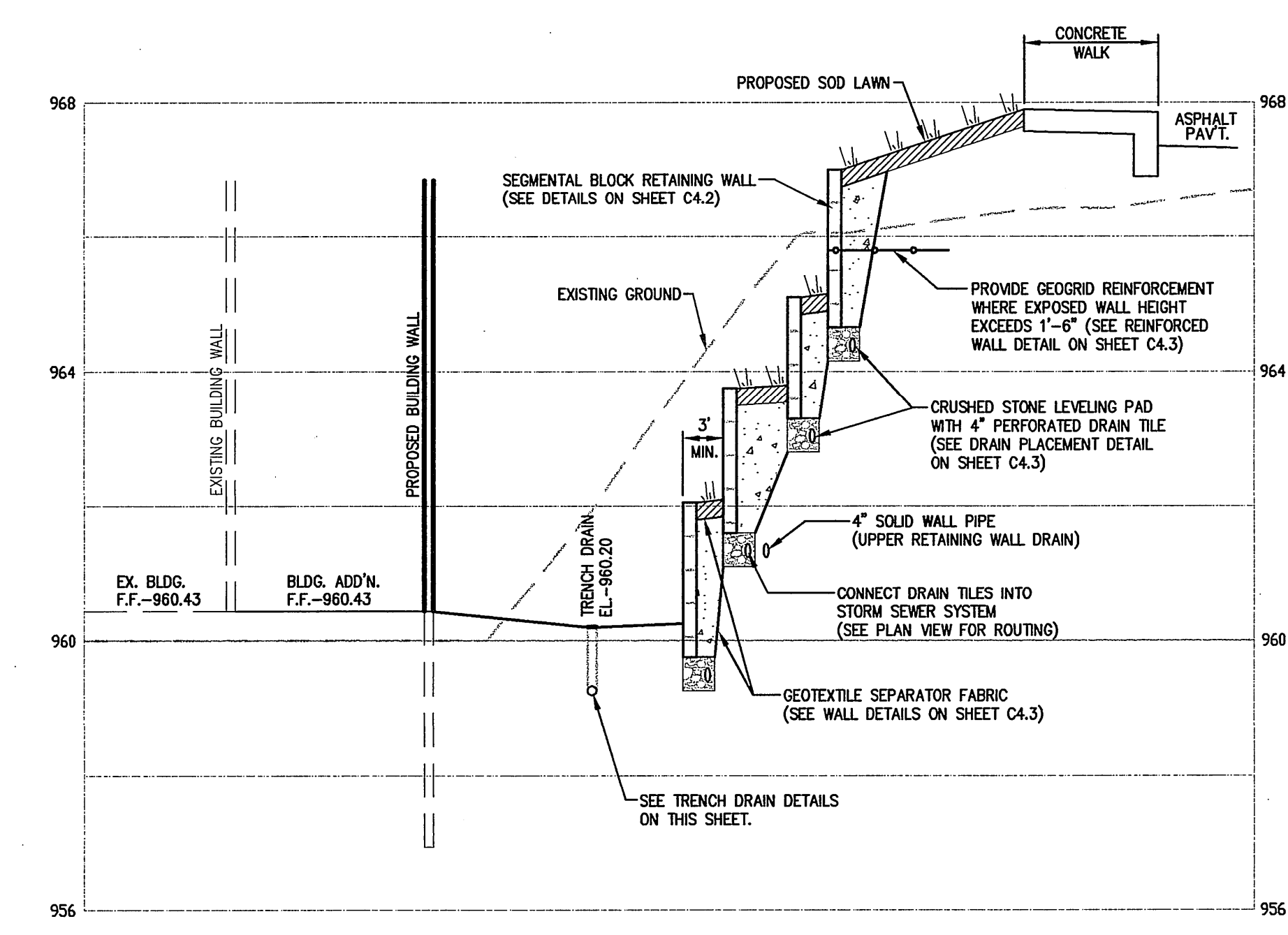
DRAINAGE PLAN
SCALE: 1" = 10'



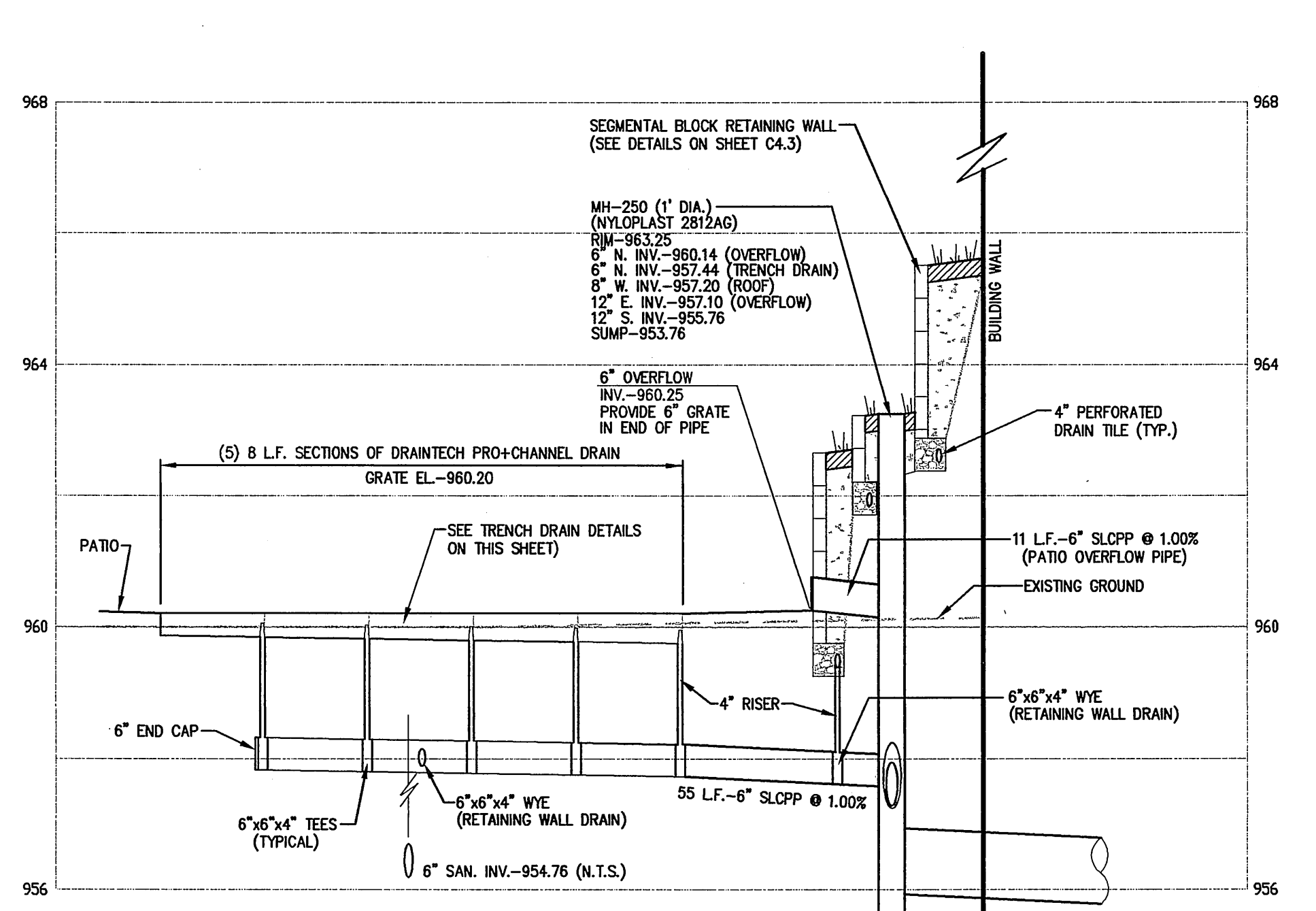
DURASLOT SURFACE DRAIN CROSS-SECTION
NOT TO SCALE



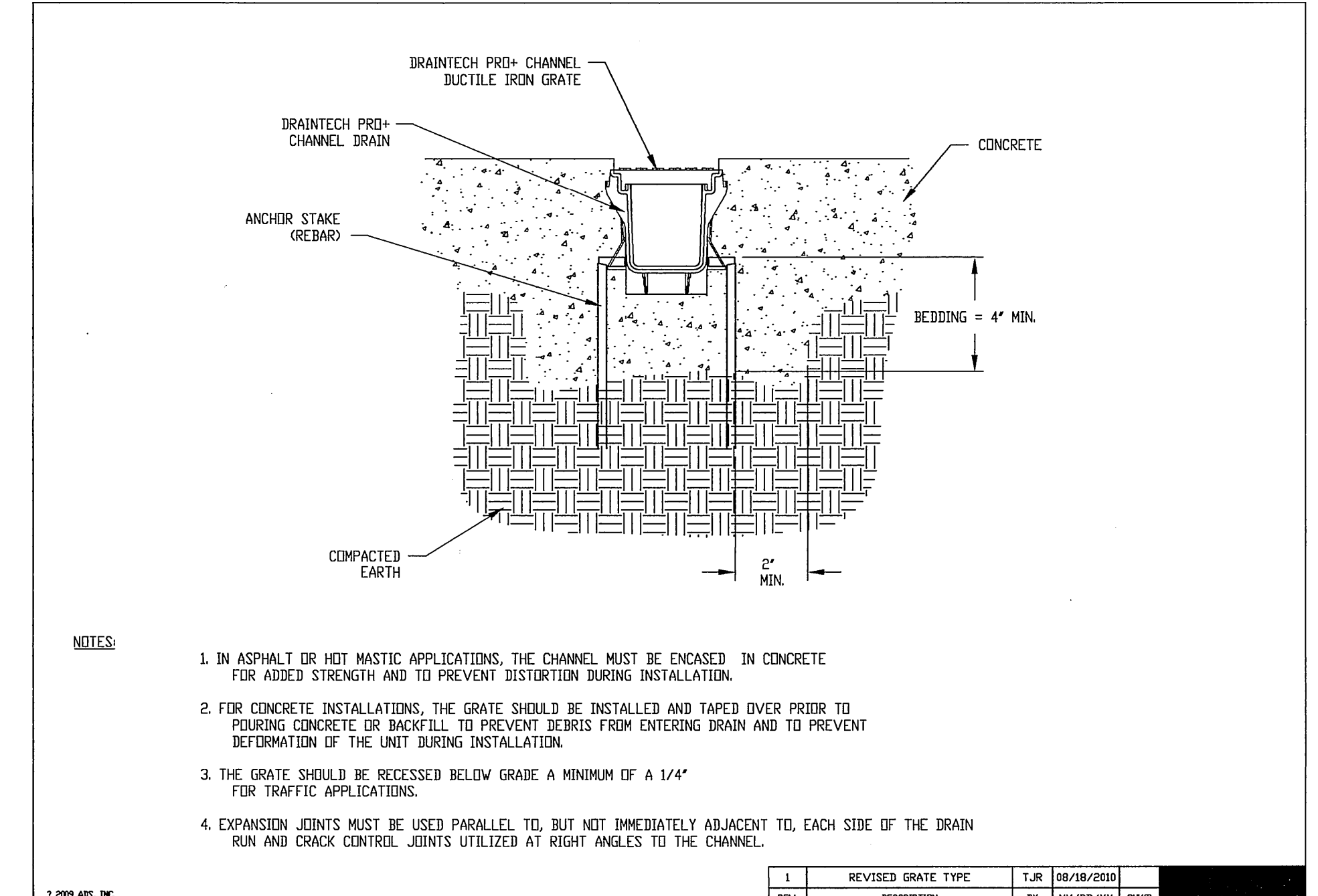
DRAIN DETAIL



WALL CROSS-SECTION A-A
SCALE: HOR. 1"=10' / VERT. 1"=2'



TRENCH DRAIN CROSS-SECTION B-B
SCALE: HOR. 1"=10' / VERT. 1"=2'



DRAINTECH PRO+ CHANNEL DRAIN DETAIL

NOTES:

1. IN ASPHALT OR HOT MASTIC APPLICATIONS, THE CHANNEL MUST BE ENCASED IN CONCRETE FOR ADDED STRENGTH AND TO PREVENT DISTORTION DURING INSTALLATION.
2. FOR CONCRETE INSTALLATIONS, THE GRATE SHOULD BE INSTALLED AND TAPPED OVER PRIOR TO POURING CONCRETE OR BACKFILL TO PREVENT DEBRIS FROM ENTERING DRAIN AND TO PREVENT DEFORMATION OF THE UNIT DURING INSTALLATION.
3. THE GRATE SHOULD BE RECESSED BELOW GRADE A MINIMUM OF A 1/4" FOR TRAFFIC APPLICATIONS.
4. EXPANSION JOINTS MUST BE USED PARALLEL TO, BUT NOT IMMEDIATELY ADJACENT TO, EACH SIDE OF THE DRAIN RUN AND CRACK CONTROL JOINTS UTILIZED AT RIGHT ANGLES TO THE CHANNEL.

BENCHMARKS

BENCH MARK 205
THE WORD "OPEN" ON HYD. FLANGE ON THE S. SIDE GRAND RIVER AND E. SIDE OF ENTRANCE TO B.A.C.
ELEVATION=969.19 (NGVD 29 DATUM)

BENCH MARK 208
S. ANCHOR BOLT OF LIGHT POLE BASE ON THE E. SIDE OF PARKING AREA
ELEVATION=965.55 (NGVD 29 DATUM)

3 WORKING DAYS BEFORE YOU DIG CALL MISS DIG 800-482-7171 (TOLL FREE)

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PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING UTILITIES (IN CONFLICT WITH PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD.

CALL MISS DIG.

DESIGN: EDR/WMP	DATE	REVISION-DESCRIPTION	DATE	REVISION-DESCRIPTION
DRAFT: L.F.	9-21-11	UPDATED PER GENERAL CONTRACTOR'S REQUEST		
CHECK: EDR				

2142 COMMUNITY CHURCH
GENOA CAMPUS
7526 W. GRAND RIVER

RETAINING WALL
NOTES AND DETAILS

CLIENT:
2142 COMMUNITY CHURCH
1661 N. LATSON RD.
HOWELL, MI. 48843
(810) 231-0190

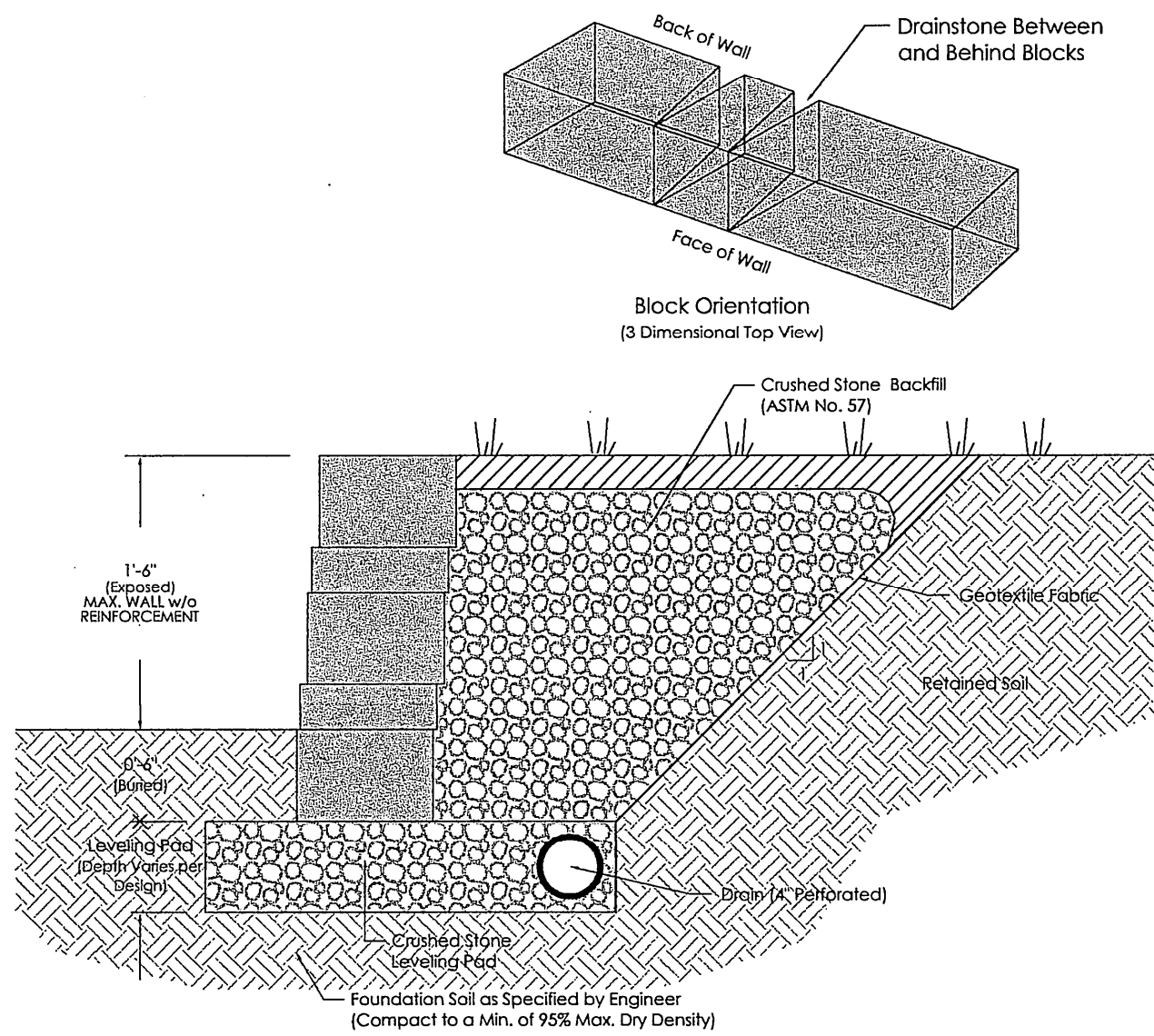
SCALE: 1"=30'

PROJECT No.: 9101777
DWG NAME: 777-GR
PRINT: SEP 21 2011

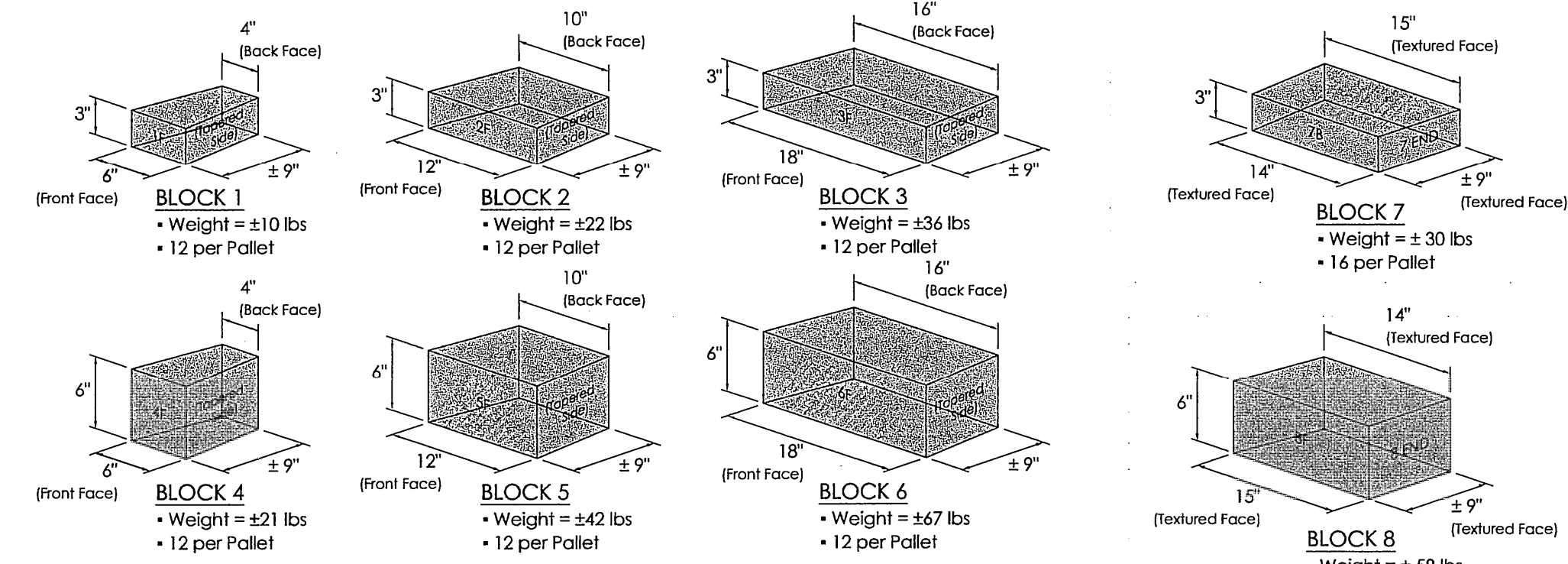
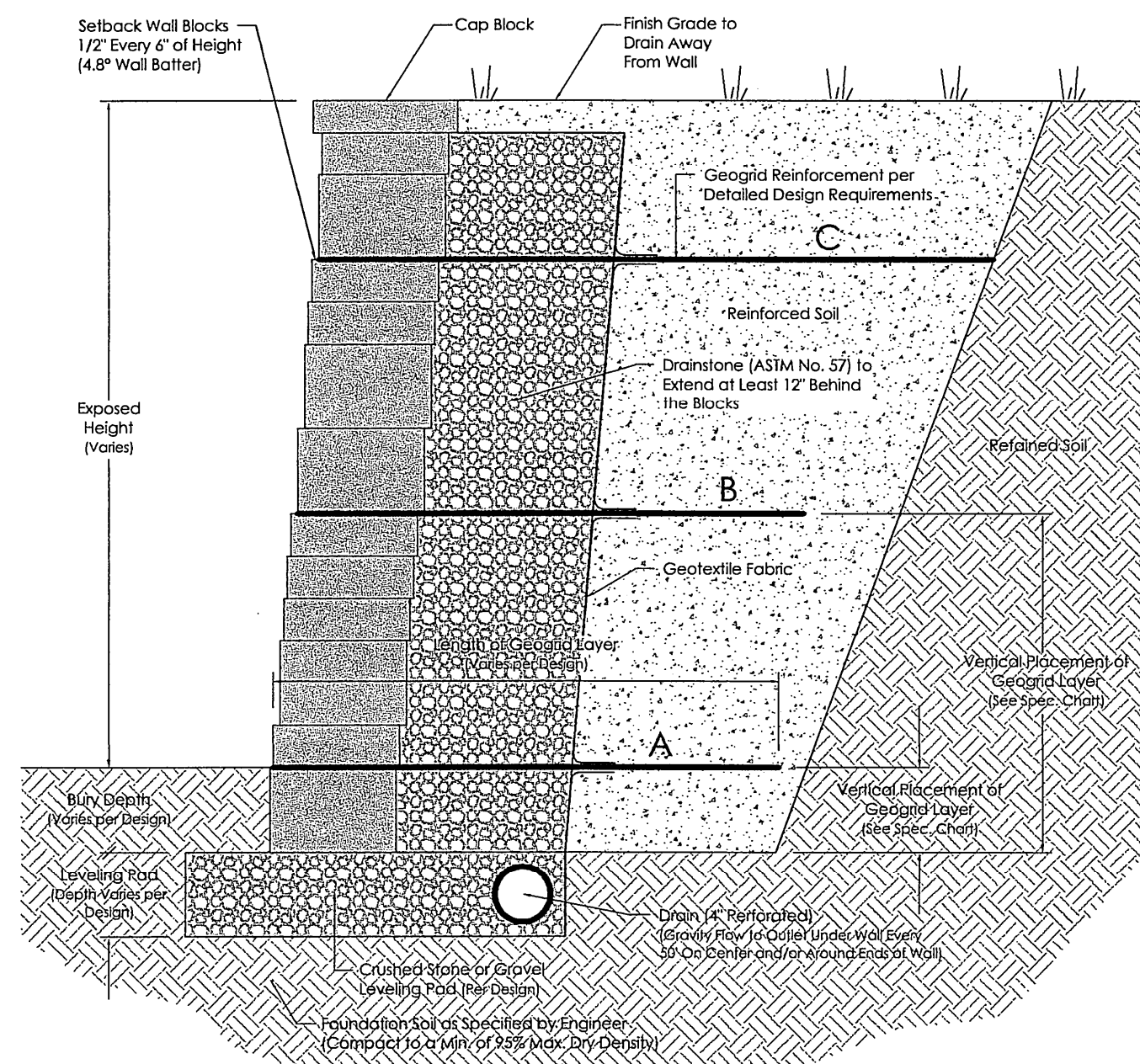
C4.2

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

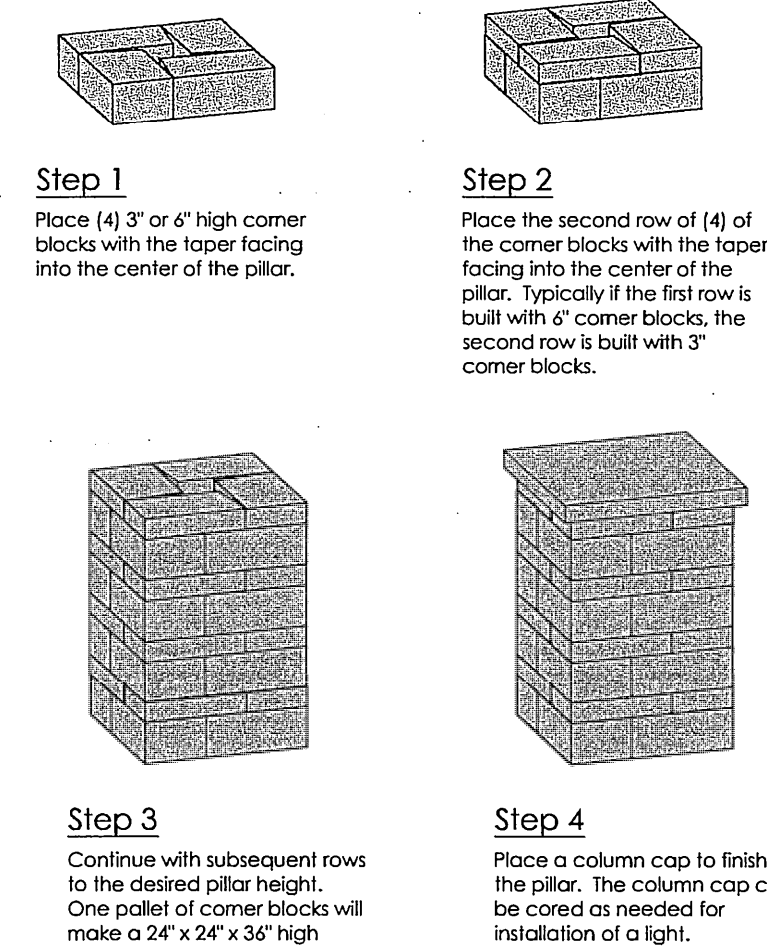
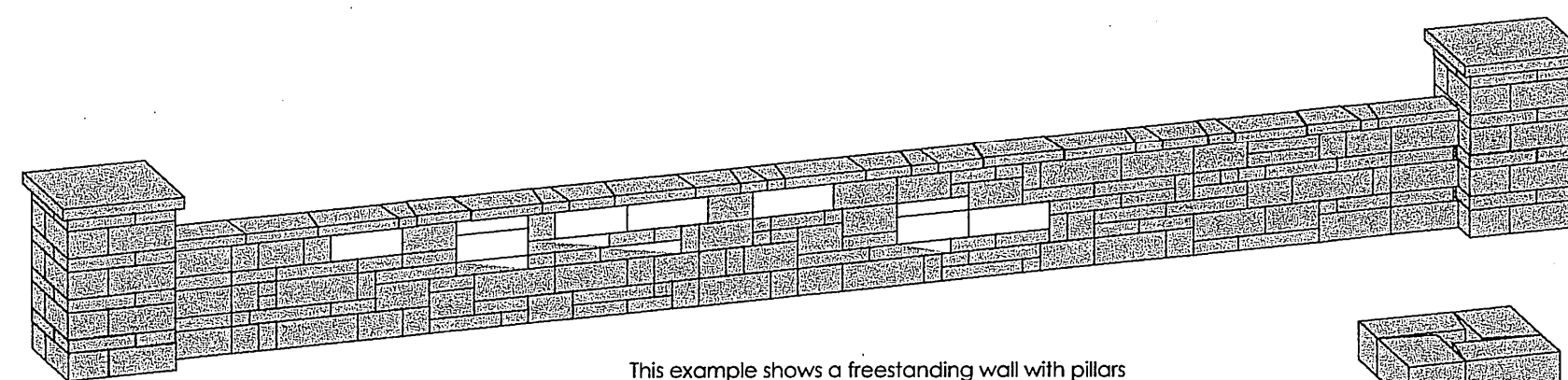
TYPICAL RETAINING WALL SECTIONS



WALL SYSTEM (BELVEDERE COLLECTION) WALL BLOCKS



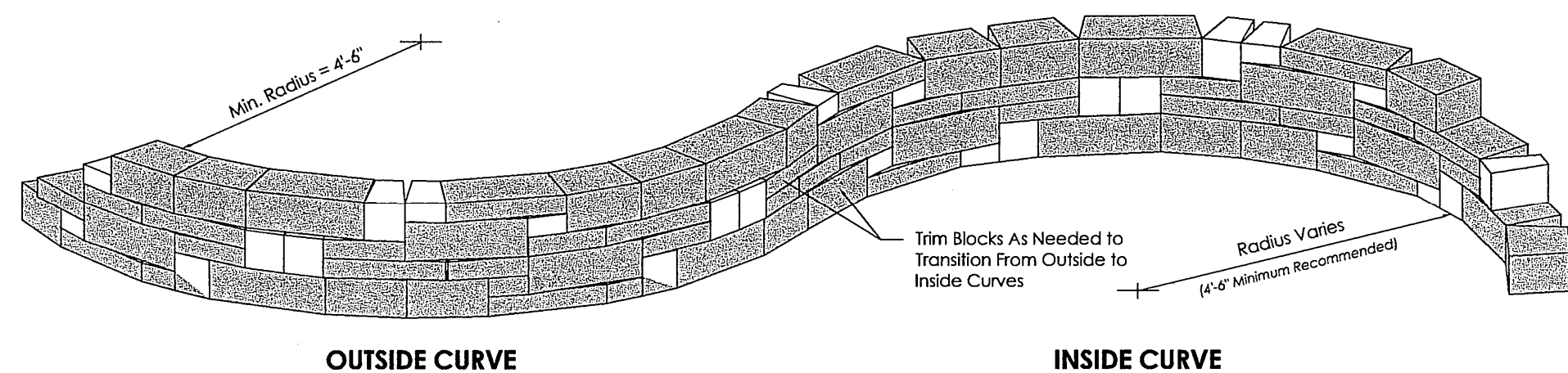
FREESTANDING WALL (BELVEDERE COLLECTION)



GEOTEXTILE REINFORCEMENT SPECIFICATIONS

2 FT. WALL HEIGHT		3 FT. WALL HEIGHT	
VERTICAL POSITION	LENGTH	VERTICAL POSITION	LENGTH
A = 4"	3 FT.	A = 4"	3 FT.
B = 1'-6"	4 FT.	B = 1'-6"	4 FT.
		C = 2'-6"	4 FT.

CURVED WALLS



Notes:

- These details show curved retaining walls.
- Minimum radius curves are shown which can be constructed without sawcutting a significant number of blocks. Larger radius curves can be created by leaving a larger gap between blocks on the back side of the wall. The gaps must be filled with drainstone.
- When retaining walls are constructed with a batter, the radius on outside curves becomes smaller with each course due to the block setback. For proper construction, the radius of the bottom course must be larger than the minimum radius so upper courses will have sufficient room for construction.
- When retaining walls are constructed with a batter, the radius on inside curves becomes larger with each course due to the block setback.

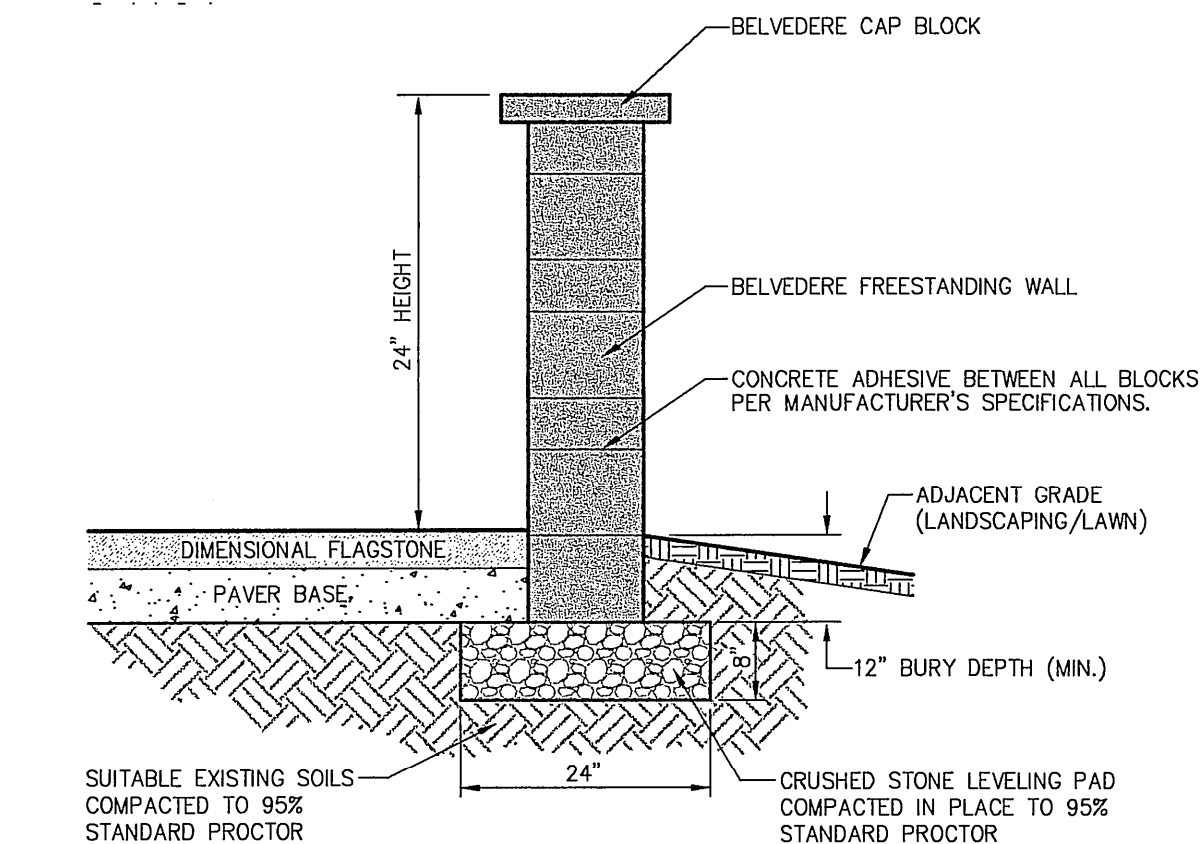
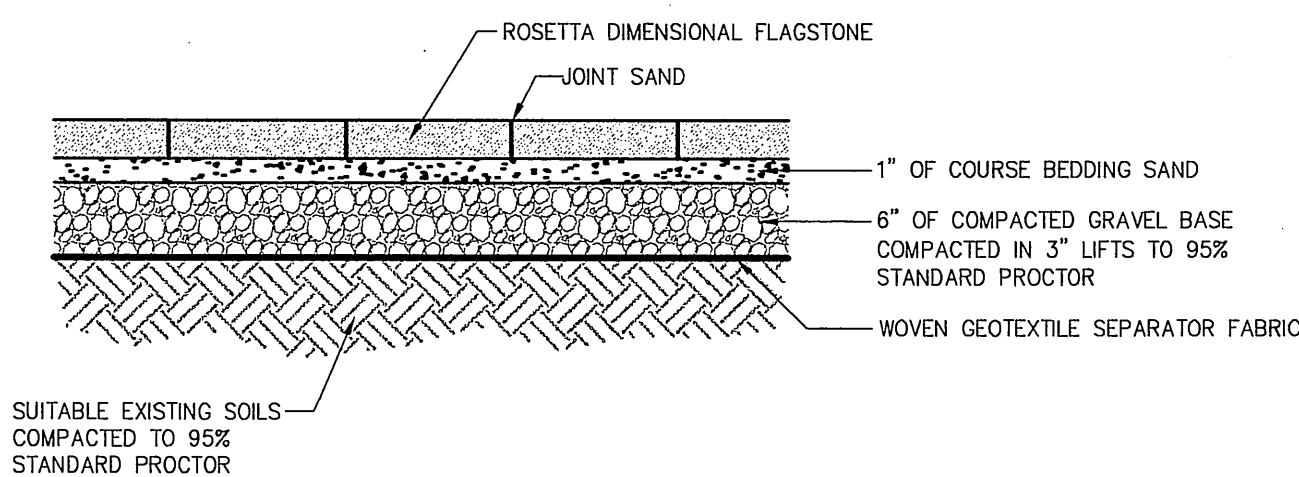
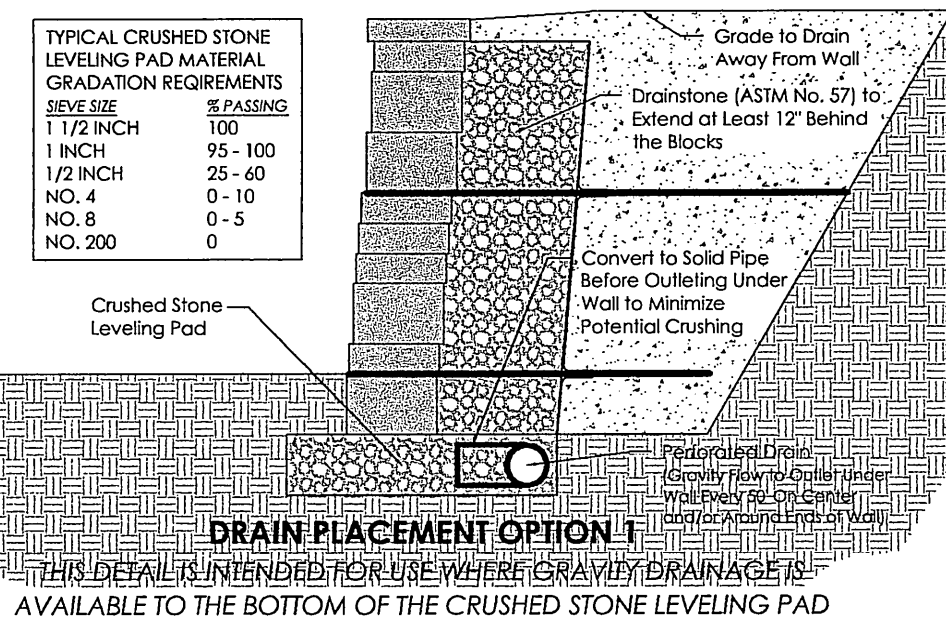
Curved Freestanding Walls:

Curved freestanding walls can also be built. Typically, the blocks have to be field adjusted to make the desired curve. Front and back faces will alternate and blocks trimmed as needed to provide a tight fit between blocks with no gaps on either side of the freestanding wall.

TYPICAL DRAIN PLACEMENT

Notes:

- Clearly understand the drainage characteristics of the site, including both surface and subsurface water flow, and have a detailed plan to properly deal with any water before starting construction.
- Install the drain in the lowest possible point behind the wall to allow the outlet pipe to drain by gravity.
- Grade areas both on top and bottom of the wall to direct surface water runoff away from the retaining wall. Drainage swales may be required.
- Use of a blanket and/or chimney drain is recommended in areas where groundwater can be expected near the bottom of the wall or flowing through the retained soil zone.



SPECIFICATION FOR BELVEDERE® WALL SYSTEM

PART 1: GENERAL

- Scope**
Work includes furnishing and installing concrete retaining wall units to the lines and grades designated on the construction drawings and as specified herein.
- Reference Standards**
ASTM C33 Concrete Aggregates
ASTM C94 Ready-Mixed Concrete
ASTM C140 Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units
ASTM C1372 Segmental Retaining Wall Units
- Delivery, Storage, and Handling**
A. Contractor shall check the materials upon delivery to assure proper material has been received.
B. Contractor shall prevent excessive mud, wet cement and like materials from coming in contact with the SRW units.
C. Contractor shall protect the materials from damage. Damaged material shall not be incorporated in the project.

PART 2: MATERIALS

- Wall Units**
A. Wall units shall be Belvedere® units as produced by a licensed manufacturer.
B. Wall units shall have Belvedere® block specifications and be made from wet cast, Ready-Mixed concrete in accordance with ASTM C-94, latest revision, and per the following chart:

Climate (Weathering Region per ASTM C533)	Air Content	28 Day Compressive Strength per (ASTM C39)	Slump* in (cm)	Min. Concrete Temp. at Placement °F (°C)
Negligible	11%-11.5%	4000 (27.6)	3 to 5 (7.6 to 10.2)	50 (10)
Moderate	3%-6%	4000 (27.6)	3 to 5 (7.6 to 10.2)	50 (10)
Severe	4.5%-7.5%	4000 (27.6)	3 to 5 (7.6 to 10.2)	50 (10)

All Belvedere products shall use frost-free aggregate.
 *Higher slumps are allowed if achieved by use of appropriate admixtures.
 Notwithstanding anything stated above, all material used in the wall units must meet applicable ASTM and local requirements for exterior concrete.

- Exterior block dimensions, as measured in accordance with ASTM C140, shall be uniform and consistent. Maximum dimensional deviations shall be 0.125 inch (3.2 mm) or 2%, whichever is less, excluding the architectural surface. Maximum width (face to back) deviation including the architectural surface shall be 1.0 inch (2.5 cm).
 - Exposed faces shall have a textured finish. Other surfaces to be smooth form type. Dime-size bug holes on the block face may be patched and/or shake-on color stain can be used to blend into the remainder of the block face.
- Leveling Pad and Free Draining Backfill**
 - Leveling pad shall be crushed stone. A drain with gravity outlet shall be placed in the bottom of the stone leveling pad.
 - Free Draining Backfill material shall be washed stone, shall be placed to a minimum of 1 foot (0.30 m) width behind the back of the wall, and shall extend vertically from the Leveling Pad to an elevation 4 inches (10.2 cm) below the top of wall.
 - Backfill material shall be approved by the geotechnical engineer. Site excavated soils may be used if approved unless otherwise specified in the drawings. Unsuitable soils with a PP-6, organic soils and frost susceptible soils shall not be used within a 1 to 1 influence area.
 - Non-woven geotextile fabric shall be placed between the Free Draining Backfill and retained soil if required in the detailed wall design.
 - Where additional fill is needed, Contractor shall submit sample and specifications to the Engineer for approval.

PART 3: CONSTRUCTION OF WALL SYSTEM

- Excavation**
A. Contractor shall excavate to the lines and grades shown on the construction drawings.
- Foundation Soil Preparation**
A. Native foundation soil shall be compacted to 95% of standard proctor or 90% of modified proctor prior to placement of the leveling pad material.
B. In-situ foundation soil shall be examined by the geotechnical engineer to ensure that the actual foundation soil strength meets or exceeds assumed design strength. Soil not meeting the required strength shall be removed and replaced with acceptable, compacted material.
- Leveling Pad Placement**
A. Leveling Pad shall be placed as shown on the construction drawings.
B. Leveling Pad shall be placed on undisturbed native soils or suitable replacement fills as directed by the geotechnical engineer.
C. Leveling Pad shall be compacted to 95% of standard proctor or 90% of modified proctor to ensure a level, hard surface on which to place the first course blocks. Pad shall be constructed to the proper elevation to ensure the final elevation shown on the plans.
D. Leveling Pad shall have a 6 inch (15.2 cm) minimum depth or deeper as shown on the Civil Plans. Pad dimensions shall extend beyond the blocks in all directions to a distance at least equal to the depth of the pad or as shown on the Civil Plans.
E. For steps and pavers, a minimum of 1 to 1 1/2 inches (2.5 to 3.8 cm) of free draining sand shall be screeded smooth to act as a placement bed for the steps or pavers.
- Unit Installation**
A. The first course of wall units shall be placed on the prepared Leveling Pad with the aesthetic surface facing out and the back edges tight together. All units shall be checked for level and alignment as they are placed.
B. Ensure that units are in full contact with Leveling Pad. Proper care shall be taken to develop straight lines and smooth curves on base course as per wall layout.
C. The backfill in front and back of entire base row shall be placed and compacted to firmly lock them in place. Check all units again for level and alignment. All excess material shall be swept from top of units.
D. Install next course of wall units on top of base row. Position blocks to be offset from seams of blocks below. Check each block for proper horizontal and vertical alignment and level. Backfill to a 12 inch (30.5 cm) width behind the block with Free Draining Backfill. Spread backfill in uniform lifts not exceeding 8 inches (20.3 cm). Employ methods using lightweight compaction equipment that will not disrupt the stability or batter of the wall. Hand-operated plate compaction equipment shall be used around the block and within 3 feet (0.91 m) of the wall to achieve consolidation. Compact backfill to 95% of standard proctor (ASTM D 698, AASHTO T-99) density within 2% of its optimum moisture content.
E. Install each subsequent course in like manner. Repeat procedure to the extent of wall height.
F. Allowable construction tolerance at the wall face is 2 degrees vertically, 3 inch (7.6 cm) maximum, and 1 inch in 10 feet (2.5 cm in 3.05 m) horizontally.
G. All walls shall be installed in accordance with local building codes and requirements.

PART 4: AVAILABILITY

Rosetta Hardscapes® LLC
 05481 South US-31
 Charlevoix, MI 49720
 1-877-777-6558
www.discoverosetta.com
info@discoverosetta.com

Redi-Wall Division
 Livingston Concrete Inc.
 550 North Old US-23
 Brighton, MI 48114
 1-810-632-3030



DESIGN: EDR/WMP
 DRAFT: L.F.
 CHECK: EDR

DATE	REVISION-DESCRIPTION	DATE	REVISION-DESCRIPTION
8-22-11	REV. PER REVIEW COMMENTS RECEIVED 8-17-11		
9-21-11	PROVIDE ADDITIONAL DETAILS FOR CONSTRUCTION		

2142 COMMUNITY CHURCH
 GENOA CAMPUS
 7526 W. GRAND RIVER

RETAINING WALL NOTES AND DETAILS

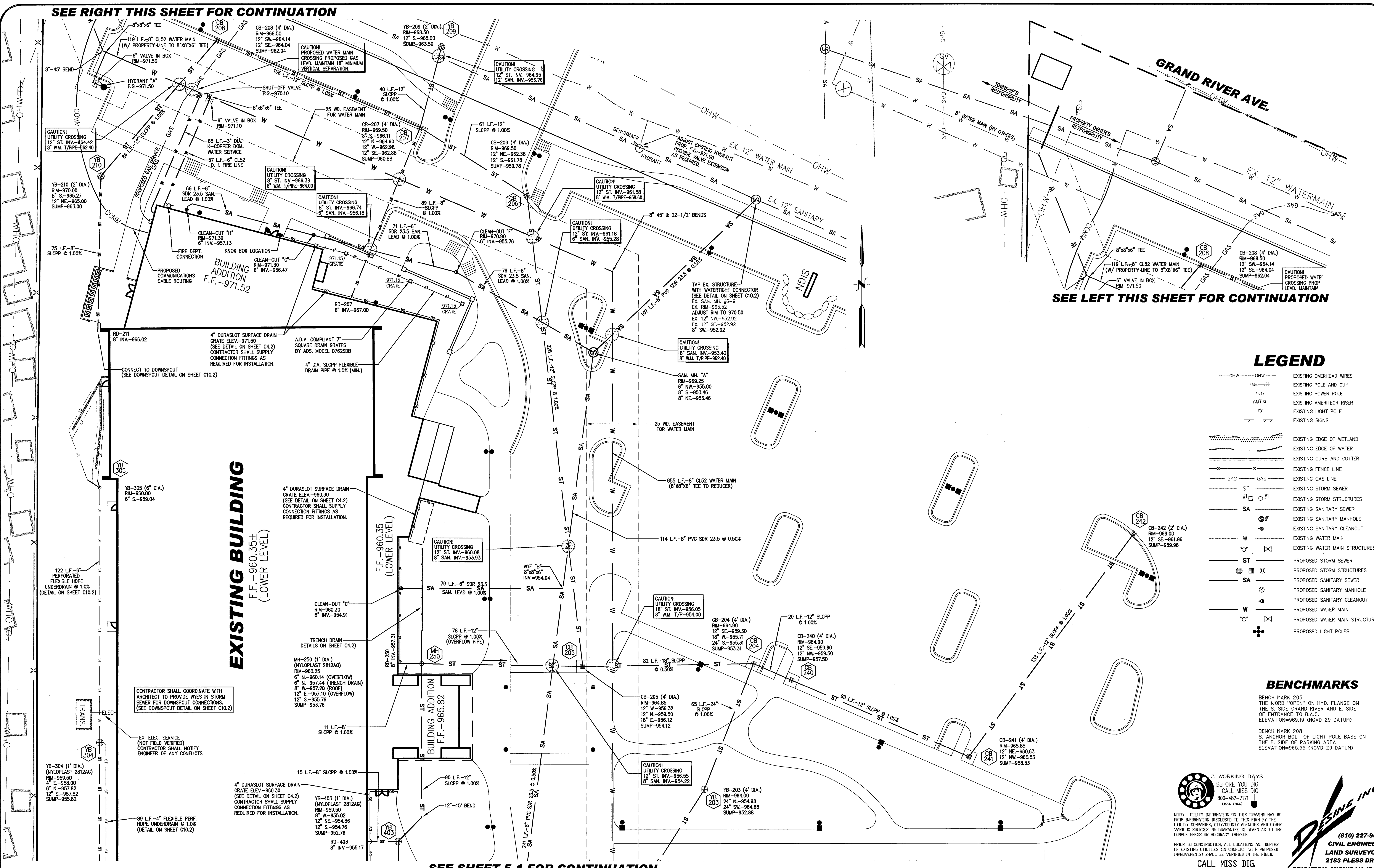
CLIENT: 2142 COMMUNITY CHURCH
 1661 N. LATSON RD.
 HOWELL, MI. 48843
 (810) 231-0190

SCALE: AS SHOWN
 PROJECT No.: 9101777
 DWG NAME: 777-WALLS
 PRINT: SEP 21 2011

C4.3

SEE RIGHT THIS SHEET FOR CONTINUATION

SEE LEFT THIS SHEET FOR CONTINUATION



LEGEND

- OHW — OHW — EXISTING OVERHEAD WIRES
- P — P — EXISTING POLE AND GUY
- P — P — EXISTING POWER POLE
- A — A — EXISTING AMERITECH RISER
- L — L — EXISTING LIGHT POLE
- S — S — EXISTING SIGNS
- E — E — EXISTING EDGE OF WETLAND
- W — W — EXISTING EDGE OF WATER
- C — C — EXISTING CURB AND CUTTER
- F — F — EXISTING FENCE LINE
- G — G — EXISTING GAS LINE
- ST — ST — EXISTING STORM SEWER
- SA — SA — EXISTING STORM STRUCTURES
- SA — SA — EXISTING SANITARY SEWER
- SA — SA — EXISTING SANITARY MANHOLE
- SA — SA — EXISTING SANITARY CLEANOUT
- W — W — EXISTING WATER MAIN
- W — W — EXISTING WATER MAIN STRUCTURES
- ST — ST — PROPOSED STORM SEWER
- ST — ST — PROPOSED STORM STRUCTURES
- SA — SA — PROPOSED SANITARY SEWER
- SA — SA — PROPOSED SANITARY MANHOLE
- SA — SA — PROPOSED SANITARY CLEANOUT
- W — W — PROPOSED WATER MAIN
- W — W — PROPOSED WATER MAIN STRUCTURES
- L — L — PROPOSED LIGHT POLES

BENCHMARKS

BENCH MARK 205
 THE WORD "OPEN" ON HYD. FLANGE ON THE S. SIDE GRAND RIVER AND E. SIDE OF ENTRANCE TO B.A.C. (ELEVATION=969.19 (NGVD 29 DATUM))

BENCH MARK 208
 S. ANCHOR BOLT OF LIGHT POLE BASE ON THE E. SIDE OF PARKING AREA (ELEVATION=965.55 (NGVD 29 DATUM))



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CALL MISS DIG.



SEE SHEET 5.1 FOR CONTINUATION

DESIGN: ED/RMM	DATE: 8-22-11	REVISION-DESCRIPTION: REV. PER REVIEW COMMENTS RECEIVED 8-17-11
DRAFT: L.F.	DATE: 9-06-11	REVISION-DESCRIPTION: REV. WATER MAIN ROUTING TO CONNECT TO M.H.O.G.
CHECK: EDR	DATE: 9-21-11	REVISION-DESCRIPTION: REV. PER PLANNING COMMISSION COMMENTS OF 9-12-11

DATE	REVISION-DESCRIPTION	DATE	REVISION-DESCRIPTION

242 COMMUNITY CHURCH
 GENOA CAMPUS
 7526 W. GRAND RIVER

UTILITY PLAN

CLIENT: 242 COMMUNITY CHURCH
 1661 N. LATSON RD.
 HOWELL, MI. 48843
 (810) 231-0190

SCALE: 1"=20'
 PROJECT No.: 9101777
 DWG NAME: 777-JT
 PRINT: SEP 21 2011

C5.0

SEE SHEET 5.0 FOR CONTINUATION

LEGEND

- O—W—O—W— CHW
- P—P—P—P— EXISTING POLE AND GUY
- P—P—P—P— EXISTING POWER POLE
- P—P—P—P— EXISTING AMERTCH RISER
- P—P—P—P— EXISTING LIGHT POLE
- P—P—P—P— EXISTING SIGNS
- E—E—E—E— EXISTING EDGE OF WETLAND
- E—E—E—E— EXISTING EDGE OF WATER
- C—C—C—C— EXISTING CURB AND GUTTER
- X—X—X—X— EXISTING FENCE LINE
- G—G—G—G— EXISTING GAS LINE
- S—S—S—S— EXISTING STORM SEWER
- S—S—S—S— EXISTING SANITARY SEWER
- S—S—S—S— EXISTING SANITARY MANHOLE
- S—S—S—S— EXISTING SANITARY CLEANOUT
- S—S—S—S— EXISTING WATER MAIN
- S—S—S—S— EXISTING WATER MAIN STRUCTURES
- S—S—S—S— PROPOSED STORM SEWER
- S—S—S—S— PROPOSED STORM STRUCTURES
- S—S—S—S— PROPOSED SANITARY SEWER
- S—S—S—S— PROPOSED SANITARY MANHOLE
- S—S—S—S— PROPOSED SANITARY CLEANOUT
- S—S—S—S— PROPOSED WATER MAIN
- S—S—S—S— PROPOSED WATER MAIN STRUCTURES
- S—S—S—S— PROPOSED LIGHT POLES

BENCHMARKS

BENCH MARK 205
THE WORD "OPEN" ON HYD. FLANGE ON THE S. SIDE GRAND RIVER AND E. SIDE OF ENTRANCE TO B.A.C.
ELEVATION=969.19 (NGVD 29 DATUM)

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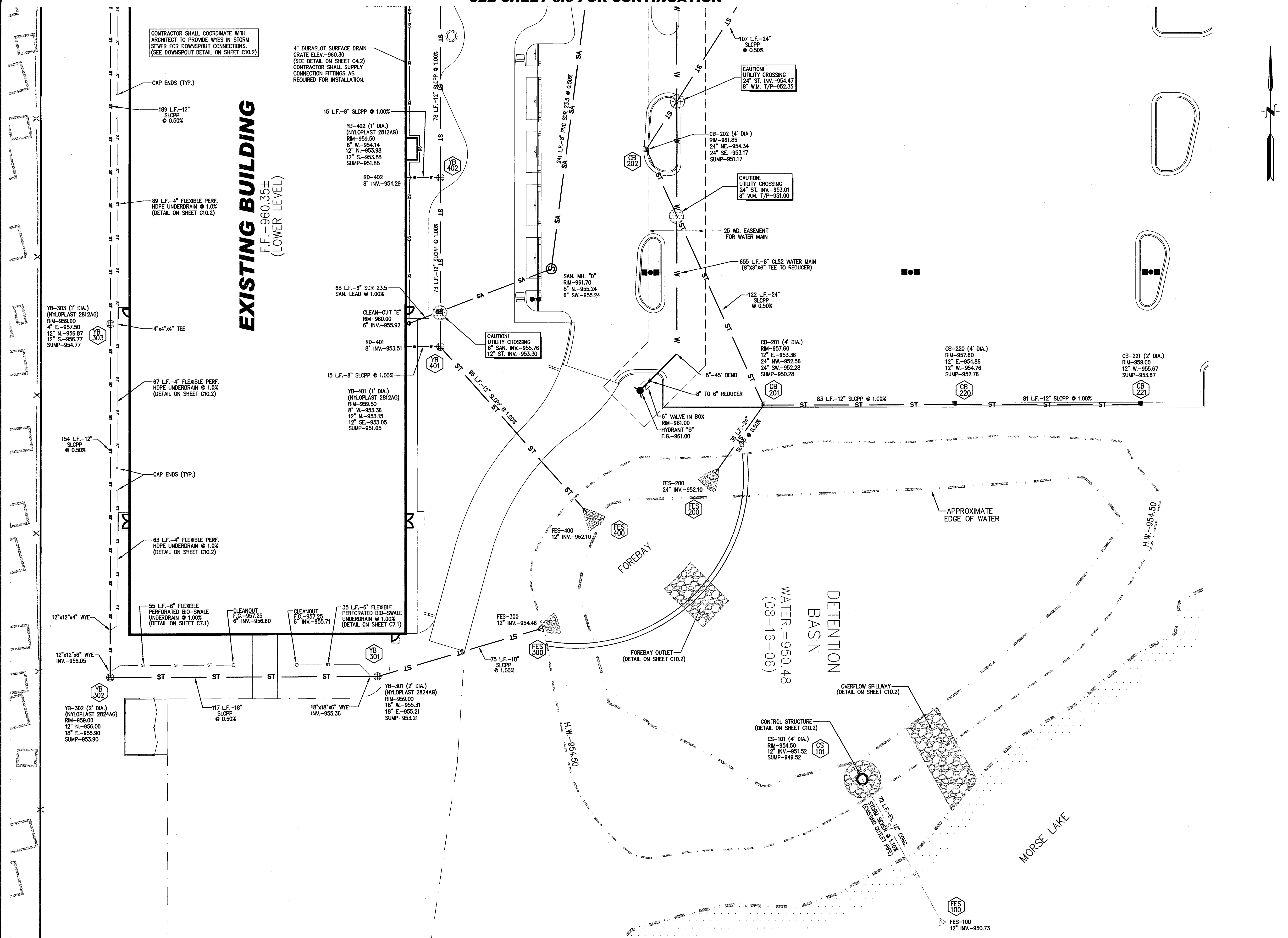
CALL MISS DIG.



EXISTING BUILDING
F.F. - 960.35±
(LOWER LEVEL)

CONTRACTOR SHALL COORDINATE WITH ARCHITECT TO PROVIDE WYES IN STORM SEWER FOR DOWNSPOUT CONNECTIONS. (SEE DOWNSPOUT DETAIL ON SHEET C10.2)

4" DURASLOT SURFACE DRAIN
GRATE ELEV.-960.30
(SEE DETAIL ON SHEET C4.2)
CONTRACTOR SHALL SUPPLY CONNECTION FITTINGS AS REQUIRED FOR INSTALLATION.



DESIGN: EDR/WMP	DATE	REVISION-DESCRIPTION	DATE	REVISION-DESCRIPTION
DRAFT: L.F.	8-22-11	REV. PER REVIEW COMMENTS RECEIVED 8-17-11		
CHECK: EDR	9-06-11	REV. WATER MAIN ROUTING TO CONNECT TO M.H.O.G.		
	9-21-11	REV. PER PLANNING COMMISSION COMMENTS OF 9-12-11		

DATE	REVISION-DESCRIPTION	DATE	REVISION-DESCRIPTION

2142 COMMUNITY CHURCH
GENOA CAMPUS
7526 W. GRAND RIVER

UTILITY PLAN

CLIENT:
2142 COMMUNITY CHURCH

1661 N. LATSON RD.
HOWELL, MI. 48843
(810) 231-0190

SCALE: 1"=20'
PROJECT No.: 9101777
DWG NAME: 777-JT
PRINT: SEP 21 2014

C5.1

Project: 242 Community Church														Project #: 9101777						
Design Criteria: 10 year event (I = 175ft + 25) SLCPP (n=0.010)														Date: 9/20/2011						
From MH#	To MH#	Inc. Acres	Eqv. Area 100% CA	Total Area 100% CA	T Time Min.	I Per Hour	Q c.f.s.	Di. of pipe inch	Slope %	Slope H.G.	Length of line ft.	Vel. Flow full ft./sec.	Time of flow min.	Cap of pipe c.f.s.	H.G. Elev. upper end	Ground Elev. Upper end	Lower end	Invert Elev. Upper end	Lower end	
YB-209	CB-207	0.43	0.20	0.09	0.09	15.0	4.38	0.38	12"	1.00	40	5.90	0.1	4.63	968.50	969.50	965.00	964.60		
RD-211	YB-210	0.16	0.80	0.13	0.13	15.0	4.38	0.56	8"	1.00	75	4.50	0.3	1.57	971.52	970.00	966.02	965.27		
YB-210	CB-208	0.14	0.40	0.06	0.18	15.3	4.34	0.80	12"	1.00	86	5.90	0.2	4.63	970.00	969.50	965.00	964.14		
CB-208	CB-207	0.42	0.52	0.22	0.40	15.5	4.32	1.74	12"	1.00	106	5.90	0.3	4.63	969.50	969.50	964.04	962.98		
RD-207	CB-207	0.24	0.80	0.19	0.19	15.0	4.38	0.84	8"	1.00	89	4.50	0.3	1.57	971.52	969.50	967.00	966.11		
CB-207	CB-206	0.19	0.75	0.14	0.82	15.8	4.29	3.53	12"	1.00	61	5.90	0.2	4.63	969.50	969.50	962.88	962.38		
CB-206	CB-205	0.15	0.85	0.13	0.95	16.0	4.27	4.06	12"	1.00	228	5.90	0.6	4.63	969.50	964.85	961.78	959.50		
TRENCH	MH-250	0.13	0.31	0.04	0.04	15.0	4.38	0.18	6"	1.00	55	3.71	0.2	0.73	960.20	963.25	957.99	957.44		
RD-250	MH-250	0.32	0.80	0.26	0.26	15.0	4.38	1.12	8"	1.00	11	4.50	0.0	1.57	960.00	963.25	957.31	957.20		
MH-250	CB-205	0.00	0.00	0.00	0.30	15.2	4.35	1.29	12"	1.00	78	5.90	0.2	4.63	963.25	964.85	957.10	956.32		
CB-205	CB-204	0.35	0.86	0.30	1.55	16.6	4.20	6.51	18"	0.50	82	5.46	0.3	9.66	964.85	965.00	956.12	955.71		
CB-242	CB-241	0.22	0.58	0.13	0.13	15.0	4.38	0.56	12"	1.00	133	5.90	0.4	4.63	969.00	965.85	961.96	960.63		
CB-241	CB-240	0.65	0.74	0.48	0.61	15.4	4.33	2.64	12"	1.00	93	5.90	0.3	4.63	965.85	964.90	960.53	959.60		
CB-240	CB-204	0.54	0.69	0.37	0.98	15.6	4.31	4.23	12"	1.00	20	5.90	0.1	4.63	964.90	965.00	959.50	959.30		
CB-204	YB-203	0.66	0.66	0.44	2.96	16.9	4.18	12.39	24"	0.50	65	6.62	0.2	20.80	965.00	964.00	955.31	954.98		
YB-203	CB-202	0.20	0.31	0.06	3.03	17.1	4.16	12.60	24"	0.50	107	6.62	0.3	20.80	964.00	961.85	954.88	954.34		

Project: 242 Community Church														Project #: 9101777						
Design Criteria: 10 year event (I = 175ft + 25) SLCPP (n=0.010)														Date: 9/20/2011						
From MH#	To MH#	Inc. Acres	Eqv. Area 100% CA	Total Area 100% CA	T Time Min.	I Per Hour	Q c.f.s.	Di. of pipe inch	Slope %	Slope H.G.	Length of line ft.	Vel. Flow full ft./sec.	Time of flow min.	Cap of pipe c.f.s.	H.G. Elev. upper end	Ground Elev. Upper end	Lower end	Invert Elev. Upper end	Lower end	
CB-202	CB-201	0.18	0.86	0.15	3.18	17.3	4.14	13.16	24"	0.50	122	6.62	0.3	20.80	961.85	967.60	953.17	952.56		
CB-221	CB-220	0.16	0.86	0.14	0.14	15.0	4.38	0.60	12"	1.00	81	5.90	0.2	4.63	959.00	957.60	955.00	954.19		
CB-220	CB-201	0.48	0.81	0.39	0.53	15.2	4.35	2.29	12"	1.00	83	5.90	0.2	4.63	957.60	957.60	954.09	953.26		
CB-201	FES-200	0.66	0.89	0.59	4.30	17.6	4.11	17.63	24"	0.50	36	6.62	0.1	20.80	957.60	953.35	952.28	952.10		
MH-250	YB-403	0.00	0.00	0.00	0.30	15.2	4.35	1.29	12"	1.00	90	5.90	0.3	4.63	962.25	959.50	955.76	954.86		
RD-403	YB-403	0.08	0.80	0.06	0.06	15.0	4.38	0.28	8"	1.00	15	4.50	0.1	1.57	960.00	959.50	955.17	955.02		
YB-403	YB-402	0.06	0.43	0.03	0.39	15.5	4.32	1.67	12"	1.00	78	5.90	0.2	4.63	959.50	959.50	954.76	953.98		
RD-402	YB-402	0.07	0.80	0.06	0.06	15.0	4.38	0.25	8"	1.00	15	4.50	0.1	1.57	960.00	959.50	954.29	954.14		
YB-402	YB-401	0.06	0.43	0.03	0.47	15.7	4.30	2.01	12"	1.00	73	5.90	0.2	4.63	959.50	959.50	953.88	953.15		
RD-401	YB-401	0.26	0.80	0.21	0.21	15.0	4.38	0.91	8"	1.00	15	4.50	0.1	1.57	960.00	959.50	953.51	953.36		
YB-401	FES-400	0.18	0.20	0.04	0.71	15.9	4.28	3.04	12"	1.00	95	5.90	0.3	4.63	959.50	959.50	953.05	952.10		

Project: 242 Community Church														Project #: 9101777						
Design Criteria: 10 year event (I = 175ft + 25) SLCPP (n=0.010)														Date: 7/27/2011						
From MH#	To MH#	Inc. Acres	Eqv. Area 100% CA	Total Area 100% CA	T Time Min.	I Per Hour	Q c.f.s.	Di. of pipe inch	Slope %	Slope H.G.	Length of line ft.	Vel. Flow full ft./sec.	Time of flow min.	Cap of pipe c.f.s.	H.G. Elev. upper end	Ground Elev. Upper end	Lower end	Invert Elev. Upper end	Lower end	
YB-305	YB-304	0.20	0.20	0.04	0.04	15.0	4.38	0.18	6"	1.00	122	3.71	0.5	0.73	960.00	959.50	959.04	957.82		
YB-304	YB-303	0.39	0.48	0.19	0.23	15.5	4.32	0.98	12"	0.50	189	4.17	0.8	3.28	959.50	959.00	957.82	956.87		
YB-303	YB-302	0.61	0.46	0.28	0.51	16.3	4.24	2.15	12"	0.50	154	4.17	0.6	3.28	959.00	959.00	956.77	956.00		
YB-302	YB-301	0.89	0.60	0.53	1.04	16.9	4.17	4.35	18"	0.50	117	5.46	0.4	9.66	959.00	959.00	955.90	955.31		
YB-301	FES-300	0.39	0.85	0.33	1.37	17.3	4.14	5.68	18"	0.50	75	5.46	0.2	9.66	959.00	954.46	955.21	954.46		

From C.O.#	To C.O.#	# Single Family	Average Daily Flow (GPD)	Peak Hourly Flow (GPM)	Total Peak Flow (GPM)	Pipe Diam. (inch)	Pipe Length (feet)	Slope %	Pipe Capacity (GPM)	Velocity Flow (FPS)	Rim Elevation Upper End	Lower End	Invert Elevation Upper End	Lower End
C.O.-E	MH-D	7	1820	8,531.3	8,531.3	6	68	1.00	273.54	3.10	960.00	961.70	955.92	955.24
MH-D	WYE-B	0	0	0.0000	8,531.3	8	241	0.50	416.56	2.66	961.70	961.90	955.24	954.04
C.O.-C	WYE-B	7	1820	8,531.3	8,531.3	6	79	1.00	273.54	3.10	960.30	966.20	954.91	954.04
WYE-B	MH-A	0	0	0.0000	17,062.5	8	114	0.50	416.56	2.66	966.20	969.25	954.04	953.46
C.O.-H	C.O.-G	6	1560	7,312.5	7,312.5	6	66	1.00	273.54	3.10	971.30	971.30	957.13	956.47
C.O.-G	C.O.-F	0	0	0.0000	7,312.5	6	71	1.00	273.54	3.10	971.30	970.90	956.47	955.76
C.O.-F	MH-A	0	0	0.0000	7,312.5	6	76	1.00	273.54	3.10	970.90	969.25	955.76	955.00
MH-A	S-9	0	0	0.0000	24,375.0	8	107	0.50	416.56	2.66	969.25	970.50	953.46	952.92

DESIGN: EDW/RMP
 DRAFT: L.F.
 CHECK: EDW

DATE	REVISION-DESCRIPTION
8-22-11	REV. PER REVIEW COMMENTS RECEIVED 8-17-11
9-06-11	REV. SANITARY AND STORM SEWER CALCS
9-21-11	REV. STORM SEWER CALCS

DATE	REVISION-DESCRIPTION

242 COMMUNITY CHURCH
 GENOA CAMPUS
 7526 W. GRAND RIVER

UTILITY
 CALCULATIONS

CLIENT:
 242 COMMUNITY CHURCH
 1661 N. LATSON RD.
 HOWELL, MI. 48843
 (810) 231-0190

SCALE: N/A
 PROJECT No.: 9101777
 DWG NAME: 777-DTLS
 PRINT: SEP 21 2011

C5.2

100-YEAR STORM DETENTION CALCULATIONS						
Tributary Area (A) =	11.00	Acres				
Compound Runoff Coefficient (C) =	0.62					
Design Constant (K1) = A * C =	6.82					
Allowable Outflow Rate (Qo) =	2.20	cfs				
1	2	3	4	5	6	7
Duration (Minutes)	Duration (Seconds)	Intensity (100-yr Storm) (in / hr)	Col. 2 * Col. 3 (inches)	Inflow Volume = Col. 4 * K1 (Cubic Feet)	Outflow Volume = Col. 2 * Qo (Cubic Feet)	Storage Volume = Col. 5 - Col. 6 (Cubic Feet)
5	300	8.17	2750	10785	660	18055
10	600	7.86	4714	32151	1320	30631
15	900	6.88	6188	42199	1980	40219
20	1200	6.11	7333	50013	2640	47373
30	1800	5.00	9000	61800	3960	57840
60	3600	3.24	11647	79433	7920	71513
90	5400	2.39	12913	88067	11880	76187
120	7200	1.80	13655	93128	15840	77288
180	10800	1.34	14468	98907	23760	75047

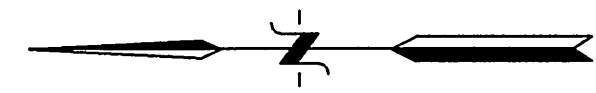
Note: Figures in Columns (3) and (4) are computed by the formula $I = 275 / (t + 25)$ (i.e. 100-yr Curve);
 * Allowable outflow rate Qo is computed by one of the following cases:
 Case 1: Qo = capacity of existing discharge conduit or channel.
 Case 2: Qo = $q * A$ where q = Permissible discharge rate per acre of tributary area = 0.20 cfs / Acre
 Bankfull Volume: $(8170)(0.62) = 5090$
 $(8170)(11.00)(0.62) = 55719$ cf
 First Flush Volume: $(1815)(0.62) = 1125$
 $(1815)(11.00)(0.62) = 12378$ cf
 Forebay Volume (5% of 100 year Volume): $(77288)(0.05) = 3864$ cf

DETENTION VOLUME					
Basin Volume (Including Forebay):					
ELEVATION	AREA (S.F.)	AVERAGE AREA (S.F.)	DEPTH (FT)	VOLUME (C.F.)	TOTAL VOLUME (C.F.)
955.00	38060	35943	1.0	35943	95381
954.00	33826	31779	1.0	31779	59438
953.00	29732	27659	1.0	27659	27659
952.00	25586				
				TOTAL VOLUME =	95381

Forebay Volume:					
ELEVATION	AREA (S.F.)	AVERAGE AREA (S.F.)	DEPTH (FT)	VOLUME (C.F.)	TOTAL VOLUME (C.F.)
954.00	5114				
953.00	4081	4598	1.0	4598	8252
952.00	3228	3655	1.0	3655	3655
				TOTAL VOLUME =	8252

STORAGE ELEVATIONS					
First Flush:					
$((953.00 - 952.00) / (27659 - 0)) = ((X - 952.00) / (12378 - 0)) =$					952.45
Bankfull:					
$((954.00 - 953.00) / (59438 - 27652)) = ((X - 953.00) / (55719 - 27652)) =$					953.88
100 year:					
$((955.00 - 954.00) / (95381 - 59438)) = ((X - 954.00) / (77288 - 59438)) =$					954.50

Sanitary Sewer Lead Calculations														
REU assignment factors based on the Genoa Township Equivalent User Table dated February 21, 2005.														
Church Use Calculation: 0.25 REUs per 1,000 square feet														
Total area of Church Use = 80250 sq ft														
REU factor = 20 REUs														
MHO design standards: 260 GPD per REU														
Peak flow factor (10 states standard): 4.50														
Assumed hours of operation per day: 16														
From C.O.#	To C.O.#	# Single Family	Average Daily Flow (GPD)	Peak Hourly Flow (GPM)	Total Peak Flow (GPM)	Pipe Diam. (inch)	Pipe Length (feet)	Slope %	Pipe Capacity (GPM)	Velocity Flow (FPS)	Rim Elevation Upper End	Lower End	Invert Elevation Upper End	Lower End



LEGEND

- EXISTING BRUSH/TREE LINE
- EXISTING TREE
- EXISTING CONTOURS
- EXISTING EDGE OF WETLAND
- EXISTING EDGE OF WATER
- EXISTING CURB AND GUTTER
- EXISTING STORM SEWER
- EXISTING STORM STRUCTURES
- PROPOSED STORM SEWER
- PROPOSED STORM STRUCTURES
- PROPOSED CONTOURS

SOIL EROSION MEASURES

6	SEEDING WITH WHEAT AND/OR WHEATGRASS	INCLUDES ESTABLISHMENT OF VEGETATION COVER EFFECTIVE AND BRANCHWAYS WITH LOW VELOCITY. SEEDS PLACED IN SMALL QUANTITIES BY RESPONSIBLE PERSONNEL. SOIL MUST BE FERTILIZED, IRRIGATED, AND...
8	SOILING	FRAMES MUST BE PROTECTED FOR ONE YEAR OR MORE. SEEDS MAY BE WITHDRAWN TO EXHAUSTION TO PLACE, MAY BE REAPPLIED IF DANGEROUS. SOILING MUST BE MAINTAINED THROUGHOUT.
13	STRIP CURBS	USE WHERE VEGETATION IS NOT EASILY ESTABLISHED. STRIP CURBS MUST BE INSTALLED IN AREAS OF HIGH VELOCITY OR HIGH CONCENTRATION. STRIP CURBS MUST BE MAINTAINED THROUGHOUT.
14	ASCENDING CURBS	INSTALLS ONE SLOPE. THIS MAXIMIZE PROTECTS CONSTRUCTION FROM INADEQUATE WEATHER. MAY BE USED AS PART OF PERMANENT BASE CONSTRUCTION OF PAVED AREAS.
36	GRASS FILTER STRIP	COLLECTS HIGH VELOCITY CONCENTRATED RUNOFF. MAY USE FILTER CLOTH OVER NET.
55	ROCK FILTER STRIP	USE WHERE HIGH VELOCITY CONCENTRATED RUNOFF MAY BE CONCENTRATED IN PAVED AREAS. MUST BE CONSTRUCTED IN PERMANENT. MUST BE MAINTAINED THROUGHOUT.

T=TEMPORARY P=PERMANENT
 36" SILT FENCE

BENCHMARKS

BENCH MARK 205
 THE WORD "OPEN" ON HYD. FLANGE ON THE S. SIDE GRAND RIVER AND E. SIDE OF ENTRANCE TO B.A.C. ELEVATION=969.19 (NGVD 29 DATUM)

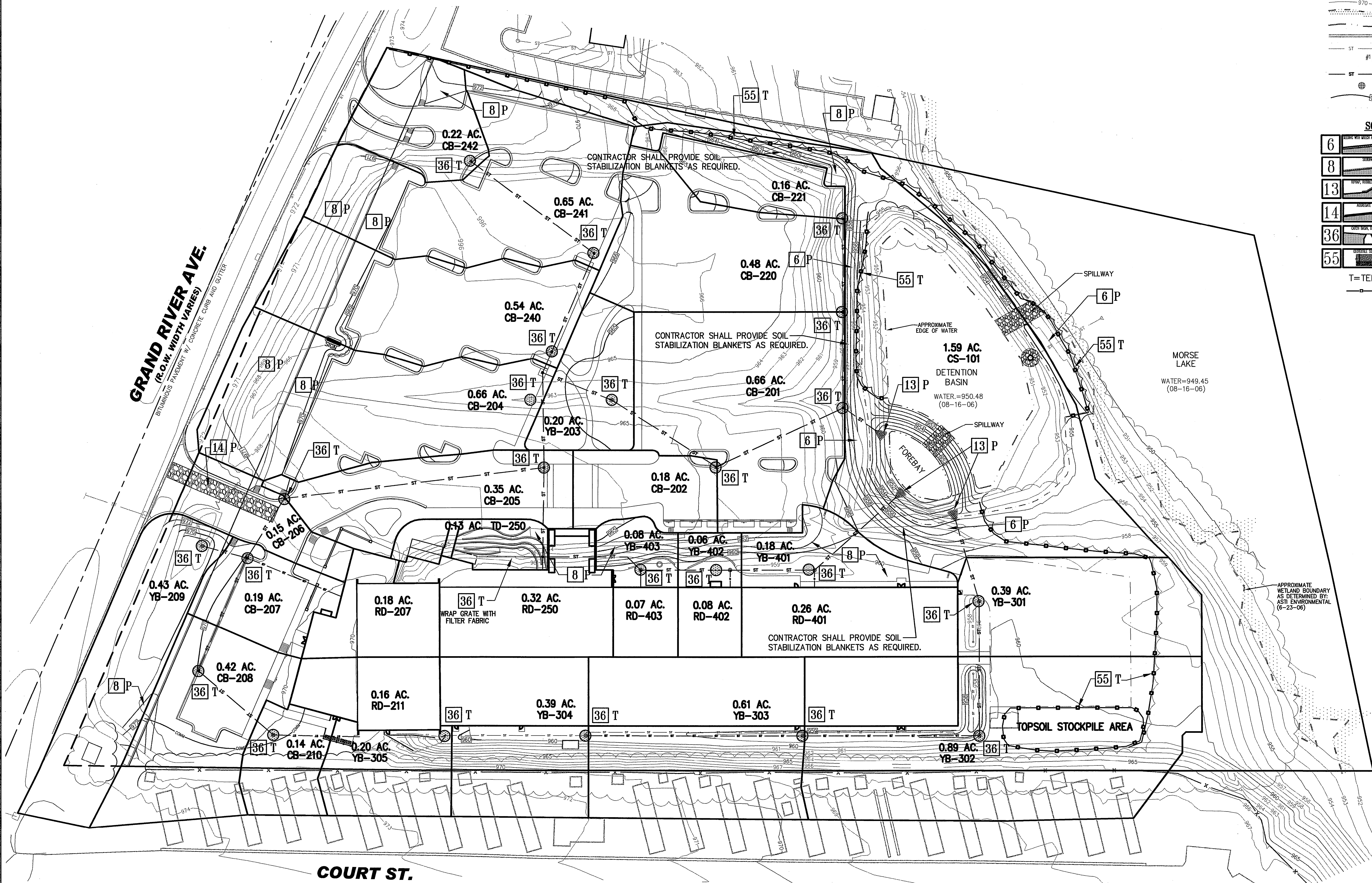
BENCH MARK 208
 S. ANCHOR BOLT OF LIGHT POLE BASE ON THE S. SIDE OF PARKING AREA. ELEVATION=965.55 (NGVD 29 DATUM)



NOTE: UTILITY INFORMATION ON THIS DRAWING MAY BE FROM INFORMATION DISCLOSED TO THIS FIRM BY THE UTILITY COMPANIES, CITY/COUNTY AGENCIES AND OTHER VARIOUS SOURCES. NO GUARANTEE IS GIVEN AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING UTILITIES IN CONFLICT WITH PROPOSED IMPROVEMENTS SHALL BE VERIFIED IN THE FIELD.

CALL MISS DIG.



DESIGN: EDR/WMP
 DRAFT: L.F.
 CHECK: EDR

DATE	REVISION-DESCRIPTION	DATE	REVISION-DESCRIPTION
8-22-11	REV. PER REVIEW COMMENTS RECEIVED 8-17-11		
9-06-11	REVISE ROOF LEADS AND DRAINAGE AREAS		
9-21-11	REVISE PER PLANNING COMMISSION COMMENTS OF 9-12-11		

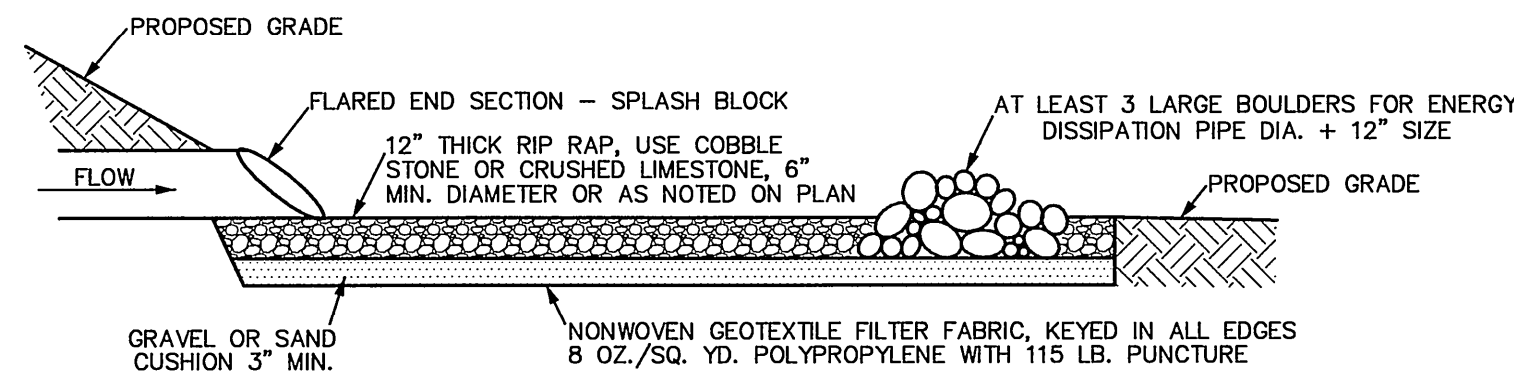
242 COMMUNITY CHURCH
 GENOA CAMPUS
 7526 W. GRAND RIVER

SOIL EROSION
 AND
 WATERSHED PLAN

CLIENT:
 242 COMMUNITY CHURCH
 1661 N. LATSON RD.
 HOWELL, MI 48843
 (810) 231-0190

SCALE: 1"=40'
 PROJECT No.: 9101777
 DWG NAME: 777-EROSION
 PRINT: SEP 2 1 2011

C6.0



13 RIP RAP CROSS SECTION
NOT TO SCALE

- NOTES:
1. GROUT RIP RAP WITH A 6" THICK CEMENT SLURRY FOR SLOPES STEEPER THAN 20%, 5 ON 1.
 2. PROVIDE ANIMAL GUARDS ON ALL STORM SEWER 15" DIA. OR GREATER, INCIDENTAL TO FES PIPE.

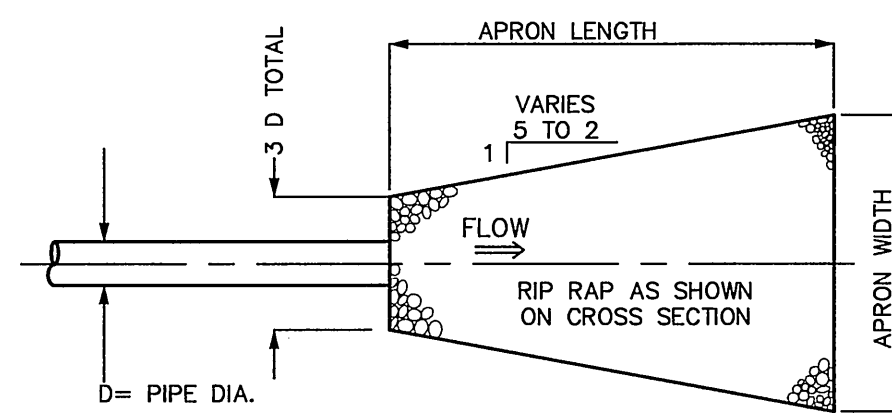
MIN. RIP RAP DIMENSIONS

PIPE DIAMETER (inch)	APRON LENGTH (feet)	(1) APRON WIDTH (feet)	(2) ALTERNATE APRON WIDTH (feet)
12	12	8	16
15	15	10	20
18	18	12	24
21	21	14	28
24	24	16	32
30	30	20	40
36	36	24	48
42	42	28	56

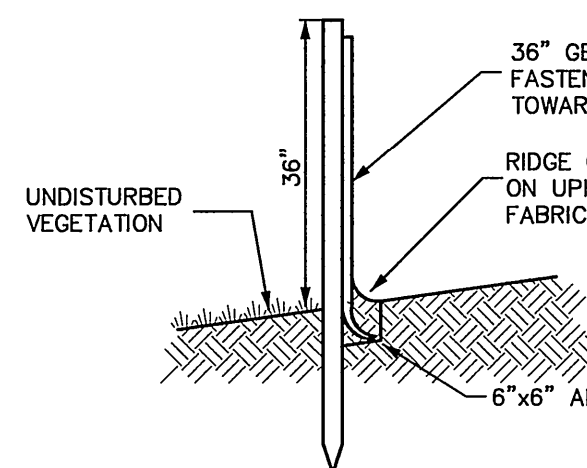
UNLESS SHOWN OTHERWISE ON PLANS. May be varied to match natural features; i.e. when meeting ex. ditch, apron width to match channel bottom extending up sides to a depth of 1/2 pipe dia.

(1) APRON WIDTH FOR USE IN DITCHES AND SWALES

(2) APRON WIDTH FOR USE IN FLAT AREAS WHERE SHEET FLOW DESIRED

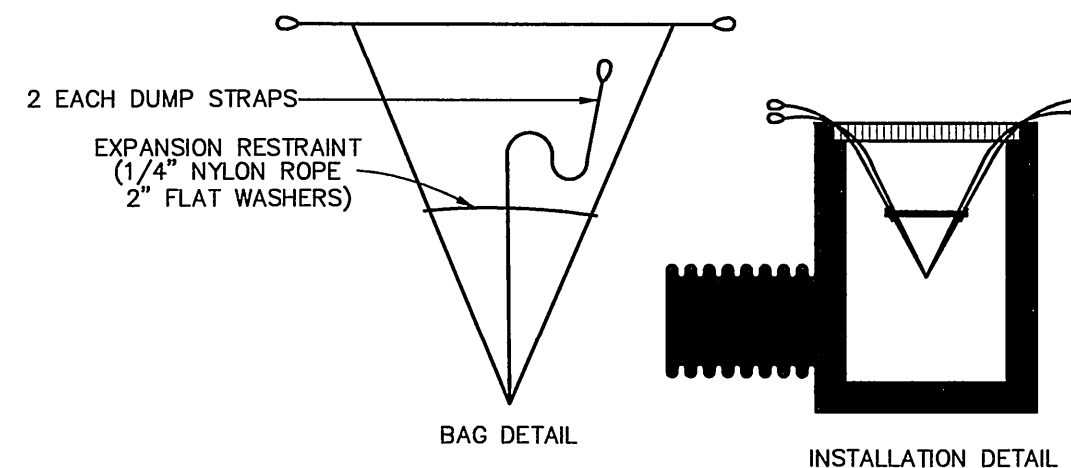


13 RIP RAP PLAN
NOT TO SCALE

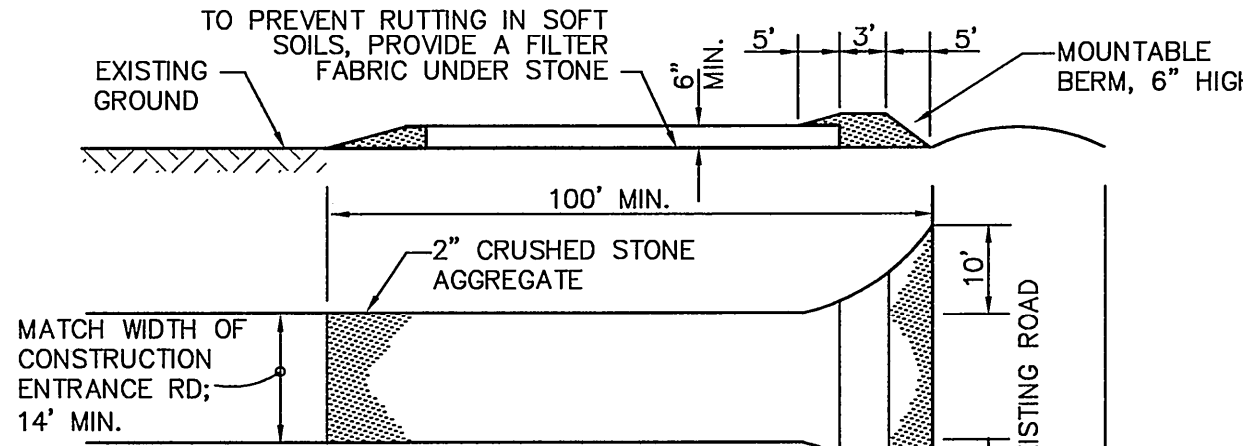


55 SILT FENCE
NOT TO SCALE

- NOTES:
1. REPAIR AND REPLACE SILT FENCE AS NEEDED, INCIDENTAL.
 2. FIELD LOCATE SILT FENCE TO FOLLOW CONSTANT CONTOUR ELEVATIONS.
 3. INSTALL SED. TRAP AND FILTER AT DRAINAGE LOW POINTS, INCIDENTAL.
 4. OVERLAP FENCES AT JOINTS.

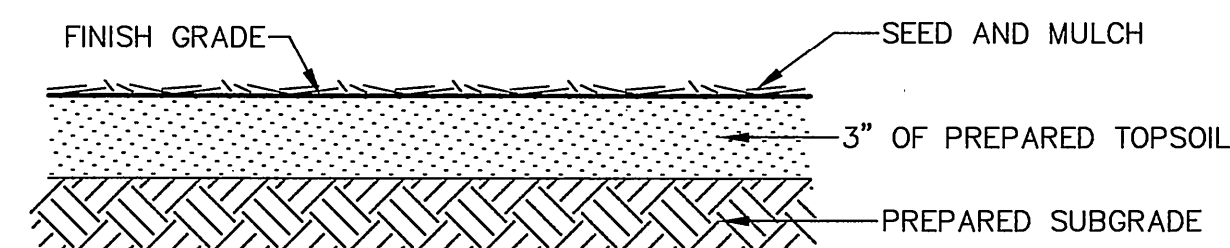


36 INLET SEDIMENT FILTER
NOT TO SCALE



14 MUD TRACKING CONTROL DIAPER
NO SCALE

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



SEEDING DETAIL
NOT TO SCALE

1. Seed mixture shall consist of: 10% - Kentucky Blue Grass, 20% - Perennial Ryegrass, 30% - Hard Fescue, 40% - Creeping Red Fescue. Seed shall be uniformly applied at a rate of 210 pounds per acre.
2. Topsoil shall be a dark, organic, natural surface soil free of clay lumps, peat or muck, subsoil, noxious weeds or other foreign matter such as roots, sticks, rocks over 1/2" in diameter and not frozen or muddy. Material shall meet with approval of the Engineer.
3. Straw mulching shall be a minimum depth of 3" applied at a rate of 1.5 to 2 tons per acre. All mulching must have a tie down, such as tackifier, net binding, etc.
4. Fertilizer shall be evenly applied at a rate which will provide 150 pounds per acre of chemical fertilizer nutrients, in equal portions, (10-10-10), of Nitrogen, Phosphoric Acid and Potash.
5. Hydroseeding is not acceptable for slopes exceeding 1%. In such cases, stabilization shall be done with seed and straw mulch with a tackifier.
6. The earthen areas to receive topsoil shall be at the required grade and properly trimmed. Topsoil shall be spread on the prepared areas to a depth of 3 inches. After spreading, any large clods and lumps of topsoil shall be broken up and pulverized. Stones and rocks over 1/2" in diameter, roots, litter, and all foreign matter shall be raked up and disposed of by the contractor. Place topsoil only when it can be followed within a reasonable time by seeding operations.



SOILS MAP

Map Unit Legend

Livingston County, Michigan (MI093)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BWB	Boyer-Oshelmo loamy sands, 2 to 6 percent slopes	2.5	11.4%
BWC	Boyer-Oshelmo loamy sands, 6 to 12 percent slopes	6.3	28.8%
BWE	Boyer-Oshelmo loamy sands, 18 to 25 percent slopes	2.8	13.0%
BWA	Bronson loamy sand, 0 to 2 percent slopes	3.4	15.4%
CWA	Conover loam, 0 to 2 percent slopes	0.0	0.1%
FRB	Fox-Boyer complex, 2 to 6 percent slopes	0.4	1.6%
FCB	Fox-Boyer complex, 6 to 12 percent slopes	1.3	6.0%
FCD	Fox-Boyer complex, 12 to 18 percent slopes	0.3	1.4%
FRD	Fox-Boyer complex, 18 to 25 percent slopes	0.0	0.1%
Ho	Houghton muck	1.9	8.8%
MoB	Miami loam, 2 to 6 percent slopes	0.2	1.1%
W	Water	2.7	12.4%
Totals for Area of Interest		21.9	100.0%

SOIL EROSION AND SEDIMENTATION CONTROL NOTES:

1. The Soil Erosion and Sedimentation Control Specifications of the appropriate Local, County and/or State Agencies are a part of this work. Refer to the General Notes on the Project Plans for additional requirements.
2. The Soil Erosion and Sedimentation Control (SESC) Permit Holder shall be responsible for compliance with the SESC Permit requirements for the duration of the permit and until receipt of final approval from the Permitting Agency. For any site with an earth disturbance area of 1 acre or greater, the SESC Permit Holder shall retain a Certified Storm Water Operator in accordance with the SESC Permit requirements. The Certified Storm Water Operator shall perform routine inspections of the site and the SESC measures and file inspection reports in accordance with the SESC permit requirements. For any site with an earth disturbance area of 5 acres or greater, the SESC Permit Holder shall file a National Pollutant Discharge Elimination System (NPDES) Notice of Coverage Form with the State DEQ prior to any earth disruption.
3. The Contractor shall install the appropriate Soil Erosion Control Measures in accordance with the Project Plans prior to massive earth disruption, including but not limited to; silt fence, and tracking control mats and sediment filters on existing storm sewer structures. Demolition work may be necessary prior to installation of some soil erosion control measures. In such cases, postpone installation of affected soil erosion control measures until immediately following demolition work. Refer to the Project Plans and the Soil Erosion Control and Construction Sequence for additional requirements.
4. The Contractor shall schedule work so as to minimize the period of time that an area is exposed and disturbed. The Contractor shall observe the grading limits and limits of disturbance in accordance with the Project Plans. The Contractor shall maintain an undisturbed vegetative buffer around the work when shown on the Project Plans.
5. The Contractor shall install and maintain Soil Erosion Control Measures in accordance with the Project Plans during the appropriate phases of construction. The Project Plans show the minimum requirements for Soil Erosion Control Measures. The Contractor shall install additional Soil Erosion Control Measures as necessary due to site conditions and as directed by the Permitting Agency and/or Engineer. The Contractor shall perform routine inspection and maintenance of all Soil Erosion Control Measures to ensure compliance with the permit requirements and proper operation of the Soil Erosion Control Measures.
6. The Contractor shall strip and stockpile topsoil from all areas of proposed disturbance. Topsoil stockpiles shall be located in accordance with the Project Plans. Topsoil stockpiles shall be stabilized with vegetative growth (or matted with straw during the non-growing season) to prevent wind and water erosion. A temporary diversion berm and silt fence shall encompass all earthen material stockpiles, including but not limited to topsoil, sand and gravel.
7. The Contractor shall install Soil Erosion Control Measures associated with the proposed storm sewer system during storm sewer construction. Inlet structure filters shall be installed immediately following completion of each storm inlet structure. Riprap shall be installed immediately following the installation of each flared end section with the following exception: Storm drain outlets that do NOT empty into a Retention, Detention or Sedimentation Basin shall have a temporary 5' wide x 10' long x 3' deep sump installed at the termination of the storm sewer. Upon completion of the stabilization work, the sump area shall be filled and riprap shall be installed in accordance with the Project Plans.
8. The Contractor shall install filter stone around the storm basin control structure(s) in accordance with the Project Plans immediately following installation of the control structure(s). The filter stone shall be monitored for sediment build up. The filter stone may need to be cleaned and/or replaced as site conditions require and as directed by the Permitting Agency and/or the Engineer.
9. All disturbed areas outside of paved areas shall be restored within 15 days of finish grading. Proposed vegetative areas shall be restored with a minimum of 3-inches of topsoil, then seeded and mulched; unless noted otherwise on the Project Plans. During the non-growing season, temporary stabilization shall be provided using straw matting or as directed by the Permitting Agency and/or the Engineer.
10. Following complete site restoration and stabilization; sediment shall be removed from all storm sewer structures, paved areas and storm basins. The SESC Permit Holder shall contact the Permitting Agency to request closure of the SESC permit. For any site with an earth disturbance area of 5 acres or greater, the SESC Permit Holder shall file a NPDES Notice of Termination Form with the State DEQ.

4. The Contractor shall schedule work so as to minimize the period of time that an area is exposed and disturbed. The Contractor shall observe the grading limits and limits of disturbance in accordance with the Project Plans. The Contractor shall maintain an undisturbed vegetative buffer around the work when shown on the Project Plans.

5. The Contractor shall install and maintain Soil Erosion Control Measures in accordance with the Project Plans during the appropriate phases of construction. The Project Plans show the minimum requirements for Soil Erosion Control Measures. The Contractor shall install additional Soil Erosion Control Measures as necessary due to site conditions and as directed by the Permitting Agency and/or Engineer. The Contractor shall perform routine inspection and maintenance of all Soil Erosion Control Measures to ensure compliance with the permit requirements and proper operation of the Soil Erosion Control Measures.

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10. Following complete site restoration and stabilization; sediment shall be removed from all storm sewer structures, paved areas and storm basins. The SESC Permit Holder shall contact the Permitting Agency to request closure of the SESC permit. For any site with an earth disturbance area of 5 acres or greater, the SESC Permit Holder shall file a NPDES Notice of Termination Form with the State DEQ.

SOIL EROSION CONTROL AND CONSTRUCTION SEQUENCE:

1. Obtain all necessary Soil Erosion and Sedimentation Control related permits from the appropriate Local, County and/or State Agencies. Refer to the General Notes on the project plans for additional requirements.

2. Prior to commencement of any earth disruption install Silt Fence and Mud Tracking Control Device(s) in accordance with the Soil Erosion and Sedimentation Control Plan.

3. Construct Retention/Detention and Sedimentation Basins, including associated spillways, in accordance with the project plans. Finish grade and establish vegetative growth in Retention/Detention and Sedimentation Basins prior to massive earth disruption. Install temporary Soil Erosion Control Measures as necessary to stabilize Retention/Detention and Sedimentation Basins.

4. Strip and stockpile topsoil. Perform mass grading and land balancing. Install appropriate Soil Erosion Control Measures in accordance with the Soil Erosion and Sedimentation Control Plan.

5. Install proposed underground utilities. (i.e.; storm and sanitary sewer, water main, etc.) Install appropriate Soil Erosion Control Measures in accordance with the Soil Erosion and Sedimentation Control Plan.

6. Construct building(s) if required on the project plans. Install appropriate Soil Erosion Control Measures in accordance with the Soil Erosion and Sedimentation Control Plan.

7. Construct roadways and/or parking areas. Install appropriate Soil Erosion Control Measures in accordance with the Soil Erosion and Sedimentation Control Plan.

8. Finish grade all disturbed areas outside of pavement. Perform final restoration, including placement of topsoil and establishment of vegetative growth outside of pavement.

9. Following establishment of sufficient vegetative ground cover and receipt of approval from the Permitting Agency, remove all temporary Soil Erosion Control Measures, clean all storm sewer structures and repair all permanent Soil Erosion Control Measures.

MAINTENANCE NOTES FOR SOIL EROSION CONTROL MEASURES:

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

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

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

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

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

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

RETENTION BASIN: Retention basins shall be inspected to ensure erosion is not occurring along the inlet locations, banks and/or bottom of the basin and for sediment accumulation. Regular maintenance of the basin includes routine mowing of the buffer/filter strip, side slopes and basin floor and removal of litter and debris accumulation. Address vegetation and/or erosion concerns as soon as weather permits. Sediment accumulation shall be removed at least once a year. Sediment shall be removed only when the surface is dry and "mud-cracked". Light equipment must be used to avoid compacting of soils. After removal of sediment, the infiltration area shall be deep tilled to restore infiltration rates. More frequent filling may be necessary in areas where soils are only marginally permeable. Sediment that is removed shall be disposed of offsite or at an upland area and stabilized so that it does not re-enter the drainage course.

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

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

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

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

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

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

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

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



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PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING UTILITIES IN CONFLICT WITH PROPOSED IMPROVEMENTS SHALL BE VERIFIED IN THE FIELD.



AREA OF DISTURBANCE=8.25 AC.

DESIGN: EDR/WMP	DATE	REVISION-DESCRIPTION	DATE	REVISION-DESCRIPTION
DRAFT: L.F.				
CHECK: EDR				

242 COMMUNITY CHURCH
GENOA CAMPUS
7526 W. GRAND RIVER

SOIL EROSION
NOTES AND DETAILS

CLIENT: 242 COMMUNITY CHURCH
1661 N. LATSON RD.
HOWELL, MI. 48843
(810) 231-0190

SCALE: N/A
PROJECT No.: 9101777
DWG NAME: 777-EROSION
PRINT: AUG 23 2011

C6.1

LEGEND

- OHW — OHW — EXISTING OVERHEAD WIRES
- GAS — GAS — EXISTING POLE AND GUY
- ST — ST — EXISTING POWER POLE
- AMT — AMT — EXISTING AMERITECH RISER
- L — L — EXISTING LIGHT POLE
- S — S — EXISTING SIGNS
- C — C — EXISTING CONTOURS
- W — W — EXISTING EDGE OF WETLAND
- E — E — EXISTING EDGE OF WATER
- X — X — EXISTING CURB AND GUTTER
- F — F — EXISTING FENCE LINE
- G — G — EXISTING GAS LINE
- S — S — EXISTING STORM SEWER
- SA — SA — EXISTING SANITARY SEWER
- SM — SM — EXISTING SANITARY MANHOLE
- SC — SC — EXISTING SANITARY CLEANOUT
- W — W — EXISTING WATER MAIN
- WS — WS — EXISTING WATER MAIN STRUCTURES
- ST — ST — PROPOSED STORM SEWER
- SA — SA — PROPOSED SANITARY SEWER
- SM — SM — PROPOSED SANITARY MANHOLE
- SC — SC — PROPOSED SANITARY CLEANOUT
- W — W — PROPOSED WATER MAIN
- WS — WS — PROPOSED WATER MAIN STRUCTURES
- C — C — PROPOSED CONC. CURB AND GUTTER

SEE SHEET C7.1 FOR PLANT MATERIAL LIST

PLANTING KEY

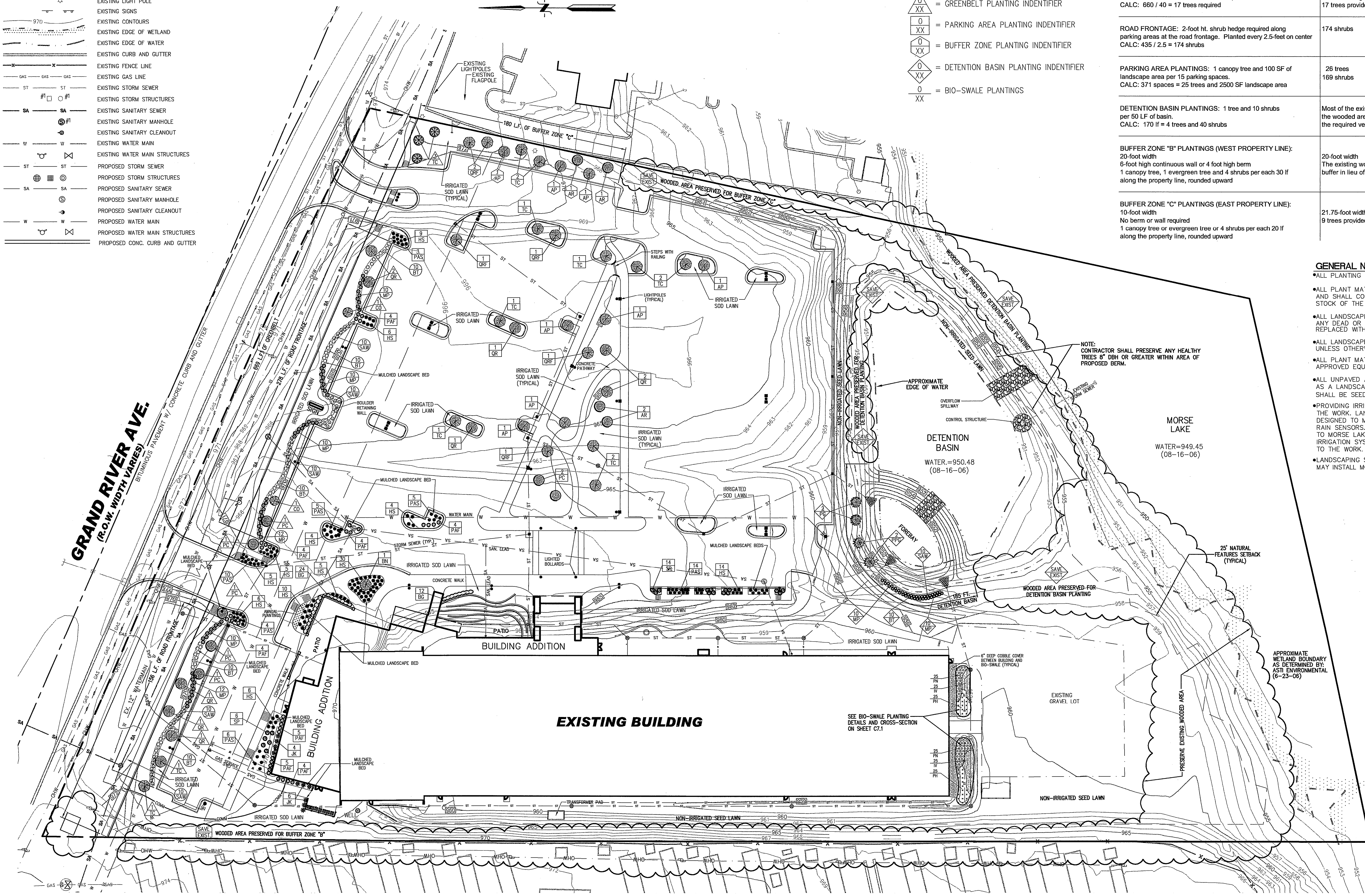
- ⊙ XX = ROAD FRONTAGE PLANTING IDENTIFIER
- △ XX = GREENBELT PLANTING IDENTIFIER
- ⊙ XX = PARKING AREA PLANTING IDENTIFIER
- ⊙ XX = BUFFER ZONE PLANTING IDENTIFIER
- ◇ XX = DETENTION BASIN PLANTING IDENTIFIER
- ⊙ XX = BIO-SWALE PLANTINGS

**LANDSCAPING REQUIREMENTS
GENOA TOWNSHIP ZONING ORDINANCE (GCD ZONING DISTRICT)**

REQUIRED:	PROPOSED:
GREENBELT: 20-foot wide and 1 tree per 40 LF CALC: 660 / 40 = 17 trees required	20-foot wide greenbelt 17 trees provided
ROAD FRONTAGE: 2-foot ht. shrub hedge required along parking areas at the road frontage. Planted every 2.5-feet on center CALC: 435 / 2.5 = 174 shrubs	174 shrubs
PARKING AREA PLANTINGS: 1 canopy tree and 100 SF of landscape area per 15 parking spaces. CALC: 371 spaces = 25 trees and 2500 SF landscape area	26 trees 169 shrubs
DETENTION BASIN PLANTINGS: 1 tree and 10 shrubs per 50 LF of basin. CALC: 170 lf = 4 trees and 40 shrubs	Most of the existing vegetation and trees are to be preserved within the wooded area around the pond. Areas that are disturbed shall provide the required vegetation of 4 trees and 40 shrubs.
BUFFER ZONE "B" PLANTINGS (WEST PROPERTY LINE): 20-foot width 6-foot high continuous wall or 4 foot high berm 1 canopy tree, 1 evergreen tree and 4 shrubs per each 30 lf along the property line, rounded upward	20-foot width The existing wooded area is to be preserved to provide a vegetated buffer in lieu of the berm and tree requirements.
BUFFER ZONE "C" PLANTINGS (EAST PROPERTY LINE): 10-foot width No berm or wall required 1 canopy tree or evergreen tree or 4 shrubs per each 20 lf along the property line, rounded upward	21.75-foot width 9 trees provided

GENERAL NOTES:

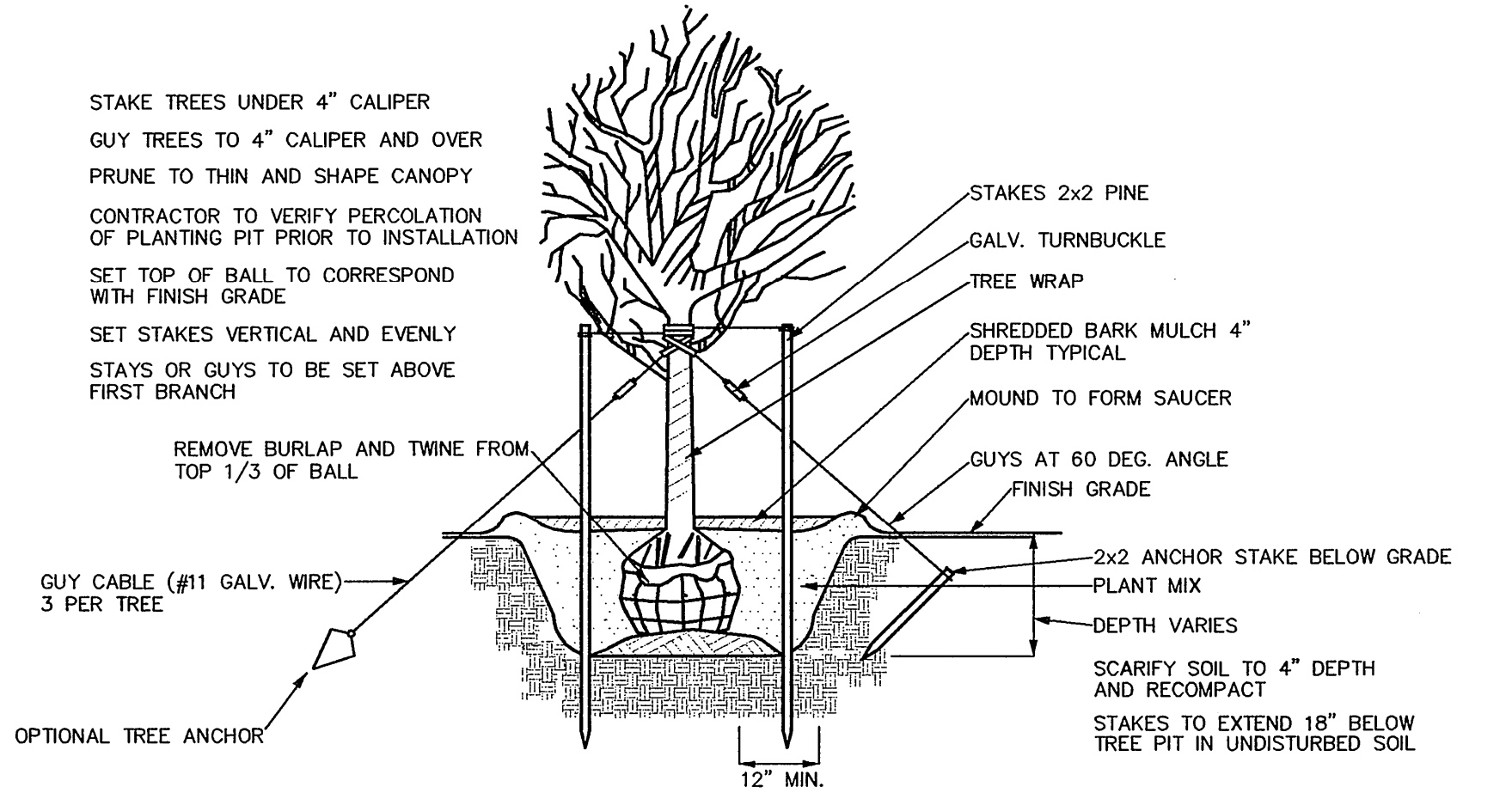
- ALL PLANTING SIZES SHOWN SHALL BE AT TIME OF PLANTING.
- ALL PLANT MATERIAL SHALL BE FREE OF DISEASE AND INSECTS AND SHALL CONFORM TO THE AMERICAN STANDARD FOR NURSERY STOCK OF THE AMERICAN ASSOCIATION OF NURSERYMEN.
- ALL LANDSCAPE SHALL BE MAINTAINED A HEALTHY CONDITION, ANY DEAD OR DISEASED PLANTINGS SHALL BE REMOVED AND REPLACED WITHIN 1 YEAR.
- ALL LANDSCAPE BEDS TO BE MULCHED WILL HAVE CYPRESS MULCH UNLESS OTHERWISE NOTED OR APPROVED BY OWNER.
- ALL PLANT MATERIAL TO BE USED SHALL BE AS SPECIFIED OR APPROVED EQUAL.
- ALL UNPAVED AREAS AND AREAS NOT OTHERWISE PROPOSED AS A LANDSCAPE BED OR AN AREA TO BE CYPRESS MULCHED SHALL BE SEEDED TO ESTABLISH A VEGETATIVE LAWN COVER.
- PROVIDING IRRIGATION SYSTEM IN AREAS NOTED IS A PART OF THE WORK. LANDSCAPE CONTRACTOR SHALL PROVIDE SYSTEM DESIGNED TO MEET THE OWNER'S NEEDS AND PROVIDE EXTERNAL RAIN SENSORS. IRRIGATION CONTRACTOR SHALL PROVIDE A PUMP TO MORSE LAKE THAT MEETS THE SUPPLY REQUIREMENTS OF THE IRRIGATION SYSTEM. POWER SUPPLY LINE TO PUMP IS INCIDENTAL TO THE WORK.
- LANDSCAPING SHOWN IS MINIMUM PLANTING REQUIRED. OWNER MAY INSTALL MORE PLANTINGS MEETING ALL MUNICIPAL STANDARDS.



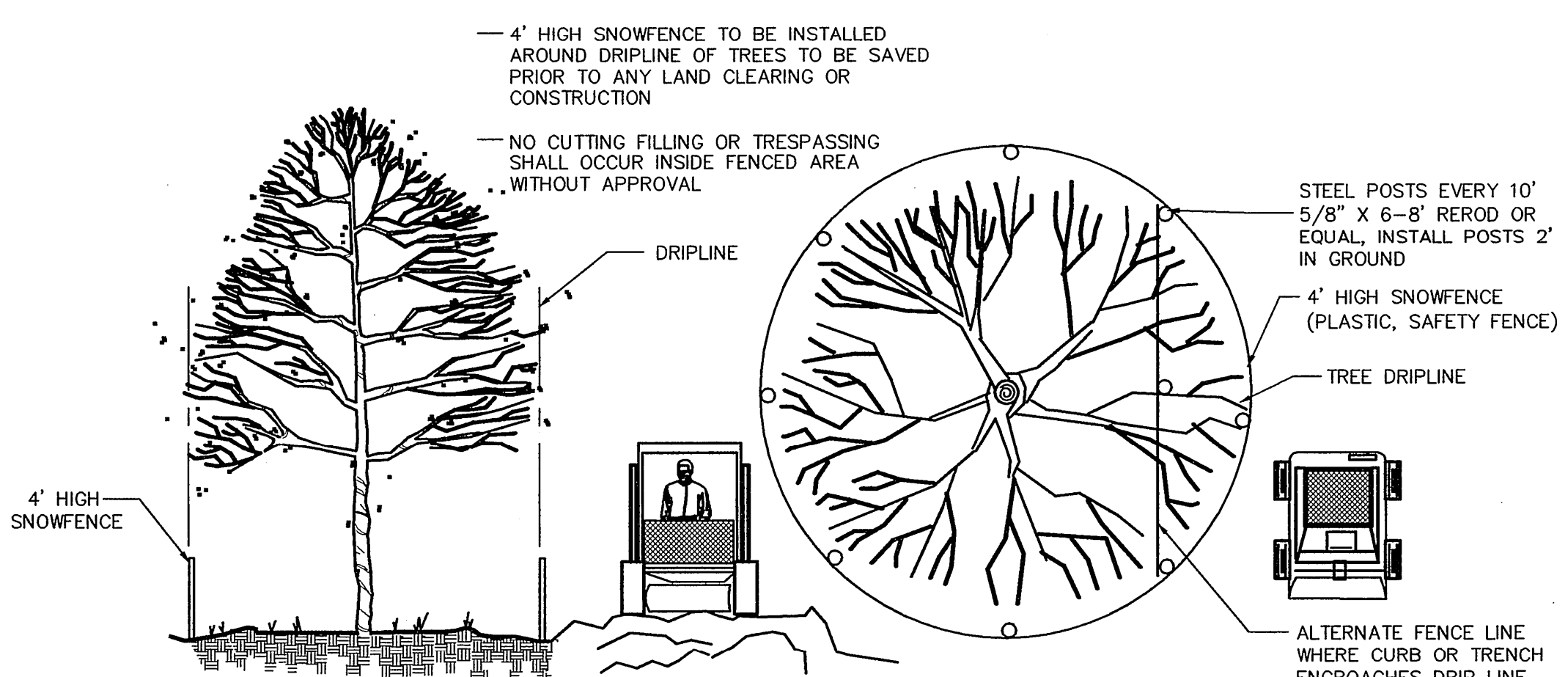
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CIVIL ENGINEERS
LAND SURVEYORS
2183 PLESS DRIVE
BRIGHTON, MICHIGAN 48114

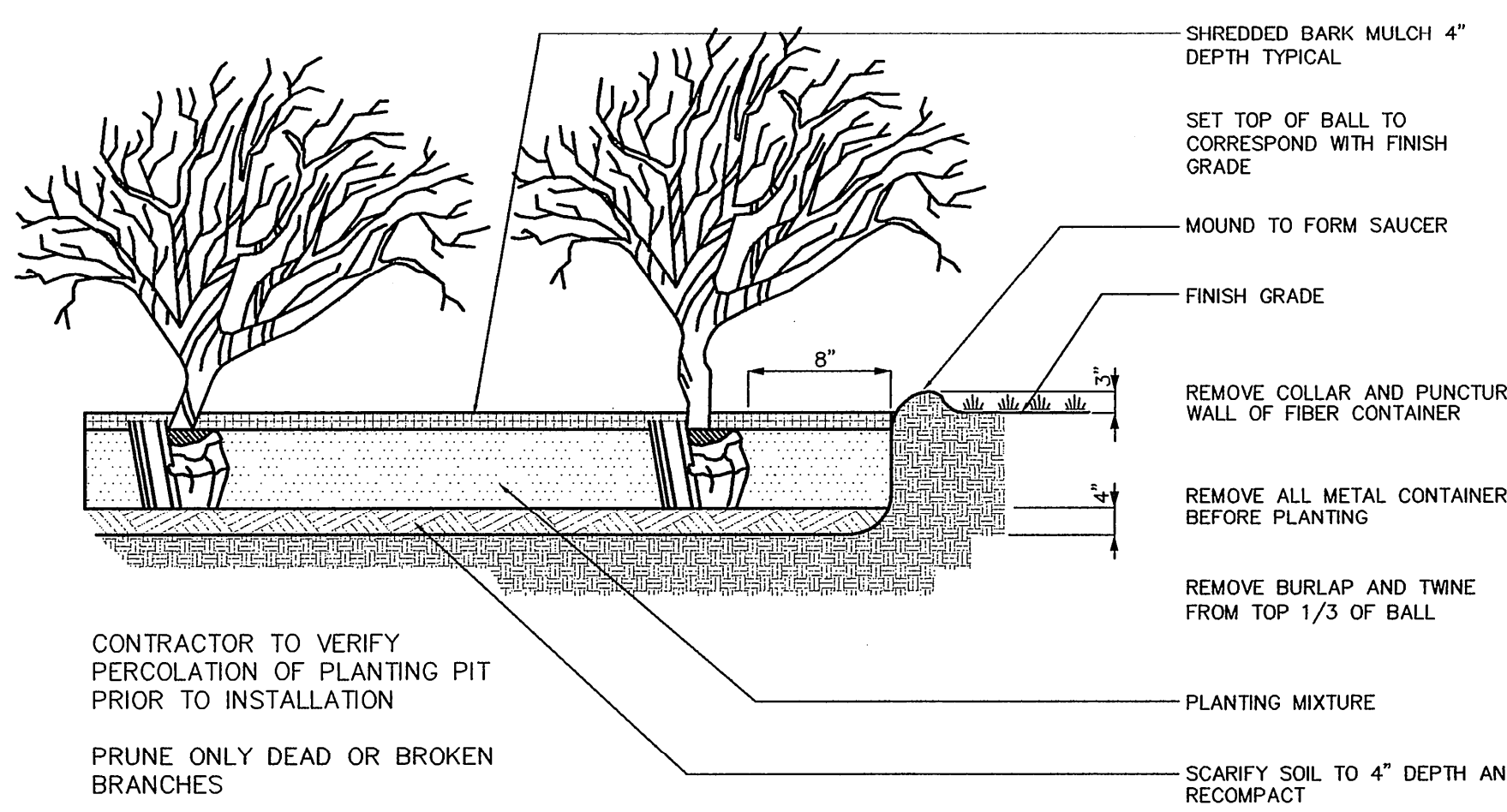
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DRAFT: L.F.	DATE: 9-06-11	REVISION-DESCRIPTION: REV. PER PLANNING COMMISSION COMMENTS OF 9-12-11	DATE:	REVISION-DESCRIPTION:			DWG NAME: 777-LA	PRINT: SEP 21 2011		
CHECK: EDR	DATE:	REVISION-DESCRIPTION:	DATE:	REVISION-DESCRIPTION:						



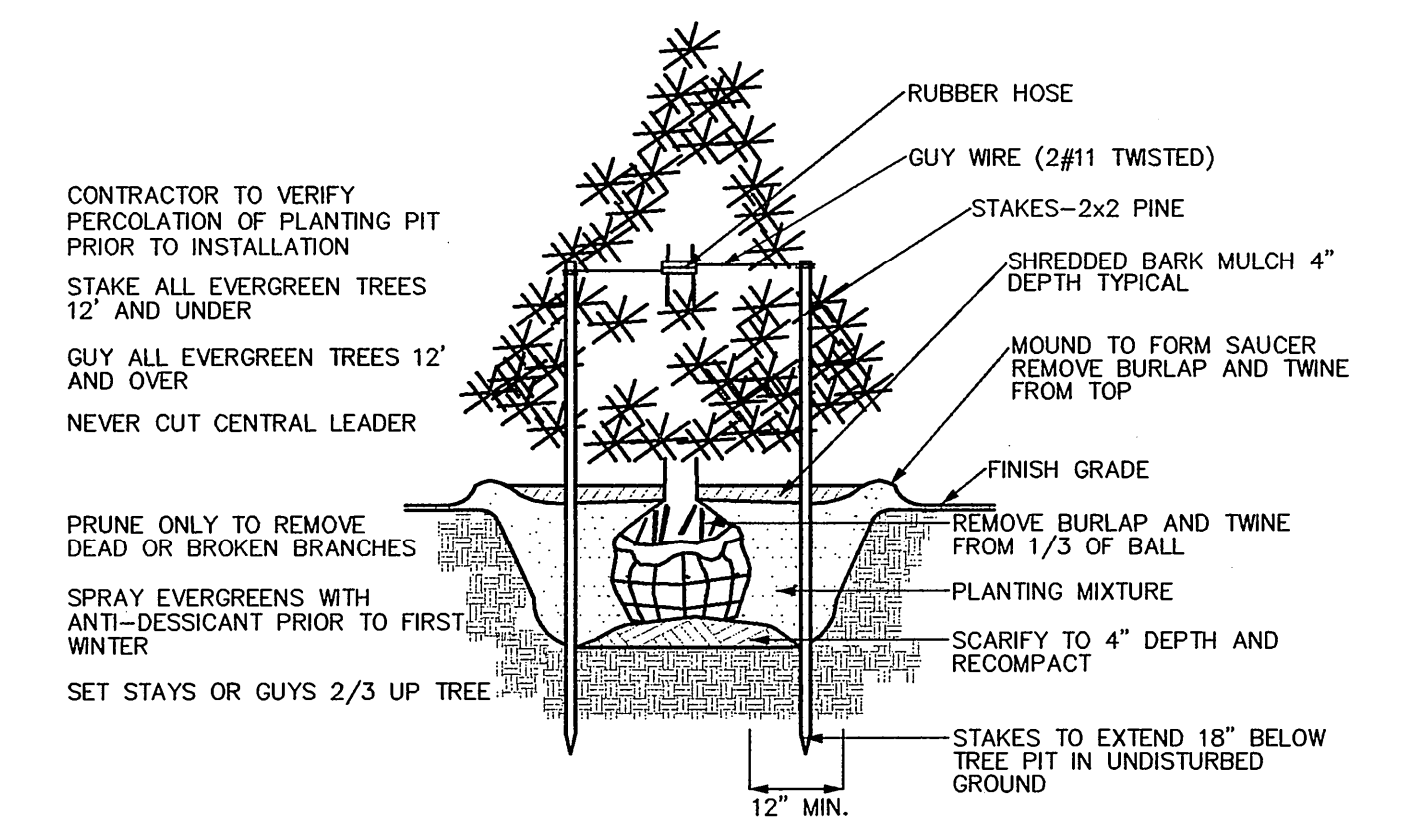
TYPICAL DECIDUOUS TREE PLANTING
NOT TO SCALE



TREE PROTECTION DETAIL
NOT TO SCALE



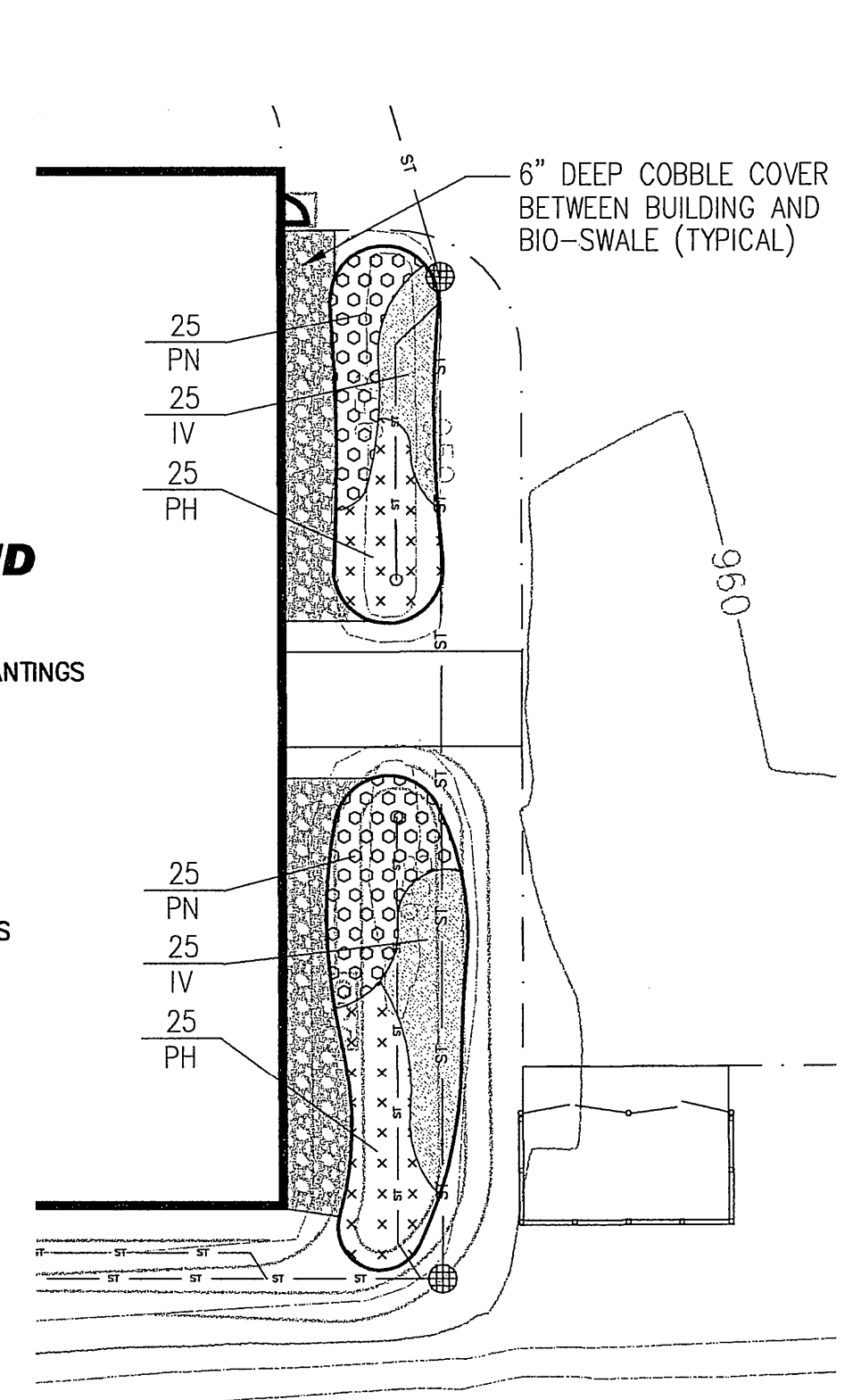
TYPICAL SHRUB PLANTING
NOT TO SCALE



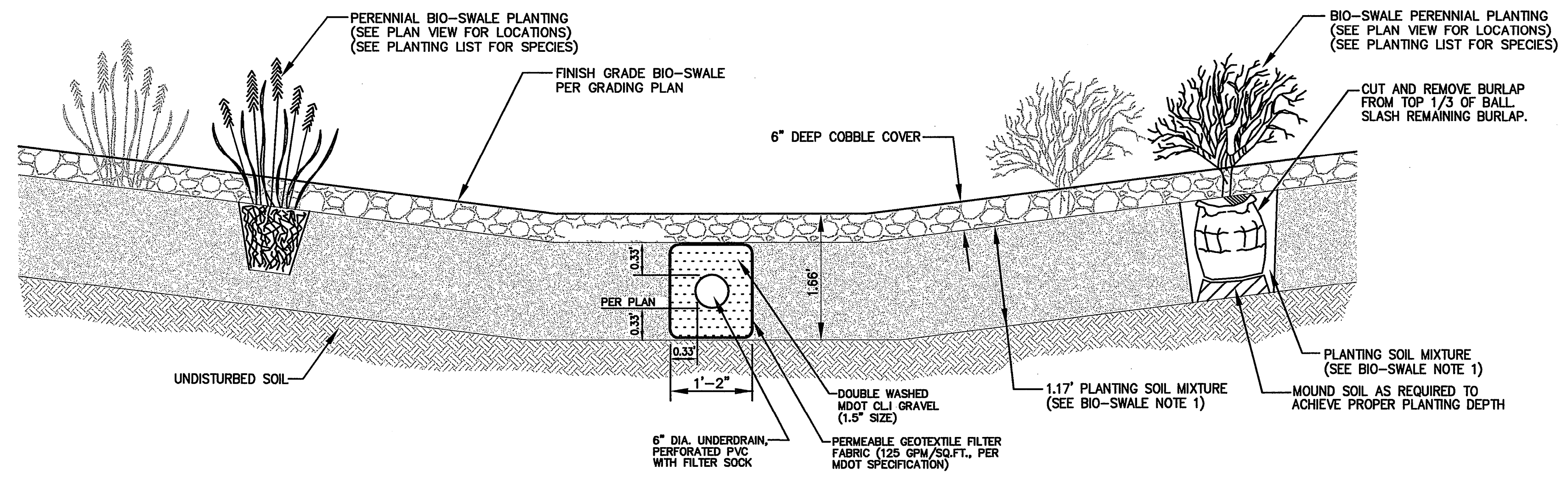
TYPICAL EVERGREEN TREE PLANTING
NOT TO SCALE

BIO-SWALE PLANTING LEGEND

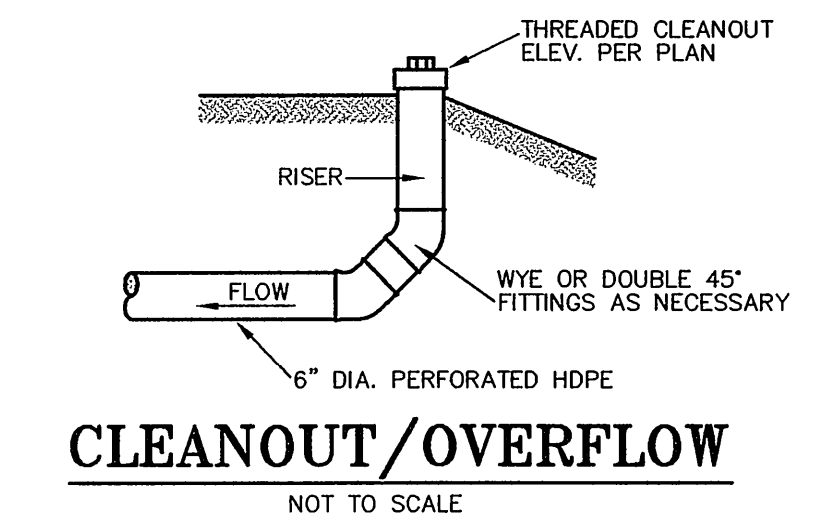
- NORTHWIND SWITCH GRASS PLANTINGS
- RED SWITCH GRASS PLANTINGS
- MULTI-COLORED IRIS PLANTINGS



BIO-SWALE PLANTING PLAN
SCALE: 1" = 20'



BIO-SWALE CROSS-SECTION
NOT TO SCALE



- BIO-SWALE NOTES:**
- The planting soil must be a mixture that includes sand (2.0-0.50 mm) (50-60%), topsoil (sandy/clay loam) (20-25%), and leaf compost (20-25%). The maximum clay content of the mixture must be equal to or less than 5%. The planting soil mixture shall be a uniform mix, free of stumps, stumps, roots or other similar objects larger than two inches, excluding mulch. The soil must have an infiltration rate of at least 0.5" per hour and a pH between 5.5 and 6.5. In addition, the planting soil should have a maximum 500 ppm concentration of soluble salts. The planting soil mixture will be installed in 6" horizontal lifts, compacted at each lift by evenly saturating the entire surface area of the lift until water flows from the underdrain system. Final grading of the planting soil will be performed after a 24 hour settling period.
 - Compost shall be mature, stable, weed free and produce by aerobic decomposition of organic matter with a pH between 5.5 and 7.5, submit sample for approval.
 - Underdrain gravel blanket should be double washed, 1.5" in size, MDOT CL1 porous material.
 - The planting soil mixture shall be placed and graded using low ground-contact pressure equipment or by excavators and/or backhoes operating on the ground adjacent to the bio-swale area.
 - No heavy equipment shall be used within the perimeter of the bio-swale area before, during or after the placement of the planting soil mixture.
 - Geotextile fabric should maintain a flow rate of 125 GPM per square foot, per MDOT specifications for non-woven geotextile separator.

PLANT LIST

CODE	QTY.	DESCRIPTION	SIZE	COMMENTS
Trees				
AR	4	October Glory Red Maple <i>Acer rubrum 'October Glory'</i>	2.5" cal.	B&B, matched
AP	8	Emerald Queen Norway Maple <i>Acer p. 'Emerald Queen'</i>	2.5" cal.	B&B, matched
BN	1	River Birch <i>Betula nigra</i>	14'-16" ht.	B&B, matched clump form, min. (4) clumps
CO	2	Common Hackberry <i>Celtis occidentalis</i>	2.0" cal.	B&B, matched
PC	7	Cleveland Select Pear <i>Pyrus calleryana 'Cleveland Select'</i>	2.0" cal.	B&B, matched
PG	2	White Spruce <i>Picea glauca</i>	6' ht.	B&B, unsharped full to ground
PPG	2	Blue Spruce <i>Picea pungens 'glauca'</i>	6' ht.	B&B, unsharped full to ground
QRF	6	Columar English Oak <i>Quercus robur 'Fastigiata'</i>	2.5" cal.	B&B, matched
QR	9	Red Oak <i>Quercus rubra</i>	2.5" cal.	B&B, matched
TC	15	Greenspire Linden <i>Tilia cordata 'Greenspire'</i>	2.5" cal.	B&B, matched
Shrubs				
BT	70	Japanese Barberry <i>Berberis thunbergii</i>	24" ht.	cont.
BG	36	Green Gem Boxwood <i>Buxus x 'Green Gem'</i>	12" ht.	cont.
JK	10	Ketterl Juniper <i>Juniperus 'Ketterl'</i>	5' ht.	cont.
MP	84	Northern Bayberry <i>Myrica pensylvanica</i>	24" ht.	cont.
SAW	60	Anthony Waterer Spirea <i>Spiraea x bum. 'Anthony Waterer'</i>	24" ht.	cont.
Perennials				
HS	104	Pardon Me Daylily <i>Hemerocallis 'Pardon Me'</i>	No. 1 cont.	Plant 18" o.c. min.
PAF	34	Hamel Dwarf Fountain Grass <i>Pennisetum alopecuroides 'Hamel'</i>	No. 3 cont.	Plant 36" o.c. min.
PAS	47	Little Spire Russian Sage <i>Perovskia atriplicifolia 'Little Spire'</i>	No. 3 cont.	Plant 30" o.c. min.
SP	20	Autumn Joy Sedum <i>Sedum 'Autumn Joy'</i>	No. 2 cont.	Plant 24" o.c. min.
Bio-swale				
PH	50	Gerald Darby Multicolored Iris <i>Iris versicolor 'Gerald Darby'</i>	1 Gallon	Potted
IV	50	Red Switch Grass <i>Panicum virgatum 'Haense Herms'</i>	1 Gallon	Potted
PN	50	Northwind Switch Grass <i>Panicum virgatum 'Northwind'</i>	1 Gallon	Potted



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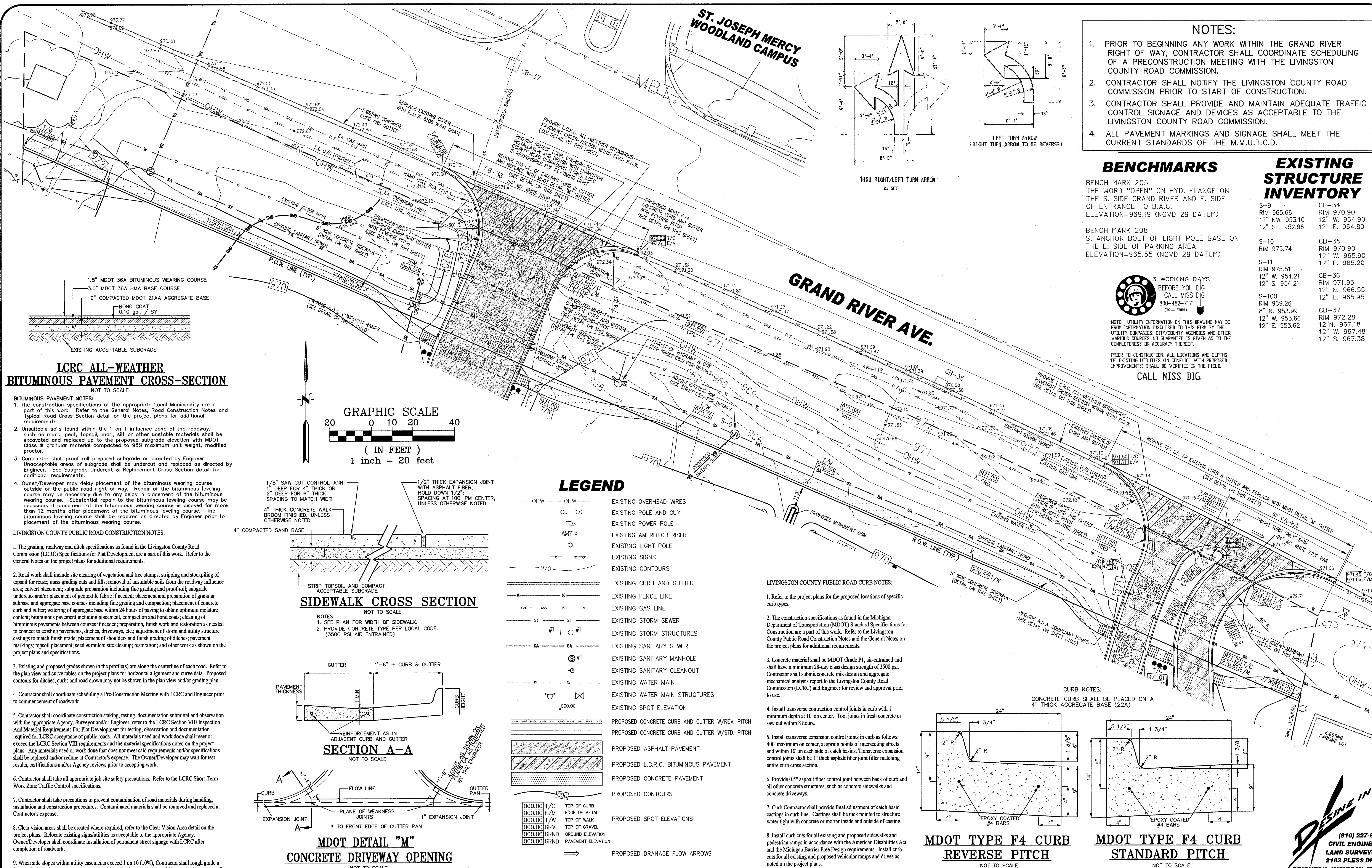
DESIGN: EDR/WMP	DATE	REVISION-DESCRIPTION	DATE	REVISION-DESCRIPTION
DRAFT: L.F.	8-22-11	REV. PER REVIEW COMMENTS RECEIVED 8-17-11		
CHECK: EDR				

2142 COMMUNITY CHURCH
GENOA CAMPUS
7526 W. GRAND RIVER

LANDSCAPE AND
BIO-SWALE
NOTES AND DETAILS

CLIENT:	SCALE: 1"=40'
2142 COMMUNITY CHURCH 1661 N. LATSON RD. HOWELL, MI. 48843 (810) 231-0190	PROJECT No.: 9101777 DWG NAME: 777-LA PRINT: AUG 23 2011

C7.1



- NOTES:**
- PRIOR TO BEGINNING ANY WORK WITHIN THE GRAND RIVER RIGHT OF WAY, CONTRACTOR SHALL COORDINATE SCHEDULING OF A PRECONSTRUCTION MEETING WITH THE LIVINGSTON COUNTY ROAD COMMISSION.
 - CONTRACTOR SHALL NOTIFY THE LIVINGSTON COUNTY ROAD COMMISSION PRIOR TO START OF CONSTRUCTION.
 - CONTRACTOR SHALL PROVIDE AND MAINTAIN ADEQUATE TRAFFIC CONTROL SIGNAGE AND DEVICES AS ACCEPTABLE TO THE LIVINGSTON COUNTY ROAD COMMISSION.
 - ALL PAVEMENT MARKINGS AND SIGNAGE SHALL MEET THE CURRENT STANDARDS OF THE M.M.U.T.C.D.

BENCHMARKS

BENCH MARK 205
THE WORD "OPEN" ON HYD. FLANGE ON THE S. SIDE GRAND RIVER AND E. SIDE OF ENTRANCE TO B.A.C.
ELEVATION=969.19 (NGVD 29 DATUM)

BENCH MARK 208
S. ANCHOR BOLT OF LIGHT POLE BASE ON THE E. SIDE OF PARKING AREA
ELEVATION=965.55 (NGVD 29 DATUM)

EXISTING STRUCTURE INVENTORY

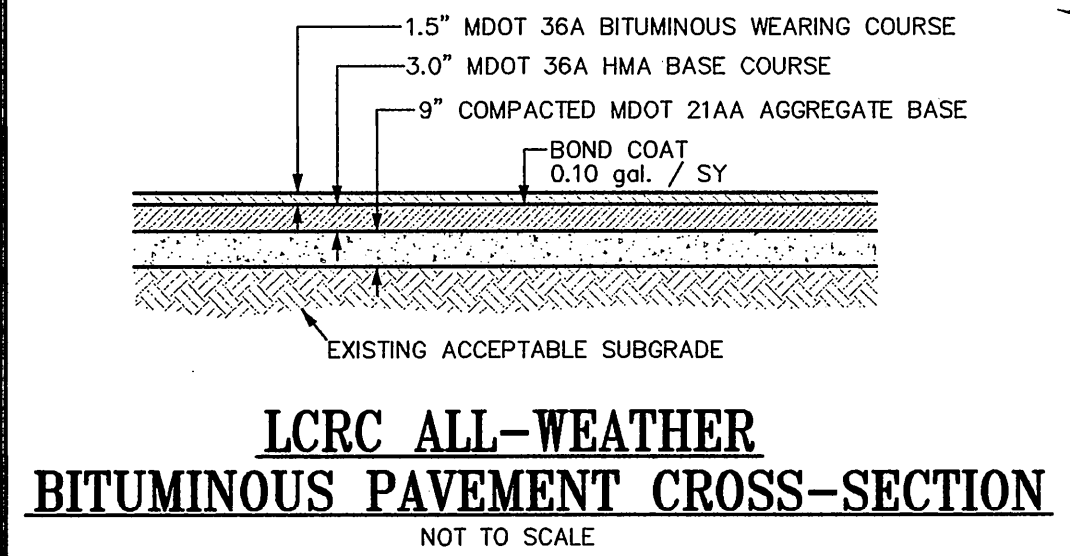
S-9	CB-34
RIM 965.66	RIM 970.90
12" NW. 953.10	12" W. 964.90
12" SE. 952.96	12" E. 964.80
S-10	CB-35
RIM 975.74	RIM 970.90
12" S. 954.21	12" W. 965.90
12" W. 954.21	12" E. 965.20
S-11	CB-36
RIM 975.51	RIM 971.95
12" S. 954.21	12" N. 966.55
12" W. 954.21	12" E. 965.95
S-100	CB-37
RIM 969.26	RIM 972.28
8" N. 953.99	12" N. 967.18
12" W. 953.66	12" W. 967.48
12" E. 953.62	12" S. 967.38



3 WORKING DAYS BEFORE YOU DIG CALL MISS DIG
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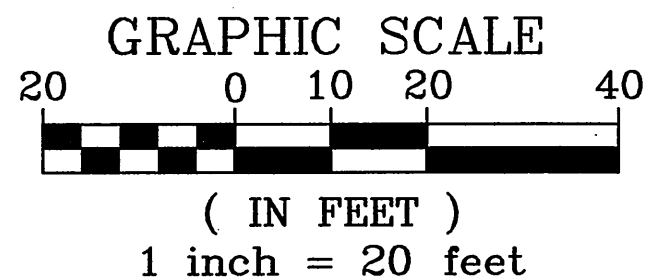
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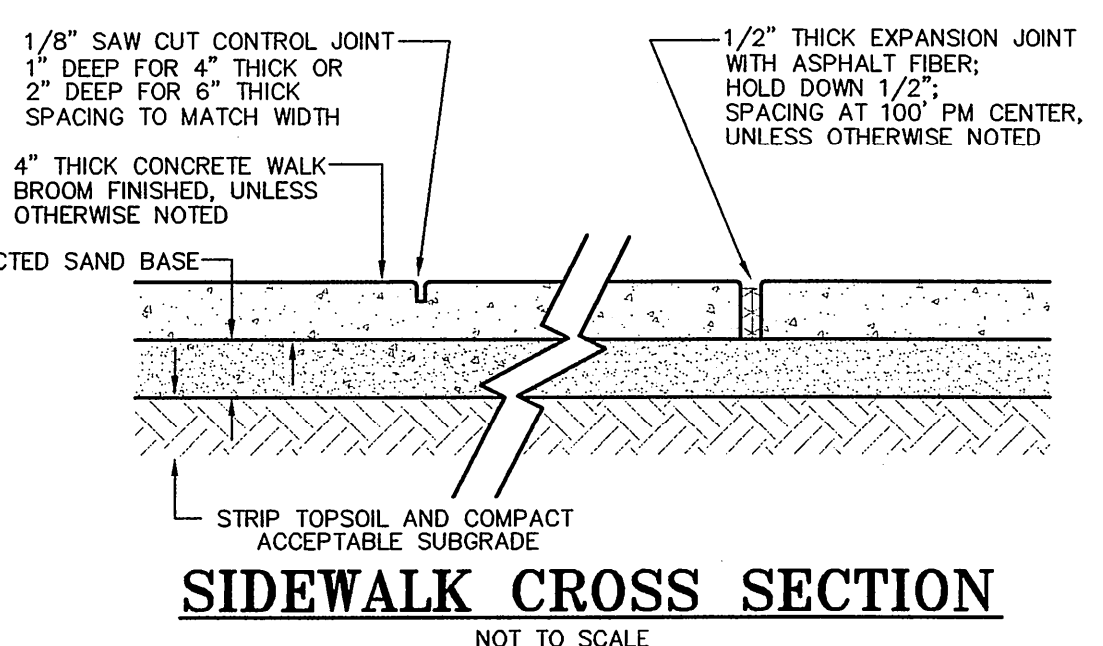
LCRC ALL-WEATHER BITUMINOUS PAVEMENT CROSS-SECTION
NOT TO SCALE

- BITUMINOUS PAVEMENT NOTES:**
- The construction specifications of the appropriate Local Municipality are a part of this work. Refer to the General Notes, Road Construction Notes and Typical Road Cross Section detail on the project plans for additional requirements.
 - Unsuitable soils found within the 1 on 1 influence zone of the roadway, such as muck, peat, topsoil, marl, silt or other unstable materials shall be excavated and replaced up to the proposed subgrade elevation with MDOT Class III granular material compacted to 95% maximum unit weight, modified proctor.
 - Contractor shall proof roll prepared subgrade as directed by Engineer. Unacceptable areas of subgrade shall be undercut and replaced as directed by Engineer. See Subgrade Undercut & Replacement Cross Section detail for additional requirements.
 - Owner/Developer may delay placement of the bituminous wearing course outside of the public road right of way. Repair of the bituminous leveling course may be necessary due to any delay in placement of the bituminous wearing course. Substantial repair to the bituminous leveling course may be necessary if placement of the bituminous wearing course is delayed for more than 12 months after placement of the bituminous leveling course. The bituminous leveling course shall be repaired as directed by Engineer prior to placement of the bituminous wearing course.



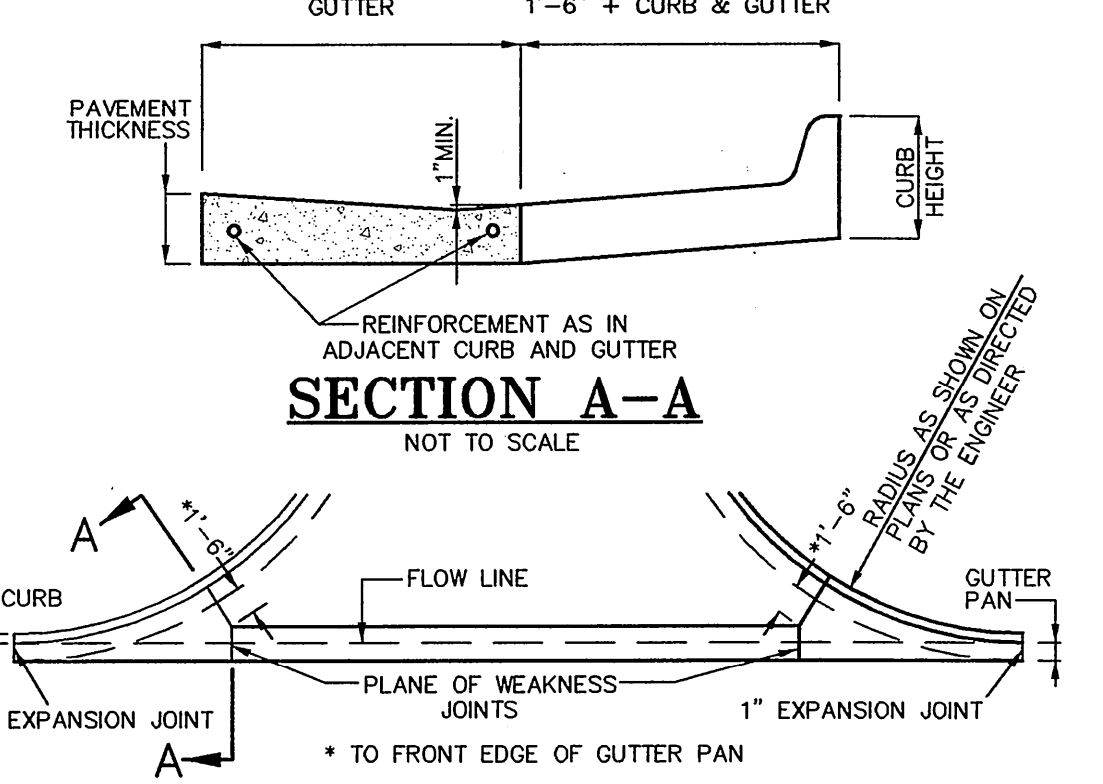
LIVINGSTON COUNTY PUBLIC ROAD CONSTRUCTION NOTES:

- The grading, roadway and ditch specifications as found in the Livingston County Road Commission (LCRC) Specifications for Plat Development are a part of this work. Refer to the General Notes on the project plans for additional requirements.
- Road work shall include site clearing of vegetation and tree stumps; stripping and stockpiling of topsoil for reuse; mass grading cuts and fills; removal of unsuitable soils from the roadway influence area; culvert placement; subgrade preparation including fine grading and proof roll; subgrade undercuts and/or placement of geotextile fabric if needed; placement and preparation of granular subbase and aggregate base courses including fine grading and compaction; placement of concrete curb and gutter; watering of aggregate base within 24 hours of paving to obtain optimum moisture content; bituminous pavement including placement, compaction and bond coats; cleaning of bituminous pavements between courses if needed; preparation, finish work and restoration as needed to connect to existing pavements, ditches, driveways, etc.; adjustment of storm and utility structure castings to match finish grade; placement of shoulders and finish grading of ditches; pavement markings; topsoil placement; seed & mulch; site cleanup; restoration; and other work as shown on the project plans and specifications.
- Existing and proposed grades shown in the profile(s) are along the centerline of each road. Refer to the plan view and curve tables on the project plans for horizontal alignment and curve data. Proposed contours for ditches, curbs and road crown may not be shown in the plan view and/or grading plan.
- Contractor shall coordinate scheduling a Pre-Construction Meeting with LCRC and Engineer prior to commencement of roadway.
- Contractor shall coordinate construction staking, testing, documentation submittal and observation with the appropriate Agency, Surveyor and/or Engineer; refer to the LCRC Section VIII Inspection And Material Requirements For Plat Development for testing, observation and documentation required for LCRC acceptance of public roads. All materials used and work done shall meet or exceed the LCRC Section VIII requirements and the material specifications noted on the project plans. Any materials used or work done that does not meet said requirements and/or specifications shall be replaced and/or redone at Contractor's expense. The Owner/Developer may wait for test results, certifications and/or Agency reviews prior to accepting work.
- Contractor shall take all appropriate job site safety precautions. Refer to the LCRC Short-Term Work Zone Traffic Control specifications.
- Contractor shall take precautions to prevent contamination of road materials during handling, installation and construction procedures. Contaminated materials shall be removed and replaced at Contractor's expense.
- Clear vision areas shall be created where required; refer to the Clear Vision Area detail on the project plans. Relocate existing signs/utilities as acceptable to the appropriate Agency. Owner/Developer shall coordinate installation of permanent street signage with LCRC after completion of roadway.
- When side slopes within utility easements exceed 1 on 10 (10%), Contractor shall rough grade a flat shelf within the easement area as acceptable to Engineer and restore following underground utility



SIDEWALK CROSS SECTION
NOT TO SCALE

NOTES:
1. SEE PLAN FOR WIDTH OF SIDEWALK.
2. PROVIDE CONCRETE TYPE PER LOCAL CODE. (3500 PSI AIR ENTRAINED)



MDOT DETAIL "M" CONCRETE DRIVEWAY OPENING
NOT TO SCALE

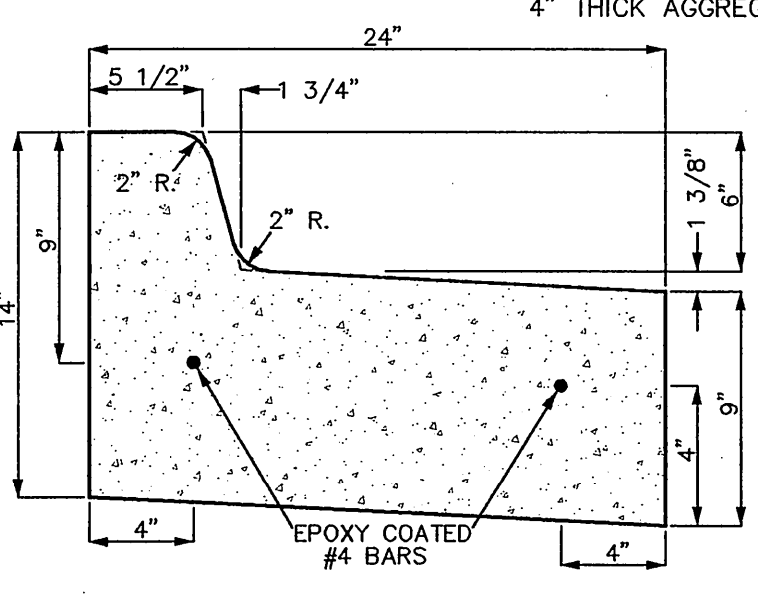
LEGEND

- OHW — OHW — EXISTING OVERHEAD WIRES
- P — P — EXISTING POLE AND GUY
- P — P — EXISTING POWER POLE
- A — A — EXISTING AMERITECH RISER
- L — L — EXISTING LIGHT POLE
- S — S — EXISTING SIGNS
- C — C — EXISTING CONTOURS
- C — C — EXISTING CURB AND GUTTER
- F — F — EXISTING FENCE LINE
- G — G — EXISTING GAS LINE
- S — S — EXISTING STORM SEWER
- S — S — EXISTING STORM STRUCTURES
- S — S — EXISTING SANITARY SEWER
- S — S — EXISTING SANITARY MANHOLE
- S — S — EXISTING SANITARY CLEANOUT
- W — W — EXISTING WATER MAIN
- W — W — EXISTING WATER MAIN STRUCTURES
- E — E — EXISTING SPOT ELEVATION
- P — P — PROPOSED CONCRETE CURB AND GUTTER W/REV. PITCH
- P — P — PROPOSED CONCRETE CURB AND GUTTER W/STD. PITCH
- P — P — PROPOSED ASPHALT PAVEMENT
- P — P — PROPOSED L.C.R.C. BITUMINOUS PAVEMENT
- P — P — PROPOSED CONCRETE PAVEMENT
- P — P — PROPOSED CONTOURS
- E — E — PROPOSED SPOT ELEVATIONS
- A — A — PROPOSED DRAINAGE FLOW ARROWS

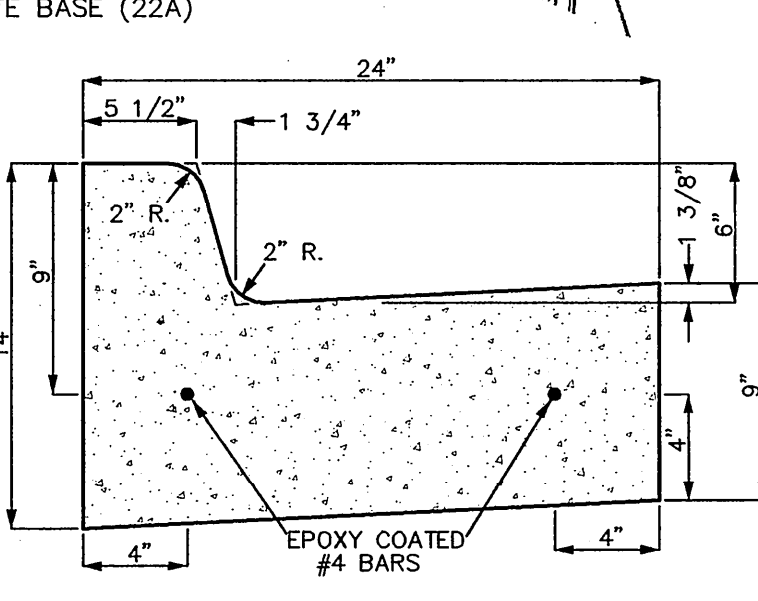
LIVINGSTON COUNTY PUBLIC ROAD CURB NOTES:

- Refer to the project plans for the proposed locations of specific curb types.
- The construction specifications as found in the Michigan Department of Transportation (MDOT) Standard Specifications for Construction are a part of this work. Refer to the Livingston County Public Road Construction Notes and the General Notes on the project plans for additional requirements.
- Concrete material shall be MDOT Grade P1, air-entrained and shall have a minimum 28-day class design strength of 3500 psi. Contractor shall submit concrete mix design and aggregate mechanical analysis report to the Livingston County Road Commission (LCRC) and Engineer for review and approval prior to use.
- Install transverse contraction control joints in curb with 1" minimum depth at 10' on center. Tool joints in fresh concrete or saw cut within 8 hours.
- Install transverse expansion control joints in curb as follows: 400' maximum on center, at spring points of intersecting streets and within 10' on each side of catch basins. Transverse expansion control joints shall be 1" thick asphalt fiber joint filler matching entire curb cross section.
- Provide 0.5" asphalt fiber control joint between back of curb and all other concrete structures, such as concrete sidewalks and concrete driveways.
- Curb Contractor shall provide final adjustment of catch basin castings in curb line. Castings shall be tack pointed to structure water tight with concrete or mortar inside and outside of casting.
- Install curb cuts for all existing and proposed sidewalks and pedestrian ramps in accordance with the American Disabilities Act and the Michigan Barrier Free Design requirements. Install curb cuts for all existing and proposed vehicular ramps and drives as noted on the project plans.

CURB NOTES:
CONCRETE CURB SHALL BE PLACED ON A 4" THICK AGGREGATE BASE (22A)



MDOT TYPE F4 CURB REVERSE PITCH
NOT TO SCALE



MDOT TYPE F4 CURB STANDARD PITCH
NOT TO SCALE

DESIGN: EDR/L.F.	DATE	REVISION-DESCRIPTION	DATE	REVISION-DESCRIPTION
DRAFT: L.F.	8-22-11	REV. PER REVIEW COMMENTS RECEIVED 8-17-11		
CHECK: EDR	9-08-11	REV. WATER MAIN ROUTING TO CONNECT TO M.H.O.G.		

242 COMMUNITY CHURCH
BRIGHTON CAMPUS
7526 W. GRAND RIVER

APPROACH PLANS
AND DETAILS

CLIENT:
242 COMMUNITY CHURCH

1661 LATSON RD.
HOWELL, MI. 48843
(810) 231-0190

SCALE: 1"=20'

PROJECT No.: 9101777

DWG NAME: 777-AP

PRINT: SEP 06 2011

C8.0

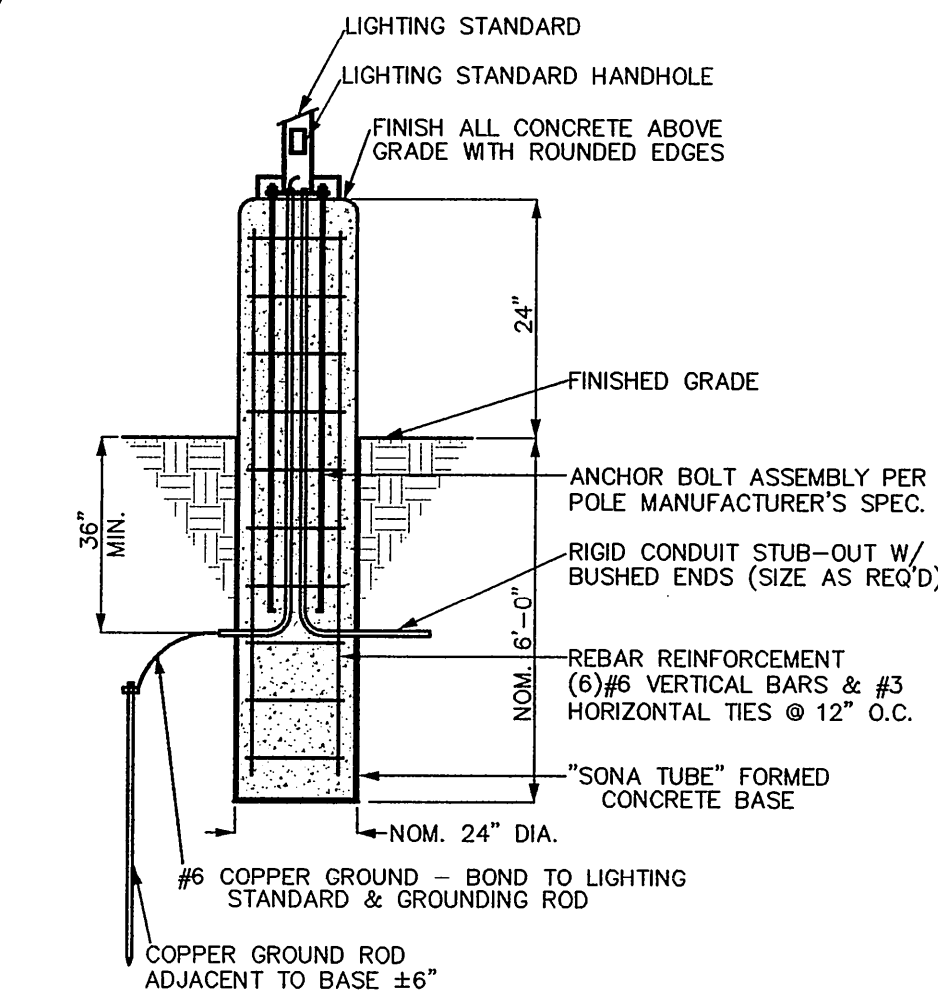


AREA SUMMARY SCHEDULE					
AREA NAME	L/O	DIMENSIONS	LUMS / (ASMS)	WATTS / SQ FT	QTY
LST PTH	OUT	675.00x1175.00ft	(1) 1" PTH FT 400 MHR F (2) 1" PTH FT 400 MHR F (3) 1" PTH FT 400 MHR F (4) 1" PTH FT 400 MHR F (5) 1" PTH FT 400 MHR F	0.02	1

CALCULATION SUMMARY										
AREA NAME	DIMENSIONS	GRID / TYPE	# PTS	SPAC	GROUP	AVE	MAX	MIN	MAX/MIN	AVE/MIN
LST PTH	675.00x1175.00ft	New Grid / H-H	782	25.00	(*)	0.90	7.53	0.00	N/A	N/A

BRIGHTON (10299) LUMINAIRE SCHEDULE									
STYLE	TYPE	SYMBOL	DESCRIPTION	LAMP	LUMENS	MOUNTING/BALLAST	LLF	QTY	
PARKING LIGHT	DA	⬇	LST 10299 1-PH-FT-400MH (1) 1" PTH FT 400 MHR F	(1) SYLVANIA M400/PS/U/B	31000	5-S070-S07G-28 2" BASE	0.73	5	
PARKING LIGHT	DB	⬇	LST 10299 2-PH-5-400MH (2) 1" PTH 5 400 MHR F	(2) SYLVANIA M400/PS/U/B	31000	5-S070-S07G-28 2" BASE	0.73	7	
DECORATIVE LIGHT	SA	⬇	LST 10299 1-LM-PP-250PS (1) 1" LM-PP-250-PSMV-F	(1) SYLVANIA MS250/PS/BU	23000	5-RPN-S11G-18 2" BASE	0.74	8	
DECORATIVE LIGHT	SC	⬇	LST 10299 1-LM-3-250PS (2) 1" LM-3-250-PSMV-F	(2) SYLVANIA MS250/PS/BU	23000	5-RPN-S11G-18 2" BASE	0.74	1	
DECORATIVE LIGHT	SD	⬇	LST 10299 1-LM-3-250PS (1) 1" LM-3-250-PSMV-F	(1) SYLVANIA MS250/PS/BU	23000	5-RPN-S11G-18 2" BASE	0.74	2	
BUILDING LIGHT	SE	⬇	LST 10299 LM-PP-250 (1) 1" LM-PP-250-PSMV-F	(1) SYLVANIA MS250/PS/BU	23000	Wall mounted 20" above grade	0.74	3	
BOLLARD LIGHT	SF	•	LST 10299 HYPR-100MH (1) 1" HYPR-100-MH-MT-OPTX	(1) SYLVANIA MP100/U	8500	Bollard	0.65	4	

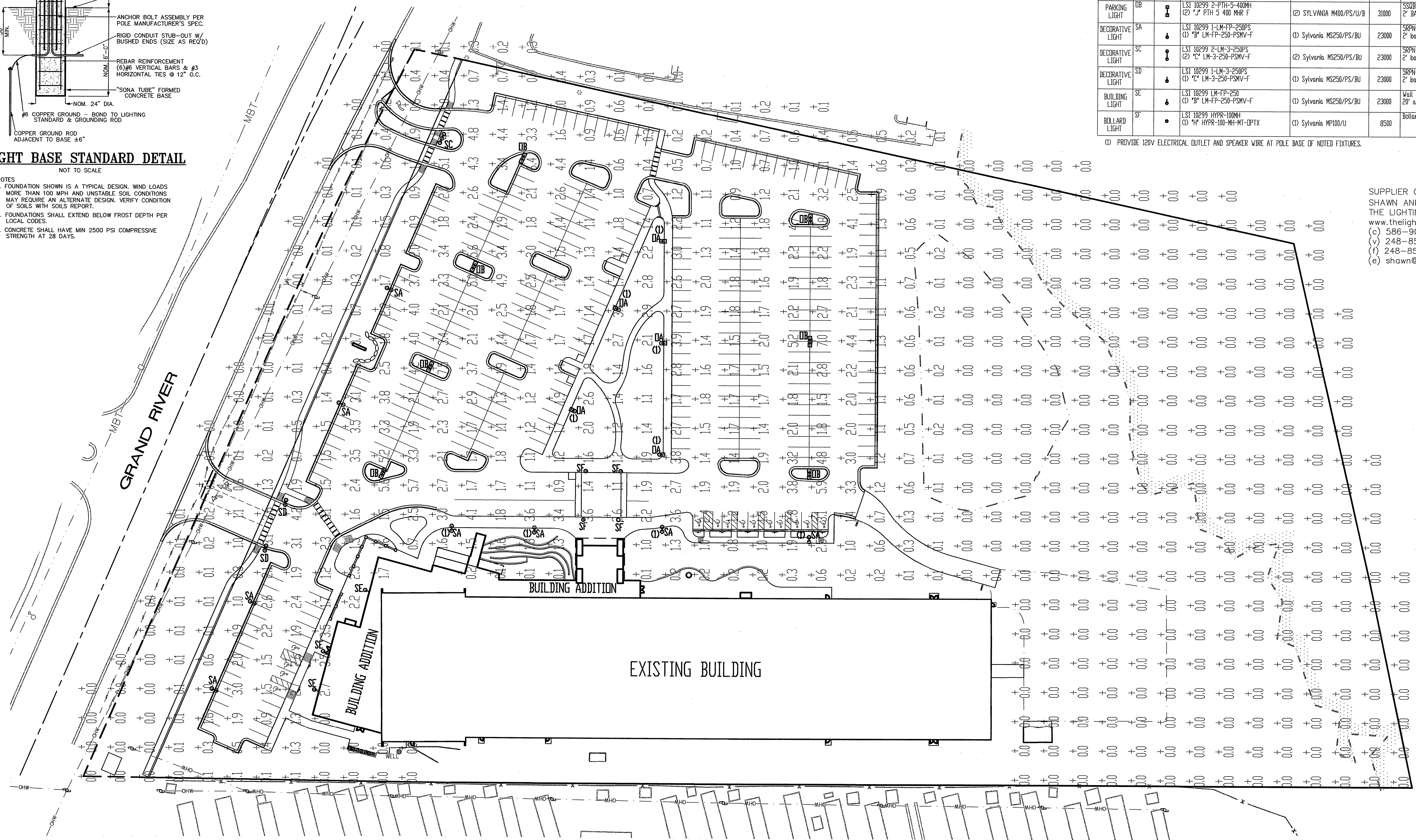
(*) PROVIDE 120V ELECTRICAL OUTLET AND SPEAKER WIRE AT POLE BASE OF NOTED FIXTURES.



LIGHT BASE STANDARD DETAIL
NOT TO SCALE

- NOTES
- FOUNDATION SHOWN IS A TYPICAL DESIGN. WIND LOADS MORE THAN 100 MPH AND UNSTABLE SOIL CONDITIONS MAY REQUIRE AN ALTERNATE DESIGN. VERIFY CONDITION OF SOILS WITH SOILS REPORT.
 - FOUNDATIONS SHALL EXTEND BELOW FROST DEPTH PER LOCAL CODES.
 - CONCRETE SHALL HAVE MIN 2500 PSI COMPRESSIVE STRENGTH AT 28 DAYS.

SUPPLIER CONTACT:
SHAWN ANN STEVENSON, R.A.
THE LIGHTING GROUP
www.thelightinggroup.net
(c) 586-904-4700
(v) 248-852-0731
(f) 248-852-3221
(e) shawn@thelightinggroup.net



DESIGN: EDR/WMP	DATE: 8-22-11	REVISION-DESCRIPTION: REV. PER REVIEW COMMENTS RECEIVED 8-17-11
DRAFT: L.F.		
CHECK: EDR		

DATE	REVISION-DESCRIPTION	DATE	REVISION-DESCRIPTION
8-22-11	REV. PER REVIEW COMMENTS RECEIVED 8-17-11		

242 COMMUNITY CHURCH
GENOA CAMPUS
7526 W. GRAND RIVER

LIGHTING PLAN

CLIENT:
242 COMMUNITY CHURCH

1661 N. LATSON RD.
HOWELL, MI. 48843
(810) 231-0190

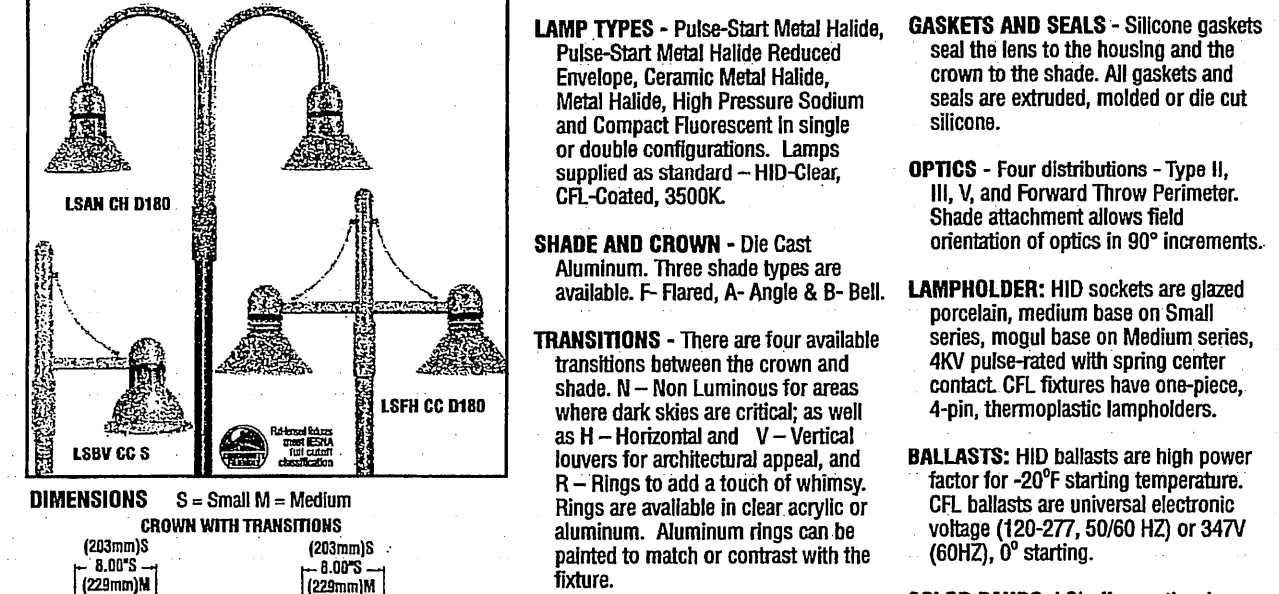
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PROJECT No.: 9101777
DWG NAME: 777-LTNG
PRINT: AUG 23 2011

C9.0



SA, SC, SD, SE

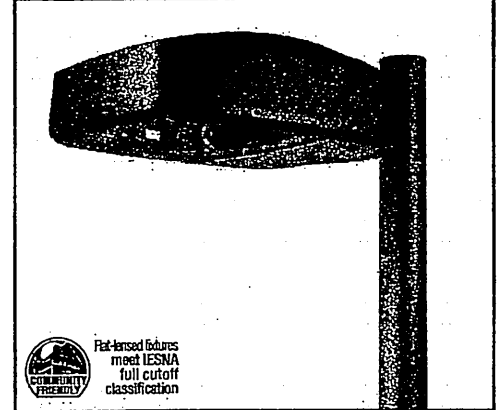
GREENLEE LIFESTYLE SERIES



GREENLEE LIFESTYLE SERIES (Various reflectors are protected by U.S. Patent No. 6,464,378.)
LAMP TYPES - Pulse-Start Metal Halide, Pulse-Start Metal Halide Reduced Envelope, Ceramic Metal Halide, Metal Halide, High Pressure Sodium and Compact Fluorescent in single or double configurations...
SHADE AND CROWN - Die Cast Aluminum, three shade types are available...

OA, OB

PATRIOT



PATRIOT (Various reflectors are protected by U.S. Patent No. 6,464,378.)
HOUSING - One-piece, die-cast aluminum in a multi-ported, rectangular shape with mounting arm cast in as an integral part of the housing...
DOOR FRAME - The Patriot's one-piece, die-cast aluminum door frame secures to the housing with a stainless steel hinge bracket...

Table with columns for Luminaire EPA Chart - Patriot, Flat Glass, Single, 2.5, D50, 2.7, 3.1, 3.3, 4.0, 4.0, 3.4, 4.0, 4.1, 4.9.

OA, OB

STEEL SQUARE POLES

STEEL SQUARE POLES
DIMENSIONS: 2-3/8" (60mm) dia. x 4-1/2" (112mm) height.
POLE SHEET: This sheet is electro-welded ASTM-A550 Grade C steel tubing with a minimum yield strength of 60,000 psi...
ANCHOR BOLTS: Poles are furnished with anchor bolts featuring zinc-plated double nuts and washers...
SHIPPING WEIGHTS - Steel Square Poles table with columns for Height, WPI, EPA, etc.

SF

GREENLEE HYPERION SERIES

GREENLEE HYPERION SERIES
LAMP TYPE: Standard or Ceramic Metal Halide
HOUSING: One-piece, heavy-walled, extruded aluminum, .322" thick for vandal resistance.
CROWN ASSEMBLY: Flat or domed, heavy cast aluminum. For added security against vandals, crown attached to lower housing with four captive, concealed 1/4" x 20 Allen-head screws.
OPTICS: Patented Opti™ optical assembly uses Constructive Occlusion™ technology...

SA, SC, SD, SE

GREENLEE LIFESTYLE SERIES

GREENLEE LIFESTYLE SERIES (Various reflectors are protected by U.S. Patent No. 6,464,378.)
LUMINAIRE ORDERING INFORMATION
TYPICAL ORDER EXAMPLE: LS A N 2 50MH F MT BRZ CC S 4 10 DBC
Includes tables for Lamps, Pole Order, and Shipping Weights.

OA, OB

PATRIOT

PATRIOT LUMINAIRE ORDERING INFORMATION
TYPICAL ORDER EXAMPLE: PTH 5 400 PSMMH F MT MSV PCR
Includes tables for Luminaires, Lamps, Light Sources, Lens, Lens Mount, Luminaire Finish, Pole, Pole Mount, Pole Accessories, and Shipping Weights.

OA, OB

STEEL SQUARE POLES

STEEL SQUARE POLES POLE ORDERING INFORMATION
TYPICAL ORDER EXAMPLE: SSQB0 S07G 24 D180 PLP SF DGP
Includes tables for Pole Order, Pole Selection Chart, Pole Accessories, Pole Mount, Pole Accessories, Pole Mount, Pole Accessories, Pole Mount, Pole Accessories, Pole Mount, Pole Accessories.

SF

GREENLEE HYPERION SERIES

GREENLEE HYPERION SERIES LUMINAIRE ORDERING INFORMATION
TYPICAL ORDER EXAMPLE: HYPR 100MH MT OPTX MSV FT H42 PC120
Includes tables for Luminaire Order, Pole Order, Pole Accessories, Pole Mount, Pole Accessories, Pole Mount, Pole Accessories, Pole Mount, Pole Accessories, Pole Mount, Pole Accessories.

Table with columns for Design, Draft, Check, Date, Revision, Description, Date, Revision, Description.

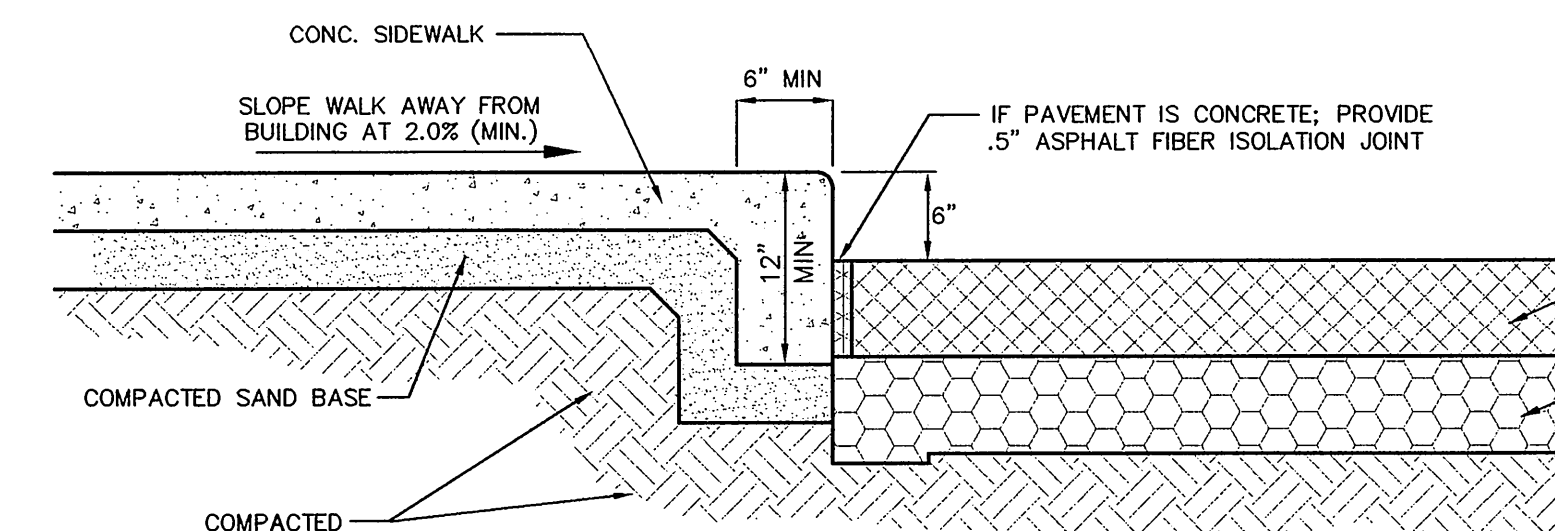
2|42 COMMUNITY CHURCH GENOA CAMPUS 7526 W. GRAND RIVER

LIGHTING DETAILS

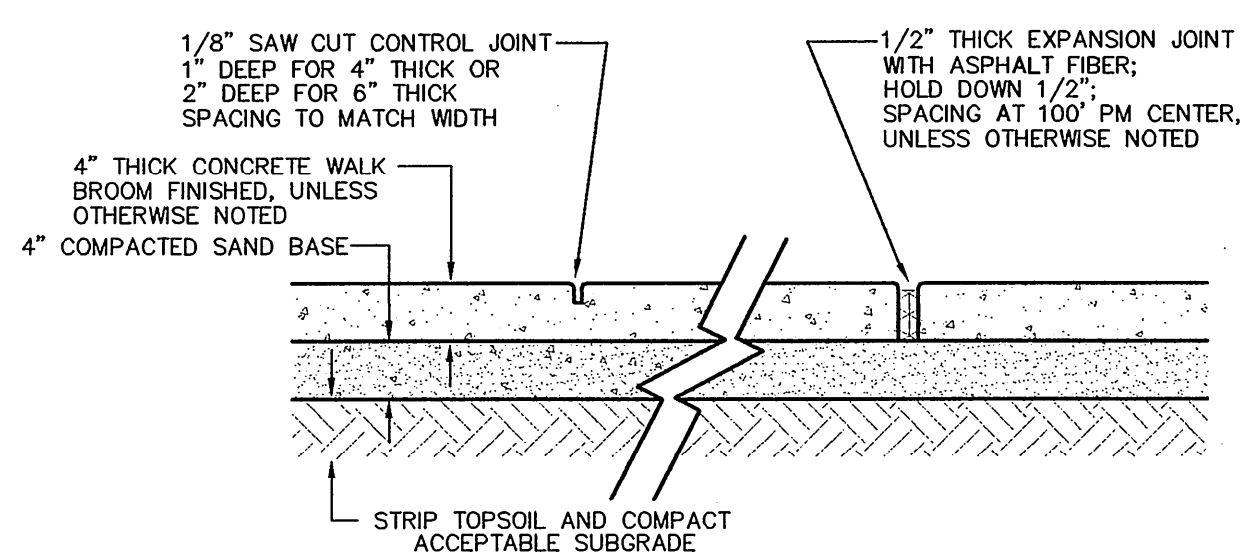
CLIENT: 2|42 COMMUNITY CHURCH
1661 N. LATSON RD. HOWELL, MI. 48843 (810) 231-0190
SCALE: N/A
PROJECT No.: 9101777
DWG NAME: 777-LTNG
PRINT: AUG 23 2011



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SIDEWALK CURB & ISOLATION JOINT DETAIL
NOT TO SCALE

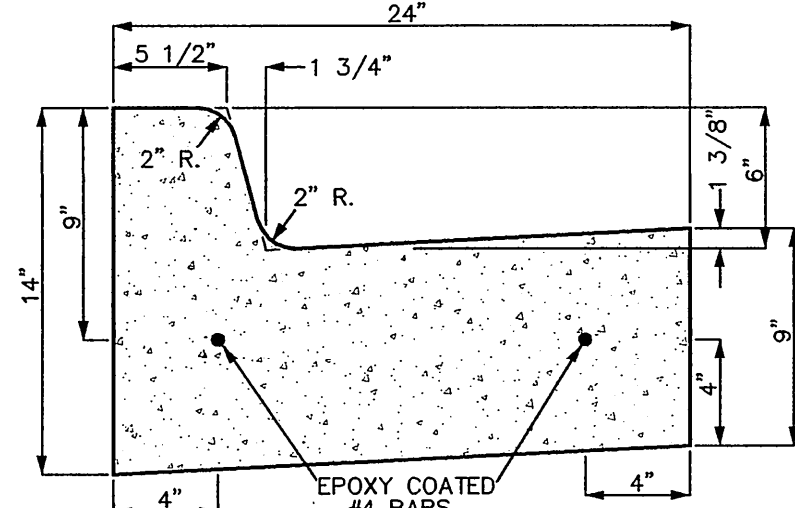


SIDEWALK CROSS SECTION
NOT TO SCALE

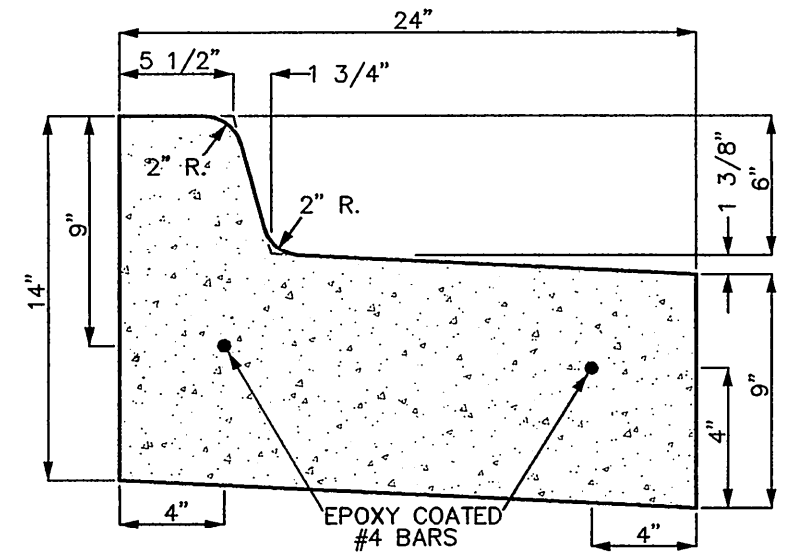
- NOTES:
1. SEE PLAN FOR WIDTH OF SIDEWALK.
2. PROVIDE CONCRETE TYPE PER LOCAL CODE. (3500 PSI AIR ENTRAINED)

PRIVATE DEVELOPMENT CURB NOTES:

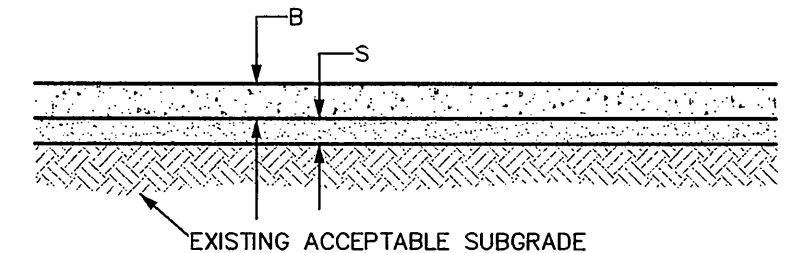
- Refer to the project plans for the proposed locations of the specific curb types.
- The construction specifications of the appropriate Local Municipality are a part of this work. Refer to the Private Road Construction Notes and/or Driveway and Parking Lot Construction Notes and the General Notes on the project plans for additional requirements.
- Concrete material shall meet or exceed the specification requirements of the appropriate Local Municipality. Unless specified otherwise by the Local Municipality, concrete material shall be air-entrained and shall have a minimum 28-day class design strength of 3500 psi. Contractor shall submit concrete mix design and aggregate mechanical analysis report to the Local Municipality and Engineer for review and approval prior to use.
- Install transverse contraction control joints in accordance with the Local Municipality requirements. If not specified by the Local Municipality, then install transverse contraction control joints in curb with 1" minimum depth at 10' on center. Tool joints in fresh concrete or saw cut within 8 hours.
- Install transverse expansion control joints in accordance with the Local Municipality requirements. If not specified by the Local Municipality, then install transverse expansion control joints in curb as follows: 300' maximum on center, at spring points of intersecting streets and within 10' on each side of catch basins. Transverse expansion control joints shall be 1" thick asphalt fiber joint filter matching entire curb cross section.
- Provide 0.5" asphalt fiber control joint between back of curb and all other concrete structures, such as concrete sidewalks and concrete driveways.
- Curb Contractor shall provide final adjustment of catch basin castings in curb line. Castings shall be tucked pointed to structure water tight with concrete or mortar inside and outside of casting.
- Install curb cuts for all existing and proposed sidewalks and pedestrian ramps in accordance with the American Disabilities Act and the Barrier Free Design requirements of the appropriate Local, County and/or State Agency. Install curb cuts for all existing and proposed vehicular ramps and drives as noted on the project plans.



MDOT TYPE F4 CURB
NOT TO SCALE



MDOT TYPE F4 CURB REVERSE PITCH
NOT TO SCALE



AGGREGATE CROSS SECTION
NOT TO SCALE

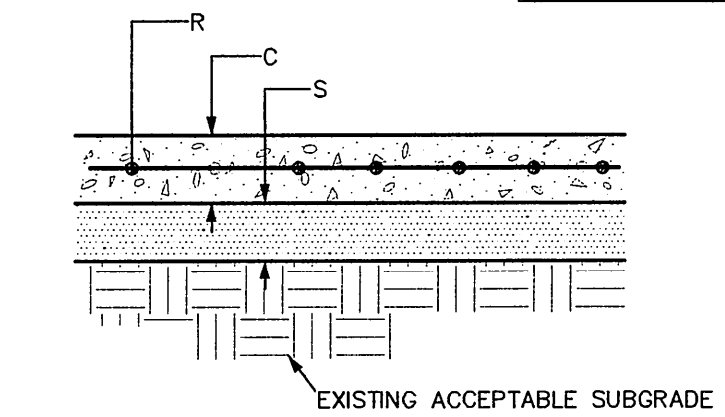
- AGGREGATE CROSS SECTION NOTES:
1. Refer to the General Notes, Road Construction Notes and Typical Road Cross Section detail on the project plans for additional requirements.
2. Unsuitable soils found within the 1 on 1 influence zone of the roadway, such as muck, peat, topsoil, marl, silt or other unstable materials shall be excavated and replaced up to the proposed subgrade elevation with MDOT Class III granular material compacted to 95% maximum unit weight, modified proctor.
3. Contractor shall proof roll prepared subgrade as directed by Engineer. Unacceptable areas of subgrade shall be undercut and replaced as directed by Engineer. See Subgrade Undercut & Replacement Cross Section detail for additional requirements.

KEY	DESCRIPTION	MATERIAL SPECIFICATION	MINIMUM COMPACTED THICKNESS
B	AGGREGATE SURFACE	MDOT 22A	6"
S	GRANULAR SUBBASE	MDOT CLASS II	4"

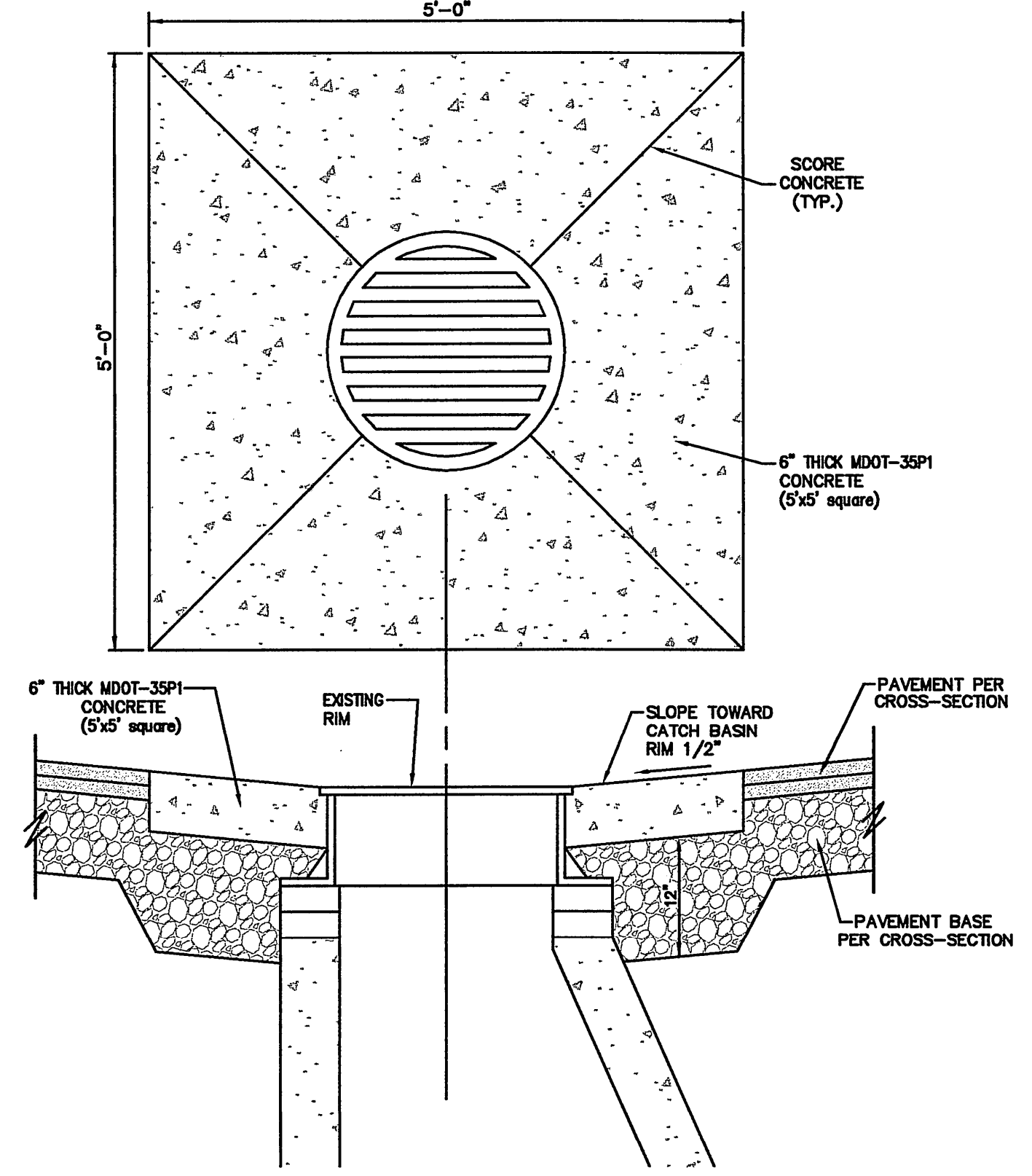
CONCRETE PAVEMENT NOTES:

- The construction specifications of the appropriate Local Municipality are a part of this work. Refer to the General Notes, Road and/or Parking Lot Construction Notes and Typical Road and/or Pavement Cross Section details on the project plans for additional requirements.
- Unsuitable soils found within the 1 on 1 influence zone of the pavement, such as muck, peat, topsoil, marl, silt or other unstable materials shall be excavated and replaced up to the proposed subgrade elevation with MDOT Class III granular material compacted to 95% maximum unit weight, modified proctor.
- Contractor shall proof roll prepared subgrade as directed by Engineer. Unacceptable areas of subgrade shall be undercut and replaced as directed by Engineer.
- Install transverse contraction control joints in accordance with the Local Municipality requirements. If not specified by the Local Municipality, then install transverse contraction control joints in curb with 1" minimum depth at 10' on center. Tool joints in fresh concrete or saw cut within 8 hours.
- Install transverse expansion control joints in accordance with the Local Municipality requirements. If not specified by the Local Municipality, then install transverse expansion control joints in curb as follows: 300' maximum on center. Transverse expansion control joints shall be 1" thick asphalt fiber joint filter matching entire concrete cross section.
- Provide lane ties when specified on the Project Plans, otherwise provide 0.5" asphalt fiber control joint between concrete pavement and all other concrete structures, such as concrete curbs, sidewalks and concrete driveways.

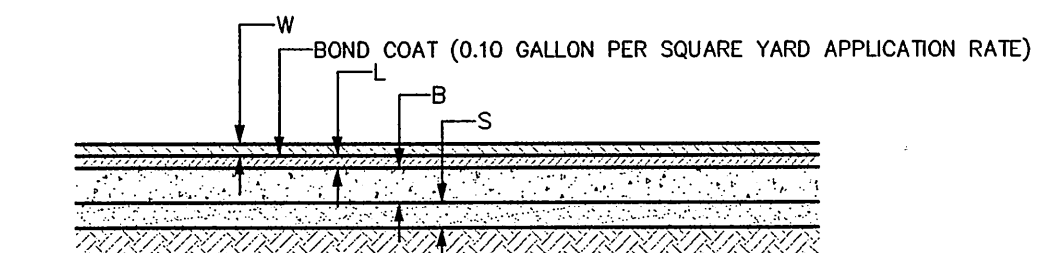
KEY	DESCRIPTION	MATERIAL SPECIFICATION	MINIMUM THICKNESS
R	REINFORCEMENT	W.W.F. 8"X8"	N/A
C	CONCRETE	MDOT 35P	8"
S	COMPACTED SUBBASE	MDOT CLASS II	6"



CONCRETE PAVEMENT CROSS-SECTION
NOT TO SCALE



CATCH BASIN COLLAR
NO SCALE



PAVEMENT CROSS SECTION
NOT TO SCALE

FOR USE IN MAIN DRIVE AISLE

KEY	DESCRIPTION	MATERIAL SPECIFICATION	MINIMUM COMPACTED THICKNESS
W	WEARING COURSE	MDOT 36A	1.5"
L	LEVELING COURSE	MDOT 13A	2"
B	AGGREGATE BASE	MDOT 21A LESTONE	8"
S	GRANULAR SUBBASE	MDOT CLASS II	6"

PARKING AREAS (MINIMUM)

KEY	DESCRIPTION	MATERIAL SPECIFICATION	MINIMUM COMPACTED THICKNESS
W	WEARING COURSE	MDOT 36A	1.5"
L	LEVELING COURSE	MDOT 13A	1.5"
B	AGGREGATE BASE	MDOT 22A AGG. BASE	6"
S	GRANULAR SUBBASE	MDOT CLASS II	6"

PARKING AREAS (ALTERNATE #1)

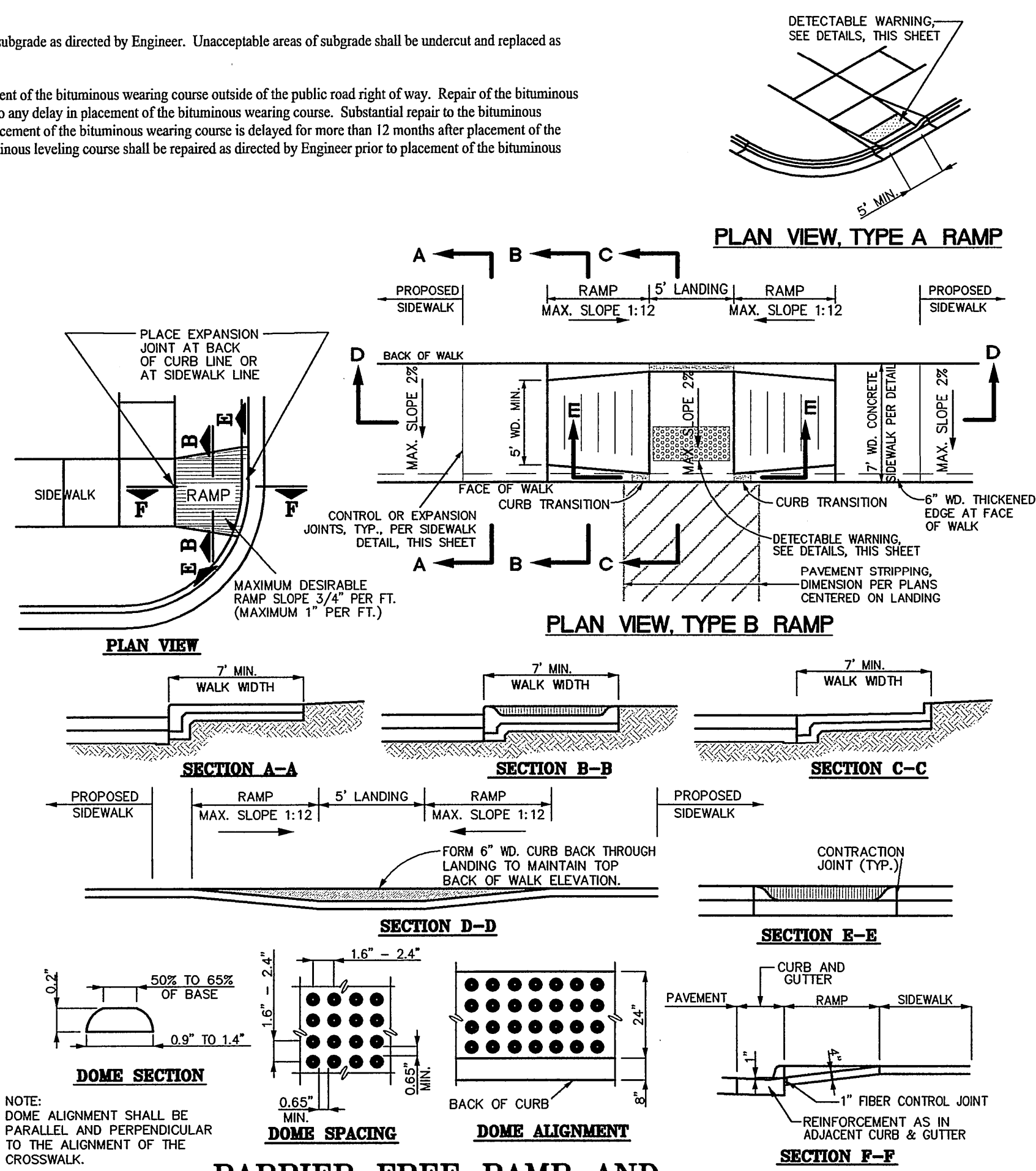
KEY	DESCRIPTION	MATERIAL SPECIFICATION	MINIMUM COMPACTED THICKNESS
W	WEARING COURSE	MDOT 36A	1.5"
L	LEVELING COURSE	MDOT 13A	1.5"
B	AGGREGATE BASE	MDOT 21A LESTONE	8"
S	GRANULAR SUBBASE	MDOT CLASS II	6"

PARKING AREAS (ALTERNATE #2)

KEY	DESCRIPTION	MATERIAL SPECIFICATION	MINIMUM COMPACTED THICKNESS
W	WEARING COURSE	MDOT 36A	1.5"
L	LEVELING COURSE	MDOT 13A	2.0"
B	AGGREGATE BASE	MDOT 21A LESTONE	8"
S	GRANULAR SUBBASE	MDOT CLASS II	6"

BITUMINOUS PAVEMENT NOTES:

- The construction specifications of the appropriate Local Municipality are a part of this work. Refer to the General Notes, Road and/or Parking Lot Construction Notes and Typical Road and/or Pavement Cross Section details on the project plans for additional requirements.
- Unsuitable soils found within the 1 on 1 influence zone of the roadway, such as muck, peat, topsoil, marl, silt or other unstable materials shall be excavated and replaced up to the proposed subgrade elevation with MDOT Class III granular material compacted to 95% maximum unit weight, modified proctor.
- Contractor shall proof roll prepared subgrade as directed by Engineer. Unacceptable areas of subgrade shall be undercut and replaced as directed by Engineer.
- Owner/Developer may delay placement of the bituminous wearing course outside of the public road right of way. Repair of the bituminous leveling course may be necessary due to any delay in placement of the bituminous wearing course. Substantial repair to the bituminous leveling course may be necessary if placement of the bituminous wearing course is delayed for more than 12 months after placement of the bituminous leveling course. The bituminous leveling course shall be repaired as directed by Engineer prior to placement of the bituminous wearing course.



BARRIER FREE RAMP AND DETECTABLE WARNING DETAILS
NOT TO SCALE

DRIVEWAY AND PARKING LOT CONSTRUCTION NOTES:

- The grading, driveway and parking lot specifications of the Local Municipality are a part of this work. Refer to the General Notes on the project plans for additional requirements.
- Driveway and Parking Lot work shall include site clearing of vegetation and tree stumps; stripping and stockpiling of topsoil for reuse; mass grading cuts and fills; removal of unsuitable soils from the paved surface influence area; culvert placement; subgrade preparation including fine grading and proof roll; subgrade undercuts and/or placement of geotextile fabric if needed; placement and preparation of granular subbase and aggregate base courses including fine grading and compaction; placement of concrete curb and gutter; watering of aggregate base within 24 hours of paving to obtain optimum moisture content; bituminous and/or concrete pavement including placement, compaction and bond coats; clearing of bituminous pavements between courses if needed; preparation, finish work and restoration as needed to connect to existing pavements, ditches, driveways, etc.; adjustment of storm and utility structure castings to match finish grade; placement of shoulders and finish grading of ditches; pavement markings; topsoil placement; seed & mulch; site cleanup; restoration; and other work as shown on the project plans and specifications.
- Existing and proposed grades shown in the driveway profile view(s) are along the centerline of each driveway. Refer to the plan view and curve tables on the project plans for horizontal alignment and curve data. Proposed contours for ditches, curbs, driveway crown and pavement slope may not be shown in the plan view and/or grading plan.
- Contractor shall coordinate scheduling a Pre-Construction Meeting with Engineer prior to commencement of driveway and/or parking lot work.
- Contractor shall coordinate construction staking, testing, documentation and/or observation with the appropriate Agency, Surveyor and/or Engineer as required for construction, certification and/or acceptance of the driveway(s) and/or parking lot(s). All materials used and work done shall meet or exceed the requirements and specifications noted on the project plans. Any materials used or work done that does not meet said requirements and/or specifications shall be replaced and/or redone at Contractor's expense. The Owner/Developer may wait for test results, certifications and/or Agency reviews prior to accepting work.
- Contractor shall take all appropriate job site safety precautions. Refer to the Traffic Control specifications of the appropriate Regulatory Agency for work within a public road right of way.
- Contractor shall take precautions to prevent contamination of driveway and/or parking lot materials during handling, installation and construction procedures. Contaminated materials shall be removed and replaced at Contractor's expense.
- Clear vision areas shall be created where required; refer to the Clear Vision Area detail on the project plans. Relocate existing signs/utilities as acceptable to the appropriate Agency. Owner/Developer shall coordinate installation of permanent street signage after completion of roadway.
- When side slopes within utility easements exceed 1 on 10 (10%), Contractor shall rough grade a flat shelf within the easement area as acceptable to Engineer and restore following underground utility installation.

GENERAL NOTES:

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



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CALL MISS DIG.

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

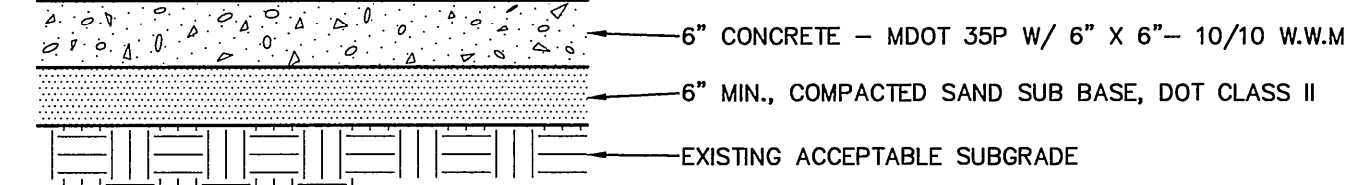
DESIGN: EDR/WWP	DATE	REVISION-DESCRIPTION	DATE	REVISION-DESCRIPTION
DRAFT: L.F.				
CHECK: EDR				

242 COMMUNITY CHURCH
GENOA CAMPUS
7526 W. GRAND RIVER

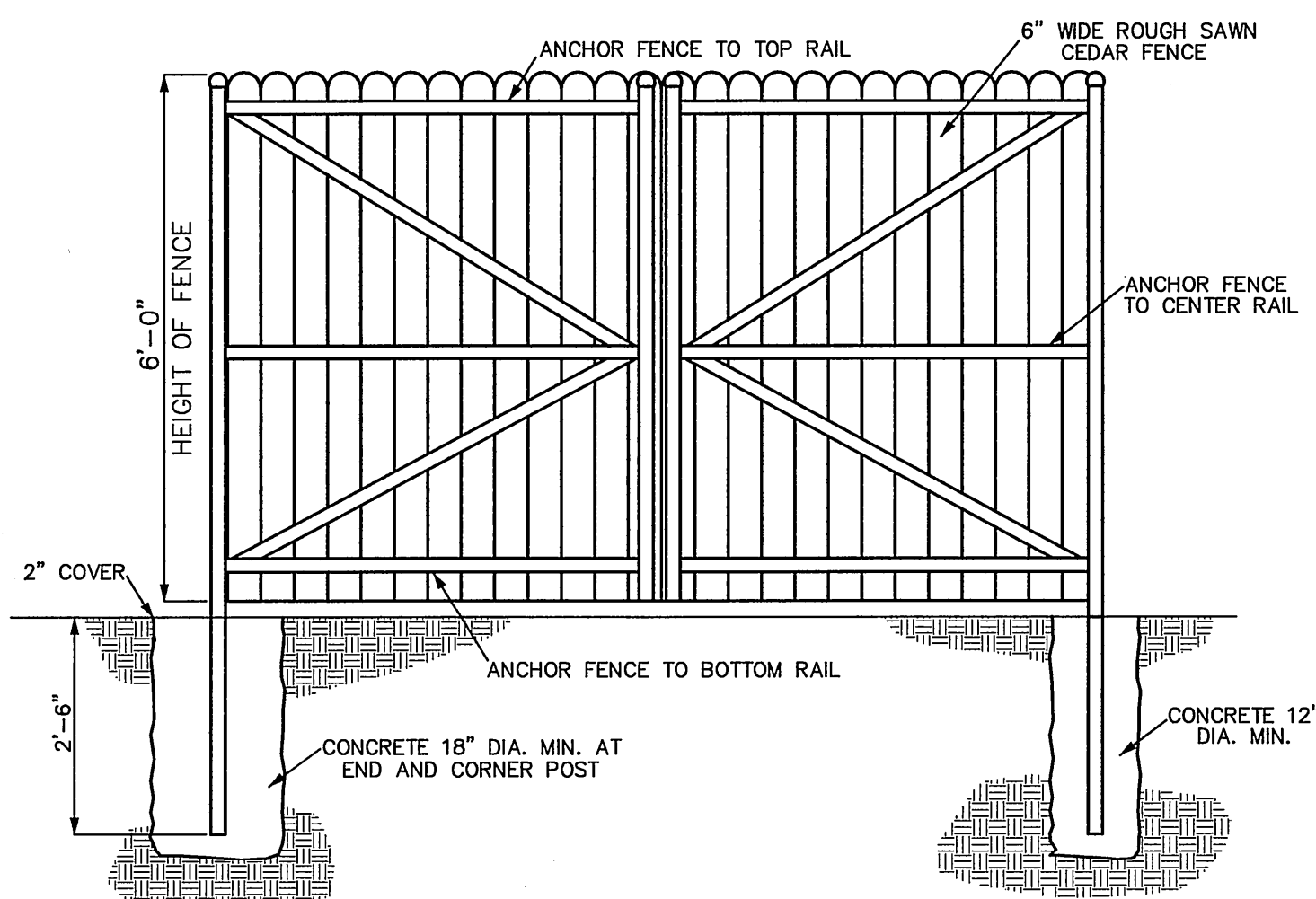
SITE DEVELOPMENT
NOTES AND DETAILS

CLIENT: 242 COMMUNITY CHURCH	SCALE: N/A
1661 N. LATSON RD. HOWELL, MI. 48843 (810) 231-0190	PROJECT No.: 9101777 DWG NAME: 777-DTLS PRINT: AUG 23 2011

C10.0

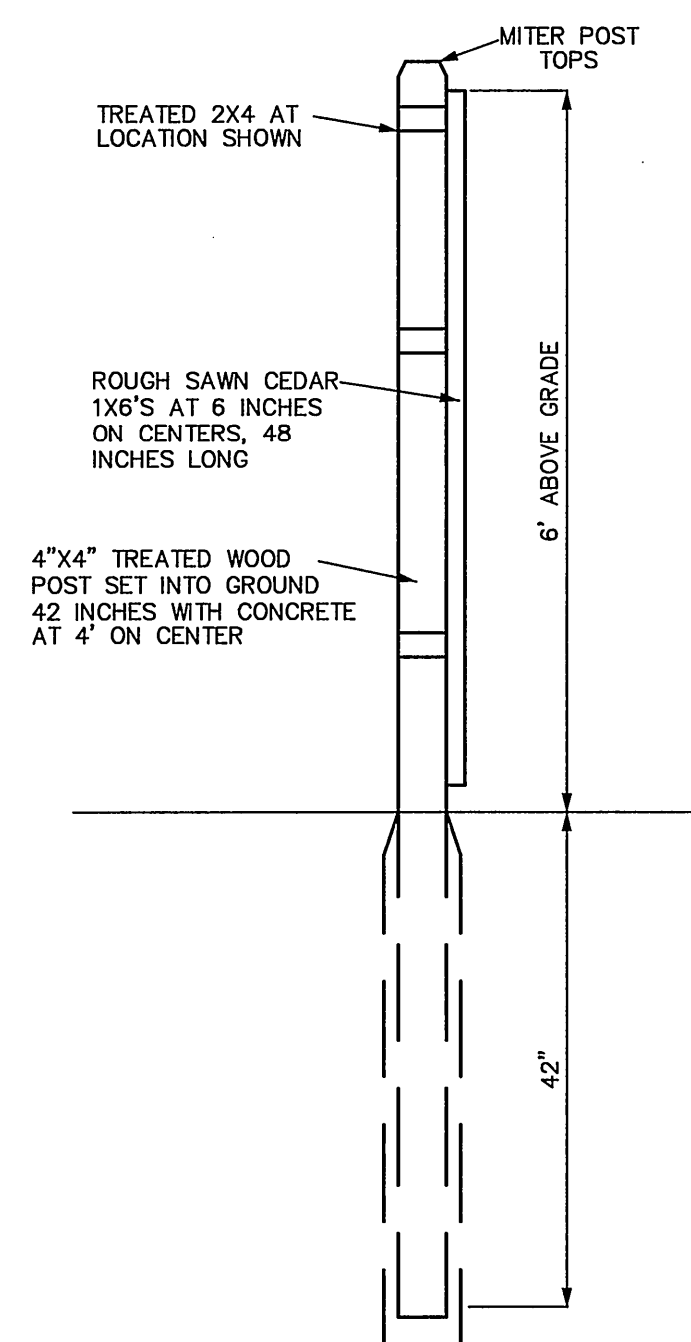


DUMPSTER PAD CROSS SECTION
NOT TO SCALE

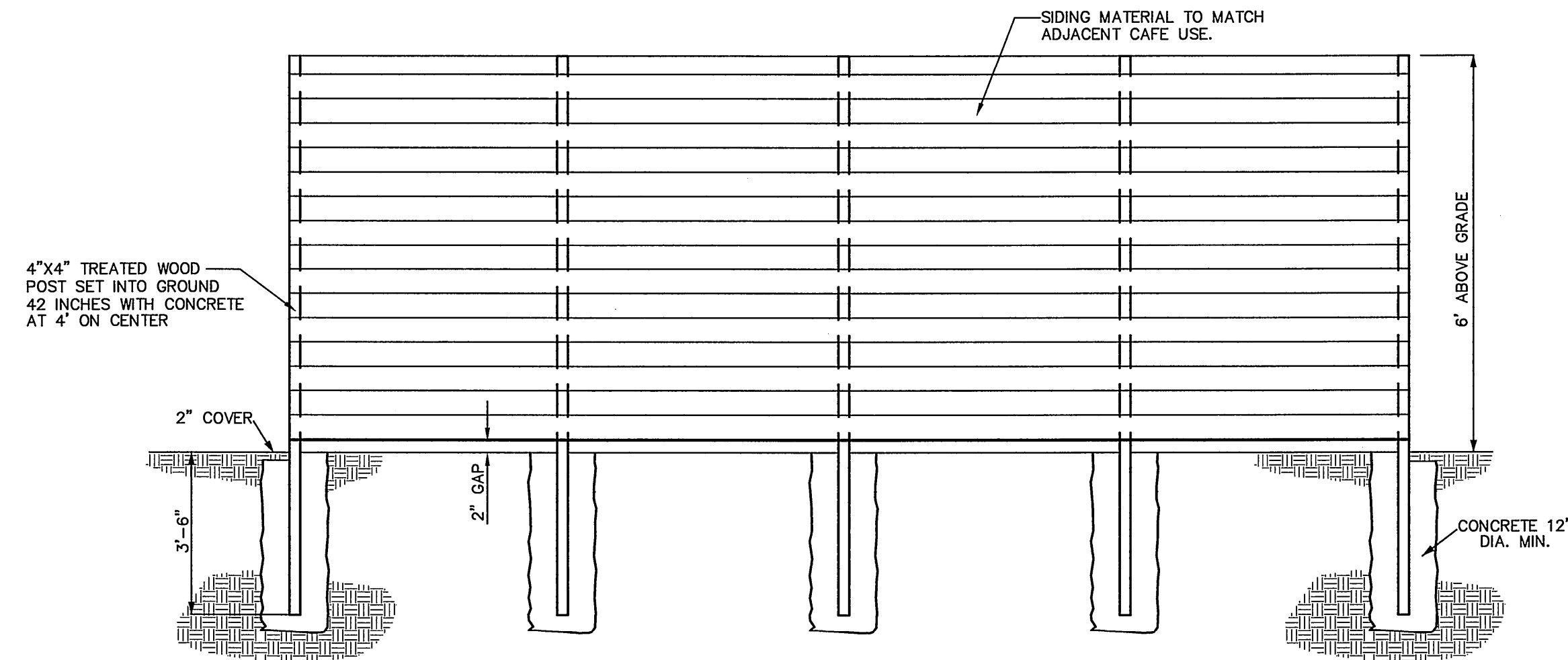


DUMPSTER SCREEN GATE
NOT TO SCALE

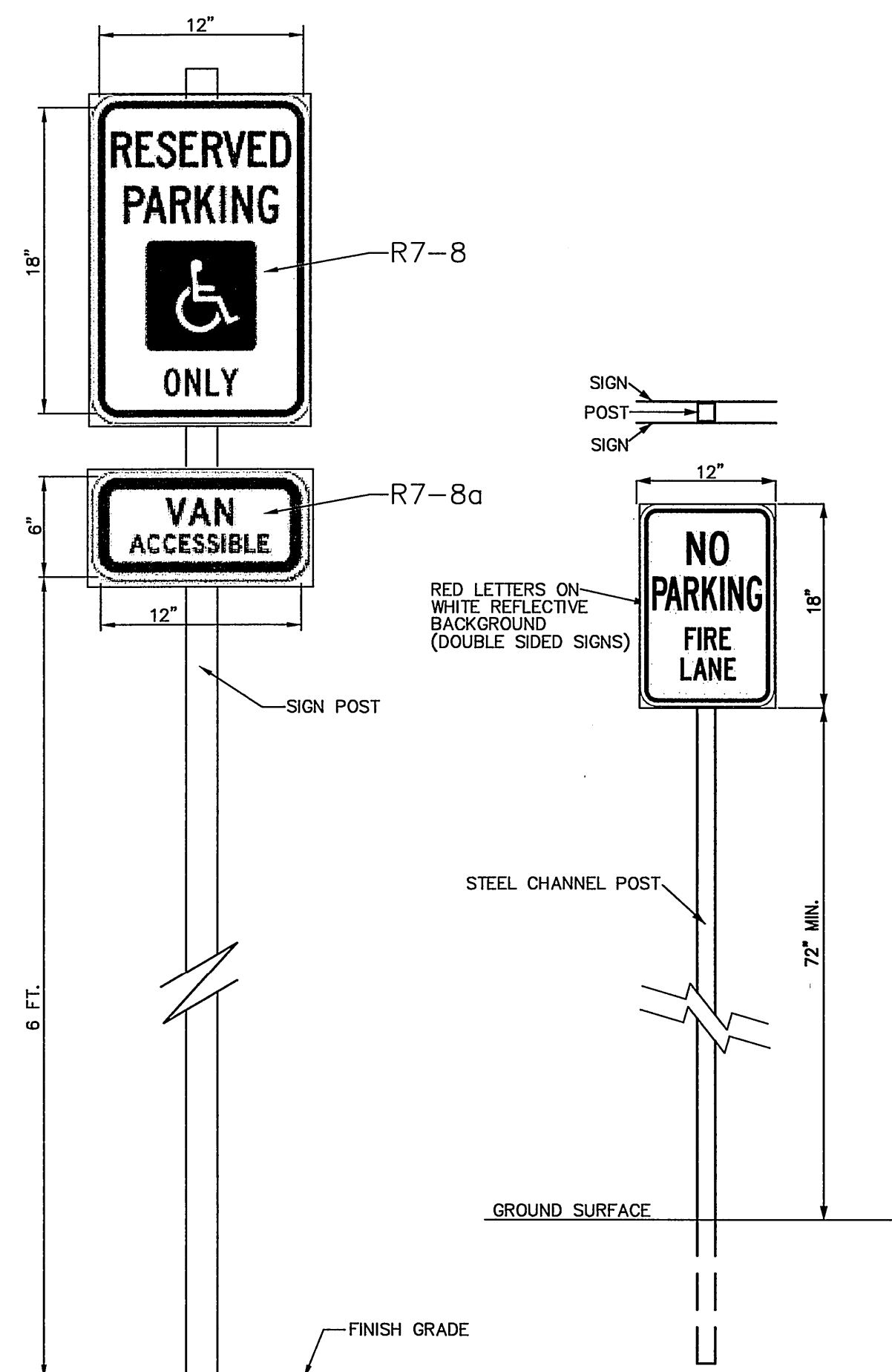
NOTE:
ALL POLES, RAILS AND HARDWARE
SHALL BE GALVANIZED STEEL.



DUMPSTER SCREEN FENCE
NOT TO SCALE



PULL CART SCREENING DETAIL
NOT TO SCALE



**BARRIER FREE PARKING
SIGN DETAIL**
NOT TO SCALE

**FIRE LANE SIGN
DETAIL**
NOT TO SCALE

ROCK SIZE DESIGNATION

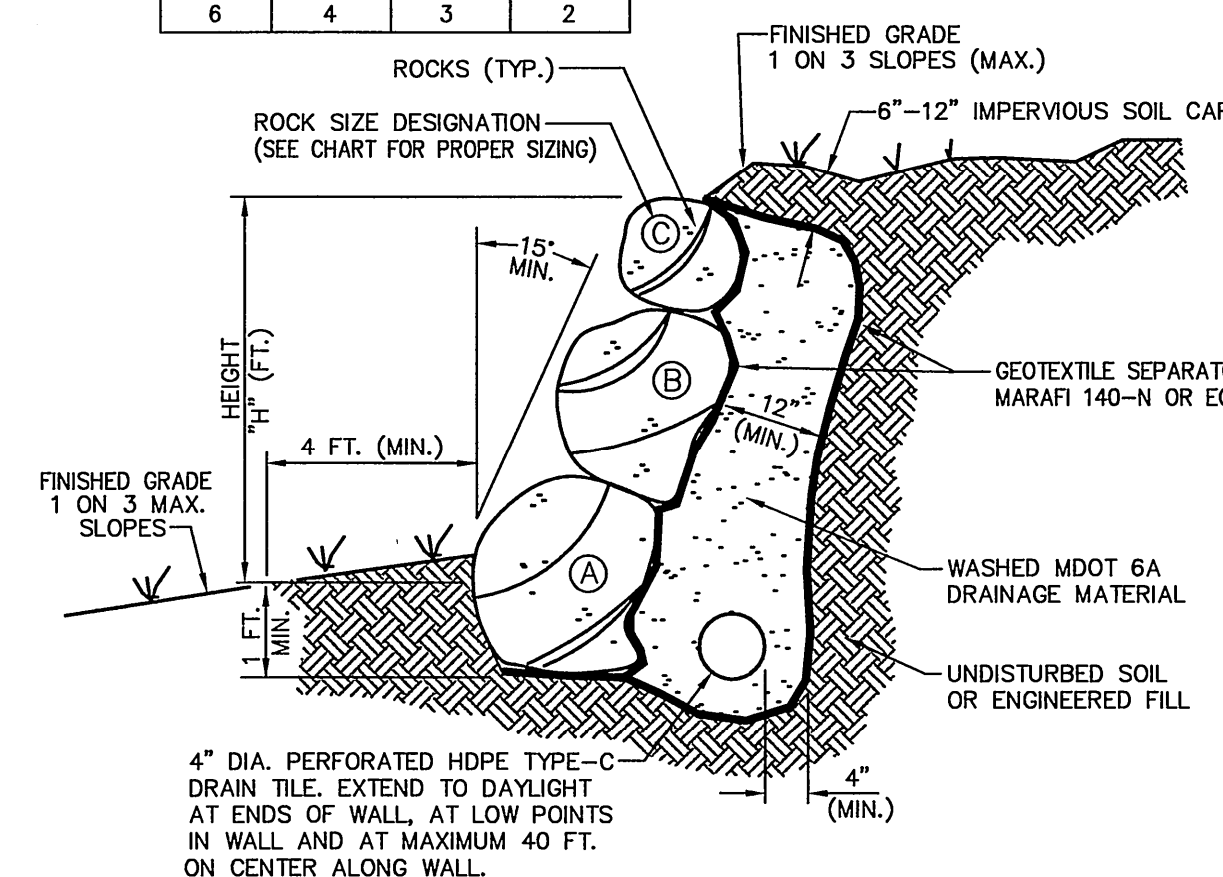
WALL HEIGHT (FEET)	MINIMUM ROCK SIZE (MAN)		
	POSITION A	POSITION B	POSITION C
1	2	1	-
2	3	2	-
3	3	2	-
4	4	3	2
5	4	3	2
6	4	3	2

ROCK SIZE DESCRIPTION

ROCK SIZE	ROCK WEIGHT	AVERAGE DIMENSION
1-MAN	50-200 lbs.	12"-18"
2-MAN	200-700 lbs.	18"-28"
3-MAN	700-2,000 lbs.	28"-36"
4-MAN	2,000-4,000 lbs.	36"-48"
5-MAN	4,000-6,000 lbs.	48"-54"
6-MAN	6,000-8,000 lbs.	54"-60"

ROCKERY WALL NOTES:

1. Non-reinforced gravity rockery walls shall not exceed 6 feet in height.
2. The face of the rockery wall shall have a minimum batter of 15 degrees from vertical.
3. Rockery walls shall be constructed on stable suitable soils or engineered fill. Unstable soils found within the 1 on 1 influence zone of the base of the wall, such as muck, peat, topsoil, marl, silt or other unstable materials shall be excavated and replaced up to the proposed subgrade elevation with MDOT Class III granular material compacted to 95% maximum unit weight, modified proctor.
4. Rocks shall be installed with the largest rocks at the base of the wall and then progressively smaller rocks as the height of the wall increases. Rocks utilized in construction of the rockery wall shall meet or exceed the minimum rock size requirements based on the wall height as specified in the Rock Size Description and Rock Size Designation Charts. Rocks shall be of sufficient quality and strength and shall be free of cracks, seams and foliation.
5. The base course of rocks shall be embedded a minimum of 12" into the acceptable subgrade soils as measured at a point 4 feet in front of the face of wall. The long dimensions of the rock shall extend into the slope behind the rockery wall for maximum stability. Subsequent courses of rocks shall be placed to lock into the rocks in the lower course or tier.
6. Proper drainage shall be provided behind the wall including a minimum of 12" of free draining aggregate the entire height of the wall and a 4" minimum diameter drain tile behind the base of wall. The drain tile shall be extended beyond the face of wall to daylight at the ends of the wall, low points and at a maximum of 40 feet on center. Finish grade at the face of wall shall be graded to direct drainage away from the wall and shall not exceed a 1 on 3 slope.



ROCKERY WALL CROSS-SECTION
NOT TO SCALE



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DESIGN:EDR/WMP	DATE	REVISION-DESCRIPTION	DATE	REVISION-DESCRIPTION
DRAFT: L.F.				
CHECK: EDR				

242 COMMUNITY CHURCH
GENOA CAMPUS
7526 W. GRAND RIVER

SITE DEVELOPMENT
NOTES AND DETAILS

CLIENT:
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1661 N. LATSON RD.
HOWELL, MI. 48843
(810) 231-0190

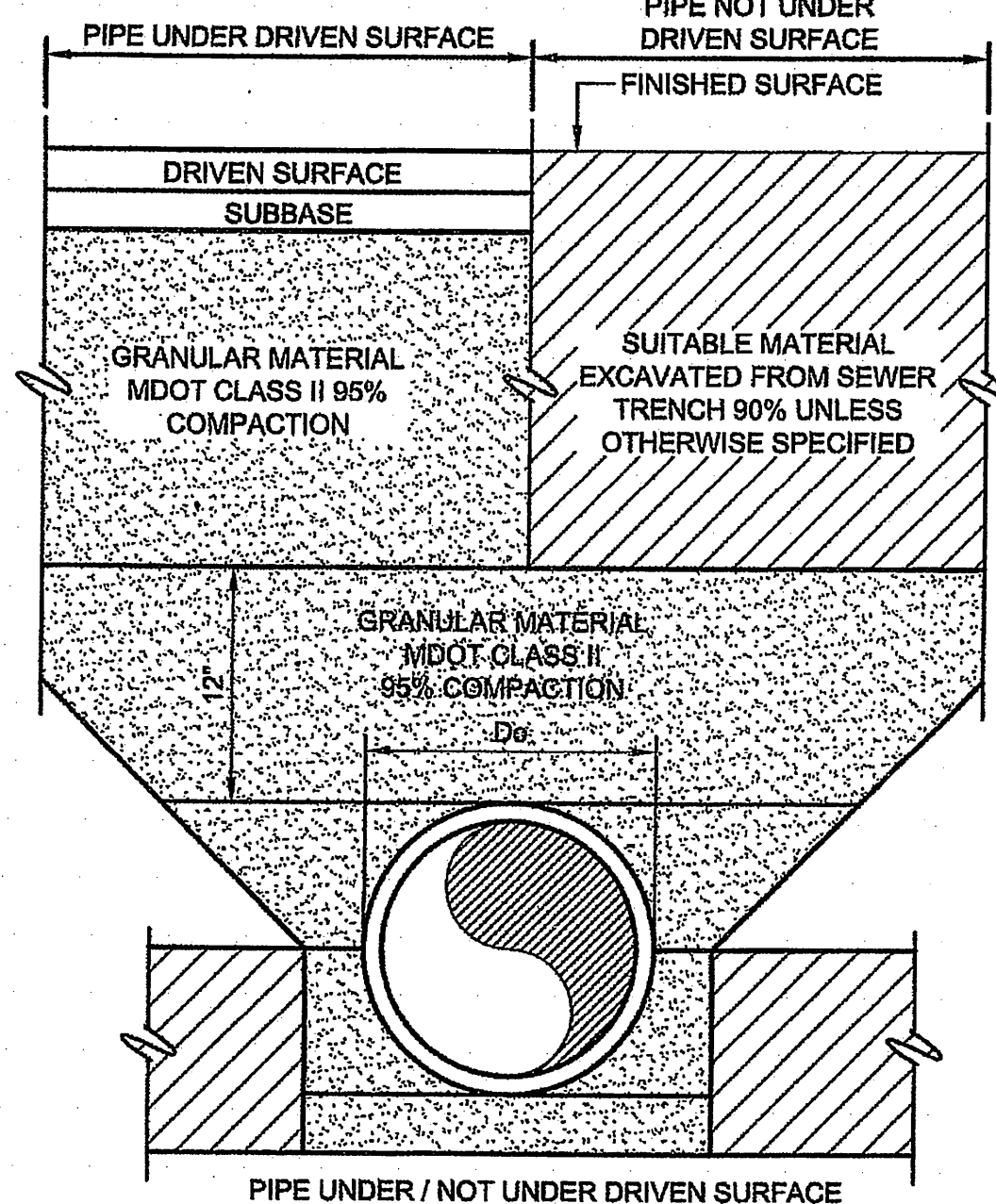
SCALE: N/A
PROJECT No.: 9101777
DWG NAME: 777-DTLS
PRINT: AUG 23 2011

C10.1

NOTES:
1. COMPACTION PRESENTED AS STANDARD PROCTOR VALUES.

2. SOIL TYPES
GRAVEL SANDY (SW) ASTHO DESIG. A1, A3
SANDY SILTY (ML) A2, A4
SILTY CLAY (CL) A5, A6, A7

3. SOIL IN HAUNCH AND LOWER SIDE ZONES OUTSIDE OF D_o/6 FROM SPRING LINE SHALL BE COMPACTED TO AT LEAST THE SAME COMPACTION AS THE SOIL IN THE OVERFILL ZONE.

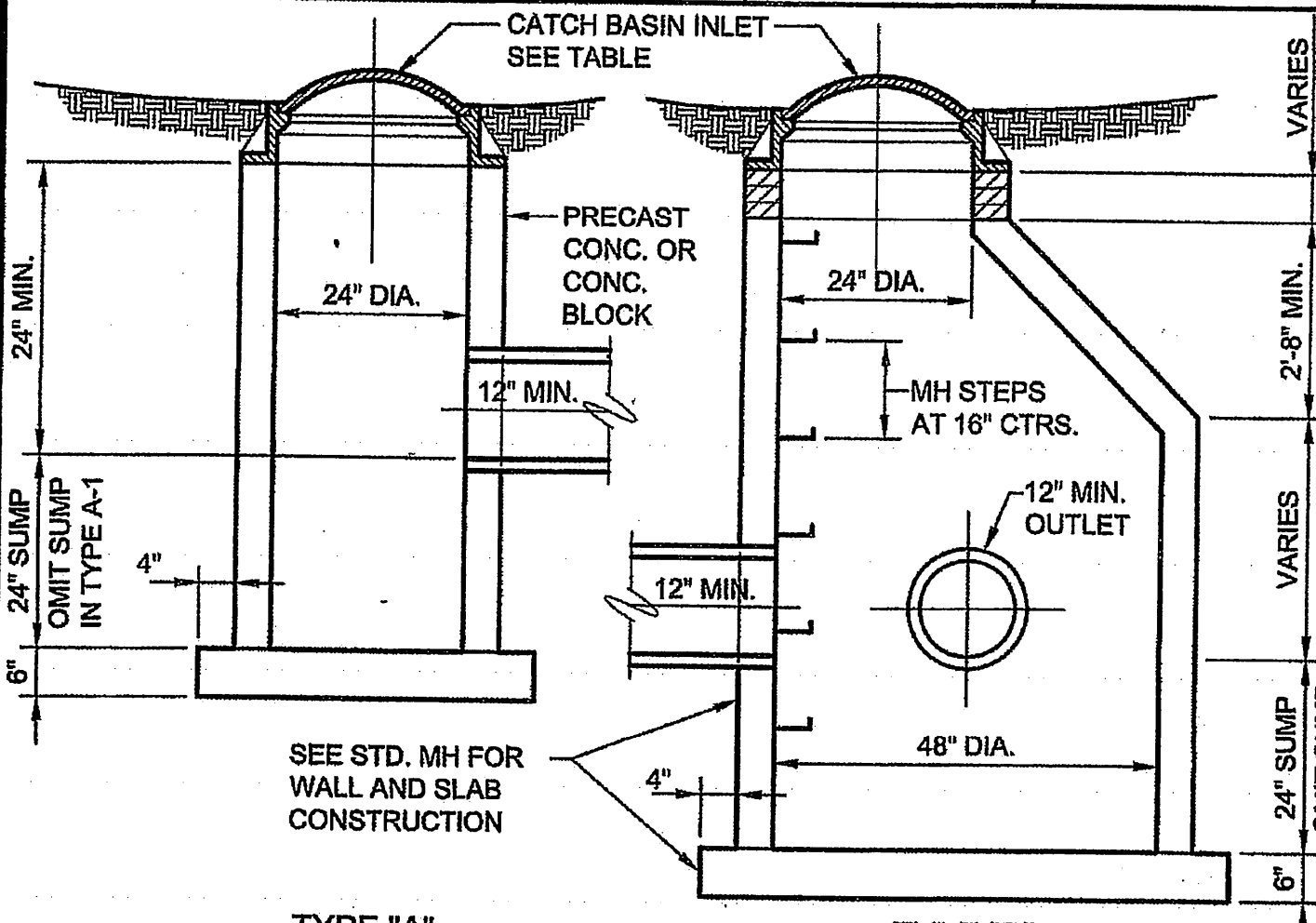


TRENCH EXCAVATION & BACKFILL

Date: APRIL 2010

R-3

MANHOLE FRAME & COVER & CATCH BASIN INLETS					
TYPE	LOCATION	MANUFACTURER OR EQUAL		TYPE OF COVER OR INLET	MAXIMUM DRAINAGE AREA (ACRES)
		EAST JORDAN	NEENAH		
MH	ALL	1040	R-1916 F1	SANITARY-SOLID SELF-SEALING STORM-VENTED	N/A
CB	TYPE A CURB	7000-T1-M1	R-3070	FLAT GRATE WITH VERT. OPEN BACK	0.71
CB	TYPE B CURB	7065-T1-M1	R-3034-B	FLAT GRATE WITH ROLL BACK	0.87
CB	PAVEMENT/ SHOULDER	1020-M1	R-2060-D	FLAT GRATE	0.66
CB	OPEN AREA	1020-01	R-2560-D	BEEHIVE GRATE 4" HIGH	0.63
CB	GUTTER	5100	R-3238	CONCAVE INLET	0.96



TYPE "A"

NOTE: TYPE A-1 EQUAL TO TYPE "A" EXCLUDING 24" SUMP BUT ADD ON BOTTOM CONC. FILLET.

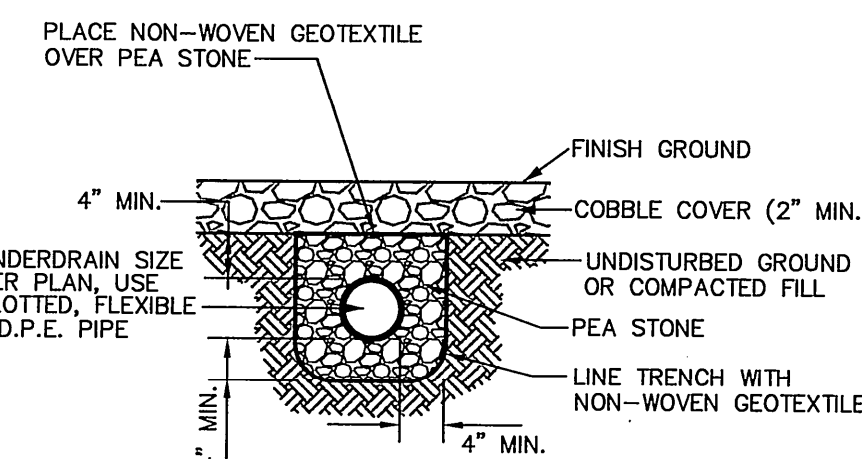
TYPE "B"

NOTE: TYPE B-1 EQUAL TO TYPE "B" EXCLUDING 24" SUMP BUT ADD ON BOTTOM CONC. FILLET.

CATCH BASIN

Date: APRIL 2010

R-1

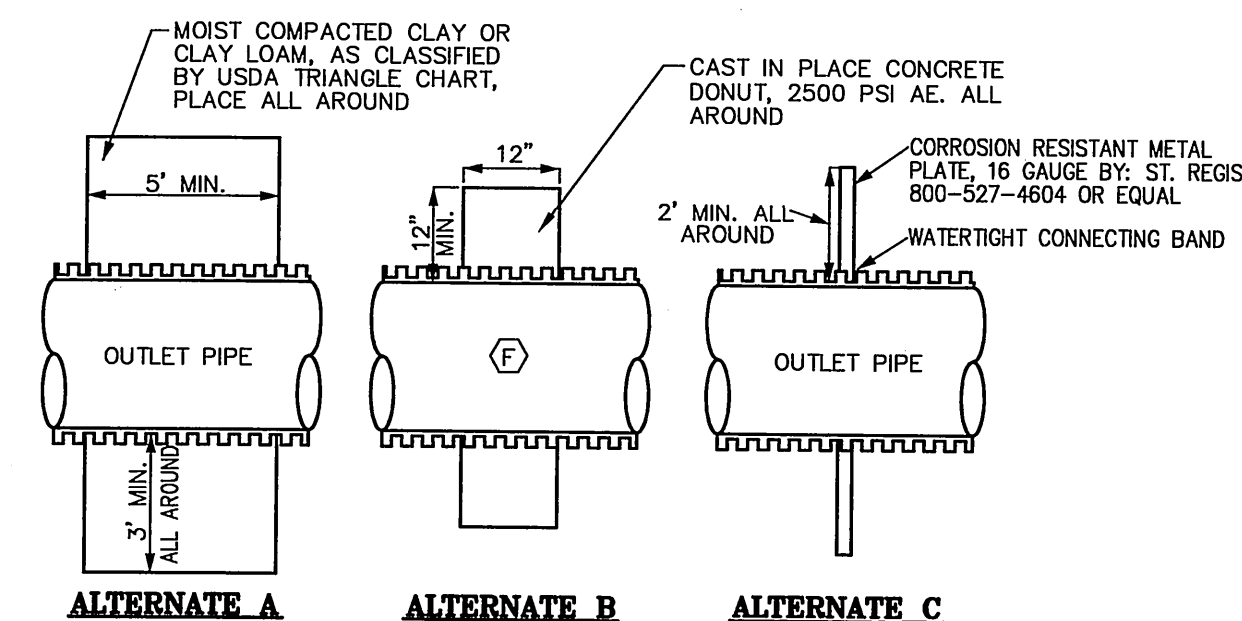


UNDERDRAIN DETAIL
NOT TO SCALE

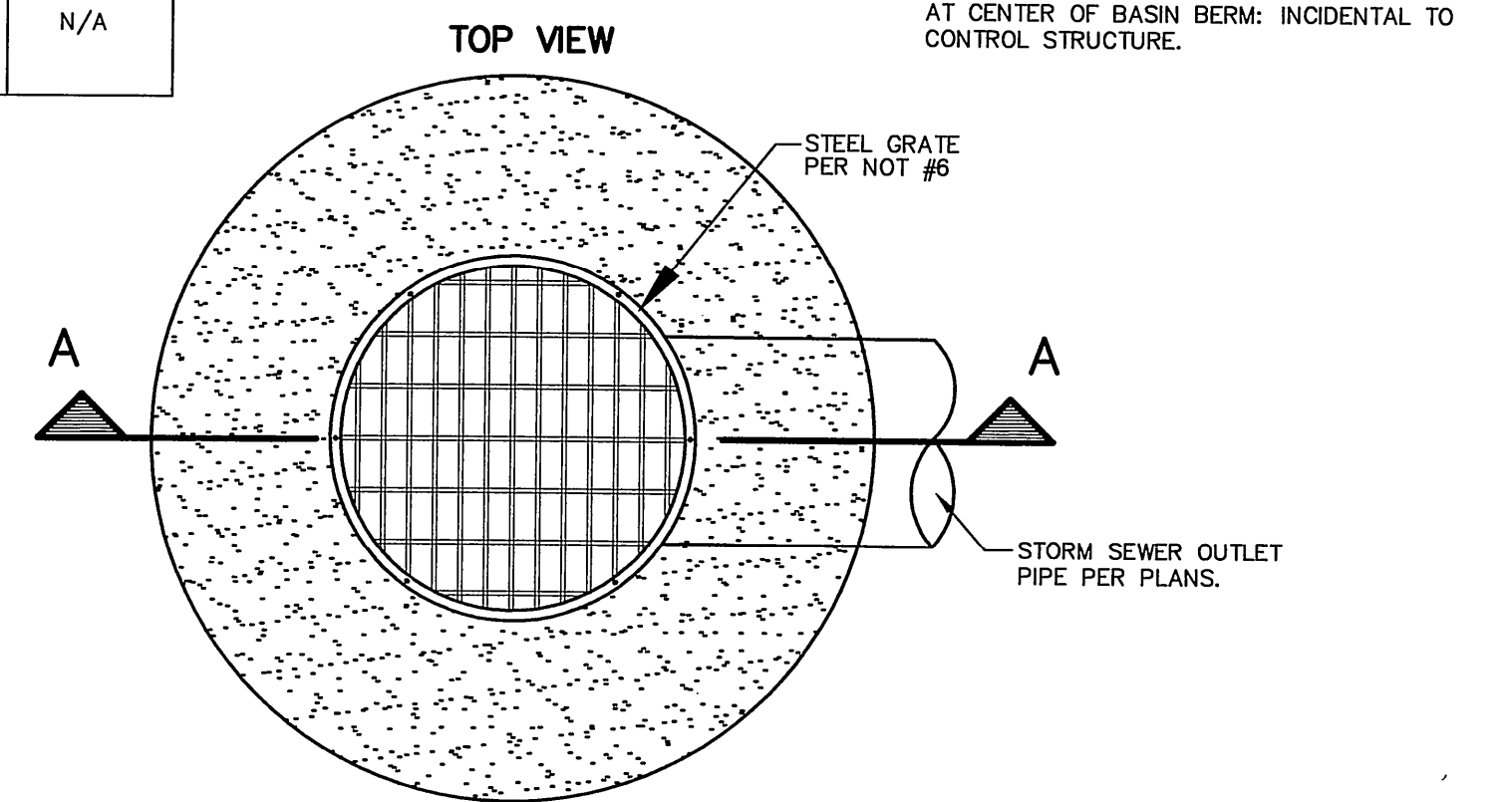
KEY	
CONTROL STRUCTURE DESIGNATION	CS-101
A MATERIAL TYPE, SEE NOTE 2	HDPE
B STRUCTURE INSIDE DIAMETER	4'
C RIM ELEVATION WITHOUT GRATE	954.50
D INVERT ELEVATION OUTLET PIPE	951.52
E TOP OF STONE ELEVATION	954.00
F OUTLET PIPE DIAMETER	12"
G OUTLET PIPE MATERIAL	RCP
H STRUCTURE HEIGHT WITHOUT GRATE	4.98'
I SUMP HEIGHT	2'
K RESTRICTOR OPENING DIA. IN OUTLET PIPE	N/A
L FIRST ROW OF HOLES CENTERLINE ELEVATION HOLE DIAMETER NUMBER OF HOLES IN ROW	952.00 1" 9
M SECOND ROW OF HOLES CENTERLINE ELEVATION HOLE DIAMETER NUMBER OF HOLES IN ROW	952.45 1" 14
N THIRD ROW OF HOLES CENTERLINE ELEVATION HOLE DIAMETER NUMBER OF HOLES IN ROW	953.88 3" 8
O FOURTH ROW OF HOLES CENTERLINE ELEVATION HOLE DIAMETER NUMBER OF HOLES IN ROW	N/A

CONTROL STRUCTURE NOTES:

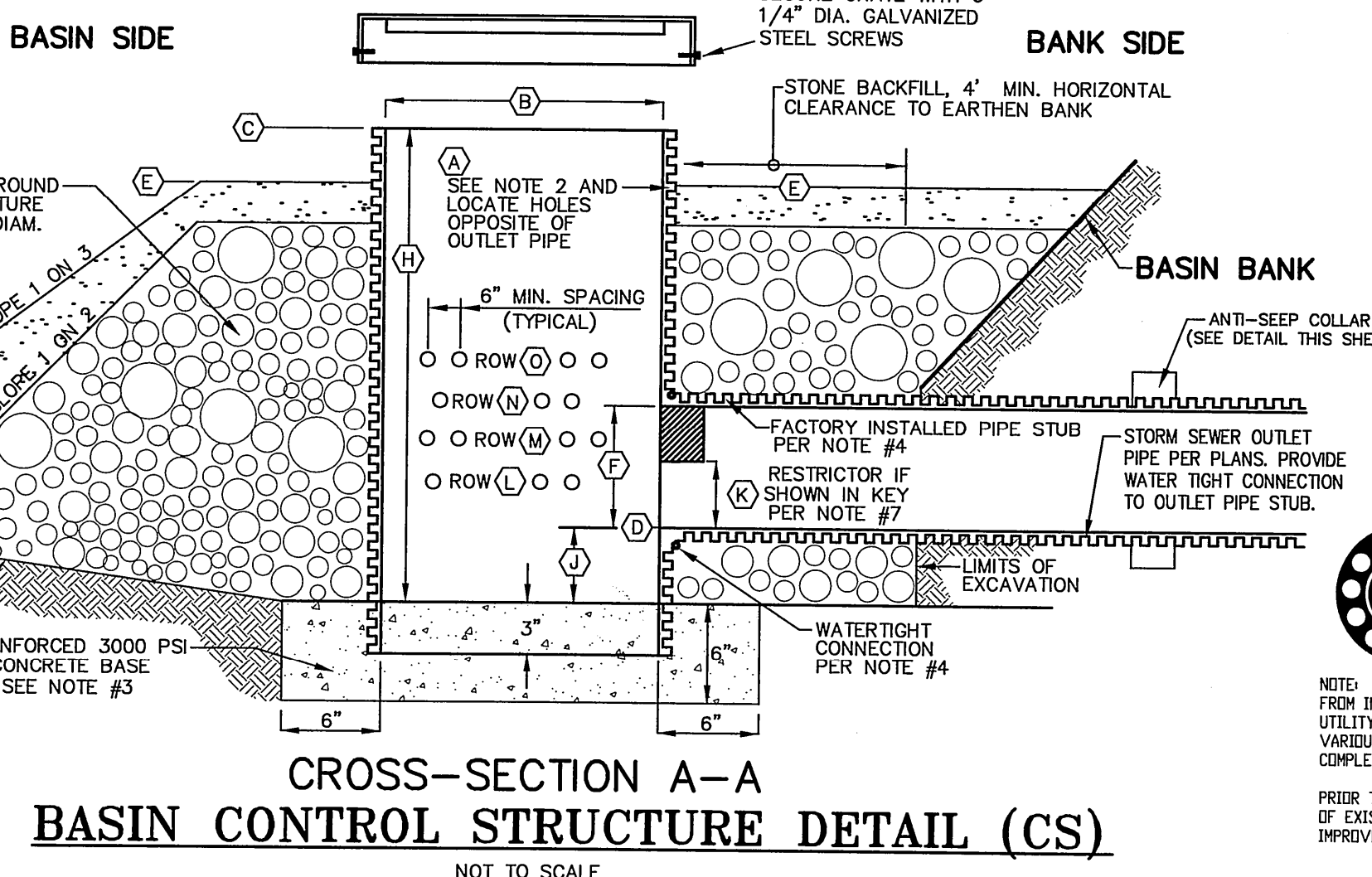
- Control Structure and Grate shall be factory built. Contractor shall provide Engineer with Shop Drawings for Control Structure and Grate. Contractor shall obtain Engineer's Approval of Shop Drawings prior to Control Structure installation.
- Control Structure shall be constructed of material noted in Item A of KEY. CMP shall be corrugated metal pipe with corrosion resistant coating and shall conform to the specifications for corrugated metal pipe per AASHTO Designation M36. HDPE shall be high density polyethylene pipe with a smooth interior and shall conform to the specifications for high density polyethylene pipe per AASHTO Designation M294 Type S.
- Control Structure Base shall be a reinforced 3000 PSI air entrained concrete base. Control Structure shall be embedded into the concrete base providing a full strength water tight connection as illustrated in the Basin Control Structure Detail.
- Provide a watertight connection between the Control Structure and Outlet Pipe as follows:
For a CMP Outlet Pipe from a CMP Control Structure: Factory weld a CMP Pipe Stub to the Control Structure with full strength continuous weld all around Pipe Stub. Coat weld area with corrosion resistant paint. OR Provide a bolted CMP saddle with watertight gasket.
For an HDPE Outlet Pipe from an HDPE Control Structure: Factory weld an HDPE pipe stub to the Control Structure with full strength PE weld all around pipe both inside and outside of Control Structure. OR Provide a bolted HDPE saddle with watertight gasket.
For an RCP Outlet Pipe from a CMP or HDPE Control Structure: Seal Outlet Pipe to outside of Control Structure with an 18" minimum thickness 2500 PSI cast in place concrete donut all around Outlet Pipe. AND Seal Outlet Pipe to inside of Control Structure with a 2" minimum thickness bead of bitumastic tar all around Outlet Pipe.
- Construct berm over Outlet Pipe as necessary to provide 12" minimum cover.
- Grate shall be built to fit over the outside edge of the Control Structure and to be secured to the Control Structure with six (6) 1/4" minimum diameter removable galvanized screws. All joints shall be welded full strength per current AWS code. Grate shall be factory coated with bitumastic or corrosion resistant paint. Grate shall be constructed of 1/2" minimum diameter round or square steel bar creating a square grid pattern with a maximum 3"x3" opening size. Outside of Grate shall be wrapped with a 14" minimum x 3" minimum flat stock steel.
- Provide a Restrictor in the Outlet Pipe when required on the Project Plans. See Item K of KEY for restrictor diameter. For Restrictor in RCP or CMP Outlet Pipe: Provide a PVC SCH. 40 restrictor pipe of diameter K and 6" minimum length. Install Restrictor Pipe at the bottom of the Outlet Pipe to match the Outlet Pipe invert. Bulkhead the remainder of the Outlet Pipe opening around the outside of the Restrictor Pipe with brick and mortar, creating a watertight seal. For Restrictor in HDPE Outlet Pipe: Factory weld a 1/2" minimum thickness HDPE Plate inside of the Outlet Pipe Stub with full strength PE weld all around the plate. Drill an opening of diameter K at the bottom of the plate to match the invert of the Outlet Pipe Stub.
- Refer to the Storm Sewer Notes on the project plans for additional requirements.



ANTI SEEP COLLAR
NOT TO SCALE



CROSS-SECTION A-A



BASIN CONTROL STRUCTURE DETAIL (CS)
NOT TO SCALE

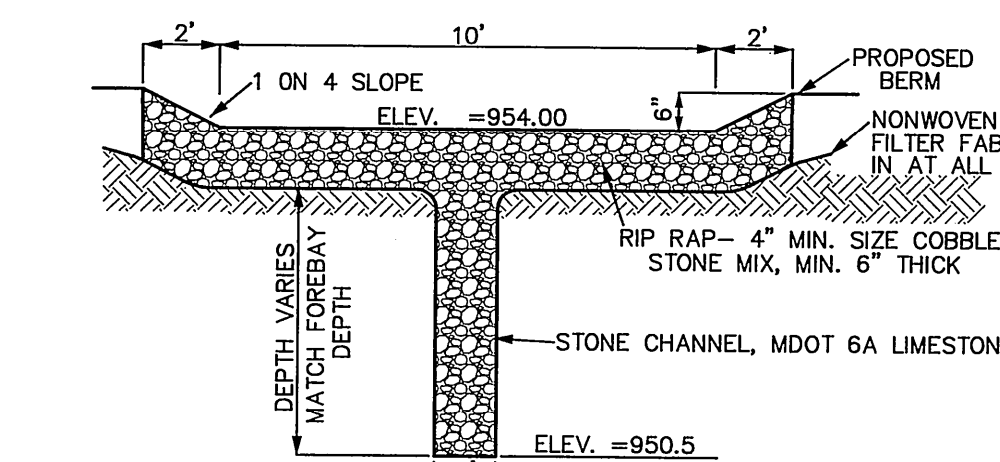
STORM SEWER NOTES:

- The storm sewer and stormwater management specifications of the Local Municipality are a part of this work. Refer to the General Notes on the project plans for additional requirements.
- Storm sewer work shall include clearing of vegetation and tree stumps, stripping and stockpiling of topsoil for reuse, excavation of pipe trench, placement of pipe bedding, placement of pipe and structures including castings, connection to existing structures, tuck pointing of structures, backfill of pipe trench, compaction of backfill, finish grading to provide positive drainage to structures, adjustment of castings to match finish grade, topsoil placement, seed & mulch, site cleanup and restoration, and other work as shown on the project plans and specifications.
- Existing and proposed grades shown in profile view, when provided on the project plans, may be in relation to the centerline of road or item other than the centerline of pipe. The pipe lengths and grades shown in profile view on the project plans may not be to scale.
- RCP when shown on the project plans shall be reinforced concrete pipe and shall conform to the specifications for reinforced concrete pipe per ASTM C76. RCP pipe joints shall be bell-and-spigot with rubber gaskets conforming to ASTM 433. Joints of pipe having a diameter of 30 inches or greater shall be tuck-pointed on the inside with cement mortar after the backfill process is complete. Install reinforced concrete end sections incidental to work. Saw cut pipes to length as needed. When pipe class is not shown on the project plans, provide the following:
Pipe cover to proposed grade: 0 to 4 feet Class V
4 to 10 feet Class III*
10 to 18 feet Class IV
18.1 feet and greater Class V
* Use Class IV under paved surfaces
- CMP when shown on the project plans shall be corrugated metal pipe and shall conform to the specifications for corrugated metal pipe per AASHTO Designation M36. CMP shall be 16-gauge steel minimum for 24 inch diameter or larger and 6" minimum steel minimum for 30 inch diameter or greater. Install galvanized steel end sections and connection bands, incidental to work. Connection bands for CMP pipe joints located under paved surfaces shall be gasketed couplers. Saw cut pipes to length as needed.
- HDPE - Type S when shown on the project plans shall be high density polyethylene pipe with a smooth interior and shall conform to the specifications for high density polyethylene pipe per AASHTO Designation M294 Type S for pipes of 3" to 10" diameter and per AASHTO Designation M294 Type S for pipes of 12" to 60" diameter. HDPE - Type C pipe joints shall be bell-and-spigot type conforming to ASTM D3212 with gaskets conforming to ASTM F477. Tamp backfill at spring line of HDPE - Type S pipe. Install high density polyethylene end sections incidental to work. Saw cut pipes to length as needed.
- HDPE - Type C when shown on the project plans shall be high density polyethylene pipe with a corrugated interior and shall conform to the specifications for high density polyethylene pipe per AASHTO Designation M252 for pipes of 3" to 10" diameter and per AASHTO Designation M294 for pipes of 12" to 60" diameter. HDPE - Type C pipe joints shall be bell-and-spigot type conforming to ASTM D3212 with gaskets conforming to ASTM F477. Tamp backfill at spring line of HDPE - Type C pipe. Install high density polyethylene end sections incidental to work. Saw cut pipes to length as needed.
- CPVC when shown on the project plans shall be corrugated polyvinyl chloride pipe and shall conform to the specifications for corrugated polyvinyl chloride pipe per ASTM F794 and F949. CPVC pipe joints shall be bell-and-spigot type conforming to ASTM D3212 with gaskets conforming to ASTM F477. Tamp backfill at spring line of CPVC pipe. Install high density polyethylene end sections incidental to work. Saw cut pipes to length as needed.
- PVC when shown on the project plans shall be polyvinyl chloride pipe and shall conform to the specifications for polyvinyl chloride pipe per ASTM D2751, maximum SDR of 26. PVC pipe joints shall be bell-and-spigot type conforming to ASTM D3212 with gaskets conforming to ASTM F477 or solvent welded type conforming to ASTM D2564. Tamp backfill at spring line of PVC pipe. Saw cut pipes to length as needed.
- Concrete storm structures shall be pre-cast and shall conform to the specification of pre-cast concrete structures per ASTM C778. Brick, concrete block or cast in place storm structures may be substituted for pre-cast storm structures ONLY when acceptable to Owner, Engineer AND Municipality, refer to MDOT standard plan R-1-D. Pipe openings in pre-cast structures shall be factory installed. All temporary openings in storm structures shall be tuck-pointed watertight with cement mortar. Refer to MDOT standard plan R-2-D for storm structure details when pipe exceeds 42 inch diameter.
- Tap existing structures as acceptable to the Engineer and Municipality, incidental to work. All temporary openings in storm structures shall be tuck-pointed watertight with cement mortar.
- Backfill all storm sewer in accordance with the Pipe Trench details provided on the project plans. Provide pipe bedding that meets or exceeds both the specifications of the Pipe Trench details on the project plans and the recommendation of the pipe manufacturer, incidental to work.
- When edge drains, under drains and/or finger drains are shown on the project plans, connection to storm structures is incidental to work. During storm sewer construction, install first 10 linear feet of edge drain and/or under drain from the storm structures in each specified direction and install temporary cap at end. Complete installation of edge drain following preparation of the subgrade when under paved surface or following finish grade when not under paved surface.
- Install removable plugs in storm sewer stubs as acceptable to Engineer and Municipality, incidental to work. Mark the end of all storm sewer stubs with a 2" x 4" wooden stake extending a minimum of 12" above finish grade, incidental to work.
- Storm structure castings shall be coated with water based asphaltic paint by the manufacturer. Seams and temporary openings between storm structures and castings shall be tuck-pointed water tight with cement mortar. Coordinate correct curb box / hood / "T" back as needed to match curb profile. See casting schedule on project plans for additional requirements.

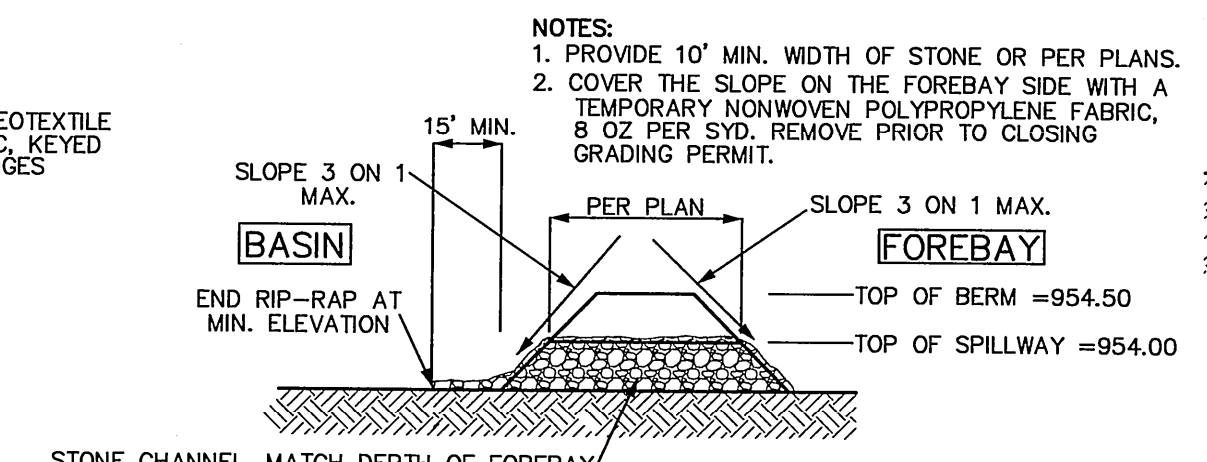
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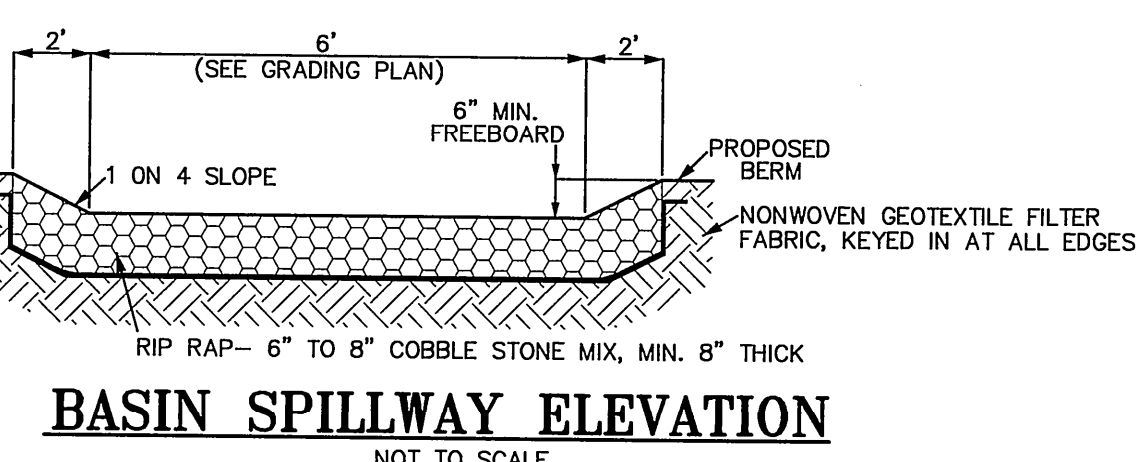
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2183 PLESS DRIVE
BRIGHTON, MICHIGAN 48114



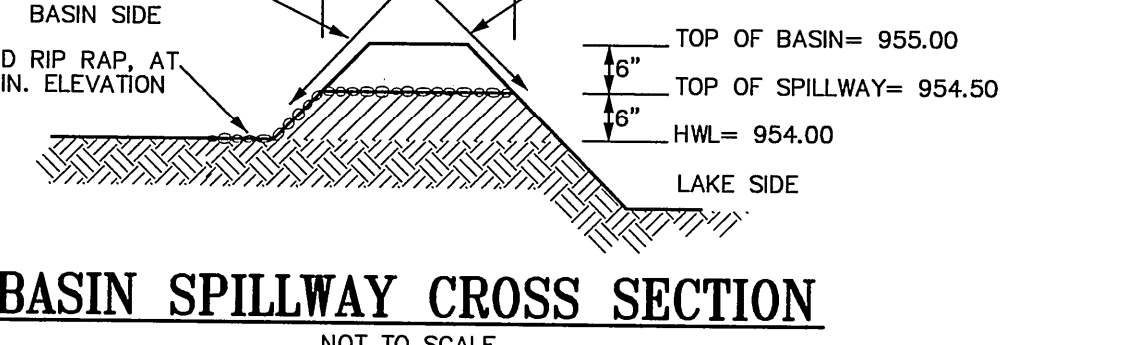
FOREBAY SPILLWAY ELEVATION
NOT TO SCALE



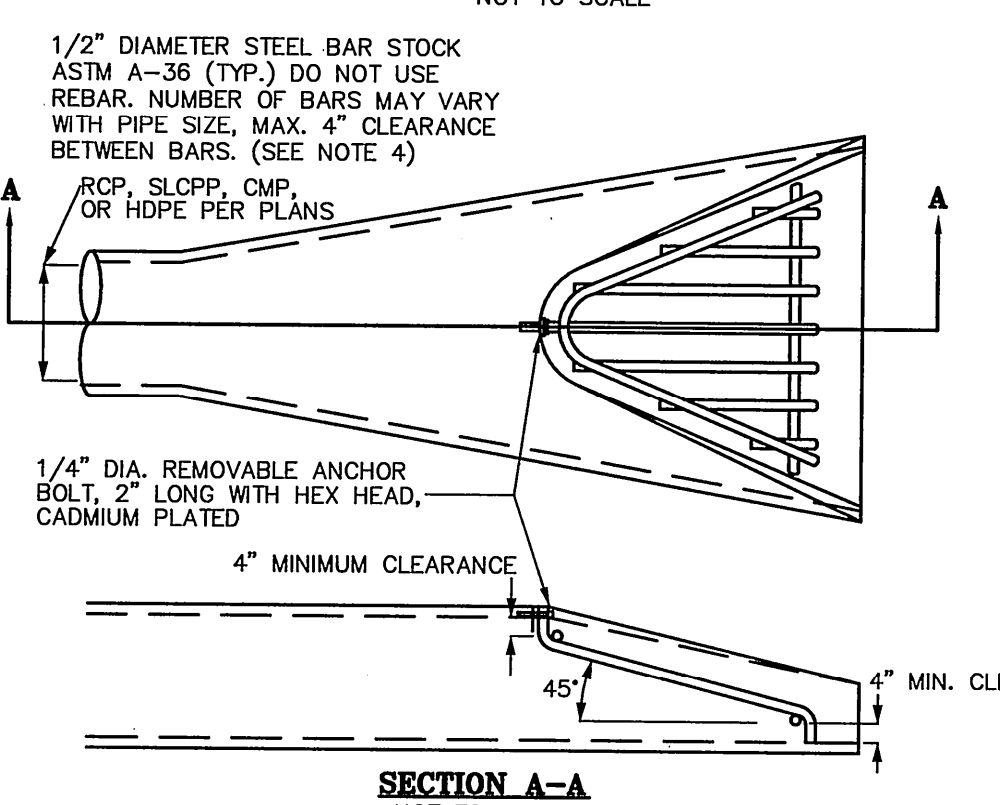
FOREBAY SPILLWAY CROSS SECTION
NOT TO SCALE



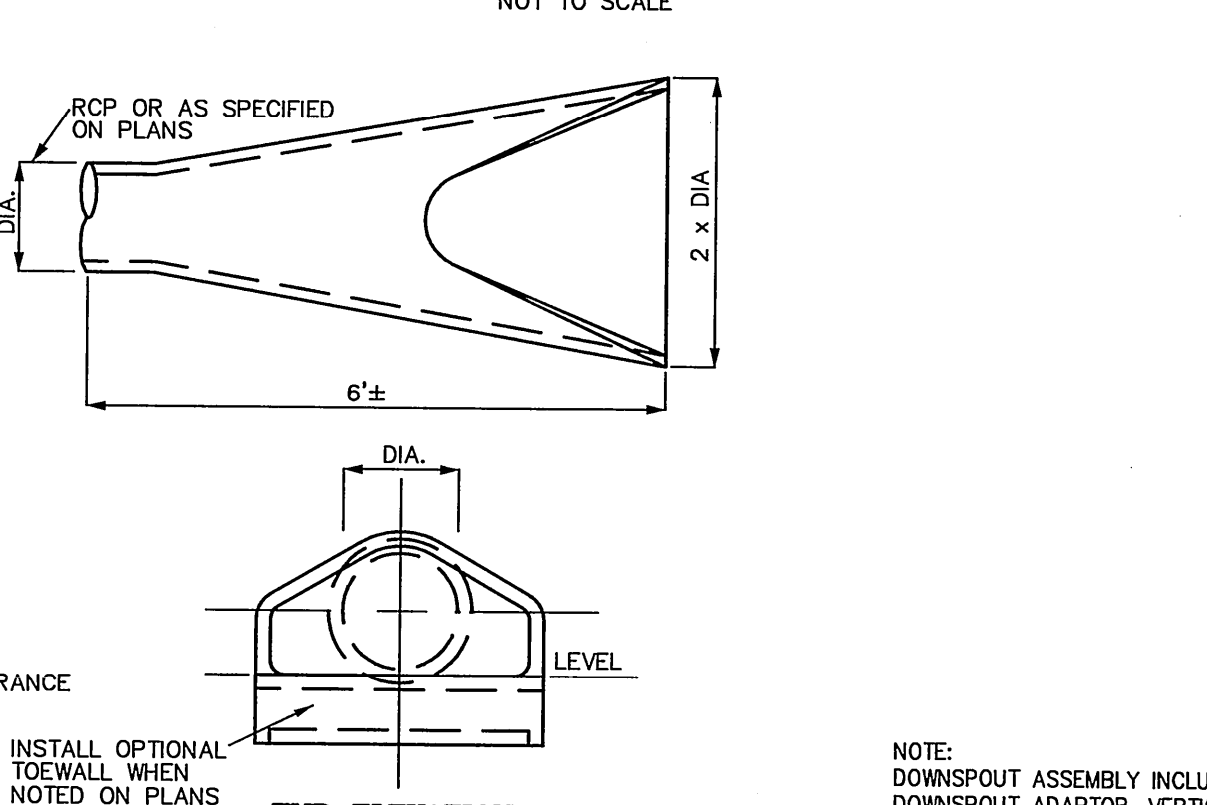
BASIN SPILLWAY ELEVATION
NOT TO SCALE



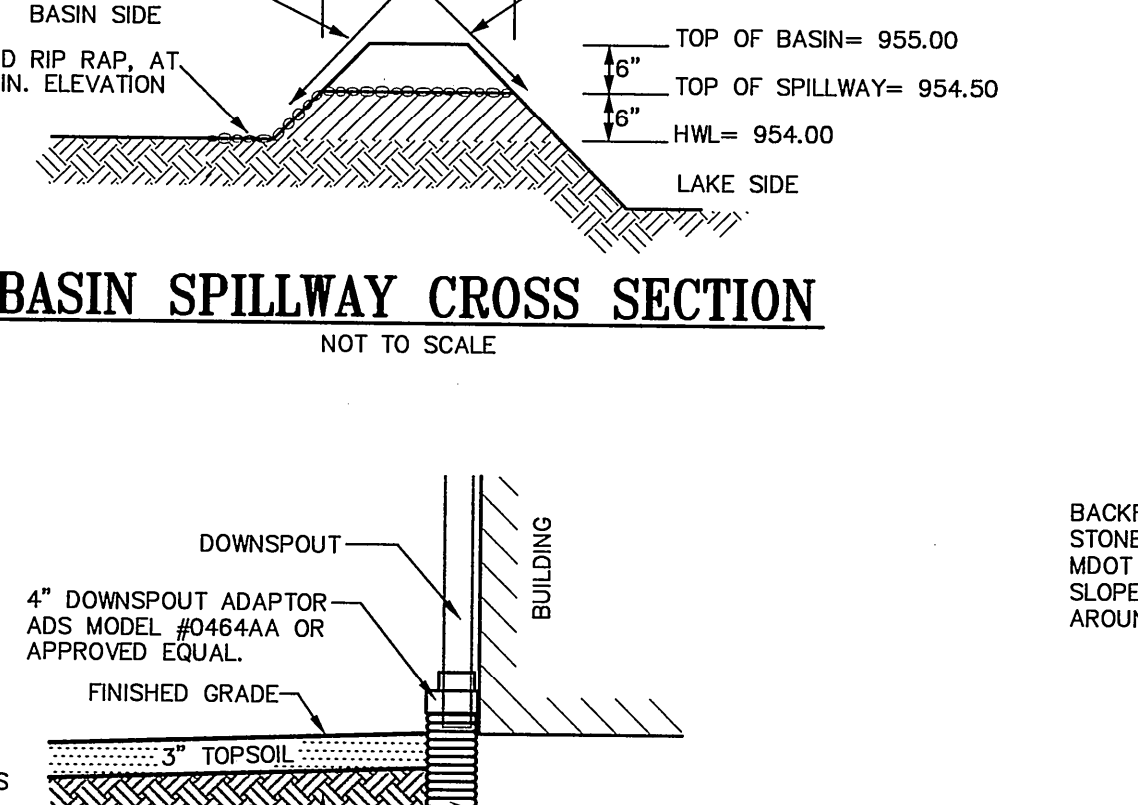
BASIN SPILLWAY CROSS SECTION
NOT TO SCALE



ANIMAL GUARD
NOT TO SCALE



FLARED END SECTION
NOT TO SCALE



DOWNSPOUT CONNECTION DETAIL
NOT TO SCALE

NOTES:
1. ANIMAL GUARD REQUIRED ON ALL FLARED END SECTIONS OF 15" DIAMETER PIPE OR GREATER.
2. CONTRACTOR MAY SUBSTITUTE ALTERNATE GRATING LAYOUT AS APPROVED BY OWNER/ENGINEER/AGENCY PRIOR TO INSTALLATION.
3. DETAIL SHOWN FOR RCP FLARED END SECTION, PROVIDE SIMILAR ANIMAL GUARD FOR FLARED END SECTIONS ON CMP, HDPE, AND SLOPP.
4. WELD ALL CONNECTIONS FULL STRENGTH PER AMERICAN WELDING SOCIETY STANDARDS.

NOTES:
1. RCP FLARED END SECTION SHOWN, PROVIDE SIMILAR FLARED END SECTION FOR CMP, SLOPP OR HDPE PIPE.
2. PROVIDE RIP-RAP PER RIP-RAP DETAILS FOR ALL OUTLET FLARED END SECTIONS.
3. INSTALL FLARED END SECTION WITH INVERT ELEVATION ELEVATION LEVEL AS VIEWED FROM END.

DESIGN: EDR/WMP
DRAFT: L.F.
CHECK: EDR

DATE	REVISION-DESCRIPTION	DATE	REVISION-DESCRIPTION
8-22-11	REV. PER REVIEW COMMENTS RECEIVED 8-17-11		
9-21-11	REV. CONTROL STRUCTURE DATA CHART		

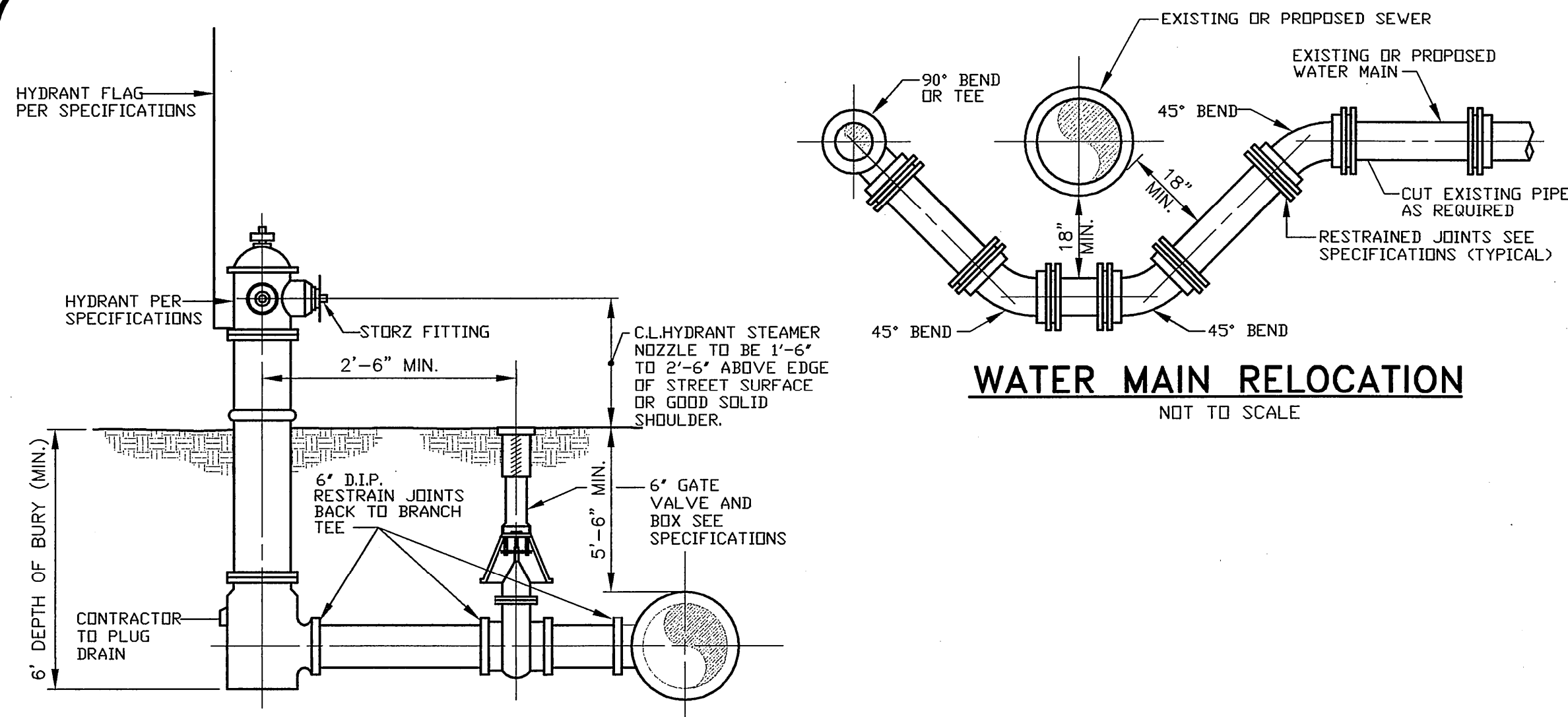
242 COMMUNITY CHURCH
GENOA CAMPUS
7526 W. GRAND RIVER

STORM SEWER NOTES AND DETAILS

CLIENT:
242 COMMUNITY CHURCH
1661 N. LATSON RD.
HOWELL, MI. 48843
(810) 231-0190

SCALE: N/A
PROJECT No.: 9101777
DWG NAME: 777-DTLS
PRINT: SEP 21 2011

C10.2



FIRE HYDRANT ASSEMBLY
NOT TO SCALE

PIPE RESTRAINT SCHEDULE
GROUND BURIED PRESSURE PIPE - DUCTILE IRON AND PVC 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.

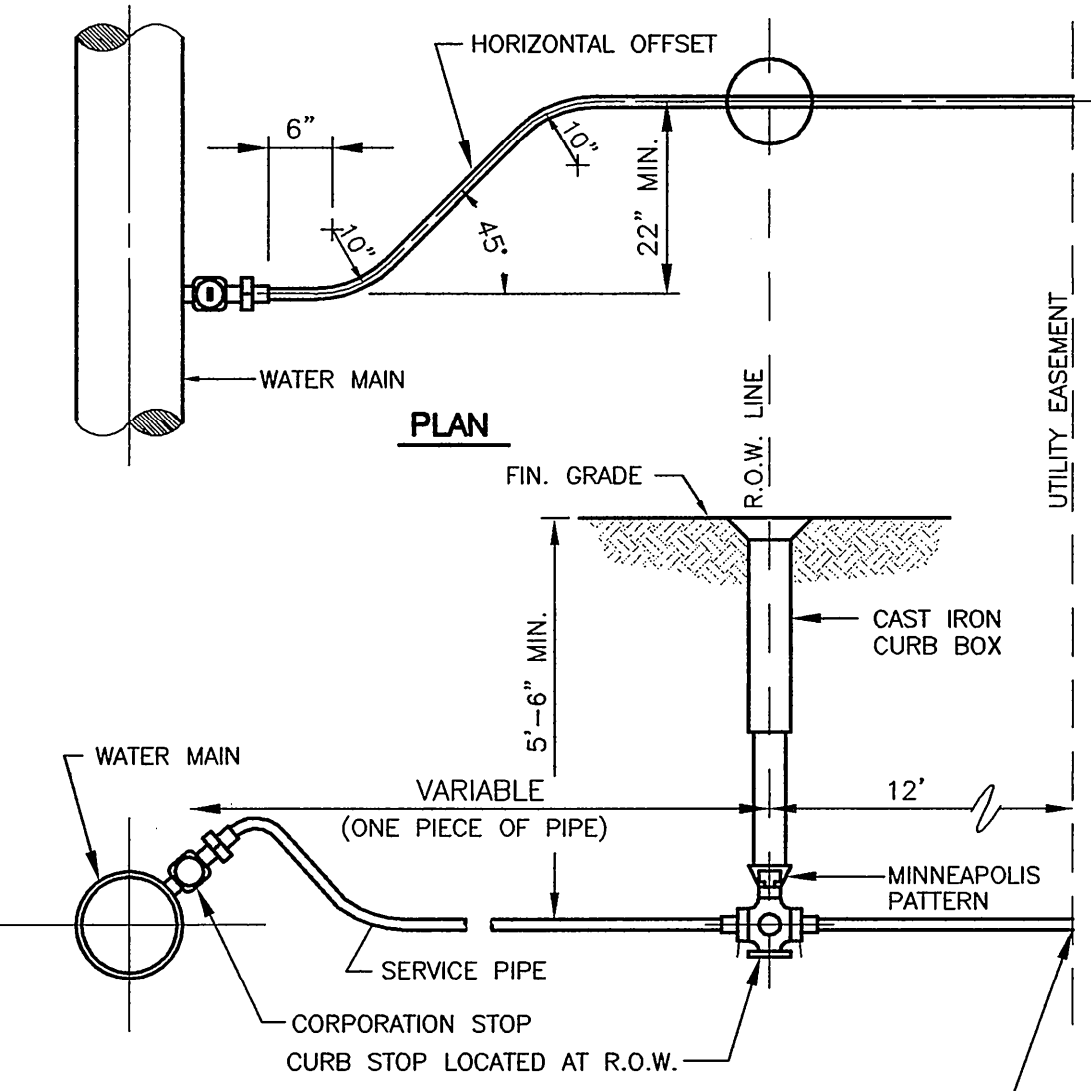
THE VALUES PROVIDED FOR RESTRAINT LENGTH ARE IN EACH DIRECTION FROM THE POINT OF DEFLECTION OR TERMINATION EXCEPT FOR TEES, AT WHICH ONLY THE BRANCH IN THE DIRECTION OF THE STEM.

IF TIE RODS ARE USED, USE FOUR RODS MINIMUM AND ADD 1/8-INCH TO BAR DIAMETER AS CORROSION ALLOWANCE.

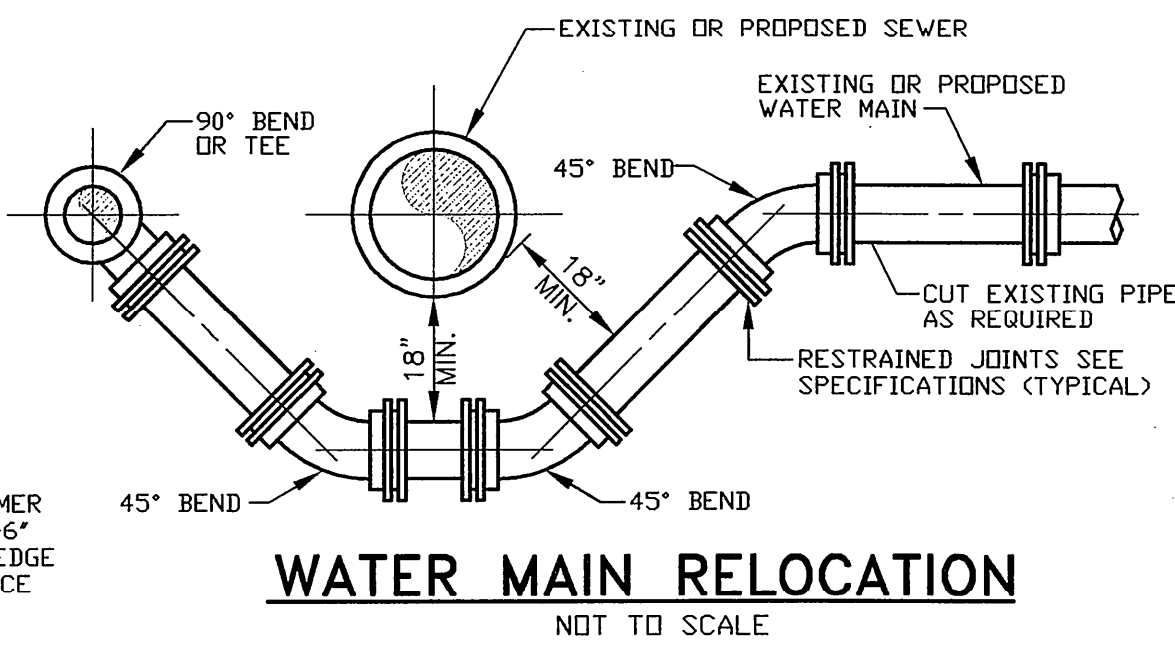
* SIZE REDUCTION IS BASED UPON THE PIPE DIAMETER SHOWN IN THIS TABLE.

BASED UPON:
INTERNAL PRESSURE: 180
PIPE DEPTH: 5
BEDDING CLASS: TYPE 4
SOIL TYPE: GOOD SAND
SAFETY FACTOR: 2

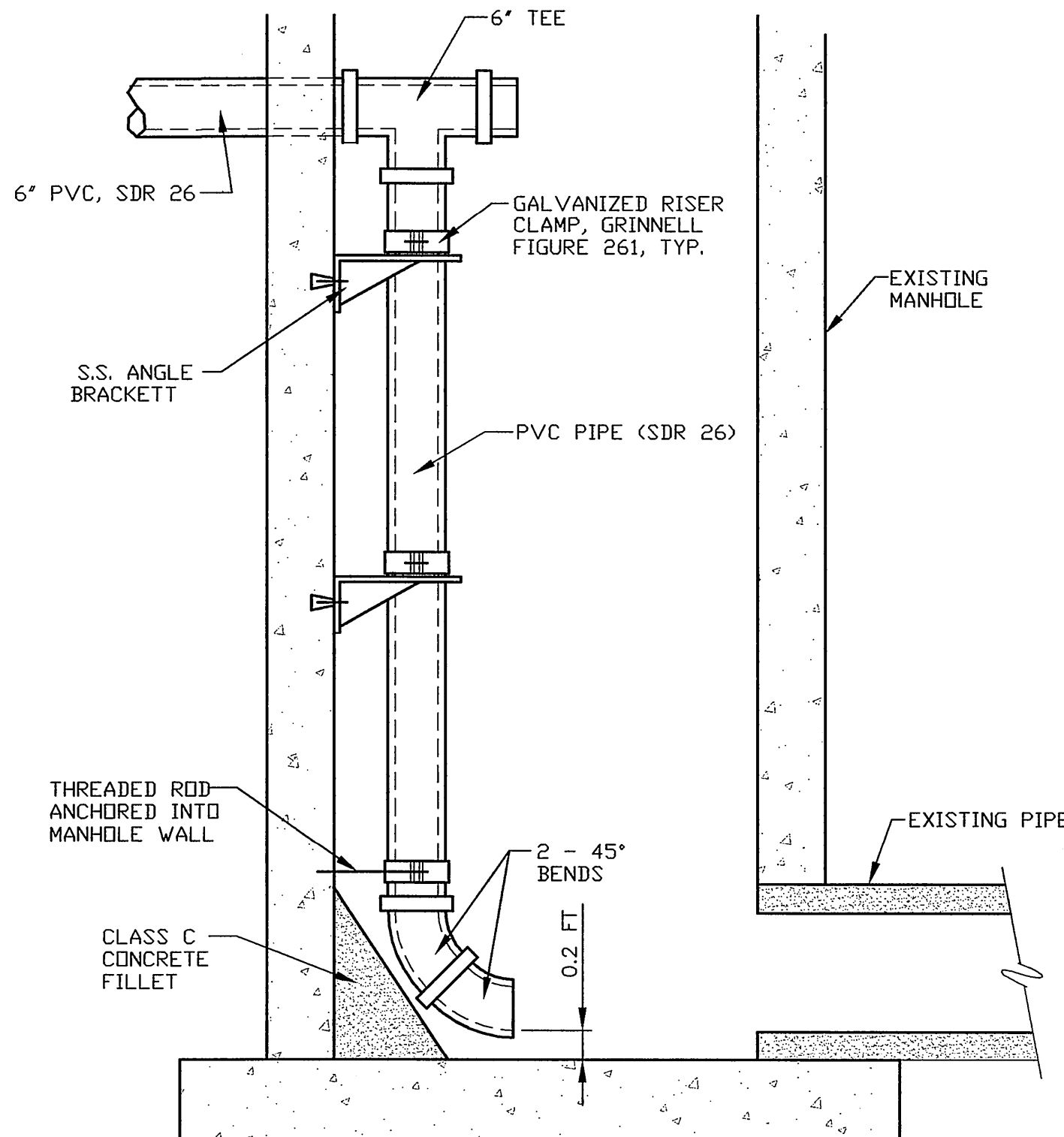
SERVICE PIPE	CORP. STOP	CURB STOP	SERVICE BOX
3/4"	3/4"	3/4"	2 1/2"
1"	1"	1"	2 1/2"
1 1/4"	1 1/4"	1 1/4"	3"
1 1/2"	1 1/4" X 1 1/2"	1 1/2"	3"
2"	1 1/2" X 2"	2"	3"



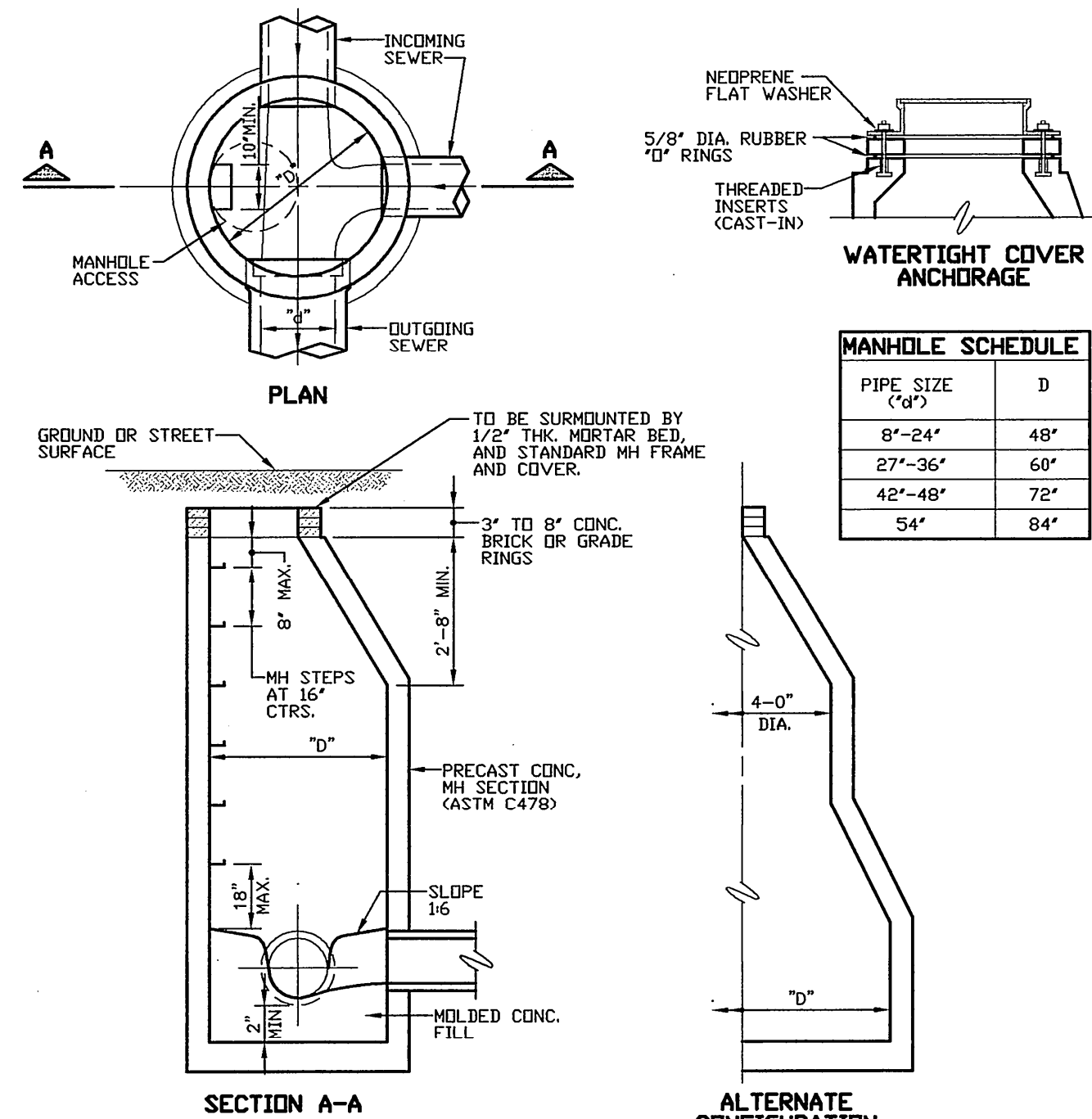
SECTION WATER SERVICE LATERAL
NOT TO SCALE



WATER MAIN RELOCATION
NOT TO SCALE

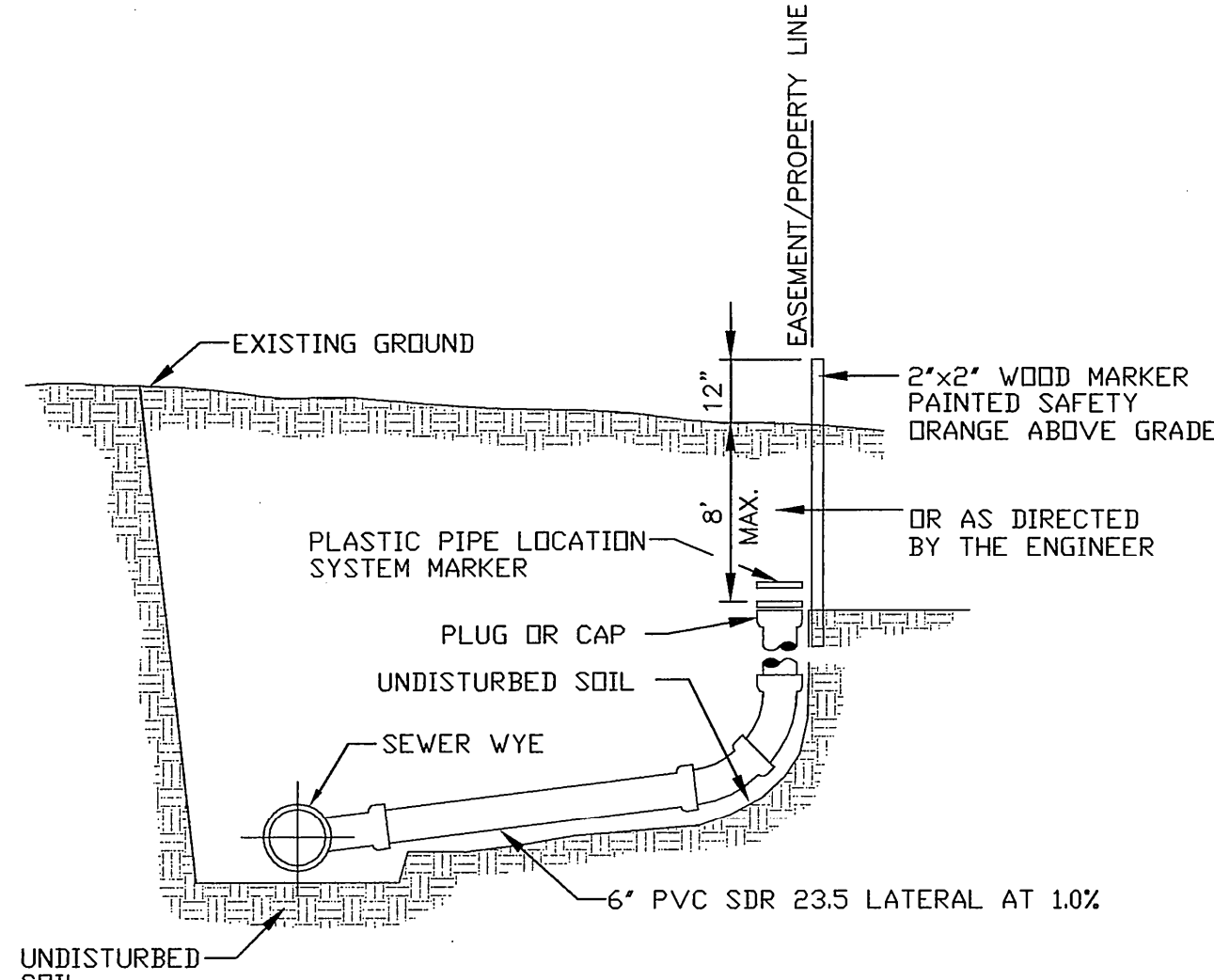


INTERNAL DROP CONNECTION
NOT TO SCALE



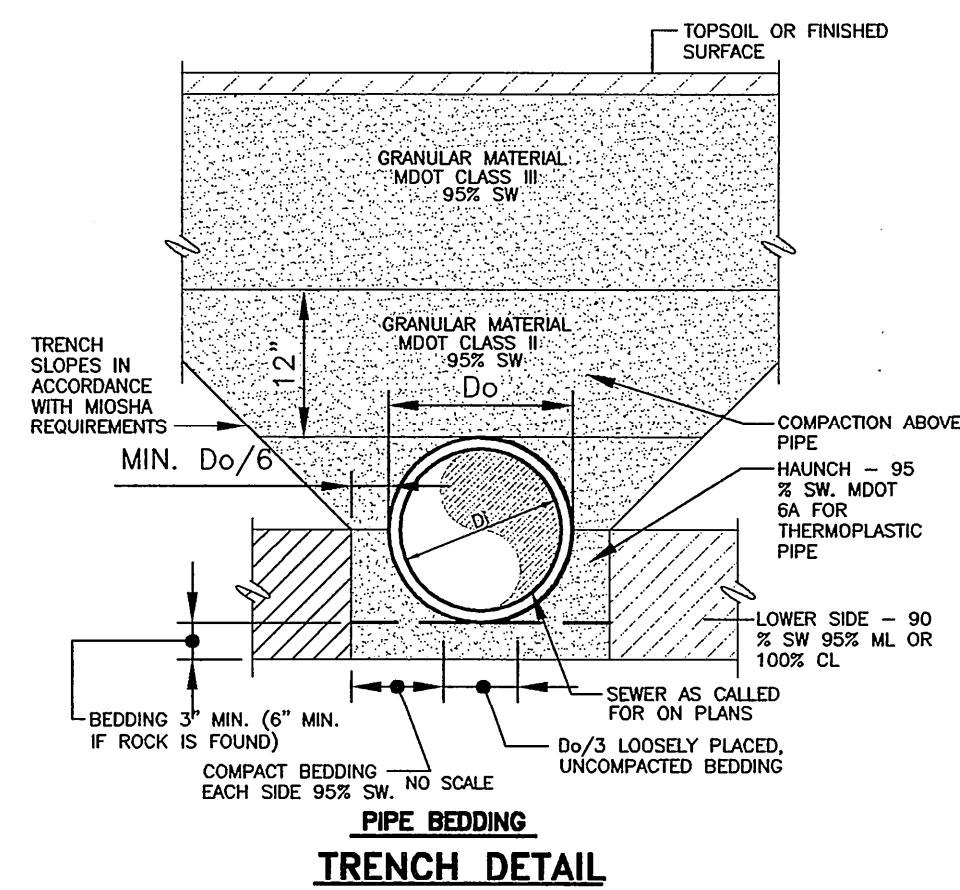
- MANHOLE SCHEDULE**
- | PIPE SIZE (ø) | D |
|---------------|-----|
| 8"-24" | 48" |
| 27"-36" | 60" |
| 42"-48" | 72" |
| 54" | 84" |
- NOTES:**
- ALL SANITARY MANHOLES MH TO BE PRECAST REINFORCED CONCRETE WITH PREMIUM JOINTS. SEE SPECIFICATIONS FOR BASE SLAB AND PIPE OPENINGS AND CONNECTIONS.
 - MANHOLE COVERS SHALL BE THE ECCENTRIC TYPE.
 - PROVIDE 6" OF COMPACTED GRANULAR MAT'L UNDER ALL PRECAST CONCRETE BASE SLABS.
 - STANDARD MH FRAMES AND COVER TO BE EAST JORDAN 1040, NENAH R-1916 F1, OR EQUAL. USE SOLID SELF-SEALING COVER FOR SANITARY SEWERS AND VENTED COVER FOR STORM SEWERS.
 - WATERTIGHT MH FRAME AND COVER, WHERE INDICATED, TO BE EAST JORDAN 1040-2PT, NENAH R-1916-F OF EQUAL.

STANDARD MANHOLE
NOT TO SCALE



SANITARY SEWER LATERAL
NOT TO SCALE

- NOTES:**
- COMPACTION PRESENTED AS STANDARD PROCTOR VALUES.
 - SOIL TYPES: ASTHO DESIG.
A1, A3
SANDY SANDY (SW)
SANDY SILTY (ML)
SILTY CLAY (CL)
A2, A4
A5, A6, A7
 - SOIL IN HAUNCH AND LOWER SIDE ZONES OUTSIDE OF D_o/6 FROM SPRING LINE SHALL BE COMPACTED TO AT LEAST THE SAME COMPACTION AS THE SOIL IN THE OVERFILL ZONE.



TRENCH DETAIL

MHOG WATER MAIN NOTES:

A. WATER MAIN (WM) shall be AWWA-C151 as specified under Section 15070, Pressure Piping, and shall be either:
Ductile Iron Pipe (DIP), Class 52, with P.E. Encasement per AWWA-C105
Ductile Iron Pipe (DIP), Pressure Class 350, with P.E. Encasement per AWWA-C105

COATINGS: Ductile iron pipe and fittings to be ground-buried shall be coated by the Manufacturer on the outside with an asphaltic coating, one mil thick, in accordance with AWWA-C151 and C110 and cement-lined, standard thickness, in accordance with AWWA-C104.

PUSH-ON JOINT (POJ): Rubber gasket type push-on or slip-on joints from approved Manufacturer (Bell-Tite, Ring-Tite, Tyton, Fastite) per Specifications. Joints shall conform to and AWWA-C111. Push-on joints will generally be used on all ground-buried pipe. All push-on joints are to be restrained per Specifications.

MECHANICAL JOINTS (MJ) shall conform to AWWA-C110 and C111. Each joint shall be complete with rubber gasket, cast iron gland, and a full complement of high-strength, low-alloy steel bolts and nuts. All mechanical joints are to be restrained per Specifications.

FITTINGS for ductile iron pipe shall be ductile iron or cast iron per AWWA-C110 or AWWA-C153. Ductile iron fittings shall be rated for 350 psi, except that ductile iron flanged fittings shall be rated for 250 psi. Cast iron fittings shall be rated 250 psi for 12 inch diameter and less, or 150 psi for pipe sizes over 12-inch diameter.

B. GATE VALVES (V) shall be AWWA-C509 as specified under Specification Section 15110, Process Valves, and shall be 150 psi. Resilient Seated Gate Valves shall be manufactured by: Metrosol 250 by U.S. Pipe, Clow, A-2360 Resilient Wedge by Mueller, M&H, or American Darling. Curb Boxes shall be: Model #H-10300 by Mueller Co., or EM2 Series by Ford Meter Box Co.

C. TAPPING SLEEVE AND VALVE (TPSV) shall be designed for a water working pressure of 150 psi and shall be mechanical joint end type. Tap shall be done under pressure and without interruptions of service. Tapping valves shall be as specified under Gate Valves, and manufactured by: A.P. Smith Company, Clow, or M&H.

D. SERVICE CONNECTION: 3" diameter or less shall be Type K, soft temper copper, ASTM-B88. For larger diameter, see Plans and/or Specifications.

E. CORPORATION STOPS shall be: Model #H15000 by Mueller Co., or Model #F600 by Ford Meter Box Co.

F. CURB STOPS (WSO) shall conform to AWWA-C800, and shall be 300 psi rated ball type: Model #B-25154 by Mueller Co. or Model #B22 by Ford Meter Box Co.

G. HYDRANT ASSEMBLIES (HYD or FH) shall be East Jordan Iron Works Water Master 5-BR, and consist of a hydrant, a 6 inch valve, a cast iron valve box, and all piping. Hydrants shall be furnished for 6 feet of cover minimum. Hydrants shall meet the requirements of AWWA-C502 and shall be made to open in conformance with OWNER'S standards. Generally, hydrants shall be 5.25 inch MVO with 6-inch M/I inlet with two 2.5 inch bibs and one 4 inch bib. The pumper nozzle shall have a Storz fitting as specified below. Hydrants shall be with 1.5 inch pentagon cast iron operating nut, one 4.5 inch pumper connection with a 5 inch cast iron Storz coupling and cap and two 2.5 inch hose connections conforming to National Standard Thread Specifications. Hydrant shall be of safety coupling and break flange construction. All fire hydrants shall be provided with New Concept Tools No. 41002 hydrant flags.

STORZ FITTING: The fire hydrant pumper nozzles installed shall be either a Koehlich "Big Water" Brass/Aluminum Fire Hydrant Storz Nozzle and Cap or Harrington, Inc. Integral Hydrant Storz with Cap Part # EHS-EDW-50-45 and shall be of a one-piece design, compatible with 5 inch Storz coupled large diameter fire hose. The nozzle complete and fittings shall be of a lead free brass alloy and aluminum forged alloy, ensuring long life free from oxidation and lead, which may contaminate public water supplies. The nozzle shall be colored red using a baked powder coat finish. Add on Storz compatible adapters shall not be acceptable.

H. All water main shall be pressure tested and disinfected in accordance with M.H.O.G. standards

GRAVITY SANITARY SEWER LEAD NOTES:

1. The Local Plumbing Code and sanitary sewer specifications of the Local Municipality with authority over the sanitary sewer are a part of this work. Refer to the General Notes and Gravity Sanitary Sewer Notes on the project plans for additional requirements.

2. Sanitary Sewer Leads shall be PVC pipe conforming to ASTM D3034, maximum SDR of 26. Pipe joints shall be push on bell-and-spigot type joints conforming to ASTM D3212 with factory installed flexible elastomeric gaskets conforming to ASTM F477. Solvent cemented joints shall only be used when noted on the project plans for specific applications and shall conform to ASTM D2855. Provide pipe diameter and slope per project plans. When proposed lead information is not noted on the project plans; provide 4" minimum diameter at 2.0% minimum slope for single family residential and 6" minimum diameter at 1.0% minimum slope for multiple family residential and all non-residential uses.

3. Connect sanitary sewer leads to the sanitary main in the locations shown on the project plans. For new sanitary sewer main, install a wye fitting rotated upward at 45 degrees to the sanitary main as shown in the sanitary lead detail. Install wye fittings so that the wye branches out away from the sanitary main opposite the direction of flow. For existing sanitary sewer main, tap main and install a saddle with stainless steel clamps and hardware in accordance with the Local Code. For connection to a new sanitary sewer structure, provide water tight factory installed rubber boot connector within the structure. For connection to an existing sanitary sewer structure, core drill the manhole wall and install a resilient boot. Connections to sanitary structures shall be at the invert elevation noted on the project plans. When proposed invert is not noted on the project plans, install sanitary lead invert 0.10' minimum, 2.0' maximum above the downstream sewer main invert.

4. Install a 45 degree riser at the connection to the sanitary sewer main per the project plans or as the site conditions allow. The invert elevation at the 45 degree bend located at the end of the riser shall be 6" minimum above the sanitary sewer main invert.

5. Contractor shall field locate all existing utilities prior to work. Contractor shall provide all bends and fittings as needed, incidental to work, to install the sanitary sewer leads and to provide the required clearance between the sanitary sewer leads and all existing and proposed utilities while maintaining the proposed minimum pipe slope and proposed lead end invert elevation. Contractor shall notify the Engineer immediately of any utility crossing conflicts.

6. Provide 4.0' minimum cover from the top of the sanitary sewer lead pipe to the proposed finished grade when site conditions allow. When pipe cover is less than 4.0', install 2" thick by 24" wide Styrofoam insulation centered over pipe at 12" above top of pipe or as required by Local Code.

7. For vacant property or when connection of the sanitary sewer lead to a building is not to be performed as a part of this project, install a 45 degree lead and riser starting at the proposed lead end and extending above proposed finish grade, 2.0' minimum, 4.0' maximum. Install a pressure tight plug and restrained joints as needed to allow for pressure testing of sanitary sewer. When connection of the sanitary lead to a building is to be performed as part of this project or when installation of a 45 degree lead end riser will conflict with the existing land use, install a temporary, water tight and pressure tight plug in the end of the lead and mark the lead end with a 2" x 4" wooden stake extending a minimum of 12" above proposed finish grade, incidental to work, or other lead end marking system as required by the Local Municipality.

GRAVITY SANITARY SEWER NOTES:

1. The sanitary sewer specifications of the Local Municipality with authority over the sanitary sewer are a part of this work. Refer to the General Notes on the project plans for additional requirements.

2. Sanitary sewer work shall include clearing of vegetation and tree stumps, stripping and stockpiling of topsoil for reuse, excavation of pipe trench, placement of pipe bedding, placement of pipe and structures including castings, connection to existing structures, tack pointing of structures, backfill of pipe trench, compaction of backfill, finish grading, adjustment of castings to match finish grade, testing of sanitary sewer, topsoil placement, seed & mulch, site cleanup and restoration, and other work as shown on the project plans and specifications.

3. Existing and proposed grades shown in profile view on the project plans may be in relation to the centerline of road or from other than the centerline of pipe. The pipe lengths and grades shown in profile view on the project plans may not be to scale.

4. RCSP when shown on the project plans shall be reinforced concrete sewer pipe and shall conform to the specifications for reinforced concrete pipe per ASTM C76. RCSP pipe joints shall be Modified Groove Tongue (MGT) type joints with a compression type rubber gasket snapped into a groove cast into the tongue. Rubber gaskets shall conform to ASTM C433. Modified groove or bell end of pipe shall be made smooth and shall not have more than a three (3) degree slope tapered to fit the rubber gasket to tolerances as determined by the gasket manufacturer. MGT joints shall be lubricated and coupled in accordance with the manufacturer's specifications. Saw cut pipes to length for connection to structures as needed. When pipe class is not shown on the project plans, provide the following:
Pipe cover to proposed grade: 0 to 4 feet Class V
4.1 to 10 feet Class III*
10.1 to 18 feet Class IV
18.1 feet and greater Class V
* Use Class IV under paved surfaces

5. PVC when shown on the project plans shall be polyvinyl chloride gravity pipe and shall conform to the specifications for polyvinyl chloride gravity pipe per ASTM D3034, maximum SDR of 26. PVC pipe joints shall be push on bell-and-spigot type joints conforming to ASTM D3212 with factory installed flexible elastomeric gaskets conforming to ASTM F477. Solvent cemented joints shall only be used when noted on the project plans for specific applications and shall conform to ASTM D2855. Tamp backfill at the spring line of PVC pipe. Saw cut pipes to length for connection to structures and fittings as needed.

6. ABS or PVC Truss Pipe when shown on the project plans shall conform to the specifications for truss pipe per ASTM D2680. ABS Truss Pipe joints shall consist of ABS plastic couplings solvent cemented to the pipe ends and shall conform to ASTM D2855. PVC Truss Pipe joints shall be bell-and-spigot type joints conforming to ASTM D3212 with factory installed flexible elastomeric gaskets conforming to ASTM F477. PVC Truss Pipe joints shall be lubricated and coupled in accordance with the manufacturer's specifications. Tamp backfill at the spring line of truss pipe. Saw cut pipes to length for connection to structures and fittings as needed.

7. Sanitary structures shall be pre-cast reinforced concrete and shall conform to the specifications for pre-cast reinforced concrete structures per ASTM C478. Sanitary structure joints shall be Modified Groove Tongue (MGT) type joints with a compression type rubber gasket snapped into a groove cast into the tongue. Rubber gaskets shall conform to ASTM C433. Pipe openings in pre-cast structures shall be water tight factory installed rubber boot connectors. Sewer pipes shall be clamped to the rubber boot with stainless steel clamps and hardware in accordance with the manufacturer's specifications. All temporary openings in sanitary structures shall be pointed up watertight with cement mortar.

8. Provide sanitary structure castings as noted on the project plans. When casting type is not noted on the project plans, provide East Jordan 1040 or Nenah R-1916 F1 with solid self sealing cover or equivalent OR as directed by the Municipality. Sanitary structure castings shall be coated with water based asphaltic paint by the manufacturer. Final casting grade adjustments shall be made with pre-cast reinforced concrete grade rings sealed with rubber "O" ring gaskets or brick and mortar pointed up and sealed water tight with cement mortar. Castings shall be secured to the pre-cast structure with a minimum of four (4) 5/8" diameter cadmium coated bolts or threaded studs with neoprene flat washers and cadmium coated nuts.

9. Connections to existing manholes shall be performed by core drilling the manhole wall and installing a resilient boot. Star drilling the opening shall ONLY be performed when core drilling is not possible. Provide a smooth hand-troweled mortared finish in the star drilled opening for installation of a resilient boot.

10. Backfill all sanitary sewer in accordance with the Pipe Trench details provided on the project plans. Provide pipe bedding that meets or exceeds both the specifications of the Pipe Trench details on the project plans and the recommendation of the pipe manufacturer, incidental to work.

11. Install removable plugs in sanitary sewer stubs as acceptable to Engineer and Municipality, incidental to work. Mark the end of all sanitary sewer stubs with a 2" x 4" wooden stake extending a minimum of 12" above finish grade, incidental to work.

12. Install sanitary sewer service leads in accordance with the project plans. Detailed graphic representation of the sanitary lead connection to the sanitary main may not be shown in the plan and/or profile views. Contractor shall provide the necessary fittings for connection of the sanitary lead to the sanitary main in accordance with the Municipality and the Project Plans, incidental to work. See the Gravity Sanitary Sewer Service Lead Notes and Details on the project plans for additional requirements.

13. Contractor shall provide testing of the sanitary sewer in accordance with the Local Municipality requirements.



NOTE: UTILITY INFORMATION ON THIS DRAWING MAY BE FROM INFORMATION DISCLOSED TO THIS FIRM BY THE UTILITY COMPANIES, CITY/COUNTY AGENCIES AND OTHER VARIOUS SOURCES. NO GUARANTEE IS GIVEN AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING UTILITIES ON CONFLICT WITH PROPOSED IMPROVEMENTS SHALL BE VERIFIED IN THE FIELD.

CALL MISS DIG.

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

DESIGN: EDW/MMP
DRAFT: L.F.
CHECK: EDW

DATE	REVISION-DESCRIPTION	DATE	REVISION-DESCRIPTION
8-22-11	REV. PER REVIEW COMMENTS RECEIVED 8-17-11		
9-21-11	REMOVE FREESTANDING FDC DETAIL		

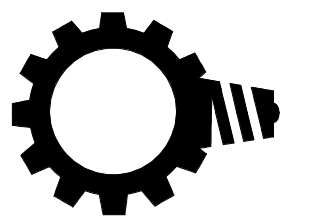
2142 COMMUNITY CHURCH
GENOA CAMPUS
7526 W. GRAND RIVER

SANITARY SEWER
AND WATER MAIN
NOTES AND DETAILS

CLIENT: 2142 COMMUNITY CHURCH
1661 N. LATSON RD.
HOWELL, MI. 48843
(810) 231-0190

SCALE: N/A
PROJECT No.: 9101777
DWG NAME: 777-DTLS
PRINT: SEP 21 2011

C10.3



Seal

REVISIONS

NO.	DATE	COMMENT

2142 COMMUNITY CHURCH
7526 W. GRAND RIVER ROAD
GENOA TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN

GENOA CAMPUS RENOVATION AND ADDITION FLOOR PLANS

DESIGN TEAM

Designed By *RB*
Drawn By *BA*
Checked By *JS*
Approved By *RC*

Project No. 621

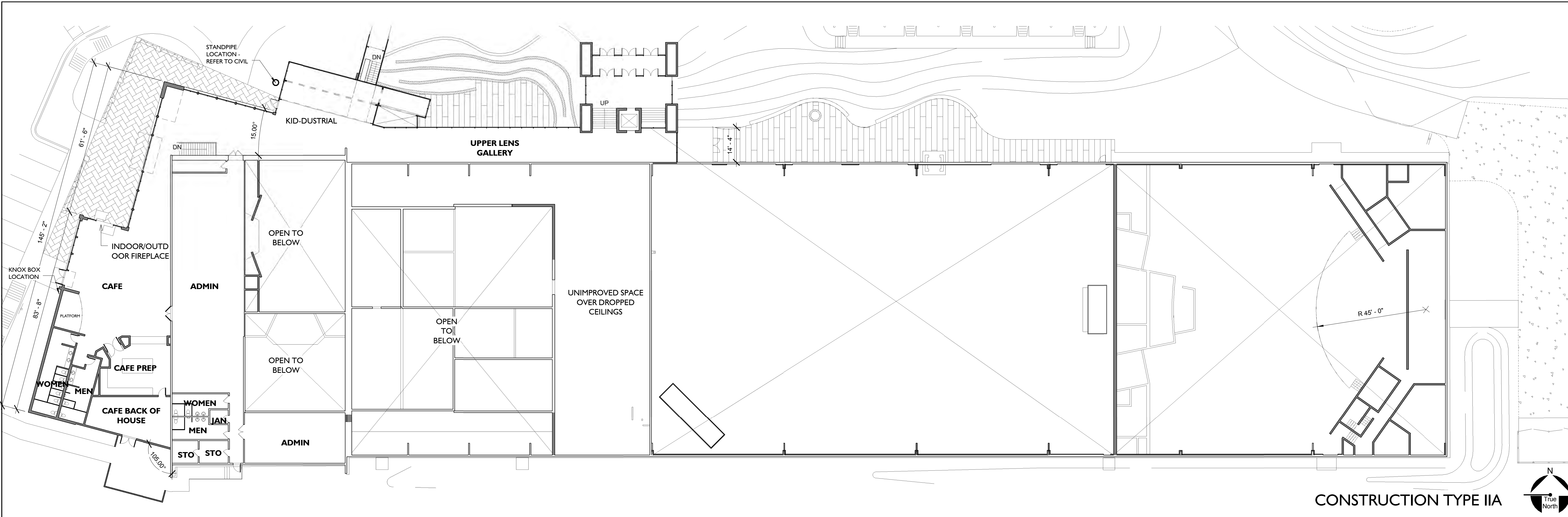
Date 08.23.2011

Project Status
CONCEPT PLANS FOR APPROVAL

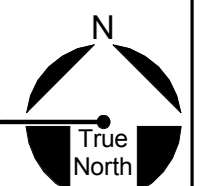
FLOOR PLANS

Sheet No.

A1



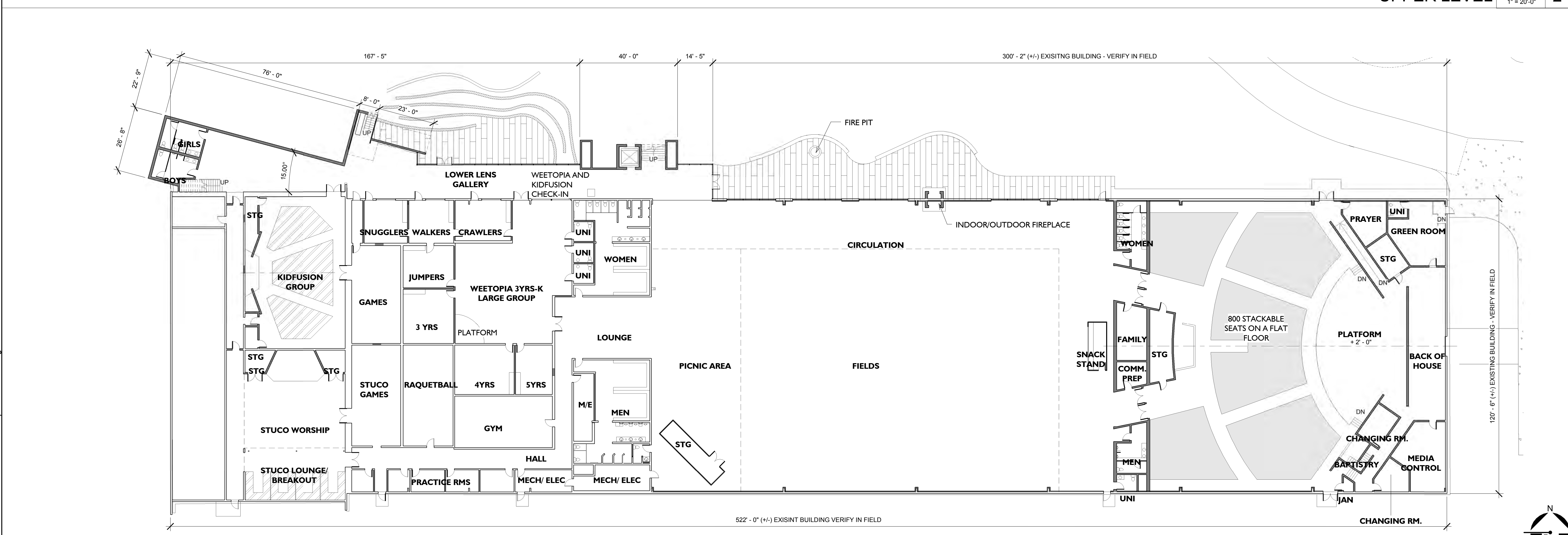
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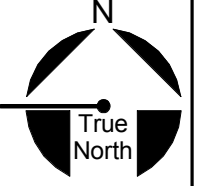
UPPER LEVEL

SCALE
1" = 20'-0"

2



CONSTRUCTION TYPE IIA

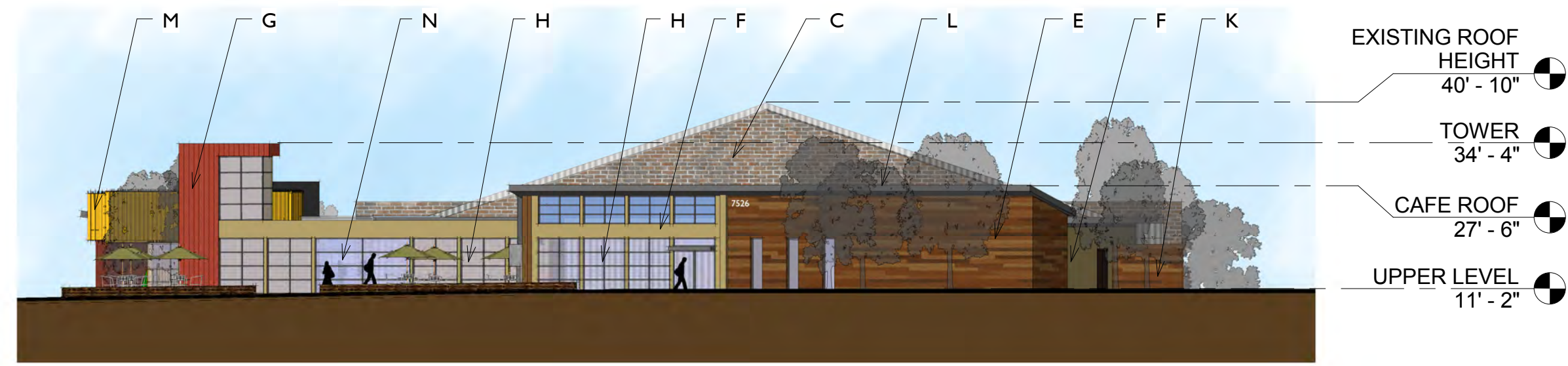


LOWER LEVEL

SCALE
1" = 20'-0"

1

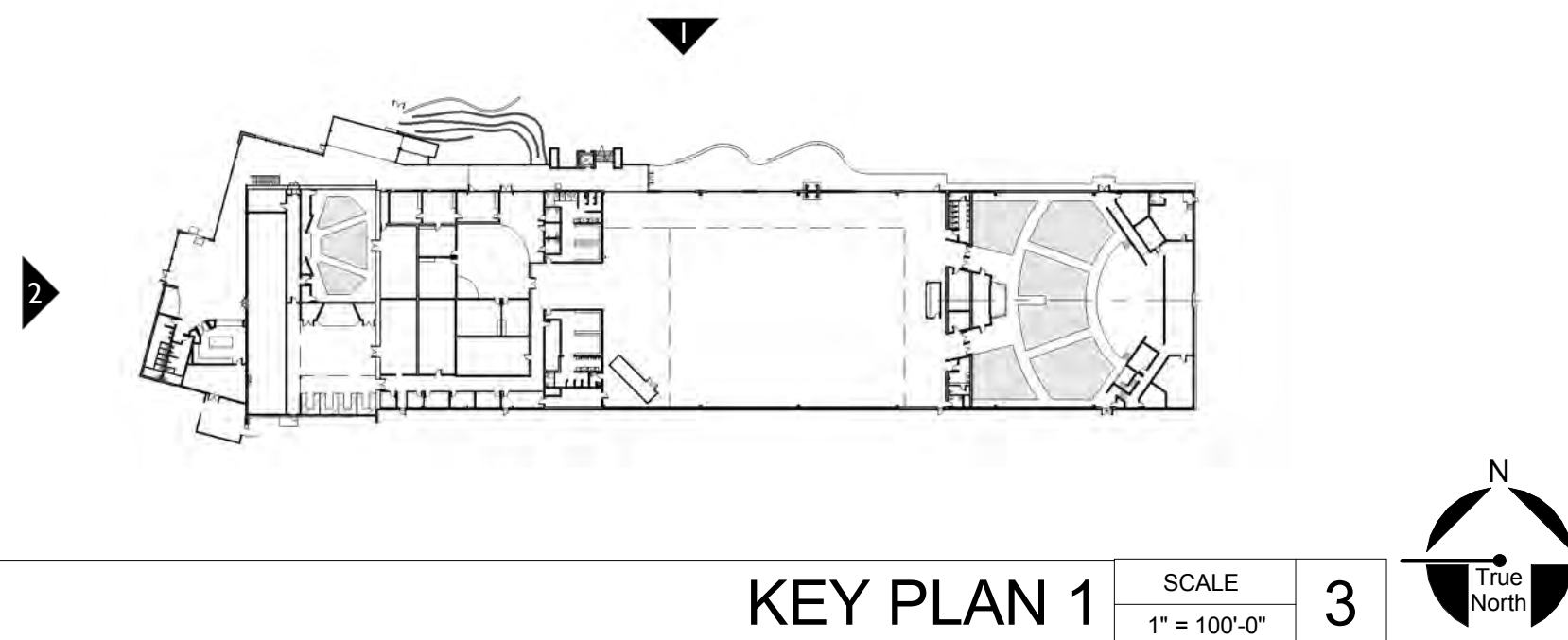
8/19/2011 2:44:57 PM C:\Users\ballen\Desktop\nt files\2142 brighton - ballen.rvt



NORTH ELEVATION.

SCALE
1" = 20'-0"

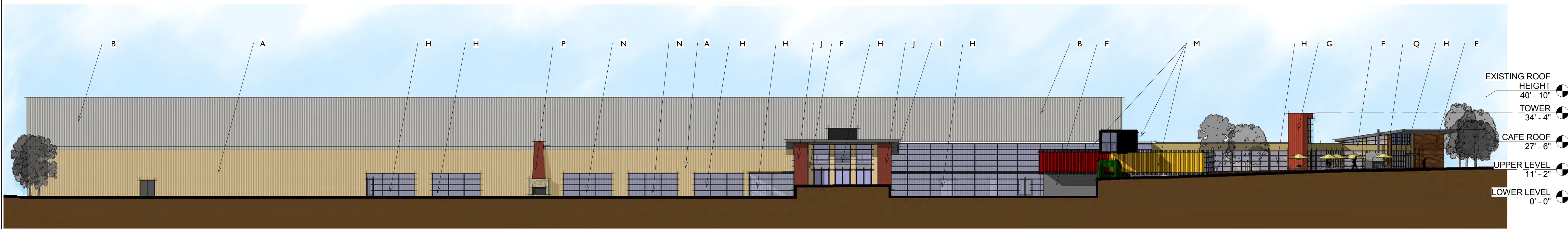
2



KEY PLAN 1

SCALE
1" = 100'-0"

3



EAST ELEVATION.

SCALE
1" = 20'-0"

1

PROPOSED EXTERIOR MATERIALS LEGEND

- A EXISTING METAL SIDING - PAINTED
- B EXISTING METAL ROOF TO BE REPLACED
- C EXISTING CMU WALL
- D EXISTING ROLLING DOOR
- E RECYCLED WOOD RAINSCREEN
- F PLASTER
- G VERTICAL METAL PANELS
- H GLAZING
- J COR-TEN PANELS
- K WOOD SLAT TRASH ENCLOSURE
- L STANDING SEAM METAL ROOF
- M SHIPPING CONTAINERS
- N OPERABLE SECTIONAL DOORS
- P STONE FIREPLACE W/ CORTEN CHIMNEY
- Q CONCRETE FIRE PLACE W/ PIPESTACK

Seal

REVISIONS

NO. DATE COMMENT

NO.	DATE	COMMENT

2142 COMMUNITY CHURCH
7526 W. GRAND RIVER ROAD
GENOA TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN

**GENOA CAMPUS RENOVATION
AND ADDITION
ELEVATIONS**

DESIGN TEAM

Designed By *RB*
Drawn By *BA*
Checked By *JS*
Approved By *RC*

Project No. 621

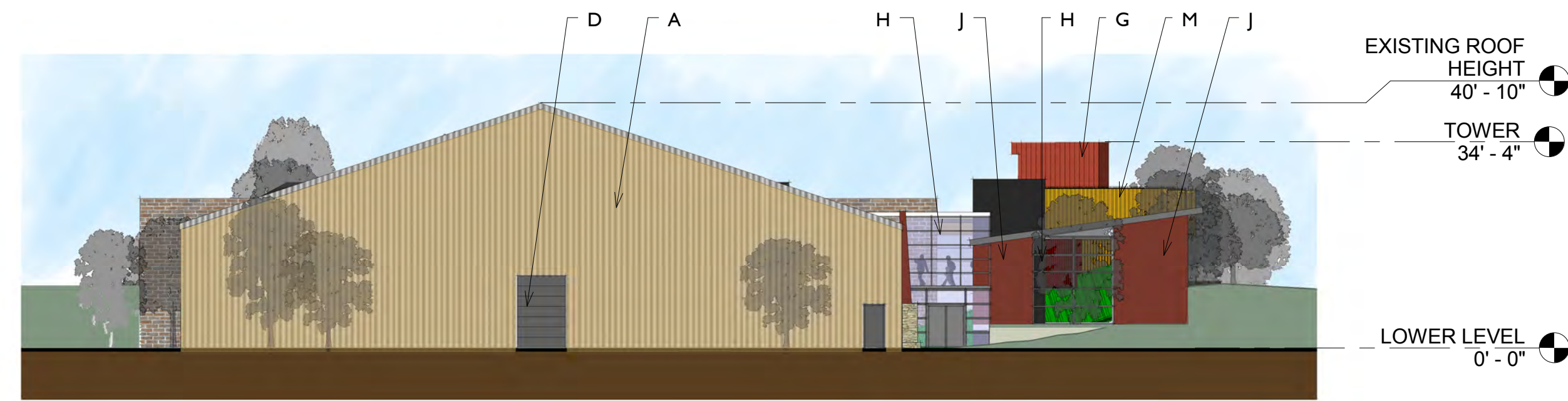
Date 08.23.2011

Project Status
CONCEPT PLANS FOR
APPROVAL

ELEVATIONS

Sheet No.

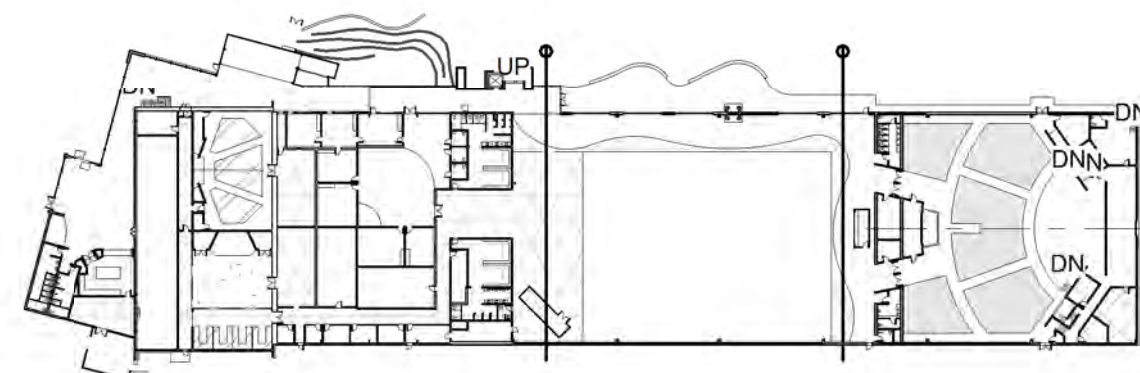
A 2



SOUTH ELEVATION.

SCALE
1" = 20'-0"

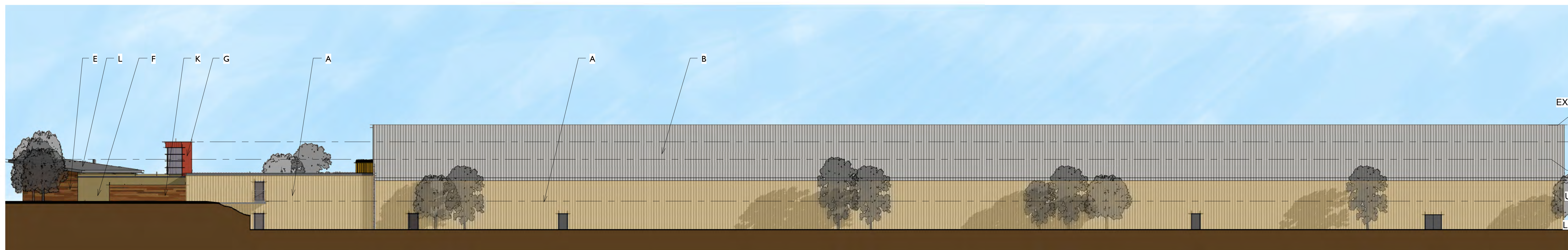
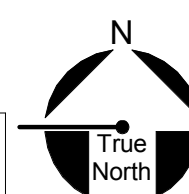
2



KEY PLAN 2

SCALE
1" = 100'-0"

3



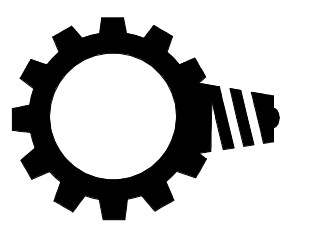
WEST ELEVATION.

SCALE
1" = 20'-0"

1

PROPOSED EXTERIOR MATERIALS LEGEND

- A EXISTING METAL SIDING - PAINTED
- B EXISTING METAL ROOF TO BE REPLACED
- C EXISTING CMU WALL
- D EXISTING ROLLING DOOR
- E RECYCLED WOOD RAINSCREEN
- F PLASTER
- G VERTICAL METAL PANELS
- H GLAZING
- J COR-TEN PANELS
- K WOOD SLAT TRASH ENCLOSURE
- L STANDING SEAM METAL ROOF
- M SHIPPING CONTAINERS
- N OPERABLE SECTIONAL DOORS
- P STONE FIREPLACE W/ CORTEN CHIMNEY
- Q CONCRETE FIRE PLACE W/ PIPESTACK



**VISIONEERING
STUDIOS ARCHITECTURE**

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Seal

REVISIONS

NO.	DATE	COMMENT

2142 COMMUNITY CHURCH
7526 W. GRAND RIVER ROAD
GENOA TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN

**GENOA CAMPUS RENOVATION
AND ADDITION
ELEVATIONS**

DESIGN TEAM

Designed By *RB*
Drawn By *BA*
Checked By *JS*
Approved By *RC*

Project No. 621

Date 08.23.2011

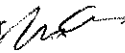
Project Status
CONCEPT PLANS FOR
APPROVAL

ELEVATIONS

Sheet No.
A 3

MEMORANDUM

TO: Township Board

FROM: Michael Archinal, Township Manager 

DATE: 9/30/11

RE: Purchasing Policy

As requested please find attached a sample purchasing policy drafted by Ken Palka. The intent of this policy is to allow for timely payment of regularly recurring bills such as utilities. Please consider the following action:

Moved by _____ , supported by _____ , to approve the purchasing policy as presented.

September 8, 2011

GENOA CHARTER TOWNSHIP

SAMPLE PURCHASING POLICY

Any purchase for goods or services exceeding a cost of \$5,000 shall require the Township Board's approval prior to the purchase except for the following types of expenditures:

1. Utilities
2. Postage
3. Payroll and related taxes
4. Intergovernmental contracts
5. Per diems
6. Insurance
7. Land contracts
8. Dues
9. Contractual obligations (includes debt payments such as bonds)
10. Professional services authorized by the Board

A minimum of two officials of the Township (supervisor, treasurer, clerk) have the authority to make purchases prior to Board approval if the goods or services cost \$5,000 or less. A minimum of two officials of the Township (supervisor, treasurer, clerk) may also make purchases of the above mentioned types of expenditures if the purchase is over \$5,000 prior to Board approval.

The Township Board shall see a list of all bills paid for review at its next regularly scheduled meeting .

The Detroit News

www.detnews.com

September 30, 2011

http://detnews.com/article/20110930/METRO04/109300375

Fight hatches over chickens in Genoa Twp.

CANDICE WILLIAMS
/ The Detroit News

Genoa Township— Carmen Eddy, 15, loves chickens so much she started tending them three years ago at her Genoa Township home.

The township, however, isn't as fond of the idea and says the Eddy family is in violation of a local zoning ordinance. The family says it is protected by the Michigan Right to Farm Act — which supersedes local ordinances in certain cases — and follows agricultural guidelines for housing chickens.

"We're going to try this and see if this works for us," said Scott Eddy, Carmen's father. "She's motivating me to fight this for her."

Both sides will be in district court over the issue Oct. 25.

The chickens are a business venture for Carmen, who sells fresh eggs by the dozen and is a member of the 4-H Club, a national organization that focuses on youth development.

"I think everybody should have chickens, (especially) people who are interested," said Carmen, who plans to be a veterinarian and own a farm.

Every day before and after school, she heads to the two chicken coops in her backyard to feed and water about a dozen birds, including hens and a rooster.

"I'm sad they're complaining about it," Carmen said.

As the interest in urban farming grows, municipalities are seeing more instances of people who want to tend chickens at home, said Wayne State University law professor John Mogk, who has studied the Michigan Right to Farm Act.

In Ferndale, the City Council might soon consider a revision to its ordinance that would allow residents to keep up to three hens. The ordinance restricts residents to keep chickens at least 150 feet away from any structure, a requirement most residents don't fit because of the average size of lots in the city.

Genoa Township's lawyer, Frank Mancuso, declined to comment on the issue with a court date pending.

Scott Eddy said the family should be allowed to keep the chickens because Carmen operates her farm as a business and follows the Generally Accepted Agricultural and Management Practices, known as GAAMPs.

If the Eddys lose their case, Carmen will have to find another business venture, her father said.

"She's always wanted to live on a big farm," Scott Eddy said. "This was our effort to try and allow her the experience of some of that without the other attributes of owning a farm."

cwilliams@detnews.com

(313) 222-2311

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