VILLAGE BOARD – MEETING AGENDA

WHITEFISH BAY VILLAGE HALL
5300 N. Marlborough Dr.
Whitefish Bay, WI 53217

Monday, April 6, 2026, 6:00 PM

As an alternative to attending in-person, the public may access this meeting of the Village Board by phone or by computer. Please note that those participating remotely will ***not*** have an opportunity to provide public comment. The phone number is: **+1 312 626 6799**. The Zoom Meeting code is: **854 6369 2688** and the Passcode is: **267748**.

https://us06web.zoom.us/j/85463692688?pwd=d0w0WmxVZFpyWThGSXhTejdPNU8vQT09

I. Call to Order and Roll Call

II. Consent Agenda – Upon request of any Trustee, any item may be removed from the Consent Agenda for separate consideration under General Business.

1. Minutes of the regular meeting held on March 16, 2026
2. Investment Report for February, 2026
3. Check Register for March, 2026
4. Contract Award for the 2026 EAB Treatment Project
5. Contract Award for the 2026 EAB Removal and Replacement Project
6. Resolution No. 3198 – National Public Safety Telecommunications Week Proclamation

III. Report of Village Officers

1. Village Attorney
2. Village Manager
3. Village President
4. Miscellaneous Trustee

IV. Petitions and Communications – This is an opportunity for anyone to address the Village Board on any issue NOT on the current agenda. While the Board encourages input from residents of the Village, it may not discuss or act on any issue that is not duly noticed on the agenda.

V. General Business

1. Discussion on the Library Strategic Plan (2026-2030).

2. Discussion/action on a new parallel storm sewer system on Beaumont Avenue between Consaul Place and Lake Drive to alleviate local flooding.

3. Discussion on new Silver Spring entrance signs to be paid for by private development projects.

4. The Board may convene into Closed Session pursuant to Wisconsin State Statute 19.85(1)(e) deliberating or negotiating the purchase of public property, investing of public funds, conducting other specified business whenever competitive and/or bargaining reasons require a closed session – specifically regarding 5111 N. Lydell Avenue.

5. The Board may reconvene into open session. The Board reserves the right to take action on any topic discussed in Closed Session.

VI. Adjourn

Upon reasonable notice, efforts will be made to accommodate the needs of disabled individuals through appropriate aids and services. Contact Village Hall at (414) 962-6690. It is possible that members of and possibly a quorum of members of other Boards, Commissions, or Committees of the Village including in particular the Business Improvement District Board may be in attendance at the above stated meeting to gather information; no action will be taken by any other Boards, Commissions, or Committees of the Village except by the Board, Commission, or Committee noticed above. Agendas and minutes are available on the Village website (www.wfbvillage.gov).

A REGULAR VILLAGE BOARD MEETING

A regular meeting of the Board of Trustees of Whitefish Bay was held in-person March 16, 2026.

Pursuant to law, written notice of this meeting was given to the press and posted on public bulletin boards.

I. Call to Order and Roll Call

President Buckley called the meeting to order at 6:00 p.m.

Present: Trustees Dettmann, Haller, Kasper (Zoom), Serebin, Vanevenhoven and President Buckley
Absent: Trustee Saunders

Also Present: Village Manager – Kelsey McElroy-Anderson
Clerk/Finance Director – Jaimie Krueger
Deputy Clerk – Erin Granstrom

II. Consent Agenda

It was moved by Trustee Haller, seconded by Trustee Vanevenhoven, to approve the consent agenda with amendment. Motion carried 6-0.

1. Check Register for February, 2026.
2. Resolution No. 3196 – Adopting the 2025 WPDES Storm Water Discharge Permit Annual Report.
3. Safety netting improvements at Craig Counsell Park.
4. Storm sewer outfall rehabilitation design services contract.
5. Storm and sanitary sewer planning professional services agreement.

III. Report of the Village Officers

1. Village Attorney – No Report.
2. Village Manager – Thanked DPW crews for final spring leaf collection and street sweeping in addition to plowing for the recent storm. Absentee ballots were received today. Staff and poll workers are working to get the initial batch in the mail tomorrow or Wednesday.
3. Village President – Thanked DPW staff.
4. Miscellaneous Trustee – Sendik's project is going up quickly and all those involved in getting that project to this point were thanked.

IV. **Petitions and Communications**

No Petitions or Communications received.

V. General Business

1. Discussion on the actuarial study for the Village's Other Post-Employment Benefits (OPEB) liabilities.

Kelsey McElroy-Anderson introduced Principal and Consulting Actuary Jack Chmielewski, from Milliman who presented the 2025–2026 actuarial valuation of the Village's Other Post-Employment Benefits (OPEB). Ehler's had made a suggestion to the General Fund balance policy which was looked at in the actuary study. The study values retiree health benefits for employees eligible at age 55 with 20 years of Village service, with the Village paying 50% of premiums for employees hired before 2012 and 2016 policy changes and 25% for later hires. Policies of other North Shore communities as a comparison were mentioned, with staff commenting that information can be determined. Policy changes in 2012 and 2016 have reduced long-term OPEB costs, though full savings are not yet realized due to existing employees under prior rules. Accounting standards, GASB 75, to determine the amount were described by Mr. Chmielewski. The Village's current OPEB reserve, about $2 million,

represents a relatively strong position when compared to expected cash payments, and the benefit design as described previously is broadly in line with peer municipalities. Impact of surcharge for joining the state health insurance program were discussed. Bonus payment for electing to opt-out was added in 2026, however, no employees elected this option. Since OPEB assets are not held in a formal trust, the discount rate is tied to the 20-year municipal bond index and the reserves remain flexible general fund resources that could be repurposed by the Board if needed.

2. **Discussion/action on Resolution No.3197 amending the Village's Unreserved General Fund Balance Policy.**

Village Manager McElroy-Anderson reviewed information in the memo in the meeting packet, comparing the numbers for 35 percent versus 40 percent of annual general fund expenditures. This is consistent with guidance from the Village's financial advisor, Ehlers, and rating agency expectations that view 35 to 50 percent as a favorable range. A 40 percent target would require approximately $647,000 in additional unassigned fund balance based on 2024 figures. It was inquired what the change would be for 2025, however, those numbers are not completed. Future operating surpluses would first be applied to reach the 40 percent target, with any remaining surplus directed to the OPEB reserve, and the Board noted that both OPEB and unassigned reserves remain flexible because they are not held in a restricted trust. Staff also indicated that a portion of the current-year surplus will be used to cash-fund temporary health insurance surcharges and reduce related borrowing. The calculation of debt issuance was discussed. The impact for rating agencies was mentioned. Shifting more gradually was mentioned.

It was moved by Trustee Dettmann, seconded by Trustee Serebin that the Village Board adopt Resolution No. 3197, a resolution amending a policy for the unassigned General Fund balance of the Village of Whitefish Bay. Motion carried 6-0.

VI. Adjourn

There being no further business, it was moved by Trustee Kasper seconded by Trustee Dettmann to adjourn the meeting at 8:04 p.m. Motion carried 6-0.

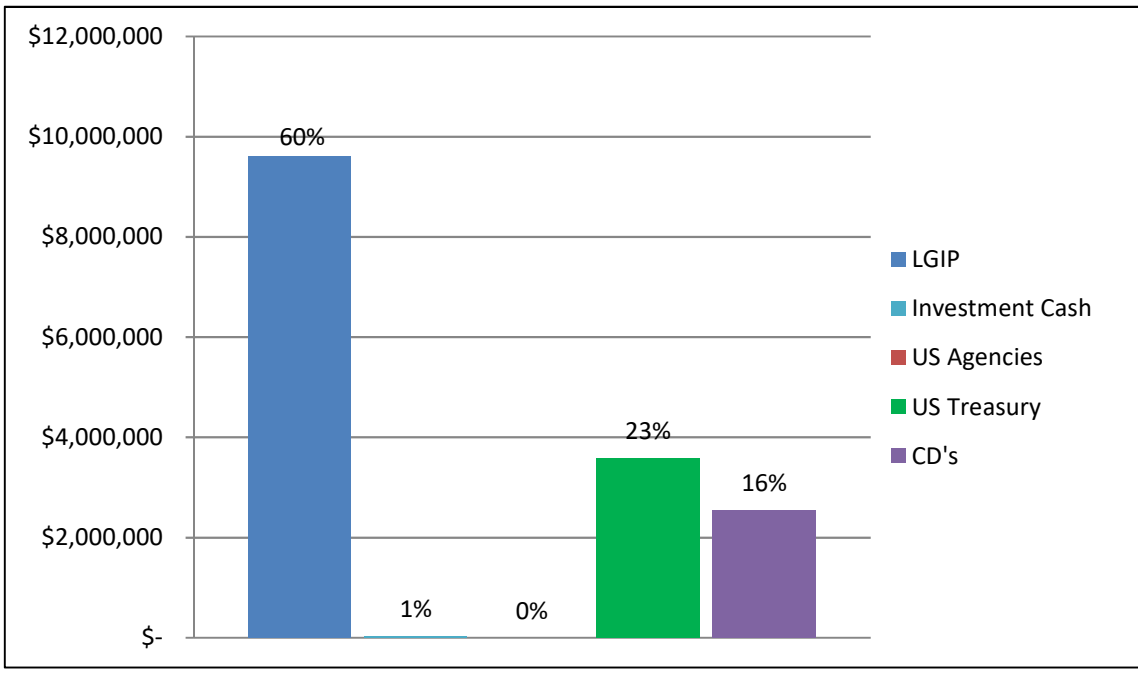
Erin M Granstrom

Erin Granstrom, Deputy Clerk

Monthly Investment Summary

February 2026

	General Investments	Post Retirement Investments	Total
LGIP	$ 9,600,978	$ -	$ 9,600,978
Investment Cash	32,121	864	32,985
US Agencies	-	-	-
Less than 1 Year	-	-	-
1 to 3 Years	-	-	-
3 to 5 Years	-	-	-
Total US Agencies	-	-	-
US Treasury			
Less than 1 Year	1,744,484	-	1,744,484
1 to 3 Years	304,547	720,818	1,025,365
3 to 5 Years	816,299	-	816,299
Total US Treasury	2,865,330	720,818	3,586,148
CD's			
Less than 1 Year	240,483	245,050	485,533
1 to 3 Years	1,823,864	241,268	2,065,132
3 to 5 Years	-	-	-
Total CD's	2,064,347	486,318	2,550,665
Total Investments	$ 14,562,776	$ 1,208,000	$ 15,770,776
Accrued Interest	$ 44,848	$ 10,326	$ 55,174



Check Date	Bank	Check	Vendor	Vendor Name	Amount
Bank Cking ASSOCIATED					
03/06/2026	Cking	71379	MISC01	ADAM HILL & LAUREN HILL	905.53
03/06/2026	Cking	71380	102569	AMAZON CAPITAL SERVICES	1,071.88
03/06/2026	Cking	71381	102238	ANNMARIE WARANKA	22.58
03/06/2026	Cking	71382	102641	ASCENSION OCCUPATIONAL HEALTH	204.00
03/06/2026	Cking	71383	102728	AT&T MOBILITY	782.57
03/06/2026	Cking	71384	103120	BATZNER PEST CONTROL	175.27
03/06/2026	Cking	71385	101837	BAYCOM	63.00
03/06/2026	Cking	71386	101644	BRIDGE TOWER OPCO, LLC	189.00
03/06/2026	Cking	71387	102896	CATTRON NORTH AMERICA INC	460.00
03/06/2026	Cking	71388	102888	CITY PRESS, INC.	593.16
03/06/2026	Cking	71389	102172	CLARK DIETZ, INC	8,005.00
03/06/2026	Cking	71390	102897	CLEAN SOURCE LLC	5,950.00
03/06/2026	Cking	71391	101610	COMPASS MINERALS AMERICA INC.	41,059.20
03/06/2026	Cking	71392	102786	CRAIG D CHILDS, PHD, S.C.	520.00
03/06/2026	Cking	71393	0024	CUMMINS SALES AND SERVICE	543.20
03/06/2026	Cking	71394	0087	DILLETT MECHANICAL SERVICE	9,190.92
03/06/2026	Cking	71395	102627	GEE INSPECTIONS LLC	680.00
03/06/2026	Cking	71396	103209	GEMPLERS INC	1,279.19
03/06/2026	Cking	71397	0040	GRAINGER	1,318.66
03/06/2026	Cking	71398	102419	GREATAMERICA FINANCIAL SVCS	101.00
03/06/2026	Cking	71399	103212	HI-VIZ.COM	1,636.32
03/06/2026	Cking	71400	102051	HOME DEPOT CREDIT SERVICES	531.98
03/06/2026	Cking	71401	101621	HOMER'S TOWING & SERVICE, INC.	650.00
03/06/2026	Cking	71402	103122	INGRAM LIBRARY SERVICES	4,653.09
03/06/2026	Cking	71403	102894	JM BRENNAN	588.00
03/06/2026	Cking	71404	MISC01	MATTHEW KLINKA	10,347.42
03/06/2026	Cking	71405	MISC01	MICHAEL CONNOR	165.14
03/06/2026	Cking	71406	101757	MIDWEST TAPE	72.67
03/06/2026	Cking	71407	0060	MILWAUKEE METRO SEWERAGE DISTRICT	27,969.00
03/06/2026	Cking	71408	102268	NORTH SHORE WATER COMMISSION	47,496.92
03/06/2026	Cking	71409	101867	OTIS ELEVATOR COMPANY	1,340.00
03/06/2026	Cking	71410	103180	PLATINUM CHEMICALS INC.	447.00
03/06/2026	Cking	71411	103179	REINHART BOERNER VAN DEUREN S.C.	2,402.10
03/06/2026	Cking	71412	101871	SCHMITZ READY MIX, INC	735.70
03/06/2026	Cking	71413	102518	SHRED-IT, C/O STERICYCLE, INC.	80.01
03/06/2026	Cking	71414	0072	STREICHER'S	54.99
03/06/2026	Cking	71415	102848	ULU LEASING LLC	36,000.00
03/06/2026	Cking	71416	0022	US CELLULAR	557.70
03/06/2026	Cking	71417	0075	VILLAGE ACE HARDWARE	116.85
03/06/2026	Cking	71418	0070	VILLAGE OF SHOREWOOD	1,122.96
03/06/2026	Cking	71419	0089	WACHTEL TREE SCIENCE	2,210.00
03/06/2026	Cking	71420	0086	WEX BANK	4,158.08
03/06/2026	Cking	71421	101960	WI DEPT OF FINANCIAL INSTITUTIONS	20.00
03/06/2026	Cking	71422	103211	WIN IT SERVICES, LLC	600.00
03/06/2026	Cking	71423	102229	WISCONSIN DEPARTMENT OF JUSTICE	28.00
				Total For 03/06/2026:	217,098.09
03/11/2026	Cking	1(E)	102406	ELAN FINANCIAL SERVICES	18,960.57
				Total For 03/11/2026:	18,960.57
03/13/2026	Cking	71424	0004	ALSCO	1,716.48
03/13/2026	Cking	71425	102569	AMAZON CAPITAL SERVICES	339.13
03/13/2026	Cking	71426	102810	AUTO ZONE	31.49
03/13/2026	Cking	71427	0012	BATTERIES PLUS	127.95
03/13/2026	Cking	71428	103120	BATZNER PEST CONTROL	250.25
03/13/2026	Cking	71429	102543	BLACKSTONE PUBLISHING	325.23
03/13/2026	Cking	71430	101655	BS&A SOFTWARE	4,970.00
03/13/2026	Cking	71431	102172	CLARK DIETZ, INC	28,315.00
03/13/2026	Cking	71432	102673	CONCENTRA HEALTH SERVICES	121.00
03/13/2026	Cking	71433	MISC01	EVERSTREAM SOLUTIONS LLC	3,000.00
03/13/2026	Cking	71434	102292	FORWARD TS, LTD	144.94
03/13/2026	Cking	71435	103209	GEMPLERS INC	323.11
03/13/2026	Cking	71436	0039	GRAEF	1,407.00
03/13/2026	Cking	71437	0040	GRAINGER	606.18
03/13/2026	Cking	71438	102625	HALRON LUBRICANTS INC	2,596.84
03/13/2026	Cking	71439	101621	HOMER'S TOWING & SERVICE, INC.	389.00
03/13/2026	Cking	71440	102732	KANOPY, INC.	242.25
03/13/2026	Cking	71441	0048	LAKESIDE INTERNATIONAL, LLC	110.14
03/13/2026	Cking	71442	0105	LEXISNEXIS RISK DATA MGMT INC.	200.00
03/13/2026	Cking	71443	102710	MACQUEEN EQUIPMENT	21,592.24
03/13/2026	Cking	71444	101757	MIDWEST TAPE	275.89
03/13/2026	Cking	71445	0058	MILWAUKEE COUNTY TREASURER	1,726.96
03/13/2026	Cking	71446	101601	PITNEY BOWES	91.29
03/13/2026	Cking	71447	103156	RINGCENTRAL INC.	1,279.86
03/13/2026	Cking	71448	101737	SHOREWOOD PRESS	1,280.00
03/13/2026	Cking	71449	100402	SNAP-ON TOOLS	168.24
03/13/2026	Cking	71450	101931	STAPLES ADVANTAGE	50.73

Check Date	Bank	Check	Vendor	Vendor Name	Amount
03/13/2026	Cking	71451	101656	STATE OF WI-COURT FINES/SURCHARGESS	5,378.24
03/13/2026	Cking	71452	101634	THE OFFICE TECHNOLOGY GROUP	95.19
03/13/2026	Cking	71453	102704	TODAY'S BUSINESS SOLUTIONS, INC.	1,216.80
03/13/2026	Cking	71454	102553	U.S. Postal Service	4,000.00
03/13/2026	Cking	71455	0112	UTILITY SALES AND SERVICE, INC.	168.86
03/13/2026	Cking	71456	0075	VILLAGE ACE HARDWARE	66.88
03/13/2026	Cking	71457	MISC01	WHITEFISH BAY PUBLIC LIBARRARY	5,000.00
03/13/2026	Cking	71458	101786	WHITEFISH BAY SCHOOL DISTRICT	146.95
03/13/2026	Cking	71459	102498	WOLVERINE FIREWORKS DISPLAY	9,500.00
03/13/2026	Cking	71460	102043	YES EQUIPMENT & SERVICES, INC	610.50
03/13/2026	Cking	71461	102784	ZIEN INC	255.00
				Total For 03/13/2026:	98,119.62
03/20/2026	Cking	71462	102569	AMAZON CAPITAL SERVICES	66.63
03/20/2026	Cking	71463	0008	ASSOCIATED TRUST COMPANY	197.92
03/20/2026	Cking	71464	0126	AT&T	386.61
03/20/2026	Cking	71465	101837	BAYCOM	380.00
03/20/2026	Cking	71466	0021	CARLIN SALES CORPORATION	725.47
03/20/2026	Cking	71467	101875	CASPER'S TRUCK EQUIPMENT	61,323.75
03/20/2026	Cking	71468	102358	CITY WATER LLC	268.00
03/20/2026	Cking	71469	0045	CONFLUENCE GRAPHICS	32.08
03/20/2026	Cking	71470	0024	CUMMINS SALES AND SERVICE	604.73
03/20/2026	Cking	71471	102198	DELTA DENTAL OF WISCONSIN	724.06
03/20/2026	Cking	71472	0040	GRAINGER	260.26
03/20/2026	Cking	71473	102659	JACOBUS ENERGY	3,523.04
03/20/2026	Cking	71474	101914	LANGE ENTERPRISES, INC.	1,648.15
03/20/2026	Cking	71475	102665	LANNON STONE PRODUCTS INC	1,336.38
03/20/2026	Cking	71476	0054	MADACC	12.65
03/20/2026	Cking	71477	MISC01	MARY ANN LOUCKS REV TRUST	144.24
03/20/2026	Cking	71478	103189	METLIFE	337.24
03/20/2026	Cking	71479	101601	PITNEY BOWES	1,009.75
03/20/2026	Cking	71480	101871	SCHMITZ READY MIX, INC	1,081.25
03/20/2026	Cking	71481	101938	SIRCHIE ACQUISITION COMPANY	30.60
03/20/2026	Cking	71482	0086	WEX BANK	726.14
03/20/2026	Cking	71483	102609	WISCONSIN POLICY FORUM	500.00
03/20/2026	Cking	71484	102219	WISCONSIN SUPREME COURT	800.00
03/20/2026	Cking	71485	101651	WM RECYCLE AMERICA	4,119.26
				Total For 03/20/2026:	80,238.21
03/25/2026	Cking	71486	103214	AMANDA STREETER	60.01
03/25/2026	Cking	71487	102569	AMAZON CAPITAL SERVICES	322.09
03/25/2026	Cking	71488	102082	BADGER UNDERGROUND INC	200.00
03/25/2026	Cking	71489	102543	BLACKSTONE PUBLISHING	40.00
03/25/2026	Cking	71490	102153	CJ & ASSOCIATES	577.26
03/25/2026	Cking	71491	102786	CRAIG D CHILDS, PHD, S.C.	520.00
03/25/2026	Cking	71492	MISC01	DANYELL T PIERCE	41.00
03/25/2026	Cking	71493	MISC01	DONALD G WIPPERT	164.00
03/25/2026	Cking	71494	101665	EGELHOFF LAWN MOWER SERVICE	103.35
03/25/2026	Cking	71495	102056	ENGINEERED SECURITY SOLUTIONS	2,231.00
03/25/2026	Cking	71496	102292	FORWARD TS, LTD	14.00
03/25/2026	Cking	71497	102659	JACOBUS ENERGY	2,346.08
03/25/2026	Cking	71498	MISC01	KEAGAN M HENSCHEL	206.00
03/25/2026	Cking	71499	101752	LAKE COUNTRY DOORS	929.80
03/25/2026	Cking	71500	101757	MIDWEST TAPE	307.32
03/25/2026	Cking	71501	102268	NORTH SHORE WATER COMMISSION	1,992.65
03/25/2026	Cking	71502	101867	OTIS ELEVATOR COMPANY	367.32
03/25/2026	Cking	71503	102287	Prime Media Acquisition Corp	260.00
03/25/2026	Cking	71504	102180	RAY O'HERRON CO INC	486.53
03/25/2026	Cking	71505	102678	ROBB GREGG	375.00
03/25/2026	Cking	71506	102009	SENSUS USA, INC.	4,699.00
03/25/2026	Cking	71507	0072	STREICHER'S	240.00
03/25/2026	Cking	71508	102007	THE SIGMA GROUP, INC.	1,236.25
03/25/2026	Cking	71509	0075	VILLAGE ACE HARDWARE	84.14
03/25/2026	Cking	71510	0123	WE ENERGIES	64,566.05
				Total For 03/25/2026:	82,368.85
03/31/2026	Cking	71511	101752	LAKE COUNTRY DOORS	5,407.03
03/31/2026	Cking	71512	102553	U.S. Postal Service	370.00
				Total For 03/31/2026:	5,777.03

CKING TOTALS:

Total of 135 Disbursements: 502,562.37

Village of Whitefish Bay
5300 N. Marlborough Drive
Whitefish Bay, Wisconsin 53217
Phone: 414-962-6690
Fax: 414-962-5651

Memorandum

To: President Kevin Buckley and the Village Board of Trustees

CC: Matt Collins, Public Works Director

From: Pat McCarthy, Public Works Superintendent

Date: April 6, 2026

Re: Recommendation to Award 2026 EAB Treatment Project

The Village is in the 14th year of the Emerald Ash Borer Management Plan. The preventative treatment portion of our EAB Management Plan began in 2013. As part of that plan, the Village will continue treating existing Ash street trees in order to protect them from the destructive Emerald Ash Borer. Bids were solicited to treat approximately 347 ash street trees ranging in size from 12" DBH to 29" DBH.

Three bids were submitted on April 1, 2026:

M & M Tree Care	$ 29,154.95 ($3.95/inch x 7831 inches)
Crawford Tree & Landscape	$ 28,564.47 ($3.87/inch x 7831 inches)
TruGreen	$ 29,450.19 ($3.99/inch x 7831 inches)

$215,000 was included in the 2026 Budget for EAB treatment, tree removal, re-plantings, and management. This is sufficient to fund the proposed EAB tree removal/replanting and the proposed treatment.

Recommendation

Award the 2026 EAB Treatment Project to Crawford Tree and Landscape in the total amount of $28,564.47.

VILLAGE OF WHITEFISH BAY

EAB TREATMENT (SPRING 2026) BID TABULATION - April 1, 2026 1:00 PM

Estimated DBH Inches 7381

EMAMECTIN BENZOATE

CONTRACTOR	PRICE/INCH DBH
Crawford Tree & Landcape	$3.87
Total Bid	$28,564.47
M & M Tree Service	$3.95
Total Bid	$29,154.95
TruGreen	$3.99
Total Bid	$29,450.19

2021 Unit Price = $4.25 per DBH Inch	M & M Tree Service
2022 Unit Price = $4.19 per DBH Inch	Crawford Tree & Landscape
2023 Unit Price = $4.05 per DBH Inch	M & M Tree Service
2024 Unit Price = $3.99 per DBH Inch	Crawford Tree & Landscape
2025 Unit Price = $3.95 per DBH Inch	Split between Crawford/M&M

Village of Whitefish Bay
5300 N. Marlborough Drive
Whitefish Bay, Wisconsin 53217
Phone: 414-962-6690
Fax: 414-962-5651

Memorandum

To: President Kevin Buckley and Village Board Trustees

CC: Matt Collins, Public Works Director

From: Pat McCarthy, Public Works Superintendent

Date: April 4, 2026

Re: Recommendation to Award the 2026 EAB Tree Removal & Tree Planting Projects

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The Village is in the 16th year of the Emerald Ash Borer Management Plan. As part of that plan, the Village will continue removing existing Ash street trees in order to replace them with non-Ash tree species. Bids were solicited to remove 105 Ash street trees ranging in size from 14" DBH to 31+" DBH (diameter at breast height).

Three bids were submitted, for removals/replanting, on April 1,2026. The three bids are:

M&M Tree Care	$146,304.00
Cut n Go	$171,254.35
Dorshak	$231,206.00

$215,000 was included in the 2026 Budget for EAB treatment, tree removal, re-plantings, and management. This is sufficient to fund the proposed EAB tree removal/replanting and the proposed treatment.

Recommendation

Award the 2026 EAB Tree Removal/Replanting Project to M&M Tree Care for the amount of $146,304.00.

VILLAGE OF WHITEFISH BAY

2026 Village Ash Removal_Replanting Tabulation. April 1, 2026. 1:00 PM

	TREE REMOVAL				STUMP GRINDING				RESTORATION			
BIDDER	DIAMETER CLASS	EST. DIAMETER INCHES	UNIT PRICE PER INCH	EXTENDED TOTAL	DIAMETER CLASS	EST. DIAMETER INCHES	UNIT PRICE PER INCH	EXTENDED TOTAL	DIAMETER CLASS	EST. DIAMETER INCHES	UNIT PRICE PER INCH	EXTENDED TOTAL
M&M	12-18"	208	$18.00	$3,744.00	12-18"	208	$7.00	$1,456.00	12-18"	208	$7.00	$1,456.00
	19-24"	659	$22.00	$14,498.00	19-24"	659	$7.00	$4,613.00	19-24"	659	$7.00	$4,613.00
	25-30"	1609	$27.00	$43,443.00	25-30"	1609	$7.00	$11,263.00	25-30"	1609	$7.00	$11,263.00
	31"+	95	$33.00	$3,135.00	31"+	95	$7.00	$665.00	31"+	95	$7.00	$665.00
		TOTAL TREE REMOVAL		$64,820.00		TOTAL STUMP GRINDING		$17,997.00		TOTAL RESTORATION		$17,997.00

TOTAL BID PROPOSAL A **$100,814.00**

ELM TREE REMOVAL

TREE REMOVAL	$/DBH"	$ 65.00
STUMP GRINDING	$/DBH"	$ 6.00
RESTORATION	$/DBH"	$ 12.00
Em. SERVICES - NORMAL HOURS	$/HOUR	$ 200.00
Em. SERVICES - NORMAL HOURS	$/HOUR	$ 300.00

TOTAL BID PROPOSAL B $ 583.00

ASH TREE REPLACEMENT PLANTING

Scientific Name	Common Name	Estimated Quantity	Unit Price 2"-2.5" Caliper	Extended Amount	
Catalpa speciosa	Northen Catalpa	6	$ 443.00	$ 2,658.00	
Celtis occidentalis 'Chicagoland'	Chicagoland Hackberry	10	$ 425.00	$ 4,250.00	Common Hackberry
Ginkgo biloba 'Princeton Sentry'	Princeton Sentry Ginkgo	10	$ 605.00	$ 6,050.00	
Gymnocladus dioicus 'Expresso'	Expresso Kentucky Coffeetree	5	$ 492.50	$ 2,462.50	
Liquidambar styraciflua 'Moraine'	Moraine Sweetgum	4	$ 398.00	$ 1,592.00	
Liriodendron tulipifera	Tuliptree/Yellow Poplar	13	$ 384.50	$ 4,998.50	
Ostrya virginiana	Ironwood	12	$ 435.00	$ 5,220.00	
Platanus acerifolia 'Exclamation'	Exclamation London Planetree	8	$ 425.00	$ 3,400.00	
Quercus bicolor	Swamp White Oak	7	$ 405.00	$ 2,835.00	
Quercus x schuettei	Swamp x Bur Oak Hybrid	9	$ 500.00	$ 4,500.00	
Syringa reticulata 'Ivory Silk'	Ivory Silk Tree Lilac	3	$ 425.00	$ 1,275.00	
Tilia americana 'Redmond'	Redmond Linden	8	$ 470.00	$ 3,760.00	Sweet Street Linden
Ulmus japonica x wilsoniana 'Morton'	Accolade Elm	2	$ 384.50	$ 769.00	Princeton Elm
Ulmus 'New Horizon'	New Horizon Elm	5	$ 344.00	$ 1,720.00	New Horizon Elm

TOTAL BID PROPOSAL C $ 45,490.00

Total Proposal (A+C) **$146,304.00**

STATE OF WISCONSIN : MILWAUKEE COUNTY : VILLAGE OF WHITEFISH BAY

Resolution No. 3198

Proclaiming April 12th Through April 18th as "National Public Safety Telecommunications Week" In The Village Of Whitefish Bay

WHEREAS, emergencies can occur at any time that require police, fire, or emergency medical services; and

WHEREAS, when an emergency occurs, the prompt response of police officers, public works, firefighters, and paramedics is critical to the protection of life and preservation of property; and

WHEREAS, the safety of our officers and firefighters is dependent upon the quality and accuracy of information obtained from citizens who contact the Bayside Communications Center; and,

WHEREAS, public safety telecommunicators are the first and most critical contact our citizens have with emergency services; and,

WHEREAS, public safety telecommunicators are the single vital link for our police officers, firefighters, and emergency medical personnel by monitoring their activities by radio, providing them information and ensuring their safety; and,

WHEREAS, Bayside Communications Center telecommunicators have contributed substantially to the apprehension of criminals, the suppression of fires and treatment of patients; and,

WHEREAS, each telecommunicator has exhibited compassion, understanding and professionalism during the performance of his or her job in the past year;

NOW, THEREFORE, BE IT RESOLVED by the Village Board of the Village of Whitefish Bay that the week of April 12-18, 2026 is NATIONAL PUBLIC SAFETY TELECOMMUNICATIONS WEEK throughout the Village in honor of the men and women whose diligence and professionalism keep our village and citizens safe and urge all citizens along with all agencies and organizations to duly note this occasion.

PASSED AND ADOPTED this the 6th day of April, 2026.

_____
Kevin Buckley, Village President

Countersigned:

_____
Jaimie Krueger, Village Clerk

To: Village of Whitefish Bay Board of Trustees
From: Nyama Y. Reed, Library Director
Date: March 31, 2026
Re: Whitefish Bay Public Library Strategic Plan (2026-2030)

Our Mission
The Whitefish Bay Public Library, as a cornerstone of the community, is dedicated to connecting people of all ages, inspiring a love of learning, and providing access to ideas, information, and resources.

Overview
This memo provides a high-level summary of the Whitefish Bay Public Library's 2026–2030 Strategic Plan, as presented to the Board. The plan reflects a comprehensive, data-driven process conducted in 2025 and is designed to guide the Library's services, operations, and investments over the next five years.

The planning process included extensive data analysis, benchmarking against peer libraries, community and staff surveys, and a full SWOT analysis. Feedback from more than 800 community respondents and strong staff participation helped ensure the plan is grounded in both community needs and operational realities.

Key Takeaways
1. The Library is highly valued and heavily used.
    - Nearly half of all residents hold active library cards, more than double the state average.
    - The Library averages approximately 500 visits per day and leads the county in visits per resident.
    - Community feedback is overwhelmingly positive, with 97% of respondents reporting a positive experience and the remainder being neutral or constructive rather than negative.
2. Demand continues to grow across all service areas.
    - Circulation, programming attendance, and digital usage have all increased significantly.
    - The Library serves not only residents but also a growing number of non-resident users, generating additional revenue through the Member Reserve Fund.
3. The Library delivers exceptional value.
    - Whitefish Bay has one of the lowest costs per circulation in the state while maintaining high service levels, long open hours, and strong collections.

Core Challenges
1. Staffing levels do not align with usage.
    - Staff circulate approximately 60% more materials per person than peer libraries.
    - Current staffing levels (11 FTE) are significantly below what comparable usage would suggest (~17 FTE).
    - Heavy reliance on part-time staff without benefits contributes to turnover and operational strain.
2. Facility limitations are becoming more pronounced.
    - Key gaps include insufficient study rooms, limited staff workspace, and the absence of a second-floor public restroom.

3. Financial pressures are increasing.
    - Rising costs for materials, digital resources, and staffing are outpacing revenue growth.
    - Levy limits and variable funding sources require careful long-term financial planning.

Conclusion
The Whitefish Bay Public Library remains a heavily used, and the most cost-effective, library in the region. Its success, however, has created pressures on staffing, space, and resources that must be addressed to sustain service quality.

This strategic plan provides a clear, measured path forward, balancing continued excellence in service with necessary investments in people, facilities, and financial planning.

We look forward to continued collaboration with the Village Board as we strive to implement these priorities and ensure the Library remains a cornerstone of the community for years to come.

Whitefish Bay Public Library Strategic Plan 2026-2030

April 2026

Nyama Y Reed and Nikki DeGuire

The Bottom Line

- **Planning process:** We analyzed extensive data, benchmarked against peer libraries, gathered input from staff and patrons, and conducted a SWOT analysis.
- Our **mission and guiding principles remain the same** with only minor refinements.
- We are a **heavily used library** across all areas and **demand continues to grow**. Community feedback is overwhelmingly positive.
- Our greatest challenge is our success: staff circulate 60% more materials per person than peer libraries.
  - We are **overused for our staff size**.
  - We are **understaffed for our level of use**.
- Our **facility** is beautiful and well loved. After **24 years of heavy use**, it now **needs updates**, including additional study rooms, improved staff workspaces, and a second-floor public restroom.

Whitefish Bay Public Library
excite your mind.

Why Our Library Matters

- The Library serves well and is well loved by residents
- Supports families, seniors, workers, students
- High community impact per dollar
- Regional asset generates additional revenue

Whitefish Bay Public Library
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The Details

Planning Process

5-Year Focus (2026-2030); Last Plan in 2021

- Co-led by Library Board Trustee/Consultant DeGuire and Director Reed in 2025
- Prior strategic plans covered 2016-2021 and 2021-2024

Work Included:

- Comparison of Strategic Plans of Village, Library Friends & Foundation, MCFLS
- Benchmarking against SE WI suburban libraries
- Assessment of Community Needs
  - Deep data dives on use and patron activities
  - Community Survey: 803 Respondents, 20% more than 5 years ago
- Assessment of Staff Needs
  - Analysis of Staffing and Benefits; Staff Survey with In-Service Presentation & Discussion
- SWOT and Landscape Analysis
- Validated Mission and Guiding Principles

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Our Patrons

- 46% of residents have active cards. State average is 22%.
- 90% of survey respondents visit monthly or more
- WFB census population:
  - highest % of residents under 18
  - growing % of residents over 65
- Since 2010: Increased Racial/Ethnic Diversity, More Educated, More Homes with Technology, Fewer Adults 18-64, Slight Growth ages 0-17 and 65+

Our library is used by most of our residents and is a community hub. We serve the region. Patrons have a wide range of needs and experiences.

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We Are A Community Connector

- WFBPL averaged 500 people per day in 2025
  - 11 visits per resident annually; average is 6. Highest in MCFLS
- Surpassed 2019 circulation in 2024
- Regional Hub: In 2025, 37% of circulation from non-residents, up from 31% in 2024, which adds to Member Reserve Fund revenue
- 2025 Programs: We hosted 300 programs with 12,000 attendees
- Availability: WFB is open 62.5 hrs/wk. Surpassed only by Greenfield (66) and Wauwatosa (63). BD 47, NS 50, SH 61.

Hundreds of people visit us daily. We are an incredibly good value with high circulation & program attendance, long hours, and low cost per circ.

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Circulation

- #1 in MCFLS for Children's material circulation per resident
- #2 in Adult and Teen materials (last several years)
- Digital usage up 127% from 2019 to 2025
  - 1 of only 4 MCFLS libraries offering Hoopla in 2026
- Take & Tinker circulates 5x more than other collections
- Collections Budget: Meets highest state standard. Impacts MRF revenue.

We offer a strategically curated collection that is highly used.

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Technology

- Highest computer & Wi-Fi use in MCFLS for several years
- Demand for tech assistance exceeds staff capacity
- 8% of community survey respondents depend solely on WFBPL for printing and copying.

Census indicates nearly universal presence of computers and internet in WFB. Those who rely on the library lack skills rather than home access.

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Value & Efficiency

- Lowest municipal cost per circulation in MCFLS for last several years.
  - 2025 MCFLS range: $3.94 (WFB) - 7.94 (HC); 31.99 (MK); avg $7.36
  - 3rd lowest in State of WI (2024 data)
- 84.1% of budget funded by property taxes (2026 Budget)
  - Member Reserve Fund 6.9%
  - Friends donations 4.4%
  - Fines & fees 2.1%
  - Room rent and copier fees 0.9%
  - Other Donations & grants 0.9%
  - Woman's Club donations 0.7%

We are adequately funded for a community our size, but we are under funded for our level of use.

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Valuable, Hard-Working Staff

- Vastly under-staffed for rate of use = burn out
  - 2025: 2nd highest circulation rate per staff member in MCFLS (23,825 per FTE)
  - MCFLS average 15,956
  - Adjusted for average, WFBPL should have 17 FTE instead of 11.
    - *Hard to tell the public to use us less*
- Wages at MCFLS suburban average.
  - Dependent on PT staff with no benefits, leads to turnover and impacts morale for some staff

Other Village of WFB departments rely on full-time staff with benefits.

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2025 Staff Survey

- 90% survey participation
- Feedback indicated:
  - Strong teamwork & pride in serving community
  - Highly engaged and collaborative culture
  - Frustration with reliance on part-time staff with no benefits, compared to other depts
  - Actionable suggestions:
    - Improve office space for privacy
    - Improve cross department communication
    - Adjusted shelver and reference assistant wages in 2026 to align with suburban average

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2025 Community Survey

- 803 Survey respondents
  - 90% visit monthly or more often
- Patrons LOVE the library and staff.
  - 97% positive experience with library and staff
- Top Desired Improvements:
  - Shorter wait times for popular titles
  - More study rooms
  - More formats (i.e., digital + physical)
  - 19% interest in non-English materials

Our patrons appreciate what we do, visit us often, & have good feelings about us. We support a wide range of needs and interests.

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Community Survey (cont.)

- Distinct patterns of usage based on demographics, such as ages in home, owner vs. renter, employment status.
  - No patterns found based on respondent race or ethnicity.
- Patrons would also like:
  - Sunday hours year-round
  - Evening or weekend programming
  - More bike parking
  - Better snow removal from curbs
  - Return of Keurig machine

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Facilities: 24 years later

- 24,000 sq ft, appropriate size for community
- Highest visits per resident = significant wear & tear
- Recent Village CIP: roof, fire suppression, boiler, solar
- Needed functional updates: study rooms, staff space, 2nd floor public restroom, accessibility updates

Neighboring libraries

- Brown Deer - Renovation of donated building in 2021
- North Shore - New library in 2026
- Shorewood - Planning renovation of 2002 building

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SWOT Analysis

Helpful

Harmful

STRENGTHS

- Excellent Staff & Customer Services
- Attractive, centrally located Building
- Higher than average open hours
- High-quality collections, with strong Fund 22 investment
- Popular Programming, especially Youth Services
- Creativity & Flexibility & Steady Leadership
- Commitment to diverse materials & viewpoints
- Lockers, self-checkout & Take & Tinker collection
- Potential for space changes could improve functionality

OPPORTUNITIES

- Continued strong Community support, interest & engagement
- Leadership & staff professional development
- Increasing community diversity means new ideas & programming
- Friends Support, growing Foundation and Woman's Club support
- Great reputation
- Technology could increase efficiencies
- Increased demand for social connections, clubs, and intergenerational programs
- Member Reserve Fund income (for now)

WEAKNESSES

- Significant Space Constraints
- Building showing its age
- High renovation costs & complex bidding processes
- Leanly staffed
- Reliance on PT staff without benefits, turnover
- Digital holds & wait times
- High demand+average staffing = overextended & limited capacity
- Basic tech
- Heavy staff time needed for tech help
- Programming limited due to staffing & space
- Daily operations dominate, limiting long-term planning
- Underfunded collections once Fund 22 spent

THREATS

- Digital transformation & competition from streaming/subscription services
- Rising costs: digital content, materials, wages, benefits, utilities, insurance
- Broad range of patron requests/needs that exceed current capacity
- Flat WFB Village funding, nearing WFB Village levy limits
- Regional competition from new & renovated buildings
- Labor market pressures: wages, hiring, retention, benefits

Internal Factors

External Factors

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Mission

The Whitefish Bay Public Library, as a cornerstone of the community, is dedicated to connecting all people, inspiring a love of learning, and providing access to ideas, information, and resources.

Approved by WFBPL Board 2020

CONNECT PEOPLE

INSPIRE LEARNING

PROVIDE ACCESS

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Guiding Principles

We will:

- Provide a welcoming place for all who enter
- Interconnect and engage our community
- Be flexible, creative and forward-looking
- Support an informed public
- Offer an exceptional workplace
- Follow a thoughtful and measurable approach

Approved by WFBPL Board 2020

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Strategic Plan Goals

1. Strengthen Connection and Belonging
2. Deliver Responsive, High-Quality Library Services
3. Invest in an Exceptional Workplace
4. Optimize Spaces and Facilities for Community Use
5. Strengthen Connections and Community Impact
6. Ensure Financial Sustainability and Stewardship
7. Cultivate Communication, Transparency, and Engagement

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Solid Operations are Vital

- Ensure regular review of operational plans and workflows in addition to strategic plan priorities
- Operations Planning: Continuous improvement and innovation through review and revision on a regular cycle:
  - Communications
  - Technology
  - Policies & Procedures (documentation & reviews/updates all areas)
  - Collections
  - Partnerships & Collaborations

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Priority A: Increase FTE To Better Support High Usage

Supports Goals 2 & 3

2: Deliver Responsive, High-Quality Library Services

3: Invest in an Exceptional Workplace

- Based on comparison of average circ per resident, WFB should have 17 FTE. Currently 11.28 per 2026 budget book.
- Convert part-time Adult Services Librarian to full-time by 2027. (FTE 11.72)
  - Leverage 2026 wage savings
- Convert part-time Circulation Services Assistant to full-time by 2028. (FTE 12.30)
  - Explore funding options at that time
- Additional part-time hours to reach 13.30 FTE by 2029.
  - Explore funding options at that time

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Priority B: Develop & Implement Facilities Plan

Supports Goals 4 & 6

4: Optimize Spaces and Facilities for Community Use

6: Ensure Financial Sustainability and Stewardship

- Pre-Design Study by Architect
  - Funded by Fund 13 Fund Balance
- RFP to 3-4 firms
- Consultation with Village staff
- Library Board to approve requests to Village Board for large projects
- Library to manage small projects

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Priority C: Develop Financial Plan

Supports Goals 6 & 7

6: Ensure Financial Sustainability and Stewardship

7: Cultivate Communication, Transparency, and Engagement

Incorporate impacts of:

- Levy limits
- Member Reserve Fund (aka Reciprocal Borrowing)
- Friends of WFBPL contribution ($40k-70k/yr)
- Increasing WFBPL Foundation ($6k) and WFB Woman's Club ($4k) contributions

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Q&A

Appendix

Whitefish Bay Demographics

- 14,750 Residents, 5,444 Households (HHs) (avg. 2.7 people per household)
- 71% Married (age 15+)
- Housing:
  - 81% Owner-Occupied Housing, 84% Single Units
  - 74% Moved to Home More than 7 Years Ago
- $154,255 Median Household Income (Approx. twice the metro area's)
- Working:
  - 25% Work from Home, 21.6 minute avg commute
  - Among HHs with kids <18: 70% have 2+ workers
  - Among HHs with no kids: 53% 2+ workers, 27% no workers
- In Milwaukee County:
  - 2nd smallest square mile area & 2nd highest density (Shorewood #1 for both)
  - 2nd highest percent married
  - Highest percent of under age 5 and under 18
  - Lowest percentage of ages 65-69

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Source: 2023 ACS Census Estimates

Diverse WFB Needs

- 1.0% are not high school graduates (lowest in county), 17% have high school or some college (lowest), 39% have bachelor degree, 43% have post grad degree (highest) (more educated since 2021)
- 2.3% of households have no computer, 2.9% no broadband Internet (down significantly)
- 29.6% of age 16+ not in labor force, and highest % of working women in Milwaukee Co
- 18.1% are BIPOC/POC (Black, Indigenous & People of Color) (higher since 2021)
- 4.3% under 65 have a disability (same as 2021)
- 2.6% veterans
- 3.8% live in poverty (family of 4 HH income <$32,150) (slightly higher)
- 9.3% speak a language other than English at home (down from 2021)
- 6.7% are foreign-born, 4.4% not US citizens (down from 2021)
- 3.5% est. of Milwaukee metro area (MSA) population identifies as LGBTQ (from 2021)

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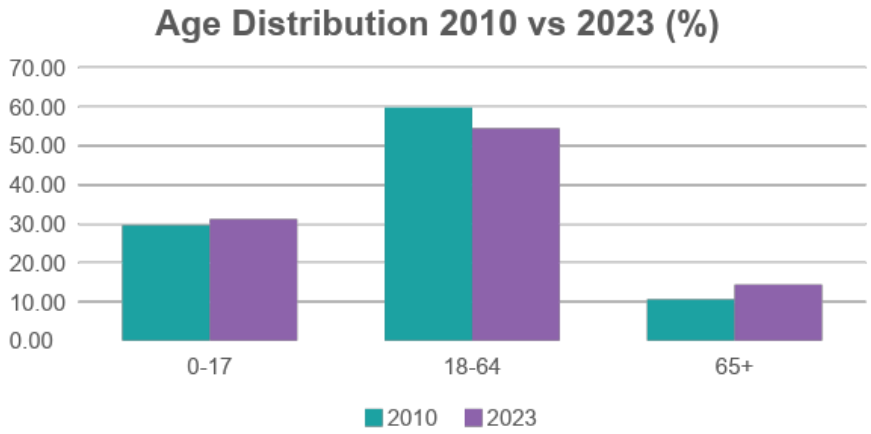
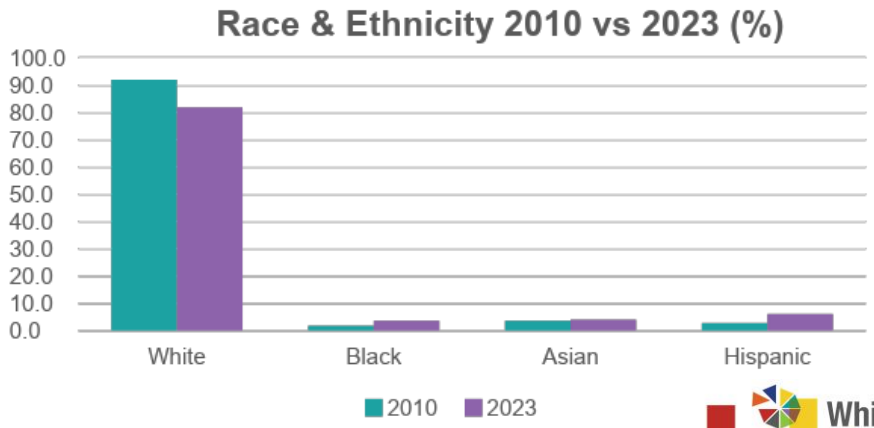
Sources: 2021-23 Census ACS, Williams Institute

WFB Demographic Shifts Since 2010

- Increased Racial/Ethnic Diversity
- Even More Educated
- More Tech: Fewer households with no computer or internet
- Age Shift: Fewer adults 18-64, slight growth in 0-17 year olds and 65+





Trends Expected to Continue: Increased Racial/Ethnic Diversity, Lower Birth Rates, Seniors Aging in Place, Increasing Technology

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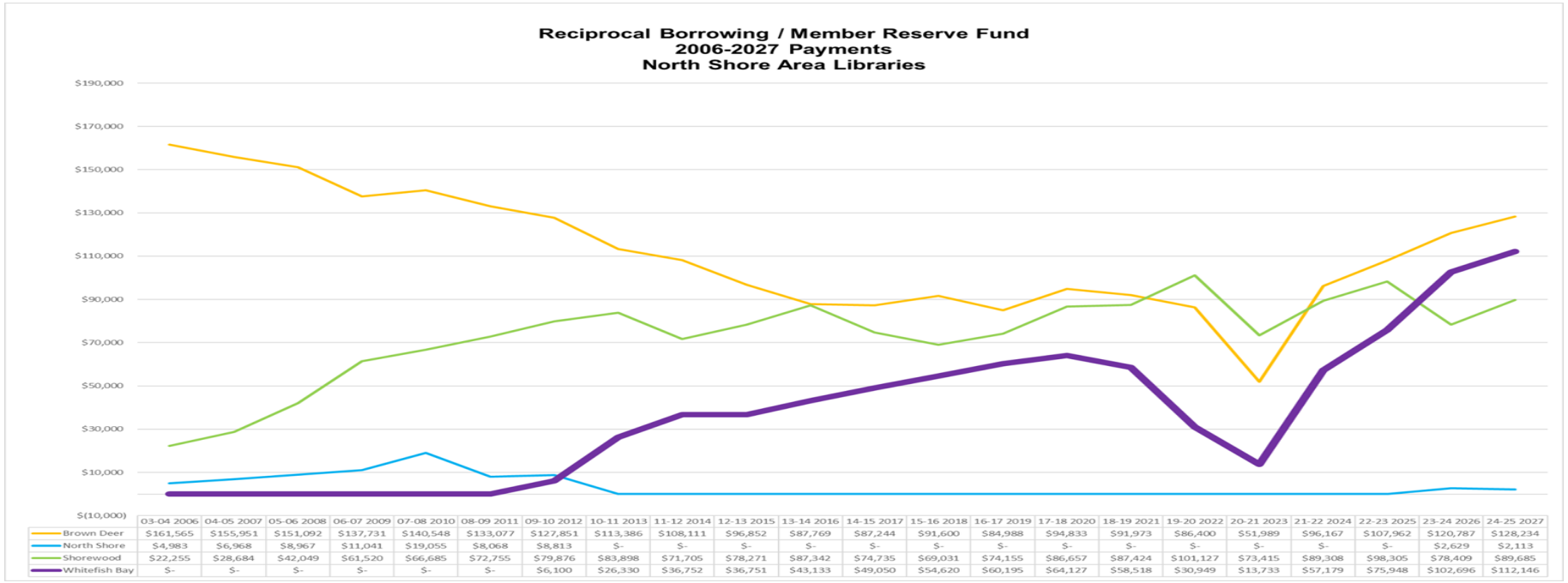
Many Users Beyond WFB Too

- Circ In-Library: In 2024, 25.8% (91,782) of our in-library circulation was from non-residents.
- Collection Use At All Libraries: Oct 2024-Sep 2025, WFB residents checked out 8,260 materials from other libraries. Residents from other communities checked out 61,112 items from WFB. This resulted in a Member Reserve Fund payment (previously called Reciprocal Borrowing) of $112,156 for 2027.



	03-04 2006	04-05 2007	05-06 2008	06-07 2009	07-08 2010	08-09 2011	09-10 2012	10-11 2013	11-12 2014	12-13 2015	13-14 2016	14-15 2017	15-16 2018	16-17 2019	17-18 2020	18-19 2021	19-20 2022	20-21 2023	21-22 2024	22-23 2025	23-24 2026	24-25 2027
Brown Deer	$161,565	$155,951	$151,092	$137,731	$140,548	$133,077	$127,851	$113,386	$108,111	$96,852	$87,769	$87,244	$91,600	$84,988	$94,833	$91,973	$86,400	$51,989	$96,167	$107,962	$120,787	$128,234
North Shore	$4,983	$6,968	$8,967	$11,041	$19,055	$8,068	$8,813	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$2,629	$2,113
Shorewood	$22,255	$28,684	$42,049	$61,520	$66,685	$72,755	$79,876	$83,898	$71,705	$78,271	$87,342	$74,735	$69,031	$74,155	$86,657	$87,424	$101,127	$73,415	$89,308	$98,305	$78,409	$89,685
Whitefish Bay	$-	$-	$-	$-	$-	$-	$6,100	$26,330	$36,752	$36,751	$43,133	$49,050	$54,620	$60,195	$64,127	$58,518	$30,949	$13,733	$57,179	$75,948	$102,696	$112,146

A key but variable source of revenue. Cuts to collection spending impacts these future revenues, so we should prioritize maintaining physical collections.

Whitefish Bay Public Library
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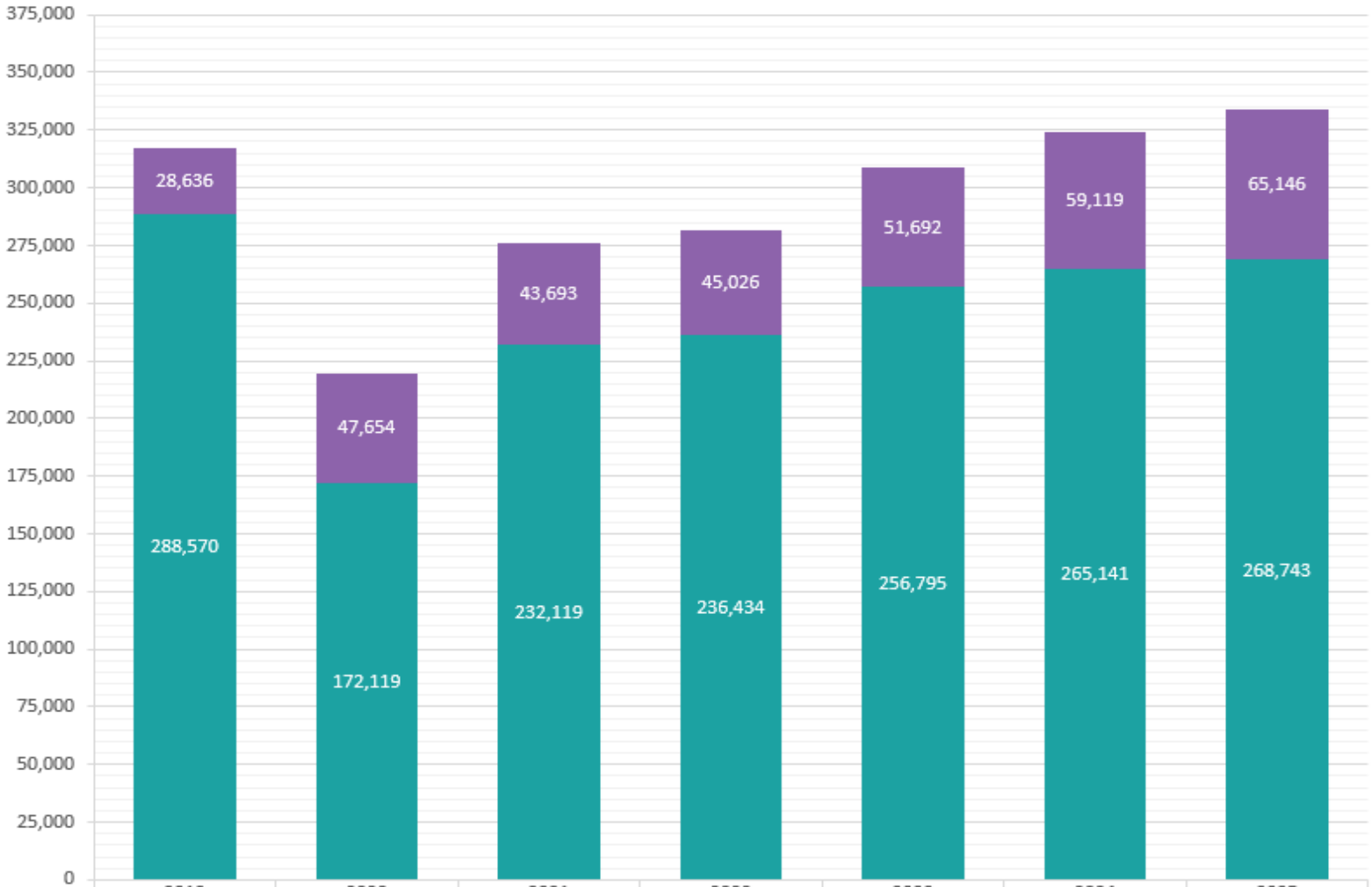
Physical & Digital Checkouts



	2019	2020	2021	2022	2023	2024	2025
DIGITAL CIRCULATION	28,636	47,654	43,693	45,026	51,692	59,119	65,146
PHYSICAL CIRCULATION	288,570	172,119	232,119	236,434	256,795	265,141	268,743

All circulation is up post-pandemic. Digital is increasing as a percentage, and costs more per title.

Whitefish Bay Public Library
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Collection Use Insights

- WFB Collection - Turnover 3.5
  - Industry benchmarks define average turnover rate as 1.5.
  - 2nd of 34 in comp group; range 1.0-3.8, Avg 2.3
  - 11th of 382 in WI; range 0.06-5.8, Avg 1.5
- Take & Tinker - Turnover 9.7
- Youth Fiction – Turnover 3.6.
  - Focus on growing by moving Adult Music & DVDs to North Wing.
- DVDs & Blu-rays – Turnover 2.0
- Adult Fiction – Turnover = 1.9
  - Focus on new titles and replacing worn classics.
- Non-Fiction – Turnover Adult 1.2; Youth 1.9
  - Strategically shrink collection in low use areas and grow high use areas.
- Music CDs – Turnover 1.1
  - Maintain high use genres.

Regular evaluation of our collection helps us maximize space and budget, and helps us respond to demand trends.

Whitefish Bay Public Library
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Public Spaces Insights

- Community Room
  - Regularly used for library and community group programs.
  - Fits up to 100 people (uncomfortably). Limits ability to bring in highly popular presenters and authors.
- Study Rooms
  - Two current rooms insufficient to meet demand, especially with growth of tutoring and work from home.
- Shared Needs & Spaces
  - Community survey and anecdotal data indicate ongoing conflicting demands for quiet space vs space for group work or exploration which tend not to be quiet.

Whitefish Bay Public Library
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Adaptable and multi-purpose spaces are challenging.

Children/Youth/Teen Experiences

- Tech Usage
  - Youth Services computers are primarily used by tweens after school for gaming and socializing. Provides a safe space, but can be noisy. No "quiet area."
- Space Needs
  - Significant space dedicated to youth and teens. Most libraries our size offer much smaller spaces.
  - Story Time Room renovated in 2024 thanks to a donor, providing a much more welcoming space. Furniture in south wing and youth tower updated in 2023 and 2025 thanks to Friends of WFBPL.

Issues Facing Libraries Nationally

- Aging Population: More services for 60+, aging in place, dementia and health support.
- Rising Digital Costs: Pay-per-use models strain budgets.
- Youth Reading Growth: Increased reading among 13–40-year-olds, driven by smartphones and social media.
- AI Disruption: Rapid change creating uncertainty and opportunity.
- Budget Pressures: Tight funding and aging infrastructure require efficiency and tough choices.
- Library of Things Demand: Growing interest in tools, games, passes; adds processing and maintenance work.
- Accessibility & Inclusion: Expanding equitable access, welcoming spaces, and diverse perspectives.
- Intellectual Freedom and Information Literacy: Navigating book challenges, legislation, misinformation, and media bias.

Whitefish Bay Public Library
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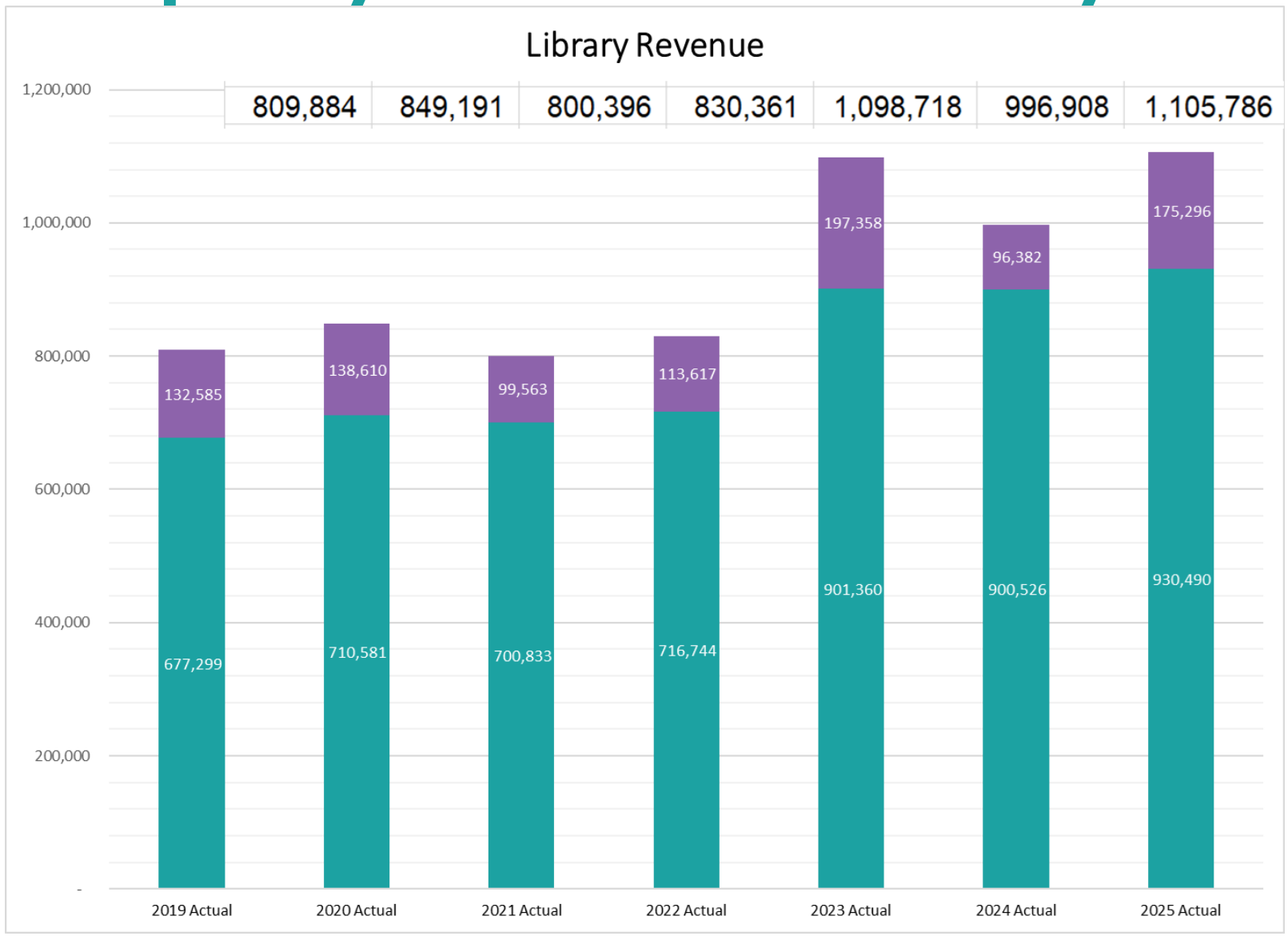
Property Taxes & Library Revenue



Property taxes cover the majority of Library expenses, but other revenue and donations are vital for programming, collections, and other enhancements. Non-property tax revenue and donation streams gradually increasing.

Whitefish Bay Public Library
excite your mind.

Village of Whitefish Bay Public Works Department
155 W. Fairmount Ave • Whitefish Bay, Wisconsin 53217 • (414) 962-6690 • Fax (414) 967-1391

Mathew Collins, Director of Public Works

April 6, 2026

Memo to: President Kevin Buckley and the Village Board of Trustees
From: Matthew Collins, Director of Public Works
Re: Sendik's Stormwater Public Improvements

The Village recorded 9.2" of rainfall during the storm event on August 9th – 10th which was categorized as a 1,000-year flood event (.01% chance of occurring in any given year). The DPW worked to mitigate the storm recovery with the necessary operational resources to assist with cleanup efforts immediately following the storm. In December, 2025 a presentation was given to the Public Works Committee to recap the flood event, showcase past storm and sanitary sewer improvement projects, and offer feedback on future continuous improvement recommendations. In March, 2026, the Public Works Committee and Village Board approved a study to give the Village guidance and recommendations to future operational and capital stormwater and sanitary sewer improvements.

In addition to these measures, village staff have also been responsive to resident concerns due to the flooding event including the residents of the 450 E. Beaumont and 330 E. Beaumont condominiums, known as La Casa. During the Sendik's Public Improvement public comments, residents of the La Casa condos expressed issues with their underground parking structure flooding during major storm events. The residents requested for the Village to review their flooding concerns, especially in light of development and public improvements planned in close proximity to the properties. Village staff initially met with members of La Casa on site on October 1st, 2025 to review their concerns and start to assist with the root causes of why both parking structures were receiving heavy flooding. Village staff requested assistance from Sigma to help guide the Village and La Casa on measures that can be taken to improve stormwater and sanitary sewer management during major storm events. DPW and Sigma's engineers worked collaboratively to review surveys, historical stormwater management reports, topography surveys, resident interviews, CCTC/televising of storm and sanitary utilities, site visits, and final QA/QC by the Village Engineer. These investigations were used to develop a report and recommendations as shown within the packet. Many of the found factors relating the La Casa's parking structure flooding issues were not known during the initial recommendations for public improvements to the Sendik's project.

Based on this initial evaluation, no single definitive cause of flooding can be identified. The most likely contributing factors include:

- Storm sewer surcharge and localized surface flooding
- Depressed garage elevations relative to roadway
- Back-pitched driveway and sidewalk areas
- Interior plumbing configuration without backflow protection

The report highlights a shared responsibility for both public and private improvements as shown in the report's recommendations. A summary of the recommendations include:

- Installation of additional storm sewer inlets and/or upsizing storm sewer in Beaumont Avenue adjacent to and east/south of the site
- Removal and reconstruction of the west building driveway approach to correct back-pitch conditions
- Removal and replacement of sidewalk, and re-grading adjacent to the east building

- Evaluation and reconfiguration of interior plumbing systems, including:
    - Installation of backflow prevention devices
    - Elimination of direct storm sewer connections (e.g., gooseneck configurations)
    - Other protective modifications as appropriate

Per Sigma's report's recommendations, village staff directed the Sendik's design team with Clark Dietz to submit a proposal for additional design services to add a new storm sewer main to run parallel to the existing storm sewer on Beaumont from Counsell to Lake Drive within the Sendik's public improvement project area. In addition, Clark Dietz will run calculations to show what benefits the improvements will make to the area so the Village can verify the cost/benefit to the project scope.

The preliminary total cost for design and construction is $100,000 based on bid unit pricing received for the public improvements. The storm sewer design and construction project costs can be covered either through TID #3 or within the approved Capital Improvement Plan (CIP) stormwater utility.

As part of the Sendik's Public Improvements, the Village Board approved TID #1 borrowed funds to support public improvements for the development project. Within the initial project scope, $200,000 was initially earmarked for traffic synchronization that was not recommended in the final plans. The traffic synchronization cost savings could be leveraged to pay for the stormwater improvements within the TID #1 borrow.

If there is not a desire by the Board to use TID funds, the Village Board adopted a 6-year CIP that includes $400,000 in the 2026-2027 CIP budget for Storm Sewer Main & Manhole Repair/Lining. Based on approved projects, there is over $300,000 in unallocated storm sewer capital funds that can be partially used for this improvement.

Refer to attached documents for additional project information.

Village staff recommends to the Village Board:
To approve the design and construction of a new storm sewer main as part of the Sendik's Redevelopment Public Improvements leveraging unallocated funds from the TID #1 Traffic Synchronization project.

March 18, 2026 Project Reference #23108

Mr. Matthew Collins
Director, Department of Public Works
Village of Whitefish Bay
155 W Fairmount Avenue
Whitefish Bay, WI 53235

Re: La Casa Condominiums
450 & 330 E Beaumont Avenue | Whitefish Bay, Wisconsin
Flooding Evaluation

Dear Mr. Collins,

Introduction

At the request of the Village of Whitefish Bay (Village), The Sigma Group, Inc. (Sigma) conducted an initial evaluation of lower-level flooding that occurred at La Casa Condominiums during the significant rainfall event on August 9–10, 2025.

Information Reviewed

As part of this evaluation, Sigma completed the following:

- Site interview with Condominium and Village representatives
- Reviewed documentation provided by the Village, including:
  - GIS mapping of adjacent utilities (Attachment 1) and topography (Attachment 2).
  - Beaumont Place Apartments (401 E Beaumont) civil and stormwater design documentation (Attachment 3).
- Site visit and limited topographic survey, completed by Sigma along Beaumont Avenue (Attachment 4).
- Reviewed documentation provided by the Village from the resident at 338 E Beaumont Avenue.

Information Provided by Condominium Representatives

During the August 2025 rainfall event, both condominium buildings experienced flooding in the lower-level parking garages:

- **450 E Beaumont (East Building):** Approximately 4 feet of water
- **330 E Beaumont (West Building):** Less than 2 feet of water

The flooding resulted in building and vehicle damage, particularly in the east building.

Condominium representatives indicated that the buildings have experienced basement flooding during prior significant rainfall events; however, detailed documentation of previous flood depths was not available. Some interior plumbing modifications have reportedly been completed, though specific details were not provided for review.

Documentation from Village GIS Mapping System

Based on Village GIS data:

- A 15-inch sanitary sewer runs east–west in Beaumont Avenue at an approximate depth of 9–10 feet.
- A 15-inch storm sewer runs west–east in Beaumont Avenue at an approximate depth of 6 feet. Inlets are located at the corners of Marlborough and Consaul and at one intermediate location.
- A 24-inch storm sewer runs north–south along the east side of the condominiums in N Consaul Place at an approximate depth of 5 feet.
- A storm sewer is located in the alley north of the east condominium building, running west–east. Pipe size and depth were not confirmed in the available documentation.

Beaumont Place Apartments (401 E Beaumont) Documentation

The Beaumont Place Apartments are directly south of the condominiums and were developed around 2014–2015. During development of Beaumont Place Apartments, a stormwater management plan was prepared by DAAR Engineering, Inc. (DAAR) (Attachment 3). The design incorporated roof detention to slightly reduce proposed runoff rates compared to existing conditions.

As part of project approval, the existing public storm sewer was relocated from the former parking lot area to the adjacent alley south of the Apartments. A design memorandum prepared by DAAR documented the design parameters and system evaluation (Attachment 3).

That analysis concluded:

- The existing storm sewer in Beaumont Avenue was undersized and surcharged during low-intensity (2-year) rainfall events.
- The relocated storm sewer in the alley reduced surcharging in Beaumont Avenue, but did not eliminate it.

Site Visit & Survey Observations

450 E Beaumont (East Building)

- Basement parking floor elevation is approximately ±645.2,roughly 3 feet below adjacent roadway elevation.
- A trench drain is located at the base of the driveway and appears to discharge to a sump pump.
- Multiple garage floor drains are present and are likely connected to the sanitary lateral.
- The driveway apron is properly pitched away from the garage entrance.
- The sidewalk adjacent to the driveway is lower than the curb and slightly pitched back toward the building.
- Roof drainage appears internally piped to the north side of the building, with two storm sewer pipes (approximately 4–6 inches in diameter) potentially connecting to the Village storm sewer in the alley.

330 E Beaumont (West Building)

- Basement parking floor elevation is approximately ±645.2, roughly 3 feet below adjacent roadway elevation.
- A trench drain at the base of the driveway appears connected to a sump pump.
- Garage floor drains likely connect to the sanitary lateral.
- The driveway apron is pitched back toward the building, allowing runoff from the roadway to flow down the ramp toward the lower level.
- Roof drains extend below grade and appear to connect to a private storm system with manholes. A private storm sewer exists at the southeast corner of the site; however, the interconnections between roof drains, the private system, and the Village storm sewer to the south are unclear.

Resident Information – 338 E Beaumont Avenue

The resident (owner for approximately 5 years) was out of town during the August storm and returned the following Sunday morning.

His observations include:

- Minor pond formation in isolated areas within the basement, consistent with previous events.
- No significant property damage.
- No indication of sanitary sewer backup through the floor drain.
- Approximately 4 inches of water in the garage.
- Although not directly related to the residence, he did observe an exterior water line approximately 4 feet above the garage floor on the east building following the storm.

Initial Flooding Analysis

Potential Sanitary Sewer Impacts

Based on available information, it does not appear that the basement flooding was solely caused by surcharge of the public sanitary sewer.

To produce approximately 4 feet of water in the east building basement, the sanitary sewer in Beaumont Avenue (approximately 9–10 feet deep) would have needed to surcharge more than 9 feet above the pipe crown. Such a condition would likely have resulted in widespread impacts to adjacent properties, especially for the resident at 338 E Beaumont reported only minimal basement water and no evidence of sanitary backup.

Additionally, if sanitary surcharge were the primary cause, similar flooding depths would be expected in both condominium buildings. Reported flooding depths differed by approximately 2–3 feet between buildings.

Potential Storm Sewer and Drainage Impacts

There is potential that storm sewer surcharging and localized surface flooding contributed to the event.

Previous analysis by DAAR documented that the Beaumont Avenue storm sewer is undersized and surcharges during relatively small (2-year) rainfall events. During larger storm events, system surcharge could:

- Contribute to surface flooding at low points
- Back up through connected roof drain systems
- Limit drainage capacity at inlets

Review of Milwaukee County GIS topography indicates that the intersection of Beaumont and Consaul functions as a local low point within a broader drainage area. During significant rainfall, bypass flow from upstream inlets may accumulate at this location.

If ponding depths at the intersection exceeded approximately 18 inches, surface flow could enter the depressed driveway of the east building. Photographs provided by the adjacent resident show exterior watermarks on the east building garage doors consistent with potential surface flooding.

Potential Private Utility and Grading Impacts

Sigma did not receive detailed information regarding interior plumbing configurations; therefore, conclusions regarding private infrastructure are limited.

Key observations include:

- Both garage floors are approximately 3 feet below curb elevation.
- The west building driveway is pitched back toward the garage, increasing susceptibility to surface inflow from the roadway.
- The east building driveway is properly pitched; however, adjacent sidewalk and greenspace areas are pitched back toward the building, potentially directing ponded right-of-way water toward the trench drain.
- No backflow prevention devices were observed on sanitary or storm service connections.

Absence of backflow prevention increases the potential for exterior system surcharge to result in internal flooding.

Conclusions & Recommendations

Based on this initial evaluation, no single definitive cause of flooding can be identified. The most likely contributing factors include:

- Storm sewer surcharge and localized surface flooding
- Depressed garage elevations relative to roadway
- Back-pitched driveway and sidewalk areas
- Interior plumbing configuration without backflow protection

Potential improvements to mitigate future flooding include:

- Installation of additional storm sewer inlets and/or upsizing storm sewer in Beaumont Avenue adjacent to and east/south of the site
- Removal and reconstruction of the west building driveway approach to correct back-pitch conditions
- Removal and replacement of sidewalk, and re-grading adjacent to the east building
- Evaluation and reconfiguration of interior plumbing systems, including:
    - Installation of backflow prevention devices
    - Elimination of direct storm sewer connections (e.g., gooseneck configurations)
    - Other protective modifications as appropriate

Further hydraulic modeling and detailed plumbing investigation would be required to develop a final design solution.

If you have any questions or require additional analysis, please contact us.

Respectfully submitted,

THE SIGMA GROUP, INC.

Christopher Carr, PE
Vice President
ccarr@thesigmagroup.com

John Edlebeck, PE
Municipal Group Leader
jedlebeck@thesigmagroup.com

Attachments:

1. Whitefish Bay Utility GIS
2. Milwaukee County GIS Contours
3. Beaumont Place Plans
4. Limited Survey

THE SIGMA GROUP

Single Source. Sound Solutions.

Whitefish Bay Utility GIS

1

Village of WhitefishBay GIS

SCALE: 1" = 100 '

Village of Whitefish Bay
155 W. Fairmount Ave
Whitefish Bay, WI 53217-5399
414-962-6690

Print Date: 2/9/2026

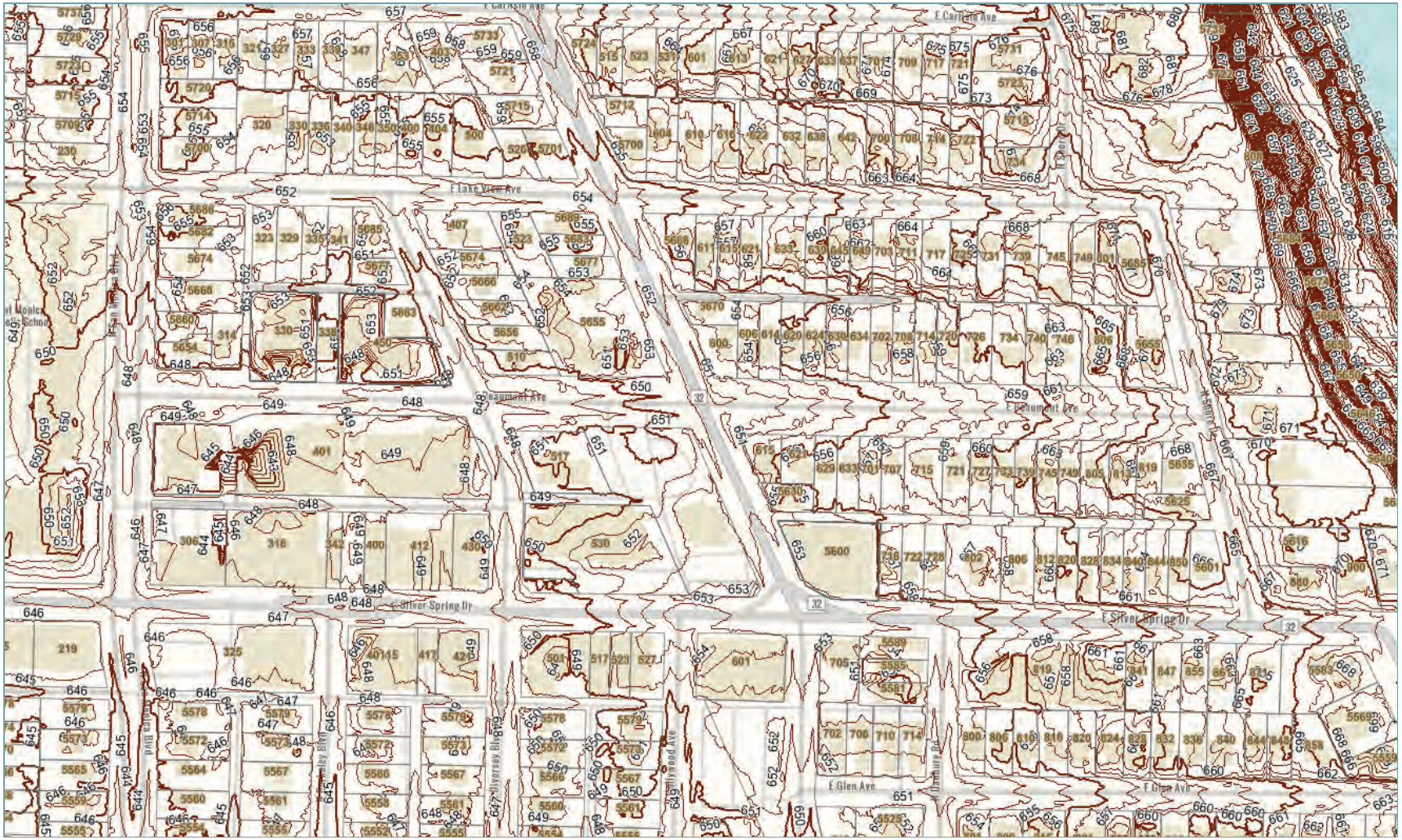
THE SIGMA GROUP

Single Source. Sound Solutions.

2

Milwaukee County GIS Contours

Map Title



Legend

- Parcels
  - Tax Parcels
- Administrative
  - Municipal Boundaries
- Topographic
  - Contour_Ln
    - Index
    - Intermediate

Notes

0 500 1000 ft

MILWAUKEE COUNTY GIS AND LAND INFORMATION

THE SIGMA GROUP

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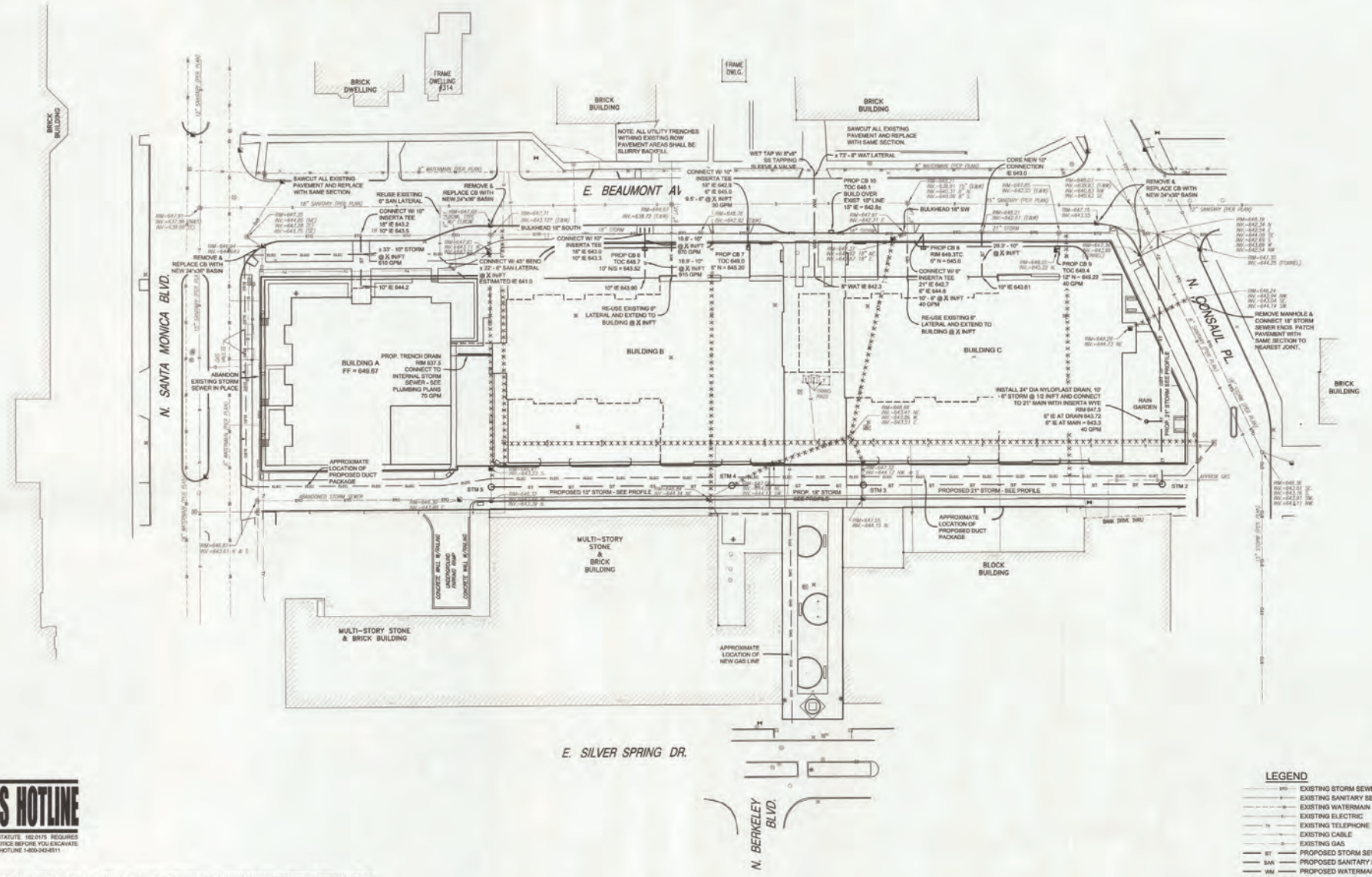
3

Beaumont Place Plans



DIGGERS HOTLINE

WISCONSIN STATE STATUTE 182.0175 REQUIRES THREE WORK DAYS NOTICE BEFORE YOU EXCAVATE. CALL DIGGERS HOTLINE 1-800-242-8511

NOTES:
1. THE LOCATION AND SIZE OF UNDERGROUND STRUCTURES AND UTILITIES SHOWN HEREON HAVE BEEN LOCATED TO A REASONABLE DEGREE OF ACCURACY, BUT THE ENGINEER DOES NOT GUARANTEE THEIR EXACT LOCATION OR THE LOCATION OF OTHERS NOT SHOWN. CONTACT DIGGERS HOTLINE.
2. ALL SITE GRADING ACTIVITY AND EROSION CONTROL MEASURES SHALL COMPLY WITH THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES CONSTRUCTION SITE EROSION AND SEDIMENT CONTROL TECHNICAL STANDARDS (1056-1075). ALL EROSION CONTROL MEASURES MUST BE IN PLACE BEFORE CONSTRUCTION BEGINS AND SHALL BE MAINTAINED DURING CONSTRUCTION.

LEGEND

STO	EXISTING STORM SEWER
SAN	EXISTING SANITARY SEWER
W	EXISTING WATERMAIN
E	EXISTING ELECTRIC
TH	EXISTING TELEPHONE
C	EXISTING CABLE
G	EXISTING GAS
ST	PROPOSED STORM SEWER
SAN	PROPOSED SANITARY SEWER
WM	PROPOSED WATERMAIN
XXXXXXX	INDICATES UTILITY TO BE REMOVED/ABANDONED

DAAR ENGINEERING, INC.
ENGINEERS PLANNERS SURVEYORS
325 EAST CHICAGO STREET, SUITE 500
MILWAUKEE, WI 53202
PHONE (414) 225-9817 FAX (414) 225-9826
www.daarengineering.com

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Architecture | Engineering | Planning
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333 East Erie Street
Milwaukee, Wisconsin USA 53202-6095
Telephone 414.276.8200 Facsimile 414.276.7754

Beaumont Place

Whitefish Bay Apartments

03-12-13 VILLAGE COMMENTS

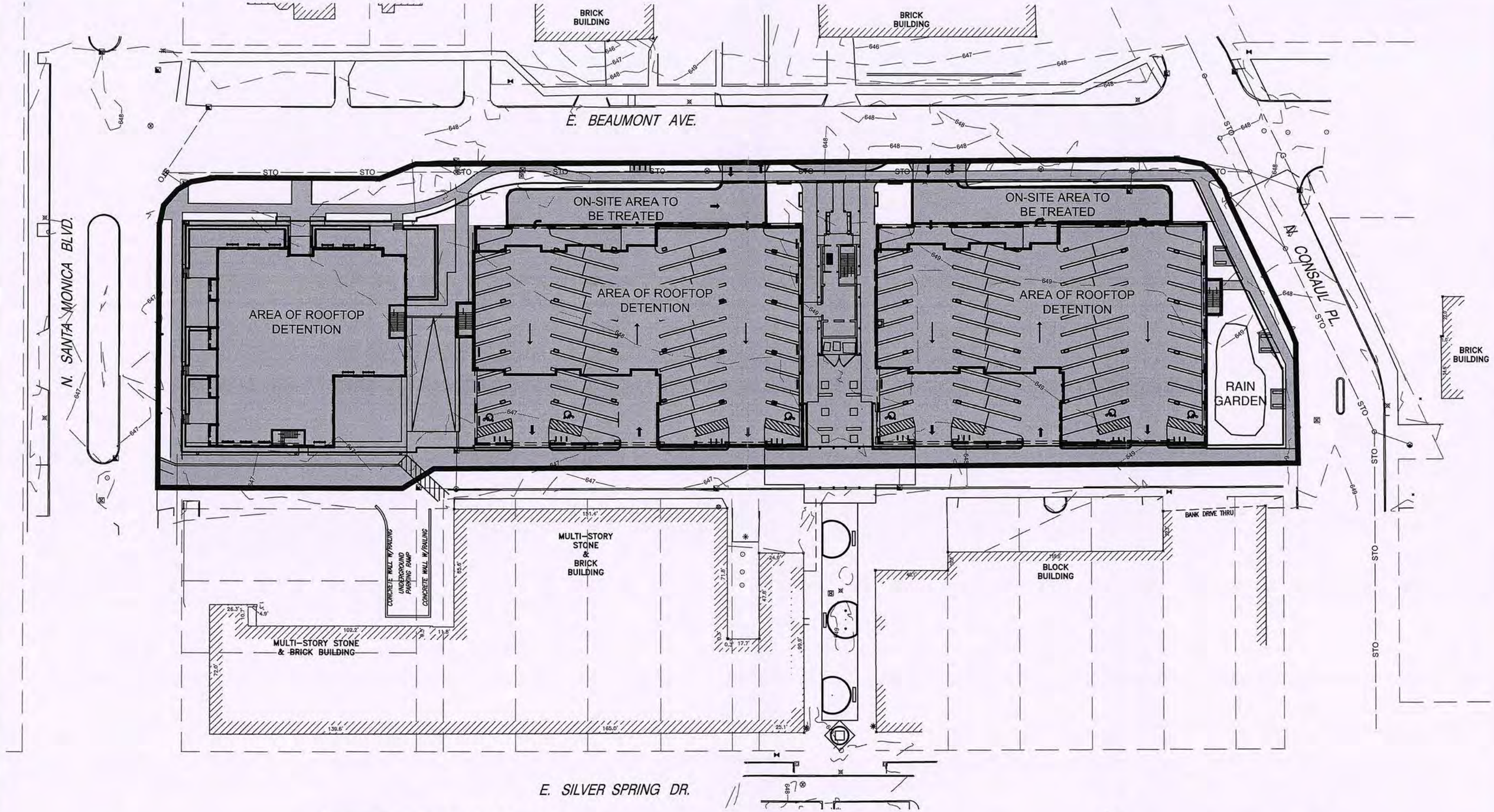
REVISION HISTORY-THIS SHEET

FOOTINGS & FOUNDATIONS

COMM. NO. 2588-012-00
SCALE 1" = 30'
DATE FEBRUARY 1, 2013
DRAWN AEK – DAAR

UTILITY PLAN

C103



INDICATES PROPOSED
IMPERVIOUS AREA = 2.1 AC

BEAUMONT PLACE RESIDENTIAL PROJECT

HYDROLOGY EXHIBIT PROPOSED CONDITIONS

DECEMBER 11, 2012

N
W E
S
1" = 50'

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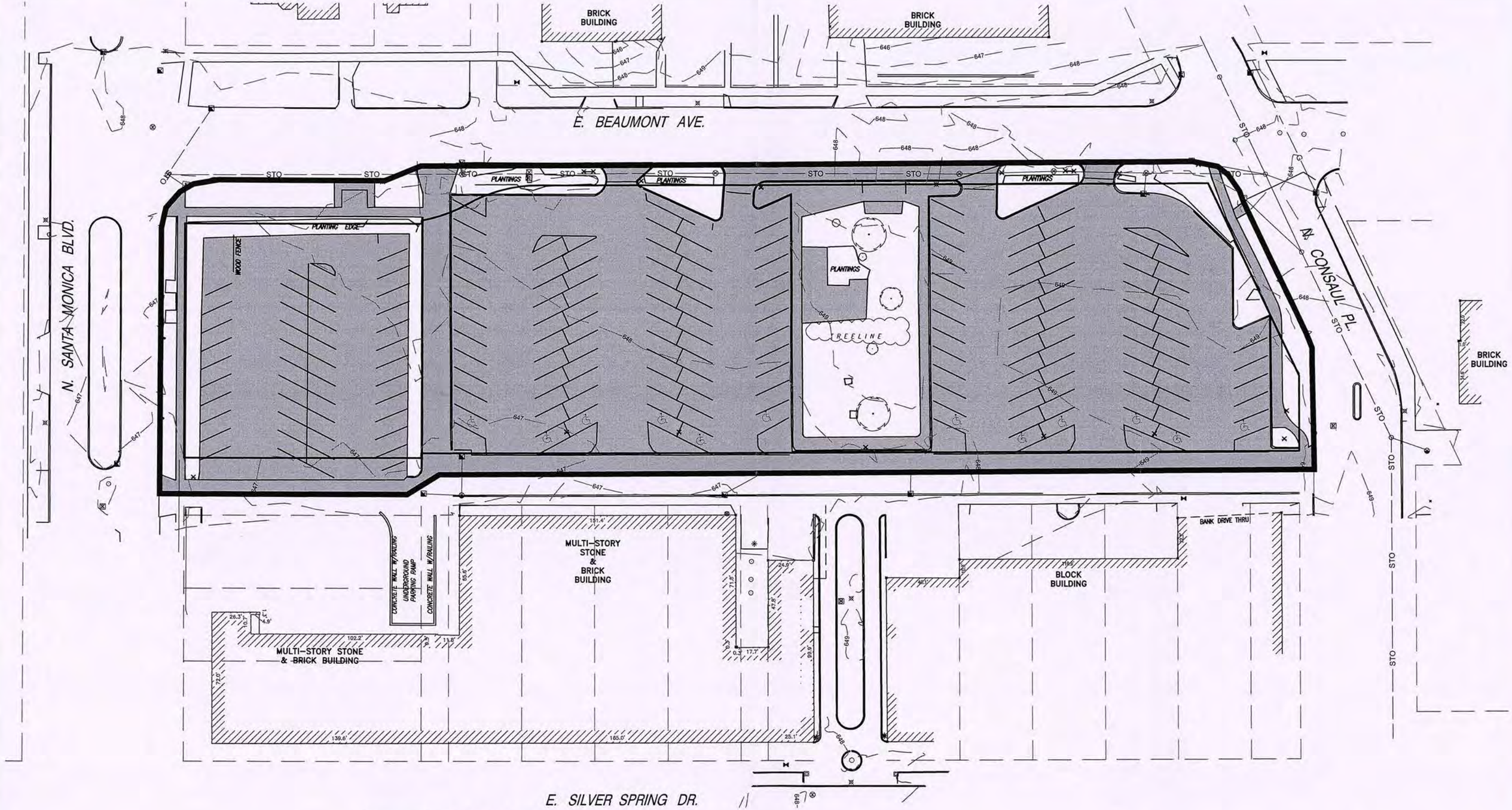

INDICATES EXISTING
IMPERVIOUS AREA = 1.95 AC

BEAUMONT PLACE RESIDENTIAL PROJECT

HYDROLOGY EXHIBIT EXISTING CONDITIONS

DECEMBER 11. 2012

N
W E
S
1" = 50'

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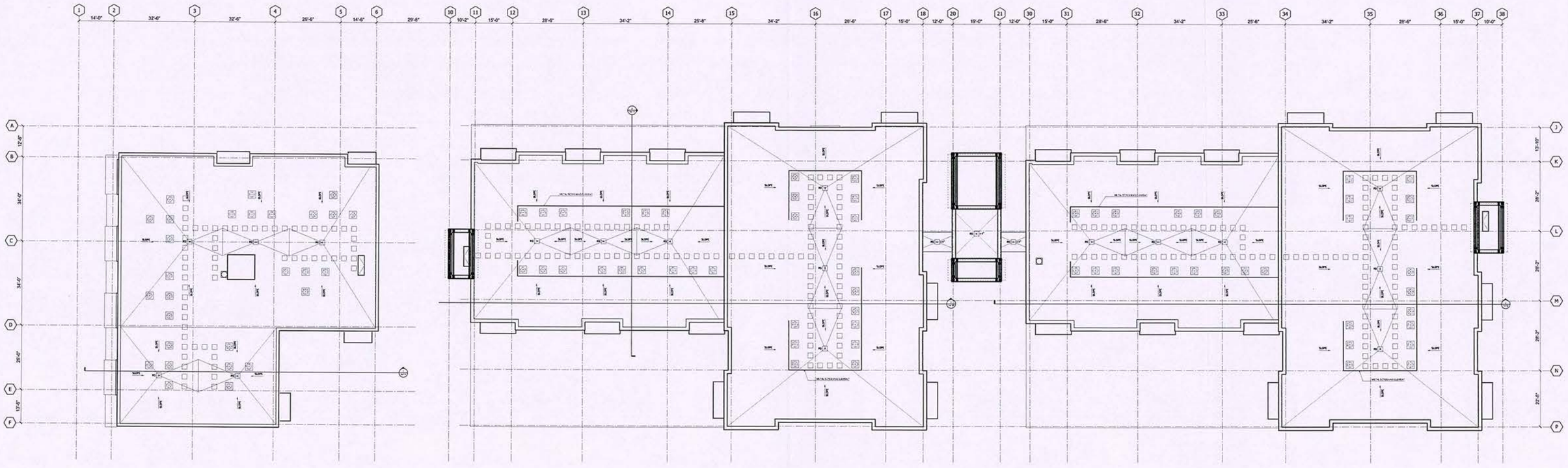
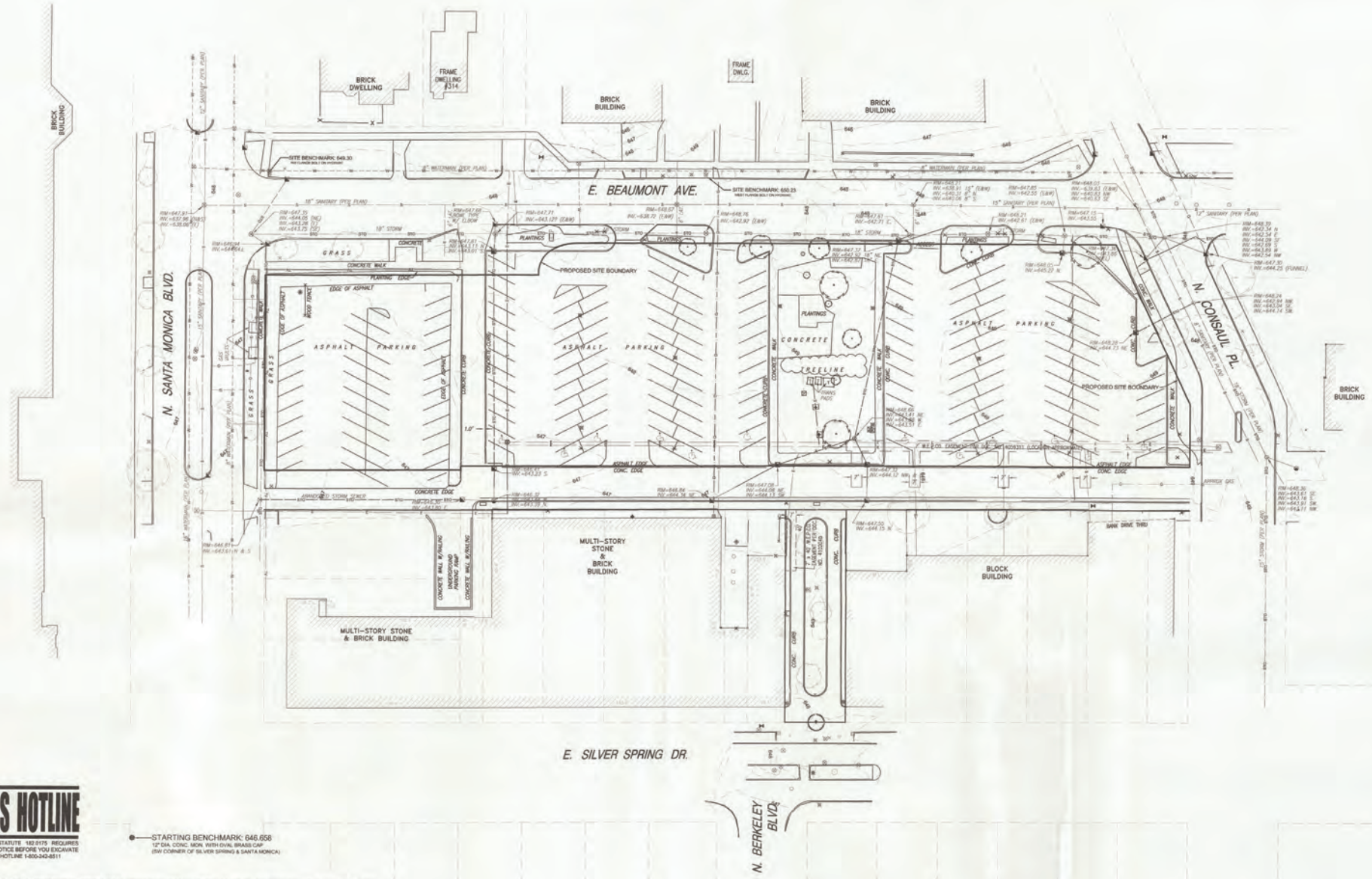


TOTAL AREA OF MAIN ROOFS = 1.0 ACRE (43,800 SF)
ROOF DRAINS ON MAIN ROOF LEVEL = 17
AVERAGE AREA TO ROOF DRAIN = 2,580 SF

OVERFLOW SCUPPERS TO BE PROVIDED FOR EMERGENCY OVERFLOW. SCUPPER HEIGHT TO BE A MINIMUM OF 6" ABOVE ROOF DRAINS. LOCATIONS TO BE DETERMINED.

PRELIMINARY ROOF PLAN

1" = 40'+/-



DIGGERS HOTLINE

WISCONSIN STATE STATUTE 182.0175 REQUIRES THREE WORK DAYS NOTICE BEFORE YOU EXCAVATE
CALL DIGGERS HOTLINE 1-800-242-8511

STARTING BENCHMARK: 646.658
12" DIA. CONC. MON. WITH OVAL BRASS CAP
(SW CORNER OF SILVER SPRING & SANTA MONICA)

NOTES:
1. THE LOCATION AND SIZE OF UNDERGROUND STRUCTURES AND UTILITIES SHOWN HEREON HAVE BEEN LOCATED TO A REASONABLE DEGREE OF ACCURACY, BUT THE ENGINEER DOES NOT GUARANTEE THEIR EXACT LOCATION OR THE LOCATION OF OTHERS NOT SHOWN. CONTACT DIGGERS HOTLINE.
2. ALL SITE GRADING ACTIVITY AND EROSION CONTROL MEASURES SHALL COMPLY WITH THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES CONSTRUCTION SITE EROSION AND SEDIMENT CONTROL TECHNICAL STANDARDS (1000-1070). ALL EROSION CONTROL MEASURES MUST BE IN PLACE BEFORE CONSTRUCTION BEGINS AND SHALL BE MAINTAINED DURING CONSTRUCTION.

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Beaumont Place

Whitefish Bay Apartments

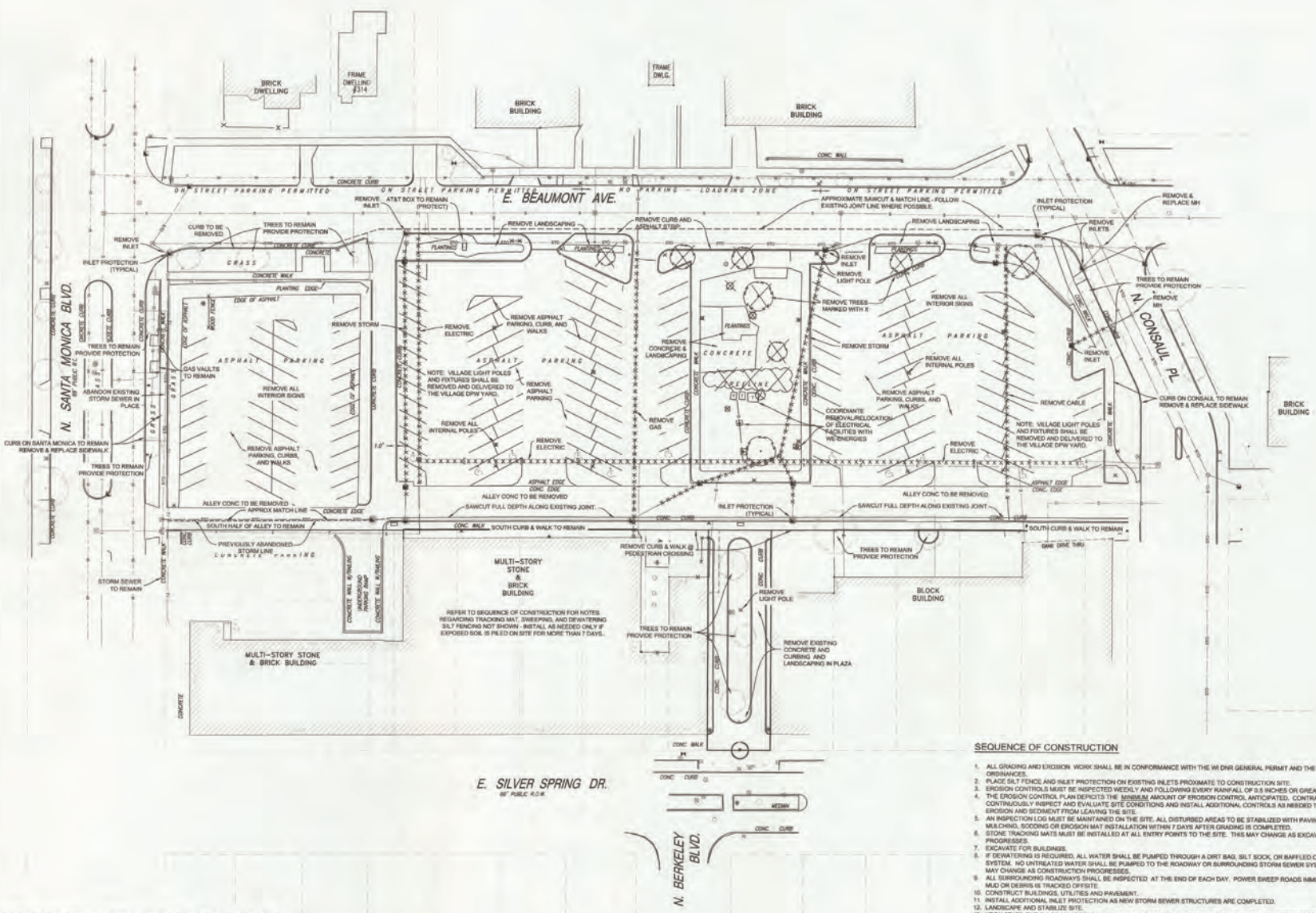
REVISION HISTORY-THIS SHEET

FOOTINGS & FOUNDATIONS

COMM. NO. 2588-012-00
SCALE 1" = 30'
DATE FEBRUARY 1, 2013
DRAWN AEK – DAAR

EXISTING CONDITIONS PLAN

C100



SEQUENCE OF CONSTRUCTION

1. ALL GRADING AND EROSION WORK SHALL BE IN CONFORMANCE WITH THE WI DNR GENERAL PERMIT AND THE VILLAGE ORDINANCES.
2. PLACE SILT FENCE AND INLET PROTECTION ON EXISTING INLETS PROXIMATE TO CONSTRUCTION SITE.
3. EROSION CONTROLS MUST BE INSPECTED WEEKLY AND FOLLOWING EVERY RAINFALL OF 0.5 INCHES OR GREATER.
4. THE EROSION CONTROL PLAN DEPICTS THE MINIMUM AMOUNT OF EROSION CONTROL ANTICIPATED. CONTRACTOR SHALL CONTINUOUSLY INSPECT AND EVALUATE SITE CONDITIONS AND INSTALL ADDITIONAL CONTROLS AS NEEDED TO PREVENT EROSION AND SEDIMENT FROM LEAVING THE SITE.
5. AN INSPECTION LOG MUST BE MAINTAINED ON THE SITE. ALL DISTURBED AREAS TO BE STABILIZED WITH PAVING, SEEDING, MULCHING, SODDING OR EROSION MAT INSTALLATION WITHIN 7 DAYS AFTER GRADING IS COMPLETED.
6. STONE TRACKING MATS MUST BE INSTALLED AT ALL ENTRY POINTS TO THE SITE. THIS MAY CHANGE AS EXCAVATION PROGRESSES.
7. EXCAVATE FOR BUILDINGS.
8. IF DEWATERING IS REQUIRED, ALL WATER SHALL BE PUMPED THROUGH A DIRT BAG, SILT SOCK, OR BAFFLED CONTAINER SYSTEM. NO UNTREATED WATER SHALL BE PUMPED TO THE ROADWAY OR SURROUNDING STORM SEWER SYSTEM. LOCATION MAY CHANGE AS CONSTRUCTION PROGRESSES.
9. ALL SURROUNDING ROADWAYS SHALL BE INSPECTED AT THE END OF EACH DAY. POWER SWEEP ROADS IMMEDIATELY IF ANY MUD OR DEBRIS IS TRACKED OFFSITE.
10. CONSTRUCT BUILDINGS, UTILITIES AND PAVEMENT.
11. INSTALL ADDITIONAL INLET PROTECTION AS NEW STORM SEWER STRUCTURES ARE COMPLETED.
12. LANDSCAPE AND STABILIZE SITE.
13. UPON STABILIZATION OF 80% OF DISTURBED AREAS A CLOSURE REPORT WILL BE FILED WITH WI DNR, WHEN APPROVED BY THE VILLAGE, RE-SEED AND MAT TURF AREAS AS REQUIRED. REMOVE ALL EROSION CONTROL MEASURES. RESTORE AREAS WHICH MAY BECOME DISTURBED BY THE REMOVAL TO EROSION CONTROL MEASURES.
14. POLYMER OR EROSION MATTING SHALL BE APPLIED TO DISTURBED AREAS LEFT INACTIVE FOR THAN MORE 30 DAYS OR AFTER OCT 15TH TO ENSURE SOIL STABILIZATION IN THE NON-GROWING SEASON.

DIGGERS HOTLINE

WISCONSIN STATE STATUTE 182.0175 REQUIRES THREE WORK DAYS NOTICE BEFORE YOU EXCAVATE
CALL DIGGERS HOTLINE 1-800-242-8511

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Beaumont Place

Whitefish Bay Apartments

03-12-13 VILLAGE COMMENTS

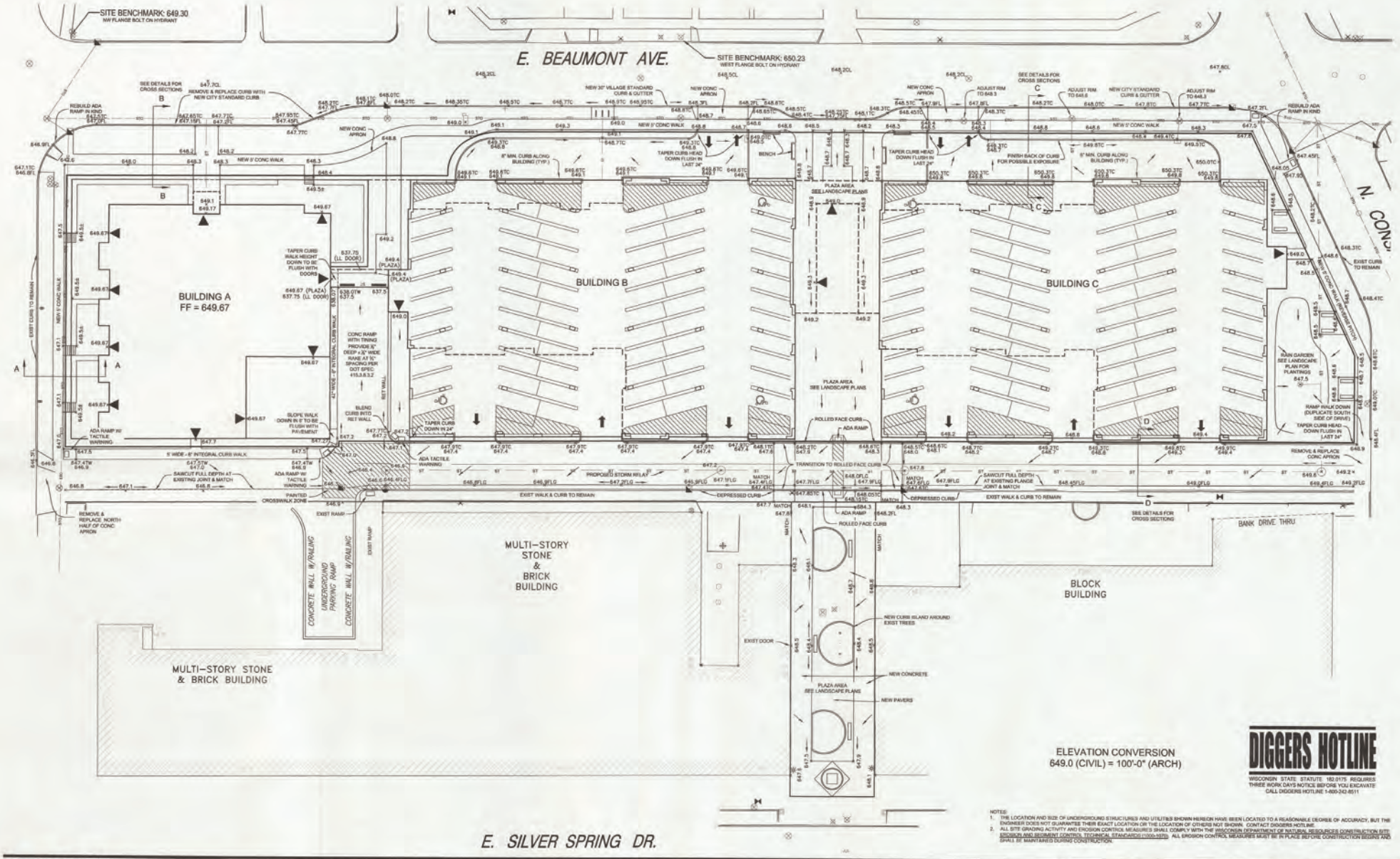
REVISION HISTORY-THIS SHEET

FOOTINGS & FOUNDATIONS

COMM. NO. 2588-012-00
SCALE 1" = 30'
DATE FEBRUARY 1, 2013
DRAWN AEK – DAAR

DEMOLITION & EROSION CONTROL PLAN

C101



ELEVATION CONVERSION
649.0 (CIVIL) = 100'-0" (ARCH)

DIGGERS HOTLINE
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Beaumont Place

Whitefish Bay Apartments

03-12-13 VILLAGE COMMENTS

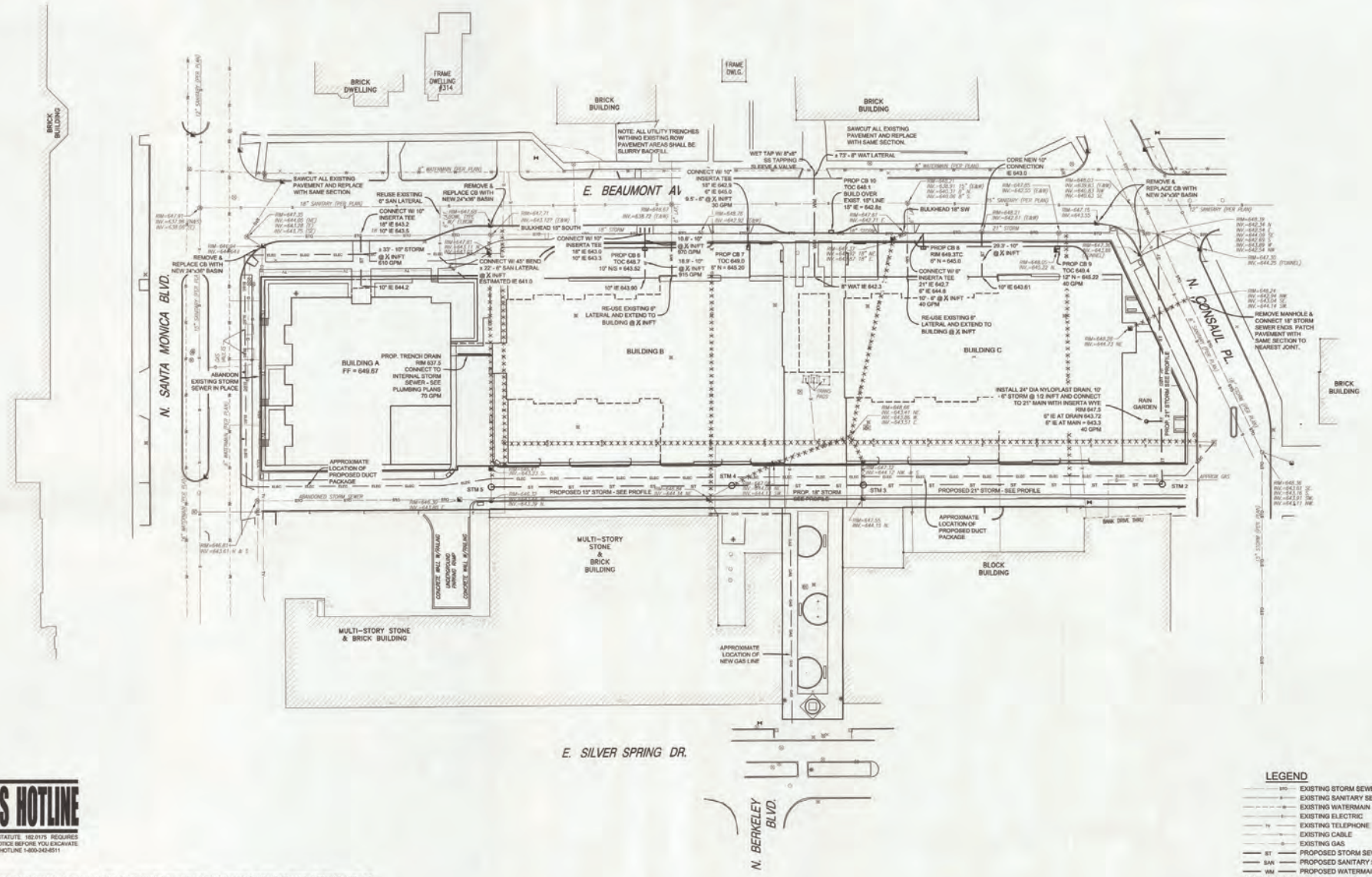
REVISION HISTORY-THIS SHEET

FOOTINGS & FOUNDATIONS

COMM. NO. 2588-012-00
SCALE 1" = 20'
DATE FEBRUARY 1, 2013
DRAWN AEK – DAAR

SPOT GRADE PLAN

C102



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2. ALL SITE GRADING ACTIVITY AND EROSION CONTROL MEASURES SHALL COMPLY WITH THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES CONSTRUCTION SITE EROSION AND SEDIMENT CONTROL TECHNICAL STANDARDS (1056-1075). ALL EROSION CONTROL MEASURES MUST BE IN PLACE BEFORE CONSTRUCTION BEGINS AND SHALL BE MAINTAINED DURING CONSTRUCTION.

LEGEND

STO	EXISTING STORM SEWER
SAN	EXISTING SANITARY SEWER
W	EXISTING WATERMAIN
E	EXISTING ELECTRIC
TH	EXISTING TELEPHONE
C	EXISTING CABLE
G	EXISTING GAS
ST	PROPOSED STORM SEWER
SAN	PROPOSED SANITARY SEWER
WM	PROPOSED WATERMAIN
XXXXXXX	INDICATES UTILITY TO BE REMOVED/ABANDONED

DAAR ENGINEERING, INC.
ENGINEERS PLANNERS SURVEYORS
325 EAST CHICAGO STREET, SUITE 500
MILWAUKEE, WI 53202
PHONE (414) 225-9817 FAX (414) 225-9826
www.daarengineering.com

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Architecture | Engineering | Planning
Hammel, Green and Abrahamson, Inc.
333 East Erie Street
Milwaukee, Wisconsin USA 53202-6095
Telephone 414.276.8200 Facsimile 414.276.7754

Beaumont Place

Whitefish Bay Apartments

03-12-13 VILLAGE COMMENTS

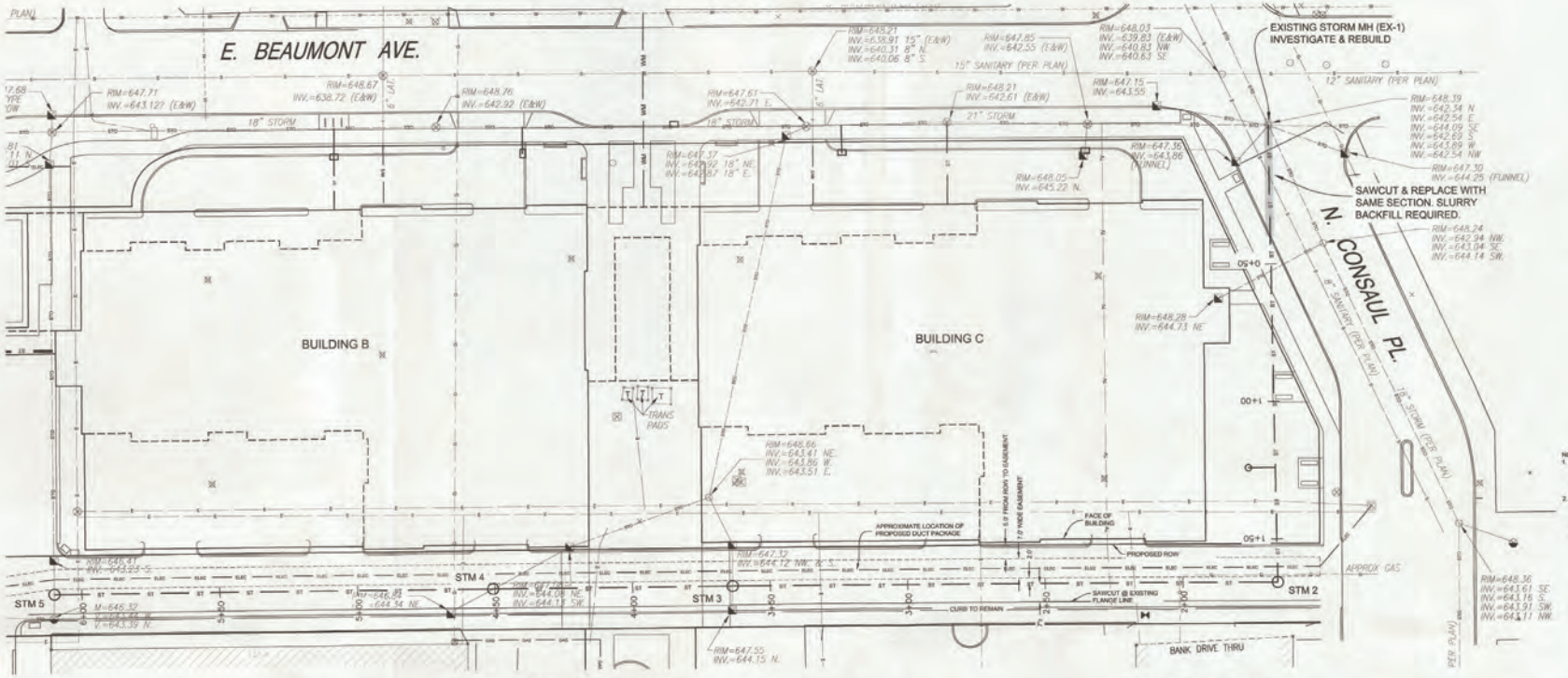
REVISION HISTORY-THIS SHEET

FOOTINGS & FOUNDATIONS

COMM. NO. 2588-012-00
SCALE 1" = 30'
DATE FEBRUARY 1, 2013
DRAWN AEK – DAAR

UTILITY PLAN

C103



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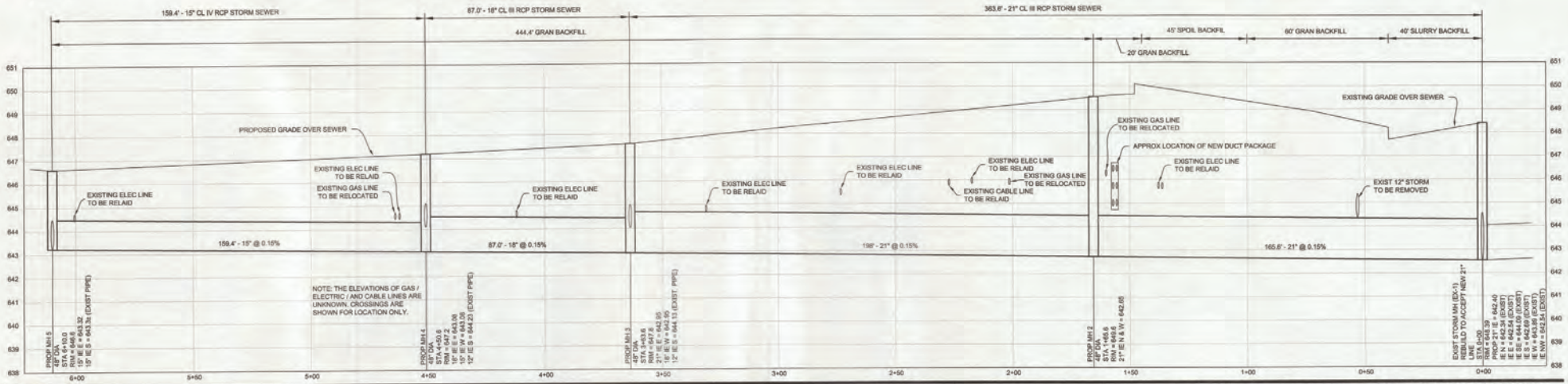
DIGGERS HOTLINE

WISCONSIN STATE STATUTE 182.0175 REQUIRES THREE WORK DAYS NOTICE BEFORE YOU EXCAVATE. CALL DIGGERS HOTLINE 1-800-242-8511



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03-12-13 VILLAGE COMMENTS

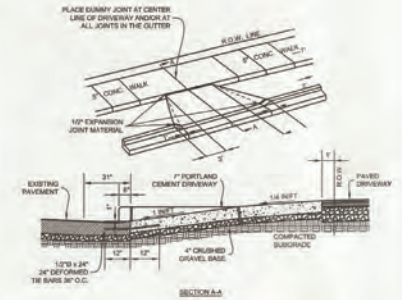
REVISION HISTORY-THIS SHEET

FOOTINGS & FOUNDATIONS

COMM. NO. 2588-012-00
SCALE H: 1"=20' V: 1"=2'
DATE FEBRUARY 1, 2013
DRAWN AEK – DAAR

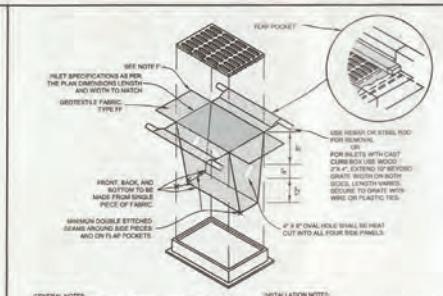
PUBLIC STORM SEWER PLAN

C104



CONCRETE DRIVEWAY DETAIL (WITH SIDEWALK)

NOT TO SCALE

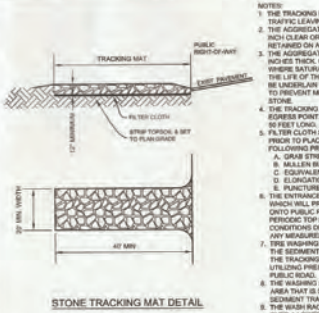


GENERAL NOTES:
A. INLET PROTECTION SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.
B. MANDFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.
C. WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.
1. FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
2. FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2"X4".

INSTALLATION NOTES:
TYPE D:
1. DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.
2. TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 2" OF THE GRATE.
3. THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.

INLET PROTECTION DETAIL - TYPE D

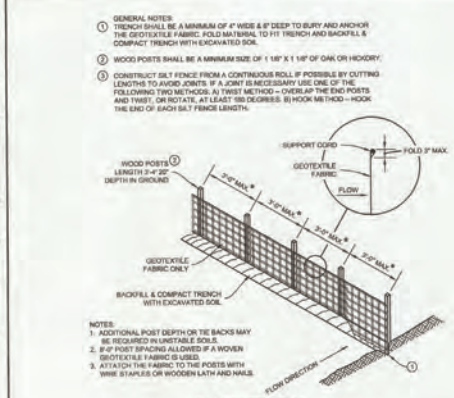
PER WISCONSIN DNR TECHNICAL STANDARD #1060



NOTES:
1. THE TRACKING PAD SHALL BE INSTALLED PRIOR TO ANY TRAFFIC LEAVING THE SITE.
2. THE AGGREGATE FOR TRACKING PADS SHALL BE 3 TO 6 INCH CLEAR OR WASHED STONE. ALL MATERIAL TO BE RETAINED ON A 3-INCH SIEVE.
3. THE AGGREGATE SHALL BE PLACED IN A LAYER AT LEAST 12 INCHES THICK, ON SITES WITH A HIGH WATER TABLE, IN WHERE SATURATED CONDITIONS ARE EXPECTED DURING THE LIFE OF THE PRACTICE. STONE TRACKING PADS SHALL BE UNDERLAIN WITH A WIDDOT TYPE R GEOTEXTILE FABRIC TO PREVENT MIGRATION OF UNDERLYING SOIL INTO THE STONE.
4. THE TRACKING PAD SHALL BE THE FULL WIDTH OF THE EGRESS POINT. THE TRACKING PAD SHALL BE AT A MINIMUM 50 FEET LONG.
5. FILTER CLOTH SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING STONE. THE FABRIC SHALL HAVE THE FOLLOWING PROPERTIES:
   A. GRAB STRENGTH: 220 LBS. (ASTM D-1682)
   B. MULLEN BURST: 430 PSI MIN. (ASTM D-3786)
   C. EQUIVALENT OPENING SIZE: 40-90 (US STD. SIEVE)
   D. ELONGATION AT FAILURE: 50% (ASTM D-1682)
   E. PUNCTURE STRENGTH: 120 LBS. (ASTM D-751)
6. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRED PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND/OR REPAIR OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
7. TIRE WASHING: IF CONDITIONS ON THE SITE ARE SUCH THAT THE SEDIMENT IS NOT REMOVED FROM VEHICLE TIRES BY THE TRACKING PAD, THEN TIRES SHALL BE WASHED UTILIZING PRESSURIZED WATER BEFORE ENTERING A PUBLIC ROAD.
8. THE WASHING STATION SHALL BE LOCATED ON SITE IN AN AREA THAT IS STABILIZED AND DRAINS INTO SUITABLE SEDIMENT TRAPPING OR SETTLING DEVICE.
9. THE WASH RACK SHALL CONSIST OF A HEAVY GRATING OVER A LOWERED AREA. THE RACK SHALL BE STRONG ENOUGH TO SUPPORT THE VEHICLES THAT WILL CROSS IT.
10. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO A PUBLIC RIGHT-OF-WAY SHALL BE REMOVED IMMEDIATELY.
11. ACCESS PERMIT TO PUBLIC ROADS MUST BE OBTAINED PRIOR TO CONSTRUCTION.

STONE TRACKING MAT DETAIL

PER WISCONSIN DNR TECHNICAL STANDARD #1057

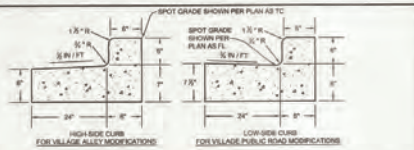


GENERAL NOTES:
1. TRENCH SHALL BE A MINIMUM OF 4" WIDE & 8" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
2. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1 1/8" X 1 1/8" OF OAK OR HICKORY.
3. CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS: A) TWIST METHOD – OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES. B) HOOK METHOD – HOOK THE END OF EACH SILT FENCE LENGTH.

NOTES:
1. ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS.
2. 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.
3. ATTATCH THE FABRIC TO THE POSTS WITH WIRE STAPLES OR WOODEN LATH AND NAILS.

SILT FENCE DETAIL

PER WISCONSIN DNR TECHNICAL STANDARD #1056



NOTES:
1. CURB SHALL BE PALCED ON MIN 3" COMPACTED GRANULAR BASE
2. 3500 PSI CONCRETE SHALL BE USED IN CONSTRUCTION OF THE CURB & GUTTER. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE SLOPE OF THE GUTTER PAN. 3" PREFORMED EXPANSION JOINT FILLER SHALL BE PLACED TRANSVERSELY IN THE CURB AS FOLLOWS:
   1. AT EACH JUNCTION OF RADIUS RETURN CURB AND THE CURB WHICH IS PARALLEL TO THE PROJECT CENTER LINE.
   2. AT EACH JUNCTION WITH EXISTING CONCRETE CURB OR CONCRETE CURB & GUTTER.
   3. AT EACH JUNCTION WITH EXISTING CONCRETE SIDEWALK, TO THE DEPTH OF THE SIDEWALK.
   4. LOWSIDE TO BE USED WHERE PAVEMENT IS SLOPED TOWARDS CURB. HIGH SIDE TO BE USED WHERE PAVEMENT SLOPES AWAY FROM CURB.

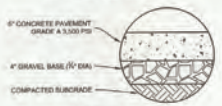
CONCRETE CURB & GUTTER DETAILS

NOT TO SCALE

ASPHALT PAVEMENT SECTION

CONCRETE PAVEMENT

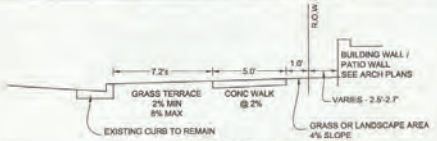
FOR ALLEY RESTORATION AND ALL OTHER CONCRETE PAVEMENTS



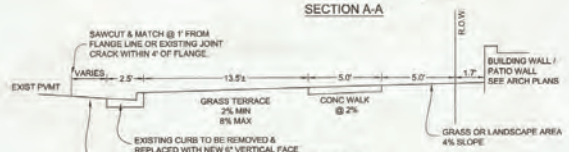
SIDEWALK

CONCRETE WALK W/ INTEGRAL CURB DETAIL

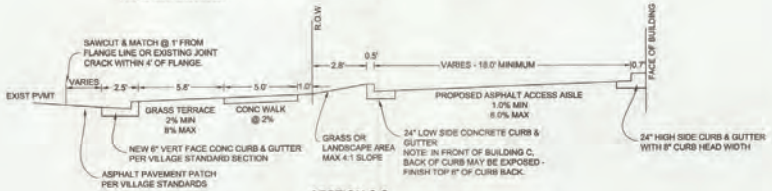
NOT TO SCALE



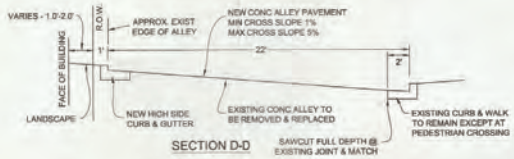
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

SITE CROSS SECTIONS

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03-12-13 VILLAGE COMMENTS

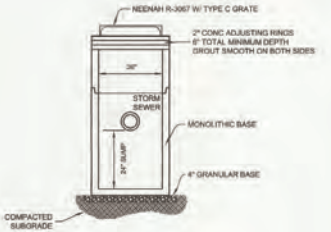
REVISION HISTORY-THIS SHEET

FOOTINGS & FOUNDATIONS

COMM. NO. 2588-012-00
SCALE NONE
DATE FEBRUARY 1, 2013
DRAWN AEK – DAAR

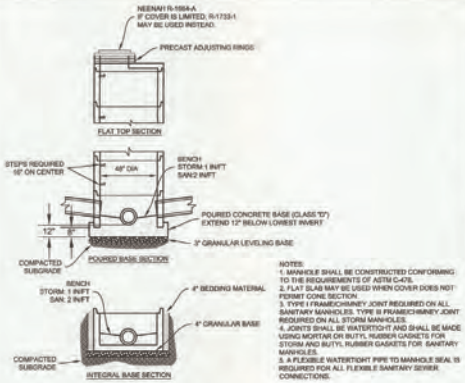
SITE DETAILS

C105



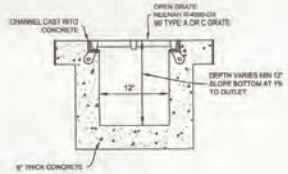
NOTES:
1. CATCH BASIN SHALL BE CONSTRUCTED CONFORMING TO THE REQUIREMENTS OF ASTM C-478.

PRECAST 24"x36" CATCH BASIN DETAIL
NOT TO SCALE

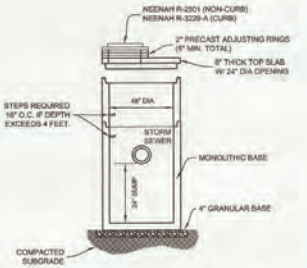


NOTES:
1. MANHOLE SHALL BE CONSTRUCTED CONFORMING TO THE REQUIREMENTS OF ASTM C-478.
2. FLAT SLAB MAY BE USED WHEN COVER DOES NOT PERMIT CONE SECTION
3. TYPE I FRAME/CHIMNEY JOINT REQUIRED ON ALL SANITARY MANHOLES. TYPE II FRAME/CHIMNEY JOINT REQUIRED ON ALL STORM MANHOLES.
4. JOINTS SHALL BE WATERTIGHT AND SHALL BE MADE USING MORTAR OR BUTYL RUBBER GASKETS FOR STORM AND BUTYL RUBBER GASKETS FOR SANITARY MANHOLES.
5. A FLEXIBLE WATERTIGHT PIPE TO MANHOLE SEAL IS REQUIRED FOR ALL FLEXIBLE SANITARY SEWER CONNECTIONS.

PRECAST MANHOLE DETAIL
NOT TO SCALE



TRENCH DRAIN DETAIL



NOTES:
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2. USE THIS DETAIL FOR CBM 6-9.
3. ALSO USE THIS DETAIL FOR CBM10. REMOVE EXISTING PIPE. DO NOT CONSTRUCT DOGHOUSE STYLE STRUCTURE. SUMP NOT REQUIRED. USE NEENAH R-3067 WITH TYPE C GRATE INSTEAD.

PRECAST ROUND CATCH BASIN DETAIL
NOT TO SCALE

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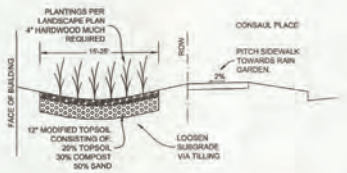

RAIN GARDEN DETAIL
NOT TO SCALE
FACING NORTH

GENERAL SPECIFICATIONS FOR CONSTRUCTION ACTIVITIES

1. THE PROPOSED IMPROVEMENTS SHALL BE CONSTRUCTED ACCORDING TO THE WISCONSIN D.O.T. STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION, THE STANDARD SPECIFICATIONS FOR SEWER & WATER IN WISCONSIN, AND WISCONSIN ADMINISTRATIVE CODE, SPS 380, 382-383, AND THE LOCAL ORDINANCES AND SPECIFICATIONS.
2. THE CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED FOR EXECUTION OF THE WORK. THE CONTRACTOR SHALL CONDUCT HIS WORK ACCORDING TO THE REQUIREMENTS OF THE PERMITS.
3. THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE MUNICIPALITY FORTY- EIGHT (48) HOURS PRIOR TO THE START OF CONSTRUCTION.
4. THE MUNICIPALITY SHALL HAVE THE RIGHT TO INSPECT, APPROVE, AND REJECT THE CONSTRUCTION OF THE PUBLIC PORTIONS OF THE WORK.
5. THE CONTRACTOR SHALL INDEMNIFY THE OWNER, THE ENGINEER, AND THE MUNICIPALITY, THEIR AGENTS, ETC, FROM ALL LIABILITY INVOLVED WITH THE CONSTRUCTION, INSTALLATION, AND TESTING OF THE WORK ON THIS PROJECT.
6. SITE SAFETY SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
7. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL UTILITY INFORMATION SHOWN ON THE PLANS PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL CALL DIGGERS HOTLINE AT 1-800-242-8511 TO NOTIFY THE UTILITIES OF HIS INTENTIONS, AND TO REQUEST FIELD STAKING OF EXISTING UTILITIES.
8. SILT FENCE AND OTHER EROSION CONTROL FACILITIES MUST BE INSTALLED PRIOR TO CONSTRUCTION OR ANY OTHER LAND DISTURBING ACTIVITY. FOLLOW THE SEQUENCE OF CONSTRUCTION ON THE EROSION CONTROL PLAN FOR MORE DETAILS. INSPECTIONS SHALL BE MADE WEEKLY OR AFTER EVERY RAINFALL OF 0.5" OR MORE. REPAIRS SHALL BE MADE IMMEDIATELY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL EROSION CONTROL FACILITIES ONCE THE THREAT OF EROSION HAS PASSED WITH THE APPROVAL OF THE GOVERNING AGENCY.
9. ANY ADJACENT PROPERTIES OR ROAD RIGHT-OF-WAYS WHICH ARE DAMAGED DURING CONSTRUCTION MUST BE RESTORED BY THE CONTRACTOR.
10. TRASH AND DEBRIS SHALL BE NOT BE ALLOWED TO ACCUMULATE ON THIS SITE AND THE SITE SHALL BE CLEAN UPON COMPLETION OF WORK.

SPECIFICATIONS FOR GRADING & EROSION CONTROL

1. THE CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR THE COMPUTATIONS OF ALL GRADING AND FOR ACTUAL LAND BALANCE, INCLUDING UTILITY TRENCH SPOIL. THE CONTRACTOR SHALL IMPORT OR EXPORT MATERIAL AS NECESSARY TO COMPLETE THE PROJECT. CONTRACTOR SHALL NOTIFY OWNER OF THE NEED TO IMPORT OR HAUL OFF SOIL. ON-SITE LOCATIONS SUITABLE FOR BORROW OR FILL MAY BE PRESENT. COORDINATE WITH OWNER.
2. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING SOIL CONDITIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION. A GEOTECHNICAL REPORT MAY BE AVAILABLE FROM THE OWNER.
3. SITE SHALL BE CLEARED TO THE LIMITS SHOWN ON THE PLANS. REMOVE VEGETATION FROM THE SITE. BURNING IS NOT PERMITTED. PROTECT TREES AND OTHER FEATURES FROM DAMAGE WITH FENCING. STOCKPILES SHALL NOT BE LOCATED CLOSER THAN 20' TO A DRAINAGE STRUCTURE OR FEATURE AND SHALL BE SURROUNDED WITH SILT FENCE.
4. THE GEOTECHNICAL ENGINEER IS RESPONSIBLE FOR VERIFYING COMPACTION AND FILL PLACEMENT IN THE FIELD. THE GEOTECHNICAL ENGINEER MAY SUPERCEDE THESE SPECIFICATIONS IF THERE IS GOOD CAUSE TO DO SO. AN EXPLANATION MUST BE SUBMITTED TO THE ENGINEER IN WITTING BEFORE ANY DEVIATIONS ARE MADE.
5. IF NO GEOTECHNICAL RECOMMENDATION IS AVAILABLE, THEN THE FOLLOWING SPECIFICATION SHALL APPLY: ALL FILL SHALL BE CONSIDERED STRUCTURAL FILL AND SHALL BE PLACED IN ACCORDANCE WITH THE FOLLOWING: THE COMPACTED FILL SUBGRADE SHALL CONSIST OF AND SHALL BE UNDERLAIN BY SUITABLE BEARING MATERIALS, FREE OF ALL ORGANIC, FROZEN, OR OTHER DELETERIOUS MATERIAL AND INSPECTED AND APPROVED BY THE RESIDENT GEOTECHNICAL ENGINEER. PREPARATION OF THE SUBGRADE, AFTER STRIPPING, SHALL CONSIST OF PROOF-ROLLING TO DETECT UNSTABLE AREAS THAT MIGHT BE UNDERCUT, AND COMPACTING THE SCARIFIED SURFACE TO THE SAME MINIMUM DENSITY INDICATED BELOW. THE COMPACTED FILL MATERIALS SHALL BE FREE OF ANY DELETERIOUS, ORGANIC OR FROZEN MATTER, AND SHALL HAVE A MAXIMUM LIQUID LIMIT (ASTM D-423), AND, PLASTICITY INDEX (ASTM D-424), OF 30 AND 15 RESPECTIVELY, UNLESS SPECIFICALLY TESTED AND FOUND TO HAVE LOW EXPANSIVE PROPERTIES AND APPROVED BY AN EXPERIENCED SOILS ENGINEER. THE TOP TWELVE (12") INCHES OF COMPACTED FILL SHOULD HAVE A MAXIMUM THREE (3") INCH PARTICLE DIAMETER AND ALL UNDERLYING COMPACTED FILL A MAXIMUM SIX (6") INCH PARTICLE DIAMETER UNLESS SPECIFICALLY APPROVED BY AN EXPERIENCED SOILS ENGINEER. ALL FILL MATERIAL MUST BE TESTED AND APPROVED UNDER THE DIRECTION AND SUPERVISION OF AN EXPERIENCED SOILS ENGINEER PRIOR TO PLACEMENT. IF THE FILL IS TO PROVIDE NON-FROST SUSCEPTIBLE CHARACTERISTICS, IT MUST BE CLASSIFIED AS A CLEAN GW, GP, SW, OR SP PER UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D-2487). FOR STRUCTURAL FILL THE DENSITY OF THE STRUCTURAL COMPACTED FILL AND SCARIFIED SUBGRADE AND GRADES SHALL NOT BE LESS THAN 95 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR (ASTM D-698) WITH THE EXCEPTION TO THE TOP 12 INCHES OF PAVEMENT SUBGRADE WHICH SHALL HAVE A MINIMUM IN-SITU DENSITY OF 100 PERCENT OF THE MAXIMUM DRY DENSITY, OR 5 PERCENT HIGHER THAN UNDERLYING FILL MATERIALS. THE MOISTURE CONTENT OF COHESIVE SOIL SHALL NOT VARY BY MORE THAN -1 TO +3 PERCENT AND GRANULAR SOIL ± 3 PERCENT OF OPTIMUM WHEN PLACED AND COMPACTED OR RECOMPACTED, UNLESS SPECIFICALLY RECOMMENDED/APPROVED BY THE SOILS ENGINEER MONITORING THE PLACEMENT AND COMPACTION. THE FILL SHALL BE PLACED IN LAYERS WITH A MAXIMUM LOOSE THICKNESS OF 8 INCHES FOR FOUNDATIONS AND 10 INCHES FOR FLOOR SLABS AND PAVEMENTS, UNLESS SPECIFICALLY APPROVED BY THE SOILS ENGINEER TAKING INTO CONSIDERATION THE TYPE OF MATERIALS AND COMPACTION EQUIPMENT BEING USED. THE COMPACTION EQUIPMENT SHOULD CONSIST OF SUITABLE MECHANICAL EQUIPMENT SPECIFICALLY DESIGNED FOR SOIL COMPACTION. BULLDOZERS OR SIMILAR TRACKED VEHICLES ARE TYPICALLY NOT SUITABLE FOR COMPACTION. MATERIAL THAT IS TOO WET TO PERMIT PROPER COMPACTION MAY BE SPREAD ON THE FILL AND PERMITTED TO DRY. DISCING, HARROWING, OR PULVERIZING MAY BE NECESSARY TO REDUCE THE MOISTURE CONTENT TO A SATISFACTORY VALUE, AFTER WHICH IT SHALL BE COMPACTED. THE FINISHED SUBGRADE AREAS OF THE SITE SHALL BE COMPACTED TO 100 PERCENT OF THE STANDARD PROCTOR (ASTM D-398) MAXIMUM DENSITY.
6. NO FILL SHALL BE PLACED ON A WET OR SOFT SUBGRADE. THE SUBGRADE SHALL BE PROOF-ROLLED AND INSPECTED BY THE GEOTECHNICAL ENGINEER BEFORE ANY MATERIAL IS PLACED.
7. SUBGRADE TOLERANCES ARE +/-1 FOR LANDSCAPE AREAS AND +/- ½" FOR ALL PAVEMENT AND BUILDING AREAS.
8. TOPSOIL SHALL BE FREE OF DELETERIOUS MATERIALS, ROOTS, OLD VEGETATION, ROCKS OVER 2" DIAMETER AND SHALL NOT BE EXCESSIVELY CLAYEY IN NATURE. NO CLUMPS LARGER THAN 4" ARE ACCEPTABLE. TOPSOIL MAY BE AMENDED AS NEEDED WITH SAND OR COMPOST TO BE LOOSE WHEN SPREAD.
9. THE CONTRACTOR SHALL MAINTAIN SITE DRAINAGE THROUGHOUT CONSTRUCTION. THIS MAY INCLUDE THE EXCAVATION OF TEMPORARY DITCHES OR PUMPING TO ALLEVIATE WATER PONDING. ANY DEWATERING SHALL NOT GO DIRECTLY TO STREAMS, CREEKS, WETLANDS OR OTHER ENVIRONMENTALLY SENSITIVE AREAS WITHOUT BEING TREATED FIRST. A DIRT BAG OR OTHER DEWATERING TREATMENT DEVICE MAY BE USED TO CAPTURE SEDIMENT FROM THE PUMPED WATER.
10. CONTRACTOR IS ADVISED THAT ALL MUD AND DEBRIS MUST NOT BE DEPOSITED ONTO THE ADJACENT ROADWAYS PER THE REQUIREMENT OF THE MUNICIPALITY OR OTHER APPROPRIATE GOVERNMENT AGENCIES. IN THE EVENT THIS OCCURS, THE ROADWAYS SHALL BE POWER SWEPT IMMEDIATELY AND ALL SEDIMENT REMOVED FROM DOWNSTREAM FACILITIES.

SPECIFICATIONS FOR UTILITIES

1. BEFORE PROCEEDING WITH ANY UTILITY CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE EACH EXISTING LATERAL OR POINT OF CONNECTION AND VERIFY THE LOCATION AND ELEVATION OF ALL UTILITIES. IF ANY EXISTING UTILITIES ARE NOT AS SHOWN ON THE DRAWINGS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY FOR POSSIBLE REDESIGN.
2. ALL CONNECTIONS TO EXISTING PIPES AND MANHOLES SHALL BE CORED CONNECTIONS. CONNECTIONS TO WATERMAIN SHALL BE WET TAPED WITH A STAINLESS STEEP TAPPING SLEEVE.
3. PROPOSED SANITARY SEWER AND INTERNALLY CONNECTED STORM SEWER SHOWN ON THIS PLAN SHALL TERMINATE AT A POINT FIVE (5) FEET FROM THE EXTERIOR BUILDING WALL. THE EXACT LOCATION OF ALL DOWN SPOUTS CONNECTIONS SHALL BE PER THE ARCHITECTURAL PLANS.
4. CONTRACTOR SHALL NOT SHUT OFF WATER OR PLUG SANITARY SEWER IN MUNICIPAL LINES WITHOUT PRIOR APPROVAL.
5. MATERIALS FOR STORM SEWER SHALL BE AS FOLLOWS: STORM SEWER PIPE FOR BUILDING LATERALS SHALL BE HIGH DENSITY POLYETHYLENE (HDPE) CORRUGATED PIPE WITH AN INTEGRALLY FORMED SMOOTH WATERWAY SUCH AS ADS N-12. FOR PIPE 10" OR LESS IN DIAMETER, PVC, ASTM D-3033 SDR-35, MAY ALSO BE USED. THE PUBLIC ALLEY STORM RELAY SHALL BE REINFORCED CONCRETE PIPE (RCP), ASTM C-76, CLASS III OR HIGHER. TRENCH SECTION SHALL BE CLASS "B" FOR PVC AND HDPE AND CLASS "C" FOR CONCRETE. MANHOLES, INLETS AND CATCH BASINS SHALL BE PRE CAST REINFORCED CONCRETE, ASTM C-478. CASTINGS SHALL BE HEAVY DUTY CAST IRON. AREA DRAINS SHALL BE ADS MYLOPLAST OR EQUIVALENT. CONNECTIONS TO EXISTING PIPES SHALL BE MADE WITH INSERTA WYE OR EQUIVALENT.
6. MATERIALS FOR SANITARY SEWER SHALL BE AS FOLLOWS: SANITARY SEWER PIPE SHALL BE PVC, ASTM D-3034, SDR-26 WITH RUBBER GASKETED JOINTS, CONFORMING TO ASTM D-3212. TRENCH SECTION SHALL BE CLASS "B" BEDDING. CRUSHED STONE CHIPS SHALL BE USED FOR BEDDING MATERIAL. CONNECTIONS SHALL BE MADE WITH INSERTA WYE OR EQUIVALENT. A MINIMUM OF 6' OF COVER IS REQUIRED FOR ALL SANITARY SEWER.
7. MATERIALS FOR WATER SERVICES AND PRIVATE HYDRANTS SHALL BE AS FOLLOWS: WATER SERVICE SHALL BE PVC, AWWA C-900. TRENCH SECTION SHALL BE CLASS "B" BEDDING. CRUSHED STONE CHIPS SHALL BE USED FOR BEDDING MATERIAL. CONNECTION SHALL BE MADE WITH A WET TAP. CORPORATE STOP AND VALVE BOX PER MUNICIPAL STANDARDS. A MINIMUM OF 5' OF COVER IS REQUIRED FOR ALL WATERMAIN. VALVES SHALL BE NONRISING STEM, RESILIENT SEATED GATE VALVES COMPLYING WITH AWWA C509 WITH A THREE PIECE CAST IRON VALVE BOX. INSTALL THRUST BLOCKING AT ALL BENDS AND TEES. DISINFECT ALL NEW LINES AND OBTAIN SAFE WATER SAMPLE PRIOR TO USE.
8. EXTREME CAUTION MUST BE FOLLOWED REGARDING THE COMPACTION OF ALL UTILITY TRENCHES. MECHANICALLY COMPACTED GRANULAR BACKFILL IS REQUIRED UNDER & WITHIN 5 FEET OF ALL PAVEMENT INCLUDING SIDEWALKS. FLOODING OF BACKFILL MATERIAL IS NOT ALLOWED.
9. TRACER WIRE (NO. 8 SINGLE STRAND COPPER) AND WARNING TAPE SHALL BE INSTALLED ON ALL UTILITIES IN ACCORDANCE WITH THE LOCAL AND STATE CODES. TRACER WIRE SHALL TERMINATE IN A VALVECO TERMINAL BOX AT EACH END.
10. MANDREL TESTING ON SANITARY LINES AND PRESSURE TESTING ON WATERMAIN MAY BE REQUIRED BY THE OWNER OR MUNICIPALITY.
11. UPON COMPLETION OF FINAL PAVING OPERATIONS, THE UTILITY CONTRACTOR SHALL ADJUST ALL MANHOLE AND INLET RIMS AND VALVE BOXES TO FINISHED GRADE.

SPECIFICATIONS FOR PAVING

1. AGGREGATES USED IN THE CRUSHED STONE BASE SHALL CONFORM TO THE GRADATION REQUIREMENTS SECTIONS 301.2 AND 305.2.2 OF THE STANDARD SPECIFICATIONS. THICKNESS SHALL BE PER THE DETAIL ON THE PLANS. BASE SHALL BE ¾ INCH DIAMETER UNLESS NOTED OTHERWISE. RECYCLED MATERIALS MAY BE ALLOWED WITH APPROVAL FROM THE OWNER.
2. SUBGRADE SHALL BE PROOFROLLED AND APPROVED BY A GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF STONE BASE. EXCAVATE UNSUITABLE AREAS AND REPLACE WITH BREAKER RUN STONE AND RECOMPACT.
3. EXISTING PAVEMENT SHALL BE SAWCUT IN NEAT STRAIGHT LINES TO FULL DEPTH AT ANY POINT WHERE EXISTING PAVEMENT IS REMOVED. CURB AND WALK SHALL BE REMOVED TO THE NEAREST JOINT. REMOVED PAVEMENT SHALL BE REPLACED WITH THE SAME SECTION AS EXISTING. MUNICIPAL STANDARDS MAY REQUIRE ADDITIONAL WORK.
4. ASPHALT FOR PARKING AREAS AND THE PRIVATE ROAD SHALL BE PER THE DETAILS MATERIALS AND PLACEMENT SHALL CONFORM TO THE DOT STANDARD SPECIFICATIONS. SECTION 460 AND 460 TYPE E-0.3 IS REQUIRED UNLESS NOTED OTHERWISE. A COMMERCIAL GRADE MIX MAY BE SUBSTITUTED ONLY WITH APPROVAL FROM THE OWNER.
5. CONCRETE FOR CURB, DRIVEWAY, WALKS AND NON-FLOOR SLABS SHALL CONFORM TO SECTION 415 OF THE STANDARD SPECIFICATIONS , GRADE A, ASTM C-94, 6 BAG MIX, WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3,000 PSI. JOINTING SHALL BE PER SECTION 415.3.2 OF THE STANDARD SPECIFICATIONS WITH JOINTS HAVING A MAXIMUM SPACING OF 10'. CONCRETE SHALL BE FINISHED PER SECTION 415.3.8 WITH A MEDIUM BROOM TEXTURE. A CURING MEMBRANE IN CONFORMANCE WITH SECTION 415.3.12 IS REQUIRED.
6. ADA TACTILE WARNING SHALL BE CAST IRON TRUNCATED DOMES.

DAAR ENGINEERING, INC.
ENGINEERS PLANNERS SURVEYORS
325 EAST CHICAGO STREET, SUITE 500
MILWAUKEE, WI 53202
PHONE (414) 225-9817 FAX (414) 225-9828
www.daarengineering.com

HGA
Architecture | Engineering | Planning
Hammel, Green and Abrahamson, Inc.
332 East Erie Street
Milwaukee, Wisconsin USA 53202-6503
Telephone 414.278.8200 Facsimile 414.278.7234

Beaumont Place
Whitefish Bay Apartments

03-12-13 VILLAGE COMMENTS

REVISION HISTORY-THIS SHEET

FOOTINGS & FOUNDATIONS

COMM. NO. 2588-012-00
SCALE NONE
DATE FEBRUARY 1, 2013
DRAWN AEK – DAAR

SITE DETAILS & SPECIFICATIONS

C106

Village of Whitefish Bay
5300 N. Marlborough Drive
Whitefish Bay, Wisconsin 53217

Phone: 414-962-6690
Fax: 414-962-5651

April 15, 2013

Milwaukee Metropolitan Sewerage District
260 West Seeboth Street
Milwaukee, WI 53204-1446
Attn: Debra Jensen, Planning Services Supervisor

Re: Beaumont Place Storm Sewer and SWMP Project, Village of Whitefish Bay

Dear Ms. Jensen:

Find enclosed with this submittal plans and computations regarding a proposed redevelopment of Village and private municipal parking lots to residential development. Existing storm sewer will be removed and re-installed in a different location with this project. Storm water quantity and quality requirements for redevelopment are met per Ch.13, MMSD rules. The following attached supporting documents were prepared by DARR Engineering under the seal of Aaron Koch, P.E.

1. MMSD Submittal Cover Sheet
2. Design plans and detail drawings
3. Storm Water Management Plan with draft Maintenance Declaration
4. Storm sewer calculations

If you have any further questions please contact me at (414) 755-6514.

Sincerely,

Daniel Naze, P.E.
Public Works Director/Engineer

Cc: Aaron Koch, P.E., DARR Engineering

MMSD Sewer Plan Review Request

Municipality: Village of Whitefish Bay Date submitted: 4/16/13
Name of contact person: Dan Naze Telephone number: 414 755 6514
Project name: Beaumont Place

Instructions: Fill out Section 1, 2, or 3 based on the type of sewer project proposed.

1. Sanitary and Combined Sewers

Project Type (check all that apply)

__ Sanitary sewer extension
__ Sanitary relay sewer
__ Sanitary relief sewer
__ Combined relief sewer
__ Sewage lift station or force main (including any modifications that increase capacity)
__ Private interceptor main sewers
__ Other (indicate) _____

Submit the following with sanitary and combined sewer projects:

1. **Five (5)** copies of plans and specifications (plans and specifications need signature and seal of designer and signature of municipal official approving/submitting plans)
2. **Two (2)** copies of the relevant system plan
3. **Two (2)** copies of the design computations (not required for 8" diameter sanitary sewers designed to carry a peak flow less than or equal to 0.7 cubic feet per second (cfs) when ½ full)
4. SEWRPC 208 letter indicating conformance with regional land use plans (sanitary extensions only)
5. For public sewer systems, the following WDNR forms:
   - 3400-59
   - 3400-95 (not necessary if no sewer work included)
   - 3400-105
   - 3400-160 (only necessary if requesting "fast-track" review)
   - 3400-168 (only necessary if lift station included)

2. Storm Sewers

Project Type (check all that apply)

__ Storm extension
☑ Storm relay
__ Other (indicate) _____

Submit the following with storm sewer projects:

1. **One (1)** copy of the plans and specifications
2. **One (1)** copy of the relevant system plan
3. **One (1)** copy of the design computations

3. Other Review Request

Describe review request: _____

Contact the District to determine submittal requirements.

Submit completed submittal packages to:	**Debra Jensen, Planning Services Supervisor** **Milwaukee Metropolitan Sewerage District** **260 West Seeboth Street** **Milwaukee, WI 53204-1446**

MEMO

TO: **Dan Naze**

FROM: **Aaron Koch**

DATE: **March 12, 2013**

RE: **Beaumont Place**
Storm Sewer Flows

Dan,

I have reviewed the existing storm sewer conditions on the site and have come up with a design for a relay. As you are aware, there is a low point located at the top of the ramp to the underground parking on the building to the south of the development. (Exist CB 20A) This low point is drained to the north via 15" storm sewer. Additional catch basins are present in the alley to the east and drain via 12" and 18" storm sewer to the north as well. Both sewers join with the 18"-21" sewer in Beaumont Avenue. A 6" warp in the concrete south of the low point helps protect the building to the south. This will not be altered.

The new building will effectively cut off the paths for the two sewers crossing the site. A 15"-21" relay is proposed to join the existing inlets and drain east along the to be reconstructed portion of the alley and then north to a manhole in the intersection of Beaumont and Consaul. A new ramp to underground parking on the new building will be constructed immediately to the north of the low point as well. The alley will be pitch as much as feasible while maintaining drivability to protect the ramp, similar to the ramp to the south.

An analysis of the existing sewer shows that the sewer in Beaumont is not capable of conveying even the 2-year storm without surcharging. The two lines within the parking lot currently function fairly well up to the 100-year event with only a minor amount of surcharging at one point. However, all of the structures in Beaumont Place have a higher rim elevation than the low point in the alley and thus the low point will still be the likely spot where surcharging first comes to the surface due to the lack of capacity in the Beaumont sewer.

The relay safely handles up to the 10-year event with no surcharging, and up to the 50-year event with only a small amount of surcharging. (Note that the surcharge in CB 12 is due to a short length of very flat existing pipe and that the proposed drainage area is only increased by 0.05 acres. Thus, this is not expected to be an adverse impact.) Even under the 100-year event, there is fairly minor surcharging as most of the pipes are still close to their capacities. This is well less than the amount of surcharge that occurs within the Beaumont sewer.

325 E. Chicago Street, Suite 500
Milwaukee, WI 53202

Phone: 414-225-9817
Fax: 414-225-9826
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The existing line in Beaumont will also perform better as a result of the relay. While the main building is still tributary to this line, the alley and areas south of the alley are now excluded from the line in Beaumont. This results in significantly less surcharging.

Based on this data, the design improves upon an existing capacity shortfall and will help to protect both the existing building to the south and the new building to the north. The computations provided are based on the best available data and visual inspections of the area. No computations have been performed downstream of MH EX1. If significant surcharging exists in downstream sewers, it could impact the amount of surcharging anticipated. Analysis and possible improvements of this offsite public sewer is not in the scope of this project.

The new storm sewer will be constructed to public standards and a plan and profile detailing the construction is enclosed. An easement will be conveyed to the Village over the private property along the east side of new building. Note that the connection to the existing manhole (MH EX1) may involve reconstruction of the manhole. Due to the number and size of connections at this point, a new manhole may be constructed adjacent to this manhole instead. Further inspection and discussion with the utility contractor and Village will be done in the near future to provide a safe and cost effective connection at this point.

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STORM SEWER COMPUTATIONS
FOR
Beaumont Place

Existing Storm

SHEET 1 OF 1

DESIGN BY: AEK

PROJECT NUMBER: 120128

DATE: 1/30/2013

DESIGN DATA

STORM EVENT: 2 yr **DESIGN INTENSITY (I):** 3.4 in/hr Intensity is based on a 10 min Tc using SEWRPC IDF equations.

STRUCTURE DATA			DRAINAGE AREA AND FLOW DATA (Flow is determined by Rational Method Q = CIA)				PIPE DATA				PIPE CAPACITY INFORMATION (Pipe capacity is determined by Manning's Equation $Q = 1.486/n\ AR^{2/3}\ S^{1/2}$)					ELEVATIONS		
Pipe Run	Upstream Structure	Downstream Structure	Individual Acres A	Individual Coefficient C	Individual Flow Q (cfs)	Cumulative Flow (cfs)	Length (ft)	Diameter (in)	Slope (%)	Manning Coefficient	Required Drop (ft)	Actual Drop (ft)	Percent Full (%)	Actual Velocity (fps)	Max. Capacity (cfs)	Rim/Toc Up	Invert Up	Invert Down
	CB 20A	CB 20	0.57	0.95	1.84	1.84	21.00	10	1.71	0.013	0.15	0.36	60%	5.58	3.09	646.30	643.80	643.44
	CB 20	CB 19	0.09	0.95	0.29	2.13	22.00	15	0.73	0.013	0.02	0.16	41%	4.20	5.93	646.32	643.39	643.23
	CB 19	CB 18	0.53	0.95	1.71	3.84	143.00	15	0.15	0.013	0.51	0.22	Surcharge	---	2.73	646.41	643.23	643.01
	CB 18	MH 17	0.02	0.95	0.06	3.91	11.00	15	0.09	0.013	0.04	0.01	Surcharge	---	2.10	647.81	643.11	643.10
	MH 17	MH 16	1.8	0.6	3.67	7.58	140.00	18	0.13	0.013	0.73	0.18	Surcharge	---	4.05	647.71	643.10	642.92
	MH 16	MH 8A	0	0	0.00	7.58	134.00	18	0.16	0.013	0.70	0.21	Surcharge	---	4.47	648.76	642.92	642.71
	MH 8A	MH 5	0	0	0.00	11.78	52.00	21	0.19	0.013	0.29	0.10	Surcharge	---	7.47	647.61	642.71	642.61
	MH 5	MH 3	0	0	0.00	11.78	51.00	21	0.12	0.013	0.28	0.06	Surcharge	---	5.85	648.21	642.61	642.55
	MH 3	MH 1	0.17	0.95	0.55	12.33	66.00	21	0.02	0.013	0.40	0.01	Surcharge	---	2.10	647.85	642.55	642.54
	CB 14	CB 13	0.33	0.95	1.07	1.07	50.00	12	0.42	0.013	0.04	0.21	47%	2.88	2.48	646.84	644.34	644.13
	CB 13	MH 10	0.14	0.8	0.38	1.45	54.00	12	0.41	0.013	0.09	0.22	60%	3.07	2.45	647.08	644.08	643.86
	MH 10	CB 8	0	0	0.00	3.17	134.00	18	0.37	0.013	0.12	0.49	50%	3.59	6.83	648.66	643.41	642.92
	CB 8	MH 8A	0.38	0.8	1.03	4.20	8.00	18	2.00	0.013	0.01	0.16	33%	7.23	15.98	647.37	642.87	642.71
	CB 12	CB 11	0.17	0.95	0.55	0.55	24.00	12	0.12	0.013	0.01	0.03	45%	1.55	1.35	647.55	644.15	644.12
	CB 11	MH 10	0.43	0.8	1.17	1.72	19.00	12	3.21	0.013	0.04	0.61	32%	6.90	6.87	647.32	644.12	643.51

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STORM SEWER COMPUTATIONS
FOR
Beaumont Place

Existing Storm

SHEET 1 OF 1

DESIGN BY: AEK

PROJECT NUMBER: 120128

DATE: 1/30/2013

DESIGN DATA

STORM EVENT: 10 yr **DESIGN INTENSITY (I):** 5.1 in/hr Intensity is based on a 10 min Tc using SEWRPC IDF equations.

STRUCTURE DATA			DRAINAGE AREA AND FLOW DATA (Flow is determined by Rational Method Q = CIA)				PIPE DATA				PIPE CAPACITY INFORMATION (Pipe capacity is determined by Manning's Equation $Q = 1.486/n\ AR^{2/3}\ S^{1/2}$)					ELEVATIONS		
Pipe Run	Upstream Structure	Downstream Structure	Individual Acres A	Individual Coefficient C	Individual Flow Q (cfs)	Cumulative Flow (cfs)	Length (ft)	Diameter (in)	Slope (%)	Manning Coefficient	Required Drop (ft)	Actual Drop (ft)	Percent Full (%)	Actual Velocity (fps)	Max. Capacity (cfs)	Rim/Toc Up	Invert Up	Invert Down
	CB 20A	CB 20	0.57	0.95	2.76	2.76	21.00	10	1.71	0.013	0.33	0.36	85%	5.99	3.09	646.30	643.80	643.44
	CB 20	CB 19	0.09	0.95	0.44	3.20	22.00	15	0.73	0.013	0.05	0.16	56%	4.66	5.93	646.32	643.39	643.23
	CB 19	CB 18	0.53	0.95	2.57	5.77	143.00	15	0.15	0.013	1.14	0.22	Surcharge	---	2.73	646.41	643.23	643.01
	CB 18	MH 17	0.02	0.95	0.10	5.86	11.00	15	0.09	0.013	0.09	0.01	Surcharge	---	2.10	647.81	643.11	643.10
	MH 17	MH 16	1.8	0.6	5.51	11.37	140.00	18	0.13	0.013	1.64	0.18	Surcharge	---	4.05	647.71	643.10	642.92
	MH 16	MH 8A	0	0	0.00	11.37	134.00	18	0.16	0.013	1.57	0.21	Surcharge	---	4.47	648.76	642.92	642.71
	MH 8A	MH 5	0	0	0.00	17.67	52.00	21	0.19	0.013	0.65	0.10	Surcharge	---	7.47	647.61	642.71	642.61
	MH 5	MH 3	0	0	0.00	17.67	51.00	21	0.12	0.013	0.63	0.06	Surcharge	---	5.85	648.21	642.61	642.55
	MH 3	MH 1	0.17	0.95	0.82	18.49	66.00	21	0.02	0.013	0.90	0.01	Surcharge	---	2.10	647.85	642.55	642.54
	CB 14	CB 13	0.33	0.95	1.60	1.60	50.00	12	0.42	0.013	0.10	0.21	64%	3.17	2.48	646.84	644.34	644.13
	CB 13	MH 10	0.14	0.8	0.57	2.17	54.00	12	0.41	0.013	0.20	0.22	84%	3.30	2.45	647.08	644.08	643.86
	MH 10	CB 8	0	0	0.00	4.75	134.00	18	0.37	0.013	0.27	0.49	68%	3.94	6.83	648.66	643.41	642.92
	CB 8	MH 8A	0.38	0.8	1.55	6.30	8.00	18	2.00	0.013	0.03	0.16	44%	8.06	15.98	647.37	642.87	642.71
	CB 12	CB 11	0.17	0.95	0.82	0.82	24.00	12	0.12	0.013	0.01	0.03	61%	1.71	1.35	647.55	644.15	644.12
	CB 11	MH 10	0.43	0.8	1.75	2.58	19.00	12	3.21	0.013	0.10	0.61	43%	7.69	6.87	647.32	644.12	643.51

DAAR ENGINEERING, INC. Land Development Division

Engineers • Planners • Surveyors • Construction Services

STORM SEWER COMPUTATIONS
FOR
Beaumont Place

Existing Storm

SHEET 1 OF 1

DESIGN BY: AEK

PROJECT NUMBER: 120128

DATE: 1/30/2013

DESIGN DATA

STORM EVENT: 25 yr **DESIGN INTENSITY (I):** 6 in/hr Intensity is based on a 10 min Tc using SEWRPC IDF equations.

STRUCTURE DATA			DRAINAGE AREA AND FLOW DATA (Flow is determined by Rational Method Q = CIA)				PIPE DATA				PIPE CAPACITY INFORMATION (Pipe capacity is determined by Manning's Equation $Q = 1.486/n\ AR^{2/3}\ S^{1/2}$)					ELEVATIONS		
Pipe Run	Upstream Structure	Downstream Structure	Individual Acres A	Individual Coefficient C	Individual Flow Q (cfs)	Cumulative Flow (cfs)	Length (ft)	Diameter (in)	Slope (%)	Manning Coefficient	Required Drop (ft)	Actual Drop (ft)	Percent Full (%)	Actual Velocity (fps)	Max. Capacity (cfs)	Rim/Toc Up	Invert Up	Invert Down
	CB 20A	CB 20	0.57	0.95	3.25	3.25	21.00	10	1.71	0.013	0.46	0.36	Surcharge	---	3.09	646.30	643.80	643.44
	CB 20	CB 19	0.09	0.95	0.51	3.76	22.00	15	0.73	0.013	0.07	0.16	63%	4.83	5.93	646.32	643.39	643.23
	CB 19	CB 18	0.53	0.95	3.02	6.78	143.00	15	0.15	0.013	1.58	0.22	Surcharge	---	2.73	646.41	643.23	643.01
	CB 18	MH 17	0.02	0.95	0.11	6.90	11.00	15	0.09	0.013	0.13	0.01	Surcharge	---	2.10	647.81	643.11	643.10
	MH 17	MH 16	1.8	0.6	6.48	13.38	140.00	18	0.13	0.013	2.27	0.18	Surcharge	---	4.05	647.71	643.10	642.92
	MH 16	MH 8A	0	0	0.00	13.38	134.00	18	0.16	0.013	2.17	0.21	Surcharge	---	4.47	648.76	642.92	642.71
	MH 8A	MH 5	0	0	0.00	20.79	52.00	21	0.19	0.013	0.89	0.10	Surcharge	---	7.47	647.61	642.71	642.61
	MH 5	MH 3	0	0	0.00	20.79	51.00	21	0.12	0.013	0.88	0.06	Surcharge	---	5.85	648.21	642.61	642.55
	MH 3	MH 1	0.17	0.95	0.97	21.76	66.00	21	0.02	0.013	1.24	0.01	Surcharge	---	2.10	647.85	642.55	642.54
	CB 14	CB 13	0.33	0.95	1.88	1.88	50.00	12	0.42	0.013	0.14	0.21	73%	3.28	2.48	646.84	644.34	644.13
	CB 13	MH 10	0.14	0.8	0.67	2.55	54.00	12	0.41	0.013	0.28	0.22	Surcharge	---	2.45	647.08	644.08	643.86
	MH 10	CB 8	0	0	0.00	5.59	134.00	18	0.37	0.013	0.38	0.49	78%	4.06	6.83	648.66	643.41	642.92
	CB 8	MH 8A	0.38	0.8	1.82	7.41	8.00	18	2.00	0.013	0.04	0.16	50%	8.40	15.98	647.37	642.87	642.71
	CB 12	CB 11	0.17	0.95	0.97	0.97	24.00	12	0.12	0.013	0.02	0.03	70%	1.77	1.35	647.55	644.15	644.12
	CB 11	MH 10	0.43	0.8	2.06	3.03	19.00	12	3.21	0.013	0.14	0.61	48%	8.02	6.87	647.32	644.12	643.51

DAAR ENGINEERING, INC. Land Development Division

Engineers • Planners • Surveyors • Construction Services

STORM SEWER COMPUTATIONS
FOR
Beaumont Place

Existing Storm

SHEET 1 OF 1

DESIGN BY: AEK

PROJECT NUMBER: 120128

DATE: 1/30/2013

DESIGN DATA

STORM EVENT: 50 yr **DESIGN INTENSITY (I):** 6.6 in/hr Intensity is based on a 10 min Tc using SEWRPC IDF equations.

STRUCTURE DATA			DRAINAGE AREA AND FLOW DATA (Flow is determined by Rational Method Q = CIA)				PIPE DATA				PIPE CAPACITY INFORMATION (Pipe capacity is determined by Manning's Equation $Q = 1.486/n\ AR^{2/3}\ S^{1/2}$)					ELEVATIONS		
Pipe Run	Upstream Structure	Downstream Structure	Individual Acres A	Individual Coefficient C	Individual Flow Q (cfs)	Cumulative Flow (cfs)	Length (ft)	Diameter (in)	Slope (%)	Manning Coefficient	Required Drop (ft)	Actual Drop (ft)	Percent Full (%)	Actual Velocity (fps)	Max. Capacity (cfs)	Rim/Toc Up	Invert Up	Invert Down
	CB 20A	CB 20	0.57	0.95	3.57	3.57	21.00	10	1.71	0.013	0.56	0.36	Surcharge	---	3.09	646.30	643.80	643.44
	CB 20	CB 19	0.09	0.95	0.56	4.14	22.00	15	0.73	0.013	0.09	0.16	68%	4.93	5.93	646.32	643.39	643.23
	CB 19	CB 18	0.53	0.95	3.32	7.46	143.00	15	0.15	0.013	1.91	0.22	Surcharge	---	2.73	646.41	643.23	643.01
	CB 18	MH 17	0.02	0.95	0.13	7.59	11.00	15	0.09	0.013	0.15	0.01	Surcharge	---	2.10	647.81	643.11	643.10
	MH 17	MH 16	1.8	0.6	7.13	14.71	140.00	18	0.13	0.013	2.75	0.18	Surcharge	---	4.05	647.71	643.10	642.92
	MH 16	MH 8A	0	0	0.00	14.71	134.00	18	0.16	0.013	2.63	0.21	Surcharge	---	4.47	648.76	642.92	642.71
	MH 8A	MH 5	0	0	0.00	22.87	52.00	21	0.19	0.013	1.08	0.10	Surcharge	---	7.47	647.61	642.71	642.61
	MH 5	MH 3	0	0	0.00	22.87	51.00	21	0.12	0.013	1.06	0.06	Surcharge	---	5.85	648.21	642.61	642.55
	MH 3	MH 1	0.17	0.95	1.07	23.93	66.00	21	0.02	0.013	1.51	0.01	Surcharge	---	2.10	647.85	642.55	642.54
	CB 14	CB 13	0.33	0.95	2.07	2.07	50.00	12	0.42	0.013	0.17	0.21	79%	3.33	2.48	646.84	644.34	644.13
	CB 13	MH 10	0.14	0.8	0.74	2.81	54.00	12	0.41	0.013	0.34	0.22	Surcharge	---	2.45	647.08	644.08	643.86
	MH 10	CB 8	0	0	0.00	6.14	134.00	18	0.37	0.013	0.46	0.49	85%	4.10	6.83	648.66	643.41	642.92
	CB 8	MH 8A	0.38	0.8	2.01	8.15	8.00	18	2.00	0.013	0.05	0.16	54%	8.60	15.98	647.37	642.87	642.71
	CB 12	CB 11	0.17	0.95	1.07	1.07	24.00	12	0.12	0.013	0.02	0.03	75%	1.80	1.35	647.55	644.15	644.12
	CB 11	MH 10	0.43	0.8	2.27	3.34	19.00	12	3.21	0.013	0.17	0.61	52%	8.22	6.87	647.32	644.12	643.51

DAAR ENGINEERING, INC. Land Development Division

Engineers • Planners • Surveyors • Construction Services

STORM SEWER COMPUTATIONS
FOR
Beaumont Place

Existing Storm

SHEET 1 OF 1

DESIGN BY: AEK

PROJECT NUMBER: 120128

DATE: 1/30/2013

DESIGN DATA

STORM EVENT: 100 yr **DESIGN INTENSITY (I):** 7.3 in/hr Intensity is based on a 10 min Tc using SEWRPC IDF equations.

STRUCTURE DATA			DRAINAGE AREA AND FLOW DATA (Flow is determined by Rational Method Q = CIA)				PIPE DATA				PIPE CAPACITY INFORMATION (Pipe capacity is determined by Manning's Equation $Q = 1.486/n\ AR^{2/3}\ S^{1/2}$)					ELEVATIONS		
Pipe Run	Upstream Structure	Downstream Structure	Individual Acres A	Individual Coefficient C	Individual Flow Q (cfs)	Cumulative Flow (cfs)	Length (ft)	Diameter (in)	Slope (%)	Manning Coefficient	Required Drop (ft)	Actual Drop (ft)	Percent Full (%)	Actual Velocity (fps)	Max. Capacity (cfs)	Rim/Toc Up	Invert Up	Invert Down
	CB 20A	CB 20	0.57	0.95	3.95	3.95	21.00	10	1.71	0.013	0.68	0.36	Surcharge	---	3.09	646.30	643.80	643.44
	CB 20	CB 19	0.09	0.95	0.62	4.58	22.00	15	0.73	0.013	0.11	0.16	74%	5.02	5.93	646.32	643.39	643.23
	CB 19	CB 18	0.53	0.95	3.68	8.25	143.00	15	0.15	0.013	2.33	0.22	Surcharge	---	2.73	646.41	643.23	643.01
	CB 18	MH 17	0.02	0.95	0.14	8.39	11.00	15	0.09	0.013	0.19	0.01	Surcharge	---	2.10	647.81	643.11	643.10
	MH 17	MH 16	1.8	0.6	7.88	16.28	140.00	18	0.13	0.013	3.36	0.18	Surcharge	---	4.05	647.71	643.10	642.92
	MH 16	MH 8A	0	0	0.00	16.28	134.00	18	0.16	0.013	3.22	0.21	Surcharge	---	4.47	648.76	642.92	642.71
	MH 8A	MH 5	0	0	0.00	25.29	52.00	21	0.19	0.013	1.32	0.10	Surcharge	---	7.47	647.61	642.71	642.61
	MH 5	MH 3	0	0	0.00	25.29	51.00	21	0.12	0.013	1.30	0.06	Surcharge	---	5.85	648.21	642.61	642.55
	MH 3	MH 1	0.17	0.95	1.18	26.47	66.00	21	0.02	0.013	1.84	0.01	Surcharge	---	2.10	647.85	642.55	642.54
	CB 14	CB 13	0.33	0.95	2.29	2.29	50.00	12	0.42	0.013	0.21	0.21	87%	3.35	2.48	646.84	644.34	644.13
	CB 13	MH 10	0.14	0.8	0.82	3.11	54.00	12	0.41	0.013	0.41	0.22	Surcharge	---	2.45	647.08	644.08	643.86
	MH 10	CB 8	0	0	0.00	6.80	134.00	18	0.37	0.013	0.56	0.49	96%	4.03	6.83	648.66	643.41	642.92
	CB 8	MH 8A	0.38	0.8	2.22	9.02	8.00	18	2.00	0.013	0.06	0.16	58%	8.81	15.98	647.37	642.87	642.71
	CB 12	CB 11	0.17	0.95	1.18	1.18	24.00	12	0.12	0.013	0.03	0.03	82%	1.82	1.35	647.55	644.15	644.12
	CB 11	MH 10	0.43	0.8	2.51	3.69	19.00	12	3.21	0.013	0.20	0.61	56%	8.42	6.87	647.32	644.12	643.51

DAAR ENGINEERING, INC. Land Development Division

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STORM SEWER COMPUTATIONS FOR BEAUMONT PLACE

PROPOSED ALLEY RELAY & BEAUMONT AVE

SHEET 1 OF 1

DESIGN BY: AEK

PROJECT NUMBER: 120128

DATE: 3/8/2013

DESIGN DATA

STORM EVENT: 2 yr **DESIGN INTENSITY (I):** 3.4 in/hr Intensity is based on a 10 min Tc using SEWRPC IDF equations.

STRUCTURE DATA			DRAINAGE AREA AND FLOW DATA (Flow is determined by Rational Method Q = CIA)				PIPE DATA				PIPE CAPACITY INFORMATION (Pipe capacity is determined by Manning's Equation $Q = 1.486/n\ AR^{2/3} S^{1/2}$)					ELEVATIONS		
Pipe Run	Upstream Structure	Downstream Structure	Individual Acres A	Individual Coefficient C	Individual Flow Q (cfs)	Cumulative Flow (cfs)	Length (ft)	Diameter (in)	Slope (%)	Manning Coefficient	Required Drop (ft)	Actual Drop (ft)	Percent Full (%)	Actual Velocity (fps)	Max. Capacity (cfs)	Rim/Toc Up	Invert Up	Invert Down
	CB EX-20A	CB EX-20	0.25	0.95	0.81	0.81	21.00	10	1.71	0.013	0.03	0.36	33%	4.51	3.08	646.30	643.80	643.44
	CB EX-20	STM 5	0.15	0.95	0.48	1.29	13.00	15	0.7	0.013	0.01	0.09	29%	3.62	5.81	646.32	643.39	643.32
	STM 5	STM 4	0	0	0.00	1.29	159.40	15	0.15	0.013	0.06	0.24	51%	2.05	2.69	646.85	643.32	643.08
	STM 4	STM 3	0	0	0.00	2.58	87.00	18	0.15	0.013	0.05	0.13	60%	2.44	4.38	647.60	643.08	642.95
	STM 3	STM 2	0	0	0.00	3.33	198.00	21	0.15	0.013	0.09	0.30	53%	2.60	6.60	647.90	642.95	642.65
	STM 2	STM EX-1	0	0	0.00	3.33	165.60	21	0.15	0.013	0.07	0.25	53%	2.60	6.60	649.60	642.65	642.40
	CB EX-14	STM 4	0.4	0.95	1.29	1.29	26.00	12	0.4	0.013	0.03	0.10	55%	2.97	2.42	646.84	644.34	644.23
	CB EX-12	STM 3	0.23	0.95	0.74	0.74	13.00	12	0.11	0.013	0.01	0.01	60%	1.59	1.27	647.55	644.15	644.13
	MH 17	MH 16	2.2	0.6	4.49	4.49	140.00	18	0.13	0.013	0.26	0.18	Surcharge	---	4.05	647.71	643.10	642.92
	MH 16	MH 8A	0.59	0.95	1.91	6.39	134.00	18	0.16	0.013	0.50	0.21	Surcharge	---	4.47	648.76	642.92	642.71
	MH 8A	MH 5	0.26	0.95	0.84	7.23	52.00	21	0.19	0.013	0.11	0.10	92%	3.28	7.47	647.61	642.71	642.61
	MH 5	MH 3	0.58	0.95	1.87	9.11	51.00	21	0.12	0.013	0.17	0.06	Surcharge	---	5.85	648.21	642.61	642.55
	MH 3	MH 1	0.04	0.95	0.13	9.24	66.00	21	0.02	0.013	0.22	0.01	Surcharge	---	2.10	647.85	642.55	642.54

DAAR ENGINEERING, INC. Land Development Division

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STORM SEWER COMPUTATIONS FOR BEAUMONT PLACE

PROPOSED ALLEY RELAY & BEAUMONT AVE

SHEET 1 OF 1

DESIGN BY: AEK

PROJECT NUMBER: 120128

DATE: 3/8/2013

DESIGN DATA

STORM EVENT: 10 yr **DESIGN INTENSITY (I):** 5.1 in/hr Intensity is based on a 10 min Tc using SEWRPC IDF equations.

STRUCTURE DATA			DRAINAGE AREA AND FLOW DATA (Flow is determined by Rational Method Q = CIA)				PIPE DATA				PIPE CAPACITY INFORMATION (Pipe capacity is determined by Manning's Equation $Q = 1.486/n\ AR^{2/3} S^{1/2}$)					ELEVATIONS		
Pipe Run	Upstream Structure	Downstream Structure	Individual Acres A	Individual Coefficient C	Individual Flow Q (cfs)	Cumulative Flow (cfs)	Length (ft)	Diameter (in)	Slope (%)	Manning Coefficient	Required Drop (ft)	Actual Drop (ft)	Percent Full (%)	Actual Velocity (fps)	Max. Capacity (cfs)	Rim/Toc Up	Invert Up	Invert Down
	CB EX-20A	CB EX-20	0.25	0.95	1.21	1.21	21.00	10	1.71	0.013	0.06	0.36	44%	5.03	3.08	646.30	643.80	643.44
	CB EX-20	STM 5	0.15	0.95	0.73	1.94	13.00	15	0.7	0.013	0.01	0.09	39%	4.04	5.81	646.32	643.39	643.32
	STM 5	STM 4	0	0	0.00	1.94	159.40	15	0.15	0.013	0.14	0.24	70%	2.25	2.69	646.85	643.32	643.08
	STM 4	STM 3	0	0	0.00	3.88	87.00	18	0.15	0.013	0.12	0.13	84%	2.62	4.38	647.60	643.08	642.95
	STM 3	STM 2	0	0	0.00	4.99	198.00	21	0.15	0.013	0.20	0.30	73%	2.84	6.60	647.90	642.95	642.65
	STM 2	STM EX-1	0	0	0.00	4.99	165.60	21	0.15	0.013	0.16	0.25	73%	2.84	6.60	649.60	642.65	642.40
	CB EX-14	STM 4	0.4	0.95	1.94	1.94	26.00	12	0.4	0.013	0.08	0.10	76%	3.23	2.42	646.84	644.34	644.23
	CB EX-12	STM 3	0.23	0.95	1.11	1.11	13.00	12	0.11	0.013	0.01	0.01	83%	1.71	1.27	647.55	644.15	644.13
	MH 17	MH 16	2.2	0.6	6.73	6.73	140.00	18	0.13	0.013	0.58	0.18	Surcharge	---	4.05	647.71	643.10	642.92
	MH 16	MH 8A	0.59	0.95	2.86	9.59	134.00	18	0.16	0.013	1.12	0.21	Surcharge	---	4.47	648.76	642.92	642.71
	MH 8A	MH 5	0.26	0.95	1.26	10.85	52.00	21	0.19	0.013	0.24	0.10	Surcharge	---	7.47	647.61	642.71	642.61
	MH 5	MH 3	0.58	0.95	2.81	13.66	51.00	21	0.12	0.013	0.38	0.06	Surcharge	---	5.85	648.21	642.61	642.55
	MH 3	MH 1	0.04	0.95	0.19	13.85	66.00	21	0.02	0.013	0.50	0.01	Surcharge	---	2.10	647.85	642.55	642.54

DAAR ENGINEERING, INC. Land Development Division

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STORM SEWER COMPUTATIONS FOR BEAUMONT PLACE

PROPOSED ALLEY RELAY & BEAUMONT AVE

SHEET 1 OF 1

DESIGN BY: AEK

PROJECT NUMBER: 120128

DATE: 3/8/2013

DESIGN DATA

STORM EVENT: 25 yr **DESIGN INTENSITY (I):** 6 in/hr Intensity is based on a 10 min Tc using SEWRPC IDF equations.

STRUCTURE DATA			DRAINAGE AREA AND FLOW DATA (Flow is determined by Rational Method Q = CIA)				PIPE DATA				PIPE CAPACITY INFORMATION (Pipe capacity is determined by Manning's Equation $Q = 1.486/n\ AR^{2/3} S^{1/2}$)					ELEVATIONS		
Pipe Run	Upstream Structure	Downstream Structure	Individual Acres A	Individual Coefficient C	Individual Flow Q (cfs)	Cumulative Flow (cfs)	Length (ft)	Diameter (in)	Slope (%)	Manning Coefficient	Required Drop (ft)	Actual Drop (ft)	Percent Full (%)	Actual Velocity (fps)	Max. Capacity (cfs)	Rim/Toc Up	Invert Up	Invert Down
	CB EX-20A	CB EX-20	0.25	0.95	1.43	1.43	21.00	10	1.71	0.013	0.09	0.36	50%	5.25	3.08	646.30	643.80	643.44
	CB EX-20	STM 5	0.15	0.95	0.86	2.28	13.00	15	0.7	0.013	0.02	0.09	44%	4.22	5.81	646.32	643.39	643.32
	STM 5	STM 4	0	0	0.00	2.28	159.40	15	0.15	0.013	0.20	0.24	80%	2.31	2.69	646.85	643.32	643.08
	STM 4	STM 3	0	0	0.00	4.56	87.00	18	0.15	0.013	0.16	0.13	Surcharge	---	4.38	647.60	643.08	642.95
	STM 3	STM 2	0	0	0.00	5.87	198.00	21	0.15	0.013	0.27	0.30	84%	2.90	6.60	647.90	642.95	642.65
	STM 2	STM EX-1	0	0	0.00	5.87	165.60	21	0.15	0.013	0.23	0.25	84%	2.90	6.60	649.60	642.65	642.40
	CB EX-14	STM 4	0.4	0.95	2.28	2.28	26.00	12	0.4	0.013	0.11	0.10	89%	3.27	2.42	646.84	644.34	644.23
	CB EX-12	STM 3	0.23	0.95	1.31	1.31	13.00	12	0.11	0.013	0.02	0.01	Surcharge	---	1.27	647.55	644.15	644.13
	MH 17	MH 16	2.2	0.6	7.92	7.92	140.00	18	0.13	0.013	0.80	0.18	Surcharge	---	4.05	647.71	643.10	642.92
	MH 16	MH 8A	0.59	0.95	3.36	11.28	134.00	18	0.16	0.013	1.55	0.21	Surcharge	---	4.47	648.76	642.92	642.71
	MH 8A	MH 5	0.26	0.95	1.48	12.77	52.00	21	0.19	0.013	0.34	0.10	Surcharge	---	7.47	647.61	642.71	642.61
	MH 5	MH 3	0.58	0.95	3.31	16.07	51.00	21	0.12	0.013	0.52	0.06	Surcharge	---	5.85	648.21	642.61	642.55
	MH 3	MH 1	0.04	0.95	0.23	16.30	66.00	21	0.02	0.013	0.70	0.01	Surcharge	---	2.10	647.85	642.55	642.54

DAAR ENGINEERING, INC. Land Development Division

Engineers • Planners • Surveyors • Construction Services

STORM SEWER COMPUTATIONS FOR BEAUMONT PLACE

PROPOSED ALLEY RELAY & BEAUMONT AVE

SHEET 1 OF 1

DESIGN BY: AEK

PROJECT NUMBER: 120128

DATE: 3/8/2013

DESIGN DATA

STORM EVENT: 50 yr **DESIGN INTENSITY (I):** 6.6 in/hr Intensity is based on a 10 min Tc using SEWRPC IDF equations.

STRUCTURE DATA			DRAINAGE AREA AND FLOW DATA (Flow is determined by Rational Method Q = CIA)				PIPE DATA				PIPE CAPACITY INFORMATION (Pipe capacity is determined by Manning's Equation $Q = 1.486/n\ AR^{2/3} S^{1/2}$)					ELEVATIONS		
Pipe Run	Upstream Structure	Downstream Structure	Individual Acres A	Individual Coefficient C	Individual Flow Q (cfs)	Cumulative Flow (cfs)	Length (ft)	Diameter (in)	Slope (%)	Manning Coefficient	Required Drop (ft)	Actual Drop (ft)	Percent Full (%)	Actual Velocity (fps)	Max. Capacity (cfs)	Rim/Toc Up	Invert Up	Invert Down
	CB EX-20A	CB EX-20	0.25	0.95	1.57	1.57	21.00	10	1.71	0.013	0.11	0.36	54%	5.37	3.08	646.30	643.80	643.44
	CB EX-20	STM 5	0.15	0.95	0.94	2.51	13.00	15	0.7	0.013	0.02	0.09	47%	4.32	5.81	646.32	643.39	643.32
	STM 5	STM 4	0	0	0.00	2.51	159.40	15	0.15	0.013	0.24	0.24	88%	2.32	2.69	646.85	643.32	643.08
	STM 4	STM 3	0	0	0.00	5.02	87.00	18	0.15	0.013	0.20	0.13	Surcharge	---	4.38	647.60	643.08	642.95
	STM 3	STM 2	0	0	0.00	6.46	198.00	21	0.15	0.013	0.33	0.30	93%	2.89	6.60	647.90	642.95	642.65
	STM 2	STM EX-1	0	0	0.00	6.46	165.60	21	0.15	0.013	0.28	0.25	93%	2.89	6.60	649.60	642.65	642.40
	CB EX-14	STM 4	0.4	0.95	2.51	2.51	26.00	12	0.4	0.013	0.13	0.10	Surcharge	---	2.42	646.84	644.34	644.23
	CB EX-12	STM 3	0.23	0.95	1.44	1.44	13.00	12	0.11	0.013	0.02	0.01	Surcharge	---	1.27	647.55	644.15	644.13
	MH 17	MH 16	2.2	0.6	8.71	8.71	140.00	18	0.13	0.013	0.96	0.18	Surcharge	---	4.05	647.71	643.10	642.92
	MH 16	MH 8A	0.59	0.95	3.70	12.41	134.00	18	0.16	0.013	1.87	0.21	Surcharge	---	4.47	648.76	642.92	642.71
	MH 8A	MH 5	0.26	0.95	1.63	14.04	52.00	21	0.19	0.013	0.41	0.10	Surcharge	---	7.47	647.61	642.71	642.61
	MH 5	MH 3	0.58	0.95	3.64	17.68	51.00	21	0.12	0.013	0.63	0.06	Surcharge	---	5.85	648.21	642.61	642.55
	MH 3	MH 1	0.04	0.95	0.25	17.93	66.00	21	0.02	0.013	0.85	0.01	Surcharge	---	2.10	647.85	642.55	642.54

DAAR ENGINEERING, INC. Land Development Division

Engineers • Planners • Surveyors • Construction Services

STORM SEWER COMPUTATIONS FOR BEAUMONT PLACE

PROPOSED ALLEY RELAY & BEAUMONT AVE

SHEET 1 OF 1

DESIGN BY: AEK

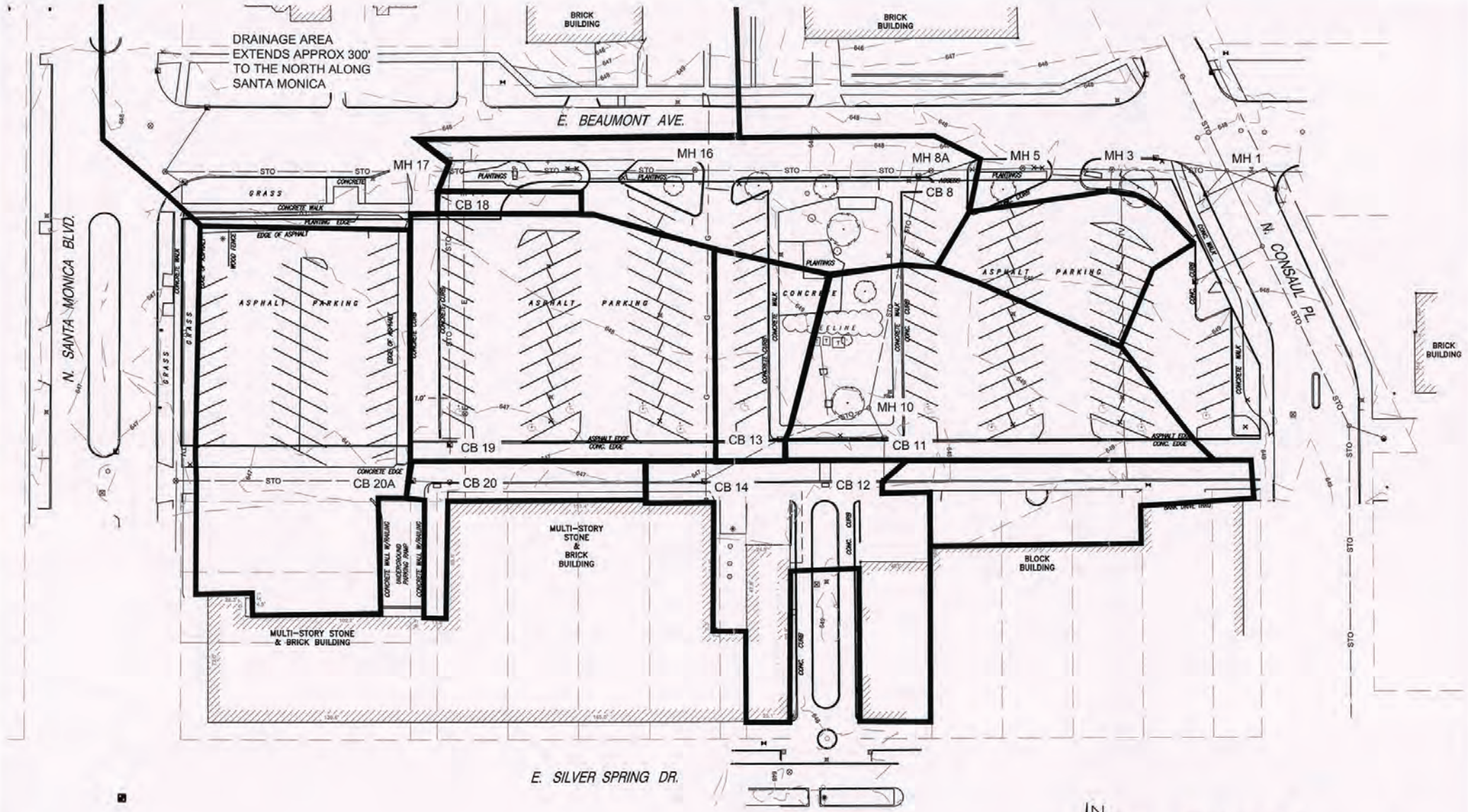
PROJECT NUMBER: 120128

DATE: 3/8/2013

DESIGN DATA

STORM EVENT: 100 yr **DESIGN INTENSITY (I):** 7.3 in/hr Intensity is based on a 10 min Tc using SEWRPC IDF equations.

STRUCTURE DATA			DRAINAGE AREA AND FLOW DATA (Flow is determined by Rational Method Q = CIA)				PIPE DATA				PIPE CAPACITY INFORMATION (Pipe capacity is determined by Manning's Equation $Q = 1.486/n\ AR^{2/3} S^{1/2}$)					ELEVATIONS		
Pipe Run	Upstream Structure	Downstream Structure	Individual Acres A	Individual Coefficient C	Individual Flow Q (cfs)	Cumulative Flow (cfs)	Length (ft)	Diameter (in)	Slope (%)	Manning Coefficient	Required Drop (ft)	Actual Drop (ft)	Percent Full (%)	Actual Velocity (fps)	Max. Capacity (cfs)	Rim/Toc Up	Invert Up	Invert Down
	CB EX-20A	CB EX-20	0.25	0.95	1.73	1.73	21.00	10	1.71	0.013	0.13	0.36	58%	5.50	3.08	646.30	643.80	643.44
	CB EX-20	STM 5	0.15	0.95	1.04	2.77	13.00	15	0.7	0.013	0.02	0.09	51%	4.43	5.81	646.32	643.39	643.32
	STM 5	STM 4	0	0	0.00	2.77	159.40	15	0.15	0.013	0.29	0.24	Surcharge	---	2.69	646.85	643.32	643.08
	STM 4	STM 3	0	0	0.00	5.55	87.00	18	0.15	0.013	0.24	0.13	Surcharge	---	4.38	647.60	643.08	642.95
	STM 3	STM 2	0	0	0.00	7.14	198.00	21	0.15	0.013	0.40	0.30	Surcharge	---	6.60	647.90	642.95	642.65
	STM 2	STM EX-1	0	0	0.00	7.14	165.60	21	0.15	0.013	0.34	0.25	Surcharge	---	6.60	649.60	642.65	642.40
	CB EX-14	STM 4	0.4	0.95	2.77	2.77	26.00	12	0.4	0.013	0.16	0.10	Surcharge	---	2.42	646.84	644.34	644.23
	CB EX-12	STM 3	0.23	0.95	1.60	1.60	13.00	12	0.11	0.013	0.03	0.01	Surcharge	---	1.27	647.55	644.15	644.13
	MH 17	MH 16	2.2	0.6	9.64	9.64	140.00	18	0.13	0.013	1.18	0.18	Surcharge	---	4.05	647.71	643.10	642.92
	MH 16	MH 8A	0.59	0.95	4.09	13.73	134.00	18	0.16	0.013	2.29	0.21	Surcharge	---	4.47	648.76	642.92	642.71
	MH 8A	MH 5	0.26	0.95	1.80	15.53	52.00	21	0.19	0.013	0.50	0.10	Surcharge	---	7.47	647.61	642.71	642.61
	MH 5	MH 3	0.58	0.95	4.02	19.55	51.00	21	0.12	0.013	0.78	0.06	Surcharge	---	5.85	648.21	642.61	642.55
	MH 3	MH 1	0.04	0.95	0.28	19.83	66.00	21	0.02	0.013	1.03	0.01	Surcharge	---	2.10	647.85	642.55	642.54



BEAUMONT PLACE RESIDENTIAL PROJECT

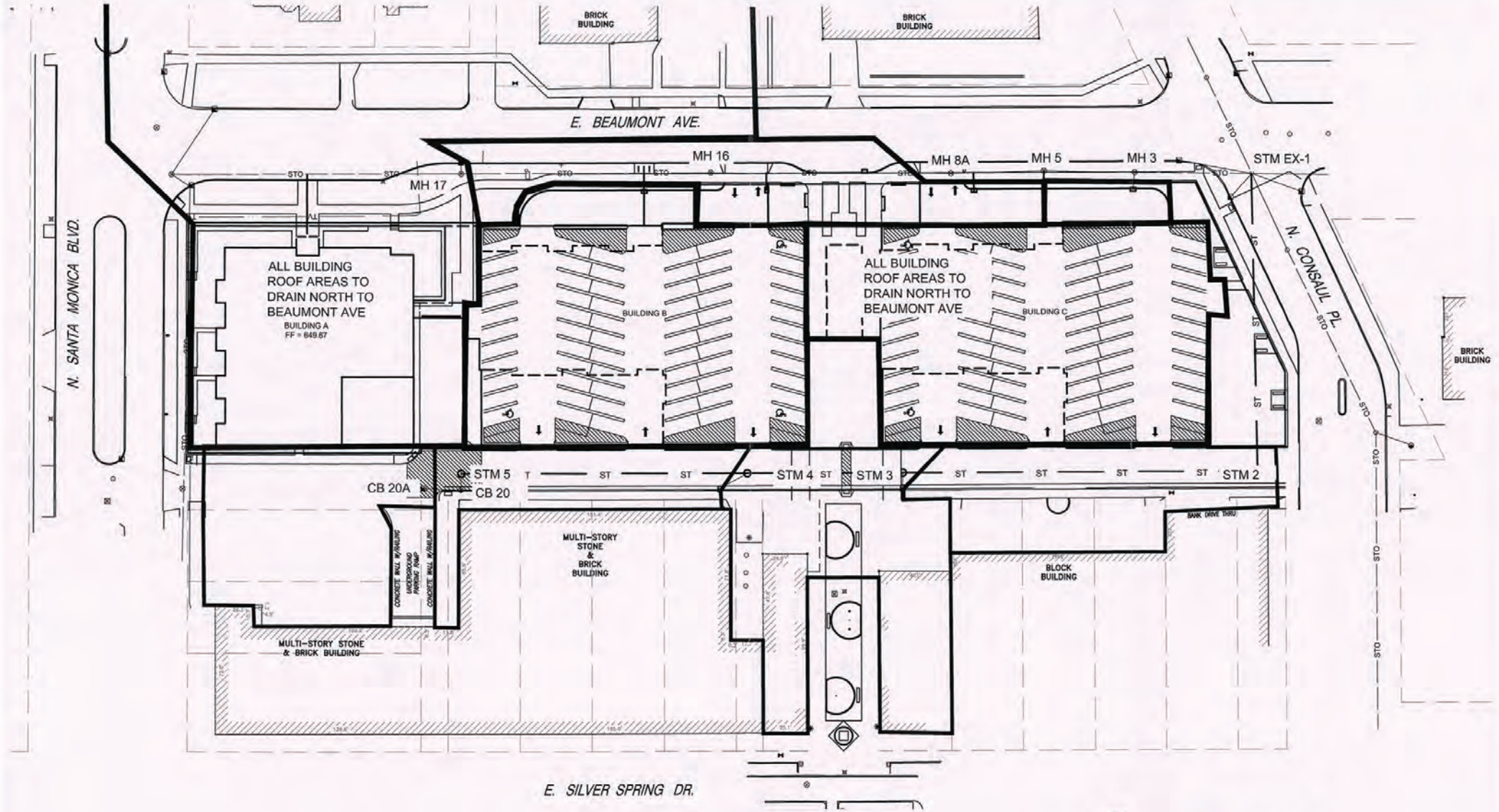
STORM SEWER EXISTING CONDITIONS

FEBRUARY 1, 2013

N
W E
S

1" = 50'

DAAR ENGINEERING, INC.
ENGINEERS PLANNERS SURVEYORS
325 EAST CHICAGO STREET, SUITE 500
MILWAUKEE, WI 53202
PHONE (414) 225-9817 FAX (414) 225-9826
www.daarengineering.com



BEAUMONT PLACE RESIDENTIAL PROJECT

STORM SEWER PROPOSED CONDITIONS

MARCH 12, 2013

N
W E
S
1" = 50'

DAAR ENGINEERING, INC.
ENGINEERS PLANNERS SURVEYORS
325 EAST CHICAGO STREET, SUITE 500
MILWAUKEE, WI 53202
PHONE (414) 225-9817 FAX (414) 225-9826
www.daarengineering.com

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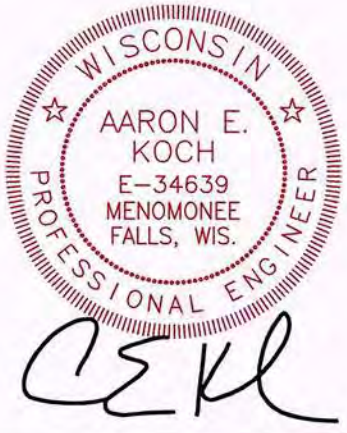
LOCAL COMPANY. GLOBAL REACH

Stormwater Management Plan
for
Beaumont Place

Village of Whitefish Bay, Wisconsin

March 21, 2013



Prepared by Aaron E. Koch, P.E.
Director of Engineering

325 E. Chicago Street, Suite 500
Milwaukee, WI 53202

Phone: 414-225-9817
Fax: 414-225-9826
www.daarcorp.com

Project Background

This project includes demolition of several parkinglot areas and construction of a new multifamily building. The project will disturb more than 1 acre (2.43 acres), Village and DNR NR151 water quality standards will apply. The project will also be subject to MMSD Chapter 13 regulations. A 10% reduction in the peak flows from existing conditions is required for a redevelopment of this size. To meet water quality goal, catch basins are proposed for the limited on-site exposed pavement. To meet the peak flow reduction goals, rooftop detention is proposed. DAAR has prepared a plan which will meet these goals.

Existing Conditions Summary

Currently the site is almost entirely parking lot. Runoff on the site drains to the south and southwest side of the site and is then conveyed via storm sewer back to the north to Beaumont Avenue. No significant off-site drainage comes onto the site. Existing soils are unmapped according to NRCS due to the high urbanization of the area. No wetlands, floodplain, or other environmental feature are present on the site. Soil borings indicate predominantly poorly graded sand for subsoils. Therefore, Hydrologic Soil Group B will be used for determining curve numbers for this report.

Proposed Conditions Summary

The proposed building will cover the majority of the site. Parking will be at grade under two thirds of the building. This parking will be under the building and will not be exposed. A small amount of pavement in the ROW around the perimeter of the site will be impacted and reconstructed in order to facilitate excavation of the underground parking level.

Modeling & Calculations

Calculations for this site runoff model were prepared using the HydroCAD Stormwater Modeling System (www.hydrocad.net) which is based on the hydrology techniques developed by the Soil Conservation Service (now the Natural Resources Conservation Service). Specifically, runoff calculations, hydrographs and pond routing are prepared using the TR-20 methodology and SCS Unit Hydrograph. The only exception being where TR-55 methodology is used to compute times of concentration based on sheet, shallow flow and channel flow.

The developed runoff condition is modeled for the 2-year through 100-year storm events using TR 55 rainfall depth data and SCS Type II rainfall distribution. Rainfall depths used in this model are as follows: 2-yr = 2.57 in, 10-yr=3.62 in, and 100-yr = 5.88 in. Rooftop detention is modeled as a series of individual ponds, each with an outlet leading to a roof conductor. Each area is slightly different based on the geometry of the roof. However, for simplicity, the areas to each conductor are averaged.

Water quality modeling is done using the SLAMM software per DNR guidelines. SLAMM is an acceptable model per NR 151. The reconstruction of public infrastructure is not considered in the calculations as it is not readily capturable and treatable. Per NR 151, transportation projects of this size and nature are exempt from the requirements. However, effort will be made to promote some additional treatment through the addition of sumped catch basins and manholes wherever possible.

325 E. Chicago Street, Suite 500
Milwaukee, WI 53202

Phone: 414-225-9817
Fax: 414-225-9826
www.daarcorp.com

The only exposed pavement on the site itself are the two access aisles north of the covered parking which is only 0.13 acres in size. Several sumped catch basins will be utilized in these areas as well.

Summary of Calculations

This section contains summary of the data compiled for the existing flows and the proposed flows for the site.

Existing Conditions

Area	Tributary Area (ac)	Runoff Curve Number (CN)	Time of Concentration (Tc) (Min)	2-year Peak Flow (cfs)	100-year Peak Flow (cfs)
Existing to Beaumont Ave	2.4	94	6.0*	7.6	19.1
10% Reduction (allowable flow goal)	---	---	---	**6.8**	**17.2**

* A Tc of 6.0 min is used since the actual computed is less than 6.0 which is the minimum allowed by TR-55.

Proposed Conditions

Area	Tributary Area (ac)	Runoff Curve Number (CN)	Time of Concentration (Tc) (Min)	2-year Peak Flow (cfs)	100-year Peak Flow (cfs)
To Roof Detention	1.0	98	6.0*	3.5	8.2
After Detention	1.0	---	---	2.2	5.7
Undetained	1.4	93	6.0*	4.3	11.0
Combined Site	2.4	95	---	**6.1**	**16.1**

* A Tc of 6.0 min is used since the actual computed is less than 6.0 which is the minimum allowed by TR-55.

Water Quality

Area Description	Area Tributary (ac)	Pounds of TSS Generated	Pounds of TSS Remaining after Treatment	Removal Rate
On site Area to be treated	0.13	110	63	43%

The Village and MMSD require that the proposed flows be 10% less than existing. The peak depth on the roof during the 100-year event is 2" which is acceptable for building design. Installation of 4 – 48" diameter catch basins in the driveways north of the main buildings will capture and treat the on-site runoff from pavement areas to just above the 40% minimum.

325 E. Chicago Street, Suite 500
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Fax: 414-225-9826
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Rain Garden

A rain garden is proposed on the east side of the project. Due to the small size of the area available and the depth of the storm sewer, it is not easily possible to capture a significant amount of runoff from the sewer. Limited surface runoff capture potential exists as well, however, the adjacent sidewalk will be reverse pitched to this area. While some stormwater quality will be achieved, this area is not part of the required stormwater management areas for the project. Thus, no calculations are provided for it. However, maintenance of the rain garden is identified in the maintenance declaration and is expected to occur on a regular basis.

Infiltration

This project is considered a redevelopment and thus infiltration is not required.

Protective Areas

Wetlands are not located on or near the site and therefore protective areas do not apply.

Floodplain

There is no floodplain located on or near the site and thus no impact is anticipated.

Construction

A WPDES permit will be in place before land disturbing activities begin. Full compliance with that permit is anticipated. An owner's representative will provide inspection for compliance. DAAR Engineering will prepare record drawings and certify compliance of the stormwater facilities.

Maintenance Plan

Inspection and maintenance of the Stormwater facilities is expected to happen on a regular basis. The private catch basins should be inspected and cleaned annually. Repairs should be made immediately as needed. Cleaning of public basins is under the Village purview. The rooftop detention should also be inspected annually. Any debris should be removed and outlets checked for deficiencies and repairs should be made immediately. Normal rooftop maintenance is also anticipated. A maintenance agreement between the owner and Village will also be prepared.

Conclusion

The proposed project will require stormwater management in the form of water quantity and quality. This will be achieved with multiple catch basins and rooftop detention. Maintenance is anticipated to occur on a regular basis.

325 E. Chicago Street, Suite 500
Milwaukee, WI 53202

Phone: 414-225-9817
Fax: 414-225-9826
www.daarcorp.com

Index of Supporting Materials

Maps

- Vicinity Map
- Aerial Photo

Reports

- HydroCAD Existing Conditions
- HydroCAD Proposed Conditions
- SLAMM Input Summary
- SLAMM Output Summary
- Geotechnical Report Selections

Exhibits

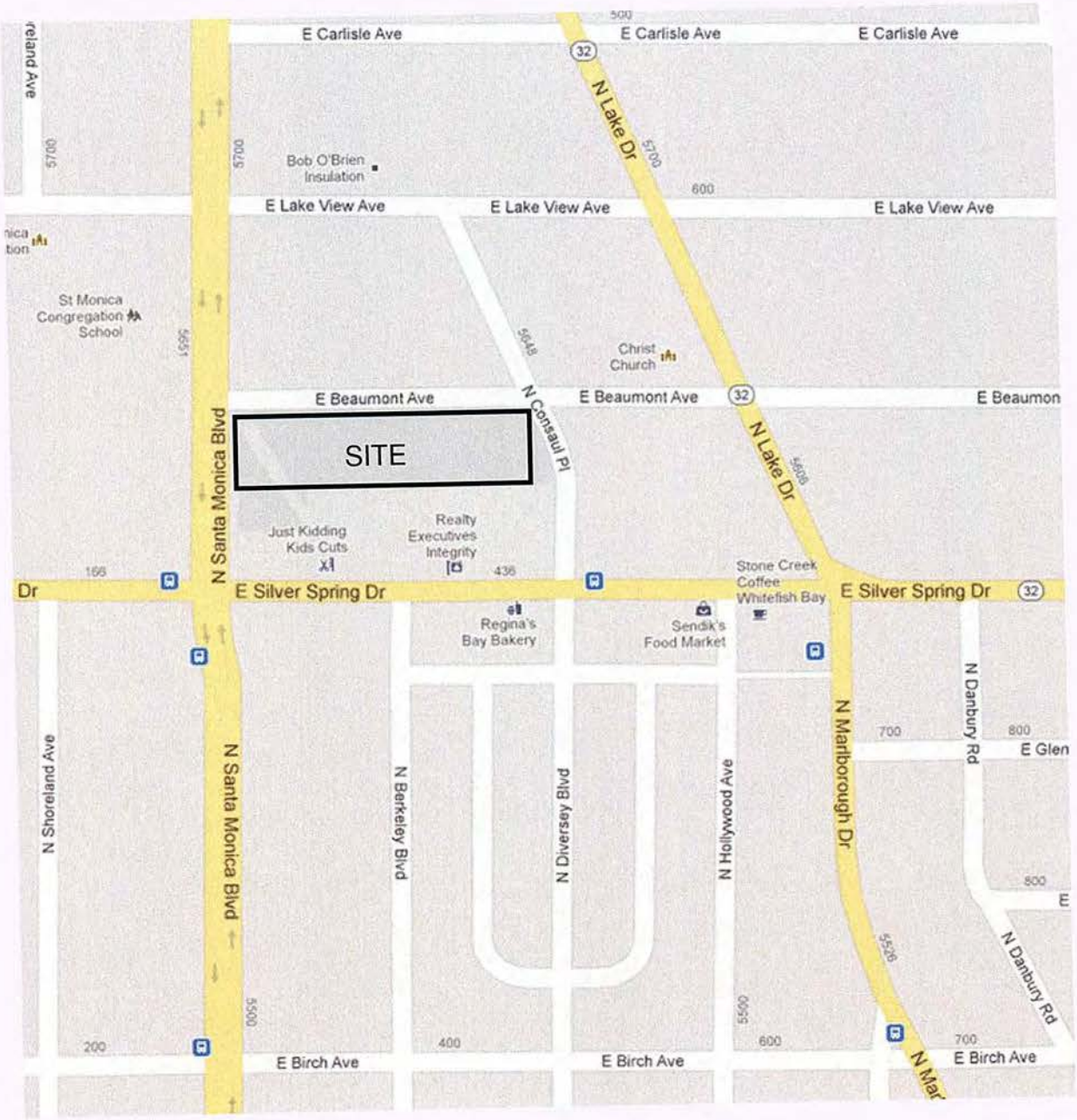
- Hydrology Exhibit Existing Conditions
- Hydrology Exhibit Proposed Conditions
- Details of Roof Detention

325 E. Chicago Street, Suite 500
Milwaukee, WI 53202

Phone: 414-225-9817
Fax: 414-225-9826
www.daarcorp.com

SITE MAPS

DAAR



Vicinity Map

Aerial Photo

HYDROGRAPHS
EXISTING CONDITIONS

Summary for Subcatchment EX: EXISTING AREA

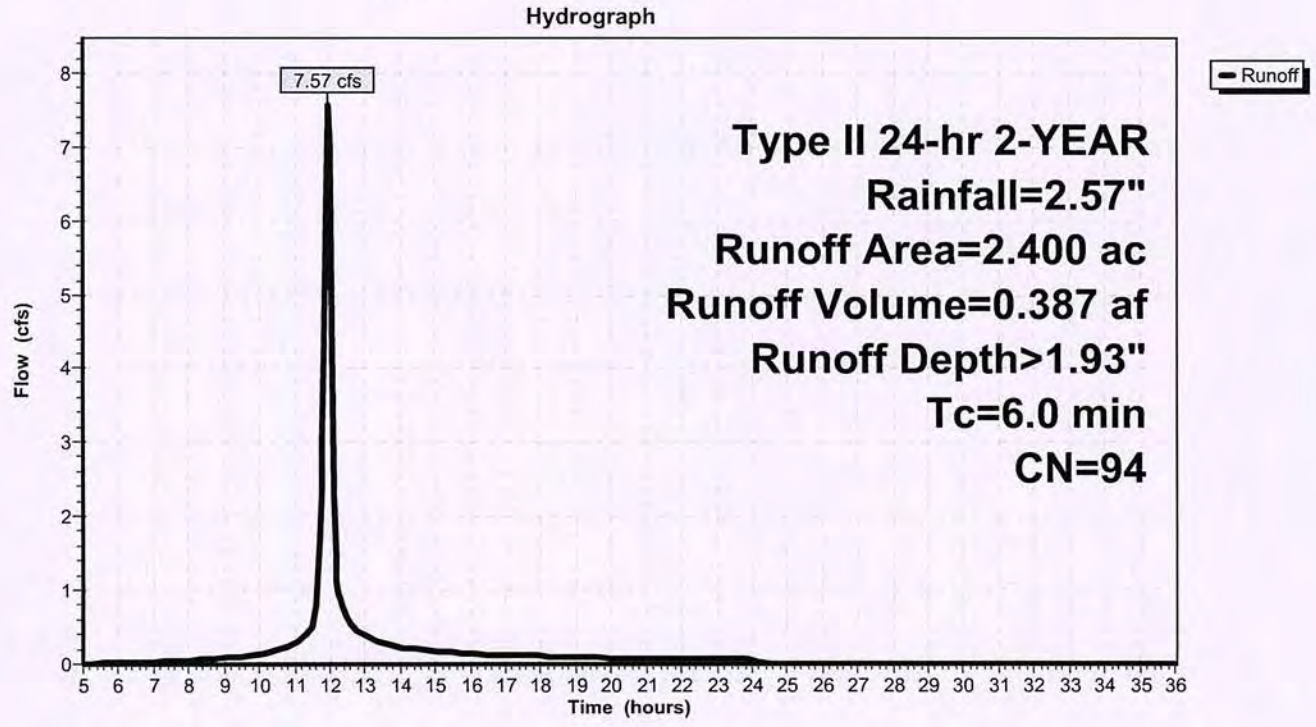
Runoff = 7.57 cfs @ 11.96 hrs, Volume= 0.387 af, Depth> 1.93"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-YEAR Rainfall=2.57"

Area (ac)	CN	Description
1.950	98	Paved parking & roofs
0.450	74	>75% Grass cover, Good, HSG C
2.400	94	Weighted Average
0.450		18.75% Pervious Area
1.950		81.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, ASSUMED**

Subcatchment EX: EXISTING AREA



Summary for Subcatchment EX: EXISTING AREA

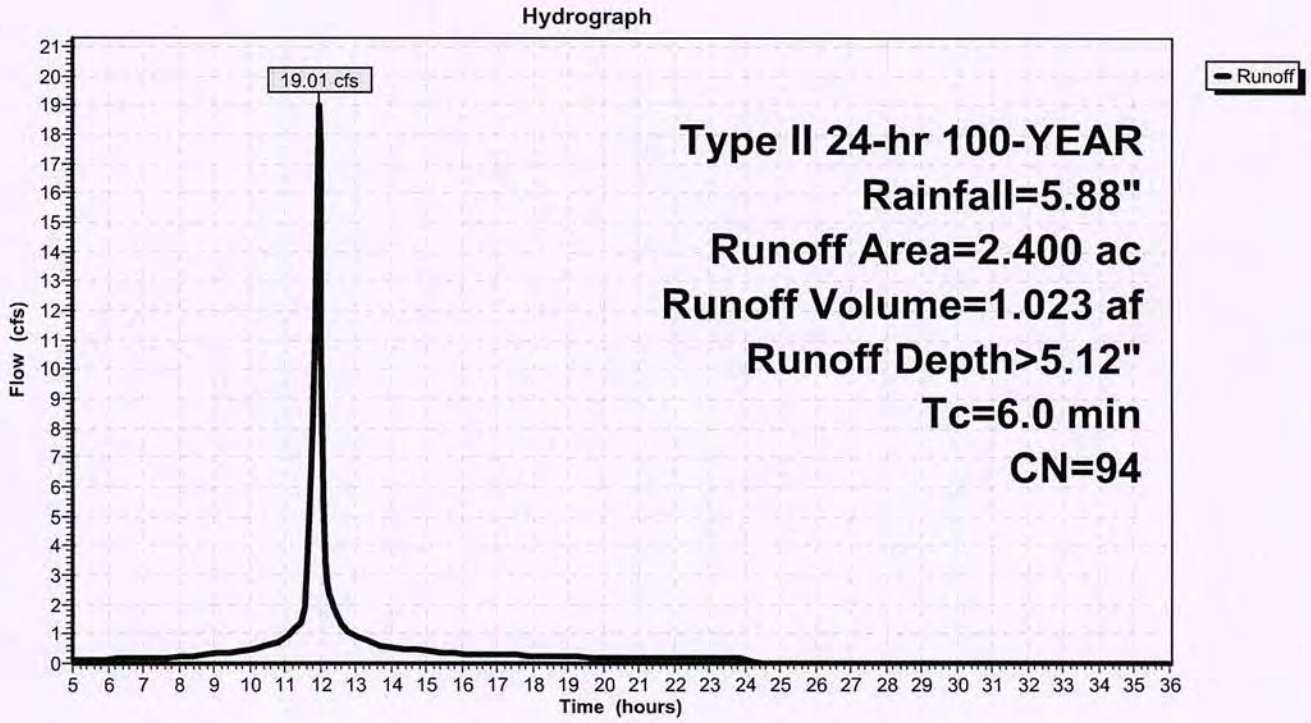
Runoff = 19.01 cfs @ 11.96 hrs, Volume= 1.023 af, Depth> 5.12"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-YEAR Rainfall=5.88"

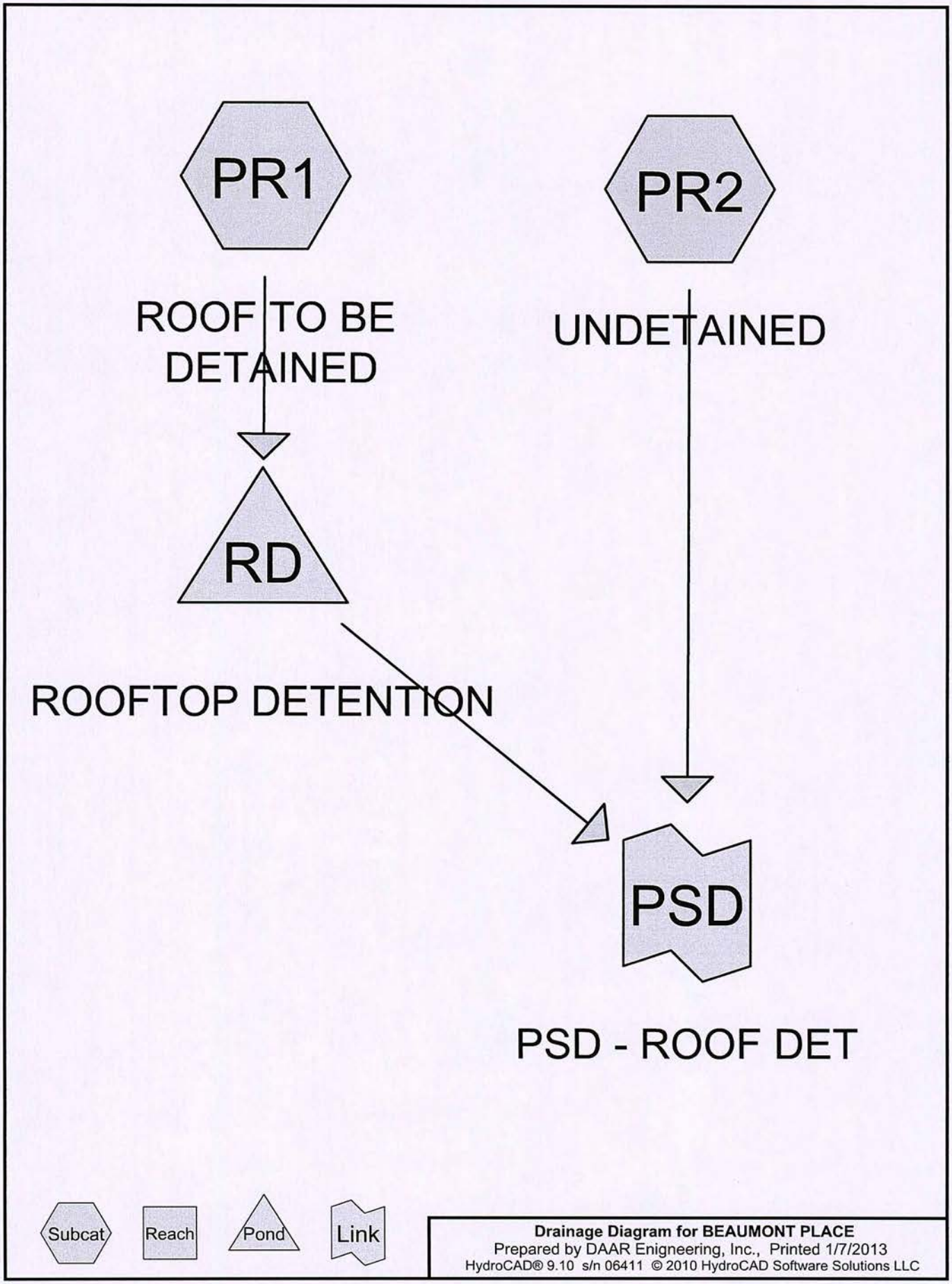
Area (ac)	CN	Description
1.950	98	Paved parking & roofs
0.450	74	>75% Grass cover, Good, HSG C
2.400	94	Weighted Average
0.450		18.75% Pervious Area
1.950		81.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, ASSUMED**

Subcatchment EX: EXISTING AREA



HYDROGRAPHS
PROPOSED CONDITIONS



Drainage Diagram for BEAUMONT PLACE
Prepared by DAAR Enigneering, Inc., Printed 1/7/2013

Time span=5.00-36.00 hrs, dt=0.05 hrs, 621 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentPR1: ROOF TO BE Runoff Area=1.000 ac 100.00% Impervious Runoff Depth>2.30"
Tc=6.0 min CN=98 Runoff=3.51 cfs 0.192 af

SubcatchmentPR2: UNDETAINED Runoff Area=1.400 ac 78.57% Impervious Runoff Depth>1.85"
Tc=6.0 min CN=93 Runoff=4.26 cfs 0.215 af

Pond RD: ROOFTOP DETENTION Peak Elev=100.09' Storage=1,992 cf Inflow=3.51 cfs 0.192 af
Outflow=2.19 cfs 0.192 af

Link PSD: PSD - ROOF DET Inflow=6.14 cfs 0.407 af
Primary=6.14 cfs 0.407 af

Total Runoff Area = 2.400 ac Runoff Volume = 0.407 af Average Runoff Depth = 2.03"
12.50% Pervious = 0.300 ac 87.50% Impervious = 2.100 ac

Summary for Subcatchment PR1: ROOF TO BE DETAINED

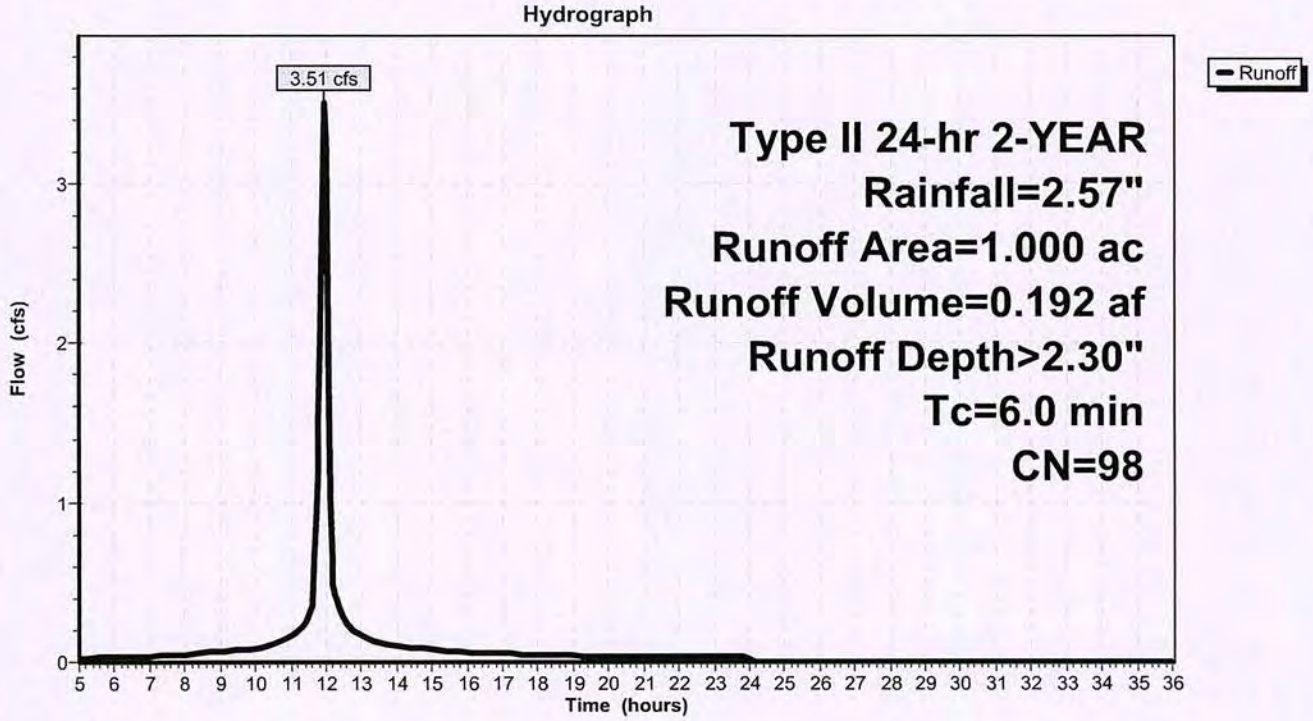
Runoff = 3.51 cfs @ 11.96 hrs, Volume= 0.192 af, Depth> 2.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-YEAR Rainfall=2.57"

	Area (ac)	CN	Description
*	1.000	98	IMPERVIOUS
	1.000		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, ASSUMED**

Subcatchment PR1: ROOF TO BE DETAINED



Summary for Subcatchment PR2: UNDETAINED

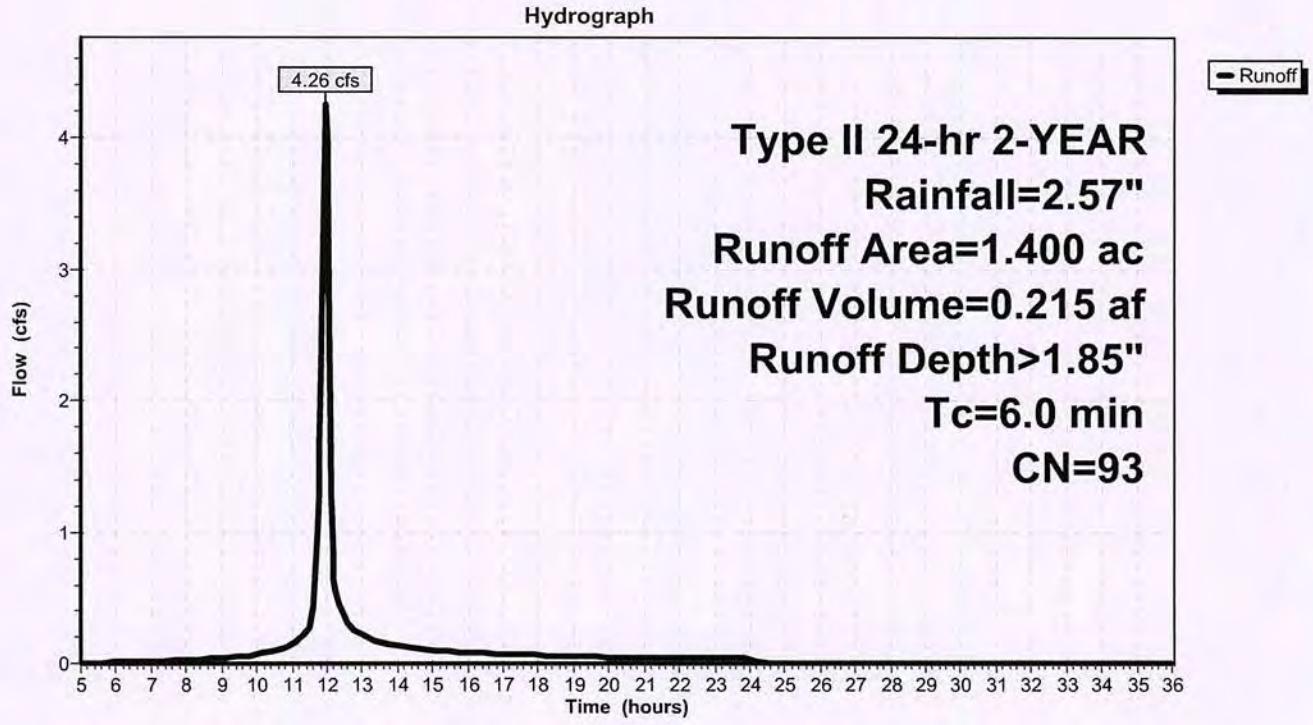
Runoff = 4.26 cfs @ 11.97 hrs, Volume= 0.215 af, Depth> 1.85"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-YEAR Rainfall=2.57"

	Area (ac)	CN	Description
*	1.100	98	NON ROOF IMPERVIOUS
*	0.300	74	GRASS
	1.400	93	Weighted Average
	0.300		21.43% Pervious Area
	1.100		78.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, ASSUMED**

Subcatchment PR2: UNDETAINED



Summary for Pond RD: ROOFTOP DETENTION

Inflow Area = 1.000 ac,100.00% Impervious, Inflow Depth > 2.30" for 2-YEAR event
Inflow = 3.51 cfs @ 11.96 hrs, Volume= 0.192 af
Outflow = 2.19 cfs @ 12.05 hrs, Volume= 0.192 af, Atten= 38%, Lag= 5.2 min
Primary = 2.19 cfs @ 12.05 hrs, Volume= 0.192 af

Routing by Stor-Ind method, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 100.09' @ 12.05 hrs Surf.Area= 7,967 sf Storage= 1,992 cf

Plug-Flow detention time= 33.5 min calculated for 0.191 af (100% of inflow)
Center-of-Mass det. time= 32.9 min (800.0 - 767.2)

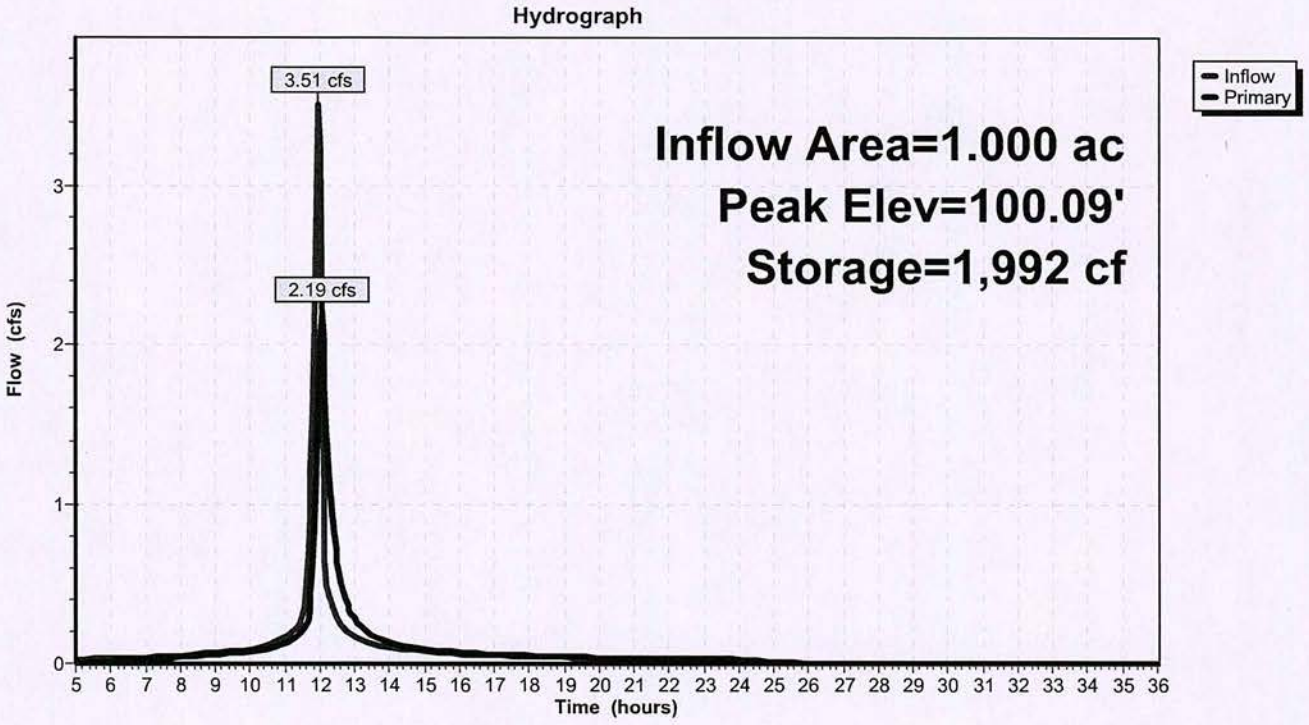
Volume	Invert	Avail.Storage	Storage Description
#1	100.00'	10,965 cf	**Custom Stage Data (Prismatic)** Listed below x 17

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
100.00	0	0	0
100.50	2,580	645	645

Device	Routing	Invert	Outlet Devices
#1	Primary	100.00'	**5.5" Horiz. Orifice/Grate X 17.00** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.19 cfs @ 12.05 hrs HW=100.09' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 2.19 cfs @ 0.98 fps)

Pond RD: ROOFTOP DETENTION

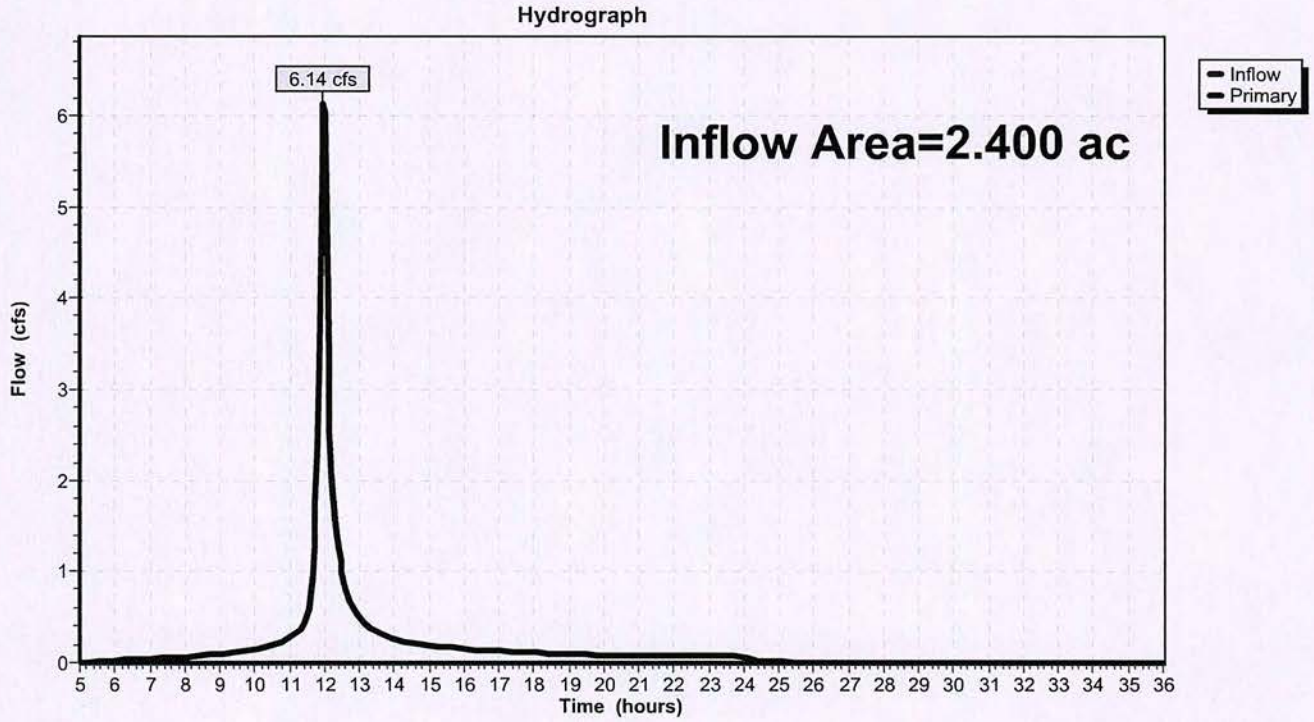


Summary for Link PSD: PSD - ROOF DET

Inflow Area = 2.400 ac, 87.50% Impervious, Inflow Depth > 2.03" for 2-YEAR event
Inflow = 6.14 cfs @ 11.98 hrs, Volume= 0.407 af
Primary = 6.14 cfs @ 11.98 hrs, Volume= 0.407 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs

Link PSD: PSD - ROOF DET



Time span=5.00-36.00 hrs, dt=0.05 hrs, 621 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentPR1: ROOF TO BE Runoff Area=1.000 ac 100.00% Impervious Runoff Depth>5.45"
Tc=6.0 min CN=98 Runoff=8.15 cfs 0.454 af

SubcatchmentPR2: UNDETAINED Runoff Area=1.400 ac 78.57% Impervious Runoff Depth>5.02"
Tc=6.0 min CN=93 Runoff=10.97 cfs 0.586 af

Pond RD: ROOFTOP DETENTION Peak Elev=100.17' Storage=3,832 cf Inflow=8.15 cfs 0.454 af
Outflow=5.68 cfs 0.454 af

Link PSD: PSD - ROOF DET Inflow=16.10 cfs 1.040 af
Primary=16.10 cfs 1.040 af

Total Runoff Area = 2.400 ac Runoff Volume = 1.040 af Average Runoff Depth = 5.20"
12.50% Pervious = 0.300 ac 87.50% Impervious = 2.100 ac

Summary for Subcatchment PR1: ROOF TO BE DETAINED

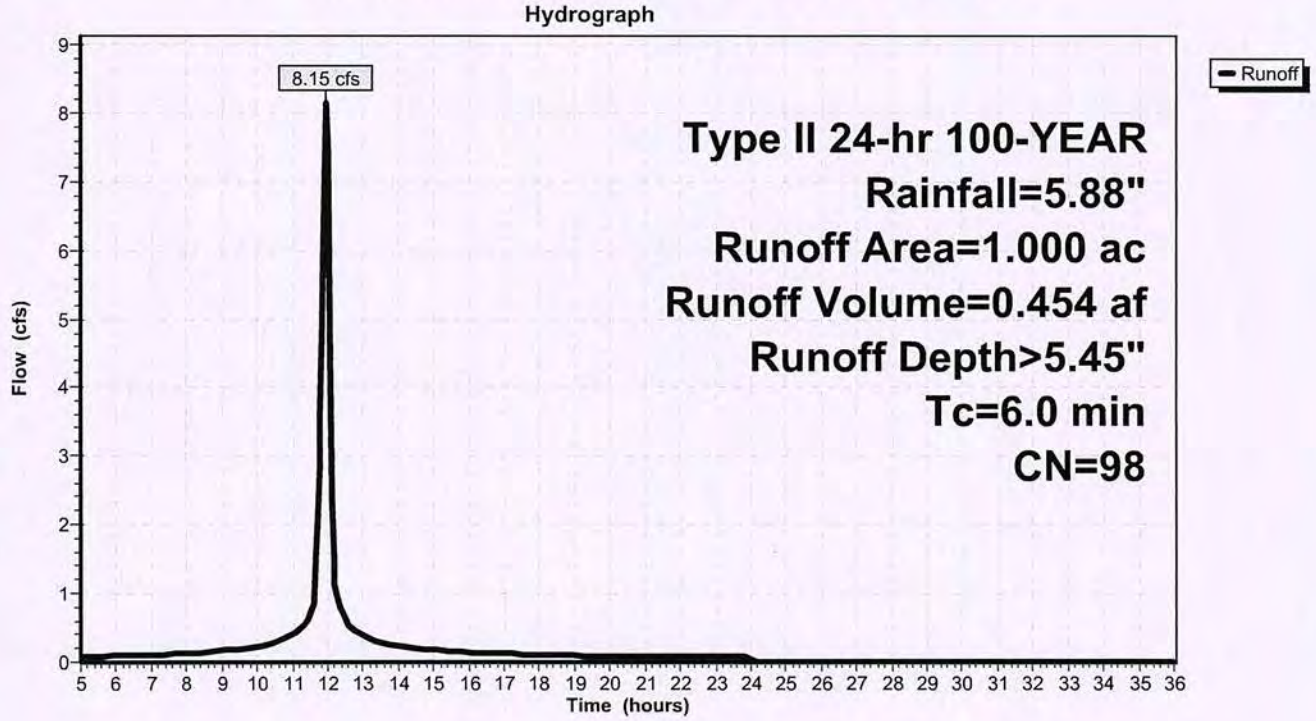
Runoff = 8.15 cfs @ 11.96 hrs, Volume= 0.454 af, Depth> 5.45"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-YEAR Rainfall=5.88"

	Area (ac)	CN	Description
*	1.000	98	IMPERVIOUS
	1.000		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, ASSUMED**

Subcatchment PR1: ROOF TO BE DETAINED



Summary for Subcatchment PR2: UNDETAINED

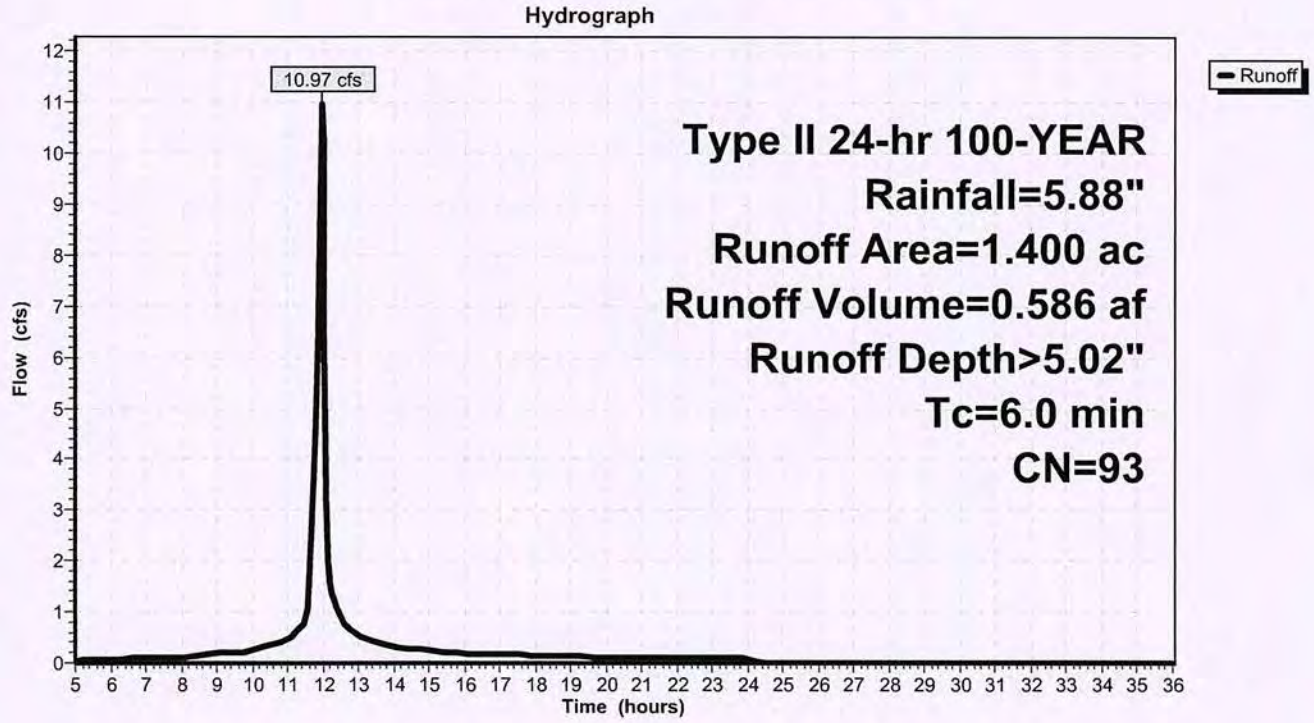
Runoff = 10.97 cfs @ 11.96 hrs, Volume= 0.586 af, Depth> 5.02"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-YEAR Rainfall=5.88"

	Area (ac)	CN	Description
*	1.100	98	NON ROOF IMPERVIOUS
*	0.300	74	GRASS
	1.400	93	Weighted Average
	0.300		21.43% Pervious Area
	1.100		78.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, ASSUMED**

Subcatchment PR2: UNDETAINED



Summary for Pond RD: ROOFTOP DETENTION

Inflow Area = 1.000 ac,100.00% Impervious, Inflow Depth > 5.45" for 100-YEAR event
Inflow = 8.15 cfs @ 11.96 hrs, Volume= 0.454 af
Outflow = 5.68 cfs @ 12.03 hrs, Volume= 0.454 af, Atten= 30%, Lag= 4.1 min
Primary = 5.68 cfs @ 12.03 hrs, Volume= 0.454 af

Routing by Stor-Ind method, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 100.17' @ 12.04 hrs Surf.Area= 15,326 sf Storage= 3,832 cf

Plug-Flow detention time= 25.7 min calculated for 0.454 af (100% of inflow)
Center-of-Mass det. time= 24.9 min (785.4 - 760.4)

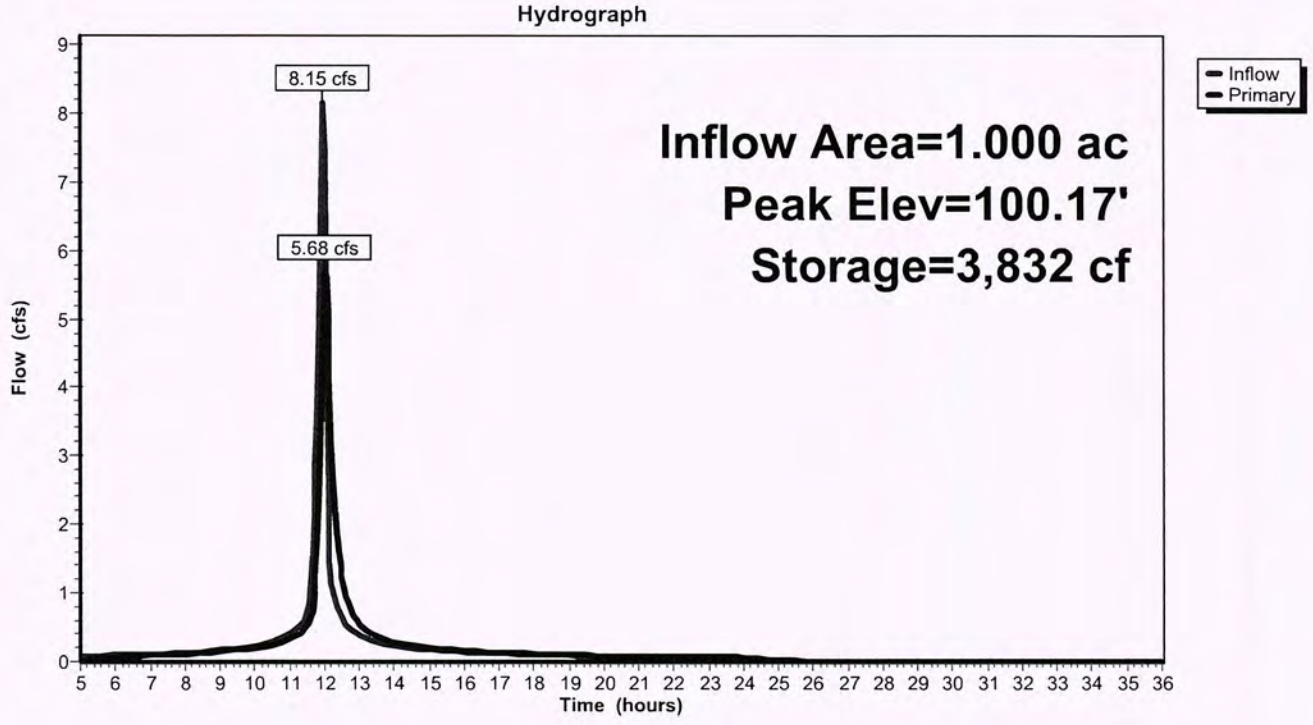
Volume	Invert	Avail.Storage	Storage Description
#1	100.00'	10,965 cf	**Custom Stage Data (Prismatic)** Listed below x 17

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
100.00	0	0	0
100.50	2,580	645	645

Device	Routing	Invert	Outlet Devices
#1	Primary	100.00'	**5.5" Horiz. Orifice/Grate X 17.00** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=5.61 cfs @ 12.03 hrs HW=100.17' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 5.61 cfs @ 2.00 fps)

Pond RD: ROOFTOP DETENTION

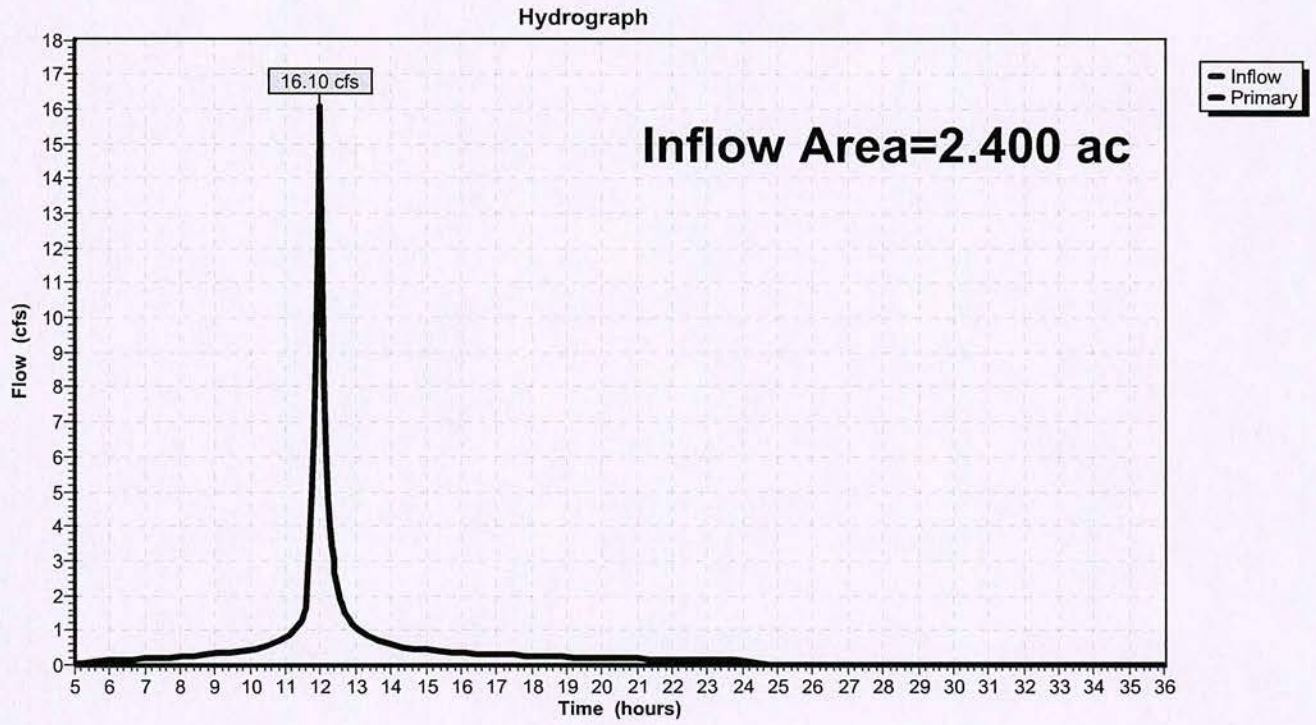


Summary for Link PSD: PSD - ROOF DET

Inflow Area = 2.400 ac, 87.50% Impervious, Inflow Depth > 5.20" for 100-YEAR event
Inflow = 16.10 cfs @ 11.98 hrs, Volume= 1.040 af
Primary = 16.10 cfs @ 11.98 hrs, Volume= 1.040 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs

Link PSD: PSD - ROOF DET



SLAMM SUMMARY

Data file name: H:\2012 Projects\120128\SWMP\SLAMM\drive aisles.dat
SLAMM Version 9.3.3
Rain file name: C:\Program Files\WinSLAMM\Rain Files\WI Milwaukee 69.RAN
Particulate Solids Concentration file name: C:\Program Files\WinSLAMM\WI_AVG01.psc
Runoff Coefficient file name: C:\Program Files\WinSLAMM\WI_SL06 Dec06.rsv
Particulate Residue Delivery file name: C:\Program Files\WinSLAMM\WI_DLV01.prr
Residential Street Delivery file name: C:\Program Files\WinSLAMM\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\Program Files\WinSLAMM\WI_Res and Other Urban Dec06.std
Commercial Street Delivery file name: C:\Program Files\WinSLAMM\WI_Res and Other Urban Dec06.std
Industrial Street Delivery file name: C:\Program Files\WinSLAMM\WI_Res and Other Urban Dec06.std
Other Urban Street Delivery file name: C:\Program Files\WinSLAMM\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\Program Files\WinSLAMM\WI_Res and Other Urban Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Pollutant Relative Concentration file name: C:\Program Files\WinSLAMM\WI_GEO01.ppd
Seed for random number generator: -42
Study period starting date: 03/28/69 Study period ending date: 12/06/69
Date: 01-07-2013 Time: 12:55:08
Fraction of each type of Drainage System serving study area:
1. Grass Swales 0
2. Undeveloped roadside 0
Curb and Gutters, `valleys', or sealed swales in:
3. Poor condition (or very flat) 0
4. Fair condition 1
5. Good condition (or very steep) 0
Site information: Beaumont Place

	|<===== Areas for each Source (acres) =====>|				
Source Area	Resi-dential Areas	Institu-tional Areas	Commercial Areas	Industrial Areas	Other Urban Areas
Roofs 1	0.00	0.00	0.00	0.00	0.00
Roofs 2	0.00	0.00	0.00	0.00	0.00
Roofs 3	0.00	0.00	0.00	0.00	0.00
Roofs 4	0.00	0.00	0.00	0.00	0.00
Roofs 5	0.00	0.00	0.00	0.00	0.00
Paved Parking/Storage 1	0.00	0.00	0.00	0.00	0.00
Paved Parking/Storage 2	0.00	0.00	0.00	0.00	0.00
Paved Parking/Storage 3	0.00	0.00	0.00	0.00	0.00
Unpaved Prkng/Storage 1	0.00	0.00	0.00	0.00	0.00
Unpaved Prkng/Storage 2	0.00	0.00	0.00	0.00	0.00
Playground 1	0.00	0.00	0.00	0.00	0.00
Playground 2	0.00	0.00	0.00	0.00	0.00
Driveways 1	0.13	0.00	0.00	0.00	0.00
Driveways 2	0.00	0.00	0.00	0.00	0.00
Driveways 3	0.00	0.00	0.00	0.00	0.00

Sidewalks/Walks 1	0.00	0.00	0.00	0.00	0.00
Sidewalks/Walks 2	0.00	0.00	0.00	0.00	0.00
Street Area 1	0.00	0.00	0.00	0.00	0.00
Street Area 2	0.00	0.00	0.00	0.00	0.00
Street Area 3	0.00	0.00	0.00	0.00	0.00
Large Landscaped Area 1	0.00	0.00	0.00	0.00	0.00
Large Landscaped Area 2	0.00	0.00	0.00	0.00	0.00
Undeveloped Area	0.00	0.00	0.00	0.00	0.00
Small Landscaped Area 1	0.00	0.00	0.00	0.00	0.00
Small Landscaped Area 2	0.00	0.00	0.00	0.00	0.00
Small Landscaped Area 3	0.00	0.00	0.00	0.00	0.00
Isolated/Water Body Area	0.00	0.00	0.00	0.00	0.00
Other Pervious Area	0.00	0.00	0.00	0.00	0.00
Other Dir Cnctd Imp Area	0.00	0.00	0.00	0.00	0.00
Other Part Cnctd Imp Area	0.00	0.00	0.00	0.00	0.00
Total	0.13	0.00	0.00	0.00	0.00

Freeway Source Area	Area (acres)
Pavd Lane & Shldr Area 1	0.00
Pavd Lane & Shldr Area 2	0.00
Pavd Lane & Shldr Area 3	0.00
Pavd Lane & Shldr Area 4	0.00
Pavd Lane & Shldr Area 5	0.00
Large Turf Areas	0.00
Undeveloped Areas	0.00
Other Pervious Areas	0.00
Other Directly Conctd Imp	0.00
Other Partially Conctd Imp	0.00
Total	0.00

Total of All Source Areas	0.13
Total of All Source Areas less All Isolated Areas	0.13

Source Area Control Practice Information

Land Use: Residential

Driveways 1 Source area number: 13

The Source Area is directly connected or draining to a directly connected area

Drainage System

Control Practice 1 : Catchbasin Cleaning Controls

1. Area served by catchbasins (acres) = 0.13
2b. Number of catchbasins = 4
3. Average sump depth below catchbasin outlet invert (feet) = 2
4. Depth of sediment in catchbasin sump at beginning of study period (ft) = 0
5. Typical outlet pipe diameter (ft) = 0.5
6. Typical outlet pipe Mannings n = 0.012
7. Typical outlet pipe slope (ft/ft) = 0.02
8. Typical catchbasin sump surface area (square feet) = 12.6
9. Total catchbasin depth (feet) = 6
10. Inflow hydrograph peak to average flow ratio = 3.8
11. Leakage rate through sump bottom (in/hr) = 0
12. Catchbasin Critical Particle Size File Name: C:\Program Files\WinSLAMM\NURP.CPZ
12. Catchbasin cleaning frequency: Annually

Outfall

Pollutants to be Analyzed and Printed:

Pollutant Name	Pollutant Type
Solids	Particulate

SLAMM for Windows Version 9.3.3

Data file name: H:\2012 Projects\120128\SWMP\SLAMM\drive aisles.dat
Data file description: Beaumont Place
Rain file name: C:\Program Files\WinSLAMM\Rain Files\WI Milwaukee 69.RAN
Particulate Solids Concentration file name: C:\Program Files\WinSLAMM\WI_AVG01.psc
Runoff Coefficient file name: C:\Program Files\WinSLAMM\WI_SL06 Dec06.rsv
Particulate Residue Delivery file name: C:\Program Files\WinSLAMM\WI_DLV01.prr
Residential Street Delivery file name: C:\Program Files\WinSLAMM\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\Program Files\WinSLAMM\WI_Res and Other Urban Dec06.std
Commercial Street Delivery file name: C:\Program Files\WinSLAMM\WI_Res and Other Urban Dec06.std
Industrial Street Delivery file name: C:\Program Files\WinSLAMM\WI_Res and Other Urban Dec06.std
Other Urban Street Delivery file name: C:\Program Files\WinSLAMM\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\Program Files\WinSLAMM\WI_Res and Other Urban Dec06.std
Pollutant Relative Concentration file name: C:\Program Files\WinSLAMM\WI_GEO01.ppd
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Model Run Start Date: 03/28/69 Model Run End Date: 12/06/69
Date of run: 01-07-2013 Time of run: 12:54:50
Total Area Modeled (acres): 0.13
Years in Model Run: 0.67

	Runoff Volume (cu ft)	Percent Runoff Volume Reduction	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Source Area Total without Controls:	11442	0 %	153.9	109.9	0 %
Total Before Drainage System:	11442	0.00%	154.1	109.9	0.00%
Total After Drainage System:	11442	0.00%	88.11	62.94	42.73%
Total After Outfall Controls:	11442	0.00%	88.11	62.94	42.73%
Annualized Total After Outfall Controls:	17186			94.53	

GEOTECHNICAL REPORT

4.0 FIELD AND LABORATORY TESTING PROGRAM

A groundwater drawdown test was performed on the wells installed in GZ-5 and GZ-6 to estimate the dewatering requirements for the project. The temporary wells were constructed with 4-inch diameter, slotted PVC screens that extended to depths of approximately 23 feet to 26 feet bgs. After well development, groundwater was pumped from the wells at a constant flow rate of approximately 10 gallons per minute (gpm) and drawdown in the well was measured. Once the drawdown stabilized, the pump was shut off and water level recovery was measured with a pressure transducer. The groundwater levels measured are provided in Appendix C.

Laboratory tests were performed on the recovered soil samples to estimate the grain size distribution of the select soil samples. Results of the grain size distribution tests are provided in Appendix C.

5.0 SUBSURFACE CONDITIONS

The Site is situated in a previously developed, commercial/residential area of Whitefish Bay, Wisconsin. The Site slopes south with elevations varying about 2 feet across the Site. The subsurface conditions encountered at the borings are summarized in this section and detailed descriptions of the subsurface conditions are provided on the boring logs in Appendix B.

5.1 SOIL

5.1.1 Asphalt Pavement and Topsoil

Asphalt pavement was present at the ground surface at GZ-4 and was approximately 4 inches thick. The asphalt pavement was underlain by approximately 8 inches of gravel base course. Topsoil was present at the ground surface at borings GZ-5 and GZ-6 and was approximately 18 inches thick.

5.1.2 Fill

Fill that generally consisted of lean clay with concrete was present beneath the topsoil in boring GZ-6. The fill was present to depths of 6 feet bgs at the boring location.

5.1.3 Sand

Poorly graded sand was present beneath the asphalt and fill soils to depths of approximately 22 feet to 29 feet bgs. GZA classified the sand as a SP-type soil in general accordance with ASTM D2488 – *Standard Practice for the Description and Identification of Soil (Visual-Manual Procedure)*. Laboratory grain size distribution tests indicated the sands were generally considered silty sand (SM-type) to poorly graded sand with silt (SP- or SM-type). The N-value of the sand varied from 7 to 54, but was typically between 12 and 25, indicating relative densities in the medium-dense category.

5.1.4 Clay

Lean clay was typically present beneath the sand and was present to boring termination depths of approximately 35 feet bgs. GZA classified the clay as a CL-type soil in general accordance with ASTM D2488 – *Standard Practice for the Description and Identification of Soil (Visual-Manual Procedure)*. The N-value of the clay varied from 13 to 29, but was typically greater than 15, indicating a relative stiffness in the stiff category.

5.2 GROUNDWATER

Based on the water levels measured in GZ-5 and GZ-6, we estimate the depth to groundwater at the time of our explorations was approximately 12 feet bgs. In addition, groundwater observations made during drilling are noted on the boring logs included in Appendix B. The groundwater level will fluctuate due to variations in precipitation, seasonal conditions, local withdrawal rates and other factors. Therefore, groundwater conditions observed during drilling could differ materially from those encountered during construction.

Groundwater pumping tests were conducted in temporary wells in GZ-5 and GZ-6 to evaluate the change in groundwater levels in response to pumping. Water was pumped from GZ-5 at a rate of approximately 9 gpm and the water level response in the well was measured. The water levels declined approximately 5 feet in response to the groundwater pumping, indicating an apparent transmissivity of approximately 2,700 gallons per day per foot (gpd/ft). Water was pumped from GZ-6 at a rate of approximately 8 gpm and the water level response in the well was measured. The water levels declined approximately 2.6 feet in response to the groundwater pumping, indicating and apparent transmissivity of approximately 4,600 gpd/ft.

EXHIBITS

ROOF DRAIN

868 series

Item # Submitted _____

Job Name _____

Location _____

Engineer _____

Contractor _____

PO# _____ TAG _____

SPECIFICATION

Sioux Chief 868 series roof drain shall be used where necessary in drainage systems. Drain shall have U.V. resistant polyethylene, or epoxy-coated aluminum dome strainer, and epoxy-coated aluminum gravel guard/flashing clamp. Drain body shall have a Sch. 40 hub connection. Connection to drainage system shall be made with solvent weld joint to ABS or PVC pipe. Designed in accordance with ASME A112.6.4-2003

868-P4M

MATERIALS

dome strainer: polyethylene, epoxy-coated aluminum
gravel guard/flashing clamp: epoxy-coated aluminum
drain body: ABS, PVC

STRAINER FREE-AREA

49.65 in²

CONNECTION TYPE

Sch. 40 hub

DIMENSIONS

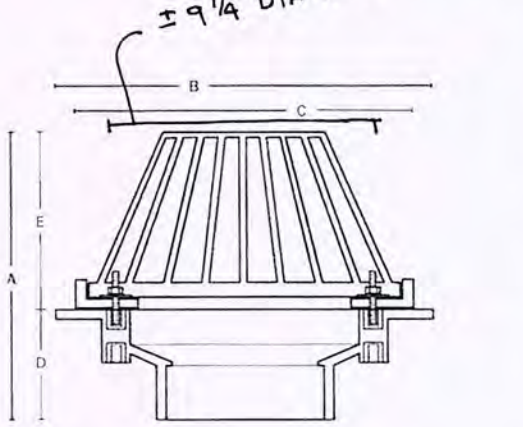
A: overall height	8 3/8"
B: overall diameter	11"
C: collar/clamp diameter	10 1/4"
D: body height	3 3/8"
E: elevation	5 1/4"

CIRC OF OUTLET = $2\pi(9.6") = 28.9$ in

ONLY 60% IS OPEN

EQUIVALENT CIRC OF OUTLET = 17.4 in

EQUIVALENT DIAMETER = 5.5 in



Create Item Number

868-ABC

e.g. 868-P4MUS = Roof drain with 4" PVC hub connection, aluminum dome strainer, underdeck clamp kit, and sump receiver

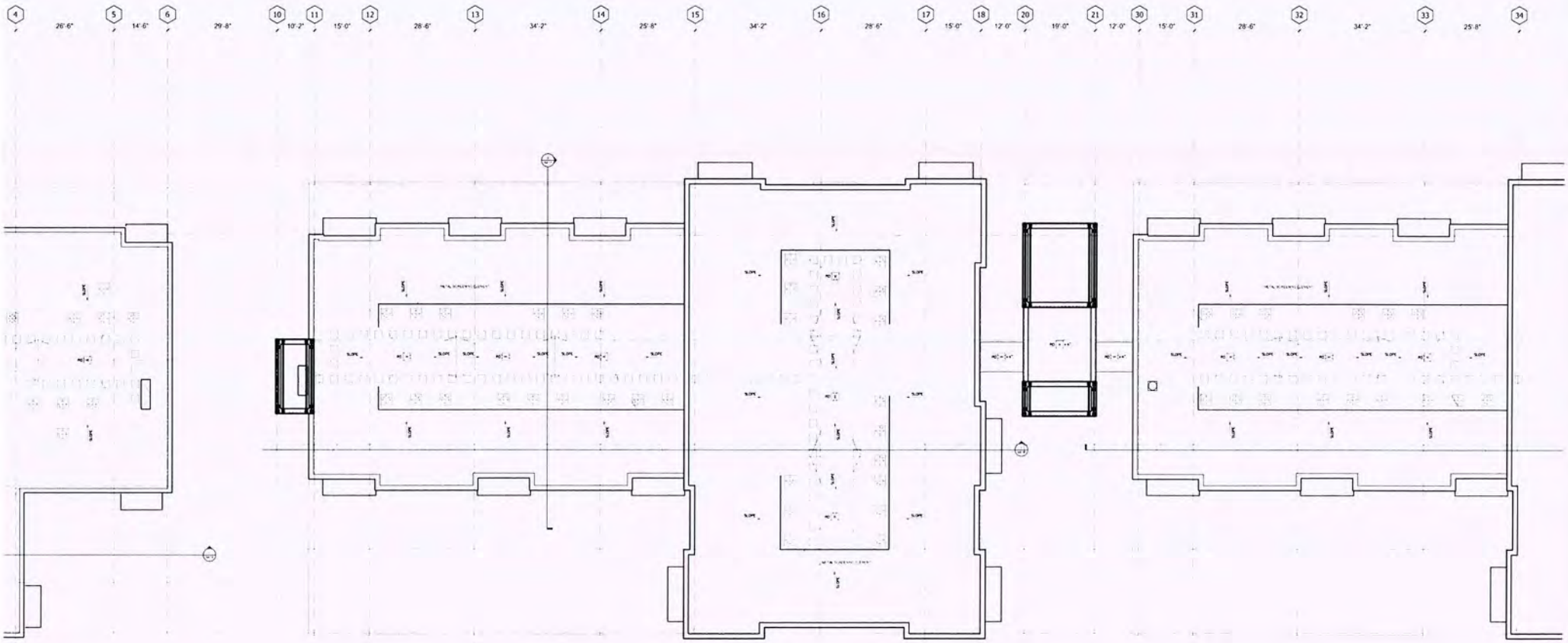
A	CONNECTION TYPE
☐ A	ABS Sch. 40 Hub
☐ P	PVC Sch. 40 Hub

B	CONNECTION SIZE
☐ 3	3"
☐ 4	4"
☐ 6	6"

C	OPTIONS
☐ M	epoxy-coated aluminum dome strainer[1]
☐ V	vandal-resistant dome screws
☐ W	2 3/16" external water dam
☐ P	screen-wrap for dome strainer
☐ STP2	2" internal stand-pipe
☐ U	underdeck clamp kit
☐ E	extension collar kit
☐ S	16" diameter sump receiver

	ACCESSORIES
☐ 868-MC	Epoxy-coated aluminum gravel guard/flashing clamp
☐ 868-WD	Epoxy-coated aluminum 2 3/16" external water dam
☐ 868-C	Underdeck clamp kit
☐ 868-E	Extension collar kit
☐ 868-S	Sump receiver

1 Poly dome strainer is standard unless otherwise specified



TOTAL AREA OF MAIN ROOFS = 1.0 ACRE (43,800 SF)
ROOF DRAINS ON MAIN ROOF LEVEL = 17
AVERAGE AREA TO ROOF DRAIN = 2,580 SF

OVERFLOW SCUPPERS TO BE PROVIDED FOR EMERGENCY OVERFLOW. SCUPPER HEIGHT TO BE A MINIMUM OF 6" ABOVE ROOF DRAINS. LOCATIONS TO BE DETERMINED.

DECLARATION OF COVENANT FOR STORM SEWER MAINTENANCE

Document Number

THIS DECLARATION OF COVENANT FOR STORM WATER MANAGEMENT FACILITY MAINTENANCE and related covenants is declared and made this _____ day of _____, 2013 by Beaumont Place LLC ("Developer").

WHEREAS, as Developer owns the real property described below on Exhibit A attached hereto and incorporated herein by reference (the "Property"); and

WHEREAS, Developer intends to develop the Property; and

WHEREAS, pursuant to subdivision and/or other applicable approvals, including permit approvals granted by the Village of Whitefish Bay, and in accordance with and obedience to conditions of such approvals and the applicable code provisions and Village policies governing storm water management facilities, and in order to insure that the storm water facilities constructed on and serving the Property continue to function according to the design and performance standards which they were constructed to meet, in perpetuity , Developer, for the benefit of itself, its successors in interest and the Property in perpetuity, hereby declares the following covenants, conditions and restrictions relating to the installation and maintenance of the storm water facilities on the subject Property; and

WHEREAS, This Agreement includes the following exhibits:

Exhibit A: Legal Description of the real estate to which this Agreement applies ("Property").

Exhibit B: Location Map(s) – shows an accurate location of each storm water facility affected by this Agreement.

Exhibit C: Minimum Maintenance Requirements – prescribes those activities that must be carried out to maintain compliance with this Agreement.

Through this Declaration Developer hereby subjects the Property to the following covenants, conditions and restrictions:

1. Developer and its assigns and successors in interest ("Responsible Party") shall be responsible for the routine and extraordinary maintenance of the storm water facilities identified in Exhibit B. and shall maintain the storm water facilities in accordance with Exhibit C.
2. The Village of Whitefish Bay, or its designee, is authorized to access the Property as necessary to conduct inspections of the storm water management facilities to ascertain compliance with this Agreement and the minimum storm sewer practice maintenance requirements prescribed in Exhibit C.
3. Upon notification to the Responsible Party by the Village of Whitefish Bay of maintenance deficiencies which require correction, the specified corrective actions shall be performed by the Responsible Party within a reasonable time frame, as shall be prescribed by the Village Engineer, which shall be no less than thirty (30) days.
4. The Village of Whitefish Bay is authorized to perform the corrective actions identified in its inspection report or its notice if the Responsible Party does not make the required corrections within the time period prescribed by the Village Engineer for corrective action. The costs and expenses of such

Name and Return Address
Beaumont Place LLC
c/o Mandel Group, Inc.
301 East Erie Street
Milwaukee, WI 53202

Parcel Identification Number(s) – (PIN)

corrective actions shall, in accordance with Section 66.0627 of the Wisconsin Statues, be invoiced to the Responsible Party and if not paid within the time determined by the Village Board, shall be entered on the tax roll as a special charge against the Property, and collected with any other taxes levied thereon for the year in which the work is completed.

5. This Declaration shall run with the Property and be binding upon the Developer and its successors and assigns. This Declaration may not be amended or abrogated in part or whole, without the express written consent of the Village of Whitefish Bay.

Dated this ___ day of _____, 2013.

Owner: Beaumont Place LLC

By: Mandel / Beaumont Place LLC
It's Manager

By: _____
Barry R. Mandel
Manager

Acknowledgements

State of Wisconsin) :ss
County of Milwaukee)

Personally came before me this _____ day of _____, 2013 the above named Barry R. Mandel, the Manager of Mandel/Beaumont Place LLC, the Manager of Beaumont Place LLC, to me known to be the person who executed the foregoing instrument and acknowledged the same.

_____
Name
Notary Public, State of Wisconsin
My commission expires:_____

This document was drafted by:

Aaron E. Koch, P.E.
DAAR Engineering, Inc.
325 E. Chicago Street, Ste 500
Milwaukee, WI 53202

Exhibit A – Legal Description

The following description and reduced copy map identifies the land parcel(s) affected by this Declaration. For a larger scale view of the referenced document, contact the Milwaukee County Register of Deeds office.

Project Identifier: **Beaumont Place**
Map Produced By: **Chaput Land Surveys LLC**
Legal Description:

COMMENCING at the Southwest corner of said 1/4 Section; thence North 00°10'25" West along the West line of said 1/4 Section 188.00 feet to a point; thence North 89°43'08" East 33.00 feet to a point on the East line of Santa Monica Boulevard and the point of beginning of the lands to be described; thence North 00°10'25" West along said East line 140.00 feet to a point on the South line of East Beaumont Avenue; thence North 89°43'08" East along said South line 181.02 feet to a point; thence Northeasterly 19.37 feet along said South line and a arc of a curve, whose center lies to the Southeast, whose radius is 17.50 feet and whose chord bears North 26°34'20" East 18.40 feet to a point of compound curve; thence Northeasterly 17.15 feet along said South line and arc of a curve, whose center lies to the South, whose radius is 31.25 feet and whose chord bears North 74°00'04" East 16.93 feet to a point; thence North 89°43'08" East along said South line 357.10 feet to a point on the West line of North Consaul Place; thence South 25°14'20" East along said West line 116.40 feet to a point; thence South 00°10'25" East along said West line 55.47 feet to a point on the North line of a Public Alley; thence South 89°43'08" West along said North line 467.00 feet to a point; thence North 00°10'25" West along said North line 14.00 feet to a point; thence South 89°43'08" West along said North line 15.00 feet to a point; thence South 00°10'25" East along said North line 14.00 feet to a point; thence South 89°43'08" West along said North line 130.00 feet to the point of beginning.
Said lands contain 91,821 square feet, or 2.1079 acres.

Exhibit B - Location Map

Storm Sewer Management Practices Covered by this Declaration

The storm sewer management practices covered by this Declaration are depicted in the reduced copy of the construction plans, as shown below.

Subdivision Name: **Beaumont Place**
Practices: **Rooftop detention, catch basins, and rain garden**
Location of Practices: **Roof, access drive north of buildings, and west side of project**

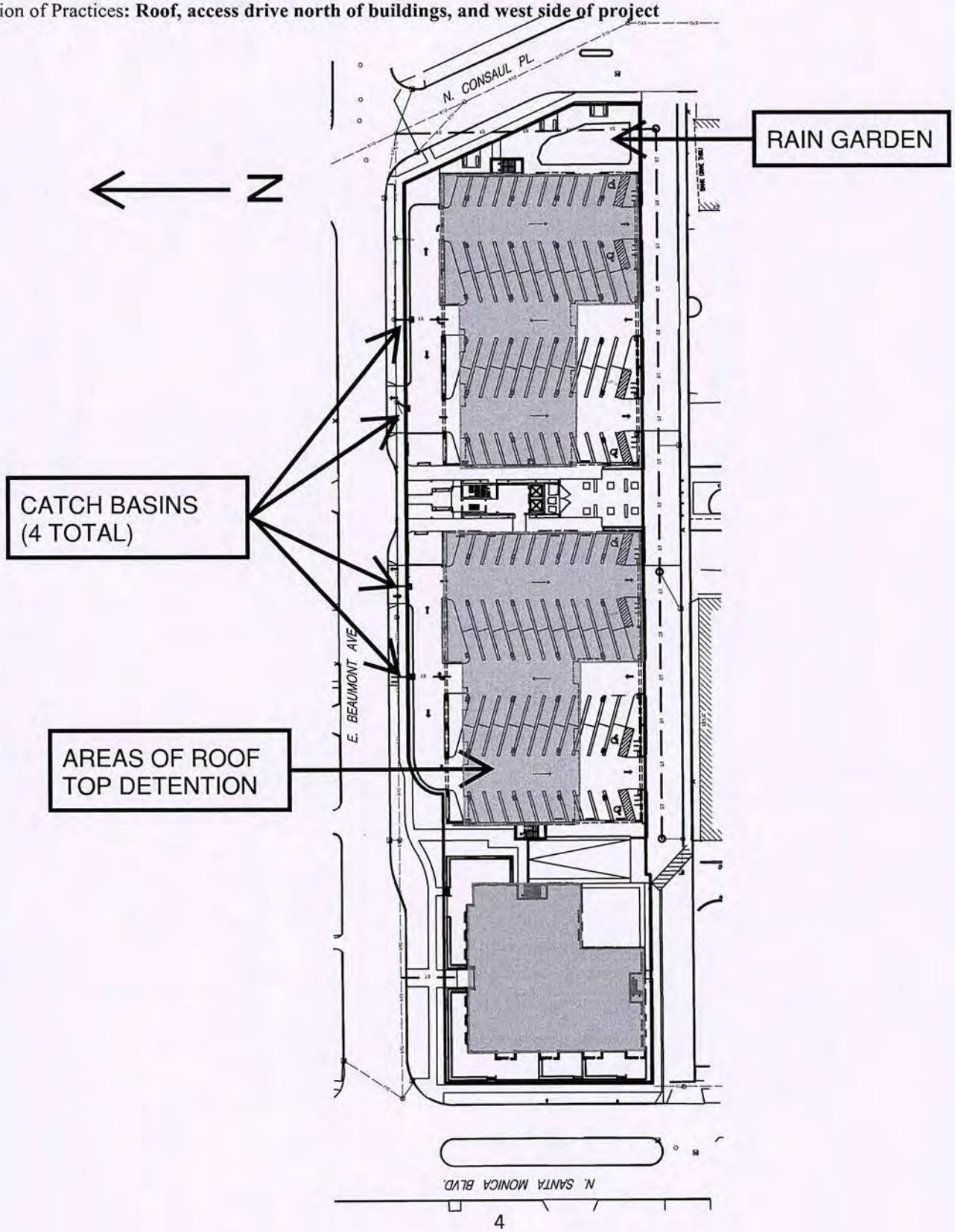


Exhibit C
Minimum Storm Water Facility Maintenance Requirements

This exhibit explains the basic function of each of the storm water facilities shown on Exhibit B and prescribes the minimum maintenance requirements to remain compliant with conditions of development approval, Village ordinances and policies, and the Declaration to which this is appended. The maintenance activities listed below are aimed to ensure these practices continue serving their intended functions in perpetuity. The list of activities is not all inclusive, but rather indicates the minimum type of maintenance that can be expected for this particular site. Access to the storm water facilities for maintenance vehicles is shown in Exhibit B. Any failure of a storm water facility that is caused by a lack of maintenance will subject the Responsible Party to enforcement of the provisions in this Declaration, by the Village of Whitefish Bay.

System Description:
Rooftop detention, catch basins, and rain garden.

Minimum Maintenance Requirements:
To ensure the proper function of the storm water management facilities described above, the following activities must be completed:

Rooftop Detention

1. All outlet grates and the overflow scuppers must be checked annually to ensure there is no blockage from debris. Any blockage must be removed immediately. Grates shall also be inspected for cracks and any broken grates shall be replaced immediately.
2. Any other repair or maintenance needed to ensure the continued function of the storm sewer practices or as ordered by the Village of Whitefish Bay under the provisions listed on page 1 of this Declaration.

Catch Basins

1. Catch basins shall be free of debris and structurally sound. Inspect annually and clean with a vacuum and/or repair as needed.
2. Storm sewer shall be kept clean and in sound structural condition. While this is not anticipated to be a problem, if any backups or flooding occurs, the storm sewer shall be televised and cleaned and/or repaired as needed.
3. Any other repair or maintenance needed to ensure the continued function of the storm sewer practices or as ordered by the Village of Whitefish Bay under the provisions listed on page 1 of this Declaration.

Rain Garden

Note that the rain garden is not required to achieve stormwater management goals as described by the stormwater management plan and calculations. However, regular maintenance of the rain garden is expected to occur and thus is included in this declaration.

1. Area shall be kept free of debris and litter. Inspect 6 times annually and clean as needed.
2. Inspect plantings twice annually and remove and replace any dead or diseased plants. Prune plants as recommended by a landscape company or professional. Any unwanted or invasive species shall also be removed.
3. Add mulch as needed for aesthetics and to maintain moisture to promote good plant growth.
4. Outlet structure shall be inspected once annually for trash, debris, and structural integrity. Clean and/or repair as needed.
5. Any other repair or maintenance needed to ensure the continued function of the storm sewer practices or as ordered by the Village of Whitefish Bay under the provisions listed on page 1 of this Declaration.

THE SIGMA GROUP

Single Source. Sound Solutions.

4

Limited Survey

GENERAL NOTES:

1. THE UNDERGROUND UTILITY INFORMATION SHOWN ON THIS DRAWING IS BASED ON FIELD LOCATIONS AND/OR RECORDS FURNISHED BY MUNICIPALITIES AND UTILITY COMPANIES. THE LOCATION AND ACCURACY OF WHICH CANNOT BE GUARANTEED. THERE MAY BE ADDITIONAL UNDERGROUND UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
2. DRAWING IS BASED ON FIELD SURVEY COMPLETED BY THE SIGMA GROUP ON NOVEMBER 19, 2025
3. DATUM FOR THE PROJECT SURVEY IS USGS NGVD29.

THE SIGMA GROUP
Single Source. Sound Solutions.
www.thesigmagroup.com
1300 West Canal Street
Milwaukee, WI 53233
Phone: 414-643-4200
Fax: 414-643-4210

LEGEND

SECTION 1/4 SECTION LINE
PROPERTY LINE
EASEMENT
CHAIN LINK FENCE
GUARD RAIL
METAL FENCE
WOOD FENCE
TREE LINE
OVERHEAD UTILITY LINE
ELECTRIC
TELEPHONE
FIBER OPTIC
CABLE TV
SANITARY SEWER
FORCE MAIN
MILWAUKEE INTERCEPTOR SEWER
COMBINED SANITARY & STORM SEWER
STORM SEWER
WATER MAIN
GAS
WETLAND
EXISTING MAJOR CONTOUR
EXISTING MINOR CONTOUR
UNKNOWN MANHOLE
SANITARY MANHOLE
STORM MANHOLE
ELECTRIC MANHOLE
MIXED MANHOLE
TELEPHONE MANHOLE
CATCH BASIN
CATCH BASIN (ROUND)
ROOF DRAIN
HYDRANT
WATER VALVE
GAS VALVE
UTILITY POLE
GUY WIRE
GUY POLE
GAS METER
ELECTRIC METER
UTILITY PEDESTAL
HANDHOLE
IRON PIPE FOUND/SET
REBAR FOUND/SET
CHISELED CROSS FOUND/SET
PK NAIL FOUND/SET
SPIKE/NAIL
MONUMENT
BENCHMARK
SIGN
DECIDUOUS TREE (Diameter)
CONIFEROUS TREE (Diameter)
BUSH
POST
ROCK PIPING
MONITORING WELL
CULVERT END
LIGHT POLE
PARKING METER
FLAG POLE
TRAFFIC SIGNAL

E. Beaumont Ave.
Whitefish Bay, Wisconsin

TOPOGRAPHIC SURVEY

N

0 20' 40'

NO.	REVISION	DATE	BY
1/	Add MH	12/9/2025	KAS

DRAWN BY:	KAS
DATE:	12/8/2025
PROJECT NO.	23108
CHECKED BY:	CTC
SHEET NO.:	

1 OF 1

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VILLAGE BOARD MEETING – STAFF REPORT

REPORT TO: Village Board

REPORT FROM: Kelsey McElroy-Anderson, Village Manager

MEETING DATE: March 16, 2026

AGENDA ITEM: Discussion on new Silver Spring entrance signs to be paid for by private development projects.

ACTION REQUESTED: ____Ordinance ____Resolution ____Motion __√__Information Only

BACKGROUND

There are two existing Whitefish Bay entrance signs on Silver Spring Drive.

1. Located on the northwest corner of Marlborough Drive and Silver Spring Drive in front of the new Sendik's Food Market store.

2. Located on the southeast corner of Lydell Avenue and Silver Spring Drive in front of the Bay Manor Apartments

Both signs are scheduled to be replaced, at the developer's expense, as part of redevelopment projects. The sign near Sendik's Food Market will be replaced this year as part of the Development Agreement between the Village and Sendik's. The sign near the Bay Manor Apartments will be

replaced as part of the Conditional Use Agreement approved in 2024 when that project moves forward, which we are told could be this year.

Both developers have asked staff for direction regarding the design of the sign. Staff is seeking Board input on any direction that should be provided. Additionally, does the Board also want staff to seek input from other interested parties such as the Community Development Authority and/or the Business Improvement District?

REQUESTED ACTION
No action is requested.

ATTACHMENTS
None