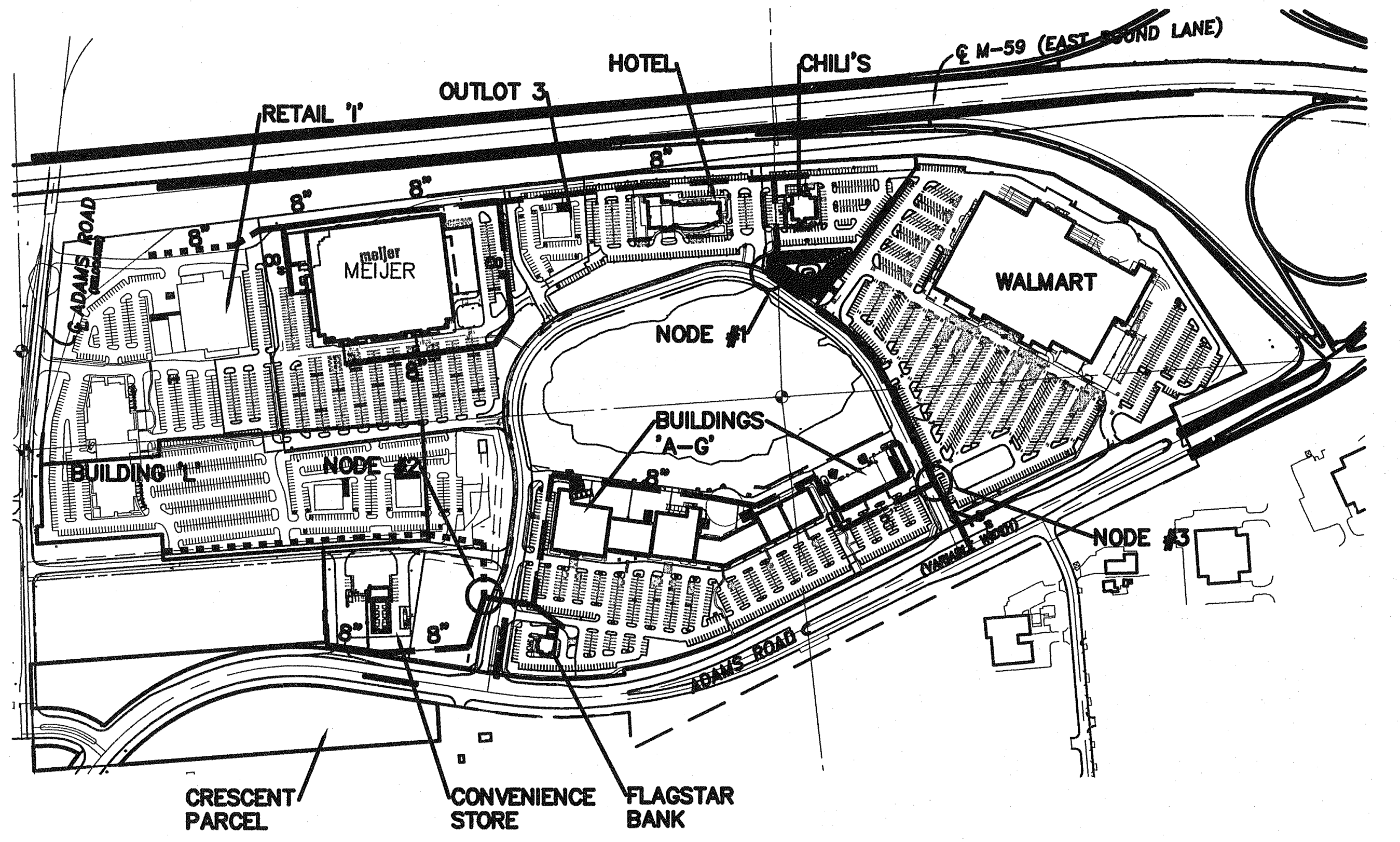
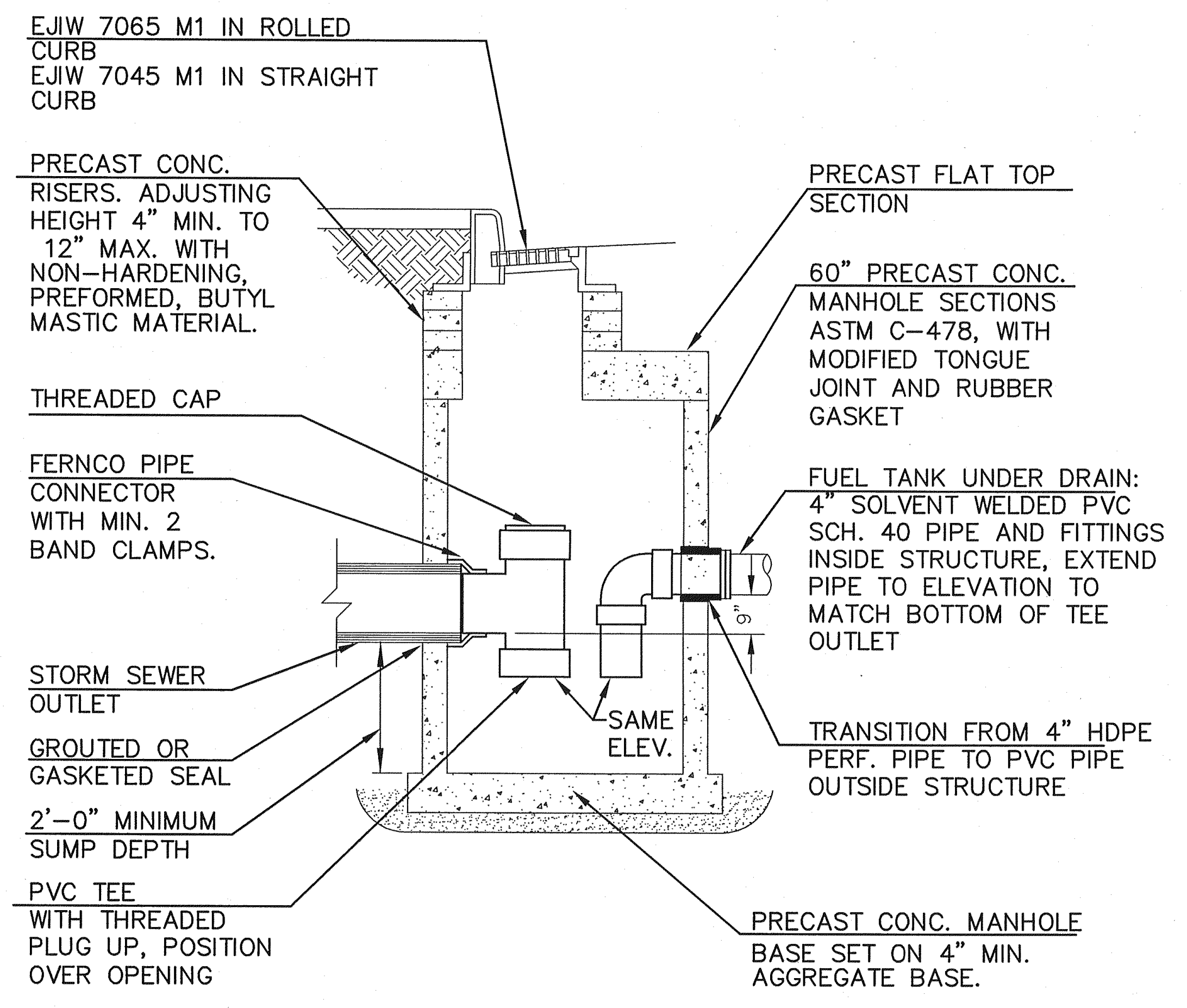


EXISTING OR APPROVED (BY MDEQ) SEWER
PROPOSED SEWER (AS PART OF THIS SITE PLAN)
FUTURE SEWER (BY OTHERS)

OVERALL SANITARY SEWER SKETCH:

SCALE: 1" = 500'



ENVIRONMENTAL CATCH BASIN DETAIL:

NO SCALE

Sanitary Sewer Basis of Design:

A. Summary of existing and MDEQ approved flows from Adams Marketplace to existing sewer in Adams Road

1. Wal-Mart (per Atwell-Hicks Job 100637, dated 8-17-05):
   Average Daily Flow = 0.039 cfs
   Peak Daily Flow = 0.16 cfs
2. Buildings "A-G" and Flagstar Bank:
   Average Daily Flow = 0.021 cfs
   Peak Daily Flow = 0.084 cfs
3. Chili's:
   Average Daily Flow = 0.014 cfs
   Peak Daily Flow = 0.055 cfs
4. Crescent Parcel (south side of Adams Road):
   Average Daily Flow = 0.011 cfs
   Peak Daily Flow = 0.044 cfs
5. Total Existing and approved flows:
   Average Daily Flow = 0.085 cfs
   Peak Daily Flow = 0.343 cfs

B. Proposed flows

1. Meijer Store:
   Average Daily Flow (per Meijer) = 17,150 gpd = 0.0265 cfs
   Peak Daily Flow (per Meijer) = 71,515 gpd = 0.111 cfs
2. Convenience Store:
   Average Daily Flow (per Meijer) = 700 gpd = 0.0011 cfs
   Peak Daily Flow (per Meijer) = 2,842 gpd = 0.004 cfs

* See Meijer provided calculations (this sheet) for the above flows.

C. Future flows

1.

Bldg. Designation	Bldg. Use	Area (sf)	Bedrooms	Seats	Unit Factor	Units
Hotel	Hotel		143	100	0.3/bed + 0.13/seat	55.9
Outlot 3	Restaurant	7,200	--	240	0.13/seat	31.2
Retail 'I'	Retail	35,500	--	--	0.20/1000sf	7.1
						94.2

No. of People = 3.5 ppu x 94.2 = 329.7 people

Average Daily Flow = 100 gpcpd x 329.7 people / (7.5 x 24 x 3600) = 0.051 cfs
Peak Daily Flow = 4 x 0.051 = 0.202 cfs

An 8" sewer at 0.40% (min.) has a capacity of 0.76 cfs

1.

Bldg. Designation	Bldg. Use	Area (sf)	Seats	Unit Factor	Units
Building 'L'	Theater	55,049	2700	1.0 + 0.01/seat	28.0

No. of People = 3.5 ppu x 28.0 = 98 people

Average Daily Flow = 100 gpcpd x 98 people / (7.5 x 24 x 3600) = 0 015 cfs
Peak Daily Flow = = 4 x 0.015 = 0.060 cfs

B. Capacity Analysis

A. Node #1:
Existing Flows = 0.014 cfs (average), 0.055 cfs (peak)
Proposed Flows = 0.0265 cfs (average), 0.111 (peak)
Future Flows = 0.051 cfs (average), 0.202 cfs (peak)

Total Flows = 0.09+15 cfs (average)
= 0.368 cfs (peak)

An 8" sewer at 0.40% (min.) slope has a capacity of 0.76 cfs. The existing pipe is sufficient for the flows.

B. Node #2:
Existing Flows = 0 cfs
Proposed Flows = 0.0121 cfs (average), 0.048 cfs (peak)
Future Flows = 0.015 cfs (average), 0.060 cfs (peak)

Total Flows = 0.0271 cfs (average)
= 0.108 cfs (peak)

An 8" sewer at 0.40% (min.) slope has a capacity of 0.76 cfs. The existing 8" sewer servicing Buildings 'A-G' and Flagstar Bank has the following capacity available:
0.76 cfs – 0.084 cfs (peak) = 0.676 cfs > 0.108 cfs required.
Therefore, the sewer is sufficient for the proposed flows.

C. Node #3:
Existing Flows = 0.085 cfs (average), 0.343 cfs (peak)
Proposed Flows = 0.0386 cfs (average), 0.159 cfs (peak)
Future Flows = 0.066 cfs (average), 0.262 cfs (peak)

Total Flows = 0.1896 cfs (average)
= 0.764 cfs (peak)

A 12" sewer at 0.22% (min.) slope has a capacity of 1.54 cfs. The existing 12" sewer has sufficient capacity for the flows.

Per the Consent Judgment, the Adams Marketplace development is allowed a maximum flow of 1.54 cfs to the sanitary sewer in Adams Road.

Meijer - Rochester Hills, MI

Estimated Sanitary Sewer Flows

BUILDING	AREA (S.F.)	USE	REU	EST. FLOW (CFS)	EST. FLOW (GPD)
Meijer	156,544 sf	Retail	49	0.0265 cfs	17,150 GPD
Meijer Gas Station	6 pumps	Service Station	2	0.0011 cfs	700 GPD
Totals (ultimate):	**156,550 sf**		**51**	**0.0276 cfs**	**17,850 GPD**

Peak Flow Factor:

Population (initial)= 3.5 people per REU = 179 People

$$\frac{18+\sqrt{pop-in-thousands}}{4+\sqrt{pop-in-thousands}}=\frac{18+\sqrt{0.081}}{4+\sqrt{0.081}} = 4.17 \quad \textbf{Peak Factor}$$

ESTIMATED INITIAL PEAK FLOW: 0.1150 cfs 74,357 GPD

Population (ultimate)= 3.5 people per REU = 179 People

$$\frac{18+\sqrt{pop-in-thousands}}{4+\sqrt{pop-in-thousands}}=\frac{18+\sqrt{0.315}}{4+\sqrt{0.315}} = 4.17 \quad \textbf{Peak Factor}$$

ESTIMATED ULTIMATE PEAK FLOW: 0.1150 cfs 74,357 GPD

Average Flow:

INITIAL
Average Flow = Qavg = **0.0276 cfs**
Qavg = 17,850 GPD

Peak Flow:

INITIAL
Peak Flow = Qmax. = **0.1150 cfs**
Qmax = 74,357 GPD

Available Capacity:

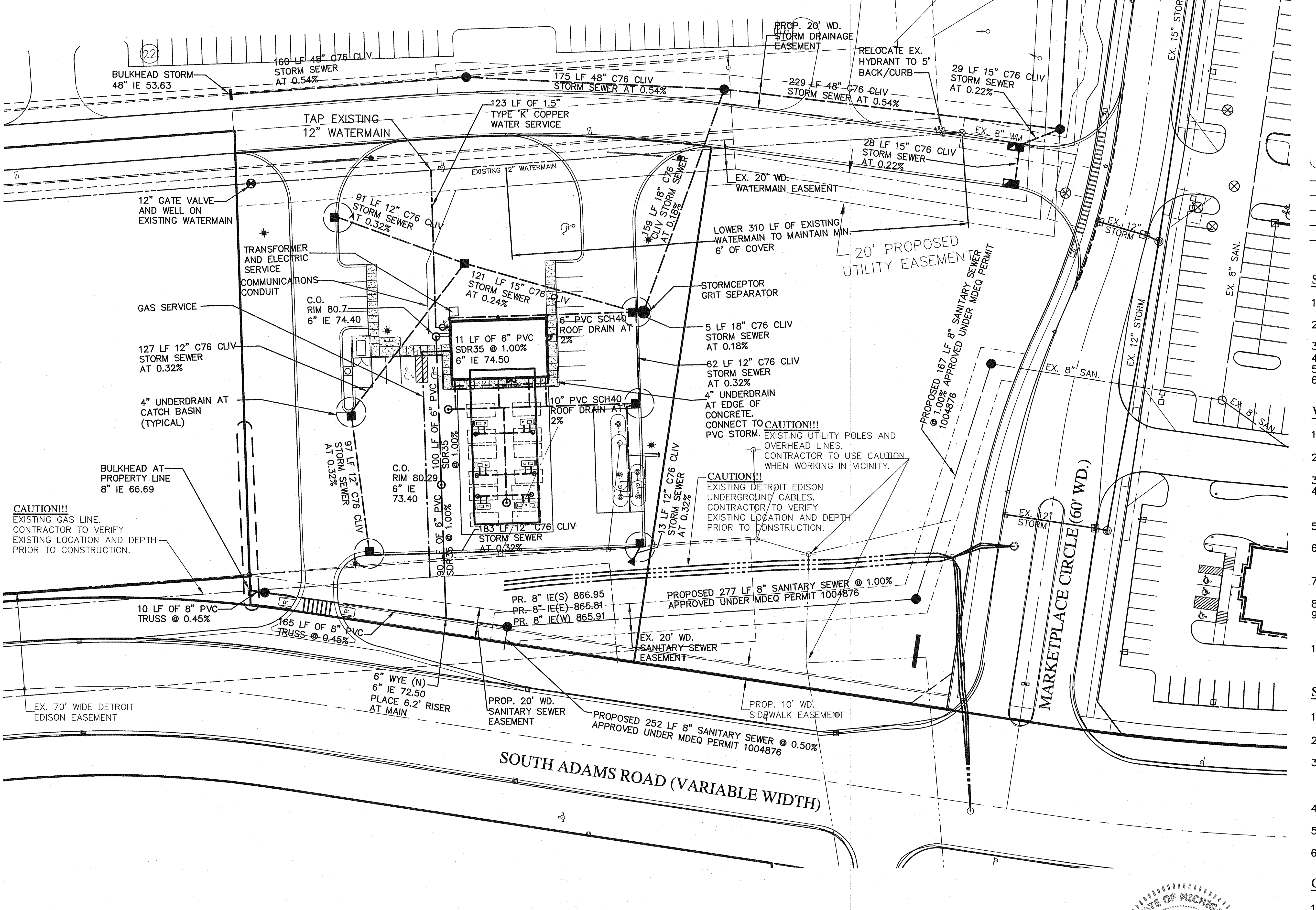
Allowable Maximum flow to the City Sewer* = 1.54 cfs
Meijer and Gas Station Peak Flow = 0.12 cfs

FLOW RATES COMPUTED AS FOLLOWS:

Retail Use: Assume 0.31 REUs/1000 sf, as dictated by the "Grocery Stores & Supermarkets" section of the OCDC Schedule of Unit Assignment Factors
Service Station .24 REUs per pump
Conversion Factor: 1 REU is equivalent to 350 GPD = 0.00054152 cfs
Population: 1 REU = 350 GPD, 1 PERSON = 100 GPD = 1 REU = 3.5 PEOPLE

Note: Flow rates are based on the Oakland County Drain Commissioner Schedule of Unit Assignment Factors dated July 1, 1998

*Consent Judgement (Section 10) dated 4/3/03 allowes the overall development 1.54 CFS to be discharged to the City Sanitary Sewer System



SCALE: 1" = 50'
0 25' 50' 100'

BENCH MARKS

1) BENCH MARK TIE W/ YELLOW FLAG WEST SIDE OF POWER POLE AT NORTHWEST CORNER OF WAL MART PARCEL.
ELEV. 856.54

2) ARROW ON HYDRANT, WEST SIDE OF ADAMS RD. AT INTERSECTION OF INDUSTRIAL DRIVE.
ELEV. 867.28

3) BENCH MARK TIE W/ YELLOW FLAG SOUTH SIDE OF POWER POLE AT NORTHEAST CORNER OF WAL MART PARCEL.
ELEV. 842.28

4) BENCH MARK TIE W/ YELLOW FLAG EAST SIDE OF POWER POLE NORTH SIDE OF INDUSTRIAL DRIVE AT EAST END OF ROAD.
ELEV. 874.96

UTILITY LEGEND

EXISTING		PROPOSED	
○	MANHOLE	●	MANHOLE
□	CATCH BASIN	■	CATCH BASIN
⊠	INLET	◩	INLET
⊙	CLEANOUT	⊙	CLEANOUT
◁	END SECTION	◀	END SECTION
◊	ROOF DRAIN	♦	ROOF DRAIN
⊗	GATE VALVE	⊗	GATE VALVE
	HYDRANT		HYDRANT
	WATER SHUT–OFF		WATER SHUT–OFF
∅	UTILITY POLE		TREE REMOVAL
∧	GUY ANCHOR		SANITARY SEWER
☼	LIGHT POLE		STORM SEWER
	SIGN		WATER MAIN
	TREE		℄ DITCH
	TREE LINE		
	SANITARY SEWER		
	STORM SEWER		
	WATER MAIN		
	GAS MAIN		
	ELECTRIC CABLE		

SANITARY SEWER NOTES:

1. ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE AGENCY HAVING JURISDICTION OVER THAT WORK.
2. ALL SANITARY SEWER BUILDING LEADS WILL BE SOLID WALL PVC SDR 23.5 PIPE.
3. SANITARY SEWER DROP CONNECTIONS MUST BE EXTERNAL TYPE.
4. THE MINIMUM SLOPE FOR 6" SANITARY BUILDING LEADS IS 1.00%.
5. ALL PROPOSED SEWERS SHALL HAVE CHEMICALLY WELDED JOINTS.
6. ALL PROPOSED SANITARY SEWER SHALL BE PVC TRUSS PIPE.

WATERMAIN NOTES:

1. ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE AGENCY HAVING JURISDICTION OVER THAT WORK.
2. ALL HYDRANTS, INCLUDING NOZZLES AND PROJECTIONS SHALL BE 3' MINIMUM FROM EDGE OF SIDEWALK, OR 6' MINIMUM FROM BACK OF CURB.
3. THE WATERMAIN WILL HAVE A MINIMUM OF 6 FEET OF COVER.
4. THE CONTRACTOR SHALL DETERMINE DEGREE OF BEND FOR THE WATERMAIN FITTINGS. PIPE DEFLECTIONS SHALL NOT EXCEED 75% OF THE MANUFACTURER'S MAXIMUM ALLOWABLE DEFLECTION.
5. WATERMAIN SHALL BE CEMENT–LINED (DOUBLE THICKNESS), DUCTILE IRON PIPE, CLASS 54.
6. A VERTICAL SEPARATION OF 18 INCHES MUST BE MAINTAINED BETWEEN THE WATERMAIN AND SANITARY SEWERS, STORM SEWERS, OR OTHER PROPOSED UTILITIES.
7. ALL GATE VALVES SHALL BE RESILIENT WEDGE OR SEATED TYPE GATE VALVE (E.J.I.W. OR U.S. PIPE).
8. PER THE SOIL BORINGS, ALL WATERMAIN SHALL REQUIRE POLYWRAP.
9. RESTRAINED RODDED JOINTS SHALL BE USED AT ALL VERTICAL BENDS. THE NUMBER OF RESTRAINED RODDED JOINTS REQUIRED SHALL BE DETERMINED BY THE MANUFACTURER, SUBJECT TO APPROVAL BY THE CITY ENGINEER.
10. USE HYDRANT CONNECTION DETAIL 'A' (STANDARD DETAIL SHEET A)

STORM SEWER NOTES:

1. PROPOSED STRUCTURE COVERS/GRATES SHALL BE PROVIDED AS REQUIRED ON THE CITY OF ROCHESTER HILLS STANDARD DETAIL SHEETS.
2. EDGE DRAIN TO BE 20' IN EACH DIRECTION AT 90° ANGLES FROM INLET STRUCTURES LOCATED IN PAVED AREAS.
3. STRUCTURAL CALCULATIONS AND SHOP DRAWINGS, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER (REGISTERED IN THE STATE OF MICHIGAN) SHALL BE SUBMITTED TO THE CITY FOR REVIEW PRIOR TO CONSTRUCTION OF ALL STORM SEWER STRUCTURES GREATER THAT 6 FEET IN DIAMETER.
4. PROPOSED ROOF DRAINS SHALL BE SCHEDULE 40 PVC PIPE WITH CHEMICALLY WELDED JOINTS.
5. PROPOSED STORM SEWER PIPE SHALL BE REINFORCED CONCRETE CLASS IV WITH RUBBER GASKETS AND CLASS B BEDDING.
6. ALL CATCH BASINS IN THE GAS STATION ARE TO BE EVIRONMENTAL CATCH BASINS. SEET DETAIL ON THIS SHEET.

GENERAL NOTES:

1. M.D.O.T. CLASS II BACKFILL TO BE COMPACTED IN 6" LAYERS TO 95% OF MAXIMUM UNIT WEIGHT. ABOVE REQUIRED UNDER OR WITHIN A 1 ON 1 SLOPE OF EXISTING OR PROPOSED PAVEMENT.
2. ALL CONTRACTORS SHALL NAME ZEIMET–WOZNIAK & ASSOCIATES AS ADDITIONALLY INSURED ON ALL INSURANCE POLICIES.

NOTE:

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

SHAWN R. BLASZCZYK
ENGINEER
No. 47387

11/12/08

ADAMS MARKETPLACE

NOT FOR CONSTRUCTION
CITY FILE 08–005

REVISIONS	DATE	BY	REVISIONS	DATE	BY	REVISIONS	DATE	BY	REVISIONS	DATE	BY
PER CITY REVIEW	10/3/08	SRB									
PER CITY REVIEW	11/12/08	SRB									

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40024 GRAND RIVER AVE, SUITE 100
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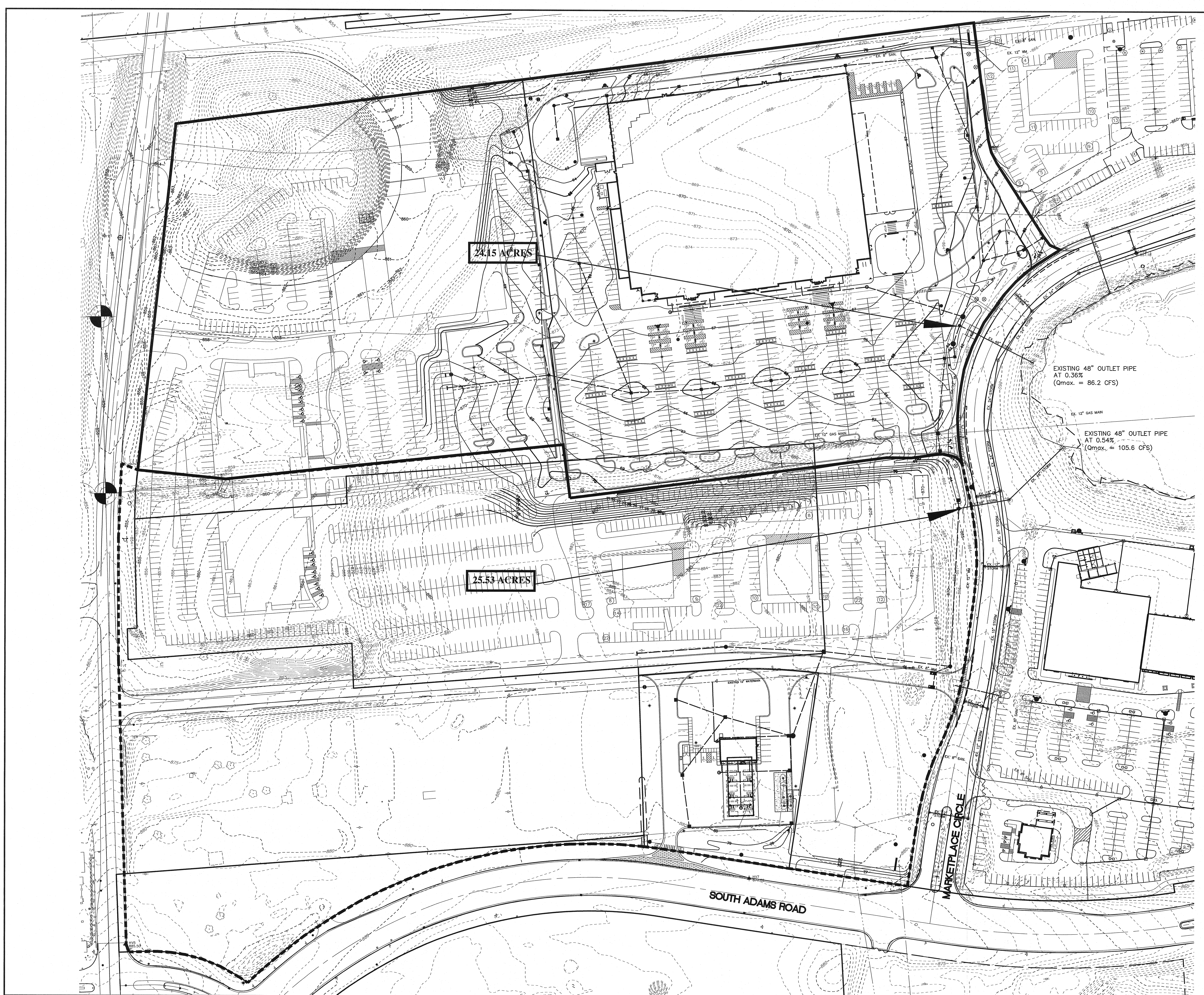
PROJECT SPONSOR:
GRAND SAKWA PROPERTIES
28470 THIRTEEN MILE ROAD, SUITE 220
FARMINGTON HILLS, MI (248) 855–5500

UTILITY PLAN (CONVENIENCE STORE)
MEIJER
ROCHESTER HILLS, MICHIGAN

FIELD BOOK

DATE 9/2/08	SCALE	HOR: 1" = 50' VER: 1" = N/A	
DESIGNED BY SRB	JOB NO.	97144	
DRAWN BY DAB	SHEET	SP–4	



STORMWATER MANAGEMENT ANALYSIS:

The detention basin is sized to store a 100-year storm event with a pre-treatment of the 1-year storm event within mechanical treatment systems using the current Oakland County Drain Commission standards.

1. Runoff Coefficient: (overall development)

Pavement:	63.04 acres	@	0.95	=	59.89
Building:	16.72 acres	@	0.95	=	15.88
Water:	3.40 acres	@	1.00	=	3.40
Landscape:	34.01 acres	@	0.25	=	8.50
	117.17				87.67

C = 87.67 / 117.17 = 0.75 use C = 0.80

2. Overall Detention Calculations:

Area = 117.17 acres (includes wetlands)
C = 0.80
Q_a = 15.0 cfs (per Adams Road Storm Sewer design)
$Q_o = Q_a / (A \times C) = 15.0 / (117.17 \times 0.80) = 0.16$ cfs / ac-imp
$T_{100} = -25 + \sqrt{(10312.5 / Q_o)} = -25 + \sqrt{(10312.5 / 0.16)} = 228.9$ minutes
$V_{S100} = [(16500 \times T) / (T + 25)] - (40 \times Q_o \times T_{100})$
$= [(16500 \times 228.9) / (228.9 + 25)] - (40 \times 0.16 \times 228.9) = 13{,}410.4$ cf / ac-imp
$V_{T100} = V_{s100} \times A \times C = 13{,}410.4 \times 117.17 \times 0.80 = 1{,}257{,}037$ cf

The existing wetland area shall act as the detention for the development (as approved by the MDEQ). Between elevations 845 and 849.7, a volume of 1,258,079 cf can be obtained within the wetland.

3. Outlet Analysis:

The drainage basin for the development west of Marketplace Circle can be subdivided into 2 smaller basins (approximately north and south of the section line). The north sub-basin contains 24.15 acres and the south sub-basin contains 25.53 acres. Each sub-basin area shall discharge to existing 48" outlet pipes provided under Marketplace Circle to the wetland. In lieu of sediment forebays, mechanical treatment systems shall be installed prior to a storm system connecting to the 48" outlet pipes.

4. North Sub-basin:

A = 24.15 acres
C = 0.80
I = 175 / (T + 25) = 175 / (15 + 25) = 4.38
Q = CIA = 0.80 x 4.38 x 24.15 = 84.62 cfs

The existing 48" outlet at 0.36% has a capacity of 86.2 cfs.

South Sub-basin:

A = 25.53 acres
C = 0.80
I = 175 / (T + 25) = 175 / (15 + 25) = 4.38
Q = CIA = 0.80 x 4.38 x 25.53 = 89.46 cfs

The existing 48" outlet at 0.54% has a capacity of 105.6 cfs.

Therefore, the existing outlets are sufficiently sized to accommodate this development and any future upstream developments for this site.

SHAWN R. BLASZCZYK
ENGINEER
No. 47387
11/12/08

NOT FOR CONSTRUCTION
CITY FILE 08-005

ADAMS MARKETPLACE

REVISIONS	DATE	BY	REVISIONS	DATE	BY	REVISIONS	DATE	BY	REVISIONS	DATE	BY
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FARMINGTON HILLS, MI (248) 855-5500

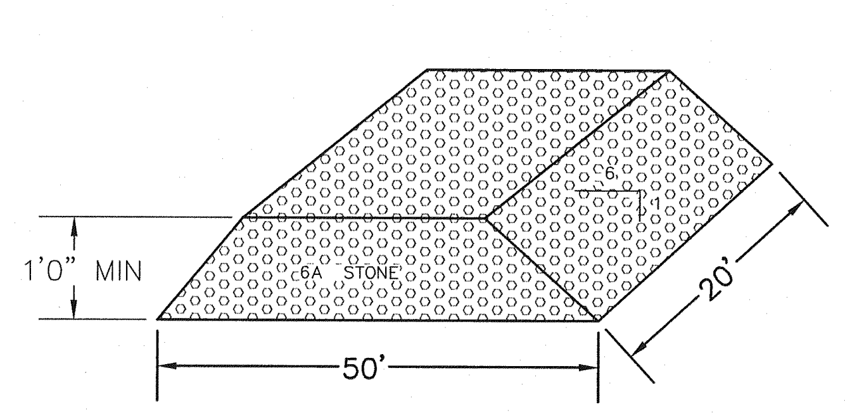
STORMWATER MANAGEMENT PLAN
MEIJER

ROCHESTER HILLS, MICHIGAN

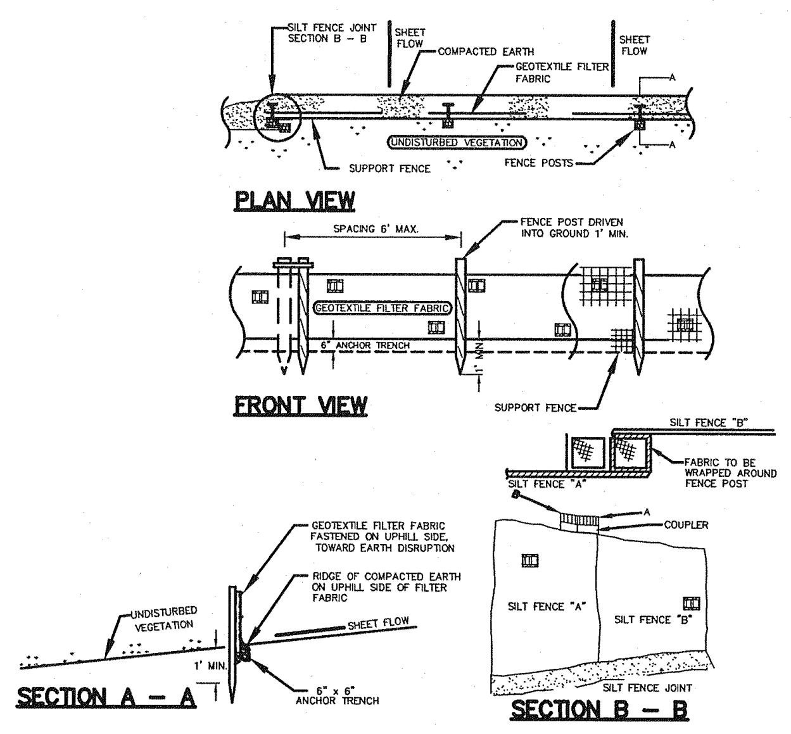
FIELD BOOK
DATE 9/2/08
SCALE HOR: 1" = 80' VER: 1" = N/A
DESIGNED BY SRB
JOB NO. 97144
DRAWN BY DAB
SHEET SP-5

H:\Projects\97144\dwg\MEIJER\97144 Meijer Site Plan.dwg, storm management plan, 11/12/2008 7:20:47 AM, SBlaszczyk

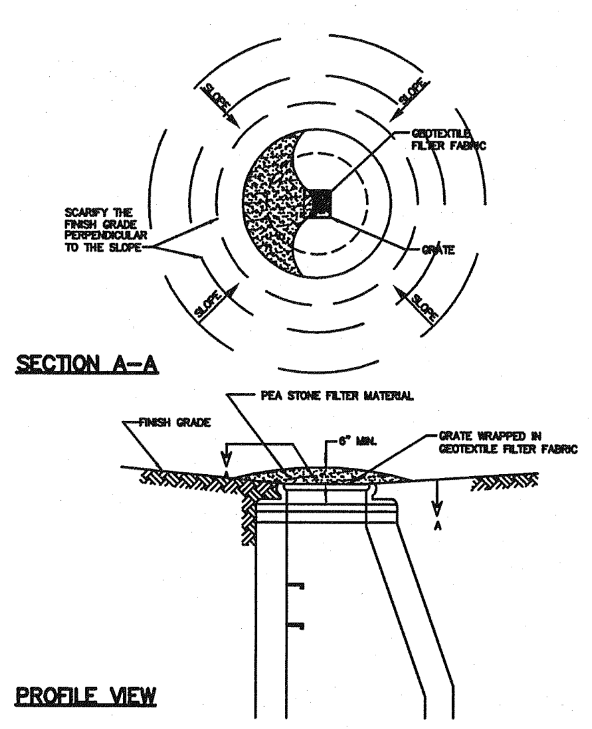
GRAVEL MUD TRACKING MAT:



SILT FENCE:



LOW POINT INLET FILTER:

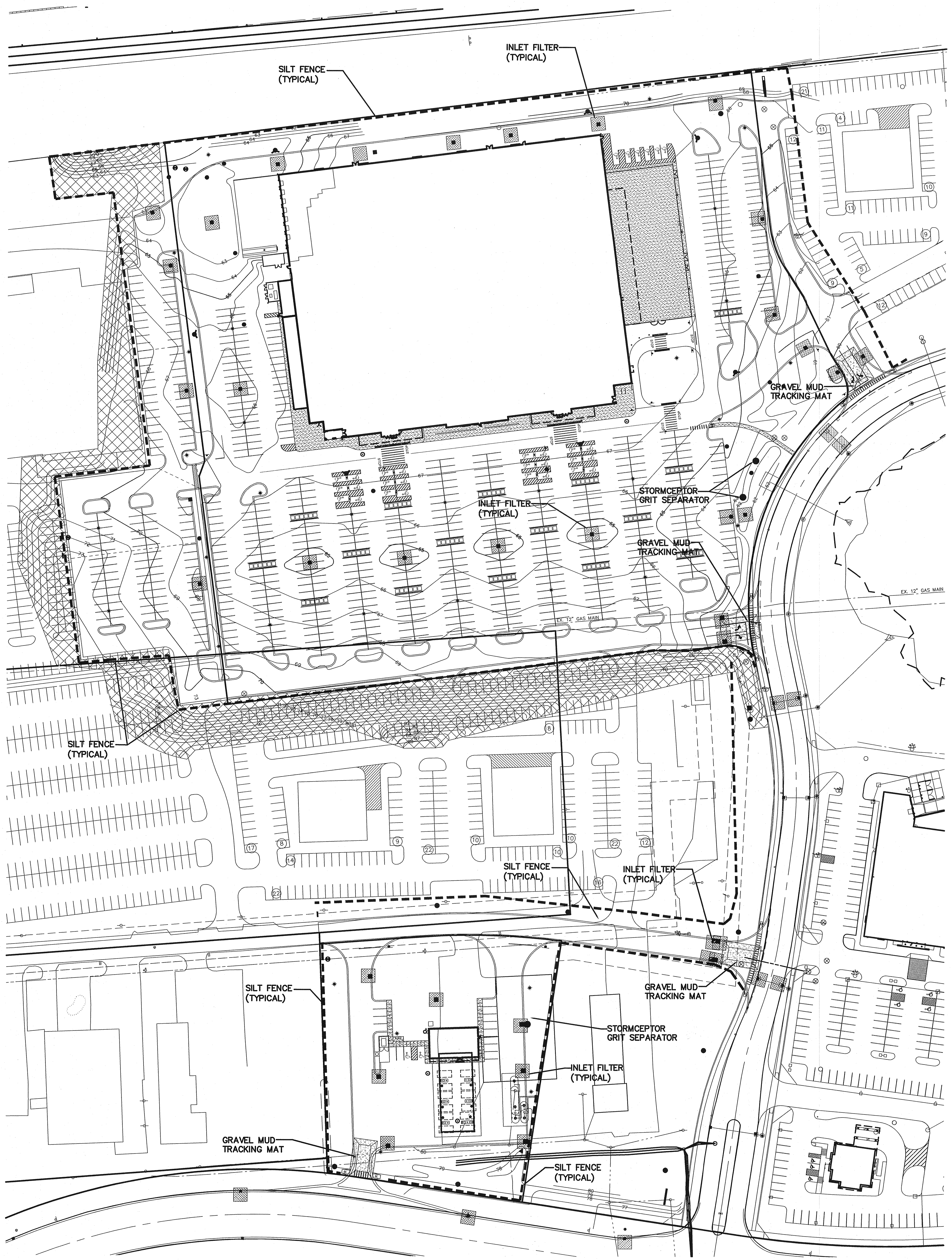


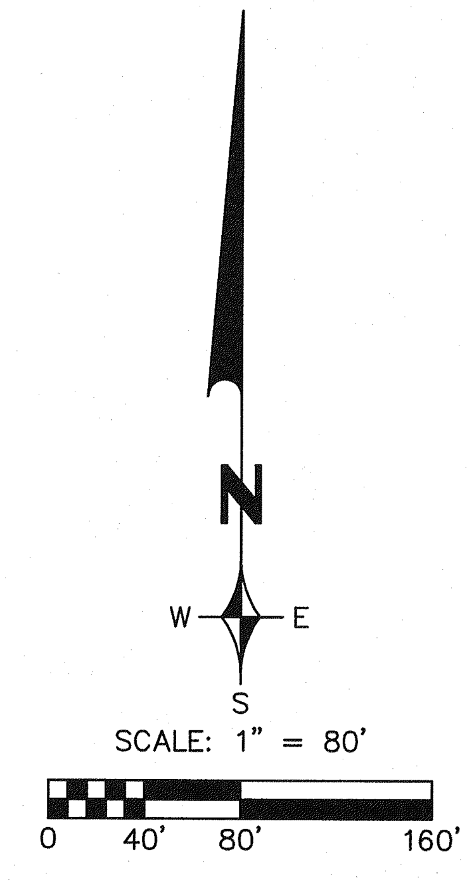
NOTICE:

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

NOTE:

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





EROSION CONTROL LEGEND:

- - - - - - -	GEOTEXTILE SILT FENCE
▭	GRAVEL MUD TRACKING MAT
▩	LOW POINT INLET FILTER
▨	EROSION CONTROL BLANKET

CONSTRUCTION AND SOIL EROSION WORK SCHEDULE

1. PLACE SILT FENCE AS SHOWN ON THIS PLAN.
2. INSTALL GRAVEL MUD TRACKING MAT NEAR ENTRANCE WHERE INDICATED.
3. MASS GRADE PARKING AREA AND CONSTRUCT BUILDING PAD.
4. INSTALL SANITARY, STORM AND WATERMAIN COMPLETE. INSTALL LOW POINT INLET FILTERS ON ALL DRAINAGE STRUCTURES AND RIP–RAP AT ALL END SECTIONS.
5. INSTALL ALL PAVEMENT. REPAIR OR REPLACE LOW POINT INLET FILTERS AS REQUIRED. SEED & MULCH ALL AREAS DISTURBED BY CONSTRUCTION.
6. UPON STABILIZATION OF SITE, REMOVE ACCUMMULATED SEDIMENT FROM BASIN AND CLEAN STORM SEWER SYSTEM. SEED AND MULCH ANY DISTURBED AREA.
7. IT SHALL BE THE DEVELOPERS RESPONSIBILITY TO INSURE THAT ALL EROSION CONTROL DEVICES ARE MAINTAINED AS REQUIRED THROUGHOUT THE CONSTRUCTION AND THAT THE STREETS ARE KEPT FREE OF MUD AND CONSTRUCTION DEBRIS. THE ACCUMULATED SEDIMENT MUST BE REMOVED FROM THE SEDIMENT BASINS PERIODICALLY THROUGHOUT THE CONSTRUCTION OF THIS PROJECT.

CITY OF ROCHESTER HILLS SESC NOTES:

1. ALL EROSION AND SEDIMENT CONTROL WORK SHALL CONFORM TO STANDARDS AND SPECIFICATIONS OF THE OAKLAND COUNTY DRAIN COMMISSIONER.
2. ALL TEMPORARY AND PERMANENT (POST CONSTRUCTION) SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL CONFORM TO THE CITY OF ROCHESTER HILLS CURRENT MS4 PERMIT. ANY CONFLICT BETWEEN THESE STANDARDS AND THE MS4 PERMIT, THE PERMIT'S CONDITIONS SHALL TAKE PRECEDENCE.
3. DAILY INSPECTIONS SHALL BE MADE BY THE CONTRACTOR FOR EFFECTIVENESS OF EROSION AND SEDIMENTATION CONTROL MEASURES, AND ANY NECESSARY REPAIRS SHALL BE PERFORMED WITHOUT DELAY.
4. ANY SEDIMENTATION FROM WORK ON THIS SITE SHALL BE CONTAINED ON THE SITE AND NOT ALLOWED TO COLLECT ON ANY OFF–SITE AREAS OR IN WATERWAYS.
5. CONTRACTOR SHALL APPLY TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES WHEN REQUIRED AND AS DIRECTED ON THESE PLANS. HE SHALL REMOVE TEMPORARY MEASURES AS SOON AS PERMANENT STABILIZATION OF SLOPES, DITCHES, AND OTHER EARTH CHANGES HAVE BEEN ACCOMPLISHED. THIS WOULD INCLUDE TEMPORARY SEDIMENTATION PONDS AND TEMPORARY SO2 FILTERS.
6. STAGING THE WORK WILL BE DONE BY THE CONTRACTOR AS DIRECTED IN THESE PLANS AND AS REQUIRED TO ENSURE PROGRESSIVE STABILIZATION OF DISTURBED EARTH.
7. SOIL EROSION CONTROL PRACTICES SHALL BE ESTABLISHED IN THE EARLY STAGES OF CONSTRUCTION BY THE CONTRACTOR. SEDIMENT CONTROL PRACTICES WILL BE APPLIED AS A PERIMETER DEFENSE AGAINST ANY TRANSPORTING OF SILT OFF THE SITE.

SHAWN R. BLASZCZYK
ENGINEER
No. 47387

11/12/08

NOTE:
THIS PLAN ILLUSTRATES THE MINIMUM EROSION CONTROLS NEEDED TO PREVENT SILTS FROM LEAVING THE SITE AND IS SUBJECT TO CHANGE AS CONDITIONS IN THE FIELD WARRANT.

NOT FOR CONSTRUCTION
CITY FILE 08–005

ADAMS MARKETPLACE

REVISIONS	DATE	BY	REVISIONS	DATE	BY	REVISIONS	DATE	BY	REVISIONS	DATE	BY
PER CITY REVIEW	10/3/08	SRB									
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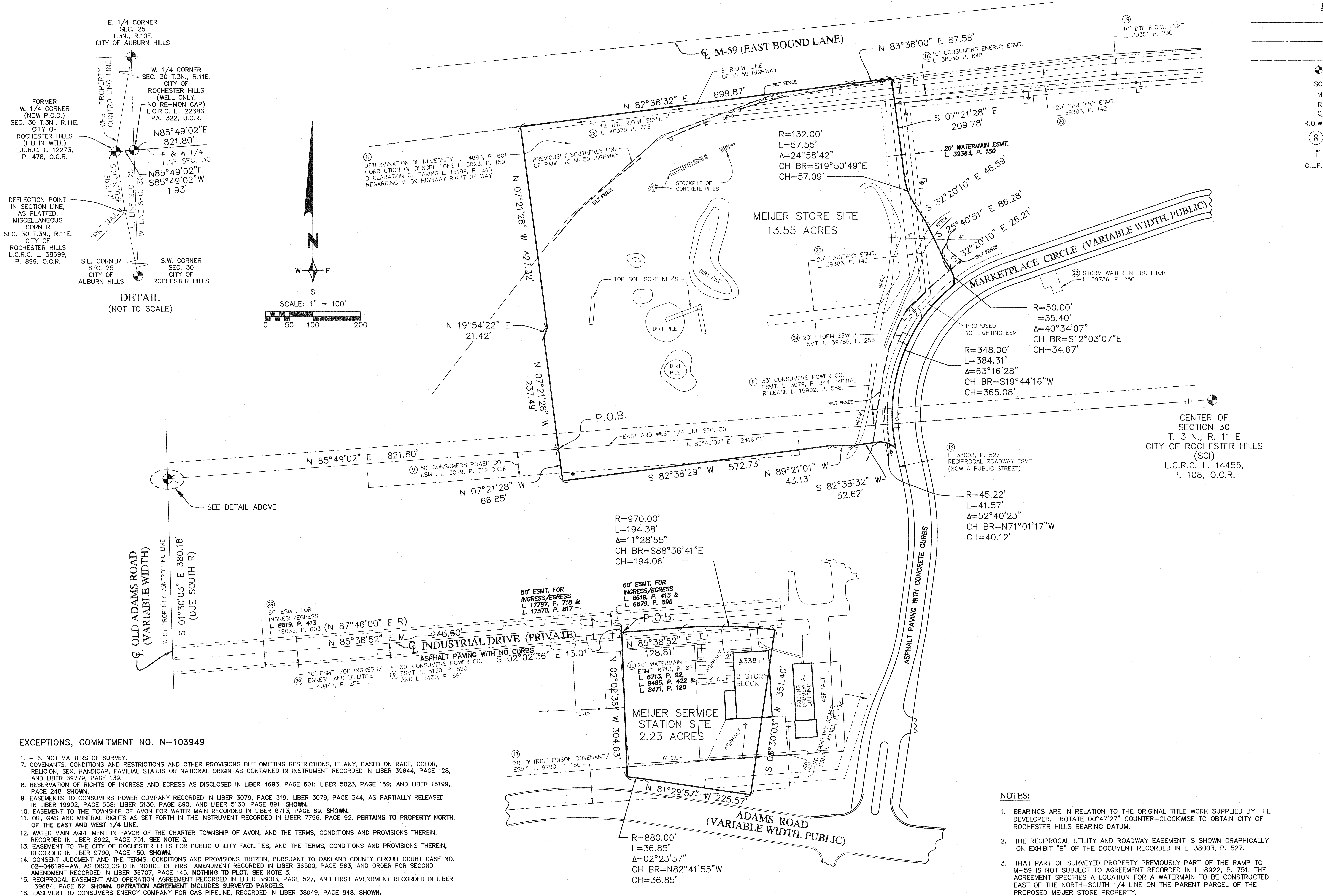
FARMINGTON HILLS, MI (248) 855–5500

SOIL EROSION CONTROL PLAN
MEIJER
ROCHESTER HILLS, MICHIGAN

FIELD BOOK – –
DATE 9/2/08
SCALE HOR: 1" = 80' VER: 1" = N/A
DESIGNED BY SRB
JOB NO. 97144
DRAWN BY DAB
SHEET SP–6



EXCEPTIONS, COMMITMENT NO. N-103949

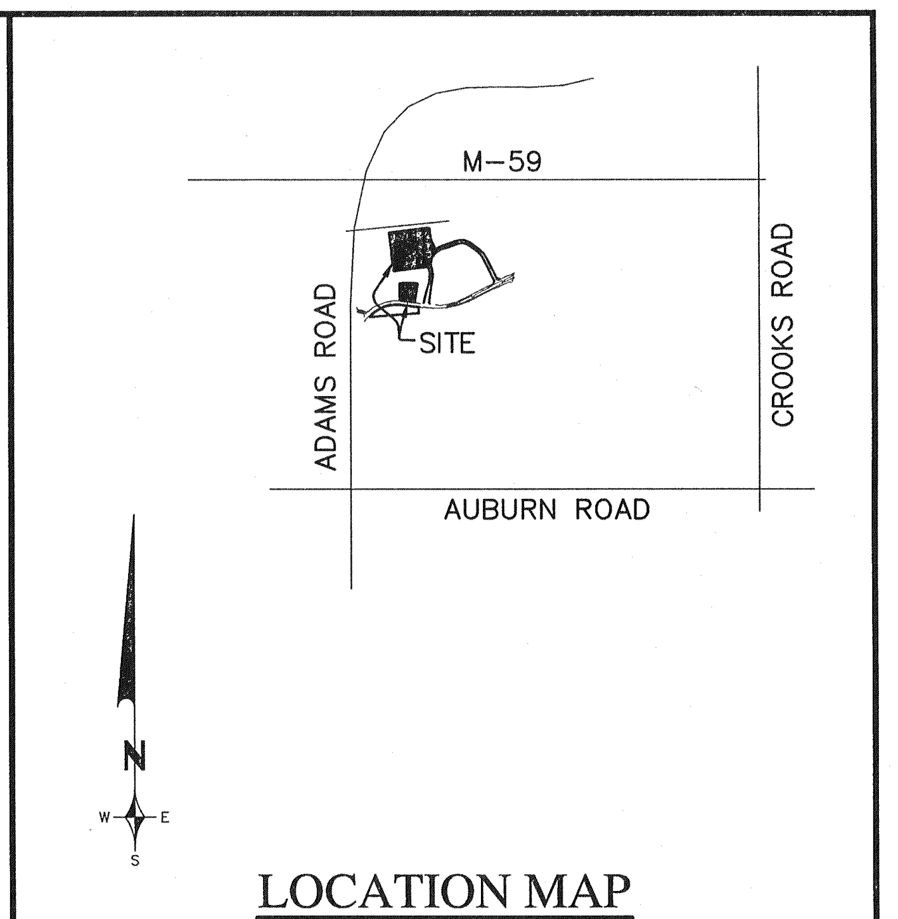
1. – 6. NOT MATTERS OF SURVEY.
7. COVENANTS, CONDITIONS AND RESTRICTIONS AND OTHER PROVISIONS BUT OMITTING RESTRICTIONS, IF ANY, BASED ON RACE, COLOR, RELIGION, SEX, HANDICAP, FAMILIAL STATUS OR NATIONAL ORIGIN AS CONTAINED IN INSTRUMENT RECORDED IN LIBER 39644, PAGE 128, AND LIBER 39779, PAGE 139.
8. RESERVATION OF RIGHTS OF INGRESS AND EGRESS AS DISCLOSED IN LIBER 4693, PAGE 601; LIBER 5023, PAGE 159; AND LIBER 15199, PAGE 248. **SHOWN.**
9. EASEMENTS TO CONSUMERS POWER COMPANY RECORDED IN LIBER 3079, PAGE 319; LIBER 3079, PAGE 344, AS PARTIALLY RELEASED IN LIBER 19902, PAGE 558; LIBER 5130, PAGE 890; AND LIBER 5130, PAGE 891. **SHOWN.**
10. EASEMENT TO THE TOWNSHIP OF AVON FOR WATER MAIN RECORDED IN LIBER 6713, PAGE 89. **SHOWN.**
11. OIL, GAS AND MINERAL RIGHTS AS SET FORTH IN THE INSTRUMENT RECORDED IN LIBER 7796, PAGE 92. **PERTAINS TO PROPERTY NORTH OF THE EAST AND WEST 1/4 LINE.**
12. WATER MAIN AGREEMENT IN FAVOR OF THE CHARTER TOWNSHIP OF AVON, AND THE TERMS, CONDITIONS AND PROVISIONS THEREIN, RECORDED IN LIBER 8922, PAGE 751. **SEE NOTE 3.**
13. EASEMENT TO THE CITY OF ROCHESTER HILLS FOR PUBLIC UTILITY FACILITIES, AND THE TERMS, CONDITIONS AND PROVISIONS THEREIN, RECORDED IN LIBER 9790, PAGE 150. **SHOWN.**
14. CONSENT JUDGMENT AND THE TERMS, CONDITIONS AND PROVISIONS THEREIN, PURSUANT TO OAKLAND COUNTY CIRCUIT COURT CASE NO. 02–046199–AW, AS DISCLOSED IN NOTICE OF FIRST AMENDMENT RECORDED IN LIBER 36500, PAGE 563, AND ORDER FOR SECOND AMENDMENT RECORDED IN LIBER 36707, PAGE 145. **NOTHING TO PLOT. SEE NOTE 5.**
15. RECIPROCAL EASEMENT AND OPERATION AGREEMENT RECORDED IN LIBER 38003, PAGE 527, AND FIRST AMENDMENT RECORDED IN LIBER 39684, PAGE 62. **SHOWN. OPERATION AGREEMENT INCLUDES SURVEYED PARCELS.**
16. EASEMENT TO CONSUMERS ENERGY COMPANY FOR GAS PIPELINE, RECORDED IN LIBER 38949, PAGE 848. **SHOWN.**
17. TERMS CONDITIONS AND PROVISIONS OF AGREEMENT FOR MAINTENANCE OF STORM WATER DETENTION SYSTEM, RECORDED IN LIBER 39193, PAGE 247. **SEE NOTE 6.**
18. TERMS, CONDITIONS AND PROVISIONS OF AGREEMENT FOR MAINTENANCE OF SEDIMENTATION BASIN RECORDED IN LIBER 39193, PAGE 255. **OFFSITE. SEE NOTE 6.**
19. EASEMENT TO THE DETROIT EDISON COMPANY RECORDED IN LIBER 39351, PAGE 230. **SHOWN.**
20. EASEMENT TO THE CITY OF ROCHESTER HILLS FOR SANITARY SEWER, AND THE TERMS, CONDITIONS AND PROVISIONS THEREIN, RECORDED IN LIBER 39383, PAGE 142. **SHOWN.**
21. TERMS, CONDITIONS AND PROVISIONS OF AGREEMENT FOR CONSERVATION EASEMENT RECORDED IN LIBER 39391, PAGE 738. **OFFSITE. SEE NOTE 6.**
22. TERMS, CONDITIONS AND PROVISIONS OF RECIPROCAL EASEMENT AGREEMENT RECORDED IN LIBER 39618, PAGE 400. **NOTHING TO PLOT.**
23. AGREEMENT FOR MAINTENANCE OF STORM WATER INTERCEPTOR, RECORDED IN LIBER 39786, PAGE 250. **OFFSITE. SEE NOTE 7.**
24. EASEMENT TO THE CITY OF ROCHESTER HILLS FOR STORM WATER RECORDED IN LIBER 39786, PAGE 256. **SHOWN.**
25. AGREEMENT FOR MAINTENANCE OF SEDIMENTATION BASIN RECORDED IN LIBER 39786, PAGE 262. **THE BASIN IS OFFSITE.**
26. EASEMENT TO THE CITY OF ROCHESTER HILLS FOR SANITARY SEWER, AND THE TERMS, CONDITIONS AND PROVISIONS THEREIN, RECORDED IN LIBER 40361, PAGE 158. **SHOWN.**
27. EASEMENT TO THE CITY OF ROCHESTER HILLS FOR WATER MAIN, AND THE TERMS, CONDITIONS AND PROVISIONS THEREIN, RECORDED IN LIBER 40361, PAGE 162. **NOT ON SURVEYED PROPERTY.**
28. EASEMENT TO THE DETROIT EDISON COMPANY RECORDED IN LIBER 40379, PAGE 723. **SHOWN.**
29. EASEMENTS FOR INGRESS AND EGRESS RECORDED IN LIBER 6297, PAGE 464; LIBER 18033, PAGE 603, AND LIBER 40447, PAGE 259. **SHOWN.**

NOTES:

1. BEARINGS ARE IN RELATION TO THE ORIGINAL TITLE WORK SUPPLIED BY THE DEVELOPER. ROTATE 00°47'27" COUNTER–CLOCKWISE TO OBTAIN CITY OF ROCHESTER HILLS BEARING DATUM.
2. THE RECIPROCAL UTILITY AND ROADWAY EASEMENT IS SHOWN GRAPHICALLY ON EXHIBIT "B" OF THE DOCUMENT RECORDED IN L, 38003, P. 527.
3. THAT PART OF SURVEYED PROPERTY PREVIOUSLY PART OF THE RAMP TO M–59 IS NOT SUBJECT TO AGREEMENT RECORDED IN L. 8922, P. 751. THE AGREEMENT SPECIFIES A LOCATION FOR A WATERMAIN TO BE CONSTRUCTED EAST OF THE NORTH–SOUTH 1/4 LINE ON THE PARENT PARCEL OF THE PROPOSED MEIJER STORE PROPERTY.
4. ITALICIZED LIBER AND PAGES ARE SHOWN FROM PREVIOUSLY SUPPLIED TITLE COMMITMENTS.
5. DESCRIBES PARCELS SUBJECT TO CONSENT JUDGMENT PARCELS INCLUDE SURVEYED PROPERTY.
6. THE SURVEYED PROPERTY IS SUBJECT TO AND BENEFITS FROM RIGHTS AND RESPONSIBILITIES PERTAINING TO THE OFFSITE EASEMENT.
7. THE STORM WATER INTERCEPTOR ACCEPTS STORM WATER FROM THE PUBLIC ROAD (MARKETPLACE CIRCLE) ONLY.
8. THE PARCEL DESCRIBED IN THE LEGAL DESCRIPTION ON THIS SURVEY IS THE SAME PARCEL DESCRIBED IN THE TITLE COMMITMENT PROVIDED.

LEGEND

━━━━	BOUNDARY LINE
— — —	PARCEL LINE
——— - ———	SECTION LINE
- - - - -	EASEMENTS
— — — —	STORM SEWER
◐	SECTION CORNER
SCI	SET CAPPED IRON
M	MEASURED
R	RECORDED
℄	CENTERLINE
R.O.W.	RIGHT OF WAY
⑧	EXCEPTION NUMBER
⚑	GAS FLAG
C.L.F.	CHAIN LINK FENCE



LOCATION MAP

NOT TO SCALE

MEIJER STORE SITE
LEGAL DESCRIPTION

A PARCEL OF LAND LOCATED IN PART OF THE WEST 1/2 OF SECTION 30, T. 3 N., R. 11 E., CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN, BEING MORE PARTICULARLY DESCRIBED AS:

COMMENCING AT THE WEST 1/4 CORNER OF SAID SECTION 30 (AS REMONUMENTED) SAID 1/4 CORNER BEING N. 85°49'02" E. 1.93 FEET ALONG THE WESTERLY EXTENSION OF THE EAST AND WEST 1/4 LINE OF SECTION 30 FROM A PROPERTY CONTROLLING CORNER (FORMERLY DESCRIBED AS THE WEST 1/4 CORNER) OF SAID SECTION 30 AND PROCEEDING ALONG SAID EAST AND WEST 1/4 LINE N. 85°49'02" E. 821.80 FEET TO THE POINT OF BEGINNING; THENCE N. 07°21'28" W. 237.49 FEET; THENCE N. 19°54'22" E. 21.42 FEET; THENCE N. 07°21'28" W. 427.32 FEET TO THE SOUTHERLY RIGHT–OF–WAY LINE OF M–59 HIGHWAY (VARIABLE WIDTH); THENCE THE FOLLOWING TWO (2) COURSES ALONG SAID RIGHT–OF–WAY: 1) N. 82°38'32" E. 699.87 FEET AND 2) N. 83°38'00" E. 87.58 FEET; THENCE S. 07°21'28" E. 209.78 FEET; THENCE 57.55 FEET ALONG THE ARC OF A CURVE TO THE LEFT, RADIUS 132.00 FEET, CENTRAL ANGLE 24°58'42" AND A CHORD THAT BEARS S. 19°50'49" E. 57.09 FEET; THENCE S. 32°20'10" E. 46.59 FEET; THENCE S. 25°40'51" E. 86.28 FEET; THENCE S. 32°20'10" E. 26.21 FEET; THENCE 35.40 FEET ALONG THE ARC OF A CURVE TO THE RIGHT, RADIUS 50.00 FEET, CENTRAL ANGLE 40°34'07" AND A CHORD THAT BEARS S. 12°03'07" E. 34.67 FEET TO THE WESTERLY RIGHT–OF–WAY LINE OF MARKETPLACE CIRCLE (VARIABLE WIDTH); THENCE ALONG SAID WESTERLY RIGHT–OF–WAY 384.31 FEET ALONG THE ARC OF A CURVE TO THE LEFT, RADIUS 348.00 FEET, CENTRAL ANGLE 63°16'28" AND A CHORD THAT BEARS S. 19°44'16" W. 365.08 FEET; THENCE 41.57 FEET ALONG THE ARC OF A CURVE TO THE LEFT, RADIUS 45.22 FEET, CENTRAL ANGLE 52°40'23" AND A CHORD THAT BEARS N. 71°01'17" W. 40.12 FEET; THENCE S. 82°38'32" W. 52.62 FEET; THENCE N. 89°21'01" W. 43.13 FEET; THENCE S. 82°38'29" W. 572.73 FEET; THENCE N. 07°21'28" W. 66.85 FEET TO THE POINT OF BEGINNING CONTAINING 13.55 ACRES MORE OR LESS, BEING SUBJECT TO EASEMENTS AND RESTRICTIONS OF RECORD.

MEIJER SERVICE STATION SITE
LEGAL DESCRIPTION

A PARCEL OF LAND LOCATED IN PART OF THE SOUTHWEST 1/4 OF SECTION 30, T. 3 N., R. 11 E., CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN, BEING MORE PARTICULARLY DESCRIBED AS:

COMMENCING AT THE WEST 1/4 CORNER OF SAID SECTION 30 (AS REMONUMENTED); THENCE S. 85°49'02" W. 1.93 FEET ALONG THE WESTERLY EXTENSION OF THE EAST AND WEST 1/4 LINE OF SAID SECTION 30 TO A PROPERTY CONTROLLING CORNER (FORMERLY DESCRIBED AS THE WEST 1/4 CORNER OF SAID SECTION 30); THENCE PROCEEDING ALONG THE WEST PROPERTY CONTROLLING LINE (AS MONUMENTED), FORMERLY DESCRIBED AS THE WEST LINE OF SECTION 30, ALSO BEING THE CENTERLINE OF OLD ADAMS ROAD (VARIABLE WIDTH) S. 01°30'03" E. 380.18 FEET MEASURED (DUE SOUTH 380.00 FEET RECORD); THENCE N. 85°38'52" E. MEASURED (N. 87°46'00" E. RECORD) 945.60 FEET ALONG THE CENTERLINE OF A 60–FOOT WIDE INGRESS AND EGRESS EASEMENT FOR A PRIVATE ROAD KNOWN AS INDUSTRIAL DRIVE; THENCE S. 02°02'36" E. 15.01 FEET TO THE POINT OF BEGINNING; THENCE N. 85°38'52" E. 128.81 FEET; THENCE 194.38 FEET ALONG THE ARC OF A CURVE TO THE RIGHT, RADIUS 970.00 FEET, CENTRAL ANGLE 11°28'55" AND A CHORD THAT BEARS S. 88°36'41" E. 194.06 FEET; THENCE S. 08°30'03" W. 351.40 FEET; THENCE ALONG THE NORTHERLY RIGHT–OF–WAY LINE OF SOUTH ADAMS ROAD (VARIABLE WIDTH) THE FOLLOWING TWO (2) COURSES: 1) N. 81°29'57" W. 225.57 FEET AND 2) 36.85 FEET ALONG THE ARC OF A CURVE TO THE LEFT, RADIUS 880.00 FEET, CENTRAL ANGLE 02°23'57" AND A CHORD THAT BEARS N. 82°41'55" W. 36.85 FEET; THENCE N. 02°02'36" W. 304.63 FEET TO THE POINT OF BEGINNING CONTAINING 2.23 ACRES MORE OR LESS, BEING SUBJECT TO EASEMENTS AND RESTRICTIONS OF RECORD.

CERTIFICATION

TO THE MARKET PLACE OF ROCHESTER HILLS, LLC, MEIJER, INC., LANDAMERICA LAWYERS TITLE AND LAWYERS TITLE INSURANCE CORPORATION:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH "MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS," JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS IN 2005. PURSUANT TO THE ACCURACY STANDARDS AS ADOPTED BY ALTA AND NSPS AND IN EFFECT ON THE DATE OF THIS CERTIFICATION, UNDERSIGNED FURTHER CERTIFIES THAT PROPER FIELD PROCEDURES, INSTRUMENTATION, AND ADEQUATE SURVEY PERSONNEL WERE EMPLOYED IN ORDER TO ACHIEVE RESULTS COMPARABLE TO THOSE OUTLINED IN THE "MINIMUM ANGLE, DISTANCE, AND CLOSURE REQUIREMENTS FOR SURVEY MEASUREMENTS WHICH CONTROL LAND BOUNDARIES FOR ALTA/ACSM LAND TITLE SURVEYS."

DATE:

RICHARD HOFSESS
PROFESSIONAL SURVEYOR No. 47955

ZEIMET/WOZNIAK & ASSOCIATES
40024 GRAND RIVER AVE, SUITE 100
NOVI, MI 48375 PH: (248) 442–1101
FAX: (248) 442–1241

LAWYERS TITLE INSURANCE CORPORATION, COMMITMENT NO. N–103949, DATED JULY 23, 2008.

REVISIONS	DATE	BY	REVISIONS	DATE	BY	REVISIONS	DATE	BY	REVISIONS	DATE	BY

ZEIMET WOZNIAK & ASSOCIATES
Civil Engineers & Land Surveyors
40024 GRAND RIVER AVE, SUITE 100
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ALTA/ACSM LAND TITLE SURVEY
MEIJER STORE SITE

CITY OF ROCHESTER HILLS OAKLAND CO. MICHIGAN

FIELD BOOK
DATE 8–27–08
SCALE HOR: 1" = 100' VER: 1" =
DESIGNED BY TRP
JOB NO. 97144
DRAWN BY PTG
SHEET SP–7