

- LEGEND**
- EXIST. UTILITY POLE
  - GUY WIRE
  - ELEC. TRANSFORMER
  - EXIST. OVERHEAD UTILITY LINE
  - EXIST. LIGHT POLE
  - EXIST. TELEPHONE LINE
  - EXIST. ELECTRIC LINE
  - EXIST. GAS LINE
  - EXIST. WATER MAIN
  - EXIST. HYDRANT
  - EXIST. GATE VALVE IN BOX
  - EXIST. GATE VALVE IN WELL
  - EXIST. STORM SEWER
  - EXIST. CATCH BASIN OR INLET
  - CULVERT
  - EXIST. SANITARY SEWER
  - SIGN
  - MAILBOX
  - SECTION CORNER
  - SET IRON ROD
  - FOUND IRON ROD
  - RECORD
  - MEASURED



**MIDWESTERN CONSULTING**  
 Civil, Environmental and Transportation Engineers  
 Planners, Surveyors  
 Landscape Architects  
 7478 Gateway Park Drive  
 Clarkston, Michigan 48346  
 Phone: 248.600.2203  
 Fax: 248.600.2301

**CLIENT**  
 REI BROWNSTOWN, LLC  
 40900 N. WOODWARD AVE.  
 BLOOMFIELD HILLS, MI 48304  
 (248) 540-8040

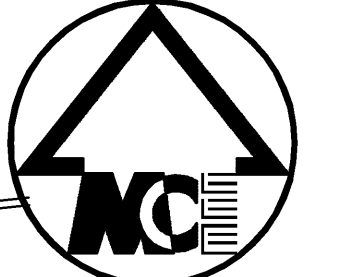
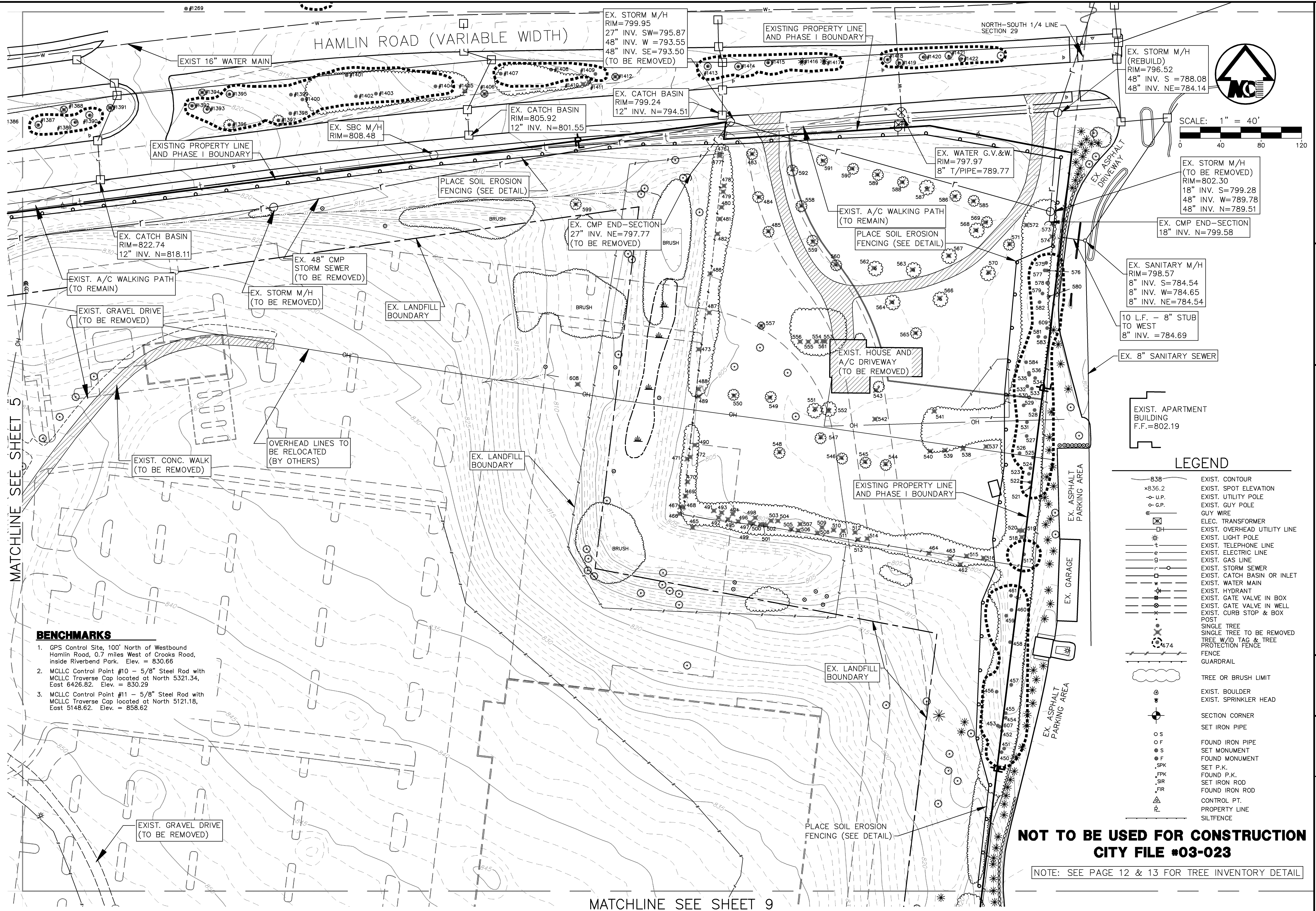
**MADISON PARK**  
 EXISTING LEGAL DESCRIPTION  
 CITY OF ROCHESTER HILLS, MICHIGAN.

**2**

JOB No.	03323
DATE	8-01-05
SHEET	2 OF 42
PER CITY REVIEW	8-24-05
PER CITY REVIEW	10-13-05
PER OWNER REVIEW	11-04-05
ADD: C.L.L.	9-23-05
ENG: D.M.B.	10-28-05
TECH: J.W.S.	12-09-05
DATE	8-01-05
PROJECT	03323/04/05

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SCALE: 1" = 40'

EX. STORM M/H (TO BE REMOVED)  
RIM=802.30  
18" INV. S=799.28  
48" INV. W=789.78  
48" INV. N=789.51

EX. SANITARY M/H  
RIM=798.57  
8" INV. S=784.54  
8" INV. W=784.65  
8" INV. NE=784.54

EXIST. APARTMENT BUILDING  
F.F.=802.19

**LEGEND**

- 838 EXIST. CONTOUR
- x836.2 EXIST. SPOT ELEVATION
- o-u.p. EXIST. UTILITY POLE
- o-g.p. EXIST. GUY POLE
- GUY WIRE
- ELEC. TRANSFORMER
- EXIST. OVERHEAD UTILITY LINE
- EXIST. LIGHT POLE
- EXIST. TELEPHONE LINE
- EXIST. ELECTRIC LINE
- EXIST. GAS LINE
- EXIST. STORM SEWER
- EXIST. CATCH BASIN OR INLET
- EXIST. WATER MAIN
- EXIST. HYDRANT
- EXIST. GATE VALVE IN BOX
- EXIST. GATE VALVE IN WELL
- EXIST. CURB STOP & BOX POST
- SINGLE TREE
- SINGLE TREE TO BE REMOVED
- TREE W/ID TAG & TREE PROTECTION FENCE
- FENCE
- GUARDRAIL
- TREE OR BRUSH LIMIT
- EXIST. BOULDER
- EXIST. SPRINKLER HEAD
- SECTION CORNER
- SET IRON PIPE
- FOUND IRON PIPE
- SET MONUMENT
- FOUND MONUMENT
- SET P.K.
- FOUND P.K.
- SET IRON ROD
- FOUND IRON ROD
- CONTROL PT.
- PROPERTY LINE
- SILTENCE

**NOT TO BE USED FOR CONSTRUCTION  
CITY FILE #03-023**

NOTE: SEE PAGE 12 & 13 FOR TREE INVENTORY DETAIL

**BENCHMARKS**

1. GPS Control Site, 100' North of Westbound Hamlin Road, 0.7 miles West of Crooks Road, inside Riverbend Park. Elev. = 830.66
2. MCLLC Control Point #10 - 5/8" Steel Rod with MCLLC Traverse Cap located at North 5321.34, East 6426.82. Elev. = 830.29
3. MCLLC Control Point #11 - 5/8" Steel Rod with MCLLC Traverse Cap located at North 5121.18, East 5148.62. Elev. = 858.62

MATCHLINE SEE SHEET 5

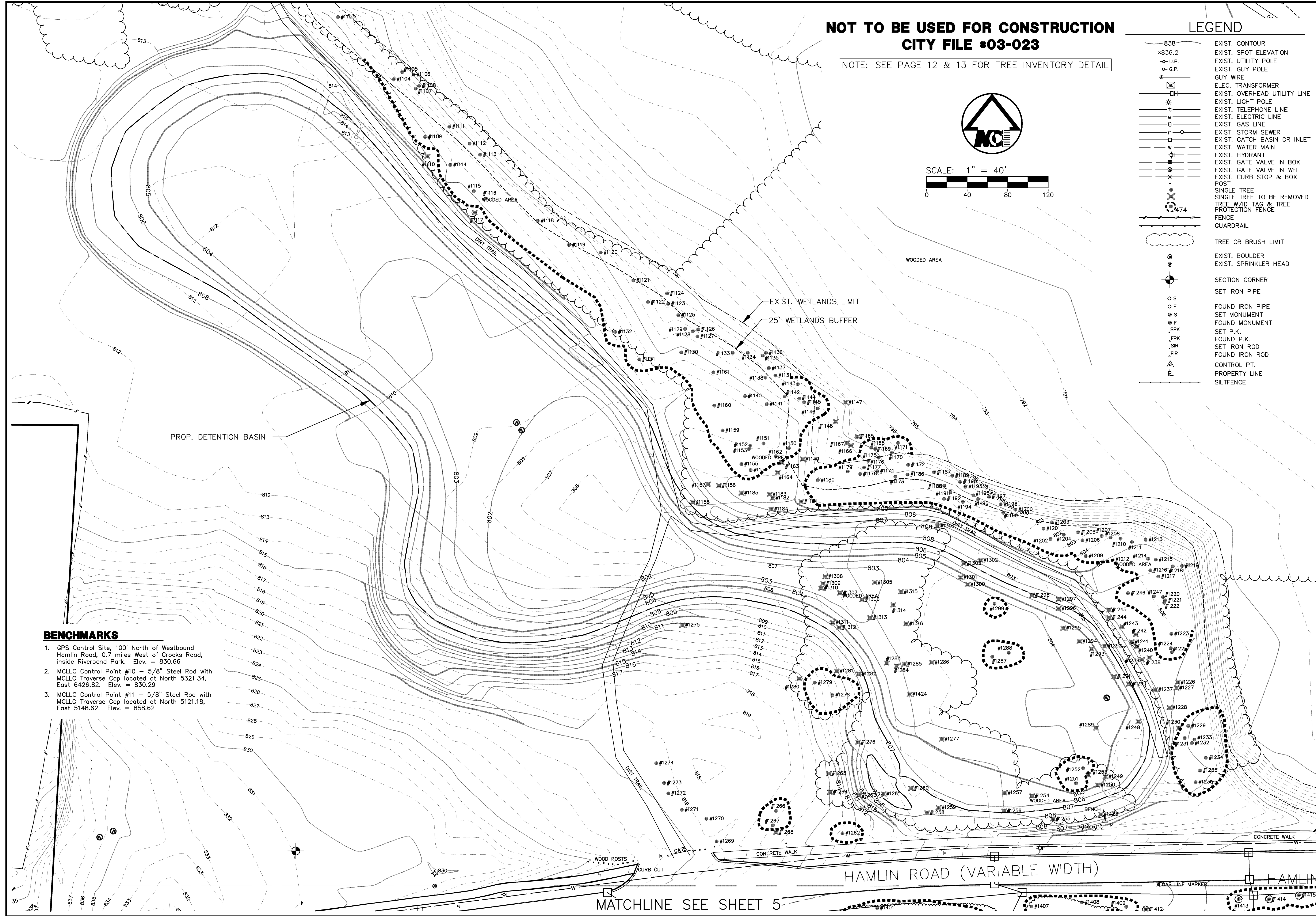
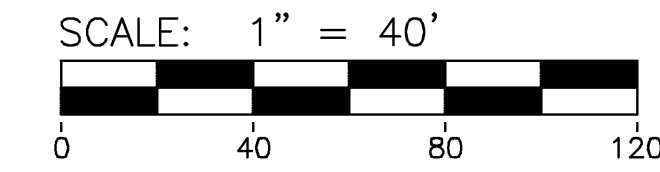
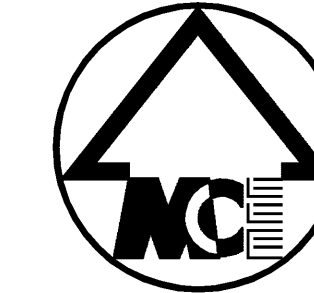
MATCHLINE SEE SHEET 9

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**LEGEND**

- 838 EXIST. CONTOUR
- x836.2 EXIST. SPOT ELEVATION
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- t EXIST. TELEPHONE LINE
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- g EXIST. GAS LINE
- r EXIST. STORM SEWER
- w EXIST. CATCH BASIN OR INLET
- W EXIST. WATER MAIN
- H EXIST. HYDRANT
- G EXIST. GATE VALVE IN BOX
- W EXIST. GATE VALVE IN WELL
- POST EXIST. CURB STOP & BOX
- o SINGLE TREE
- x SINGLE TREE TO BE REMOVED
- W/D TAG & TREE PROTECTION FENCE
- FENCE
- GUARDRAIL
- TREE OR BRUSH LIMIT
- o EXIST. BOULDER
- o EXIST. SPRINKLER HEAD
- SECTION CORNER
- SET IRON PIPE
- o FOUND IRON PIPE
- o SET MONUMENT
- o FOUND MONUMENT
- o SET P.K.
- o FOUND P.K.
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- o FOUND IRON ROD
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MATCHLINE SEE SHEET 5

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**MADISON PARK**  
EXISTING CONDITIONS, REMOVALS  
AND TREE PRESERVATION PLAN  
CITY OF ROCHESTER HILLS, MICHIGAN

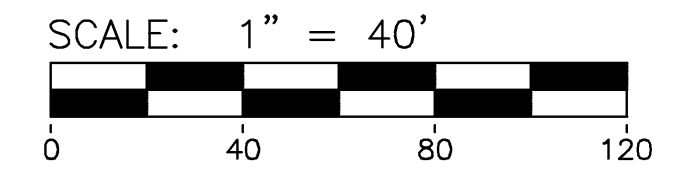
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JOB No.	03323
DATE: 8-01-05	
SHEET 4A OF 42	
REV. DATE	REV. BY
9-23-05	CADD: BJS/DWL
10-28-05	ENG: DWL
12-09-05	PM: DMB
2-22-06	TECH: JWG
3-03-06	03323EXT.DWG

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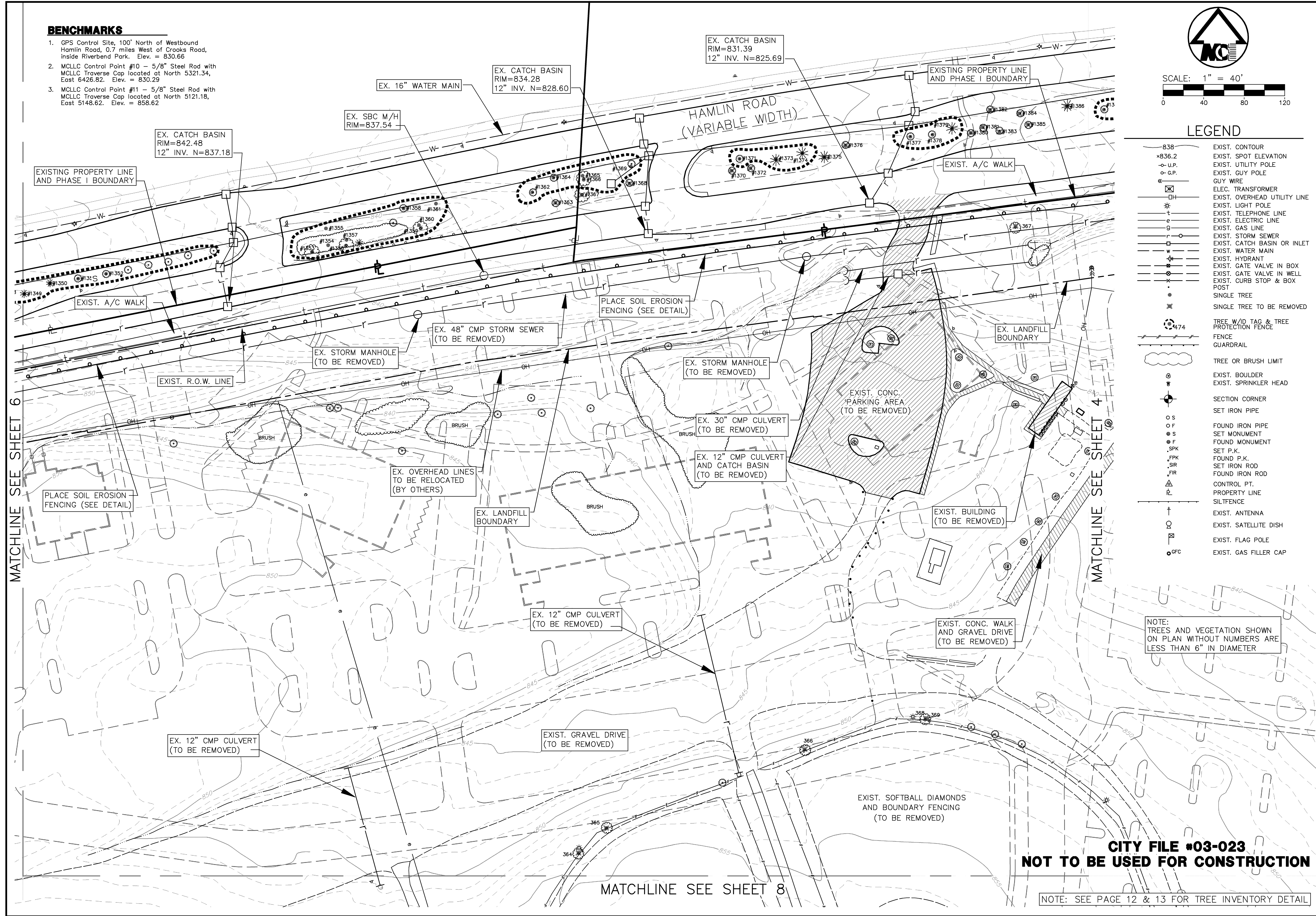
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**LEGEND**

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- o U.P. EXIST. UTILITY POLE
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- GUY WIRE
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- h EXIST. HYDRANT
- o EXIST. GATE VALVE IN BOX
- o EXIST. GATE VALVE IN WELL
- x EXIST. CURB STOP & BOX POST
- o SINGLE TREE
- x SINGLE TREE TO BE REMOVED
- o TREE W/D TAG & TREE PROTECTION FENCE
- o FENCE GUARDRAIL
- o TREE OR BRUSH LIMIT
- o EXIST. BOULDER
- o EXIST. SPRINKLER HEAD
- o SECTION CORNER
- o SET IRON PIPE
- o FOUND IRON PIPE
- o SET MONUMENT
- o FOUND MONUMENT
- o SET P.K.
- o FOUND P.K.
- o SET IRON ROD
- o FOUND IRON ROD
- o CONTROL PT.
- o PROPERTY LINE SILTFENCE
- o EXIST. ANTENNA
- o EXIST. SATELLITE DISH
- o EXIST. FLAG POLE
- o EXIST. GAS FILLER CAP



NOTE:  
TREES AND VEGETATION SHOWN  
ON PLAN WITHOUT NUMBERS ARE  
LESS THAN 6" IN DIAMETER

**CITY FILE #03-023**  
**NOT TO BE USED FOR CONSTRUCTION**

MATCHLINE SEE SHEET 6

MATCHLINE SEE SHEET 4

MATCHLINE SEE SHEET 8

NOTE: SEE PAGE 12 & 13 FOR TREE INVENTORY DETAIL

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**MADISON PARK**  
EXISTING CONDITIONS, REMOVALS  
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CITY OF ROCHESTER HILLS, MICHIGAN

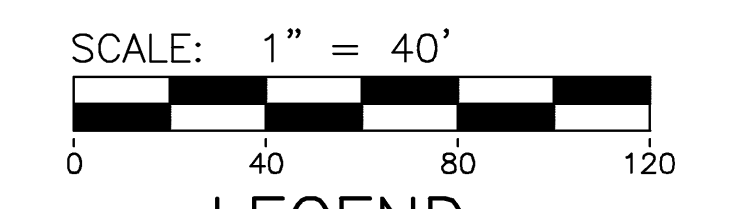
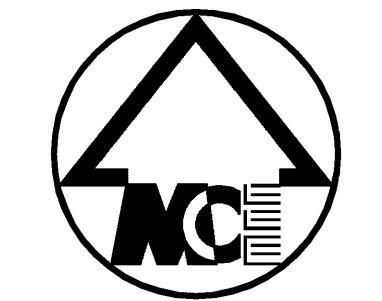
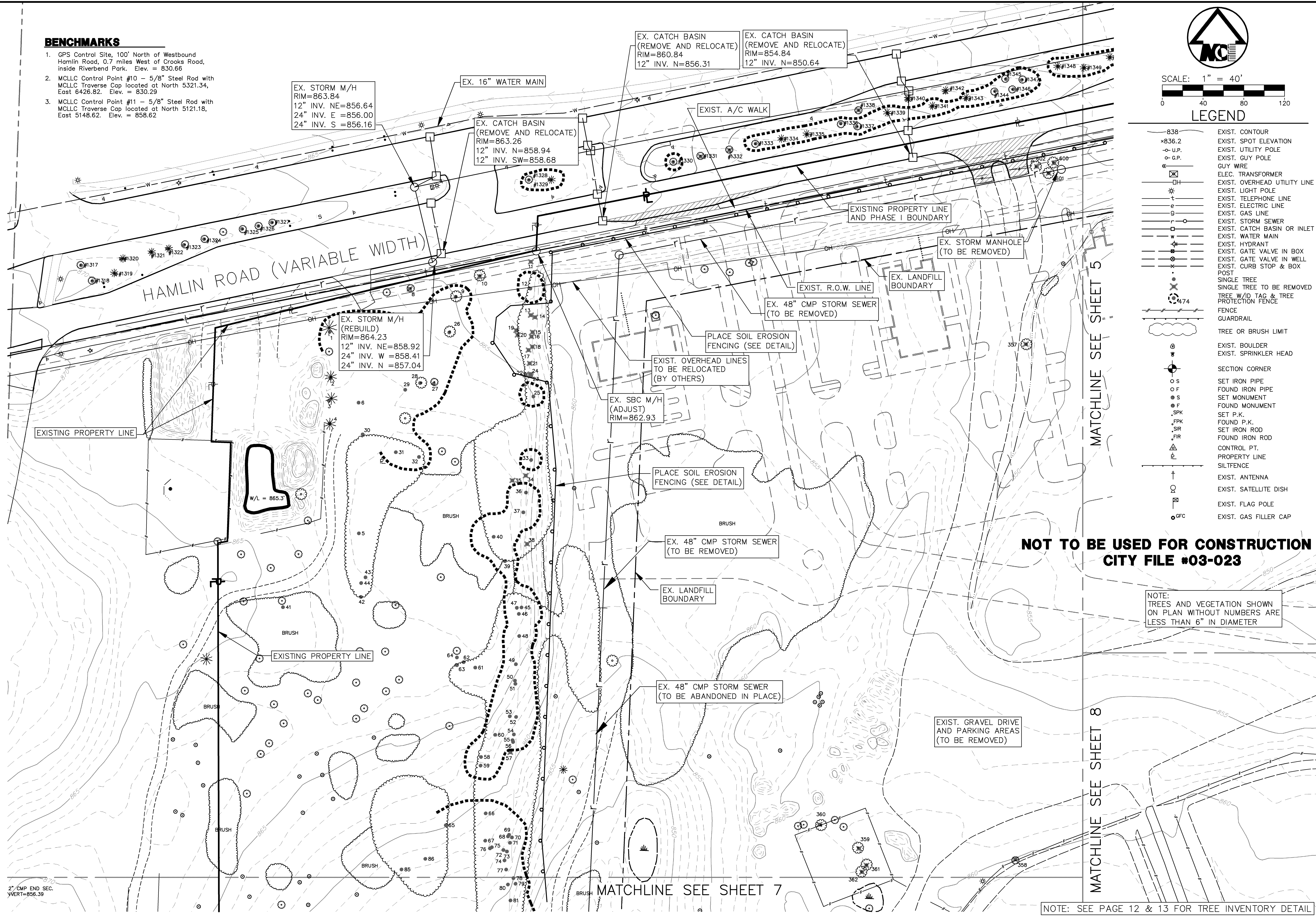
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JOB No.	03323
DATE	8-01-05
REV. DATE	9-23-05
REV. DATE	10-28-05
REV. DATE	12-09-05
REV. DATE	2-22-06
REV. DATE	5-03-06
SHEET	5 OF 42
CADD	BAS/DW/PAB
ENG.	DWL
PM	DMB
TECH	
PROJECT	03323E2.DWG

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**BENCHMARKS**

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**LEGEND**

- 838 EXIST. CONTOUR
- ×836.2 EXIST. SPOT ELEVATION
- U.P. EXIST. UTILITY POLE
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- GUY WIRE
- ELEC. TRANSFORMER
- OH EXIST. OVERHEAD UTILITY LINE
- \* EXIST. LIGHT POLE
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- W EXIST. CATCH BASIN OR INLET
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- V EXIST. GATE VALVE IN BOX
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- FOUND IRON PIPE
- SET MONUMENT
- FOUND MONUMENT
- SET P.K.
- FOUND P.K.
- SET IRON ROD
- FOUND IRON ROD
- △ CONTROL PT.
- PROPERTY LINE
- SILTFENCE
- ↑ EXIST. ANTENNA
- EXIST. SATELLITE DISH
- EXIST. FLAG POLE
- GFC EXIST. GAS FILLER CAP

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CITY FILE #03-023**

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**MADISON PARK**  
EXISTING CONDITIONS, REMOVALS  
AND TREE PRESERVATION PLAN  
CITY OF ROCHESTER HILLS, MICHIGAN

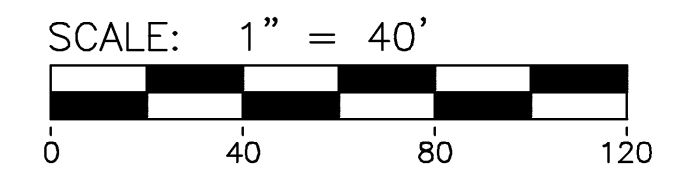
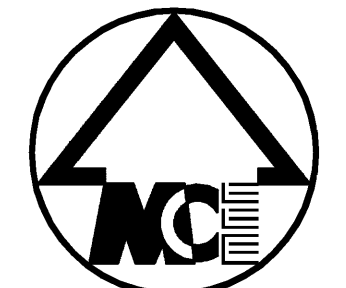
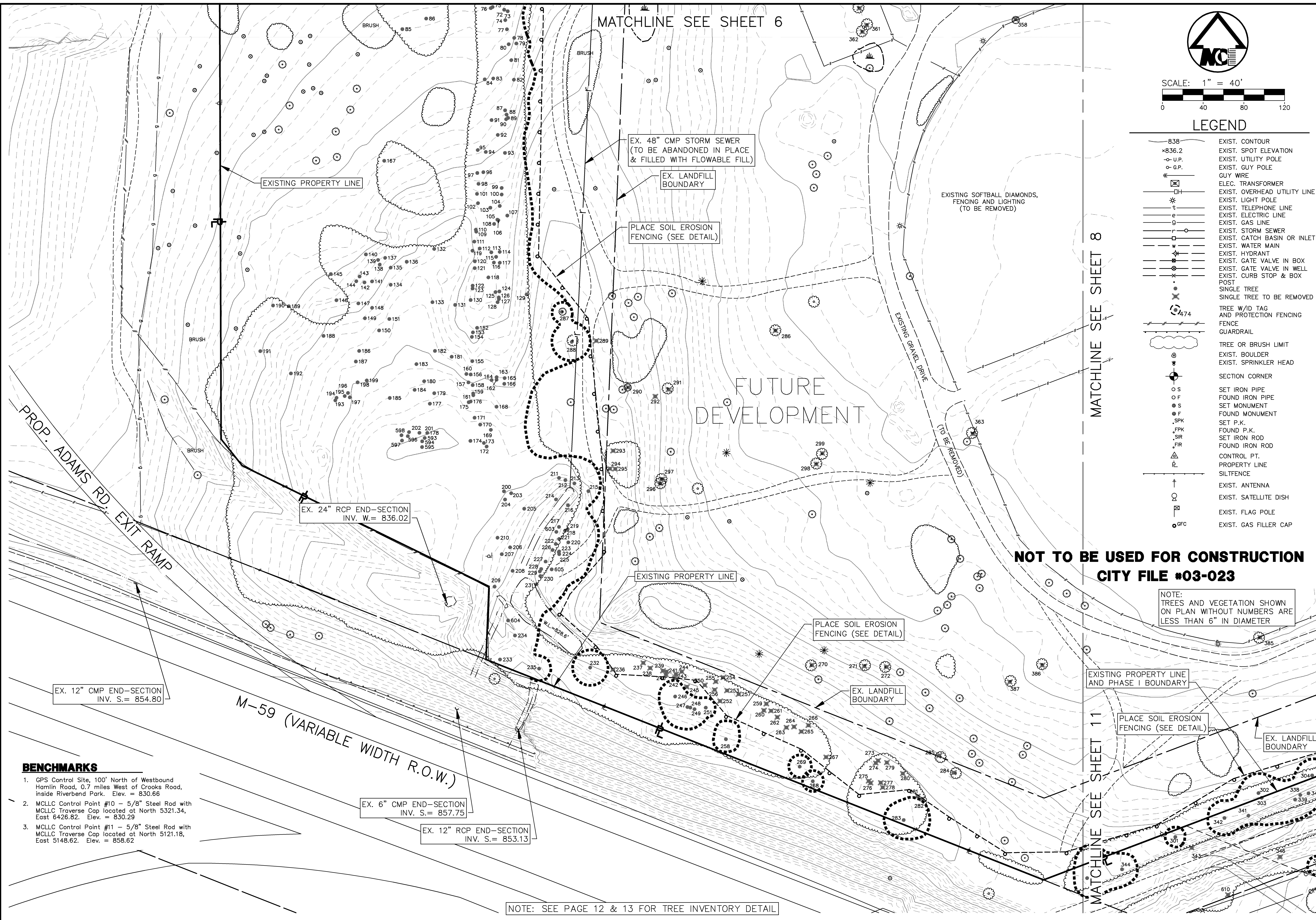
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JOB No.	03323
DATE	8-01-05
REV. DATE	8-24-05
REV. DATE	9-23-05
REV. DATE	10-28-05
REV. DATE	12-09-05
REV. DATE	2-22-06
REV. DATE	5-03-06
SHEET	6 OF 42
CADD	BIS/DW/PAB
ENG.	DWL
PM.	DMB
TECH.	
DATE	03/23/03.DWG

NOTE: SEE PAGE 12 & 13 FOR TREE INVENTORY DETAIL

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2" CMP END SEC.  
VERT=856.39



**LEGEND**

- 838 EXIST. CONTOUR
- x836.2 EXIST. SPOT ELEVATION
- o U.P. EXIST. UTILITY POLE
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- o EXIST. GATE VALVE IN WELL
- o EXIST. CURB STOP & BOX POST
- o SINGLE TREE
- o SINGLE TREE TO BE REMOVED
- o 474 TREE W/D TAG AND PROTECTION FENCING
- o FENCE GUARDRAIL
- o TREE OR BRUSH LIMIT
- o EXIST. BOULDER
- o EXIST. SPRINKLER HEAD
- o SECTION CORNER
- o S SET IRON PIPE
- o F FOUND IRON PIPE
- o S SET MONUMENT
- o F FOUND MONUMENT
- o SPK SET P.K.
- o FPK FOUND P.K.
- o SIR SET IRON ROD
- o FIR FOUND IRON ROD
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- o PROPERTY LINE
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- o EXIST. ANTENNA
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EX. 6" CMP END-SECTION  
INV. S.= 857.75

EX. 12" RCP END-SECTION  
INV. S.= 853.13

NOTE: SEE PAGE 12 & 13 FOR TREE INVENTORY DETAIL

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**MADISON PARK**  
EXISTING CONDITIONS, REMOVALS  
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CITY OF ROCHESTER HILLS, MICHIGAN

**7**

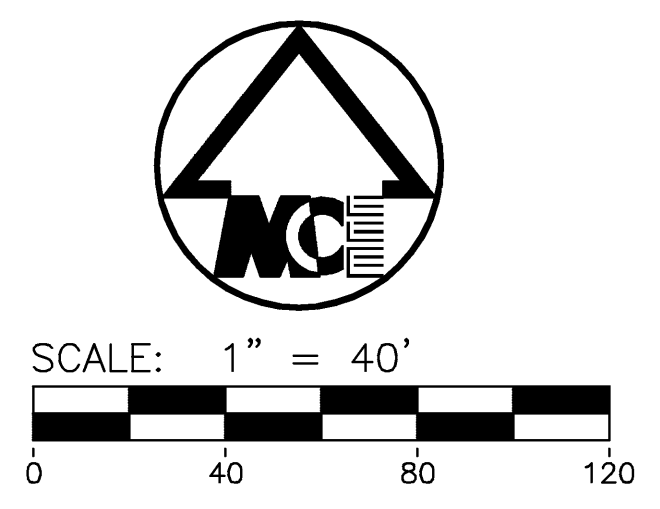
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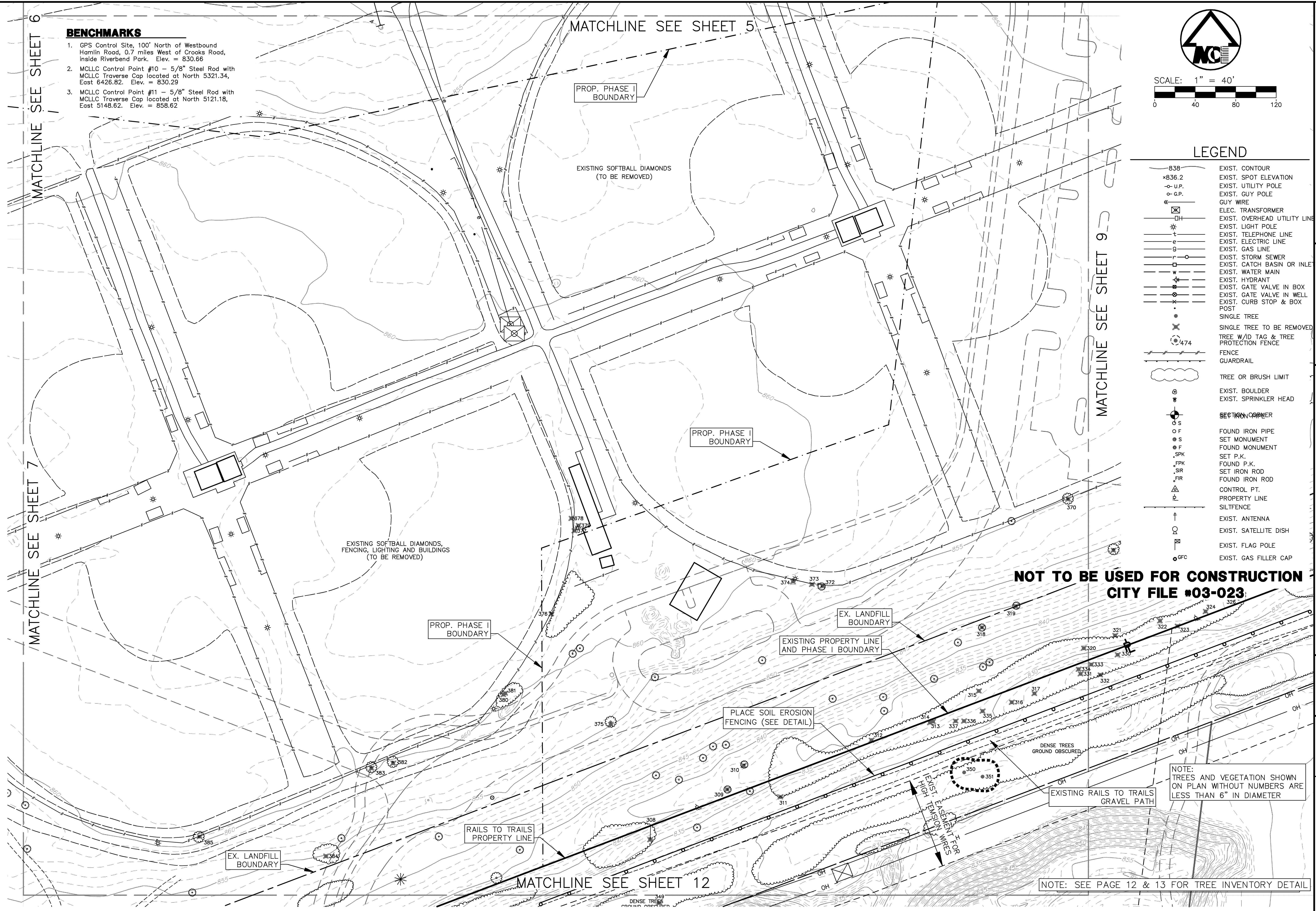


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	SECTION CORNER
	FOUND IRON PIPE SET MONUMENT
	FOUND MONUMENT
	SET P.K.
	FOUND P.K.
	SET IRON ROD
	FOUND IRON ROD
	CONTROL PT.
	PROPERTY LINE
	SILT FENCE
	EXIST. ANTENNA
	EXIST. SATELLITE DISH
	EXIST. FLAG POLE
	EXIST. GAS FILLER CAP



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NOTE: SEE PAGE 12 & 13 FOR TREE INVENTORY DETAIL

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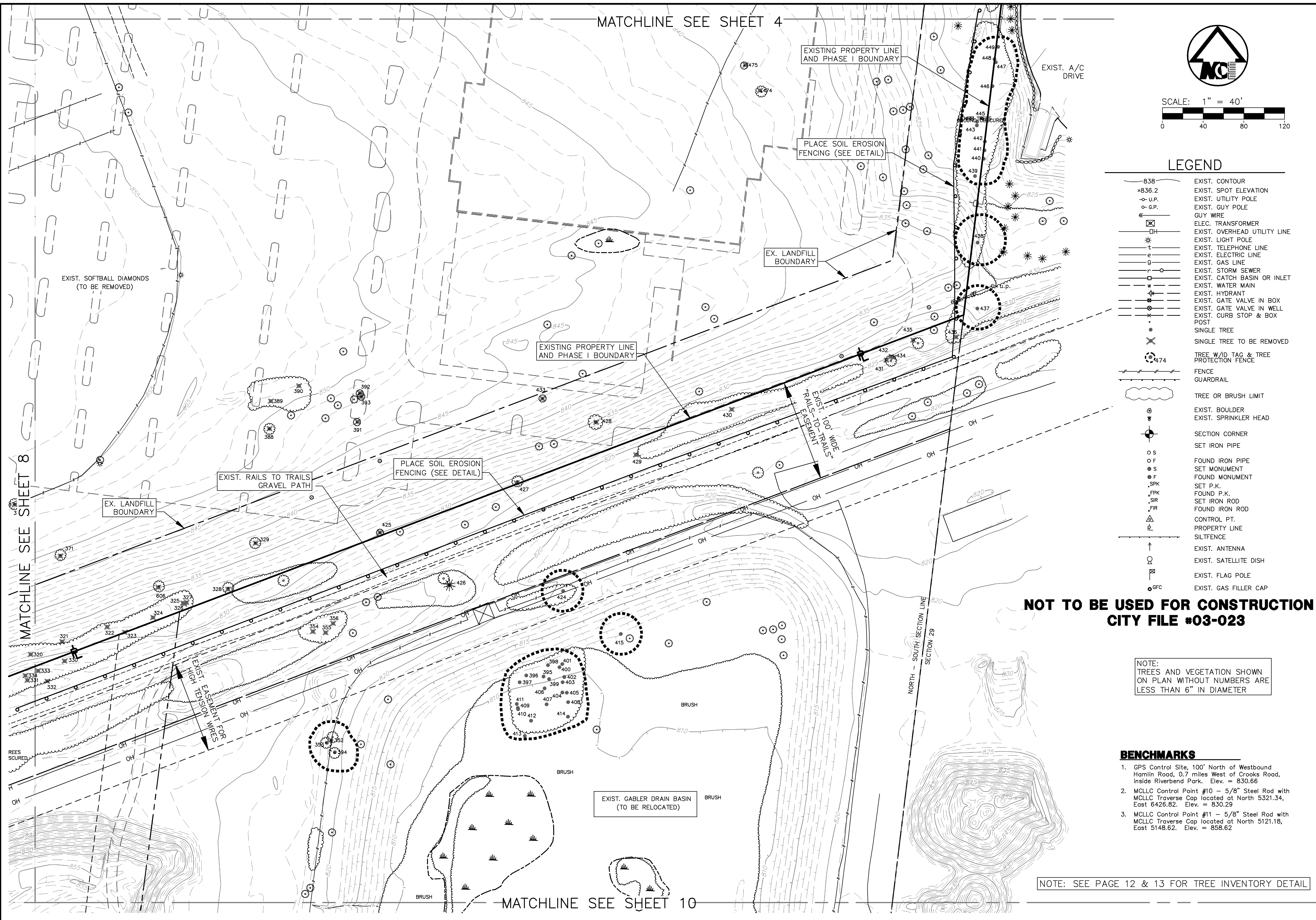
**MADISON PARK**  
EXISTING CONDITIONS, REMOVALS  
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CITY OF ROCHESTER HILLS, MICHIGAN

**08**

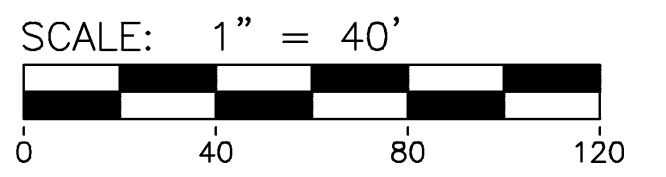
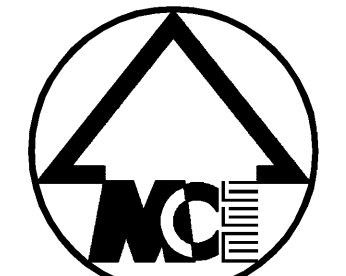
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DATE: 5-20-05	SHEET 8 OF 42
REV. DATE	REV. DATE
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12-09-05	PM: DMB
2-22-06	TECH:
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MATCHLINE SEE SHEET 4



**LEGEND**

- 838 EXIST. CONTOUR
- x836.2 EXIST. SPOT ELEVATION
- o-U.P. EXIST. UTILITY POLE
- o-G.P. EXIST. GUY POLE
- GUY WIRE
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- EXIST. GATE VALVE IN BOX
- EXIST. GATE VALVE IN WELL
- EXIST. CURB STOP & BOX POST
- SINGLE TREE
- SINGLE TREE TO BE REMOVED
- 474 TREE W/D TAG & TREE PROTECTION FENCE
- FENCE GUARDRAIL
- TREE OR BRUSH LIMIT
- EXIST. BOULDER
- EXIST. SPRINKLER HEAD
- SECTION CORNER
- SET IRON PIPE
- FOUND IRON PIPE
- SET MONUMENT
- FOUND MONUMENT
- SET P.K.
- FOUND P.K.
- SET IRON ROD
- FOUND IRON ROD
- CONTROL PT.
- PROPERTY LINE
- SILTFENCE
- EXIST. ANTENNA
- EXIST. SATELLITE DISH
- EXIST. FLAG POLE
- EXIST. GAS FILLER CAP

**NOT TO BE USED FOR CONSTRUCTION  
CITY FILE #03-023**

NOTE:  
TREES AND VEGETATION SHOWN  
ON PLAN WITHOUT NUMBERS ARE  
LESS THAN 6" IN DIAMETER

**BENCHMARKS**

1. GPS Control Site, 100' North of Westbound Hamlin Road, 0.7 miles West of Crooks Road, inside Riverbend Park. Elev. = 830.66
2. MCLLC Control Point #10 - 5/8" Steel Rod with MCLLC Traverse Cap located at North 5321.34, East 6426.82. Elev. = 830.29
3. MCLLC Control Point #11 - 5/8" Steel Rod with MCLLC Traverse Cap located at North 5121.18, East 5148.62. Elev. = 858.62

NOTE: SEE PAGE 12 & 13 FOR TREE INVENTORY DETAIL

**MIDWESTERN CONSULTING**  
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Transportation Engineers  
Planners, Surveyors  
Landscape Architects  
7478 Gateway Park Drive  
Clarkston, Michigan 48346  
Phone: 248.620.2203  
Fax: 248.620.2301

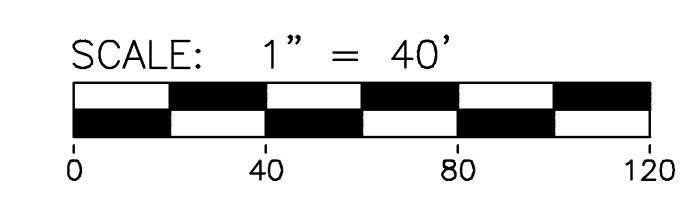
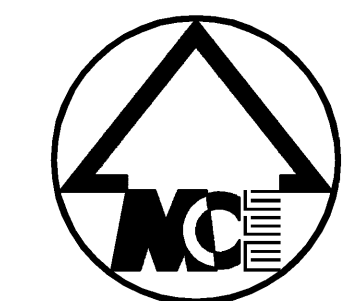
CLIENT  
R.E.I. BROWNSTOWN, L.L.C.  
40900 WOODWARD AVENUE  
SUITE 130  
BLOOMFIELD HILLS, MI 48304  
(248) 540-8040

**MADISON PARK**  
EXISTING CONDITIONS, REMOVALS  
AND TREE PRESERVATION PLAN  
CITY OF ROCHESTER HILLS, MICHIGAN

**9**

DATE: 5-20-05	SHEET 9 OF 42	CADD: DWG/BAS/PAB
9-23-05	10-28-05	ENG: DWL
12-09-05	12-09-05	PM: DMB
2-22-06	2-22-06	TECH: DMB
5-03-06	5-03-06	032326X6.DWG

JOB No. **03323**  
PER CITY REVIEW 8-24-05  
PER CITY REVIEW 10-13-05  
PER OWNER REVIEW 11-04-05  
PER CITY REVIEW 1-4-06  
PER CITY REVIEW 3-13-06



MATCHLINE SEE SHEET 9

**LEGEND**

- 838 ——— EXIST. CONTOUR
- x836.2 ——— EXIST. SPOT ELEVATION
- U.P. ——— EXIST. UTILITY POLE
- G.P. ——— EXIST. GUY POLE
- GUY WIRE
- ⊠ ——— ELEC. TRANSFORMER
- OH ——— EXIST. OVERHEAD UTILITY LINE
- LP ——— EXIST. LIGHT POLE
- TEL ——— EXIST. TELEPHONE LINE
- EL ——— EXIST. ELECTRIC LINE
- GAS ——— EXIST. GAS LINE
- SS ——— EXIST. STORM SEWER
- CB ——— EXIST. CATCH BASIN OR INLET
- WM ——— EXIST. WATER MAIN
- HD ——— EXIST. HYDRANT
- GV ——— EXIST. GATE VALVE IN BOX
- GVV ——— EXIST. GATE VALVE IN WELL
- CS ——— EXIST. CURB STOP & BOX
- POST ——— POST
- ——— SINGLE TREE
- X ——— SINGLE TREE TO BE REMOVED
- 474 ——— TREE W/D TAG & TREE PROTECTION FENCE
- F ——— FENCE
- GR ——— GUARDRAIL
- TL ——— TREE OR BRUSH LIMIT
- ⊙ ——— EXIST. BOULDER
- ⊙ ——— EXIST. SPRINKLER HEAD
- ⊙ ——— SECTION CORNER
- ⊙ ——— SET IRON PIPE
- S ——— FOUND IRON PIPE
- F ——— SET MONUMENT
- S ——— FOUND MONUMENT
- F ——— FOUND MONUMENT
- SPK ——— SET P.K.
- FPK ——— FOUND P.K.
- SIR ——— SET IRON ROD
- FIR ——— FOUND IRON ROD
- △ ——— CONTROL PT.
- PL ——— PROPERTY LINE
- SIL ——— SILTFENCE
- ↑ ——— EXIST. ANTENNA
- ⊙ ——— EXIST. SATELLITE DISH
- ⊙ ——— EXIST. FLAG POLE
- ⊙ GFC ——— EXIST. GAS FILLER CAP

NOTE:  
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**MADISON PARK**  
EXISTING CONDITIONS, REMOVALS  
AND TREE PRESERVATION PLAN  
CITY OF ROCHESTER HILLS, MICHIGAN

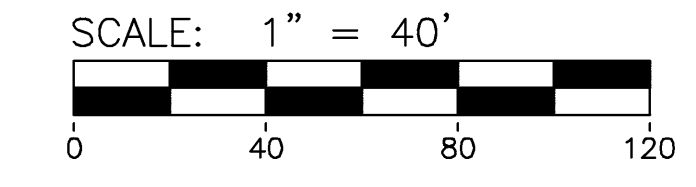
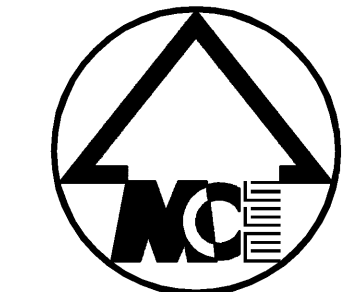
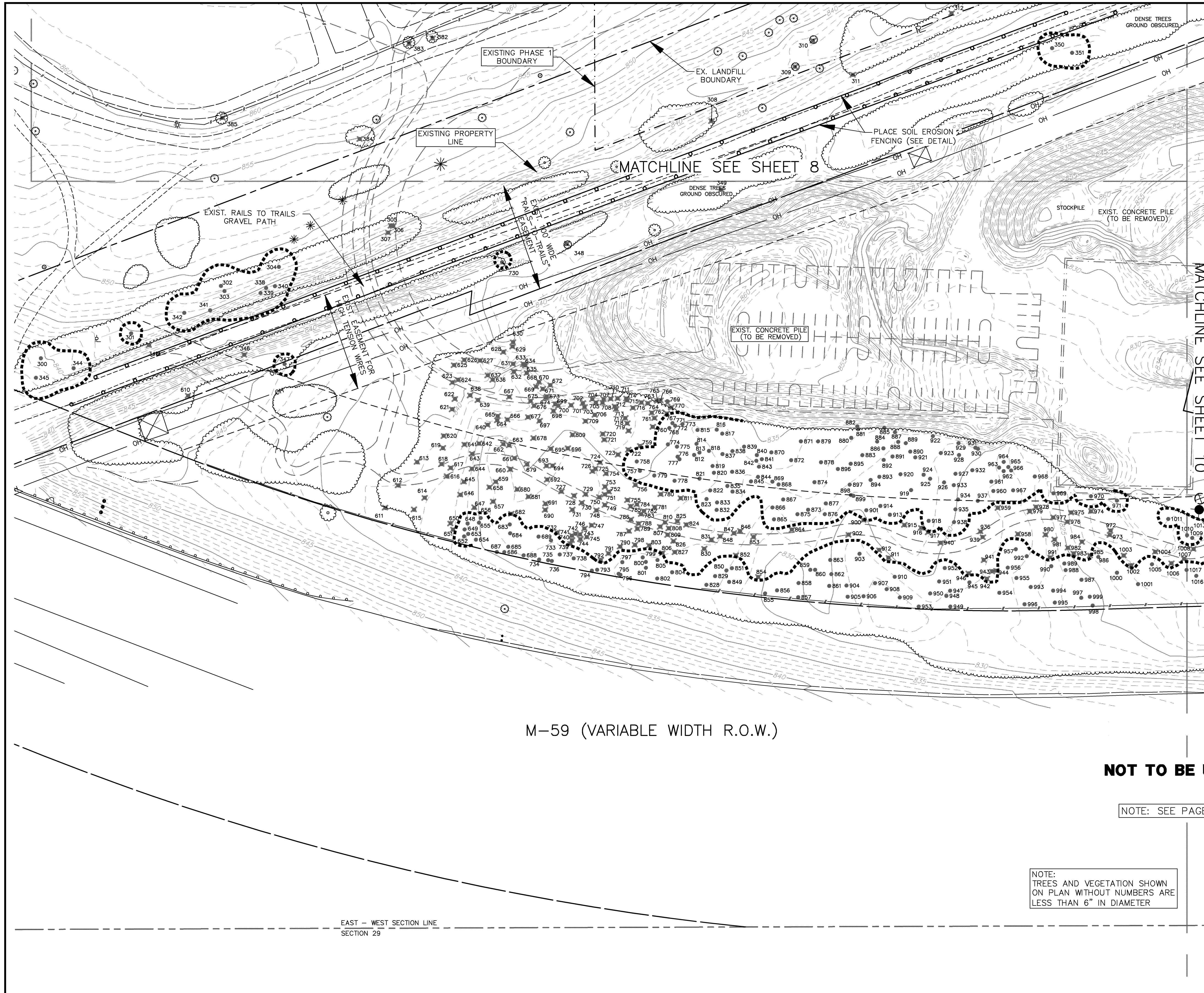
**10**

DATE: 5-20-05	SHEET 10 OF 42
9-23-05	CADD: DWL/BS/PAB
10-28-05	ENG: DWL
12-09-05	PM: DMB
2-22-06	TECH:
5-03-06	03323E7.DWG

**NOT TO BE USED FOR CONSTRUCTION**  
**CITY FILE #03-023**

NOTE: SEE PAGE 12 & 13 FOR TREE INVENTORY DETAIL

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**LEGEND**

- 838 — EXIST. CONTOUR
- × 836.2 EXIST. SPOT ELEVATION
- U.P. EXIST. UTILITY POLE
- G.P. EXIST. GUY POLE
- GUY WIRE
- ⊠ ELEC. TRANSFORMER
- OH — EXIST. OVERHEAD UTILITY LINE
- ⊛ EXIST. LIGHT POLE
- t — EXIST. TELEPHONE LINE
- e — EXIST. ELECTRIC LINE
- g — EXIST. GAS LINE
- r — EXIST. STORM SEWER
- w — EXIST. CATCH BASIN OR INLET
- W.M. — EXIST. WATER MAIN
- H — EXIST. HYDRANT
- G.V. — EXIST. GATE VALVE IN BOX
- C.S. — EXIST. CURB STOP & BOX POST
- SINGLE TREE
- ⊗ 474 TREE W/D TAG & TREE PROTECTION FENCE
- SINGLE TREE TO BE REMOVED
- FENCE
- GUARDRAIL
- TREE OR BRUSH LIMIT
- ⊙ EXIST. BOULDER
- ⊙ EXIST. SPRINKLER HEAD
- SECTION CORNER
- SET IRON PIPE
- FOUND IRON PIPE
- SET MONUMENT
- FOUND MONUMENT
- SET P.K.
- FOUND P.K.
- SET IRON ROD
- FOUND IRON ROD
- △ CONTROL PT.
- PROPERTY LINE
- ANTENNA
- EXIST. SATELLITE DISH
- EXIST. FLAG POLE
- GFC EXIST. GAS FILLER CAP

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NOTE: SEE PAGE 12 & 13 FOR TREE INVENTORY DETAIL

NOTE:  
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 ON PLAN WITHOUT NUMBERS ARE  
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EAST - WEST SECTION LINE  
 SECTION 29

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**MADISON PARK**  
 EXISTING CONDITIONS, REMOVALS  
 AND TREE PRESERVATION PLAN  
 CITY OF ROCHESTER HILLS, MICHIGAN

**11**

DATE: 8-01-05	SHEET 11 OF 42
9-23-05	CADD: DWG/BAS/PAB
10-28-05	ENG: DWL
12-08-05	PM: DMB
2-22-06	TECH: DMB
5-03-06	03323E8.DWG

JOB No. **03323**

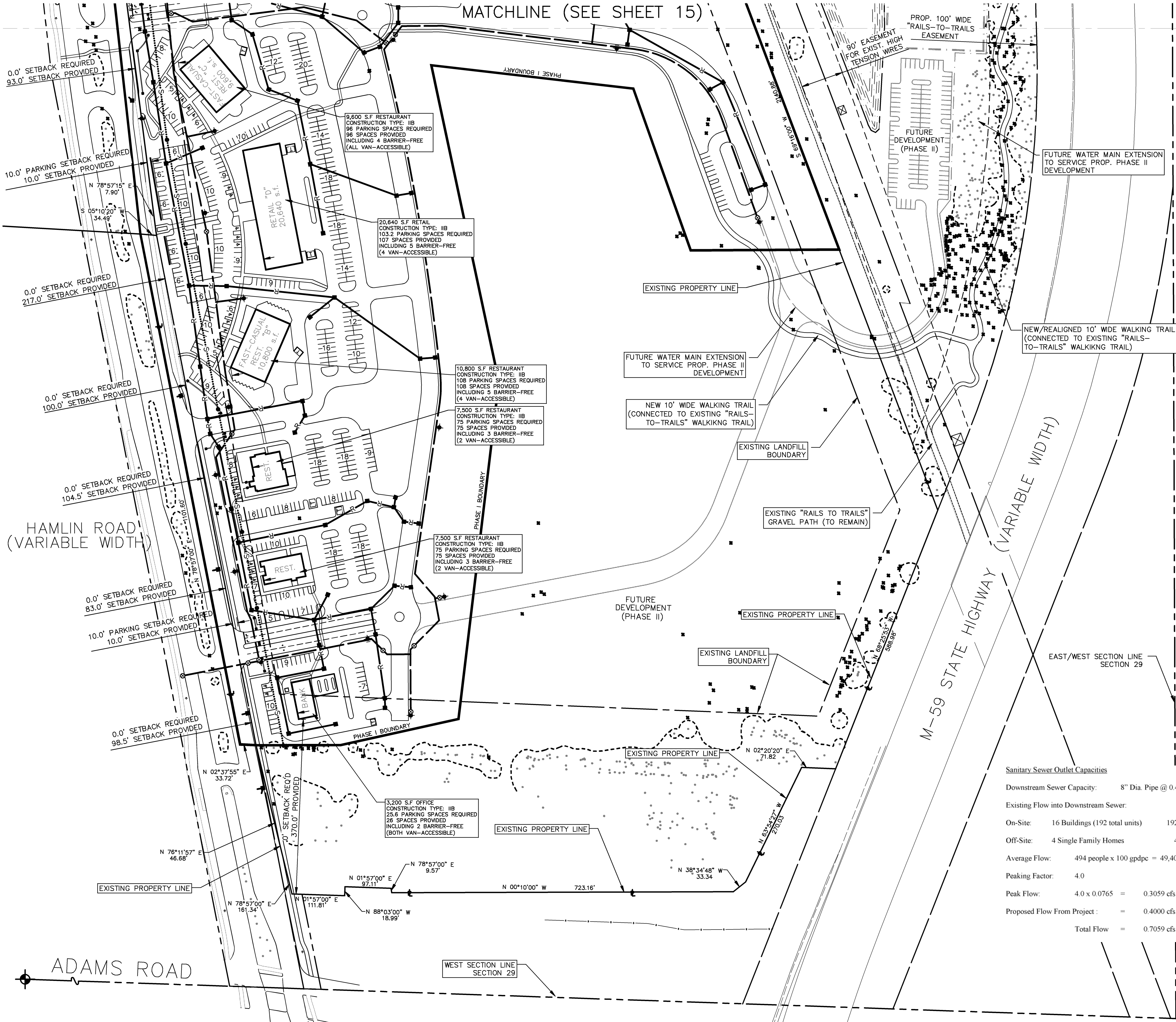
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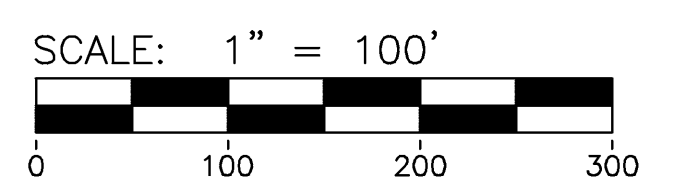
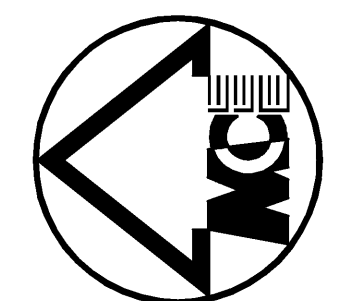
MATCHLINE (SEE SHEET 15)

**SANITARY SEWER BASIS OF DESIGN**



Madison Park - Sanitary Sewer Calculations

Category	Description	Flow (cfs)
Phase I	Major Retail Space:	
	Retail "A"	0.0036 cfs
	Major "B"	0.0070 cfs
Major "C"	0.0018 cfs	
Easterly Bank:		
		0.0009 cfs
Restaurant "B"		
		0.0122 cfs
Retail "C"		
		0.0122 cfs
Retail "D"		
		0.0012 cfs
Restaurants (2)		
		0.0413 cfs
Westerly Bank:		
		0.0007 cfs
Leachate Collection System (From Hydrologic Evaluation of Landfill Performance model)		
Typical Cross-section:		
Final Cover of 45 Acres		15.4 c.f./acre
Projected Peak Flow = (385/25) x 45 = 693 c.f.		(0.008 cfs)
14.60 reu's		0.0080 cfs
14.60 (350) = 5,112 gal/day		
<b>Total Phase I:</b>		<b>162.32 reu's = 0.0889 cfs</b>
Peaking Factor (PF)		
P = population in thousands		162.32 reu's
3.5 people per reu		3.5 (162.32) = 568.12 people
PF = $\frac{18 + (P)^2}{4 + (P)^2}$		
PF = 18.7537 / 4.7537 = 3.95		
Q avg:		0.0889 cfs
Q peak:		0.0889 (3.95) = 0.3507 cfs



**LEGEND**

- 838 EXIST. CONTOUR
- 838 PROP. CONTOUR
- x836.2 EXIST. SPOT ELEVATION
- 36.60x PROP. SPOT ELEVATION
- W EXIST. WATER MAIN
- W PROP. WATER MAIN
- H EXIST. HYDRANT
- H PROP. HYDRANT
- R EXIST. STORM SEWER
- R PROP. STORM SEWER
- C EXIST. CATCH BASIN OR INLET
- C PROP. CATCH BASIN OR INLET
- S EXIST. SANITARY SEWER
- T/C TOP OF CURB
- T/P TOP OF PAVEMENT
- Q OF DITCH
- DRAINAGE DIRECTION
- WELL
- SINGLE TREE
- FENCE
- GUARDRAIL
- TREE OR BRUSH LIMIT
- EXIST. BOULDER
- EXIST. SPRINKLER HEAD
- SECTION CORNER
- SET IRON PIPE
- FOUND IRON PIPE
- SET MONUMENT
- FOUND MONUMENT
- SET P.K.
- FOUND P.K.
- SET IRON ROD
- FOUND IRON ROD
- CONTROL PT.
- CENTERLINE
- PROPERTY LINE

**Sanitary Sewer Outlet Capacities**

Downstream Sewer Capacity: 8" Dia. Pipe @ 0.40% = 0.76 cfs

Existing Flow into Downstream Sewer:

On-Site: 16 Buildings (192 total units) 192 x 2.5 people/unit = 480 people

Off-Site: 4 Single Family Homes 4 x 3.5 people/unit = 14 people

Average Flow: 494 people x 100 gpdpc = 49,400 gpd (0.0765 cfs)

Peaking Factor: 4.0

Peak Flow: 4.0 x 0.0765 = 0.3059 cfs

Proposed Flow From Project: = 0.4000 cfs Max.

Total Flow = 0.7059 cfs < 0.76 cfs

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**CITY FILE #03-023**

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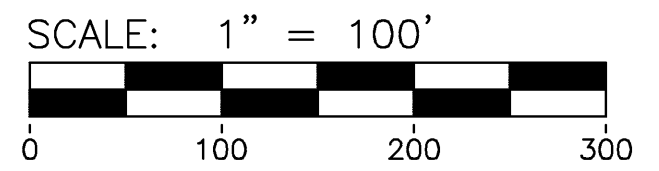
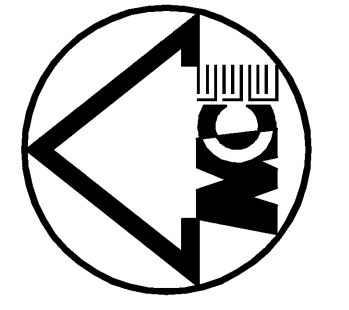
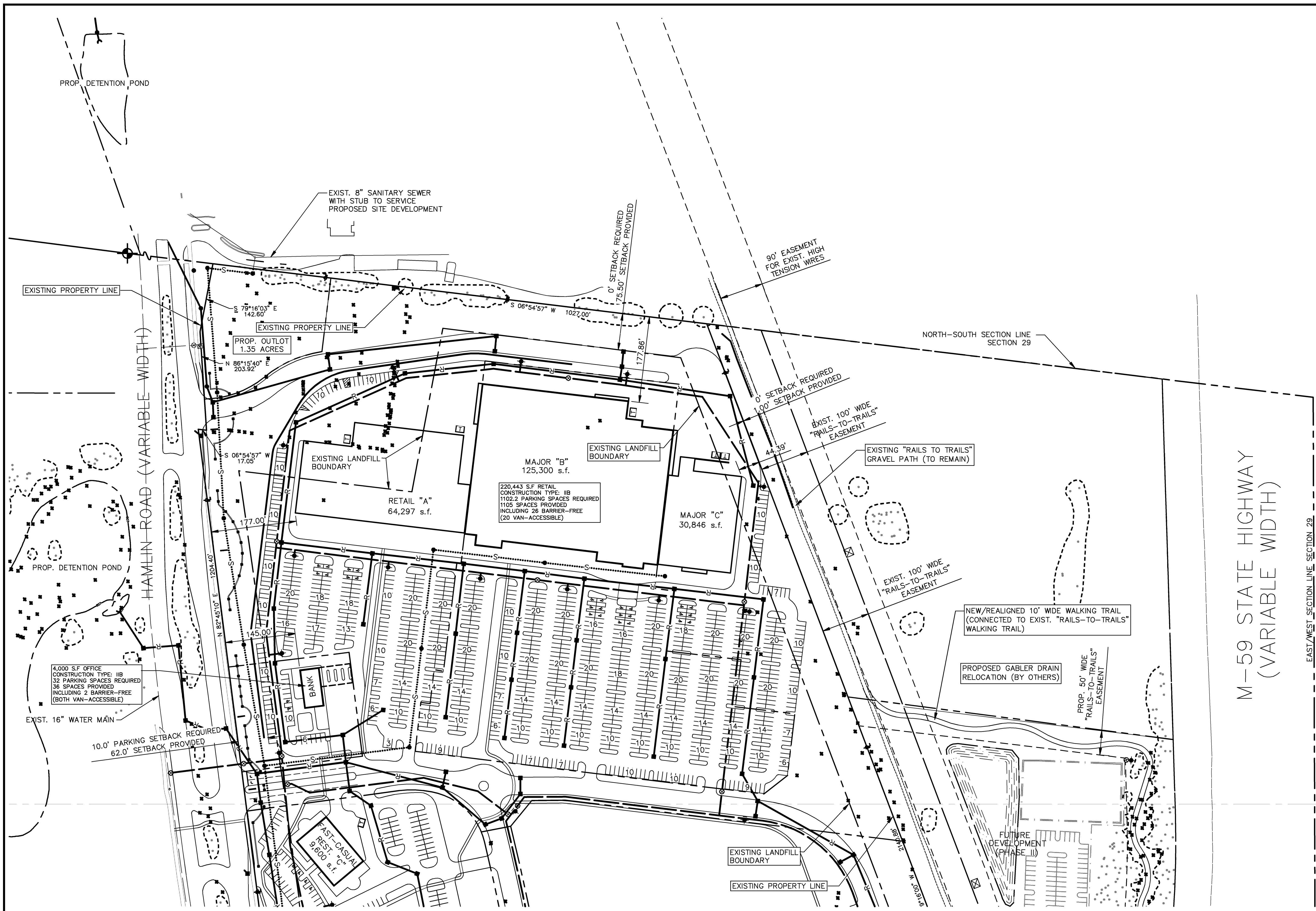
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R.E.I. BROWNSTOWN, L.L.C.  
40900 WOODWARD AVENUE  
SUITE 130  
BLOOMFIELD HILLS, MI 48304  
(248) 540-8040

**MADISON PARK**  
DIMENSION SITE PLAN  
CITY OF ROCHESTER HILLS, MICHIGAN

**14**

JOB No.	03323
DATE	8-01-05
SHEET	14 OF 42
REV. DATE	9-23-05
PER CITY REVIEW	8-24-05
PER OWNER REVIEW	11-04-05
PER CITY REVIEW	1-4-06
PER CITY REVIEW	3-13-06

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**LEGEND**

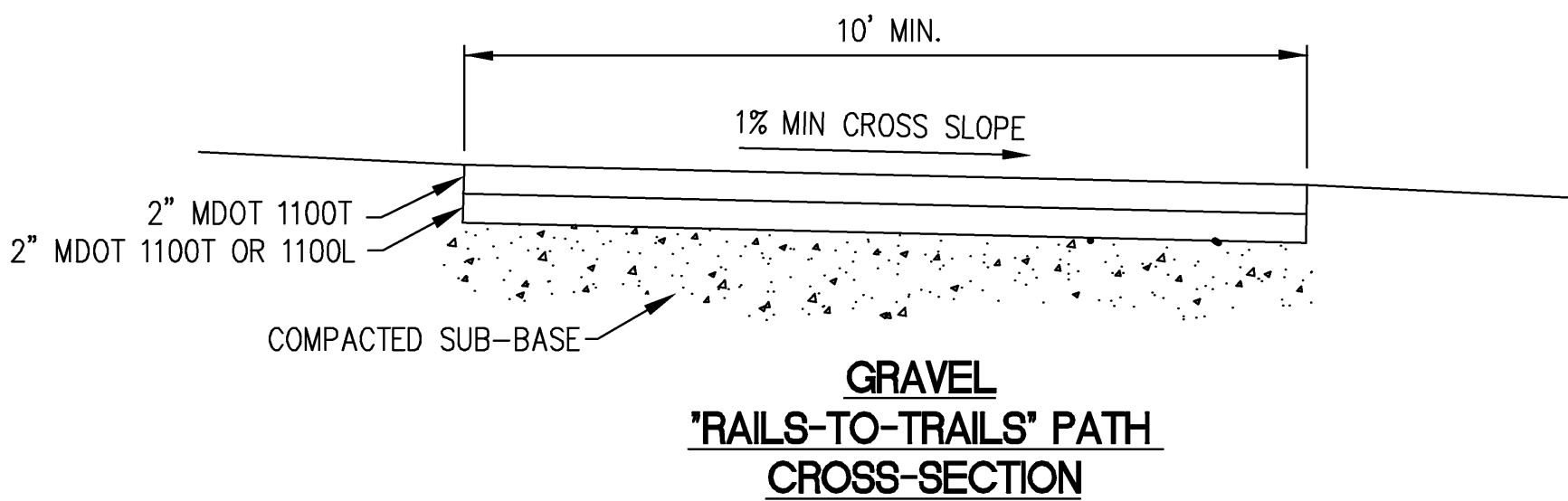
- 838 EXIST. CONTOUR
- 836.2 PROP. CONTOUR
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- W EXIST. WATER MAIN
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- H EXIST. HYDRANT
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- S EXIST. STORM SEWER
- S PROP. STORM SEWER
- CB EXIST. CATCH BASIN OR INLET
- CB PROP. CATCH BASIN OR INLET
- SS EXIST. SANITARY SEWER
- T/C TOP OF CURB
- T/P TOP OF PAVEMENT
- C/D CENTERLINE OF DITCH
- DRAINAGE DIRECTION
- W WELL
- S SINGLE TREE
- F FENCE
- G GUARDRAIL
- T/B TREE OR BRUSH LIMIT
- B EXIST. BOULDER
- S EXIST. SPRINKLER HEAD
- SC SECTION CORNER
- SIP SET IRON PIPE
- FIP FOUND IRON PIPE
- SM SET MONUMENT
- FOM FOUND MONUMENT
- SPK SET P.K.
- FPK FOUND P.K.
- SIR SET IRON ROD
- FIR FOUND IRON ROD
- CP CONTROL PT.
- CL CENTERLINE
- PL PROPERTY LINE
- SIF SILTFENCE
- A EXIST. ANTENNA
- SD EXIST. SATELLITE DISH
- FP EXIST. FLAG POLE
- GFC EXIST. GAS FILLER CAP

M-59 STATE HIGHWAY  
(VARIABLE WIDTH)

EAST/WEST\_SECTION LINE SECTION 29

NORTH-SOUTH SECTION LINE  
SECTION 29

MATCHLINE SEE SHEET 14



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DIMENSION SITE PLAN  
CITY OF ROCHESTER HILLS, MICHIGAN

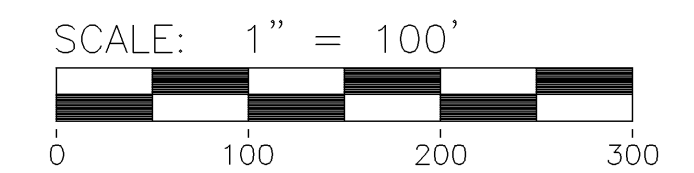
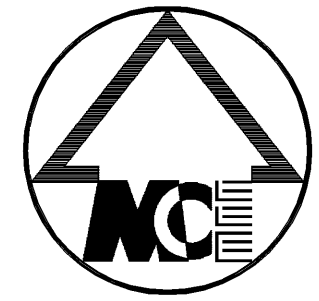
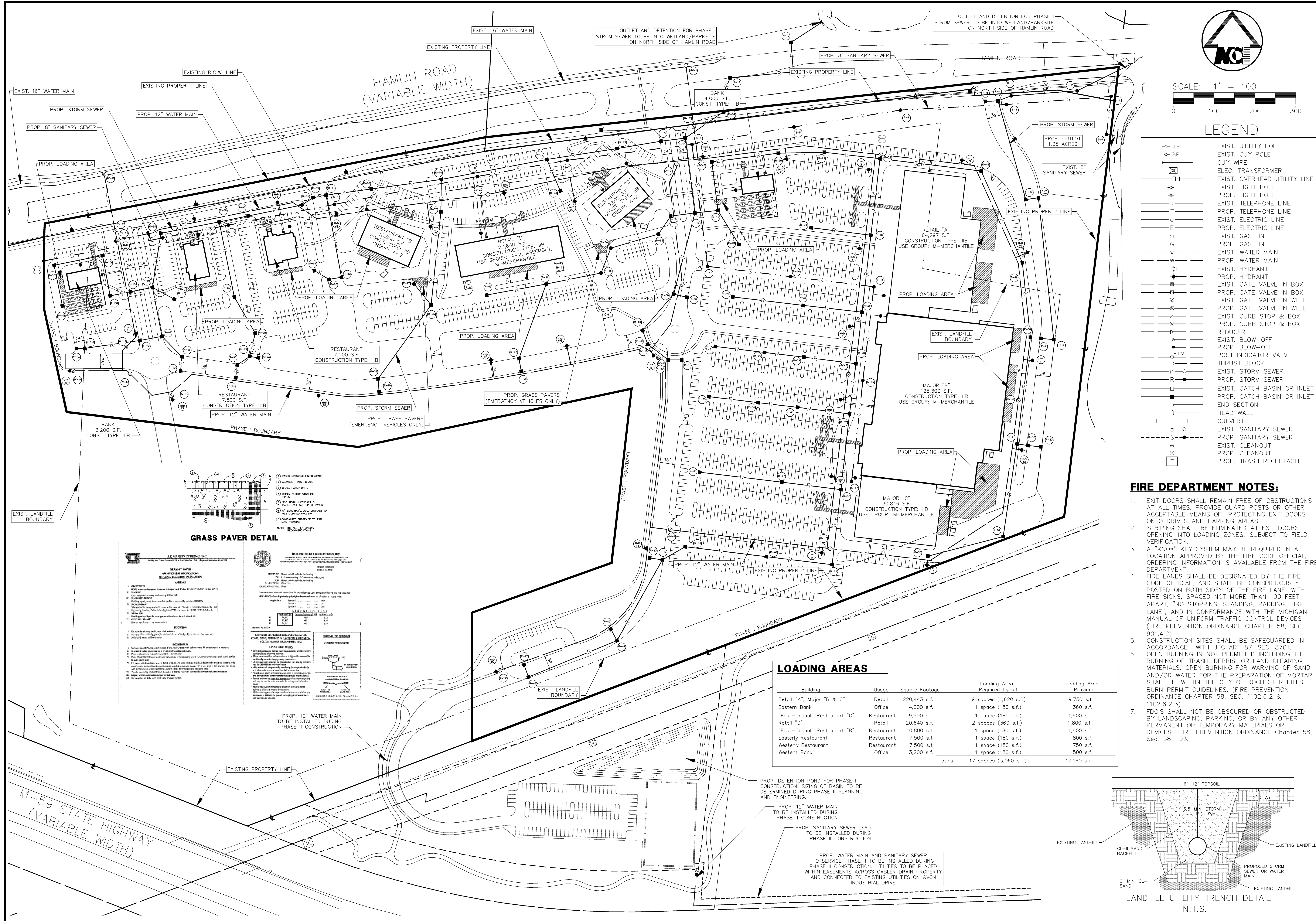
**15**

JOB No.	03323		
DATE	5-20-05		
SHEET	15 OF 42		
REV.	DATE	BY	DESCRIPTION
1	8-23-05	CADD	DWL/BJS
2	10-28-05	ENG.	DWL
3	12-09-05	PM.	DMB
4	2-22-06	TECH.	DMB
5	5-03-06		03323023.DWG

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CITY FILE #03-023**

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**LEGEND**

- o- U.P. EXIST. UTILITY POLE
- o- G.P. EXIST. GUY POLE
- o- GUY WIRE
- ELEC. TRANSFORMER
- H- EXIST. OVERHEAD UTILITY LINE
- L- EXIST. LIGHT POLE
- L- PROP. LIGHT POLE
- T- EXIST. TELEPHONE LINE
- T- PROP. TELEPHONE LINE
- E- EXIST. ELECTRIC LINE
- E- PROP. ELECTRIC LINE
- G- EXIST. GAS LINE
- G- PROP. GAS LINE
- W- EXIST. WATER MAIN
- W- PROP. WATER MAIN
- H- EXIST. HYDRANT
- H- PROP. HYDRANT
- B- EXIST. GATE VALVE IN BOX
- B- PROP. GATE VALVE IN BOX
- V- EXIST. GATE VALVE IN WELL
- V- PROP. GATE VALVE IN WELL
- X- EXIST. CURB STOP & BOX
- X- PROP. CURB STOP & BOX
- R- REDUCER
- O- EXIST. BLOW-OFF
- O- PROP. BLOW-OFF
- P.L.V. POST INDICATOR VALVE
- T- THRUST BLOCK
- R- EXIST. STORM SEWER
- R- PROP. STORM SEWER
- I- EXIST. CATCH BASIN OR INLET
- I- PROP. CATCH BASIN OR INLET
- E- END SECTION
- H- HEAD WALL
- C- CULVERT
- S- EXIST. SANITARY SEWER
- S- PROP. SANITARY SEWER
- C- EXIST. CLEANOUT
- C- PROP. CLEANOUT
- T- PROP. TRASH RECEPTACLE

**FIRE DEPARTMENT NOTES:**

- EXIT DOORS SHALL REMAIN FREE OF OBSTRUCTIONS AT ALL TIMES. PROVIDE GUARD POSTS OR OTHER ACCEPTABLE MEANS OF PROTECTING EXIT DOORS ONTO DRIVES AND PARKING AREAS.
- STRIPING SHALL BE ELIMINATED AT EXIT DOORS OPENING INTO LOADING ZONES; SUBJECT TO FIELD VERIFICATION.
- A "KNOX" KEY SYSTEM MAY BE REQUIRED IN A LOCATION APPROVED BY THE FIRE CODE OFFICIAL. ORDERING INFORMATION IS AVAILABLE FROM THE FIRE DEPARTMENT.
- FIRE LANES SHALL BE DESIGNATED BY THE FIRE CODE OFFICIAL AND SHALL BE CONSPICUOUSLY POSTED ON BOTH SIDES OF THE FIRE LANE, WITH FIRE SIGNS, SPACED NOT MORE THAN 100 FEET APART, "NO STOPPING, STANDING, PARKING, FIRE LANE", AND IN CONFORMANCE WITH THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (FIRE PREVENTION ORDINANCE CHAPTER 58, SEC. 901.4.2)
- CONSTRUCTION SITES SHALL BE SAFEGUARDED IN ACCORDANCE WITH UFC PART 87, SEC. 8701.
- OPEN BURNING IN NOT PERMITTED INCLUDING THE BURNING OF TRASH, DEBRIS, OR LAND CLEARING MATERIALS. OPEN BURNING FOR WARMING OF SAND AND/OR WATER FOR THE PREPARATION OF MORTAR SHALL BE WITHIN THE CITY OF ROCHESTER HILLS BURN PERMIT GUIDELINES, (FIRE PREVENTION ORDINANCE CHAPTER 58, SEC. 1102.6.2 & 1102.6.2.3)
- FDC'S SHALL NOT BE OBTAINED OR OBSTRUCTED BY LANDSCAPING, PARKING, OR BY ANY OTHER PERMANENT OR TEMPORARY MATERIALS OR DEVICES. FIRE PREVENTION ORDINANCE Chapter 58, Sec. 58-93.

**LOADING AREAS**

Building	Usage	Square Footage	Loading Area Required by s.f.	Loading Area Provided
Retail "A", Major "B" & "C"	Retail	220,443 s.f.	9 spaces (1,620 s.f.)	19,750 s.f.
Eastern Bank	Office	4,000 s.f.	1 space (180 s.f.)	360 s.f.
"Fast-Casual" Restaurant "C"	Restaurant	9,600 s.f.	1 space (180 s.f.)	1,600 s.f.
Retail "D"	Retail	20,640 s.f.	2 spaces (360 s.f.)	1,800 s.f.
"Fast-Casual" Restaurant "B"	Restaurant	10,800 s.f.	1 space (180 s.f.)	1,600 s.f.
Easterly Restaurant	Restaurant	7,500 s.f.	1 space (180 s.f.)	800 s.f.
Westerly Restaurant	Restaurant	7,500 s.f.	1 space (180 s.f.)	750 s.f.
Western Bank	Office	3,200 s.f.	1 space (180 s.f.)	500 s.f.
Totals:			17 spaces (3,060 s.f.)	17,160 s.f.

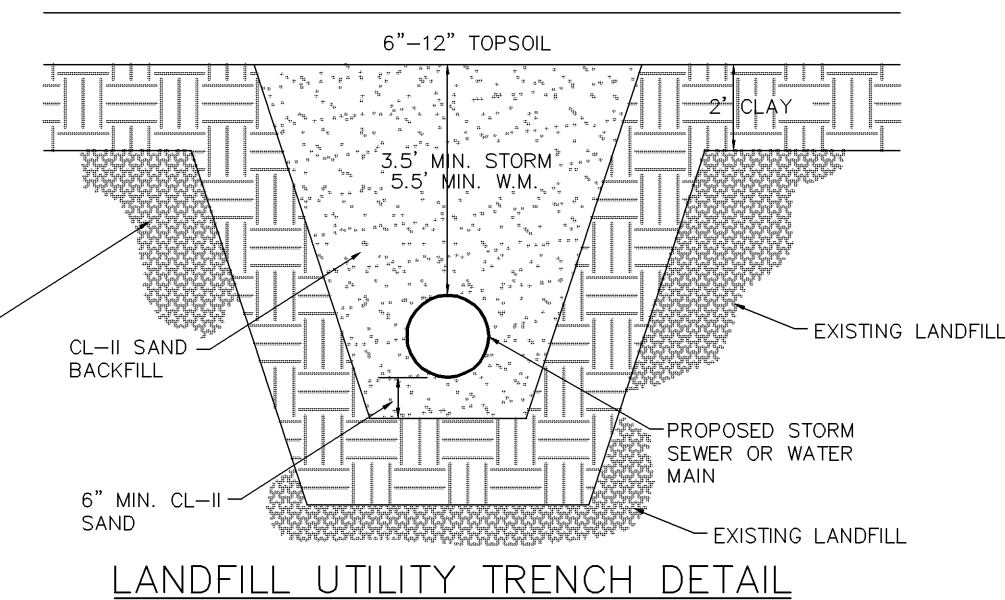
**GRASS PAVER DETAIL**

PROP. DETENTION POND FOR PHASE II CONSTRUCTION. SIZING OF BASIN TO BE DETERMINED DURING PHASE II PLANNING AND ENGINEERING.

PROP. 12" WATER MAIN TO BE INSTALLED DURING PHASE II CONSTRUCTION

PROP. SANITARY SEWER LEAD TO BE INSTALLED DURING PHASE II CONSTRUCTION

PROP. WATER MAIN AND SANITARY SEWER TO BE INSTALLED DURING PHASE II CONSTRUCTION. UTILITIES TO BE PLACED WITHIN EASEMENTS ACROSS GABLE DRAIN PROPERTY AND CONNECTED TO EXISTING UTILITIES ON AVON INDUSTRIAL DRIVE



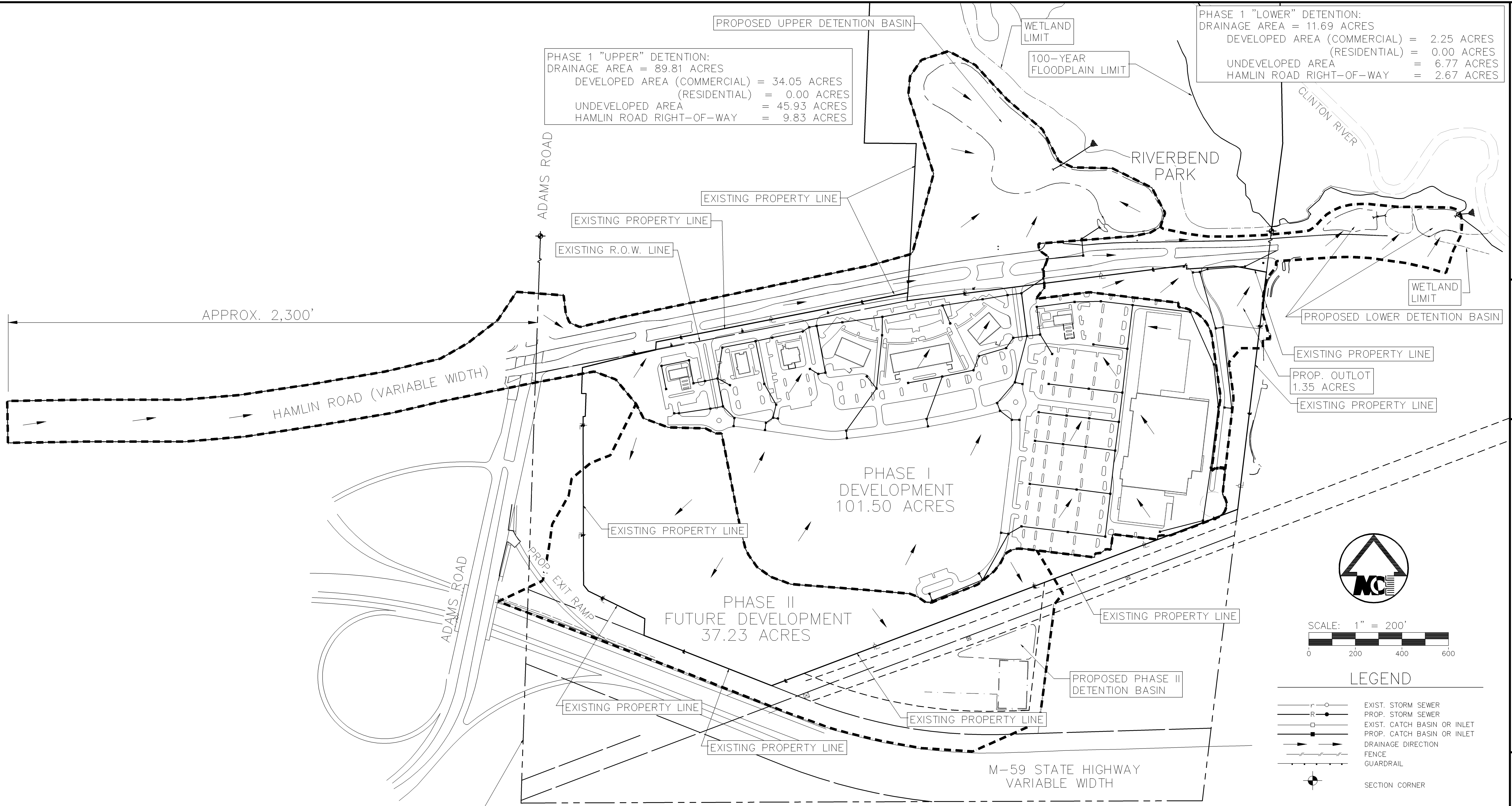
**MIDWESTERN CONSULTING**  
Civil, Environmental and 7479 Gateway Park Drive  
Transportation Engineers Clarkston, Michigan 48346  
Planners, Surveyors Phone: 248.620.2203  
Landscape Architects Fax: 248.620.2301

**MADISON PARK**  
OVERALL UTILITY PLAN  
CITY OF ROCHESTER HILLS, MICHIGAN

**03323**  
JOB No. 03323

DATE: 08-31-05  
SHEET 16 OF 42  
REV. DATE 09-23-05  
REV. DATE 10-28-05  
REV. DATE 12-09-05  
REV. DATE 2-22-06  
REV. DATE 3-03-06

DESIGNER: CADD: BAZ  
ENGINEER: ENL: DWL  
PROJECT MANAGER: PM: DWL  
TECHNICAL DRAFTER: TRACY PRESTON  
CHECKER: DWL

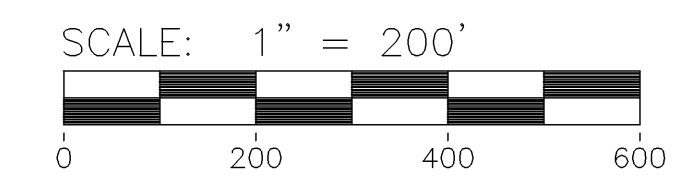


PHASE 1 "UPPER" DETENTION:  
 DRAINAGE AREA = 89.81 ACRES  
 DEVELOPED AREA (COMMERCIAL) = 34.05 ACRES  
 (RESIDENTIAL) = 0.00 ACRES  
 UNDEVELOPED AREA = 45.93 ACRES  
 HAMLIN ROAD RIGHT-OF-WAY = 9.83 ACRES

PHASE 1 "LOWER" DETENTION:  
 DRAINAGE AREA = 11.69 ACRES  
 DEVELOPED AREA (COMMERCIAL) = 2.25 ACRES  
 (RESIDENTIAL) = 0.00 ACRES  
 UNDEVELOPED AREA = 6.77 ACRES  
 HAMLIN ROAD RIGHT-OF-WAY = 2.67 ACRES

PHASE I DEVELOPMENT  
 101.50 ACRES

PHASE II  
 FUTURE DEVELOPMENT  
 37.23 ACRES



LEGEND

	EXIST. STORM SEWER
	PROP. STORM SEWER
	EXIST. CATCH BASIN OR INLET
	PROP. CATCH BASIN OR INLET
	DRAINAGE DIRECTION
	FENCE
	GUARDRAIL
	SECTION CORNER

NOTE:  
 PROPOSED GRADING OF PHASE II AREAS WILL BE LIMITED TO ADDING TWO FEET OF CLAY COVER OVER THE EXISTING LANDFILL AREAS AND REGRADING TO MATCH THE EXISTING GROUND. THE PROPOSED RUNOFF WILL BE EQUAL TO OR LESS THAN THE EXISTING RUNOFF FOR THE PHASE II AREAS. ALL DISTURBED AREAS WILL BE RESTORED WITH TOP-SOIL, SEED, MULCH AND FERTILIZER AS SPECIFIED BY THE CITY OF ROCHESTER HILLS.

- NOTES:
- PHASE I "UPPER" BASIN TO INCLUDE SEDIMENT TREATMENT PRIOR TO ENTERING BASIN. (STORMCEPTOR, ETC.) BASIN TO DISCHARGE TO UPLAND PARK AREA, BY WAY OF STONE LINED SWALE TO MINIMIZE EROSION.
  - PHASE I "LOWER" BASIN TO PROVIDE SEDIMENT FOREBAY BEFORE DISCHARGING TO EXISTING WOODED WETLAND AREAS BEFORE REACHING DETENTION BASIN. BASIN TO DISCHARGE DIRECTLY TO CLINTON RIVER.
  - PHASE II BASIN TO PROVIDE SEDIMENT FOREBAY AND DISCHARGE DIRECTLY TO RELOCATED GABLER DRAIN BASIN.
  - ALL BASINS DESIGNED BASED ON THE 50-YEAR STORM EVENT AND A RELEASE RATE OF 0.20 CFS PER ACRE. OUTLET STRUCTURES AND BASIN DESIGNS WILL BE PER OAKLAND COUNTY DRAIN COMMISSIONER STANDARDS.

**NOT TO BE USED FOR CONSTRUCTION**  
**CITY FILE #03-023**

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 (248) 540-8040

**MADISON PARK**  
 OVERALL DRAINAGE AREA PLAN  
 CITY OF ROCHESTER HILLS, MICHIGAN

**17**

JOB No.	03323
DATE	05-09-06
REV. DATE	5-03-06
PER CITY REVIEW	3-13-06
SHEET	17 OF 43
ADD: DWG	
ENG: DWG	
PM: DWG	
TECH: DWG	
03323.DWG	

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