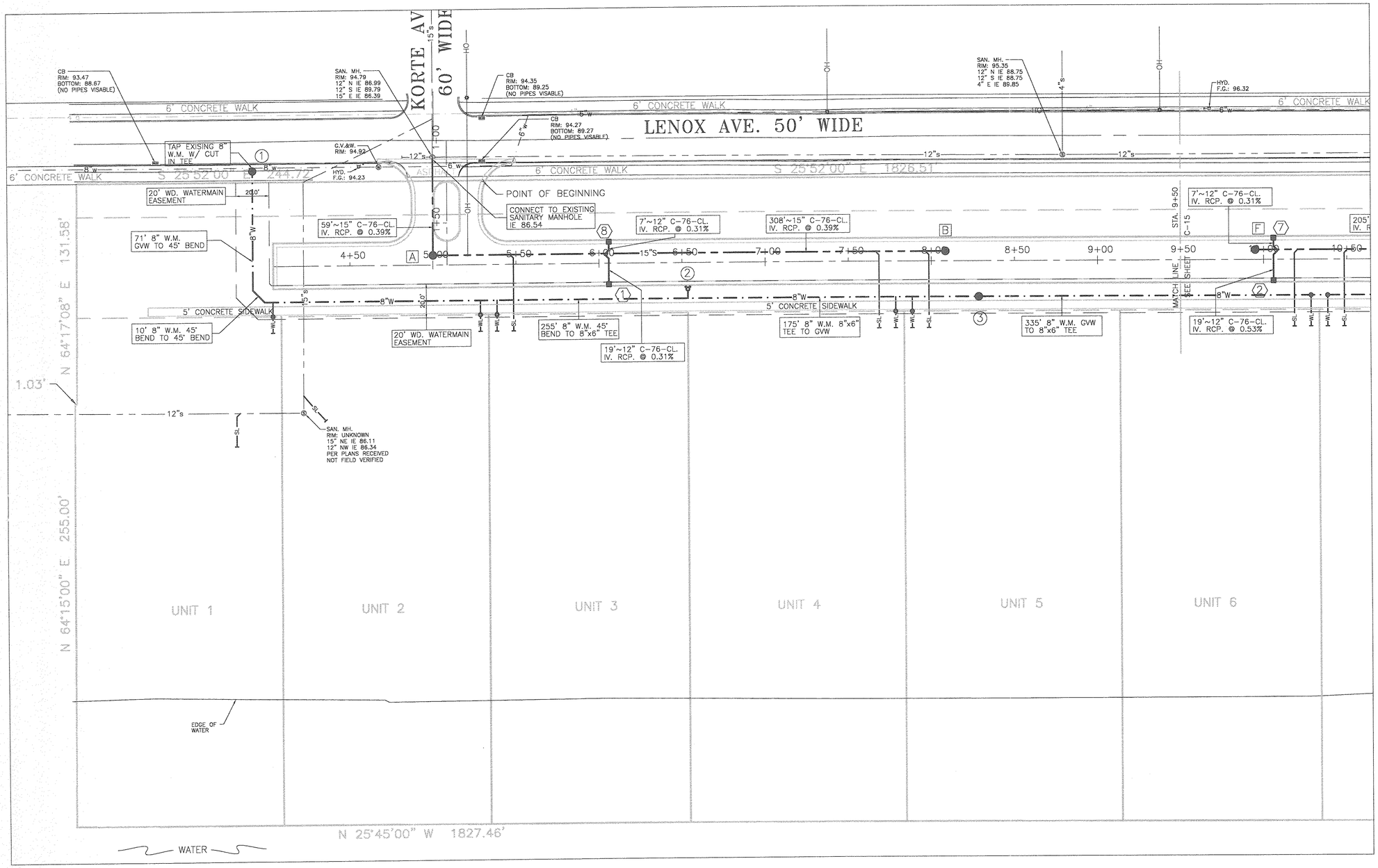

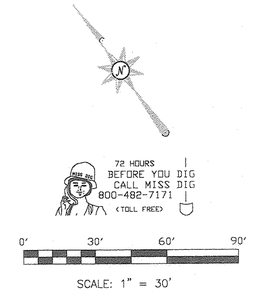

ISSUE DATE	REVISIONS
9/1/06	

CLIENT:
MORGAN DEVELOPMENT LLC
36150 DEQUINDRE
SUITE 600
STERLING HEIGHTS, MI 48310

GLS SURVEYORS & ENGINEERS
9800 ANN ARBOR ROAD, WEST
PLYMOUTH, MI 48170
PHONE: (734) 416-9650
FAX: (734) 416-9657
www.gasurveyor.com

STRUCTURE LEGEND

- SANITARY MANHOLE
- CATCH BASIN
- WATER STRUCTURE

UTILITY PLAN 1
LENOX WATERFRONT ESTATES
LENOX AVENUE
WAYNE COUNTY, CITY OF DETROIT, MICHIGAN

DWSD SYSTEM ACCEPTANCE	
DESIGNED REVIEWED	DATE
HEAD ENGR-DES.	
CONSTRUCTION INSPECTED:	
HEAD ENGR-FLD.	
PERMIT No.	LS#
MDNR MDPH	D JOB#
R/W#	DRWG/REF# SEWER
	WATER

ISSUED FOR REVIEW ONLY	
FILE NO.: 2791	DWG.: ENG SITE PLAN
DESIGNED BY: S.A.S.	SHEET No.
DRAWN BY: S.A.S.	C-14
CHECKED BY: L.P.R.	
SCALE: 1" = 30'	

UTILITY COMPANIES

SBC AMERITECH MICHIGAN
JEFF COLLARD
100 SOUTH MAIN STREET
ROOM 314
MT. CLEMENS, MI 48043-2374
(586) 466-1024

DTE ENERGY
SERVICE PLANNING
HELEN LEE
2000 SECOND AVE. (518 S.B.)
DETROIT, MI 48226
(313) 235-9043
(313) 235-9366 FAX

MICHIGAN CONSOLIDATED GAS
DRAFTING CLERK
MAIN REPLACEMENT TEAM
NOBLE SECOND FLOOR
3200 HOBSON
DETROIT, MI 45201
(313) 577-7236
(313) 577-7061 FAX

COMCAST CONSTRUCTION
RUSTY KEMPER
12775 LYNDON AVENUE
DETROIT, MI 48227-3982
(313) 934-2600 EXT. 440
(313) 934-5782 FAX

DETROIT WATER & SEWERAGE DEPARTMENT
ENGINEERING GROUPS
1420 WASHINGTON BLVD.
SUITE 100
DETROIT, MI 48226
(313) 964-9800
(313) 964-9810 FAX

GENERAL NOTES

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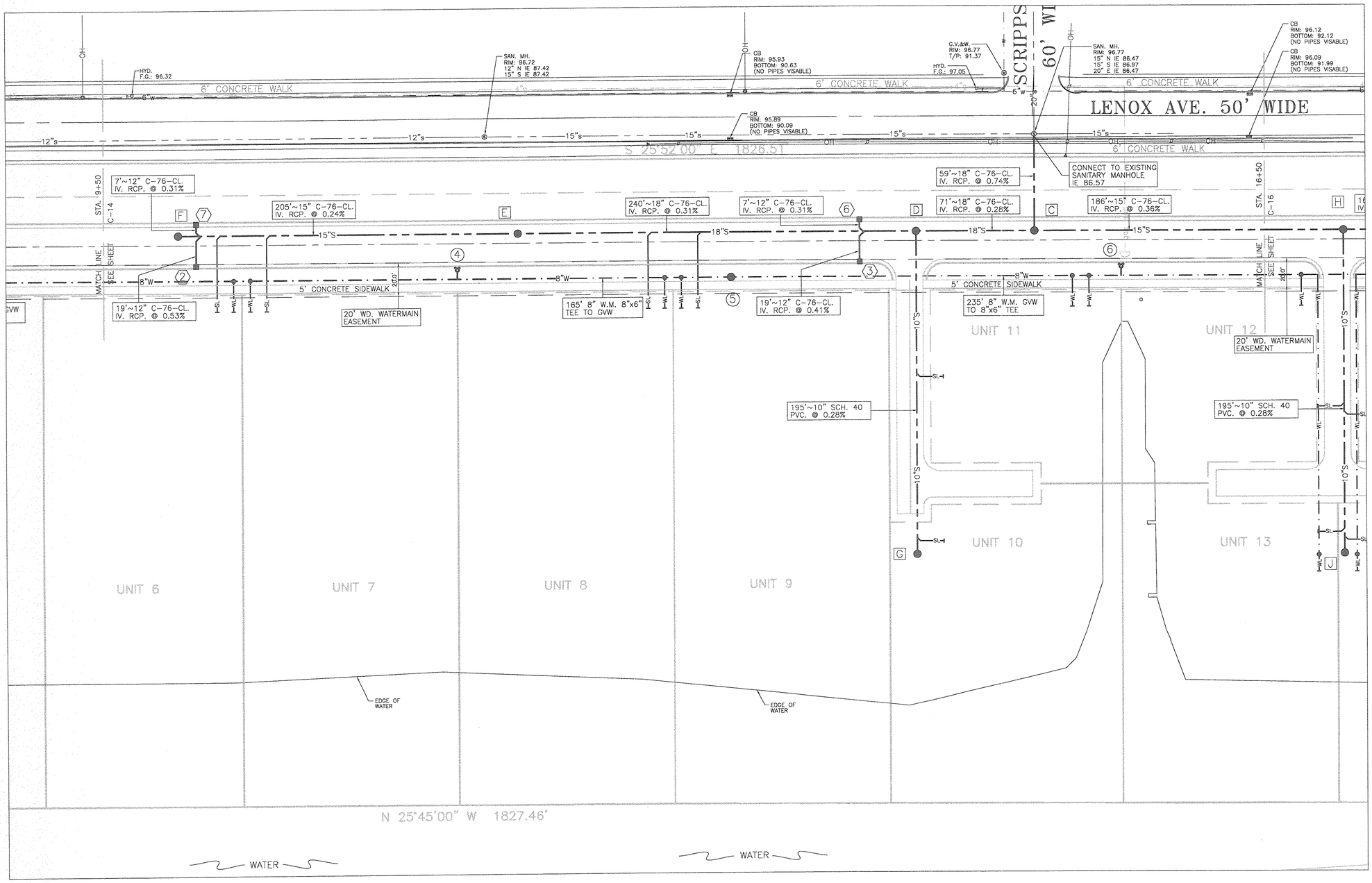
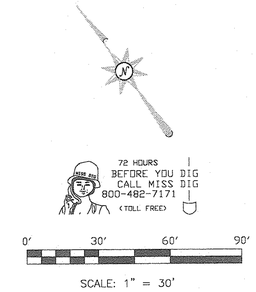
6. ROOF DOWNSPOUTS ARE NOT TO BE DIRECTLY CONNECTED TO THE SEWER SYSTEM.

WATER SERVICE NOTE

A. SINGLE FAMILY DOMESTIC WATER SERVICE LEADS SHALL BE 1" TYPE "K" COPPER.





ISSUE DATE	REVISIONS
9/1/06	

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SUITE 600
STERLING HEIGHTS, MI 48310

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STRUCTURE LEGEND

- SANITARY MANHOLE
- CATCH BASIN
- WATER STRUCTURE

UTILITY PLAN 2
LENOX WATERFRONT ESTATES
LENOX AVENUE

WAYNE COUNTY, CITY OF DETROIT, MICHIGAN

UTILITY COMPANIES

SBC AMERITECH MICHIGAN
JEFF COLLARD
100 SOUTH MAIN STREET
ROOM 314
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SUITE 100
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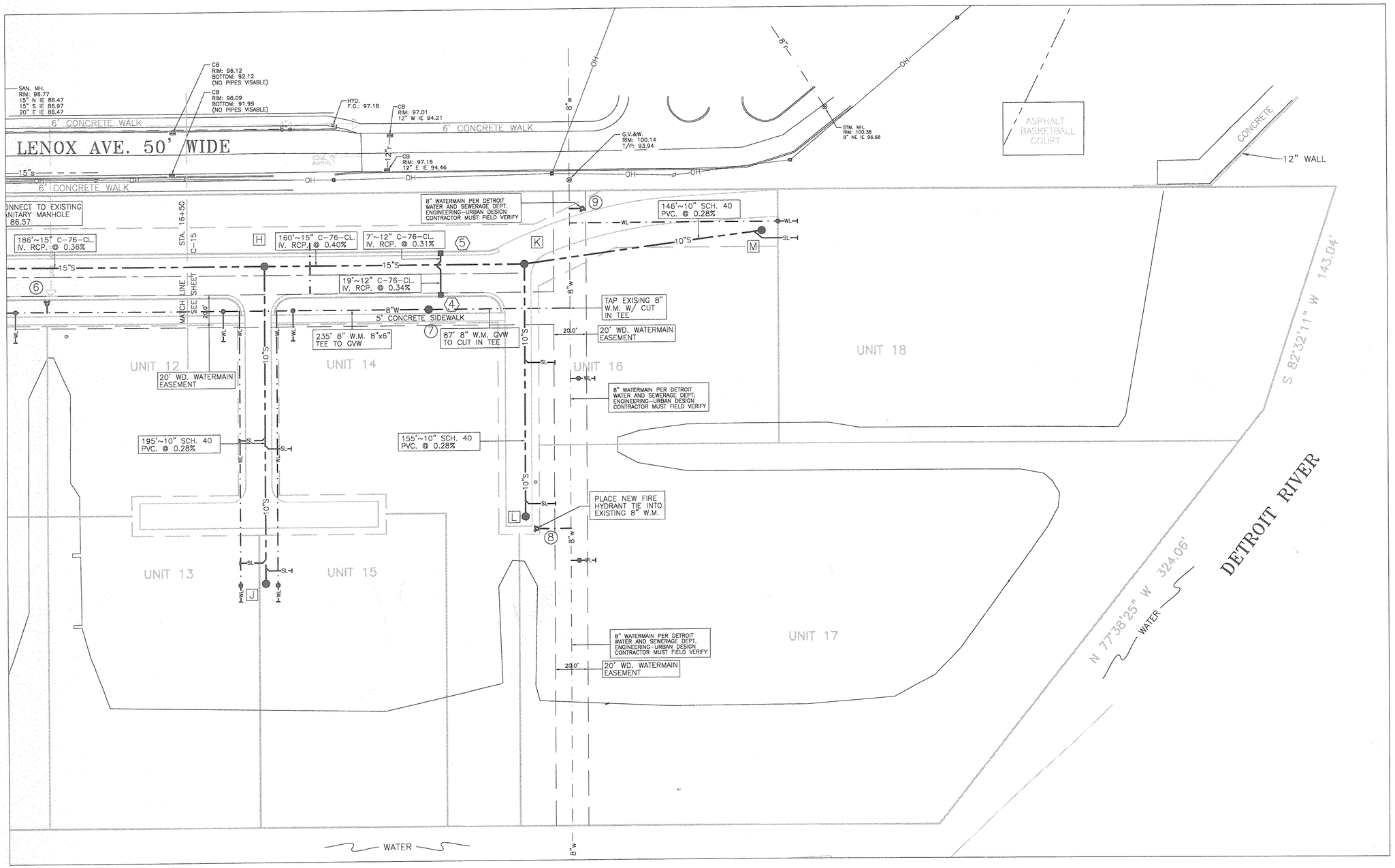
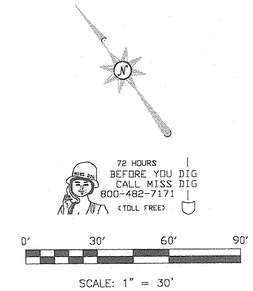
DWSD SYSTEM ACCEPTANCE	
DESIGNED REVIEWED	DATE
HEAD ENGR-DES.	
CONSTRUCTION INSPECTED:	
HEAD ENGR-FLD.	
PERMIT No.	LS#
MDNR MDPH	D JOB#
R/W#	DRWG/REF# SEWER
	WATER

ISSUED FOR REVIEW ONLY

FILE NO.: 2791	DWG.: ENG SITE PLAN
DESIGNED BY: S.A.S.	SHEET No.
DRAWN BY: S.A.S.	C-15
CHECKED BY: L.P.R.	
SCALE: 1" = 30'	





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STRUCTURE LEGEND

- SANITARY MANHOLE
- CATCH BASIN
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UTILITY PLAN 3
LENOX WATERFRONT ESTATES
LENOX AVENUE
WAYNE COUNTY, CITY OF DETROIT, MICHIGAN

DWSD SYSTEM ACCEPTANCE	
DESIGNED REVIEWED	DATE
HEAD ENGR-DES.	
CONSTRUCTION INSPECTED:	
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PERMIT No.	LS#
MDNR MDPH	D JOB#
R/W#	DRWG/REF# SEWER WATER

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FILE NO.: 2791	DWG.: ENG SITE PLAN
DESIGNED BY: S.A.S.	SHEET No.
DRAWN BY: S.A.S.	C-16
CHECKED BY: L.P.R.	
SCALE: 1" = 30'	

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SBC AMERITECH MICHIGAN
JEFF COLLARD
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(586) 466-1024

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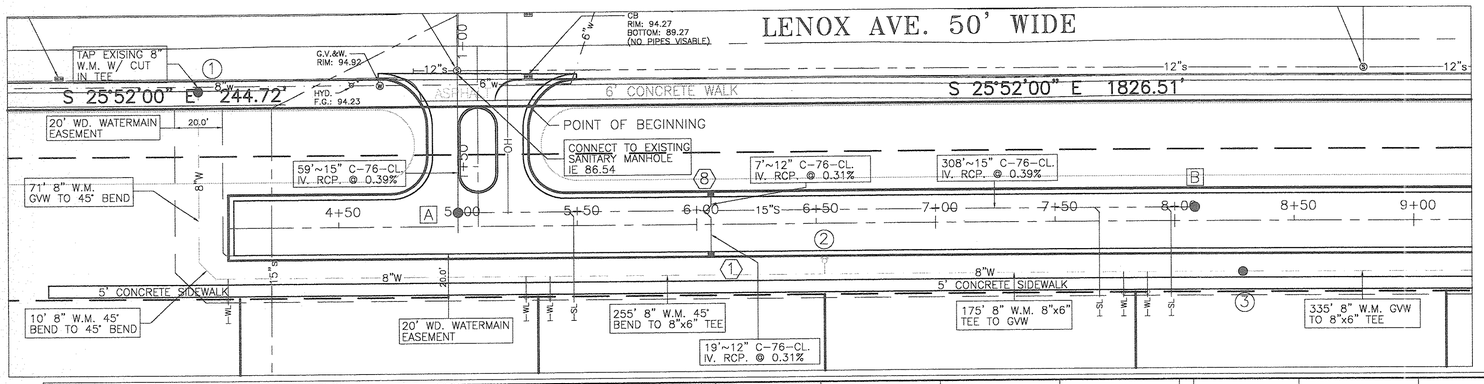

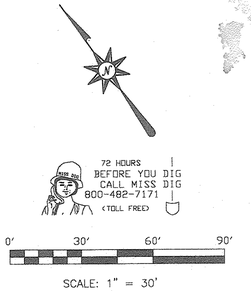

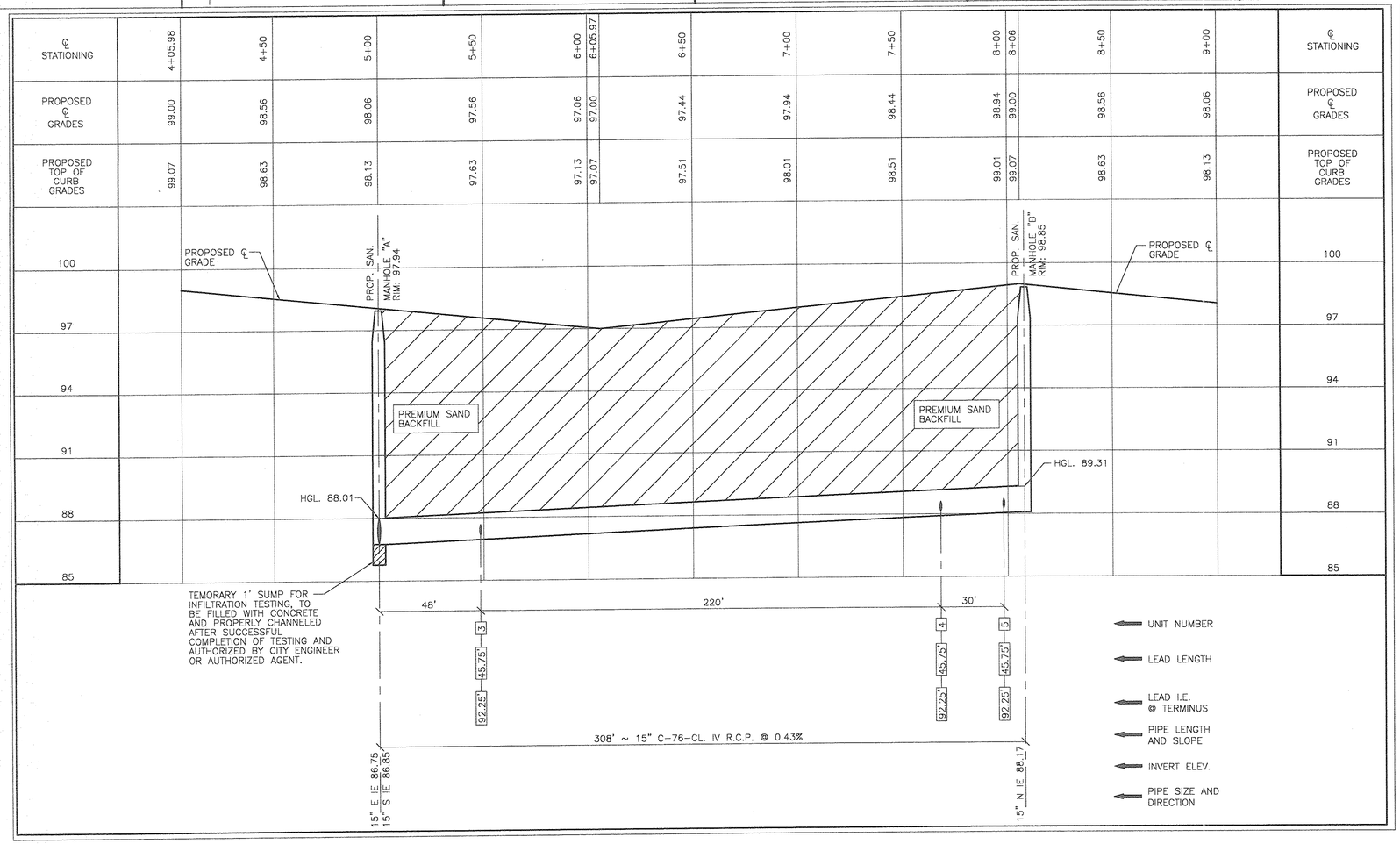

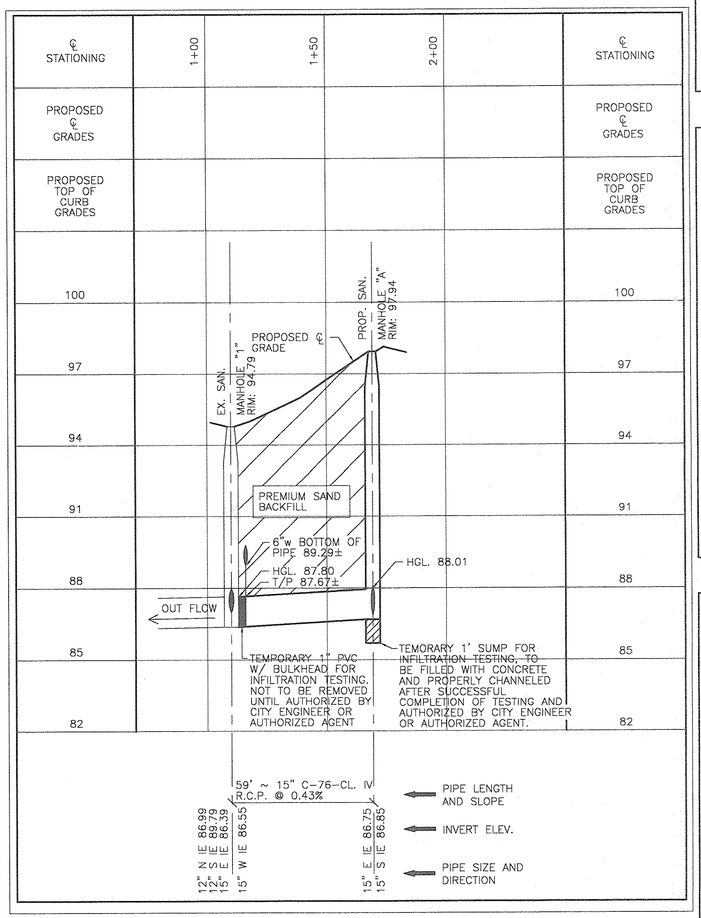

CONTRACTOR'S NOTE

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CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS CITY ENGINEERING DIVISION – STANDARD SPECIFICATIONS FOR PAVING AND RELATED CONSTRUCTION. OCTOBER 1999

DETROIT WATER AND SEWERAGE DEPARTMENT – GUIDELINES FOR SEWER SYSTEM CONSTRUCTION IN THE CITY OF DETROIT, NO PUBLISHED DATE.

D.W.S.D. – STANDARD SPECIFICATIONS FOR WATER SERVICE INSTALLATION AND MAINTENANCE, JUNE 1982.

D.W.S.D. – STANDARD SPECIFICATIONS FOR WATER SYSTEM ALTERATIONS, APRIL 1980 REVISED SEPTEMBER 1983.

D.W.S.D. – STANDARD SPECIFICATIONS FOR FIRE HYDRANT ALTERATIONS, APRIL 1980, REVISED SEPTEMBER 1983.

SEWER CONSTRUCTION NOTES

LOWER WATER MAIN AS NECESSARY TO MAINTAIN 18" MINIMUM VERTICAL SEPARATION DETWEEN UTILITIES.

PREMIUM SAND BACKFILL MUST BE M.D.O.T CLASS II MATERIAL COMPACTED TO 95% MAXIMUM UNIT DENSITY.

PROPER JOINTING MATERIAL AND CARE SHALL BE USED TO PRODUCE DURABLE, WATER TIGHT JOINTS. ALL JOINT MATERIALS SHALL BE APPROVED BY CITY ENGINEER BEFORE BEING USED.

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SANITARY SEWER BASIS OF DESIGN

TOTAL # OF UNITS = 18
3.5 PERSONS x UNITS = 3.5 x 18 = 63 PERSONS
AVERAGE FLOW 100 GPD. x 63 = 6300 GPD.

$$\text{PEAK FLOW } \frac{18 + \sqrt{0.063}}{4 + \sqrt{0.063}} = 4.81$$

6300 x 4.81 = 30303 GPD.
30303 / 1440 = 21.04 GPM.
= 0.0469 CFS.

STORM SEWER CALCULATIONS

SEE STORM SEWER COMPUTATION DATA FOR COMPLETE HYDROLOGIC DATA.
SHEET C-26

UTILITY NOTE

UNDERGROUND UTILITY LINES AND STRUCTURES SHOWN ARE PER RECORDS MADE AVAILABLE BY UTILITY OR MUNICIPALITY, AND BY FIELD OBSERVATION WHERE POSSIBLE. ALL MUNICIPALITIES AND UTILITY COMPANIES SHOULD BE NOTIFIED BY CONTRACTOR FOR FIELD LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.

PROFILE SCALE

HORIZONTIAL: 1" = 30'
VERTICAL: 1" = 3'

ISSUE DATE	REVISIONS
9/1/06	

CLIENT:
MORGAN DEVELOPMENT LLC
36150 DEQUINDRE
SUITE 600
STERLING HEIGHTS, MI 48310

GLA SURVEYORS & ENGINEERS
9800 ANN ARBOR ROAD, WEST
PLYMOUTH, MI 48170
PHONE: (734) 416-9650
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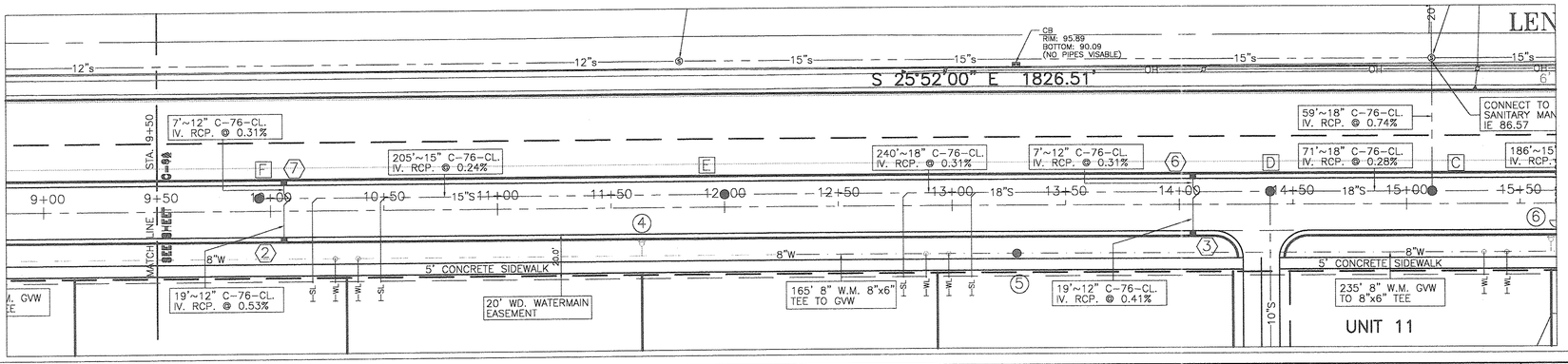
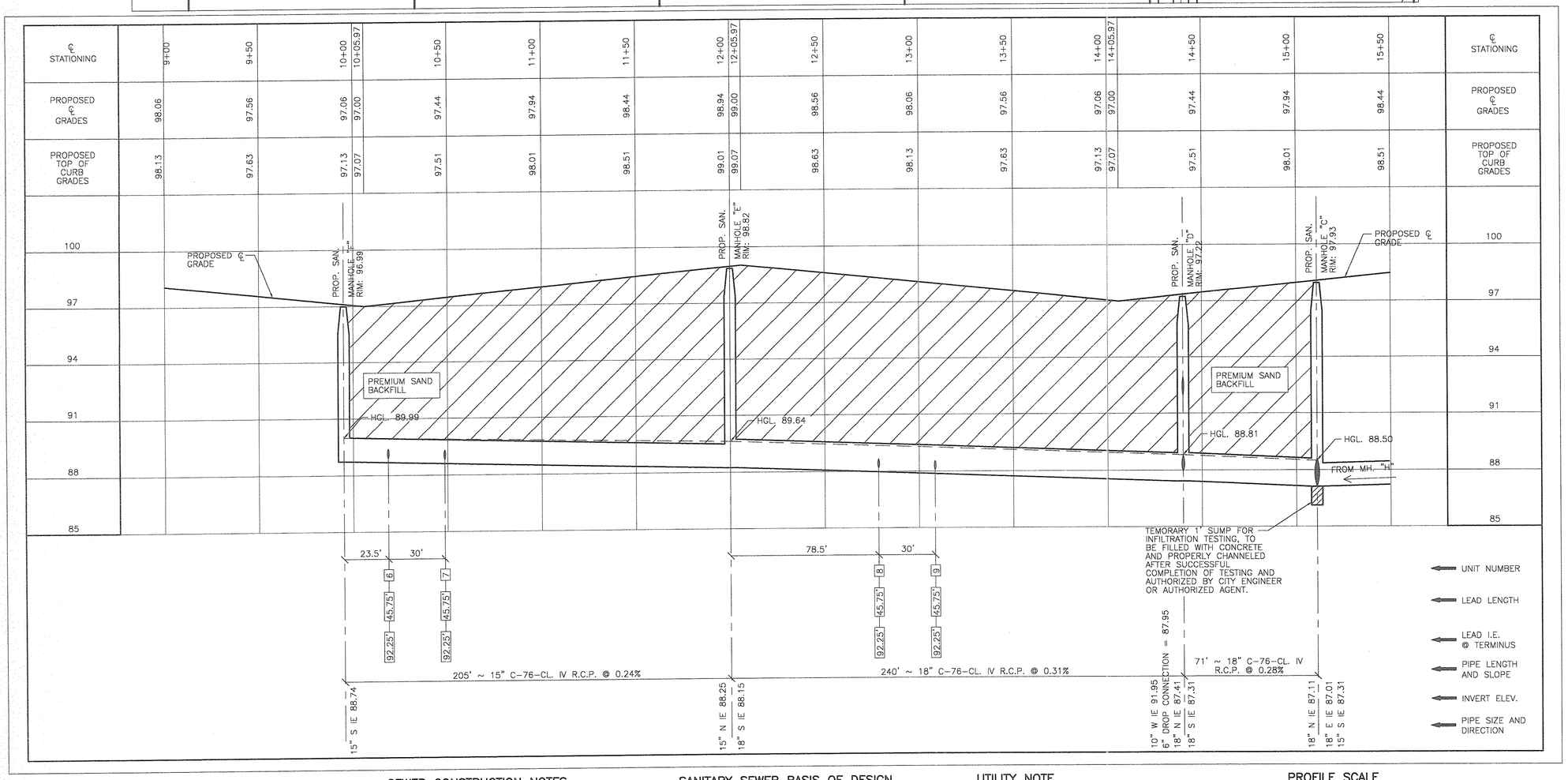
www.glasurveyor.com

PLAN & PROFILE 1
LENOX WATERFRONT ESTATES
LENOX AVENUE
WAYNE COUNTY, CITY OF DETROIT, MICHIGAN

ISSUED FOR REVIEW ONLY	
FILE NO.: 2791	DWG.: ENG SITE PLAN
DESIGNED BY: S.A.S.	SHEET No.
DRAWN BY: S.A.S.	C-17
CHECKED BY: L.P.R.	
SCALE: 1" = 30'	





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SHEET C-26

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72 HOURS BEFORE YOU DIG CALL MISS DIG 800-482-7171 (TOLL FREE)

0' 30' 60' 90'
SCALE: 1" = 30'

ISSUE DATE	REVISIONS
9/1/06	

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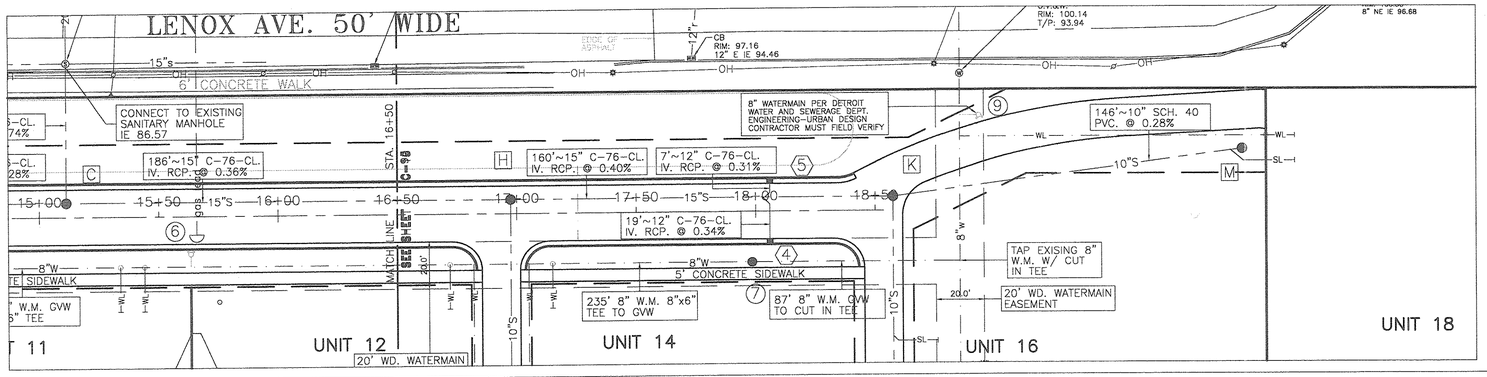
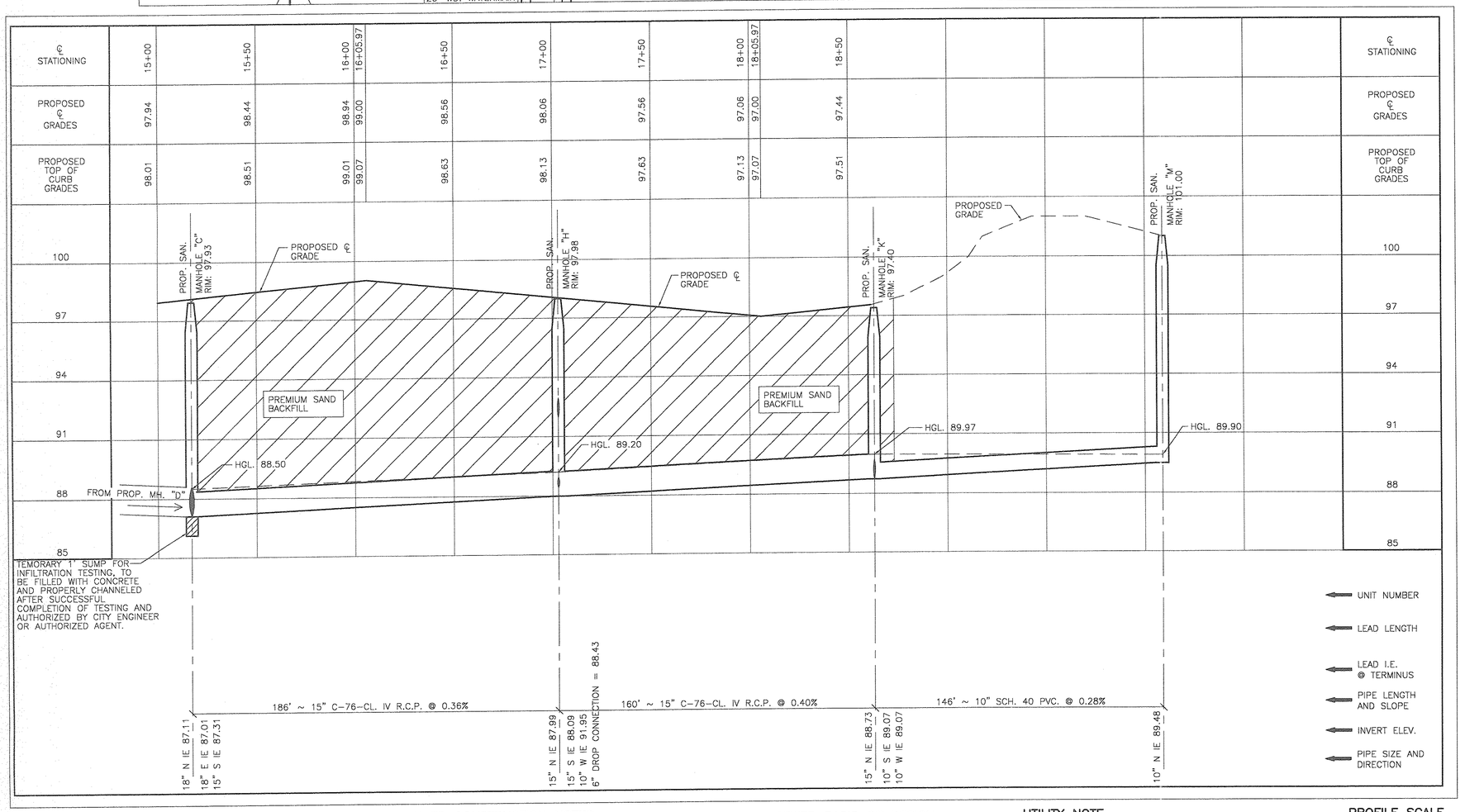
PLAN & PROFILE 2
LENOX WATERFRONT ESTATES
LENOX AVENUE
WAYNE COUNTY, CITY OF DETROIT, MICHIGAN

ISSUED FOR REVIEW ONLY	
FILE NO.: 2791	DWG.: ENG SITE PLAN
DESIGNED BY: S.A.S.	SHEET No.
DRAWN BY: S.A.S.	C-18
CHECKED BY: L.P.R.	
SCALE: 1" = 30'	





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SHEET C-26

UTILITY NOTE

UNDERGROUND UTILITY LINES AND STRUCTURES SHOWN ARE PER RECORDS MADE AVAILABLE BY UTILITY OR MUNICIPALITY, AND BY FIELD OBSERVATION WHERE POSSIBLE. ALL MUNICIPALITIES AND UTILITY COMPANIES SHOULD BE NOTIFIED BY CONTRACTOR FOR FIELD LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.

PROFILE SCALE

HORIZONTIAL: 1" = 30'
VERTICAL: 1" = 3'

72 HOURS BEFORE YOU DIG CALL MISS DIG 800-482-7171 (TOLL FREE)

0' 30' 60' 90'
SCALE: 1" = 30'

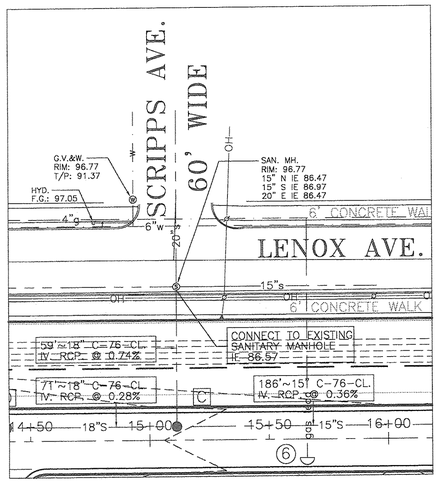
ISSUE DATE	REVISIONS
9/1/06	

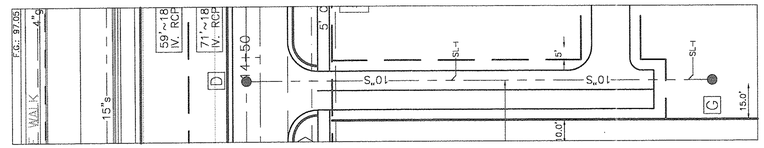
CLIENT:
MORGAN DEVELOPMENT LLC
36150 DEQUINDRE
SUITE 600
STERLING HEIGHTS, MI 48310

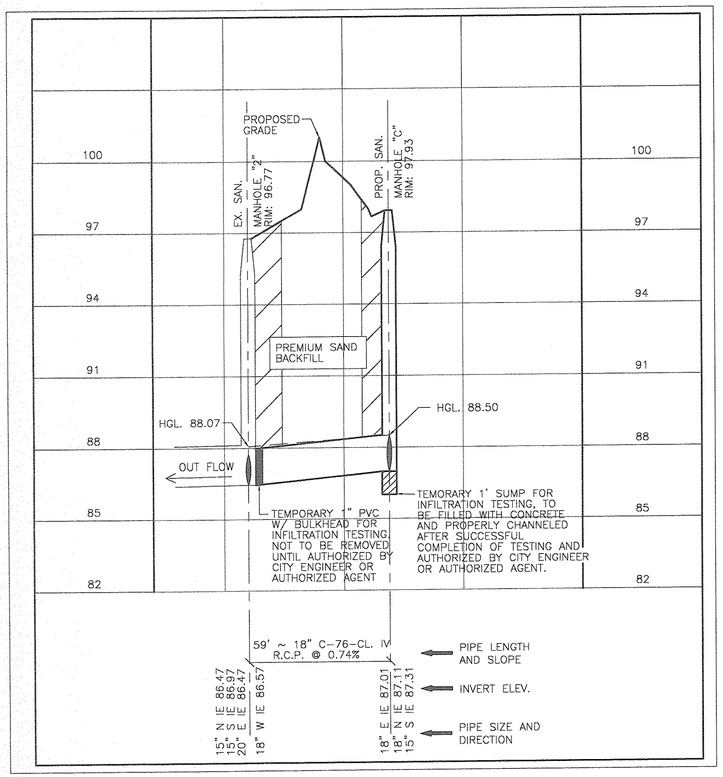
GLA SURVEYORS & ENGINEERS
9800 ANN ARBOR ROAD, WEST
PLYMOUTH, MI 48170
PHONE: (734) 416-9650
FAX: (734) 416-9657
www.glasurveyor.com

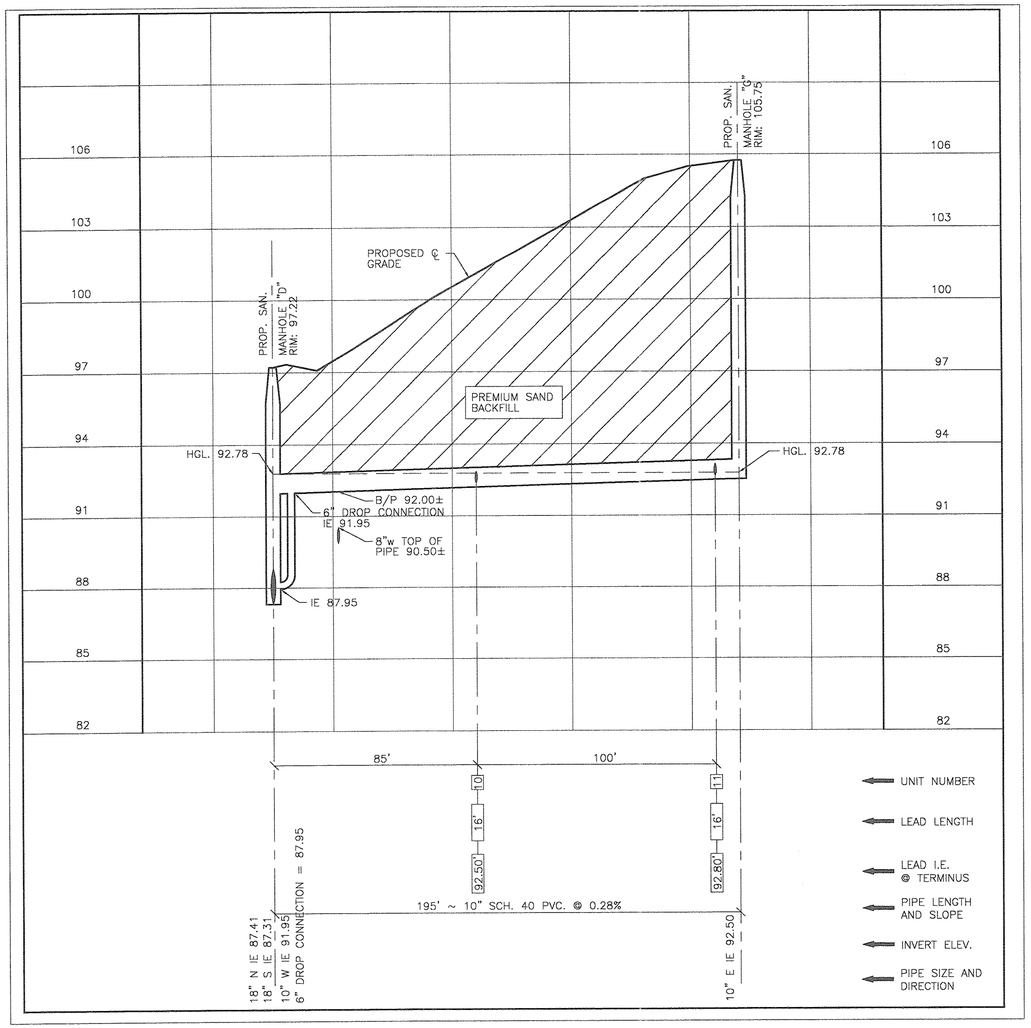
PLAN & PROFILE 3
LENOX WATERFRONT ESTATES
LENOX AVENUE
WAYNE COUNTY, CITY OF DETROIT, MICHIGAN

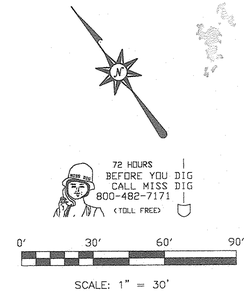
ISSUED FOR REVIEW ONLY	
FILE NO.: 2791	DWG.: ENG SITE PLAN
DESIGNED BY: S.A.S.	SHEET No.
DRAWN BY: S.A.S.	C-19
CHECKED BY: L.P.R.	
SCALE: 1" = 30'	











ISSUE DATE	REVISIONS
9/1/06	

CLIENT:
MORGAN DEVELOPMENT LLC
36150 DEQUINDRE
SUITE 600
STERLING HEIGHTS, MI 48310

GLA SURVEYORS & ENGINEERS
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www.glasurveyor.com

PLAN & PROFILE 4
LENOX WATERFRONT ESTATES
LENOX AVENUE
WAYNE COUNTY, CITY OF DETROIT, MICHIGAN

CONTRACTOR'S NOTE

CONTRACTOR MUST COMPLY WITH ALL OF THE CITY OF DETROIT NEW CONTRUCTION REQUIREMENTS. REQUIREMENTS ARE AS PUBLISHED BY THE CITY OF DETROIT. OR AS DIRECTED BY CITY ENGINEER.

CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS CITY ENGINEERING DIVISION – STANDARD SPECIFICATIONS FOR PAVING AND RELATED CONSTRUCTION. OCTOBER 1999

DETROIT WATER AND SEWERAGE DEPARTMENT – GUIDELINES FOR SEWER SYSTEM CONSTRUCTION IN THE CITY OF DETROIT, NO PUBLISHED DATE.

D.W.S.D. – STANDARD SPECIFICATIONS FOR WATER SERVICE INSTALLATION AND MAINTENANCE, JUNE 1982.

D.W.S.D. – STANDARD SPECIFICATIONS FOR WATER SYSTEM ALTERATIONS, APRIL 1980 REVISED SEPTEMBER 1983.

D.W.S.D. – STANDARD SPECIFICATIONS FOR FIRE HYDRANT ALTERATIONS, APRIL 1980, REVISED SEPTEMBER 1983.

SEWER CONSTRUCTION NOTES

LOWER WATER MAIN AS NECESSARY TO MAINTAIN 18" MINIMUM VERTICAL SEPARATION DETWEEN UTILITIES.

PREMIUM SAND BACKFILL MUST BE M.D.O.T CLASS II MATERIAL COMPACTED TO 95% MAXIMUM UNIT DENSITY.

PROPER JOINTING MATERIAL AND CARE SHALL BE USED TO PRODUCE DURABLE, WATER TIGHT JOINTS. ALL JOINT MATERIALS SHALL BE APPROVED BY CITY ENGINEER BEFORE BEING USED.

ALL GASKETS SHALL BE COMPOSED OF A SYNTHETIC TYPE RUBBER COMPOUND, SUCH AS NEOPRENE OR APPROVED EQUAL, RESISTANT TO ALKALI, ACIDS, OILS, SEWAGE AND WASTE PETROLEOM PRODUCTS. THE GASKETS SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF EITHER A.S.T.M. C 443M OR A.S.T.M. C361.

SANITARY SEWER BASIS OF DESIGN

TOTAL # OF UNITS = 18
3.5 PERSONS x UNITS = 3.5 x 18 = 63 PERSONS
AVERAGE FLOW 100 GPD. x 63 = 6300 GPD.

PEAK FLOW $\frac{18 + \sqrt{0.063}}{4 + \sqrt{0.063}} = 4.81$

6300 x 4.81 = 30303 GPD.
30303 / 1440 = 21.04 GPM.
= 0.0469 CFS.

STORM SEWER CALCULATIONS

SEE STORM SEWER COMPUTATION DATA FOR COMPLETE HYDROLOGIC DATA.
SHEET C-26

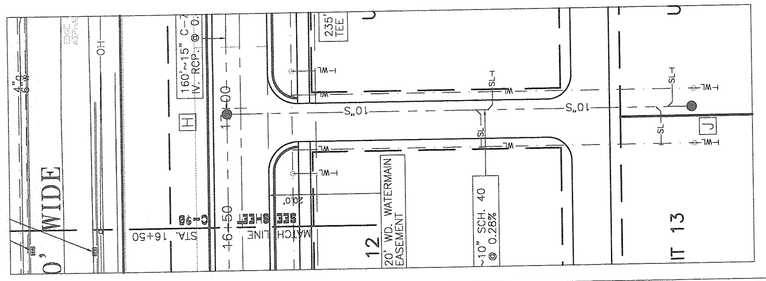
UTILITY NOTE

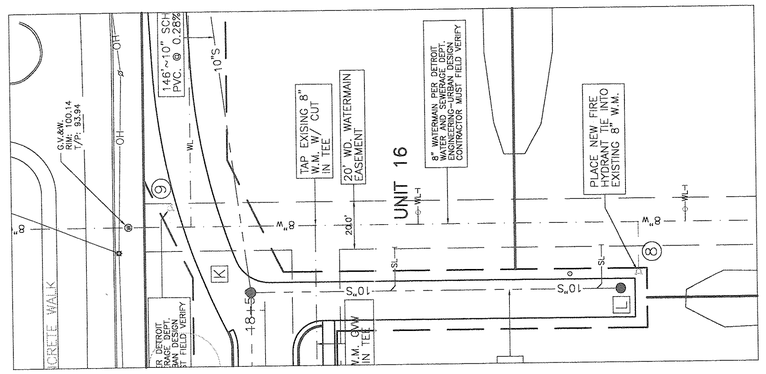
UNDERGROUND UTILITY LINES AND STRUCTURES SHOWN ARE PER RECORDS MADE AVAILABLE BY UTILITY OR MUNICIPALITY, AND BY FIELD OBSERVATION WHERE POSSIBLE. ALL MUNICIPALITIES AND UTILITY COMPANIES SHOULD BE NOTIFIED BY CONTRACTOR FOR FIELD LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.

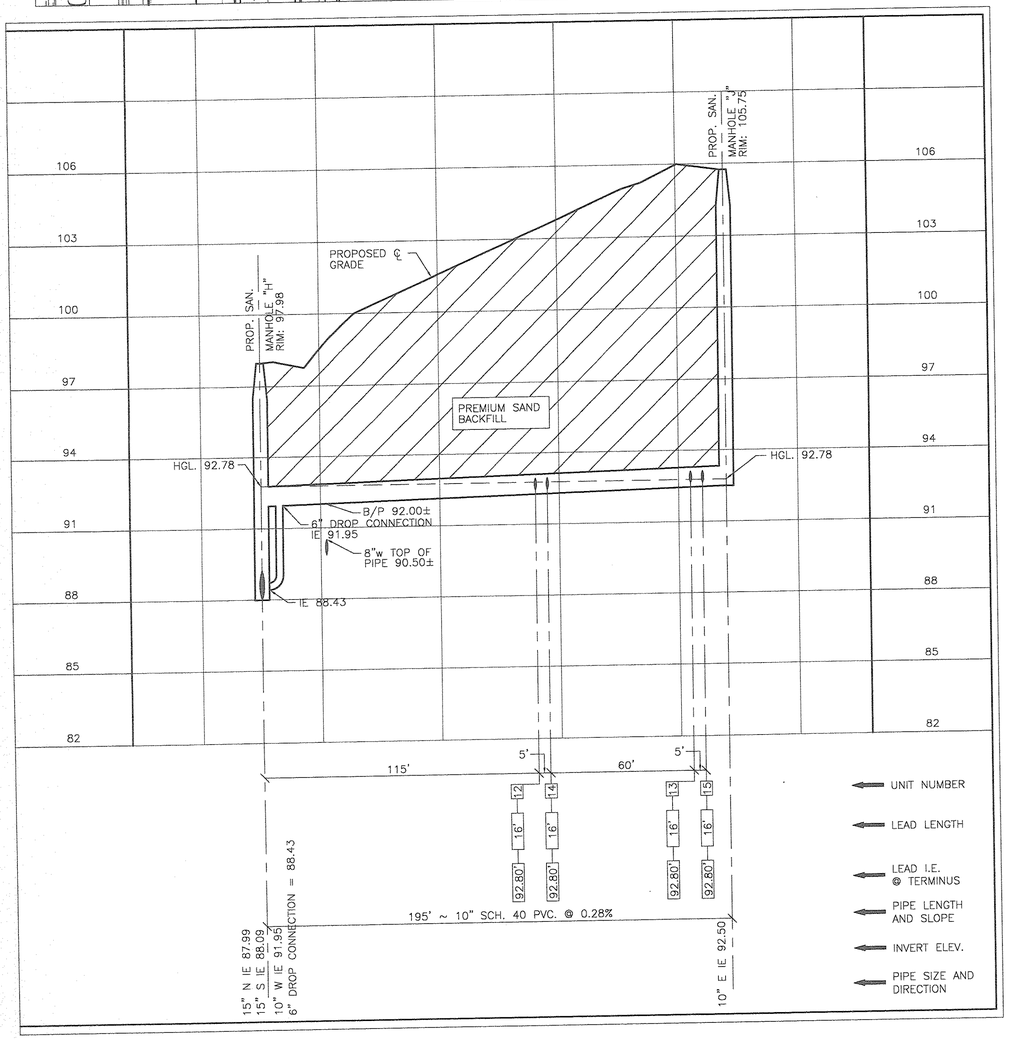
PROFILE SCALE

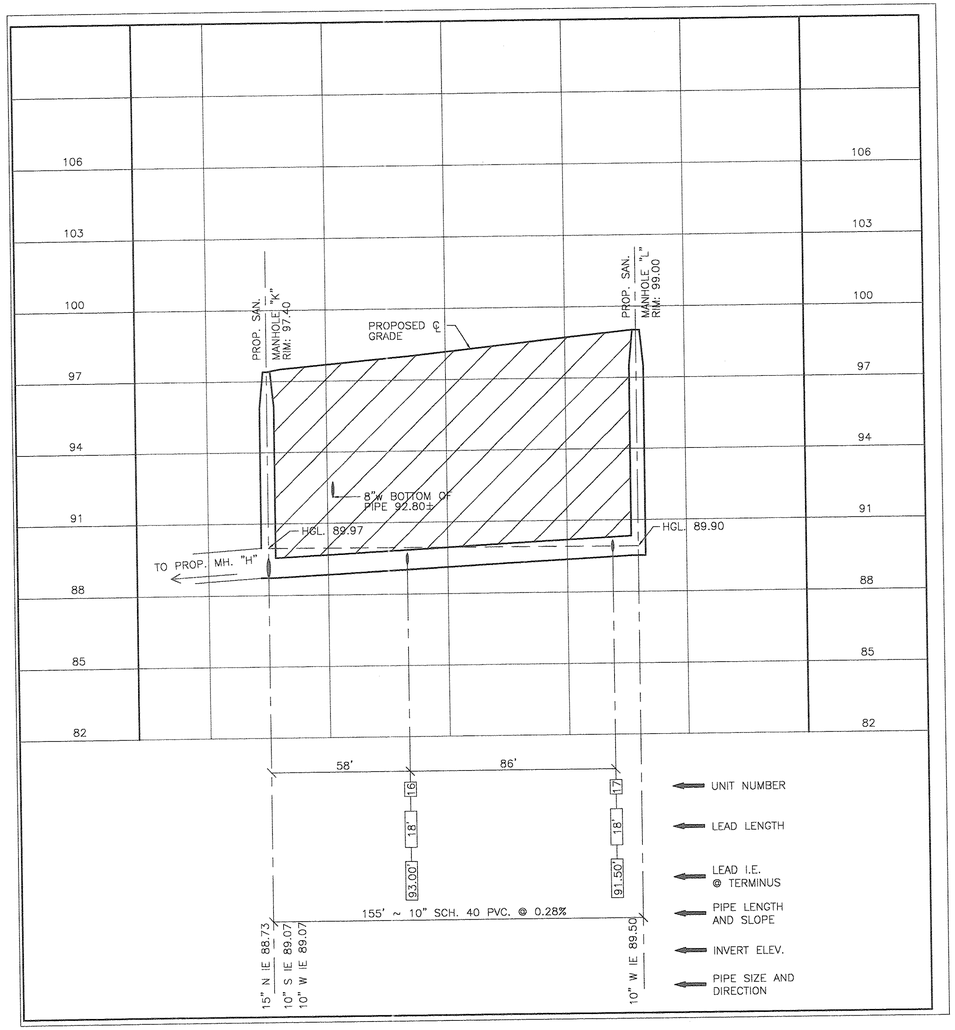
HORIZONTIAL: 1" = 30'
VERTICAL: 1" = 3'

ISSUED FOR REVIEW ONLY		
FILE NO.: 2791	DWG.: ENG SITE PLAN	
DESIGNED BY: S.A.S.		SHEET No.
DRAWN BY: S.A.S.		C-20
CHECKED BY: L.P.R.		
SCALE: 1" = 30'		









72 HOURS BEFORE YOU DIG CALL MISS DIG 800-482-7171 (TOLL FREE)

0' 30' 60' 90'

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SHEET C-26

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ISSUE DATE	REVISIONS
9/1/06	

CLIENT:
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36150 DEQUINDRE
SUITE 600
STERLING HEIGHTS, MI 48310

GLA SURVEYORS & ENGINEERS
9800 ANN ARBOR ROAD, WEST
PLYMOUTH, MI 48170
PHONE: (734) 416-9650
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FAX:
www.glasurveyor.com

PLAN & PROFILE 5
LENOX WATERFRONT ESTATES
LENOX AVENUE
WAYNE COUNTY, CITY OF DETROIT, MICHIGAN

CONTRACTOR'S NOTE

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CITY OF DETROIT DEPARTMENT OF PUBLIC WORKS CITY ENGINEERING DIVISION – STANDARD SPECIFICATIONS FOR PAVING AND RELATED CONSTRUCTION. OCTOBER 1999

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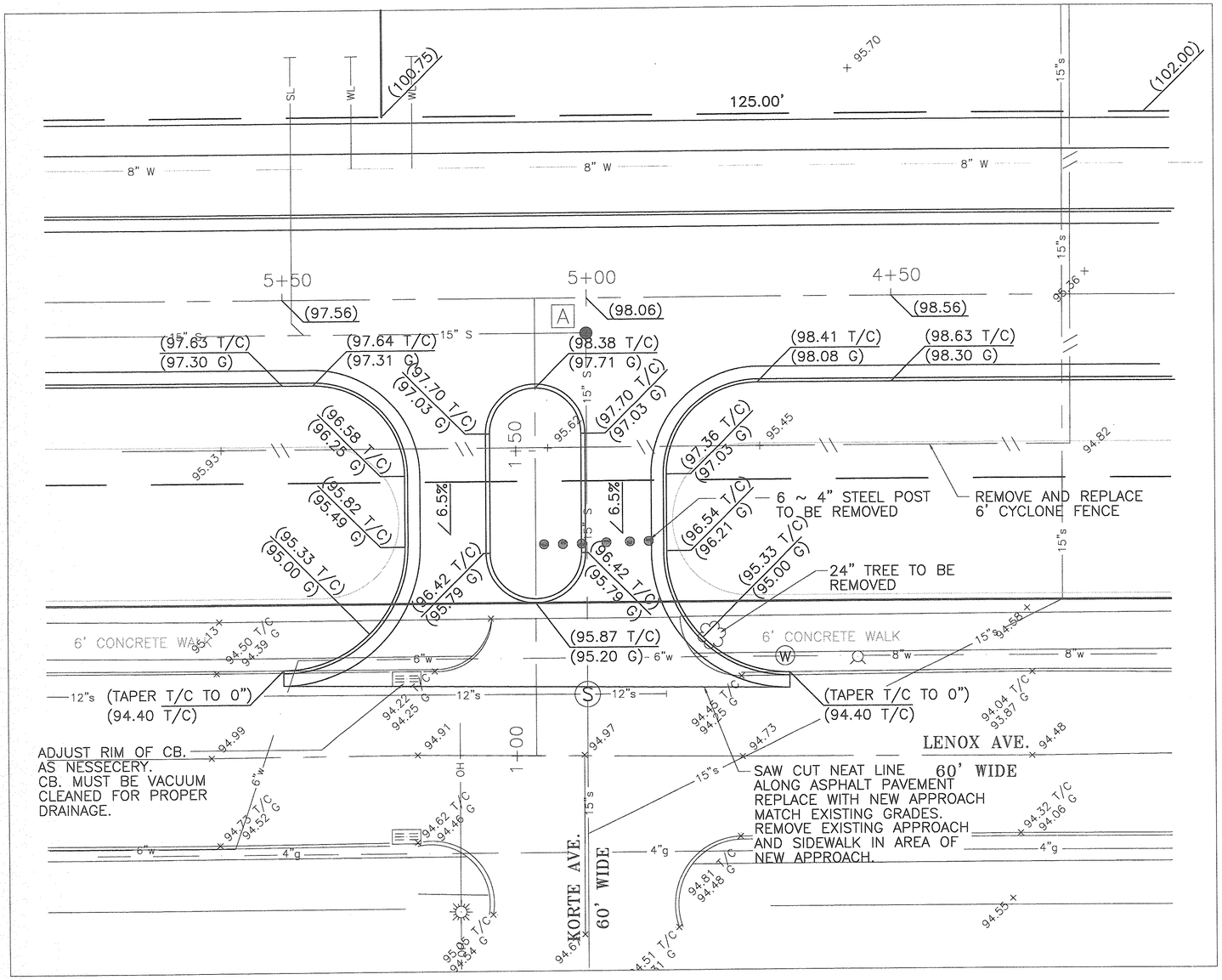
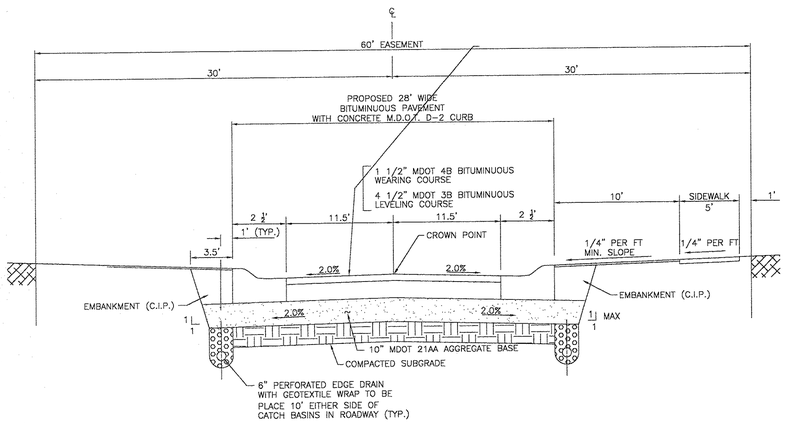
PROFILE SCALE

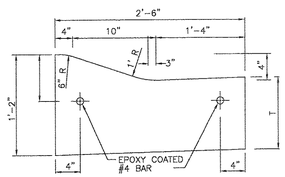
HORIZONTIAL: 1" = 30'
VERTICAL: 1" = 3'

ISSUED FOR REVIEW ONLY	
FILE NO.: 2791	DWG.: ENG SITE PLAN
DESIGNED BY: S.A.S.	SHEET No.
DRAWN BY: S.A.S.	C-21
CHECKED BY: L.P.R.	
SCALE: 1" = 30'	





TYPICAL CROSS SECTION



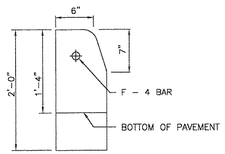
M.D.O.T.
TYPE D-2 CURB

M.D.O.T. "D" CURB TABLE

DETAIL	DIMENSION T	LANE TIES	CONCRETE CYD / LFT
D1	9"	AS SHOWN	0.0788
D2	9"	OMITTED	0.0788
D3	10"	AS SHOWN	0.0826

SEE M.D.O.T. SPECIFICATIONS R-30-D

E-2 CURB FOR ENTRANCE ISLAND ONLY



M.D.O.T.
TYPE E-2 CURB

M.D.O.T. "E" CURB TABLE

DETAIL	CURB HEIGHT	LANE TIES	CONCRETE CYD / LFT
E1	1'-4"	AS SHOWN	0.0310
E2	1'-4"	OMITTED	0.0310
E3	2'-0"	AS SHOWN	0.0477

SEE M.D.O.T. SPECIFICATIONS R-30-D

0' 10' 20' 30'
SCALE: 1" = 10'

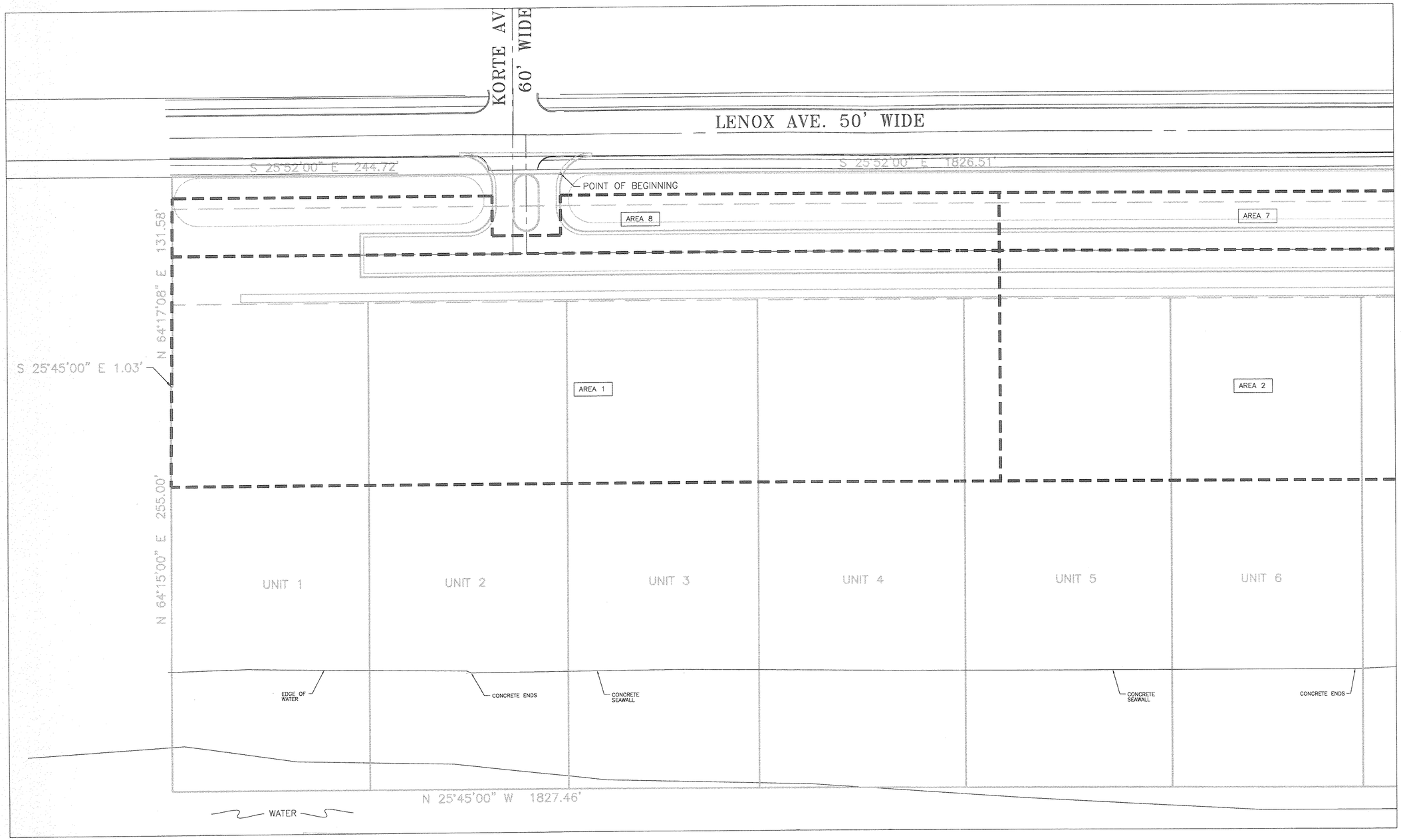
ISSUE DATE	REVISIONS
9/1/06	

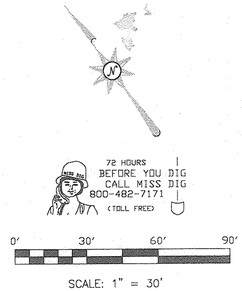
CLIENT:
MORGAN DEVELOPMENT LLC
36150 DEQUINDRE
SUITE 600
STERLING HEIGHTS, MI 48310

GLASS SURVEYORS & ENGINEERS
9800 ANN ARBOR ROAD, WEST
PLYMOUTH, MI 48170
PHONE: (734) 416-9650
FAX: (734) 416-9657
www.glassurveyor.com

INTERSECTION DETAIL
LENOX WATERFRONT ESTATES
LENOX AVENUE
WAYNE COUNTY, CITY OF DETROIT, MICHIGAN

ISSUED FOR REVIEW ONLY	
FILE NO.: 2791	DWG.: ENG SITE PLAN
DESIGNED BY: S.A.S.	SHEET No.
DRAWN BY: S.A.S.	C-22
CHECKED BY: L.P.R.	
SCALE: 1" = 10'	





ISSUE DATE	REVISIONS
9/1/06	

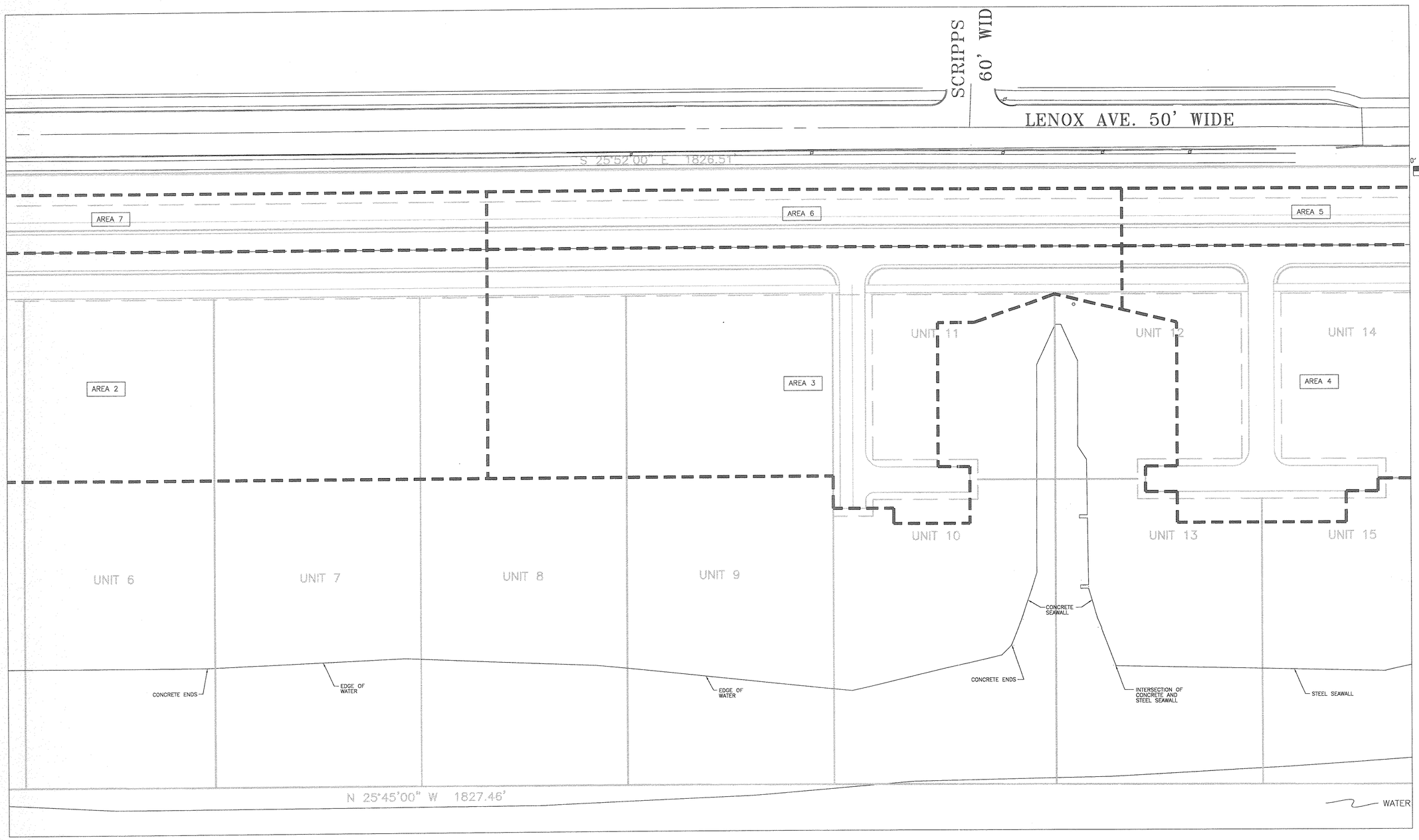
CLIENT:
MORGAN DEVELOPMENT LLC
36150 DEQUINDRE
SUITE 600
STERLING HEIGHTS, MI 48310

GLS SURVEYORS & ENGINEERS
9800 ANN ARBOR ROAD, WEST
PLYMOUTH, MI 48170
PHONE: (734) 416-9650
FAX: (734) 416-9657
www.glssurveyor.com

DRAINAGE DISTRICT 1
LENOX WATERFRONT ESTATES
LENOX AVENUE

WAYNE COUNTY, CITY OF DETROIT, MICHIGAN

ISSUED FOR REVIEW ONLY	
FILE NO.: 2791	DWG.: ENG SITE PLAN
DESIGNED BY: S.A.S.	SHEET No.
DRAWN BY: S.A.S.	C-23
CHECKED BY: L.P.R.	
SCALE: 1" = 30'	



72 HOURS
BEFORE YOU DIG
CALL MISS DIG
800-482-7171
(TOLL FREE)

0' 30' 60' 90'

SCALE: 1" = 30'

ISSUE DATE	REVISIONS
9/1/06	

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STERLING HEIGHTS, MI 48310

GLA
SURVEYORS & ENGINEERS
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PLYMOUTH, MI 48170
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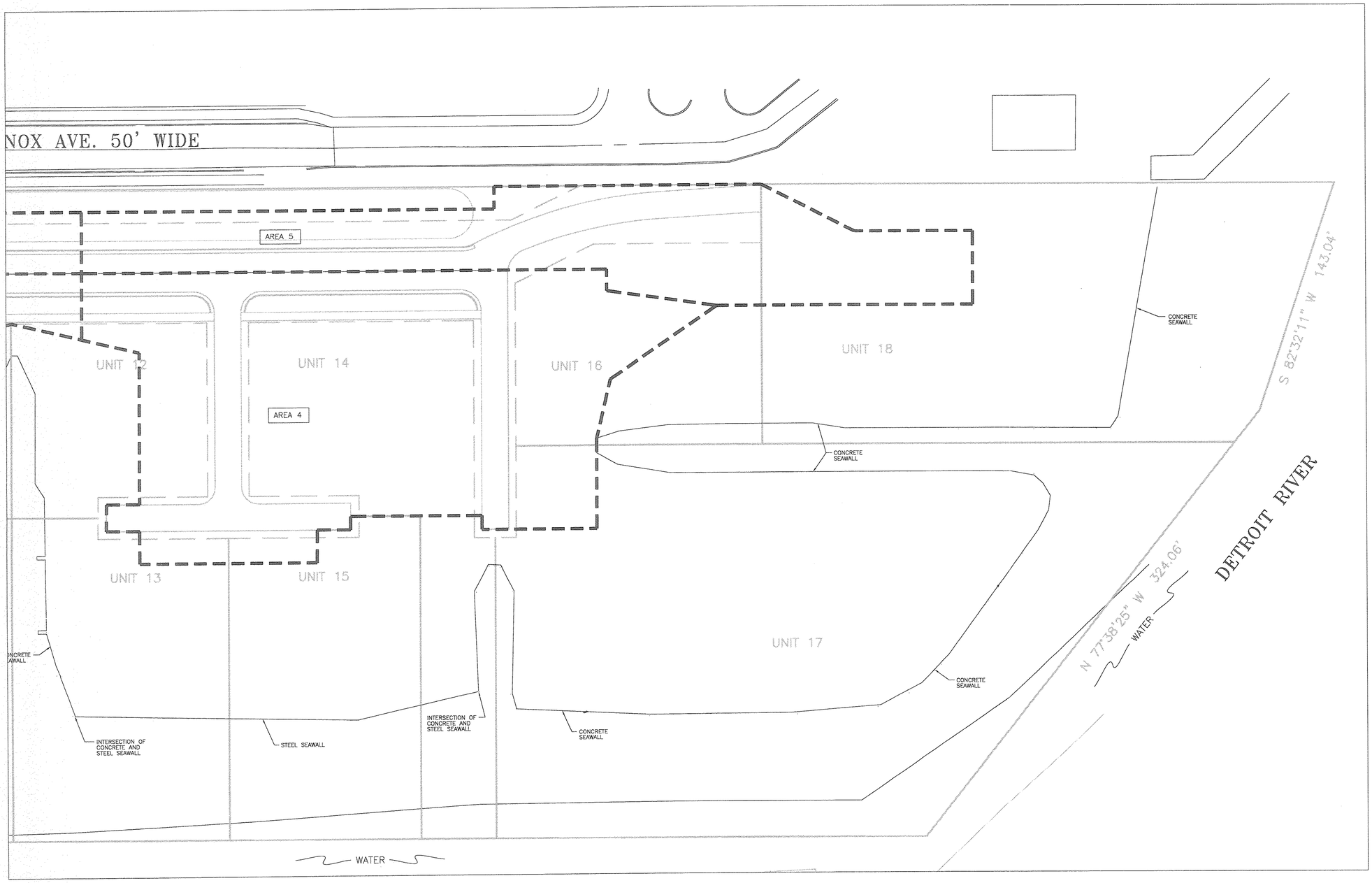
www.glasurveyor.com

DRAINAGE DISTRICT 2
LENOX WATERFRONT ESTATES
LENOX AVENUE
WAYNE COUNTY, CITY OF DETROIT, MICHIGAN

ISSUED FOR REVIEW ONLY	
FILE NO.: 2791	DWG.: ENG SITE PLAN
DESIGNED BY: S.A.S.	SHEET No.
DRAWN BY: S.A.S.	C-24
CHECKED BY: L.P.R.	
SCALE: 1" = 30'	



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0' 30' 60' 90'

SCALE: 1" = 30'

ISSUE DATE	REVISIONS
9/1/06	

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36150 DEQUINDRE
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STERLING HEIGHTS, MI 48310

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www.glasurveyor.com

DRAINAGE DISTRICT 3
LENOX WATERFRONT ESTATES
LENOX AVENUE
WAYNE COUNTY, CITY OF DETROIT, MICHIGAN

ISSUED FOR REVIEW ONLY

FILE NO.: 2791	DWG.: ENG SITE PLAN
DESIGNED BY: S.A.S.	SHEET No.
DRAWN BY: S.A.S.	C-25
CHECKED BY: L.P.R.	
SCALE: 1" = 30'	

GLA Surveyors & Engineers

STORM SEWER COMPUTATION SHEET

10 YEAR STORM

Manning's 'n' 1 for hydraulic slope:
Manning's 'n' 2 for hydraulic slope:
Diameter for change in n, if desired
min. acceptable cover (ft) YI/CB:
Pipe thickness for cover calc. (in):

LOCATION: Detroit, MI
Calc'd by: S. Schumacher
PROJECT: Lenox Waterfront Estates

JOB NO. 2791
Checked by: L. Rausch
STREET: Lenox St
Date: August 27, 2006
Rev.:

Struc. No.	RUN	Area No.	A acre	C	CA	Σ CA	Flow t min.	Time min.	I 10 YEAR	Q 10 YEAR	Dia in.	L ft.	PipeS. %	Hyd.S. %	V (full) fps	CAP. cfs	IE upper	IE lower	Hyd. delta	H.G. ft	RIM UP ft
1	1-B	1	1.73	0.54	0.93	0.93		20.0	3.80	3.55	12	19	0.31	0.99	2.52	1.98	87.44	87.38	0.19	88.57	96.74
							0.1	20.1												88.38	
8	8-B	8	0.41	0.43	0.18	0.18		20.0	3.80	0.67	12	7	0.31	0.04	2.52	1.98	87.40	87.38	0.00	88.38	96.74
							0.0	20.0												88.38	
B	B-A	N/A	0.00	0.00	0.00	1.11		20.0	3.80	4.22	15	306	0.43	0.43	3.45	4.23	88.17	86.85	1.32	89.44	98.85
							1.5	21.5												88.12	
A	A-EXISTING	N/A	0.00	0.00	0.00	1.11		21.6	3.66	4.06	15	59	0.43	0.39	3.45	4.23	86.75	86.50	0.23	88.03	97.94
							0.3	21.9												87.80	

GLA Surveyors & Engineers

STORM SEWER COMPUTATION SHEET

10 YEAR STORM

Manning's 'n' 1 for hydraulic slope:
Manning's 'n' 2 for hydraulic slope:
Diameter for change in n, if desired
min. acceptable cover (ft) YI/CB:
Pipe thickness for cover calc. (in):

LOCATION: Detroit, MI
Calc'd by: S. Schumacher
PROJECT: Lenox Waterfront Estates

JOB NO. 2791
Checked by: L. Rausch
STREET: Lenox St
Date: August 27, 2006
Rev.:

Struc. No.	RUN	Area No.	A acre	C	CA	Σ CA	Flow t min.	Time min.	I 10 YEAR	Q 10 YEAR	Dia in.	L ft.	PipeS. %	Hyd.S. %	V (full) fps	CAP. cfs	IE upper	IE lower	Hyd. delta	H.G. ft	RIM UP ft
2	2-E	2	1.32	0.51	0.68	0.68		20.0	3.80	2.59	12	19	0.53	0.53	3.30	2.59	89.04	88.94	0.10	90.04	96.74
							0.1	20.1												89.94	
7	7-E	7	0.34	0.45	0.15	0.15		20.0	3.80	0.58	12	7	0.31	0.03	2.52	1.98	88.96	88.94	0.00	89.94	96.74
							0.0	20.0												89.94	
F	F-E	N/A	0.00	0.00	0.00	0.83		20.1	3.80	3.16	15	205	0.24	0.24	2.58	3.16	88.74	88.25	0.49	89.99	96.99
							1.3	21.4												89.50	
3	3-D	3	1.10	0.54	0.59	0.59		20.0	3.80	2.26	12	19	0.41	0.40	2.90	2.28	87.80	87.72	0.07	88.79	96.74
							0.1	20.1												88.72	
6	6-D	6	0.34	0.45	0.15	0.15		20.0	3.80	0.58	12	7	0.31	0.03	2.52	1.98	87.74	87.72	0.00	88.72	96.74
							0.0	20.0												88.72	
E	E-D	N/A	0.00	0.00	0.00	1.58		21.5	3.67	5.78	18	240	0.31	0.30	3.31	5.85	88.15	87.41	0.73	89.64	98.82
							1.2	22.7												88.91	
G	G-D	N/A	0.00	0.00	0.00	0.00		20.0	3.80	0.00	10	195	0.28	0.00	2.12	1.16	88.50	87.95	0.00	92.78	105.75
							1.5	21.5												92.78	
D	D-C	N/A	0.00	0.00	0.00	1.58		23.1	3.53	5.56	18	71	0.28	0.28	3.14	5.56	87.31	87.11	0.20	88.81	97.22
							0.4	23.5												88.81	
M	M-K	N/A	0.00	0.00	0.00	0.00		20.0	3.80	0.00	10	146	0.28	0.00	2.12	1.16	89.48	89.07	0.00	89.90	101.00
							1.1	21.1												89.90	
L	L-K	N/A	0.00	0.00	0.00	0.00		20.0	3.80	0.00	10	155	0.28	0.00	2.12	1.16	89.50	89.07	0.00	89.90	99.00
							1.2	21.2												89.90	
4	4-H	4	1.10	0.51	0.56	0.56		20.0	3.80	2.14	12	19	0.34	0.36	2.64	2.08	88.79	88.73	0.07	89.80	96.74
							0.1	20.1												89.73	
5	5-H	5	1.68	0.32	0.53	0.53		20.0	3.80	2.03	12	7	0.31	0.33	2.52	1.98	88.75	88.73	0.02	89.75	96.74
							0.0	20.0												89.73	
K	K-H	N/A	0.00	0.00	0.00	1.10		21.2	3.69	4.05	15	160	0.40	0.39	3.33	4.08	88.73	88.09	0.63	89.97	97.40
							0.8	22.0												89.34	
J	J-H	N/A	0.00	0.00	0.00	0.00		22.6	3.57	0.00	10	195	0.28	0.00	2.12	1.16	88.98	88.43	0.00	92.78	105.75
							1.5	24.1												92.78	
H	H-C	N/A	0.00	0.00	0.00	1.10		24.1	3.45	3.78	15	186	0.36	0.34	3.17	3.90	87.99	87.31	0.64	89.20	97.98
							1.0	25.1												88.56	
C	C-EXISTING	N/A	0.00	0.00	0.00	2.67		25.1	3.37	9.01	18	59	0.74	0.74	5.11	9.03	87.01	86.57	0.43	88.50	97.93
							0.2	25.3												88.07	

ISSUE DATE	REVISIONS
9/1/06	

CLIENT:
MORGAN DEVELOPMENT LLC
36150 DEQUINDRE
SUITE 600
STERLING HEIGHTS, MI 48310

9800 ANN ARBOR ROAD, WEST
PLYMOUTH, MI 48170
PHONE: (734) 416-9650
FAX: (734) 416-9657
www.glasurveyor.com
GLA SURVEYORS & ENGINEERS

SANITARY SEWER TABLE

		NORTHING	EASTING
EX #1	SAN. M.H. RIM: 94.79 12" N IE 86.99 12" S IE 89.79 15" E IE 86.39 PROP. 15" W IE 86.55	6644.98	11077.04
EX #2	SAN. M.H. RIM: 96.77 15" N IE 86.47 15" S IE 86.97 20" E IE 86.47 PROP. 18" W IE 86.57	5734.71	11517.48
A	SAN. M.H. RIM: 97.94 15" E IE 86.75 15" S IE 86.85	6619.15	11023.76
B	SAN. M.H. RIM: 98.85 15" N IE 88.17	6341.64	11158.31
C	SAN. M.H. RIM: 97.93 15" S IE 87.31 18" N IE 87.11 18" E IE 87.01	5709.23	11464.93
D	SAN. M.H. RIM: 97.22 10" W IE 91.95 6" DROP IE 87.95 18" N IE 87.41 18" S IE 87.31	5773.41	11433.81
E	SAN. M.H. RIM: 98.82 15" N IE 88.25 18" S IE 88.15	5989.37	11329.11
F	SAN. M.H. RIM: 96.99 15" S IE 88.74	6173.83	11239.67
G	SAN. M.H. RIM: 105.75 10" S IE 92.50	5688.45	11258.58
H	SAN. M.H. RIM: 97.98 10" W IE 91.95 6" DROP IE 88.43 15" N IE 87.99 15" S IE 88.09	5541.71	11546.16
J	SAN. M.H. RIM: 105.75 10" E IE 92.50	5456.74	11370.92
K	SAN. M.H. RIM: 97.40 10" S IE 89.07 10" W IE 89.07 15" N IE 88.73	5397.74	11615.96
L	SAN. M.H. RIM: 99.00 10" W IE 89.50	5330.23	11476.71
M	SAN. M.H. RIM: 101.00 10" N IE 89.48	5274.77	11696.98

STORM SEWER TABLE

		NORTHING	EASTING
1	4' DIA. C.B. W/ 2' SUMP RIM: 96.74 12" E IE 87.44	6515.78	11053.31
2	4' DIA. C.B. W/ 2' SUMP RIM: 96.74 12" E IE 89.04	6155.86	11227.82
3	4' DIA. C.B. W/ 2' SUMP RIM: 96.74 12" E IE 87.80	5795.93	11402.34
4	4' DIA. C.B. W/ 2' SUMP RIM: 96.74 12" E IE 88.79	5436.01	11576.85
5	4' DIA. M.H. W/ 2' SUMP RIM: 96.74 12" W IE 88.75	5447.13	11599.79
6	4' DIA. C.B. W/ 2' SUMP RIM: 96.74 12" W IE 87.74	5807.06	11425.28
7	4' DIA. C.B. W/ 2' SUMP RIM: 96.74 12" W IE 88.96	6166.98	11250.77
8	4' DIA. M.H. W/ 2' SUMP RIM: 96.74 12" W IE 87.40	6526.91	11076.26

WATER STRUCTURE TABLE

		NORTHING	EASTING
1	5' DIA. G.V & WELL RIM: 94.40	6739.29	11022.46
2	STD. FIRE HYDRANT F.G.: 97.80	6471.62	11071.11
3	5' DIA. G.V & WELL RIM: 100.00	6311.76	11142.51
4	STD. FIRE HYDRANT F.G.: 99.00	6012.72	11293.61
5	5' DIA. G.V & WELL RIM: 98.50	5861.85	11360.65
6	STD. FIRE HYDRANT F.G.: 99.00	5652.80	11468.12
7	5' DIA. G.V & WELL RIM: 97.75	5438.94	11565.70
8	STD. FIRE HYDRANT F.G.: 99.00	5320.62	11472.94
9	STD. FIRE HYDRANT F.G.: 99.50	5380.04	11661.81
10	5' DIA. G.V & WELL RIM: 101.65	6111.86	6043.73

MATERIAL LIST

STORM

8 – 4' CATCH BASINS W/ 2' SUMP

104 L.F. 12" R.C.P. C-76-CL. IV

SANITARY

12 – 5' MANHOLE

453 L.F. 6" P.V.C. S.D.R. 23.5, SCH. 40 OR AS APPROVED BY THE CITY OF DETROIT SANITARY LEAD

918 L.F. 15" C-76-CL IV R.C.P.
370 L.F. 18" C-76-CL IV R.C.P.
691 L.F. 10" SCH. 40 PVC.

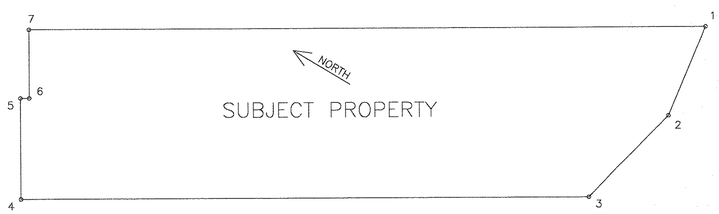
WATER

2 – 8"x8"x8" CUT IN TEE
4 – 5' GATE, VALVE AND WELL
5 – STD. FIRE HYDRANT AND ASSEMBLY
2 – 8" 45° BENDS

1481 L.F. 8" DUCTILE IRON CL. 56 PIPE W/ POLY WRAP
680 L.F. 1" TYPE "K" COPPER

ADDITIONAL MATERIAL WILL BE REQUIRED.

THE ABOVE QUANTITIES ONLY REPRESENT THE CONCEPTUAL DESIGN.



PROPERTY CORNERS

PROPERTY CORNER	NORTHING	EASTING
P.O.B.	6611.43	11076.67
1.	4967.92	11873.54
2.	4949.34	11731.71
3.	5018.70	11415.16
4.	6664.69	10621.23
5.	6775.48	10850.90
6.	6774.54	10851.35
7.	6831.64	10969.91

STRUCTURE TABLE
STORM WATER CALC'S
LENOX WATERFRONT ESTATES
LENOX AVENUE
WAYNE COUNTY, CITY OF DETROIT, MICHIGAN

ISSUED FOR REVIEW ONLY	
FILE NO.: 2791	DWG.: ENG SITE PLAN
DESIGNED BY: S.A.S.	SHEET No.
DRAWN BY: S.A.S.	C-26
CHECKED BY: L.P.R.	