

ADDENDUM #2

DATE: September 14, 2022

PROJECT: Northern Moraine Wastewater Reclamation District
Lakemoor Lift Stations Modifications

PROJECT NUMBER: NMW-070

OWNER: Northern Moraine Wastewater Reclamation District, Illinois

ENGINEER: Trotter and Associates, Inc.
40W201 Wasco Road, Suite D
St. Charles, Illinois 60175

TO: Prospective Bidders

The Addendum forms a part of the Contract Documents and modifies the Bidding Documents dated July 15, 2022, with amendments and additions noted below.

Return the provided Receipt of Addendum Acknowledgement to Trotter and Associates, Inc. and acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may disqualify the Bidder.

This Addendum consists of two (2) pages, plus attachments consisting of sixteen (16) pages.

General Comments

-
1. Sanitary sewer atlases are enclosed as attachments.
-

Modifications to Project Specifications

- 1. Section 13 44 00 – Instrumentation for Process Control Basic requirements**

Section 13 44 00, 1.2 C.1.a.2.g, is hereby added as follows:

g) Allan Integrated Control Systems, Inc.
2020 Belulah Ave, East Troy, WI
262-642-7800
Ted Zess tzess@allan-ics.com

- 2. Section 02 96 00 – Temporary Bypass Pumping Systems has been added in its entirety.**

Modifications to the Drawings

1. Sheet LS1.1 Note 4 has been modified.
 2. Sheets LS2.1, LS3.1, LS5.1 and LS6.1 have been modified to provide additional upstream sanitary manhole information.
-

Questions & Clarifications

None.

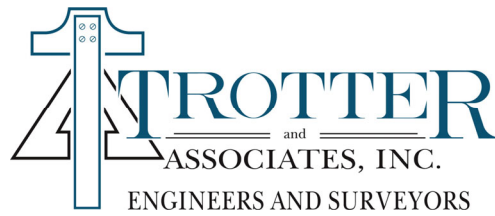
ALL ITEMS IN CONFLICT WITH THIS ADDENDUM ARE HEREBY DELETED.

THIS ADDENDUM IS HEREBY MADE PART OF THE CONTRACT DOCUMENTS AND SHALL BE NOTED ON THE PROPOSAL.

Attachments:

1. Addendum Receipt Acknowledgement (1 Page)
2. Sanitary Sewer Atlas (5 Pages)
3. Specification Section 02 96 00 Temporary Bypass Pumping Systems (6 Pages)
4. Revised Engineering Drawings (4 Pages)

END ADDENDUM NO. 2



Northern Moraine Wastewater Reclamation District Lakemoor Lift Stations No. 1-7 Modifications

Receipt of Addendum Acknowledgement Addendum No. 2

Please check the appropriate box, enter the corresponding information required below, and return via email to a.fialko@trotter-inc.com. If you do not respond to this notice, repeat notices may follow. Failure to acknowledge receipt of addenda within the project Bid Documents may result in the Bid being declared Non-responsive.

_____ (Name of Plan Holder)

☐ I have received the Addendum by email. I have confirmed that the Addendum is complete as indicated in the Addendum description.

_____ (Signature)

_____ (Printed Name, Title)

☐ Please send future correspondence by email to the address below.

_____ (Email Address)

☐ I will not be bidding this project and request no further correspondence.

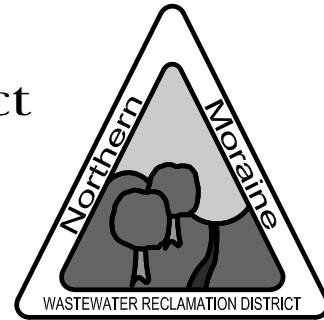
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2	Revised and Re-Distributed	09/30/09
3	Revised and Re-Distributed	11/30/10
4	Revised and Re-Distributed	01/31/12



TROTTER
and
ASSOCIATES
Consulting Engineers and Surveyors
40W201 Wasco Road • St. Charles, IL 60175
630-587-0470 • Fax: 630-387-0475


Northern Moraine Wastewater Reclamation District
Sanitary Sewer Mapping Atlas


The Southeast Quarter of Section 32,
Township 45 North, Range 9 East, McHenry Twp.
McHenry County, Illinois




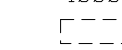
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KEY	C11	D11	E11	F11	G11	
MAP	D12	E12	F12	G12		


Legend


 FORCE MAIN


 SANITARY SEWER

 SANITARY MANHOLE

 LIFT STATION

 ADDRESS

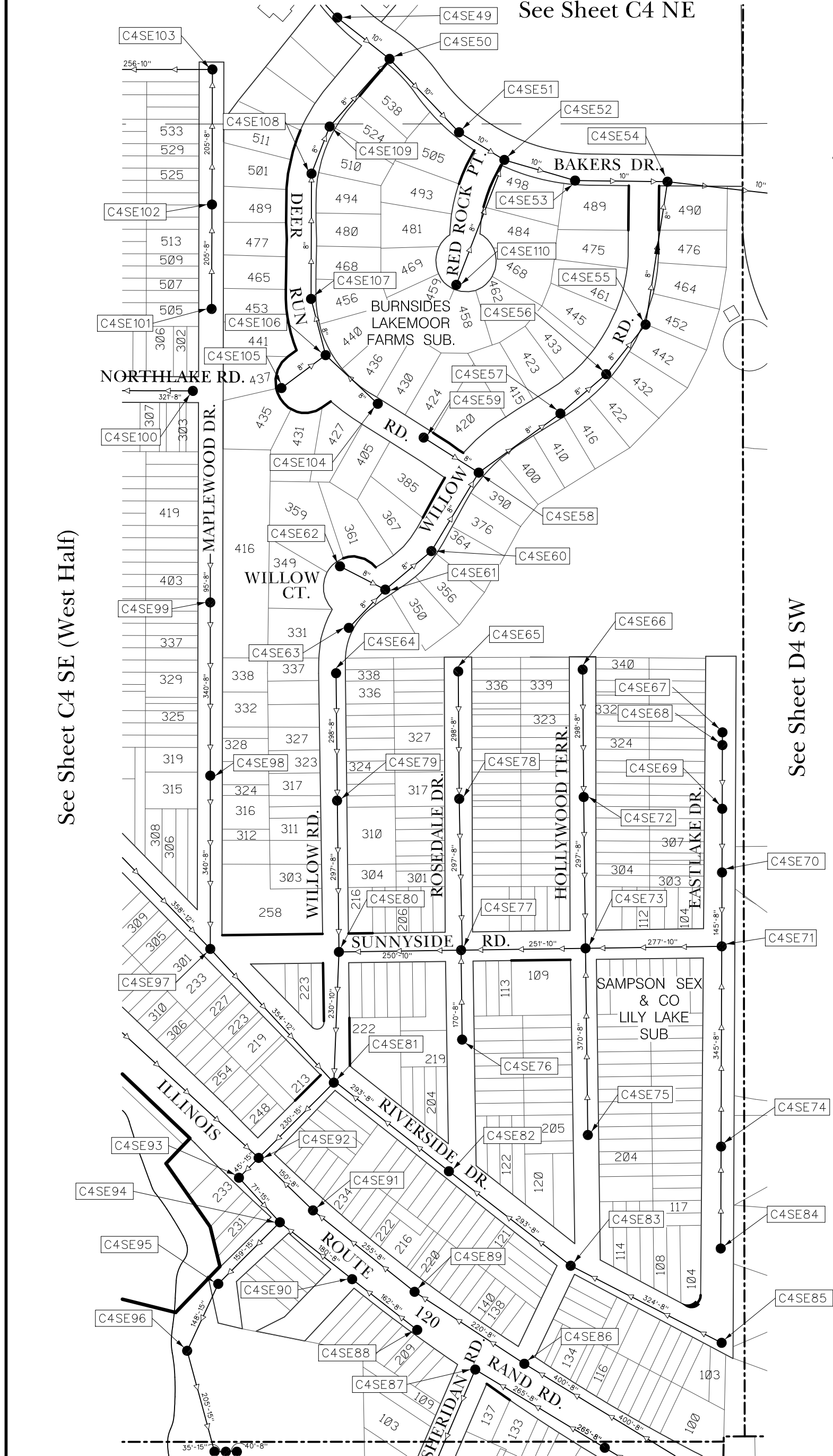
 INACTIVE ADDRESS

 BUILDING NUMBER

 LAKE SUB. SUBDIVISION NAME

Sheet C4 SE

(East Half)



Manhole Table									
MANHOLE NUMBER	RIM ELEV.	NORTH INV.	N.E. INV.	EAST INV.	S.E. INV.	SOUTH INV.	S.W. INV.	WEST INV.	N.W. INV.
C4SE49	757.41				741.66				741.66
C4SE50	755.61				741.22				741.22
C4SE51	757.01				740.95				740.95
C4SE52				741.19		746.13			741.19
C4SE53	757.32			740.30				740.30	
C4SE54	756.56			739.78		743.76		739.78	
C4SE55	757.50	745.60					745.60		
C4SE56	757.19		746.19				746.19		
C4SE57	757.68		746.88				746.88		
C4SE58	757.43		747.65				747.65		747.65
C4SE59	757.70				748.45				
C4SE60	758.02		748.42				748.42		
C4SE61	757.21		748.81				748.81	748.81	
C4SE62	757.47			749.27					
C4SE63	757.32		749.52						
C4SE64						747.00			
C4SE65						746.50			
C4SE66						747.20			
C4SE67									
C4SE68									
C4SE69									
C4SE70		747.50				747.50			
C4SE71		746.63				746.43		746.17	
C4SE72		745.41				745.41			
C4SE73		744.22		744.06		744.22		744.06	
C4SE74		748.50				748.50			
C4SE75		747.18							
C4SE76		745.00							
C4SE77		743.52		743.36		743.64		743.36	
C4SE78		744.71				744.71			
C4SE79		745.21				745.21			
C4SE80		743.43		743.43		742.56			
C4SE81		741.83			741.83		741.50		741.83
C4SE82					747.80				747.50
C4SE83					753.06				753.01
C4SE84									
C4SE85									755.00
C4SE86					753.60				753.60
C4SE87					753.32		753.22		
C4SE88									753.52
C4SE89					752.28				752.28
C4SE90									
C4SE91					750.08				750.08
C4SE92			747.09		741.13		746.06		741.13
C4SE93			741.06		740.96				
C4SE94					747.00		740.84		740.84
C4SE95									
C4SE96									
C4SE97		743.92			742.96				742.96
C4SE98		747.50				747.50			
C4SE99						748.00			
C4SE100									
C4SE101		759.98							
C4SE102		753.01				753.01			
C4SE103									
C4SE104	757.38								748.48
C4SE105	757.88						748.33		
C4SE106	757.27	747.86			747.86		747.89		
C4SE107	757.82	747.44				747.44			
C4SE108	757.42	746.17				746.17			
C4SE109	757.48		745.79			745.79			
C4SE110	758.21	748.47							

999
997
AVE.

995
993

ST.

101
103

100
102

Address Orientation

N.M.W.R.D. Boundary

0 50 100 200 300 400 500 FEET

Scale

See Sheet C4 NE

See Sheet C4 SW

See Sheet C4 SE (East Half)

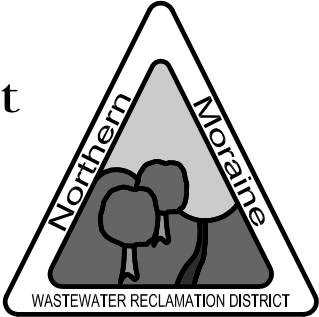
See Sheet C5 NE (West Half)

DATE: SEPTEMBER 17, 2007		
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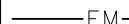
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ASSOCIATES
Consulting Engineers and Surveyors
16 North First Avenue • St. Charles, IL 60174
630-587-0470 • Fax: 630-587-0475

Northern Moraine Wastewater Reclamation District
Sanitary Sewer Mapping Atlas
The Southeast Quarter of Section 32,
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McHenry County, Illinois

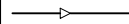


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A9	B9	C9	D9	E9	F9	G9
A10	B10	C10	D10	E10	F10	G10
KEY	C11	D11	E11	F11	G11	
MAP	D12	E12	F12	G12		


Legend

 F M


FORCE MAIN

 SANITARY SEWER

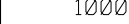
SANITARY SEWER

 SANITARY MANHOLE

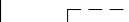
SANITARY MANHOLE

 LIFT STATION

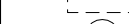
LIFT STATION

 ADDRESS


ADDRESS

 INACTIVE ADDRESS

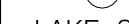
INACTIVE ADDRESS

 BUILDING NUMBER

BUILDING NUMBER

 LAKE SUB.

LAKE SUB.

 SUBDIVISION NAME

SUBDIVISION NAME

Sheet C4 SE
(West Half)

Manhole Table

MANHOLE NUMBER	RIM ELEV.	NORTH INV.	N.E. INV.	EAST INV.	S.E. INV.	SOUTH INV.	S.W. INV.	WEST INV.	N.W. INV.
C4SE01									
C4SE02		745.79						745.89	
C4SE03		745.12		744.43		744.53			
C4SE04		748.50				748.50		748.60	
C4SE05						750.50			
C4SE06				755.60					
C4SE07		747.43							
C4SE08		744.37		744.47					
C4SE09		742.89		742.84		742.96			
C4SE10						743.59			
C4SE11						741.41			
C4SE12		741.66		741.56		741.66			
C4SE13		741.78				741.88		741.88	
C4SE14		743.52							
C4SE15								746.82	
C4SE16		738.96				739.96		740.06	
C4SE17		740.77				740.72			
C4SE18		752.00							
C4SE19		741.44		741.27					
C4SE20				752.48				752.48	
C4SE21		755.03							
C4SE22		753.54				753.54			
C4SE23		759.46							
C4SE24		755.00				755.00			
C4SE25		749.57				749.51			
C4SE26						747.35			
C4SE27		742.78				742.78			
C4SE28		743.32		743.44				743.44	
C4SE29		745.07				745.07		744.97	
C4SE30				758.00				758.00	
C4SE31		747.92		748.02					
C4SE32								750.00	
C4SE33				747.50					
C4SE34		746.90		746.74				746.90	
C4SE35					746.55				746.55
C4SE36						751.50			
C4SE37		746.54				746.54			
C4SE38		744.84			744.10				744.10
C4SE39					750.50				
C4SE40					748.23				748.28
C4SE41									
C4SE42									
LIFT STATION #5									

999

997

ST.

101

103

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993

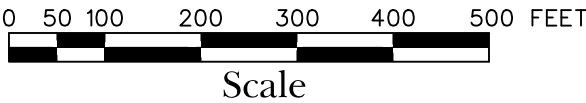
AVE.

100

102

Address Orientation

N.M.W.R.D. Boundary



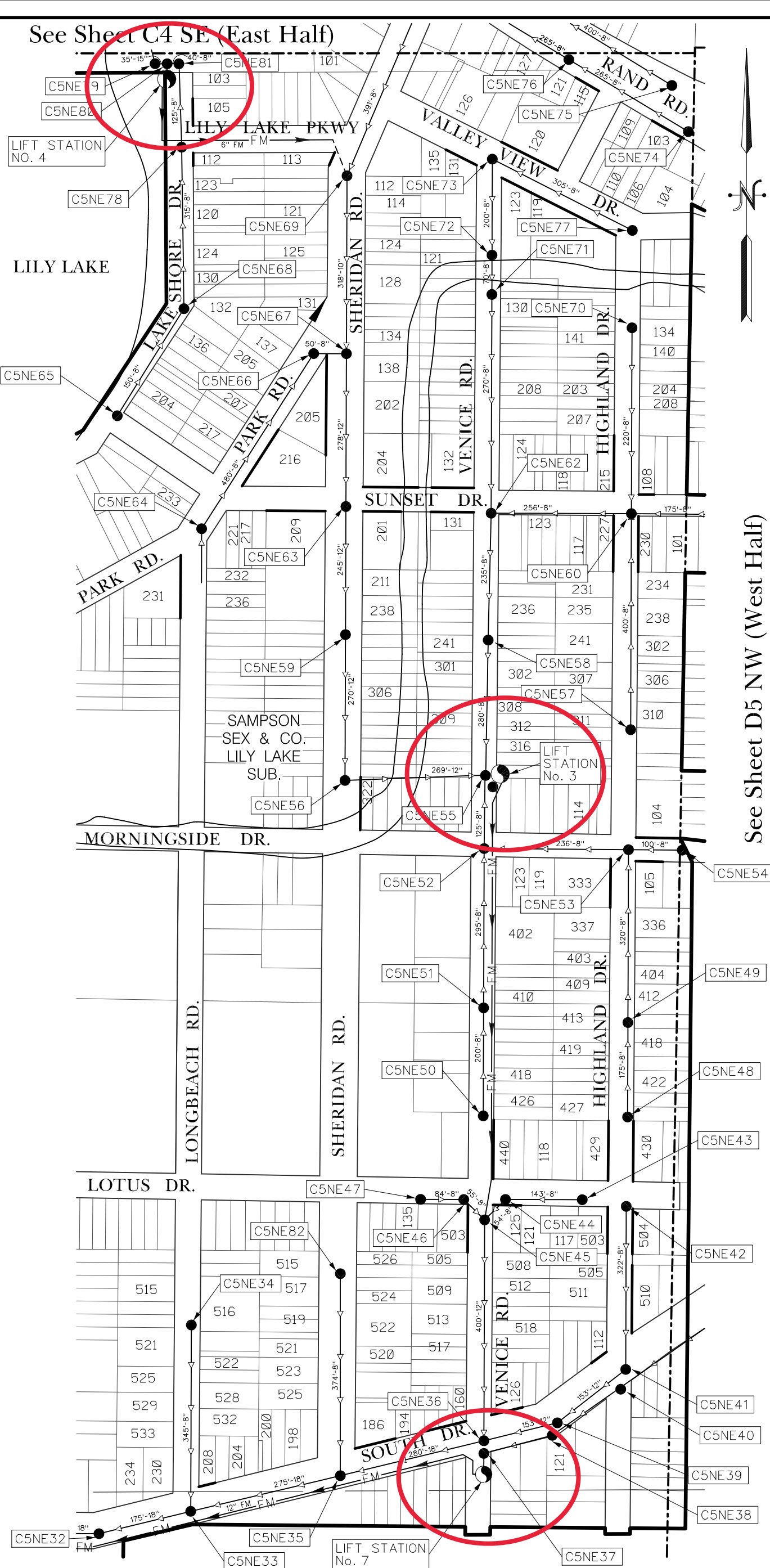
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A4	B4	C4	D4	E4	F4	G4
A5	B5	C5	D5	E5	F5	G5
A6	B6	C6	D6	E6	F6	G6
A7	B7	C7	D7	E7	F7	G7
A8	B8	C8	D8	E8	F8	G8
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A10	B10	C10	D10	E10	F10	G10
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MAP	D12	E12	F12	G12		

See Sheet C4 SE (East Half)

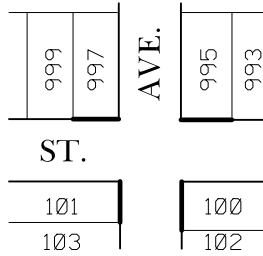
See Sheet C5 NE (West Half)

See Sheet D5 NW (West Half)



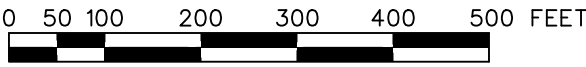
Out of District

Manhole Table									
MANHOLE NUMBER	RIM ELEV.	NORTH INV.	N.E. INV.	EAST INV.	S.E. INV.	SOUTH INV.	S.W. INV.	WEST INV.	N.W. INV.
C5NE32									
C5NE33		745.14		744.32				744.32	
C5NE34						747.21			
C5NE35		745.48		744.62				744.62	
C5NE36				745.30				744.99	
C5NE37									
C5NE38									
C5NE39				745.63				745.63	
C5NE40									
C5NE41		746.49						746.00	
C5NE42						759.01			
C5NE43	763.59							758.09	
C5NE44	754.59			748.69			748.69		
C5NE45	755.84					748.06			748.19
C5NE46	753.20				748.41			748.41	
C5NE47	753.50			748.75					
C5NE48						764.46			
C5NE49		751.00				755.50			
C5NE50						745.05			
C5NE51		744.25							
C5NE52		742.99				743.07			
C5NE53				750.00		749.72		749.62	
C5NE54								760.00	
C5NE55		740.21						740.00	
C5NE56		743.13		743.01		744.40			
C5NE57		753.90							
C5NE58		741.33				741.33			
C5NE59		744.31				744.31			
C5NE60	757.44	745.99		745.99		751.44		745.94	
C5NE62		742.27		742.37		746.14			
C5NE63		745.58				742.27			
C5NE64							745.58	745.80	
C5NE65		745.33							
C5NE66									
C5NE67		747.02				747.02			
C5NE68		744.03				744.13			
C5NE69			751.66			751.47			751.50
C5NE70						747.85			
C5NE71		743.75				743.75			
C5NE72		744.17				744.17			
C5NE73				745.47		745.37			
C5NE74								747.40	
C5NE75								756.50	
C5NE76									
C5NE77				754.91				754.91	
C5NE78		741.51				741.51			
C5NE79		739.76		739.76					
C5NE80				740.42				739.70	
C5NE81						740.76		740.66	
C5NE82		755.36				748.37			
LIFT STATION #3									
LIFT STATION #4									
LIFT STATION #7									



Address Orientation

N.M.W.R.D. Boundary



Scale

A1	B1	C1	D1	E1	F1	G1
A2	B2	C2	D2	E2	F2	G2
A3	B3	C3	D3	E3	F3	G3
A4	B4	C4	D4	E4	F4	G4
A5	B5	C5	D5	E5	F5	G5
A6	B6	C6	D6	E6	F6	G6
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A8	B8	C8	D8	E8	F8	G8
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A10	B10	C10	D10	E10	F10	G10
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KEY

MAP

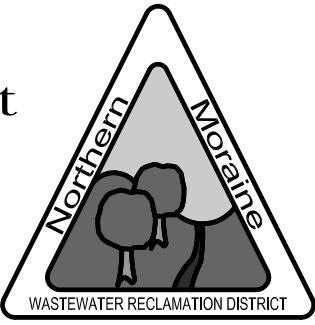
Legend	
— FM —	FORCE MAIN
— S —	SANITARY SEWER
●	SANITARY MANHOLE
1000	LIFT STATION
1000	ADDRESS
1000	INACTIVE ADDRESS
20	BUILDING NUMBER
LAKE SUB.	SUBDIVISION NAME

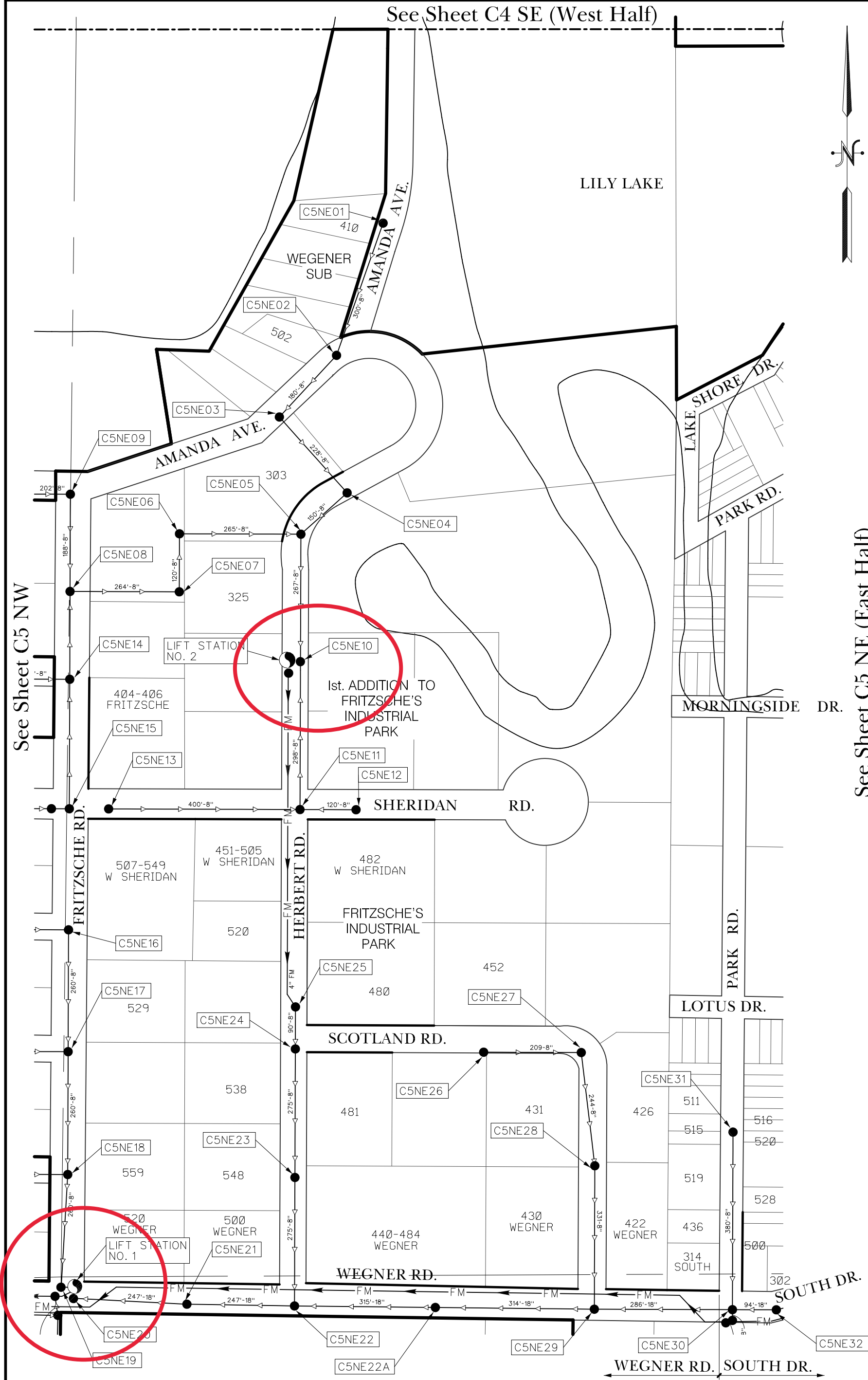
Sheet C5 NE
(East Half)

DATE: SEPTEMBER 17, 2007		
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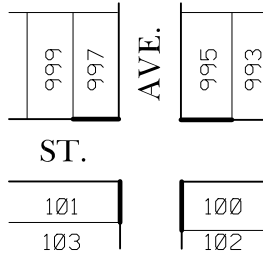
TROTTER
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ASSOCIATES
Consulting Engineers and Surveyors
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630-587-0470 • Fax: 630-587-0475

Northern Moraine Wastewater Reclamation District
Sanitary Sewer Mapping Atlas
The Northeast Quarter of Section 5,
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McHenry County, Illinois



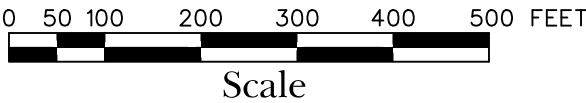


Manhole Table									
MANHOLE NUMBER	RIM ELEV.	NORTH INV.	N.E. INV.	EAST INV.	S.E. INV.	SOUTH INV.	S.W. INV.	WEST INV.	N.W. INV.
C5NE01						745.79			
C5NE02		744.59				744.59			
C5NE03			743.87		743.77				
C5NE04							742.77		742.87
C5NE05			745.71			742.07		745.71	
C5NE06				747.06					
C5NE07									
C5NE08									
C5NE09									
C5NE10		741.00				747.11			
C5NE11		748.90		749.00				749.00	
C5NE12									
C5NE13				751.40					
C5NE14									
C5NE15									
C5NE16									
C5NE17									
C5NE18									
C5NE19									
C5NE20		742.10		742.10				742.35	
C5NE21				742.50				742.50	
C5NE22		748.90		742.90		743.73		742.90	
C5NE22A				743.28				743.28	
C5NE23		750.54				750.84			
C5NE24		751.64		751.74		751.64			
C5NE25		752.00				752.00			
C5NE26	761.00			750.84					
C5NE27	759.57					749.93		749.93	
C5NE28	756.21	748.96				748.96			
C5NE29				743.66				743.66	
C5NE30		744.84		744.00		753.00		744.00	
C5NE31						747.00			
C5NE32				744.11				744.11	
LIFT STATION #1									
LIFT STATION #2									



Address Orientation

N.M.W.R.D. Boundary



Scale

A1	B1	C1	D1	E1	F1	G1
A2	B2	C2	D2	E2	F2	G2
A3	B3	C3	D3	E3	F3	G3
A4	B4	C4	D4	E4	F4	G4
A5	B5	C5	D5	E5	F5	G5
A6	B6	C6	D6	E6	F6	G6
A7	B7	C7	D7	E7	F7	G7
A8	B8	C8	D8	E8	F8	G8
A9	B9	C9	D9	E9	F9	G9
A10	B10	C10	D10	E10	F10	G10
A11	B11	C11	D11	E11	F11	G11
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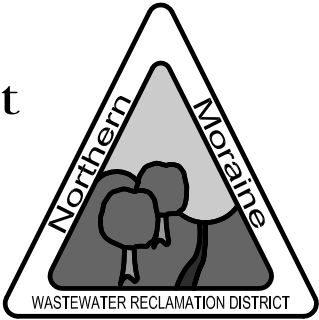
Legend	
	FORCE MAIN
	SANITARY SEWER
	SANITARY MANHOLE
	LIFT STATION
	ADDRESS
	INACTIVE ADDRESS
	BUILDING NUMBER
	SUBDIVISION NAME

Sheet C5 NE
(West Half)

DATE: SEPTEMBER 17, 2007		
ISSUE	REVISIONS	DATE
1	Revised and Re-Distributed	01/31/09
2	Revised and Re-Distributed	09/30/09
3	Revised and Re-Distributed	11/30/10
4	Revised and Re-Distributed	01/31/12

TROTTER
ASSOCIATES
Consulting Engineers and Surveyors
40W201 Wasco Road • St. Charles, IL 60175
630-587-0470 • Fax: 630-587-0475

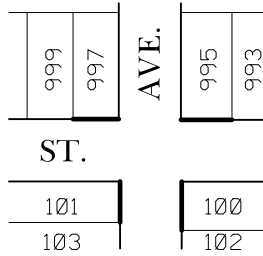
Northern Moraine Wastewater Reclamation District
Sanitary Sewer Mapping Atlas
The Northeast Quarter of Section 5,
Township 44 North, Range 9 East, Nunda Twp.
McHenry County, Illinois





Manhole Table										
MANHOLE NUMBER	RIM ELEV.	NORTH INV.	N.E. INV.	EAST INV.	S.E. INV.	SOUTH INV.	S.W. INV.	WEST INV.	N.W. INV.	
D4SW01	758.19	738.89		746.24		738.89				
D4SW02	758.63	747.18		747.18				747.18		
D4SW03	756.89							748.54		
D4SW04	756.87					746.42				
D4SW05	756.79	744.86		744.84				744.84		
D4SW06	757.33			745.58				745.58		
D4SW07	757.06			746.09				746.09		
D4SW08	757.21			746.76				746.76		
D4SW09	756.60							747.69		
D4SW10	759.02			743.47				743.47		
D4SW11	760.02	737.97		738.52						
D4SW12	759.65	738.45				738.45				
D4SW13	758.66	737.44				737.44				
D4SW14	757.98	737.13				737.13				
D4SW15	758.15	736.19				736.19				
D4SW16	757.48	735.63		738.08		742.83		735.63		
D4SW17	757.68	745.05		739.38				739.38		
D4SW18	758.35	745.90				745.90				
D4SW19	757.58	746.63				746.63				
D4SW20	757.75	747.11				747.11				
D4SW21	756.54			747.49		747.48		747.49		
D4SW22	758.80			748.77						
D4SW23	757.77							748.67		
D4SW24	756.32					747.25				
D4SW25	756.92	746.58				746.58				
D4SW26	756.65	740.99		740.49				740.49		
D4SW27	756.85			739.89				739.89		
D4SW28	757.41			741.31				741.31		
D4SW29	756.04			741.74				741.74		
D4SW30	756.73			742.98				742.98		
D4SW31	756.61			744.36	743.40			744.36		
D4SW32	756.86				748.16			745.16		
D4SW33	756.88			746.33					746.33	
D4SW34	757.56			746.76				746.76		
D4SW35	757.75			747.40				747.40		
D4SW36	756.97				747.87		747.87			
D4SW37	757.12			748.13					748.13	
D4SW38	757.50							748.55		
D4SW39	757.26	748.31								
D4SW40	757.76	747.76				747.76				
D4SW41	756.51					747.06		747.06		
D4SW42	756.48			746.03		747.58		746.03		
D4SW43	757.72	748.01					748.01			
D4SW44	759.21		748.46							
D4SW45	757.87			744.70				744.70		
D4SW46	757.51			744.14				744.14		
D4SW47	757.21	743.76				743.76				
D4SW48	759.13	745.23				745.23		745.23		
D4SW49	758.70			748.06				748.06		
D4SW50	758.84			748.64						
D4SW51	758.31	746.41				746.41		746.38		
D4SW52	757.91			747.86				747.86		
D4SW53	757.59			748.59				748.59		
D4SW54	758.55			749.50						
D4SW55	760.00	747.10				747.10				
LIFT STATION *6										

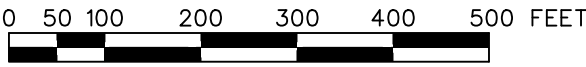
Out of District



Address Orientation



N.M.W.R.D. Boundary



Scale

DATE: SEPTEMBER 17, 2007		
ISSUE	REVISIONS	DATE
1	Revised and Re-Distributed	01/31/09
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4	Revised and Re-Distributed	01/31/12

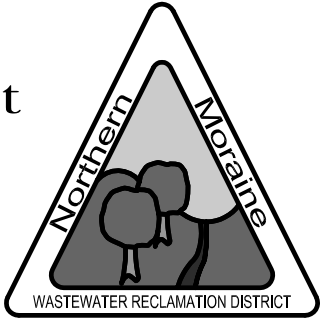


TROTTER
ASSOCIATES
Consulting Engineers and Surveyors
40W201 Wasco Road • St. Charles, IL 60175
630-587-0470 • Fax: 630-587-0475

Northern Moraine Wastewater Reclamation District

Sanitary Sewer Mapping Atlas

The Southwest Quarter of Section 33,
Township 45 North, Range 9 East, Grant Twp.
Lake County, Illinois



A1	B1	C1	D1	E1	F1	G1
A2	B2	C2	D2	E2	F2	G2
A3	B3	C3	D3	E3	F3	G3
A4	B4	C4	D4	E4	F4	G4
A5	B5	C5	D5	E5	F5	G5
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A7	B7	C7	D7	E7	F7	G7
A8	B8	C8	D8	E8	F8	G8
A9	B9	C9	D9	E9	F9	G9
A10	B10	C10	D10	E10	F10	G10
KEY	C11	D11	E11	F11	G11	
MAP	D12	E12	F12	G12		

Legend

— FM —

FORCE MAIN

— S —

SANITARY SEWER

●

SANITARY MANHOLE

1000

LIFT STATION

ADDRESS

INACTIVE ADDRESS

20

BUILDING NUMBER

LAKE SUB.

SUBDIVISION NAME

02 96 00 - TEMPORARY BYPASS PUMPING SYSTEMS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Section includes requirements for implementing a temporary pumping system for the purpose of diverting existing sewage flow around work area as needed to maintain continuous service of lift station processes.

1.2 QUALITY ASSURANCE

- A. Follow national standards and as specified herein.
- B. Perform leakage and pressure tests on discharge piping using clean water, before operation. Notify Engineer 24 hours prior to testing.
- C. Maintain and inspect temporary pumping system every two hours. Responsible operator: on site when pumps are operating.
- D. Keep and maintain spare parts for pumps and piping on site, as required.
- E. Maintain adequate hoisting equipment and accessories on site for each pump.

1.3 SUBMITTALS

- A. Submit following Section 01 33 00.
 - 1. Detailed plan and description of proposed pumping system. Indicate number, size, material, location and method of installation of suction and discharge piping, size of pipeline or conveyance system to be bypassed, staging area for pumps, site access point, and expected flow.
 - a. Size and location of manhole or access points for suction and discharge hose or piping.
 - b. Sections showing suction and discharge pipe depth, embedment, select fill and special backfill, if buried.
 - c. Temporary pipe supports and anchoring required.
 - d. Thrust and restraint block sizes and locations.
 - e. Sewer plugging method and type of plugs.
 - f. Bypass pump sizes, capacity, number of each size to be on site and power requirements.
 - g. Backup pump, power and piping equipment.
 - h. Calculations of static lift, friction losses, and flow velocity. Pump curves showing pump operating range.
 - i. Design plans and computation for access to bypass pumping locations indicated on drawings.
 - j. Calculations for selection of bypass pumping pipe size.
 - k. Method of noise control for each pump and/or generator.
 - l. Method of protecting discharge manholes or structures from erosion and damage.
 - m. Schedule for installation and maintenance of bypass pumping lines.
 - n. Procedures to monitor upstream mains for backup impacts.
 - o. Procedures for setup and breakdown of pumping operations.
 - p. Emergency plan detailing procedures to be followed in event of pump failures, sewer overflows, service backups, and sewage spillage.
 - 1) Maintain copy of emergency plan on site for duration of project.

B. Submit following Section 01 33 00.

1. Certify bypass system will meet requirements of codes, and regulatory agencies having jurisdiction.

1.4 CONTRACTORS RESPONSIBILITY FOR OVERFLOWS AND SPILLS

A. Schedule and perform work in manner that does not cause or contribute to incidence of overflows, releases or spills of sewage from sanitary sewer system or bypass operation.

1.5 DELIVERY AND STORAGE

A. Transport, deliver, handle, and store pipe, fittings, pumps, ancillary equipment and materials to prevent damage and following manufacturer's recommendations.

1. Inspect all material and equipment for proper operation before initiating work.

B. Material found to be defective or damaged due to manufacturer or shipment.

1. When Engineer deems repairable: Repair as recommended by manufacturer.
2. When Engineer deems not repairable: Replace as directed by Engineer before initiating work.
3. Repair or replacement of defective or damaged material and equipment will be at no cost to Commission.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Discharge and Suction Pipes: Approved by Engineer.

1. Discharge piping: Determined according to flow calculations and system operating calculations.
2. Suction piping: Determined according to pump size, flow calculations, and manhole depth following manufacturer's specifications and recommendations.

B. Polyethylene Plastic Pipe:

1. High density solid wall and following ASTM F714 Polyethylene (PE) Plastic Pipe (SDR-DR) based on Outside Diameter, ASTM D1248 and ASTM D3550
2. Homogenous throughout, free of visible cracks, discoloration, pitting, varying wall thickness, holes, foreign material, blisters, or other deleterious faults.

C. High-Density Polyethylene (HDPE).

1. Homogenous throughout, free of visible cracks, discoloration, pitting, varying wall thickness, holes, foreign material, blisters, or other deleterious faults.
 - a. Defective areas of pipe: Cut out and joint fused as stated herein.
2. Assembled and joined at site using couplings, flanges or butt-fusion method to provide leak proof joint. Follow manufacturer's instructions and ASTM D 2657.
 - a. Threaded or solvent joints and connections are not permitted.
3. Fusing: By personnel certified as fusion technicians by manufacturer of HDPE pipe and/or fusing equipment.
4. Butt-fused joint: True alignment and uniform roll-back beads resulting from use of proper temperature and pressure.

- a. Allow adequate cooling time before removal of pressure.
 - b. Watertight and have tensile strength equal to that of pipe.
 - c. Acceptance by Engineer before insertion.
- 5. Use in streams, storm water culverts and environmentally sensitive areas.
- D. Flexible Hoses and Associated Couplings and Connectors.
 - 1. Abrasion resistant.
 - 2. Suitable for intended service.
 - 3. Rated for external and internal loads anticipated, including test pressure.
 - a. External loading design: Incorporate anticipated traffic loadings, including traffic impact loading.
 - 4. When subject to traffic loading, compose system, such as traffic ramps or covers.
 - a. Install system and maintain H-20 loading requirements while in use or as directed by the Engineer.
- E. Valves and Fittings: Determined according to flow calculations, pump sizes previously determined, and system operating pressures.
- F. Plugs: Selected and installed according to size of line to be plugged, pipe and manhole configurations, and based on specific site.
 - 1. Additional plugs: Available in the event a plug fails. Plugs will be inspected before use for defects which may lead to failure.
- G. Aluminum "irrigation type" piping or glued PVC piping will not be permitted.
- H. Discharge hose will only be allowed in short sections when approved by Engineer.

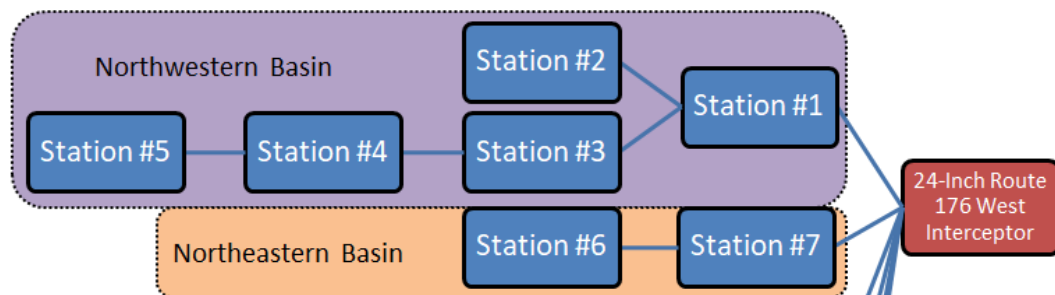
2.2 EQUIPMENT

- A. Pumps.
 - 1. Fully automatic self-priming units that do not require the use of foot-valves or vacuum pumps in priming system.
 - 2. Electric or diesel powered.
 - 3. Constructed to allow dry running for long periods of time to accommodate cyclical nature of effluent flows.
- B. Provide.
 - 1. Necessary stop/start controls for each pump.
 - 2. One standby pump of each size maintained on site.
 - a. On-line, isolated from primary system by a valve.
 - 3. Quiet flow pumps at request of Engineer.

2.3 DESIGN REQUIREMENTS

- A. Bypass pumping systems:
 - a. Lakemoor Lift Station #1
 - i. Daily Average Flow: 115 gal/min
 - ii. Peak Hourly Flow: 793 gal/min

- iii. Existing duplex pump station is 400 gpm at 83 ft TDH.
 - b. Lakemoor Lift Station #2
 - i. Daily Average Flow: 4 gal/min
 - ii. Peak Hourly Flow: 17 gal/min
 - iii. Existing duplex pump station is 328 gpm at 63 ft TDH.
 - c. Lakemoor Lift Station #3
 - i. Daily Average Flow: 60 gal/min
 - ii. Peak Hourly Flow: 310 gal/min
 - iii. Existing duplex pump station is 270 gpm at 25 ft TDH.
 - d. Lakemoor Lift Station #4
 - i. Daily Average Flow: 50 gal/min
 - ii. Peak Hourly Flow: 389 gal/min
 - iii. Existing duplex pump station is 270 gpm at 31.5 ft TDH.
 - e. Lakemoor Lift Station #5
 - i. Daily Average Flow: 20 gal/min
 - ii. Peak Hourly Flow: 81 gal/min
 - iii. Existing duplex pump station is 270 gpm at 37.8 ft TDH.
 - f. Lakemoor Lift Station #6
 - i. Daily Average Flow: 87 gal/min
 - ii. Peak Hourly Flow: 316 gal/min
 - iii. Existing duplex pump station is 500 gpm at 40 ft TDH.
 - g. Lakemoor Lift Station #7
 - i. Daily Average Flow: 130 gal/min
 - ii. Peak Hourly Flow: 669 gal/min
 - iii. Existing duplex pump station is 827 gpm at 62 ft TDH.
- B. The flow diagram is depicted below:



- C. The existing pump stations have the following provisions to facilitate the bypass pumping operations:

- a. Lift Station #1 - An existing 6" bypass connection to the lift station force main is located in a vault approximately 15 ft. west of the wet well which may be used to connect supplemental pumping equipment needed to meet the required bypass capacity. The upstream manhole is roughly 12 ft. south of the wet well connected with 18" diameter sanitary sewer.
 - b. Lift Station #2 - An existing 4" bypass connection to the lift station force main is located in a vault approximately 15 ft. south of the wet well which may be used to connect supplemental pumping equipment needed to meet the required bypass capacity. The upstream manhole is roughly 18 ft. north of the wet well connected with 12" diameter sanitary sewer.
 - c. Lift Station #3 - An existing 4" bypass connection to the lift station force main is located approximately 15 ft. south of the wet well which may be used to connect supplemental pumping equipment needed to meet the required bypass capacity. The upstream manhole is roughly 14 ft. east of the wet well connected with 12" diameter sanitary sewer.
 - d. Lift Station #4 - An existing 4" bypass connection to the lift station force main is located approximately 16 ft. south of the wet well which may be used to connect supplemental pumping equipment needed to meet the required bypass capacity. The upstream manhole is roughly 14 ft. north of the wet well connected with 14" diameter sanitary sewer.
 - e. Lift Station #5 - An existing 4" bypass connection to the lift station force main is located approximately 15 ft. south of the wet well which may be used to connect supplemental pumping equipment needed to meet the required bypass capacity. The upstream manhole is roughly 13 ft. west of the wet well connected with 12" diameter sanitary sewer.
 - f. Lift Station #6 - An existing 4" bypass connection to the lift station force main is located adjacent to the wet well which may be used to connect supplemental pumping equipment needed to meet the required bypass capacity. The upstream manhole is roughly 60 ft. east of the wet well connected with 12" diameter sanitary sewer.
 - g. Lift Station #7 - An existing 4" bypass connection to the lift station force main is located approximately 15 ft. west of the wet well which may be used to connect supplemental pumping equipment needed to meet the required bypass capacity. The upstream manhole is roughly 20 ft. north of the wet well connected with 24" diameter sanitary sewer.
- D. Contractor must coordinate shut down of any system with the Owner and Engineer to reduce the required pumping capacity by limiting shut downs to low-flow times (night) and dry weather periods.
 - E. Provide pipeline plugs and pumps of adequate size to handle peak flow, and temporary discharge piping to ensure total flow of raw sewage can be safely diverted around the Work.

PART 3 - EXECUTION

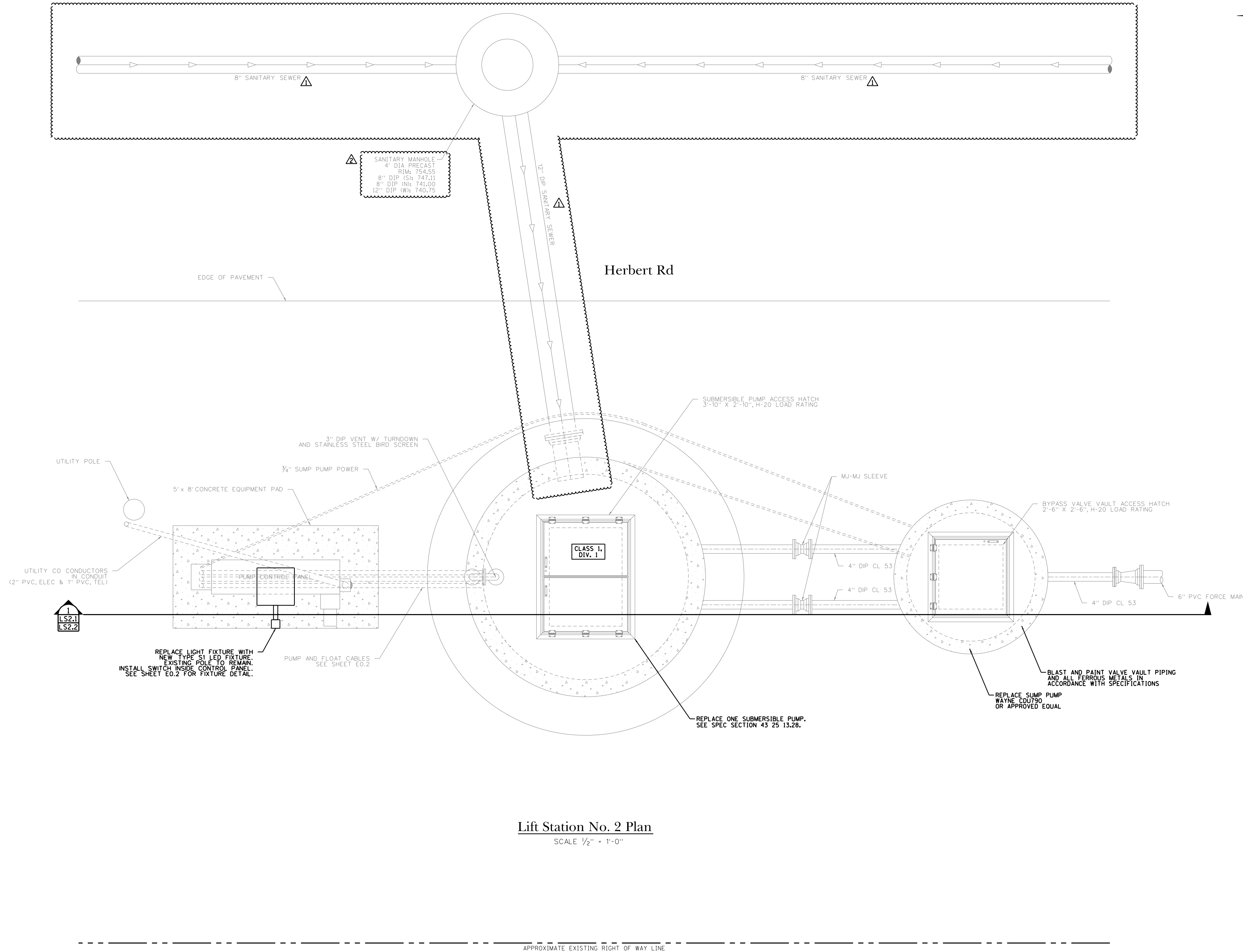
3.1 PREPARATION

- A. Determining location of bypass pipelines.
 - 1. Minimize disturbance to ability of staff to operate the existing facilities.
 - 2. Obtain approvals for placement plan from operations staff and Engineer.

3.2 INSTALLATION AND REMOVAL

- A. Provisions and requirements must be reviewed by Engineer before starting construction.
- B. Plugging or blocking of sewage flows shall incorporate a primary and secondary plugging device. When plugging or blocking is no longer needed for performance and acceptance of work, remove in a manner that permits the sewage flow to slowly return to normal without surge, to prevent surcharging or causing other major disturbances downstream.
- C. When working inside manhole or force main, exercise caution. Follow OSHA, Local, State and Federal requirements. Take required measures to protect workforce against sewer gases and/or combustible or oxygen-deficient atmosphere.
- D. During bypass pumping operation, protect sewer lines from damage inflicted by equipment.
- E. Upon completion of bypass pumping operations, remove piping, restore property to pre-construction condition.

END OF SECTION 02 96 00



NOTES:
1. RESTORE SITE TO PRE-CONSTRUCTION CONDITIONS UPON COMPLETION OF WORK.

PROJECT STAFF		ISSUE	REVISIONS	DATE
PROJECT MANAGER	SCOTT TROTTER P.E.			
ENGINEER	JULIAN KASZLE			
TECHNICIAN	MIKE JACOBSON			
		2.	ADDENDUM #2	9/14/22
		1.	ADDENDUM #1	8/31/22
		0.	ISSUED FOR BIDDING	7/15/22

4

TROTTER

ASSOCIATES, INC.

ENGINEERS AND SURVEYORS

409204 Wisco Road, Suite D

St. Charles, IL 60175

PH: (630) 587-0170 • FAX: (630) 587-0175

Lakemoor Lift Stations Modifications

Lift Station No. 2 - Plan

Northern Moraine Wastewater Reclamation District

Project No.:	NMW070
File Name:	LS2.1.dgn
Plot Date:	9/14/2022
Scale:	1/2" = 1'-0"
Sheet Number	LS2.1

