APPENDIX A
COLLECTION SUMP DESCRIPTIONS, P&IDS AND EQUIPMENT LIST

Appendix A
FMC Middleport – North Site Cover System
Collection Sumps Descriptions

This Appendix includes a description of the Facility sump and underdrain system, including the collected water origin and the water discharge point for each sump, and provides details regarding the equipment for each of the sumps. A map showing the location of the swales and sumps is included as Figure 4 in the North Site Cover Operations and Maintenance Plan (Parsons 2015).

Sump 1 (Sanitary Sewer Underdrain)

Sump 1 collects groundwater via approximately 100 feet of perforated polyvinyl chloride (PVC) collection pipe in the bedding of the sewer. Water collected in this sump is pumped to Sump 3.

Sump 2 (Swale Underdrain #1)

Sump 2 collects groundwater from approximately 500 feet of six-inch perforated PVC collection pipe, nominally four feet beneath the invert of the main north asphalt swale. One manhole at mid-section and a PVC riser at the origin of the system provide access to the PVC pipe for cleaning. Water collected in this sump is pumped through a two-inch force main, into the four-inch water treatment plant (WTP) recirculation force main with final discharge into Tanks T-1101 and T-1102.

Sump 3 (WSI Underdrain)

Sump 3 collects groundwater from the overburden and upper bedrock through approximately 1,200 feet of perforated PVC collection pipes located beneath the base of the WSI. The underdrain relieves hydrostatic uplift pressure on the WSI liner. Water collected in this sump (and from Sump 1) is pumped through a two-inch force main into the four-inch WTP force main with eventual discharge into Tanks T-1101 and T-1102.

Sump 4 (Swale Underdrain #2)

Sump 4 collects groundwater from approximately 1,000 feet of six-inch perforated PVC collection pipe nominally four feet beneath the invert of the main north swale west of the Central Surface Impoundment (CSI). Two north/south laterals are included in this system. PVC riser cleanouts are provided for pipe access. Water collected in this sump is pumped through a two-inch aboveground force main into the sump pit at Tanks T-1101 and T-1102.

Sump 5 (Building 67 Swale Underdrain)

Sump 5 collects groundwater from approximately 200 feet of shallow buried collection pipe along the former Building 67. Collected water is pumped to Tanks T-1101 and T-1102.

Sump 6 (Raymond Mill Underdrain)

Sump 6 receives both groundwater from underdrains and surface water runoff from a swale/drain system. The approximately 1,200 feet of perforated PVC underdrain are located along rail spur #2 to collect water that infiltrates through the rail spur bedding material east of Building 26. Collected water is pumped to Tanks T-1101 and T-1102 through a two-inch forcemain.

Sump 7 (South CSI Interceptor)

Sump 7 collects groundwater from a 300 foot long railroad spur line underdrain between buildings 65 and 72 and approximately 285 feet of 6-inch diameter perforated PVC collection pipe, nominally four feet beneath the invert of the swales running along the southwest and south boundary of the former CSI. Collected water is pumped to Tanks T-1101 and T-1102 through a four-inch PVC force main.

Sump 8 (Rail Unloading Underdrain)

Sump 8 collects surface water from an open gravel trench along the railroad spur No. 4 located on the west side of Building 72. Collected water is pumped directly to Tank T-8100.

Sump 9 (Building 72 Loading Dock Surface Drain)

Sump 9 collects groundwater and surface water from a concrete trench and steel grate at the base of the the truck loading dock. Water is pumped to directly to Tank T-8100.

Sump 10 (East Pad)

Sump 10 collects surface water from the concrete pad east of Building 70. Water from the upper portion of the Building 70 roof is also directed to this location. Water is pumped directly into Tank T-8100.

Sump 11 (Building 70 Manhole)

Sump 11 collects groundwater from a 150 foot long collection pipe installed at the base of the gravel slope to the east of Building 70. Water is pumped directly into Tank T-8100.

Sump 12 (Building 70 North Pad)

Sump 12 collects surface water and roof runoff water from limited portion of Bldg 70 northeastern side and distillate from the Calfran Unit. Water is pumped directly into Tank T-8100.

Sump 13 (Evaporator Pad Swale Underdrain)

Sump13 collects groundwater and surface water runoff from approximately 150 feet of shallow buried collection pipe (along Bldg 22) and trench drain between Buildings 22 and 104. Collected water is pumped directly to the groundwater storage tanks.

Sump 14 (Boiler House Sump)

Sump 14, located in the basement of the boiler house, collects groundwater from collection pipes located around the perimeter of the boiler house foundation. Water is pumped to the groundwater storage tanks.

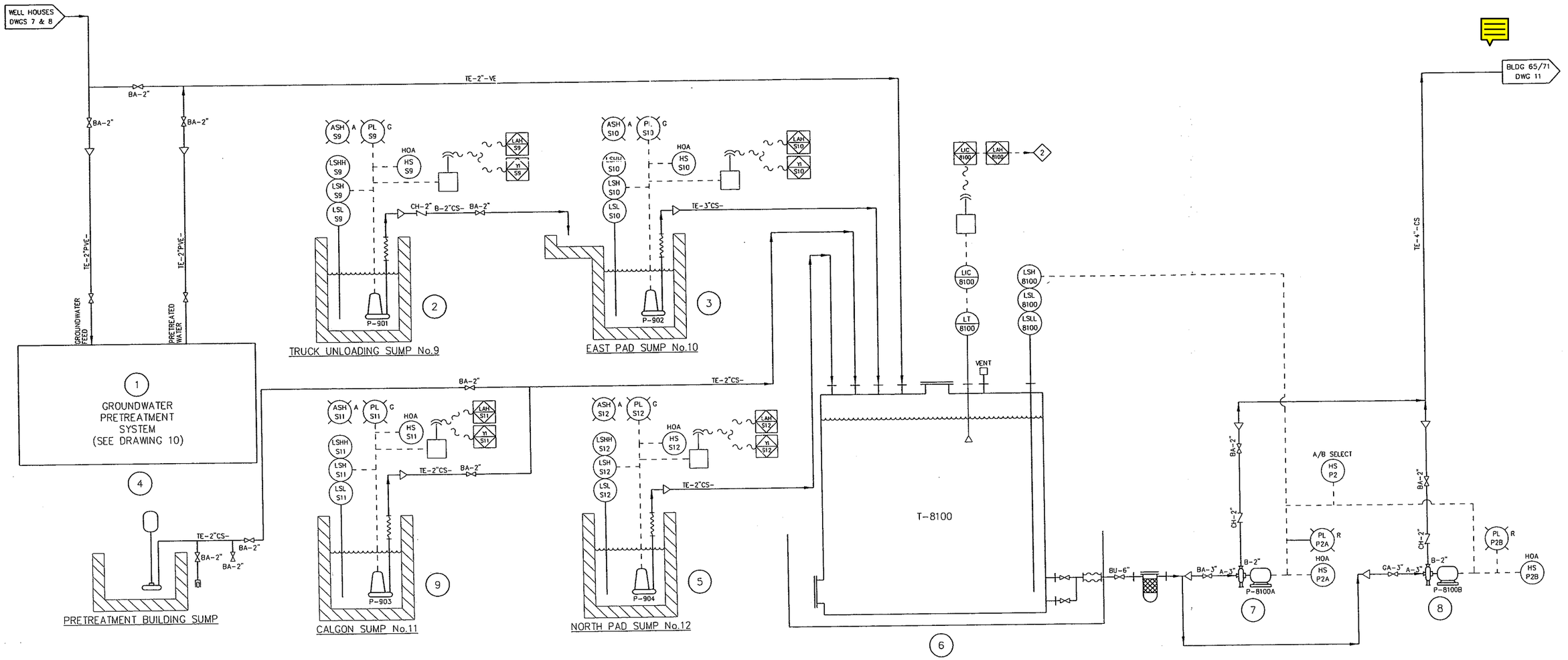
Sump 15 (North CSI Swale Underdrain #3)

Sump 15 collects groundwater from approximately 200 feet of 6-inch diameter perforated PVC collection pipe nominally 4 feet beneath the invert of the main north swale running along the northern boundary of the former CSI. The collected water is pumped through a 2-inch diameter force main which runs along the eastern edge of the former CSI to the main four inch diameter force main in the area of Sump 7.

Sump 16 (Building 65/71 Underdrain)

Sump 16 collects groundwater from approximately 250 feet of a filter fabric wrapped 6-inch diameter HDPE pipe installed 1 to 2 feet below the surface grade within the trench drain and asphalt liner line swale located to the south of Buildings 65 and 71. Water is collected in a sump and transferred through a force main directly to the groundwater storage tanks.

Attachment 1: Process and Instrumentation Diagrams
Attachment 2: Collection Sumps Equipment List



PLANT ID.	P-7413 (1)	P-901 (2)	P-902 (3)	P-7163 (4)	P-904 (5)	T-8100 (6)	P-8100A (7)	P-8100B (8)	P-903 (9)
NAME	PRETREATMENT (CALGON) BUILDING	TRUCK UNLOADING SUMP PUMP	EAST PAD SUMP PUMP	PRETREATMENT BUILDING SUMP PUMP	NORTH PAD PUMP	GROUNDWATER HOLDING TANK	GROUNDWATER TRANSFER PUMP	GROUNDWATER TRANSFER PUMP	CALGON SUMP PUMP
MATERIAL		CI				304 SS	CI	CI	
SIZE						17'-6" DIA x	3x2-6.2"	3x2-6.2"	
CAPACITY		200 GPM @ 10' TDH	150 GPM @ 60' TDH		150 GPM @ 60' TDH	43000 GALLONS			
TEMP/PRESS									
HP/V/RPM		1.5/	7.5/		7.5/		15/460	15/460	
WEIGHT									
MANUFACTURER							WORTHINGTON	WORTHINGTON	GOULDS
MODEL							824	824	GL885 WE1034H
VENDOR									

DESCRIPTION

NO.	DESCRIPTION	MADE BY	APPR. BY	DATE
0	GENERAL REVISION	BAB		12/00

REVISIONS

CONESTOGA-ROVERS & ASSOCIATES

DRAWN BY B.A. BEEBE	FMC, INC. MIDDLEPORT, NEW YORK
DATE 3/25/00	
DESIGNED BY M. LASCHINGER	DWG. 9981-EF-02 SHT.
DATE 3/25/00	
APPROVED BY	SURFACE AND GROUNDWATER COLLECTION ENGINEERING FLOW DIAGRAM
DATE	

CITY:SYRACUSE-NY DIVGROUP:141 DB:SDLKFS KLS LD: PIC: PM:DRG TM:JLONZANIDA LYR:ON=*;OFF=*REF* G:\ENVCAD\SYRACUSE\ACTIB\037708\0000\00203\DWG\WTP\37708D06.DWG LAYOUT: 9SAVED: 7/23/2008 8:13 AM ACADVER: 17.0S (LMS TECH)PAGESETUP: ---PLOTSTYLETABLE: PLTCONT1.CTBPLOTTED: 1/8/2009 3:17 PM BY: DECLERCQ, BRIAN

XREFS: 37706X00
IMAGES:
PROJECTNAME: ---

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No.	Date	Revisions	By	Ckd

Professional Engineer's Name		
DAVID R. GERBER		
Professional Engineer's No.		
073001		
State	Date Signed	Project Mgr.
NY		TEM
Designed by	Drawn by	Checked by
MMP	GMS	

ARCADIS

ARCADIS OF NEW YORK, INC.

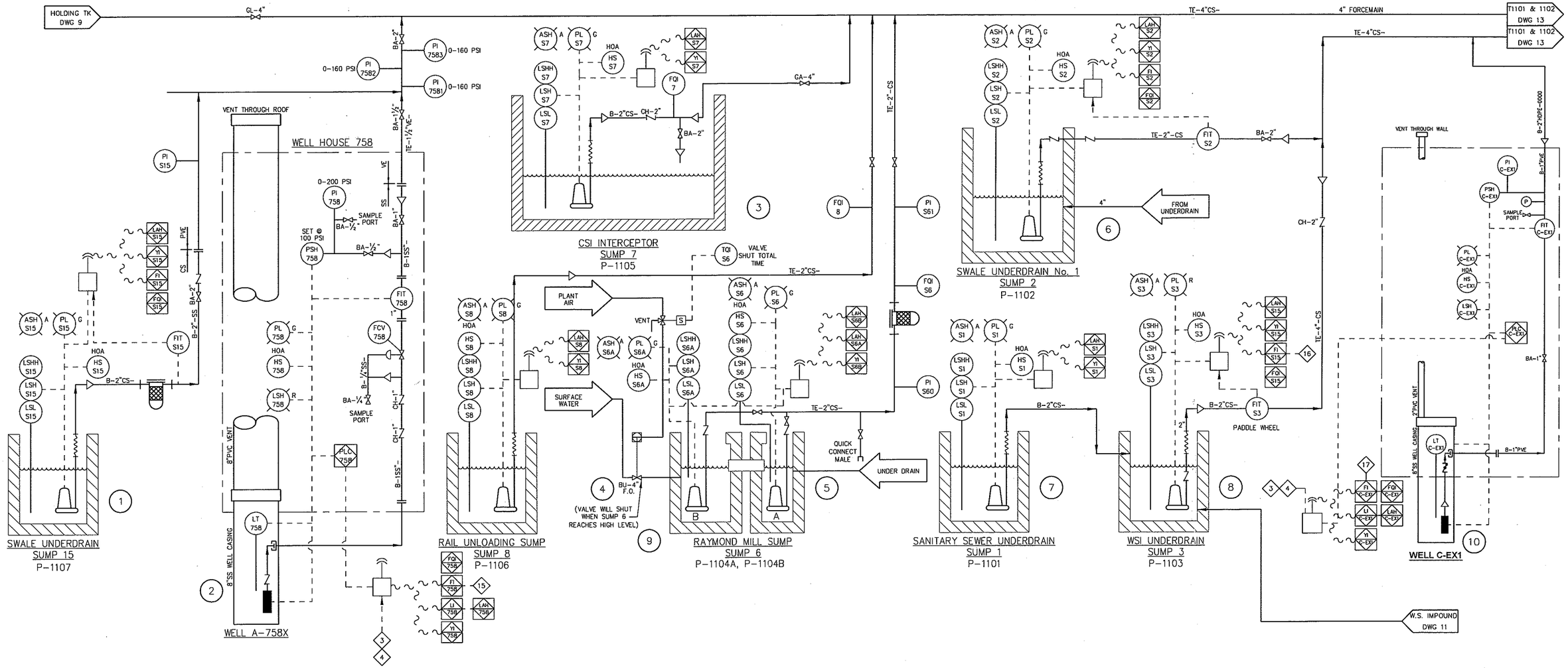
FMC CORPORATION • MIDDLEPORT, NEW YORK
WATER TREATMENT PLANT UPGRADE

SUMPS AND TANK T-8100 PIPING AND INSTRUMENTATION DIAGRAM

MECHANICAL

ARCADIS Project No.	37706.0000.00203
Date	JULY 2008
ARCADIS	6723 TOWPATH ROAD SYRACUSE, N.Y., 13215 TEL. 315.446.9120

9



PLANT ID.	P-1015 (1)	P758 (2)	PUMP 7 (3)	PUMP 8 (4)	PUMP 6 (5)	P-1002 (6)	P-1001 (7)	P-1008 (8)	PUMP 6A (9)	(10)
NAME	SWALE UNDERDRAIN SUMP PUMP	WELL A-758X PUMP	CSI INTERCEPTOR SUMP PUMP	RAIL UNLOADING SUMP PUMP	RAYMOND MILL SUMP PUMP A	SWALE UNDERDRAIN SUMP PUMP	SANITARY SEWER SUMP PUMP	WSI UNDERDRAIN SUMP PUMP	RAYMOND MILL SUMP PUMP B	WELL C-EX1
MATERIAL		SS						CI		SS
SIZE		4"								4"
CAPACITY		5 GPM @ 270'		20 GPM @ 50'	40 GPM @ 80'			40 GPM @ 80'	40 GPM @ 80'	5 GPM @ 150'
TEMP./PRESS										
HP/V/RPM		.5/230/3450		1.5/230/3450	1.5/230/3450			1.5/230/3450	1.5/230/3450	.5/230/3450
WEIGHT										
MANUFACTURER		RED JACKET			GOULDS			GOULDS	GOULDS	RED JACKET
MODEL		50CNSWI-CNS17AE			3885 WE1534HH			3885 WE1534HH	3885 WE1534HH	50F2116S17
VENDOR										

NO.	DESCRIPTION	DATE
0	GENERAL REVISION	BAB 3/25

REVISIONS

CONESTOGA-ROVERS & ASSOCIATES

DRAWN BY B.A. BEEBE DATE 3/25/00
DESIGNED BY M. LASCHINGER DATE 3/25/00
APPROVED BY ..... DATE .....

FMC, INC.
MIDDLEPORT, NEW YORK
DWG. 9981-EF-03 SHT.
SURFACE AND GROUNDWATER COLLECTION ENGINEERING FLOW DIAGRAM

CITY:SYRACUSE-NY DIV/GROUP:141 DB:GMS BGP KLS LD: PIC: PM:DRG TM:JLONZANIDA LYR:ON=*;OFF=*REF* G:\ENVCAD\SYRACUSE\ACTIB\0037706\0000\00203\DWG\WTP\37706D07.DWG LAYOUT: 11SAVED: 1/8/2009 11:14 AM ACADVER: 17.0S (LMS TECH) PAGESETUP: ----PLOTSTYLETABLE: PLTCONT1.CTB PLOTTED: 1/8/2009 3:18 PM BY: DECLERCQ, BRIAN
XREFS: 37706X00 IMAGES: PROJECTNAME: ----

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No.	Date	Revisions	By	Ckd

Professional Engineer's Name: DAVID R. GERBER
Professional Engineer's No.: 073001
State: NY | Date Signed: | Project Mgr.: TEM
Designed by: MMP | Drawn by: GMS | Checked by:

ARCADIS
ARCADIS OF NEW YORK, INC.

FMC CORPORATION • MIDDLEPORT, NEW YORK
WATER TREATMENT PLANT UPGRADE

EXTRACTION WELL AND SUMPS PIPING AND INSTRUMENTATION DIAGRAM

MECHANICAL

ARCADIS Project No. 37706.0000.00203
Date JULY 2008

ARCADIS
6723 TOWPATH ROAD
SYRACUSE, N.Y., 13215
TEL. 315.446.9120

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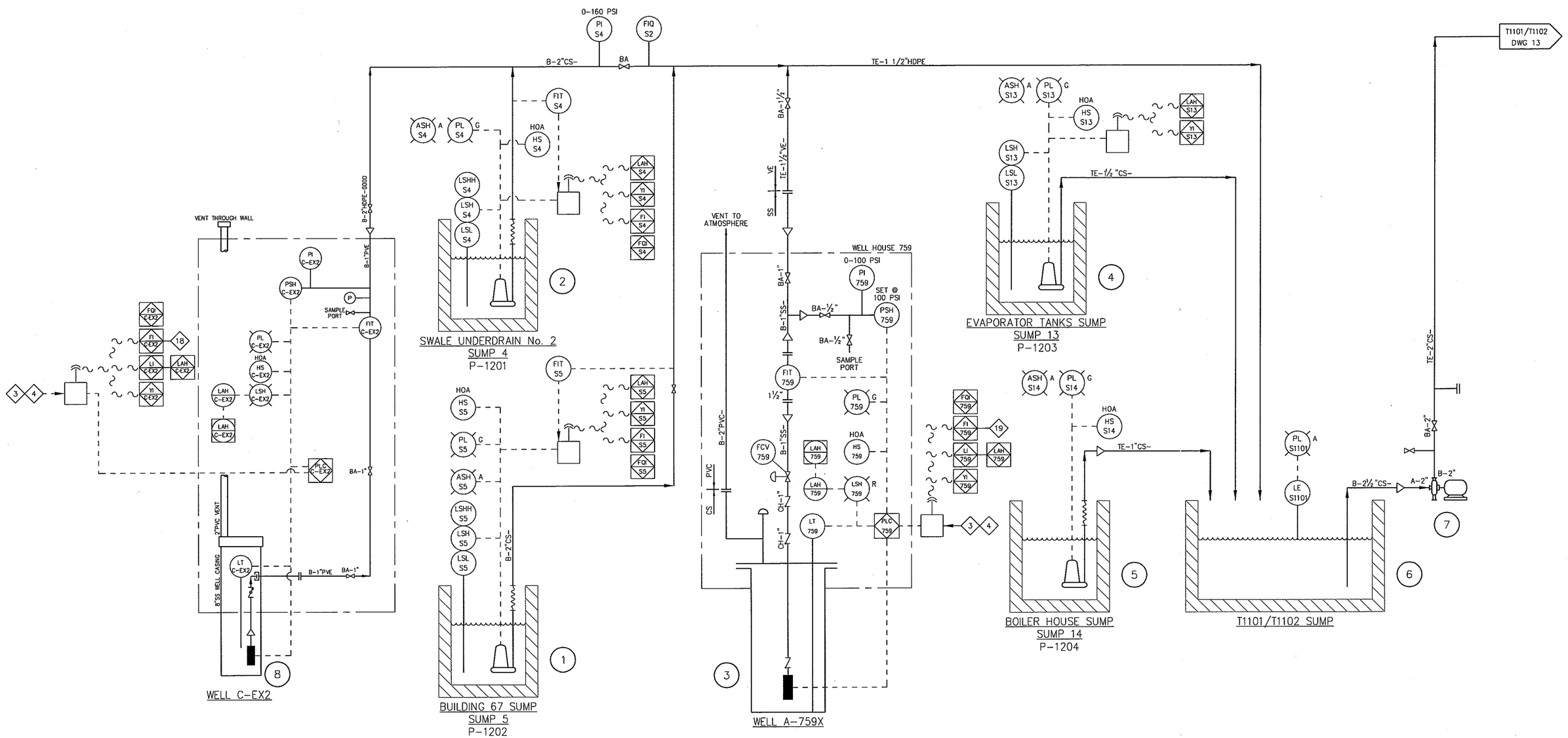

PLANT ID.	P-1005 (1)	P-1004 (2)	(3)	PUMP 13 (4)	PUMP 14 (5)	(6)	(7)	(8)
NAME	BUILDING 67 SUMP PUMP	SWALE UNDERDRAIN No. 2	WELL A-759X PUMP	EVAPORATOR TANKS SUMP PUMP	BOILER HOUSE SUMP PUMP	T1101/T1102 SUMP	T1101/T1102 SUMP PUMP	WELL C-EX2
DESCRIPTION: MATERIAL			SS					SS
SIZE			4"					4"
CAPACITY			18 GPM @ 100'					5 GPM @ 150'
TEMP/PRESS								
HP/V/RPM			.75/230/3450				7.5/460/1745	.5/230/3450
WEIGHT								
MANUFACTURER			RED JACKET				GALIGHER	RED JACKET
MODEL			75SESWL-6SCC				2SA2-5100X60	50F2116S17
VENDOR								

REVISIONS			
NO.	DESCRIPTION	MADE BY	DATE
0	GENERAL REVISION	BAB	3/25

CONESTOGA-ROVERS & ASSOCIATES

DRAWN BY B.A. BEEBE DATE 3/25/00
DESIGNED BY M. LASCHINGER DATE 3/25/00
APPROVED BY
DATE

FMC, INC.
MIDDLEPORT, NEW YORK

DWG. 9981-EF-04 SHT.

SURFACE AND GROUNDWATER COLLECTION ENGINEERING FLOW DIAGRAM

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No.	Date	Revisions	By	Ckd

Professional Engineer's Name: DAVID R. GERBER
Professional Engineer's No.: 073001
State: NY | Date Signed | Project Mgr.: TEM
Designed by: MMP | Drawn by: GMS | Checked by

ARCADIS
ARCADIS OF NEW YORK, INC.

FMC CORPORATION • MIDDLEPORT, NEW YORK
WATER TREATMENT PLANT UPGRADE

EXTRACTION WELLS AND SUMPS PIPING AND INSTRUMENTATION DIAGRAM

MECHANICAL

ARCADIS Project No. 37706.0000.00203
Date JULY 2008

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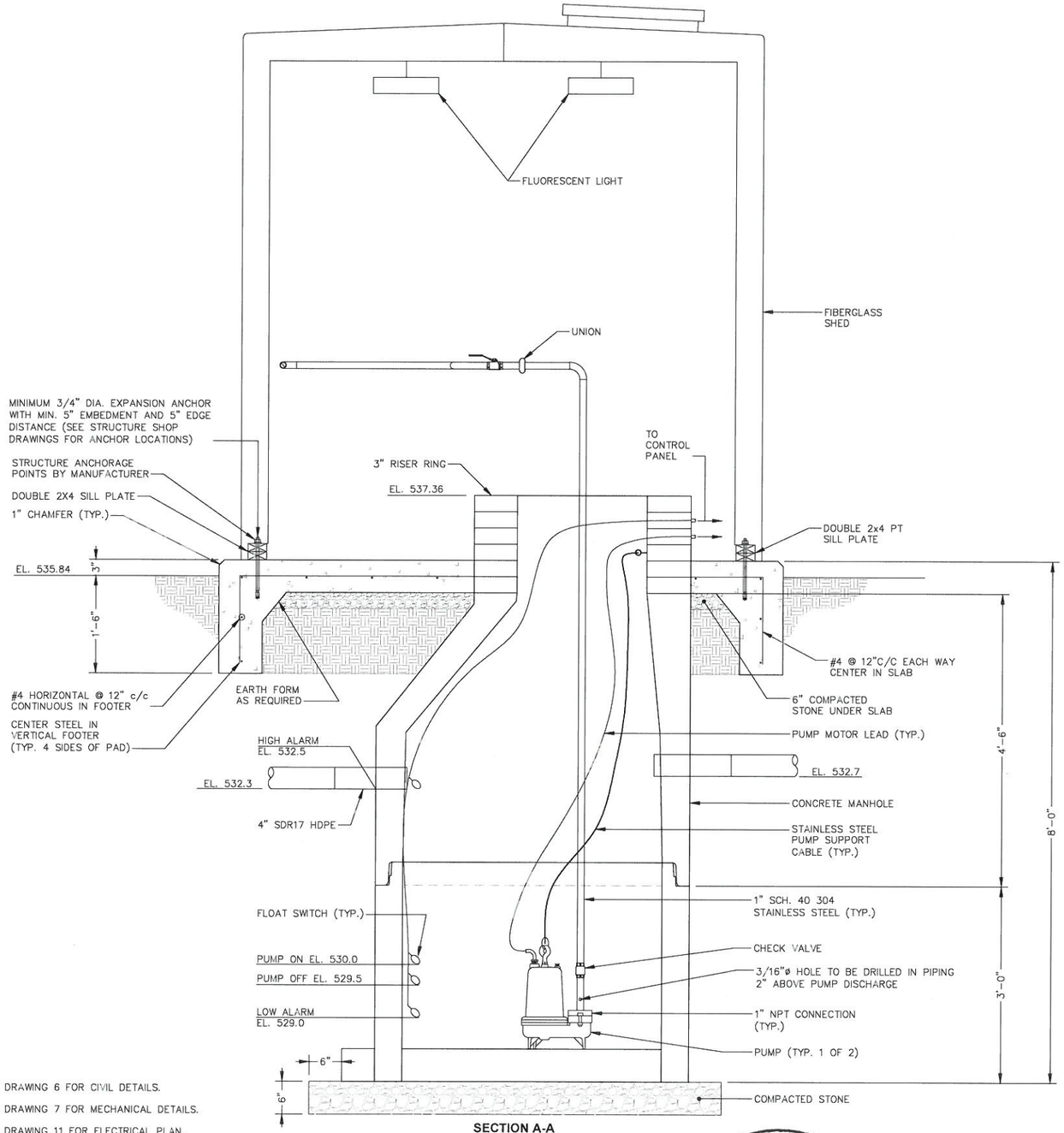


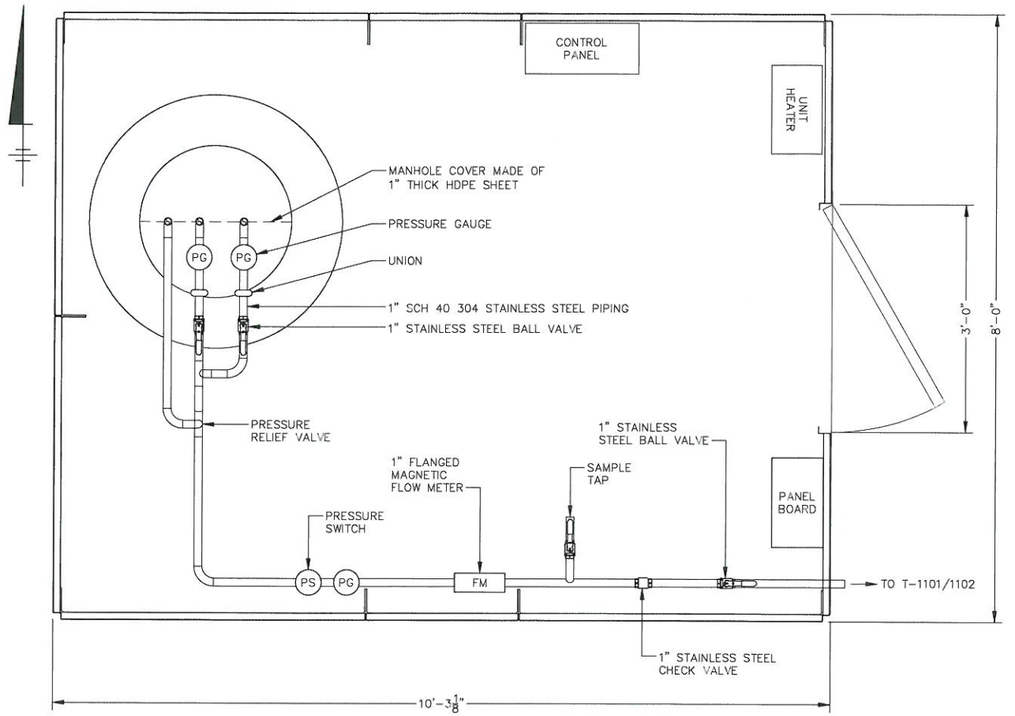
SECTION A-A

COLLECTION SUMP PROFILE 1

SCALE: 1"=1'-0"

NOTES:

1. SEE DRAWING 6 FOR CIVIL DETAILS.
2. SEE DRAWING 7 FOR MECHANICAL DETAILS.
3. SEE DRAWING 11 FOR ELECTRICAL PLAN.



COLLECTION SUMP PLAN 2

SCALE: 1"=1'-0"

RECORD DRAWINGS
TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.
DATE 6/9/14 BY Joseph Molinatt

CITY: SYRACUSE, NY DIVGROUP: ENVCADD DB: P. LISTER, S.BELL LD: P. LISTER PM: T.YOUNG TM/TR: M.RYCHTECKA LYR:ON="OFF"REF"
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XREFS: 37771X00 IMAGES:

SCALE(S) AS INDICATED

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No.	Date	Revisions	By	Ckd

Professional Engineer's Name: JOSEPH MOLINA III
Professional Engineer's No.: 072644
State: NY | Date Signed: 6/9/14 | Project Mgr: DAW
Designed by: SAB | Drawn by: BKD | Checked by: TEM

ARCADIS
ARCADIS OF NEW YORK, INC.

FMC CORPORATION • MIDDLEPORT, NEW YORK
BUILDINGS 65 AND 71 UNDERDRAIN SYSTEM

COLLECTION SUMP MECHANICAL PLAN AND PROFILE

ARCADIS Project No.: B0037780.0000.00006
Date: JUNE 2014

ARCADIS
6723 TOWPATH RD
PO BOX 66
SYRACUSE, NY 13214-0066
TEL. 315.446.9120

5

Device ID	Type	Location	Manufacturer	Model
P-1101	Submersible Pump	Sanitary Sewer Underdrain Sump 1	Goulds	WE 1534HH (460V 3^{o})
Sump 1	Radio	Sanitary Sewer Underdrain Sump 1	Elpro	905U-K (output only 2 digital, 1 analog)
P-1102	Submersible Pump	Swale Underdrain No. 1 Sump 2	Goulds	WE 1534HH (460V 3^{o})
FIT-S2	Flow Indicating Transm	Swale Underdrain No. 1 Sump 2	Badger	current model "PRIMO" replace with M2000
Sump 2	Radio	Swale Underdrain No. 1 Sump 2	Elpro	905U-K (output only 2 digital, 1 analog)
P-1103	Submersible Pump	WSI Underdrain Sump 3	Goulds	WE 1534HH (460V 3^{o})
FIT-S3	Flow Indicating Transm	WSI Underdrain Sump 3	Badger	M2000
Sump 3	Radio	WSI Underdrain Sump 3	Elpro	905U-K (output only 2 digital, 1 analog)
P-1201	Submersible Pump	Swale Underdrain No. 2 Sump 4	Goulds	WE1512HH [230V-1^{o} (1.5hp)]
FIT-S4	Flow Indicating Transm	Swale Underdrain No. 2 Sump 4	Badger	current model "PRIMO" replace with M2000
Sump 4	Radio	Swale Underdrain No. 2 Sump 4	Elpro	905U-K (output only 2 digital, 1 analog)
P-1202	Submersible Pump	Building 67 Sump 5	Goulds	WE1012HE
FIT-S5	Flow Indicating Transm	Building 67 Sump 5	Badger	current model "PRIMO" replace with M2000
Sump 5	Radio	Building 67 Sump 5	Elpro	905U-K (output only 2 digital, 1 analog)
PI-S5	Pressure Indicator	Building 67 Sump 5	Ashcroft	0-160 PSI
P-1104A	Submersible Pump	Raymond Mill Sump 6	Goulds	WE 1534HH (40GPM@80' TDH 230V-1^{o} (1.5hp))
P-1104B	Submersible Pump	Raymond Mill Sump 6	Goulds	WE 1534HH (40GPM@80' TDH 230V-1^{o} (1.5hp))
Sump 6	Radio	Sanitary Sewer Underdrain Sump 6	Elpro	905U-K (output only 2 digital, 1 analog)
P-1105	Submersible Pump	CSI Interceptor Sump 7	Goulds	230V-1^{o} (1.5hp)
Sump 7	Radio	CSI Interceptor Sump 7	Elpro	905U-K (output only 2 digital, 1 analog)
P-1106	Submersible Pump	Rail Unloading Sump 8	Goulds	20GPM@50' TDH 230V-1o (1.5hp)
Sump 8	Radio	Rail Unloading Sump 8	Elpro	905U-K (output only 2 digital, 1 analog)
P-901	Submersible Pump	Truck Unloading Sump 9	Goulds	200GPM@10' TDH 230V-1o (1.5hp)
Sump 9	Radio	Rail Unloading Sump 9	Elpro	905U-K (output only 2 digital, 1 analog)
P-902	Submersible Pump	East Pad Sump 10	Little Giant	150GPM@80' TDH 230V-1o (7.5hp)
Sump 10	Radio	Sanitary Sewer Underdrain Sump 10	Elpro	905U-K (output only 2 digital, 1 analog)
P-903	Submersible Pump	Calgon Sump 11	Goulds	150GPM@80' TDH 230V-1o (7.5hp)
Sump 11	Radio	Sanitary Sewer Underdrain Sump 11	Elpro	905U-K (output only 2 digital, 1 analog)
P-904	Submersible Pump	North Pad Sump 12	Goulds	150GPM@60' TDH 230V-1o (7.5hp)
Sump 12	Radio	Sanitary Sewer Underdrain Sump 12	Elpro	905U-K (output only 2 digital, 1 analog)
P-1203	Submersible Pump	Evaporator Tanks Sump 13	Zoeller	150GPM@60' TDH 230V-1o (7.5hp)
P-1204	Submersible Pump	Boiler House Sump 14		150GPM@60' TDH 230V-1o (7.5hp)
P-1107	Submersible Pump	Swale Underdrain Sump15	Goulds	WE 1534HH (40GPM@80' TDH 230V-1^{o} (1.5hp))
FIT-S15	Flow Indicating Transm	Swale Underdrain Sump15	Badger	current model "PRIMO" replace with M2000
Sump 15	Radio	Swale Underdrain Sump15	Elpro	905U-K (output only 2 digital, 1 analog)

rev Sept 27, 2016

Device ID	Type	Location	Manufacturer	Model
P-101	Submersible Pump	Swale Underdrain Sump 16	Goulds	WE1012H (230V, 1°, 1HP)
PI-101	Pressure Indicator	Swale Underdrain Sump 16	DuroUnited Instruments	0-60 PSI
P-102	Submersible Pump	Swale Underdrain Sump 16	Goulds	WE1012B (230V, 1°, 1HP)
PSH-101	Pressure Switch	Swale Underdrain Sump 16	Ashcroft	B450B XPX (60 psi)
FIT-101	Flow Indicating Transm	Swale Underdrain Sump 16	Badger	Model 2000
Heat Trace	Heat Trace	Swale Underdrain Sump 16	TYCO Thermal Controls	Digitrace JB3-100-ECP-a

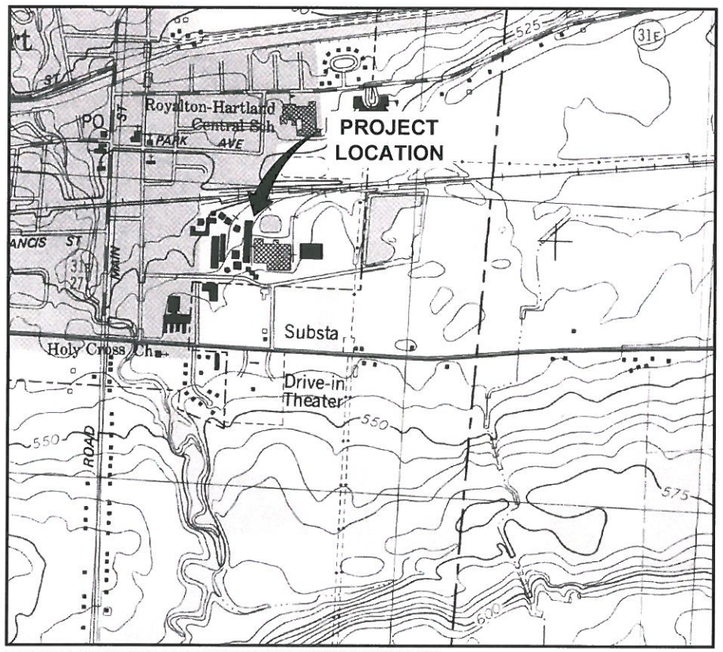
rev Sept 27, 2016

APPENDIX B
STORM WATER ATTENUATION STRUCTURES AS-BUILT DRAWINGS

PARSONS

RECORD DRAWINGS

STORMWATER ATTENUATION STRUCTURE CONSTRUCTION AND MODIFICATION



REFERENCE: BASE MAP USGS 7.5 MINUTE QUADRANGLE., MEDINA, NEW YORK, 1980.

LOCATION MAP
0 1000' 2000'
GRAPHIC SCALE

DATE ISSUED
JUNE 2014

FMC CORPORATION
MIDDLEPORT, NEW YORK

ARCADIS

ARCADIS OF NEW YORK, INC.

RECORD DRAWINGS
TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.

DATE 6/9/14 BY Joseph Molina III

INDEX TO DRAWINGS

XREFS: 37780X00 37780X03
IMAGES:

REFER TO DRAWING 2

MAIN ASPHALT-LINED SWALE

REFER TO DRAWING 3

WESTERN SURFACE IMPOUNDMENT (WSI)

TANK T-1102

TANK T-1101

WATER TREAT. PLANT

OFFICES

GUARD HOUSE

LEGEND:

- APPROXIMATE LIMITS OF WSI WATERSHED
- EXISTING SWALE/TRENCH DRAIN
- BURIED CULVERT

NOTES:

1. DRAWING INFORMATION BASED ON APRIL 16, 2002 AERIAL SURVEY PROVIDED BY ABRAMS AERIAL SURVEY CORPORATION AND FIELD SURVEY PERFORMED BY MCINTOSH AND MCINTOSH, P.C. DATED: NOVEMBER 13, 2003, APRIL 7, 2005, AND NOVEMBER 2, 2009, AND OCTOBER 15, 2012.
2. NOT ALL EXISTING SITE FEATURES ARE SHOWN (ABOVE GROUND AND BELOW GROUND). LOCATIONS OF ALL UTILITIES ARE APPROXIMATE.

RECORD DRAWINGS
TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.
DATE 6/9/14 BY Joseph Molina III

100' 0 100' 200'
1"=100'

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No.	Date	Revisions	By	Ckd

Professional Engineer's Name: JOSEPH MOLINA III
Professional Engineer's No.: 072644
State: NY | Date Signed: 6/9/14 | Project Mgr: DAW
Designed by: MR | Drawn by: AGS | Checked by: MBH

STATE OF NEW YORK JOSEPH MOLINA III 072644 PROFESSIONAL ENGINEER

ARCADIS
ARCADIS OF NEW YORK, INC.

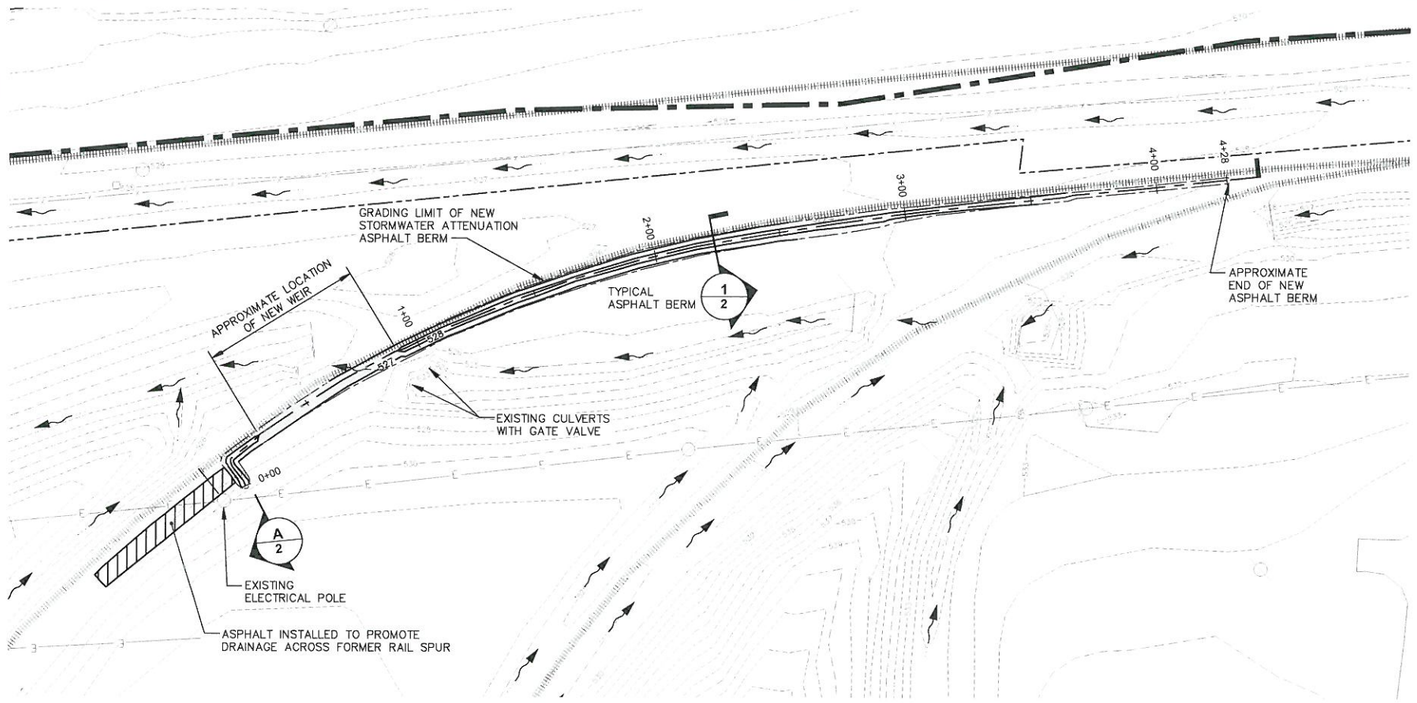
FMC CORPORATION • MIDDLEPORT, NEW YORK
STORMWATER ATTENUATION STRUCTURE CONSTRUCTION AND MODIFICATION

OVERALL SITE PLAN

ARCADIS Project No.
B0037780.0000.00006
Date
JUNE 2014

ARCADIS
6723 TOWPATH RD
PO BOX 66
SYRACUSE, NEW YORK
TEL. 315.446.9120

1



STORMWATER ATTENUATION BERM PLAN

0 30' 60'

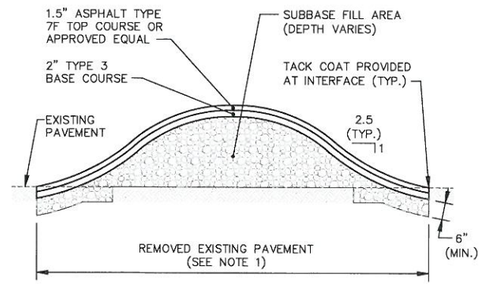
SCALE: 1"=30'

LEGEND:

- EDGE OF PAVEMENT
- EXISTING CONTOUR (1 FOOT INTERVAL)
- APPROXIMATE LIMITS OF WSI WATERSHED
- EXISTING SWALE/TRENCH DRAIN
- CENTERLINE OF NEW BERM AND STATIONING (1+00)
- NEW ASPHALT BERM
- NEW ASPHALT FILL AREA

NOTES:

1. REFER TO DRAWING 1 FOR ADDITIONAL BASEMAP INFORMATION.
2. NOT ALL EXISTING SITE FEATURES ARE SHOWN (ABOVE GROUND AND BELOW GROUND). LOCATIONS OF ALL UTILITIES ARE APPROXIMATE.

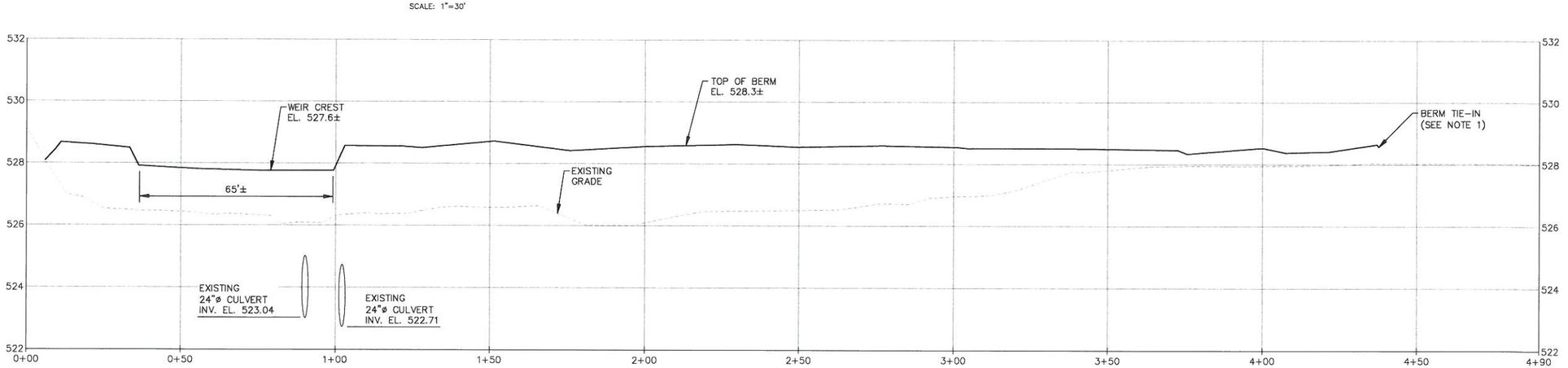


NOTE:

1. EXISTING PAVEMENT WAS MILLED AND RE-USED AS SUBBASE MATERIAL.

TYPICAL ASPHALT BERM (1)

NOT TO SCALE



NOTE:

1. ASPHALT BERM TIED-IN WITH EXISTING GRADE, WHICH VARIED SLIGHTLY FROM THE PROFILE EXISTING GRADE INTERPOLATED ABOVE.

STORMWATER ATTENUATION STRUCTURE PROFILE (A)

0 20' 40'

SCALE: 1"=20'
(10X VERTICAL EXAGGERATION)

RECORD DRAWINGS
TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.
DATE 6/9/14 BY Joseph Molina III

SCALE(S) AS INDICATED

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING — USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd

Professional Engineer's Name: JOSEPH MOLINA III
Professional Engineer's No.: 072644
State: NY | Date Signed: 6/9/14 | Project Mgr: DAW
Designed by: MR | Drawn by: AGS | Checked by: MBH

ARCADIS
ARCADIS OF NEW YORK, INC.

FMC CORPORATION • MIDDLEPORT, NEW YORK
STORMWATER ATTENUATION STRUCTURE CONSTRUCTION AND MODIFICATION

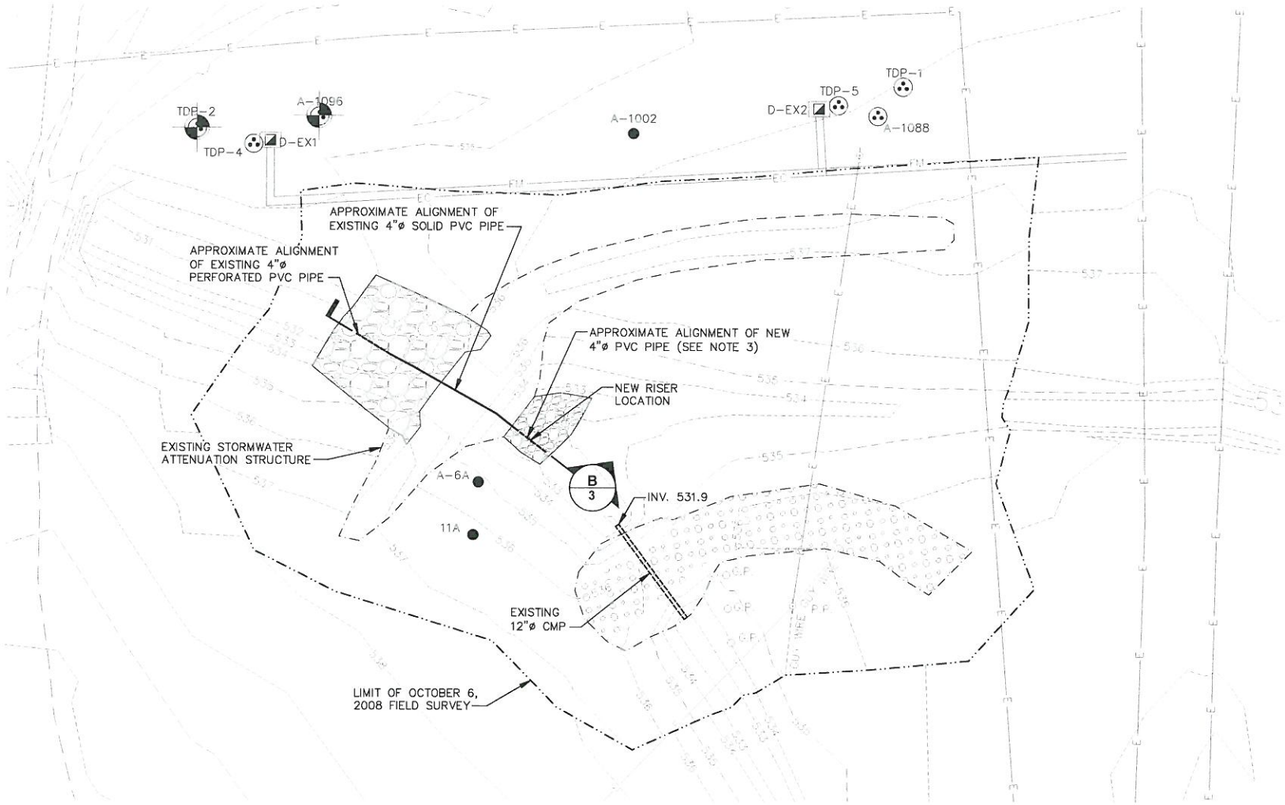
STORMWATER ATTENUATION BERM CONSTRUCTION

ARCADIS Project No.: B0037780.0000.00006
Date: JUNE 2014

ARCADIS
6723 TOWPATH RD
PO BOX 66
SYRACUSE, NEW YORK
TEL. 315.446.9120

2

CITY: SYRACUSE, NY DIV/GROUP: ENVCAD DB: A. SAMIOS PIC: S. COX PM: D. WRIGHT TM: D. WRIGHT LYR:ON=*; OFF=*REF*
G:\ENVCAD\SYRACUSE\ACTIB0037780\0000000006\DWG\STORMWATERRECORD\37780G02.dwg LAYOUT: 2 SAVED: 6/5/2014 12:49 PM ACADVER: 18.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTCONT1.CTB PLOTTED: 6/5/2014 12:50 PM BY: SAMIOS, ALEX
XREFS: 37780X00 37780X02 37780X03 37780X07
IMAGES:



EXISTING STORMWATER ATTENUATION STRUCTURE WITH NEW RISER

0 20' 40'

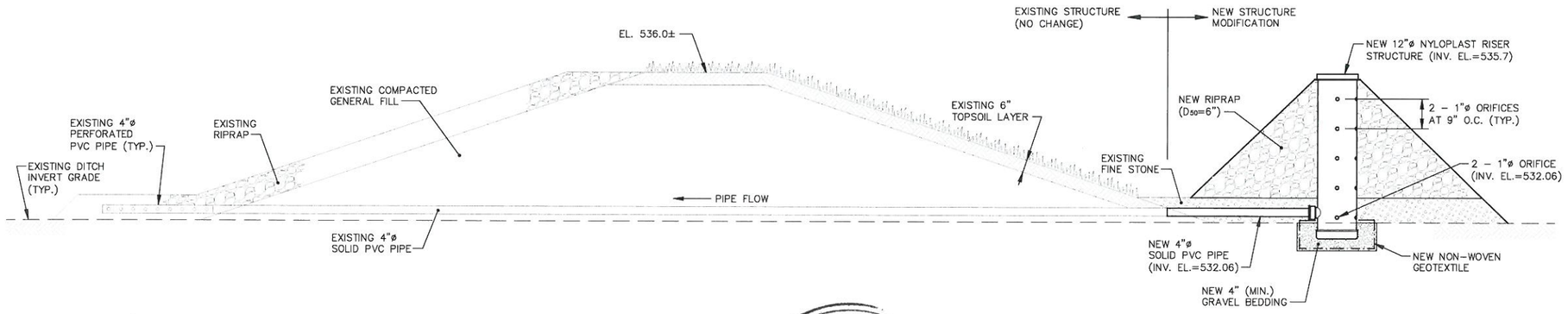
SCALE: 1"=20'

LEGEND:

- PROPERTY LINE
- EXISTING GRADE INDEX CONTOUR
- EXISTING GRADE INTERMEDIATE CONTOUR
- OVERHEAD UTILITY AND POLE
- ABOVEGROUND FORCEMAIN
- ABOVEGROUND ELECTRICAL CONDUIT
- PUMP HOUSE
- SHALLOW BEDROCK MONITORING WELL
- OVERBURDEN MONITORING WELL
- DEEP BEDROCK MONITORING WELL
- EXTRACTION WELL
- SHALLOW BEDROCK PIEZOMETER
- OVERBURDEN PIEZOMETER
- DEEP BEDROCK PIEZOMETER
- APPROXIMATE LIMIT OF EXISTING RIPRAP
- APPROXIMATE LIMIT OF EXISTING STONE
- APPROXIMATE LIMIT OF EXISTING GRAVEL

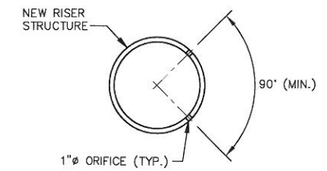
NOTES:

1. BASEMAP INFORMATION SHOWN ON THIS DRAWING WAS COMPILED FROM FIELD SURVEYS PERFORMED BY McINTOSH AND McINTOSH, P.C. DATED SEPTEMBER 18, 1999; MARCH 28, 2001; APRIL 29, 2004; AUGUST 13, 2004; APRIL 7, 2005; AND RECORD DRAWINGS DATED SEPTEMBER 9, 2005 (PHASE 1 ICM AS-BUILT) AND OCTOBER 6, 2008 (REVISED ON FEBRUARY 10, 2009).
2. EXISTING GRADE CONTOUR INTERVAL EQUALS 1 FOOT.
3. EXISTING PERFORATED PIPE SECTION WAS REMOVED AND REPLACED WITH A SOLID 4-INCH DIAMETER PVC PIPE AND RISER STRUCTURE AS SHOWN IN PROFILE B ON THIS DRAWING.



STORMWATER ATTENUATION STRUCTURE RISER PROFILE (B)

NOT TO SCALE



RISER PERFORATION PATTERN (1)

NOT TO SCALE

RECORD DRAWINGS
TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.
DATE 6/9/14 BY Joseph Molina

CITY: SYRACUSE, NY DIV/GROUP: ENVCAD DB: A. SAMIOS PIC: S. COX PM: D. WRIGHT TM: D. WRIGHT LYR:ON=*; OFF=*REF* G:\ENVCAD\SYRACUSE\ACTIB0037780\0000\0006\DWG\STORMWATERRECORD\37780G03.dwg LAYOUT: 3 SAVED: 6/5/2014 12:50 PM ACADVER: 18.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 6/5/2014 12:51 PM BY: SAMIOS, ALEX

XREFS:
37780X00
37780X05
37780X06

IMAGES:

SCALE(S) AS INDICATED

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING: ——— USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd

Professional Engineer's Name: JOSEPH MOLINA III
Professional Engineer's No.: 072644

State	Date Signed	Project Mgr
NY	6/9/14	DAW
Designed by: MR	Drawn by: AGS	Checked by: MBH

ARCADIS
ARCADIS OF NEW YORK, INC.

FMC CORPORATION • MIDDLEPORT, NEW YORK

STORMWATER ATTENUATION STRUCTURE CONSTRUCTION AND MODIFICATION

STORMWATER ATTENUATION STRUCTURE MODIFICATION

ARCADIS Project No.
B0037780.0000.00006

Date
JUNE 2014

ARCADIS
6723 TOWPATH RD
PO BOX 66
SYRACUSE, NEW YORK
TEL. 315.446.9120

3

APPROXIMATE FLOOR EL. 535.0

APPROXIMATE FLOOR EL. 536.5

APPROXIMATE FLOOR EL. 537.0

APPROXIMATE FLOOR EL. 538.5

SEE NOTE 3

SEE NOTE 3

STORMWATER ATTENUATION STRUCTURE

EARTHEN BERM

EXISTING GRAVEL DRIVE

EXTEND EARTHEN BERM END TO EXISTING OR FIELD EL. 537.0 (TYP.)

APPROXIMATE LOCATION OF EXISTING GRASS-LINED DITCHES

ESI FILL AREA

H-2

H-2

EXISTING CULVERT CROSSING TO BE MODIFIED. (SEE NOTE 5)

74

70

12

LEGEND:

- PROPERTY LINE
- RAILROAD
- FENCE
- 545 EXISTING GRADE INDEX CONTOUR
- EXISTING GRADE INTERMEDIATE CONTOUR
- LIMIT OF FIELD SURVEY
- OVERHEAD UTILITY AND POLE
- PUMP HOUSE (SHOWN LARGER FOR CLARITY)
- TEMPORARY FLOOD LIMIT (100-YR EVENT)
- APPROXIMATE LIMIT OF PERMANENT EROSION CONTROL MAT
- APPROXIMATE LIMIT OF TEMPORARY EROSION CONTROL MAT
- APPROXIMATE LIMIT OF RIPRAP
- FM ABOVEGROUND FORCEMAIN
- FM UNDERGROUND FORCEMAIN
- EC ABOVEGROUND ELECTRICAL CONDUIT
- EC UNDERGROUND ELECTRICAL CONDUIT
- SHALLOW BEDROCK MONITORING WELL
- OVERBURDEN MONITORING WELL
- DEEP BEDROCK MONITORING WELL
- EXTRACTION WELL
- SHALLOW BEDROCK PIEZOMETER
- OVERBURDEN PIEZOMETER
- DEEP BEDROCK PIEZOMETER

NOTES:

1. BASEMAP INFORMATION SHOWN ON THIS FIGURE WAS COMPILED FROM FIELD SURVEYS PERFORMED BY McINTOSH AND McINTOSH, P.C. DATED SEPTEMBER 9, 2005 (PHASE 1 ICM AS-BUILT); SEPTEMBER 18, 1999; MARCH 28, 2001; APRIL 29, 2004; AUGUST 13, 2004; AND APRIL 7, 2005.
2. EXISTING CONTOUR INTERVAL EQUALS 1 FOOT.
3. ELECTRICAL LINE IS SHOWN OFFSET FROM THE FORCEMAIN FOR CLARITY PURPOSES. ELECTRICAL LINE RUNS WITHIN CONDUIT, WHICH IS ANCHORED TO THE SUPPORT POSTS FOR THE ABOVEGROUND FORCEMAIN. WHERE FORCEMAIN RUNS UNDERGROUND THE ELECTRICAL LINE RUNS IN A TRENCH ADJACENT TO THE FORCEMAIN.
4. THE CONTRACTOR SHALL VERIFY THE PRESENCE AND LOCATION OF ALL SITE FEATURES RELEVANT TO AND POTENTIALLY TO BE ENCOUNTERED DURING PERFORMANCE OF THIS PROJECT. THE LOCATIONS OF ALL STRUCTURES/UTILITIES SHOWN ARE APPROXIMATE. ADDITIONAL SITE FEATURES MAY BE PRESENT THAT ARE NOT SHOWN ON THE DRAWINGS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE PRESENCE AND LOCATION OF SUCH FEATURES.

5. REFER TO FIGURES 1 AND 2, OF FIELD MODIFICATION No. #2, FOR ADDITIONAL INFORMATION PERTAINING TO THE EXISTING CULVERT CROSSING TO BE MODIFIED.

0 50' 100'
GRAPHIC SCALE

DATE OF FIELD MODIFICATION: 7/11/08

FMC CORPORATION
MIDDLEPORT, NEW YORK
PHASE 2 ICM WORK PLAN

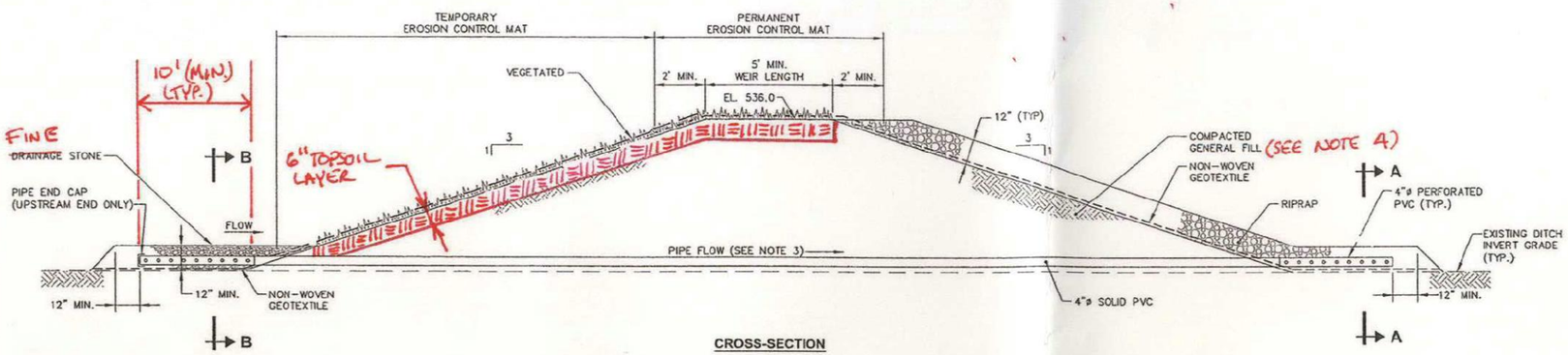
POST-PHASE 1 ICM STORMWATER MANAGEMENT CONTROLS - SITE PLAN

ARCADIS BBL

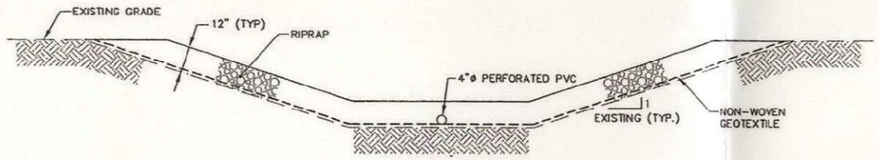
FIGURE
H-1

SYR-BS-RLP GHS BCP LAYER: ON=*, OFF=REF, ICON-INT-HID, X-FILTERSTRIP-HID, IX-HV, IX-NEV_CULVERT-HID
G:\CAD\ACTIVE\-DWG\ACT\37686001\PHASE_2\37686001.DWG SAVED:3/29/2007 4:38 PM LAYOUT:H-1 PAGESETUP:---- PENTABLE:FLTFULL.CTB PRINTED:3/29/2007 4:38 PM BY:BRITTSLEY
PROJECTNAME:----
XREFS: IMAGES:
37686X02

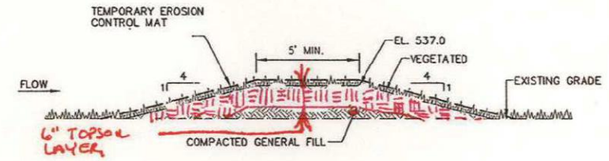
061158



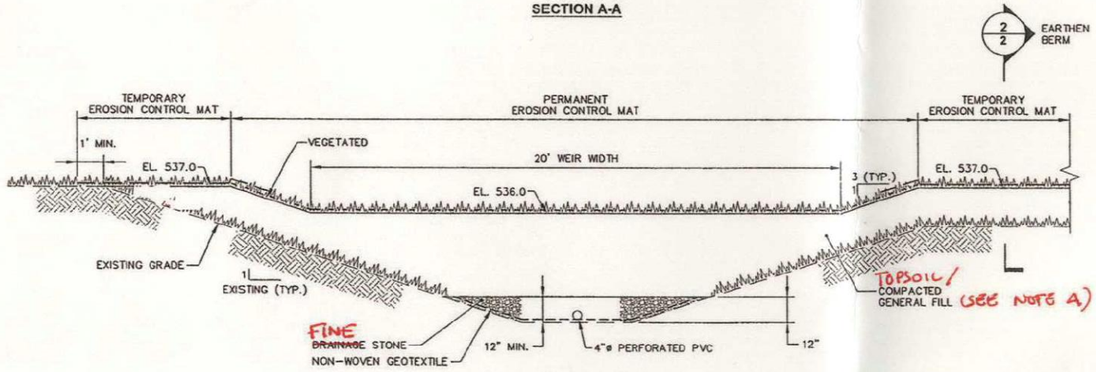
CROSS-SECTION



SECTION A-A



EARTHEN BERM (2)
NOT TO SCALE



SECTION B-B

NOTES:

1. PVC PIPE SHALL BE SCHEDULE 40. ALL CONNECTIONS SHALL BE MADE IN ACCORDANCE WITH PIPE MANUFACTURERS SPECIFICATIONS/RECOMMENDATIONS.
2. PVC PIPE SHALL BE PLACED ON UNIFORM AND STABLE SUBGRADE THAT IS FREE FROM DELETERIOUS OBJECTS THAT COULD CAUSE DAMAGE OR INTERRUPTION IN PIPE SLOPE. BACKFILL ADJACENT TO AND ABOVE PIPE SHALL BE PLACED AND COMPACTED IN A MANNER THAT AVOIDS DAMAGING THE PIPE.
3. PIPE SLOPE SHALL BE EQUAL TO EXISTING DITCH INVERT SLOPE.

4. GENERAL FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT MORE THAN 6 INCHES IN THICKNESS, AND COMPACTED TO OBTAIN 96 PERCENT MAXIMUM DRY DENSITY (STANDARD PROCTOR).

STORMWATER ATTENUATION STRUCTURE (1)

NOT TO SCALE

DATE OF FIELD MODIFICATION: 7/11/08

FMC CORPORATION
MIDDLEPORT, NEW YORK
PHASE 2 ICM WORK PLAN

POST-PHASE 1 ICM STORMWATER MANAGEMENT CONTROLS - SECTIONS AND DETAILS

ARCADIS BBL

FIGURE
H-2

SYR-85-RLP CMS CMS LAYER: ON=*, OFF=*REF*
G:\CAD\ACTIVE\-DWG\ACT\37686003\PHASE_2\37686G02.DWG SAVED:3/28/2007 12:00 PM LAYOUT:H-2 PAGESETUP:---- PENTABLE:PLOTFULL.CTB PRINTED:3/28/2007 12:01 PM BY:ASAMOS
PROJECTNAME:----
XREFS: IMAGES:

APPENDIX C
NORTH SITE COVER INSPECTION FORMS

North Site Cover Area Inspection Form

Inspection Area **1A** Inspection Date _____

Inspector Name _____

A. Clay Soil Cover System	Action Required	
(A1) erosion of soils	yes	no
(A2) bare vegetated areas	yes	no
(A3) ponding of surface water	yes	no
(A4) dead or dying vegetation	yes	no
(A5) weeds or woody growth	yes	no
(A6) animal burrows	yes	no
(A7) sediment buildup	yes	no
(A8) other	yes	no
B. Asphalt Cover System		
(B1) broken, loose, or cracked asphalt	yes	no
(B2) failed sealant	yes	no
(B3) surface course wear/raveling	yes	no
(B4) vegetation growing through asphalt	yes	no
(B5) evidence of seeps	yes	no
(B6) ponding of surface water	yes	no
(B7) formation of potholes or erosion	yes	no
(B8) other	yes	no
C. Storm Water Attenuation Structures		
(C1) accumulation of debris	yes	no
(C2) damage to asphalt	yes	no
(C3) damage or wear on flow control gates	yes	no

Comments

indicate comment number

indicate areas on attached figure

North Site Cover Area Inspection Form

Inspection Area **1B** Inspection Date _____

Inspector Name _____

A. Clay Soil Cover System	Action Required	
(A1) erosion of soils	yes	no
(A2) bare vegetated areas	yes	no
(A3) ponding of surface water	yes	no
(A4) dead or dying vegetation	yes	no
(A5) weeds or woody growth	yes	no
(A6) animal burrows	yes	no
(A7) sediment buildup	yes	no
(A8) other	yes	no

B. Asphalt Cover System		
(B1) broken, loose, or cracked asphalt	yes	no
(B2) failed sealant	yes	no
(B3) surface course wear/raveling	yes	no
(B4) vegetation growing through asphalt	yes	no
(B5) evidence of seeps	yes	no
(B6) ponding of surface water	yes	no
(B7) formation of potholes or erosion	yes	no
(B8) other	yes	no

Comments
indicate comment number
indicate areas on attached figure

rev 9-27-2016

North Site Cover Area Inspection Form

Inspection Area **2A** Inspection Date _____

Inspector Name _____

A. Clay Soil Cover System	Action Required	
(A1) erosion of soils	yes	no
(A2) bare vegetated areas	yes	no
(A3) ponding of surface water	yes	no
(A4) dead or dying vegetation	yes	no
(A5) weeds or woody growth	yes	no
(A6) animal burrows	yes	no
(A7) sediment buildup	yes	no
(A8) other	yes	no
B. Asphalt Cover System		
(B1) broken, loose, or cracked asphalt	yes	no
(B2) failed sealant	yes	no
(B3) surface course wear/raveling	yes	no
(B4) vegetation growing through asphalt	yes	no
(B5) evidence of seeps	yes	no
(B6) ponding of surface water	yes	no
(B7) formation of potholes or erosion	yes	no
(B8) other	yes	no
C. Polyurea Liner		
(C1) surface deterioration	yes	no
(C2) damage to panel	yes	no

Comments

indicate comment number

indicate areas on attached figure

rev 9-27-2016

North Site Cover Area Inspection Form

Inspection Area **2B** Inspection Date _____

Inspector Name _____

A. Clay Soil Cover System	Action Required	
(A1) erosion of soils	yes	no
(A2) bare vegetated areas	yes	no
(A3) ponding of surface water	yes	no
(A4) dead or dying vegetation	yes	no
(A5) weeds or woody growth	yes	no
(A6) animal burrows	yes	no
(A7) sediment buildup	yes	no
(A8) other	yes	no
B. Asphalt Cover System		
(B1) broken, loose, or cracked asphalt	yes	no
(B2) failed sealant	yes	no
(B3) surface course wear/raveling	yes	no
(B4) vegetation growing through asphalt	yes	no
(B5) evidence of seeps	yes	no
(B6) ponding of surface water	yes	no
(B7) formation of potholes or erosion	yes	no
(B8) other	yes	no
C. Polyurea Liner		
(C1) surface deterioration	yes	no
(C2) damage to panel	yes	no

Comments

indicate comment number

indicate areas on attached figure

rev 9-27-2016

North Site Cover Area Inspection Form

Inspection Area **3A** Inspection Date _____

Inspector Name _____

A. Clay Soil Cover System	Action Required	
(A1) erosion of soils	yes	no
(A2) bare vegetated areas	yes	no
(A3) ponding of surface water	yes	no
(A4) dead or dying vegetation	yes	no
(A5) weeds or woody growth	yes	no
(A6) animal burrows	yes	no
(A7) sediment buildup	yes	no
(A8) other	yes	no

B. Asphalt Cover System		
(B1) broken, loose, or cracked asphalt	yes	no
(B2) failed sealant	yes	no
(B3) surface course wear/raveling	yes	no
(B4) vegetation growing through asphalt	yes	no
(B5) evidence of seeps	yes	no
(B6) ponding of surface water	yes	no
(B7) formation of potholes or erosion	yes	no
(B8) other	yes	no

C. Storm Water Attenuation Structures		
(C1) accumulation of debris	yes	no
(C2) damage to asphalt	yes	no
(C3) damage or wear on flow control gates	yes	no

Comments
indicate comment number
indicate areas on attached figure

rev 9-27-2016

North Site Cover Area Inspection Form

Inspection Area **3B** Inspection Date _____

Inspector Name _____

A. Clay Soil Cover System	Action Required	
(A1) erosion of soils	yes	no
(A2) bare vegetated areas	yes	no
(A3) ponding of surface water	yes	no
(A4) dead or dying vegetation	yes	no
(A5) weeds or woody growth	yes	no
(A6) animal burrows	yes	no
(A7) sediment buildup	yes	no
(A8) other	yes	no

B. ESI Soil Cover System		
(B1) erosion of soils	yes	no
(B2) bare vegetated areas	yes	no
(B3) ponding of surface water	yes	no
(B4) dead or dying vegetation	yes	no
(B5) weeds or woody growth	yes	no
(B6) animal burrows	yes	no
(B7) sediment buildup	yes	no
(B8) other	yes	no

Comments
indicate comment number
indicate areas on attached figure

rev 9-27-2016

North Site Cover Area Inspection Form

Inspection Area **3C** Inspection Date _____

Inspector Name _____

A. Clay Soil Cover System	Action Required	
(A1) erosion of soils	yes	no
(A2) bare vegetated areas	yes	no
(A3) ponding of surface water	yes	no
(A4) dead or dying vegetation	yes	no
(A5) weeds or woody growth	yes	no
(A6) animal burrows	yes	no
(A7) sediment buildup	yes	no
(A8) other	yes	no

B. Asphalt Cover System		
(B1) broken, loose, or cracked asphalt	yes	no
(B2) failed sealant	yes	no
(B3) surface course wear/raveling	yes	no
(B4) vegetation growing through asphalt	yes	no
(B5) evidence of seeps	yes	no
(B6) ponding of surface water	yes	no
(B7) formation of potholes or erosion	yes	no
(B8) other	yes	no

Comments
indicate comment number
indicate areas on attached figure

rev 9-27-2016

APPENDIX D
SUMP INSPECTION FORMS

North Site Cover Area Inspection Form

Inspection Area **COLLECTION SUMPS** Inspection Date _____

Inspector Name _____

		Action Required	
SUMP 1			
	1) accumulation of sediment	yes	no
	2) controls (HOA), floats	yes	no
	3) fittings and pipeline	yes	no
	4) signs of electrical system damage	yes	no
	5) interlock and radio communication with SCADA	yes	no
	6) pump function check	yes	no
SUMP 2			
	1) accumulation of sediment	yes	no
	2) flow meter check	yes	no
	3) controls (HOA), floats	yes	no
	4) fittings and pipeline	yes	no
	5) heat trace alarms	yes	no
	6) signs of electrical system damage	yes	no
	7) interlock and radio communication with SCADA	yes	no
	8) pump function check	yes	no
	9) heat trace wiring check (October)	yes	no
	10) compare flow rates	yes	no

Comments
indicate comment number

rev 9-27-2016

North Site Cover Area Inspection Form

Inspection Area **COLLECTION SUMPS** Inspection Date _____

Inspector Name _____

		Action Required	
SUMP 3			
	1) accumulation of sediment	yes	no
	2) flow meter check	yes	no
	3) controls (HOA), floats	yes	no
	4) fittings and pipeline	yes	no
	5) signs of electrical system damage	yes	no
	6) interlock and radio communication with SCADA	yes	no
	7) pump function check	yes	no
	8) heat trace wiring check (October)	yes	no
	9) compare flow rates	yes	no
SUMP 4			
	1) accumulation of sediment	yes	no
	2) flow meter check	yes	no
	3) controls (HOA), floats	yes	no
	4) fittings and pipeline	yes	no
	5) signs of electrical system damage	yes	no
	6) interlock and radio communication with SCADA	yes	no
	7) pump function check	yes	no
	8) heat trace wiring check (October)	yes	no
	9) compare flow rates	yes	no

Comments
indicate comment number

rev 9-27-2016

North Site Cover Area Inspection Form

Inspection Area **COLLECTION SUMPS** Inspection Date _____

Inspector Name _____

		Action Required	
SUMP 5			
	1) accumulation of sediment	yes	no
	2) flow meter check	yes	no
	3) controls (HOA), floats	yes	no
	4) fittings and pipeline	yes	no
	5) signs of electrical system damage	yes	no
	6) interlock and radio communication with SCADA	yes	no
	7) pump function check	yes	no
	8) heat trace wiring check (October)	yes	no
	9) compare flow rates	yes	no
SUMP 6			
	1) accumulation of sediment	yes	no
	2) controls (HOA), floats	yes	no
	3) fittings and pipeline	yes	no
	4) signs of electrical system damage	yes	no
	5) interlock and radio communication with SCADA	yes	no
	6) pump function check	yes	no
	7) heat trace wiring check (October)	yes	no

Comments
indicate comment number

rev 9-27-2016

North Site Cover Area Inspection Form

Inspection Area **COLLECTION SUMPS** Inspection Date _____

Inspector Name _____

		Action Required	
SUMP 7			
	1) accumulation of sediment	yes	no
	2) controls (HOA), floats	yes	no
	3) fittings and pipeline	yes	no
	4) heat trace alarms	yes	no
	5) signs of electrical system damage	yes	no
	6) interlock and radio communication with SCADA	yes	no
	7) pump function check	yes	no
	8) heat trace wiring check (October)	yes	no
SUMP 8			
	1) accumulation of sediment	yes	no
	2) controls (HOA), floats	yes	no
	3) fittings and pipeline	yes	no
	4) heat trace alarms	yes	no
	5) signs of electrical system damage	yes	no
	6) interlock and radio communication with SCADA	yes	no
	7) pump function check	yes	no
	8) heat trace wiring check (October)	yes	no

Comments
indicate comment number

rev 9-27-2016

North Site Cover Area Inspection Form

Inspection Area **COLLECTION SUMPS** Inspection Date _____

Inspector Name _____

		Action Required	
SUMP 9			
	1) accumulation of sediment	yes	no
	2) controls (HOA), floats	yes	no
	3) fittings and pipeline	yes	no
	4) signs of electrical system damage	yes	no
	5) interlock and radio communication with SCADA	yes	no
	6) pump function check	yes	no
	7) heat trace wiring check (October)	yes	no
	8) Emergency stop button	yes	no
	9) Drain grating secure and cleaned	yes	no
SUMP 10			
	1) accumulation of sediment	yes	no
	2) controls (HOA), floats	yes	no
	3) fittings and pipeline	yes	no
	4) heat trace alarms	yes	no
	5) signs of electrical system damage	yes	no
	6) interlock and radio communication with SCADA	yes	no
	7) pump function check	yes	no
	8) heat trace wiring check (October)	yes	no

Comments
indicate comment number

rev 9-27-2016

North Site Cover Area Inspection Form

Inspection Area **COLLECTION SUMPS** Inspection Date _____

Inspector Name _____

		Action Required	
SUMP 11			
	1) accumulation of sediment	yes	no
	2) controls (HOA), floats	yes	no
	3) fittings and pipeline	yes	no
	4) heat trace alarms	yes	no
	5) signs of electrical system damage	yes	no
	6) interlock and radio communication with SCADA	yes	no
	7) pump function check	yes	no
	8) heat trace wiring check (October)	yes	no
SUMP 12			
	1) accumulation of sediment	yes	no
	2) controls (HOA), floats	yes	no
	3) fittings and pipeline	yes	no
	4) heat trace alarms	yes	no
	5) signs of electrical system damage	yes	no
	6) interlock and radio communication with SCADA	yes	no
	7) pump function check	yes	no
	8) heat trace wiring check (October)	yes	no

Comments

indicate comment number

rev 9-27-2016

North Site Cover Area Inspection Form

Inspection Area **COLLECTION SUMPS** Inspection Date _____

Inspector Name _____

		Action Required	
SUMP 13			
	1) accumulation of sediment	yes	no
	2) controls (HOA), floats	yes	no
	3) fittings and pipeline	yes	no
	4) heat trace alarms	yes	no
	5) signs of electrical system damage	yes	no
	6) interlock and radio communication with SCADA	yes	no
	7) pump function check	yes	no
	8) heat trace wiring check (October)	yes	no
SUMP 14			
	1) accumulation of sediment	yes	no
	2) controls (HOA), floats	yes	no
	3) fittings and pipeline	yes	no
	4) signs of electrical system damage	yes	no
	5) interlock and radio communication with SCADA	yes	no
	6) pump function check	yes	no

Comments
indicate comment number

rev 9-27-2016

North Site Cover Area Inspection Form

Inspection Area **COLLECTION SUMPS** Inspection Date _____

Inspector Name _____

		Action Required	
SUMP 15			
	1) accumulation of sediment	yes	no
	2) flow meter check	yes	no
	3) controls (HOA), floats	yes	no
	4) fittings and pipeline	yes	no
	5) heat trace alarms	yes	no
	6) signs of electrical system damage	yes	no
	7) interlock and radio communication with SCADA	yes	no
	8) pump function check	yes	no
	9) heat trace wiring check (October)	yes	no
	10) compare flow rates	yes	no
SUMP 16			
	1) accumulation of sediment	yes	no
	2) flow meter check	yes	no
	3) controls (HOA), floats	yes	no
	4) fittings and pipeline	yes	no
	5) heat trace alarms	yes	no
	6) signs of electrical system damage	yes	no
	7) pump function check	yes	no
	8) heat trace wiring check (October)	yes	no
	9) compare flow rates	yes	no

Comments

indicate comment number

rev 9-27-2016

APPENDIX E
FENCE LINE INSPECTION FORM

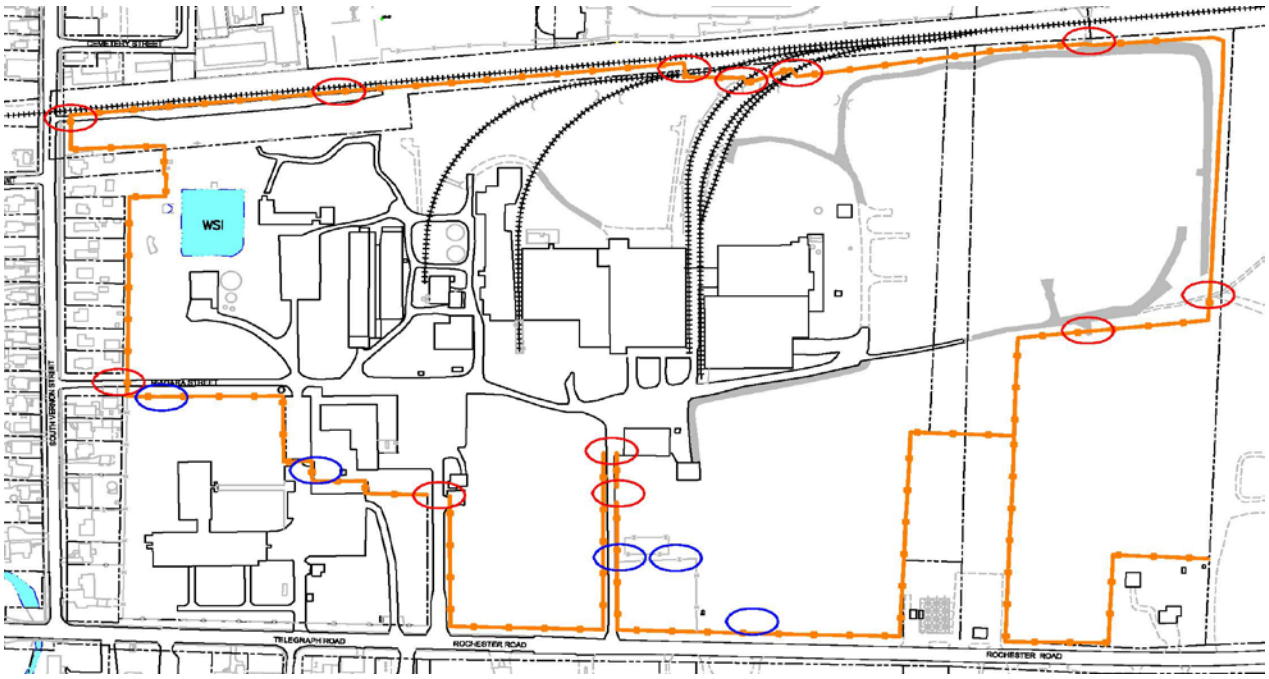
North Site Cover Area Inspection Form

Inspection Area **Fenceline** Inspection Date _____

Inspector Name _____

Complete and inspection of the perimeter fence line shown below. Indicte on the figure any items observed and make notes in the comments sections.

Items to note: damage to fence fabric, suport posts, top wire, undermining, gaps under fence, borrows, padlocks, fallen debris on top of fence, sign postings.



Gates are itentified with ovals

Comments

indicate comment number

rev 9-27-2016

APPENDIX F
NORTH SITE COVER EXCAVATION AND REPAIR PROCEEDURES

PARSONS

GENERAL

The following procedures have been developed to prevent surface contamination as a result of disturbing potentially contaminated soils beneath the grass or asphalt cover systems that comprise the North Site Cover (NSC). Excavation of cover materials will only be permitted for essential maintenance tasks such as water main repair or replacement.

HEALTH AND SAFETY REQUIREMENTS

Any excavation in the North Site Cover Area will be completed in accordance with the requirements included in the Health and Safety Plan, Facility Safety Plan and the FMC Corporate Safety Policies.

Whenever soils are disturbed below the clay soil of asphalt cover, the Community Air Monitoring Plan will be required to be implemented.

NOTIFICATION

Prior to beginning excavation in the NSC area, notification will be made to the Facility Plant Manager, Facility Environmental Health and Safety (EHS) Manager, and Facility Maintenance Manager. Notification will also be made to the Corporate Remediation Manager responsible for the Facility water treatment plant operations and maintenance.

Prior to any invasive ground/earthwork that would penetrate any component of the soil cover systems notification will be made to the New York State Department of Environmental Conservation (NYSDEC) Project Coordinator, except in emergencies which may require immediate invasive ground/earthwork that would penetrate the cover system.

UTILITY CLEARANCE

The Facility Maintenance Manager retains copies of the Facility design and record drawings. The drawings will be reviewed prior to beginning excavation to identify the location of any underground utilities in the area. All parties should understand that these drawings are old and may not be fully updated with all of the underground hazards. Multiple lines of evidence will be used to confirm utility clearance prior to excavation. If the excavation is to be in an area where there may be unidentified utilities, a private utility locator may be retained to complete a survey and clearance of the area.

Additionally, New York State Code Rule 753 requires the following:

1. Before commencing or engaging in any nonemergency excavation or demolition, each excavator shall provide notice of the location and date of the planned excavation or demolition to the one-call notification system serving the vicinity in which the excavation or demolition is to take place.
2. Such notice shall be served at least 2 but not more than 10 working days, not including the date of the call, before the commencement date of the excavation or demolition.
3. Excavation or demolition which is required to be performed promptly as a result of an emergency, disaster or to correct an immediate hazard may proceed immediately without prior notification to operators, if the situation is so serious that the excavation or demolition cannot reasonably be delayed. However, excavators shall notify the one-call notification system as soon as possible that such excavation or demolition is commencing or is underway. Extreme caution shall be employed by the excavator to prevent damage to existing underground facilities and to avoid endangering persons and property.

The Facility Environmental Manager or his/her designee will contact Dig Safely New York, Inc. (811) prior to beginning a non-emergency excavation. Additional information regarding the NYS one-call system and notification requirements can be found at http://www.digsafelyny.com.

PERMITTING

All required permits must be obtained from the Facility EHS Manager before beginning excavation. Permits may include Safe Work, Excavation, and Confined Space Entry.

PRODUCTS

Material used in excavation backfilling and repairs to the soil cover and asphalt cover will comply with the requirements provided below. To the extent possible, excavated materials will be used as backfill.

Prior to importation to the Facility, any material that is imported to the site, and which is used to construct a soil cover, site cap system or as excavation backfill, must be specifically approved by the Facility EHS Manager.

The following products are approved for use when making repairs within the NSC Area.

Clay Material

Clay material required to repair the cover following excavation shall be obtained from the on-Site stockpile or other suitable source.

Stockpiled clay material shall be clean, clay material and shall have a gradation of more than 25 percent of soil particles smaller than 0.005 millimeters in diameter. The clay material shall have a minimum of 55 percent fines passing the No. 200 sieve (clay classified as CL under the Unified Soils Classification System or defined by ASTM[1] D-421-58 and D-422-63 procedures). The clay material shall have a maximum hydraulic conductivity under saturated conditions of $1x10^{-7}$ centimeters per second (cm/ sec) when remolded at 95% Standard Proctor Density at Optimum Moisture Content.

Top Soil

Imported topsoil may be naturally occurring or may be manufactured. Topsoil shall be free from refuse, material toxic or otherwise deleterious to plant growth, subsoil, woody vegetation and stumps, roots, brush, stones, clay lumps or similar objects. Sod and herbaceous growth such as grass and weeds need not be removed but shall be thoroughly broken up and mixed with the soil during handling or manufacturing operations.

Imported topsoil will meet NYSDOT[2] Section 713 specifications for topsoil.

Crushed Stone

Crushed stone shall be obtained from a qualified supplier. The stone shall be two-inch, crusher run meeting NYSDOT Sec. 304 Type 4 Subbase specifications

Asphalt Products

Asphalt material for patching excavations shall conform to the requirements of NYSDOT Type 7 surface course.

A NYSDOT approved tack coat shall be used where required.

[1] ASTM – American Society for Testing and Materials
[2] NYSDOT – New York State Department of Transportation

EXECUTION

A. Segregation of Clean Soils

Prior to excavation of clay or native material, strip sand and topsoil to the top of the clay layer and stockpile the material adjacent to excavation. This material is clean and may be reused following backfill of the excavation with clay.

B. Excavation and Backfilling

Prior to excavation, place two layers of polyethylene sheeting (minimum 6 millimeter) on the ground adjacent to the excavation area. Excavated soils shall be contained on polyethylene sheeting or placed directly into containers supplied for off-site disposal. Soil stockpiles shall be completely covered with polyethylene sheeting during breaks in excavation work to isolate the soils from precipitation and wind. Work must be completed in a timely manner to minimize the period of exposure of potentially contaminated soils.

Following completion of repair or maintenance activities, backfill and compact material to previous elevations (i.e., the base of the clay cover). Plate tampers shall be used to compact native material. The backfill lift thickness shall not exceed 12 inches.

The Facility EHS Manger shall be notified if excess spoil material is anticipated. Excess material shall be placed directly into containers supplied by FMC. Containers shall be covered with tarps immediately. Polyethylene sheeting and used personal protective equipment (PPE) **may not** be placed in the containers with excess spoil material. Polyethylene sheeting and used PPE must be placed in containers provided by FMC.

Decontaminate all equipment and tools coming in contact with native material at the surface water decontamination pad. Decontamination shall consist of a high pressure wash to remove all visible sediment. DO NOT track potentially contaminated soil out of the work zone.

If an excavation is not to be backfilled the same day, completely cover and secure the stockpiled native soil and open excavation pit with polyethylene sheeting. Provide barricades around the excavation.

C. Restoration

1. Grass Cover

Following backfill of native material, place clay material in two six-inch lifts and thoroughly compact each lift with a decontaminated plate tamper.

Replace sand and topsoil and reseed or salvage sod from the excavation. Seed will be either a contractor mix for the grasses areas or a wildflower mix in the areas that are not mowed. An erosion control mat will be installed over the seeded area.

2. Asphalt Cover

Place and compact two inches of crushed stone with plate tamper. Apply tack coat to exposed asphalt surfaces. Place three inches of NYSDOT Type 7 asphalt in two lifts and compact each lift by rolling.

WASTE MANAGEMENT

Excess soil spoils from the excavation within the cover area can be staged on two layers of plastic sheeting or placed into drums, roll-off container or lugger. The soil pile, drum or bulk container will be covered when not being actively managed.

Waste characterization will be based on FMC knowledge of the excavation area, existing soil data from the excavation area, and/or on waste characterization sample data, with consultation of the Facility EHS Manager. As necessary, representative samples of the soil spoils will be sampled for analyses of the hazardous waste characteristics (i.e., TCLP parameters), as needed. Soils from under the clay or asphalt cover will be characterized for disposal in accordance with the requirements of 6 NYCRR 372.

Non-soil materials may be decontaminated and disposed of as directed by the Facility EHS Manager.

REFERENCES

NYSDOT Standard Specifications, §713-01, Landscape Development Materials (https://www.dot.ny.gov/main/business-center/engineering/specifications/specs- repository/sec713to714_p7-144to161.pdf)

Parsons, 2016. Health and Safety Plan, FMC Middleport Site, EPA ID No. NYD002126845. October 2016.

APPENDIX G
POLYUREA LINER
MANUFACTURES INFORMATION

PARSONS

RoboLiner®

Total Containment Solutions, Inc.

Composite Pure Spray Polyurea Secondary Containment System

Remains Flexible in Cold Temperatures
RE-USABLE
Cures from -40° to 225°F
100% Solids, Zero VOC
Excellent UV Stability
Seamless Elastomer
Patent US 8,500,941 B2 August 6, 2013

The RoboLiner® System for secondary and primary containments and impoundments are manufactured robotically in a controlled environment. Unlike field application RoboLiner® is QA/QC in the plant and arrives fully cured and ready for rapid installation. With minimum amount of installation time versus field applied it creates a monolithic containment solution that has no heat welded seams and requires no backfilling or covering.

Ask about RoboPad™ for drill sites and RoboCon™ portable secondary containment systems.

Saves you Time and Money!

- Pre-Manufactured robotically in a controlled environment
- Less time on site, means lower mobilization cost and reduced shut down time
- Meets EPA regulations for secondary containment of stored hydrocarbons
- Reduced material waste that goes to the landfill
- Cost Efficient

For more information please contact:
Mike Whitener, Total Containment Solutions - (239) 275-6235

Typical Physical Property	ASTM	Results	
Hardness	D-2240	37 Shore D	
Tensile Strength	D-638	1370 psi	100 ppi*
Elongation	D-638	175%	
Die C Tear Strength	D-624	445 pli	34 lbs*
Trouser Tear Strength	D-624	95 pli	7.5 lbs*
Bursting Strength	D-751	415 lbf	171 psi*
Puncture Resistance	D-751	67 lbf	27 psi*

RoboLiner
TOTAL CONTAINMENT SOLUTIONS, INC.

Product Data Sheet

TCS-380-CL

Product Description- *TCS*-380-CL is a 100% solids elastomeric polyurea developed for applications such as geotextile lining membranes. **TCS-380-CL** may also be applied to concrete and steel substrates. **TCS-380-CL** is a volatile free, odorless system applied with 1:1 mix ratio with plural component spray equipment.

Uses- TCS-380-CL provides less shrinkage with improved elongation characteristics. As a result, **TCS-380-CL** makes an excellent polyurea for liners, geotextile coatings, and applications where resilience and durability are required. **TCS-380-CL** may be applied at varying thicknesses in a single application using a multi-pass spray technique.

Ideal for Applications in:

- Waterproofing membranes
- Geotextile coatings
- Secondary containment
- Foam coatings
- Flexible membranes
- Liners
- Oil production water/condensate containments
- Typical ambient waste water & hydrogen sulfide exposures

Advantages:

- 100% solids, no VOC's
- 1:1 mix ratio by volume
- Rapid cure
- Immediate return to service
- Applied by plural component spray
- Odorless
- No VOC's
- Low curing stress shrinkage
- Exposure temperatures -40°F to 350°F, dry

Physical Properties-

(Typical) 1:1 Mix Ratio		
Cured Film Properties	**Test Method**	**Typical Value**
VOC	Theoretical	0%
Solids content	Theoretical	100%
Shore A hardness	ASTM D2240	80 – 85
Elongation	ASTM D638	350 – 390%
Tensile strength, psi	ASTM D638	2000 – 2500
Elastic Modulus (psi)	ASTM D638	500 – 900
Tear strength	ASTM D624	250 – 300 psi
Moisture vapor transmission	ASTM E-96	0.02 perm
Taber abrasion, mg wt loss (1000 g, 1000 revs, CS-17)	ASTM D4060	8 - 18
Gel time	ASTM D1640	15 – 25 seconds
Tack free	ASTM D1640	~3 minutes
Tested in accordance to EPA 9090A, LARR Approval (CA)		
The value ranges stated in this Technical Data Sheet are based on system processing under laboratory conditions. Equipment configurations and/or field application conditions may produce variances in final system values.		

Limitations- TCS-380-CL should not be used for direct contact with extremely high or low pH attack. Composite systems are available. Consult Total Containment Solutions.

Coverage Rates- Theoretical square feet per gallon
*Note: 1604 mil inches per gallon. Totally dependent on substrate texture and condition.

Mils	10	15	50	60	80	100	125
Sq. Ft.	160	107	32	27	20	16	13

Packaging-

- One Hundred Ten Gallon Kit: 55 gallons of 'A' side and 55 gallons of 'B' side. Drum containers filled by weight, volume is closely approximated.

Mixing- TCS-380-CL must be spray applied using approved equipment. Use 1:1 ratio pump with appropriate material heaters, as required for individual application. For more information contact ***Total Containment Solutions***.

Colors- Standard is Tan or Black, however there are other colors. Contact TCS

Preparation & Installation- Please review the material Processing & Handling Information for preparation and application procedures. Substrate priming is not required on all substrates, consult ***Total Containment Solutions*** for recommendations. Also, please consult the ***Total Containment Solutions*** Spray Gun Configuration Recommendation pdf for specific modules and tips.

Clean Up- Cured product may be disposed of without restriction. Excess liquid 'A' & 'B' material should be mixed together and allowed to cure, then disposed of in the normal manner. Product containers that are "drip free" may be disposed of according to local, state and federal laws.

Safety-

Request MSDS from ***TCS***

Basic safety for personal protection is:

- Long sleeve overalls or disposable Tyvex overalls
- Rubber gloves
- Splash shield or safety glasses with splash guards
- Rubber or leather boots
- Respirator
- Do not use near high heat or open flame
- Do not take internally
- Keep out of reach of children

Shelf Life- One year from date of shipment, in original, unopened factory containers, under normal storage conditions of 60^{o}F to 95^{o}F (18^{o}-35^{o}C).

Technical Services- Sales and Customer Support Total Containment Solutions 239-275-6235

Warranty-*Total Containment Solutions* will refund the price of or replace, at its election, product it finds to be defective provided the product has been used properly. Except as expressly stated above, the company makes no warranty of merchantability and no warranty of fitness for any particular purpose, nor does it make any warranty, expressed or implied, of any nature whatsoever with respect to the product of its use. In no event shall the company be liable for delay caused by defects, for loss of use, for indirect, special or consequential damages, or for any changes or expenses of any nature incurred without its written consent.

VersaFlex Incorporated
686 S. Adams Street
Kansas City, KS 66105
913-321-9000
913-321-1490 (Fax)

Product Data Sheet

HM45™

Hand Mix Polyurea

USGBC LEED, EQ Credit 4:
Low-emitting VOC Compliant Materials

Product Description- *VersaFlex* HM45 is a hand mixable, self-leveling, 100% solids, flexible, two-component polyurea and ambient temperature cured material. Designed for small coating applications, slab stabilization, and small patching where mixing by hand or pumping through non-heated plural component equipment is desirable.

Uses- *VersaFlex* HM45 is a superior hand mixable material designed specifically for applications requiring elastomeric qualities. **HM45** is flexible and accommodating to movement of the substrate. May be used for slab stabilization or as a low-pressure spray material with ambient cure on all bondable surfaces. **HM45** is capable of application well below freezing and is ideal for use in cold storage facilities, freezers, and food processing plants where time and temperature are serious concerns.

Ideal for Applications in:

- Small repairs on existing polyurea-rips & tears
- Slab stabilization
- Industrial facilities
- Manufacturing facilities
- Water & waste water treatment
- Food processing facilities

Advantages:

- 100% solids, no VOC's
- Flexible, 450 – 500% elongation
- Remains flexible in cold temperatures
- Return project to service in 3 hours
- Cures from -40°F to 130°F
- Odorless, no toxic vapors
- Hand mixable and brushable

Physical Properties-

(Typical) 1:1 Mix Ratio		
Cured Film Properties	**Test Method**	**Typical Value**
VOC	ASTM D3960	Zero
Solids content		100%
Pot life		3 – 4 minutes
Tack free		45 minutes
Initial cure		3 hours
Final cure		7 days
Tensile strength (psi)	ASTM D638	1400 – 1600
Tensile elongation (%)	ASTM D638	300 – 450
Tear strength, pli, Die C	ASTM D624	300 – 360
Shore D hardness	ASTM D2240	45+
The value ranges stated in this Technical Data Sheet are based on system processing under laboratory conditions. Equipment configurations and/or field application conditions may produce variances in final system values.		

Limitations- Allow concrete surfaces to fully cure prior to application of **HM45**. **HM45** is an aromatic based polyurea. Discoloration from exposure to ultraviolet light may occur, however the physical properties are unaffected.

Packaging-

- Ten Gallon Kit: 5 gallons of 'A' side and 5 gallons of 'B' side.
- Two Gallon Kit: 1 gallon of 'A' side and 1 gallon of 'B' side.
- Six Hundred ML Cartridges: 300 ml of 'A' side and 300 ml of 'B' side packaged as a duplex cartridge. Ten cartridges per case.

Mixing-

- Hand Mixing: Mix in small quantities, mix equal amounts of 'A' and 'B' components until homogeneous mix is achieved. Add the 'B' side to the 'A', not 'A' to 'B'. If 'A' is added to the 'B', the material will have a thick, putty like consistency. Apply material directly to surface to be coated using a trowel or brush.
- Machine Dispensing: Use 1:1 ratio pump, with or without heater as required for individual application. Low-pressure spray head should be used for ambient cure spray applications.

Colors- View ColorFlex color chart at www.versaflex.com. Available pre-pigmented or non-pigmented.

Preparation & Installation-
For previously coated surfaces of Polyurea: surface should be clean and dry. Abrading the existing polyurea and wiping with ***VersaFlex*** TackCoat will help promote the adhesion of **HM 45**. Allow TackCoat to flash off/dissipate prior to application. Surface should be tacky.
For small bare steel substrates: SSPC SP-10, minimum surface profile of 2 to 3 mils. 3 mils required for immersion applications.

Clean Up- Cured product may be disposed of without restriction. Excess liquid 'A' & 'B' material should be mixed together and allowed to cure, then disposed of in the normal manner. Product containers that are "drip free" may be disposed of according to local, state and federal laws.

Safety- Review MSDS at ***VersaFlex***.com
Basic safety for personal protection is:

- Long sleeve overalls or disposable Tyvex overalls
- Rubber gloves
- Splash shield or safety glasses with splash guards
- Rubber or leather boots
- Respirator
- Do not use near high heat or open flame
- Do not take internally
- Keep out of reach of children

Shelf Life- One year from date of shipment, in original, unopened factory containers, under normal storage conditions of 60°F to 95°F (18°-35°C).

Technical Services- Sales and Customer Support 913-321-9000

Warranty-*VersaFlex Incorporated* will refund the price of or replace, at its election, product it finds to be defective provided the product has been used properly. Except as expressly stated above, the company makes no warranty of merchantability and no warranty of fitness for any particular purpose, nor does it make any warranty, expressed or implied, of any nature whatsoever with respect to the product of its use. In no event shall the company be liable for delay caused by defects, for loss of use, for indirect, special or consequential damages, or for any changes or expenses of any nature incurred without its written consent.

Plural Component Polyurea Elastomer Systems

Instruction Guide

Plural Component Cartridge Pack
Assembly and Application

HM 45

Assembly

Assembly-Step 1

Before dispensing, cartridge units should be brought up to at least 60° F to obtain proper viscosity of product. Prior to unit assembly, shake cartridge pack vigorously for 2-3 minutes to insure proper mixing, then remove plug cap inserts as shown in the picture above. Once caps have been removed, clean and store in a safe place. In the event that all material is not used, simply replace the plug caps and screw on the threaded lock nut for safe storing.

Assembly-Step 2

When the plug caps have been removed, insert the static mixing wand through the back of the threaded cartridge lock nut. Once this has been completed, the mixing wand is ready for mounting to the cartridge by tightening the lock nut. NOTE: Be sure the lock nut is on tight enough to prevent leakage, but do not over tighten.

Assembly-Step 3

With the mixing wand assembly completed, insert the unit of VersaFlex product into the Duplex Caulking Gun.

>>IMPORTANT<<

Hold the cartridge upright when attaching the mixing wand to the unit. The material inside is low viscosity, it is likely to run out if pointed in a downward position.

Assembly-Step 4

The assembled VersaFlex Duplex Cartridge should look like the one pictured here. NOTE: Before dispensing of product has started, always maintain the gun, cartridge and wand in a vertical position to prevent material from running out of mixing wand.

Surface Preparation

1. Previously coated surface should be clean, dry, and in sound condition.
2. If necessary, mechanically "abrade/rough up" the surface to provide the proper profile.
3. Apply VersaFlex TackCoat or Dzolv at the recommended rate per gallon to make the surface tacky. Either product may be applied by using a clean cotton rag, or sprayer.
4. Surface should be "tacky" but not wet when HM 45 is applied. If surface becomes dry to the touch, lightly re-apply to activate surface and achieve "tackiness".

Product Application

Application-Step 1

Before application, the area designated for installation should be properly prepared/cleaned. The use of rubber gloves is highly recommended since the product has high adhesion to the skin and is difficult to remove after curing. Upon completion of the proper preparation steps, a small amount of material should be discharged into a small container to ensure that the gun plungers are applying even pressure to the material in the cylinders.

Application-Step 2

Initial dispensing should be done rapidly until properly mixed material is exiting tip then maintain a steady, consistent pressure. Applying jerking or sporadic pressure will result in sections of uncured product. The size of the wand orifice allows only a certain maximum flow rate. When making repairs to large areas or fractures, a small portion of the wand tip may be cut off to allow greater material flow. Dispense a sufficient amount of material to cover the prepared area and allow to dry before placing back into service. Use paint brush as necessary to level out areas and spread evenly.

Product Storage

Storing Unused Product-
Remember those black cartridge plugs you cleaned and saved? The mixing wand can be discarded and the black plugs replaced into the cartridge head. The threaded lock nut can then be screwed on over the plugs to hold them in place.
THE MIXING WAND CAN ONLY BE USED ONCE, simply discard it, *BUT SAVE THE THREADED LOCK NUT*.
Alternatively, the mixing wand can be left in place with the cured material inside, then removed and discarded before additional product is used. Cartridge should be stored in upright position.

NOTE: Because of the limited amount of product in each unit, cartridge dispensers are designed for *SMALL PROJECTS ONLY*.

Clean-Up & Safety

Cured product may be disposed of without restriction. Excess liquid "A" and "B" materials should be mixed together and allowed to cure, then disposed of in a normal manner. Product containers that are "drip-free" may be disposed of according to local, state and federal laws. Use disposable or plastic tools such as cardboard trowels and plastic buckets, whenever possible. Disposable tools may be thrown away. Cured material may be stripped or peeled from plastic tools and containers. Steel mixers or other metal tools are more difficult to clean. It is recommended that metal tools be cleaned within one hour of use by cutting or peeling cured material from tool.

Read and make sure that personnel understand product Material Safety Data Sheets. Available at www.versaflex.com

Basic safety recommendations for personal protection are:

- Long-sleeve overalls or disposable Tyvek overalls
- Rubber gloves
- Splash shield or safety glasses with guard
- Do not use near high heat or open flame
- Do not take internally
- Keep out of reach of children

For more information, please visit us on the web
www.versaflex.com

VersaFlex Incorporated
----Manufacturing Division----
686 S Adams Street
Kansas City, KS 66105
913-321-9000
913-321-1490 (fax)

APPENDX H
COLLECTION SUMPS SPARE PARTS INVENTORY

PARSONS

FMC Middleport
North Site Cover

Spare Parts Inventory

Device	Manufacturer	Model
Pump	Goulds	WE1512HH
Pump	Goulds	WE1534HH
Radio Transmitter	ELPRO	905U-K
Flow Meter	Bader	M2000

The parts listed on this table (or equvalent) are to maintained at the Water Treatement Plant

APPENDIX I
SUMMARY OF ALARMS

Summary of Alarms and Interlocks
FMC Middleport, NY

HIGH LEVEL ALARM (LAH-51) AT SUMP 1, SIGNAL ALARM AT WTP PLC.
HIGH LEVEL ALARM (LAH-52) AT SUMP 2, SIGNAL ALARM AT WTP PLC.
HIGH LEVEL ALARM (LAH-53) AT SUMP 3, SIGNAL ALARM AT WTP PLC.
HIGH LEVEL ALARM (LAH-54) AT SUMP 4, SIGNAL ALARM AT WTP PLC.
HIGH LEVEL ALARM (LAH-55) AT SUMP 5, SIGNAL ALARM AT WTP PLC.
HIGH LEVEL ALARM (LAH-56) AT SUMP 6, SIGNAL ALARM AT WTP PLC.
HIGH LEVEL ALARM (LAH-57) AT SUMP 7, SIGNAL ALARM AT WTP PLC.
HIGH LEVEL ALARM (LAH-58) AT SUMP 8, SIGNAL ALARM AT WTP PLC.
HIGH LEVEL ALARM (LAH-59) AT SUMP 9, SIGNAL ALARM AT WTP PLC.
HIGH LEVEL ALARM (LAH-510) AT SUMP 10, SIGNAL ALARM AT WTP PLC.
HIGH LEVEL ALARM (LAH-511) AT SUMP 11, SIGNAL ALARM AT WTP PLC.
HIGH LEVEL ALARM (LAH-512) AT SUMP 12, SIGNAL ALARM AT WTP PLC.
HIGH LEVEL ALARM (LAH-S13) AT SUMP 13, SIGNAL ALARM AT WTP PLC.
HIGH LEVEL ALARM (LAH-514) AT SUMP 14, SIGNAL ALARM AT WTP PLC.
HIGH LEVEL ALARM (LAH-515) AT SUMP 15, SIGNAL ALARM AT WTP PLC.

ZERO FLOW RECORDED AT SUMP PUMP S3 FOR SEVEN CONSECUTIVE DAYS OR TEN DAYS WITHIN A MONTH,
SIGNAL ALARM VIA ELECTRONIC MAIL.

alarm summary taken from:
Figure 3 - WTP Equipment Control Logic, Interlocks and Specifications
July 2008, Arcadis