

SECTION 4.0

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FIGURE 4-2
TOWN OF ORLEANS, MASSACHUSETTS
COMPREHENSIVE WASTEWATER MANAGEMENT PLAN ALTERNATIVES

STE SEWERS TRIBUTARY TO WWTF SITE #163

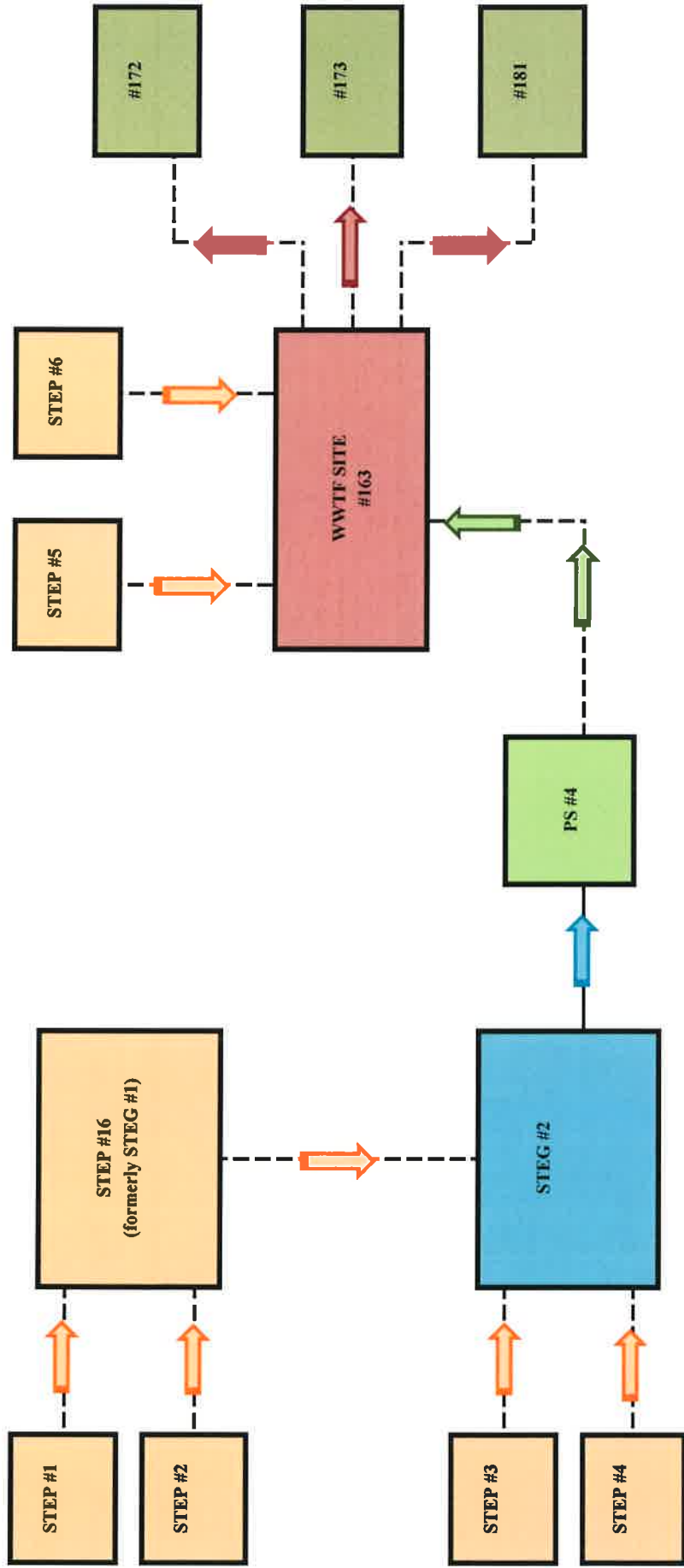


FIGURE 4-3
 TOWN OF ORLEANS, MASSACHUSETTS
 COMPREHENSIVE WASTEWATER MANAGEMENT PLAN ALTERNATIVES

STE SEWERS TRIBUTARY TO WWTF SITE #111

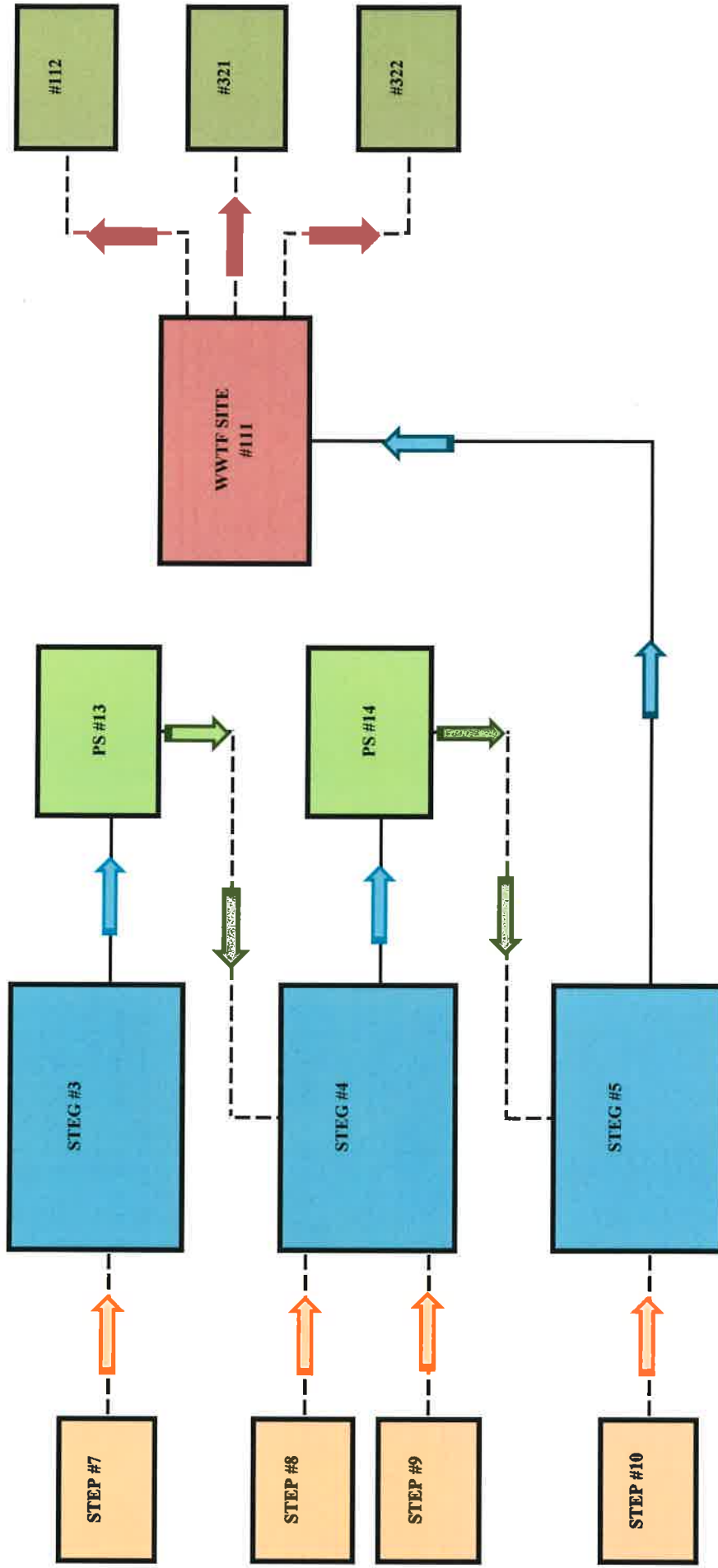
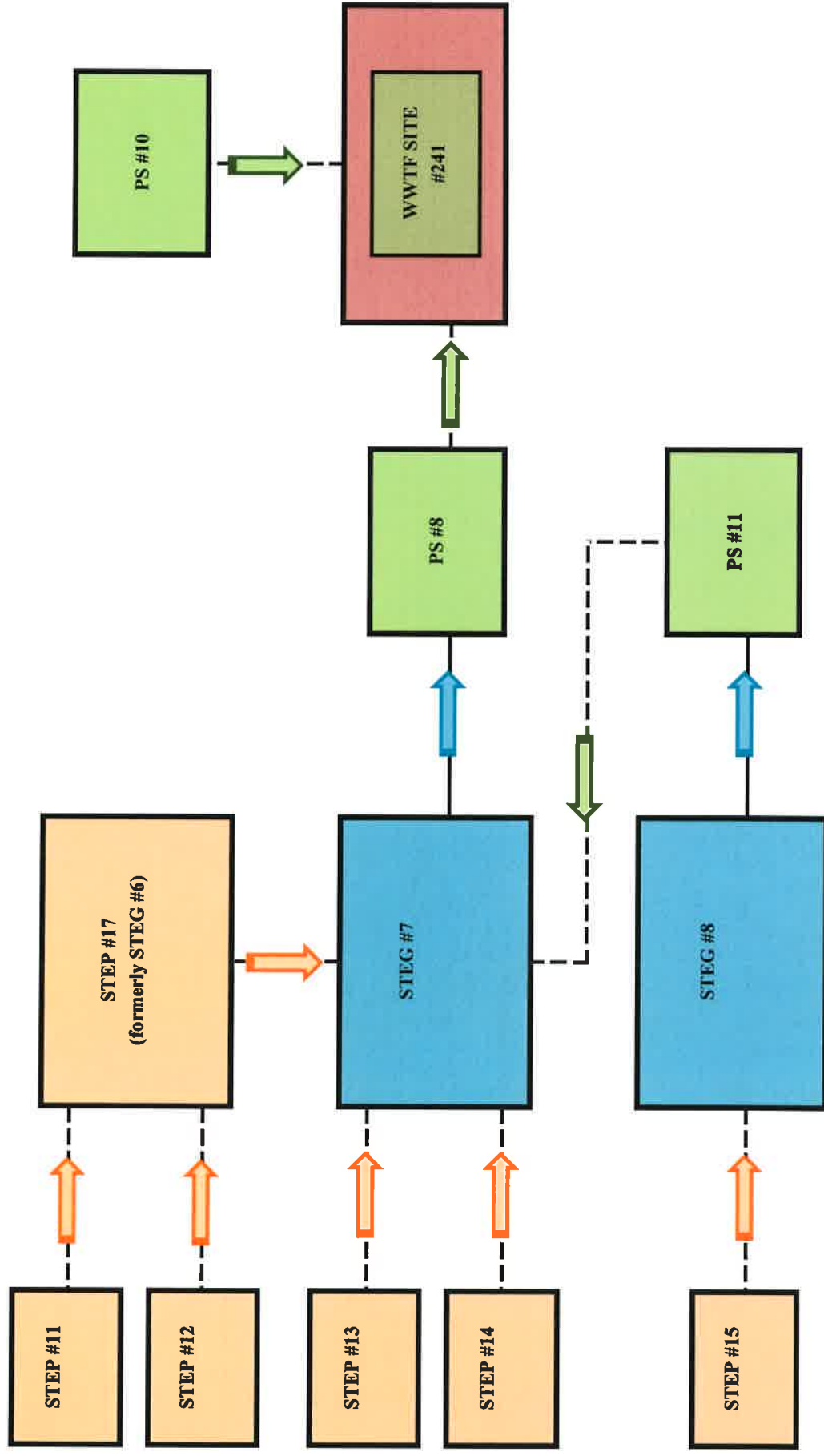
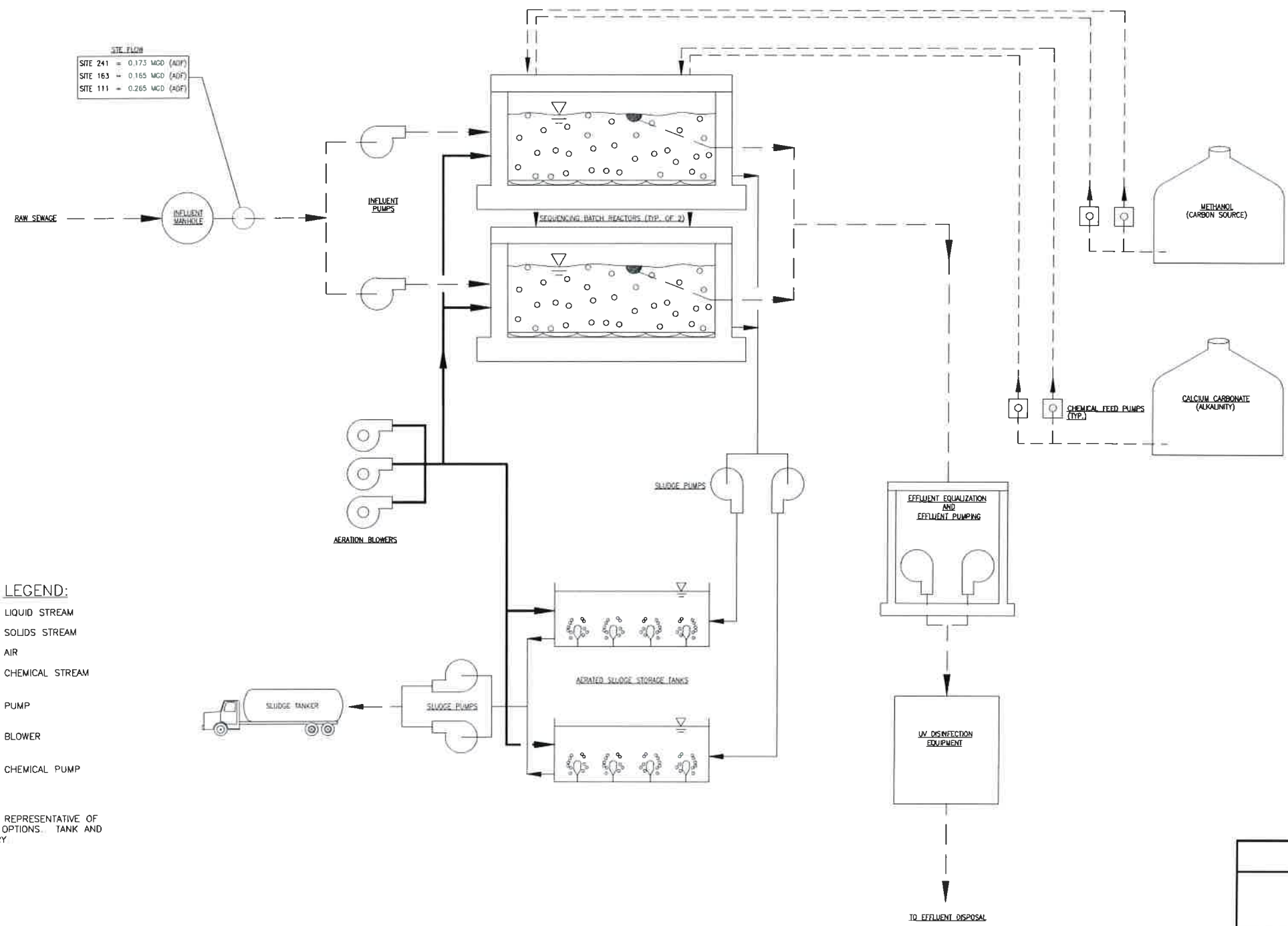


FIGURE 4-4
TOWN OF ORLEANS, MASSACHUSETTS
COMPREHENSIVE WASTEWATER MANAGEMENT PLAN ALTERNATIVES
STE SEWERS TRIBUTARY TO WWTF SITE #241





LEGEND:

- LIQUID STREAM
- SOLIDS STREAM
- AIR
- CHEMICAL STREAM
- ⊂ PUMP
- ⊂ BLOWER
- ⊂ CHEMICAL PUMP

NOTE: FLOW SCHEMATIC IS REPRESENTATIVE OF ALL DECENTRALIZED WWTF OPTIONS. TANK AND EQUIPMENT SIZES MAY VARY.

FIGURE 4-5
 ORLEANS, MA
 COMPREHENSIVE WASTEWATER
 MANAGEMENT PLAN ALTERNATIVES

FLOW DIAGRAM FOR DECENTRALIZED
 WWTF OPTION

DRAWN BY: MSL | CHECKED BY: MAS | DATE: 04/05/12

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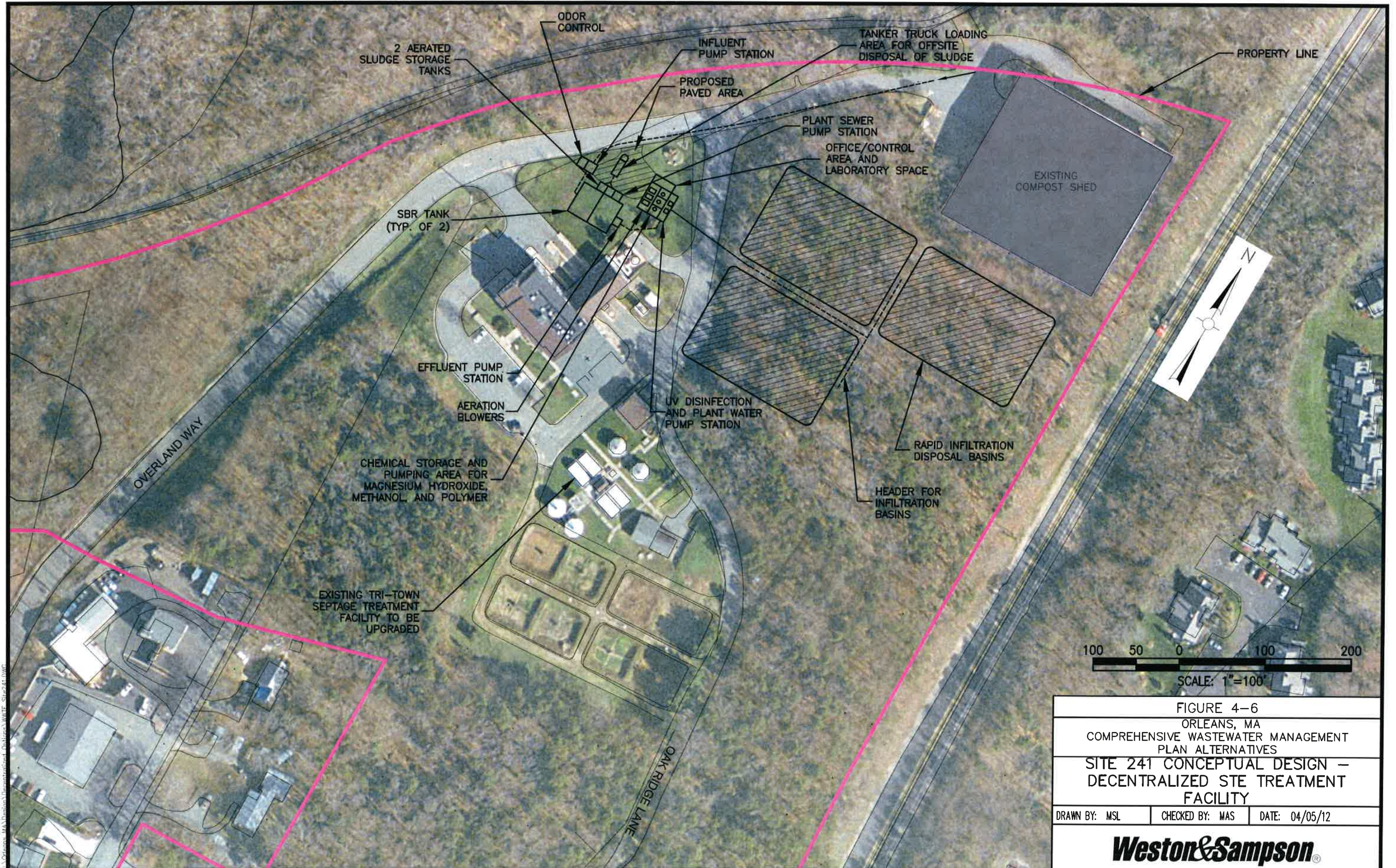
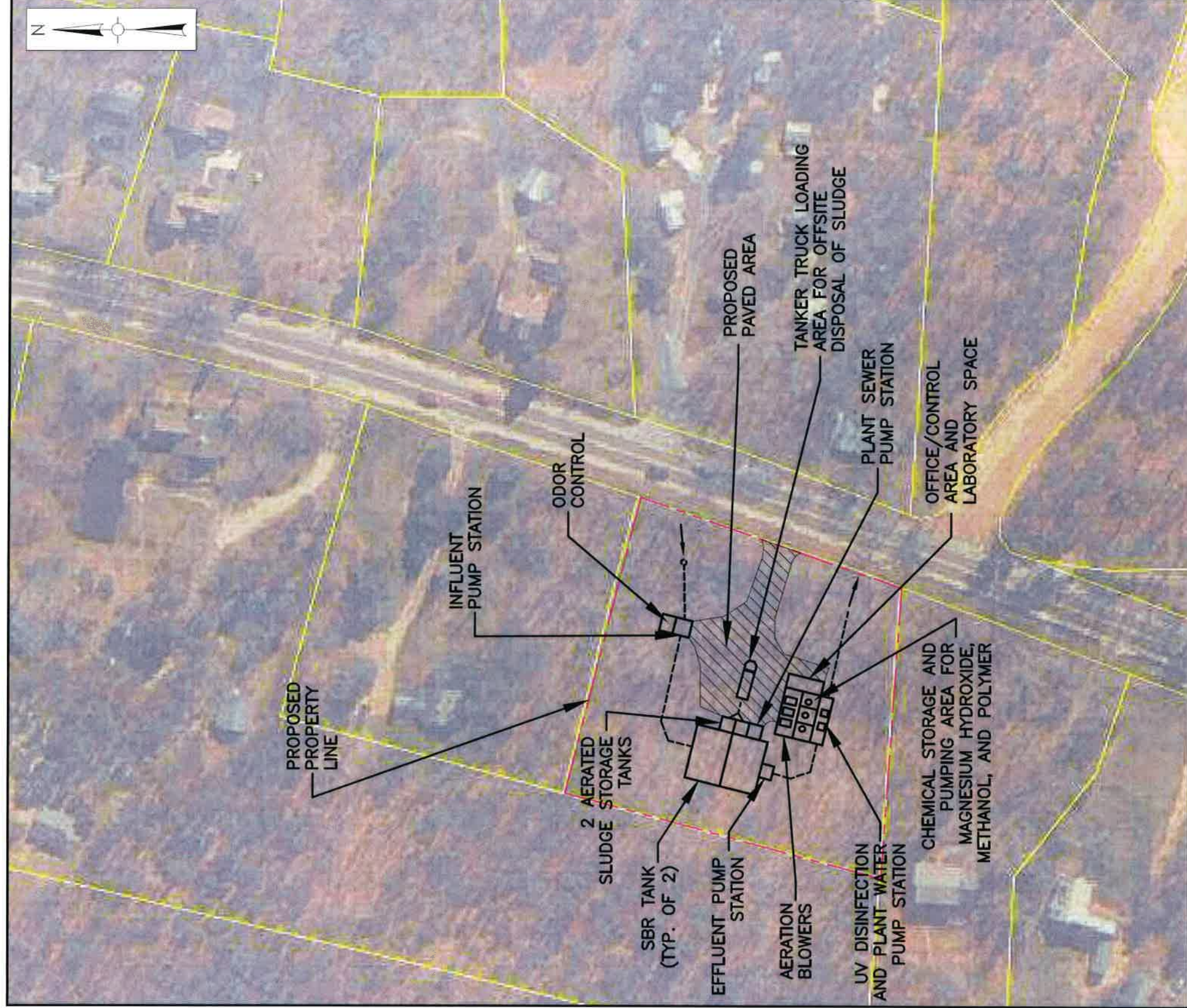


FIGURE 4-6
 ORLEANS, MA
 COMPREHENSIVE WASTEWATER MANAGEMENT
 PLAN ALTERNATIVES
 SITE 241 CONCEPTUAL DESIGN –
 DECENTRALIZED STE TREATMENT
 FACILITY
 DRAWN BY: MSL CHECKED BY: MAS DATE: 04/05/12

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C:\Orleans_MA\Design\Drawings\Site\Site241.DWG



V:\Orleans MA\Design\Decentralized Options\WTF Sites 111 and 163.dwg

FIGURE 4-7
 ORLEANS, MA
 COMPREHENSIVE WASTEWATER MANAGEMENT PLAN ALTERNATIVES
 SITE 163 CONCEPTUAL DESIGN - DECENTRALIZED STE TREATMENT FACILITY

SCALE: 1" = 100'

DATA SOURCES:
 MASS GIS ONLINE DATA VIEWER

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FIGURE 4-8
ORLEANS, MA
COMPREHENSIVE WASTEWATER MANAGEMENT PLAN ALTERNATIVES
SITE 172 - CONCEPTUAL DISCHARGE CONFIGURATION

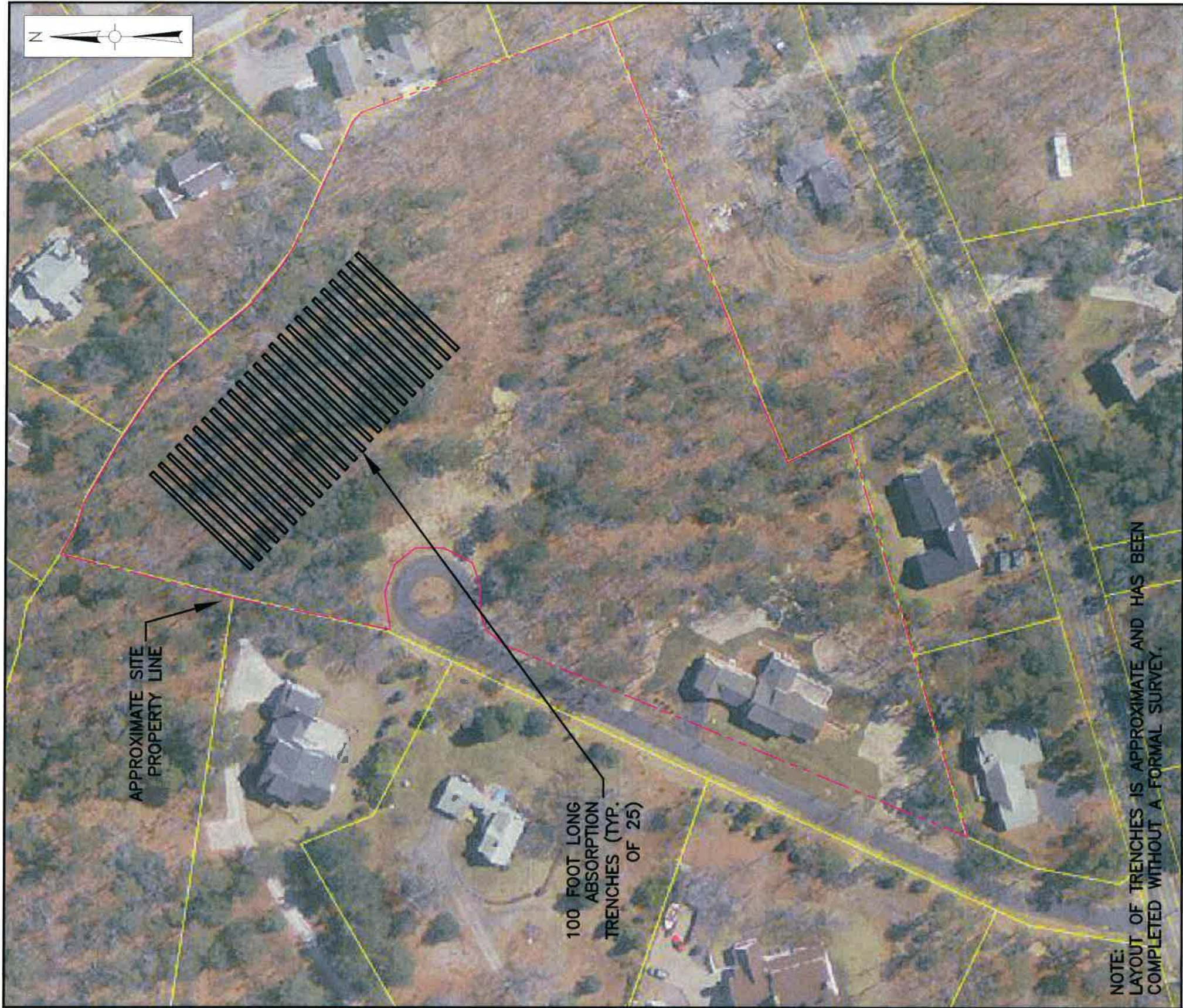
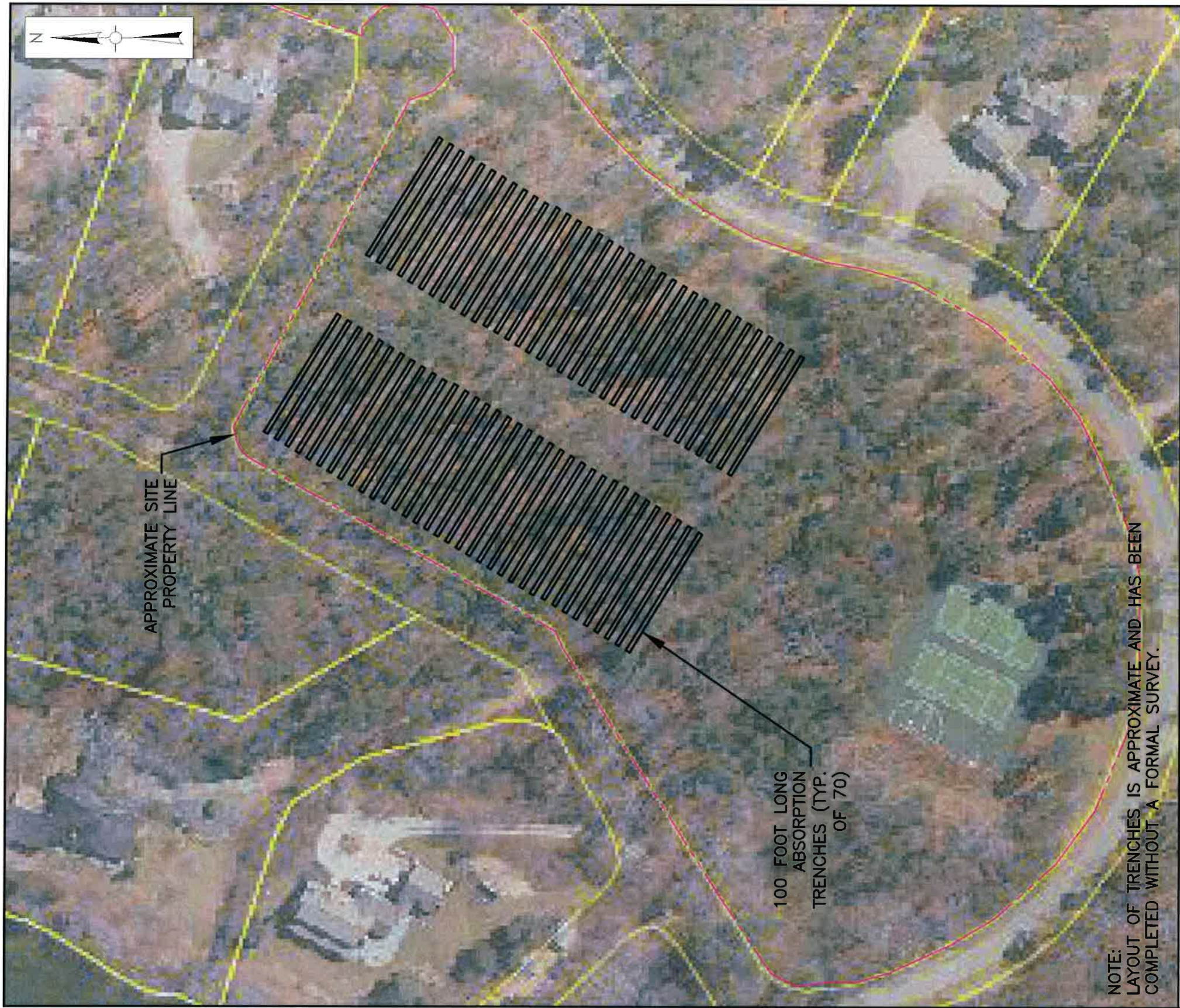


FIGURE 4-9
ORLEANS, MA
COMPREHENSIVE WASTEWATER MANAGEMENT PLAN ALTERNATIVES
SITE 173 - CONCEPTUAL DISCHARGE CONFIGURATION



NOTE:
LAYOUT OF TRENCHES IS APPROXIMATE AND HAS BEEN
COMPLETED WITHOUT A FORMAL SURVEY.

FIGURE 4-10
ORLEANS, MA
COMPREHENSIVE WASTEWATER MANAGEMENT PLAN ALTERNATIVES
SITE 181 - CONCEPTUAL DISCHARGE CONFIGURATION

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SCALE: 1" = 100'

DATA SOURCES:
MASS GIS ONLINE DATA VIEWER

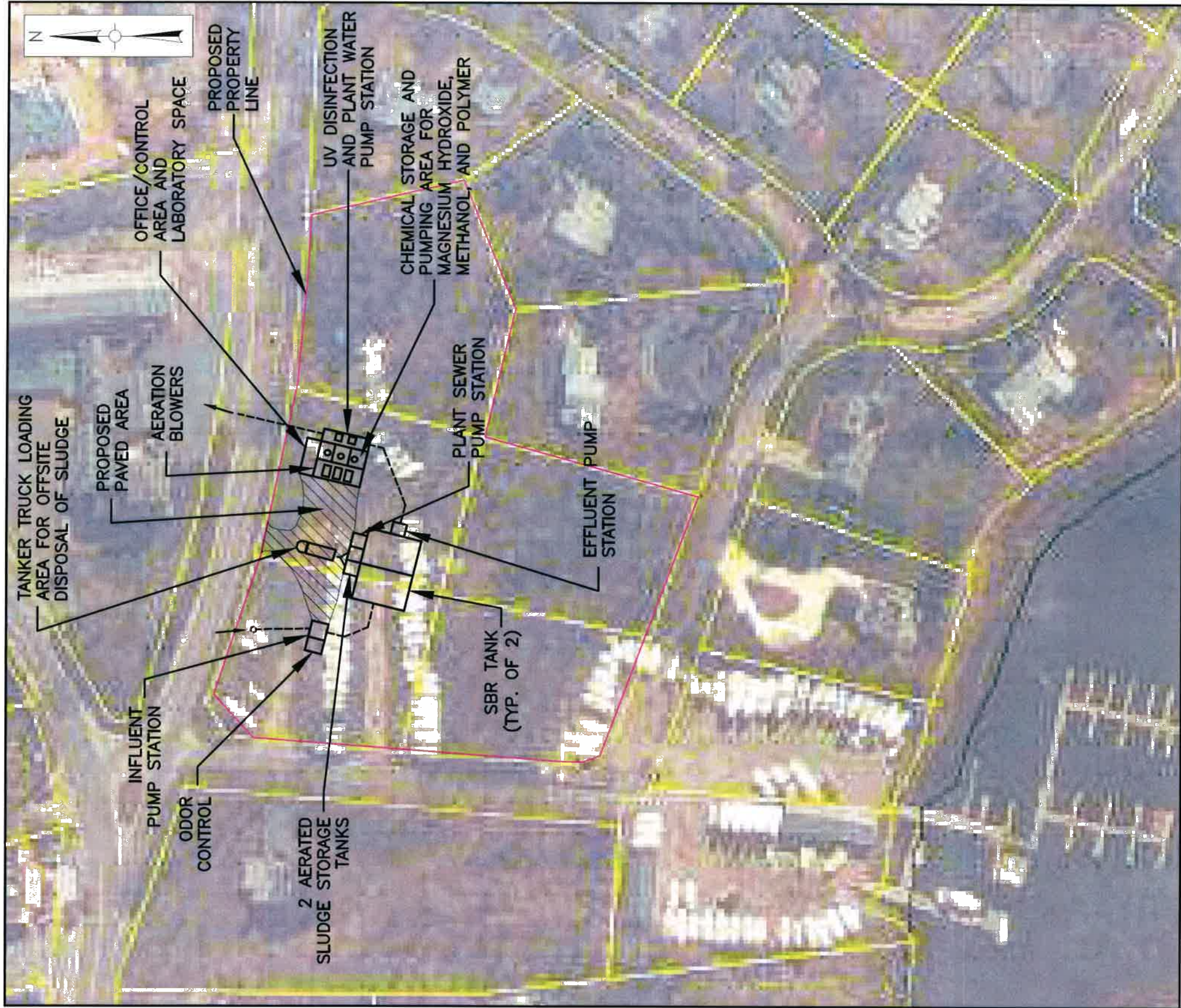


FIGURE 4-11
 ORLEANS, MA
 COMPREHENSIVE WASTEWATER MANAGEMENT PLAN ALTERNATIVES
 SITE 111 CONCEPTUAL DESIGN – DECENTRALIZED STE TREATMENT FACILITY

SCALE: 1" = 100'



DATA SOURCES:
 MASS GIS ONLINE DATA VIEWER

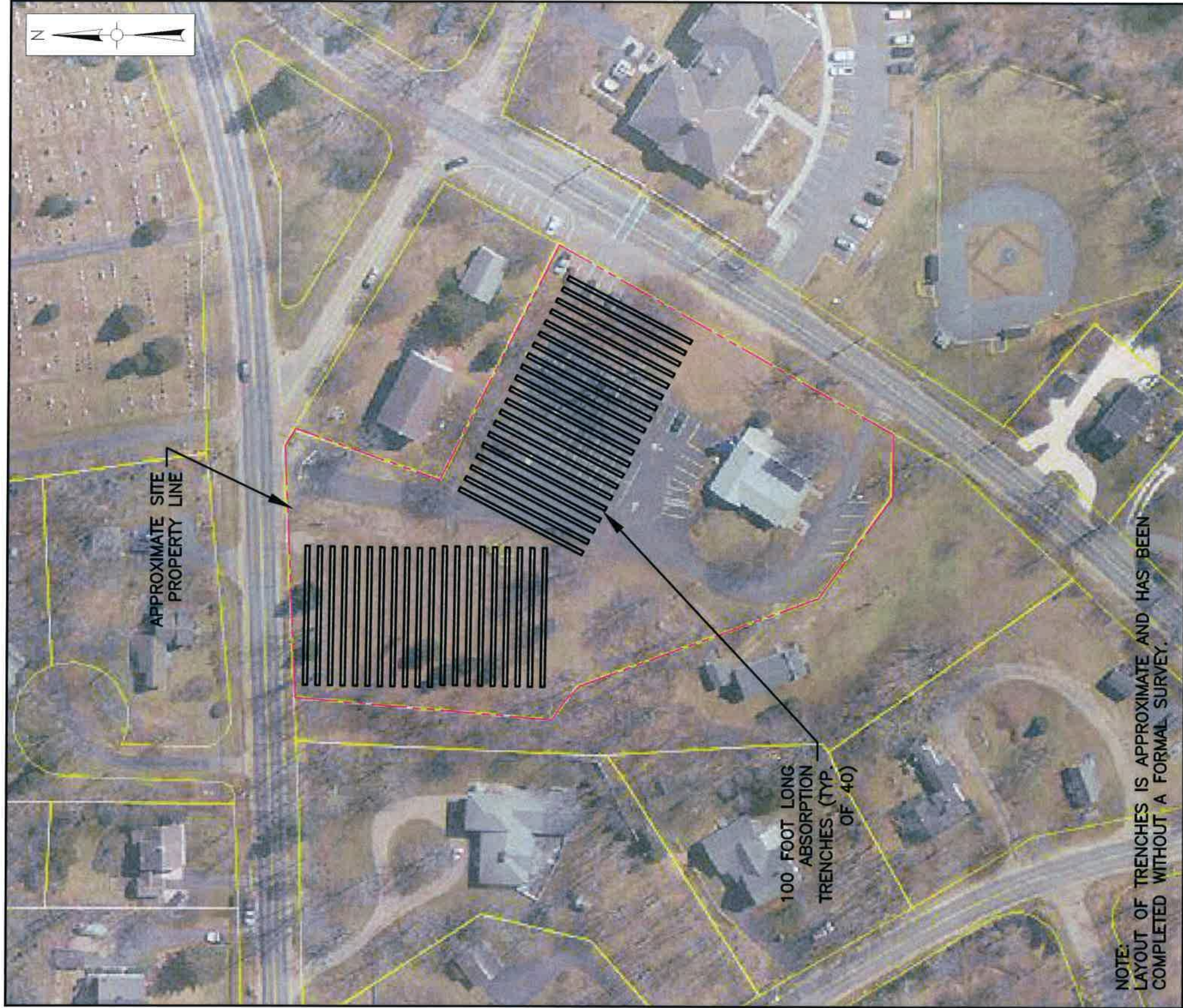


FIGURE 4-12
ORLEANS, MA
COMPREHENSIVE WASTEWATER MANAGEMENT PLAN ALTERNATIVES
SITE 112 - CONCEPTUAL DISCHARGE CONFIGURATION

SCALE: 1" = 100'



DATA SOURCES:
MASS GIS ONLINE DATA VIEWER

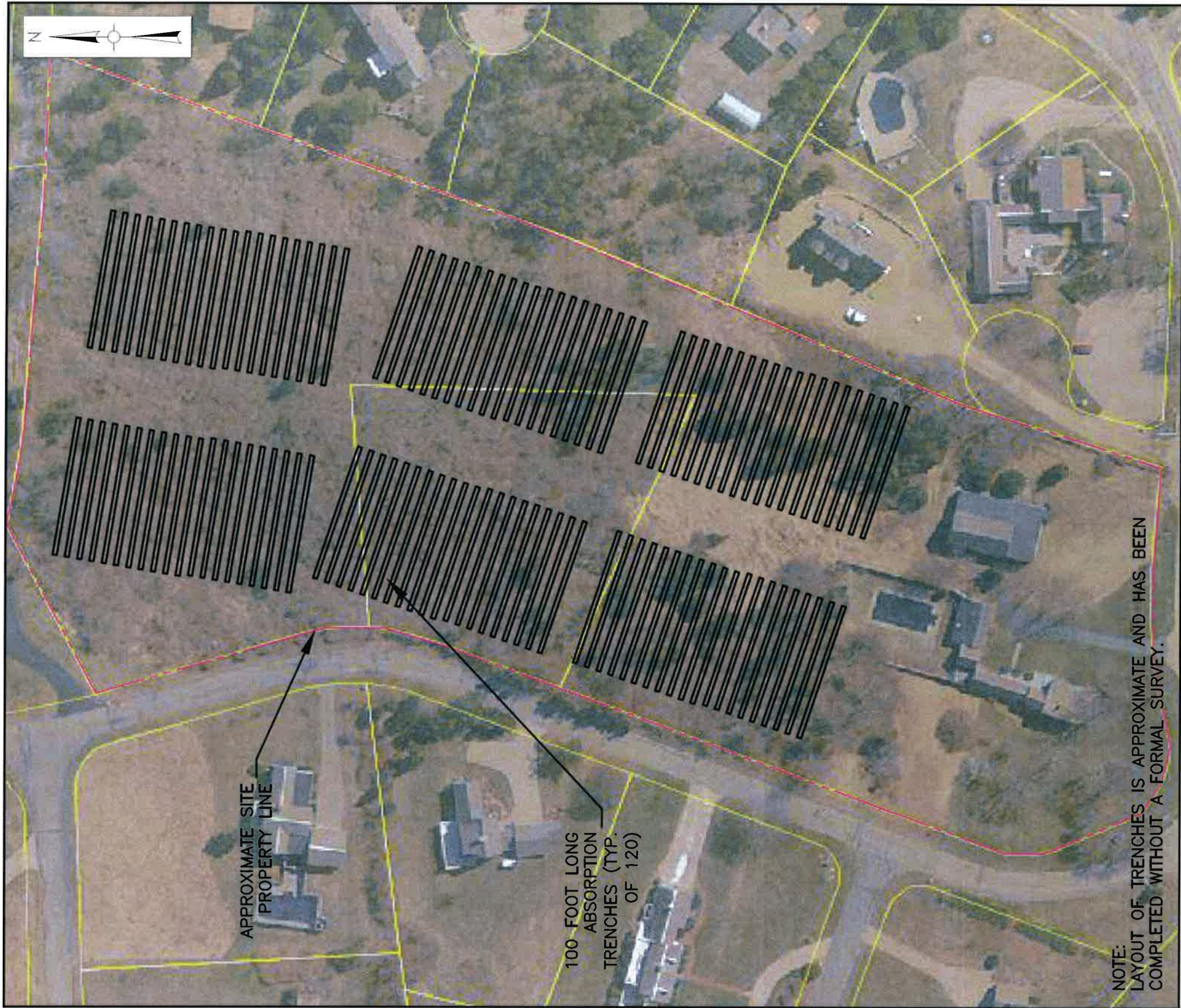
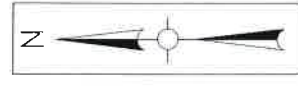


FIGURE 4-13
 ORLEANS, MA
 COMPREHENSIVE WASTEWATER MANAGEMENT PLAN ALTERNATIVES
 SITE 321 -- CONCEPTUAL DISCHARGE CONFIGURATION

SCALE: 1" = 100'



DATA SOURCES:
 MASS GIS ONLINE DATA VIEWER



APPROXIMATE SITE
PROPERTY LINE

100 FOOT LONG
ABSORPTION
TRENCHES (TYP.
OF 80)



NOTE:
LAYOUT OF TRENCHES IS APPROXIMATE AND HAS BEEN
COMPLETED WITHOUT A FORMAL SURVEY.

FIGURE 4-14

ORLEANS, MA
COMPREHENSIVE WASTEWATER MANAGEMENT PLAN ALTERNATIVES
SITE 322 - CONCEPTUAL DISCHARGE CONFIGURATION

SCALE: 1" = 100'



DATA SOURCES:
MASS GIS ONLINE DATA VIEWER

**TABLE 4-2
STEG COLLECTION SYSTEM SUMMARY**

PROPOSED STE	TRIBUTARY STREETS	STEG PIPE			TRIBUTARY TO
		4"	6"	8"	
STEG #2	South Orleans Road (#454 to #313/#318)	1,300	3,725		SITE #163 (via PS #4)
	Harwich Road (#67 to South Orleans Road)	2,660			
	Sherman Road	650			
	Lowell Drive	1,420			
	Quanset Road (South Orleans Road to #75 Quanset Road)	1,880	900		
	Caroline's Way	720			
	Lindsay Way	610			
	John Kenrick Road	1,300			
	Namequoit Road (South Orleans Road to #26 Namequoit Road)	1,210			
	SUB-TOTAL:	11,750	4,625	0	
STEG #3	Barley Neck Road	2,770	1,800		STEG #4 (via PS #13)
	Cedar Way	570			
	Windy Hill Lane	450			
	Carriage Place	660			
	Fisher Way	1,000			
	Sea Mist Drive	990			
	Briar Spring Road (Barley Neck Road to #27)	1,180			
	Twiss Road	1,030			
	SUB-TOTAL:	8,650	1,800	0	
STEG #4	Beach Road (#52 to #130)	1,800			STEG #5 (via PS #14)
	Greymore Way	1,070			
	Country Crossing	1,000			
	Meadow Way	520			
	Brick Hill Road		1,300	300	
	Colony Drive / East Circle Drive	1,270			
	Great Oak Road (Brick Hill Road to #59)	1,360			
	Rose Path	355			
	Westwood Drive	715			
	Maple Road	620			
	SUB-TOTAL:	8,710	1,300	300	
STEG #5	Beach Road (Main Street to #51)			1,600	SITE #111
	SUB-TOTAL:	0	0	1,600	
STEG #8	Jones Road		500		STEG #7 (via PS #11)
	South Orleans Road (Route 6A to #16)	800			
	Cottage Lane	660			
	Canal Road	1,430			
	Route 6A (Canal Road to #76)	730			
	Locust Road	1,600	1,000		
	Liberty Lane	550			
	Main Street/Rock Harbor Road (Route 6A to Route 6 Overpass)	2,910			
	Old Colony Way (Main Street to #130)	1,000			
	Namskaket Road	1,340			
Childs Homestead Road	1,630				
	SUB-TOTAL:	12,650	1,500	0	
STEG #7	Tonset Road (South Orleans Road to #84)		3,365		SITE #241 (via PS #8)
	South Orleans Road (#102 to Main Street)	1,680			
	Windward Way	260			
	Main Street (South Orleans Road to River Road)	800	1,880	350	
	Arena Drive	240			
	Owls Hill Road	150			
	Monument Road (Main Street to Herring Brook Way)		2,940		
	Pond Road (Monument Road to #22)	1,540			
	Eldridge Park Way	3,220			
	Marston Way	350			
	Nickerson Road	1,350			
	Main Street (South Orleans Road to Route 6A)		1,450		
	Route 6A (#115 to #79)	550	1,150		
	South Orleans Road (Main Street to #20)	1,550			
	Academy Place	430			
Cove Road	880				
	SUB-TOTAL:	13,000	10,785	350	
Pump Station #10	Old Colony Way (Old Tote Road to #130)	1,680			SITE #241 (via PS #10)
	Old Tote Road	1,070			
	SUB-TOTAL:	2,750	0	0	
	GRAND TOTAL:	57,510	20,010	2,250	

**TABLE 4-3
STEP COLLECTION SYSTEM SUMMARY**

PROPOSED STE	TRIBUTARY STREETS	STEP PIPE		TRIBUTARY TO
		1 1/2"	2"	
STEP #1	Winslow Drive	3,040		STEP #16
	Winslow Way	420		
	South Orleans Road (South Extent of Project Area to Cross Road)	1,140		
	Towhee Lane	1,480		
	Whipporwill Lane	330		
	Baywood Drive	800		
	Cross Road	1,000		
	SUB-TOTAL:	8,210	0	
STEP #2	Lake Drive	2,850		STEP #16
	Shoal Lane	810		
	Deep Pond Circle	540		
	SUB-TOTAL:	4,200	0	
STEP #16 (formerly STEG #1)	South Orleans Road (Cross Road to #453 South Orleans Road)	500	2,770	STEG #2
	Lake Drive	320		
	Chapin Circle	330		
	Half Cape Way	350		
	Crescent Ridge Way	790		
	Uncle Israel's Road	2,380		
	Rebecca Way	180		
	Blackberry Lane	250		
	Granny's Lane	1,780		
	Aunt Abigail's Way	330		
	Harwich Road (Brewster Town Line to #73 Harwich Road)	740		
	Woodridge Road	1,000		
Cross-Country (Woodridge Road to South Orleans Road)	260			
	SUB-TOTAL:	9,210	2,770	
STEP #3	Portanimicut Road	5,110		STEG #2
	Deacon Way	800		
	SUB-TOTAL:	5,910	0	
STEP #4	Namequit Road (#36 to End)	4,035	1,550	STEG #2
	Lockwood Lane	780		
	Duck Marsh Lane	430		
	Riverview Way	450		
	Little Marsh Way	400		
	Heritage Drive	1,835		
	Sturbridge Drive	1,630		
	Colonial Drive	260		
	Pilgrim Drive	580		
	Highwood Road	290		
	Ridgewood Road	1,210		
	Windsor Lane	150		
	SUB-TOTAL:	12,050	1,550	
STEG #2	Huckleberry Drive	370		SITE #163
	Eli Rogers Road	1,430		
	John's Way	300		
	Windjammer Way	615		
	SUB-TOTAL:	2,715	0	

**TABLE 4-3
STEP COLLECTION SYSTEM SUMMARY**

PROPOSED STE	TRIBUTARY STREETS	STEP PIPE		TRIBUTARY TO
		1 1/2"	2"	
STEP #5	Arey's Lane	3,055	3,050	STEP #6
	Kescayogansett Road	2,350		
	Blue Heron Way	1,060		
	Thayer Lane	1,750		
	Kenneth Lane	2,050		
	Higgins Way	350		
	Linnell Lane	670		
	Pershing Lane	2,700		
	Andre Lane	500		
	Kidd Way	300		
	Sandbar Lane	100		
	Cygnat Way	600		
	Rohmers Road	570		
	Mayflower Circle	300		
	Dromara Lane	300		
SUB-TOTAL:		16,655	3,050	
STEP #6	Monument Road (South Orleans Road to #120)	3,110		SITE #163
	Pilgrim Lake Terrace	880		
	Pilgrim Lake Terrace East	750		
	Country Lane	530		
	Pompohs Trail	550		
	Old Timer's Lane	1,600		
	Paradise Lane	230		
	Morgans Way	700		
	South Orleans Road (#309/#310 to Old Timer's Lane)	2,815	500	
	Lisa Way	375		
	Carmen Lane	140		
	No-name Street (adjacent to Lisa Way)	440		
	SUB-TOTAL:		12,120	
STEP #7	Briar Spring Road (#27 to Fox Ridge Drive)	980		STEG #3
	Gilman Lane	630		
	Fox Ridge Drive	1,660		
	Pleasant View Drive / Dale Ann Drive	1,970		
SUB-TOTAL:		5,240	0	
STEG #3	Cedar Way	300		STEG #4 (via PS #13)
	Baxter Lane	870		
	Bayberry Way	200		
	Pond View Road	360		
	Harveys Lane	1,200		
	Tides End Lane	2,330		
	Hayward Lane	1,220		
	Sea Mist Drive	370		
	Cedar Cove Road	930		
	Lestage Road	490		
	Walker Road / Black Duck Lane	940		
	Captain Dean Road	620		
	Twiss Road	600		
SUB-TOTAL:		10,430	0	

**TABLE 4-3
STEP COLLECTION SYSTEM SUMMARY**

PROPOSED STE	TRIBUTARY STREETS	STEP PIPE		TRIBUTARY TO
		1 1/2"	2"	
STEP #8	Pochet Road	3,660	1,910	STEG #4
	Sparrow Hawk Road / Blossom Lane	1,150		
	Shore View Drive (to #60) / Briar Spring Road	2,900		
	Uncle Harvey's Way	870		
	Briar Spring Road	1,270		
	Holly Lane/Spinnaker Trail	820		
	Cedar Land Road	1,420		
	Pheasant Drive	320		
	Brick Hill Road (Pochet Road to Beach Road)		1,420	
	Larboard Lane	330		
	Natural Drive	560		
	High Tide Lane	440		
	Grist Road	810		
	SUB-TOTAL:	14,550	3,330	
STEP #9	Captain Curtis Way	3,250		STEG #4
	Chickadee Lane	1,800		
	Safe Harbor Lane	450		
	Gwens Lane	550		
	Harbor View Lane	1,350		
	Harbor View East	220		
	Duck Pond Lane	300		
	Little Cove Lane	420		
	Brick Hill Road (Hopkins Lane to Tanglewood Terrace)	1,650	1,630	
	Hopkins Lane	1,400		
	Beginners Lane	1,110		
	Drummond Road	330		
	SUB-TOTAL:	12,830	1,630	
STEG #4	Landers Lane	400		STEG #5 (via PS #14)
	Dylan's Way	280		
	Great Oak Road (Brick Hill Road to #59)	500		
	Blueberry Lane	650		
	Westwood Drive	335		
SUB-TOTAL:	2,165	0		
STEP #10	Main Street (River Road to Beach Road)	1,920	1,630	STEG #5
	Hopkins Lane (Meetinghouse Road to #45)	610		
	Meetinghouse Road	2,070		
	Collins Lane	930		
	Karen Way	1,150		
	Great Oak Road (Main Street to Woodland Park Lane)	1,920		
	Pine Ridge Lane	880		
	Oak Lane	610		
	Woodland Park Lane	470		
	Mayo Way	370		
	Deerwood Park	900		
	Loomis Lane	1,850		
	Manito Way	790		
	Cheney Road	1,140		
	Lewis Road	620		
	River Road	2,100		
	Linden Lane / Packet Landing	940		
	Lucy's Lane	500		
	Rev. Treat Road	250		
	Ministers Prim	660		
School Road	1,080			
SUB-TOTAL:	21,760	1,630		

**TABLE 4-3
STEP COLLECTION SYSTEM SUMMARY**

PROPOSED STE	TRIBUTARY STREETS	STEP PIPE		TRIBUTARY TO
		1 1/2"	2"	
STEG #5	Cole Place	800		SITE #111
	Nauset Farms Way	890		
	SUB-TOTAL:	1,690	0	
STEP #11	Asa's Landing	225		STEP #17
	Gibson Road	4,080		
	Seavers Road	1,010		
	Finch Lane	250		
	Hidden Valley Road	1,210		
	Hilltop Lane	580		
SUB-TOTAL:	7,355	0		
STEP #12	Brick Hill Road (Tonset Road to Champlain Road)	1,820		STEP #17
	Bramblewood Lane	430		
	Tonset Road (#90 to #308)	2,730		
	Juniper Hill Lane	650		
SUB-TOTAL:	5,630	0		
STEP #17 (formerly STEG #6)	Tonset Road (#? to #308)	2,830	1,770	STEP #7
	Salt Works Circle	200		
	Quinn Road	510		
	Hathorne Lane	620		
	Lobster Lane	200		
SUB-TOTAL:	4,360	1,770		
STEP #13	South Orleans Road (Old Timer's Lane to #102)	2,550	1,490	STEP #7
	Crystal Lake Drive	1,490		
	Pond Road (South Orleans Road to #20)	800		
	Lake Farm Lane	1,025		
	Finlay Road	3,510		
	Giddiah Hill Road	320		
	Commerce Drive	540		
	Lots Hollow Road	430		
	Daleys Terrace (Hses. #10, #55, #60 and #61)	600		
	Kettle Pond Way	840		
	Daleys Terrace	770		
	Nickerson Road	2,830		
	SUB-TOTAL:	15,705	1,490	
STEP #14	Herring Brook Way	2,800		STEP #7
	Alewife Way	330		
	Monument Road (Main Street to Herring Brook Way)	1,620		
	Frost Fish Lane	1,000		
	Spider Web Lane	330		
	Keziah's Lane	5,945		
	Megs Lane	800		
SUB-TOTAL:	12,825	0		
STEP #15	Rock Harbor Road	4,760	3,050	STEP #8
	Bridge Road	990		
	Knowles Way	160		
	Cedar Pond Road	270		
	Captain Doanes Way	950		
	Captains Row	890		
	Smith Bros Way	360		
	Penny Lane	430		
Bonnell Lane	630			
SUB-TOTAL:	9,440	3,050		

**TABLE 4-3
STEP COLLECTION SYSTEM SUMMARY**

PROPOSED STE	TRIBUTARY STREETS	STEP PIPE		TRIBUTARY TO
		1 1/2"	2"	
STEG #8	Route 6A (Eastham Town Line to South Orleans Road)	2,000		STEG #7 (via PS #11)
	Old Country Road	600		
	Main Street (Route 6A to Route 6 Overpass)	270		
	Prence Lane	400		
	SUB-TOTAL:	3,270	0	
STEG #7	Driftwood Lane	730		SITE #241 (via PS #8)
	Seacrest Drive	830		
	Tonset Road (#90 to #?)		1,350	
	Old Farm Road	590		
	Quail Hill Lane	900		
	Gesner Road	1,330		
	Woodland Drive	385		
	Etta's Way	375		
	Uncle Vick's Way	990		
	Misty Lane	350		
	Clayton Circle	2,160		
	Cove Road	650		
	Henson's Way	1,200		
	Aunt Polly's Lane	400		
SUB-TOTAL:	10,890	1,350		
Pump Station #10	Route 6A (#192 to #120)	3,025		SITE #241
	Brewster Cross Road	1,180		
	Center Place	930		
	SUB-TOTAL:	5,135	0	
GRAND TOTAL:	214,345	22,120		