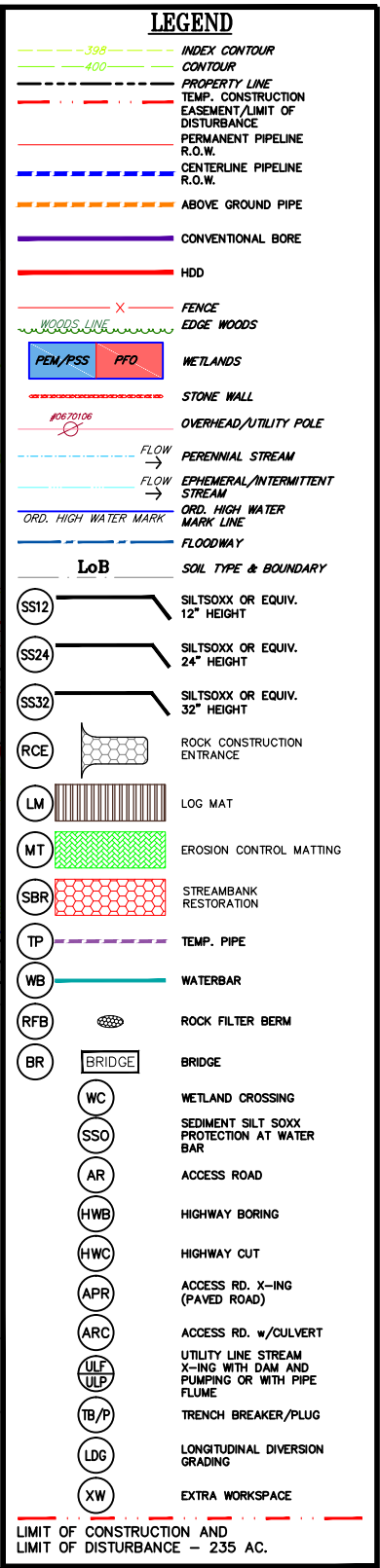
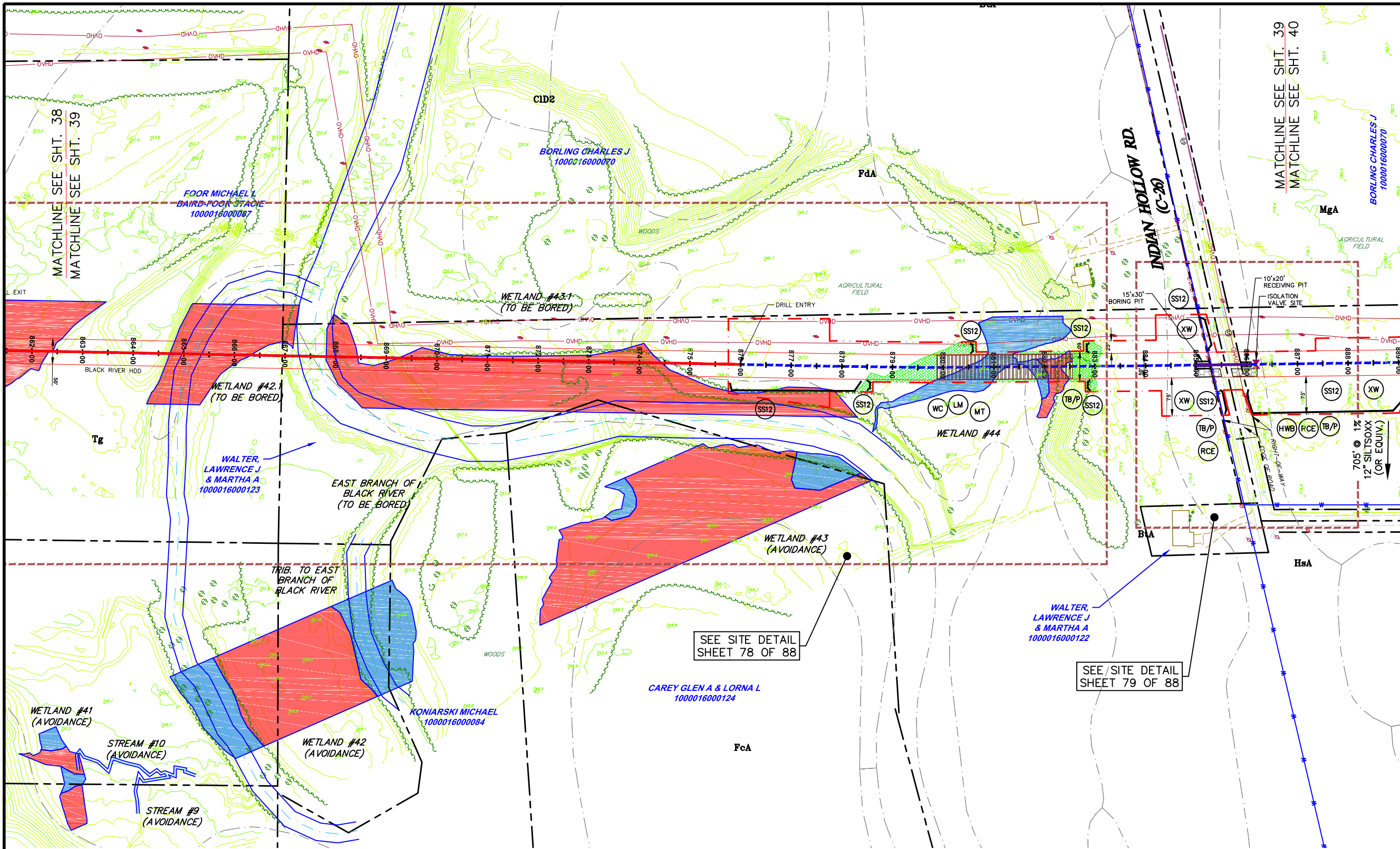


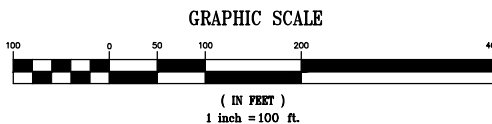
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**E&SPC LAYOUT PLAN**

**AVON LAKE GAS ADDITION PROJECT**

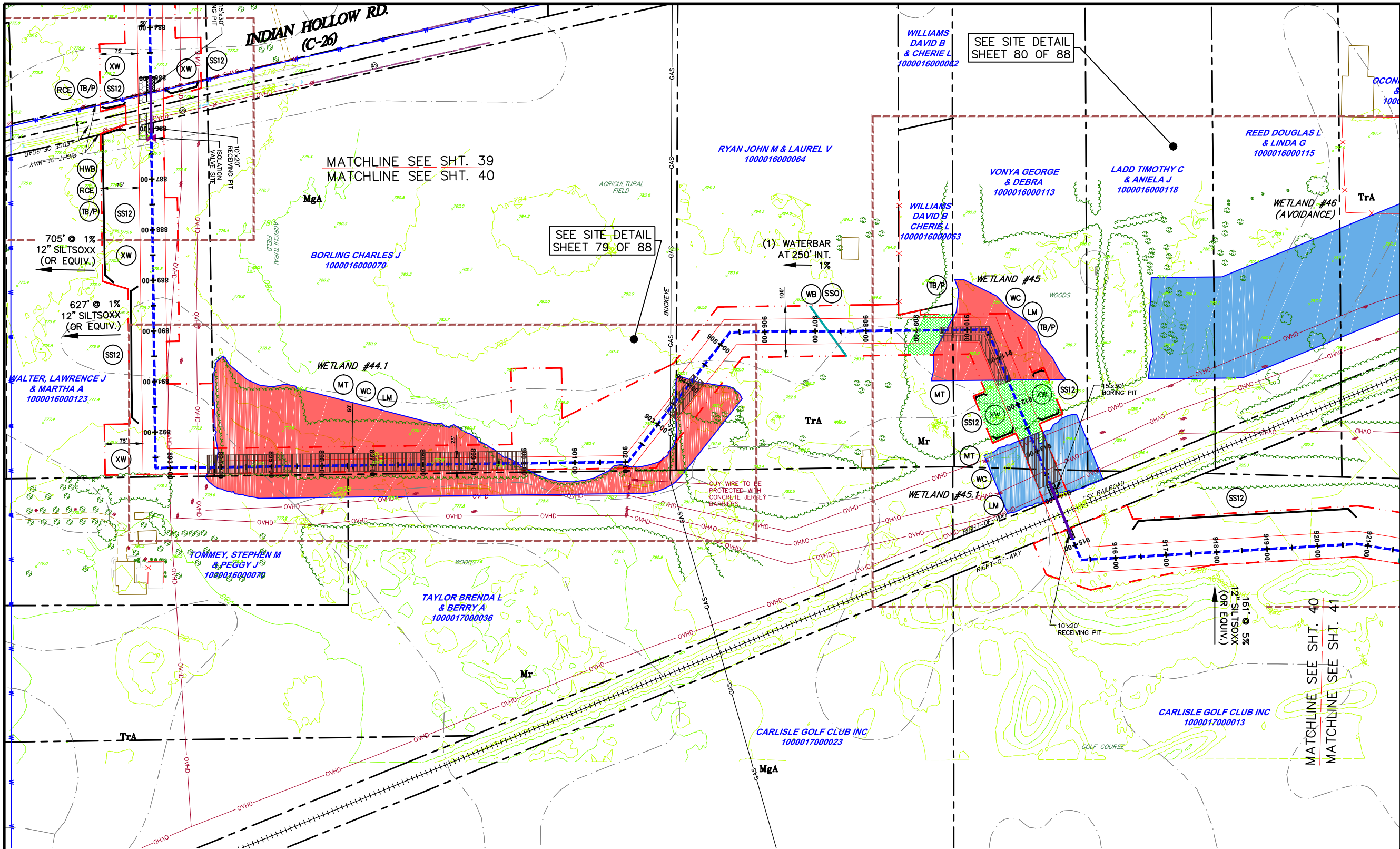
CARLISLE, EATON & LAGRANGE TOWNSHIPS  
AVON, AVON LAKE, ELYRIA &  
NORTH RIDGEVILLE CITIES  
LORAIN COUNTY  
OHIO

**Hanover**  
Engineering Associates Inc

DRAWN BY: AEJ  
CHECKED BY: SJC  
DATE: 12.15.14  
SCALE: 1"=100'  
PROJECT NO.: NRG-1007  
SHEET NO.: 39 OF 88

3355 Route 611, Suite 1  
Bartonsville, PA 18321-7822  
570.688.9550  
Fax 570.688.9768



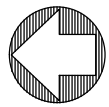
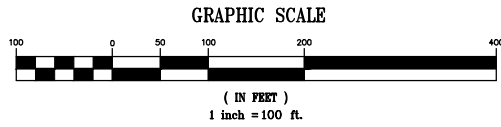


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SEAL

**E&SPC LAYOUT PLAN**

**AVON LAKE GAS ADDITION PROJECT**

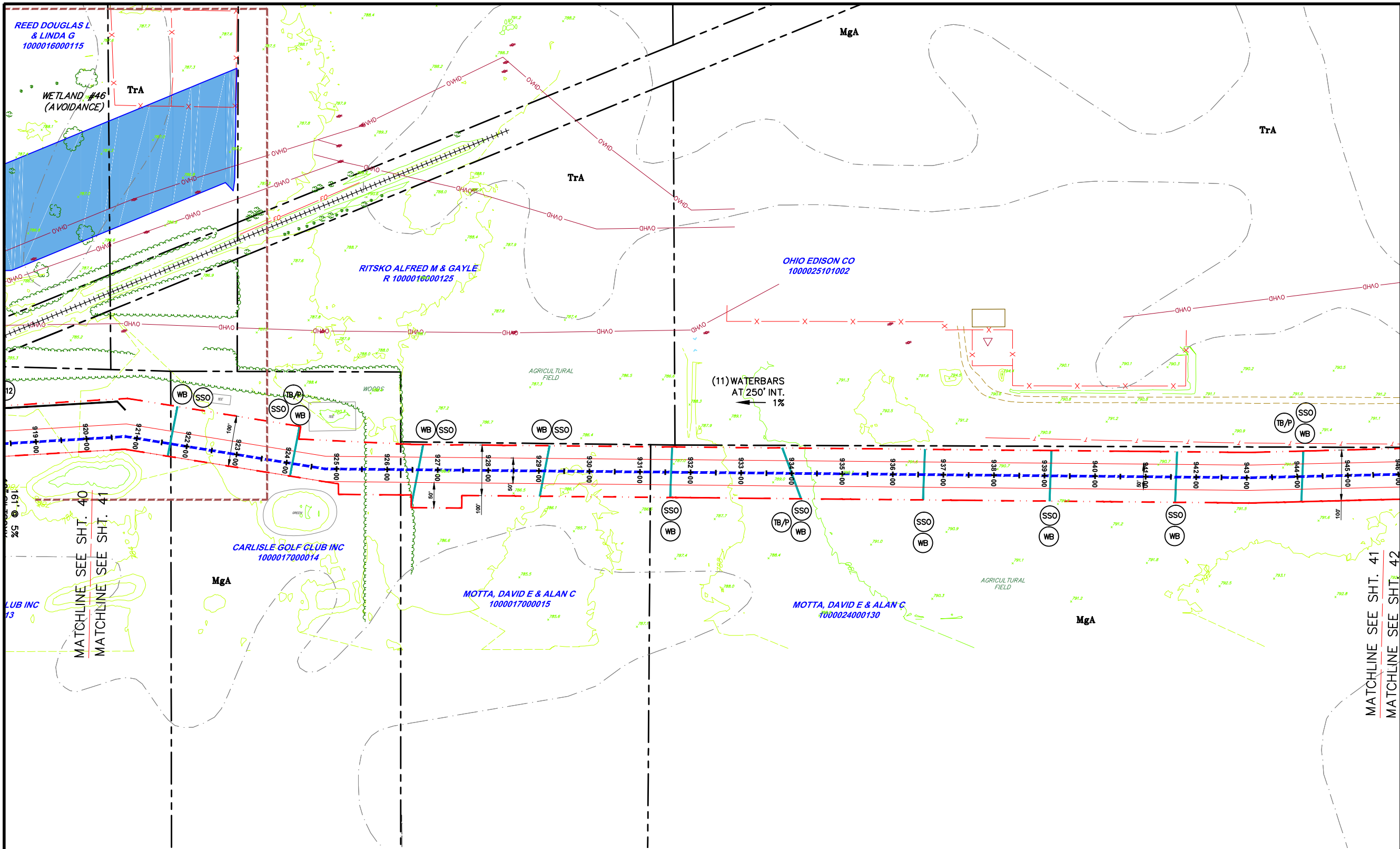
CARLISLE, EATON & LAGRANGE TOWNSHIPS  
AVON, AVON LAKE, ELYRIA &  
NORTH RIDGEVILLE CITIES  
LORAIN COUNTY  
OHIO

DRAWN BY: AEJ  
CHECKED BY: SJC  
DATE: 12.15.14  
SCALE: 1"=100'

PROJECT NO. NRG-1007  
SHEET NO. 40 OF 88

3355 Route 611, Suite 1  
Bartonsville, PA 18321-7822  
570.688.9550  
Fax 570.688.9768

**Hanover**  
Engineering Associates Inc

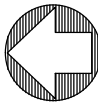
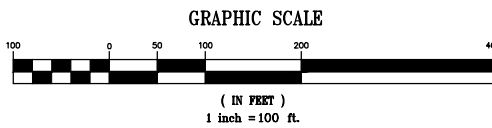


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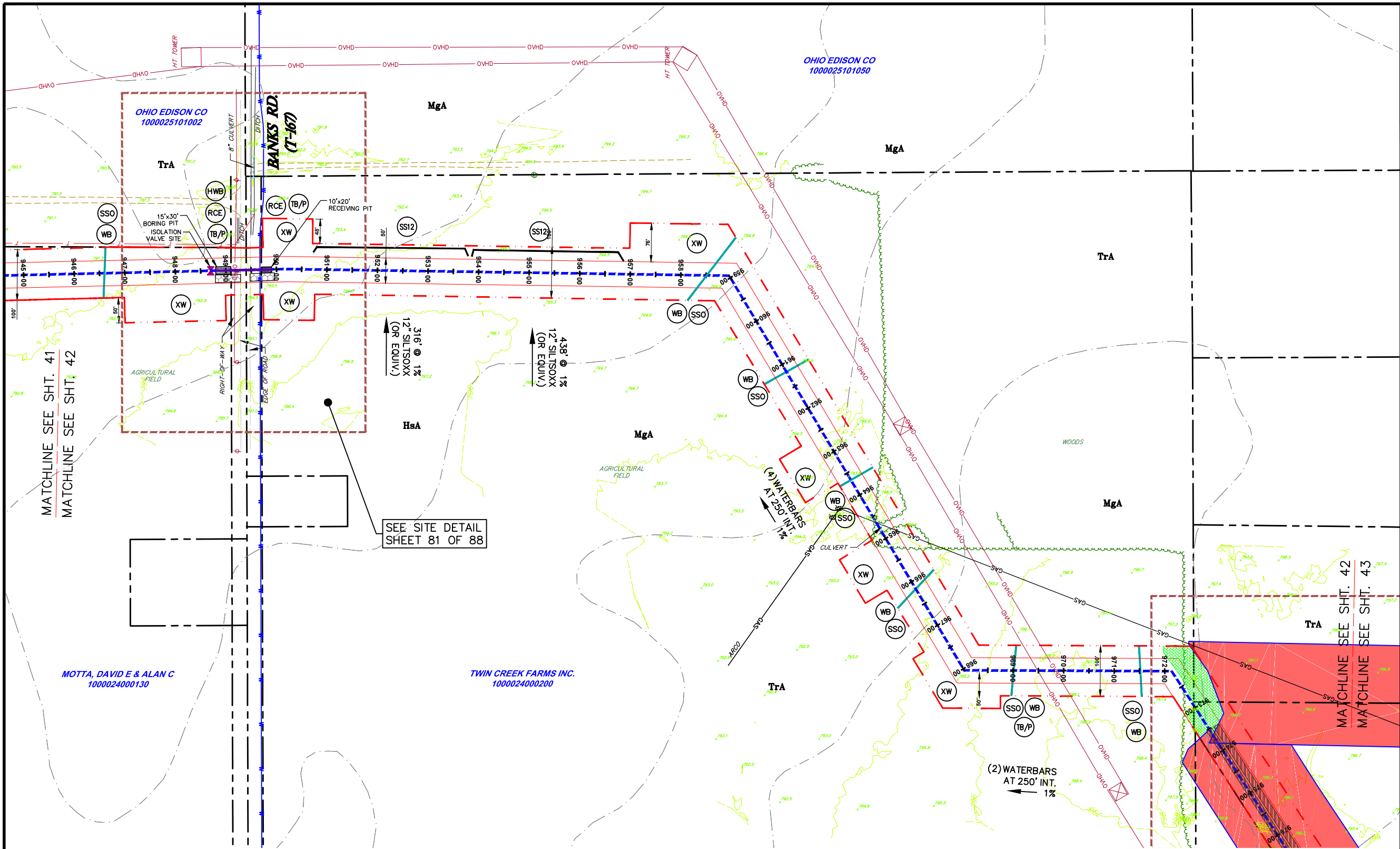
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SEAL

**E&SPC LAYOUT PLAN**

NO.	REVISIONS		DATE	AVON LAKE GAS ADDITION PROJECT			
				CARLISLE, EATON & LAGRANGE TOWNSHIPS AVON, AVON LAKE, ELYRIA & NORTH RIDGEVILLE CITIES LORAIN COUNTY OHIO		DRAWN BY: AEJ	PROJECT NO. NRG-1007
						CHECKED BY: SJC	SHEET NO. 41 OF 88
						DATE: 12.15.14	
						SCALE: 1"=100'	
						<b>Hanover</b> Engineering Associates Inc	





**LEGEND**

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CONTOUR

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PEM/PSS

PFO

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**GRAPHIC SCALE**

( IN FEET )  
1 inch = 100 ft.

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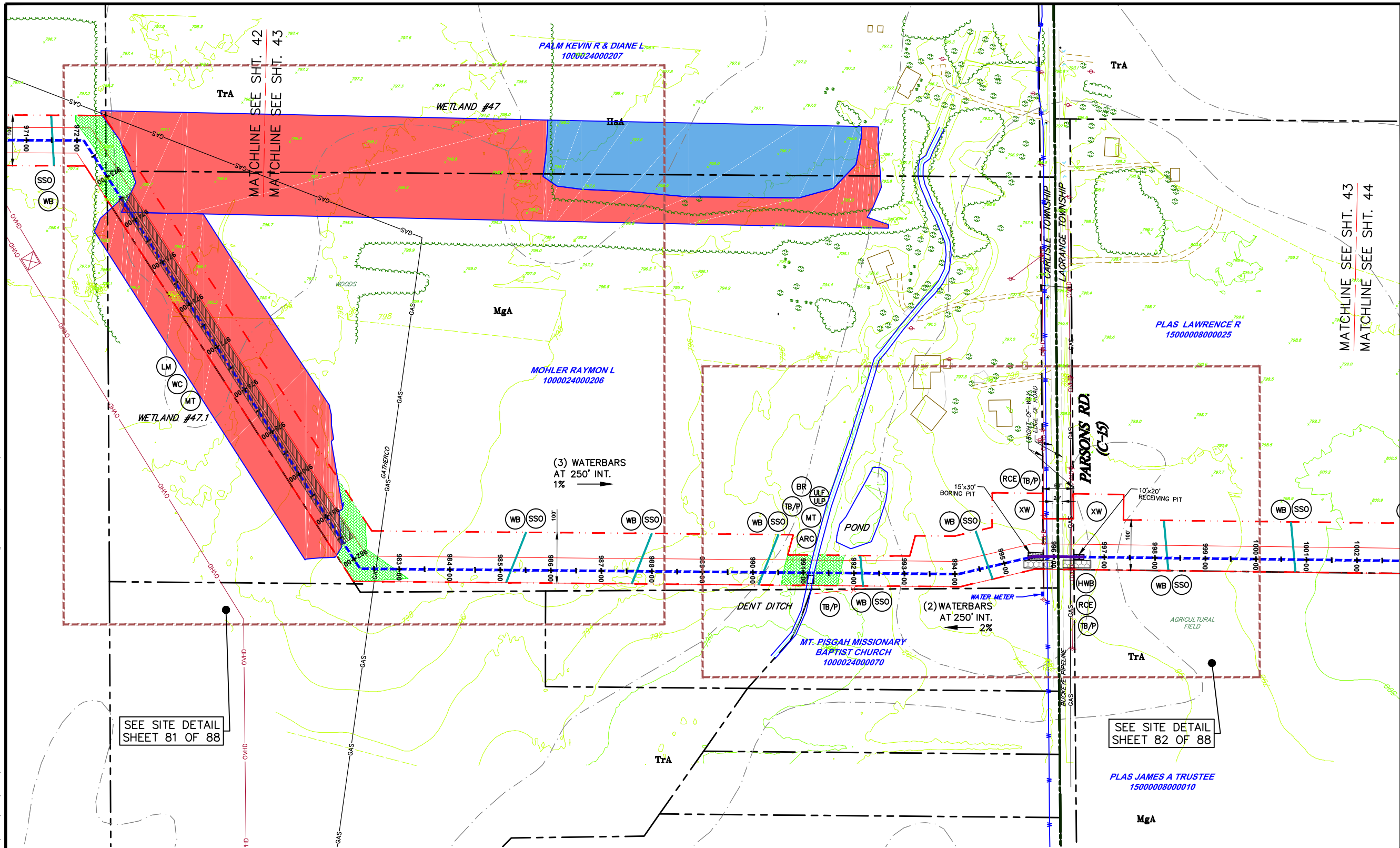
**E&SPC LAYOUT PLAN**

**AVON LAKE GAS ADDITION PROJECT**

CARLISLE, EATON & LAGRANGE TOWNSHIPS  
AVON, AVON LAKE, ELYRIA &  
NORTH RIDGEVILLE CITIES  
LORAIN COUNTY  
OHIO

**Hanover**  
Engineering Associates Inc

DRAWN BY: AEJ	PROJECT NO. NRG-1007
CHECKED BY: SJC	SHEET NO. 42 OF 88
DATE: 12.15.14	
SCALE: 1"=100'	
3355 Route 611, Suite 1 Bartonsville, PA 18321-7822 570.688.9550 Fax 570.688.9768	



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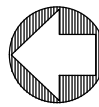
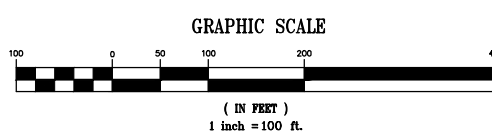
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SEE SITE DETAIL SHEET 81 OF 88

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CARLISLE, EATON & LAGRANGE TOWNSHIPS  
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LORAIN COUNTY  
OHIO

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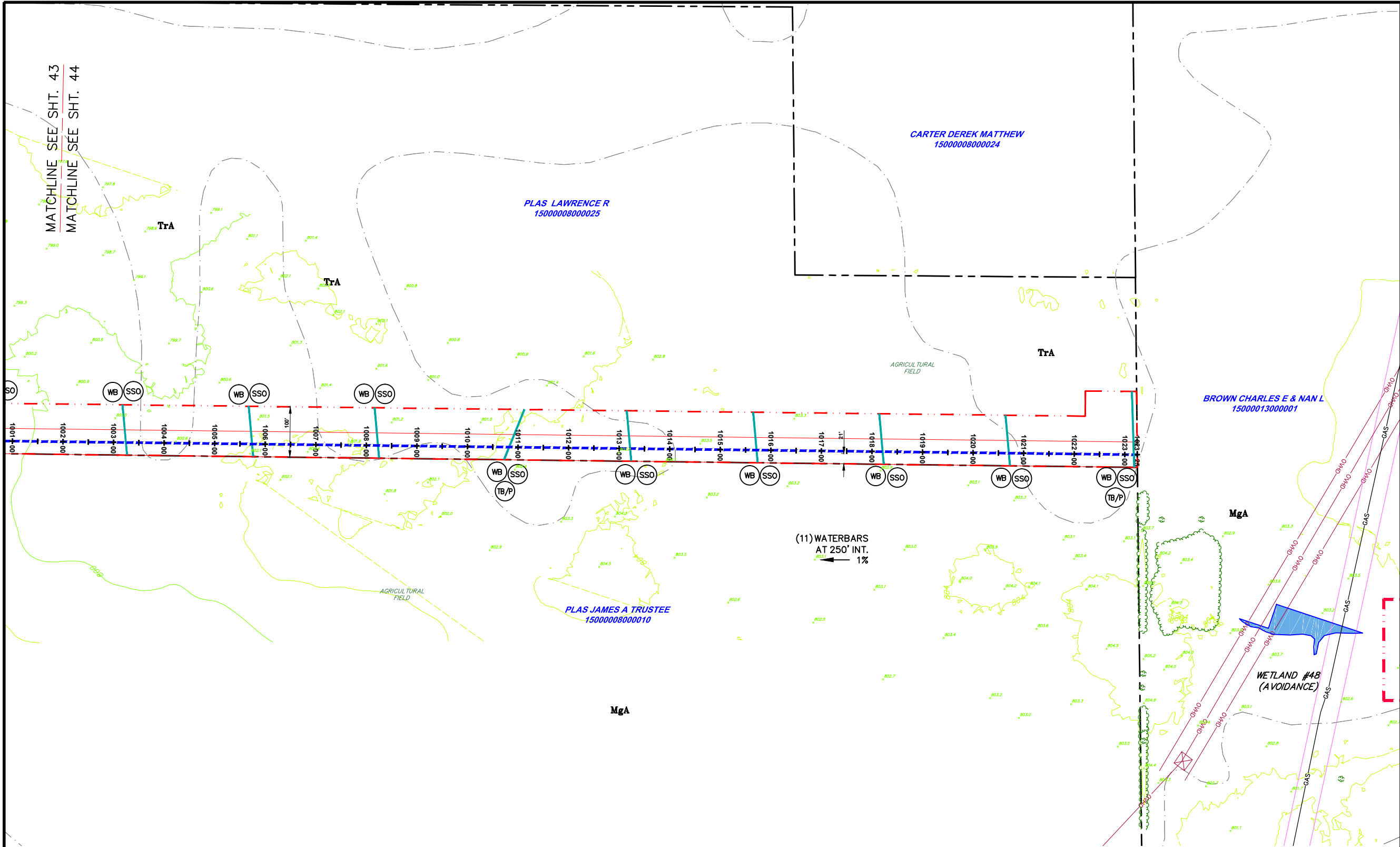
PROJECT NO. NRG-1007  
SHEET NO. 43 OF 88

3355 Route 611, Suite 1  
Bartonsville, PA 18321-7822  
570.688.9550  
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**Hanover**  
Engineering Associates Inc



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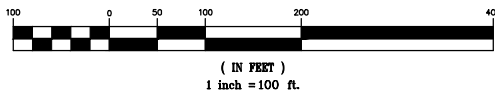
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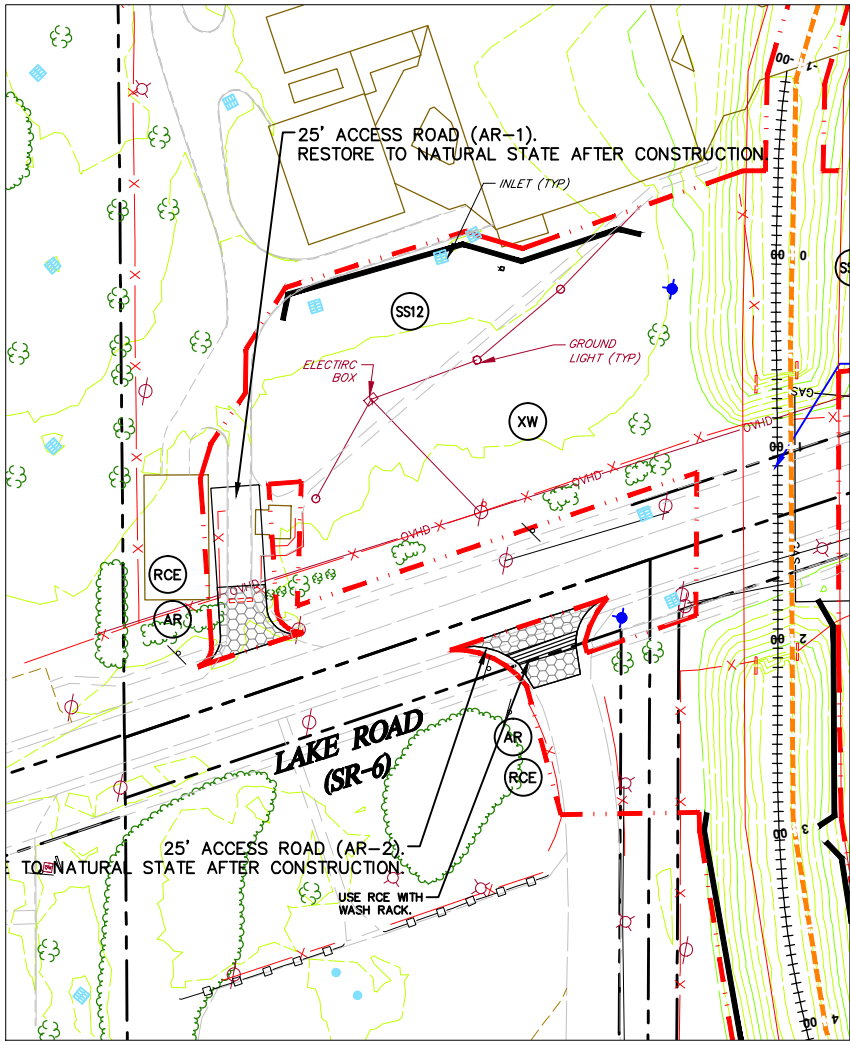
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3355 Route 611, Suite 1  
Bartonsville, PA 18321-7822  
570.688.9550  
Fax 570.688.9768

Y:\Projects\Energy\NRG Energy\NRG-1007-Avon Lakes Pipeline\DWG\ESPC\ ESPC-NRG-1007-Avon LAKE-006-SITE DETAILS-1.dwg Dec 14, 2014 - 5:36pm



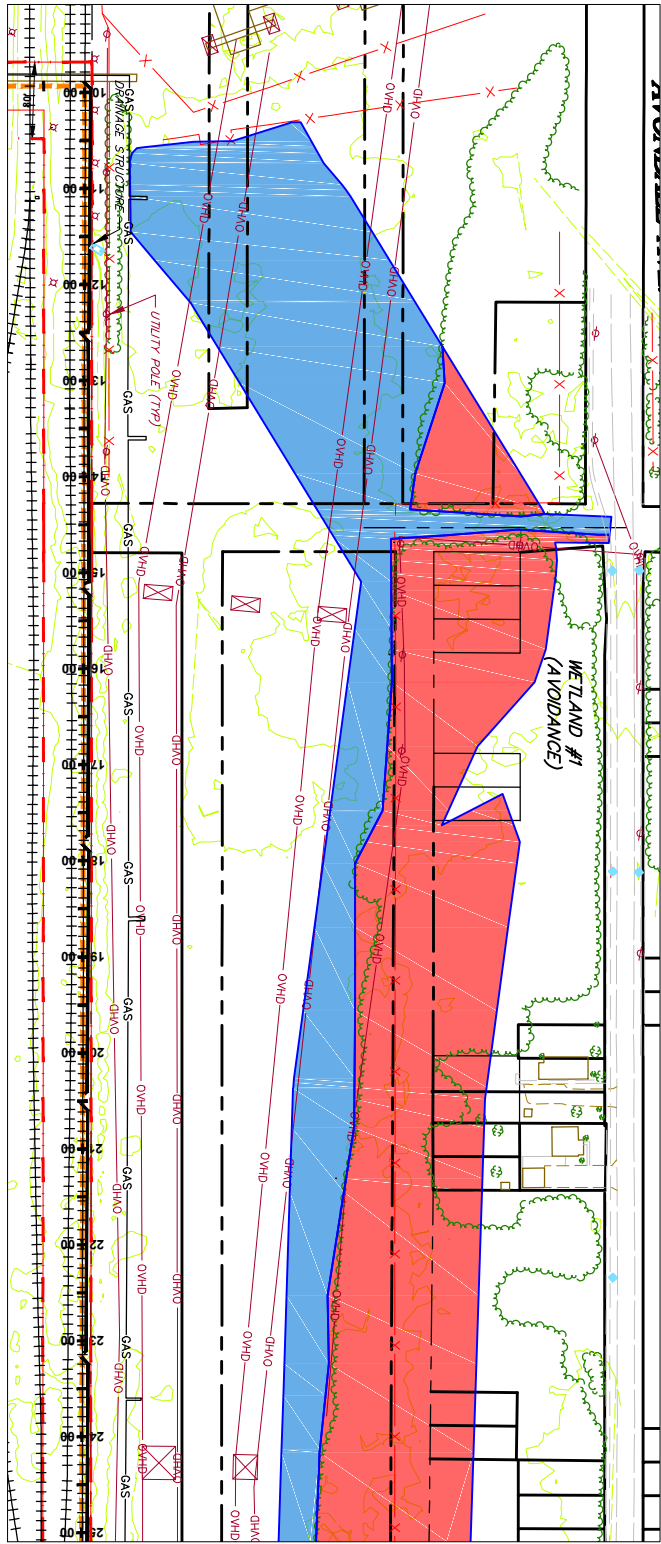
**ACCESS ROAD (AR-1) TO LAKE ROAD (SR-6),  
ACCESS ROAD (AR-2) TO LAKE ROAD (SR-6),  
& LAKE ROAD (SR-6)**  
SCALE: 1" = 50'

**NOTES:**

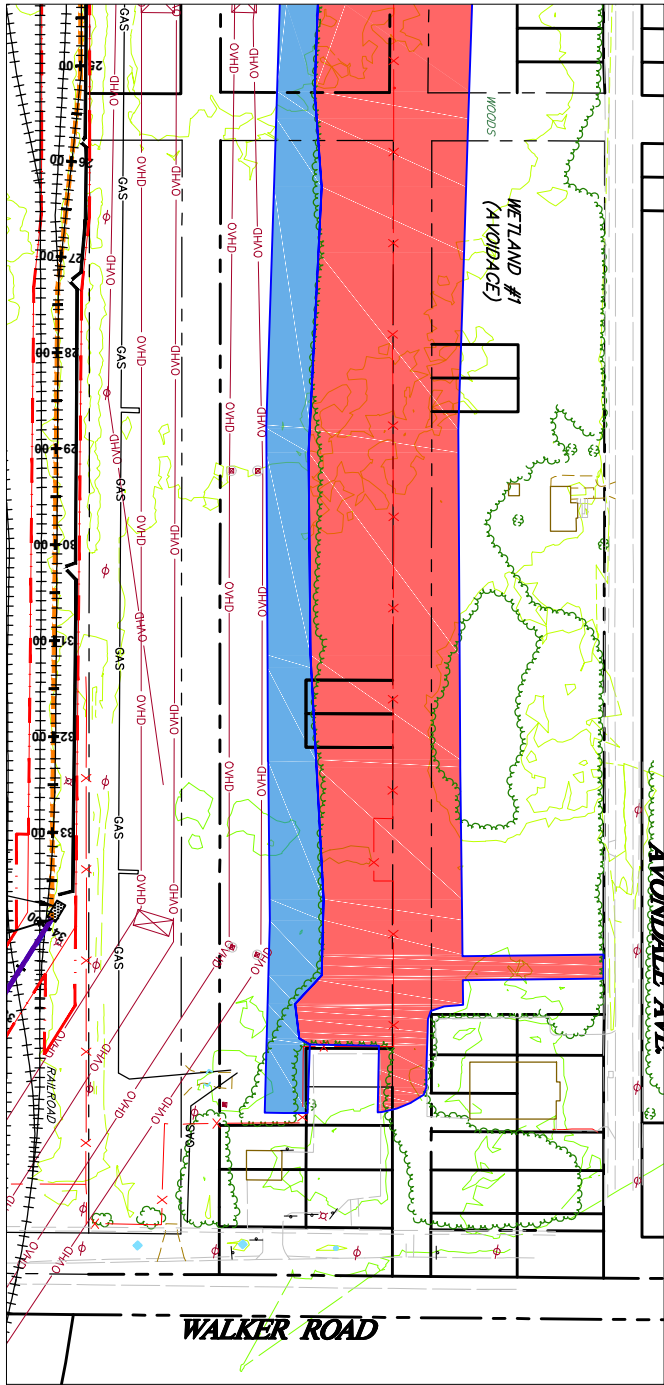
1. REFER TO DETAIL SHEET 5 FOR "RCE" DETAIL.
2. REFER TO DETAIL SHEET 5 FOR "AR" DETAIL.
3. REFER TO DETAIL SHEET 3 FOR "HWC" OR "HMB" DETAIL. PLACE TRENCH BREAKERS ON EITHER SIDE OF THE EXISTING ROAD.
4. SEE ODOT PERMITS FOR STATE REQUIREMENTS.
5. REFER TO DETAIL SHEET 3 FOR "TB" DETAIL.
6. REFER TO DETAIL SHEET 6 FOR INLET PROTECTION DETAIL.

**GENERAL NOTES:**

1. SEE DETAIL SHEET 1 FOR SCHEDULE FOR PIPES/BRIDGES.
2. STREAM BUFFER IS 25 FEET FROM THE ORDINARY HIGH WATER MARK AND WETLAND BUFFER IS 25 FT. FROM WETLAND BOUNDARY.

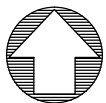
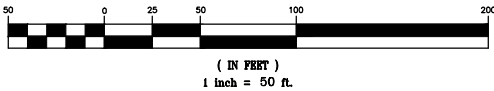


**WETLAND #1 (AVOIDANCE)**  
SCALE: 1" = 100'



LEGEND	
	INDEX CONTOUR
	CONTOUR
	PROPERTY LINE
	TEMP. CONSTRUCTION EASEMENT/LIMIT OF DISTURBANCE
	PERMANENT PIPELINE
	CENTERLINE PIPELINE
	ABOVE GROUND PIPE
	CONVENTIONAL BORE
	HDD
	FENCE
	EDGE WOODS
	WETLANDS
	STONE WALL
	OVERHEAD/UTILITY POLE
	FLOW
	PERENNIAL STREAM
	EPHEMERAL/INTERMITTENT STREAM
	ORD. HIGH WATER MARK
	FLOODWAY
	LoB
	SILT/COX OR EQUIV. 12" HEIGHT
	SILT/COX OR EQUIV. 24" HEIGHT
	SILT/COX OR EQUIV. 32" HEIGHT
	ROCK CONSTRUCTION ENTRANCE
	LOG MAT
	EROSION CONTROL MATTING
	STREAMBANK RESTORATION
	TEMP. PIPE
	WATERBAR
	ROCK FILTER BERM
	BRIDGE
	WETLAND CROSSING
	SEDIMENT SILT SOXX PROTECTION AT WATER BAR
	ACCESS ROAD
	HIGHWAY BORING
	HIGHWAY CUT
	ACCESS RD. X-ING (PAVED ROAD)
	ACCESS RD. w/CULVERT
	UTILITY LINE STREAM X-ING WITH DAM AND PUMPING OR WITH PIPE FLUME
	TRENCH BREAKER/PLUG
	LONGITUDINAL DIVERSION GRADING
	EXTRA WORKSPACE
LIMIT OF CONSTRUCTION AND LIMIT OF DISTURBANCE - 235 AC.	

**GRAPHIC SCALE**



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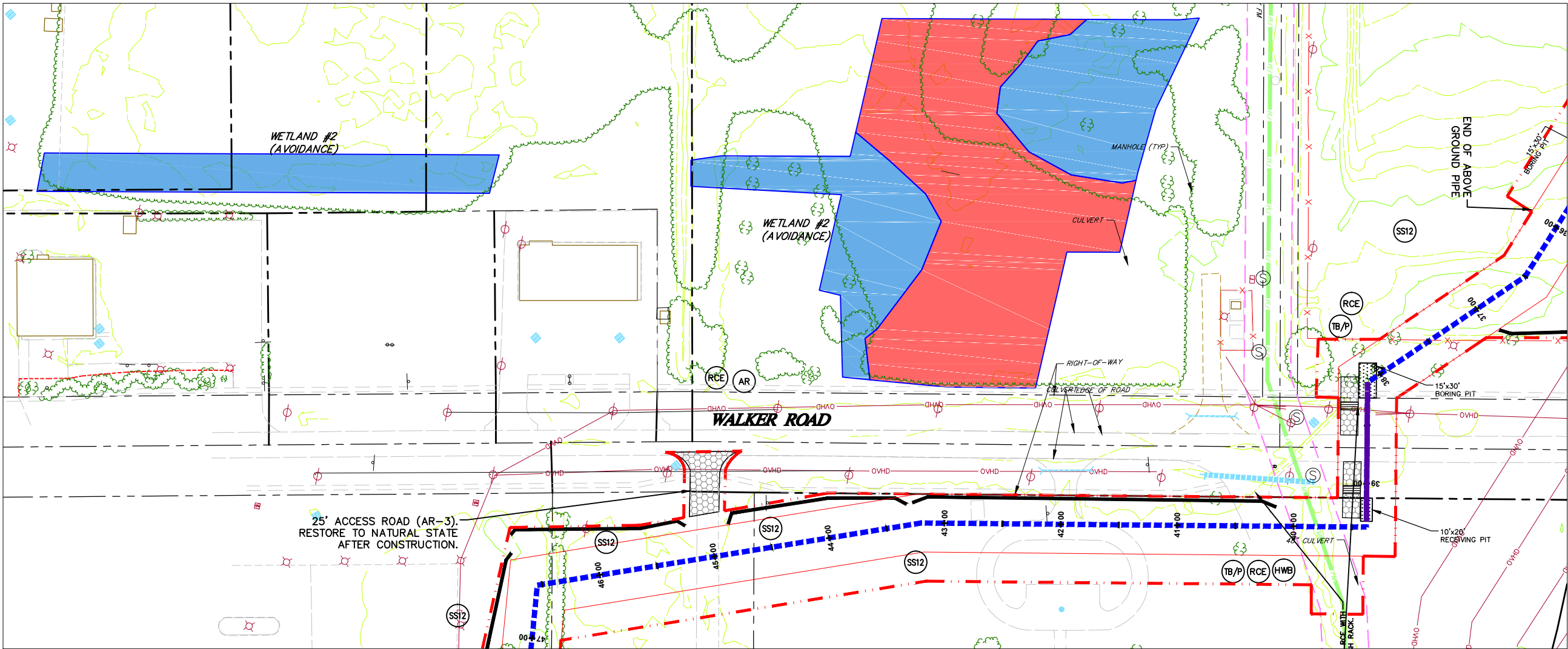
SEAL

**E&SPC SITE DETAIL**

SEAL	NO.	REVISIONS	DATE	AVON LAKE GAS ADDITION PROJECT			
				CARLISLE, EATON & LAGRANGE TOWNSHIPS AVON, AVON LAKE, ELYRIA & NORTH RIDGEVILLE CITIES LORAIN COUNTY OHIO	DRAWN BY: AEJ	PROJECT NO. NRG-1007	
					CHECKED BY: SJC	SHEET NO. 45 OF 88	
					DATE: 12.15.14		
					SCALE: AS NOTED		
				<b>Hanover</b> Engineering Associates Inc	3355 Route 611, Suite 1 Bartonsville, PA 18321-7822 570.688.9550 Fax 570.688.9768		



Y:\Projects\Energy\NRG Energy\NRG-1007-Avon Lakes Pipeline\DWG\ESPC\ ESPC-NRG-1007-Avon Lake-006-SITE DETAILS-1.dwg Dec 14, 2014 - 5:38pm



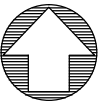
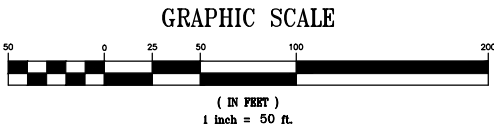
**WETLAND #2(AVOIDANCE), WALKER ROAD, & ACCESS ROAD (AR-3) TO WALKER ROAD**  
SCALE: 1" = 50'

**NOTES:**

1. REFER TO DETAIL SHEET 3 FOR "TB/P" DETAIL. ADDITIONAL TRENCH BREAKERS SHALL BE USED IF NEEDED.
2. PLACE SEDIMENT BARRIER/SIGNAGE AROUND PERIMETER OF WETLAND PRIOR TO ANY EARTHWORK. IF THE CONTRACTOR IS NOT SURE WHERE THE WETLAND "LIMIT" IS, HE SHALL CONTACT THE OWNER TO HAVE THE WETLAND REMARKED.
3. REFER TO DETAIL SHEET 5 FOR "RCE" DETAIL.
4. REFER TO DETAIL SHEET 5 FOR "AR" DETAIL.
5. REFER TO DETAIL SHEET 3 FOR "HWB" DETAIL. PLACE TRENCH BREAKERS ON EITHER SIDE OF THE EXISTING ROAD.
6. REFER TO DETAIL SHEET 3 FOR "TB" DETAIL.
7. REFER TO DETAIL SHEET 6 FOR INLET PROTECTION DETAIL.

**GENERAL NOTES:**

1. SEE DETAIL SHEET 1 FOR SCHEDULE FOR PIPES/BRIDGES.
2. STREAM BUFFER IS 25 FEET FROM THE ORDINARY HIGH WATER MARK AND WETLAND BUFFER IS 25 FT. FROM WETLAND BOUNDARY.



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LEGEND	
	INDEX CONTOUR
	CONTOUR
	PROPERTY LINE
	TEMP. CONSTRUCTION EASEMENT/LIMIT OF DISTURBANCE
	PERMANENT PIPELINE R.O.W.
	CENTERLINE PIPELINE R.O.W.
	ABOVE GROUND PIPE
	CONVENTIONAL BORE
	HDD
	FENCE
	EDGE WOODS
	WETLANDS
	STONE WALL
	OVERHEAD/UTILITY POLE
	FLOW
	PERENNIAL STREAM
	EPHEMERAL/INTERMITTENT STREAM
	ORD. HIGH WATER MARK
	FLOODWAY
	SOIL TYPE & BOUNDARY
	SILT/CLAY OR EQUIV. 12" HEIGHT
	SILT/CLAY OR EQUIV. 24" HEIGHT
	SILT/CLAY OR EQUIV. 32" HEIGHT
	ROCK CONSTRUCTION ENTRANCE
	LOG MAT
	EROSION CONTROL MATTING
	STREAMBANK RESTORATION
	TEMP. PIPE
	WATERBAR
	ROCK FILTER BERM
	BRIDGE
	WETLAND CROSSING
	SEDIMENT SILT SOXX PROTECTION AT WATER BAR
	ACCESS ROAD
	HIGHWAY BORING
	HIGHWAY CUT
	ACCESS RD. X-ING (PAVED ROAD)
	ACCESS RD. w/CULVERT
	UTILITY LINE STREAM X-ING WITH DAM AND PUMPING OR WITH PIPE FLUME
	TRENCH BREAKER/PLUG
	LONGITUDINAL DIVERSION GRADING
	EXTRA WORKSPACE
	LIMIT OF CONSTRUCTION AND LIMIT OF DISTURBANCE - 235 AC.

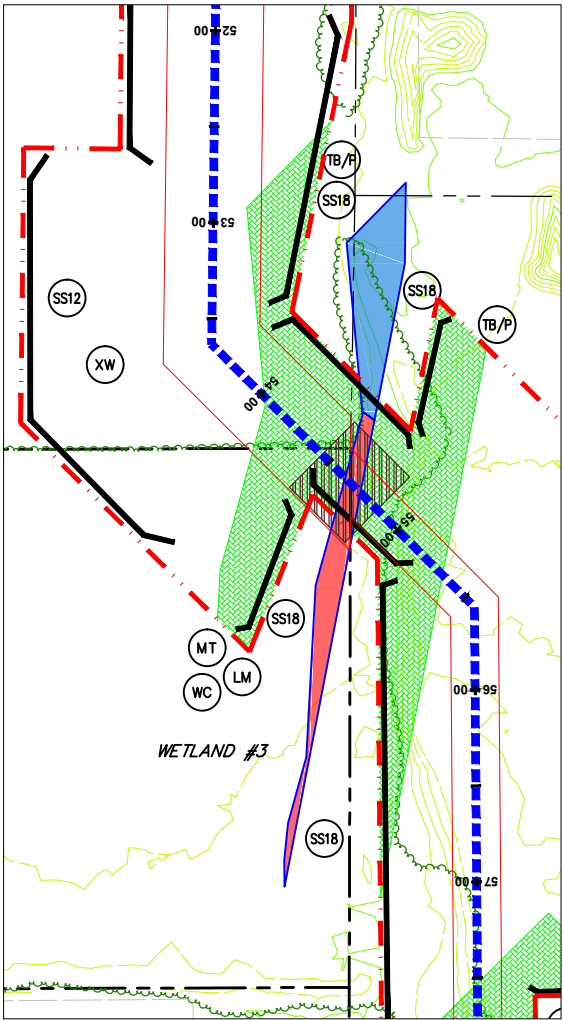
**E&SPC SITE DETAIL**

NO.			REVISIONS	DATE	AVON LAKE GAS ADDITION PROJECT			
					CARLISLE, EATON & LAGRANGE TOWNSHIPS AVON, AVON LAKE, ELYRIA & NORTH RIDGEVILLE CITIES LORAIN COUNTY OHIO			
					DRAWN BY: AEJ CHECKED BY: SJC DATE: 12.15.14 SCALE: AS NOTED			
					PROJECT NO. NRG-1007 SHEET NO. 46 OF 88			
					3355 Route 611, Suite 1 Bartonsville, PA 18321-7822 570.688.9550 Fax 570.688.9768			

**Hanover**  
Engineering Associates Inc



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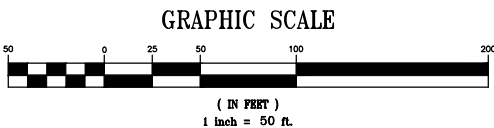
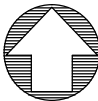


NOTES:

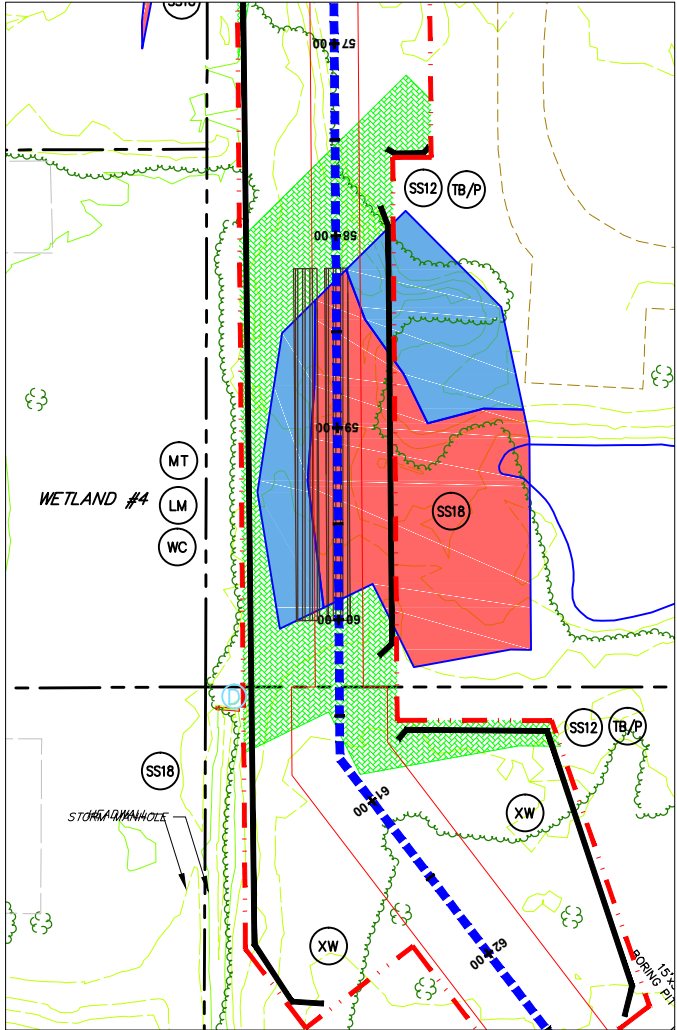
1. REFER TO DETAIL SHEET 3 FOR "TB/P" DETAIL. ADDITIONAL TRENCH BREAKERS SHALL BE USED IF NEEDED.
2. REFER TO DETAIL SHEET 3 FOR "WC" DETAIL.
3. PLACE SEDIMENT BARRIER/SIGNAGE AROUND PERIMETER OF WETLAND PRIOR TO ANY EARTHWORK. IF THE CONTRACTOR IS NOT SURE WHERE THE WETLAND "LIMIT" IS, HE SHALL CONTACT THE OWNER TO HAVE THE WETLAND REMARKED.
4. THE CONTRACTOR SHALL PLACE LOG MATS TO CROSS THE WETLAND AREA. ALL APPLICABLE WETLAND AREA WITHIN THE LIMITS OF CONSTRUCTION/DISTURBANCE SHALL BE COVERED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FINES AND/OR REPAIRS REQUIRED AS A RESULT OF DAMAGE TO WETLANDS AND WATERCOURSES AT NO COST TO THE FACILITY OWNER.
5. REFER TO DETAIL SHEET 6 FOR "MT" DETAIL:
  - a) WETLAND #3 USE BLANKET TYPE S75 OR APPROVED EQUAL, STAPLE PATTERN "C".
6. REFER TO DETAIL SHEET 3 FOR "TB" DETAIL.

GENERAL NOTES:

1. SEE DETAIL SHEET 1 FOR SCHEDULE FOR PIPES/BRIDGES.
2. STREAM BUFFER IS 25 FEET FROM THE ORDINARY HIGH WATER MARK AND WETLAND BUFFER IS 25 FT. FROM WETLAND BOUNDARY.



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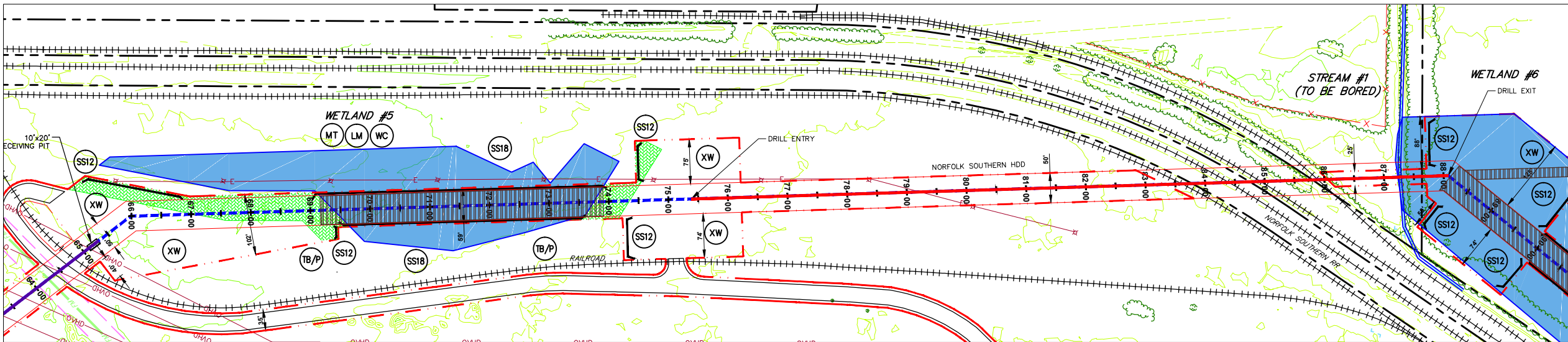
NOTES:

1. REFER TO DETAIL SHEET 3 FOR "TB/P" DETAIL. ADDITIONAL TRENCH BREAKERS SHALL BE USED IF NEEDED.
2. REFER TO DETAIL SHEET 3 FOR "WC" DETAIL.
3. PLACE SEDIMENT BARRIER/SIGNAGE AROUND PERIMETER OF WETLAND PRIOR TO ANY EARTHWORK. IF THE CONTRACTOR IS NOT SURE WHERE THE WETLAND "LIMIT" IS, HE SHALL CONTACT THE OWNER TO HAVE THE WETLAND REMARKED.
4. THE CONTRACTOR SHALL PLACE LOG MATS TO CROSS THE WETLAND AREA. ALL APPLICABLE WETLAND AREA WITHIN THE LIMITS OF CONSTRUCTION/DISTURBANCE SHALL BE COVERED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FINES AND/OR REPAIRS REQUIRED AS A RESULT OF DAMAGE TO WETLANDS AND WATERCOURSES AT NO COST TO THE FACILITY OWNER.
5. REFER TO DETAIL SHEET 6 FOR "MT" DETAIL:
  - a) WETLAND #4 USE BLANKET TYPE S75 OR APPROVED EQUAL, STAPLE PATTERN "C".
6. REFER TO DETAIL SHEET 3 FOR "TB" DETAIL.

LEGEND	
	INDEX CONTOUR
	CONTOUR
	PROPERTY LINE
	TEMP. CONSTRUCTION EASEMENT/LIMIT OF DISTURBANCE
	PERMANENT PIPELINE R.O.W.
	CENTERLINE PIPELINE R.O.W.
	ABOVE GROUND PIPE
	CONVENTIONAL BORE
	HDD
	FENCE
	EDGE WOODS
	WETLANDS
	STONE WALL
	OVERHEAD/UTILITY POLE
	FLOW
	PERENNIAL STREAM
	EPHEMERAL/INTERMITTENT STREAM
	ORD. HIGH WATER MARK
	FLOODWAY
LoB SOIL TYPE & BOUNDARY	
	SILT/CLAY OR EQUIV. 12" HEIGHT
	SILT/CLAY OR EQUIV. 24" HEIGHT
	SILT/CLAY OR EQUIV. 32" HEIGHT
	ROCK CONSTRUCTION ENTRANCE
	LOG MAT
	EROSION CONTROL MATTING
	STREAMBANK RESTORATION
	TEMP. PIPE
	WATERBAR
	ROCK FILTER BERM
	BRIDGE
	WETLAND CROSSING
	SEDIMENT SILT SOXX PROTECTION AT WATER BAR
	ACCESS ROAD
	HIGHWAY BORING
	HIGHWAY CUT
	ACCESS RD. X-ING (PAVED ROAD)
	ACCESS RD. w/CULVERT
	UTILITY LINE STREAM X-ING WITH DAM AND PUMPING OR WITH PIPE FLUME
	TRENCH BREAKER/PLUG
	LONGITUDINAL DIVERSION GRADING
	EXTRA WORKSPACE
LIMIT OF CONSTRUCTION AND LIMIT OF DISTURBANCE - 235 AC.	

E&SPC SITE DETAIL

SEAL	NO.	REVISIONS	DATE	AVON LAKE GAS ADDITION PROJECT			
				CARLISLE, EATON & LAGRANGE TOWNSHIPS AVON, AVON LAKE, ELYRIA & NORTH RIDGEVILLE CITIES LORAIN COUNTY OHIO	DRAWN BY: AEJ	PROJECT NO. NRG-1007	
					CHECKED BY: SJC	SHEET NO. 47 OF 88	
					DATE: 12.15.14		
					SCALE: AS NOTED		

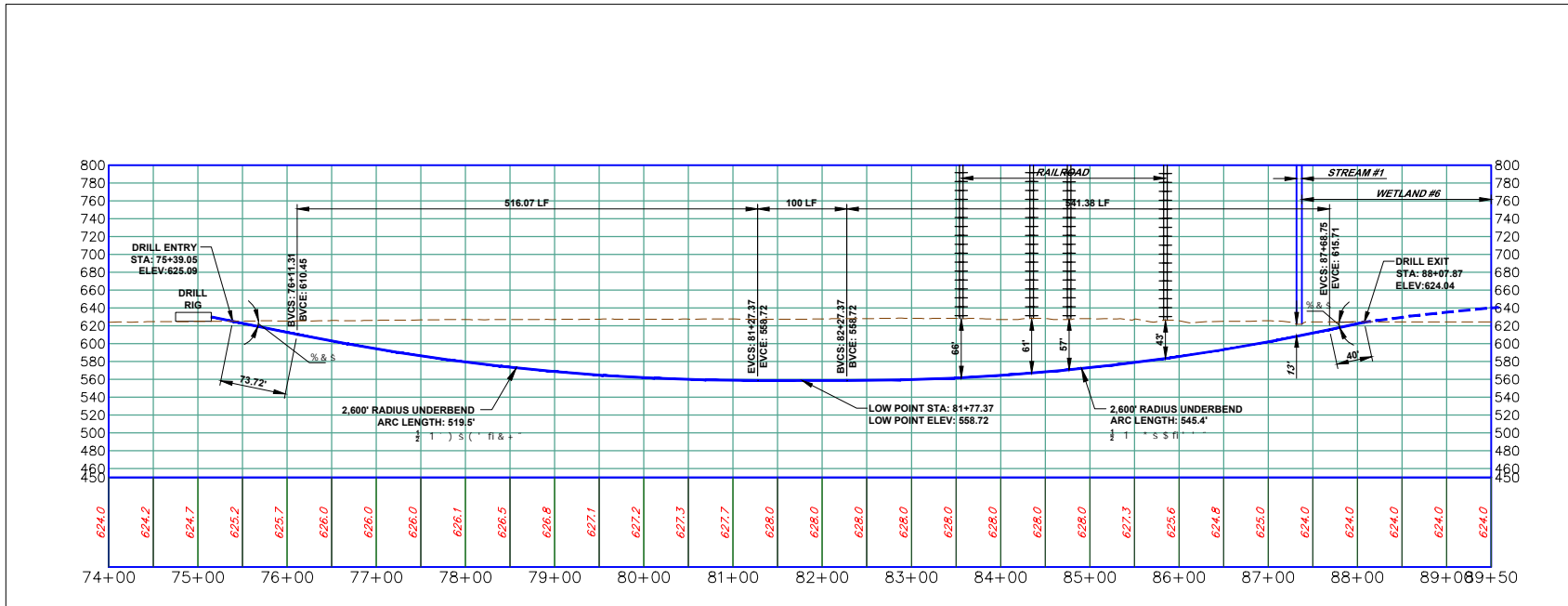


**WETLAND #5 & STREAM #1 (TO BE BORED)**

SCALE: 1" = 100'

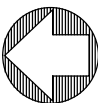
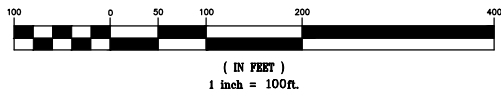
**NOTES:**

1. REFER TO DETAIL SHEET 3 FOR "TB/P" DETAIL. ADDITIONAL TRENCH BREAKERS SHALL BE USED IF NEEDED.
2. REFER TO DETAIL SHEET 3 FOR "WC" DETAIL.
3. PLACE SEDIMENT BARRIER/SIGNAGE AROUND PERIMETER OF WETLAND PRIOR TO ANY EARTHWORK. IF THE CONTRACTOR IS NOT SURE WHERE THE WETLAND "LIMIT" IS, HE SHALL CONTACT THE OWNER TO HAVE THE WETLAND REMARKED.
4. THE CONTRACTOR SHALL PLACE LOG MATS TO CROSS THE WETLAND AREA. ALL APPLICABLE WETLAND AREA WITHIN THE LIMITS OF CONSTRUCTION/DISTURBANCE SHALL BE COVERED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FINES AND/OR REPAIRS REQUIRED AS A RESULT OF DAMAGE TO WETLANDS AND WATERCOURSES AT NO COST TO THE FACILITY OWNER.
5. REFER TO DETAIL SHEET 6 FOR "MT" DETAIL:  
a) WETLAND #5 USE BLANKET TYPE S75 OR APPROVED EQUAL, STAPLE PATTERN "C".
6. REFER TO DETAIL SHEET 3 FOR "TB" DETAIL.



**NORFOLK SOUTHERN HDD**

**GRAPHIC SCALE**



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SEAL

**LEGEND**

- INDEX CONTOUR
- CONTOUR
- PROPERTY LINE
- TEMP. CONSTRUCTION EASEMENT/LIMIT OF DISTURBANCE
- PERMANENT PIPELINE R.O.W.
- CENTERLINE PIPELINE R.O.W.
- ABOVE GROUND PIPE
- CONVENTIONAL BORE
- HDD
- FENCE
- EDGE WOODS
- WETLANDS
- STONE WALL
- OVERHEAD/UTILITY POLE
- PERENNIAL STREAM
- EPHEMERAL/INTERMITTENT STREAM
- ORD. HIGH WATER MARK
- FLOODWAY
- SOIL TYPE & BOUNDARY
- SILT/SSX OR EQUIV. 12" HEIGHT
- SILT/SSX OR EQUIV. 24" HEIGHT
- SILT/SSX OR EQUIV. 32" HEIGHT
- ROCK CONSTRUCTION ENTRANCE
- LOG MAT
- EROSION CONTROL MATTING
- STREAMBANK RESTORATION
- TEMP. PIPE
- WATERBAR
- ROCK FILTER BERM
- BRIDGE
- WETLAND CROSSING
- SEDIMENT SILT SOXX PROTECTION AT WATER BAR
- ACCESS ROAD
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- HIGHWAY CUT
- ACCESS RD. X-ING (PAVED ROAD)
- ACCESS RD. w/CULVERT
- UTILITY LINE STREAM X-ING WITH DAM AND PUMPING OR WITH PIPE FLUME
- TRENCH BREAKER/PLUG
- LONGITUDINAL DIVERSION GRADING
- EXTRA WORKSPACE

LIMIT OF CONSTRUCTION AND  
LIMIT OF DISTURBANCE - 235 AC.

**E&SPC SITE DETAIL**

**AVON LAKE GAS ADDITION PROJECT**

CARLISLE, EATON & LAGRANGE TOWNSHIPS  
AVON, AVON LAKE, ELYRIA &  
NORTH RIDGEVILLE CITIES  
LORAIN COUNTY  
OHIO

**Hanover**  
Engineering Associates Inc

DRAWN BY: AEJ  
CHECKED BY: SJC  
DATE: 12.15.14  
SCALE: AS NOTED  
PROJECT NO. NRG-1007  
SHEET NO. 48 OF 88

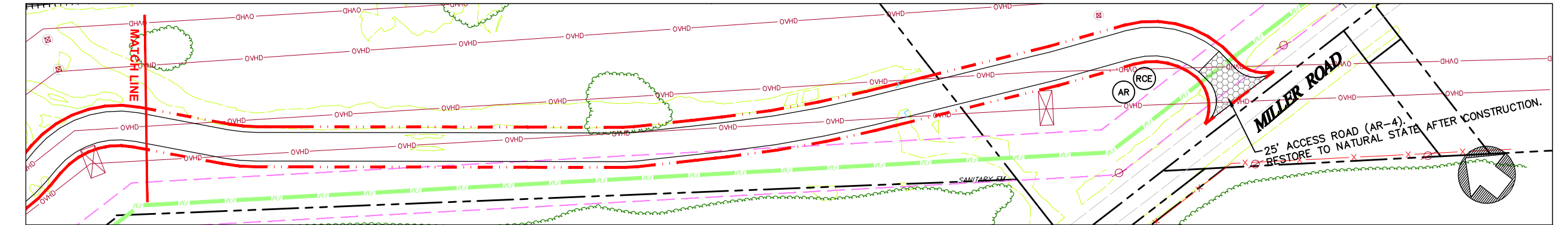
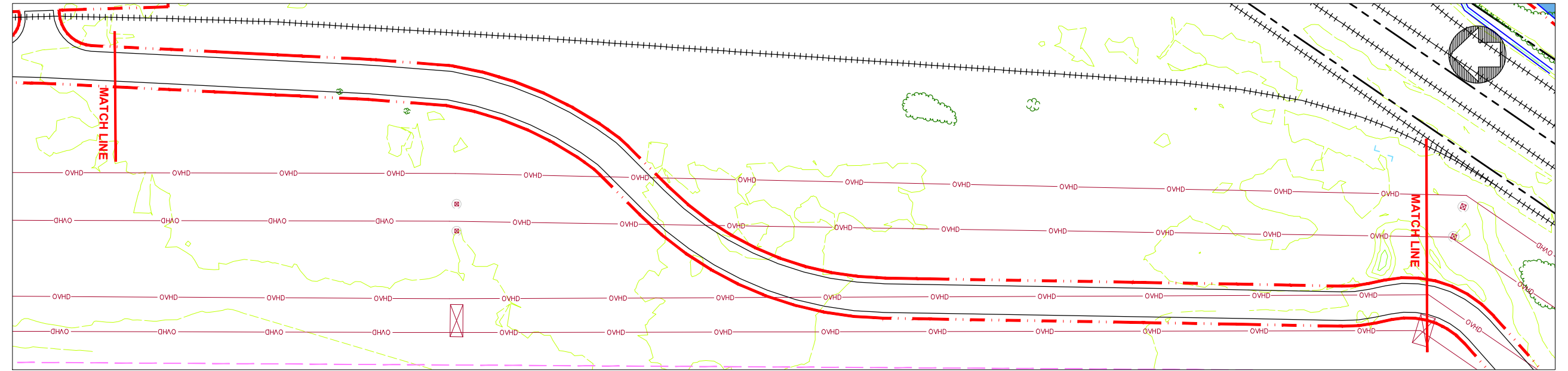
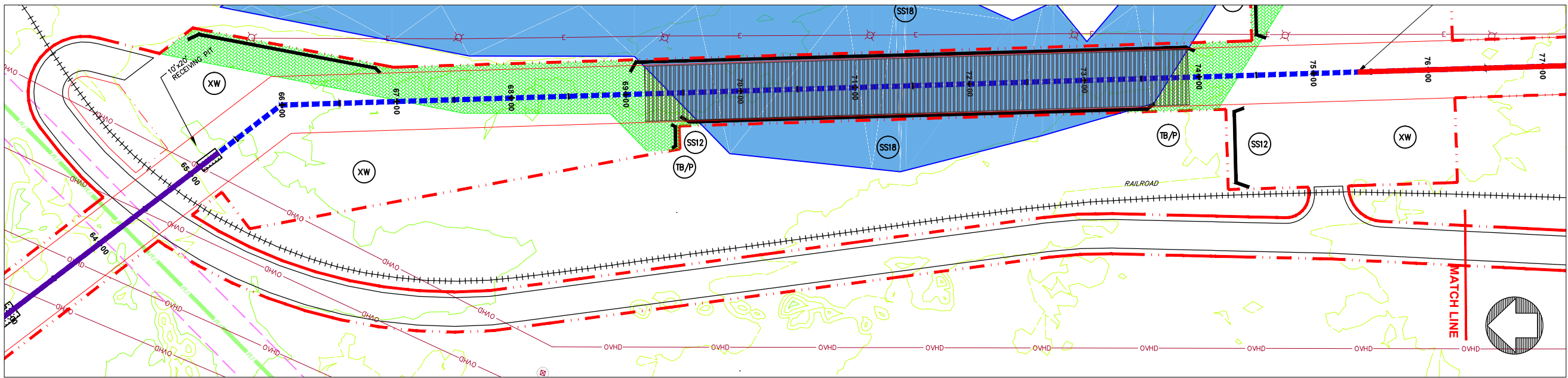
3355 Route 611, Suite 1  
Bartonsville, PA 18321-7822  
570.688.9550  
Fax 570.688.9768

**GENERAL NOTES:**

1. SEE DETAIL SHEET 1 FOR SCHEDULE FOR PIPES/BRIDGES.
2. STREAM BUFFER IS 25 FEET FROM THE ORDINARY HIGH WATER MARK AND WETLAND BUFFER IS 25 FT. FROM WETLAND BOUNDARY.



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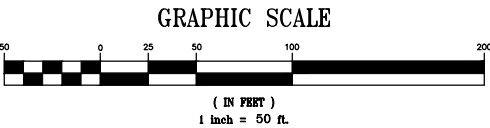
ACCESS ROAD (AR-6) TO MILLER ROAD  
SCALE: 1" = 50'

**NOTES:**

1. REFER TO DETAIL SHEET 5 FOR "RCE" OR "BRCE" DETAIL.
2. REFER TO DETAIL SHEET 5 FOR "AR" DETAIL.
3. REFER TO DETAIL SHEET 3 FOR "TB" DETAIL.

**GENERAL NOTES:**

1. SEE DETAIL SHEET 1 FOR SCHEDULE FOR PIPES/BRIDGES.
2. STREAM BUFFER IS 25 FEET FROM THE ORDINARY HIGH WATER MARK AND WETLAND BUFFER IS 25 FT. FROM WETLAND BOUNDARY.



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**LEGEND**

- INDEX CONTOUR
- CONTOUR
- PROPERTY LINE
- TEMP. CONSTRUCTION EASEMENT/LIMIT OF DISTURBANCE
- PERMANENT PIPELINE R.O.W.
- CENTERLINE PIPELINE R.O.W.
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- CONVENTIONAL BORE
- HDD
- FENCE
- EDGE WOODS
- WETLANDS
- STONE WALL
- OVERHEAD/UTILITY POLE
- PERENNIAL STREAM
- EPHEMERAL/INTERMITTENT STREAM
- ORD. HIGH WATER MARK
- FLOODWAY
- SOIL TYPE & BOUNDARY
- SILT/COX OR EQUIV. 12" HEIGHT
- SILT/COX OR EQUIV. 24" HEIGHT
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- ROCK CONSTRUCTION ENTRANCE
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- TEMP. PIPE
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- ROCK FILTER BERM
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- ACCESS RD. X-ING (PAVED ROAD)
- ACCESS RD. w/CULVERT
- UTILITY LINE STREAM X-ING WITH DAM AND PUMPING OR WITH PIPE FLUME
- TRENCH BREAKER/PLUG
- LONGITUDINAL DIVERSION GRADING
- EXTRA WORKSPACE
- LIMIT OF CONSTRUCTION AND LIMIT OF DISTURBANCE - 235 AC.

**E&SPC SITE DETAIL**

**AVON LAKE GAS ADDITION PROJECT**

CARLISLE, EATON & LAGRANGE TOWNSHIPS  
AVON, AVON LAKE, ELYRIA &  
NORTH RIDGEVILLE CITIES  
LORAIN COUNTY  
OHIO

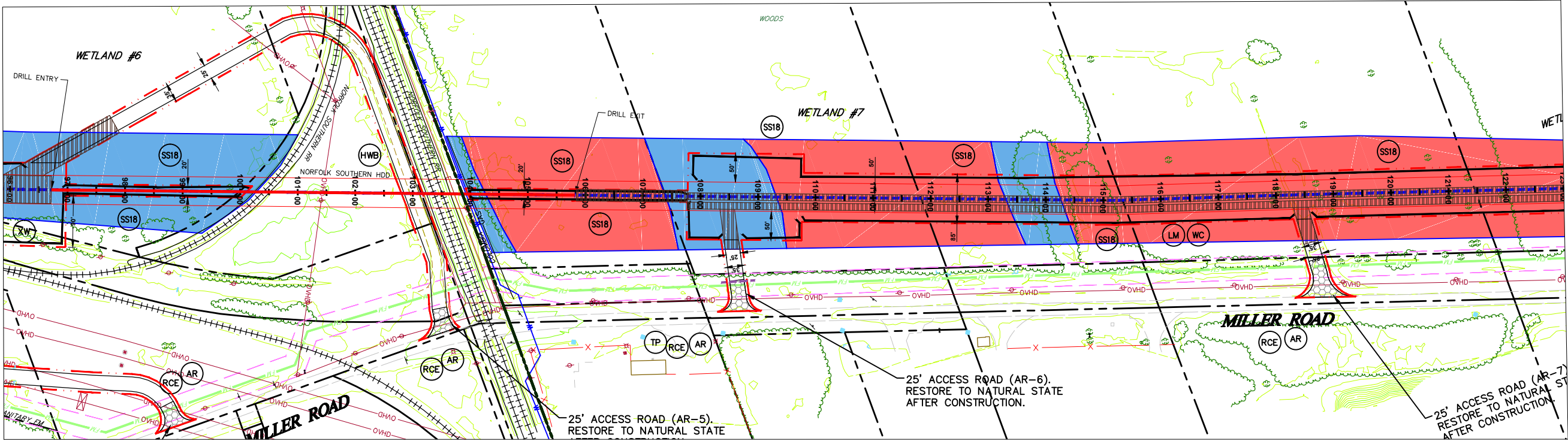
**Hanover**  
Engineering Associates Inc

DRAWN BY: AEJ	PROJECT NO. NRG-1007
CHECKED BY: SJC	SHEET NO. 49 OF 88
DATE: 12.15.14	
SCALE: AS NOTED	
3355 Route 611, Suite 1 Bartonsville, PA 18321-7822 570.688.9550 Fax 570.688.9768	





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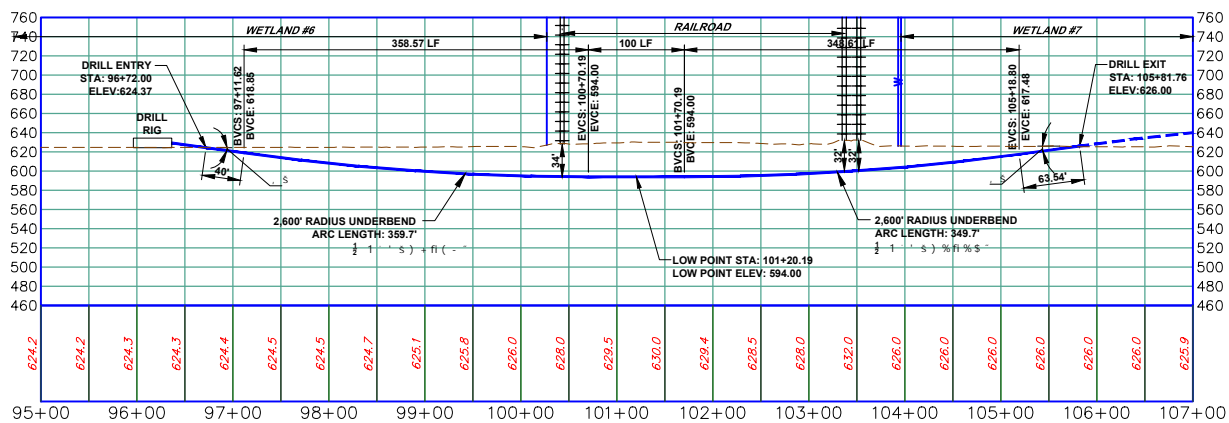


**ACCESS ROAD (AR-5) TO MILLER ROAD, ACCESS ROAD (AR-6) TO MILLER ROAD,  
ACCESS ROAD (AR-7) TO MILLER ROAD, & WETLAND #7**

SCALE: 1" = 100'

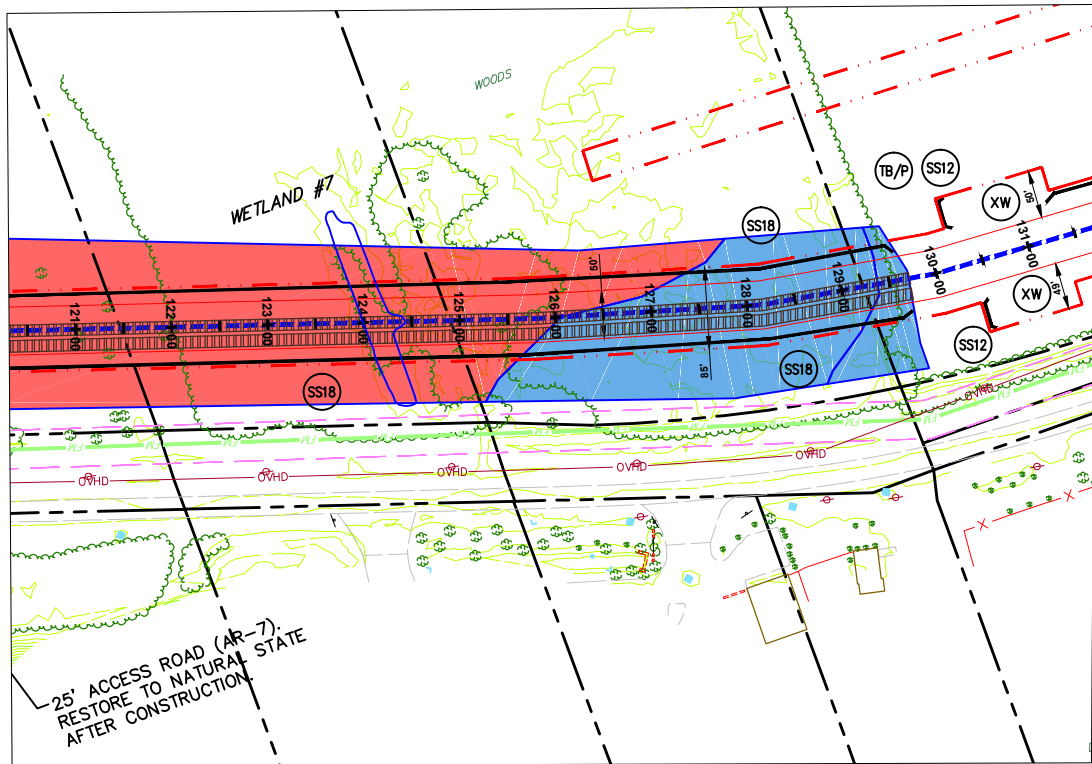
**NOTES:**

1. REFER TO DETAIL SHEET 3 FOR "TB/P" DETAIL. ADDITIONAL TRENCH BREAKERS SHALL BE USED IF NEEDED.
2. REFER TO DETAIL SHEET 3 FOR "WB" DETAIL.
3. REFER TO DETAIL SHEET 3 FOR "SSO" DETAIL.
4. REFER TO DETAIL SHEET 3 FOR "WC" DETAIL.
5. PLACE SEDIMENT BARRIER/SIGNAGE AROUND PERIMETER OF WETLAND PRIOR TO ANY EARTHWORK. IF THE CONTRACTOR IS NOT SURE WHERE THE WETLAND "LIMIT" IS, HE SHALL CONTACT THE OWNER TO HAVE THE WETLAND REMARKED.
6. THE CONTRACTOR SHALL PLACE LOG MATS TO CROSS THE WETLAND AREA. ALL APPLICABLE WETLAND AREA WITHIN THE LIMITS OF CONSTRUCTION/DISTURBANCE SHALL BE COVERED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FINES AND/OR REPAIRS REQUIRED AS A RESULT OF DAMAGE TO WETLANDS AND WATERCOURSES AT NO COST TO THE FACILITY OWNER.
7. REFER TO DETAIL SHEET 6 FOR "MT" DETAIL:
  - a) WETLAND #6 USE BLANKET TYPE S75 OR APPROVED EQUAL, STAPLE PATTERN "C".
8. REFER TO DETAIL SHEET 5 FOR "RCE" DETAIL.
9. REFER TO DETAIL SHEET 5 FOR "AR" DETAIL.
10. REFER TO DETAIL SHEET 3 FOR "TB" DETAIL.



**NORFOLK SOUTHERN HDD**

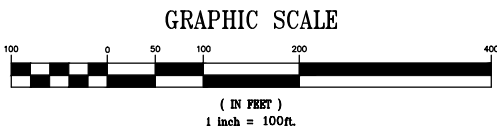
SCALE: 1" = 100'



LEGEND	
	INDEX CONTOUR
	CONTOUR
	PROPERTY LINE
	TEMP. CONSTRUCTION EASEMENT/LIMIT OF DISTURBANCE
	PERMANENT PIPELINE R.O.W.
	CENTERLINE PIPELINE R.O.W.
	ABOVE GROUND PIPE
	CONVENTIONAL BORE
	HDD
	FENCE
	EDGE WOODS
	WETLANDS
	STONE WALL
	OVERHEAD/UTILITY POLE
	FLOW
	PERENNIAL STREAM
	FLOW
	EPHEMERAL/INTERMITTENT STREAM
	ORD. HIGH WATER MARK
	FLOODWAY
	SOIL TYPE & BOUNDARY
	SILT/SSX OR EQUIV. 12" HEIGHT
	SILT/SSX OR EQUIV. 24" HEIGHT
	SILT/SSX OR EQUIV. 32" HEIGHT
	ROCK CONSTRUCTION ENTRANCE
	LOG MAT
	EROSION CONTROL MATTING
	STREAMBANK RESTORATION
	TEMP. PIPE
	WATERBAR
	ROCK FILTER BERM
	BRIDGE
	WETLAND CROSSING
	SEDIMENT SILT SOXX PROTECTION AT WATER BAR
	ACCESS ROAD
	HIGHWAY BORING
	HIGHWAY CUT
	ACCESS RD. X-ING (PAVED ROAD)
	ACCESS RD. w/CULVERT
	UTILITY LINE STREAM X-ING WITH DAM AND PUMPING OR WITH PIPE FLUME
	TRENCH BREAKER/PLUG
	LONGITUDINAL DIVERSION GRADING
	EXTRA WORKSPACE
	LIMIT OF CONSTRUCTION AND LIMIT OF DISTURBANCE - 235 AC.

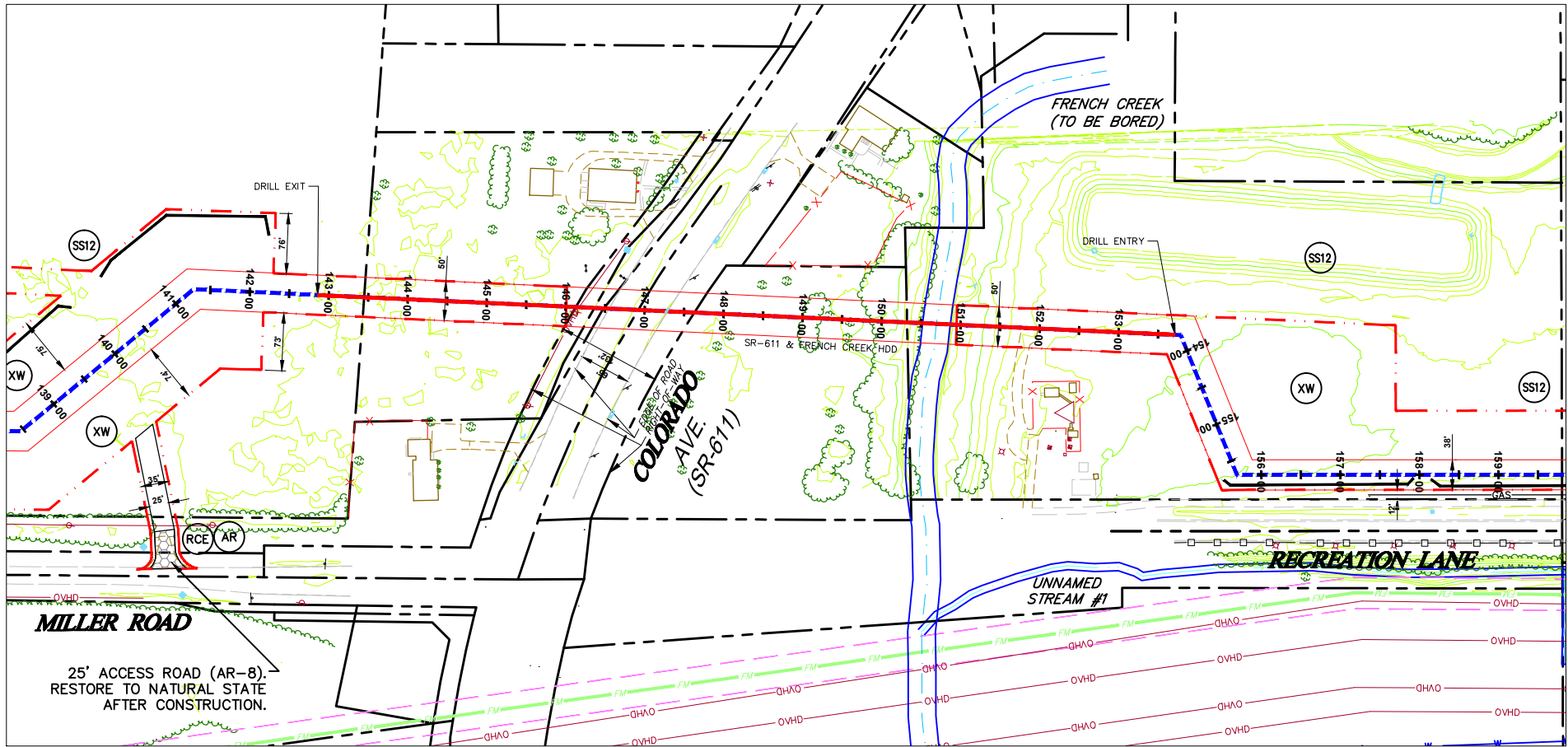
**GENERAL NOTES:**

1. SEE DETAIL SHEET 1 FOR SCHEDULE FOR PIPES/BRIDGES.
2. STREAM BUFFER IS 25 FEET FROM THE ORDINARY HIGH WATER MARK AND WETLAND BUFFER IS 25 FT. FROM WETLAND BOUNDARY.



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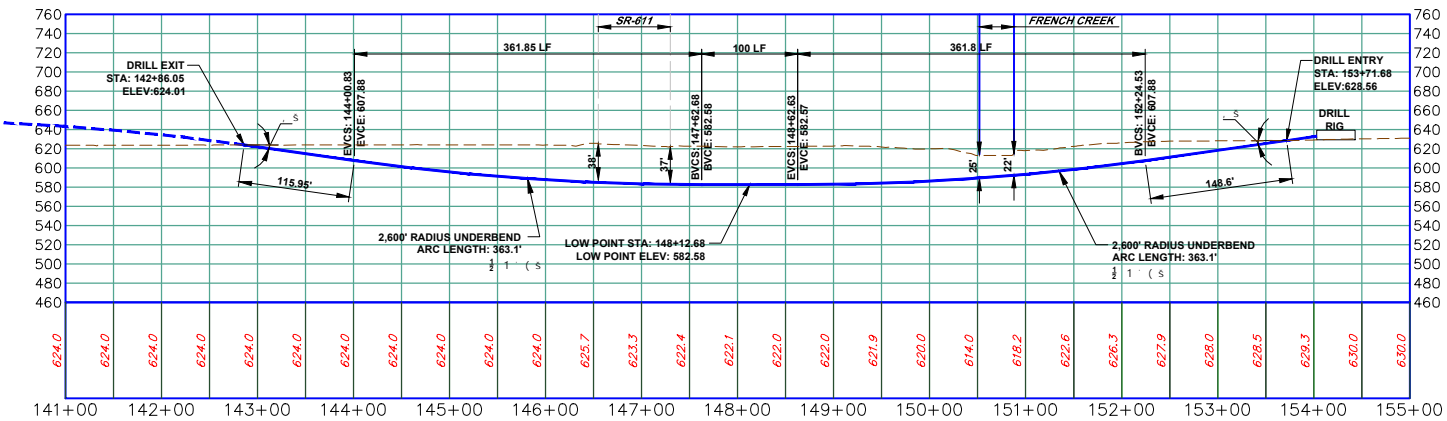
SEAL	NO.	REVISIONS	DATE	AVON LAKE GAS ADDITION PROJECT			
				CARLISLE, EATON & LAGRANGE TOWNSHIPS AVON, AVON LAKE, ELYRIA & NORTH RIDGEVILLE CITIES LORAIN COUNTY OHIO	DRAWN BY: AEJ	PROJECT NO.	
					CHECKED BY: SJC	NRG-1007	
					DATE: 12.15.14	SHEET NO.	
					SCALE:	51 OF 88	
					AS NOTED		
				3355 Route 611, Suite 1 Bartonsville, PA 18321-7822 570.688.9550 Fax 570.688.9768			
				<div><div>Hanover</div><div>Engineering Associates Inc</div></div>			



COLORADO AVE. (SR-611) & FRENCH CREEK (TO BE BORED)

SCALE: 1" = 100'

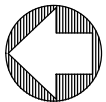
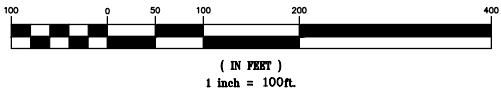
1. REFER TO DETAIL SHEET 5 FOR "RCE" DETAIL.
2. REFER TO DETAIL SHEET 5 FOR "AR" DETAIL.
6. REFER TO DETAIL SHEET 3 FOR "FB" DETAIL.



FRENCH CREEK HDD

(ON 22x34 SHEET)  
HORIZONTAL & VERTICAL

GRAPHIC SCALE



GENERAL NOTES:

1. SEE DETAIL SHEET 1 FOR SCHEDULE FOR PIPES/BRIDGES.
2. STREAM BUFFER IS 25 FEET FROM THE ORDINARY HIGH WATER MARK AND WETLAND BUFFER IS 25 FT. FROM WETLAND BOUNDARY.

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SEAL

LEGEND

- INDEX CONTOUR
- CONTOUR
- PROPERTY LINE
- TEMP. CONSTRUCTION EASEMENT/LIMIT OF DISTURBANCE
- PERMANENT PIPELINE R.O.W.
- CENTERLINE PIPELINE R.O.W.
- ABOVE GROUND PIPE
- CONVENTIONAL BORE
- HDD
- FENCE
- EDGE WOODS
- WETLANDS
- STONE WALL
- OVERHEAD/UTILITY POLE
- PERENNIAL STREAM
- EPHEMERAL/INTERMITTENT STREAM
- ORD. HIGH WATER MARK
- FLOODWAY
- SOIL TYPE & BOUNDARY
- SILT/SOXX OR EQUIV. 12" HEIGHT
- SILT/SOXX OR EQUIV. 24" HEIGHT
- SILT/SOXX OR EQUIV. 32" HEIGHT
- ROCK CONSTRUCTION ENTRANCE
- LOG MAT
- EROSION CONTROL MATTING
- STREAMBANK RESTORATION
- TEMP. PIPE
- WATERBAR
- ROCK FILTER BERM
- BRIDGE
- WETLAND CROSSING
- SEDIMENT SILT SOXX PROTECTION AT WATER BAR
- ACCESS ROAD
- HIGHWAY BORING
- HIGHWAY CUT
- ACCESS RD. X-ING (PAVED ROAD)
- ACCESS RD. w/CULVERT
- UTILITY LINE STREAM X-ING WITH DAM AND PUMPING OR WITH PIPE FLUME
- TRENCH BREAKER/PLUG
- LONGITUDINAL DIVERSION GRADING
- EXTRA WORKSPACE

LIMIT OF CONSTRUCTION AND  
LIMIT OF DISTURBANCE - 235 AC.

E&SPC SITE DETAIL

AVON LAKE GAS ADDITION PROJECT

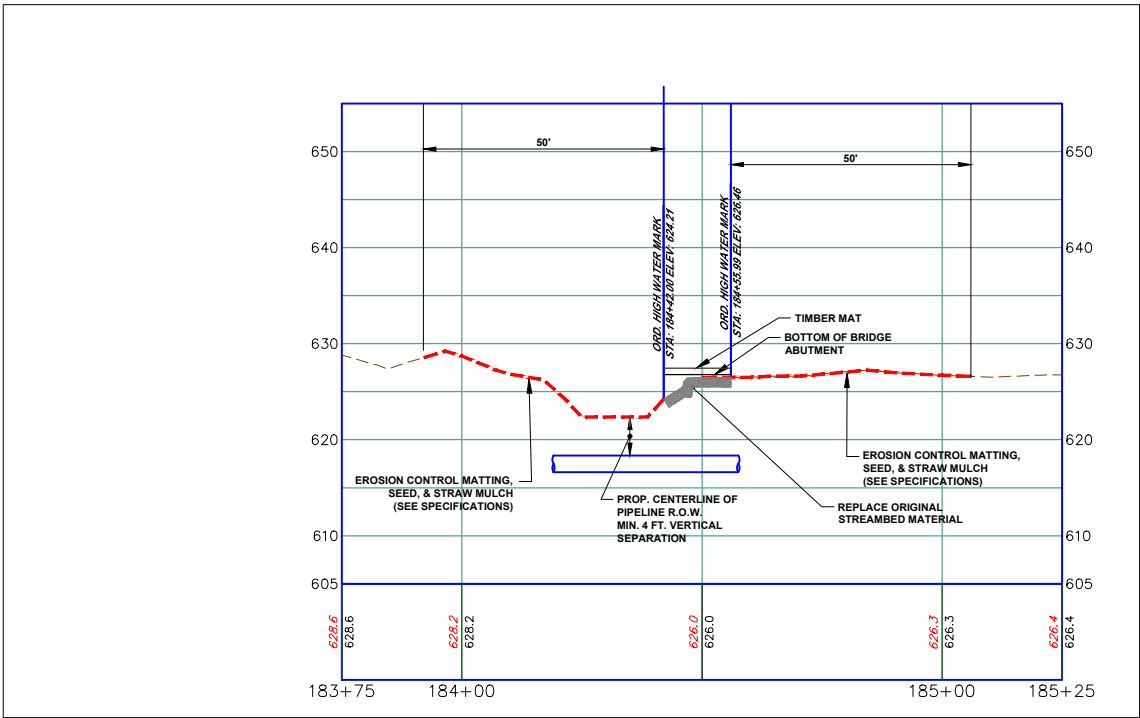
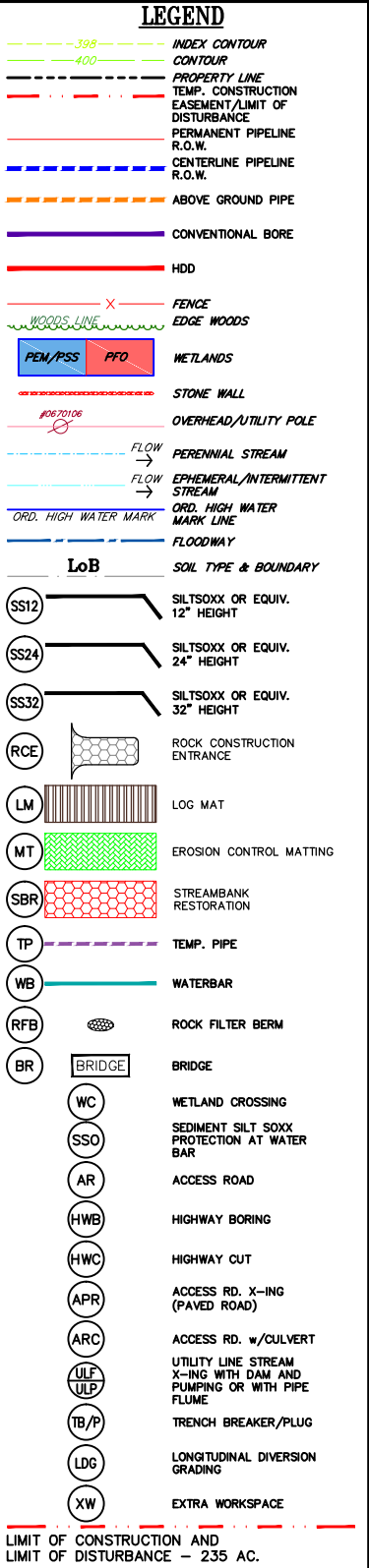
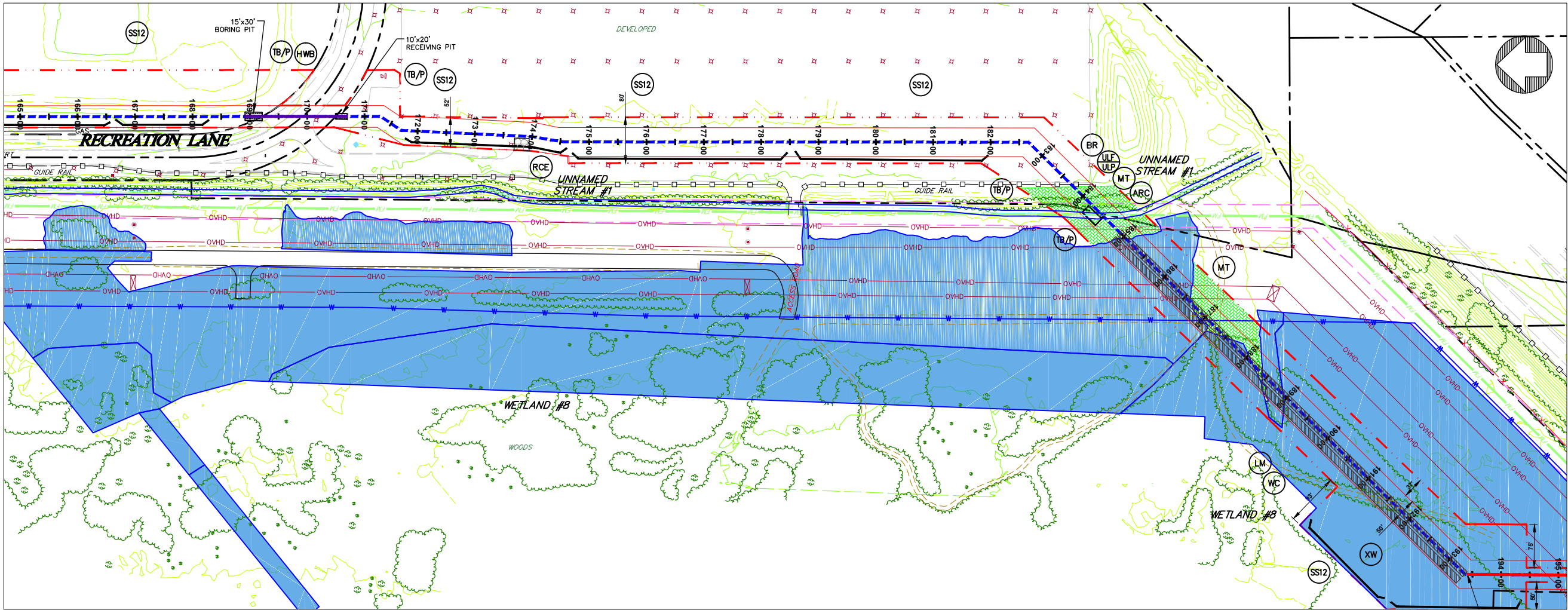
CARLISLE, EATON & LAGRANGE TOWNSHIPS  
AVON, AVON LAKE, ELYRIA &  
NORTH RIDGEVILLE CITIES  
LORAIN COUNTY  
OHIO

**Hanover**  
Engineering Associates Inc

DRAWN BY: AEJ  
CHECKED BY: SJC  
DATE: 12.15.14  
SCALE: AS NOTED  
PROJECT NO.: NRG-1007  
SHEET NO.: 52 OF 88

3355 Route 611, Suite 1  
Bartonsville, PA 18321-7822  
570.688.9550  
Fax 570.688.9768





**UNNAMED STREAM #1 PROFILE**

(ON 22x34 SHEET)

HORIZONTAL

GRAPHIC SCALE



( IN FEET )

1 inch = 20 ft.

(ON 22x34 SHEET)

VERTICAL

GRAPHIC SCALE



( IN FEET )

1 inch = 10 ft.

GRAPHIC SCALE



( IN FEET )

1 inch = 100ft.

**RECREATION LANE, WETLAND #8 & UNNAMED STREAM #1**

SCALE: 1" = 100'

**NOTES:**

1. REFER TO DETAIL SHEET 3 FOR "TB/P" DETAIL. ADDITIONAL TRENCH BREAKERS SHALL BE USED IF NEEDED.
2. REFER TO DETAIL SHEET 3 FOR "WB" DETAIL.
3. REFER TO DETAIL SHEET 3 FOR "SSO" DETAIL.
4. REFER TO DETAIL SHEET 3 FOR "WC" DETAIL.
5. PLACE SEDIMENT BARRIER/SIGNAGE AROUND PERIMETER OF WETLAND PRIOR TO ANY EARTHWORK. IF THE CONTRACTOR IS NOT SURE WHERE THE WETLAND "LIMIT" IS, HE SHALL CONTACT THE OWNER TO HAVE THE WETLAND REMARKED.
6. THE CONTRACTOR SHALL PLACE LOG MATS TO CROSS THE WETLAND AREA. ALL APPLICABLE WETLAND AREA WITHIN THE LIMITS OF CONSTRUCTION/DISTURBANCE SHALL BE COVERED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FINES AND/OR REPAIRS REQUIRED AS A RESULT OF DAMAGE TO WETLANDS AND WATERCOURSES AT NO COST TO THE FACILITY OWNER.
7. REFER TO DETAIL SHEET 6 FOR "MT" DETAIL:
  - a) WETLAND #8 USE BLANKET TYPE S75 OR APPROVED EQUAL, STAPLE PATTERN "C".
  - b) UNNAMED STREAM #1 USE BLANKET TYPE S75 OR APPROVED EQUAL STAPLE PATTERN "C".
8. REFER TO DETAIL SHEET 3 FOR "FB" DETAIL.
9. REFER TO DETAIL SHEET 6 FOR INLET PROTECTION DETAIL.

**GENERAL NOTES:**

1. SEE DETAIL SHEET 1 FOR SCHEDULE FOR PIPES/BRIDGES.
2. STREAM BUFFER IS 25 FEET FROM THE ORDINARY HIGH WATER MARK AND WETLAND BUFFER IS 25 FT. FROM WETLAND BOUNDARY.

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SEAL

**E&SPC SITE DETAIL**

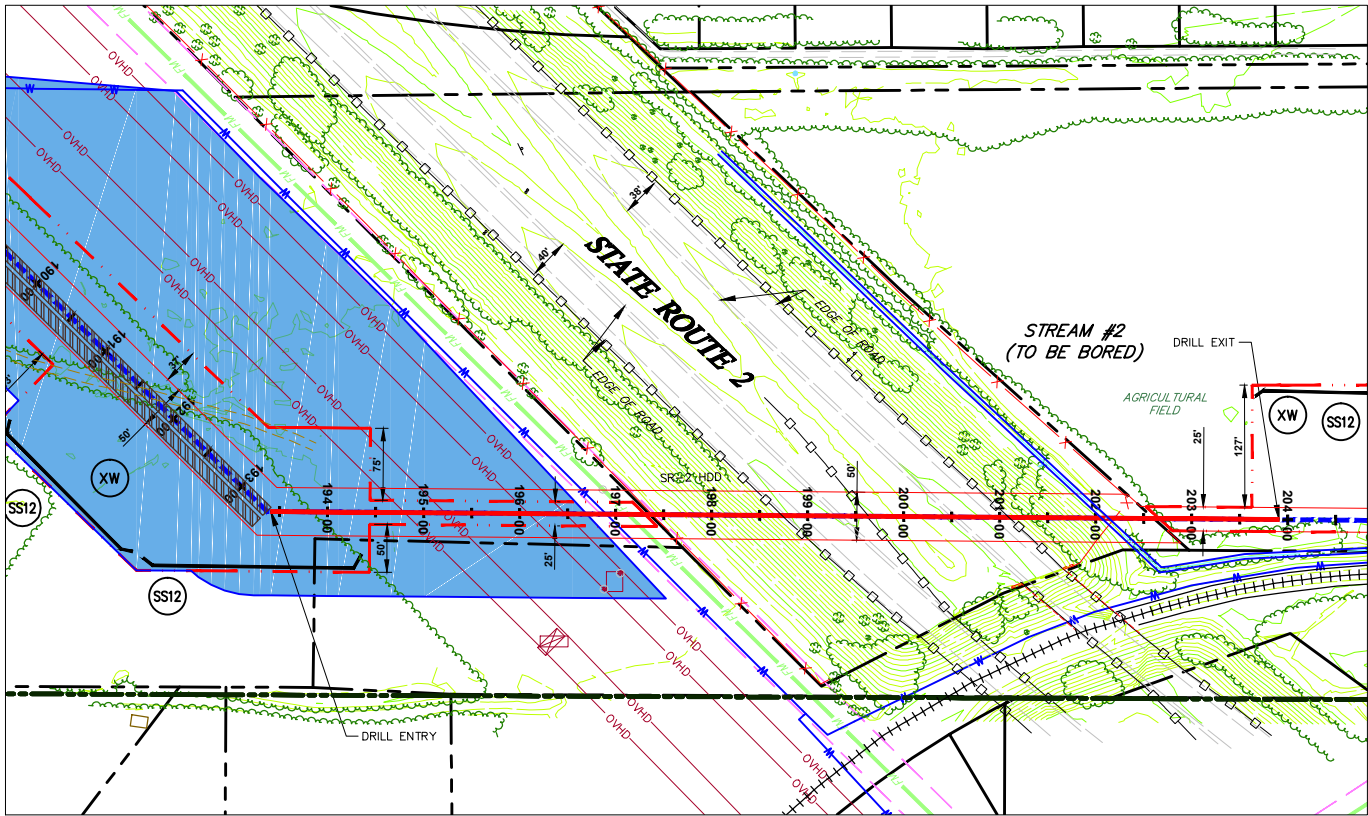
**AVON LAKE GAS ADDITION PROJECT**

CARLISLE, EATON & LAGRANGE TOWNSHIPS  
AVON, AVON LAKE, ELYRIA &  
NORTH RIDGEVILLE CITIES  
LORAIN COUNTY  
OHIO

**Hanover**  
Engineering Associates Inc

DRAWN BY: AEJ  
CHECKED BY: SJC  
DATE: 12.15.14  
SCALE: AS NOTED  
PROJECT NO.: NRG-1007  
SHEET NO.: 53 OF 88

3355 Route 611, Suite 1  
Bartonsville, PA 18321-7822  
570.688.9550  
Fax 570.688.9768

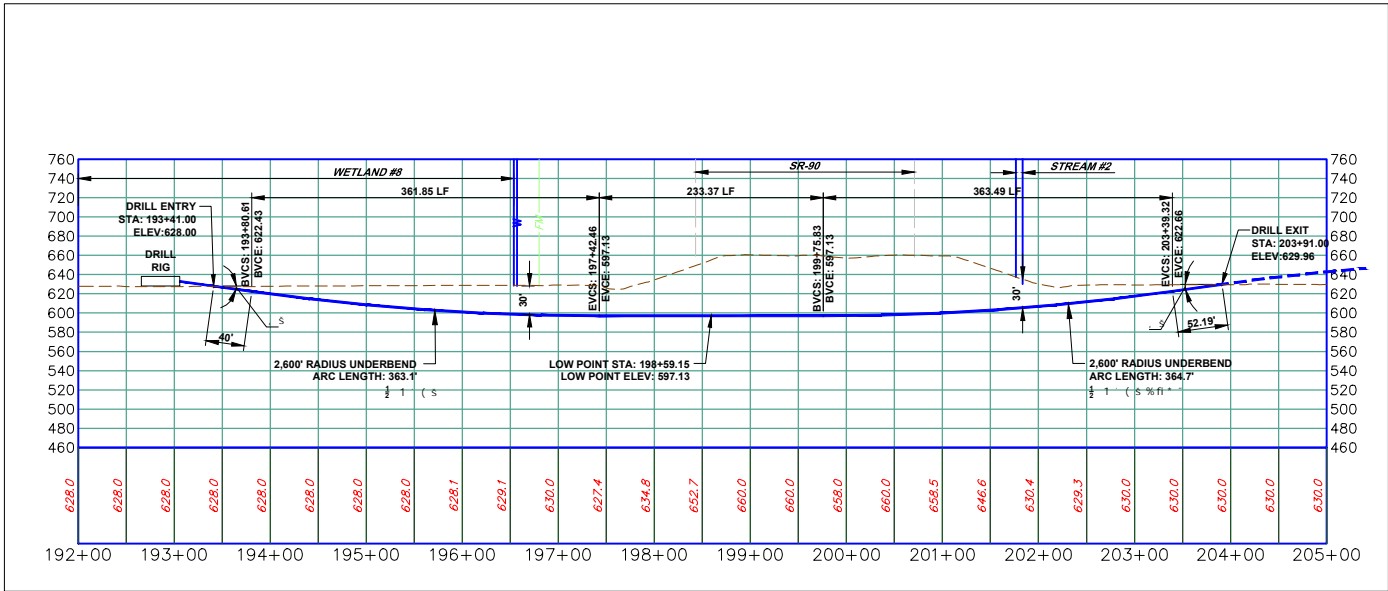


STATE ROUTE 2 & STREAM #2 (TO BE BORED)

SCALE: 1" = 100'

NOTES:

1. PLACE SEDIMENT BARRIER/SIGNAGE AROUND PERIMETER OF WETLAND PRIOR TO ANY EARTHWORK. IF THE CONTRACTOR IS NOT SURE WHERE THE WETLAND "LIMIT" IS, HE SHALL CONTACT THE OWNER TO HAVE THE WETLAND REMARKED.
2. REFER TO DETAIL SHEET 3 FOR "FB" DETAIL.



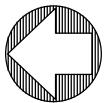
STATE ROUTE 2 HDD

SCALE: 1" = 100'

GRAPHIC SCALE



( IN FEET )  
1 inch = 100ft.



GENERAL NOTES:

1. SEE DETAIL SHEET 1 FOR SCHEDULE FOR PIPES/BRIDGES.
2. STREAM BUFFER IS 25 FEET FROM THE ORDINARY HIGH WATER MARK AND WETLAND BUFFER IS 25 FT. FROM WETLAND BOUNDARY.

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SEAL

LEGEND

- INDEX CONTOUR
- CONTOUR
- PROPERTY LINE
- TEMP. CONSTRUCTION EASEMENT/LIMIT OF DISTURBANCE
- PERMANENT PIPELINE R.O.W.
- CENTERLINE PIPELINE R.O.W.
- ABOVE GROUND PIPE
- CONVENTIONAL BORE
- HDD
- FENCE
- EDGE WOODS
- WETLANDS
- STONE WALL
- OVERHEAD/UTILITY POLE
- PERENNIAL STREAM
- EPHEMERAL/INTERMITTENT STREAM
- ORD. HIGH WATER MARK
- FLOODWAY
- SOIL TYPE & BOUNDARY
- SILT/SOXX OR EQUIV. 12" HEIGHT
- SILT/SOXX OR EQUIV. 24" HEIGHT
- SILT/SOXX OR EQUIV. 32" HEIGHT
- ROCK CONSTRUCTION ENTRANCE
- LOG MAT
- EROSION CONTROL MATTING
- STREAMBANK RESTORATION
- TEMP. PIPE
- WATERBAR
- ROCK FILTER BERM
- BRIDGE
- WETLAND CROSSING
- SEDIMENT SILT SOXX PROTECTION AT WATER BAR
- ACCESS ROAD
- HIGHWAY BORING
- HIGHWAY CUT
- ACCESS RD. X-ING (PAVED ROAD)
- ACCESS RD. w/CULVERT
- UTILITY LINE STREAM X-ING WITH DAM AND PUMPING OR WITH PIPE FLUME
- TRENCH BREAKER/PLUG
- LONGITUDINAL DIVERSION GRADING
- EXTRA WORKSPACE

LIMIT OF CONSTRUCTION AND  
LIMIT OF DISTURBANCE - 235 AC.

E&SPC SITE DETAIL

AVON LAKE GAS ADDITION PROJECT

CARLISLE, EATON & LAGRANGE TOWNSHIPS  
AVON, AVON LAKE, ELYRIA &  
NORTH RIDGEVILLE CITIES  
LORAIN COUNTY  
OHIO

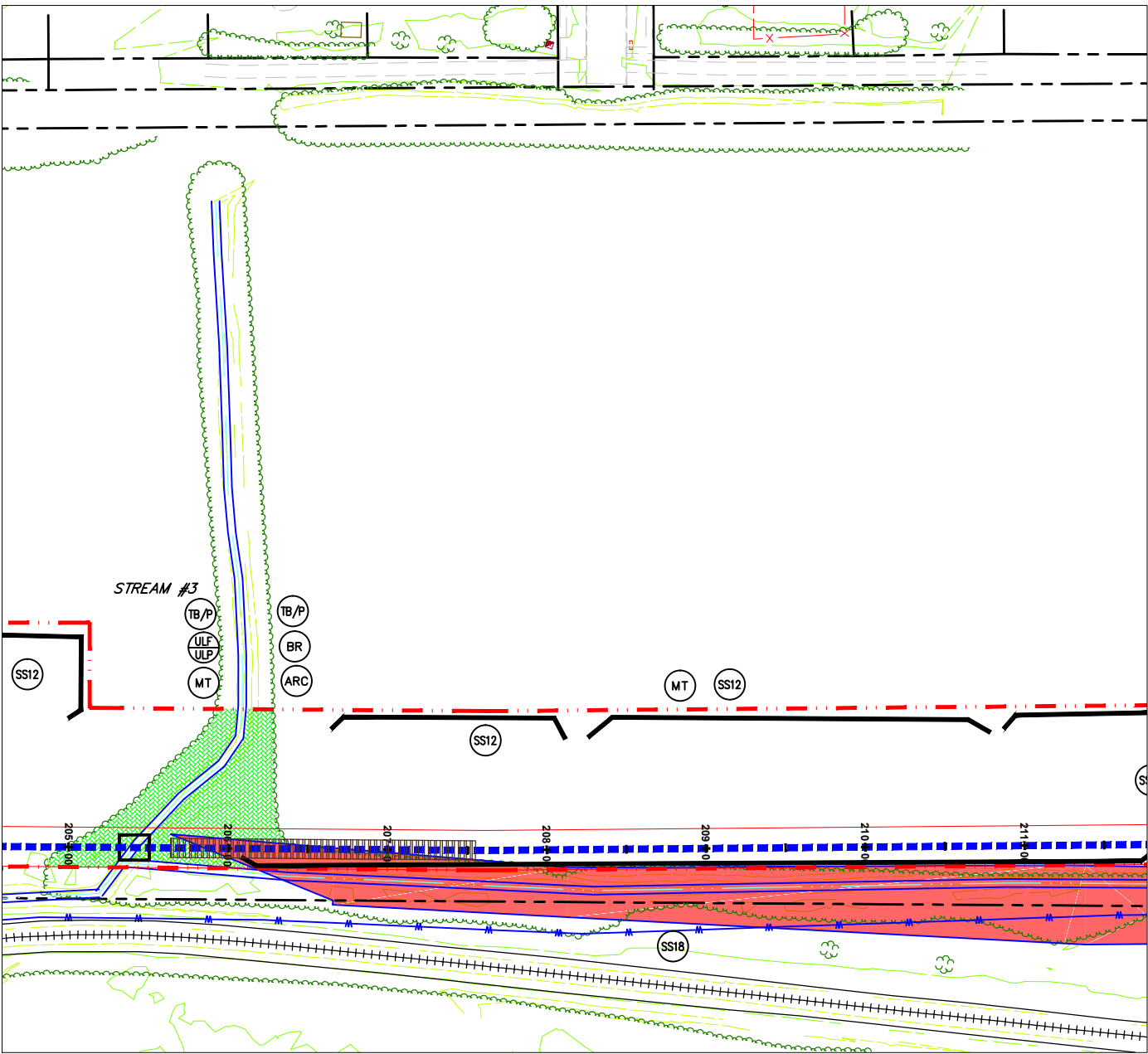
**Hanover**  
Engineering Associates Inc

DRAWN BY: AEJ  
CHECKED BY: SJC  
DATE: 12.15.14  
SCALE: AS NOTED  
PROJECT NO. NRG-1007  
SHEET NO. 54 OF 88

3355 Route 611, Suite 1  
Bartonsville, PA 18321-7822  
570.688.9550  
Fax 570.688.9768



Y:\Projects\Energy\NRG Energy\NRG-Avon Lakes Pipeline\DWG\ESPC\ ESPC-NRG-1007-AVON LAKE-006-SITE DETAILS-1.dwg Dec 14,2014 - 5:57pm



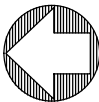
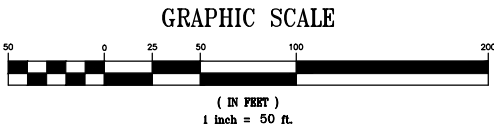
STREAM #3 & WETLAND #9  
SCALE: 1" = 50'

NOTES:

1. REFER TO DETAIL SHEET 3 FOR "TB/P" DETAIL. ADDITIONAL TRENCH BREAKERS SHALL BE USED IF NEEDED.
2. PLACE SEDIMENT BARRIER/SIGNAGE AROUND PERIMETER OF WETLAND PRIOR TO ANY EARTHWORK. IF THE CONTRACTOR IS NOT SURE WHERE THE WETLAND "LIMIT" IS, HE SHALL CONTACT THE OWNER TO HAVE THE WETLAND REMARKED.
3. REFER TO DETAIL SHEET 6 FOR "MT" DETAIL:
  - a) WETLAND #9 USE BLANKET TYPE S75 OR APPROVED EQUAL, STAPLE PATTERN "C".
  - b) STREAM #3 USE BLANKET TYPE S75 OR APPROVED EQUAL, STAPLE PATTERN "B".
4. REFER TO DETAIL SHEET 4 FOR "ULF" OR "ULP" DETAIL. UTILIZE FOR STREAM CROSSINGS.
5. ALTHOUGH A BRIDGE IS SHOWN, A TEMPORARY CULVERT CROSSING MAY BE INSTALLED. REFER TO DETAIL SHEET 1 FOR "BR" DETAIL AND FOR THE SPECIFIED SIZE AND NUMBER OF CULVERTS.
6. REFER TO DETAIL SHEET 4 FOR "ARC" DETAIL.
7. REFER TO DETAIL SHEET 3 FOR "FB" DETAIL.

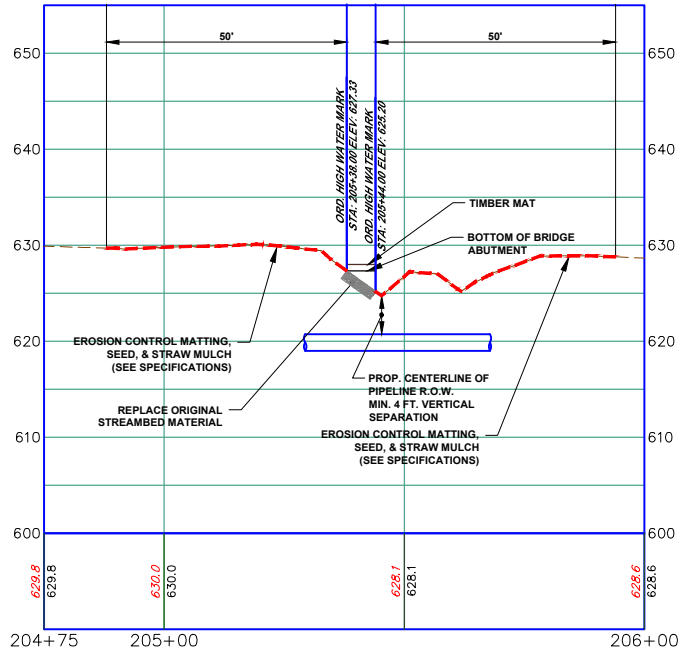
GENERAL NOTES:

1. SEE DETAIL SHEET 1 FOR SCHEDULE FOR PIPES/BRIDGES.
2. STREAM BUFFER IS 25 FEET FROM THE ORDINARY HIGH WATER MARK AND WETLAND BUFFER IS 25 FT. FROM WETLAND BOUNDARY.



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SEAL



STREAM #3 PROFILE

(ON 22x34 SHEET)

HORIZONTAL

GRAPHIC SCALE



( IN FEET )

1 inch = 20 ft.

(ON 22x34 SHEET)

VERTICAL

GRAPHIC SCALE



( IN FEET )

1 inch = 10 ft.

LEGEND

- INDEX CONTOUR
- CONTOUR
- PROPERTY LINE
- TEMP. CONSTRUCTION EASEMENT/LIMIT OF DISTURBANCE
- PERMANENT PIPELINE R.O.W.
- CENTERLINE PIPELINE R.O.W.
- ABOVE GROUND PIPE
- CONVENTIONAL BORE
- HDD
- FENCE
- EDGE WOODS
- WETLANDS
- STONE WALL
- OVERHEAD/UTILITY POLE
- PERENNIAL STREAM
- EPHEMERAL/INTERMITTENT STREAM
- ORD. HIGH WATER MARK
- FLOODWAY
- SOIL TYPE & BOUNDARY
- SS12 SILT/SSOX OR EQUIV. 12" HEIGHT
- SS24 SILT/SSOX OR EQUIV. 24" HEIGHT
- SS32 SILT/SSOX OR EQUIV. 32" HEIGHT
- RCE ROCK CONSTRUCTION ENTRANCE
- LM LOG MAT
- MT EROSION CONTROL MATTING
- SBR STREAMBANK RESTORATION
- TP TEMP. PIPE
- WB WATERBAR
- RFB ROCK FILTER BERM
- BR BRIDGE
- WC WETLAND CROSSING
- SSO SEDIMENT SILT SOXX PROTECTION AT WATER BAR
- AR ACCESS ROAD
- HWB HIGHWAY BORING
- HWC HIGHWAY CUT
- APR ACCESS RD. X-ING (PAVED ROAD)
- ARC ACCESS RD. w/CULVERT
- ULF UTILITY LINE STREAM X-ING WITH DAM AND PUMPING OR WITH PIPE FLUME
- TB/P TRENCH BREAKER/PLUG
- LDG LONGITUDINAL DIVERSION GRADING
- XW EXTRA WORKSPACE

LIMIT OF CONSTRUCTION AND  
LIMIT OF DISTURBANCE - 235 AC.

E&SPC SITE DETAIL

AVON LAKE GAS ADDITION PROJECT

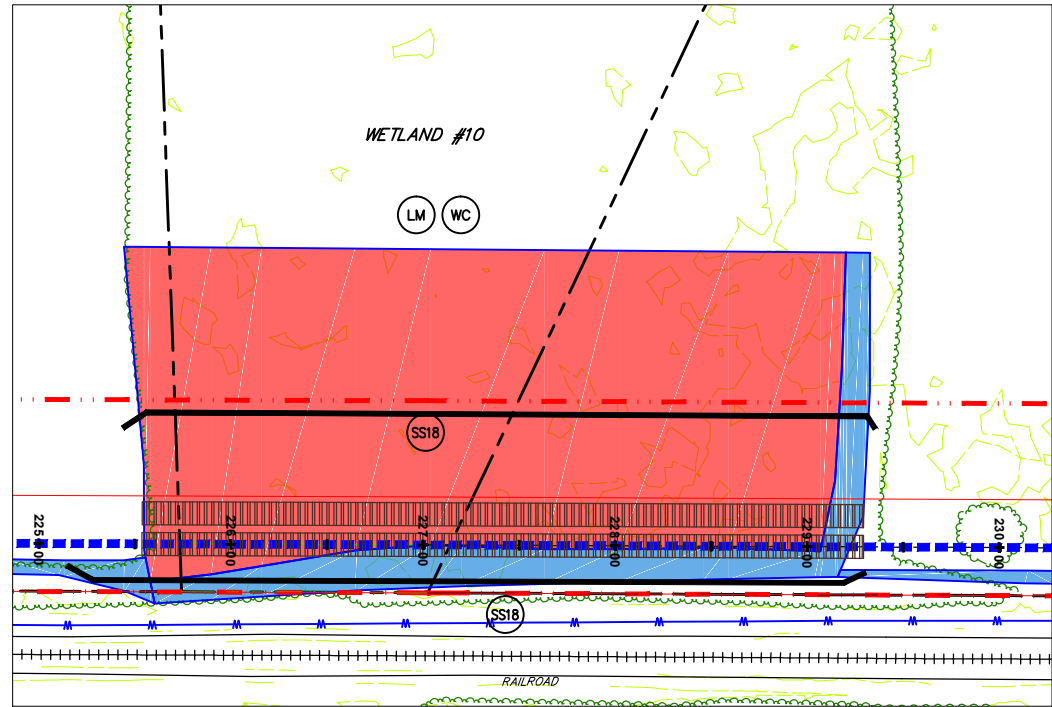
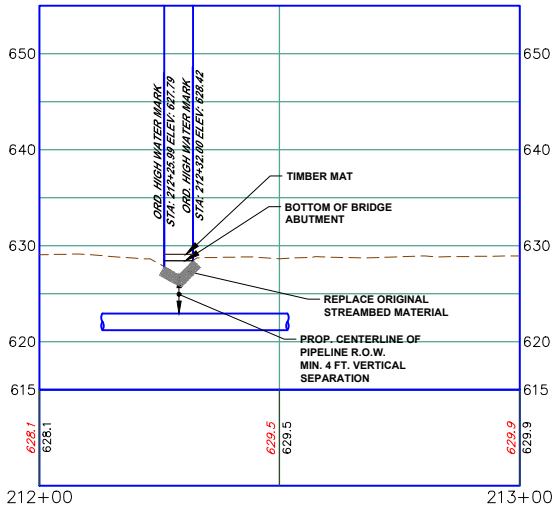
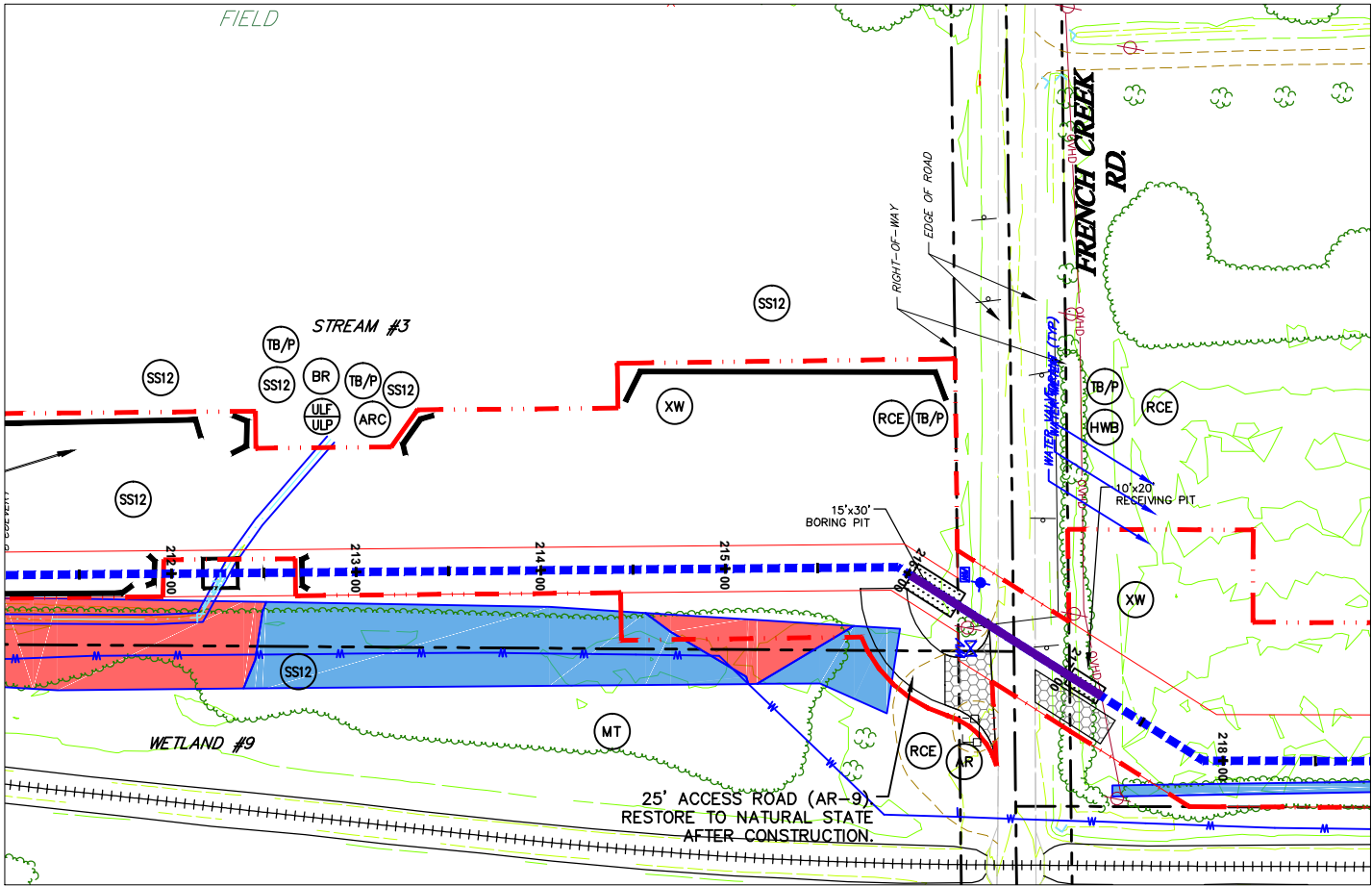
CARLISLE, EATON & LAGRANGE TOWNSHIPS  
AVON, AVON LAKE, ELYRIA &  
NORTH RIDGEVILLE CITIES  
LORAIN COUNTY  
OHIO

**Hanover**  
Engineering Associates Inc

DRAWN BY: AEJ  
CHECKED BY: SJC  
DATE: 12.15.14  
SCALE: AS NOTED  
PROJECT NO. NRG-1007  
SHEET NO. 55 OF 88

3355 Route 611, Suite 1  
Bartonsville, PA 18321-7822  
570.688.9550  
Fax 570.688.9768

Y:\Projects\Energy\NRG Energy\NRG-1007-Avon Lakes Pipeline\DWG\ESPC\ ESPC-NRG-1007-Avon LAKE-006-SITE DETAILS-1.dwg Dec 14,2014 - 6:01pm



**STREAM #3, WETLAND #9, ACCESS ROAD (AR-9) TO FRENCH CREEK RD., FRENCH CREEK RD. & WETLAND #10**

SCALE: 1" = 50'

**NOTES:**

1. REFER TO DETAIL SHEET 3 FOR "TB/P" DETAIL. ADDITIONAL TRENCH BREAKERS SHALL BE USED IF NEEDED.
2. PLACE SEDIMENT BARRIER/SIGNAGE AROUND PERIMETER OF WETLAND PRIOR TO ANY EARTHWORK. IF THE CONTRACTOR IS NOT SURE WHERE THE WETLAND "LIMIT" IS, HE SHALL CONTACT THE OWNER TO HAVE THE WETLAND REMARKED.
3. REFER TO DETAIL SHEET 6 FOR "MT" DETAIL:
  - a) WETLAND #9 & WETLAND #10 USE BLANKET TYPE S75 OR APPROVED EQUAL, STAPLE PATTERN "C".
  - b) STREAM #3 USE BLANKET TYPE S75 OR APPROVED EQUAL, STAPLE PATTERN "B".
4. REFER TO DETAIL SHEET 4 FOR "ULP" OR "ULP" DETAIL. UTILIZE FOR STREAM CROSSINGS.
5. ALTHOUGH A BRIDGE IS SHOWN, A TEMPORARY CULVERT CROSSING MAY BE INSTALLED. REFER TO DETAIL SHEET 1 FOR "BR" DETAIL AND FOR THE SPECIFIED SIZE AND NUMBER OF CULVERTS.
6. REFER TO DETAIL SHEET 4 FOR "ARC" DETAIL.
7. REFER TO DETAIL SHEET 5 FOR "RCE" OR DETAIL.
8. REFER TO DETAIL SHEET 3 FOR OR "HWB" DETAIL. PLACE TRENCH BREAKERS ON EITHER SIDE OF THE EXISTING ROAD.
9. REFER TO DETAIL SHEET 3 FOR "STONE/DIRT TWP ROAD CROSSING DETAIL" OR "PAVED TWP ROAD CROSSING" FOR TRENCH BACKFILL AND ROAD SURFACE RESTORATION.
10. REFER TO DETAIL SHEET 3 FOR "WC" DETAIL.
11. REFER TO DETAIL SHEET 3 FOR "TB" DETAIL.
12. REFER TO DETAIL SHEET 6 FOR INLET PROTECTION DETAIL.

**STREAM #3 PROFILE**

(ON 22x34 SHEET)

HORIZONTAL

**GRAPHIC SCALE**



( IN FEET )

1 inch = 20 ft.

(ON 22x34 SHEET)

VERTICAL

**GRAPHIC SCALE**



( IN FEET )

1 inch = 10 ft.

**GRAPHIC SCALE**



( IN FEET )

1 inch = 50 ft.

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**LEGEND**

- INDEX CONTOUR
- CONTOUR
- PROPERTY LINE
- TEMP. CONSTRUCTION EASEMENT/LIMIT OF DISTURBANCE
- PERMANENT PIPELINE R.O.W.
- CENTERLINE PIPELINE R.O.W.
- ABOVE GROUND PIPE
- CONVENTIONAL BORE
- HDD
- FENCE
- EDGE WOODS
- WETLANDS
- STONE WALL
- OVERHEAD/UTILITY POLE
- PERENNIAL STREAM
- EPHEMERAL/INTERMITTENT STREAM
- ORD. HIGH WATER MARK
- FLOODWAY
- SOIL TYPE & BOUNDARY
- SILT/SSOX OR EQUIV. 12" HEIGHT
- SILT/SSOX OR EQUIV. 24" HEIGHT
- SILT/SSOX OR EQUIV. 32" HEIGHT
- ROCK CONSTRUCTION ENTRANCE
- LOG MAT
- EROSION CONTROL MATTING
- STREAMBANK RESTORATION
- TEMP. PIPE
- WATERBAR
- ROCK FILTER BERM
- BRIDGE
- WETLAND CROSSING
- SEDIMENT SILT SOXX PROTECTION AT WATER BAR
- ACCESS ROAD
- HIGHWAY BORING
- HIGHWAY CUT
- ACCESS RD. X-ING (PAVED ROAD)
- ACCESS RD. w/CULVERT
- UTILITY LINE STREAM X-ING WITH DAM AND PUMPING OR WITH PIPE FLUME
- TRENCH BREAKER/PLUG
- LONGITUDINAL DIVERSION GRADING
- EXTRA WORKSPACE

LIMIT OF CONSTRUCTION AND LIMIT OF DISTURBANCE - 235 AC.

**E&SPC SITE DETAIL**

**AVON LAKE GAS ADDITION PROJECT**

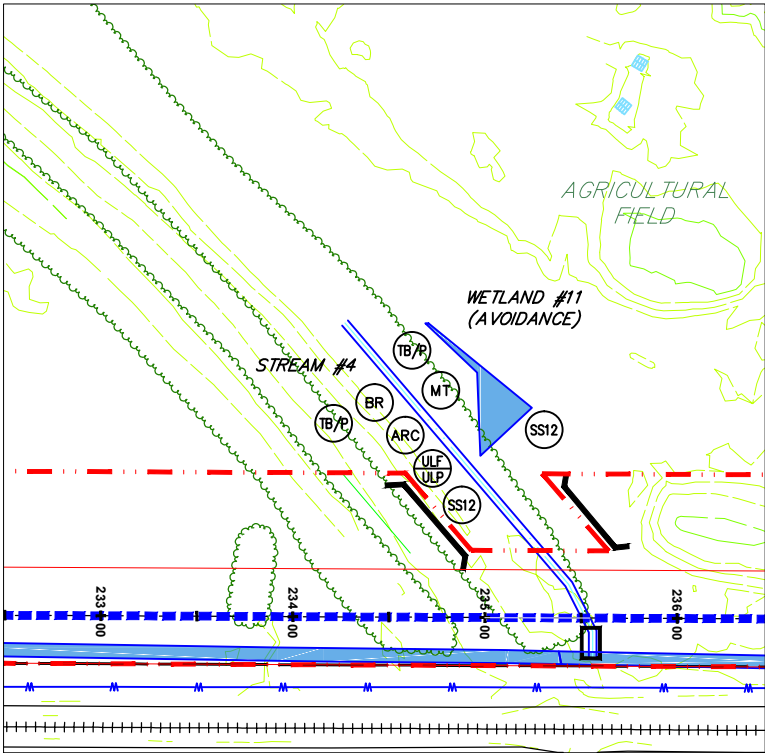
CARLISLE, EATON & LAGRANGE TOWNSHIPS  
AVON, AVON LAKE, ELYRIA &  
NORTH RIDGEVILLE CITIES  
LORAIN COUNTY  
OHIO

**Hanover**  
Engineering Associates Inc

DRAWN BY: AEJ  
CHECKED BY: SJC  
DATE: 12.15.14  
SCALE: AS NOTED  
PROJECT NO. NRG-1007  
SHEET NO. 56 OF 88

3355 Route 611, Suite 1  
Bartonsville, PA 18321-7822  
570.688.9550  
Fax 570.688.9768



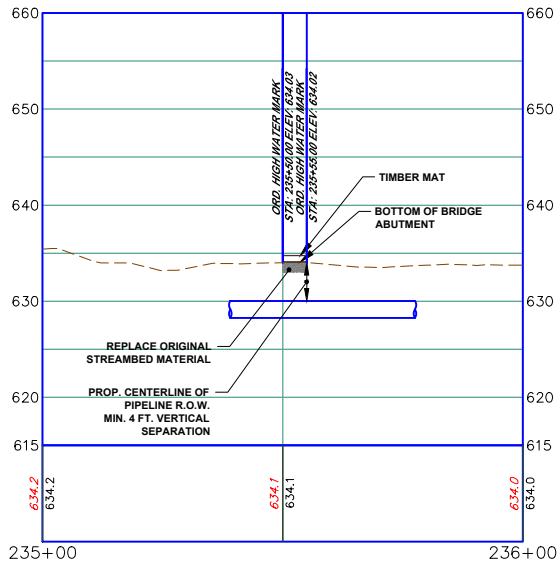


**STREAM #4, WETLAND #11 (AVOIDANCE),  
& WETLAND #12**

SCALE: 1" = 50'

**NOTES:**

1. REFER TO DETAIL SHEET 3 FOR "TB/P" DETAIL. ADDITIONAL TRENCH BREAKERS SHALL BE USED IF NEEDED.
2. PLACE SEDIMENT BARRIER/SIGNAGE AROUND PERIMETER OF WETLAND PRIOR TO ANY EARTHWORK. IF THE CONTRACTOR IS NOT SURE WHERE THE WETLAND "LIMIT" IS, HE SHALL CONTACT THE OWNER TO HAVE THE WETLAND REMARKED.
3. REFER TO DETAIL SHEET 6 FOR "MT" DETAIL:
  - a) WETLAND #12 USE BLANKET TYPE S75 OR APPROVED EQUAL, STAPLE PATTERN "C".
  - b) STREAM #4 USE BLANKET TYPE S75 OR APPROVED EQUAL, STAPLE PATTERN "B".
4. REFER TO DETAIL SHEET 4 FOR "ULP" OR "ULP" DETAIL. UTILIZE FOR STREAM CROSSINGS.
5. ALTHOUGH A BRIDGE IS SHOWN, A TEMPORARY CULVERT CROSSING MAY BE INSTALLED. REFER TO DETAIL SHEET 1 FOR "BR" DETAIL AND FOR THE SPECIFIED SIZE AND NUMBER OF CULVERTS.
6. REFER TO DETAIL SHEET 4 FOR "ARC" DETAIL.
7. REFER TO DETAIL SHEET 5 FOR "RCE" OR DETAIL.
8. REFER TO DETAIL SHEET 3 FOR "TB" DETAIL.



**STREAM #4 PROFILE**

(ON 22x34 SHEET)

HORIZONTAL

**GRAPHIC SCALE**



( IN FEET )

1 inch = 20 ft.

(ON 22x34 SHEET)

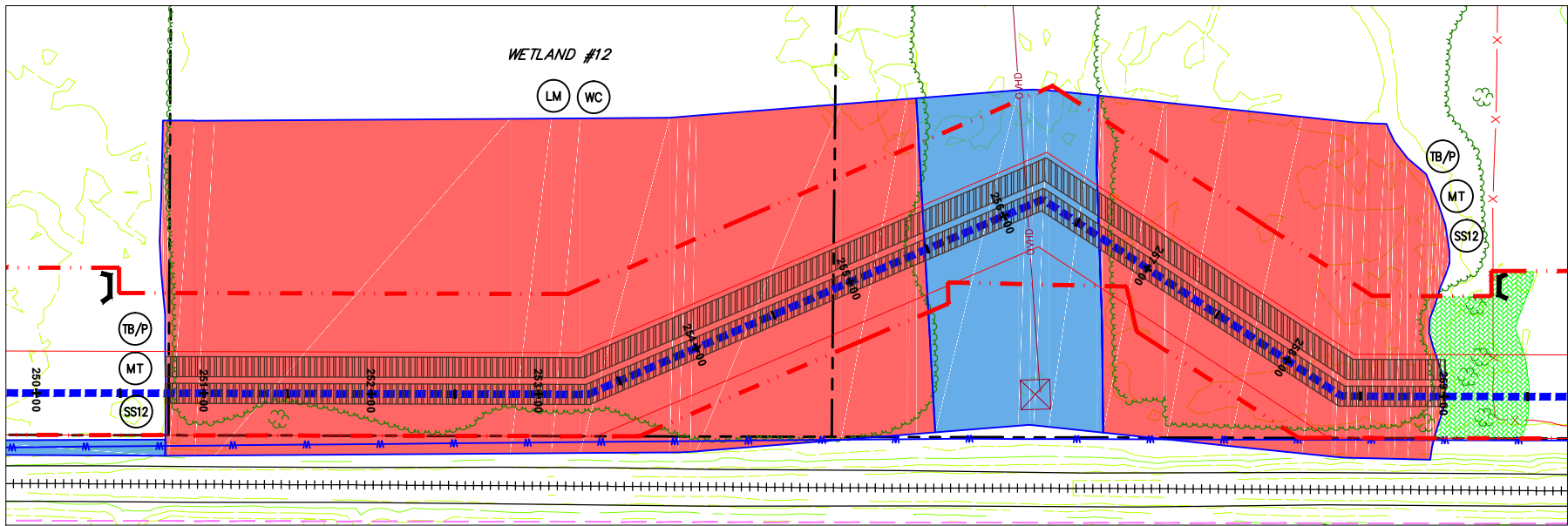
VERTICAL

**GRAPHIC SCALE**



( IN FEET )

1 inch = 10 ft.

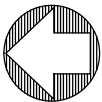


**GRAPHIC SCALE**



( IN FEET )

1 inch = 50 ft.



**GENERAL NOTES:**

1. SEE DETAIL SHEET 1 FOR SCHEDULE FOR PIPES/BRIDGES.
2. STREAM BUFFER IS 25 FEET FROM THE ORDINARY HIGH WATER MARK AND WETLAND BUFFER IS 25 FT. FROM WETLAND BOUNDARY.

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SEAL

**LEGEND**

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- ORD. HIGH WATER MARK LINE
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- LM LOG MAT
- MT EROSION CONTROL MATTING
- SBR STREAMBANK RESTORATION
- TP TEMP. PIPE
- WB WATERBAR
- RFB ROCK FILTER BERM
- BR BRIDGE
- WC WETLAND CROSSING
- SSO SEDIMENT SILT/SOXX PROTECTION AT WATER BAR
- AR ACCESS ROAD
- HWB HIGHWAY BORING
- HWC HIGHWAY CUT
- APR ACCESS RD. X-ING (PAVED ROAD)
- ARC ACCESS RD. w/CULVERT
- ULP UTILITY LINE STREAM X-ING WITH DAM AND PUMPING OR WITH PIPE FLUME
- TB/P TRENCH BREAKER/PLUG
- LDG LONGITUDINAL DIVERSION GRADING
- XW EXTRA WORKSPACE

LIMIT OF CONSTRUCTION AND  
LIMIT OF DISTURBANCE - 235 AC.

**E&SPC SITE DETAIL**

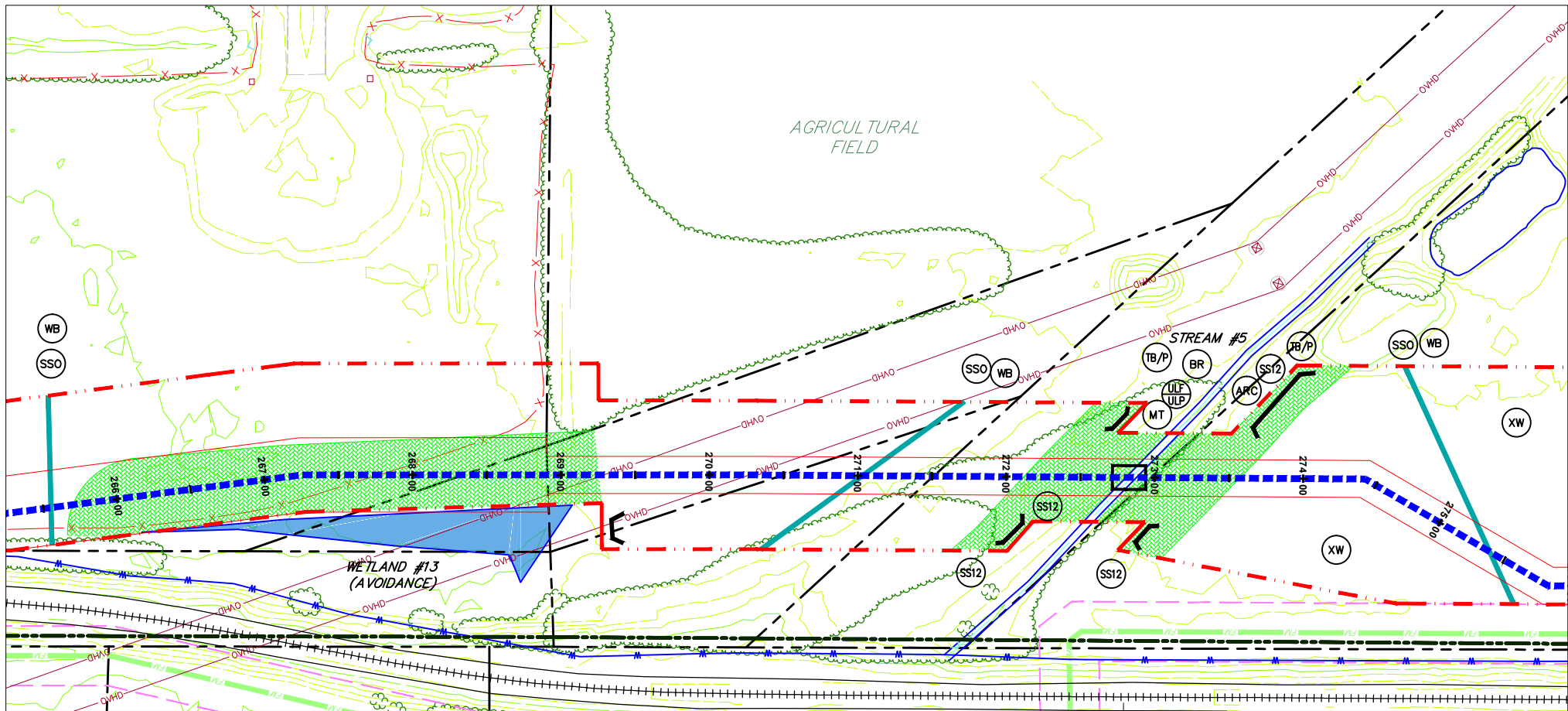
**AVON LAKE GAS ADDITION PROJECT**

CARLISLE, EATON & LAGRANGE TOWNSHIPS  
AVON, AVON LAKE, ELYRIA &  
NORTH RIDGEVILLE CITIES  
LORAIN COUNTY  
OHIO

**Hanover**  
Engineering Associates Inc

DRAWN BY: AEJ  
CHECKED BY: SJC  
DATE: 12.15.14  
SCALE: AS NOTED  
PROJECT NO. NRG-1007  
SHEET NO. 57 OF 88

3355 Route 611, Suite 1  
Bartonsville, PA 18321-7822  
570.688.9550  
Fax 570.688.9768

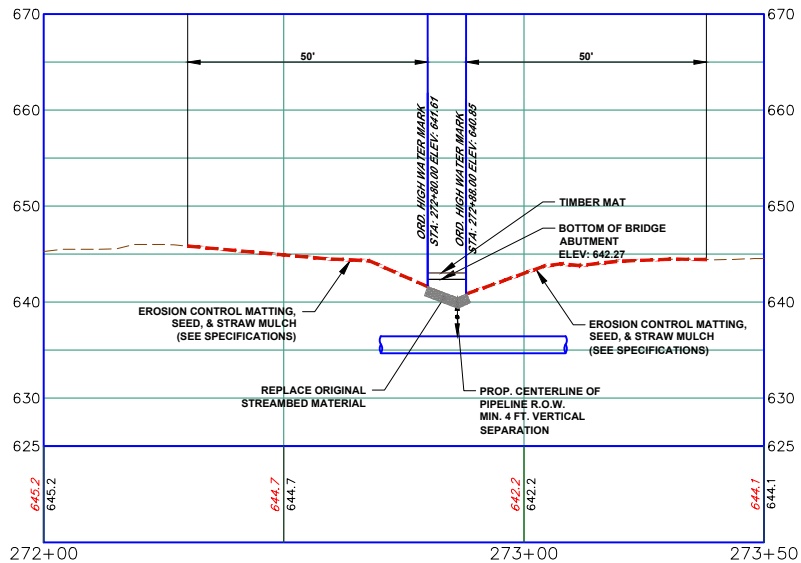
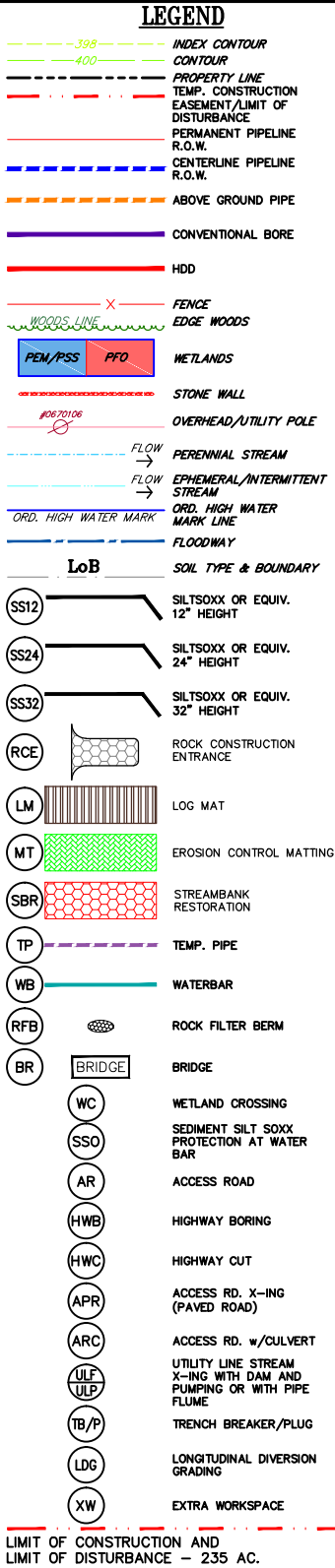


**WETLAND #13 (AVOIDANCE)& STREAM #5**

SCALE: 1" = 100'

**NOTES:**

1. REFER TO DETAIL SHEET 3 FOR "TB/P" DETAIL. ADDITIONAL TRENCH BREAKERS SHALL BE USED IF NEEDED.
2. REFER TO DETAIL SHEET 3 FOR "WC" DETAIL.
3. PLACE SEDIMENT BARRIER/SIGNAGE AROUND PERIMETER OF WETLAND PRIOR TO ANY EARTHWORK. IF THE CONTRACTOR IS NOT SURE WHERE THE WETLAND "LIMIT" IS, HE SHALL CONTACT THE OWNER TO HAVE THE WETLAND REMARKED.
4. THE CONTRACTOR SHALL PLACE LOG MATS TO CROSS THE WETLAND AREA. ALL APPLICABLE WETLAND AREA WITHIN THE LIMITS OF CONSTRUCTION/DISTURBANCE SHALL BE COVERED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FINES AND/OR REPAIRS REQUIRED AS A RESULT OF DAMAGE TO WETLANDS AND WATERCOURSES AT NO COST TO THE FACILITY OWNER.
5. REFER TO DETAIL SHEET 6 FOR "MT" DETAIL:  
a) WETLAND #13 USE BLANKET TYPE S75 OR APPROVED EQUAL, STAPLE PATTERN "C".  
b) STREAM #5 USE BLANKET TYPE S75 OR APPROVED EQUAL, STAPLE PATTERN "B".
6. REFER TO DETAIL SHEET 4 FOR "ULP" OR "ULP" DETAIL UTILIZE FOR STREAM CROSSINGS.
7. ALTHOUGH A BRIDGE IS SHOWN, A TEMPORARY CULVERT CROSSING MAY BE INSTALLED. REFER TO DETAIL SHEET 1 FOR "BR" DETAIL AND FOR THE SPECIFIED SIZE AND NUMBER OF CULVERTS.
8. REFER TO DETAIL SHEET 4 FOR "ARC" DETAIL.
9. REFER TO DETAIL SHEET 5 FOR "RCE" OR DETAIL.
10. REFER TO DETAIL SHEET 5 FOR "AR" DETAIL.
11. REFER TO DETAIL SHEET 3 FOR "FB" DETAIL.



**STREAM #5 PROFILE**

(ON 22x34 SHEET)

**GRAPHIC SCALE**



( IN FEET )

1 inch = 20 ft.

(ON 22x34 SHEET)

**GRAPHIC SCALE**



( IN FEET )

1 inch = 10 ft.

**GRAPHIC SCALE**



( IN FEET )

1 inch = 50 ft.

**GENERAL NOTES:**

1. SEE DETAIL SHEET 1 FOR SCHEDULE FOR PIPES/BRIDGES.
2. STREAM BUFFER IS 25 FEET FROM THE ORDINARY HIGH WATER MARK AND WETLAND BUFFER IS 25 FT. FROM WETLAND BOUNDARY.

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**E&SPC SITE DETAIL**

**AVON LAKE GAS ADDITION PROJECT**

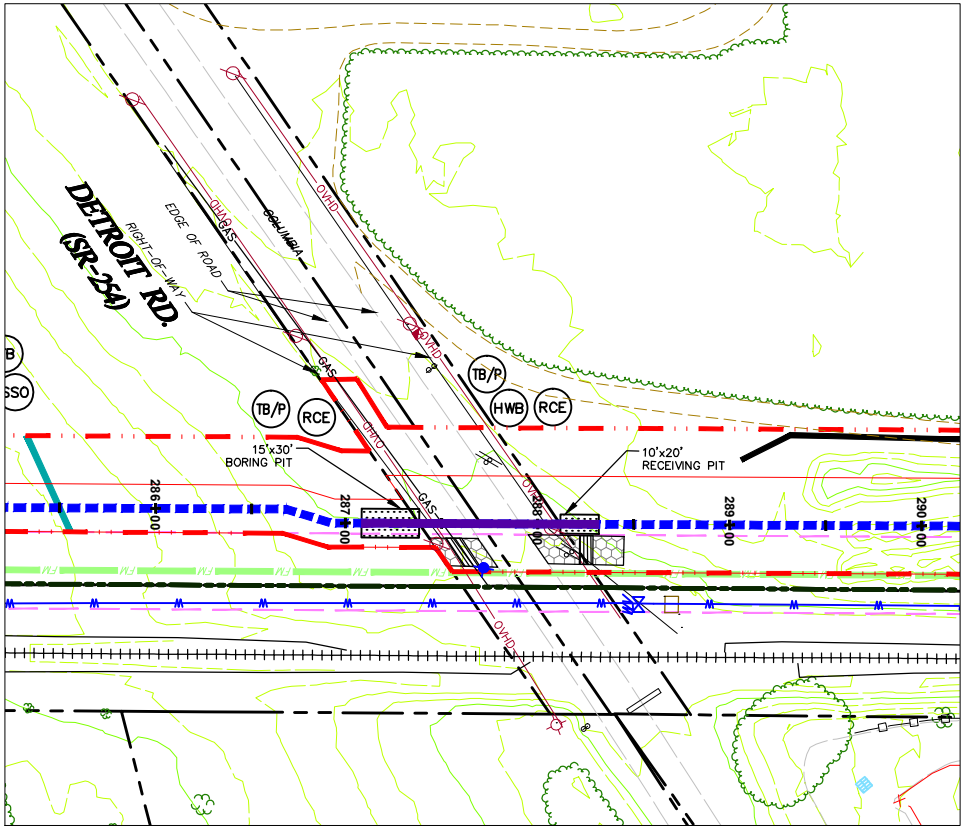
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AVON, AVON LAKE, ELYRIA &  
NORTH RIDGEVILLE CITIES  
LORAIN COUNTY  
OHIO

**Hanover**  
Engineering Associates Inc

DRAWN BY: AEJ  
CHECKED BY: SJC  
DATE: 12.15.14  
SCALE: AS NOTED  
PROJECT NO.: NRG-1007  
SHEET NO.: 58 OF 88

3355 Route 611, Suite 1  
Bartonsville, PA 18321-7822  
570.688.9550  
Fax 570.688.9768



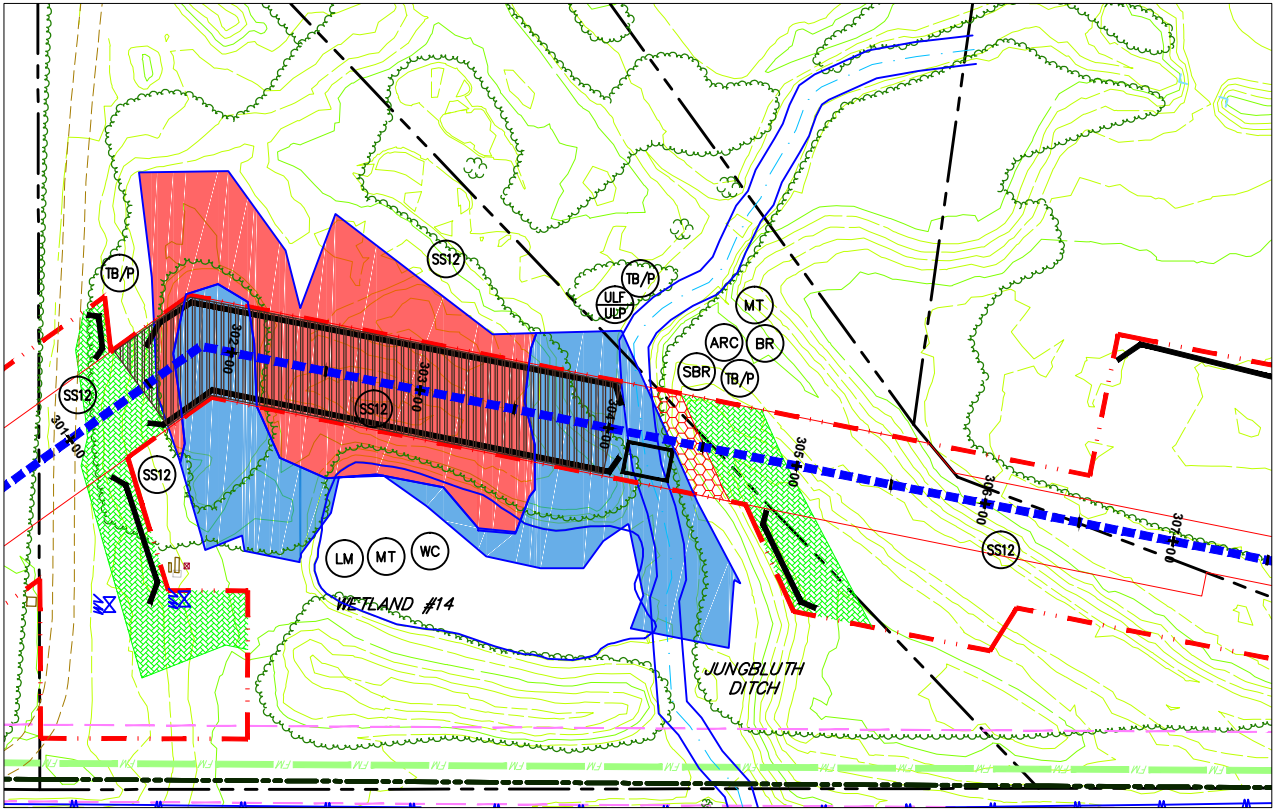


DETROIT RD. (SR-254)

SCALE: 1" = 50'

NOTES:

1. REFER TO DETAIL SHEET 3 FOR "TB/P" DETAIL. ADDITIONAL TRENCH BREAKERS SHALL BE USED IF NEEDED.
2. REFER TO DETAIL SHEET 3 FOR "WB" DETAIL.
3. REFER TO DETAIL SHEET 3 FOR "SSO" DETAIL.
4. REFER TO DETAIL SHEET 5 FOR "RCE" OR DETAIL.
5. REFER TO DETAIL SHEET 3 FOR OR "HWC" DETAIL. PLACE TRENCH BREAKERS ON EITHER SIDE OF THE EXISTING ROAD.
6. REFER TO DETAIL SHEET 3 FOR "STONE/DIRT TWP ROAD CROSSING DETAIL" OR "PAVED TWP ROAD CROSSING" FOR TRENCH BACKFILL AND ROAD SURFACE RESTORATION.
7. REFER TO DETAIL SHEET 3 FOR "FB" DETAIL.
8. REFER TO DETAIL SHEET 6 FOR INLET PROTECTION DETAIL.



WETLAND #14. & JUNGBLUTH DITCH

SCALE: 1" = 50'

NOTES:

1. REFER TO DETAIL SHEET 3 FOR "TB/P" DETAIL. ADDITIONAL TRENCH BREAKERS SHALL BE USED IF NEEDED.
2. REFER TO DETAIL SHEET 3 FOR "WB" DETAIL.
3. REFER TO DETAIL SHEET 3 FOR "SSO" DETAIL.
4. REFER TO DETAIL SHEET 5 FOR "RCE" OR DETAIL.
5. PLACE SEDIMENT BARRIER/SIGNAGE AROUND PERIMETER OF WETLAND PRIOR TO ANY EARTHWORK. IF THE CONTRACTOR IS NOT SURE WHERE THE WETLAND "LIMIT" IS, HE SHALL CONTACT THE OWNER TO HAVE THE WETLAND REMARKED.
6. THE CONTRACTOR SHALL PLACE LOG MATS TO CROSS THE WETLAND AREA. ALL APPLICABLE WETLAND AREA WITHIN THE LIMITS OF CONSTRUCTION/DISTURBANCE SHALL BE COVERED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FINES AND/OR REPAIRS REQUIRED AS A RESULT OF DAMAGE TO WETLANDS AND WATERCOURSES AT NO COST TO THE FACILITY OWNER.
7. REFER TO DETAIL SHEET 6 FOR "MT" DETAIL:
  - a) WETLAND #14 USE BLANKET TYPE S75 OR APPROVED EQUAL, STAPLE PATTERN "C".
  - b) JUNGBLUTH DITCH USE BLANKET TYPE S75 OR APPROVED EQUAL, STAPLE PATTERN "B".
8. REFER TO DETAIL SHEET 4 FOR "ULP" OR "ULP" DETAIL. UTILIZE FOR STREAM CROSSINGS.
9. ALTHOUGH A BRIDGE IS SHOWN, A TEMPORARY CULVERT CROSSING MAY BE INSTALLED. REFER TO DETAIL SHEET 1 FOR "BR" DETAIL AND FOR THE SPECIFIED SIZE AND NUMBER OF CULVERTS.
10. REFER TO DETAIL SHEET 4 FOR "ARC" DETAIL.
11. REFER TO DETAIL SHEET 2 FOR STREAMBANK RESTORATION SPECIFICATIONS.
12. REFER TO DETAIL SHEET 3 FOR "FB" DETAIL.
13. REFER TO DETAIL SHEET 6 FOR INLET PROTECTION DETAIL.

JUNGBLUTH DITCH PROFILE

(ON 22x34 SHEET)

HORIZONTAL GRAPHIC SCALE



( IN FEET )

1 inch = 20 ft.

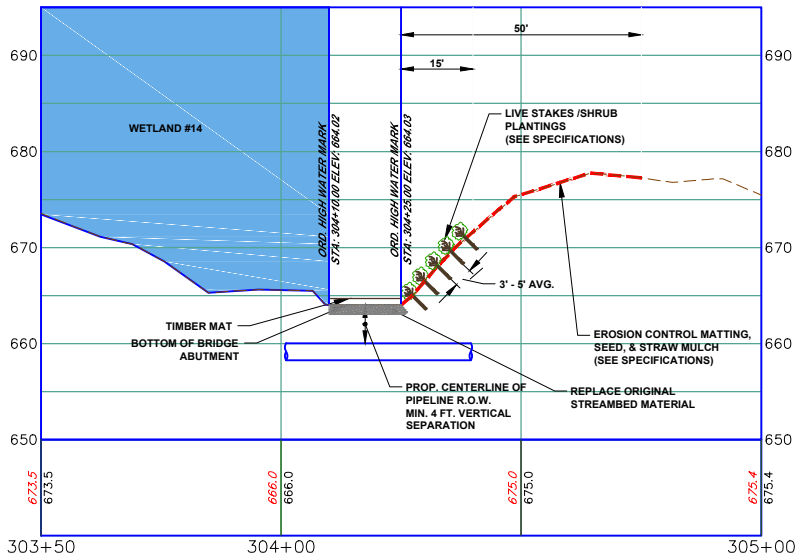
(ON 22x34 SHEET)

VERTICAL GRAPHIC SCALE



( IN FEET )

1 inch = 10 ft.



GRAPHIC SCALE

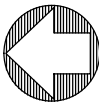


( IN FEET )

1 inch = 50 ft.

GENERAL NOTES:

1. SEE DETAIL SHEET 1 FOR SCHEDULE FOR PIPES/BRIDGES.
2. STREAM BUFFER IS 25 FEET FROM THE ORDINARY HIGH WATER MARK AND WETLAND BUFFER IS 25 FT. FROM WETLAND BOUNDARY.



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- AR ACCESS ROAD
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- LDG LONGITUDINAL DIVERSION GRADING
- XW EXTRA WORKSPACE
- LIMIT OF CONSTRUCTION AND LIMIT OF DISTURBANCE - 235 AC.

E&SPC SITE DETAIL

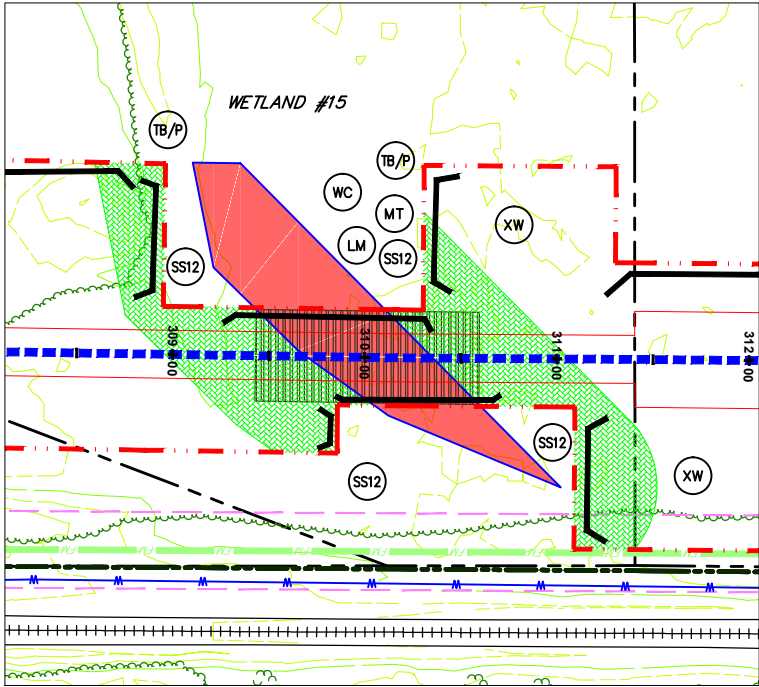
AVON LAKE GAS ADDITION PROJECT

CARLISLE, EATON & LAGRANGE TOWNSHIPS  
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**Hanover**  
Engineering Associates Inc

DRAWN BY: AEJ  
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SHEET NO. 59 OF 88

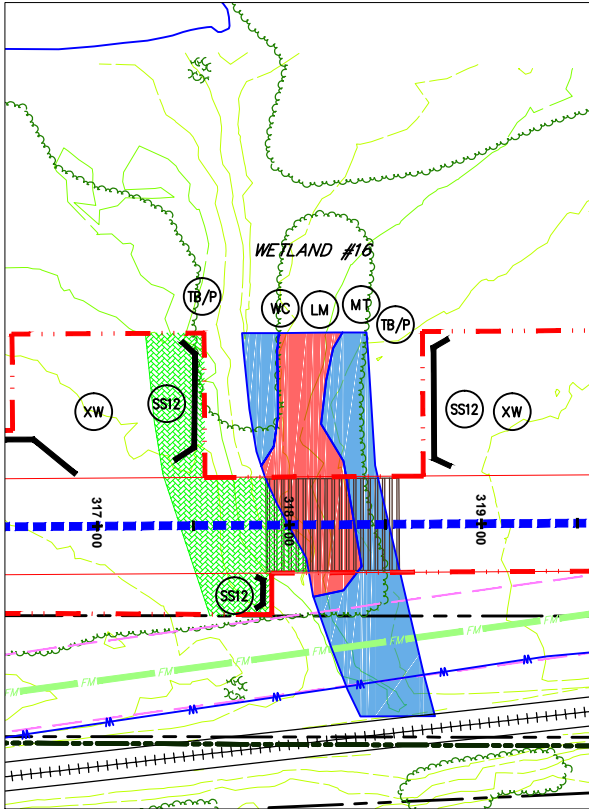
3355 Route 611, Suite 1  
Bartonsville, PA 18321-7822  
570.688.9550  
Fax 570.688.9768



WETLAND #15  
SCALE: 1" = 50'

NOTES:

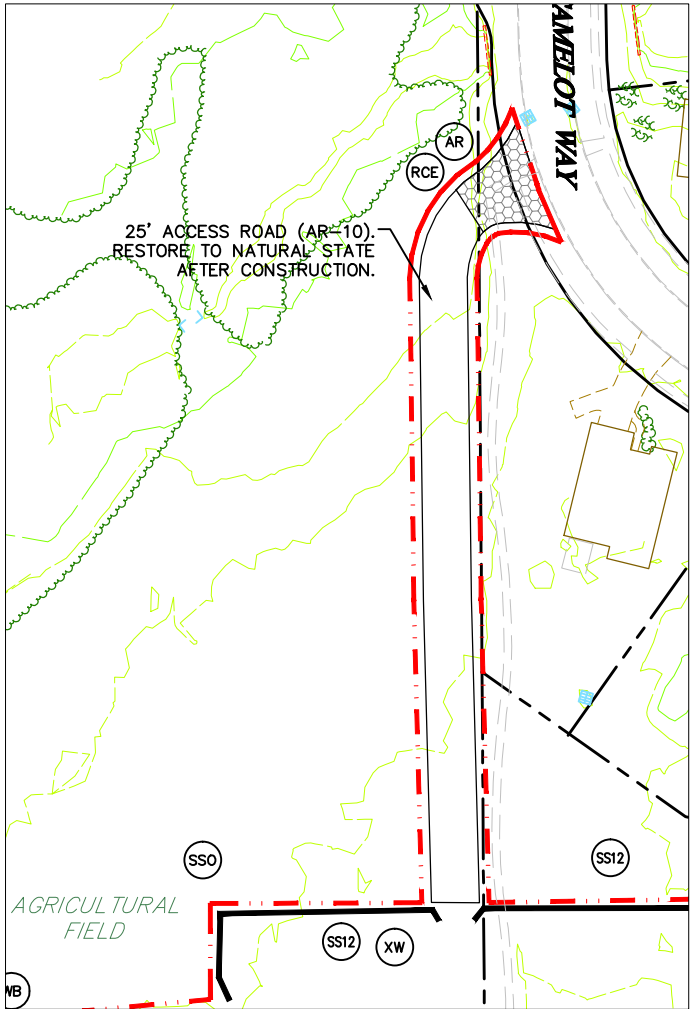
1. REFER TO DETAIL SHEET 3 FOR "TB/P" DETAIL. ADDITIONAL TRENCH BREAKERS SHALL BE USED IF NEEDED.
2. REFER TO DETAIL SHEET 3 FOR "WC" DETAIL.
3. PLACE SEDIMENT BARRIER/SIGNAGE AROUND PERIMETER OF WETLAND PRIOR TO ANY EARTHWORK. IF THE CONTRACTOR IS NOT SURE WHERE THE WETLAND "LIMIT" IS, HE SHALL CONTACT THE OWNER TO HAVE THE WETLAND REMARKED.
4. THE CONTRACTOR SHALL PLACE LOG MATS TO CROSS THE WETLAND AREA. ALL APPLICABLE WETLAND AREA WITHIN THE LIMITS OF CONSTRUCTION/DISTURBANCE SHALL BE COVERED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FINES AND/OR REPAIRS REQUIRED AS A RESULT OF DAMAGE TO WETLANDS AND WATERCOURSES AT NO COST TO THE FACILITY OWNER.
5. REFER TO DETAIL SHEET 6 FOR "MT" DETAIL:  
a) WETLAND #15 USE BLANKET TYPE S75 OR APPROVED EQUAL, STAPLE PATTERN "C".
6. REFER TO DETAIL SHEET 3 FOR "FB" DETAIL.



WETLAND #16  
SCALE: 1" = 50'

NOTES:

1. REFER TO DETAIL SHEET 3 FOR "TB/P" DETAIL. ADDITIONAL TRENCH BREAKERS SHALL BE USED IF NEEDED.
2. REFER TO DETAIL SHEET 3 FOR "WC" DETAIL.
3. PLACE SEDIMENT BARRIER/SIGNAGE AROUND PERIMETER OF WETLAND PRIOR TO ANY EARTHWORK. IF THE CONTRACTOR IS NOT SURE WHERE THE WETLAND "LIMIT" IS, HE SHALL CONTACT THE OWNER TO HAVE THE WETLAND REMARKED.
4. THE CONTRACTOR SHALL PLACE LOG MATS TO CROSS THE WETLAND AREA. ALL APPLICABLE WETLAND AREA WITHIN THE LIMITS OF CONSTRUCTION/DISTURBANCE SHALL BE COVERED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FINES AND/OR REPAIRS REQUIRED AS A RESULT OF DAMAGE TO WETLANDS AND WATERCOURSES AT NO COST TO THE FACILITY OWNER.
5. REFER TO DETAIL SHEET 6 FOR "MT" DETAIL:  
a) WETLAND #16 USE BLANKET TYPE S75 OR APPROVED EQUAL, STAPLE PATTERN "C".
6. REFER TO DETAIL SHEET 3 FOR "FB" DETAIL.



ACCESS ROAD (AR-10) TO CAMELOT WAY  
SCALE: 1" = 50'

NOTES:

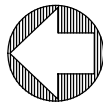
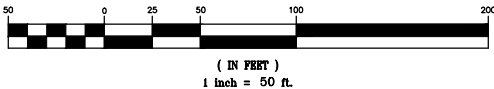
1. REFER TO DETAIL SHEET 5 FOR "RCE" OR DETAIL.
2. REFER TO DETAIL SHEET 5 FOR "AR" DETAIL.
3. REFER TO DETAIL SHEET 3 FOR "FB" DETAIL.

LEGEND	
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	FLOODWAY
	SOIL TYPE & BOUNDARY
	SILT/CLAY OR EQUIV. 12" HEIGHT
	SILT/CLAY OR EQUIV. 24" HEIGHT
	SILT/CLAY OR EQUIV. 32" HEIGHT
	ROCK CONSTRUCTION ENTRANCE
	LOG MAT
	EROSION CONTROL MATTING
	STREAMBANK RESTORATION
	TEMP. PIPE
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	EXTRA WORKSPACE
	LIMIT OF CONSTRUCTION AND LIMIT OF DISTURBANCE - 235 AC.

GENERAL NOTES:

1. SEE DETAIL SHEET 1 FOR SCHEDULE FOR PIPES/BRIDGES.
2. STREAM BUFFER IS 25 FEET FROM THE ORDINARY HIGH WATER MARK AND WETLAND BUFFER IS 25 FT. FROM WETLAND BOUNDARY.

GRAPHIC SCALE



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SEAL

E&SPC SITE DETAIL

SEAL	NO.	REVISIONS	DATE	AVON LAKE GAS ADDITION PROJECT				
				CARLISLE, EATON & LAGRANGE TOWNSHIPS AVON, AVON LAKE, ELYRIA & NORTH RIDGEVILLE CITIES LORAIN COUNTY OHIO		DRAWN BY: AEJ	PROJECT NO.	
						CHECKED BY: SJC	NRG-1007	
						DATE: 12.15.14		SHEET NO.
						SCALE: AS NOTED		60 OF 88
				<b>Hanover</b> Engineering Associates Inc		3355 Route 611, Suite 1 Bartonsville, PA 18321-7822 570.688.9550 Fax 570.688.9768		



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Summary: Application of NRG Ohio Pipeline Company LLC continued - Attachment K (Part 5)  
electronically filed by Teresa Orahod on behalf of Sally Bloomfield