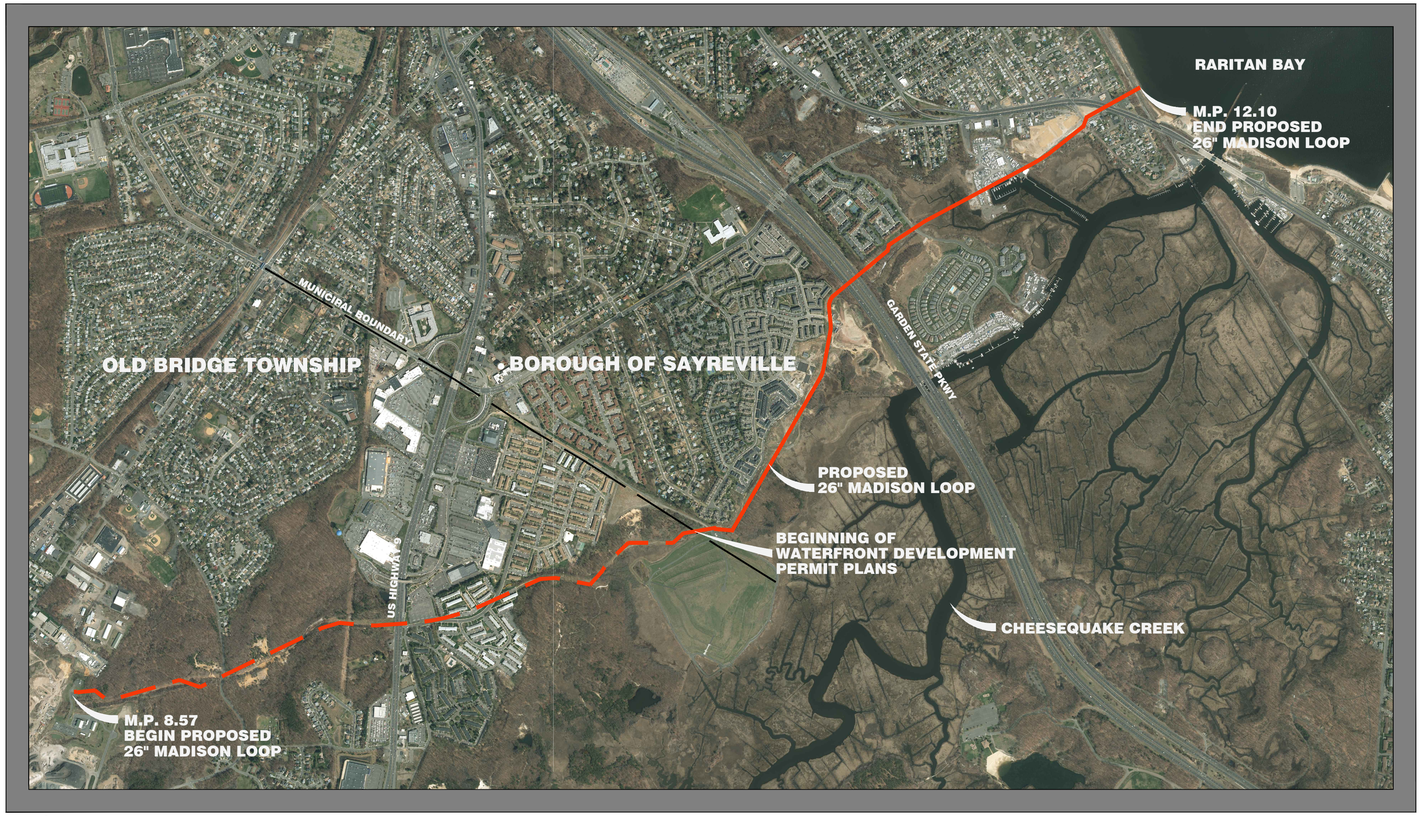
NJDEP LAND USE PERMIT PLANS

FOR THE

NORTHEAST SUPPLY ENHANCEMENT PROJECT

PROPOSED 26" MADISON LOOP

TRANSCONTINENTAL GAS PIPE LINE COMPANY LLC



N

AERIAL KEY MAP

SOURCE: WWW.NJGIN.STATE.NJ.US, AERIAL MAPS, 2015
SCALE: 1" = 1000'

DRAWING LIST			
DWG. NO.	DWG. TITLE	ISSUED	LAST REVISED
1	COVER SHEET	06/08/18	04/22/19
2	GENERAL NOTES	06/08/18	04/22/19
3	WATERFRONT DEVELOPMENT PERMIT PLAN (MILE 10.4 TO 10.6)	06/08/18	04/22/19
4	WATERFRONT DEVELOPMENT PERMIT PLAN (MILE 10.6 TO 10.9)	06/08/18	04/22/19
5	WATERFRONT DEVELOPMENT PERMIT PLAN (MILE 10.9 TO 11.1)	06/08/18	04/22/19
6	WATERFRONT DEVELOPMENT PERMIT PLAN (MILE 11.1 TO 11.4)	06/08/18	04/22/19
7	WATERFRONT DEVELOPMENT PERMIT PLAN (MILE 11.4 TO 11.6)	06/08/18	04/22/19
8	WATERFRONT DEVELOPMENT PERMIT PLAN (MILE 11.6 TO 11.9)	06/08/18	04/22/19
9	WATERFRONT DEVELOPMENT PERMIT PLAN (MILE 11.9 TO 12.1)	06/08/18	04/22/19
10	CONSTRUCTION DETAILS–1	06/08/18	04/22/19
11	CONSTRUCTION DETAILS–2	06/08/18	04/22/19
12	CONSTRUCTION DETAILS–3	06/08/18	04/22/19
13	CONSTRUCTION DETAILS–4	06/08/18	04/22/19

SUPPLEMENTAL DRAWING LIST			
DWG. NO.	DWG. TITLE	ISSUED	LAST REVISED
1	PERMIT PLAN BLOCK 6302, LOT CO210, OLD BRIDGE TOWNSHIP – STAGING AREA	06/08/18	04/22/19
1	PERMIT PLAN BLOCK 1051, LOT 4, OLD BRIDGE TOWNSHIP – STAGING AREA	06/08/18	04/22/19

WATERFRONT DEVELOPMENT PERMIT PLANS

REV. / ISSUE	DATE	DESCRIPTION
1	4/22/19	REV TRANSITION AREA WIDTH PER NJDEP

I AM A DULY REGISTERED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF NEW JERSEY AND I HEREBY CERTIFY THAT EXISTING CONDITIONS SHOWN WERE FIELD LOCATED AND PREPARED UNDER MY DIRECT SUPERVISION.

THOMAS J. MURPHY, PLS
DW SMITH ASSOCIATES, LLC
1450 STATE ROUTE 34, WALL, NJ 07753
PROFESSIONAL LAND SURVEYOR
N.J. LIC. NO. 37207 COA NO. 24GA28122400

SIGNATURE DATE

I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF NEW JERSEY AND I HEREBY CERTIFY THAT THE PROPOSED ENVIRONMENTAL DISTURBANCES SHOWN ARE ACCURATE AND CORRESPOND WITH THE DETAILED ENGINEERING DRAWINGS.

WILLIAM SALMON, P.E.
PS&S, LLC
1433 HIGHWAY 34, SUITE A-4, WALL, NJ 07727
PROFESSIONAL ENGINEER
N.J. LIC. NO. 41319 COA NO. 24GA28032700

04/24/19
SIGNATURE DATE

PS&S
PAULUS, SOKOLOWSKI
AND SARTOR, LLC.
1433 ROUTE 34
SUITE A4
WALL, NJ 07727
PHONE: (848) 206-2626
CERTIFICATE OF AUTHORIZATION NO. 24GA28032700

ALL DIMENSIONS MUST BE VERIFIED BY THE CONTRACTOR. NOTIFY PAULUS, SOKOLOWSKI AND SARTOR, LLC. OF ANY CONFLICTS, ERRORS, AMBIGUITIES OR DISCREPANCIES IN THE CONTRACT DRAWINGS OR SPECIFICATIONS BEFORE PROCEEDING WITH CONSTRUCTION.

ALL DIMENSIONS SHALL BE AS NOTED IN WORDS OR NUMBERS ON THE CONTRACT DRAWINGS. DO NOT SCALE THE DRAWINGS TO DETERMINE DIMENSIONS.

THESE CONTRACT DRAWINGS CONTAIN DATA INTENDED SPECIFICALLY FOR THE NOTED PROJECT AND CLIENT. THEY ARE NOT INTENDED FOR USE ON EXTENSIONS OF THIS PROJECT OR FOR REUSE ON ANY OTHER PROJECT.

THE COPYING AND/OR MODIFICATION OF THIS DOCUMENT OR ANY PORTION THEREOF WITHOUT THE WRITTEN PERMISSION OF PAULUS, SOKOLOWSKI AND SARTOR, LLC. IS PROHIBITED.

UNLESS THESE DRAWINGS ARE SPECIFICALLY DESIGNATED AS "CONSTRUCTION ISSUE", THESE DRAWINGS SHALL NOT BE USED FOR CONSTRUCTION OR IMPROVEMENTS DEPICTED HEREIN, CONTRACTORS SHALL NOTIFY THE DESIGN ENGINEER TO OBTAIN CONSTRUCTION DOCUMENTS.

PROJECT
NORTHEAST SUPPLY
ENHANCEMENT PROJECT
PROPOSED
26" MADISON LOOP
OLD BRIDGE TOWNSHIP & SAYREVILLE BOROUGH
MIDDLESEX COUNTY, NEW JERSEY

SHEET TITLE
COVER SHEET

PROJECT NO.: 05731.0002
SCALE: AS NOTED
DATE: 06/08/18
DRAWN BY: JPS
CHECKED BY: WS
SHEET 1 OF 13
SHEET NO. 1

NOTES ON USE OF PLANS:

1. UNLESS THESE PERMIT DRAWINGS ARE SPECIFICALLY DESIGNATED AS "CONSTRUCTION ISSUE," THESE DRAWINGS SHALL NOT BE USED FOR PERMITTING ASSOCIATED WITH CONSTRUCTION OR THE IMPROVEMENTS DEPICTED HEREIN. CONTRACTORS SHALL NOTIFY THE DESIGN ENGINEER TO OBTAIN PERMITTING DOCUMENTS. THESE PLANS ARE FOR NJDEP PERMITTING ONLY, NO CONSTRUCTION IS TO BE BASED UPON THESE PLANS.
2. ALL DIMENSIONS MUST BE VERIFIED IN THE FIELD DURING CONSTRUCTION BY THE CONTRACTOR. NOTIFY PAULUS, SOKOLOWSKI AND SARTOR, LLC OF ANY CONFLICTS, ERRORS, AMBIGUITIES OR DISCREPANCIES IN THE CONTRACT DRAWINGS OR SPECIFICATIONS BEFORE PROCEEDING WITH CONSTRUCTION.
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5. THE COPYING AND/OR MODIFICATION OF THIS DOCUMENT OR ANY OTHER PORTION THEREOF WITHOUT THE WRITTEN PERMISSION OF PAULUS, SOKOLOWSKI, AND SARTOR, LLC IS EXPRESSLY PROHIBITED.
6. INFORMATION FOR DESIGN LAYOUT IS CONTAINED SOLELY IN THE WRITTEN DIMENSIONS, BEARINGS, AND ANGLES CONTAINED ON THE DRAWINGS.
7. THIS DIMENSIONAL INFORMATION IS NOT WARRANTED NOR SHOULD IT BE CONSIDERED AS COMPLETE FOR EVERY ASPECT OF THE LAYOUT. STANDARD PRACTICE REQUIRES THAT THE LAYOUT PERSON CHECK THE DIMENSIONAL DATA CONSISTENCY AND TO PERFORM SURVEY CALCULATIONS WHICH ARE CUSTOMARY FOR CONSTRUCTION LAYOUT. IN THE EVENT THAT A QUESTION OR INCONSISTENCY IS DISCOVERED, THE INSTALLER SHALL IMMEDIATELY NOTIFY THE DESIGN ENGINEER, PAULUS, SOKOLOWSKI, AND SARTOR, LLC.
8. THE GRAPHICAL INFORMATION CONTAINED IN ELECTRONIC FILES IS INTENDED AS DRAWING DATA ONLY. IT IS NOT INTENDED TO SERVE AS SURVEY LAYOUT DATA.
9. ALL PROPOSED FITTING ANGLES ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY PRIOR TO CUTTING.

GENERAL NOTES:

1. AS INDICATED IN THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES," SUFFICIENT CONSTRUCTION WARNING SIGNS ARE TO BE PROVIDED AND MAINTAINED BY CONTRACTORS PERFORMING CONSTRUCTION WORK. SAID SIGNS ARE TO BE MAINTAINED UNTIL CONSTRUCTION IS COMPLETED AND APPROVED BY THE APPROPRIATE MUNICIPAL INSPECTION PERSONNEL.
2. THE CONTRACTOR SHALL PROVIDE SUCH TEMPORARY DRAINAGE, SOIL EROSION, AND DUST CONTROL MEASURES AS MAY BE INDICATED ON THE PLANS AND/OR AS DIRECTED BY THE MUNICIPAL ENGINEER OR OTHER AGENCIES OR DEPARTMENTS TO SATISFY ENVIRONMENTAL CONCERNS.
3. LOCATION OF EXISTING INLETS, CATCH BASINS AND MANHOLES MUST BE FIELD VERIFIED BEFORE WORK MAY COMMENCE. ANY CONFLICTING INFORMATION FROM THAT SHOWN SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE DESIGN ENGINEER, PAULUS, SOKOLOWSKI, AND SARTOR, LLC.
4. ALL ROADWAYS ARE TO BE PASSABLE FOR FIRE, POLICE, & EMERGENCY VEHICLES DURING CONSTRUCTION. NOTICE SHALL BE GIVEN TO AGENCIES 72 HOURS IN ADVANCE IF WORK MAY IMPACT EMERGENCY RESPONSE.
5. ALL NON-PIPELINE CONSTRUCTION SHOWN HEREIN SHALL CONFORM TO MUNICIPAL/COUNTY STANDARD CONSTRUCTION DETAILS AND SPECIFICATIONS AND N.J. DEPT. OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION 2001, AS AMENDED, UNLESS SPECIFICALLY SHOWN OTHERWISE HEREIN. IN CASE OF CONFLICT, THE MORE RESTRICTIVE SHALL GOVERN. CONTRACTOR SHALL NOTIFY DESIGN ENGINEER, PAULUS, SOKOLOWSKI, AND SARTOR, LLC IN WRITING OF ANY QUESTIONS REGARDING CONFLICTS.
6. UNLESS SPECIFICALLY SHOWN HEREIN, THE DESIGN ENGINEER, PAULUS, SOKOLOWSKI, AND SARTOR, LLC HAS NOT CONDUCTED AN INVESTIGATION OR PROVIDED DATA ON THE NATURE OF, OR STRUCTURAL SUITABILITY OF ANY SUBSURFACE MATERIALS. THE CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER, PAULUS, SOKOLOWSKI, AND SARTOR, LLC IN WRITING OF ANY UNUSUAL SOIL OR ROCK CONDITIONS ENCOUNTERED.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING WARNING SIGNS, BARRICADES, AND ANY AND ALL SAFETY MEASURES AS MAY BE REQUIRED BY LOCAL CODE, OSHA, STANDARD PRACTICE, AND/OR COMMON SENSE AND MAINTENANCE THEREOF. IN RESIDENTIAL AREAS, WHERE THE STREET ADDRESSES (HOUSE NUMBERS) ARE NOT VISIBLE FROM THE PROJECT AREA, CONTRACTOR MUST POST EACH PROPERTY'S ADDRESS AT THE EDGE OF THE WORK RIGHT-OF-WAY. SIGNAGE WILL BE PROVIDED BY THE CONTRACTOR AND SHALL INCLUDE PROPERTY ADDRESS, LANDOWNER NAME, LOT AND BLOCK. LETTERING SHALL BE A MINIMUM OF 2" HIGH AND SHALL BE OF A COLOR THAT CONTRASTS WITH THE SIGN.
8. ALL SOIL EROSION AND SEDIMENT CONTROL STRUCTURES AND MEASURES SHALL BE IN PLACE PRIOR TO ANY SITE DISTURBANCE.
9. CONTRACTOR TO RESTORE GROUND SURFACE OF GAS PIPELINE TRENCH, CONSTRUCTION STAGING AREAS, AND ALL OTHER DISTURBED AREAS TO THEIR ORIGINAL CONDITION OR BETTER, OR AS SPECIFIED IN THESE PLANS.
10. NO CONSTRUCTION SHALL BE PERFORMED ON WEEKENDS OR DURING NIGHTS IN RESIDENTIAL AREAS WITHOUT PRIOR APPROVAL OF TRANSCO AND TOWNSHIP.
11. A TYPICAL TRAFFIC CONTROL PLAN IS PROVIDED WITH GAS ALIGNMENT SHEETS. CONTRACTOR IS RESPONSIBLE TO MODIFY, ADJUST AND AUGMENT THE PLAN BASED UPON THEIR SPECIFIC MEANS AND METHODS, THEN SUBMIT TO OWNER FOR APPROVAL PRIOR TO USE.
12. ALL TREES REMOVED DURING CLEARING SHALL BE TRIMMED AND PLACED AT EDGE OF EASEMENT FOR LANDOWNER UNLESS OTHERWISE NOTED ON PLANS.
13. THE CONTRACTOR SHALL PREPARE AS-BUILT DRAWINGS FOR ALL UNDERGROUND IMPROVEMENTS INSTALLED DURING CONSTRUCTION, ETC. AS-BUILT DRAWINGS MUST BE SIGNED AND SEALED BY A NJ PROFESSIONAL ENGINEER OR LAND SURVEYOR. THE AS-BUILT SURVEY DRAWINGS MUST COMPLY WITH UTILITY OWNER STANDARDS / REQUIREMENTS. COPIES SHALL BE SUBMITTED TO UTILITY COMPANY AND/OR OWNER.

OWNER / APPLICANT

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
2800 POST OAK BLVD.
HOUSTON, TEXAS 77056

COASTAL ZONE MANAGEMENT NOTES:

1. THE PURPOSE OF THESE PLANS IS TO SECURE NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION COASTAL ZONE MANAGEMENT PERMIT FOR THE PROPOSED CONSTRUCTION OF A 26-INCH GAS TRANSMISSION MAIN CO-LOCATED ADJACENT TO AN EXISTING 42-INCH GAS PIPELINE.
   A. COASTAL ZONE MANAGEMENT PERMIT, WATERFRONT DEVELOPMENT INDIVIDUAL PERMIT – UPLAND, WATERFRONT DEVELOPMENT INDIVIDUAL PERMIT – WATER, COASTAL / TIDAL PERMIT; N.J.A.C. 7:7
2. IT IS THE INTENT OF THE APPLICANT/OWNER TO CO-LOCATE THE PROPOSED GAS TRANSMISSION MAIN WITHIN THE EXISTING EASEMENT WHERE POSSIBLE.
3. THE APPLICANT/OWNER SHALL SECURE ALL PROPOSED PERMANENT AND TEMPORARY EASEMENTS AND RIGHTS OF ACCESS SHOWN ON THE PLANS PRIOR TO CONSTRUCTION. THE OWNER/CONTRACTOR SHALL ALSO SECURE NECESSARY EASEMENTS OR RIGHTS OF ACCESS BEYOND THE LIMITS SHOWN, AS DEEMED NECESSARY.
4. THE CONTRACTOR IS ADVISED THAT STAGING, STORING AND STOCKPILING OF MATERIALS AND EQUIPMENT SHALL BE ACCOMPLISHED OUTSIDE NJDEP REGULATED FRESHWATER WETLANDS, WETLANDS BUFFERS OR FLOOD HAZARD AREA RIPARIAN ZONES TO THE MAXIMUM EXTENT PRACTICABLE AND IN ACCORDANCE WITH NJDEP LINEAR CONSTRUCTION GUIDELINES.
5. THE CONTRACTOR SHALL EXCAVATE, STORE AND REPLACE TOPSOIL WITHIN TRENCH LIMITS. PROPOSED FINISHED GRADE SHALL MATCH EXISTING GRADE. ALL EXCESS MATERIAL SHALL BE DISPOSED OF LAWFULLY.
6. ANY PROPOSED TRENCH IN A STREAM CHANNEL, OPEN WATER OR RIPARIAN ZONE IS TO BE A MAXIMUM OF 20 FEET WIDE, UNLESS CONSTRUCTION STANDARDS DICTATE ADDITIONAL WIDTH.
7. MINIMUM DEPTH OF BURIAL (TOP OF PIPE) SHALL BE FOUR (4) FEET FOR STREAM CROSSINGS PER NJDEP REQUIREMENTS. MINIMUM COVER AT ALL OTHER LOCATIONS SHALL BE THREE (3) FEET.
8. A MINIMUM COVER OF FOUR (4) FEET SHALL BE PROVIDED FROM THE CHANNEL INVERT. THE ELEVATION OF THE TRANSMISSION GAS MAIN SHALL REMAIN HORIZONTAL UNTIL TEN (10) FEET BEYOND THE TOP OF BANK, OR TWICE THE HEIGHT OF THE STREAM BANK, WHICHEVER IS GREATER. THE INCLINE OF THE MAIN SHALL BE NO GREATER THAT 1:2 ENTERING AND EXITING THE CHANNEL BANK AREA.
9. ADDITIONAL TEMPORARY OFF-SITE STAGING & STORAGE IS PROVIDED AT APPROXIMATE MP8.57, MP9.00 AND MP10.35. NO REGULATED FEATURES EXIST WITHIN OFF-SITE AREAS.
10. PROPOSED PROJECT IS SUBJECT TO FREEHOLD SOIL CONSERVATION DISTRICT PLAN CERTIFICATION APPROVAL.
11. NON-PAVED AREAS IN FRESHWATER WETLANDS AND/OR RIPARIAN ZONES TO RECEIVE 18 INCHES OF TOPSOIL/INSITU MATERIAL.
12. PER N.J.A.C. 7:13-4.1(h) "WHERE A COASTAL WETLAND REGULATED UNDER THE WETLANDS ACT OF 1970, N.J.S.A. 13:9A-1ET SEQ., LIES WITHIN A RIPARIAN ZONE, THE RIPARIAN ZONE STANDARDS OF THIS CHAPTER DO NOT APPLY WITHIN THE WETLAND."
13. FOR RIPARIAN ZONE IMPACTS REFER TO PLANS ENTITLED "NJDEP LAND USE PERMIT PLANS FOR THE NORTHEAST SUPPLY ENHANCEMENT PROJECT – PROPOSED 26" MADISON LOOP – FLOOD HAZARD AREA PERMIT PLANS," DATED JUNE 8, 2018, PREPARED BY PAULUS, SOKOLOWSKI AND SARTOR, LLC.
15. FOR FRESHWATER WETLAND IMPACTS REFER TO PLANS ENTITLED "NJDEP LAND USE PERMIT PLANS FOR THE NORTHEAST SUPPLY ENHANCEMENT PROJECT – PROPOSED 26" MADISON LOOP – FRESHWATER WETLANDS PERMIT PLANS," DATED JUNE 8, 2018, PREPARED BY PAULUS, SOKOLOWSKI AND SARTOR, LLC.

REFERENCE NOTES

1. EXISTING CONDITIONS SHOWN HEREON ARE BASED UPON SURVEY INFORMATION PREPARED BY D.W. SMITH ASSOCIATES, LLC AND WILLIAMS TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC.
2. THE VERTICAL DATUM REFERS TO NAVD 88 TOPOGRAPHICAL DATA. (CONVERSION TO NVGD 1929; +1.04 FT.)
3. THE HORIZONTAL DATUM REFERS TO NAD83 NEW JERSEY STATE PLANE COORDINATE SYSTEM.
4. LOT LINES AND RIGHT-OF-WAY LINES SHOWN HEREON WERE TAKEN FROM ABOVE-REFERENCED SURVEY INFORMATION.
5. TOPOGRAPHIC CONTOURS BASED UPON AERIALS PERFORMED BY MICHAEL BAKER INTERNATIONAL AUGUST 2016, PROVIDED BY TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC.
6. THESE PLANS ARE BASED UPON GAS ALIGNMENT PLANS ENTITLED "TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC – FERC ALIGNMENT SHEET NORTHEAST SUPPLY ENHANCEMENT PROJECT – PROPOSED 26" MADISON LOOP M.P. 8.57 TO M.P. 12.00 MIDDLESEX COUNTY, NEW JERSEY", LAST REVISED MAY 9, 2018, PREPARED BY MUSTANG OF NEW JERSEY, INC.
7. INFORMATION SHOWN FROM MILE POST 12.00 TO MEAN HIGH WATER LINE TAKEN FROM PLANS ENTITLED "TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC – FERC ALIGNMENT SHEET (1 OF 8) NORTHEAST SUPPLY ENHANCEMENT PROJECT – PROPOSED 26" RARITAN BAY LOOP LINE, M.P. 12.00 TO M.P. 12.22, NEW JERSEY", LAST REVISED MAY 9, 2018, PREPARED BY INTECSEA, WORLEY PARSONS GROUP.
8. TAX MAP INFORMATION TAKEN FROM TAX MAP FOR BOROUGH OF SAYREVILLE, MIDDLESEX COUNTY, NEW JERSEY, SHEETS 126, 126.01, 126.02, 127, 129, 138, AND 143, DATED AUGUST 1989, PREPARED BY RAYMOND E. BORUP JR., P.L.S. AND TAX MAP FOR TOWNSHIP OF OLD BRIDGE, MIDDLESEX COUNTY, NEW JERSEY, SHEETS 4, 4.21 AND 5, DATED JULY 2008, PREPARED BY MICHSEL J. MCGURL, P.L.S.
9. NEW JERSEY WATERS OF THE UNITED STATES DELINEATION DATA WERE COLLECTED BY ECOLSCIENCES AND ECOLOGY AND ENVIRONMENT, INC. IN 2016/2017. A MAPPING GRADE TRIMBLE GPS WAS USED TO COLLECT FRESHWATER WETLANDS IN THE FIELD. IN NEW JERSEY MAPPING GRADE LOCATIONS AND DATA WERE RECORDED BY CIVIL SURVEY OF WILLIAMS STRATEGIC SOURCING COMPANY, LLC TO MEET PLS CERTIFICATION REQUIREMENT REQUIRED FOR NJDEP LETTER OF INTERPRETATION.
10. WITHIN THE SURVEY CORRIDOR ECOLOGY AND ENVIRONMENT, INC. AND AMY GREENE ENVIRONMENTAL ESTABLISHED THE RIPARIAN ZONES UTILIZING WATERS OF THE UNITED STATES FIELD DATA. OUTSIDE SURVEY CORRIDOR FEATURES ECOLOGY AND ENVIRONMENT, INC. USED REMOTE SENSING FOR FEATURES WHO'S TRADITIONAL AREAS ENCROACH INTO THE SURVEY CORRIDOR FROM OUTSIDE.
11. MEAN HIGH WATER LEVEL VALUES PROVIDED BY WILLIAMS TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC GENERATED FROM NOAA VERTICAL DATUM WEBSITE AND VERIFIED AGAINST THE NEW JERSEY TIDAL BENCHMARK DATA. NEGLIGIBLE DIFFERENCE BETWEEN SOURCES IS ASSUMED TO BE RELATED TO SEA LEVEL RISE AND FROM NEW JERSEY DATA BEING FROM 1970'S TIDAL EPOCH DATASET.
12. SPRING HIGH WATER LEVEL ELEVATION VALUE AND DATA WERE BASED OFF OF FIELD OBSERVATIONS OF TIDAL WRACK LINES AND INCORPORATED ACROSS THE PROJECT DEM, PROVIDED BY WILLIAMS TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC.
13. COASTAL WETLAND LIMITS TAKEN FROM NJDEP 1970 TIDAL WETLANDS BASEMAPS WEB MAP SERVICES, PREPARED BY NJDEP OFFICE OF INFORMATION RESOURCES MANAGEMENT BUREAU OF GEOGRAPHIC INFORMATION SYSTEMS, PUBLISHED FEBRUARY 2013.
14. ADDITIONAL TEMPORARY OFF-SITE STAGING & STORAGE IS PROVIDED AT BLOCK 6302, LOT C0210 AS INDICATED ON PLAN ENTITLED "NORTHEAST SUPPLY ENHANCEMENT PROJECT PROPOSED 26" MADISON LOOP – PERMIT PLAN BLOCK 6302, LOT C0210, OLD BRIDGE TOWNSHIP STAGING AREA," DATED JUNE 8, 2018, PREPARED BY PAULUS, SOKOLOWSKI AND SARTOR, LLC AND BLOCK 1051, LOT 4 AS INDICATED ON PLAN ENTITLED "NORTHEAST SUPPLY ENHANCEMENT PROJECT PROPOSED 26" MADISON LOOP – PERMIT PLAN BLOCK 1051, LOT 4, OLD BRIDGE TOWNSHIP STAGING AREA," DATED JUNE 8, 2018, PREPARED BY PAULUS, SOKOLOWSKI AND SARTOR, LLC.

REV. / ISSUE	DATE	DESCRIPTION
1	4/22/19	REV TRANSITION AREA WIDTH PER NJDEP

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PROJECT

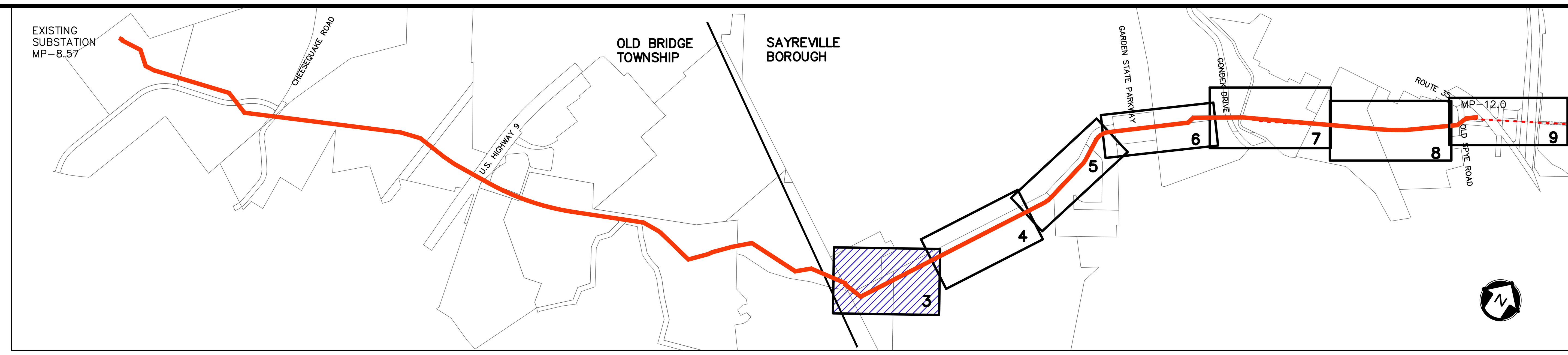
NORTHEAST SUPPLY ENHANCEMENT PROJECT PROPOSED 26" MADISON LOOP

OLD BRIDGE TOWNSHIP & SAYREVILLE BOROUGH
MIDDLESEX COUNTY, NEW JERSEY

SHEET TITLE

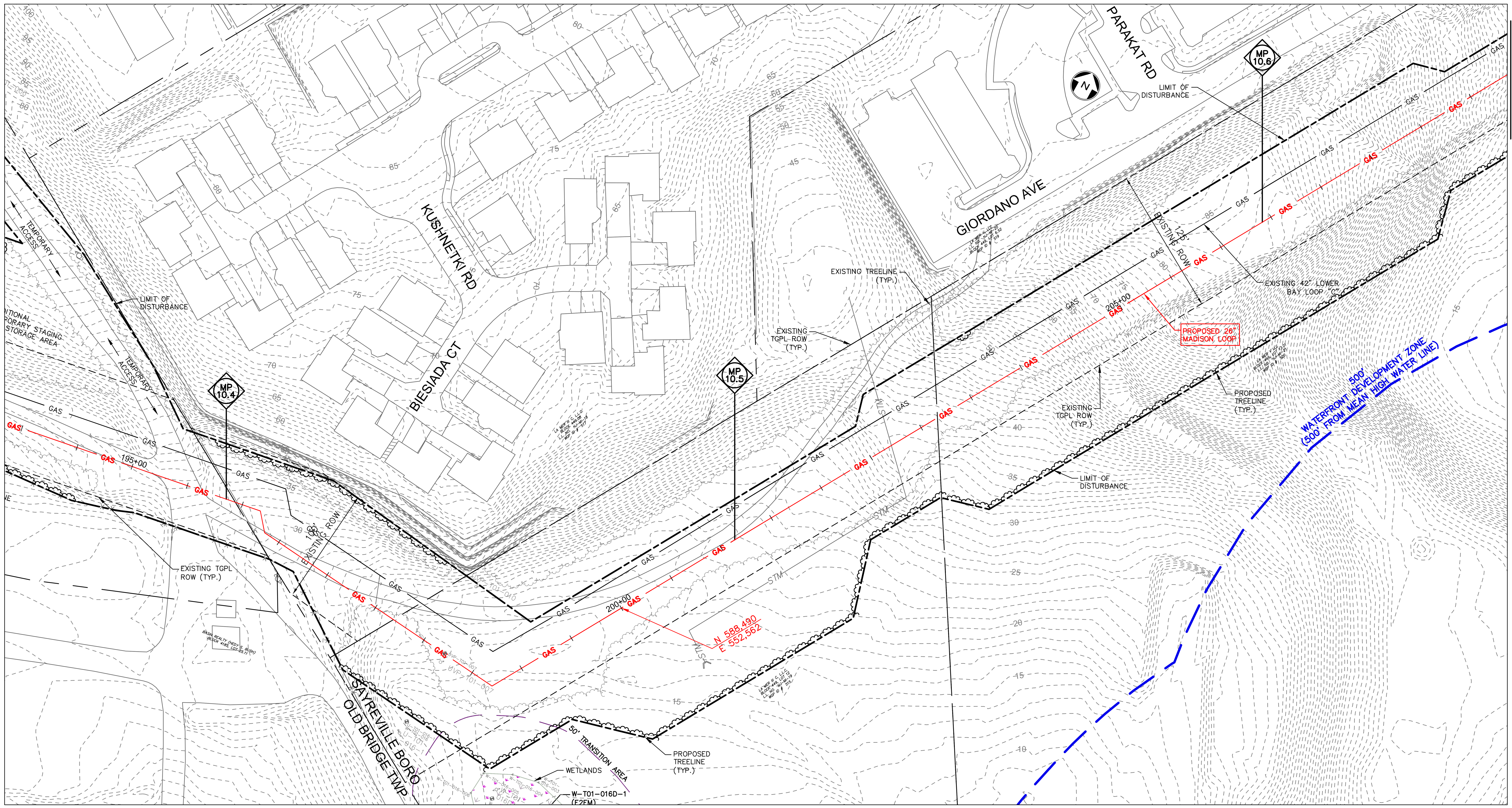
GENERAL NOTES

PROJECT NO.: 05731.0002	DRAWN BY: JPS
SCALE: AS NOTED	CHECKED BY: WS
DATE: 06/08/18	SHEET 2 OF 13
SHEET NO. 2	



KEY MAP

SCALE: 1" =1000'



WATERFRONT DEVELOPMENT WETLAND UTILITY CROSSING TABULATION					
MILEPOST	FRESHWATER WETLAND IMPACT$_A$	TRANSITION AREA IMPACT$_A$	COASTAL WETLAND IMPACT	VEGETATIVE NON-WETLAND IMPACT	TIDELANDS IMPACT
10.69 - 10.74			0.184		
10.87 - 10.94			0.183		
11.36 - 11.42	0.542	0.378			0.003
11.43 - 11.60	0.004	0.04	1.126		0.035
11.77 - 11.94	0.004	0.35	0.475	0.165	0.017
TOTAL	0.550	0.768	1.968	0.165	0.055

UTILITY CROSSING TABULATION IMPACT NOTES:

A. AUTHORIZATION FOR IMPACTS REQUESTED UNDER THE FRESHWATER WETLANDS PROTECTION ACT, N.J.A.C. 7:7A.

NOTES:

1. NO WATERFRONT DEVELOPMENT ZONE DISTURBANCE ON THIS SHEET.

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)
1 inch = 50 ft.

REV. / ISSUE	DATE	DESCRIPTION
1	4/22/19	REV TRANSITION AREA WIDTH PER NJDEP

LEGEND

- PROPERTY LINE
- EXISTING CONTOURS
- EXISTING SPOT ELEVATION
- EXISTING STORM SEWER
- EXISTING WATER MAIN
- EXISTING GAS MAIN
- PROPOSED GAS MAIN
- EXISTING SIGN
- EXISTING UTILITY POLE
- PROPOSED GAS VALVE
- EXISTING TREELINE/CANOPY
- EXISTING TREE
- PROPOSED TREELINE
- EXISTING FENCE
- EXISTING RETAINING WALL
- EXISTING PERMANENT EASEMENT/TGPL R.O.W.
- PROPOSED PERMANENT EASEMENT
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED HDD LIMIT OF DISTURBANCE
- STREAM LINE
- WETLANDS BOUNDARY
- COASTAL WETLANDS BOUNDARY
- TOP OF BANK
- 50' WETLAND TRANSITION AREA
- RIPARIAN BUFFER
- MEAN HIGH WATER LINE
- SPRING HIGH WATER LINE
- MEAN HIGH WATER LINE 500' BUFFER
- TIDELANDS
- (5)→ W–T01–005A–1 PHOTO LOCATION (SEE REPORT)
- 1620 WETLAND FLAGS
- 1432 STATE OPEN WATERS FLAGS
- 1609 FRESHWATER WETLAND/STATE OPEN WATER DATA POINTS

I AM A DULY REGISTERED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF NEW JERSEY AND I HEREBY CERTIFY THAT EXISTING CONDITIONS SHOWN WERE FIELD LOCATED AND PREPARED UNDER MY DIRECT SUPERVISION.

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1450 STATE ROUTE 34, WALL, NJ 07753
PROFESSIONAL LAND SURVEYOR
N.J. LIC. NO. 37207 COA NO. 24GA28122400

SIGNATURE DATE

I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF NEW JERSEY AND I HEREBY CERTIFY THAT THE PROPOSED ENVIRONMENTAL DISTURBANCES SHOWN ARE ACCURATE AND CORRESPOND WITH THE DETAILED ENGINEERING DRAWINGS.

WILLIAM SALMON, P.E.
PS&S, LLC
1433 HIGHWAY 34, SUITE A-4, WALL, NJ 07727
PROFESSIONAL ENGINEER
N.J. LIC. NO. 41319 COA NO. 24GA28032700

04/24/19

SIGNATURE DATE

PAULUS, SOKOLOWSKI AND SARTOR, LLC.
1433 ROUTE 34
SUITE A4
WALL, NJ 07727
PHONE: (848) 206-2626
CERTIFICATE OF AUTHORIZATION NO. 24GA28032700

PROJECT

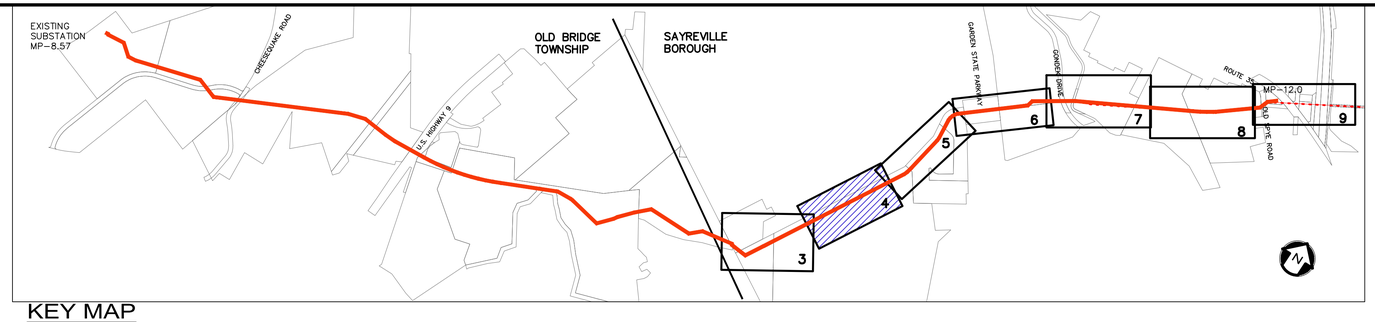
NORTHEAST SUPPLY ENHANCEMENT PROJECT
PROPOSED
26" MADISON LOOP

OLD BRIDGE TOWNSHIP & SAYREVILLE BOROUGH
MIDDLESEX COUNTY, NEW JERSEY

SHEET TITLE

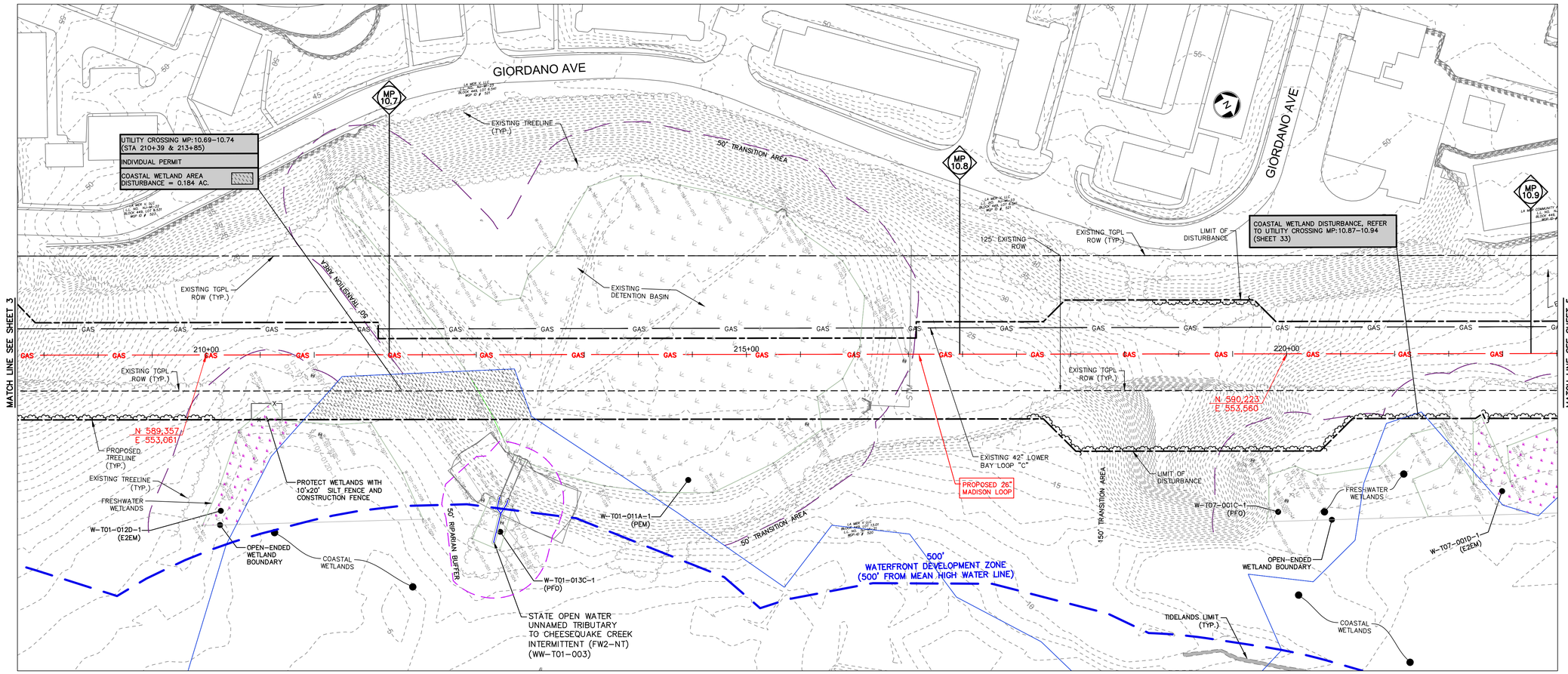
WATERFRONT DEVELOPMENT PERMIT PLAN MP 10.4 - MP 10.6

PROJECT NO.: 05731.0002	DRAWN BY: JPS
SCALE: 1 = 50'	CHECKED BY: WS
DATE: 06/08/18	SHEET 3 OF 13
SHEET NO. 3	



KEY MAP

SCALE: 1" =1000'



WATERFRONT DEVELOPMENT WETLAND UTILITY CROSSING TABULATION					
MILEPOST	FRESHWATER WETLAND IMPACT$_A$	TRANSITION AREA IMPACT$_A$	COASTAL WETLAND IMPACT	VEGETATIVE NON-WETLAND IMPACT	TIDELANDS IMPACT
10.69 - 10.74			0.184		
10.87 - 10.94			0.183		
11.36 - 11.42	0.542	0.378			0.003
11.43 - 11.60	0.004	0.04	1.126		0.035
11.77 - 11.94	0.004	0.35	0.475	0.165	0.017
TOTAL	0.550	0.768	1.968	0.165	0.055

UTILITY CROSSING TABULATION IMPACT NOTES:

A. AUTHORIZATION FOR IMPACTS REQUESTED UNDER THE FRESHWATER WETLANDS PROTECTION ACT, N.J.A.C. 7:7A.

NOTES:

1. NO WATERFRONT DEVELOPMENT ZONE DISTURBANCE ON THIS SHEET.

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)
1 inch = 50 ft.

REV. / ISSUE	DATE	DESCRIPTION
1	4/22/19	REV TRANSITION AREA WIDTH PER NJDEP

LEGEND

	PROPERTY LINE
430	EXISTING CONTOURS
427.0 X	EXISTING SPOT ELEVATION
	EXISTING STORM SEWER
W	EXISTING WATER MAIN
GAS	EXISTING GAS MAIN
GAS	PROPOSED GAS MAIN
	EXISTING SIGN
	EXISTING UTILITY POLE
⋈	PROPOSED GAS VALVE
	EXISTING TREELINE/CANOPY
	EXISTING TREE
	PROPOSED TREELINE
	EXISTING FENCE
	EXISTING RETAINING WALL
	EXISTING PERMANENT EASEMENT/TGPL R.O.W.
	PROPOSED PERMANENT EASEMENT
	PROPOSED LIMIT OF DISTURBANCE
	PROPOSED HDD LIMIT OF DISTURBANCE
	STREAM LINE
	WETLANDS BOUNDARY
	COASTAL WETLANDS BOUNDARY
	TOP OF BANK
	50' WETLAND TRANSITION AREA
	RIPARIAN BUFFER
	MEAN HIGH WATER LINE
	SPRING HIGH WATER LINE
	MEAN HIGH WATER LINE 500' BUFFER
	TIDELANDS
⑤→ W-T01-005A-1	PHOTO LOCATION (SEE REPORT)
△1620	WETLAND FLAGS
△1432	STATE OPEN WATERS FLAGS
⌖ 1609	FRESHWATER WETLAND/STATE OPEN WATER DATA POINTS

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THOMAS J. MURPHY, PLS
DW SMITH ASSOCIATES, LLC
1450 STATE ROUTE 34, WALL, NJ 07753
PROFESSIONAL LAND SURVEYOR
N.J. LIC. NO. 37207 COA NO. 24GA28122400

SIGNATURE DATE

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1433 HIGHWAY 34, SUITE A-4, WALL, NJ 07727
PROFESSIONAL ENGINEER
N.J. LIC. NO. 41319 COA NO. 24GA28032700

04/24/19
SIGNATURE DATE

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1433 ROUTE 34
SUITE A4
WALL, NJ 07727
PHONE: (848) 206-2626
CERTIFICATE OF AUTHORIZATION NO. 24GA28032700

PROJECT

NORTHEAST SUPPLY
ENHANCEMENT PROJECT
PROPOSED
26" MADISON LOOP

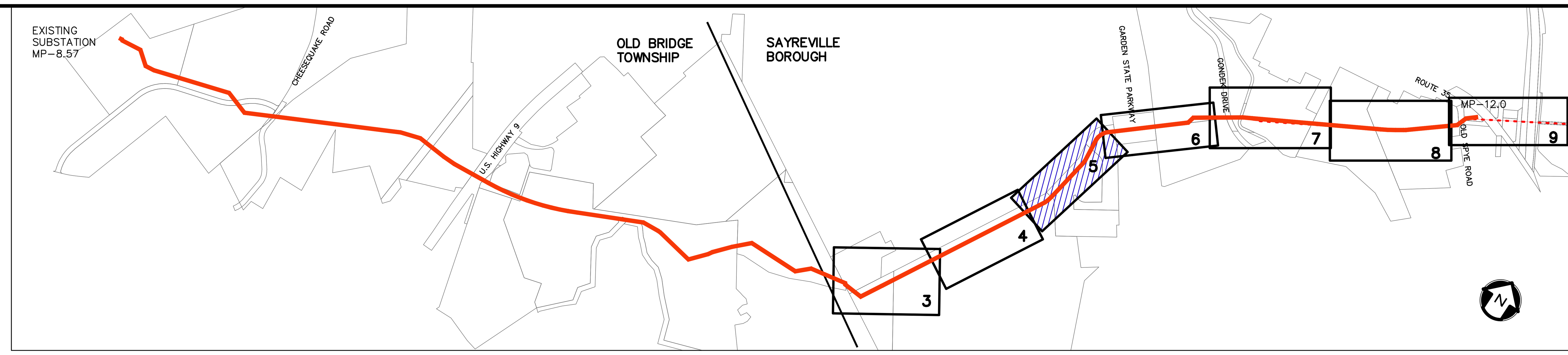
OLD BRIDGE TOWNSHIP & SAYREVILLE BOROUGH
MIDDLESEX COUNTY, NEW JERSEY

SHEET TITLE

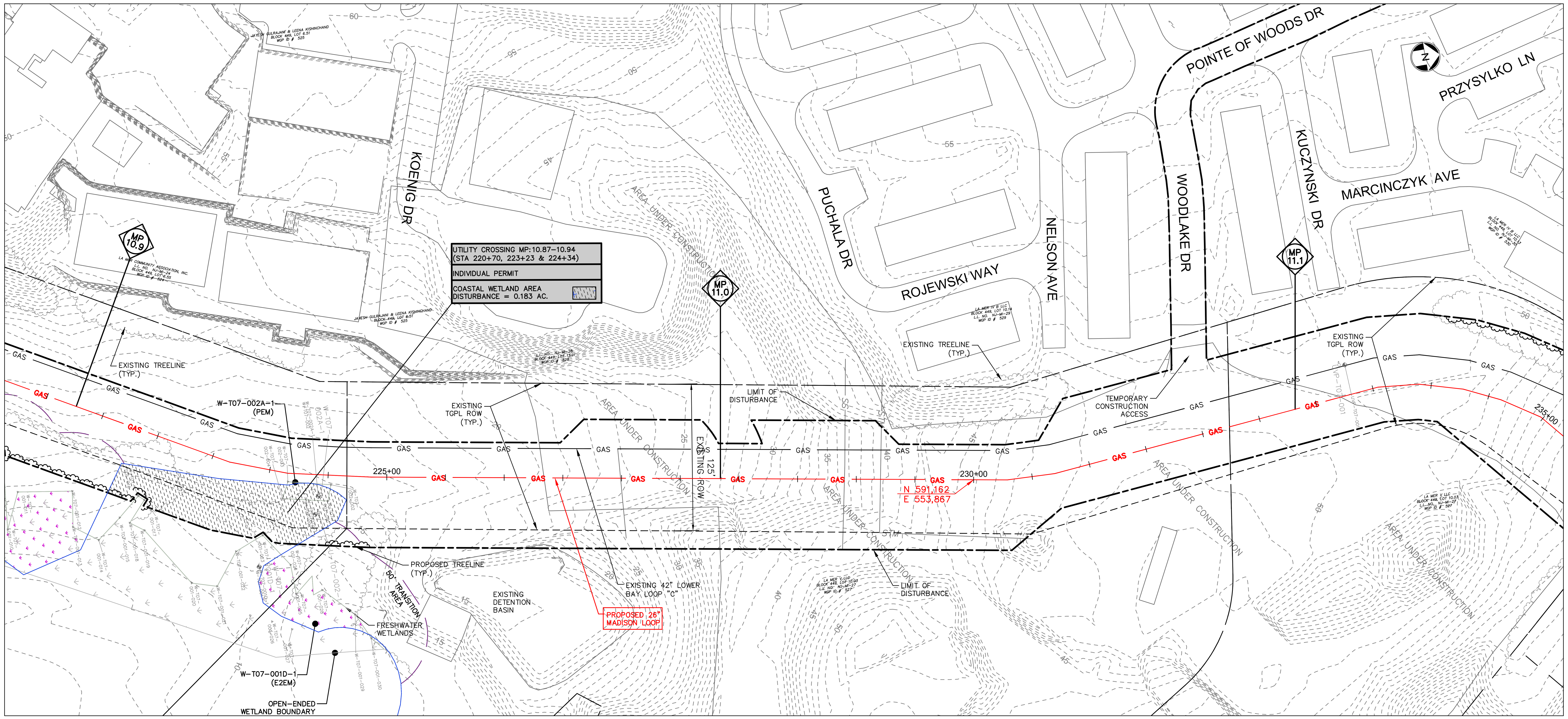
WATERFRONT DEVELOPMENT PERMIT PLAN MP 10.6 - MP 10.9

PROJECT NO.:	05731.0002	DRAWN BY:	JPS
SCALE:	1 = 50'	CHECKED BY:	WS
DATE:	06/08/18	SHEET 4 OF 13	

SHEET NO.
4



KEY MAP
SCALE: 1" =1000'



WATERFRONT DEVELOPMENT WETLAND UTILITY CROSSING TABULATION					
MILEPOST	FRESHWATER WETLAND IMPACT$_A$	TRANSITION AREA IMPACT$_A$	COASTAL WETLAND IMPACT	VEGETATIVE NON-WETLAND IMPACT	TIDELANDS IMPACT
10.69 - 10.74			0.184		
10.87 - 10.94			0.183		
11.36 - 11.42	0.542	0.378			0.003
11.43 - 11.60	0.004	0.04	1.126		0.035
11.77 - 11.94	0.004	0.35	0.475	0.165	0.017
TOTAL	0.550	0.768	1.968	0.165	0.055

UTILITY CROSSING TABULATION IMPACT NOTES:

A. AUTHORIZATION FOR IMPACTS REQUESTED UNDER THE FRESHWATER WETLANDS PROTECTION ACT, N.J.A.C. 7:7A.

NOTES:

1. NO WATERFRONT DEVELOPMENT ZONE DISTURBANCE ON THIS SHEET.

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50 ft.

REV. / ISSUE	DATE	DESCRIPTION
1	4/22/19	REV TRANSITION AREA WIDTH PER NJDEP

LEGEND

- PROPERTY LINE
- EXISTING CONTOURS
- EXISTING SPOT ELEVATION
- EXISTING STORM SEWER
- EXISTING WATER MAIN
- EXISTING GAS MAIN
- PROPOSED GAS MAIN
- EXISTING SIGN
- EXISTING UTILITY POLE
- PROPOSED GAS VALVE
- EXISTING TREELINE/CANOPY
- EXISTING TREE
- PROPOSED TREELINE
- EXISTING FENCE
- EXISTING RETAINING WALL
- EXISTING PERMANENT EASEMENT/TGPL R.O.W.
- PROPOSED PERMANENT EASEMENT
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED HDD LIMIT OF DISTURBANCE
- STREAM LINE
- WETLANDS BOUNDARY
- COASTAL WETLANDS BOUNDARY
- TOP OF BANK
- 50' WETLAND TRANSITION AREA
- RIPARIAN BUFFER
- MEAN HIGH WATER LINE
- SPRING HIGH WATER LINE
- MEAN HIGH WATER LINE 500' BUFFER
- TIDELANDS
- W-T01-005A-1 PHOTO LOCATION (SEE REPORT)
- 1620 WETLAND FLAGS
- 1432 STATE OPEN WATERS FLAGS
- 1609 FRESHWATER WETLAND/STATE OPEN WATER DATA POINTS

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04/24/19
SIGNATURE DATE

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1433 ROUTE 34
SUITE A4
WALL, NJ 07727
PHONE: (848) 206-2626
CERTIFICATE OF AUTHORIZATION NO. 24GA28032700

PROJECT

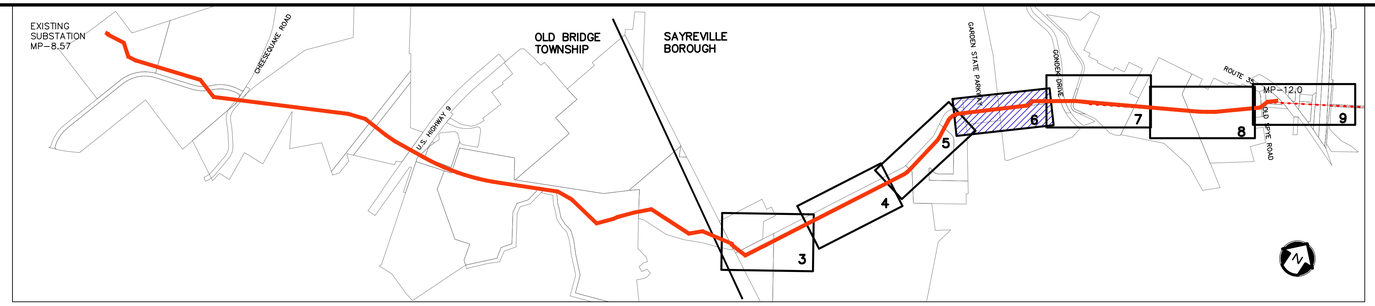
NORTHEAST SUPPLY ENHANCEMENT PROJECT PROPOSED 26" MADISON LOOP

OLD BRIDGE TOWNSHIP & SAYREVILLE BOROUGH
MIDDLESEX COUNTY, NEW JERSEY

SHEET TITLE

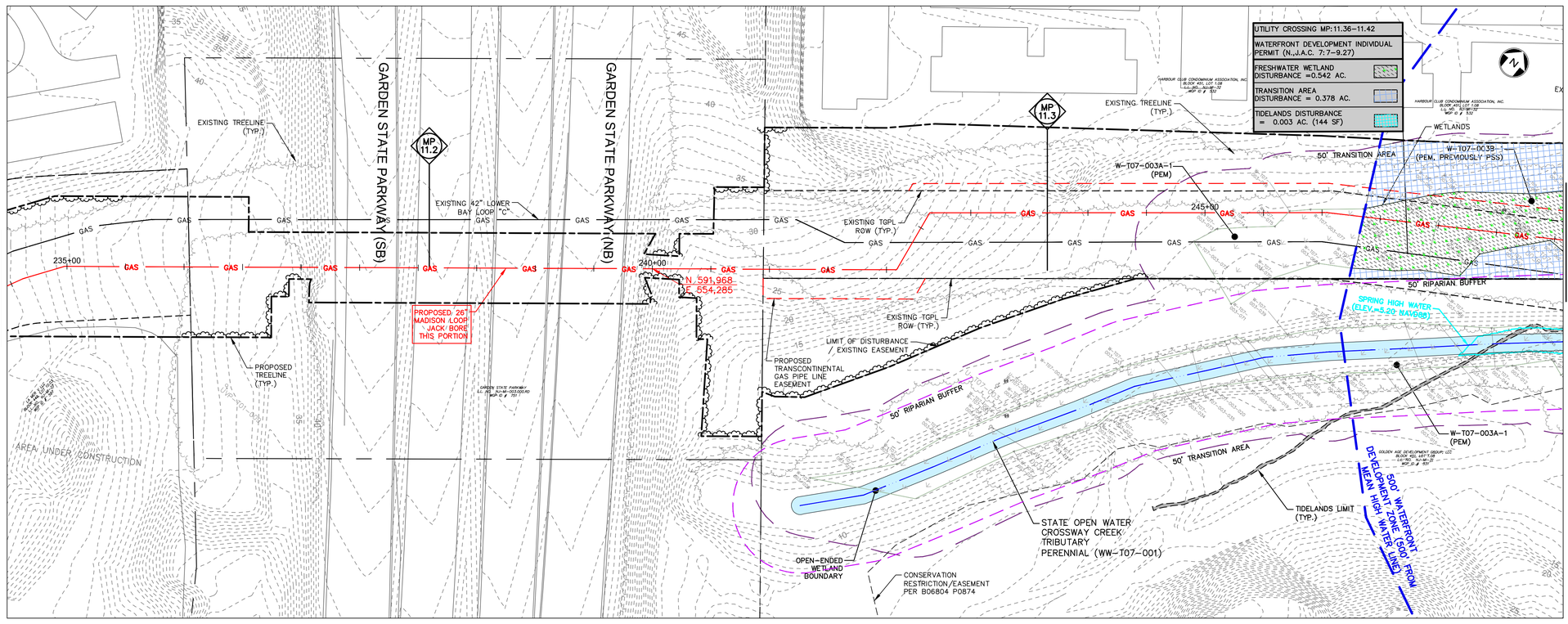
WATERFRONT DEVELOPMENT PERMIT PLAN MP 10.9 - MP 11.1

PROJECT NO.:	05731.0002	DRAWN BY:	JPS
SCALE:	1 = 50'	CHECKED BY:	WS
DATE:	06/08/18	SHEET	5 OF 13
SHEET NO.	5		



KEY MAP

SCALE: 1" =1000'



UTILITY CROSSING MP:11.36–11.42	
WATERFRONT DEVELOPMENT INDIVIDUAL PERMIT (N.,J.A.C. 7:7–9.27)	
FRESHWATER WETLAND DISTURBANCE =0.542 AC.	▨
TRANSITION AREA DISTURBANCE = 0.378 AC.	▦
TIDELANDS DISTURBANCE = 0.003 AC. (144 SF)	▦

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)
1 inch = 50 ft.

WATERFRONT DEVELOPMENT WETLAND UTILITY CROSSING TABULATION					
MILEPOST	FRESHWATER WETLAND IMPACT$_A$	TRANSITION AREA IMPACT$_A$	COASTAL WETLAND IMPACT	VEGETATIVE NON-WETLAND IMPACT	TIDELANDS IMPACT
10.69 - 10.74			0.184		
10.87 - 10.94			0.183		
11.36 - 11.42	0.542	0.378			0.003
11.43 - 11.60	0.004	0.04	1.126		0.035
11.77 - 11.94	0.004	0.35	0.475	0.165	0.017
TOTAL	0.550	0.768	1.968	0.165	0.055

UTILITY CROSSING TABULATION IMPACT NOTES:

A. AUTHORIZATION FOR IMPACTS REQUESTED UNDER THE FRESHWATER WETLANDS PROTECTION ACT, N.J.A.C. 7:7A.

REV. / ISSUE	DATE	DESCRIPTION
1	4/22/19	REV TRANSITION AREA WIDTH PER NJDEP

LEGEND

	PROPERTY LINE
430	EXISTING CONTOURS
427.0 X	EXISTING SPOT ELEVATION
	EXISTING STORM SEWER
W	EXISTING WATER MAIN
GAS	EXISTING GAS MAIN
GAS	PROPOSED GAS MAIN
	EXISTING SIGN
	EXISTING UTILITY POLE
⋈	PROPOSED GAS VALVE
	EXISTING TREELINE/CANOPY
	EXISTING TREE
	PROPOSED TREELINE
	EXISTING FENCE
	EXISTING RETAINING WALL
	EXISTING PERMANENT EASEMENT/TGPL R.O.W.
	PROPOSED PERMANENT EASEMENT
	PROPOSED LIMIT OF DISTURBANCE
	PROPOSED HDD LIMIT OF DISTURBANCE
	STREAM LINE
	WETLANDS BOUNDARY
	COASTAL WETLANDS BOUNDARY
	TOP OF BANK
	50' WETLAND TRANSITION AREA
	RIPARIAN BUFFER
	MEAN HIGH WATER LINE
	SPRING HIGH WATER LINE
	MEAN HIGH WATER LINE 500' BUFFER
	TIDELANDS
⑤> W–T01–005A–1	PHOTO LOCATION (SEE REPORT)
1620	WETLAND FLAGS
1432	STATE OPEN WATERS FLAGS
1609	FRESHWATER WETLAND/STATE OPEN WATER DATA POINTS

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04/24/19

SIGNATURE DATE

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1433 ROUTE 34
SUITE A4
WALL, NJ 07727
PHONE: (848) 206-2626
CERTIFICATE OF AUTHORIZATION NO. 24GA28032700

PROJECT

NORTHEAST SUPPLY
ENHANCEMENT PROJECT
PROPOSED
26" MADISON LOOP

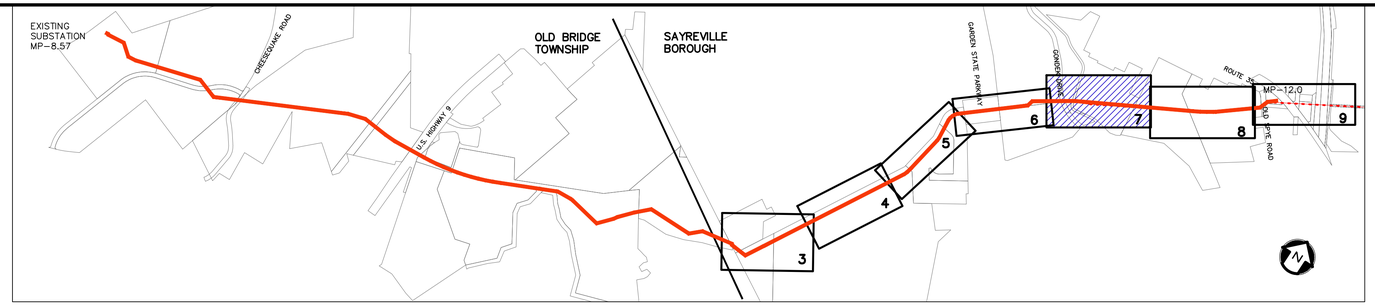
OLD BRIDGE TOWNSHIP & SAYREVILLE BOROUGH
MIDDLESEX COUNTY, NEW JERSEY

SHEET TITLE

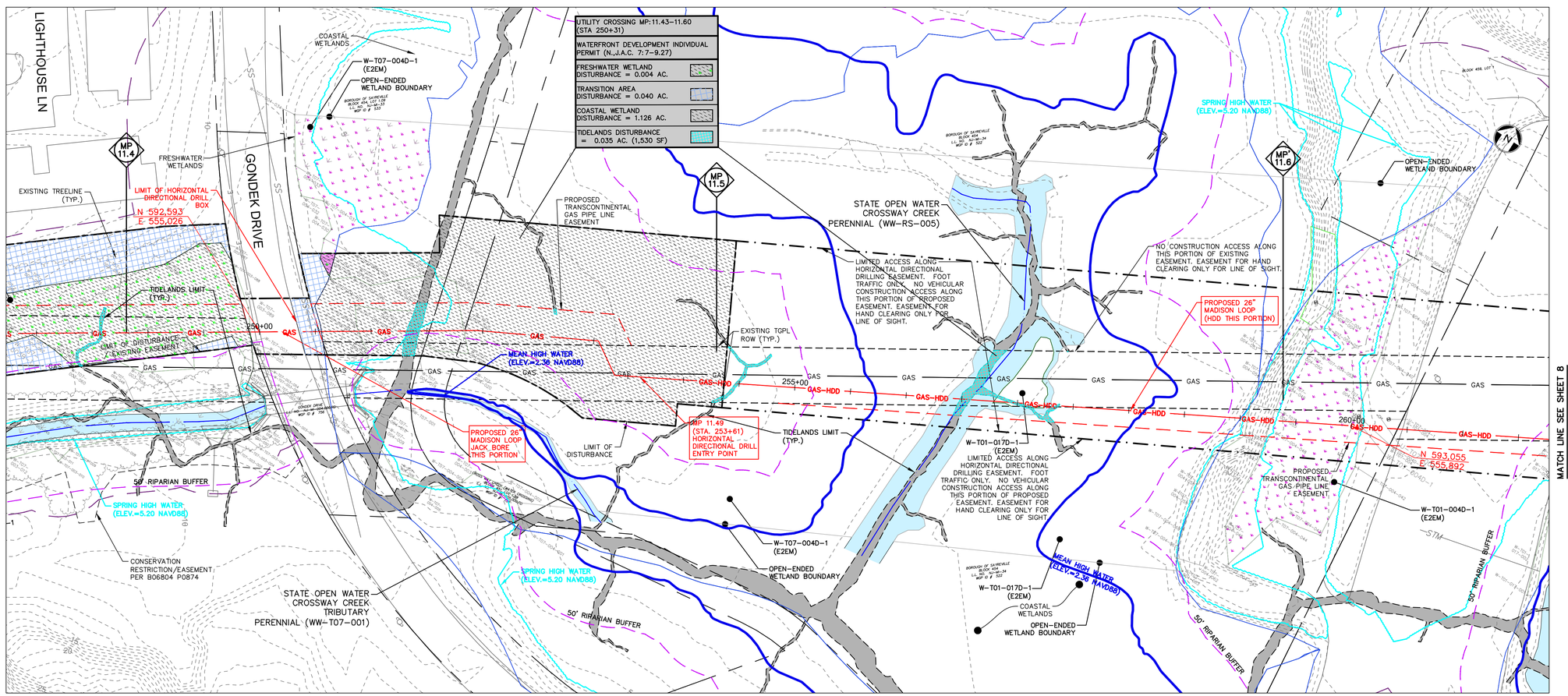
WATERFRONT DEVELOPMENT PERMIT PLAN MP 11.1 - MP 11.4

PROJECT NO.: 05731.0002
SCALE: 1 = 50'
DATE: 06/08/18
DRAWN BY: JPS
CHECKED BY: WS
SHEET 6 OF 13

SHEET NO.
6



KEY MAP
SCALE: 1" =1000'



UTILITY CROSSING MP:11.43-11.60 (STA 250+31)
WATERFRONT DEVELOPMENT INDIVIDUAL PERMIT (N.J.A.C. 7:7-9.27)
FRESHWATER WETLAND DISTURBANCE = 0.004 AC.
TRANSITION AREA DISTURBANCE = 0.040 AC.
COASTAL WETLAND DISTURBANCE = 1.126 AC.
TIDELANDS DISTURBANCE = 0.035 AC. (1,530 SF)

WATERFRONT DEVELOPMENT WETLAND UTILITY CROSSING TABULATION

MILEPOST	FRESHWATER WETLAND IMPACT$_A$	TRANSITION AREA IMPACT$_A$	COASTAL WETLAND IMPACT	VEGETATIVE NON-WETLAND IMPACT	TIDELANDS IMPACT
10.69 - 10.74			0.184		
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TOTAL	0.550	0.768	1.968	0.165	0.055

UTILITY CROSSING TABULATION IMPACT NOTES:

A. AUTHORIZATION FOR IMPACTS REQUESTED UNDER THE FRESHWATER WETLANDS PROTECTION ACT, N.J.A.C. 7:7A.

NOTES:

1. THIS ENTIRE WORKSPACE LIES WITHIN THE WATERFRONT DEVELOPMENT ZONE.

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50 ft.

REV. / ISSUE	DATE	DESCRIPTION
1	4/22/19	REV TRANSITION AREA WIDTH PER NJDEP

LEGEND

- PROPERTY LINE
- EXISTING CONTOURS
- EXISTING SPOT ELEVATION
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- EXISTING GAS MAIN
- PROPOSED GAS MAIN
- EXISTING SIGN
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- EXISTING TREE
- PROPOSED TREELINE
- EXISTING FENCE
- EXISTING RETAINING WALL
- EXISTING PERMANENT EASEMENT/TGPL R.O.W.
- PROPOSED PERMANENT EASEMENT
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED HDD LIMIT OF DISTURBANCE
- STREAM LINE
- WETLANDS BOUNDARY
- COASTAL WETLANDS BOUNDARY
- TOP OF BANK
- 50' WETLAND TRANSITION AREA
- RIPARIAN BUFFER
- MEAN HIGH WATER LINE
- SPRING HIGH WATER LINE
- MEAN HIGH WATER LINE 500' BUFFER
- TIDELANDS
- W-T01-005A-1 PHOTO LOCATION (SEE REPORT)
- 1620 WETLAND FLAGS
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- 1609 FRESHWATER WETLAND/STATE OPEN WATER DATA POINTS

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PROPOSED
26" MADISON LOOP

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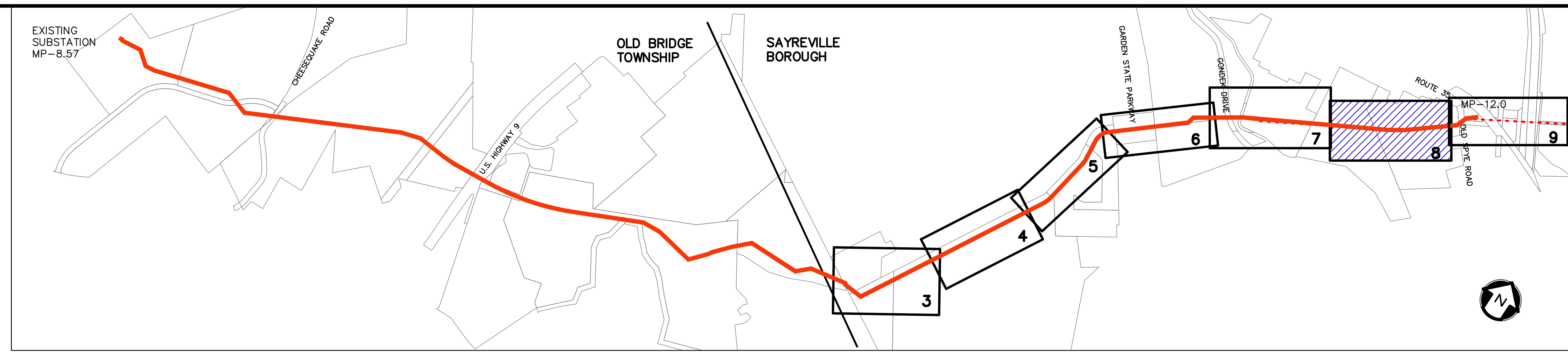
MIDDLESEX COUNTY, NEW JERSEY

SHEET TITLE

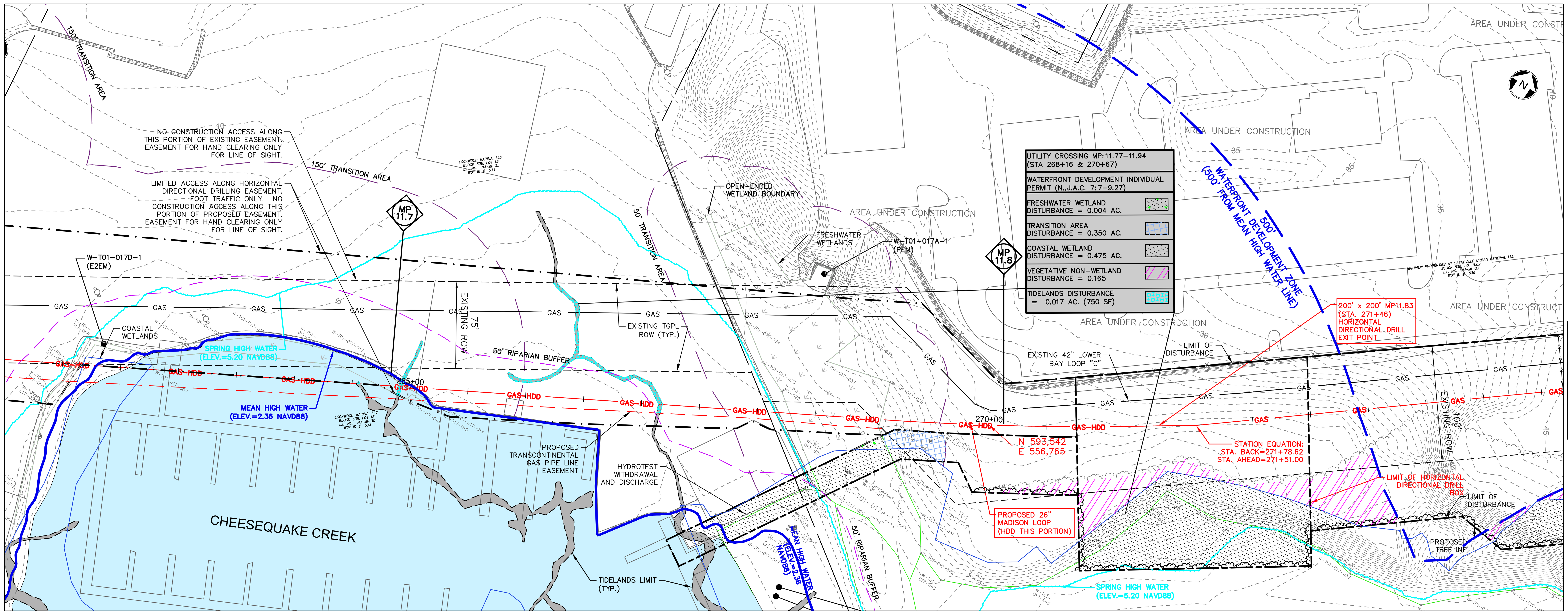
WATERFRONT DEVELOPMENT PERMIT PLAN
MP 11.4 - MP 11.6

PROJECT NO.: 05731.0002 | DRAWN BY: JPS
SCALE: 1 = 50' | CHECKED BY: WS
DATE: 06/08/18 | SHEET 7 OF 13
SHEET NO.
7



KEY MAP

SCALE: 1" =1000'



WATERFRONT DEVELOPMENT WETLAND UTILITY CROSSING TABULATION					
MILEPOST	FRESHWATER WETLAND $IMPACT_A$	TRANSITION AREA $IMPACT_A$	COASTAL WETLAND IMPACT	VEGETATIVE NON-WETLAND IMPACT	TIDELANDS IMPACT
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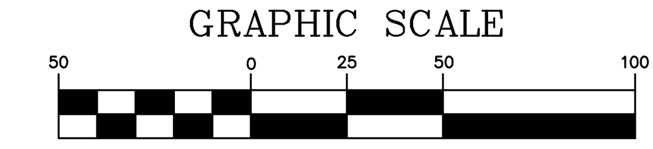
UTILITY CROSSING TABULATION IMPACT NOTES:

A. AUTHORIZATION FOR IMPACTS REQUESTED UNDER THE FRESHWATER WETLANDS PROTECTION ACT, N.J.A.C. 7:7A.

GRAPHIC SCALE



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1 inch = 50 ft.

REV. / ISSUE	DATE	DESCRIPTION
1	4/22/19	REV TRANSITION AREA WIDTH PER NJDEP

LEGEND

- PROPERTY LINE
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- EXISTING WATER MAIN
- EXISTING GAS MAIN
- PROPOSED GAS MAIN
- EXISTING SIGN
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- PROPOSED GAS VALVE
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- EXISTING TREE
- PROPOSED TREELINE
- EXISTING FENCE
- EXISTING RETAINING WALL
- EXISTING PERMANENT EASEMENT/TGPL R.O.W.
- PROPOSED PERMANENT EASEMENT
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED HDD LIMIT OF DISTURBANCE
- STREAM LINE
- WETLANDS BOUNDARY
- COASTAL WETLANDS BOUNDARY
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- MEAN HIGH WATER LINE 500' BUFFER
- TIDELANDS
- ⑤> W-T01-005A-1 PHOTO LOCATION (SEE REPORT)
- 1620 WETLAND FLAGS
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- 1609 FRESHWATER WETLAND/STATE OPEN WATER DATA POINTS

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1433 HIGHWAY 34, SUITE A-4, WALL, NJ 07727
PROFESSIONAL ENGINEER
N.J. LIC. NO. 41319 COA NO. 24GA28032700

SIGNATURE 04/24/19 DATE

PAULUS, SOKOLOWSKI AND SARTOR, LLC.
1433 ROUTE 34
SUITE A4
WALL, NJ 07727
PHONE: (848) 206-2626
CERTIFICATE OF AUTHORIZATION NO. 24GA28032700

PROJECT

NORTHEAST SUPPLY ENHANCEMENT PROJECT PROPOSED 26" MADISON LOOP

OLD BRIDGE TOWNSHIP & SAYREVILLE BOROUGH
MIDDLESEX COUNTY, NEW JERSEY

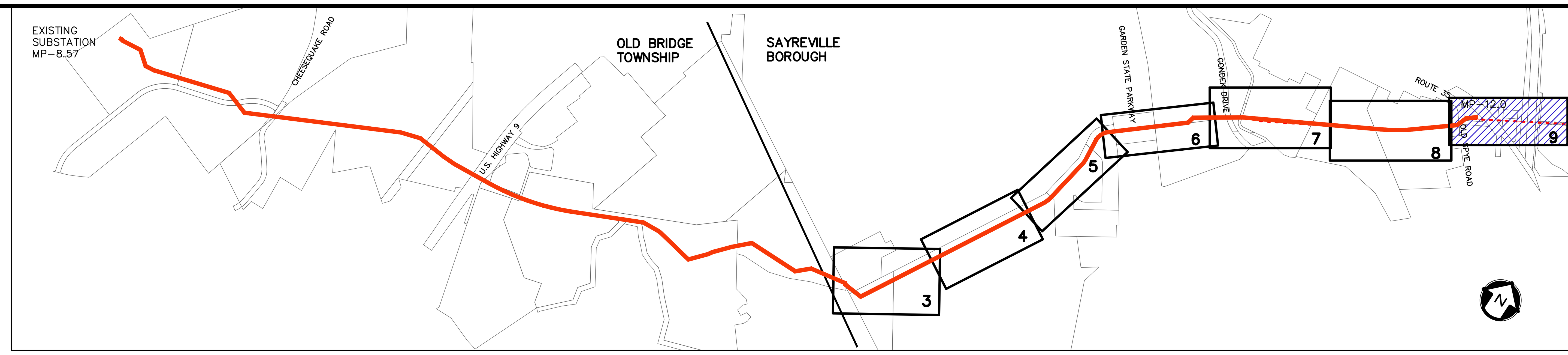
SHEET TITLE

WATERFRONT DEVELOPMENT PERMIT PLAN MP 11.6 - MP 11.9

PROJECT NO.: 05731.0002
SCALE: 1 = 50'
DATE: 06/08/18
DRAWN BY: JPS
CHECKED BY: WS
SHEET 8 OF 13

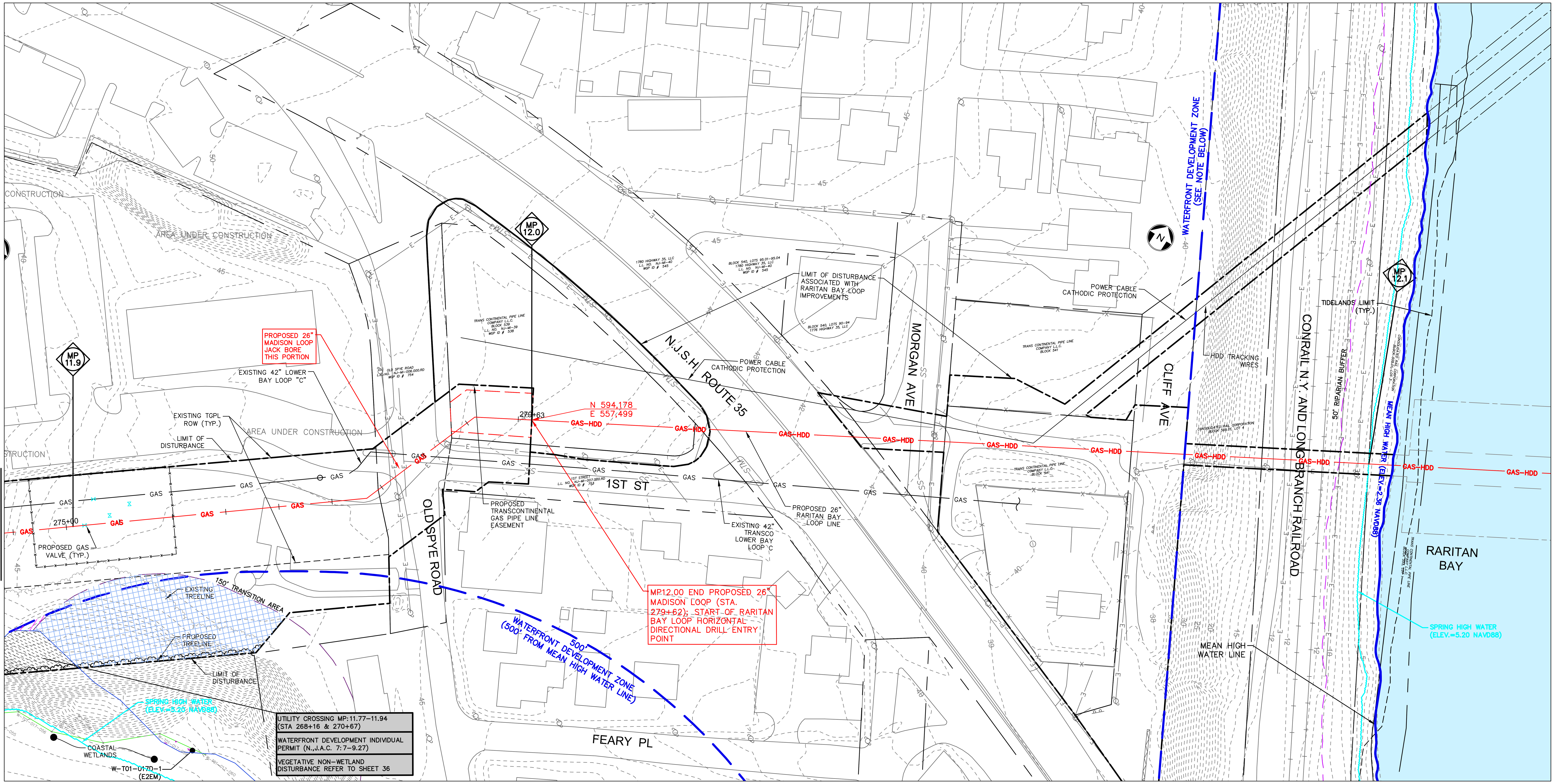
SHEET NO.

8



KEY MAP

SCALE: 1" =1000'



WATERFRONT DEVELOPMENT WETLAND UTILITY CROSSING TABULATION					
MILEPOST	FRESHWATER WETLAND IMPACT$_A$	TRANSITION AREA IMPACT$_A$	COASTAL WETLAND IMPACT	VEGETATIVE NON-WETLAND IMPACT	TIDELANDS IMPACT
10.69 - 10.74			0.184		
10.87 - 10.94			0.183		
11.36 - 11.42	0.542	0.378			0.003
11.43 - 11.60	0.004	0.04	1.126		0.035
11.77 - 11.94	0.004	0.35	0.475	0.165	0.017
TOTAL	0.550	0.768	1.968	0.165	0.055

UTILITY CROSSING TABULATION IMPACT NOTES:

A. AUTHORIZATION FOR IMPACTS REQUESTED UNDER THE FRESHWATER WETLANDS PROTECTION ACT, N.J.A.C. 7:7A.

NOTES:

1. FOR CONTINUATION OF WORK WITHIN RARITAN BAY, REFER TO PLANS ENTITLED "NORTHEAST SUPPLY ENHANCEMENT PROJECT – PROPOSED 26" RARITAN BAY LOOP (OFFSHORE)," LAST REVISED JUNE 8, 2018, PREPARED BY PAULUS, SOKOLOWSKI AND SARTOR, LLC.
2. CLIFF AVENUE IS THE FIRST PAVED PUBLIC ROAD, RAILROAD OR SURVEYABLE PROPERTY LINE GENERALLY PARALLEL TO THE MEAN HIGH WATER LINE GREATER THAN 100 FEET UPLAND OF THE MEAN HIGH WATER LINE. THEREFORE, THE WATERFRONT DEVELOPMENT ZONE IN THIS AREA IS DELINEATED BY THE CLIFF AVENUE PROPERTY LINE IN ACCORDANCE WITH N.J.A.C. 7:7-2.4(A)3.

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)
1 inch = 50 ft.

REV. / ISSUE	DATE	DESCRIPTION
1	4/22/19	REV TRANSITION AREA WIDTH PER NJDEP

LEGEND

- PROPERTY LINE
- EXISTING CONTOURS
- EXISTING SPOT ELEVATION
- EXISTING STORM SEWER
- EXISTING WATER MAIN
- EXISTING GAS MAIN
- PROPOSED GAS MAIN
- EXISTING SIGN
- EXISTING UTILITY POLE
- PROPOSED GAS VALVE
- EXISTING TREELINE/CANOPY
- EXISTING TREE
- PROPOSED TREELINE
- EXISTING FENCE
- EXISTING RETAINING WALL
- EXISTING PERMANENT EASEMENT/TGPL R.O.W.
- PROPOSED PERMANENT EASEMENT
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED HDD LIMIT OF DISTURBANCE
- STREAM LINE
- WETLANDS BOUNDARY
- COASTAL WETLANDS BOUNDARY
- TOP OF BANK
- 50' WETLAND TRANSITION AREA
- RIPARIAN BUFFER
- MEAN HIGH WATER LINE
- SPRING HIGH WATER LINE
- MEAN HIGH WATER LINE 500' BUFFER
- TIDELANDS
- W-T01-005A-1 PHOTO LOCATION (SEE REPORT)
- 1620 WETLAND FLAGS
- 1432 STATE OPEN WATERS FLAGS
- 1609 FRESHWATER WETLAND/STATE OPEN WATER DATA POINTS

I AM A DULY REGISTERED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF NEW JERSEY AND I HEREBY CERTIFY THAT EXISTING CONDITIONS SHOWN WERE FIELD LOCATED AND PREPARED UNDER MY DIRECT SUPERVISION.

THOMAS J. MURPHY, PLS
DW SMITH ASSOCIATES, LLC
1450 STATE ROUTE 34, WALL, NJ 07753
PROFESSIONAL LAND SURVEYOR
N.J. LIC. NO. 37207 COA NO. 24GA28122400

SIGNATURE DATE

I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF NEW JERSEY AND I HEREBY CERTIFY THAT THE PROPOSED ENVIRONMENTAL DISTURBANCES SHOWN ARE ACCURATE AND CORRESPOND WITH THE DETAILED ENGINEERING DRAWINGS.

WILLIAM SALMON, P.E.
PS&S, LLC
1433 HIGHWAY 34, SUITE A-4, WALL, NJ 07727
PROFESSIONAL ENGINEER
N.J. LIC. NO. 41319 COA NO. 24GA28032700

04/24/19

SIGNATURE DATE

PAULUS, SOKOLOWSKI AND SARTOR, LLC.
1433 ROUTE 34
SUITE A4
WALL, NJ 07727
PHONE: (848) 206-2626
CERTIFICATE OF AUTHORIZATION NO. 24GA28032700

PROJECT

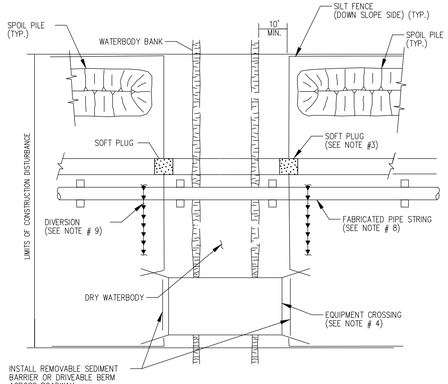
NORTHEAST SUPPLY ENHANCEMENT PROJECT PROPOSED 26" MADISON LOOP

OLD BRIDGE TOWNSHIP & SAYREVILLE BOROUGH
MIDDLESEX COUNTY, NEW JERSEY

SHEET TITLE

WATERFRONT DEVELOPMENT PERMIT PLAN MP 11.9 - MP 12.0

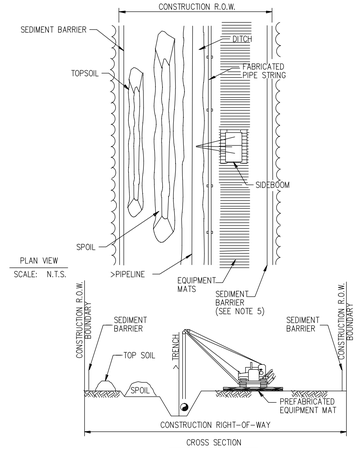
PROJECT NO.: 05731.0002	DRAWN BY: JPS
SCALE: 1 = 50'	CHECKED BY: WS
DATE: 06/08/18	SHEET 9 OF 13
SHEET NO. 9	



NOTES:

1. THIS METHOHOD APPLIES TO WATERBODIES THAT ARE DRY AT THE TIME OF CROSSING.
2. SILT FENCES SHALL BE INSTALLED AS DEPICTED AND ALONG DOWN GRADIENT SIDES OF WORK AREAS SUCH THAT NO HEAVILY SILT LADEN WATER ENTERS THE WATERBODY OR LEAVES THE CONSTRUCTION RIGHT OF WAY.
3. SOFT PLUGS SHALL BE INSTALLED FOLLOWING EXCAVATION OF MAINLINE DITCH THROUGH THE WATERBODY.
4. EQUIPMENT OPERATING IN THE WATERBODY SHALL BE LIMITED TO THAT NEEDED TO PERFORM CONSTRUCTION. IF OTHER TYPES OF EQUIPMENT MUST CROSS THE WATERBODY, CONTRACTOR SHALL PROVIDE AND USE A TEMPORARY STREAM CROSSING (BEC).
5. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED DAILY AND REPAIRED IF NECESSARY.
6. CHEMICALS, FUELS AND LUBRICATING OILS SHALL NOT BE STORED AND EQUIPMENT SHALL NOT BE REFUELED WITHIN 100 FEET OF WATERBODY.
7. INSTALL DIVERSION TRENCHES AT THE BASE OF ALL SLOPES ADJACENT TO THE WATERBODY.
8. MAINLINE FABRICATED PIPE STRING MAY SPAN DRY WATERBODY CROSSING IN PREPARATION FOR LOWER IN PHASE OF CONSTRUCTION.
9. DRY WATERBODY MAY BE TRENCHED IN SEQUENCE WITH NORMAL TRENCHING OPERATIONS AND PIPE INSTALLED THROUGH DRY WATERBODY CROSSING MAY BE INSTALLED IN CONJUCTION WITH UPSTREAM AND DOWN STREAM PIPE.

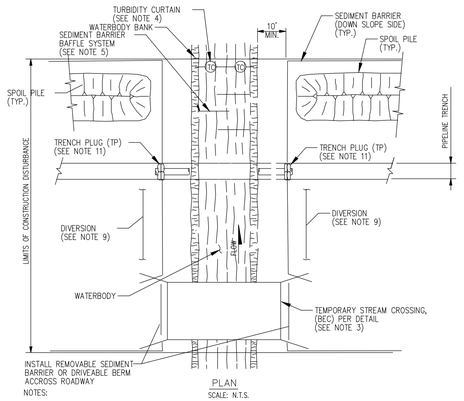
DRY WATERBODY CROSSING
TEMPORARY EROSION CONTROL MEASURE
(APPLIES TO WATERBODIES "DRY" AT TIME OF CROSSING)



CONSTRUCTION PROCEDURE NOTES:

1. FLAG WETLAND BOUNDARIES AND INSTALL BOUNDARY SIGNS PRIOR TO CLEARING.
2. NO OVERNIGHT PARKING OR REFUELING OF MOBILE EQUIPMENT IS ALLOWED WITHIN 100 FEET OF WETLAND. PLACE "NO FUELING" SIGN POSTS 100 FEET BACK FROM WETLAND BOUNDARY. REFUEL STATIONARY EQUIPMENT AS PER SPCC PLAN.
3. INSTALL TEMPORARY SLOPE BREAKERS UPSLOPE OF WETLAND BOUNDARIES AS SHOWN ON DRAWINGS AND SPECIFICATIONS.
4. INSTALL PREFABRICATED EQUIPMENT MATS THROUGH ENTIRE WETLAND AREA ON THE WORKING SIDE OF THE CONSTRUCTION CORRIDOR.
5. AVOID ADJACENT WETLANDS. INSTALL SEDIMENT BARRIERS AT OUTER BOUNDARIES OF THE WETLAND. INSTALL SEDIMENT BARRIERS ALONG THE EDGE OF THE SPOIL SIDE OF THE CONSTRUCTION CORRIDOR THROUGH THE WETLAND AND ALONG THE DOWN SLOPE EDGE OF THE WETLAND. IF THE DOWN SLOPE EDGE OF THE WETLAND IS THE SPOIL SIDE, THEN SEDIMENT BARRIERS ARE NOT REQUIRED ON THE WORKING SIDE OF THE CORRIDOR UNLESS EQUIPMENT TRAVERSING THROUGH THE WETLAND CAUSES SPOIL AND SEDIMENT TO EXIT THE CONSTRUCTION CORRIDOR.
6. LIMIT PULLING OF TREE STUMPS AND GRADING ACTIVITIES TO DIRECTLY OVER THE TRENCH LINE. DO NOT GRADE OR REMOVE STUMPS OR ROOT SYSTEMS FROM THE REST OF THE RIGHT-OF-WAY IN WETLANDS UNLESS THE CHIEF INSPECTOR AND COMPANY ENVIRONMENTAL INSPECTOR DETERMINE THAT SAFETY RELATED CONSTRUCTION CONSTRAINTS REQUIRE REMOVAL OF TREE STUMPS FROM UNDER THE WORKING SIDE OF THE RIGHT-OF-WAY.
7. CONDUCT TRENCH LINE TOPSOIL STRIPPING (IF TOPSOIL IS NOT SATURATED). SALVAGE TOPSOIL TO ACTUAL DEPTH OR A MAXIMUM DEPTH OF 12 INCHES, AS DETERMINED BY THE COMPANY ENVIRONMENTAL INSPECTOR. SEGREGATED TOPSOIL PILE MAY BE LOCATED ON SPOIL SIDE, AS REQUIRED.
8. LEAVE HARD PLUGS AT THE EDGES OF WETLAND UNTIL JUST PRIOR TO TRENCHING.
9. TRENCHING THROUGH WETLANDS MAY PROCEED WHEN THE PIPE SECTION IS FABRICATED AND READY TO LAY. ONCE TRENCHING COMMENCES, CONSTRUCTION THROUGH THE WETLAND IS TO PROCEED CONTINUOUSLY UNTIL THE CROSSING IS COMPLETED, BACK FILLED AND RESTORED IN ORDER TO MINIMIZE THE LENGTH OF TIME THE TRENCH IS OPEN.
10. PIPE SECTION MAY BE FABRICATED WITHIN THE WETLAND ADJACENT TO PIPE TRENCH, OR IN STAGING AREA OUTSIDE THE WETLAND AND WALKED IN. NO CONCRETE COATING ACTIVITY WITHIN 100 FEET OF WETLAND BOUNDARY UNLESS APPROVED BY COMPANY ENVIRONMENTAL INSPECTOR.
11. LOWER-IN PIPE. PRIOR TO BACK FILLING TRENCH, INSTALL TRENCH PLUGS IN ACCORDANCE WITH DRAWINGS AND SPECIFICATIONS.
12. RESTORE GRADE TO NEAR PRE-CONSTRUCTION TOPOGRAPHY, REPLACE TOPSOIL AND INSTALL PERMANENT EROSION CONTROL.
13. REMOVE PREFABRICATED MATS FROM WETLANDS UPON COMPLETION.
14. SEED DISTURBED WETLANDS AREA AS DETERMINED BY THE ENVIRONMENTAL INSPECTOR AND AS SHOWN ON DRAWINGS.

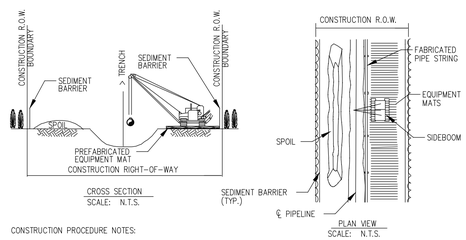
TRANSCONTINENTAL GAS PIPE LINE LLC
STANDARD ENVIRONMENTAL DETAIL
TYPE 1 "DRY WETLAND"
INSTALLATION PROCEDURE



NOTES:

1. THIS METHOD APPLIES TO MINOR WATERBODY CROSSINGS THAT ARE DEFINED AS WATERBODIES THAT ARE LESS THAN OR EQUAL TO 10 FEET AT WATERS EDGE AT THE TIME OF CROSSING.
2. SEDIMENT BARRIERS SHALL BE INSTALLED AS DEPICTED AND ALONG DOWN GRADIENT SIDES OF WORK AREAS AND STAGING AREAS SUCH THAT NO HEAVILY SILT LADEN WATER ENTERS THE WATERBODY OR LEAVES THE CONSTRUCTION RIGHT OF WAY.
3. HARD DITCH PLUGS MUST REMAIN IN PLACE AT CONVENIENT LOCATIONS TO SEPARATE MAINLINE DITCH FROM THE WATERBODY CROSSING UNTIL THE WATERBODY IS INSTALLED AND BACK FILLED.
4. INSTALL TURBIDITY CURTAINS DOWNSTREAM OF CROSSING AT EDGE OF WORK CORRIDOR IF STREAM FLOW IS CONDUCIVE TO SUCH AN INSTALLATION.
5. IF FLOW OF WATERBODY IS SUCH THAT TURBIDITY CURTAIN CAN NOT BE INSTALLED, THEN INSTALL DOWNSTREAM SEDIMENT BARRIER BAFFLE SYSTEM AS DEPICTED.
6. EQUIPMENT OPERATING IN THE WATERBODY SHALL BE LIMITED TO THAT NEEDED TO PERFORM CONSTRUCTION. IF OTHER TYPES OF EQUIPMENT MUST CROSS THE WATERBODY, CONTRACTOR SHALL PROVIDE AND USE TEMPORARY STREAM CROSSING (BEC).
7. STAGING AREA(S) FOR WATERBODY CROSSING(S), WHEN REQUIRED, SHALL BE LOCATED AT LEAST 50 FEET FROM WATER'S EDGE AND SHALL BE OF A MINIMUM SIZE NEEDED FOR CONVENIENT PREPARATION.
8. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED DAILY AND REPAIRED IF NECESSARY.
9. INSTALL DIVERSION TRENCHES AT THE BASE OF ALL SLOPES ADJACENT TO THE WATERBODY.
10. CHEMICALS, FUELS AND LUBRICATING OILS SHALL NOT BE STORED AND EQUIPMENT SHALL NOT BE REFUELED WITHIN 100 FEET OF THE WATERBODY.
11. INSTALL TRENCH PLUGS ON BOTH SIDES OF THE WATERBODY TO PREVENT DIVERSION OF WATER INTO UPLAND PORTIONS OF THE PIPELINE TRENCH AND TO KEEP ANY ACCUMULATED TRENCH WATER OUT OF THE WATERBODY.
12. CONTRACTOR SHALL POSTPONE GRADING OF RIGHT-OF-WAY IMMEDIATELY ADJACENT TO WATERBODY UNTIL STAGING AREA IS PREPARED AND WORK IN THE WATERBODY IS READY TO COMMENCE.
13. EXCEPT FOR BLASTING AND OTHER ROCK BREAKING MEASURES, COMPLETE IN STREAM CONSTRUCTION ACTIVITIES (INCLUDING TRENCHING, PIPE INSTALLATION, BACKFILL, AND RESTORATION OF THE STREAM BED CONTOURS) WITHIN 24 HOURS. STREAM BANKS AND UNCONSOLIDATED STREAM BEDS MAY REQUIRE ADDITIONAL RESTORATION AFTER THIS PERIOD.

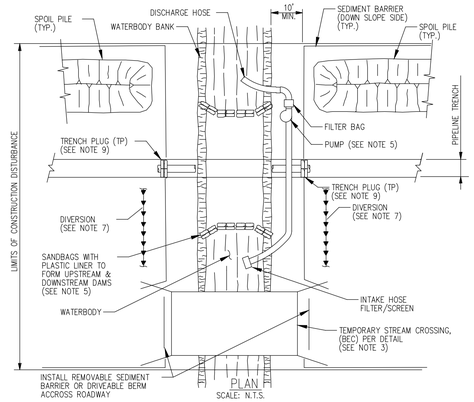
WET MINOR WATERBODY CROSSING
TEMPORARY EROSION CONTROL MEASURE
(APPLIES TO WATERBODIES 10' WIDE OR LESS AT WATERS EDGE AT TIME OF CROSSING)



CONSTRUCTION PROCEDURE NOTES:

1. FLAG WETLAND BOUNDARIES AND INSTALL BOUNDARY SIGNS PRIOR TO CLEARING.
2. NO OVERNIGHT PARKING OR REFUELING OF MOBILE EQUIPMENT IS ALLOWED WITHIN 100 FEET OF WETLAND. PLACE "NO FUELING" SIGN POSTS 100 FEET BACK FROM WETLAND BOUNDARY. REFUEL STATIONARY EQUIPMENT AS PER SPCC PLAN.
3. INSTALL TEMPORARY SLOPE BREAKERS UPSLOPE OF WETLAND BOUNDARIES AS SHOWN ON DRAWINGS AND SPECIFICATIONS.
4. INSTALL PREFABRICATED EQUIPMENT MATS THROUGH ENTIRE WETLAND AREA ON THE WORKING SIDE OF THE CONSTRUCTION CORRIDOR.
5. AVOID ADJACENT WETLANDS. INSTALL SEDIMENT BARRIERS AT OUTER BOUNDARIES OF WETLAND AND ALONG BOTH WETLAND EDGES.
6. LIMIT PULLING OF TREE STUMPS AND GRADING ACTIVITIES TO DIRECTLY OVERTHE TRENCHLINE. DO NOT GRADE OR REMOVE STUMPS OR ROOT SYSTEMS FROM THE REST OF THE RIGHT-OF-WAY IN WETLANDS UNLESS THE CHIEF INSPECTOR AND COMPANY ENVIRONMENTAL INSPECTOR DETERMINE THAT SAFETY RELATED CONSTRUCTION CONSTRAINTS REQUIRE REMOVAL OF TREE STUMPS FROM UNDER THE WORKING SIDE OF THE RIGHT-OF-WAY.
7. TOPSOIL STRIPPING SHALL NOT BE REQUIRED IN SATURATED SOIL CONDITIONS.
8. LEAVE HARD PLUGS AT THE EDGES OF WETLAND UNTIL JUST PRIOR TO TRENCHING.
9. TRENCHING THROUGH WETLANDS MAY PROCEED WHEN THE PIPE SECTION IS FABRICATED AND READY TO LAY. ONCE TRENCHING COMMENCES, CONSTRUCTION THROUGH THE WETLAND IS TO PROCEED CONTINUOUSLY UNTIL THE CROSSING IS COMPLETED, BACKFILLED AND RESTORED IN ORDER TO MINIMIZE THE LENGTH OF TIME THE TRENCH IS OPEN.
10. PIPE SECTION MAY BE FABRICATED WITHIN THE WETLAND ADJACENT TO PIPE TRENCH, OR IN STAGING AREA OUTSIDE THE WETLAND AND WALKED IN. NO CONCRETE COATING ACTIVITY WITHIN 100 FEET OF WETLAND BOUNDARY, UNLESS APPROVED BY COMPANY ENVIRONMENTAL INSPECTOR.
11. LOWER-IN PIPE. PRIOR TO BACKFILLING, INSTALL TRENCH PLUGS IN ACCORDANCE WITH DRAWINGS AND SPECIFICATIONS.
12. RESTORE GRADE TO NEAR PRE-CONSTRUCTION TOPOGRAPHY AND INSTALL PERMANENT EROSION CONTROL.
13. REMOVE PREFABRICATED MATS FROM WETLANDS UPON COMPLETION.
14. SEED DISTURBED WETLAND AREA AS DETERMINED BY THE ENVIRONMENTAL INSPECTOR AND AS SHOWN ON DRAWINGS.

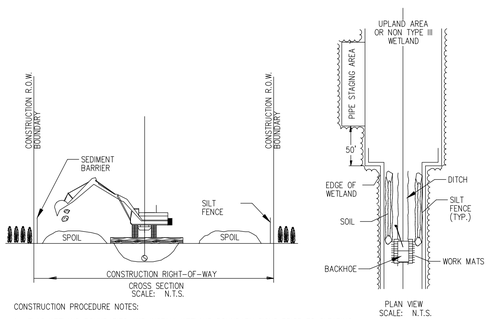
TRANSCONTINENTAL GAS PIPE LINE LLC
STANDARD ENVIRONMENTAL DETAIL
TYPE II "SATURATED WETLAND"
INSTALLATION PROCEDURE



NOTES:

1. SEDIMENT BARRIERS SHALL BE INSTALLED AS DEPICTED AND ALONG DOWN GRADIENT SIDES OF WORK AREAS AND STAGING AREAS SUCH THAT NO HEAVY SILT LADEN WATER ENTERS THE WATERBODY OR LEAVES THE CONSTRUCTION RIGHT-OF-WAY
2. HARD DITCH PLUGS MUST REMAIN IN PLACE AT CONVENIENT LOCATIONS TO SEPARATE MAINLINE DITCH FROM THE WATERBODY CROSSING UNTIL THE WATERBODY CROSSING IS INSTALLED AND BACKFILLED.
3. EQUIPMENT OPERATING IN THE WATERBODY SHALL BE LIMITED TO THAT NEEDED TO PERFORM CONSTRUCTION. IF OTHER TYPES OF EQUIPMENT MUST CROSS THE WATERBODY, CONTRACTOR SHALL PROVIDE AND USE A TEMPORARY STREAM CROSSING (BEC).
4. STAGING AREA(S) FOR WATERBODY CROSSING(S), WHEN REQUIRED, SHALL BE LOCATED AT LEAST 50 FEET FROM WATER'S EDGE AND SHALL BE OF A MINIMUM SIZE NEEDED FOR CONVENIENT PREPARATION.
5. IMPLEMENTATION OF THE DAM-AND-PUMP CROSSING METHOD MUST MEET THE FOLLOWING PERFORMANCE CRITERIA:
   (A) USE SUFFICIENT PUMPS, INCLUDING ON-SITE BACKUP PUMPS, TO MAINTAIN DOWNSTREAM FLOWS.
   (B) CONSTRUCT DAMS WITH MATERIALS THAT PREVENT SEDIMENT AND OTHER POLLUTANTS FROM ENTERING THE WATERBODY (E.G., SANDBAGS OR CLEAN GRAVEL WITH PLASTIC LINER).
   (C) SCREEN PUMP INTAKES;
   (D) PREVENT STREAM BED SCOUR AT PUMP DISCHARGE.
   (E) MONITOR THE DAM AND PUMPS TO ENSURE PROPER OPERATION THROUGHOUT THE WATERBODY CROSSING.
6. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED DAILY AND REPAIRED IF NECESSARY.
7. INSTALL DIVERSION TRENCHES AT THE BASE OF ALL SLOPES ADJACENT TO THE WATERBODY.
8. CHEMICALS, FUELS AND LUBRICATING OILS SHALL NOT BE STORED AND EQUIPMENT SHALL NOT BE REFUELED WITHIN 100 FEET OF THE WATERBODY.
9. INSTALL TRENCH PLUGS ON BOTH SIDES OF THE WATERBODY TO PREVENT DIVERSION OF WATER INTO UPLAND PORTIONS OF THE PIPELINE TRENCH AND TO KEEP ANY ACCUMULATED TRENCH WATER OUT OF THE WATERBODY.
10. CONTRACTOR SHALL POSTPONE GRADING OF RIGHT-OF-WAY ADJACENT TO WATERBODY UNTIL STAGING AREA IS PREPARED AND WORK IN THE WATERBODY IS READY TO COMMENCE.

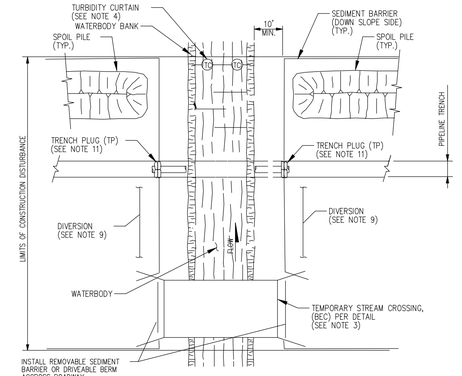
DAM AND PUMP CROSSING
TEMPORARY EROSION CONTROL MEASURE



CONSTRUCTION PROCEDURE NOTES:

1. FLAG WETLAND BOUNDARIES AND INSTALL WETLAND BOUNDARY SIGNS PRIOR TO CLEARING.
2. NO OVERNIGHT PARKING OR REFUELING OF MOBILE EQUIPMENT IS ALLOWED WITHIN 100 FEET OF WETLAND. PLACE "NO FUELING" SIGN POSTS 100 FEET BACK FROM WETLAND BOUNDARY. REFUEL STATIONARY EQUIPMENT AS PER SPCC PLAN.
3. INSTALL TEMPORARY SLOPE BREAKERS UPSLOPE OF WETLAND BOUNDARIES AS SHOWN ON DRAWINGS AND SPECIFICATIONS.
4. AVOID ADJACENT WETLANDS. INSTALL SEDIMENT BARRIERS AT OUTER BOUNDARIES OF WETLAND AND ALONG BOTH WETLAND EDGES.
5. LIMIT PULLING OF TREE STUMPS AND GRADING ACTIVITIES TO DIRECTLY OVER TRENCH LINE. DO NOT GRADE OR REMOVE STUMPS OR ROOT SYSTEMS FROM THE REST OF THE RIGHT-OF-WAY IN WETLANDS UNLESS THE CHIEF INSPECTOR AND COMPANY ENVIRONMENTAL INSPECTOR DETERMINE THAT SAFETY RELATED CONSTRUCTION CONSTRAINTS REQUIRE REMOVAL OFTREE STUMPS FROM UNDER THE WORKING SIDE OF THE RIGHT-OF-WAY.
6. TOPSOIL STRIPPING SHALL NOT BE REQUIRED IN SATURATED SOIL CONDITIONS.
7. UTILIZE AMPHIBIOUS EXCAVATORS (PONTOON MOUNTED BACKHOES) OR TRACKED BACKHOES SUPPORTED BY PREFABRICATED EQUIPMENT MATS OR FLOATS, TO EXCAVATE TRENCH. IF PREFABRICATED EQUIPMENT MATS ARE USED FOR STABILIZATION, THE BACKHOE SHALL GRADUALLY MOVE ACROSS THE WETLAND BY MOVING THE MATS FROM IMMEDIATELY BEHIND TO IMMEDIATELY IN FRONT OF THE BACKHOE'S PATH.
8. FABRICATE PIPE IN A STAGING AREA OUTSIDE THE TYPE III WETLAND AS INDICATED ON THE CONSTRUCTION DRAWINGS.NO CONCRETE COATING ACTIVITY WITHIN 100 FEET OF WETLAND BOUNDARY, UNLESS APPROVED BY COMPANY ENVIRONMENTAL INSPECTOR.
9. LEAVE HARD PLUGS AT THE EDGE OF TYPE III WETLAND UNTIL JUST PRIOR TO PIPE PLACEMENT.
10. FLOAT PIPE IN PLACE, LOWER-IN, INSTALL TRENCH PLUGS IN ACCORDANCE WITH DRAWINGS AND SPECIFICATIONS, AND BACKFILL.
11. RESTORE GRADE TO NEAR PRE-CONSTRUCTION TOPOGRAPHY AND INSTALL PERMANENT EROSION CONTROL.
12. REMOVE ANY MATS UTILIZED TO SUPPORT AMPHIBIOUS EQUIPMENT FROM WETLANDS UPON COMPLETION.
13. WETLANDS CROSSED USING PUSH/PULL METHOD TEND TO BE TOO WET FOR EFFECTIVE SEEDING. HOWEVER, IF THE SITE IS DRY ENOUGH AND IF DIRECTED BY THE ENVIRONMENTAL INSPECTOR, THE RIGHT-OF-WAY SHALL BE SEEDED IN ACCORDANCE WITH DRAWINGS.

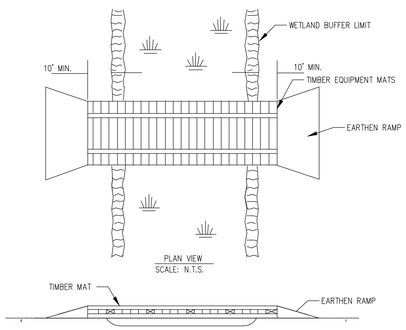
TRANSCONTINENTAL GAS PIPE LINE LLC
STANDARD ENVIRONMENTAL DETAIL
TYPE III "FLOODED WETLAND"
INSTALLATION PROCEDURE



NOTES:

1. THIS METHOD APPLIES TO INTERMEDIATE WATERBODY CROSSINGS THAT ARE DEFINED AS WATERBODIES THAT ARE GREATER THAN 10 FEET WIDE BUT LESS THAN OR EQUAL TO 100 FEET WIDE AT THE WATERS EDGE AT THE TIME OF CONSTRUCTION.
2. SEDIMENT BARRIERS SHALL BE INSTALLED AS DEPICTED AND ALONG DOWN GRADIENT SIDES OF WORK AREAS AND STAGING AREAS SUCH THAT NO HEAVILY SILT LADEN WATER ENTERS THE WATERBODY OR LEAVES THE CONSTRUCTION RIGHT OF WAY.
3. HARD DITCH PLUGS MUST REMAIN IN PLACE AT CONVENIENT LOCATIONS TO SEPARATE MAINLINE DITCH FROM THE WATERBODY CROSSING UNTIL THE WATERBODY IS INSTALLED AND BACK FILLED.
4. INSTALL TURBIDITY CURTAINS DOWNSTREAM OF CROSSING AT EDGE OF WORK CORRIDOR IF STREAM FLOW IS CONDUCIVE TO SUCH AN INSTALLATION.
5. IF FLOW OF WATERBODY IS SUCH THAT TURBIDITY CURTAIN CAN NOT BE INSTALLED, THEN INSTALL DOWNSTREAM SEDIMENT BARRIER BAFFLE SYSTEM AS DEPICTED.
6. EQUIPMENT OPERATING IN THE WATERBODY SHALL BE LIMITED TO THAT NEEDED TO PERFORM CONSTRUCTION. IF OTHER TYPES OF EQUIPMENT MUST CROSS THE WATERBODY, CONTRACTOR SHALL PROVIDE AND USE TEMPORARY STREAM CROSSING (BEC).
7. STAGING AREA(S) FOR WATERBODY CROSSING(S), WHEN REQUIRED, SHALL BE LOCATED AT LEAST 50 FEET FROM WATER'S EDGE AND SHALL BE OF A MINIMUM SIZE NEEDED FOR CONVENIENT PREPARATION.
8. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED DAILY AND REPAIRED IF NECESSARY.
9. INSTALL DIVERSION TRENCHES AT THE BASE OF ALL SLOPES ADJACENT TO THE WATERBODY.
10. CHEMICALS, FUELS AND LUBRICATING OILS SHALL NOT BE STORED AND EQUIPMENT SHALL NOT BE REFUELED WITHIN 100 FEET OF THE WATERBODY.
11. INSTALL TRENCH PLUGS ON BOTH SIDES OF THE WATERBODY TO PREVENT DIVERSION OF WATER INTO UPLAND PORTIONS OF THE PIPELINE TRENCH AND TO KEEP ANY ACCUMULATED TRENCH WATER OUT OF THE WATERBODY.
12. CONTRACTOR SHALL POSTPONE GRADING OF RIGHT-OF-WAY ADJACENT TO WATERBODY UNTIL STAGING AREA IS PREPARED AND WORK IN THE WATERBODY IS READY TO COMMENCE.
13. COMPLETE IN STREAM CONSTRUCTION ACTIVITIES (NOT INCLUDING BLASTING AND OTHER ROCK BREAKING MEASURES) WITHIN 24 HOURS, UNLESS SITE SPECIFIC CONDITIONS MAKE COMPLETION WITHIN 48 HOURS INFEASIBLE.

WET INTERMEDIATE WATERBODY CROSSING
TEMPORARY EROSION CONTROL MEASURE
(APPLIES TO WATERBODIES GREATER THAN 10' WIDE BUT LESS THAN 100' WIDE AT WATERS EDGE AT TIME OF CROSSING)



NOTES:

1. PERIODICALLY CHECK INSTALLATION AND REMOVE BUILD-UP OF SEDIMENT OR DEBRIS.
2. MATERIALS PLACED IN WETLANDS SHALL BE COMPLETELY REMOVED DURING FINAL CLEAN-UP. REMOVAL OF THIS STRUCTURE IS NOT CONTINGENT UPON ESTABLISHMENT OF PERMANENT VEGETATION.
3. IF A WATERBODY IS LOCATED WITHIN A WETLAND SYSTEM, EXTEND TIMBER EQUIPMENT MATS TO THE BRIDGE EQUIPMENT CROSSING (BEC) USED TO CROSS THE WATERBODY IN ORDER TO ALLOW FOR CONTINUOUS TIMBER EQUIPMENT MAT COVERAGE THROUGH THE WETLAND AND WATERBODY AREA.
4. USE ADDITIONAL TIMBER MAT LAYERS TO RAISE CROSSING ABOVE GRADE WHERE POOR SOIL CONDITIONS EXIST.
5. TIMBER EQUIPMENT MATS SHALL EXTEND A MINIMUM OF 10 FEET OUTSIDE OF THE WETLAND BOUNDARIES.
6. INSTALL EARTHEN RAMP APPROACHES TO TIMBER EQUIPMENT MATS. EARTHEN RAMPS TO BE CONSTRUCTED OF UPLAND MATERIAL, TOP SOIL SHALL NOT BE USED TO CONSTRUCT EARTHEN RAMPS.

WETLAND EQUIPMENT CROSSING
TEMPORARY EROSION CONTROL MEASURE

NOTES:

1. **PIPELINE INSTALLATION PROCEDURES, WATERBODY CROSSINGS AND DIVERSION METHODOLOGY SHALL BE ESTABLISHED IN THE FIELD IN COORDINATION WITH THE OWNER.**

REV. / ISSUE	DATE	DESCRIPTION
1	4/22/19	REV TRANSITION AREA WIDTH PER NJDEP

LEGEND

▬ ▬ ▬	PROPERTY LINE
– – – – 430	EXISTING CONTOURS
427.0 X	EXISTING SPOT ELEVATION
═	EXISTING STORM SEWER
— W —	EXISTING WATER MAIN
▬	EXISTING GAS MAIN
▬	PROPOSED GAS MAIN
	EXISTING SIGN
	EXISTING UTILITY POLE
⋈	PROPOSED GAS VALVE
—	EXISTING TREELINE/CANOPY
	EXISTING TREE
—	PROPOSED TREELINE
—✕✕—✕—	EXISTING FENCE
	EXISTING RETAINING WALL
— — — —	EXISTING PERMANENT EASEMENT/TGPL R.O.W.
— — — —	PROPOSED PERMANENT EASEMENT
▬	PROPOSED LIMIT OF DISTURBANCE
▬	PROPOSED HDD LIMIT OF DISTURBANCE
—	STREAM LINE
—	WETLANDS BOUNDARY
—	COASTAL WETLANDS BOUNDARY
—	TOP OF BANK
—	50' WETLAND TRANSITION AREA
—	RIPARIAN BUFFER
▬	MEAN HIGH WATER LINE
—	SPRING HIGH WATER LINE
—	MEAN HIGH WATER LINE 500' BUFFER
—	TIDELANDS
⑤→ W-T01-005A-1	PHOTO LOCATION (SEE REPORT)
△1620	WETLAND FLAGS
△1432	STATE OPEN WATERS FLAGS
⯐ 1609	FRESHWATER WETLAND/STATE OPEN WATER DATA POINTS

I AM A DULY REGISTERED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF NEW JERSEY AND I HEREBY CERTIFY THAT EXISTING CONDITIONS SHOWN WERE FIELD LOCATED AND PREPARED UNDER MY DIRECT SUPERVISION.

THOMAS J. MURPHY, PLS
DW SMITH ASSOCIATES, LLC
1450 STATE ROUTE 34, WALL, NJ 07753
PROFESSIONAL LAND SURVEYOR
N.J. LIC. NO. 37207 COA NO. 24GA28122400

SIGNATURE DATE

I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF NEW JERSEY AND I HEREBY CERTIFY THAT THE PROPOSED ENVIRONMENTAL DISTURBANCES SHOWN ARE ACCURATE AND CORRESPOND WITH THE DETAILED ENGINEERING DRAWINGS.

WILLIAM SALMON, P.E.
PS&S, LLC
1433 HIGHWAY 34, SUITE A-4, WALL, NJ 07727
PROFESSIONAL ENGINEER
N.J. LIC. NO. 41319 COA NO. 24GA28032700

04/24/19
SIGNATURE DATE

PAULUS, SOKOLOWSKI AND SARTOR, LLC.
1433 ROUTE 34
SUITE A4
WALL, NJ 07727
PHONE: (848) 206-2626
CERTIFICATE OF AUTHORIZATION NO. 24GA28032700

ALL DIMENSIONS MUST BE VERIFIED BY THE CONTRACTOR. NOTIFY PAULUS, SOKOLOWSKI AND SARTOR, LLC. OF ANY CONFLICTS, ERRORS, AMBIGUITIES OR DISCREPANCIES IN THE CONTRACT DRAWINGS OR SPECIFICATIONS BEFORE PROCEEDING WITH CONSTRUCTION.

ALL DIMENSIONS SHALL BE AS NOTED IN WORDS OR NUMBERS ON THE CONTRACT DRAWINGS. DO NOT SCALE THE DRAWINGS TO DETERMINE DIMENSIONS.

THESE CONTRACT DRAWINGS CONTAIN DATA INTENDED SPECIFICALLY FOR THE NOTED PROJECT AND CLIENT. THEY ARE NOT INTENDED FOR USE ON EXTENSIONS OF THIS PROJECT OR FOR REUSE ON ANY OTHER PROJECT.

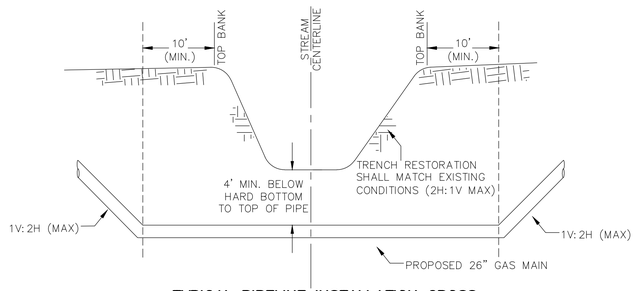
UNLESS THESE DRAWINGS ARE SPECIFICALLY DESIGNATED AS "CONSTRUCTION ISSUE", THESE DRAWINGS SHALL NOT BE USED FOR CONSTRUCTION OR IMPROVEMENTS DEPICTED HEREIN, CONTRACTORS SHALL NOTIFY THE DESIGN ENGINEER TO OBTAIN CONSTRUCTION DOCUMENTS.

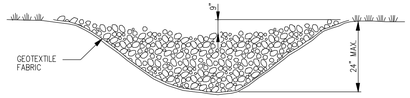
PROJECT
NORTHEAST SUPPLY
ENHANCEMENT PROJECT
PROPOSED
26" MADISON LOOP
OLD BRIDGE TOWNSHIP & SAYREVILLE BOROUGH
MIDDLESEX COUNTY, NEW JERSEY

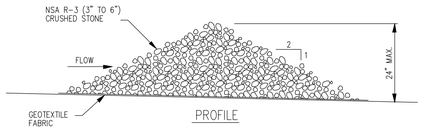
SHEET TITLE
CONSTRUCTION
DETAILS

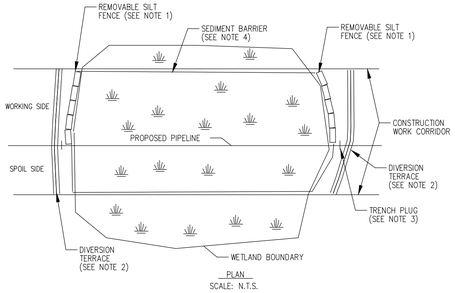
PROJECT NO.: 05731.0002
SCALE: AS SHOWN
DATE: 06/08/18
DRAWN BY: JPS
CHECKED BY: WS
SHEET 10 OF 13
SHEET NO. 10

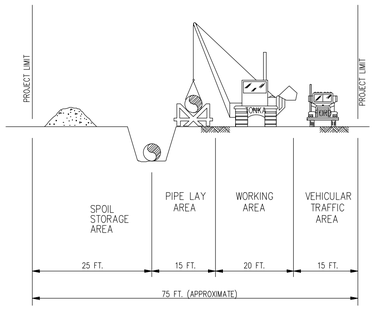
FILE NAME: P:\05731\0002\DWGs\CAD\C-Civil\Plotdwgs\05731-0002-Waterfront 04-09-19\05731-0002_DET.dwg LAST EDIT: 04/23/2019 - 03:58:22 PM LOGIN: jschooling@
XREFS: 36x24V_TitleBlock ; 36x24V_TitleBlock-Waterfront 05-21-18 IMAGE: Bridge Equipment Crossing.tif ; Sheet 15 - Bored Wetland Crossing.tif ; Sheet 16 - Construction Matting.tif ; Sheet 16 - Landscaping.tif ; Sheet 17 - Wetland and Waterbody Procedures.tif ; Sheet 18 - Wetland and Waterbody Procedures.tif ; Sheet 9 - Bypass Flume.tif ;

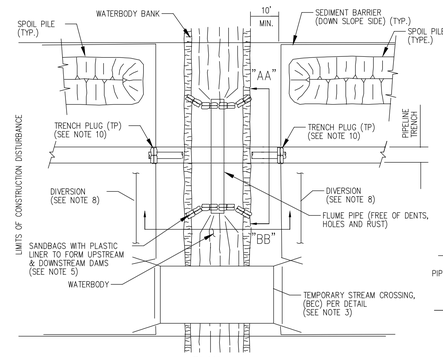


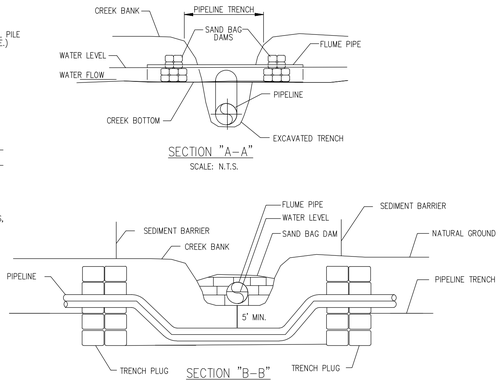


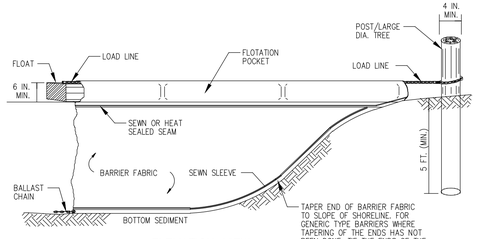


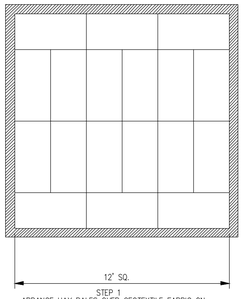


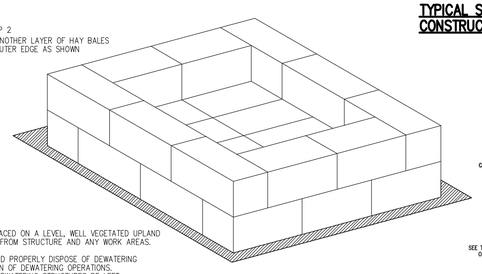


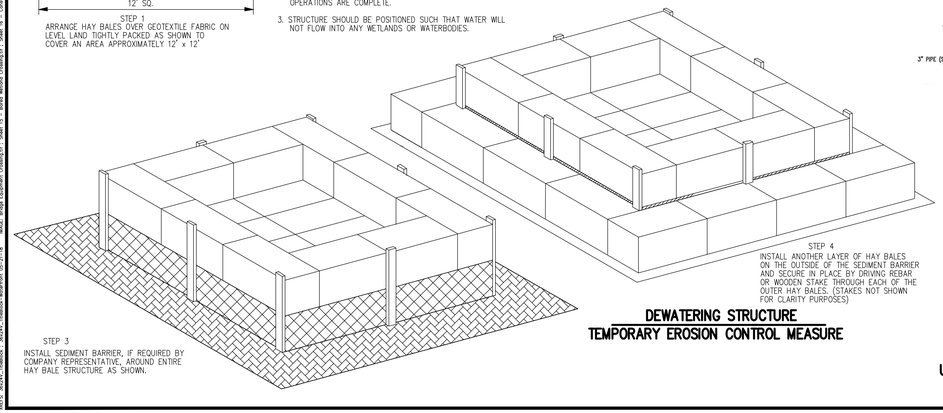


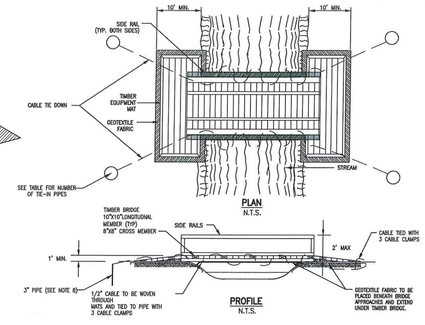


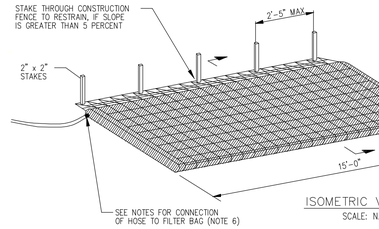


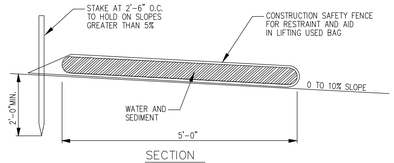


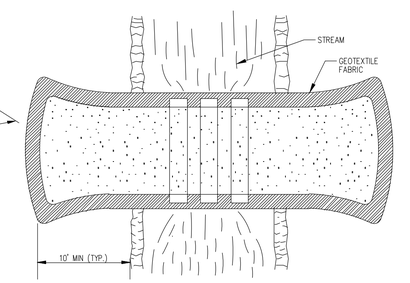


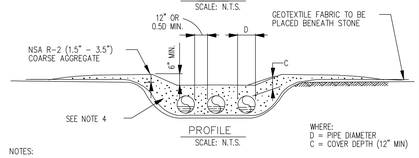












TYPICAL PIPELINE INSTALLATION CROSS SECTION AT STREAM/WETLANDS CROSSINGS

NOT TO SCALE

NOTES:
1. BACKFILL UPPERMOST 18 INCHES OF ANY EXCAVATION WITH THE ORIGINAL TOPSOIL MATERIAL.
2. REPLANT DISTURBED AREA WITH INDIGENOUS WETLAND OR RIPARIAN PLANTS.
3. A MINIMUM COVER OF FOUR (4) FEET IS TO BE PROVIDED BELOW CHANNEL INVERT. THE ELEVATION OF THE TRANSMISSION GAS MAIN SHALL REMAIN HORIZONTAL UNTIL TEN (10) FEET BEYOND TOP OF BANK, OR TWICE THE HEIGHT OF THE STREAM BANK, WHICHEVER IS GREATER.

CROSS SECTION

PROFILE

NOTES:

1. CHECK DAMS ARE APPLICABLE FOR SMALL DITCHES AND SWALES AND ARE NOT TO BE USED IN LIVE FLOWING STREAMS.
2. CHECK DAMS SHALL BE INSTALLED SUCH THAT COMPLETE COVERAGE OF THE ENTIRE WIDTH OF THE DITCH OR SWALE IS ACHIEVED.
3. THE CENTER OF THE CHECK DAM MUST BE CONSTRUCTED SUCH THAT IT IS 9 INCHES LOWER THAN THE EDGES OF THE CHECK DAM.
4. SEDIMENT SHALL BE REMOVED WHEN IT ACCUMULATES TO A DEPTH OF ONE-HALF THE ORIGINAL DAM HEIGHT.
5. CHECK DAMS SHALL BE REMOVED WHEN THE DITCH OR SWALE HAS BEEN SUCCESSFULLY REVEGETATED.

CHECK DAM
TEMPORARY EROSION CONTROL MEASURE

PLAN
SCALE: N.T.S.

NOTES:

1. INSTALL REMOVABLE SEDIMENT BARRIERS (HAY BALES) OR DRIVEABLE BERMS ACROSS THE TRAVEL LANE AT BOTH WETLAND BOUNDARIES. THE REMOVABLE SEDIMENT BARRIERS CAN BE REMOVED DURING THE CONSTRUCTION DAY, BUT MUST BE RE-INSTALLED AFTER CONSTRUCTION HAS STOPPED FOR THE DAY AND/OR WHEN HEAVY PRECIPITATION IS IMMINENT.
2. INSTALL DIVERSION TERRACES IMMEDIATELY UPSLOPE OF BOTH WETLAND BOUNDARIES TO PREVENT SEDIMENT FROM ENTERING THE WETLAND.
3. INSTALL TRENCH PLUGS AT BOTH WETLAND BOUNDARIES TO PREVENT DIVERSION OF WATER INTO UPLAND PORTIONS OF THE PIPELINE TRENCH AND TO KEEP ANY ACCUMULATED UPLAND TRENCH WATER OUT OF WETLAND.
4. FOR TYPE II ("SATURATED") AND TYPE III ("FLOODED") WETLANDS, INSTALL SEDIMENT BARRIERS AT WETLAND BOUNDARIES AND ALONG BOTH WETLAND EDGES. FOR TYPE I ("DRY") WETLANDS, INSTALL SEDIMENT BARRIERS AT WETLAND BOUNDARIES, ALONG THE EDGE OF THE SPOIL SIDE OF THE CONSTRUCTION CORRIDOR AND ALONG THE DOWNSLOPE EDGE OF THE WETLAND. IF THE DOWNSLOPE EDGE OF THE WETLAND IS THE SPOIL SIDE, THEN SEDIMENT BARRIERS ARE NOT REQUIRED ON THE WORKING SIDE OF THE CORRIDOR UNLESS EQUIPMENT TRAVERSING THROUGH THE WETLAND CAUSES SPOIL AND SEDIMENT TO EXIT THE CONSTRUCTION CORRIDOR.

WETLAND CROSSING CONFIGURATION
(TYPE I, II AND III WETLANDS)

NOTES:

1. ALL DIMENSIONS ARE APPROXIMATE.
2. ADDITIONAL WIDTH MAY BE DICTATED BY SOIL CONDITIONS, SLOPES OR CONGESTION.
3. SOIL REMOVED DURING TRENCHING SHOULD BE PLACED UPSLOPE OF THE TRENCH WHEREVER POSSIBLE.

TYPICAL SECTION OF CONSTRUCTION RIGHT-OF-WAY

PLAN
SCALE: N.T.S.

NOTES:

1. SEDIMENT BARRIERS SHALL BE INSTALLED AS DEPICTED AND ALONG DOWN GRADIENT SIDES OF WORK AREAS AND STAGING AREAS SUCH THAT NO HEAVY SILT LADEN WATER ENTERS THE WATERBODY OR LEAVES THE CONSTRUCTION RIGHT-OF-WAY.
2. HARD DITCH PLUGS MUST REMAIN IN PLACE AT CONVENIENT LOCATIONS TO SEPARATE MAINLINE DITCH FROM THE WATERBODY CROSSING UNTIL THE WATERBODY CROSSING IS INSTALLED AND BACKFILLED.
3. EQUIPMENT OPERATING IN THE WATERBODY SHALL BE LIMITED TO THAT NEEDED TO PERFORM CONSTRUCTION. IF OTHER TYPES OF EQUIPMENT MUST CROSS THE WATERBODY, CONTRACTOR SHALL PROVIDE AND USE A TEMPORARY STREAM CROSSING (BEC).
4. STAGING AREA(S) FOR WATERBODY CROSSING(S), WHEN REQUIRED, SHALL BE LOCATED AT LEAST 50 FEET FROM WATER'S EDGE AND SHALL BE OF A MINIMUM SIZE NEEDED FOR CONVENIENT PREPARATION.
5. FLUME CROSSING METHOD REQUIREMENTS INCLUDE:
   (A) INSTALL FLUME PIPE(S) AFTER BLASTING (IF NECESSARY), BUT BEFORE ANY TRENCHING.
   (B) USE SAND BAG OR SAND BAG AND PLASTIC SHEETING DIVERSION STRUCTURE OR EQUIVALENT TO DEVELOP AN EFFECTIVE SEAL AND TO DIVERT STREAM FLOW THROUGH THE FLUME PIPE (SOME MODIFICATIONS TO THE STREAM BOTTOM MAY BE REQUIRED TO ACHIEVE AN EFFECTIVE SEAL).
   (C) PROPERLY ALIGN FLUME PIPE(S) TO PREVENT BANK EROSION AND STREAM BED SCOUR.
   (D) DO NOT REMOVE FLUME PIPE DURING TRENCHING, PIPE LAYING, OR BACKFILLING ACTIVITIES, OR INITIAL STREAM BED RESTORATION EFFORTS.
   (E) REMOVE ALL FLUME PIPES AND DAMS THAT ARE NOT ALSO PART OF THE EQUIPMENT BRIDGE AS SOON AS FINAL CLEANUP OF THE STREAM BED AND BANK IS COMPLETE.
6. THE FLUME PIPE MUST BE SIZED TO PREVENT IMPEDIMENT OF THE UPSTREAM FLOW AND TO MAINTAIN ADEQUATE FLOW RATES TO PROTECT AQUATIC LIFE, AND PREVENT THE INTERRUPTION OF EXISTING DOWNSTREAM USES.

SECTION "A-A"
SCALE: N.T.S.

SECTION "B-B"
SCALE: N.T.S.

7. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED DAILY AND REPAIRED IF NECESSARY.
8. INSTALL DIVERSION TRENCHES AT THE BASE OF ALL SLOPES ADJACENT TO THE WATERBODY.
9. CHEMICALS, FUELS AND LUBRICATING OILS SHALL NOT BE STORED AND EQUIPMENT SHALL NOT BE REFUELED WITHIN 100 FEET OF THE WATERBODY.
10. INSTALL TRENCH PLUGS ON BOTH SIDES OF THE WATERBODY TO PREVENT DIVERSION OF WATER INTO UPLAND PORTIONS OF THE PIPELINE TRENCH AND TO KEEP ANY ACCUMULATED TRENCH WATER OUT OF THE WATERBODY.
11. CONTRACTOR SHALL POSTPONE GRADING OF RIGHT-OF-WAY IMMEDIATELY ADJACENT TO WATERBODY UNTIL STAGING AREA IS PREPARED AND WORK IN THE WATERBODY IS READY TO COMMENCE.

FLUME CROSSING
TEMPORARY EROSION CONTROL MEASURE

ELEVATION VIEW
SCALE: N.T.S.

NOTES:

1. TURBIDITY CURTAIN IS TO BE USED ONLY WHERE SPECIFIED ON THE CONSTRUCTION DRAWINGS, OR AS DIRECTED BY COMPANY REPRESENTATIVE.
2. TURBIDITY CURTAIN IS NOT TO BE USED TO FILTER STEADY STREAM FLOW.

TURBIDITY CURTAIN

STEP 1
ARRANGE HAY BALES OVER GEOTEXTILE FABRIC ON LEVEL LAND TIGHTLY PACKED AS SHOWN TO COVER AN AREA APPROXIMATELY 12' x 12'

STEP 2
INSTALL ANOTHER LAYER OF HAY BALES ON THE OUTER EDGE AS SHOWN

STEP 3
INSTALL SEDIMENT BARRIER, IF REQUIRED BY COMPANY REPRESENTATIVE, AROUND ENTIRE HAY BALE STRUCTURE AS SHOWN.

STEP 4
INSTALL ANOTHER LAYER OF HAY BALES ON THE OUTSIDE OF THE SEDIMENT BARRIER AND SECURE IN PLACE BY DRIVING REBAR OR WOODEN STAKE THROUGH EACH OF THE OUTER HAY BALES. (STAKES NOT SHOWN FOR CLARITY PURPOSES)

NOTES:

1. WHERE POSSIBLE STRUCTURE SHALL BE PLACED ON A LEVEL, WELL VEGETATED UPLAND SITE SUCH THAT WATER WILL FLOW AWAY FROM STRUCTURE AND ANY WORK AREAS.
2. CONTRACTOR SHALL PROPERLY REMOVE AND PROPERLY DISPOSE OF DEWATERING STRUCTURE IMMEDIATELY UPON COMPLETION OF DEWATERING OPERATIONS. UNDER NO CIRCUMSTANCES SHALL USED DEWATERING STRUCTURES BE LEFT IN PLACE FOR A PERIOD OF TIME GREATER THAN 48 HOURS AFTER DEWATERING OPERATIONS ARE COMPLETE.
3. STRUCTURE SHOULD BE POSITIONED SUCH THAT WATER WILL NOT FLOW INTO ANY WETLANDS OR WATERBODIES.

DEWATERING STRUCTURE
TEMPORARY EROSION CONTROL MEASURE

PLAN
N.T.S.

PROFILE
N.T.S.

NOTE:

1. MATERIALS PLACED ALONG SIDE STREAM CHANNEL SHALL BE COMPLETELY REMOVED DURING FINAL CLEAN-UP. REMOVAL OF THIS STRUCTURE IS NOT CONTINGENT UPON ESTABLISHMENT OF PERMANENT VEGETATION.
2. PERIODICALLY CHECK BRIDGE INSTALLATION AND REMOVE BUILD-UP OF SEDIMENT OR DEBRIS ON BRIDGE.
3. BRIDGE APPROACHES SHALL BE TIMBER EQUIPMENT MATS (OR EQUAL).
4. SIDE RAILS SHALL BE INSTALLED ON BOTH SIDES OF THE BRIDGE EQUIPMENT CROSSING IN ORDER TO PREVENT SEDIMENT FROM ENTERING THE WATERBODY. SIDE RAILS TO BE CONSTRUCTED OF PLYWOOD NAILED TO THE OUTER EDGES OF THE TIMBER EQUIPMENT MATS.
5. TIMBER EQUIPMENT MATS SHALL EXTEND A MINIMUM OF 10 FEET OUTSIDE OF THE WATERBODY, WETLAND OR RIPARIAN ZONE BOUNDARIES.
6. THE STRUCTURE SHALL BE LARGE ENOUGH TO CONVEY FLOW EXPECTED FROM A 2-YEAR FREQUENCY, 24 HOUR DURATION STORM WITHOUT APPRECIABLE ALTERING THE STREAM FLOW CHARACTERISTICS.
7. TIMBER BRIDGES SHALL BE ADEQUATELY ANCHORED AT BOTH ENDS.
8. 3" PIPE TO BE DRIVEN INTO THE GROUND TO MINIMUM 1' BELOW GRADE TO ASSIGNED DEPTH OR REFUSAL.
9. BRIDGE EQUIPMENT CROSSING DETAIL TAKEN FROM PLAN ENTITLED "STANDARD ENVIRONMENTAL DETAIL – BRIDGE EQUIPMENT CROSSING," DATED AUGUST 15, 2017, PREPARED BY TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC.

BRIDGE EQUIPMENT CROSSING
TEMPORARY EROSION CONTROL MEASURE
UNLESS OTHERWISE INDICATED ON PLAN, CROSSING SHALL BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

ISOMETRIC VIEW
SCALE: N.T.S.

SECTION
SCALE: N.T.S.

NOTES:

1. FILTER BAG SHALL BE PLACED ON A SLOPING OR LEVEL, WELL VEGETATED SITE SUCH THAT WATER WILL FLOW AWAY FROM DEVICE AND ANY WORK AREAS.
2. THE FILTER BAG MUST BE STAKED IN PLACE IF THE FILTER BAG IS PLACED ON A SLOPE GREATER THAN 5 PERCENT.
3. FILTER BAG SHALL NOT BE USED FOR DISCHARGE FLOWS GREATER THAN 300 GPM.
4. CONTRACTOR SHALL PROPERLY REMOVE AND PROPERLY DISPOSE OF USED FILTER BAGS IMMEDIATELY UPON COMPLETION OF DEWATERING OPERATIONS. UNDER NO CIRCUMSTANCES SHALL USED FILTER BAGS BE LEFT IN PLACE FOR A PERIOD OF TIME GREATER THAN 48 HOURS AFTER DEWATERING OPERATIONS ARE COMPLETE.
5. SEDIMENT FROM BAG SHALL BE SPREAD IN AN UPLAND AREA WITHIN THE CONSTRUCTION CORRIDOR AND THE AREA SHALL BE STABILIZED AND REVEGETATED.
6. TO ATTACH HOSE, CUT OPEN CORNER OF FILTER BAG, GATHER UP MATERIAL AND CLAMP TO A SHORT SECTION OF STEEL PIPE. CLAMP HOSE TO OTHER END OF PIPE. BOTH CONNECTIONS SHALL BE WATERTIGHT.
7. CONTRACTOR SHALL ONLY INSTALL ONE DEWATERING HOSE PER FILTER BAG.
8. FILTER BAG/DEWATER LOCATIONS SHALL BE AS SHOWN ON SOIL EROSION AND SEDIMENT CONTROL PLANS AND AS DETERMINED IN THE FIELD IN COORDINATION WITH THE OWNER.

FILTER BAG
TEMPORARY EROSION CONTROL MEASURE

PLAN VIEW
SCALE: N.T.S.

PROFILE
SCALE: N.T.S.

WHERE:
D = PIPE DIAMETER
C = COVER DEPTH (12" MIN)

NOTES:

1. PERIODICALLY CHECK BRIDGE INSTALLATION AND REMOVE BUILD-UP OF SEDIMENT OR DEBRIS ON BRIDGE.
2. CULVERTS SHALL BE PLACED AT LEAST ONE- HALF (1/2) THEIR DIAMETER APART.
3. MATERIALS PLACED IN STREAM CHANNEL SHALL BE COMPLETELY REMOVED DURING FINAL CLEAN-UP. REMOVAL OF THIS ITEM IS NOT CONTINGENT UPON ESTABLISHMENT OF PERMANENT VEGETATION.
4. RIPRAP (OR ROCK) TO 10" AVERAGE DIAMETER CAN BE USED FOR ALL BUT THE TOP 6" OF STONE FILL. THE TOP 6" MUST CONSIST OF NSA R-2 (1.5" – 3.5") COARSE AGGREGATE.

CULVERT EQUIPMENT CROSSING

NOTES:

1. PIPELINE INSTALLATION PROCEDURES, WATERBODY CROSSINGS AND DIVERSION METHODOLOGY SHALL BE ESTABLISHED IN THE FIELD IN COORDINATION WITH THE OWNER.

REV. / ISSUE	DATE	DESCRIPTION
1	4/22/19	REV TRANSITION AREA WIDTH PER NJDEP

LEGEND

▬ ▬ ▬	PROPERTY LINE
- - - 430 - - -	EXISTING CONTOURS
427.0 X	EXISTING SPOT ELEVATION
═	EXISTING STORM SEWER
— W —	EXISTING WATER MAIN
▬	EXISTING GAS MAIN
🟥	PROPOSED GAS MAIN
	EXISTING SIGN
	EXISTING UTILITY POLE
⋈	PROPOSED GAS VALVE
—	EXISTING TREELINE/CANOPY
	EXISTING TREE
—	PROPOSED TREELINE
—✕✕—✕—	EXISTING FENCE
	EXISTING RETAINING WALL
— — — —	EXISTING PERMANENT EASEMENT/TGPL R.O.W.
— — — —	PROPOSED PERMANENT EASEMENT
—	PROPOSED LIMIT OF DISTURBANCE
—	PROPOSED HDD LIMIT OF DISTURBANCE
—	STREAM LINE
—	WETLANDS BOUNDARY
—	COASTAL WETLANDS BOUNDARY
—	TOP OF BANK
—	50' WETLAND TRANSITION AREA
—	RIPARIAN BUFFER
—	MEAN HIGH WATER LINE
—	SPRING HIGH WATER LINE
—	MEAN HIGH WATER LINE 500' BUFFER
—	TIDELANDS
⑤→ W–T01–005A–1	PHOTO LOCATION (SEE REPORT)
△1620	WETLAND FLAGS
△1432	STATE OPEN WATERS FLAGS
⊕ 1609	FRESHWATER WETLAND/STATE OPEN WATER DATA POINTS

I AM A DULY REGISTERED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF NEW JERSEY AND I HEREBY CERTIFY THAT EXISTING CONDITIONS SHOWN WERE FIELD LOCATED AND PREPARED UNDER MY DIRECT SUPERVISION.

THOMAS J. MURPHY, PLS
DW SMITH ASSOCIATES, LLC
1450 STATE ROUTE 34, WALL, NJ 07753
PROFESSIONAL LAND SURVEYOR
N.J. LIC. NO. 37207 COA NO. 24GA28122400

SIGNATURE DATE

I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF NEW JERSEY AND I HEREBY CERTIFY THAT THE PROPOSED ENVIRONMENTAL DISTURBANCES SHOWN ARE ACCURATE AND CORRESPOND WITH THE DETAILED ENGINEERING DRAWINGS.

WILLIAM SALMON, P.E.
PS&S, LLC
1433 HIGHWAY 34, SUITE A-4, WALL, NJ 07727
PROFESSIONAL ENGINEER
N.J. LIC. NO. 41319 COA NO. 24GA28032700

04/24/19
SIGNATURE DATE

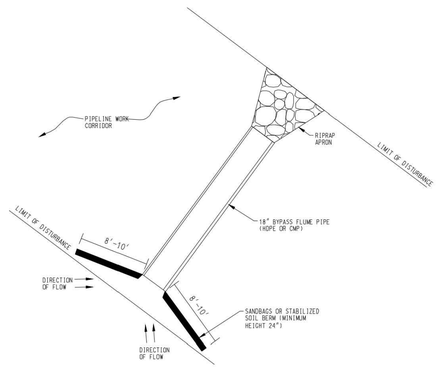
PAULUS, SOKOLOWSKI AND SARTOR, LLC.
PS&S
1433 ROUTE 34
SUITE A4
WALL, NJ 07727
PHONE: (848) 206-2626
CERTIFICATE OF AUTHORIZATION NO. 24GA28032700

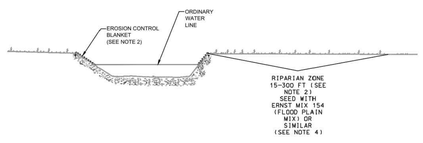
PROJECT
NORTHEAST SUPPLY
ENHANCEMENT PROJECT
PROPOSED
26" MADISON LOOP
OLD BRIDGE TOWNSHIP & SAYREVILLE BOROUGH
MIDDLESEX COUNTY, NEW JERSEY

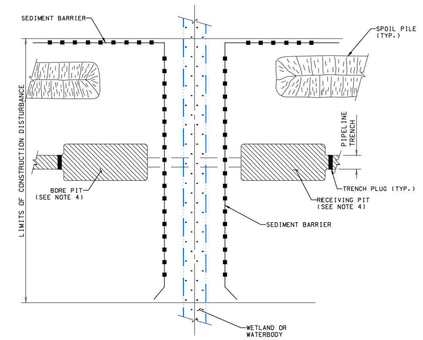
SHEET TITLE
CONSTRUCTION
DETAILS

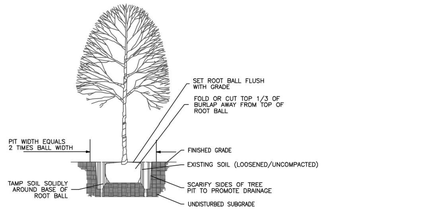
PROJECT NO.: 05731.0002
SCALE: AS SHOWN
DATE: 06/08/18
DRAWN BY: JPS
CHECKED BY: WS
SHEET 11 OF 13
SHEET NO.
11

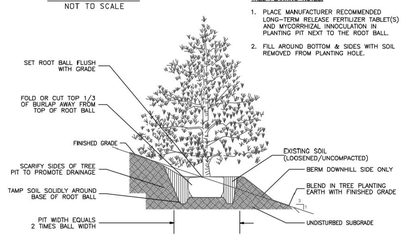
FILE NAME: P:\05731\0002\DWGs\CAD\C-Civil\Plotdwgs\05731-0002-Waterfront 04-09-19\05731-0002_DET.dwg LAST EDIT: 04/23/2019 – 03:58:45 PM LOGIN: jschooling@
XREFS: 36x24V_TitleBlock ; 36x24V_TitleBlock-Waterfront 05-21-18 IMAGE: Bridge Equipment Crossing.tif ; Sheet 15 – Bored Wetland Crossing.tif ; Sheet 16 – Construction Matting.tif ; Sheet 16 – Landscaping.tif ; Sheet 17 – Wetland and Waterbody Procedures.tif ; Sheet 18 – Wetland and Waterbody Procedures.tif ; Sheet 9 – Bypass Flume.tif ;

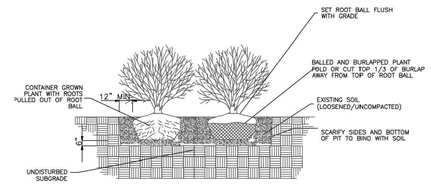


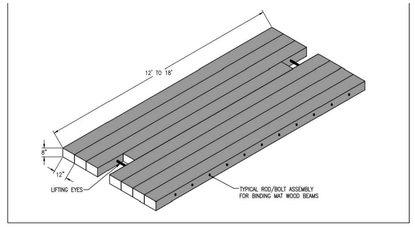


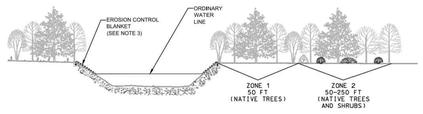












BYPASS FLUME PIPE (FP)

TEMPORARY EROSION CONTROL MEASURE

NOTES:

1. RESTORE IMPACTED RIPARIAN ZONE FOR A MINIMUM OF 15 FEET LANDWARD OF THE TOP OF BANK. IF THE PRE-IMPACT RIPARIAN BUFFER OF NATIVE HERBACEOUS AND SHRUB VEGETATION EXCEEDS 15 FEET BEYOND THE TOP OF BANK, THE AREA TO BE SEEDED SHOULD BE AS FOLLOWS:

   300 FT (CATEGORY 1 – NJ)
   150 FT (TROUT WATERS – NJ)
   50 FT (NON-TROUT WATERS – NJ)

   OR EXISTING WIDTH OF RIPARIAN ZONE IF LESS THAN THESE MINIMUM REQUIREMENTS.
2. EROSION CONTROL BLANKETS SHALL BE PLACED ON RESTORED BANKS TO THE ORDINARY WATER LINE AND UPLAND AREAS SHOULD BE INSTALLED A MINIMUM OF 50 FT BEYOND THE TOP OF BANK (MORE AS NEEDED DEPENDING ON SLOPES). EROSION CONTROL BLANKETS SHALL NOT BE PLACED IN WETLANDS. SEE DETAIL ON SHEET 22.
3. ERNST MIX 154 (FLOOD PLAIN MIX) OR SIMILAR TO BE APPLIED AT 15 LBS PER ACRE OR 1/3-1/2 LB PER 1,000 SQ. FT. ON RESTORED BANKS AND IN RIPARIAN ZONE.
4. FOR DETAILS REGARDING RECOMMENDED SEED MIX, SEE TABLE 1 ON THIS SHEET.
5. LIVE STAKES SHOULD BE PLANTED ALONG WATER BODY BANKS WITH EXISTING WOODY VEGETATION.

TYPICAL VEGETATION RESTORATION – 2
WATER BODIES WITH NON-FORESTED RIPARIAN BUFFER

LIVE STAKE INSTALLATION

NOT TO SCALE

LIVE STAKE DETAIL

NOT TO SCALE

NOTES:

1. THIS DETAIL IS FOR THE STABILIZATION OF WATER BODIES WITH EXISTING WOODY VEGETATION ALONG THE BANKS AND SHOULD BE COMBINED AS NEEDED WITH THE OTHER VEGETATION RESTORATION OPTIONS.
2. EROSION CONTROL BLANKETS SHALL BE PLACED ON RESTORED BANKS TO THE ORDINARY WATER LINE AND IN UPLAND AREAS SHOULD BE INSTALLED A MINIMUM OF 50 FT BEYOND THE TOP OF BANK (MORE AS NEEDED DEPENDING ON SLOPES). EROSION CONTROL BLANKETS SHALL NOT BE PLACED IN WETLANDS. SEE DETAIL ON SHEET 22.
3. TWO ROWS OF LIVE STAKES SHALL BE EVENLY SPACED 2 FEET APART.
4. LIVE STAKES SHALL BE DRIVEN UNTIL APPROXIMATELY 3/4 OF THE LIVE STAKE IS WITHIN THE GROUND.
5. IF STARTER HOLE IS NEEDED, MINIMIZE AIR POCKET.
6. AVOID STRIPPING THE BARK OR BRUISING OF STAKES DURING INSTALLATION. DO NOT USE AXE OR SLEDGE FOR DRIVING STAKES. IN HARD GROUND USE AN IRON BAR OR STAR DRILL TO PREPARE HOLES FOR THE STAKES.

VEGETATION RESTORATION – LIVE STAKES
WATER BODIES WITH EXISTING VEGETATED BANKS
(WOODY MATERIAL)

PLAN
SCALE: N.T.S.

NOTES:

1. SEDIMENT BARRIER SHALL BE INSTALLED AT THE BASE OF SLOPES ADJACENT TO WATER BODY CROSSINGS WHERE VEGETATION IS DISTURBED, TO INTERCEPT SURFACE RUNOFF.
2. PROTECTION FOR SPOIL PILES SHALL BE INSTALLED ONLY WHERE SEDIMENT BARRIERS ACROSS THE ENTIRE DISTURBED AREA ARE NOT REQUIRED.
3. SEDIMENT BARRIERS SHALL REMAIN IN PLACE UNTIL PERMANENT REVEGETATION IS ESTABLISHED.
4. WATER REMOVED FROM BORE PIT AND RECEIVING PIT SHALL BE FILTERED THROUGH A DEWATERING STRUCTURE OR FILTER BAG.
5. IF WELL POINTING IS REQUIRED PRIOR TO EXCAVATING BORE PITS, CONTRACTOR SHALL CONSULT WITH COMPANY'S ENVIRONMENTAL INSPECTOR PRIOR TO COMMENCEMENT OF WORK IN ORDER TO DETERMINE PROPER DEWATERING LOCATION.
6. CONTRACTOR SHALL BE REQUIRED TO KEEP THE ROAD CLEAN OF DEBRIS AT ALL TIMES.
7. CONTRACTOR MAY ELECT TO UTILIZE SHEET PILING IN ORDER TO STABILIZE BORE PITS.
8. DEPENDING ON TOPOGRAPHY AND STATE REQUIREMENTS, SEDIMENT BARRIER MAY BE REQUIRED ACROSS THE ENTIRE CONSTRUCTION RIGHT OF WAY AT THE EDGE OF ROAD. IN ADDITION TO THIS DETAIL, REFER TO THE ENVIRONMENTAL ALIGNMENT DRAWINGS FOR PLACEMENT OF SEDIMENT BARRIERS.

BORED WETLAND/WATERBODY CROSSING (WBX)

TEMPORARY EROSION CONTROL MEASURE

TREE INSTALLATION

NOT TO SCALE

TREE PLANTING NOTES:

1. PLACE MANUFACTURER RECOMMENDED LONG-TERM RELEASE FERTILIZER TABLET(S) AND MYCORRHIZAL INNOCULATION IN PLANTING PIT NEXT TO THE ROOT BALL.
2. FILL AROUND BOTTOM & SIDES WITH SOIL REMOVED FROM PLANTING HOLE.

TREE INSTALLATION ON A SLOPE

NOT TO SCALE

VEGETATION RESTORATION
TREE INSTALLATION

SHRUB INSTALLATION

NOT TO SCALE

SHRUB PLANTING NOTES:

1. PLACE MANUFACTURER RECOMMENDED LONG-TERM RELEASE FERTILIZER TABLET(S) AND MYCORRHIZAL INNOCULATION IN PLANTING PIT NEXT TO THE ROOT BALL.
2. FILL AROUND BOTTOM & SIDES WITH SOIL REMOVED FROM PLANTING HOLE.

VEGETATION RESTORATION
SHRUB INSTALLATION

PRE-FABRICATED CONSTRUCTION MATTING (CM)

TEMPORARY EROSION CONTROL MEASURE

NOTES:

1. CONSTRUCTION MATTING SHALL BE PROVIDED WITHIN WETLANDS, WETLAND BUFFERS AND RIPARIAN ZONE LIMITS.

NOTES:

1. RESTORE IMPACTED FOREST BUFFER FOR:

   300 FT (CATEGORY 1 – NJ)
   150 FT (TROUT WATERS – NJ)
   50 FT (NON-TROUT WATERS – NJ)

   OR EXISTING WIDTH OF FOREST BUFFER IF LESS THAN THESE MINIMUM REQUIREMENTS.
2. NATIVE TREES AND/OR SHRUBS IN ZONE 1 AND ZONE 2 SHOULD BE PLACED 12' APART.
3. EROSION CONTROL BLANKETS SHALL BE PLACED ON RESTORED BANKS TO THE ORDINARY WATER LINE AND IN UPLAND AREAS SHOULD BE INSTALLED A MINIMUM OF 50 FT BEYOND THE TOP OF BANK (MORE AS NEEDED DEPENDING ON SLOPES). EROSION CONTROL BLANKETS SHALL NOT BE PLACED IN WETLANDS. SEE DETAIL ON SHEET 22.
4. ERNST MIX 178 (RIPARIAN BUFFER MIX) OR SIMILAR TO BE APPLIED AT 20 LBS PER ACRE OR 1/2 LB PER 1,000 SQ. FT. ON RESTORED BANKS AND IN ZONE 1 AND ZONE 2.
5. FOR DETAILS REGARDING RECOMMENDED TREES, SHRUBS, LIVE STAKES AND SEED MIX SEE TABLES 1 AND 2 ON THIS SHEET.
6. LIVE STAKES SHOULD BE PLANTED ALONG WATER BODY BANKS WITH EXISTING WOODY VEGETATION.
7. NO TREES ARE TO BE PLANTED IN AN AREA 10 FEET WIDE CENTERED OVER THE PIPE LINE.

TYPICAL VEGETATION RESTORATION – 1
WATER BODIES WITH EXISTING FORESTED RIPARIAN BUFFER

TABLE 1 - RECOMMENDED SEEDING SCHEDULE

RIPARIAN BUFFER MIX
(ERNMX-178)
APPLICATION RATE: 20 LBS PER ACRE OR 1/2 LB PER 1,000 SQUARE FEET

SCIENTIFIC NAME	COMMON NAME	PERCENT COMPOSITION
PANICUM CLANDESTINUM	DEERTONGUE	13%
CAREX VULPENOIDEA	FOX SEDGE	10%
ELYMUS VIRGINICUS	VIRGINIA WILDRYE	8%
SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	8%
ELYMUS RIPARIUS	RIVERBANK WILDRYE	8%
SORGHASTRUM NUTANS	INDIANGRASS	7%
CHAMAECRISTA FASCICULATA	PARTRIDGE PEA	6%
CORNUS AMOMUM	SILKY DOGWOOD	6%
ANDROPOGON GERARDII	BIG BLUESTEM	5%
PANICUM VIRGATUM	SWITCHGRASS	4%
RUDBECKIA HIRTA	BLACKEYED SUSAN	3%
BAPTISIA AUSTRALIS	BLUE O INDIGO	3%
VERBENA HASTATA	BLUE VERVAIN	3%
VIBURNUM DENTATUM	ARROWWOOD	2%
MONARDA PUNCTATA	SPOTTED BEEBALM	2%
VERNONIA GIGANTEA	GIANT IRONWEED	2%
EUPATORIUM PERFOLIATUM	BONESET	2%
JUNCUS EFFUSUS	SOFT RUSH	2%
HELIOPSIS HELIANTHOIDES	OXEYE SUNFLOWER	2%
EUTHAMIA GRAMINIFOLIA	GRASSLEAF GOLDENROD	1%
PARTHENIUM INTEGRIFOLIUM	WILD QUININE	1%
LOBELIA SIPHILITICA	GREAT BLUE LOBELIA	1%
HELENIUM AUTUMNALE	COMMON SNEEZEWEED	1%

NOTES:

1. THIS MIX WILL BE APPLIED (SEEDED AND MULCHED) OVER ANY EXPOSED GROUND SURFACE WITHIN ZONE 1 AND ZONE 2 OF THE RESTORED FORESTED RIPARIAN BUFFER.
2. THIS MIX IS PREPARED BY ERNST CONSERVATION SEED. A SUITABLE ALTERNATIVE MAY BE USED BASED UPON APPROVAL BY THE ENGINEER OR REPRESENTATIVE.

FLOOD PLAIN MIX
(ERNMX-154)
APPLICATION RATE: 15 LBS PER ACRE OR 1/3 - 1/2 LB PER 1,000 SQUARE FEET

SCIENTIFIC NAME	COMMON NAME	PERCENT COMPOSITION
ELYMUS VIRGINICUS	VIRGINIA WILDRYE	20%
CAREX VULPENOIDEA	FOX SEDGE	20%
PANICUM CLANDESTINUM	DEERTONGUE	14%
SORGHASTRUM NUTANS	INDIANGRASS	10%
ANDROPOGON GERARDII	BIG BLUESTEM	10%
PANICUM VIRGATUM	SWITCHGRASS	5%
CAREX CRINITA	FRINGED (NODDING) SEDGE	4%
HELENIUM AUTUMNALE	COMMON SNEEZEWEED	3%
VERBENA HASTATA	BLUE VERVAIN	3%
HELIOPSIS HELEANTHOIDES	OXEYE SUNFLOWER	2%
EUPATORIUM PERFOLIATUM	BONESET	2%
ASTER PUNICEUS	PURPLESTEM ASTER	2%
ASCLEPIAS INCARNATA	SWAMP MILKWEED	1%
LUDWIGIA ALTERNIFOLIA	SEEDBOX	1%
MONARDA PUNCTATA	SPOTTED BEEBALM	1%
EUTHAMIA GRAMINIFOLIA	GRASSLEAF GOLDENROD	1%

NOTES:

1. THIS MIX WILL BE APPLIED (SEEDED AND MULCHED) OVER ANY EXPOSED GROUND SURFACE WITHIN THE RESTORED NON-FORESTED RIPARIAN BUFFER.
2. THIS MIX IS PREPARED BY ERNST CONSERVATION SEED. A SUITABLE ALTERNATIVE MAY BE USED BASED UPON APPROVAL BY THE ENGINEER OR REPRESENTATIVE.

WETLAND AND WATERBODY CONSTRUCTION AND MITIGATION PROCEDURES

I. APPLICABILITY

A. THE INTENT OF THESE PROCEDURES IS TO ASSIST PROJECT SPONSORS BY IDENTIFYING BASELINE MITIGATION MEASURES FOR MINIMIZING THE EXTENT AND DURATION OF PROJECT-RELATED DISTURBANCE ON WETLANDS AND WATERBODIES. PROJECT SPONSORS SHALL SPECIFY IN THEIR APPLICATIONS FOR A NEW FERC AUTHORIZATION, AND IN PRIOR NOTICE AND ADVANCE NOTICE FILINGS, ANY INDIVIDUAL MEASURES IN THESE PROCEDURES THEY CONSIDER UNNECESSARY, TECHNICALLY INFEASIBLE, OR UNSUITABLE DUE TO LOCAL CONDITIONS AND FULLY DESCRIBE ANY ALTERNATIVE MEASURES THEY WOULD USE. PROJECT SPONSORS SHALL ALSO EXPLAIN HOW THOSE ALTERNATIVE MEASURES WOULD ACHIEVE A COMPARABLE LEVEL OF MITIGATION.
ONCE A PROJECT IS AUTHORIZED, PROJECT SPONSORS CAN REQUEST FURTHER CHANGES AS VARIANCES TO THE MEASURES IN THESE PROCEDURES (OR THE APPLICANT'S APPROVED PROCEDURES). THE DIRECTOR OF THE OFFICE OF ENERGY PROJECTS (DIRECTOR) WILL CONSIDER APPROVAL OF VARIANCES UPON THE PROJECT SPONSOR'S WRITTEN REQUEST, IF THE DIRECTOR AGREES THAT A VARIANCE:

1. PROVIDES EQUAL OR BETTER ENVIRONMENTAL PROTECTION;
2. IS NECESSARY BECAUSE A PORTION OF THESE PROCEDURES IS INFEASIBLE OR UNWORKABLE BASED ON PROJECT-SPECIFIC CONDITIONS; OR
3. IS SPECIFICALLY REQUIRED IN WRITING BY ANOTHER FEDERAL, STATE, OR NATIVE AMERICAN LAND MANAGEMENT AGENCY FOR THE PORTION OF THE PROJECT ON ITS LAND OR UNDER ITS JURISDICTION.

SPONSORS OF PROJECTS PLANNED FOR CONSTRUCTION UNDER THE AUTOMATIC AUTHORIZATION PROVISIONS IN THE FERC'S REGULATIONS MUST RECEIVE WRITTEN APPROVAL FOR ANY VARIANCES IN ADVANCE OF CONSTRUCTION.
PROJECT-RELATED IMPACTS ON NON-WETLAND AREAS ARE ADDRESSED IN THE STAFF'S UPLAND EROSION CONTROL, REVEGETATION, AND MAINTENANCE PLAN (PLAN).

B. DEFINITIONS

1. "WATERBODY" INCLUDES ANY NATURAL OR ARTIFICIAL STREAM, RIVER, OR DRAINAGE WITH PERCEPTIBLE FLOW AT THE TIME OF CROSSING, AND OTHER PERMANENT WATERBODIES SUCH AS PONDS AND LAKES:
   A. "MINOR WATERBODY" INCLUDES ALL WATERBODIES LESS THAN OR EQUAL TO 10 FEET WIDE AT THE WATER'S EDGE AT THE TIME OF CROSSING;
   B. "INTERMEDIATE WATERBODY" INCLUDES ALL WATERBODIES GREATER THAN 10 FEET WIDE BUT LESS THAN OR EQUAL TO 100 FEET WIDE AT THE WATER'S EDGE AT THE TIME OF CROSSING; AND
   C. "MAJOR WATERBODY" INCLUDES ALL WATERBODIES GREATER THAN 100 FEET WIDE AT THE WATER'S EDGE AT THE TIME OF CROSSING.
2. "WETLAND" INCLUDES ANY AREA THAT IS NOT IN ACTIVELY CULTIVATED OR ROTATED CROPLAND AND THAT SATISFIES THE REQUIREMENTS OF THE CURRENT FEDERAL METHODOLOGY FOR IDENTIFYING AND DELINEATING WETLANDS.

II. PRECONSTRUCTION FILING

A. THE FOLLOWING INFORMATION MUST BE FILED WITH THE SECRETARY OF THE FERC (SECRETARY) PRIOR TO THE BEGINNING OF CONSTRUCTION, FOR THE REVIEW AND WRITTEN APPROVAL BY THE DIRECTOR:

1. SITE-SPECIFIC JUSTIFICATIONS FOR EXTRA WORK AREAS THAT WOULD BE CLOSER THAN 50 FEET FROM A WATERBODY OR WETLAND; AND
2. SITE-SPECIFIC JUSTIFICATIONS FOR THE USE OF A CONSTRUCTION RIGHT-OF-WAY GREATER THAN 75-FEET-WIDE IN WETLANDS.

B. THE FOLLOWING INFORMATION MUST BE FILED WITH THE SECRETARY PRIOR TO THE BEGINNING OF CONSTRUCTION. THESE FILING REQUIREMENTS DO NOT APPLY TO PROJECTS CONSTRUCTED UNDER THE AUTOMATIC AUTHORIZATION PROVISIONS IN THE FERC'S REGULATIONS:

1. SPILL PREVENTION AND RESPONSE PROCEDURES SPECIFIED IN SECTION IV.A;
2. A SCHEDULE IDENTIFYING WHEN TRENCHING OR BLASTING WILL OCCUR WITHIN EACH WATERBODY GREATER THAN 10 FEET WIDE, WITHIN ANY DESIGNATED COLDWATER FISHERY, AND WITHIN ANY WATERBODY IDENTIFIED AS HABITAT FOR FEDERALLY-LISTED THREATENED OR ENDANGERED SPECIES. THE PROJECT SPONSOR WILL REVISE THE SCHEDULE AS NECESSARY TO PROVIDE FERC STAFF AT LEAST 14 DAYS ADVANCE NOTICE. CHANGES WITHIN THIS LAST 14-DAY PERIOD MUST PROVIDE FOR AT LEAST 48 HOURS ADVANCE NOTICE;
3. PLANS FOR HORIZONTAL DIRECTIONAL DRILLS (HDD) UNDER WETLANDS OR WATERBODIES, SPECIFIED IN SECTION V.B.6.D;
4. SITE-SPECIFIC PLANS FOR MAJOR WATERBODY CROSSINGS, DESCRIBED IN SECTION V.B.9;
5. A WETLAND DELINEATION REPORT AS DESCRIBED IN SECTION VI.A.1, IF APPLICABLE; AND
6. THE HYDROSTATIC TESTING INFORMATION SPECIFIED IN SECTION VII.B.3.

III. ENVIRONMENTAL INSPECTORS

A. AT LEAST ONE ENVIRONMENTAL INSPECTOR HAVING KNOWLEDGE OF THE WETLAND AND WATERBODY CONDITIONS IN THE PROJECT AREA IS REQUIRED FOR EACH CONSTRUCTION SPREAD. THE NUMBER AND EXPERIENCE OF ENVIRONMENTAL INSPECTORS ASSIGNED TO EACH CONSTRUCTION SPREAD SHALL BE APPROPRIATE FOR THE LENGTH OF THE CONSTRUCTION SPREAD AND THE NUMBER/SIGNIFICANCE OF RESOURCES AFFECTED.
B. THE ENVIRONMENTAL INSPECTOR'S RESPONSIBILITIES ARE OUTLINED IN THE UPLAND EROSION CONTROL, REVEGETATION, AND MAINTENANCE PLAN (PLAN).

IV. PRECONSTRUCTION PLANNING

A. THE PROJECT SPONSOR SHALL DEVELOP PROJECT-SPECIFIC SPILL PREVENTION AND RESPONSE PROCEDURES THAT MEET APPLICABLE REQUIREMENTS OF STATE AND FEDERAL AGENCIES. A COPY MUST BE FILED WITH THE SECRETARY PRIOR TO CONSTRUCTION AND MADE AVAILABLE IN THE FIELD ON EACH CONSTRUCTION SPREAD. THIS FILING REQUIREMENT DOES NOT APPLY TO PROJECTS CONSTRUCTED UNDER THE AUTOMATIC AUTHORIZATION PROVISIONS IN THE FERC'S REGULATIONS.

1. IT SHALL BE THE RESPONSIBILITY OF THE PROJECT SPONSOR AND ITS CONTRACTORS TO STRUCTURE THEIR OPERATIONS IN A MANNER THAT REDUCES THE RISK OF SPILLS OR THE ACCIDENTAL EXPOSURE OF FUELS OR HAZARDOUS MATERIALS TO WATERBODIES OR WETLANDS. THE PROJECT SPONSOR AND ITS CONTRACTORS MUST, AT A MINIMUM, ENSURE THAT:
   A. ALL EMPLOYEES HANDLING FUELS AND OTHER HAZARDOUS MATERIALS ARE PROPERLY TRAINED;
   B. ALL EQUIPMENT IS IN GOOD OPERATING ORDER AND INSPECTED ON A REGULAR BASIS;
   C. FUEL TRUCKS TRANSPORTING FUEL TO ON-SITE EQUIPMENT TRAVEL ONLY ON APPROVED ACCESS ROADS;
   D. ALL EQUIPMENT IS PARKED OVERNIGHT AND/OR FUELED AT LEAST 100 FEET FROM A WATERBODY OR IN AN UPLAND AREA AT LEAST 100 FEET FROM A WETLAND BOUNDARY. THESE ACTIVITIES CAN OCCUR CLOSER ONLY IF THE ENVIRONMENTAL INSPECTOR DETERMINES THAT THERE IS NO REASONABLE ALTERNATIVE, AND THE PROJECT SPONSOR AND ITS CONTRACTORS HAVE TAKEN APPROPRIATE STEPS (INCLUDING SECONDARY CONTAINMENT STRUCTURES) TO PREVENT SPILLS AND PROVIDE FOR PROMPT CLEANUP IN THE EVENT OF A SPILL;
   E. HAZARDOUS MATERIALS, INCLUDING CHEMICALS, FUELS, AND LUBRICATING OILS, ARE NOT STORED WITHIN 100 FEET OF A WETLAND, WATERBODY, OR DESIGNATED MUNICIPAL WATERSHED AREA, UNLESS THE LOCATION IS DESIGNATED FOR SUCH USE BY AN APPROPRIATE GOVERNMENTAL AUTHORITY. THIS APPLIES TO STORAGE OF THESE MATERIALS AND DOES NOT APPLY TO NORMAL OPERATION OR USE OF EQUIPMENT IN THESE AREAS;
   F. CONCRETE COATING ACTIVITIES ARE NOT PERFORMED WITHIN 100 FEET OF A WETLAND OR WATERBODY BOUNDARY, UNLESS THE LOCATION IS AN EXISTING INDUSTRIAL SITE DESIGNATED FOR SUCH USE. THESE ACTIVITIES CAN OCCUR CLOSER ONLY IF THE ENVIRONMENTAL INSPECTOR DETERMINES THAT THERE IS NO REASONABLE ALTERNATIVE, AND THE PROJECT SPONSOR AND ITS CONTRACTORS HAVE TAKEN APPROPRIATE STEPS (INCLUDING SECONDARY CONTAINMENT STRUCTURES) TO PREVENT SPILLS AND PROVIDE FOR PROMPT CLEANUP IN THE EVENT OF A SPILL;
   G. PUMPS OPERATING WITHIN 100 FEET OF A WATERBODY OR WETLAND BOUNDARY UTILIZE APPROPRIATE SECONDARY CONTAINMENT SYSTEMS TO PREVENT SPILLS; AND
   H. BULK STORAGE OF HAZARDOUS MATERIALS, INCLUDING CHEMICALS, FUELS, AND LUBRICATING OILS HAVE APPROPRIATE SECONDARY CONTAINMENT SYSTEMS TO PREVENT SPILLS.
2. THE PROJECT SPONSOR AND ITS CONTRACTORS MUST STRUCTURE THEIR OPERATIONS IN A MANNER THAT PROVIDES FOR THE PROMPT AND EFFECTIVE CLEANUP OF SPILLS OF FUEL AND OTHER HAZARDOUS MATERIALS. AT A MINIMUM, THE PROJECT SPONSOR AND ITS CONTRACTORS MUST:
   A. ENSURE THAT EACH CONSTRUCTION CREW (INCLUDING CLEANUP CREWS) HAS ON HAND SUFFICIENT SUPPLIES OF ABSORBENT AND BARRIER MATERIALS TO ALLOW THE RAPID CONTAINMENT AND RECOVERY OF SPILLED MATERIALS AND KNOWS THE PROCEDURE FOR REPORTING SPILLS AND UNANTICIPATED DISCOVERIES OF CONTAMINATION;
   B. ENSURE THAT EACH CONSTRUCTION CREW HAS ON HAND SUFFICIENT TOOLS AND MATERIAL TO STOP LEAKS;
   C. KNOW THE CONTACT NAMES AND TELEPHONE NUMBERS FOR ALL LOCAL, STATE, AND FEDERAL AGENCIES (INCLUDING, IF NECESSARY, THE U. S. COAST GUARD AND THE NATIONAL RESPONSE CENTER) THAT MUST BE NOTIFIED OF A SPILL; AND
   D. FOLLOW THE REQUIREMENTS OF THOSE AGENCIES IN CLEANING UP THE SPILL, IN EXCAVATING AND DISPOSING OF SOILS OR OTHER MATERIALS CONTAMINATED BY A SPILL, AND IN COLLECTING AND DISPOSING OF WASTE GENERATED DURING SPILL CLEANUP.

B. AGENCY COORDINATION
THE PROJECT SPONSOR MUST COORDINATE WITH THE APPROPRIATE LOCAL, STATE, AND FEDERAL AGENCIES AS OUTLINED IN THESE PROCEDURES AND IN THE FERC'S ORDERS.

V. WATERBODY CROSSINGS

A. NOTIFICATION PROCEDURES AND PERMITS

1. APPLY TO THE U.S. ARMY CORPS OF ENGINEERS (COE), OR ITS DELEGATED AGENCY, FOR THE APPROPRIATE WETLAND AND WATERBODY CROSSING PERMITS.
2. PROVIDE WRITTEN NOTIFICATION TO AUTHORITIES RESPONSIBLE FOR POTABLE SURFACE WATER SUPPLY INTAKES LOCATED WITHIN 3 MILES DOWNSTREAM OF THE CROSSING AT LEAST 1 WEEK BEFORE BEGINNING WORK IN THE WATERBODY, OR AS OTHERWISE SPECIFIED BY THAT AUTHORITY.
3. APPLY FOR STATE-ISSUED WATERBODY CROSSING PERMITS AND OBTAIN INDIVIDUAL OR GENERIC SECTION 401 WATER QUALITY CERTIFICATION OR WAIVER.
4. NOTIFY APPROPRIATE FEDERAL AND STATE AUTHORITIES AT LEAST 48 HOURS BEFORE BEGINNING TRENCHING OR BLASTING WITHIN THE WATERBODY, OR AS SPECIFIED IN APPLICABLE PERMITS.

B. INSTALLATION

1. TIME WINDOW FOR CONSTRUCTION
   UNLESS EXPRESSLY PERMITTED OR FURTHER RESTRICTED BY THE APPROPRIATE FEDERAL OR STATE AGENCY IN WRITING ON A SITE-SPECIFIC BASIS, INSTREAM WORK, EXCEPT THAT REQUIRED TO INSTALL OR REMOVE EQUIPMENT BRIDGES, MUST OCCUR DURING THE FOLLOWING TIME WINDOWS:
   A. COLDWATER FISHERIES - JUNE 1 THROUGH SEPTEMBER 30; AND
   B. COOLWATER AND WARMWATER FISHERIES - JUNE 1 THROUGH NOVEMBER 30.
2. EXTRA WORK AREAS
   A. LOCATE ALL EXTRA WORK AREAS (SUCH AS STAGING AREAS AND ADDITIONAL SPOIL STORAGE AREAS) AT LEAST 50 FEET AWAY FROM WATER'S EDGE, EXCEPT WHERE THE ADJACENT UPLAND CONSISTS OF CULTIVATED OR ROTATED CROPLAND OR OTHER DISTURBED LAND.
   B. THE PROJECT SPONSOR SHALL FILE WITH THE SECRETARY FOR REVIEW AND WRITTEN APPROVAL BY THE DIRECTOR, SITE-SPECIFIC JUSTIFICATION FOR EACH EXTRA WORK AREA WITH A LESS THAN 50-FOOT SETBACK FROM THE WATER'S EDGE, EXCEPT WHERE THE ADJACENT UPLAND CONSISTS OF CULTIVATED OR ROTATED CROPLAND OR OTHER DISTURBED LAND. THE JUSTIFICATION MUST SPECIFY THE CONDITIONS THAT WILL NOT PERMIT A 50-FOOT SETBACK AND MEASURES TO ENSURE THE WATERBODY IS ADEQUATELY PROTECTED.
   C. LIMIT THE SIZE OF EXTRA WORK AREAS TO THE MINIMUM NEEDED TO CONSTRUCT THE WATERBODY CROSSING.
3. GENERAL CROSSING PROCEDURES
   A. COMPLY WITH THE COE, OR ITS DELEGATED AGENCY, PERMIT TERMS AND CONDITIONS.
   B. CONSTRUCT CROSSINGS AS CLOSE TO PERPENDICULAR TO THE AXIS OF THE WATERBODY CHANNEL AS ENGINEERING AND ROUTING CONDITIONS PERMIT.
   C. WHERE PIPELINES PARALLEL A WATERBODY, MAINTAIN AT LEAST 15 FEET OF UNDISTURBED VEGETATION BETWEEN THE WATERBODY (AND ANY ADJACENT WETLAND) AND THE CONSTRUCTION RIGHT-OF-WAY, EXCEPT WHERE MAINTAINING THIS OFFSET WILL RESULT IN GREATER ENVIRONMENTAL IMPACT.
   D. WHERE WATERBODIES MEANDER OR HAVE MULTIPLE CHANNELS, ROUTE THE PIPELINE TO MINIMIZE THE NUMBER OF WATERBODY CROSSINGS.
   E. MAINTAIN ADEQUATE WATERBODY FLOW RATES TO PROTECT AQUATIC LIFE, AND PREVENT THE INTERRUPTION OF EXISTING DOWNSTREAM USES.
   F. WATERBODY BUFFERS (E.G., EXTRA WORK AREA SETBACKS, REFUELING RESTRICTIONS) MUST BE CLEARLY MARKED IN THE FIELD WITH SIGNS AND/OR HIGHLY VISIBLE FLAGGING UNTIL CONSTRUCTION-RELATED GROUND DISTURBING ACTIVITIES ARE COMPLETE.
   G. CROSSING OF WATERBODIES WHEN THEY ARE DRY OR FROZEN AND NOT FLOWING MAY PROCEED USING STANDARD UPLAND CONSTRUCTION TECHNIQUES IN ACCORDANCE WITH THE PLAN, PROVIDED THAT THE ENVIRONMENTAL INSPECTOR VERIFIES THAT WATER IS UNLIKELY TO FLOW BETWEEN INITIAL DISTURBANCE AND FINAL STABILIZATION OF THE FEATURE. IN THE EVENT OF PERCEPTIBLE FLOW, THE PROJECT SPONSOR MUST COMPLY WITH ALL APPLICABLE PROCEDURE REQUIREMENTS FOR "WATERBODIES" AS DEFINED IN SECTION I.B.1.

NOTES:

1. PIPELINE INSTALLATION PROCEDURES, WATERBODY CROSSINGS AND DIVERSION METHODOLOGY SHALL BE ESTABLISHED IN THE FIELD IN COORDINATION WITH THE OWNER.

REV. / ISSUE	DATE	DESCRIPTION
1	4/22/19	REV TRANSITION AREA WIDTH PER NJDEP

LEGEND

— — —	PROPERTY LINE
- - 430 - -	EXISTING CONTOURS
427.0 x	EXISTING SPOT ELEVATION
═	EXISTING STORM SEWER
— W —	EXISTING WATER MAIN
━	EXISTING GAS MAIN
🟥	PROPOSED GAS MAIN
⊤	EXISTING SIGN
☉	EXISTING UTILITY POLE
⋈	PROPOSED GAS VALVE
—	EXISTING TREELINE/CANOPY
✱	EXISTING TREE
—	PROPOSED TREELINE
—×—×—	EXISTING FENCE
⌐	EXISTING RETAINING WALL
— — — —	EXISTING PERMANENT EASEMENT/TGPL R.O.W.
— — — —	PROPOSED PERMANENT EASEMENT
━	PROPOSED LIMIT OF DISTURBANCE
━	PROPOSED HDD LIMIT OF DISTURBANCE
—	STREAM LINE
—	WETLANDS BOUNDARY
—	COASTAL WETLANDS BOUNDARY
—	TOP OF BANK
—	50' WETLAND TRANSITION AREA
—	RIPARIAN BUFFER
—	MEAN HIGH WATER LINE
—	SPRING HIGH WATER LINE
—	MEAN HIGH WATER LINE 500' BUFFER
—	TIDELANDS
⑤→ W-T01-005A-1	PHOTO LOCATION (SEE REPORT)
△1620	WETLAND FLAGS
△1432	STATE OPEN WATERS FLAGS
◈ 1609	FRESHWATER WETLAND/STATE OPEN WATER DATA POINTS

I AM A DULY REGISTERED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF NEW JERSEY AND I HEREBY CERTIFY THAT EXISTING CONDITIONS SHOWN WERE FIELD LOCATED AND PREPARED UNDER MY DIRECT SUPERVISION.

THOMAS J. MURPHY, PLS
DW SMITH ASSOCIATES, LLC
1450 STATE ROUTE 34, WALL, NJ 07753
PROFESSIONAL LAND SURVEYOR
N.J. LIC. NO. 37207 COA NO. 24GA28122400

SIGNATURE DATE

I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF NEW JERSEY AND I HEREBY CERTIFY THAT THE PROPOSED ENVIRONMENTAL DISTURBANCES SHOWN ARE ACCURATE AND CORRESPOND WITH THE DETAILED ENGINEERING DRAWINGS.

WILLIAM SALMON, P.E.
PS&S, LLC
1433 HIGHWAY 34, SUITE A-4, WALL, NJ 07727
PROFESSIONAL ENGINEER
N.J. LIC. NO. 41319 COA NO. 24GA28032700

04/24/19
SIGNATURE DATE

PAULUS, SOKOLOWSKI AND SARTOR, LLC.
PS&S
1433 ROUTE 34
SUITE A4
WALL, NJ 07727
PHONE: (848) 206-2626
CERTIFICATE OF AUTHORIZATION NO. 24GA28032700

PROJECT

NORTHEAST SUPPLY ENHANCEMENT PROJECT PROPOSED 26" MADISON LOOP

OLD BRIDGE TOWNSHIP & SAYREVILLE BOROUGH
MIDDLESEX COUNTY, NEW JERSEY

SHEET TITLE

CONSTRUCTION DETAILS

PROJECT NO.: 05731.0002
SCALE: AS SHOWN
DATE: 06/08/18
DRAWN BY: JPS
CHECKED BY: WS
SHEET 12 OF 13
SHEET NO. 12

WETLAND AND WATERBODY CONSTRUCTION AND MITIGATION PROCEDURES (CONT'D)

4. SPOIL PILE PLACEMENT AND CONTROL

A. ALL SPOIL FROM MINOR AND INTERMEDIATE WATERBODY CROSSINGS, AND UPLAND SPOIL FROM MAJOR WATERBODY CROSSINGS, MUST BE PLACED IN THE CONSTRUCTION RIGHT-OF-WAY AT LEAST 10 FEET FROM THE WATER'S EDGE OR IN ADDITIONAL EXTRA WORK AREAS AS DESCRIBED IN SECTION V.B.2.

B. USE SEDIMENT BARRIERS TO PREVENT THE FLOW OF SPOIL OR SILT-LADEN WATER INTO ANY WATERBODY.

5. EQUIPMENT BRIDGES

A. ONLY CLEARING EQUIPMENT AND EQUIPMENT NECESSARY FOR INSTALLATION OF EQUIPMENT BRIDGES MAY CROSS WATERBODIES PRIOR TO BRIDGE INSTALLATION. LIMIT THE NUMBER OF SUCH CROSSINGS OF EACH WATERBODY TO ONE PER PIECE OF CLEARING EQUIPMENT.

B. CONSTRUCT AND MAINTAIN EQUIPMENT BRIDGES TO ALLOW UNRESTRICTED FLOW AND TO PREVENT SOIL FROM ENTERING THE WATERBODY. EXAMPLES OF SUCH BRIDGES INCLUDE:

(1) EQUIPMENT PADS AND CULVERT(S);
(2) EQUIPMENT PADS OR RAILROAD CAR BRIDGES WITHOUT CULVERTS;
(3) CLEAN ROCK FILL AND CULVERT(S); AND
(4) FLEXI-FLOAT OR PORTABLE BRIDGES.

ADDITIONAL OPTIONS FOR EQUIPMENT BRIDGES MAY BE UTILIZED THAT ACHIEVE THE PERFORMANCE OBJECTIVES NOTED ABOVE. DO NOT USE SOIL TO CONSTRUCT OR STABILIZE EQUIPMENT BRIDGES.

C. DESIGN AND MAINTAIN EACH EQUIPMENT BRIDGE TO WITHSTAND AND PASS THE HIGHEST FLOW EXPECTED TO OCCUR WHILE THE BRIDGE IS IN PLACE. ALIGN CULVERTS TO PREVENT BANK EROSION OR STREAMBED SCOUR. IF NECESSARY, INSTALL ENERGY DISSIPATING DEVICES DOWNSTREAM OF THE CULVERTS.

D. DESIGN AND MAINTAIN EQUIPMENT BRIDGES TO PREVENT SOIL FROM ENTERING THE WATERBODY.

E. REMOVE TEMPORARY EQUIPMENT BRIDGES AS SOON AS PRACTICABLE AFTER PERMANENT SEEDING.

F. IF THERE WILL BE MORE THAN 1 MONTH BETWEEN FINAL CLEANUP AND THE BEGINNING OF PERMANENT SEEDING AND REASONABLE ALTERNATIVE ACCESS TO THE RIGHT-OF-WAY IS AVAILABLE, REMOVE TEMPORARY EQUIPMENT BRIDGES AS SOON AS PRACTICABLE AFTER FINAL CLEANUP.

G. OBTAIN ANY NECESSARY APPROVAL FROM THE CODE, OR THE APPROPRIATE STATE AGENCY FOR PERMANENT BRIDGES.

6. DRY-DITCH CROSSING METHODS

A. UNLESS APPROVED OTHERWISE BY THE APPROPRIATE FEDERAL OR STATE AGENCY, INSTALL THE PIPELINE USING ONE OF THE DRY-DITCH METHODS OUTLINED BELOW FOR CROSSINGS OF WATERBODIES UP TO 30 FEET WIDE (AT THE WATER'S EDGE AT THE TIME OF CONSTRUCTION) THAT ARE STATE-DESIGNATED AS EITHER COLDWATER OR SIGNIFICANT COOLWATER OR WARMWATER FISHERIES, OR FEDERALLY-DESIGNATED AS CRITICAL HABITAT.

B. DAM AND PUMP

(1) THE DAM-AND-PUMP METHOD MAY BE USED WITHOUT PRIOR APPROVAL FOR CROSSINGS OF WATERBODIES WHERE PUMPS CAN ADEQUATELY TRANSFER STREAMFLOW VOLUMES AROUND THE WORK AREA, AND THERE ARE NO CONCERNS ABOUT SENSITIVE SPECIES PASSAGE.

(2) IMPLEMENTATION OF THE DAM-AND-PUMP CROSSING METHOD MUST MEET THE FOLLOWING PERFORMANCE CRITERIA:

(I) USE SUFFICIENT PUMPS, INCLUDING ON-SITE BACKUP PUMPS, TO MAINTAIN DOWNSTREAM FLOWS;
(II) CONSTRUCT DAMS WITH MATERIALS THAT PREVENT SEDIMENT AND OTHER POLLUTANTS FROM ENTERING THE WATERBODY (E.G., SANDBAGS OR CLEAN GRAVEL WITH PLASTIC LINER);
(III) SCREEN PUMP INTAKES TO MINIMIZE ENTRAINMENT OF FISH;
(IV) PREVENT STREAMBED SCOUR AT PUMP DISCHARGE; AND
(V) CONTINUOUSLY MONITOR THE DAM AND PUMPS TO ENSURE PROPER OPERATION THROUGHOUT THE WATERBODY CROSSING.

C. FLUME CROSSING

THE FLUME CROSSING METHOD REQUIRES IMPLEMENTATION OF THE FOLLOWING

(1) INSTALL FLUME PIPE AFTER BLASTING (IF NECESSARY), BUT BEFORE ANY TRENCHING;
(2) USE SAND BAG OR SAND BAG AND PLASTIC SHEETING DIVERSION STRUCTURE OR EQUIVALENT TO DEVELOP AN EFFECTIVE SEAL AND TO DIVERT STREAM FLOW THROUGH THE FLUME PIPE (SOME MODIFICATIONS TO THE STREAM BOTTOM MAY BE REQUIRED TO ACHIEVE AN EFFECTIVE SEAL);
(3) PROPERLY ALIGN FLUME PIPE(S) TO PREVENT BANK EROSION AND STREAMBED SCOUR;
(4) DO NOT REMOVE FLUME PIPE DURING TRENCHING, PIPELAYING, OR BACKFILLING ACTIVITIES, OR INITIAL STREAMBED RESTORATION EFFORTS; AND
(5) REMOVE ALL FLUME PIPES AND DAMS THAT ARE NOT ALSO PART OF THE EQUIPMENT BRIDGE AS SOON AS FINAL CLEANUP OF THE STREAM BED AND BANK IS COMPLETE.

D. HORIZONTAL DIRECTIONAL DRILL

FOR EACH WATERBODY OR WETLAND THAT WOULD BE CROSSED USING THE HDD METHOD, FILE WITH THE SECRETARY FOR THE REVIEW AND WRITTEN APPROVAL BY THE DIRECTOR, A PLAN THAT INCLUDES:

(1) SITE-SPECIFIC CONSTRUCTION DIAGRAMS THAT SHOW THE LOCATION OF MUD PITS, PIPE ASSEMBLY AREAS, AND ALL AREAS TO BE DISTURBED OR CLEARED FOR CONSTRUCTION;
(2) JUSTIFICATION THAT DISTURBED AREAS ARE LIMITED TO THE MINIMUM NEEDED TO CONSTRUCT THE CROSSING;
(3) IDENTIFICATION OF ANY ABOVEGROUND DISTURBANCE OR CLEARING BETWEEN THE HDD ENTRY AND EXIT WORKSPACES DURING CONSTRUCTION;
(4) A DESCRIPTION OF HOW AN INADVERTENT RELEASE OF DRILLING MUD WOULD BE CONTAINED AND CLEANED UP; AND
(5) A CONTINGENCY PLAN FOR CROSSING THE WATERBODY OR WETLAND IN THE EVENT THE HDD IS UNSUCCESSFUL AND HOW THE ABANDONED DRILL HOLE WOULD BE SEALED, IF NECESSARY.

THE REQUIREMENT TO FILE HDD PLANS DOES NOT APPLY TO PROJECTS CONSTRUCTED UNDER THE AUTOMATIC AUTHORIZATION PROVISIONS IN THE FERC'S REGULATIONS.

7. CROSSINGS OF MINOR WATERBODIES

WHERE A DRY-DITCH CROSSING IS NOT REQUIRED, MINOR WATERBODIES MAY BE CROSSED USING THE OPEN-CUT CROSSING METHOD, WITH THE FOLLOWING RESTRICTIONS:

A. EXCEPT FOR BLASTING AND OTHER ROCK BREAKING MEASURES, COMPLETE INSTREAM CONSTRUCTION ACTIVITIES (INCLUDING TRENCHING, PIPE INSTALLATION, BACKFILL, AND RESTORATION OF THE STREAMBED CONTOURS) WITHIN 24 HOURS. STREAMBANKS AND UNCONSOLIDATED STREAMBEDS MAY REQUIRE ADDITIONAL RESTORATION AFTER THIS PERIOD;

B. LIMIT USE OF EQUIPMENT OPERATING IN THE WATERBODY TO THAT NEEDED TO CONSTRUCT THE CROSSING; AND

C. EQUIPMENT BRIDGES ARE NOT REQUIRED AT MINOR WATERBODIES THAT DO NOT HAVE A STATE-DESIGNATED FISHERY CLASSIFICATION OR PROTECTED STATUS (E.G., AGRICULTURAL OR INTERMITTENT DRAINAGE DITCHES). HOWEVER, IF AN EQUIPMENT BRIDGE IS USED IT MUST BE CONSTRUCTED AS DESCRIBED IN SECTION V.B.5.

8. CROSSINGS OF INTERMEDIATE WATERBODIES

WHERE A DRY-DITCH CROSSING IS NOT REQUIRED, INTERMEDIATE WATERBODIES MAY BE CROSSED USING THE OPEN-CUT CROSSING METHOD, WITH THE FOLLOWING RESTRICTIONS:

A. COMPLETE INSTREAM CONSTRUCTION ACTIVITIES (NOT INCLUDING BLASTING AND OTHER ROCK BREAKING MEASURES) WITHIN 48 HOURS, UNLESS SITE-SPECIFIC CONDITIONS MAKE COMPLETION WITHIN 48 HOURS INFEASIBLE;

B. LIMIT USE OF EQUIPMENT OPERATING IN THE WATERBODY TO THAT NEEDED TO CONSTRUCT THE CROSSING; AND

C. ALL OTHER CONSTRUCTION EQUIPMENT MUST CROSS ON AN EQUIPMENT BRIDGE AS SPECIFIED IN SECTION V.B.5.

9. CROSSINGS OF MAJOR WATERBODIES

BEFORE CONSTRUCTION, THE PROJECT SPONSOR SHALL FILE WITH THE SECRETARY FOR THE REVIEW AND WRITTEN APPROVAL BY THE DIRECTOR A DETAILED, SITE-SPECIFIC CONSTRUCTION PLAN AND SCALED DRAWINGS IDENTIFYING ALL AREAS TO BE DISTURBED BY CONSTRUCTION FOR EACH MAJOR WATERBODY CROSSING (THE SCALED DRAWINGS ARE NOT REQUIRED FOR ANY OFFSHORE PORTIONS OF PIPELINE PROJECTS). THIS PLAN MUST BE DEVELOPED IN CONSULTATION WITH THE APPROPRIATE STATE AND FEDERAL AGENCIES AND SHALL INCLUDE EXTRA WORK AREAS, SPOIL STORAGE AREAS, SEDIMENT CONTROL STRUCTURES, ETC., AS WELL AS MITIGATION FOR NAVIGATIONAL ISSUES. THE REQUIREMENT TO FILE MAJOR WATERBODY CROSSING PLANS DOES NOT APPLY TO PROJECTS CONSTRUCTED UNDER THE AUTOMATIC AUTHORIZATION PROVISIONS OF THE FERC'S REGULATIONS.

THE ENVIRONMENTAL INSPECTOR MAY ADJUST THE FINAL PLACEMENT OF THE EROSION AND SEDIMENT CONTROL STRUCTURES IN THE FIELD TO MAXIMIZE EFFECTIVENESS.

10. TEMPORARY EROSION AND SEDIMENT CONTROL

INSTALL SEDIMENT BARRIERS (AS DEFINED IN SECTION IV.F.3.A OF THE PLAN) IMMEDIATELY AFTER INITIAL DISTURBANCE OF THE WATERBODY OR ADJACENT UPLAND.SEDIMENT BARRIERS MUST BE PROPERLY MAINTAINED THROUGHOUT CONSTRUCTION AND REINSTALLED AS NECESSARY (SUCH AS AFTER BACKFILLING OF THE TRENCH) UNTIL REPLACED BY PERMANENT EROSION CONTROLS OR RESTORATION OF ADJACENT UPLAND AREAS IS COMPLETE.

TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES ARE ADDRESSED IN MORE DETAIL IN THE PLAN; HOWEVER, THE FOLLOWING SPECIFIC MEASURES MUST BE IMPLEMENTED AT STREAM CROSSINGS:

A. INSTALL SEDIMENT BARRIERS ACROSS THE ENTIRE CONSTRUCTION RIGHT-OF-WAY AT ALL WATERBODY CROSSINGS, WHERE NECESSARY TO PREVENT THE FLOW OF SEDIMENTS INTO THE WATERBODY. REMOVABLE SEDIMENT BARRIERS (OR DRIVEABLE BERMS) MUST BE INSTALLED ACROSS THE TRAVEL LANE. THESE REMOVABLE SEDIMENT BARRIERS CAN BE REMOVED DURING THE CONSTRUCTION DAY, BUT MUST BE RE-INSTALLED AFTER CONSTRUCTION HAS STOPPED FOR THE DAY AND/OR WHEN HEAVY PRECIPITATION IS IMMINENT;

B. WHERE WATERBODIES ARE ADJACENT TO THE CONSTRUCTION RIGHT-OF-WAY AND THE RIGHT-OF-WAY SLOPES TOWARD THE WATERBODY, INSTALL SEDIMENT BARRIERS ALONG THE EDGE OF THE CONSTRUCTION RIGHT-OF-WAY AS NECESSARY TO CONTAIN SPOIL WITHIN THE CONSTRUCTION RIGHT-OF-WAY AND PREVENT SEDIMENT FLOW INTO THE WATERBODY; AND

C. USE TEMPORARY TRENCH PLUGS AT ALL WATERBODY CROSSINGS, AS NECESSARY, TO PREVENT DIVERSION OF WATER INTO UPLAND PORTIONS OF THE PIPELINE TRENCH AND TO KEEP ANY ACCUMULATED TRENCH WATER OUT OF THE WATERBODY.

11. TRENCH DEWATERING

DEWATER THE TRENCH (EITHER ON OR OFF THE CONSTRUCTION RIGHT-OF-WAY) IN A MANNER THAT DOES NOT CAUSE EROSION AND DOES NOT RESULT IN SILT-LADEN WATER FLOWING INTO ANY WATERBODY. REMOVE THE DEWATERING STRUCTURES AS SOON AS PRACTICABLE AFTER THE COMPLETION OF DEWATERING ACTIVITIES.

C. RESTORATION

1. USE CLEAN GRAVEL OR NATIVE COBBLES FOR THE UPPER 1 FOOT OF TRENCH BACKFILL IN ALL WATERBODIES THAT CONTAIN COLDWATER FISHERIES.

2. FOR OPEN-CUT CROSSINGS, STABILIZE WATERBODY BANKS AND INSTALL TEMPORARY SEDIMENT BARRIERS WITHIN 24 HOURS OF COMPLETING INSTREAM CONSTRUCTION ACTIVITIES. FOR DRY-DITCH CROSSINGS, COMPLETE STREAMBED AND BANK STABILIZATION BEFORE RETURNING FLOW TO THE WATERBODY CHANNEL.

3. RETURN ALL WATERBODY BANKS TO PRECONSTRUCTION CONTOURS OR TO A STABLE ANGLE OF REPOSE AS APPROVED BY THE ENVIRONMENTAL INSPECTOR.

4. INSTALL EROSION CONTROL FABRIC OR A FUNCTIONAL EQUIVALENT ON WATERBODY BANKS AT THE TIME OF FINAL BANK RECONTOURING. DO NOT USE SYNTHETIC MONOFILAMENT MESH/NETTED EROSION CONTROL MATERIALS IN AREAS DESIGNATED AS SENSITIVE WILDLIFE HABITAT UNLESS THE PRODUCT IS SPECIFICALLY DESIGNED TO MINIMIZE HARM TO WILDLIFE. ANCHOR EROSION CONTROL FABRIC WITH STAPLES OR OTHER APPROPRIATE DEVICES.

5. APPLICATION OF RIPRAP FOR BANK STABILIZATION MUST COMPLY WITH COE, OR ITS DELEGATED AGENCY, PERMIT TERMS AND CONDITIONS.

6. UNLESS OTHERWISE SPECIFIED BY STATE PERMIT, LIMIT THE USE OF RIPRAP TO AREAS WHERE FLOW CONDITIONS PRECLUDE EFFECTIVE VEGETATIVE STABILIZATION TECHNIQUES SUCH AS SEEDING AND EROSION CONTROL FABRIC.

7. REVEGETATE DISTURBED RIPARIAN AREAS WITH NATIVE SPECIES OF CONSERVATION GRASSES, LEGUMES, AND WOODY SPECIES, SIMILAR IN DENSITY TO ADJACENT UNDISTURBED LANDS.

8. INSTALL A PERMANENT SLOPE BREAKER ACROSS THE CONSTRUCTION RIGHT-OF-WAY AT THE BASE OF SLOPES GREATER THAN 5 PERCENT THAT ARE LESS THAN 50 FEET FROM THE WATERBODY, OR AS NEEDED TO PREVENT SEDIMENT TRANSPORT INTO THE WATERBODY. IN ADDITION, INSTALL SEDIMENT BARRIERS AS OUTLINED IN THE PLAN.

IN SOME AREAS, WITH THE APPROVAL OF THE ENVIRONMENTAL INSPECTOR, AN EARTHEN BERM MAY BE SUITABLE AS A SEDIMENT BARRIER ADJACENT TO THE WATERBODY.

9. SECTIONS V.C.3 THROUGH V.C.7 ABOVE ALSO APPLY TO THOSE PERENNIAL OR INTERMITTENT STREAMS NOT FLOWING AT THE TIME OF CONSTRUCTION.

D. POST-CONSTRUCTION MAINTENANCE

1. LIMIT ROUTINE VEGETATION MOWING OR CLEARING ADJACENT TO WATERBODIES TO ALLOW A RIPARIAN STRIP AT LEAST 25 FEET WIDE, AS MEASURED FROM THE WATERBODY'S MEAN HIGH WATER MARK, TO PERMANENTLY REVEGETATE WITH NATIVE PLANT SPECIES ACROSS THE ENTIRE CONSTRUCTION RIGHT-OF-WAY. HOWEVER, TO FACILITATE PERIODIC CORROSION/LEAK SURVEYS, A CORRIDOR CENTERED ON THE PIPELINE AND UP TO 10 FEET WIDE MAY BE CLEARED AT A FREQUENCY NECESSARY TO MAINTAIN THE 10-FOOT CORRIDOR IN AN HERBACEOUS STATE. IN ADDITION, TREES THAT ARE LOCATED WITHIN 15 FEET OF THE PIPELINE THAT HAVE ROOTS THAT COULD COMPROMISE THE INTEGRITY OF THE PIPELINE COATING MAY BE CUT AND REMOVED FROM THE PERMANENT RIGHT-OF-WAY. DO NOT CONDUCT ANY ROUTINE VEGETATION MOWING OR CLEARING IN RIPARIAN AREAS THAT ARE BETWEEN HDD ENTRY AND EXIT POINTS.

2. DO NOT USE HERBICIDES OR PESTICIDES IN OR WITHIN 100 FEET OF A WATERBODY EXCEPT AS ALLOWED BY THE APPROPRIATE LAND MANAGEMENT OR STATE AGENCY.

3. TIME OF YEAR RESTRICTIONS SPECIFIED IN SECTION VII.A.5 OF THE PLAN (APRIL 15 - AUGUST 1 OF ANY YEAR) APPLY TO ROUTINE MOWING AND CLEARING OF RIPARIAN AREAS.

VI. WETLAND CROSSINGS

A. GENERAL

1. THE PROJECT SPONSOR SHALL CONDUCT A WETLAND DELINEATION USING THE CURRENT FEDERAL METHODOLOGY AND FILE A WETLAND DELINEATION REPORT WITH THE SECRETARY BEFORE CONSTRUCTION. THE REQUIREMENT TO FILE A WETLAND DELINEATION REPORT DOES NOT APPLY TO PROJECTS CONSTRUCTED UNDER THE AUTOMATIC AUTHORIZATION PROVISIONS IN THE FERC'S REGULATIONS.

THIS REPORT SHALL IDENTIFY:
A. BY MILEPOST ALL WETLANDS THAT WOULD BE AFFECTED;
B. THE NATIONAL WETLANDS INVENTORY (NWI) CLASSIFICATION FOR EACH WETLAND;
C. THE CROSSING LENGTH OF EACH WETLAND IN FEET; AND
D. THE AREA OF PERMANENT AND TEMPORARY DISTURBANCE THAT WOULD OCCUR IN EACH WETLAND BY NWI CLASSIFICATION TYPE.

THE REQUIREMENTS OUTLINED IN THIS SECTION DO NOT APPLY TO WETLANDS IN ACTIVELY CULTIVATED OR ROTATED CROPLAND. STANDARD UPLAND PROTECTIVE MEASURES, INCLUDING WORKSPACE AND TOPSOILING REQUIREMENTS, APPLY TO THESE AGRICULTURAL WETLANDS.

2. ROUTE THE PIPELINE TO AVOID WETLAND AREAS TO THE MAXIMUM EXTENT POSSIBLE. IF A WETLAND CANNOT BE AVOIDED OR CROSSED BY FOLLOWING AN EXISTING RIGHT-OF-WAY, ROUTE THE NEW PIPELINE IN A MANNER THAT MINIMIZES DISTURBANCE TO WETLANDS. WHERE LOOPING AN EXISTING PIPELINE, OVERLAP THE EXISTING PIPELINE RIGHT-OF-WAY WITH THE NEW CONSTRUCTION RIGHT-OF-WAY. IN ADDITION, LOCATE THE LOOP LINE NO MORE THAN 25 FEET AWAY FROM THE EXISTING PIPELINE UNLESS SITE-SPECIFIC CONSTRAINTS WOULD ADVERSELY AFFECT THE STABILITY OF THE EXISTING PIPELINE.

3. LIMIT THE WIDTH OF THE CONSTRUCTION RIGHT-OF-WAY TO 75 FEET OR LESS. PRIOR WRITTEN APPROVAL OF THE DIRECTOR IS REQUIRED WHERE TOPOGRAPHIC CONDITIONS OR SOIL LIMITATIONS REQUIRE THAT THE CONSTRUCTION RIGHT-OF-WAY WIDTH WITHIN THE BOUNDARIES OF A FEDERALLY DELINEATED WETLAND BE EXPANDED BEYOND 75 FEET. EARLY IN THE PLANNING PROCESS THE PROJECT SPONSOR IS ENCOURAGED TO IDENTIFY SITE-SPECIFIC AREAS WHERE EXCESSIVELY WIDE TRENCHES COULD OCCUR AND/OR WHERE SPOIL PILES COULD BE DIFFICULT TO MAINTAIN BECAUSE EXISTING SOILS LACK ADEQUATE UNCONFINED COMPRESSIVE STRENGTH.

4. WETLAND BOUNDARIES AND BUFFERS MUST BE CLEARLY MARKED IN THE FIELD WITH SIGNS AND/OR HIGHLY VISIBLE FLAGGING UNTIL CONSTRUCTION-RELATED GROUND DISTURBING ACTIVITIES ARE COMPLETE.

5. IMPLEMENT THE MEASURES OF SECTIONS V AND VI IN THE EVENT A WATERBODY CROSSING IS LOCATED WITHIN OR ADJACENT TO A WETLAND CROSSING. IF ALL MEASURES OF SECTIONS V AND VI CANNOT BE MET, THE PROJECT SPONSOR MUST FILE WITH THE SECRETARY A SITE-SPECIFIC CROSSING PLAN FOR REVIEW AND WRITTEN APPROVAL BY THE DIRECTOR BEFORE CONSTRUCTION. THIS CROSSING PLAN SHALL ADDRESS AT A MINIMUM:

A. SPOIL CONTROL;
B. EQUIPMENT BRIDGES;
C. RESTORATION OF WATERBODY BANKS AND WETLAND HYDROLOGY;
D. TIMING OF THE WATERBODY CROSSING;
E. METHOD OF CROSSING; AND
F. SIZE AND LOCATION OF ALL EXTRA WORK AREAS.

6. DO NOT LOCATE ABOVEGROUND FACILITIES IN ANY WETLAND, EXCEPT WHERE THE LOCATION OF SUCH FACILITIES OUTSIDE OF WETLANDS WOULD PROHIBIT COMPLIANCE WITH U.S. DEPARTMENT OF TRANSPORTATION REGULATIONS.

B. INSTALLATION

1. EXTRA WORK AREAS AND ACCESS ROADS

A. LOCATE ALL EXTRA WORK AREAS (SUCH AS STAGING AREAS AND ADDITIONAL SPOIL STORAGE AREAS) AT LEAST 50 FEET AWAY FROM WETLAND BOUNDARIES, EXCEPT WHERE THE ADJACENT UPLAND CONSISTS OF CULTIVATED OR ROTATED CROPLAND OR OTHER DISTURBED LAND.

B. THE PROJECT SPONSOR SHALL FILE WITH THE SECRETARY FOR REVIEW AND WRITTEN APPROVAL BY THE DIRECTOR, SITE-SPECIFIC JUSTIFICATION FOR EACH EXTRA WORK AREA WITH A LESS THAN 50-FOOT SETBACK FROM WETLAND BOUNDARIES, EXCEPT WHERE ADJACENT UPLAND CONSISTS OF CULTIVATED OR ROTATED CROPLAND OR OTHER DISTURBED LAND. THE JUSTIFICATION MUST SPECIFY THE SITE-SPECIFIC CONDITIONS THAT WILL NOT PERMIT A 50-FOOT SETBACK AND MEASURES TO ENSURE THE WETLAND IS ADEQUATELY PROTECTED.

C. THE CONSTRUCTION RIGHT-OF-WAY MAY BE USED FOR ACCESS WHEN THE WETLAND SOIL IS FIRM ENOUGH TO AVOID RUTTING OR THE CONSTRUCTION RIGHT-OF-WAY HAS BEEN APPROPRIATELY STABILIZED TO AVOID RUTTING (E.G., WITH TIMBER RIPRAP, PREFABRICATED EQUIPMENT MATS, OR TERRA MATS).

IN WETLANDS THAT CANNOT BE APPROPRIATELY STABILIZED, ALL CONSTRUCTION EQUIPMENT OTHER THAN THAT NEEDED TO INSTALL THE WETLAND CROSSING SHALL

USE ACCESS ROADS LOCATED IN UPLAND AREAS. WHERE ACCESS ROADS IN UPLAND AREAS DO NOT PROVIDE REASONABLE ACCESS, LIMIT ALL OTHER CONSTRUCTION EQUIPMENT TO ONE PASS THROUGH THE WETLAND USING THE CONSTRUCTION RIGHT-OF-WAY.

D. THE ONLY ACCESS ROADS, OTHER THAN THE CONSTRUCTION RIGHT-OF-WAY, THAT CAN BE USED IN WETLANDS ARE THOSE EXISTING ROADS THAT CAN BE USED WITH NO MODIFICATIONS OR IMPROVEMENTS, OTHER THAN ROUTINE REPAIR, AND NO IMPACT ON THE WETLAND.

2. CROSSING PROCEDURES

A. COMPLY WITH COE, OR ITS DELEGATED AGENCY, PERMIT TERMS AND CONDITIONS.

B. ASSEMBLE THE PIPELINE IN AN UPLAND AREA UNLESS THE WETLAND IS DRY ENOUGH TO ADEQUATELY SUPPORT SKIDS AND PIPE.

C. USE "PUSH-PULL" OR "FLOAT" TECHNIQUES TO PLACE THE PIPE IN THE TRENCH WHERE WATER AND OTHER SITE CONDITIONS ALLOW.

D. MINIMIZE THE LENGTH OF TIME THAT TOPSOIL IS SEGREGATED AND THE TRENCH IS OPEN. DO NOT TRENCH THE WETLAND UNTIL THE PIPELINE IS ASSEMBLED AND READY FOR LOWERING IN.

E. LIMIT CONSTRUCTION EQUIPMENT OPERATING IN WETLAND AREAS TO THAT NEEDED TO CLEAR THE CONSTRUCTION RIGHT-OF-WAY, DIG THE TRENCH, FABRICATE AND INSTALL THE PIPELINE, BACKFILL THE TRENCH, AND RESTORE THE CONSTRUCTION RIGHT-OF-WAY.

F. CUT VEGETATION JUST ABOVE GROUND LEVEL, LEAVING EXISTING ROOT SYSTEMS IN PLACE, AND REMOVE IT FROM THE WETLAND FOR DISPOSAL.

THE PROJECT SPONSOR CAN BURN WOODY DEBRIS IN WETLANDS, IF APPROVED BY THE COE AND IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS, ENSURING THAT ALL REMAINING WOODY DEBRIS IS REMOVED FOR DISPOSAL.

G. LIMIT PULLING OF TREE STUMPS AND GRADING ACTIVITIES TO DIRECTLY OVER THE TRENCHLINE. DO NOT GRADE OR REMOVE STUMPS OR ROOT SYSTEMS FROM THE REST OF THE CONSTRUCTION RIGHT-OF-WAY IN WETLANDS UNLESS THE CHIEF INSPECTOR AND ENVIRONMENTAL INSPECTOR DETERMINE THAT SAFETY-RELATED CONSTRUCTION CONSTRAINTS REQUIRE GRADING OR THE REMOVAL OF TREE STUMPS FROM UNDER THE WORKING SIDE OF THE CONSTRUCTION RIGHT-OF-WAY.

H. SEGREGATE THE TOP 1 FOOT OF TOPSOIL FROM THE AREA DISTURBED BY TRENCHING, EXCEPT IN AREAS WHERE STANDING WATER IS PRESENT OR SOILS ARE

SATURATED. IMMEDIATELY AFTER BACKFILLING IS COMPLETE, RESTORE THE SEGREGATED TOPSOIL TO ITS ORIGINAL LOCATION.

I. DO NOT USE ROCK, SOIL IMPORTED FROM OUTSIDE THE WETLAND, TREE STUMPS, OR BRUSH RIPRAP TO SUPPORT EQUIPMENT ON THE CONSTRUCTION RIGHT-OF-WAY.

J. IF STANDING WATER OR SATURATED SOILS ARE PRESENT, OR IF CONSTRUCTION EQUIPMENT CAUSES RUTS OR MIXING OF THE TOPSOIL AND SUBSOIL IN WETLANDS, USE LOW-GROUND-WEIGHT CONSTRUCTION EQUIPMENT, OR OPERATE NORMAL EQUIPMENT ON TIMBER RIPRAP, PREFABRICATED EQUIPMENT MATS, OR TERRA MATS.

K. REMOVE ALL PROJECT-RELATED MATERIAL USED TO SUPPORT EQUIPMENT ON THE CONSTRUCTION RIGHT-OF-WAY UPON COMPLETION OF CONSTRUCTION.

3. TEMPORARY SEDIMENT CONTROL

INSTALL SEDIMENT BARRIERS (AS DEFINED IN SECTION IV.F.3.A OF THE PLAN) IMMEDIATELY AFTER INITIAL DISTURBANCE OF THE WETLAND OR ADJACENT UPLAND. SEDIMENT BARRIERS MUST BE PROPERLY MAINTAINED THROUGHOUT CONSTRUCTION AND REINSTALLED AS NECESSARY (SUCH AS AFTER BACKFILLING OF THE TRENCH). EXCEPT AS NOTED BELOW IN SECTION VI.B.3.C, MAINTAIN SEDIMENT BARRIERS UNTIL REPLACED BY PERMANENT EROSION CONTROLS OR RESTORATION OF ADJACENT UPLAND AREAS IS COMPLETE. TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES ARE ADDRESSED IN MORE DETAIL IN THE PLAN.

A. INSTALL SEDIMENT BARRIERS ACROSS THE ENTIRE CONSTRUCTION RIGHT-OF-WAY IMMEDIATELY UPSLOPE OF THE WETLAND BOUNDARY AT ALL WETLAND CROSSINGS WHERE NECESSARY TO PREVENT SEDIMENT FLOW INTO THE WETLAND.

B. WHERE WETLANDS ARE ADJACENT TO THE CONSTRUCTION RIGHT-OF-WAY AND THE RIGHT-OF-WAY SLOPES TOWARD THE WETLAND, INSTALL SEDIMENT BARRIERS ALONG THE EDGE OF THE CONSTRUCTION RIGHT-OF-WAY AS NECESSARY TO CONTAIN SPOIL WITHIN THE CONSTRUCTION RIGHT-OF-WAY AND PREVENT SEDIMENT FLOW INTO THE WETLAND.

C. INSTALL SEDIMENT BARRIERS ALONG THE EDGE OF THE CONSTRUCTION RIGHT-OF-WAY AS NECESSARY TO CONTAIN SPOIL AND SEDIMENT WITHIN THE CONSTRUCTION RIGHT-OF-WAY THROUGH WETLANDS. REMOVE THESE SEDIMENT BARRIERS DURING RIGHT-OF-WAY CLEANUP.

4. TRENCH DEWATERING

DEWATER THE TRENCH (EITHER ON OR OFF THE CONSTRUCTION RIGHT-OF-WAY) IN A MANNER THAT DOES NOT CAUSE EROSION AND DOES NOT RESULT IN SILT-LADEN WATER FLOWING INTO ANY WETLAND. REMOVE THE DEWATERING STRUCTURES AS SOON AS PRACTICABLE AFTER THE COMPLETION OF DEWATERING ACTIVITIES.

C. RESTORATION

1. WHERE THE PIPELINE TRENCH MAY DRAIN A WETLAND, CONSTRUCT TRENCH BREAKERS AT THE WETLAND BOUNDARIES AND/OR SEAL THE TRENCH BOTTOM AS NECESSARY TO MAINTAIN THE ORIGINAL WETLAND HYDROLOGY.

2. RESTORE PRE-CONSTRUCTION WETLAND CONTOURS TO MAINTAIN THE ORIGINAL WETLAND HYDROLOGY.

3. FOR EACH WETLAND CROSSED, INSTALL A TRENCH BREAKER AT THE BASE OF SLOPES NEAR THE BOUNDARY BETWEEN THE WETLAND AND ADJACENT UPLAND AREAS. INSTALL A PERMANENT SLOPE BREAKER ACROSS THE CONSTRUCTION RIGHT-OF-WAY AT THE BASE OF SLOPES GREATER THAN 5 PERCENT WHERE THE BASE OF THE SLOPE IS LESS THAN 50 FEET FROM THE WETLAND, OR AS NEEDED TO PREVENT SEDIMENT TRANSPORT INTO THE WETLAND. IN ADDITION, INSTALL SEDIMENT BARRIERS AS OUTLINED IN THE PLAN. IN SOME AREAS, WITH THE APPROVAL OF THE ENVIRONMENTAL INSPECTOR, AN EARTHEN BERM MAY BE SUITABLE AS A SEDIMENT BARRIER ADJACENT TO THE WETLAND.

4. DO NOT USE FERTILIZER, LIME, OR MULCH UNLESS REQUIRED IN WRITING BY THE APPROPRIATE FEDERAL OR STATE AGENCY.

5. CONSULT WITH THE APPROPRIATE FEDERAL OR STATE AGENCIES TO DEVELOP A PROJECT-SPECIFIC WETLAND RESTORATION PLAN. THE RESTORATION PLAN SHALL INCLUDE MEASURES FOR RE-ESTABLISHING HERBACEOUS AND/OR WOODY SPECIES, CONTROLLING THE INVASION AND SPREAD OF INVASIVE SPECIES AND NOXIOUS WEEDS (E.G., PURPLE LOOSESTRIFE AND PHRAGMITES), AND MONITORING THE SUCCESS OF THE REVEGETATION AND WEED CONTROL EFFORTS. PROVIDE THIS PLAN TO THE FERC STAFF UPON REQUEST.

6. UNTIL A PROJECT-SPECIFIC WETLAND RESTORATION PLAN IS DEVELOPED AND/OR IMPLEMENTED, TEMPORARILY REVEGETATE THE CONSTRUCTION RIGHT-OF-WAY WITH ANNUAL RYEGRASS AT A RATE OF 40 POUNDS/ACRE (UNLESS STANDING WATER IS PRESENT).

7. ENSURE THAT ALL DISTURBED AREAS SUCCESSFULLY REVEGETATE WITH WETLAND HERBACEOUS AND/OR WOODY PLANT SPECIES.

8. REMOVE TEMPORARY SEDIMENT BARRIERS LOCATED AT THE BOUNDARY BETWEEN WETLAND AND ADJACENT UPLAND AREAS AFTER REVEGETATION AND STABILIZATION OF ADJACENT UPLAND AREAS ARE JUDGED TO BE SUCCESSFUL AS SPECIFIED IN SECTION VII.A.4 OF THE PLAN.

D. POST-CONSTRUCTION MAINTENANCE AND REPORTING

1. DO NOT CONDUCT ROUTINE VEGETATION MOWING OR CLEARING OVER THE FULL WIDTH OF THE PERMANENT RIGHT-OF-WAY IN WETLANDS. HOWEVER, TO FACILITATE PERIODIC CORROSION/LEAK SURVEYS, A CORRIDOR CENTERED ON THE PIPELINE AND UP TO 10 FEET WIDE MAY BE CLEARED AT A FREQUENCY NECESSARY TO MAINTAIN THE 10-FOOT CORRIDOR IN AN HERBACEOUS STATE. IN ADDITION, TREES WITHIN 15 FEET OF THE PIPELINE WITH ROOTS THAT COULD COMPROMISE THE INTEGRITY OF PIPELINE COATING MAY BE SELECTIVELY CUT AND REMOVED FROM THE PERMANENT RIGHT-OF-WAY. DO NOT CONDUCT ANY ROUTINE VEGETATION MOWING OR CLEARING IN WETLANDS THAT ARE BETWEEN HDD ENTRY AND EXIT POINTS.

2. DO NOT USE HERBICIDES OR PESTICIDES IN OR WITHIN 100 FEET OF A WETLAND, EXCEPT AS ALLOWED BY THE APPROPRIATE FEDERAL OR STATE AGENCY.

3. TIME OF YEAR RESTRICTIONS SPECIFIED IN SECTION VII.A.5 OF THE PLAN (APRIL 15 - AUGUST 1 OF ANY YEAR) APPLY TO ROUTINE MOWING AND CLEARING OF WETLAND AREAS.

4. MONITOR AND RECORD THE SUCCESS OF WETLAND REVEGETATION ANNUALLY UNTIL WETLAND REVEGETATION IS SUCCESSFUL.

5. WETLAND REVEGETATION SHALL BE CONSIDERED SUCCESSFUL IF ALL OF THE FOLLOWING CRITERIA ARE SATISFIED:

A. THE AFFECTED WETLAND SATISFIES THE CURRENT FEDERAL DEFINITION FOR A WETLAND (I.E., SOILS, HYDROLOGY, AND VEGETATION);
B. VEGETATION IS AT LEAST 80 PERCENT OF EITHER THE COVER DOCUMENTED FOR THE WETLAND PRIOR TO CONSTRUCTION, OR AT LEAST 80 PERCENT OF THE COVER IN ADJACENT WETLAND AREAS THAT WERE NOT DISTURBED BY CONSTRUCTION;
C. IF NATURAL RATHER THAN ACTIVE REVEGETATION WAS USED, THE PLANT SPECIES COMPOSITION IS CONSISTENT WITH EARLY SUCCESSIONAL WETLAND PLANT COMMUNITIES IN THE AFFECTED ECOREGION; AND
D. INVASIVE SPECIES AND NOXIOUS WEEDS ARE ABSENT, UNLESS THEY ARE ABUNDANT IN ADJACENT AREAS THAT WERE NOT DISTURBED BY CONSTRUCTION.

6. WITHIN 3 YEARS AFTER CONSTRUCTION, FILE A REPORT WITH THE SECRETARY IDENTIFYING THE STATUS OF THE WETLAND REVEGETATION EFFORTS AND DOCUMENTING SUCCESS AS DEFINED IN SECTION VI.D.5, ABOVE. THE REQUIREMENT TO FILE WETLAND RESTORATION REPORTS WITH THE SECRETARY DOES NOT APPLY TO PROJECTS CONSTRUCTED UNDER THE AUTOMATIC AUTHORIZATION, PRIOR NOTICE, OR ADVANCE NOTICE PROVISIONS IN THE FERC'S REGULATIONS.

FOR ANY WETLAND WHERE REVEGETATION IS NOT SUCCESSFUL AT THE END OF 3 YEARS AFTER CONSTRUCTION, DEVELOP AND IMPLEMENT (IN CONSULTATION WITH A PROFESSIONAL WETLAND ECOLOGIST) A REMEDIAL REVEGETATION PLAN TO ACTIVELY REVEGETATE WETLANDS. CONTINUE REVEGETATION EFFORTS AND FILE A REPORT ANNUALLY DOCUMENTING PROGRESS IN THESE WETLANDS UNTIL WETLAND REVEGETATION IS SUCCESSFUL.

VII. HYDROSTATIC TESTING

A. NOTIFICATION PROCEDURES AND PERMITS

1. APPLY FOR STATE-ISSUED WATER WITHDRAWAL PERMITS, AS REQUIRED.

2. APPLY FOR NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) OR STATE-ISSUED DISCHARGE PERMITS, AS REQUIRED.

3. NOTIFY APPROPRIATE STATE AGENCIES OF INTENT TO USE SPECIFIC SOURCES AT LEAST 48 HOURS BEFORE TESTING ACTIVITIES UNLESS THEY WAIVE THIS REQUIREMENT IN WRITING.

B. GENERAL

1. PERFORM 100 PERCENT RADIOGRAPHIC INSPECTION OF ALL PIPELINE SECTION WELDS OR HYDROTEST THE PIPELINE SECTIONS, BEFORE INSTALLATION UNDER WATERBODIES OR WETLANDS.

2. IF PUMPS USED FOR HYDROSTATIC TESTING ARE WITHIN 100 FEET OF ANY WATERBODY OR WETLAND, ADDRESS SECONDARY CONTAINMENT AND REFUELING OF THESE PUMPS IN THE PROJECT'S SPILL PREVENTION AND RESPONSE PROCEDURES.

3. THE PROJECT SPONSOR SHALL FILE WITH THE SECRETARY BEFORE CONSTRUCTION A LIST IDENTIFYING THE LOCATION OF ALL WATERBODIES PROPOSED FOR USE AS A HYDROSTATIC TEST WATER SOURCE OR DISCHARGE LOCATION. THIS FILING REQUIREMENT DOES NOT APPLY TO PROJECTS CONSTRUCTED UNDER THE AUTOMATIC AUTHORIZATION PROVISIONS OF THE FERC'S REGULATIONS.

C. INTAKE SOURCE AND RATE

1. SCREEN THE INTAKE HOSE TO MINIMIZE THE POTENTIAL FOR ENTRAINMENT OF FISH.

2. DO NOT USE STATE-DESIGNATED EXCEPTIONAL VALUE WATERS, WATERBODIES WHICH PROVIDE HABITAT FOR FEDERALLY LISTED THREATENED OR ENDANGERED SPECIES, OR WATERBODIES DESIGNATED AS PUBLIC WATER SUPPLIES, UNLESS APPROPRIATE FEDERAL, STATE, AND/OR LOCAL PERMITTING AGENCIES GRANT WRITTEN PERMISSION.

3. MAINTAIN ADEQUATE FLOW RATES TO PROTECT AQUATIC LIFE, PROVIDE FOR ALL WATERBODY USES, AND PROVIDE FOR DOWNSTREAM WITHDRAWALS OF WATER BY EXISTING USERS.

4. LOCATE HYDROSTATIC TEST MANIFOLDS OUTSIDE WETLANDS AND RIPARIAN AREAS TO THE MAXIMUM EXTENT PRACTICABLE.

D. DISCHARGE LOCATION, METHOD, AND RATE

1. REGULATE DISCHARGE RATE, USE ENERGY DISSIPATION DEVICE(S), AND INSTALL SEDIMENT BARRIERS, AS NECESSARY, TO PREVENT EROSION, STREAMBED SCOUR, SUSPENSION OF SEDIMENTS, OR EXCESSIVE STREAMFLOW.

2. DO NOT DISCHARGE INTO STATE-DESIGNATED EXCEPTIONAL VALUE WATERS, WATERBODIES WHICH PROVIDE HABITAT FOR FEDERALLY LISTED THREATENED OR ENDANGERED SPECIES, OR WATERBODIES DESIGNATED AS PUBLIC WATER SUPPLIES, UNLESS APPROPRIATE FEDERAL, STATE, AND LOCAL PERMITTING AGENCIES GRANT WRITTEN PERMISSION.

NOTES:

1. PIPELINE INSTALLATION PROCEDURES, WATERBODY CROSSINGS AND DIVERSION METHODOLOGY SHALL BE ESTABLISHED IN THE FIELD IN COORDINATION WITH THE OWNER.

REV. / ISSUE	DATE	DESCRIPTION
1	4/22/19	REV TRANSITION AREA WIDTH PER NJDEP

LEGEND

▬ ▬ ▬ ▬	PROPERTY LINE
430	EXISTING CONTOURS
427.0 X	EXISTING SPOT ELEVATION
═══	EXISTING STORM SEWER
—— W ——	EXISTING WATER MAIN
━━━━━	EXISTING GAS MAIN
🟥	PROPOSED GAS MAIN
	EXISTING SIGN
	EXISTING UTILITY POLE
⋈	PROPOSED GAS VALVE
————	EXISTING TREELINE/CANOPY
	EXISTING TREE
————	PROPOSED TREELINE
—XX——X—	EXISTING FENCE
	EXISTING RETAINING WALL
— — — —	EXISTING PERMANENT EASEMENT/TGPL R.O.W.
— — — —	PROPOSED PERMANENT EASEMENT
━━━━	PROPOSED LIMIT OF DISTURBANCE
━━━━	PROPOSED HDD LIMIT OF DISTURBANCE
————	STREAM LINE
————	WETLANDS BOUNDARY
————	COASTAL WETLANDS BOUNDARY
————	TOP OF BANK
————	50' WETLAND TRANSITION AREA
————	RIPARIAN BUFFER
━━━━	MEAN HIGH WATER LINE
————	SPRING HIGH WATER LINE
━━━━	MEAN HIGH WATER LINE 500' BUFFER
————	TIDELANDS
⑤→ W–T01–005A–1	PHOTO LOCATION (SEE REPORT)
△1620	WETLAND FLAGS
△1432	STATE OPEN WATERS FLAGS
⌖ 1609	FRESHWATER WETLAND/STATE OPEN WATER DATA POINTS

I AM A DULY REGISTERED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF NEW JERSEY AND I HEREBY CERTIFY THAT EXISTING CONDITIONS SHOWN WERE FIELD LOCATED AND PREPARED UNDER MY DIRECT SUPERVISION.

THOMAS J. MURPHY, PLS
DW SMITH ASSOCIATES, LLC
1450 STATE ROUTE 34, WALL, NJ 07753
PROFESSIONAL LAND SURVEYOR
N.J. LIC. NO. 37207 COA NO. 24GA28122400

SIGNATURE DATE

I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF NEW JERSEY AND I HEREBY CERTIFY THAT THE PROPOSED ENVIRONMENTAL DISTURBANCES SHOWN ARE ACCURATE AND CORRESPOND WITH THE DETAILED ENGINEERING DRAWINGS.

WILLIAM SALMON, P.E.
PS&S, LLC
1433 HIGHWAY 34, SUITE A-4, WALL, NJ 07727
PROFESSIONAL ENGINEER
N.J. LIC. NO. 41319 COA NO. 24GA28032700

04/24/19
SIGNATURE DATE

PAULUS, SOKOLOWSKI
AND SARTOR, LLC.
1433 ROUTE 34
SUITE A4
WALL, NJ 07727
PHONE: (848) 206-2626
CERTIFICATE OF AUTHORIZATION NO. 24GA28032700

ALL DIMENSIONS MUST BE VERIFIED BY THE CONTRACTOR. NOTIFY PAULUS, SOKOLOWSKI AND SARTOR, LLC. OF ANY CONFLICTS, ERRORS, AMBIGUITIES OR DISCREPANCIES IN THE CONTRACT DRAWINGS OR SPECIFICATIONS BEFORE PROCEEDING WITH CONSTRUCTION.

ALL DIMENSIONS SHALL BE AS NOTED IN WORDS OR NUMBERS ON THE CONTRACT DRAWINGS. DO NOT SCALE THE DRAWINGS TO DETERMINE DIMENSIONS.

THESE CONTRACT DRAWINGS CONTAIN DATA INTENDED SPECIFICALLY FOR THE NOTED PROJECT AND CLIENT. THEY ARE NOT INTENDED FOR USE ON EXTENSIONS OF THIS PROJECT OR FOR REUSE ON ANY OTHER PROJECT.

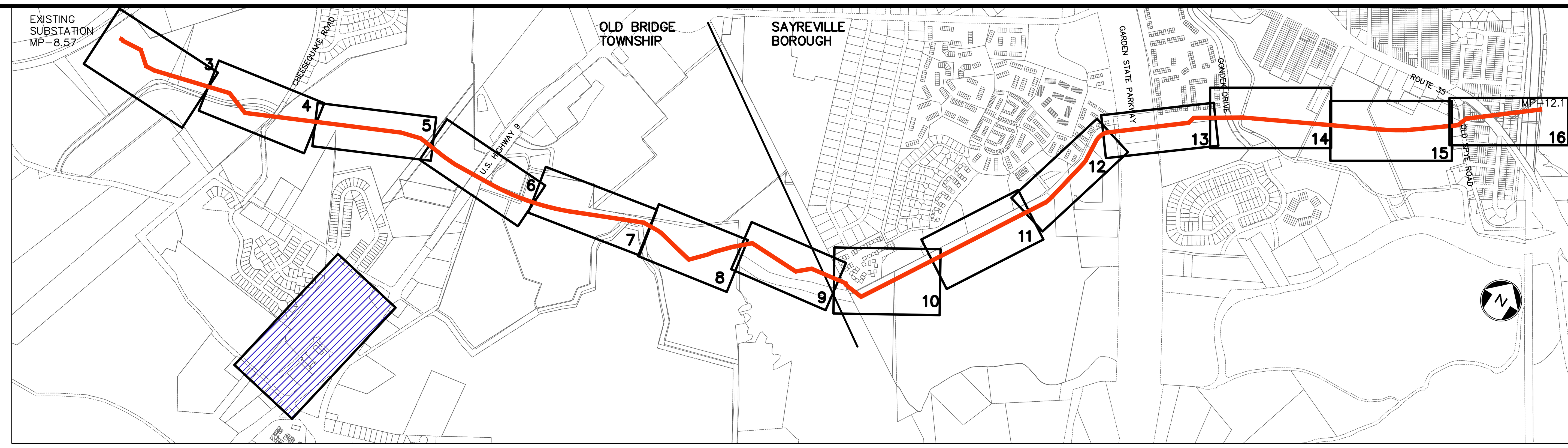
THE COPYING AND/OR MODIFICATION OF THIS DOCUMENT OR ANY PORTION THEREOF WITHOUT THE WRITTEN PERMISSION OF PAULUS, SOKOLOWSKI AND SARTOR, LLC. IS PROHIBITED.

UNLESS THESE DRAWINGS ARE SPECIFICALLY DESIGNATED AS "CONSTRUCTION ISSUE", THESE DRAWINGS SHALL NOT BE USED FOR CONSTRUCTION OR IMPROVEMENTS DEPICTED HEREIN, CONTRACTORS SHALL NOTIFY THE DESIGN ENGINEER TO OBTAIN CONSTRUCTION DOCUMENTS.

PROJECT
NORTHEAST SUPPLY
ENHANCEMENT PROJECT
PROPOSED
26" MADISON LOOP
OLD BRIDGE TOWNSHIP & SAYREVILLE BOROUGH
MIDDLESEX COUNTY, NEW JERSEY

SHEET TITLE
CONSTRUCTION
DETAILS

PROJECT NO.: 05731.0002
SCALE: AS SHOWN
DATE: 06/08/18
DRAWN BY: JPS
CHECKED BY: WS
SHEET 13 OF 13
SHEET NO.
13



KEY MAP
SCALE: 1" =1000'

NOTES:

1. THE PURPOSE OF THIS PLAN IS TO DEPICT THE LIMITS OF OFF-SITE CONTRACTOR YARD ASSOCIATED WITH THE NORTHEAST SUPPLY ENHANCEMENT PROJECT – 26" MADISON LOOP. REFER TO THE PLANS ENTITLED "NORTHEAST SUPPLY ENHANCEMENT PROJECT – PROPOSED 26" MADISON LOOP," LAST REVISED APRIL 22, 2019, PREPARED BY PAULUS, SOKOLOSWKI AND SARTOR, LLC.
2. AERIAL INFORMATION TAKEN FROM NEW JERSEY GEOGRAPHIC INFORMATION NETWORK – NJ 2015 ORTHOPHOTOGRAPHY MG4, PREPARED BY NJ OFFICE OF INFORMATION TECHNOLOGY, OFFICE OF GIS.
3. TAX MAP INFORMATION TAKEN FROM "TAX MAP – TOWNSHIP OF OLD BRIDGE (SHEET 6.11)", DATED JULY 2008, PREPARED BY CME ASSOCIATES.
4. THERE ARE NO IMPACTS TO REGULATED FEATURES WITHIN THE LIMITS OF CONTRACTOR YARDS.

REV. / ISSUE	DATE	DESCRIPTION
1	4/22/19	REV TRANSITION AREA WIDTH PER NJDEP

I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF NEW JERSEY AND I HEREBY CERTIFY THAT THE PROPOSED ENVIRONMENTAL DISTURBANCES SHOWN ARE ACCURATE AND CORRESPOND WITH THE DETAILED ENGINEERING DRAWINGS.

WILLIAM SALMON, P.E.
PS&S, LLC
1433 HIGHWAY 34, SUITE A-4, WALL, NJ 07727
PROFESSIONAL ENGINEER
N.J. LIC. NO. 41319 COA NO. 24GA28032700

SIGNATURE 04/24/19 DATE

PAULUS, SOKOLOWSKI AND SARTOR, LLC.
PS&S
1433 ROUTE 34
SUITE A4
WALL, NJ 07727
PHONE: (848) 206-2626
CERTIFICATE OF AUTHORIZATION NO. 24GA28032700

PROJECT

NORTHEAST SUPPLY ENHANCEMENT PROJECT PROPOSED 26" MADISON LOOP

OLD BRIDGE TOWNSHIP & SAYREVILLE BOROUGH
MIDDLESEX COUNTY, NEW JERSEY

SHEET TITLE

PERMIT PLAN BLOCK 6302, LOT CO210 OLD BRIDGE TOWNSHIP STAGING AREA

PROJECT NO.:	05731.0002	DRAWN BY:	JPS
SCALE:	1 = 60'	CHECKED BY:	WS
DATE:	6/08/18	SHEET	1 OF 1
SHEET NO.	1		

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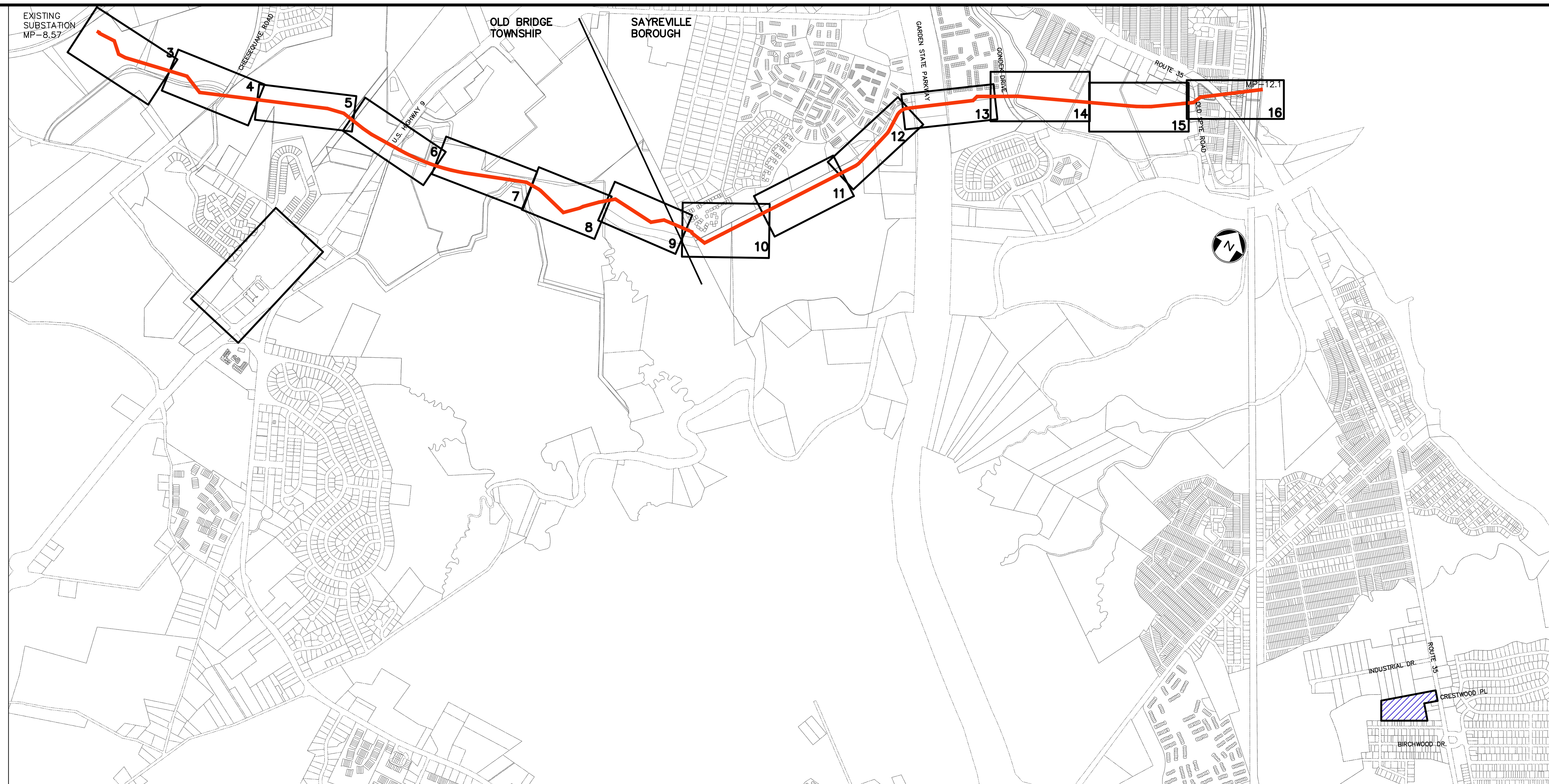
4. THERE ARE NO IMPACTS TO REGULATED FEATURES WITHIN THE LIMITS OF CONTRACTOR YARDS.



KEY MAP
SCALE: 1" =1000'

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CERTIFICATE OF AUTHORIZATION NO. 24GA28032700

PROJECT

NORTHEAST SUPPLY ENHANCEMENT PROJECT PROPOSED 26" MADISON LOOP

OLD BRIDGE TOWNSHIP & SAYREVILLE BOROUGH
MIDDLESEX COUNTY, NEW JERSEY

SHEET TITLE

PERMIT PLAN
BLOCK 1051, LOT 4
OLD BRIDGE TOWNSHIP
STAGING AREA

PROJECT NO.:	05731.0002	DRAWN BY:	JPS
SCALE:	1 = 60'	CHECKED BY:	WS
DATE:	06/08/18	SHEET 1 OF 1	
SHEET NO.	1		