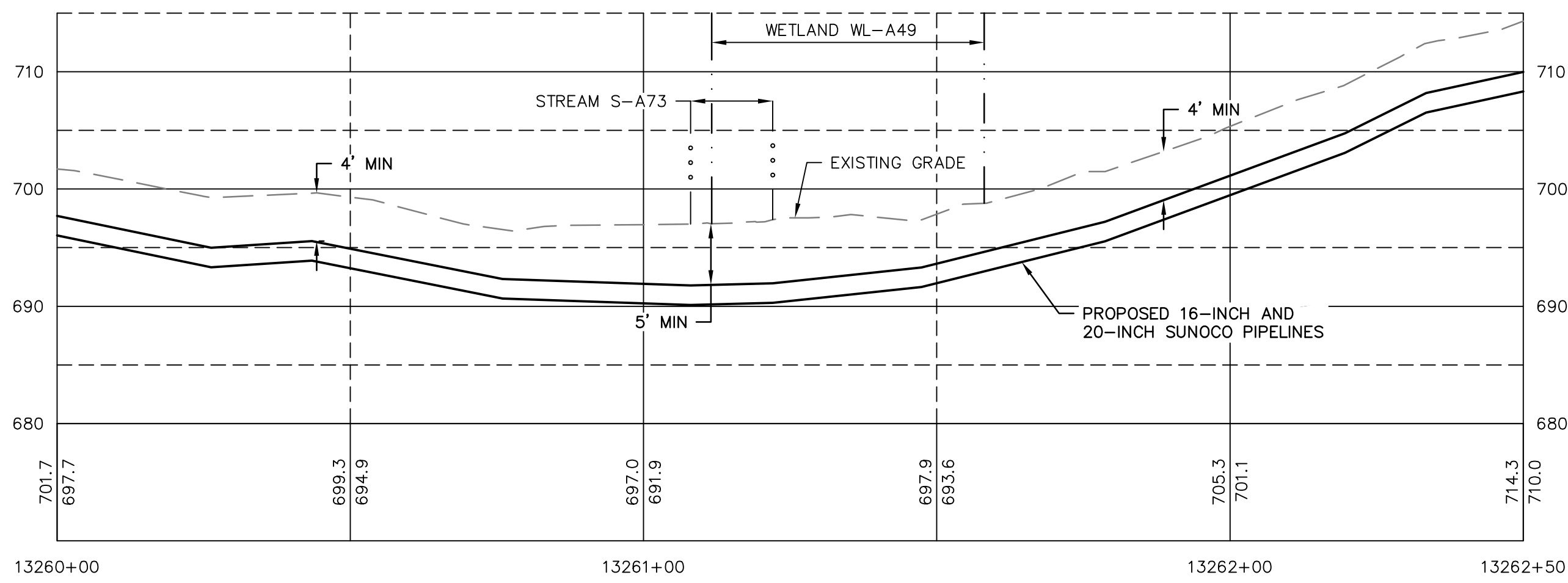
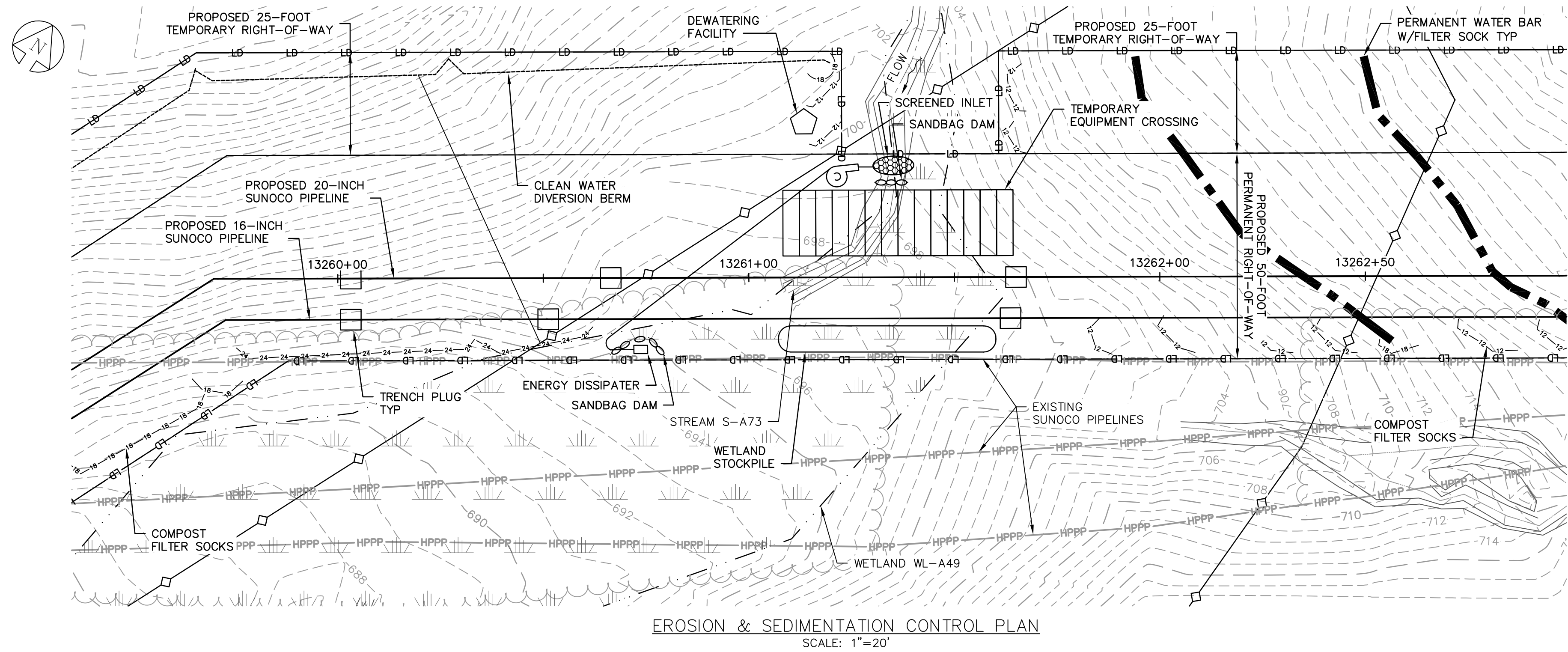
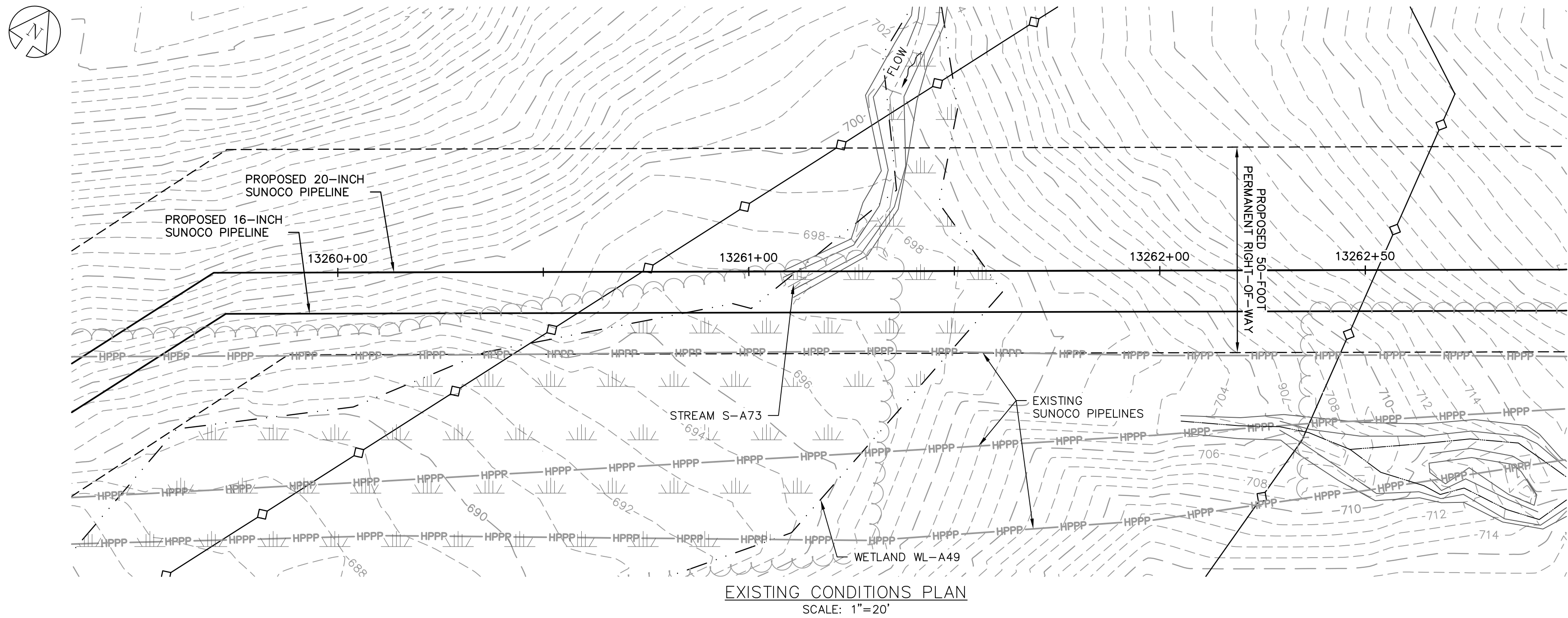
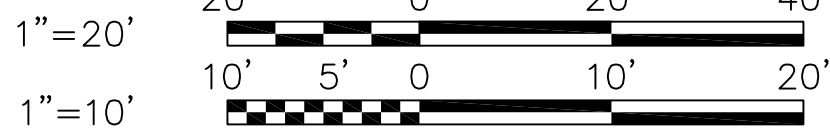




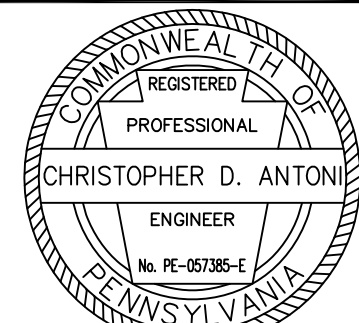
PROFILE
HORZ SCALE: 1"=20'
VERT SCALE: 1"=10'

GRAPHIC SCALES

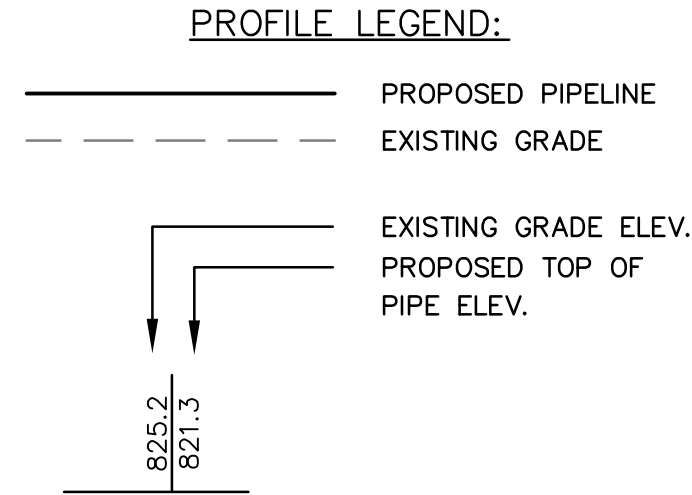


THE LOCATION OF THE PIPELINE FACILITIES AS SHOWN HEREON MUST BE CONSIDERED AS APPROXIMATE ONLY. BEFORE DIGGING OR FOR AN EXACT LOCATION PLEASE CONTACT YOUR STATES UNDERGROUND UTILITY LOCATION SERVICE.

STV PROJECT No.: 38-17335



CHRISTOPHER D. ANTONI
PE-057385-E



ENGINEERING RECORD	
DRAWN BY	DLH
CHECKED BY	CDA
APPROVED BY	CDA
DATE	11/30/16
SCALE	AS NOTED

OLD DRAWING NO.

GENERAL NOTES:

- REFERENCE E&S PLAN AND SITE RESTORATION NOTES AND DETAILS FOR ADDITIONAL CONSTRUCTION SEQUENCING, TYPICAL DETAILS AND NOTES (ES-0.01-ES-0.23); AND PLAN SHEETS FOR ADDITIONAL PLANS AND TOPOGRAPHY.
- ALL EXISTING UTILITY INFORMATION IS APPROXIMATE. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
- MAINTAIN 2'-0" MINIMUM VERTICAL SEPARATION BETWEEN THE PROPOSED PIPELINE AND OTHER UTILITIES.
- THE BACKGROUND TOPOGRAPHY WAS OBTAINED FROM TOPOGRAPHIC SURVEYS PERFORMED IN SEPTEMBER 2016.
- THE PROJECT IS LOCATED IN NAD83 PENNSYLVANIA STATE PLANE COORDINATE SYSTEM (SOUTH ZONE), NAVD88.
- EXCAVATION IS LIMITED TO THE CENTERLINE WITH A TYPICAL TRENCH WIDTH OF 4-5' FOR 16/20" PIPELINE.

WETLAND CROSSING NOTES:

- REFERENCE NOTES AND DETAILS FOR WETLAND CONSTRUCTION SEQUENCING AND WETLAND RESTORATION (ES-0.03, ES-0.08, ES-0.10, AND ES-0.15).
- A MINIMUM OF 4 FEET COVER UNDER WETLANDS AND UPLANDS IS REQUIRED.
- FOR TEMPORARY TIMBER MAT REFERENCE (ES-0.10)
- EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET EDGE OF WETLAND OR 100 FEET FROM EDGE OF WETLAND FOR SPECIAL PROTECTION WATERS (HQ OR EV).

STREAM CROSSING NOTES:

- REFERENCE NOTES AND DETAILS FOR STREAM CONSTRUCTION SEQUENCING AND STREAM RESTORATION (ES-0.01-ES-0.17).
- FOR TEMPORARY EQUIPMENT CROSSINGS REFERENCE (ES-0.10).
- SITE CONDITIONS MAY ALLOW FOR IMPLEMENTATION OF OTHER APPROVED PIPELINE INSTALLATION METHODS REFERENCED WITH THE NOTES AND DETAILS (ES-0.11-ES-0.14).
- THE PIPELINES SHALL MAINTAIN A MINIMUM OF 5 FEET OF COVER UNDER STREAMS FROM THE TOP OF PIPE TO THE STREAM BED. THIS COVER WILL BE MAINTAINED AT A MINIMUM FROM TOP OF BANK TO TOP OF BANK.
- REFERENCE THE STREAM BANK STABILIZATION DETAIL AND STREAM RESTORATION TABLE IN THE NOTES AND DETAILS WHERE RIP-RAP IS PROPOSED (ES-0.18).
- EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET FROM TOP OF BANK OR 100 FEET FROM TOP OF BANK FOR SPECIAL PROTECTION WATERS (HQ OR EV).
- TIMBER MATS SHALL EXTEND A MINIMUM OF 20 FEET BEYOND TOP OF BANK.
- COMPOST FILTER SOCKS SHALL BE INSTALLED ALONG THE TOP OF THE STREAM BANK ACROSS THE RIGHT-OF-WAY WHEN PUMP BYPASS IS NOT IN PLACE.

LEGEND

SYMBOL	DESCRIPTION
	PROPOSED 16-INCH & 20-INCH SUNOCO PIPELINES
	PROPOSED SUNOCO RIGHT-OF-WAY
	EXISTING SUNOCO PIPELINE
	MAJOR CONTOUR
	MINOR CONTOUR
	STREAM CENTERLINE
	TOP/BOTTOM OF BANK
	EXISTING EDGE OF PAVED ROADWAY
	EXISTING EDGE OF UNPAVED ROADWAY
	EXISTING VEGETATION
	EDGE OF WATER
	SOIL TYPE BOUNDARY
	WETLAND
	PROPOSED ROCK CONSTRUCTION ENTRANCE
	LIMIT OF DISTURBANCE
	CONSTRUCTION FENCE
	12-INCH COMPOST FILTER SOCK
	18-INCH COMPOST FILTER SOCK
	24-INCH COMPOST FILTER SOCK
	32-INCH COMPOST FILTER SOCK
	PERMANENT WATER BAR W/FILTER SOCK
	TRENCH PLUG
	TEMPORARY EQUIPMENT CROSSING
	SANDBAG DAM
	PUMP
	SCREENED INLET
	ENERGY DISSIPATER
	DEWATERING FACILITY
	CULVERT PIPE
	EROSION CONTROL BLANKET
	STREAM RESTORATION

REV.	DATE	APP#	DESCRIPTION	APPROVAL
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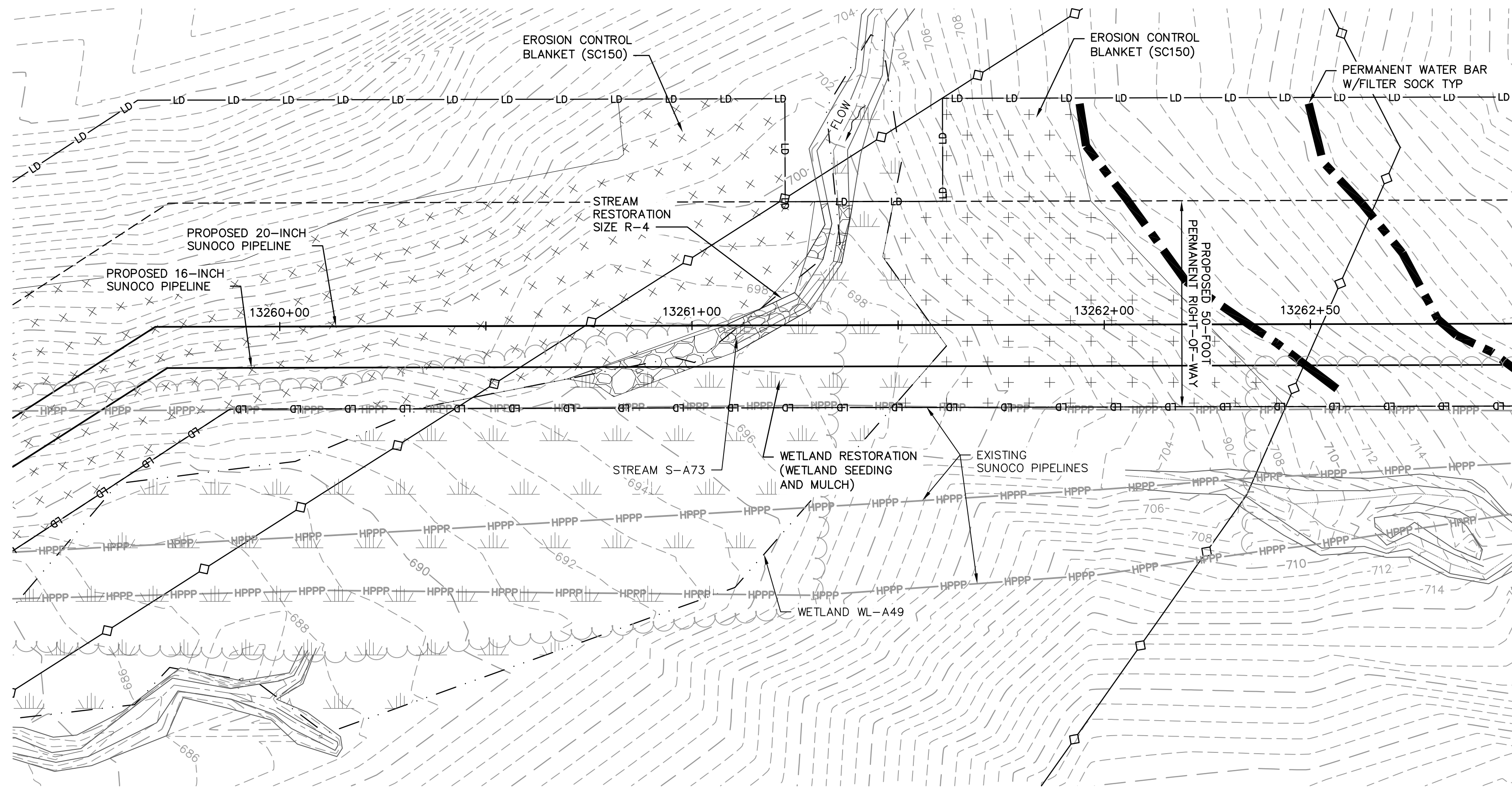


PENNSYLVANIA PIPELINE PROJECT
STREAM S-A73
EXISTING CONDITIONS/EROSION & SEDIMENTATION NTROL PLAN

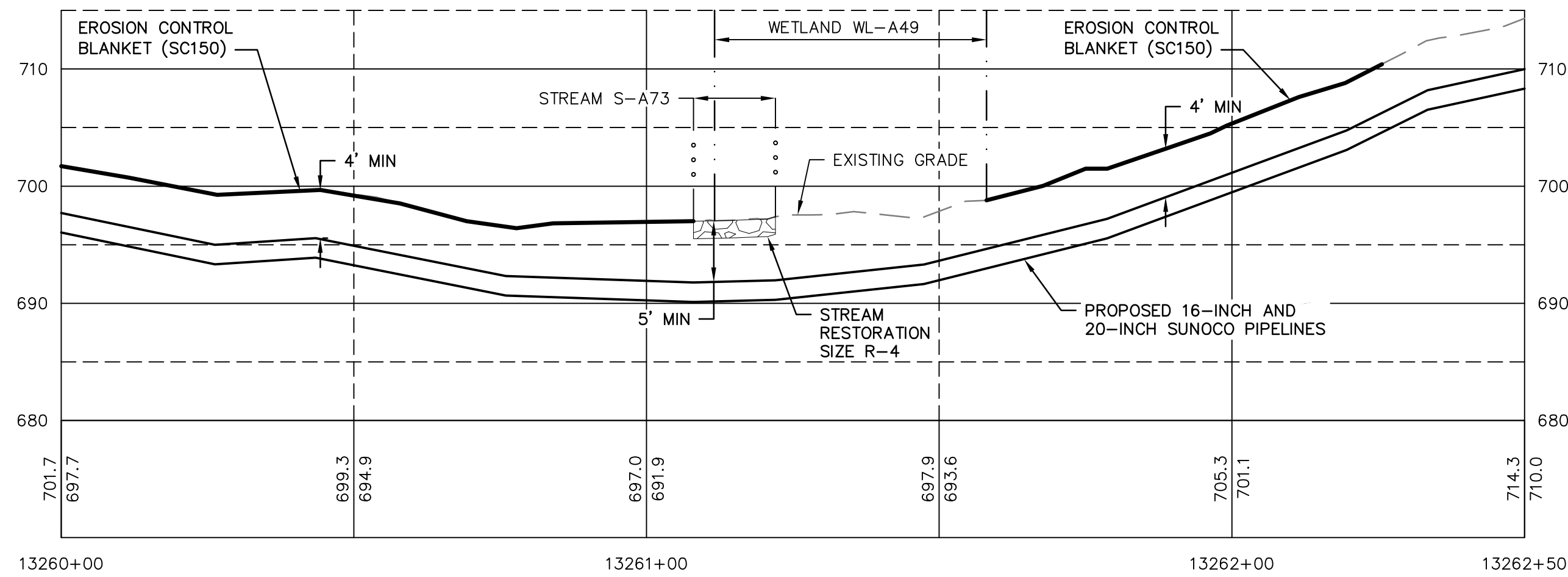
BERKS COUNTY, PA

DWG. NO.
S-A73-A

REV. NO.
0



PLAN
SCALE: 1"=20'



RESTORED GRADE PROFILE
HORIZ SCALE: 1"=20'
VERT SCALE: 1"=10'

GENERAL NOTES:

- REFERENCE E&S PLAN AND SITE RESTORATION NOTES AND DETAILS FOR ADDITIONAL CONSTRUCTION SEQUENCING, TYPICAL DETAILS AND NOTES (ES-0.01-ES-0.23); AND PLAN SHEETS FOR ADDITIONAL PLANS AND TOPOGRAPHY.
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- THE BACKGROUND TOPOGRAPHY WAS OBTAINED FROM TOPOGRAPHIC SURVEYS PERFORMED IN SEPTEMBER 2016.
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WETLAND CROSSING NOTES:

- REFERENCE NOTES AND DETAILS FOR WETLAND CONSTRUCTION SEQUENCING AND WETLAND RESTORATION (ES-0.03, ES-0.08, ES-0.10, AND ES-0.15).
- A MINIMUM OF 4 FEET COVER UNDER WETLANDS AND UPLANDS IS REQUIRED.
- FOR TEMPORARY TIMBER MAT REFERENCE (ES-0.10)
- EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET EDGE OF WETLAND OR 100 FEET FROM EDGE OF WETLAND FOR SPECIAL PROTECTION WATERS (HQ OR EV).

STREAM CROSSING NOTES:

- REFERENCE NOTES AND DETAILS FOR STREAM CONSTRUCTION SEQUENCING AND STREAM RESTORATION (ES-0.01-ES-0.17).
- FOR TEMPORARY EQUIPMENT CROSSINGS REFERENCE (ES-0.10).
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- REFERENCE THE STREAM BANK STABILIZATION DETAIL AND STREAM RESTORATION TABLE IN THE NOTES AND DETAILS WHERE RIP-RAP IS PROPOSED (ES-0.18).
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- TIMBER MATS SHALL EXTEND A MINIMUM OF 20 FEET BEYOND TOP OF BANK.
- COMPOST FILTER SOCKS SHALL BE INSTALLED ALONG THE TOP OF THE STREAM BANK ACROSS THE RIGHT-OF-WAY WHEN PUMP BYPASS IS NOT IN PLACE.

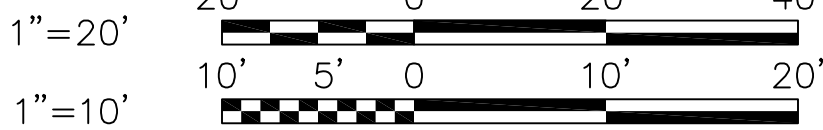
LEGEND

SYMBOL	DESCRIPTION
	PROPOSED 16-INCH & 20-INCH SUNOCO PIPELINES
	PROPOSED SUNOCO RIGHT-OF-WAY
	EXISTING SUNOCO PIPELINE
	MAJOR CONTOUR
	MINOR CONTOUR
	STREAM CENTERLINE
	TOP/BOTTOM OF BANK
	EXISTING EDGE OF PAVED ROADWAY
	EXISTING EDGE OF UNPAVED ROADWAY
	EXISTING VEGETATION
	EDGE OF WATER
	SOIL TYPE BOUNDARY
	WETLAND
	PROPOSED ROCK CONSTRUCTION ENTRANCE
	LIMIT OF DISTURBANCE
	CONSTRUCTION FENCE
	12-INCH COMPOST FILTER SOCK
	18-INCH COMPOST FILTER SOCK
	24-INCH COMPOST FILTER SOCK
	32-INCH COMPOST FILTER SOCK
	PERMANENT WATER BAR W/FILTER SOCK
	TRENCH PLUG
	TEMPORARY EQUIPMENT CROSSING
	SANDBAG DAM
	PUMP
	SCREENED INLET
	ENERGY DISSIPATER
	DEWATERING FACILITY
	CULVERT PIPE
	EROSION CONTROL BLANKET
	STREAM RESTORATION

PROFILE LEGEND:

	PROPOSED PIPELINE
	EXISTING GRADE
	EXISTING GRADE ELEV.
	PROPOSED TOP OF PIPE ELEV.

GRAPHIC SCALES



STV
Baltimore, MD Bismarck, ND Denver, CO Douglassville, PA
Houston, TX Pittsburgh, PA Williamsport, PA

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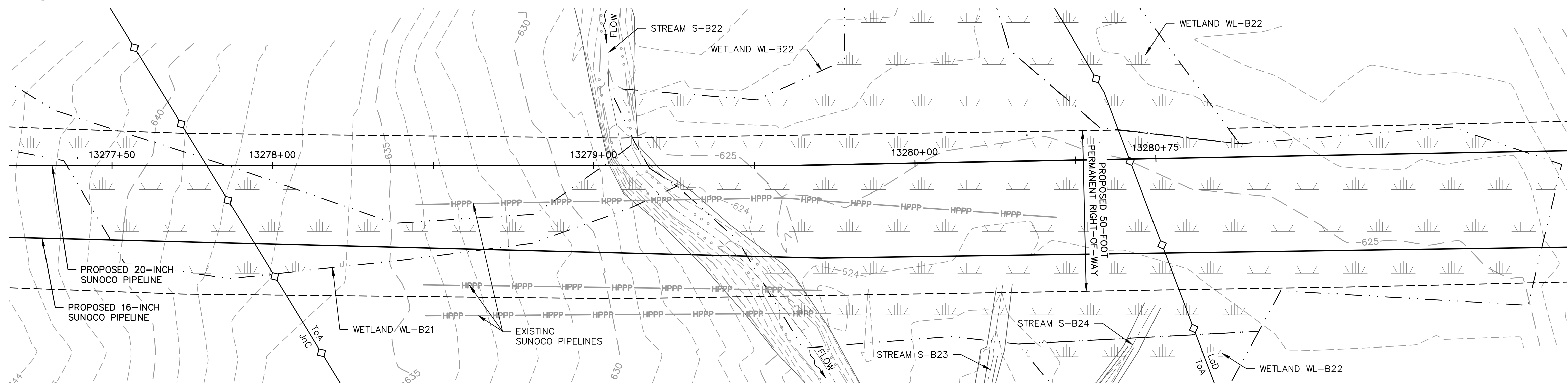
STV PROJECT No.: 38-17335

ENGINEERING RECORD

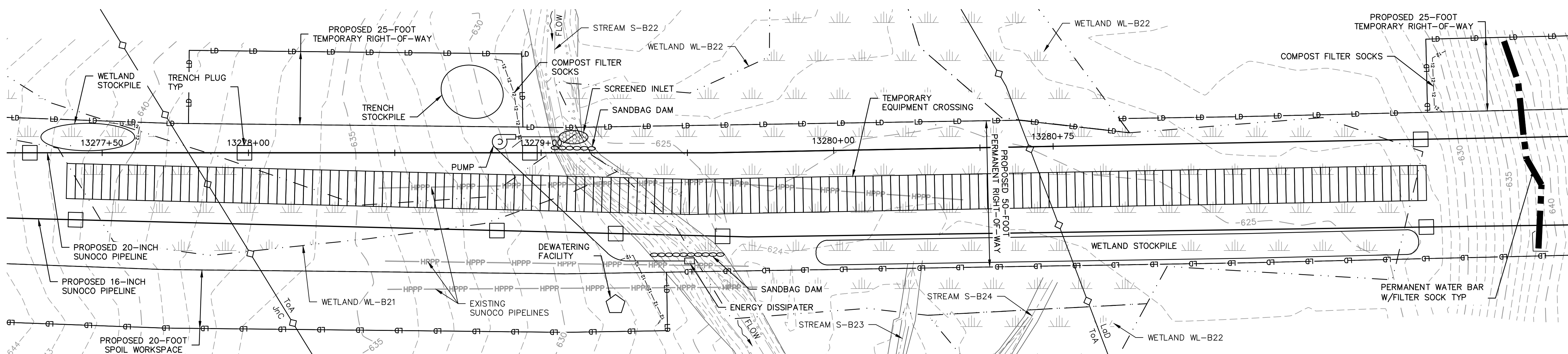
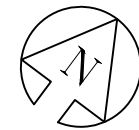
DRAWN BY	DLH
CHECKED BY	CDA
APPROVED BY	CDA
DATE	11/30/16
SCALE	AS NOTED

CHRISTOPHER D. ANTONI
PE-057385-E

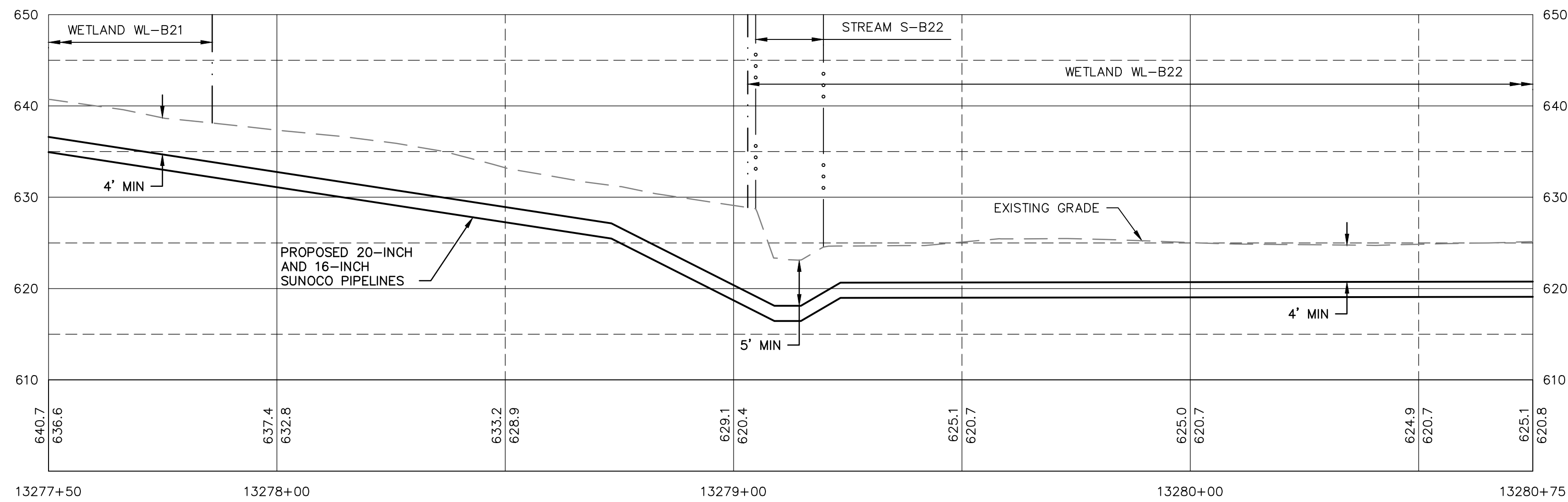
REV.	DATE	APP#	DESCRIPTION	APPROVAL
PENNSYLVANIA PIPELINE PROJECT STREAM S-A73 RESTORATION PLAN				
BERKS COUNTY, PA				
DWG. NO. S-A73-B				REV. NO. 0



EXISTING CONDITIONS PLAN
SCALE: 1"=20'

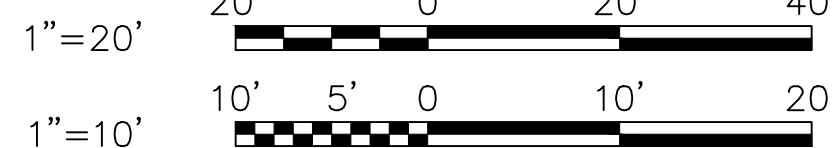


EROSION & SEDIMENTATION CONTROL PLAN
SCALE: 1"=20'

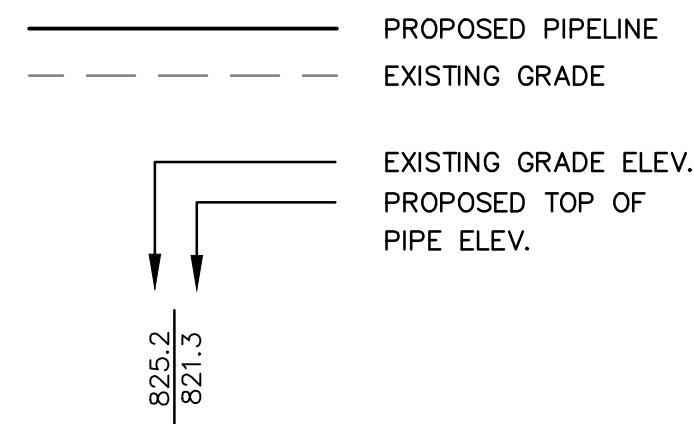


PROFILE
HORIZ SCALE: 1"=20'
VERT SCALE: 1"=10'

GRAPHIC SCALES



PROFILE LEGEND:



SYMBOL	DESCRIPTION
	PROPOSED 16-INCH & 20-INCH SUNOCO PIPELINES
	PROPOSED SUNOCO RIGHT-OF-WAY
	EXISTING SUNOCO PIPELINE
	MAJOR CONTOUR
	MINOR CONTOUR
	STREAM CENTERLINE
	TOP/BOTTOM OF BANK
	EXISTING EDGE OF PAVED ROADWAY
	EXISTING EDGE OF UNPAVED ROADWAY
	EXISTING VEGETATION
	EDGE OF WATER
	SOIL TYPE BOUNDARY
	WETLAND
	PROPOSED ROCK CONSTRUCTION ENTRANCE
	LIMIT OF DISTURBANCE
	CONSTRUCTION FENCE
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	32-INCH COMPOST FILTER SOCK
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	TEMPORARY EQUIPMENT CROSSING
	SANDBAG DAM
	PUMP
	SCREENED INLET
	ENERGY DISSIPATER
	DEWATERING FACILITY
	CULVERT PIPE
	EROSION CONTROL BLANKET
	STREAM RESTORATION

GENERAL NOTES:

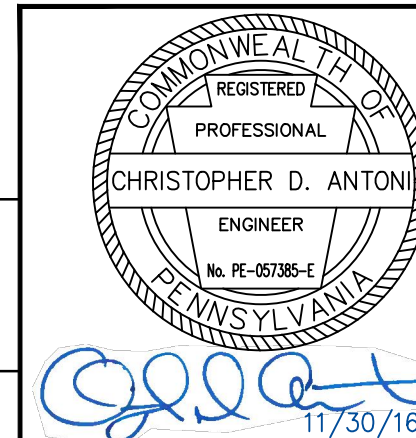
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STREAM CROSSING NOTES:

- REFERENCE NOTES AND DETAILS FOR STREAM CONSTRUCTION SEQUENCING AND STREAM RESTORATION (ES-0.01-ES-0.17).
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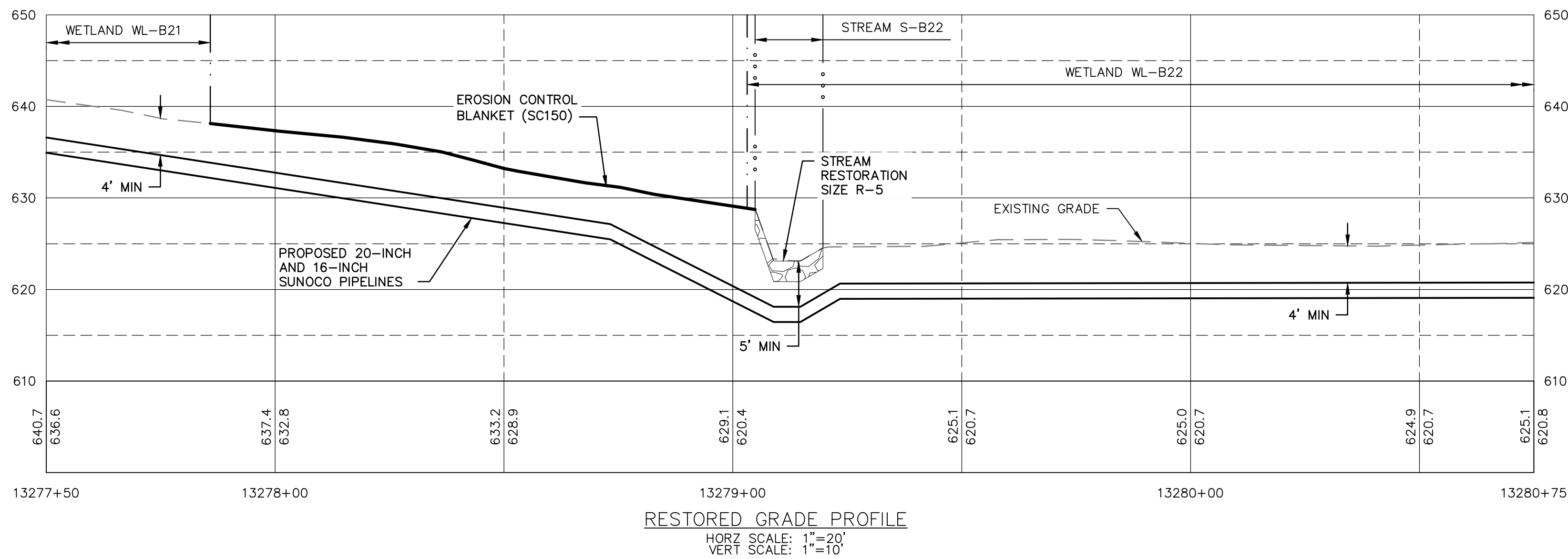
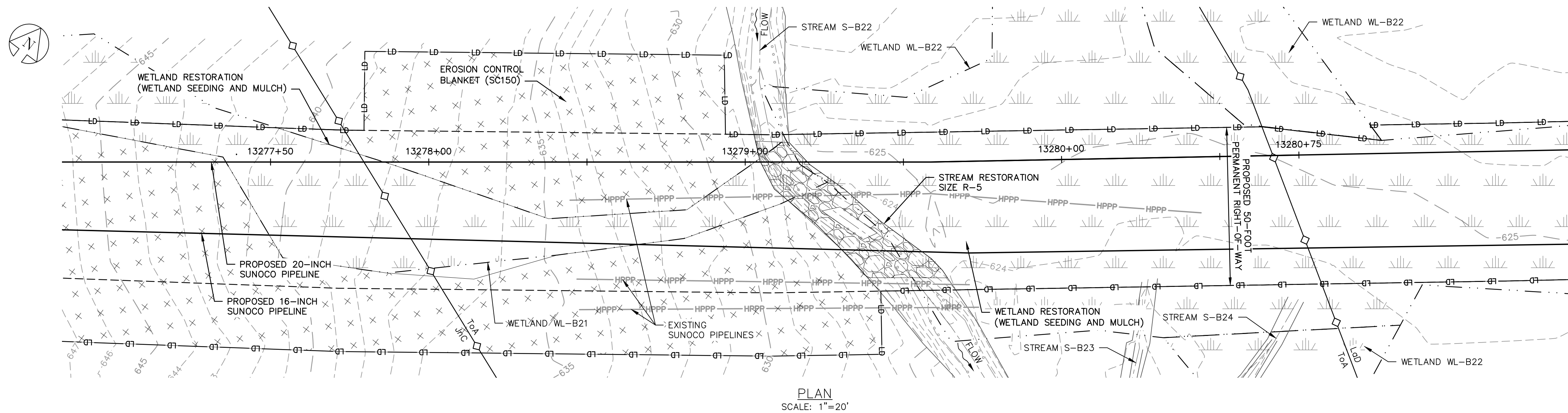


CHRISTOPHER D. ANTONI
PE-057385-E

ENGINEERING RECORD	
DRAWN BY	PDZ
CHECKED BY	CDA
APPROVED BY	CDA
DATE	11/30/16
SCALE	AS NOTED

OLD DRAWING NO.

REV.	DATE	APP#	DESCRIPTION	APPROVAL
PENNSYLVANIA PIPELINE PROJECT				
STREAM S-B22				
EXISTING CONDITIONS/EROSION & SEDIMENTATION CONTROL PLANS				
BERKS COUNTY, PA				
DWG. NO.			REV. NO.	
S-B23-A			0	



GENERAL NOTES:

- REFERENCE E&S PLAN AND SITE RESTORATION NOTES AND DETAILS FOR ADDITIONAL CONSTRUCTION SEQUENCING, TYPICAL DETAILS AND NOTES (ES-0.01-ES-0.23); AND PLAN SHEETS FOR ADDITIONAL PLANS AND TOPOGRAPHY.
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STREAM CROSSING NOTES:

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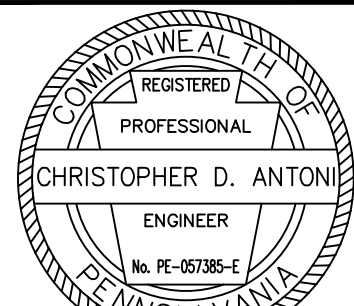
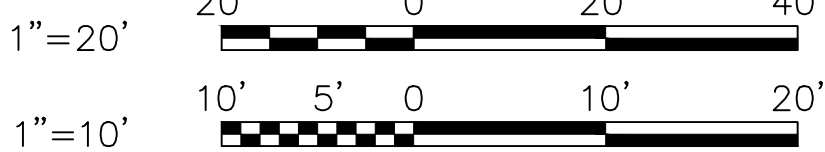
LEGEND

SYMBOL	DESCRIPTION
	PROPOSED 16-INCH & 20-INCH SUNOCO PIPELINES
	PROPOSED SUNOCO RIGHT-OF-WAY
	EXISTING SUNOCO PIPELINE
	MAJOR CONTOUR
	MINOR CONTOUR
	STREAM CENTERLINE
	TOP/BOTTOM OF BANK
	EXISTING EDGE OF PAVED ROADWAY
	EXISTING EDGE OF UNPAVED ROADWAY
	EXISTING VEGETATION
	EDGE OF WATER
	SOIL TYPE BOUNDARY
	WETLAND
	PROPOSED ROCK CONSTRUCTION ENTRANCE
	LIMIT OF DISTURBANCE
	CONSTRUCTION FENCE
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	PERMANENT WATER BAR W/FILTER SOCK
	TRENCH PLUG
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	SANDBAG DAM
	PUMP
	SCREENED INLET
	ENERGY DISSIPATER
	DEWATERING FACILITY
	CULVERT PIPE
	EROSION CONTROL BLANKET
	STREAM RESTORATION

PROFILE LEGEND:

	PROPOSED PIPELINE
	EXISTING GRADE
	EXISTING GRADE ELEV.
	PROPOSED TOP OF PIPE ELEV.

GRAPHIC SCALES



CHRISTOPHER D. ANTONI
PE-057385-E

STV
Baltimore, MD Bismarck, ND Denver, CO Douglassville, PA
Houston, TX Pittsburgh, PA Williamsport, PA

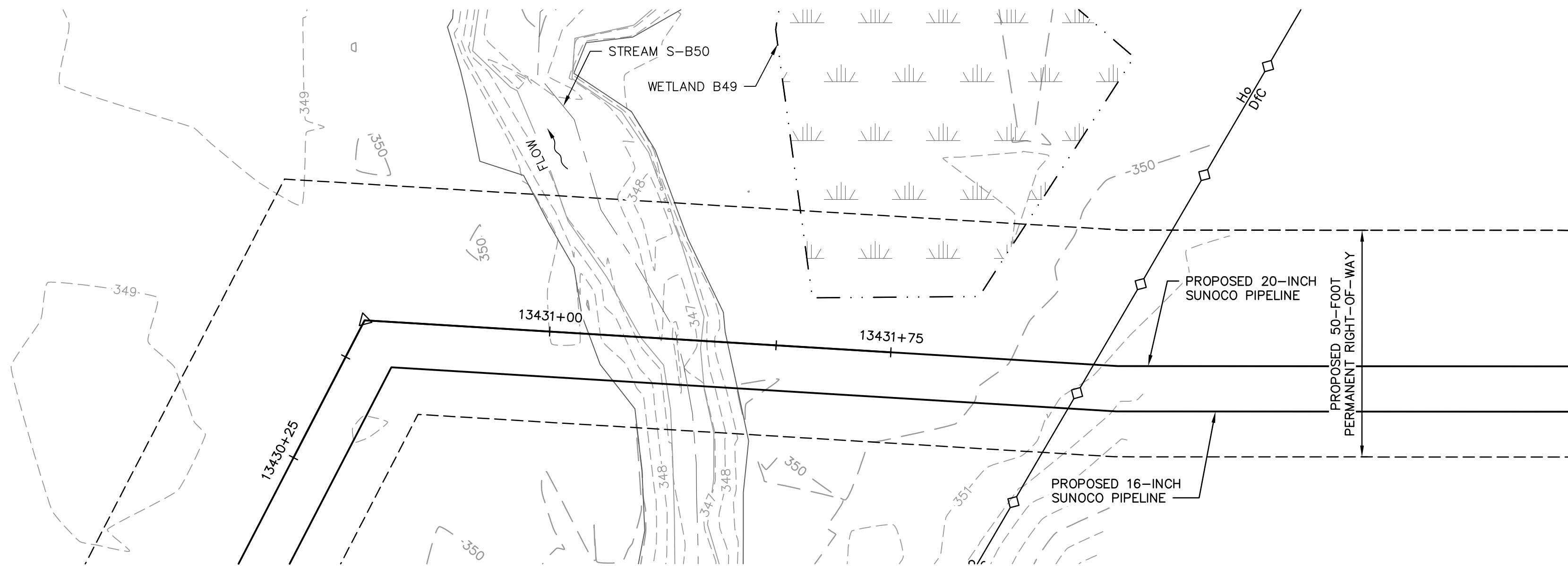
THE LOCATION OF THE PIPELINE FACILITIES AS SHOWN HEREON MUST BE CONSIDERED AS APPROXIMATE ONLY. BEFORE DIGGING OR FOR AN EXACT LOCATION PLEASE CONTACT YOUR STATES UNDERGROUND UTILITY LOCATION SERVICE.

STV PROJECT No.: 38-17335

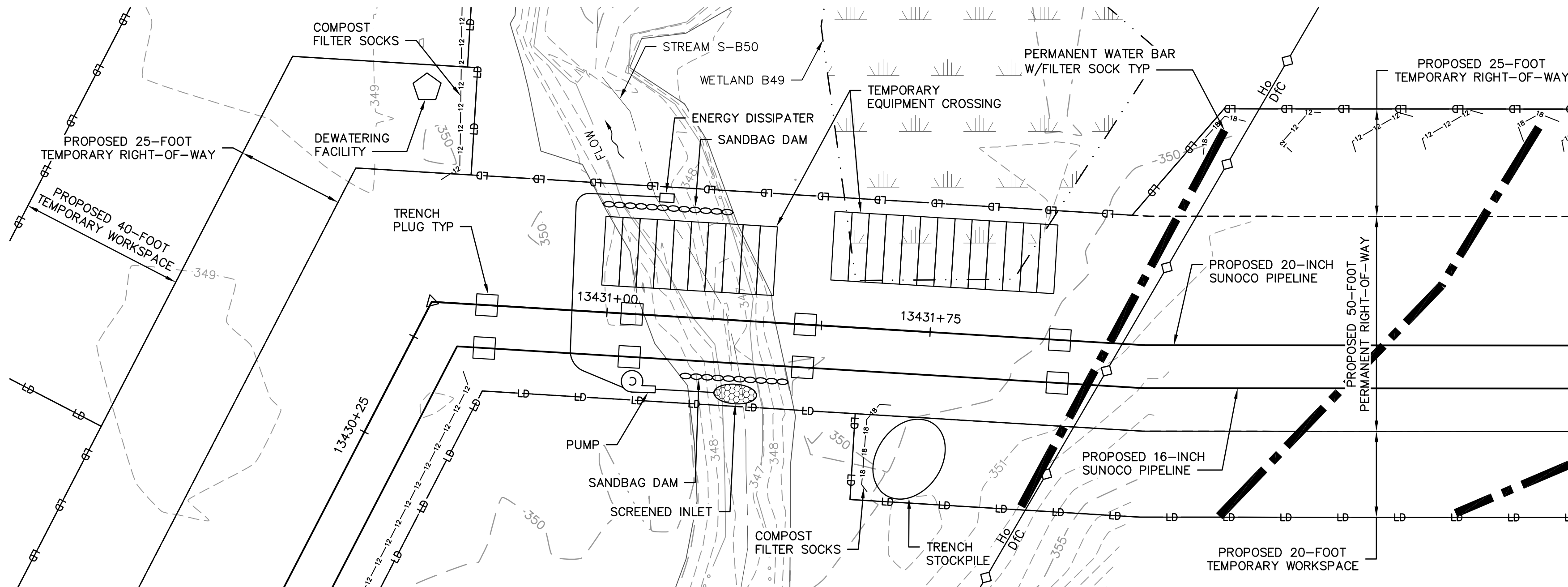
ENGINEERING RECORD	
DRAWN BY	PDZ
CHECKED BY	CDA
APPROVED BY	CDA
DATE	11/30/16
SCALE	AS NOTED

OLD DRAWING NO.

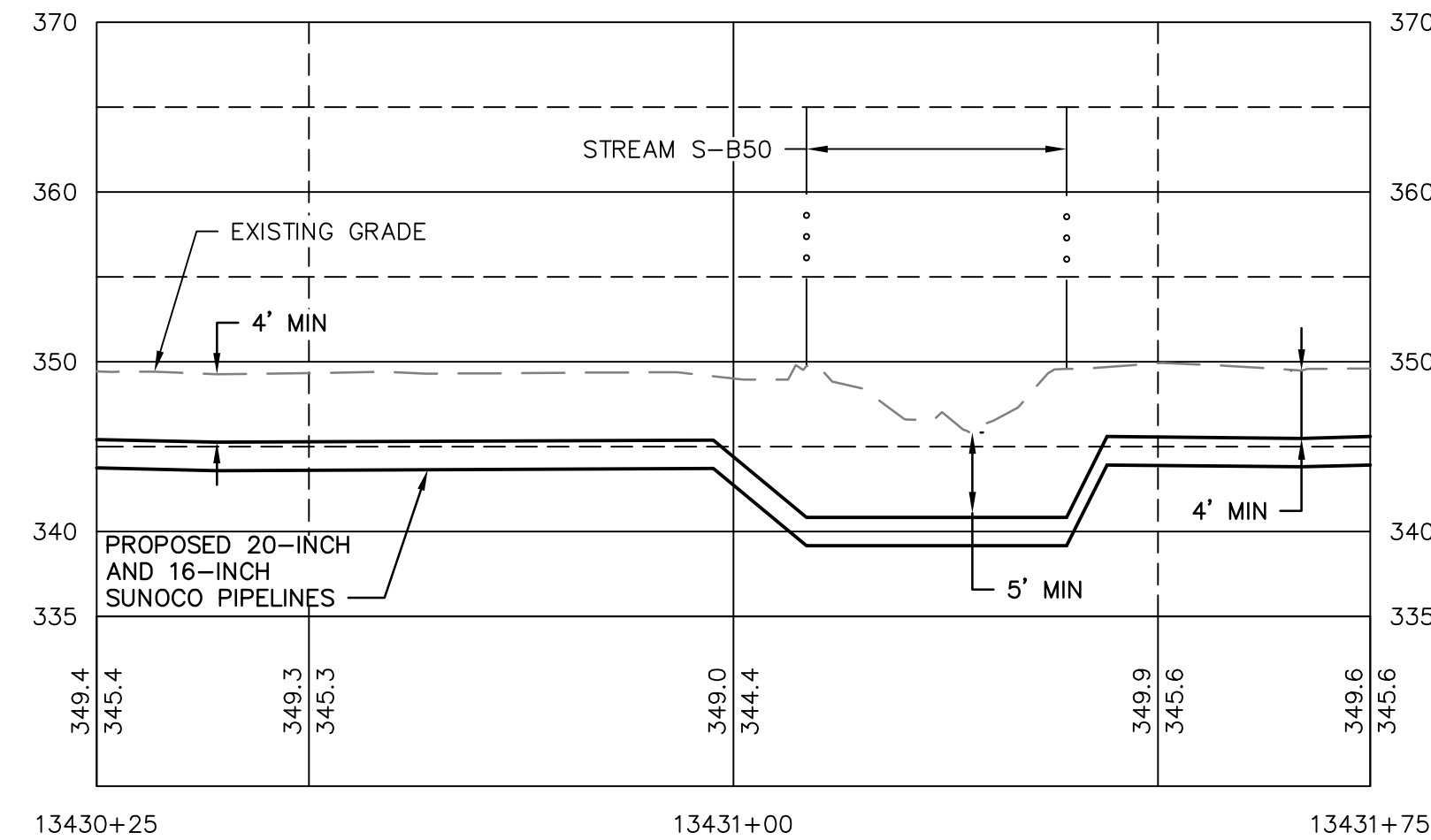
REV.	DATE	APP#	DESCRIPTION	APPROVAL
PENNSYLVANIA PIPELINE PROJECT STREAM S-B22 RESTORATION PLAN				
BERKS COUNTY, PA				
DWG. NO.			S-B23-B	REV. NO. 0



EXISTING CONDITIONS PLAN
SCALE: 1"=20'

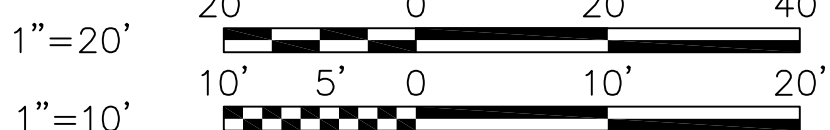


EROSION AND SEDIMENT CONTROL PLAN
SCALE: 1"=20'



PROFILE
HORZ SCALE: 1"=20'
VERT SCALE: 1"=10'

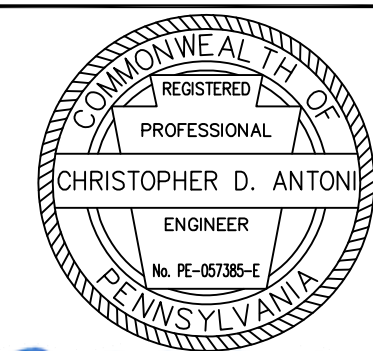
GRAPHIC SCALES



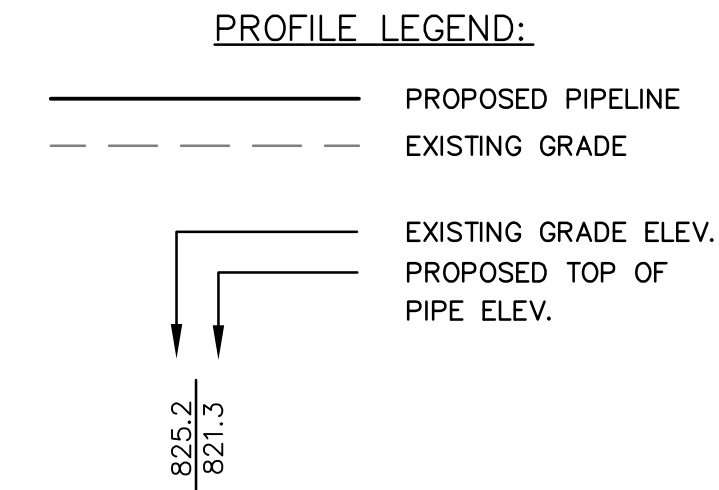
STV
Baltimore, MD Bismarck, ND Denver, CO Douglassville, PA
Houston, TX Pittsburgh, PA Williamsport, PA

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LOCATION PLEASE CONTACT YOUR STATES UNDERGROUND UTILITY LOCATION
SERVICE.

STV PROJECT No.: 38-17335



CHRISTOPHER D. ANTONI
PE-057385-E



GENERAL NOTES:

1. REFERENCE E&S PLAN AND SITE RESTORATION NOTES AND DETAILS FOR ADDITIONAL CONSTRUCTION SEQUENCING, TYPICAL DETAILS AND NOTES (ES-0.01-ES-0.23); AND PLAN SHEETS FOR ADDITIONAL PLANS AND TOPOGRAPHY.
2. ALL EXISTING UTILITY INFORMATION IS APPROXIMATE. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
3. MAINTAIN 2'-0" MINIMUM VERTICAL SEPARATION BETWEEN THE PROPOSED PIPELINE AND OTHER UTILITIES.
4. THE BACKGROUND TOPOGRAPHY WAS OBTAINED FROM TOPOGRAPHIC SURVEYS PERFORMED IN SEPTEMBER 2016.
5. THE PROJECT IS LOCATED IN NAD83 PENNSYLVANIA STATE PLANE COORDINATE SYSTEM (SOUTH ZONE), NAVD88.
6. EXCAVATION IS LIMITED TO THE CENTERLINE WITH A TYPICAL TRENCH WIDTH OF 4'-5' FOR 16/20" PIPELINE.

WETLAND CROSSING NOTES:

1. REFERENCE NOTES AND DETAILS FOR WETLAND CONSTRUCTION SEQUENCING AND WETLAND RESTORATION (ES-0.03, ES-0.08, ES-0.10, AND ES-0.15).
2. A MINIMUM OF 4 FEET COVER UNDER WETLANDS AND UPLANDS IS REQUIRED.
3. FOR TEMPORARY TIMBER MAT REFERENCE (ES-0.10)
4. EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET EDGE OF WETLAND OR 100 FEET FROM EDGE OF WETLAND FOR SPECIAL PROTECTION WATERS (HQ OR EV).

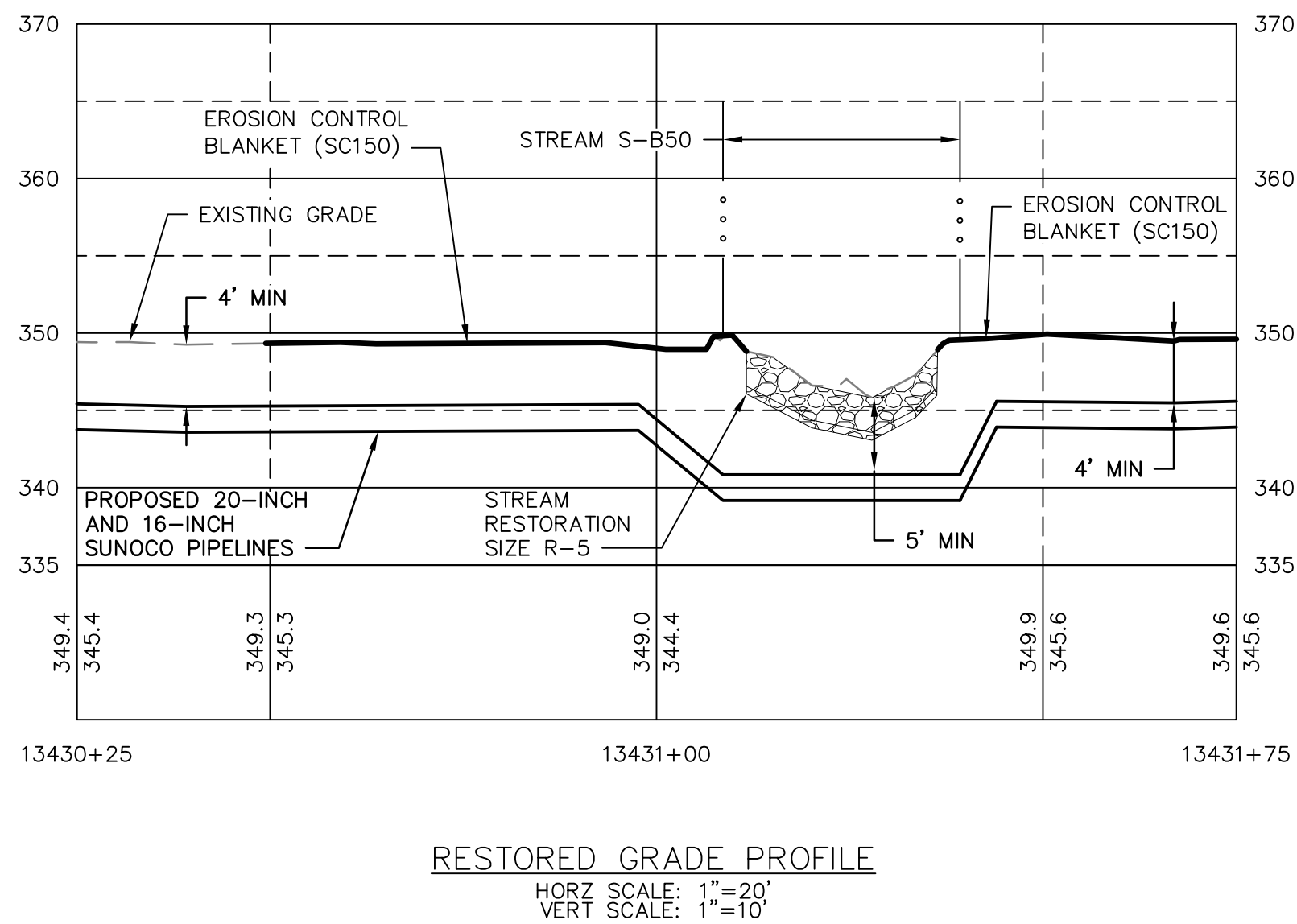
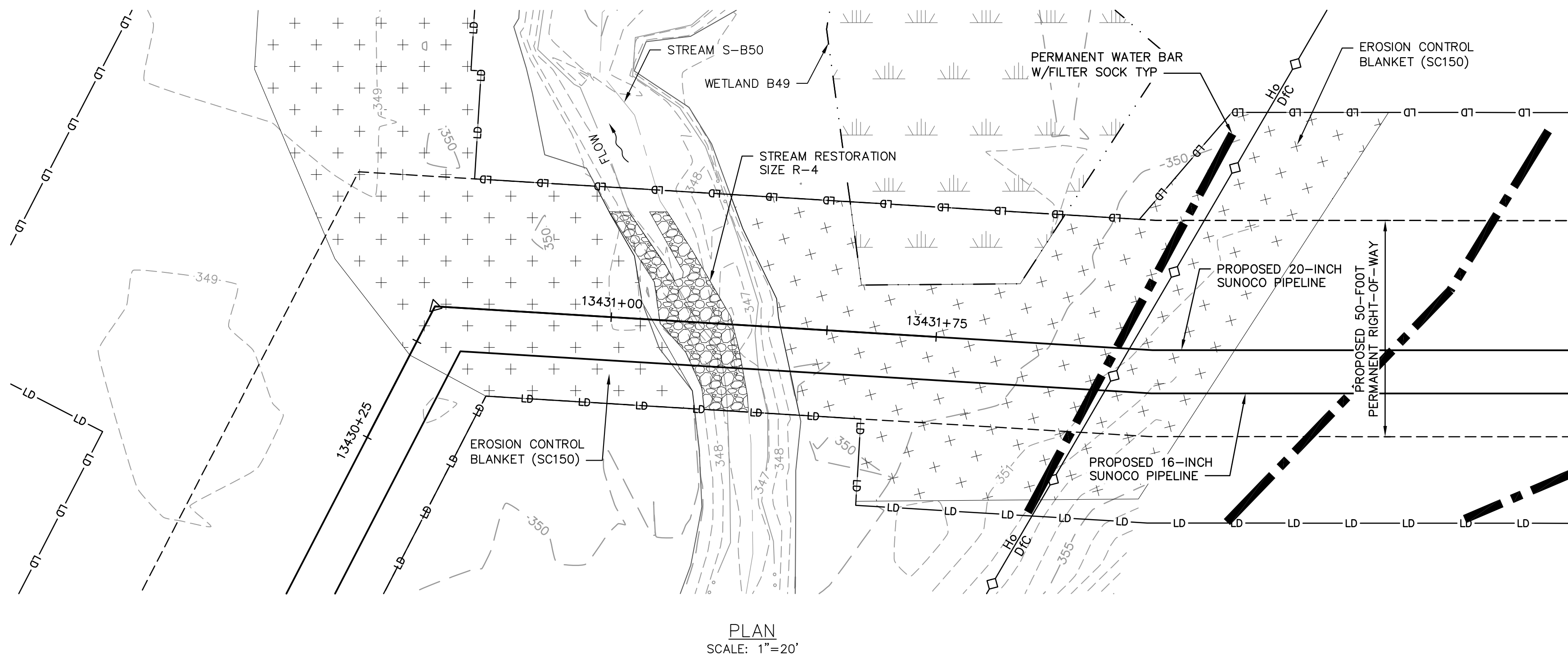
STREAM CROSSING NOTES:

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2. FOR TEMPORARY EQUIPMENT CROSSINGS REFERENCE (ES-0.10).
3. SITE CONDITIONS MAY ALLOW FOR IMPLEMENTATION OF OTHER APPROVED PIPELINE INSTALLATION METHODS REFERENCED WITH THE NOTES AND DETAILS (ES-0.11-ES-0.14).
4. THE PIPELINES SHALL MAINTAIN A MINIMUM OF 5 FEET OF COVER UNDER STREAMS FROM THE TOP OF PIPE TO THE STREAM BED. THIS COVER WILL BE MAINTAINED AT A MINIMUM FROM TOP OF BANK TO TOP OF BANK.
5. REFERENCE THE STREAM BANK STABILIZATION DETAIL AND STREAM RESTORATION TABLE IN THE NOTES AND DETAILS WHERE RIP-RAP IS PROPOSED (ES-0.18).
6. EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET FROM TOP OF BANK OR 100 FEET FROM TOP OF BANK FOR SPECIAL PROTECTION WATERS (HQ OR EV).
7. TIMBER MATS SHALL EXTEND A MINIMUM OF 20 FEET BEYOND TOP OF BANK.
8. COMPOST FILTER SOCKS SHALL BE INSTALLED ALONG THE TOP OF THE STREAM BANK ACROSS THE RIGHT-OF-WAY WHEN PUMP BYPASS IS NOT IN PLACE.

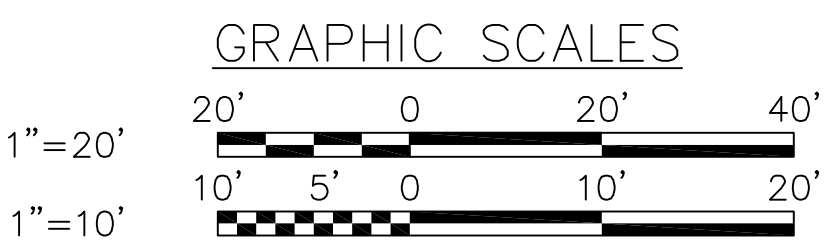
LEGEND

SYMBOL	DESCRIPTION
	PROPOSED 16-INCH & 20-INCH SUNOCO PIPELINES
	PROPOSED SUNOCO RIGHT-OF-WAY
	EXISTING SUNOCO PIPELINE
	MAJOR CONTOUR
	MINOR CONTOUR
	STREAM CENTERLINE
	TOP/BOTTOM OF BANK
	EXISTING EDGE OF PAVED ROADWAY
	EXISTING EDGE OF UNPAVED ROADWAY
	EXISTING VEGETATION
	EDGE OF WATER
	SOIL TYPE BOUNDARY
	WETLAND
	PROPOSED ROCK CONSTRUCTION ENTRANCE
	LIMIT OF DISTURBANCE
	CONSTRUCTION FENCE
	12-INCH COMPOST FILTER SOCK
	18-INCH COMPOST FILTER SOCK
	24-INCH COMPOST FILTER SOCK
	32-INCH COMPOST FILTER SOCK
	PERMANENT WATER BAR W/FILTER SOCK
	TRENCH PLUG
	TEMPORARY EQUIPMENT CROSSING
	SANDBAG DAM
	PUMP
	SCREENED INLET
	ENERGY DISSIPATER
	DEWATERING FACILITY
	CULVERT PIPE
	EROSION CONTROL BLANKET
	STREAM RESTORATION

REV.	DATE	APP#	DESCRIPTION	APPROVAL
PENNSYLVANIA PIPELINE PROJECT STREAM S-B50 EXISTING CONDITIONS/EROSION & SEDIMENTATION CONTROL PLANS				
BERKS COUNTY, PA				
DWG. NO. S-B50-A			REV. NO. 0	



RESTORED GRADE PROFILE
HORIZ SCALE: 1"=20'
VERT SCALE: 1"=10'



GENERAL NOTES:

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2. ALL EXISTING UTILITY INFORMATION IS APPROXIMATE. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
3. MAINTAIN 2'-0" MINIMUM VERTICAL SEPARATION BETWEEN THE PROPOSED PIPELINE AND OTHER UTILITIES.
4. THE BACKGROUND TOPOGRAPHY WAS OBTAINED FROM TOPOGRAPHIC SURVEYS PERFORMED IN SEPTEMBER 2016.
5. THE PROJECT IS LOCATED IN NAD83 PENNSYLVANIA STATE PLANE COORDINATE SYSTEM (SOUTH ZONE), NAVD88.
6. EXCAVATION IS LIMITED TO THE CENTERLINE WITH A TYPICAL TRENCH WIDTH OF 4'-5' FOR 16/20" PIPELINE.

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2. A MINIMUM OF 4 FEET COVER UNDER WETLANDS AND UPLANDS IS REQUIRED.
3. FOR TEMPORARY TIMBER MAT REFERENCE (ES-0.10)
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STREAM CROSSING NOTES:

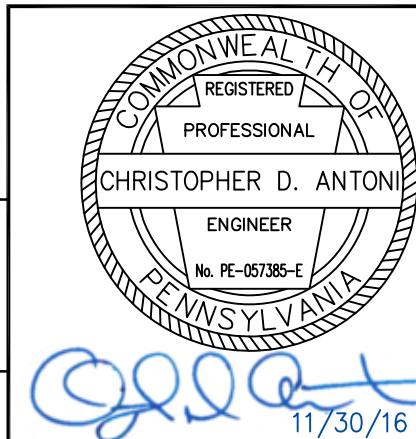
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LEGEND

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	PROPOSED SUNOCO RIGHT-OF-WAY
	EXISTING SUNOCO PIPELINE
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	MINOR CONTOUR
	STREAM CENTERLINE
	TOP/BOTTOM OF BANK
	EXISTING EDGE OF PAVED ROADWAY
	EXISTING EDGE OF UNPAVED ROADWAY
	EXISTING VEGETATION
	EDGE OF WATER
	SOIL TYPE BOUNDARY
	WETLAND
	PROPOSED ROCK CONSTRUCTION ENTRANCE
	LIMIT OF DISTURBANCE
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	24-INCH COMPOST FILTER SOCK
	32-INCH COMPOST FILTER SOCK
	PERMANENT WATER BAR W/FILTER SOCK
	TRENCH PLUG
	TEMPORARY EQUIPMENT CROSSING
	SANDBAG DAM
	PUMP
	SCREENED INLET
	ENERGY DISSIPATER
	DEWATERING FACILITY
	CULVERT PIPE
	EROSION CONTROL BLANKET
	STREAM RESTORATION

PROFILE LEGEND:

	PROPOSED PIPELINE
	EXISTING GRADE
	EXISTING GRADE ELEV.
	PROPOSED TOP OF PIPE ELEV.

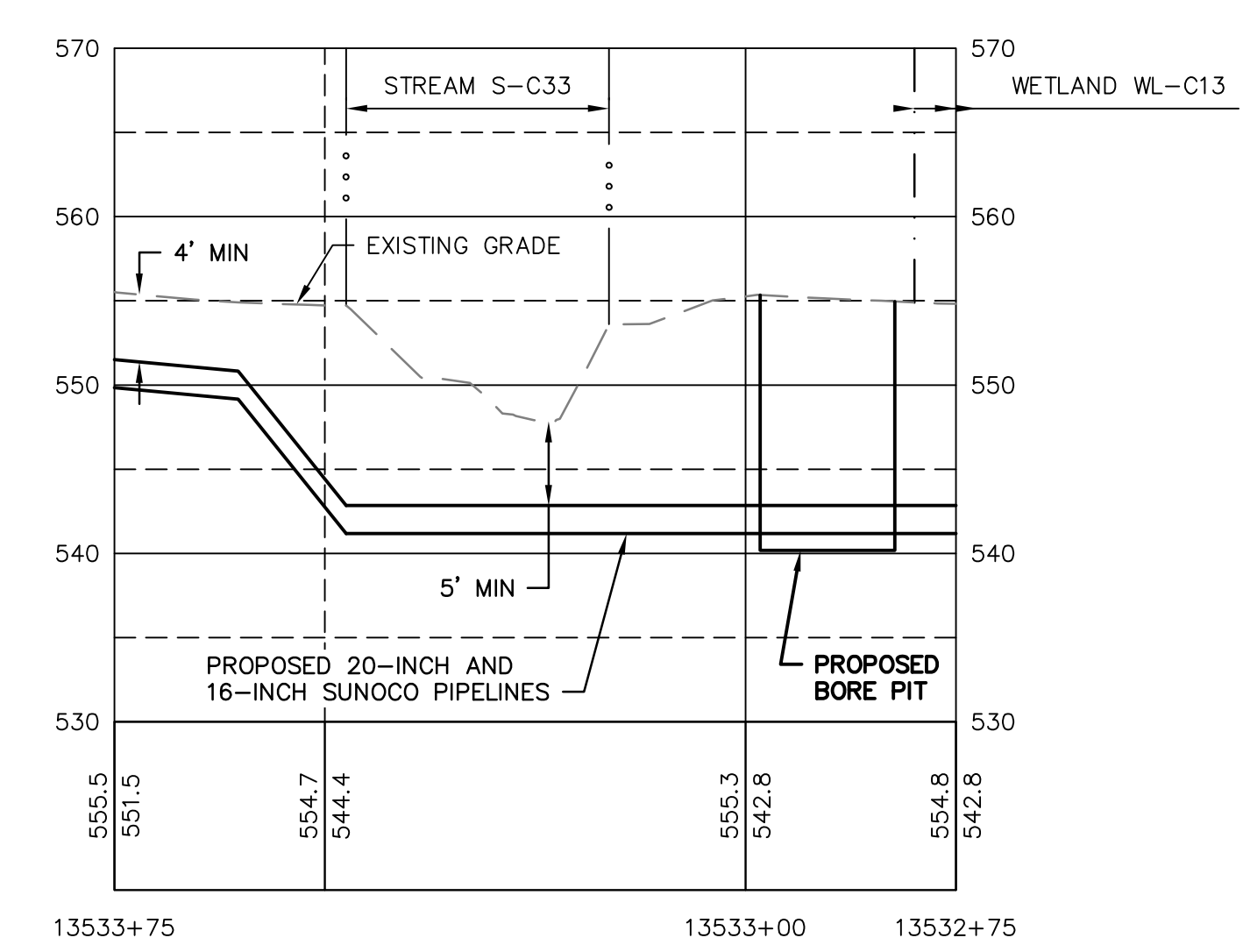
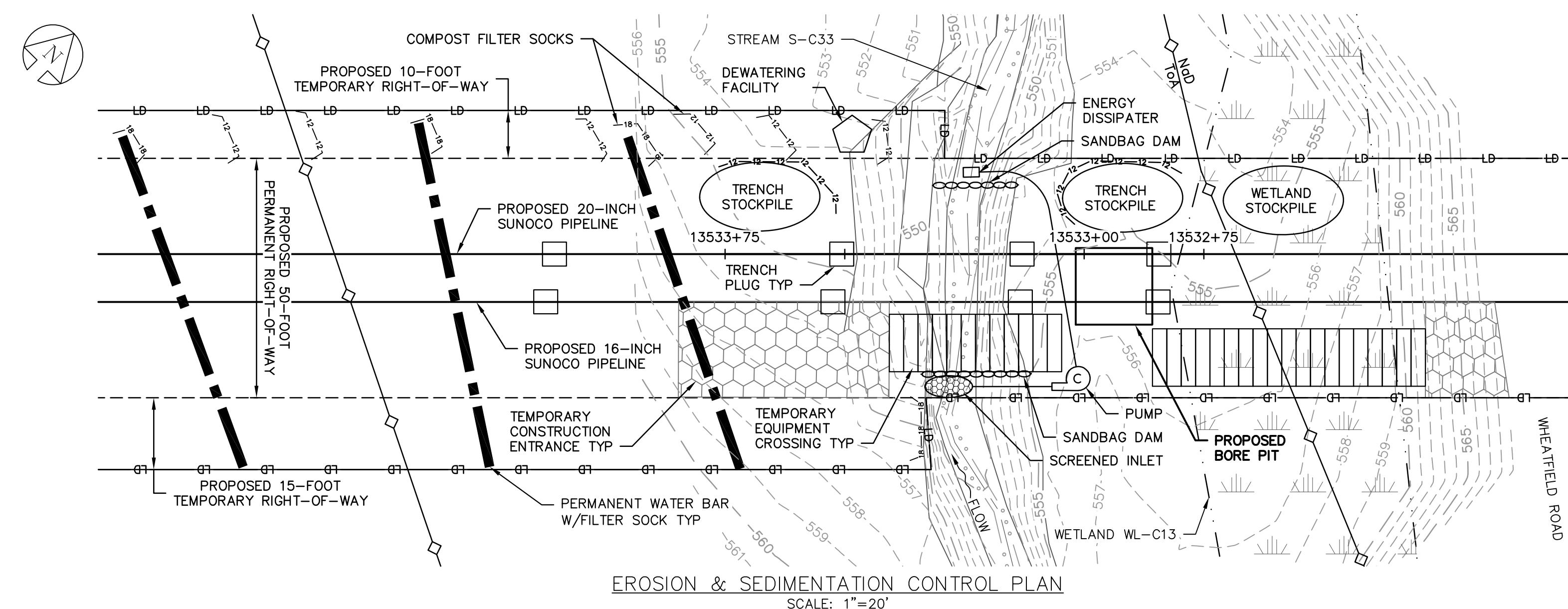
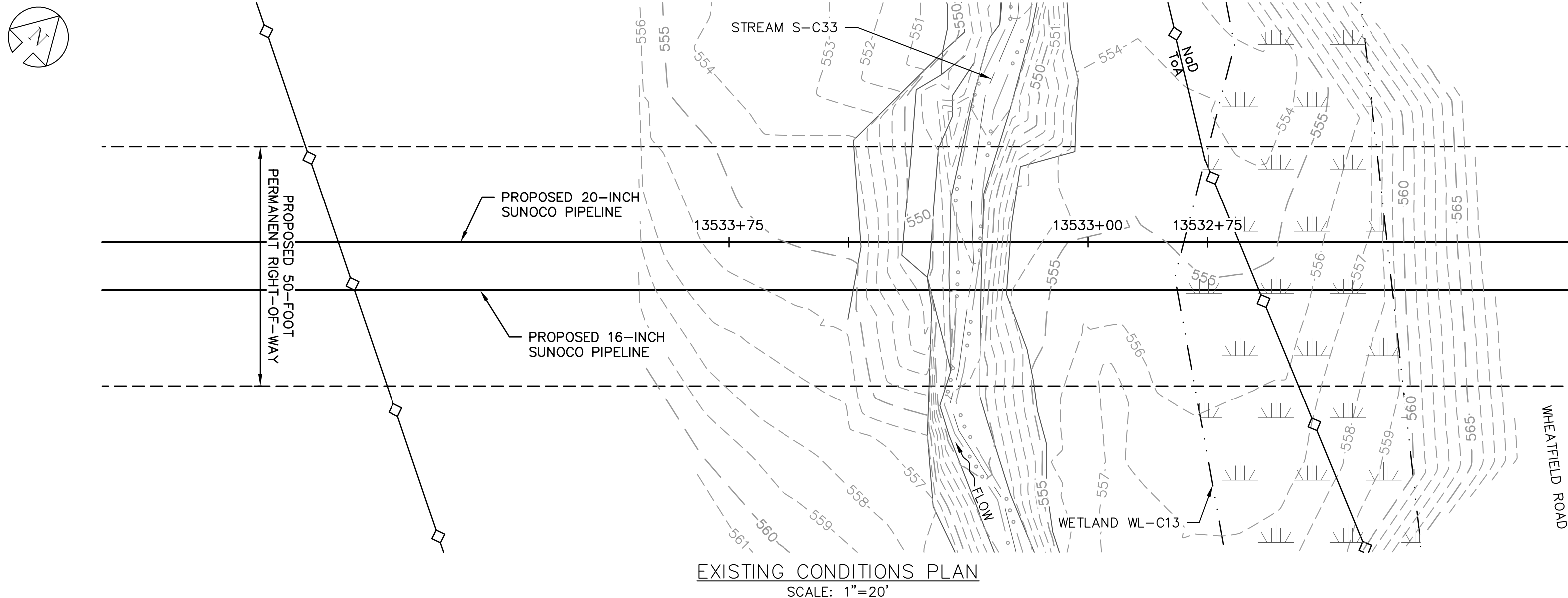


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PE-057385-E

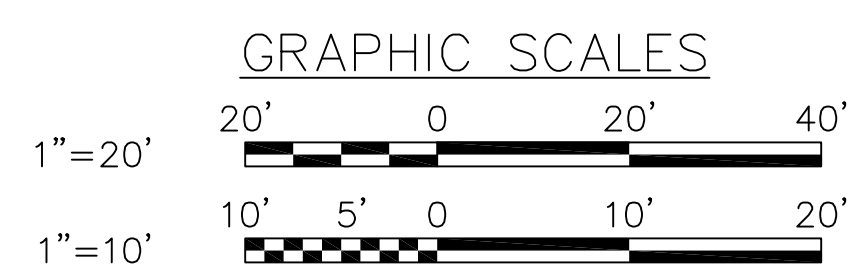
ENGINEERING RECORD	
DRAWN BY	RFG
CHECKED BY	CDA
APPROVED BY	CDA
DATE	11/30/16
SCALE	AS NOTED

OLD DRAWING NO.

REV.	DATE	APP#	DESCRIPTION	APPROVAL
PENNSYLVANIA PIPELINE PROJECT STREAM S-B50 RESTORATION PLAN BERKS COUNTY, PA				
DWG. NO.			S-B50-B	REV. NO. 0



PROFILE
HORZ SCALE: 1"=20'
VERT SCALE: 1"=10'



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LEGEND

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— — — — —	PROPOSED 16-INCH & 20-INCH SUNOCO PIPELINES
- - - - -	PROPOSED SUNOCO RIGHT-OF-WAY
=====	EXISTING SUNOCO PIPELINE
----- 910 -----	MAJOR CONTOUR
-----	MINOR CONTOUR
-----	STREAM CENTERLINE
=====	TOP/BOTTOM OF BANK
=====	EXISTING EDGE OF PAVED ROADWAY
=====	EXISTING EDGE OF UNPAVED ROADWAY
=====	EXISTING VEGETATION
.....	EDGE OF WATER
----- Tm ----- ----- Ma -----	SOIL TYPE BOUNDARY
[Symbol]	WETLAND
[Symbol]	PROPOSED ROCK CONSTRUCTION ENTRANCE
----- LD ----- LD ----- LD -----	LIMIT OF DISTURBANCE
----- CF ----- CF -----	CONSTRUCTION FENCE
----- 12 ----- 12 ----- 12 ----- 12 -----	12-INCH COMPOST FILTER SOCK
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----- 24 ----- 24 ----- 24 ----- 24 -----	24-INCH COMPOST FILTER SOCK
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[Symbol]	TEMPORARY EQUIPMENT CROSSING
[Symbol]	SANDBAG DAM
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[Symbol]	SCREENED INLET
[Symbol]	ENERGY DISSIPATER
[Symbol]	DEWATERING FACILITY
[Symbol]	CULVERT PIPE
[Symbol]	EROSION CONTROL BLANKET
[Symbol]	STREAM RESTORATION

PROFILE LEGEND:

-----	PROPOSED PIPELINE
- - - - -	EXISTING GRADE
-----	EXISTING GRADE ELEV.
-----	PROPOSED TOP OF PIPE ELEV.

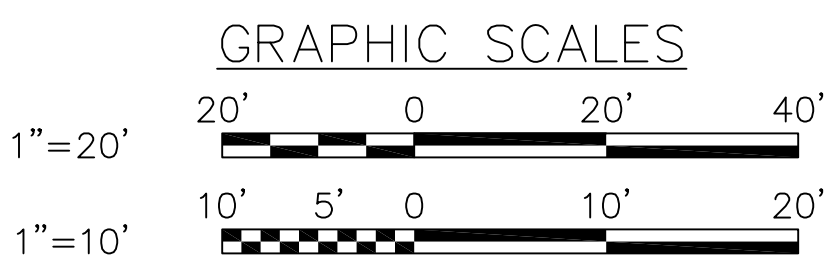
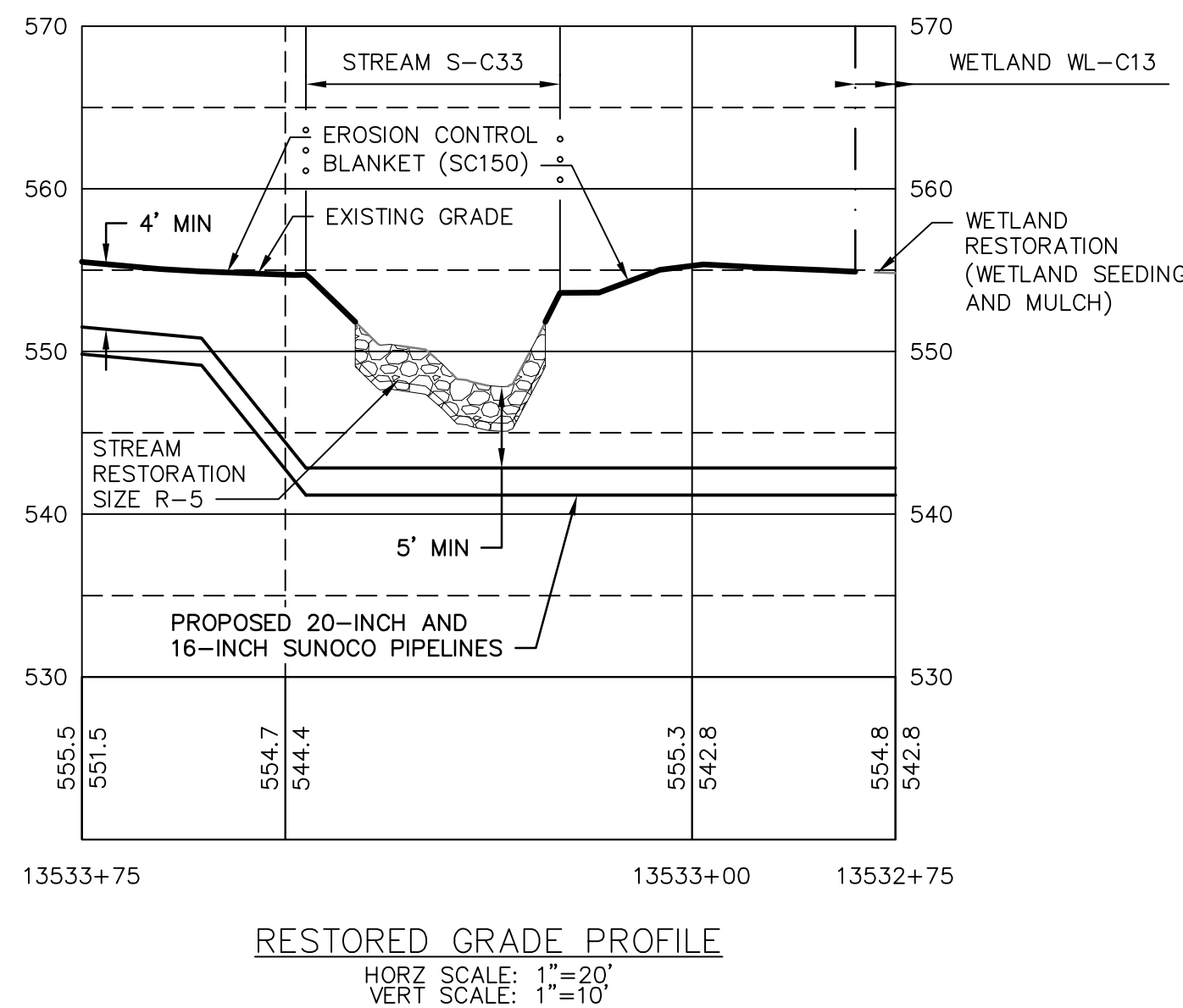
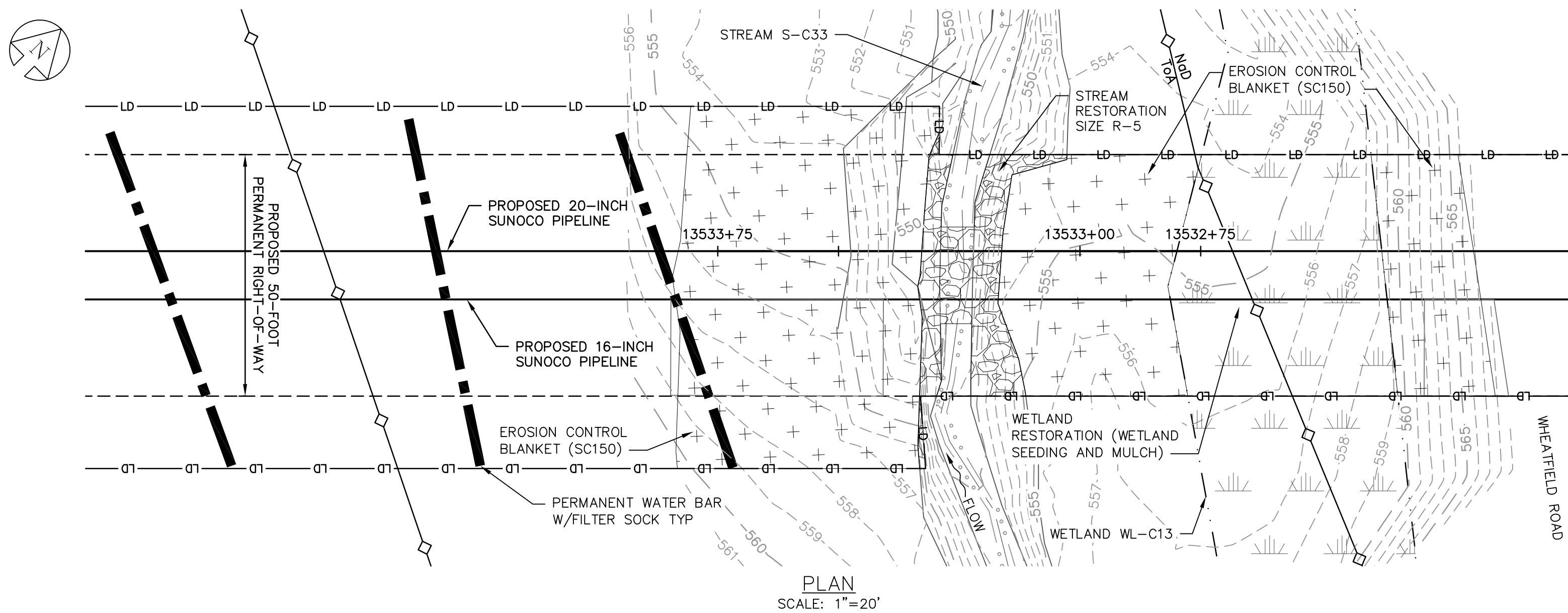
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	CHECKED BY CDA		
	APPROVED BY CDA		
DATE 11/30/16	OLD DRAWING NO.	DWG. NO. S-C33-A	
SCALE AS NOTED		REV. NO. 0	

11/30/16
CHRISTOPHER D. ANTONI
PE-057385-E

STV
Baltimore, MD Bismarck, ND Denver, CO Douglassville, PA
Houston, TX Pittsburgh, PA Williamsport, PA

THE LOCATION OF THE PIPELINE FACILITIES AS SHOWN HEREON MUST BE CONSIDERED AS APPROXIMATE ONLY. BEFORE DIGGING OR FOR AN EXACT LOCATION PLEASE CONTACT YOUR STATES UNDERGROUND UTILITY LOCATION SERVICE.

STV PROJECT No.: 38-17335



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LEGEND

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	PROPOSED SUNOCO RIGHT-OF-WAY
	EXISTING SUNOCO PIPELINE
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	MINOR CONTOUR
	STREAM CENTERLINE
	TOP/BOTTOM OF BANK
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	SCREENED INLET
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	DEWATERING FACILITY
	CULVERT PIPE
	EROSION CONTROL BLANKET
	STREAM RESTORATION

PROFILE LEGEND:

	PROPOSED PIPELINE
	EXISTING GRADE
	EXISTING GRADE ELEV.
	PROPOSED TOP OF PIPE ELEV.

STV
Baltimore, MD Bismarck, ND Denver, CO Douglassville, PA
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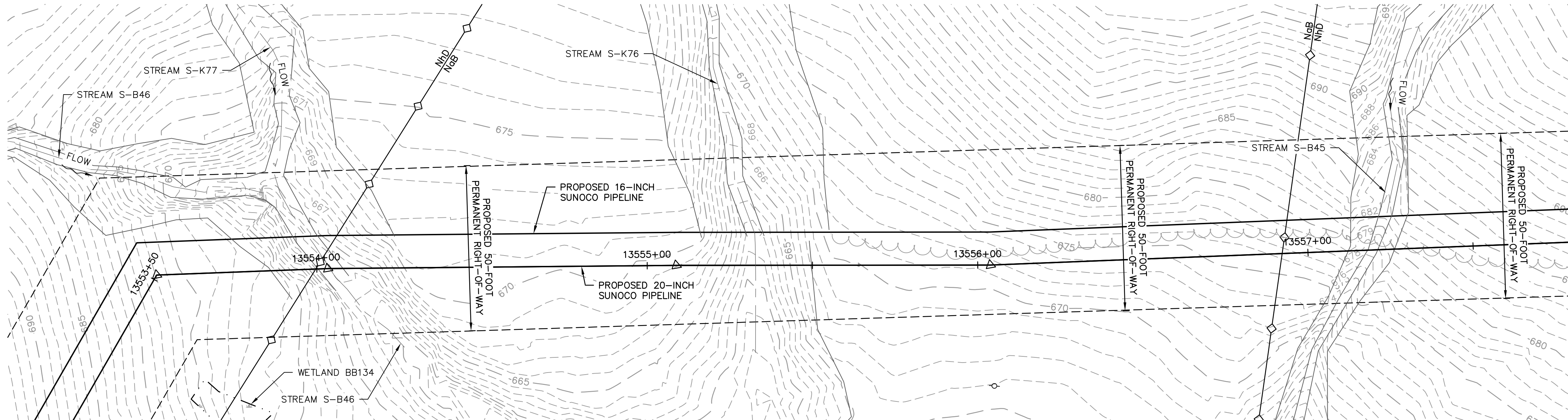
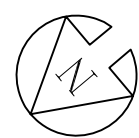
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STV PROJECT No.: 38-17335

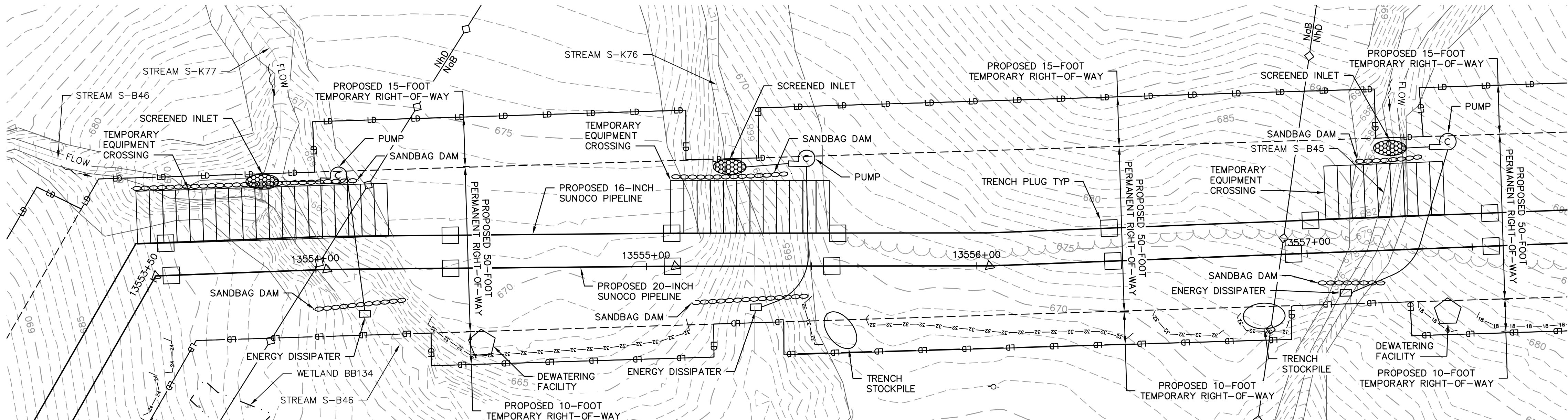
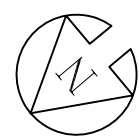
COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER D. ANTONI
No. PE-057385-E
11/30/16
CHRISTOPHER D. ANTONI
PE-057385-E

ENGINEERING RECORD	
DRAWN BY	RFG
CHECKED BY	CDA
APPROVED BY	CDA
DATE	11/30/16
SCALE	AS NOTED
OLD DRAWING NO.	

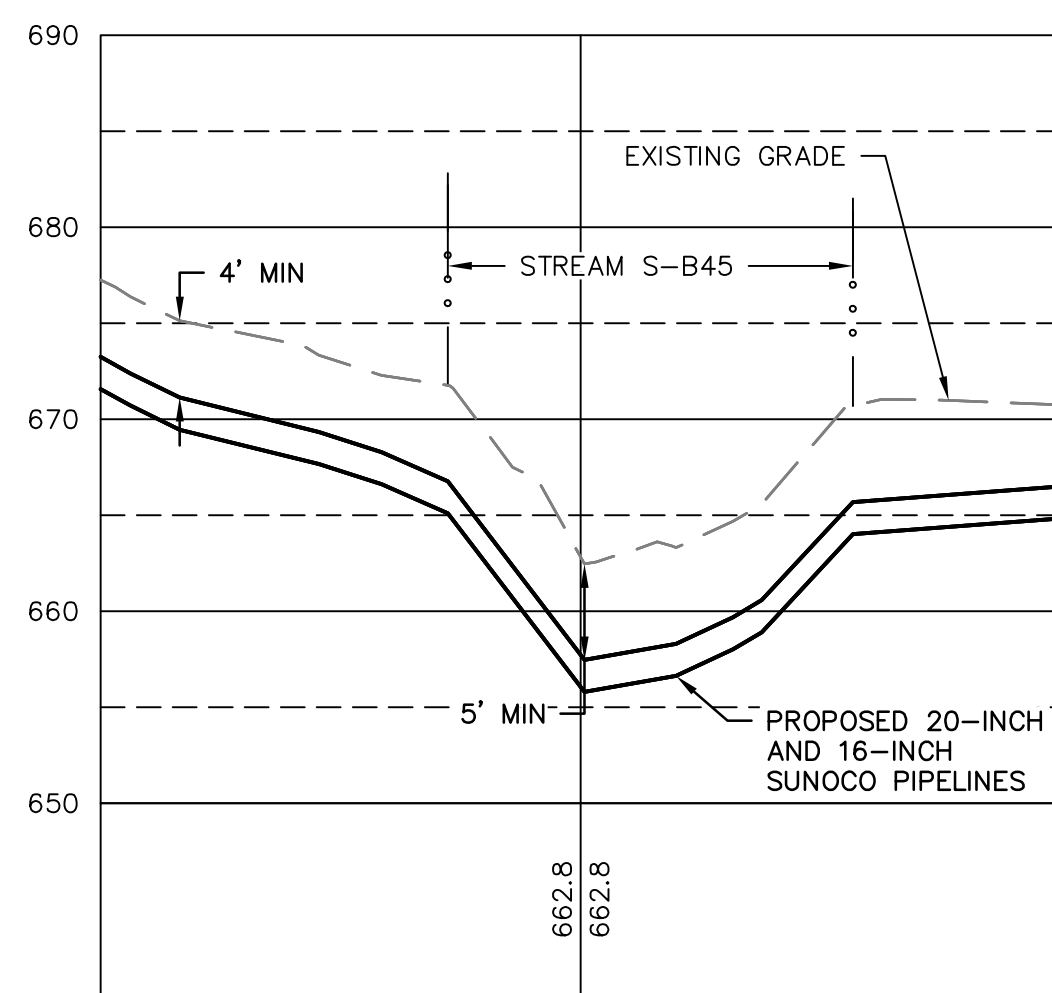
REV.	DATE	APP#	DESCRIPTION	APPROVAL
Sunoco Logistics Partners L.P. PENNSYLVANIA PIPELINE PROJECT STREAM S-C33 RESTORATION PLAN BERKS COUNTY, PA				
DWG. NO.			S-C33-B	REV. NO. 0



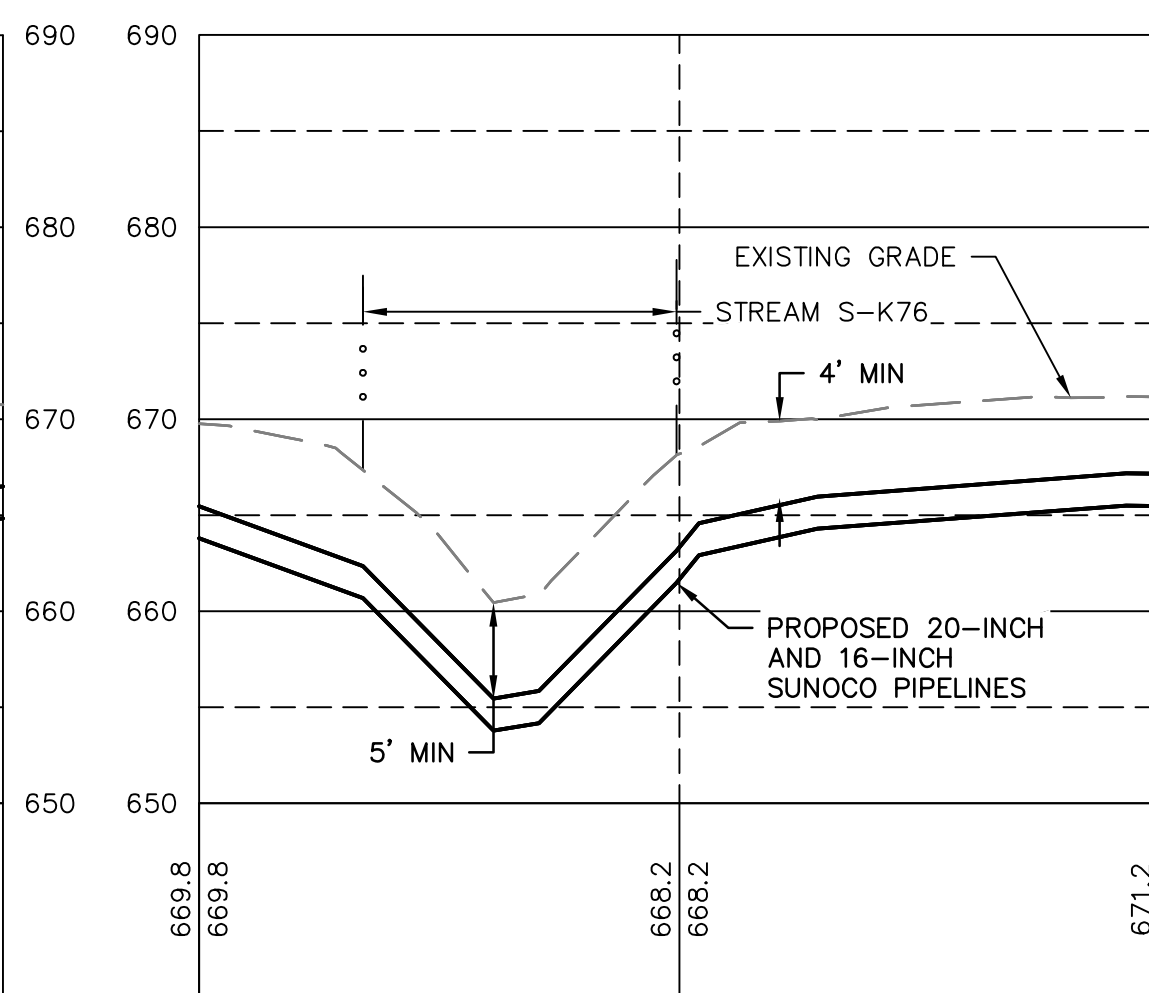
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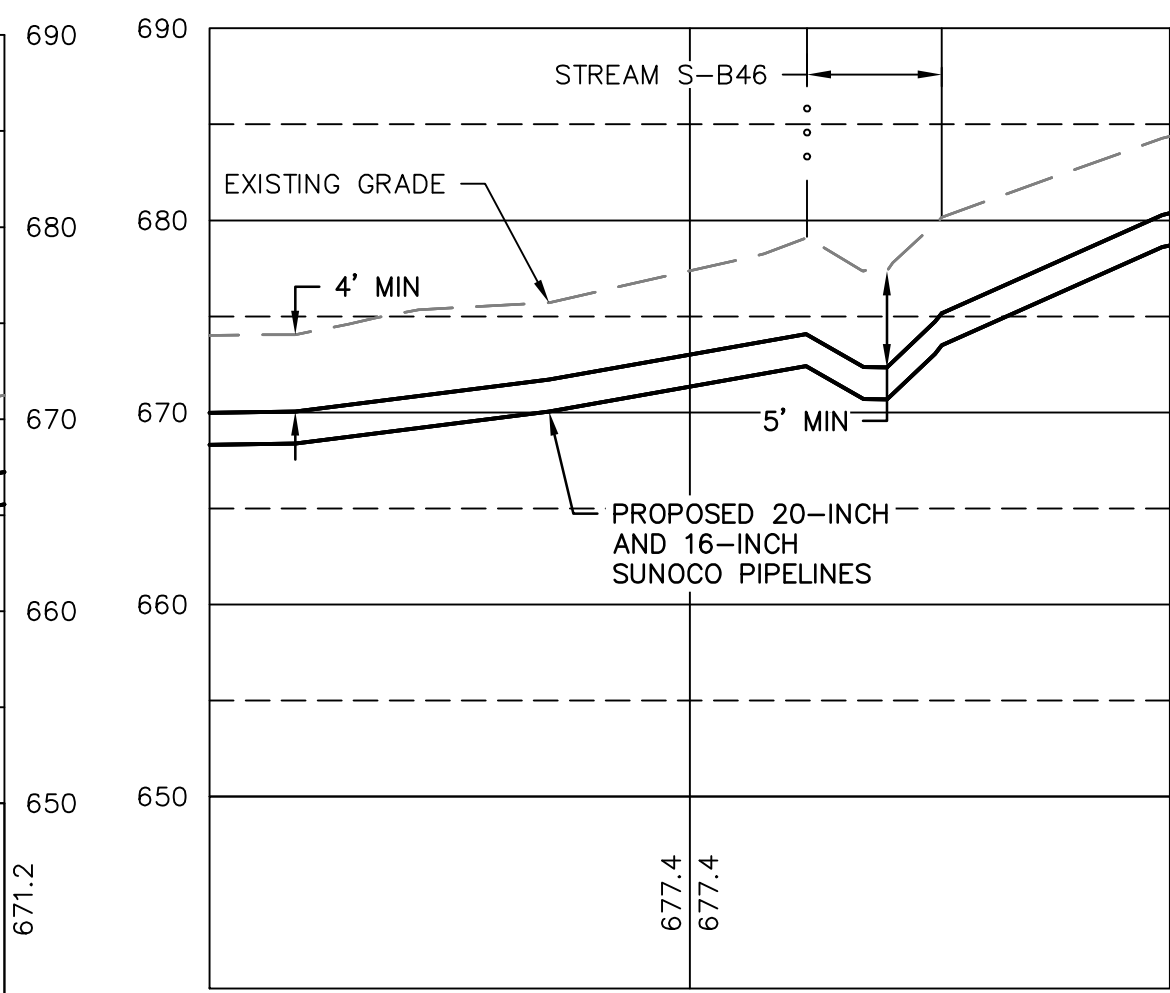
EROSION & SEDIMENTATION CONTROL PLAN
SCALE: 1"=20'



PROFILE
HORZ SCALE: 1"=20'
VERT SCALE: 1"=10'

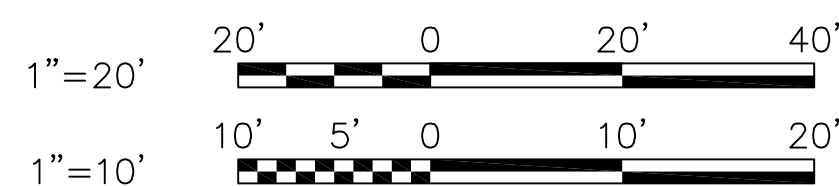


PROFILE
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VERT SCALE: 1"=10'

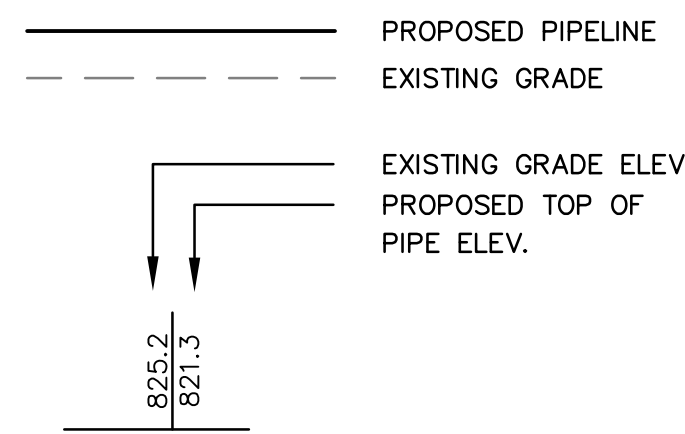


PROFILE
HORZ SCALE: 1"=20'
VERT SCALE: 1"=10'

GRAPHIC SCALES



PROFILE LEGEND:



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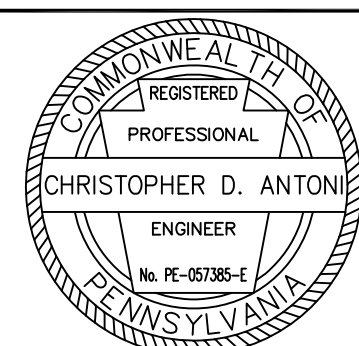
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- FOR TEMPORARY TIMBER MAT REFERENCE (ES-0.10).
- EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET EDGE OF WETLAND OR 100 FEET FROM EDGE OF WETLAND FOR SPECIAL PROTECTION WATERS (HQ OR EV).

STREAM CROSSING NOTES:

- REFERENCE NOTES AND DETAILS FOR STREAM CONSTRUCTION SEQUENCING AND STREAM RESTORATION (ES-0.01-ES-0.17).
- FOR TEMPORARY EQUIPMENT CROSSINGS REFERENCE (ES-0.10).
- SITE CONDITIONS MAY ALLOW FOR IMPLEMENTATION OF OTHER APPROVED PIPELINE INSTALLATION METHODS REFERENCED WITH THE NOTES AND DETAILS (ES-0.11-ES-0.14).
- THE PIPELINES SHALL MAINTAIN A MINIMUM OF 5 FEET OF COVER UNDER STREAMS FROM THE TOP OF PIPE TO THE STREAM BED. THIS COVER WILL BE MAINTAINED AT A MINIMUM FROM TOP OF BANK TO TOP OF BANK.
- REFERENCE THE STREAM BANK STABILIZATION DETAIL AND STREAM RESTORATION TABLE IN THE NOTES AND DETAILS WHERE RIP-RAP IS PROPOSED (ES-0.18).
- EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET FROM TOP OF BANK OR 100 FEET FROM TOP OF BANK FOR SPECIAL PROTECTION WATERS (HQ OR EV).
- TIMBER MATS SHALL EXTEND A MINIMUM OF 20 FEET BEYOND TOP OF BANK.
- COMPOST FILTER SOCKS SHALL BE INSTALLED ALONG THE TOP OF THE STREAM BANK ACROSS THE RIGHT-OF-WAY WHEN PUMP BYPASS IS NOT IN PLACE.

LEGEND

SYMBOL	DESCRIPTION
	PROPOSED 16-INCH & 20-INCH SUNOCO PIPELINES
	PROPOSED SUNOCO RIGHT-OF-WAY
	EXISTING SUNOCO PIPELINE
	MAJOR CONTOUR
	MINOR CONTOUR
	STREAM CENTERLINE
	TOP/BOTTOM OF BANK
	EXISTING EDGE OF PAVED ROADWAY
	EXISTING EDGE OF UNPAVED ROADWAY
	EXISTING VEGETATION
	EDGE OF WATER
	SOIL TYPE BOUNDARY
	WETLAND
	PROPOSED ROCK CONSTRUCTION ENTRANCE
	LIMIT OF DISTURBANCE
	CONSTRUCTION FENCE
	12-INCH COMPOST FILTER SOCK
	18-INCH COMPOST FILTER SOCK
	24-INCH COMPOST FILTER SOCK
	32-INCH COMPOST FILTER SOCK
	PERMANENT WATER BAR W/FILTER SOCK
	TRENCH PLUG
	TEMPORARY EQUIPMENT CROSSING
	SANDBAG DAM
	PUMP
	SCREENED INLET
	ENERGY DISSIPATER
	DEWATERING FACILITY
	CULVERT PIPE
	EROSION CONTROL BLANKET
	STREAM RESTORATION

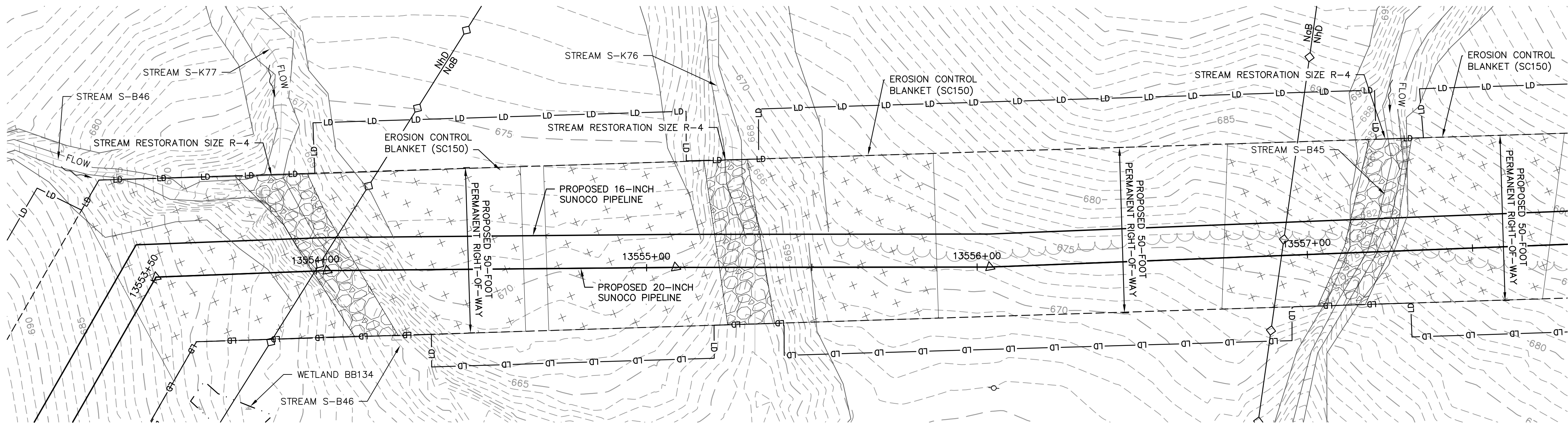
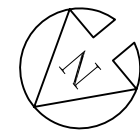


CHRISTOPHER D. ANTONI
PE-057385-E

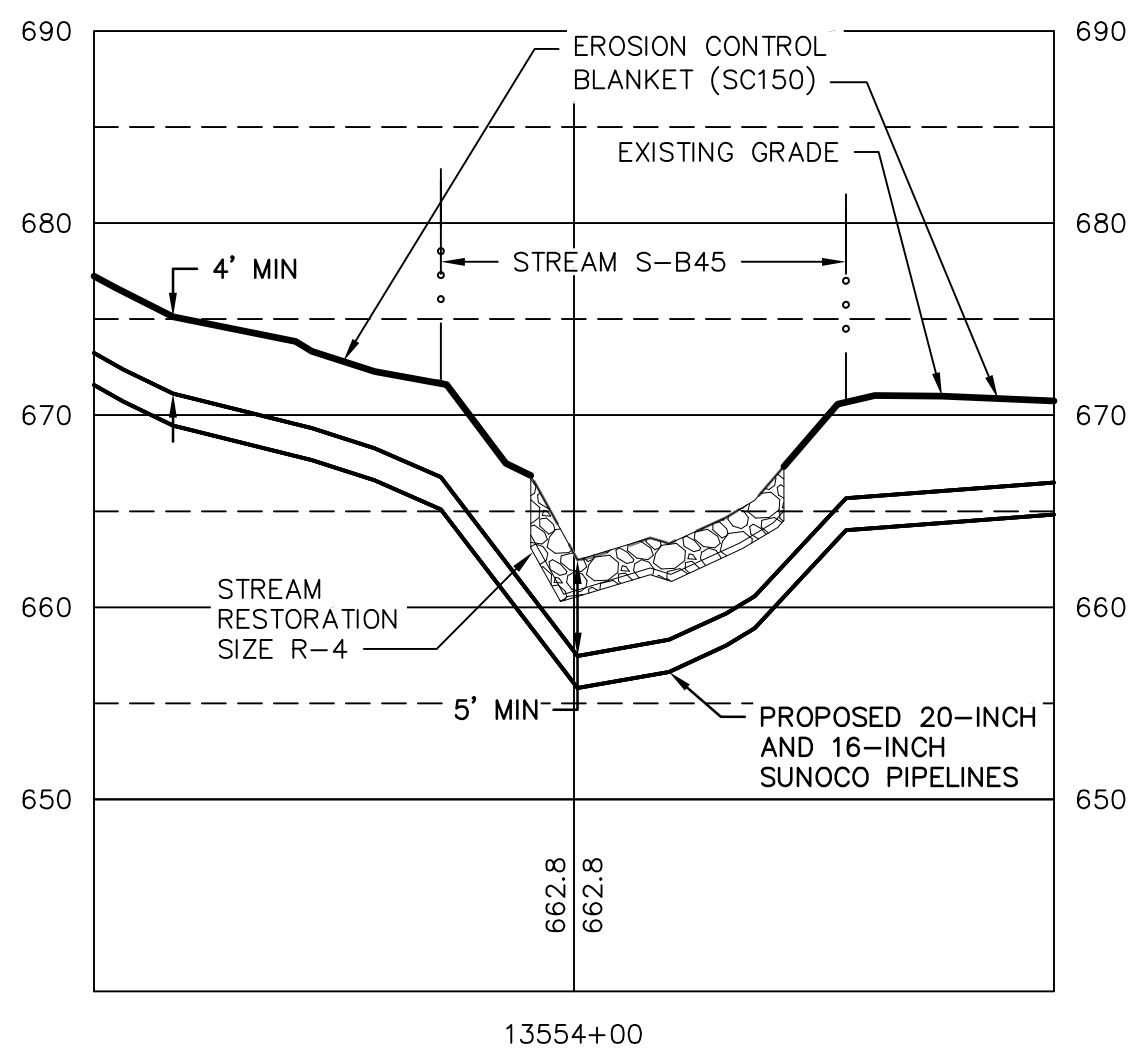
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CHECKED BY	CDA
APPROVED BY	CDA
DATE	11/30/16
SCALE	AS NOTED

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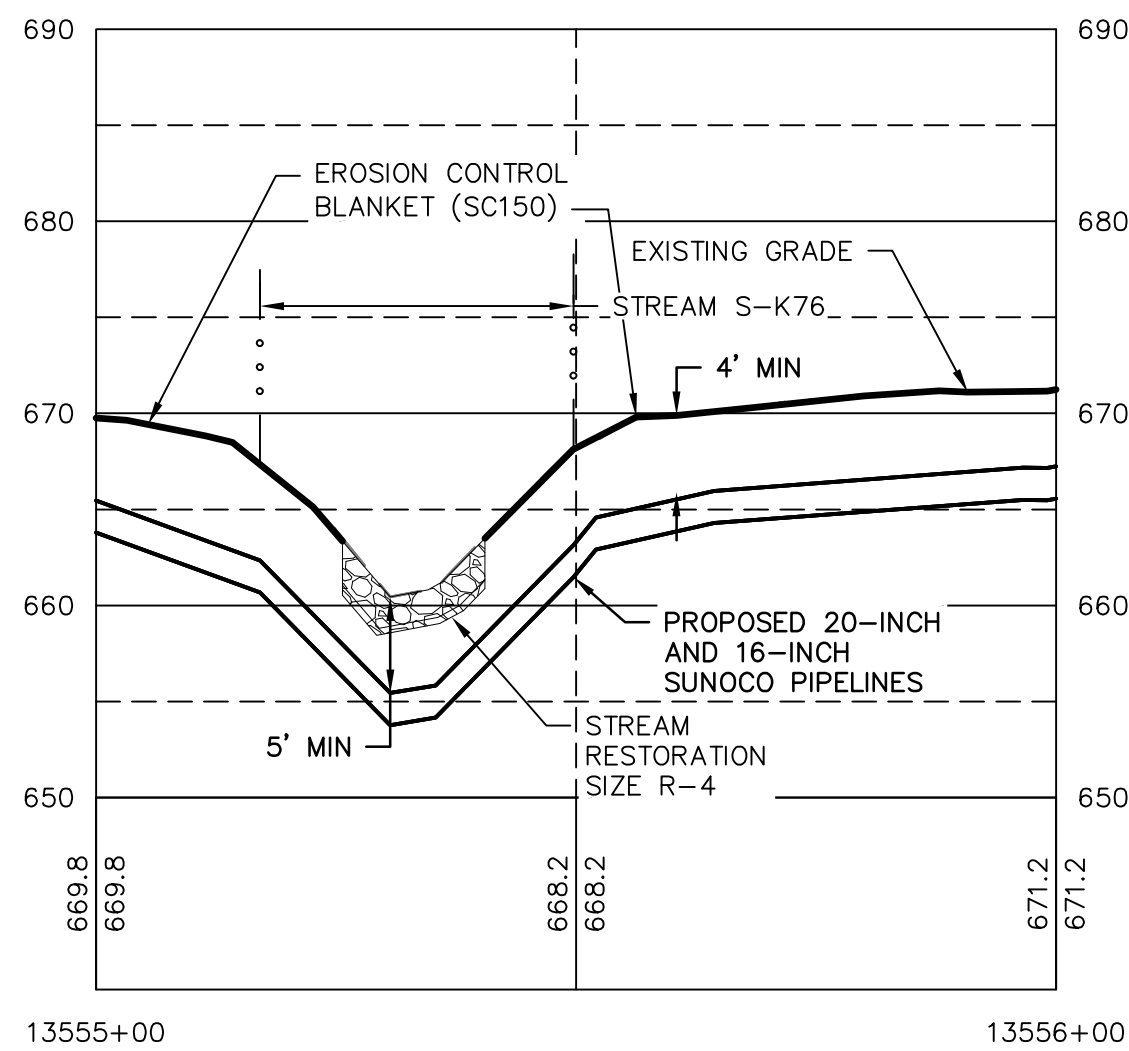
REV.	DATE	APP#	DESCRIPTION	APPROVAL
PENNSYLVANIA PIPELINE PROJECT STREAM S-B45 EXISTING CONDITIONS/EROSION & SEDIMENTATION CONTROL PLANS				
BERKS COUNTY, PA				
DWG. NO. S-K77-A				REV. NO. 0



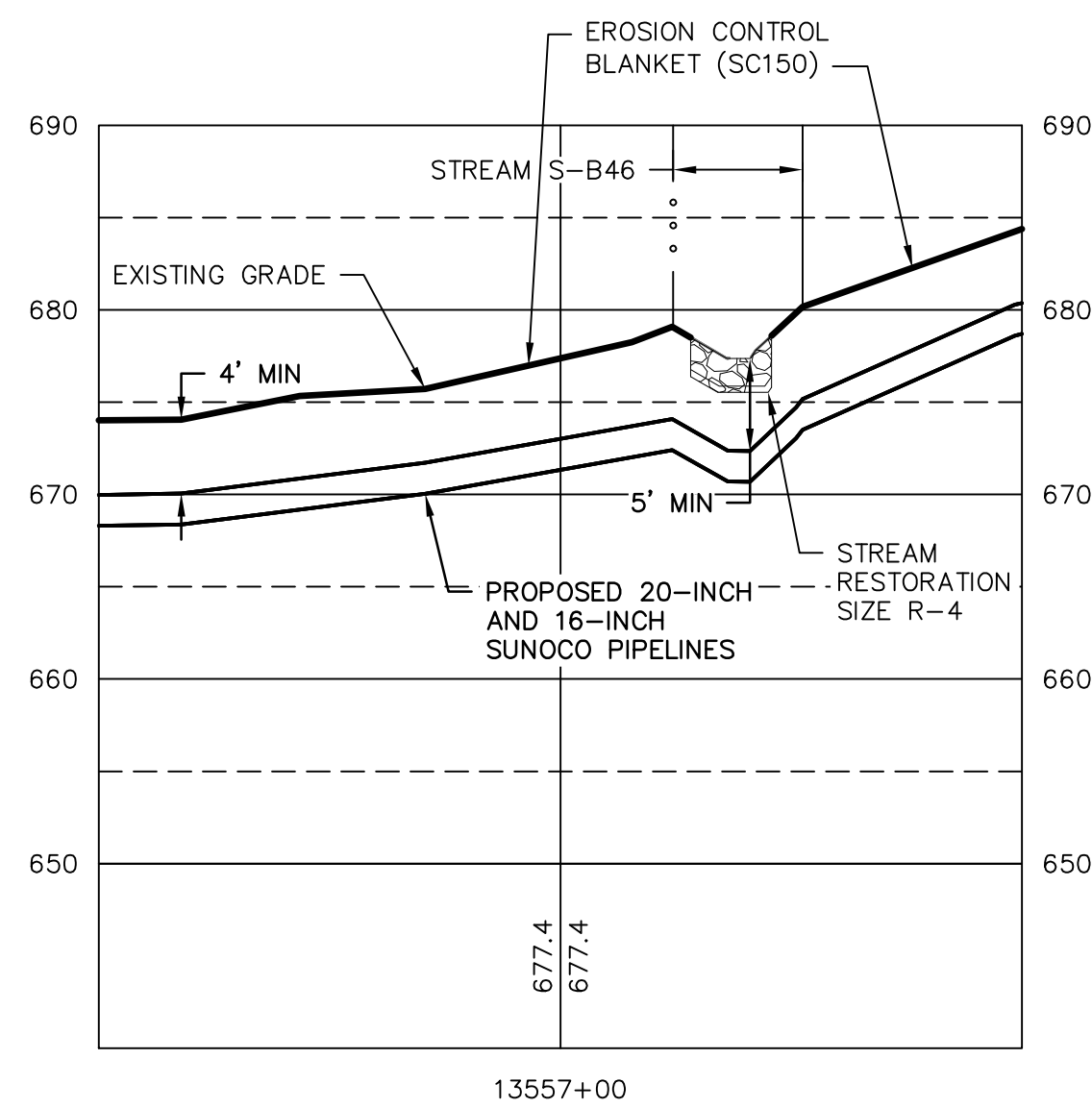
PLAN
SCALE: 1"=20'



PROFILE
HORZ SCALE: 1"=20'
VERT SCALE: 1"=10'

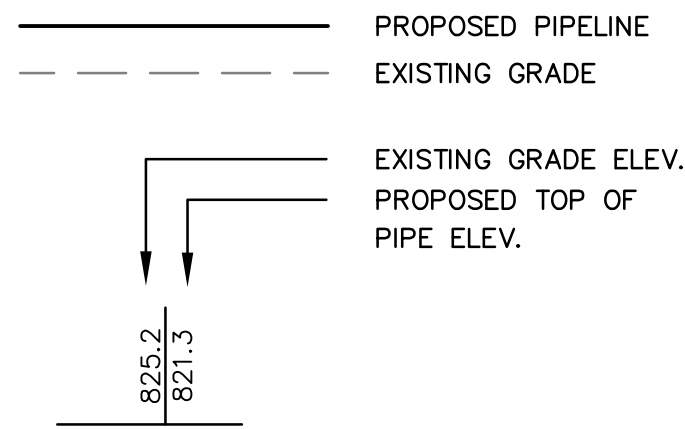


PROFILE
HORZ SCALE: 1"=20'
VERT SCALE: 1"=10'



PROFILE
HORZ SCALE: 1"=20'
VERT SCALE: 1"=10'

PROFILE LEGEND:



SYMBOL	DESCRIPTION
	PROPOSED 16-INCH & 20-INCH SUNOCO PIPELINES
	PROPOSED SUNOCO RIGHT-OF-WAY
	EXISTING SUNOCO PIPELINE
	MAJOR CONTOUR
	MINOR CONTOUR
	STREAM CENTERLINE
	TOP/BOTTOM OF BANK
	EXISTING EDGE OF PAVED ROADWAY
	EXISTING EDGE OF UNPAVED ROADWAY
	EXISTING VEGETATION
	EDGE OF WATER
	SOIL TYPE BOUNDARY
	WETLAND
	PROPOSED ROCK CONSTRUCTION ENTRANCE
	LIMIT OF DISTURBANCE
	CONSTRUCTION FENCE
	12-INCH COMPOST FILTER SOCK
	18-INCH COMPOST FILTER SOCK
	24-INCH COMPOST FILTER SOCK
	32-INCH COMPOST FILTER SOCK
	PERMANENT WATER BAR W/FILTER SOCK
	TRENCH PLUG
	TEMPORARY EQUIPMENT CROSSING
	SANDBAG DAM
	PUMP
	SCREENED INLET
	ENERGY DISSIPATER
	DEWATERING FACILITY
	CULVERT PIPE
	EROSION CONTROL BLANKET
	STREAM RESTORATION

GENERAL NOTES:

- REFERENCE E&S PLAN AND SITE RESTORATION NOTES AND DETAILS FOR ADDITIONAL CONSTRUCTION SEQUENCING, TYPICAL DETAILS AND NOTES (ES-0.01-ES-0.23); AND PLAN SHEETS FOR ADDITIONAL PLANS AND TOPOGRAPHY.
- ALL EXISTING UTILITY INFORMATION IS APPROXIMATE. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
- MAINTAIN 2'-0" MINIMUM VERTICAL SEPARATION BETWEEN THE PROPOSED PIPELINE AND OTHER UTILITIES.
- THE BACKGROUND TOPOGRAPHY WAS OBTAINED FROM TOPOGRAPHIC SURVEYS PERFORMED IN SEPTEMBER 2016.
- THE PROJECT IS LOCATED IN NAD83 PENNSYLVANIA STATE PLANE COORDINATE SYSTEM (SOUTH ZONE), NAVD88.
- EXCAVATION IS LIMITED TO THE CENTERLINE WITH A TYPICAL TRENCH WIDTH OF 4-5' FOR 16/20" PIPELINE.

WETLAND CROSSING NOTES:

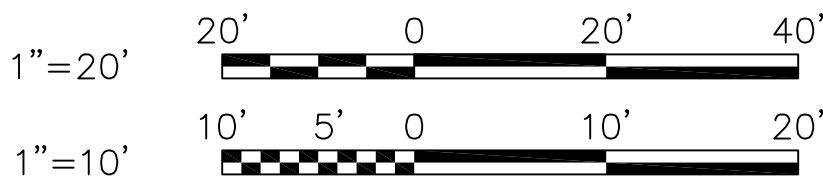
- REFERENCE NOTES AND DETAILS FOR WETLAND CONSTRUCTION SEQUENCING AND WETLAND RESTORATION (ES-0.03, ES-0.08, ES-0.10, AND ES-0.15).
- A MINIMUM OF 4 FEET COVER UNDER WETLANDS AND UPLANDS IS REQUIRED.
- FOR TEMPORARY TIMBER MAT REFERENCE (ES-0.10).
- EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET EDGE OF WETLAND OR 100 FEET FROM EDGE OF WETLAND FOR SPECIAL PROTECTION WATERS (HQ OR EV).

STREAM CROSSING NOTES:

- REFERENCE NOTES AND DETAILS FOR STREAM CONSTRUCTION SEQUENCING AND STREAM RESTORATION (ES-0.01-ES-0.17).
- FOR TEMPORARY EQUIPMENT CROSSINGS REFERENCE (ES-0.10).
- SITE CONDITIONS MAY ALLOW FOR IMPLEMENTATION OF OTHER APPROVED PIPELINE INSTALLATION METHODS REFERENCED WITH THE NOTES AND DETAILS (ES-0.11-ES-0.14).
- THE PIPELINES SHALL MAINTAIN A MINIMUM OF 5 FEET OF COVER UNDER STREAMS FROM THE TOP OF PIPE TO THE STREAM BED. THIS COVER WILL BE MAINTAINED AT A MINIMUM FROM TOP OF BANK TO TOP OF BANK.
- REFERENCE THE STREAM BANK STABILIZATION DETAIL AND STREAM RESTORATION TABLE IN THE NOTES AND DETAILS WHERE RIP-RAP IS PROPOSED (ES-0.18).
- EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET FROM TOP OF BANK OR 100 FEET FROM TOP OF BANK FOR SPECIAL PROTECTION WATERS (HQ OR EV).
- TIMBER MATS SHALL EXTEND A MINIMUM OF 20 FEET BEYOND TOP OF BANK.
- COMPOST FILTER SOCKS SHALL BE INSTALLED ALONG THE TOP OF THE STREAM BANK ACROSS THE RIGHT-OF-WAY WHEN PUMP BYPASS IS NOT IN PLACE.

LEGEND

GRAPHIC SCALES



STV
Baltimore, MD Bismarck, ND Denver, CO Douglassville, PA Houston, TX
Pittsburgh, PA Williamsport, PA

THE LOCATION OF THE PIPELINE FACILITIES AS SHOWN HEREON MUST BE CONSIDERED AS APPROXIMATE ONLY. BEFORE DIGGING OR FOR AN EXACT LOCATION PLEASE CONTACT YOUR STATES UNDERGROUND UTILITY LOCATION SERVICE.

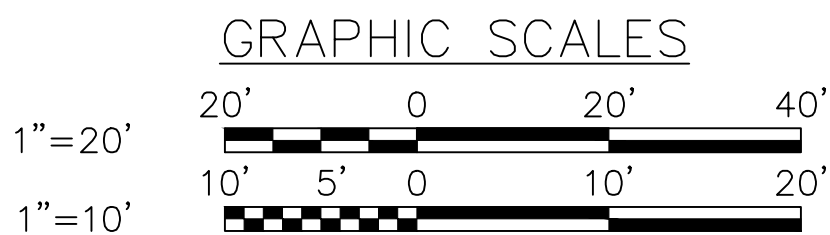
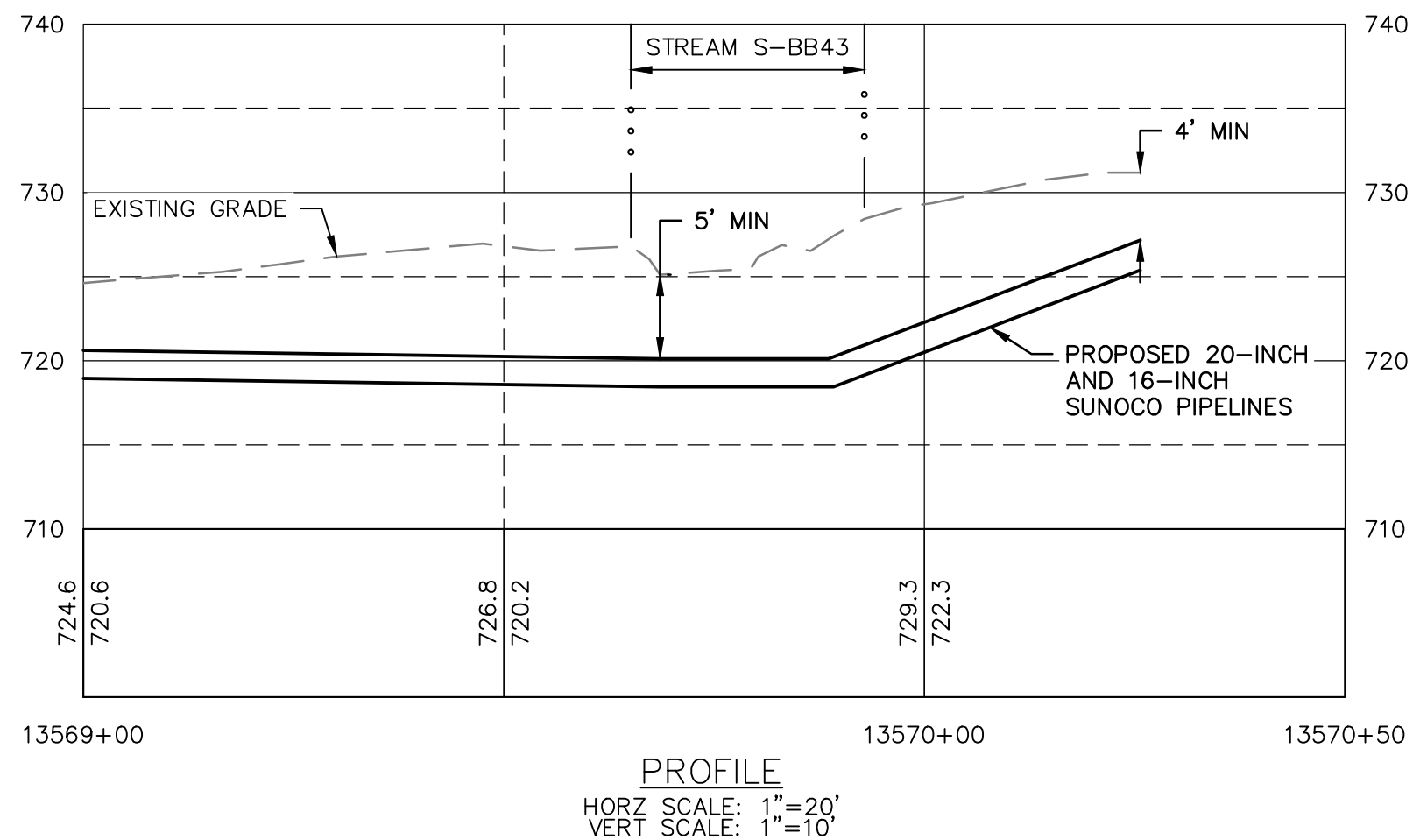
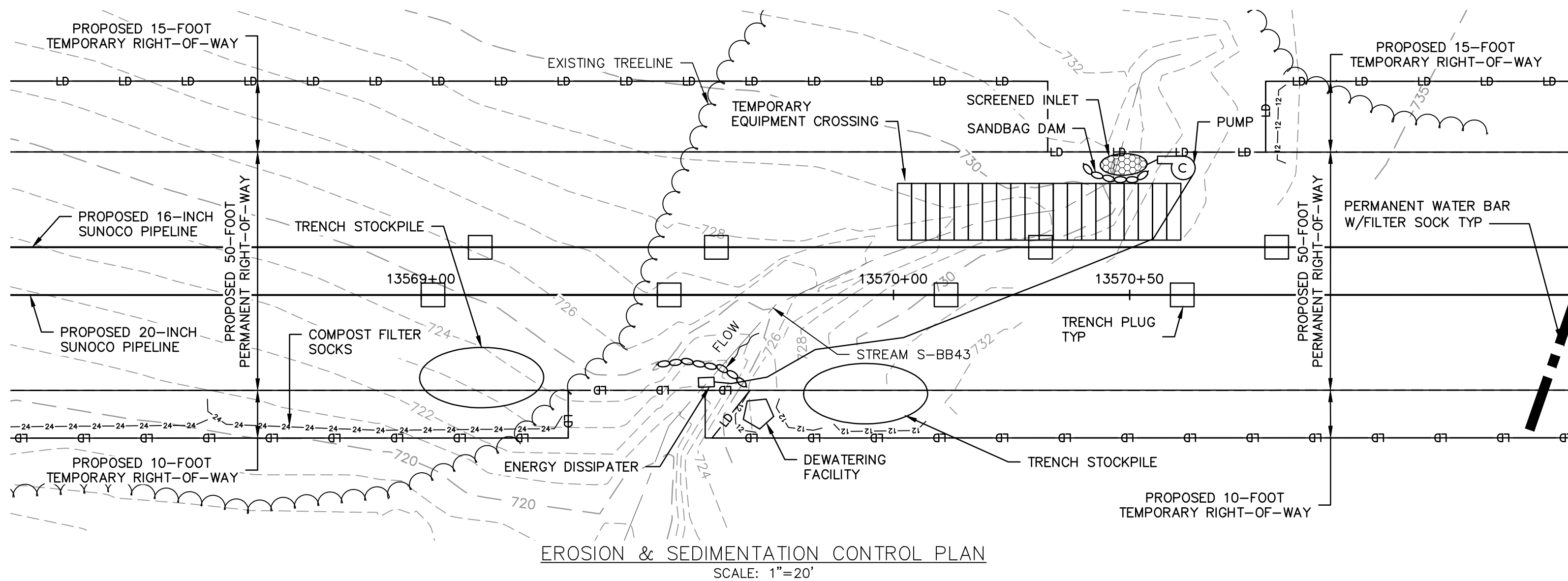
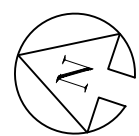
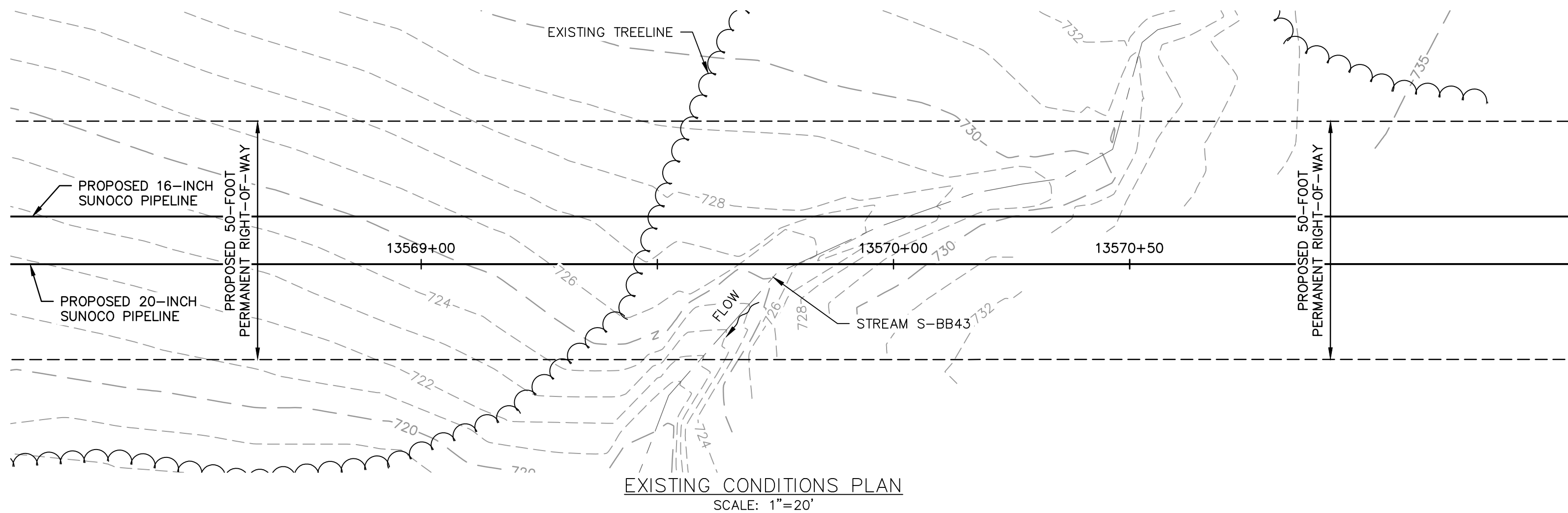
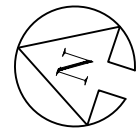
STV PROJECT No.: 38-17335

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER D. ANTONI
No. PE-057385-E
11/30/16

CHRISTOPHER D. ANTONI
PE-057385-E

ENGINEERING RECORD	
DRAWN BY	RFG
CHECKED BY	CDA
APPROVED BY	CDA
DATE	11/30/16
SCALE	AS NOTED
OLD DRAWING NO.	

REV.	DATE	APP#	DESCRIPTION	APPROVAL
PENNSYLVANIA PIPELINE PROJECT STREAM S-B45 RESTORATION PLAN BERKS COUNTY, PA				
DWG. NO.			S-K77-B	REV. NO. 0



GENERAL NOTES:

1. REFERENCE E&S PLAN AND SITE RESTORATION NOTES AND DETAILS FOR ADDITIONAL CONSTRUCTION SEQUENCING, TYPICAL DETAILS AND NOTES (ES-0.01-ES-0.23); AND PLAN SHEETS FOR ADDITIONAL PLANS AND TOPOGRAPHY.
2. ALL EXISTING UTILITY INFORMATION IS APPROXIMATE. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
3. MAINTAIN 2'-0" MINIMUM VERTICAL SEPARATION BETWEEN THE PROPOSED PIPELINE AND OTHER UTILITIES.
4. THE BACKGROUND TOPOGRAPHY WAS OBTAINED FROM TOPOGRAPHIC SURVEYS PERFORMED IN SEPTEMBER 2016.
5. THE PROJECT IS LOCATED IN NAD83 PENNSYLVANIA STATE PLANE COORDINATE SYSTEM (SOUTH ZONE), NAVD88.
6. EXCAVATION IS LIMITED TO THE CENTERLINE WITH A TYPICAL TRENCH WIDTH OF 4'-5' FOR 16/20" PIPELINE.

WETLAND CROSSING NOTES:

1. REFERENCE NOTES AND DETAILS FOR WETLAND CONSTRUCTION SEQUENCING AND WETLAND RESTORATION (ES-0.03, ES-0.08, ES-0.10, AND ES-0.15).
2. A MINIMUM OF 4 FEET COVER UNDER WETLANDS AND UPLANDS IS REQUIRED.
3. FOR TEMPORARY TIMBER MAT REFERENCE (ES-0.10)
4. EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET EDGE OF WETLAND OR 100 FEET FROM EDGE OF WETLAND FOR SPECIAL PROTECTION WATERS (HQ OR EV).

STREAM CROSSING NOTES:

1. REFERENCE NOTES AND DETAILS FOR STREAM CONSTRUCTION SEQUENCING AND STREAM RESTORATION (ES-0.01-ES-0.17).
2. FOR TEMPORARY EQUIPMENT CROSSINGS REFERENCE (ES-0.10).
3. SITE CONDITIONS MAY ALLOW FOR IMPLEMENTATION OF OTHER APPROVED PIPELINE INSTALLATION METHODS REFERENCED WITH THE NOTES AND DETAILS (ES-0.11-ES-0.14).
4. THE PIPELINES SHALL MAINTAIN A MINIMUM OF 5 FEET OF COVER UNDER STREAMS FROM THE TOP OF PIPE TO THE STREAM BED. THIS COVER WILL BE MAINTAINED AT A MINIMUM FROM TOP OF BANK TO TOP OF BANK.
5. REFERENCE THE STREAM BANK STABILIZATION DETAIL AND STREAM RESTORATION TABLE IN THE NOTES AND DETAILS WHERE RIP-RAP IS PROPOSED (ES-0.18).
6. EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET FROM TOP OF BANK OR 100 FEET FROM TOP OF BANK FOR SPECIAL PROTECTION WATERS (HQ OR EV).
7. TIMBER MATS SHALL EXTEND A MINIMUM OF 20 FEET BEYOND TOP OF BANK.
8. COMPOST FILTER SOCKS SHALL BE INSTALLED ALONG THE TOP OF THE STREAM BANK ACROSS THE RIGHT-OF-WAY WHEN PUMP BYPASS IS NOT IN PLACE.

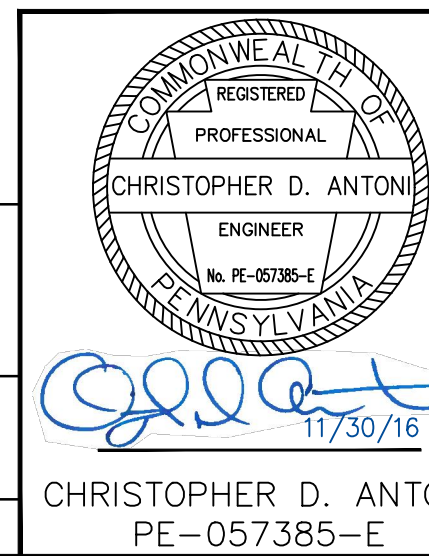
LEGEND

SYMBOL	DESCRIPTION
	PROPOSED 16-INCH & 20-INCH SUNOCO PIPELINES
	PROPOSED SUNOCO RIGHT-OF-WAY
	EXISTING SUNOCO PIPELINE
	MAJOR CONTOUR
	MINOR CONTOUR
	STREAM CENTERLINE
	TOP/BOTTOM OF BANK
	EXISTING EDGE OF PAVED ROADWAY
	EXISTING EDGE OF UNPAVED ROADWAY
	EXISTING VEGETATION
	EDGE OF WATER
	SOIL TYPE BOUNDARY
	WETLAND
	PROPOSED ROCK CONSTRUCTION ENTRANCE
	LIMIT OF DISTURBANCE
	CONSTRUCTION FENCE
	12-INCH COMPOST FILTER SOCK
	18-INCH COMPOST FILTER SOCK
	24-INCH COMPOST FILTER SOCK
	32-INCH COMPOST FILTER SOCK
	PERMANENT WATER BAR W/FILTER SOCK
	TRENCH PLUG
	TEMPORARY EQUIPMENT CROSSING
	SANDBAG DAM
	PUMP
	SCREENED INLET
	ENERGY DISSIPATER
	DEWATERING FACILITY
	CULVERT PIPE
	EROSION CONTROL BLANKET
	STREAM RESTORATION

PROFILE LEGEND:

	PROPOSED PIPELINE
	EXISTING GRADE
	EXISTING GRADE ELEV.
	PROPOSED TOP OF PIPE ELEV.

REV.	DATE	APP#	DESCRIPTION	APPROVAL
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ENGINEERING RECORD	
DRAWN BY	RFG
CHECKED BY	CDA
APPROVED BY	CDA
DATE	11/30/16
SCALE	AS NOTED

OLD DRAWING NO.



PENNSYLVANIA PIPELINE PROJECT STREAM S-BB43 EXISTING CONDITIONS/EROSION & SEDIMENTATION CONTROL PLANS

BERKS COUNTY, PA

DWG. NO.

S-BB43-A

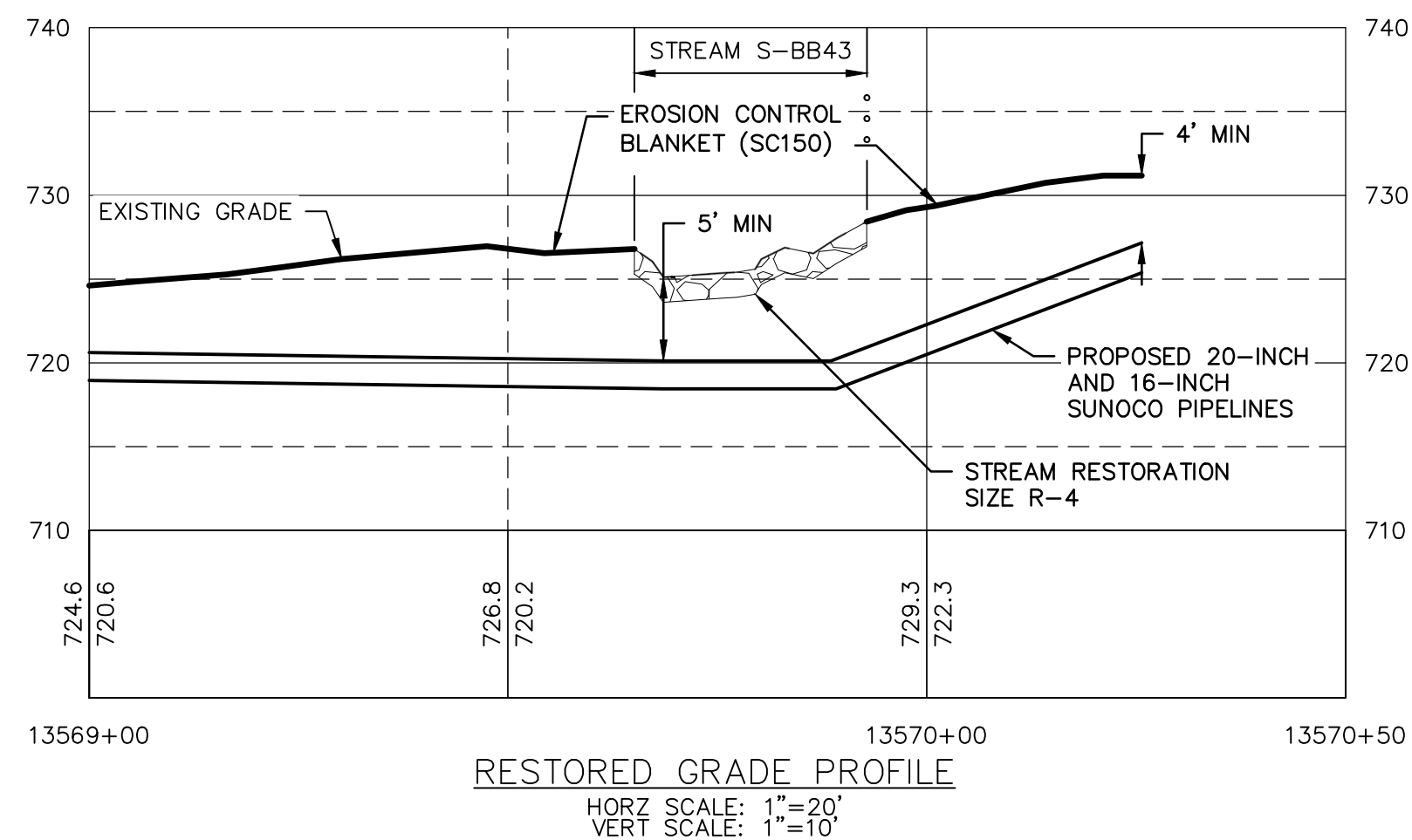
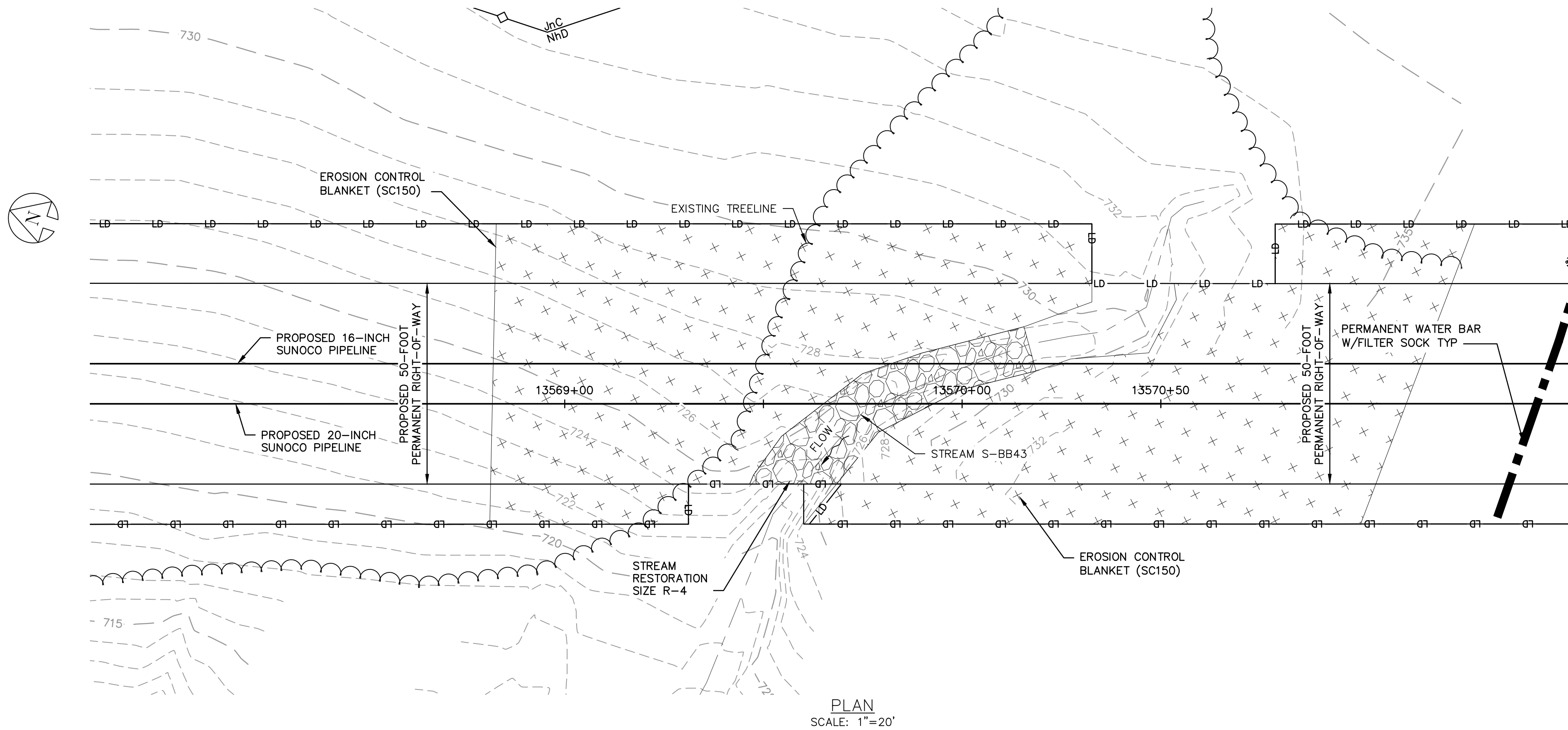
REV. NO.

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STV
Baltimore, MD Bismarck, ND Denver, CO Douglassville, PA Houston, TX
Pittsburgh, PA Williamsport, PA

THE LOCATION OF THE PIPELINE FACILITIES AS SHOWN HEREON MUST BE CONSIDERED AS APPROXIMATE ONLY. BEFORE DIGGING OR FOR AN EXACT LOCATION PLEASE CONTACT YOUR STATES UNDERGROUND UTILITY LOCATION SERVICE.

STV PROJECT No.: 38-17335



GENERAL NOTES:

1. REFERENCE E&S PLAN AND SITE RESTORATION NOTES AND DETAILS FOR ADDITIONAL CONSTRUCTION SEQUENCING, TYPICAL DETAILS AND NOTES (ES-0.01-ES-0.23); AND PLAN SHEETS FOR ADDITIONAL PLANS AND TOPOGRAPHY.
2. ALL EXISTING UTILITY INFORMATION IS APPROXIMATE. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
3. MAINTAIN 2'-0" MINIMUM VERTICAL SEPARATION BETWEEN THE PROPOSED PIPELINE AND OTHER UTILITIES.
4. THE BACKGROUND TOPOGRAPHY WAS OBTAINED FROM TOPOGRAPHIC SURVEYS PERFORMED IN SEPTEMBER 2016.
5. THE PROJECT IS LOCATED IN NAD83 PENNSYLVANIA STATE PLANE COORDINATE SYSTEM (SOUTH ZONE), NAVD88.
6. EXCAVATION IS LIMITED TO THE CENTERLINE WITH A TYPICAL TRENCH WIDTH OF 4'-5' FOR 16/20" PIPELINE.

WETLAND CROSSING NOTES:

1. REFERENCE NOTES AND DETAILS FOR WETLAND CONSTRUCTION SEQUENCING AND WETLAND RESTORATION (ES-0.03, ES-0.08, ES-0.10, AND ES-0.15).
2. A MINIMUM OF 4 FEET COVER UNDER WETLANDS AND UPLANDS IS REQUIRED.
3. FOR TEMPORARY TIMBER MAT REFERENCE (ES-0.10)
4. EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET EDGE OF WETLAND OR 100 FEET FROM EDGE OF WETLAND FOR SPECIAL PROTECTION WATERS (HQ OR EV).

STREAM CROSSING NOTES:

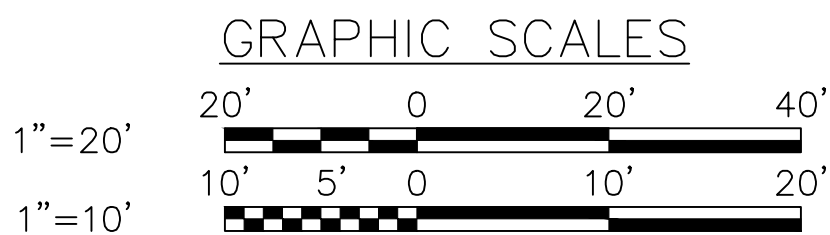
1. REFERENCE NOTES AND DETAILS FOR STREAM CONSTRUCTION SEQUENCING AND STREAM RESTORATION (ES-0.01-ES-0.17).
2. FOR TEMPORARY EQUIPMENT CROSSINGS REFERENCE (ES-0.10).
3. SITE CONDITIONS MAY ALLOW FOR IMPLEMENTATION OF OTHER APPROVED PIPELINE INSTALLATION METHODS REFERENCED WITH THE NOTES AND DETAILS (ES-0.11-ES-0.14).
4. THE PIPELINES SHALL MAINTAIN A MINIMUM OF 5 FEET OF COVER UNDER STREAMS FROM THE TOP OF PIPE TO THE STREAM BED. THIS COVER WILL BE MAINTAINED AT A MINIMUM FROM TOP OF BANK TO TOP OF BANK.
5. REFERENCE THE STREAM BANK STABILIZATION DETAIL AND STREAM RESTORATION TABLE IN THE NOTES AND DETAILS WHERE RIP-RAP IS PROPOSED (ES-0.18).
6. EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET FROM TOP OF BANK OR 100 FEET FROM TOP OF BANK FOR SPECIAL PROTECTION WATERS (HQ OR EV).
7. TIMBER MATS SHALL EXTEND A MINIMUM OF 20 FEET BEYOND TOP OF BANK.
8. COMPOST FILTER SOCKS SHALL BE INSTALLED ALONG THE TOP OF THE STREAM BANK ACROSS THE RIGHT-OF-WAY WHEN PUMP BYPASS IS NOT IN PLACE.

LEGEND

SYMBOL	DESCRIPTION
	PROPOSED 16-INCH & 20-INCH SUNOCO PIPELINES
	PROPOSED SUNOCO RIGHT-OF-WAY
	EXISTING SUNOCO PIPELINE
	MAJOR CONTOUR
	MINOR CONTOUR
	STREAM CENTERLINE
	TOP/BOTTOM OF BANK
	EXISTING EDGE OF PAVED ROADWAY
	EXISTING EDGE OF UNPAVED ROADWAY
	EXISTING VEGETATION
	EDGE OF WATER
	SOIL TYPE BOUNDARY
	WETLAND
	PROPOSED ROCK CONSTRUCTION ENTRANCE
	LIMIT OF DISTURBANCE
	CONSTRUCTION FENCE
	12-INCH COMPOST FILTER SOCK
	18-INCH COMPOST FILTER SOCK
	24-INCH COMPOST FILTER SOCK
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	PERMANENT WATER BAR W/FILTER SOCK
	TRENCH PLUG
	TEMPORARY EQUIPMENT CROSSING
	SANDBAG DAM
	PUMP
	SCREENED INLET
	ENERGY DISSIPATER
	DEWATERING FACILITY
	CULVERT PIPE
	EROSION CONTROL BLANKET
	STREAM RESTORATION

PROFILE LEGEND:

	PROPOSED PIPELINE
	EXISTING GRADE
	EXISTING GRADE ELEV. PROPOSED TOP OF PIPE ELEV.



STV
Baltimore, MD Bismarck, ND Denver, CO Douglassville, PA Houston, TX
Pittsburgh, PA Williamsport, PA

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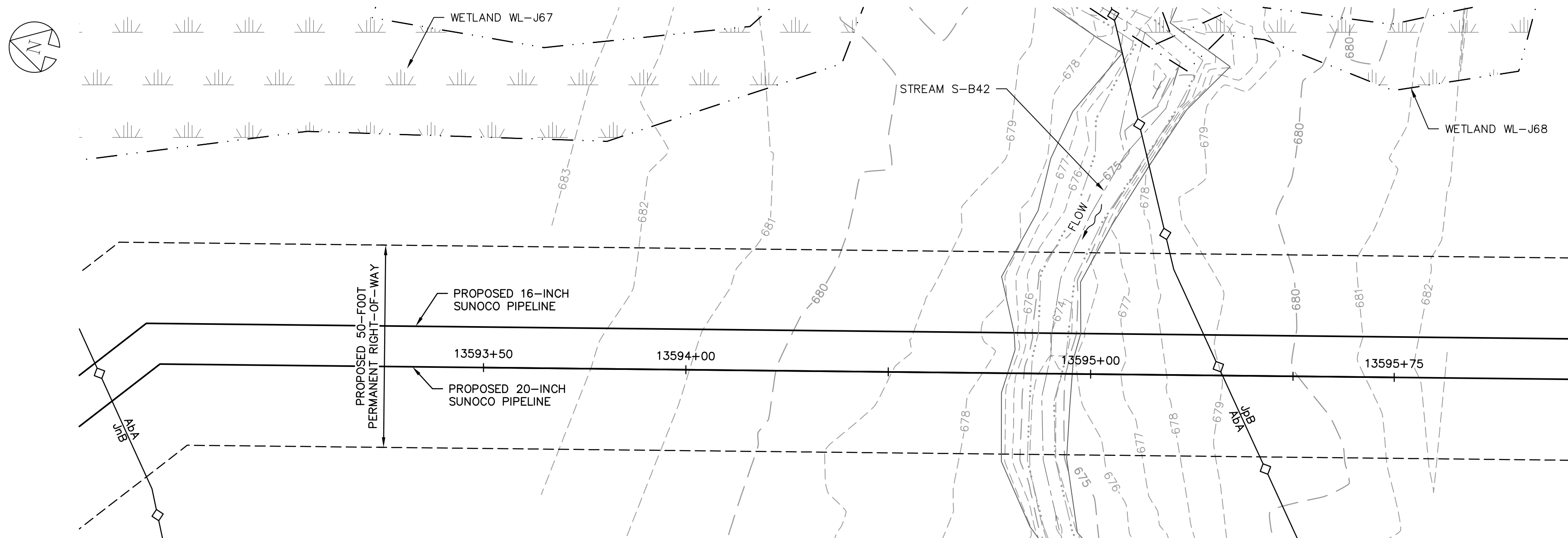
STV PROJECT No.: 38-17335

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER D. ANTONI
No. PE-057385-E
11/30/16
CHRISTOPHER D. ANTONI
PE-057385-E

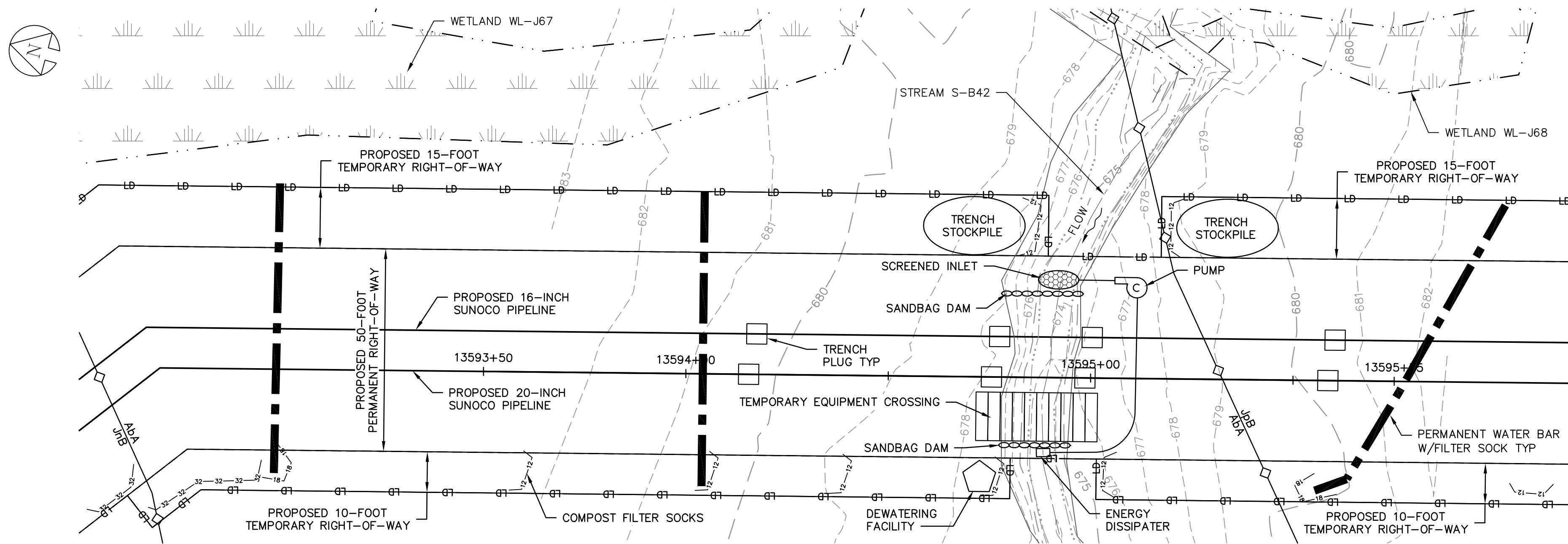
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SCALE	AS NOTED

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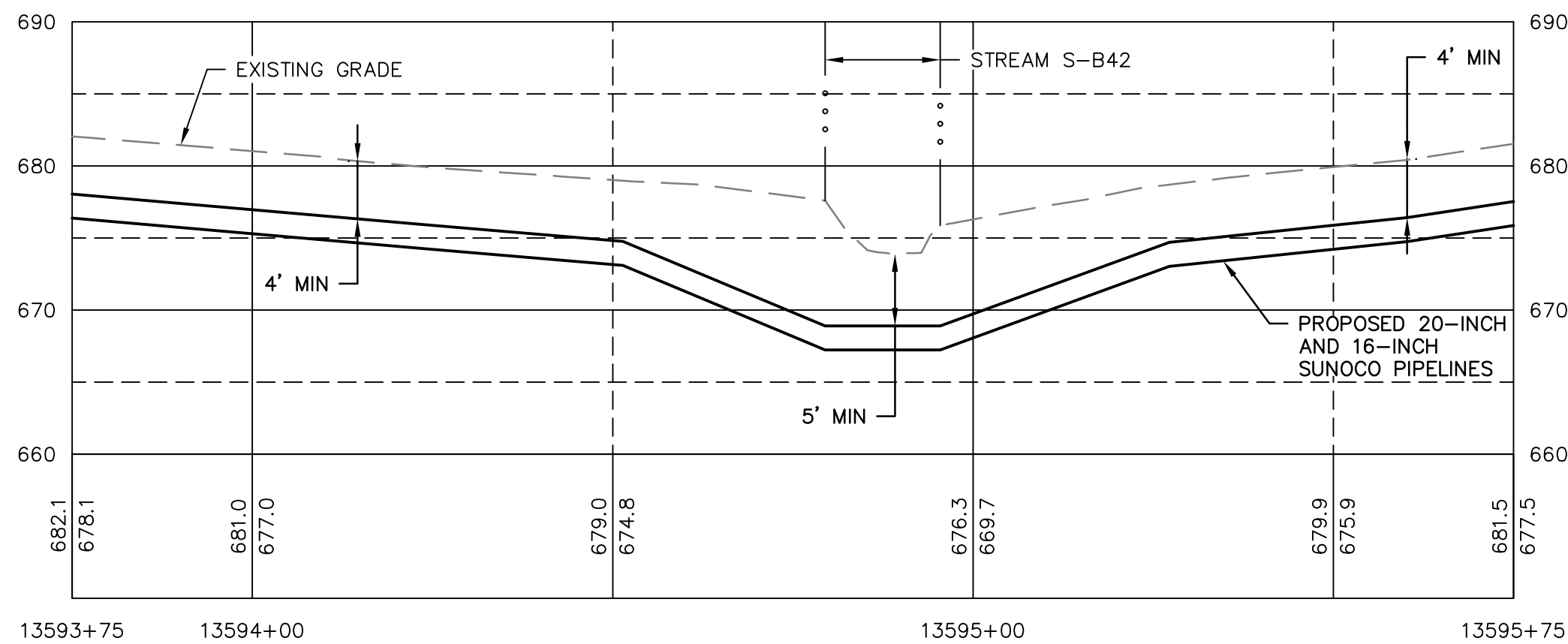
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PENNSYLVANIA PIPELINE PROJECT STREAM S-B43 RESTORATION PLAN				
BERKS COUNTY, PA				
DWG. NO.			S-BB43-B	REV. NO. 0



EXISTING CONDITIONS PLAN
SCALE: 1"=20'

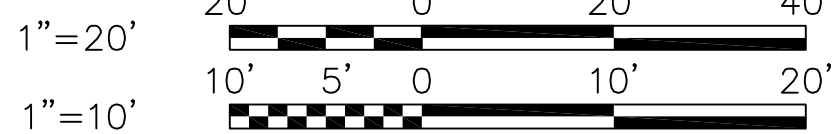


EROSION & SEDIMENTATION CONTROL PLAN
SCALE: 1"=20'

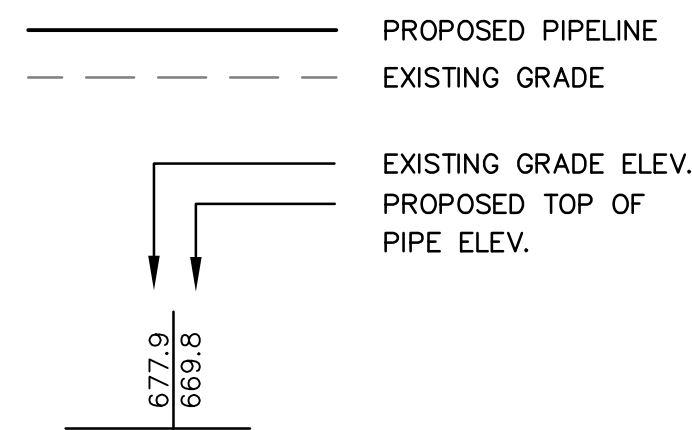


PROFILE
HORZ SCALE: 1"=20'
VERT SCALE: 1"=10'

GRAPHIC SCALES



PROFILE LEGEND:



LEGEND

SYMBOL	DESCRIPTION
	PROPOSED 16-INCH & 20-INCH SUNOCO PIPELINES
	PROPOSED SUNOCO RIGHT-OF-WAY
	EXISTING SUNOCO PIPELINE
	MAJOR CONTOUR
	MINOR CONTOUR
	STREAM CENTERLINE
	TOP/BOTTOM OF BANK
	EXISTING EDGE OF PAVED ROADWAY
	EXISTING EDGE OF UNPAVED ROADWAY
	EXISTING VEGETATION
	EDGE OF WATER
	SOIL TYPE BOUNDARY
	WETLAND
	PROPOSED ROCK CONSTRUCTION ENTRANCE
	LIMIT OF DISTURBANCE
	CONSTRUCTION FENCE
	12-INCH COMPOST FILTER SOCK
	18-INCH COMPOST FILTER SOCK
	24-INCH COMPOST FILTER SOCK
	32-INCH COMPOST FILTER SOCK
	PERMANENT WATER BAR W/FILTER SOCK
	TRENCH PLUG
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	SANDBAG DAM
	PUMP
	SCREENED INLET
	ENERGY DISSIPATER
	DEWATERING FACILITY
	CULVERT PIPE
	EROSION CONTROL BLANKET
	STREAM RESTORATION

GENERAL NOTES:

- REFERENCE E&S PLAN AND SITE RESTORATION NOTES AND DETAILS FOR ADDITIONAL CONSTRUCTION SEQUENCING, TYPICAL DETAILS AND NOTES (ES-0.01-ES-0.23); AND PLAN SHEETS FOR ADDITIONAL PLANS AND TOPOGRAPHY.
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- THE BACKGROUND TOPOGRAPHY WAS OBTAINED FROM TOPOGRAPHIC SURVEYS PERFORMED IN SEPTEMBER 2016.
- THE PROJECT IS LOCATED IN NAD83 PENNSYLVANIA STATE PLANE COORDINATE SYSTEM (SOUTH ZONE), NAVD88.
- EXCAVATION IS LIMITED TO THE CENTERLINE WITH A TYPICAL TRENCH WIDTH OF 4'-5' FOR 16/20" PIPELINE.

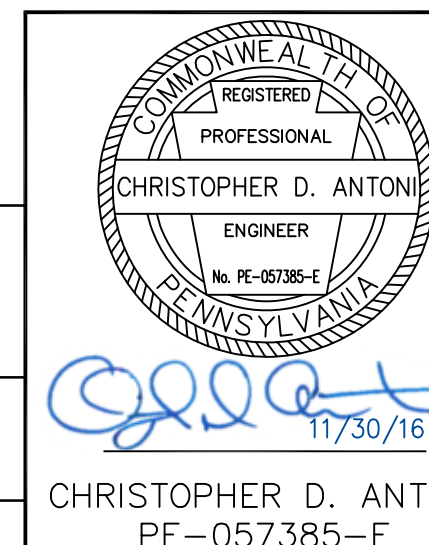
WETLAND CROSSING NOTES:

- REFERENCE NOTES AND DETAILS FOR WETLAND CONSTRUCTION SEQUENCING AND WETLAND RESTORATION (ES-0.03, ES-0.08, ES-0.10, AND ES-0.15).
- A MINIMUM OF 4 FEET COVER UNDER WETLANDS AND UPLANDS IS REQUIRED.
- FOR TEMPORARY TIMBER MAT REFERENCE (ES-0.10)
- EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET EDGE OF WETLAND OR 100 FEET FROM EDGE OF WETLAND FOR SPECIAL PROTECTION WATERS (HQ OR EV).

STREAM CROSSING NOTES:

- REFERENCE NOTES AND DETAILS FOR STREAM CONSTRUCTION SEQUENCING AND STREAM RESTORATION (ES-0.01-ES-0.17).
- FOR TEMPORARY EQUIPMENT CROSSINGS REFERENCE (ES-0.10).
- SITE CONDITIONS MAY ALLOW FOR IMPLEMENTATION OF OTHER APPROVED PIPELINE INSTALLATION METHODS REFERENCED WITH THE NOTES AND DETAILS (ES-0.11-ES-0.14).
- THE PIPELINES SHALL MAINTAIN A MINIMUM OF 5 FEET OF COVER UNDER STREAMS FROM THE TOP OF PIPE TO THE STREAM BED. THIS COVER WILL BE MAINTAINED AT A MINIMUM FROM TOP OF BANK TO TOP OF BANK.
- REFERENCE THE STREAM BANK STABILIZATION DETAIL AND STREAM RESTORATION TABLE IN THE NOTES AND DETAILS WHERE RIP-RAP IS PROPOSED (ES-0.18).
- EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET FROM TOP OF BANK OR 100 FEET FROM TOP OF BANK FOR SPECIAL PROTECTION WATERS (HQ OR EV).
- TIMBER MATS SHALL EXTEND A MINIMUM OF 20 FEET BEYOND TOP OF BANK.
- COMPOST FILTER SOCKS SHALL BE INSTALLED ALONG THE TOP OF THE STREAM BANK ACROSS THE RIGHT-OF-WAY WHEN PUMP BYPASS IS NOT IN PLACE.

REV.	DATE	APP#	DESCRIPTION	APPROVAL
PENNSYLVANIA PIPELINE PROJECT				
STREAM S-B42				
EXISTING CONDITIONS/EROSION & SEDIMENTATION CONTROL PLANS				
BERKS COUNTY, PA				
DWG. NO.			REV. NO.	
S-B42-A			0	



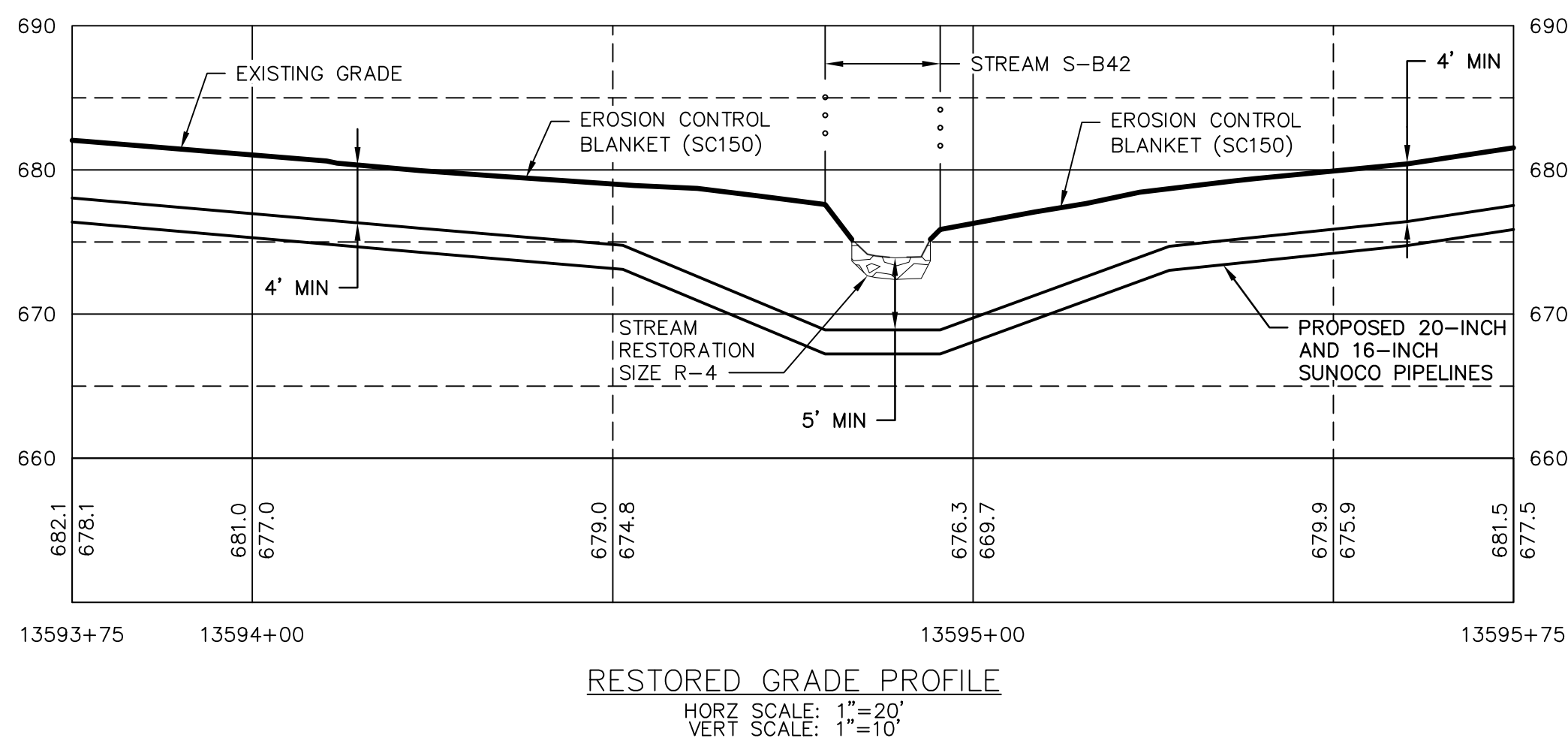
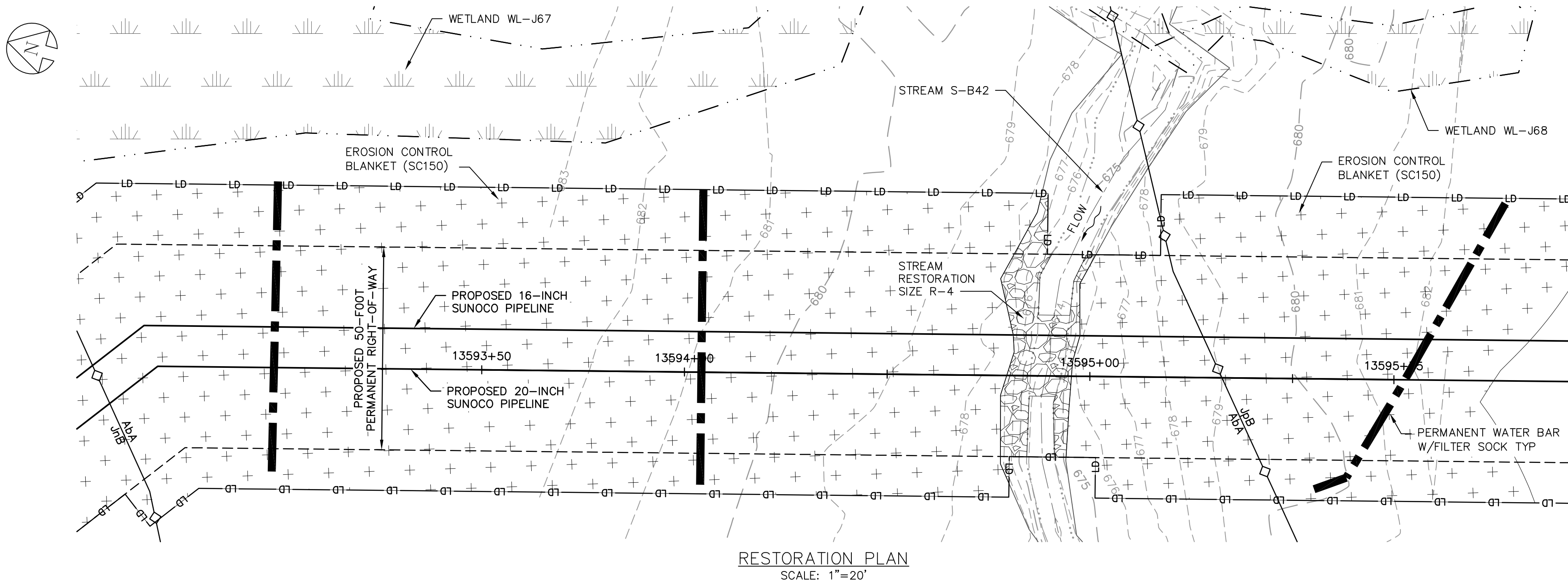
ENGINEERING RECORD	
DRAWN BY	RFG
CHECKED BY	CDA
APPROVED BY	CDA
DATE	11/30/16
SCALE	AS NOTED

STV
Baltimore, MD Bismarck, ND Denver, CO Douglassville, PA
Houston, TX Pittsburgh, PA Williamsport, PA

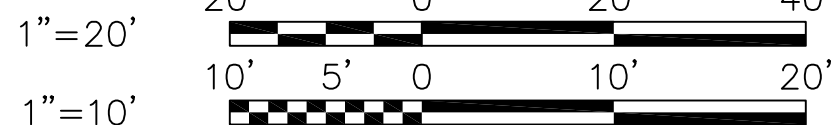
THE LOCATION OF THE PIPELINE FACILITIES AS SHOWN HEREON MUST BE CONSIDERED AS APPROXIMATE ONLY. BEFORE DIGGING OR FOR AN EXACT LOCATION PLEASE CONTACT YOUR STATES UNDERGROUND UTILITY LOCATION SERVICE.

STV PROJECT No.: 38-17335

OLD DRAWING NO.



GRAPHIC SCALES



GENERAL NOTES:

- REFERENCE E&S PLAN AND SITE RESTORATION NOTES AND DETAILS FOR ADDITIONAL CONSTRUCTION SEQUENCING, TYPICAL DETAILS AND NOTES (ES-0.01-ES-0.23); AND PLAN SHEETS FOR ADDITIONAL PLANS AND TOPOGRAPHY.
- ALL EXISTING UTILITY INFORMATION IS APPROXIMATE. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
- MAINTAIN 2'-0" MINIMUM VERTICAL SEPARATION BETWEEN THE PROPOSED PIPELINE AND OTHER UTILITIES.
- THE BACKGROUND TOPOGRAPHY WAS OBTAINED FROM TOPOGRAPHIC SURVEYS PERFORMED IN SEPTEMBER 2016.
- THE PROJECT IS LOCATED IN NAD83 PENNSYLVANIA STATE PLANE COORDINATE SYSTEM (SOUTH ZONE), NAVD88.
- EXCAVATION IS LIMITED TO THE CENTERLINE WITH A TYPICAL TRENCH WIDTH OF 4'-5' FOR 16/20" PIPELINE.

WETLAND CROSSING NOTES:

- REFERENCE NOTES AND DETAILS FOR WETLAND CONSTRUCTION SEQUENCING AND WETLAND RESTORATION (ES-0.03, ES-0.08, ES-0.10, AND ES-0.15).
- A MINIMUM OF 4 FEET COVER UNDER WETLANDS AND UPLANDS IS REQUIRED.
- FOR TEMPORARY TIMBER MAT CROSSINGS REFERENCE (ES-0.10).
- EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET EDGE OF WETLAND OR 100 FEET FROM EDGE OF WETLAND FOR SPECIAL PROTECTION WATERS (HQ OR EV).

STREAM CROSSING NOTES:

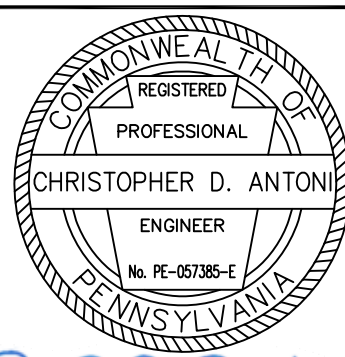
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- FOR TEMPORARY EQUIPMENT CROSSINGS REFERENCE (ES-0.10).
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- COMPOST FILTER SOCKS SHALL BE INSTALLED ALONG THE TOP OF THE STREAM BANK ACROSS THE RIGHT-OF-WAY WHEN PUMP BYPASS IS NOT IN PLACE.

LEGEND

SYMBOL	DESCRIPTION
	PROPOSED 16-INCH & 20-INCH SUNOCO PIPELINES
	PROPOSED SUNOCO RIGHT-OF-WAY
	EXISTING SUNOCO PIPELINE
	MAJOR CONTOUR
	MINOR CONTOUR
	STREAM CENTERLINE
	TOP/BOTTOM OF BANK
	EXISTING EDGE OF PAVED ROADWAY
	EXISTING EDGE OF UNPAVED ROADWAY
	EXISTING VEGETATION
	EDGE OF WATER
	SOIL TYPE BOUNDARY
	WETLAND
	PROPOSED ROCK CONSTRUCTION ENTRANCE
	LIMIT OF DISTURBANCE
	CONSTRUCTION FENCE
	12-INCH COMPOST FILTER SOCK
	18-INCH COMPOST FILTER SOCK
	24-INCH COMPOST FILTER SOCK
	32-INCH COMPOST FILTER SOCK
	PERMANENT WATER BAR W/FILTER SOCK
	TRENCH PLUG
	TEMPORARY EQUIPMENT CROSSING
	SANDBAG DAM
	PUMP
	SCREENED INLET
	ENERGY DISSIPATER
	DEWATERING FACILITY
	CULVERT PIPE
	EROSION CONTROL BLANKET
	STREAM RESTORATION

PROFILE LEGEND:

	PROPOSED PIPELINE
	EXISTING GRADE
	EXISTING GRADE ELEV. AND PROPOSED TOP OF PIPE ELEV.

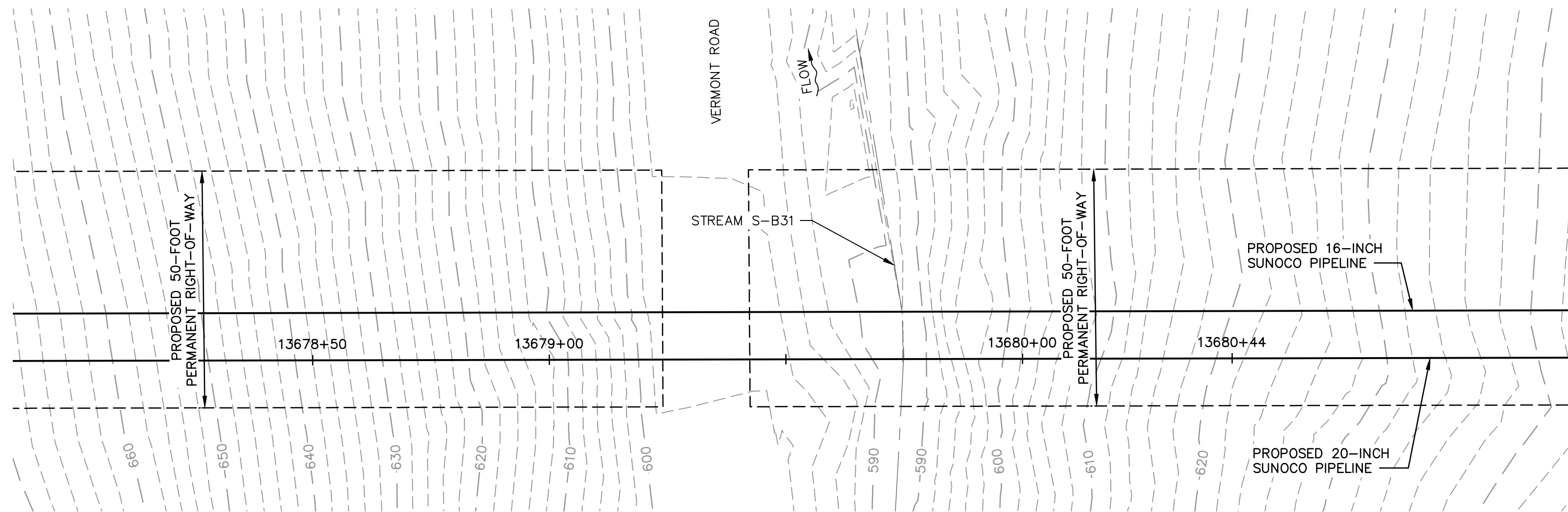


CHRISTOPHER D. ANTONI
PE-057385-E

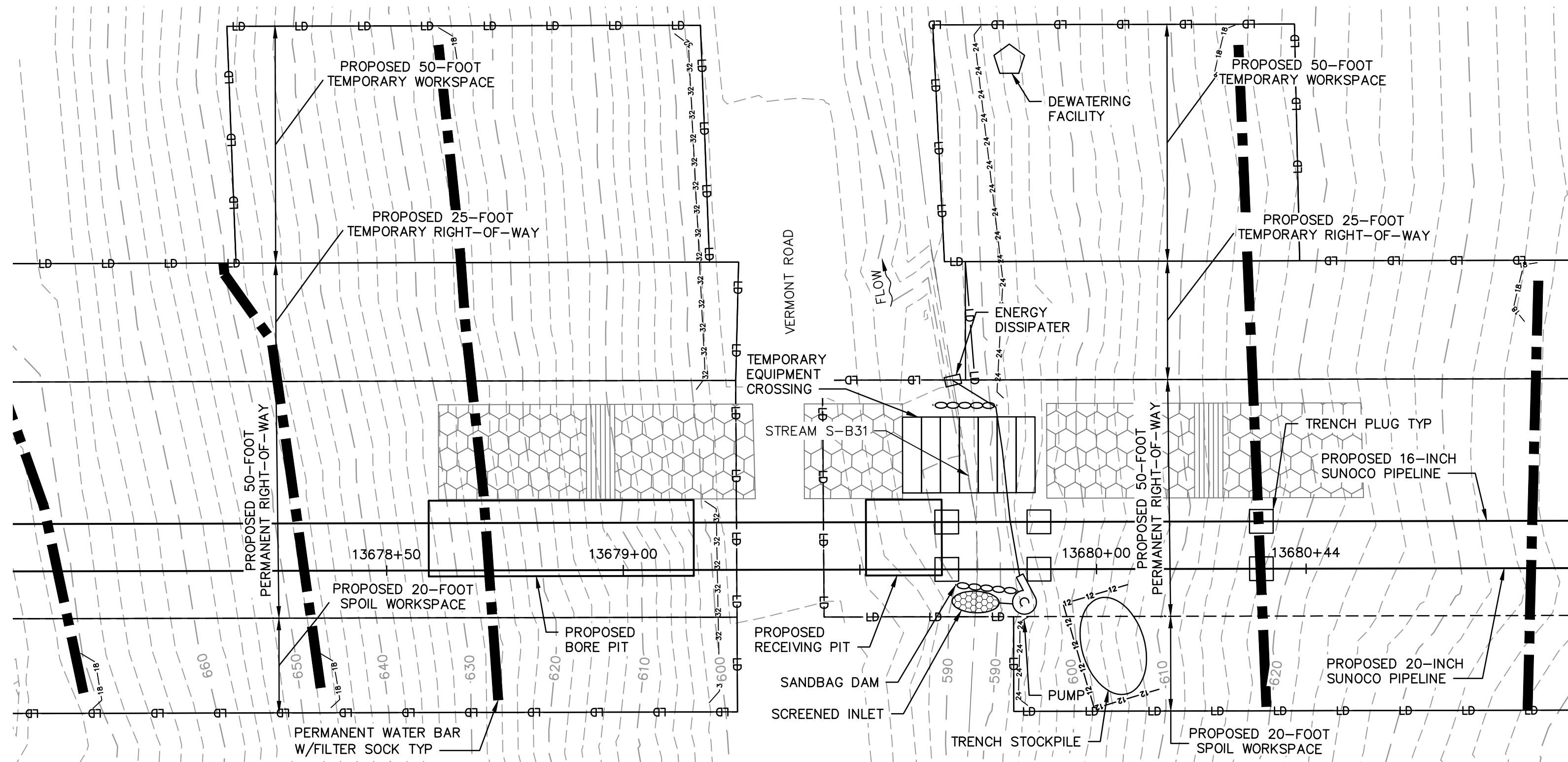
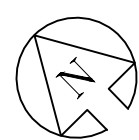
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DRAWN BY	RFG
CHECKED BY	CDA
APPROVED BY	CDA
DATE	11/30/16
SCALE	AS NOTED

OLD DRAWING NO.

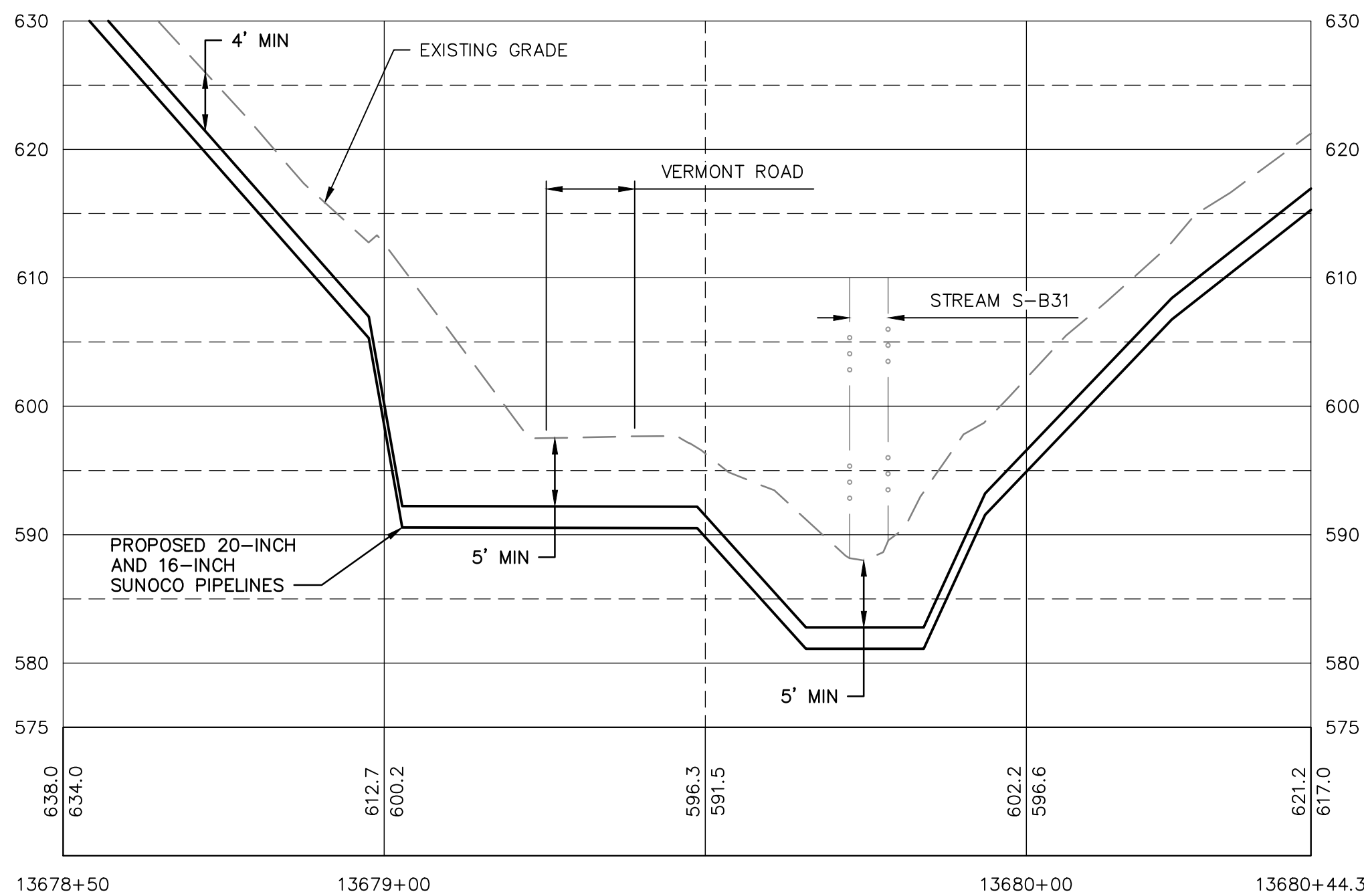
REV.	DATE	APP#	DESCRIPTION	APPROVAL
PENNSYLVANIA PIPELINE PROJECT				
STREAM S-B42 RESTORATION PLAN				
BERKS COUNTY, PA				
DWG. NO.			S-B42-B	REV. NO.
				0



EXISTING CONDITIONS PLAN
SCALE: 1"=20'



EROSION & SEDIMENTATION CONTROL PLAN
SCALE: 1"=20'



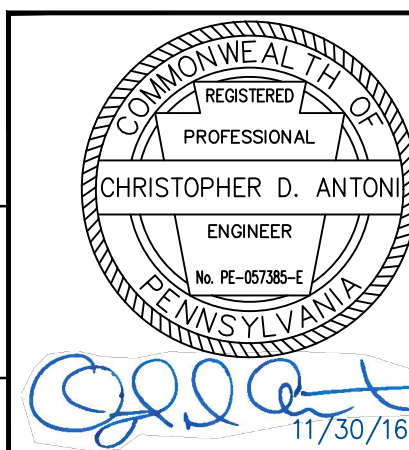
PROFILE
HORZ SCALE: 1"=20'
VERT SCALE: 1"=10'

1"=20'
1"=10'



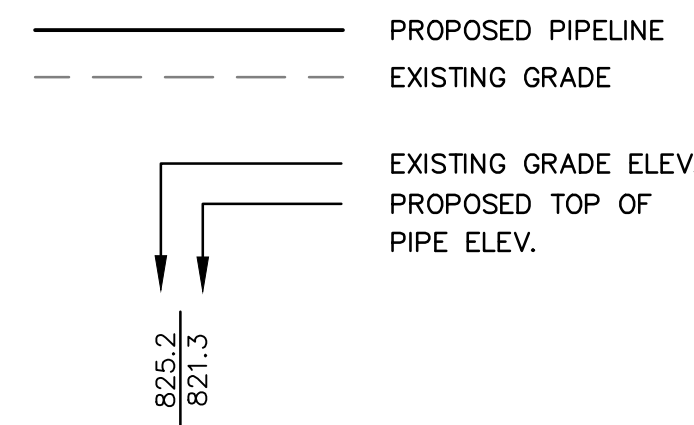
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STV PROJECT No.: 38-17335



CHRISTOPHER D. ANTONI
PE-057385-E

PROFILE LEGEND:



GENERAL NOTES:

- REFERENCE E&S PLAN AND SITE RESTORATION NOTES AND DETAILS FOR ADDITIONAL CONSTRUCTION SEQUENCING, TYPICAL DETAILS AND NOTES (ES-0.01-ES-0.23); AND PLAN SHEETS FOR ADDITIONAL PLANS AND TOPOGRAPHY.
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- THE BACKGROUND TOPOGRAPHY WAS OBTAINED FROM TOPOGRAPHIC SURVEYS PERFORMED IN SEPTEMBER 2016.
- THE PROJECT IS LOCATED IN NAD83 PENNSYLVANIA STATE PLANE COORDINATE SYSTEM (SOUTH ZONE), NAVD88.
- EXCAVATION IS LIMITED TO THE CENTERLINE WITH A TYPICAL TRENCH WIDTH OF 4-5' FOR 16/20" PIPELINE.

WETLAND CROSSING NOTES:

- REFERENCE NOTES AND DETAILS FOR WETLAND CONSTRUCTION SEQUENCING AND WETLAND RESTORATION (ES-0.03, ES-0.08, ES-0.10, AND ES-0.15).
- A MINIMUM OF 4 FEET COVER UNDER WETLANDS AND UPLANDS IS REQUIRED.
- FOR TEMPORARY TIMBER MAT REFERENCE (ES-0.10)
- EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET EDGE OF WETLAND OR 100 FEET FROM EDGE OF WETLAND FOR SPECIAL PROTECTION WATERS (HQ OR EV).

STREAM CROSSING NOTES:

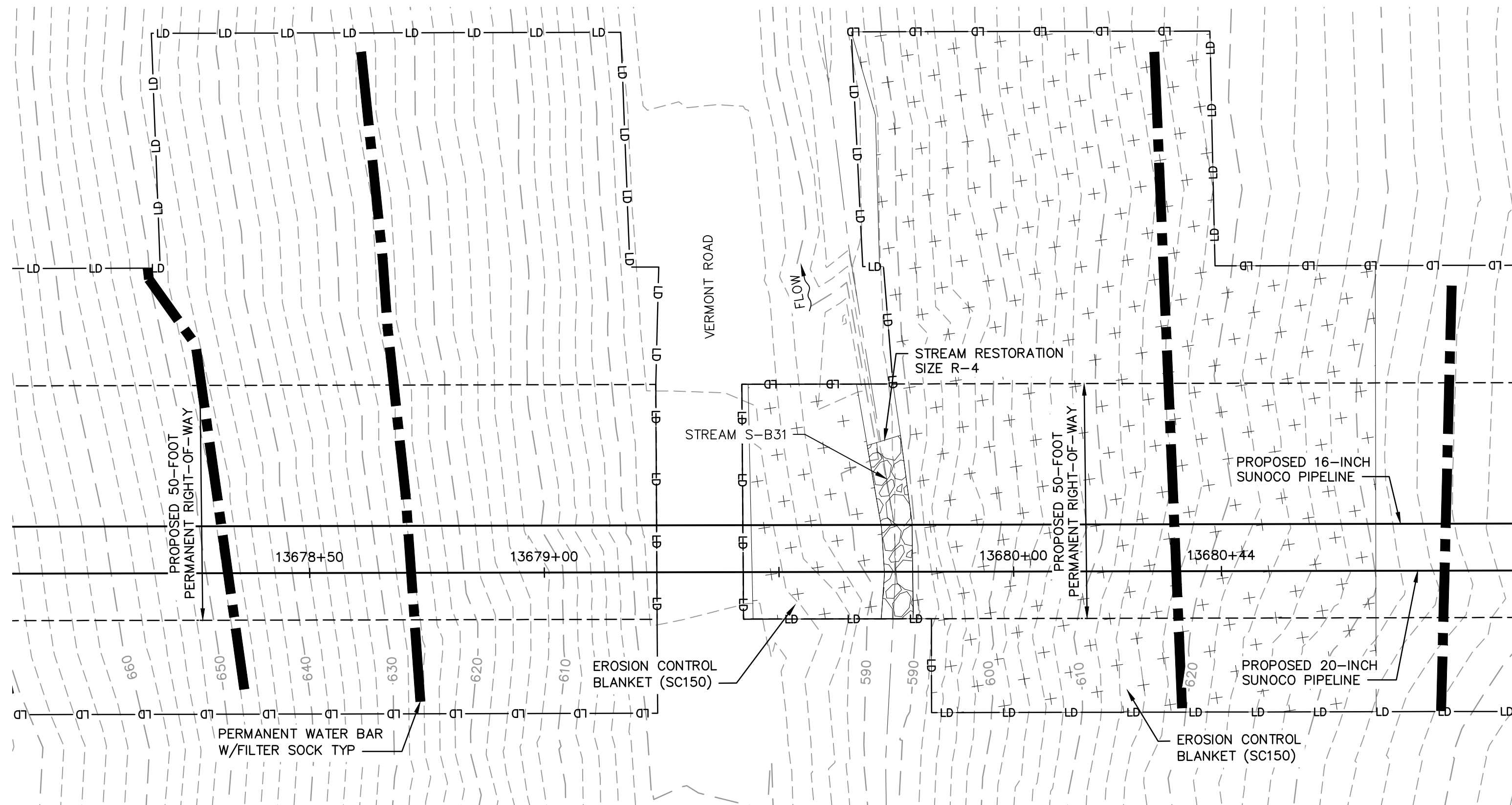
- REFERENCE NOTES AND DETAILS FOR STREAM CONSTRUCTION SEQUENCING AND STREAM RESTORATION (ES-0.01-ES-0.17).
- FOR TEMPORARY EQUIPMENT CROSSINGS REFERENCE (ES-0.10).
- SITE CONDITIONS MAY ALLOW FOR IMPLEMENTATION OF OTHER APPROVED PIPELINE INSTALLATION METHODS REFERENCED WITH THE NOTES AND DETAILS (ES-0.11-ES-0.14).
- THE PIPELINES SHALL MAINTAIN A MINIMUM OF 5 FEET OF COVER UNDER STREAMS FROM THE TOP OF PIPE TO THE STREAM BED. THIS COVER WILL BE MAINTAINED AT A MINIMUM FROM TOP OF BANK TO TOP OF BANK.
- REFERENCE THE STREAM BANK STABILIZATION DETAIL AND STREAM RESTORATION TABLE IN THE NOTES AND DETAILS WHERE RIP-RAP IS PROPOSED (ES-0.18).
- EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET FROM TOP OF BANK OR 100 FEET FROM TOP OF BANK FOR SPECIAL PROTECTION WATERS (HQ OR EV).
- TIMBER MATS SHALL EXTEND A MINIMUM OF 20 FEET BEYOND TOP OF BANK.
- COMPOST FILTER SOCKS SHALL BE INSTALLED ALONG THE TOP OF THE STREAM BANK ACROSS THE RIGHT-OF-WAY WHEN PUMP BYPASS IS NOT IN PLACE.

LEGEND

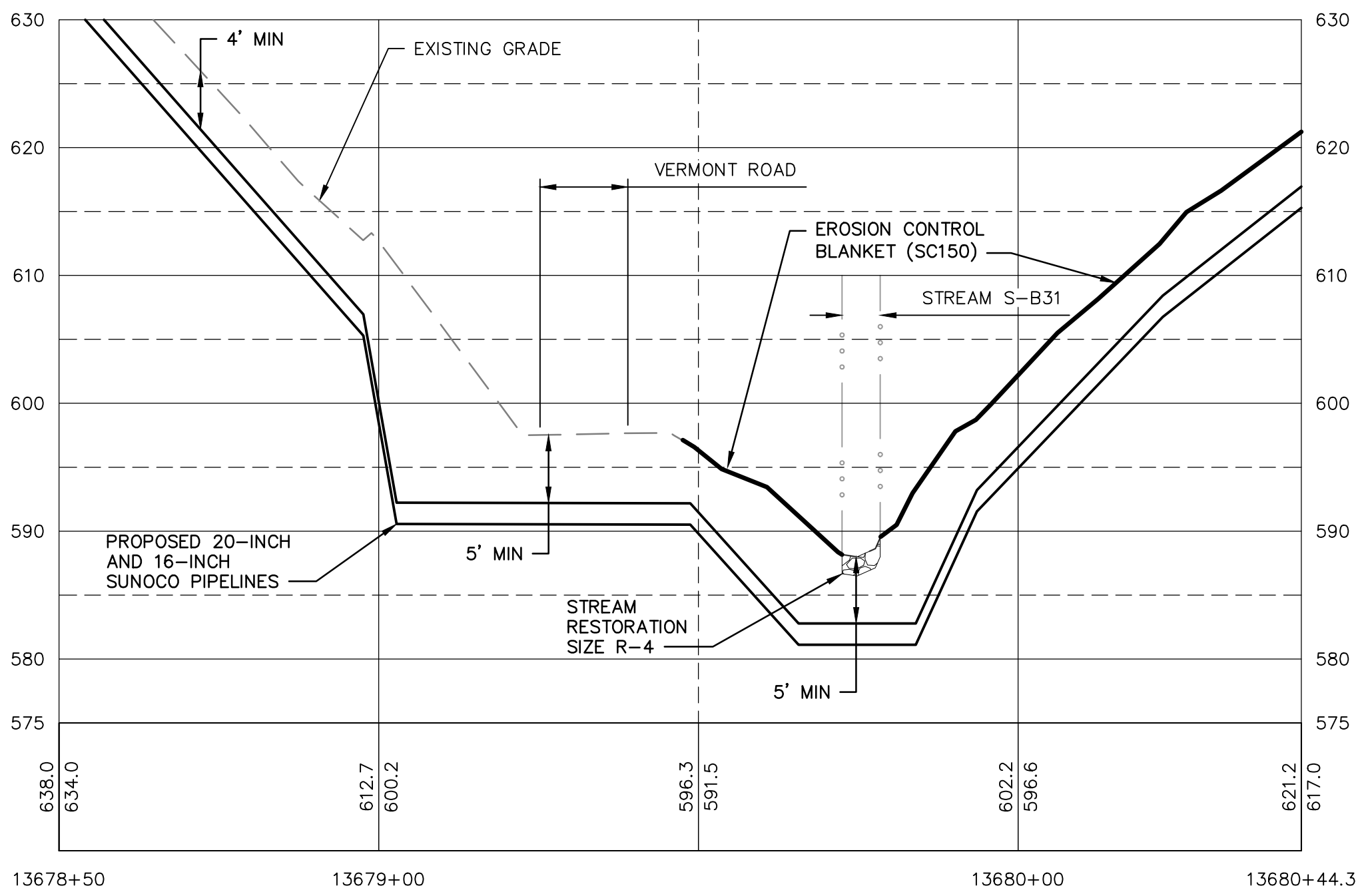
SYMBOL	DESCRIPTION
	PROPOSED 16-INCH & 20-INCH SUNOCO PIPELINES
	PROPOSED SUNOCO RIGHT-OF-WAY
	EXISTING SUNOCO PIPELINE
	MAJOR CONTOUR
	MINOR CONTOUR
	STREAM CENTERLINE
	TOP/BOTTOM OF BANK
	EXISTING EDGE OF PAVED ROADWAY
	EXISTING EDGE OF UNPAVED ROADWAY
	EXISTING VEGETATION
	EDGE OF WATER
	SOIL TYPE BOUNDARY
	WETLAND
	PROPOSED ROCK CONSTRUCTION ENTRANCE
	LIMIT OF DISTURBANCE
	CONSTRUCTION FENCE
	12-INCH COMPOST FILTER SOCK
	18-INCH COMPOST FILTER SOCK
	24-INCH COMPOST FILTER SOCK
	32-INCH COMPOST FILTER SOCK
	PERMANENT WATER BAR W/FILTER SOCK
	TRENCH PLUG
	TEMPORARY EQUIPMENT CROSSING
	SANDBAG DAM
	PUMP
	SCREENED INLET
	ENERGY DISSIPATER
	DEWATERING FACILITY
	CULVERT PIPE
	EROSION CONTROL BLANKET
	STREAM RESTORATION

REV.	DATE	APP#	DESCRIPTION	APPROVAL
PENNSYLVANIA PIPELINE PROJECT STREAM S-B31 EXISTING CONDITIONS/EROSION & SEDIMENTATION CONTROL PLANS				
BERKS COUNTY, PA				
DWG. NO.			REV. NO.	
S-B31-A			0	

OLD DRAWING NO.

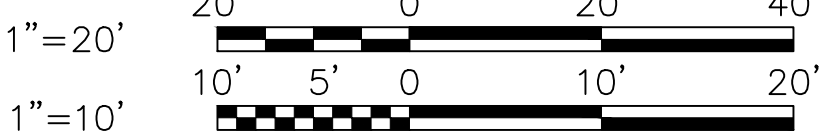


PLAN
SCALE: 1"=20'



RESTORED GRADE PROFILE
HORZ SCALE: 1"=20'
VERT SCALE: 1"=10'

GRAPHIC SCALES



GENERAL NOTES:

1. REFERENCE E&S PLAN AND SITE RESTORATION NOTES AND DETAILS FOR ADDITIONAL CONSTRUCTION SEQUENCING, TYPICAL DETAILS AND NOTES (ES-0.01-ES-0.23); AND PLAN SHEETS FOR ADDITIONAL PLANS AND TOPOGRAPHY.
2. ALL EXISTING UTILITY INFORMATION IS APPROXIMATE. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
3. MAINTAIN 2'-0" MINIMUM VERTICAL SEPARATION BETWEEN THE PROPOSED PIPELINE AND OTHER UTILITIES.
4. THE BACKGROUND TOPOGRAPHY WAS OBTAINED FROM TOPOGRAPHIC SURVEYS PERFORMED IN SEPTEMBER 2016.
5. THE PROJECT IS LOCATED IN NAD83 PENNSYLVANIA STATE PLANE COORDINATE SYSTEM (SOUTH ZONE), NAVD88.
6. EXCAVATION IS LIMITED TO THE CENTERLINE WITH A TYPICAL TRENCH WIDTH OF 4-5' FOR 16/20" PIPELINE.

WETLAND CROSSING NOTES:

1. REFERENCE NOTES AND DETAILS FOR WETLAND CONSTRUCTION SEQUENCING AND WETLAND RESTORATION (ES-0.03, ES-0.08, ES-0.10, AND ES-0.15).
2. A MINIMUM OF 4 FEET COVER UNDER WETLANDS AND UPLANDS IS REQUIRED.
3. FOR TEMPORARY TIMBER MAT REFERENCE (ES-0.10)
4. EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET EDGE OF WETLAND OR 100 FEET FROM EDGE OF WETLAND FOR SPECIAL PROTECTION WATERS (HQ OR EV).

STREAM CROSSING NOTES:

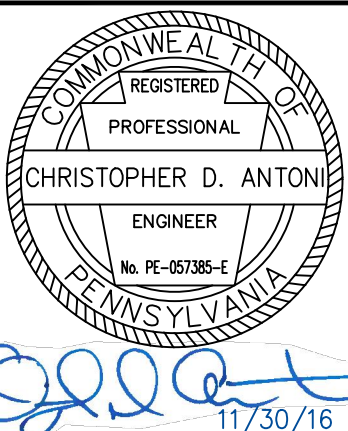
1. REFERENCE NOTES AND DETAILS FOR STREAM CONSTRUCTION SEQUENCING AND STREAM RESTORATION (ES-0.01-ES-0.17).
2. FOR TEMPORARY EQUIPMENT CROSSINGS REFERENCE (ES-0.10).
3. SITE CONDITIONS MAY ALLOW FOR IMPLEMENTATION OF OTHER APPROVED PIPELINE INSTALLATION METHODS REFERENCED WITH THE NOTES AND DETAILS (ES-0.11-ES-0.14).
4. THE PIPELINES SHALL MAINTAIN A MINIMUM OF 5 FEET OF COVER UNDER STREAMS FROM THE TOP OF PIPE TO THE STREAM BED. THIS COVER WILL BE MAINTAINED AT A MINIMUM FROM TOP OF BANK TO TOP OF BANK.
5. REFERENCE THE STREAM BANK STABILIZATION DETAIL AND STREAM RESTORATION TABLE IN THE NOTES AND DETAILS WHERE RIP-RAP IS PROPOSED (ES-0.18).
6. EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET FROM TOP OF BANK OR 100 FEET FROM TOP OF BANK FOR SPECIAL PROTECTION WATERS (HQ OR EV).
7. TIMBER MATS SHALL EXTEND A MINIMUM OF 20 FEET BEYOND TOP OF BANK.
8. COMPOST FILTER SOCKS SHALL BE INSTALLED ALONG THE TOP OF THE STREAM BANK ACROSS THE RIGHT-OF-WAY WHEN PUMP BYPASS IS NOT IN PLACE.

LEGEND

SYMBOL	DESCRIPTION
	PROPOSED 16-INCH & 20-INCH SUNOCO PIPELINES
	PROPOSED SUNOCO RIGHT-OF-WAY
	EXISTING SUNOCO PIPELINE
	MAJOR CONTOUR
	MINOR CONTOUR
	STREAM CENTERLINE
	TOP/BOTTOM OF BANK
	EXISTING EDGE OF PAVED ROADWAY
	EXISTING EDGE OF UNPAVED ROADWAY
	EXISTING VEGETATION
	EDGE OF WATER
	SOIL TYPE BOUNDARY
	WETLAND
	PROPOSED ROCK CONSTRUCTION ENTRANCE
	LIMIT OF DISTURBANCE
	CONSTRUCTION FENCE
	12-INCH COMPOST FILTER SOCK
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	24-INCH COMPOST FILTER SOCK
	32-INCH COMPOST FILTER SOCK
	PERMANENT WATER BAR W/FILTER SOCK
	TRENCH PLUG
	TEMPORARY EQUIPMENT CROSSING
	SANDBAG DAM
	PUMP
	SCREENED INLET
	ENERGY DISSIPATER
	DEWATERING FACILITY
	CULVERT PIPE
	EROSION CONTROL BLANKET
	STREAM RESTORATION

PROFILE LEGEND:

	PROPOSED PIPELINE
	EXISTING GRADE
	EXISTING GRADE ELEV.
	PROPOSED TOP OF PIPE ELEV.



CHRISTOPHER D. ANTONI
PE-057385-E

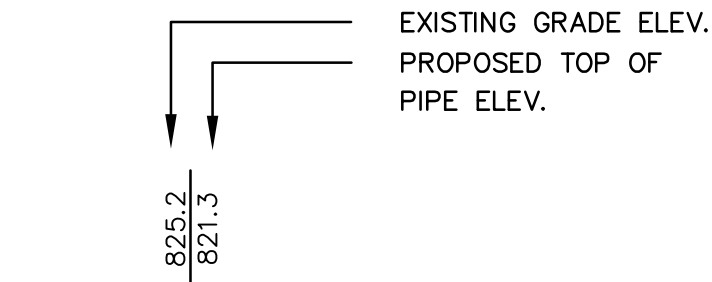
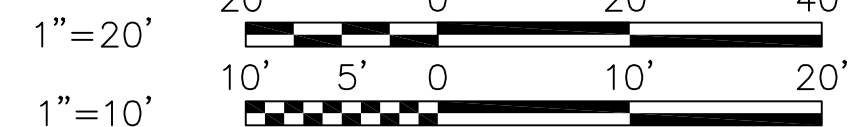
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DRAWN BY	DLH
CHECKED BY	CDA
APPROVED BY	CDA
DATE	11/30/16
SCALE	AS NOTED

REV.	DATE	APP#	DESCRIPTION	APPROVAL
			 PENNSYLVANIA PIPELINE PROJECT STREAM S-B31 RESTORATION PLAN Sunoco Logistics Partners L.P.	
				BERKS COUNTY, PA
		DWG. NO.		REV. NO.
		S-B31-B		0

STV
Baltimore, MD Bismarck, ND Denver, CO Douglassville, PA
Houston, TX Pittsburgh, PA Williamsport, PA

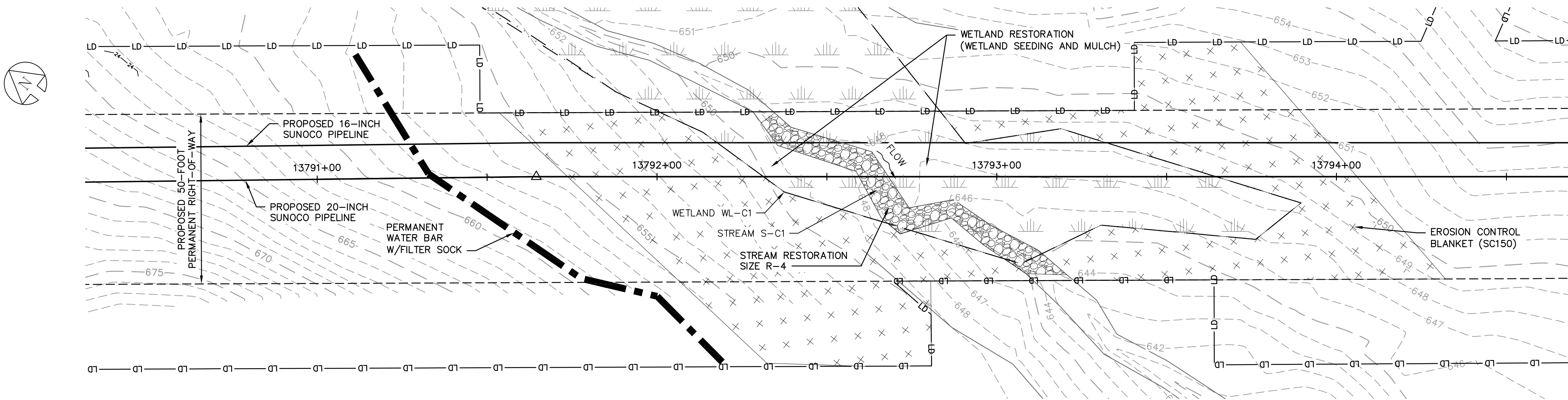
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STV PROJECT No.: 38-17335

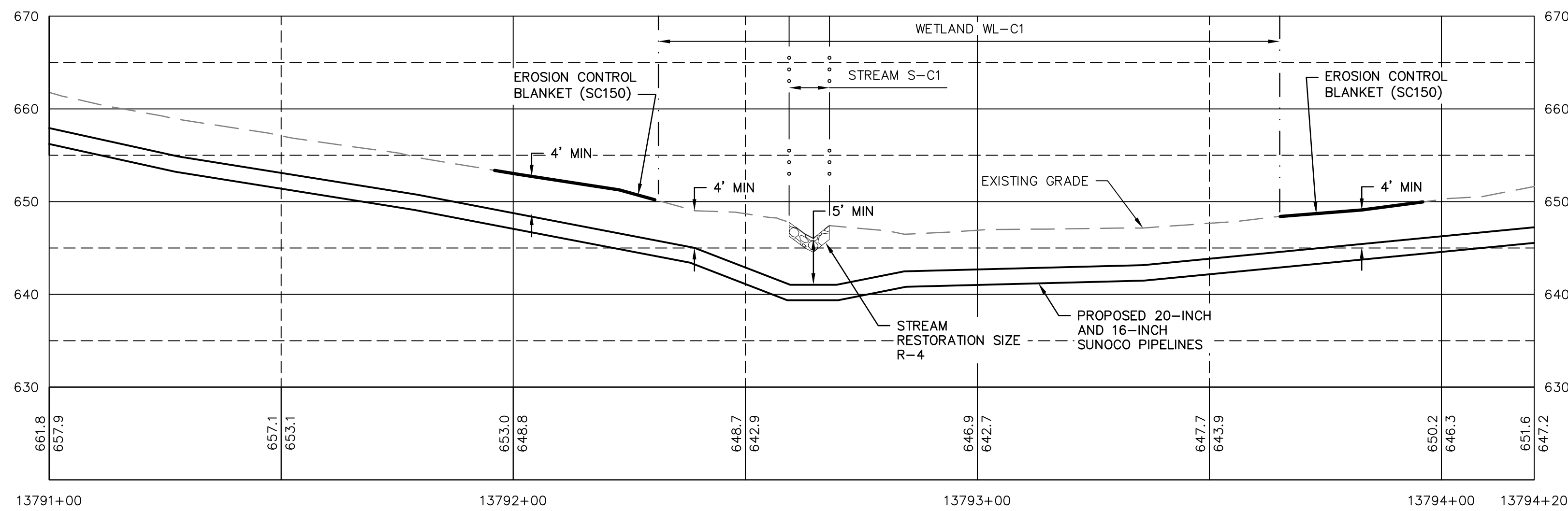


SYMBOL	DESCRIPTION
	PROPOSED 16-INCH & 20-INCH SUNOCO PIPELINES
	PROPOSED SUNOCO RIGHT-OF-WAY
	EXISTING SUNOCO PIPELINE
	MAJOR CONTOUR
	MINOR CONTOUR
	STREAM CENTERLINE
	TOP/BOTTOM OF BANK
	EXISTING EDGE OF PAVED ROADWAY
	EXISTING EDGE OF UNPAVED ROADWAY
	EXISTING VEGETATION
	EDGE OF WATER
	SOIL TYPE BOUNDARY
	WETLAND
	PROPOSED ROCK CONSTRUCTION ENTRANCE
	LIMIT OF DISTURBANCE
	CONSTRUCTION FENCE
	12-INCH COMPOST FILTER SOCK
	18-INCH COMPOST FILTER SOCK
	24-INCH COMPOST FILTER SOCK
	32-INCH COMPOST FILTER SOCK
	PERMANENT WATER BAR W/FILTER SOCK
	TRENCH PLUG
	TEMPORARY EQUIPMENT CROSSING
	SANDBAG DAM
	PUMP
	SCREENED INLET
	ENERGY DISSIPATER
	DEWATERING FACILITY
	CULVERT PIPE
	EROSION CONTROL BLANKET
	STREAM RESTORATION

REV.	DATE	APP#	DESCRIPTION	APPROVAL
			 PENNSYLVANIA PIPELINE PROJECT STREAM S-C1 EXISTING CONDITIONS/EROSION & SEDIMENTATION CONTROL PLANS	
			BERKS COUNTY, PA	
		DWG. NO. S-C1-A	REV. NO. 0	



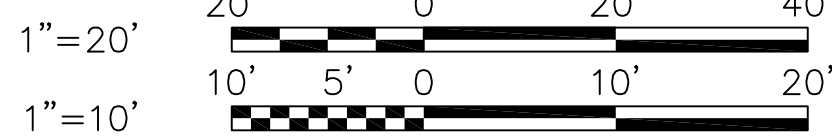
PLAN
SCALE: 1"=20'



RESTORED GRADE PROFILE

HORIZ SCALE: 1"=20'
VERT SCALE: 1"=10'

GRAPHIC SCALES



GENERAL NOTES:

- REFERENCE E&S PLAN AND SITE RESTORATION NOTES AND DETAILS FOR ADDITIONAL CONSTRUCTION SEQUENCING, TYPICAL DETAILS AND NOTES (ES-0.01-ES-0.23); AND PLAN SHEETS FOR ADDITIONAL PLANS AND TOPOGRAPHY.
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STREAM CROSSING NOTES:

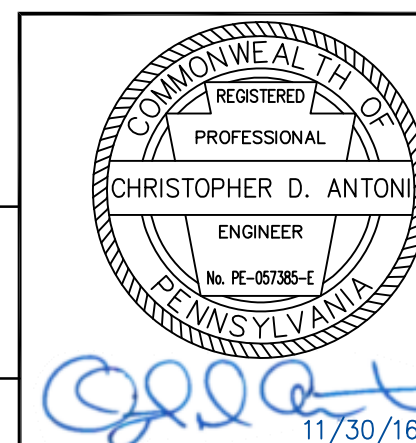
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- FOR TEMPORARY EQUIPMENT CROSSINGS REFERENCE (ES-0.10).
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- THE PIPELINES SHALL MAINTAIN A MINIMUM OF 5 FEET OF COVER UNDER STREAMS FROM THE TOP OF PIPE TO THE STREAM BED. THIS COVER WILL BE MAINTAINED AT A MINIMUM FROM TOP OF BANK TO TOP OF BANK.
- REFERENCE THE STREAM BANK STABILIZATION DETAIL AND STREAM RESTORATION TABLE IN THE NOTES AND DETAILS WHERE RIP-RAP IS PROPOSED (ES-0.18).
- EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET FROM TOP OF BANK OR 100 FEET FROM TOP OF BANK FOR SPECIAL PROTECTION WATERS (HQ OR EV).
- TIMBER MATS SHALL EXTEND A MINIMUM OF 20 FEET BEYOND TOP OF BANK.
- COMPOST FILTER SOCKS SHALL BE INSTALLED ALONG THE TOP OF THE STREAM BANK ACROSS THE RIGHT-OF-WAY WHEN PUMP BYPASS IS NOT IN PLACE.

LEGEND

SYMBOL	DESCRIPTION
	PROPOSED 16-INCH & 20-INCH SUNOCO PIPELINES
	PROPOSED SUNOCO RIGHT-OF-WAY
	EXISTING SUNOCO PIPELINE
	MAJOR CONTOUR
	MINOR CONTOUR
	STREAM CENTERLINE
	TOP/BOTTOM OF BANK
	EXISTING EDGE OF PAVED ROADWAY
	EXISTING EDGE OF UNPAVED ROADWAY
	EXISTING VEGETATION
	EDGE OF WATER
	SOIL TYPE BOUNDARY
	WETLAND
	PROPOSED ROCK CONSTRUCTION ENTRANCE
	LIMIT OF DISTURBANCE
	CONSTRUCTION FENCE
	12-INCH COMPOST FILTER SOCK
	18-INCH COMPOST FILTER SOCK
	24-INCH COMPOST FILTER SOCK
	32-INCH COMPOST FILTER SOCK
	PERMANENT WATER BAR W/FILTER SOCK
	TRENCH PLUG
	TEMPORARY EQUIPMENT CROSSING
	SANDBAG DAM
	PUMP
	SCREENED INLET
	ENERGY DISSIPATER
	DEWATERING FACILITY
	CULVERT PIPE
	EROSION CONTROL BLANKET
	STREAM RESTORATION

PROFILE LEGEND:

	PROPOSED PIPELINE
	EXISTING GRADE
	EXISTING GRADE ELEV.
	PROPOSED TOP OF PIPE ELEV.



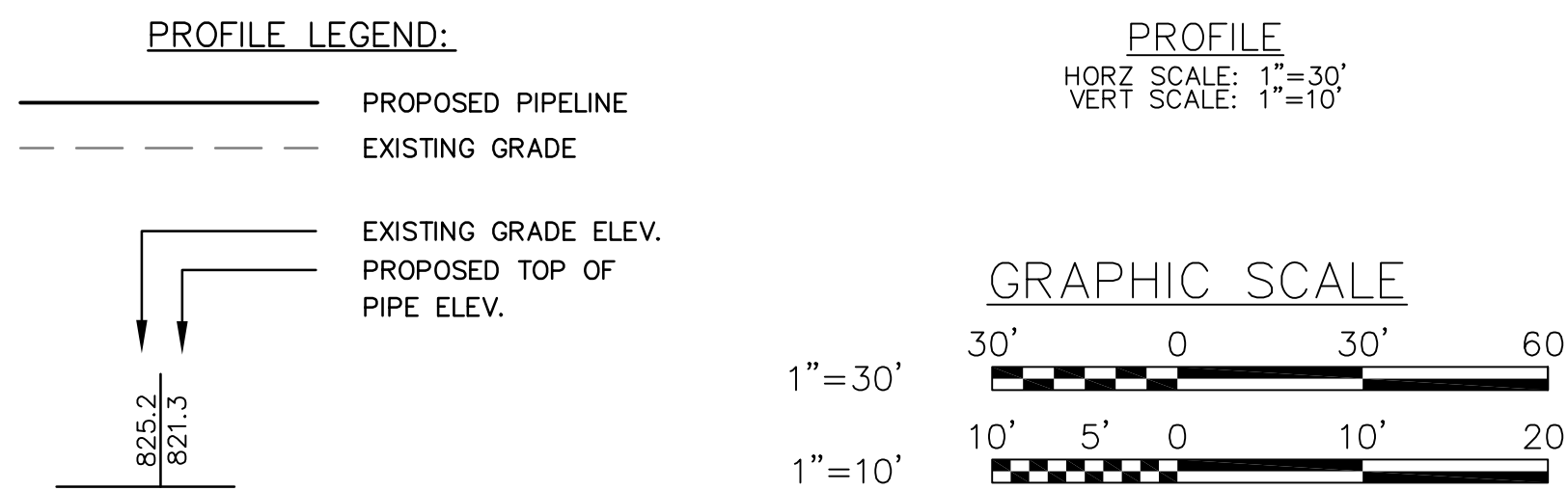
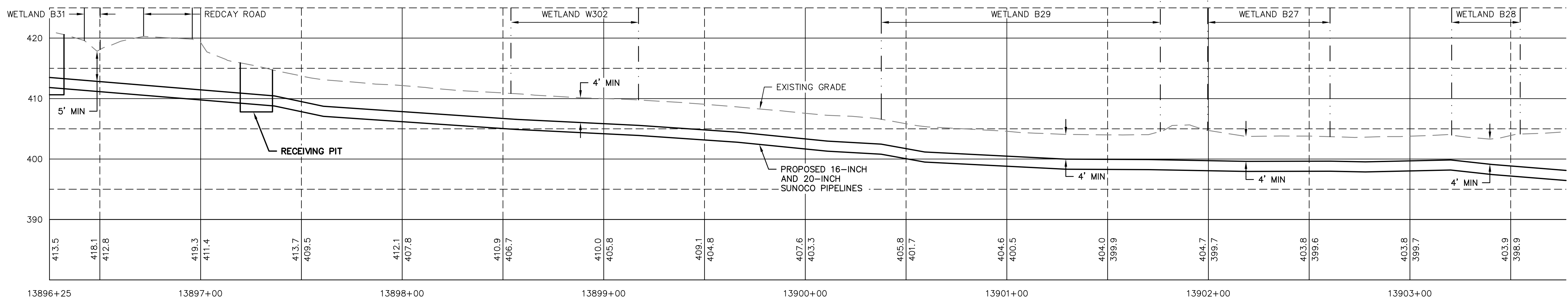
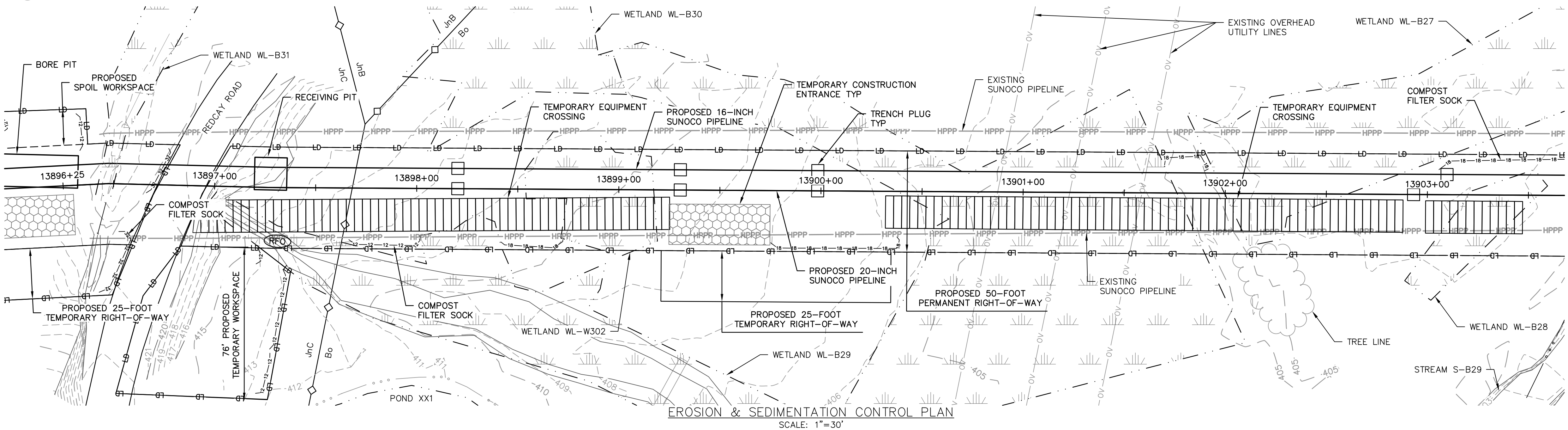
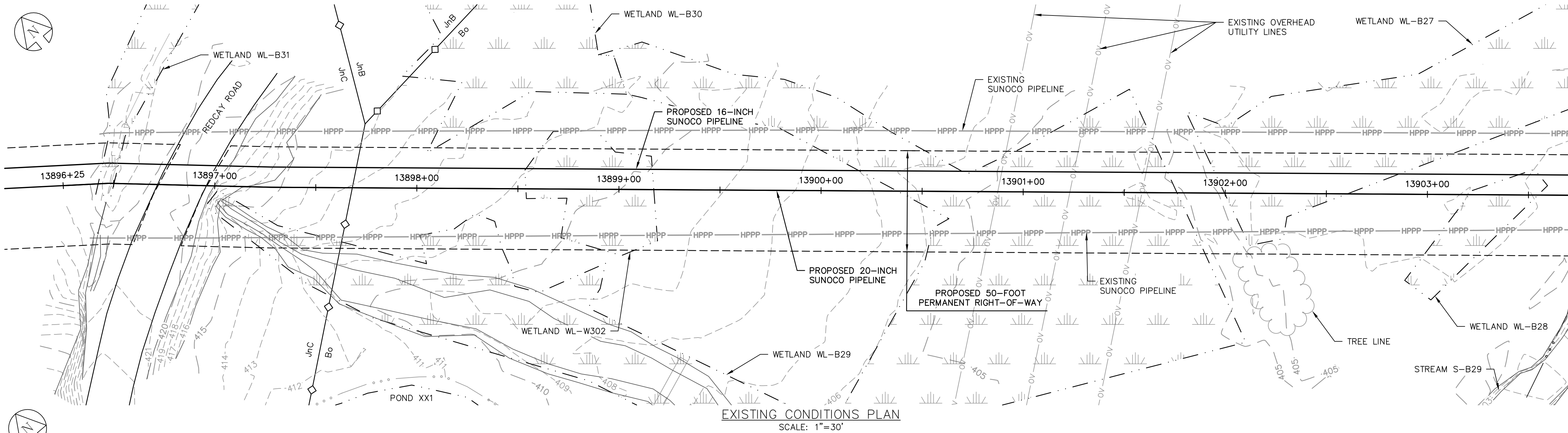
CHRISTOPHER D. ANTONI
PE-057385-E

ENGINEERING RECORD

DRAWN BY	DLH
CHECKED BY	CWA
APPROVED BY	CDA
DATE	11/30/16
SCALE	AS NOTED

OLD DRAWING NO.

REV.	DATE	APP#	DESCRIPTION	APPROVAL
PENNSYLVANIA PIPELINE PROJECT STREAM S-C1 RESTORATION PLAN				
BERKS COUNTY, PA				
DWG. NO.			REV. NO.	
S-C1-B			0	



- GENERAL NOTES:**
- REFERENCE E&S PLAN AND SITE RESTORATION NOTES AND DETAILS FOR ADDITIONAL CONSTRUCTION SEQUENCING, TYPICAL DETAILS AND NOTES (ES-0.01-ES-0.23); AND PLAN SHEETS FOR ADDITIONAL PLANS AND TOPOGRAPHY.
 - ALL EXISTING UTILITY INFORMATION IS APPROXIMATE. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
 - MAINTAIN 2'-0" MINIMUM VERTICAL SEPARATION BETWEEN THE PROPOSED PIPELINE AND OTHER UTILITIES.
 - THE BACKGROUND TOPOGRAPHY WAS OBTAINED FROM TOPOGRAPHIC SURVEYS PERFORMED IN SEPTEMBER 2016.
 - THE PROJECT IS LOCATED IN NAD83 PENNSYLVANIA STATE PLANE COORDINATE SYSTEM (SOUTH ZONE), NAVD88.
 - EXCAVATION IS LIMITED TO THE CENTERLINE WITH A TYPICAL TRENCH WIDTH OF 4-5' FOR 16/20" PIPELINE.
- WETLAND CROSSING NOTES:**
- REFERENCE NOTES AND DETAILS FOR WETLAND CONSTRUCTION SEQUENCING AND WETLAND RESTORATION (ES-0.03, ES-0.08, ES-0.10, AND ES-0.15).
 - A MINIMUM OF 4 FEET COVER UNDER WETLANDS AND UPLANDS IS REQUIRED.
 - FOR TEMPORARY TIMBER MAT REFERENCE (ES-0.10)
 - EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET EDGE OF WETLAND OR 100 FEET FROM EDGE OF WETLAND FOR SPECIAL PROTECTION WATERS (HQ OR EV).
- STREAM CROSSING NOTES:**
- REFERENCE NOTES AND DETAILS FOR STREAM CONSTRUCTION SEQUENCING AND STREAM RESTORATION (ES-0.01-ES-0.17).
 - FOR TEMPORARY EQUIPMENT CROSSINGS REFERENCE (ES-0.10).
 - SITE CONDITIONS MAY ALLOW FOR IMPLEMENTATION OF OTHER APPROVED PIPELINE INSTALLATION METHODS REFERENCED WITH THE NOTES AND DETAILS (ES-0.11-ES-0.14).
 - THE PIPELINES SHALL MAINTAIN A MINIMUM OF 5 FEET OF COVER UNDER STREAMS FROM THE TOP OF PIPE TO THE STREAM BED. THIS COVER WILL BE MAINTAINED AT A MINIMUM FROM TOP OF BANK TO TOP OF BANK.
 - REFERENCE THE STREAM BANK STABILIZATION DETAIL AND STREAM RESTORATION TABLE IN THE NOTES AND DETAILS WHERE RIP-RAP IS PROPOSED (ES-0.18).
 - EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET FROM TOP OF BANK OR 100 FEET FROM TOP OF BANK FOR SPECIAL PROTECTION WATERS (HQ OR EV).
 - TIMBER MATS SHALL EXTEND A MINIMUM OF 20 FEET BEYOND TOP OF BANK.
 - COMPOST FILTER SOCKS SHALL BE INSTALLED ALONG THE TOP OF THE STREAM BANK ACROSS THE RIGHT-OF-WAY WHEN PUMP BYPASS IS NOT IN PLACE.

SYMBOL	DESCRIPTION
	PROPOSED 16-INCH & 20-INCH SUNOCO PIPELINES
	PROPOSED SUNOCO RIGHT-OF-WAY
	EXISTING SUNOCO PIPELINE
	MAJOR CONTOUR
	MINOR CONTOUR
	STREAM CENTERLINE
	TOP/BOTTOM OF BANK
	EXISTING EDGE OF PAVED ROADWAY
	EXISTING EDGE OF UNPAVED ROADWAY
	EXISTING VEGETATION
	EDGE OF WATER
	SOIL TYPE BOUNDARY
	WETLAND
	PROPOSED ROCK CONSTRUCTION ENTRANCE
	LIMIT OF DISTURBANCE
	CONSTRUCTION FENCE
	12-INCH COMPOST FILTER SOCK
	18-INCH COMPOST FILTER SOCK
	24-INCH COMPOST FILTER SOCK
	32-INCH COMPOST FILTER SOCK
	PERMANENT WATER BAR W/FILTER SOCK
	TRENCH PLUG
	TEMPORARY EQUIPMENT CROSSING
	SANDBAG DAM
	PUMP
	SCREENED INLET
	ENERGY DISSIPATER
	DEWATERING FACILITY
	CULVERT PIPE
	EROSION CONTROL BLANKET
	STREAM RESTORATION

REV.	DATE	APP#	DESCRIPTION	APPROVAL
PENNSYLVANIA PIPELINE PROJECT WETLANDS B29 & B31 EROSION & SEDIMENTATION CONTROL PLAN AND PROFILE BERKS COUNTY, PA				
DWG. NO.			S-B29-A	REV. NO. 0

ENGINEERING RECORD

DRAWN BY	LG
CHECKED BY	CDA
APPROVED BY	CDA
DATE	11/30/16
SCALE	AS NOTED

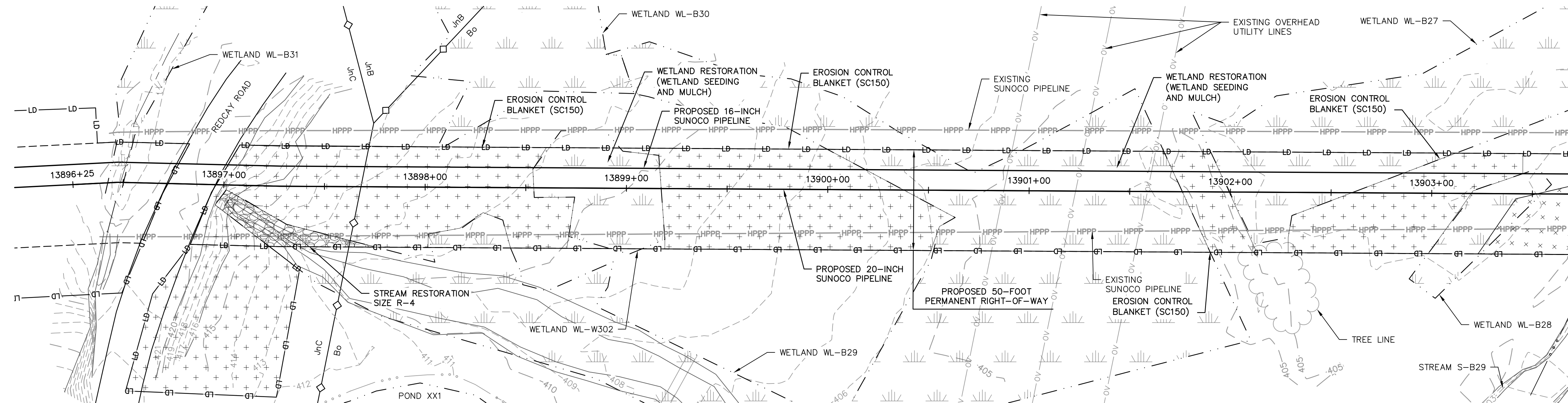
Baltimore, MD Bismarck, ND Denver, CO Douglassville, PA Houston, TX
Pittsburgh, PA Williamsport, PA

THE LOCATION OF THE PIPELINE FACILITIES AS SHOWN HEREON MUST BE
CONSIDERED AS APPROXIMATE ONLY. BEFORE DIGGING OR FOR AN EXACT
LOCATION PLEASE CONTACT YOUR STATES UNDERGROUND UTILITY LOCATION
SERVICE.

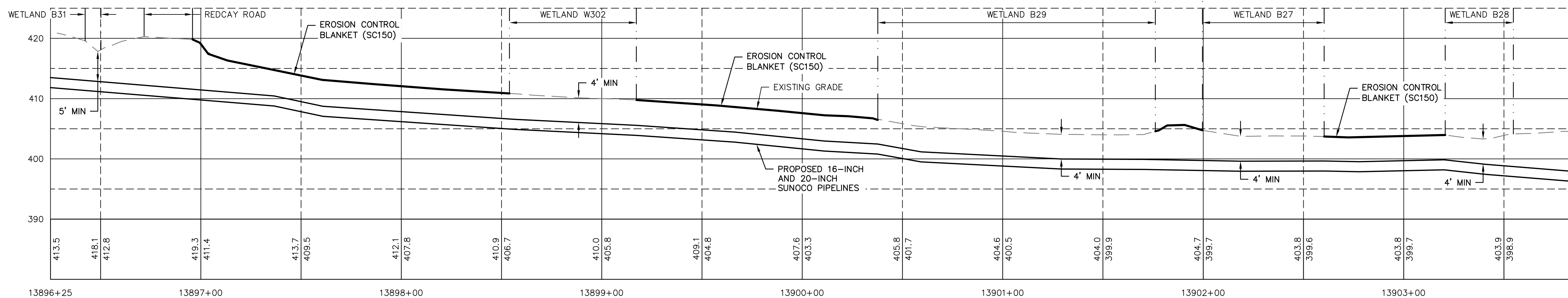
STV PROJECT No.: 38-17335

OLD DRAWING NO.

CHRISTOPHER D. ANTONI
PE-057385-E



PLAN
SCALE: 1"=30'



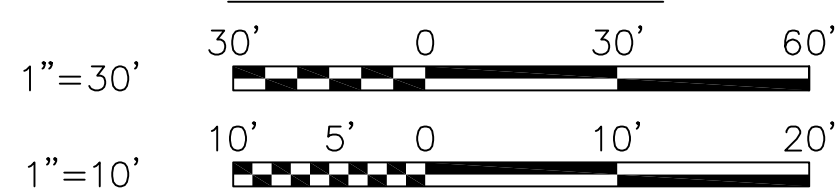
RESTORED GRADE PROFILE
HORIZ SCALE: 1"=30'
VERT SCALE: 1"=10'

PROFILE LEGEND:

———— PROPOSED PIPELINE
----- EXISTING GRADE

EXISTING GRADE ELEV.
PROPOSED TOP OF
PIPE ELEV.

GRAPHIC SCALE



GENERAL NOTES:

- REFERENCE E&S PLAN AND SITE RESTORATION NOTES AND DETAILS FOR ADDITIONAL CONSTRUCTION SEQUENCING, TYPICAL DETAILS AND NOTES (ES-0.01-ES-0.23); AND PLAN SHEETS FOR ADDITIONAL PLANS AND TOPOGRAPHY.
- ALL EXISTING UTILITY INFORMATION IS APPROXIMATE. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
- MAINTAIN 2'-0" MINIMUM VERTICAL SEPARATION BETWEEN THE PROPOSED PIPELINE AND OTHER UTILITIES.
- THE BACKGROUND TOPOGRAPHY WAS OBTAINED FROM TOPOGRAPHIC SURVEYS PERFORMED IN SEPTEMBER 2016.
- THE PROJECT IS LOCATED IN NAD83 PENNSYLVANIA STATE PLANE COORDINATE SYSTEM (SOUTH ZONE), NAVD88.
- EXCAVATION IS LIMITED TO THE CENTERLINE WITH A TYPICAL TRENCH WIDTH OF 4-5' FOR 16/20" PIPELINE.

WETLAND CROSSING NOTES:

- REFERENCE NOTES AND DETAILS FOR WETLAND CONSTRUCTION SEQUENCING AND WETLAND RESTORATION (ES-0.03, ES-0.08, ES-0.10, AND ES-0.15).
- A MINIMUM OF 4 FEET COVER UNDER WETLANDS AND UPLANDS IS REQUIRED.
- FOR TEMPORARY TIMBER MAT REFERENCE (ES-0.10)
- EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET EDGE OF WETLAND OR 100 FEET FROM EDGE OF WETLAND FOR SPECIAL PROTECTION WATERS (HQ OR EV).

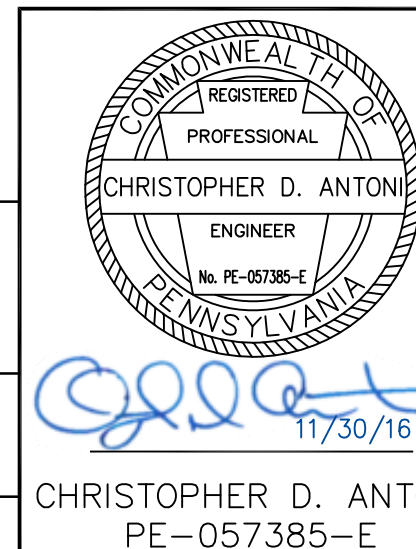
STREAM CROSSING NOTES:

- REFERENCE NOTES AND DETAILS FOR STREAM CONSTRUCTION SEQUENCING AND STREAM RESTORATION (ES-0.01-ES-0.17).
- FOR TEMPORARY EQUIPMENT CROSSINGS REFERENCE (ES-0.10).
- SITE CONDITIONS MAY ALLOW FOR IMPLEMENTATION OF OTHER APPROVED PIPELINE INSTALLATION METHODS REFERENCED WITH THE NOTES AND DETAILS (ES-0.11-ES-0.14).
- THE PIPELINES SHALL MAINTAIN A MINIMUM OF 5 FEET OF COVER UNDER STREAMS FROM THE TOP OF PIPE TO THE STREAM BED. THIS COVER WILL BE MAINTAINED AT A MINIMUM FROM TOP OF BANK TO TOP OF BANK.
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- COMPOST FILTER SOCKS SHALL BE INSTALLED ALONG THE TOP OF THE STREAM BANK ACROSS THE RIGHT-OF-WAY WHEN PUMP BYPASS IS NOT IN PLACE.

LEGEND

SYMBOL	DESCRIPTION
-----	PROPOSED 16-INCH & 20-INCH SUNOCO PIPELINES
-----	PROPOSED SUNOCO RIGHT-OF-WAY
-----	EXISTING SUNOCO PIPELINE
-----	MAJOR CONTOUR
-----	MINOR CONTOUR
-----	STREAM CENTERLINE
-----	TOP/BOTTOM OF BANK
-----	EXISTING EDGE OF PAVED ROADWAY
-----	EXISTING EDGE OF UNPAVED ROADWAY
-----	EXISTING VEGETATION
-----	EDGE OF WATER
-----	SOIL TYPE BOUNDARY
-----	WETLAND
-----	PROPOSED ROCK CONSTRUCTION ENTRANCE
-----	LIMIT OF DISTURBANCE
-----	CONSTRUCTION FENCE
-----	12-INCH COMPOST FILTER SOCK
-----	18-INCH COMPOST FILTER SOCK
-----	24-INCH COMPOST FILTER SOCK
-----	32-INCH COMPOST FILTER SOCK
-----	PERMANENT WATER BAR W/FILTER SOCK
-----	TRENCH PLUG
-----	TEMPORARY EQUIPMENT CROSSING
-----	SANDBAG DAM
-----	PUMP
-----	SCREENED INLET
-----	ENERGY DISSIPATER
-----	DEWATERING FACILITY
-----	CULVERT PIPE
-----	EROSION CONTROL BLANKET
-----	STREAM RESTORATION

REV.	DATE	APP#	DESCRIPTION	APPROVAL
PENNSYLVANIA PIPELINE PROJECT WETLANDS B29 & B31 RESTORATION PLAN				
BERKS COUNTY, PA				REV. NO.
DWG. NO. S-B29-B				0



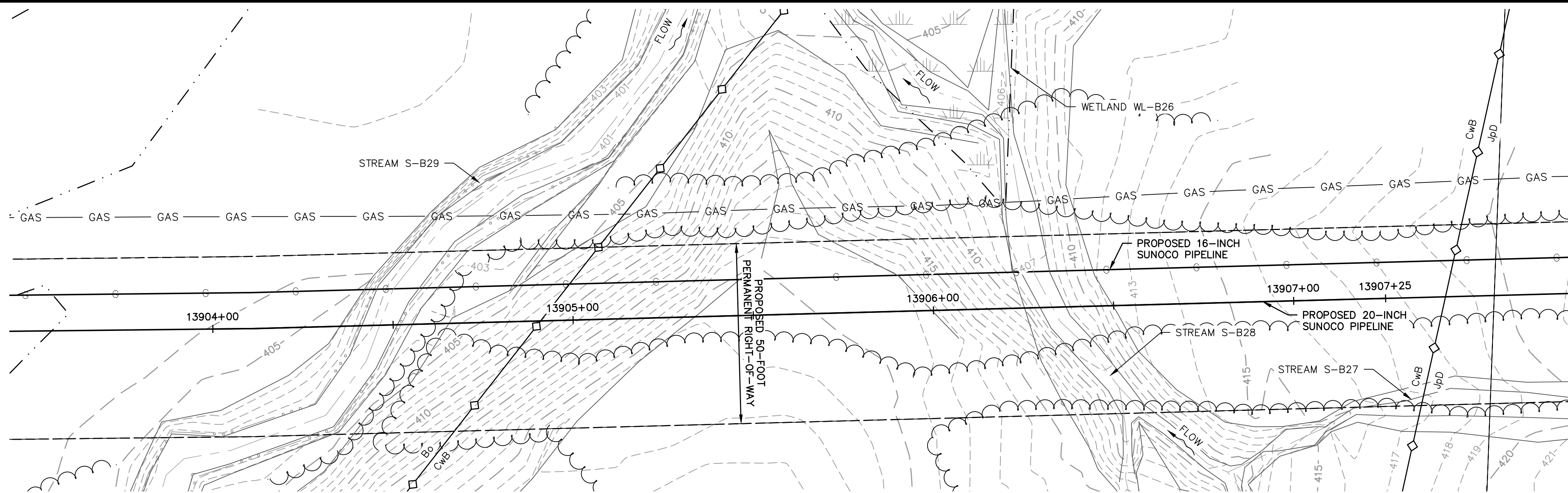
CHRISTOPHER D. ANTONI
PE-057385-E

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SCALE	AS NOTED
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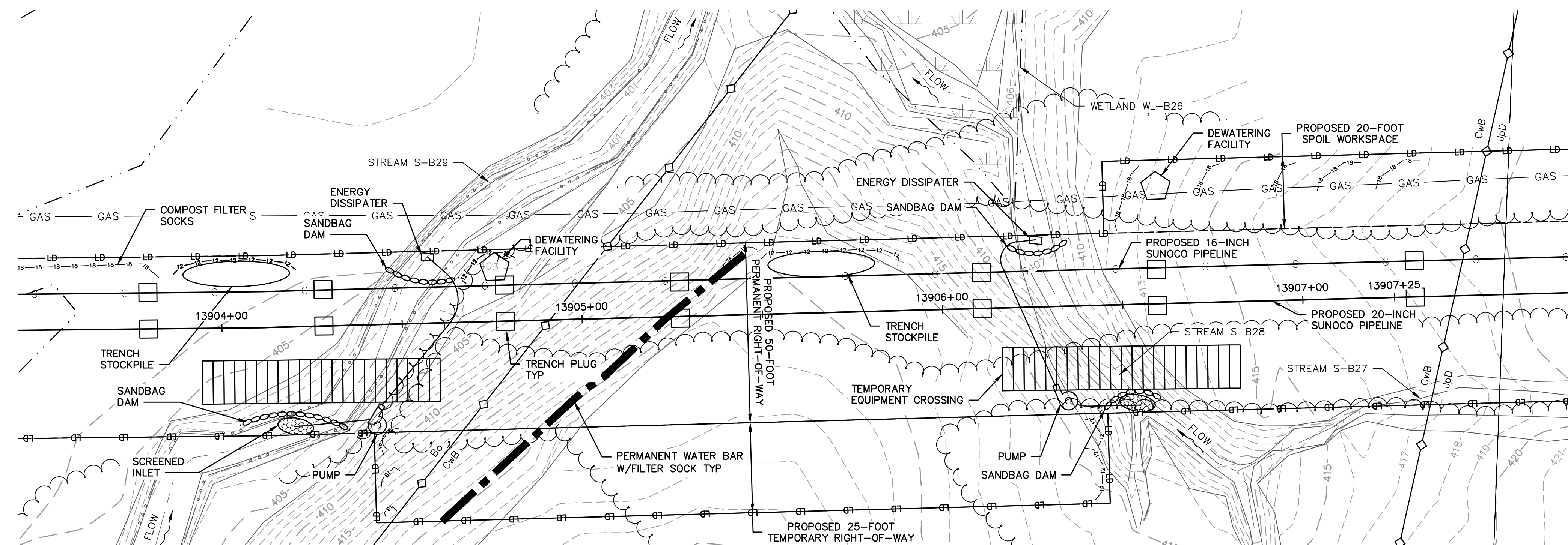
Baltimore, MD Bismarck, ND Denver, CO Douglassville, PA Houston, TX
Pittsburgh, PA Williamsport, PA

THE LOCATION OF THE PIPELINE FACILITIES AS SHOWN HEREON MUST BE
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SERVICE.

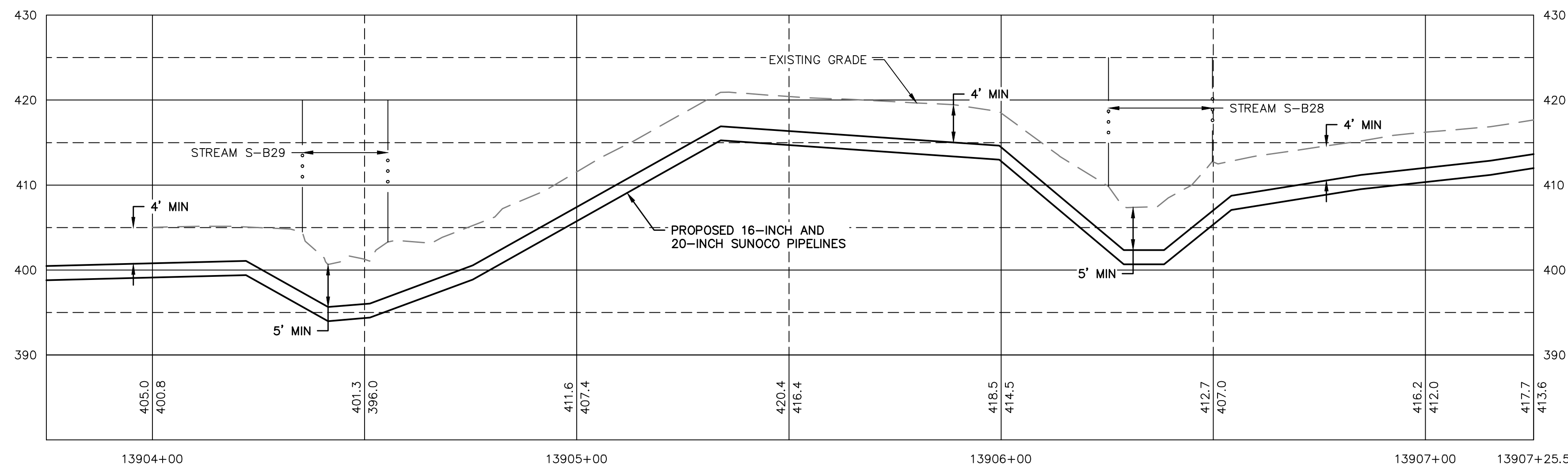
STV PROJECT No.: 38-17335



PLAN
SCALE: 1"=20'

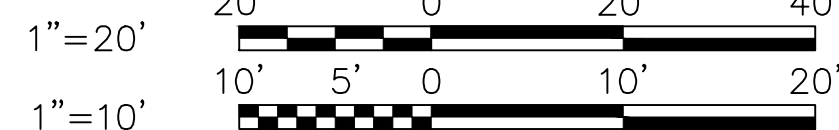


PLAN
SCALE: 1"=20'



PROFILE
HORIZ SCALE: 1"=20'
VERT SCALE: 1"=10'

GRAPHIC SCALES



GENERAL NOTES:

- REFERENCE E&S PLAN AND SITE RESTORATION NOTES AND DETAILS FOR ADDITIONAL CONSTRUCTION SEQUENCING, TYPICAL DETAILS AND NOTES (ES-0.01-ES-0.23); AND PLAN SHEETS FOR ADDITIONAL PLANS AND TOPOGRAPHY.
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- EXCAVATION IS LIMITED TO THE CENTERLINE WITH A TYPICAL TRENCH WIDTH OF 4'-5' FOR 16/20" PIPELINE.

WETLAND CROSSING NOTES:

- REFERENCE NOTES AND DETAILS FOR WETLAND CONSTRUCTION SEQUENCING AND WETLAND RESTORATION (ES-0.03, ES-0.08, ES-0.10, AND ES-0.15).
- A MINIMUM OF 4 FEET COVER UNDER WETLANDS AND UPLANDS IS REQUIRED.
- FOR TEMPORARY TIMBER MAT REFERENCE (ES-0.10).
- EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET EDGE OF WETLAND OR 100 FEET FROM EDGE OF WETLAND FOR SPECIAL PROTECTION WATERS (HQ OR EV).

STREAM CROSSING NOTES:

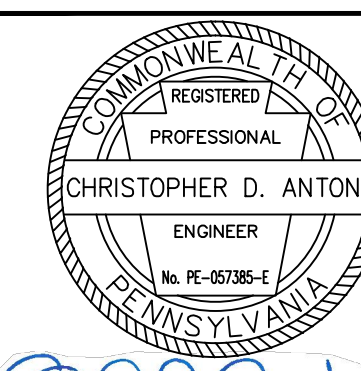
- REFERENCE NOTES AND DETAILS FOR STREAM CONSTRUCTION SEQUENCING AND STREAM RESTORATION (ES-0.01-ES-0.17).
- FOR TEMPORARY EQUIPMENT CROSSINGS REFERENCE (ES-0.10).
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- EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET FROM TOP OF BANK OR 100 FEET FROM TOP OF BANK FOR SPECIAL PROTECTION WATERS (HQ OR EV).
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- COMPOST FILTER SOCKS SHALL BE INSTALLED ALONG THE TOP OF THE STREAM BANK ACROSS THE RIGHT-OF-WAY WHEN PUMP BYPASS IS NOT IN PLACE.

LEGEND

SYMBOL	DESCRIPTION
	PROPOSED 16-INCH & 20-INCH SUNOCO PIPELINES
	PROPOSED SUNOCO RIGHT-OF-WAY
	EXISTING SUNOCO PIPELINE
	MAJOR CONTOUR
	MINOR CONTOUR
	STREAM CENTERLINE
	TOP/BOTTOM OF BANK
	EXISTING EDGE OF PAVED ROADWAY
	EXISTING EDGE OF UNPAVED ROADWAY
	EXISTING VEGETATION
	EDGE OF WATER
	SOIL TYPE BOUNDARY
	WETLAND
	PROPOSED ROCK CONSTRUCTION ENTRANCE
	LIMIT OF DISTURBANCE
	CONSTRUCTION FENCE
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	TRENCH PLUG
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	SANDBAG DAM
	PUMP
	SCREENED INLET
	ENERGY DISSIPATER
	DEWATERING FACILITY
	CULVERT PIPE
	EROSION CONTROL BLANKET
	STREAM RESTORATION

PROFILE LEGEND:

	PROPOSED PIPELINE
	EXISTING GRADE
	EXISTING GRADE ELEV.
	PROPOSED TOP OF PIPE ELEV.

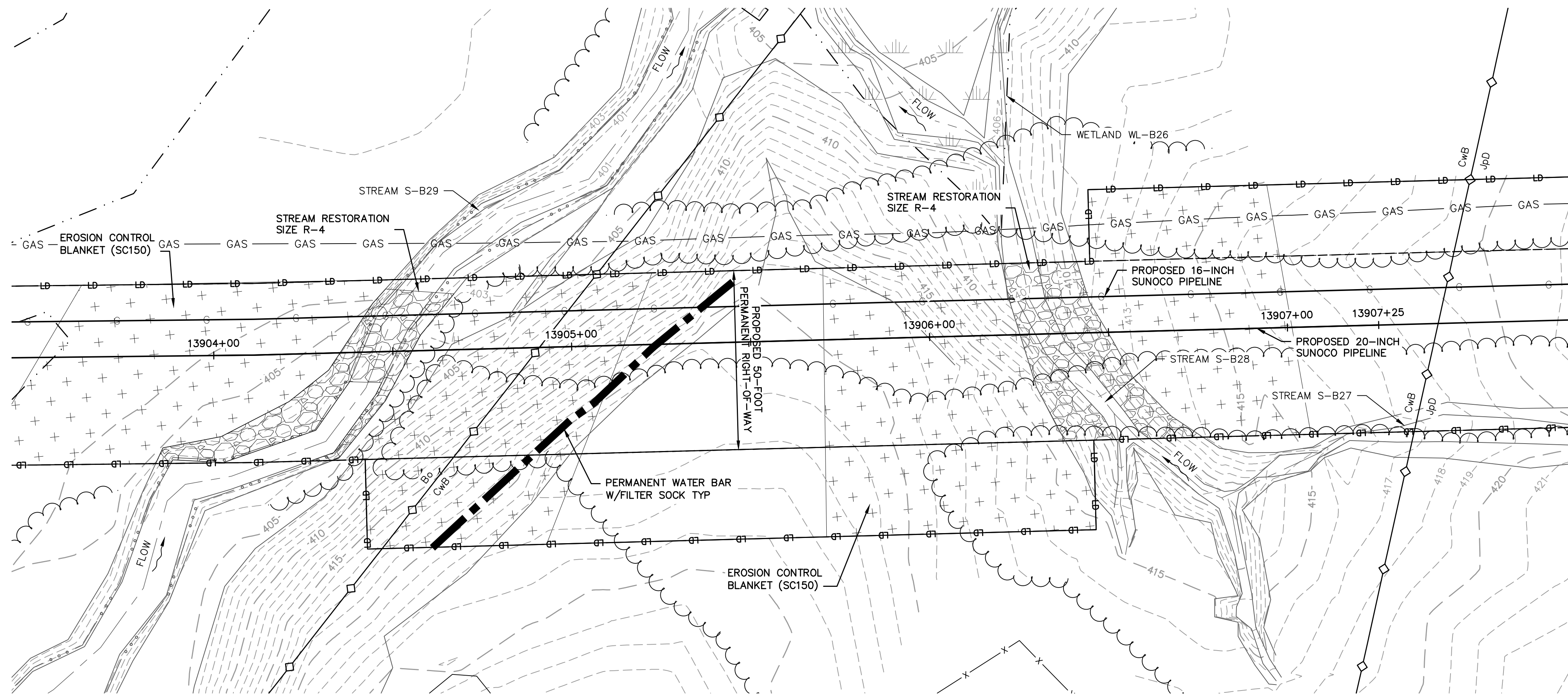


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PE-057385-E

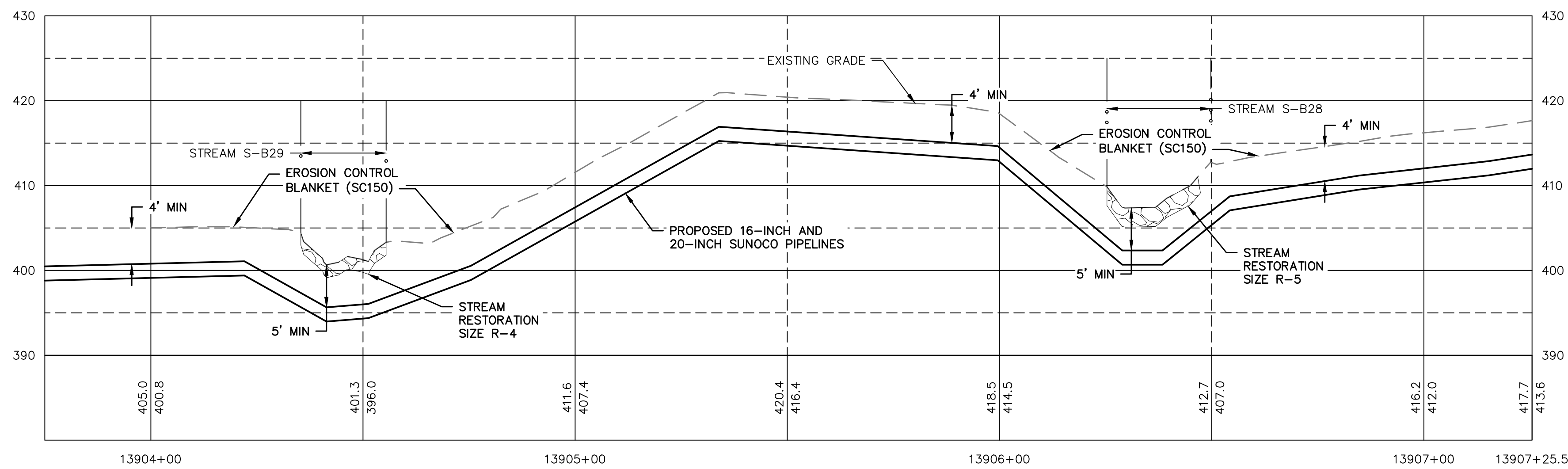
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DRAWN BY	DLH
CHECKED BY	CDA
APPROVED BY	CDA
DATE	11/30/16
SCALE	AS NOTED

OLD DRAWING NO.

REV.	DATE	APP#	DESCRIPTION	APPROVAL
PENNSYLVANIA PIPELINE PROJECT				
STREAM S-B27				
EXISTING CONDITIONS				
BERKS COUNTY, PA				
DWG. NO.			REV. NO.	
S-B27-A			0	



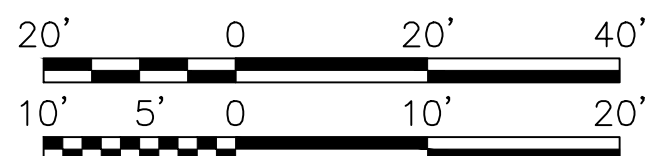
PLAN
SCALE: 1"=20'



RESTORED GRADE PROFILE
HORZ SCALE: 1"=20'
VERT SCALE: 1"=10'

GRAPHIC SCALES

1"=20'
1"=10'



GENERAL NOTES:

- REFERENCE E&S PLAN AND SITE RESTORATION NOTES AND DETAILS FOR ADDITIONAL CONSTRUCTION SEQUENCING, TYPICAL DETAILS AND NOTES (ES-0.01-ES-0.23); AND PLAN SHEETS FOR ADDITIONAL PLANS AND TOPOGRAPHY.
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- EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET EDGE OF WETLAND OR 100 FEET FROM EDGE OF WETLAND FOR SPECIAL PROTECTION WATERS (HQ OR EV).

STREAM CROSSING NOTES:

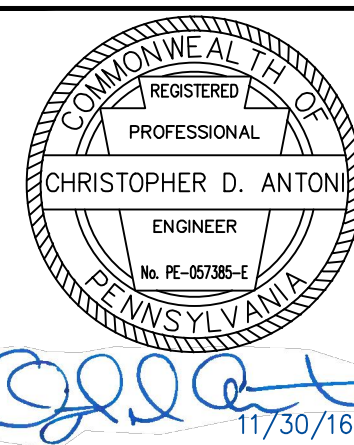
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- FOR TEMPORARY EQUIPMENT CROSSINGS REFERENCE (ES-0.10).
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LEGEND

SYMBOL	DESCRIPTION
	PROPOSED 16-INCH & 20-INCH SUNOCO PIPELINES
	PROPOSED SUNOCO RIGHT-OF-WAY
	EXISTING SUNOCO PIPELINE
	MAJOR CONTOUR
	MINOR CONTOUR
	STREAM CENTERLINE
	TOP/BOTTOM OF BANK
	EXISTING EDGE OF PAVED ROADWAY
	EXISTING EDGE OF UNPAVED ROADWAY
	EXISTING VEGETATION
	EDGE OF WATER
	SOIL TYPE BOUNDARY
	WETLAND
	PROPOSED ROCK CONSTRUCTION ENTRANCE
	LIMIT OF DISTURBANCE
	CONSTRUCTION FENCE
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	18-INCH COMPOST FILTER SOCK
	24-INCH COMPOST FILTER SOCK
	32-INCH COMPOST FILTER SOCK
	PERMANENT WATER BAR W/FILTER SOCK
	TRENCH PLUG
	TEMPORARY EQUIPMENT CROSSING
	SANDBAG DAM
	PUMP
	SCREENED INLET
	ENERGY DISSIPATER
	DEWATERING FACILITY
	CULVERT PIPE
	EROSION CONTROL BLANKET
	STREAM RESTORATION

PROFILE LEGEND:

	PROPOSED PIPELINE
	EXISTING GRADE
	EXISTING GRADE ELEV.
	PROPOSED TOP OF PIPE ELEV.



CHRISTOPHER D. ANTONI
PE-057385-E

ENGINEERING RECORD	
DRAWN BY	DLH
CHECKED BY	CDA
APPROVED BY	CDA
DATE	11/18/16
SCALE	AS NOTED

OLD DRAWING NO.

REV.	DATE	APP#	DESCRIPTION	APPROVAL
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PENNSYLVANIA PIPELINE PROJECT
STREAM S-B27
RESTORATION PLAN

BERKS COUNTY, PA

DWG. NO.

S-B27-B

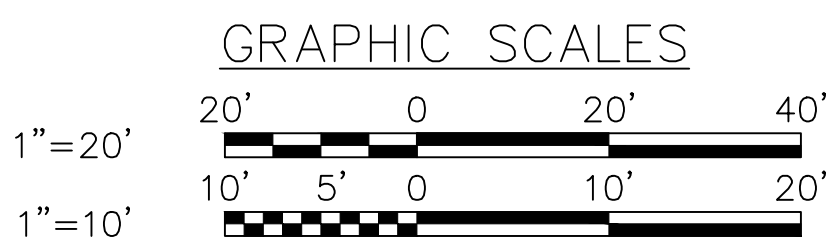
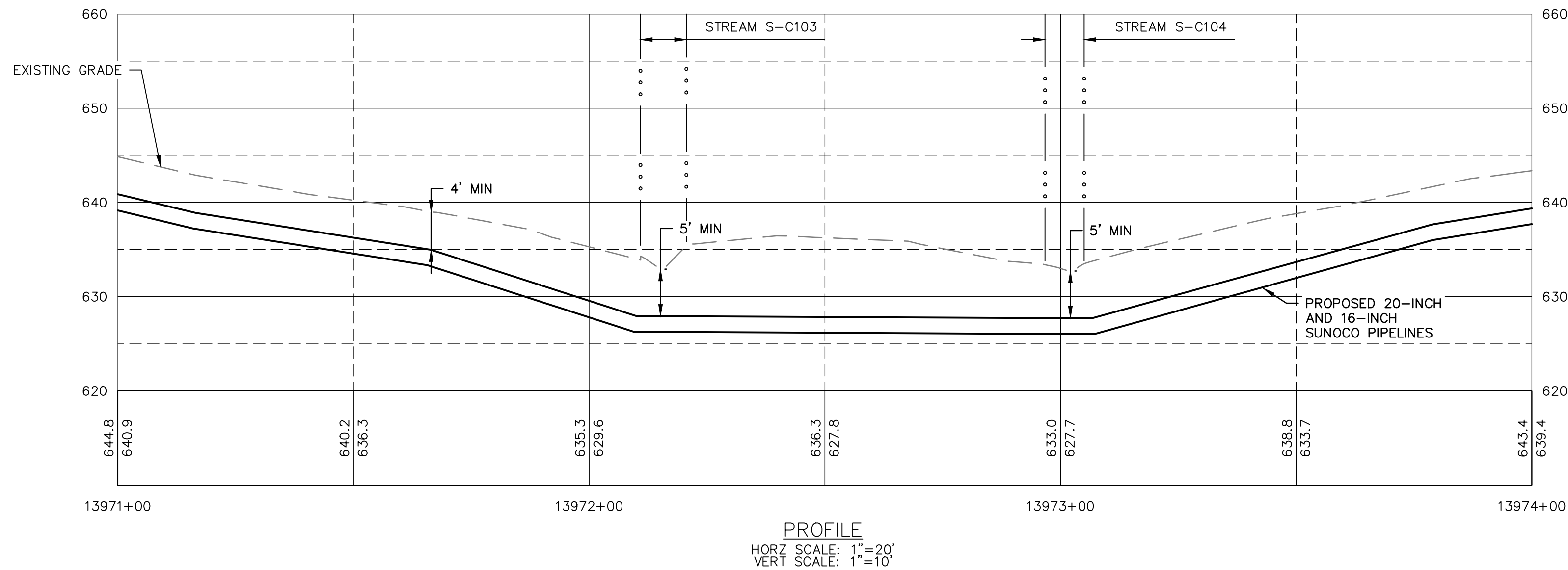
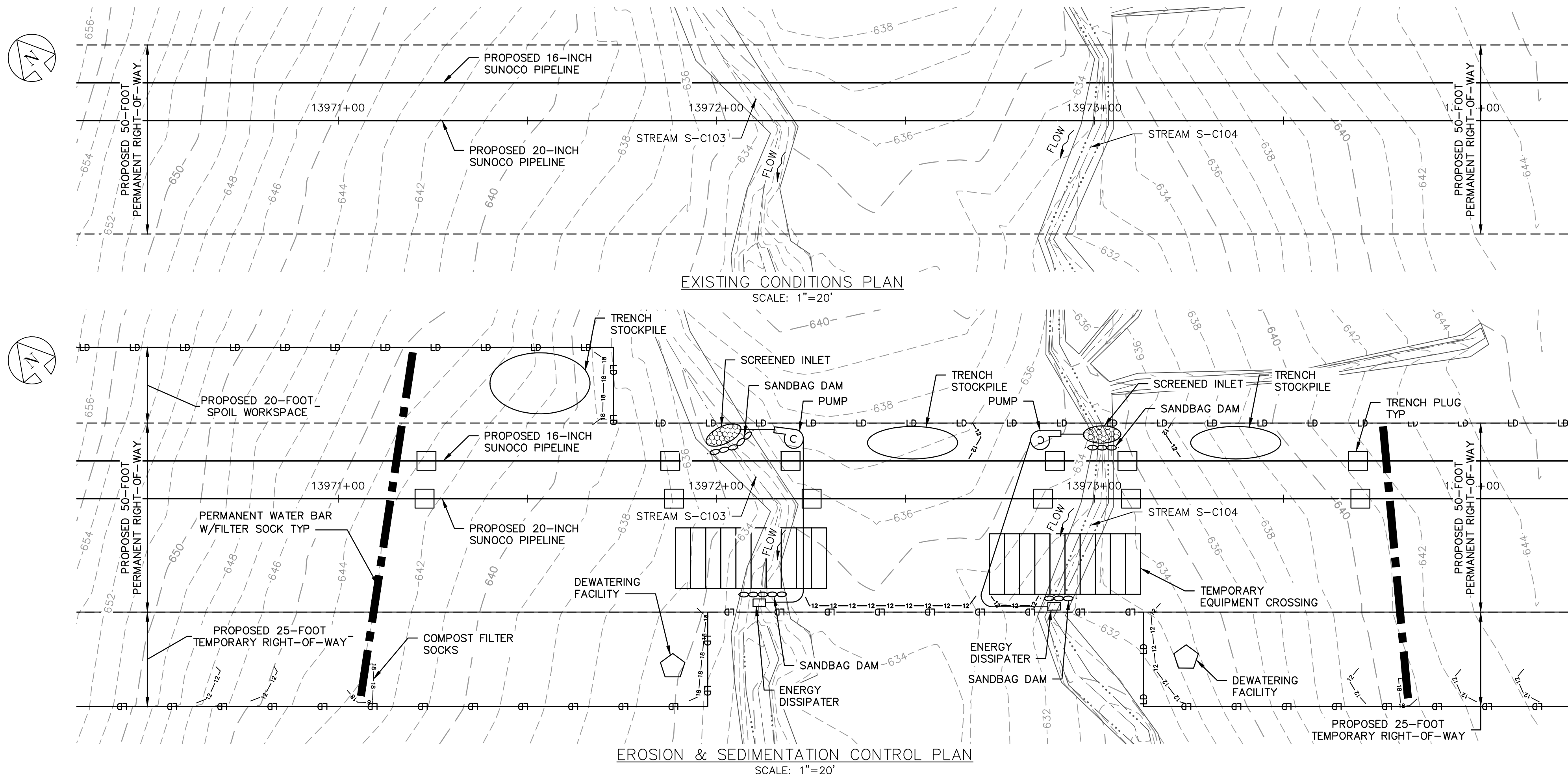
REV. NO.

0

STV
Baltimore, MD Bismarck, ND Denver, CO Douglassville, PA
Houston, TX Pittsburgh, PA Williamsport, PA

THE LOCATION OF THE PIPELINE FACILITIES AS SHOWN HEREON MUST BE CONSIDERED AS APPROXIMATE ONLY. BEFORE DIGGING OR FOR AN EXACT LOCATION PLEASE CONTACT YOUR STATES UNDERGROUND UTILITY LOCATION SERVICE.

STV PROJECT No.: 38-17335



GENERAL NOTES:

- REFERENCE E&S PLAN AND SITE RESTORATION NOTES AND DETAILS FOR ADDITIONAL CONSTRUCTION SEQUENCING, TYPICAL DETAILS AND NOTES (ES-0.01-ES-0.23); AND PLAN SHEETS FOR ADDITIONAL PLANS AND TOPOGRAPHY.
- ALL EXISTING UTILITY INFORMATION IS APPROXIMATE. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
- MAINTAIN 2'-0" MINIMUM VERTICAL SEPARATION BETWEEN THE PROPOSED PIPELINE AND OTHER UTILITIES.
- THE BACKGROUND TOPOGRAPHY WAS OBTAINED FROM TOPOGRAPHIC SURVEYS PERFORMED IN SEPTEMBER 2016.
- THE PROJECT IS LOCATED IN NAD83 PENNSYLVANIA STATE PLANE COORDINATE SYSTEM (SOUTH ZONE), NAVD88.
- EXCAVATION IS LIMITED TO THE CENTERLINE WITH A TYPICAL TRENCH WIDTH OF 4-5' FOR 16/20" PIPELINE.

WETLAND CROSSING NOTES:

- REFERENCE NOTES AND DETAILS FOR WETLAND CONSTRUCTION SEQUENCING AND WETLAND RESTORATION (ES-0.03, ES-0.08, ES-0.10, AND ES-0.15).
- A MINIMUM OF 4 FEET COVER UNDER WETLANDS AND UPLANDS IS REQUIRED.
- FOR TEMPORARY TIMBER MAT REFERENCE (ES-0.10)
- EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET EDGE OF WETLAND OR 100 FEET FROM EDGE OF WETLAND FOR SPECIAL PROTECTION WATERS (HQ OR EV).

STREAM CROSSING NOTES:

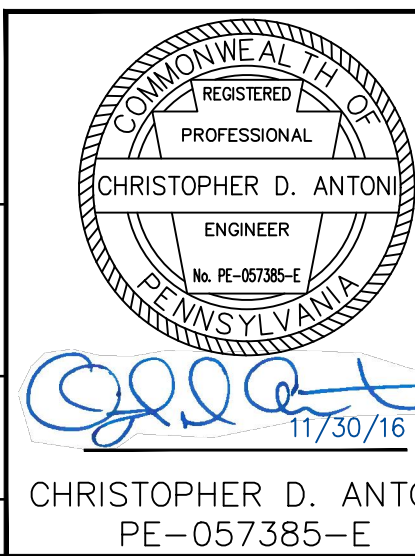
- REFERENCE NOTES AND DETAILS FOR STREAM CONSTRUCTION SEQUENCING AND STREAM RESTORATION (ES-0.01-ES-0.17).
- FOR TEMPORARY EQUIPMENT CROSSINGS REFERENCE (ES-0.10).
- SITE CONDITIONS MAY ALLOW FOR IMPLEMENTATION OF OTHER APPROVED PIPELINE INSTALLATION METHODS REFERENCED WITH THE NOTES AND DETAILS (ES-0.11-ES-0.14).
- THE PIPELINES SHALL MAINTAIN A MINIMUM OF 5 FEET OF COVER UNDER STREAMS FROM THE TOP OF PIPE TO THE STREAM BED. THIS COVER WILL BE MAINTAINED AT A MINIMUM FROM TOP OF BANK TO TOP OF BANK.
- REFERENCE THE STREAM BANK STABILIZATION DETAIL AND STREAM RESTORATION TABLE IN THE NOTES AND DETAILS WHERE RIP-RAP IS PROPOSED (ES-0.18).
- EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET FROM TOP OF BANK OR 100 FEET FROM TOP OF BANK FOR SPECIAL PROTECTION WATERS (HQ OR EV).
- TIMBER MATS SHALL EXTEND A MINIMUM OF 20 FEET BEYOND TOP OF BANK.
- COMPOST FILTER SOCKS SHALL BE INSTALLED ALONG THE TOP OF THE STREAM BANK ACROSS THE RIGHT-OF-WAY WHEN PUMP BYPASS IS NOT IN PLACE.

LEGEND

SYMBOL	DESCRIPTION
	PROPOSED 16-INCH & 20-INCH SUNOCO PIPELINES
	PROPOSED SUNOCO RIGHT-OF-WAY
	EXISTING SUNOCO PIPELINE
	MAJOR CONTOUR
	MINOR CONTOUR
	STREAM CENTERLINE
	TOP/BOTTOM OF BANK
	EXISTING EDGE OF PAVED ROADWAY
	EXISTING EDGE OF UNPAVED ROADWAY
	EXISTING VEGETATION
	EDGE OF WATER
	SOIL TYPE BOUNDARY
	WETLAND
	PROPOSED ROCK CONSTRUCTION ENTRANCE
	LIMIT OF DISTURBANCE
	CONSTRUCTION FENCE
	12-INCH COMPOST FILTER SOCK
	18-INCH COMPOST FILTER SOCK
	24-INCH COMPOST FILTER SOCK
	32-INCH COMPOST FILTER SOCK
	PERMANENT WATER BAR W/FILTER SOCK
	TRENCH PLUG
	TEMPORARY EQUIPMENT CROSSING
	SANDBAG DAM
	PUMP
	SCREENED INLET
	ENERGY DISSIPATER
	DEWATERING FACILITY
	CULVERT PIPE
	EROSION CONTROL BLANKET
	STREAM RESTORATION

PROFILE LEGEND:

	PROPOSED PIPELINE
	EXISTING GRADE
	EXISTING GRADE ELEV.
	PROPOSED TOP OF PIPE ELEV.



ENGINEERING RECORD	
DRAWN BY	LG
CHECKED BY	CDA
APPROVED BY	CDA
DATE	11/30/16
SCALE	AS NOTED

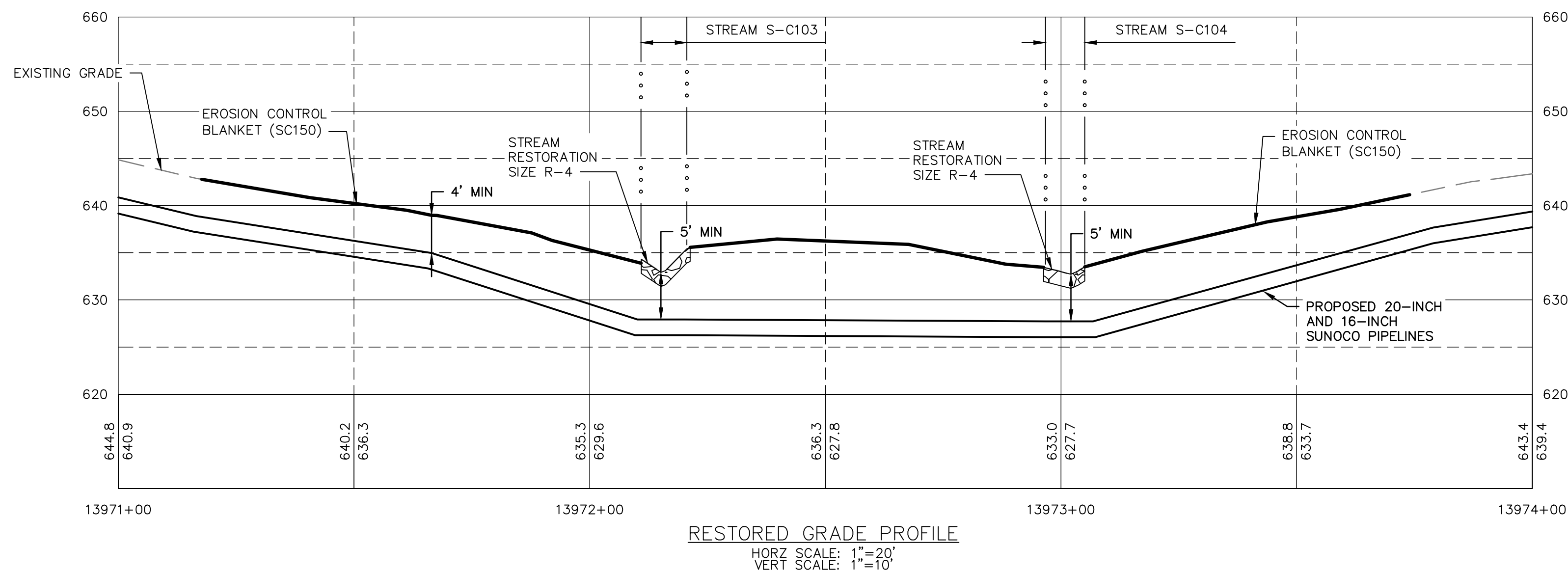
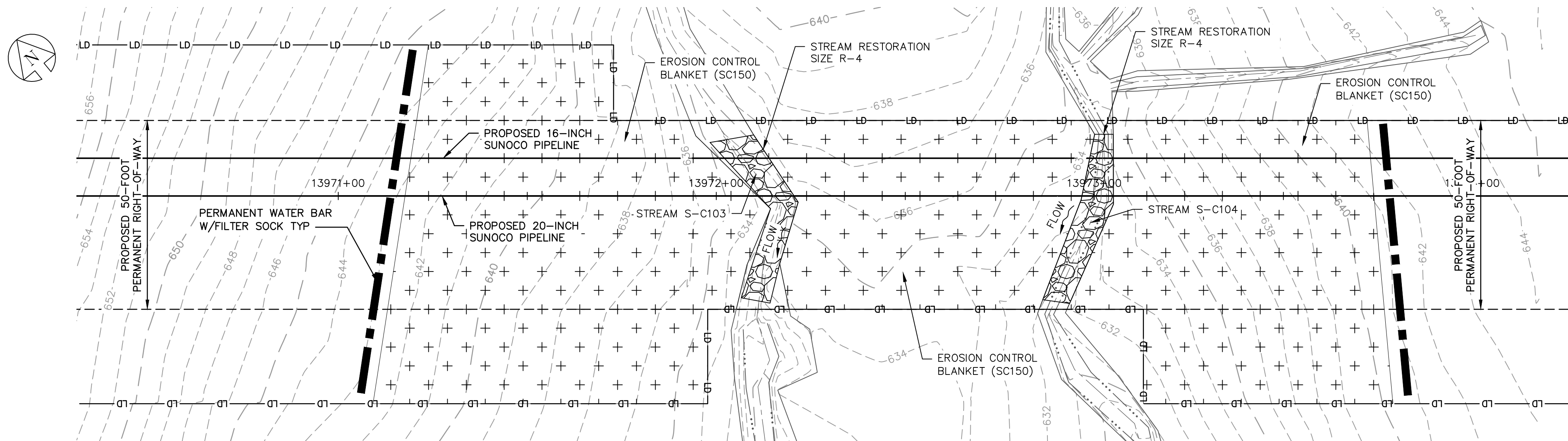
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REV.	DATE	APP#	DESCRIPTION	APPROVAL
PENNSYLVANIA PIPELINE PROJECT STREAMS S-C103 & S-C104 EXISTING CONDITIONS/EROSION & SEDIMENTATION CONTROL PLANS				
BERKS COUNTY, PA				
DWG. NO.			S-C103-A	REV. NO. 0

STV
Baltimore, MD Bismarck, ND Denver, CO Douglassville, PA
Houston, TX Pittsburgh, PA Williamsport, PA

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STV PROJECT No.: 38-17335



GENERAL NOTES:

- REFERENCE E&S PLAN AND SITE RESTORATION NOTES AND DETAILS FOR ADDITIONAL CONSTRUCTION SEQUENCING, TYPICAL DETAILS AND NOTES (ES-0.01-ES-0.23); AND PLAN SHEETS FOR ADDITIONAL PLANS AND TOPOGRAPHY.
- ALL EXISTING UTILITY INFORMATION IS APPROXIMATE. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
- MAINTAIN 2'-0" MINIMUM VERTICAL SEPARATION BETWEEN THE PROPOSED PIPELINE AND OTHER UTILITIES.
- THE BACKGROUND TOPOGRAPHY WAS OBTAINED FROM TOPOGRAPHIC SURVEYS PERFORMED IN SEPTEMBER 2016.
- THE PROJECT IS LOCATED IN NAD83 PENNSYLVANIA STATE PLANE COORDINATE SYSTEM (SOUTH ZONE), NAVD88.
- EXCAVATION IS LIMITED TO THE CENTERLINE WITH A TYPICAL TRENCH WIDTH OF 4-5' FOR 16/20" PIPELINE.

WETLAND CROSSING NOTES:

- REFERENCE NOTES AND DETAILS FOR WETLAND CONSTRUCTION SEQUENCING AND WETLAND RESTORATION (ES-0.03, ES-0.08, ES-0.10, AND ES-0.15).
- A MINIMUM OF 4 FEET COVER UNDER WETLANDS AND UPLANDS IS REQUIRED.
- FOR TEMPORARY TIMBER MAT REFERENCE (ES-0.10)
- EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET EDGE OF WETLAND OR 100 FEET FROM EDGE OF WETLAND FOR SPECIAL PROTECTION WATERS (HQ OR EV).

STREAM CROSSING NOTES:

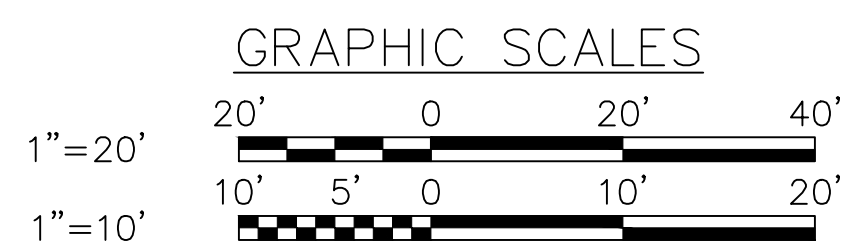
- REFERENCE NOTES AND DETAILS FOR STREAM CONSTRUCTION SEQUENCING AND STREAM RESTORATION (ES-0.01-ES-0.17).
- FOR TEMPORARY EQUIPMENT CROSSINGS REFERENCE (ES-0.10).
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- COMPOST FILTER SOCKS SHALL BE INSTALLED ALONG THE TOP OF THE STREAM BANK ACROSS THE RIGHT-OF-WAY WHEN PUMP BYPASS IS NOT IN PLACE.

LEGEND

SYMBOL	DESCRIPTION
	PROPOSED 16-INCH & 20-INCH SUNOCO PIPELINES
	PROPOSED SUNOCO RIGHT-OF-WAY
	EXISTING SUNOCO PIPELINE
	MAJOR CONTOUR
	MINOR CONTOUR
	STREAM CENTERLINE
	TOP/BOTTOM OF BANK
	EXISTING EDGE OF PAVED ROADWAY
	EXISTING EDGE OF UNPAVED ROADWAY
	EXISTING VEGETATION
	EDGE OF WATER
	SOIL TYPE BOUNDARY
	WETLAND
	PROPOSED ROCK CONSTRUCTION ENTRANCE
	LIMIT OF DISTURBANCE
	CONSTRUCTION FENCE
	12-INCH COMPOST FILTER SOCK
	18-INCH COMPOST FILTER SOCK
	24-INCH COMPOST FILTER SOCK
	32-INCH COMPOST FILTER SOCK
	PERMANENT WATER BAR W/FILTER SOCK
	TRENCH PLUG
	TEMPORARY EQUIPMENT CROSSING
	SANDBAG DAM
	PUMP
	SCREENED INLET
	ENERGY DISSIPATER
	DEWATERING FACILITY
	CULVERT PIPE
	EROSION CONTROL BLANKET
	STREAM RESTORATION

PROFILE LEGEND:

	PROPOSED PIPELINE
	EXISTING GRADE
	EXISTING GRADE ELEV.
	PROPOSED TOP OF PIPE ELEV.



STV
Baltimore, MD Bismarck, ND Denver, CO Douglassville, PA
Houston, TX Pittsburgh, PA Williamsport, PA

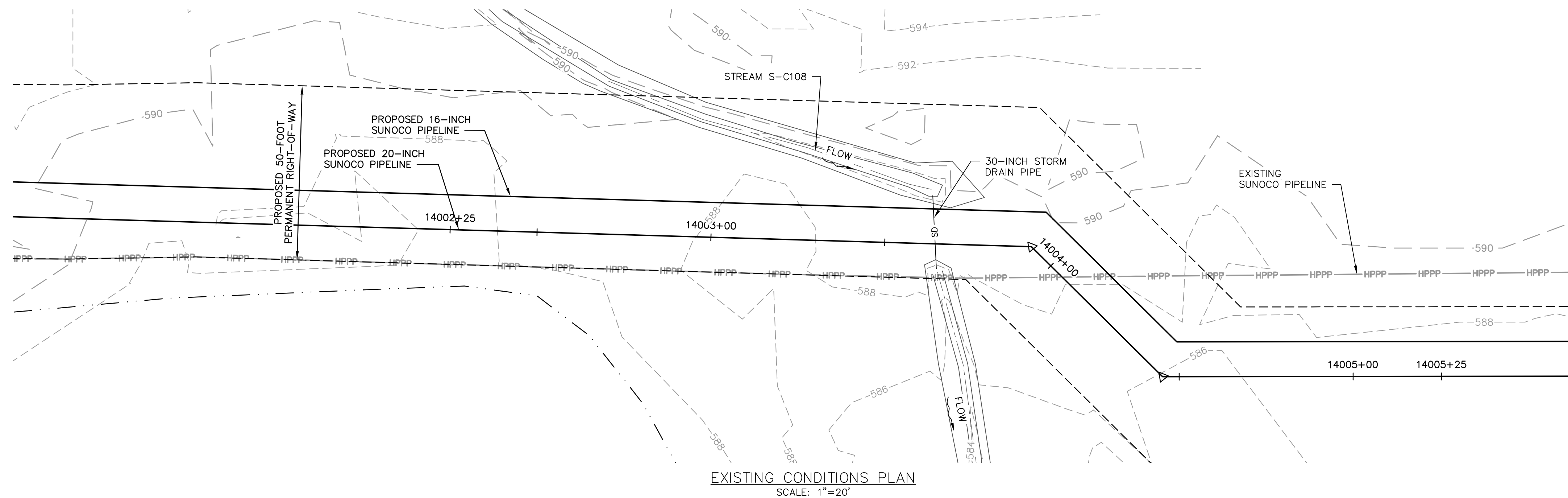
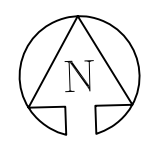
THE LOCATION OF THE PIPELINE FACILITIES AS SHOWN HEREON MUST BE CONSIDERED AS APPROXIMATE ONLY. BEFORE DIGGING OR FOR AN EXACT LOCATION PLEASE CONTACT YOUR STATES UNDERGROUND UTILITY LOCATION SERVICE.

STV PROJECT No.: 38-17335

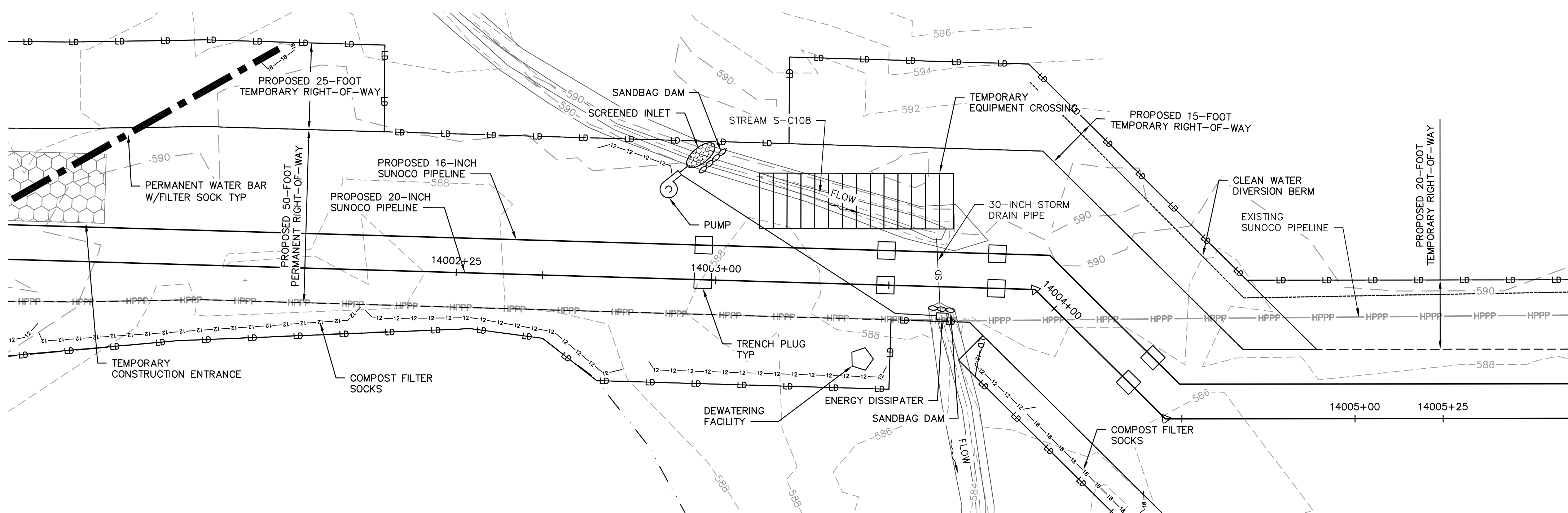
COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER D. ANTONI
No. PE-057385-E
11/30/16
CHRISTOPHER D. ANTONI
PE-057385-E

ENGINEERING RECORD	
DRAWN BY	LG
CHECKED BY	CDA
APPROVED BY	CDA
DATE	11/30/16
SCALE	AS NOTED

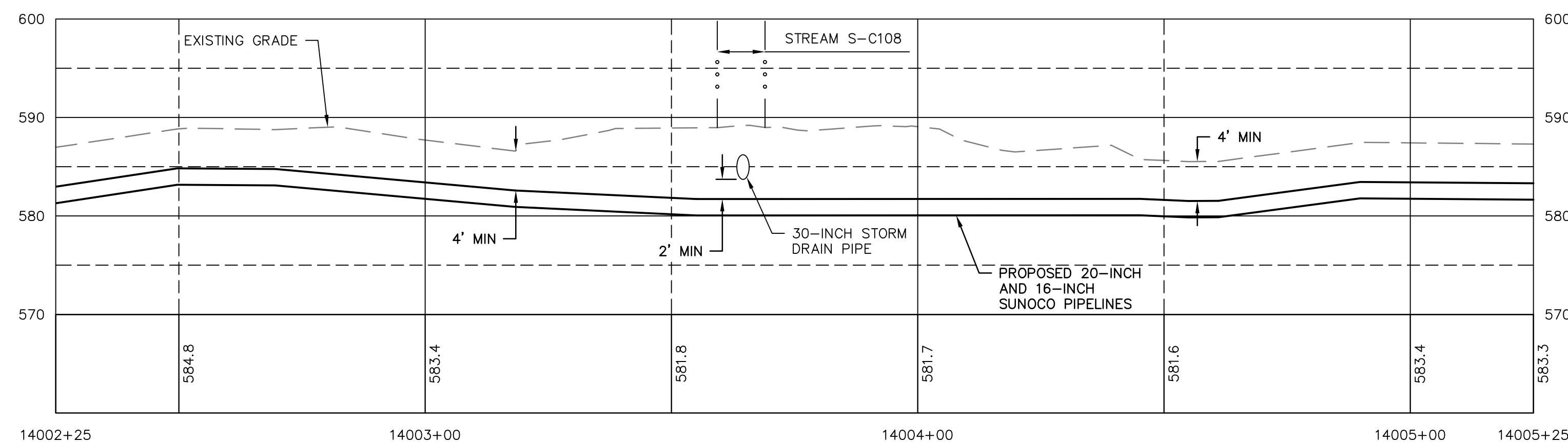
REV.	DATE	APP#	DESCRIPTION	APPROVAL
 PENNSYLVANIA PIPELINE PROJECT STREAMS S-C103 & S-C104 RESTORATION PLAN				
OLD DRAWING NO.				BERKS COUNTY, PA
DWG. NO. S-C103-B				REV. NO. 0



EXISTING CONDITIONS PLAN
SCALE: 1"=20'



EROSION & SEDIMENTATION CONTROL PLAN
SCALE: 1"=20'



PROFILE
HORZ SCALE: 1"=20'
VERT SCALE: 1"=10'

GRAPHIC SCALES



GENERAL NOTES:

- REFERENCE E&S PLAN AND SITE RESTORATION NOTES AND DETAILS FOR ADDITIONAL CONSTRUCTION SEQUENCING, TYPICAL DETAILS AND NOTES (ES-0.01-ES-0.23); AND PLAN SHEETS FOR ADDITIONAL PLANS AND TOPOGRAPHY.
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WETLAND CROSSING NOTES:

- REFERENCE NOTES AND DETAILS FOR WETLAND CONSTRUCTION SEQUENCING AND WETLAND RESTORATION (ES-0.03, ES-0.08, ES-0.10, AND ES-0.15).
- A MINIMUM OF 4 FEET COVER UNDER WETLANDS AND UPLANDS IS REQUIRED.
- FOR TEMPORARY TIMBER MAT REFERENCE (ES-0.10).
- EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET EDGE OF WETLAND OR 100 FEET FROM EDGE OF WETLAND FOR SPECIAL PROTECTION WATERS (HQ OR EV).

STREAM CROSSING NOTES:

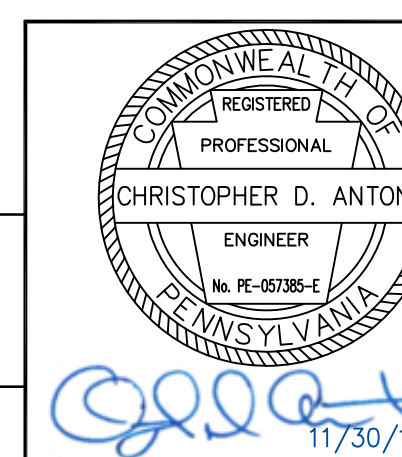
- REFERENCE NOTES AND DETAILS FOR STREAM CONSTRUCTION SEQUENCING AND STREAM RESTORATION (ES-0.01-ES-0.17).
- FOR TEMPORARY EQUIPMENT CROSSINGS REFERENCE (ES-0.10).
- SITE CONDITIONS MAY ALLOW FOR IMPLEMENTATION OF OTHER APPROVED PIPELINE INSTALLATION METHODS REFERENCED WITH THE NOTES AND DETAILS (ES-0.11-ES-0.14).
- THE PIPELINES SHALL MAINTAIN A MINIMUM OF 5 FEET OF COVER UNDER STREAMS FROM THE TOP OF PIPE TO THE STREAM BED. THIS COVER WILL BE MAINTAINED AT A MINIMUM FROM TOP OF BANK TO TOP OF BANK.
- REFERENCE THE STREAM BANK STABILIZATION DETAIL AND STREAM RESTORATION TABLE IN THE NOTES AND DETAILS WHERE RIP-RAP IS PROPOSED (ES-0.18).
- EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET FROM TOP OF BANK OR 100 FEET FROM TOP OF BANK FOR SPECIAL PROTECTION WATERS (HQ OR EV).
- TIMBER MATS SHALL EXTEND A MINIMUM OF 20 FEET BEYOND TOP OF BANK.
- COMPOST FILTER SOCKS SHALL BE INSTALLED ALONG THE TOP OF THE STREAM BANK ACROSS THE RIGHT-OF-WAY WHEN PUMP BYPASS IS NOT IN PLACE.

LEGEND

SYMBOL	DESCRIPTION
	PROPOSED 16-INCH & 20-INCH SUNOCO PIPELINES
	PROPOSED SUNOCO RIGHT-OF-WAY
	EXISTING SUNOCO PIPELINE
	MAJOR CONTOUR
	MINOR CONTOUR
	STREAM CENTERLINE
	TOP/BOTTOM OF BANK
	EXISTING EDGE OF PAVED ROADWAY
	EXISTING EDGE OF UNPAVED ROADWAY
	EXISTING VEGETATION
	EDGE OF WATER
	SOIL TYPE BOUNDARY
	WETLAND
	PROPOSED ROCK CONSTRUCTION ENTRANCE
	LIMIT OF DISTURBANCE
	CONSTRUCTION FENCE
	12-INCH COMPOST FILTER SOCK
	18-INCH COMPOST FILTER SOCK
	24-INCH COMPOST FILTER SOCK
	32-INCH COMPOST FILTER SOCK
	PERMANENT WATER BAR W/FILTER SOCK
	TRENCH PLUG
	TEMPORARY EQUIPMENT CROSSING
	SANDBAG DAM
	PUMP
	SCREENED INLET
	ENERGY DISSIPATER
	DEWATERING FACILITY
	CULVERT PIPE
	EROSION CONTROL BLANKET
	STREAM RESTORATION

PROFILE LEGEND:

	PROPOSED PIPELINE
	EXISTING GRADE
	EXISTING GRADE ELEV.
	PROPOSED TOP OF PIPE ELEV.

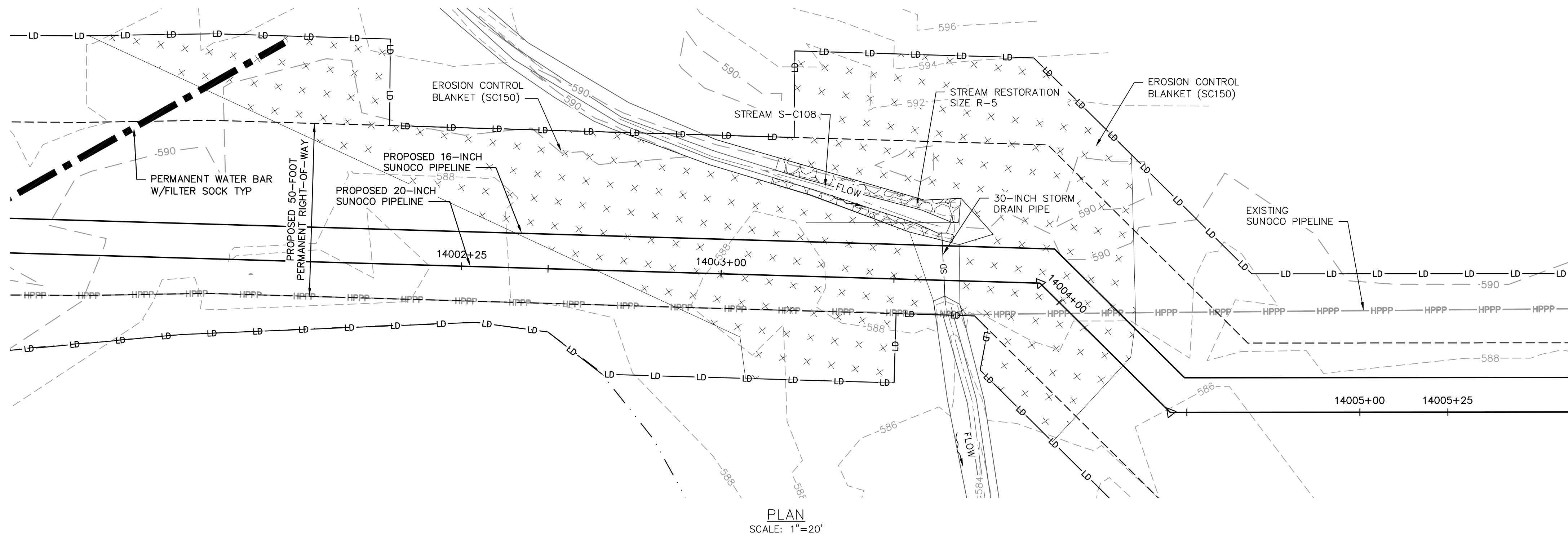


CHRISTOPHER D. ANTONI
PE-057385-E

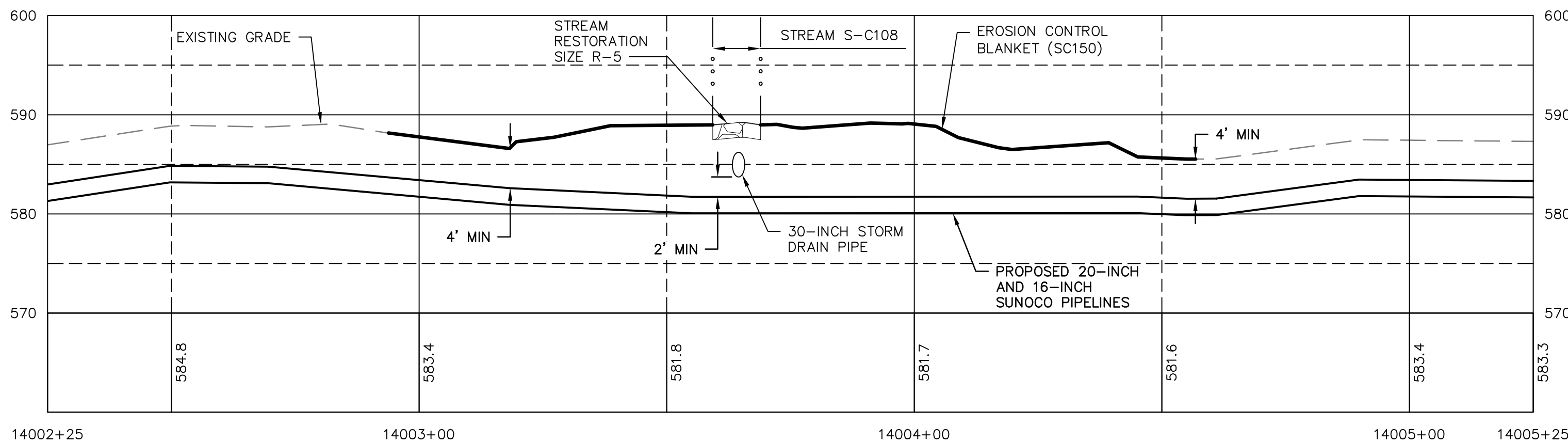
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APPROVED BY	CDA
DATE	11/30/16
SCALE	AS NOTED

OLD DRAWING NO.

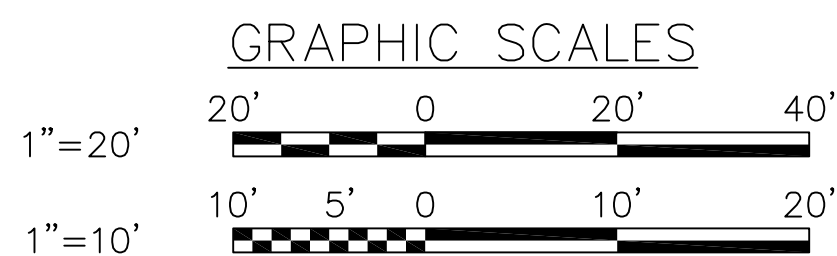
REV.	DATE	APP#	DESCRIPTION	APPROVAL
PENNSYLVANIA PIPELINE PROJECT				
STREAM S-C108				
EXISTING CONDITIONS/EROSION & SEDIMENTATION CONTROL PLANS				
BERKS COUNTY, PA				
DWG. NO.			REV. NO.	
S-C108-A			0	



PLAN
SCALE: 1"=20'



RESTORED GRADE PROFILE
HORZ SCALE: 1"=20'
VERT SCALE: 1"=10'



GENERAL NOTES:

1. REFERENCE E&S PLAN AND SITE RESTORATION NOTES AND DETAILS FOR ADDITIONAL CONSTRUCTION SEQUENCING, TYPICAL DETAILS AND NOTES (ES-0.01-ES-0.23); AND PLAN SHEETS FOR ADDITIONAL PLANS AND TOPOGRAPHY.
2. ALL EXISTING UTILITY INFORMATION IS APPROXIMATE. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
3. MAINTAIN 2'-0" MINIMUM VERTICAL SEPARATION BETWEEN THE PROPOSED PIPELINE AND OTHER UTILITIES.
4. THE BACKGROUND TOPOGRAPHY WAS OBTAINED FROM TOPOGRAPHIC SURVEYS PERFORMED IN SEPTEMBER 2016.
5. THE PROJECT IS LOCATED IN NAD83 PENNSYLVANIA STATE PLANE COORDINATE SYSTEM (SOUTH ZONE), NAVD88.
6. EXCAVATION IS LIMITED TO THE CENTERLINE WITH A TYPICAL TRENCH WIDTH OF 4'-5' FOR 16/20" PIPELINE.

WETLAND CROSSING NOTES:

1. REFERENCE NOTES AND DETAILS FOR WETLAND CONSTRUCTION SEQUENCING AND WETLAND RESTORATION (ES-0.03, ES-0.08, ES-0.10, AND ES-0.15).
2. A MINIMUM OF 4 FEET COVER UNDER WETLANDS AND UPLANDS IS REQUIRED.
3. FOR TEMPORARY TIMBER MAT REFERENCE (ES-0.10)
4. EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET EDGE OF WETLAND OR 100 FEET FROM EDGE OF WETLAND FOR SPECIAL PROTECTION WATERS (HQ OR EV).

STREAM CROSSING NOTES:

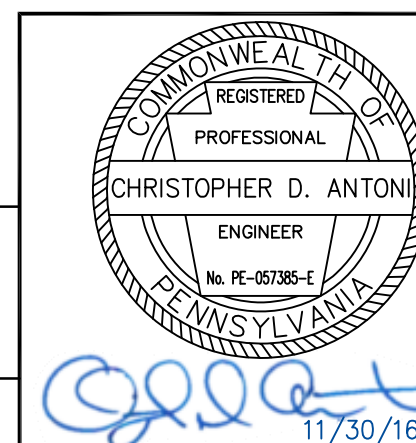
1. REFERENCE NOTES AND DETAILS FOR STREAM CONSTRUCTION SEQUENCING AND STREAM RESTORATION (ES-0.01-ES-0.17).
2. FOR TEMPORARY EQUIPMENT CROSSINGS REFERENCE (ES-0.10).
3. SITE CONDITIONS MAY ALLOW FOR IMPLEMENTATION OF OTHER APPROVED PIPELINE INSTALLATION METHODS REFERENCED WITH THE NOTES AND DETAILS (ES-0.11-ES-0.14).
4. THE PIPELINES SHALL MAINTAIN A MINIMUM OF 5 FEET OF COVER UNDER STREAMS FROM THE TOP OF PIPE TO THE STREAM BED. THIS COVER WILL BE MAINTAINED AT A MINIMUM FROM TOP OF BANK TO TOP OF BANK.
5. REFERENCE THE STREAM BANK STABILIZATION DETAIL AND STREAM RESTORATION TABLE IN THE NOTES AND DETAILS WHERE RIP-RAP IS PROPOSED (ES-0.18).
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7. TIMBER MATS SHALL EXTEND A MINIMUM OF 20 FEET BEYOND TOP OF BANK.
8. COMPOST FILTER SOCKS SHALL BE INSTALLED ALONG THE TOP OF THE STREAM BANK ACROSS THE RIGHT-OF-WAY WHEN PUMP BYPASS IS NOT IN PLACE.

LEGEND

SYMBOL	DESCRIPTION
	PROPOSED 16-INCH & 20-INCH SUNOCO PIPELINES
	PROPOSED SUNOCO RIGHT-OF-WAY
	EXISTING SUNOCO PIPELINE
	MAJOR CONTOUR
	MINOR CONTOUR
	STREAM CENTERLINE
	TOP/BOTTOM OF BANK
	EXISTING EDGE OF PAVED ROADWAY
	EXISTING EDGE OF UNPAVED ROADWAY
	EXISTING VEGETATION
	EDGE OF WATER
	SOIL TYPE BOUNDARY
	WETLAND
	PROPOSED ROCK CONSTRUCTION ENTRANCE
	LIMIT OF DISTURBANCE
	CONSTRUCTION FENCE
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	PERMANENT WATER BAR W/FILTER SOCK
	TRENCH PLUG
	TEMPORARY EQUIPMENT CROSSING
	SANDBAG DAM
	PUMP
	SCREENED INLET
	ENERGY DISSIPATER
	DEWATERING FACILITY
	CULVERT PIPE
	EROSION CONTROL BLANKET
	STREAM RESTORATION

PROFILE LEGEND:

	PROPOSED PIPELINE
	EXISTING GRADE
	EXISTING GRADE ELEV. PROPOSED TOP OF PIPE ELEV.



CHRISTOPHER D. ANTON
PE-057385-E

ENGINEERING RECORD	
DRAWN BY	PDZ
CHECKED BY	CDA
APPROVED BY	CDA
DATE	11/30/16
SCALE	AS NOTED

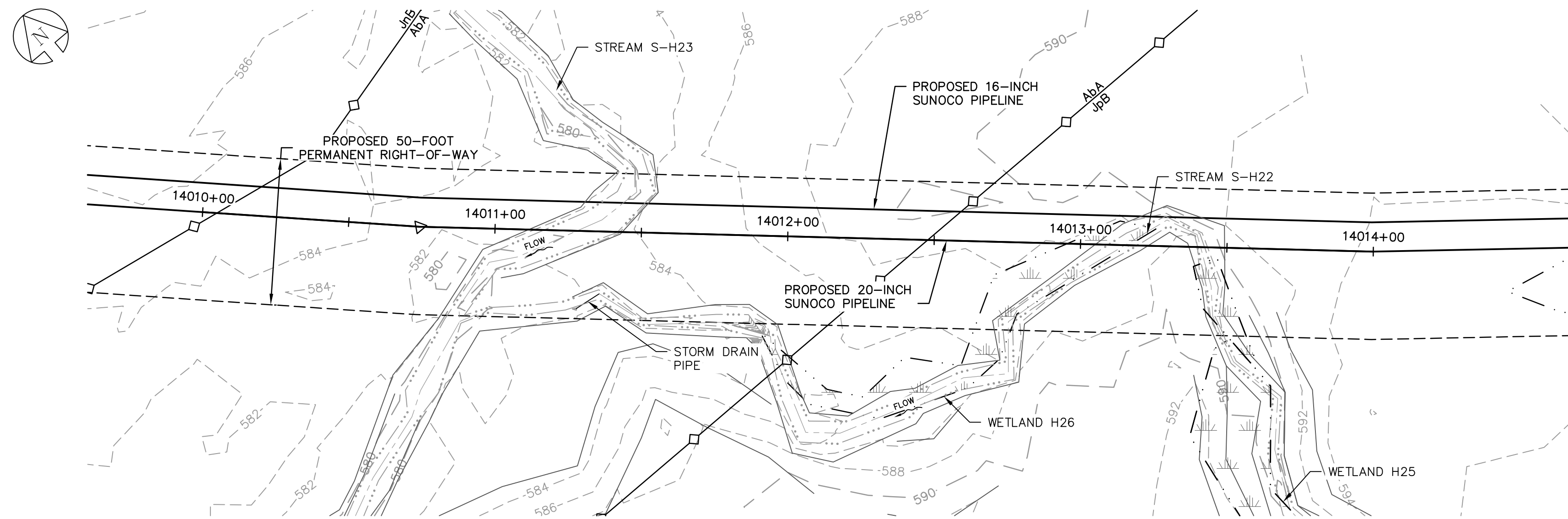
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REV.	DATE	APP#	DESCRIPTION	APPROVAL
PENNSYLVANIA PIPELINE PROJECT STREAM S-C108 RESTORATION PLAN				
BERKS COUNTY, PA				
DWG. NO.			REV. NO.	
S-C108-B			0	

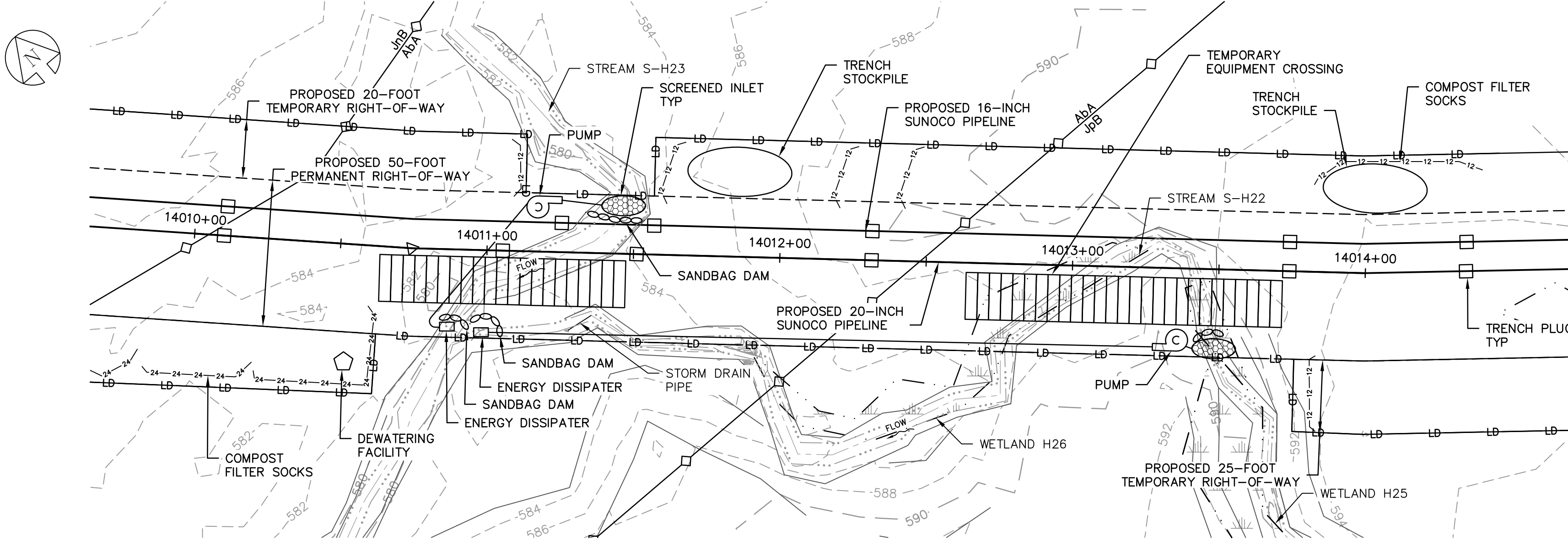
STV
Baltimore, MD Bismarck, ND Denver, CO Douglassville, PA
Houston, TX Pittsburgh, PA Williamsport, PA

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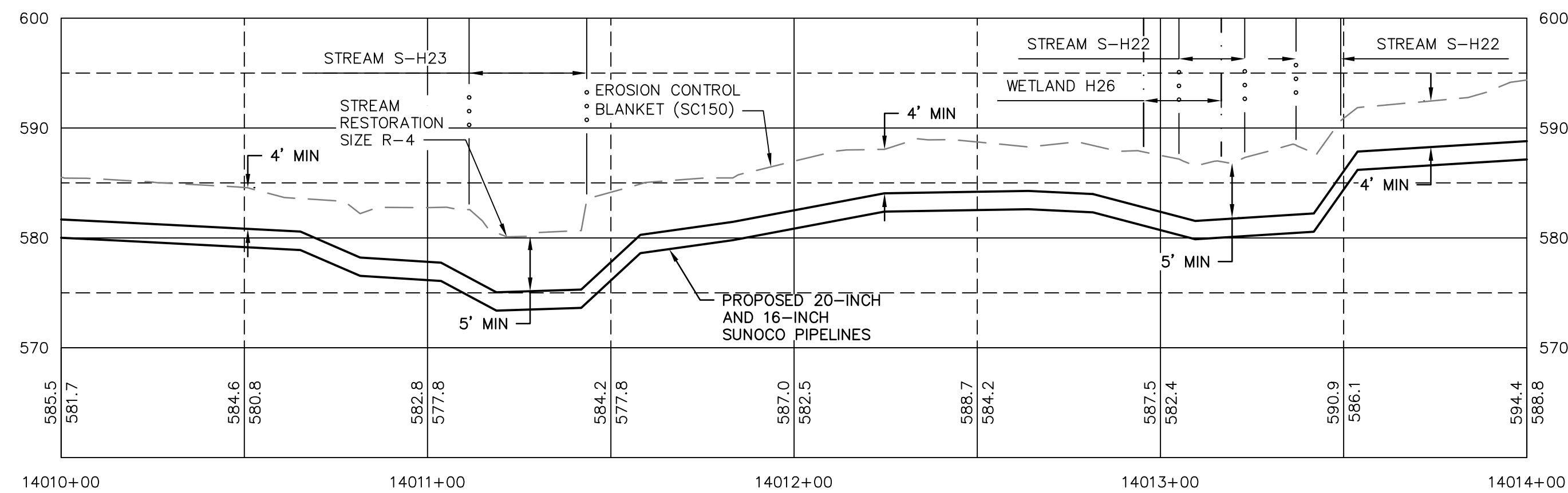
STV PROJECT No.: 38-17335



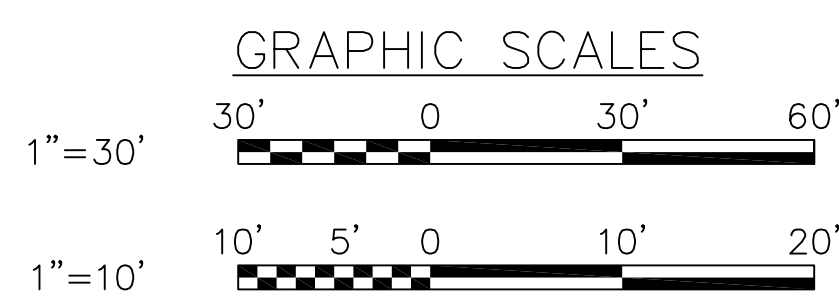
EXISTING CONDITIONS PLAN
SCALE: 1"=30'



EROSION & SEDIMENTATION CONTROL PLAN
SCALE: 1"=30'



PROFILE
HORZ SCALE: 1"=30'
VERT SCALE: 1"=10'



GENERAL NOTES:

1. REFERENCE E&S PLAN AND SITE RESTORATION NOTES AND DETAILS FOR ADDITIONAL CONSTRUCTION SEQUENCING, TYPICAL DETAILS AND NOTES (ES-0.01-ES-0.23); AND PLAN SHEETS FOR ADDITIONAL PLANS AND TOPOGRAPHY.
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5. THE PROJECT IS LOCATED IN NAD83 PENNSYLVANIA STATE PLANE COORDINATE SYSTEM (SOUTH ZONE), NAVD88.
6. EXCAVATION IS LIMITED TO THE CENTERLINE WITH A TYPICAL TRENCH WIDTH OF 4'-5' FOR 16/20" PIPELINE.

WETLAND CROSSING NOTES:

1. REFERENCE NOTES AND DETAILS FOR WETLAND CONSTRUCTION SEQUENCING AND WETLAND RESTORATION (ES-0.03, ES-0.08, ES-0.10, AND ES-0.15).
2. A MINIMUM OF 4 FEET COVER UNDER WETLANDS AND UPLANDS IS REQUIRED.
3. FOR TEMPORARY TIMBER MAT REFERENCE (ES-0.10)
4. EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET EDGE OF WETLAND OR 100 FEET FROM EDGE OF WETLAND FOR SPECIAL PROTECTION WATERS (HQ OR EV).

STREAM CROSSING NOTES:

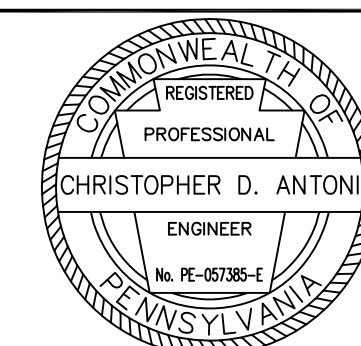
1. REFERENCE NOTES AND DETAILS FOR STREAM CONSTRUCTION SEQUENCING AND STREAM RESTORATION (ES-0.01-ES-0.17).
2. FOR TEMPORARY EQUIPMENT CROSSINGS REFERENCE (ES-0.10).
3. SITE CONDITIONS MAY ALLOW FOR IMPLEMENTATION OF OTHER APPROVED PIPELINE INSTALLATION METHODS REFERENCED WITH THE NOTES AND DETAILS (ES-0.11-ES-0.14).
4. THE PIPELINES SHALL MAINTAIN A MINIMUM OF 5 FEET OF COVER UNDER STREAMS FROM THE TOP OF PIPE TO THE STREAM BED. THIS COVER WILL BE MAINTAINED AT A MINIMUM FROM TOP OF BANK TO TOP OF BANK.
5. REFERENCE THE STREAM BANK STABILIZATION DETAIL AND STREAM RESTORATION TABLE IN THE NOTES AND DETAILS WHERE RIP-RAP IS PROPOSED (ES-0.18).
6. EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET FROM TOP OF BANK OR 100 FEET FROM TOP OF BANK FOR SPECIAL PROTECTION WATERS (HQ OR EV).
7. TIMBER MATS SHALL EXTEND A MINIMUM OF 20 FEET BEYOND TOP OF BANK.
8. COMPOST FILTER SOCKS SHALL BE INSTALLED ALONG THE TOP OF THE STREAM BANK ACROSS THE RIGHT-OF-WAY WHEN PUMP BYPASS IS NOT IN PLACE.

LEGEND

SYMBOL	DESCRIPTION
	PROPOSED 16-INCH & 20-INCH SUNOCO PIPELINES
	PROPOSED SUNOCO RIGHT-OF-WAY
	EXISTING SUNOCO PIPELINE
	MAJOR CONTOUR
	MINOR CONTOUR
	STREAM CENTERLINE
	TOP/BOTTOM OF BANK
	EXISTING EDGE OF PAVED ROADWAY
	EXISTING EDGE OF UNPAVED ROADWAY
	EXISTING VEGETATION
	EDGE OF WATER
	SOIL TYPE BOUNDARY
	WETLAND
	PROPOSED ROCK CONSTRUCTION ENTRANCE
	LIMIT OF DISTURBANCE
	CONSTRUCTION FENCE
	12-INCH COMPOST FILTER SOCK
	18-INCH COMPOST FILTER SOCK
	24-INCH COMPOST FILTER SOCK
	32-INCH COMPOST FILTER SOCK
	PERMANENT WATER BAR W/FILTER SOCK
	TRENCH PLUG
	TEMPORARY EQUIPMENT CROSSING
	SANDBAG DAM
	PUMP
	SCREENED INLET
	ENERGY DISSIPATER
	DEWATERING FACILITY
	CULVERT PIPE
	EROSION CONTROL BLANKET
	STREAM RESTORATION

PROFILE LEGEND:

	PROPOSED PIPELINE
	EXISTING GRADE
	EXISTING GRADE ELEV.
	PROPOSED TOP OF PIPE ELEV.

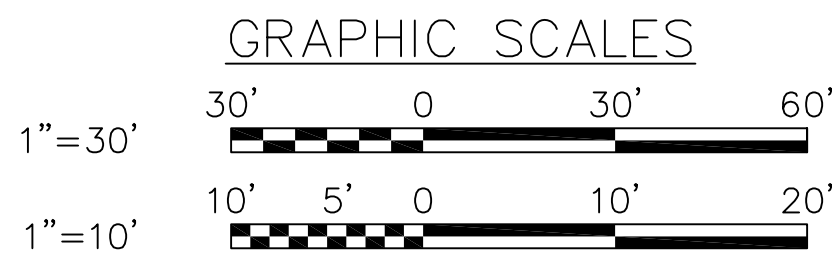
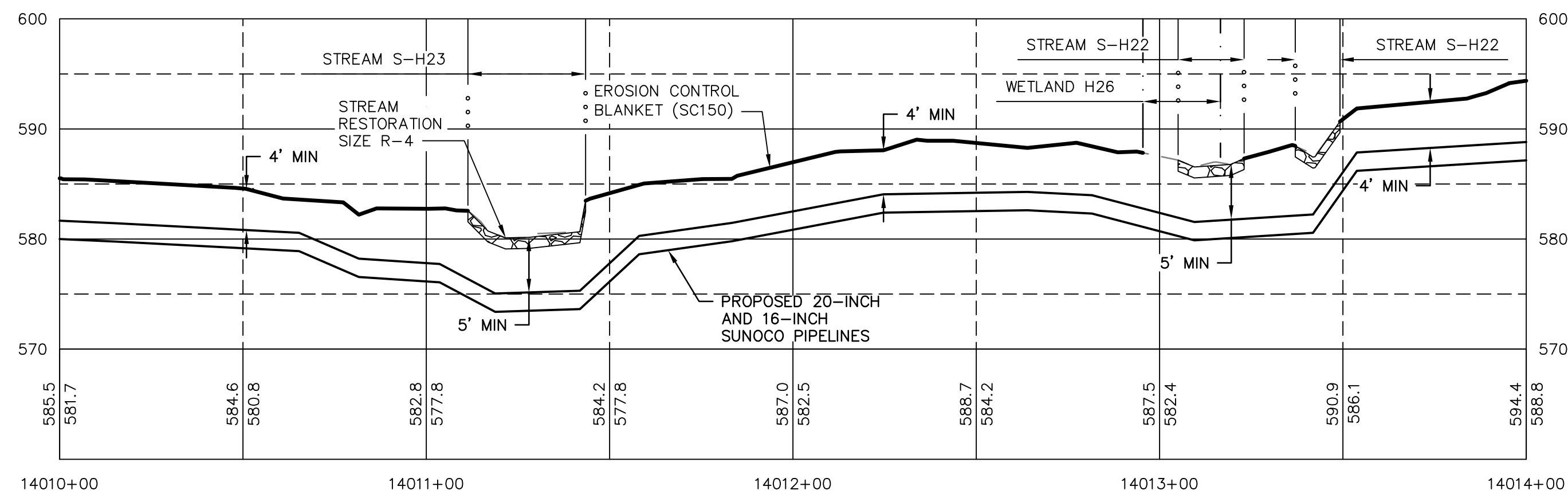
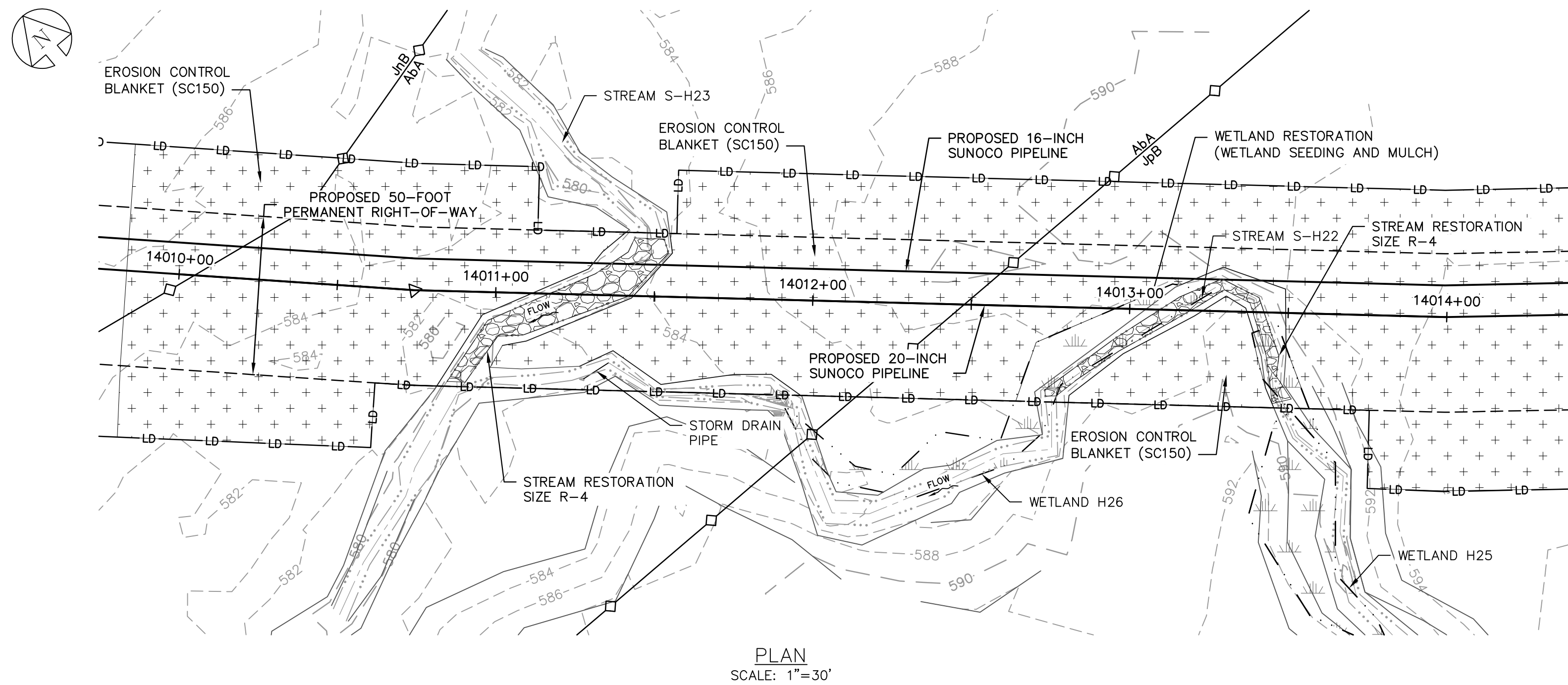


CHRISTOPHER D. ANTONI
PE-057385-E

ENGINEERING RECORD	
DRAWN BY	RFG
CHECKED BY	CDA
APPROVED BY	CDA
DATE	11/30/16
SCALE	AS NOTED

OLD DRAWING NO.

REV.	DATE	APP#	DESCRIPTION	APPROVAL
PENNSYLVANIA PIPELINE PROJECT STREAMS S-C108, S-H23 AND S-H22 EXISTING CONDITIONS/EROSION & SEDIMENTATION CONTROL PLANS				
BERKS COUNTY, PA				
DWG. NO. S-H22-A				REV. NO. 0



GENERAL NOTES:

- REFERENCE E&S PLAN AND SITE RESTORATION NOTES AND DETAILS FOR ADDITIONAL CONSTRUCTION SEQUENCING, TYPICAL DETAILS AND NOTES (ES-0.01-ES-0.23); AND PLAN SHEETS FOR ADDITIONAL PLANS AND TOPOGRAPHY.
- ALL EXISTING UTILITY INFORMATION IS APPROXIMATE. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
- MAINTAIN 2'-0" MINIMUM VERTICAL SEPARATION BETWEEN THE PROPOSED PIPELINE AND OTHER UTILITIES.
- THE BACKGROUND TOPOGRAPHY WAS OBTAINED FROM TOPOGRAPHIC SURVEYS PERFORMED IN SEPTEMBER 2016.
- THE PROJECT IS LOCATED IN NAD83 PENNSYLVANIA STATE PLANE COORDINATE SYSTEM (SOUTH ZONE), NAVD88.
- EXCAVATION IS LIMITED TO THE CENTERLINE WITH A TYPICAL TRENCH WIDTH OF 4'-5' FOR 16/20" PIPELINE.

WETLAND CROSSING NOTES:

- REFERENCE NOTES AND DETAILS FOR WETLAND CONSTRUCTION SEQUENCING AND WETLAND RESTORATION (ES-0.03, ES-0.08, ES-0.10, AND ES-0.15).
- A MINIMUM OF 4 FEET COVER UNDER WETLANDS AND UPLANDS IS REQUIRED.
- FOR TEMPORARY TIMBER MAT REFERENCE (ES-0.10)
- EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET EDGE OF WETLAND OR 100 FEET FROM EDGE OF WETLAND FOR SPECIAL PROTECTION WATERS (HQ OR EV).

STREAM CROSSING NOTES:

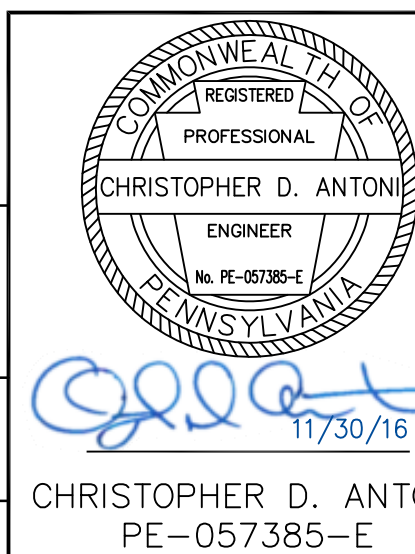
- REFERENCE NOTES AND DETAILS FOR STREAM CONSTRUCTION SEQUENCING AND STREAM RESTORATION (ES-0.01-ES-0.17).
- FOR TEMPORARY EQUIPMENT CROSSINGS REFERENCE (ES-0.10).
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- THE PIPELINES SHALL MAINTAIN A MINIMUM OF 5 FEET OF COVER UNDER STREAMS FROM THE TOP OF PIPE TO THE STREAM BED. THIS COVER WILL BE MAINTAINED AT A MINIMUM FROM TOP OF BANK TO TOP OF BANK.
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- COMPOST FILTER SOCKS SHALL BE INSTALLED ALONG THE TOP OF THE STREAM BANK ACROSS THE RIGHT-OF-WAY WHEN PUMP BYPASS IS NOT IN PLACE.

LEGEND

SYMBOL	DESCRIPTION
	PROPOSED 16-INCH & 20-INCH SUNOCO PIPELINES
	PROPOSED SUNOCO RIGHT-OF-WAY
	EXISTING SUNOCO PIPELINE
	MAJOR CONTOUR
	MINOR CONTOUR
	STREAM CENTERLINE
	TOP/BOTTOM OF BANK
	EXISTING EDGE OF PAVED ROADWAY
	EXISTING EDGE OF UNPAVED ROADWAY
	EXISTING VEGETATION
	EDGE OF WATER
	SOIL TYPE BOUNDARY
	WETLAND
	PROPOSED ROCK CONSTRUCTION ENTRANCE
	LIMIT OF DISTURBANCE
	CONSTRUCTION FENCE
	12-INCH COMPOST FILTER SOCK
	18-INCH COMPOST FILTER SOCK
	24-INCH COMPOST FILTER SOCK
	32-INCH COMPOST FILTER SOCK
	PERMANENT WATER BAR W/FILTER SOCK
	TRENCH PLUG
	SANDBAG DAM
	PUMP
	SCREENED INLET
	ENERGY DISSIPATER
	DEWATERING FACILITY
	CULVERT PIPE
	EROSION CONTROL BLANKET
	STREAM RESTORATION

PROFILE LEGEND:

	PROPOSED PIPELINE
	EXISTING GRADE
	EXISTING GRADE ELEV.
	PROPOSED TOP OF PIPE ELEV.



ENGINEERING RECORD	
DRAWN BY	RFG
CHECKED BY	CDA
APPROVED BY	CDA
DATE	11/30/16
SCALE	AS NOTED

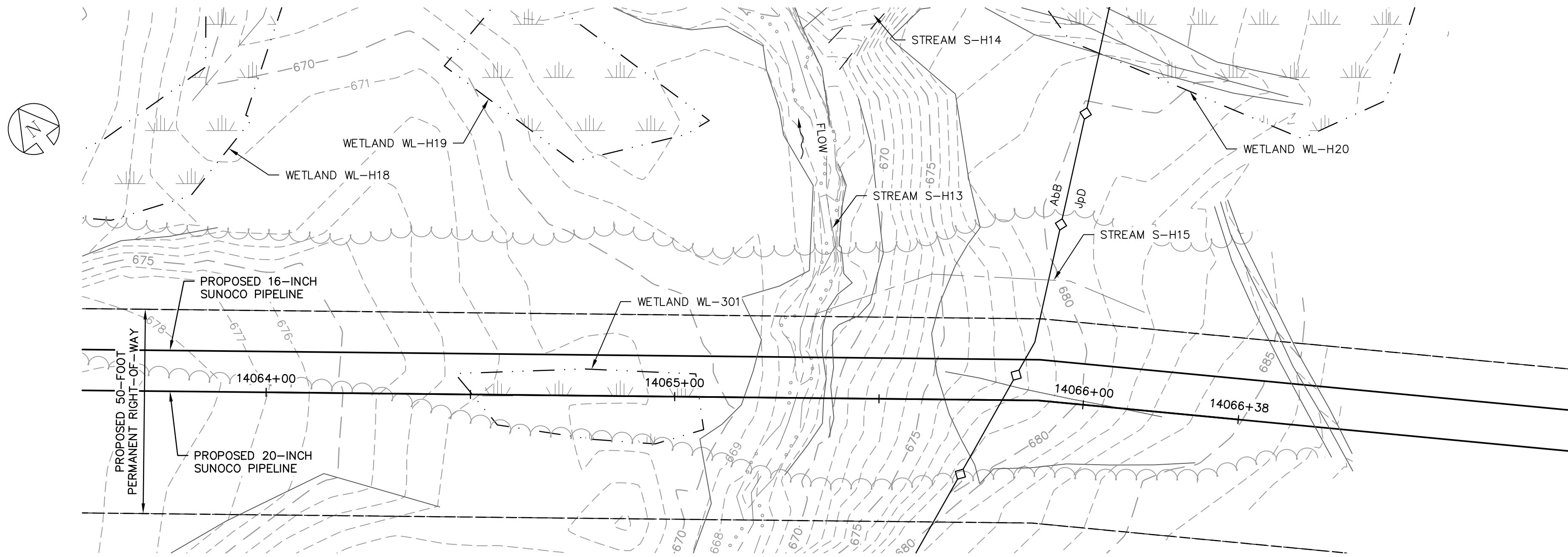
OLD DRAWING NO.

REV.	DATE	APP#	DESCRIPTION	APPROVAL
PENNSYLVANIA PIPELINE PROJECT STREAMS S-C108, S-H23 AND S-H22 RESTORATION PLAN				
BERKS COUNTY, PA				
DWG. NO.			S-H22-B	REV. NO. 0

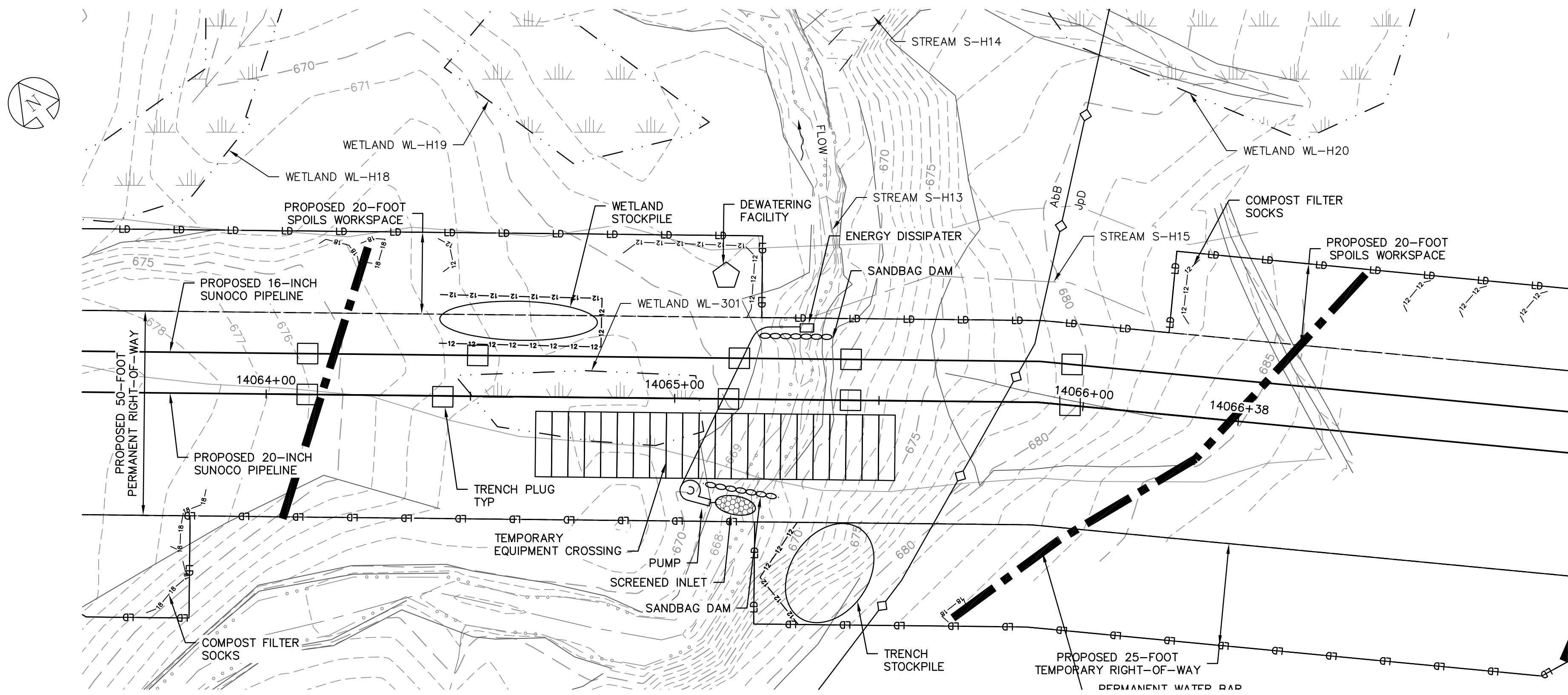
STV
Baltimore, MD Bismarck, ND Denver, CO Douglassville, PA
Houston, TX Pittsburgh, PA Williamsport, PA

THE LOCATION OF THE PIPELINE FACILITIES AS SHOWN HEREON MUST BE CONSIDERED AS APPROXIMATE ONLY. BEFORE DIGGING OR FOR AN EXACT LOCATION PLEASE CONTACT YOUR STATES UNDERGROUND UTILITY LOCATION SERVICE.

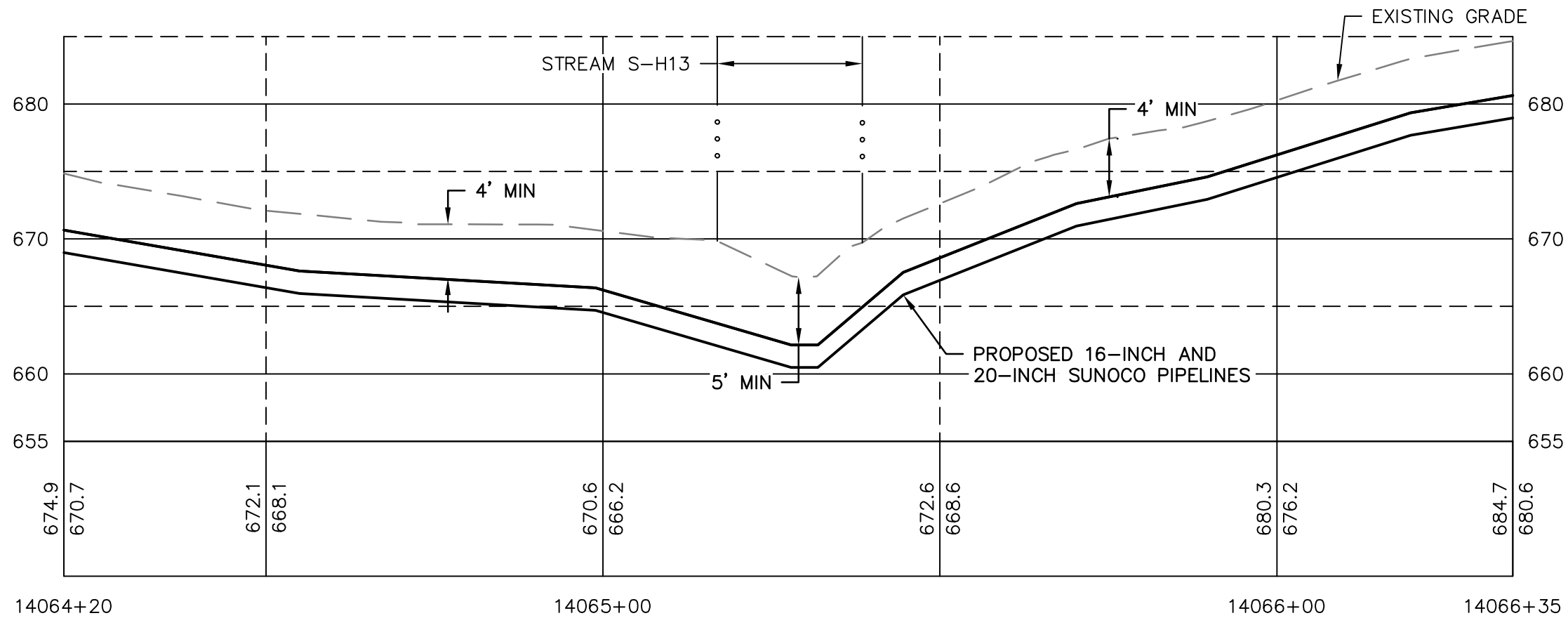
STV PROJECT No.: 38-17335



EXISTING CONDITIONS PLAN
SCALE: 1"=20'

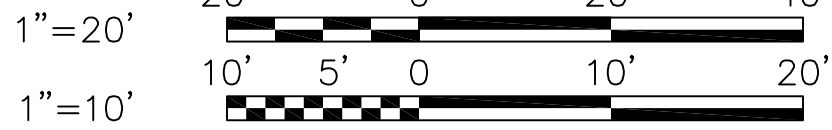


EROSION & SEDIMENTATION CONTROL PLAN
SCALE: 1"=20'



PROFILE
HORIZ SCALE: 1"=20'
VERT SCALE: 1"=10'

GRAPHIC SCALES



GENERAL NOTES:

1. REFERENCE E&S PLAN AND SITE RESTORATION NOTES AND DETAILS FOR ADDITIONAL CONSTRUCTION SEQUENCING, TYPICAL DETAILS AND NOTES (ES-0.01-ES-0.23), AND PLAN SHEETS FOR ADDITIONAL PLANS AND TOPOGRAPHY.
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3. MAINTAIN 2'-0" MINIMUM VERTICAL SEPARATION BETWEEN THE PROPOSED PIPELINE AND OTHER UTILITIES.
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5. THE PROJECT IS LOCATED IN NAD83 PENNSYLVANIA STATE PLANE COORDINATE SYSTEM (SOUTH ZONE), NAVD88.
6. EXCAVATION IS LIMITED TO THE CENTERLINE WITH A TYPICAL TRENCH WIDTH OF 4'-5' FOR 16/20" PIPELINE.

WETLAND CROSSING NOTES:

1. REFERENCE NOTES AND DETAILS FOR WETLAND CONSTRUCTION SEQUENCING AND WETLAND RESTORATION (ES-0.03, ES-0.08, ES-0.10, AND ES-0.15).
2. A MINIMUM OF 4 FEET COVER UNDER WETLANDS AND UPLANDS IS REQUIRED.
3. FOR TEMPORARY TIMBER MAT REFERENCE (ES-0.10)
4. EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET EDGE OF WETLAND OR 100 FEET FROM EDGE OF WETLAND FOR SPECIAL PROTECTION WATERS (HQ OR EV).

STREAM CROSSING NOTES:

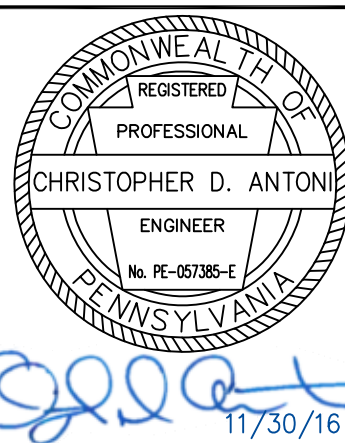
1. REFERENCE NOTES AND DETAILS FOR STREAM CONSTRUCTION SEQUENCING AND STREAM RESTORATION (ES-0.01-ES-0.17).
2. FOR TEMPORARY EQUIPMENT CROSSINGS REFERENCE (ES-0.10).
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7. TIMBER MATS SHALL EXTEND A MINIMUM OF 20 FEET BEYOND TOP OF BANK.
8. COMPOST FILTER SOCKS SHALL BE INSTALLED ALONG THE TOP OF THE STREAM BANK ACROSS THE RIGHT-OF-WAY WHEN PUMP BYPASS IS NOT IN PLACE.

LEGEND

SYMBOL	DESCRIPTION
	PROPOSED 16-INCH & 20-INCH SUNOCO PIPELINES
	PROPOSED SUNOCO RIGHT-OF-WAY
	EXISTING SUNOCO PIPELINE
	MAJOR CONTOUR
	MINOR CONTOUR
	STREAM CENTERLINE
	TOP/BOTTOM OF BANK
	EXISTING EDGE OF PAVED ROADWAY
	EXISTING EDGE OF UNPAVED ROADWAY
	EXISTING VEGETATION
	EDGE OF WATER
	SOIL TYPE BOUNDARY
	WETLAND
	PROPOSED ROCK CONSTRUCTION ENTRANCE
	LIMIT OF DISTURBANCE
	CONSTRUCTION FENCE
	12-INCH COMPOST FILTER SOCK
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	24-INCH COMPOST FILTER SOCK
	32-INCH COMPOST FILTER SOCK
	PERMANENT WATER BAR W/FILTER SOCK
	TRENCH PLUG
	TEMPORARY EQUIPMENT CROSSING
	SANDBAG DAM
	PUMP
	SCREENED INLET
	ENERGY DISSIPATER
	DEWATERING FACILITY
	CULVERT PIPE
	EROSION CONTROL BLANKET
	STREAM RESTORATION

PROFILE LEGEND:

	PROPOSED PIPELINE
	EXISTING GRADE
	EXISTING GRADE ELEV.
	PROPOSED TOP OF PIPE ELEV.

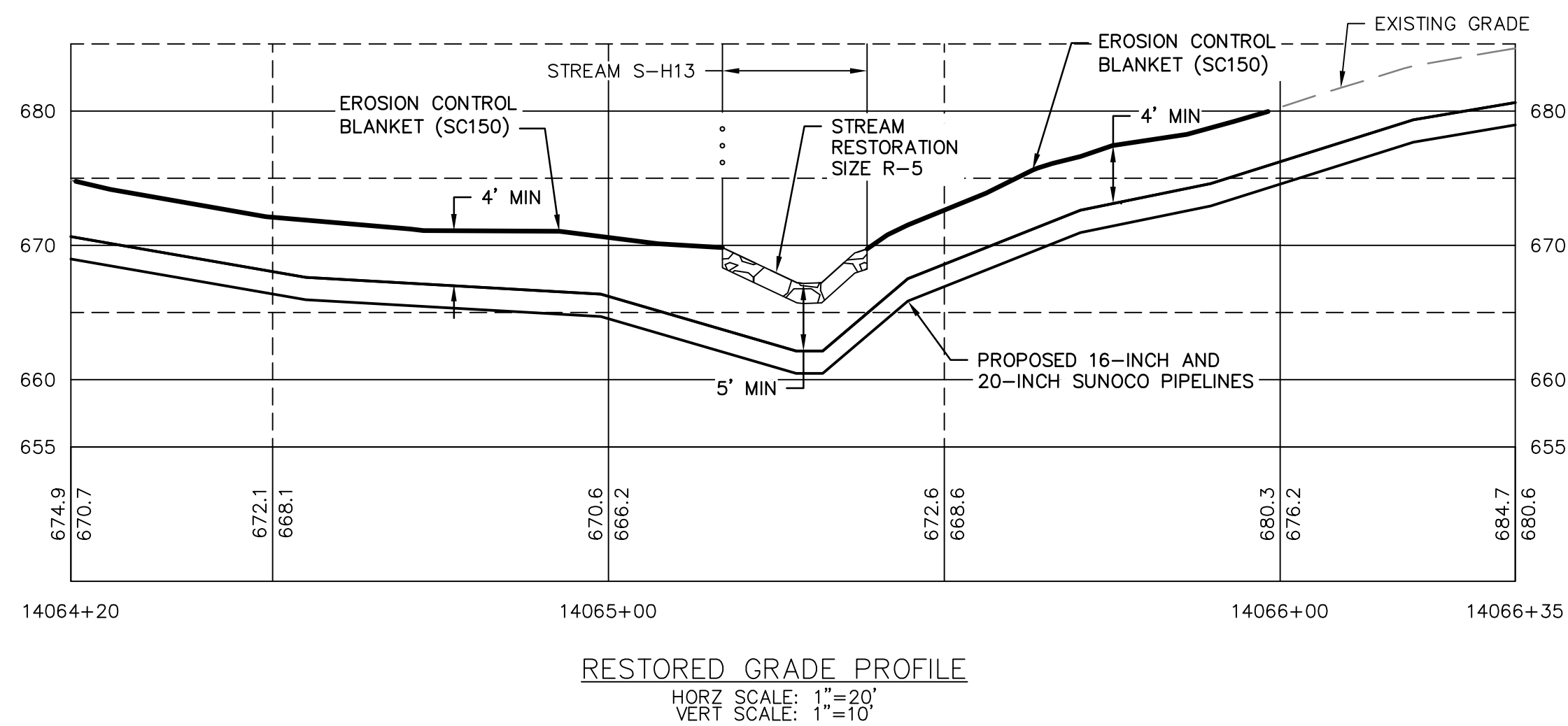
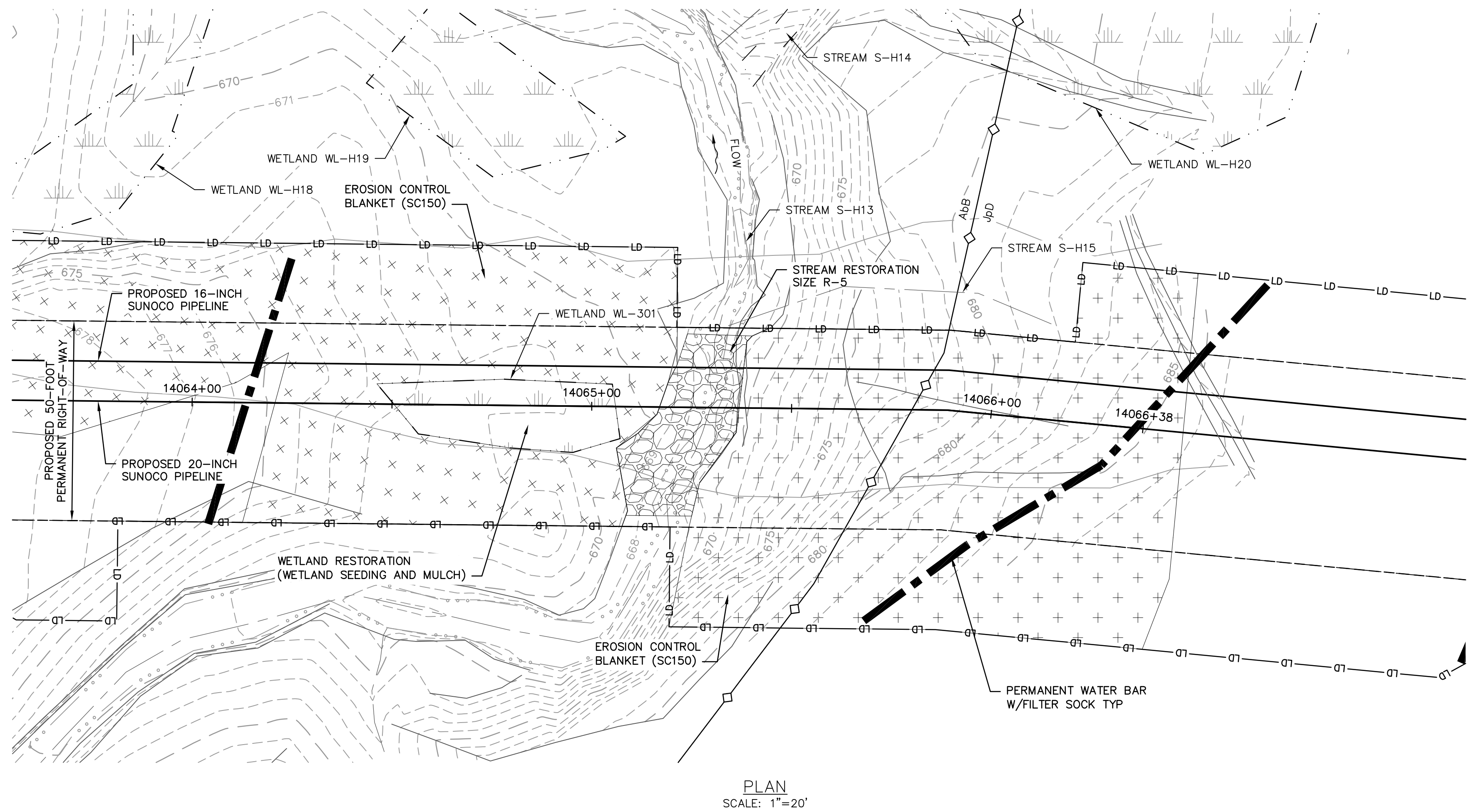
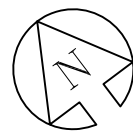


CHRISTOPHER D. ANTON
PE-057385-E

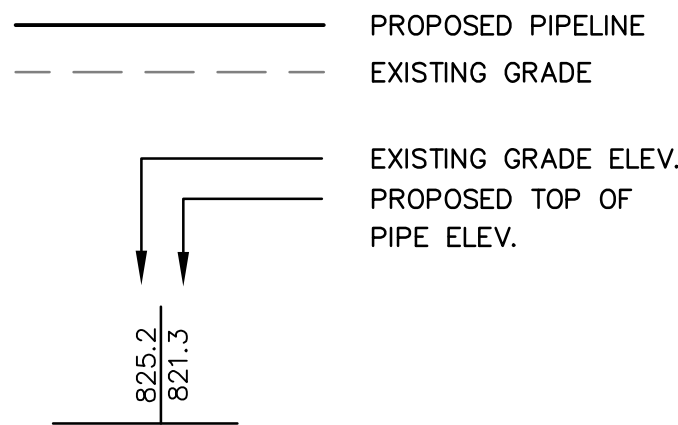
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DRAWN BY	DLH
CHECKED BY	CDA
APPROVED BY	CDA
DATE	11/30/16
SCALE	AS NOTED

OLD DRAWING NO.

REV.	DATE	APP#	DESCRIPTION	APPROVAL
PENNSYLVANIA PIPELINE PROJECT STREAMS S-H13 AND S-H15 EXISTING CONDITIONS EROSION & SEDIMENTATION CONTROL PLAN				
BERKS COUNTY, PA				
DWG. NO. S-H13-A				REV. NO. 0



PROFILE LEGEND:



LEGEND

SYMBOL	DESCRIPTION
	PROPOSED 16-INCH & 20-INCH SUNOCO PIPELINES
	PROPOSED SUNOCO RIGHT-OF-WAY
	EXISTING SUNOCO PIPELINE
	MAJOR CONTOUR
	MINOR CONTOUR
	STREAM CENTERLINE
	TOP/BOTTOM OF BANK
	EXISTING EDGE OF PAVED ROADWAY
	EXISTING EDGE OF UNPAVED ROADWAY
	EXISTING VEGETATION
	EDGE OF WATER
	SOIL TYPE BOUNDARY
	WETLAND
	PROPOSED ROCK CONSTRUCTION ENTRANCE
	LIMIT OF DISTURBANCE
	CONSTRUCTION FENCE
	12-INCH COMPOST FILTER SOCK
	18-INCH COMPOST FILTER SOCK
	24-INCH COMPOST FILTER SOCK
	32-INCH COMPOST FILTER SOCK
	PERMANENT WATER BAR W/FILTER SOCK
	TRENCH PLUG
	TEMPORARY EQUIPMENT CROSSING
	SANDBAG DAM
	PUMP
	SCREENED INLET
	ENERGY DISSIPATER
	DEWATERING FACILITY
	CULVERT PIPE
	EROSION CONTROL BLANKET
	STREAM RESTORATION

GENERAL NOTES:

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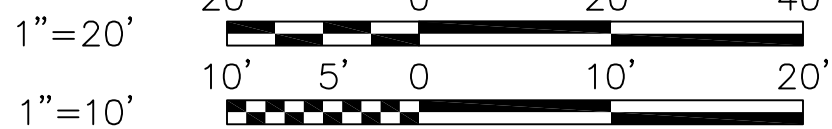
WETLAND CROSSING NOTES:

- REFERENCE NOTES AND DETAILS FOR WETLAND CONSTRUCTION SEQUENCING AND WETLAND RESTORATION (ES-0.03, ES-0.08, ES-0.10, AND ES-0.15).
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STREAM CROSSING NOTES:

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- TIMBER MATS SHALL EXTEND A MINIMUM OF 20 FEET BEYOND TOP OF BANK.
- COMPOST FILTER SOCKS SHALL BE INSTALLED ALONG THE TOP OF THE STREAM BANK ACROSS THE RIGHT-OF-WAY WHEN PUMP BYPASS IS NOT IN PLACE.

GRAPHIC SCALES



STV
Baltimore, MD Bismarck, ND Denver, CO Douglassville, PA
Houston, TX Pittsburgh, PA Williamsport, PA

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STV PROJECT No.: 38-17335

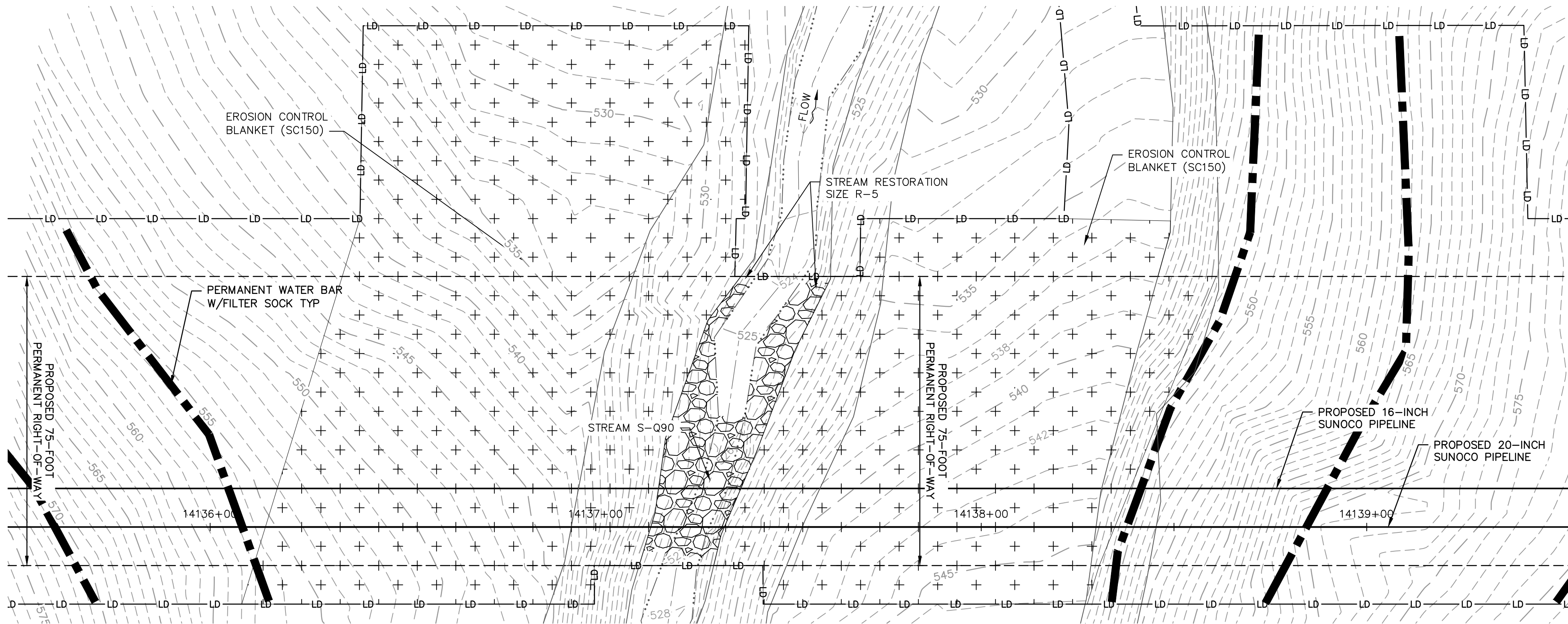
COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER D. ANTON
No. PE-057385-E
11/30/16

CHRISTOPHER D. ANTONI
PE-057385-E

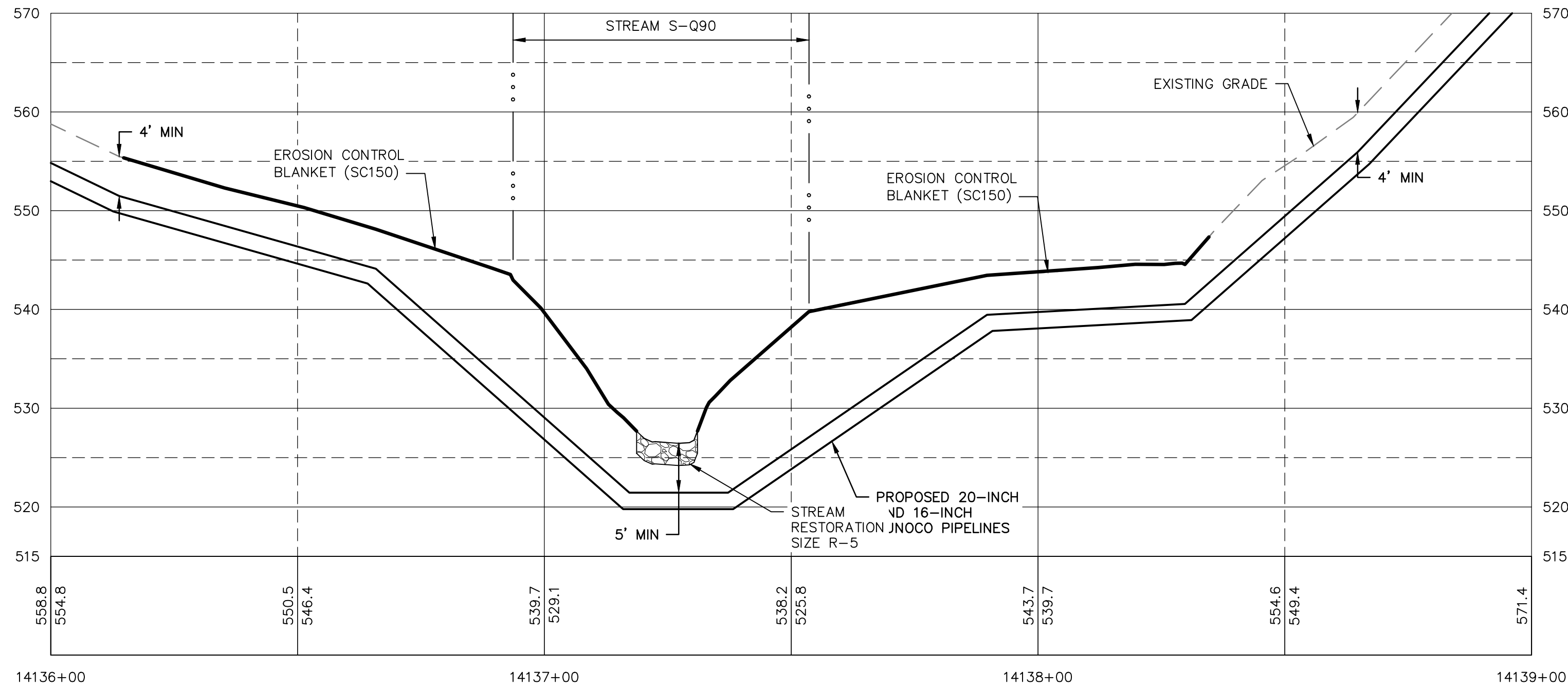
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DRAWN BY	DLH
CHECKED BY	CDA
APPROVED BY	CDA
DATE	11/30/16
SCALE	AS NOTED

REV.	DATE	APP#	DESCRIPTION	APPROVAL
PENNSYLVANIA PIPELINE PROJECT STREAMS S-H13 AND S-H15 RESTORATION PLAN				
BERKS COUNTY, PA				
OLD DRAWING NO.			DWG. NO. S-H13-B	REV. NO. 0

SYMBOL	DESCRIPTION
	PROPOSED 16-INCH & 20-INCH SUNOCO PIPELINES
	PROPOSED SUNOCO RIGHT-OF-WAY
	EXISTING SUNOCO PIPELINE
	MAJOR CONTOUR
	MINOR CONTOUR
	STREAM CENTERLINE
	TOP/BOTTOM OF BANK
	EXISTING EDGE OF PAVED ROADWAY
	EXISTING EDGE OF UNPAVED ROADWAY
	EXISTING VEGETATION
	EDGE OF WATER
	SOIL TYPE BOUNDARY
	WETLAND
	PROPOSED ROCK CONSTRUCTION ENTRANCE
	LIMIT OF DISTURBANCE
	CONSTRUCTION FENCE
	12-INCH COMPOST FILTER SOCK
	18-INCH COMPOST FILTER SOCK
	24-INCH COMPOST FILTER SOCK
	32-INCH COMPOST FILTER SOCK
	PERMANENT WATER BAR
	W/FILTER SOCK
	TRENCH PLUG
	TEMPORARY EQUIPMENT CROSSING
	SANDBAG DAM
	PUMP
	SCREENED INLET
	ENERGY DISSIPATER
	DEWATERING FACILITY
	CULVERT PIPE
	EROSION CONTROL BLANKET
	STREAM RESTORATION

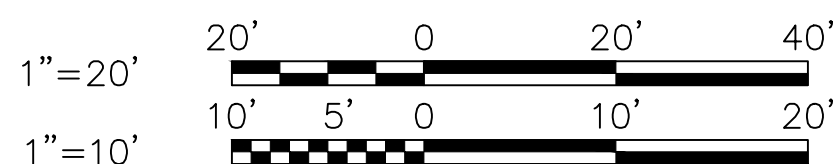


PLAN
SCALE: 1"=20'



RESTORED GRADE PROFILE
HORIZ SCALE: 1"=20'
VERT SCALE: 1"=10'

GRAPHIC SCALES



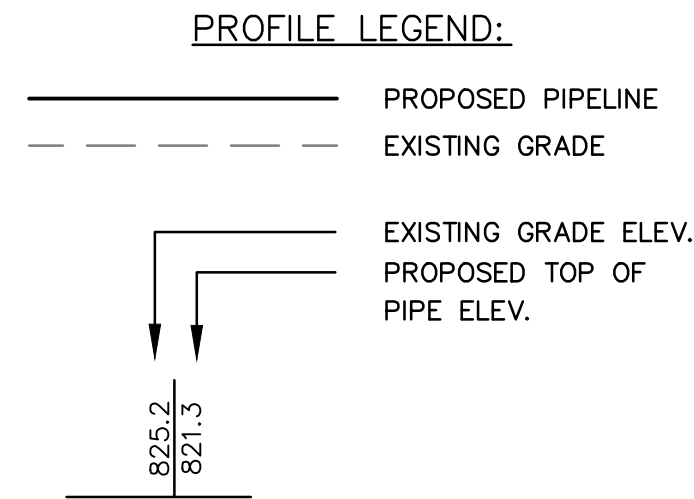
STV
Baltimore, MD Bismarck, ND Denver, CO Douglassville, PA
Houston, TX Pittsburgh, PA Williamsport, PA

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STV PROJECT No.: 38-17335

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER D. ANTONI
No. PE-057385-E
11/30/16

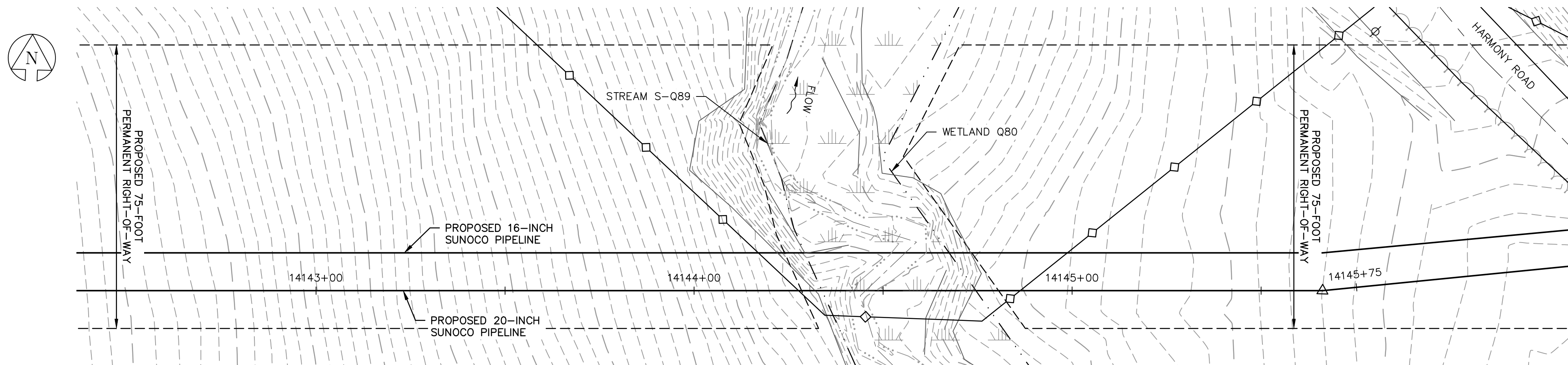
CHRISTOPHER D. ANTONI
PE-057385-E



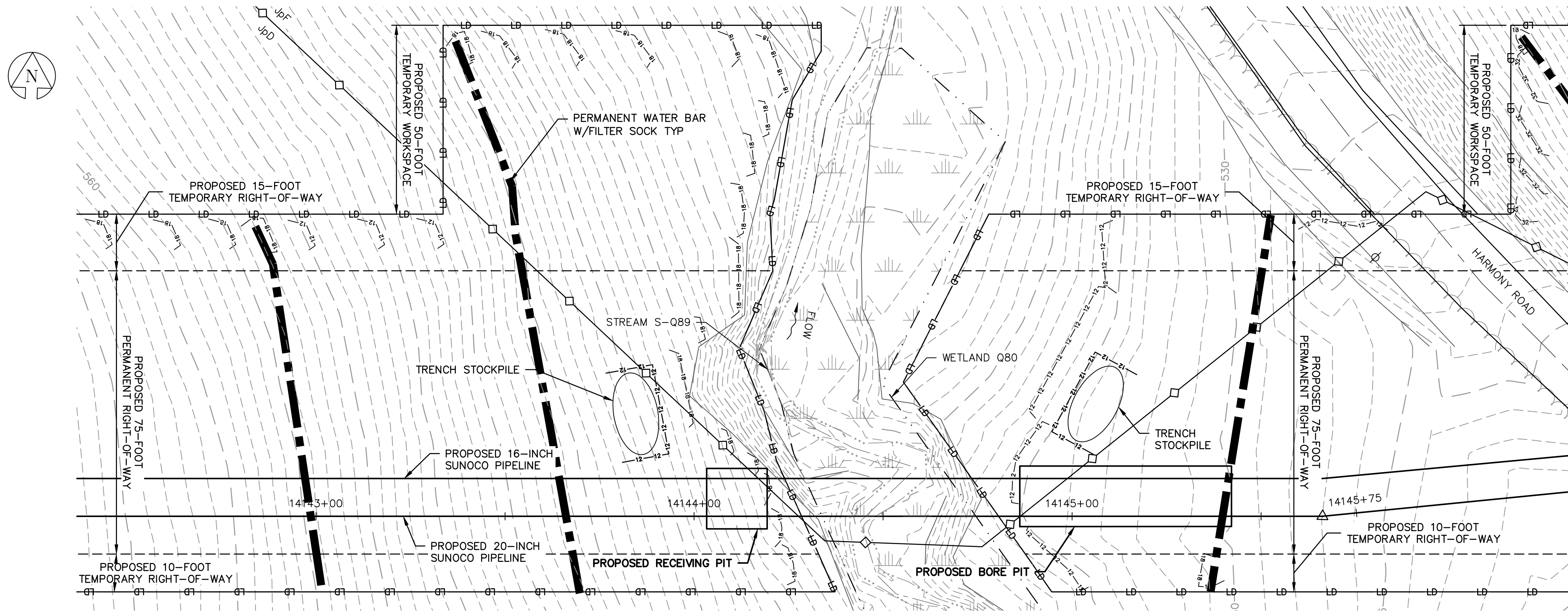
- GENERAL NOTES:**
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 - THE PROJECT IS LOCATED IN NAD83 PENNSYLVANIA STATE PLANE COORDINATE SYSTEM (SOUTH ZONE), NAVD88.
 - EXCAVATION IS LIMITED TO THE CENTERLINE WITH A TYPICAL TRENCH WIDTH OF 4-5' FOR 16/20" PIPELINE.
- WETLAND CROSSING NOTES:**
- REFERENCE NOTES AND DETAILS FOR WETLAND CONSTRUCTION SEQUENCING AND WETLAND RESTORATION (ES-0.03, ES-0.08, ES-0.10, AND ES-0.15).
 - A MINIMUM OF 4 FEET COVER UNDER WETLANDS AND UPLANDS IS REQUIRED.
 - FOR TEMPORARY TIMBER MAT CROSSINGS REFERENCE (ES-0.10)
 - EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET EDGE OF WETLAND OR 100 FEET FROM EDGE OF WETLAND FOR SPECIAL PROTECTION WATERS (HQ OR EV).
- STREAM CROSSING NOTES:**
- REFERENCE NOTES AND DETAILS FOR STREAM CONSTRUCTION SEQUENCING AND STREAM RESTORATION (ES-0.01-ES-0.17).
 - FOR TEMPORARY EQUIPMENT CROSSINGS REFERENCE (ES-0.10).
 - SITE CONDITIONS MAY ALLOW FOR IMPLEMENTATION OF OTHER APPROVED PIPELINE INSTALLATION METHODS REFERENCED WITH THE NOTES AND DETAILS (ES-0.11-ES-0.14).
 - THE PIPELINES SHALL MAINTAIN A MINIMUM OF 5 FEET OF COVER UNDER STREAMS FROM THE TOP OF PIPE TO THE STREAM BED. THIS COVER WILL BE MAINTAINED AT A MINIMUM FROM TOP OF BANK TO TOP OF BANK.
 - REFERENCE THE STREAM BANK STABILIZATION DETAIL AND STREAM RESTORATION TABLE IN THE NOTES AND DETAILS WHERE RIP-RAP IS PROPOSED (ES-0.18).
 - EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET FROM TOP OF BANK OR 100 FEET FROM TOP OF BANK FOR SPECIAL PROTECTION WATERS (HQ OR EV).
 - TIMBER MATS SHALL EXTEND A MINIMUM OF 20 FEET BEYOND TOP OF BANK.
 - COMPOST FILTER SOCKS SHALL BE INSTALLED ALONG THE TOP OF THE STREAM BANK ACROSS THE RIGHT-OF-WAY WHEN PUMP BYPASS IS NOT IN PLACE.

SYMBOL	DESCRIPTION
	PROPOSED 16-INCH & 20-INCH SUNOCO PIPELINES
	PROPOSED SUNOCO RIGHT-OF-WAY
	EXISTING SUNOCO PIPELINE
	MAJOR CONTOUR
	MINOR CONTOUR
	STREAM CENTERLINE
	TOP/BOTTOM OF BANK
	EXISTING EDGE OF PAVED ROADWAY
	EXISTING EDGE OF UNPAVED ROADWAY
	EXISTING VEGETATION
	EDGE OF WATER
	SOIL TYPE BOUNDARY
	WETLAND
	PROPOSED ROCK CONSTRUCTION ENTRANCE
	LIMIT OF DISTURBANCE
	CONSTRUCTION FENCE
	12-INCH COMPOST FILTER SOCK
	18-INCH COMPOST FILTER SOCK
	24-INCH COMPOST FILTER SOCK
	32-INCH COMPOST FILTER SOCK
	PERMANENT WATER BAR W/FILTER SOCK
	TRENCH PLUG
	TEMPORARY EQUIPMENT CROSSING
	SANDBAG DAM
	PUMP
	SCREENED INLET
	ENERGY DISSIPATER
	DEWATERING FACILITY
	CULVERT PIPE
	EROSION CONTROL BLANKET
	STREAM RESTORATION

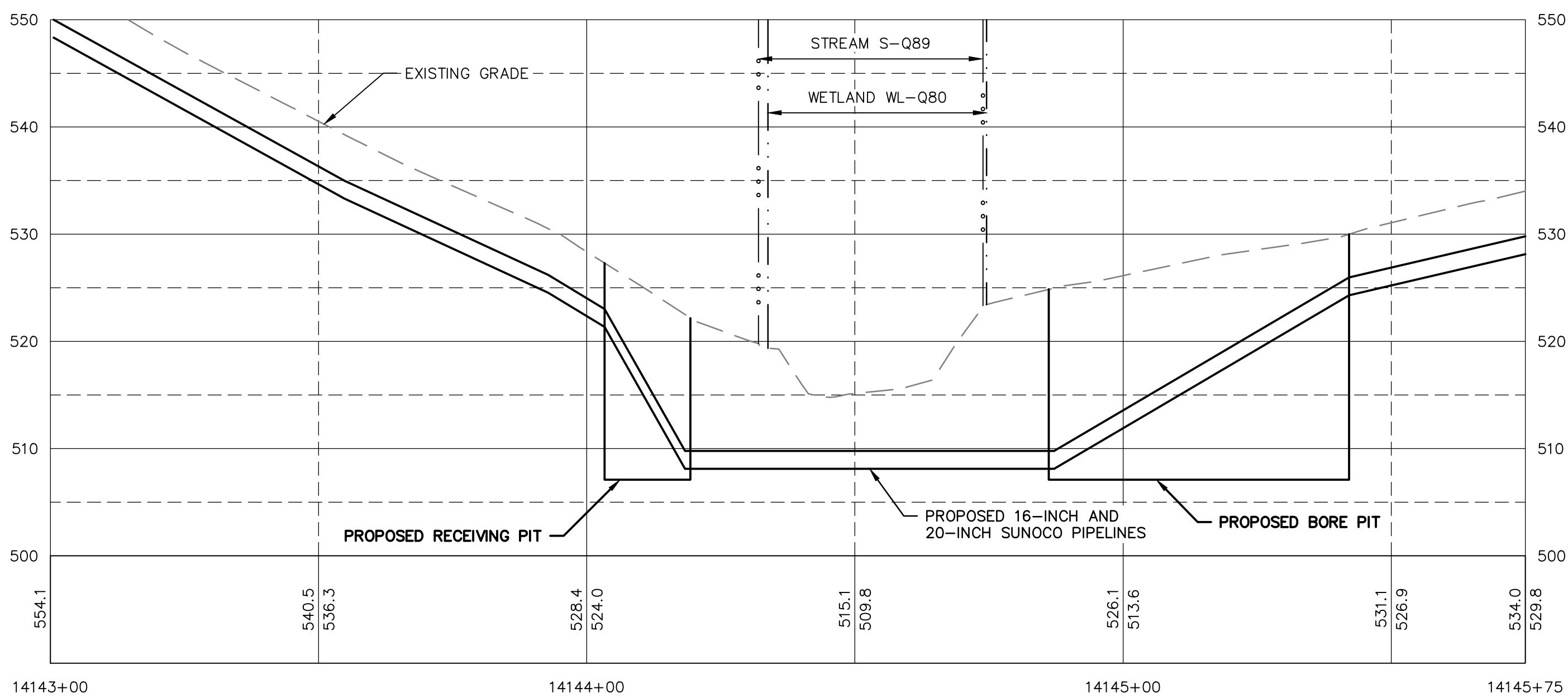
REV.	DATE	APP#	DESCRIPTION	APPROVAL
PENNSYLVANIA PIPELINE PROJECT STREAM S-Q90 RESTORATION PLAN				
BERKS COUNTY, PA				
OLD DRAWING NO.			DWG. NO. S-Q90-B	REV. NO. 0



EXISTING CONDITIONS PLAN
SCALE: 1"=20'

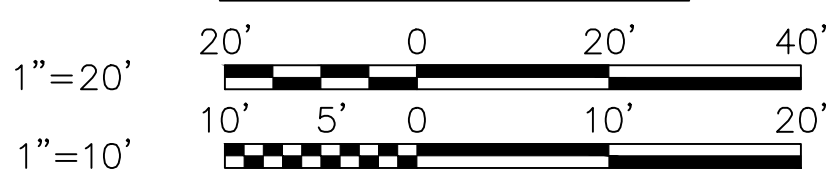


EROSION & SEDIMENTATION CONTROL PLAN
SCALE: 1"=20'



PROFILE
HORZ SCALE: 1"=20'
VERT SCALE: 1"=10'

GRAPHIC SCALES



GENERAL NOTES:

- REFERENCE E&S PLAN AND SITE RESTORATION NOTES AND DETAILS FOR ADDITIONAL CONSTRUCTION SEQUENCING, TYPICAL DETAILS AND NOTES (ES-0.01-ES-0.23); AND PLAN SHEETS FOR ADDITIONAL PLANS AND TOPOGRAPHY.
- ALL EXISTING UTILITY INFORMATION IS APPROXIMATE. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
- MAINTAIN 2'-0" MINIMUM VERTICAL SEPARATION BETWEEN THE PROPOSED PIPELINE AND OTHER UTILITIES.
- THE BACKGROUND TOPOGRAPHY WAS OBTAINED FROM TOPOGRAPHIC SURVEYS PERFORMED IN SEPTEMBER 2016.
- THE PROJECT IS LOCATED IN NAD83 PENNSYLVANIA STATE PLANE COORDINATE SYSTEM (SOUTH ZONE), NAVD88.
- EXCAVATION IS LIMITED TO THE CENTERLINE WITH A TYPICAL TRENCH WIDTH OF 4'-5' FOR 16/20" PIPELINE.

WETLAND CROSSING NOTES:

- REFERENCE NOTES AND DETAILS FOR WETLAND CONSTRUCTION SEQUENCING AND WETLAND RESTORATION (ES-0.03, ES-0.08, ES-0.10, AND ES-0.15).
- A MINIMUM OF 4 FEET COVER UNDER WETLANDS AND UPLANDS IS REQUIRED.
- FOR TEMPORARY TIMBER MAT REFERENCE (ES-0.10)
- EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET EDGE OF WETLAND OR 100 FEET FROM EDGE OF WETLAND FOR SPECIAL PROTECTION WATERS (HQ OR EV).

STREAM CROSSING NOTES:

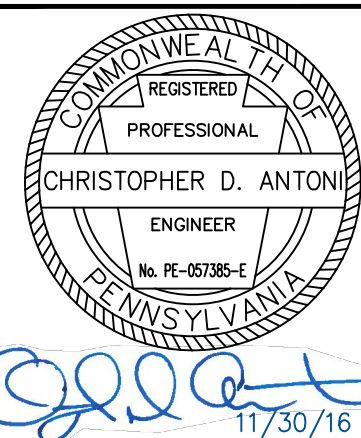
- REFERENCE NOTES AND DETAILS FOR STREAM CONSTRUCTION SEQUENCING AND STREAM RESTORATION (ES-0.01-ES-0.17).
- FOR TEMPORARY EQUIPMENT CROSSINGS REFERENCE (ES-0.10).
- SITE CONDITIONS MAY ALLOW FOR IMPLEMENTATION OF OTHER APPROVED PIPELINE INSTALLATION METHODS REFERENCED WITH THE NOTES AND DETAILS (ES-0.11-ES-0.14).
- THE PIPELINES SHALL MAINTAIN A MINIMUM OF 5 FEET OF COVER UNDER STREAMS FROM THE TOP OF PIPE TO THE STREAM BED. THIS COVER WILL BE MAINTAINED AT A MINIMUM FROM TOP OF BANK TO TOP OF BANK.
- REFERENCE THE STREAM BANK STABILIZATION DETAIL AND STREAM RESTORATION TABLE IN THE NOTES AND DETAILS WHERE RIP-RAP IS PROPOSED (ES-0.18).
- EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET FROM TOP OF BANK OR 100 FEET FROM TOP OF BANK FOR SPECIAL PROTECTION WATERS (HQ OR EV).
- TIMBER MATS SHALL EXTEND A MINIMUM OF 20 FEET BEYOND TOP OF BANK.
- COMPOST FILTER SOCKS SHALL BE INSTALLED ALONG THE TOP OF THE STREAM BANK ACROSS THE RIGHT-OF-WAY WHEN PUMP BYPASS IS NOT IN PLACE.

LEGEND

SYMBOL	DESCRIPTION
	PROPOSED 16-INCH & 20-INCH SUNOCO PIPELINES
	PROPOSED SUNOCO RIGHT-OF-WAY
	EXISTING SUNOCO PIPELINE
	MAJOR CONTOUR
	MINOR CONTOUR
	STREAM CENTERLINE
	TOP/BOTTOM OF BANK
	EXISTING EDGE OF PAVED ROADWAY
	EXISTING EDGE OF UNPAVED ROADWAY
	EXISTING VEGETATION
	EDGE OF WATER
	SOIL TYPE BOUNDARY
	WETLAND
	PROPOSED ROCK CONSTRUCTION ENTRANCE
	LIMIT OF DISTURBANCE
	CONSTRUCTION FENCE
	12-INCH COMPOST FILTER SOCK
	18-INCH COMPOST FILTER SOCK
	24-INCH COMPOST FILTER SOCK
	32-INCH COMPOST FILTER SOCK
	PERMANENT WATER BAR W/FILTER SOCK
	TRENCH PLUG
	TEMPORARY EQUIPMENT CROSSING
	SANDBAG DAM
	PUMP
	SCREENED INLET
	ENERGY DISSIPATER
	DEWATERING FACILITY
	CULVERT PIPE
	EROSION CONTROL BLANKET
	STREAM RESTORATION

PROFILE LEGEND:

	PROPOSED PIPELINE
	EXISTING GRADE
	EXISTING GRADE ELEV.
	PROPOSED TOP OF PIPE ELEV.

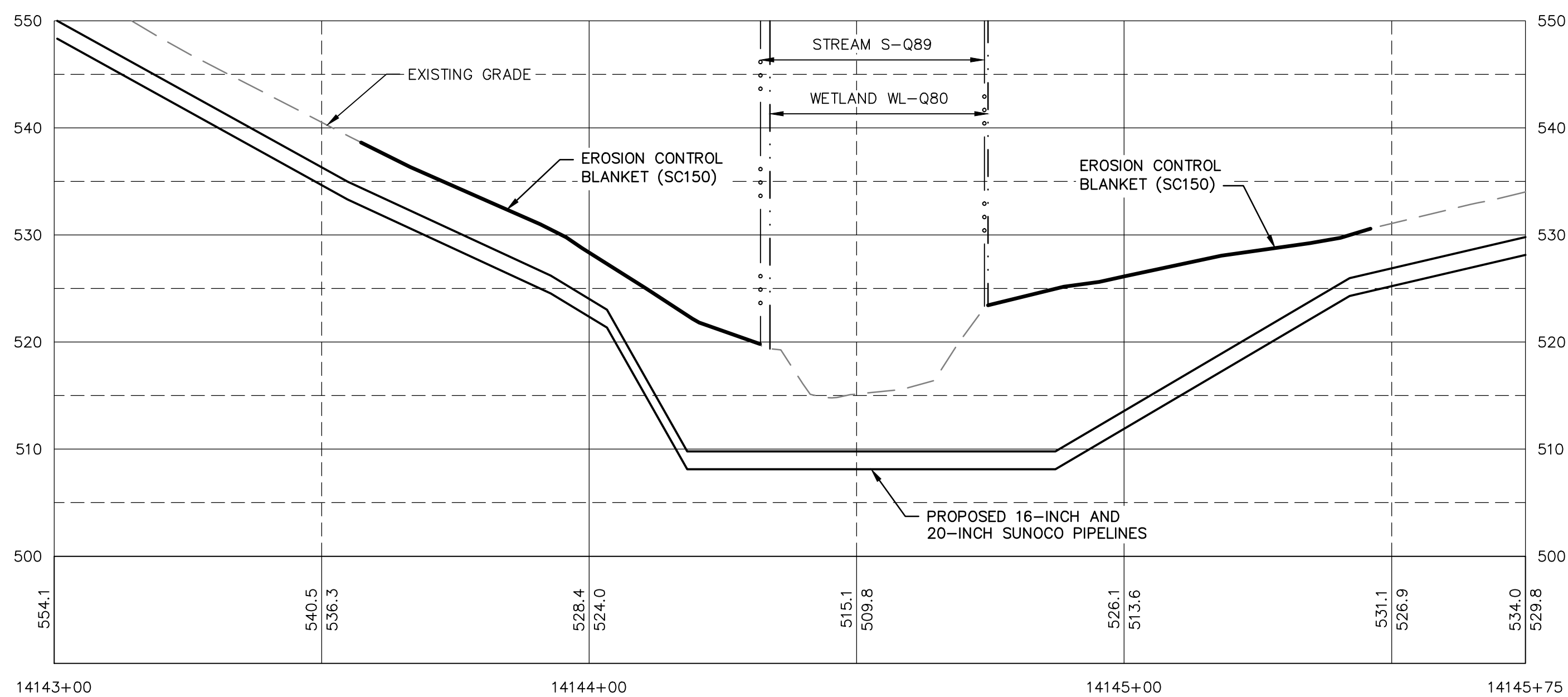
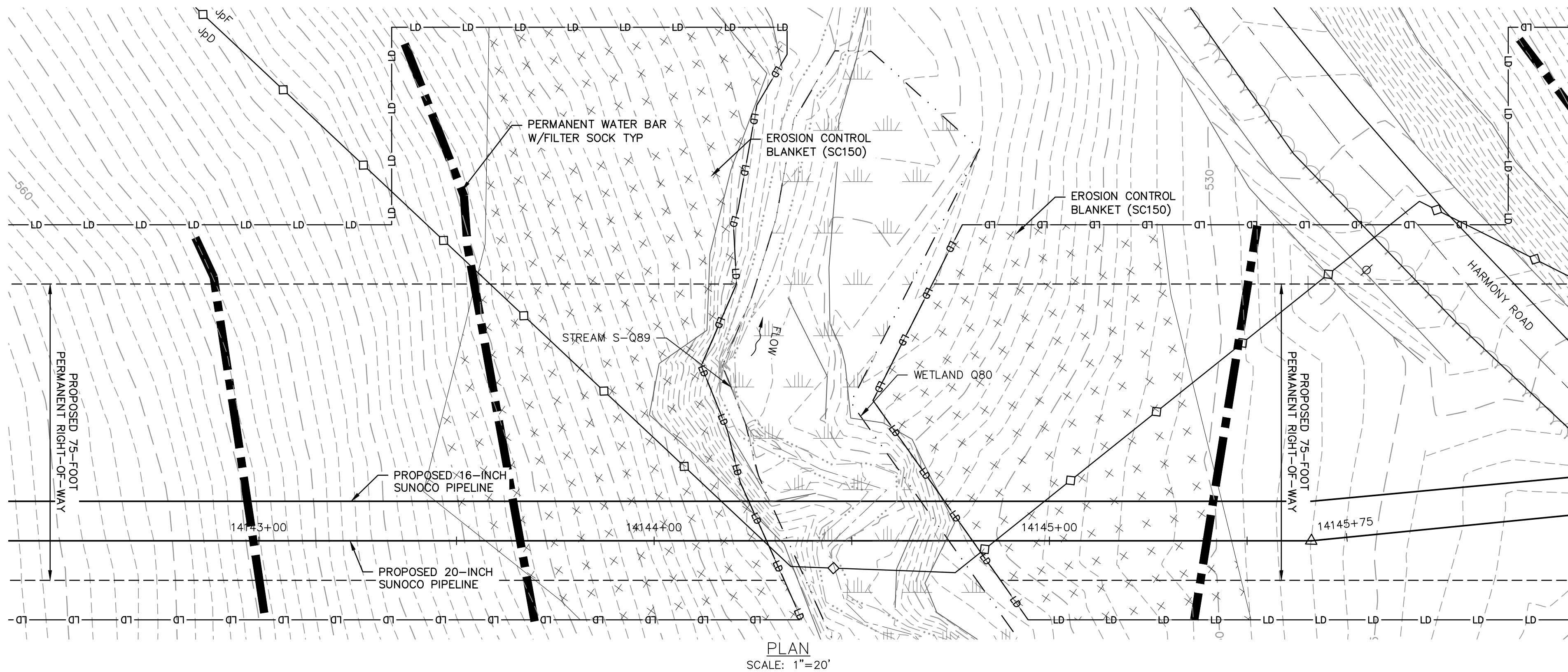


CHRISTOPHER D. ANTONI
PE-057385-E

ENGINEERING RECORD	
DRAWN BY	DLH
CHECKED BY	CDA
APPROVED BY	CDA
DATE	11/30/16
SCALE	AS NOTED

OLD DRAWING NO.

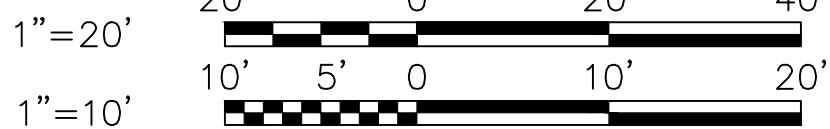
REV.	DATE	APP#	DESCRIPTION	APPROVAL
PENNSYLVANIA PIPELINE PROJECT STREAM S-Q89 EXISTING CONDITIONS/EROSION & SEDIMENTATION CONTROL PLANS				
BERKS COUNTY, PA				
DWG. NO.			S-Q89-A	REV. NO. 0



RESTORED GRADE PROFILE

HORZ SCALE: 1"=20'
VERT SCALE: 1"=10'

GRAPHIC SCALES



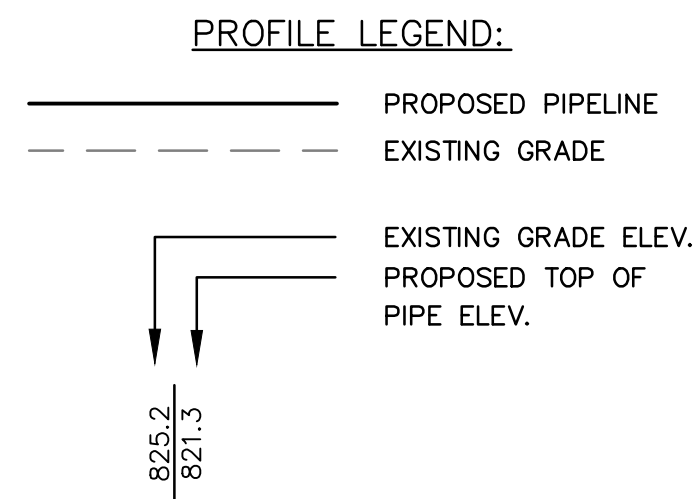
STV
Baltimore, MD Bismarck, ND Denver, CO Douglassville, PA
Houston, TX Pittsburgh, PA Williamsport, PA

THE LOCATION OF THE PIPELINE FACILITIES AS SHOWN HEREON MUST BE CONSIDERED AS APPROXIMATE ONLY. BEFORE DIGGING OR FOR AN EXACT LOCATION PLEASE CONTACT YOUR STATES UNDERGROUND UTILITY LOCATION SERVICE.

STV PROJECT No.: 38-17335

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER D. ANTONI
No. PE-057385-E
11/30/16

CHRISTOPHER D. ANTONI
PE-057385-E



GENERAL NOTES:

- REFERENCE E&S PLAN AND SITE RESTORATION NOTES AND DETAILS FOR ADDITIONAL CONSTRUCTION SEQUENCING, TYPICAL DETAILS AND NOTES; AND PLAN SHEETS FOR ADDITIONAL PLANS AND TOPOGRAPHY.
- ALL EXISTING UTILITY INFORMATION IS APPROXIMATE. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
- MAINTAIN 2'-0" MINIMUM VERTICAL SEPARATION BETWEEN THE PROPOSED PIPELINE AND OTHER UTILITIES.
- THE BACKGROUND TOPOGRAPHY WAS OBTAINED FROM TOPOGRAPHIC SURVEYS PERFORMED IN SEPTEMBER 2016.
- THE PROJECT IS LOCATED IN NAD83 PENNSYLVANIA STATE PLANE COORDINATE SYSTEM (SOUTH ZONE), NAVD88.

WETLAND CROSSING NOTES:

- REFERENCE E&S PLAN AND SITE RESTORATION NOTES AND DETAILS, FOR WETLAND CONSTRUCTION SEQUENCING AND RESTORATION.
- A MINIMUM OF 4 FEET OF COVER UNDER WETLANDS AND UPLANDS IS REQUIRED.
- EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET FROM EDGE OF WETLAND, OR 100 FEET FROM EDGE OF WETLAND FOR SPECIAL PROTECTION WATERS (HQ OR EV).

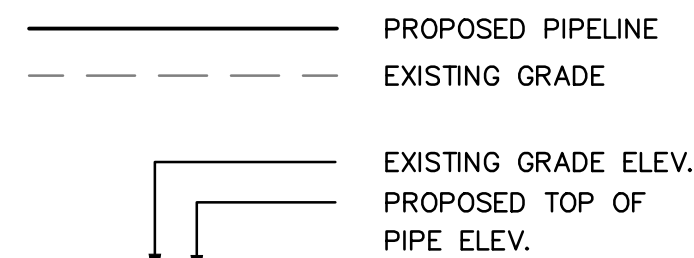
STREAM CROSSING NOTES:

- REFERENCE E&S PLAN AND SITE RESTORATION NOTES AND DETAILS FOR STREAM CONSTRUCTION SEQUENCING AND RESTORATION.
- TEMPORARY EQUIPMENT BRIDGE CROSSINGS ARE TO BE IMPLEMENTED IN ACCORDANCE WITH THE NOTES AND DETAILS FOR THE IMPLEMENTED METHOD.
- SITE CONDITIONS MAY ALLOW FOR IMPLEMENTATION OF OTHER APPROVED PIPELINE INSTALLATION METHODS, REFERENCED WITH THE NOTES AND DETAILS.
- THE PIPELINES SHALL MAINTAIN A MINIMUM OF 5 FEET OF COVER UNDER STREAMS, FROM THE TOP OF PIPE TO THE STREAM BED. THIS COVER WILL BE MAINTAINED AT A MINIMUM FROM TOP OF BANK TO TOP OF BANK.
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- EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET FROM TOP OF BANK, OR 100 FEET FROM TOP OF BANK FOR SPECIAL PROTECTION WATERS (HQ OR EV).
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LEGEND

SYMBOL	DESCRIPTION
	PROPOSED 16-INCH & 20-INCH SUNOCO PIPELINES
	PROPOSED SUNOCO RIGHT-OF-WAY
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	MINOR CONTOUR
	STREAM CENTERLINE
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	EXISTING EDGE OF UNPAVED ROADWAY
	EXISTING VEGETATION
	EDGE OF WATER
	SOIL TYPE BOUNDARY
	WETLAND
	PROPOSED ROCK CONSTRUCTION ENTRANCE
	LIMIT OF DISTURBANCE
	CONSTRUCTION FENCE
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	PUMP
	SCREENED INLET
	ENERGY DISSIPATER
	DEWATERING FACILITY
	CULVERT PIPE
	EROSION CONTROL BLANKET
	STREAM RESTORATION

PROFILE LEGEND:



REV.	DATE	APP#	DESCRIPTION	APPROVAL
PENNSYLVANIA PIPELINE PROJECT STREAM S-Q89 RESTORATION PLAN				
BERKS COUNTY, PA				
OLD DRAWING NO.			DWG. NO. S-Q89-B	REV. NO. 0