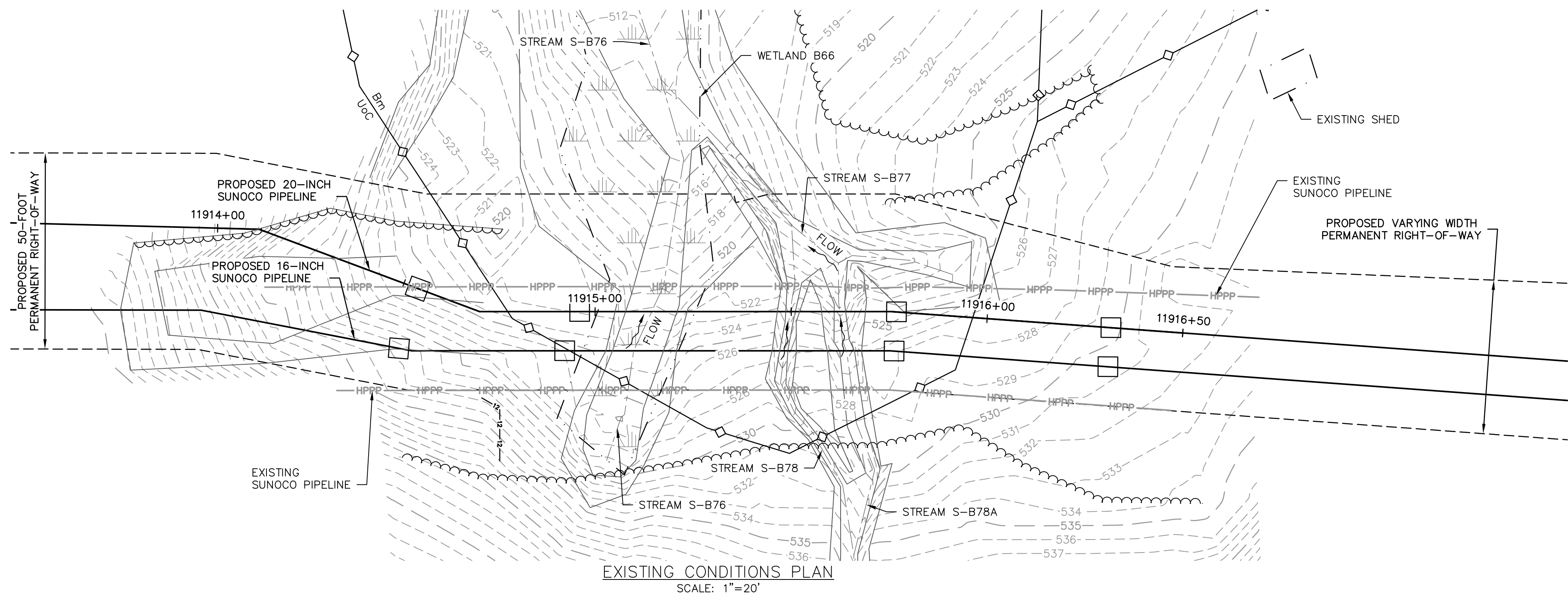
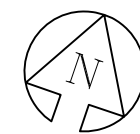
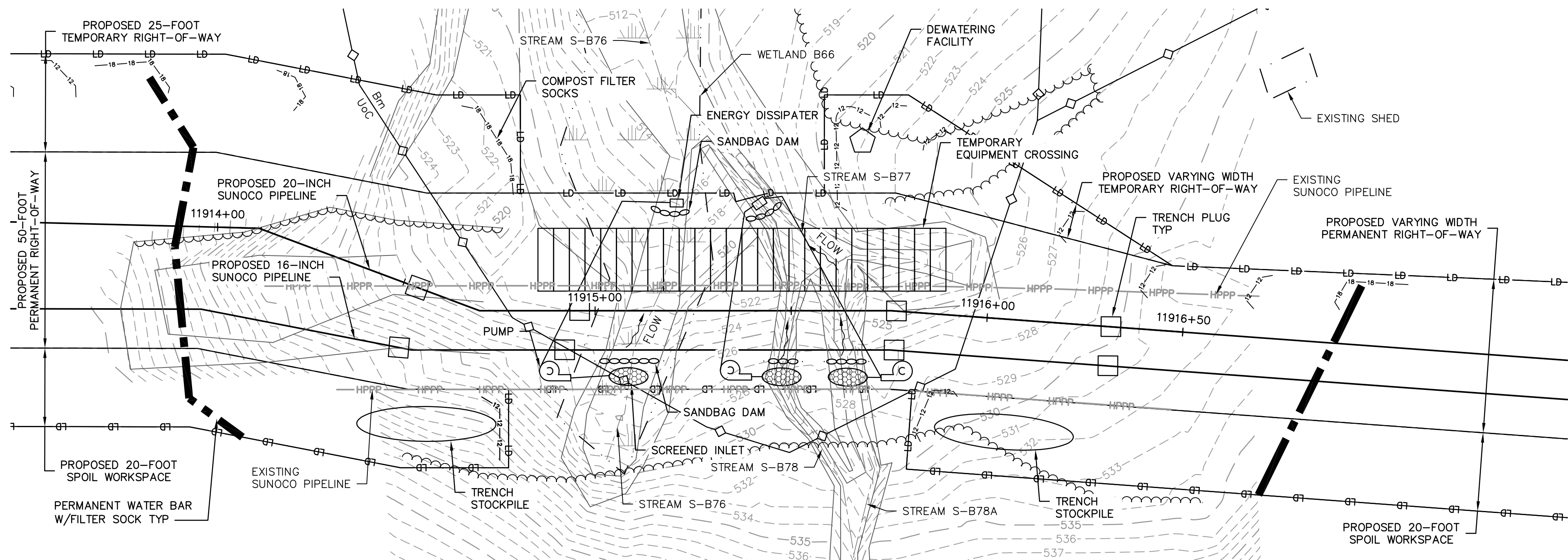
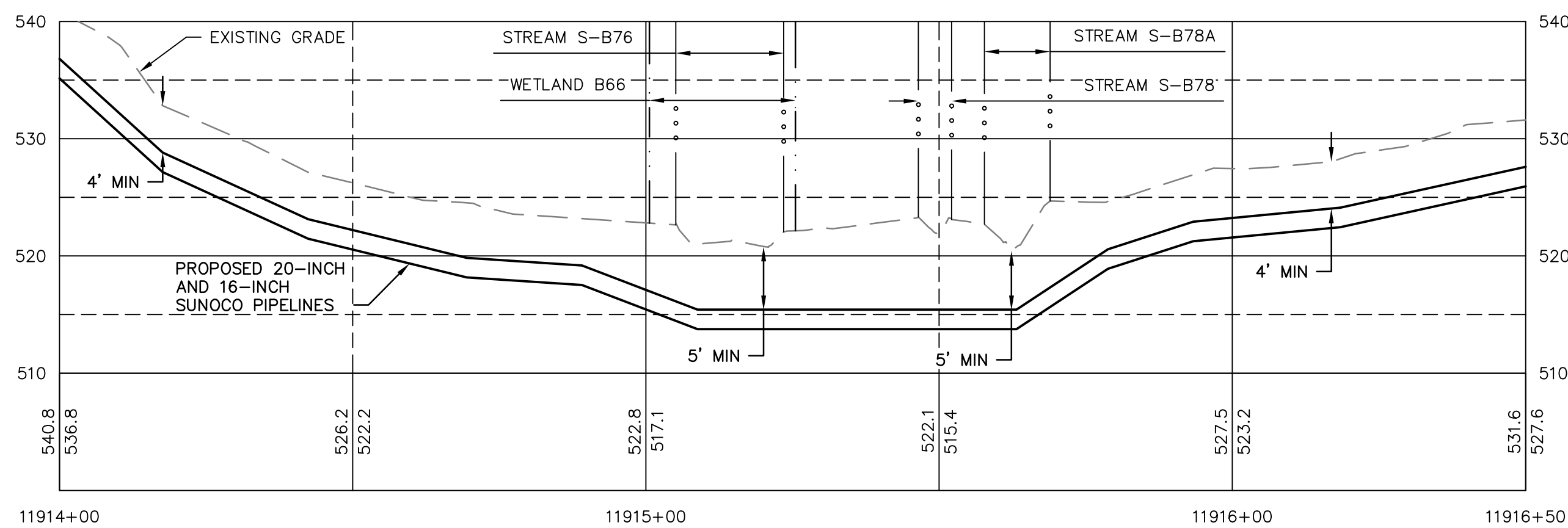




EXISTING CONDITIONS PLAN  
SCALE: 1"=20'

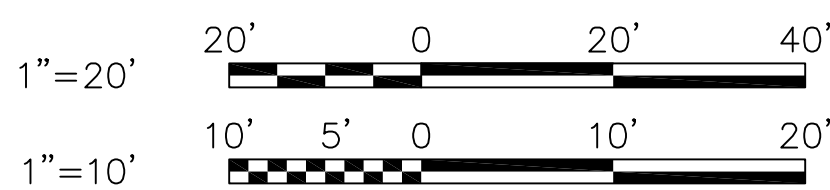


EROSION & SEDIMENTATION CONTROL PLAN  
SCALE: 1"=20'



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:

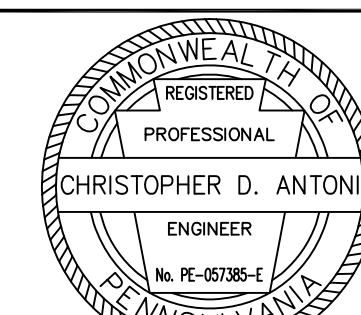
- REFERENCE NOTES AND DETAILS FOR STREAM CONSTRUCTION SEQUENCING AND STREAM RESTORATION (ES-0.01-ES-0.17).
- FOR TEMPORARY EQUIPMENT CROSSINGS REFERENCE (ES-0.10).
- SITE CONDITIONS MAY ALLOW FOR IMPLEMENTATION OF OTHER APPROVED PIPELINE INSTALLATION METHODS REFERENCED WITH THE NOTES AND DETAILS (ES-0.11-ES-0.14).
- 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. |

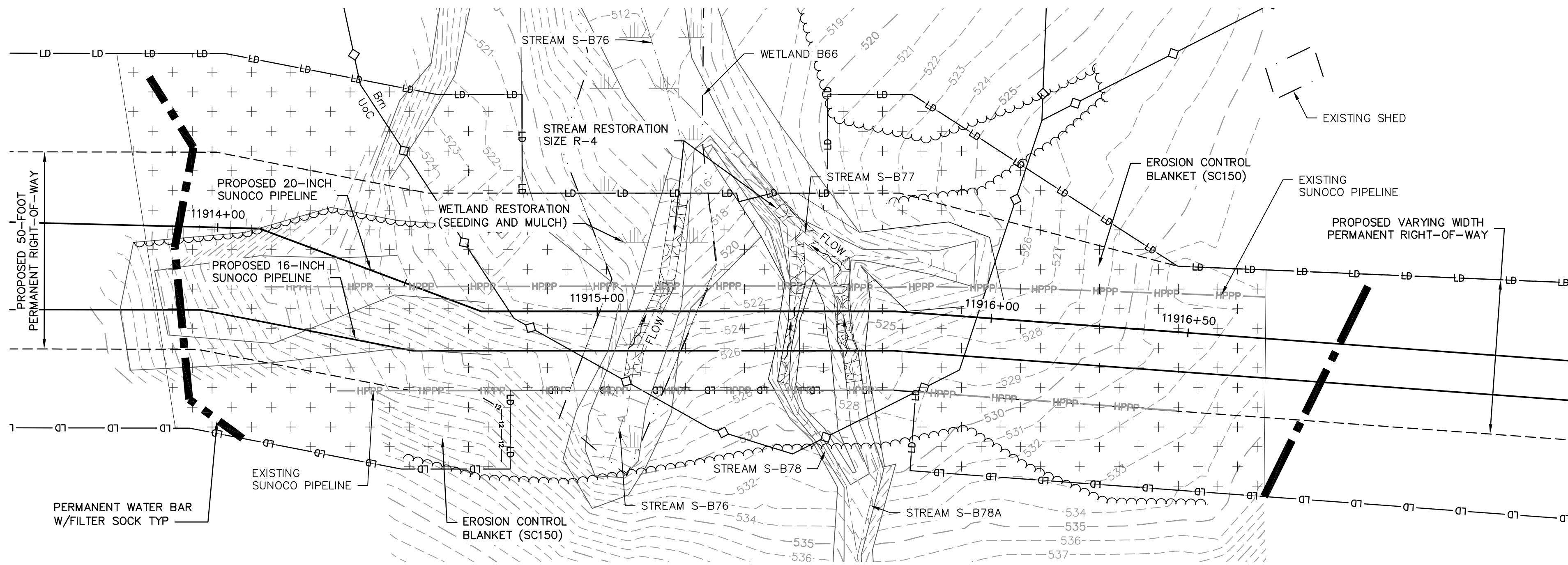


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PE-057385-E

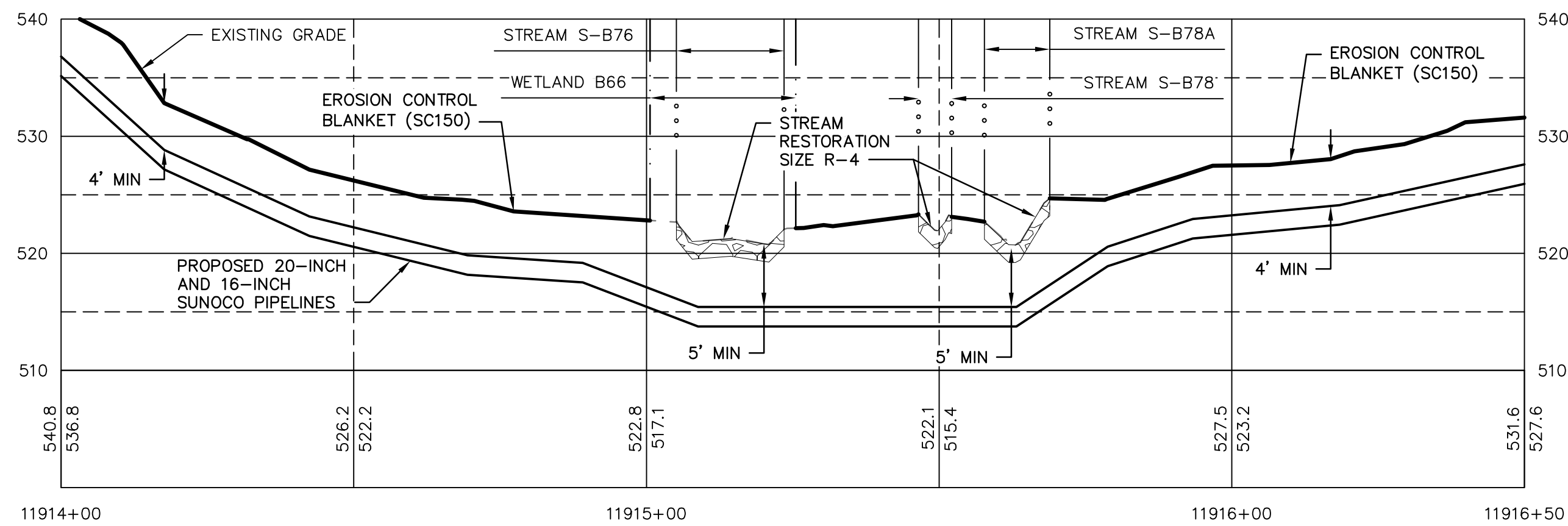
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| CHECKED BY         | CDA      |
| APPROVED BY        | CDA      |
| DATE               | 11/30/16 |
| SCALE              | AS NOTED |

OLD DRAWING NO.

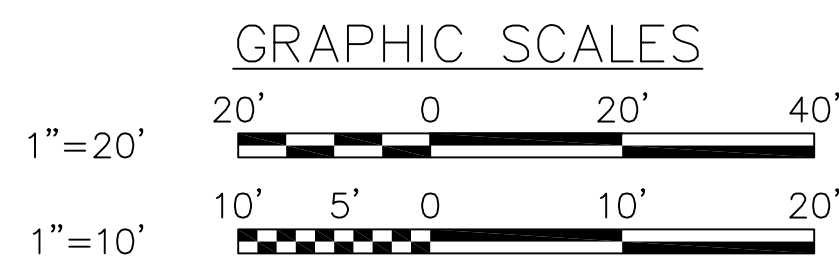
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|------------------------------------------------------------------------------------------------------------------------------|------|------|-------------|----------|
|                                                                                                                              |      |      |             |          |
| PENNSYLVANIA PIPELINE PROJECT<br>STREAMS S-B76, S-B78, & S-B78A<br>EXISTING CONDITIONS/ EROSION & SEDIMENTATION CONTROL PLAN |      |      |             |          |
| LEBANON COUNTY, PA                                                                                                           |      |      |             |          |
| DWG. NO.                                                                                                                     |      |      | REV. NO.    |          |
| S-B77-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).
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. |



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PE-057385-E

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

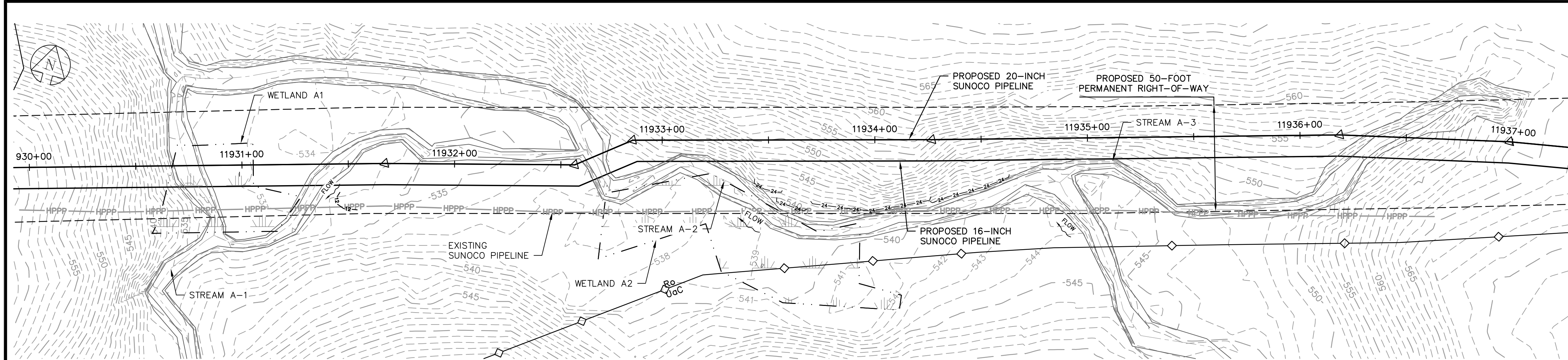
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| DWG. NO.<br><b>S-B77-B</b>                                                                                                                     |      |      |             | REV. NO.<br><b>0</b> |

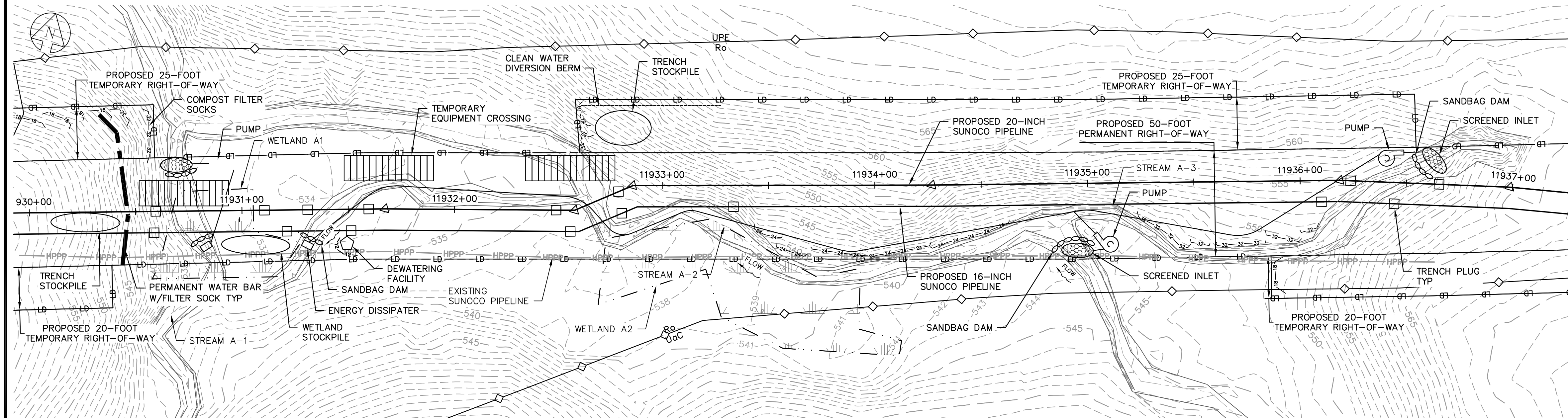
**STV**  
Baltimore, MD Bismarck, ND Denver, CO Douglassville, PA  
Houston, TX Pittsburgh, PA Williamsport, PA

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.

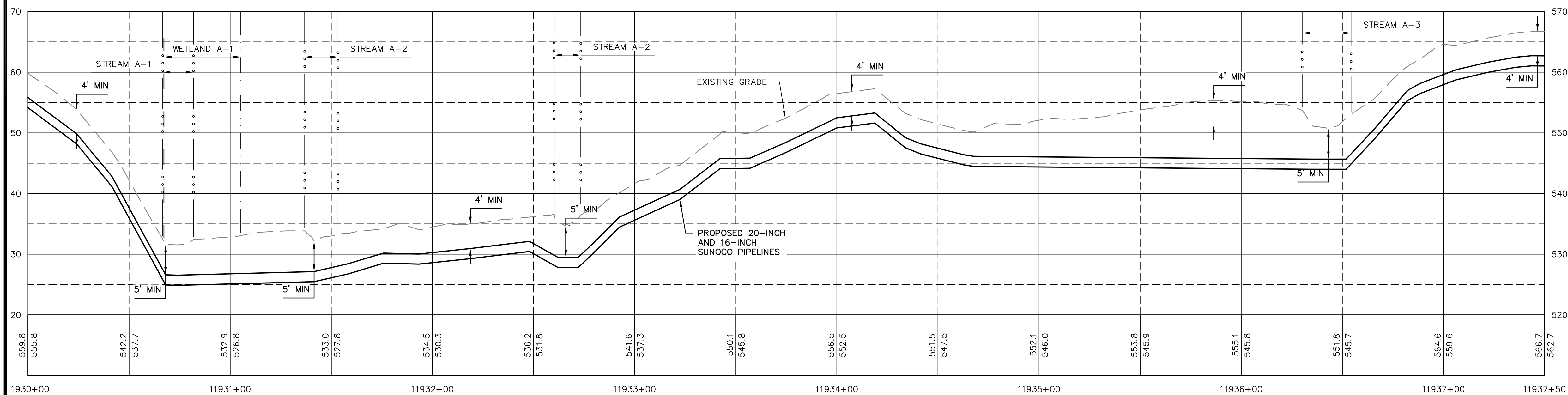
STV PROJECT No.: 38-17335



EXISTING CONDITIONS PLAN  
SCALE: 1"=30'



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



PROFILE LEGEND:

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

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

GRAPHIC SCALE

1"=30'  
30' 0 30' 60'  
1"=10'  
10' 5' 0 10' 20'

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:

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- FOR TEMPORARY TIMBER MAT REFERENCE (ES-0.10)
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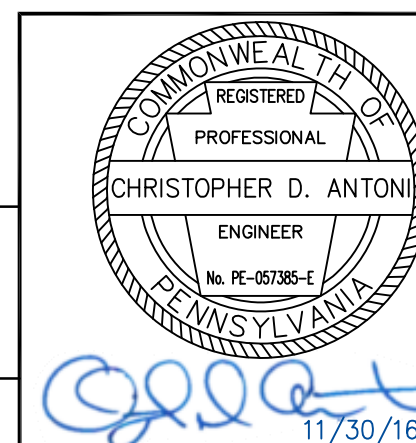
STREAM CROSSING NOTES:

- 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).
- 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      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|-------------|---------------|
| <div><div></div><div>PENNSYLVANIA PIPELINE PROJECT<br/>STREAM S-A1, S-A2 &amp; S-A3<br/>EROSION &amp; SEDIMENTATION<br/>CONTROL PLAN AND PROFILE<br/>LEBANON COUNTY, PA</div></div> |      |      |             |               |
| DWG. NO.                                                                                                                                                                            |      |      | S-A2-A      | REV. NO.<br>0 |



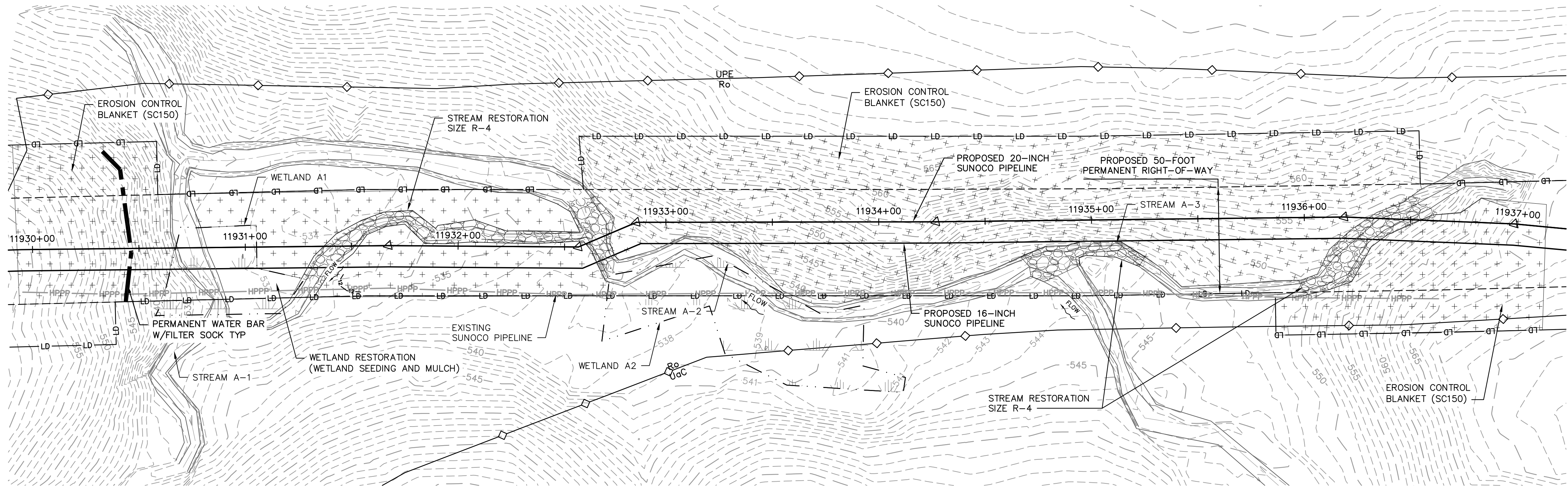
CHRISTOPHER D. ANTONI  
PE-057385-E

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

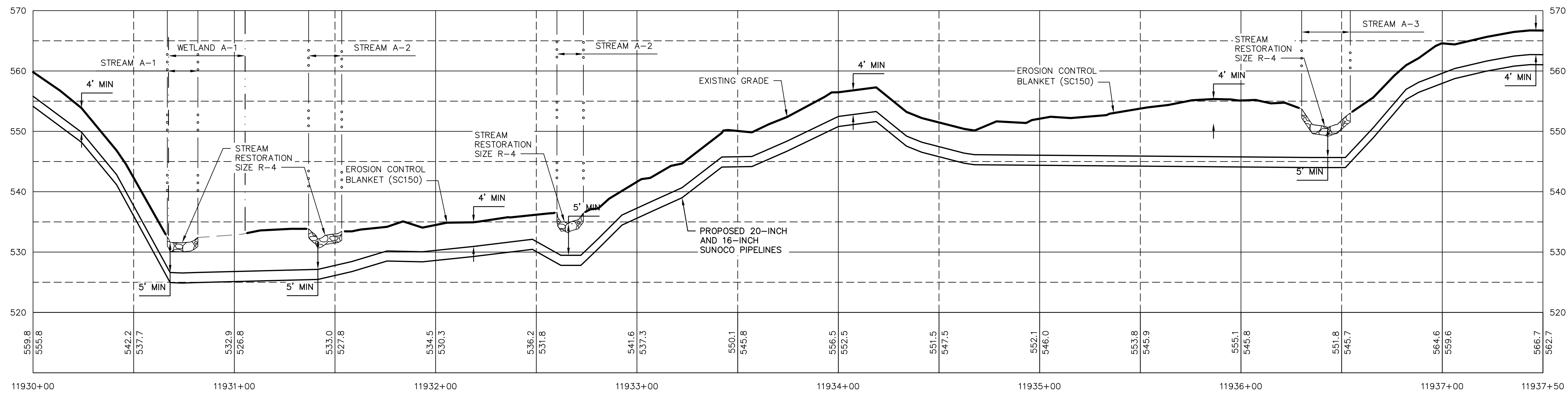
Baltimore, MD Bismarck, ND Denver, CO Douglassville, PA  
Houston, TX Pittsburgh, PA Williamsport, PA

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

STV PROJECT No.: 38-17335

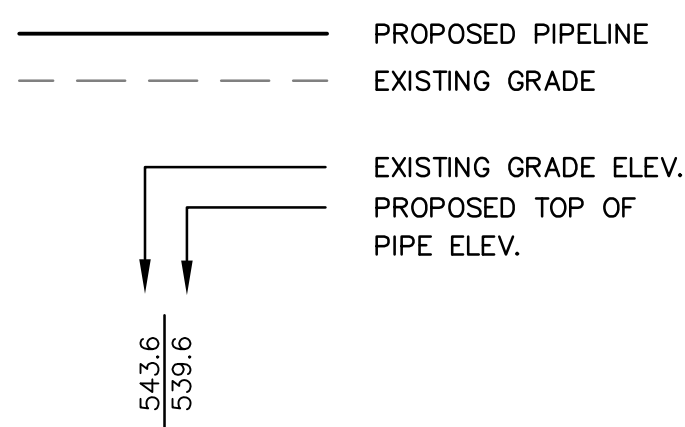


PLAN  
SCALE: 1"=30'

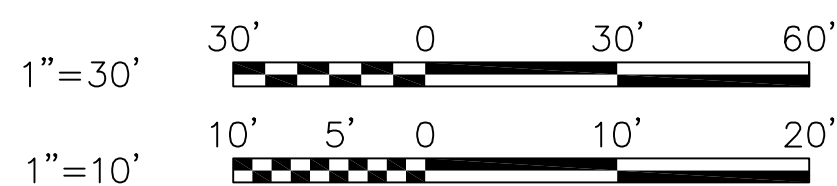


RESTORED GRADE PROFILE  
HORIZ SCALE: 1"=30'  
VERT SCALE: 1"=10'

PROFILE LEGEND:



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.
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WETLAND CROSSING NOTES:

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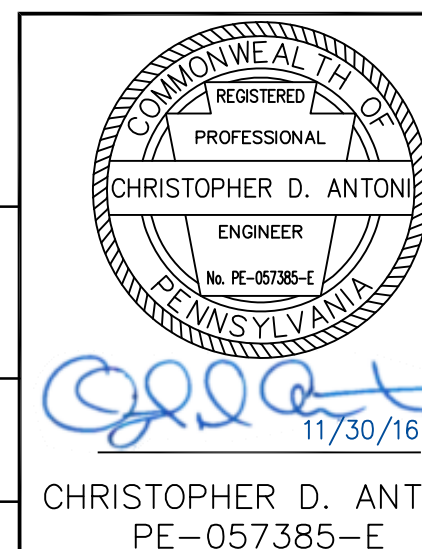
STREAM CROSSING NOTES:

- REFERENCE NOTES AND DETAILS FOR STREAM CONSTRUCTION SEQUENCING AND STREAM RESTORATION (ES-0.01-ES-0.17).
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- 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 |
|---------------------------------------------------------------------------------------------------------------------|------|------|-------------|----------|
| <div><b>PENNSYLVANIA PIPELINE PROJECT</b><br/><b>STREAM S-A1, S-A2 &amp; S-A3</b><br/><b>RESTORATION PLAN</b></div> |      |      |             |          |
| LEBANON COUNTY, PA                                                                                                  |      |      |             |          |
| DWG. NO.                                                                                                            |      |      | REV. NO.    |          |
| S-A2-B                                                                                                              |      |      | 0           |          |



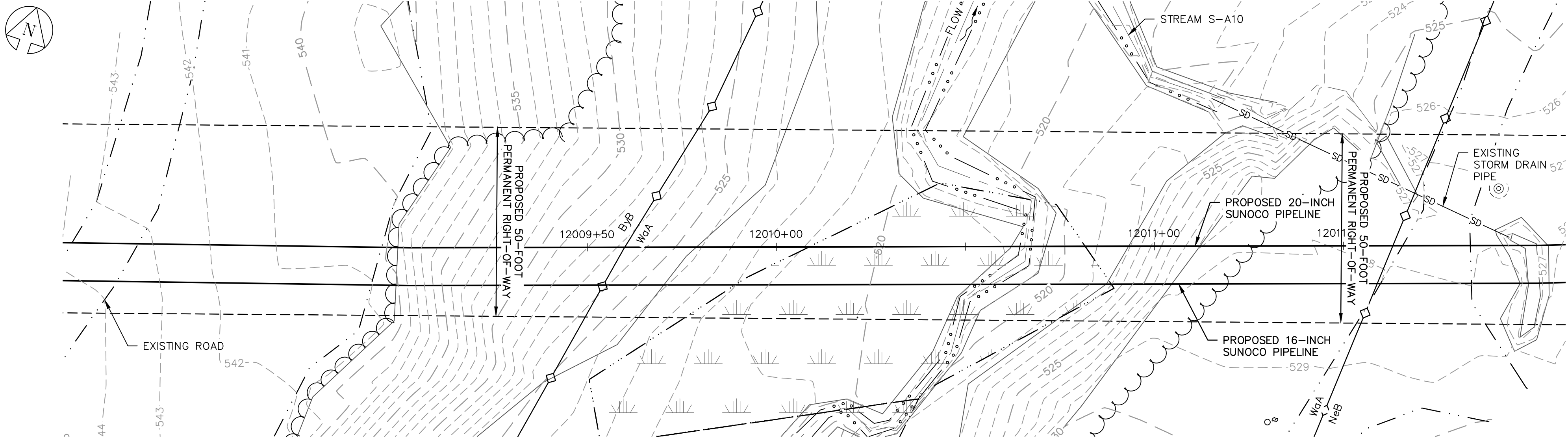
CHRISTOPHER D. ANTON  
PE-057385-E

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

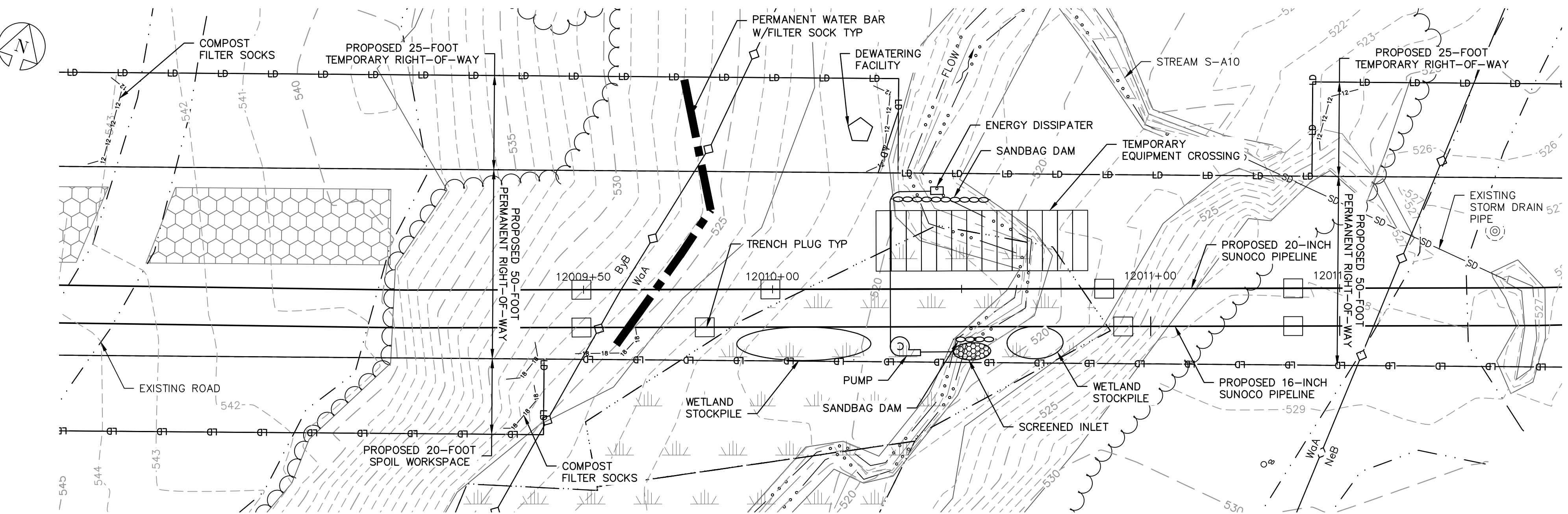
**STV**  
Baltimore, MD Bismarck, ND Denver, CO Douglassville, PA  
Houston, TX Pittsburgh, PA Williamsport, PA

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.

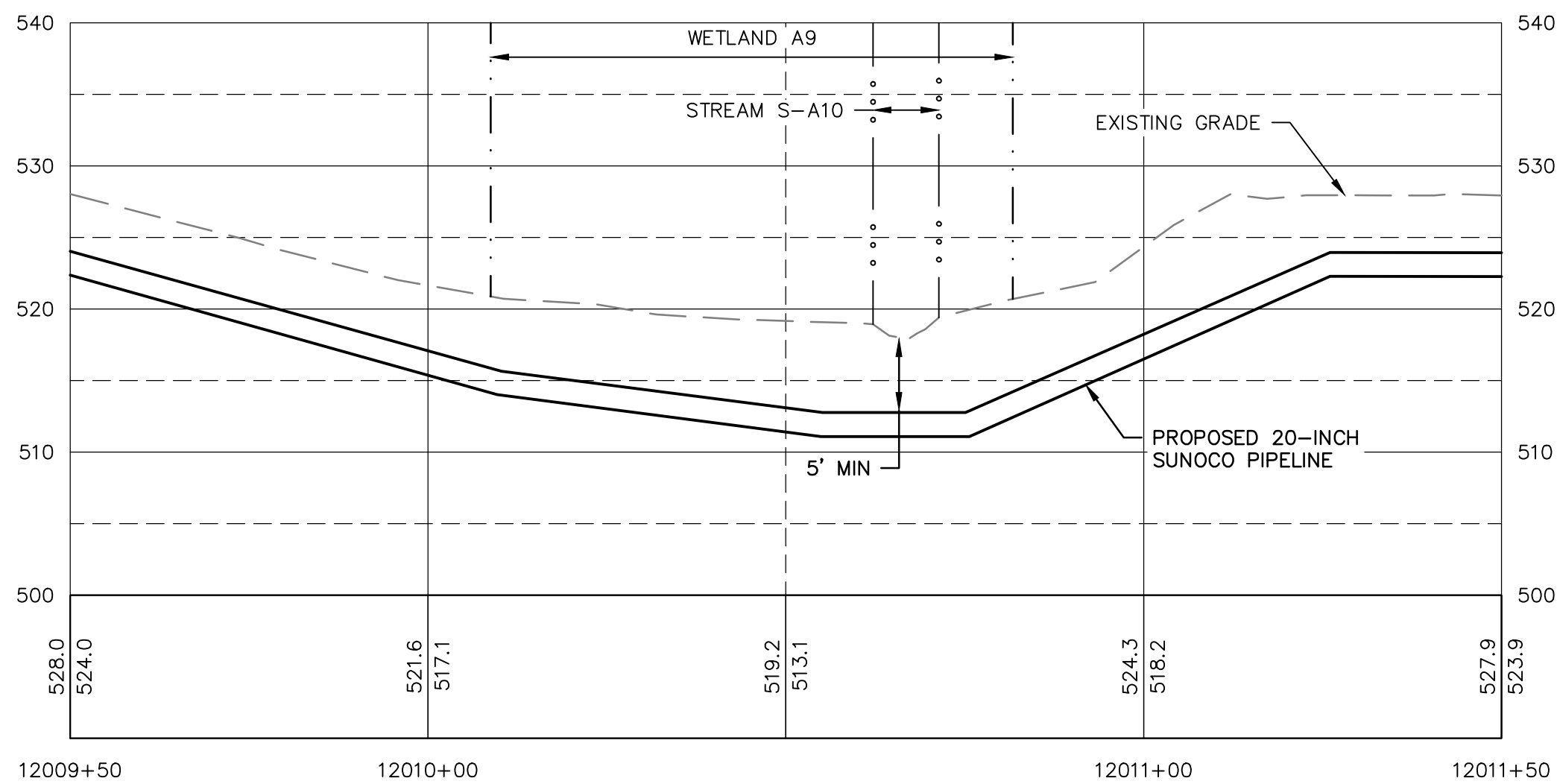
STV PROJECT No.: 38-17335



EXISTING CONDITIONS PLAN  
SCALE: 1"=20'

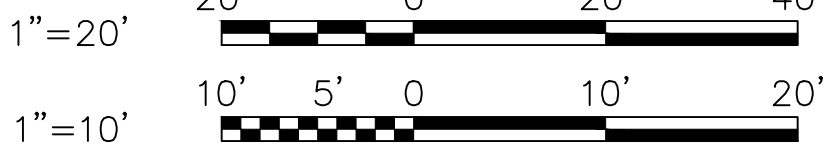


EROSION & SEDIMENTATION CONTROL PLAN  
SCALE: 1"=20'



PROFILE  
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:

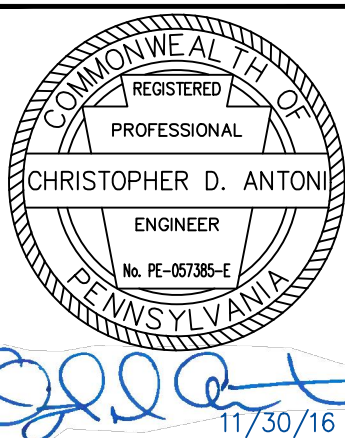
- REFERENCE NOTES AND DETAILS FOR STREAM CONSTRUCTION SEQUENCING AND STREAM RESTORATION (ES-0.01-ES-0.17).
- FOR TEMPORARY EQUIPMENT CROSSINGS REFERENCE (ES-0.10).
- SITE CONDITIONS MAY ALLOW FOR IMPLEMENTATION OF OTHER APPROVED PIPELINE INSTALLATION METHODS REFERENCED WITH THE NOTES AND DETAILS (ES-0.11-ES-0.14).
- 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. |

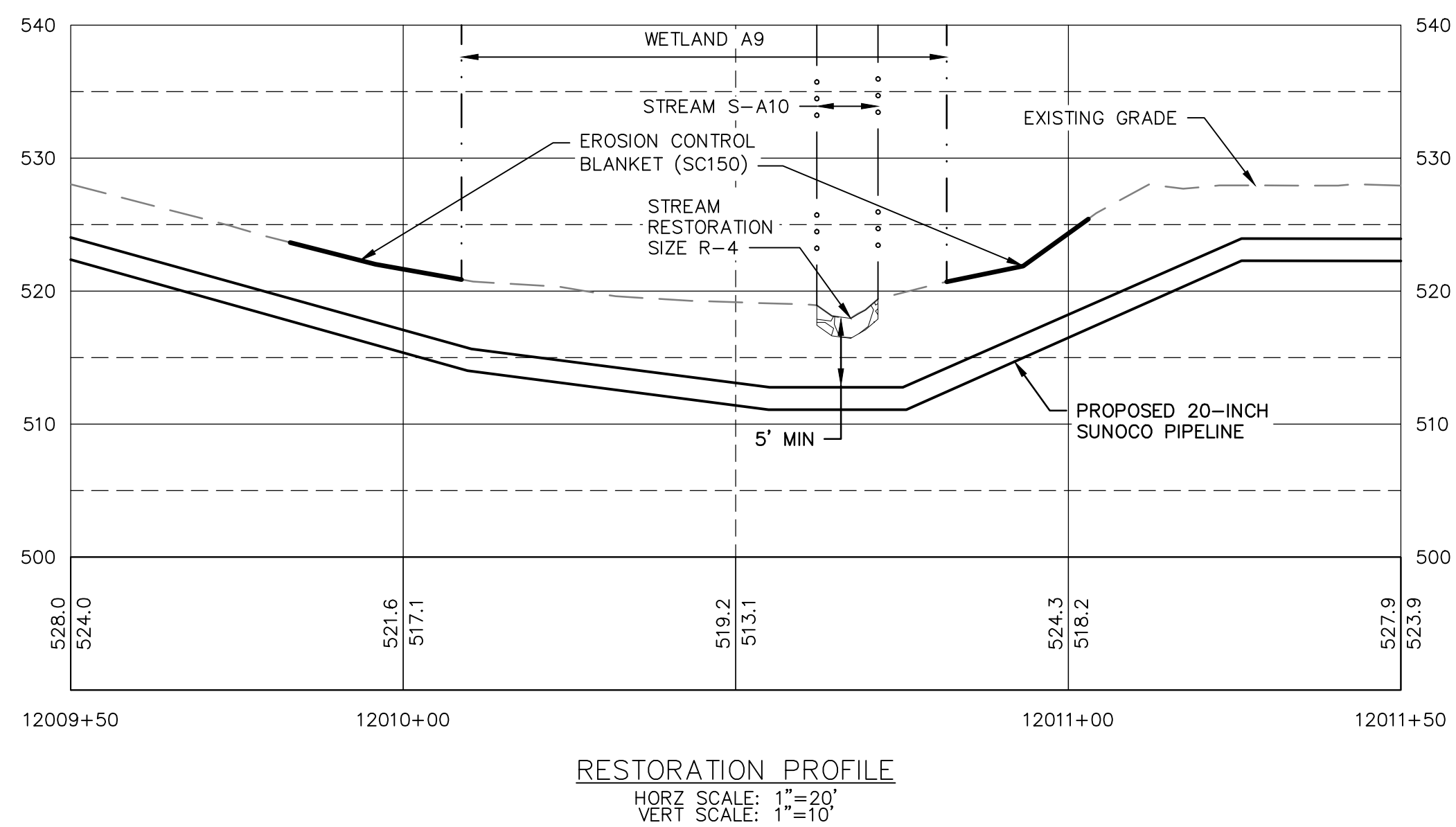
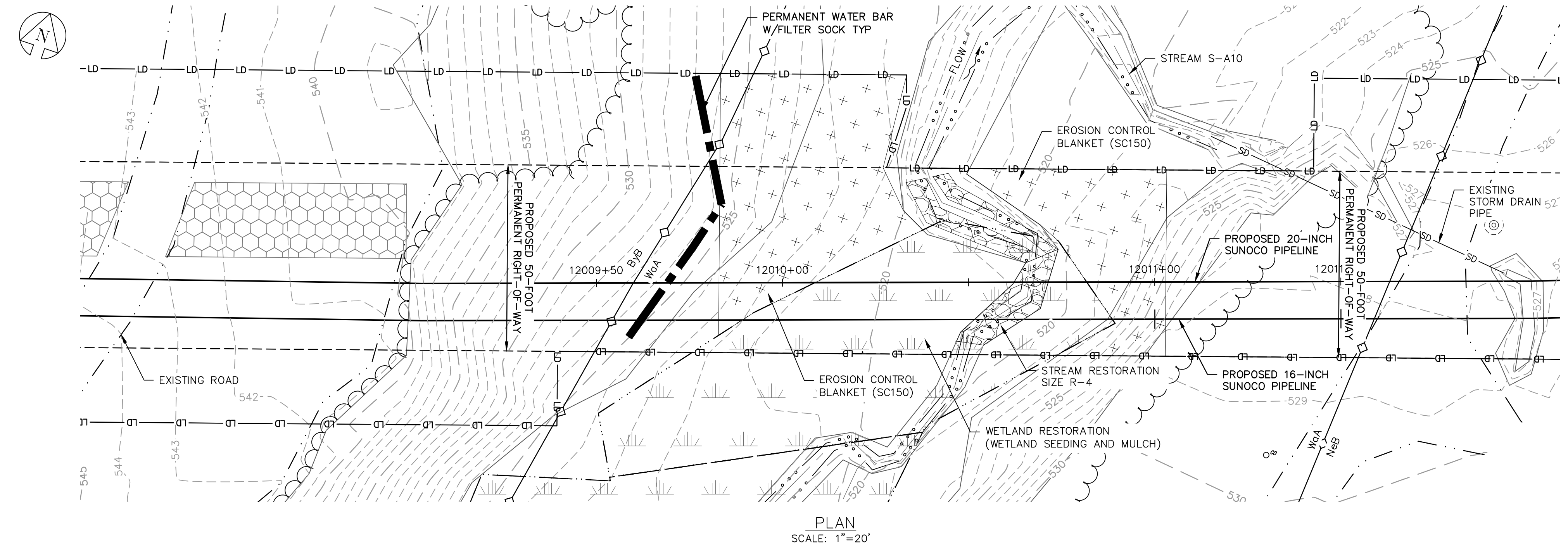


CHRISTOPHER D. ANTONI  
PE-057385-E

| 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-A10                                             |      |      |             |          |
| EXISTING CONDITIONS/EROSION & SEDIMENTATION CONTROL PLAN |      |      |             |          |
| LEBANON COUNTY, PA                                       |      |      |             |          |
| DWG. NO.                                                 |      |      | REV. NO.    |          |
| S-A10-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.
- 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.

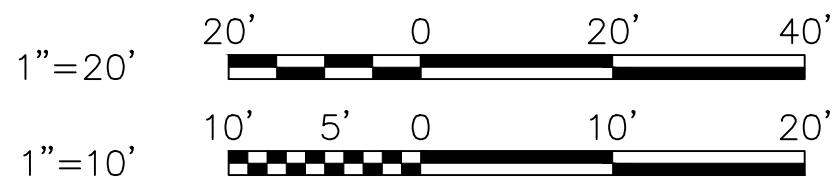
LEGEND

| 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. |

GRAPHIC SCALES



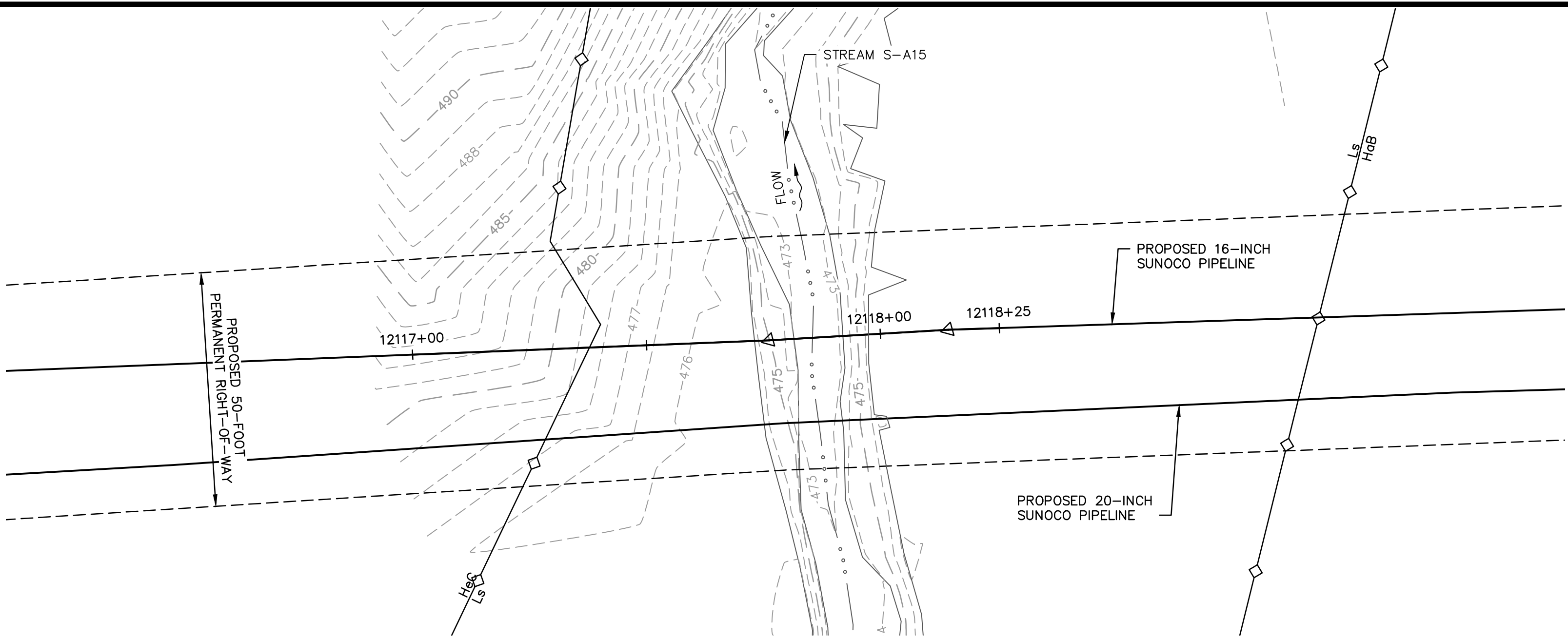
**STV**  
Baltimore, MD Bismarck, ND Denver, CO Douglassville, PA Houston, TX  
Pittsburgh, PA Williamsport, PA

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.

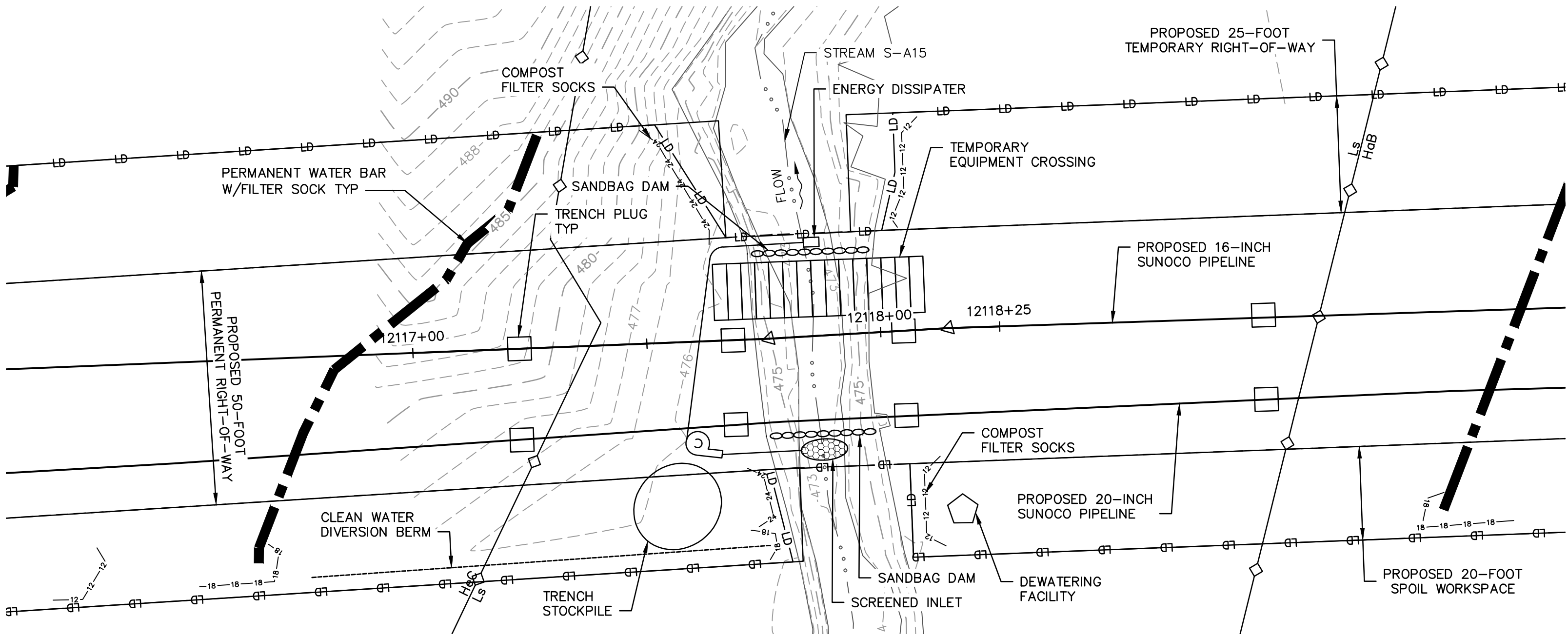
STV PROJECT No.: 38-17335

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

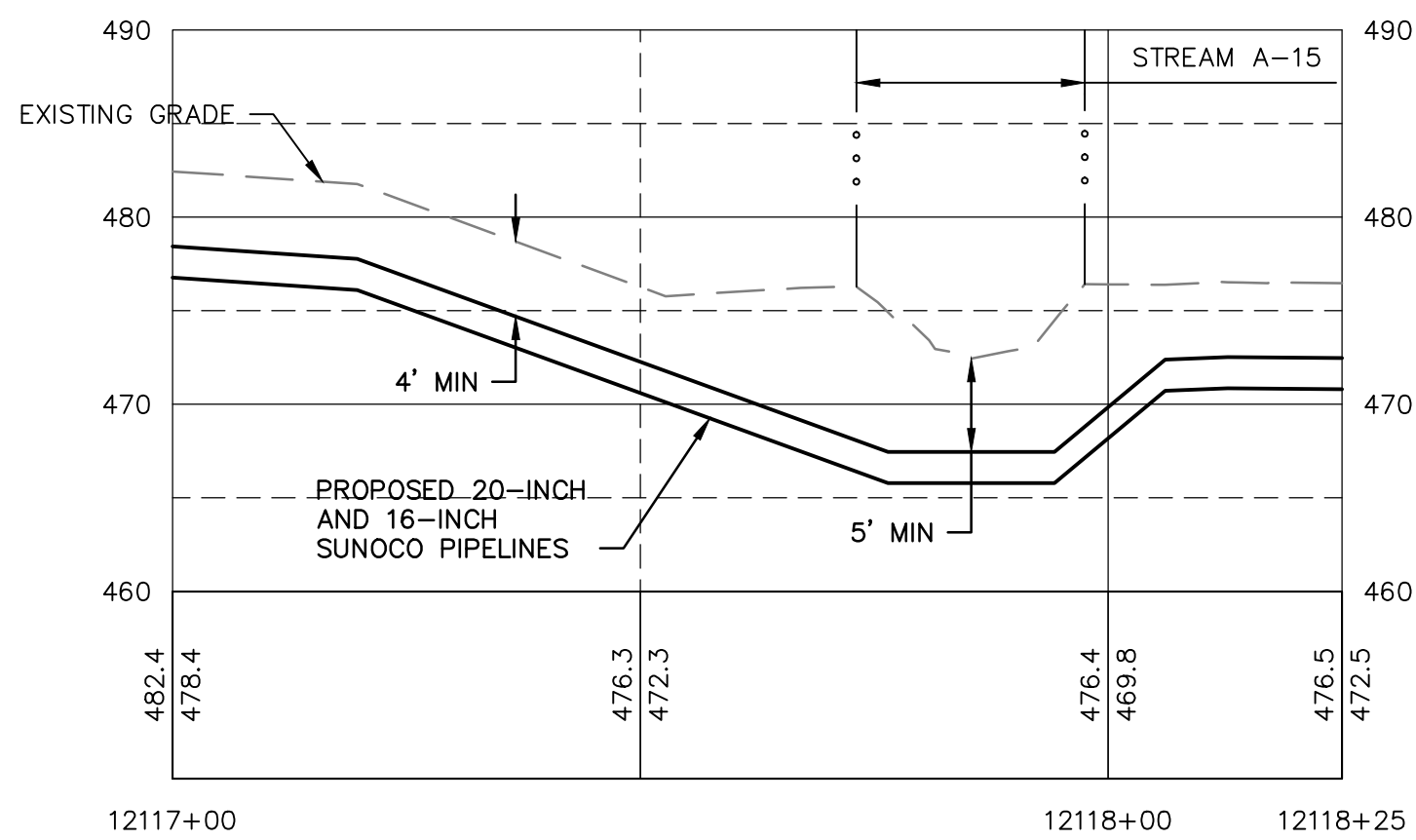
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| <b>ENGINEERING RECORD</b> |          |      |                                                                                        |               |
| DRAWN BY                  | DLH      |      |                                                                                        |               |
| CHECKED BY                | CDA      |      |                                                                                        |               |
| APPROVED BY               | CDA      |      |                                                                                        |               |
| DATE                      | 11/30/16 |      |                                                                                        |               |
| SCALE                     | AS NOTED |      |                                                                                        |               |
| OLD DRAWING NO.           |          |      | <b>PENNSYLVANIA PIPELINE PROJECT</b><br><b>STREAM S-A10</b><br><b>RESTORATION PLAN</b> |               |
|                           |          |      | LEBANON COUNTY, PA                                                                     |               |
| DWG. NO.                  |          |      | <b>S-A10-B</b>                                                                         | REV. NO.<br>0 |



EXISTING CONDITIONS PLAN  
SCALE: 1"=20'

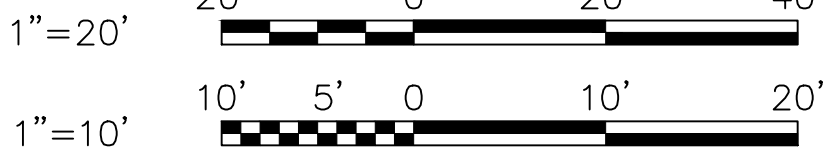


EROSION AND SEDIMENT CONTROL PLAN  
SCALE: 1"=20'



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.
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:

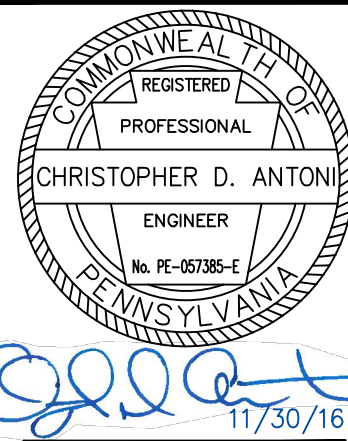
1. REFERENCE NOTES AND DETAILS FOR STREAM CONSTRUCTION SEQUENCING AND STREAM RESTORATION (ES-0.01-ES-0.17).
2. FOR TEMPORARY EQUIPMENT CROSSINGS REFERENCE (ES-0.10).
3. SITE CONDITIONS MAY ALLOW FOR IMPLEMENTATION OF OTHER APPROVED PIPELINE INSTALLATION METHODS REFERENCED WITH THE NOTES AND DETAILS (ES-0.11-ES-0.14).
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. |



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

OLD DRAWING NO.

| REV. | DATE | APP# | DESCRIPTION | APPROVAL |
|------|------|------|-------------|----------|
|------|------|------|-------------|----------|

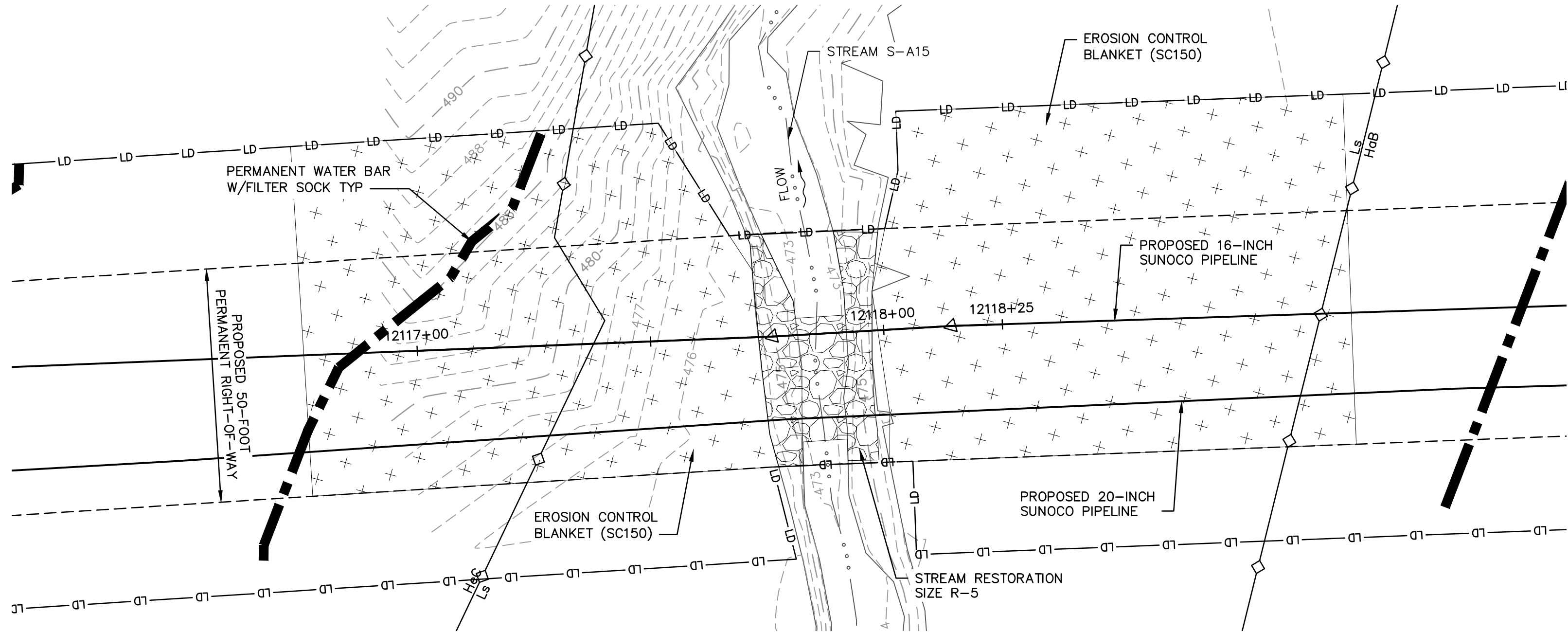


PENNSYLVANIA PIPELINE PROJECT  
STREAM S-A15  
EXISTING CONDITIONS PLAN

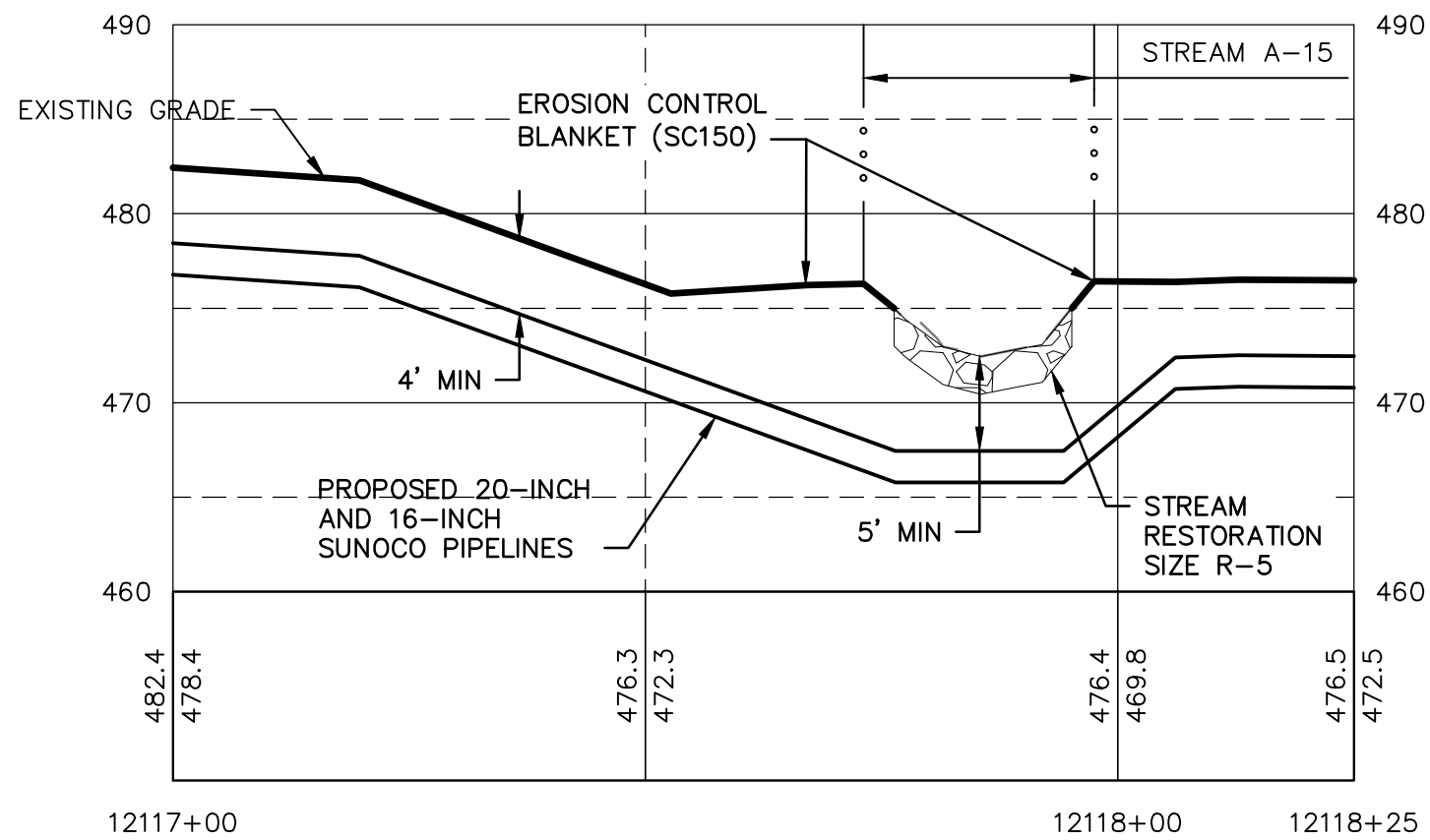
LEBANON COUNTY, PA

DWG. NO.  
**S-A15A**

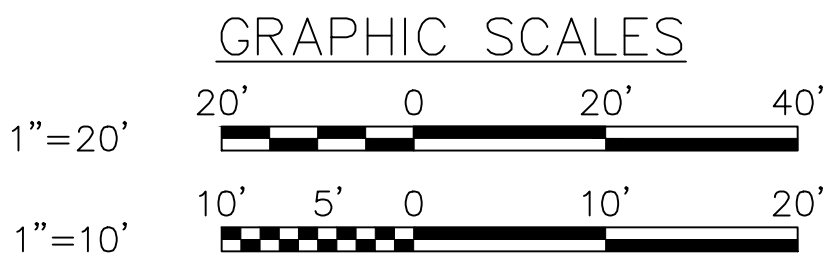
REV. NO.  
**0**



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.
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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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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.<br>PROPOSED TOP OF PIPE ELEV. |

| REV. | DATE | APP# | DESCRIPTION | APPROVAL |
|------|------|------|-------------|----------|
|------|------|------|-------------|----------|

| ENGINEERING RECORD |          |
|--------------------|----------|
| DRAWN BY           | CNN      |
| CHECKED BY         | CDA      |
| APPROVED BY        | CDA      |
| DATE               | 11/30/16 |
| SCALE              | AS NOTED |

|                    |  |                                                                   |  |
|--------------------|--|-------------------------------------------------------------------|--|
|                    |  | PENNSYLVANIA PIPELINE PROJECT<br>STREAM S-A15<br>RESTORATION PLAN |  |
| LEBANON COUNTY, PA |  |                                                                   |  |

|                 |  |
|-----------------|--|
| OLD DRAWING NO. |  |
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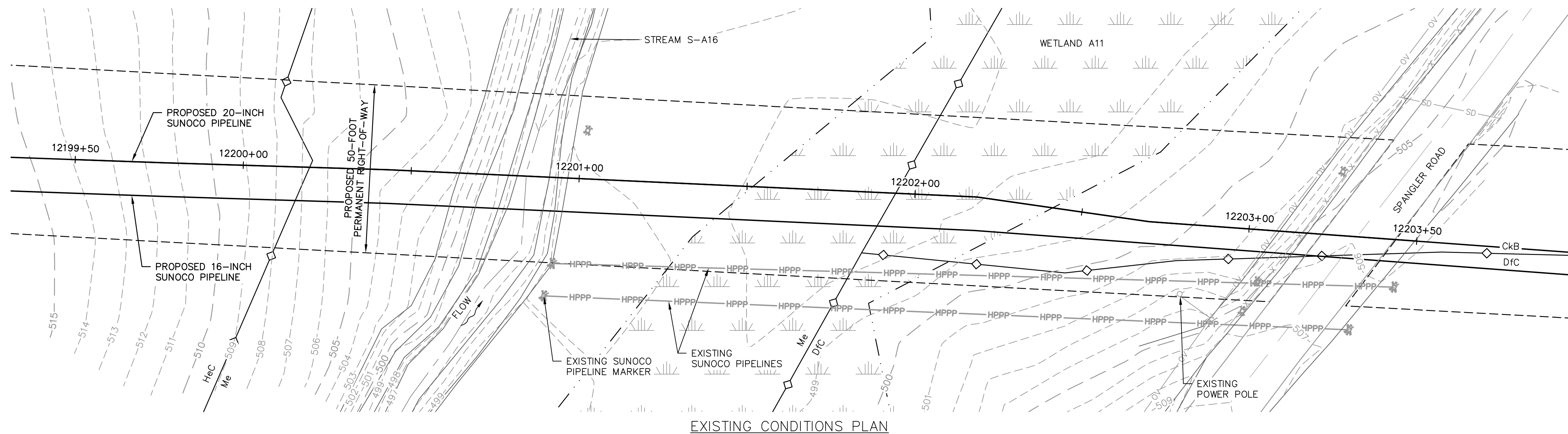
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| DWG. NO. | S-A15B | REV. NO. | 0 |
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Pittsburgh, PA Williamsport, PA

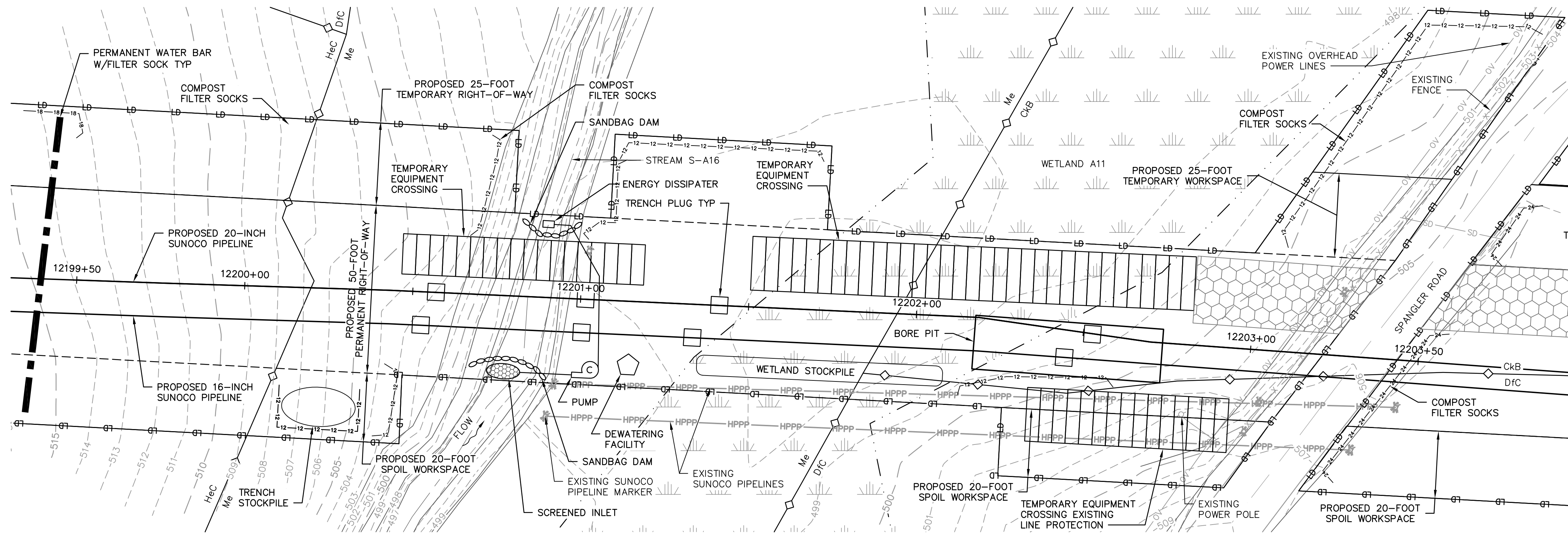
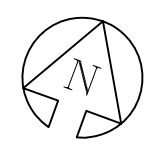
THE LOCATION OF THE PIPELINE FACILITIES AS SHOWN HEREON MUST BE CONSIDERED AS APPROXIMATE ONLY. BEFORE DIGGING OR FOR AN EXACT LOCATION PLEASE CONTACT YOUR STATES UNDERGROUND UTILITY LOCATION SERVICE.

STV PROJECT No.: 38-17335

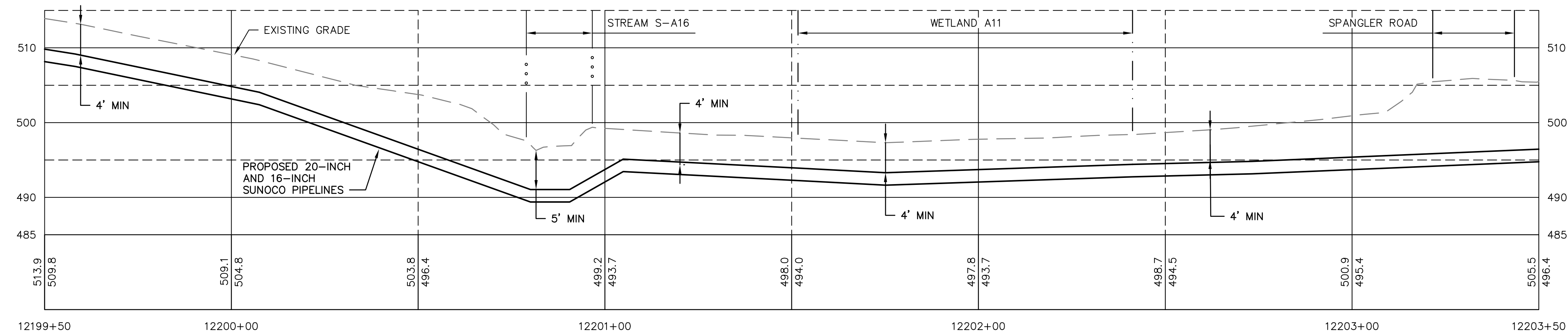
11/30/16  
CHRISTOPHER D. ANTONI  
PE-057385-E



EXISTING CONDITIONS PLAN  
SCALE: 1"=20'

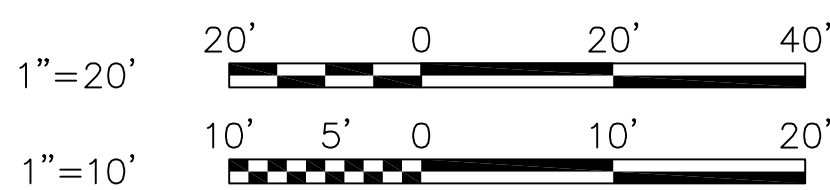


EROSION & SEDIMENTATION CONTROL PLAN  
SCALE: 1"=20'



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:

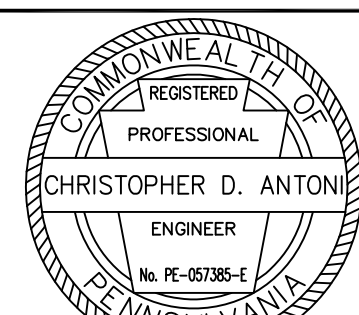
- REFERENCE NOTES AND DETAILS FOR STREAM CONSTRUCTION SEQUENCING AND STREAM RESTORATION (ES-0.01-ES-0.17).
- FOR TEMPORARY EQUIPMENT CROSSINGS REFERENCE (ES-0.10).
- SITE CONDITIONS MAY ALLOW FOR IMPLEMENTATION OF OTHER APPROVED PIPELINE INSTALLATION METHODS REFERENCED WITH THE NOTES AND DETAILS (ES-0.11-ES-0.14).
- 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. |

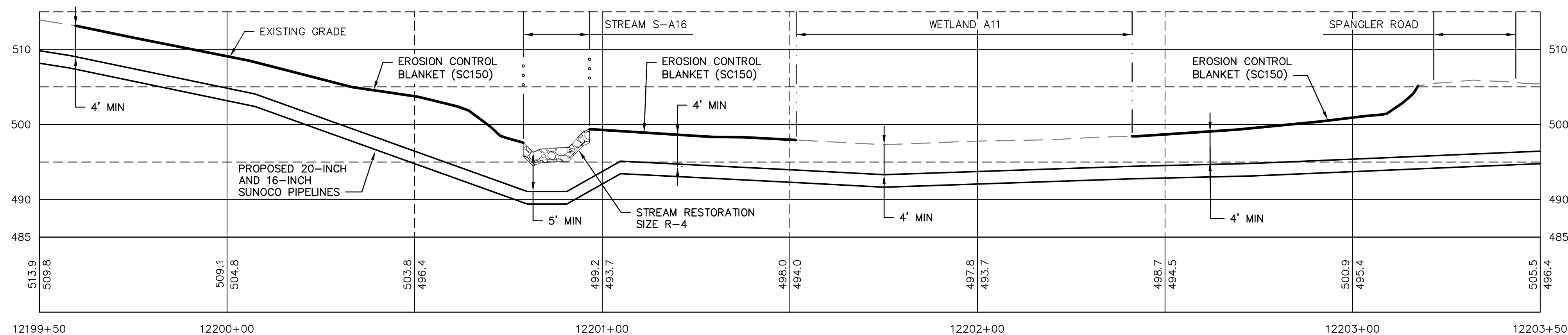
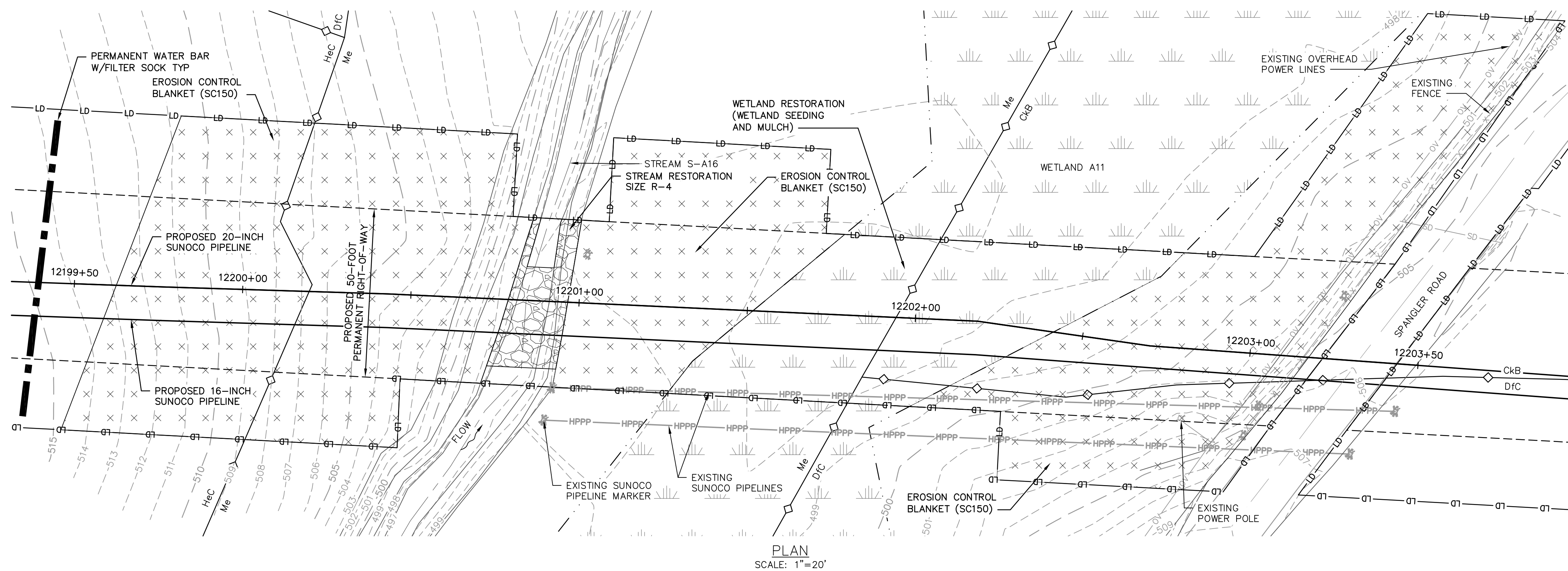


CHRISTOPHER D. ANTONI  
PE-057385-E

| ENGINEERING RECORD |          |
|--------------------|----------|
| DRAWN BY           | CNN      |
| CHECKED BY         | CDA      |
| APPROVED BY        | CDA      |
| DATE               | 11/30/16 |
| SCALE              | AS NOTED |

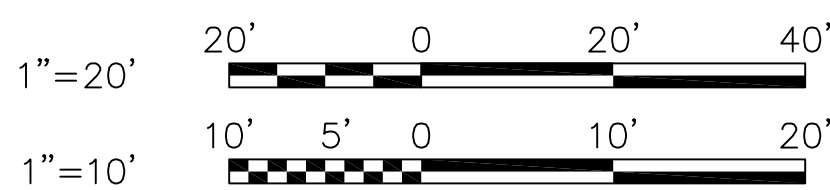
OLD DRAWING NO.

| REV.                                                                                                                     | DATE | APP# | DESCRIPTION | APPROVAL   |
|--------------------------------------------------------------------------------------------------------------------------|------|------|-------------|------------|
|                                                                                                                          |      |      |             |            |
| PENNSYLVANIA PIPELINE PROJECT<br>STREAM S-A16 & WETLAND A11<br>EXISTING CONDITIONS/EROSION & SEDIMENTATION CONTROL PLANS |      |      |             |            |
| LEBANON COUNTY, PA                                                                                                       |      |      |             |            |
| DWG. NO.                                                                                                                 |      |      | S-A16-A     | REV. NO. 0 |



RESTORED GRADE 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.
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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:

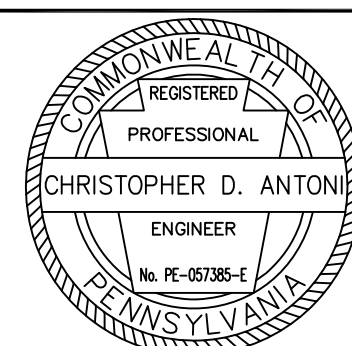
- REFERENCE NOTES AND DETAILS FOR STREAM CONSTRUCTION SEQUENCING AND STREAM RESTORATION (ES-0.01-ES-0.17).
- FOR TEMPORARY EQUIPMENT CROSSINGS REFERENCE (ES-0.10).
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- TIMBER MATS SHALL EXTEND A MINIMUM OF 20 FEET BEYOND TOP OF BANK.
- COMPOST FILTER 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.<br>PROPOSED TOP OF<br>PIPE ELEV. |



CHRISTOPHER D. ANTONI  
PE-057385-E

| ENGINEERING RECORD |          |
|--------------------|----------|
| DRAWN BY           | CNN      |
| CHECKED BY         | CDA      |
| APPROVED BY        | CDA      |
| DATE               | 11/30/16 |
| SCALE              | AS NOTED |

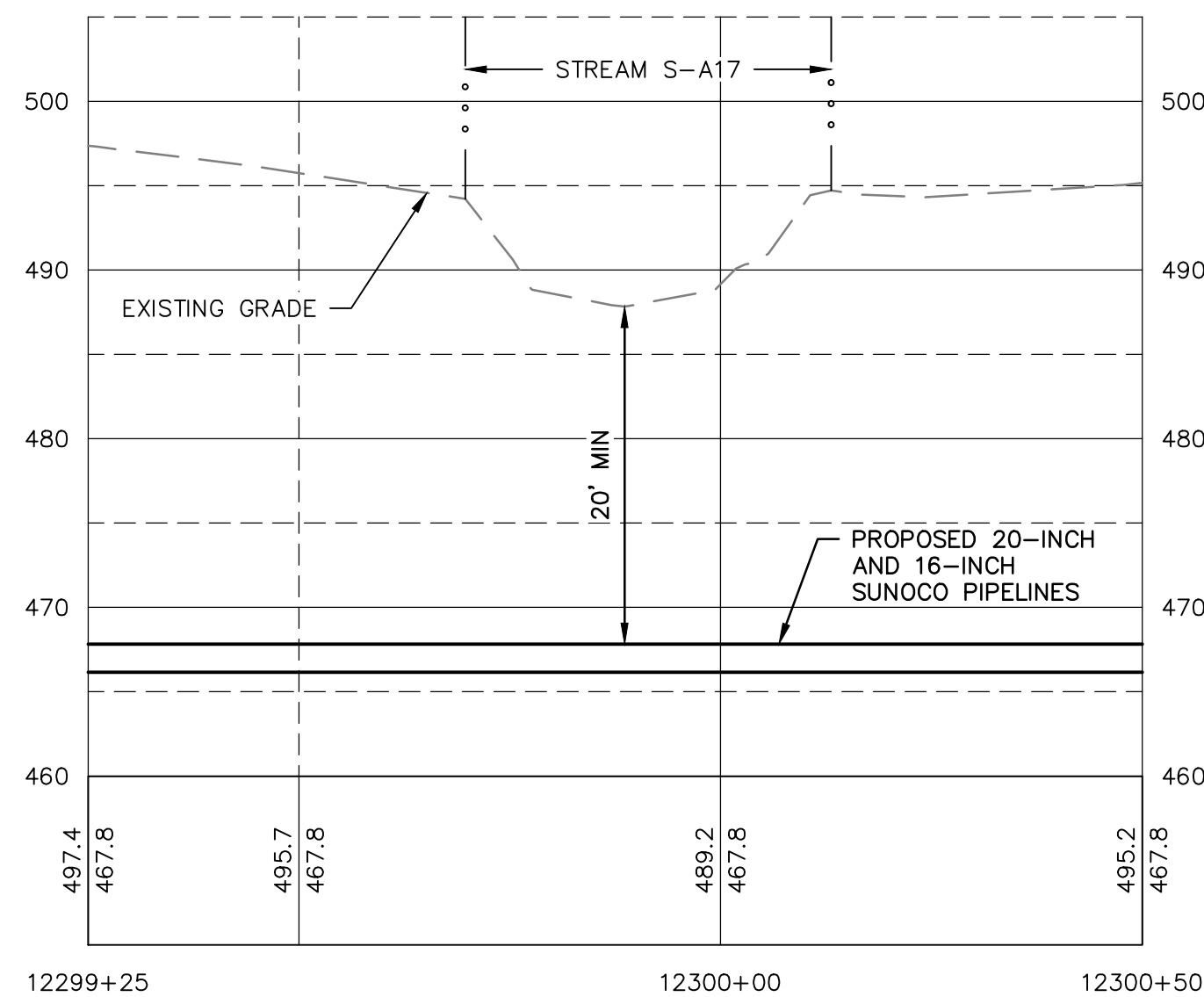
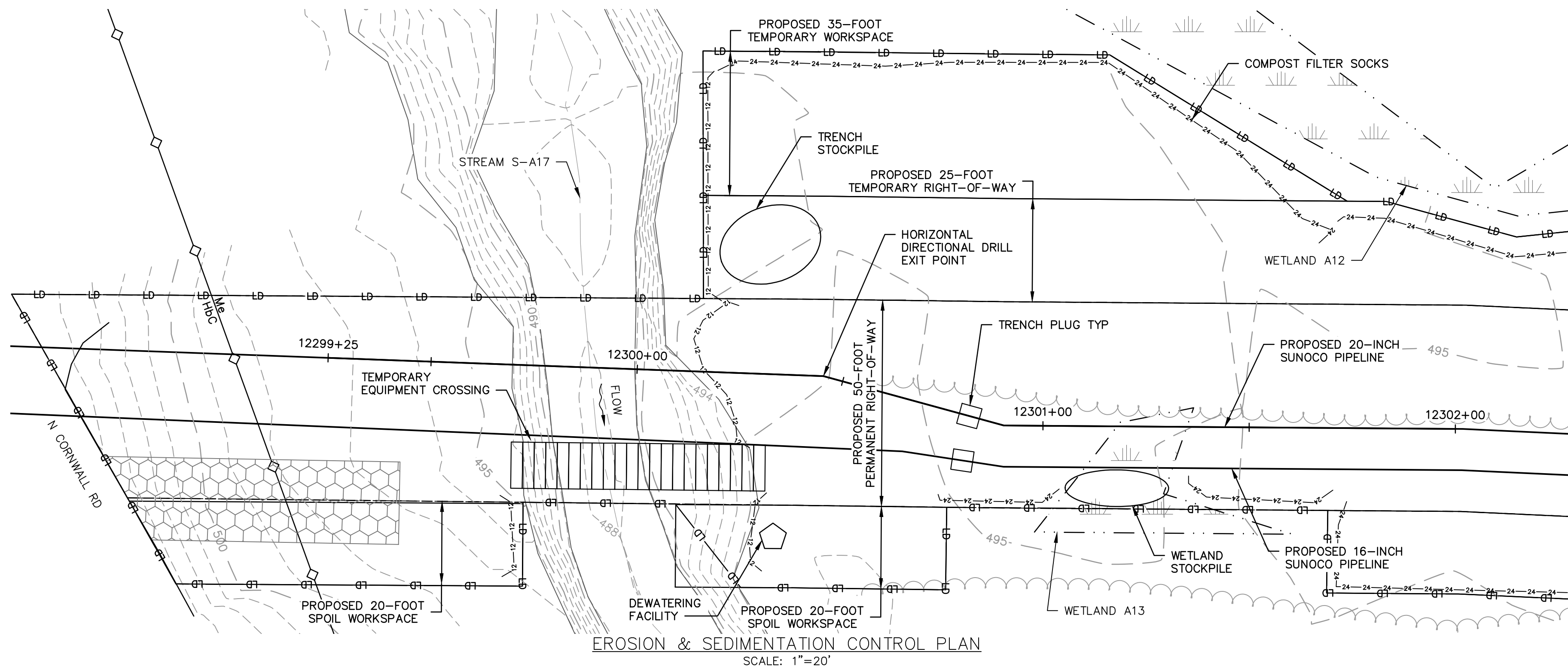
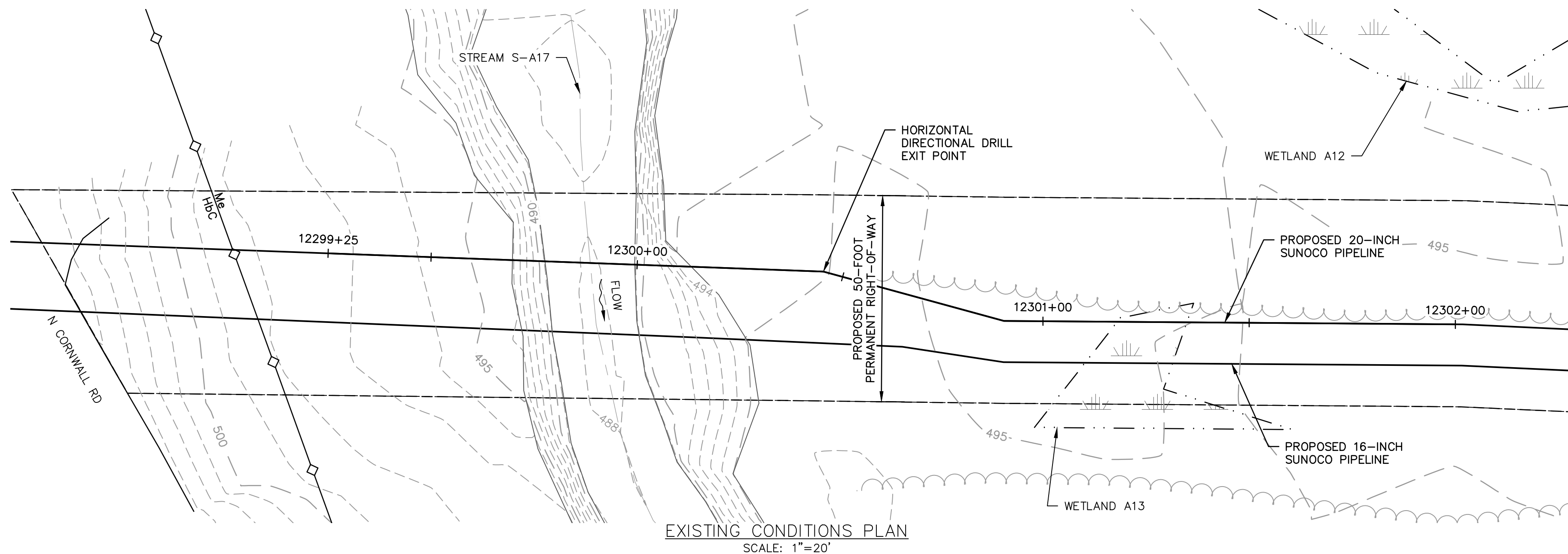
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| <div><b>Sunoco Logistics Partners L.P.</b></div> <div><b>PENNSYLVANIA PIPELINE PROJECT</b><br/><b>STREAM S-A16 &amp; WETLAND A11</b><br/><b>RESTORATION PLAN</b></div> <div>LEBANON COUNTY, PA</div> |      |      |                |                      |
| DWG. NO.                                                                                                                                                                                             |      |      | <b>S-A16-B</b> | REV. NO.<br><b>0</b> |

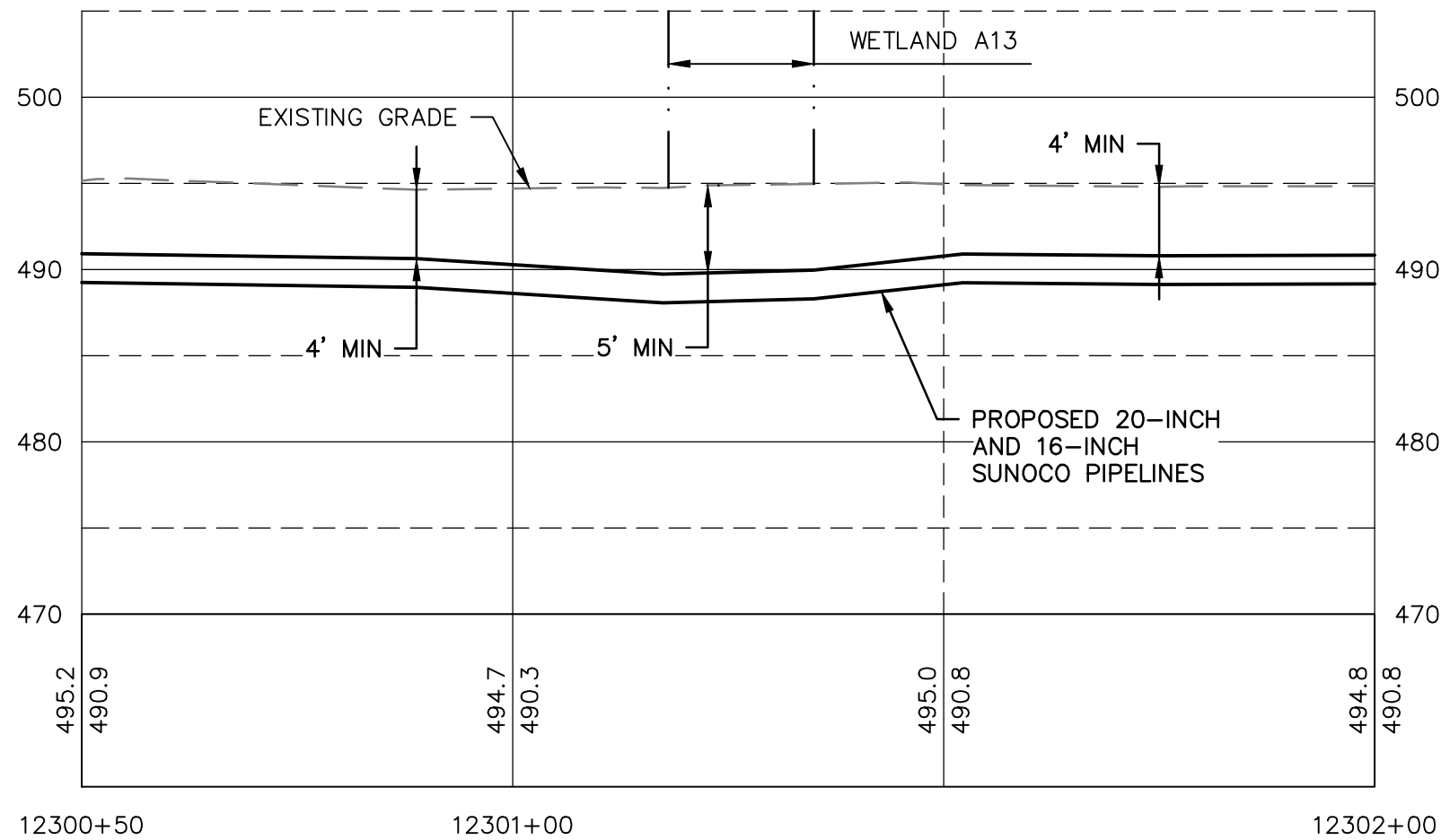
**STV**  
Baltimore, MD Bismarck, ND Denver, CO Douglassville, PA Houston, TX  
Pittsburgh, PA Williamsport, PA

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

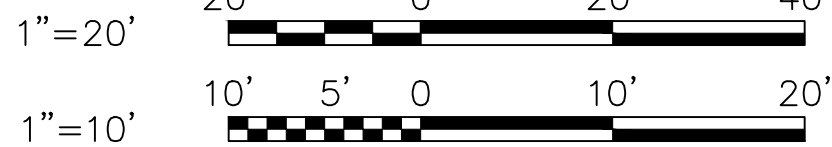


PROFILE  
HORZ SCALE: 1"=20'  
VERT SCALE: 1"=10'



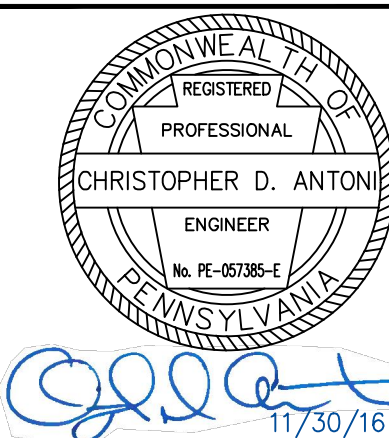
PROFILE  
HORZ SCALE: 1"=20'  
VERT SCALE: 1"=10'

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           | 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-A17  
EXISTING CONDITIONS/EROSION &  
SEDIMENTATION CONTROL PLANS

LEBANON COUNTY, PA

DWG. NO.  
S-A17A

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.
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WETLAND CROSSING NOTES:

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STREAM CROSSING NOTES:

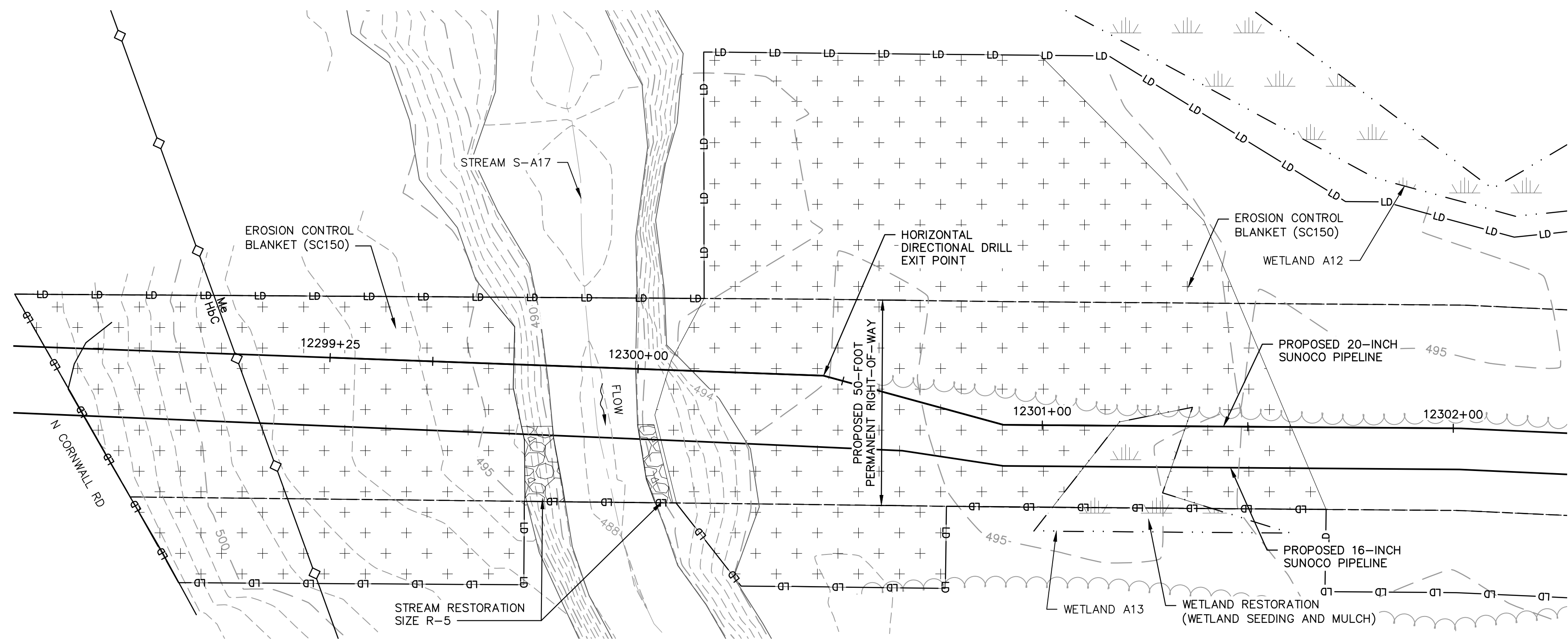
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LEGEND

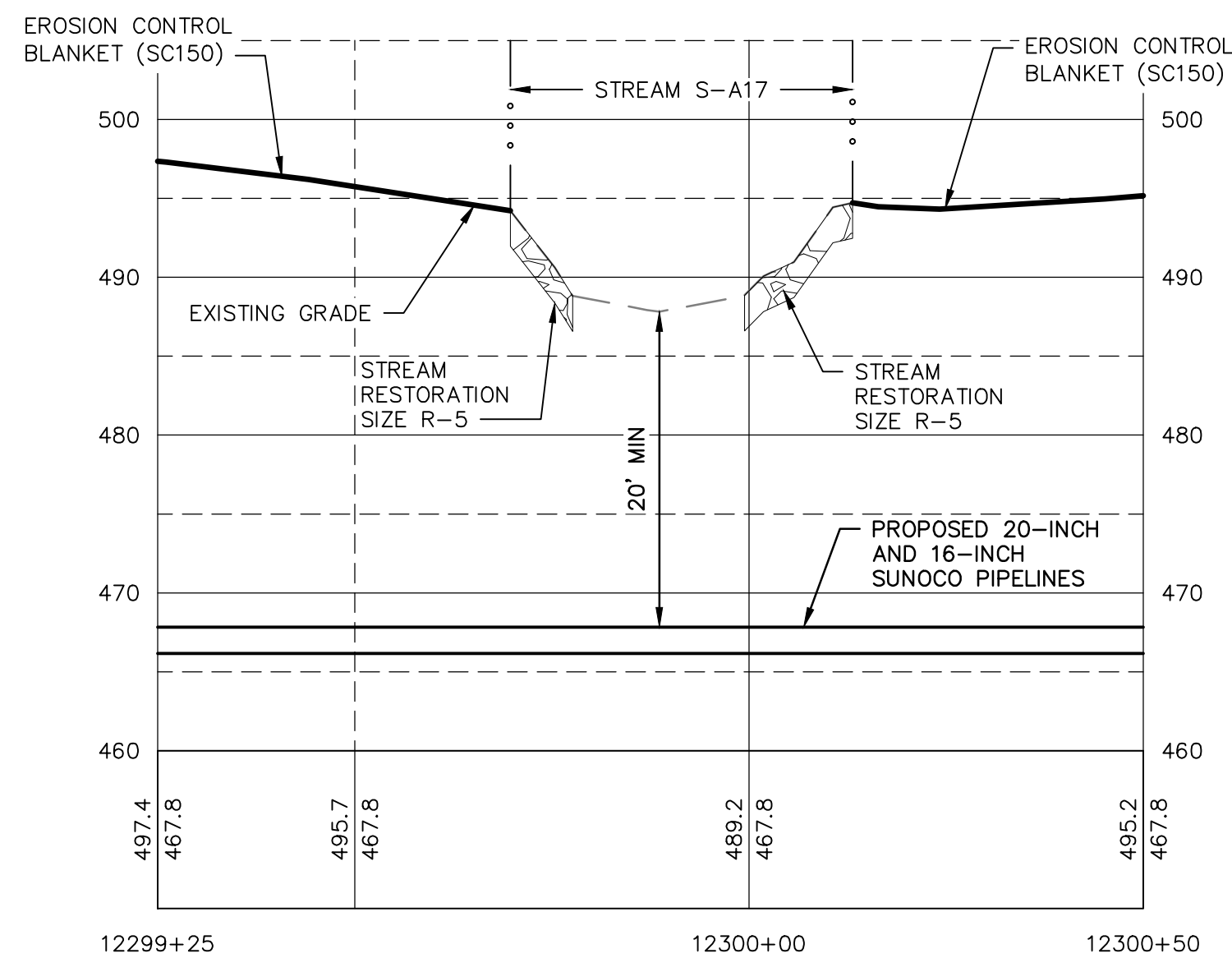
| SYMBOL | DESCRIPTION                                 |
|--------|---------------------------------------------|
|        | PROPOSED 16-INCH & 20-INCH SUNOCO PIPELINES |
|        | PROPOSED SUNOCO RIGHT-OF-WAY                |
|        | EXISTING SUNOCO PIPELINE                    |
|        | MAJOR 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                          |
|        | 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:

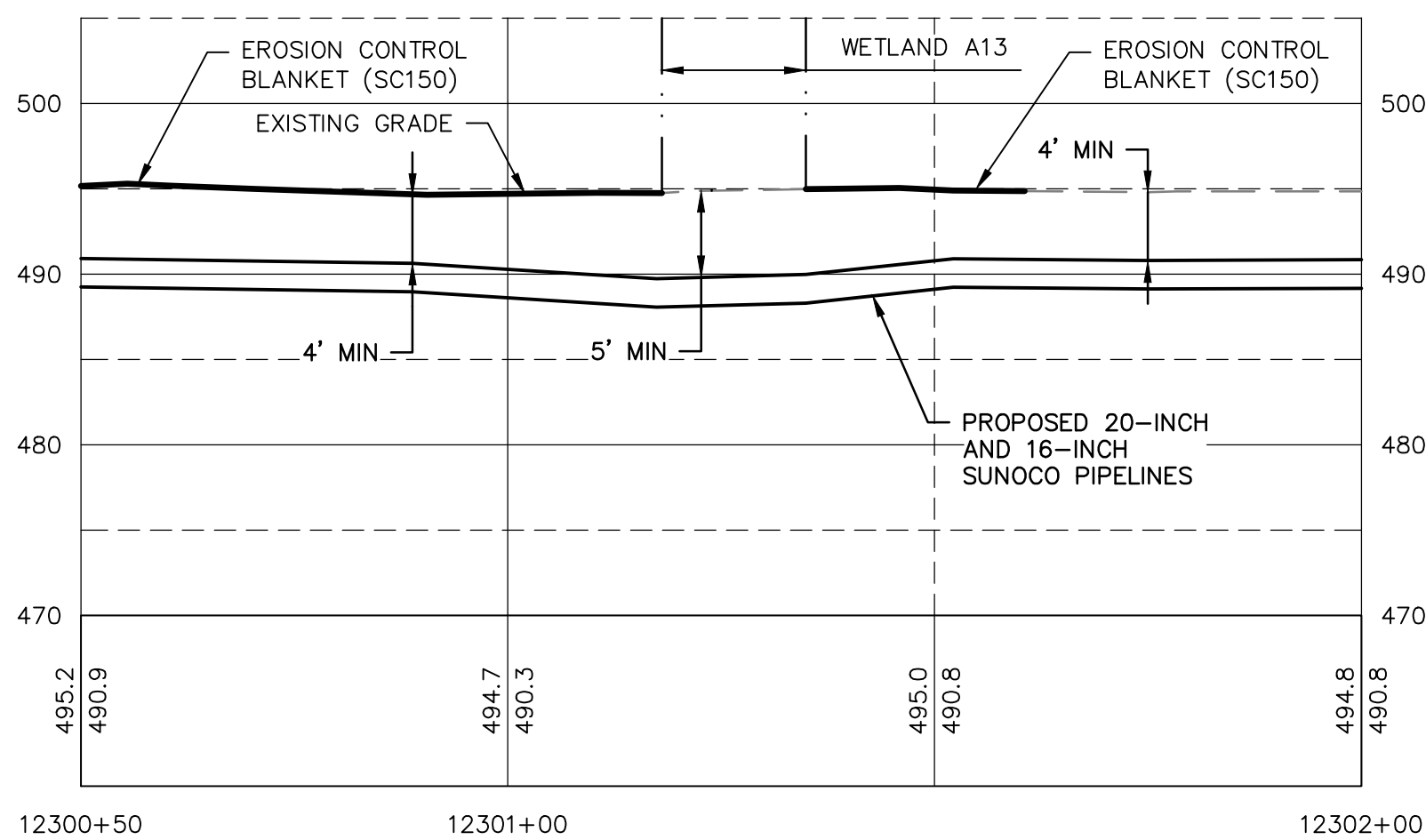
|  |                                                    |
|--|----------------------------------------------------|
|  | PROPOSED PIPELINE                                  |
|  | EXISTING GRADE                                     |
|  | EXISTING GRADE ELEV.<br>PROPOSED TOP OF PIPE ELEV. |



PLAN  
SCALE: 1"=20'

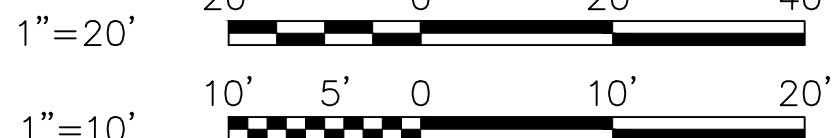


RESTORED GRADE PROFILE  
HORZ SCALE: 1"=20'  
VERT SCALE: 1"=10'



RESTORED GRADE 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:

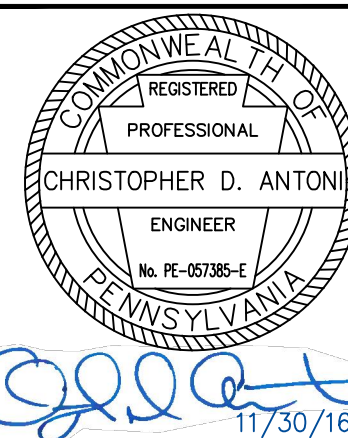
- REFERENCE NOTES AND DETAILS FOR STREAM CONSTRUCTION SEQUENCING AND STREAM RESTORATION (ES-0.01-ES-0.17).
- FOR TEMPORARY EQUIPMENT CROSSINGS REFERENCE (ES-0.10).
- SITE CONDITIONS MAY ALLOW FOR IMPLEMENTATION OF OTHER APPROVED PIPELINE INSTALLATION METHODS REFERENCED WITH THE NOTES AND DETAILS (ES-0.11-ES-0.14).
- 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           | 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-A17  
RESTORATION PLAN

LEBANON COUNTY, PA

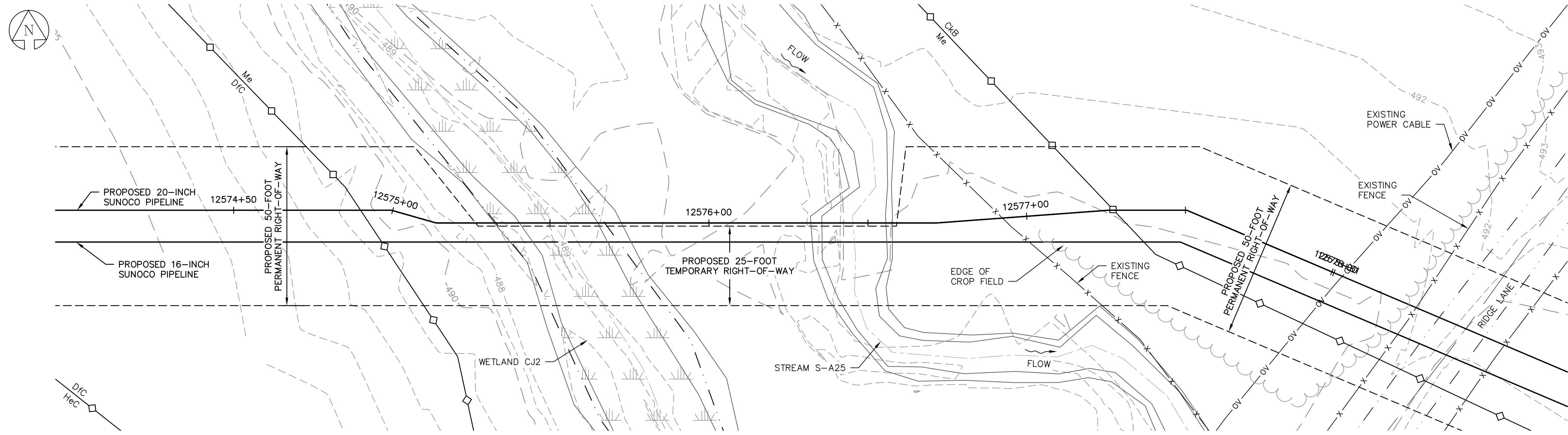
DWG. NO.  
S-A17B

REV. NO.  
0

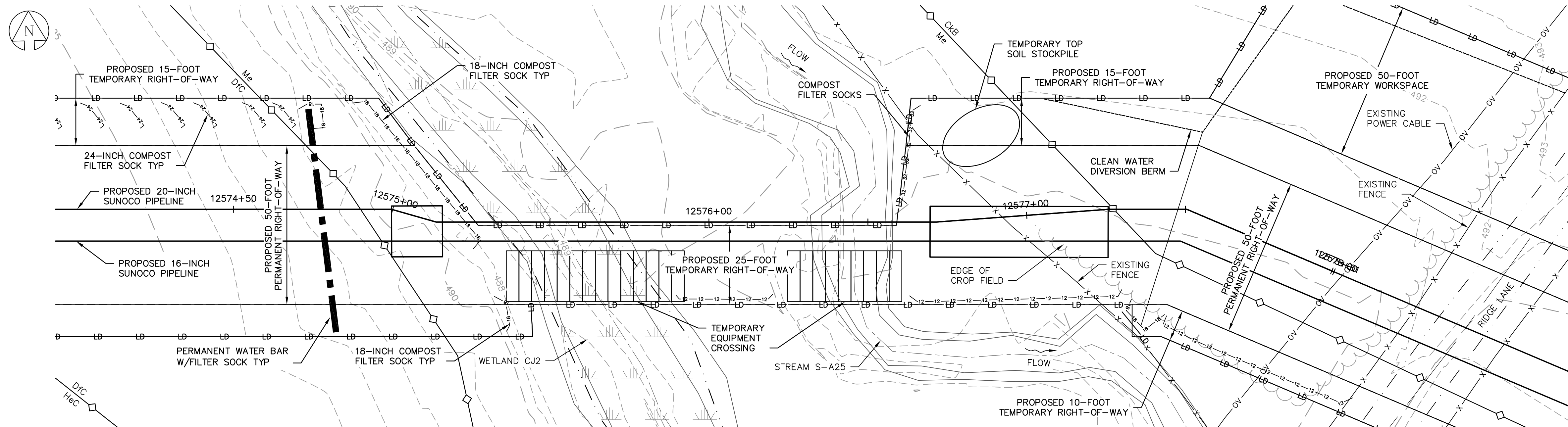
**STV**  
Baltimore, MD Bismarck, ND Denver, CO Douglassville, PA Houston, TX  
Pittsburgh, PA Williamsport, PA

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.

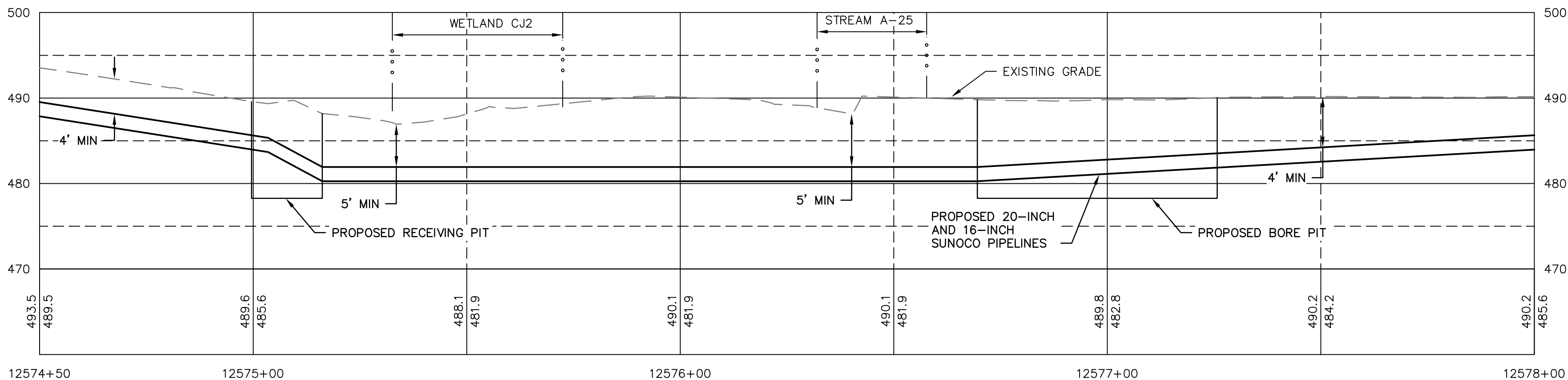
STV PROJECT No.: 38-17335



EXISTING CONDITIONS PLAN  
SCALE: 1"=20'

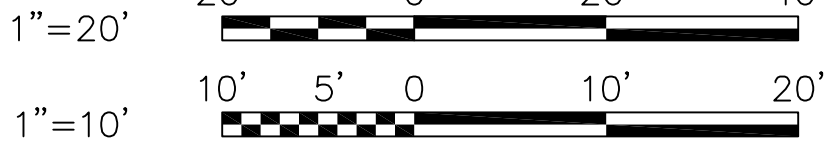


EROSION & SEDIMENTATION CONTROL PLAN  
SCALE: 1"=20'



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

GRAPHIC SCALE



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 |
|------|------|------|-------------|----------|
|------|------|------|-------------|----------|



PENNSYLVANIA PIPELINE PROJECT  
STREAM S-A25  
EXISTING CONDITIONS/EROSION & SEDIMENTATION CONTROL PLANS

LEBANON COUNTY, PA

DWG. NO.  
P-A1-A

REV. NO.  
0



CHRISTOPHER D. ANTONI  
PE-057385-E

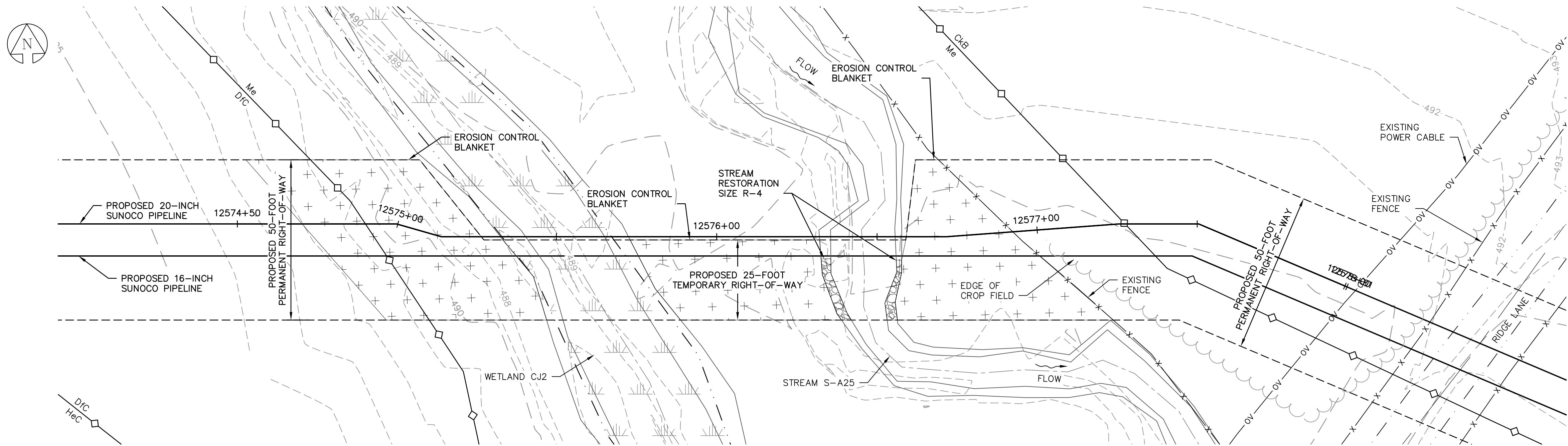
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|--------------------|----------|
| DRAWN BY           | PDZ      |
| CHECKED BY         | RJC      |
| APPROVED BY        | CDA      |
| DATE               | 11/30/16 |
| SCALE              | AS NOTED |

OLD DRAWING NO.

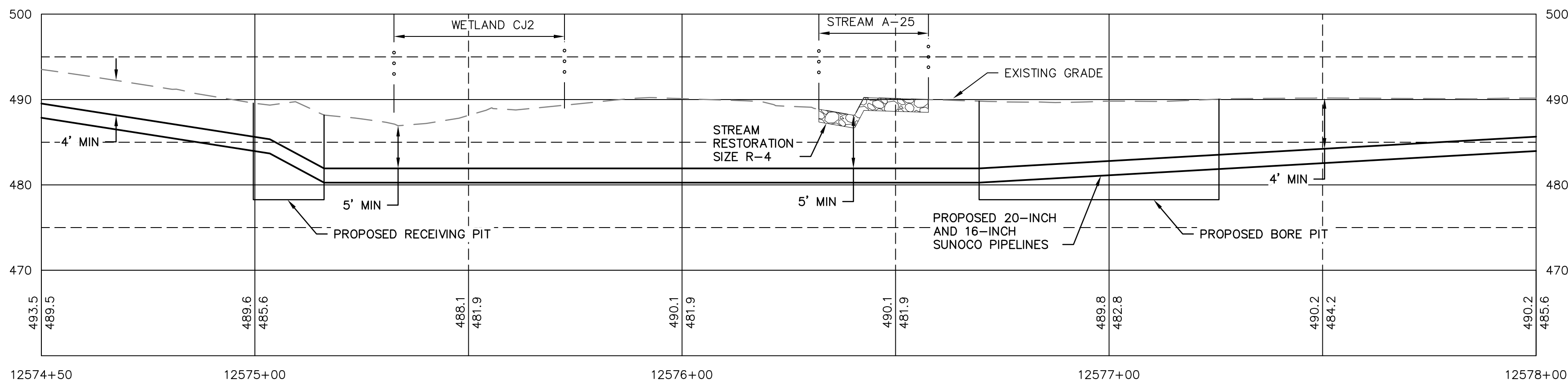
**STV**  
Baltimore, MD Bismarck, ND Denver, CO Douglassville, PA  
Houston, TX Pittsburgh, PA Williamsport, PA

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.

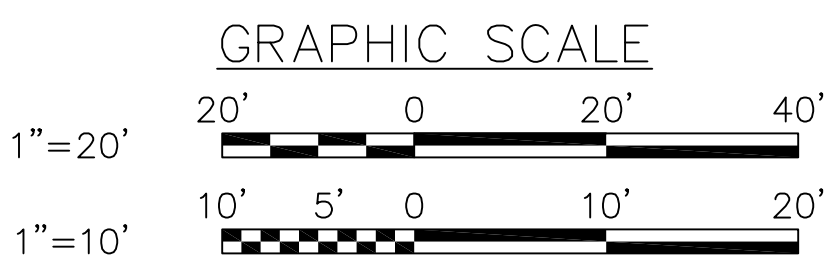
STV PROJECT No.: 38-17335



PLAN  
SCALE: 1"=20'  
FOR STREAM RESTORATION DETAILS,  
SEE DRAWING P-A1-103.



RESTORED GRADE PROFILE  
HORZ 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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- EXCAVATION IS LIMITED TO THE CENTERLINE WITH A TYPICAL TRENCH WIDTH OF 4'-5" FOR 16/20" PIPELINE.

#### WETLAND CROSSING NOTES:

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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:

- 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

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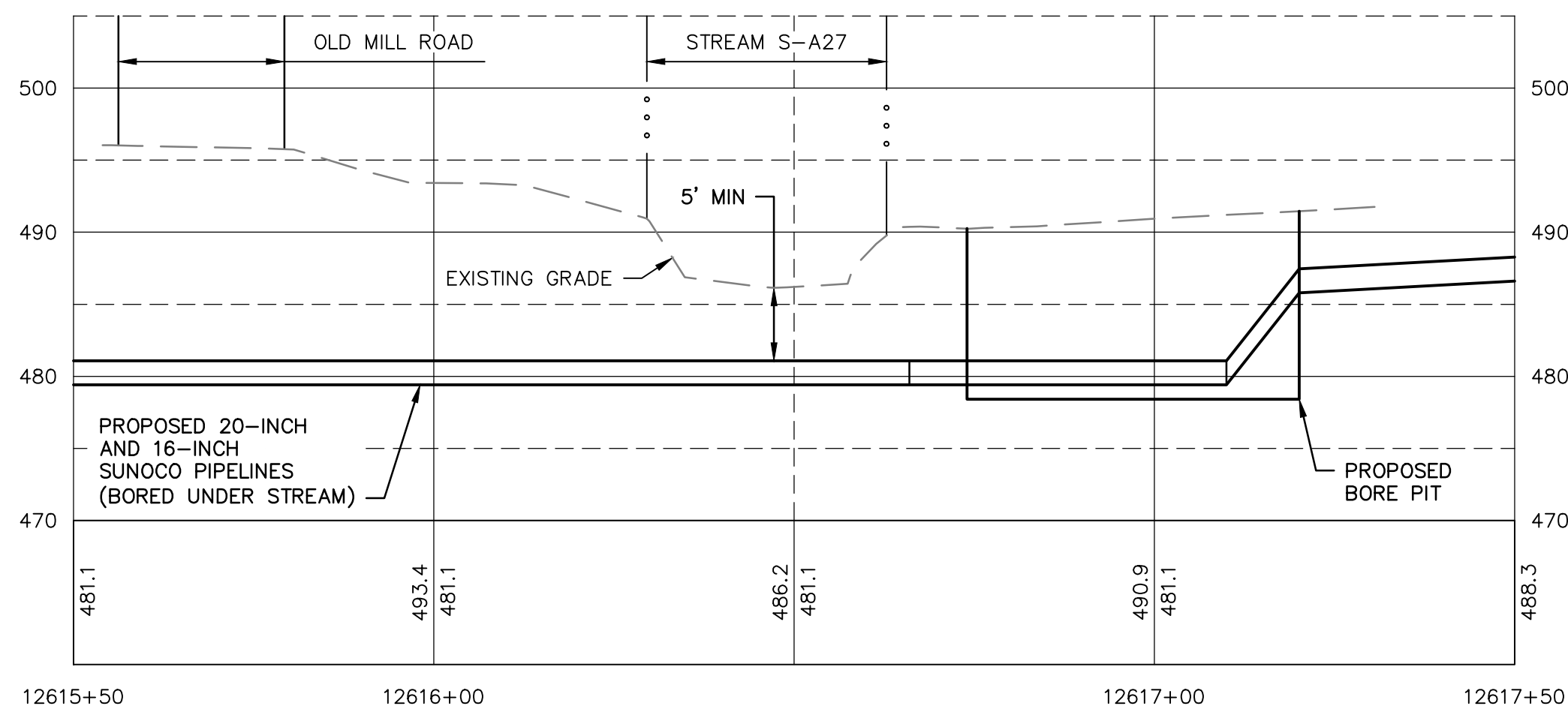
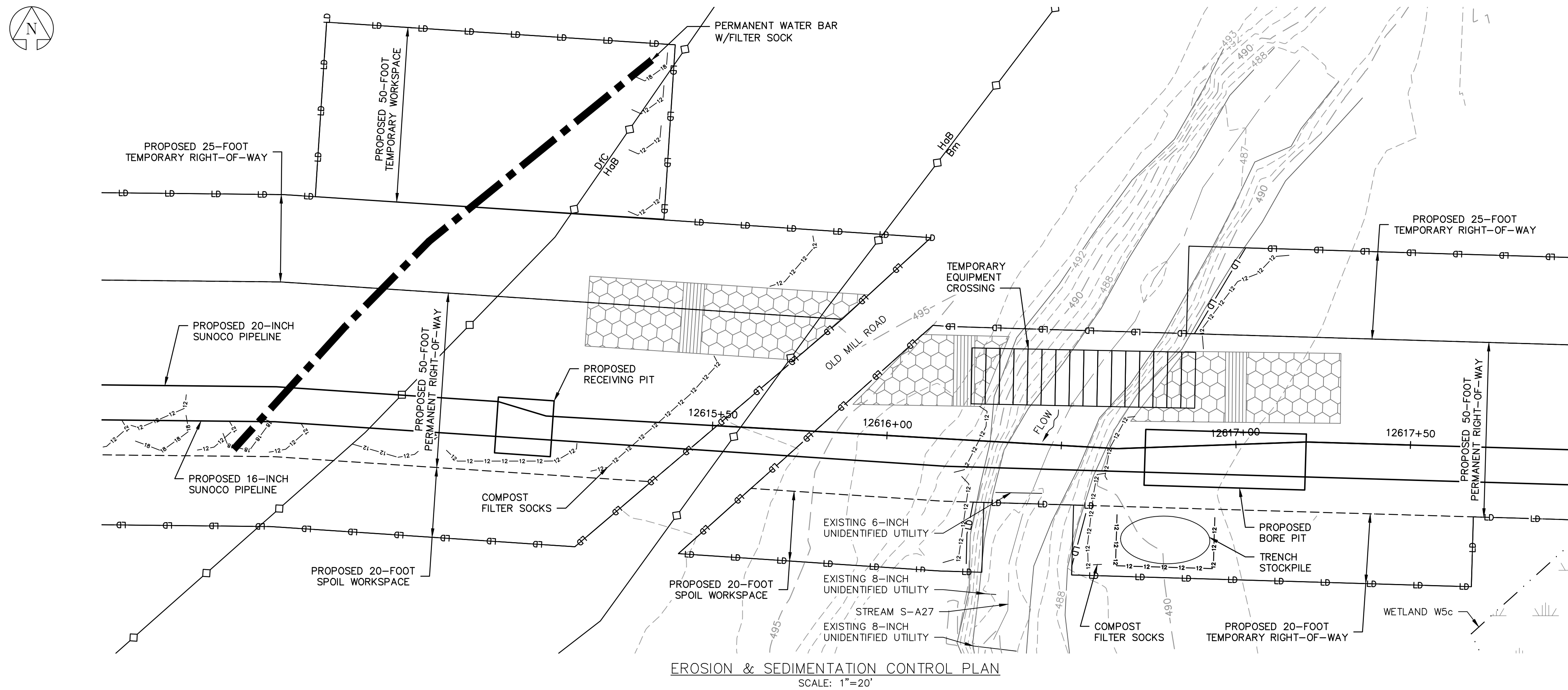
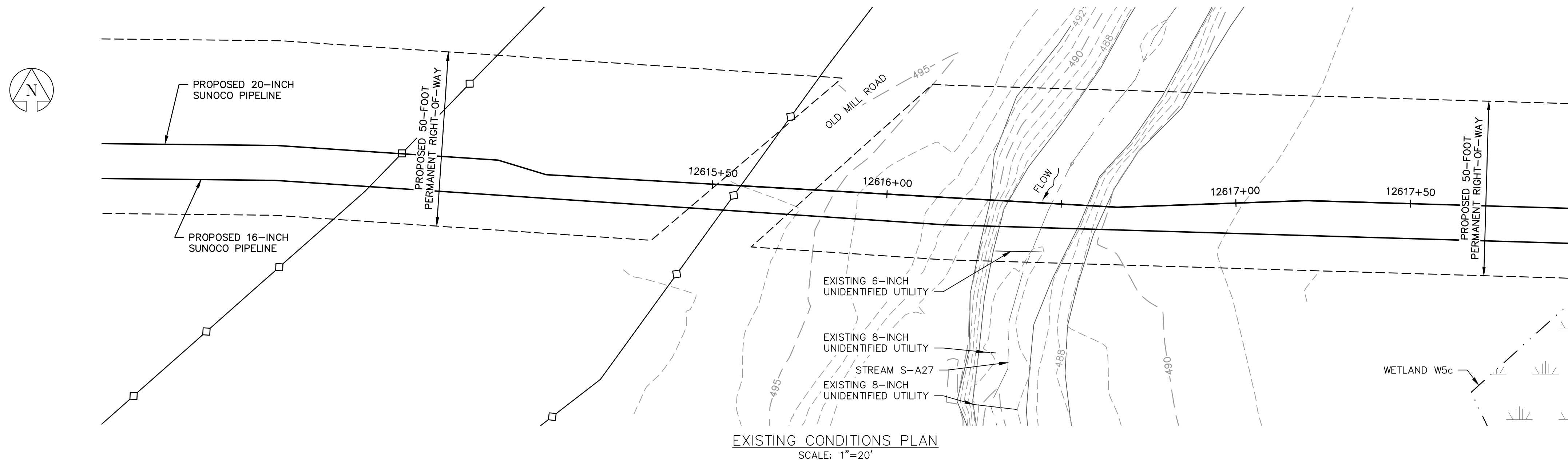
STV PROJECT No.: 38-17335

**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           | PDZ      |
| CHECKED BY         | RJC      |
| APPROVED BY        | CDA      |
| DATE               | 11/30/16 |
| SCALE              | AS NOTED |
| OLD DRAWING NO.    |          |

| REV.                                                                                        | DATE | APP# | DESCRIPTION | APPROVAL             |
|---------------------------------------------------------------------------------------------|------|------|-------------|----------------------|
| <div> <b>PENNSYLVANIA PIPELINE PROJECT</b><br/> <b>STREAM S-A25 RESTORATION PLAN</b> </div> |      |      |             |                      |
| <b>DWG. NO.</b><br>P-A1-B                                                                   |      |      |             | <b>REV. NO.</b><br>0 |
| LEBANON COUNTY, PA                                                                          |      |      |             |                      |



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

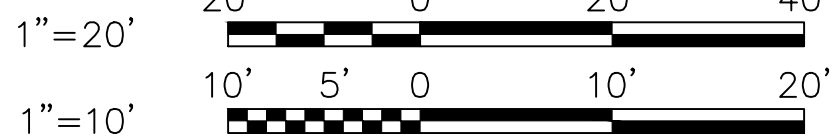
LEGEND

| 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:

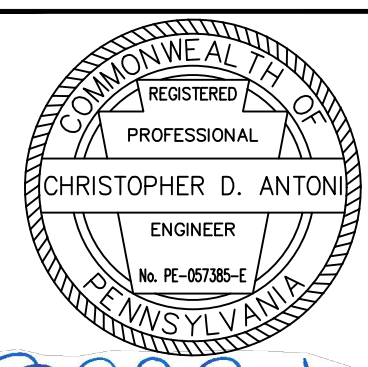
|  |                            |
|--|----------------------------|
|  | PROPOSED PIPELINE          |
|  | EXISTING GRADE             |
|  | EXISTING GRADE ELEV.       |
|  | PROPOSED TOP OF PIPE ELEV. |

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

OLD DRAWING NO.

| REV. | DATE | APP# | DESCRIPTION | APPROVAL |
|------|------|------|-------------|----------|
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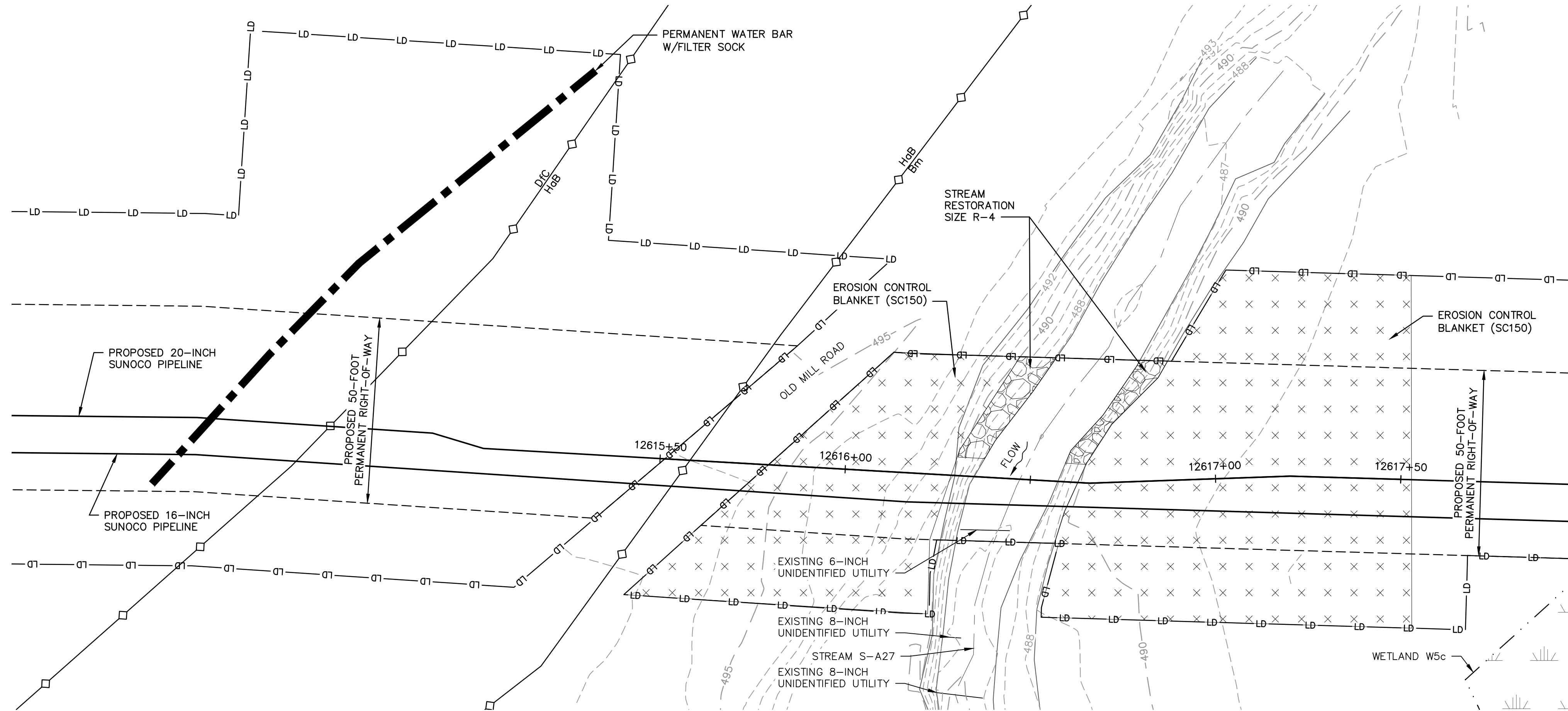


PENNSYLVANIA PIPELINE PROJECT  
STREAM S-A27  
EXISTING CONDITIONS/EROSION & SEDIMENTATION CONTROL PLANS

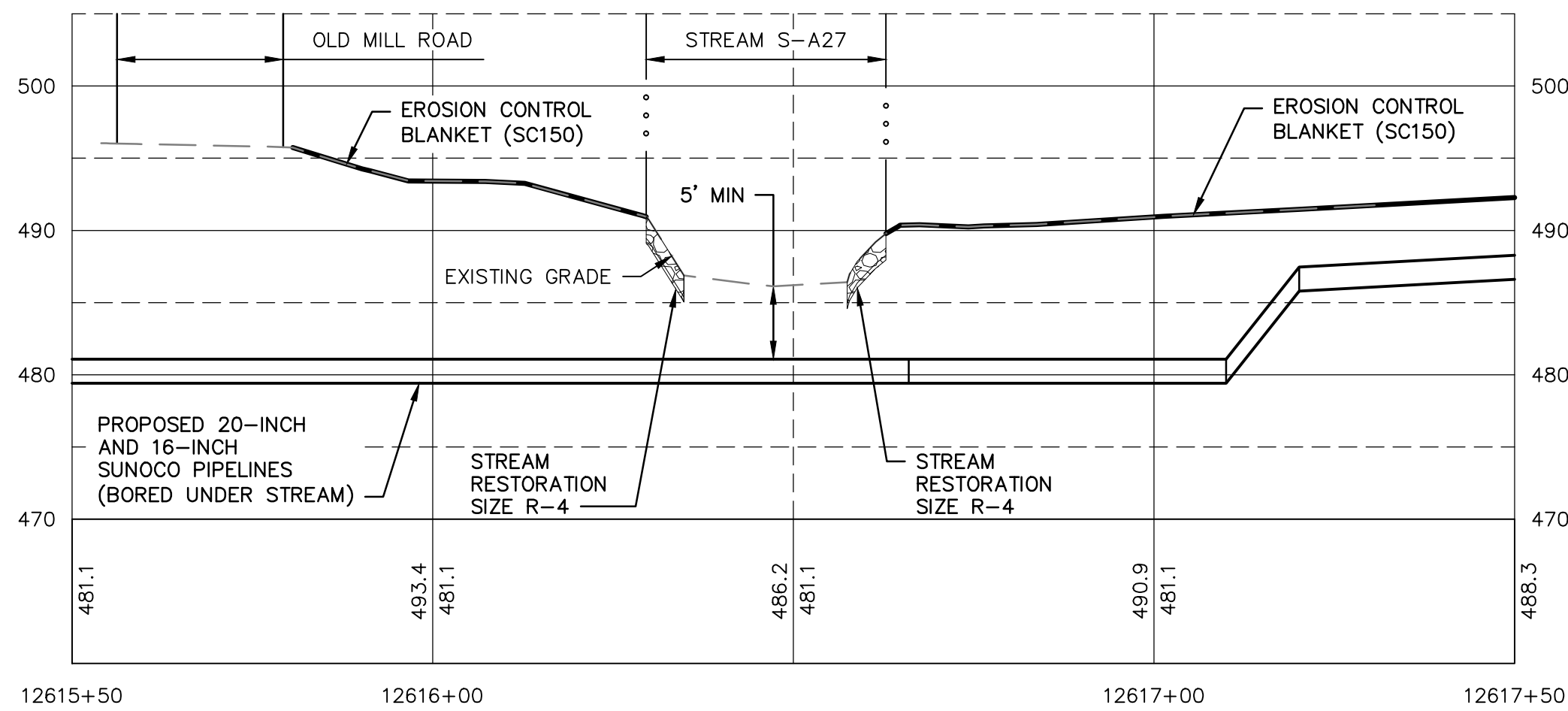
LEBANON COUNTY, PA

DWG. NO.  
S-A27A

REV. NO.  
0

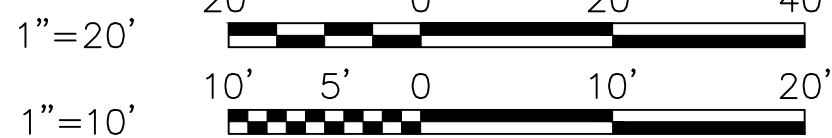


PLAN  
SCALE: 1"=20'



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:

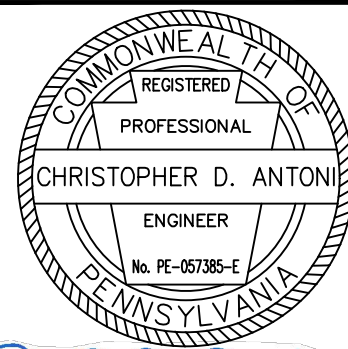
1. REFERENCE NOTES AND DETAILS FOR STREAM CONSTRUCTION SEQUENCING AND STREAM RESTORATION (ES-0.01-ES-0.17).
2. FOR TEMPORARY EQUIPMENT CROSSINGS REFERENCE (ES-0.10).
3. SITE CONDITIONS MAY ALLOW FOR IMPLEMENTATION OF OTHER APPROVED PIPELINE INSTALLATION METHODS REFERENCED WITH THE NOTES AND DETAILS (ES-0.11-ES-0.14).
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                 |
|        | 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  
STREAM S-A27  
RESTORATION PLAN

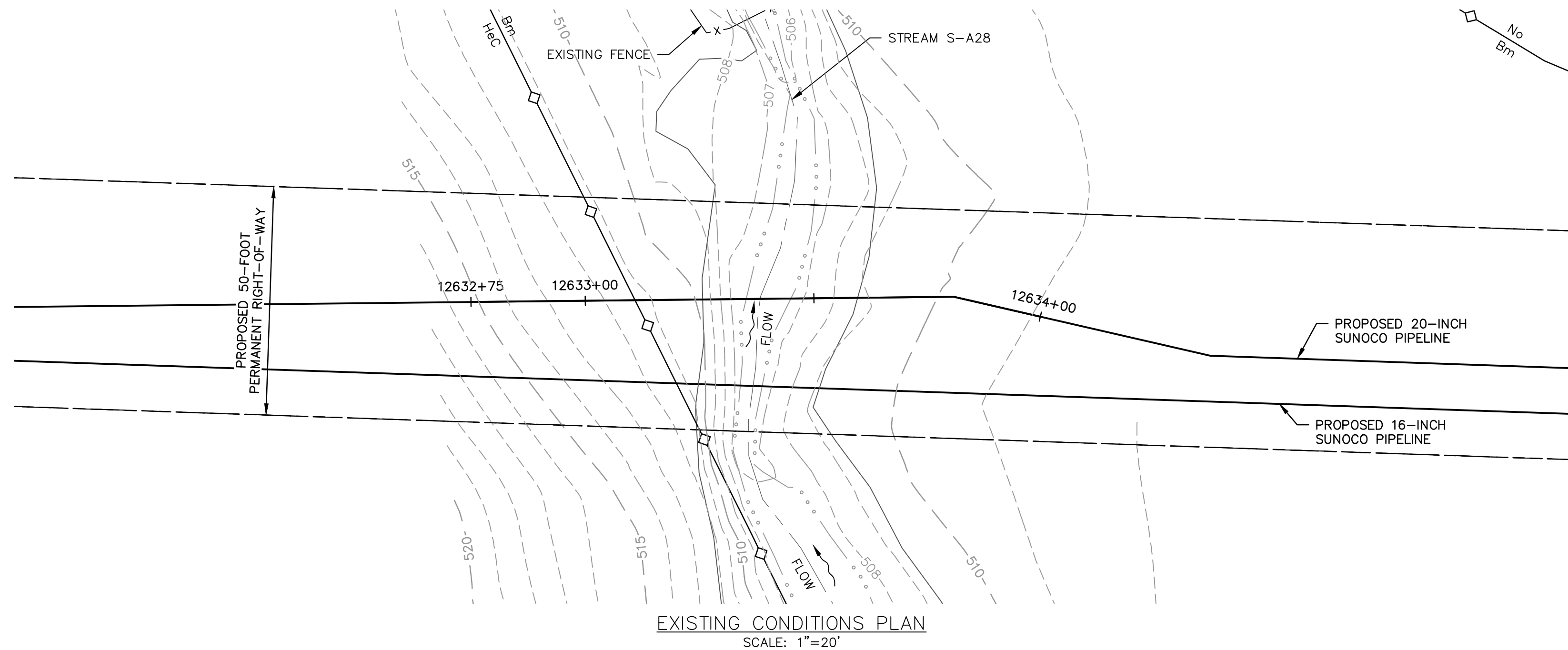
LEBANON COUNTY, PA

DWG. NO.

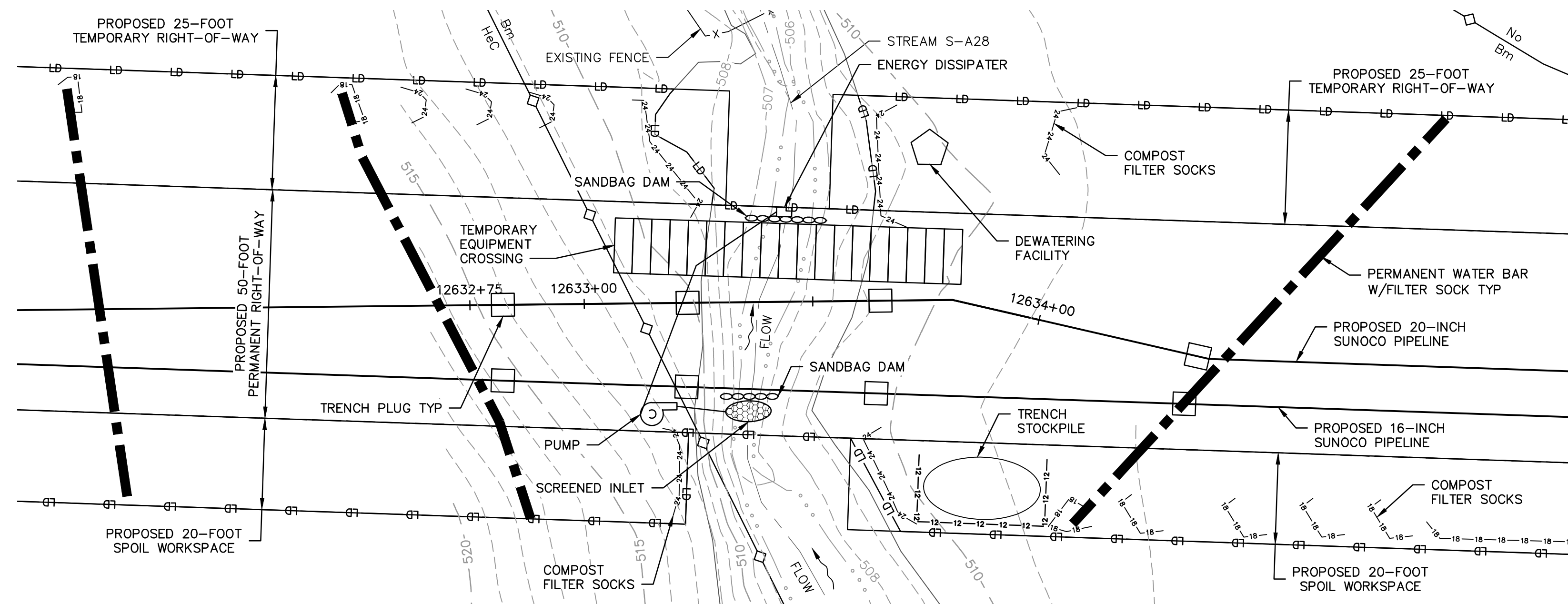
S-A27B

REV. NO.

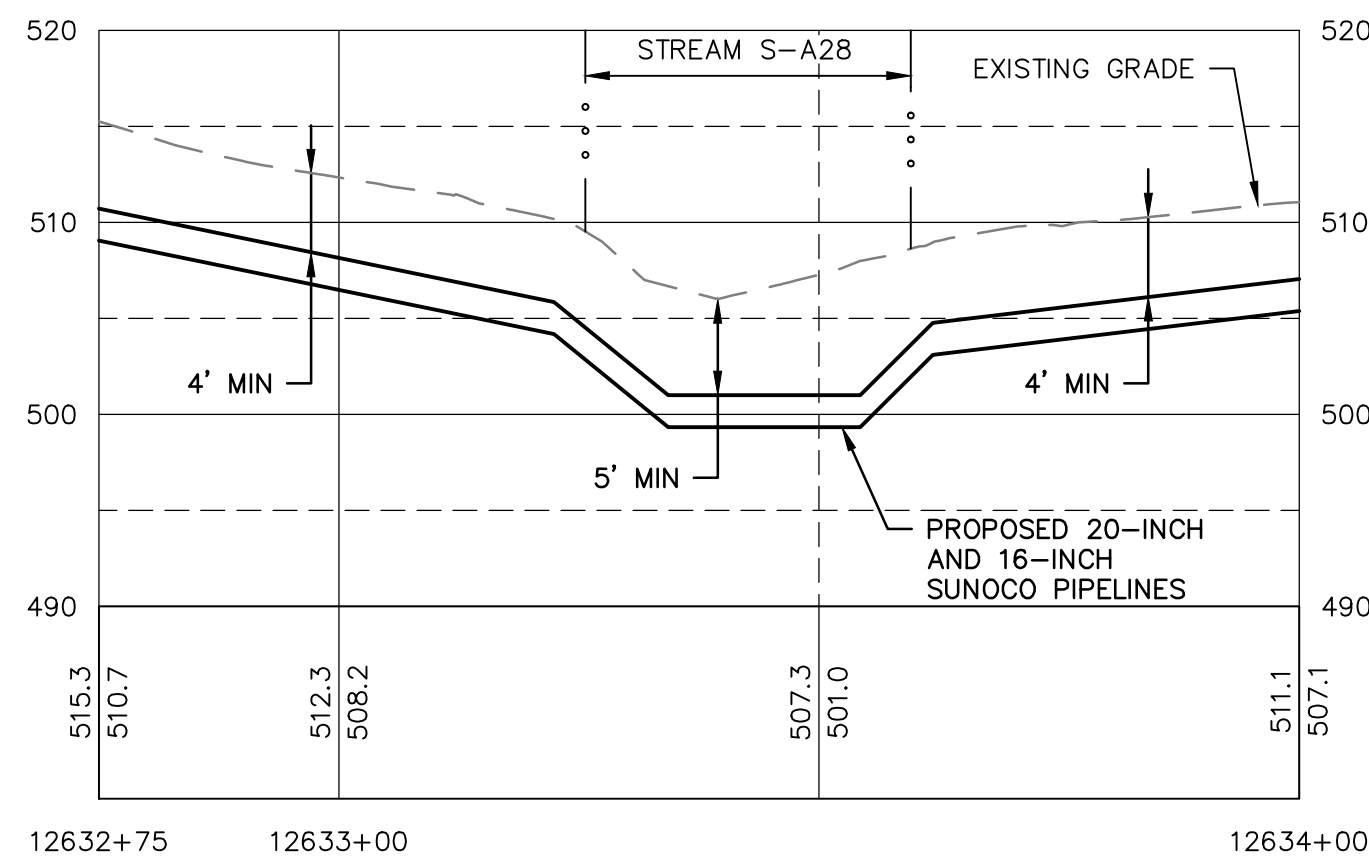
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EXISTING CONDITIONS PLAN  
SCALE: 1"=20'

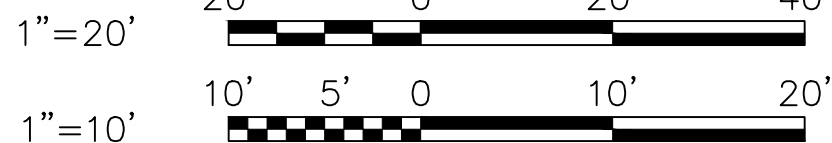


EROSION & SEDIMENTATION CONTROL PLAN  
SCALE: 1"=20'



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

GRAPHIC SCALES



GENERAL NOTES:

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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.
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2. A MINIMUM OF 4 FEET COVER UNDER WETLANDS AND UPLANDS IS REQUIRED.
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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:

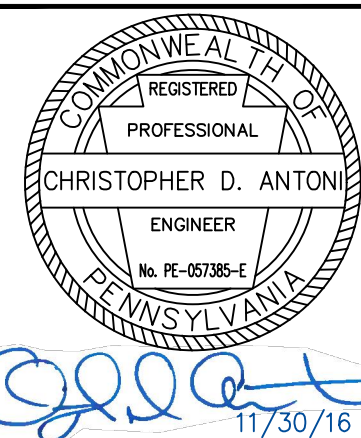
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2. FOR TEMPORARY EQUIPMENT CROSSINGS REFERENCE (ES-0.10).
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6. EROSION CONTROL BLANKET SHALL BE PLACED A MINIMUM OF 50 FEET FROM TOP OF BANK OR 100 FEET FROM TOP OF BANK FOR SPECIAL PROTECTION WATERS (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    | 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-A28  
EXISTING CONDITIONS/EROSION & SEDIMENTATION CONTROL PLANS

LEBANON COUNTY, PA

DWG. NO.

S-A28A

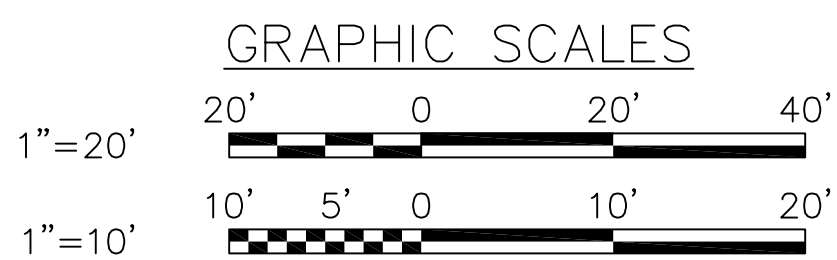
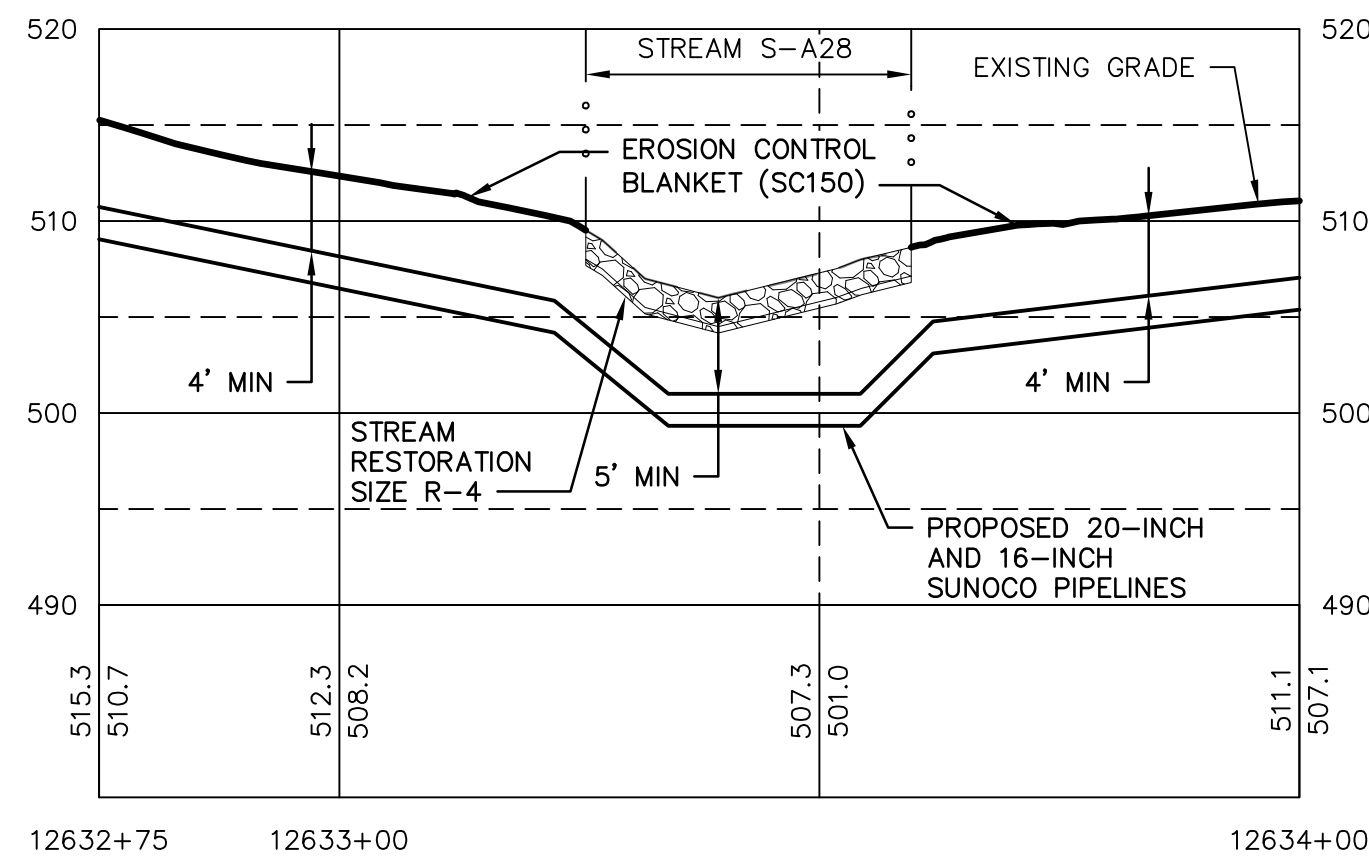
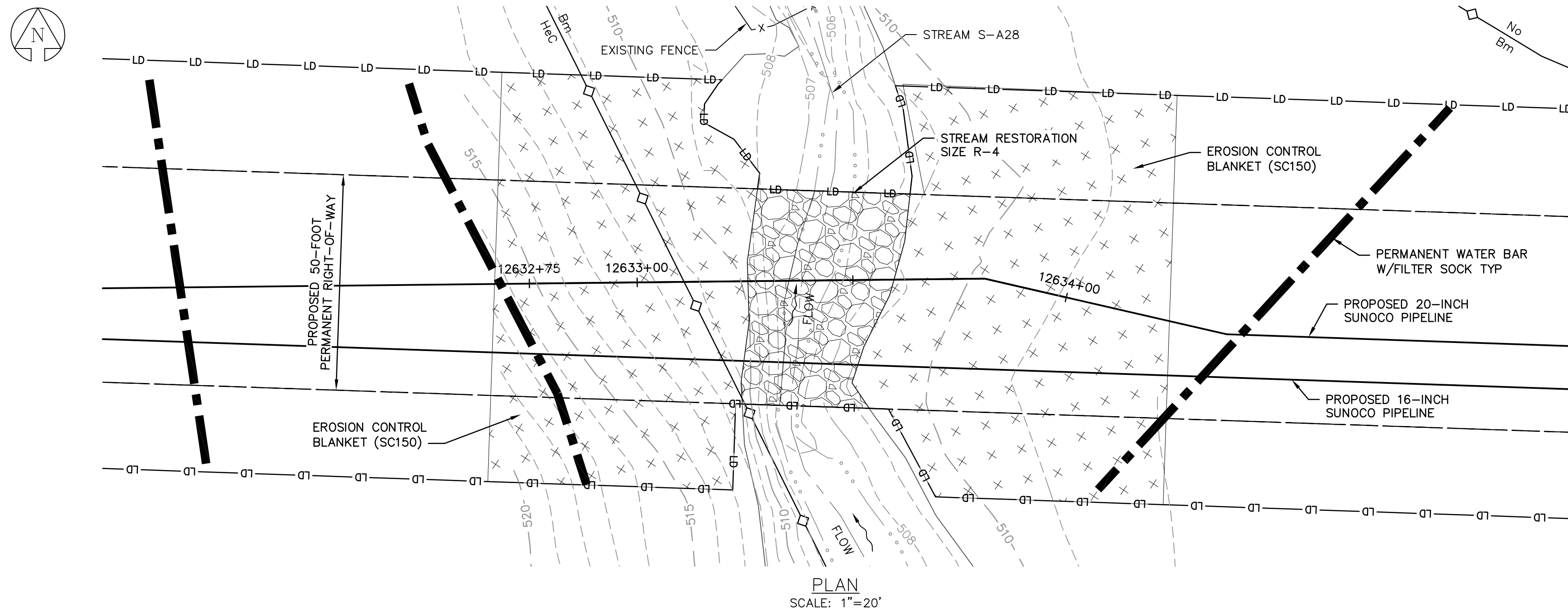
REV. NO.

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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:

- 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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- 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

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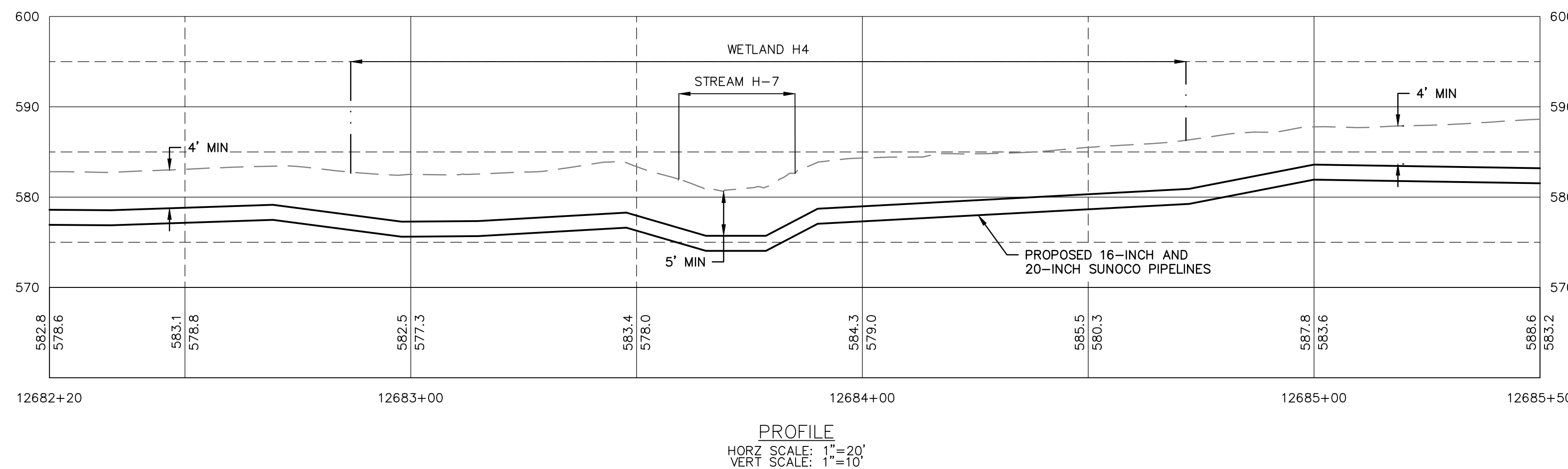
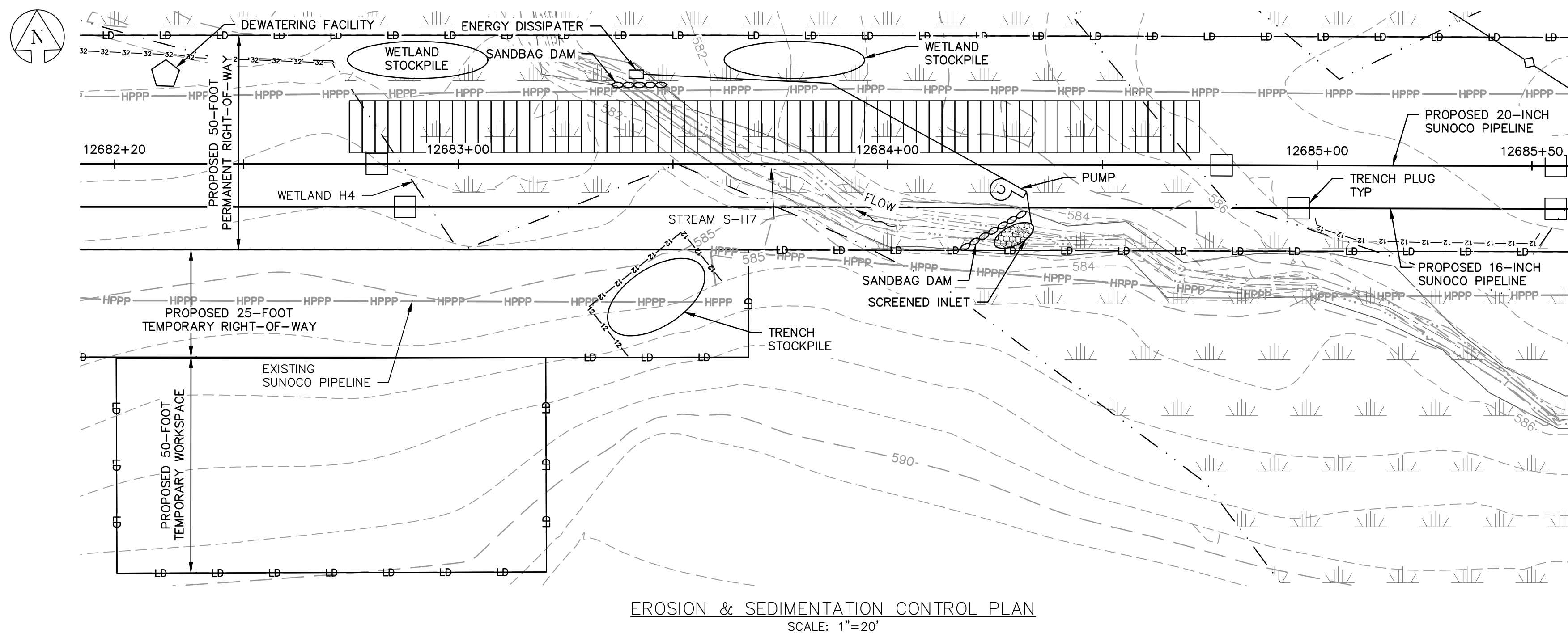
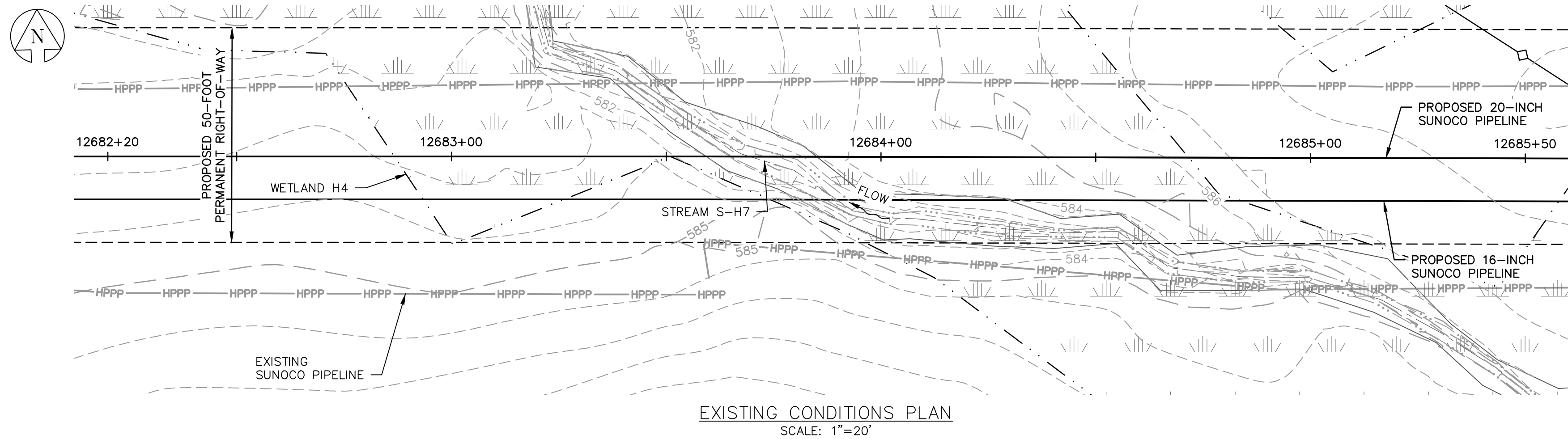
STV PROJECT No.: 38-17335

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

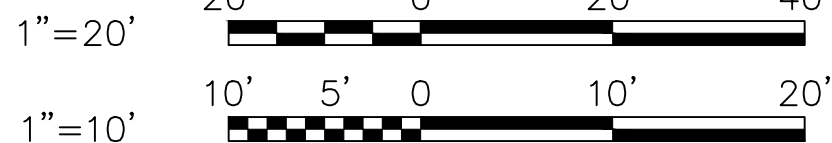
CHRISTOPHER D. ANTONI  
PE-057385-E

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

| REV.                                                                                                                              | DATE | APP# | DESCRIPTION | APPROVAL             |
|-----------------------------------------------------------------------------------------------------------------------------------|------|------|-------------|----------------------|
| <div><b>PENNSYLVANIA PIPELINE PROJECT</b><br/><b>STREAM S-A28</b><br/><b>RESTORATION PLAN</b></div> <div>LEBANON COUNTY, PA</div> |      |      |             |                      |
| DWG. NO.<br><b>S-A28-B</b>                                                                                                        |      |      |             | REV. NO.<br><b>0</b> |



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.
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STREAM CROSSING NOTES:

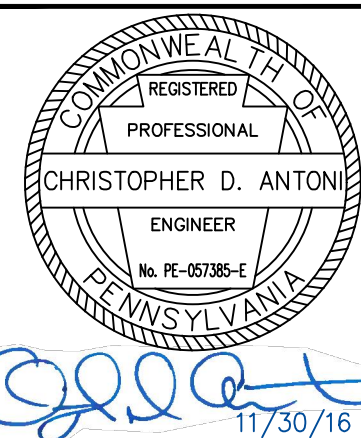
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LEGEND

| 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                          |
|        | 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.<br>PROPOSED TOP OF PIPE ELEV. |



CHRISTOPHER D. ANTONI  
PE-057385-E

| ENGINEERING RECORD |          |
|--------------------|----------|
| DRAWN BY           | LG       |
| 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-H47  
EROSION & SEDIMENTATION  
CONTROL PLAN AND PROFILE

LEBANON COUNTY, PA

DWG. NO.

S-H7-A

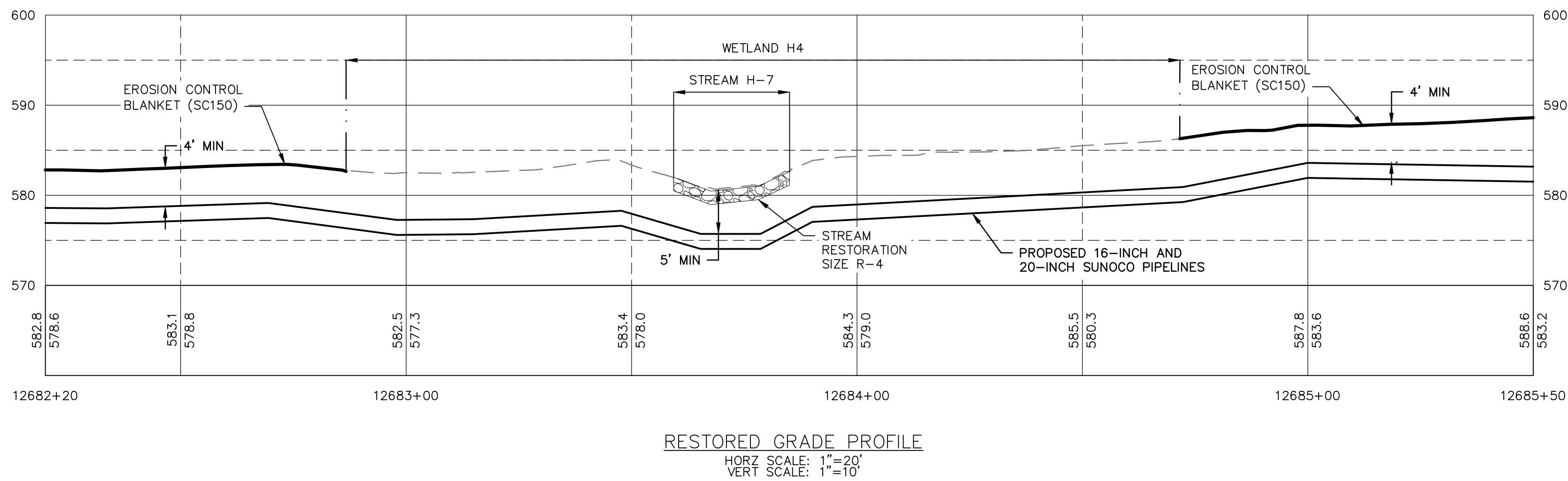
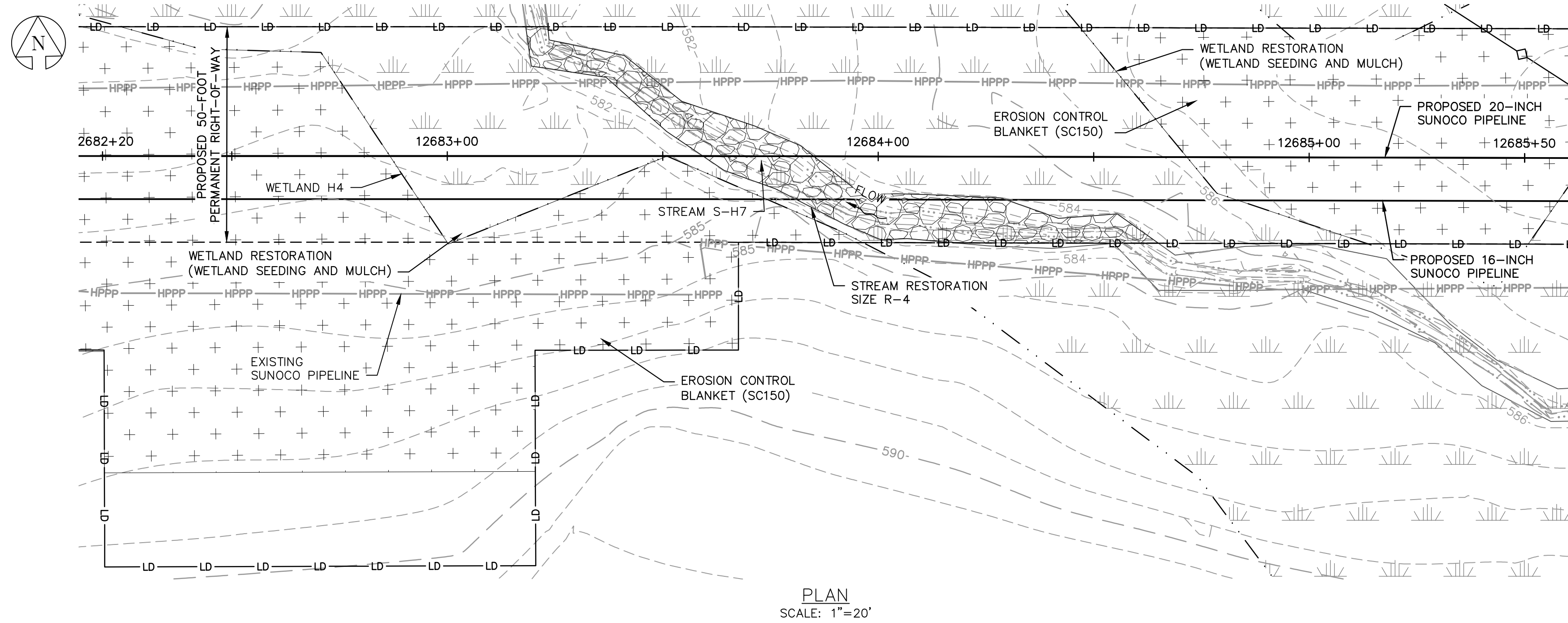
REV. NO.

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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                 |
|        | 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

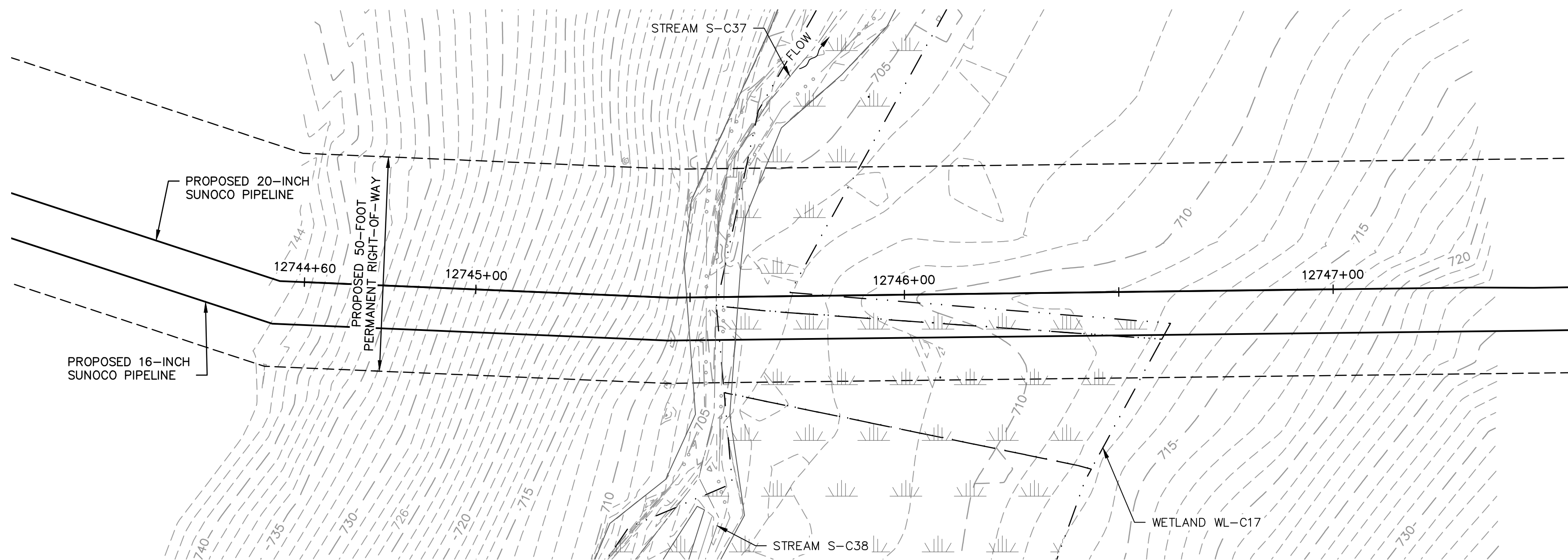
THE LOCATION OF THE PIPELINE FACILITIES AS SHOWN HEREON MUST BE CONSIDERED AS APPROXIMATE ONLY. BEFORE DIGGING OR FOR AN EXACT LOCATION PLEASE CONTACT YOUR STATES UNDERGROUND UTILITY LOCATION SERVICE.

STV PROJECT No.: 38-17335

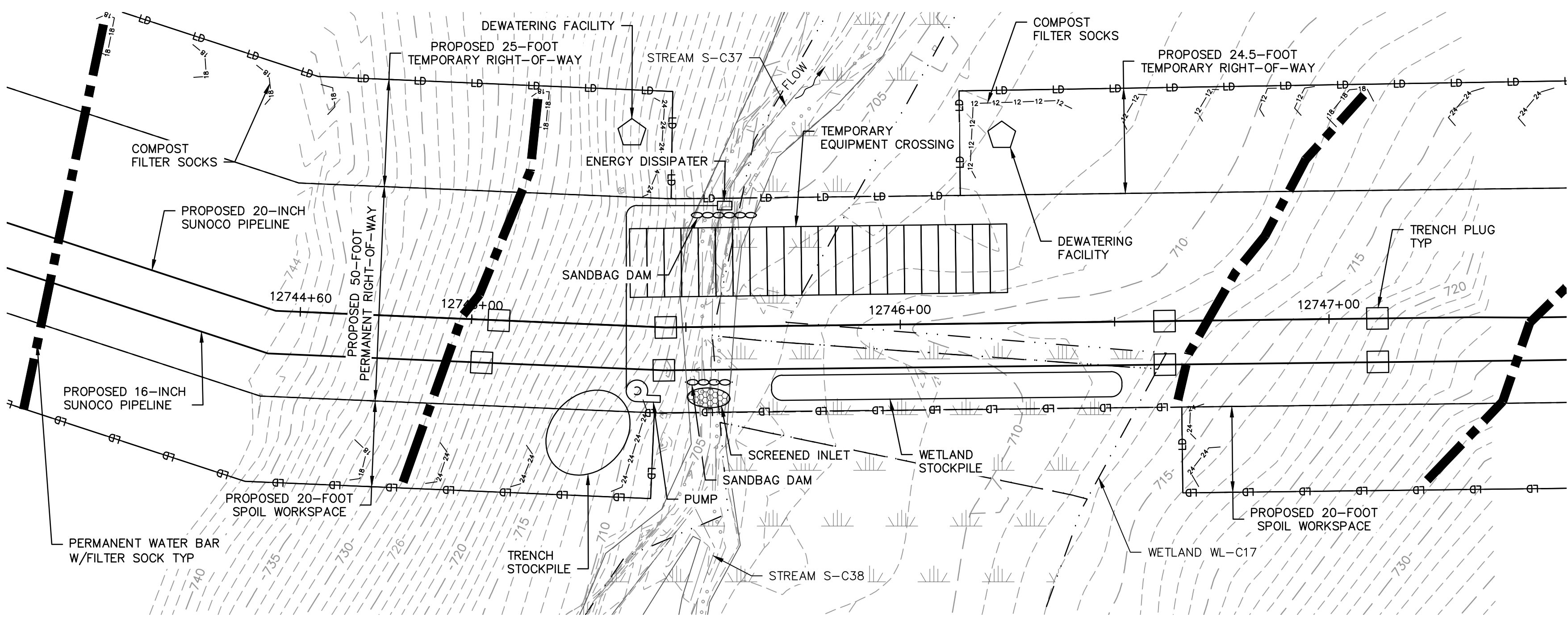
**COMMONWEALTH OF PENNSYLVANIA**  
REGISTERED PROFESSIONAL ENGINEER  
CHRISTOPHER D. ANTONI  
No. PE-057385-E  
11/30/16  
CHRISTOPHER D. ANTONI  
PE-057385-E

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

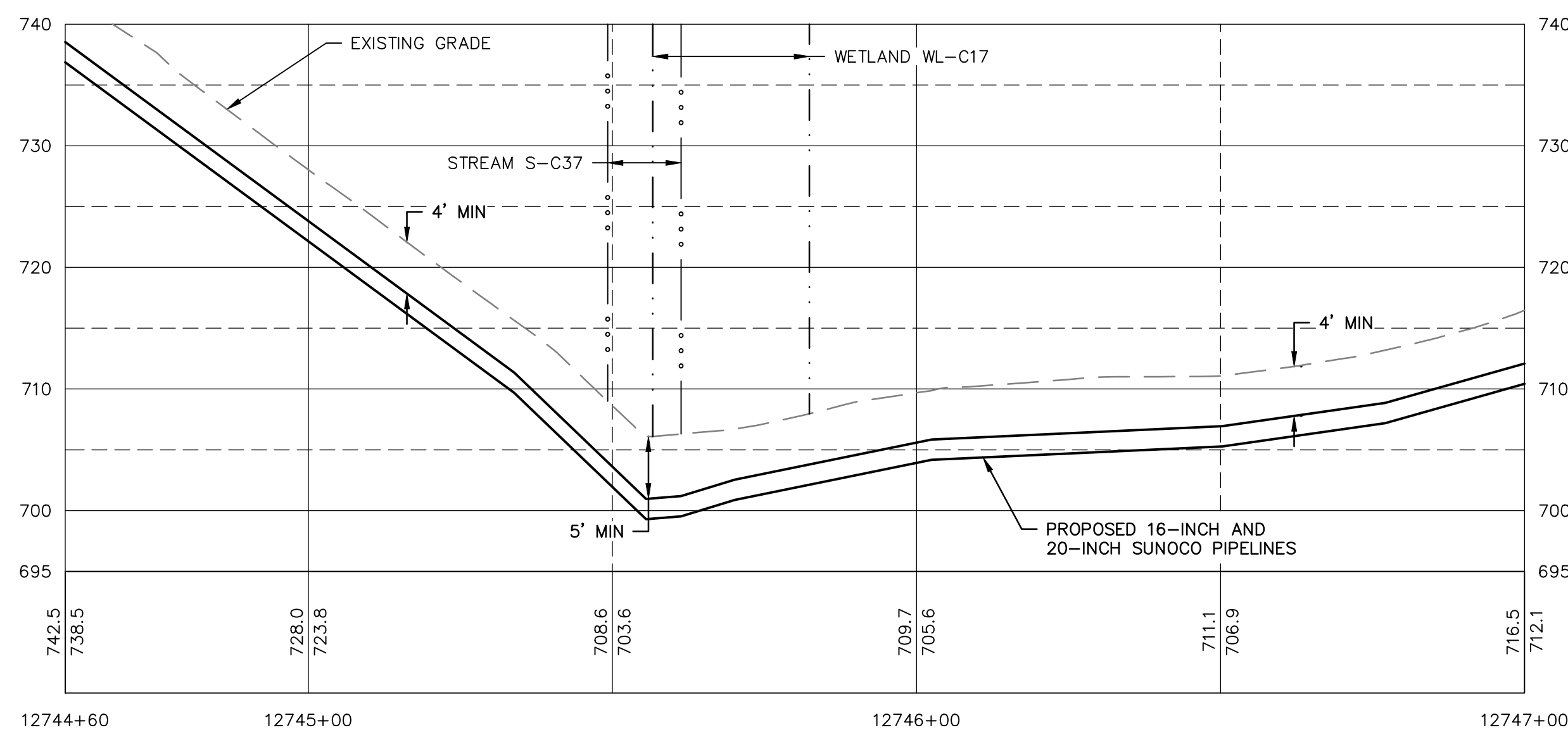
| REV.                                                              | DATE | APP# | DESCRIPTION               | APPROVAL             |
|-------------------------------------------------------------------|------|------|---------------------------|----------------------|
| <b>Sunoco Logistics Partners L.P.</b>                             |      |      |                           |                      |
| PENNSYLVANIA PIPELINE PROJECT<br>STREAM S-H47<br>RESTORATION PLAN |      |      |                           |                      |
| LEBANON COUNTY, PA                                                |      |      |                           |                      |
| OLD DRAWING NO.                                                   |      |      | DWG. NO.<br><b>S-H7-B</b> | REV. NO.<br><b>0</b> |



EXISTING CONDITIONS PLAN  
SCALE: 1"=20'

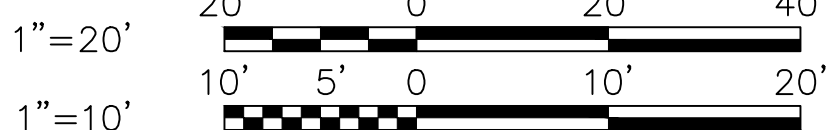


EROSION & SEDIMENTATION CONTROL PLAN  
SCALE: 1"=20'



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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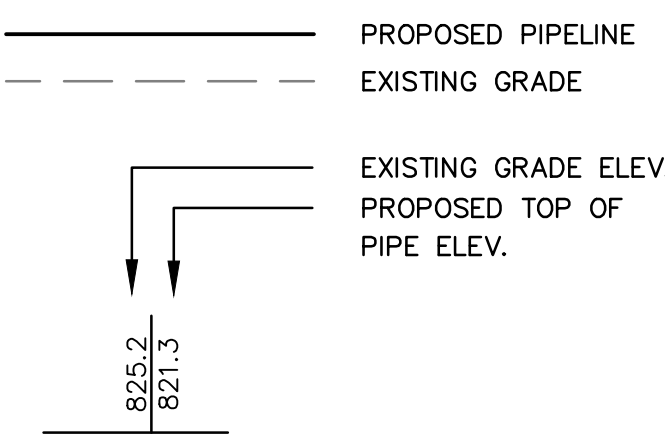
STV PROJECT No.: 38-17335

**ENGINEERING RECORD**

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

CHRISTOPHER D. ANTONI  
PE-057385-E

PROFILE LEGEND:



GENERAL NOTES:

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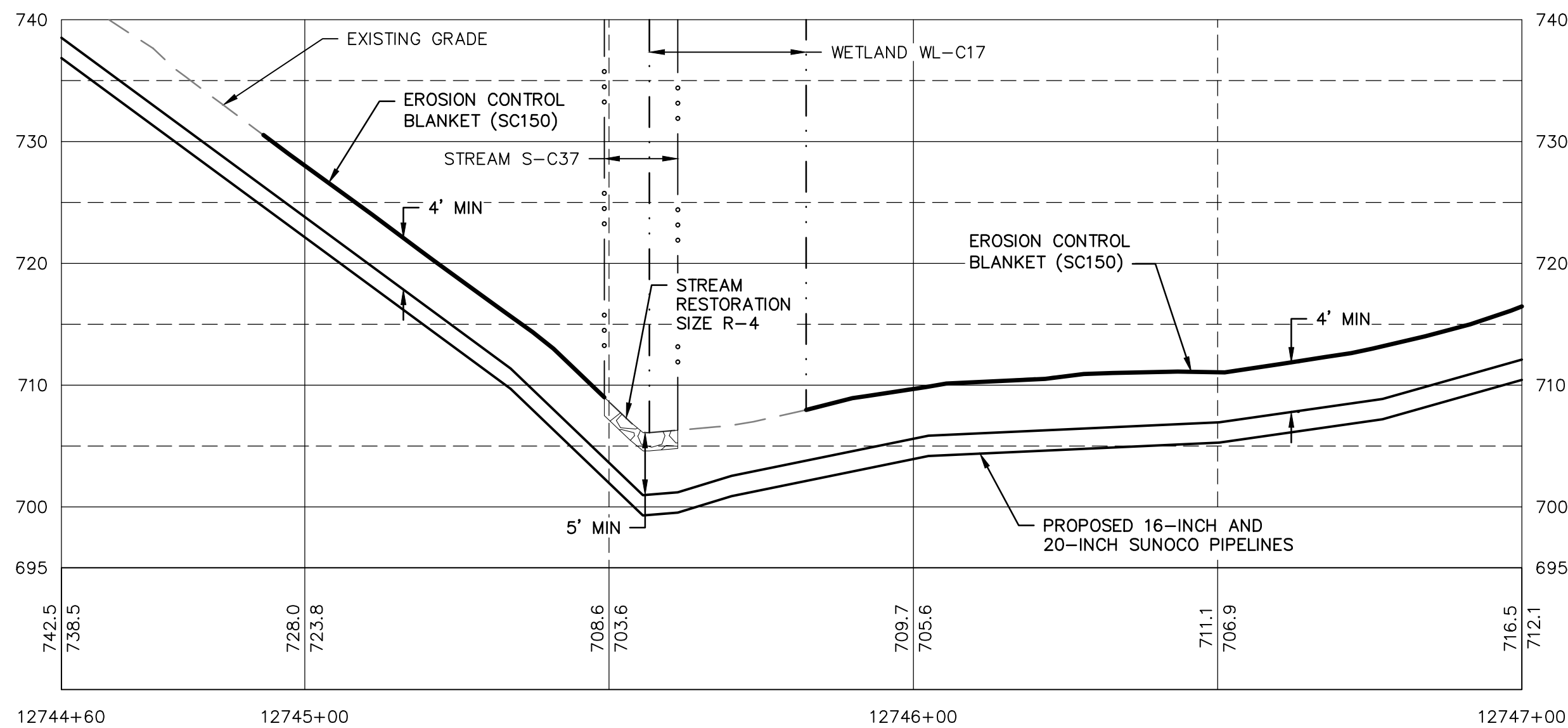
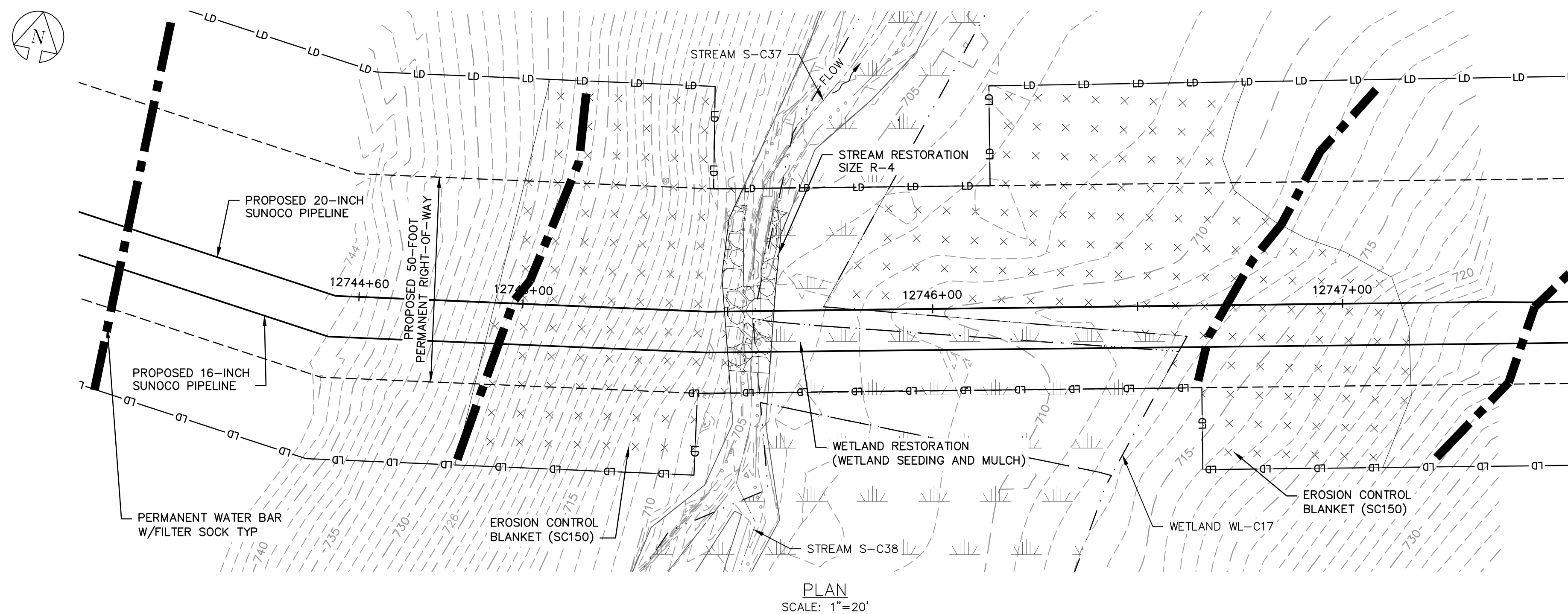
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- COMPOST FILTER SOCKS SHALL BE INSTALLED ALONG THE TOP OF THE STREAM BANK ACROSS THE RIGHT-OF-WAY WHEN PUMP BYPASS IS NOT IN PLACE.

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<br>STREAM S-C37<br>EXISTING CONDITIONS/EROSION & SEDIMENTATION CONTROL PLAN |      |      |             |          |
| LEBANON COUNTY, PA                                                                                        |      |      |             |          |
| DWG. NO.                                                                                                  |      |      | REV. NO.    |          |
| WL-C17-A                                                                                                  |      |      | 0           |          |



GENERAL NOTES:

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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).
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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.

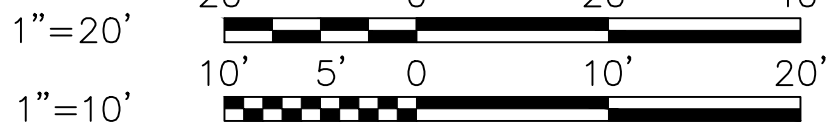
LEGEND

| 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. |

GRAPHIC SCALES



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

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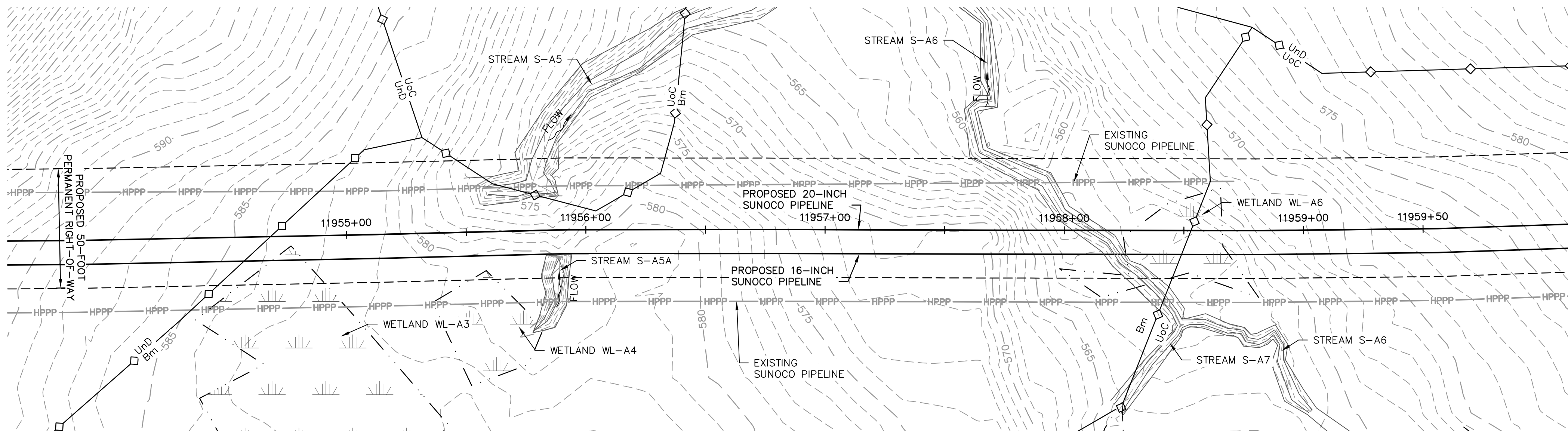
STV PROJECT No.: 38-17335

**ENGINEERING RECORD**

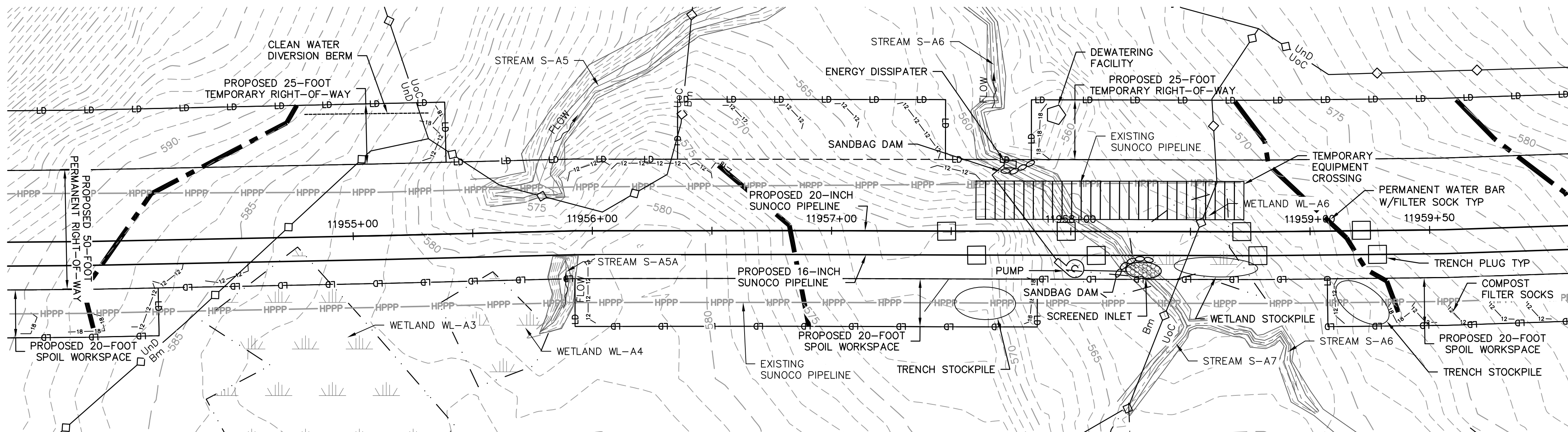
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| DRAWN BY    | DLH      |
| CHECKED BY  | CDA      |
| APPROVED BY | CDA      |
| DATE        | 11/30/16 |
| SCALE       | AS NOTED |

CHRISTOPHER D. ANTONI  
PE-057385-E

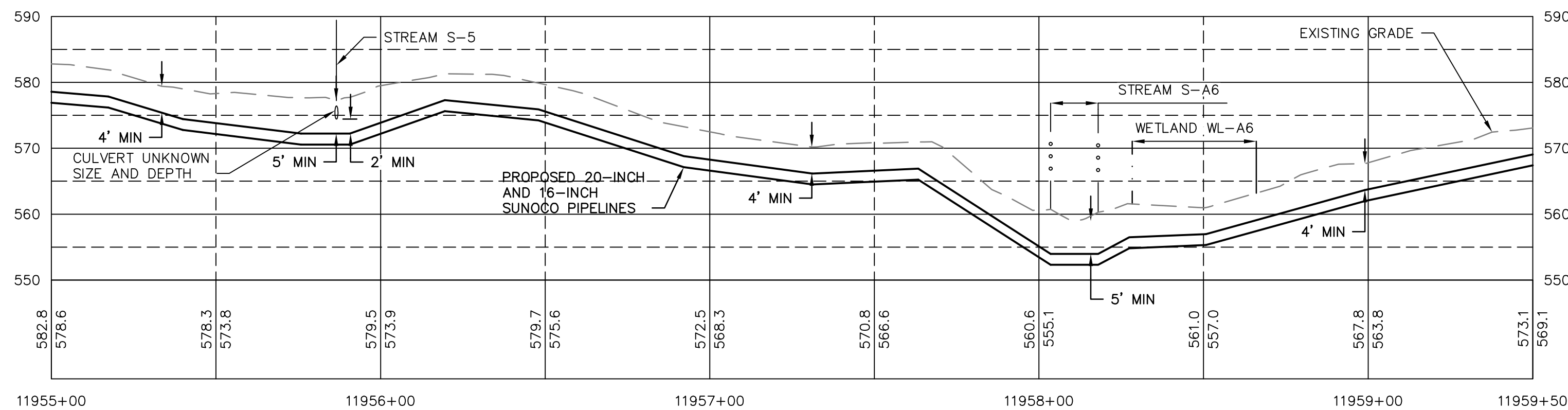
| REV.                                                                                   | DATE | APP# | DESCRIPTION                 | APPROVAL             |
|----------------------------------------------------------------------------------------|------|------|-----------------------------|----------------------|
| <b>PENNSYLVANIA PIPELINE PROJECT</b><br><b>STREAM S-C37</b><br><b>RESTORATION PLAN</b> |      |      |                             |                      |
| LEBANON COUNTY, PA                                                                     |      |      |                             |                      |
| OLD DRAWING NO.                                                                        |      |      | DWG. NO.<br><b>WL-C17-B</b> | REV. NO.<br><b>0</b> |



EXISTING CONDITIONS PLAN  
SCALE: 1"=30'

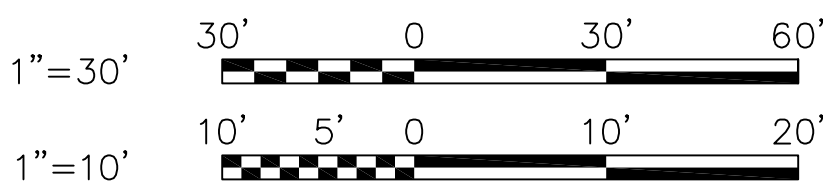


EROSION & SEDIMENTATION CONTROL PLAN  
SCALE: 1"=30'



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

GRAPHIC SCALE



GENERAL NOTES:

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STREAM CROSSING NOTES:

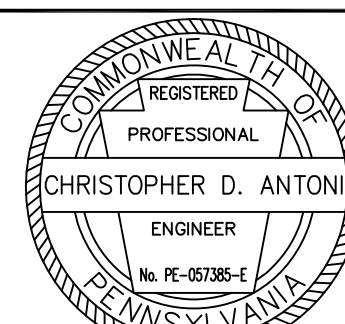
- REFERENCE NOTES AND DETAILS FOR STREAM CONSTRUCTION SEQUENCING AND STREAM RESTORATION (ES-0.01-ES-0.17).
- FOR TEMPORARY EQUIPMENT CROSSINGS REFERENCE (ES-0.10).
- SITE CONDITIONS MAY ALLOW FOR IMPLEMENTATION OF OTHER APPROVED PIPELINE INSTALLATION METHODS REFERENCED WITH THE NOTES AND DETAILS (ES-0.11-ES-0.14).
- 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           | PDZ      |
| CHECKED BY         | CDA      |
| APPROVED BY        | CDA      |
| DATE               | 11/30/16 |
| SCALE              | AS NOTED |

OLD DRAWING NO.

| REV. | DATE | APP# | DESCRIPTION | APPROVAL |
|------|------|------|-------------|----------|
|------|------|------|-------------|----------|

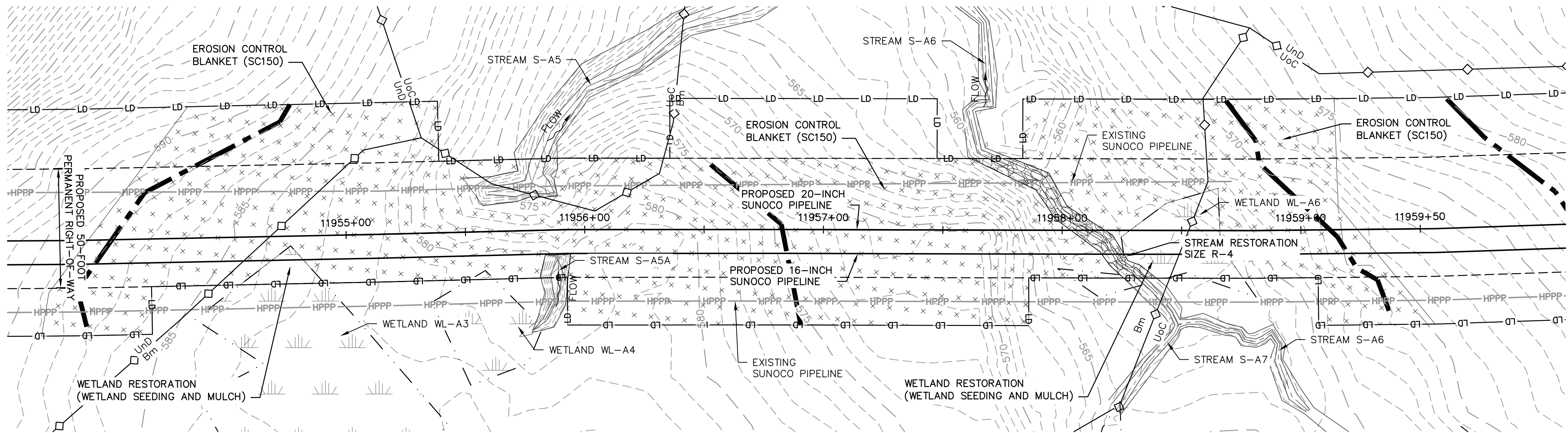


PENNSYLVANIA PIPELINE PROJECT  
STREAMS S-A5A & S-A6  
EXISTING CONDITIONS/EROSION & SEDIMENTATION CONTROL PLANS

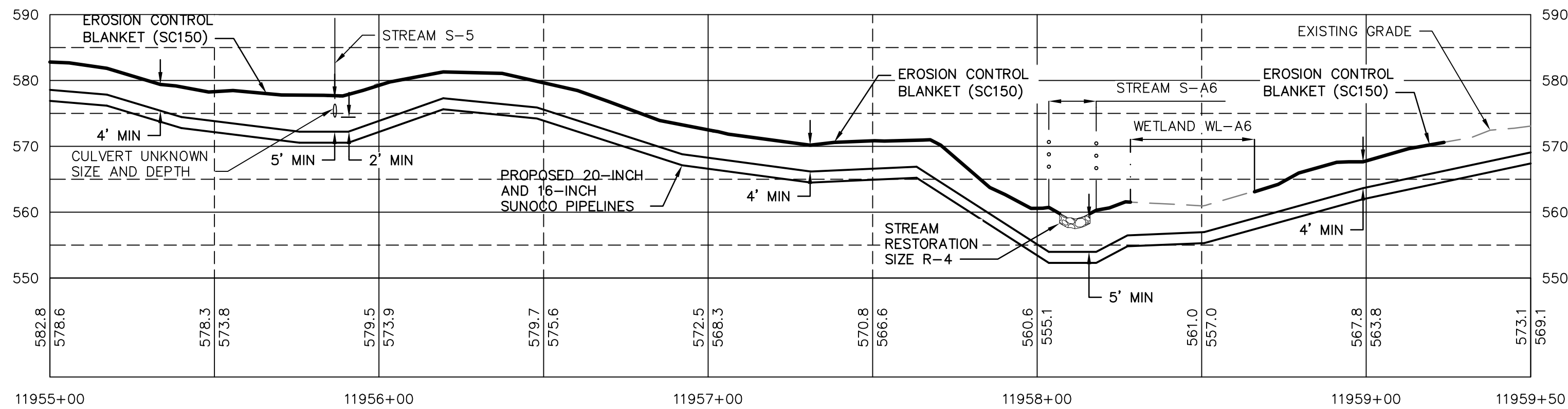
LEBANON COUNTY, PA

DWG. NO.  
S-A5-A

REV. NO.  
0

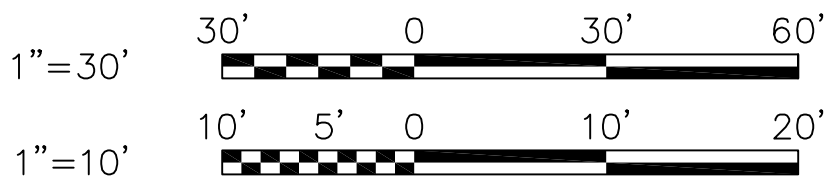


PLAN  
SCALE: 1"=30'



RESTORED GRADE PROFILE  
HORZ SCALE: 1"=30'  
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:

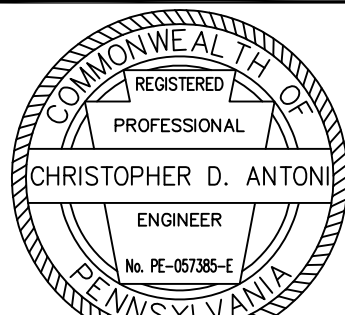
- REFERENCE NOTES AND DETAILS FOR STREAM CONSTRUCTION SEQUENCING AND STREAM RESTORATION (ES-0.01-ES-0.17).
- FOR TEMPORARY EQUIPMENT CROSSINGS REFERENCE (ES-0.10).
- SITE CONDITIONS MAY ALLOW FOR IMPLEMENTATION OF OTHER APPROVED PIPELINE INSTALLATION METHODS REFERENCED WITH THE NOTES AND DETAILS (ES-0.11-ES-0.14).
- 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.
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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                          |
|        | 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.<br>PROPOSED TOP OF<br>PIPE ELEV. |



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.

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PENNSYLVANIA PIPELINE PROJECT  
STREAMS S-A5A & S-A6  
RESTORATION PLAN

LEBANON COUNTY, PA

DWG. NO.  
S-A5-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