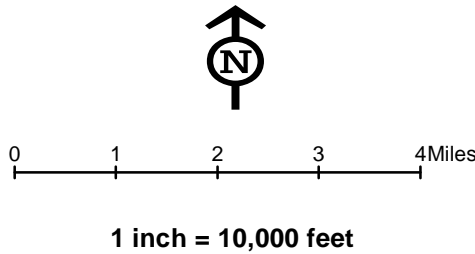


- Legend**
- Sheet Boundary
 - Swedesford Lateral
 - PPP 1
 - PPP 2
 - Township Line
 - Roads
 - County Boundary



Mapset Legend

- | | | | | |
|--------------------|------------------------------|----------------------------------|---------------------------|---|
| Sheet Boundary | Permanent ROW | Existing Buried Cable | Stream Photo | Pond |
| Roads | Temporary ROW | Existing Electric Line | PEM Photo | PEM Wetland |
| Municipal Boundary | ATWS | Existing Fiberoptic Cable | PFO Photo | PFO Wetland |
| Swedesford Lateral | Block Valve Setting LOD | Existing Gas Line | PSS Photo | PSS Wetland |
| PPP 1 | Existing Block Valve Setting | Existing Phone Line | Ephemeral Stream | PEM Extension |
| PPP 2 | Permanent Access Road | Existing Sanitary Sewer | Intermittent Stream | PFO Extension |
| PPP 1 Bore | Temporary Access Road | Existing Septic System | Perennial Stream | PSS Extension |
| PPP 2 Bore | Clearing Only | Existing Storm Sewer | Ch. 105 Floodways | Permanent Easement (no surface disturbance) |
| PPP 1 HDD | Travel Only | Existing TV Line | Waived Ch. 105 Floodways | Parcels |
| PPP 2 HDD | Stations | Existing Utility (unknown) | Ch. 106 Floodplain Fringe | Contours |
| | | Existing Water Line | | |
| | | 8" Centerline | | |
| | | 8" Pipeline Maintenance Corridor | | |



Site Plan Sheet Key for the Sunoco Pennsylvania Pipeline Project, Delaware County, PA.
Sheet 1 of 1

Prepared By: **TETRA TECH**
Date: 05/2016

Base Map; ESRI ArcGIS Online, Roads from NRCS Geospatial Data Giveaway, 100-Year Floodplain from FEMA National Flood Hazard Layer, downloaded 8/2013.
Coordinate System: NAD 83 Stateplane, PA South, Feet



Legend

- Swedesford Lateral
- PPP 1
- PPP 2
- PPP 1 Bore
- PPP 2 Bore
- PPP 1 HDD
- PPP 2 HDD
- Permanent ROW
- Temporary ROW
- ATWS
- Block Valve Setting LOD
- Existing Block Valve Setting
- Permanent Access Road
- Temporary Access Road
- Clearing Only
- Travel Only
- Permanent Easement (no surface disturbance)
- Stations
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Pond
- PEM Wetland
- PFO Wetland
- PSS Wetland
- Ch. 105 Floodways
- Waived Ch. 105 Floodways
- Ch. 106 Floodplain Fringe

1 5 10 15 20 23

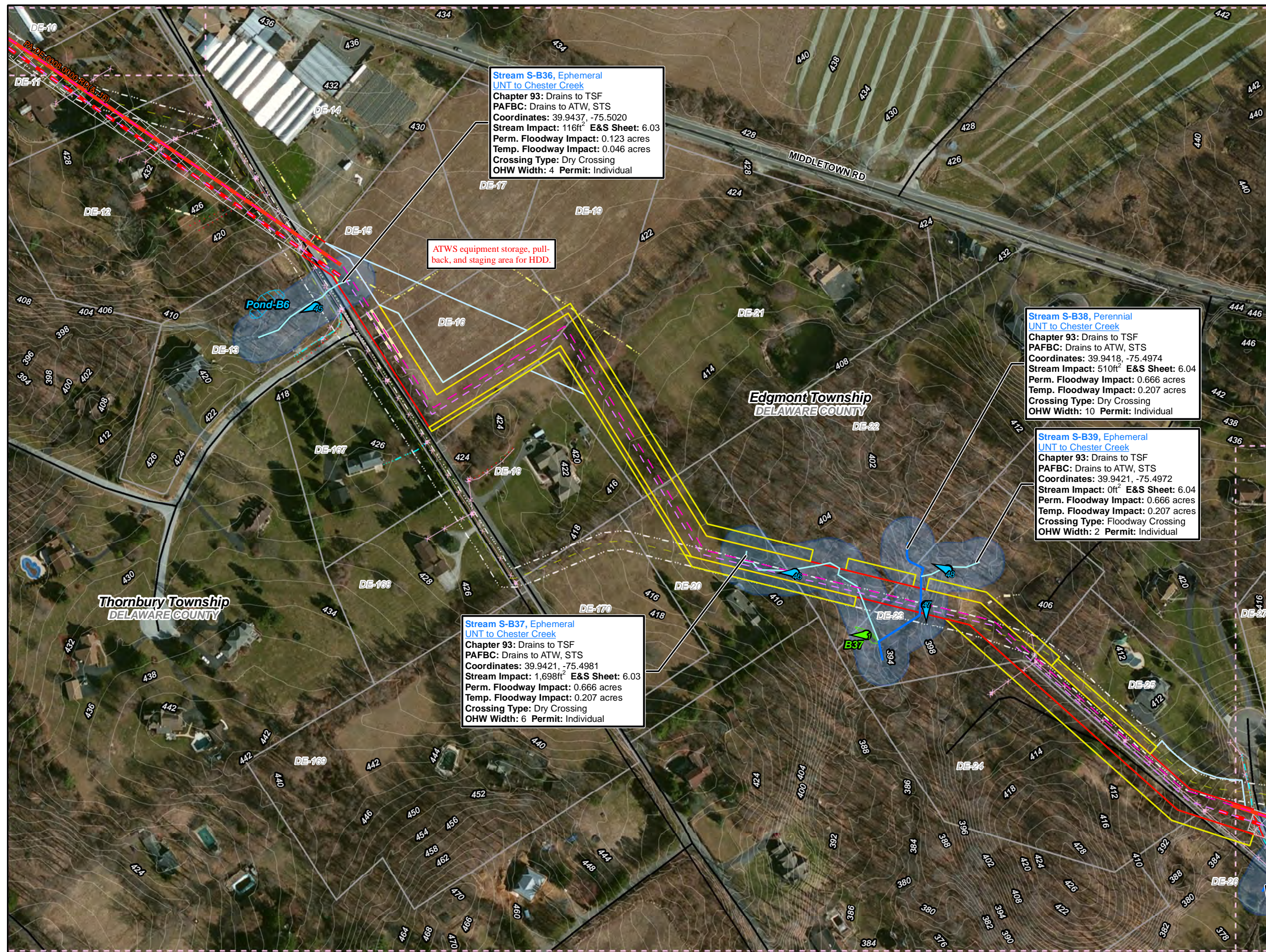
0 50 100 200 300 400

1 inch = 200 feet

Site Plan for the Sunoco Pennsylvania Pipeline Project, Delaware County, PA.
Sheet 1 of 23

Prepared By: 	Date: 5/2016
------------------	-----------------

Base Map; ESRI ArcGIS Online, Roads from NRCS Geospatial Data Giveaway, 100-Year Floodplain from FEMA National Flood Hazard Layer, downloaded 10/2015.
Coordinate System: NAD 83 Stateplane, PA South, Feet



Legend

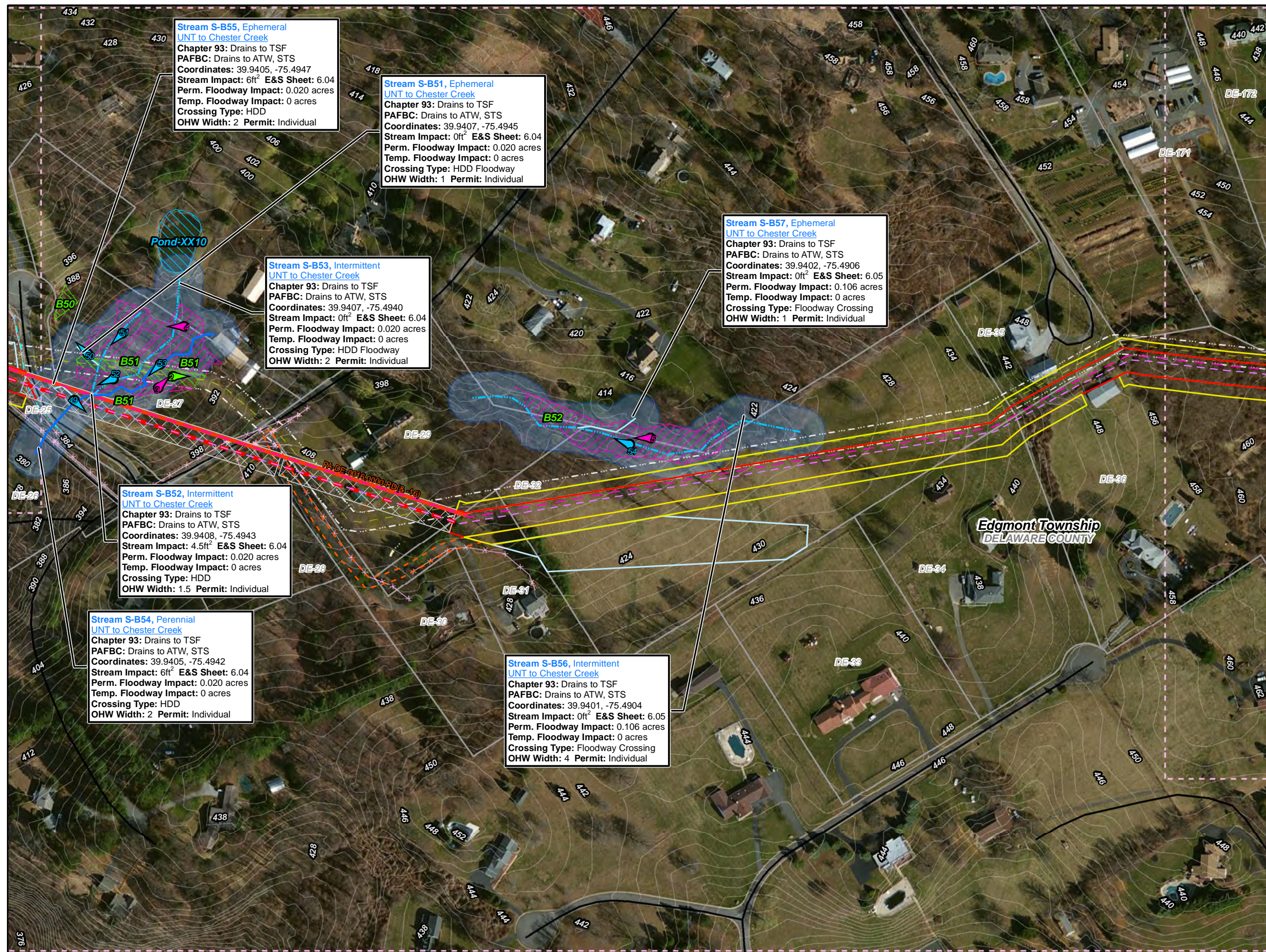
- Swedesford Lateral
- PPP 1
- PPP 2
- PPP 1 Bore
- PPP 2 Bore
- PPP 1 HDD
- PPP 2 HDD
- Permanent ROW
- Temporary ROW
- ATWS
- Block Valve Setting LOD
- Existing Block Valve Setting
- Permanent Access Road
- Temporary Access Road
- Clearing Only
- Travel Only
- Permanent Easement (no surface disturbance)
- Stations
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Pond
- PEM Wetland
- PFO Wetland
- PSS Wetland
- Ch. 105 Floodways
- Waived Ch. 105 Floodways
- Ch. 106 Floodplain Fringe

1 inch = 200 feet

Site Plan for the Sunoco Pennsylvania Pipeline Project, Delaware County, PA.
Sheet 2 of 23

Prepared By:	Date:
TETRA TECH	5/2016

Base Map: ESRI ArcGIS Online, Roads from NRCS Geospatial Data Giveaway, 100-Year Floodplain from FEMA National Flood Hazard Layer, downloaded 10/2015.
Coordinate System: NAD 83 Stateplane, PA South, Feet



Legend

- Swedesford Lateral
- PPP 1
- PPP 2
- PPP 1 Bore
- PPP 2 Bore
- PPP 1 HDD
- PPP 2 HDD
- Permanent ROW
- Temporary ROW
- ATWS
- Block Valve Setting LOD
- Existing Block Valve Setting
- Permanent Access Road
- Temporary Access Road
- Clearing Only
- Travel Only
- Permanent Easement (no surface disturbance)
- Stations
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Pond
- PEM Wetland
- PFO Wetland
- PSS Wetland
- Ch. 105 Floodways
- Waived Ch. 105 Floodways
- Ch. 106 Floodplain Fringe

1 inch = 200 feet

0 50 100 200 300 400

Site Plan for the Sunoco Pennsylvania Pipeline Project, Delaware County, PA.
Sheet 3 of 23

Prepared By:	Date:
TETRA TECH	5/2016

Base Map; ESRI ArcGIS Online, Roads from NRCS Geospatial Data Giveaway, 100-Year Floodplain from FEMA National Flood Hazard Layer, downloaded 10/2015.
Coordinate System: NAD 83 Stateplane, PA South, Feet



Legend

- Swedesford Lateral
- PPP 1
- PPP 2
- PPP 1 Bore
- PPP 2 Bore
- PPP 1 HDD
- PPP 2 HDD
- Permanent ROW
- Temporary ROW
- ATWS
- Block Valve Setting LOD
- Existing Block Valve Setting
- Permanent Access Road
- Temporary Access Road
- Clearing Only
- Travel Only
- Permanent Easement (no surface disturbance)
- Stations
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Pond
- PEM Wetland
- PFO Wetland
- PSS Wetland
- Ch. 105 Floodways
- Waived Ch. 105 Floodways
- Ch. 106 Floodplain Fringe

1 5 10 15 20 23

0 50 100 200 300 400

1 inch = 200 feet

Site Plan for the Sunoco Pennsylvania Pipeline Project, Delaware County, PA.
Sheet 4 of 23

Prepared By:	Date:
TETRA TECH	5/2016

Base Map; ESRI ArcGIS Online, Roads from NRCS Geospatial Data Giveaway, 100-Year Floodplain from FEMA National Flood Hazard Layer, downloaded 10/2015.
Coordinate System: NAD 83 Stateplane, PA South, Feet



Legend

- Swedesford Lateral
- PPP 1
- PPP 2
- PPP 1 Bore
- PPP 2 Bore
- PPP 1 HDD
- PPP 2 HDD
- Permanent ROW
- Temporary ROW
- ATWS
- Block Valve Setting LOD
- Existing Block Valve Setting
- Permanent Access Road
- Temporary Access Road
- Clearing Only
- Travel Only
- Permanent Easement (no surface disturbance)
- Stations
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Pond
- PEM Wetland
- PFO Wetland
- PSS Wetland
- Ch. 105 Floodways
- Waived Ch. 105 Floodways
- Ch. 106 Floodplain Fringe

1 inch = 200 feet

0 50 100 200 300 400

**Stream S-C43, Ephemeral
UNT to Chester Creek**
Chapter 93: Drains to TSF
PAFBC: Drains to ATW, STS
Coordinates: 39.9274, -75.4700
Stream Impact: 50ft² E&S Sheet: 6.10
Perm. Floodway Impact: 0.153 acres
Temp. Floodway Impact: 0.047 acres
Crossing Type: Dry Crossing
OHW Width: 1 Permit: Individual

**Site Plan for the Sunoco
Pennsylvania Pipeline Project,
Delaware County, PA.
Sheet 6 of 23**

Prepared By: 	Date: 5/2016
------------------	-----------------

Base Map; ESRI ArcGIS Online, Roads from NRCS
Geospatial Data Giveaway, 100-Year Floodplain from
FEMA National Flood Hazard Layer, downloaded 10/2015.
Coordinate System: NAD 83 Stateplane, PA South, Feet



Legend

- Swedesford Lateral
- PPP 1
- PPP 2
- PPP 1 Bore
- PPP 2 Bore
- PPP 1 HDD
- PPP 2 HDD
- Permanent ROW
- Temporary ROW
- ATWS
- Block Valve Setting LOD
- Existing Block Valve Setting
- Permanent Access Road
- Temporary Access Road
- Clearing Only
- Travel Only
- Permanent Easement (no surface disturbance)
- Stations
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Pond
- PEM Wetland
- PFO Wetland
- PSS Wetland
- Ch. 105 Floodways
- Waived Ch. 105 Floodways
- Ch. 106 Floodplain Fringe

1 5 10 15 20 23

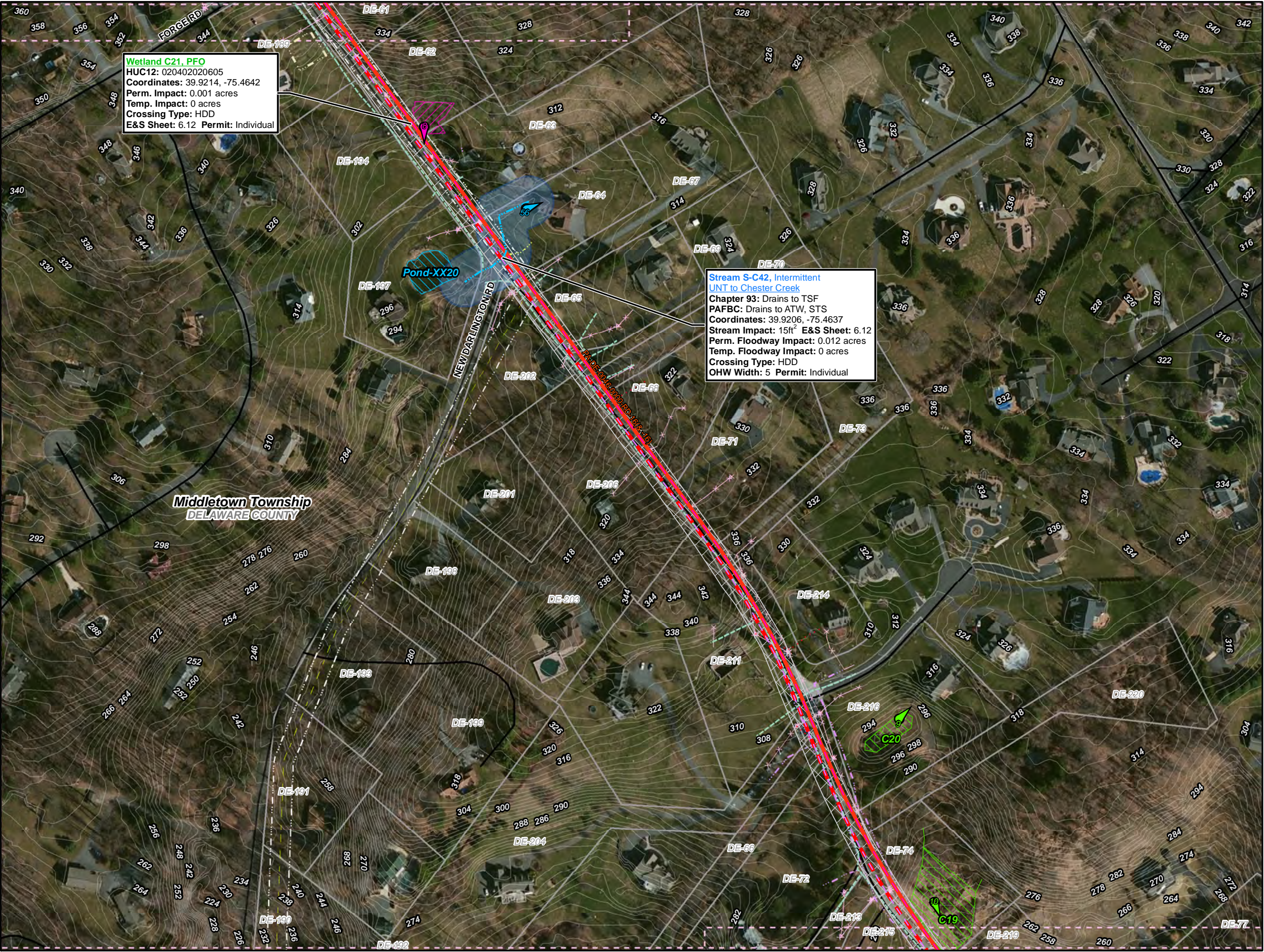
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1 inch = 200 feet

**Site Plan for the Sunoco
Pennsylvania Pipeline Project,
Delaware County, PA.
Sheet 7 of 23**

Prepared By: 	Date: 5/2016
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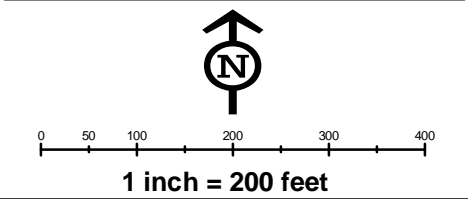
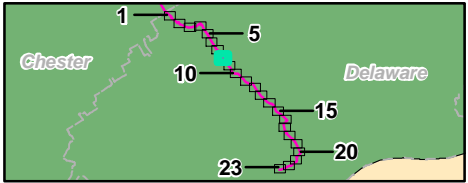
Base Map; ESRI ArcGIS Online, Roads from NRCS Geospatial Data Giveaway, 100-Year Floodplain from FEMA National Flood Hazard Layer, downloaded 10/2015.
Coordinate System: NAD 83 Stateplane, PA South, Feet



Wetland C21, PFO
HUC12: 020402020605
Coordinates: 39.9214, -75.4642
Perm. Impact: 0.001 acres
Temp. Impact: 0 acres
Crossing Type: HDD
E&S Sheet: 6.12 Permit: Individual

Stream S-C42, Intermittent
UNT to Chester Creek
Chapter 93: Drains to TSF
PAFBC: Drains to ATW, STS
Coordinates: 39.9206, -75.4637
Stream Impact: 15ft² E&S Sheet: 6.12
Perm. Floodway Impact: 0.012 acres
Temp. Floodway Impact: 0 acres
Crossing Type: HDD
OHW Width: 5 Permit: Individual

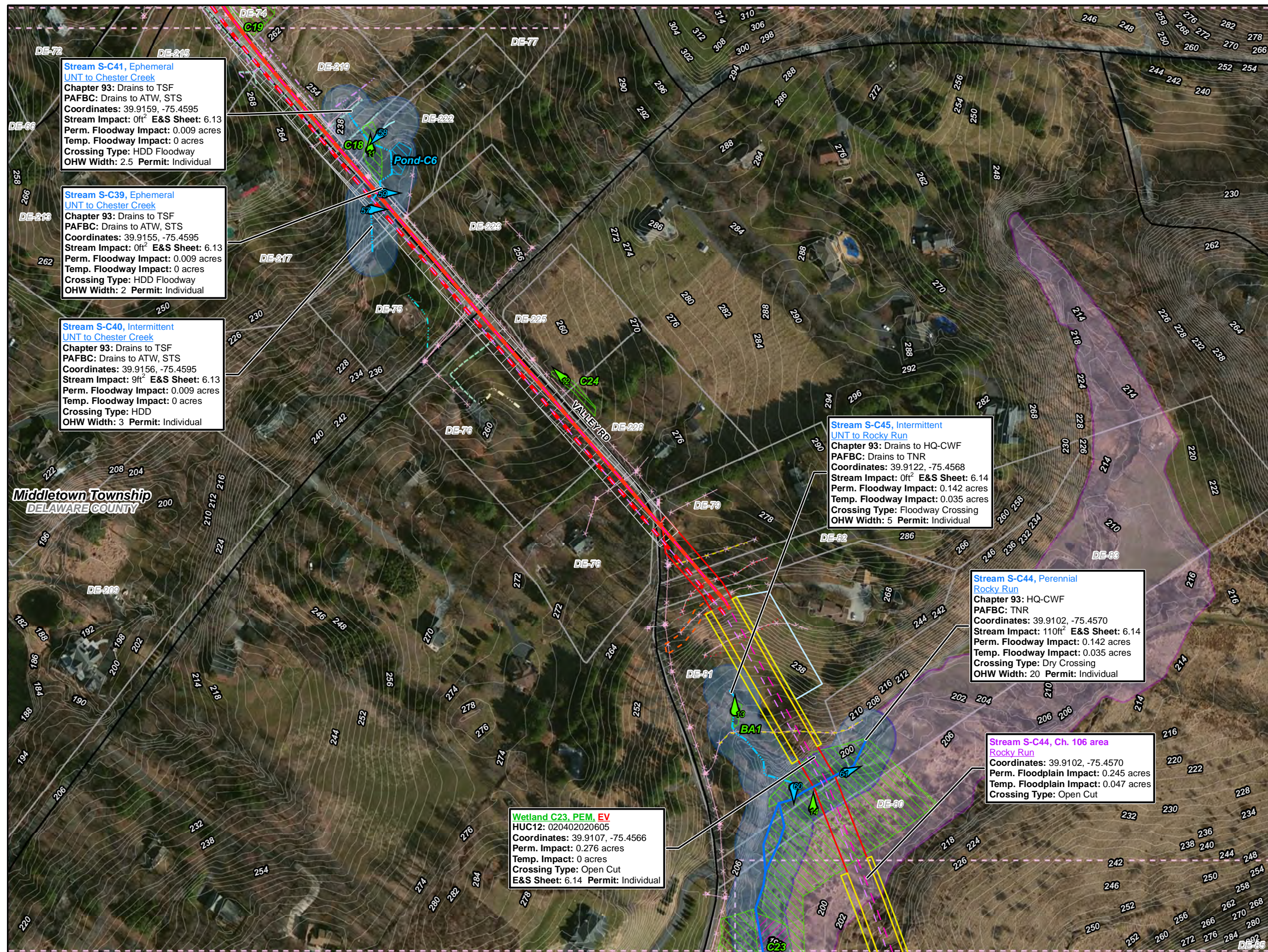
- Legend**
- Swedesford Lateral
 - PPP 1
 - PPP 2
 - PPP 1 Bore
 - PPP 2 Bore
 - PPP 1 HDD
 - PPP 2 HDD
 - Permanent ROW
 - Temporary ROW
 - ATWS
 - Block Valve Setting LOD
 - Existing Block Valve Setting
 - Permanent Access Road
 - Temporary Access Road
 - Clearing Only
 - Travel Only
 - Permanent Easement (no surface disturbance)
 - Stations
 - Ephemeral Stream
 - Intermittent Stream
 - Perennial Stream
 - Pond
 - PEM Wetland
 - PFO Wetland
 - PSS Wetland
 - Ch. 105 Floodways
 - Waived Ch. 105 Floodways
 - Ch. 106 Floodplain Fringe



Site Plan for the Sunoco Pennsylvania Pipeline Project, Delaware County, PA.
Sheet 8 of 23

Prepared By:	Date:
TETRA TECH	5/2016

Base Map: ESRI ArcGIS Online, Roads from NRCS Geospatial Data Giveaway, 100-Year Floodplain from FEMA National Flood Hazard Layer, downloaded 10/2015.
Coordinate System: NAD 83 Stateplane, PA South, Feet



Legend

- Swedesford Lateral
- PPP 1
- PPP 2
- PPP 1 Bore
- PPP 2 Bore
- PPP 1 HDD
- PPP 2 HDD
- Permanent ROW
- Temporary ROW
- ATWS
- Block Valve Setting LOD
- Existing Block Valve Setting
- Permanent Access Road
- Temporary Access Road
- Clearing Only
- Travel Only
- Permanent Easement (no surface disturbance)
- Stations
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Pond
- PEM Wetland
- PFO Wetland
- PSS Wetland
- Ch. 105 Floodways
- Waived Ch. 105 Floodways
- Ch. 106 Floodplain Fringe

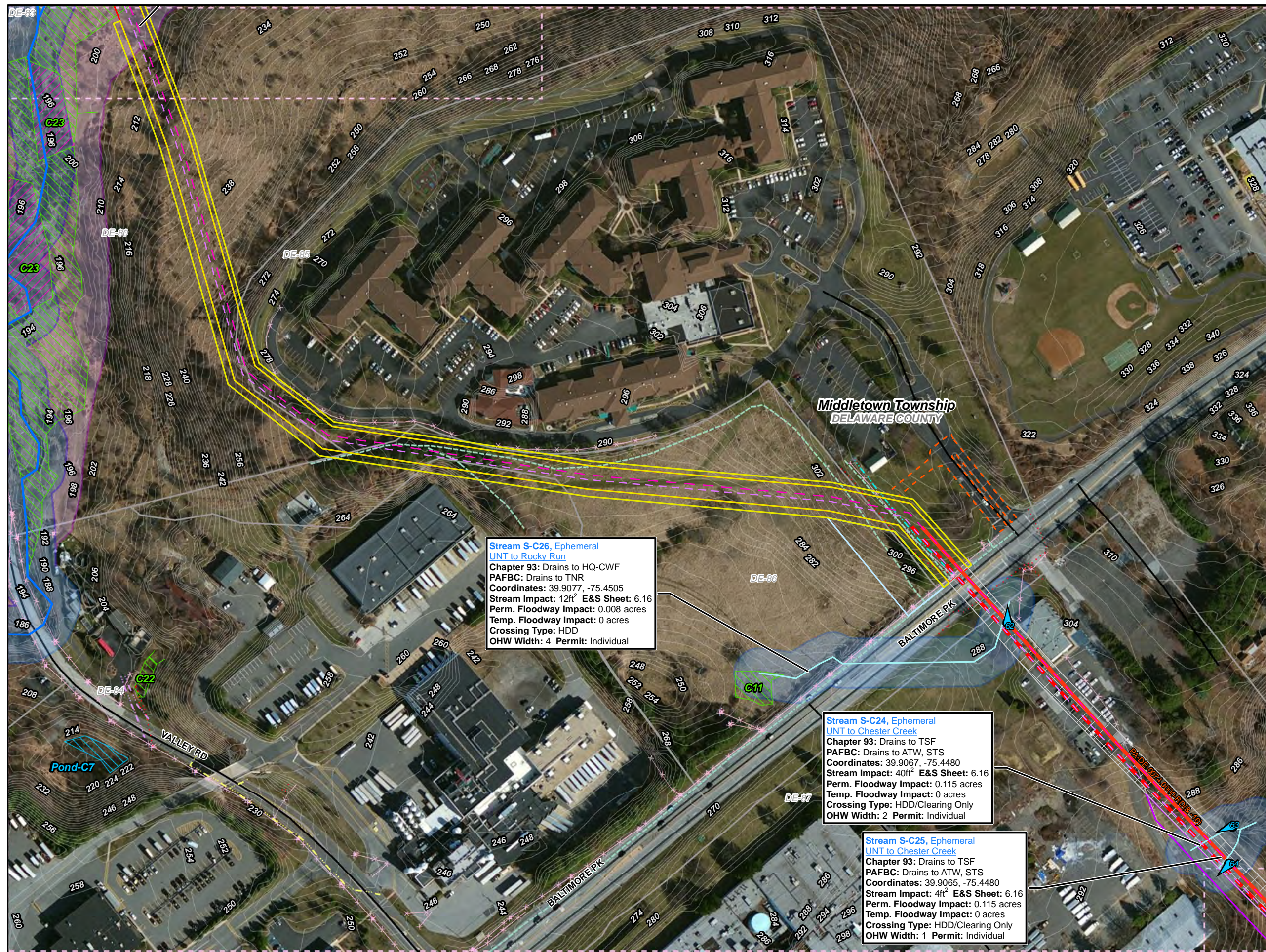
1 inch = 200 feet

0 50 100 200 300 400

Site Plan for the Sunoco Pennsylvania Pipeline Project, Delaware County, PA.
Sheet 9 of 23

Prepared By:	Date:
TETRA TECH	5/2016

Base Map: ESRI ArcGIS Online, Roads from NRCS Geospatial Data Giveaway, 100-Year Floodplain from FEMA National Flood Hazard Layer, downloaded 10/2015.
Coordinate System: NAD 83 Stateplane, PA South, Feet



Legend

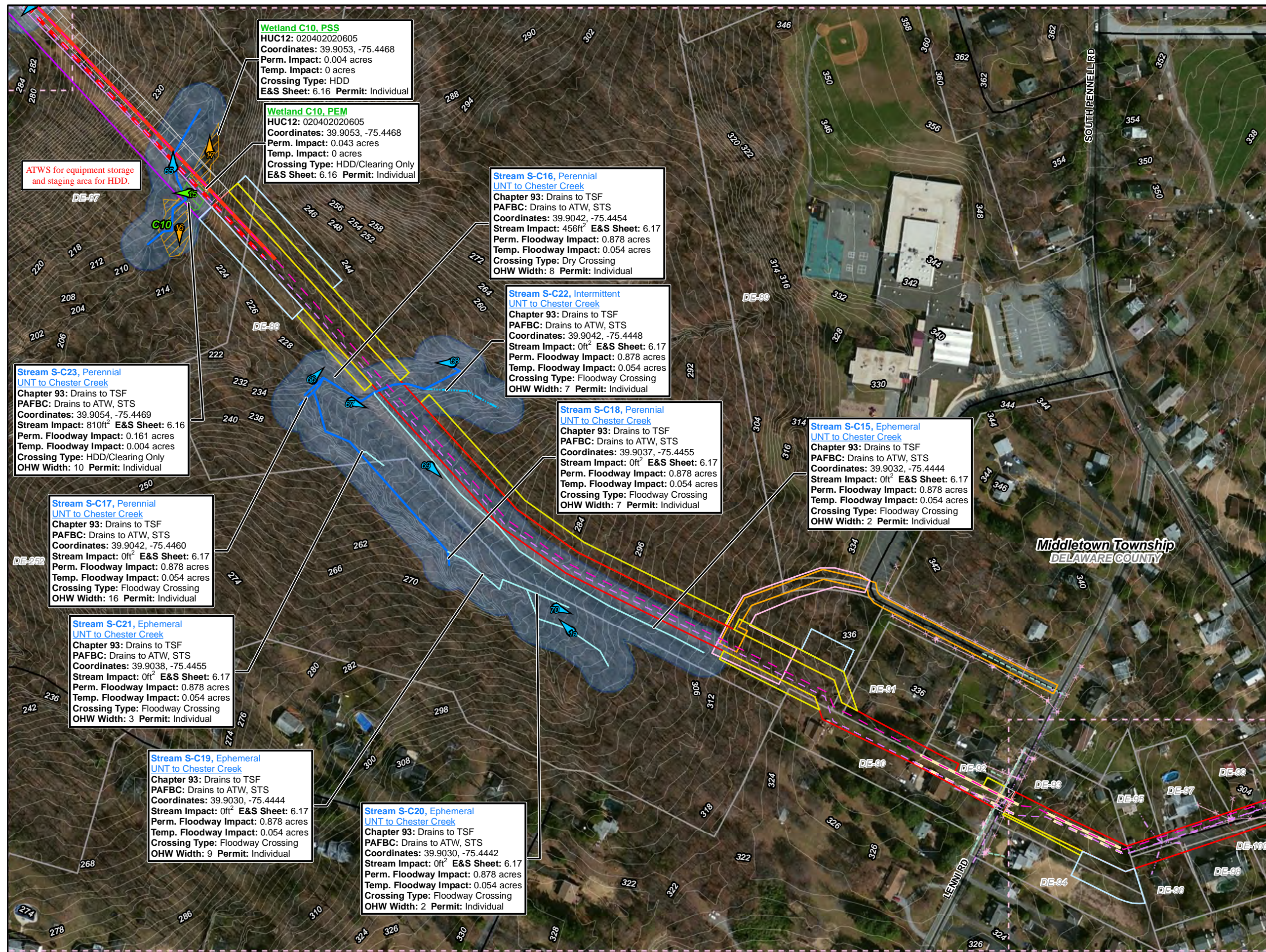
- Swedesford Lateral
- PPP 1
- PPP 2
- PPP 1 Bore
- PPP 2 Bore
- PPP 1 HDD
- PPP 2 HDD
- Permanent ROW
- Temporary ROW
- ATWS
- Block Valve Setting LOD
- Existing Block Valve Setting
- Permanent Access Road
- Temporary Access Road
- Clearing Only
- Travel Only
- Permanent Easement (no surface disturbance)
- Stations
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Pond
- PEM Wetland
- PFO Wetland
- PSS Wetland
- Ch. 105 Floodways
- Waived Ch. 105 Floodways
- Ch. 106 Floodplain Fringe

1 inch = 200 feet

Site Plan for the Sunoco Pennsylvania Pipeline Project, Delaware County, PA.
Sheet 10 of 23

Prepared By:	Date:
TETRA TECH	5/2016

Base Map; ESRI ArcGIS Online, Roads from NRCS Geospatial Data Giveaway, 100-Year Floodplain from FEMA National Flood Hazard Layer, downloaded 10/2015.
Coordinate System: NAD 83 Stateplane, PA South, Feet



Legend

- Swedesford Lateral
- PPP 1
- PPP 2
- PPP 1 Bore
- PPP 2 Bore
- PPP 1 HDD
- PPP 2 HDD
- Permanent ROW
- Temporary ROW
- ATWS
- Block Valve Setting LOD
- Existing Block Valve Setting
- Permanent Access Road
- Temporary Access Road
- Clearing Only
- Travel Only
- Permanent Easement (no surface disturbance)
- Stations
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Pond
- PEM Wetland
- PFO Wetland
- PSS Wetland
- Ch. 105 Floodways
- Waived Ch. 105 Floodways
- Ch. 106 Floodplain Fringe

1 inch = 200 feet

Site Plan for the Sunoco Pennsylvania Pipeline Project, Delaware County, PA.

Sheet 11 of 23

Prepared By:	Date:
TETRA TECH	5/2016

Base Map: ESRI ArcGIS Online, Roads from NRCS Geospatial Data Giveaway, 100-Year Floodplain from FEMA National Flood Hazard Layer, downloaded 10/2015.
Coordinate System: NAD 83 Stateplane, PA South, Feet



Legend

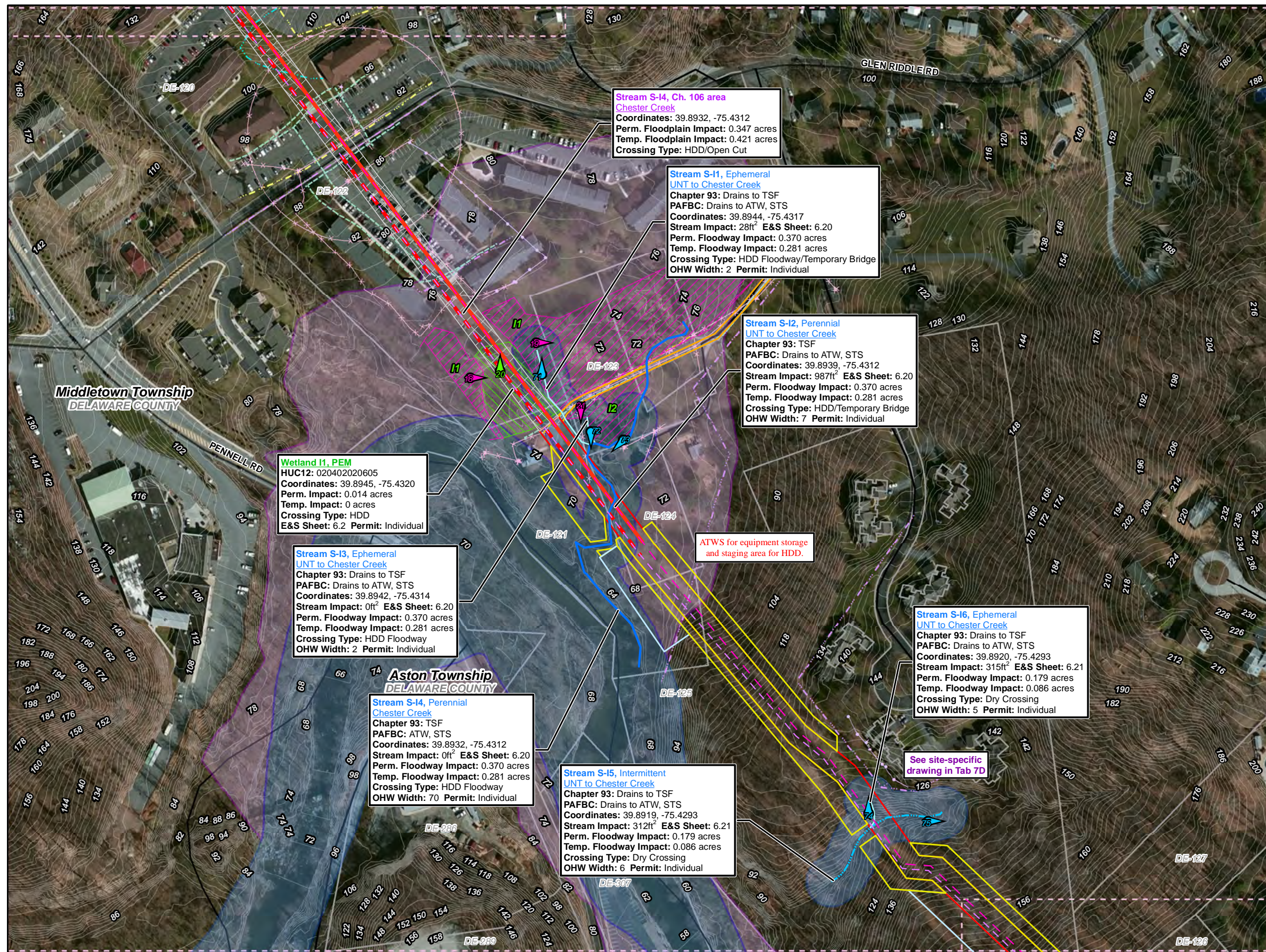
- Swedesford Lateral
- PPP 1
- PPP 2
- PPP 1 Bore
- PPP 2 Bore
- PPP 1 HDD
- PPP 2 HDD
- Permanent ROW
- Temporary ROW
- ATWS
- Block Valve Setting LOD
- Existing Block Valve Setting
- Permanent Access Road
- Temporary Access Road
- Clearing Only
- Travel Only
- Permanent Easement (no surface disturbance)
- Stations
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Pond
- PEM Wetland
- PFO Wetland
- PSS Wetland
- Ch. 105 Floodways
- Waived Ch. 105 Floodways
- Ch. 106 Floodplain Fringe

1 inch = 200 feet

Site Plan for the Sunoco Pennsylvania Pipeline Project, Delaware County, PA.
Sheet 12 of 23

Prepared By:	Date:
TETRA TECH	5/2016

Base Map; ESRI ArcGIS Online, Roads from NRCS Geospatial Data Giveaway, 100-Year Floodplain from FEMA National Flood Hazard Layer, downloaded 10/2015.
Coordinate System: NAD 83 Stateplane, PA South, Feet



Legend

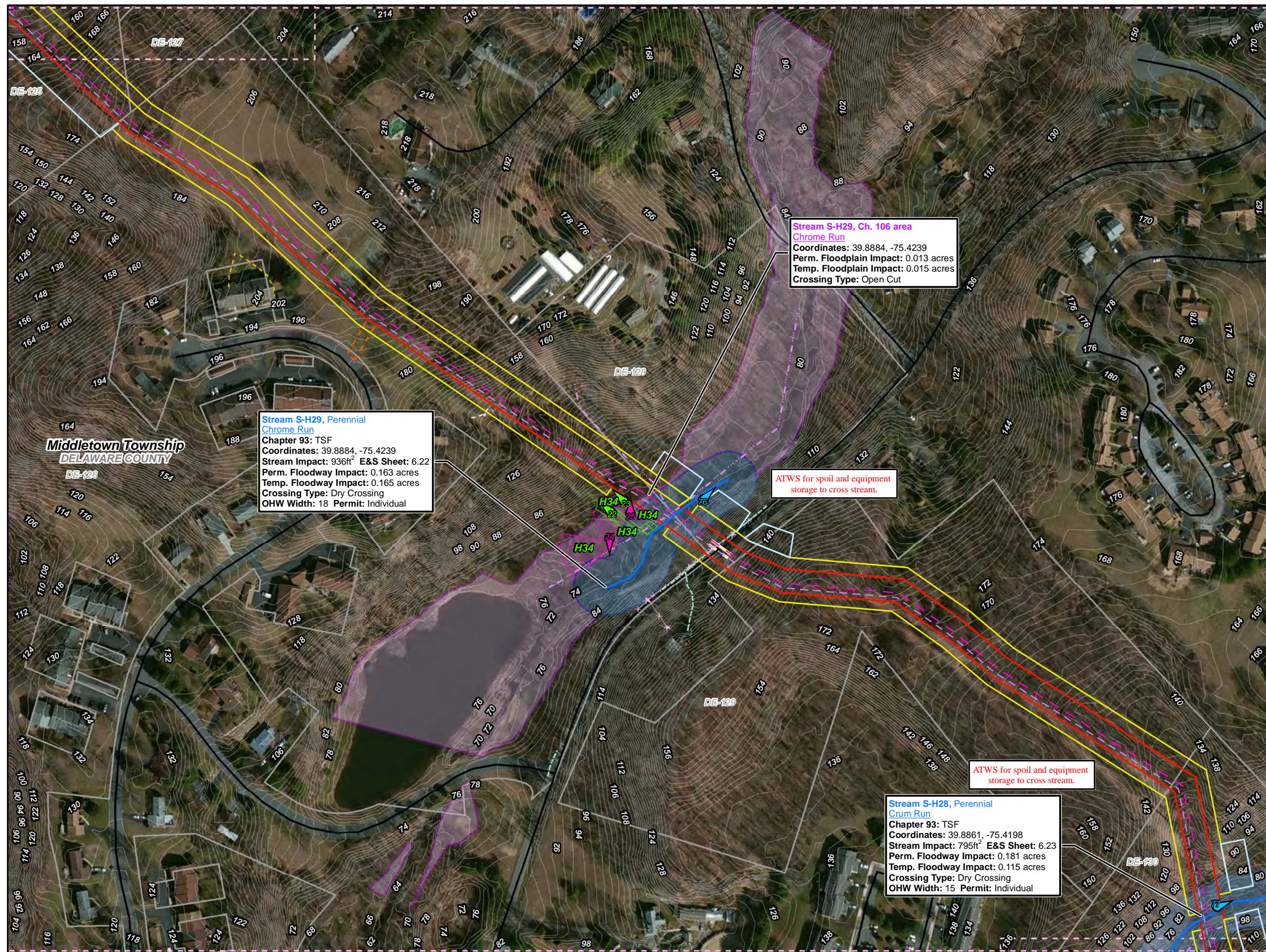
- Swedesford Lateral
- PPP 1
- PPP 2
- PPP 1 Bore
- PPP 2 Bore
- PPP 1 HDD
- PPP 2 HDD
- Permanent ROW
- Temporary ROW
- ATWS
- Block Valve Setting LOD
- Existing Block Valve Setting
- Permanent Access Road
- Temporary Access Road
- Clearing Only
- Travel Only
- Permanent Easement (no surface disturbance)
- Stations
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Pond
- PEM Wetland
- PFO Wetland
- PSS Wetland
- Ch. 105 Floodways
- Waived Ch. 105 Floodways
- Ch. 106 Floodplain Fringe

Scale: 1 inch = 200 feet

Site Plan for the Sunoco Pennsylvania Pipeline Project, Delaware County, PA. Sheet 13 of 23

Prepared By: TETRA TECH **Date:** 5/2016

Base Map: ESRI ArcGIS Online, Roads from NRCS Geospatial Data Giveaway, 100-Year Floodplain from FEMA National Flood Hazard Layer, downloaded 10/2015.
Coordinate System: NAD 83 Stateplane, PA South, Feet



Legend

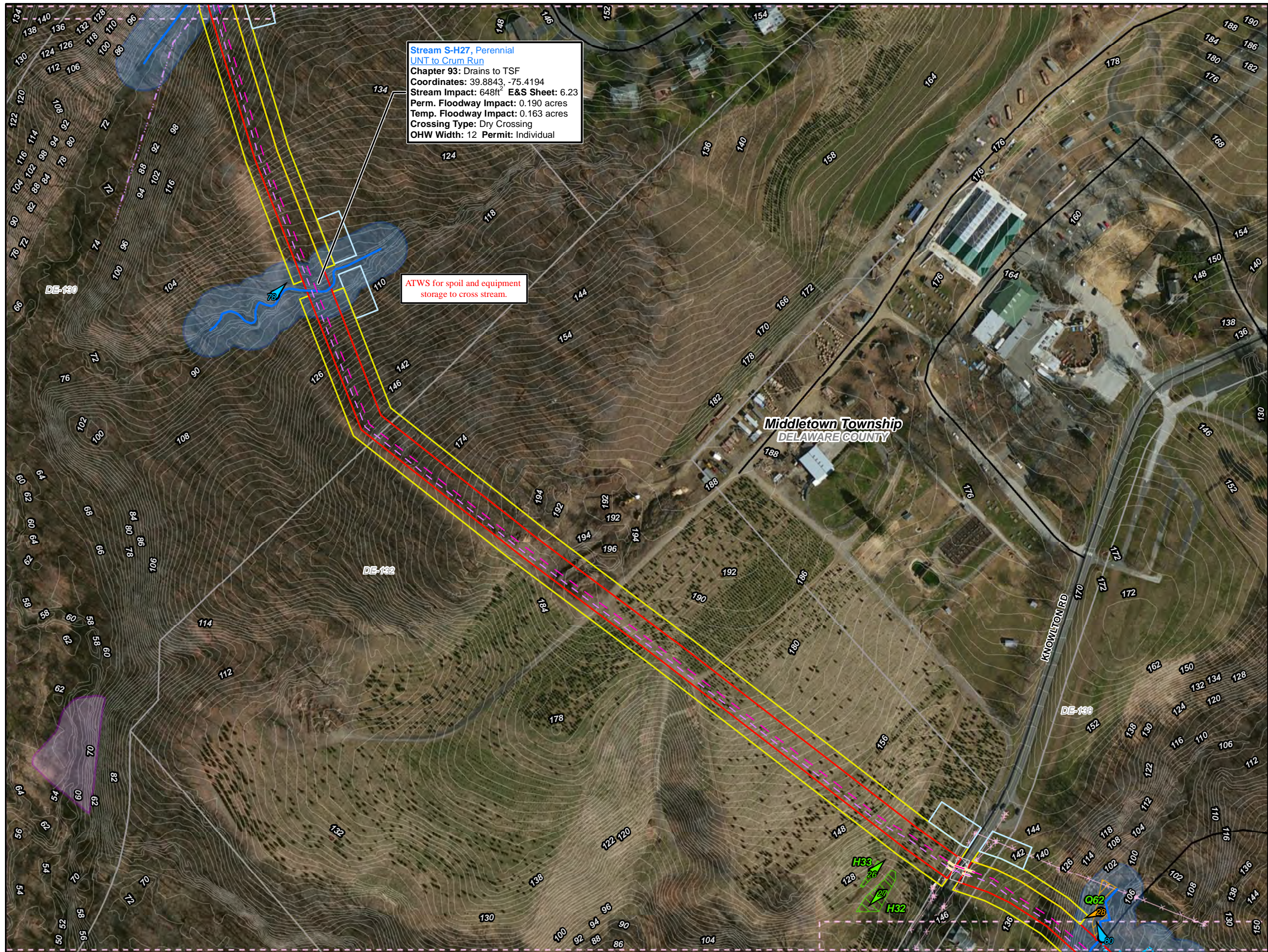
- Swedesford Lateral
- PPP 1
- PPP 2
- PPP 1 Bore
- PPP 2 Bore
- PPP 1 HDD
- PPP 2 HDD
- Permanent ROW
- Temporary ROW
- ATWS
- Block Valve Setting LOD
- Existing Block Valve Setting
- Permanent Access Road
- Temporary Access Road
- Clearing Only
- Travel Only
- Permanent Easement (no surface disturbance)
- Stations
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Pond
- PEM Wetland
- PFO Wetland
- PSS Wetland
- Ch. 105 Floodways
- Waived Ch. 105 Floodways
- Ch. 106 Floodplain Fringe

1 inch = 200 feet

Site Plan for the Sunoco Pennsylvania Pipeline Project, Delaware County, PA.
Sheet 14 of 23

Prepared By: 	Date: 5/2016
-------------------------	------------------------

Base Map; ESRI ArcGIS Online, Roads from NRCS Geospatial Data Giveaway, 100-Year Floodplain from FEMA National Flood Hazard Layer, downloaded 10/2015.
Coordinate System: NAD 83 Stateplane, PA South, Feet



Legend

- Swedesford Lateral
- PPP 1
- PPP 2
- PPP 1 Bore
- PPP 2 Bore
- PPP 1 HDD
- PPP 2 HDD
- Permanent ROW
- Temporary ROW
- ATWS
- Block Valve Setting LOD
- Existing Block Valve Setting
- Permanent Access Road
- Temporary Access Road
- Clearing Only
- Travel Only
- Permanent Easement (no surface disturbance)
- Stations
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Pond
- PEM Wetland
- PFO Wetland
- PSS Wetland
- Ch. 105 Floodways
- Waived Ch. 105 Floodways
- Ch. 106 Floodplain Fringe

1 inch = 200 feet

0 50 100 200 300 400

**Site Plan for the Sunoco
Pennsylvania Pipeline Project,
Delaware County, PA.
Sheet 15 of 23**

Prepared By: 	Date: 5/2016
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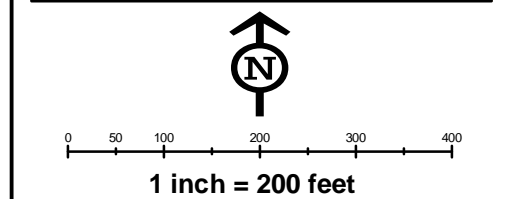
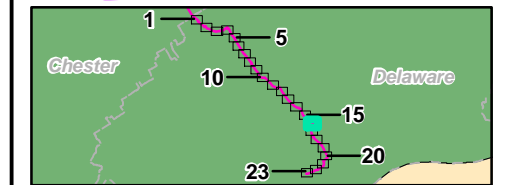
Base Map; ESRI ArcGIS Online, Roads from NRCS Geospatial Data Giveaway, 100-Year Floodplain from FEMA National Flood Hazard Layer, downloaded 10/2015.
Coordinate System: NAD 83 Stateplane, PA South, Feet



Stream S-H35, Perennial
UNT to Chester Creek
Chapter 93: TSF
PAFBC: Drains to ATW, STS
Coordinates: 39.8803, -75.4135
Stream Impact: 357ft² E&S Sheet: 6.24
Perm. Floodway Impact: 0.214 acres
Temp. Floodway Impact: 0.054 acres
Crossing Type: Dry Crossing
OHW Width: 7 Permit: Individual

Stream S-H36, Intermittent
UNT to Chester Creek
Chapter 93: Drains to TSF
PAFBC: Drains to ATW, STS
Coordinates: 39.8803, -75.4131
Stream Impact: 108ft² E&S Sheet: 6.24
Perm. Floodway Impact: 0.214 acres
Temp. Floodway Impact: 0.054 acres
Crossing Type: Dry Crossing
OHW Width: 3 Permit: Individual

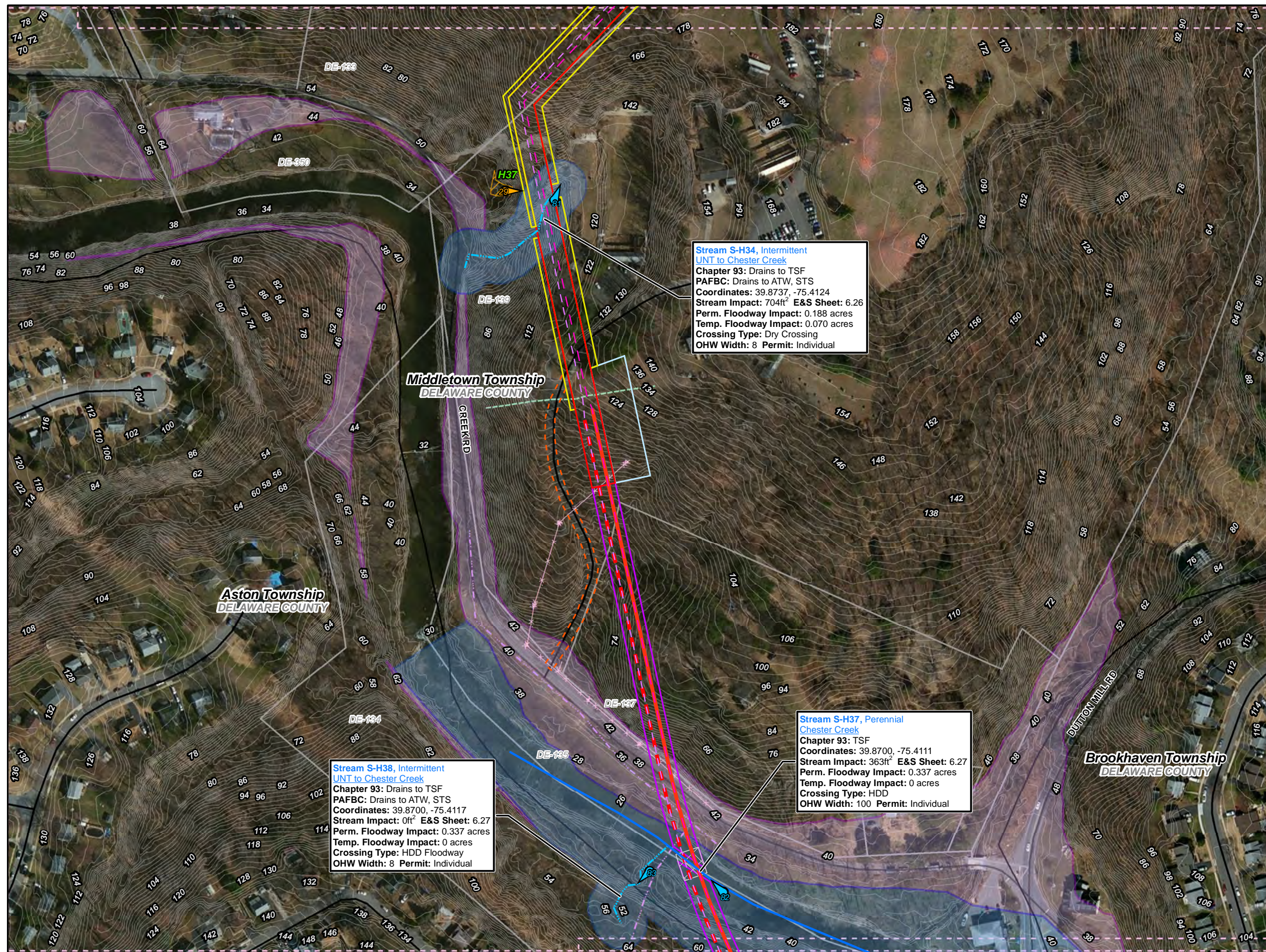
- Legend**
- Swedesford Lateral
 - PPP 1
 - PPP 2
 - PPP 1 Bore
 - PPP 2 Bore
 - PPP 1 HDD
 - PPP 2 HDD
 - Permanent ROW
 - Temporary ROW
 - ATWS
 - Block Valve Setting LOD
 - Existing Block Valve Setting
 - Permanent Access Road
 - Temporary Access Road
 - Clearing Only
 - Travel Only
 - Permanent Easement (no surface disturbance)
 - Stations
 - Ephemeral Stream
 - Intermittent Stream
 - Perennial Stream
 - Pond
 - PEM Wetland
 - PFO Wetland
 - PSS Wetland
 - Ch. 105 Floodways
 - Waived Ch. 105 Floodways
 - Ch. 106 Floodplain Fringe



**Site Plan for the Sunoco
Pennsylvania Pipeline Project,
Delaware County, PA.
Sheet 16 of 23**

Prepared By: 	Date: 5/2016
--	------------------------

Base Map: ESRI ArcGIS Online, Roads from NRCS
Geospatial Data Giveaway, 100-Year Floodplain from
FEMA National Flood Hazard Layer, downloaded 10/2015.
Coordinate System: NAD 83 Stateplane, PA South, Feet



Legend

- Swedesford Lateral
- PPP 1
- PPP 2
- PPP 1 Bore
- PPP 2 Bore
- PPP 1 HDD
- PPP 2 HDD
- Permanent ROW
- Temporary ROW
- ATWS
- Block Valve Setting LOD
- Existing Block Valve Setting
- Permanent Access Road
- Temporary Access Road
- Clearing Only
- Travel Only
- Permanent Easement (no surface disturbance)
- Stations
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Pond
- PEM Wetland
- PFO Wetland
- PSS Wetland
- Ch. 105 Floodways
- Waived Ch. 105 Floodways
- Ch. 106 Floodplain Fringe

0 50 100 200 300 400

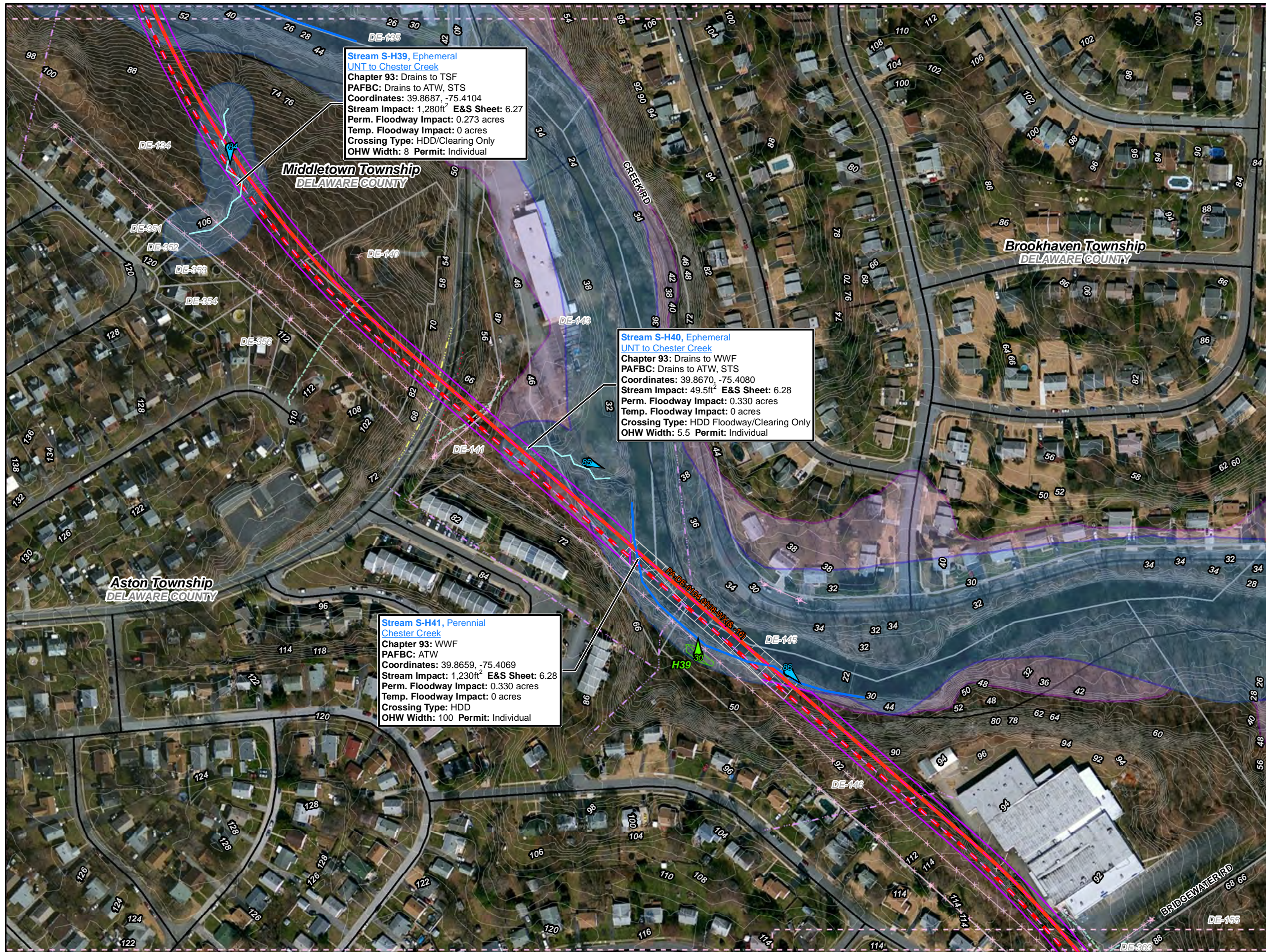
1 inch = 200 feet

Site Plan for the Sunoco Pennsylvania Pipeline Project, Delaware County, PA.
Sheet 17 of 23

Prepared By:	Date:
TETRA TECH	5/2016

Base Map; ESRI ArcGIS Online, Roads from NRCS Geospatial Data Giveaway, 100-Year Floodplain from FEMA National Flood Hazard Layer, downloaded 10/2015.
Coordinate System: NAD 83 Stateplane, PA South, Feet

P:\GIS\Projects\112\CS958-PPP\10\DelPermis\CountyPermis\DelawareCounty SitePlan_Rev4



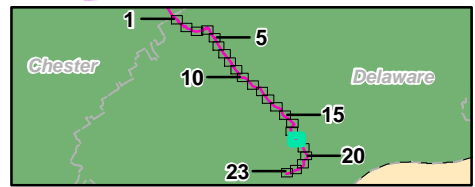
Stream S-H39, Ephemeral
UNT to Chester Creek
Chapter 93: Drains to TSF
PAFBC: Drains to ATW, STS
Coordinates: 39.8687, -75.4104
Stream Impact: 1,280ft² E&S Sheet: 6.27
Perm. Floodway Impact: 0.273 acres
Temp. Floodway Impact: 0 acres
Crossing Type: HDD/Clearing Only
OHW Width: 8 Permit: Individual

Stream S-H40, Ephemeral
UNT to Chester Creek
Chapter 93: Drains to WWF
PAFBC: Drains to ATW, STS
Coordinates: 39.8670, -75.4080
Stream Impact: 49.5ft² E&S Sheet: 6.28
Perm. Floodway Impact: 0.330 acres
Temp. Floodway Impact: 0 acres
Crossing Type: HDD Floodway/Clearing Only
OHW Width: 5.5 Permit: Individual

Stream S-H41, Perennial
Chester Creek
Chapter 93: WWF
PAFBC: ATW
Coordinates: 39.8659, -75.4069
Stream Impact: 1,230ft² E&S Sheet: 6.28
Perm. Floodway Impact: 0.330 acres
Temp. Floodway Impact: 0 acres
Crossing Type: HDD
OHW Width: 100 Permit: Individual

Legend

- Swedesford Lateral
- PPP 1
- PPP 2
- PPP 1 Bore
- PPP 2 Bore
- PPP 1 HDD
- PPP 2 HDD
- Permanent ROW
- Temporary ROW
- ATWS
- Block Valve Setting LOD
- Existing Block Valve Setting
- Permanent Access Road
- Temporary Access Road
- Clearing Only
- Travel Only
- Permanent Easement (no surface disturbance)
- Stations
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Pond
- PEM Wetland
- PFO Wetland
- PSS Wetland
- Ch. 105 Floodways
- Waived Ch. 105 Floodways
- Ch. 106 Floodplain Fringe



0 50 100 200 300 400
1 inch = 200 feet

Site Plan for the Sunoco
Pennsylvania Pipeline Project,
Delaware County, PA.
Sheet 18 of 23

Prepared By:

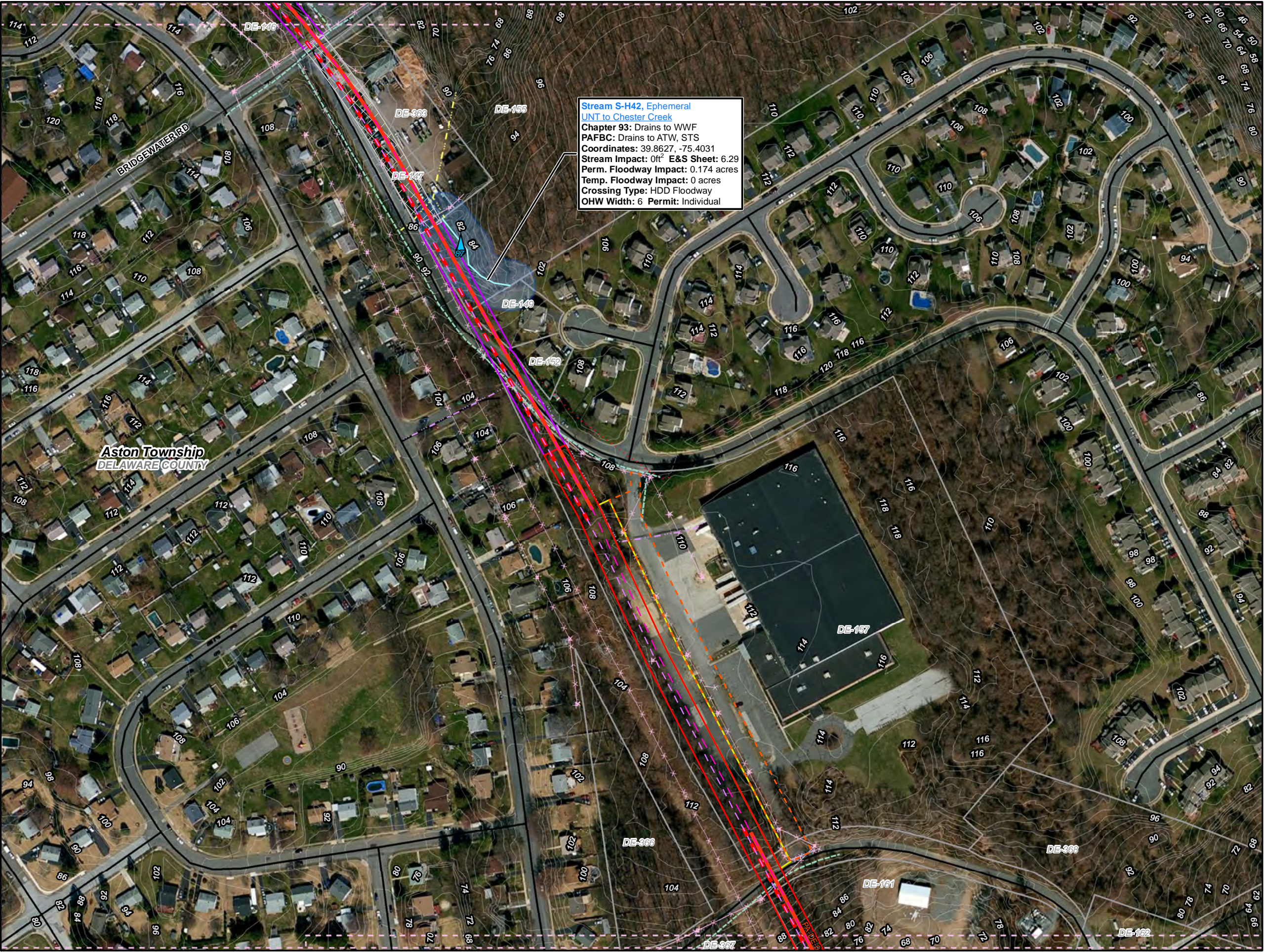


Date:

5/2016

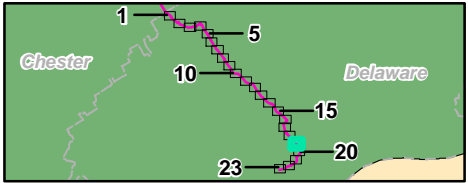
Base Map: ESRI ArcGIS Online, Roads from NRCS
Geospatial Data Giveaway, 100-Year Floodplain from
FEMA National Flood Hazard Layer, downloaded 10/2015.

Coordinate System: NAD 83 Stateplane, PA South, Feet



Stream S-H42, Ephemeral
UNT to Chester Creek
Chapter 93: Drains to WWF
PAFBC: Drains to ATWS, STS
Coordinates: 39.8627, -75.4031
Stream Impact: 0ft² E&S Sheet: 6.29
Perm. Floodway Impact: 0.174 acres
Temp. Floodway Impact: 0 acres
Crossing Type: HDD Floodway
OHW Width: 6 Permit: Individual

- Legend**
- Swedesford Lateral
 - PPP 1
 - PPP 2
 - PPP 1 Bore
 - PPP 2 Bore
 - PPP 1 HDD
 - PPP 2 HDD
 - Permanent ROW
 - Temporary ROW
 - ATWS
 - Block Valve Setting LOD
 - Existing Block Valve Setting
 - Permanent Access Road
 - Temporary Access Road
 - Clearing Only
 - Travel Only
 - Permanent Easement (no surface disturbance)
 - Stations
 - Ephemeral Stream
 - Intermittent Stream
 - Perennial Stream
 - Pond
 - PEM Wetland
 - PFO Wetland
 - PSS Wetland
 - Ch. 105 Floodways
 - Waived Ch. 105 Floodways
 - Ch. 106 Floodplain Fringe

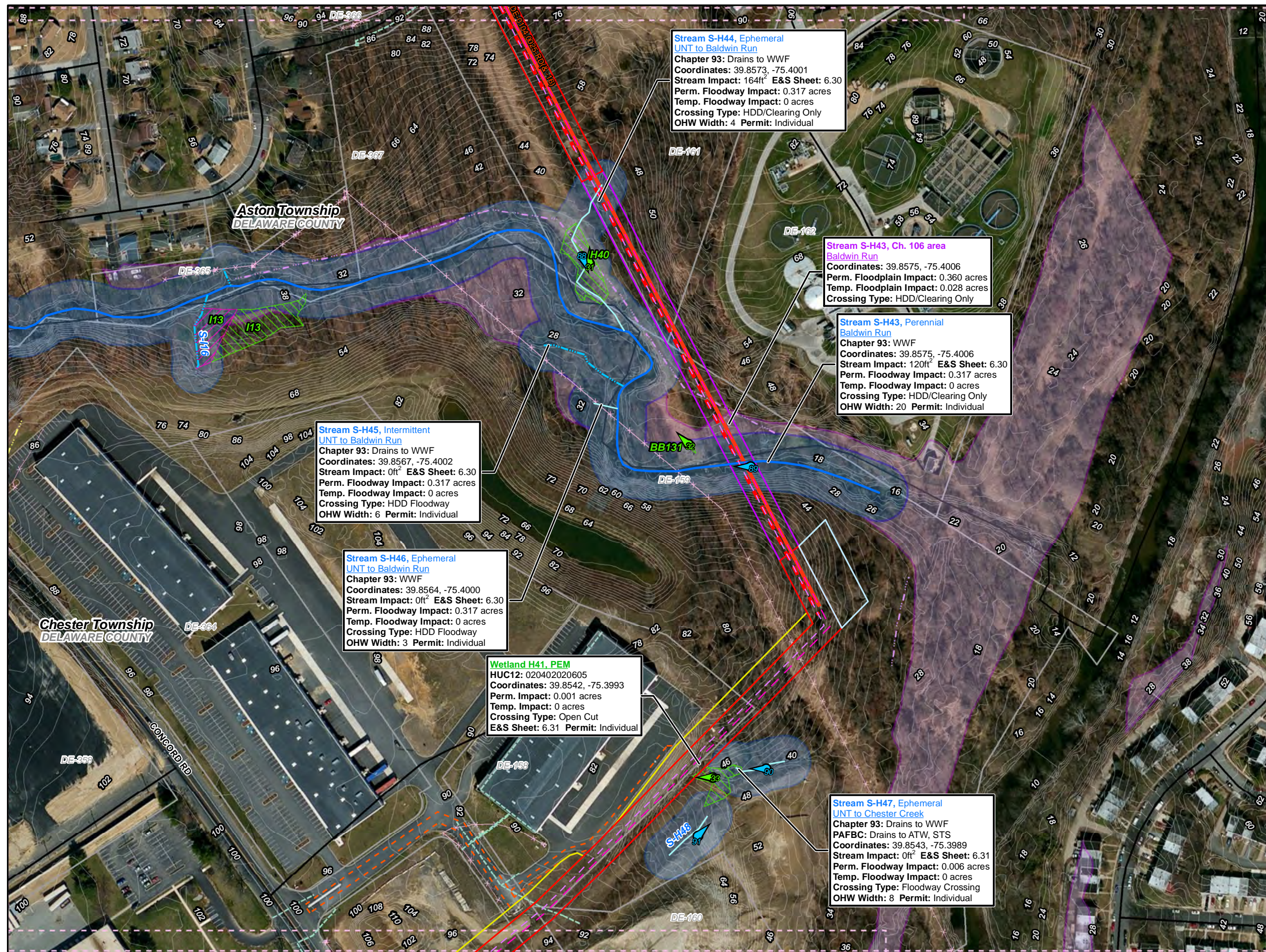


0 50 100 200 300 400
1 inch = 200 feet

Site Plan for the Sunoco
Pennsylvania Pipeline Project,
Delaware County, PA.
Sheet 19 of 23

Prepared By: **TETRA TECH** Date: **5/2016**

Base Map: ESRI ArcGIS Online, Roads from NRCS
Geospatial Data Giveaway, 100-Year Floodplain from
FEMA National Flood Hazard Layer, downloaded 10/2015.
Coordinate System: NAD 83 Stateplane, PA South, Feet



Legend

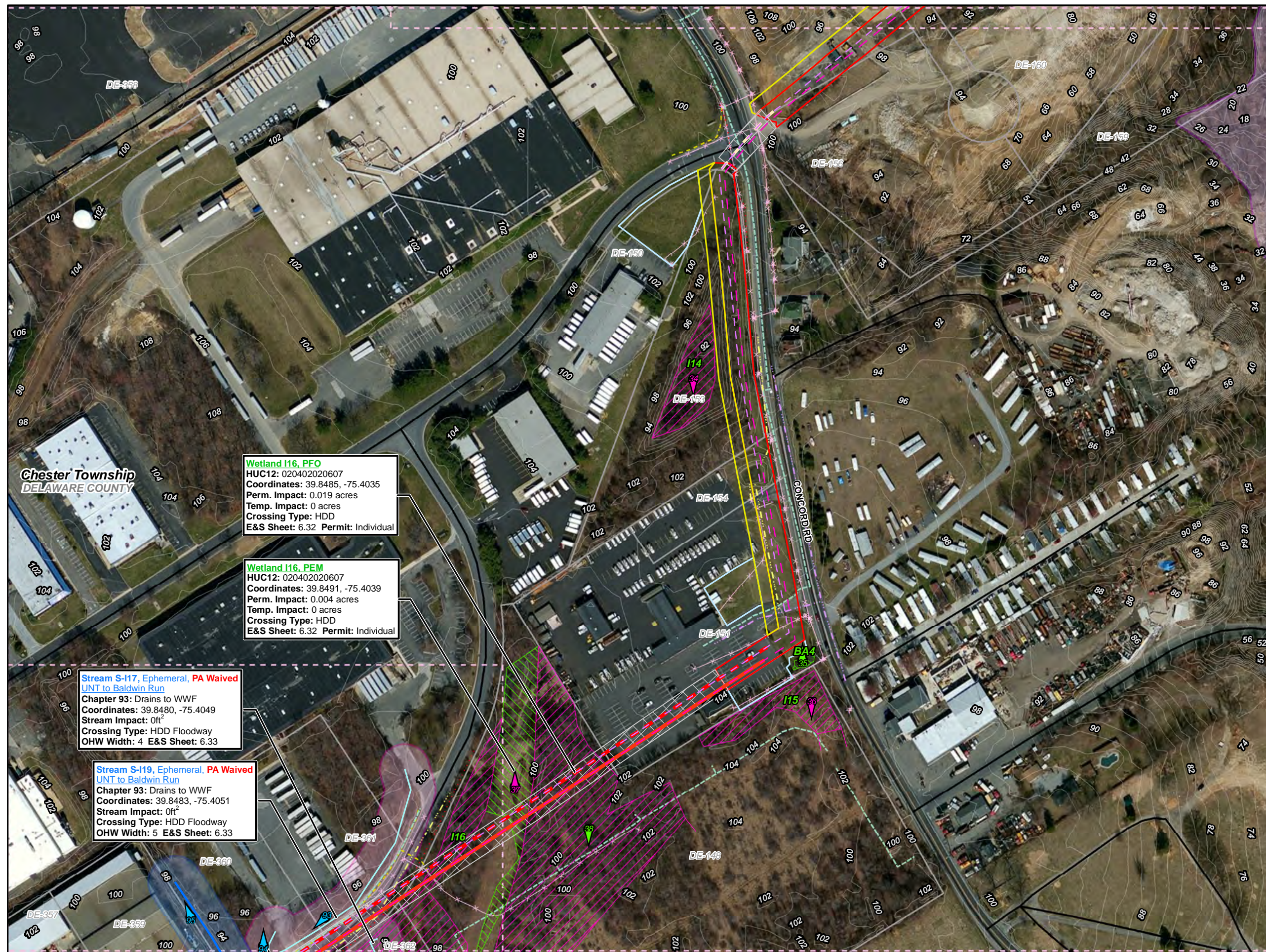
- Swedesford Lateral
- PPP 1
- PPP 2
- PPP 1 Bore
- PPP 2 Bore
- PPP 1 HDD
- PPP 2 HDD
- Permanent ROW
- Temporary ROW
- ATWS
- Block Valve Setting LOD
- Existing Block Valve Setting
- Permanent Access Road
- Temporary Access Road
- Clearing Only
- Travel Only
- Permanent Easement (no surface disturbance)
- Stations
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Pond
- PEM Wetland
- PFO Wetland
- PSS Wetland
- Ch. 105 Floodways
- Waived Ch. 105 Floodways
- Ch. 106 Floodplain Fringe

1 inch = 200 feet

Site Plan for the Sunoco Pennsylvania Pipeline Project, Delaware County, PA.
Sheet 20 of 23

Prepared By:	Date:
TETRA TECH	5/2016

Base Map: ESRI ArcGIS Online, Roads from NRCS Geospatial Data Giveaway, 100-Year Floodplain from FEMA National Flood Hazard Layer, downloaded 10/2015.
Coordinate System: NAD 83 Stateplane, PA South, Feet



Chester Township
DELAWARE COUNTY

Wetland I16, PFO
HUC12: 020402020607
Coordinates: 39.8485, -75.4035
Perm. Impact: 0.019 acres
Temp. Impact: 0 acres
Crossing Type: HDD
E&S Sheet: 6.32 Permit: Individual

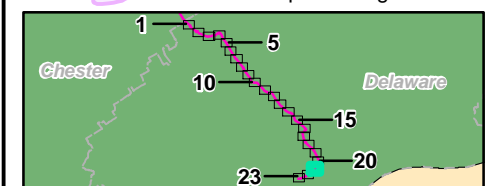
Wetland I16, PEM
HUC12: 020402020607
Coordinates: 39.8491, -75.4039
Perm. Impact: 0.004 acres
Temp. Impact: 0 acres
Crossing Type: HDD
E&S Sheet: 6.32 Permit: Individual

Stream S-117, Ephemeral, PA Waived
UNT to Baldwin Run
Chapter 93: Drains to WWF
Coordinates: 39.8480, -75.4049
Stream Impact: 0ft²
Crossing Type: HDD Floodway
OHW Width: 4 E&S Sheet: 6.33

Stream S-119, Ephemeral, PA Waived
UNT to Baldwin Run
Chapter 93: Drains to WWF
Coordinates: 39.8483, -75.4051
Stream Impact: 0ft²
Crossing Type: HDD Floodway
OHW Width: 5 E&S Sheet: 6.33

Legend

- Swedesford Lateral
- PPP 1
- PPP 2
- PPP 1 Bore
- PPP 2 Bore
- PPP 1 HDD
- PPP 2 HDD
- Permanent ROW
- Temporary ROW
- ATWS
- Block Valve Setting LOD
- Existing Block Valve Setting
- Permanent Access Road
- Temporary Access Road
- Clearing Only
- Travel Only
- Permanent Easement (no surface disturbance)
- Stations
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Pond
- PEM Wetland
- PFO Wetland
- PSS Wetland
- Ch. 105 Floodways
- Waived Ch. 105 Floodways
- Ch. 106 Floodplain Fringe



0 50 100 200 300 400

1 inch = 200 feet

**Site Plan for the Sunoco
Pennsylvania Pipeline Project,
Delaware County, PA.
Sheet 21 of 23**

Prepared By:

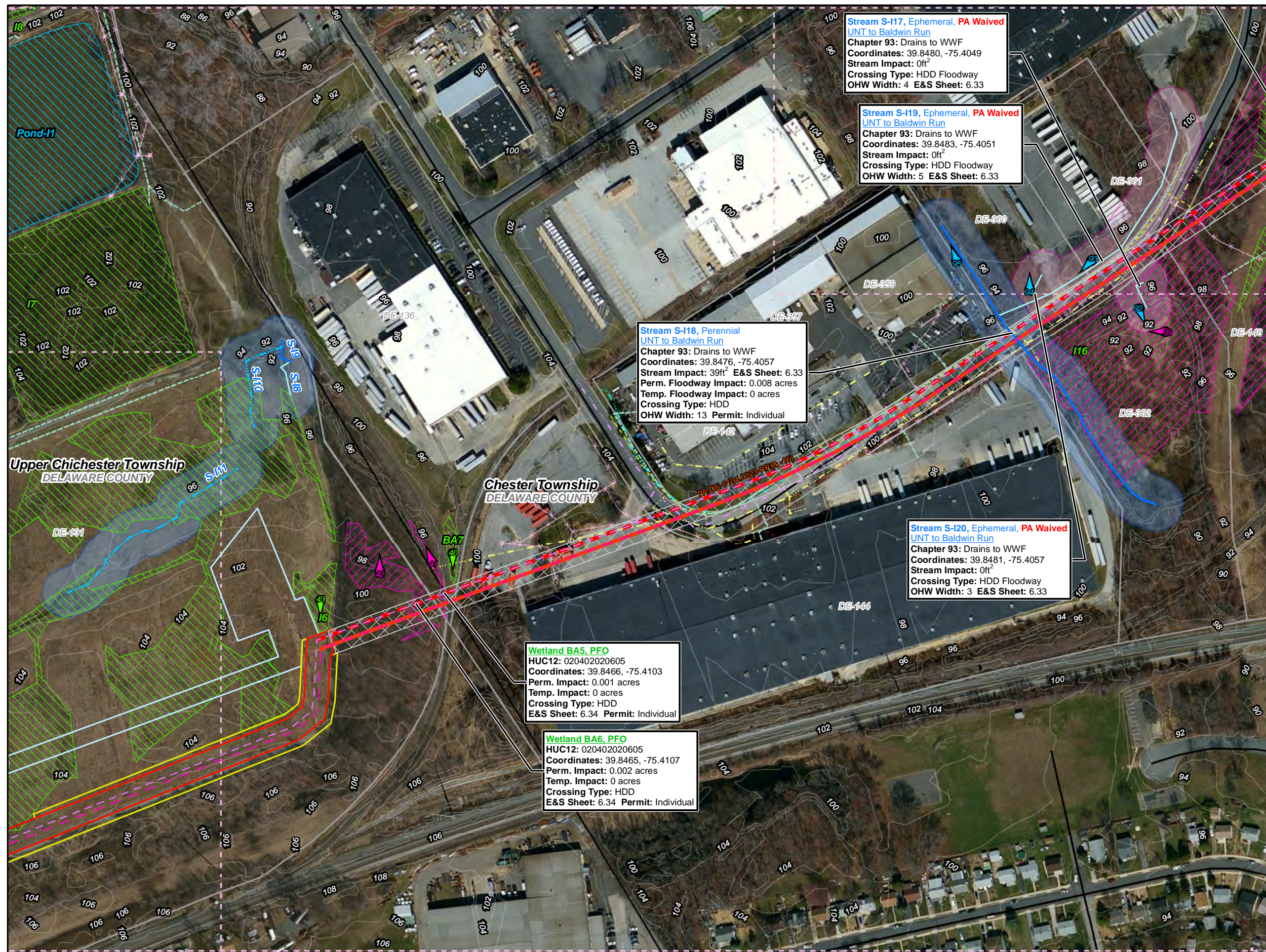


Date:

5/2016

Base Map: ESRI ArcGIS Online, Roads from NRCS
Geospatial Data Giveaway, 100-Year Floodplain from
FEMA National Flood Hazard Layer, downloaded 10/2015.

Coordinate System: NAD 83 Stateplane, PA South, Feet



Legend

- Swedesford Lateral
- PPP 1
- PPP 2
- PPP 1 Bore
- PPP 2 Bore
- PPP 1 HDD
- PPP 2 HDD
- Permanent ROW
- Temporary ROW
- ATWS
- Block Valve Setting LOD
- Existing Block Valve Setting
- Permanent Access Road
- Temporary Access Road
- Clearing Only
- Travel Only
- Permanent Easement (no surface disturbance)
- Stations
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Pond
- PEM Wetland
- PFO Wetland
- PSS Wetland
- Ch. 105 Floodways
- Waived Ch. 105 Floodways
- Ch. 106 Floodplain Fringe

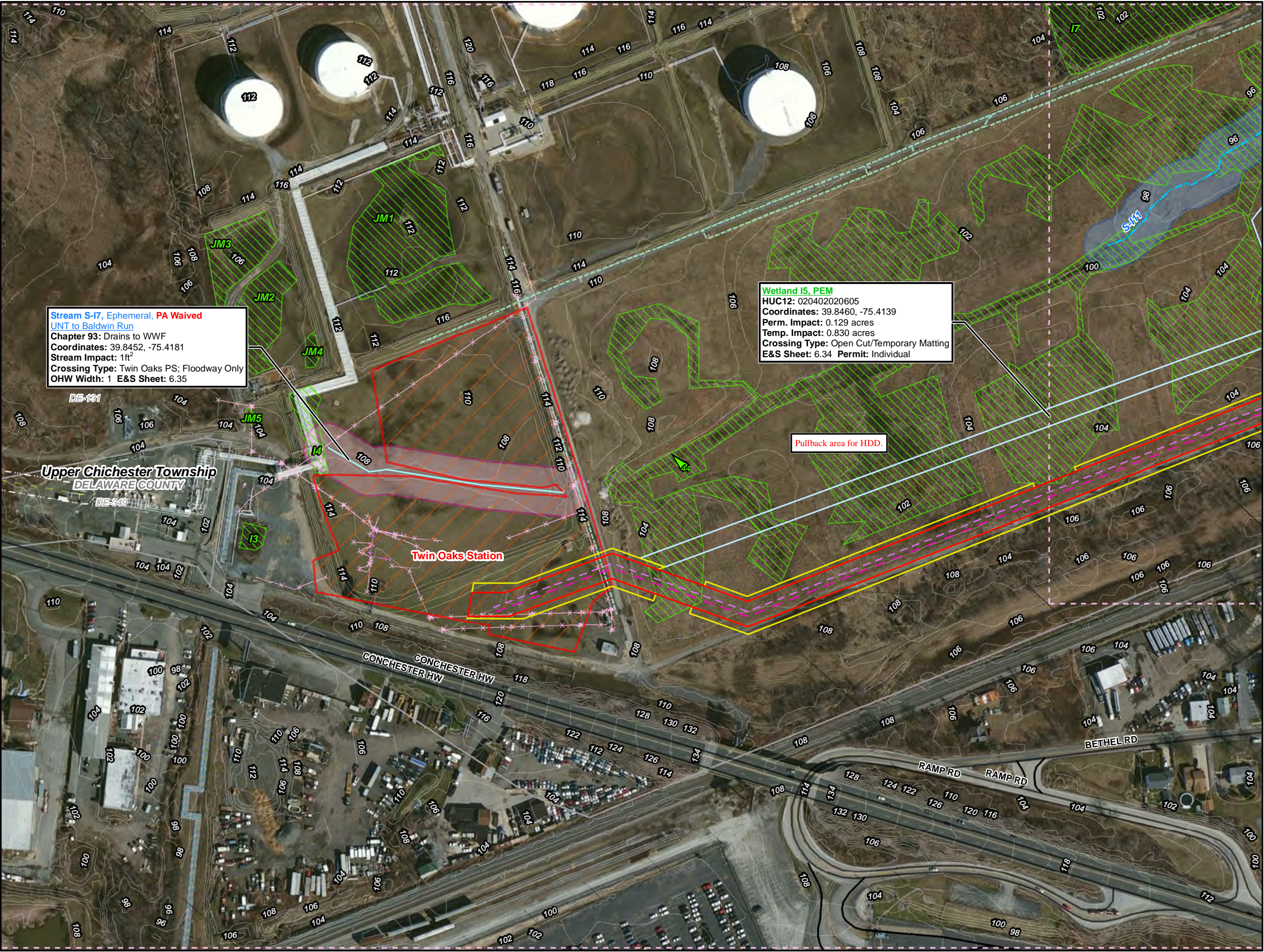
1 inch = 200 feet

0 50 100 200 300 400

Site Plan for the Sunoco Pennsylvania Pipeline Project, Delaware County, PA.
Sheet 22 of 23

Prepared By:	Date:
TETRA TECH	5/2016

Base Map; ESRI ArcGIS Online, Roads from NRCS Geospatial Data Giveaway, 100-Year Floodplain from FEMA National Flood Hazard Layer, downloaded 10/2015.
Coordinate System: NAD 83 Stateplane, PA South, Feet



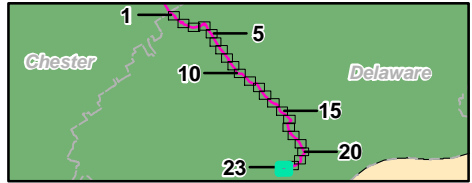
Stream S-17, Ephemeral, PA Waived
UNT to Baldwin Run
Chapter 93: Drains to WWF
Coordinates: 39.8452, -75.4181
Stream Impact: 1ft²
Crossing Type: Twin Oaks PS; Floodway Only
OHW Width: 1 E&S Sheet: 6.35

Wetland I5, PEM
HUC12: 020402020605
Coordinates: 39.8460, -75.4139
Perm. Impact: 0.129 acres
Temp. Impact: 0.830 acres
Crossing Type: Open Cut/Temporary Matting
E&S Sheet: 6.34 Permit: Individual

Pullback area for HDD.

Legend

- Swedesford Lateral
- PPP 1
- PPP 2
- PPP 1 Bore
- PPP 2 Bore
- PPP 1 HDD
- PPP 2 HDD
- Permanent ROW
- Temporary ROW
- ATWS
- Block Valve Setting LOD
- Existing Block Valve Setting
- Permanent Access Road
- Temporary Access Road
- Clearing Only
- Travel Only
- Permanent Easement (no surface disturbance)
- Stations
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Pond
- PEM Wetland
- PFO Wetland
- PSS Wetland
- Ch. 105 Floodways
- Waived Ch. 105 Floodways
- Ch. 106 Floodplain Fringe



0 50 100 200 300 400
1 inch = 200 feet

Site Plan for the Sunoco
Pennsylvania Pipeline Project,
Delaware County, PA.
Sheet 23 of 23

Prepared By: **TETRA TECH** Date: **5/2016**

Base Map: ESRI ArcGIS Online, Roads from NRCS
Geospatial Data Giveaway, 100-Year Floodplain from
FEMA National Flood Hazard Layer, downloaded 10/2015.
Coordinate System: NAD 83 Stateplane, PA South, Feet