MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4) MAPPING
for
PLYMOUTH TOWNSHIP
MONTGOMERY COUNTY – PENNSYLVANIA

TOWNSHIP BOUNDARY – AERIAL IMAGE

Scale: 1"=1000'

PROJECT SHEET INDEX

SHEET No.:	SHEET DESCRIPTION:
1 of 9	COVER – INDEX SHEET
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3 of 9	MAJOR WATERCOURSES WITHIN THE TOWNSHIP
4 of 9	WATERSHED BOUNDARIES WITHIN PLYMOUTH TOWNSHIP
5 of 9	TOWNSHIP STORM SEWER OUTFALL MAP QUADRANT 'A'
6 of 9	TOWNSHIP STORM SEWER OUTFALL MAP QUADRANT 'B'
7 of 9	TOWNSHIP STORM SEWER OUTFALL MAP QUADRANT 'C'
8 of 9	TOWNSHIP STORM SEWER OUTFALL MAP QUADRANT 'D'
9 of 9	OPERATION & MAINTENANCE NOTES

REVISIONS

No.:	DATE:	DESCRIPTION:
3	09/17/2024	Revised per DEP review comments (email March 15, 2023)
2	03/14/2023	Revised per DEP review comments (email Feb. 27, 2023) for review
1	03/11/2021	Revised per DEP review comments (email) and pre-submission comments (letter May 31, 2018)

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PROJECT SERIAL NUMBER FOR DESIGN:

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TIMOTHY P. WOODROW
ENGINEER
No. 03013-E

Applicant:
PLYMOUTH TOWNSHIP
700 Belvoir Road
Plymouth Meeting, Pa. 19462

Township Boundary:
5,388.80 Acres

FINAL PLAN

COVER - INDEX SHEET
PLYMOUTH TOWNSHIP
PLYMOUTH TOWNSHIP – MONTGOMERY COUNTY – PENNSYLVANIA

WOODROW & ASSOCIATES, INC.
MUNICIPAL/ CIVIL CONSULTING ENGINEERS
1108 North Bethlehem Pike / Suite 5 – Lower Gwynedd – PA 19002
Phone: (215) 542-2000 Fax: (215) 542-2879
Web: www.Woodrowinc.com

Layer List: B-SHT01_COVER
Job No: 12-0803P
Plan Date: August 1, 2017
Sheet No: 1 of 9

Project No: 12-0803P Project Name: PLYMOUTH TOWNSHIP Print Date: Aug 16, 2024 (8:24)

ZONING DISTRICTS WITHIN TOWNSHIP: (TOTAL AREA = 5,388.80 Acres)

ZONING DISTRICT:	AREA WITHIN TOWNSHIP:
AA Residential	464.60 Acres
A Residential	689.45 Acres
B Residential	787.68 Acres
C Residential	459.55 Acres
D Residential	157.58 Acres
D-1 Residential	5.74 Acres
Residential Special	54.96 Acres

ZONING DISTRICT:	AREA WITHIN TOWNSHIP:
Commercial	249.76 Acres
Limited Commercial	43.98 Acres
Shopping Center	123.18 Acres
Office Laboratory	37.72 Acres
Industrial Park	42.54 Acres
Limited Industrial	613.83 Acres
Heavy Industrial	406.33 Acres
Campus Industrial	80.37 Acres

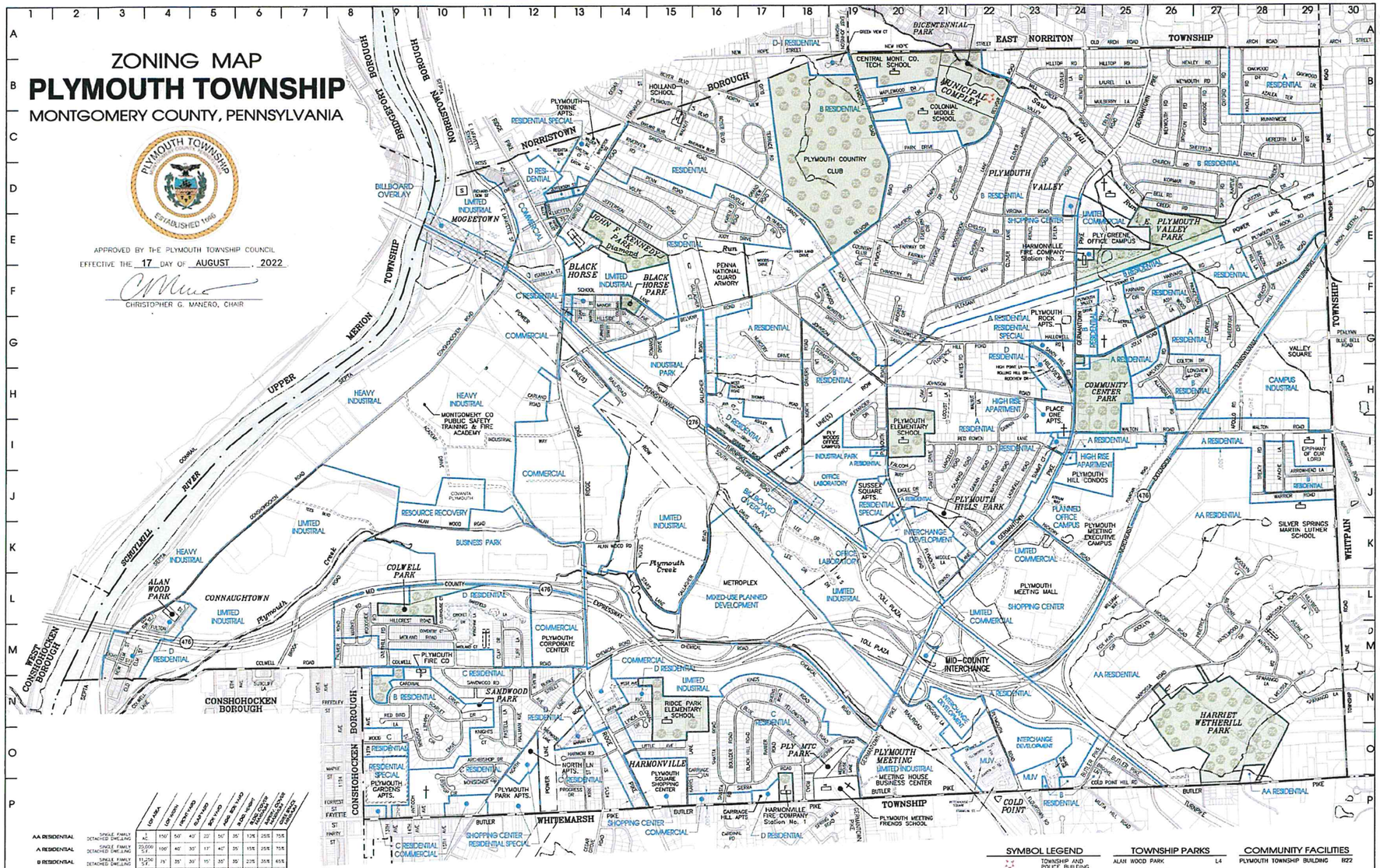
ZONING DISTRICT:	AREA WITHIN TOWNSHIP:
High-Rise Apartments	22.47 Acres
Planned Office Park	58.99 Acres
Interchange Development	30.54 Acres
Resource Recovery	22.02 Acres
Mixed-Use Planned Development	144.41 Acres
Business Park	73.94 Acres
Mixed-Use Village Residential	20.46 Acres

MISCELLANEOUS AREAS:	AREA WITHIN TOWNSHIP:
PennDOT Right-of-Way Areas	352.95 Acres
PECO Right-of-Way Areas	78.22 Acres
Pervious Developed Areas (i.e. golf courses)	103.89 Acres
Park/School/Open Space Lands	263.64 Acres

ZONING MAP
PLYMOUTH TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

APPROVED BY THE PLYMOUTH TOWNSHIP COUNCIL
EFFECTIVE THE 17 DAY OF AUGUST, 2022

CHRISTOPHER G. MANERO, CHAIR



		LOT AREA	LOT WIDTH	FRONT YARD	REAR YARD	SIDE YARD	ACC. BLDG. YARD	BLDG. HEIGHT	MAXIMUM LOT COVERAGE	MAXIMUM IMPERVIOUS COVERAGE
AA RESIDENTIAL	SINGLE FAMILY DETACHED DWELLING	AC.	150'	50'	40'	20'	50'	35'	12%	25%
A RESIDENTIAL	SINGLE FAMILY DETACHED DWELLING	20,000 S.F.	100'	40'	30'	15'	40'	35'	15%	25%
B RESIDENTIAL	SINGLE FAMILY DETACHED DWELLING	11,250 S.F.	75'	35'	30'	15'	35'	35'	20%	35%
C RESIDENTIAL	SINGLE FAMILY DETACHED DWELLING	9,000 S.F.	60'	30'	30'	12'	30'	35'	25%	35%
D RESIDENTIAL	SINGLE FAMILY DWELLING	5,000 S.F.	50'	25'	25'	8	20'	35	30%	45%
	TWIN DWELLING	4,000 S.F.	40'	25'	25'	15'	-	35	25%	45%
	DUPLEX DWELLING	4,000 S.F.	60'	25'	25'	10'	25'	35	30%	50%
	TRIPLEX DWELLING	7,000 S.F.	80'	25'	25'	10'	25'	35	30%	50%
	QUADRAPLEX DWELLING	7,000 S.F.	80'	25'	25	25	-	35	30%	50%
	TOWNHOUSE DWELLING	2,000 S.F.	20'	25'	25	15'	-	35	35%	50%
D-1 RESIDENTIAL	DUPLEX DWELLING	4,000 S.F.	60'	30'	25	10'	25'	35	35%	50%
	TOWNHOUSE	2,800 S.F.	24'	30'	25	15'	-	35	35%	50%

SUMMARY OF RESIDENTIAL ZONING REGULATIONS

GRAPHIC SCALE
(SCALE IN FEET, 1 Inch = 800 Feet (@ 24"x36" Print Size))

Map prepared utilizing public Data from the following sources:
County GIS Tax Parcel Data supplied by the Montgomery County Planning Commission.
PA Spatial Data Access system (PASDA) based on PA State Plane (South) NAD83 horizontal, NAVD88 vertical datum.
All attempts were made to maintain relative accuracy, however, this map should not be used for engineering purposes.

SYMBOL LEGEND

- TOWNSHIP AND POLICE BUILDING
- SCHOOL
- FIRE HOUSE
- COMMUNITY CENTER BUILDING
- SEWAGE TREATMENT PLANT
- CHURCH
- CEMETARY
- PUBLIC ROAD
- PRIVATE ROAD

TOWNSHIP PARKS

ALAN WOOD PARK	L4
BICENTENNIAL PARK	B21
BLACK HORSE PARK	F14
COLWELL PARK	L10
COMMUNITY CENTER PARK	H24
EAST PLYMOUTH VALLEY PARK	E26
HARRIET WETHERILL PARK	N27
JOHN F. KENNEDY PARK	E14
PLYMOUTH HILLS PARK	J21
PLYMOUTH MEETING PARK	O19
SANDWOOD PARK	N11

OPEN SPACE RECREATION

COMMUNITY FACILITIES

PLYMOUTH TOWNSHIP BUILDING	B22
COLONIAL MIDDLE SCHOOL	C21
COUNTY TECH. SCHOOL	A20
PLYMOUTH ELEMENTARY SCHOOL	I20
RIDGE PARK ELEM SCHOOL	N15
EPIPHANY OF OUR LORD	I29
HOLLAND SCHOOL	C15
PLYMOUTH MEETING FRIENDS	P19
HARMONVILLE FIRE CO – Sta 1	P17
HARMONVILLE FIRE CO – Sta 2	E24
PLYMOUTH FIRE CO	M9

Map Print Date: 9 Aug 2022 Mapping File No: 12-0804 P

REVISIONS

No.	DATE:	DESCRIPTION:
3	06/15/2024	Revised per DEP review comments (email March 15, 2023).
2	04/01/2024	Revised to update FIRM mapping standards and resubmit to DEP for review.
1	03/16/2022	Revised per DEP review comments (email) on PDP application dated May 21, 2018.

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COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TIMOTHY P. WOODROW
ENGINEER
No. 03730-E

Applicant: PLYMOUTH TOWNSHIP
700 Belvoir Road
Plymouth Meeting, PA 19462

Township Boundary: 5,388.80 Acres

FINAL PLAN
OVERALL TOWNSHIP ZONING BOUNDARY LIMITS
PLYMOUTH TOWNSHIP
PLYMOUTH TOWNSHIP – MONTGOMERY COUNTY – PENNSYLVANIA

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Layer List: B-ZONING_MAP
Job No: 12-0803P
Plan Date: August 1, 2017
Sheet No: 2 of 9

Project No: 12-0803P Project Name: PLYMOUTH TOWNSHIP Print Date: Aug 16, 2024 (8:24)

PLAN LEGEND

Township Boundary

Watercourses

REVISIONS

No.	DATE	DESCRIPTION
3	06/15/2024	Revised per DEP review comments (email March 15, 2023).
2	04/01/2024	Revised to update PRP mapping standards and resubmit to DEP for review.
1	02/14/2023	Revised per DEP review comments (email) on PRP application dated May 21, 2018.

N
W PLAN NORTH E
S

400' 0' 800'
Scale In Feet (1" = 800')

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PROJECT SERIAL NUMBER FOR DESIGN:

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TIMOTHY P. WOODROW
ENGINEER
No. 037121-E

Applicant:
PLYMOUTH TOWNSHIP
700 Belvoir Road
Plymouth Meeting, PA 19462

Township Boundary:
5,388.80 Acres

FINAL PLAN

MAJOR WATERCOURSES WITHIN THE TOWNSHIP

PLYMOUTH TOWNSHIP – MONTGOMERY COUNTY – PENNSYLVANIA

WOODROW & ASSOCIATES, INC.
MUNICIPAL/ CIVIL CONSULTING ENGINEERS
1108 North Bethlehem Pike / Suite 5 – Lower Gwynedd – PA 19002
Phone: (215) 542-5979 Fax: (215) 542-5979
Web: www.woodrowassoc.com

Layer List:
B-SHT03_WATERCOURSES

Job No:
12-0803P

Plan Date:
January 10, 2018

Sheet No:
3 of 9

Project No: 12-0803P Project Name: PLYMOUTH TOWNSHIP Print Date: Aug 16, 2024 (8:22)

PLAN LEGEND

- Township Boundary
- Watercourses
- Drainage Boundary to Watercourses
- Topographic Contours (10' Intervals)
- Areas of PennDOT R.O.W. and parcel ownership that have been paced from Plymouth Township obligations

SCHUYLKILL RIVER WATERSHED: 358.06 Acres

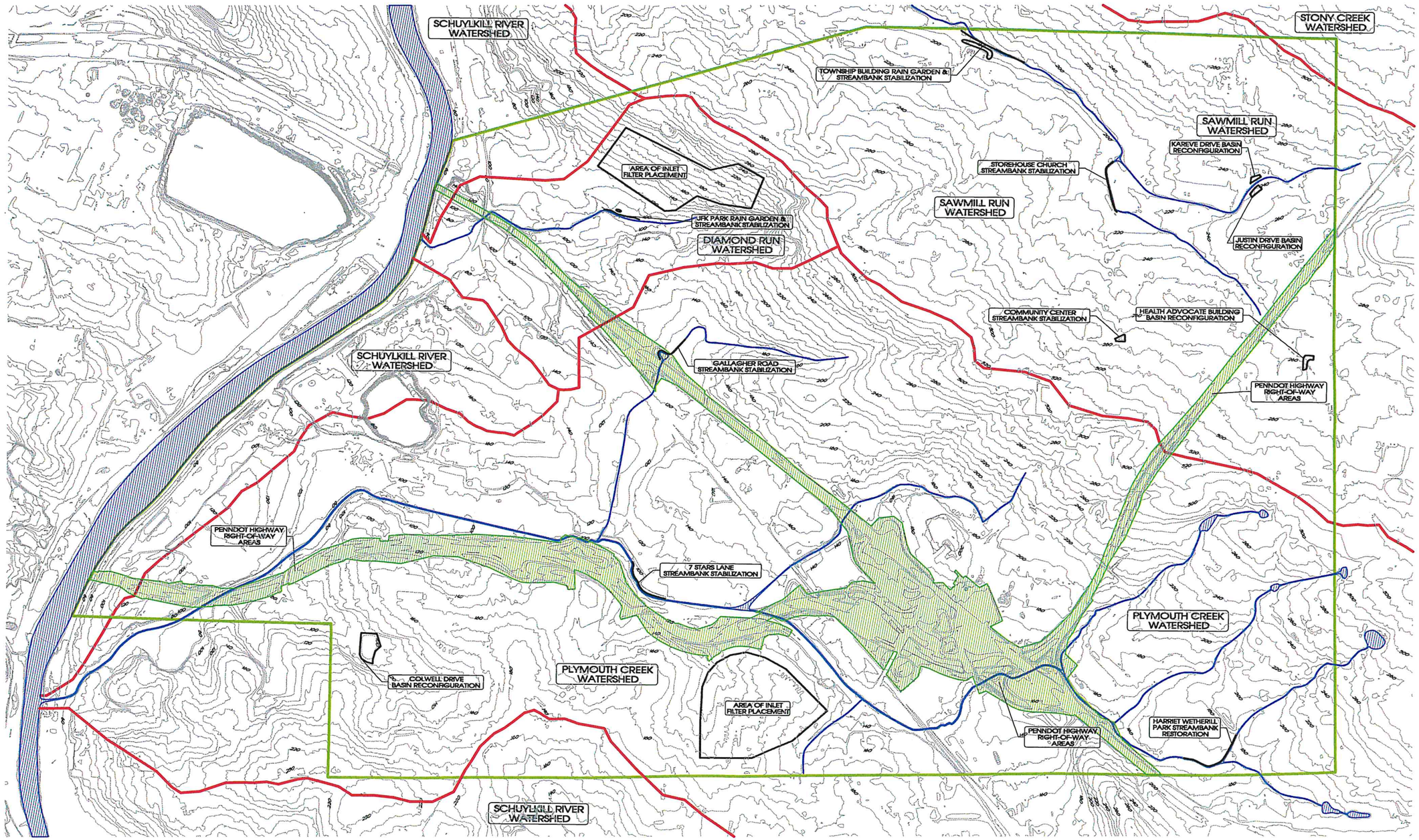
SAWMILL RUN WATERSHED: 1,385.70 Acres

DIAMOND RUN WATERSHED: 493.24 Acres

PLYMOUTH CREEK WATERSHED: 3,107.42 Acres

* Areas draining to Stony Creek (44.38 Acres) are minimal that no requirements are applied to this watershed for Plymouth Township per the 'MS4 Requirements Table' issued by PA DEP

** Areas within PennDOT Right-of-Way for S.R. 476 & S.R. 276, toll plazas, and maintenance areas within Plymouth Township have been removed from overall Township responsibilities. Areas taken from GIS parcel boundary information.



No.	DATE:	DESCRIPTION:
3	08/15/2024	Revised per PGP review comments (email March 15, 2023)
2	03/16/2023	Revised per DEP review comments and response to DEP tier review
1	02/16/2023	Revised per DEP MS4 Requirements Table and Impaired Stream Table 3-1, 2018

REVISIONS

N / W / E / S — PLAN NORTH

400' 0' 800'
Scale In Feet (1" = 800')

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COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — TIMOTHY P. WOODROW — ENGINEER — No. 03818-E

Applicant: PLYMOUTH TOWNSHIP
700 Beaver Road
Plymouth Meeting, PA 19452

Township Boundary: 5,388.80 Acres

FINAL PLAN

WATERSHED BOUNDARIES WITHIN PLYMOUTH TOWNSHIP

PLYMOUTH TOWNSHIP

PLYMOUTH TOWNSHIP – MONTGOMERY COUNTY – PENNSYLVANIA

WOODROW & ASSOCIATES, INC.
MUNICIPAL / CIVIL CONSULTING ENGINEERS
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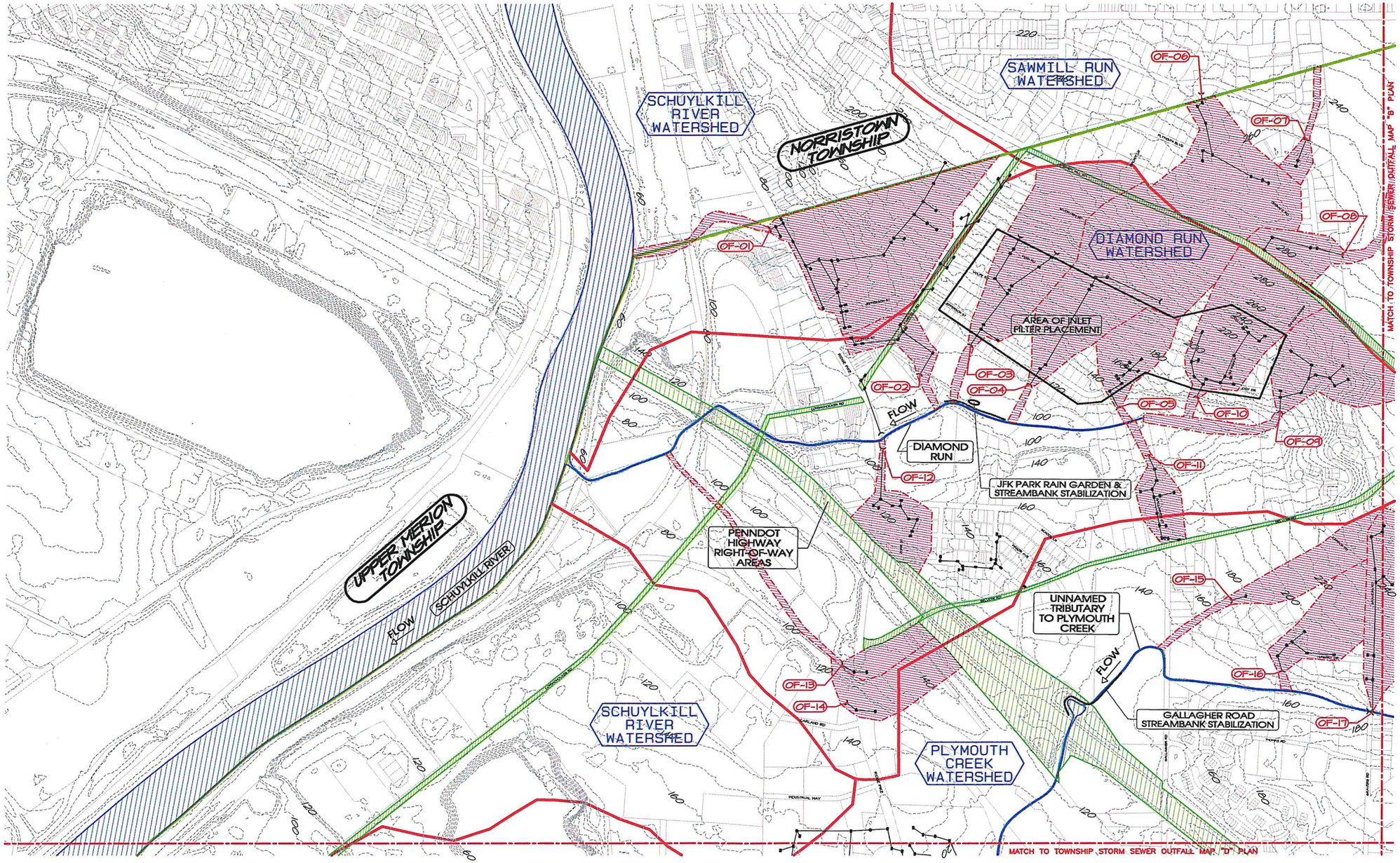
Layer List: B-SHT04-WATERSHEDS
Job No: 12-0803P
Plan Date: January 10, 2018
Sheet No: 4 of 9

Project No: 12-0803P Project Name: PLYMOUTH TOWNSHIP Print Date: Aug 16, 2024 (8:15)

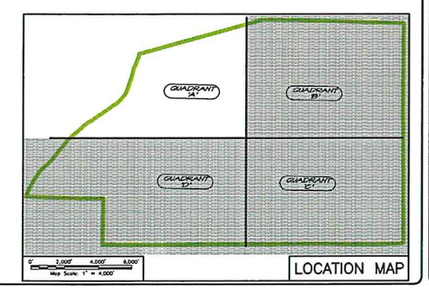


TOWNSHIP STORM SEWER OUTFALL LOCATION:

OUTFALL No.:	LATITUDE:	LONGITUDE:	WATERCOURSE DISCHARGE:
OF-01	40.108376 N	-75.324143 W	SCHUYLKILL RIVER
OF-02	40.108945 N	-75.318816 W	DIAMOND RUN
OF-03	40.110774 N	-75.316724 W	DIAMOND RUN
OF-04	40.110961 N	-75.314999 W	DIAMOND RUN
OF-05	40.112191 N	-75.313653 W	DIAMOND RUN
OF-06	40.118230 N	-75.319688 W	SAWMILL RUN
OF-07	40.118887 N	-75.316040 W	SAWMILL RUN
OF-08	40.118316 N	-75.312687 W	SAWMILL RUN
OF-09	40.115268 N	-75.310616 W	DIAMOND RUN
OF-10	40.113771 N	-75.312843 W	DIAMOND RUN
OF-11	40.112405 N	-75.312215 W	DIAMOND RUN
OF-12	40.110128 N	-75.315192 W	DIAMOND RUN
OF-13	40.103793 N	-75.312462 W	DIAMOND RUN
OF-14	40.103147 N	-75.312868 W	DIAMOND RUN
OF-15	40.111740 N	-75.307697 W	UNNAMED TRIBUTARY TO PLYMOUTH CREEK
OF-16	40.111849 N	-75.304239 W	UNNAMED TRIBUTARY TO PLYMOUTH CREEK
OF-17	40.113057 N	-75.302252 W	UNNAMED TRIBUTARY TO PLYMOUTH CREEK

PLAN LEGEND

- Township Boundary
- Watercourses
- Drainage Boundary to Watercourses
- Topographic Contours (10' Intervals)
- PennDOT Highways & Roadways
- Drainage Area to Stormwater Outfalls
- Storm Sewer Inlet / Manhole
- Storm Sewer Headwall / Endwall
- Terminal Storm Outfall



LOCATION MAP

No.	DATE	DESCRIPTION
3	06/15/2024	Revised per BBP review comments (email March 15, 2023)
2	04/01/2024	Revised to update PBP mapping standards and readers to GDP for review.
1	03/14/2023	Revised per BBP review comments (email) on PBP application dated May 21, 2018

REVISIONS

N W E S PLAN NORTH

200' 0' 400'
Scale In Feet (1" = 400')

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COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL TIMOTHY P. WOODROW ENGINEER No. 63872-E

Applicant: PLYMOUTH TOWNSHIP
700 Belvoir Road
Plymouth Meeting, PA 19462

Township Boundary: 5,388.80 Acres

FINAL PLAN
TOWNSHIP STORM SEWER OUTFALL MAP QUADRANT 'A'
PLYMOUTH TOWNSHIP
PLYMOUTH TOWNSHIP – MONTGOMERY COUNTY – PENNSYLVANIA

WOODROW & ASSOCIATES, INC.
MUNICIPAL CIVIL CONSULTING ENGINEERS
1108 North Bethlehem Pike / Suite 5 – Lower Gwynedd – PA 19002
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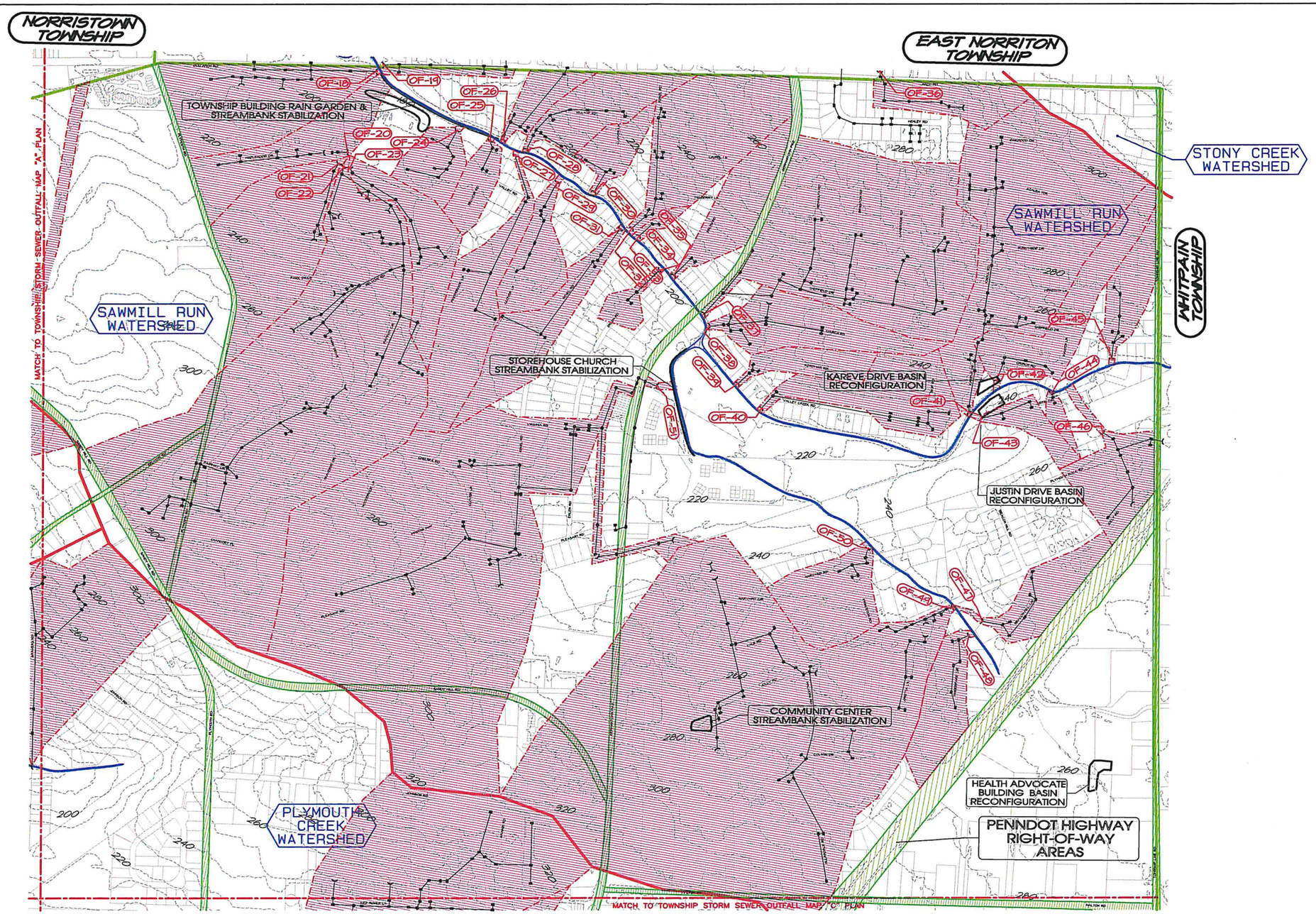
Web: www.woodrowassoc.com

Layer List: B-SHT05-QUAD-A
Job No: 12-0803P
Plan Date: January 10, 2018
Sheet No: 5 of 9

Project No: 12-0803P Project Name: PLYMOUTH TOWNSHIP Print Date: Aug 16, 2024 (8:11)

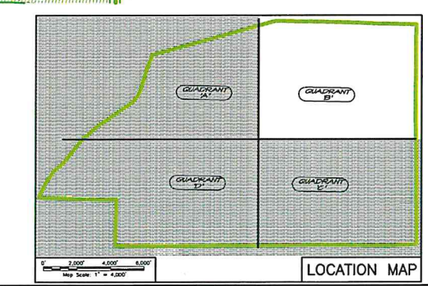


TOWNSHIP STORM SEWER OUTFALL LOCATION:

OUTFALL No.:	LATITUDE:	LONGITUDE:	WATERCOURSE DISCHARGE:	OUTFALL No.:	LATITUDE:	LONGITUDE:	WATERCOURSE DISCHARGE:	OUTFALL No.:	LATITUDE:	LONGITUDE:	WATERCOURSE DISCHARGE:
OF-18	40.128277 N	-75.312593 W	SAWMILL RUN	OF-33	40.131397 N	-75.303760 W	SAWMILL RUN	OF-48	40.131660 N	-75.288288 W	UNNAMED TRIBUTARY TO SAWMILL RUN
OF-19	40.128762 N	-75.313061 W	SAWMILL RUN	OF-34	40.131182 N	-75.302523 W	SAWMILL RUN	OF-49	40.132133 N	-75.289249 W	UNNAMED TRIBUTARY TO SAWMILL RUN
OF-20	40.127123 N	-75.311194 W	SAWMILL RUN	OF-35	40.131371 N	-75.302132 W	SAWMILL RUN	OF-50	40.131529 N	-75.292131 W	UNNAMED TRIBUTARY TO SAWMILL RUN
OF-21	40.126869 N	-75.310900 W	SAWMILL RUN	OF-36	40.138123 N	-75.303517 W	UNNAMED TRIBUTARY TO SAWMILL RUN	OF-51	40.129546 N	-75.300003 W	UNNAMED TRIBUTARY TO SAWMILL RUN
OF-22	40.126903 N	-75.310792 W	SAWMILL RUN	OF-37	40.131667 N	-75.300851 W	SAWMILL RUN				
OF-23	40.127011 N	-75.310594 W	SAWMILL RUN	OF-38	40.131557 N	-75.300404 W	SAWMILL RUN				
OF-24	40.129528 N	-75.309707 W	SAWMILL RUN	OF-39	40.131384 N	-75.298532 W	SAWMILL RUN				
OF-25	40.130040 N	-75.308738 W	SAWMILL RUN	OF-40	40.131488 N	-75.297648 W	SAWMILL RUN				
OF-26	40.130251 N	-75.308534 W	SAWMILL RUN	OF-41	40.135240 N	-75.293751 W	SAWMILL RUN				
OF-27	40.130234 N	-75.307859 W	SAWMILL RUN	OF-42	40.136057 N	-75.293891 W	SAWMILL RUN				
OF-28	40.130442 N	-75.307807 W	SAWMILL RUN	OF-43	40.135326 N	-75.293620 W	SAWMILL RUN				
OF-29	40.130772 N	-75.306694 W	SAWMILL RUN	OF-44	40.137081 N	-75.292718 W	SAWMILL RUN				
OF-30	40.131168 N	-75.305662 W	SAWMILL RUN	OF-45	40.138692 N	-75.292455 W	SAWMILL RUN				
OF-31	40.131149 N	-75.304286 W	SAWMILL RUN	OF-46	40.137268 N	-75.290787 W	SAWMILL RUN				
OF-32	40.131305 N	-75.304009 W	SAWMILL RUN	OF-47	40.132412 N	-75.288234 W	SAWMILL RUN				

PLAN LEGEND

- Township Boundary
- Watercourses
- Drainage Boundary to Watercourses
- Topographic Contours (10' Intervals)
- PennDOT Highways & Roadways
- Drainage Area to Stormwater Outfalls
- Storm Sewer Inlet / Manhole
- Storm Sewer Headwall / Endwall
- OF-XX Terminal Storm Outfall



LOCATION MAP

No.:	DATE:	DESCRIPTION:
3	06/15/2024	Revised per PDP review comments (email March 15, 2023)
2	01/18/2023	Revised to update Plan Notations, Legends and Layers to PDP for review
1	01/04/2023	Revised per PDP review comments (email December 14, 2022)

REVISIONS

N W E S — PLAN NORTH

200' 0' 400'
Scale In Feet (1" = 400')

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PROJECT SERIAL NUMBER FOR DESIGN:

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — TIMOTHY P. WOODROW — ENGINEER — No. 039718-E

Applicant: PLYMOUTH TOWNSHIP
700 Revere Road
Plymouth Meeting Pa. 19462

Township Boundary: 5,388.80 Acres

FINAL PLAN
TOWNSHIP STORM SEWER OUTFALL MAP QUADRANT 'B'
PLYMOUTH TOWNSHIP
PLYMOUTH TOWNSHIP – MONTGOMERY COUNTY – PENNSYLVANIA

WOODROW & ASSOCIATES, INC.
MUNICIPAL / CIVIL CONSULTING ENGINEERS
1108 North Bethlehem Pike / Suite 5 – Lower Gwynedd – PA 19002
Phone: (215) 542-9575 Fax: (215) 542-9579
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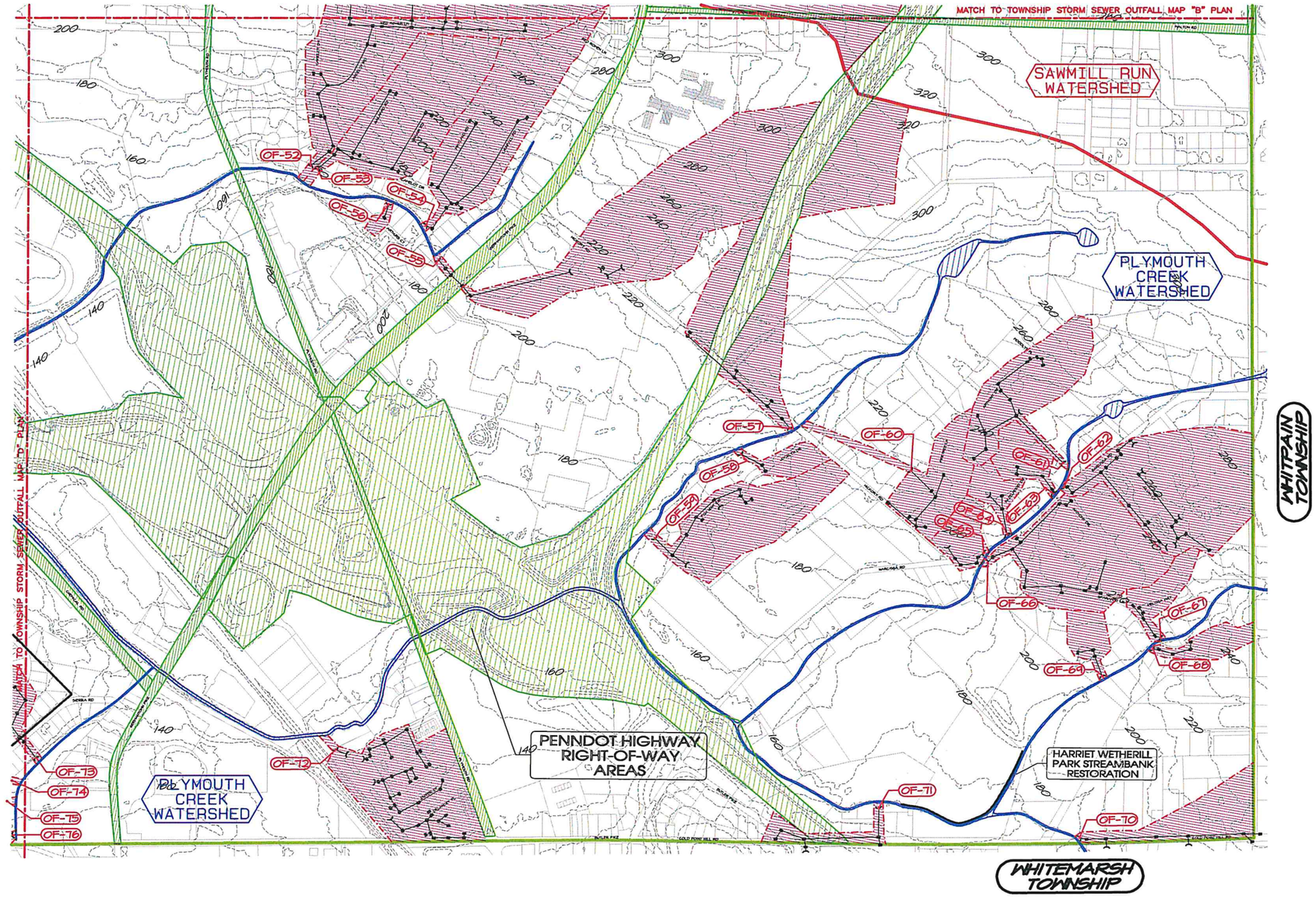
Layer List: B-SHT06-QUAD-B
Job No: 12-0803P
Plan Date: January 10, 2018
Sheet No: 6 of 9

Project No: 12-0803P Project Name: PLYMOUTH TOWNSHIP Print Date: Aug 16, 2024 (8:03)

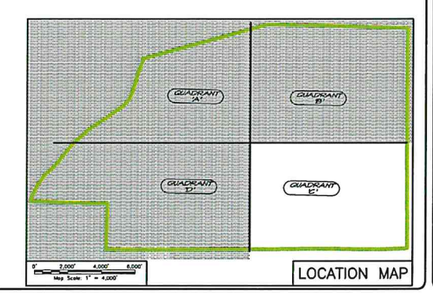


TOWNSHIP STORM SEWER OUTFALL LOCATION:

OUTFALL No.:	LATITUDE:	LONGITUDE:	WATERCOURSE DISCHARGE:	OUTFALL No.:	LATITUDE:	LONGITUDE:	WATERCOURSE DISCHARGE:
OF-52	40.114007 N	-75.290576 W	UNNAMED TRIBUTARY TO PLYMOUTH CREEK	OF-67	40.122884 N	-75.266437 W	UNNAMED TRIBUTARY TO PLYMOUTH CREEK
OF-53	40.114071 N	-75.290397 W	UNNAMED TRIBUTARY TO PLYMOUTH CREEK	OF-68	40.122683 N	-75.266075 W	UNNAMED TRIBUTARY TO PLYMOUTH CREEK
OF-54	40.115547 N	-75.287344 W	UNNAMED TRIBUTARY TO PLYMOUTH CREEK	OF-69	40.121455 N	-75.265292 W	UNNAMED TRIBUTARY TO PLYMOUTH CREEK
OF-55	40.115120 N	-75.286451 W	UNNAMED TRIBUTARY TO PLYMOUTH CREEK	OF-70	40.119217 N	-75.263123 W	UNNAMED TRIBUTARY TO PLYMOUTH CREEK
OF-56	40.115134 N	-75.288523 W	UNNAMED TRIBUTARY TO PLYMOUTH CREEK	OF-71	40.116413 N	-75.266618 W	UNNAMED TRIBUTARY TO PLYMOUTH CREEK
OF-57	40.119143 N	-75.276984 W	UNNAMED TRIBUTARY TO PLYMOUTH CREEK	OF-72	40.108054 N	-75.277625 W	UNNAMED TRIBUTARY TO PLYMOUTH CREEK
OF-58	40.118406 N	-75.277107 W	UNNAMED TRIBUTARY TO PLYMOUTH CREEK	OF-73	40.102302 N	-75.281998 W	UNNAMED TRIBUTARY TO PLYMOUTH CREEK
OF-59	40.115510 N	-75.276887 W	UNNAMED TRIBUTARY TO PLYMOUTH CREEK				
OF-60	40.120636 N	-75.273844 W	UNNAMED TRIBUTARY TO PLYMOUTH CREEK				
OF-61	40.123372 N	-75.271963 W	UNNAMED TRIBUTARY TO PLYMOUTH CREEK				
OF-62	40.123134 N	-75.271275 W	UNNAMED TRIBUTARY TO PLYMOUTH CREEK				
OF-63	40.122806 N	-75.271532 W	UNNAMED TRIBUTARY TO PLYMOUTH CREEK				
OF-64	40.121700 N	-75.271219 W	UNNAMED TRIBUTARY TO PLYMOUTH CREEK				
OF-65	40.120816 N	-75.271240 W	UNNAMED TRIBUTARY TO PLYMOUTH CREEK				
OF-66	40.120804 N	-75.270776 W	UNNAMED TRIBUTARY TO PLYMOUTH CREEK				

PLAN LEGEND

- Township Boundary
- Watercourses
- Drainage Boundary to Watercourses
- Topographic Contours (10' Intervals)
- PennDOT Highways & Roadways
- Drainage Area to Stormwater Outfalls
- Storm Sewer Inlet / Manhole
- Storm Sewer Headwall / Endwall
- Terminal Storm Outfall



REVISIONS

No.:	DATE:	DESCRIPTION:
3	08/15/2024	Revised per DEP review comments (email March 10, 2023)
2	06/03/2024	Revised to update PBP mapping standards and resubmit to DEP for review.
1	03/14/2023	Revised per DEP review comments (email) as PBP application dated May 21, 2018

N
PLAN NORTH
W E
S

200' 0' 400'
Scale In Feet (1" = 400')

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PROJECT SERIAL NUMBER FOR DESIGN.

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TIMOTHY P WOODROW
ENGINEER
No. 037131-E

Applicant: PLYMOUTH TOWNSHIP
700 Belvoir Road
Plymouth Meeting, PA 19462

Township Boundary: 5,388.80 Acres

FINAL PLAN
TOWNSHIP STORM SEWER OUTFALL MAP QUADRANT 'C' PLYMOUTH TOWNSHIP
PLYMOUTH TOWNSHIP – MONTGOMERY COUNTY – PENNSYLVANIA

WOODROW & ASSOCIATES, INC.
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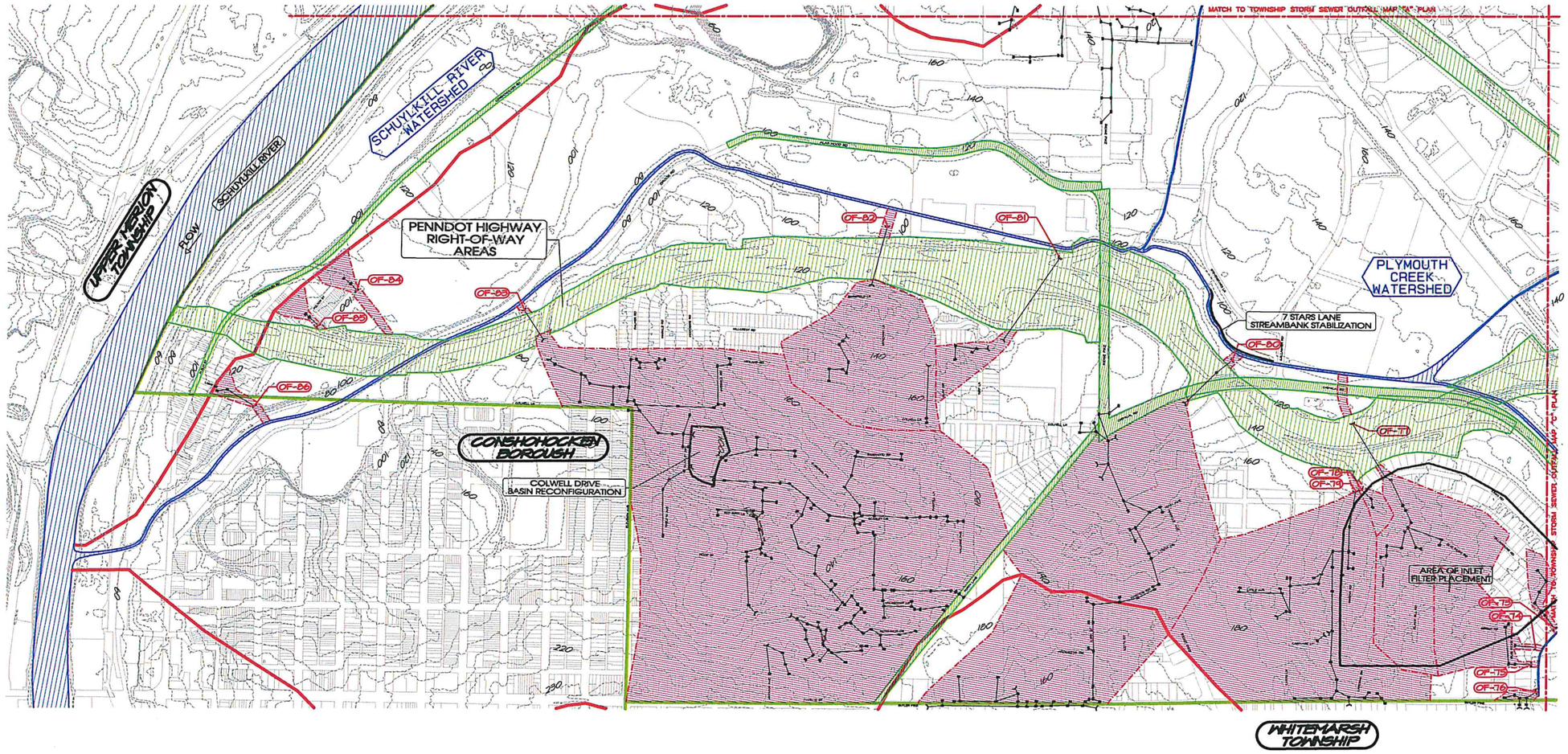
Layer List: B-SHT07-QUAD-C
Job No: 12-0803P
Plan Date: January 10, 2018
Sheet No: 7 of 9

Project No. 12-0803P Project Name: PLYMOUTH TOWNSHIP Print Date: Aug 16, 2024 (7:58)

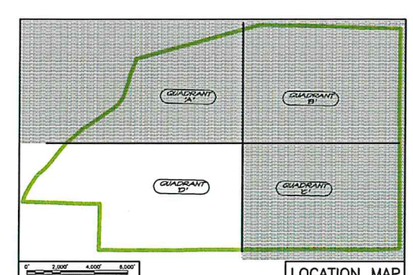


TOWNSHIP STORM SEWER OUTFALL LOCATION:

OUTFALL No.:	LATITUDE:	LONGITUDE:	WATERCOURSE DISCHARGE:
OF-73	40.102302 N	-75.281998 W	UNNAMED TRIBUTARY TO PLYMOUTH CREEK
OF-74	40.101588 N	-75.281846 W	UNNAMED TRIBUTARY TO PLYMOUTH CREEK
OF-75	40.101234 N	-75.281198 W	UNNAMED TRIBUTARY TO PLYMOUTH CREEK
OF-76	40.100857 N	-75.280560 W	UNNAMED TRIBUTARY TO PLYMOUTH CREEK
OF-77	40.101502 N	-75.292818 W	PLYMOUTH CREEK
OF-78	40.100475 N	-75.289288 W	PLYMOUTH CREEK
OF-79	40.100325 N	-75.289209 W	PLYMOUTH CREEK
OF-80	40.100043 N	-75.294863 W	PLYMOUTH CREEK
OF-81	40.097809 N	-75.301520 W	PLYMOUTH CREEK
OF-82	40.094080 N	-75.305597 W	PLYMOUTH CREEK
OF-83	40.086001 N	-75.310525 W	PLYMOUTH CREEK
OF-84	40.082850 N	-75.314519 W	PLYMOUTH CREEK
OF-85	40.081733 N	-75.314063 W	PLYMOUTH CREEK
OF-86	40.078855 N	-75.313230 W	PLYMOUTH CREEK

PLAN LEGEND

- Township Boundary
- Watercourses
- Drainage Boundary to Watercourses
- Topographic Contours (10' Intervals)
- PennDOT Highways & Roadways
- Drainage Area to Stormwater Outfalls
- Storm Sewer Inlet / Manhole
- Storm Sewer Headwall / Endwall
- Terminal Storm Outfall



REVISIONS

No.:	DATE:	DESCRIPTION:
3	08/15/2024	Revised per DEP review comments (email March 15, 2023)
2	06/03/2024	Revised to update PRP modeling standards and resubmit to DEP for review.
1	10/04/2023	Revised per DEP review comments on PRP application dated May 1, 2018

N W E S

PLAN NORTH

200' 0' 400'

Scale In Feet (1" = 400')

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CALL 1-800-242-1776
PROJECT SERIAL NUMBER FOR DESIGN:

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TIMOTHY P. WOODROW
ENGINEER
No. 032715-E

Applicant:
PLYMOUTH TOWNSHIP
700 Belvoir Road
Plymouth Meeting, Pa. 19462

Township Boundary:
5,388.80 Acres

FINAL PLAN
TOWNSHIP STORM SEWER OUTFALL MAP QUADRANT 'D'
PLYMOUTH TOWNSHIP
PLYMOUTH TOWNSHIP – MONTGOMERY COUNTY – PENNSYLVANIA

WOODROW & ASSOCIATES, INC.
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1105 North Bethlehem Pike / Suite 5 – Lower Gwynedd – PA 19002
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Layer Url: B-SHT08-QUAD-D
Job No: 12-0803P
Plan Date: January 10, 2018
Sheet No: 8 of 9

Project No: 12-0803P Project Name: PLYMOUTH TOWNSHIP Print Date: Aug 16, 2024 (7:36)

SURFACE STABILIZATION NOTES:

FERTILIZATION, SEEDING AND MULCHING:

TEMPORARY COVER ON DISTURBED AREAS:

Upon temporary cessation of an earth disturbance or any stage or phase of an activity where a cessation of earth disturbance activities exceed 4 days, the site shall be immediately seeded, mulched or otherwise protected from accelerated erosion and sedimentation pending future earth disturbance activities.

PERMANENT COVER ON DISTURBED AREAS:

Disturbed areas which are either at finish grade or will not be redisturbed a within one (1) year period must be seeded and mulched with a permanent seed mixture.

All disturbed areas shall be stabilized immediately with a temporary seed and mulch mixture applied at the recommended rates. Site preparation of mulch and maintenance shall be performed in accordance with the Penn State University's Erosion Control & Conservation Plantings on Noncropland manual and Pennsylvania Department of Transportation publication form 408 specifications (latest edition). During nongermination periods, mulch must be applied at the recommended rates.

Graded areas shall be scarified or otherwise loosened to a depth of 3" to 5" prior to topsoil placement to permit the bonding of new topsoil.

MULCHING:

All seeded areas should be mulched or blanketed to minimize the potential for failure to establish adequate vegetated cover. Mulching may also be used as a temporary stabilization of disturbed areas in non-germinating seasons. Mulch shall be applied immediately after seeding or at the termination of grading operations during non-germinating seasons.

Straw and hay mulch should be anchored or tackified immediately after application to prevent being windblown. A tractor-drawn implement may be used to "crimp" the straw or hay into the soil about 3 inches deep. This method should be limited to slopes no steeper than 3H:1V. The machinery shall be operated on the contour.

Polymeric and gum tackifiers mixed and applied according to manufacturer's recommendations may be used to tack mulch. Avoid application during rain and on windy days. A 24 hour curing period and a soil temperature of 45 degrees F are typically required. Application should generally be heaviest at edges of seeded areas and at crests of ridges and banks to prevent loss. The remainder of the area shall have binder applied uniformly. Binders may only be applied after mulch is spread or sprayed onto the mulch as it is being blown onto the soil.

Synthetic binders, or chemical binders, may be used as recommended by the manufacturer to anchor mulch provided that sufficient documentation is provided to show they are non-toxic to native plant and animal species.

Mulch on slopes of 8% or steeper should be held in place with netting. Light-weight plastic, fiber, or paper nets may be stapled over the mulch according to manufacturer's recommendations.

Shredded paper hydromulch should not be used on slopes steeper than 5%. Wood fiber hydromulch may be applied on steeper slopes provided a tacifier is used. The application for any hydromulch should be 2000 lb/acre at a minimum.

MULCH APPLICATION RATES

Mulch Type:	Application Rate (Min.)			Notes:
	Per Acre:	Per 1,000 S.F.	Per 1,000 S.Y.	
Straw	3 tons	140 lbs.	1,240 lbs.	Either wheat or oat straw, free of weeds, not chopped or finely broken
Hay	3 tons	140 lbs.	1,240 lbs.	Timothy, mixed clover and timothy or other native forage grasses
Wood Chips	4-6 tons	185-275 lbs.	1,650-2500 lbs.	May prevent germination of grasses and legumes
Hydromulch	1 ton	47 lbs.	415	See limitations above

SEEDING SCHEDULE:

Seeding to conform to specifications outlined in Section 804 – Seeding and Soil Supplements of PADOT Publication 408/2003 (latest revision).

A soils test should be performed in order to determine actual lime and fertilizer needs of the project site instead of using the generic application rates listed below.

TEMPORARY SEEDING SPECIFICATION – FORMULA E:

100% ANNUAL RYEGRASS (LOLIUM MULTIFLORUM): 10.0 lbs./1,000 s.y.

PERMANENT SEEDING SPECIFICATION – FORMULA B:

70% Tall Fescue (Festuca Arunoinacea var., Kentucky 31): 15.0 lbs./1,000 s.y.
30% Creeping Red Fescue or Chewings Fescue: 6.0 lbs./1,000 s.y.

SEEDING RATES FOR THE ABOVE MIXTURES:

Spread seeds where indicated and at the rates specified above (and Table A, Pub 408, Section 804). Spread seeds within the following dates, or as otherwise indicated or directed:

* Formula B: – March 15 to June 01
  August 01 to October 15
* Formula E: – March 15 to October 15

Extend seeding dates where project conditions warrant. Apply full treatment or apply only 50% of the permanent seeding and soil supplements and apply the remaining 50% within the next seeding dates.

Place mulch, hay or straw immediately after seeding or within 48 hours after seeding is completed. Place hay or straw uniformly, in a continuous blanket, until seeding is completed. If directed, increase the rate of application, depending upon the material used, season, soil conditions or method of application.

SOIL SUPPLEMENTS:

Pulverized agricultural limestone and commercial fertilizer shall be applied to all disturbed areas which are to be seeded in both temporary and permanent conditions at the following rates:

SOIL AMENDMENT APPLICATION RATE EQUIVALENTS

Soil Amendment	Permanent Seeding Application Rate			Notes
	Per Acre:	Per 1,000 S.F.	Per 1,000 S.Y.	
Agricultural Lime	6 tons	240 lb.	2,480 lb.	Or as per soil test; may not be required in agricultural fields
10-10-20 Fertilizer	1,000 lb.	25 lb.	210 lb.	Or as per soil test; may not be required in agricultural fields
Temporary Seeding Application Rate				
Agricultural Lime	1 ton	40 lb.	410 lb.	Typically not required for topsoil stockpiles
10-10-10 Fertilizer	500 lb.	12.5 lb.	100 lb.	Typically not required for topsoil stockpiles

Adapted from Penn State, "Erosion Control and Conservation Plantings on Noncropland

B.M.P. OPERATION & MAINTENANCE PROGRAM

Plymouth Township shall be responsible for the maintenance and care of all BMPs shown on these plans.

All BMP's outlined below require yearly inspection and maintenance to ensure they are functioning as designed. More frequent inspection and maintenance may be required if listed as such on the BMP's specific maintenance notes. Maintenance of the BMPs will include removal of any debris and flushing of the storm system (if applicable). An inspection report should be compiled by a creditable Engineering Firm under the direction of a Licensed Engineer. Plymouth Township shall assume all responsibility for the cost associated with the inspection, cleaning of the system, engineering fees and ultimately any costs associated with recommended repairs and/or replacement of said facilities. Copies of the inspection report shall be filed at the Township for review and record keeping with State regulations.

If any BMP fails to drain the storage volume within 72 hours, the remaining water shall be immediately pumped into the failed BMP Outlet Structure and a certified professional contacted to investigate the cause and recommend a solution to the dewatering failure.

Maintenance of Basins/Rain Gardens (Semi-annually):

Plymouth Township shall be responsible to ensure that the Basins and Rain Garden are in operational condition, particularly the condition of the embankments, outlet structures, trash racks, riprap aprons, inlets, and other safety related items. While vegetation (seed mixes, plugs, and plantings) are being established, pruning and weeding may be required. Inspection shall be completed quarterly and after major rainfall events. Sediment removal shall be performed when the basin is completely dry. Any removed sediment should be disposed of properly, and once removed, disturbed areas need to be immediately restabilized and revegetated. Detritus may also need to be removed every year.

Perennial plantings, if utilized, may be cut down at the end of the growing season. Mulch, if utilized, should be re-spread when erosion is evident and be replenished as needed. Once every two to three years the entire area may require mulch replacement. Maintain all Basin/Rain Garden berm and perimeter areas on a weekly basis. DO NOT apply pesticides or fertilizers where stormwater will be conveyed. Mow bio-filter planting area twice a year. The berm and outside embankments shall be mowed regularly to maintain a lawn condition. Mow interior embankment areas and floor areas twice a year. Once a year mowing is sufficient to keep a meadow from reverting to woodlands, but may not be sufficient to discourage woody seedlings, brambles, invasive vines and multiflora rose. Mowing more than twice a year will only encourage cool season grass species and create additional turf areas. Recommended dates for mowing are early July for the first cutting and a second cutting in March up to April 15th. This will maximize bird and animal habitat and promote desirable and attractive vegetation. Mow these areas when the ground is dry and at a height of 6"-8" during the dormant season. Monitor for intrusion by invasive plants such as thistle. Eliminate invasives by spot mowing, spot spraying, or wick application of appropriate herbicide, or manual or mechanical pulling. A combination of strategies may be the best approach. Trees and shrubs should be inspected twice per year to evaluate health. During periods of extended drought, Basin/Rain Garden areas may require watering. Inflow and outflow structures shall be inspected at least two times per year for erosion. Rip-rap areas, if applicable, at these structures shall be replaced to design specifications if necessary.

Maintenance of the Bio-planting Areas:

1st Year:

New plantings shall be closely monitored on a weekly basis during the 1st year of establishment in order to quickly identify any potential problems with the new growth. Any areas of discovered erosion shall be immediately fixed and re-seeded with a permanent seed mixture. Any plantings that die off within the first year shall be immediately replaced. All proposed plantings shall be routinely watered during the first year in order to promote vigorous growth and establishment of all bio-swale and stilling areas.

Semi-annually after 1st Year growth establishment:

Monitor bio-planting areas for intrusion by invasive plants such as thistle. Eliminate invasives by spot mowing, spot spraying, or wick application of appropriate herbicide, or manual pulling. A combination of strategies may be the best approach. Re-stabilize any areas of discovered erosion immediately.

Maintenance of the storm sewer collection system (After each runoff event):

Plymouth Township shall be responsible to ensure that the storm sewer collection and/or lawn drain system is free and clear of any debris. The system shall be inspected after each runoff event and cleaned if required.

Maintenance of the Stabilized Streambank (Annually and within 48 hours after the end of every major storm event >1" rainfall depth):

Inspect and correct erosion problems, damage to vegetation, and sediment and debris accumulations (address when >3" at any spot or covering vegetation).

Inspect vegetation on side slopes for erosion and formation of rills or gullies, correct as needed.

Inspect for pools of standing water; dewater and discharge to an approved location and restore to design grade.

Inspect for litter along the stop of streambank that could cause damage or erosion.

Inspect fiber log for damage and/or displacement. Immediately repair or replace fiber log if damage and/or displacement is discovered.

PLYMOUTH TOWNSHIP SHALL BE RESPONSIBLE FOR ALL OPERATION & MAINTENANCE RESPONSIBILITIES, AND ANY ASSOCIATED COSTS, FOR THE PROPOSED BMPs

REVISIONS

No.:	DATE:	DESCRIPTION:
1	01/31/2024	Revised per BCM review comments (email March 15, 2023)
2	04/15/2024	Revised per BCM review comments (email March 15, 2023)
3	08/16/2024	Revised per BCM review comments (email July 2, 2024)

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PROJECT SERIAL NUMBER FOR DESIGN:

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TIMOTHY P. WOODROW
ENGINEER
No. 03872-E

Applicant:
PLYMOUTH TOWNSHIP
700 Belvoir Road
Plymouth Meeting, Pa. 19462

Township Boundary:
5,388.80 Acres

FINAL PLAN

OPERATION & MAINTENANCE NOTES
PLYMOUTH TOWNSHIP
PLYMOUTH TOWNSHIP – MONTGOMERY COUNTY – PENNSYLVANIA

WOODROW & ASSOCIATES, INC.
MUNICIPAL / CIVIL CONSULTING ENGINEERS
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Web: www.Woodrowinc.com

Layer List: B-SHT09-O&M
Job No: 12-0803P
Plan Date: January 10, 2018
Sheet No: 9 of 9