



# BENSALEM TOWNSHIP

Building and Planning Department  
2400 Byberry Road • Bensalem PA 19020  
215-633-3644 • FAX 215-633-3653

## SUBDIVISION AND LAND DEVELOPMENT APPLICATION SITE AND PLAN CHARACTERISTICS

<b>CHECK ONE:</b>	<b>DATE OF SUBMISSION:</b>
<input type="checkbox"/> Sketch Plan	Tax Parcel # 02-039-086
<input type="checkbox"/> Lot Line Change	Location 2866 Wine Avenue
<input checked="" type="checkbox"/> Minor Subdivision	Zoning Classification R-2
<input type="checkbox"/> Minor Land Development	Proposed # of Lots or Leaseholds 2
<input type="checkbox"/> Preliminary Subdivision	Area of Commercial Bldg of Addition (sf) N/A
<input type="checkbox"/> Preliminary Land Development	Name of Development Wine Avenue Minor Subdivision
<input type="checkbox"/> Final Subdivision	Proposed Use Single Family Detached Residential
<input type="checkbox"/> Final Land Development	Site Area (ac) 0.45 ac
<input type="checkbox"/> Conditional Use	Development Area (ac) 0.45 ac

**SUBMISSION IS TO INCLUDE A DISC WITH APPLICATION AND PLAN(S) IN PDF FILE FORMAT or email same to [lalston@bensalemPA.gov](mailto:lalston@bensalemPA.gov).**

1. Name, address & phone No. of Applicant:

  
Signature

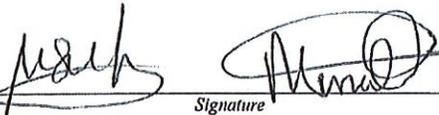
Manish Shah  
1209 William Penn Drive  
Bensalem, PA 19020  
(301) 455-6260  
Daytime Contact Number

2. Name, address & phone No. of Attorney:  
(if other than applicant)

Signature

Daytime Contact Number

3. Name, address & phone No. of Owner:

  
Signature

Nina M. Shah & Minal B. Shah  
1209 William Penn Drive  
Bensalem, PA 19020  
(301) 455-6260  
Daytime Contact Number

4. Name, address & phone No. of Person Designing Plan:

  
Signature

Chirag V. Thakkar  
1456 Ferry Road, Suite 603  
Doylestown, PA 18901  
(215) 766-8280  
Daytime Contact Number

5. Has parcel ever been subject to subdivision or land development approval? No

If Yes: Date of Approval \_\_\_\_\_  
Plan Title \_\_\_\_\_  
Recording Date \_\_\_\_\_  
Plan Book \_\_\_\_\_  
Page \_\_\_\_\_



1260 Almshouse Road • Doylestown, Pa 18901  
Phone 215/345-3400 FAX 215/345-3886 EMAIL [bcpc@buckscounty.org](mailto:bcpc@buckscounty.org)

This application must be completed by the applicant or his/her agent and submitted along with one copy of the plan, one digital copy of the plan, and required fee (see fee schedule on back) for subdivision and land development reviews mandated by the Pennsylvania Municipalities Planning Code, Act 247 of 1968, as amended.

**MUNICIPALITY:** Bensalem Township

**NAME OF PROPOSAL:** Wine Avenue Minor Subdivison

**LOCATION:** 2866 Wine Avenue, Bensalem, PA

**TAX PARCEL No.:** 02-039-086

**APPLICANT:** MANISH SHAH

**ADDRESS:** 1209 WILLIAM PENN DRIVE, BENSLEM, PA 19020

**OWNER OF RECORD:** NINA M. SHAH & MINAL B. SHAH

**ADDRESS:** 1209 WILLIAM PENN DRIVE, BENSLEM, PA 19020

**PRESENT LAND USE:** RESIDENTIAL - SINGLE FAMILY DETACHED HOMES

**PLAN TYPE:**  Land Development  Subdivision

**PLAN CLASS:**  Major  Minor  
 Municipal  Sketch

**TOTAL ACREAGE:** 0.45

**TELEPHONE:** (301) 455-6260

**APPLICANT EMAIL:** manishshah04@yahoo.com

**DEVELOPMENT TYPE:**  Agricultural  Commercial  
 Conversion  Industrial  Institutional  
 Lot Line Change  Office  Residential

**PROPOSAL:**  
**NONRESIDENTIAL:** Number of Lots or Leaseholds: \_\_\_\_\_ **RESIDENTIAL:** Number of lots or units: 2  
 Proposed new building area: \_\_\_\_\_  
Gross square feet (floor area)

**WATER SUPPLY:**  Public  Community On-site  Individual On-lot  
(Check one)

**SEWERAGE:**  Public  Community  Individual On-lot  
(Check One)

**OPEN SPACE:**  Public  Private  
(Check One)

**TOTAL OPEN SPACE ACREAGE:** \_\_\_\_\_

The following documentation is **required** for every plan submission, at the applicable level, in addition to a completed application form. Please check the appropriate state of plan submission and the inclusion of the required documentation:

<input type="checkbox"/> Sketch Plan <i>or</i>	<input type="checkbox"/> One copy of plan
<input type="checkbox"/> Revised Sketch Plan	<input type="checkbox"/> One <b>digital</b> file of plan ( <b>CD or USB drive</b> )
<input checked="" type="checkbox"/> Preliminary Plan <i>or</i>	<input checked="" type="checkbox"/> One copy of preliminary plan/revised preliminary plan
<input type="checkbox"/> Revised Preliminary Plan	<input checked="" type="checkbox"/> One <b>digital</b> file of preliminary plan/revised preliminary plan ( <b>CD or USB drive</b> )
	<input checked="" type="checkbox"/> Review fee (see schedule on back)
	<input type="checkbox"/> Proof of variances, special exception, conditional uses, or other agreements
	<input type="checkbox"/> Sewage Facilities Planning Module, one copy, one digital copy
	<input type="checkbox"/> Transportation Impact Study, one copy, one digital copy
<input type="checkbox"/> Final Plan <i>or</i>	<input type="checkbox"/> One copy of final plan/revised final plan
<input type="checkbox"/> Revised Final Plan	<input type="checkbox"/> One <b>digital</b> file of final plan/revised final plan ( <b>CD or USB drive</b> )
	<input type="checkbox"/> Review fee (see schedule on back)
	<input type="checkbox"/> Conditions of preliminary approval

If proposal is made by applicant or agent directly to the Bucks County Planning Commission (BCPC), the following certification is required to assure that all plans submitted to the BCPC are also submitted to the municipal government for review.

I hereby certify that this plan has been submitted for review to the Township/Borough of Bensalem and that, if the plan is withdrawn from consideration by the municipality, it will also be withdrawn from the BCPC review process via written notification. Members of the BCPC and staff are authorized to enter land for site inspection if necessary.

MANISH SHAH  
 \_\_\_\_\_  
 Print Name of Applicant  
 \_\_\_\_\_  
 Signature of Applicant

7/13/20  
 \_\_\_\_\_  
 Date

**BCPC USE ONLY**

BCPC File No.: \_\_\_\_\_

Date Received: \_\_\_\_\_

Fee Paid: \_\_\_\_\_

# BUCKS COUNTY PLANNING COMMISSION FEE SCHEDULE FOR REVIEWS

The following fees will be charged by the Bucks County Planning Commission for subdivision and land development reviews as authorized by Act 194 amending Act 247, the Pennsylvania Municipalities Planning Code. These fees are effective January 1, 2018. Plans will not be accepted for review without the appropriate fee and completed application form. If you need assistance in calculating application fee(s), please call us at 215-345-3400.

## Residential subdivisions, land developments, and conversions *(Including Tentative Planned Residential Development Plans)*

				Base Fee	+		
up to	2	lots or units	=	\$160			
3	up to 10	lots or units	=	\$100	+	\$65	for each lot/unit over 2
11	up to 25	lots or units	=	\$600	+	\$45	for each lot/unit over 10
26	up to 50	lots or units	=	\$1,200	+	\$40	for each lot/unit over 25
51	up to 100	lots or units	=	\$1,800	+	\$20	for each lot/unit over 50
101	+	lots or units	=	\$2,400	+	\$15	for each lot/unit over 100
Please show your calculations: 2 lot = \$160							

## Nonresidential land developments

				Base Fee	+		
0	up to 5,000	square feet	=	\$300	+	\$0.045	per square foot of floor area
5,001	+	square feet	=	(no base fee)		\$0.15	per square foot of floor area, not to exceed \$5,000
Please show your calculations:							

## Nonresidential subdivisions

up to	2	lots or units	=	\$225	
3	up to 10	lots or units	=	\$125	per lot
11	+	lots or units	=	\$100	per lot
Please show your calculations:					

- Curative Amendments** (not municipal curative amendments)                     \$2,000
- Private Petitions for Zoning Change** (not municipal petition)                     \$1,500

For the purposes of this Fee Schedule the definitions in Article II of the Pennsylvania Municipalities Planning Code of subdivision and land development shall be used.

There is **no fee** for review of a sketch plan or final plan submission (unless otherwise noted below).

All fee charges are intended to cover the entire review process from preliminary to final stages **except** as follows:

- 1) **Each resubmission of a plan with minor revisions** shall be subject to an additional fee, not to exceed the required fee listed in the tables above or \$225.00, whichever is less. A subdivision which proposes no more than two lots may be resubmitted with minor revisions one time without a charge for the review.
- 2) **Each resubmission of a plan involving a major revision or change in program** from the original submission shall be required to pay an additional fee as required in the tables above. A major revision or change in program may include, but is not limited to, a change in use, dwelling type, density, lot layout, street layout, or site layout.
- 3) **Each plan submitted for review two years or more after the first submission** shall be subject to an additional fee, not to exceed the required fee listed in the tables above or \$160.00, whichever is less, if the plan contains only minor revisions. If there are major revisions to the plan, the submission will require a fee in accordance with the fee schedule above. Major changes are as noted in #2 above.
- 4) **Proposals submitted which contain a mix of uses** will be subject to the appropriate fee for each use.

**MEETINGS WITH THE STAFF** of the Bucks County Planning Commission to discuss applications either prior to or during the formal development application are encouraged and are free of charge. Appointments can be made by contacting 215-345-3400.

**SIGNING OF PLANS FOR RECORDING:**-The Bucks County Planning Commission now signs plans electronically. If you have municipally-signed plans with an official BCPC number you can go directly to the Bucks County Recorder of Deeds to record your plan. Please contact the Recorder of Deeds at 215-348-6209 should you have any questions about recording your plan.

**REQUESTS FOR ADDITIONAL COPIES OF REVIEW:** Copies of the Bucks County Planning Commission review of this proposal will be sent to the applicant, municipality, and municipal engineer. If you wish to have copies sent to other persons, please type names, addresses and emails:


**SITE PLAN NOTES**

- SUBJECT SITE TA ID PARCEL No. 02-039-086 AND CONSISTS OF 19,609 SF.
- BASED ON THE ZONING MAP OF TOWNSHIP OF BENSALEM, THE SUBJECT PROPERTY IS LOCATED WITHIN THE R-2 RESIDENTIAL ZONING DISTRICT. EXISTING USE AND PROPOSED USE FOR THE PROPERTY IS ONE SINGLE-FAMILY DETACHED DWELLING PER LOT. ZONING INFORMATION IS BASED ON CHAPTER 232 OF THE BENSALEM TOWNSHIP ORDINANCE.
- HORIZONTAL DATUM IS BASED ON 1983 STATE PLANE COORDINATE SYSTEM ESTABLISHED UTILIZING GLOBAL POSITIONING SYSTEM (GPS) WITH OBSERVATIONS REFERENCED TO THE TOPCON TOPSURV GPS BASE STATION NETWORK.
- METES AND BOUNDS AS SHOWN ARE BASED ON PA STATE PLANE COORDINATE SYSTEM. ROTATION TO DEED MERIDIAN IS 05 DEGREES 19 MINUTES 19 SECONDS CLOCKWISE.
- EXISTING FEATURE INFORMATION SHOWN HEREON IS BASED ON A FIELD SURVEY PERFORMED BY CAVANAUGH'S SURVEYING SERVICES DATED JULY 26, 2017.
- SITE FRONTAGE SHALL BE FROM WINE AVENUE.
- THE PROPOSED RESIDENTIAL HOMES WILL BE SERVICED BY PUBLIC SEWER FROM BUCKS COUNTY WATER AND SEWER AUTHORITY AND PUBLIC WATER FROM AQUA PENNSYLVANIA.
- EXISTING STRUCTURE, ACCESSORY STRUCTURES, DECKS, STAIRCASES, RETAINING WALLS, AND DRIVEWAYS SHALL BE REMOVED IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL LAWS.
- ARCHITECTURAL PLANS SHALL BE SUBMITTED FOR REVIEW BY BENSALEM TOWNSHIP AT THE TIME OF BUILDING PERMIT APPLICATION.
- THE AREA LYING BETWEEN THE TITLE LINE AND THE ULTIMATE RIGHT-OF-WAY OF WINE AVENUE AND VIRGINIA AVENUE IS OFFERED FOR DEDICATION TO THE TOWNSHIP.
- THE RESPONSIBILITY OF OPERATION AND MAINTENANCE OF THE STORMWATER MANAGEMENT FACILITIES SHALL REMAIN WITH THE OWNER OF THE PROPERTY.

**WAIVER REQUEST**

- SECTION 201-106 a.2.6 REQUIRES GRADING TO BE TIE-IN THREE (3) FEET FROM THE PROPERTY LINE. THE PROPOSED REDEVELOPMENT OF THE SITE WILL REQUIRE REMOVAL OF SEVERAL EXISTING FEATURES AND REGRADING OF THE AREA WHICH IS LESS THAN THREE FEET FROM THE PROPERTY LINE.
- SECTION 201-106 a.3.1 REQUIRES THAT WITHIN ANY SUBDIVISION, THE DEVELOPER SHALL PLAN STREET TREES ALONG ANY STREET WHERE SUITABLE STREET TREES DO NOT EXIST. THE APPLICANT IS REQUESTING A WAIVER FROM THIS REQUIREMENT, SINCE THERE IS AN EXISTING OVERHEAD ELECTRIC LINE IN THE AREA BETWEEN THE CARTWAY AND RIGHT-OF-WAY LINE WHICH WOULD BE IMPACTED BY THE STREET TREES.

**ZONING DATA TABLE**  
Wine Avenue Minor Subdivision  
Bensalem Township, Bucks County, Pennsylvania

ITEM	REQUIRED/PERMITTED	EXISTING LOT	PROPOSED LOT 1	PROPOSED LOT 2
Zoning District:	R 2 (Single Family Detached)			
Minimum Lot Area	7,500 SF	19,609 SF	7,503 SF	11,063 SF
Minimum Lot Frontage (At Right-Of-Way)	75 FT	161.1 FT	86.1 FT	75 FT
Minimum Lot Width at Building Setback	75 FT	168.0 FT	93.0 FT	75 FT
Maximum Building Area	40%	12%	20%	27%
Maximum Building Height	35 FT	<= 35 FT	<=35 FT	<= 35 FT
Maximum Impervious Surface Ratio	45%	22%	26%	38%
Minimum Yards:				
Front	25 FT	13.4 FT	25.0 FT	67.0 FT
Side	10 FT (EACH SIDE)	20.9 FT	10 FT (EACH SIDE)	10 FT (EACH SIDE)
Rear	25 FT	99.6 FT	25.0 FT	25.0 FT
Min. Off-Street Parking Spaces	2 / SINGLE FAMILY HOUSE	4	2	2

Drawing Index			
Drawing No.	Drawing No.	Drawing Title	Last Revised
1	CS-101	Subdivision and Site (Record) Plan	7/24/2020
2	CG-101	Improvements Plan	7/24/2020
3	CE-101	Soil Erosion and Sediment Control Plan & Details	7/24/2020
4	CS-501	Site Construction Details	7/24/2020

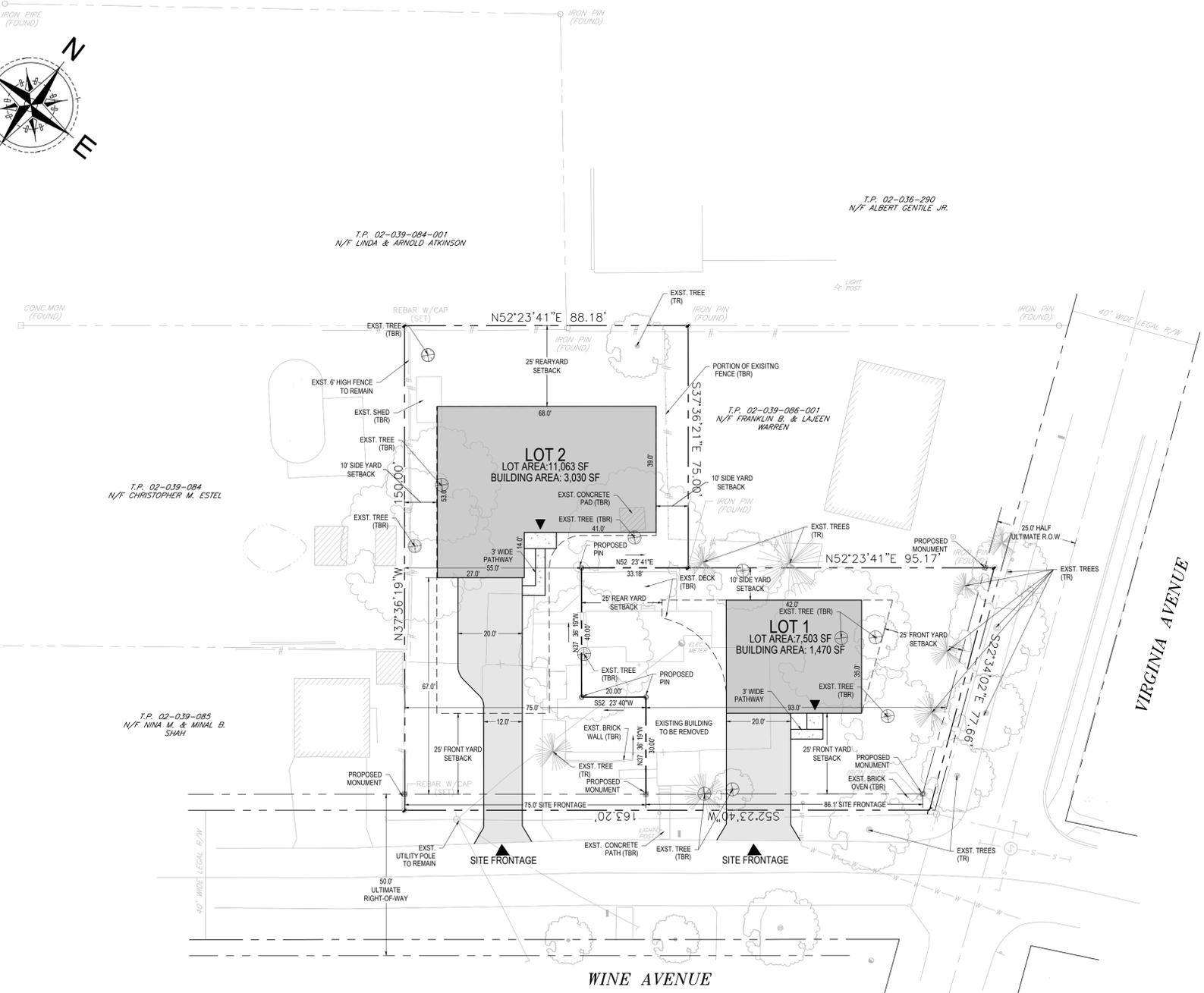
**Supplemental Drawings**  
1. Existing Features Survey, prepared by Cavanaugh's Surveying Services last revised July 26, 2017.



**SITE LOCATION MAP**  
SCALE: 1" = 1000'

**APPLICANT:**  
MANISH SHAH  
1209 WILLIAMS PENN DRIVE,  
BENSALEM, PA 19020-4378

**OWNER:**  
NINA M. AND MINAL B. SHAH  
1209 WILLIAMS PENN DRIVE,  
BENSALEM, PA 19020-4378



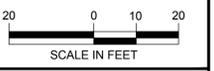
- BENSALEM CONTACT LIST**
- BENSALEM TOWNSHIP**  
ADMINISTRATION OFFICE  
2400 BYBERRY ROAD  
BENSALEM, PA 19020  
(215) 633-3800
- BUCKS COUNTY PLANNING COMMISSION**  
EVAN J. STONES, EXECUTIVE DIRECTOR  
1300 ALMOUSE ROAD,  
DOYLESTOWN, PA 18901  
(215) 345-3400
- BUCKS COUNTY CONSERVATION DISTRICT**  
1456 FERRY ROAD, SUITE 704  
DOYLESTOWN, PA 18901  
(215) 345-7577
- SEWER SERVICE**  
BUCKS COUNTY WATER & SEWER AUTHORITY  
1275 ALMOUSE ROAD,  
WARRINGTON, PA 18976  
(215) 343-2538
- WATER SERVICE**  
AQUA Pennsylvania  
(877) 987-2782

**LEGEND**

EXISTING SYMBOLS & LINES	PROPOSED SYMBOLS & LINES
STORM DRAIN	CHAIN LINK FENCE
SANITARY LINE	BUILDING
GAS LINE	EDGE OF PAVEMENT
WATER LINE	DOOR
ELECTRIC LINE	STORMWATER FACILITY
OVERHEAD WIRE	MONUMENT
FENCE TYPE AS NOTED:	IRON PIN
TREE LINE	ITEM TO BE REMOVED
PROPERTY RIGHT-OF-WAY LINE	
UTILITY EASEMENT	
UTILITY POLE	
CONTOUR LINE	
HYDRANT	
MANHOLE TYPE AS LABELED:	
WATER METER	
WATER VALVE	
GAS VALVE	
UNKNOWN VALVE	
CATCH BASIN	
SPOT ELEVATION	
CLEAN-OUT	
TREE	
BENCH MARK	
SIGN	
BOLLARD	
METAL COVER	
ELECTRIC BOX	
DOOR	
GARAGE DOOR	
E-ISTING CONTOUR	
TR: TO REMAIN	
TBR: TO BE REMOVED	
	DWELLING
	SIDEWALK/ STOOP
	DRIVEWAY



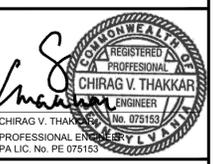
arna Engineering Inc.  
1456 Ferry Road, Suite 603  
Doylestown, PA 18901  
T: 215.766.8280  
F: 215.434.5280



Project  
**WINE AVENUE MINOR SUBDIVISION**  
TMP # 02-039-086

Bensalem Township  
Bucks County Pennsylvania

Drawing Title  
**SUBDIVISION AND SITE RECORD PLAN**



DATE	COMMENTS	NO.
7-24-2020	REVISED FOR SITE LAYOUT	2.
6-23-2020	REVISED PER TOWNSHIP COMMENTS	1.

REVISIONS

Project No. 23006501

Date 11-30-2017

Scale 1" = 20'

Drawn By JEM

Checked By AAB

Drawing No. **CS-101**

Sheet 1 of 4

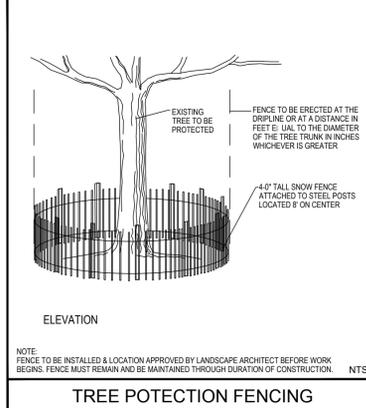


### SOIL EROSION LEGEND

COMPOST FILTER SOCK	
LIMIT OF DISTURBANCE	LOO LOO
TOPSOIL STOCKPILE	
TREE PROTECTION FENCING	TP TP TP
SOILS LIMITS	
SOILS TYPE	Uk B

### ON-SITE SOIL TYPE DESCRIPTION AND LIMITATIONS

Map Symbol	Soil	Hydrological Soil Group
Uk B	Urban land - Chester complex, 0-8% slopes	-



### SEEDING NOTES:

#### TEMPORARY SEEDING NOTES

- THE FOLLOWING SURFACES OF THE SITE SHALL BE TEMPORARILY SEEDING AND:
  - THE SURFACE OF TOPSOIL STOCKPILES.
  - THE SURFACE OF EXPOSED EARTH AREAS NOT SUBJECT TO CONSTRUCTION.
- SEEDING SHALL OCCUR IMMEDIATELY AFTER THE ESTABLISHMENT OF THE TOPSOIL STOCKPILES OR ROUGH GRADED AREAS. THE FOLLOWING SEED SHALL BE PLANTED:
  - PERENNIAL TYPE - NOT APPLICABLE.
  - ANNUAL TYPE - TYPICAL.
- PREPARE AREAS TO BE SEEDING AS FOLLOWS:
  - REMOVE ALL DEBRIS, INCLUDING LARGE STONE. TILL SOIL TO A DEPTH OF FOUR INCHES TO SIX INCHES. APPLY PULVERIZED AGRICULTURAL GRADED LIME AT A RATE OF 2 TONS PER ACRE.
  - BEFORE AUGUST, SEPTEMBER OR OCTOBER SEEDING, APPLY 20-25 LBS. OF 10-20-20 FERTILIZER PER 1,000 S. UARE FEET. BEFORE FEBRUARY MARCH, APRIL, MAY, JUNE, JULY OR NOVEMBER SEEDING, APPLY 10 LBS. OF 10-20-20 FERTILIZER PER 1,000 S. UARE FEET. WORK INTO TOP INCH OF SOIL.
  - STRAW MULCH SHOULD BE APPLIED AT A RATE OF 3 TONS PER ACRE.
- SO SEED AT THE INDICATED RATE. DIVIDE SEED INTO TWO E. UAL LOTS. SOW ONE LOT IN ONE DIRECTION. SOW SECOND LOT AT RIGHT ANGLE TO FIRST LOT.

#### PERMANENT SEEDING NOTES

LAWN AREAS - AREAS DESIGNATED AS LAWN OR DISTURBED AREAS NOT DESIGNATED FOR ANY OTHER PLANTING SHALL BE PERMANENTLY STABILIZED BY SEEDING WITH THE FOLLOWING SEED MIXTURE AT A RATE OF 150 POUNDS ACRE:

- KENTUCKY BLUEGRASS - BARON MIX
- RED FESCUE - PENNA LAIN
- CHAMPION PERENNIAL RYE
- ANNUAL RYEGRASS

SEEDING DATES FOR THIS MIXTURE SHALL BE APRIL 1 TO JUNE 1 OR SEPTEMBER 1 TO OCTOBER 30.

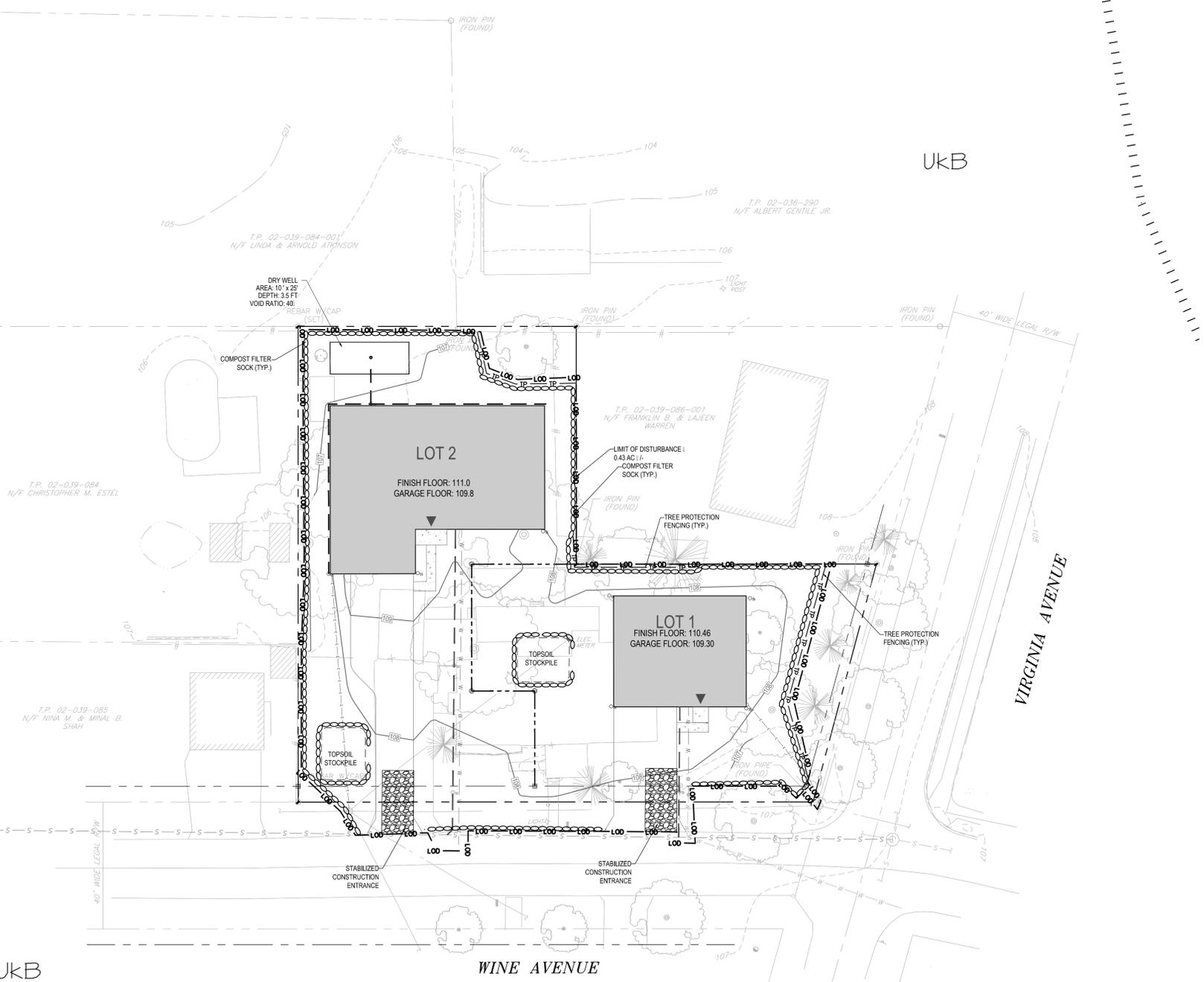
### EROSION SEDIMENT CONTROL PLAN STANDARD NOTES

- STOCKPILE HEIGHTS MUST NOT EXCEED 35 FEET. STOCKPILE SLOPES MUST NOT EXCEED 2:1.
- THE OPERATOR RESPONSIBLE PERSON (ORP) ON SITE SHALL ASSURE THAT THE APPROVED EROSION AND SEDIMENT CONTROL PLAN IS PROPERLY AND COMPLETELY IMPLEMENTED.
- IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND OR SEDIMENT POLLUTION, THE ORP SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES (BMPs) TO ELIMINATE THE POTENTIAL FOR ACCELERATED EROSION AND OR SEDIMENT POLLUTION.
- THE ORP SHALL ASSURE THAT AN EROSION AND SEDIMENT CONTROL PLAN HAS BEEN PREPARED AND APPROVED BY THE BUCKS COUNTY CONSERVATION DISTRICT AND IS BEING IMPLEMENTED AND MAINTAINED FOR ALL SOILS AND OR ROCK SPOIL AND BORROW AREAS REGARDLESS OF THEIR LOCATIONS.
- ALL PUMPING OF SEDIMENT-LADEN WATER SHALL BE THROUGH A SEDIMENT CONTROL BMP SUCH AS A PUMPED WATER FILTER BAG DISCHARGING OVER AN UNDISTURBED AREA.
- A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN MUST BE AVAILABLE ON THE PROJECT SITE AT ALL TIMES.
- EROSION AND SEDIMENT BMPs MUST BE CONSTRUCTED, STABILIZED AND FUNCTIONAL BEFORE SITE DISTURBANCE BEGINS WITHIN THE TRIBUTARY AREAS OF THOSE BMPs.
- AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMP CONTROLS MUST BE REMOVED. AREAS DISTURBED DURING THE REMOVAL OF THE BMPs MUST BE STABILIZED IMMEDIATELY.
- AT LEAST SEVEN (7) DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITY, THE ORP SHALL NOTIFY ALL CONTRACTORS INVOLVED IN THAT ACTIVITY, THE LANDOWNER, ALL APPROPRIATE MUNICIPAL OFFICIALS, THE EROSION AND SEDIMENT CONTROL PLAN DESIGNER AND THE BUCKS COUNTY CONSERVATION DISTRICT TO A PRE-CONSTRUCTION MEETING. ALSO, AT LEAST THREE (3) DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITY, ALL CONTRACTORS INVOLVED IN THAT ACTIVITY SHALL NOTIFY THE PENNSYLVANIA ONE-CALL SYSTEM INC. AT 1-800-342-1176 TO DETERMINE ANY UNDERGROUND UTILITIES LOCATIONS.
- IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITY CEASES, THE ORP SHALL STABILIZE ANY AREAS DISTURBED BY THE ACTIVITY DURING NON-GERMINATING PERIODS. MULCH MUST BE APPLIED AT SPECIFIED RATES. DISTURBED AREAS THAT ARE NOT FINISHED GRADE AND WHICH WILL BE RE-DISTURBED WITHIN ONE YEAR MUST BE STABILIZED IN ACCORDANCE WITH TEMPORARY VEGETATIVE STABILIZATION SPECIFICATIONS.
- DISTURBED AREAS THAT ARE AT A FINISHED GRADE OR WHICH WILL NOT BE RE-DISTURBED WITHIN ONE YEAR MUST BE STABILIZED IN ACCORDANCE WITH PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS.
- AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 70% VEGETATIVE OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.
- UPON THE INSTALLATION OF TEMPORARY SEDIMENT BASIN RISERS, A QUALIFIED SITE REPRESENTATIVE SHALL CONDUCT AN IMMEDIATE INSPECTION OF THE RISERS, WHEREUPON THE BUCKS COUNTY CONSERVATION DISTRICT SHALL BE NOTIFIED IN WRITING THAT THE RISER IS SEALED, WATER-TIGHT.
- AT STREAM CROSSINGS, A 50-FOOT BUFFER SHALL BE MAINTAINED. ON BUFFERS, CLEARINGS, SOIL DISTURBANCES AND E. CAVATIONS, EQUIPMENT TRAFFIC SHOULD BE MINIMIZED. ACTIVITY SUCH AS STACKING LOGS, BURNING CLEARED BRUSH, DISCHARGED RAINWATER FROM TRENCHES, WELDING PIPE SECTIONS, REWELDING AND MAINTAINING EQUIPMENT SHOULD BE AVOIDED WITHIN BUFFER ZONES.
- UNTIL A SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPs MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION CONTROL BMPs AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEANOUT, REPAIR, REPLACEMENT, RE-GRADING, RESEEDING, RE-MULCHING AND RE-NETTING MUST BE PERFORMED IMMEDIATELY IF EROSION AND SEDIMENT CONTROL BMPs FAIL TO PERFORM AS EXPECTED. REPLACEMENT BMPs, OR MODIFICATIONS OF THOSE INSTALLED, WILL BE REQUIRED.
- SEDIMENT REMOVED FROM BMPs SHALL BE DISPOSED OF ON-SITE IN LANDSCAPED AREAS EXCEPT FOR STEEP SLOPES, WETLANDS, FLOODPLAIN OR DRAINAGE SWALES AND IMMEDIATELY STABILIZED OR PLACED IN SOIL STOCKPILES AND STABILIZED.
- ALL BUILDING MATERIAL AND WASTES MUST BE REMOVED FROM THE SITE AND RECYCLED IN ACCORDANCE WITH DEP SOLID WASTE REGULATIONS 25 PA Code 280.1 et seq., 271.1 et seq., AND 287.1 et seq., AND OR ANY ADDITIONAL LOCAL, STATE OR FEDERAL REGULATIONS. NO BUILDING MATERIALS USED OR UNUSED OR WASTE MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.

### UTILITY TRENCH E. CAVATION GUIDELINES

- COMPOST FILTER SOCK
  - COMPOST FILTER SOCKS SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET OF OPEN AT 4:0 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOIL AND THE SLOPE OF ITS TRIBUTARY AREA.
  - TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.
  - ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES TO THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED IN THE EROSION AND SEDIMENT CONTROL PLAN.
  - COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
  - BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 3 MONTHS PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
  - UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

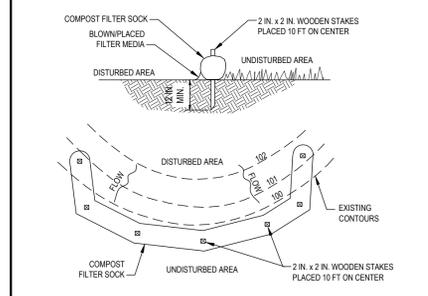
LIMIT OF DISTURBANCE 0.43 AC



### SEEDING NOTES:

#### TEMPORARY SEEDING NOTES

- STOCKPILE HEIGHTS MUST NOT EXCEED 35 FEET. STOCKPILE SLOPES MUST NOT EXCEED 2:1.
- THE OPERATOR RESPONSIBLE PERSON (ORP) ON SITE SHALL ASSURE THAT THE APPROVED EROSION AND SEDIMENT CONTROL PLAN IS PROPERLY AND COMPLETELY IMPLEMENTED.
- IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND OR SEDIMENT POLLUTION, THE ORP SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES (BMPs) TO ELIMINATE THE POTENTIAL FOR ACCELERATED EROSION AND OR SEDIMENT POLLUTION.
- THE ORP SHALL ASSURE THAT AN EROSION AND SEDIMENT CONTROL PLAN HAS BEEN PREPARED AND APPROVED BY THE BUCKS COUNTY CONSERVATION DISTRICT AND IS BEING IMPLEMENTED AND MAINTAINED FOR ALL SOILS AND OR ROCK SPOIL AND BORROW AREAS REGARDLESS OF THEIR LOCATIONS.
- ALL PUMPING OF SEDIMENT-LADEN WATER SHALL BE THROUGH A SEDIMENT CONTROL BMP SUCH AS A PUMPED WATER FILTER BAG DISCHARGING OVER AN UNDISTURBED AREA.
- A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN MUST BE AVAILABLE ON THE PROJECT SITE AT ALL TIMES.
- EROSION AND SEDIMENT BMPs MUST BE CONSTRUCTED, STABILIZED AND FUNCTIONAL BEFORE SITE DISTURBANCE BEGINS WITHIN THE TRIBUTARY AREAS OF THOSE BMPs.
- AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMP CONTROLS MUST BE REMOVED. AREAS DISTURBED DURING THE REMOVAL OF THE BMPs MUST BE STABILIZED IMMEDIATELY.
- AT LEAST SEVEN (7) DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITY, THE ORP SHALL NOTIFY ALL CONTRACTORS INVOLVED IN THAT ACTIVITY, THE LANDOWNER, ALL APPROPRIATE MUNICIPAL OFFICIALS, THE EROSION AND SEDIMENT CONTROL PLAN DESIGNER AND THE BUCKS COUNTY CONSERVATION DISTRICT TO A PRE-CONSTRUCTION MEETING. ALSO, AT LEAST THREE (3) DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITY, ALL CONTRACTORS INVOLVED IN THAT ACTIVITY SHALL NOTIFY THE PENNSYLVANIA ONE-CALL SYSTEM INC. AT 1-800-342-1176 TO DETERMINE ANY UNDERGROUND UTILITIES LOCATIONS.
- IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITY CEASES, THE ORP SHALL STABILIZE ANY AREAS DISTURBED BY THE ACTIVITY DURING NON-GERMINATING PERIODS. MULCH MUST BE APPLIED AT SPECIFIED RATES. DISTURBED AREAS THAT ARE NOT FINISHED GRADE AND WHICH WILL BE RE-DISTURBED WITHIN ONE YEAR MUST BE STABILIZED IN ACCORDANCE WITH TEMPORARY VEGETATIVE STABILIZATION SPECIFICATIONS.
- DISTURBED AREAS THAT ARE AT A FINISHED GRADE OR WHICH WILL NOT BE RE-DISTURBED WITHIN ONE YEAR MUST BE STABILIZED IN ACCORDANCE WITH PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS.
- AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 70% VEGETATIVE OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.
- UPON THE INSTALLATION OF TEMPORARY SEDIMENT BASIN RISERS, A QUALIFIED SITE REPRESENTATIVE SHALL CONDUCT AN IMMEDIATE INSPECTION OF THE RISERS, WHEREUPON THE BUCKS COUNTY CONSERVATION DISTRICT SHALL BE NOTIFIED IN WRITING THAT THE RISER IS SEALED, WATER-TIGHT.
- AT STREAM CROSSINGS, A 50-FOOT BUFFER SHALL BE MAINTAINED. ON BUFFERS, CLEARINGS, SOIL DISTURBANCES AND E. CAVATIONS, EQUIPMENT TRAFFIC SHOULD BE MINIMIZED. ACTIVITY SUCH AS STACKING LOGS, BURNING CLEARED BRUSH, DISCHARGED RAINWATER FROM TRENCHES, WELDING PIPE SECTIONS, REWELDING AND MAINTAINING EQUIPMENT SHOULD BE AVOIDED WITHIN BUFFER ZONES.
- UNTIL A SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPs MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION CONTROL BMPs AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEANOUT, REPAIR, REPLACEMENT, RE-GRADING, RESEEDING, RE-MULCHING AND RE-NETTING MUST BE PERFORMED IMMEDIATELY IF EROSION AND SEDIMENT CONTROL BMPs FAIL TO PERFORM AS EXPECTED. REPLACEMENT BMPs, OR MODIFICATIONS OF THOSE INSTALLED, WILL BE REQUIRED.
- SEDIMENT REMOVED FROM BMPs SHALL BE DISPOSED OF ON-SITE IN LANDSCAPED AREAS EXCEPT FOR STEEP SLOPES, WETLANDS, FLOODPLAIN OR DRAINAGE SWALES AND IMMEDIATELY STABILIZED OR PLACED IN SOIL STOCKPILES AND STABILIZED.
- ALL BUILDING MATERIAL AND WASTES MUST BE REMOVED FROM THE SITE AND RECYCLED IN ACCORDANCE WITH DEP SOLID WASTE REGULATIONS 25 PA Code 280.1 et seq., 271.1 et seq., AND 287.1 et seq., AND OR ANY ADDITIONAL LOCAL, STATE OR FEDERAL REGULATIONS. NO BUILDING MATERIALS USED OR UNUSED OR WASTE MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.



### COMPOST FILTER SOCK

SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.

COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET OF OPEN AT 4:0 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOIL AND THE SLOPE OF ITS TRIBUTARY AREA.

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arna Engineering Inc.  
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Doylstown, PA 18901  
T: 215.766.8280  
F: 215.434.5280

Project

### WINE AVENUE MINOR SUBDIVISION

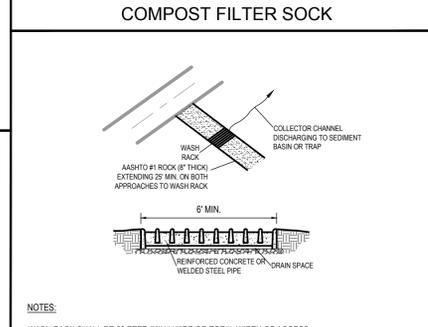
TMP # 02-039-086

Bensalem Township  
Bucks County  
Pennsylvania

Drawing Title

### SOIL EROSION AND SEDIMENT CONTROL PLAN & DETAILS

Scale: 20 0 10 20  
SCALE IN FEET



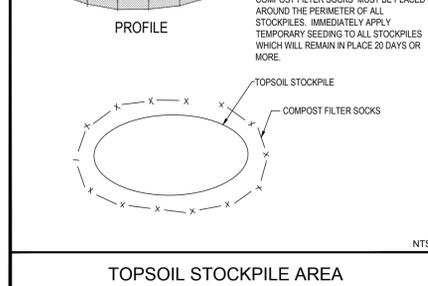
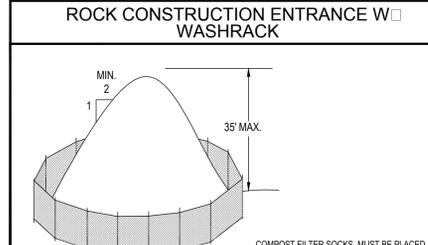
### ROCK CONSTRUCTION ENTRANCE WASH RACK

WASH RACK SHALL BE 20 FEET (MIN.) WIDE OR TOTAL WIDTH OF ACCESS.

WASH RACK SHALL BE DESIGNED AND CONSTRUCTED TO ACCOMMODATE ANTICIPATED CONSTRUCTION VEHICULAR TRAFFIC.

A WATER SUPPLY SHALL BE MADE AVAILABLE TO WASH THE WHEELS OF ALL VEHICLES EXITING THE SITE.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSISTENTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE OF ROCK MATERIAL SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. DRAIN SPACE UNDER WASH RACK SHALL BE KEPT OPEN AT ALL TIMES. DAMAGE TO THE WASH RACK SHALL BE REPAIRED PRIOR TO FURTHER USE OF THE RACK. ALL SEDIMENT DEPOSITED ON ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.



DATE	COMMENTS	NO.
REVISIONS		
Project No.	230006501	
Date	7-24-2020	
Scale	1" = 20'	
Drawn By	JEM	
Checked By	AAB	
Drawing No.	CE-101	

DATE COMMENTS NO.

REVISIONS

Project No. 230006501

Date 7-24-2020

Scale 1" = 20'

Drawn By JEM

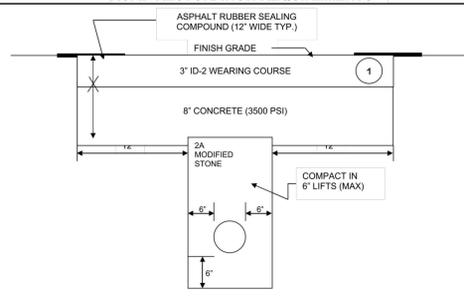
Checked By AAB

Drawing No. CE-101

Sheet 3 of 4

PROJECT No. 23006501

**STREET OPENING ROAD RESTORATION REQUIREMENTS**

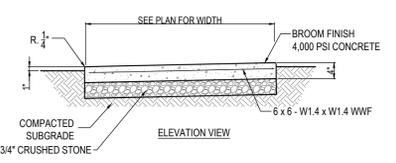


**TYPICAL TRENCH RESTORATION IN PAVED CARTWAY N.T.S.**  
 Certain conditions may require overlay of travel line or entire street width. See Bensalem Township Road Restoration requirements.

- Trench work must be completed at 3.00 p.m. Trench area must be secured and road reopened by 5:00 p.m. If roadway is not secure by 5:00 p.m., contractors will incur additional consulting fees based on an hourly basis.
- Final restoration on openings for new construction shall be completed prior to occupancy. The restoration must be completed within 30 days. Failure to comply will result in a \$1500 escrow in addition to any other escrow previously required.

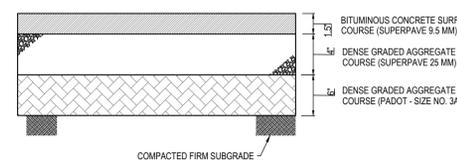
ALL WORK TO BE DONE IN ACCORDANCE WITH PENNDOT SPECIFICATIONS PUBLICATION 408 AS AMENDED

**STREET OPENING & RESTORATION DETAIL**

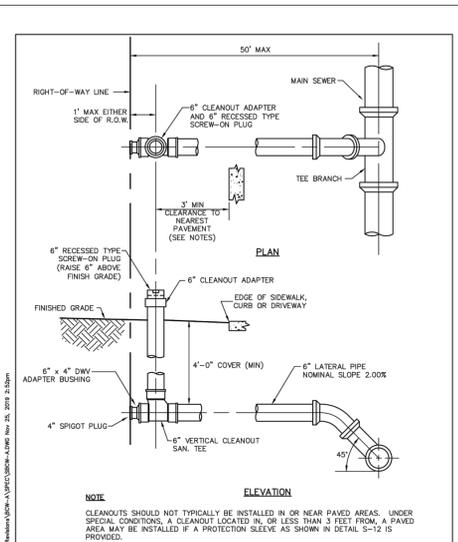


- NOTE:
- TRANSVERSE JOINTS SHALL BE PROVIDED EVERY 4' O.C. EXPANSION JOINTS SHALL BE 3/4" WIDE AND SHALL BE PROVIDED EVERY 16' O.C. RECESSED 1/4" FROM THE TOP OF FACE AND SHALL BE PREFORMED BITUMINOUS IMPREGNATED FIBER JOINT FILLER PER AASHTO SPEC. M-213 IN ACCORDANCE WITH TOWNSHIP STANDARDS.
  - ALL SIDEWALKS TO HAVE A BROOM FINISH TO ENSURE A SLIP RESISTANT SURFACE.
  - CLASS "A" CONCRETE SHALL HAVE A 28-DAY COMPRESSIVE STRESS OF 4,000 PSI.
  - CONTRACTOR TO PROVIDE SMOOTH TROWEL EDGE FOR THE BROOM FINISH OF THE SIDEWALK. CONTRACTOR MUST PROVIDE SHOP DRAWING TO DESIGN ENGINEER PRIOR TO CONSTRUCTION.

**CONCRETE PATHWAYS**



**DRIVEWAY PAVEMENT**



**LATERAL CONNECTION SHALLOW SEWER**

BUCKS COUNTY WATER & SEWER AUTHORITY

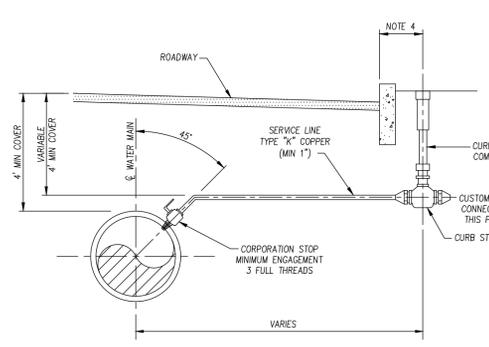
DWG. BY: TSB | CDD. BY: [ ]

DATE: 7-24-19 | SCALE: None | LATERAL CONNECTION SHALLOW SEWER

REVISION | DATE

STANDARD DETAIL S-9

**BCWSA LATERAL CONNECTION - SHALLOW SEWER**



- NOTE:
- FOR STANDARD 1" CONNECTION, PROVIDE A TAPPED COUPLING WITH THREADED INSERT OR DOUBLE-STRAPPED SADDLE CLAMP.
  - DO NOT PLACE CURB STOP IN PAVED AREAS.
  - ALL SERVICE CONNECTIONS SHALL BE LOCATED AT THE MIDPOINT BETWEEN SIDE LOT LINES OR AS DIRECTED BY A AQUA PA FIELD REPRESENTATIVE.
  - WHERE SIDEWALK PARALLELS ROADWAY, THE CURB BOX SHALL BE PLACED BETWEEN THE CURB AND SIDEWALK. ALL OTHER LOCATIONS, CURB BOX TO BE PLACED AS DIRECTED BY A AQUA PA FIELD REPRESENTATIVE.

**AQUA STANDARD SERVICE CONNECTION**

**RECOMMENDED MINIMUM TRENCH WIDTHS**

PIPE DIAM.	MIN. TRENCH WIDTH
4"	24"
6"	30"
8"	36"
10"	42"
12"	48"
15"	60"
18"	72"
24"	96"
30"	120"
36"	144"
42"	168"
48"	192"
60"	240"
72"	288"
90"	360"
108"	432"

**MINIMUM RECOMMENDED COVER BASED ON VEHICLE LOADING CONDITIONS\***

PIPE DIAM.	SURFACE LOAD CONDITION		
	CLASS I	CLASS II	CLASS III
4"	18"	24"	30"
6"	24"	30"	36"
8"	30"	36"	42"
10"	36"	42"	48"
12"	42"	48"	54"
15"	54"	60"	66"
18"	66"	72"	78"
24"	84"	90"	96"
30"	102"	108"	114"
36"	120"	126"	132"
42"	138"	144"	150"
48"	156"	162"	168"
60"	192"	198"	204"
72"	228"	234"	240"
90"	270"	276"	282"
108"	324"	330"	336"

**TECHNICAL NOTE**  
 Minimum and Maximum Burial Depth for Corrugated HDPE Pipe (per ASTM F2648)  
 TN 2.02  
 January 2016

**Introduction**  
 The information in this document is designed to provide answers to general cover height questions; the data provided is not intended to be used for project design. The design provisions described in the (disclosure section (Section 2) of the Drainage Handbook provides detailed information for analyzing most common installation conditions. This procedure should be utilized for project specific designs.

**Minimum Cover in Traffic Applications**  
 Pipe diameters from 4- through 48-inch (100-1200 mm) installed in traffic areas (AASHTO H-25 or HS-25 loads) must have at least one foot (0.3m) of cover over the pipe crown, while 60-inch (1500 mm) pipe must have at least 24 inches (0.6m) of cover. The backfill envelope must be constructed in accordance with the installation section (Section 5) of the Drainage Handbook and the requirements of ASTM D2222. The backfill envelope must be of the type and composition listed in Appendix A-5, Table A-5-2a of the Drainage Handbook. In Table 1 below, this condition is represented by a Class II material compacted to 90% standard Proctor density, although other material can provide similar strength at slightly lower levels of compaction. Structural backfill material should extend six inches (0.15m) over the crown of the pipe; the remaining cover should be appropriate for the installation and as specified by the design engineer. If settlement or rutting is a concern, it may be appropriate to extend the structural backfill to grade. Where pavement is involved, sub-base material can be considered in the minimum burial depth. While rigid pavements can be included in the minimum cover, the thickness of flexible pavements should not be included in the minimum cover.

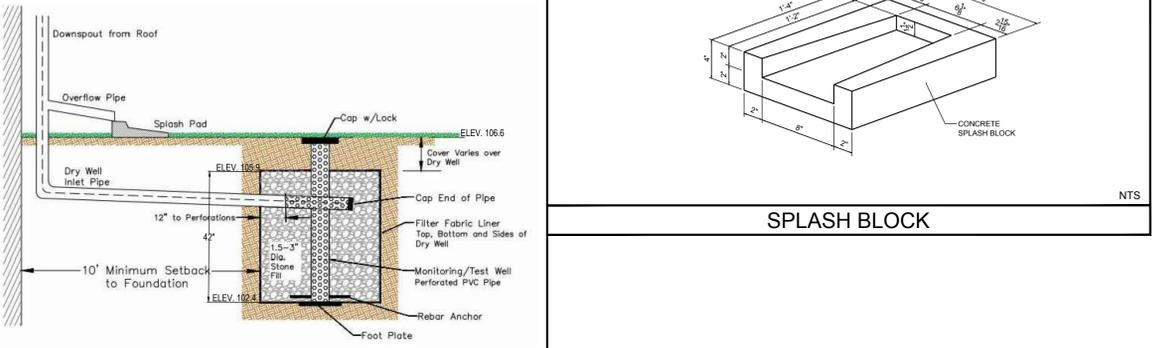
**Additional information that may affect the cover requirements is included in the installation section (Section 5) of the Drainage Handbook. Some examples of what may need to be considered are temporary heavy equipment, construction loading, driving equipment and similar loads that are less than the design load, the potential of pipe flexion, and the type of surface treatment which will be installed over the pipe zone. Please note that Table 1 and 3 are based on the installation of N-12 and MEGA GREEN (per ASTM F2648) pipe under pavement using a uniform backfill type and compaction level, as depicted in Figure 1.**

**Table 1**  
 Minimum Cover Requirements for N-12 and MEGA GREEN™ Pipes (per ASTM F2648) with AASHTO H-25 or HS-25 Load

Inlet Diameter, D, inches (mm)	Minimum Cover (feet) (m)
4 (100)	1.0 (3.0)
6 (150)	2.0 (6.1)

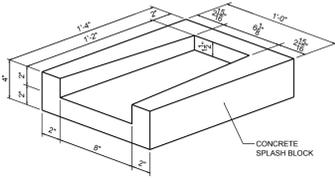
**Notes:**  
 \*Minimum covers presented here were calculated assuming Class II backfill material compacted to 90% standard Proctor density around the pipe and a minimum of 6 inches (0.15m) structural backfill over the pipe crown, as recommended in Section 5 of the Drainage Handbook, with an additional layer of compacted traffic base sub-base for a total cover as required. In shallow traffic installations, especially where pavement is involved, a good quality compacted material to grade is required to prevent surface settlement and rutting.

**STORMWATER TRENCH INSTALLATION DETAIL**



- NOTE:
- DRY WELL SIZE: 25(L) X 10(W) X 3.5(D). REFER TO GRADING PLAN FOR LOCATION OF DRY WELL.
  - AASHTO'S STONE TO BE COMPLETELY WRAPPED IN NONWOVEN GEOTEXTILE FILTER FABRIC, INCLUDING ON TOP OF STONE TRENCH & BENEATH THE TOPSOIL AND GRASS.
  - OWNER IS RESPONSIBLE FOR THE MAINTENANCE AND OPERATION OF THE DRY WELL (SWM FACILITY). OWNER'S CONTACT INFORMATION:  
 NINA M. AND MINAL B. SHAH - 1209 WILLIAMS PENN DRIVE, BENSALEM, PA 19020-4378
  - MAINTENANCE SCHEDULE FOR DRY WELL IS AS FOLLOWS:  
 4.1 DRY WELLS SHOULD BE INSPECTED AT LEAST FOUR (4) TIMES ANNUALLY AS WELL AS AFTER LARGE STORM EVENTS.  
 4.2 REMOVE SEDIMENT, DEBRIS/TRASH, AND ANY OTHER WATER MATERIAL FROM A DRY WELL.  
 4.3 REGULARLY CLEAN OUT GUTTERS AND ENSURE PROPER CONNECTIONS TO THE DRY WELL.  
 4.4 REPLACE THE FILTER SCREEN THAT INTERCEPTS THE ROOF RUNOFF AS NECESSARY.

**DRY WELL DETAIL**



**SPLASH BLOCK**

arn Engineering Inc.  
 1456 Ferry Road, Suite 603  
 Doylestown, PA 18901  
 T: 215.766.8280  
 F: 215.434.5280

Project  
**WINE AVENUE MINOR SUBDIVISION**  
 TMP # 02-039-086

Bensalem Township  
 Bucks County  
 Pennsylvania

**SITE CONSTRUCTION DETAILS**



CHIRAG V. THAKKAR  
 PROFESSIONAL ENGINEER  
 PA LIC. NO. PE 075153

DATE	COMMENTS	NO.
REVISIONS		

Project No.	230006501
Date	7-24-2020
Scale	NOT TO SCALE
Drawn By	JEM
Checked By	AAB
Drawing No.	

**CS-501**

# POST-CONSTRUCTION STORMWATER MANAGEMENT REPORT

## WINE AVENUE MINOR SUBDIVISION

TMP# 02-039-086

2866 Wine Avenue

Bensalem Township, Bucks County, Pennsylvania

Prepared For:

**Nina Shah & Minal Shah**

1209 William Penn Drive

Bensalem, Pennsylvania 19020

Prepared By:

**arna** Engineering Inc.

1456 Ferry Road, Suite 603

Doylestown, PA 18901



---

**Chirag V. Thakkar, P.E.**

**PA License No. PE 075153**

July 24, 2020

ARNA Project No. 230006501

**arna**

ENGINEERING  
CIVIL ENGINEERS

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RECEIVING WATERSHED .....	2
PROPOSED CONDITIONS .....	2
PROPOSED STORMWATER ANALYSIS .....	2

LIST OF APPENDICES

APPENDIX	DESCRIPTION
A	Simplified Method Calculations

## **INTRODUCTION**

The owners of property are proposing to demolish the existing dilapidated single-family home with the detached garage and subdivide the existing lot into two single-family detached lots. The existing property is located at 2866 Wine Avenue in Bensalem Township, Bucks County, Pennsylvania. The subject property contains approximately 0.45 acres of previously developed area.

The stormwater management design has been completed in accordance with the regulations set forth by Bensalem Township Stormwater Management Ordinance (Chapter 196). In accordance with section 196-6(b), due to the small size of the project and the proposed additional impervious area being less than 5,000 SF, the project is exempt from the stormwater peak control requirements; however will need to comply with the stormwater volume control requirements. To account for the additional runoff volume from the redevelopment of the site, the plans propose construction a dry well on lot #2 to handle the additional stormwater runoff volume. This report has been prepared to address the design of the stormwater management system.

## **HYDRAULIC METHODOLOGY**

This study has been prepared using the Simplified Method, listing in Section 196-34.(2) of the Stormwater Management Ordinance. This method is applicable for small sites with area under 1 acre. The Simplified Method requires that 2" of stormwater runoff from all new impervious areas be captured and 1" of stormwater runoff from all new impervious areas be removed.

## **EXISTING CONDITIONS**

The existing lot (TMP# 02-039-086) site is located within the R2 – Residential zone. The subject site has been developed and contains a single-family detached dwelling along with a detached garage, outdoor decks, asphalt driveway, concrete pathway, and pad. The project site is generally bounded by Virginia Ave to the east, Wine Avenue to the south, and residential buildings to the west and north. The subject site has 4,817 SF of impervious surface in existing conditions. Of that impervious surface, 2,512 sf is on future lot #1 and 2,305 sf is on future lot #2. There are no existing stormwater management (SWM) facilities located on the site.

The stormwater runoff from the site drains to Poquessing Creek which flows to Delaware River. Topography on the site is relatively mild with a high point in the center of the site where the existing home is situated.

## **RECEIVING WATERSHED**

The project site is located within Poquessing Creek Watershed. Per Chapter 93 of the Pennsylvania Code, Poquessing Creek is designated as Warm Water Fishery and Migratory Fishery (WWF, MF).

## **PROPOSED CONDITIONS**

The proposed development consists subdivision of the existing lot and the demolition of the existing single-family home, garage, decks, sheds, and concrete pathway. Additionally, the proposed development consists of the construction of a new single-family home on each new lot with a driveway and concrete pathway to the house.

The proposed development consists of total 2,027 sf of impervious surface for Lot #1. Since the impervious surface currently existing on Lot #1 is 2,512 SF, there is no additional impervious surface proposed for this lot. Therefore, the volume reduction requirements are met by reducing the area of the impervious surface from the lot.

The proposed development 4,211 sf of impervious surface for Lot #2. The impervious surface currently existing on Lot #2 is 2,305 SF. The stormwater runoff from the additional impervious surface of 1,906 SF is being managed by the proposed Dry Well on Lot #2. Dry Well on Lot #2 is located in the northwest corner of lot and captures part of the roof runoff from the new dwelling.

## **PROPOSED STORMWATER ANALYSIS**

The proposed stormwater analysis has been performed based on requirements from Sections 196-34(b) and 196-148 of the Bensalem Township Stormwater Management Ordinance. The proposed Dry Well for Lot #2 has been sized per the requirements listed in Appendix I of Section 196-148. Please see the attached calculations in Appendix A for Dry Well sizing.

**Summary for Lot #1:**

	<b>Required</b>	<b>Proposed</b>	<b>Meets Requirements</b>
Volume Captured (CF)	-80.8	0.0	Yes
Volume Removed (CF)	-40.4	0.0	Yes

**Summary for Lot #2:**

	<b>Required</b>	<b>Proposed</b>	<b>Meets Requirements</b>
Volume Captured (CF)	317.7	350.0	Yes
Volume Removed (CF)	158.8	350.0	Yes

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**Stormwater Management Calculations- Lot #1**

**Volume Control ( Simplified Method)**

	Site Area (sf)	Impervious Area (SF)	Pervious Area (SF)
Existing	7,503	2,512	4,991
Proposed	7,503	2,027	5,476
Net Difference		(485)	485

**Section 196-34(2)**

**1. Volume of stormwater runoff when capturing first 2" of runoff from new impervious**

Volume (CF) = ( 2" runoff / 12") \* Impervious area (SF)

-80.8 cf (Reduction in Stormwater Management Volume)

**2. Volume of stormwater runoff when permanently removing 1" of runoff from new impervious**

Volume (CF) = ( 1" runoff / 12") \* Impervious area (SF)

-40.4 cf (Reduction in Stormwater Management Volume)

**Summary for Lot #1:**

	Required	Proposed	Meets Requirements
Volume Captured (CF)	-80.8	0.0	Yes
Volume Removed (CF)	-40.4	0.0	Yes

**Stormwater Management Calculations - Lot #2**

**Volume Control ( Simplified Method)**

	Site Area (sf)	Impervious Area (SF)	Pervious Area (SF)
<b>Existing</b>	11,063	2,305	8,758
<b>Proposed</b>	11,063	4,211	6,852
<b>Net Difference</b>		1,906	<b>(1,906)</b>

**Section 196-34(2)**

**1. Volume of stormwater runoff when capturing first 2" of runoff from new impervious**

Volume (CF) = ( 2" runoff / 12")\* Impervious area (SF)

**317.7** cf

**2. Volume of stormwater runoff when permanently removing 1" of runoff from new impervious**

Volume (CF) = ( 1" runoff / 12")\* Impervious area (SF)

**158.8** cf

**Small Project SWM Site Plan Calculations for Lot #2**

**Volume of runoff to be captured/controlled by Structural BMP**

Total Volume to be Captured by BMP = 317.7 cf

Volume captured/controlled by non-structural BMP = 0.0 cf

Volume to be captured/controlled by structural BMP = **317.7** cf

**Contributing impervious area to dry well:**

Roof area draining to Dry Well= 1,928 sf of impervious

*Contributing Volume*

Area(sf) x (2" runoff) / 12" = (2257 sf) x (2" of runoff)/(12") = **321.3** cf

**Dry Well Volume**

*Dry Well Dimensions:*

Length (ft) 25

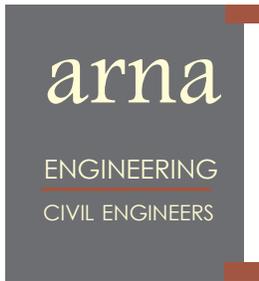
Width (ft) 10

Depth (ft) 3.5

Dry Well Volume =area (sf) x Depth (ft) x 40 % void ratio = **350** cf

**Summary for Lot #2:**

	Required	Proposed	Meets Requirements
Volume Captured (CF)	317.7	350.0	Yes
Volume Removed (CF)	158.8	350.0	Yes



ARNA Engineering Inc.  
1456 Ferry Road, Suite 603  
Doylestown, PA 18901  
T: 215.766.8280  
F: 215.434.5280  
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**PRINCIPALS**  
Anand A. Bhatt, P.E., LEED AP  
Chirag V. Thakkar, P.E., LEED AP

July 30, 2020

Ms. Loretta Alston  
Bensalem Township  
Building and Planning Department  
2400 Byberry Road  
Bensalem, PA 19020

**Re: Minor Subdivision Application  
TMP#02-039-086  
2866 Wine Avenue  
Bensalem Township, Bucks County, Pennsylvania  
ARNA Project No. 230006501**

Dear Loretta:

On behalf of the owners of the property, we hereby submit the following documents for the Minor Subdivision Application for the above referenced property.

- One (1) original completed Subdivision and Land Development Application;
- A check in amount of \$266.00 for Minor Subdivision Application Fee;
- A check in amount of \$2,400.00 for Escrow Fee;
- One (1) copy of completed BCPC Subdivision and Land Development 2020 Review Application;
- Twenty Five (25) copies of the plan set containing the following sheets:
  - Drawing No. CS-101 titled "Subdivision and Site (Record) Plan" last revised July 24, 2020;
  - Drawing No. CG-101 titled "Improvements Plan" dated July 24, 2020;
  - Drawing No. CE-101 titled "Soil Erosion and Sediment Control Plan and Details" dated July 24, 2020;
  - Drawing No. CS-501 titled "Site Construction Details" dated July 24, 2020.
- Post-Construction Stormwater Management Report dated July 24, 2020.
- One (1) Compact Disc containing PDFs of the above listed documents.

As per our coordination with Mr. Ken Ferrell regarding the zoning requirements determination, this minor subdivision plans incorporated the land development design information for the project. Please note that the proposed buildings and configuration shown on these plans are not final and are subject to change at the time of building permit application.

We respectfully request you review the enclosed documents and schedule us for the council meeting for the approval of this project.

Please feel free to call us at (215) 766-8280 if you have any questions or require additional information.

Very truly yours,  
**ARNA Engineering Inc.**

Chirag V. Thakkar, P.E., LEED AP  
Principal

Cc: Manish Shah (Email)