Planning and Zoning Department
616 Germantown Pike, Lafayette Hill, PA 19444-1821
484-594-2625
www.whitemarshtwp.org

Subdivision and Land Development Cover Page for SLD # 02-20
Project Name: Federal Realty Investment Trust
Address: 1842 Bethlehem Pike
Date: March 15, 2021
Status: Original submission not pursued; revised plans recommended for approval by Planning Commission January 11, 2022

Updates:

Comments from Richard Abraham – January 26, 2022

Memo from Township Arborist - January 26, 2022

RESUBMISSION 11.1.2021

PRELIMINARY / FINAL LAND DEVELOPMENT PLAN

PROPOSED INDUSTRIAL REDEVELOPMENT

1890 BETHLEHEM PIKE, FLOURTOWN PA 19031
SPRINGFIELD TOWNSHIP AND WHITEMARSH TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

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APPROVAL BLOCKS

OWNER'S STATEMENT

WE HEREBY CERTIFY THAT FEDERAL REALTY INVESTMENT TRUST, STEVEN J. GUTTMAN AND DONALD MISNER ARE THE OWNERS / APPLICANTS OF THE DESIGNATED LAND, AND ACKNOWLEDGE THIS PLAN TO BE THE OFFICIAL PLAN OF THE HIGHWAYS AND PROPERTIES SHOWN THEREON SITUATE IN THE TOWNSHIP OF SPRINGFIELD, MONTGOMERY COUNTY, PENNSYLVANIA, AND DESIRE THAT THIS PLAN BE RECORDED ACCORDING TO LAW.

BY _____
FEDERAL REALTY INVESTMENT TRUST

BY _____
STEVEN J. GUTTMAN

BY _____
DONALD MISNER

OWNER'S ACKNOWLEDGEMENT

COMMONWEALTH of PENNSYLVANIA :
COUNTY of MONTGOMERY :

ON THIS _____ DAY OF _____, 20____ BEFORE ME, THE SUBSCRIBER, A NOTARY PUBLIC OF THE COMMONWEALTH OF PENNSYLVANIA, PERSONALLY APPEARED _____, WHO ACKNOWLEDGED HIMSELF TO BE A MEMBER OF _____, AND THAT HE, AS SUCH OFFICER, BEING AUTHORIZED TO DO SO, EXECUTED THIS PLAN ON BEHALF OF _____ FOR THE PURPOSE THAT THIS PLAN BE RECORDED ACCORDING TO LAW.

_____ (SEAL)
NOTARY PUBLIC
MY COMMISSION EXPIRES:

(SEAL)

RECORDER of DEEDS CERTIFICATION

MCPC FILE NO. _____

RECORDER OF DEEDS
RECORDED IN THE OFFICE FOR THE RECORDING OF DEEDS IN AND FOR THE COUNTY OF MONTGOMERY, AT NORRISTOWN, PA., IN PLAN BOOK NO. _____PAGE NO. _____
ON _____ _____.

BOARD of TOWNSHIP COMMISSIONERS APPROVAL BLOCK

APPROVED BY THE BOARD OF TOWNSHIP COMMISSIONERS OF THE TOWNSHIP OF SPRINGFIELD THIS _____ DAY OF _____, 20____.

_____
PRESIDENT

_____
TOWNSHIP ENGINEER

_____
ATTEST : SECRETARY

TOWNSHIP BOARD of SUPERVISORS APPROVAL BLOCK

APPROVED BY THE TOWNSHIP BOARD OF SUPERVISORS OF THE TOWNSHIP OF WHITEMARSH THIS _____ DAY OF _____, 20____.

_____
CHARIMAN

_____
TOWNSHIP ENGINEER

_____
ATTEST : SECRETARY

MCPC No. _____

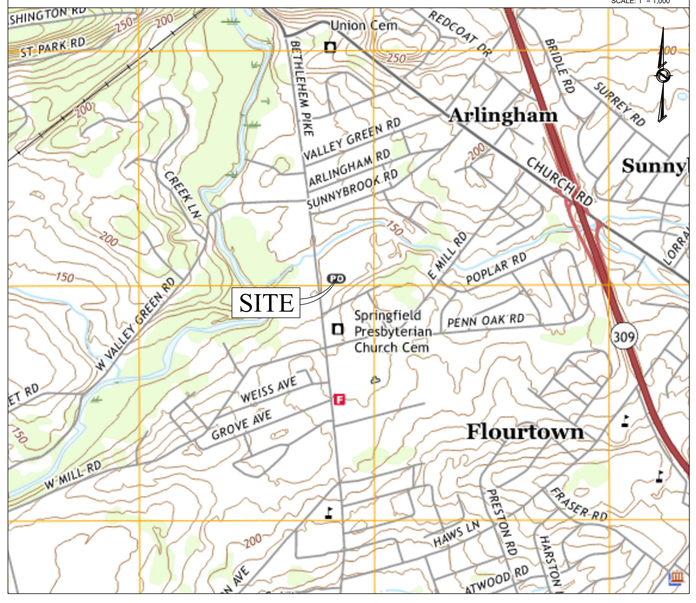
PROCESSED AND REVIEWED
REPORT PREPARED BY MONTGOMERY COUNTY PLANNING COMMISSION IN ACCORDANCE WITH THE MUNICIPALITIES PLANNING CODE.

CERTIFIED ON THIS DATE _____

_____
FOR THE DIRECTOR

MONTGOMERY COUNTY PLANNING COMMISSION

USGS MAP
SCALE: 1" = 1,000'



LOCATION MAP
SCALE: 1" = 500'



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TICKET #:

REV.	DATE	COMMENT	BY
1	2021-10-21	PER TWP COMMENTS	

D. ALEXANDER TWEEDIE
PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE No. 071873
NOT FOR CONSTRUCTION

PROJECT No: 140065
DRAWN BY: MAR
CHECKED BY: DAT
CAD I.D. #: 01_CL_140065

LANDCORE
Engineering Consultants, P.C.
PO BOX 37015 #60297
PHILADELPHIA, PENNSYLVANIA 19101-0615
PHONE 215-826-2510 | FAX 215-324-0428
LANDCORECONSULTING.COM

PROJECT: PROPOSED INDUSTRIAL REDEVELOPMENT
1890 BETHLEHEM PIKE, FLOURTOWN PA 19031
SPRINGFIELD TOWNSHIP AND WHITEMARSH TOWNSHIP
MONTGOMERY COUNTY, PA
APPLICANT: FEDERAL REALTY INVESTMENT TRUST
TITLE: COVER SHEET

DATE: 2021-03-04
SHEET: 01 of 13
REV. No: 1
CL

D:\GROUP01\X (LANDCORE)\PROJECTS\2014\140065 - FEDERAL REALTY - FLOURTOWN PA\DRAWINGS\00-SITE PLANS\01_CL_140065.DWG
JASON WIGGINS,LEED AP @ 2021-10-21, 4:26 AM

WHITEMARSH TOWNSHIP PORTION OF SITE

ZONED : VC-3 (VILLAGE COMMERCIAL) - WHITEMARSH TOWNSHIP

EXISTING USE :
SHOPPING CENTER

PROPOSED USE :
RESTAURANT (CONDITIONAL USE), BANK W/ DRIVE THRU (CONDITIONAL USE)(*3)

BULK REQUIREMENTS

	REQUIRED	*EXISTING*		PROPOSED	
MINIMUM LOT AREA (SF)	NA	*776,333 (VC-3)*		NO CHANGE	
MINIMUM LOT AREA (AC)	NA	*17.822*		NO CHANGE	
MINIMUM STREET FRONTAGE (*1)(FT)	50	*682.85*		NO CHANGE	
MINIMUM LOT WIDTH @ BSBL (*1)(FT)	100	*690.62*		NO CHANGE	
MINIMUM BUILDING SEPARATION (*1)(FT)	15	*NA*		36.3 (*8)	
MINIMUM YARD SETBACKS (LOT AREA 15 ACRES OR GREATER)					
FRONT YARD, ULTIMATE R-O-W (FT)	35	*NA*		201.18 (*8)	
FRONT YARD, INTERNAL ROADWAY (FT)	15	*NA*		15.00 (*8)	
SIDE YARD FROM RESIDENTIAL (FT)	45	*NA*		78.14	
REAR YARD FROM RESIDENTIAL (FT)	45	*NA*		NA (*8)	
MAXIMUM IMPERVIOUS COVERAGE (*6)(%)	65	*94.66% (E)*		93.81% (E)	
(SF)		*734,887*		728,245	
MINIMUM VEGETATED OPEN SPACE, TREES OR LANDSCAPING (*1)(*2)(%)	35	*5.34% (E)*		6.19% (E)	
(SF)		*41,446*		48,088	
MAXIMUM BUILDING COVERAGE (*6)(%)	40	*0.00%*		0.32%	
(SF)		*0*		2,450	
MAXIMUM NONRESIDENTIAL BUILDING FOOTPRINT FOR NEW CONSTRUCTION ONLY (*1) (SF)	8,000 EXCEPT FOR RETAIL IN WHICH A MAXIMUM OF 10,000 IS PERMITTED.	*NA*		4,550	
MAXIMUM BUILDING FRONT FACADE WIDTH (*1)(FT)	75	*NA*		60	
MAXIMUM BUILDING HEIGHT (*1)(FT)	3 STORIES (42 FT MAX)	*NA*		< 42	

PARKING REQUIREMENTS (WHITEMARSH TOWNSHIP)

MINIMUM PARKING STALL REQUIREMENT					
RESTAURANT USE	1 STALL PER 50 SF OF PATRON FLOOR SPACE (75% OF GSF ASSUMED)	*NA*		(2,100 X 0.75) / 50 = 31.5 (*6) 32 REQUIRED	
	1 STALL PER 3 PERSONS OF DESIGN CAP. (*4)	*NA*		525 SF/200 SF PER OCCUPANT + 1575 SF/15 SF PER PATRON = 108 PERSON DESIGN CAPACITY/3 = 36 STALLS REQUIRED.	
GREATER OF PARKING REQUIREMENTS FOR RESTAURANT				36 STALLS	
BANK USE (OTHER COMMERCIAL USES)	1 STALL PER 1,000 SF	*NA*		2,450 / 1,000 = 2.450 3 REQUIRED	
TOTAL REQUIRED PARKING		*NA*		39 REQUIRED 5 PROPOSED (*7)(V) SEE NOTE (*5)	
MINIMUM STALL SIZE (FT)	9 x 18	*9 x 18*		9 x 18	
MINIMUM AISLE WIDTH (FT)	24	*24*		24	
MINIMUM PARKING SETBACKS					
FRONT YARD (FT)	10	*NA*		88.20	
SIDE / REAR YARD (NON RES ADJ) (FT)	0	*NA*		79.10	
SIDE / REAR YARD (RES ADJ) (FT)	20	*NA*		NA	
FROM BUILDING (FT)	10	*NA*		10.00	
MAXIMUM PARKING PERCENTAGE BETWEEN STREET LINE AND FRONT PRINCIPAL BUILDING PLANE	25%	*NA*		100% (V)	

SPRINGFIELD TOWNSHIP PORTION OF SITE

ZONED : S (SHOPPING CENTER) - SPRINGFIELD TOWNSHIP

EXISTING USE :
SHOPPING CENTER (PERMITTED)

PROPOSED USE :
RESTAURANT (PERMITTED), BANK W/ DRIVE THRU (PERMITTED)

BULK REQUIREMENTS

	REQUIRED	*EXISTING*		PROPOSED	
MINIMUM LOT AREA (SF)		*1,030,210*		NO CHANGE	
MINIMUM LOT AREA (AC)	2	*23.650*		NO CHANGE	
MINIMUM YARD SETBACKS					
FRONT YARD (FT)	NA	*88.30*		NO CHANGE	
SIDE YARD (RES ADJ) (FT)	25	*49.80*		NO CHANGE	
REAR YARD (RES ADJ) (FT)	25	*133.20*		NO CHANGE	
ADJACENT BUILDINGS (FT)	12	*57.30*		36.30	
MAXIMUM BUILDING COVERAGE (%)	30	*19.22%*		19.42%	
(SF)		*197,970*		200,070	
MAXIMUM BUILDING HEIGHT (NON RES)(FT)	50	*< 50*		< 50	

PARKING REQUIREMENTS (SPRINGFIELD TOWNSHIP)

MINIMUM PARKING STALL REQUIREMENT					
SHOPPING CENTER USE (*5)	5.5 STALLS PER 1,000 GR LEASEABLE SF	*(177,025 / 1,000) X 5.5 = 974 REQ*		((177,025 / 1,000) + (4,550 / 1,000)) x 5.5 = 999 REQ	
MINIMUM STALL SIZE (FT)	9 x 18	9 x 18		9 x 18	
MINIMUM AISLE WIDTH (FT)	24	*24*		24	
MINIMUM PARKING SETBACKS					
FRONT YARD (FT)	10	*14.03 (*7)*		NO CHANGE	
SIDE YARD (RES ADJ) (FT)	25	*26.45 (*7)*		NO CHANGE	
REAR YARD (RES ADJ) (FT)	25	*133.84 (*7)*		NO CHANGE	

| (V) VARIANCE REQUIRED | (NA) NOT APPLICABLE | (NS) NOT SPECIFIED |

ALL CALCULATIONS WITHIN THE TABLES HEREWITH HAVE BEEN BASIED ON THE TOTAL TRACT AREA INCLUSIVE OF PARCELS A, B & C, (LOTS A & B) UNLES NOTED OTHERWISE.

(*1) - PER WHITEMARSH TOWNSHIP CONDITIONAL USE STANDARDS

(*2) - PER CONDITIONAL USE STANDARDS** SAID PERCENTAGES MAY BE REDUCED COMMENSURATE WITH ANY INCREASE IN IMPERVIOUS COVERAGE PERMITTED BY STANDARD NO. 7 FOR NONRESIDENTIAL VC-3 PERMITTED USES, BY STANDARD NO. 8 IN THIS SECTION, OR BY CONDITIONAL USE IN ACCORDANCE WITH THE PROVISIONS OF § 116-297 HEREIN.

(*3) - PER 116-290.E(5) A TRAFFIC IMPACT STUDY IS REQUIRED FOR A CONDITIONAL USE APPROVAL OF A DRIVE-THRU.

(*4) - BASED ON THE TABLE OF THE MAXIMUM FLOOR AREA ALLOWANCE PER OCCUPANT IN THE CURRENT EDITION OF THE WHITEMARSH TOWNSHIP BUILDING CODE OR THE MAXIMUM OCCUPANCY ALLOWANCE UNDER THE PROVISIONS OF THE WHITEMARSH TOWNSHIP FIRE PREVENTION CODE, BOTH OF WHICH WERE UNAVAILABLE. THEREFORE THE CALCULATIONS ARE BASED ON THE ASSUMPTION OF 25% KITCHEN AREA AT 200 SF PER OCCUPANT AND 75% TABLE/CHAIR AREA AT 15 SF PER PATRON.

(*5) - PER "FINAL RECORD PLAN", PREPARED BY GILMORE & ASSOCIATES, DATED 9/13/2013, THE OVERALL CENTER CONTAINS 177,025-SF OF TOTAL LEASEABLE AREA (TLA) AND 713 PARKING STALLS, EQUATING TO A 4.0 PARKING RATIO. THE PROPOSED IMPROVEMENTS WILL INCREASE THE TLA TO 181,575 SF; THE PARKING STALL COUNT WILL DECREASE TO 702, AND THE OVERALL PARKING RATIO WILL BE 3.9. THE PRIOR SPRINGFIELD TOWNSHIP APPROVALS HAVE BEEN BASED OFF OF A REQUIRED 5.5 PARKING RATIO AND THE EXISTING 4.0 RATIO HAS BEEN PREVIOUSLY APPROVED AS AN EXISTING NON-CONFORMANCE. THE REDUCTION OF THIS RATIO TO 3.9 MAY RESULT IN A VARIANCE BEING REQUIRED FROM SPRINGFIELD TWP. ADDITIONALLY, SINCE THE REQUIRED 39 STALLS FOR THE RESTAURANT AND BANK ARE NOT PROVIDED WITHIN WHITEMARSH TOWNSHIP, A VARIANCE IS ALSO LIKELY TO BE REQUIRED FROM WHITEMARSH TOWNSHIP. VERIFICATION FROM THE RESPECTIVE ZONING OFFICERS SHOULD BE OBTAINED.

(*6) - IMPERVIOUS COVERAGE WITHIN RESPECTIVE TOWNSHIP & ZONING DISTRICT.

(*7) - PARKING PROVIDED IN RESPECTIVE TOWNSHIP

(*8) - BUILDINGS WITHIN RESPECTIVE TOWNSHIP

NOTE: THE ZONING ANALYSIS CONTAINED ON THIS PLAN DOES NOT INCLUDE THE VARIOUS BUILDING DESIGN REQUIREMENTS CONTAINED IN SECTION 116-291B. THIS SECTION SHALL BE ASSESSED BY ARCHITECT AT TIME WHEN TENANT OR BUILDING DESIGN IS KNOWN.

20 0 10 20 40 80
GRAPHIC SCALE 1 INCH = 20 FEET

SITE DATA

THIS LAND DEVELOPMENT PLAN REFERENCES A SURVEY PREPARED BY

BLUE MARSH ASSOCIATES, INC.
P.O. BOX 563
WARRINGTON PA, 18976-2370
FILE No. 17-80446-058 / DATED 2017-03-17

OWNER of RECORD / APPLICANT

FEDERAL REALTY INVESTMENT TRUST
C/O ALTUS GROUP
PO BOX 92129
SOUTHLAKE TX, 76092

GUTTMAN STEVEN J & MISNER DONALD
1626 E JEFFERSON ST
ROCKVILLE MD 20852

PARCEL DATA

1890 BETHLEHEM PIKE
FLOURTOWN, PA 19031

LOT A: UNIT 15, BLOCK 48 PARCEL # 52-00-01903-007
UNIT 66, BLOCK 60 PARCEL # 65-00-00547-063
LOT B: UNIT 16, BLOCK 48 PARCEL # 52-00-01904-006
UNIT 67, BLOCK 60 PARCEL # 65-00-00547-045
LOT C: UNIT 19, BLOCK 48 PARCEL # 52-00-01904-105
UNIT 17, BLOCK 60 PARCEL # 65-00-00547-027

PARKING TABLE (SPRINGFIELD TOWNSHIP)

PARKING STALL TABULATION PER LOT

LOT	REQUIRED	*PROVIDED*
EXISTING LOT A GROSS LEASEABLE SF 84,956 SF	(84,956 / 1,000) * 5.5 = 467.25 REQUIRED 5.5 RATIO	*472 PROVIDED 5.55 RATIO*
EXISTING LOT B GROSS LEASEABLE SF 92,069 SF	(92,069 / 1,000) * 5.5 = 506.37 REQUIRED 5.5 RATIO	242 PROVIDED 2.63 RATIO (E)
EXISTING CONDITION, COMBINED TOTAL (SPRINGFIELD TOWNSHIP & WHITEMARSH TOWNSHIP)	((84,956 + 92,069) / 1,000) * 5.5 = 974 REQUIRED 5.5 RATIO	714 PROVIDED 4.03 RATIO (E)
PROPOSED ADDITION TO LOT A GROSS LEASEABLE SF 4,550 + 84,956 SF)	((4,550 + 84,956) / 1,000) * 5.5 = 492.28 REQUIRED 5.5 RATIO	457 PROVIDED 5.11 RATIO (V)
PROPOSED CONDITION, COMBINED TOTAL (SPRINGFIELD TOWNSHIP & WHITEMARSH TOWNSHIP)	((84,956 + 92,069 + 4,550) / 1,000) * 5.5 = 999 REQUIRED 5.5 RATIO	699 PROVIDED 3.85 RATIO (V)

SITE / RECORD PLAN LEGEND

- PROPERTY LINE (PIQ)
- BUILDING SETBACK LINE
- ZONE LINE
- MUNICIPALITY LINE
- *TREELINE*
- SAWCUT LIMITS
- *BUILDING EAVE / OVERHANG*
- PROP. BUILDING EAVE / OVERHANG
- *OVERHEAD WIRES*
- *100 YR* *100 YEAR FLOODPLAIN*
- 100 YR PROPOSED 100 YEAR FLOODPLAIN
- STREAM BANK

RECORD/SITE NOTES

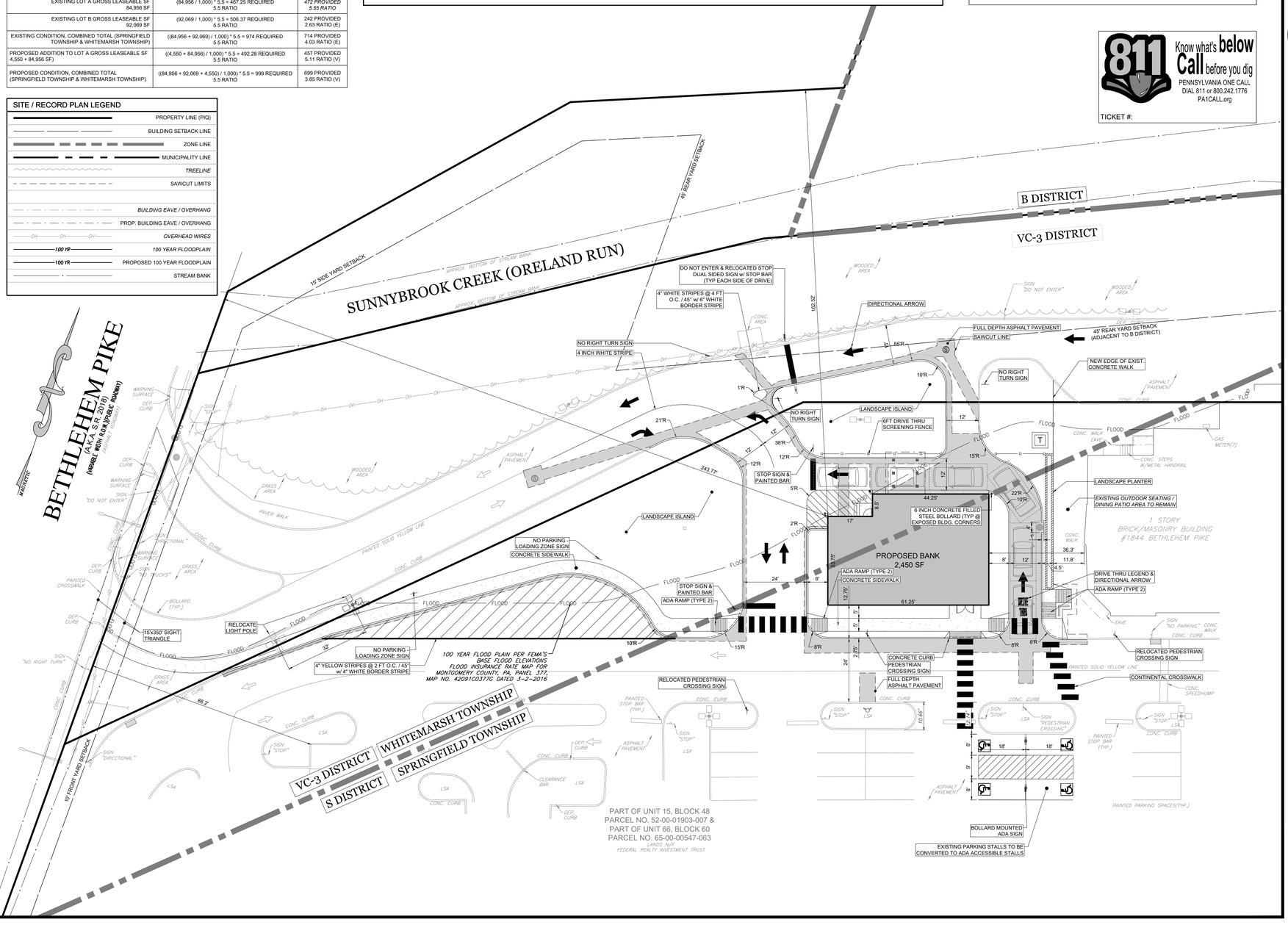
1. THESE PLANS ARE BASED ON INFORMATION PROVIDED TO LANDCORE ENGINEERING CONSULTANTS, P.C. (HEREINAFTER "THE ENGINEER") AT THE TIME OF PREPARATION. ALL ELEVATIONS SHOWN CORRELATE TO THE REFERENCED SURVEYOR'S BENCHMARK AND MUST BE VERIFIED BY THE GENERAL CONTRACTOR PRIOR TO GROUNDBREAKING. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY THE ENGINEER IN WRITING OF ANY SUCH DISCREPANCY, IF ACTUAL SITE CONDITIONS DIFFER FROM THOSE SHOWN ON THE PLAN, OR IF THE PROPOSED WORK WOULD BE INHIBITED BY ANY OTHER SITE FEATURES. ALL DIMENSIONS SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS AND CONTRACTOR SHALL NOTIFY ENGINEER IN WRITING IF ANY DISCREPANCIES EXIST PRIOR TO ORDER AND/OR FABRICATION OF STRUCTURES AND MATERIALS; OR COMMENCEMENT WITH CONSTRUCTION ACTIVITIES.
2. ALL WORK AND MATERIALS SHALL COMPLY WITH OR EXCEED ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS, REGULATIONS AND CODES, AND OSHA STANDARDS.
3. THE OWNER / CONTRACTOR SHALL BE FAMILIAR WITH AND RESPONSIBLE FOR ANY / ALL CERTIFICATIONS, INSPECTIONS, ETC. REQUIRED BY ALL GOVERNING JURISDICTIONAL AGENCIES DURING AND AFTER CONSTRUCTION FOR SIGN-OFF AND CERTIFICATE OF OCCUPANCY ISSUANCE, INCLUDING BUT NOT LIMITED TO PROCUREMENT OF SERVICES, SCHEDULING OF FIELD OBSERVATIONS AND COORDINATION WITH REPRESENTATIVES OF THE APPROPRIATE PARTIES.
4. CONTRACTOR IS RESPONSIBLE FOR OBTAINING, AND FAMILIARIZING THEMSELVES WITH, ALL PROJECT RELATED RESOURCES, TECHNICAL REPORTS AND DESIGN DOCUMENTS PREPARED FOR THE PROJECT, INCLUDING, BUT NOT LIMITED TO ANY PREPARED GEOTECHNICAL REPORTS, ENVIRONMENTAL REPORTS, PERMIT GUIDANCE, ET. AL. UPON REVIEW OF PROJECT RELATED RESOURCES, CONTRACTOR SHALL NOTIFY ENGINEER IN WRITING OF ANY CONFLICTS BETWEEN THE PLANS AND RESOURCES AND SUCH DISCREPANCY SHALL BE REVIEWED WITH ENGINEER PRIOR TO COMMENCING ANY WORK RELATED TO SUCH.
5. IT IS ESSENTIAL THAT CONTRACTORS ARE AWARE OF THE SITE ACCESSIBILITY REQUIREMENTS. LANDCORE ENGINEERING CONSULTANTS HAS MADE A POINT IN THE PROVIDED NOTES AND DETAILS, AS WELL AS IN THE DRAWINGS, TO PROVIDE SLOPES / GRADES AND DIMENSIONS THAT COMPLY WITH THE AMERICANS WITH DISABILITIES ACT (ADA) STANDARDS (AS LAST REVISED) AS WELL AS APPLICABLE STATE AND LOCAL LAWS AND REGULATIONS, LATEST EDITIONS. IF THESE SLOPES / GRADES AND DIMENSIONS ARE NOT ACHIEVABLE, THE CONTRACTOR IS REQUIRED TO NOTIFY THE OWNER, IN WRITING, IMMEDIATELY AND BEFORE MOVING FORWARD WITH THE WORK. THE CONTRACTOR SHALL CONFIRM THE DESIGNATED ADA ACCESSIBLE AREAS AND ROUTES PRIOR TO THE START OF CONSTRUCTION AND SHALL BE RESPONSIBLE FOR CONSTRUCTION OF THE DESIGNATED AREAS AND ROUTES IN ACCORDANCE WITH THE MOST CURRENT ADA GUIDELINES AS APPLICABLE TO THE PROJECT.
6. STORMWATER MANAGEMENT FACILITIES:
   - 6.1. THE PROPOSED ON-SITE STORMWATER MANAGEMENT FACILITIES SHALL BE OWNED AND MAINTAINED BY THE APPLICANT, UNLESS SPECIFICALLY NOTED OTHERWISE ON THESE PLANS
   - 6.2. A BLANKET EASEMENT IS HEREBY GRANTED TO THE MUNICIPALITY FOR ACCESS AND INSPECTION OF THE STORMWATER BEST MANAGEMENT PRACTICES (BMPS) AS INDICATED ON THESE PLANS. THE MUNICIPALITY SHALL HAVE THE RIGHT, BUT NOT THE DUTY, OF REASONABLE ACCESS AT REASONABLE TIMES TO EVERY BMP AND CONVEYANCE FROM A PUBLIC RIGHT-OF-WAY OR ROADWAY ONTO THE PROPERTY TO CONDUCT PERIODIC INSPECTIONS AS OUTLINED IN ANY APPLICABLE EASEMENT AGREEMENT AND TO UNDERTAKE OTHER ACTIONS THAT MAY BE NECESSARY TO ENFORCE THE REQUIREMENTS OF THE MUNICIPAL STORMWATER MANAGEMENT ORDINANCE, AND ANY APPLICABLE OPERATION AND MAINTENANCE PLANS AND/OR OPERATION AND MAINTENANCE AGREEMENTS.
   - 6.3. THE STORMWATER MANAGEMENT FACILITIES, AS DEPICTED HEREIN, ARE PERMANENT STRUCTURES. NO PERSON OR ENTITY SHALL MODIFY, REMOVE, FILL, LANDSCAPE OR OTHERWISE ALTER ANY STORMWATER MANAGEMENT FACILITY WHICH HAS BEEN INSTALLED ON A PROPERTY UNLESS A STORMWATER MANAGEMENT PLAN REVISION HAS BEEN SUBMITTED TO AND APPROVED BY THE MUNICIPALITY, ALONG WITH THE REVIEW AND ADVICE OF THE MUNICIPAL ENGINEER AND THE COUNTY CONSERVATION DISTRICT, WHICH AUTHORIZES SUCH MODIFICATION, REMOVAL, FILLING, LANDSCAPING OR ALTERATION. NO PERSON SHALL PLACE ANY STRUCTURE, FILL, LANDSCAPING OR VEGETATION WITHIN A STORMWATER MANAGEMENT FACILITY OR WITHIN A DRAINAGE EASEMENT WHICH HAS THE EFFECT OF OR TO ANY DEGREE LIMITS OR ALTERS THE FUNCTIONING OF THE FACILITY OR EASEMENT IN ACCORDANCE WITH ITS DESIGN AND INTENDED FUNCTION.
7. WATER / SEWER: THIS SITE IS SERVICED BY PUBLIC WATER AND SANITARY SEWER.
8. WETLANDS: BY APPROVAL OF THIS PLAN, THE MUNICIPALITY HAS NEITHER CONFIRMED NOR DENIED THE EXISTENCE AND/OR EXTENT OF ANY WETLAND AREAS WHETHER OR NOT DELINEATED ON THE SAID PLAN AND ANY ENCROACHMENT THEREON FOR ANY REASON WHATSOEVER SHALL BE THE SOLE RESPONSIBILITY OF THE DEVELOPER, HIS HEIRS AND ASSIGNS AND SHALL BE SUBJECT TO THE JURISDICTION OF THE ARMY CORPS OF ENGINEERS AND/OR THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION AS THE SAID ENCROACHMENT SHALL CONFORM TO THE RULES AND REGULATIONS OF THE JURISDICTIONAL AGENCIES.
9. FLOODPLAIN: PORTIONS OF THIS SITE LIE WITHIN THE FLOOD PLAIN AS SHOWN ON A FLOOD INSURANCE RATE MAP (FIRM), MAP NUMBER 42091C0377G, EFFECTIVE DATE MARCH 2, 2016.
10. PERMANENT REMOVAL OF TOPSOIL FROM LAND WITHIN WHITEMARSH TOWNSHIP IS PROHIBITED.

LOT SUMMARY

LOT	AREA (SF)	*AREA (AC)*
WHITEMARSH TOWNSHIP LOT A	23,915.16	0.549
WHITEMARSH TOWNSHIP LOT B	41,449.22	0.952
WHITEMARSH TOWNSHIP LOT C (VC-3 ZONE)	12,268.54	0.282
WHITEMARSH TOWNSHIP LOT C (B ZONE)	45,803.00	1.051
TOTAL WHITEMARSH TOWNSHIP	123,435.92	2.834
SPRINGFIELD TOWNSHIP (LOT A)	390,492.72	8.964
SPRINGFIELD TOWNSHIP (LOT B)	321,647.16	7.384
SPRINGFIELD TOWNSHIP (LOT C)	194,633.28	4.468
TOTAL SPRINFIELD TOWNSHIP	906,773.16	20.817
TOTAL TRACT	1,030,209.08	23.650

NOTE: LOCATION OF ALL PROPERTY LINES AND ZONE LINES ARE APPROXIMATE ONLY AND HAVE BEEN APPROXIMATED BASED ON IMAGES OF THE REFERENCED PRIOR APPROVED PLANS FOR THIS SHOPPING CENTER*.

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TICKET #:



LANDCORE
Engineering Consultants, P.C.
PO BOX 27303 #6297
PHILADELPHIA, PENNSYLVANIA 19101-6635
PHONE 215-826-2510 | FAX 215-826-2511
LANDCORECONSULTING.COM

REV.	DATE	COMMENT	JDB	BY
1	2021-10-21	PER TWP COMMENTS		

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
D. ALEXANDER TWEEDIE
ENGINEER
No. PE071873

D. ALEXANDER TWEEDIE
PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE No. 071873

NOT FOR CONSTRUCTION

PROJECT No: 140065 | DRAWN BY: MAR | CHECKED BY: DAT | CAD I.D. #: 02_RP_140065

PROJECT: PROPOSED INDUSTRIAL REDEVELOPMENT
1890 BETHLEHEM PIKE, FLOURTOWN PA 19031
SPRINGFIELD TOWNSHIP AND WHITEMARSH TOWNSHIP
MONTGOMERY COUNTY, PA

APPLICANT: FEDERAL REALTY INVESTMENT TRUST

TITLE: RECORD PLAN

DATE: 2021-03-04

SHEET: 02 of 13 | REV. No. 1

RP

D:\DROPBOX (LANDCORE)\PROJECTS\2014\140065 - FEDERAL REALTY - FLOURTOWN PA\DRAWINGS\00-SITE PLANS\02_RP_140065.DWG
JASON MARMELLO @ 2021-10-26 - 7:00 AM

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TICKET #:

BETHLEHEM PIKE
S.R. 2018

EXISTING MULTI-TENANT BUILDING
PROPOSED BANK
2,450 SF
EXISTING McDONALDS
EXISTING RETAIL STORES
EXISTING MOVIE THEATER
EXISTING BANK
EXISTING SUPERMARKET

PARKING TOTAL
694 STALLS

PEDESTRIAN AND VEHICULAR CIRCULATION IMPROVEMENTS ARE SHOWN CONCEPTUALLY AND ARE NOT TO BE CONSIDERED THE FINAL DESIGN. THE APPLICANT AGREES TO WORK WITH THE SPRINGFIELD TOWNSHIP, UNDER A SEPARATE AND STAND-ALONE, PROCESS TO IMPLEMENT PEDESTRIAN AND CIRCULATION IMPROVEMENTS IN GENERAL CONFORMANCE WITH THIS CONCEPT. THE APPROVAL OF THE PROPOSED BANK PAD SHALL BE IN NO WAY BE AFFECTED OR CONDITIONED UPON THE IMPLEMENTATION OF THESE IMPROVEMENTS.

WHITEMARSH TOWNSHIP
SPRINGFIELD TOWNSHIP
ZONING DISTRICT "A"
ZONING DISTRICT "S"
ZONING DISTRICT "B-2"
ZONING DISTRICT "D"
B DISTRICT
VC-3 DISTRICT
S DISTRICT

SPRINGFIELD AVENUE
LEGAL R.O.W.
ULTIMATE R.O.W.
15'x35' SIGHT TRIANGLE
REBAR W/CAP TO BE SET
I. PIPE FD.
I. PIPE FD. & HELD

211 STALLS
318 STALLS
72 STALLS
62 STALLS
31 STALLS

GRAPHIC SCALE
60 0 30 60 120 240
1 INCH = 60 FEET

REV.	DATE	COMMENT	BY
1	2021-10-21	PER TWP. COMMENTS	

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
D. ALEXANDER TWEEDIE
No. PE071873
PENNSYLVANIA

D. ALEXANDER TWEEDIE
PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE No. 071873

NOT FOR CONSTRUCTION

PROJECT No: 140065
DRAWN BY: MAR
CHECKED BY: DAT
CAD I.D. #: 03_OA_140065

LANDCORE
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PO BOX 73525 #52287
PHILADELPHIA, PENNSYLVANIA 19101-4635
PHONE 215-832-2510 | FAX 215-832-2428
LANDCORECONSULTING.COM

PROJECT: PROPOSED INDUSTRIAL REDEVELOPMENT
1990 BETHLEHEM PIKE, FLORTOWN PA 19031
SPRINGFIELD TOWNSHIP AND WHITEMARSH TOWNSHIP
MONTGOMERY COUNTY, PA

APPLICANT: FEDERAL REALTY INVESTMENT TRUST

TITLE: OVERALL SITE PLAN

DATE: 2021-03-04

SHEET: 03 of 13 | REV. No: 1

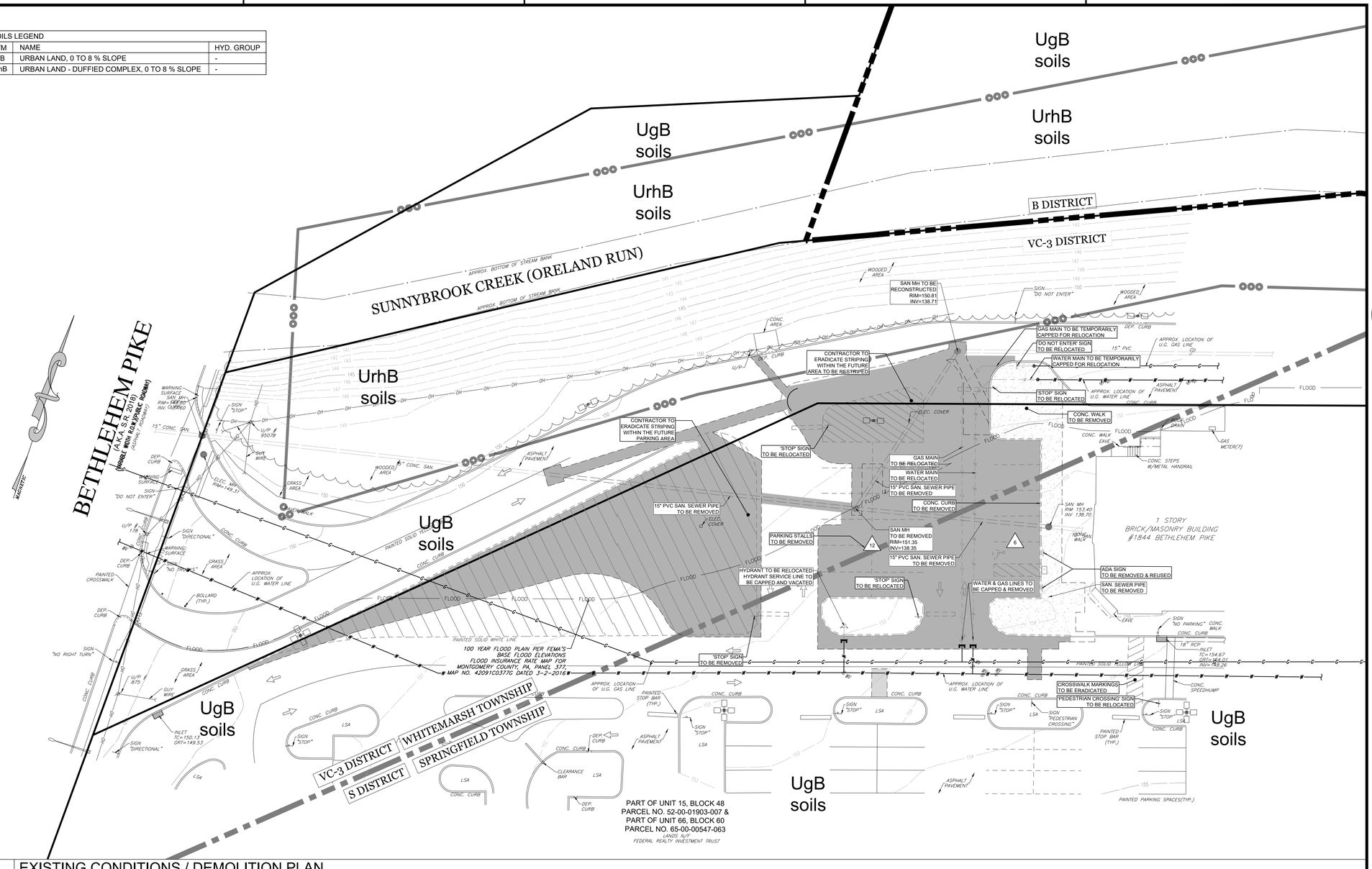
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JAQUA\MAR@LDP @ 2021-10-28 - 10:10 AM

EXISTING CONDITIONS/DEMOLITION NOTES

1. NEITHER LANDCORE ENGINEERING CONSULTANTS, P.C. NOR THE OWNER IS RESPONSIBLE FOR JOB SITE SAFETY OR SUPERVISION. CONTRACTOR IS TO PROCEED WITH THE DEMOLITION IN A SYSTEMATIC AND SAFE MANNER, FOLLOWING ALL OSHA, STATE, AND MUNICIPAL REQUIREMENTS, TO ENSURE PUBLIC AND CONTRACTOR SAFETY.
2. ALL DEMOLITION ACTIVITIES ARE TO BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AS WELL AS ALL FEDERAL, STATE, AND LOCAL REGULATIONS. ANY DISCREPANCIES OR DEVIATIONS SHALL BE IDENTIFIED BY THE CONTRACTOR TO LANDCORE ENGINEERING CONSULTANTS, P.C. IN WRITING FOR RESOLUTION PRIOR TO INITIATION OF SITE ACTIVITY.
3. THIS DEMOLITION PLAN IS INTENDED TO IDENTIFY THOSE EXISTING ITEMS / CONDITIONS WHICH ARE TO BE REMOVED. IT IS NOT INTENDED TO PROVIDE ANY OTHER DIRECTION. ALL DEMOLITION MEANS AND METHODS ARE TO BE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, LOCAL AND JURISDICTIONAL REQUIREMENTS.
4. PRIOR TO STARTING ANY DEMOLITION, CONTRACTOR IS RESPONSIBLE TO / FOR THE FOLLOWING:
   - 4.1. ENSURING COPIES OF ALL APPLICABLE PERMITS AND APPROVALS ARE MAINTAINED ON SITE AND AVAILABLE FOR REVIEW.
   - 4.2. INSTALLING THE REQUIRED SOIL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO SITE DISTURBANCE.
   - 4.3. THE CONTRACTOR SHALL USE AND COMPLY WITH THE REQUIREMENTS OF THE NATIONAL UTILITY NOTIFICATION SYSTEM (811) TO LOCATE ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCEMENT OF ANY WORK. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRS OF DAMAGE TO ANY EXISTING UTILITIES DURING CONSTRUCTION AT NO COST TO THE OWNER.
   - 4.4. PROTECTING AND MAINTAINING IN OPERATION, ALL ACTIVE UTILITIES AND SYSTEMS THAT ARE NOT BEING REMOVED DURING THE DEMOLITION ACTIVITIES.
   - 4.5. FAMILIARIZING THEMSELVES WITH THE APPLICABLE UTILITY SERVICE PROVIDERS AND IS RESPONSIBLE FOR ALL COORDINATION REGARDING ANY TEMPORARY OR PERMANENT DISCONNECTION, REMOVAL AND/OR RELOCATION OF UTILITIES FOR ANY DEMOLITION REQUIRED FOR THE PROJECT. THE CONTRACTOR SHALL PROVIDE THE OWNER WRITTEN NOTIFICATION THAT THE EXISTING UTILITIES AND SERVICES HAVE BEEN TERMINATED AND ABANDONED IN ACCORDANCE WITH JURISDICTION AND UTILITY COMPANY REQUIREMENTS.
   - 4.6. COORDINATION WITH UTILITY COMPANIES REGARDING WORKING 'OFF-PEAK' HOURS OR ON WEEKENDS AS MAY BE REQUIRED TO MINIMIZE THE IMPACT OF THE AFFECTED PARTIES.
   - 4.7. CONTACTING THE APPROPRIATE UTILITY OWNERS TO DISCONNECT EXISTING UTILITY SERVICES TO BUILDINGS/STRUCTURES SCHEDULED FOR DEMOLITION.
   - 4.8. AN INSPECTION AND ASSESSMENT BY A LICENSED ENVIRONMENTAL TESTING AGENCY OF ANY HAZARDOUS MATERIALS WITHIN THE BUILDINGS AND / OR STRUCTURES REQUIRED TO BE ABATED OR REMOVED IN ACCORDANCE WITH FEDERAL, STATE, OR LOCAL LAWS PRIOR TO DEMOLITION. THE INSPECTION AND ASSESSMENT SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL ENVIRONMENTAL REGULATIONS. ALL ENVIRONMENTAL WORK INCLUDING REMEDIATION, ABATEMENT OR REMOVAL OF HAZARDOUS MATERIALS, SOILS, ASBESTOS, LEAD-BASED PAINT, OR ANY OTHER ENVIRONMENTAL WORK REQUIRED SHALL BE OVERSEEN BY A LICENSED ENVIRONMENTAL CONSULTANT AND PERFORMED BY LICENSED TRADES.
5. THE CONTRACTOR SHALL PROVIDE ALL THE 'MEANS AND METHODS' NECESSARY TO PREVENT MOVEMENT, SETTLEMENT OR COLLAPSE OF EXISTING STRUCTURES OR ANY OTHER IMPROVEMENTS THAT ARE REMAINING ON OR OFF THE SITE. THE DEMOLITION CONTRACTOR IS RESPONSIBLE FOR ALL REPAIRS OF DAMAGE TO ALL ITEMS THAT ARE TO REMAIN AS A RESULT OF THEIR ACTIVITIES. ALL REPAIRS SHALL USE NEW MATERIAL. THE REPAIRS SHALL RESTORE THE ITEM TO THE PRE-DEMOLITION CONDITION.
6. IN THE ABSENCE OF SPECIFICATIONS, THE CONTRACTOR SHALL PERFORM EARTH MOVEMENT ACTIVITIES, DEMOLITION AND REMOVAL OF ALL FOUNDATION WALLS, FOOTINGS, AND OTHER MATERIALS WITHIN THE LIMITS OF DISTURBANCE IN ACCORDANCE WITH DIRECTION BY THE OWNER'S STRUCTURAL OR GEOTECHNICAL ENGINEER.
7. EXPLOSIVES SHALL NOT BE USED WITHOUT PRIOR WRITTEN AUTHORIZATION OF BOTH THE OWNER AND APPLICABLE GOVERNMENTAL AUTHORITIES. ALL THE REQUIRED PERMITS AND EXPLOSIVE CONTROL MEASURES THAT ARE REQUIRED BY THE FEDERAL, STATE, AND LOCAL GOVERNMENTS SHALL BE IN PLACE PRIOR TO STARTING AN EXPLOSIVE PROGRAM. THE CONTRACTOR IS ALSO RESPONSIBLE FOR ALL INSPECTION AND SEISMIC VIBRATION TESTING THAT IS REQUIRED TO MONITOR THE EFFECTS ON ALL LOCAL STRUCTURES.
8. CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL AND GENERALLY ACCEPTED SAFE PRACTICES IN CONFORMANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL' AS WELL AS FEDERAL, STATE AND LOCAL REGULATIONS WHEN DEMOLITION RELATED ACTIVITIES IMPACT ROADWAYS OR ROADWAY RIGHTS OF WAY.
9. CONTRACTOR SHALL CONDUCT DEMOLITION ACTIVITIES IN SUCH A MANNER TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, SIDEWALKS, WALKWAYS, AND OTHER ADJACENT FACILITIES. STREET/SIDEWALK CLOSURE PERMITS MUST BE RECEIVED FROM THE APPROPRIATE GOVERNMENTAL AUTHORITY.
10. DEMOLITION ACTIVITIES AND EQUIPMENT SHALL NOT USE AREAS OUTSIDE THE DEFINED PROPERTY LINE OR APPROVED LIMITS OF DISTURBANCE FOR THE PROJECT WITHOUT WRITTEN PERMISSION OF THE OWNER AND / OR APPROPRIATE GOVERNMENT AGENCY.
11. CONTRACTOR SHALL UTILIZE APPROPRIATE DUST CONTROL MEASURES TO LIMIT AIRBORNE DUST AND DIRT RISING AND SCATTERING IN THE AIR IN ACCORDANCE WITH FEDERAL, STATE AND / OR LOCAL STANDARDS. AFTER THE DEMOLITION IS COMPLETE, ADJACENT STRUCTURES AND IMPROVEMENTS SHALL BE CLEANED OF ALL DUST AND DEBRIS CAUSED BY THE DEMOLITION OPERATIONS. THE CONTRACTOR IS RESPONSIBLE FOR RETURNING ALL ADJACENT AREAS TO THEIR 'PRE-DEMOLITION' CONDITION.
12. CONTRACTOR IS RESPONSIBLE TO SAFEGUARD AND SECURE THE SITE AS NECESSARY TO PERFORM THE DEMOLITION IN SUCH A MANNER AS TO PREVENT THE ENTRY OF UNAUTHORIZED PERSONS AT ANY TIME.
13. DEBRIS SHALL NOT BE BURIED ON THE SUBJECT SITE (CRUSHED STONE/CONCRETE CERTIFIED AND USED AS CLEAN FILL SHALL BE EXCLUDED). ALL DEMOLITION WASTES AND DEBRIS (SOLID WASTE) SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, COUNTY AND LOCAL LAWS, REGULATIONS, AND CODES.
14. ALL EXISTING UTILITIES SHALL BE REMOVED BY CONTRACTOR IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS.

SOILS LEGEND		
SYM	NAME	HYD. GROUP
UgB	URBAN LAND, 0 TO 8 % SLOPE	-
UrhB	URBAN LAND - DUFFIED COMPLEX, 0 TO 8 % SLOPE	-



C2 EXISTING CONDITIONS / DEMOLITION PLAN

SCALE: 1" = 20'

EXISTING CONDITIONS / DEMOLITION PLAN LEGEND

- ITEM TO BE REMOVED
- PROPERTY LINE (PIQ)
- ZONE LINE
- MUNICIPALITY LINE
- SOILS TYPE BOUNDARY LINE
- TREELINE
- SAWCUT LIMITS
- BUILDING EAVE / OVERHANG
- OVERHEAD WIRES
- GAS SERVICE
- GAS SERVICE (TBR)
- SANITARY MAIN
- SANITARY MAIN (TBR)
- WATER MAIN / LATERAL
- WATER MAIN / LATERAL (TBR)
- MAJOR CONTOUR
- MINOR CONTOUR
- STORM SEWER MAIN
- 100 YR — 100 YEAR FLOODPLAIN
- STREAM BANK

Know what's below. Call before you dig
PENNSYLVANIA ONE CALL
DIAL 811 or 800.242.1776
PA1CALL.org
TICKET #:

GRAPHIC SCALE 20 0 10 20 40 80 — 1 INCH = 20 FEET

REV.	DATE	COMMENT	BY
1	2021-10-21	PER TWP COMMENTS	

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — D. ALEXANDER TWEEDIE — ENGINEER — No. PE071873

D. ALEXANDER TWEEDIE
PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE No. 071873

NOT FOR CONSTRUCTION

PROJECT No: 140165
DRAWN BY: MAR
CHECKED BY: DAT
CAD I.D. #: 04_ECD_140165

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PROJECT: PROPOSED INDUSTRIAL REDEVELOPMENT
1690 BETHLEHEM PIKE, FLOURTOWN PA 19031
SPRINGFIELD TOWNSHIP AND WHITEMARSH TOWNSHIP
MONTGOMERY COUNTY, PA

APPLICANT: FEDERAL REALTY INVESTMENT TRUST

TITLE: EXISTING CONDITIONS / DEMOLITION PLAN

DATE: 2021-03-04

SHEET: 04 of 13 | REV. No: 1

ECD

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JASON BRINKERHOFF @ 2021-10-21 - 10:29:21 AM

EROSION / SEDIMENT CONTROL PLAN STANDARD NOTES

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
2. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING.
3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
5. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
6. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
7. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAPS(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H:1V OR FLATTER.
9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
10. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1, AND 287.1 ET SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
11. ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
12. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL, AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.
13. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN OVER UNDISTURBED VEGETATIVE AREAS.
14. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
15. A LOG SHOWING DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
16. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
17. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
18. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES. 6 TO 12 INCHES ON COMPACTED SOILS - PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
19. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
20. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS
21. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
22. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
23. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
24. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
25. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.
26. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS. DURING NON-GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
27. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
28. E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
29. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPS.
30. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPS. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPS SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.
31. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
32. FAILURE TO CORRECTLY INSTALL E&S BMPS, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPS MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO $10,000 PER DAY IN CIVIL PENALTIES, UP TO $10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO $25,000 IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.
33. CONCRETE WASH WATER SHALL BE HANDLED IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS. IN NO CASE SHALL IT BE ALLOWED TO ENTER ANY SURFACE WATERS OR GROUNDWATER SYSTEMS.
34. THE CONTRACTOR IS REQUIRED TO IMPLEMENT APPROPRIATE DUST CONTROL MEASURES ON SITE IN ACCORDANCE WITH PADEP GUIDELINES. SUCH MEASURE SHALL INCLUDE, BUT NOT BE LIMITED TO, SPRINKLING/IRRIGATION, VEGETATIVE COVER, MULCH, WIND BREAKS, STONE OR SPRAY-ON CHEMICAL SOIL TREATMENTS.

RECYCLING AND DISPOSAL OF CONSTRUCTION WASTES

1. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1., AND 287.1 ET SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
2. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE REMOVAL OF ANY EXCESS MATERIAL AND MAKE SURE THE SITE(S) RECEIVING THE EXCESS HAS AN APPROVED AND FULLY IMPLEMENTED EROSION AND SEDIMENT CONTROL PLAN THAT MEETS THE CONDITIONS OF CHAPTER 102 AND/OR OTHER STATE OR FEDERAL REGULATIONS. CONCRETE WASH WATER SHALL BE CONTROLLED TO PROJECT AREAS THAT WILL RECEIVE CONCRETE PAVING AS PART OF THE PROJECT'S PROPOSED CONDITIONS.
3. CONCRETE WASH WATER SHALL BE CONTROLLED AT ALL TIMES AND SHALL NOT BE PERMITTED TO ENTER INTO THE STORMWATER RUNOFF FROM THE PROJECT SITE.
4. IN THE EVENT OF A SINK FORMATION, UNDER THE SUPERVISION OF A PROFESSIONAL GEOLOGIST OR A LICENSED GEOTECHNICAL ENGINEER, MATERIAL DEEMED UNSUITABLE FOR BACKFILL MUST BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION'S (PADEP) SOLID WASTE MANAGEMENT REGULATIONS.

UTILITY LINE TRENCH EXCAVATION NOTES

1. LIMIT ADVANCED CLEARING AND GRUBBING OPERATIONS TO A DISTANCE EQUAL TO THE TIME THE LENGTH OF PIPE INSTALLATION THAT CAN BE COMPLETED IN ONE DAY.
2. WORK CREWS AND EQUIPMENT FOR TRENCHING, PLACEMENT OF PIPE, PLUG CONSTRUCTION AND BACKFILLING WILL BE SELF CONTAINED AND SEPARATE FROM CLEARING AND GRUBBING AND SITE RESTORATION AND STABILIZATION OPERATIONS.
3. ALL SOIL EXCAVATED FROM THE TRENCH WILL BE PLACED ON THE UPHILL SIDE OF THE TRENCH.
4. LIMIT DAILY TRENCH EXCAVATION TO THE LENGTH OF PIPE PLACEMENT, PLUG INSTALLATION AND BACKFILLING THAT CAN BE COMPLETED THE SAME DAY.
5. WATER WHICH ACCUMULATES IN THE OPEN TRENCH WILL BE COMPLETELY REMOVED BY PUMPING BEFORE PIPE PLACEMENT AND / OR BACKFILLING BEGINS. WATER REMOVED FROM THE TRENCH SHALL BE PUMPED THROUGH A FILTRATION DEVICE.
6. ON THE DAY FOLLOWING PIPE PLACEMENT AND TRENCH BACKFILLING, THE DISTURBED AREA WILL BE GRADED TO FINAL CONTOURS AND IMMEDIATELY STABILIZED.
7. SOILS EXCAVATED FROM EXISTING SURFACE LAYER SHOULD BE STOCKPILED SEPARATELY AND RETURNED AS FINAL SURFACE LAYER FOLLOWING TRENCH BACKFILLING.

MINIMIZE EXTENT AND DURATION OF EARTH DISTURBANCE

THE FOLLOWING PLAN SHALL BE IMPLEMENTED THROUGH CONSTRUCTION TO MINIMIZE ACCELERATED EROSION AND SEDIMENTATION DURING EARTH DISTURBANCE ACTIVITIES BY MINIMIZING THE AMOUNT OF EXISTING VEGETATIVE COVER TO BE REMOVED, AND BY PROVIDING TEMPORARY AND PERMANENT STABILIZATION MEASURES ON DISTURBED AREAS AS SOON AS PRACTICABLE. THE PRIMARY CONTROL FOR CAPTURING SEDIMENT BEFORE LEAVING THE SITE WILL BE SEDIMENT BARRIERS AND SEDIMENT TRAP. THE AMOUNT OF DISTURBED AREA AND THE DURATION OF EXPOSURE SHALL BE KEPT TO A PRACTICAL MINIMUM AND THE PERMANENT VEGETATION AND STORMWATER CONTROL SYSTEMS WILL BE INSTALLED AS SOON AS POSSIBLE TO PREVENT EROSION AND THEREFORE MINIMIZE THE AMOUNT OF SEDIMENT TO BE CONTROLLED.

CONSTRUCTION WILL BEGIN ONLY AFTER THE EROSION AND SEDIMENT CONTROLS HAVE BEEN INSTALLED.

MAXIMIZE PROTECTION OF EXISTING DRAINAGE FEATURES AND VEGETATION

EXISTING DRAINAGE FEATURES AND VEGETATION WILL BE PROTECTED DURING CONSTRUCTION BY ENSURING THE EROSIONS AND SEDIMENT CONTROL BMPS REMAIN IN PLACE AND OPERATIONAL FOR THE ENTIRE DURATION OF THE CONSTRUCTION. SEDIMENT BARRIERS WILL PREVENT SILT LADEN RUNOFF FROM LEAVING THE SITE.

MINIMIZE SOIL COMPACTION

SOIL COMPACTION WILL BE MINIMIZED DURING CONSTRUCTION BY KEEPING THE CONSTRUCTION ACTIVITIES WITHIN THE LIMITS OF DISTURBANCE.

OTHER MEASURES OR CONTROLS THAT PREVENT OR MINIMIZE GENERATION OF INCREASED STORMWATER RUNOFF

BY MINIMIZING THE AMOUNT OF EXISTING VEGETATIVE COVER TO BE REMOVED, AND BY PROVIDING TEMPORARY AND PERMANENT STABILIZATION MEASURES ON DISTURBED AREAS AS SOON AS PRACTICABLE, RUNOFF WILL BE MINIMIZED DURING CONSTRUCTION.

THERMAL IMPACTS DURING CONSTRUCTION AND MITIGATION

BY MINIMIZING THE AMOUNT OF EXISTING VEGETATIVE COVER TO BE REMOVED, AND BY PROVIDING TEMPORARY AND PERMANENT STABILIZATION MEASURES ON DISTURBED AREAS AS SOON AS PRACTICABLE, RUNOFF WILL BE MINIMIZED DURING CONSTRUCTION, WHICH IN TURN WILL MINIMIZE THERMAL IMPACTS.

RECEIVING SURFACE WATERS

TRIB. TO WISSAHICKON CREEK - DESIGNATED AND EXISTING USE : TSF - MF

GEOLOGICAL FORMATIONS / SOIL CONDITIONS

THE SITE IS LOCATED IN AN AREA KNOWN FOR NATURALLY OCCURRING GEOLOGICAL FORMATIONS OR SOIL CONDITIONS THAT MAY HAVE THE POTENTIAL TO CAUSE POLLUTION DURING EARTH DISTURBANCE ACTIVITIES. IN THE EVENT ANY GEOLOGICAL FORMATION OR SOIL CONDITIONS ARE DISCOVERED DURING CONSTRUCTION, THE PERMITTEE SHALL NOTIFY THE ENGINEER OF RECORD AND COUNTY CONSERVATION DISTRICT FOR ACTIONS TO BE TAKEN.

SEQUENCE OF CONSTRUCTION

- ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. EACH STEP SHALL BE COMPLETED BEFORE ANY FOLLOWING STEP IS INITIATED. CLEARING AND GRUBBING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH STEP.
- AN ON-SITE PRE-CONSTRUCTION MEETING IS REQUIRED TO OCCUR NO LESS THAN 7-DAYS PRIOR TO ANY EARTH DISTURBANCE UNLESS NOTIFIED OTHERWISE BY THE COUNTY CONSERVATION DISTRICT. PERMITTEES, CO-PERMITTEES, OPERATORS, ALL APPROPRIATE MUNICIPAL OFFICIALS, REPRESENTATIVES FROM THE COUNTY CONSERVATION DISTRICT AND LICENSED PROFESSIONALS OR DESIGNEES RESPONSIBLE FOR THE EARTH DISTURBANCE ACTIVITY, INCLUDING IMPLEMENTATION OF E&S AND PCSM PLANS AND CRITICAL STAGES OF IMPLEMENTATION OF THE APPROVED PCSM PLAN, SHALL ATTEND A PRE-CONSTRUCTION MEETING.
- CESSATION OF ACTIVITY LONGER THAN 4 DAYS REQUIRES TEMPORARY STABILIZATION.
- NO MORE THAN 15,000 SQUARE FEET OF DISTURBED AREA REACH FINAL GRADE BEFORE INITIATING SEEDING AND MULCHING OPERATIONS

1. INSTALL CONSTRUCTION ENTRANCE (CE). REMOVE ENOUGH PAVEMENT TO INSTALL CE.
2. INSTALL SEDIMENT BARRIERS, CONCRETE WASHOUT AND INLET FILTER.
3. UPON THE INSTALLATION OR STABILIZATION OF ALL PERIMETER SEDIMENT CONTROL BMPS AND AT LEAST 3 DAYS PRIOR TO PROCEEDING WITH THE BULK EARTH DISTURBANCE ACTIVITIES, THE PERMITTEE OR CO-PERMITTEE SHALL PROVIDE NOTIFICATION TO THE DEPARTMENT OR COUNTY CONSERVATION DISTRICT.
4. DEMOLISH ABOVEGROUND / UNDERGROUND FEATURES.
5. INITIATE NECESSARY SITE EARTHWORK TO ACHIEVE THE GRADES INDICATED ON THE DRAWINGS. ENSURE MAINTENANCE OF SEDIMENT CONTROL FACILITIES.
6. INITIATE BUILDING CONSTRUCTION.
7. CONTINUE WITH THE BALANCE OF THE EARTHWORK. MAINTAIN ALL E&S BMPS OPERATIONAL.
8. CONSTRUCT INFILTRATION TRENCH.
9. INSTALL STONE SUBBASE COURSE FOR ALL PAVEMENT AND CONCRETE AREAS.
10. INSTALL PERMANENT VEGETATION INCLUDING TREES, SHRUBS AND GRASSED AREAS.
11. PERMANENTLY STABILIZE DISTURBED AREAS. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER 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.
12. INSTALL BINDER COURSE FOR ALL PAVEMENT AND CONCRETE AREAS.
13. NOTIFY COUNTY CONSERVATION DISTRICT PRIOR TO THE CONVERSION OR REMOVAL OF PRIMARY E&S BMPS. THE DISTRICT MAY REQUIRE A SITE INSPECTION PRIOR TO THE CONVERSION OR REMOVAL OF SUCH FACILITIES.
14. UPON PERMANENT SITE STABILIZATION AND AUTHORIZATION FROM THE COUNTY CONSERVATION DISTRICT, REMOVE ALL EROSION AND SEDIMENT POLLUTION CONTROL BMPS (SEDIMENT BARRIER, INLET PROTECTION, ETC.). NATURAL DRAINAGE WAY BUFFER AREAS WITHIN THE LIMIT OF DISTURBANCE SHALL BE IMMEDIATELY STABILIZED UPON REMOVAL OF THE SEDIMENT BARRIERS. ANY AREA DISTURBED DURING THE REMOVAL OF THE EROSION AND SEDIMENT POLLUTION CONTROL BMPS MUST BE STABILIZED IMMEDIATELY. UPON COMPLETION OF ALL OTHER SITE CONSTRUCTION ACTIVITIES, INSTALL FINAL WEARING COURSE, SIGNAGE AND STRIPING. DEMOBILIZE.

SOIL EROSION AND SEDIMENT POLLUTION BMP MAINTENANCE PROGRAM

UNTIL THE SITE IS STABILIZED, ALL TEMPORARY EROSION AND SEDIMENT POLLUTION CONTROL BMPS MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT POLLUTION CONTROL BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. RECORDS OF EACH INSPECTION, NOTES OF DEFICIENCIES, AND THE CORRECTIVE ACTIONS TAKEN MUST BE KEPT AT THE PROJECT SITE FOR REVIEW BY THE ENGINEER OF RECORD, APPLICABLE COUNTY CONSERVATION DISTRICT AND/OR PADEP (AS APPLICABLE).

1. CONTRACTOR IS RESPONSIBLE TO CONSTRUCT AND MAINTAIN ALL REQUIRED EROSION AND SEDIMENT POLLUTION CONTROL BMPS THROUGHOUT THE CONSTRUCTION PROCESS. THE CONTRACTOR IS ALSO RESPONSIBLE TO INSPECT AND EVALUATE THE EFFECTIVENESS OF THE EROSION AND SEDIMENT POLLUTION CONTROL BMPS AND IMPLEMENT ANY ADDITIONAL BMPS REQUIRED TO CONTROL UNFORESEEN PROBLEMS ON THE SITE.
2. OWNER/DEVELOPER IS RESPONSIBLE TO ENSURE THAT THE CONTRACTOR CONDUCTS HIS OPERATIONS AND MAINTENANCE ACCORDING TO THE APPROVED EROSION AND SEDIMENT POLLUTION CONTROL PLAN.
3. OWNER AND/OR CONTRACTOR SHALL ASSIGN ONE INDIVIDUAL TO BE RESPONSIBLE FOR PROPER INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT POLLUTION CONTROL BMPS THROUGHOUT THE CONSTRUCTION PROCESS.
4. THIS PLAN REPRESENTS THE MINIMUM LEVEL OF IMPLEMENTATION OF EROSION AND SEDIMENT POLLUTION CONTROL BMPS. ADDITIONAL BMPS SHALL BE INSTALLED WHERE NECESSARY OR WHERE DIRECTED BY EITHER THE TOWNSHIP OR THE COUNTY CONSERVATION DISTRICT AS CONSTRUCTION PROGRESSES.
5. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT CONTROL BMPS MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT 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.
6. THE PERMITTEE AND CO-PERMITTEE MUST ENSURE THAT VISUAL SITE INSPECTIONS ARE CONDUCTED WEEKLY, AND AFTER EACH MEASURABLE PRECIPITATION EVENT BY QUALIFIED PERSONNEL, TRAINED AND EXPERIENCED IN EROSION AND SEDIMENT CONTROL, TO ASCERTAIN THAT THE EROSION AND SEDIMENT CONTROL (E&S) BMPS ARE OPERATIONAL AND EFFECTIVE IN PREVENTING POLLUTION TO THE WATERS OF THE COMMONWEALTH. A WRITTEN REPORT OF EACH INSPECTION SHALL BE KEPT, AND INCLUDE:

   1) A SUMMARY OF THE SITE CONDITIONS, E&S BMPS, AND COMPLIANCE; AND
   2) THE DATE, TIME, AND THE NAME OF THE PERSON CONDUCTING THE INSPECTION.

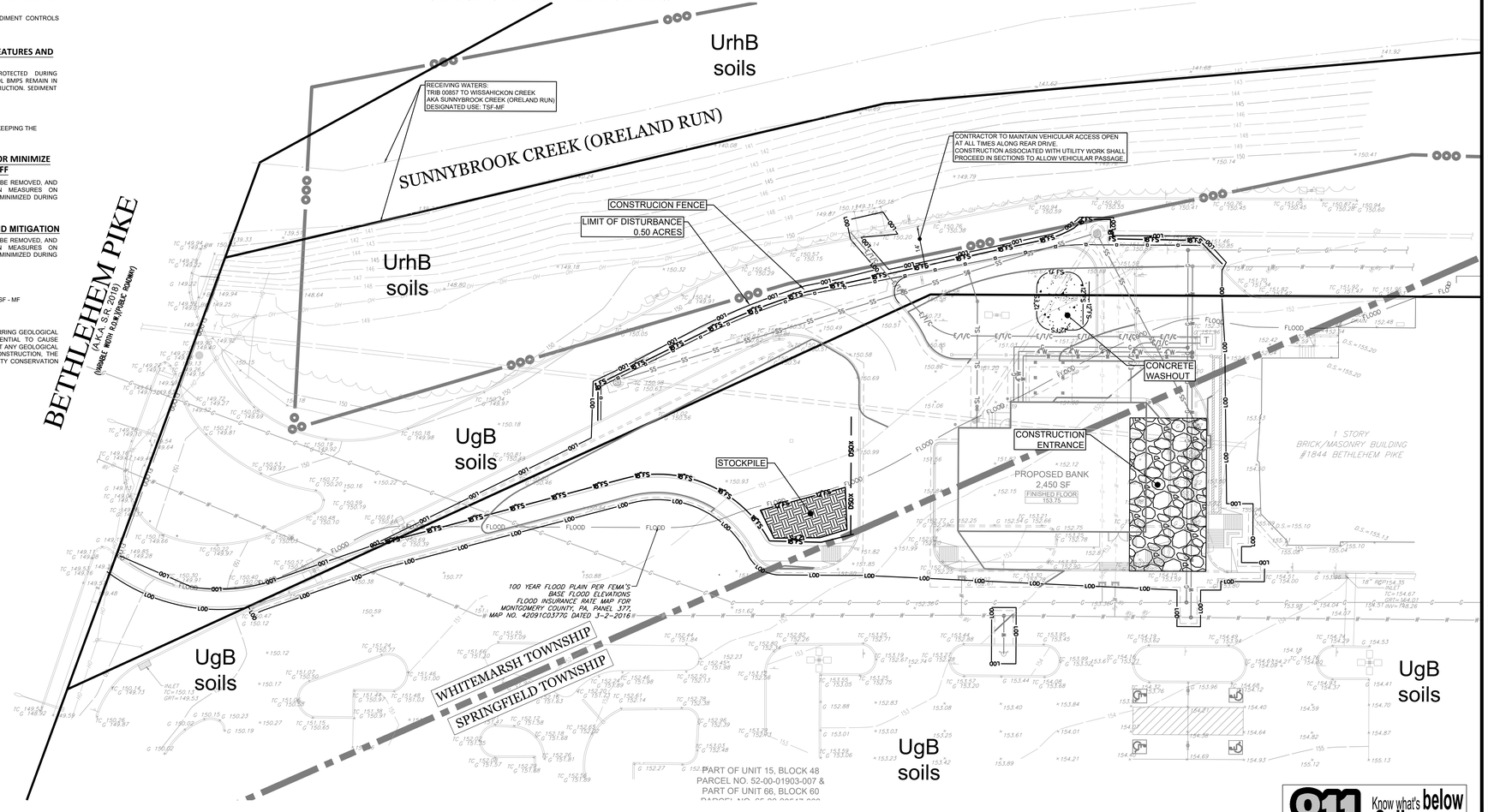
7. AFTER EACH RUNOFF EVENT, ALL TEMPORARY EROSION AND SEDIMENT POLLUTION CONTROL BMPS SHALL BE INSPECTED, CLEANED AND REPAIRED AS NECESSARY.
8. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN-OUT, REPAIR, REPLACEMENT, RE-GRADING, RE-SEEDING, RE-MULCHING AND RE-NETTING, MUST BE PERFORMED IMMEDIATELY.
9. IF THE INSTALLED EROSION AND SEDIMENT POLLUTION CONTROL BMPS FAIL TO PERFORM AS INTENDED, REPLACEMENT BMPS OR MODIFICATIONS OF THE INSTALLED BMPS WILL BE REQUIRED.
10. SHOULD ANY EROSION AND SEDIMENT POLLUTION CONTROL BMPS CONTAINED WITHIN THIS PLAN PROVE INCAPABLE OF ADEQUATELY REMOVING SEDIMENT FROM ON-SITE FLOWS PRIOR TO DISCHARGE (OR PRIOR TO STABILIZING THE PERMANENT SURFACES), ADDITIONAL MEASURES MUST BE IMMEDIATELY IMPLEMENTED TO ELIMINATE SUCH PROBLEMS.
11. CONTRACTOR SHALL SEPARATE WATER ORIGINATING OUTSIDE OF THE PROJECT BOUNDARY FROM WATER THAT ORIGINATING WITHIN THE PROJECT BOUNDARY.
12. CONTRACTOR SHALL REMOVE ACCUMULATED SEDIMENTS AS REQUIRED AND AT A MINIMUM PRIOR TO THE SEDIMENT REACHING ONE-HALF OF THE ABOVE GROUND HEIGHT OF THE SILT FENCE TO KEEP THE SILT FENCE FUNCTIONAL. REPAIR ALL UNDERCUTTING OR EROSION OF THE TOE ANCHOR IMMEDIATELY WITH COMPACTED BACKFILL MATERIALS.
13. ANY SEDIMENT BARRIER WHICH HAS BEEN UNDERMINED OR TOPPED SHALL BE REPLACED WITH ROCK FILTER OUTLETS IMMEDIATELY.
14. ROCK CONSTRUCTION ENTRANCE(S) THICKNESS MUST BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSION BY ADDING ROCK. A STOCKPILE OF ROCK MATERIAL MUST BE MAINTAINED ON THE PROJECT SITE FOR THIS PURPOSE. AT THE END OF EACH CONSTRUCTION DAY, ALL SEDIMENT DEPOSITED ON PUBLIC ROADWAYS MUST BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE. WASHING OF THE ROADWAY WITH WATER IS NOT PERMITTED UNLESS A VACUUM TRUCK IS UTILIZED FOR THIS PROCESS.
15. SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN LANDSCAPED AREAS OUTSIDE OF STEEP SLOPES, WETLANDS, WATERS OF THE COMMONWEALTH, POLLUTION CONTROL BMPS THROUGHOUT THE CONSTRUCTION PROCESS, AND PLACED IN TOPSOIL STOCKPILES.
16. CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING AN EROSION AND SEDIMENT POLLUTION CONTROL PLAN FOR ALL OFF-SITE BORROW AND WASTE AREAS. THIS PLAN MUST BE SUBMITTED TO THE ENGINEER OF RECORD, APPLICABLE COUNTY CONSERVATION DISTRICT, AND PADEP (AS REQUIRED) FOR REVIEW AND APPROVAL.
17. CONTRACTOR SHALL STABILIZE ALL OFF-SITE BORROW AND WASTE AREAS BY SEEDING AND MULCHING AS SPECIFIED IN THE APPROVED EROSION AND SEDIMENT POLLUTION CONTROL PLAN.
18. IF SIGNS OF BMPS FAILURE ARE NOTED, AN ENGINEER OR OTHER QUALIFIED PROFESSIONAL SHOULD BE CONTACTED.
19. MAINTENANCE OF THE PERMANENT STORMWATER CONTROL BMPS SHALL BE THE RESPONSIBILITY OF OWNER.

GRADING AND DRAINAGE PLAN LEGEND

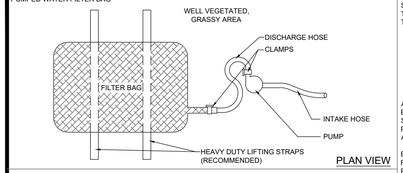
- MAJOR CONTOUR
- MINOR CONTOUR
- STORM SEWER MAIN
- PROP. MINOR CONTOUR
- E — E — E — PROP. ELECTRIC SERVICE
- E/T/C — E/T/C — PROP. ELECTRIC / TELCOM CONDUIT
- G — G — G — GAS SERVICE
- PROP. GAS SERVICE
- OH — OH — OH — OVERHEAD WIRES
- SANITARY MAIN
- SS — SS — SS — PROP. SANITARY MAIN / LATERAL
- SL — SL — SL — PROP. SANITARY LATERAL
- SS — SS — SS — PROP. SANITARY LATERAL
- W — W — W — WATER MAIN / LATERAL
- W — W — W — PROP. WATER MAIN / LATERAL
- WL — WL — WL — PROP. WATER LATERAL
- WW — WW — PROP. WATER LATERAL
- 4"W — 4"W — 4"W — PROP. 4" WATER SERVICE
- SAWCUT LIMITS
- PROPERTY LINE (PIQ)
- MUNICIPALITY LINE
- 100 YR — 100 YEAR FLOODPLAIN
- 100 YR — PROPOSED 100 YEAR FLOODPLAIN
- STREAM BANK
- TREELINE

EROSION & SEDIMENT CONTROL LEGEND

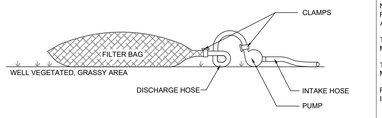
- CONSTRUCTION ENTRANCE
- STOCKPILE
- LOD — LIMIT OF DISTURBANCE
- 12"FS — 12"FS — 12" COMPOST FILTER SOCK
- 18"FS — 18"FS — 18" COMPOST FILTER SOCK
- INLET FILTER
- CONCRETE WASHOUT AREA


UrhB soils
UgB soils
RECEIVING WATERS:
TRIB 00857 TO WISSAHICKON CREEK
AKA SUNNYBROOK CREEK (ORELAND RUN)
DESIGNATED USE: TSF-MF
SUNNYBROOK CREE

STANDARD CONSTRUCTION DETAIL # 3-16
PUMPED WATER FILTER BAG



PLAN VIEW



ELEVATION VIEW

NOTES:
LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 LB/IN
GRAB TENSILE	ASTM D-4632	205 LB
PUNTURE	ASTM D-4833	110 LB
MULLEN BURST	ASTM D-3786	350 PSI
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-4751	80 SIEVE

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME ½ FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

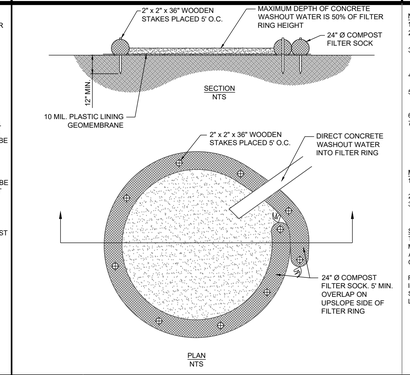
NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR ½ THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

A1 PUMPED WATER FILTER BAG
NOT TO SCALE



NOTES:
1. INSTALL ON FLAT GRADE FOR OPTIMUM PERFORMANCE.
2. 18" Ø FILTER SOCK MAY BE STACKED ONTO DOUBLE 24" Ø SOCKS IN PYRAMIDAL CONFIGURATION FOR ADDED HEIGHT.
3. A SUITABLE IMPERVIOUS GEOMEMBRANE SHALL BE PLACED AT THE LOCATION OF THE WASHOUT PRIOR TO INSTALLING THE SOCKS. THE GEOMEMBRANE SHALL HAVE NO HOLES OR TEARS TO PREVENT LEACHING OF LIQUIDS INTO THE GROUND.
4. CONCRETE WASHOUTS SHALL NOT BE PLACED WITHIN 50' OF STORM DRAINS, OPEN DITCHES OR SURFACE WATERS.
5. COMPOST SOCKS SHOULD BE STAKED IN THE MANNER RECOMMENDED BY THE MANUFACTURER AROUND PERIMETER OF THE GEOMEMBRANE SO AS TO FORM A RING WITH THE ENDS OF THE SOCK LOCATED AT THE UPSLOPE CORNER .
6. PROVIDE PROPER SIGNAGE TO DRIVERS SO THAT THEY ARE AWARE OF THE PRESENCE OF WASHOUT FACILITIES.
7. SEDIMENT BASINS AND SEDIMENT TRAPS MAY NOT BE USED AS CONCRETE WASHOUT DEVICES, SINCE THEY DISCHARGE DIRECTLY TO SURFACE WATERS. THIS DISCHARGE WOULD HAVE AN ADVERSE EFFECT UPON THE RECEIVING WATER. IN ADDITION, CONTINUED USE OF A BASIN OR TRAP AS A WASHOUT FACILITY WOULD SIGNIFICANTLY REDUCE THE STORAGE CAPACITY OF THE BASIN OR TRAP.

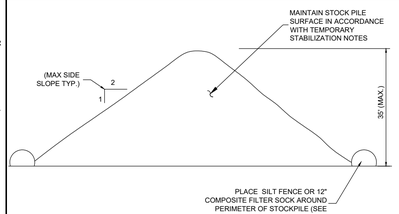
MAINTENANCE:
1. ALL CONCRETE WASHOUT FACILITIES SHOULD BE INSPECTED DAILY. DAMAGED OR LEAKING WASHOUTS SHOULD BE DEACTIVATED AND REPAIRED OR REPLACED IMMEDIATELY.
2. ACCUMULATED MATERIALS SHOULD BE REMOVED WHEN THEY REACH 75% CAPACITY.
3. PLASTIC LINERS SHOULD BE REPLACED WITH EACH CLEANING OF THE WASHOUT FACILITY.

SELF-INSTALLED WASHOUTS (ALTERNATE):
THESE TYPES OF WASHOUTS SHOULD BE EXCAVATED BELOW GRADE TO PREVENT RUNOFF OF THE WASH WATER AND MINIMIZE THE POTENTIAL FOR BREACHING. THEY SHOULD BE SIZED TO HANDLE SOLIDS, WASH WATER, AND RAINFALL. A GOOD RULE OF THUMB IS THAT 7 GALLONS OF WASH WATER ARE REQUIRED TO WASH ONE TRUCK CHUTE AND 50 GALLONS FOR THE HOPPER OF A CONCRETE PUMP TRUCK.

FOR LARGER SITES, A BELOW-GRADE WASHOUT SHOULD BE A MINIMUM OF 10 FEET WIDE AND PROVIDE AT LEAST 12 INCHES OF FREEBOARD ABOVE THE LIQUID AND SOLID WASTE ANTICIPATED BETWEEN CLEANOUT INTERVALS. THE PIT SHOULD BE LINED WITH PLASTIC SHEETING OF AT LEAST 10-MIL THICKNESS (WITH NO HOLES OR TEARS) TO PREVENT LEACHING OF LIQUIDS INTO THE GROUND.

A3 TYPICAL COMPOST SOCK CONCRETE WASHOUT INSTALLATION
NOT TO SCALE

2019-03-01 / LEC STD



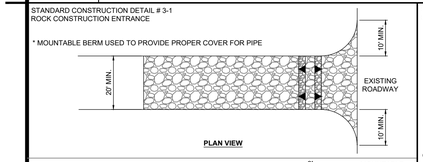
CUBIC YARDS OF TOPSOIL REQUIRED FOR APPLICATION TO VARIOUS DEPTHS

DEPTH (IN)	PER 1,000 SQUARE FEET	PER ACRE
1	3.1	134.00
2	6.2	268.00
3	9.3	403.00
4	12.4	537.00
5	15.5	672.00
6	18.6	806.00
7	21.7	940.00
8	24.8	1074.00

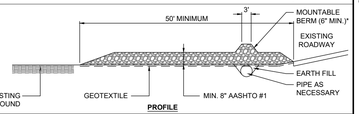
TOPSOIL APPLICATION
- GRADED AREAS SHOULD BE SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES TO PERMIT BONDING OF THE TOPSOIL TO THE SURFACE AREAS AND TO PROVIDE A ROUGHENED SURFACE TO PREVENT TOPSOIL FROM SLIDING DOWN SLOPE.
- TOPSOIL SHOULD BE UNIFORMLY DISTRIBUTED ACROSS THE DISTURBED AREA TO A DEPTH OF 4 TO 8 INCHES MINIMUM -- 2 INCHES ON FILL OUTSLOPES. SPREADING SHOULD BE DONE IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL PREPARATION OR TILLAGE. IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOIL PLACEMENT SHOULD BE CORRECTED IN ORDER TO PREVENT FORMATION OF DEPRESSIONS UNLESS SUCH DEPRESSIONS ARE PART OF THE PCSM PLAN.
- TOPSOIL SHOULD NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET, OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION. COMPACTED SOILS SHOULD BE SCARIFIED 6 TO 12 INCHES ALONG CONTOUR WHEREVER POSSIBLE PRIOR TO SEEDING.

A5 TEMPORARY TOPSOIL STOCKPILE
NOT TO SCALE

STANDARD CONSTRUCTION DETAIL # 3-1
ROCK CONSTRUCTION ENTRANCE



PLAN VIEW



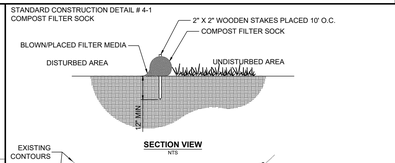
PROFILE

- REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.
- RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.
- MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.
- MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

B1 ROCK CONSTRUCTION ENTRANCE
NOT TO SCALE

2019-03-01 / LEC STD

STANDARD CONSTRUCTION DETAIL # 4-1
COMPOST FILTER SOCK



PLAN VIEW
NTS

ON PAVED SURFACES, CONCRETE BLOCKS SHOULD BE USED IMMEDIATELY DOWNSLOPE OF SOCKS (AT SAME INTERVALS AS STAKES)

NOTES:
- SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2.
- COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT (FIGURE 4.1). MAXIMUM SLOPE LENGTH ABOVE ANY SOCK SHALL NOT EXCEED THAT SHOWN ON FIGURE 4.2. STAKES MAY BE INSTALLED IMMEDIATELY DOWNSLOPE OF THE SOCK IF SO SPECIFIED BY THE MANUFACTURER.
- TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.
- ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE ABOVEGROUND HEIGHT OF THE SOCK AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.
- 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 FILTER SOCKS SHALL BE REPLACED AFTER 6 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.
- COMPOST SHOULD BE A WELL DECOMPOSED, WEED-FREE ORGANIC MATTER DERIVED FROM AGRICULTURE, FOOD, STUMP GRINDINGS, AND YARD OR WOODBARK ORGANIC MATTER SOURCES. THE COMPOST SHOULD BE AEROBICALLY COMPOSTED. THE COMPOST SHOULD POSSESS NO OBJECTIONABLE ODORS AND SHOULD BE REASONABLY FREE (<1% BY DRY WEIGHT) OF MAN-MADE FOREIGN MATTER. THE COMPOST PRODUCT SHOULD NOT RESEMBLE THE RAW MATERIAL FROM WHICH IT WAS DERIVED. WOOD AND BARK CHIPS, GROUND CONSTRUCTION DEBRIS OR REPROCESSED WOOD PRODUCTS ARE NOT ACCEPTABLE AS THE ORGANIC COMPONENT OF THE MIX.
- THE PHYSICAL PARAMETERS OF THE COMPOST SHOULD COMPLY WITH THE STANDARDS IN TABLE 4.2. THE STANDARDS CONTAINED IN THE PENNDOT PUBLICATION 408 ARE AN ACCEPTABLE ALTERNATIVE.

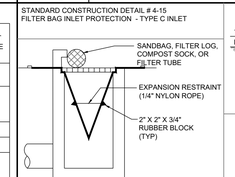
TABLE 4.2
COMPOST STANDARDS

ORGANIC MATERIAL CONTENT	25% - 100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND ELONGATED
pH	5.5 – 8.5
MOISTURE CONTENT	30% - 60%
PARTICLE SIZE	30%-50% PASS THROUGH 3/8" SCREEN
SOLUBLE SALT CONCENTRATION	5.0 dS/m (mmhos/cm) MAXIMUM

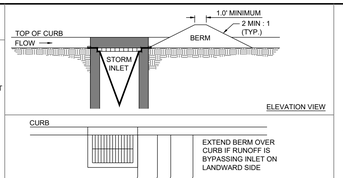
TABLE 4.1
COMPOST SOCK FABRIC MINIMUM SPECIFICATIONS

MATERIAL TYPE	3 mil HDPE	5 mil HDPE	5 mil HDPE	MULTI-FILAMENT POLYPROPYLENE (MFPP)	HEAVY DUTY MULTI-FILAMENT POLYPROPYLENE (HDMFPP)
MATERIAL CHARACTERISTICS	PHOTO-DEGRADABLE	PHOTO-DEGRADABLE	BIO-DEGRADABLE	PHOTO-DEGRADABLE	PHOTO-DEGRADABLE
SOCK DIAMETERS	12" 18"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"
MESH OPENING	3/8"	3/8"	3/8"	3/8"	1/8"
TENSILE STRENGTH		26 PSI	26 PSI	44 PSI	202 PSI
ULTRAVIOLET STABILITY % ORIGINAL STRENGTH (ASTM G-155)	23% at 1000 hr.	23% at 1000 hr.		100% at 1000 hr.	100% at 1000 hr.
MINIMUM FUNCTIONAL LONGEVITY	6 MONTHS	9 MONTHS	6 MONTHS	1 YEAR	2 YEAR
TWO-PLY SYSTEM					
INNER CONTAINMENT NETTING				HDPE BIAXIAL NET	
				CONTINUOUSLY WOUND FUSION-WELDED JUNCTURES	
				3/4" X 3/4" MAX. APERTURE SIZE	
OUTER FILTRATION MESH				COMPOSITE POLYPROPYLENE FABRIC (WOVEN LAYER AND NON-WOVEN FLEECE MECHANICALLY FUSED VIA NEEDLE PUNCH)	
				3/16" MAX. APERTURE SIZE	
SOCK FABRICS COMPOSED OF BURLAP MAY BE USED ON PROJECTS LASTING 6 MONTHS OR LESS.					

STANDARD CONSTRUCTION DETAIL # 4-15
FILTER BAG INLET PROTECTION - TYPE C INLET



INSTALLATION DETAIL



MAXIMUM DRAINAGE AREA = ¾ ACRE.

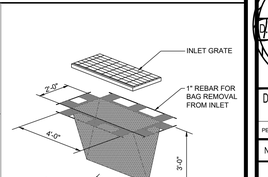
INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.

ROLLED EARTHEN BERM SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. SIX INCH MINIMUM HEIGHT ASPHALT BERM SHALL BE MAINTAINED UNTIL ROADWAY SURFACE RECEIVES FINAL COAT.

AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS, A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.

INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE OF ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.

DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.



ISOMETRIC VIEW

B5 FILTER BAG INLET PROTECTION - TYPE C INLET
NOT TO SCALE

2019-03-01 / LEC STD

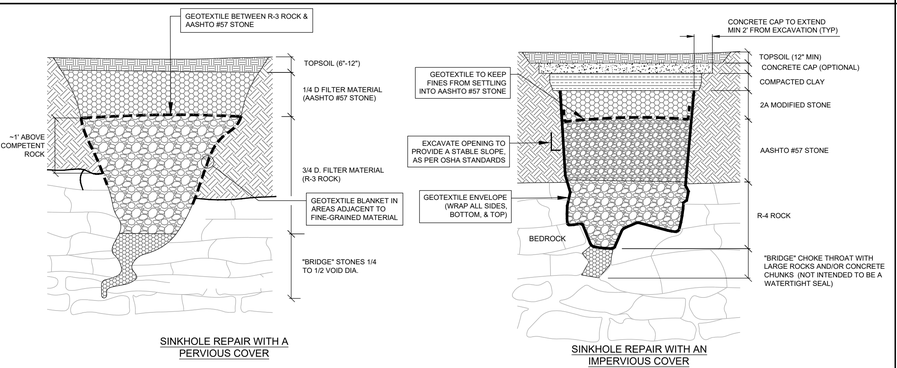
TEMPORARY STABILIZATION NOTES:

SURFACE STABILIZATION CRITERIA:
ALL DENUDED SOIL SURFACES, INCLUDING SOIL STOCKPILES, ARE SUBJECT TO EROSION AND SHALL BE STABILIZED EITHER TEMPORARILY OR PERMANENTLY. DURING NON-GERMINATION PERIODS, MULCH MUST BE APPLIED AT RECOMMENDED RATES. CRUSHED STONE ON PAVEMENT SUB-GRADES IS CONSIDERED ADEQUATE STABILIZATION. ALL DISTURBED ZONES AND VEGETATED REGIONS SHALL BE STABILIZED, PREFERABLY WITH A PERMANENT TREATMENT AS FOLLOWS:

A. TEMPORARY COVER ON DISTURBED AREAS:
DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE RE-DISTURBED WITHIN ONE (1) YEAR MAY BE SEEDED AND MULCHED WITH A TEMPORARY COVER. PREPARATION OF THE SURFACE, FERTILIZATION AND SEEDING WITH EITHER ANNUAL OR WINTER RYE GRASS SHALL BE DONE IN COMPLIANCE WITH THE PENN STATE GUIDELINES UNDER "EROSION CONTROL & CONSERVATION PLANTING ON NON-CROPLAND".
a. GROUND LIMESTONE SHALL BE APPLIED AT A RATE OF 1.0 TON/ACRE OR 46 LBS/1,000 S.F.
b. FERTILIZER 10-10-10 SHALL BE APPLIED AT A RATE OF 500 LBS/ACRE. (BOTH FERTILIZER AND LIMESTONE SHALL BE WORKED INTO THE SOIL TO A DEPTH OF FOUR (4) INCHES PRIOR TO SEEDING.)
c. ANNUAL RYEGRASS SHALL BE APPLIED AT A RATE OF 48 LBS/ACRE OR 1.1 LB/1,000 S.F. (15% PLS)
d. WINTER RYEGRASS SHALL BE APPLIED AT A RATE OF 168 LBS/ACRE OR 3.9 LBS/1,000 S.F. (15% PLS)
e. AFTER SEEDING, MULCH WITH HAY OR STRAW AT 3.0 TONS/ACRE OR 138 LBS/ 1,000 S.F. (MULCHING IS MOST APPLICABLE TO THOSE AREAS SUBJECT TO PERIODIC DISTURBANCE AND REWORKING.)
f. GENERAL INFORMATION:
i. AREAS THAT FAIL TO GERMINATE MUST BE RE-SEEDED.
ii. WHERE DISTURBED AREAS ARE DIFFICULT TO STABILIZE, NETTING SHOULD BE USED TO HOLD SEED AND MULCH IN PLACE. THIS IS ESPECIALLY IMPORTANT AROUND WATERCOURSES, WITHIN SWALES AND AREAS OF CONCENTRATED FLOWS, AND ON (STEEP) SLOPES.

B. STANDARD FOR STABILIZATION WITH MULCH:
a. PERFORM ALL CULTURAL OPERATIONS AT RIGHT ANGLES TO THE SLOPE.
b. STRAW AND HAY MULCH SHOULD BE ANCHORED IMMEDIATELY AFTER APPLICATION TO PREVENT WIND BLOWING.
c. GRADE AS NEEDED AND FEASIBLE. SEE STANDARD FOR LAND GRADING.
d. PROTECTIVE MATERIALS TO BE USED:
i. NON-ROTTED SMALL-GRAIN STRAW OR HAY AT 3.0 TONS/ACRE, SPREAD UNIFORMLY AT 140 LBS/1,000 S.F. AND ANCHORED WITH LIQUID MULCH BINDER; OR BY A HYDRO-SEEDER OR HYDRO-MULCHER. (USE IS LIMITED TO FLATTER SLOPES DURING OPTIMUM SEEDING PERIODS IN SPRING AND FALL.)
ii. LIQUID MULCH BINDERS: APPLY IMMEDIATELY AFTER PLACEMENT OF HAY OR STRAW MULCH TO MINIMIZE LOSS BY WIND OR WATER. IF EMULSIFIED ASPHALT (CONTAINING NO SOLVENTS OR OTHER DILUTING AGENTS TOXIC TO PLANT OR ANIMAL LIFE), APPLY AT A RATE OF 31 GAL/1,000 S.Y.

C. STANDARD FOR LAND GRADING:
a. DEFINITION: RESHAPING THE GROUND SURFACE BY GRADING TO PLANNED GRADES WHICH ARE DETERMINED BY TOPOGRAPHIC SURVEY AND LAYOUT.
b. PROVISIONS SHALL BE MADE TO SAFELY CONVEY SURFACE WATER TO STORM DRAINS OR SUITABLE WATER COURSES AND TO PREVENT SURFACE RUNOFF FROM DAMAGING CUT FACES AND FILL SLOPES.
c. ADJOINING PROPERTY(IES) SHALL BE PROTECTED FROM EXCAVATION AND FILLING OPERATIONS.
d. TIMBER, LOGS, BRUSH, RUBBISH, ROCKS, STUMPS AND VEGETATIVE MATTER WHICH WILL INTERFERE WITH THE GRADING OPERATION OR AFFECT THE PLANNED STABILITY OF FILL AREAS SHALL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH APPROVED DISPOSAL METHODS.
e. FILL MATERIAL IS TO BE FREE OF BRUSH, RUBBISH, TIMBER, LOGS, VEGETATIVE MATTER AND STUMPS IN AMOUNTS THAT WILL BE DETRIMENTAL TO CONSTRUCTING STABLE FILLS.
f. ALL FILLS SHALL BE COMPACTED SUFFICIENTLY FOR THEIR INTENDED PURPOSE AND AS REQUIRED TO REDUCE SLIPPING, EROSION OR EXCESS SATURATION. (REFER TO GEOTECHNICAL REQUIREMENTS OF THE PROJECT SITE FOR SPECIFIC STANDARD FOR FILL PLACEMENT AND COMPACTION.)
g. ALL DISTURBED AREAS SHALL BE LEFT WITH A CLEAN AND FINISHED APPEARANCE AND SHALL BE PROTECTED FROM EROSION USING APPROVED EROSION AND SEDIMENT POLLUTION CONTROL BMPS.



SINKHOLE REPAIR WITH A PERVIOUS COVER

SINKHOLE REPAIR WITH AN IMPERVIOUS COVER

REPAIR NOTE:
1. THE INFORMATION PROVIDED IS FOR GUIDANCE ONLY. DUE TO THE VARIABLE NATURE OF SINKHOLES, A PROFESSIONAL GEOLOGIST OR LICENSED GEOTECHNICAL ENGINEER SHALL BE ENLISTED TO PREPARE DESIGNS AND SPECIFICATIONS IN ADDITION TO THE SUPERVISION OF THE REPAIR.

DETAIL NOTES:
1. LOOSE MATERIAL SHALL BE EXCAVATED FROM THE SINKHOLE AND EXPOSE SOLUTION VOID(S) IF POSSIBLE. ENLARGE SINKHOLE IF NECESSARY TO ALLOW FOR INSTALLATION OF FILTER MATERIALS. OSHA REGULATIONS MUST BE FOLLOWED AT ALL TIMES DURING EXCAVATION.
2. GEOTEXTILE SHALL BE NON-WOVEN WITH A BURST STRENGTH BETWEEN 100 AND 200 PSI.
3. SELECT FIELD STONE(S) ABOUT 1.5 TIMES LARGER THAN SOLUTION VOID(S) TO FORM "BRIDGE". PLACE ROCK(S) SO NO LARGE OPENINGS EXIST ALONG THE SIDES. STONES USED FOR THE "BRIDGE" AND FILTERS SHALL HAVE A MODERATELY HARD ROCK STRENGTH AND BE RESISTANT TO ABRASION AND DEGRADATION. SHALE AND SIMILAR SOFT AND/OR NON-DURABLE ROCK ARE NOT ACCEPTABLE.
4. MINIMUM THICKNESS OF R-4 ROCK IS 18." AASHTO #57 STONE THICKNESS SHALL BE ½ TO ¾ THAT OF THE R-4 ROCK. MINIMUM THICKNESS OF 2A MODIFIED CRUSHED STONE SHALL BE 9". AASHTO #57 STONE AND 2A MODIFIED CRUSHED STONE SHALL BE COMPACTED AFTER EACH PLACEMENT.
5. COMPACTED CLAY SEAL SHALL BE A MINIMUM OF 12" THICK. CLAY SHALL BE PLACED IN 6" TO 9" LIFTS AND THOROUGHLY COMPACTED.
6. CONCRETE CAP, WHICH IS OPTIONAL, SHALL BE A MINIMUM OF 8" THICK. USE 4,000 PSI CONCRETE WITH 6" X 6" - 6 GAUGE WELDED WIRE FABRIC, OR # 3 REBAR ON 18" O.C. BOTH WAYS.
7. TOPSOIL SHALL BE A MINIMUM OF 12" THICK. GRADE FOR POSITIVE DRAINAGE AWAY FROM SINKHOLE AREA.

C2 SINKHOLE REPAIR
NOT TO SCALE

2019-03-01 / LEC STD

PERMANENT STABILIZATION NOTES:

A. STANDARD FOR SEEDING AND SOIL TREATMENT FOR PERMANENT VEGETATIVE COVER:
a. SITE PREPARATION:
1. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, ANCHORING AND MAINTENANCE.
2. ii. SUBSOIL SHOULD BE TESTED BY A REPUTABLE LABORATORY FOR THE LIME REQUIREMENT; AND LIMESTONE, IF NEEDED, SHOULD BE APPLIED TO BRING SOIL PH TO 6.5 AND INCORPORATED INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF FOUR (4) INCHES.
3. iii. IMMEDIATELY PRIOR TO TOPSOIL DISTRIBUTION, THE SURFACE SHOULD BE SCARIFIED TO PROVIDE A GOOD BOND WITH THE TOPSOIL.
b. APPLYING TOPSOIL:
AREAS WHICH ARE TO BE TOP-SOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES (6 TO 12 INCHES ON COMPACTED SOILS) PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING, I.E. YARDS.
1. TOPSOIL SHOULD BE HANDLED ONLY WHEN IT IS DRY ENOUGH TO WORK WITHOUT DAMAGING SOIL STRUCTURE.
2. UNIFORM APPLICATION TO A DEPTH OF FIVE (5) INCHES (UNSETTLED) IS RECOMMENDED. SOILS WITH A PH OF 4.0 OR LESS, OR CONTAINING IRON SULFIDE, SHALL BE COVERED WITH A MINIMUM DEPTH OF TWELVE (12) INCHES OF SOIL HAVING A PH OF 6.0 OR MORE.
c. SEED BED PREPARATION:
1. PERFORM ALL CULTURAL OPERATIONS AT RIGHT ANGLES TO THE SLOPE.
2. APPLY 10-20-20 OR EQUIVALENT RATED FERTILIZER AT A RATE OF 500 LBS./ACRE OR 11 LBS./1,000 S.F.
3. APPLY 300 LBS. OF 38-0-0 PER ACRE OR EQUIVALENT OF SLOW RELEASE NITROGEN.
4. APPLY PULVERIZED DOLOMITIC LIMESTONE AT A RATE OF 6.0 TON/ACRE OR 240 LBS./1,000 S.F.
5. WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF FOUR (4) INCHES. CONTINUE TILLAGE UNTIL A REASONABLY UNIFORM FINE SEEDBED IS PREPARED.
6. REMOVE FROM THE SURFACE ALL STONES TWO (2) INCHES OR LARGER IN ANY DIMENSION. REMOVE ALL OTHER DEBRIS SUCH AS WIRE

GENERAL NOTES

1. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED AND THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PLANS AND OTHER DOCUMENTS AS APPROVED BY ALL APPLICABLE PERMITTING AUTHORITIES. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND THE REQUIREMENTS AND STANDARDS OF THE LOCAL GOVERNING AUTHORITY.
2. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF VESTIBULES, SLOPE PAVING, SIDEWALKS, EXIT PORCHES, TRUCK DOCKS, PRECISE BUILDING DIMENSIONS AND EXACT BUILDING UTILITY ENTRANCE LOCATIONS.
3. DEBRIS, UNSUITABLE SOIL AND DEMOLITION MATERIAL SHALL NOT BE BURIED ON THE SUBJECT SITE AND ALL UNSUITABLE SOIL, DEMOLITION MATERIAL, DEBRIS AND ANY OTHER WASTE MATERIAL SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, LOCAL LAWS, REGULATIONS AND CODES SITE (CRUSHED STONE/CONCRETE CERTIFIED AND USED AS CLEAN FILL SHALL BE EXCLUDED).
4. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS AS INDICATED IN SPECIFICATIONS UNLESS OTHERWISE NOTED ON THE PLANS, DETAILS AND / OR GEOTECHNICAL REPORT.
5. UNLESS OTHERWISE INDICATED WITHIN THE APPROVED PLANS, ALL DISTURBED AREAS ARE TO RECEIVE SIX INCHES OF TOPSOIL, SEED, MULCH, AND WATER UNTIL A HEALTHY STAND OF GRASS IS ESTABLISHED.
6. ALL DIMENSIONS AND RADII ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED. ALL PROPOSED RADII ARE 5.0' UNLESS OTHERWISE NOTED.
7. PAVEMENT SHALL BE SAW CUT IN STRAIGHT LINES TO THE FULL DEPTH OF THE EXISTING PAVEMENT.
8. EXISTING STRUCTURES WITHIN CONSTRUCTION LIMITS ARE TO BE ABANDONED, REMOVED, OR RELOCATED, AS NECESSARY. ALL COSTS SHALL BE INCLUDED IN BASE BID.
9. FOR MATERIALS AND/OR SPECIFICATIONS NOT SPECIFICALLY REFERENCED ON THESE PLANS OR STATE AND LOCAL REQUIREMENTS THE PROJECT SHALL BE CONSTRUCTED IN CONFORMANCE WITH PENNDOT PUB 408 AS LAST REVISED.

GRADING & DRAINAGE NOTES

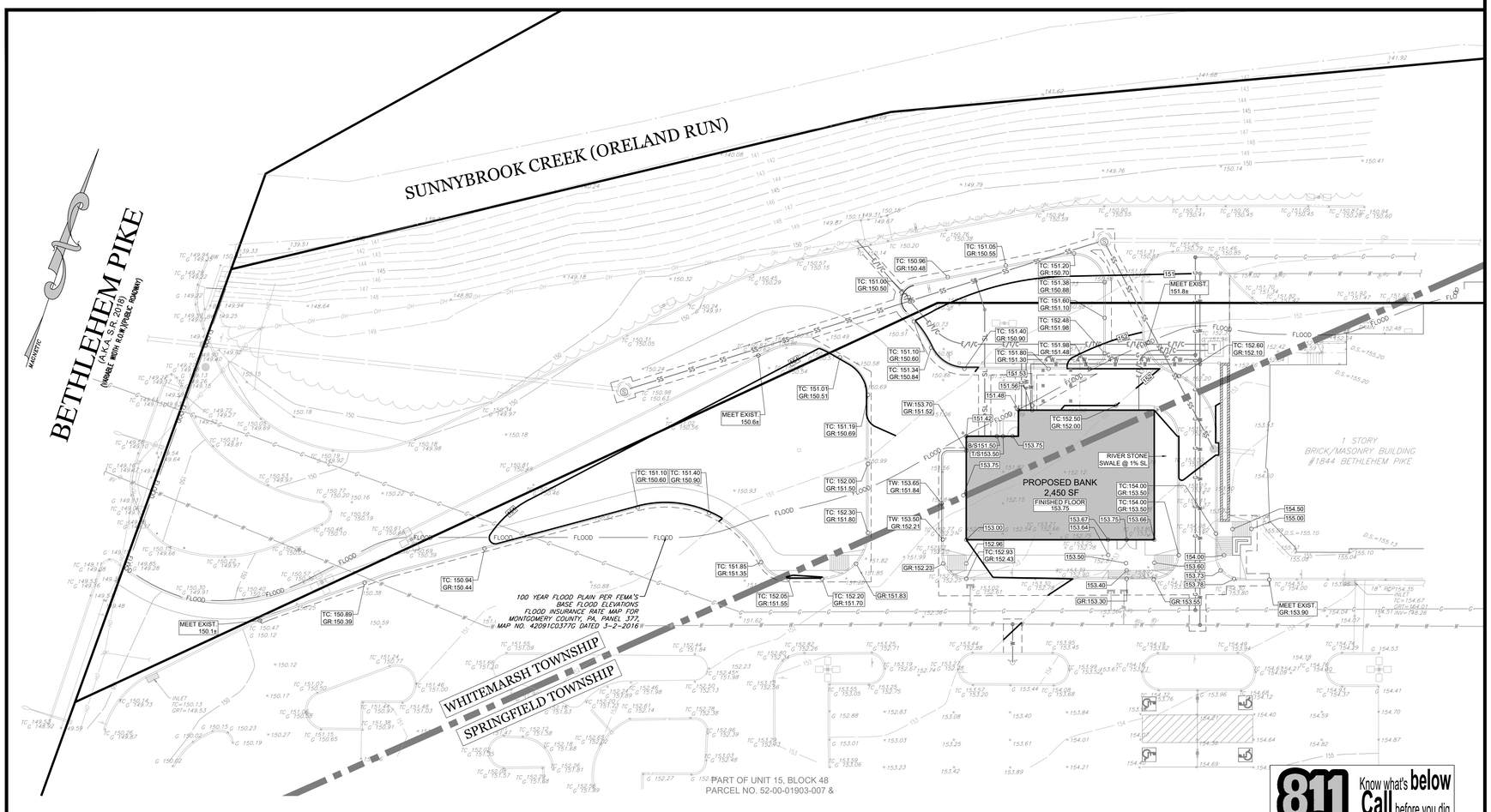
1. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF EXISTING TOPOGRAPHIC INFORMATION PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY DISCREPANCIES THAT MAY AFFECT THE PUBLIC SAFETY OR PROJECT COST. PROCEEDING WITH CONSTRUCTION WITHOUT NOTIFICATION IS DONE SO AT THE CONTRACTOR'S OWN RISK. CONTRACTOR TO ENSURE THE FOLLOWING MINIMUM GRADING STANDARDS TO ENSURE PROPER DRAINAGE AND PREVENTION OF PONDING.
   - 1.1. 0.75% MINIMUM SLOPE AGAINST ALL ISLANDS, GUTTERS, AND CURBS RECEIVING DRAINAGE
   - 1.2. 1.0% ON ALL CONCRETE AND ASPHALT AND 2% MINIMUM ON ALL PERVIOUS SURFACES.
2. SPOT GRADE ELEVATIONS (GR) INDICATED ON THE PLANS SIGNIFY FINISHED GRADE ELEVATION OR FINISHED GRADE AT FACE OF CURB. TOP OF CURB (TC) ELEVATION ARE GENERALLY 6" ABOVE ASPHALT UNLESS NOTED OTHERWISE. SPOT ELEVATIONS SHOWN AT DRAINAGE STRUCTURES REPRESENT THE TOP OF UNIT ELEVATION AT THE CENTER OF THE STRUCTURE.
3. THE TOPS OF EXISTING MANHOLES, INLET STRUCTURES, AND SANITARY CLEANOUT TOPS SHALL BE ADJUSTED, IF REQUIRED TO MATCH PROPOSED GRADES IN ACCORDANCE WITH ALL APPLICABLE STANDARDS. GRADE ADJUSTMENTS SHALL BE MADE PRIOR TO THE INSTALLATION OF PAVEMENT WEARING COURSE OR PLACEMENT OF TOPSOIL IN UNPAVED AREAS.
4. ALL STORMWATER PIPING INSTALLED WITHIN THE REINFORCING ZONE OF THE PROPOSED RETAINING WALLS MUST BE INSTALLED WITH A WATERTIGHT SEAL.
5. HIGH DENSITY POLYETHYLENE (HDPE) PIPES SHALL BE N-12 DUAL WALL, SMOOTH LINED OR EQUIVALENT IN ACCORDANCE WITH ASTM STANDARDS, UNLESS OTHERWISE SPECIFIED.
6. REINFORCED CONCRETE PIPES (RCP) SHALL BE CLASS III, UNLESS OTHERWISE SPECIFIED.
7. PLANS FOR MANY EARTH DISTURBANCE ACTIVITY, BEARING THE STAMP OF THE WHITEMARSH TOWNSHIP ENGINEER, SHALL BE MAINTAINED AT THE SITE DURING THE PROGRESS OF GRADING WORK AND UNTIL THE WORK HAS BEEN COMPLETED.

THE CONTRACTOR SHALL ENLIST THE SERVICES OF A QUALIFIED GEOTECHNICAL ENGINEER TO CERTIFY THAT ON-SITE SOIL CONDITIONS AND CONSTRUCTION PRACTICES ARE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE STATE/LOCAL CODES AND ACCEPTED INDUSTRY STANDARDS. CONTRACTOR SHALL ENSURE:

- 7.1. ALL EXCAVATED OR FILLED AREAS SHALL BE COMPACTED AS DIRECTED BY THE QUALIFIED GEOTECHNICAL ENGINEER.
- 7.2. MOISTURE CONTENT AT TIME OF PLACEMENT SHALL BE DOCUMENTED IN A COMPACTION REPORT VERIFYING THAT ALL FILLED AREAS AND SUBGRADE AREAS WITHIN THE BUILDING PAD AND AREAS TO BE PAVED, HAVE BEEN COMPACTED AS DIRECTED BY THE QUALIFIED GEOTECHNICAL ENGINEER.
- 7.3. SUBBASE MATERIAL FOR SIDEWALKS, CURB, OR ASPHALT SHALL BE FREE OF ORGANICS AND OTHER UNSUITABLE MATERIALS. SHOULD SUBBASE BE DEEMED UNSUITABLE BY OWNER OR OWNER'S REPRESENTATIVE, SUBBASE IS TO BE REMOVED AND FILLED WITH APPROVED FILL MATERIAL COMPACTED AS DIRECTED BY THE QUALIFIED GEOTECHNICAL ENGINEER

GRADING and DRAINAGE PLAN LEGEND

	MAJOR CONTOUR
	MINOR CONTOUR
	STORM SEWER MAIN
	PROP. MINOR CONTOUR
E E E	PROP. ELECTRIC SERVICE
E/T/C E/T/C	PROP. ELECTRIC / TELCOM CONDUIT
C C C	*GAS SERVICE*
G G G	PROP. GAS SERVICE
OH OH OH	*OVERHEAD WIRES*
	SANITARY MAIN
SS SS SS	PROP. SANITARY MAIN / LATERAL
SL SL SL	PROP. SANITARY LATERAL
SS SS SS	PROP. SANITARY LATERAL
W W W	*WATER MAIN / LATERAL*
W W W	PROP. WATER MAIN / LATERAL
WL WL WL	PROP. WATER LATERAL
WW WW	PROP. WATER LATERAL
4"W 4"W 4"W	PROP. 4" WATER SERVICE
	SAWCUT LIMITS
	PROPERTY LINE (PIQ)
	MUNICIPALITY LINE
100 YR	*100 YEAR FLOODPLAIN*
100 YR	PROPOSED 100 YEAR FLOODPLAIN
	STREAM BANK
	TREELINE



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REV.	DATE	COMMENT	JOB	BY
1	2021-10-21	PER TWP COMMENTS		

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL D. ALEXANDER TWEEDIE ENGINEER No. PE071873

D. ALEXANDER TWEEDIE
PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE No. 071873

NOT FOR CONSTRUCTION

PROJECT No: 140065
DRAWN BY: MAR
CHECKED BY: DAT
CAD I.D. #: 07_GP_140065

LANDCORE
Engineering Consultants, P.C.
PO BOX 27253 #52327
PHILADELPHIA, PENNSYLVANIA 19101-0635
PHONE 215-826-2519 | FAX 215-826-2428
LANDCORECONSULTING.COM

PROJECT: PROPOSED INDUSTRIAL REDEVELOPMENT
1880 BETHLEHEM PIKE, FLOURTOWN PA 19031
SPRINGFIELD TOWNSHIP AND WHITEMARSH TOWNSHIP
MONTGOMERY COUNTY, PA

APPLICANT: FEDERAL REALTY INVESTMENT TRUST

TITLE: GRADING & DRAINAGE PLAN

DATE: 2021-03-04

SHEET: 07 of 13 | REV. No: 1

GP

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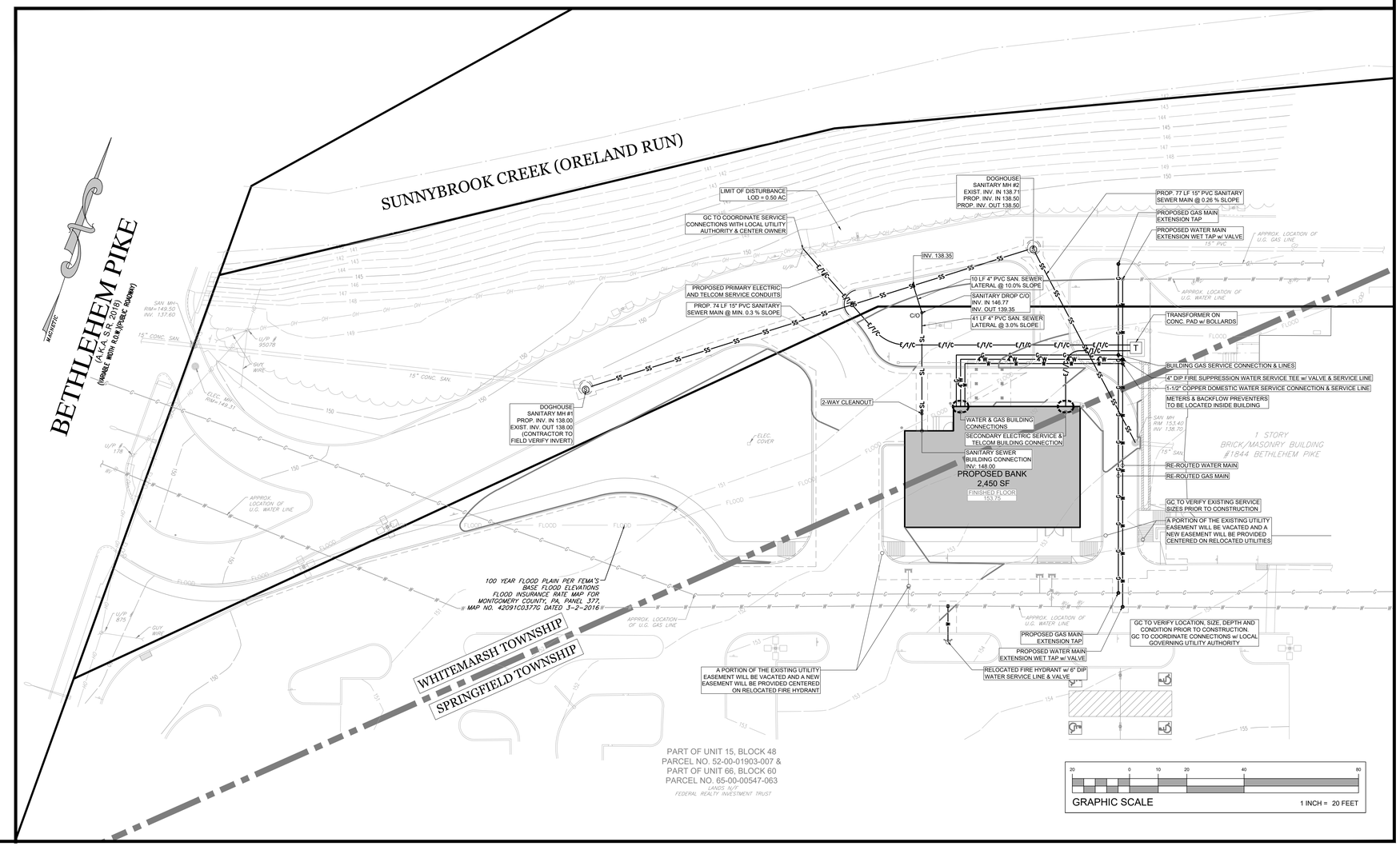
UTILITY NOTES

1. LOCATIONS OF ALL EXISTING AND PROPOSED UTILITY LINES ARE APPROXIMATE. CONTRACTOR IS TO CONFIRM LOCATIONS, SIZES, MATERIALS, AND CONNECTION POINTS INDEPENDENTLY IN ACCORDANCE WITH ARCHITECTURAL/MEP DRAWINGS AND WITH THE APPLICABLE UTILITY COMPANIES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION OR EXCAVATION.
2. ALL UTILITIES AND SERVICES WITHIN THE LIMITS OF DISTURBANCE SHALL BE VERTICALLY AND HORIZONTALLY LOCATED PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION OR EXCAVATION. ALL ACTIVE UTILITY AND/OR SERVICE SYSTEMS THAT ARE TO BE REMOVED OR RELOCATED SHALL BE COORDINATED BY THE CONTRACTOR WITH THE APPLICABLE UTILITY COMPANY REGARDING THE REMOVAL OR RELOCATION OF SUCH. THE CONTRACTOR IS RESPONSIBLE TO PROTECT AND MAINTAIN ALL ACTIVE SYSTEMS THAT ARE NOT BEING REMOVED/ RELOCATED DURING SITE CONSTRUCTION ACTIVITY.
3. CONSTRUCTION SHALL COMMENCE BEGINNING AT THE LOWEST INVERT (POINT OF CONNECTION) AND PROGRESS UP GRADIENT. PROPOSED INTERFACE POINTS (CROSSINGS) WITH EXISTING UNDERGROUND UTILITIES SHALL BE FIELD VERIFIED BY TEST PIT PRIOR TO COMMENCEMENT OF CONSTRUCTION.
4. THE CONTRACTOR SHALL USE AND COMPLY WITH THE REQUIREMENTS OF THE NATIONAL UTILITY NOTIFICATION SYSTEM (811) TO LOCATE ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCEMENT OF ANY WORK. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRS OF DAMAGE TO ANY EXISTING UTILITIES DURING CONSTRUCTION AT NO COST TO THE OWNER.
5. THE CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH THE APPLICABLE UTILITY SERVICE PROVIDER REQUIREMENTS AND IS RESPONSIBLE FOR ALL COORDINATION REGARDING ANY REMOVAL, DISCONNECTION, ABANDONMENT, OR RELOCATIONS OF ANY UTILITY IDENTIFIED OR REQUIRED FOR PROJECT. THE CONTRACTOR SHALL PROVIDE THE OWNER WRITTEN NOTIFICATION THAT THE EXISTING UTILITIES AND SERVICES HAVE BEEN REMOVED, TERMINATED, DISCONNECTED, RELOCATED AND/OR ABANDONED IN ACCORDANCE WITH JURISDICTIONAL AND/OR UTILITY COMPANY REQUIREMENTS.
6. ALL NEW UTILITIES/SERVICES, INCLUDING ELECTRIC, TELEPHONE, CABLE TV, ETC. ARE TO BE INSTALLED UNDERGROUND IN ACCORDANCE WITH THE UTILITY/SERVICE PROVIDER INSTALLATION SPECIFICATIONS AND STANDARDS.
7. ELECTRIC, CABLE & TELEPHONE LOCATIONS PROVIDED ON THESE PLANS AREA APPROXIMATE AND SHOWN FOR SCHEMATIC PURPOSES ONLY. ACTUAL LOCATIONS ARE TO BE DESIGNED AND SUBMITTED BY LOCAL UTILITY SERVICE COMPANIES UPON CONTRACTOR FILING THE REQUIRED SERVICE CONNECTION APPLICATION FOR THE PROJECT.
8. THE TOPS OF EXISTING MANHOLES AND UTILITY STRUCTURES SHALL BE ADJUSTED, IF REQUIRED, TO MATCH PROPOSED GRADES IN ACCORDANCE WITH ALL APPLICABLE STANDARDS.
9. ALL FILL, COMPACTION, AND BACKFILL MATERIALS REQUIRED FOR UTILITY INSTALLATION SHALL BE IN ACCORDANCE WITH THE APPLICABLE UTILITY, MUNICIPAL OR STATE REGULATION UNLESS A GEOTECHNICAL REPORT FOR THE PROJECT SITE HAS BEEN PREPARED AND PROVIDES GUIDANCE FOR THESE ITEMS. IN SUCH CASES, THE MORE STRINGENT RECOMMENDATIONS SHALL BE IMPLEMENTED. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THAT ANY IMPORT SOIL(S) ARE CERTIFIED "CLEAN FILL" AS DEFINED BY THE APPLICABLE DEPARTMENT OF ENVIRONMENTAL PROTECTION.
10. ALL MANHOLE OR CLEANOUT COVERS SHALL BE STAMPED WITH THE APPROPRIATE UTILITY CALLOUT WHICH MAY INCLUDE BUT IS NOT LIMITED TO, "SANITARY", "STORM", "WATER", "ELECTRIC", "GAS" OR "TELE". PRIOR TO FABRICATING, THE CONTRACTOR MUST COORDINATE WITH THE APPROPRIATE UTILITY OWNER TO DETERMINE THE EXACT NOMENCLATURE THAT SHOULD BE STAMPED ON THE RESPECTIVE COVER.

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TICKET #:

UTILITY PLAN LEGEND

- MAJOR CONTOUR
- MINOR CONTOUR
- STORM SEWER MAIN
- PROP. MINOR CONTOUR
- E E E — PROP. ELECTRIC SERVICE
- E/T/C E/T/C — PROP. ELECTRIC / TELCOM CONDUIT
- G G G — GAS SERVICE
- PROP. GAS SERVICE
- OH OH OH — OVERHEAD WIRES
- SANITARY MAIN
- SS SS SS — PROP. SANITARY MAIN / LATERAL
- SL SL SL — PROP. SANITARY LATERAL
- SS SS SS — PROP. SANITARY LATERAL
- W W W — WATER MAIN / LATERAL
- PROP. WATER MAIN / LATERAL
- WL WL WL — PROP. WATER LATERAL
- WW WW — PROP. WATER LATERAL
- 4"W 4"W 4"W — PROP. 4" WATER SERVICE
- SAWCUT LIMITS
- PROPERTY LINE (PIQ)
- MUNICIPALITY LINE
- 100 YR — 100 YEAR FLOODPLAIN
- 100 YR — PROPOSED 100 YEAR FLOODPLAIN
- STREAM BANK
- TREELINE



REV.	DATE	COMMENT	JOB	BY
1	2021-10-21	PER TWP COMMENTS	-	-

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
D. ALEXANDER TWEEDIE
ENGINEER
No. PE071873
PENNSYLVANIA

D. ALEXANDER TWEEDIE
PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE No. 071873

NOT FOR CONSTRUCTION

PROJECT No: 140065
DRAWN BY: MAR
CHECKED BY: DAT
CAD I.D. #: 08_UP_140065

LANDCORE
Engineering Consultants, P.C.
PO BOX 27053 #50297
PHILADELPHIA, PENNSYLVANIA 19101-0653
PHONE 215-626-2510 | FAX 215-320-4428
LANDCORECONSULTING.COM

PROJECT: PROPOSED INDUSTRIAL REDEVELOPMENT
1880 BETHLEHEM PIKE, FLOURTOWN PA 19031
SPRINGFIELD TOWNSHIP AND WHITEMARSH TOWNSHIP
MONTGOMERY COUNTY, PA

APPLICANT: FEDERAL REALTY INVESTMENT TRUST

TITLE: UTILITY PLAN

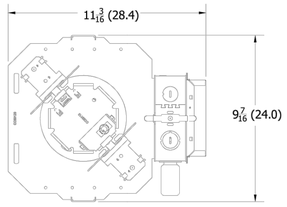
DATE: 2021-03-04

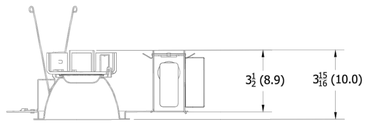
SHEET: 08 of 13 | REV. No: 1

UP

D:\DROPBOX (LANDCORE)\PROJECTS\2021\140065 - FEDERAL REALTY - FLOURTOWN PAD\DRAWINGS\00-SITE PLANS\08_UP_140065.DWG
JASON.WARMBOLD @ 2021-10-26, 7:12 AM

LDN4 500 - 2000 LUMENS





Aperture: 4-5/16" (11)
Ceiling Opening: 5-1/8" (13)
Overlap Trim: 5-7/16" (13.8)

LDN4			
Nominal	**Lumens**	**Wattage**	**Lm/W**
500	523.6	5.74	91.2
750	751.1	8.6	87.3
1000	1045	10.58	98.8
1500	1512	17.5	86.4
2000	2006	22.12	90.7
2500	2551	26.1	97.7
3000	3007	32.1	93.7
4000	4212	43	98.0

LUMEN OUTPUT MULTIPLIERS EXCT					
	2700K	**3000K**	**3500K**	**4000K**	**5000K**
80CRI	0.950	0.966	1.000	1.025	1.101

HOW TO ESTIMATE DELIVERED LUMENS IN EMERGENCY MODE

Use the formula below to estimate the delivered lumens in emergency mode

Delivered Lumens = 1.25 x P x LPW

P = Ouput power of emergency driver. P = 10W for PS1055CP

LPW = Lumen per watt rating of the luminaire. This information is available on the ABL luminaire spec sheet.
The LPW rating is also available at Designlight Consortium.

LUMEN OUTPUT MULTIPLIERS FINISH			
	Clear (AR)	**White (WR)**	**Black (BR)**
Specular (LS)	1.0	N/A	N/A
Semi-specular (LSS)	0.950	N/A	N/A
Matte diuse (LD)	0.85	N/A	N/A
Painted	N/A	0.87	0.73

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A2 LDN4 DETAILS & SPECS

NOT TO SCALE

LIGHT FIXTURE SCHEDULE

PLAN LABEL	QTY	MOUNTING HEIGHT	MOUNTING TYPE	FIXTURE EPA	BUG RATING	LUMENS PER LAMP	WATTAGE	LLF	DESCRIPTION	MANUFACTURER / CATALOG NUMBER
EXISTING 3M	NA	33 FT	POLE TOP	NA	3-0-3	19,500	260	0.85	EXISTING LED AREA LIGHT PER APPROVED PLAN	WLS LIGHITNG SYSTEMS (2013) WLS-EDG-3MP-16-E-UL-525-60K
EXISTING 5M2	NA	33 FT	POLE TOP	NA	5-0-3	24,681	260	0.85	EXISTING LED AREA LIGHT PER APPROVED PLAN	WLS LIGHITNG SYSTEMS (2013) WLS-EDG-5M-16-D-UL-525-60K
EXISTING 5M4	NA	33 FT	POLE TOP	NA	5-0-3	24,681	260	0.85	EXISTING LED AREA LIGHT PER APPROVED PLAN	WLS LIGHITNG SYSTEMS (2013) WLS-EDG-5M-16-D-UL-525-60K
LDN4	6	10 FT	SOFFIT	NA	NA	804	11	0.93	LED SOFFIT LIGHT 80 CRI LED LIGHT SOURCE 1000 LUMEN DOWN LIGHT FINISHED TO BE COORDINATED WITH ARCH	LITHONIA LIGHTING LDN4CYL 40/10 LO4 BR

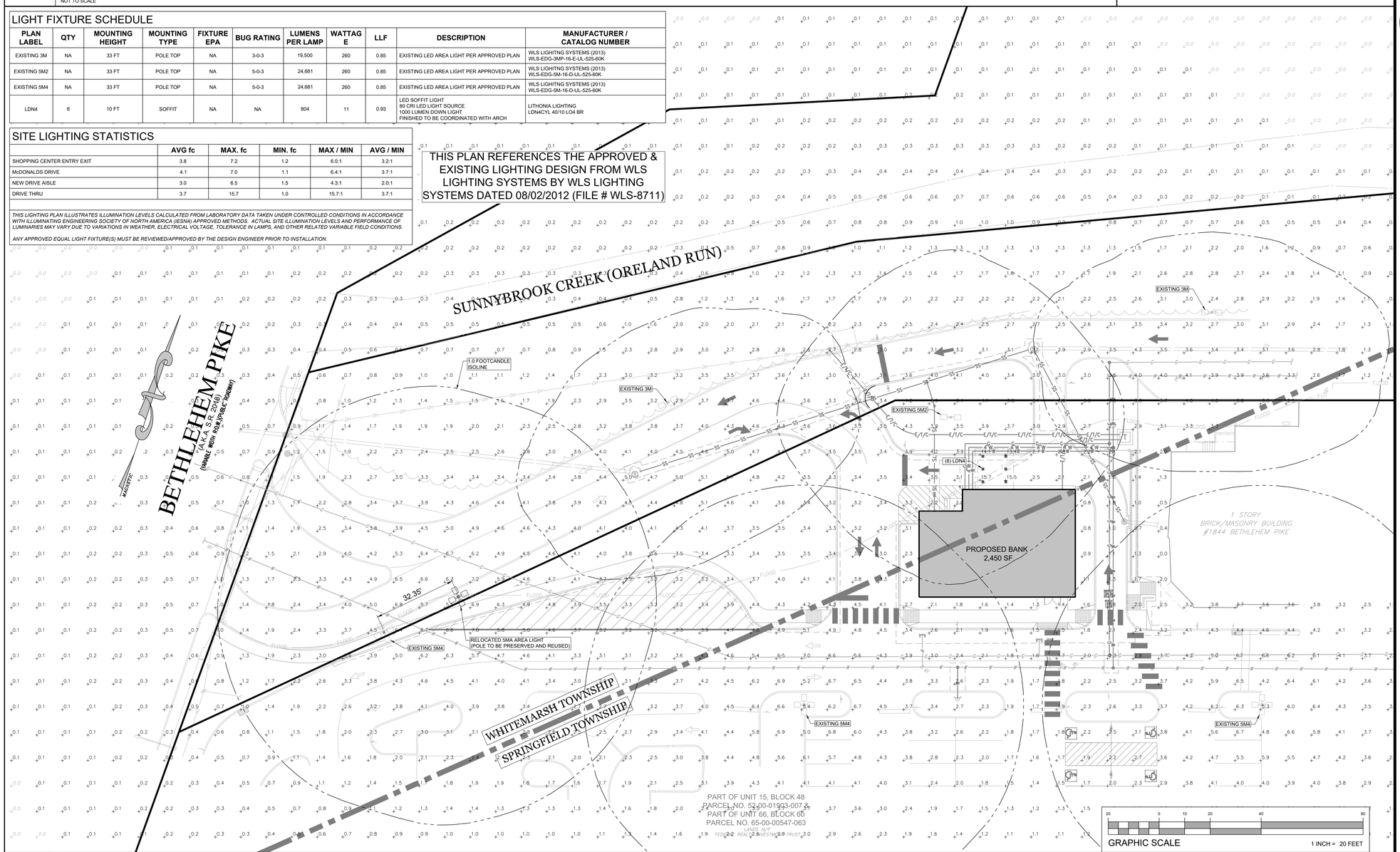
SITE LIGHTING STATISTICS

	AVG fc	MAX. fc	MIN. fc	MAX / MIN	AVG / MIN
SHOPPING CENTER ENTRY EXIT	3.8	7.2	1.2	6.0:1	3.2:1
McDONALDS DRIVE	4.1	7.0	1.1	6.4:1	3.7:1
NEW DRIVE AISLE	3.0	6.5	1.5	4.3:1	2.0:1
DRIVE THRU	3.7	15.7	1.0	15.7:1	3.7:1

THIS LIGHTING PLAN ILLUSTRATES ILLUMINATION LEVELS CALCULATED FROM LABORATORY DATA TAKEN UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICA (IESNA) APPROVED METHODS. ACTUAL SITE ILLUMINATION LEVELS AND PERFORMANCE OF LUMINARIES MAY VARY DUE TO VARIATIONS IN WEATHER, ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS, AND OTHER RELATED VARIABLE FIELD CONDITIONS.

ANY APPROVED EQUAL LIGHT FIXTURE(S) MUST BE REVIEWED/APPROVED BY THE DESIGN ENGINEER PRIOR TO INSTALLATION.

THIS PLAN REFERENCES THE APPROVED & EXISTING LIGHTING DESIGN FROM WLS LIGHTING SYSTEMS BY WLS LIGHTING SYSTEMS DATED 08/02/2012 (FILE # WLS-8711)



D2 LIGHTING PLAN

SCALE: 1" = 20'

REV.	DATE	COMMENT	BY
1	2021-10-21	PER TWP COMMENTS	

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER D. ALEXANDER TWEEDIE No. PE071873

D. ALEXANDER TWEEDIE
PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE No. 071873

NOT FOR CONSTRUCTION

PROJECT No: 140165 | DRAWN BY: MAR | CHECKED BY: DAT | CAD I.D. #: 09_LP_140665

LANDCORE Engineering Consultants, P.C.
PO BOX 27858 #6287 PHILADELPHIA, PENNSYLVANIA 19101-6535
PHONE 215-836-2510 | EFAX 215-832-0423
LANDCORECONSULTING.COM

PROJECT: PROPOSED INDUSTRIAL REDEVELOPMENT
1890 BETHLEHEM PIKE, FLOURTOWN PA, 19031
SPRINGFIELD TOWNSHIP AND WHITEMARSH TOWNSHIP
MONTGOMERY COUNTY, PA

APPLICANT: FEDERAL REALTY INVESTMENT TRUST

TITLE: LIGHTING PLAN

DATE: 2021-03-04

SHEET: 09 of 13 | REV. No: 1

LP

D:\GROPBOX (LANDCORE)\PROJECTS\2014\140665 - FEDERAL REALTY - FLOURTOWN (FAIR)\WORKING\SD\SITE PLANS\09_LP - 140665.DWG
SADIA.KHAN@LANDCORECONSULTING.COM @ 2021-10-21, 11:17 AM

LANDSCAPE NOTES

2019-03-01 / LEC STD

(AS APPLICABLE TO THIS PROJECT)

GENERAL NOTES

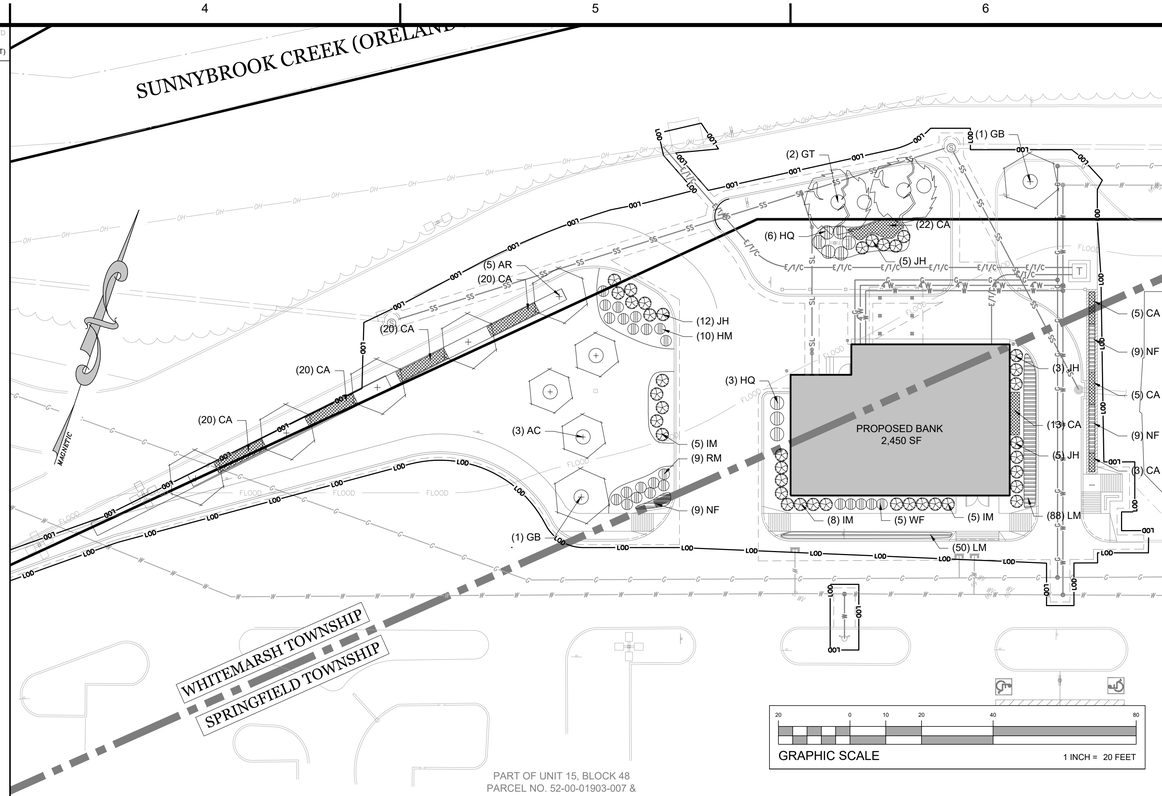
1. THE LANDSCAPE PLAN IS TO BE USED FOR LANDSCAPE PURPOSES ONLY.
2. ALL DISTURBED UNPAVED AREAS, EXCLUDING PLANTING BEDS, ARE TO BE INSTALLED AS LAWN IN ACCORDANCE WITH SEEDING SPECIFICATIONS, UNLESS OTHERWISE NOTED.
3. IF IRRIGATION IS REQUIRED BY THE OWNER OR APPROVING MUNICIPALITY, THE CONTRACTOR SHALL SUBMIT AN IRRIGATION DESIGN FOR BOTH LAWN & BED AREAS TO THE PROJECT REPRESENTATIVE / OWNER FOR REVIEW AND APPROVAL. IRRIGATION DESIGN SHALL PROVIDE FOR ANY PRESSURE REDUCING DEVICES REQUIRED TO MEET MAXIMUM PRESSURE REQUIREMENT. SYSTEM DESIGN SHALL SHOW ALL VALVES, PIPING, HEADS, BACK FLOW PREVENTION DEVICES, METERS, CONTROLLERS, ROUTING SLEEVES AND ANY OTHER DEVICES NECESSARY.
4. THE PROPERTY OWNER AGREES TO MAINTAIN AND REPLACE TREES IN ACCORDANCE WITH THE TOWNSHIP ORDINANCE SECTION.
5. MAINTAIN PROPER SEPARATION BETWEEN TREES AND UTILITIES. TREES MUST BE PLANTED A MINIMUM DISTANCE OF 5' (THREE FEET) FROM CURBS AND SIDEWALKS, 15' (FIFTEEN FEET) FROM OVERHEAD UTILITIES, AND 6' (SIX FEET) FROM UNDERGROUND UTILITIES.
6. CLEAR SIGHT TRIANGLES ARE TO BE KEPT FREE OF ALL OBSTRUCTIONS, INCLUDING, BUT NOT LIMITED TO, SHRUBS OR GROUNDCOVERS GREATER THAN ONE FOOT HIGH, TREES, STRUCTURES, OR EXISTING VEGETATION. CLEAR AREA BETWEEN HIGHER THAN 2.0' AND LOWER THAN 10.0'
7. LOCATIONS OF UTILITIES SHOWN ON THE DRAWINGS MIGHT NOT COINCIDE PRECISELY WITH ACTUAL LOCATIONS IN THE FIELD. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND VERIFYING ALL UNDERGROUND AND ABOVE GROUND UTILITIES PRIOR TO COMMENCING PLANTING OPERATIONS.
8. GUARANTEE: ALL PLANTS SHALL BE GUARANTEED BY CONTRACTOR FOR THE PERIOD UP TO ONE YEAR AFTER STORE OPENING. PLANTS SHALL BE REPLACED DURING THIS PERIOD IF THEY DIE, FAIL TO EXHIBIT TYPICAL GROWTH OR BECOME DISFIGURED. THE REPLACEMENT PLANT SHALL MATCH THE ORIGINAL PLANT IN SIZE AND SPECIES. AT THE END OF THE SPECIFIED MAINTENANCE/GUARANTEE PERIOD, ANY MATERIAL THAT, IN THE OPINION OF THE OWNER OR MUNICIPAL REPRESENTATIVE, IS SIGNIFICANTLY DISFIGURED OR 25% DEAD OR MORE SHALL BE CONSIDERED DEAD AND MUST BE REPLACED AT NO CHARGE. A TREE SHALL BE CONSIDERED DEAD WHEN THE MAIN LEADER HAS DIED BACK, OR IF 25% OR MORE OF THE CROWN IS DEAD.
9. MAINTENANCE: ALL PLANTINGS SHALL BE PERPETUALLY MAINTAINED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING PLANTINGS FOR THE PERIOD UP TO ONE YEAR AFTER STORE OPENING. THE LANDOWNER SHALL BE RESPONSIBLE FOR MAINTENANCE AFTER THIS PERIOD HAS EXPIRED.
10. THE DEVELOPER SHALL CONTACT THE TOWNSHIP IN WRITING TO REQUEST A FINAL INSPECTION FOR ACCEPTANCE AT THE END OF THE GUARANTEE PERIOD.
11. ALL TREE WRAP AND STAKING MATERIALS MUST BE REMOVED BY THE CONTRACTOR AT THE CONCLUSION OF THE MAINTENANCE/GUARANTEE PERIOD.

PLANTING NOTES

1. THE TOWNSHIP SHALL BE NOTIFIED PRIOR TO BEGINNING PLANTING OPERATIONS.
2. THE CONTRACTOR SHALL FURNISH AND PLANT ALL PLANTS SHOWN ON THE DRAWINGS, AS SPECIFIED, AND IN QUANTITIES INDICATED ON THE PLANT LIST. WHEN A DISCREPANCY ARISES IN QUANTITY, THE ACTUAL NUMBER OF PLANTS SHOWN ON THE DRAWINGS SHALL GOVERN.
3. ALL PLANTS SHALL BE QUALITY NURSERY GROWN MATERIAL COMPLYING WITH THE STANDARDS OF THE AMERICAN ASSOCIATION OF NURSERYMEN AND ANSI Z60.1. THEY SHALL BE FRESHLY DUG AND SUPPLIED TO THE SITE FREE OF HARMFUL INSECTS, DISEASE, DISFIGUREMENT, OR DAMAGE TO ROOT BALLS, BARK, STEMS, BRANCHES OR LEAVES. EACH SPECIES SHALL BEAR A LABEL LISTING THE FULL BOTANICAL NAME OF THE PLANT AND SHALL BE CERTIFIED BY THE SUPPLIER TO BE THE SPECIES LABELED.
4. ANY PLANT FOUND TO BE DAMAGED, DISEASED, DISFIGURED, OR IN NONCOMPLIANCE WITH ANSI SPECIFICATIONS, SPECIES, OR QUALITY WILL BE REJECTED AND SHALL BE REMOVED FROM THE SITE AND REPLACED.
5. ALL PLANTS SHALL BE HARDY UNDER CLIMATIC CONDITIONS SIMILAR TO THOSE IN THE LOCALITY OF THE PROJECT. ALL PLANT MATERIAL SHALL MINIMALLY BE HARDY WITHIN THE USDA HARDINESS ZONE 6.
6. ALL PLANTS SHALL BE TYPICAL OF THEIR SPECIES OR VARIETY AND SHALL HAVE A NORMAL HABIT OR GROWTH, THEY SHALL BE SOUND, HEALTHY AND VIGOROUS, WELL BRANCHED AND FREE FROM FOLIATED WHEN IN LEAF. THEY SHALL BE CERTIFIED BY APPROPRIATE STATE AND FEDERAL AUTHORITIES TO BE FREE OF DISEASE AND INSECT PESTS, EGGS OR LARVAE. THEY SHALL HAVE HEALTHY, WELL-DEVELOPED ROOT SYSTEMS.
7. FALL DIGGING HAZARD: ANY SPECIES LISTED BELOW, IF INCLUDED ON THE PLANT LIST, MUST NOT BE DUG IN THE FALL (OCTOBER THROUGH DECEMBER) BECAUSE OF RISK TO THE TREE'S SURVIVAL. SPECIAL EXCEPTIONS MAY BE GRANTED IF THE TOWNSHIP IS NOTIFIED AND AN EXTENDED WARRANTY ON THESE PLANTS IS AGREED UPON PRIOR TO DIGGING. THE FOLLOWING VARIETIES SHOULD NOT BE DUG IN FALL: BETULA, CARPINUS, CELTIS, CERCIDIPHYLLUM, CRATAEGUS, CRYPTOMERIA, FAGUS, HALESIA, ILEX (TREE FORM VARIETIES), KOELREUTERIA, LIQUIDAMBAR, LIRODENDRON, NYSSA, OSTRYA, PRUNUS, PYRUS, QUERCUS (EXCEPT QUERCUS PALUSTRIS), SALIX (WEEPING VARIETIES), SORBUS, TAXODIUM, TILIA TOMENTOSA, AND ULMUS. DIGGING FOR MALUS AND ZELKOVA VARIETIES SHOULD BE AVOIDED IN FALL ONLY WHEN IN LEAF.
8. SUBSTITUTIONS: WHEN PLANTS OF A SPECIFIED KIND OR SIZE ARE NOT AVAILABLE WITHIN A REASONABLE DISTANCE (TYPICALLY WITHIN A 150 MILE RADIUS OF PROJECT SITE), SUBSTITUTIONS MAY BE MADE UPON REQUEST BY THE CONTRACTOR & APPROVED BY THE LANDSCAPE ARCHITECT, OWNER AND TOWNSHIP. NOTIFY THE OWNERS REPRESENTATIVE IN WRITING WITH ALL SUBSTITUTION REQUESTS TO OBTAIN APPROVALS.
9. SIZE: ALL PLANTS SHALL CONFORM TO THE MEASUREMENT SPECIFIED ON THE PLANT LIST, UNLESS AUTHORIZED IN WRITING BY THE TOWNSHIP.
10. MEASUREMENT: DIMENSIONS OF TREES AND SHRUBS SHALL CONFORM TO THE AMERICAN STANDARD FOR NURSERY STOCK ANSI Z60.1, LATEST EDITION.
11. SHADE TREES SHALL HAVE A MINIMUM BRANCHING HEIGHT OF SEVEN (7) FEET ZERO (0) INCHES ABOVE THE GROUND AS GROWN IN THE NURSERY UNLESS OTHERWISE NOTED. MINOR PRUNING OF LOWER BRANCHES MIGHT BE NECESSARY. HOWEVER, TREES WITH DISFIGURED HEADS CAUSED BY THE NEED FOR SIGNIFICANT REMOVAL OF LOWER BRANCHES WILL NOT BE ACCEPTED AND MUST BE REPLACED IMMEDIATELY.
12. TREES IN LEAF, INCLUDING EVERGREENS, WHEN PLANTED SHALL BE TREATED WITH ANTI-DESICCANT SUCH AS WILT-PROOF IF PLANTED DURING THE MONTHS OF JUNE THROUGH SEPTEMBER, NOVEMBER, AND DECEMBER.
13. BALLED AND BURLAPPED PLANTS SHALL BE DUG WITH FIRM NATURAL BALLS OF EARTH OF DIAMETER AND DEPTH TO INCLUDE MOST OF THE FIBROUS ROOTS. CONTAINER GROWN STOCK SHALL HAVE BEEN GROWN IN A CONTAINER LONG ENOUGH FOR THE ROOT SYSTEM TO HAVE DEVELOPED SUFFICIENTLY TO HOLD ITS SOIL TOGETHER FIRM AND WHOLE. NO PLANTS SHALL BE LOOSE IN THE CONTAINER.
14. ROOT BALLS SHALL BE ADEQUATELY PROTECTED AT ALL TIMES FROM SUN AND DRYING WINDS OR FROST.
15. PLANTS WITH BROKEN ROOT BALLS OR EXCESSIVE DAMAGE TO THE CROWN, STEM OR HEAD SHALL BE REPLACED PRIOR TO PLANTING. ANY PLANT SIGNIFICANTLY DAMAGED AFTER PLANTING SHALL BE REPLACED PRIOR TO FINAL DEDICATION. THE REPLACEMENT PLANT SHALL MAINTAIN A FULL GUARANTEE FOR THE DURATION SPECIFIED FOR THE PROJECT.
16. TAKE EXTREME CARE IN HANDLING AND INSTALLING ALL PLANTS TO PREVENT DAMAGE TO BARK, BRANCHES, AND ROOT BALLS.
17. PREPARE TREE AND SHRUB PLANTING PITS WITH PROPER SIZE EXCAVATIONS AND BACKFILL WITH PREPARED PLANTING MIXTURE LAYERS. WATER THOROUGHLY TO ALLOW SETTLEMENT AND REMOVE AIR POCKETS.
18. ROOT BALLS OF BALLED AND BURLAPPED (B&B) PLANTS COMMONLY ARRIVE FROM NURSERIES WITH EXCESS SOIL OVER THE CROWN. CAREFULLY REMOVE BURLAP FROM THE TOP OF THE ROOTBALL AND EXAMINE THE TOP OF THE ROOTBALL TO DETERMINE THE ACTUAL CROWN ELEVATION, OR ROOT FLAIR. CAREFULLY REMOVE ANY EXCESS SOIL OVERTOP THE ROOTBALL TO EXPOSE THE CORRECT ELEVATION. WHEN CORRECTLY INSTALLED, THE CROWN OF A PLANT SHALL BE AN INCH OR TWO HIGHER THAN THE PROPOSED GRADE ELEVATION AND NEVER LOWER THAN THE PROPOSED ELEVATION. HIGH OR LOW ROOT BALLS SHALL NOT BE ACCEPTED.
19. BACKFILL: PLANTING SOIL MIX SHALL BE AS SPECIFIED ON THE PLANTING DETAILS AND/OR NOTES. IF NOT SPECIFIED, BACKFILL MIX SHALL CONTAIN 25% TOPSOIL, 25% COMPOST, EARTHMATE, PEAT MOSS OR OTHER HIGH-QUALITY ORGANIC AMENDMENT MIXED WITH AN EQUAL QUANTITY OF EXISTING SOIL. IF EXCAVATED SOIL IS GOOD QUALITY TOPSOIL, THEN THE BACKFILL MIX MAY CONTAIN 25% COMPOST, EARTHMATE, PEAT MOSS OR OTHER HIGH-QUALITY ORGANIC AMENDMENT MIXED WITH 75% EXISTING TOPSOIL.
20. FERTILIZE ALL PLANTS WITH APPROPRIATE STARTER FERTILIZER AT TIME OF PLANTING.
21. ALL PLANTINGS MUST BE THOROUGHLY WATERED ON THE DAY OF INSTALLATION. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING WATER FOR THIS OPERATION. DURING PERIOD(S) OF DROUGHT (DEFINED AS NO RAINFALL WITHIN A THREE WEEK PERIOD) DURING THE FIRST GROWING SEASON, THE CONTRACTOR SHALL WATER ALL PLANTINGS ONCE WEEKLY.
22. MULCH ALL PLANTINGS WITH A 3" (THREE INCH) LAYER OF FINELY SHREDDED BARK MULCH OR LICORICE ROOT IMMEDIATELY AFTER PLANTING OPERATIONS ARE COMPLETED. THE MULCH SHALL BE AGED A MINIMUM OF 6 MONTHS. A GRANULAR PRE-EMERGENT WEED CONTROL SHALL BE SPREAD PRIOR TO MULCHING. THE LIMIT OF THIS MULCH FOR DECIDUOUS TREES AND SINGLE EVERGREEN TREES SHALL BE THE AREA OF THE PIT EXCAVATION. FOR EVERGREEN TREE AND SHRUB CLUSTERS, A FULLY MULCHED BED SHALL BE CREATED TO INCLUDE ALL PLANTS IN THE GROUPING TO THE EXTENT OF THEIR COLLECTIVE BRANCH DRIP LINE. MULCH PLANTING BEDS ENTIRELY AROUND AND BETWEEN ALL PLANTS FOR A FULLY MULCHED BED. MULCH BED SHALL BE CLEANLY EDGED & TAPERED TO MEET ADJACENT GRADE.
23. ALL SHRUBS ARE TO BE MULCHED IN GROUPS. NO SINGULARLY MULCHED SHRUBS WILL BE ACCEPTED, UNLESS A SINGULAR SPECIMEN SHRUB IN LAWN HAS BEEN SHOWN ON THE DRAWINGS. A CONTINUOUS MULCH BED SHALL BE PROVIDED FOR EACH GROUPING OR CLUSTER OF SHRUBS TO THE EXTENT OF THEIR COLLECTIVE BRANCH DRIP LINE.
24. WEED CONTROL: ALL PLANTING AREAS SHALL BE FREE FROM WEEDS PRIOR TO THE BEGINNING OF PLANTING OPERATION. CONTACT HERBICIDE SPRAYS SHOULD ONLY BE USED AS REQUIRED AND ALL MANUFACTURES WRITTEN INSTRUCTIONS AND STRICTLY FOLLOWED.
25. TREES SHALL BE STAKED AND GUYED AS SHOWN ON THE PLANTING DETAILS
26. EACH TREE AND SHRUB SHALL BE PRUNED IN ACCORDANCE WITH THE AMERICAN ASSOCIATION OF NURSERYMEN STANDARDS TO PRESERVE THE NATURAL CHARACTER OF THE PLANT. REMOVE DEAD, DYING OR DAMAGED BRANCHES. WEAK CROTCHES, AND POTENTIAL DISEASE LEADERS INCLUDING EXISTING MATURE TREES. SHOULD BE PERIODICALLY INSPECTED FOR INSECT OR DISEASE INFESTATION. METHODS UTILIZED TO CONTROL INSECT AND DISEASE MAY RANGE FROM SPRAYING AND PRUNING TO PLANT REMOVAL. CERTIFIED AND TRAINED PERSONNEL SHOULD ALWAYS PERFORM THIS TASK. SAFETY AND CONTROL SHOULD ALWAYS BE OF PRIME CONCERN.
27. ALL PLANTING SHALL BE INSTALLED AT THE LOCATIONS INDICATED ON THE DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLANTING AT THE CORRECT GRADES, ALIGNMENT, AND TO THE INDICATED LAYOUT OF THE PLANTING BEDS.
28. LAYOUT OF PLANTING: THE CONTRACTOR SHALL LAY OUT WITH IDENTIFIABLE STAKES AND PAINT THE LOCATION OF ALL TREES, SHRUBS AND PLANTING BEDS AS INDICATED ON DRAWINGS. THE LAYOUT OF PLANTINGS SHALL BE APPROVED BY THE OWNER AND TOWNSHIP PRIOR TO ANY EXCAVATION OF PLANT PITS OR PLANTING BEDS. THE OWNER OR OWNERS REPRESENTATIVE MUST APPROVE PLANTING LOCATIONS PRIOR TO ANY EXCAVATION OF PLANT PITS OR PLANTING BEDS TO ENSURE NO CONFLICT WILL OCCUR WITH SIGNAGE OR LIGHT POLE LOCATIONS.
29. MINOR ADJUSTMENTS TO TREE LOCATIONS MAY BE NECESSARY DUE TO FIELD CONDITIONS AND FINAL GRADING. THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE IF MAJOR ADJUSTMENTS ARE REQUIRED.
30. CONDITIONS DETRIMENTAL TO PLANTS: THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE IN WRITING OF ALL SOIL OR DRAINAGE CONDITIONS WHICH THE CONTRACTOR CONSIDERS DETRIMENTAL TO THE GROWTH OF PLANTS. THE CONTRACTOR SHALL STATE THE CONDITIONS AND SUBMIT A PROPOSAL FOR CORRECTING THE CONDITIONS, INCLUDING ANY CHANGE IN COST, FOR REVIEW AND ACCEPTANCE BY THE OWNERS REPRESENTATIVE.
31. NO PLANTINGS OR STRUCTURES SHALL BE PERMITTED WITHIN ANY EASEMENTS.

LANDSCAPE MAINTENANCE MANAGEMENT PROGRAM

1. GENERAL
   - 1.1. ALL MAINTENANCE OPERATIONS AS STATED HEREIN SHALL BE ADHERED TO ON AN ANNUAL BASIS.
   - 1.2. ALL PLANTING AREAS (INCLUDING LAWNS, BUFFERS AND PARKING LOTS) SHALL BE PERIODICALLY INSPECTED A MINIMUM OF ONCE PER MONTH; EVERY 2 WEEKS DURING THE GROWING SEASON OR AFTER EACH MOWING SESSION. A GENERAL FALL CLEAN-UP SHALL BE SCHEDULED EACH YEAR.
   - 1.3. ALL UNDESIRABLE LITTER, DEBRIS AND WEEDS SHALL BE REMOVED ON A WEEKLY BASIS.
   - 1.4. MAINTAIN A MINIMUM OF A 2 INCH DEPTH OF ORGANIC HARDWOOD MULCH OR EQUIVALENT ON ALL PLANTING BEDS, CURBED ISLANDS WITHIN THE PARKING LOT AND ALL PLANTERS ADJACENT TO THE BUILDING. ADJACENT LAWN AREAS SHOULD BE EDGED TO MAINTAIN A NEAT DISTINCT BORDER.
   - 1.5. ALL BED AREAS ARE TO RECEIVE AN APPLICATION OF PRE-EMERGENCE SUCH AS "PREEN" OR APPROVED EQUAL IN EARLY SPRING.
   - 1.6. ALL STAKES AND GUY WIRES ON NEWLY PLANTED DECIDUOUS AND EVERGREEN TREES SHALL BE MAINTAINED IN GOOD CONDITION FOR THE DURATION OF THE GUARANTEE PERIOD. ALL STAKES AND GUYS ARE TO BE REMOVED UPON COMMENCEMENT OF THIS PERIOD OR ONE YEAR, WHICH EVER OCCURS FIRST.
2. SEASONAL FLOWERS WHEN APPLICABLE
   - 2.1. ANNUAL FLOWERS PLANTED IN EITHER BED AREAS OR PLANTER BEDS SHALL BE PERIODICALLY AMENDED, AS WELL AS THE SOIL IN SAID AREAS AMENDED ANNUALLY. NEW PLANTINGS SHALL BE PROVIDED IN MAY OF EACH YEAR. DURING THE GROWING SEASON, ALL BEDS SHALL RECEIVE PERIODIC INSPECTION (AS STATED IN NOTE #1) AND WEEDING TO MAINTAIN NEAT APPEARANCE.
3. TURF
   - 3.1. LAWN AREAS SHALL NOT EXCEED A HEIGHT OF 3 INCHES. APPROXIMATELY 25 TO 30 MOWINGS PER YEAR WILL BE REQUIRED.
   - 3.2. FERTILIZER AND SOIL AMENDMENTS SHOULD BE ADDED AS NECESSARY AND/OR ON A SEASONAL BASIS. FERTILIZER IS OPTIMALLY APPLIED TO LAWN AREAS FOUR TIMES PER SEASON. TIMING, FREQUENCY AND RATE OF APPLICATION SHOULD BE ADJUSTED ACCORDING TO WEATHER AND HORTICULTURAL AND SOIL TEST CONDITIONS FOR EACH SPECIFIC SITE. FERTILIZER SHOULD BE APPLIED BY ACCEPTED METHODS ONLY. SAFETY SHOULD ALWAYS BE OF PRIME CONSIDERATION. CARE SHOULD BE TAKEN NOT TO APPLY FERTILIZER WHEN GROUND IS WET, UNDER EXTREME STRESS, WHEN PEOPLE ARE PRESENT OR DURING WINDY CONDITIONS.
   - 3.3. SOIL AMENDMENTS SUCH AS LIME OR GYPSUM MAY HAVE TO BE ADDED TO THE SOIL PERIODICALLY. THE NEED FOR SUCH SOIL AMENDMENTS SHOULD BE ANALYZED DURING THE PERIODIC INSPECTIONS AND IN CONJUNCTION WITH A SOIL TEST.
   - 3.4. APPLY LIME AND SOIL AMENDMENTS AT INTERVALS WHEN REQUIRED. DO NOT APPLY SOIL AMENDMENTS WHILE TURF AREAS ARE WET, UNDER EXTREME STRESS, WHEN PEOPLE ARE PRESENT, OR IN WINDY CONDITIONS.
4. PLANTINGS
   - 4.1. SOIL AMENDMENTS SHOULD BE APPLIED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS OR BASED UPON SOIL TEST RESULTS.
   - 4.2. APPLY A 3-1-2 (21-7-14, 10-4-6, OR 24-4-8) 50% ORGANIC FERTILIZER TWICE A YEAR BETWEEN MARCH 15 TO APRIL 15 AND SEPTEMBER 1 TO OCTOBER 1. IF NECESSARY TWO ADDITIONAL APPLICATIONS MAY BE MADE IN MAY AND NOVEMBER.
   - 4.3. DO NOT APPLY SOIL AMENDMENTS OR FERTILIZER WHILE PLANTS ARE UNDER EXTREME STRESS, IN WINDY CONDITIONS OR WHILE PEOPLE ARE PRESENT.
5. PRUNING
   - 5.1. REMOVAL OF DEAD, DISEASED, INSECT INFESTED OR WEAK WOOD SHALL TAKE PLACE IN DORMANT SEASON, OR AFTER FLOWERING. EXCESSIVE SHOOTS AND SUCKERS SHALL BE REMOVED. ALL TREES WITHIN THE PARKING LOT ARE TO BE MAINTAINED AT A MINIMUM LIME HEIGHT OF TEN FEET (10.0').
   - 5.2. SHRUB MATERIAL USED AS A SCREEN SHOULD BE PRUNED AS A MASS TO ENHANCE THEIR NATURAL FORM. HEDGES SHOULD BE PRUNED TO MAINTAIN A TRAPEZOIDAL FORM.
   - 5.3. ROOT PRUNING OF TREES ADJACENT TO CURBS OR SIDEWALKS SHOULD OCCUR DURING PERIODIC INSPECTIONS WITH KNOWLEDGE OF MOST RECENT PRUNING. NO MORE THAN ½ OF ROOT SYSTEM SHOULD BE PRUNED DURING A YEAR. A CERTIFIED TREE EXPERT OR ARBORIST SHALL PERFORM THIS WORK.
6. INSECT AND DISEASE CONTROL
   - 6.1. THE CONTROL OF INSECTS AND DISEASE ASSOCIATED WITH ALL PLANTING AREAS SHOULD ALWAYS BE A MAINTENANCE PRIORITY. ALL PLANTS, INCLUDING EXISTING MATURE TREES, SHOULD BE PERIODICALLY INSPECTED FOR INSECT OR DISEASE INFESTATION. METHODS UTILIZED TO CONTROL INSECT AND DISEASE MAY RANGE FROM SPRAYING AND PRUNING TO PLANT REMOVAL. CERTIFIED AND TRAINED PERSONNEL SHOULD ALWAYS PERFORM THIS TASK. SAFETY AND CONTROL SHOULD ALWAYS BE OF PRIME CONCERN.
7. RENOVATION
   - 7.1. RENOVATION INCLUDES THE RESEEDING OR REPLANTING OF LANDSCAPE AREAS DAMAGED, DESTROYED OR FAILING DUE TO INSECTS, DISEASE, WEATHER OR PHYSICAL DAMAGE.
   - 7.2. LAWN: ALL AREAS WHERE SOIL HAS BEEN EXPOSED SHOULD BE RENOVATED DURING THE NEXT PLANTING SEASON. PROPER HORTICULTURAL AND SOIL EROSION PREVENTION METHODS SHOULD BE UTILIZED. IF SOIL EROSION HAS OCCURRED, THE AREA SHOULD BE REPAIRED. A SEED MIXTURE COMPATIBLE TO EXISTING PLANTINGS AND CONDITIONS SHOULD ALWAYS BE UTILIZED.
   - 7.3. PLANTINGS: ALL PLANTINGS WHICH ARE DEAD, DAMAGED OR DESTROYED SHOULD BE REPLACED BY THE END OF THE NEXT PLANTING SEASON. A FAILING, DAMAGED OR DESTROYED LANDSCAPE SCREEN OR BUFFER MUST BE RENOVATED OR REPLACED WITHIN A REASONABLE AMOUNT OF TIME BUT NOT TO EXCEED THE SUBSEQUENT GROWING SEASON.
8. SITE AMENITIES
   - 8.1. BENCHES, PATHS, BICYCLE RACKS, TRASH RECEPTACLES AND SIGNS SHOULD BE INSPECTED AT LEAST TWICE A YEAR, MARCH AND AUGUST, TO DETERMINE THEIR CONDITION. ANY DAMAGED, WORN OR UNSAFE CONDITION SHOULD BE RECTIFIED IMMEDIATELY.
9. PAVED SURFACES
   - 9.1. ALL PAVED SURFACES, CONCRETE SIDEWALKS, ASPHALT PAVEMENT AND DECORATIVE PAVEMENT MUST BE INSPECTED ON A REGULAR BASIS, A MINIMUM OF ONCE PER MONTH.
   - 9.2. ANY TRASH, STAINS, OR OBSTRUCTIONS MUST BE REMOVED IMMEDIATELY. PAVEMENTS SHOULD BE INSPECTED FOR DAMAGE, CRACKS, POT HOLES, AND RETURNED TO THEIR ORIGINAL CONDITION. SNOW SHOULD BE REMOVED DURING AND FOLLOWING EVERY STORM. SIDEWALKS AND PARKING AREAS MUST BE KEPT CLEAR OF ICE AND SNOW DURING BUSINESS HOURS.



PART OF UNIT 15, BLOCK 48
PARCEL NO. 52-00-01903-007 &
PART OF UNIT 66, BLOCK 60

B4 LANDSCAPE PLAN

SCALE: 1" = 20'

PLANT SCHEDULE

Plan Symbol	Quantity	Botanical Name	Common Name	Min. Planting Caliper	Min. Planting Spread	Min. Planting Height	Remarks	Comments
Shade Trees								
AR	4	*Acer rubrum 'Bowhall'*	'Bowhall' Red Maple	3" cal.	-	12-14'	B&B	Full, straight leader
GB	2	*Ginkgo biloba 'Princeton Sentry'*	'Princeton Sentry' Ginkgo	3" cal.	-	12-14'	B&B	Full, straight leader
GT	2	*Gleditsia triacanthos var. inermis*	Thornless Honeylocust	3" cal.	-	12-14'	B&B	Full, straight leader
Evergreen Trees								
TO	9	*Thuja occidentalis 'Smaragd'*	Emerald Green Arborvitae	-	-	5-6'	B&B	Branched fully to ground
Shrubs**								
HM	16	*Hydrangea macrophylla 'Endless Summer'*	'Endless Summer' Hydrangea	-	-	18-24"	CONT	Heavy, full specimen
HQ	9	*Hydrangea quercifolia 'Ruby Slippers'*	'Ruby Slippers' Oakleaf Hydrangea	-	-	24-30"	CONT	Heavy, full specimen
IG	10	*Ilex x meserveae 'Monnieves'*	Scallywag Holly	-	-	18-24"	CONT	Heavy, full specimen
JH	26	*Juniperus horizontalis 'Bar Harbor'*	'Bar Harbor' Juniper	-	6-12" ^^	-	CONT	Heavy, full specimen
RM	19	*Rosa 'Meidrifora'*	Coral Drift Rose	-	-	18-24"	CONT	Heavy, full specimen
WF	5	*Weigela florida 'Coco Krunch'*	'Coco Krunch' Weigela	-	-	18-24"	CONT	Heavy, full specimen
Perennials**								
CA	110	*Calamagrostis acutiflora 'Karl Foerster'*	'Karl Foerster' Feather Reed Grass	-	-	-	CONT	Plant 18" on center
LM	240	*Liriope muscari*	Lilyturf	-	-	-	CONT	Plant 15" on center
NF	41	*Nepeta x. faassenii 'Walker's Low'*	'Walker's Low' Catmint	-	-	-	CONT	Plant 18" on center
PA	17	*Pennisetum alopecuroides 'Little Bunny'*	'Little Bunny' Fountain Grass	-	-	-	CONT	Plant 24" on center

** Plant in continuous mulch bed (2-3" depth) until fully established.
^^ low, spreading variety

LANDSCAPE REQUIREMENTS CHART
Springfield Township

Code Item	Requirement	Plan Proposed
S.O. 95-11.I (1) Buffers	Subdivisions and land developments shall be required to provide landscape buffering along side and rear boundaries of the tract to be subdivided or developed except in the development of single-family detached residences.	
	Proposed uses are part of existing shopping center that has screening around property boundaries	N/A
S.O. 95-11.I (2) Street trees	Within any subdivision or land development, street trees shall be planted along new and existing streets	
	No street frontage	N/A
S.O. 95-11.I (3) Parking area landscaping	All off-street parking areas and all loading areas shall be landscaped.	
	No parking proposed within Springfield Township	
	Landscape planter proposed between existing retail stores and bank drive-thru lane	33 Perennials
	Foundation plantings between bank & drive aisles	37 Shrubs 114 Perennials

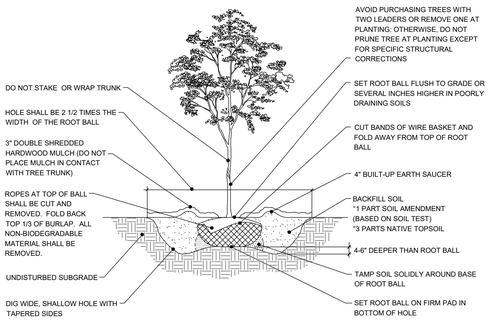
LANDSCAPE REQUIREMENTS CHART
Whitemarsh Township

Code Item	Requirement	Plan Proposed
S.O. 105-39 Landscaping of Parking Facilities	All parking areas shall have at least one, 3" caliper tree for every two parking spaces provided.	
	5 parking spaces provided 5/2 = 3 trees	8 Shade trees 9 Evergreen trees 48 Shrubs 261 Perennials
	A minimum of 10% of any parking facility over 2,000 sf in gross area shall be devoted to landscaping	
	Parking area is less than 2,000 sf	N/A
S.O. 105-48 Street Trees	Shade street trees shall be planted at intervals of not more than 45 feet, and flowering street trees at intervals of not more than 30 feet.	
	No street frontage	N/A
S.O. 105-48 Buffer yards	Per Table 1 - Determination of Buffer Yard Class; No buffer is required between proposed and existing Retail & Consumer Services uses	N/A
Chapter 55 Tree Protection Standards	Every tree determined to be living and healthy, with a DBH of six inches or greater that is removed or destroyed, shall be replaced with one or more new shade trees, min. 3" caliper. Total caliper of replacement trees shall equal or exceed the DBH of the trees removed.	
	No trees, 6" or greater, are proposed to be removed.	N/A

C1 DECIDUOUS TREE PLANTING

NOT TO SCALE

2019-03-01 / LEC STD



NOTES:

1. FOR CONTAINER-GROWN TREES, USE FINGERS OR SMALL HAND TOOLS TO PULL THE ROOTS OUT OF THE OUTER LAYER OF POTTING SOIL; THEN CUT OR PULL APART ANY ROOTS CIRCLING THE PERIMETER OF THE CONTAINER
2. THOROUGHLY SOAK THE TREE ROOT BALL AND ADJACENT PREPARED SOIL SEVERAL TIMES DURING THE FIRST MONTH AFTER PLANTING AND REGULARLY THROUGHOUT THE FOLLOWING TWO SUMMERS.
3. SOIL AMENDMENTS:
   *MODIFY HEAVY CLAY OR SILT SOILS (MORE THAN 40% CLAY OR SILT) BY ADDING COMPOSTED PINE BARK (UP TO 30% BY VOLUME) OR GYPSUM
   *MODIFY EXTREMELY SANDY SOILS (MORE THAN 85% SAND) BY ADDING ORGANIC MATTER AND/OR DRY, SHREDDED CLAY LOAM UP TO 30% OF THE TOTAL MIX

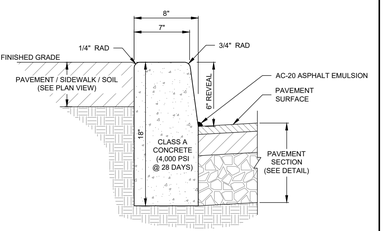
D1 SHRUB PLANTING

NOT TO SCALE

2019-03-01 / LEC STD

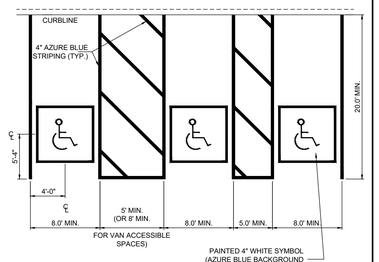
NOTES:

1. FOR CONTAINER-GROWN SHRUBS, USE FINGERS OR SMALL HAND TOOL TO PULL THE ROOTS OUT OF THE OUTER LAYER OF POTTING SOIL; THEN CUT OR PULL APART ANY ROOTS CIRCLING THE PERIMETER OF THE CONTAINER.
2. THOROUGHLY SOAK THE SHRUB ROOT BALL AND ADJACENT PREPARED SOIL SEVERAL TIMES DURING THE FIRST MONTH AFTER PLANTING AND REGULARLY THROUGHOUT THE FOLLOWING TWO SUMMERS.
3. SOIL AMENDMENTS:
   *MODIFY HEAVY CLAY OR SILT SOILS (MORE THAN 40% CLA



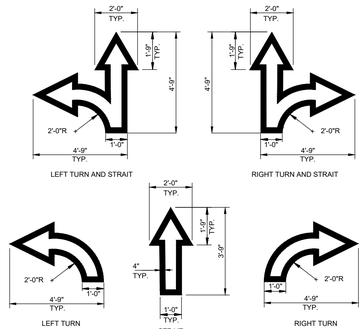
NOTES:
1. ANY EXCAVATION BELOW DESIRED GRADE DUE TO OVER EXCAVATION OR WET SOIL CONDITIONS SHALL BE BACKFILLED WITH 3/4" CLEAN CRUSHED STONE. ALL SUBGRADES SHALL BE APPROVED BY THE TOWNSHIP ENGINEER PRIOR TO POURING.
2. TRANSVERSE JOINTS 3/4" WIDE SHALL BE INSTALLED IN THE CURB 20'-0" APART AND SHALL BE FILLED WITH PREFORMED, BITUMINOUS-IMPREGNATED FIBER JOINT FILLER, COMPLYING WITH THE REQUIREMENTS OF AASHTO M-213, RECESSED 1/4" FROM THE FRONT FACE AND TOP OF THE CURB.

A1 CONCRETE CURB (6" REVEAL)
NOT TO SCALE



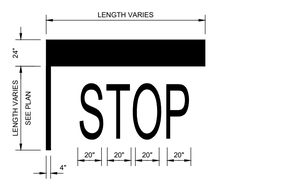
NOTES:
1. CURB RAMPS, PAVEMENT MARKINGS, & APPLICABLE SIGNAGE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST A.D.A. ACCESSIBILITY GUIDELINES.
2. REFER TO ADA PARKING STALL NOTES FOR ADDITIONAL LAYOUT CRITERIA.

A2 RESERVED PARKING STALL
NOT TO SCALE 2020-06-10 / LEC STD

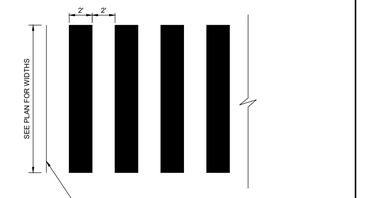


NOTE:
ALL TRAFFIC FLOW ARROWS TO BE REFLECTIVE WHITE PAINT.

A3 TRAFFIC ARROWS
NOT TO SCALE 2019-03-01 / LEC STD

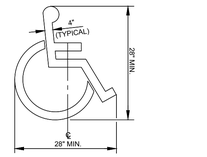


A4 STOP MARKING
NOT TO SCALE 2019-03-01 / LEC STD



NOTE:
1. ALL CROSSWALKS AND NEUTRAL AREAS SHALL BE PAINTED WHITE. SPACES AND LINES SHALL BE OF EQUAL THICKNESS.
2. MAX. CROSS SLOPE NOT TO EXCEED 2%; MAX. RUNNING SLOPE NOT TO EXCEED 5%.

A5 CROSSWALK MARKING
NOT TO SCALE 2019-03-01 / LEC STD

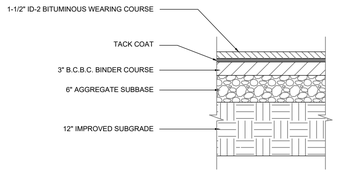


REFER TO RESERVED PARKING STALL DETAIL FOR SYMBOL LOCATION

A6 ADA PARKING SYMBOL
NOT TO SCALE 2019-03-01 / LEC STD

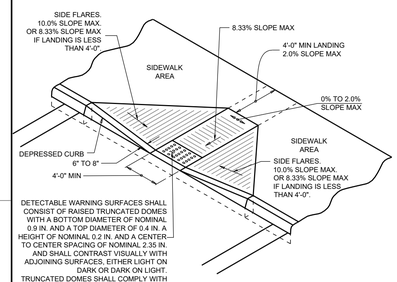
NOTES:
1. CURB RAMPS, PAVEMENT MARKINGS, & APPLICABLE SIGNAGE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST A.D.A. ACCESSIBILITY GUIDELINES.
2. CURB RAMPS MAY NOT EXTEND INTO ANY PORTION OF THE PARKING SPACE OR ASSOCIATED STRIPED ISLAND.
3. SLOPE, CROSS SLOPE OF ACCESSIBLE SPACES NOT TO EXCEED 2% IN ANY DIRECTION.
4. ACCESSIBLE PARKING SPACES SHALL BE LOCATED ON THE SHORTEST ACCESSIBLE ROUTES OF TRAVEL FROM ADJACENT PARKING TO AN ACCESSIBLE BUILDING ENTRANCE.
5. ACCESSIBLE PARKING SPACES SHALL BE AT LEAST NINETY-SIX (96) INCHES WIDE. ACCESS AISLES SHALL BE 60 INCHES WIDE. ONE OF SIX ACCESSIBLE SPACES SHOULD PROVIDE A VAN ACCESSIBLE AISLE. THE AISLE SHOULD BE 96 INCHES WIDE (OR ACCESSIBLE SPACE IS 11 FEET AND ACCESS AISLE IS FIVE FEET). WHERE PARKING SPACES AND ACCESS AISLES ARE MARKED WITH LINES, THE WIDTH MEASUREMENTS SHALL BE MADE FROM CENTERLINE OF THE MARKINGS. WHERE PARKING SPACES OR ACCESS AISLES ARE NOT ADJACENT TO ANOTHER PARKING SPACE OR ACCESS AISLES, MEASUREMENTS SHALL BE PERMITTED TO INCLUDE THE FULL WIDTH OF THE LINE DEFINING THE PARKING SPACE OR ACCESS AISLE.
6. PARKING ACCESS AISLES SHALL BE PART OF AN ACCESSIBLE ROUTE TO THE BUILDING OR FACILITY ENTRANCE AND SHALL COMPLY WITH PROVISIONS FOR ACCESSIBLE ROUTES. MARKED CROSSINGS SHALL BE PROVIDED WHERE THE ACCESSIBLE ROUTE MUST CROSS VEHICULAR TRAFFIC LANES. WHERE POSSIBLE, IT IS PREFERABLE THAT THE ACCESSIBLE ROUTE NOT PASS BEHIND PARKED VEHICLES.
7. TWO (2) ACCESSIBLE PARKING SPACES MAY SHARE A COMMON ACCESS AISLE.
8. ACCESS AISLES SHALL EXTEND THE FULL LENGTH OF THE PARKING SPACE THEY SERVE.
9. ACCESS AISLES SHALL BE MARKED SO AS TO DISCOURAGE PARKING IN THEM.
10. ACCESS AISLES SHALL NOT OVERLAP THE VEHICULAR WAY. ACCESS AISLES SHALL BE PERMITTED TO BE PLACED ON EITHER SIDE OF THE PARKING SPACE EXCEPT FOR ANGLED VAN PARKING SPACES WHICH SHALL HAVE ACCESS AISLES LOCATED ON THE PASSENGER SIDE OF THE PARKING SPACES.
11. FLOOR SURFACES OF PARKING SPACES AND ACCESS AISLES SERVING THEM SHALL BE STABLE, FIRM AND SLIP RESISTANT. ACCESS AISLES SHALL BE AT THE SAME LEVEL AS THE PARKING SPACES THEY SERVE. CHANGES IN LEVEL ARE NOT PERMITTED.
12. PARKING SPACES AND ACCESS AISLES SHALL BE LEVEL WITH SURFACE SLOPES NOT EXCEEDING 2.0% IN ALL DIRECTIONS.
13. PARKED VEHICLE OVERHANGS SHALL NOT REDUCE THE REQUIRED CLEAR WIDTH OF AN ACCESSIBLE ROUTE.
14. PARKING SPACES FOR VANS AND ACCESS AISLES AND VEHICULAR ROUTES SERVING THEM SHALL PROVIDE A VERTICAL CLEARANCE OF NINETY-EIGHT (98) INCHES MINIMUM. SIGNS SHALL BE PROVIDED AT ENTRANCES TO PARKING FACILITIES INFORMING DRIVERS OF CLEARANCES AND THE LOCATION OF VAN ACCESSIBLE PARKING SPACES.
15. EACH ACCESSIBLE PARKING SPACE SHALL BE PROVIDED WITH THE APPROPRIATE SIGNAGE DISPLAYING THE INTERNATIONAL SYMBOL OF ACCESSIBILITY, THE PENNSYLVANIA PARKING PENALTY SIGN AND VAN ACCESSIBLE SPACES SHALL HAVE SIGNAGE STATING "VAN ACCESSIBLE". SIGNS SHALL BE INSTALLED SO THAT THE BOTTOM OF SIGNS ARE MOUNTED NOT LESS THAN 60 INCHES ABOVE GRADE AND SHALL NOT INTERFERE WITH AN ACCESSIBLE ROUTE FROM AN ACCESS AISLE

B1 ADA PARKING STALL NOTES
NOT TO SCALE 2020-06-10 / LEC STD



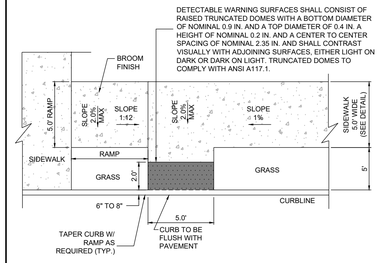
NOTE:
1. CBR VALUES SHALL BE OBTAINED BY GEOTECHNICAL ENGINEER PRIOR TO COMMENCEMENT OF PAVING.
2. REFER TO GEOTECHNICAL REPORT FOR ADDITIONAL PAVEMENT DESIGN SPECIFICATIONS AND MATERIAL REQUIREMENTS.
3. AGGREGATE SUB-BASE SHALL BE AGGREGATE CONFORMING TO THE GRADATIONS OF TYPE 2A AGGREGATE. ON-SITE MATERIAL MAY BE USED IF DEEMED ADEQUATE.

B2 ASPHALT PAVEMENT
NOT TO SCALE 2019-03-01 / LEC STD



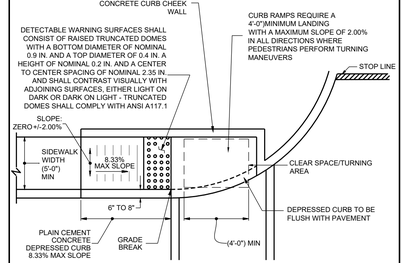
NOTES:
1. CURB RAMPS MAY NOT EXTEND INTO ANY PORTION OF THE PARKING SPACE OR ASSOCIATED STRIPED ISLAND.
2. CURB RAMPS, PAVEMENT MARKINGS, & APPLICABLE SIGNAGE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST A.D.A. ACCESSIBILITY GUIDELINES.
3. CONTRACTOR TO CONSTRUCT DETECTABLE WARNINGS ONLY WHEN SIDEWALK INTERSECTS A VEHICULAR TRAVELED WAY

B3 ADA RAMP (TYPE 1)
NOT TO SCALE 2019-03-01 / LEC STD



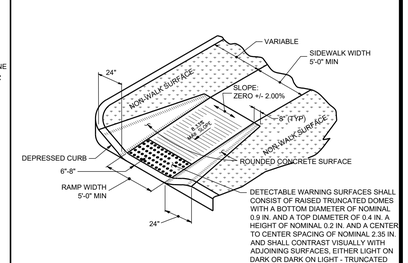
NOTES:
1. CURB RAMPS MAY NOT EXTEND INTO ANY PORTION OF THE PARKING SPACE OR ASSOCIATED STRIPED ISLAND.
2. CURB RAMPS, PAVEMENT MARKINGS, & APPLICABLE SIGNAGE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST A.D.A. ACCESSIBILITY GUIDELINES.
3. CONTRACTOR TO CONSTRUCT DETECTABLE WARNINGS ONLY WHEN SIDEWALK INTERSECTS A VEHICULAR TRAVELED WAY

B4 ADA RAMP (TYPE 2)
NOT TO SCALE 2019-03-01 / LEC STD



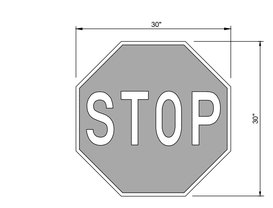
NOTES:
1. CURB RAMPS MAY NOT EXTEND INTO ANY PORTION OF THE PARKING SPACE OR ASSOCIATED STRIPED ISLAND.
2. CURB RAMPS, PAVEMENT MARKINGS, & APPLICABLE SIGNAGE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST A.D.A. ACCESSIBILITY GUIDELINES.
3. CONTRACTOR TO CONSTRUCT DETECTABLE WARNINGS ONLY WHEN SIDEWALK INTERSECTS A VEHICULAR TRAVELED WAY

B5 ADA RAMP (TYPE 2 PARTIAL)
NOT TO SCALE 2019-03-01 / LEC STD



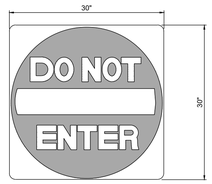
NOTES:
1. CURB RAMPS MAY NOT EXTEND INTO ANY PORTION OF THE PARKING SPACE OR ASSOCIATED STRIPED ISLAND.
2. CURB RAMPS, PAVEMENT MARKINGS, & APPLICABLE SIGNAGE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST A.D.A. ACCESSIBILITY GUIDELINES.
3. CONTRACTOR TO CONSTRUCT DETECTABLE WARNINGS ONLY WHEN SIDEWALK INTERSECTS A VEHICULAR TRAVELED WAY

B6 ADA RAMP (TYPE 4A)
NOT TO SCALE 2019-03-01 / LEC STD



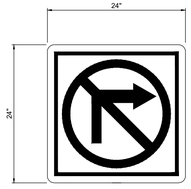
WHITE LEGEND RED BACKGROUND
R1-1

C1 STOP SIGN
NOT TO SCALE 2019-03-01 / LEC STD



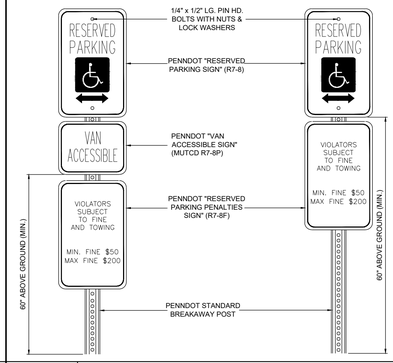
STANDARD RED AND WHITE SIGN
R5-1 : 24" x 24"
R5-1(S) : 30" x 30"

C2 DO NOT ENTER SIGN
NOT TO SCALE 2019-03-01 / LEC STD

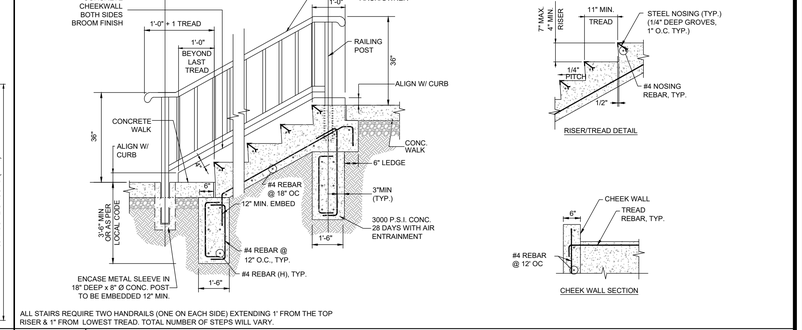


BLACK LEGEND ON WHITE BACKGROUND
R3-1

C3 NO RIGHT TURN SIGN
NOT TO SCALE 2019-03-01 / LEC STD

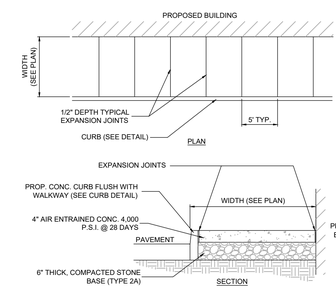


C4 RESERVED PARKING SIGN
NOT TO SCALE 2019-03-01 / LEC STD



ALL STAIRS REQUIRE TWO HANDRAILS (ONE ON EACH SIDE) EXTENDING 1' FROM THE TOP RISER & 1" FROM LOWEST TREAD. TOTAL NUMBER OF STEPS WILL VARY.

C5 CONCRETE STEPS
NOT TO SCALE 2019-03-01 / LEC STD



NOTE:
1. MAX. CROSS SLOPE 1/4" PER FOOT PITCHED AWAY FROM BUILDING.
2. EXPANSION JOINTS 1/2" WIDE PREMOULDED BIT. MATERIAL SHALL BE INSTALLED AT 30' INTERVALS. CONTRACTION JOINTS TO BE SPACED AT EQUAL INTERVALS, 5' MAXIMUM LENGTH.
3. REFER TO SITE PLAN FOR SIDEWALK WIDTH (W).

D6 CONCRETE SIDEWALK
NOT TO SCALE 2019-03-01 / LEC STD

REV.	DATE	COMMENT	BY
1	2021-10-21	PER TWP COMMENTS	JDB

D. ALEXANDER TWEEDIE
PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE No. 071873

NOT FOR CONSTRUCTION

PROJECT No: 140065 | DRAWN BY: MAR | CHECKED BY: DAT | CAD I.D. #: 11-12_DT_140065

LANDCORE
Engineering Consultants, P.C.
PO BOX 27525 #50267
PHILADELPHIA, PENNSYLVANIA 19151-0525
PHONE 215-828-2510 | FAX 215-824-2419
LANDCORECONSULTING.COM

PROJECT: PROPOSED INDUSTRIAL REDEVELOPMENT
1880 BETHLEHEM PIKE, FLOURTOWN PA 19031
SPRINGFIELD TOWNSHIP AND WHITEMARSH TOWNSHIP
MONTGOMERY COUNTY, PA

APPLICANT: FEDERAL REALTY INVESTMENT TRUST

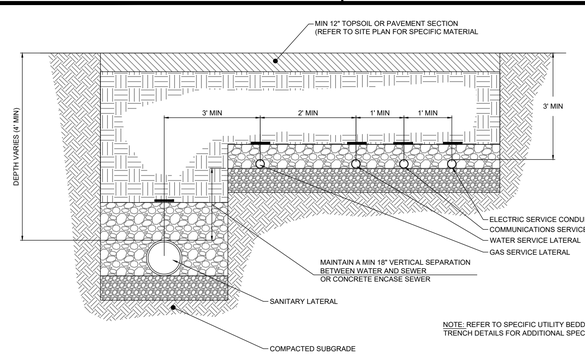
TITLE: DETAILS

DATE: 2021-03-04

SHEET: 11 of 13 | REV. No: 1

DT1

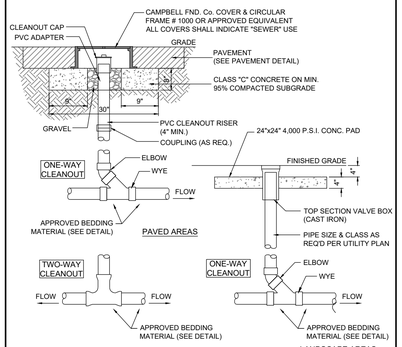
D:\DROPBOX (LANDCORE)\PROJECT FOLDER\140065 - FEDERAL REALTY - FLOURTOWN PA\DRAWINGS\SD-SITE PLANS\11-12_DT_140065.DWG
JASON WAMBOLD III @ 2021-10-28 7:10 AM



NOTE: REFER TO SPECIFIC UTILITY BEDDING AND TRENCH DETAILS FOR ADDITIONAL SPECIFICATIONS

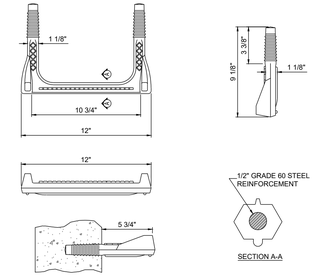
A1 COMMON UTILTY TRENCH

NOT TO SCALE 2019-03-01 / LEC STD



A3 SANITARY CLEANOUTS

NOT TO SCALE 2019-06-11 / LEC STD



NOTES:

1. PLACE LADDER BARS AT 12" O.C. MAX.
2. MAX. DISTANCE FROM BOTTOM OF STRUCTURE TO LOWEST LADDER BAR IS 12".
3. SPECIFICATIONS: MANHOLE STEPS SHALL BE ANODIZED ALUMINUM OR APPROVED MATERIAL.

A4 LADDER RUNGS

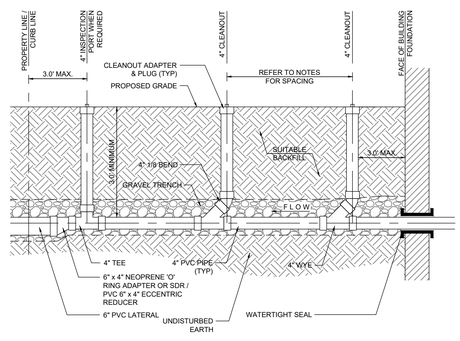
NOT TO SCALE 2019-03-01 / LEC STD

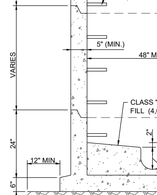
NOTES:

1. CONSTRUCTION SHALL COMPLY WITH THE BOCA INTERNATIONAL PLUMBING CODE.
2. IF BENDS ARE NECESSARY, THEY SHALL BE A STANDARD MANUFACTURED BEND PRECEDED BY THE INSTALLATION OF A CLEANOUT.
3. ALL CONNECTIONS AND FITTINGS SHALL BE SEALED WITH EITHER FLEXIBLE ELASTOMERIC SEAL JOINTS OR SOLVENT CEMENT JOINTS.
4. BUILDING SEWER PIPE MAY BE 4" OR 6" (4" SHOWN). THE MINIMUM SLOPE FOR A 4" PIPE SHALL BE 1/4" PER FOOT. THE MINIMUM SLOPE FOR 6" PIPE SHALL BE 1/8" PER FOOT.
5. THE SEWER LINE SHALL BE BEDDED IN A MINIMUM OF TWO (2) INCHES OF AASHTO No. 8 AGGREGATE AND COMPLETELY BACKFILLED TO SIX INCHES ABOVE THE TOP OF THE PIPE WITH THE SAME MATERIAL. THE REMAINING TRENCH MAY BE BACKFILLED WITH SUITABLE EXISTING MATERIAL REMOVED FROM THE TRENCH EXCAVATION.
6. ALL INSTALLATIONS SHALL HAVE AT LEAST ONE (1) CLEANOUT. THIS CLEANOUT SHALL BE INSTALLED IMMEDIATELY AFTER THE SEWER EXITS THE BUILDING. ADDITIONAL CLEANOUTS SHALL BE INSTALLED AT INTERVALS OF 50 FEET FOR 4" PIPE, 100 FEET FOR 6" PIPE AND AT ALL CHANGES OF DIRECTION.
7. THE INSPECTION PORT SHALL BE REQUIRED FOR COMMERCIAL AND INDUSTRIAL LATERALS.
8. CLEANOUTS AND INSPECTION PORTS PLACED WITHIN PAVED AREAS SHALL BE PROTECTED FROM VEHICULAR DAMAGE BY CONSTRUCTING CAST IRON OR DUCTILE IRON CLEANOUT COVERS SUPPORTED ON A CONCRETE SLAB.

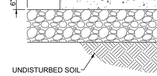
A5 TYPICAL SANITARY SERVICE CONNECTION

NOT TO SCALE 2019-03-01 / LEC STD

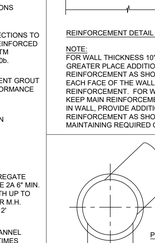




PLAN



MANHOLE COVER SECTION



SECTION A-A

NOTES:

1. PRECAST MANHOLES, MEETING THE REQUIREMENTS OF PUBLICATION 408 SPECIFICATIONS, SECTION 714, MAY BE SUBSTITUTED FOR THE STANDARD CAST-IN-PLACE MANHOLE.
2. CONSTRUCTION NOTES:
   - 2.1. CONSTRUCT IN ACCORDANCE WITH PENNDOT PUBLICATION 408 SPECIFICATIONS, SECTIONS 605, 606, 714 AND ASTM C-478-90, STANDARD SPECIFICATIONS FOR PRECAST REINFORCED CONCRETE MANHOLE SECTIONS, AS MODIFIED HERE IN.
   - 2.2. MINIMUM CONCRETE CLASS AA.
   - 2.3. PROVIDE EPOXY COATED STEEL REINFORCEMENT IN ACCORDANCE WITH ASTM A185, STEEL WELDED WIRE FABRIC ASTM A663 & A675, PLAIN BILLET STEEL BARS OR ASTM A615, DEFORMED BILLET STEEL BARS PROVIDE MINIMUM YIELD STRENGTH OF 60,000 PSI.
   - 2.4. CLEAR COVER FOR STEEL:
     - 2.4.1. WALLS: 2"
     - 2.4.2. FOOTINGS: 2" (TOP BARS), 1 1/2" (BOTTOM BARS)
     - 2.4.3. 1 1/2" (SIDE COVER)
3. PROVIDE 12" MINIMUM HORIZONTAL CLEARANCE BETWEEN OPENINGS LOCATED AT THE SAME DEPTH. PIPES NOT LOCATED AT THE SAME DEPTH MUST BE LOCATED VERTICALLY AT LEAST ONE TIMES MAXIMUM OPENING DIAMETER APART.
4. FOR RISERS OR BASE SECTIONS WITH OPENINGS, PROVIDE A MINIMUM HEIGHT OF SECTION EQUAL TO TWO TIMES THE LARGEST OPENING. CENTER OF OPENING TO BE LOCATED AT LEAST ONE TIMES THE OPENING FROM THE CLOSEST JOINT BETWEEN RISERS.
5. PRECAST RISERS AND BASE SECTIONS
   - 5.1. FOR PRECAST RISER OR BASE SECTIONS WITH ONE OPENING LOCATED AT DEPTHS TO 60' OR FOR SECTIONS WITH TWO OR MORE OPENINGS, LOCATED AT A DEPTH OF 15 FEET AND LESS, PROVIDE CIRCUMFERENTIAL REINFORCEMENT IN ACCORDANCE WITH REINFORCEMENT DETAIL AT OPENINGS.
   - 5.2. FOR RISERS OR BASE SECTIONS WITH 2 OR MORE OPENINGS, LOCATED AT A DEPTH GREATER THAN 15 FEET, BUT LESS THAN OR EQUAL TO 30 FEET, PROVIDE CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.44 SQ/IN VERTICAL FOOT FOR THE DEPTH OF THE RISER OR BASE SECTION.
   - 5.3. FOR RISERS OR BASE SECTIONS WITH 2 OR MORE OPENINGS, LOCATED AT DEPTHS GREATER THAN 30 FEET, USE A 10 INCH THICK WALL RISER OR BASE SECTION WITH CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ/IN VERTICAL FOOT EACH FACE.
   - 5.4. RISERS OR BASE SECTIONS WITH HOLES TO BE CLEARLY MARKED WITH MAXIMUM ALLOWABLE DEPTH.
6. PROVIDE ADDITIONAL REINFORCEMENT BARS AROUND OPENINGS AS SHOWN ON REINFORCEMENT DETAILS AT OPENINGS.
7. PROVIDE MANHOLE STEPS MEETING THE REQUIREMENTS OF PUBLICATION 408 SPECIFICATIONS, SECTION 605.2(C), ALTERNATE CONFIGURATIONS AND DIMENSIONS, AS APPROVED BY THE ENGINEER, MAY BE USED.
8. PROVIDE MINIMUM 1" SECTION DIMENSION FOR METAL STEPS. PROVIDE MAXIMUM 3/4" SECTION DIMENSION FOR NON-DETERIORATING MATERIAL STEPS.
9. MECHANICAL ANCHOR REQUIRED FOR INSTALLATION OF STEPS WITHOUT HOOKS.
10. FOR FOOTING TOP REINFORCEMENT, BOTH DIRECTIONS, USE NO. 19 (6) BARS AT 12" FOR DEPTHS TO 60' OR 0.30 IN²/FT WWF FOR DEPTHS TO 30' AND 0.32 IN²/FT WWF FOR DEPTHS GREATER THAN 30'. 6" MAXIMUM SPACING FOR WWF.
11. FOR FOOTING BOTTOM REINFORCEMENT, BOTH DIRECTIONS, USE NO. 13 (4) BARS AT 18" FOR DEPTHS TO 60' OR 0.15 IN²/FT WWF FOR DEPTHS TO 30' AND 0.16 IN²/FT WWF FOR DEPTHS GREATER THAN 30'. 6" MAXIMUM SPACING FOR WWF.
12. A SAFE BEARING CAPACITY OF (1.5 TONS PER S.F.) UNDER THE ENTIRE SLAB IS ASSUMED TO DETERMINE THE BASE SIZE. WHEN THE SUBSOIL IS EXTREMELY POOR, PROCEED WITH CONSTRUCTION ONLY AFTER THE GEOTECHNICAL ENGINEER SPECIFIES ADEQUATE BASE DESIGN.

REINFORCEMENT DETAIL AT OPENINGS

NOTE:
FOR WALL THICKNESS 10" THICK OR GREATER PLACE ADDITIONAL REINFORCEMENT AS SHOWN ABOVE AT EACH FACE OF THE WALL INSIDE MAIN REINFORCEMENT. FOR WALLS 5" THICK KEEP MAIN REINFORCEMENT CENTERED IN WALL, PROVIDE ADDITIONAL REINFORCEMENT AS SHOWN ABOVE, MAINTAINING REQUIRED COVER.

PLAN VIEW

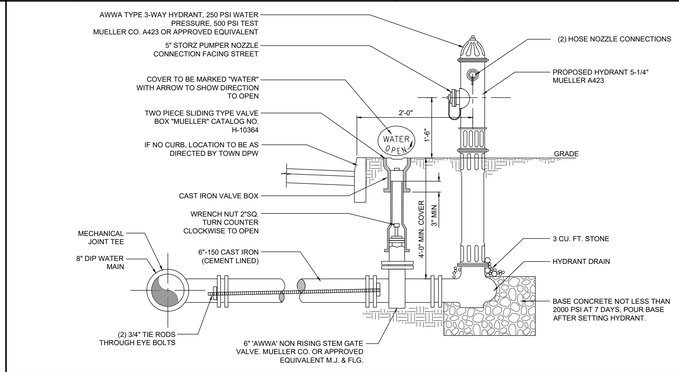
C1 PRE-CAST SANITARY MANHOLE

NOT TO SCALE 2019-03-01 / LEC STD

EXCAVATIONS IN EXISTING PAVED ROADWAYS SHALL BE COORDINATED WITH THE LOCAL PERMITTING AGENCY, AND ALL EXCAVATION SHALL BE PAVED WITH TEMPORARY BITUMINOUS PAVEMENT FROM THE DATE OF ORIGINAL EXCAVATION UNTIL PERMANENT PAVEMENT IS INSTALLED. (MINIMUM = 90 DAYS, MAXIMUM = 120 DAYS)

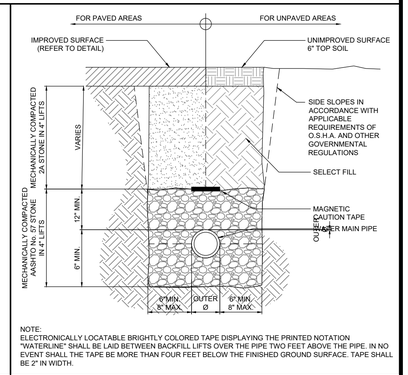
B3 SANITARY SEWER PIPE BEDDING

NOT TO SCALE 2019-03-01 / LEC STD



B4 FIRE HYDRANT and VALVE INSTALLATION

NOT TO SCALE 2020-07-09 LEC STD



NOTE:
ELECTRONICALLY LOCATABLE BRIGHTLY COLORED TAPE DISPLAYING THE PRINTED NOTATION "WATERLINE" SHALL BE LAID BETWEEN BACKFILL LIFTS OVER THE PIPE TWO FEET ABOVE THE PIPE. IN NO EVENT SHALL THE TAPE BE MORE THAN FOUR FEET BELOW THE FINISHED GROUND SURFACE. TAPE SHALL BE 2" IN WIDTH.

B6 WATER MAIN BEDDING & PIPE ZONE

NOT TO SCALE 2020-07-09 LEC STD

CROSS-SECTION

SECTION A-A

C3 CONNECTION TO EXISTING SANITARY MANHOLE

NOT TO SCALE 2019-03-01 / LEC STD

△	L
11-1/4°	0'-8"
22-1/2°	1'-3"
45°	2'-5"
90°	4'-5"
TEE	3'-1"

SPECIFICATIONS:
CONCRETE MINIMUM STRENGTH
(4,000 P.S.I. @ 28 DAYS)

PLAN OF HORIZONTAL BEND

SECTION A-A

C5 WATER SERVICE THRUST BLOCKING

NOT TO SCALE 2020-07-09 LEC STD

NOTE:
MODIFIED 2A STONE (8" LIFTS) SHALL BE PLACED WHEN BACKFILLING WATER SERVICE CONNECTION FROM MAIN TO BEHIND CURB.

D6 DOMESTIC WATER CONNECTION

NOT TO SCALE 2020-07-09 LEC STD

REV.	DATE	COMMENT	JOB
1	2021-10-21	PER TWP COMMENTS	18

D. ALEXANDER TWEEDIE
PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE No. 071873

NOT FOR CONSTRUCTION

PROJECT No: 140065
DRAWN BY: MAR
CHECKED BY: DAT
CAD I.D. #: 11-12_DT_140065

LANDCORE
Engineering Consultants, P.C.
PO BOX 27924 19027
PHILADELPHIA, PENNSYLVANIA 19101-0635
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LANDCORECONSULTING.COM

PROJECT: PROPOSED INDUSTRIAL REDEVELOPMENT
1880 BETHLEHEM PIKE, FLOURTOWN PA 19031
SPRINGFIELD TOWNSHIP AND WHITEMARSH TOWNSHIP
MONTGOMERY COUNTY, PA

APPLICANT: FEDERAL REALTY INVESTMENT TRUST

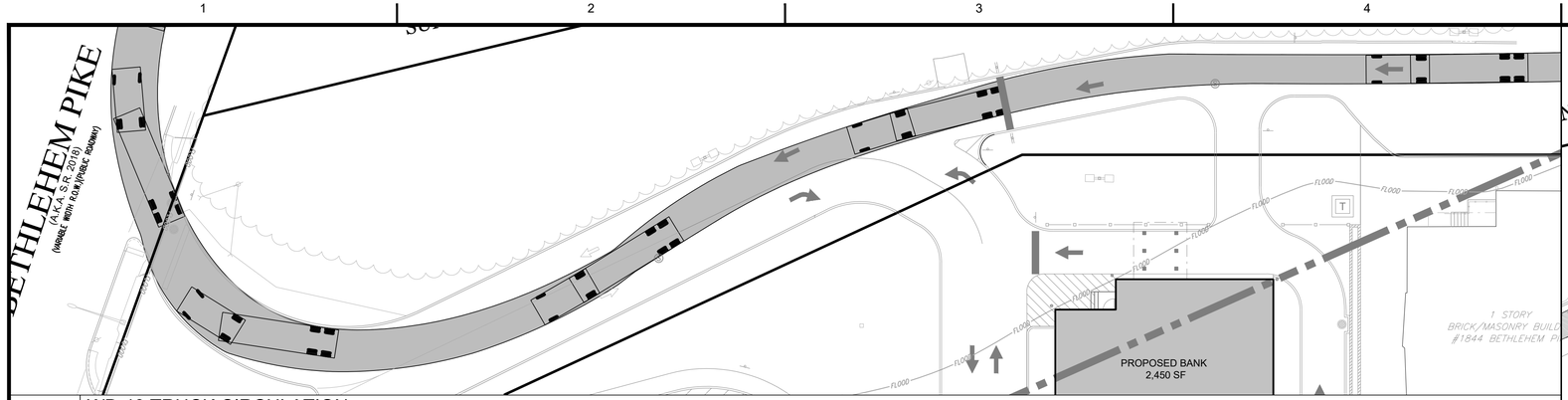
TITLE: DETAILS

DATE: 2021-03-04

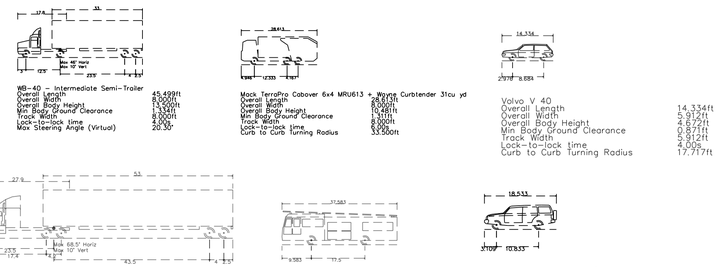
SHEET: 12 of 13 | REV. No: 1

DT2

D:\DROPBOX (LANDCORE)\PROJECTS\2021\140065 - FEDERAL REALTY - FLOURTOWN PA\DRAWINGS\03-SITE PLANS\11-12_DT_140065.DWG
JASON.WAGNER.LEC @ 2021-10-28 - 7:10 AM



D1 WB-40 TRUCK CIRCULATION
SCALE: 1" = 20'



WB-40 – Intermediate Semi-Trailer

Overall Length	45.499ft
Overall Width	8.500ft
Overall Body Height	13.500ft
Min Body Ground Clearance	1.334ft
Track Width	8.000ft
Lock-to-lock time	4.00s
Max Steering Angle (Virtual)	20.30°

Mack TerraPro Cabover 6x4 MRU613 + Wayne Curbtender 31cu yd

Overall Length	38.583ft
Overall Width	8.500ft
Overall Body Height	10.481ft
Min Body Ground Clearance	1.101ft
Track Width	8.000ft
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	53.000ft

Volvo V 40

Overall Length	14.334ft
Overall Width	5.912ft
Overall Body Height	4.672ft
Min Body Ground Clearance	0.871ft
Track Width	5.912ft
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	17.717ft



WB-67 – Interstate Semi-Trailer

Overall Length	73.501ft
Overall Width	8.500ft
Overall Body Height	13.500ft
Min Body Ground Clearance	1.334ft
Max Track Width	8.500ft
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	28.40°



E-ONE HP75 SideStacker

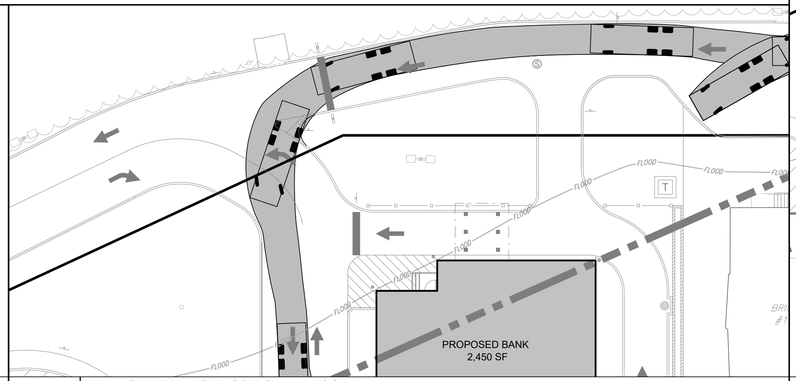
Overall Length	37.583ft
Overall Width	8.333ft
Overall Body Height	11.000ft
Min Body Ground Clearance	1.333ft
Track Width	8.333ft
Lock-to-lock time	6.00s
Max Wheel Angle	48.00°



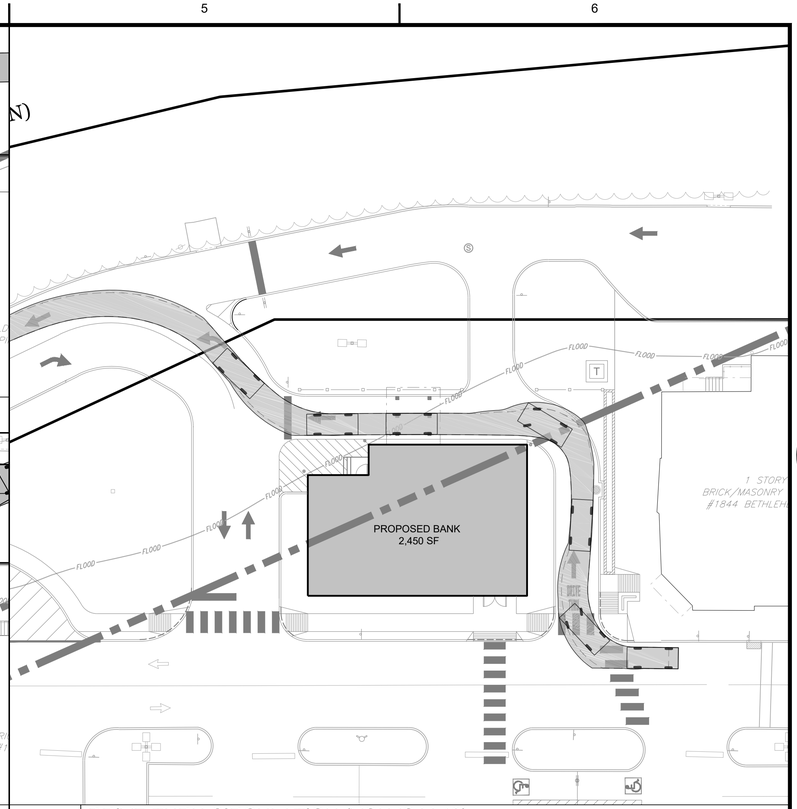
Chevrolet Suburban 3/4 Ton LS

Overall Length	18.533ft
Overall Width	6.592ft
Overall Body Height	6.256ft
Min Body Ground Clearance	0.990ft
Track Width	6.592ft
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	22.650ft

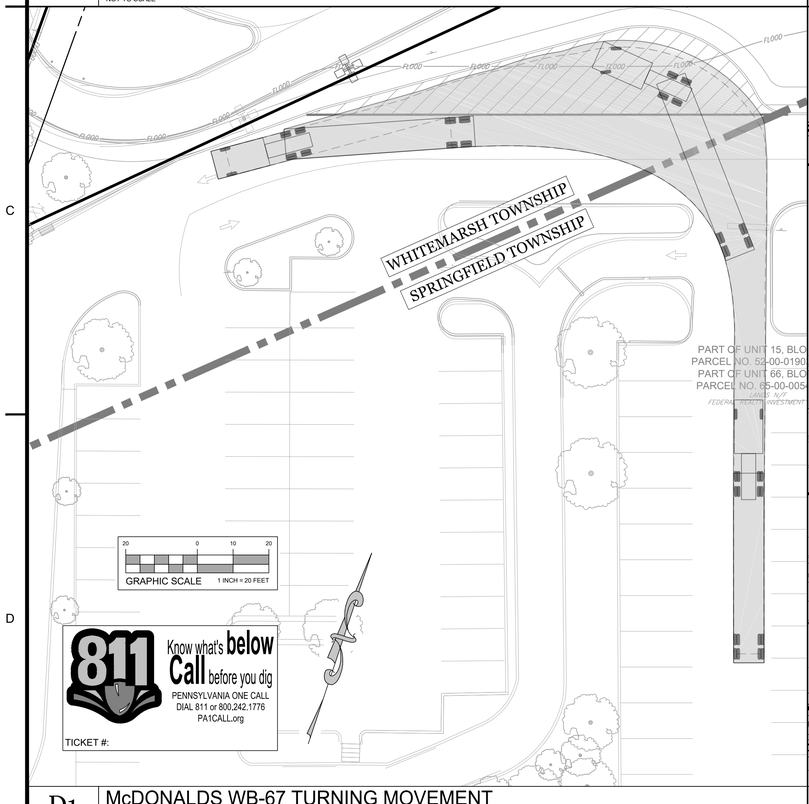
B2 PASSENGER VEHICHLE DATA
NOT TO SCALE



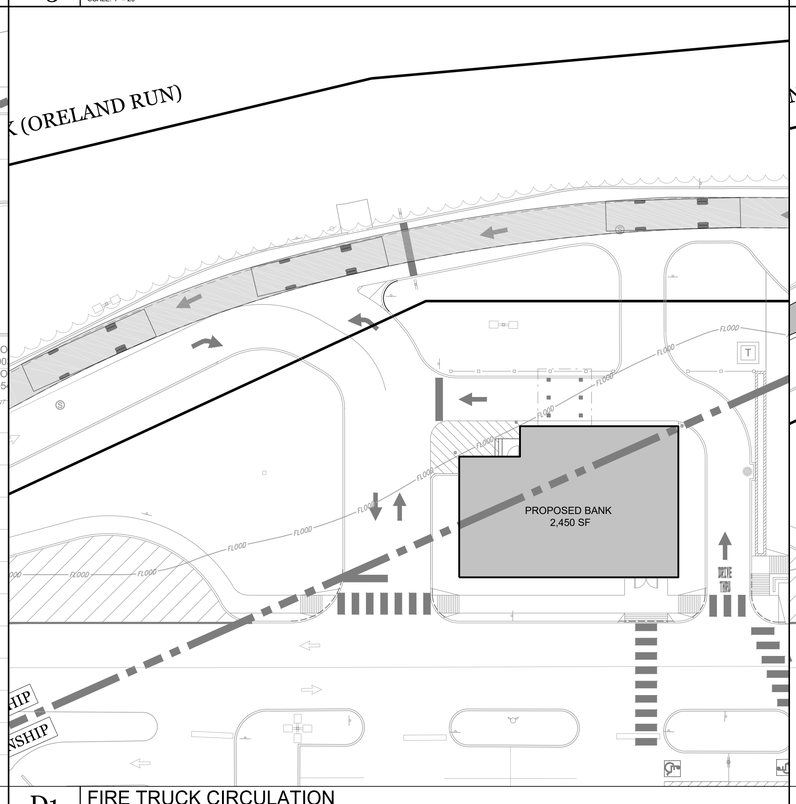
B3 TRASH TRUCK CIRCULATION
SCALE: 1" = 20'



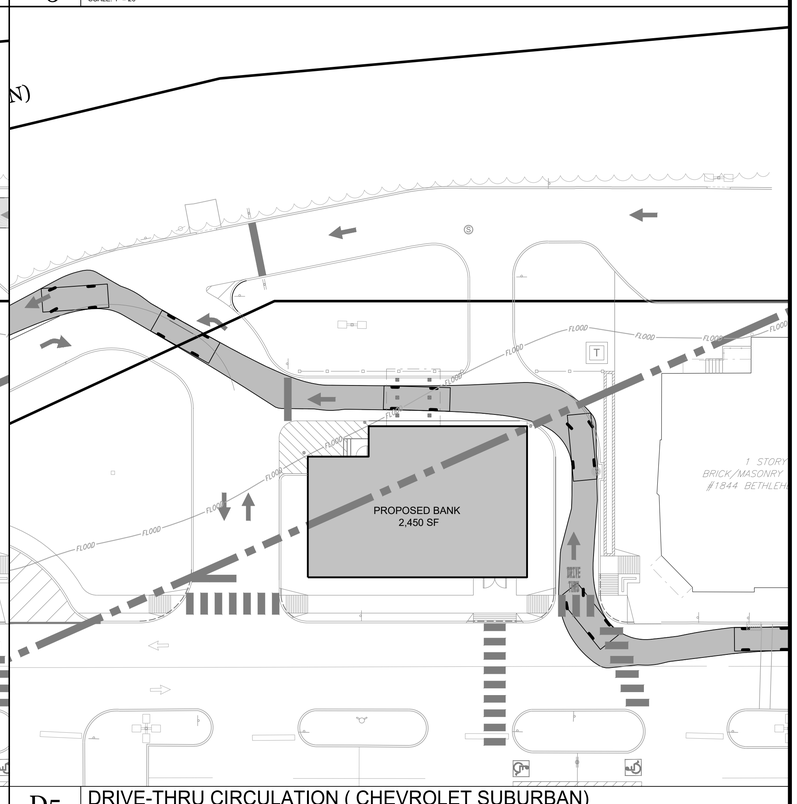
B5 DRIVE-THRU CIRCULATION (VOLVO V-40)
SCALE: 1" = 20'



D1 McDONALDS WB-67 TURNING MOVEMENT
SCALE: 1" = 20'



D1 FIRE TRUCK CIRCULATION
SCALE: 1" = 20'



D5 DRIVE-THRU CIRCULATION (CHEVROLET SUBURBAN)
SCALE: 1" = 20'

REV.	DATE	COMMENT	BY
1	2021-10-21	PER TWP COMMENTS	JDB

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
D. ALEXANDER TWEEDIE
ENGINEER
No. PE071873
PENNSYLVANIA

D. ALEXANDER TWEEDIE
PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE No. 071873

NOT FOR CONSTRUCTION

PROJECT No: 140065
DRAWN BY: MAR
CHECKED BY: DAT
CAD I.D. #: 13_VM_140065

LANDCORE
Engineering Consultants, P.C.
PO BOX 37828 #52287
PHILADELPHIA, PENNSYLVANIA 19101-0535
PHONE 215-830-2510 FAX 215-830-2511
LANDCORECONSULTING.COM

PROJECT: PROPOSED INDUSTRIAL REDEVELOPMENT
1990 BETHLEHEM PIKE, FLORTOWN PA 19031
SPRINGFIELD TOWNSHIP AND WHITEMARSH TOWNSHIP
MONTGOMERY COUNTY, PA

APPLICANT: FEDERAL REALTY INVESTMENT TRUST

TITLE: VEHICLE MOVEMENT PLAN

DATE: 2021-03-04
SHEET: 13 of 13
REV. No: 1
VM

D:\DROPBOX (LANDCORE)\PROJECTS\2021\140065 - FEDERAL REALTY - FLORTOWN PA\DRAWINGS\03-SITE PLANS\13_VM_140065.DWG
Apr 04, 2021 - 9:28am

PRELIMINARY
NOT FOR CONSTRUCTION

THIS PLAN HAS BEGEN PREPARED FOR GENERAL LAYOUT DISCUSSION PURPOSES ONLY AND IS BASED ON LIMITED DUE DILIGENCE AVAILABLE AT THE TIME OF PREPARATION



REV.	DATE	COMMENT	BY
2.	2020-09-14	REVISED PER ZONING APPLICATION	MPG
1.	2019-11-27	UPDATE BULK CHART AND PARKING CALCULATIONS	MPG

K. MATTHEW RUTT, P.E.

PENNSYLVANIA LICENSE NO. 073433
NEW JERSEY LICENSE NO. 42992

NOT FOR CONSTRUCTION

PROJECT No: 140065
DRAWN BY: B. MAGENGAST
CHECKED BY: K. M. RUTT
CAD I.D. #: 140065_CD1_RN

LANDCORE
Engineering Consultants, P.C.

PO BOX 73783 #80287
PHILADELPHIA, PENNSYLVANIA 19101-4635

PHONE 215-836-2510 | FAX 215-332-2428
LANDCORECONSULTING.COM

PROJECT: FEDERAL REALTY INVESTMENT TRUST
PROPOSED SITE IMPROVEMENTS
1601-1651 BETHLEHEM PIKE
SPRINGFIELD and WHITEMARSH TOWNSHIPS
MONTGOMERY COUNTY, PENNSYLVANIA

TITLE: EXISTING CONDITION AERIAL EXHIBIT

SCALE: (H) AS NOTED
(V) .

DATE: 2019 - 06 - 12

SHEET: EXH

REV. No: 2

D:\DROPBOX (LANDCORE)\PROJECTS\2014\140065 - FEDERAL REALTY - FLOURTOWN, PA\GRAPHICS\EXHIBITS\RENDERINGS\ZONING PLAN RENDERS\140065_CD1_RN-----XLAYOUT: D3_EXIST COND AERIAL

WHITEMARSH TOWNSHIP PORTION OF SITE

ZONED : VC-3 (VILLAGE COMMERCIAL) - WHITEMARSH TOWNSHIP

EXISTING USE :
SHOPPING CENTER

PROPOSED USE :
RESTAURANT (CONDITIONAL USE), BANK W/ DRIVE THRU (CONDITIONAL USE)(*3)

BULK REQUIREMENTS

	REQUIRED	*EXISTING*		PROPOSED	
MINIMUM LOT AREA (SF)	NA	*776,333 (VC-3)*		NO CHANGE	
MINIMUM LOT AREA (AC)	NA	*17.822*		NO CHANGE	
MINIMUM STREET FRONTAGE (*1)(FT)	50	*682.85*		NO CHANGE	
MINIMUM LOT WIDTH @ BSBL (*1)(FT)	100	*690.62*		NO CHANGE	
MINIMUM BUILDING SEPARATION (*1)(FT)	15	*NA*		36.3 (*8)	
MINIMUM YARD SETBACKS (LOT AREA 15 ACRES OR GREATER)					
FRONT YARD, ULTIMATE R-O-W (FT)	35	*NA*		243.77 (*8)	
FRONT YARD, INTERNAL ROADWAY (FT)	15	*NA*		NA (*8)	
SIDE YARD FROM RESIDENTIAL (FT)	45	*NA*		100.54	
REAR YARD FROM RESIDENTIAL (FT)	45	*NA*		NA (*8)	
MAXIMUM IMPERVIOUS COVERAGE (*6)(%)	65	*94.65% (E)*		93.61% (E)	
(SF)		*734,887*		726,761	
MINIMUM VEGETATED OPEN SPACE, TREES OR LANDSCAPING (*1)*(2)(%)	35	*5.34% (E)*		6.39% (E)	
(SF)		*41,446*		49,572	
MAXIMUM BUILDING COVERAGE (*6)(%)	40	*0.00%*		0.09%	
(SF)		*0*		721	
MAXIMUM NONRESIDENTIAL BUILDING FOOTPRINT FOR NEW CONSTRUCTION ONLY (*1) (SF)	8,000 EXCEPT FOR RETAIL IN WHICH A MAXIMUM OF 10,000 IS PERMITTED.	*NA*		2,450	
MAXIMUM BUILDING FRONT FACADE WIDTH (*1)(FT)	75	*NA*		42.25	
MAXIMUM BUILDING HEIGHT (*1)(FT)	3 STORIES (42 FT MAX)	*NA*		< 42	

PARKING REQUIREMENTS (WHITEMARSH TOWNSHIP)

MINIMUM PARKING STALL REQUIREMENT					
BANK USE (OTHER COMMERCIAL USES)	1 STALL PER 1,000 SF	*NA*		2,450 / 1,000 = 2.450 3 REQUIRED	
TOTAL REQUIRED PARKING		*NA*		3 REQUIRED 0 PROPOSED (*7) SEE NOTE (*5)	
MINIMUM STALL SIZE (FT)	9 x 18	*9 x 18*		9 x 18	
MINIMUM AISLE WIDTH (FT)	24	*24*		24	
MINIMUM PARKING SETBACKS					
FRONT YARD (FT)	10	*NA*		43.64	
SIDE / REAR YARD (NON RES ADJ) (FT)	0	*NA*		88.65	
SIDE / REAR YARD (RES ADJ) (FT)	20	*NA*		NA	
FROM BUILDING (FT)	10	*NA*		47.41	
MAXIMUM PARKING PERCENTAGE BETWEEN STREET LINE AND FRONT PRINCIPAL BUILDING PLANE	25%	*NA*		0%	

SPRINGFIELD TOWNSHIP PORTION OF SITE

ZONED : S (SHOPPING CENTER) - SPRINGFIELD TOWNSHIP

EXISTING USE :
SHOPPING CENTER (PERMITTED)

PROPOSED USE :
RESTAURANT (PERMITTED), BANK W/ DRIVE THRU (PERMITTED)

BULK REQUIREMENTS

	REQUIRED	*EXISTING*		PROPOSED	
MINIMUM LOT AREA (SF)		*1,030,210*		NO CHANGE	
MINIMUM LOT AREA (AC)	2	*23.650*		NO CHANGE	
MINIMUM YARD SETBACKS					
FRONT YARD (FT)	NA	*88.30*		NO CHANGE	
SIDE YARD (RES ADJ) (FT)	25	*49.80*		NO CHANGE	
REAR YARD (RES ADJ) (FT)	25	*133.20*		NO CHANGE	
ADJACENT BUILDINGS (FT)	12	*57.30*		36.30	
MAXIMUM BUILDING COVERAGE (%)	30	*19.22%*		19.38%	
(SF)		*197,970*		199,699	
MAXIMUM BUILDING HEIGHT (NON RES)(FT)	50	*< 50*		< 50	

PARKING REQUIREMENTS (SPRINGFIELD TOWNSHIP)

MINIMUM PARKING STALL REQUIREMENT					
SHOPPING CENTER USE (*5)	5.5 STALLS PER 1,000 GR LEASEABLE SF	*(177,025 / 1,000) X 5.5 = 974 REQ*		((177,025 / 1,000) + (2,450 / 1,000)) x 5.5 = 987 REQ	
MINIMUM STALL SIZE (FT)	9 x 18	9 x 18		9 x 18	
MINIMUM AISLE WIDTH (FT)	24	*24*		24	
MINIMUM PARKING SETBACKS					
FRONT YARD (FT)	10	*14.03 (*7)*		NO CHANGE	
SIDE YARD (RES ADJ) (FT)	25	*26.45 (*7)*		NO CHANGE	
REAR YARD (RES ADJ) (FT)	25	*133.84 (*7)*		NO CHANGE	

| (V) VARIANCE REQUIRED | (NA) NOT APPLICABLE | (NS) NOT SPECIFIED |

ALL CALCULATIONS WITHIN THE TABLES HEREWITH HAVE BEEN BASIED ON THE TOTAL TRACT AREA INCLUSIVE OF PARCELS A, B & C, (LOTS A & B) UNLES NOTED OTHERWISE.

(*1) - PER WHITEMARSH TOWNSHIP CONDITIONAL USE STANDARDS

(*2) - PER CONDITIONAL USE STANDARDS** SAID PERCENTAGES MAY BE REDUCED COMMENSURATE WITH ANY INCREASE IN IMPERVIOUS COVERAGE PERMITTED BY STANDARD NO. 7 FOR NONRESIDENTIAL VC-3 PERMITTED USES, BY STANDARD NO. 8 IN THIS SECTION, OR BY CONDITIONAL USE IN ACCORDANCE WITH THE PROVISIONS OF § 116-297 HEREIN.

(*3) - PER 116-290.E(5) A TRAFFIC IMPACT STUDY IS REQUIRED FOR A CONDITIONAL USE APPROVAL OF A DRIVE-THRU.

(*4) - BASED ON THE TABLE OF THE MAXIMUM FLOOR AREA ALLOWANCE PER OCCUPANT IN THE CURRENT EDITION OF THE WHITEMARSH TOWNSHIP BUILDING CODE OR THE MAXIMUM OCCUPANCY ALLOWANCE UNDER THE PROVISIONS OF THE WHITEMARSH TOWNSHIP FIRE PREVENTION CODE, BOTH OF WHICH WERE UNAVAILABLE. THEREFORE THE CALCULATIONS ARE BASED ON THE ASSUMPTION OF 25% KITCHEN AREA AT 200 SF PER OCCUPANT AND 75% TABLE/CHAIR AREA AT 15 SF PER PATRON.

(*5) - PER "FINAL RECORD PLAN", PREPARED BY GILMORE & ASSOCIATES, DATED 9/13/2013, THE OVERALL CENTER CONTAINS 177,025-SF OF TOTAL LEASEABLE AREA (TLA) AND 713 PARKING STALLS, EQUATING TO A 4.0 PARKING RATIO. THE PROPOSED IMPROVEMENTS WILL INCREASE THE TLA TO 179,475 SF. THE PARKING STALL COUNT WILL DECREASE TO 694, AND THE OVERALL PARKING RATIO WILL BE 3.87. THE PRIOR SPRINGFIELD TOWNSHIP APPROVALS HAVE BEEN BASED OFF OF A REQUIRED 5.5 PARKING RATIO AND THE EXISTING 4.0 RATIO HAS BEEN PREVIOUSLY APPROVED AS AN EXISTING NON-CONFORMANCE. THE REDUCTION OF THIS RATIO TO 3.87 MAY RESULT IN A VARIANCE BEING REQUIRED FROM SPRINGFIELD TWP. ADDITIONALLY, SINCE THE REQUIRED 3 STALLS FOR THE BANK ARE NOT PROVIDED WITHIN WHITEMARSH TOWNSHIP.

(*6) - IMPERVIOUS COVERAGE WITHIN RESPECTIVE TOWNSHIP & ZONING DISTRICT.

(*7) - PARKING PROVIDED IN RESPECTIVE TOWNSHIP

(*8) - BUILDINGS WITHIN RESPECTIVE TOWNSHIP

NOTE: THE ZONING ANALYSIS CONTAINED ON THIS PLAN DOES NOT INCLUDE THE VARIOUS BUILDING DESIGN REQUIREMENTS CONTAINED IN SECTION 116-291B. THIS SECTION SHALL BE ASSESSED BY ARCHITECT AT TIME WHEN TENANT OR BUILDING DESIGN IS KNOWN.

SITE DATA

THIS LAND DEVELOPMENT PLAN REFERENCES A SURVEY PREPARED BY

BLUE MARSH ASSOCIATES, INC.
P.O. BOX 963
WARRINGTON PA, 18976-2370
FILE No. 17-80446-058 / DATED 2017-03-17

OWNER of RECORD / APPLICANT

FEDERAL REALTY INVESTMENT TRUST
C/O ALTUS GROUP
PO BOX 92129
SOUTHLAKE TX, 76092

GUTTMAN STEVEN J & MISNER DONALD
1626 E JEFFERSON ST
ROCKVILLE MD 20852

PARCEL DATA

1890 BETHLEHEM PIKE
FLOURTOWN, PA 19031

LOT A: UNIT 15, BLOCK 48 PARCEL # 52-00-01903-007
UNIT 66, BLOCK 60 PARCEL # 65-00-00547-063
LOT B: UNIT 16, BLOCK 48 PARCEL # 52-00-01904-006
UNIT 67, BLOCK 60 PARCEL # 65-00-00547-045
LOT C: UNIT 19, BLOCK 48 PARCEL # 52-00-01904-105
UNIT 17, BLOCK 60 PARCEL # 65-00-00547-027

PARKING TABLE (SPRINGFIELD TOWNSHIP)

PARKING STALL TABULATION PER LOT

LOT	REQUIRED	*PROVIDED*
EXISTING LOT A GROSS LEASEABLE SF 84,956 SF	(84,956 / 1,000) * 5.5 = 467.25 REQUIRED 5.5 RATIO	*472 PROVIDED 5.55 RATIO*
EXISTING LOT B GROSS LEASEABLE SF 92,069 SF	(92,069 / 1,000) * 5.5 = 506.37 REQUIRED 5.5 RATIO	242 PROVIDED 2.63 RATIO (E)
EXISTING CONDITION, COMBINED TOTAL (SPRINGFIELD TOWNSHIP & WHITEMARSH TOWNSHIP)	((84,956 + 92,069) / 1,000) * 5.5 = 974 REQUIRED 5.5 RATIO	714 PROVIDED 4.03 RATIO (E)
PROPOSED ADDITION TO LOT A GROSS LEASEABLE SF (2,450 + 84,956 SF)	((2,450 + 84,956) / 1,000) * 5.5 = 480.73 REQUIRED 5.5 RATIO	452 PROVIDED 5.17 RATIO (V)
PROPOSED CONDITION, COMBINED TOTAL (SPRINGFIELD TOWNSHIP & WHITEMARSH TOWNSHIP)	((84,956 + 92,069 + 2,450) / 1,000) * 5.5 = 987.11 REQUIRED 5.5 RATIO	694 PROVIDED 3.87 RATIO (V)

SITE / RECORD PLAN LEGEND

- PROPERTY LINE (PIQ)
- BUILDING SETBACK LINE
- ZONE LINE
- MUNICIPALITY LINE
- *TREELINE*
- SAWCUT LIMITS
- *BUILDING EAVE / OVERHANG*
- PROP. BUILDING EAVE / OVERHANG
- *OVERHEAD WIRES*
- *100 YR* *100 YEAR FLOODPLAIN*
- 100 YR PROPOSED 100 YEAR FLOODPLAIN
- STREAM BANK

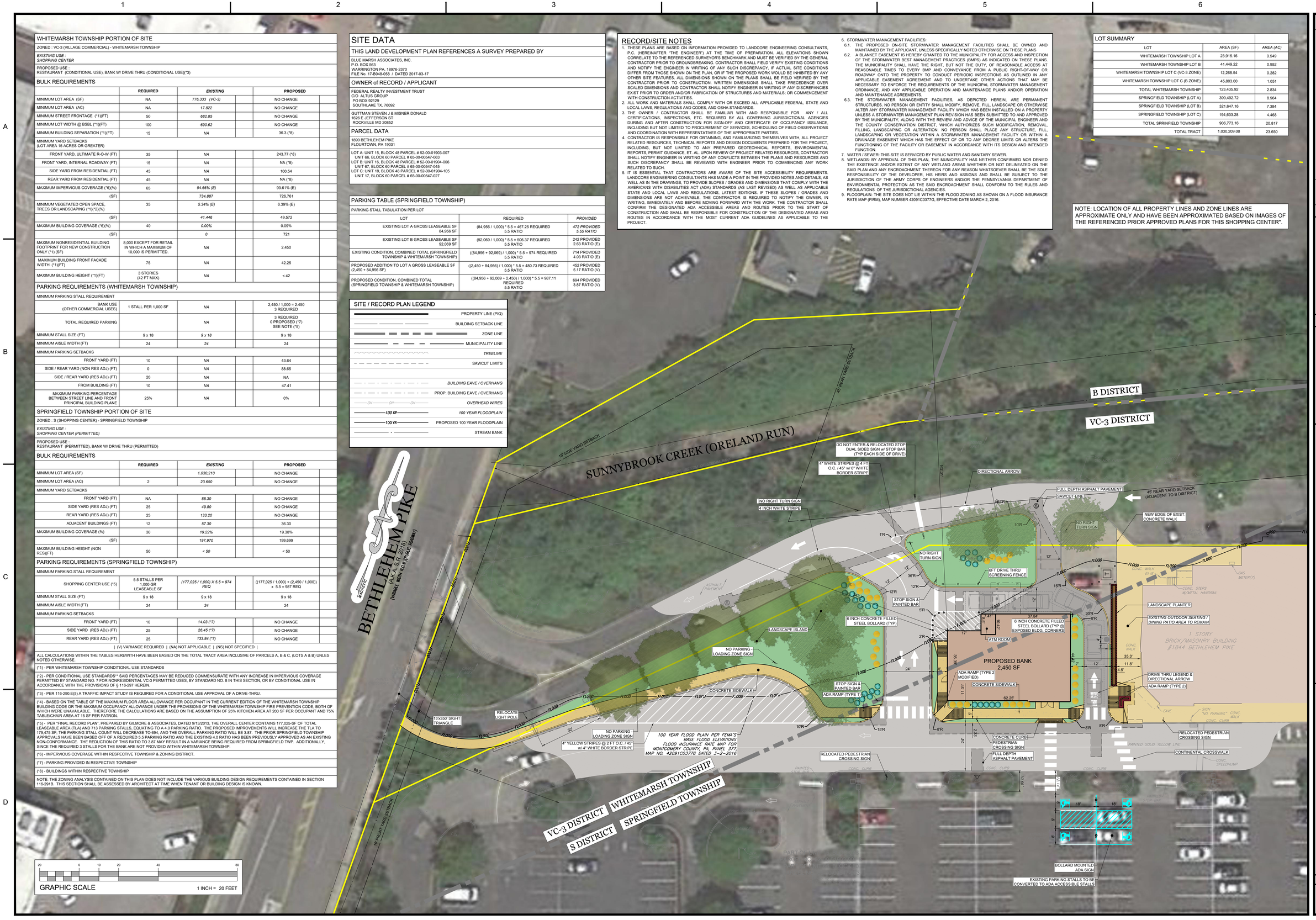
RECORD/SITE NOTES

1. THESE PLANS ARE BASED ON INFORMATION PROVIDED TO LANDCORE ENGINEERING CONSULTANTS, P.C. (HEREINAFTER "THE ENGINEER") AT THE TIME OF PREPARATION. ALL ELEVATIONS SHOWN CORRELATE TO THE REFERENCED SURVEYOR'S BENCHMARK AND MUST BE VERIFIED BY THE GENERAL CONTRACTOR PRIOR TO GROUNDBREAKING. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY THE ENGINEER IN WRITING OF ANY SUCH DISCREPANCY, IF ACTUAL SITE CONDITIONS DIFFER FROM THOSE SHOWN ON THE PLAN, OR IF THE PROPOSED WORK WOULD BE INHIBITED BY ANY OTHER SITE FEATURES. ALL DIMENSIONS SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS AND CONTRACTOR SHALL NOTIFY ENGINEER IN WRITING IF ANY DISCREPANCIES EXIST PRIOR TO ORDER AND/OR FABRICATION OF STRUCTURES AND MATERIALS; OR COMMENCEMENT WITH CONSTRUCTION ACTIVITIES.
2. ALL WORK AND MATERIALS SHALL COMPLY WITH OR EXCEED ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS, REGULATIONS AND CODES, AND OSHA STANDARDS.
3. THE OWNER / CONTRACTOR SHALL BE FAMILIAR WITH AND RESPONSIBLE FOR ANY / ALL CERTIFICATIONS, INSPECTIONS, ETC. REQUIRED BY ALL GOVERNING JURISDICTIONAL AGENCIES DURING AND AFTER CONSTRUCTION FOR SIGN-OFF AND CERTIFICATE OF OCCUPANCY ISSUANCE, INCLUDING BUT NOT LIMITED TO PROCUREMENT OF SERVICES, SCHEDULING OF FIELD OBSERVATIONS AND COORDINATION WITH REPRESENTATIVES OF THE APPROPRIATE PARTIES.
4. CONTRACTOR IS RESPONSIBLE FOR OBTAINING, AND FAMILIARIZING THEMSELVES WITH, ALL PROJECT RELATED RESOURCES, TECHNICAL REPORTS AND DESIGN DOCUMENTS PREPARED FOR THE PROJECT, INCLUDING, BUT NOT LIMITED TO ANY PREPARED GEOTECHNICAL REPORTS, ENVIRONMENTAL REPORTS, PERMIT GUIDANCE, ET. AL. UPON REVIEW OF PROJECT RELATED RESOURCES, CONTRACTOR SHALL NOTIFY ENGINEER IN WRITING OF ANY CONFLICTS BETWEEN THE PLANS AND RESOURCES AND SUCH DISCREPANCY SHALL BE REVIEWED WITH ENGINEER PRIOR TO COMMENCING ANY WORK RELATED TO SUCH.
5. IT IS ESSENTIAL THAT CONTRACTORS ARE AWARE OF THE SITE ACCESSIBILITY REQUIREMENTS. LANDCORE ENGINEERING CONSULTANTS HAS MADE A POINT IN THE PROVIDED NOTES AND DETAILS, AS WELL AS IN THE DRAWINGS, TO PROVIDE SLOPES / GRADES AND DIMENSIONS THAT COMPLY WITH THE AMERICANS WITH DISABILITIES ACT (ADA) STANDARDS (AS LAST REVISED) AS WELL AS APPLICABLE STATE AND LOCAL LAWS AND REGULATIONS, LATEST EDITIONS. IF THESE SLOPES / GRADES AND DIMENSIONS ARE NOT ACHIEVABLE, THE CONTRACTOR IS REQUIRED TO NOTIFY THE OWNER, IN WRITING, IMMEDIATELY AND BEFORE MOVING FORWARD WITH THE WORK. THE CONTRACTOR SHALL CONFIRM THE DESIGNATED ADA ACCESSIBLE AREAS AND ROUTES PRIOR TO THE START OF CONSTRUCTION AND SHALL BE RESPONSIBLE FOR CONSTRUCTION OF THE DESIGNATED AREAS AND ROUTES IN ACCORDANCE WITH THE MOST CURRENT ADA GUIDELINES AS APPLICABLE TO THE PROJECT.
6. STORMWATER MANAGEMENT FACILITIES:
   - 6.1. THE PROPOSED ON-SITE STORMWATER MANAGEMENT FACILITIES SHALL BE OWNED AND MAINTAINED BY THE APPLICANT, UNLESS SPECIFICALLY NOTED OTHERWISE ON THESE PLANS
   - 6.2. A BLANKET EASEMENT IS HEREBY GRANTED TO THE MUNICIPALITY FOR ACCESS AND INSPECTION OF THE STORMWATER BEST MANAGEMENT PRACTICES (BMPS) AS INDICATED ON THESE PLANS. THE MUNICIPALITY SHALL HAVE THE RIGHT, BUT NOT THE DUTY, OF REASONABLE ACCESS AT REASONABLE TIMES TO EVERY BMP AND CONVEYANCE FROM A PUBLIC RIGHT-OF-WAY OR ROADWAY ONTO THE PROPERTY TO CONDUCT PERIODIC INSPECTIONS AS OUTLINED IN ANY APPLICABLE EASEMENT AGREEMENT AND TO UNDERTAKE OTHER ACTIONS THAT MAY BE NECESSARY TO ENFORCE THE REQUIREMENTS OF THE MUNICIPAL STORMWATER MANAGEMENT ORDINANCE, AND ANY APPLICABLE OPERATION AND MAINTENANCE PLANS AND/OR OPERATION AND MAINTENANCE AGREEMENTS.
   - 6.3. THE STORMWATER MANAGEMENT FACILITIES, AS DEPICTED HEREIN, ARE PERMANENT STRUCTURES. NO PERSON OR ENTITY SHALL MODIFY, REMOVE, FILL, LANDSCAPE OR OTHERWISE ALTER ANY STORMWATER MANAGEMENT FACILITY WHICH HAS BEEN INSTALLED ON A PROPERTY UNLESS A STORMWATER MANAGEMENT PLAN REVISION HAS BEEN SUBMITTED TO AND APPROVED BY THE MUNICIPALITY, ALONG WITH THE REVIEW AND ADVICE OF THE MUNICIPAL ENGINEER AND THE COUNTY CONSERVATION DISTRICT, WHICH AUTHORIZES SUCH MODIFICATION, REMOVAL, FILLING, LANDSCAPING OR ALTERATION. NO PERSON SHALL PLACE ANY STRUCTURE, FILL, LANDSCAPING OR VEGETATION WITHIN A STORMWATER MANAGEMENT FACILITY OR WITHIN A DRAINAGE EASEMENT WHICH HAS THE EFFECT OF OR TO ANY DEGREE LIMITS OR ALTERS THE FUNCTIONING OF THE FACILITY OR EASEMENT IN ACCORDANCE WITH ITS DESIGN AND INTENDED FUNCTION.
7. WATER / SEWER: THIS SITE IS SERVICED BY PUBLIC WATER AND SANITARY SEWER.
8. WETLANDS: BY APPROVAL OF THIS PLAN, THE MUNICIPALITY HAS NEITHER CONFIRMED NOR DENIED THE EXISTENCE AND/OR EXTENT OF ANY WETLAND AREAS WHETHER OR NOT DELINEATED ON THE SAID PLAN AND ANY ENCROACHMENT THEREON FOR ANY REASON WHATSOEVER SHALL BE THE SOLE RESPONSIBILITY OF THE DEVELOPER, HIS HEIRS AND ASSIGNS AND SHALL BE SUBJECT TO THE JURISDICTION OF THE ARMY CORPS OF ENGINEERS AND/OR THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION AS THE SAID ENCROACHMENT SHALL CONFORM TO THE RULES AND REGULATIONS OF THE JURISDICTIONAL AGENCIES.
9. FLOODPLAIN: THE SITE DOES NOT LIE WITHIN THE FLOOD ZONING AS SHOWN ON A FLOOD INSURANCE RATE MAP (FIRM), MAP NUMBER 42091C0377G, EFFECTIVE DATE MARCH 2, 2016.

LOT SUMMARY

LOT	AREA (SF)	*AREA (AC)*
WHITEMARSH TOWNSHIP LOT A	23,915.16	0.549
WHITEMARSH TOWNSHIP LOT B	41,449.22	0.952
WHITEMARSH TOWNSHIP LOT C (VC-3 ZONE)	12,268.54	0.282
WHITEMARSH TOWNSHIP LOT C (B ZONE)	45,803.00	1.051
TOTAL WHITEMARSH TOWNSHIP	123,435.92	2.834
SPRINGFIELD TOWNSHIP (LOT A)	390,492.72	8.964
SPRINGFIELD TOWNSHIP (LOT B)	321,647.16	7.384
SPRINGFIELD TOWNSHIP (LOT C)	194,633.28	4.468
TOTAL SPRINFIELD TOWNSHIP	906,773.16	20.817
TOTAL TRACT	1,030,209.08	23.650

NOTE: LOCATION OF ALL PROPERTY LINES AND ZONE LINES ARE APPROXIMATE ONLY AND HAVE BEEN APPROXIMATED BASED ON IMAGES OF THE REFERENCED PRIOR APPROVED PLANS FOR THIS SHOPPING CENTER*.



REV.	DATE	COMMENT



OCTOBER 12, 2021

1842 Bethlehem Pike
Flourtown PA 19031
PROJECT # 19090

JOHN W. LISTER architects
115 WESTTOWN RD, SUITE 201
WEST CHESTER, PA 19382 610.429.4470



OCTOBER 12, 2021

1842 Bethlehem Pike
Flourtown PA 19031
PROJECT # 19090

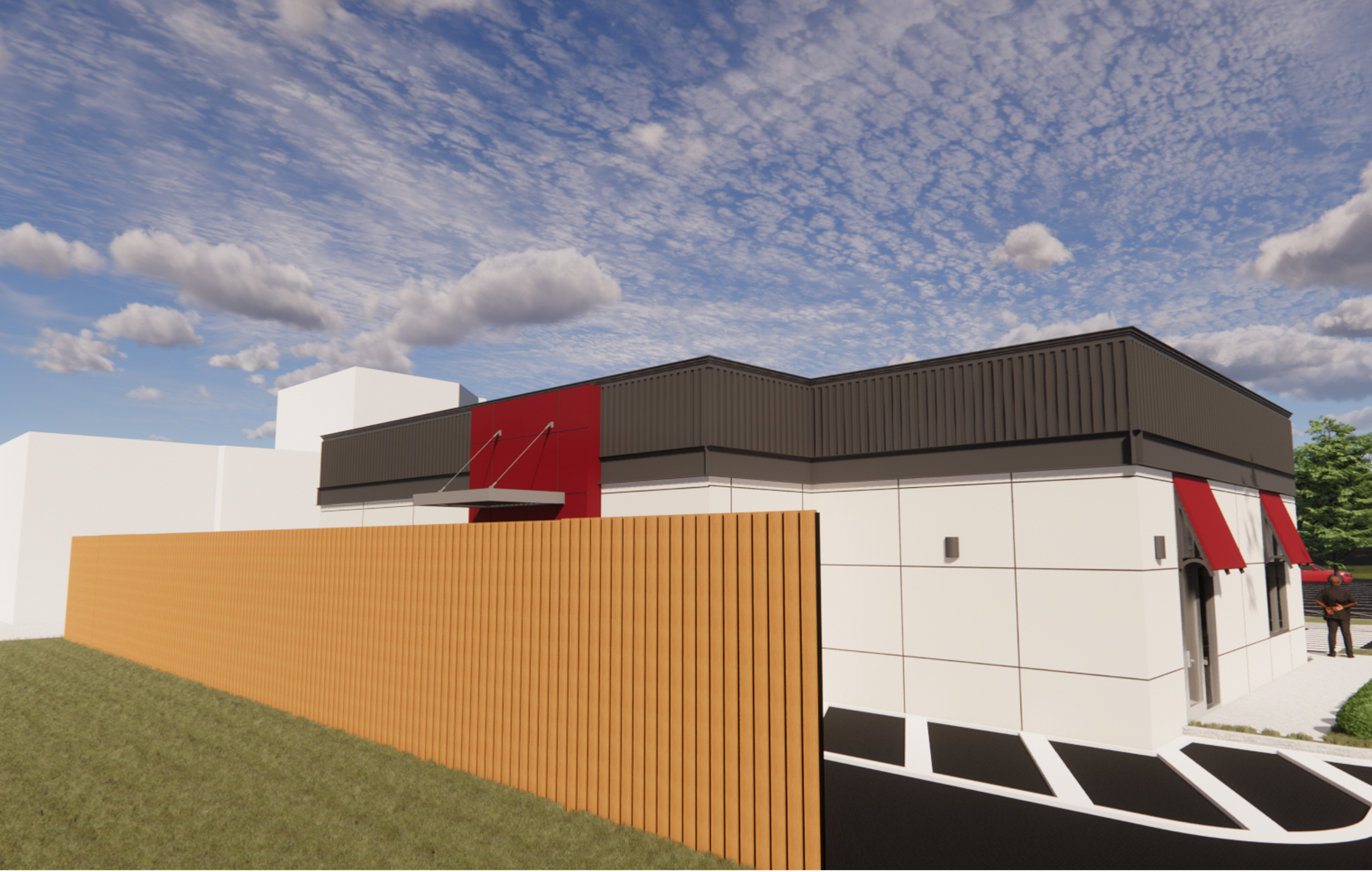
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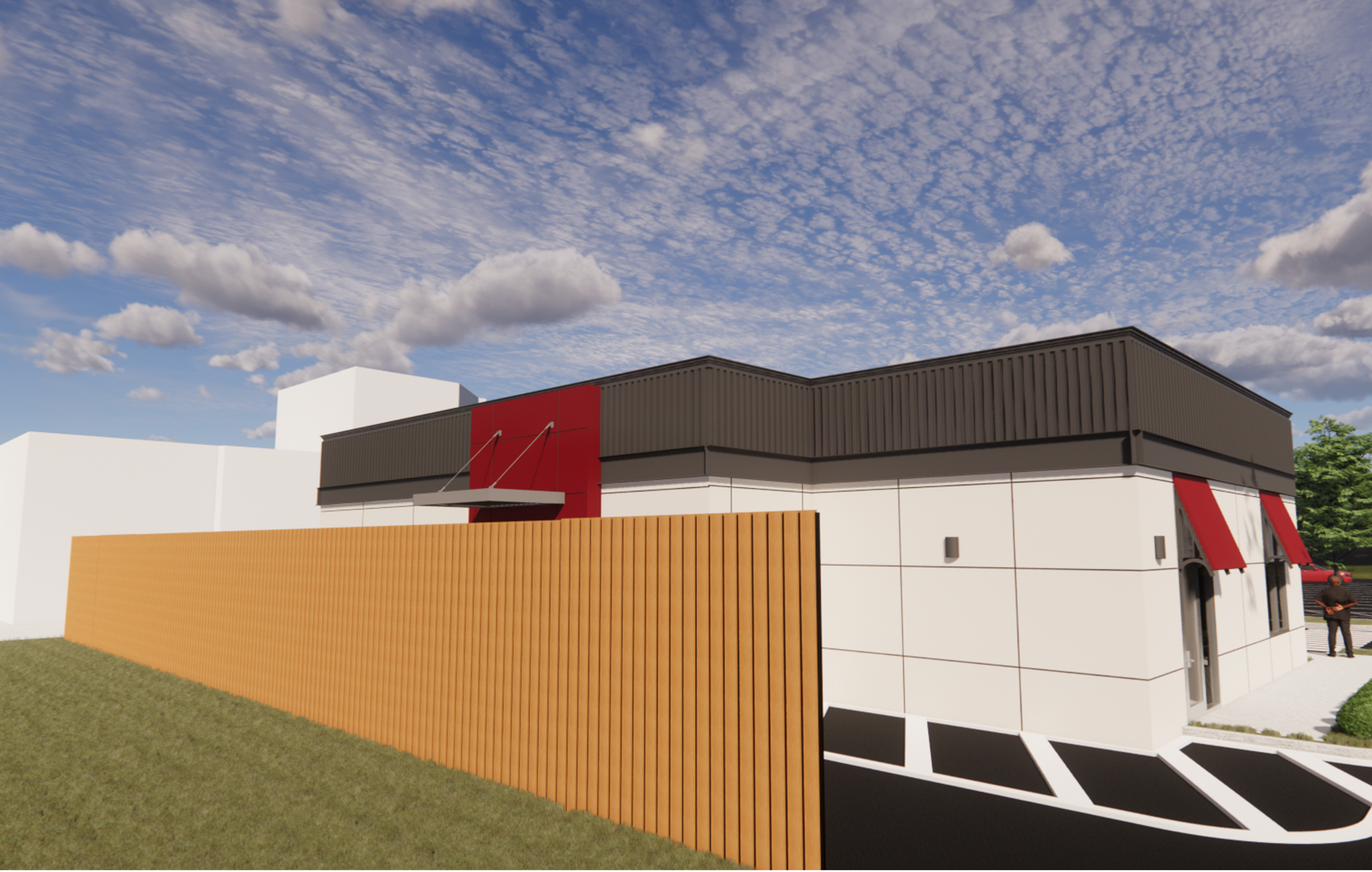
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LANDCORE
Engineering Consultants, P.C.

MAILING ADDRESS (FOR ALL OFFICES)
P.O. Box 37635 #56287
Philadelphia, PA 19101-0635
Phone: (215) 836-2510 | eFax: (215) 352-0428
LANDCOREconsulting.com

October 21, 2021
Via Fed-Ex

Whitemarsh Township
616 Germantown Pike
Lafayette Hill, PA 19444
Attn: Charles Guttenplan, Dir. of Planning & Zoning

Subject: **Conditional Use & Land Development Application**
Flourtown Shopping Center
Proposed Site Redevelopment
1842 Bethlehem Pike
Whitemarsh Twp, Montgomery Co., PA
LEC File #140065.02

Dear Mr. Guttenplan:

On behalf of the applicant, **Federal Realty Investment Trust**, enclosed please find documents and supporting information as required by Whitemarsh Township for resubmission of a **Conditional Use & Preliminary/Final Land Development Application** for the above referenced property. The following is a summary of the items being submitted:

- Sixteen (16) copies of the **"Preliminary / Final Land Development Plans"** prepared by our office, dated March 4, 2021, last revised October 21, 2021.
- Five (5) copies of the **"Overall Site & Record Plans"** prepared by our office, dated March 4, 2021, last revised October 21, 2021.
- Sixteen (16) copies of the **"Architectural Elevations"** prepared by JL Architects, dated October 12, 2021.

We have revised the Plan in accordance with your Township Engineer's April 22, 2021 comment letter as well as comments received from Springfield Township. We offer the following responses in corresponding order:

ZONING ORDINANCE

1) We have revised the plans to include the requested note.
2) Noted.
3) Noted.
4) Noted.
5) Noted, said testimony will be part of the Conditional Use Application.
6) We have revised the Plans and the Site Layout to address the Floodplain Conservation District.
7) We have revised the Plans per the FEMA Floodplain elevation of 151.5 +/-.
8) The Shopping Center and project have been granted a Zoning Variance related to Parking, we believe this comment does not apply.
9) Noted.
10) The Applicant has received the necessary zoning relief related to the Riparian Corridor Conservation District.
11) This submission includes the proposed Architectural Elevations of the building.
12) The required Traffic Report was previous submitted and any necessary testimony will be provided as part of the Conditional Use Approval.
13) The proposed utilities services will be underground services.

14) Noted.
15) Noted.
16) Noted.
17) Noted.
18) This submission includes the proposed Architectural Elevations of the building.
19) Noted.
20) This project does not propose any new Trash Enclosures.
21) The plans have been revised to show the updated setback dimensions.
22) A Lighting Plan is included in the submitted Planset.
23) The plans have been revised to show the updated setback dimensions.
24) We have revised the plans to update the Front Yard parking setback.
25) The Applicant/Tenant will file a stand alone signage application.

SUBDIVISION AND LAND DEVELOPMENT ORDINANCE

26) We have revised the plans to include the location map.
27) We request a waiver from this requirement.
28) Noted.
29) We have revised the Site Circulation for both pedestrian and vehicular traffic and will discuss these improvements with the Township:
30) Noted.
31) We have labelled the ROW for the Center, previous approvals (Movie Tavern) within the center offered Ultimate ROW to Springfield Township.
32) We have revised the Plans to show the available Sight Distance.
33) We have revised the Plans to show the available Sight Distance.
34) We have included a Lighting Plan.
35) We have revised the caliper size of the trees.
36) We have included a Lighting Plan.
37) We have revised the plan to eliminate this parking condition.
38) We have revised the Landscape Plan to indicate that there are sufficient existing street trees to meet the Township requirements.
39) We have revised the site layout to improve pedestrian circulation, we believe these revisions address the concerns noted.
40) We have enclosed a revised Landscape Plan.
41) Noted.
42) We have revised the Site Plan to include the requested signage.
43) Noted.
44) Noted.
45) We have enclosed a revised Landscape Plan.
46) Noted.

CHAPTER 55 – TREE PROTECTION STANDARDS

47) We have reviewed the existing trees within the project limits and none are large enough to require replacement.
48) We have reviewed the existing trees within the project limits and none are large enough to require replacement.
49) We have revised the plans to include the requested notes.
50) There are no existing trees over 6" diameter within the project limits.
51) There is no replacement tree requirement for this project.

GRADING, EROSION CONTROL, STORMWATER MANAGEMENT AND BEST MANAGEMENT PRACTICE ORDINANCE:

52) No Stormwater facilities are proposed, so this note is not required.
53) No Stormwater facilities are proposed, so this note is not required.
54) No Stormwater facilities are proposed, so this note is not required.
55) No Stormwater facilities are proposed, so this agreement is not required.
56) We have revised the plans to include the requested notes.
57) We have revised the Site Design to maximize green space being added to the parking areas around the pad site. Roof drains will be directed to the maximum extent feasible.

RESOLUTION 2004-8:

58) We have revised the detail to address this concern.
59) This redevelopment reduces impervious and therefore does not have an increase in runoff.
60) We have revised the plans to include the requested notes.
61) This redevelopment reduces impervious and therefore does not have an increase in runoff.
62) This redevelopment reduces impervious and therefore does not have an increase in runoff.
63) This redevelopment reduces impervious and therefore does not have an increase in runoff, the previously submitted report addressed these concerns.
64) No Stormwater facilities are proposed, so this calculation is not required.
65) No Stormwater facilities are proposed, so this note is not required.
66) No Stormwater facilities are proposed, so this evaluation is not required.

ADDITIONAL COMMENTS:

67) We have revised the Plans to graphically depict the construction fence.

Should you have any questions or comments regarding this or any other matter, please do not hesitate to contact our office.

Very truly yours,
LANDCORE Engineering Consultants, PC

D. Alexander Tweedie, PE, Sr Project Manager

Enclosure

cc: Andy Bottaro, Federal Realty
Rob Lewis, Kaplin Stewart
File

c:\users\atwee\dropbox (landcore)\projects\2014\140065 - federal realty - flourtown pa\permitting\township_whitemarsh township\2021-10-21_140065.02_whitemarsh resubmission.docx

WHITEMARSH TOWNSHIP
SUBDIVISION and/or LAND DEVELOPMENT APPLICATION

The applicant, or applicant's authorized agent, for the Township to accept submission of the application, must complete each Application Item and each Application Submission Checklist Item.

Application Type: (check one) ☐ Minor Subdivision ☒ Minor Land Development ☐ Major Subdivision ☐ Major Land Development ☐ Land Development Waiver

Plan Type: ☐ Sketch ☒ Preliminary ☒ Final

RECEIVED
MAR 15 2021
WHITEMARSH TOWNSHIP
ZONING & ENGINEERING

INSERT "N/A" FOR NOT APPLICABLE WHERE APPROPRIATE

Name of Subdivision/Land Development: Flourtown Shopping Center

Location of Subdivision/Land Development: 1842 Bethlehem Pike, Flourtown PA 19031
(Primary Access Roadway Name)

Between: Springfield Ave (Roadway Name) **and** Sunnybrook Road (Roadway Name)

Number of Parcels: 1 **Block Number(s):** Lot A 60 **Unit Number(s):** 66

Parcel Number(s): 65-00-00547-063

Acreage: < 1 Ac Proj Area **Total Lots Proposed:** 1 (Exist) **Zoning District:** VC-3

Water Service Proposed: ☒ Public ☐ Private Sewer Service Proposed: ☒ Public ☐ Private

Applicant Name: Federal Realty Investment Trust **Contact Name:** Andy Bottaro

Phone #: 610-896-5870 Fax #: Email: abottaro@federalrealty.com

Address: 50 E. Wynnewood Road, Suite 200, Wynnewood, PA 19096

Owner of Record Name (if Different): Federal Realty Investment Trust AND Steven J Guttman & Donald Misner c/o Federal Realty Investment Trust

Phone #: 610-896-5870 Fax #: Email: abottaro@federalrealty.com

Address: 909 Rose Ave, Suite 200, North Bethesda, MD 20852

Engineer Name: D. Alexander Tweedie, PE **Firm Name:** LANDCORE Eng. Consultants, P(

Phone #: 215-836-2510 Fax #: Email: atweedie@landcoreconsulting.com

Address: PO Box 37635 #56287, Philadelphia, PA 19101-0635

Fees and plans showing all public improvements are submitted with this application. Any additional plan information required by the Township Engineer will be submitted to the Director of Planning and Zoning for distribution. The undersigned applicant agrees to comply with all the provisions of Chapter 105 of the Code of the Township of Whitemarsh, as amended, and agrees to obtain all necessary permits in connection with the proposed subdivision and/or land development.

Whitemarsh Township employees, or township-authorized agents, are hereby granted permission to enter upon the land, if necessary, for site inspections.

Original preliminary and/or original final subdivision and/or land development applications submitted by 4:00pm on the last business day of the month will be reviewed by the Whitemarsh Township Planning Commission at a regular meeting two (2) months following the date of submission or other appropriate meeting date depending upon the results of Township reviews.

I hereby certify, as the undersigned applicant, that I am familiar with the provisions of: [1] Chapter 105, "Subdivision and Land Development", [2] Chapter 58, "Grading, Erosion Control, Stormwater Management and Best Management Practices", and [3] Chapter 55, "Tree Protection Standards" of the Code of the Township of Whitemarsh, as amended, and, to the best of my knowledge and belief, this application and the submitted plans conform to those provisions.

Date of Submission: 3.5.2021

Signature: _____

(Original Signature must be submitted)

Printed Name: ANDREW BOTTARO

I, **(name)** ANDREW BOTTARO **(title)** SENIOR DIRECTOR, DEVELOPMENT of

(entity submitting application) FEDERAL REALTY INVESTMENT TRUST do hereby affirm

that I am authorized by the applicant to affix my signature to this application.

Date: 3.3.2021 Signature: _____

(Original Signature must be submitted)

WHITEMARSH TOWNSHIP
SUBDIVISION and/or LAND DEVELOPMENT
TIME WAIVER FORM

Date: 3.3.2021

Granted to: Whitemarsh Township Board of Supervisors

Name of Subdivision and/or Land Development: Flourtown Shopping Center

On or about 3/3/2021, I/we submitted for official filing the above-reference application.

Notwithstanding any contrary provision of the Pennsylvania Municipalities Planning Code or the Code of the Township of Whitemarsh, this letter will serve as notice to Whitemarsh Township that the requirement that action be taken on this application within ninety (90) days is hereby waived, without limitation as to time. This waiver is granted to permit us to make revisions to the application during the application review process.

Further, with the understanding that this waiver is voluntarily given and will be relied upon by Whitemarsh Township, I/we will give Whitemarsh Township written notice (by certified mail or recognized overnight carrier) should we determine that limiting the time of the review process becomes necessary. Whitemarsh Township shall then have ninety (90) days from receipt of such written notice in which to act upon the application.

This waver is not transferable or assignable by the Applicants and shall apply to any and all revised submissions made in relation to the above-referenced application.

I/we represent that I/we have been duly authorized to execute this waiver on behalf of the Applicant.

Date: 3.3.2021

Signature: [signature]

(Original Signature must be submitted)

Printed Name: Andy Bottaro

Firm Name: Federal Realty

(if applicable)

Title: Senior Director, Development

(if applicable)

WHITEMARSH TOWNSHIP
REQUEST FOR MODIFICATION (WAIVER) OF
SUBDIVISION and/or LAND DEVELOPMENT ORDINANCE REQUIREMENTS

Pursuant to § 512.1.(b) of the Pennsylvania Municipalities Planning Code, all requests for a modification shall be in writing and shall accompany and be a part of the application for development. The request shall state in full the grounds and facts of unreasonableness or hardship on which the request is based, the provision or provisions of the ordinance involved and the minimum modification necessary.

Check the appropriate line:

☒ No modification (or waiver) of the Whitemarsh Township Subdivision and Land Development Ordinance is requested

☐ I/we hereby request the following modification[s] (or waiver[s]) of the Whitemarsh Township Subdivision and Land Development Ordinance. (The request must identify the applicable Section[s] of the Ordinance, modification[s] requested, and facts of unreasonableness or hardship upon which the request is made; attach additional sheets if necessary).

Name of Subdivision and/or Land Development: Flourtown Shopping Center

Date: 3.3.2021 Signature:

(Original Signature must be submitted)

FUREY & BALDASSARI, P.C.

ATTORNEYS AT LAW
1043 S. PARK AVENUE
AUDUBON, PA 19403

MICHAEL E. FUREY
JOSEPH J. BALDASSARI*

(610) 666-7500
fax (610) 666-7200

*also member NJ bar

August 16, 2021

Federal Realty Investment Trust
50 E. Wynnewood Road, Suite 200
Wynnewood, PA 19096

RE: Whitemarsh Township Zoning Hearing Board
Application of Federal Realty Investment Trust, No. 2021-30

Dear Applicant:

Enclosed herewith please find a true and correct copy of the Decision and Order of the Whitemarsh Township Zoning Hearing Board pursuant to the vote rendered at its meeting on August 11, 2021. Please note that your application was granted, subject to conditions as recited in the Decision and Order.

You are also hereby advised that all parties have thirty (30) days from the issuance of the Board's Decision and Order to file an appeal to the Court of Common Pleas of Montgomery County.

Sincerely,

MICHAEL E. FUREY
Solicitor to the Whitemarsh
Township Zoning Hearing Board

MEF/sr
Enclosure
cc: Charles Guttenplan, Zoning Officer (w/enclosure)
Sean Kilkenny, Esquire (w/enclosure)
Craig Robert Lewis, Esquire (w/enclosure)

WHITEMARSH TOWNSHIP ZONING HEARING BOARD

DECISION AND ORDER

APPLICATION NO.: 2021-30
APPLICANT: Federal Realty Investment Trust
Block 060, Units 066 and 067
1842 Bethlehem Pike
Flourtown, PA 19031
VC-3 Village Commercial District (Sub-District 3)
Floodplain Conservation Overlay District
Riparian Corridor Conservation District

HEARING DATE: 07/14/21
CONTINUED HEARING DATE: 08/11/21
VOTE: 08/11/21
WRITTEN DECISION: 08/16/21
COPY MAILED: 08/16/21

The Applicant previously received relief in Application No. 2020-36 to expand the Flourtown Shopping Center for the addition of an approximately 4,550 SF pad site for a restaurant and bank. The Applicant has revised its plans for the pad to accommodate only a 2,450 SF bank building.

After completion of a public hearing on the above-referenced Application, pursuant to public notice as required by law, the Zoning Hearing Board of Whitemarsh Township decided and orders as follows:

1. A Special Exception under Section 116-185, so as to permit shared parking between adjacent lots, is **GRANTED**.

2. A Special Exception under Section 116-166.B., so as to permit utilities within the floodway fringe, is **GRANTED**.

3. A variance from Section 116-184.D(8), so as to permit parking on an adjacent lot and zero parking spaces, rather than the 3 parking spaces required, is **GRANTED**.

4. A variance from Section 116-165, so as to permit earth disturbance/construction, removal of existing pavement, and installation of curbing, sidewalk, landscape islands and other improvements as shown on the plans within the floodway fringe, is **GRANTED**.

5. A variance from Section 116-259.A., so as to permit the proposed bank to be located within the side yard of the Riparian Corridor Conservation Overlay District, and providing for no setback, rather than at a setback equal to half of the side yard setback required from the edge of the Riparian Corridor Conservation Overlay District, is **GRANTED**.

6. Variances from Sections 116-260.C. and 116-260.E, so as to permit modifications to exiting lawful nonconforming parking spaces and drive aisles within the Riparian Corridor Conservation Overlay District, are **GRANTED**.

THIS DECISION IS SUBJECT TO THE FOLLOWING CONDITIONS:

1. All use and development permitted by this Decision shall substantially conform to the exhibits and testimony presented by the Applicant, unless inconsistent with any specific conditions imposed by this Board, in which case these specific conditions shall take precedence.

2. The Applicant shall apply for and obtain all permits required by the Township Codes in a timely manner.

3. The Applicant shall comply with all requirements of the Township with respect to the land development process and the conditional use approval process.

4. The Applicant shall install landscaping as directed and/or approved by the Township upon the recommendation of the Shade Tree Commission.

5. The Applicant shall comply with the requirements of the Township Fire Marshal with respect to the traffic patterns resulting from the proposed improvements.

6. The Applicant shall comply with all requirements of the National Flood Insurance Program related to construction in the floodplain, and all requirements of the Township Engineer as related to development in the floodplain and riparian corridor.

As required by Section 116-227.D of the Zoning Ordinance, the Applicant is on notice that:

Certain relief from floodplain regulations may result in increased premium rates for flood insurance and/or may increase the risks to life and property. The development and use of the property in the floodplain are entirely at the risk of the Applicant.

This Decision and Order of the Board is final and any appeal of it must be filed with the Court of Common Pleas of Montgomery County within thirty (30) days following the copy mailing date set out above.

The Board reserves the right to issue Findings of Fact and Conclusions of Law in the event of an appeal.

Section 116-223 of the Zoning Ordinance provides as follows:

Expiration of granted appeals. Unless otherwise specified by the Board, all approvals granted by the Zoning Hearing Board shall automatically expire 365 days after the date of the decision unless: (1) the applicant has acted upon the approval by obtaining the required permit(s) and paying the prescribed fees for same, or (2) the Zoning Hearing Board decision is on appeal to the courts, at which point, the approval, if upheld on appeal, shall expire 365 days after final determination on appeal.

The Zoning Hearing Board may extend the expiration date of approvals for a 180 day period upon request by the applicant, provided that the applicant is, in the opinion of the Zoning Hearing Board, diligently pursuing governmental and/or regulatory approvals as required. Requests for extensions shall be in writing and submitted to the Zoning Hearing Board at least 30 days before any applicable expiration date. Only one (1) extension may be provided for any application.

No. 2021-30
WHITEMARSH TOWNSHIP ZONING HEARING BOARD:

Robert A. Bacine, Chair

William E. Kramer, Vice Chair

Marc Weinstein

Stanley A. Casacio

James Behr

Randi Rubin

The Township of Springfield

MONTGOMERY COUNTY, PENNSYLVANIA
Township Bldg., 1510 Paper Mill Rd., Wyndmoor, PA 19038
website: www.SpringfieldMontco.org Phone: 215-836-7600
Fax: 215-836-7180

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Solicitor

Bonny S. Davis
Treasurer / Tax Collector

Mark W. Eisold
Engineer

Craig Robert Lewis, Esq.
Union Meeting Corporate Center
910 Harvest Drive, P. O. Box 3037
Blue Bell, PA 19422-0765

October 27, 2020

Re: Zoning Hearing Board Application #20-13 for the property located at 1842 Bethlehem Pike, Flourtown, PA 19031. Known as Parcel #520001903007, Parcel #520001904006 and Parcel #520001904105.

Dear Mr. Lewis,

This letter is sent to inform you that on Monday, October 26, 2020 the Zoning Hearing Board of Springfield Township approved the dimensional variance from Section 114-134. A. (6) of the Zoning Ordinance of Springfield Township to allow for the on-site parking to be reduced from the existing 713 parking stalls to 699 parking stalls.

The approval of this application was unanimous with one condition.

Condition: That noise mitigation be addressed to the satisfaction of the Springfield Township Board of Commissioners during the land development review process.

This approval will expire twelve (12) months from the date of this decision should the required land development application not be submitted. If there are any questions that you may have, please feel free to contact me at 215-836-7600, ext. 1114.

Sincerely,

Mark A. Penecale
Director of Planning & Zoning

Cc: ZHB Members by way of email
ZHB Solicitor by way of email
Michael Taylor, Township Manager, Springfield Township

1559310-1

Deana Shuler

From: Krista Heinrich <kheinrich@gilmore-assoc.com>
Sent: Thursday, April 29, 2021 3:20 PM
To: Craig R. Lewis; Charlie Guttenplan
Cc: D. Alexander Tweedie P.E. (atweedie@landcoreconsulting.com); Sean Halbom; Dave Sander
Subject: RE: Flourtown Shopping Center - Review of Land Development Application [KS-IMAN_BB.FID902312]
Attachments: FEMA42091C0377G.tif; FIRMETTE_436affbb-cee1-4416-883e-8174490ee9a9.pdf

Rob-
The FEMA FIRM Map (attached) lists a Base Flood Elevation (BFE) 151.5 NAVD88. The BFE defines FEMA's 100-Year Floodplain, which represents the Whitemarsh Township Floodplain Conservation District Boundary. The plans will need to be revised to show the Floodplain Conservation District as being along the elevation representing 151.5 NAVD88.

Following revision, it appears that the following Zoning relief would be required:

- Special Exception from Section 116-166(B)(3) to permit utilities to be allowed in the in the floodway fringe.
- Variance from Section 116-165 in order to permit uses other than those described herein. Banks and/or restaurants are not listed as permitted uses within the Floodplain Conservation District.
- Variances from Section 116-259(C) and 116-260 to permit the proposed structures, drives and parking areas within Zone 2 of the Riparian Corridor Conservation District.

Any questions, let us know.

Thanks,
Krista Heinrich, PE
Gilmore & Associates

From: Craig R. Lewis
Sent: Thursday, April 29, 2021 10:18 AM
To: Charlie Guttenplan <cguttenplan@whitemarshtwp.org>; kheinrich@gilmoreassoc.com
Cc: D. Alexander Tweedie P.E. (atweedie@landcoreconsulting.com) <atweedie@landcoreconsulting.com>
Subject: Flourtown Shopping Center - Review of Land Development Application [KS-IMAN_BB.FID902312]

Krista and Charlie,

I hope this finds you well. As you know, we recently received review comments from the Township's engineer regarding Federal's application for land development for an approximately 4,550 s.f. addition to the Flourtown Shopping Center. While we continue to work on responses to the remainder of the comments, there appears to be a threshold issue that must be addressed. Comments number 6 and 7 raise the issue of the location of the Floodplain Conservation District. The Floodplain Management Ordinance and SLDO indicate that the Floodplain shall be delineated by the FEMA Rate Maps (FIRM). We have plotted the Floodplain Conservation District in this manner and believe the project will be compliant; possibly requiring a Special Exception in accordance with Section 116-166. However, if, as is seemingly suggested in Comments 6 and 7, the Floodplain is plotted according to the noted elevation (151.5), this results in an entirely different plotting; one that we do not believe to accurately depict flooding conditions and one which is inconsistent with the FIRM.

Can we schedule a time to discuss the above? As I mentioned above, this is a threshold issue that must be resolved before we address any of the other comments. I can be reached by email or by cell phone 267-235-7797.

Thanks.

Rob

Craig Robert Lewis, Esq.
Kaplin | Stewart
Union Meeting Corporate Center
910 Harvest Drive
P.O. Box 3037
Blue Bell, Pennsylvania 19422-0765
(610) 941-2584 (phone)
(267) 235-7797 (mobile)
(610) 684-2021 (fax)
rlewis@kaplaw.com

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National Flood Hazard Layer FIRMette

FEMA

75°13'9"W 40°6'51"N



75°12'32"W 40°6'23"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) Zone A, V, A99
- With BFE or Depth Zone AE, AO, AH, VE, AR
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Are of 1% annual chance flood with averag depth less than one foot or with drainag areas of less than one square mile Zone
- Future Conditions 1% Annual Chance Flood Hazard Zone X
- Area with Reduced Flood Risk due to Levee. See Notes. Zone X
- Area with Flood Risk due to Levee Zone D

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard Zone X
- Effective LOMRs
- Area of Undetermined Flood Hazard Zon

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximat point selected by the user and does not repres an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 8/28/2020 at 11:55 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

STORMWATER MANAGEMENT REPORT

Proposed Site Improvements

1842 Bethlehem Pike, Flourtown PA 19031
Springfield Township & Whitemarsh Township,
Montgomery County, Pennsylvania

Prepared for

Federal Realty Investment Trust

50 E. Wynnewood Road, Suite 200
Wynnewood, PA 19096

Prepared By:

LANDCORE Engineering Consultants, P.C.

P.O. Box 37635, #65287
Philadelphia, PA 19101-0635

LEC Project No: **140065**

Date: **March 4, 2021**

Revised:

D. Alexander Tweedie, P.E.

PA License #071873



LANDCORE
Engineering Consultants, P.C.

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APPENDIX A: Supporting Documents

A.1 Project Location Map

A.2 FEMA Flood Insurance Rate Map

APPENDIX B: Site Soils investigation

B.1 USGS Custom Web Soil Survey

APPENDIX C: Water Quality and infiltration Analysis

C.1 Springfield Township Water Quality & Infiltration Analysis

C.2 Whitemarsh Township Water Quality & Infiltration Analys

APPENDIX D: Drainage Maps

1.0 PROJECT DESCRIPTION

Federal Realty Investment Trust is proposing to redevelop a section of the Flourtown Shopping Center located at 1809 Bethlehem Pike (SITE) in both Springfield Township and Whitemarsh Township, Montgomery County, Pennsylvania. The project proposes 4,550 sf of additional commercial building space. Other improvements include a drive-thru lane, parking area, and utilities.

The property in questions is further identified as A.P.N. 52-00-01904-006 as identified on the official tax maps of Montgomery County, Springfield Township & A.P.N. 65-00-00547-045 as identified on the official tax maps of Montgomery County, Whitemarsh Township, Commonwealth of Pennsylvania. A project location map can be found in the appendix.

Tract Area: **41.47 acres**
Limit of Disturbance: **0.47 acres**

2.0 SITE CHARACTERISTICS

2.1 EXISTING CONDITIONS

The property is the location of the Flourtown Shopping Center which is comprised of several commercial buildings with associated parking and loading areas. The area to be developed is located along the north westerly corner of the shopping center and is primarily a paved area.

2.2 PROPOSED CONDITIONS

As mentioned above, a 4,550 sf commercial building is proposed with associated drive-thru lane, parking and loading area. All improvements will be contained within the limits of the existing shopping center developed area. Impervious cover will be reduced.

2.3 RECEIVING WATERS

The SITE is located within the Wissahickon Creek watershed, a tributary of the Delaware River. The nearest receiving waters is Tributary 00857 to Wissahickon Creek (aka Sunnybrook Creek or Oreland Run) located onsite along the northerly and easterly property lines. The creek flows in a westerly direction towards Bethlehem Pike. The watercourse is designated as a Trout Stock Fishery (TSF), Migratory Fishery (MF) on the Pennsylvania Department of Environmental Protection (PADEP) Chapter 93 classification list.

2.4 PROJECT AREA SOILS

The SITE was evaluated using the latest soil survey information and mapped accordingly. The soil types for this site were obtained from the United States Department of Agriculture NRCS Web Soil Survey and a custom report generated (see Appendix). The mapped area extended beyond the property boundary line to ensure adequate coverage of the site.

Table 1: Site Soils

Soil ID	Description	Slopes	Hydrologic Soil Group
UgB	Urban Land	0 – 8%	-
UrhB	Urban Land – Duffied Complex	0 – 8%	-

2.5 FLOODPLAINS

The site lies within a regulated flood area. FEMA's Flood Insurance Rate Map for Montgomery County, PA, map numbers "42091C0377G" effective on 03/02/2016, designates portion of the site as "Zone AE" or "Special Flood Hazard Areas Subject To Inundation By The 1% Annual Chance Flood" and "Base Flood Elevations Determined" (see Map in Appendix).

The proposed development will be located within the regulated flood area, which has ab approximate elevation of 151.7 in the location of the proposed building. The proposed finished floor is set at elevation 153.00.

2.6 WETLANDS

The improvements will occur within the limits of the existing shopping center, therefore no wetlands will be impacted by the development.

3.0 DESIGN CRITERIA

The stormwater design standards for the development are set forth by the following:

- Springfield Township Stormwater Management Ordinance Chapter 88.
- Springfield Township Erosion and Sedimentation Control Ordinance Chapter 28.
- Whitemarsh Township Grading, Erosion Control, Stormwater Management and Best Management Practices Ordinance Chapter 58.
- Whitemarsh Township Resolution 2004-8.
- PADEP's Erosion and Sediment Pollution Control Program regulations.

Specific design standards and project site conditions are as follows:

3.1 SPRINGFIELD TOWNSHIP CHAPTER 88

1. §88-3.G: Meet legal water quality requirements under state law, including regulations at 25 Pa. Code Chapter 93 .4a to protect and maintain existing uses and maintain the level

of water quality to support those uses in all streams, and to protect and maintain water quality in special protection streams.

3.2 Springfield Township Chapter 28

1. §28-9.B: Provide for no increase in stormwater peak discharge as per Subsection A.

3.3 Whitemarsh Township 2004-8.

1. §II.C(1) & (2): Control post rate to pre up to 100 yr storm.
2. §II. F(3)(c)(1) Water Quality: WQv = (0.17)(Rv)(A)
3. §II. F(3)(d) Infiltration: Rev = [(S)(Rv)(A)]/12

4.0 Analysis

4.1 Peak Rate Analysis

The proposed development will result in a reduction in impervious cover which will result in a reduction in peak rates for the 1 – 100 year storms.

The follows summaries the net reduction in impervious area:

Springfield Township:	660 sf
Whitemarsh Township:	2,982 sf
Total:	3,642 sf

4.2 Water Quality

Due to the net reduction in impervious coverage, water quality requirements have been satisfied; Therefore, no additional BMPs are required. See Water Quality Analysis in the appendix

4.3 Infiltration

Due to the net reduction in impervious coverage, infiltration requirements have been satisfied; Therefore, no additional BMPs are required. See Infiltration Analysis in the appendix.

5.0 Conclusions

The reduction in impervious coverage will result in a decrease in peak rates, and an increase in both water quality benefits and infiltration volume.

6.0 REFERENCES

- Springfield Township Stormwater Management Ordinance Chapter 88.
- Springfield Township Erosion and Sedimentation Control Ordinance Chapter 28.
- Whitemarsh Township Grading, Erosion Control, Stormwater Management and Best Management Practices Ordinance Chapter 58.
- Whitemarsh Township Resolution 2004-8.
- PA Stormwater BMP Manual. December 2006.
- "Erosion and Sediment Pollution Control Program Manual". Commonwealth of Pennsylvania, Department of Environmental Protection, Office of Water Management. March 2012.

APPENDIX A: SUPPORTING DOCUMENTS

A.1 PROJECT LOCATION MAP

USGS MAP

SCALE: 1" = 2,000'



A.2 FEMA Flood Insurance Rate Map

National Flood Hazard Layer FIRMette

FEMA

75°13'9"W 40°6'51"N



75°12'32"W 40°6'23"N

Feet

0 250 500 1,000 1,500 2,000

1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 1/13/2021 at 11:59 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

APPENDIX B: SITE SOILS INVESTIGATION

B.1 USGS CUSTOM WEB SOIL SURVEY

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Montgomery County, Pennsylvania



December 21, 2020

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



Map Scale: 1:2,130 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 30 60 120 180

Feet
0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Montgomery County, Pennsylvania
Survey Area Data: Version 15, Jun 5, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 17, 2014—Aug 14, 2014

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ch	Codorus silt loam	0.2	0.7%
UgB	Urban land, 0 to 8 percent slopes	19.6	83.8%
UrhB	Urban land-Duffield complex, 0 to 8 percent slopes	3.6	15.5%
Totals for Area of Interest		**23.4**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The

delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Montgomery County, Pennsylvania

Ch—Codorus silt loam

Map Unit Setting

National map unit symbol: l53x
Elevation: 200 to 2,000 feet
Mean annual precipitation: 35 to 50 inches
Mean annual air temperature: 45 to 57 degrees F
Frost-free period: 120 to 220 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Codorus and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Codorus

Setting

Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from gneiss and/or alluvium derived from mica schist

Typical profile

Ap - 0 to 12 inches: silt loam
Bw - 12 to 48 inches: silt loam
C - 48 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 72 to 99 inches to lithic bedrock
Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: OccasionalNone
Frequency of ponding: None
Available water capacity: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Hatboro

Percent of map unit: 8 percent
Landform: Flood plains

Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Hydric soil rating: Yes

Glenville

Percent of map unit: 4 percent
Landform: Hillslopes
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Side slope, head slope
Down-slope shape: Linear, concave
Across-slope shape: Concave, linear
Hydric soil rating: No

Baile

Percent of map unit: 3 percent
Landform: Depressions
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear, concave
Across-slope shape: Concave, linear
Hydric soil rating: Yes

UgB—Urban land, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2dtyq
Elevation: 800 to 1,500 feet
Mean annual precipitation: 36 to 46 inches
Mean annual air temperature: 41 to 62 degrees F
Frost-free period: 130 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Parent material: Pavement, buildings and other artifically covered areas human transported material

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

Minor Components

Udorthents, unstable fill
Percent of map unit: 10 percent
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

UrhB—Urban land-Duffield complex, 0 to 8 percent slopes

Map Unit Setting
National map unit symbol: 2dtyv
Elevation: 200 to 1,500 feet
Mean annual precipitation: 32 to 50 inches
Mean annual air temperature: 44 to 57 degrees F
Frost-free period: 120 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition
Urban land: 65 percent
Duffield and similar soils: 25 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting
Landform: Hills
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Pavement, buildings and other artifically covered areas

Typical profile
H1 - 0 to 6 inches: variable

Properties and qualities
Slope: 0 to 8 percent
Depth to restrictive feature: 10 to 100 inches to lithic bedrock
Available water capacity: Very low (about 0.0 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

Description of Duffield

Setting
Landform: Valleys
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve

Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Residuum weathered from limestone

Typical profile

H1 - 0 to 10 inches: silt loam
H2 - 10 to 53 inches: silty clay loam
H3 - 53 to 72 inches: silt loam

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 48 to 120 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Clarksburg

Percent of map unit: 4 percent
Landform: Valley flats
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Hydric soil rating: No

Penlaw

Percent of map unit: 4 percent
Landform: Swales
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

Thorndale

Percent of map unit: 2 percent
Landform: Depressions
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear, concave
Hydric soil rating: Yes

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APPENDIX C: WATER QUALITY AND INFILTRATION ANALYSIS

C.1 SPRINGFIELD TOWNSHIP WATER QUALITY & INFILTRATION ANALYSIS

LANDCORE Engineering Consultants, P.C.

Water Quality & Infiltration Analysis

Project: **Proposed Site Improvements - 1890 Bethlehem Pike, Flourtown PA**
Springfield Township, Montgomery County PA

Date: **1/13/2021**
Prepared By: **MR**
Checked By: **DAT**

Pre Development Conditions:

Pervious Areas =	502	sf
Impervious Areas =	6127	sf
	6629	sf
or	0.15	acres

Post Development Conditions:

Pervious Areas =	1162	sf
Impervious Areas =	5467	sf
	6629	sf
or	0.15	acres

Net Impervious Area =	-660	sf
or	-0.02	acres

Water Quality Requirement

P =	0.17	inches
Total Area (A)=	0.15	acres
Net Impervious Area (A_i)=	-0.02	acres
I = A / A_i =	-9.96	%
Rv = 0.05 + 0.009 (I) =	-0.040	
WQv = (P * Rv * A) =	-0.001	acre-ft
or	-44.63	cf

Infiltration Requirement

S =	0.06	(D Soils)
Total Area (A)=	0.15	acres
Net Impervious Area (A_i)=	-0.02	acres
I = A / A_i =	-9.96	%
Rv = 0.05 + 0.009 (I) =	-0.040	
Re_v = [(S)(Rv)(A)]/12	0.000	acre-ft
or	-1.31	cf

C.2 WHITEMARSH TOWNSHIP WATER QUALITY & INFILTRATION ANALYS

LANDCORE Engineering Consultants, P.C.

Water Quality & Infiltration Analysis

Project: **Proposed Site Improvements - 1890 Bethlehem Pike, Flourtown PA**
Whitemarsh Township, Montgomery County PA

Date: **1/13/2021**
Prepared By: **MR**
Checked By: **DAT**

Pre Development Conditions:

Pervious Areas =	178	sf
Impervious Areas =	13850	sf
	14028	sf
or	0.32	acres

Post Development Conditions:

Pervious Areas =	3160	sf
Impervious Areas =	10868	sf
	14028	sf
or	0.32	acres

Net Impervious Area =	-2982	sf
or	-0.07	acres

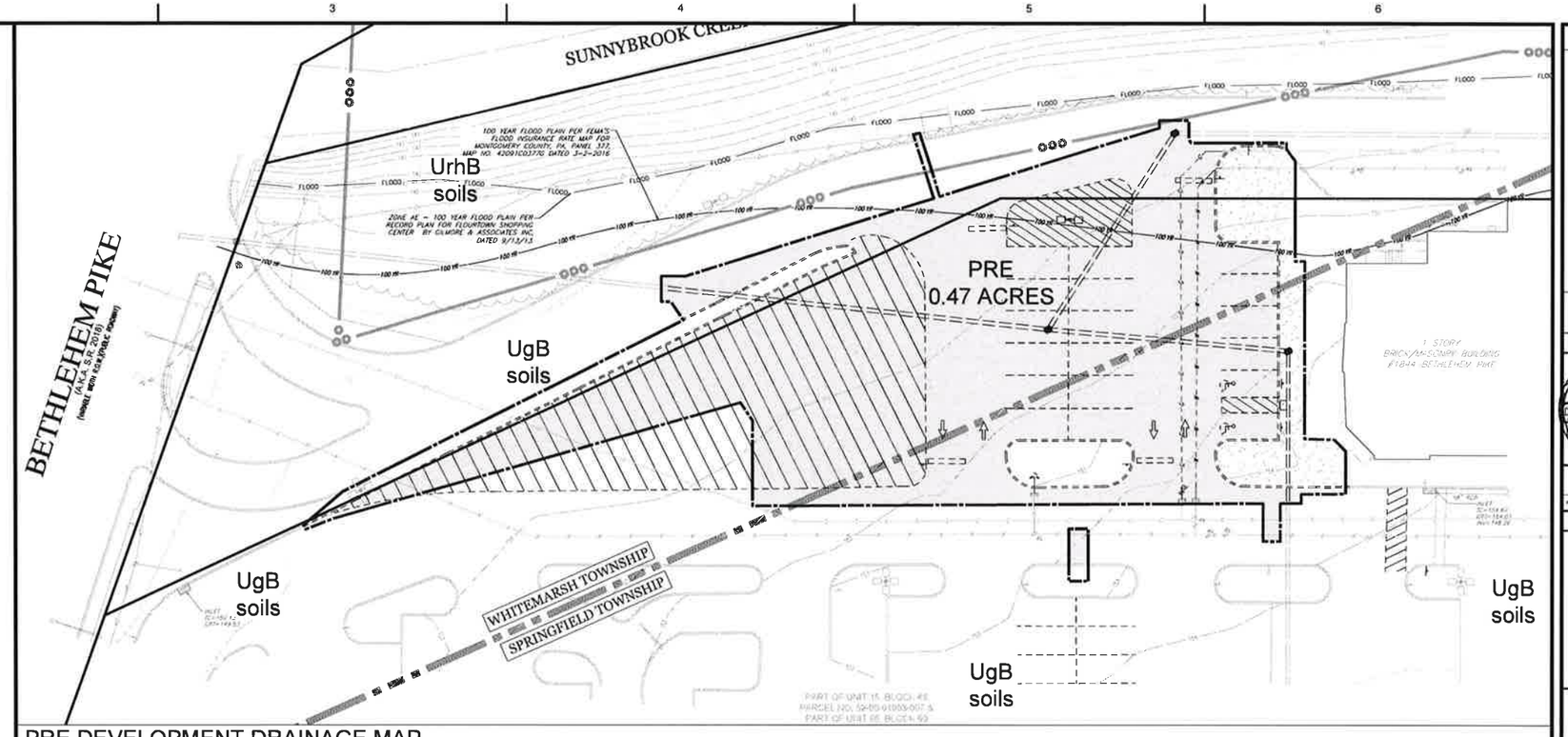
Water Quality Requirement

P =	0.17	inches
Total Area (A)=	0.32	acres
Net Impervious Area (A_i)=	-0.07	acres
I = A / A_i =	-21.26	%
Rv = 0.05 + 0.009 (I) =	-0.141	
WQv = (P * Rv * A) =	-0.008	acre-ft
or	-337.01	cf

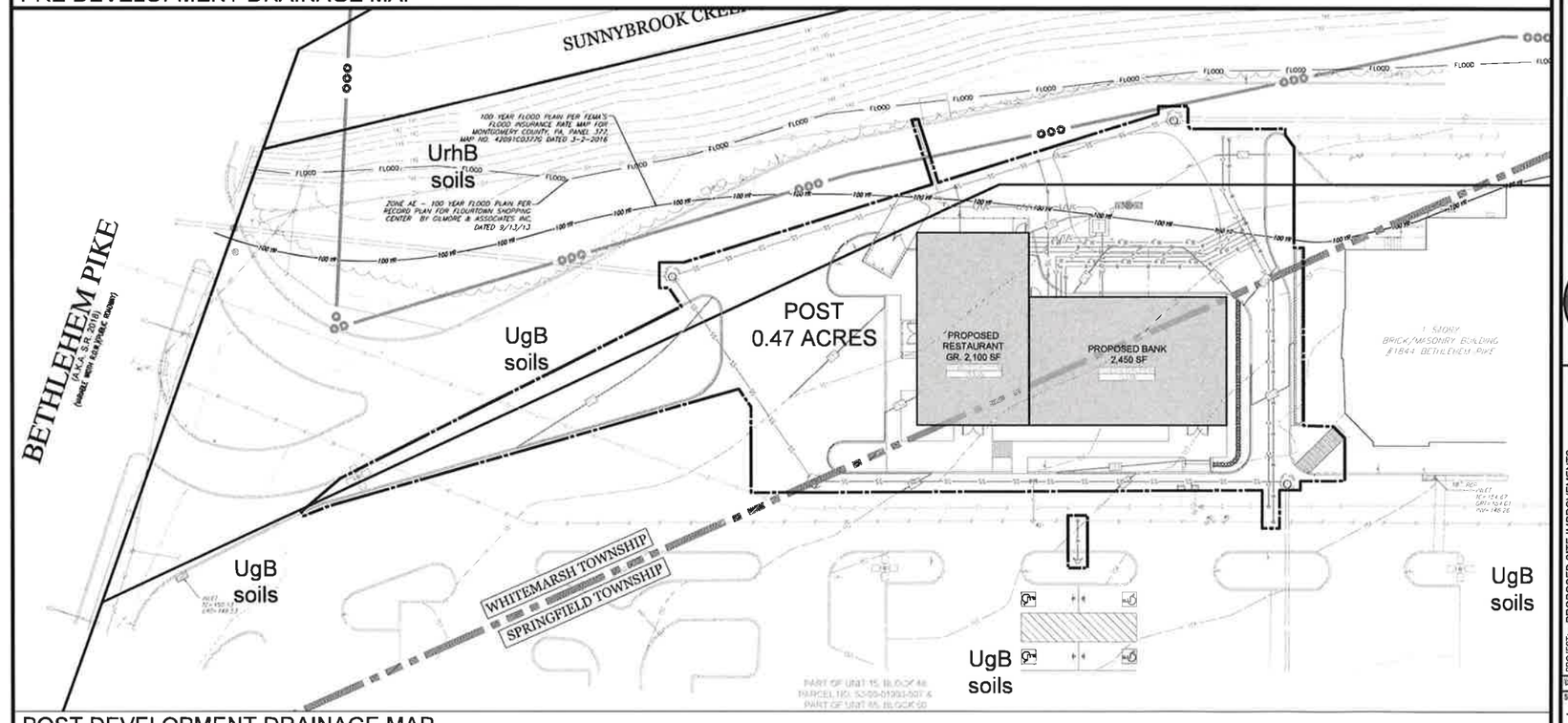
Infiltration Requirement

S =	0.06	(D Soils)
Total Area (A)=	0.32	acres
Net Impervious Area (A_i)=	-0.07	acres
I = A / A_i =	-21.26	%
Rv = 0.05 + 0.009 (I) =	-0.141	
Re_v = [(S)(Rv)(A)]/12	0.000	acre-ft
or	-9.91	cf

APPENDIX D: DRAINAGE MAPS



PRE DEVELOPMENT DRAINAGE MAP



POST DEVELOPMENT DRAINAGE MAP

811 Know what's below Call before you dig
PENNSYLVANIA ONE CALL
DIAL 811 or 800.242.1776
PATCALL.org
TICKET #:

GRAPHIC SCALE 1 INCH = 20 FEET

REV.	DATE	COMMENT

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER D. ALEXANDER TWEEDIE No. PE071815

D. ALEXANDER TWEEDIE
PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE No. 071815

NOT FOR CONSTRUCTION

PROJECT No 142315
DRAWN BY MKB
CHECKED BY DAT
CAD ID # A01_DAM_1 400X36

LANDCORE
Engineering Consultants, P.C.
PO BOX 71533 19237
PHILADELPHIA, PENNSYLVANIA 19101-4533
PHONE 215-634-2102 | FAX 215-634-2428
LANDCORECONSULTING.COM

PROJECT: PROPOSED SITE IMPROVEMENTS
1800 BETHLEHEM PIKE, FLOURTOWN, PA 19031
SPRINGFIELD TOWNSHIP AND WHITEMARSH TOWNSHIP
MONTGOMERY COUNTY, PA

APPLICANT: FEDERAL REALTY INVESTMENT TRUST

TITLE: DRAINAGE AREAS

DATE 2021-03-04
SHEET 01 of 01 REV. No 0
DAM

F. Tavani and Associates, Inc.
Traffic Engineering and Planning

248 Beech Hill Road • Wynnewood • PA • 19096 • (215) 625-3821 Phone • (484) 792-9495 Fax
www.FTAVANIASSOCIATES.com

10 February 2021

Andy Bottaro
Federal Realty Investment Trust
50 E Wynnewood Rd, SU 200
Wynnewood, PA 19096

VIA EMAIL ONLY

RE: Flourtown Shopping Center
Proposed 4.3 KSF Expansion

Drive Thru Queue Investigations

Springfield & Whitemarsh Twps, Montgomery Co

FTA Job # 220-004

Dear Mr. Bottaro:

As requested, F. Tavani and Associates, Inc. (FTA) has conducted queuing investigations relative to a proposed bank in a proposed 4.3 KSF expansion of the existing 177.0 KSF Flourtown Shopping Center. The site is depicted in a plan excerpt (from plans recently received from the site civil engineer) which is attached to the end of this report. FTA has reviewed site plans relative to the above-referenced application and specifically with regard to the adequacy of the proposed drive thru facility for the proposed Santander bank as depicted in the plans and offers the following comments.

PROPOSED CONDITIONS

The plans reflect a proposed bank totaling approximately 2,450 SF. The bank has walk-in services as well as a drive-thru facility. The drive thru is not a full-service drive thru, but rather is a 24-hour ATM (only) drive thru. The drive thru provides stacking for up to about 5 cars. Note that the bank will also include 2 additional ATM machines inside the branch, which can also be accessed 24 hours a day, but would require a patron to park and then walk inside the branch.

EXPECTED PEAK QUEUING ACTIVITY

The adequacy of the proposed storage for the drive thru is an important design element. Queue projection studies are available from others, the most recent being made available in a report from 2012 (attached). As shown, independent studies of 6 drive-thru banks were conducted. All of the studied drive thrus included multiple lanes, one or more of which was full-service with at least one lane being an ATM-only lane. No mention was made in the report regarding whether or not there was an additional ATM in the branch itself. The study concluded that the average maximum queue was 5.8 cars, but it is unclear if this is a total queue over multiple lanes or a single-lane maximum queue.

OTHER CONSIDERATIONS

The most recent available third-party data, as cited earlier, is now nearly a decade old. Over the last decade, online banking has grown in popularity, as has consumer use of and reliance upon non-cash

transactions, including PayPal, Venmo, and others. Visits to ATMs to get or deposit cash are less frequent. Checks can now even be deposited with the use of a smartphone and an app; eliminating yet another reason for many people to visit an ATM. In short, there is likelihood that the 2012 data overstates present-day ATM usage and queuing potential.

Even more, albeit slightly older, bank drive-thru data is presented in **Appendix B** of the attached 2012 study. Interestingly, the slightly older (2008/2009) data and related analysis was gathered at 10 banks – nearly double the dataset of the 2012 effort. Most importantly, the 2008/2009 study included definitive verbiage that its maximum queue observations were based on maximum observed queues in a single lane (or "per lane"). As shown on page **B3** of the appendix, the absolute (100^{th} %ile) maximum was 4 cars per lane. On page **B4**, the 2008/2009 study even goes so far as to invoke findings of an earlier study (1995), and found that absolute maximum queue lengths (per lane) at *that* time were considerably longer. This interesting comparison (1995 having longer maximum queue lengths than those observed in 2008/2009) underscores how present-day usage is probably even lower still (i.e., the trend is down, as newer technologies and other alternatives to bank visits become more widely used).

Lastly it is important to bear in mind that there exists a fundamental "acceptance or alternative" theory when considering drive-thru storage adequacy. Simply stated, an arriving motorist will assess a queue length and decide whether or not he/she wants to invest the time in waiting for said queue to be processed and for he/she to be served. If the perception is a queue is too long, a motorist will often bypass the drive thru entirely, seeking an alternative to service. In this case, the motorist will be aware of the availability of 2 other ATMs located in the branch, and may elect to simply park and walk up to said ATMs, provided one or both are available[1]. As previously established in other investigations by FTA, parking in the vicinity of front façade of the proposed bank is readily available. In the alternate, the motorist could decide to disregard the visit entirely, either going to another ATM location, or re-visiting the drive thru later, for a second assessment to decide whether or not to enter the queue, after completing another task[2].

CONCLUSIONS

The storage potential of the proposed bank drive thru is approximately 5 cars. The storage potential is adequate as depicted.

Very truly yours,
F. TAVANI AND ASSOCIATES, INC.

FRANK TAVANI, P.E., PTOE
Principal

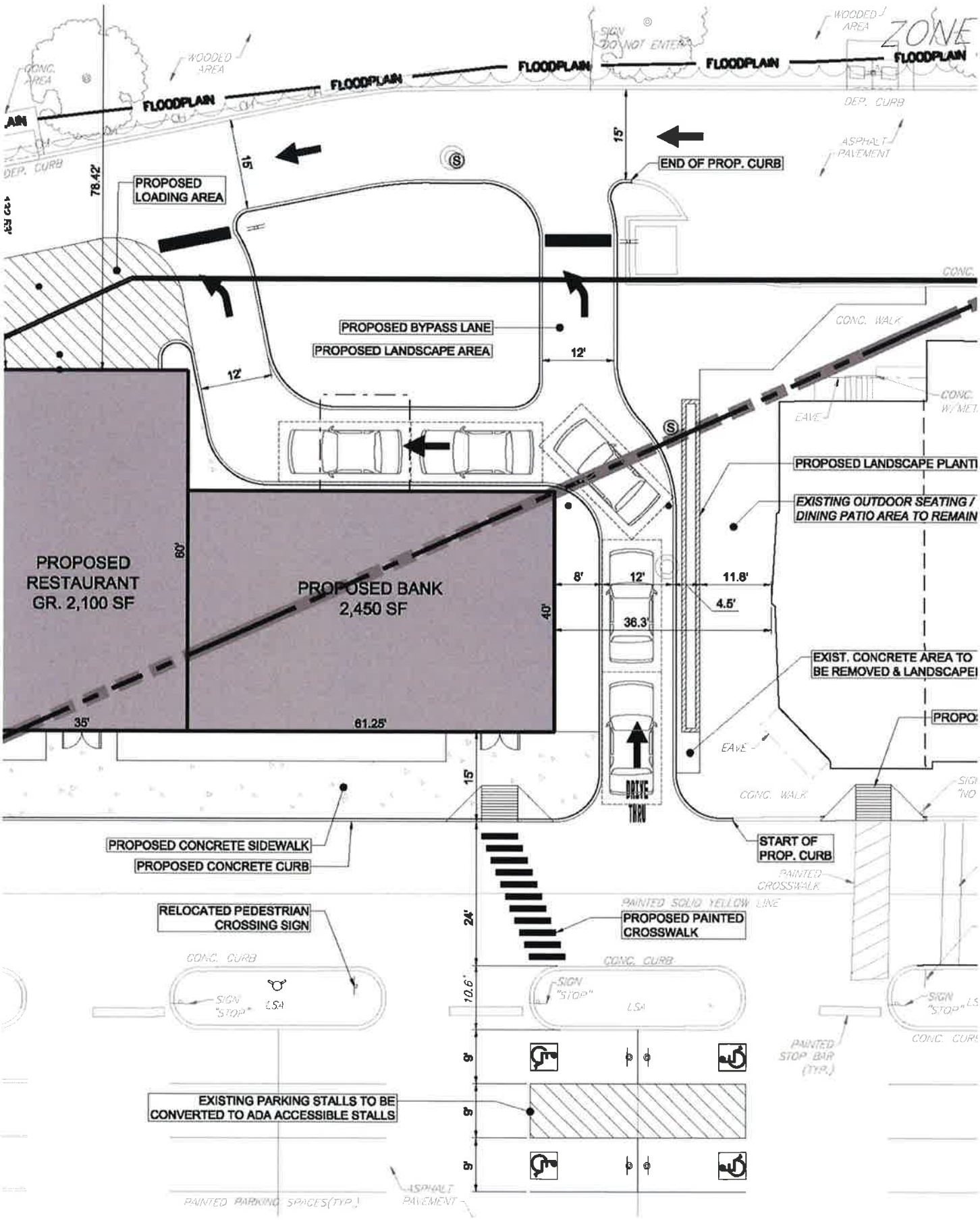
attachments

cc: C. Robert Lewis, Esq.
Alex Tweedie, P.E.

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[1] Renderings of the proposed Santander branch demonstrate that the 2 in-branch ATMs will be plainly visible to passers-by since the front façade of the bank will be almost entirely glass.

[2] An ATM visit is often not a primary trip; it is frequently made as part of another trip. In the instant example, the proposed bank is located within a large shopping center which features, among many other uses, a large supermarket. Thus, one potential is that a motorist could observe an undesirably long queue at the proposed bank and decide to instead perform another task within the shopping center first, such as go food shopping, and then revisit the bank drive thru again later, to assess if the queue is shorter.


FLOODPLAIN
FLOODPLAIN
FLOODPLAIN
FLOODPLAIN
WOODED AREA
WOODED AREA
CONC. AREA
SIGN DO NOT ENTER
DEP. CURB
DEP. CURB
ASPHALT PAVEMENT
15'
15'
78.42'
END OF PROP. CURB
PROPOSED LOADING AREA
PROPOSED BYPASS LANE
PROPOSED LANDSCAPE AREA
12'
12'
CONC.
CONC. WALK
CONC. W/ MET.
EAVE
PROPOSED LANDSCAPE PLANTI
EXISTING OUTDOOR SEATING / DINING PATIO AREA TO REMAIN
PROPOSED RESTAURANT GR. 2,100 SF
PROPOSED BANK 2,450 SF
60'
40'
8'
12'
11.8'
4.5'
36.3'
35'
61.25'
EXIST. CONCRETE AREA TO BE REMOVED & LANDSCAPEI
PROPO
EAVE
CONC. WALK
SIGN "NO
DRIVE THRU
15'
PROPOSED CONCRETE SIDEWALK
PROPOSED CONCRETE CURB
START OF PROP. CURB
PAINTED CROSSWALK
PAINTED SOLID YELLOW LINE
RELOCATED PEDESTRIAN CROSSING SIGN
PROPOSED PAINTED CROSSWALK
24'
CONC. CURB
CONC. CURB
SIGN "STOP"
LSA
10.6'
SIGN "STOP"
LSA
SIGN "STOP" LS
CONC. CURB
PAINTED STOP BAR (TYP.)
9'
9'
9'
EXISTING PARKING STALLS TO BE CONVERTED TO ADA ACCESSIBLE STALLS
PAINTED PARKING SPACES(TYP.)
ASPHALT PAVEMENT

COUNTINGcars.com

Drive-Through Queue Generation

Mike Spack, PE, PTOE, Max Moreland, EIT, Lindsay de Leeuw, Nate Hood

1.0 Introduction

This report provides queuing data for businesses with drive-through services. It is intended to be an aid for site designers and reviewers, similar to the Institute of Transportation Engineers' *Trip Generation* and *Parking Generation* reports. The data presentation is modeled on the *Parking Generation* report and data is provided based on at least six sites, similar to data sets marked as statistically significant in *Trip Generation*.

Businesses with drive-through lanes are very common in the United States and having data that gives usage information for drive-through lanes will assist designers as well as cities in determining the appropriate amount of storage needed for proposed drive-through businesses. Data for drive-through queues was published by the ITE Technical Council Committee 5D-10 in 1995 based on information collected between the late 1960's and the 1990's. A paper was also published in 2009 by Mark Stuecheli, PTP giving updated information for bank and coffee shop drive-through lanes. The results from the 2009 study are incorporated into this paper (thank you Mark for your assistance).

2.0 Data Collection

Data was collected using COUNTcam video recording systems at a total of 30 drive-through locations in Minneapolis, MN and several surrounding suburbs between 2010 and 2012 (26 of the 30 videos were recorded in February of 2012, which should represent peak usage in the cold Minnesota winter). Videos of drive-through lanes were collected at banks, car washes, coffee shops, fast food restaurants and pharmacies. A total of six locations were selected for each of the five different land uses. Each location was recorded for between one and five days where the majority of locations were recorded for two consecutive days. The days of the week that each video was recorded on varies.

The 24-hour videos were watched at high speeds with the PC-TAS counting software and maximum queues throughout the day were noted. Most of the COUNTcams were set up such that the entire queue lane could be seen, but at a few locations the drive-through lanes wrapped around the building in a way that the entire queue length would not be able to be seen. For these situations, the COUNTcams were set up so that the ordering window and back of the queue could be seen and it was noted how many vehicles could fit between the ordering window and the front of the queue. For drive-through locations with multiple lanes, the number of lanes was noted but the maximum queue is defined as the sum of the queues at each lane for any given point in time, not the queue per lane. This approach provides overall demand, which may assist designers in determining how many drive through lanes are appropriate in addition to determining how long they should be.

Once the maximum queue for each day at each location was determined, the data was compiled and statistics for each land use were calculated. The average maximum queue, standard deviation, coefficient of variation, range, 85th percentile and 33rd percentile were calculated for each land use.

Data for drive-through coffee shops and banks from the Kansas City, Kansas metropolitan area was published in the 2009 paper New Drive-Through Stacking Information for Banks and Coffee Shops by Mark Stuecheli. This data is included in the analysis.

3.0 Data Analysis

Based on the peak queue lengths, it is apparent that each land use will require a different minimum drive through stacking distance. The results for each land use can be found below. The peak queue lengths for each location, broken down by land use and day of the week, can be found in the Appendix.

3.1 Banks

Data collection was done at six banks with drive-through services (including one credit union) in August 2011 and February 2012. Twelve days of data were collected. The banks were located in the cities of Minneapolis, Robbinsdale and St. Louis Park, MN.

All of the locations had a lane with a drive-through ATM and at least two other lanes. Though service times may differ for ATM lanes compared to the regular lanes, the maximum queues were counted together. This is because based upon what was observed, vehicles would occasionally switch the lane they were in. For example, a vehicle waiting in the ATM line with a queue of three vehicles may move over to a regular line with a queue of only one vehicle. Much of what can be done at the bank's drive-through lane can also be accomplished at that bank's ATM and vice versa. Vehicles being served were counted as being in the queue.

Nine days of data from the Kansas City, Kansas area is also included. This data does not factor in vehicles in ATM lanes.

Table 3.1 – Drive-Through Bank Maximum Queue Statistics

	Minnesota Data	Minnesota + Kansas Data
Number of Data Points	12	21
Average Maximum Queue (Vehicles)	5.83	5.76
Standard Deviation (Vehicles)	1.85	2.21
Coefficient of Variation	32%	38%
Range (Vehicles)	3 to 8	1 to 10
85th Percentile (Vehicles)	8.00	8.00
33rd Percentile (Vehicles)	5.00	5.00



Figure 3.1.1 – Drive-Through Bank Maximum Queue Frequency – Minnesota Data



Figure 3.1.2 – Drive-Through Bank Maximum Queue Frequency – Minnesota + Kansas Data

The data for Kansas banks was collected between 4:30pm and 6:00pm. While many of the maximum queues for the data collected in Minnesota were between these times, maximum queues occurred between 8:30am and 5:30pm so it is possible that some of the Kansas data does not capture the actual maximum queues for the day.

The number of available lanes at banks, not including the ATM lane, ranged from two to seven lanes (though the most open at one time was five lanes). Even though plenty of lanes were available, cars often stacked at the lane closest to the building, thus additional lanes may not result in shorter queues. With an 85th percentile maximum queue of eight vehicles, the data suggests that banks with drive-through lanes should be able to accommodate 160 feet of vehicle stacking.

3.2 Car Washes

Data collection was done at six car washes with drive-through services (including one full-service car wash) in February 2012. Twelve days of data were collected. The car washes were located in the cities of Falcon Heights, Hopkins, Minneapolis, Roseville and St. Louis Park, MN. Five of the six car washes (excluding the full-service car wash) were located at gas stations. Only the vehicles waiting in line were counted; vehicles being washed were not added to the queue.

Table 3.2 – Drive-Through Car Wash Maximum Queue Statistics

Number of Data Points	**12**
Average Maximum Queue (Vehicles)	**4.42**
Standard Deviation (Vehicles)	**2.31**
Coefficient of Variation	**52%**
Range (Vehicles)	**1 to 10**
85th Percentile (Vehicles)	**6.20**
33rd Percentile (Vehicles)	**3.00**

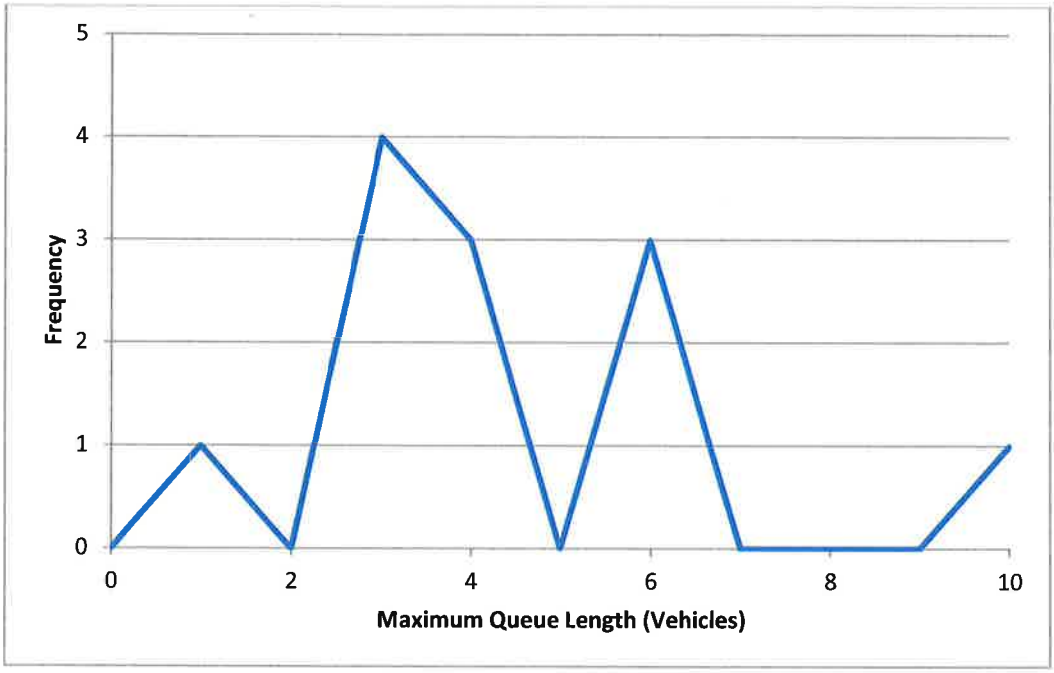


Figure 3.2 – Drive-Through Car Wash Maximum Queue Frequency

Two of the car washes had two lanes while the other four were one lane car washes. The full-service car wash had two lanes and also produced the highest maximum queue of 10 vehicles. The maximum queues for car washes were spread throughout the afternoon from 12:30pm to 8:30pm. With an 85th percentile maximum queue of more than six vehicles, the data suggests that car washes with drive-through lanes should be able to accommodate 140 feet of vehicle stacking throughout the day.

3.3 Coffee Shops

Data collection was done at six coffee shops with drive-through services in November 2010, August 2011 and February 2012. Fourteen days of data were collected. The coffee shops were located in the cities of Edina, Hopkins, Minneapolis, Roseville and St. Louis Park, MN. Vehicles being served were counted as being in the queue. Twelve days of data from the Kansas City, Kansas area is also included.

Table 3.3 – Drive-Through Coffee Shop Maximum Queue Statistics

	Minnesota Data	Minnesota + Kansas Data
Number of Data Points	14	26
Average Maximum Queue (Vehicles)	11.00	10.23
Standard Deviation (Vehicles)	2.25	2.76
Coefficient of Variation	20%	27%
Range (Vehicles)	7 to 16	3 to 16
85th Percentile (Vehicles)	13.50	13.00
33rd Percentile (Vehicles)	10.00	9.91

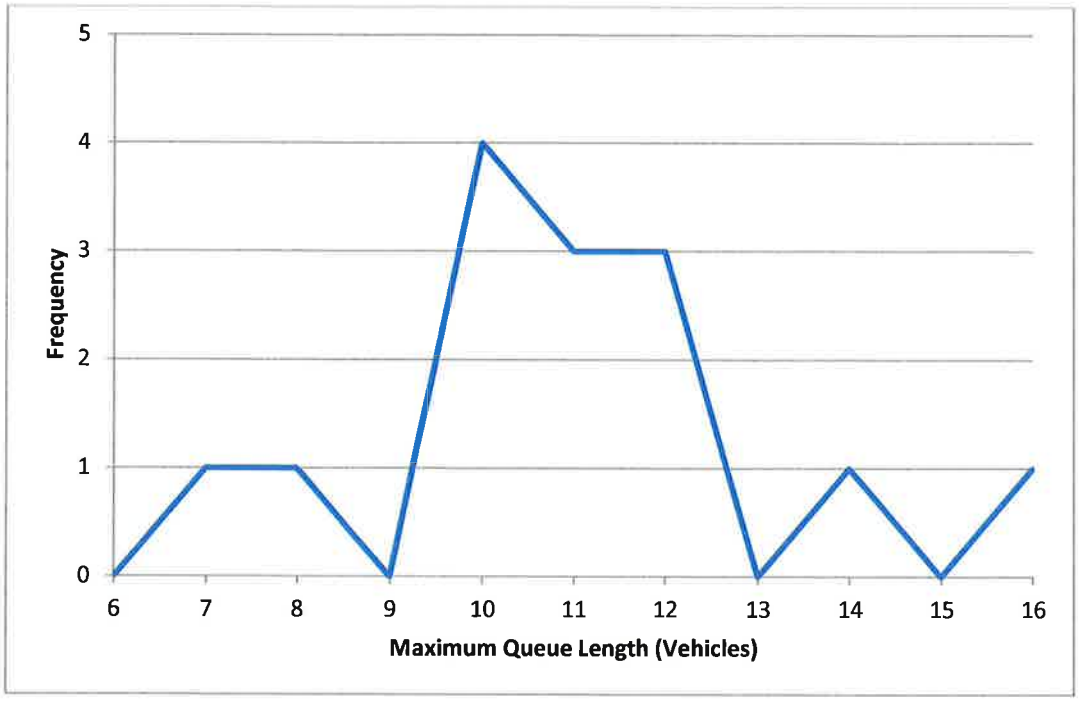


Figure 3.3.1 – Drive-Through Coffee Shop Maximum Queue Frequency – Minnesota Data

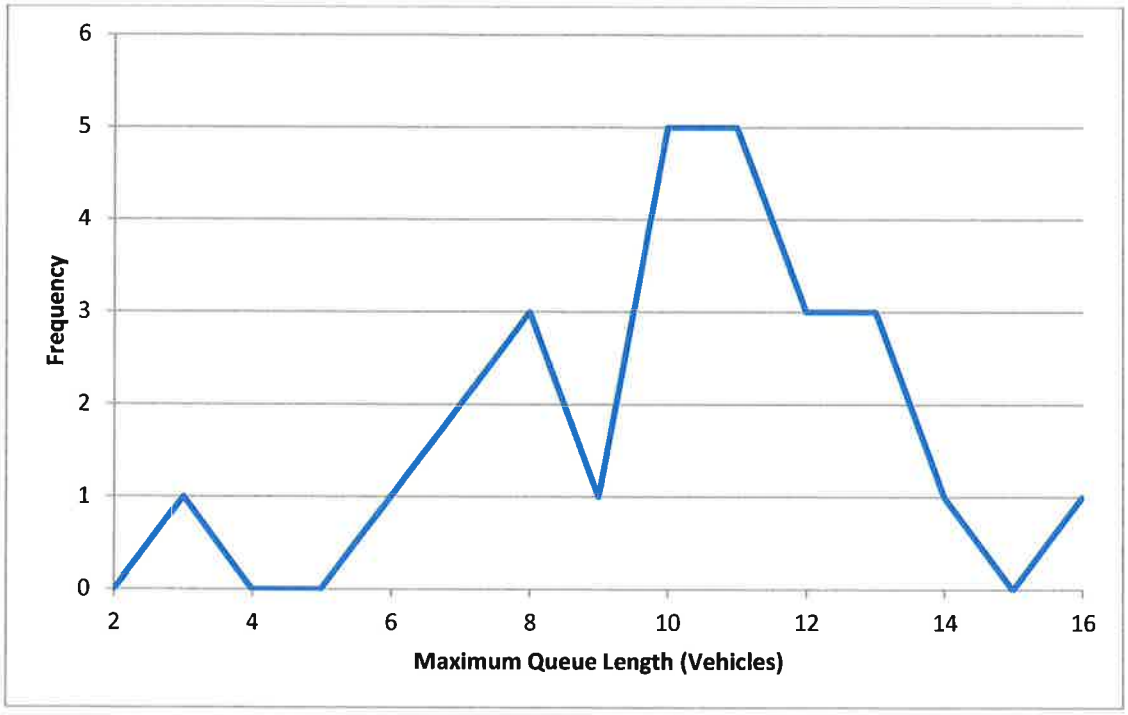


Figure 3.3.2 – Drive-Through Coffee Shop Maximum Queue Frequency – MN + KS Data

Coffee shops produced the longest maximum queues of any of the land uses in this study with all of the maximum queues occurring in the morning. In four of the six cases, the queues spilled out of the parking lot and into the street. These spillovers would typically only happen once or twice a day and last only a few minutes, however, one location had stacking into the street for about 15 minutes in addition to multiple periods of several minutes where cars would queue in the street.

With an 85th percentile maximum queue of 13 vehicles, the data suggests that coffee shops with drive-through lanes should be able to accommodate at least 260 feet of vehicle stacking during morning hours.

3.4 Fast Food Restaurants

Data collection was done at six fast food restaurants with drive-through services in August 2011 and February 2012. Fourteen days of data were collected. The restaurants were located in the cities of Golden Valley, Hopkins, Minneapolis and St. Louis Park, MN. Vehicles being served were counted as being in the queue.

Table 3.4 – Drive-Through Fast Food Restaurant Maximum Queue Statistics

Number of Data Points	**14**
Average Maximum Queue (Vehicles)	**8.50**
Standard Deviation (Vehicles)	**2.68**
Coefficient of Variation	**32%**
Range (Vehicles)	**5-13**
85th Percentile (Vehicles)	**12.00**
33rd Percentile (Vehicles)	**7.90**

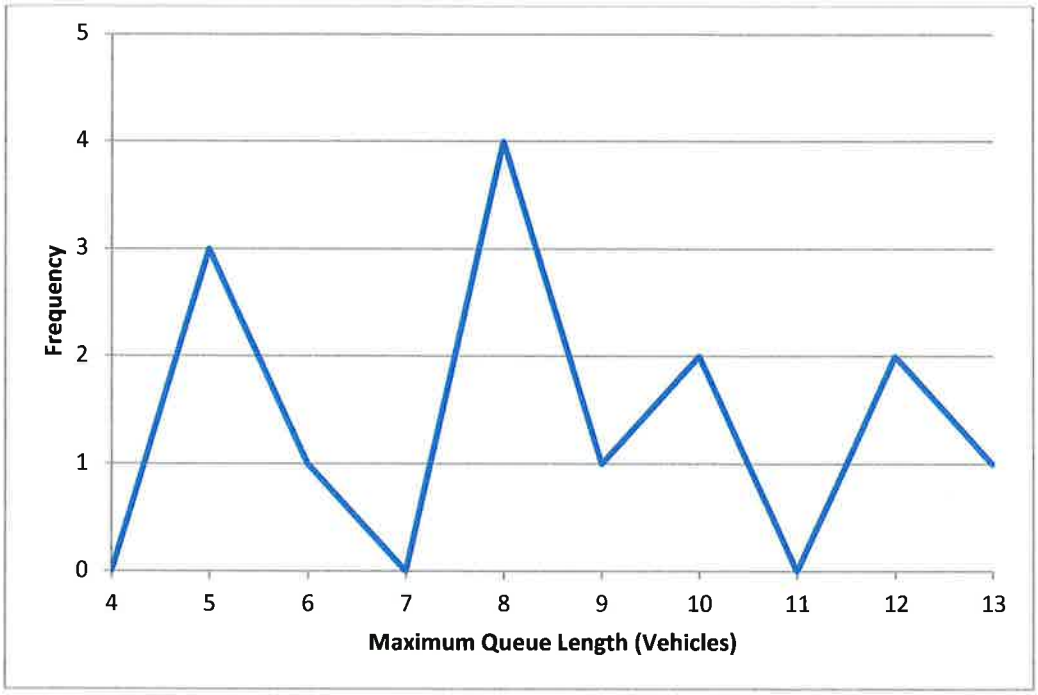


Figure 3.4 – Drive-Through Fast Food Restaurant Maximum Queue Frequency

The maximum queues for fast food restaurants were spread throughout the day from 8:00am to 10:00pm. With an 85th percentile maximum queue of 12 vehicles, the data suggests that fast food restaurants with drive-through lanes should be able to accommodate 240 feet of vehicle stacking throughout the day.

3.5 Pharmacies

Data collection was done at six pharmacies with drive-through services in February 2012. Twelve days of data were collected. The pharmacies were located in the cities of Hopkins, Minneapolis, New Hope and Robbinsdale, MN. Vehicles being served were counted as being in the queue.

Table 3.5 – Drive-Through Pharmacy Maximum Queue Statistics

Number of Data Points	**12**
Average Maximum Queue (Vehicles)	**2.92**
Standard Deviation (Vehicles)	**1.16**
Coefficient of Variation	**40%**
Range (Vehicles)	**1-5**
85th Percentile (Vehicles)	**4.05**
33rd Percentile (Vehicles)	**2.00**



Figure 3.5 – Drive-Through Pharmacy Maximum Queue Frequency

The maximum queues for pharmacies were spread throughout the day from 8:00am to 10:00pm. With an 85th percentile maximum queue of more than 4 vehicles, the data suggests that pharmacies with drive-through lanes should be able to accommodate 100 feet of vehicle stacking throughout the day.

4.0 Conclusions

The 85th percentile maximum queue lengths for each land use are: 160 feet for banks (eight vehicles), 140 feet for car washes (seven vehicles), 260 feet for coffee shops (13 vehicles), 240 feet for fast food restaurants (12 vehicles) and 100 feet for pharmacies (five vehicles).

While some of the locations observed have an excess of space dedicated to drive-through lanes (i.e. some banks and pharmacies), others could occasionally use additional space for drive-through lanes (i.e. coffee shops in the morning).

Fast food restaurants and coffee shops have the longest maximum queues of the five land uses observed. Coffee shops have a tendency for the morning queues to build so long that they spill out onto the street, though, as is expected, their afternoon and evening queues are minimal. Fast food restaurants also have large queues, but they tended to have enough dedicated space that stacking did not go beyond the designated queuing area.

The data collected for this paper along with the data from the papers by Mark Stuecheli and the ITE Technical Committee 5D-10 (see Appendix for both of these) will hopefully provide useful data for traffic engineers and others trying to analyze drive-through queuing storage areas.

5.0 Labor Savings of the COUNTkit

Deploying people in the field to perform this data collection would not have been feasible. Using the COUNTcam video system made it possible to observe the drive through lanes 24 hours a day and the PC-TAS software made the data reduction practical. One location was recorded in November 2010 for 6 hours, three locations were recorded in August 2011 for a total of 202 hours and 26 locations were recorded in February 2012 for a total of 1012 hours. These 1220 hours of video were counted with a total of 120 hours of labor, meaning the videos were watched at approximately 10x speed. Installation of a COUNTcam takes approximately 10 minutes and retrieval takes approximately 5 minutes. This whole project was completed in approximately 3 weeks.

6.0 References

1. Stuecheli, M. (2009). New Drive-Through Stacking Information for Banks and Coffee Shops. *ITE 2009 Annual Meeting and Exhibit.* Print.
2. ITE Technical Committee 5D-10. "Queuing Areas for Drive-Thru Facilities." *ITE Journal* (May 1995): 38-42. Print.
3. Institute of Transportation Engineers. *Parking Generation.* 4th ed. Washington, DC: Institute of Transportation Engineers, 2010. Print.
4. Institute of Transportation Engineers. *Trip Generation.* 8th ed. Washington, DC: Institute of Transportation Engineers, 2008. Print.

7.0 Appendix

A – Day of Week Maximum Queues
B – New Drive-Through Stacking Information for Banks and Coffee Shops
C – ITE Technical Committee 5D-10: Queuing Areas for Drive-Thru Facilities
D – Drive-Through Data Forms

Appendix A

Day of Week Maximum Queues

		Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Fast Food	Arby's				5	5		
	Burger King	6	12				10	8
	McDonald's				12	13		
	McDonald's				9	8		
	Taco Bell				10	8		
	White Castle				8	5		
Car Wash	BP				6	6		
	BP			1	3			
	BP			4	3			
	Holiday				3	4		
	Mister Car Wash				10	6		
	Mobil				4	3		
Coffee	Caribou				11	10		
	Caribou	7	10	12			12	8
	Starbucks				14	16		
	Starbucks				10	11		
	Starbucks			10	12			
	Starbucks				11			
Bank	Citizens Independent Bank			5	5			
	SharePoint Credit Union				3	3		
	TCF	4					8	8
	US Bank				7	7		
	Wells Fargo			8	6			
	Wells Fargo			6				
Pharmacy	CVS			1	2			
	CVS			4	4			
	CVS			2	2			
	Walgreens				4	5		
	Walgreens			3	3			
	Walgreens			3	2			

Appendix B

New Drive-Through Stacking Information for Banks and Coffee Shops

Mark Stuecheli, PTP

Abstract

This paper provides updated queuing information for drive-in banks and new queuing data for coffee shops with drive-through lanes. The data is presented in a format similar to that used in the report for **ITE Technical Council Committee 5D-10**, originally published in 1995.

Significant changes have occurred in the way that bank patrons conduct business with their banks. In recognition of those changes, ITE has adjusted the trip generation information included in the Eighth Edition of **Trip Generation, an ITE Informational Report** to include only data collected since 2000, and the revised trip generation totals are significantly lower than in previous editions. Clearly, the reduced trip generation figures indicate a reduction in bank drive-through business. This report summarizes queuing information included in counts taken in the Kansas City metropolitan area.

In the last few years coffee shops with drive-through lanes have become prevalent throughout the country. Because those businesses were uncommon when the 1995 report was prepared, no data was gathered for those operations. This paper contains information on counts taken at those establishments, once again in the Kansas City metropolitan area.

Based on the count data, recommendations are included for the minimum amount of stacking distance to require for the two types of drive-through businesses that were studied.

Background

ITE Technical Council Committee 5D-10 was formed in 1987 to produce a database of queuing information for various types of drive-through lanes. The report of the findings of the Committee, published in the May 1995 **ITE Journal**, included information on the characteristics of drive-through lane stacking for fast-food restaurants, drive-in banks, car washes, day care centers and dry cleaners. The counts that were included in the Committee report were conducted from the late 1960s through the late 1980s in a limited number of mid-western, southern and eastern states.

As a former member of that Committee, and having submitted drive-through counts for the effort, I am in a position to make some observations about the change in drive-through usage.

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This paper analyzes two types of drive-through operations – one that is greatly modified and another that is new since the original report was published. First, significant changes have occurred in the ways that bank patrons conduct business with their financial institutions. On-line banking, direct deposit and the wide usage of ATMs have resulted in greatly reduced trip generation totals for drive-in banks. In recognition of that fact, ITE adjusted the trip generation information for drive-in banks in the Eighth Edition of **Trip Generation, an ITE Informational Report,** to include only data collected since 2000. The trip generation rates during the p.m. peak hour for the newer data are about 44% lower than rates in the Seventh Edition.

The amount of stacking provided for bank drive-through lanes often has a critical impact on the potential site design alternatives for proposed bank properties. If the information included in the 1995 Report were to be used as the basis for establishing stacking requirements, a large area would need to be allocated to the drive-through lanes. On tight sites, that limitation could preclude developing an acceptable layout.

Clearly, the major drop in trip generation rates indicates that fewer customers are using drive-through lanes. That reduction in drive-through usage has an impact on queue lengths and other operational characteristics observed at those facilities. This paper includes updated information on queuing in bank drive-through lanes based on counts taken in the City of Overland Park, Kansas, a suburban community of 171,000 residents in the Kansas City metropolitan area.

The second area of analysis in this paper pertains to observed queuing characteristics for coffee shops with drive-through lanes. In the last few years, drive-through coffee shops have become common throughout the country. Because those businesses were an insignificant factor when the report for **ITE Technical Council Committee 5D-10** was completed, no counts were conducted for that land use category. This paper contains data on queuing for coffee shops with drive-through lanes, based on counts conducted predominantly in the Kansas suburbs of the Kansas City metropolitan area.

As is the case for drive-in banks, the length of stacking required for a site has a major impact on potential site layouts. If a relatively short stacking distance is permitted, the lanes can be fit into very restricted sites or be more easily retrofitted to work with existing buildings. But if more queuing occurs than is provided for in a dedicated lane, the flow of traffic within a parking lot can be seriously restricted by that excess queue. In the worst case, if the drive-through stacking is located close to a public street and the excess queue extends into or near the street, the operation of the adjoining public street may be negatively impacted.

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Drive-In Banks

Counts were conducted at ten suburban drive-in banks located throughout Overland Park in the fall of 2008 and the spring of 2009. Both established locations and sites that were relatively new were counted, although all banks had been open for business for at least one year. All but one location had drive-through ATMs. Based on the results of counts taken at a single bank location during a mid-week lunch hour, a mid-week p.m. peak hour, a Friday lunch hour, and a Friday p.m. peak hour; the maximum queue lengths occurred during the Friday p.m. peak hour. Therefore, all counts used in the study were conducted during the Friday p.m. peak hour time period.

The counting process involved noting the maximum per lane and total queues for the drive-through lanes at each location in fifteen minute increments, along with collecting information on the stacking of any drive-through ATM. In all cases the vehicles in the service positions were included in the counts. Where possible, the volumes of vehicles entering and exiting the parking lot also were tabulated. As a way to evaluate the frequency of various maximum queue lengths, the total queue lengths were noted at five minute intervals.

The queuing data was analyzed in ways similar to the methods used in the 1995 Report. Table 1 lists the observed frequency of maximum queue lengths per lane. Figure 1 plots the per lane maximum queue lengths using both the 2009 data and the data that was presented in 1995 (please note that the 1995 data involved fifteen counts, compared to the ten counts in the 2009 data). Figure 2 plots the probability that the queue lengths per lane will not exceed a given maximum queue length, once again presenting both 2009 and 1995 data.

Table 1 – Drive-In Bank 2009 Maximum Queue Length Per Lane

Queue Length	Frequency	Cumulative Frequency	P(q≤N)
0	0	0	0.00
1	1	1	.10
2	4	5	.50
3	4	9	.90
4	1	10	1.00

Note: P(q≤N) indicates probability, based on sample, of queue length of "q" not exceeding length "N"

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Figure 1 – Drive-In Bank 1995 And 2009 Maximum Queue Length Per Lane Data Plot

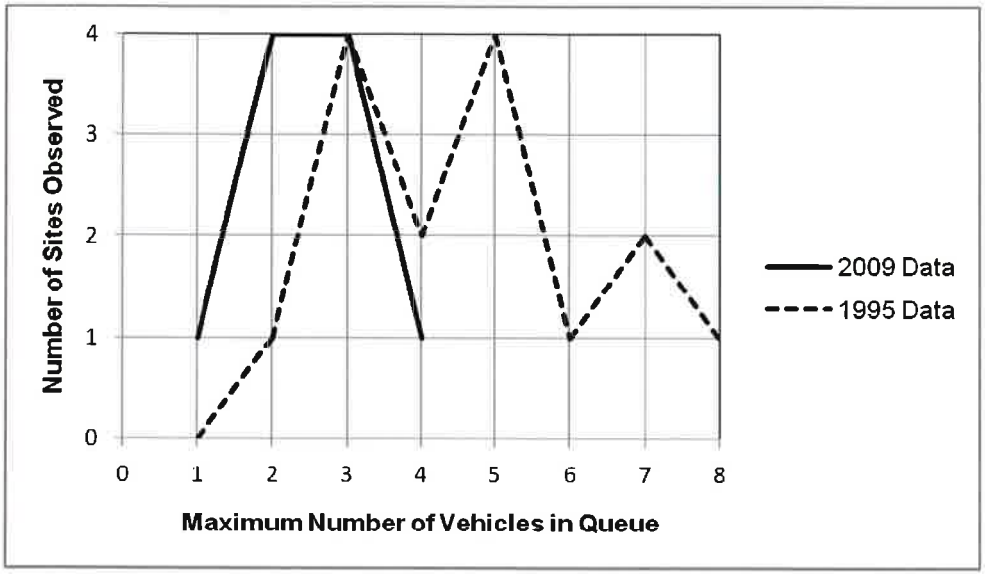
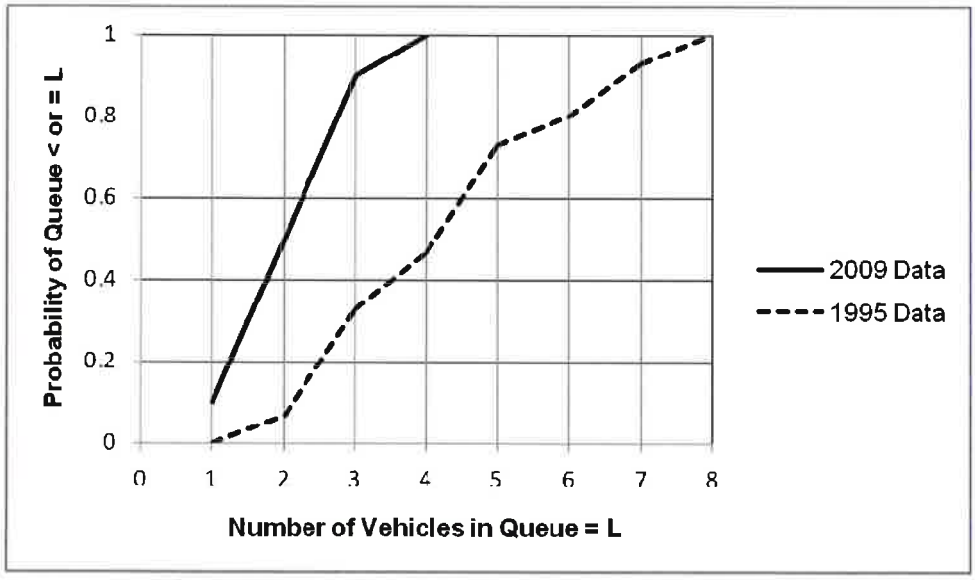


Figure 2 – Drive-In Bank 1995 And 2009 Cumulative Maximum Queue Length Per Lane Data Plot



The differences between the 1995 Report data (as noted earlier, actually based on counts conducted from the late 1960s to the late 1980s) and the 2009 counts are dramatic. The maximum per-lane queue lengths in the current counts were half what they were in the 1995 data.

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An attempt was made to determine if such factors as adjoining major street traffic volumes or the size of the building could predict the queuing results, but no correlation was found.

Observations

Some banks, especially those that have been in operation for several years, have a surplus of drive-through lanes and stacking area. That is because those sites were designed to accommodate the much higher demands that existed many years ago. Consequently, they often open only a portion of the available lanes.

In one case, for a main office bank location where it was possible to make a direct comparison between a count conducted in 1988 and a new count in 2008 (actually taken almost precisely 20 years apart), the difference was dramatic. The p.m. peak hour drive-through volumes for the 2008 count were 65% lower than the 1988 count, a much greater drop than would have been indicated by the reduced ITE trip generation figures discussed earlier. The maximum total number of vehicles queued and the maximum queue lengths per lane were correspondingly lower, dropping from 29 to 8 and 7 to 3, respectively. The demographics and development characteristics of the surrounding area have changed little since 1988 and the bank has continued as a stable operation. Considering all of those factors, it is reasonable to assume that the differences are associated with changes in customers' banking habits.

The one incidence of a four car per lane maximum stack was a single occurrence that lasted for only a few minutes. Based on that information, it is reasonable to consider the practical maximum required queue length to be three vehicles.

The maximum queue lengths for ATMS ranged from two to five vehicles. Only one location experienced the longer queue lengths and only for a short time period. All other locations had maximum queue lengths of three vehicles or less.

Coffee Shops With Drive-Through Lanes

Counts were conducted in the fall of 2008 and the spring of 2009 at twelve coffee shops located in the Kansas suburbs of Merriam, Olathe and Overland Park in the Kansas City metropolitan area and also in suburban Kansas City, Missouri. All but two of the establishments were situated in free-standing buildings, and several were located within shopping centers. Three were drive-through-only operations and the remaining nine were full-service locations that included both drive-through lanes and inside seating facilities. Because this type of use is busiest in the morning peak hour, all counts were completed during that time period.

Similar to the process used for drive-in banks, the counting process involved noting the maximum number of vehicles queued in the drive-through lane at each location for fifteen minute increments. As was done for the drive-in bank counts, the vehicle in the

service position was included in the counts. Information on the number of vehicles entering and leaving the parking lot was collected for full-service operations (drive-through-only locations did not have any parking activity). The queuing information was tabulated for both the total length of queue and for the number of vehicles behind the menu board. The observed queue length was noted at five minute intervals as a way to evaluate the frequency of various queue lengths.

Once again, the queuing data was analyzed in ways similar to the methods used in the 1995 Report. Table 2 lists the observed frequency of maximum queue lengths. Figure 3 plots the per-lane maximum queue lengths and Figure 4 plots the probability that the queue will not exceed a given maximum queue length.

Table 2 – Coffee Shop With Drive-Through Maximum Queue Length

Queue Length	Frequency	Cumulative Frequency	P(q≤N)
0	0	0	0.00
1	0	0	0.00
2	0	0	0.00
3	1	1	.08
4	0	1	.08
5	0	1	.08
6	1	2	.17
7	1	3	.25
8	2	5	.42
9	1	6	.50
10	1	7	.58
11	2	9	.75
12	0	9	.75
13	3	12	1.00

Note: P(q≤N) indicates probability, based on sample, of queue length of "q" not exceeding length "N"

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Figure 3 – Coffee Shop With Drive-Through Maximum Queue Length Data Plot

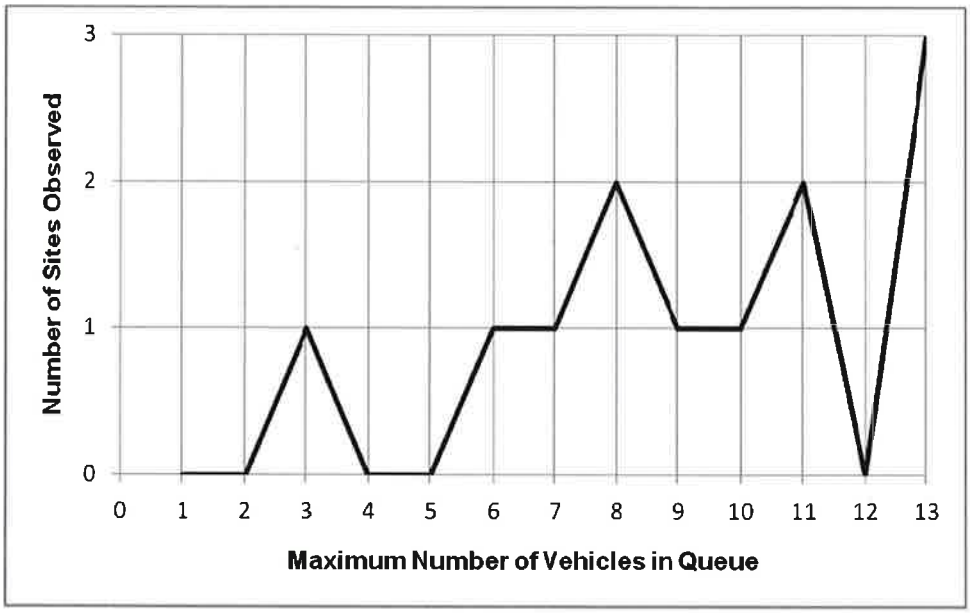
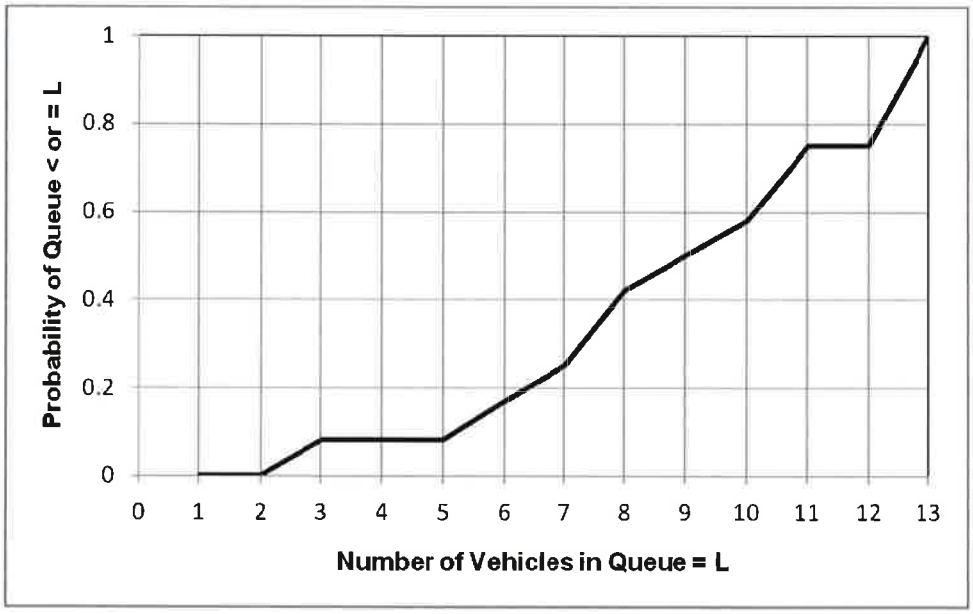


Figure 4 – Coffee Shop With Drive-Through Cumulative Maximum Queue Length Data Plot



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The total trip generation figures were compared to the a.m. peak hour ITE rates for Land Use Code 937, Coffee/Donut Shop with Drive-Through Window, and Land Use Code 938, Coffee/Donut Shop with Drive-Through Window and No Indoor Seating. The observed counts generally fell within the range of counts included in those categories, although two of the rates for the No Indoor Seating category exceeded the published range. No correlation was found between the adjoining major street traffic volumes or the size of the building and either the queuing or the trip generation results.

Observations

Several of the drive-through lanes were under-designed for the usage that was observed and queues spilled-out into parking lot circulation areas. In most cases the excess stacking did not result in disruptions of the operations of surrounding uses, since most other businesses were not open in the early morning. But for those sites where the end of the drive-through lane extended into the coffee shop parking lot, the excess queue often disrupted the movements of drivers who were trying to enter or exit parking spaces or the site itself.

One interesting facet of the data is that the three lowest observed maximum queue lengths were for the drive-through-only locations. The highest observed queue length for those operations was seven vehicles, which occurred only once at one location and only for a very short period of time. A six vehicle maximum stack was a more common occurrence.

The data shows that the volume of drive-through traffic and, therefore, the required stacking distance, is higher for full-service coffee shops than for drive-through-only operations. When total trip generation (both drive-through business and customers who park and walk in) is factored in, the full-service coffee shops did, on average, about two and one-half times the business of drive-through-only facilities. Since all of the full-service operations were Starbucks locations, it may be possible to apply the results of those counts to other proposed suburban Starbucks locations elsewhere in the country.

Total vehicular stacking available for a drive-through lane is an important consideration, but the location of the menu board relative to the pick-up window also impacts the efficiency of a drive-through lane operation. If the spacing is too short, stacking behind the pick-up window will extend into the menu board area, delaying ordering for those farther back in the line. In the counts conducted for this study, the pick-up window to menu board available stacking distances ranged from two to five vehicles.

The operation with the two car stack between the pick-up window and menu board regularly resulted in delays for drivers waiting to order at the menu board. The location with a five car stack rarely experienced delays for those ordering. Based on field observations, if an unlimited amount of stacking were available at a proposed site, the five car spacing would be ideal. Realizing that space for stacking nearly always is limited, an acceptable alternative would be the four car spacing.

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Conclusions

Drive-in bank usage has dropped dramatically, as illustrated in the data provided in this report. Consequently, a reduced amount of stacking is required. That reduced area for drive-through stacking can provide more flexibility in the design of bank sites, allowing for development on smaller sites or the provision of increased landscaped areas.

Based on the data that was gathered, the City of Overland Park has reduced its previous requirement for a minimum five car stack per lane to a three car stack (a distance of 60 feet per lane, assuming average vehicle spacing to be 20 feet). That design should be sufficient to accommodate virtually all situations. Vehicular stacking requirements for ATMs have been established, also at a minimum of three car lengths.

Coffee shop drive-through lanes are most heavily used during the morning peak period, and therefore it is important to design sites to accommodate that peak demand. The following recommended minimum stacking lengths should be appropriate in most cases. The only exceptions would be situations in which excess queuing could impact a nearby street or major drive, in which case a more conservative approach should be taken.

Based on the data that was gathered for drive-through-only operations, it appears reasonable to require that a dedicated drive-through lane be provided with a stack of 120 feet – enough to handle six vehicles. That should be sufficient to accommodate nearly all vehicles that are likely to arrive during the morning peak hour time period.

For full service establishments, a 220-foot long drive-through lane, providing eleven cars of total storage, should be adequate to handle the vast majority of the drive-through lane volumes that might be encountered. In those cases where more than eleven vehicles were counted, the duration of the extreme queue lasted for only a few minutes. For the most efficient operation, the distance between the pick-up window and menu board should be at least 80 feet to accommodate four vehicles.

References

1. Gattis, J. L., Chair of ITE Technical Council Committee 5D-10. "Queuing Areas for Drive-Thru Facilities, by ITE Technical Council Committee 5D-10." *ITE Journal* (May 1995): 38-42.

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Appendix C

Queuing Areas For Drive-Thru Facilities

BY ITE TECHNICAL COUNCIL COMMITTEE 5D-10

ITE Technical Council Committee 5D-10 was formed to collect and analyze basic information that may be used to estimate and evaluate lengths of automobile queues at drive-thru facilities. In addition to fulfilling this objective, this Informational Report constitutes a starting point for compiling a database for drive-thru facility queue length information.

Introduction

When faced with the need to evaluate the future impacts of a planned development, the transportation engineer often employs some form of analogy, estimating the future impacts of as-yet unbuilt development by using the attributes of existing land uses having a similar nature. For instance, the engineer may refer to published trip generation rates, derived from observations made at existing developments, to obtain a figure by which to estimate volumes that will occur at the proposed development.



J. L. Gattis, P.E., was Chair of Technical Council Committee 5D-10. He is an Assistant Professor in the Department of Civil Engineering at the University of Arkansas in Fayetteville, Ark. He is a Member of ITE.

Many types of businesses (such as fast-food restaurants, banks and cleaners) utilize drive-thru systems. A similar form of drive-thru operation can be found at sites where passenger pick-up operations occur (such as parents picking up schoolchildren). These drive-thru systems are comprised of a server position (often at a service "window"), and vehicle queuing space in advance

QUEUING DATA SHEET

1.	Type of Service Provided	_____
2.	Day(s) of Week	Sun Mon Tue Wed Thu Fri Sat
3.	Time(s) of Day	_____
4.	Type of Area	CBD ☐ Surburban ☐ Rural ☐
5.	Competition in Area (For Same Services)	High ☐ Medium ☐ Low ☐
6.	Service Rate Measured (Per Window or Aisle or Lane)	_____ Vehicles/Time
7.	Arrival Rate Measured (Per Window or Aisle or Lane)	Avg ____ Max ____ Vehicles/Time
8.	Uniformity Rating	_____ (1 - 10)
9.	Capacity of Queue Storage Area	_____ (Vehicles)
10.	Measured Average Queue	_____ (Vehicles)
11.	Measured Maximum Queue	_____ (Vehicles)
12.	Excess Demand Volume	_____ (Vehicles)
13.	Excess Demand Frequency	_____
14.	Size Sample or Length of Count Data	_____
15.	Narrative Description of Service	_____

Figure 1. Data gathering form used in survey.

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of the service position, for waiting in line as those ahead are served first.

When attempting to project lengths of automobile queues at proposed drive-thru facilities, the municipal or private consulting engineers may not find available data by which a projection can be made. While such data may be known by larger business chains that have drive-thru operations, the data do not seem to be generally available to the average traffic engineer trying to size or evaluate automobile queue storage area. True, some publications present results of queuing studies or equations for estimating queue lengths based on known system arrival and service rates.[1-4] But the proposed-site arrival and service rates may be unknown, and the proposed system may not possess attributes (such as negative exponential service time rates) needed for certain equations to properly predict queue lengths.

Drive-thru facilities are perceived as time-savers; as a convenience to the physically challenged, elderly and parents with young children; and as a way to avoid going out into inclement weather. Due to vehicle idling while in line, drive-thru facilities may also be viewed as causing unnecessary fuel consumption and air pollution. The popularity of drive-thru services creates a need to evaluate the queuing capacities of the varied drive-thru facilities. This report provides some basic drive-thru facility queue length information. It is hoped that the database will continue to grow, so that a comprehensive analytical tool may be available for the transportation professional.

Methods

The queue length data gathering form shown in Figure 1 was distributed to committee members in November 1987. The form was accompanied by specific user-instructions to ensure uniformity of procedures and compatibility of results.

Completed forms were returned to the committee chair and data were cataloged by land-use type. The maximum observed queue lengths and the maximum observed queue length frequencies were compiled. Cumulative frequencies and the probability that queues would not exceed an absolute maximum were calculated and shown graphically.

Table 1. Ranges of Fast Food Queue Lengths by Food Type

Food Type	Maximum Queue Range (# in system)	Average Maximum Queue (# in system)	Studies
Donuts	4	4	2
Steak	4	4	2
Chicken	2–9	5	5
Fish	5	5	1
Sandwiches	5	5	1
Mexican	7	7	1
Roast Beef	6–8	7	2
Hamburgers	4–13	7	27

Table 2. Fast Food Queue Lengths

Maximum Queue Length (# in system)	Frequency	Cumulative Frequency	P(q≤N)
1	0	0	0.00
2	2	2	0.05
3	0	2	0.05
4	6	8	0.18
5	4	12	0.27
6	7	19	0.43
7	10	29	0.66
8	7	36	0.82
9	5	41	0.93
10	1	42	0.95
11	0	42	0.95
12	1	43	0.98
13	1	44	1.00

Note: P(q≤N) indicates probability, based on sample, of queue length "q" not exceeding length "N".

Findings

Within this report, data have been compiled for banks, car washes, day care facilities, dry cleaners and fast-food restaurants.

Fast Food

This category includes restaurants characterized by food being prepared in advance of, or shortly after, ordering; by high turnover for eat-in customers; and by long business hours. The ITE land-use codes (LUCs) for this use are LUC 834 (*Trip Generation*, 1991) and 836 (*Parking Generation*, 1987).

Forty-four fast-food restaurants were observed for this study. They ranged from those serving chicken to the hamburger chains. All sites were suburban locations. Queuing was observed mainly during the weekday mid-day peak from the 1970s through the 1990s, at sites in Florida, Kansas, Illinois, Minnesota, Montana, New Jersey, Oklahoma, Pennsylvania and Texas. All fast-food facilities observed for this study had a single-window drive-thru system. The industry is changing, with double- and even triple-window systems being utilized. Further information will be needed on queuing characteristics of these facilities.

The average observed service rate was 54 vehicles per hour (vph); the maximum rate was 108 vph. The maximum observed queue lengths (number of vehicles in line, including vehicle at service position) ranged from two to 13 vehicles (see Table 1). Where there was a menu-order board followed by a service window, the combined total of vehicles in both sequential lines was reported.

The restaurants featuring hamburgers had maximum queues in the upper part of the range. Table 2 shows the frequencies of the observed maximum queue lengths, as well as a probability of a queue of less than a given number

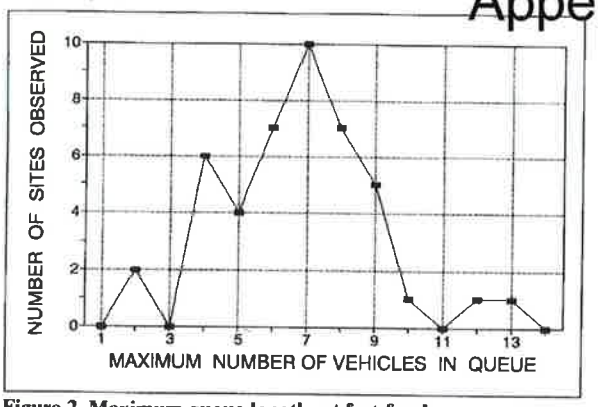


Figure 2. Maximum queue lengths at fast-food.

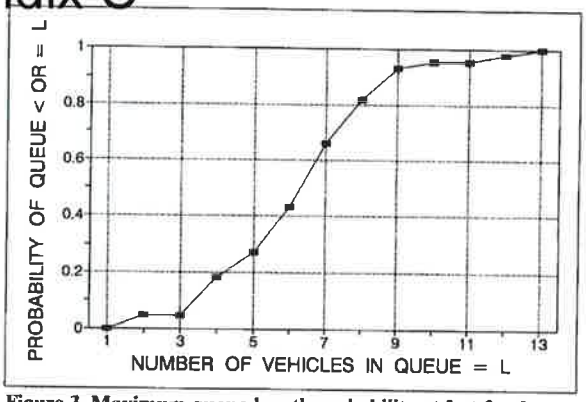


Figure 3. Maximum queue length probability at fast-food.

of vehicles. Figure 2 plots maximum queue length against the observed frequency of occurrence. Figure 3 depicts the probability that at any fast-food site, the queue will not exceed a given maximum queue length. From Table 2 or Figure 3, it can be seen that there was a 95 percent probability that the maximum queue at a site would be no more than 10 vehicles.

The maximum queues were evaluated against days of the week and were found to have no statistical relationship. Likewise, when evaluated against different levels of competition within the area and against service rates, there was no statistical relationship.

Bank

This category includes savings-and-loans with or without automatic teller machines (ATMs) and commercial banks with or without ATMs. Although there were historical differences between banks and savings-and-loans, they are now often indistinguishable to the public. The ITE land-use codes for this use are LUC 912 and 914 (*Trip Generation*, 1991) and LUC 912 (*Parking Generation*, 1987).

The studies analyzed were conducted from the late 1960s through the late 1980s; many were in Illinois, Minnesota, New Jersey and Texas. The size of the bank drive-thru facilities ranged from a minimum of one lane with one teller-window up to an institution with 10 lanes and four tellers.

Observed service rates for these institutions went up to a maximum of 35 vehicles per lane-hour. Maximum observed queues per lane ranged from two to eight vehicles. The maximum system queue lengths (all lanes combined) ranged from five to 29 vehicles. At two sites, it was observed that a queue length exceeding eight vehicles per lane was not tolerated by customers. When the queue length became excessive, customers would park and use walk-in facilities rather than the drive-thru. Thus the collected data reflect a maximum queue per lane of eight vehicles.

Table 3 shows the observed frequency of occurrence of maximum queue lengths per lane. Figure 4 plots the maximum number of vehicles per lane observed. On the basis of the studies received, there is a 100 percent probability that the queue length at a bank drive-thru facility will not exceed eight vehicles per lane, as Figure 5 shows.

Table 4 presents the maximum number of vehicles in an entire drive-thru system (all lanes combined) by ranges, along with the frequency of occurrence. This table shows that the most common maximum number-in-the-system at a bank drive-thru facility fell between six and 10 vehicles, as most observed facilities consisted of two lanes. Table 4 also

Table 3. Bank Queue Lengths

	Maximum Queue Per Lane		
Queue Length	*Frequency*	*Cumulative Frequency*	*P(q≤N)*
0	0	0	0.00
1	0	0	0.00
2	1	1	0.07
3	4	5	0.33
4	2	7	0.47
5	4	11	0.73
6	1	12	0.80
7	2	14	0.93
8	1	15	1.00

Note: P(q≤N) indicates probability, based on sample, of queue length "q" not exceeding length "N".

Table 4. Maximum Number of Vehicles in Bank System (All Lanes)

# in system	*Frequency*	*Cumulative Frequency*	*P(q≤N)*
0 – 5	2	2	0.13
6 – 10	6	8	0.53
11 – 15	3	11	0.73
16 – 20	2	13	0.87
21 – 25	1	14	0.93
26 – 30	1	15	1.00

Note: P(q≤N) indicates probability, based on sample, of queue length "q" not exceeding length "N".

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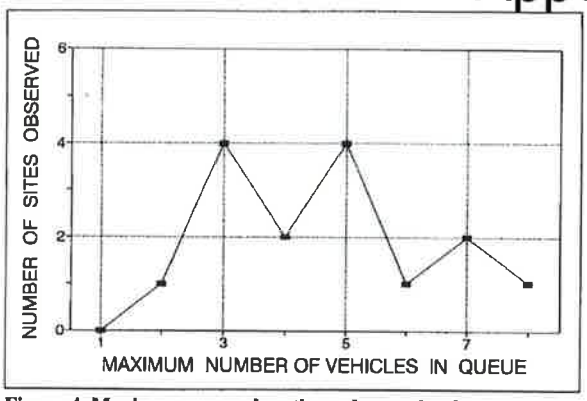


Figure 4. Maximum queue length per lane at bank.

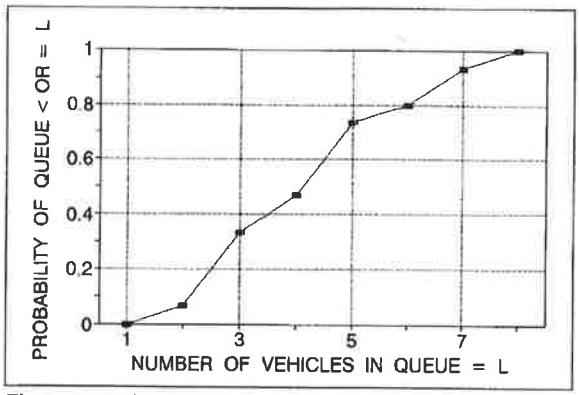


Figure 5. Maximum per lane queue length probability at bank.

gives the probability, based on the studies received, that the number of vehicles in the system will not exceed a certain range.

It should be noted that queuing lengths may be affected by time-of-day banking habits. There may be differences between the central city and a suburb. An area with a large proportion of retired persons may experience unique banking-time behaviors. In addition, the effects of banks incorporating ATMs into drive-thru aisles may also need to be investigated in future queuing studies.

Car Wash

This category includes full-service car washes (offering vacuuming and towel-drying services), exterior tunnel operation (vacuuming and towel drying not a part of the "in-line" operation, but may be offered at separate stations to the side), and self-service car washes (where customers pull into a wash bay, insert coins into a box, and proceed to wash). The ITE land-use code for these uses is LUC 847 (*Trip Generation*, 1991). This land use was not included in the 1987 *Parking Generation* report.

The studies analyzed were conducted from the late 1960s through the late 1980s in Kansas, Illinois, Montana, New Jersey and Texas. They included seven full service car washes, two exterior tunnel car washes, and nine self-service car washes. The number of self-service bays ranged from six to 14 per site. The self-service car washes typically had one or more parallel wash bays; the full-service car wash operations tended to have a single tunnel to serve customers.

Studies at the full-service car washes were made during winter or early spring months. Both full-service car washes consisted of a single tunnel. Observed service rates were 35 vph (maximum queue of nine vehicles) and 27 vph (maximum queue of 26 vehicles). At the site with a 26-vehicle queue, the queue extended off the site and onto an adjacent private street with light traffic volumes.

The self-service car wash studies were conducted on Saturday and Thursday, during late spring and/or summer months. Service rates at self-service car washes ranged from 4.1 vehicles per bay-hour to 5.4 vehicles per bay-hour. The average service rate was 4.77 vehicles per bay-hour. The maximum queue observed at two study sites was three vehicles, and at a third study site the maximum observed was one vehicle. No distinction was made as to whether these were maximum queues per bay or total maximum queues (per entire operation).

Day Care

This category includes facilities that provide a place for children during the day, often while parents are at work. After-school care may also be provided. The ITE land-use code is LUC 565 (*Trip Generation*, 1991). This land use was not included in the 1987 *Parking Generation* report.

Data were submitted for one day-care facility in Texas, during the evening peak hour. The facility had 99 children enrolled and 94 present the day the study was conducted. The day-care facility handled children age 2 through first grade. The facility was operated in a manner that required the parents to park their cars and go inside to get their children.

The hour service rate was 46 vehicles. A maximum of eight vehicles in

This is an Informational Report of the Institute of Transportation Engineers prepared by Technical Council Committee 5D-10. The information in this report has been obtained from experiences of transportation engineering professionals and research. ITE Informational Reports are prepared for informational purposes only and do not include Institute recommendations on which is the best course of action or the preferred application of the data.

Members of Technical Council Committee 5D-10 were J. L. Gattis, P.E. (M), Chair; Grant A. Bacchus, P. Eng. (F); Benedict G. Barkan (F); Robert R. Marvin, P.E. (M); Dale B. McKinney, P.E. (F); Robert A. Nelson, P.E. (F); Seyed M. Safavian (M); James M. Schoen (A); David K. Sorenson, P.E. (A); Mark J. Stuecheli (M); and Jack Wierzenski (A).

Members of the Technical Council Department 5 Standing Committee at the time of approval of this report were Dennis O'Malley (F), Chair; Carol H. Walters, P.E. (M), Assistant Chair; Robert D. McMillen, P.E. (FL); Wamahdri W. Williams (A); and Donald J. Galloway, P.E. (F). Brian S. Bochner, P.E. (F), was the Chair of Technical Council, and John M. Mason, P.E. (F), was the Assistant Chair.

Table 5. Summary of Observed Queue Distances at Drive-Thru Facilities

	Near-maximum number of queued vehicles observed in system (does not include vehicle at service position)	*Lane Length needed to store near-maximum queue (does not include) vehicle at service position)*
Fast-Food (Hamburger)	10 – 1 = 9	60 m (198 feet)
Bank	8 – 1 = 7	47 m (154 feet)
Car Wash (self-service)	3 – 1 = 2	13 m (44 feet)
Day Care	10 – 1 = 9	can store in parallel
Dry Cleaner	3 – 1 = 2	13 m (44 feet)

5 minutes (if sustained, equivalent to 96 vph) were observed; a 20-minute period had 28 vehicles (84 per hour). The maximum number of waiting vehicles was 10 vehicles.

VanWinkle and Kinton reported the results of 29 field studies at day-care establishments in Tennessee. Their findings are in the July 1994 *ITE Journal*."

Dry Cleaners

This category includes facilities that clean clothing and other fabrics that should not be laundered. Often a walk-up window is present. No information is provide for this land use in either the ITE 1991 *Trip Generation* report or the ITE 1987 *Parking Generation* report.

One study was conducted at a dry cleaner with drive-thru facilities in Montana during a weekday p.m. peak period. An average service rate of 41 vph was measured at the single window. The observed maximum queue was three vehicles long. Forty-five percent of the customers used the drive-thru facility.

Conclusions

Table 5 summarizes the observed maximum or near-maximum observed queue lengths, and also lists the stacking distance needed to accommodate these observed queues, based on a front bumper-to-front bumper space occupied length of 22 feet (ft) per vehicle. This 22 ft may not be the exact space that vehicles occupy, but a value ranging from 20 ft to 25 ft seems appropriate for many situations. Because only one day-care facility was observed, and because parents picking up children may park in parallel or in a lot instead of in a single-file line, no stacking length was calculated for this land use.

Due to a change of committee personnel during the course of the data-gathering effort, some of the original forms submitted by committee members are not available. There are some apparent errors in the tables. For instance, the number of studies tallied in Table 1 is 41, while the number in Table 2 is 44. It is not known whether three studies were not included in Table 1, or whether there was double counting in Table 2. The unavailability of the original data forms makes it impossible to recheck the numbers.

The size of this drive-thru facility queuing characteristic database was limited. There is a need to accumulate and analyze more drive-thru queuing system data, so transportation engineers and site planners can be better informed. Additional observations of service rates are also needed in order to determine relationships between service rates and queue lengths, and to evaluate long-term trends in service rates. Finally, investigations of the amount of space occupied per vehicle within a queue are needed so that engineers will have the ability to project not only the number of vehicles that will be in the maximum queue for a given site, but also the queue storage length required for a site.

When collecting queuing data, the recorder should clearly indicate whether the number of vehicles recorded includes or excludes the vehicle(s) in the service position (that is, at the window). The data record must indicate which numbers are for a single queuing line and which totals are for the entire system of multiple queuing lines. An observer should also note instances of arriving vehicles balking or refusing to enter a queue due to excessive length, and how many vehicles were in the queue when the next arrival balked.

Other types of drive-thru operations that could be studied include those at credit unions, funeral homes, gas stations (either gas only, full-service, self-service, or a combination with convenience stores or car washes), libraries, liquor stores, movie theater ticket booths, parking lots and garages (either pick-up ticket or pay, or key, tag, or card), post offices, pre-schools, baby-sitting or school combinations, lower grade schools, stadium ticket sales machines, truck stops and places of worship.

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Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	912
Land Use/Building Type*:	Drive-in Bank

Name of Business:	Citizens Independent Bank
Address:	3700 W Broadway Ave
City:	Robbinsdale
State:	MN
Zip Code:	55422
Date(s)	February 7-8, 2012 (Tuesday-Wednesday)
Weather Conditions	High 32 °F and Clear

Location Within Area (select one):		Competition Within Area (select one):	
	CBD		High
	Urban (non-CBD)		Medium
X	Suburban (non-CBD)	X	Low
	Suburban CBD		
	Rural		
	Not Given		

Drive-Through Description	4 Lanes + 1 ATM Lane
Gross Floor Area (estimated)	6300

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday	**5**	**3:36pm**
Wednesday	**5**	**2:37pm**
Thursday		
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	912
Land Use/Building Type:	Drive-in Bank

Name of Business:	SharePoint Credit Union
Address:	3670 Aquila Ave S
City:	St. Louis Park
State:	MN
Zip Code:	55426
Date(s)	February 1-2, 2012 (Wednesday-Thursday)
Weather Conditions	High 32-36 °F and Fog

Location Within Area (select one):	
CBD	
Urban (non-CBD)	
Suburban (non-CBD)	X
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):	
High	
Medium	X
Low	

Drive-Through Description :	2 Lanes + 1 ATM Lane
Gross Floor Area (estimated)	7,850 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	**3**	**3:28pm**
Thursday	**3**	**8:51am, 10:37am**
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	912
Land Use/Building Type:	Drive-in Bank
Name of Business:	TCF Bank
Address:	8020 Highway 7
City:	St. Louis Park
State:	MN
Zip Code:	55426
Date(s)	August 5-7, 2011 (Friday-Sunday)
Weather Conditions	High 84-88 °F and Clear

Location Within Area (select one):		Competition Within Area (select one):	
	CBD		High
	Urban (non-CBD)		Medium
X	Suburban (non-CBD)	X	Low
	Suburban CBD		
	Rural		
	Not Given		

Drive-Through Description :	5 Lanes + 1 ATM Lane
Gross Floor Area (estimated)	6,000 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday	**4**	**5:18pm**
Monday		
Tuesday		
Wednesday		
Thursday		
Friday	**8**	**12:20pm, 2:20pm**
Saturday	**8**	**11:40am**

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	912
Land Use/Building Type:	Drive-in Bank
Name of Business:	US Bank
Address:	4000 W Broadway Ave
City:	Robbinsdale
State:	MN
Zip Code:	55422
Date(s)	February 7-8, 2012 (Tuesday-Wednesday)
Weather Conditions	High 32 °F and Clear

Location Within Area (select one):		Competition Within Area (select one):	
	CBD		High
	Urban (non-CBD)		Medium
X	Suburban (non-CBD)	X	Low
	Suburban CBD		
	Rural		
	Not Given		

Drive-Through Description :	3 Lanes + 1 ATM Lane
Gross Floor Area (estimated)	21,550 sq. ft.

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday	**7**	**4:47pm, 5:04pm**
Wednesday	**7**	**3:00pm, 5:26pm**
Thursday		
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	912
Land Use/Building Type:	Drive-in Bank
Name of Business:	Wells Fargo
Address:	425 E Hennepin Ave
City:	Minneapolis
State:	MN
Zip Code:	55414
Date(s)	February 7, 2012 (Tuesday)
Weather Conditions	High 32 °F and Clear

Location Within Area (select one):		Competition Within Area (select one):	
	CBD		
X	Urban (non-CBD)		High
	Suburban (non-CBD)		Medium
	Suburban CBD	X	
	Rural		Low
	Not Given		

Drive-Through Description :	4 Lanes + 1 ATM Lane
Gross Floor Area (estimated)	12,000 sq. ft.

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday	**6**	**1:18pm**
Wednesday		
Thursday		
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	912
Land Use/Building Type:	Drive-in Bank
Name of Business:	Wells Fargo
Address:	2329 Central Ave NE
City:	Minneapolis
State:	MN
Zip Code:	55418
Date(s)	February 7-8, 2012 (Tuesday-Wednesday)
Weather Conditions	High 32 °F and Clear

Location Within Area (select one):		Competition Within Area (select one):	
	CBD		
X	Urban (non-CBD)		High
	Suburban (non-CBD)	X	Medium
	Suburban CBD		Low
	Rural		
	Not Given		

Drive-Through Description :	7 Lanes (4-5 Lanes were open at various points) + 1 ATM Lane
Gross Floor Area (estimated)	20,125 sq. ft.

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday	**8**	**4:41pm**
Wednesday	**6**	**11:27am, 1:48pm, 2:23pm, 4:32pm, 5:25pm**
Thursday		
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	948
Land Use/Building Type:	Automated Car Wash

Name of Business:	BP
Address:	3012 Excelsior Blvd
City:	Minneapolis
State:	MN
Zip Code:	55416
Date(s)	February 1-2, 2012, (Wednesday-Thursday)
Weather Conditions	High 32-36 °F and Fog

Location Within Area (select one):	
CBD	
Urban (non-CBD)	X
Suburban (non-CBD)	
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):	
High	
Medium	
Low	X

Drive-Through Description :	1 Lane. Only counted the vehicles waiting in line, not the vehicles currently being washed.
Gross Floor Area (estimated)	3,375 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	**6**	**3:08pm**
Thursday	**6**	**3:07pm**
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	948
Land Use/Building Type:	Automated Car Wash

Name of Business:	BP
Address:	2441 Fariview Ave N
City:	Roseville
State:	MN
Zip Code:	55113
Date(s)	February 7-8, 2012 (Tuesday-Wednesday)
Weather Conditions	High 32 °F and Clear

Location Within Area (select one):		Competition Within Area (select one):	
	CBD		High
	Urban (non-CBD)		Medium
X	Suburban (non-CBD)	X	Low
	Suburban CBD		
	Rural		
	Not Given		

Drive-Through Description :	1 Lane. Only counted the vehicles waiting in line, not the vehicles currently being washed.
Gross Floor Area (estimated)	3,150 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday	**1**	**12:58pm**
Wednesday	**3**	**2:53pm**
Thursday		
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	948
Land Use/Building Type:	Automated Car Wash

Name of Business:	BP
Address:	1691 Snelling Ave N
City:	Falcon Heights
State:	MN
Zip Code:	55113

Date(s)	February 7-8, 2012 (Tuesday-Wednesday)
Weather Conditions	High 32 °F and Clear

Location Within Area (select one):		Competition Within Area (select one):	
	CBD		High
	Urban (non-CBD)		Medium
X	Suburban (non-CBD)	X	Low
	Suburban CBD		
	Rural		
	Not Given		

Drive-Through Description :	1 Lane. Only counted the vehicles waiting in line, not the vehicles currently being washed.
Gross Floor Area (estimated)	1,500 sq. ft.

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday	**4**	**1:48pm**
Wednesday	**3**	**4:29pm**
Thursday		
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	948
Land Use/Building Type:	Automated Car Wash
Name of Business:	Holiday Gas Station Carwash
Address:	5430 Minnetonka Blvd
City:	St. Louis Park
State:	MN
Zip Code:	55416
Date(s)	February 1-2, 2012 (Wednesday-Thursday)
Weather Conditions	High 32-36 °F and Fog

Location Within Area (select one):		Competition Within Area (select one):	
	CBD		High
	Urban (non-CBD)		Medium
X	Suburban (non-CBD)	X	Low
	Suburban CBD		
	Rural		
	Not Given		

Drive-Through Description :	1 Lane. Only counted the vehicles waiting in line, not the vehicles currently being washed.
Gross Floor Area (estimated)	3,000 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	**3**	**12:37pm, 1:50pm, 3:43pm, 4:41pm, 5:10pm, 7:04pm, 7:30pm**
Thursday	**4**	**2:38pm, 4:20pm**
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	948
Land Use/Building Type:	Automated Car Wash

Name of Business:	Mister Car Wash
Address:	8650 Highway 7
City:	St. Louis Park
State:	MN
Zip Code:	55426

Date(s)	February 1-2, 2011 (Wednesday-Thursday)
Weather Conditions	High 32-36 °F and Fog

Location Within Area (select one):		Competition Within Area (select one):	
	CBD		High
	Urban (non-CBD)		Medium
X	Suburban (non-CBD)	X	Low
	Suburban CBD		
	Rural		
	Not Given		

Drive-Through Description :	2 Lanes, Full Service Wash, only vehicles in line were counted, not the vehicles being washed.
Gross Floor Area (estimated)	8,250 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	**10**	**1:03pm**
Thursday	**6**	**4:02pm**
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	948
Land Use/Building Type:	Automated Car Wash

Name of Business:	Mobil Car Wash
Address:	3864 Hopkins Crossroad
City:	Minnetonka
State:	MN
Zip Code:	55305

Date(s)	February 1-2, 2012 (Wednesday-Thursday)
Weather Conditions	High 32-36 °F and Fog

Location Within Area (select one):		Competition Within Area (select one):	
	CBD		
	Urban (non-CBD)		
X	Suburban (non-CBD)	High	
	Suburban CBD	Medium	
	Rural	Low	X
	Not Given		

Drive-Through Description :	2 lanes. Only vehicles in line were counted, not vehicles being washed.
Gross Floor Area (estimated)	1,225 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	**4**	**6:03pm**
Thursday	**3**	**4:37pm, 6:28pm, 7:39pm, 7:51pm, 8:04pm, 8:23pm**
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	937
Land Use/Building Type:	Coffee/Donut Shop w/ Drive Thru

Name of Business:	Caribou Coffee
Address:	4745 Cedar Ave S
City:	Minneapolis
State:	MN
Zip Code:	55407
Date(s)	February 1-2, 2012 (Wednesday-Thursday)
Weather Conditions	High 32-36 °F and Fog

Location Within Area (select one):		Competition Within Area (select one):	
CBD		High	
Urban (non-CBD)	X	Medium	X
Suburban (non-CBD)		Low	
Suburban CBD			
Rural			
Not Given			

Drive-Through Description :	1 Lane
Gross Floor Area (estimated)	1,950 sq. ft.

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	**11**	**8:50am**
Thursday	**10**	**7:57am**
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	937
Land Use/Building Type:	Coffee/Donut Shop w/ Drive Thru

Name of Business:	Caribou Coffee
Address:	5330 Cedar Lake Rd
City:	St. Louis Park
State:	MN
Zip Code:	55416
Date(s)	August 5-9, 2011 (Friday-Tuesday)
Weather Conditions	High 82-88 °F and Clear

Location Within Area (select one):		Competition Within Area (select one):	
	CBD		High
	Urban (non-CBD)		Medium
X	Suburban (non-CBD)	X	Low
	Suburban CBD		
	Rural		
	Not Given		

Drive-Through Description :	1 Lane
Gross Floor Area (estimated)	3,600 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday	**7**	**9:39am, 9:41am**
Monday	**10**	**8:39am**
Tuesday	**12**	**9:26am**
Wednesday		
Thursday		
Friday	**12**	**8:12am**
Saturday	**8**	**8:52am, 10:24am**

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	937
Land Use/Building Type:	Coffee/Donut Shop w/ Drive Thru

Name of Business:	Starbucks
Address:	5121 Gus Young Lane
City:	Edina
State:	MN
Zip Code:	55436

Date(s)	February 7-8, 2012 (Tuesday-Wednesday)

Weather Conditions	High 32 °F and Clear

Location Within Area (select one):		Competition Within Area (select one):	
	CBD		High
	Urban (non-CBD)		Medium
X	Suburban (non-CBD)	X	Low
	Suburban CBD		
	Rural		
	Not Given		

Drive-Through Description :	1 Lane

Gross Floor Area (estimated)	3,000 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	**14**	**7:22am, 7:49am**
Thursday	**16**	**8:56am**
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	937
Land Use/Building Type:	Coffee/Donut Shop w/ Drive Thru

Name of Business:	Starbucks
Address:	1505 Highway 7
City:	Hopkins
State:	MN
Zip Code:	55305
Date(s)	February 1-2, 2012 (Wednesday-Thursday)
Weather Conditions	High 32-36 °F and Fog

Location Within Area (select one):		Competition Within Area (select one):	
	CBD		High
	Urban (non-CBD)		Medium
X	Suburban (non-CBD)	X	Low
	Suburban CBD		
	Rural		
	Not Given		

Drive-Through Description :	1 Lane, Queuing Went Out Onto the Street
Gross Floor Area (estimated)	1,800 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	**10**	**7:42am, 8:41am, 8:59am**
Thursday	**11**	**7:33am**
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	937
Land Use/Building Type:	Coffee/Donut Shop w/ Drive Thru

Name of Business:	Starbucks
Address:	4201 Minnetonka Blvd
City:	St. Louis Park
State:	MN
Zip Code:	55416
Date(s)	November 3, 2010 (Wednesday)
Weather Conditions	High 56 °F and Clear

Location Within Area (select one):		Competition Within Area (select one):	
	CBD		High
	Urban (non-CBD)		Medium
X	Suburban (non-CBD)	X	Low
	Suburban CBD		
	Rural		
	Not Given		

Drive-Through Description :	1 Lane, Queue Lengths Recorded at 5 min Intervals
Gross Floor Area (estimated)	2,550 sq. ft.

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	**11**	**8:45am**
Thursday		
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	937
Land Use/Building Type:	Coffee/Donut Shop w/ Drive Thru

Name of Business:	Starbucks
Address:	2305 Fairview Ave
City:	Roseville
State:	MN
Zip Code:	55113
Date(s)	February 7-8, 2012 (Tuesday-Wednesday)
Weather Conditions	High 32 °F and Clear

Location Within Area (select one):		Competition Within Area (select one):	
	CBD		
	Urban (non-CBD)		
X	Suburban (non-CBD)	X	Medium
	Suburban CBD		
	Rural		
	Not Given		
			High
			Low

Drive-Through Description :	1 Lane
Gross Floor Area (estimated)	1,500 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday	**10**	**8:09am**
Wednesday	**12**	**7:57am**
Thursday		
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	934
Land Use/Building Type:	Fast Food with Drive Thru

Name of Business:	Arby's
Address:	1116 W Lake St
City:	Minneapolis
State:	MN
Zip Code:	55408
Date(s)	February 1-2, 2012 (Wednesday-Thursday)
Weather Conditions	High 32-36 °F and Fog

Location Within Area (select one):	
CBD	
Urban (non-CBD)	X
Suburban (non-CBD)	
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):	
High	
Medium	X
Low	

Drive-Through Description :	1 Lane
Gross Floor Area (estimated)	3,000 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	**5**	**6:04pm**
Thursday	**5**	**6:55pm**
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	934
Land Use/Building Type:	Fast Food with Drive Thru

Name of Business:	Burger King
Address:	6660 Wayzata Blvd
City:	Golden Valley
State:	Minnesota
Zip Code:	55426
Date(s)	August 5-8, 2011
Weather Conditions	High 82-88 °F and Clear

Location Within Area (select one):		Competition Within Area (select one):	
	CBD		High
	Urban (non-CBD)		Medium
X	Suburban (non-CBD)	X	Low
	Suburban CBD		
	Rural		
	Not Given		

Drive-Through Description :	1 Lane
Gross Floor Area (estimated)	3,300 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday	**6**	**4:30pm**
Monday	**12**	**12:10pm**
Tuesday		
Wednesday		
Thursday		
Friday	**10**	**12:12pm**
Saturday	**8**	**9:38pm**

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	934
Land Use/Building Type:	Fast Food with Drive Thru
Name of Business:	McDonald's
Address:	5200 Excelsior Blvd
City:	St. Louis Park
State:	MN
Zip Code:	55416
Date(s)	February 1-2, 2012 (Wednesday-Thursday)
Weather Conditions	High 32-36 °F and Fog

Location Within Area (select one):		Competition Within Area (select one):	
	CBD		High
	Urban (non-CBD)		Medium X
X	Suburban (non-CBD)		Low
	Suburban CBD		
	Rural		
	Not Given		

Drive-Through Description :	2 Order Stations
Gross Floor Area (estimated)	3,600 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	**12**	**11:46am**
Thursday	**13**	**12:23pm**
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	934
Land Use/Building Type:	Fast Food with Drive Thru

Name of Business:	McDonald's
Address:	2929 Hennepin Ave S
City:	Minneapolis
State:	MN
Zip Code:	55408
Date(s)	February 1-2, 2012 (Wednesday-Thursday)
Weather Conditions	High 32-36 °F and Fog

Location Within Area (select one):		Competition Within Area (select one):	
CBD		High	
Urban (non-CBD)	X	Medium	X
Suburban (non-CBD)		Low	
Suburban CBD			
Rural			
Not Given			

Drive-Through Description :	1 Lane
Gross Floor Area (estimated)	3,825 sq. ft.

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	**9**	**8:48am**
Thursday	**8**	**8:54am**
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	934
Land Use/Building Type:	Fast Food with Drive Thru

Name of Business:	Taco Bell
Address:	819 Cambridge St
City:	Hopkins
State:	MN
Zip Code:	55343
Date(s)	February 1-2, 2012 (Wednesday-Thursday)
Weather Conditions	High 32-36 °F and Fog

Location Within Area (select one):		Competition Within Area (select one):	
	CBD		High
	Urban (non-CBD)		Medium
X	Suburban (non-CBD)	X	Low
	Suburban CBD		
	Rural		
	Not Given		

Drive-Through Description :	1 Lane
Gross Floor Area (estimated)	2,500 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	**10**	**12:26pm**
Thursday	**8**	**12:17pm, 6:57pm**
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	934
Land Use/Building Type:	Fast Food with Drive Thru
Name of Business:	White Castle
Address:	1111 Cambridge St
City:	Hopkins
State:	MN
Zip Code:	55343
Date(s)	February 1-2, 2012 (Wednesday-Thursday)
Weather Conditions	High 32-36 °F and Fog

Location Within Area (select one):		Competition Within Area (select one):	
	CBD		
	Urban (non-CBD)		
X	Suburban (non-CBD)	High	
	Suburban CBD	Medium	X
	Rural	Low	
	Not Given		

Drive-Through Description :	1 Lane
Gross Floor Area (estimated)	1,750 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	**8**	**5:26pm**
Thursday	**5**	**8:13am, 12:10pm, 1:25pm, 3:22pm, 8:54pm**
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	881
Land Use/Building Type:	Pharmacy/Drugstore w/ Drive-Thru

Name of Business:	CVS Pharmacy
Address:	Medicine Lake Rd & Winnetka Ave
City:	New Hope
State:	MN
Zip Code:	55427

Date(s)	February 7-8, 2012 (Tuesday-Wednesday)
Weather Conditions	High 32 °F and Clear

Location Within Area (select one):	
CBD	
Urban (non-CBD)	
Suburban (non-CBD)	X
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):	
High	X
Medium	
Low	

Drive-Through Description :	2 Lanes
Gross Floor Area (estimated)	18, 700 sq. ft.

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday	**1**	**13 times**
Wednesday	**2**	**5:55pm**
Thursday		
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	881
Land Use/Building Type:	Pharmacy/Drugstore w/ Drive-Thru

Name of Business:	CVS
Address:	2426 W Broadway Ave
City:	Minneapolis
State:	MN
Zip Code:	55411

Date(s)	February 7-8, 2012 (Tuesday-Wednesday)
Weather Conditions	High 32 °F and Clear

Location Within Area (select one):		Competition Within Area (select one):	
	CBD		High
	Urban (non-CBD)		Medium
X	Suburban (non-CBD)	X	Low
	Suburban CBD		
	Rural		
	Not Given		

Drive-Through Description :	2 Lanes
Gross Floor Area (estimated)	14,200 sq. ft

	Maximum Queue	Time(s) Max Queue Occurred
Sunday		
Monday		
Tuesday	**4**	**5:28pm**
Wednesday	**4**	**6:38pm**
Thursday		
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	881
Land Use/Building Type:	Pharmacy/Drugstore w/ Drive-Thru

Name of Business:	CVS
Address:	3655 Central Ave NE
City:	Minneapolis
State:	MN
Zip Code:	55418
Date(s)	February 7-8, 2012 (Tuesday-Wednesday)
Weather Conditions	High 32 °F and Clear

Location Within Area (select one):		Competition Within Area (select one):	
	CBD		High
X	Urban (non-CBD)		Medium
	Suburban (non-CBD)	X	
	Suburban CBD		Low
	Rural		
	Not Given		

Drive-Through Description :	2 Lanes
Gross Floor Area (estimated)	14,200 sq. ft

	Maximum Queue	Time(s) Max Queue Occurred
Sunday		
Monday		
Tuesday	**2**	**1:57pm, 3:35pm, 5:48pm, 6:07pm, 7:10pm**
Wednesday	**2**	**3:03pm, 3:52pm, 4:07pm, 4:46pm, 5:12pm, 5:20pm, 6:43pm**
Thursday		
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	881
Land Use/Building Type:	Pharmacy/Drugstore w/ Drive-Thru
Name of Business:	Walgreens
Address:	540 Blake Rd N
City:	Hopkins
State:	MN
Zip Code:	55343
Date(s)	February 1-2, 2012 (Wednesday-Thursday)
Weather Conditions	High 32-36 °F and Fog

Location Within Area (select one):		Competition Within Area (select one):	
	CBD		High
	Urban (non-CBD)		Medium
X	Suburban (non-CBD)	X	
	Suburban CBD		Low
	Rural		
	Not Given		

Drive-Through Description :	2 Lanes
Gross Floor Area (estimated)	14,375 sq. ft

	Maximum Queue	Time(s) Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	**4**	**2:33pm, 3:31pm, 4:46pm, 4:57pm, 5:28pm, 6:26pm, 6:38pm, 8:20pm, 9:20pm**
Thursday	**5**	**4:30pm, 4:52pm, 5:56pm, 6:00pm**
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	881
Land Use/Building Type:	Pharmacy/Drugstore w/ Drive-Thru

Name of Business:	Walgreens
Address:	4200 Winnetka Ave N
City:	New Hope
State:	MN
Zip Code:	55428
Date(s)	February 7-8, 2012 (Tuesday-Wednesday)
Weather Conditions	High 32 °F and Clear

Location Within Area (select one):		Competition Within Area (select one):	
CBD		High	X
Urban (non-CBD)		Medium	
Suburban (non-CBD)	X	Low	
Suburban CBD			
Rural			
Not Given			

Drive-Through Description :	2 Lanes
Gross Floor Area (estimated)	16675 sq. ft.

	Maximum Queue	Time(s) Max Queue Occurred
Sunday		
Monday		
Tuesday	**3**	**4:03pm**
Wednesday	**3**	**8:34am, 4:04pm, 4:51pm**
Thursday		
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	881
Land Use/Building Type:	Pharmacy/Drugstore w/ Drive-Thru
Name of Business:	Walgreens
Address:	4100 W Broadway Ave
City:	Robbinsdale
State:	MN
Zip Code:	55422
Date(s)	February 7-8, 2012 (Tuesday-Wednesday)
Weather Conditions	High 32 °F and Clear

Location Within Area (select one):		Competition Within Area (select one):	
	CBD		
	Urban (non-CBD)		
X	Suburban (non-CBD)	High	X
	Suburban CBD	Medium	
	Rural	Low	
	Not Given		

Drive-Through Description :	1 Lane
Gross Floor Area (estimated)	14,400 sq. ft.

	Maximum Queue	Time(s) Max Queue Occurred
Sunday		
Monday		
Tuesday	**3**	**4:49pm**
Wednesday	**2**	**12:49pm**
Thursday		
Friday		
Saturday		

SEWER PLANNING EXEMPTION REQUEST

Proposed Site Improvements

1842 Bethlehem Pike, Flourtown PA 19031
Springfield Township & Whitemarsh Township,
Montgomery County, Pennsylvania

Prepared for

Federal Realty Investment Trust

50 E. Wynnewood Road, Suite 200
Wynnewood, PA 19096

Prepared By:

LANDCORE Engineering Consultants, P.C.

P.O. Box 37635, #65287
Philadelphia, PA 19101-0635

LEC Project No: **140065**

Date: **March 4, 2021**

Revised:

D. Alexander Tweedie, P.E.

PA License #071873



LANDCORE
Engineering Consultants, P.C.

LANDCORE
Engineering Consultants, P.C.

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A. PROJECT DESCRIPTION

Federal Realty Investment Trust is proposing to redevelop a section of the Flourtown Shopping Center located at 1842 Bethlehem Pike, Flourtown (SITE), Pennsylvania. The existing parcels under development are further identified as A.P.N. 52-00-01904-006 as identified on the official tax maps of Montgomery County, Springfield Township & A.P.N. 65-00-00547-045 as identified on the official tax maps of Montgomery County, Whitemarsh Township, Commonwealth of Pennsylvania. The site, which is approximately 9.5 acres, is physically located along the northbound side of Bethlehem Pike, between Springfield Avenue and Sunnybrook Road, in both Springfield Township and Whitemarsh Township, Montgomery County, Pennsylvania

The re-development of the site will include construction of a retail and building comprised of 4,500 +/- SF of retail floor. The remaining shopping center building area will remain unchanged. Associated parking, grading, and utility improvements are also proposed. A Project Utility Plan can be found in Section C.

A Planning Module Exemption is requested to approve the flows from the project to the public sanitary system of the Township of Whitemarsh. The existing and anticipated sewer flows are as described below. This is a potential multi-tenant building and therefore we have based this application on a 2 tenant concept with 1 restaurant and 1 bank tenant. We believe this estimation represents the expected sewer flows from this property.

Table 1:

PROPOSED SEWAGE FLOWS							
PROPOSED USE	**UNITS**	**OCCUPANCY**	**TURNOVER**	**GPD**	**FLOW (GPD)**	**EDU**	**EDUs**
RESTAURANT w/ BAR	108 SEATS	0.8	2	12	2,074	400	5.2
BANK	2,450 sf			0.1	245	400	0.6
TOTAL PROPOSED					2,319	400	**5.8**
EXISTING CREDIT					0	0	**0**
NET INCREASE					2,319	400	**6**

B. PLANNING MODULE MAILER

1. **Development Information**

Name of Development Flourtown Shopping Center
Developer Name Federal Realty Investment Trust
Address 50 E. Wynnewood Road, Suite 200
Wynnewood, PA 19096
Telephone # _____
Email abottaro@federalrealty.com

2. **Location of Development**

a. County Montgomery County
b. Municipality Springfield Township and Whitemarsh Township
c. Address or Coordinates 1842 Bethlehem Pike, Flourtown PA 19031
d. Tax Parcel # A.P.N. 52-00-01904-006 & A.P.N. 65-00-00547-045 (Springfield and Whitemarsh Township respecitively)
e. USGS Quad Name Germantown, PA
inches up 12.5" over 7.5"
from bottom right corner of map.
f. Located in a High Quality/Exceptional Value watershed?
☐ Yes ☒ No

3. **Type of Development Proposed** (check appropriate box)

☐ Residential ☐ Multi-Residential
Describe _____

☒ Commercial ☐ Institutional
Describe Multi Tenant Bldg with Resturant and Bank

☐ Brownfield Site Redevelopment
☐ Other (specify) _____

4. **Size**

a. # of lots 2 # of EDUs 6
b. # of lots since 5/15/72 2
c. Development Acreage 0.47
d. Remaining Acreage 41.00

5. **Sewage Flows** 13,320 gpd

6. **Proposed Sewage Disposal Method** (check applicable boxes)

a. ☐ Sewerage System
☒ Existing (connection only) ☐ New (extension)
☒ Public ☐ Private
☐ Pump Station(s)/Force Main ☒ Gravity
Name of existing system being extended

Interceptor Name _____
Treatment Facility Name _____

NPDES Permit # _____

b. ☐ Construction of Treatment Facility
☐ With Stream Discharge
☐ With Land Application (not including IRSIS)
☐ Other
☐ Repair?
Name of waterbody where point of discharge is proposed (if stream discharge)

c. ☐ Onlot Sewage Disposal Systems (check appropriate box)
☐ Individual onlot system(s) (including IRSIS)
☐ Community onlot system
☐ Large-Volume onlot system
d. ☐ Retaining tanks
Number of Holding Tanks _____
Number of Privies _____

7. ☐ **Request Sewage Facilities Planning Module forms in electronic format**

8. **Request for Planning Exemption**

a. Protection of rare, endangered or threatened species
Check one:
☒ The "PNDI Project Environmental Review Receipt" is attached.
or
☐ A completed "PNDI Project Planning & Environmental Review Form," (PNDI Form) is attached. I request DEP staff to complete the required PNDI search for my project. I realize that my planning exemption will be considered incomplete and that the DEP processing of my planning exemption request will be delayed, until a "PNDI Project Environmental Review Receipt" and all supporting documentation from jurisdictional agencies (when necessary) is/are received by DEP.

Applicant or Consultant Initials_____

b. ☒ Plot Plan Attached ☐ Site Reports Attached

c. Onlot Disposal Systems

(1) I certify that the Official Plan shows this area as an onlot service area.

_____ / _____
(Signature of Municipal Official) Date

_____ / _____
Name (Print) Title

_____
Municipality (must be same as in 2.b.)

Telephone # _____

(2) I certify that each lot in this subdivision has been tested and is suitable for both a primary and replacement sewage disposal system.

_____ / _____
Signature of SEO) Date

_____ / _____
Name (Print) Certification #

Telephone # _____

(3) I certify that each lot in this subdivision is at least 1 acre in size

_____ / _____
(Signature of Project Applicant/Agent) Date

d. Public Sewerage Service (i.e., ownership by municipality or authority)

Based upon written documentation, I certify that the facilities proposed for use have capacity and that no overload exists or is projected within 5 years. (Attach documents.)

_____ / _____
(Signature of Municipal Official) Date

_____ / _____
Name (Print) Title

_____
Municipality (must be same as in 2.b.)

Telephone # _____

LANDCORE
Engineering Consultants, P.C.

C. PROJECT UTILITY PLAN

LANDCORE
Engineering Consultants, P.C.

D. PNDI RECEIPT

1. PROJECT INFORMATION

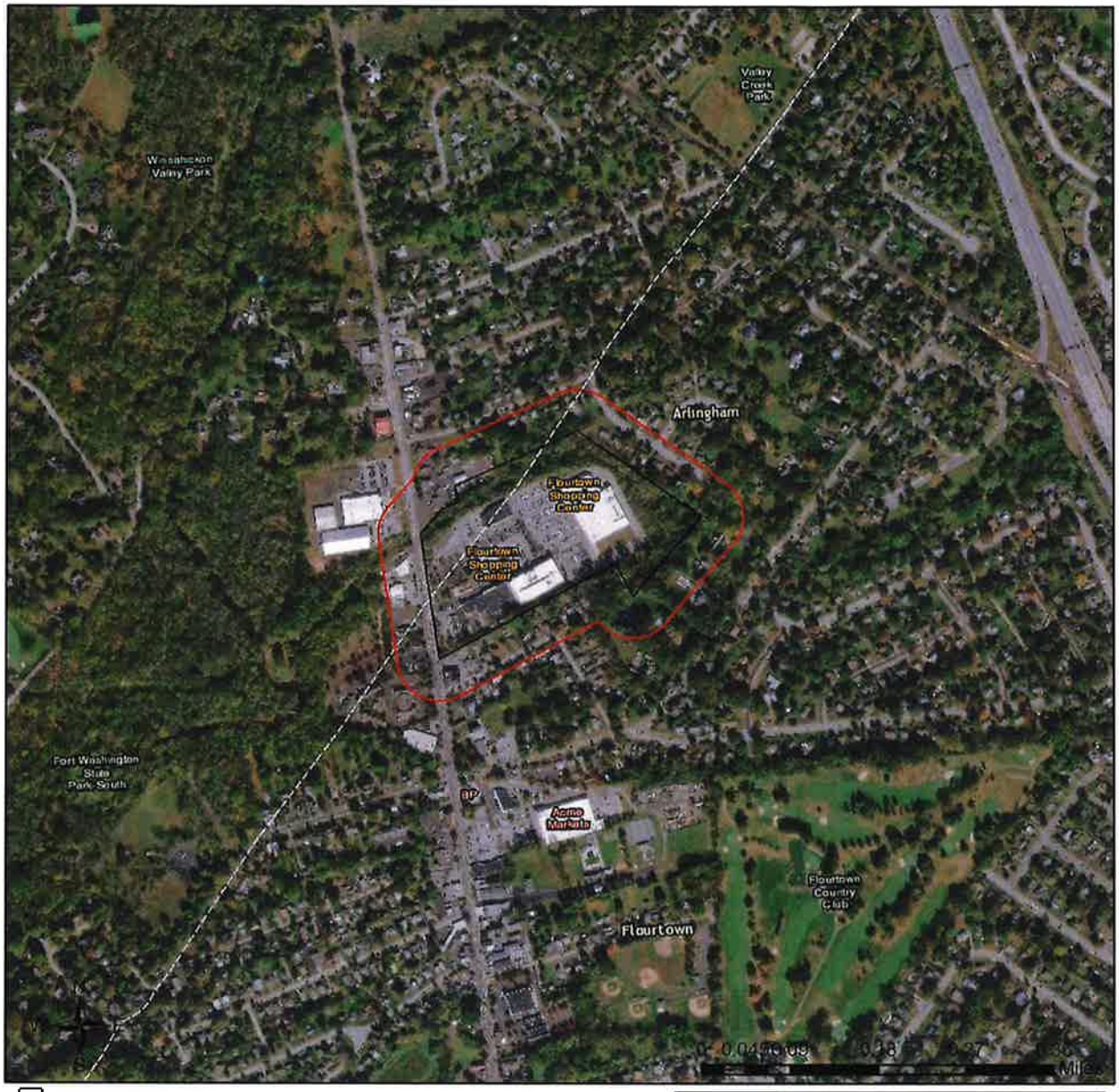
Project Name: **Flourtown Shopping Center - Proposed Site Improvements**
Date of Review: **3/5/2021 07:44:54 AM**
Project Category: **Development, New commercial/industrial development (store, gas station, factory)**
Project Area: **23.33 acres**
County(s): **Montgomery**
Township/Municipality(s): **SPRINGFIELD TOWNSHIP; WHITEMARSH TOWNSHIP**
ZIP Code:
Quadrangle Name(s): **GERMANTOWN**
Watersheds HUC 8: **Schuylkill**
Watersheds HUC 12: **Lower Wissahickon Creek**
Decimal Degrees: **40.111359, -75.211732**
Degrees Minutes Seconds: **40° 6' 40.8939" N, 75° 12' 42.2341" W**

2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	**Potential Impact**	**FURTHER REVIEW IS REQUIRED, See Agency Response**
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.

Flourtown Shopping Center - Proposed Site Improvements



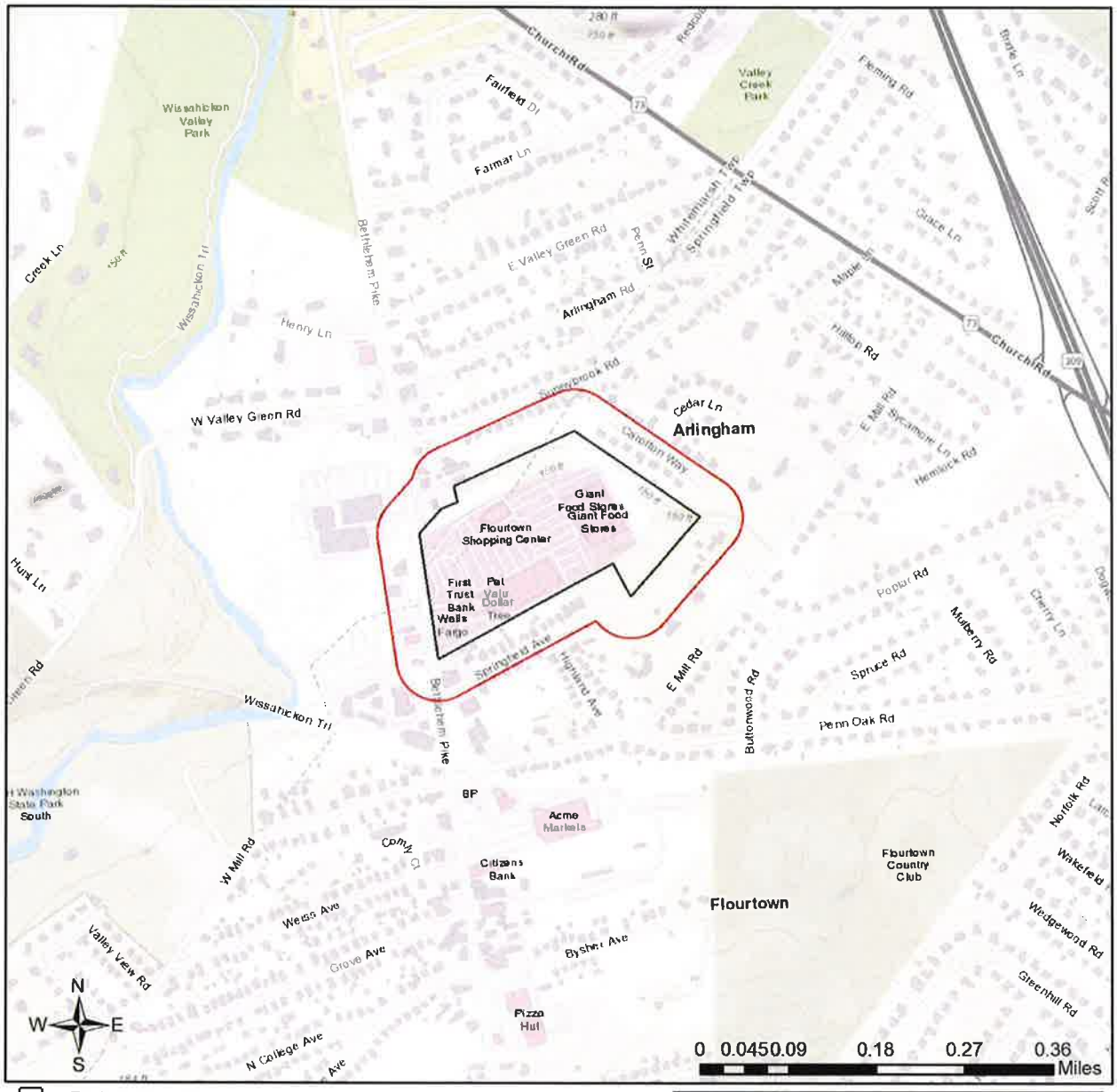
Project Boundary

Buffered Project Boundary



Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China

Flourtown Shopping Center - Proposed Site Improvements



Project Boundary

Buffered Project Boundary



Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

RESPONSE TO QUESTION(S) ASKED

Q1: Accurately describe what is known about wetland presence in the project area or on the land parcel. "Project" includes all features of the project (including buildings, roads, utility lines, outfall and intake structures, wells, stormwater retention/detention basins, parking lots, driveways, lawns, etc.), as well as all associated impacts (e.g., temporary staging areas, work areas, temporary road crossings, areas subject to grading or clearing, etc.). Include all areas that will be permanently or temporarily affected -- either directly or indirectly -- by any type of disturbance (e.g., land clearing, grading, tree removal, flooding, etc.). Land parcel = the lot(s) on which some type of project(s) or activity(s) are proposed to occur.
Your answer is: The entire project will occur in or on an existing building, parking lot, driveway, road, road shoulder, street, runway, paved area, or railroad bed.

Q2: The proposed project is in the range of the Indiana bat. Describe how the project will affect bat habitat (forests, woodlots and trees) and indicate what measures will be taken in consideration of this. Round acreages up to the nearest acre (e.g., 0.2 acres = 1 acre).
Your answer is: No forests, woodlots or trees will be affected by the project.

Q3: Aquatic habitat (stream, river, lake, pond, etc.) is located on or adjacent to the subject property and project activities (including discharge) may occur within 300 feet of these habitats?
Your answer is: Yes

Q4: Is tree removal, tree cutting or forest clearing of 40 acres or more necessary to implement all aspects of this project?
Your answer is: No

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jursidictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission
RESPONSE:
No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources
RESPONSE:
No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission
RESPONSE:
Further review of this project is necessary to resolve the potential impact(s). Please send project information to this agency for review (see WHAT TO SEND).

PFBC Species: (Note: The Pennsylvania Conservation Explorer tool is a primary screening tool, and a desktop review may reveal more or fewer species than what is listed below.)

Scientific Name	Common Name	Current Status
Sensitive Species**		Threatened

U.S. Fish and Wildlife Service
RESPONSE:

No impacts to **federally** listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq. is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

* Special Concern Species or Resource - Plant or animal species classified as rare, tentatively undetermined or candidate as well as other taxa of conservation concern, significant natural communities, special concern populations (plants or animals) and unique geologic features.
** Sensitive Species - Species identified by the jurisdictional agency as collectible, having economic value, or being susceptible to decline as a result of visitation.

WHAT TO SEND TO JURISDICTIONAL AGENCIES

If project information was requested by one or more of the agencies above, upload* or email* the following information to the agency(s). Instructions for uploading project materials can be found here. This option provides the applicant with the convenience of sending project materials to a single location accessible to all three state agencies. Alternatively, applicants may email or mail their project materials (see AGENCY CONTACT INFORMATION). For projects showing "Potential Impacts" with USFWS, please send project information to that agency by email IR1_ESPenn@fws.gov *(preferred) or regular mail.*

Check-list of Minimum Materials to be submitted:
X Project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.
X A map with the project boundary and/or a basic site plan(particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)
In addition to the materials listed above, USFWS REQUIRES the following
X **SIGNED** copy of a Final Project Environmental Review Receipt

The inclusion of the following information may expedite the review process.
X Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)
N/A Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing the location of all project features, as well as wetlands and streams.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. Two review options are available to permit applicants for handling PNDI coordination in conjunction with DEP's permit review process involving either T&E Species or species of special concern. Under sequential review, the permit applicant performs a PNDI screening and completes all coordination with the appropriate jurisdictional agencies prior to submitting the permit application. The applicant will include with its application, both a PNDI receipt and/or a clearance letter from the jurisdictional agency if the PNDI Receipt shows a Potential Impact to a species or the applicant chooses to obtain letters directly from the jurisdictional agencies. Under concurrent review, DEP, where feasible, will allow technical review of the permit to occur concurrently with the T&E species consultation with the jurisdictional agency. The applicant must still supply a copy of the PNDI Receipt with its permit application. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. The applicant and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at https://conservationexplorer.dcnr.pa.gov/content/resources.

5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources
Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552
Harrisburg, PA 17105-8552
Email: RA-HeritageReview@pa.gov

U.S. Fish and Wildlife Service
Pennsylvania Field Office
Endangered Species Section
110 Radnor Rd; Suite 101
State College, PA 16801
Email: IR1_ESPenn@fws.gov
NO Faxes Please

PA Fish and Boat Commission
Division of Environmental Services
595 E. Rolling Ridge Dr., Bellefonte, PA 16823
Email: RA-FBPACENOTIFY@pa.gov

PA Game Commission
Bureau of Wildlife Habitat Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue, Harrisburg, PA 17110-9797
Email: RA-PGC_PNDI@pa.gov
NO Faxes Please

7. PROJECT CONTACT INFORMATION

Name: D. Alexander Tweedie, PE
Company/Business Name: LANDCORE Engineering Consultants, PC
Address: PO Box 37635 #56287
City, State, Zip: Philadelphia, PA 19101-0635
Phone:(215) 836-2510 Fax:( )
Email: atweedie@landcoreconsulting.com

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

DATweedie 3/5/2021

applicant/project proponent signature date

LANDCORE
Engineering Consultants, P.C.

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March 3, 2021

RE: **PNDI Project Narrative**
Project Search ID: PNDI-725207
Flourtown Shopping Center / Proposed Site Improvements
1842 Bethlehem Pike, Flourtown PA
Springfield Township & Whitemarsh Township,
Montgomery County, PA
LEC File #140065

The project site is located at 1842 Bethlehem Pike, Flourtown PA, between Springfield Ave and Sunnybrook Road in Springfield Township and Whitemarsh Township, Montgomery County, PA. The subject site is the location of the Flourtown Shopping Center, which consists of various retail/commercial tenants and includes associated parking, circulation, and other site amenities. The site topography within the developed portion of the site is relatively flat, with stormwater runoff conveyed via sheet flow and conveyance system to Tributary 00857 to Wissahickon Creek, located along the easterly and northerly property lines.

Tributary 00857 to Wissahickon Creek is also known as Sunny Brook and Oreland Run. The watercourse is designated as a Trout Stock Fishery (TSF), Migratory Fishery (MF) on the Pennsylvania Department of Environmental Protection (PADEP) Chapter 93 classification list. The stream does have an associated flood hazard area per FEMA's FIRM mapping for Montgomery County, PA, map numbers "42091C0377G" effective on 03/02/2016. Also, per our review of the of national wetlands inventory, wetlands do not appear to exist along this segment of the stream.

The proposed improvements are located at the northwesterly corner of the site and will be entirely located within existing developed / paved areas. Improvements include an additional 4,550 sf commercial building with associated drive-thru land, parking, loading and utilities. Stormwater management will not be required due to a net reduction in impervious coverage. Also, the proposed improvements will not displace fill within the flood hazard area.

Site access will remain as is currently exists along Bethlehem Pike.

As mentioned above, site improvements will be entirely contained within the limits of the existing shopping center developed area, therefore there will be no impacts to the stream, associated wildlife, and flood hazard area. See the site photos and Photo Location Map for additional information.



PHOTO 1



PHOTO 2



PHOTO 3



PHOTO 4



PHOTO 5



PHOTO 6



PHOTO 7



PHOTO 8

E. PUBLIC SEWER SYSTEM AVAILABLE CAPACITY DETERMINATION

F. PENNSYLVANIA CODE 73.17 SEWAGE FLOWS

§ 73.17. Sewage flows.

(a) The flow figures in this subsection and subsection (b) are peak daily flows for the design of community onlot sewage systems. These flow figures are not intended to be used for the calculation of flows for the design of community sewerage systems or for the allocation of flows related to community sewerage systems. Design and permit sewage flows for a community sewerage system are to be calculated using the procedures established in the Department's "Domestic Wastewater Facilities Manual." The sewage flow from single family dwellings served by a community onlot sewage system or from apartments, rooming houses, hotels and motels served byan individual or community sewage system shall be determined from the following table:

Type of Establishment	*Gallons/Unit/day*	
Residential	*Gallons/unit*	*BOD/unit*
Hotels and motels	100	.30
Multiple family dwellings and apartments, including townhouses, duplexes and condominiums	400	1.13
Rooming houses (per unit)	200	.60
Single family residences	400*	.90

*For units of 3 bedrooms or less; for each bedroom over 3, add 100 gallons.

(b) The sewage flow, which shall exclude any industrial waste, for nonresidential establishments served by an individual or community sewage system shall be determined from the following table:

Type of Establishment		
Commercial	*Gallons/day*	*BOD/day*
Airline catering (per meal served)	3	.03
Airports (per passenger—not including food)	5	.02
Airports (per employe)	10	.06
One licensed operator Beauty shops	200	—
Bus service areas not including food (per patron and employe)	5	.02
Country clubs not including food (per patron and employe)	30	.02
Drive-in theaters (not including food—per space)	10	.06
Factories and plants exclusive of industrial wastes (per employe)	35	.08
Laundries, self-service (gallons/washer)	400	2.00
Mobile home parks, independent (per space)	400	1.00
Movie theaters (not including food, per auditorium seat)	5	.03
Offices (per employe)	10	.06
Restaurants (toilet and kitchen wastes per patron)	10	.06
(Additional for bars and cocktail lounges)	2	.02
Restaurants (kitchen and toilet wastes, single-service utensils/person)	8.5	.03

Restaurants (kitchen waste only, single-service utensils/patron)	3	.01
Stores (per public toilet)	400	2.00
Warehouses (per employe)	35	—
Work or construction camps (semipermanent) with flush toilets (per employe)	50	.17
Work or construction camps (semipermanent) without flush toilets (per employe)	35	.02
Institutional		
Churches (per seat)	3	—
Churches (additional kitchen waste per meal served)	3	—

Type of Establishment		
Institutional	*Gallons/day*	*BOD/day*
Churches (additional with paper service per meal served)	1.5	—
Hospitals (per bed space, with laundry)	300	.20
Hospitals (per bed space, without laundry)	220	—
Institutional food service (per meal)	20	—
Institutions other than hospitals (per bed space)	125	.17
Schools, boarding (per resident)	100	.17
Schools, day (without cafeterias, gyms or showers per student and employe)	15	.04
Schools, day (with cafeterias, but no gym or showers per student and employe)	20	.08
Schools, day (with cafeterias, gym and showers per student and employe)	25	.10
Recreational and Seasonal		
Camps, day (no meals served)	10	.12
Camps, hunting and summer residential (night and day) with limited plumbing including water-carried toilet wastes (per person)	50	.12
Campgrounds, with individual sewer and water hookup (per space)	100	.50
Campgrounds with water hookup only and/or central comfort station which includes water-carried toilet wastes (per space)	50	.50
Fairgrounds and parks, picnic—with bathhouses, showers, and flush toilets (per person)	15	.06
Fairgrounds and parks, picnic (toilet wastes only, per person)	5	.06
Swimming pools and bathhouses (per person)	10	.06

(c) Actual water meter or sewer meter flow data indicating peak daily flows different than those shown in this section over a 1-year period for a similar nonresidential establishment may be accepted for use in sizing the onlot disposal system. If average daily flows are used, the peak daily flow shall be calculated by multiplying the average daily flow by two.

(d) Establishments with food preparation facilities are required to install adequately designed pretreatment units and traps to reduce greases and biological oxygen demand (BOD) prior to discharge to an individual or community sewage system.

Authority

The provisions of this § 73.17 amended under section 9 of the Pennsylvania Sewage Facilities Act (35 P. S. § 750.9); The Clean Streams Law (35 P. S. § § 691.1—691.1001); and section 1920-A of The Administrative Code of 1929 (71 P. S. § 510-20).

Source

The provisions of this § 73.17 adopted January 21, 1983, effective January 22, 1983, 13 Pa.B. 508; amended November 7, 1997, effective November 8, 1997, 27 Pa.B. 5877. Immediately preceding text appears at serial pages (217318) to (217320).

Cross References

This section cited in 25 Pa. Code § 71.52 (relating to content requirements—new land development revisions); 25 Pa. Code § 72.22 (relating to permit issuance); 25 Pa. Code § 73.16 (relating to absorption area requirement); 25 Pa. Code § 73.31 (relating to standards for septic tanks); 25 Pa. Code § 73.32 (relating to standards for aerobic treatment tanks); and 25 Pa. Code § 73.161 (relating to general).

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January 7, 2022
REVISED: January 10, 2022
Via e-mail

Whitemarsh Township
616 Germantown Pike
Lafayette Hill, PA 19444
Attn: Charles Guttenplan, Dir. of Planning & Zoning

Subject: **Conditional Use & Land Development Application**
Flourtown Shopping Center
Proposed Site Redevelopment
1842 Bethlehem Pike
Whitemarsh Twp, Montgomery Co., PA
LEC#: 140065.02

Dear Mr. Guttenplan:

On behalf of the applicant, **Federal Realty Investment Trust,** formal response is made herein of the above referenced project. Our office is in receipt of the following review letters/memo

- Letter prepared by Charles L. Guttenplan, Whitemarsh Township Dir. of Planning & Zoning, dated November 30, 2021
- Letter prepared by Charles L. Guttenplan, Whitemarsh Township Dir. of Planning & Zoning, dated December 1, 2021
- Letter prepared by Krista Heinrich, P.E. Township Engineer Gilmore & Associates, Inc., dated December 30, 2021

This letter shall serve as the response letter and includes how the concerns will be addressed. The comments from the review letter are indicated in *italics* with the response in **bold**.

Letter prepared by Charles L. Guttenplan, Whitemarsh Township Dir. of Planning & Zoning, dated November 30, 2021

1. §116-37.F.(I)-(8) Testimony must be provided to allow the Board of Supervisors to make determinations as required in these sections, for all conditional use requests. One of the sub-sections, §116-37.F.(J)(d), requires the applicant to confirm that the conditional use will not have a harmful effect due to design and capacity of off-street parking facilities. Based upon the updated plan, we note that the Zoning Hearing Board granted certain relief for parking; in ZHB #2021-30, the Zoning Hearing Board granted variances and special exceptions from §116-185, 116-184.D.(8), 116-260.C. and 116-260.E. to permit shared parking spaces between adjacent lots, to permit O parking spaces rather than the 3 required, and to permit modifications to existing lawful nonconforming parking spaces and drive aisles within the Riparian Corridor Overlay District. (Springfield Township Zoning Hearing Board also granted relief for the number of parking spaces required.)

   RESPONSE: Noted, required testimony will be provided.

2. §116-184.G. All parking shall conform to the requirements of the Whitemarsh Township Fire Prevention Code as enacted and amended. The applicant is required to obtain approval from the Whitemarsh Township Fire Marshal. (See enclosed memo from the Fire Marshal.)

   RESPONSE: Fire Marshall memo notes approval of this plan.

3. *§116-290.E.(5) This section permits "Drive-through windows for permitted banks and retail uses" as a conditional use in the VC-3 Village Commercial District, sub-district 3. This application proposes the drive-through under this section and conditional use approval is being sought based upon it.*

   RESPONSE: Noted.

4. *§116-290.E.(5)(a)-(g) These sub-sections contain the specific requirements that must be met for a drive-through use. Testimony must therefore be provided to demonstrate compliance with the requirements of these sub-sections. Given the design, we call attention specifically to section 216-290.E.(S)(c) pertaining to the location of the drive-through/shielding it from view.*

   RESPONSE: The proposed Landscape Plan provides the necessary screening from street view.

5. *§116-292 This section contains requirements that must be met for all conditional uses in the Village Commercial District. Testimony must therefore be provided to demonstrate compliance with all applicable provisions of this section.*

   RESPONSE: Noted.

Letter prepared by Charles L. Guttenplan, Whitemarsh Twp Dir. of Planning & Zoning, dated December 1, 2021

1. *§116-28.A.(2) In the letter dated October 21, 2021, the Applicant states they have noted the requirement to furnish a letter from the appropriate authority indicating the availability and supply of water for the proposed project to the Zoning Officer.*

   RESPONSE: Noted.

2. *§116-29 In the letter dated October 21, 2021, the Applicant states they have noted the requirement to obtain approval of the Whitemarsh Township Authority with regard to an adjusted connection for sanitary sewerage needs.*

   RESPONSE: Noted.

3. *§116-165 A variance was granted as part of Zoning Hearing Board Decision 2021-30 to permit earth disturbance/construction, removal of existing pavement, and installation of curbing, sidewalk, landscape islands and other improvements as shown on the plans within the floodway fringe.*

   RESPONSE: Noted.

4. *§116-166.B A Special Exception was granted as part of Zoning Hearing Board Decision 2021-30 to permit utilities within the floodway fringe.*

   RESPONSE: Noted.

5. *§116-184.0.(8) A variance was granted as part of Zoning Hearing Board Decision 2021- 30 to permit parking on an adjacent lot and for zero parking spaces rather than the 3 parking spaces required.*

   RESPONSE: Noted.

6. *§116-184.G. In the letter dated October 21, 2021, the Applicant states they have noted the requirement to conform to the requirements of the Whitemarsh Township Fire Prevention Code as acted and amended, and to obtain approval from the Whitemarsh Township Fire Marshal. Please see the enclosed Fire Marshal memo dated November 3, 2021.*

   RESPONSE: Fire Marshall memo notes approval of this plan.

7. *§116-185 A special exception was granted as part of Zoning Hearing Board Decision 2021-30 to permit shared parking with adjacent lots (owned by the same owner in Springfield Township).*

   RESPONSE: Noted.

8. *§116-258.C.(2) The Riparian Corridor Conservation District Overlay must be shown on the plan in accordance with this section.*

   RESPONSE: Plans will be revised to show the Riparian Corridor Conservation District Overlay.

9. *§116-259.A. A variance was granted as part of Zoning Hearing Board Decision 2021- 30 to permit the proposed bank to be located within the side yard of the Riparian Corridor Conservation Overlay District.*

   RESPONSE: Noted.

10. *§116-260.C A variance was granted as part of Zoning Hearing Board Decision 2021- 30 to permit modifications to existing nonconforming parking spaces and drive aisles within the Riparian Corridor Conservation Overlay District.*

    RESPONSE: Noted.

    .

11. *§116-290.E.(5) The bank drive-through is a conditional use in the VC-3 District in accordance with this section. A separate zoning review has been provided for the conditional use application.*

    RESPONSE: Noted.

12. *§116-291.A.(2) In the letter dated October 21, 2021, the Applicant states that the proposed utility services will be underground.*

    RESPONSE: Noted.

13. *§116-291.B.(l) In accordance with this section, we believe that pedestrian access needs to be added to a portion of the bank that faces Bethlehem Pike.*

    RESPONSE: The plans will be revised to include the requested sidewalk along the Bethlehem Pk building frontage, as shown on the presented Site Plan Rendering.

14. *§116-291.B.(7)(a) In the letter dated October 21, 2021, the Applicant states that the requirement for all ground-mounted HV AC units or other utility equipment to be screened from view using masonry walls and landscaping has been noted. These features must be shown on the plans.*

    RESPONSE: Noted.

15. *§116-29l.B.(7)(b) In the letter dated October 21, 2021, the Applicant states that there will be no new trash enclosures installed as part of the proposed project.*

    RESPONSE: Noted.

16. *§116-291.D.(l) This section states that incident light spill-off at the development boundaries shall not exceed 0.10 footcandle at any point along off-street areas. The submitted Lighting Plan shows footcandles exceeding this requirement a*long the northwestern point of the VC-3 and B-Residential Boundary line.

    RESPONSE: The Lighting Plan will be revised to reduce the light spill-over to below 0.10 footcandle.

17. *§116-207(1), §116-208, §116- 209, §116-210, §116-298 boundary line. These sections of the ordinance describe signs which are permitted in the districts on which the subject property is located. In lieu of providing plans that detail proposed signs, the Applicant states its intention to submit a sign permit application following land development approval.*

    RESPONSE: Sign permitting will be a separate application.

Letter prepared by Krista Heinrich, P.E. Twp Engineer Gilmore & Associates, Inc., dated December 30, 2021
SUBDIVISION AND LAND DEVELOPMENT ORDINANCE

1. *105-21(B)(1)(n) The applicant is requesting a waiver from the requirements of this section of the ordinance, which requires the plans to show existing principal buildings (and their respective uses) and driveways on the peripheral strip. Sewer lines, storm drains, culverts, bridges, utility easements, quarries, railroads, and other significant man-made features within 500 feet of and within the site, including properties across streets. The granting of any waiver should be conditioned that the plans include aerial photography that shows the required features.*

   RESPONSE: We hereby request said waiver and will update the plans to include the requested aerial photo.

2. *105-21(B)(9)(c)(2) The applicant is advised that the Township Planning Commission, at its discretion, may request the preparation of a traffic impact study for any land development.*

   RESPONSE: Though this project is substantially below the threshold(s) of 25,000 SF or 100 parking stalls that would require a Traffic Study, the Applicant has reviewed relevant transportation issues surrounding the proposed 2,500 SF expansion of the existing 177,025 SF shopping center, including queuing, parking, and multi-modal (pedestrian) improvements. The additional traffic which will be generated by the proposed 2,500 SF is minimal and will generally go unnoticed by the motoring public at large. Given the scale and scope of the project, as well as the already-offered multi-modal improvements, no further transportation study is warranted or required.

3. *105-21(B)(9)(c)(2) The application included a traffic impact analysis limited to study of queuing at the bank drive-through, which must be expanded to address vehicular flow through the site. At a minimum, the following must be addressed:*

   •The transportation impact study shall contain full documentation of the proposed internal and existing external transportation system. This description shall include proposed internal vehicular, bicycle and pedestrian circulation, all proposed ingress and egress locations, all internal roadway widths and rights-of-way, parking conditions, traffic channelizations, and any traffic signals or other intersection control devices within the site. The site design shall be shown to maximize potential public transportation usage to and from the development.
   •During a site visit, it was observed that the secondary unsignalized site access to the site is heavily used. The proposed improvements appear to align a new drive aisle with an existing drive aisle to the South, which could encourage additional flow to/from the secondary site access. Additional study of this secondary access should be performed, to evaluate the impact of the realignment on overall vehicular flow through the site.
   •The plans must be revised to address traffic flow during construction; especially how vehicles entering from Bethlehem Pike will be routed.

   RESPONSE: Refer to response to Comment #2, above.

4. *105-21.1(K)(2) Within the North Transportation Service Area an impact fee in the amount of Two Thousand Eight Hundred and Twenty-Five Dollars ($2,825.00) per anticipated peak hour trip must be provided by the applicant. Based on data documented within the latest edition of the ITE Trip Generation Manual, will generate 50 PM peak hour trips. Therefore, the traffic impact fee totals $141,250.00 ($2,825.00 x 50 peak hour trips).*

   RESPONSE: The proposed bank is not a free-standing bank, it is part of a larger shopping center. The expected weekday PM peak hour trip generation related to the proposed bank is a function of the proposed shopping center's existing size and the proposed increase. This difference, 2,500 SF, translates to 8 "total" PM peak hour trips, per the 11th edition of ITE Trip Generation Manual. According to latest ITE data, the passby rate for a shopping center is 34%, on average, during weekday PM peak hours. This means the 8 trips just referenced is comprised of 5 new trips, and Act 209 fees apply only to new trips. Thus the related fee should be $14,125.

5. *105-48 Within any land development, street trees shall be planted along all streets where suitable street trees do not exist. The minimum trunk diameter, measured at a height of six inches above the root ball, shall be three inches. The required Landscaping Plan must show existing and proposed trees, if required, along Bethlehem Pike. Additionally, the note in the Landscape Requirements Chart on Sheet 10 indicating "no street frontage" is not consistent with the plan and must be revised in order to list the dimension of site street frontage along Bethlehem Pike.*

   RESPONSE: We will update the landscape compliance chart to reflect 6 required street trees. The existing street frontage already has 6 or more existing trees and no additional plantings are required.

6. *105-49 Interior crosswalks may be required wherever necessary to facilitate pedestrian circulation and to give access to community facilities in blocks of over 1,000 feet in length. Two proposed pedestrian crossings in front of the new building must be revised to direct pedestrians to a safe landing area, instead of towards a vehicle drive aisle.*

   RESPONSE: These crosswalks are located within Springfield Township and we do not believe this code section applies. It should be noted that the proposed crosswalk design is consistent with the center.

7. *105-52 Buffer yards are required between land developments and along existing streets to soften visual impact, to screen glare, and to create a visual barrier between conflicting land uses. The plans must be revised to provide a table detailing the buffer yard requirements, in accordance with Section 105-52.B as well as the actual buffers provided. All landscaping plans are subject to the review and approval of the Shade Tree Commission.*

   RESPONSE: No Buffer yard is required between retail uses and existing streets of this classification. Only Street Trees are required and existing vegetation satisfies that requirement.

8. *105-53(D) This section of the ordinance requires the dedication of land in the amount of 10% of the total Site Area for Park and/or Recreational use. The applicant has the option of offering a fee in lieu of dedicating actual land area and can also provide a combination of a fee in lieu and dedication of land. All offers of land and/or fees in lieu of dedication must meet the requirements of this section of the ordinance.*

   RESPONSE: Park and Recreation land will be reviewed with the Township Solicitor and Board

9. *105-76 The applicant must obtain a letter of approval from the Township Fire Marshal in order to ensure that adequate fire protection is provided.*

   RESPONSE: Fire Marshall memo notes approval of this plan.

10. *105-83 Street trees and other required plantings shall be in accordance with §§ 105-39, 105-48 and 105-52.*

    RESPONSE: 105-39 does not apply as there is not parking proposed within Whitemarsh Township, 105-48 is address by the existing vegetation along the street frontage and 105-52 is not applicable as no buffer is required between retail use and Bethlehem Pike.

11. *105-89 The developer shall enter into a written agreement with the Township in the manner and form approved by the Solicitor wherein the developer shall agree, to construct or cause to be constructed at his own expense all proposed improvements shown on the approved land development plan, all in strict accordance with the standards and specifications of the Township and within the time specified in said agreement, and to deposit with the Township financial security in an amount sufficient to cover the cost of all subdivision or land development improvements, including both public and private improvements*

    RESPONSE: Noted.

CHAPTER 55 - TREE PROTECTION STANDARDS:

12. *55-4(A) A Tree Survey Plan prepared in accordance with the requirements contained in this section of the ordinance must be submitted to the Township. The tree survey plan shall be reviewed by the Shade Tree Commission in a public meeting.*

    RESPONSE: No existing trees exceed 6" therefore there are no trees required to be depicted on the plans. It should be noted that two trees under 6" (3") will be removed and replaced in kind.

GRADING, EROSION CONTROL, STORMWATER MANAGEMENT AND BEST MANAGEMENT PRACTICES ORDINANCE:

13. *58-8(B) Stormwater facilities shall be accessible to permit periodic maintenance and an access easement shall be provided to permit such access. The following blanket stormwater easement note, must be added to the plan: 'Stormwater facilities shall be owned and maintained by the property owner in perpetuity. The property owner shall provide a blanket stormwater access easement to the Township for the purpose of access to the stormwater facilities. If, in the judgment of the Township Engineer, the owner has failed to maintain the stormwater facilities in such a manner as to ensure their proper functioning, the Township after providing a written notice, shall have the right to enter upon the lands of the owner and to make any repairs as may be necessary to the stormwater facilities to ensure that such facilities function and perform in accordance with the design specifications. Any and all costs incurred by the Township for such repairs and/or maintenance shall be paid in full by the owner. A lien or liens may be placed against the property if the owner fails to remit payment within sixty (60) days.'*

    RESPONSE: The plans will be revised to provide the requested blanket stormwater easement note.

14. *58-11(G)(1)(b) The plans must be revised to include a note stating the ownership and maintenance of stormwater BMPs shall be the responsibility of the owner or private management entity of the property.*

    RESPONSE: The plans will be revised to include the requested Stormwater O&M note.

15. *58-11(G)(3) An as-built survey of all stormwater BMPs must be submitted to the Township in paper and digital (dwg) formats. A note must be added to the plans stating an as-built survey will be completed and submitted in both formats to the Township.*

    RESPONSE: The plans will be revised to include the requested Stormwater as-built note.

16. *58-11(H)(1) The property owner shall sign an operations and maintenance agreement with the Township addressing stormwater BMPs that are to be privately owned.*

    RESPONSE: The Applicant will sign the necessary Stormwater O&M agreement.

RESOLUTION 2004-8:

17. *I(B)(4)(g) This section of the ordinance requires provisions be made to effectively accommodate the increased runoff caused by changed soil and surface conditions during and after development of the site.*

    RESPONSE: This project reduces impervious coverage by the removal of significant areas (approximately 7,000SF) of existing pavement, adding grass/landscape areas and thereby reducing stormwater runoff from the property. Said landscape areas will propose a soil amendment BMP, to further reduce runoff and provide water quality benefits.

18. *II(C)(1) All earth disturbance activities shall limit the rate of stormwater runoff so that no greater runoff is permitted from any point on the site than that of the site at its maximum development potential in its natural condition of the same frequency storm, except where deemed necessary by the Township Engineer. Where disturbed earth is the existing condition, meadow shall be used as the starting basis for such calculations, regardless of the actual conditions.*

    RESPONSE: As the site is stabilized with pavement in its existing condition, and the amount of pavement is reduced in the post-development condition all stormwater runoff is limited so no greater runoff will leave this property after development. This project creates approximately 7,000 SF of new landscape islands whereas the building pad is only approximately 4,600 SF and approximately 1,300 SF of sidewalk connection. We will provide stormwater calculations showing the reduction in runoff.

19. *II(C)(2) The increased runoff from the proposed development must be controlled by permanent runoff control measures. All runoff control measures shall be evaluated for their effectiveness during the one-hundred-year storm. The required stormwater management calculations must demonstrate compliance with the requirements of this section of the ordinance.*

    RESPONSE: We will provide stormwater calculations showing the reduction in runoff.

20. *II(C)(3) All plans and designs for stormwater management systems and facilities submitted to the Township for approval shall determine stormwater peak discharge and runoff by use of the Soil Cover Complex Method as set forth in the U.S. Department of Agriculture, Soil Conservation Service Publication entitled, "Urban Hydrology for Small Watersheds," Technical Release #55 or latest edition thereof.*

    RESPONSE: We will provide stormwater calculations showing the reduction in runoff.

21. *II(C)(8)(d) The following note shall be attached to all drainage plans and signed and sealed by the applicant's Registered Professional Engineer experienced in geotechnical and soil engineering: "I certify that the proposed facility is/is not underlain by limestone."*

    RESPONSE: The plans will be revised to include the requested note.

22. *II(F)(3)(d)(4)(d) A soils evaluation of the project site shall be performed to determine the suitability of any infiltration BMPs, if any. The evaluation shall be performed by a Registered Professional Engineer experienced in geotechnical engineering or a Certified Professional Soil Scientist and at a minimum, address soil permeability, depth to bedrock, susceptibility to sinkhole formation, and subgrade stability. A copy of the results of the soils evaluation must be submitted to the Township.*

    RESPONSE: The proposed soil amendment BMP does not require a soils evaluation.

ADDITIONAL COMMENTS:

23. *The construction fence called out on the Erosion and Sediment Control Plan must be shown visually.*

RESPONSE: The plans will be revised to visually show the construction fence.

Should you have any questions or comments regarding this or any other matter, please do not hesitate to contact our office.

Very truly yours,
LANDCORE Engineering Consultants, PC



D. Alex Tweedie, PE, Sr Project Manager

Enclosure
cc: Federal Realty Investment Trust (via email)

Whitemarsh TOWNSHIP

616 GERMANTOWN PIKE - LAFAYETTE HILL, PA 19444-1821
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BOARD of SUPERVISORS

Laura Boyle Nester – Chair
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Richard L. Mellor, Jr.
Township Manager

December 1, 2021

Federal Realty Investment Trust
c/o Craig Robert Lewis, Esq.
Kaplin Stewart
910 Harvest Drive; Suite 200
Blue Bell, PA 19422

Re: SLD #02-20 Federal Realty Investment Trust/ 1842 Bethlehem Pike (Flourtown Shopping Center)
Revised Land Development - Proposed Bank with Drive-Through Facility
Zoning Ordinance Compliance Review Letter

Dear Mr. Lewis,

Please accept this as a review of the Zoning Ordinance compliance issues for the above referenced Land Development application, based on the 13-page plan set prepared by Landcore Engineering Consultants, P.C., dated March 4, 2021, with a revision date of October 21, 2021, and the 4-page architectural elevations by JL Architects, dated October 12, 2021. This review also refers a letter dated October 21, 2021 from Landcore, which was in response to the Township's initial review letter dated April 22, 2021 (authored by Gilmore & Associates).

The Applicant proposes to expand the existing Flourtown Shopping Center and build a bank with a drive-through facility. The property and proposed improvements are located in both Springfield and Whitemarsh Townships. The comments herein refer only to the portions of those located in Whitemarsh Township. The portion of the property to be developed is located within the Village Commercial District Sub-District 3 (VC-3), the Floodplain Conservation District, and the Riparian Corridor Conservation Overlay District.

1.	§116-28.A.(2)	In the letter dated October 21, 2021, the Applicant states they have noted the requirement to furnish a letter from the appropriate authority indicating the availability and supply of water for the proposed project to the Zoning Officer.
2.	§116-29	In the letter dated October 21, 2021, the Applicant states they have noted the requirement to obtain approval of the Whitemarsh Township Authority with regard to an adjusted connection for sanitary sewerage needs.
3.	§116-165	A variance was granted as part of Zoning Hearing Board Decision 2021-30 to permit earth disturbance/construction, removal of existing pavement, and installation of curbing, sidewalk, landscape islands and other improvements as shown on the plans within the floodway fringe.
4.	§116-166.B.	A Special Exception was granted as part of Zoning Hearing Board Decision 2021-30 to permit utilities within the floodway fringe.

"A GREAT PLACE TO LIVE AND WORK"

5.	§116-184.D.(8)	A variance was granted as part of Zoning Hearing Board Decision 2021-30 to permit parking on an adjacent lot and for zero parking spaces rather than the 3 parking spaces required.
6.	§116-184.G.	In the letter dated October 21, 2021, the Applicant states they have noted the requirement to conform to the requirements of the Whitemarsh Township Fire Prevention Code as acted and amended, and to obtain approval from the Whitemarsh Township Fire Marshal. Please see the enclosed Fire Marshal memo dated November 3, 2021.
7.	§116-185	A special exception was granted as part of Zoning Hearing Board Decision 2021-30 to permit shared parking with adjacent lots (owned by the same owner in Springfield Township).
8.	§116-258.C.(2)	The Riparian Corridor Conservation District Overlay must be shown on the plan in accordance with this section.
9.	§116-259.A.	A variance was granted as part of Zoning Hearing Board Decision 2021-30 to permit the proposed bank to be located within the side yard of the Riparian Corridor Conservation Overlay District.
10.	§116-260.C.	A variance was granted as part of Zoning Hearing Board Decision 2021-30 to permit modifications to existing nonconforming parking spaces and drive aisles within the Riparian Corridor Conservation Overlay District.
11.	§116-290.E.(5)	The bank drive-through is a conditional use in the VC-3 District in accordance with this section. A separate zoning review has been provided for the conditional use application.
12.	§116-291.A.(2)	In the letter dated October 21, 2021, the Applicant states that the proposed utility services will be underground.
13.	§116-291.B.(1)	In accordance with this section, we believe that pedestrian access needs to be added to a portion of the bank that faces Bethlehem Pike.
14.	§116-291.B.(7)(a)	In the letter dated October 21, 2021, the Applicant states that the requirement for all ground-mounted HVAC units or other utility equipment to be screened from view using masonry walls and landscaping has been noted. These features must be shown on the plans.
15.	§116-291.B.(7)(b)	In the letter dated October 21, 2021, the Applicant states that there will be no new trash enclosures installed as part of the proposed project.
16.	§116-291.D.(1)	This section states that incident light spill-off at the development boundaries shall not exceed 0.10 footcandle at any point along off-street areas. The submitted Lighting Plan shows footcandles exceeding this requirement along the northwestern point of the VC-3 and B-Residential boundary line.
17.	§116-207(1), §116-208, §116-209, §116-210, §116-298	These sections of the ordinance describe signs which are permitted in the districts on which the subject property is located. In lieu of providing plans that detail proposed signs, the Applicant states its intention to submit a sign permit application following land development approval.

Should you have any questions, please do not hesitate to contact me.

Very truly yours,

Charles L. Gattenplan, AICP
Director of Planning and Zoning/Zoning Officer

Enclosed: Fire Marshal Memo dated November 3, 2021

cc: Mr. Richard L. Mellor Jr., Township Manager
Mr. Sean Halbom – Assistant Township Manager
Mr. Robert A. Sztubinski, B.C.O. – Director of Building & Codes
Mr. Nick Weaver – Fire Marshal
Mr. Sean Kilkenny, Esq.; Township Solicitor
Mr. Mark Penacale, Director of Planning & Zoning, Springfield Township
Mr. Timothy P. Woodrow, PE – Springfield Township Engineer
Mr. Andy Bottaro, Federal Realty Investment Trust – Owner/Applicant
D. Alexander Tweedie, PE – Landcore Engineering, Applicant's Engineer

GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES

December 30, 2021

File No. 2020-06067

Mr. Richard L. Mellor, Jr., Township Manager
Whitemarsh Township Municipal Building
616 Germantown Pike
Lafayette Hill, PA 19444

Reference: Preliminary/Final Plan Review
1890 Bethlehem Pike – Flourtown Shopping Center
Whitemarsh Township, Montgomery County, Pennsylvania
SLD #02-20

Dear Mr. Mellor:

In reference to the above-mentioned property, we have reviewed plans prepared by Landcore Engineering Consultants, PC, dated March 4. 2021, and last revised October 21, 2021. The property and the proposed improvements are located in both Springfield and Whitemarsh Townships, and the comments herein refer only to the portions of those located in Whitemarsh Township. The following comments are offered for your consideration:

SUBDIVISION AND LAND DEVELOPMENT ORDINANCE

	Section	Description
1.	105-21(B)(1)(n)	The applicant is requesting a waiver from the requirements of this section of the ordinance, which requires the plans to show existing principal buildings (and their respective uses) and driveways on the peripheral strip. Sewer lines, storm drains, culverts, bridges, utility easements, quarries, railroads, and other significant man-made features within 500 feet of and within the site, including properties across streets. The granting of any waiver should be conditioned that the plans include aerial photography that shows the required features.
2.	105-21(B)(9)(c)[2]	The applicant is advised that the Township Planning Commission, at its discretion, may request the preparation of a traffic impact study for any land development.

	Section	Description
3.	105-21(B)(9)(c)[2]	The application included a traffic impact analysis limited to study of queuing at the bank drive-through, which must be expanded to address vehicular flow through the site. At a minimum, the following must be addressed: • The transportation impact study shall contain full documentation of the proposed internal and existing external transportation system. This description shall include proposed internal vehicular, bicycle and pedestrian circulation, all proposed ingress and egress locations, all internal roadway widths and rights-of-way, parking conditions, traffic channelizations, and any traffic signals or other intersection control devices within the site. The site design shall be shown to maximize potential public transportation usage to and from the development. • During a site visit, it was observed that the secondary unsignalized site access to the site is heavily used. The proposed improvements appear to align a new drive aisle with an existing drive aisle to the South, which could encourage additional flow to/from the secondary site access. Additional study of this secondary access should be performed, to evaluate the impact of the realignment on overall vehicular flow through the site. • The plans must be revised to address traffic flow during construction; especially how vehicles entering from Bethlehem Pike will be routed.
4.	105-21.1(K)(2)	Within the North Transportation Service Area an impact fee in the amount of Two Thousand Eight Hundred and Twenty-Five Dollars ($2,825.00) per anticipated peak hour trip must be provided by the applicant. Based on data documented within the latest edition of the ITE Trip Generation Manual, will generate 50 PM peak hour trips. Therefore, the traffic impact fee totals $141,250.00 ($2,825.00 x 50 peak hour trips).
5.	105-48	Within any land development, street trees shall be planted along all streets where suitable street trees do not exist. The minimum trunk diameter, measured at a height of six inches above the root ball, shall be three inches. The required Landscaping Plan must show existing and proposed trees, if required, along Bethlehem Pike. Additionally, the note in the Landscape Requirements Chart on Sheet 10 indicating "no street frontage" is not consistent with the plan and must be revised in order to list the dimension of site street frontage along Bethlehem Pike.
6.	105-49	Interior crosswalks may be required wherever necessary to facilitate pedestrian circulation and to give access to community facilities in blocks of over 1,000 feet in length. Two proposed pedestrian crossings in front of the new building must be revised to direct pedestrians to a safe landing area, instead of towards a vehicle drive aisle.
7.	105-52	Buffer yards are required between land developments and along existing streets to soften visual impact, to screen glare, and to create a visual barrier between conflicting land uses. The plans must be revised to provide a table detailing the buffer yard requirements, in accordance with Section 105-52.B as well as the actual buffers provided. All landscaping plans are subject to the review and approval of the Shade Tree Commission.
8.	105-53(D)	This section of the ordinance requires the dedication of land in the amount of 10% of the total Site Area for Park and/or Recreational use. The applicant has the option of offering a fee in lieu of dedicating actual land area and can also provide a combination of a fee in lieu and dedication of land. All offers of land and/or fees in lieu of dedication must meet the requirements of this section of the ordinance.

	Section	Description
9.	105-76	The applicant must obtain a letter of approval from the Township Fire Marshal in order to ensure that adequate fire protection is provided.
10.	105-83	Street trees and other required plantings shall be in accordance with §§ 105-39, 105-48 and 105-52.
11.	105-89	The developer shall enter into a written agreement with the Township in the manner and form approved by the Solicitor wherein the developer shall agree, to construct or cause to be constructed at his own expense all proposed improvements shown on the approved land development plan, all in strict accordance with the standards and specifications of the Township and within the time specified in said agreement, and to deposit with the Township financial security in an amount sufficient to cover the cost of all subdivision or land development improvements, including both public and private improvements.

CHAPTER 55 - TREE PROTECTION STANDARDS

	Section	Description
12.	55-4(A)	A Tree Survey Plan prepared in accordance with the requirements contained in this section of the ordinance must be submitted to the Township. The tree survey plan shall be reviewed by the Shade Tree Commission in a public meeting.

GRADING, EROSION CONTROL, STORMWATER MANAGEMENT AND BEST MANAGEMENT PRACTICES ORDINANCE:

	Section	Description
13.	58-8(B)	Stormwater facilities shall be accessible to permit periodic maintenance and an access easement shall be provided to permit such access. The following blanket stormwater easement note, must be added to the plan: *'Stormwater facilities shall be owned and maintained by the property owner in perpetuity. The property owner shall provide a blanket stormwater access easement to the Township for the purpose of access to the stormwater facilities. If, in the judgment of the Township Engineer, the owner has failed to maintain the stormwater facilities in such a manner as to ensure their proper functioning, the Township after providing a written notice, shall have the right to enter upon the lands of the owner and to make any repairs as may be necessary to the stormwater facilities to ensure that such facilities function and perform in accordance with the design specifications. Any and all costs incurred by the Township for such repairs and/or maintenance shall be paid in full by the owner. A lien or liens may be placed against the property if the owner fails to remit payment within sixty (60) days.'*
14.	58-11(G)(1)(b)	The plans must be revised to include a note stating the ownership and maintenance of stormwater BMPs shall be the responsibility of the owner or private management entity of the property.

	Section	Description
15.	58-11(G)(3)	An as-built survey of all stormwater BMPs must be submitted to the Township in paper and digital (dwg) formats. A note must be added to the plans stating an as-built survey will be completed and submitted in both formats to the Township.
16.	58-11(H)(1)	The property owner shall sign an operations and maintenance agreement with the Township addressing stormwater BMPs that are to be privately owned.

RESOLUTION 2004-8:

	Section	Description
17.	I(B)(4)(g)	This section of the ordinance requires provisions be made to effectively accommodate the increased runoff caused by changed soil and surface conditions during and after development of the site.
18.	II(C)(1)	All earth disturbance activities shall limit the rate of stormwater runoff so that no greater runoff is permitted from any point on the site than that of the site at its maximum development potential in its natural condition of the same frequency storm, except where deemed necessary by the Township Engineer. Where disturbed earth is the existing condition, meadow shall be used as the starting basis for such calculations, regardless of the actual conditions.
19.	II(C)(2)	The increased runoff from the proposed development must be controlled by permanent runoff control measures. All runoff control measures shall be evaluated for their effectiveness during the one-hundred-year storm. The required stormwater management calculations must demonstrate compliance with the requirements of this section of the ordinance.
20.	II(C)(3)	All plans and designs for stormwater management systems and facilities submitted to the Township for approval shall determine stormwater peak discharge and runoff by use of the Soil Cover Complex Method as set forth in the U.S. Department of Agriculture, Soil Conservation Service Publication entitled, "Urban Hydrology for Small Watersheds," Technical Release #55 or latest edition thereof.
21.	II(C)(8)(d)	The following note shall be attached to all drainage plans and signed and sealed by the applicant's Registered Professional Engineer experienced in geotechnical and soil engineering: *"I certify that the proposed facility is/is not underlain by limestone."*
22.	II(F)(3)(d)(4)[d]	A soils evaluation of the project site shall be performed to determine the suitability of any infiltration BMPs, if any. The evaluation shall be performed by a Registered Professional Engineer experienced in geotechnical engineering or a Certified Professional Soil Scientist and at a minimum, address soil permeability, depth to bedrock, susceptibility to sinkhole formation, and subgrade stability. A copy of the results of the soils evaluation must be submitted to the Township.

ADDITIONAL COMMENTS

23. The construction fence called out on the Erosion and Sediment Control Plan must be shown visually.

Any future submission of the design plans for this project must be accompanied by a letter, prepared by the applicant's engineer, which addresses each of the comments contained in this report. Should you have any questions regarding this matter, please do not hesitate to contact me at this office.

Sincerely,

Krista Heinrich, P.E.
Township Engineer
Gilmore & Associates, Inc.

KH/sl

cc: Mr. Charles L. Guttenplan, AICP – Director of Planning and Zoning
Mr. Sean Kilkenny, Esq.; The Law Offices of Sean Kilkenny, LLC – Township Solicitor *(via email)*
Mr. Sean Halbom – Assistant Township Manager
Mr. Robert A. Sztubinski, B.C.O. – Director of Building & Codes *(via email)*
Mr. Nick Weaver – Fire Marshal
Mr. Mark Penacale, Director of Planning & Zoning, Springfield Township
Mr. Timothy P. Woodrow, PE – Springfield Township Engineer
Mr. Andy Bottaro, Federal Realty Investment Trust – Owner/Applicant
Craig R. Lewis, Esq.– Applicant's Attorney
D. Alexander Tweedie, PE – Landcore Engineering, Applicant's Engineer

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WHITEMARSH TOWNSHIP

To: Charlie L. Guttenplan, Director of Planning & Zoning/Zoning Officer

From: NICHOLAS W. WEAVER, FIRE MARSHAL

Subject: **SLD #02-20 Federal Realty/Flourtown Shopping Center**

Date: November 3, 2021

cc:

This application cannot be approved at this time for the following outstanding items:

1. Update Fire Apparatus Access and Turning plan with correct dimensions. Overall length 49' and wheelbase 23' (Tandem axle).

Nicholas W. Weaver
Fire Marshal
616 Germantown Pike
Lafayette Hill, PA 19444
Phone: 610-825-3535 ext. 2614
Email: nweaver@whitemarshtwp.org

WHITEMARSH TOWNSHIP

To: Richard L. Mellor, Jr., Township Manager

From: SEAN HALBOM, ASST. TOWNSHIP MANAGER

Subject: **April 6, 2021 STC Meeting Summary: SLD# 02-20 (Flourtown Shopping Center)**

Date: August 10, 2020

cc: Krista Heinrich, PC, Township Engineer; Charlie Guttenplan AICP, Director of Planning and Zoning; Pat Doran, Chair, Planning Commission; Robert Bacine, Chair, Zoning Hearing Board

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At the April 6th, 2021 Shade Tree Commission meeting Alex Tweedie presented on behalf of the applicant for SLD# 02-20, Flourtown Shopping Center. The landscaping plans were approved in a 5-0 vote by the Shade Tree Commission with the following changes to the presented plans:

- All trees displayed with a 2" caliper will be replaced with trees measuring at 3" caliper.
- The non-native tree species will be swapped for a native tree species.
- The non-native perennial plants will be swapped for native perennial species.

Sean Halbom, MPA
Assistant Township Manager
616 Germantown Pike
Lafayette Hill, PA 19444
Phone: 610-825-3535 ext. 2604
Email: shalbom@whitemarshtwp.org

The Township of Springfield

MONTGOMERY COUNTY, PENNSYLVANIA

Township Bldg., 1510 Paper Mill Rd., Wyndmoor, PA 19038

website: www.SpringfieldMontco.org Phone: 215-836-7600

Fax: 215-836-7180

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Timothy P. Woodrow, PE
Engineer

Michael Taylor
Township Manager
Springfield Township

December 8, 2021

Re: Planning Commission Recommendation on Application LD-21-01, filed by Federal Realty Investment Trust for the property located at 1890 Bethlehem Pike, Flourtown, PA 19031.

Dear Mr. Taylor,

This letter is sent to inform you that on Tuesday, December 7, 2021 the Springfield Township Planning Commission recommended approval of the Land Development application and the requested waivers filed by Federal Realty Investment Trust for the property located at 1890 Bethlehem Pike, Flourtown, PA 19031. The waivers are as follows:

Section 95-7.1. This is the requirement to submit a traffic study with the Land Development submission. A traffic impact analysis was submitted, but that was limited to the stacking provisions of the drive-thru ATM lane.

Section 95-10.This provision of the Subdivision & Land Development Ordinance defines the required right-of-way widths and cart way width for streets associated with this development.

Section 95-11.I. This is the requirement for plantings within the parking lot areas and on the parking lot islands.

The recommendation to approve the plan and the requested waivers received a favorable vote of 5-0. The Planning Commission offered this recommendation with the following conditions:

1. The traffic improvements and traffic calming measures presented to the Township be installed as a condition of this Land Development approval.

2. The conditions listed within the Township Engineer's review letters dated April 21, 2021 and November 29, 2021 be addressed to the satisfaction of the Board of Commissioners of Springfield Township.

Respectfully Submitted,

Angela Murray
Planning Commission Acting Chairperson
Springfield Township

WOODROW & ASSOCIATES

November 29, 2021

Mark Penecale, Planning Director
Springfield Township
1510 Paper Mill Road
Wyndmoor, PA 19038

Reference: 1890 Bethlehem Pike / Flourtown Shopping Center

Dear Mark:

My office is in receipt of a 13-sheet set of plans prepared by Landcore Engineering of Philadelphia. The plans are originally dated March 4, 2021, and have been most recently revised October 21, 2021, and illustrated as the first revision to the documents. The proposal for the construction of a new building, politically bisecting the boundary defining both Whitemarsh Township and Springfield Township, has been modified. The initial application called for the creation of a building to house a bank, as well as new restaurant. The proposed modification eliminates the restaurant component now seeking only the construction of a new bank pad. The bank is to be served by a drive through window with modifications to the traffic circulation pattern in the area of the shopping center providing an exit onto northbound Bethlehem Pike.

It is our understanding that certain floodplain conservation district issues that were a part of the Whitemarsh application have now been quieted to the extent that these plans are responsive to a review issue by my office on April 20, 2021. Key components of the revised application include the following threshold issues:

1. The April review identified certain concerns related to traffic circulation and safety throughout the shopping center. The Township manager, public works director and I met on site with the developers and their engineers to talk about traffic safety improvements that should be considered. I am happy to report that the revised plans have taken the conclusions from that meeting and implemented modifications to the site. The southerly access to the property will remain a one-way traffic circulation pattern heading east along the retail store frontages. However, instead of a two-lane configuration, pedestrian refuge islands have been added and drop off spaces provided along the store frontages. These pull off spaces will be protected by curbing islands defining the one-lane-through traffic movement. We believe that pedestrians will be much better suited crossing from the parking spaces to the retail stores having only to negotiate a single lane of traffic once this improvement has been implemented.
2. Construction commitments – the plan has notes deferring the implantation of the driveway improvements and asking that there be no connection made between the bank construction and

Municipal/Civil Consulting Engineers
Suite 5 • 1108 North Bethlehem Pike • Lower Gwynedd, PA 19002
Phone: 215-542-5648 • Fax 215-542-5679
Established 1996

November 23, 2021
Mark Penecale, Planning Director
Springfield Township
Reference: 1890 Bethlehem Pike / Flourtown Shopping Center

the future traffic pattern improvements. In my opinion, there must be a defined date by which this construction is to be complete. Further, some form of financial security must be posted to guarantee the work will be done.

3. Pedestrian Connections Main Driveway – A defined sidewalk has been added from the Bethlehem Pike access to the property along the main driveway connecting to the retail stores. This sidewalk will connect the bus stop and other pedestrian movements at the intersection to the retail facility.

4. Pedestrian Connections – Bank Pad – Accommodation for pedestrian crossing have been added to the revised plan directing patrons from parking areas to the new bank pad and existing restaurant pad, showing a significant improvement from the earlier application.

5. Stormwater Management – A significant landscape island has been added to the plans reducing the existing impervious cover on the property. This improvement is located in Whitemarsh Township, therefore, deferring to that entity for any specific concerns regarding construction.

General Design Topics:

1. It should be noted that this application creates an opportunity for the inspection of public improvements, including sidewalks and curbing.

2. It is noted that significant landscaping is being added in conjunction with these revised plans. Again, the majority of that improvement occurs in Whitemarsh Township, but does provide aesthetic benefit to our community as well.

3. The plans show the intent to construct drop-off islands along the main driveway. However, they do not design these drop-off areas with the efficient detail allowing a contractor to build these improvements. A detailed design of grade and alignment will be needed prior to construction.

I would like to take this opportunity to thank the applicant for working with us for this much-needed improvement to the shopping center. Please contact me if any questions you may have regarding the content of this review.

Sincerely,

Timothy P. Woodrow, P.E.
Township Engineer
Woodrow & Associates, Inc.

TPW/del

cc: Craig Robert Lewis, Esq. – Kaplin Stewart
A. Michael Taylor, Township Manager – Springfield Township
Alex Tweedie, P.E. – Landcore engineering
James J. Garrity, Esq., Wisler Pearlstine, LLP. – Township Solicitor

The Township of Springfield

MONTGOMERY COUNTY, PENNSYLVANIA

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Timothy P. Woodrow, PE
Engineer

April 22, 2021

Mark Penecale
Director of Planning and Zoning
Springfield Township
1510 Paper Mill Rd.
Wyndmoor, PA 19038

RE: Flourtown Shopping Center
LOCATION: 1874 Bethlehem Pike

Dear Mr. Penecale:

The Springfield Township Emergency Services Board is in receipt of plans for the addition of a new building to be occupied as a restaurant and bank. The building will be located between Mr. P's and the exit to Bethlehem Pike. The building will be located in both Whitemarsh and Springfield Townships. The Board had no objections to the plan and commented only that it appeared fire sprinkler systems were to be installed.

If there should be any questions please feel free to contact me.

Sincerely,

Charles H. Baily
Fire Marshal

Cc: Timothy Woodrow, PE Township Engineer
Michael Taylor, Township Manager

MONTGOMERY COUNTY
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WWW.MONTCOPA.ORG

SCOTT FRANCE, AICP
EXECUTIVE DIRECTOR

November 30, 2021

Mr. Mark Penecale, Director of Planning & Zoning
Springfield Township
1510 Paper Mill Road
Wyndmoor, Pennsylvania 19038

Re: MCPC #20-0111-004
Plan Name: Flourtown Shopping Center
(2,450 sq. ft. pad site/shopping center on parcels totaling 23.65 acres.)
Situate: North of Springfield Avenue/south of W. Valley Green Road
Springfield & Whitemarsh Townships

Dear Mr. Penecale:

We have reviewed the above-referenced land development plan in accordance with Section 502 of Act 247, "The Pennsylvania Municipalities Planning Code," as you requested on November 9, 2021. We forward this letter as a report of our review.

BACKGROUND

The applicant, Federal Realty Investment Trust, is proposing to construct an addition to the existing Flourtown Shopping Center, which would be located at the northwest corner of the property. As proposed, the building would include a 2,450-square foot bank with a drive-through lane. The property is located in both Whitemarsh and Springfield Townships, and the improvements are proposed in what is currently an existing parking area. The majority of the proposed bank building is in Springfield, while a smaller portion of the building is in Whitemarsh. The Whitemarsh portion of the shopping center is split zoned between the VC-3 Village Commercial District and the B-Residential Zoning District, though the proposed pad site development is entirely in the VC-3 area. The portion of the proposed site in Springfield is in the township's Shopping Center (S) District.

As an existing shopping center, the site contains a parking lot which is primarily located in the Springfield portion of the property. The applicant has received a variance from the Springfield Township Zoning Hearing Board for the number of on-site parking spaces required. The applicant also received a number of variances related to parking requirements from the Whitemarsh Township Zoning Hearing Board. The property is served by public water and sewer, and the plan is dated March 4, 2021. We previously reviewed a prior submission for this site on April 16, 2021.

COMPREHENSIVE PLAN COMPLIANCE

The Future Land Use element of the 2012 Springfield Township Comprehensive Plan identifies the Flourtown Shopping Center as a Community Mixed Use and Services area. In addition, the site is also identified as a Community Mixed Use Area in the Future Land Use Plan of the Montgomery County Comprehensive Plan, *Montco 2040: A Shared Vision*. Community shopping centers, such as Flourtown Shopping Center, and commercial uses, such as the proposed bank, are consistent with both land use designations.

RECOMMENDATION

The Montgomery County Planning Commission (MCPC) generally supports the applicant's proposal, however, in the course of our review we have identified the following issues that the applicant and both Springfield Township may wish to consider prior to final plan approval. Our comments are as follows:

REVIEW COMMENTS – SPRINGFIELD TOWNSHIP

LANDSCAPING

A. Parking Lot Landscaping. The applicant is proposing to convert four existing parking spaces to ADA accessible parking stalls near the front of the proposed building addition. The applicant should assess the health and condition of the existing trees and vegetation in the planting areas near the ADA parking stalls to ensure that the trees are healthy and that no mitigation or replacement trees are warranted.

B. Improved Landscaping Island. The applicant has incorporated comments from our previous letter regarding the size of the new proposed landscaping island and has made it significantly larger than originally proposed. This is likely due to the extra space gained from reducing the proposed improvements from two buildings to one. However, this extra space significantly improves the parking lot landscaping space, allowing for additional trees and shrubs to be planted, and creates a more sustainable environment for the effective growth of the proposed tree and shrub groups.

INTERNAL CIRCULATION AND SAFETY

A. Enhanced Pedestrian Safety Measures. We would like to reiterate comments from our previous letter related to pedestrian safety and circulation within the shopping center. Given the proposed building's location on a main access drive leading to the traffic signal on Bethlehem Pike, additional pedestrian safety measures should be considered to prevent potential conflicts between pedestrians and vehicles entering/exiting the shopping center. This could potentially include traffic calming devices such as a speed table, flashing signals near proposed crosswalks, or enhanced pedestrian lighting. The applicant notes on page 3 of the plan that the proposed pedestrian and vehicular circulation improvements are conceptual and that the applicant agrees to work with Springfield Township to implement the necessary pedestrian and vehicular improvements. We support this effort to work cooperatively to ensure that a safe pedestrian environment is created and vehicular circulation issues are addressed in the shopping center to the greatest extent feasible.

B. New Sidewalk. The improved landscaping island also includes a new proposed sidewalk creating a safe pedestrian connection from this area of the shopping center to the existing sidewalk on Bethlehem Pike.

C. Bethlehem Pike Road Diet. The applicant should coordinate with PennDOT and the appropriate project manager on the road diet project and planned safety improvements for the Bethlehem Pike Corridor.

CONCLUSION

We wish to reiterate that MCPC generally supports the applicant's proposal to expand the existing shopping center through the addition of the proposed bank; however we believe that our suggested revisions will better achieve both Springfield Township's planning objectives for commercial development.

Please note that the review comments and recommendations contained in this report are advisory to the municipality and final disposition for the approval of any proposal will be made by the municipality.

Should the governing body approve a final plat of this proposal, the applicant must present the plan to our office for seal and signature prior to recording with the Recorder of Deeds office. A paper copy bearing the municipal seal and signature of approval must be supplied for our files. Please print the assigned MCPC number (#20-0111-004) on any plans submitted for final recording.

Sincerely,

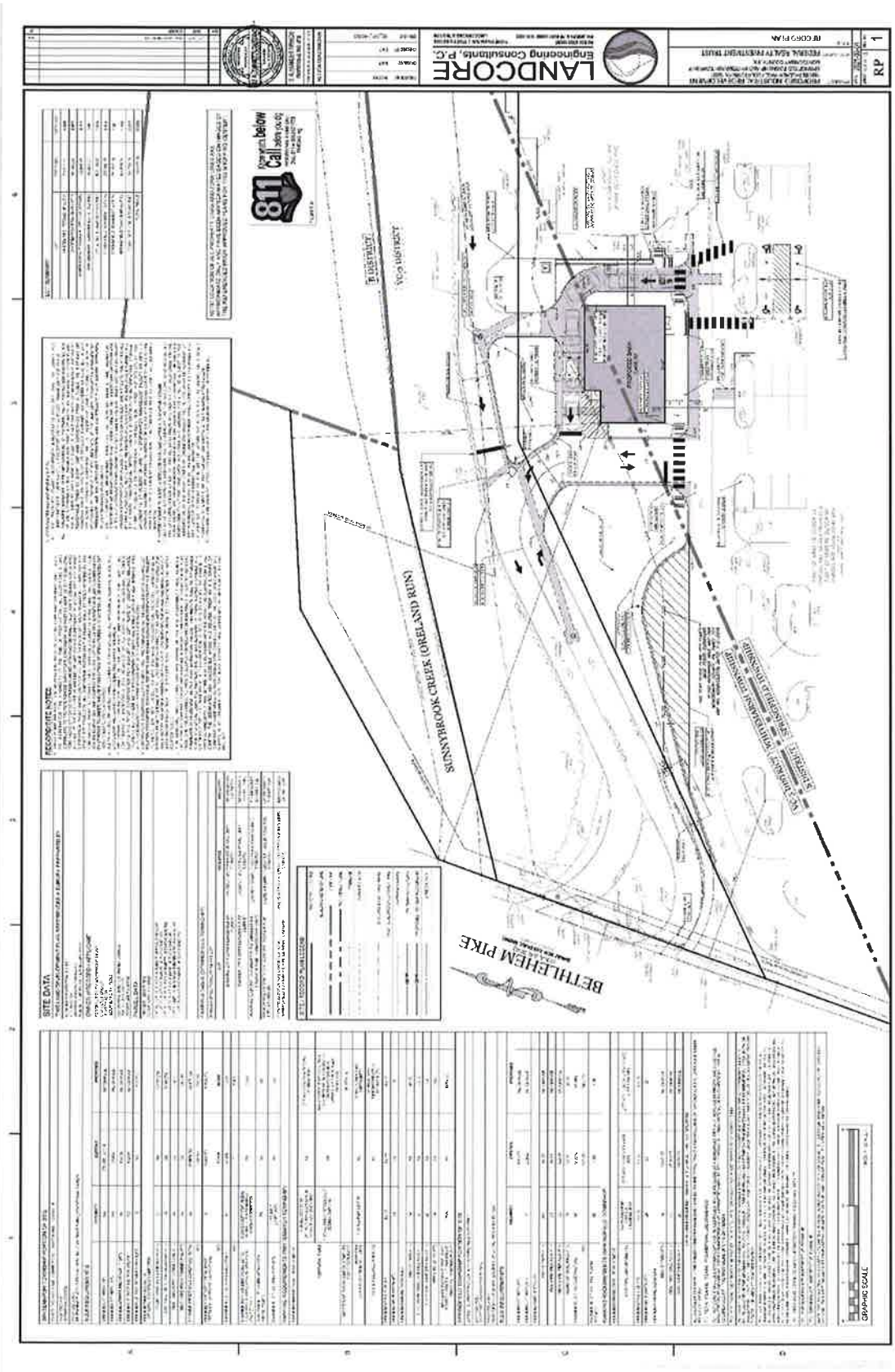
Aaron Holly, Community Planner
aholly@montcopa.org - 610-278-3748

c: Alexander Tweedie, Applicant's Representative
A. Michael Taylor, Springfield Township Manager
Amanda Helwig, Chair, Springfield Township Planning Commission
Charles L. Guttenplan, Whitemarsh Township Director of Planning and Zoning
Nikhil Kharva, HNTB
Ashwin Patel, PennDOT
Barry Jeffries, MCPC

Attachments: Aerial Photo of Site
Applicant's Plan

Flourtown Shopping Center
MCPC #200111004

Montgomery County Planning Commission
Montgomery County Courthouse - Planning Commission
P.O. Box 311 • Norristown, PA 19404-0311
ph (610) 278-3722 • fax (610) 278-3941
www.montcopa.org/planning
Aerial photography provided by NearMap


LANDCORE
Engineering Consultants, P.C.
SUNNYBROOK CREEK (ORELAND RUN)
BETHLEHEM PIKE
SITE DATA
RECORDATION NOTES
GRAPHIC SCALE

ORIGINAL SUBMISSION 3.15.2021

PRELIMINARY / FINAL LAND DEVELOPMENT PLAN

PROPOSED SITE IMPROVEMENTS

1890 BETHLEHEM PIKE, FLOURTOWN PA 19031
SPRINGFIELD TOWNSHIP AND WHITEMARSH TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

SHEET INDEX		
COVER SHEET	CL	1 of 13
RECORD PLAN	RP	2 of 13
OVERALL SITE PLAN	OA	3 of 13
EXISTING CONDITIONS / DEMOLITION PLAN	ECD	4 of 13
EROSION and SEDIMENT CONTROL PLAN	ES	5 of 13
EROSION and SEDIMENT CONTROL DETAILS	DE	6 of 13
GRADING and DRAINAGE PLAN	GP	7 of 13
UTILITIES PLAN	UP	8 of 13
LIGHTING PLAN	LP	9 of 13
LANDSCAPE PLAN	LA	10 of 13
CONSTRUCTION DETAILS	DT1	11 of 13
CONSTRUCTION DETAILS	DT2	12 of 13
VEHICLE MOVEMENT PLAN	VM	13 of 13

APPROVAL BLOCKS

OWNER'S STATEMENT

WE HEREBY CERTIFY THAT FEDERAL REALTY INVESTMENT TRUST, STEVEN J. GUTTMAN AND DONALD MISNER ARE THE OWNERS / APPLICANTS OF THE DESIGNATED LAND, AND ACKNOWLEDGE THIS PLAN TO BE THE OFFICIAL PLAN OF THE HIGHWAYS AND PROPERTIES SHOWN THEREON SITUATE IN THE TOWNSHIP OF SPRINGFIELD, MONTGOMERY COUNTY, PENNSYLVANIA, AND DESIRE THAT THIS PLAN BE RECORDED ACCORDING TO LAW.

BY _____
FEDERAL REALTY INVESTMENT TRUST

BY _____
STEVEN J. GUTTMAN

BY _____
DONALD MISNER

OWNER'S ACKNOWLEDGEMENT

COMMONWEALTH of PENNSYLVANIA :
COUNTY of MONTGOMERY :

ON THIS _____ DAY OF _____, 20____ BEFORE ME, THE SUBSCRIBER, A NOTARY PUBLIC OF THE COMMONWEALTH OF PENNSYLVANIA, PERSONALLY APPEARED _____, WHO ACKNOWLEDGED HIMSELF TO BE A MEMBER OF _____, AND THAT HE, AS SUCH OFFICER, BEING AUTHORIZED TO DO SO, EXECUTED THIS PLAN ON BEHALF OF _____ FOR THE PURPOSE THAT THIS PLAN BE RECORDED ACCORDING TO LAW.

_____ (SEAL)
NOTARY PUBLIC
MY COMMISSION EXPIRES:

(SEAL)

RECORDER of DEEDS CERTIFICATION

MCPC FILE NO. _____

RECORDER OF DEEDS
RECORDED IN THE OFFICE FOR THE RECORDING OF DEEDS IN AND FOR THE COUNTY OF MONTGOMERY, AT NORRISTOWN, PA., IN PLAN BOOK NO. _____PAGE NO. _____
ON _____.

BOARD of TOWNSHIP COMMISSIONERS APPROVAL BLOCK

APPROVED BY THE BOARD OF TOWNSHIP COMMISSIONERS OF THE TOWNSHIP OF SPRINGFIELD THIS _____ DAY OF _____, 20____.

_____
PRESIDENT

_____
TOWNSHIP ENGINEER

_____
ATTEST : SECRETARY

TOWNSHIP BOARD of SUPERVISORS APPROVAL BLOCK

APPROVED BY THE TOWNSHIP BOARD OF SUPERVISORS OF THE TOWNSHIP OF WHITEMARSH THIS _____ DAY OF _____, 20____.

_____
CHARIMAN

_____
TOWNSHIP ENGINEER

_____
ATTEST : SECRETARY

MCPC No. _____

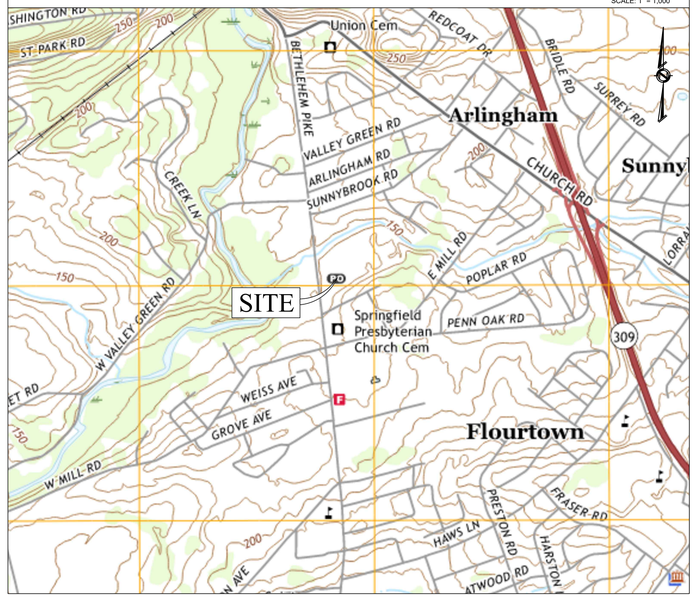
PROCESSED AND REVIEWED
REPORT PREPARED BY MONTGOMERY COUNTY PLANNING COMMISSION IN ACCORDANCE WITH THE MUNICIPALITIES PLANNING CODE.

CERTIFIED ON THIS DATE _____

_____
FOR THE DIRECTOR

MONTGOMERY COUNTY PLANNING COMMISSION

USGS MAP
SCALE: 1" = 1,000'



LOCATION MAP
SCALE: 1" = 500'



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REV.	DATE	COMMENT	BY

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
D. ALEXANDER TWEEDIE
ENGINEER
No. PE071873
PENNSYLVANIA

D. ALEXANDER TWEEDIE
PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE No. 071873

NOT FOR CONSTRUCTION

PROJECT No: 140065
DRAWN BY: MAR
CHECKED BY: DAT
CAD I.D. #: 01_CL_140065

LANDCORE
Engineering Consultants, P.C.
PO BOX 37015 #60297
PHILADELPHIA, PENNSYLVANIA 19101-0615
PHONE 215-824-2510 | FAX 215-324-0428
LANDCORECONSULTING.COM

PROJECT: PROPOSED SITE IMPROVEMENTS
1890 BETHLEHEM PIKE, FLOURTOWN PA 19031
SPRINGFIELD TOWNSHIP AND WHITEMARSH TOWNSHIP
MONTGOMERY COUNTY, PA

APPLICANT: FEDERAL REALTY INVESTMENT TRUST

TITLE: COVER SHEET

DATE: 2021-03-04

SHEET: 01 of 13 | REV. No: 0

CL

D:\DROPBOX (LANDCORE)\PROJECTS\2014\140065 - FEDERAL REALTY - FLOURTOWN PA\DRAWINGS\00-SITE PLANS\01_CL_140065.DWG
MIKE GALANTE @ 2021-3-4 8:29 AM

WHITEMARSH TOWNSHIP PORTION OF SITE

ZONED : VC-3 (VILLAGE COMMERCIAL) - WHITEMARSH TOWNSHIP

EXISTING USE :
SHOPPING CENTER

PROPOSED USE :
RESTAURANT (CONDITIONAL USE), BANK W/ DRIVE THRU (CONDITIONAL USE)(*3)

BULK REQUIREMENTS

	REQUIRED	*EXISTING*		PROPOSED	
MINIMUM LOT AREA (SF)	NA	*776,333 (VC-3)*		NO CHANGE	
MINIMUM LOT AREA (AC)	NA	*17.822*		NO CHANGE	
MINIMUM STREET FRONTAGE (*1)(FT)	50	*682.85*		NO CHANGE	
MINIMUM LOT WIDTH @ BSBL (*1)(FT)	100	*690.62*		NO CHANGE	
MINIMUM BUILDING SEPARATION (*1)(FT)	15	*NA*		36.3 (*8)	
MINIMUM YARD SETBACKS (LOT AREA 15 ACRES OR GREATER)					
FRONT YARD, ULTIMATE R-O-W (FT)	35	*NA*		201.18 (*8)	
FRONT YARD, INTERNAL ROADWAY (FT)	15	*NA*		15.00 (*8)	
SIDE YARD FROM RESIDENTIAL (FT)	45	*NA*		78.14	
REAR YARD FROM RESIDENTIAL (FT)	45	*NA*		NA (*8)	
MAXIMUM IMPERVIOUS COVERAGE (*6)(%)	65	*94.65% (E)*		94.28% (E)	
(SF)		*734,887*		731,905	
MINIMUM VEGETATED OPEN SPACE, TREES OR LANDSCAPING (*1)(*2)(%)	35	*5.34% (E)*		5.72% (E)	
(SF)		*41,446*		44,428	
MAXIMUM BUILDING COVERAGE (*6)(%)	40	*0.00%*		0.36%	
(SF)		*0*		2,771	
MAXIMUM NONRESIDENTIAL BUILDING FOOTPRINT FOR NEW CONSTRUCTION ONLY (*1) (SF)	8,000 EXCEPT FOR RETAIL IN WHICH A MAXIMUM OF 10,000 IS PERMITTED.	*NA*		4,550	
MAXIMUM BUILDING FRONT FACADE WIDTH (*1)(FT)	75	*NA*		60	
MAXIMUM BUILDING HEIGHT (*1)(FT)	3 STORIES (42 FT MAX)	*NA*		< 42	

PARKING REQUIREMENTS (WHITEMARSH TOWNSHIP)

MINIMUM PARKING STALL REQUIREMENT					
RESTAURANT USE	1 STALL PER 50 SF OF PATRON FLOOR SPACE (75% OF GSF ASSUMED)	*NA*		(2,100 X 0.75) / 50 = 31.5 (*6) 32 REQUIRED	
	1 STALL PER 3 PERSONS OF DESIGN CAP. (*4)	*NA*		525 SF/200 SF PER OCCUPANT + 1575 SF/15 SF PER PATRON = 108 PERSON DESIGN CAPACITY/3 = 36 STALLS REQUIRED.	
GREATER OF PARKING REQUIREMENTS FOR RESTAURANT				36 STALLS	
BANK USE (OTHER COMMERCIAL USES)	1 STALL PER 1,000 SF	*NA*		2,450 / 1,000 = 2.450 3 REQUIRED	
TOTAL REQUIRED PARKING		*NA*		39 REQUIRED 5 PROPOSED (*7)(V) SEE NOTE (*5)	
MINIMUM STALL SIZE (FT)	9 x 18	*9 x 18*		9 x 18	
MINIMUM AISLE WIDTH (FT)	24	*24*		24	
MINIMUM PARKING SETBACKS					
FRONT YARD (FT)	10	*NA*		179.35	
SIDE / REAR YARD (NON RES ADJ) (FT)	0	*NA*		79.10	
SIDE / REAR YARD (RES ADJ) (FT)	20	*NA*		NA	
FROM BUILDING (FT)	10	*NA*		10.00	
MAXIMUM PARKING PERCENTAGE BETWEEN STREET LINE AND FRONT PRINCIPAL BUILDING PLANE	25%	*NA*		100% (V)	

SPRINGFIELD TOWNSHIP PORTION OF SITE

ZONED : S (SHOPPING CENTER) - SPRINGFIELD TOWNSHIP

EXISTING USE :
SHOPPING CENTER (PERMITTED)

PROPOSED USE :
RESTAURANT (PERMITTED), BANK W/ DRIVE THRU (PERMITTED)

BULK REQUIREMENTS

	REQUIRED	*EXISTING*		PROPOSED	
MINIMUM LOT AREA (SF)		*1,030,210*		NO CHANGE	
MINIMUM LOT AREA (AC)	2	*23.650*		NO CHANGE	
MINIMUM YARD SETBACKS					
FRONT YARD (FT)	NA	*88.30*		NO CHANGE	
SIDE YARD (RES ADJ) (FT)	25	*49.80*		NO CHANGE	
REAR YARD (RES ADJ) (FT)	25	*133.20*		NO CHANGE	
ADJACENT BUILDINGS (FT)	12	*57.30*		36.30	
MAXIMUM BUILDING COVERAGE (%)	30	*19.22%*		19.39%	
(SF)		*197,970*		199,749	
MAXIMUM BUILDING HEIGHT (NON RES)(FT)	50	*< 50*		< 50	

PARKING REQUIREMENTS (SPRINGFIELD TOWNSHIP)

MINIMUM PARKING STALL REQUIREMENT					
SHOPPING CENTER USE (*5)	5.5 STALLS PER 1,000 GR LEASEABLE SF	*(177,025 / 1,000) X 5.5 = 974 REQ*		((177,025 / 1,000) + (4,550 / 1,000)) x 5.5 = 999 REQ	
MINIMUM STALL SIZE (FT)	9 x 18	9 x 18		9 x 18	
MINIMUM AISLE WIDTH (FT)	24	*24*		24	
MINIMUM PARKING SETBACKS					
FRONT YARD (FT)	10	*14.03 (*7)*		NO CHANGE	
SIDE YARD (RES ADJ) (FT)	25	*26.45 (*7)*		NO CHANGE	
REAR YARD (RES ADJ) (FT)	25	*133.84 (*7)*		NO CHANGE	

| (V) VARIANCE REQUIRED | (NA) NOT APPLICABLE | (NS) NOT SPECIFIED |

ALL CALCULATIONS WITHIN THE TABLES HEREWITH HAVE BEEN BASIED ON THE TOTAL TRACT AREA INCLUSIVE OF PARCELS A, B & C, (LOTS A & B) UNLES NOTED OTHERWISE.

(*1) - PER WHITEMARSH TOWNSHIP CONDITIONAL USE STANDARDS

(*2) - PER CONDITIONAL USE STANDARDS** SAID PERCENTAGES MAY BE REDUCED COMMENSURATE WITH ANY INCREASE IN IMPERVIOUS COVERAGE PERMITTED BY STANDARD NO. 7 FOR NONRESIDENTIAL VC-3 PERMITTED USES, BY STANDARD NO. 8 IN THIS SECTION, OR BY CONDITIONAL USE IN ACCORDANCE WITH THE PROVISIONS OF § 116-297 HEREIN.

(*3) - PER 116-290.E(5) A TRAFFIC IMPACT STUDY IS REQUIRED FOR A CONDITIONAL USE APPROVAL OF A DRIVE-THRU.

(*4) - BASED ON THE TABLE OF THE MAXIMUM FLOOR AREA ALLOWANCE PER OCCUPANT IN THE CURRENT EDITION OF THE WHITEMARSH TOWNSHIP BUILDING CODE OR THE MAXIMUM OCCUPANCY ALLOWANCE UNDER THE PROVISIONS OF THE WHITEMARSH TOWNSHIP FIRE PREVENTION CODE, BOTH OF WHICH WERE UNAVAILABLE. THEREFORE THE CALCULATIONS ARE BASED ON THE ASSUMPTION OF 25% KITCHEN AREA AT 200 SF PER OCCUPANT AND 75% TABLE/CHAIR AREA AT 15 SF PER PATRON.

(*5) - PER "FINAL RECORD PLAN", PREPARED BY GILMORE & ASSOCIATES, DATED 9/13/2013, THE OVERALL CENTER CONTAINS 177,025-SF OF TOTAL LEASEABLE AREA (TLA) AND 713 PARKING STALLS, EQUATING TO A 4.0 PARKING RATIO. THE PROPOSED IMPROVEMENTS WILL INCREASE THE TLA TO 181,575 SF. THE PARKING STALL COUNT WILL DECREASE TO 702, AND THE OVERALL PARKING RATIO WILL BE 3.9. THE PRIOR SPRINGFIELD TOWNSHIP APPROVALS HAVE BEEN BASED OFF OF A REQUIRED 5.5 PARKING RATIO AND THE EXISTING 4.0 RATIO HAS BEEN PREVIOUSLY APPROVED AS AN EXISTING NON-CONFORMANCE. THE REDUCTION OF THIS RATIO TO 3.9 MAY RESULT IN A VARIANCE BEING REQUIRED FROM SPRINGFIELD TWP. ADDITIONALLY, SINCE THE REQUIRED 39 STALLS FOR THE RESTAURANT AND BANK ARE NOT PROVIDED WITHIN WHITEMARSH TOWNSHIP, A VARIANCE IS ALSO LIKELY TO BE REQUIRED FROM WHITEMARSH TOWNSHIP. VERIFICATION FROM THE RESPECTIVE ZONING OFFICERS SHOULD BE OBTAINED.

(*6) - IMPERVIOUS COVERAGE WITHIN RESPECTIVE TOWNSHIP & ZONING DISTRICT.

(*7) - PARKING PROVIDED IN RESPECTIVE TOWNSHIP

(*8) - BUILDINGS WITHIN RESPECTIVE TOWNSHIP

NOTE: THE ZONING ANALYSIS CONTAINED ON THIS PLAN DOES NOT INCLUDE THE VARIOUS BUILDING DESIGN REQUIREMENTS CONTAINED IN SECTION 116-291B. THIS SECTION SHALL BE ASSESSED BY ARCHITECT AT TIME WHEN TENANT OR BUILDING DESIGN IS KNOWN.

SITE DATA

THIS LAND DEVELOPMENT PLAN REFERENCES A SURVEY PREPARED BY

BLUE MARSH ASSOCIATES, INC.
P.O. BOX 563
WARRINGTON PA, 18976-2370
FILE No. 17-80446-058 / DATED 2017-03-17

OWNER of RECORD / APPLICANT

FEDERAL REALTY INVESTMENT TRUST
C/O ALTUS GROUP
PO BOX 92129
SOUTHLAKE TX, 76092

GUTTMAN STEVEN J & MISNER DONALD
1626 E JEFFERSON ST
ROCKVILLE MD 20852

PARCEL DATA

1890 BETHLEHEM PIKE
FLOURTOWN, PA 19031

LOT A: UNIT 15, BLOCK 48 PARCEL # 52-00-01903-007
UNIT 66, BLOCK 60 PARCEL # 65-00-00547-063
LOT B: UNIT 16, BLOCK 48 PARCEL # 52-00-01904-006
UNIT 67, BLOCK 60 PARCEL # 65-00-00547-045
LOT C: UNIT 19, BLOCK 48 PARCEL # 52-00-01904-105
UNIT 17, BLOCK 60 PARCEL # 65-00-00547-027

PARKING TABLE (SPRINGFIELD TOWNSHIP)

PARKING STALL TABULATION PER LOT

LOT	REQUIRED	*PROVIDED*
EXISTING LOT A GROSS LEASEABLE SF 84,956 SF	(84,956 / 1,000) * 5.5 = 467.25 REQUIRED 5.5 RATIO	*472 PROVIDED 5.55 RATIO*
EXISTING LOT B GROSS LEASEABLE SF 92,069 SF	(92,069 / 1,000) * 5.5 = 506.37 REQUIRED 5.5 RATIO	242 PROVIDED 2.63 RATIO (E)
EXISTING CONDITION, COMBINED TOTAL (SPRINGFIELD TOWNSHIP & WHITEMARSH TOWNSHIP)	((84,956 + 92,069) / 1,000) * 5.5 = 974 REQUIRED 5.5 RATIO	714 PROVIDED 4.03 RATIO (E)
PROPOSED ADDITION TO LOT A GROSS LEASEABLE SF 4,550 + 84,956 SF)	((4,550 + 84,956) / 1,000) * 5.5 = 492.28 REQUIRED 5.5 RATIO	457 PROVIDED 5.11 RATIO (V)
PROPOSED CONDITION, COMBINED TOTAL (SPRINGFIELD TOWNSHIP & WHITEMARSH TOWNSHIP)	((84,956 + 92,069 + 4,550) / 1,000) * 5.5 = 999 REQUIRED 5.5 RATIO	699 PROVIDED 3.85 RATIO (V)

SITE / RECORD PLAN LEGEND

- PROPERTY LINE (PIQ)
- BUILDING SETBACK LINE
- ZONE LINE
- MUNICIPALITY LINE
- *TREELINE*
- SAWCUT LIMITS
- *BUILDING EAVE / OVERHANG*
- PROP. BUILDING EAVE / OVERHANG
- *OVERHEAD WIRES*
- *100 YR 100 YEAR FLOODPLAIN*
- 100 YR PROPOSED 100 YEAR FLOODPLAIN
- STREAM BANK

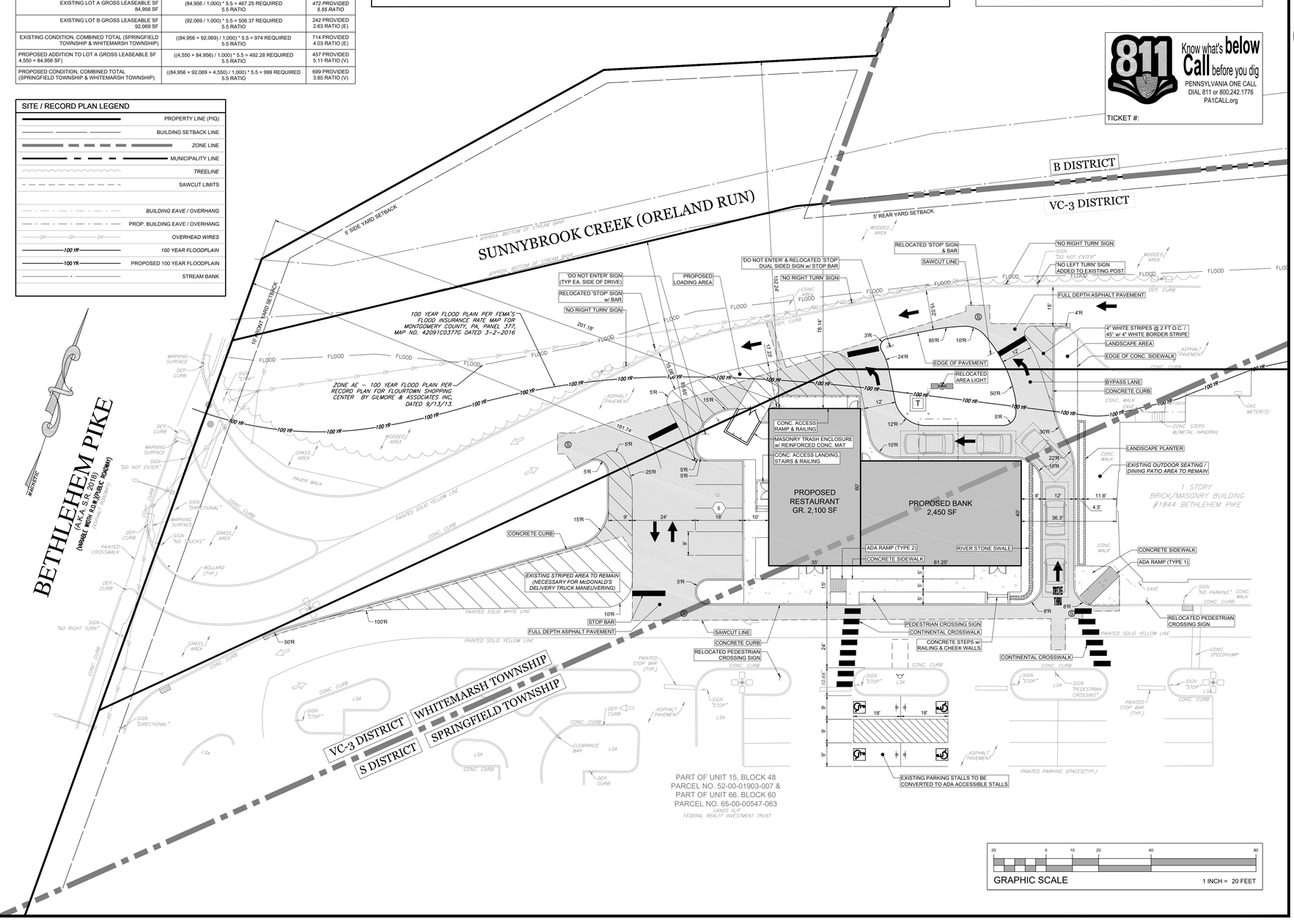
RECORD/SITE NOTES

1. THESE PLANS ARE BASED ON INFORMATION PROVIDED TO LANDCORE ENGINEERING CONSULTANTS, P.C. (HEREINAFTER "THE ENGINEER") AT THE TIME OF PREPARATION. ALL ELEVATIONS SHOWN CORRELATE TO THE REFERENCED SURVEYOR'S BENCHMARK AND MUST BE VERIFIED BY THE GENERAL CONTRACTOR PRIOR TO GROUNDBREAKING. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY THE ENGINEER IN WRITING OF ANY SUCH DISCREPANCY, IF ACTUAL SITE CONDITIONS DIFFER FROM THOSE SHOWN ON THE PLAN, OR IF THE PROPOSED WORK WOULD BE INHIBITED BY ANY OTHER SITE FEATURES. ALL DIMENSIONS SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS AND CONTRACTOR SHALL NOTIFY ENGINEER IN WRITING IF ANY DISCREPANCIES EXIST PRIOR TO ORDER AND/OR FABRICATION OF STRUCTURES AND MATERIALS; OR COMMENCEMENT WITH CONSTRUCTION ACTIVITIES.
2. ALL WORK AND MATERIALS SHALL COMPLY WITH OR EXCEED ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS, REGULATIONS AND CODES, AND OSHA STANDARDS.
3. THE OWNER / CONTRACTOR SHALL BE FAMILIAR WITH AND RESPONSIBLE FOR ANY / ALL CERTIFICATIONS, INSPECTIONS, ETC. REQUIRED BY ALL GOVERNING JURISDICTIONAL AGENCIES DURING AND AFTER CONSTRUCTION FOR SIGN-OFF AND CERTIFICATE OF OCCUPANCY ISSUANCE, INCLUDING BUT NOT LIMITED TO PROCUREMENT OF SERVICES, SCHEDULING OF FIELD OBSERVATIONS AND COORDINATION WITH REPRESENTATIVES OF THE APPROPRIATE PARTIES.
4. CONTRACTOR IS RESPONSIBLE FOR OBTAINING, AND FAMILIARIZING THEMSELVES WITH, ALL PROJECT RELATED RESOURCES, TECHNICAL REPORTS AND DESIGN DOCUMENTS PREPARED FOR THE PROJECT, INCLUDING, BUT NOT LIMITED TO ANY PREPARED GEOTECHNICAL REPORTS, ENVIRONMENTAL REPORTS, PERMIT GUIDANCE, ET. AL. UPON REVIEW OF PROJECT RELATED RESOURCES, CONTRACTOR SHALL NOTIFY ENGINEER IN WRITING OF ANY CONFLICTS BETWEEN THE PLANS AND RESOURCES AND SUCH DISCREPANCY SHALL BE REVIEWED WITH ENGINEER PRIOR TO COMMENCING ANY WORK RELATED TO SUCH.
5. IT IS ESSENTIAL THAT CONTRACTORS ARE AWARE OF THE SITE ACCESSIBILITY REQUIREMENTS. LANDCORE ENGINEERING CONSULTANTS HAS MADE A POINT IN THE PROVIDED NOTES AND DETAILS, AS WELL AS IN THE DRAWINGS, TO PROVIDE SLOPES / GRADES AND DIMENSIONS THAT COMPLY WITH THE AMERICANS WITH DISABILITIES ACT (ADA) STANDARDS (AS LAST REVISED) AS WELL AS APPLICABLE STATE AND LOCAL LAWS AND REGULATIONS, LATEST EDITIONS. IF THESE SLOPES / GRADES AND DIMENSIONS ARE NOT ACHIEVABLE, THE CONTRACTOR IS REQUIRED TO NOTIFY THE OWNER, IN WRITING, IMMEDIATELY AND BEFORE MOVING FORWARD WITH THE WORK. THE CONTRACTOR SHALL CONFIRM THE DESIGNATED ADA ACCESSIBLE AREAS AND ROUTES PRIOR TO THE START OF CONSTRUCTION AND SHALL BE RESPONSIBLE FOR CONSTRUCTION OF THE DESIGNATED AREAS AND ROUTES IN ACCORDANCE WITH THE MOST CURRENT ADA GUIDELINES AS APPLICABLE TO THE PROJECT.
6. STORMWATER MANAGEMENT FACILITIES:
   - 6.1. THE PROPOSED ON-SITE STORMWATER MANAGEMENT FACILITIES SHALL BE OWNED AND MAINTAINED BY THE APPLICANT, UNLESS SPECIFICALLY NOTED OTHERWISE ON THESE PLANS
   - 6.2. A BLANKET EASEMENT IS HEREBY GRANTED TO THE MUNICIPALITY FOR ACCESS AND INSPECTION OF THE STORMWATER BEST MANAGEMENT PRACTICES (BMPS) AS INDICATED ON THESE PLANS. THE MUNICIPALITY SHALL HAVE THE RIGHT, BUT NOT THE DUTY, OF REASONABLE ACCESS AT REASONABLE TIMES TO EVERY BMP AND CONVEYANCE FROM A PUBLIC RIGHT-OF-WAY OR ROADWAY ONTO THE PROPERTY TO CONDUCT PERIODIC INSPECTIONS AS OUTLINED IN ANY APPLICABLE EASEMENT AGREEMENT AND TO UNDERTAKE OTHER ACTIONS THAT MAY BE NECESSARY TO ENFORCE THE REQUIREMENTS OF THE MUNICIPAL STORMWATER MANAGEMENT ORDINANCE, AND ANY APPLICABLE OPERATION AND MAINTENANCE PLANS AND/OR OPERATION AND MAINTENANCE AGREEMENTS.
   - 6.3. THE STORMWATER MANAGEMENT FACILITIES, AS DEPICTED HEREIN, ARE PERMANENT STRUCTURES. NO PERSON OR ENTITY SHALL MODIFY, REMOVE, FILL, LANDSCAPE OR OTHERWISE ALTER ANY STORMWATER MANAGEMENT FACILITY WHICH HAS BEEN INSTALLED ON A PROPERTY UNLESS A STORMWATER MANAGEMENT PLAN REVISION HAS BEEN SUBMITTED TO AND APPROVED BY THE MUNICIPALITY, ALONG WITH THE REVIEW AND ADVICE OF THE MUNICIPAL ENGINEER AND THE COUNTY CONSERVATION DISTRICT, WHICH AUTHORIZES SUCH MODIFICATION. REMOVAL, FILLING, LANDSCAPING OR ALTERATION. NO PERSON SHALL PLACE ANY STRUCTURE, FILL, LANDSCAPING OR VEGETATION WITHIN A STORMWATER MANAGEMENT FACILITY OR WITHIN A DRAINAGE EASEMENT WHICH HAS THE EFFECT OF OR TO ANY DEGREE LIMITS OR ALTERS THE FUNCTIONING OF THE FACILITY OR EASEMENT IN ACCORDANCE WITH ITS DESIGN AND INTENDED FUNCTION.
7. WATER / SEWER: THIS SITE IS SERVICED BY PUBLIC WATER AND SANITARY SEWER.
8. WETLANDS: BY APPROVAL OF THIS PLAN, THE MUNICIPALITY HAS NEITHER CONFIRMED NOR DENIED THE EXISTENCE AND/OR EXTENT OF ANY WETLAND AREAS WHETHER OR NOT DELINEATED ON THE SAID PLAN AND ANY ENCROACHMENT THEREON FOR ANY REASON WHATSOEVER SHALL BE THE SOLE RESPONSIBILITY OF THE DEVELOPER, HIS HEIRS AND ASSIGNS AND SHALL BE SUBJECT TO THE JURISDICTION OF THE ARMY CORPS OF ENGINEERS AND/OR THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION AS THE SAID ENCROACHMENT SHALL CONFORM TO THE RULES AND REGULATIONS OF THE JURISDICTIONAL AGENCIES.
9. FLOODPLAIN: THE SITE DOES NOT LIE WITHIN THE FLOOD ZONING AS SHOWN ON A FLOOD INSURANCE RATE MAP (FIRM), MAP NUMBER 42091C0377G, EFFECTIVE DATE MARCH 2, 2016.

LOT SUMMARY

LOT	AREA (SF)	*AREA (AC)*
WHITEMARSH TOWNSHIP LOT A	23,915.16	0.549
WHITEMARSH TOWNSHIP LOT B	41,449.22	0.952
WHITEMARSH TOWNSHIP LOT C (VC-3 ZONE)	12,268.54	0.282
WHITEMARSH TOWNSHIP LOT C (B ZONE)	45,803.00	1.051
TOTAL WHITEMARSH TOWNSHIP	123,435.92	2.834
SPRINGFIELD TOWNSHIP (LOT A)	390,492.72	8.964
SPRINGFIELD TOWNSHIP (LOT B)	321,647.16	7.384
SPRINGFIELD TOWNSHIP (LOT C)	194,633.28	4.468
TOTAL SPRINFIELD TOWNSHIP	906,773.16	20.817
TOTAL TRACT	1,030,209.08	23.650

NOTE: LOCATION OF ALL PROPERTY LINES AND ZONE LINES ARE APPROXIMATE ONLY AND HAVE BEEN APPROXIMATED BASED ON IMAGES OF THE REFERENCED PRIOR APPROVED PLANS FOR THIS SHOPPING CENTER*.



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16	- - - -	- - - - - - - -
17	- - - -	- - - - - - - -
18	- - - -	- - - - - - - -

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
D. ALEXANDER TWEEDIE
ENGINEER
No. PE071873
D. ALEXANDER TWEEDIE
PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE No. 071873

NOT FOR CONSTRUCTION

PROJECT No: 140065
DRAWN BY: MAR
CHECKED BY: DAT
CAD I.D. #: 02_RP_140065

LANDCORE
Engineering Consultants, P.C.
PO BOX 37353 #62307
PHILADELPHIA, PENNSYLVANIA 19101-0635
PHONE 215-826-8310 | FAX 215-326-4208
LANDCORECONSULTING.COM

PROJECT: PROPOSED SITE IMPROVEMENTS
1890 BETHLEHEM PIKE, FLOURTOWN PA 19031
SPRINGFIELD TOWNSHIP AND WHITEMARSH TOWNSHIP
MONTGOMERY COUNTY, PA

APPLICANT: FEDERAL REALTY INVESTMENT TRUST

TITLE: RECORD PLAN

DATE: 2021-03-04

SHEET: 02 of 13 | REV. No: RP | 0

D:\DROPBOX (LANDCORE)\PROJECTS\2014\140065 - FEDERAL REALTY - FLOURTOWN PAD\DRAWINGS\04-SITE PLANS\02_RP_140065.DWG
MAR, 03 MAR 2021 - 4:49AM

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BETHLEHEM PIKE
S.R. 2018

SPRINGFIELD AVENUE

EXISTING MULTI-TENANT BUILDING

EXISTING McDONALDS

EXISTING BANK

EXISTING RETAIL STORES

EXISTING MOVIE THEATER

EXISTING SUPERMARKET

PROPOSED BANK
2,450 SF

PROPOSED RESTAURANT
2,100 SF

PARKING TOTAL
694 STALLS
5 STALLS
699 TOTAL STALLS

SUNNYBROOK CREEK
(ORELAND RUN)

WHITEMARSH TOWNSHIP
SPRINGFIELD TOWNSHIP

ZONING DISTRICT "A"
ZONING DISTRICT "S"

ZONING DISTRICT "B-2"
ZONING DISTRICT "S"

ZONING DISTRICT "S"
ZONING DISTRICT "D"

ZONING DISTRICT
"B-2"
ZONING DISTRICT "D"

VC-3 DISTRICT
B DISTRICT
S DISTRICT

GRAPHIC SCALE
60 0 30 60 120 240
1 INCH = 60 FEET

BY	DATE	REV.	COMMENT

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
D. ALEXANDER TWEEDIE
ENGINEER
No. PE071873
PENNSYLVANIA

D. ALEXANDER TWEEDIE
PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE No. 071873

NOT FOR CONSTRUCTION

PROJECT No: 140065
DRAWN BY: MAR
CHECKED BY: DAT
CAD I.D. #: 03_OA_140065

LANDCORE
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PO BOX 73525 19327
PHILADELPHIA, PENNSYLVANIA 19101-6535
PHONE 215-832-2510 | FAX 215-832-2428
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PROJECT: PROPOSED SITE IMPROVEMENTS
1990 BETHLEHEM PIKE, FLOURTOWN PA 19031
SPRINGFIELD TOWNSHIP AND WHITEMARSH TOWNSHIP
MONTGOMERY COUNTY, PA

APPLICANT: FEDERAL REALTY INVESTMENT TRUST

TITLE: OVERALL SITE PLAN

DATE: 2021-03-04

SHEET: 03 of 13 | REV. No: 0

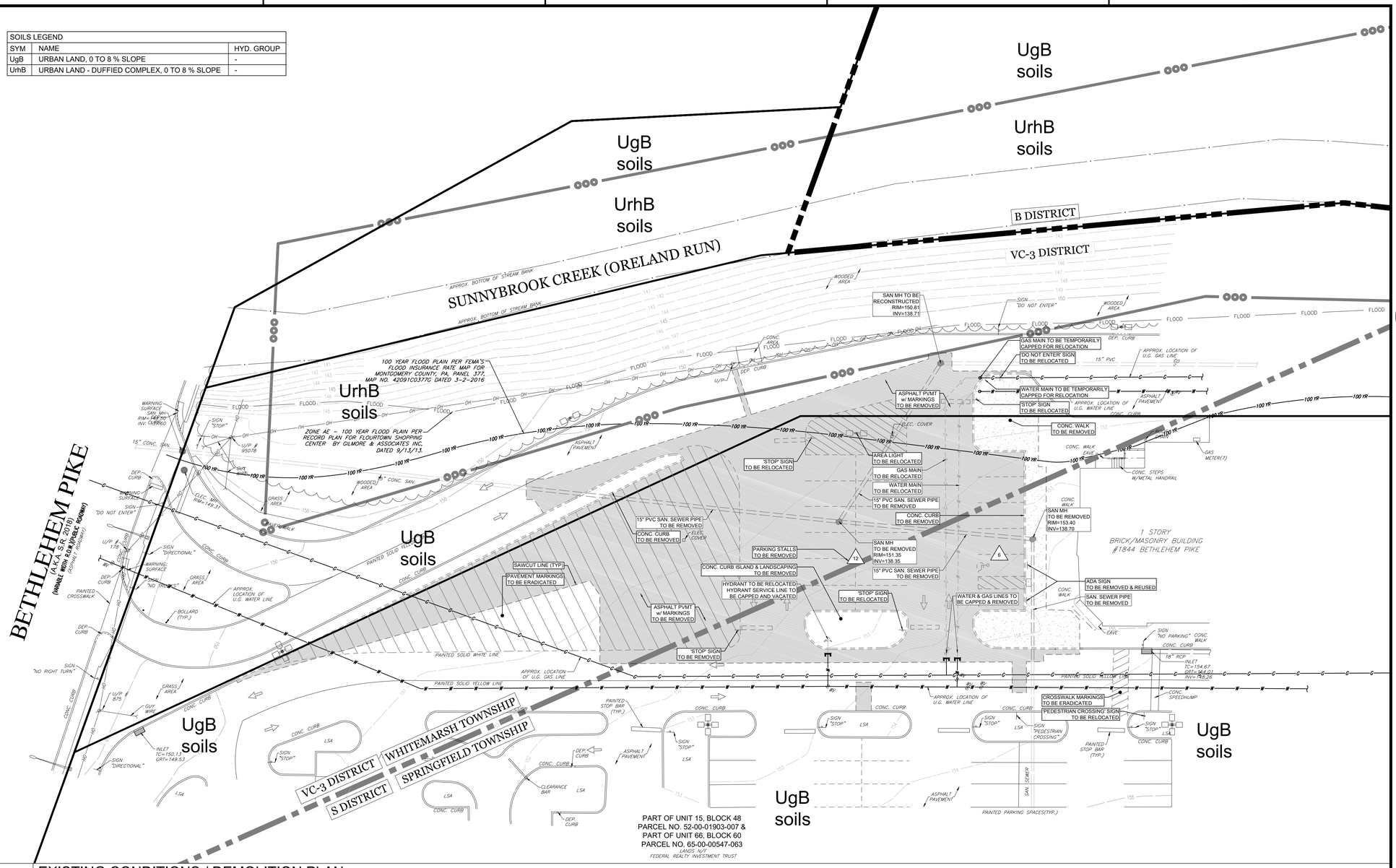
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MAR, 04 MAR 2021 @ 2021-3-4, 8:44 AM

EXISTING CONDITIONS/DEMOLITION NOTES

1. NEITHER LANDCORE ENGINEERING CONSULTANTS, P.C. NOR THE OWNER IS RESPONSIBLE FOR JOB SITE SAFETY OR SUPERVISION. CONTRACTOR IS TO PROCEED WITH THE DEMOLITION IN A SYSTEMATIC AND SAFE MANNER, FOLLOWING ALL OSHA, STATE, AND MUNICIPAL REQUIREMENTS, TO ENSURE PUBLIC AND CONTRACTOR SAFETY.
2. ALL DEMOLITION ACTIVITIES ARE TO BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AS WELL AS ALL FEDERAL, STATE, AND LOCAL REGULATIONS. ANY DISCREPANCIES OR DEVIATIONS SHALL BE IDENTIFIED BY THE CONTRACTOR TO LANDCORE ENGINEERING CONSULTANTS, P.C. IN WRITING FOR RESOLUTION PRIOR TO INITIATION OF SITE ACTIVITY.
3. THIS DEMOLITION PLAN IS INTENDED TO IDENTIFY THOSE EXISTING ITEMS / CONDITIONS WHICH ARE TO BE REMOVED. IT IS NOT INTENDED TO PROVIDE ANY OTHER DIRECTION. ALL DEMOLITION MEANS AND METHODS ARE TO BE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, LOCAL AND JURISDICTIONAL REQUIREMENTS.
4. PRIOR TO STARTING ANY DEMOLITION, CONTRACTOR IS RESPONSIBLE TO / FOR THE FOLLOWING:
   - 4.1. ENSURING COPIES OF ALL APPLICABLE PERMITS AND APPROVALS ARE MAINTAINED ON SITE AND AVAILABLE FOR REVIEW.
   - 4.2. INSTALLING THE REQUIRED SOIL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO SITE DISTURBANCE.
   - 4.3. THE CONTRACTOR SHALL USE AND COMPLY WITH THE REQUIREMENTS OF THE NATIONAL UTILITY NOTIFICATION SYSTEM (811) TO LOCATE ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCEMENT OF ANY WORK. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRS OF DAMAGE TO ANY EXISTING UTILITIES DURING CONSTRUCTION AT NO COST TO THE OWNER.
   - 4.4. PROTECTING AND MAINTAINING IN OPERATION, ALL ACTIVE UTILITIES AND SYSTEMS THAT ARE NOT BEING REMOVED DURING THE DEMOLITION ACTIVITIES.
   - 4.5. FAMILIARIZING THEMSELVES WITH THE APPLICABLE UTILITY SERVICE PROVIDERS AND IS RESPONSIBLE FOR ALL COORDINATION REGARDING ANY TEMPORARY OR PERMANENT DISCONNECTION, REMOVAL AND/OR RELOCATION OF UTILITIES FOR ANY DEMOLITION REQUIRED FOR THE PROJECT. THE CONTRACTOR SHALL PROVIDE THE OWNER WRITTEN NOTIFICATION THAT THE EXISTING UTILITIES AND SERVICES HAVE BEEN TERMINATED AND ABANDONED IN ACCORDANCE WITH JURISDICTION AND UTILITY COMPANY REQUIREMENTS.
   - 4.6. COORDINATION WITH UTILITY COMPANIES REGARDING WORKING 'OFF-PEAK' HOURS OR ON WEEKENDS AS MAY BE REQUIRED TO MINIMIZE THE IMPACT OF THE AFFECTED PARTIES.
   - 4.7. CONTACTING THE APPROPRIATE UTILITY OWNERS TO DISCONNECT EXISTING UTILITY SERVICES TO BUILDINGS/STRUCTURES SCHEDULED FOR DEMOLITION.
   - 4.8. AN INSPECTION AND ASSESSMENT BY A LICENSED ENVIRONMENTAL TESTING AGENCY OF ANY HAZARDOUS MATERIALS WITHIN THE BUILDINGS AND / OR STRUCTURES REQUIRED TO BE ABATED OR REMOVED IN ACCORDANCE WITH FEDERAL, STATE, OR LOCAL LAWS PRIOR TO DEMOLITION. THE INSPECTION AND ASSESSMENT SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL ENVIRONMENTAL REGULATIONS. ALL ENVIRONMENTAL WORK INCLUDING REMEDIATION, ABATEMENT OR REMOVAL OF HAZARDOUS MATERIALS, SOILS, ASBESTOS, LEAD-BASED PAINT, OR ANY OTHER ENVIRONMENTAL WORK REQUIRED SHALL BE OVERSEEN BY A LICENSED ENVIRONMENTAL CONSULTANT AND PERFORMED BY LICENSED TRADES.
5. THE CONTRACTOR SHALL PROVIDE ALL THE 'MEANS AND METHODS' NECESSARY TO PREVENT MOVEMENT, SETTLEMENT OR COLLAPSE OF EXISTING STRUCTURES OR ANY OTHER IMPROVEMENTS THAT ARE REMAINING ON OR OFF THE SITE. THE DEMOLITION CONTRACTOR IS RESPONSIBLE FOR ALL REPAIRS OF DAMAGE TO ALL ITEMS THAT ARE TO REMAIN AS A RESULT OF THEIR ACTIVITIES. ALL REPAIRS SHALL USE NEW MATERIAL. THE REPAIRS SHALL RESTORE THE ITEM TO THE PRE-DEMOLITION CONDITION.
6. IN THE ABSENCE OF SPECIFICATIONS, THE CONTRACTOR SHALL PERFORM EARTH MOVEMENT ACTIVITIES, DEMOLITION AND REMOVAL OF ALL FOUNDATION WALLS, FOOTINGS, AND OTHER MATERIALS WITHIN THE LIMITS OF DISTURBANCE IN ACCORDANCE WITH DIRECTION BY THE OWNER'S STRUCTURAL OR GEOTECHNICAL ENGINEER.
7. EXPLOSIVES SHALL NOT BE USED WITHOUT PRIOR WRITTEN AUTHORIZATION OF BOTH THE OWNER AND APPLICABLE GOVERNMENTAL AUTHORITIES. ALL THE REQUIRED PERMITS AND EXPLOSIVE CONTROL MEASURES THAT ARE REQUIRED BY THE FEDERAL, STATE, AND LOCAL GOVERNMENTS SHALL BE IN PLACE PRIOR TO STARTING AN EXPLOSIVE PROGRAM. THE CONTRACTOR IS ALSO RESPONSIBLE FOR ALL INSPECTION AND SEISMIC VIBRATION TESTING THAT IS REQUIRED TO MONITOR THE EFFECTS ON ALL LOCAL STRUCTURES.
8. CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL AND GENERALLY ACCEPTED SAFE PRACTICES IN CONFORMANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL' AS WELL AS FEDERAL, STATE AND LOCAL REGULATIONS WHEN DEMOLITION RELATED ACTIVITIES IMPACT ROADWAYS OR ROADWAY RIGHTS OF WAY.
9. CONTRACTOR SHALL CONDUCT DEMOLITION ACTIVITIES IN SUCH A MANNER TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, SIDEWALKS, WALKWAYS, AND OTHER ADJACENT FACILITIES. STREET/SIDEWALK CLOSURE PERMITS MUST BE RECEIVED FROM THE APPROPRIATE GOVERNMENTAL AUTHORITY.
10. DEMOLITION ACTIVITIES AND EQUIPMENT SHALL NOT USE AREAS OUTSIDE THE DEFINED PROPERTY LINE OR APPROVED LIMITS OF DISTURBANCE FOR THE PROJECT WITHOUT WRITTEN PERMISSION OF THE OWNER AND / OR APPROPRIATE GOVERNMENT AGENCY.
11. CONTRACTOR SHALL UTILIZE APPROPRIATE DUST CONTROL MEASURES TO LIMIT AIRBORNE DUST AND DIRT RISING AND SCATTERING IN THE AIR IN ACCORDANCE WITH FEDERAL, STATE AND / OR LOCAL STANDARDS. AFTER THE DEMOLITION IS COMPLETE, ADJACENT STRUCTURES AND IMPROVEMENTS SHALL BE CLEANED OF ALL DUST AND DEBRIS CAUSED BY THE DEMOLITION OPERATIONS. THE CONTRACTOR IS RESPONSIBLE FOR RETURNING ALL ADJACENT AREAS TO THEIR 'PRE-DEMOLITION' CONDITION.
12. CONTRACTOR IS RESPONSIBLE TO SAFEGUARD AND SECURE THE SITE AS NECESSARY TO PERFORM THE DEMOLITION IN SUCH A MANNER AS TO PREVENT THE ENTRY OF UNAUTHORIZED PERSONS AT ANY TIME.
13. DEBRIS SHALL NOT BE BURIED ON THE SUBJECT SITE (CRUSHED STONE/CONCRETE CERTIFIED AND USED AS CLEAN FILL SHALL BE EXCLUDED). ALL DEMOLITION WASTES AND DEBRIS (SOLID WASTE) SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, COUNTY AND LOCAL LAWS, REGULATIONS, AND CODES.
14. ALL EXISTING UTILITIES SHALL BE REMOVED BY CONTRACTOR IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS.

SOILS LEGEND		
SYM	NAME	HYD. GROUP
UgB	URBAN LAND, 0 TO 8 % SLOPE	-
UrhB	URBAN LAND - DUFFIED COMPLEX, 0 TO 8 % SLOPE	-



C2 EXISTING CONDITIONS / DEMOLITION PLAN

SCALE: 1" = 20'

EXISTING CONDITIONS / DEMOLITION PLAN LEGEND

- ITEM TO BE REMOVED
- PROPERTY LINE (PIQ)
- ZONE LINE
- MUNICIPALITY LINE
- SOILS TYPE BOUNDARY LINE
- TREELINE
- SAWCUT LIMITS
- BUILDING EAVE / OVERHANG
- OVERHEAD WIRES
- GAS SERVICE
- GAS SERVICE (TBR)
- SANITARY MAIN
- SANITARY MAIN (TBR)
- WATER MAIN / LATERAL
- WATER MAIN / LATERAL (TBR)
- MAJOR CONTOUR
- MINOR CONTOUR
- STORM SEWER MAIN
- 100 YEAR FLOODPLAIN
- STREAM BANK

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PA1CALL.org
TICKET #:

GRAPHIC SCALE 1 INCH = 20 FEET

NORTH

REV.	DATE	COMMENT	BY

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER D. ALEXANDER TWEEDIE ENGINEER No. PE071873

D. ALEXANDER TWEEDIE
PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE No. 071873
NOT FOR CONSTRUCTION

PROJECT No: 140065
DRAWN BY: MAR
CHECKED BY: DAT
CAD I.D. #: 04_ECD_140065

LANDCORE
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PHONE 215-836-2510 | FAX 215-382-6428
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PROJECT: PROPOSED SITE IMPROVEMENTS
1800 BETHLEHEM PIKE, FLOURTOWN PA 19031
SPRINGFIELD TOWNSHIP AND WHITEMARSH TOWNSHIP
MONTGOMERY COUNTY, PA

APPLICANT: FEDERAL REALTY INVESTMENT TRUST

TITLE: EXISTING CONDITIONS / DEMOLITION PLAN

DATE: 2021-03-04

SHEET: 04 of 13 | REV. No: 0

ECD

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MAR, 03/04/2021 @ 2021-1-4, 8:54 AM

EROSION / SEDIMENT CONTROL PLAN STANDARD NOTES

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
2. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING.
3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
5. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
6. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
7. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAPS(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H:1V OR FLATTER.
9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
10. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1, AND 287.1 ET SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
11. ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
12. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICALS.
13. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN OVER UNDISTURBED VEGETATED AREAS.
14. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
15. A LOG SHOWING DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
16. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
17. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
18. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES. 6 TO 12 INCHES ON COMPACTED SOILS - PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
19. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
20. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS
21. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
22. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
23. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
24. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
25. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.
26. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS. DURING NON-GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
27. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
28. E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
29. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPS.
30. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPS. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPS SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON
31. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
32. FAILURE TO CORRECTLY INSTALL E&S BMPS, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPS MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO $10,000 PER DAY IN CIVIL PENALTIES, UP TO $10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO $25,000 IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.
33. CONCRETE WASH WATER SHALL BE HANDLED IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS. IN NO CASE SHALL IT BE ALLOWED TO ENTER ANY SURFACE WATERS OR GROUNDWATER SYSTEMS.

RECYCLING AND DISPOSAL OF CONSTRUCTION WASTES

1. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1., AND 287.1 ET SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
2. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE REMOVAL OF ANY EXCESS MATERIAL AND MAKE SURE THE SITE(S) RECEIVING THE EXCESS HAS AN APPROVED AND FULLY IMPLEMENTED EROSION AND SEDIMENT CONTROL PLAN THAT MEETS THE CONDITIONS OF CHAPTER 102 AND/OR OTHER STATE OR FEDERAL REGULATIONS. CONCRETE WASH WATER SHALL BE CONTROLLED TO PROJECT AREAS THAT WILL RECEIVE CONCRETE PAVING AS PART OF THE PROJECT'S PROPOSED CONDITIONS.
3. CONCRETE WASH WATER SHALL BE CONTROLLED AT ALL TIMES AND SHALL NOT BE PERMITTED TO ENTER INTO THE STORMWATER RUNOFF FROM THE PROJECT SITE.
4. IN THE EVENT OF A SINK FORMATION, UNDER THE SUPERVISION OF A PROFESSIONAL GEOLOGIST OR A LICENSED GEOTECHNICAL ENGINEER, MATERIAL DEEMED UNSUITABLE FOR BACKFILL MUST BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION'S (PADEP) SOLID WASTE MANAGEMENT REGULATIONS.

UTILITY LINE TRENCH EXCAVATION NOTES

1. LIMIT ADVANCED CLEARING AND GRUBBING OPERATIONS TO A DISTANCE EQUAL TO THREE TIMES THE LENGTH OF PIPE INSTALLATION THAT CAN BE COMPLETED IN ONE DAY.
2. WORK CREWS AND EQUIPMENT FOR TRENCHING, PLACEMENT OF PIPE, PLUG CONSTRUCTION AND BACKFILLING WILL BE SELF CONTAINED AND SEPARATE FROM CLEARING AND GRUBBING AND SITE RESTORATION AND STABILIZATION OPERATIONS.
3. ALL SOIL EXCAVATED FROM THE TRENCH WILL BE PLACED ON THE UPHILL SIDE OF THE TRENCH.
4. LIMIT DAILY TRENCH EXCAVATION TO THE LENGTH OF PIPE PLACEMENT, PLUG INSTALLATION AND BACKFILLING THAT CAN BE COMPLETED THE SAME DAY.
5. WATER WHICH ACCUMULATES IN THE OPEN TRENCH WILL BE COMPLETELY REMOVED BY PUMPING BEFORE PIPE PLACEMENT AND / OR BACKFILLING BEGINS. WATER REMOVED FROM THE TRENCHES SHALL BE PUMPED THROUGH A FILTRATION DEVICE.
6. ON THE DAY FOLLOWING PIPE PLACEMENT AND TRENCH BACKFILLING, THE DISTURBED AREA WILL BE GRADED TO FINAL CONTOURS AND IMMEDIATELY STABILIZED.
7. SOILS EXCAVATED FROM EXISTING SURFACE LAYER SHOULD BE STOCKPILED SEPARATELY AND RETURNED AS FINAL SURFACE LAYER FOLLOWING TRENCH BACKFILLING.

MINIMIZE EXTENT AND DURATION OF EARTH DISTURBANCE

THE FOLLOWING PLAN SHALL BE IMPLEMENTED THROUGH CONSTRUCTION TO MINIMIZE ACCELERATED EROSION AND SEDIMENTATION DURING EARTH DISTURBANCE ACTIVITIES BY MINIMIZING THE AMOUNT OF EXISTING VEGETATIVE COVER TO BE REMOVED, AND BY PROVIDING TEMPORARY AND PERMANENT STABILIZATION MEASURES ON DISTURBED AREAS AS SOON AS PRACTICABLE. THE PRIMARY CONTROL FOR CAPTURING SEDIMENT BEFORE LEAVING THE SITE WILL BE SEDIMENT BARRIERS AND SEDIMENT TRAP. THE AMOUNT OF DISTURBED AREA AND THE DURATION OF EXPOSURE SHALL BE KEPT TO A PRACTICAL MINIMUM AND THE PERMANENT VEGETATION AND STORMWATER CONTROL SYSTEMS WILL BE INSTALLED AS SOON AS POSSIBLE TO PREVENT EROSION AND THEREFORE MINIMIZE THE AMOUNT OF SEDIMENT TO BE CONTROLLED.

CONSTRUCTION WILL BEGIN ONLY AFTER THE EROSION AND SEDIMENT CONTROLS HAVE BEEN INSTALLED.

MAXIMIZE PROTECTION OF EXISTING DRAINAGE FEATURES AND VEGETATION

EXISTING DRAINAGE FEATURES AND VEGETATION WILL BE PROTECTED DURING CONSTRUCTION BY ENSURING THE EROSIONS AND SEDIMENT CONTROL BMPS REMAIN IN PLACE AND OPERATIONAL FOR THE ENTIRE DURATION OF THE CONSTRUCTION. SEDIMENT BARRIERS WILL PREVENT SILT LADEN RUNOFF FROM LEAVING THE SITE.

MINIMIZE SOIL COMPACTION

SOIL COMPACTION WILL BE MINIMIZED DURING CONSTRUCTION BY KEEPING THE CONSTRUCTION ACTIVITIES WITHIN THE LIMITS OF DISTURBANCE.

OTHER MEASURES OR CONTROLS THAT PREVENT OR MINIMIZE GENERATION OF INCREASED STORMWATER RUNOFF

BY MINIMIZING THE AMOUNT OF EXISTING VEGETATIVE COVER TO BE REMOVED, AND BY PROVIDING TEMPORARY AND PERMANENT STABILIZATION MEASURES ON DISTURBED AREAS AS SOON AS PRACTICABLE, RUNOFF WILL BE MINIMIZED DURING CONSTRUCTION.

THERMAL IMPACTS DURING CONSTRUCTION AND MITIGATION

BY MINIMIZING THE AMOUNT OF EXISTING VEGETATIVE COVER TO BE REMOVED, AND BY PROVIDING TEMPORARY AND PERMANENT STABILIZATION MEASURES ON DISTURBED AREAS AS SOON AS PRACTICABLE, RUNOFF WILL BE MINIMIZED DURING CONSTRUCTION, WHICH IN TURN WILL MINIMIZE THERMAL IMPACTS.

RECEIVING SURFACE WATERS

TRIB. TO WISSAHICKON CREEK - DESIGNATED AND EXISTING USE : TSF - MF

GEOLOGICAL FORMATIONS / SOIL CONDITIONS

THE SITE IS LOCATED IN AN AREA KNOWN FOR NATURALLY OCCURRING GEOLOGICAL FORMATIONS OR SOIL CONDITIONS THAT MAY HAVE THE POTENTIAL TO CAUSE POLLUTION DURING EARTH DISTURBANCE ACTIVITIES. IN THE EVENT ANY GEOLOGICAL FORMATION OR SOIL CONDITIONS ARE DISCOVERED DURING CONSTRUCTION, THE PERMITTEE SHALL NOTIFY THE ENGINEER OF RECORD AND COUNTY CONSERVATION DISTRICT FOR ACTIONS TO BE TAKEN.

SEQUENCE OF CONSTRUCTION

- ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. EACH STEP SHALL BE COMPLETED BEFORE ANY FOLLOWING STEP IS INITIATED. CLEARING AND GRUBBING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH STEP.
- AN ON-SITE PRE-CONSTRUCTION MEETING IS REQUIRED TO OCCUR NO LESS THAN 7-DAYS PRIOR TO ANY EARTH DISTURBANCE UNLESS NOTIFIED OTHERWISE BY THE COUNTY CONSERVATION DISTRICT. PERMITTEES, CO-PERMITTEES, OPERATORS, ALL APPROPRIATE MUNICIPAL OFFICIALS, REPRESENTATIVES FROM THE COUNTY CONSERVATION DISTRICT AND LICENSED PROFESSIONALS OR DESIGNEES RESPONSIBLE FOR THE EARTH DISTURBANCE ACTIVITY, INCLUDING THE PREPARER OF E&S AND PCSM PLANS AND CRITICAL STAGES OF IMPLEMENTATION OF THE APPROVED PCSM PLAN, SHALL ATTEND A PRE-CONSTRUCTION MEETING.
- CESSATION OF ACTIVITY LONGER THAN 4 DAYS REQUIRES TEMPORARY STABILIZATION.
- NO MORE THAN 15,000 SQUARE FEET OF DISTURBED AREA REACH FINAL GRADE BEFORE INITIATING SEEDING AND MULCHING OPERATIONS

1. INSTALL CONSTRUCTION ENTRANCE (CE). REMOVE ENOUGH PAVEMENT TO INSTALL CE.
2. INSTALL SEDIMENT BARRIERS, CONCRETE WASHOUT AND INLET FILTER.
3. UPON THE INSTALLATION OR STABILIZATION OF ALL PERIMETER SEDIMENT CONTROL BMPS AND AT LEAST 3 DAYS PRIOR TO PROCEEDING WITH THE BULK EARTH DISTURBANCE ACTIVITIES, THE PERMITTEE OR CO-PERMITTEE SHALL PROVIDE NOTIFICATION TO THE DEPARTMENT OR COUNTY CONSERVATION DISTRICT.
4. DEMOLISH ABOVEGROUND / UNDERGROUND FEATURES.
5. INITIATE NECESSARY EARTHWORK TO ACHIEVE THE GRADES INDICATED ON THE DRAWINGS. ENSURE MAINTENANCE OF SEDIMENT CONTROL FACILITIES.
6. INITIATE BUILDING CONSTRUCTION.
7. CONTINUE WITH THE BALANCE OF THE EARTHWORK. MAINTAIN ALL E&S BMPS OPERATIONAL.
8. CONSTRUCT INFILTRATION TRENCH.
9. INSTALL STONE SUBBASE COURSE FOR ALL PAVEMENT AND CONCRETE AREAS.
10. INSTALL PERMANENT VEGETATION INCLUDING TREES, SHRUBS AND GRASSED AREAS.
11. PERMANENTLY STABILIZE DISTURBED AREAS. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER 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.
12. INSTALL BINDER COURSE FOR ALL PAVEMENT AND CONCRETE AREAS.
13. NOTIFY COUNTY CONSERVATION DISTRICT PRIOR TO THE CONVERSION OR REMOVAL OF PRIMARY E&S BMPS. THE DISTRICT MAY REQUIRE A SITE INSPECTION PRIOR TO THE CONVERSION OR REMOVAL OF SUCH FACILITIES.
14. UPON PERMANENT SITE STABILIZATION AND AUTHORIZATION FROM THE COUNTY CONSERVATION DISTRICT, REMOVE ALL EROSION AND SEDIMENT POLLUTION CONTROL BMPS (SEDIMENT BARRIER, INLET PROTECTION, ETC.). NATURAL DRAINAGE WAY BUFFER AREAS WITHIN THE LIMIT OF DISTURBANCE SHALL BE IMMEDIATELY STABILIZED UPON REMOVAL OF THE SEDIMENT BARRIERS. ANY AREA DISTURBED DURING THE REMOVAL OF THE EROSION AND SEDIMENT POLLUTION CONTROL BMPS MUST BE STABILIZED IMMEDIATELY. UPON COMPLETION OF ALL OTHER SITE CONSTRUCTION ACTIVITIES, INSTALL FINAL WEARING COURSE, SIGNAGE AND STRIPING. DEMOBILIZE.

SOIL EROSION AND SEDIMENT POLLUTION BMP MAINTENANCE PROGRAM

UNTIL THE SITE IS STABILIZED, ALL TEMPORARY EROSION AND SEDIMENT POLLUTION CONTROL BMPS MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT POLLUTION CONTROL BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. RECORDS OF EACH INSPECTION, NOTES OF DEFICIENCIES, AND THE CORRECTIVE ACTIONS TAKEN MUST BE KEPT AT THE PROJECT SITE FOR REVIEW BY THE ENGINEER OF RECORD, APPLICABLE COUNTY CONSERVATION DISTRICT AND/OR PADEP (AS APPLICABLE).

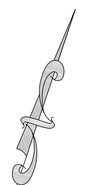
1. CONTRACTOR IS RESPONSIBLE TO CONSTRUCT AND MAINTAIN ALL REQUIRED EROSION AND SEDIMENT POLLUTION CONTROL BMPS THROUGHOUT THE CONSTRUCTION PROCESS. THE CONTRACTOR IS ALSO RESPONSIBLE TO INSPECT AND EVALUATE THE EFFECTIVENESS OF THE EROSION AND SEDIMENT POLLUTION CONTROL BMPS AND IMPLEMENT ANY ADDITIONAL BMPS REQUIRED TO CONTROL UNFORESEEN PROBLEMS ON THE SITE.
2. OWNER/DEVELOPER IS RESPONSIBLE TO ENSURE THAT THE CONTRACTOR CONDUCTS HIS OPERATIONS AND MAINTENANCE ACCORDING TO THE APPROVED EROSION AND SEDIMENT POLLUTION CONTROL PLAN.
3. OWNER AND/OR CONTRACTOR SHALL ASSIGN ONE INDIVIDUAL TO BE RESPONSIBLE FOR PROPER INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT POLLUTION CONTROL BMPS THROUGHOUT THE CONSTRUCTION PROCESS.
4. THIS PLAN REPRESENTS THE MINIMUM LEVEL OF IMPLEMENTATION OF EROSION AND SEDIMENT POLLUTION CONTROL BMPS. ADDITIONAL BMPS SHALL BE INSTALLED WHERE NECESSARY OR WHERE DIRECTED BY EITHER THE TOWNSHIP OR THE COUNTY CONSERVATION DISTRICT AS CONSTRUCTION PROGRESSES.
5. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT CONTROL BMPS MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT 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.
6. THE PERMITTEE AND CO-PERMITTEE MUST ENSURE THAT VISUAL SITE INSPECTIONS ARE CONDUCTED WEEKLY, AND AFTER EACH MEASURABLE PRECIPITATION EVENT BY QUALIFIED PERSONNEL, TRAINED AND EXPERIENCED IN EROSION AND SEDIMENT CONTROL, TO ASCERTAIN THAT THE EROSION AND SEDIMENT CONTROL (E&S) BMPS ARE OPERATIONAL AND EFFECTIVE IN PREVENTING POLLUTION TO THE WATERS OF THE COMMONWEALTH. A WRITTEN REPORT OF EACH INSPECTION SHALL BE KEPT, AND INCLUDE:

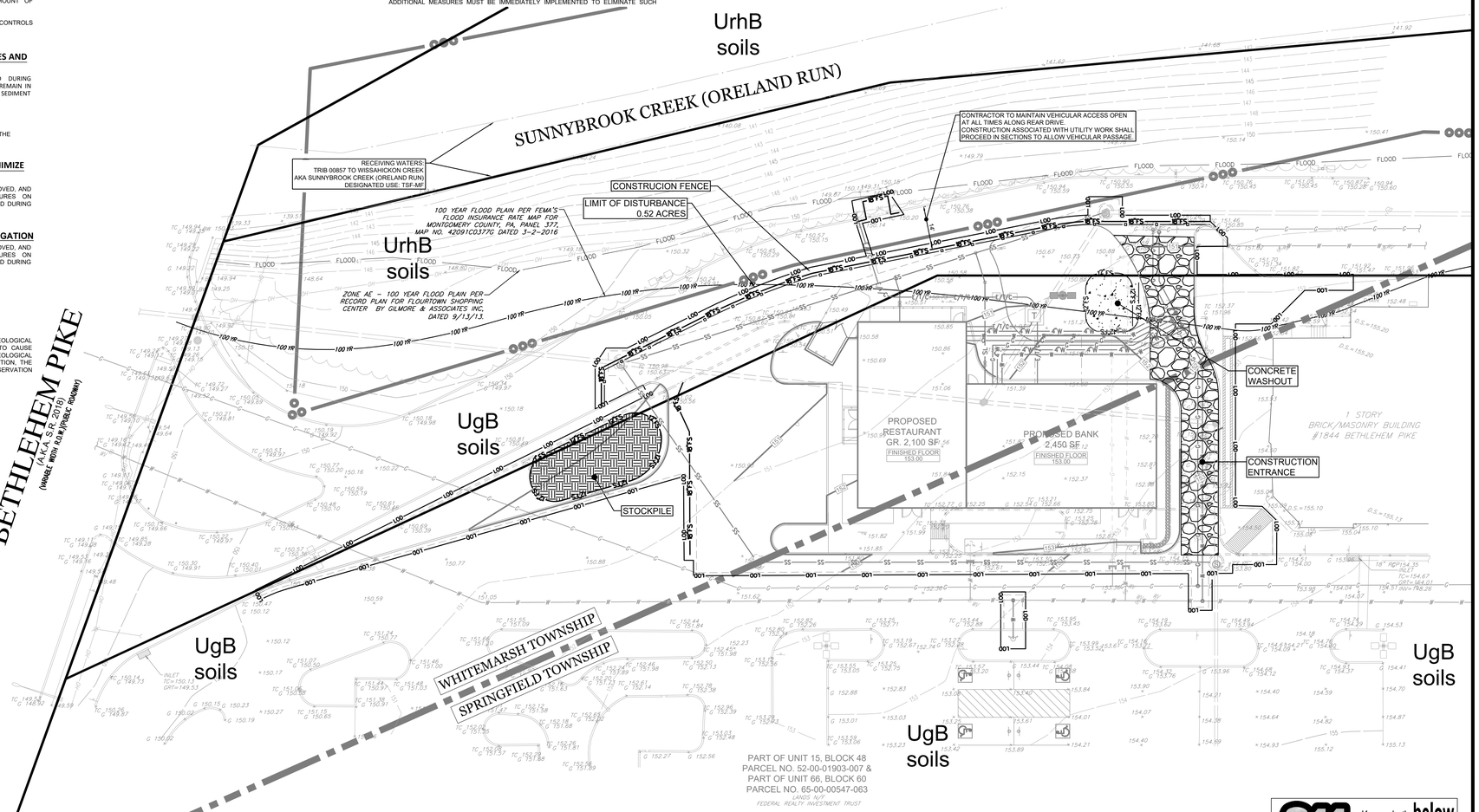
   1) A SUMMARY OF THE SITE CONDITIONS, E&S BMPS, AND COMPLIANCE; AND
   2) THE DATE, TIME, AND THE NAME OF THE PERSON CONDUCTING THE INSPECTION.

7. AFTER EACH RUNOFF EVENT, ALL TEMPORARY EROSION AND SEDIMENT POLLUTION CONTROL BMPS SHALL BE INSPECTED, CLEANED AND REPAIRED AS NECESSARY.
8. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN-OUT, REPAIR, REPLACEMENT, RE-GRADING, RE-SEEDING, RE-MULCHING AND RE-NETTING, MUST BE PERFORMED IMMEDIATELY.
9. IF THE INSTALLED EROSION AND SEDIMENT POLLUTION CONTROL BMPS FAIL TO PERFORM AS INTENDED, REPLACEMENT BMPS OR MODIFICATIONS OF THE INSTALLED BMPS WILL BE REQUIRED.
10. SHOULD ANY EROSION AND SEDIMENT POLLUTION CONTROL BMPS CONTAINED WITHIN THIS PLAN PROVE INCAPABLE OF ADEQUATELY REMOVING SEDIMENT FROM ON-SITE FLOWS PRIOR TO DISCHARGE (OR PRIOR TO STABILIZING THE PERMANENT SURFACES), ADDITIONAL MEASURES MUST BE IMMEDIATELY IMPLEMENTED TO ELIMINATE SUCH PROBLEMS.
11. CONTRACTOR SHALL SEPARATE WATER ORIGINATING OUTSIDE OF THE PROJECT BOUNDARY FROM WATER THAT ORIGINATING WITHIN THE PROJECT BOUNDARY.
12. CONTRACTOR SHALL REMOVE ACCUMULATED SEDIMENTS AS REQUIRED AND AT A MINIMUM PRIOR TO THE SEDIMENT REACHING ONE-HALF OF THE ABOVE GROUND HEIGHT OF THE SILT FENCE TO KEEP THE SILT FENCE FUNCTIONAL. REPAIR ALL UNDERCUTTING OR EROSION OF THE TOE ANCHOR IMMEDIATELY WITH COMPACTED BACKFILL MATERIALS.
13. ANY SEDIMENT BARRIER WHICH HAS BEEN UNDERMINED OR TOPPED SHALL BE REPLACED WITH ROCK FILTER OUTLETS IMMEDIATELY.
14. ROCK CONSTRUCTION ENTRANCE(S) THICKNESS MUST BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSION BY ADDING ROCK. A STOCKPILE OF ROCK MATERIAL MUST BE MAINTAINED ON THE PROJECT SITE FOR THIS PURPOSE. AT THE END OF EACH CONSTRUCTION DAY, ALL SEDIMENT DEPOSITED ON PUBLIC ROADWAYS MUST BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE. WASHING OF THE ROADWAY WITH WATER IS NOT PERMITTED UNLESS A VACUUM TRUCK IS UTILIZED FOR THIS PROCESS.
15. SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN LANDSCAPED AREAS OUTSIDE OF STEEP SLOPES, WETLANDS, WATERS OF THE COMMONWEALTH, FLOODPLAINS OR DRAINAGE SWALES AND MUST BE IMMEDIATELY STABILIZED, OR PLACED IN TOPSOIL STOCKPILES.
16. CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING AN EROSION AND SEDIMENT POLLUTION CONTROL PLAN FOR ALL OFF-SITE BORROW AND WASTE AREAS. THIS PLAN MUST BE SUBMITTED TO THE ENGINEER OF RECORD, APPLICABLE COUNTY CONSERVATION DISTRICT, AND PADEP (AS REQUIRED) FOR REVIEW AND APPROVAL.
17. CONTRACTOR SHALL STABILIZE ALL OFF-SITE BORROW AND WASTE AREAS BY SEEDING AND MULCHING AS SPECIFIED IN THE APPROVED EROSION AND SEDIMENT POLLUTION CONTROL PLAN.
18. IF SIGNS OF BMPS FAILURE ARE NOTED, AN ENGINEER OR OTHER QUALIFIED PROFESSIONAL SHOULD BE CONTACTED.
19. MAINTENANCE OF THE PERMANENT STORMWATER CONTROL BMPS SHALL BE THE RESPONSIBILITY OF OWNER.

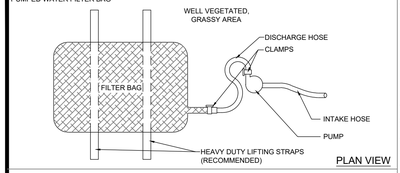
GRADING AND DRAINAGE PLAN LEGEND

- MAJOR CONTOUR
- MINOR CONTOUR
- STORM SEWER MAIN
- PROP. MINOR CONTOUR
- PROP. ELECTRIC SERVICE
- PROP. ELECTRIC / TELCOM CONDUIT
- GAS SERVICE
- PROP. GAS SERVICE
- OVERHEAD WIRES
- SANITARY MAIN
- PROP. SANITARY MAIN / LATERAL
- PROP. SANITARY LATERAL
- WATER MAIN / LATERAL
- PROP. WATER MAIN / LATERAL
- PROP. WATER LATERAL
- PROP. 4" WATER SERVICE
- SAWCUT LIMITS
- PROPERTY LINE (PIQ)
- MUNICIPALITY LINE
- 100 YEAR FLOODPLAIN
- PROPOSED 100 YEAR FLOODPLAIN
- STREAM BANK
- TREELINE

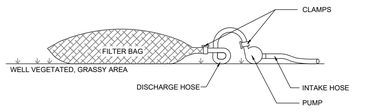



UrhB soils
SUNNYBROOK CREEK (ORELAND RUN)
RECEIVING WATERS
TRIB 00857 TO WISSAHICKON CREEK
AKA SUNNYBROOK CREEK (ORELAND RUN)
DESIGNATED USE: TSF-MF
CONSTRUCION FENCE
LIMIT OF DISTURBANCE
0.52 ACRES
100 YEAR FLOOD PLAIN PER FEMA'S FLOOD INSURANCE RATE MAP FOR MONTGOMERY COUNTY, PA, PANEL 577, MAP NO. 42091C0377G DATED 3-2-2016
UrhB soils
ZONE AE – 100 YEAR FLOOD PLAIN PER RECORD PLAN FOR FLOURTOWN SHOPPING CENTER BY GILMORE & ASSOCIATES INC., DATED 9/13/13.
BETHLEHEM PIKE
(A.K.A. S.R. 2016)
(WIDGET WIDTH VARIES ROADWAY)
UgB soils
STOCKPILE
CONTRACTOR TO MAINTAIN VEHICULAR ACCESS OPEN AT ALL TIMES ALONG REAR DRIVE. CONSTRUCTION ASSOCIATED WITH UTILITY WORK SHALL PROCEED IN SECTIONS TO ALLOW VEHICULAR PASSAGE.
CONCRETE WASHOUT
CONSTRUCTION EN

STANDARD CONSTRUCTION DETAIL # 3-16
PUMPED WATER FILTER BAG



PLAN VIEW



ELEVATION VIEW

NOTES:
LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 LB/IN
GRAB TENSILE	ASTM D-4632	205 LB
PUNTURE	ASTM D-4833	110 LB
MULLEN BURST	ASTM D-3786	350 PSI
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-4751	80 SIEVE

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME ½ FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

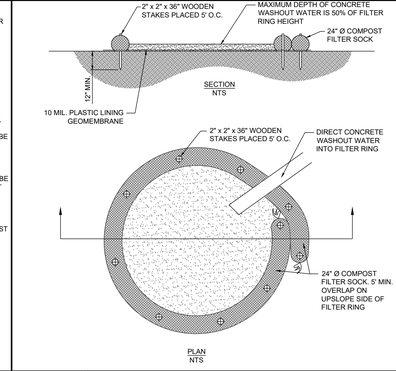
NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR ½ THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

A1 PUMPED WATER FILTER BAG
NOT TO SCALE



NOTES:
1. INSTALL ON FLAT GRADE FOR OPTIMUM PERFORMANCE.
2. 18" Ø FILTER SOCK MAY BE STACKED ONTO DOUBLE 24" Ø SOCKS IN PYRAMIDAL CONFIGURATION FOR ADDED HEIGHT.
3. A SUITABLE IMPERVIOUS GEOMEMBRANE SHALL BE PLACED AT THE LOCATION OF THE WASHOUT PRIOR TO INSTALLING THE SOCKS. THE GEOMEMBRANE SHALL HAVE NO HOLES OR TEARS TO PREVENT LEACHING OF LIQUIDS INTO THE GROUND.
4. CONCRETE WASHOUTS SHALL NOT BE PLACED WITHIN 50' OF STORM DRAINS, OPEN DITCHES OR SURFACE WATERS.
5. COMPOST SOCKS SHOULD BE STAKED IN THE MANNER RECOMMENDED BY THE MANUFACTURER AROUND PERIMETER OF THE GEOMEMBRANE SO AS TO FORM A RING WITH THE ENDS OF THE SOCK LOCATED AT THE UPSLOPE CORNER .
6. PROVIDE PROPER SIGNAGE TO DRIVERS SO THAT THEY ARE AWARE OF THE PRESENCE OF WASHOUT FACILITIES.
7. SEDIMENT BASINS AND SEDIMENT TRAPS MAY NOT BE USED AS CONCRETE WASHOUT DEVICES, SINCE THEY DISCHARGE DIRECTLY TO SURFACE WATERS. THIS DISCHARGE WOULD HAVE AN ADVERSE EFFECT UPON THE RECEIVING WATER. IN ADDITION, CONTINUED USE OF A BASIN OR TRAP AS A WASHOUT FACILITY WOULD SIGNIFICANTLY REDUCE THE STORAGE CAPACITY OF THE BASIN OR TRAP.

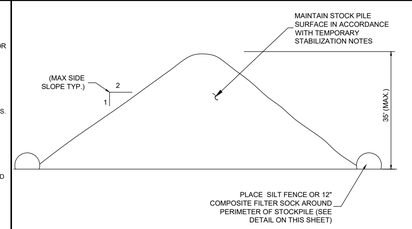
MAINTENANCE:
1. ALL CONCRETE WASHOUT FACILITIES SHOULD BE INSPECTED DAILY. DAMAGED OR LEAKING WASHOUTS SHOULD BE DEACTIVATED AND REPAIRED OR REPLACED IMMEDIATELY.
2. ACCUMULATED MATERIALS SHOULD BE REMOVED WHEN THEY REACH 75% CAPACITY.
3. PLASTIC LINERS SHOULD BE REPLACED WITH EACH CLEANING OF THE WASHOUT FACILITY.

SELF-INSTALLED WASHOUTS (ALTERNATE):
THESE TYPES OF WASHOUTS SHOULD BE EXCAVATED BELOW GRADE TO PREVENT RUNOFF OF THE WASH WATER AND MINIMIZE THE POTENTIAL FOR BREACHING. THEY SHOULD BE SIZED TO HANDLE SOLIDS, WASH WATER, AND RAINFALL. A GOOD RULE OF THUMB IS THAT 7 GALLONS OF WASH WATER ARE REQUIRED TO WASH ONE TRUCK CHUTE AND 50 GALLONS FOR THE HOPPER OF A CONCRETE PUMP TRUCK.

FOR LARGER SITES, A BELOW-GRADE WASHOUT SHOULD BE A MINIMUM OF 10 FEET WIDE AND PROVIDE AT LEAST 12 INCHES OF FREEBOARD ABOVE THE LIQUID AND SOLID WASTE ANTICIPATED BETWEEN CLEANOUT INTERVALS. THE PIT SHOULD BE LINED WITH PLASTIC SHEETING OF AT LEAST 10-MIL THICKNESS (WITH NO HOLES OR TEARS) TO PREVENT LEACHING OF LIQUIDS INTO THE GROUND.

A3 TYPICAL COMPOST SOCK CONCRETE WASHOUT INSTALLATION
NOT TO SCALE

2019-03-01 / LEC STD



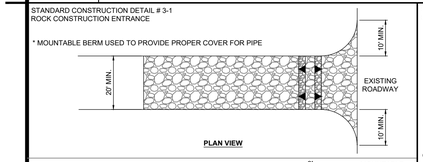
CUBIC YARDS OF TOPSOIL REQUIRED FOR APPLICATION TO VARIOUS DEPTHS

DEPTH (IN)	PER 1,000 SQUARE FEET	PER ACRE
1	3.1	134.00
2	6.2	268.00
3	9.3	403.00
4	12.4	537.00
5	15.5	672.00
6	18.6	806.00
7	21.7	940.00
8	24.8	1074.00

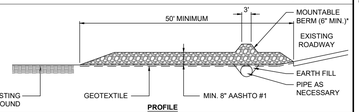
TOPSOIL APPLICATION
- GRADED AREAS SHOULD BE SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES TO PERMIT BONDING OF THE TOPSOIL TO THE SURFACE AREAS AND TO PROVIDE A ROUGHENED SURFACE TO PREVENT TOPSOIL FROM SLIDING DOWN SLOPE.
- TOPSOIL SHOULD BE UNIFORMLY DISTRIBUTED ACROSS THE DISTURBED AREA TO A DEPTH OF 4 TO 8 INCHES MINIMUM -- 2 INCHES ON FILL OUTSLOPES. SPREADING SHOULD BE DONE IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL PREPARATION OR TILLAGE. IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOIL PLACEMENT SHOULD BE CORRECTED IN ORDER TO PREVENT FORMATION OF DEPRESSIONS UNLESS SUCH DEPRESSIONS ARE PART OF THE PCSM PLAN.
- TOPSOIL SHOULD NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET, OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION. COMPACTED SOILS SHOULD BE SCARIFIED 6 TO 12 INCHES ALONG CONTOUR WHEREVER POSSIBLE PRIOR TO SEEDING.

A5 TEMPORARY TOPSOIL STOCKPILE
NOT TO SCALE

STANDARD CONSTRUCTION DETAIL # 3-1
ROCK CONSTRUCTION ENTRANCE



PLAN VIEW



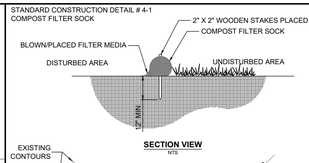
PROFILE

- REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.
- RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.
- MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.
- MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

B1 ROCK CONSTRUCTION ENTRANCE
NOT TO SCALE

2019-03-01 / LEC STD

STANDARD CONSTRUCTION DETAIL # 4-1
COMPOST FILTER SOCK



ON PAVED SURFACES, CONCRETE BLOCKS SHOULD BE USED IMMEDIATELY DOWNSLOPE OF SOCKS (AT SAME INTERVALS AS STAKES)

NOTES:
- SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2.
- COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT (FIGURE 4.1). MAXIMUM SLOPE LENGTH ABOVE ANY SOCK SHALL NOT EXCEED THAT SHOWN ON FIGURE 4.2. STAKES MAY BE INSTALLED IMMEDIATELY DOWNSLOPE OF THE SOCK IF SO SPECIFIED BY THE MANUFACTURER.
- TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.
- ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE ABOVEGROUND HEIGHT OF THE SOCK AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.
- 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 FILTER SOCKS SHALL BE REPLACED AFTER 6 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.
- COMPOST SHOULD BE A WELL DECOMPOSED, WEED-FREE ORGANIC MATTER DERIVED FROM AGRICULTURE, FOOD, STUMP GRINDINGS, AND YARD OR WOODBARK ORGANIC MATTER SOURCES. THE COMPOST SHOULD BE AEROBICALLY COMPOSTED. THE COMPOST SHOULD POSSESS NO OBJECTIONABLE ODORS AND SHOULD BE REASONABLY FREE (<1%, BY DRY WEIGHT) OF MAN-MADE FOREIGN MATTER. THE COMPOST PRODUCT SHOULD NOT RESEMBLE THE RAW MATERIAL FROM WHICH IT WAS DERIVED. WOOD AND BARK CHIPS, GROUND CONSTRUCTION DEBRIS OR REPROCESSED WOOD PRODUCTS ARE NOT ACCEPTABLE AS THE ORGANIC COMPONENT OF THE MIX.
- THE PHYSICAL PARAMETERS OF THE COMPOST SHOULD COMPLY WITH THE STANDARDS IN TABLE 4.2. THE STANDARDS CONTAINED IN THE PENNDOT PUBLICATION 408 ARE AN ACCEPTABLE ALTERNATIVE.

TABLE 4.2
COMPOST STANDARDS

ORGANIC MATERIAL CONTENT	25% - 100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND ELONGATED
pH	5.5 – 8.5
MOISTURE CONTENT	30% - 60%
PARTICLE SIZE	30%-50% PASS THROUGH 3/8" SCREEN
SOLUBLE SALT CONCENTRATION	5.0 dS/m (mmhos/cm) MAXIMUM

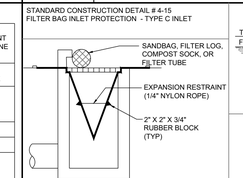
TABLE 4.1
COMPOST SOCK FABRIC MINIMUM SPECIFICATIONS

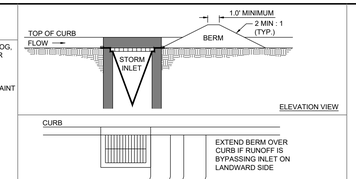
MATERIAL TYPE	3 mil HDPE	5 mil HDPE	5 mil HDPE	MULTI-FILAMENT POLYPROPYLENE (MFPP)	HEAVY DUTY MULTI-FILAMENT POLYPROPYLENE (HDMFPP)
MATERIAL CHARACTERISTICS	PHOTO-DEGRADABLE	PHOTO-DEGRADABLE	BIO-DEGRADABLE	PHOTO-DEGRADABLE	PHOTO-DEGRADABLE
SOCK DIAMETERS	12" 18"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"
MESH OPENING	3/8"	3/8"	3/8"	3/8"	1/8"
TENSILE STRENGTH		26 PSI	26 PSI	44 PSI	202 PSI
ULTRAVIOLET STABILITY % ORIGINAL STRENGTH (ASTM G-155)	23% at 1000 hr.	23% at 1000 hr.		100% at 1000 hr.	100% at 1000 hr.
MINIMUM FUNCTIONAL LONGEVITY	6 MONTHS	9 MONTHS	6 MONTHS	1 YEAR	2 YEAR
TWO-PLY SYSTEM					
INNER CONTAINMENT NETTING				HDPE BIAXIAL NET	
				CONTINUOUSLY WOUND	
				FUSION-WELDED JUNCTURES	
				3/4" X 3/4" MAX. APERTURE SIZE	
OUTER FILTRATION MESH				COMPOSITE POLYPROPYLENE FABRIC (WOVEN LAYER AND NON-WOVEN FLEECE MECHANICALLY FUSED VIA NEEDLE PUNCH)	
				3/16" MAX. APERTURE SIZE	
SOCK FABRICS COMPOSED OF BURLAP MAY BE USED ON PROJECTS LASTING 6 MONTHS OR LESS.					

B2 COMPOST FILTER SOCK
NOT TO SCALE

2019-03-01 / LEC STD

STANDARD CONSTRUCTION DETAIL # 5-15
FILTER BAG INLET PROTECTION - TYPE C INLET





MAXIMUM DRAINAGE AREA = ¾ ACRE.

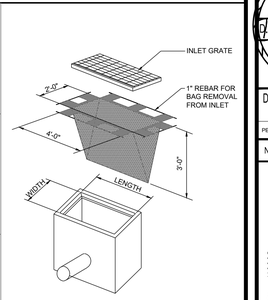
INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.

ROLLED EARTHEN BERM SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. SIX INCH MINIMUM HEIGHT ASPHALT BERM SHALL BE MAINTAINED UNTIL ROADWAY SURFACE RECEIVES FINAL COAT.

AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS, A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.

INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE OF ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.

DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.



ISOMETRIC VIEW

B5 FILTER BAG INLET PROTECTION - TYPE C INLET
NOT TO SCALE

2019-03-01 / LEC STD

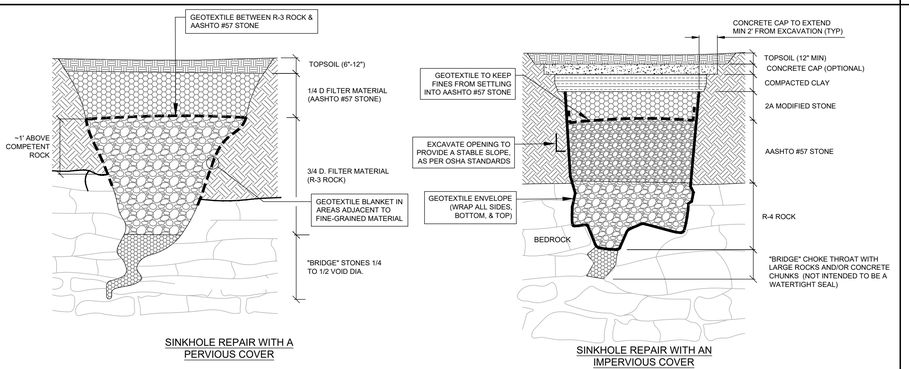
TEMPORARY STABILIZATION NOTES:

SURFACE STABILIZATION CRITERIA:
ALL DENUDED SOIL SURFACES, INCLUDING SOIL STOCKPILES, ARE SUBJECT TO EROSION AND SHALL BE STABILIZED EITHER TEMPORARILY OR PERMANENTLY. DURING NON-GERMINATION PERIODS, MULCH MUST BE APPLIED AT RECOMMENDED RATES. CRUSHED STONE ON PAVEMENT SUB-GRADES IS CONSIDERED ADEQUATE STABILIZATION. ALL DISTURBED ZONES AND VEGETATED REGIONS SHALL BE STABILIZED, PREFERABLY WITH A PERMANENT TREATMENT AS FOLLOWS:

A. TEMPORARY COVER ON DISTURBED AREAS:
DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE RE-DISTURBED WITHIN ONE (1) YEAR MAY BE SEEDED AND MULCHED WITH A TEMPORARY COVER. PREPARATION OF THE SURFACE, FERTILIZATION AND SEEDING WITH EITHER ANNUAL OR WINTER RYE GRASS SHALL BE DONE IN COMPLIANCE WITH THE PENN STATE GUIDELINES UNDER "EROSION CONTROL & CONSERVATION PLANTING ON NON-CROPLAND".
a. GROUND LIMESTONE SHALL BE APPLIED AT A RATE OF 1.0 TON/ACRE OR 46 LBS/1,000 S.F.
b. FERTILIZER 10-10-10 SHALL BE APPLIED AT A RATE OF 500 LBS/ACRE. (BOTH FERTILIZER AND LIMESTONE SHALL BE WORKED INTO THE SOIL TO A DEPTH OF FOUR (4) INCHES PRIOR TO SEEDING.)
c. ANNUAL RYEGRASS SHALL BE APPLIED AT A RATE OF 48 LBS/ACRE OR 1.1 LB/1,000 S.F. (15% PLS)
d. WINTER RYEGRASS SHALL BE APPLIED AT A RATE OF 168 LBS/ACRE OR 3.9 LBS/1,000 S.F. (15% PLS)
e. AFTER SEEDING, MULCH WITH HAY OR STRAW AT 3.0 TONS/ACRE OR 138 LBS/ 1,000 S.F. (MULCHING IS MOST APPLICABLE TO THOSE AREAS SUBJECT TO PERIODIC DISTURBANCE AND REWORKING.)
f. GENERAL INFORMATION:
i. AREAS THAT FAIL TO GERMINATE MUST BE RE-SEEDED.
ii. WHERE DISTURBED AREAS ARE DIFFICULT TO STABILIZE, NETTING SHOULD BE USED TO HOLD SEED AND MULCH IN PLACE. THIS IS ESPECIALLY IMPORTANT AROUND WATERCOURSES, WITHIN SWALES AND AREAS OF CONCENTRATED FLOWS, AND ON (STEEP) SLOPES.

B. STANDARD FOR STABILIZATION WITH MULCH:
a. PERFORM ALL CULTURAL OPERATIONS AT RIGHT ANGLES TO THE SLOPE.
b. STRAW AND HAY MULCH SHOULD BE ANCHORED IMMEDIATELY AFTER APPLICATION TO PREVENT WIND BLOWING.
c. GRADE AS NEEDED AND FEASIBLE. SEE STANDARD FOR LAND GRADING.
d. PROTECTIVE MATERIALS TO BE USED:
i. NON-ROTTED SMALL-GRAIN STRAW OR HAY AT 3.0 TONS/ACRE, SPREAD UNIFORMLY AT 140 LBS/1,000 S.F. AND ANCHORED WITH LIQUID MULCH BINDER; OR BY A HYDRO-SEEDER OR HYDRO-MULCHER. (USE IS LIMITED TO FLATTER SLOPES DURING OPTIMUM SEEDING PERIODS IN SPRING AND FALL.)
ii. LIQUID MULCH BINDERS: APPLY IMMEDIATELY AFTER PLACEMENT OF HAY OR STRAW MULCH TO MINIMIZE LOSS BY WIND OR WATER. IF EMULSIFIED ASPHALT (CONTAINING NO SOLVENTS OR OTHER DILUTING AGENTS TOXIC TO PLANT OR ANIMAL LIFE), APPLY AT A RATE OF 31 GAL/1,000 S.Y.

C. STANDARD FOR LAND GRADING:
a. DEFINITION: RESHAPING THE GROUND SURFACE BY GRADING TO PLANNED GRADES WHICH ARE DETERMINED BY TOPOGRAPHIC SURVEY AND LAYOUT.
b. PROVISIONS SHALL BE MADE TO SAFELY CONVEY SURFACE WATER TO STORM DRAINS OR SUITABLE WATER COURSES AND TO PREVENT SURFACE RUNOFF FROM DAMAGING CUT FACES AND FILL SLOPES.
c. ADJOINING PROPERTY(IES) SHALL BE PROTECTED FROM EXCAVATION AND FILLING OPERATIONS.
d. TIMBER, LOGS, BRUSH, RUBBISH, ROCKS, STUMPS AND VEGETATIVE MATTER WHICH WILL INTERFERE WITH THE GRADING OPERATION OR AFFECT THE PLANNED STABILITY OF FILL AREAS SHALL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH APPROVED DISPOSAL METHODS.
e. FILL MATERIAL IS TO BE FREE OF BRUSH, RUBBISH, TIMBER, LOGS, VEGETATIVE MATTER AND STUMPS IN AMOUNTS THAT WILL BE DETRIMENTAL TO CONSTRUCTING STABLE FILLS.
f. ALL FILLS SHALL BE COMPACTED SUFFICIENTLY FOR THEIR INTENDED PURPOSE AND AS REQUIRED TO REDUCE SLIPPING, EROSION OR EXCESS SATURATION. (REFER TO GEOTECHNICAL REQUIREMENTS OF THE PROJECT SITE FOR SPECIFIC STANDARD FOR FILL PLACEMENT AND COMPACTION.)
g. ALL DISTURBED AREAS SHALL BE LEFT WITH A CLEAN AND FINISHED APPEARANCE AND SHALL BE PROTECTED FROM EROSION USING APPROVED EROSION AND SEDIMENT POLLUTION CONTROL BMPS.



REPAIR NOTE:
1. THE INFORMATION PROVIDED IS FOR GUIDANCE ONLY. DUE TO THE VARIABLE NATURE OF SINKHOLES, A PROFESSIONAL GEOLOGIST OR LICENSED GEOTECHNICAL ENGINEER SHALL BE ENLISTED TO PREPARE DESIGNS AND SPECIFICATIONS IN ADDITION TO THE SUPERVISION OF THE REPAIR.

DETAIL NOTES:
1. LOOSE MATERIAL SHALL BE EXCAVATED FROM THE SINKHOLE AND EXPOSE SOLUTION VOID(S) IF POSSIBLE. ENLARGE SINKHOLE IF NECESSARY TO ALLOW FOR INSTALLATION OF FILTER MATERIALS. OSHA REGULATIONS MUST BE FOLLOWED AT ALL TIMES DURING EXCAVATION.
2. GEOTEXTILE SHALL BE NON-WOVEN WITH A BURST STRENGTH BETWEEN 100 AND 200 PSI.
3. SELECT FIELD STONE(S) ABOUT 1.5 TIMES LARGER THAN SOLUTION VOID(S) TO FORM "BRIDGE". PLACE ROCK(S) SO NO LARGE OPENINGS EXIST ALONG THE SIDES. STONES USED FOR THE "BRIDGE" AND FILTERS SHALL HAVE A MODERATELY HARD ROCK STRENGTH AND BE RESISTANT TO ABRASION AND DEGRADATION. SHALE AND SIMILAR SOFT AND/OR NON-DURABLE ROCK ARE NOT ACCEPTABLE.
4. MINIMUM THICKNESS OF R-4 ROCK IS 18." AASHTO #57 STONE THICKNESS SHALL BE ½ TO ¾ THAT OF THE R-4 ROCK. MINIMUM THICKNESS OF 2A MODIFIED CRUSHED STONE SHALL BE 9". AASHTO #57 STONE AND 2A MODIFIED CRUSHED STONE SHALL BE COMPACTED AFTER EACH PLACEMENT.
5. COMPACTED CLAY SEAL SHALL BE A MINIMUM OF 12" THICK. CLAY SHALL BE PLACED IN 6" TO 9" LIFTS AND THOROUGHLY COMPACTED.
6. CONCRETE CAP, WHICH IS OPTIONAL, SHALL BE A MINIMUM OF 8" THICK. USE 4,000 PSI CONCRETE WITH 6" X 6" - 6 GAUGE WELDED WIRE FABRIC, OR # 3 REBAR ON 18" O.C. BOTH WAYS.
7. TOPSOIL SHALL BE A MINIMUM OF 12" THICK. GRADE FOR POSITIVE DRAINAGE AWAY FROM SINKHOLE AREA.

C2 SINKHOLE REPAIR
NOT TO SCALE

2019-03-01 / LEC STD

PERMANENT STABILIZATION NOTES:

A. STANDARD FOR SEEDING AND SOIL TREATMENT FOR PERMANENT VEGETATIVE COVER:
a. SITE PREPARATION:
1. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, ANCHORING AND MAINTENANCE.
2. ii. SUBSOIL SHOULD BE TESTED BY A REPUTABLE LABORATORY FOR THE LIME REQUIREMENT; AND LIMESTONE, IF NEEDED, SHOULD BE APPLIED TO BRING SOIL PH TO 6.5 AND INCORPORATED INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF FOUR (4) INCHES.
3. iii. IMMEDIATELY PRIOR TO TOPSOIL DISTRIBUTION, THE SURFACE SHOULD BE SCARIFIED TO PROVIDE A GOOD BOND WITH THE TOPSOIL.
b. APPLYING TOPSOIL:
AREAS WHICH ARE TO BE TOP-SOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES (6 TO 12 INCHES ON COMPACTED SOILS) PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING, I.E. YARDS.
1. TOPSOIL SHOULD BE HANDLED ONLY WHEN IT IS DRY ENOUGH TO WORK WITHOUT DAMAGING SOIL STRUCTURE.
2. UNIFORM APPLICATION TO A DEPTH OF FIVE (5) INCHES (UNSETTLED) IS RECOMMENDED. SOILS WITH A PH OF 4.0 OR LESS, OR CONTAINING IRON SULFIDE, SHALL BE COVERED WITH A MINIMUM DEPTH OF TWELVE (12) INCHES OF SOIL HAVING A PH OF 6.0 OR MORE.
c. SEED BED PREPARATION:
1. PERFORM ALL CULTURAL OPERATIONS AT RIGHT ANGLES TO THE SLOPE.
2. APPLY 10-20-20 OR EQUIVALENT RATED FERTILIZER AT A RATE OF 500 LBS./ACRE OR 11 LBS./1,000 S.F.
3. APPLY 300 LBS. OF 38-0-0 PER ACRE OR EQUIVALENT OF SLOW RELEASE NITROGEN.
4. APPLY PULVERIZED DOLOMITIC LIMESTONE AT A RATE OF 6.0 TON/ACRE OR 240 LBS./1,000 S.F.
5. WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF FOUR (4) INCHES. CONTINUE TILLAGE UNTIL A REASONABLY UNIFORM FINE SEEDBED IS PREPARED.
6. REMOVE FROM THE SURFACE ALL STONES TWO (2) INCHES OR LARGER IN ANY DIMENSION. REMOVE ALL OTHER DEBRI

GENERAL NOTES

1. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED AND THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PLANS AND OTHER DOCUMENTS AS APPROVED BY ALL APPLICABLE PERMITTING AUTHORITIES. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND THE REQUIREMENTS AND STANDARDS OF THE LOCAL GOVERNING AUTHORITY.
2. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF VESTIBULES, SLOPE PAVING, SIDEWALKS, EXIT PORCHES, TRUCK DOCKS, PRECISE BUILDING DIMENSIONS AND EXACT BUILDING UTILITY ENTRANCE LOCATIONS.
3. DEBRIS, UNSUITABLE SOIL AND DEMOLITION MATERIAL SHALL NOT BE BURIED ON THE SUBJECT SITE AND ALL UNSUITABLE SOIL, DEMOLITION MATERIAL, DEBRIS AND ANY OTHER WASTE MATERIAL SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, LOCAL LAWS, REGULATIONS AND CODES SITE (CRUSHED STONE/CONCRETE CERTIFIED AND USED AS CLEAN FILL SHALL BE EXCLUDED).
4. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS AS INDICATED IN SPECIFICATIONS UNLESS OTHERWISE NOTED ON THE PLANS, DETAILS AND / OR GEOTECHNICAL REPORT.
5. UNLESS OTHERWISE INDICATED WITHIN THE APPROVED PLANS, ALL DISTURBED AREAS ARE TO RECEIVE SIX INCHES OF TOPSOIL, SEED, MULCH, AND WATER UNTIL A HEALTHY STAND OF GRASS IS ESTABLISHED.
6. ALL DIMENSIONS AND RADII ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED. ALL PROPOSED RADII ARE 5.0' UNLESS OTHERWISE NOTED.
7. PAVEMENT SHALL BE SAW CUT IN STRAIGHT LINES TO THE FULL DEPTH OF THE EXISTING PAVEMENT.
8. EXISTING STRUCTURES WITHIN CONSTRUCTION LIMITS ARE TO BE ABANDONED, REMOVED, OR RELOCATED, AS NECESSARY. ALL COSTS SHALL BE INCLUDED IN BASE BID.
9. FOR MATERIALS AND/OR SPECIFICATIONS NOT SPECIFICALLY REFERENCED ON THESE PLANS OR STATE AND LOCAL REQUIREMENTS THE PROJECT SHALL BE CONSTRUCTED IN CONFORMANCE WITH PENNDOT PUB 408 AS LAST REVISED.

GRADING & DRAINAGE NOTES

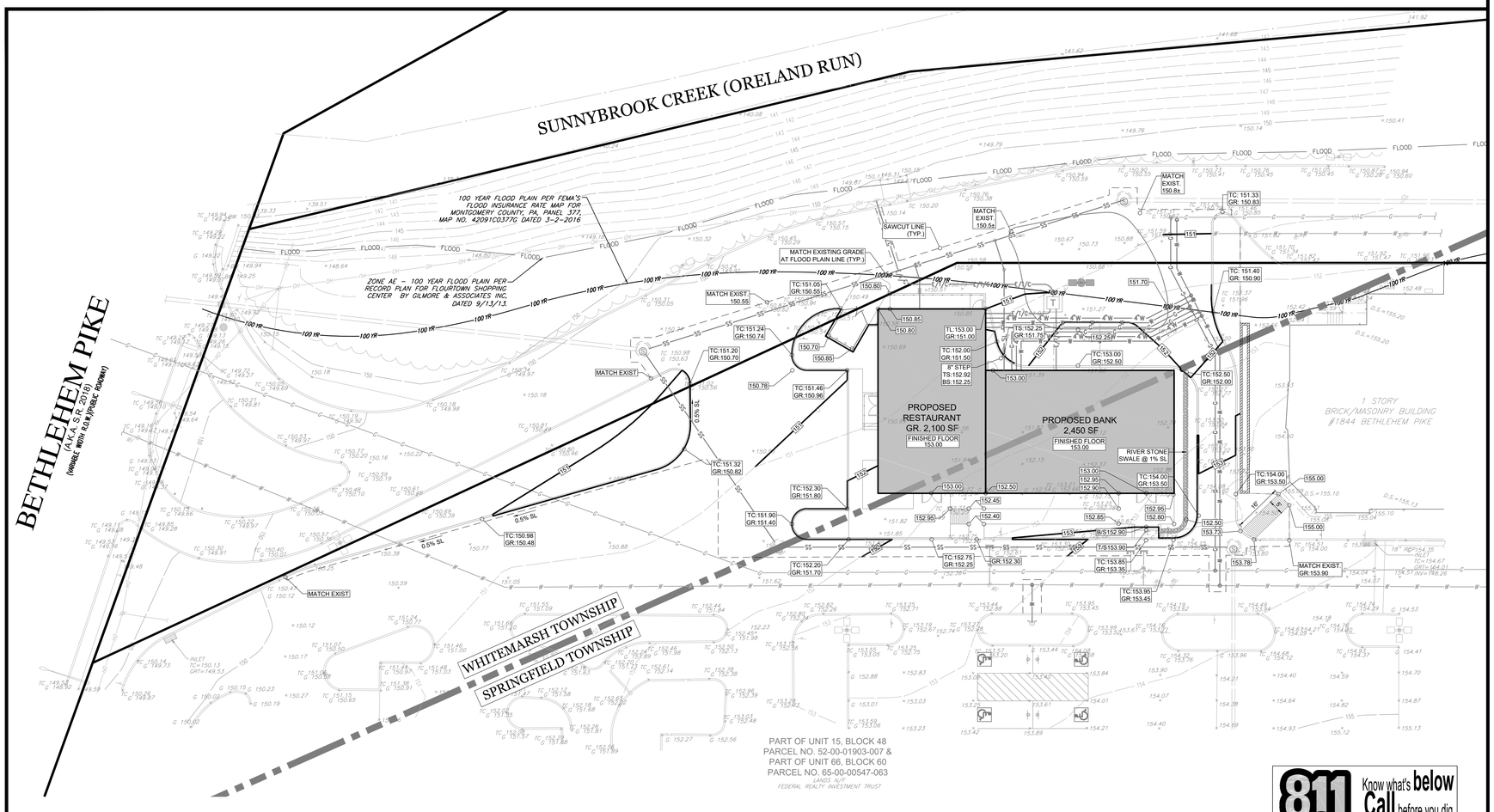
1. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF EXISTING TOPOGRAPHIC INFORMATION PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY DISCREPANCIES THAT MAY AFFECT THE PUBLIC SAFETY OR PROJECT COST. PROCEEDING WITH CONSTRUCTION WITHOUT NOTIFICATION IS DONE SO AT THE CONTRACTOR'S OWN RISK. CONTRACTOR TO ENSURE THE FOLLOWING MINIMUM GRADING STANDARDS TO ENSURE PROPER DRAINAGE AND PREVENTION OF PONDING.
   - 1.1. 0.75% MINIMUM SLOPE AGAINST ALL ISLANDS, GUTTERS, AND CURBS RECEIVING DRAINAGE
   - 1.2. 1.0% ON ALL CONCRETE AND ASPHALT AND 2% MINIMUM ON ALL PERVIOUS SURFACES.
2. SPOT GRADE ELEVATIONS (GR) INDICATED ON THE PLANS SIGNIFY FINISHED GRADE ELEVATION OR FINISHED GRADE AT FACE OF CURB. TOP OF CURB (TC) ELEVATION ARE GENERALLY 6" ABOVE ASPHALT UNLESS NOTED OTHERWISE. SPOT ELEVATIONS SHOWN AT DRAINAGE STRUCTURES REPRESENT THE TOP OF UNIT ELEVATION AT THE CENTER OF THE STRUCTURE.
3. THE TOPS OF EXISTING MANHOLES, INLET STRUCTURES, AND SANITARY CLEANOUT TOPS SHALL BE ADJUSTED, IF REQUIRED TO MATCH PROPOSED GRADES IN ACCORDANCE WITH ALL APPLICABLE STANDARDS. GRADE ADJUSTMENTS SHALL BE MADE PRIOR TO THE INSTALLATION OF PAVEMENT WEARING COURSE OR PLACEMENT OF TOPSOIL IN UNPAVED AREAS.
4. ALL STORMWATER PIPING INSTALLED WITHIN THE REINFORCING ZONE OF THE PROPOSED RETAINING WALLS MUST BE INSTALLED WITH A WATERTIGHT SEAL.
5. HIGH DENSITY POLYETHYLENE (HDPE) PIPES SHALL BE N-12 DUAL WALL, SMOOTH LINED OR EQUIVALENT IN ACCORDANCE WITH ASTM STANDARDS, UNLESS OTHERWISE SPECIFIED.
6. REINFORCED CONCRETE PIPES (RCP) SHALL BE CLASS III, UNLESS OTHERWISE SPECIFIED.

THE CONTRACTOR SHALL ENLIST THE SERVICES OF A QUALIFIED GEOTECHNICAL ENGINEER TO CERTIFY THAT ON-SITE SOIL CONDITIONS AND CONSTRUCTION PRACTICES ARE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE STATE/LOCAL CODES AND ACCEPTED INDUSTRY STANDARDS. CONTRACTOR SHALL ENSURE:

- 6.1. ALL EXCAVATED OR FILLED AREAS SHALL BE COMPACTED AS DIRECTED BY THE QUALIFIED GEOTECHNICAL ENGINEER.
- 6.2. MOISTURE CONTENT AT TIME OF PLACEMENT SHALL BE DOCUMENTED IN A COMPACTION REPORT VERIFYING THAT ALL FILLED AREAS AND SUBGRADE AREAS WITHIN THE BUILDING PAD AND AREAS TO BE PAVED, HAVE BEEN COMPACTED AS DIRECTED BY THE QUALIFIED GEOTECHNICAL ENGINEER.
- 6.3. SUBBASE MATERIAL FOR SIDEWALKS, CURB, OR ASPHALT SHALL BE FREE OF ORGANICS AND OTHER UNSUITABLE MATERIALS. SHOULD SUBBASE BE DEEMED UNSUITABLE BY OWNER OR OWNER'S REPRESENTATIVE, SUBBASE IS TO BE REMOVED AND FILLED WITH APPROVED FILL MATERIAL COMPACTED AS DIRECTED AS DIRECTED BY THE QUALIFIED GEOTECHNICAL ENGINEER

GRADING and DRAINAGE PLAN LEGEND

	MAJOR CONTOUR
	MINOR CONTOUR
	STORM SEWER MAIN
	PROP. MINOR CONTOUR
E E E	PROP. ELECTRIC SERVICE
E/T/C E/T/C	PROP. ELECTRIC / TELCOM CONDUIT
G G G	*GAS SERVICE*
G G G	PROP. GAS SERVICE
OH OH OH	*OVERHEAD WIRES*
	SANITARY MAIN
SS SS SS	PROP. SANITARY MAIN / LATERAL
SL SL SL	PROP. SANITARY LATERAL
SS SS SS	PROP. SANITARY LATERAL
W W W	*WATER MAIN / LATERAL*
W W W	PROP. WATER MAIN / LATERAL
WL WL WL	PROP. WATER LATERAL
WW WW	PROP. WATER LATERAL
4"W 4"W 4"W	PROP. 4" WATER SERVICE
	SAWCUT LIMITS
	PROPERTY LINE (PIQ)
	MUNICIPALITY LINE
100 YR	*100 YEAR FLOODPLAIN*
100 YR	PROPOSED 100 YEAR FLOODPLAIN
	STREAM BANK
	TREELINE



GRAPHIC SCALE 1 INCH = 20 FEET

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REV.	DATE	COMMENT	BY

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL D. ALEXANDER TWEEDIE ENGINEER No. PE071873

D. ALEXANDER TWEEDIE
PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE No. 071873

NOT FOR CONSTRUCTION

PROJECT No: 140065
DRAWN BY: MAR
CHECKED BY: DAT
CAD I.D. #: 07_GP_140065

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PROJECT: PROPOSED SITE IMPROVEMENTS
1800 BETHLEHEM PIKE, FLOURTOWN PA 19031
SPRINGFIELD TOWNSHIP AND WHITEMARSH TOWNSHIP
MONTGOMERY COUNTY, PA
APPLICANT: FEDERAL REALTY INVESTMENT TRUST
TITLE: GRADING & DRAINAGE PLAN

DATE: 2021-03-04
SHEET: 07 of 13
REV. No: 0
GP

D:\DROPBOX (LANDCORE)\PROJECTS\2014\140065 - FEDERAL REALTY - FLOURTOWN PAD\DRAWINGS\00-SITE PLANS\07_GP - 140065.DWG
WED, 03/04/2021 @ 2:00:14 PM

UTILITY NOTES

1. LOCATIONS OF ALL EXISTING AND PROPOSED UTILITY LINES ARE APPROXIMATE. CONTRACTOR IS TO CONFIRM LOCATIONS, SIZES, MATERIALS, AND CONNECTION POINTS INDEPENDENTLY IN ACCORDANCE WITH ARCHITECTURAL/MEP DRAWINGS AND WITH THE APPLICABLE UTILITY COMPANIES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION OR EXCAVATION.
2. ALL UTILITIES AND SERVICES WITHIN THE LIMITS OF DISTURBANCE SHALL BE VERTICALLY AND HORIZONTALLY LOCATED PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION OR EXCAVATION. ALL ACTIVE UTILITY AND/OR SERVICE SYSTEMS THAT ARE TO BE REMOVED OR RELOCATED SHALL BE COORDINATED BY THE CONTRACTOR WITH THE APPLICABLE UTILITY COMPANY REGARDING THE REMOVAL OR RELOCATION OF SUCH. THE CONTRACTOR IS RESPONSIBLE TO PROTECT AND MAINTAIN ALL ACTIVE SYSTEMS THAT ARE NOT BEING REMOVED/ RELOCATED DURING SITE CONSTRUCTION ACTIVITY.
3. CONSTRUCTION SHALL COMMENCE BEGINNING AT THE LOWEST INVERT (POINT OF CONNECTION) AND PROGRESS UP GRADIENT. PROPOSED INTERFACE POINTS (CROSSINGS) WITH EXISTING UNDERGROUND UTILITIES SHALL BE FIELD VERIFIED BY TEST PIT PRIOR TO COMMENCEMENT OF CONSTRUCTION.
4. THE CONTRACTOR SHALL USE AND COMPLY WITH THE REQUIREMENTS OF THE NATIONAL UTILITY NOTIFICATION SYSTEM (811) TO LOCATE ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCEMENT OF ANY WORK. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRS OF DAMAGE TO ANY EXISTING UTILITIES DURING CONSTRUCTION AT NO COST TO THE OWNER.
5. THE CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH THE APPLICABLE UTILITY SERVICE PROVIDER REQUIREMENTS AND IS RESPONSIBLE FOR ALL COORDINATION REGARDING ANY REMOVAL, DISCONNECTION, ABANDONMENT, OR RELOCATIONS OF ANY UTILITY IDENTIFIED OR REQUIRED FOR PROJECT. THE CONTRACTOR SHALL PROVIDE THE OWNER WRITTEN NOTIFICATION THAT THE EXISTING UTILITIES AND SERVICES HAVE BEEN REMOVED, TERMINATED, DISCONNECTED, RELOCATED AND/OR ABANDONED IN ACCORDANCE WITH JURISDICTIONAL AND/OR UTILITY COMPANY REQUIREMENTS.
6. ALL NEW UTILITIES/SERVICES, INCLUDING ELECTRIC, TELEPHONE, CABLE TV, ETC. ARE TO BE INSTALLED UNDERGROUND IN ACCORDANCE WITH THE UTILITY/SERVICE PROVIDER INSTALLATION SPECIFICATIONS AND STANDARDS.
7. ELECTRIC, CABLE & TELEPHONE LOCATIONS PROVIDED ON THESE PLANS AREA APPROXIMATE AND SHOWN FOR SCHEMATIC PURPOSES ONLY. ACTUAL LOCATIONS ARE TO BE DESIGNED AND SUBMITTED BY LOCAL UTILITY SERVICE COMPANIES UPON CONTRACTOR FILING THE REQUIRED SERVICE CONNECTION APPLICATION FOR THE PROJECT.
8. THE TOPS OF EXISTING MANHOLES AND UTILITY STRUCTURES SHALL BE ADJUSTED, IF REQUIRED, TO MATCH PROPOSED GRADES IN ACCORDANCE WITH ALL APPLICABLE STANDARDS.
9. ALL FILL, COMPACTION, AND BACKFILL MATERIALS REQUIRED FOR UTILITY INSTALLATION SHALL BE IN ACCORDANCE WITH THE APPLICABLE UTILITY, MUNICIPAL OR STATE REGULATION UNLESS A GEOTECHNICAL REPORT FOR THE PROJECT SITE HAS BEEN PREPARED AND PROVIDES GUIDANCE FOR THESE ITEMS. IN SUCH CASES, THE MORE STRINGENT RECOMMENDATIONS SHALL BE IMPLEMENTED. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THAT ANY IMPORT SOIL(S) ARE CERTIFIED "CLEAN FILL" AS DEFINED BY THE APPLICABLE DEPARTMENT OF ENVIRONMENTAL PROTECTION.
10. ALL MANHOLE OR CLEANOUT COVERS SHALL BE STAMPED WITH THE APPROPRIATE UTILITY CALLOUT WHICH MAY INCLUDE BUT IS NOT LIMITED TO, "SANITARY", "STORM", "WATER", "ELECTRIC", "GAS" OR "TELE". PRIOR TO FABRICATING, THE CONTRACTOR MUST COORDINATE WITH THE APPROPRIATE UTILITY OWNER TO DETERMINE THE EXACT NOMENCLATURE THAT SHOULD BE STAMPED ON THE RESPECTIVE COVER.

UTILITY PLAN LEGEND

- *MAJOR CONTOUR*
- *MINOR CONTOUR*
- *STORM SEWER MAIN*
- PROP. MINOR CONTOUR
- PROP. ELECTRIC SERVICE
- PROP. ELECTRIC / TELCOM CONDUIT
- *GAS SERVICE*
- PROP. GAS SERVICE
- *OVERHEAD WIRES*
- *SANITARY MAIN*
- PROP. SANITARY MAIN / LATERAL
- PROP. SANITARY LATERAL
- PROP. SANITARY LATERAL
- *WATER MAIN / LATERAL*
- PROP. WATER MAIN / LATERAL
- PROP. WATER LATERAL
- PROP. WATER LATERAL
- PROP. 4" WATER SERVICE
- SAWCUT LIMITS
- PROPERTY LINE (PIQ)
- MUNICIPALITY LINE
- *100 YEAR FLOODPLAIN*
- PROPOSED 100 YEAR FLOODPLAIN
- STREAM BANK
- TREELINE

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TICKET #:

SUNNYBROOK CREEK (ORELAND RUN)

BETHLEHEM PIKE
(A.K.A. S.R. 2015)
(WIDBLE WIDTH R.O.W./PUBLIC ROADWAY)

WHITEMARSH TOWNSHIP
SPRINGFIELD TOWNSHIP

100 YEAR FLOOD PLAIN PER FEMA'S FLOOD INSURANCE RATE MAP FOR MONTGOMERY COUNTY, PA, PANEL 377, MAP NO. 42091C0377G DATED 3-2-2016

ZONE AE – 100 YEAR FLOOD PLAIN PER RECORD PLAN FOR FLOURTOWN SHOPPING CENTER BY GILMORE & ASSOCIATES INC, DATED 9/13/13.

PART OF UNIT 15, BLOCK 48
PARCEL NO. 52-00-01903-007 &
PART OF UNIT 66, BLOCK 60
PARCEL NO. 65-00-00547-063
LANDS N/F
FEDERAL REALTY INVESTMENT TRUST

PROPOSED RESTAURANT GR. 2,100 SF
FINISHED FLOOR 153.00

PROPOSED BANK 2,450 SF
FINISHED FLOOR 153.00

1 STORY BRICK/MASONRY BUILDING #1844 BETHLEHEM PIKE

LIMIT OF DISTURBANCE LOD = 0.50 AC

GC TO COORDINATE SERVICE CONNECTIONS WITH LOCAL UTILITY AUTHORITY & CENTER OWNER

PROPOSED PRIMARY ELECTRIC AND TELCOM SERVICE CONDUITS

DOGHOUSE SANITARY MH #1 PROP. INV. IN 138.00 EXIST. INV. OUT 138.00 (CONTRACTOR TO FIELD VERIFY INVERT)

PROP. 162 LF 15" PVC SANITARY SEWER MAIN @ 0.3 % SLOPE

PROP. 74 LF 15" PVC SANITARY SEWER MAIN @ MIN. 0.3 % SLOPE

SANITARY MH #3 RIM 151.65 INV. IN 138.22

PROP. 144 LF 15" PVC SANITARY SEWER MAIN @ MIN. 0.3 % SLOPE

A PORTION OF THE EXISTING UTILITY EASEMENT WILL BE VACATED AND A NEW EASEMENT WILL BE PROVIDED CENTERED ON RELOCATED FIRE HYDRANT

5 LF 4" PVC SAN. SEWER LATERAL @ 10.0% SLOPE

SANITARY DROP C/O INV. IN 147.97 INV. OUT 138.78

DOGHOUSE SANITARY MH #2 EXIST. INV. IN 138.7 ± PROP. INV. 138.50

INV. 138.35

10 LF 4" PVC SAN. SEWER LATERAL @ 10.0% SLOPE

SANITARY DROP C/O INV. IN 147.00 INV. OUT 139.35

33 LF 4" PVC SAN. SEWER LATERAL @ 3.0% SLOPE

2-WAY CLEANOUT

10 LF 4" PVC SAN. SEWER LATERAL @ 3.0% SLOPE

SANITARY SEWER BUILDING CONNECTION INV. 148.00

SECONDARY ELECTRIC SERVICE, TELCOM, WATER & GAS BUILDING CONNECTIONS

2-WAY CLEANOUT

SECONDARY ELECTRIC SERVICE & TELCOM BUILDING CONNECTIONS

WATER & GAS BUILDING CONNECTIONS

SANITARY SEWER BUILDING CONNECTION INV. 148.00

TRANSFORMER ON CONC. PAD w/ BOLLARDS

4" DIP FIRE SUPPRESSION WATER SERVICE TEE w/ VALVE & SERVICE LINE

1-1/2" COPPER DOMESTIC WATER SERVICE CONNECTION & SERVICE LINE

METERS & BACKFLOW PREVENTERS TO BE LOCATED INSIDE BUILDING

BUILDING GAS SERVICE CONNECTION & LINES

4" DIP FIRE SUPPRESSION WATER SERVICE TEE w/ VALVE & SERVICE LINE

1-1/2" COPPER DOMESTIC WATER SERVICE CONNECTION & SERVICE LINE

METERS & BACKFLOW PREVENTERS TO BE LOCATED INSIDE BUILDING

RE-ROUTED WATER MAIN

RE-ROUTED GAS MAIN

GC TO VERIFY EXISTING SERVICE SIZES PRIOR TO CONSTRUCTION

A PORTION OF THE EXISTING UTILITY EASEMENT WILL BE VACATED AND A NEW EASEMENT WILL BE PROVIDED CENTERED ON RELOCATED UTILITIES

SANITARY MH #4 RIM 153.65 (CONTRACTOR TO FIELD VERIFY INVERT)

PROPOSED GAS MAIN EXTENSION TAP

PROPOSED WATER MAIN EXTENSION WET TAP w/ VALVE

RELOCATED FIRE HYDRANT w/ 6" DIP WATER SERVICE LINE & VALVE

GC TO VERIFY LOCATION, SIZE, DEPTH AND CONDITION PRIOR TO CONSTRUCTION. GC TO COORDINATE CONNECTIONS w/ LOCAL GOVERNING UTILITY AUTHORITY

APPROX. LOCATION OF U.G. GAS LINE

APPROX. LOCATION OF U.G. WATER LINE

APPROX. LOCATION OF U.G. ELEC. LINE

15" PVC

GRAPHIC SCALE
20 0 10 20 40 80
1 INCH = 20 FEET

REV.	DATE	COMMENT	BY

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
D. ALEXANDER TWEEDIE
ENGINEER
No. PE071873
PENNSYLVANIA

D. ALEXANDER TWEEDIE
PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE No. 071873

NOT FOR CONSTRUCTION

PROJECT No: 140165
DRAWN BY: MAR
CHECKED BY: DAT
CAD I.D. #: 08_UP_140065

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Engineering Consultants, P.C.
423 EAST MAIN STREET
PO BOX 87828 #85287
PHILADELPHIA, PENNSYLVANIA 19181-0635
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PROJECT: PROPOSED SITE IMPROVEMENTS
1899 BETHLEHEM PIKE, FLOURTOWN PA 19031
SPRINGFIELD TOWNSHIP AND WHITEMARSH TOWNSHIP
MONTGOMERY COUNTY, PA

APPLICANT: FEDERAL REALTY INVESTMENT TRUST

TITLE: UTILITY PLAN

DATE: 2021-03-04

SHEET: 08 of 13

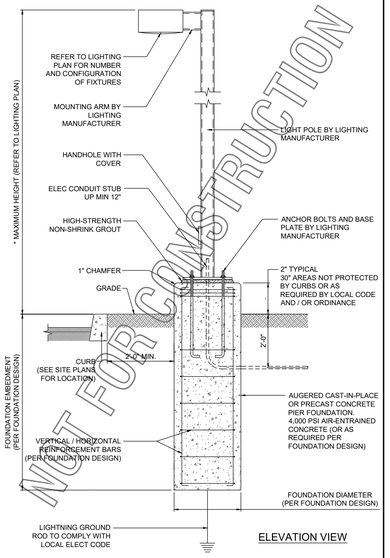
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LIGHT POLE FOUNDATION NOTES

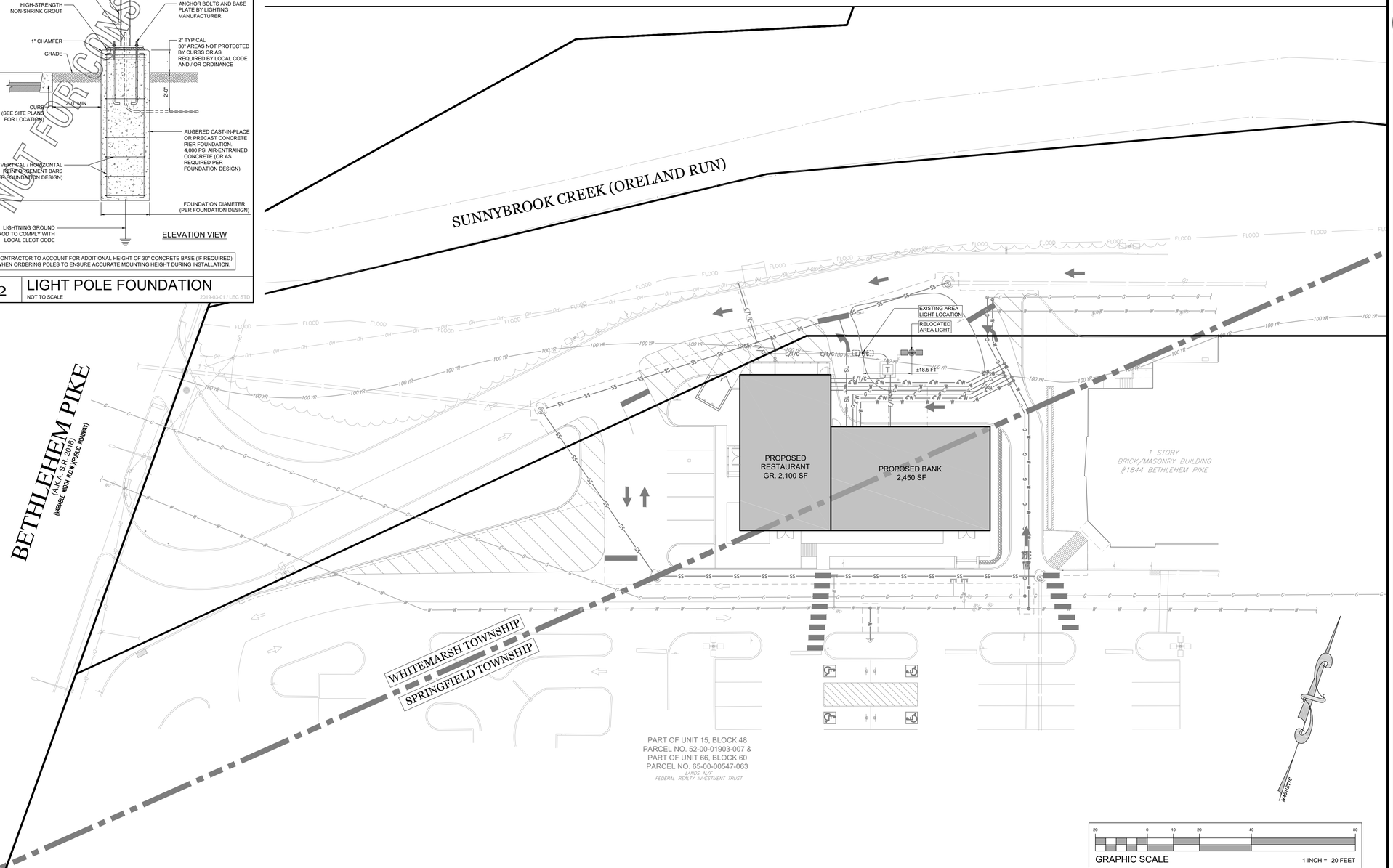
1. CONTRACTOR TO OBTAIN PROJECT SPECIFIC, SIGNED/SEALED FOUNDATION DESIGN AND SUBMIT TO ENGINEER OF RECORD FOR REVIEW PRIOR TO CONSTRUCTION OF PROPOSED FOUNDATIONS.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS, COORDINATE WITH ALL CONTRACT DRAWINGS, PROJECT SHOP DRAWINGS AND FIELD CONDITIONS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL ENSURE NO CONFLICTS ARISE BETWEEN LIGHT POLE FOUNDATIONS, STRUCTURES, AND UTILITIES. IF ANY DISCREPANCIES BETWEEN FIELD CONDITIONS AND DESIGN PLANS ARISE, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY.
3. CONTRACTOR SHALL HAVE A GEOTECHNICAL ENGINEER, LICENSED IN THE PROJECT'S STATE, ON SITE TO INSPECT FILL, MONITOR FILL COMPACTION AND TO VERIFY SUBGRADE ALLOWABLE BEARING CAPACITY AND SOIL DESIGN CRITERIA PRIOR TO CONSTRUCTION IN ACCORDANCE WITH THE FOUNDATION DESIGN PARAMETERS. UNSUITABLE MATERIALS FOUND SHALL BE REMEDIED AS PER THE DIRECTION OF THE ON SITE GEOTECHNICAL ENGINEER.
4. IF CONDITIONS IN THE FIELD ARE DIFFERENT THAN THOSE INDICATED IN THE FOUNDATION DESIGN, THE ENGINEER OF RECORD SHALL BE NOTIFIED IMMEDIATELY.



ELEVATION VIEW

* CONTRACTOR TO ACCOUNT FOR ADDITIONAL HEIGHT OF 30" CONCRETE BASE (IF REQUIRED) WHEN ORDERING POLES TO ENSURE ACCURATE MOUNTING HEIGHT DURING INSTALLATION.

B2 LIGHT POLE FOUNDATION
NOT TO SCALE 2019-03-01 / LEC STD



D2 LIGHTING PLAN
SCALE: 1" = 20'

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BY	DATE	REV.	COMMENT

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REGISTERED PROFESSIONAL
D. ALEXANDER TWEEDIE
ENGINEER
No. PE071873
D. ALEXANDER TWEEDIE
PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE No. 071873
NOT FOR CONSTRUCTION

PROJECT No: 140065
DRAWN BY: MAR
CHECKED BY: DAT
CAD I.D. #: 09_LP_140065

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PROJECT: PROPOSED SITE IMPROVEMENTS
1800 BETHLEHEM PIKE, FLOURTOWN PA 19031
SPRINGFIELD TOWNSHIP AND WHITEMARSH TOWNSHIP
MONTGOMERY COUNTY, PA
APPLICANT: FEDERAL REALTY INVESTMENT TRUST
TITLE: LIGHTING PLAN
DATE: 2021-03-04
SHEET: 09 of 13
REV. No: 0
LP

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LANDSCAPE NOTES

2019-03-01 / LEC STD

(AS APPLICABLE TO THIS PROJECT)

GENERAL NOTES

1. THE LANDSCAPE PLAN IS TO BE USED FOR LANDSCAPE PURPOSES ONLY.
2. ALL DISTURBED UNPAVED AREAS, EXCLUDING PLANTING BEDS, ARE TO BE INSTALLED AS LAWN IN ACCORDANCE WITH SEEDING SPECIFICATIONS, UNLESS OTHERWISE NOTED.
3. IF IRRIGATION IS REQUIRED BY THE OWNER OR APPROVING MUNICIPALITY, THE CONTRACTOR SHALL SUBMIT AN IRRIGATION DESIGN FOR BOTH LAWN & BED AREAS TO THE PROJECT REPRESENTATIVE / OWNER FOR REVIEW AND APPROVAL. IRRIGATION DESIGN SHALL PROVIDE FOR ANY PRESSURE REDUCING DEVICES REQUIRED TO MEET MAXIMUM PRESSURE REQUIREMENT. SYSTEM DESIGN SHALL SHOW ALL VALVES, PIPING, HEADS, BACK FLOW PREVENTION DEVICES, METERS, CONTROLLERS, ROUTING SLEEVES AND ANY OTHER DEVICES NECESSARY.
4. THE PROPERTY OWNER AGREES TO MAINTAIN AND REPLACE TREES IN ACCORDANCE WITH THE TOWNSHIP ORDINANCE SECTION.
5. MAINTAIN PROPER SEPARATION BETWEEN TREES AND UTILITIES. TREES MUST BE PLANTED A MINIMUM DISTANCE OF 5' (THREE FEET) FROM CURBS AND SIDEWALKS, 15' (FIFTEEN FEET) FROM OVERHEAD UTILITIES, AND 6' (SIX FEET) FROM UNDERGROUND UTILITIES.
6. CLEAR SIGHT TRIANGLES ARE TO BE KEPT FREE OF ALL OBSTRUCTIONS, INCLUDING, BUT NOT LIMITED TO, SHRUBS OR GROUNDCOVERS GREATER THAN ONE FOOT HIGH, TREES, STRUCTURES, OR EXISTING VEGETATION. CLEAR AREA BETWEEN HIGHER THAN 2.0' AND LOWER THAN 10.0'
7. LOCATIONS OF UTILITIES SHOWN ON THE DRAWINGS MIGHT NOT COINCIDE PRECISELY WITH ACTUAL LOCATIONS IN THE FIELD. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND VERIFYING ALL UNDERGROUND AND ABOVE GROUND UTILITIES PRIOR TO COMMENCING PLANTING OPERATIONS.
8. GUARANTEE: ALL PLANTS SHALL BE GUARANTEED BY CONTRACTOR FOR THE PERIOD UP TO ONE YEAR AFTER STORE OPENING. PLANTS SHALL BE REPLACED DURING THIS PERIOD IF THEY DIE, FAIL TO EXHIBIT TYPICAL GROWTH OR BECOME DISFIGURED. THE REPLACEMENT PLANT SHALL MATCH THE ORIGINAL PLANT IN SIZE AND SPECIES. AT THE END OF THE SPECIFIED MAINTENANCE/GUARANTEE PERIOD, ANY MATERIAL THAT, IN THE OPINION OF THE OWNER OR MUNICIPAL REPRESENTATIVE, IS SIGNIFICANTLY DISFIGURED OR 25% DEAD OR MORE SHALL BE CONSIDERED DEAD AND MUST BE REPLACED AT NO CHARGE. A TREE SHALL BE CONSIDERED DEAD WHEN THE MAIN LEADER HAS DIED BACK, OR IF 25% OR MORE OF THE CROWN IS DEAD.
9. MAINTENANCE: ALL PLANTINGS SHALL BE PERPETUALLY MAINTAINED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING PLANTINGS FOR THE PERIOD UP TO ONE YEAR AFTER STORE OPENING. THE LANDOWNER SHALL BE RESPONSIBLE FOR MAINTENANCE AFTER THIS PERIOD HAS EXPIRED.
10. THE DEVELOPER SHALL CONTACT THE TOWNSHIP IN WRITING TO REQUEST A FINAL INSPECTION FOR ACCEPTANCE AT THE END OF THE GUARANTEE PERIOD.
11. ALL TREE WRAP AND STAKING MATERIALS MUST BE REMOVED BY THE CONTRACTOR AT THE CONCLUSION OF THE MAINTENANCE/GUARANTEE PERIOD.

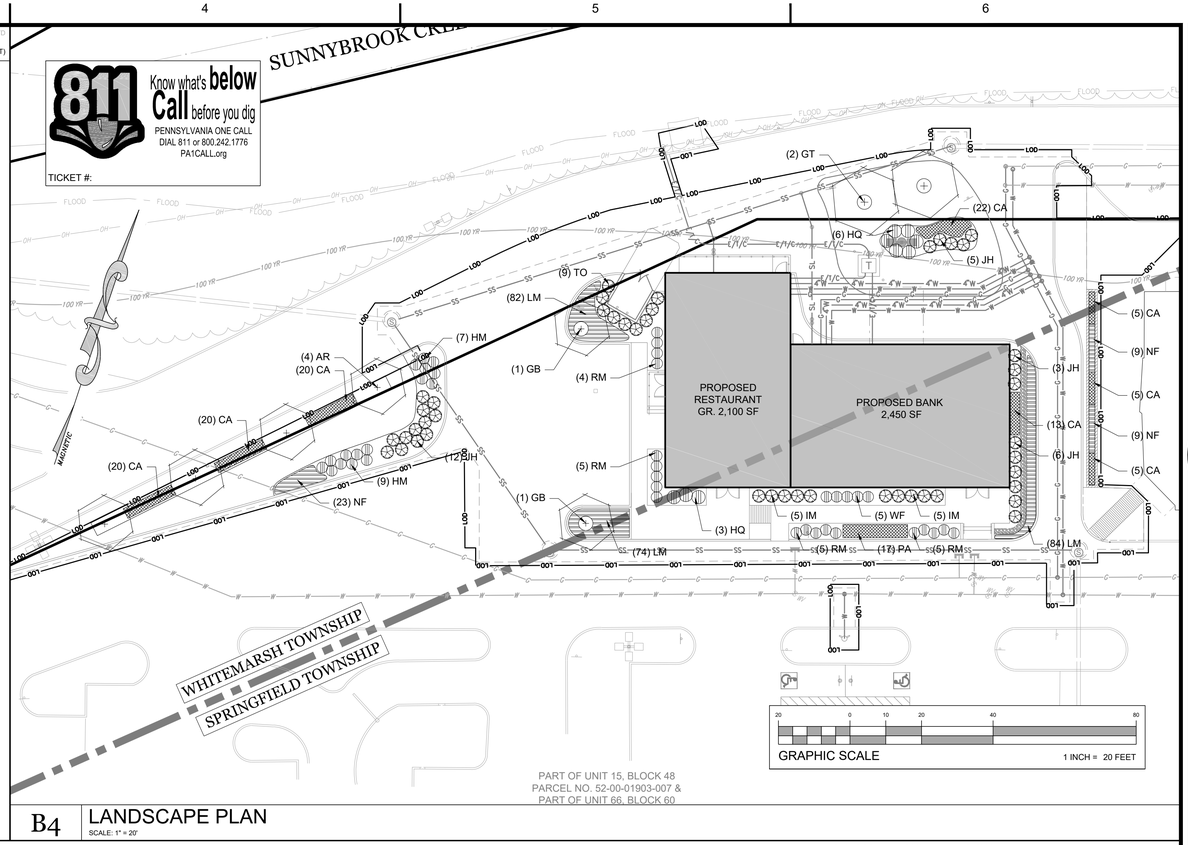
PLANTING NOTES

1. THE TOWNSHIP SHALL BE NOTIFIED PRIOR TO BEGINNING PLANTING OPERATIONS.
2. THE CONTRACTOR SHALL FURNISH AND PLANT ALL PLANTS SHOWN ON THE DRAWINGS, AS SPECIFIED, AND IN QUANTITIES INDICATED ON THE PLANT LIST. WHEN A DISCREPANCY ARISES IN QUANTITY, THE ACTUAL NUMBER OF PLANTS SHOWN ON THE DRAWINGS SHALL GOVERN.
3. ALL PLANTS SHALL BE QUALITY NURSERY GROWN MATERIAL COMPLYING WITH THE STANDARDS OF THE AMERICAN ASSOCIATION OF NURSERYMEN AND ANSI Z60.1. THEY SHALL BE FRESHLY DUG AND SUPPLIED TO THE SITE FREE OF HARMFUL INSECTS, DISEASE, DISFIGUREMENT, OR DAMAGE TO ROOT BALLS, BARK, STEMS OR BRANCHES. THE SPECIES SHALL BEAR A LABEL LISTING THE FULL BOTANICAL NAME OF THE PLANT AND SHALL BE CERTIFIED BY THE SUPPLIER TO BE THE SPECIES LABELED.
4. ANY PLANT FOUND TO BE DAMAGED, DISEASED, DISFIGURED, OR IN NONCOMPLIANCE WITH ANSI SPECIFICATIONS, SPECIES, OR QUALITY WILL BE REJECTED AND SHALL BE REMOVED FROM THE SITE AND REPLACED.
5. ALL PLANTS SHALL BE HARDY UNDER CLIMATIC CONDITIONS SIMILAR TO THOSE IN THE LOCALITY OF THE PROJECT. ALL PLANT MATERIAL SHALL MINIMALLY BE HARDY WITHIN THE USDA HARDINESS ZONE 6.
6. ALL PLANTS SHALL BE TYPICAL OF THEIR SPECIES OR VARIETY AND SHALL HAVE A NORMAL HABIT OR GROWTH, THEY SHALL BE SOUND, HEALTHY AND VIGOROUS, WELL BRANCHED AND DENSELY FOLIATED WHEN IN LEAF. THEY SHALL BE CERTIFIED BY APPROPRIATE STATE AND FEDERAL AUTHORITIES TO BE FREE OF DISEASE AND INSECT PESTS, EGGS OR LARVAE. THEY SHALL HAVE HEALTHY, WELL-DEVELOPED ROOT SYSTEMS.
7. FALL DIGGING HAZARD: ANY SPECIES LISTED BELOW, IF INCLUDED ON THE PLANT LIST, MUST NOT BE DUG IN THE FALL (OCTOBER THROUGH DECEMBER) BECAUSE OF RISK TO THE TREE'S SURVIVAL. SPECIAL EXCEPTIONS MAY BE GRANTED IF THE TOWNSHIP IS NOTIFIED AND AN EXTENDED WARRANTY ON THESE PLANTS IS AGREED UPON PRIOR TO DIGGING. THE FOLLOWING VARIETIES SHOULD NOT BE DUG IN FALL: BETULA, CARPINUS, CELTIS, CERCIDIPHYLLUM, CRATAEGUS, CRYPTOMERIA, FAGUS, HALESIA, ILEX (TREE FORM VARIETIES), KOELREUTERIA, LIQUIDAMBAR, LIRODENDRON, NYSSA, OSTRYA, PRUNUS, PYRUS, QUERCUS (EXCEPT QUERCUS PALUSTRIS), SALIX (WEEPING VARIETIES), SORBUS, TAXODIUM, TILIA TOMENTOSA, AND ULMUS. DIGGING FOR MALUS AND ZELKOVA VARIETIES SHOULD BE AVOIDED IN FALL ONLY WHEN IN LEAF.
8. SUBSTITUTIONS: WHEN PLANTS OF A SPECIFIED KIND OR SIZE ARE NOT AVAILABLE WITHIN A REASONABLE DISTANCE (TYPICALLY WITHIN A 150 MILE RADIUS OF PROJECT SITE), SUBSTITUTIONS MAY BE MADE UPON REQUEST BY THE CONTRACTOR & APPROVED BY THE LANDSCAPE ARCHITECT, OWNER AND TOWNSHIP. NOTIFY THE PROJECT REPRESENTATIVE IN WRITING WITH ALL SUBSTITUTION REQUESTS TO OBTAIN APPROVALS.
9. SIZE: ALL PLANTS SHALL CONFORM TO THE MEASUREMENT SPECIFIED ON THE PLANT LIST, UNLESS AUTHORIZED IN WRITING BY THE TOWNSHIP.
10. MEASUREMENT: DIMENSIONS OF TREES AND SHRUBS SHALL CONFORM TO THE AMERICAN STANDARD FOR NURSERY STOCK ANSI Z60.1, LATEST EDITION.
11. SHADE TREES SHALL HAVE A MINIMUM BRANCHING HEIGHT OF SEVEN (7) FEET ZERO (0) INCHES ABOVE THE GROUND AS GROWN IN THE NURSERY UNLESS OTHERWISE NOTED. MINOR PRUNING OF LOWER BRANCHES MIGHT BE NECESSARY. HOWEVER, TREES WITH DISFIGURED HEADS CAUSED BY THE NEED FOR SIGNIFICANT REMOVAL OF LOWER BRANCHES WILL NOT BE ACCEPTED AND MUST BE REPLACED IMMEDIATELY.
12. TREES IN LEAF, INCLUDING EVERGREENS, WHEN PLANTED SHALL BE TREATED WITH ANTI-DESICCANT SUCH AS WILT-PROOF IF PLANTED DURING THE MONTHS OF JUNE THROUGH SEPTEMBER, NOVEMBER, AND DECEMBER.
13. BALLED AND BURLAPPED PLANTS SHALL BE DUG WITH FIRM NATURAL BALLS OF EARTH OF DIAMETER AND DEPTH TO INCLUDE MOST OF THE FIBROUS ROOTS. CONTAINER GROWN STOCK SHALL HAVE BEEN GROWN IN A CONTAINER LONG ENOUGH FOR THE ROOT SYSTEM TO HAVE DEVELOPED SUFFICIENTLY TO HOLD ITS SOIL TOGETHER FIRM AND WHOLE. NO PLANTS SHALL BE LOOSE IN THE CONTAINER.
14. ROOT BALLS SHALL BE ADEQUATELY PROTECTED AT ALL TIMES FROM SUN AND DRYING WINDS OR FROST.
15. PLANTS WITH BROKEN ROOT BALLS OR EXCESSIVE DAMAGE TO THE CROWN, STEM OR HEAD SHALL BE REPLACED PRIOR TO PLANTING. ANY PLANT SIGNIFICANTLY DAMAGED AFTER PLANTING SHALL BE REPLACED PRIOR TO FINAL DEDICATION. THE REPLACEMENT PLANT SHALL MAINTAIN A FULL GUARANTEE FOR THE DURATION SPECIFIED FOR THE PROJECT.
16. TAKE EXTREME CARE IN HANDLING AND INSTALLING ALL PLANTS TO PREVENT DAMAGE TO BARK, BRANCHES, AND ROOT BALLS.
17. PREPARE TREE AND SHRUB PLANTING PITS WITH PROPER SIZE EXCAVATIONS AND BACKFILL WITH PREPARED PLANTING MIXTURE LAYERS. WATER THOROUGHLY TO ALLOW SETTLEMENT AND REMOVE AIR POCKETS.
18. ROOT BALLS OF BALLED AND BURLAPPED (B&B) PLANTS COMMONLY ARRIVE FROM NURSERIES WITH EXCESS SOIL OVER THE CROWN. CAREFULLY REMOVE BURLAP FROM THE TOP OF THE ROOTBALL AND EXAMINE THE TOP OF THE ROOTBALL TO DETERMINE THE ACTUAL CROWN ELEVATION, OR ROOT FLAIR. CAREFULLY REMOVE ANY EXCESS SOIL OVERTOP THE ROOTBALL TO EXPOSE THE CORRECT ELEVATION. WHEN CORRECTLY INSTALLED, THE CROWN OF A PLANT SHALL BE AN INCH OR TWO HIGHER THAN THE PROPOSED GRADE ELEVATION AND NEVER LOWER THAN THE PROPOSED ELEVATION. HIGH OR LOW ROOT BALLS SHALL NOT BE ACCEPTED.
19. BACKFILL PLANTING SOIL MIX SHALL BE AS SPECIFIED ON THE PLANTING DETAILS AND/OR NOTES. IF NOT SPECIFIED, BACKFILL MIX SHALL CONTAIN 25% TOPSOIL, 25% COMPOST, EARTHMATE, PEAT MOSS OR OTHER HIGH-QUALITY ORGANIC AMENDMENT MIXED WITH AN EQUAL QUANTITY OF EXISTING SOIL. IF EXCAVATED SOIL IS GOOD QUALITY TOPSOIL, THEN THE BACKFILL MIX MAY CONTAIN 25% COMPOST, EARTHMATE, PEAT MOSS OR OTHER HIGH-QUALITY ORGANIC AMENDMENT MIXED WITH 75% EXISTING TOPSOIL.
20. FERTILIZE ALL PLANTS WITH APPROPRIATE STARTER FERTILIZER AT TIME OF PLANTING.
21. ALL PLANTINGS MUST BE THOROUGHLY WATERED ON THE DAY OF INSTALLATION. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING WATER FOR THIS OPERATION. DURING PERIOD(S) OF DROUGHT (DEFINED AS NO RAINFALL WITHIN A THREE WEEK PERIOD) DURING THE FIRST GROWING SEASON, THE CONTRACTOR SHALL WATER ALL PLANTINGS ONCE WEEKLY.
22. MULCH ALL PLANTINGS WITH A 3" (THREE INCH) LAYER OF FINELY SHREDDED BARK MULCH OR LICORICE ROOT IMMEDIATELY AFTER PLANTING OPERATIONS ARE COMPLETED. THE MULCH SHALL BE AGED A MINIMUM OF 6 MONTHS. A GRANULAR PRE-EMERGENT WEED CONTROL SHALL BE SPREAD PRIOR TO MULCHING. THE LIMIT OF THIS MULCH FOR DECIDUOUS TREES AND SINGLE EVERGREEN TREES SHALL BE THE AREA OF THE PIT EXCAVATION. FOR EVERGREEN TREE AND SHRUB CLUSTERS, A FULLY MULCHED BED SHALL BE CREATED TO INCLUDE ALL PLANTS IN THE GROUPING TO THE EXTENT OF THEIR COLLECTIVE BRANCH DRIP LINE. MULCH PLANTING BEDS ENTIRELY AROUND AND BETWEEN ALL PLANTS OF A FULLY MULCHED BED. MULCH BED SHALL BE CLEANLY EDGED & TAPERED TO MEET ADJACENT GRADE.
23. ALL SHRUBS ARE TO BE MULCHED IN GROUPS. NO SINGULARLY MULCHED SHRUBS WILL BE ACCEPTED, UNLESS A SINGULAR SPECIMEN SHRUB IN LAWN HAS BEEN SHOWN ON THE DRAWINGS. A CONTINUOUS MULCH BED SHALL BE PROVIDED FOR EACH GROUPING OR CLUSTER OF SHRUBS TO THE EXTENT OF THEIR COLLECTIVE BRANCH DRIP LINE.
24. WEED CONTROL. ALL PLANTING AREAS SHALL BE FREE FROM WEEDS PRIOR TO THE BEGINNING OF PLANTING OPERATION. CONTACT HERBICIDE SPRAYS SHOULD ONLY BE USED AS REQUIRED AND ALL MANUFACTURES WRITTEN INSTRUCTIONS AND STRICTLY FOLLOWED.
25. TREES SHALL BE STAKED AND GUYED AS SHOWN ON THE PLANTING DETAILS
26. EACH TREE AND SHRUB SHALL BE PRUNED IN ACCORDANCE WITH THE AMERICAN ASSOCIATION OF NURSERYMEN STANDARDS TO PRESERVE THE NATURAL CHARACTER OF THE PLANT. REMOVE DEAD, DYING OR DAMAGED BRANCHES, WEAK CROTCHES, AND DOUBLE LEADERS AS NECESSARY. REMOVING WHOLE BRANCH SECTIONS BACK TO A BRANCH UNION USING PROPER HORTICULTURAL PRACTICES. DO NOT TIP- OR STUB-CUT BRANCHES. THE FORM OF THE PLANT SHALL REMAIN TYPICAL OF ITS SPECIES. PRUNING OF CENTRAL LEADER, SHEARING, OR END-CUTTING OF BRANCHES SHALL RENDER THE PLANT "DISFIGURED" AND IT SHALL BE REJECTED AND REPLACED.
27. ALL PLANTINGS SHALL BE INSTALLED AT THE LOCATIONS INDICATED ON THE DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLANTING AT THE CORRECT GRADES, ALIGNMENT, AND TO THE INDICATED LAYOUT OF THE PLANTING BEDS.
28. LAYOUT OF PLANTING. THE CONTRACTOR SHALL LAY OUT WITH IDENTIFIABLE STAKES AND PAINT THE LOCATION OF ALL TREES, SHRUBS AND PLANTING BEDS AS INDICATED ON DRAWINGS. THE LAYOUT OF PLANTINGS SHALL BE APPROVED BY THE OWNER AND TOWNSHIP PRIOR TO ANY EXCAVATION OF PLANT PITS OR PLANTING BEDS. THE OWNER OR OWNERS REPRESENTATIVE MUST APPROVE PLANTING LOCATIONS PRIOR TO ANY EXCAVATION OF PLANT PITS OR PLANTING BEDS TO ENSURE NO CONFLICT WILL OCCUR WITH SIGNAGE OR LIGHT POLE LOCATIONS.
29. MINOR ADJUSTMENTS TO TREE LOCATIONS MAY BE NECESSARY DUE TO FIELD CONDITIONS AND FINAL GRADING. THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE IF MAJOR ADJUSTMENTS ARE REQUIRED.
30. CONDITIONS DETRIMENTAL TO PLANTS: THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE IN WRITING OF ALL SOIL OR DRAINAGE CONDITIONS WHICH THE CONTRACTOR CONSIDERS DETRIMENTAL TO THE GROWTH OF PLANTS. THE CONTRACTOR SHALL STATE THE CONDITIONS AND SUBMIT A PROPOSAL FOR CORRECTING THE CONDITIONS, INCLUDING ANY CHANGE IN THE COST, FOR REVIEW AND ACCEPTANCE BY THE OWNERS REPRESENTATIVE.
31. NO PLANTINGS OR STRUCTURES SHALL BE PERMITTED WITHIN ANY EASEMENTS.

LANDSCAPE MAINTENANCE MANAGEMENT PROGRAM

1. GENERAL
   - 1.1. ALL MAINTENANCE OPERATIONS AS STATED HEREIN SHALL BE ADHERED TO ON AN ANNUAL BASIS.
   - 1.2. ALL PLANTING AREAS (INCLUDING LAWNS, BUFFERS AND PARKING LOTS) SHALL BE PERIODICALLY INSPECTED A MINIMUM OF ONCE PER MONTH; EVERY 2 WEEKS DURING THE GROWING SEASON OR AFTER EACH MOWING SESSION. A GENERAL FALL CLEAN-UP SHALL BE SCHEDULED EACH YEAR.
   - 1.3. ALL UNDESIRABLE LITTER, DEBRIS AND WEEDS SHALL BE REMOVED ON A WEEKLY BASIS.
   - 1.4. MAINTAIN A MINIMUM OF A 2 INCH DEPTH OF ORGANIC HARDWOOD MULCH OR EQUIVALENT ON ALL PLANTING BEDS, CURBED ISLANDS WITHIN THE PARKING LOT AND ALL PLANTERS ADJACENT TO THE BUILDING. ADJACENT LAWN AREAS SHOULD BE EDGED TO MAINTAIN A NEAT DISTINCT BORDER.
   - 1.5. ALL BED AREAS ARE TO RECEIVE AN APPLICATION OF PRE-EMERGENCE SUCH AS "PREEN" OR APPROVED EQUAL IN EARLY SPRING.
   - 1.6. ALL STAKES AND GUY WIRES ON NEWLY PLANTED DECIDUOUS AND EVERGREEN TREES SHALL BE MAINTAINED IN GOOD CONDITION FOR THE DURATION OF THE GUARANTEE PERIOD. ALL STAKES AND GUYS ARE TO BE REMOVED UPON COMMENCEMENT OF THIS PERIOD OR ONE YEAR, WHICH EVER OCCURS FIRST.
2. SEASONAL FLOWERS WHEN APPLICABLE
   - 2.1. ANNUAL FLOWERS PLANTED IN EITHER BED AREAS OR PLANTER BEDS SHALL BE PERIODICALLY AMENDED, AS WELL AS THE SOIL IN SAID AREAS AMENDED ANNUALLY. NEW PLANTINGS SHALL BE PROVIDED IN MAY OF EACH YEAR. DURING THE GROWING SEASON, ALL BEDS SHALL RECEIVE PERIODIC INSPECTION (AS STATED IN NOTE #1) AND WEEDING TO MAINTAIN NEAT APPEARANCE.
3. TURF
   - 3.1. LAWN AREAS SHALL NOT EXCEED A HEIGHT OF 3 INCHES. APPROXIMATELY 25 TO 30 MOWINGS PER YEAR WILL BE REQUIRED.
   - 3.2. FERTILIZER AND SOIL AMENDMENTS SHOULD BE ADDED AS NECESSARY AND/OR ON A SEASONAL BASIS. FERTILIZER IS OPTIMALLY APPLIED TO LAWN AREAS FOUR TIMES PER SEASON. TIMING, FREQUENCY AND RATE OF APPLICATION SHOULD BE ADJUSTED ACCORDING TO WEATHER AND HORTICULTURAL AND SOIL TEST CONDITIONS FOR EACH SPECIFIC SITE. FERTILIZER SHOULD BE APPLIED BY ACCEPTED METHODS ONLY. SAFETY SHOULD ALWAYS BE OF PRIME CONSIDERATION. CARE SHOULD BE TAKEN NOT TO APPLY FERTILIZER WHEN GROUND IS WET, UNDER EXTREME STRESS, WHEN PEOPLE ARE PRESENT OR DURING WINDY CONDITIONS.
   - 3.3. SOIL AMENDMENTS SUCH AS LIME OR GYPSUM MAY HAVE TO BE ADDED TO THE SOIL PERIODICALLY. THE NEED FOR SUCH SOIL AMENDMENTS SHOULD BE ANALYZED DURING THE PERIODIC INSPECTIONS AND IN CONJUNCTION WITH A SOIL TEST.
   - 3.4. APPLY LIME AND SOIL AMENDMENTS AT INTERVALS WHEN REQUIRED. DO NOT APPLY SOIL AMENDMENTS WHILE TURF AREAS ARE WET, UNDER EXTREME STRESS, WHEN PEOPLE ARE PRESENT OR IN WINDY CONDITIONS.
4. PLANTINGS
   - 4.1. SOIL AMENDMENTS SHOULD BE APPLIED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS OR BASED UPON SOIL TEST RESULTS.
   - 4.2. APPLY A 3-1-2 (21-7-14, 10-4-6, OR 24-4-8) 50% ORGANIC FERTILIZER TWICE A YEAR BETWEEN MARCH 15 TO APRIL 15 AND SEPTEMBER 1 TO OCTOBER 1. IF NECESSARY TWO ADDITIONAL APPLICATIONS MAY BE MADE IN MAY AND NOVEMBER.
   - 4.3. DO NOT APPLY SOIL AMENDMENTS OR FERTILIZER WHILE PLANTS ARE UNDER EXTREME STRESS, IN WINDY CONDITIONS OR WHILE PEOPLE ARE PRESENT.
5. PRUNING
   - 5.1. REMOVAL OF DEAD, DISEASED, INSECT INFESTED OR WEAK WOOD SHALL TAKE PLACE IN DORMANT SEASON, OR AFTER FLOWERING. EXCESSIVE SHOOTS AND SUCKERS SHALL BE REMOVED AS TREES WITHIN THE PARKING LOT ARE TO BE MAINTAINED AT A MINIMUM LIMB HEIGHT OF TEN FEET (10.0').
   - 5.2. SHRUB MATERIAL USED AS A SCREEN SHOULD BE PRUNED AS A MASS TO ENHANCE THEIR NATURAL FORM. HEDGES SHOULD BE PRUNED TO MAINTAIN A TRAPEZOIDAL FORM.
   - 5.3. ROOT PRUNING OF TREES ADJACENT TO CURBS OR SIDEWALKS SHOULD OCCUR DURING PERIODIC INSPECTIONS WITH KNOWLEDGE OF MOST RECENT PRUNING. NO MORE THAN ½ OF ROOT SYSTEM SHOULD BE PRUNED DURING A YEAR. A CERTIFIED TREE EXPERT OR ARBORIST SHALL PERFORM THIS WORK.
6. INSECT AND DISEASE CONTROL
   - 6.1. THE CONTROL OF INSECTS AND DISEASE ASSOCIATED WITH ALL PLANTING AREAS SHOULD ALWAYS BE A MAINTENANCE PRIORITY. ALL PLANTINGS INCLUDING MATURE TREES SHOULD BE PERIODICALLY INSPECTED FOR INSECT OR DISEASE INFESTATION. METHODS UTILIZED TO CONTROL INSECT AND DISEASE MAY RANGE FROM SPRAYING AND PRUNING TO PLANT REMOVAL. QUALIFIED AND TRAINED PERSONNEL SHOULD ALWAYS PERFORM THIS TASK. SAFETY AND CONTROL SHOULD ALWAYS BE OF PRIME CONCERN.
7. RENOVATION
   - 7.1. RENOVATION INCLUDES THE RESEEDING OR REPLANTING OF LANDSCAPE AREAS DAMAGED, DESTROYED OR FAILING DUE TO INSECTS, DISEASE, WEATHER OR PHYSICAL DAMAGE.
   - 7.2. LAWN: ALL AREAS WHERE SOIL HAS BEEN EXPOSED SHOULD BE RENOVATED DURING THE NEXT PLANTING SEASON. PROPER HORTICULTURAL AND SOIL EROSION PREVENTION METHODS SHOULD BE UTILIZED. IF SOIL EROSION HAS OCCURRED, THE AREA SHOULD BE REPAIRED. A SEED MIXTURE COMPATIBLE TO EXISTING PLANTINGS AND CONDITIONS SHOULD ALWAYS BE UTILIZED.
   - 7.3. PLANTINGS:ALL PLANTINGS WHICH ARE DEAD, DAMAGED OR DESTROYED SHOULD BE REPLACED BY THE END OF THE NEXT PLANTING SEASON. A FAILING, DAMAGED OR DESTROYED LANDSCAPE SCREEN OR BUFFER MUST BE RENOVATED OR REPLACED WITHIN A REASONABLE AMOUNT OF TIME BUT NOT TO EXCEED THE SUBSEQUENT GROWING SEASON.
8. SITE AMENITIES
   - 8.1. BENCHES, PATHS, BICYCLE RACKS, TRASH RECEPTACLES AND SIGNS SHOULD BE INSPECTED AT LEAST TWICE A YEAR, MARCH AND AUGUST, TO DETERMINE THEIR CONDITION. ANY DAMAGED, WORN OR UNSAFE CONDITION SHOULD BE RECTIFIED IMMEDIATELY.
9. PAVED SURFACES
   - 9.1. ALL PAVED SURFACES, CONCRETE SIDEWALKS, ASPHALT PAVEMENT AND DECORATIVE PAVEMENT MUST BE INSPECTED ON A REGULAR BASIS, A MINIMUM OF ONCE PER MONTH.
   - 9.2. ANY TRASH, STAINS, OR OBSTRUCTIONS MUST BE REMOVED IMMEDIATELY. PAVEMENTS SHOULD BE INSPECTED FOR DAMAGE, CRACKS, POT HOLES, AND RETURNED TO THEIR ORIGINAL CONDITION. SNOW SHOULD BE REMOVED DURING AND FOLLOWING EVERY STORM. SIDEWALKS AND PARKING AREAS MUST BE KEPT CLEAR OF ICE AND SNOW DURING BUSINESS HOURS.

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PART OF UNIT 15, BLOCK 48
PARCEL NO. 52-00-01903-007 &
PART OF UNIT 66, BLOCK 60

B4 LANDSCAPE PLAN

SCALE: 1" = 20'

PLANT SCHEDULE

Plan Symbol	Quantity	Botanical Name	Common Name	Min. Planting Caliper	Min. Planting Spread	Min. Planting Height	Remarks	Comments
Shade Trees								
AR	4	*Acer rubrum 'Bowhall'*	'Bowhall' Red Maple	2" cal.	-	12-14'	B&B	Full, straight leader
GB	2	*Ginkgo biloba 'Princeton Sentry'*	'Princeton Sentry' Ginkgo	2" cal.	-	12-14'	B&B	Full, straight leader
GT	2	*Gleditsia triacanthos var. inermis*	Thornless Honeylocust	2" cal.	-	12-14'	B&B	Full, straight leader
Evergreen Trees								
TO	9	*Thuja occidentalis 'Smaragd'*	Emerald Green Arborvitae	-	-	5-6'	B&B	Branched fully to ground
Shrubs**								
HM	16	*Hydrangea macrophylla 'Endless Summer'*	'Endless Summer' Hydrangea	-	-	18-24"	CONT	Heavy, full specimen
HQ	9	*Hydrangea quercifolia 'Ruby Slippers'*	'Ruby Slippers' Oakleaf Hydrangea	-	-	24-30"	CONT	Heavy, full specimen
IG	10	*Ilex x meserveae 'Monnieves'*	Scallywag Holly	-	-	18-24"	CONT	Heavy, full specimen
JH	26	*Juniperus horizontalis 'Bar Harbor'*	'Bar Harbor' Juniper	-	6-12" ^^	-	CONT	Heavy, full specimen
RM	19	*Rosa 'Meidrifora'*	Coral Drift Rose	-	-	18-24"	CONT	Heavy, full specimen
WF	5	*Weigela florida 'Coco Krunch'*	'Coco Krunch' Weigela	-	-	18-24"	CONT	Heavy, full specimen
Perennials**								
CA	110	*Calamagrostis acutiflora 'Karl Foerster'*	'Karl Foerster' Feather Reed Grass	-	-	-	CONT	Plant 18" on center
LM	240	*Liriope muscari*	Lilyturf	-	-	-	CONT	Plant 15" on center
NF	41	*Nepeta x. faassenii 'Walker's Low'*	'Walker's Low' Catmint	-	-	-	CONT	Plant 18" on center
PA	17	*Pennisetum alopecuroides 'Little Bunny'*	'Little Bunny' Fountain Grass	-	-	-	CONT	Plant 24" on center

** Plant in continuous mulch bed (2-3" depth) until fully established.
^^ low, spreading variety

LANDSCAPE REQUIREMENTS CHART

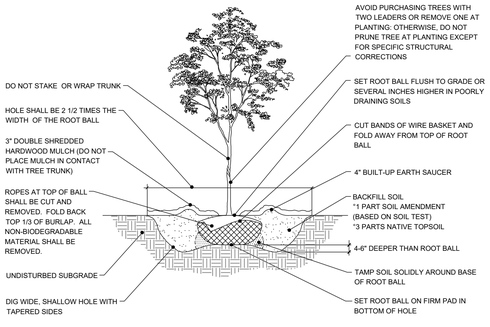
Springfield Township

Code Item	Requirement	Plan Proposed
S.O. 95-11.I (1) Buffers	Subdivisions and land developments shall be required to provide landscape buffering along side and rear boundaries of the tract to be subdivided or developed except in the development of single-family detached residences.	
	Proposed uses are part of existing shopping center that has screening around property boundaries	N/A
S.O. 95-11.I (2) Street trees	Within any subdivision or land development, street trees shall be planted along new and existing streets	
	No street frontage	N/A
S.O. 95-11.I (3) Parking area landscaping	All off-street parking areas and all loading areas shall be landscaped.	
	No parking proposed within Springfield Township	
	Landscape planter proposed between existing retail stores and bank drive-thru lane	33 Perennials
	Foundation plantings between bank & drive aisles	37 Shrubs 114 Perennials

LANDSCAPE REQUIREMENTS CHART

Whitemarsh Township

Code Item	Requirement	Plan Proposed
S.O. 105-39 Landscaping of Parking Facilities	All parking areas shall have at least one, 3" caliper tree for every two parking spaces provided.	
	5 parking spaces provided 5/2 = 3 trees	8 Shade trees 9 Evergreen trees 48 Shrubs 261 Perennials
	A minimum of 10% of any parking facility over 2,000 sf in gross area shall be devoted to landscaping	
	Parking area is less than 2,000 sf	N/A
S.O. 105-48 Street Trees	Shade street trees shall be planted at intervals of not more than 45 feet, and flowering street trees at intervals of not more than 30 feet.	
	No street frontage	N/A
S.O. 105-48 Buffer yards	Per Table 1 - Determination of Buffer Yard Class; No buffer is required between proposed and existing Retail & Consumer Services uses	N/A
Chapter 55 Tree Protection Standards	Every tree determined to be living and healthy, with a DBH of six inches or greater that is removed or destroyed, shall be replaced with one or more new shade trees, min. 3" caliper. Total caliper of replacement trees shall equal or exceed the DBH of the trees removed.	
	No trees, 6" or greater, are proposed to be removed.	N/A



NOTES:

1. FOR CONTAINER-GROWN TREES, USE FINGERS OR SMALL HAND TOOLS TO PULL THE ROOTS OUT OF THE OUTER LAYER OF POTTING SOIL; THEN CUT OR PULL APART ANY ROOTS CIRCLING THE PERIMETER OF THE CONTAINER
2. THOROUGHLY SOAK THE TREE ROOT BALL AND ADJACENT PREPARED SOIL SEVERAL TIMES DURING THE FIRST MONTH AFTER PLANTING AND REGULARLY THROUGHOUT THE FOLLOWING TWO SUMMERS.
3. SOIL AMENDMENTS:
   *MODIFY HEAVY CLAY OR SILT SOILS (MORE THAN 40% CLAY OR SILT) BY ADDING COMPOSTED PINE BARK (UP TO 30% BY VOLUME) OR GYPSUM
   *MODIFY EXTREMELY SANDY SOILS (MORE THAN 85% SAND) BY ADDING ORGANIC MATTER AND/OR DRY, SHREDDED CLAY LOAM UP TO 30% OF THE TOTAL MIX

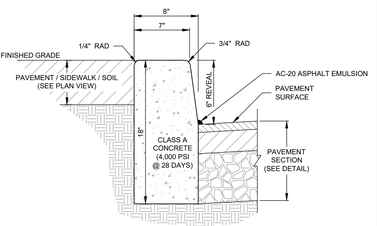
C1 DECIDUOUS TREE PLANTING

NOT TO SCALE

2019-03-01 / LEC STD

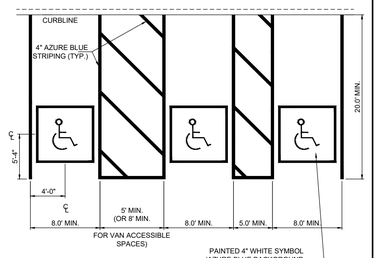
NOTES:

1. FOR CONTAINER-GROWN SHRUBS, USE FINGERS OR SMALL HAND TOOL TO PULL THE ROOTS OUT OF THE OUTER LAYER OF POTTING SOIL; THEN CUT OR PULL APART ANY ROOTS CIRCLING THE PERIMETER OF THE CONTAINER.
2. THOROUGHLY SOAK THE SHRUB ROOT BALL AND ADJACENT PREPARED SOIL SEVERAL TIMES DURING THE FIRST MONTH AFTER PLANTING AND REGULARLY THROUGHOUT THE FOLLOWING TWO SUMMER



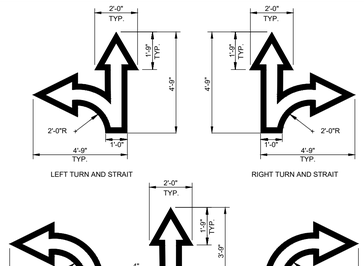
NOTES:
1. ANY EXCAVATION BELOW DESIRED GRADE DUE TO OVER EXCAVATION OR WET SOIL CONDITIONS SHALL BE BACKFILLED WITH 3/4" CLEAN CRUSHED STONE. ALL SUBGRADES SHALL BE APPROVED BY THE TOWNSHIP ENGINEER PRIOR TO POURING.
2. TRANSVERSE JOINTS 3/4" WIDE SHALL BE INSTALLED IN THE CURB 20'-0" APART AND SHALL BE FILLED WITH PREFORMED, BITUMINOUS-IMPREGNATED FIBER JOINT FILLER, COMPLYING WITH THE REQUIREMENTS OF AASHTO M-213, RECESSED 1/4" FROM THE FRONT FACE AND TOP OF THE CURB.

A1 CONCRETE CURB (6" REVEAL)
NOT TO SCALE



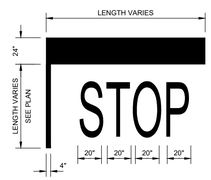
NOTES:
1. CURB RAMPS, PAVEMENT MARKINGS, & APPLICABLE SIGNAGE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST A.D.A. ACCESSIBILITY GUIDELINES.
2. REFER TO ADA PARKING STALL NOTES FOR ADDITIONAL LAYOUT CRITERIA.

A2 RESERVED PARKING STALL
NOT TO SCALE 2020-06-10 / LEC STD

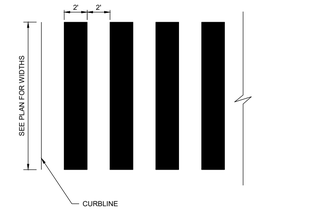


NOTE:
ALL TRAFFIC FLOW ARROWS TO BE REFLECTIVE WHITE PAINT.

A3 TRAFFIC ARROWS
NOT TO SCALE 2019-03-01 / LEC STD

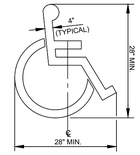


A4 STOP MARKING
NOT TO SCALE 2019-03-01 / LEC STD



NOTE:
1. ALL CROSSWALKS AND NEUTRAL AREAS SHALL BE PAINTED WHITE. SPACES AND LINES SHALL BE OF EQUAL THICKNESS.
2. MAX. CROSS SLOPE NOT TO EXCEED 2%; MAX. RUNNING SLOPE NOT TO EXCEED 5%.

A5 CROSSWALK MARKING
NOT TO SCALE 2019-03-01 / LEC STD

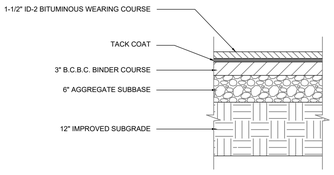


REFER TO RESERVED PARKING STALL DETAIL FOR SYMBOL LOCATION

A6 ADA PARKING SYMBOL
NOT TO SCALE 2019-03-01 / LEC STD

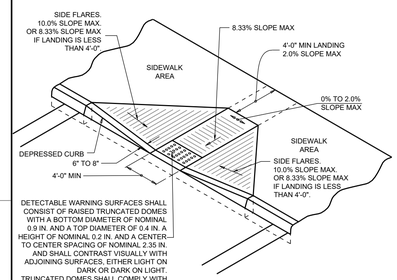
NOTES:
1. CURB RAMPS, PAVEMENT MARKINGS, & APPLICABLE SIGNAGE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST A.D.A. ACCESSIBILITY GUIDELINES.
2. CURB RAMPS MAY NOT EXTEND INTO ANY PORTION OF THE PARKING SPACE OR ASSOCIATED STRIPED ISLAND.
3. SLOPE, CROSS SLOPE OF ACCESSIBLE SPACES NOT TO EXCEED 2% IN ANY DIRECTION.
4. ACCESSIBLE PARKING SPACES SHALL BE LOCATED ON THE SHORTEST ACCESSIBLE ROUTES OF TRAVEL FROM ADJACENT PARKING TO AN ACCESSIBLE BUILDING ENTRANCE.
5. ACCESSIBLE PARKING SPACES SHALL BE AT LEAST NINETY-SIX (96) INCHES WIDE. ACCESS AISLES SHALL BE 60 INCHES WIDE. ONE OF SIX ACCESSIBLE SPACES SHOULD PROVIDE A VAN ACCESSIBLE AISLE. THE AISLE SHOULD BE 96 INCHES WIDE (OR ACCESSIBLE SPACE IS 11 FEET AND ACCESS AISLE IS FIVE FEET). WHERE PARKING SPACES AND ACCESS AISLES ARE MARKED WITH LINES, THE WIDTH MEASUREMENTS SHALL BE MADE FROM CENTERLINE OF THE MARKINGS. WHERE PARKING SPACES OR ACCESS AISLES ARE NOT ADJACENT TO ANOTHER PARKING SPACE OR ACCESS AISLES, MEASUREMENTS SHALL BE PERMITTED TO INCLUDE THE FULL WIDTH OF THE LINE DEFINING THE PARKING SPACE OR ACCESS AISLE.
6. PARKING ACCESS AISLES SHALL BE PART OF AN ACCESSIBLE ROUTE TO THE BUILDING OR FACILITY ENTRANCE AND SHALL COMPLY WITH PROVISIONS FOR ACCESSIBLE ROUTES. MARKED CROSSINGS SHALL BE PROVIDED WHERE THE ACCESSIBLE ROUTE MUST CROSS VEHICULAR TRAFFIC LANES. WHERE POSSIBLE, IT IS PREFERABLE THAT THE ACCESSIBLE ROUTE NOT PASS BEHIND PARKED VEHICLES.
7. TWO (2) ACCESSIBLE PARKING SPACES MAY SHARE A COMMON ACCESS AISLE.
8. ACCESS AISLES SHALL EXTEND THE FULL LENGTH OF THE PARKING SPACE THEY SERVE.
9. ACCESS AISLES SHALL BE MARKED SO AS TO DISCOURAGE PARKING IN THEM.
10. ACCESS AISLES SHALL NOT OVERLAP THE VEHICULAR WAY. ACCESS AISLES SHALL BE PERMITTED TO BE PLACED ON EITHER SIDE OF THE PARKING SPACE EXCEPT FOR ANGLED VAN PARKING SPACES WHICH SHALL HAVE ACCESS AISLES LOCATED ON THE PASSENGER SIDE OF THE PARKING SPACES.
11. FLOOR SURFACES OF PARKING SPACES AND ACCESS AISLES SERVING THEM SHALL BE STABLE, FIRM AND SLIP RESISTANT. ACCESS AISLES SHALL BE AT THE SAME LEVEL AS THE PARKING SPACES THEY SERVE. CHANGES IN LEVEL ARE NOT PERMITTED.
12. PARKING SPACES AND ACCESS AISLES SHALL BE LEVEL WITH SURFACE SLOPES NOT EXCEEDING 2.0% IN ALL DIRECTIONS.
13. PARKED VEHICLE OVERHANGS SHALL NOT REDUCE THE REQUIRED CLEAR WIDTH OF AN ACCESSIBLE ROUTE.
14. PARKING SPACES FOR VANS AND ACCESS AISLES AND VEHICULAR ROUTES SERVING THEM SHALL PROVIDE A VERTICAL CLEARANCE OF NINETY-EIGHT (98) INCHES MINIMUM. SIGNS SHALL BE PROVIDED AT ENTRANCES TO PARKING FACILITIES INFORMING DRIVERS OF CLEARANCES AND THE LOCATION OF VAN ACCESSIBLE PARKING SPACES.
15. EACH ACCESSIBLE PARKING SPACE SHALL BE PROVIDED WITH THE APPROPRIATE SIGNAGE DISPLAYING THE INTERNATIONAL SYMBOL OF ACCESSIBILITY, THE PENNSYLVANIA PARKING PENALTY SIGN AND VAN ACCESSIBLE SPACES SHALL HAVE SIGNAGE STATING "VAN ACCESSIBLE". SIGNS SHALL BE INSTALLED SO THAT THE BOTTOM OF SIGNS ARE MOUNTED NO LOWER THAN 60 INCHES ABOVE GRADE AND SHALL NOT INTERFERE WITH AN ACCESSIBLE ROUTE FROM AN ACCESS AISLE

B1 ADA PARKING STALL NOTES
NOT TO SCALE 2020-06-10 / LEC STD



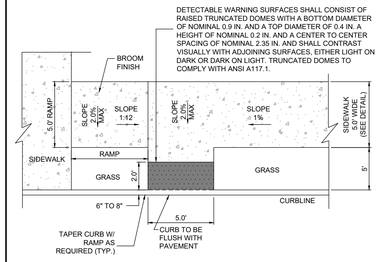
NOTE:
1. CBR VALUES SHALL BE OBTAINED BY GEOTECHNICAL ENGINEER PRIOR TO COMMENCEMENT OF PAVING.
2. REFER TO GEOTECHNICAL REPORT FOR ADDITIONAL PAVEMENT DESIGN SPECIFICATIONS AND MATERIAL REQUIREMENTS.
3. AGGREGATE SUB-BASE SHALL BE AGGREGATE CONFORMING TO THE GRADATIONS OF TYPE 2A AGGREGATE. ON-SITE MATERIAL MAY BE USED IF DEEMED ADEQUATE.

B2 ASPHALT PAVEMENT
NOT TO SCALE 2019-03-01 / LEC STD



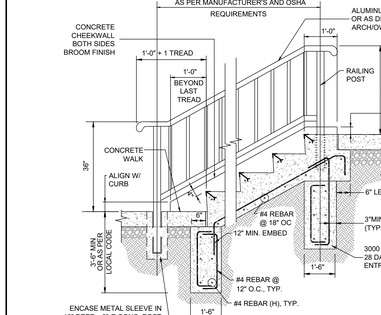
NOTES:
1. CURB RAMPS MAY NOT EXTEND INTO ANY PORTION OF THE PARKING SPACE OR ASSOCIATED STRIPED ISLAND.
2. CURB RAMPS, PAVEMENT MARKINGS, & APPLICABLE SIGNAGE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST A.D.A. ACCESSIBILITY GUIDELINES.
3. CONTRACTOR TO CONSTRUCT DETECTABLE WARNINGS ONLY WHEN SIDEWALK INTERSECTS A VEHICULAR TRAVELED WAY

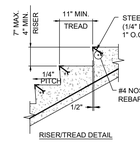
B3 ADA RAMP (TYPE 1)
NOT TO SCALE 2019-03-01 / LEC STD



NOTES:
1. CURB RAMPS MAY NOT EXTEND INTO ANY PORTION OF THE PARKING SPACE OR ASSOCIATED STRIPED ISLAND.
2. CURB RAMPS, PAVEMENT MARKINGS, & APPLICABLE SIGNAGE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST A.D.A. ACCESSIBILITY GUIDELINES.
3. CONTRACTOR TO CONSTRUCT DETECTABLE WARNINGS ONLY WHEN SIDEWALK INTERSECTS A VEHICULAR TRAVELED WAY

B4 ADA RAMP (TYPE 2 MODIFIED)
NOT TO SCALE 2019-03-01 / LEC STD





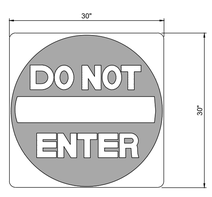
ALL STAIRS REQUIRE TWO HANDRAILS (ONE ON EACH SIDE) EXTENDING 1' FROM THE TOP RISER & 1' FROM LOWEST TREAD. TOTAL NUMBER OF STEPS WILL VARY.

B5 CONCRETE STEPS
NOT TO SCALE 2019-03-01 / LEC STD



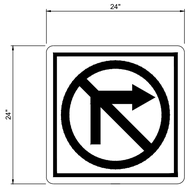
WHITE LEGEND RED BACKGROUND
R1-1

C1 STOP SIGN
NOT TO SCALE 2019-03-01 / LEC STD



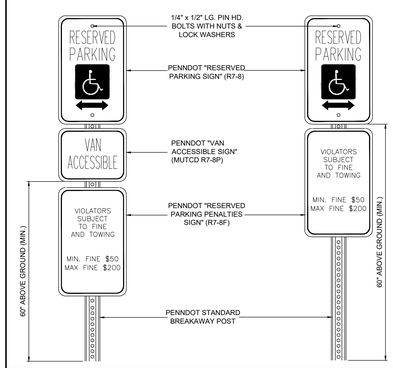
STANDARD RED AND WHITE SIGN
R5-1 : 24" x 24"
R5-1(S) : 30" x 30"

C2 DO NOT ENTER SIGN
NOT TO SCALE 2019-03-01 / LEC STD

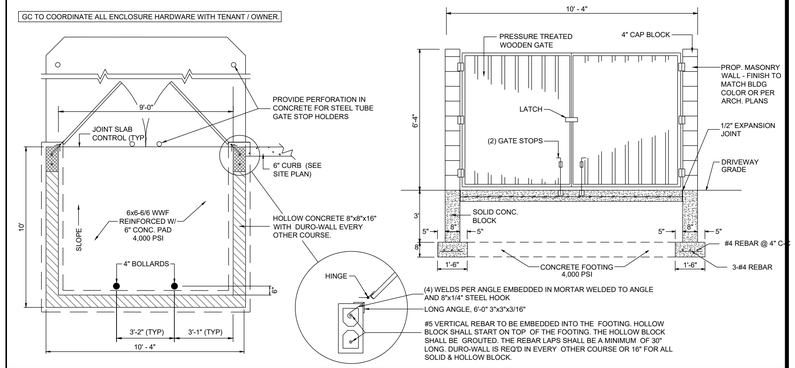


BLACK LEGEND ON
WHITE BACKGROUND
R3-1

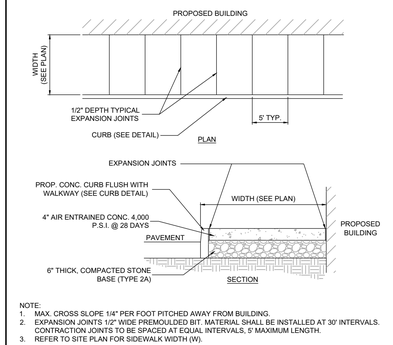
C3 NO RIGHT TURN SIGN
NOT TO SCALE 2019-03-01 / LEC STD



C4 RESERVED PARKING SIGN
NOT TO SCALE 2019-03-01 / LEC STD

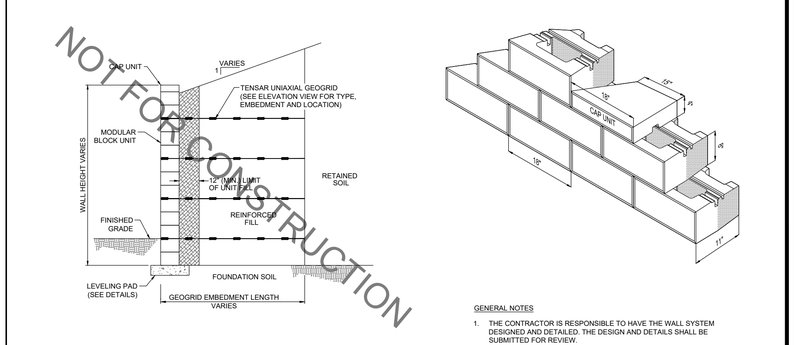


C5 MASONRY TRASH ENCLOSURE - 10"x10'-4"
NOT TO SCALE 2019-06-11 / LEC STD



NOTE:
1. MAX. CROSS SLOPE 1/4" PER FOOT PITCHED AWAY FROM BUILDING.
2. EXPANSION JOINTS 1/2" WIDE PREMOULDED BIT. MATERIAL SHALL BE INSTALLED AT 30' INTERVALS. CONTRACTION JOINTS TO BE SPACED AT EQUAL INTERVALS, 5' MAXIMUM LENGTH.
3. REFER TO SITE PLAN FOR SIDEWALK WIDTH (W).

D4 CONCRETE SIDEWALK
NOT TO SCALE 2019-03-01 / LEC STD



GENERAL NOTES
1. THE CONTRACTOR IS RESPONSIBLE TO HAVE THE WALL SYSTEM DESIGNED AND DETAILED. THE DESIGN AND DETAILS SHALL BE SUBMITTED FOR REVIEW.

D5 MODULAR BLOCK RETAINING WALL
NOT TO SCALE 2019-03-01 / LEC STD

BY	REV.	DATE	COMMENT

COMMONWEALTH OF PENNSYLVANIA
REGISTERED
PROFESSIONAL
D. ALEXANDER TWEEDIE
ENGINEER
No. PE071873
PENNSYLVANIA

D. ALEXANDER TWEEDIE
PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE No. 071873

NOT FOR CONSTRUCTION

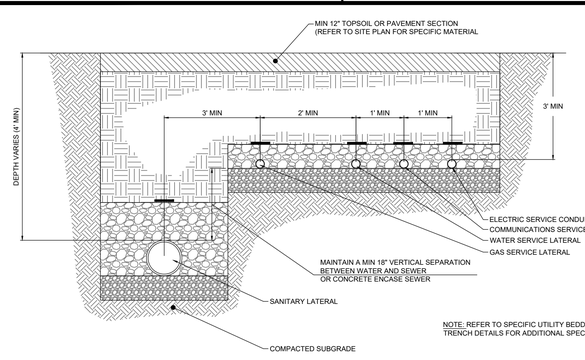
PROJECT No: 140065
DRAWN BY: MAR
CHECKED BY: DAT
CAD I.D. #: 11-12_DT_140065

LANDCORE
Engineering Consultants, P.C.
PO BOX 67393 #65287
PHILADELPHIA, PENNSYLVANIA 19101-6535
PHONE 215-836-2510 | FAX 215-836-2519
LANDCORECONSULTING.COM

PROJECT: PROPOSED SITE IMPROVEMENTS
1690 BETHLEHEM PIKE, FLOURTOWN PA 19031
SPRINGFIELD TOWNSHIP AND WHITEMARSH TOWNSHIP
MONTGOMERY COUNTY, PA
APPLICANT: FEDERAL REALTY INVESTMENT TRUST
TITLE: DETAILS

DATE: 2021-03-04
SHEET: 11 of 13
REV. No: 0
DT1

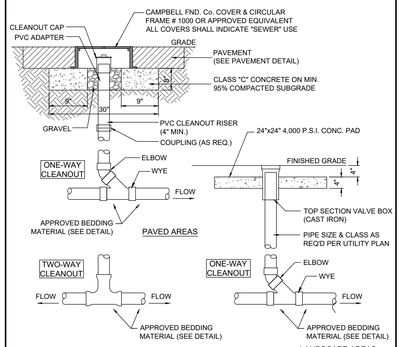
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Wed, 03/04/26 @ 8:01:04 AM



NOTE: REFER TO SPECIFIC UTILITY BEDDING AND TRENCH DETAILS FOR ADDITIONAL SPECIFICATIONS

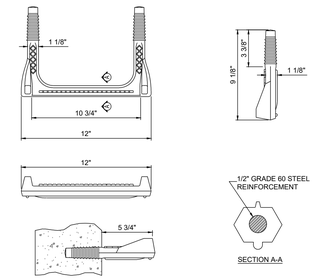
A1 COMMON UTILTY TRENCH

NOT TO SCALE 2019-03-01 / LEC STD



A3 SANITARY CLEANOUTS

NOT TO SCALE 2019-06-11 / LEC STD



NOTES:

1. PLACE LADDER BARS AT 12" O.C. MAX.
2. MAX. DISTANCE FROM BOTTOM OF STRUCTURE TO LOWEST LADDER BAR IS 12".
3. SPECIFICATIONS: MANHOLE STEPS SHALL BE ANODIZED ALUMINUM OR APPROVED MATERIAL.

A4 LADDER RUNGS

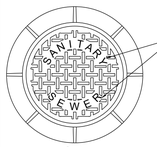
NOT TO SCALE 2019-03-01 / LEC STD

NOTES:

1. CONSTRUCTION SHALL COMPLY WITH THE BOCA INTERNATIONAL PLUMBING CODE.
2. IF BENDS ARE NECESSARY, THEY SHALL BE A STANDARD MANUFACTURED BEND PRECEDED BY THE INSTALLATION OF A CLEANOUT.
3. ALL CONNECTIONS AND FITTINGS SHALL BE SEALED WITH EITHER FLEXIBLE ELASTOMERIC SEAL JOINTS OR SOLVENT CEMENT JOINTS.
4. BUILDING SEWER PIPE MAY BE 4" OR 6" (4" SHOWN). THE MINIMUM SLOPE FOR A 4" PIPE SHALL BE 1/4" PER FOOT. THE MINIMUM SLOPE FOR 6" PIPE SHALL BE 1/8" PER FOOT.
5. THE SEWER LINE SHALL BE BEDDED IN A MINIMUM OF TWO (2) INCHES OF AASHTO No. 8 AGGREGATE AND COMPLETELY BACKFILLED TO SIX INCHES ABOVE THE TOP OF THE PIPE WITH THE SAME MATERIAL. THE REMAINING TRENCH MAY BE BACKFILLED WITH SUITABLE EXISTING MATERIAL REMOVED FROM THE TRENCH EXCAVATION.
6. ALL INSTALLATIONS SHALL HAVE AT LEAST ONE (1) CLEANOUT. THIS CLEANOUT SHALL BE INSTALLED IMMEDIATELY AFTER THE SEWER EXITS THE BUILDING. ADDITIONAL CLEANOUTS SHALL BE INSTALLED AT INTERVALS OF 50 FEET FOR 4" PIPE, 100 FEET FOR 6" PIPE AND AT ALL CHANGES OF DIRECTION.
7. THE INSPECTION PORT SHALL BE REQUIRED FOR COMMERCIAL AND INDUSTRIAL LATERALS.
8. CLEANOUTS AND INSPECTION PORTS PLACED WITHIN PAVED AREAS SHALL BE PROTECTED FROM VEHICULAR DAMAGE BY CONSTRUCTING CAST IRON OR DUCTILE IRON CLEANOUT COVERS SUPPORTED ON A CONCRETE SLAB.

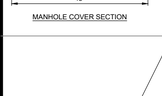
A5 TYPICAL SANITARY SERVICE CONNECTION

NOT TO SCALE 2019-03-01 / LEC STD

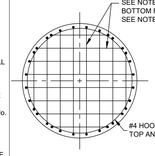


2" RAISED LETTERS

PLAN



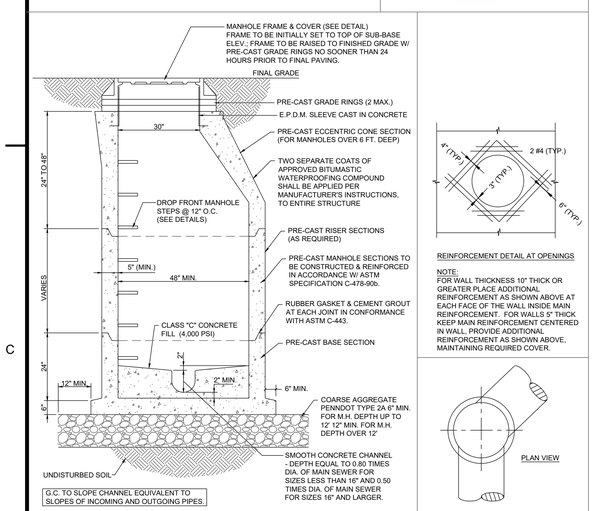
MANHOLE COVER SECTION



SECTION A-A

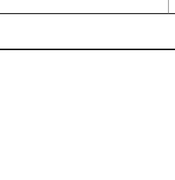
NOTES:

1. STANDARD MANHOLE FRAMES & COVERS SHALL BE USED ON ALL MANHOLES NOT LOCATED WITHIN EASEMENTS UNLESS DIRECTED OTHERWISE BY THE ENGINEER.
2. ALL MANHOLE FRAMES AND COVERS SHALL BE HEAVY DUTY, AASHTO HIGHWAY LOADING CLASS HS-20, CAMPBELL FOUNDRY PATTERN No. 1012B OR APPROVED EQUIVALENT. WITH NON-PENETRATING PICK HOLES .
3. "FLOW-SEAL" MANHOLE COVERS SHALL BE USED ON MANHOLES LOCATED WITHIN EASEMENTS, IN UNPAVED AREAS, AND OUTSIDE OF THE CENTERLINE OF PAVED ROADS.



REINFORCEMENT DETAIL AT OPENINGS

NOTE:
FOR WALL THICKNESS 10" THICK OR GREATER PLACE ADDITIONAL REINFORCEMENT AS SHOWN ABOVE AT EACH FACE OF THE WALL INSIDE MAIN REINFORCEMENT. FOR WALLS 5" THICK KEEP MAIN REINFORCEMENT CENTERED IN WALL, PROVIDE ADDITIONAL REINFORCEMENT AS SHOWN ABOVE, MAINTAINING REQUIRED COVER.



PLAN VIEW

NOTES:

1. PRECAST MANHOLES, MEETING THE REQUIREMENTS OF PUBLICATION 408 SPECIFICATIONS, SECTION 714, MAY BE SUBSTITUTED FOR THE STANDARD CAST-IN-PLACE MANHOLE.
2. CONSTRUCTION NOTES:
   - 2.1. CONSTRUCT IN ACCORDANCE WITH PENNDOT PUBLICATION 408 SPECIFICATIONS, SECTIONS 605, 606, 714 AND ASTM C-478-90, STANDARD SPECIFICATIONS FOR PRECAST REINFORCED CONCRETE MANHOLE SECTIONS, AS MODIFIED HERE IN.
   - 2.2. MINIMUM CONCRETE CLASS AA.
   - 2.3. PROVIDE EPOXY COATED STEEL REINFORCEMENT IN ACCORDANCE WITH ASTM A185, STEEL WELDED WIRE FABRIC ASTM A663 & A675, PLAIN BILLET STEEL BARS OR ASTM A615, DEFORMED BILLET STEEL BARS PROVIDE MINIMUM YIELD STRENGTH OF 60,000 PSI.
   - 2.4. CLEAR COVER FOR STEEL:
     - 2.4.1. WALLS: 2"
     - 2.4.2. FOOTINGS: 2" (TOP BARS), 1 1/2" (BOTTOM BARS)
     - 2.4.3. 1 1/2" (SIDE COVER)
3. PROVIDE 12" MINIMUM HORIZONTAL CLEARANCE BETWEEN OPENINGS LOCATED AT THE SAME DEPTH. PIPES NOT LOCATED AT THE SAME DEPTH MUST BE LOCATED VERTICALLY AT LEAST ONE TIMES MAXIMUM OPENING DIAMETER APART.
4. FOR RISERS OR BASE SECTIONS WITH OPENINGS, PROVIDE A MINIMUM HEIGHT OF SECTION EQUAL TO TWO TIMES THE LARGEST OPENING. CENTER OF OPENING TO BE LOCATED AT LEAST ONE TIMES THE OPENING FROM THE CLOSEST JOINT BETWEEN RISERS.
5. PRECAST RISERS AND BASE SECTIONS
   - 5.1. FOR PRECAST RISER OR BASE SECTIONS WITH ONE OPENING LOCATED AT DEPTHS TO 60' OR FOR SECTIONS WITH TWO OR MORE OPENINGS, LOCATED AT A DEPTH OF 15 FEET AND LESS, PROVIDE CIRCUMFERENTIAL REINFORCEMENT IN ACCORDANCE WITH REINFORCEMENT DETAIL AT OPENINGS.
   - 5.2. FOR RISERS OR BASE SECTIONS WITH 2 OR MORE OPENINGS, LOCATED AT A DEPTH GREATER THAN 15 FEET, BUT LESS THAN OR EQUAL TO 30 FEET, PROVIDE CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.44 SQ/IN VERTICAL FOOT FOR THE DEPTH OF THE RISER OR BASE SECTION.
   - 5.3. FOR RISERS OR BASE SECTIONS WITH 2 OR MORE OPENINGS, LOCATED AT DEPTHS GREATER THAN 30 FEET, USE A 10 INCH THICK WALL RISER OR BASE SECTION WITH CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ/IN VERTICAL FOOT EACH FACE.
   - 5.4. RISERS OR BASE SECTIONS WITH HOLES TO BE CLEARLY MARKED WITH MAXIMUM ALLOWABLE DEPTH.
6. PROVIDE ADDITIONAL REINFORCEMENT BARS AROUND OPENINGS AS SHOWN ON REINFORCEMENT DETAILS AT OPENINGS.
7. PROVIDE MANHOLE STEPS MEETING THE REQUIREMENTS OF PUBLICATION 408 SPECIFICATIONS, SECTION 605.2(C), ALTERNATE CONFIGURATIONS AND DIMENSIONS, AS APPROVED BY THE ENGINEER, MAY BE USED.
8. PROVIDE MINIMUM 1" SECTION DIMENSION FOR METAL STEPS. PROVIDE MAXIMUM 3/4" SECTION DIMENSION FOR NON-DETERIORATING MATERIAL STEPS.
9. MECHANICAL ANCHOR REQUIRED FOR INSTALLATION OF STEPS WITHOUT HOOKS.
10. FOR FOOTING TOP REINFORCEMENT, BOTH DIRECTIONS, USE NO. 19 (6) BARS AT 12" FOR DEPTHS TO 60' OR 0.30 IN²/FT WWF FOR DEPTHS TO 30' AND 0.32 IN²/FT WWF FOR DEPTHS GREATER THAN 30'. 6" MAXIMUM SPACING FOR WWF.
11. FOR FOOTING BOTTOM REINFORCEMENT, BOTH DIRECTIONS, USE NO. 13 (4) BARS AT 18" FOR DEPTHS TO 60' OR 0.15 IN²/FT WWF FOR DEPTHS TO 30' AND 0.16 IN²/FT WWF FOR DEPTHS GREATER THAN 30'. 6" MAXIMUM SPACING FOR WWF.
12. A SAFE BEARING CAPACITY OF (1.5 TONS PER S.F.) UNDER THE ENTIRE SLAB IS ASSUMED TO DETERMINE THE BASE SIZE. WHEN THE SUBSOIL IS EXTREMELY POOR, PROCEED WITH CONSTRUCTION ONLY AFTER THE GEOTECHNICAL ENGINEER SPECIFIES ADEQUATE BASE DESIGN.

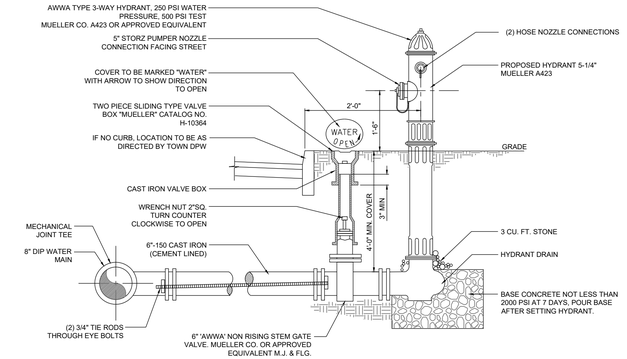
C1 PRE-CAST SANITARY MANHOLE

NOT TO SCALE 2019-03-01 / LEC STD

EXCAVATIONS IN EXISTING PAVED ROADWAYS SHALL BE COORDINATED WITH THE LOCAL PERMITTING AGENCY, AND ALL EXCAVATION SHALL BE PAVED WITH TEMPORARY BITUMINOUS PAVEMENT FROM THE DATE OF ORIGINAL EXCAVATION UNTIL PERMANENT PAVEMENT IS INSTALLED. (MINIMUM = 90 DAYS, MAXIMUM = 120 DAYS)

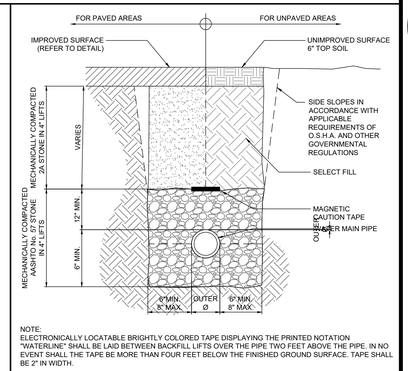
B3 SANITARY SEWER PIPE BEDDING

NOT TO SCALE 2019-03-01 / LEC STD



B4 FIRE HYDRANT and VALVE INSTALLATION

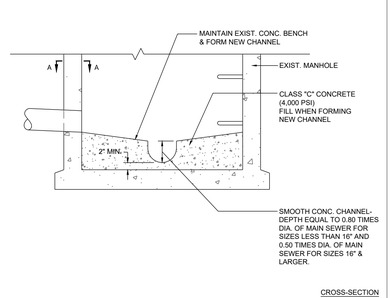
NOT TO SCALE 2020-07-09 LEC STD



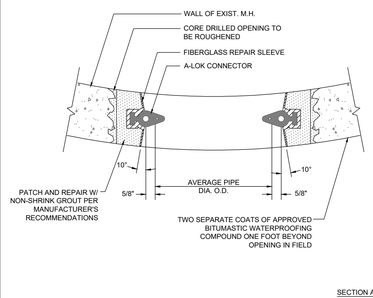
NOTE:
ELECTRONICALLY LOCATABLE BRIGHTLY COLORED TAPE DISPLAYING THE PRINTED NOTATION "WATERLINE" SHALL BE LAID BETWEEN BACKFILL LIFTS OVER THE PIPE TWO FEET ABOVE THE PIPE. IN NO EVENT SHALL THE TAPE BE MORE THAN FOUR FEET BELOW THE FINISHED GROUND SURFACE. TAPE SHALL BE 2" IN WIDTH.

B6 WATER MAIN BEDDING & PIPE ZONE

NOT TO SCALE 2020-07-09 LEC STD



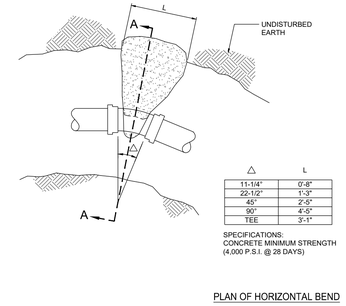
CROSS-SECTION



SECTION A-A

C3 CONNECTION TO EXISTING SANITARY MANHOLE

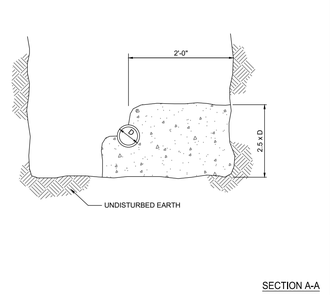
NOT TO SCALE 2019-03-01 / LEC STD



Δ	L
11-1/4°	0'-8"
22-1/2°	1'-3"
45°	2'-5"
90°	4'-5"
TEE	3'-1"

SPECIFICATIONS:
CONCRETE MINIMUM STRENGTH
(4,000 P.S.I. @ 28 DAYS)

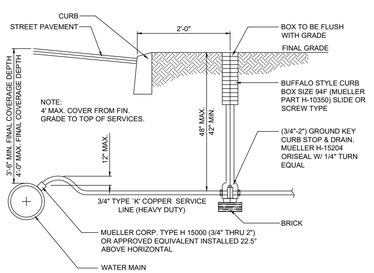
PLAN OF HORIZONTAL BEND



SECTION A-A

C5 WATER SERVICE THRUST BLOCKING

NOT TO SCALE 2020-07-09 LEC STD



NOTE:
MODIFIED 2A STONE (8" LIFTS) SHALL BE PLACED WHEN BACKFILLING WATER SERVICE CONNECTION FROM MAIN TO BEHIND CURB.

D6 DOMESTIC WATER CONNECTION

NOT TO SCALE 2020-07-09 LEC STD

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D. ALEXANDER TWEEDIE
PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE No. 071873

NOT FOR CONSTRUCTION

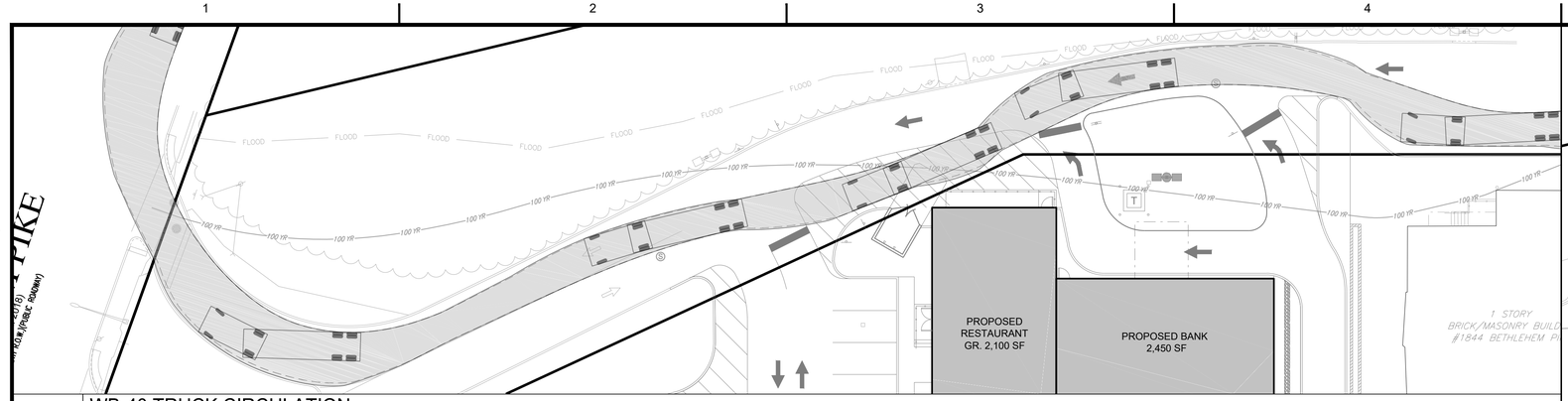
REV.	DATE	COMMENT	BY
-	-	-	-

PROJECT No: 140065
DRAWN BY: MAR
CHECKED BY: DAT
CAD I.D. #: 11-12_DT_140065

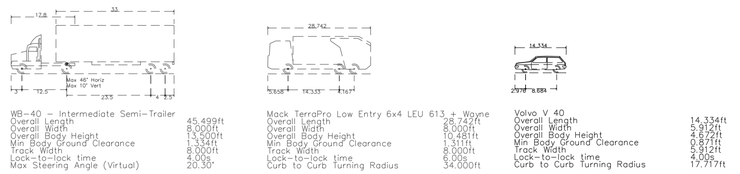
PROJECT: PROPOSED SITE IMPROVEMENTS
1880 BETHLEHEM PIKE, FLOURTOWN PA 19031
SPRINGFIELD TOWNSHIP AND WHITEMARSH TOWNSHIP
MONTGOMERY COUNTY, PA
APPLICANT: FEDERAL REALTY INVESTMENT TRUST
TITLE: DETAILS

DATE: 2021-03-04
SHEET: 12 of 13
REV. No: 0
DT2

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WED, 03 MAR 2021 @ 8:21:14 AM



D1 WB-40 TRUCK CIRCULATION
SCALE: 1" = 20'



WB-40 – Intermediate Semi-Trailer	
Overall Length	45.499ft
Overall Width	8.000ft
Overall Body Height	13.500ft
Min Body Ground Clearance	1.334ft
Track Width	8.000ft
Lock-to-lock time	4.00s
Max Steering Angle (Virtual)	20.30°

Mack TerraPro Low Entry 6x4 LEU 613 + Wayne	
Overall Length	28.742ft
Overall Width	8.000ft
Overall Body Height	10.481ft
Min Body Ground Clearance	1.311ft
Track Width	8.000ft
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	34.000ft

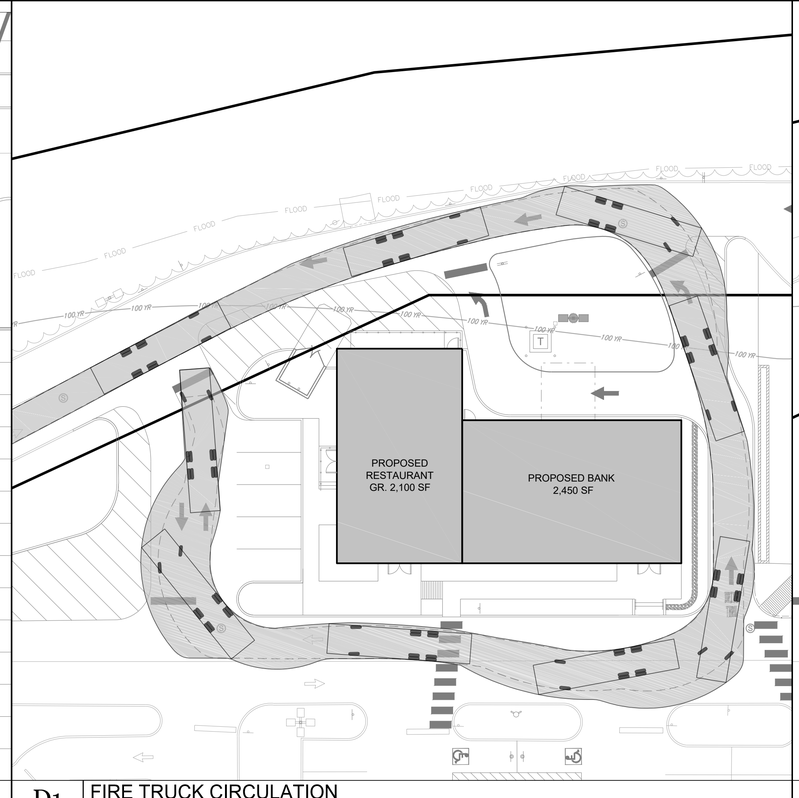
Volvo V 40	
Overall Length	14.334ft
Overall Width	5.912ft
Overall Body Height	4.672ft
Min Body Ground Clearance	0.871ft
Track Width	5.912ft
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	17.717ft

WB-67 – Interstate Semi-Trailer	
Overall Length	73.501ft
Overall Width	8.500ft
Overall Body Height	13.500ft
Min Body Ground Clearance	1.334ft
Max Track Width	8.500ft
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	28.48°

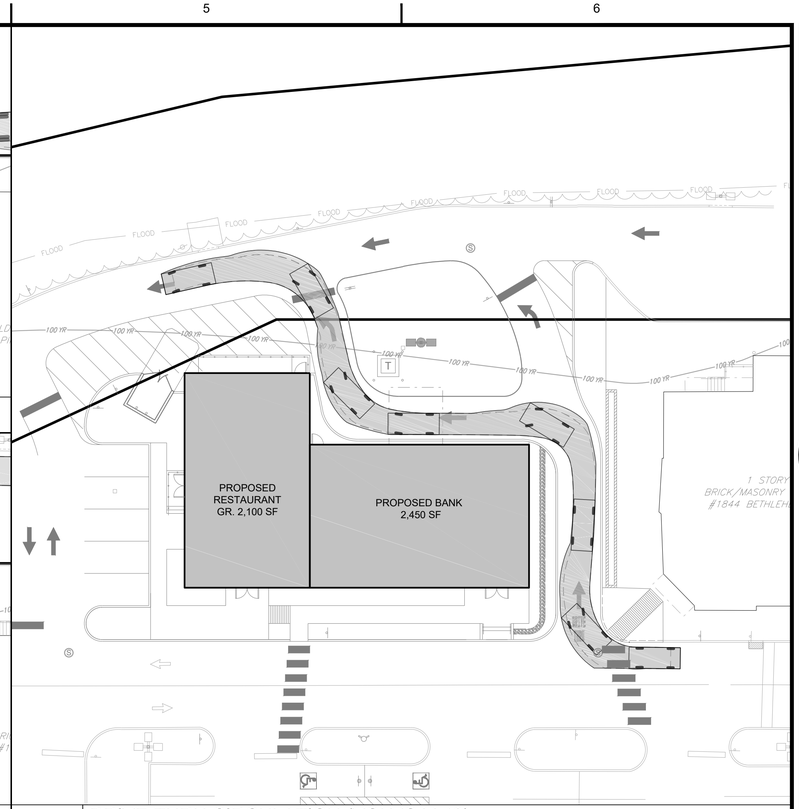
E-ONE HP100 Aerial	
Overall Length	40.000ft
Overall Width	8.333ft
Overall Body Height	11.000ft
Min Body Ground Clearance	1.397ft
Track Width	8.333ft
Lock-to-lock time	6.00s
Max Wheel Angle	45.00°

Chevrolet Suburban 3/4 Ton LS	
Overall Length	18.533ft
Overall Width	6.592ft
Overall Body Height	6.258ft
Min Body Ground Clearance	0.999ft
Track Width	6.592ft
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	22.650ft

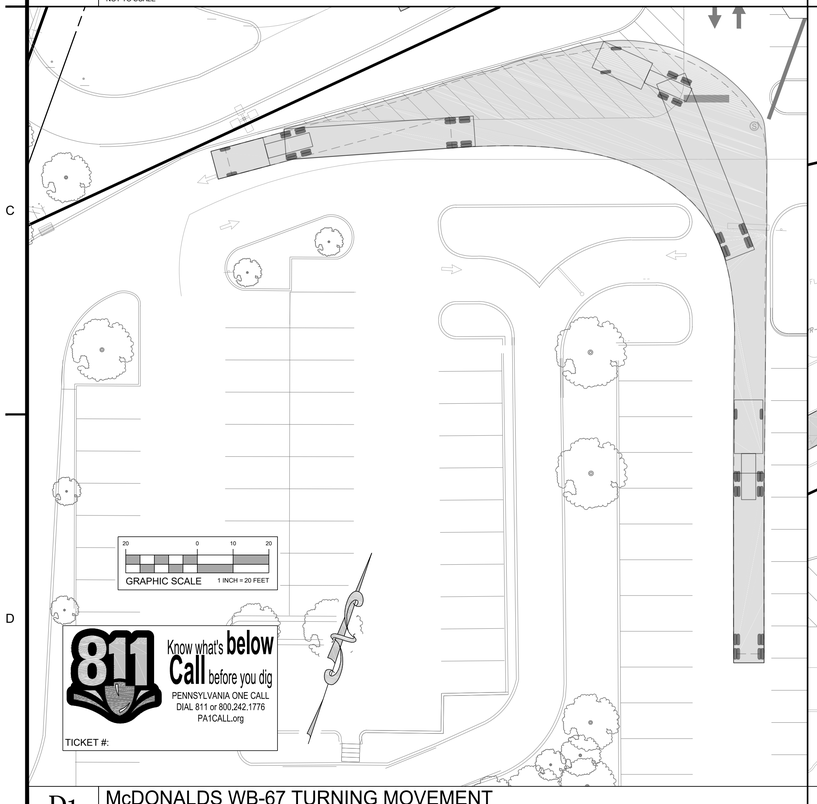
B2 PASSENGER VEHICHLE DATA
NOT TO SCALE



B3 TRASH TRUCK CIRCULATION
SCALE: 1" = 20'

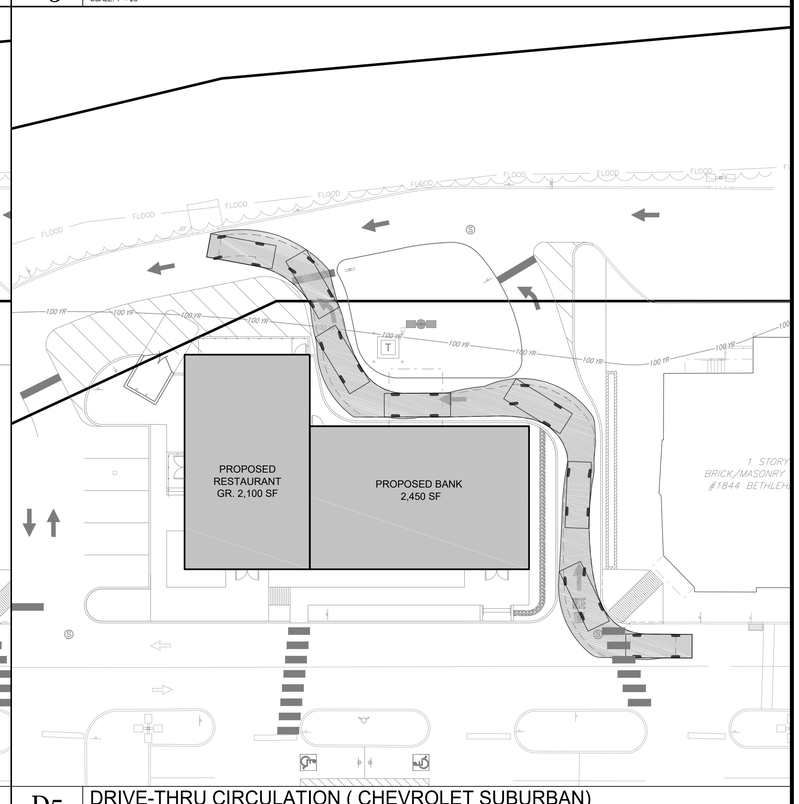


B5 DRIVE-THRU CIRCULATION (VOLVO V-40)
SCALE: 1" = 20'



D1 McDONALDS WB-67 TURNING MOVEMENT
SCALE: 1" = 20'

D1 FIRE TRUCK CIRCULATION
SCALE: 1" = 20'



D5 DRIVE-THRU CIRCULATION (CHEVROLET SUBURBAN)
SCALE: 1" = 20'

NO.	REV.	DATE	COMMENT	BY

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
D. ALEXANDER TWEEDIE
ENGINEER
No. PE071873
PENNSYLVANIA

D. ALEXANDER TWEEDIE
PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE No. 071873

NOT FOR CONSTRUCTION

PROJECT No: 140065
DRAWN BY: MAR
CHECKED BY: DAT
CAD I.D. #: 13_VM_140065

LANDCORE
Engineering Consultants, P.C.
PO BOX 73535 #52307
PHILADELPHIA, PENNSYLVANIA 19101-0535
PHONE 215-832-2510 EFAX 215-832-2511
LANDCORECONSULTING.COM

PROJECT: PROPOSED SITE IMPROVEMENTS
1990 BETHLEHEM PIKE, FLOURTOWN PA 19031
SPRINGFIELD TOWNSHIP AND WHITEMARSH TOWNSHIP
MONTGOMERY COUNTY, PA

APPLICANT: FEDERAL REALTY INVESTMENT TRUST

TITLE: VEHICLE MOVEMENT PLAN

DATE: 2021-03-04
SHEET: 13 of 13
REV. No: 0
VM

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VC-3 DISTRICT

SUNNYBROOK CREEK
(ORELAND RUN)

EXISTING
MULTI-TENANT
BUILDING

Point of Interest "A"

VC-3 DISTRICT

S DISTRICT

PROPOSED BANK
2,450 SF

PROPOSED RESTAURANT
2,100 SF

PARKING TOTAL
694 STALLS
5 STALLS
699 TOTAL STALLS

EXISTING
McDONALDS

EXISTING
BANK

EXISTING
RETAIL STORES

EXISTING
MOVIE THEATER

318 STALLS

211 STALLS

72 STALLS

62 STALLS

FLOOD

100 YR

OH

N60°14'46"E 226.46'

N51°58'30"E 220.97'

N40°32'30"E 309.68'

N65°23'30"E 265.00'

N71°50'00"E 450.00'

N65°18'15"E 303.73'

S24°54'03"E 215.49'

N04°47'40"W 682.85'

LANDCORE
Engineering Consultants, P.C.

MAILING ADDRESS (FOR ALL OFFICES)
P.O. Box 37635 #56287
Philadelphia, PA 19101-0635
Phone: (215) 836-2510 | eFax: (215) 352-0428
LANDCOREconsulting.com

March 4, 2021
Via Hand Delivery

Whitemarsh Township
616 Germantown Pike
Lafayette Hill, PA 19444
Attn: Charles Guttenplan, Dir. of Planning & Zoning

Subject: **Conditional Use & Land Development Application**
Flourtown Shopping Center
Proposed Site Redevelopment
1842 Bethlehem Pike
Whitemarsh Twp, Montgomery Co., PA
LEC File #140065.02

Dear Mr. Guttenplan:

On behalf of the applicant, **Federal Realty Investment Trust**, enclosed please find documents and supporting information as required by Whitemarsh Township for submission of a **Conditional Use & Preliminary/Final Land Development Application** for the above referenced property. The following is a summary of the items being submitted:

- One (1) **Township Submission Checklist.**
- One (1) executed **Township Land Development Application.**
- One (1) **Township Conditional Use Application Fee** in the amount of $500.00.
- One (1) **Township Conditional Use Escrow Fee** in the amount of $500.00.
- One (1) **Township Land Development Escrow Fee** in the amount of $7,500.00.
- One (1) executed **Township Request for Modification Form**.
- One (1) executed **Township Time Waiver Form**.
- One (1) **County "Municipal Request for Review",** requiring municipal signature**.**
- Sixteen (16) copies of the **"Preliminary / Final Land Development Plans"** prepared by our office, dated March 4, 2021.
- Five (5) copies of the **"Overall Site & Record Plans"** prepared by our office, dated March 4, 2021.
- Three (3) copies of **"Act 537 Sewage Planning Module Mailer Package"**, requiring municipal signature.
- Three (3) copies of the **"Stormwater Report"** prepared by our office and dated March 4, 2021.
- Three (3) copies of "**ZHB Application #2020-36 Decision and Order"** dated January 29, 2021.
- Three (3) copies of "**Drive-Thru Queue Investigation"** prepared by FTA and dated February 10, 2021.

Please sign and forward both the **MCPC Municipal Request for Review** and the **Act 537 Sewage Planning Module Mailer** to the appropriate agencies. Should you have any questions or comments regarding this or any other matter, please do not hesitate to contact our office.

Very truly yours,
LANDCORE Engineering Consultants, PC



D. Alexander Tweedie, PE, Sr Project Manager

Enclosure

cc: Andy Bottaro, Federal Realty
Rob Lewis, Kaplin Stewart
File

c:\users\atwee\dropbox (landcore)\projects\2014\140065 - federal realty - flourtown pa\permitting\township_whitemarsh township\2021-03-04_140065.02_whitemarsh submission.docx

WHITEMARSH TOWNSHIP
SUBDIVISION and/or LAND DEVELOPMENT APPLICATION

The applicant, or applicant's authorized agent, for the Township to accept submission of the application, must complete each Application Item and each Application Submission Checklist Item.

Application Type: (check one) ☐ Minor Subdivision ☒ Minor Land Development ☐ Major Subdivision ☐ Major Land Development ☐ Land Development Waiver

Plan Type: ☐ Sketch ☒ Preliminary ☒ Final

RECEIVED
MAR 15 2021
WHITEMARSH TOWNSHIP
ZONING & ENGINEERING

INSERT "N/A" FOR NOT APPLICABLE WHERE APPROPRIATE

Name of Subdivision/Land Development: Flourtown Shopping Center

Location of Subdivision/Land Development: 1842 Bethlehem Pike, Flourtown PA 19031
(Primary Access Roadway Name)

Between: Springfield Ave (Roadway Name) and Sunnybrook Road (Roadway Name)

Number of Parcels: 1 **Block Number(s):** Lot A 60 **Unit Number(s):** 66

Parcel Number(s): 65-00-00547-063

Acreage: < 1 Ac Proj Area **Total Lots Proposed:** 1 (Exist) **Zoning District:** VC-3

Water Service Proposed: ☒ Public ☐ Private Sewer Service Proposed: ☒ Public ☐ Private

Applicant Name: Federal Realty Investment Trust **Contact Name:** Andy Bottaro

Phone #: 610-896-5870 Fax #: Email: abottaro@federalrealty.com

Address: 50 E. Wynnewood Road, Suite 200, Wynnewood, PA 19096

Owner of Record Name (If Different): Federal Realty Investment Trust AND Steven J Guttman & Donald Misner c/o Federal Realty Investment Trust

Phone #: 610-896-5870 Fax #: Email: abottaro@federalrealty.com

Address: 909 Rose Ave, Suite 200, North Bethesda, MD 20852

Engineer Name: D. Alexander Tweedie, PE **Firm Name:** LANDCORE Eng. Consultants, P(

Phone #: 215-836-2510 Fax #: Email: atweedie@landcoreconsulting.com

Address: PO Box 37635 #56287, Philadelphia, PA 19101-0635

Fees and plans showing all public improvements are submitted with this application. Any additional plan information required by the Township Engineer will be submitted to the Director of Planning and Zoning for distribution. The undersigned applicant agrees to comply with all the provisions of Chapter 105 of the Code of the Township of Whitemarsh, as amended, and agrees to obtain all necessary permits in connection with the proposed subdivision and/or land development.

Whitemarsh Township employees, or township-authorized agents, are hereby granted permission to enter upon the land, if necessary, for site inspections.

Original preliminary and/or original final subdivision and/or land development applications submitted by 4:00pm on the last business day of the month will be reviewed by the Whitemarsh Township Planning Commission at a regular meeting two (2) months following the date of submission or other appropriate meeting date depending upon the results of Township reviews.

I hereby certify, as the undersigned applicant, that I am familiar with the provisions of: [1] Chapter 105, "Subdivision and Land Development", [2] Chapter 58, "Grading, Erosion Control, Stormwater Management and Best Management Practices", and [3] Chapter 55, "Tree Protection Standards" of the Code of the Township of Whitemarsh, as amended, and, to the best of my knowledge and belief, this application and the submitted plans conform to those provisions.

Date of Submission: 3.5.2021

Signature: _____

(Original Signature must be submitted)

Printed Name: Andrew Bottaro

I, (name) Andrew Bottaro **(title)** Senior Director, Development of

(entity submitting application) Federal Realty Investment Trust do hereby affirm

that I am authorized by the applicant to affix my signature to this application.

Date: 3.3.2021 Signature: _____

(Original Signature must be submitted)

WHITEMARSH TOWNSHIP
SUBDIVISION and/or LAND DEVELOPMENT
TIME WAIVER FORM

Date: 3.3.2021

Granted to: Whitemarsh Township Board of Supervisors

Name of Subdivision and/or Land Development: Flourtown Shopping Center

On or about 3/3/2021, I/we submitted for official filing the above-reference application.

Notwithstanding any contrary provision of the Pennsylvania Municipalities Planning Code or the Code of the Township of Whitemarsh, this letter will serve as notice to Whitemarsh Township that the requirement that action be taken on this application within ninety (90) days is hereby waived, without limitation as to time. This waiver is granted to permit us to make revisions to the application during the application review process.

Further, with the understanding that this waiver is voluntarily given and will be relied upon by Whitemarsh Township, I/we will give Whitemarsh Township written notice (by certified mail or recognized overnight carrier) should we determine that limiting the time of the review process becomes necessary. Whitemarsh Township shall then have ninety (90) days from receipt of such written notice in which to act upon the application.

This waiver is not transferable or assignable by the Applicants and shall apply to any and all revised submissions made in relation to the above-referenced application.

I/we represent that I/we have been duly authorized to execute this waiver on behalf of the Applicant.

Date: 3.3.2021

Signature: [signature]
(Original Signature must be submitted)

Printed Name: Andy Bottaro

Firm Name: Federal Realty
(if applicable)

Title: SENIOR DIRECTOR, DEVELOPMENT
(if applicable)

WHITEMARSH TOWNSHIP

REQUEST FOR MODIFICATION (WAIVER) OF SUBDIVISION and/or LAND DEVELOPMENT ORDINANCE REQUIREMENTS

Pursuant to § 512.1.(b) of the Pennsylvania Municipalities Planning Code, all requests for a modification shall be in writing and shall accompany and be a part of the application for development. The request shall state in full the grounds and facts of unreasonableness or hardship on which the request is based, the provision or provisions of the ordinance involved and the minimum modification necessary.

Check the appropriate line:

☒ No modification (or waiver) of the Whitemarsh Township Subdivision and Land Development Ordinance is requested

☐ I/we hereby request the following modification[s] (or waiver[s]) of the Whitemarsh Township Subdivision and Land Development Ordinance. (The request must identify the applicable Section[s] of the Ordinance, modification[s] requested, and facts of unreasonableness or hardship upon which the request is made; attach additional sheets if necessary).

Name of Subdivision and/or Land Development: Flourtown Shopping Center

Date: 3.3.2021 Signature: _____

(Original Signature must be submitted)

WHITEMARSH TOWNSHIP ZONING HEARING BOARD

DECISION AND ORDER

APPLICATION NO.: 2020-36
APPLICANT: Federal Realty Investment Trust
Block 060, Units 066 and 067
1842 Bethlehem Pike
Flourtown, PA 19031
VC-3 Village Commercial District (Sub-District 3)

HEARING DATE: 01/19/21
VOTE: 01/19/21
WRITTEN DECISION: 01/29/21
COPY MAILED: 01/29/21

The Applicant is proposing to expand the Flourtown Shopping Center, including construction of a 4,550 square foot pad site for a restaurant and bank, with associated revisions to the adjacent parking fields and circulation patterns. The Shopping Center is bisected by the municipal boundary of Springfield and Whitemarsh Townships with the majority of the Shopping Center being located in Springfield Township. The majority of the bank and a small portion of the restaurant are in Whitemarsh. The Whitemarsh portion of the Shopping Center is split zoned between the VC-3 Village Commercial District and the B-Residential Zoning District. The proposed development is entirely within the VC-3 area.

After completion of a public hearing on the above-referenced Application, pursuant to public notice as required by law, the Zoning Hearing Board of Whitemarsh Township decided and orders as follows:

1. A variance from Section 116-184.D.(6) and (8), so as to permit less than the required parking (5 spaces, rather than the 39 spaces required), and permit parking associated with the proposed use to be located on an adjacent lot owned by the same owner in Springfield Township, is **GRANTED**.

2. A variance from Section 116-184.E, to not provide landscape strips within the parking lot, is **GRANTED**.

3. A special exception under Section 116-185, so as to permit shared parking with the adjacent lot owned by the same owner in Springfield Township, is **GRANTED**.

4. Variances from Sections 116-291.A.(7)(b)(1), (2), and (3), so as to permit parking between the street line and front principal building plane in excess of 25% of the total parking, and to not require a wall and associated landscaping (other than as set forth in the conditions below) between the parking and street, are **GRANTED**.

THIS DECISION IS SUBJECT TO THE FOLLOWING CONDITIONS:

1. All use and development permitted by this Decision shall substantially conform to the exhibits and testimony presented by the Applicant, unless inconsistent with any specific conditions imposed by this Board, in which case these specific conditions shall take precedence.

2. The Applicant shall apply for and obtain all permits required by the Township Codes in a timely manner.

3. The Applicant shall comply with all requirements of the Township with respect to the land development process and the conditional use approval process.

4. The Applicant shall install landscaping as directed and/or approved by the Township upon the recommendations of the Shade Tree Commission.

5. The Applicant shall comply with the requirements of the Township Fire Marshal with respect to the traffic patterns resulting from the proposed improvements.

This Decision and Order of the Board is final and any appeal of it must be filed with the Court of Common Pleas of Montgomery County within thirty (30) days following the copy mailing date set out above.

The Board reserves the right to issue Findings of Fact and Conclusions of Law in the event of an appeal.

Section 116-223 of the Zoning Ordinance provides as follows:

Expiration of granted appeals. Unless otherwise specified by the Board, all approvals granted by the Zoning Hearing Board shall automatically expire 365 days after the date of the decision unless: (1) the applicant has acted upon the approval by obtaining the required permit(s) and paying the prescribed fees for same, or (2) the Zoning Hearing Board decision is on appeal to the courts, at which point, the approval, if upheld on appeal, shall expire 365 days after final determination on appeal.

The Zoning Hearing Board may extend the expiration date of approvals for a 180 day period upon request by the applicant, provided that the applicant is, in the opinion of the Zoning Hearing Board, diligently pursuing governmental and/or regulatory approvals as required. Requests for extensions shall be in writing and submitted to the Zoning Hearing Board at least 30 days before any applicable expiration date. Only one (1) extension may be provided for any application.

No. 2020-36
WHITEMARSH TOWNSHIP ZONING HEARING BOARD:

Robert A. Bacine, Chair

William E. Kramer, Vice Chair

Marc Weinstein

Stanley A. Casacio

James Behr

Alternate
Randi Rubin

No. 2020-36
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Marc Weinstein

Stanley A. Casacio

James Behr

Alternate
Randi Rubin

STORMWATER MANAGEMENT REPORT

Proposed Site Improvements

1842 Bethlehem Pike, Flourtown PA 19031
Springfield Township & Whitemarsh Township,
Montgomery County, Pennsylvania

Prepared for

Federal Realty Investment Trust

50 E. Wynnewood Road, Suite 200
Wynnewood, PA 19096

Prepared By:

LANDCORE Engineering Consultants, P.C.

P.O. Box 37635, #65287
Philadelphia, PA 19101-0635

LEC Project No: **140065**

Date: **March 4, 2021**

Revised:

D. Alexander Tweedie, P.E.

PA License #071873



LANDCORE
Engineering Consultants, P.C.

Table of Contents

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4.2 Water Quality 5
4.3 Infiltration 5
5.0 Conclusions 5
6.0 References 6

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APPENDIX A: Supporting Documents

A.1 Project Location Map

A.2 FEMA Flood Insurance Rate Map

APPENDIX B: Site Soils investigation

B.1 USGS Custom Web Soil Survey

APPENDIX C: Water Quality and infiltration Analysis

C.1 Springfield Township Water Quality & Infiltration Analysis

C.2 Whitemarsh Township Water Quality & Infiltration Analys

APPENDIX D: Drainage Maps

1.0 PROJECT DESCRIPTION

Federal Realty Investment Trust is proposing to redevelop a section of the Flourtown Shopping Center located at 1809 Bethlehem Pike (SITE) in both Springfield Township and Whitemarsh Township, Montgomery County, Pennsylvania. The project proposes 4,550 sf of additional commercial building space. Other improvements include a drive-thru lane, parking area, and utilities.

The property in questions is further identified as A.P.N. 52-00-01904-006 as identified on the official tax maps of Montgomery County, Springfield Township & A.P.N. 65-00-00547-045 as identified on the official tax maps of Montgomery County, Whitemarsh Township, Commonwealth of Pennsylvania. A project location map can be found in the appendix.

Tract Area: **41.47 acres**
Limit of Disturbance: **0.47 acres**

2.0 SITE CHARACTERISTICS

2.1 EXISTING CONDITIONS

The property is the location of the Flourtown Shopping Center which is comprised of several commercial buildings with associated parking and loading areas. The area to be developed is located along the north westerly corner of the shopping center and is primarily a paved area.

2.2 PROPOSED CONDITIONS

As mentioned above, a 4,550 sf commercial building is proposed with associated drive-thru lane, parking and loading area. All improvements will be contained within the limits of the existing shopping center developed area. Impervious cover will be reduced.

2.3 RECEIVING WATERS

The SITE is located within the Wissahickon Creek watershed, a tributary of the Delaware River. The nearest receiving waters is Tributary 00857 to Wissahickon Creek (aka Sunnybrook Creek or Oreland Run) located onsite along the northerly and easterly property lines. The creek flows in a westerly direction towards Bethlehem Pike. The watercourse is designated as a Trout Stock Fishery (TSF), Migratory Fishery (MF) on the Pennsylvania Department of Environmental Protection (PADEP) Chapter 93 classification list.

2.4 PROJECT AREA SOILS

The SITE was evaluated using the latest soil survey information and mapped accordingly. The soil types for this site were obtained from the United States Department of Agriculture NRCS Web Soil Survey and a custom report generated (see Appendix). The mapped area extended beyond the property boundary line to ensure adequate coverage of the site.

Table 1: Site Soils

Soil ID	Description	Slopes	Hydrologic Soil Group
UgB	Urban Land	0 – 8%	-
UrhB	Urban Land – Duffied Complex	0 – 8%	-

2.5 FLOODPLAINS

The site lies within a regulated flood area. FEMA's Flood Insurance Rate Map for Montgomery County, PA, map numbers "42091C0377G" effective on 03/02/2016, designates portion of the site as "Zone AE" or "Special Flood Hazard Areas Subject To Inundation By The 1% Annual Chance Flood" and "Base Flood Elevations Determined" (see Map in Appendix).

The proposed development will be located within the regulated flood area, which has ab approximate elevation of 151.7 in the location of the proposed building. The proposed finished floor is set at elevation 153.00.

2.6 WETLANDS

The improvements will occur within the limits of the existing shopping center, therefore no wetlands will be impacted by the development.

3.0 DESIGN CRITERIA

The stormwater design standards for the development are set forth by the following:

- Springfield Township Stormwater Management Ordinance Chapter 88.
- Springfield Township Erosion and Sedimentation Control Ordinance Chapter 28.
- Whitemarsh Township Grading, Erosion Control, Stormwater Management and Best Management Practices Ordinance Chapter 58.
- Whitemarsh Township Resolution 2004-8.
- PADEP's Erosion and Sediment Pollution Control Program regulations.

Specific design standards and project site conditions are as follows:

3.1 SPRINGFIELD TOWNSHIP CHAPTER 88

1. §88-3.G: Meet legal water quality requirements under state law, including regulations at 25 Pa. Code Chapter 93 .4a to protect and maintain existing uses and maintain the level

of water quality to support those uses in all streams, and to protect and maintain water quality in special protection streams.

3.2 Springfield Township Chapter 28

1. §28-9.B: Provide for no increase in stormwater peak discharge as per Subsection A.

3.3 Whitemarsh Township 2004-8.

1. §II.C(1) & (2): Control post rate to pre up to 100 yr storm.
2. §II. F(3)(c)(1) Water Quality: WQv = (0.17)(Rv)(A)
3. §II. F(3)(d) Infiltration: Rev = [(S)(Rv)(A)]/12

4.0 Analysis

4.1 Peak Rate Analysis

The proposed development will result in a reduction in impervious cover which will result in a reduction in peak rates for the 1 – 100 year storms.

The follows summaries the net reduction in impervious area:

Springfield Township:	660 sf
Whitemarsh Township:	2,982 sf
Total:	3,642 sf

4.2 Water Quality

Due to the net reduction in impervious coverage, water quality requirements have been satisfied; Therefore, no additional BMPs are required. See Water Quality Analysis in the appendix

4.3 Infiltration

Due to the net reduction in impervious coverage, infiltration requirements have been satisfied; Therefore, no additional BMPs are required. See Infiltration Analysis in the appendix.

5.0 Conclusions

The reduction in impervious coverage will result in a decrease in peak rates, and an increase in both water quality benefits and infiltration volume.

6.0 REFERENCES

- Springfield Township Stormwater Management Ordinance Chapter 88.
- Springfield Township Erosion and Sedimentation Control Ordinance Chapter 28.
- Whitemarsh Township Grading, Erosion Control, Stormwater Management and Best Management Practices Ordinance Chapter 58.
- Whitemarsh Township Resolution 2004-8.
- PA Stormwater BMP Manual. December 2006.
- "Erosion and Sediment Pollution Control Program Manual". Commonwealth of Pennsylvania, Department of Environmental Protection, Office of Water Management. March 2012.

APPENDIX A: SUPPORTING DOCUMENTS

A.1 PROJECT LOCATION MAP

USGS MAP

SCALE: 1" = 2,000'



A.2 FEMA Flood Insurance Rate Map

Deana Shuler

From: Krista Heinrich <kheinrich@gilmore-assoc.com>
Sent: Thursday, April 29, 2021 3:20 PM
To: Craig R. Lewis; Charlie Guttenplan
Cc: D. Alexander Tweedie P.E. (atweedie@landcoreconsulting.com); Sean Halbom; Dave Sander
Subject: RE: Flourtown Shopping Center - Review of Land Development Application [KS-IMAN_BB.FID902312]
Attachments: FEMA42091C0377G.tif; FIRMETTE_436affbb-cee1-4416-883e-8174490ee9a9.pdf

Rob-
The FEMA FIRM Map (attached) lists a Base Flood Elevation (BFE) 151.5 NAVD88. The BFE defines FEMA's 100-Year Floodplain, which represents the Whitemarsh Township Floodplain Conservation District Boundary. The plans will need to be revised to show the Floodplain Conservation District as being along the elevation representing 151.5 NAVD88.

Following revision, it appears that the following Zoning relief would be required:

- Special Exception from Section 116-166(B)(3) to permit utilities to be allowed in the in the floodway fringe.
- Variance from Section 116-165 in order to permit uses other than those described herein. Banks and/or restaurants are not listed as permitted uses within the Floodplain Conservation District.
- Variances from Section 116-259(C) and 116-260 to permit the proposed structures, drives and parking areas within Zone 2 of the Riparian Corridor Conservation District.

Any questions, let us know.

Thanks,
Krista Heinrich, PE
Gilmore & Associates

From: Craig R. Lewis
Sent: Thursday, April 29, 2021 10:18 AM
To: Charlie Guttenplan <cguttenplan@whitemarshtwp.org>; kheinrich@gilmoreassoc.com
Cc: D. Alexander Tweedie P.E. (atweedie@landcoreconsulting.com) <atweedie@landcoreconsulting.com>
Subject: Flourtown Shopping Center - Review of Land Development Application [KS-IMAN_BB.FID902312]

Krista and Charlie,

I hope this finds you well. As you know, we recently received review comments from the Township's engineer regarding Federal's application for land development for an approximately 4,550 s.f. addition to the Flourtown Shopping Center. While we continue to work on responses to the remainder of the comments, there appears to be a threshold issue that must be addressed. Comments number 6 and 7 raise the issue of the location of the Floodplain Conservation District. The Floodplain Management Ordinance and SLDO indicate that the Floodplain shall be delineated by the FEMA Rate Maps (FIRM). We have plotted the Floodplain Conservation District in this manner and believe the project will be compliant; possibly requiring a Special Exception in accordance with Section 116-166. However, if, as is seemingly suggested in Comments 6 and 7, the Floodplain is plotted according to the noted elevation (151.5), this results in an entirely different plotting; one that we do not believe to accurately depict flooding conditions and one which is inconsistent with the FIRM.

Can we schedule a time to discuss the above? As I mentioned above, this is a threshold issue that must be resolved before we address any of the other comments. I can be reached by email or by cell phone 267-235-7797.

Thanks.

Rob

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National Flood Hazard Layer FIRMette

FEMA

75°13'9"W 40°6'51"N



75°12'32"W 40°6'23"N

Feet

0 250 500 1,000 1,500 2,000

1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 1/13/2021 at 11:59 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

APPENDIX B: SITE SOILS INVESTIGATION

B.1 USGS CUSTOM WEB SOIL SURVEY

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Montgomery County, Pennsylvania



December 21, 2020

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



Map Scale: 1:2,130 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 30 60 120 180

Feet
0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Montgomery County, Pennsylvania
Survey Area Data: Version 15, Jun 5, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 17, 2014—Aug 14, 2014

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ch	Codorus silt loam	0.2	0.7%
UgB	Urban land, 0 to 8 percent slopes	19.6	83.8%
UrhB	Urban land-Duffield complex, 0 to 8 percent slopes	3.6	15.5%
Totals for Area of Interest		**23.4**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The

delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Montgomery County, Pennsylvania

Ch—Codorus silt loam

Map Unit Setting

National map unit symbol: l53x
Elevation: 200 to 2,000 feet
Mean annual precipitation: 35 to 50 inches
Mean annual air temperature: 45 to 57 degrees F
Frost-free period: 120 to 220 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Codorus and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Codorus

Setting

Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from gneiss and/or alluvium derived from mica schist

Typical profile

Ap - 0 to 12 inches: silt loam
Bw - 12 to 48 inches: silt loam
C - 48 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 72 to 99 inches to lithic bedrock
Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: OccasionalNone
Frequency of ponding: None
Available water capacity: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Hatboro

Percent of map unit: 8 percent
Landform: Flood plains

Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Hydric soil rating: Yes

Glenville

Percent of map unit: 4 percent
Landform: Hillslopes
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Side slope, head slope
Down-slope shape: Linear, concave
Across-slope shape: Concave, linear
Hydric soil rating: No

Baile

Percent of map unit: 3 percent
Landform: Depressions
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear, concave
Across-slope shape: Concave, linear
Hydric soil rating: Yes

UgB—Urban land, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2dtyq
Elevation: 800 to 1,500 feet
Mean annual precipitation: 36 to 46 inches
Mean annual air temperature: 41 to 62 degrees F
Frost-free period: 130 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Parent material: Pavement, buildings and other artifically covered areas human transported material

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

Minor Components

Udorthents, unstable fill
Percent of map unit: 10 percent
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

UrhB—Urban land-Duffield complex, 0 to 8 percent slopes

Map Unit Setting
National map unit symbol: 2dtyv
Elevation: 200 to 1,500 feet
Mean annual precipitation: 32 to 50 inches
Mean annual air temperature: 44 to 57 degrees F
Frost-free period: 120 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition
Urban land: 65 percent
Duffield and similar soils: 25 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting
Landform: Hills
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Pavement, buildings and other artifically covered areas

Typical profile
H1 - 0 to 6 inches: variable

Properties and qualities
Slope: 0 to 8 percent
Depth to restrictive feature: 10 to 100 inches to lithic bedrock
Available water capacity: Very low (about 0.0 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

Description of Duffield

Setting
Landform: Valleys
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve

Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Residuum weathered from limestone

Typical profile

H1 - 0 to 10 inches: silt loam
H2 - 10 to 53 inches: silty clay loam
H3 - 53 to 72 inches: silt loam

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 48 to 120 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Clarksburg

Percent of map unit: 4 percent
Landform: Valley flats
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Hydric soil rating: No

Penlaw

Percent of map unit: 4 percent
Landform: Swales
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

Thorndale

Percent of map unit: 2 percent
Landform: Depressions
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear, concave
Hydric soil rating: Yes

References

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APPENDIX C: WATER QUALITY AND INFILTRATION ANALYSIS

C.1 SPRINGFIELD TOWNSHIP WATER QUALITY & INFILTRATION ANALYSIS

LANDCORE Engineering Consultants, P.C.

Water Quality & Infiltration Analysis

Project: **Proposed Site Improvements - 1890 Bethlehem Pike, Flourtown PA**
Springfield Township, Montgomery County PA

Date: **1/13/2021**
Prepared By: **MR**
Checked By: **DAT**

Pre Development Conditions:

Pervious Areas =	502	sf
Impervious Areas =	6127	sf
	6629	sf
or	0.15	acres

Post Development Conditions:

Pervious Areas =	1162	sf
Impervious Areas =	5467	sf
	6629	sf
or	0.15	acres

Net Impervious Area =	-660	sf
or	-0.02	acres

Water Quality Requirement

P =	0.17	inches
Total Area (A)=	0.15	acres
Net Impervious Area (A_i)=	-0.02	acres
I = A / A_i =	-9.96	%
Rv = 0.05 + 0.009 (I) =	-0.040	
WQv = (P * Rv * A) =	-0.001	acre-ft
or	-44.63	cf

Infiltration Requirement

S =	0.06	(D Soils)
Total Area (A)=	0.15	acres
Net Impervious Area (A_i)=	-0.02	acres
I = A / A_i =	-9.96	%
Rv = 0.05 + 0.009 (I) =	-0.040	
Re_v = [(S)(Rv)(A)]/12	0.000	acre-ft
or	-1.31	cf

C.2 WHITEMARSH TOWNSHIP WATER QUALITY & INFILTRATION ANALYS

LANDCORE Engineering Consultants, P.C.

Water Quality & Infiltration Analysis

Project: **Proposed Site Improvements - 1890 Bethlehem Pike, Flourtown PA**
Whitemarsh Township, Montgomery County PA

Date: **1/13/2021**
Prepared By: **MR**
Checked By: **DAT**

Pre Development Conditions:

Pervious Areas =	178	sf
Impervious Areas =	13850	sf
	14028	sf
or	0.32	acres

Post Development Conditions:

Pervious Areas =	3160	sf
Impervious Areas =	10868	sf
	14028	sf
or	0.32	acres

Net Impervious Area =	-2982	sf
or	-0.07	acres

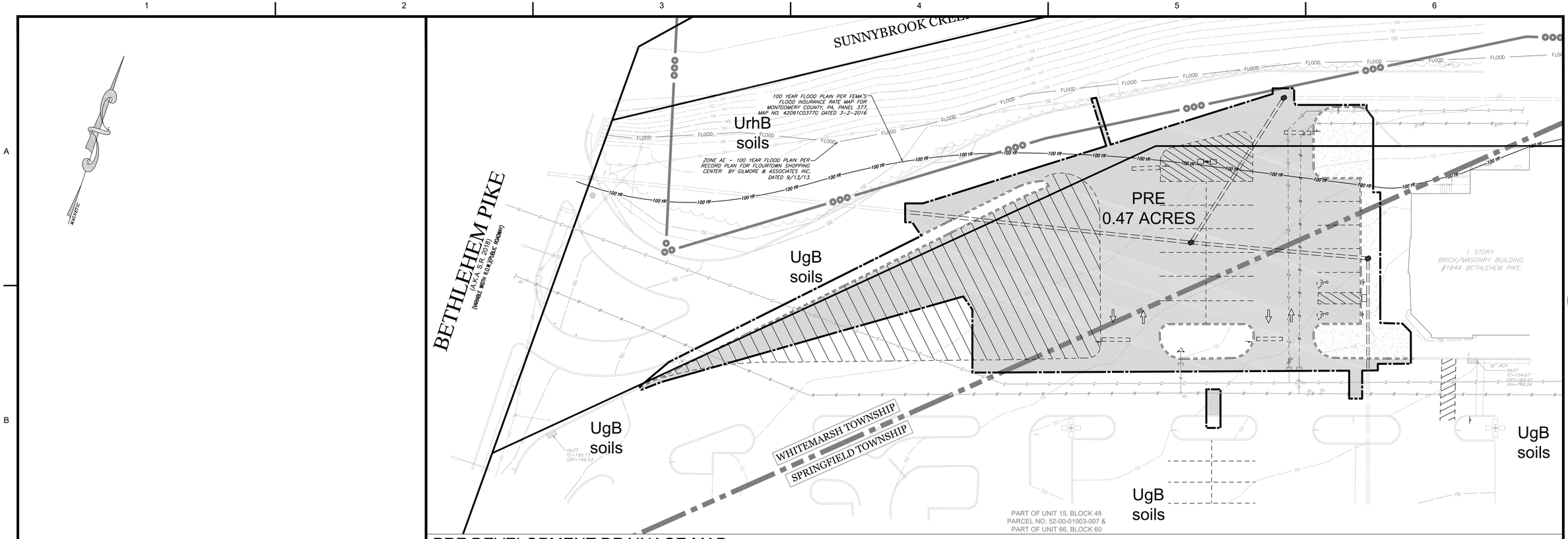
Water Quality Requirement

P =	0.17	inches
Total Area (A)=	0.32	acres
Net Impervious Area (A_i)=	-0.07	acres
I = A / A_i =	-21.26	%
Rv = 0.05 + 0.009 (I) =	-0.141	
WQv = (P * Rv * A) =	-0.008	acre-ft
or	-337.01	cf

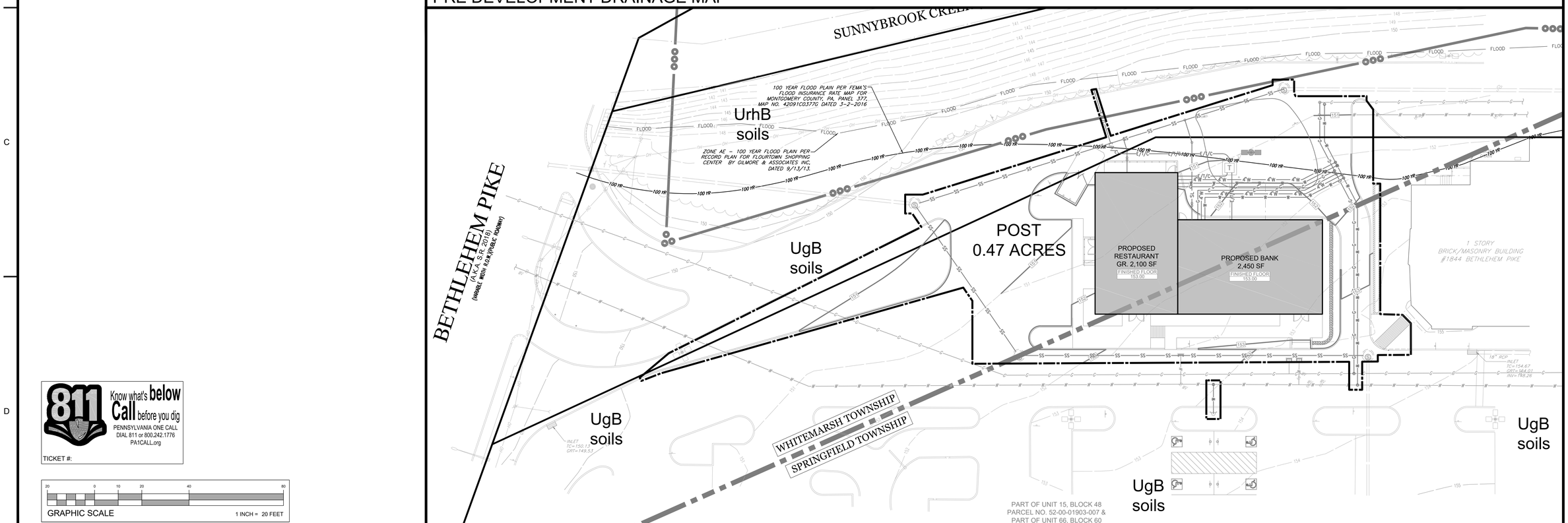
Infiltration Requirement

S =	0.06	(D Soils)
Total Area (A)=	0.32	acres
Net Impervious Area (A_i)=	-0.07	acres
I = A / A_i =	-21.26	%
Rv = 0.05 + 0.009 (I) =	-0.141	
Re_v = [(S)(Rv)(A)]/12	0.000	acre-ft
or	-9.91	cf

APPENDIX D: DRAINAGE MAPS



PRE DEVELOPMENT DRAINAGE MAP



POST DEVELOPMENT DRAINAGE MAP

811 Know what's below Call before you dig
PENNSYLVANIA ONE CALL
DIAL 811 or 800.242.1776
PA1CALL.org
TICKET #:

GRAPHIC SCALE 20 0 10 20 40 80
1 INCH = 20 FEET

BY	COMMENT	DATE	REV.

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
D. ALEXANDER TWEEDIE
ENGINEER
No. PE071873

D. ALEXANDER TWEEDIE
PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE No. 071873

NOT FOR CONSTRUCTION

PROJECT No: 140065
DRAWN BY: MAR
CHECKED BY: DAT
CAD I.D. #: A01_DAM_140065

LANDCORE
Engineering Consultants, P.C.
PO BOX 37033 #50297
PHILADELPHIA, PENNSYLVANIA 19101-6835
PHONE 215-836-2100 | FAX 215-335-0428
LANDCORECONSULTING.COM

PROJECT: PROPOSED SITE IMPROVEMENTS
1800 BETHLEHEM PIKE, FLOURTOWN PA 19031
SPRINGFIELD TOWNSHIP AND WHITEMARSH TOWNSHIP
MONTGOMERY COUNTY, PA
APPLICANT: FEDERAL REALTY INVESTMENT TRUST
TITLE: DRAINAGE AREAS

DATE: 2021-03-04
SHEET: 01 of 01
REV. No: 0
DAM

D:\DROPBOX (LANDCORE)\PROJECTS\2014\140065 - FEDERAL REALTY - FLOURTOWN PA\DRAWINGS\00-SITE PLANS\A01_DAM_140065.DWG
MAR, 03.04.2021 @ 2021-3-4 - 8:51 AM

SEWER PLANNING EXEMPTION REQUEST

Proposed Site Improvements

1842 Bethlehem Pike, Flourtown PA 19031
Springfield Township & Whitemarsh Township,
Montgomery County, Pennsylvania

Prepared for

Federal Realty Investment Trust

50 E. Wynnewood Road, Suite 200
Wynnewood, PA 19096

Prepared By:

LANDCORE Engineering Consultants, P.C.

P.O. Box 37635, #65287
Philadelphia, PA 19101-0635

LEC Project No: **140065**

Date: **March 4, 2021**

Revised:

D. Alexander Tweedie, P.E.

PA License #071873



LANDCORE
Engineering Consultants, P.C.

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A. PROJECT DESCRIPTION

Federal Realty Investment Trust is proposing to redevelop a section of the Flourtown Shopping Center located at 1842 Bethlehem Pike, Flourtown (SITE), Pennsylvania. The existing parcels under development are further identified as A.P.N. 52-00-01904-006 as identified on the official tax maps of Montgomery County, Springfield Township & A.P.N. 65-00-00547-045 as identified on the official tax maps of Montgomery County, Whitemarsh Township, Commonwealth of Pennsylvania. The site, which is approximately 9.5 acres, is physically located along the northbound side of Bethlehem Pike, between Springfield Avenue and Sunnybrook Road, in both Springfield Township and Whitemarsh Township, Montgomery County, Pennsylvania

The re-development of the site will include construction of a retail and building comprised of 4,500 +/- SF of retail floor. The remaining shopping center building area will remain unchanged. Associated parking, grading, and utility improvements are also proposed. A Project Utility Plan can be found in Section C.

A Planning Module Exemption is requested to approve the flows from the project to the public sanitary system of the Township of Whitemarsh. The existing and anticipated sewer flows are as described below. This is a potential multi-tenant building and therefore we have based this application on a 2 tenant concept with 1 restaurant and 1 bank tenant. We believe this estimation represents the expected sewer flows from this property.

Table 1:

PROPOSED SEWAGE FLOWS							
PROPOSED USE	**UNITS**	**OCCUPANCY**	**TURNOVER**	**GPD**	**FLOW (GPD)**	**EDU**	**EDUs**
RESTAURANT w/ BAR	108 SEATS	0.8	2	12	2,074	400	5.2
BANK	2,450 sf			0.1	245	400	0.6
TOTAL PROPOSED					2,319	400	**5.8**
EXISTING CREDIT					0	0	**0**
NET INCREASE					2,319	400	**6**

B. PLANNING MODULE MAILER

1. **Development Information**

Name of Development Flourtown Shopping Center
Developer Name Federal Realty Investment Trust
Address 50 E. Wynnewood Road, Suite 200
Wynnewood, PA 19096
Telephone #
Email abottaro@federalrealty.com

2. **Location of Development**

a. County Montgomery County
b. Municipality Springfield Township and Whitemarsh Township
c. Address or Coordinates 1842 Bethlehem Pike, Flourtown PA 19031

d. Tax Parcel # A.P.N. 52-00-01904-006 & A.P.N. 65-00-00547-045 (Springfield and Whitemarsh Township respecitively)
e. USGS Quad Name Germantown, PA
inches up 12.5" over 7.5"
from bottom right corner of map.
f. Located in a High Quality/Exceptional Value watershed?
☐ Yes ☒ No

3. **Type of Development Proposed** (check appropriate box)

☐ Residential ☐ Multi-Residential
Describe

☒ Commercial ☐ Institutional
Describe Multi Tenant Bldg with Resturant and Bank

☐ Brownfield Site Redevelopment
☐ Other (specify)

4. **Size**

a. # of lots 2 # of EDUs 6
b. # of lots since 5/15/72 2
c. Development Acreage 0.47
d. Remaining Acreage 41.00

5. **Sewage Flows** 13,320 gpd

6. **Proposed Sewage Disposal Method** (check applicable boxes)

a. ☐ Sewerage System
☒ Existing (connection only) ☐ New (extension)
☒ Public ☐ Private
☐ Pump Station(s)/Force Main ☒ Gravity
Name of existing system being extended

Interceptor Name
Treatment Facility Name

NPDES Permit #

b. ☐ Construction of Treatment Facility
☐ With Stream Discharge
☐ With Land Application (not including IRSIS)
☐ Other
☐ Repair?
Name of waterbody where point of discharge is proposed (if stream discharge)

c. ☐ Onlot Sewage Disposal Systems
(check appropriate box)
☐ Individual onlot system(s) (including IRSIS)
☐ Community onlot system
☐ Large-Volume onlot system
d. ☐ Retaining tanks
Number of Holding Tanks
Number of Privies

7. ☐ **Request Sewage Facilities Planning Module forms in electronic format**

8. **Request for Planning Exemption**

a. Protection of rare, endangered or threatened species
Check one:
☒ The "PNDI Project Environmental Review Receipt" is attached.
or
☐ A completed "PNDI Project Planning & Environmental Review Form," (PNDI Form) is attached. I request DEP staff to complete the required PNDI search for my project. I realize that my planning exemption will be considered incomplete and that the DEP processing of my planning exemption request will be delayed, until a "PNDI Project Environmental Review Receipt" and all supporting documentation from jurisdictional agencies (when necessary) is/are received by DEP.

Applicant or Consultant Initials

b. ☒ Plot Plan Attached ☐ Site Reports Attached

c. Onlot Disposal Systems

(1) I certify that the Official Plan shows this area as an onlot service area.

/
(Signature of Municipal Official) Date

/
Name (Print) Title

Municipality (must be same as in 2.b.)

Telephone #

(2) I certify that each lot in this subdivision has been tested and is suitable for both a primary and replacement sewage disposal system.

/
Signature of SEO) Date

/
Name (Print) Certification #

Telephone #

(3) I certify that each lot in this subdivision is at least 1 acre in size

/
(Signature of Project Applicant/Agent) Date

d. Public Sewerage Service (i.e., ownership by municipality or authority)

Based upon written documentation, I certify that the facilities proposed for use have capacity and that no overload exists or is projected within 5 years. (Attach documents.)

/
(Signature of Municipal Official) Date

/
Name (Print) Title

Municipality (must be same as in 2.b.)

Telephone #

C. PROJECT UTILITY PLAN

D. PNDI RECEIPT

1. PROJECT INFORMATION

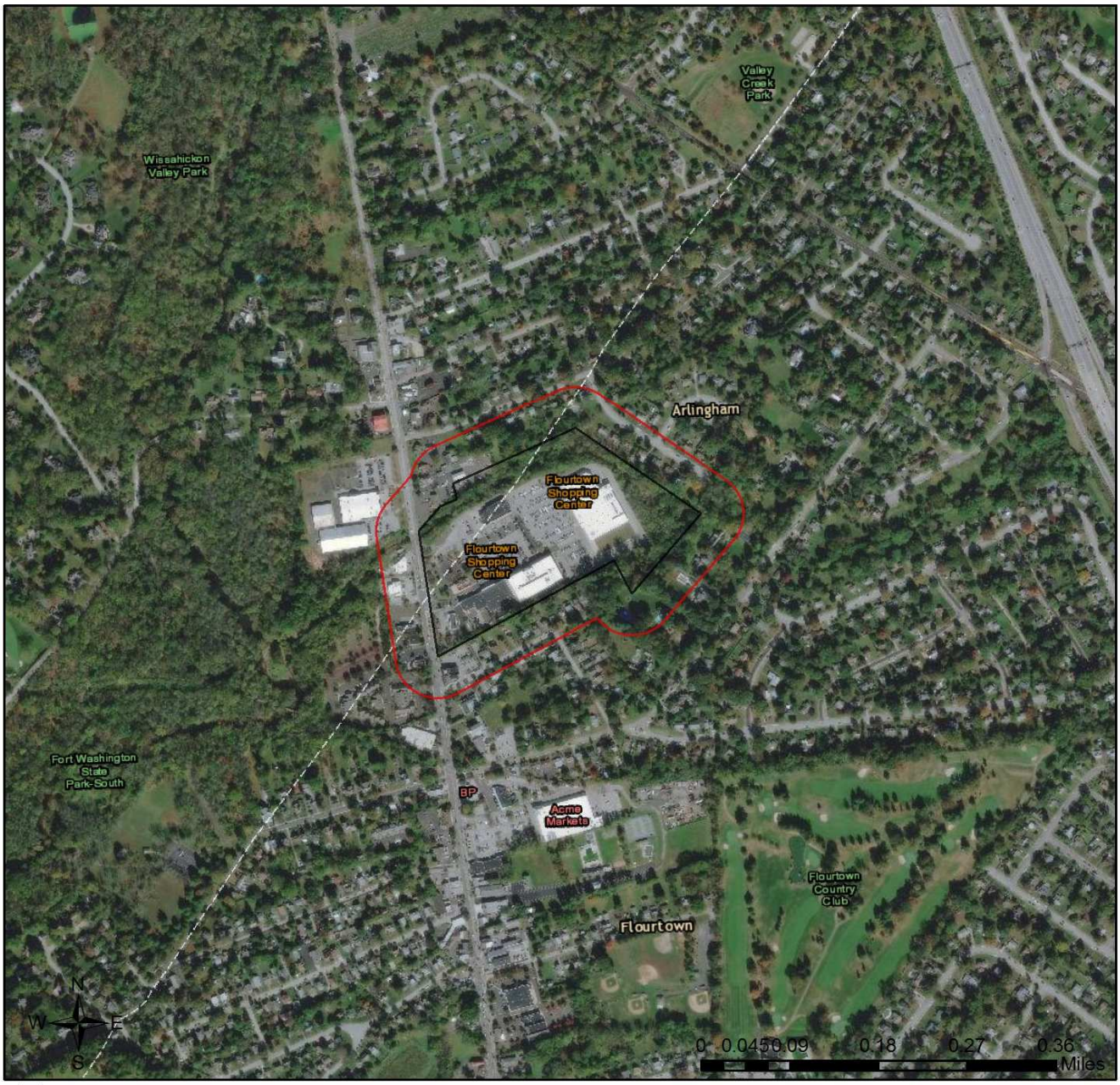
Project Name: **Flourtown Shopping Center - Proposed Site Improvements**
Date of Review: **3/5/2021 07:44:54 AM**
Project Category: **Development, New commercial/industrial development (store, gas station, factory)**
Project Area: **23.33 acres**
County(s): **Montgomery**
Township/Municipality(s): **SPRINGFIELD TOWNSHIP; WHITEMARSH TOWNSHIP**
ZIP Code:
Quadrangle Name(s): **GERMANTOWN**
Watersheds HUC 8: **Schuylkill**
Watersheds HUC 12: **Lower Wissahickon Creek**
Decimal Degrees: **40.111359, -75.211732**
Degrees Minutes Seconds: **40° 6' 40.8939" N, 75° 12' 42.2341" W**

2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	**Potential Impact**	**FURTHER REVIEW IS REQUIRED, See Agency Response**
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.

Flourtown Shopping Center - Proposed Site Improvements



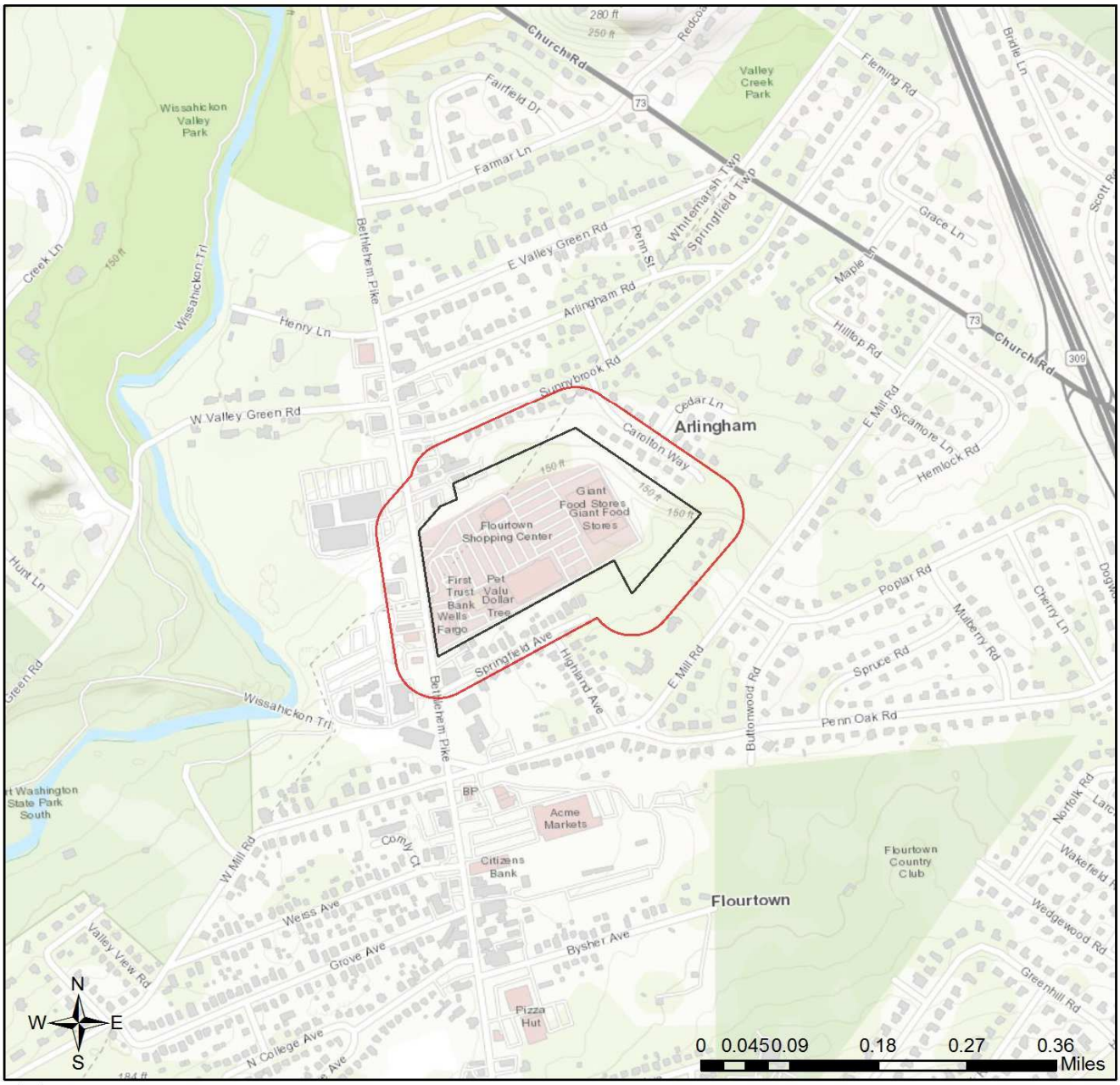
Project Boundary

Buffered Project Boundary



Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China

Flourtown Shopping Center - Proposed Site Improvements



Project Boundary

Buffered Project Boundary



Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

RESPONSE TO QUESTION(S) ASKED

Q1: Accurately describe what is known about wetland presence in the project area or on the land parcel. "Project" includes all features of the project (including buildings, roads, utility lines, outfall and intake structures, wells, stormwater retention/detention basins, parking lots, driveways, lawns, etc.), as well as all associated impacts (e.g., temporary staging areas, work areas, temporary road crossings, areas subject to grading or clearing, etc.). Include all areas that will be permanently or temporarily affected -- either directly or indirectly -- by any type of disturbance (e.g., land clearing, grading, tree removal, flooding, etc.). Land parcel = the lot(s) on which some type of project(s) or activity(s) are proposed to occur.
Your answer is: The entire project will occur in or on an existing building, parking lot, driveway, road, road shoulder, street, runway, paved area, or railroad bed.

Q2: The proposed project is in the range of the Indiana bat. Describe how the project will affect bat habitat (forests, woodlots and trees) and indicate what measures will be taken in consideration of this. Round acreages up to the nearest acre (e.g., 0.2 acres = 1 acre).
Your answer is: No forests, woodlots or trees will be affected by the project.

Q3: Aquatic habitat (stream, river, lake, pond, etc.) is located on or adjacent to the subject property and project activities (including discharge) may occur within 300 feet of these habitats?
Your answer is: Yes

Q4: Is tree removal, tree cutting or forest clearing of 40 acres or more necessary to implement all aspects of this project?
Your answer is: No

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jurisdictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission
RESPONSE:
No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources
RESPONSE:
No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission
RESPONSE:
Further review of this project is necessary to resolve the potential impact(s). Please send project information to this agency for review (see WHAT TO SEND).

PFBC Species: (Note: The Pennsylvania Conservation Explorer tool is a primary screening tool, and a desktop review may reveal more or fewer species than what is listed below.)

Scientific Name	Common Name	Current Status
Sensitive Species**		Threatened

U.S. Fish and Wildlife Service
RESPONSE:

No impacts to **federally** listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq. is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

* Special Concern Species or Resource - Plant or animal species classified as rare, tentatively undetermined or candidate as well as other taxa of conservation concern, significant natural communities, special concern populations (plants or animals) and unique geologic features.
** Sensitive Species - Species identified by the jurisdictional agency as collectible, having economic value, or being susceptible to decline as a result of visitation.

WHAT TO SEND TO JURISDICTIONAL AGENCIES

If project information was requested by one or more of the agencies above, upload* or email* the following information to the agency(s). Instructions for uploading project materials can be found here. This option provides the applicant with the convenience of sending project materials to a single location accessible to all three state agencies. Alternatively, applicants may email or mail their project materials (see AGENCY CONTACT INFORMATION). For projects showing "Potential Impacts" with USFWS, please send project information to that agency by email IR1_ESPenn@fws.gov *(preferred) or regular mail.*

Check-list of Minimum Materials to be submitted:
X Project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.
X A map with the project boundary and/or a basic site plan(particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)
In addition to the materials listed above, USFWS REQUIRES the following
X **SIGNED** copy of a Final Project Environmental Review Receipt

The inclusion of the following information may expedite the review process.
X Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)
N/A Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing the location of all project features, as well as wetlands and streams.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. Two review options are available to permit applicants for handling PNDI coordination in conjunction with DEP's permit review process involving either T&E Species or species of special concern. Under sequential review, the permit applicant performs a PNDI screening and completes all coordination with the appropriate jurisdictional agencies prior to submitting the permit application. The applicant will include with its application, both a PNDI receipt and/or a clearance letter from the jurisdictional agency if the PNDI Receipt shows a Potential Impact to a species or the applicant chooses to obtain letters directly from the jurisdictional agencies. Under concurrent review, DEP, where feasible, will allow technical review of the permit to occur concurrently with the T&E species consultation with the jurisdictional agency. The applicant must still supply a copy of the PNDI Receipt with its permit application. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. The applicant and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at https://conservationexplorer.dcnr.pa.gov/content/resources.

5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources
Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552
Harrisburg, PA 17105-8552
Email: RA-HeritageReview@pa.gov

U.S. Fish and Wildlife Service
Pennsylvania Field Office
Endangered Species Section
110 Radnor Rd; Suite 101
State College, PA 16801
Email: IR1_ESPenn@fws.gov
NO Faxes Please

PA Fish and Boat Commission
Division of Environmental Services
595 E. Rolling Ridge Dr., Bellefonte, PA 16823
Email: RA-FBPACENOTIFY@pa.gov

PA Game Commission
Bureau of Wildlife Habitat Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue, Harrisburg, PA 17110-9797
Email: RA-PGC_PNDI@pa.gov
NO Faxes Please

7. PROJECT CONTACT INFORMATION

Name: D. Alexander Tweedie, PE
Company/Business Name: LANDCORE Engineering Consultants, PC
Address: PO Box 37635 #56287
City, State, Zip: Philadelphia, PA 19101-0635
Phone:(215) 836-2510 Fax:( ) _____
Email: atweedie@landcoreconsulting.com

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

DATweedie 3/5/2021

applicant/project proponent signature date

LANDCORE
Engineering Consultants, P.C.

MAILING ADDRESS (FOR ALL OFFICES):
PO BOX 37635 #56287
PHILADELPHIA, PA 19101-0635
Phone: (215) 836-2510
eFax: (215) 352-0428
LANDCOREconsulting.com

March 3, 2021

RE: **PNDI Project Narrative**
Project Search ID: PNDI-725207
Flourtown Shopping Center / Proposed Site Improvements
1842 Bethlehem Pike, Flourtown PA
Springfield Township & Whitemarsh Township,
Montgomery County, PA
LEC File #140065

The project site is located at 1842 Bethlehem Pike, Flourtown PA, between Springfield Ave and Sunnybrook Road in Springfield Township and Whitemarsh Township, Montgomery County, PA. The subject site is the location of the Flourtown Shopping Center, which consists of various retail/commercial tenants and includes associated parking, circulation, and other site amenities. The site topography within the developed portion of the site is relatively flat, with stormwater runoff conveyed via sheet flow and conveyance system to Tributary 00857 to Wissahickon Creek, located along the easterly and northerly property lines.

Tributary 00857 to Wissahickon Creek is also known as Sunny Brook and Oreland Run. The watercourse is designated as a Trout Stock Fishery (TSF), Migratory Fishery (MF) on the Pennsylvania Department of Environmental Protection (PADEP) Chapter 93 classification list. The stream does have an associated flood hazard area per FEMA's FIRM mapping for Montgomery County, PA, map numbers "42091C0377G" effective on 03/02/2016. Also, per our review of the of national wetlands inventory, wetlands do not appear to exist along this segment of the stream.

The proposed improvements are located at the northwesterly corner of the site and will be entirely located within existing developed / paved areas. Improvements include an additional 4,550 sf commercial building with associated drive-thru land, parking, loading and utilities. Stormwater management will not be required due to a net reduction in impervious coverage. Also, the proposed improvements will not displace fill within the flood hazard area.

Site access will remain as is currently exists along Bethlehem Pike.

As mentioned above, site improvements will be entirely contained within the limits of the existing shopping center developed area, therefore there will be no impacts to the stream, associated wildlife, and flood hazard area. See the site photos and Photo Location Map for additional information.



PHOTO 1



PHOTO 2



PHOTO 3



PHOTO 4



PHOTO 5



PHOTO 6



PHOTO 7



PHOTO 8

E. PUBLIC SEWER SYSTEM AVAILABLE CAPACITY DETERMINATION

F. PENNSYLVANIA CODE 73.17 SEWAGE FLOWS

§ 73.17. Sewage flows.

(a) The flow figures in this subsection and subsection (b) are peak daily flows for the design of community onlot sewage systems. These flow figures are not intended to be used for the calculation of flows for the design of community sewerage systems or for the allocation of flows related to community sewerage systems. Design and permit sewage flows for a community sewerage system are to be calculated using the procedures established in the Department's ''Domestic Wastewater Facilities Manual.'' The sewage flow from single family dwellings served by a community onlot sewage system or from apartments, rooming houses, hotels and motels served byan individual or community sewage system shall be determined from the following table:

Type of Establishment	*Gallons/Unit/day*	
Residential	*Gallons/unit*	*BOD/unit*
Hotels and motels	100	.30
Multiple family dwellings and apartments, including townhouses, duplexes and condominiums	400	1.13
Rooming houses (per unit)	200	.60
Single family residences	400*	.90

*For units of 3 bedrooms or less; for each bedroom over 3, add 100 gallons.

(b) The sewage flow, which shall exclude any industrial waste, for nonresidential establishments served by an individual or community sewage system shall be determined from the following table:

Type of Establishment		
Commercial	*Gallons/day*	*BOD/day*
Airline catering (per meal served)	3	.03
Airports (per passenger—not including food)	5	.02
Airports (per employe)	10	.06
One licensed operator Beauty shops	200	—
Bus service areas not including food (per patron and employe)	5	.02
Country clubs not including food (per patron and employe)	30	.02
Drive-in theaters (not including food—per space)	10	.06
Factories and plants exclusive of industrial wastes (per employe)	35	.08
Laundries, self-service (gallons/washer)	400	2.00
Mobile home parks, independent (per space)	400	1.00
Movie theaters (not including food, per auditorium seat)	5	.03
Offices (per employe)	10	.06
Restaurants (toilet and kitchen wastes per patron)	10	.06
(Additional for bars and cocktail lounges)	2	.02
Restaurants (kitchen and toilet wastes, single-service utensils/person)	8.5	.03

Restaurants (kitchen waste only, single-service utensils/patron)	3	.01
Stores (per public toilet)	400	2.00
Warehouses (per employe)	35	—
Work or construction camps (semipermanent) with flush toilets (per employe)	50	.17
Work or construction camps (semipermanent) without flush toilets (per employe)	35	.02
Institutional		
Churches (per seat)	3	—
Churches (additional kitchen waste per meal served)	3	—

Type of Establishment		
Institutional	*Gallons/day*	*BOD/day*
Churches (additional with paper service per meal served)	1.5	—
Hospitals (per bed space, with laundry)	300	.20
Hospitals (per bed space, without laundry)	220	—
Institutional food service (per meal)	20	—
Institutions other than hospitals (per bed space)	125	.17
Schools, boarding (per resident)	100	.17
Schools, day (without cafeterias, gyms or showers per student and employe)	15	.04
Schools, day (with cafeterias, but no gym or showers per student and employe)	20	.08
Schools, day (with cafeterias, gym and showers per student and employe)	25	.10
Recreational and Seasonal		
Camps, day (no meals served)	10	.12
Camps, hunting and summer residential (night and day) with limited plumbing including water-carried toilet wastes (per person)	50	.12
Campgrounds, with individual sewer and water hookup (per space)	100	.50
Campgrounds with water hookup only and/or central comfort station which includes water-carried toilet wastes (per space)	50	.50
Fairgrounds and parks, picnic—with bathhouses, showers, and flush toilets (per person)	15	.06
Fairgrounds and parks, picnic (toilet wastes only, per person)	5	.06
Swimming pools and bathhouses (per person)	10	.06

(c) Actual water meter or sewer meter flow data indicating peak daily flows different than those shown in this section over a 1-year period for a similar nonresidential establishment may be accepted for use in sizing the onlot disposal system. If average daily flows are used, the peak daily flow shall be calculated by multiplying the average daily flow by two.

(d) Establishments with food preparation facilities are required to install adequately designed pretreatment units and traps to reduce greases and biological oxygen demand (BOD) prior to discharge to an individual or community sewage system.

Authority

The provisions of this § 73.17 amended under section 9 of the Pennsylvania Sewage Facilities Act (35 P. S. § 750.9); The Clean Streams Law (35 P. S. § § 691.1—691.1001); and section 1920-A of The Administrative Code of 1929 (71 P. S. § 510-20).

Source

The provisions of this § 73.17 adopted January 21, 1983, effective January 22, 1983, 13 Pa.B. 508; amended November 7, 1997, effective November 8, 1997, 27 Pa.B. 5877. Immediately preceding text appears at serial pages (217318) to (217320).

Cross References

This section cited in 25 Pa. Code § 71.52 (relating to content requirements—new land development revisions); 25 Pa. Code § 72.22 (relating to permit issuance); 25 Pa. Code § 73.16 (relating to absorption area requirement); 25 Pa. Code § 73.31 (relating to standards for septic tanks); 25 Pa. Code § 73.32 (relating to standards for aerobic treatment tanks); and 25 Pa. Code § 73.161 (relating to general).

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Traffic Engineering and Planning

248 Beech Hill Road • Wynnewood • PA • 19096 • (215) 625-3821 Phone • (484) 792-9495 Fax
www.FTAVANIASSOCIATES.com

10 February 2021

Andy Bottaro
Federal Realty Investment Trust
50 E Wynnewood Rd, SU 200
Wynnewood, PA 19096

VIA EMAIL ONLY

RE: Flourtown Shopping Center
Proposed 4.3 KSF Expansion

Drive Thru Queue Investigations

Springfield & Whitemarsh Twps, Montgomery Co

FTA Job # 220-004

Dear Mr. Bottaro:

As requested, F. Tavani and Associates, Inc. (FTA) has conducted queuing investigations relative to a proposed bank in a proposed 4.3 KSF expansion of the existing 177.0 KSF Flourtown Shopping Center. The site is depicted in a plan excerpt (from plans recently received from the site civil engineer) which is attached to the end of this report. FTA has reviewed site plans relative to the above-referenced application and specifically with regard to the adequacy of the proposed drive thru facility for the proposed Santander bank as depicted in the plans and offers the following comments.

PROPOSED CONDITIONS

The plans reflect a proposed bank totaling approximately 2,450 SF. The bank has walk-in services as well as a drive-thru facility. The drive thru is not a full-service drive thru, but rather is a 24-hour ATM (only) drive thru. The drive thru provides stacking for up to about 5 cars. Note that the bank will also include 2 additional ATM machines inside the branch, which can also be accessed 24 hours a day, but would require a patron to park and then walk inside the branch.

EXPECTED PEAK QUEUING ACTIVITY

The adequacy of the proposed storage for the drive thru is an important design element. Queue projection studies are available from others, the most recent being made available in a report from 2012 (attached). As shown, independent studies of 6 drive-thru banks were conducted. All of the studied drive thrus included multiple lanes, one or more of which was full-service with at least one lane being an ATM-only lane. No mention was made in the report regarding whether or not there was an additional ATM in the branch itself. The study concluded that the average maximum queue was 5.8 cars, but it is unclear if this is a total queue over multiple lanes or a single-lane maximum queue.

OTHER CONSIDERATIONS

The most recent available third-party data, as cited earlier, is now nearly a decade old. Over the last decade, online banking has grown in popularity, as has consumer use of and reliance upon non-cash

transactions, including PayPal, Venmo, and others. Visits to ATMs to get or deposit cash are less frequent. Checks can now even be deposited with the use of a smartphone and an app; eliminating yet another reason for many people to visit an ATM. In short, there is likelihood that the 2012 data overstates present-day ATM usage and queuing potential.

Even more, albeit slightly older, bank drive-thru data is presented in **Appendix B** of the attached 2012 study. Interestingly, the slightly older (2008/2009) data and related analysis was gathered at 10 banks – nearly double the dataset of the 2012 effort. Most importantly, the 2008/2009 study included definitive verbiage that its maximum queue observations were based on maximum observed queues in a single lane (or "per lane"). As shown on page **B3** of the appendix, the absolute (100^{th} %ile) maximum was 4 cars per lane. On page **B4**, the 2008/2009 study even goes so far as to invoke findings of an earlier study (1995), and found that absolute maximum queue lengths (per lane) at *that* time were considerably longer. This interesting comparison (1995 having longer maximum queue lengths than those observed in 2008/2009) underscores how present-day usage is probably even lower still (i.e., the trend is down, as newer technologies and other alternatives to bank visits become more widely used).

Lastly it is important to bear in mind that there exists a fundamental "acceptance or alternative" theory when considering drive-thru storage adequacy. Simply stated, an arriving motorist will assess a queue length and decide whether or not he/she wants to invest the time in waiting for said queue to be processed and for he/she to be served. If the perception is a queue is too long, a motorist will often bypass the drive thru entirely, seeking an alternative to service. In this case, the motorist will be aware of the availability of 2 other ATMs located in the branch, and may elect to simply park and walk up to said ATMs, provided one or both are available[1]. As previously established in other investigations by FTA, parking in the vicinity of front façade of the proposed bank is readily available. In the alternate, the motorist could decide to disregard the visit entirely, either going to another ATM location, or re-visiting the drive thru later, for a second assessment to decide whether or not to enter the queue, after completing another task[2].

CONCLUSIONS

The storage potential of the proposed bank drive thru is approximately 5 cars. The storage potential is adequate as depicted.

Very truly yours,
F. TAVANI AND ASSOCIATES, INC.

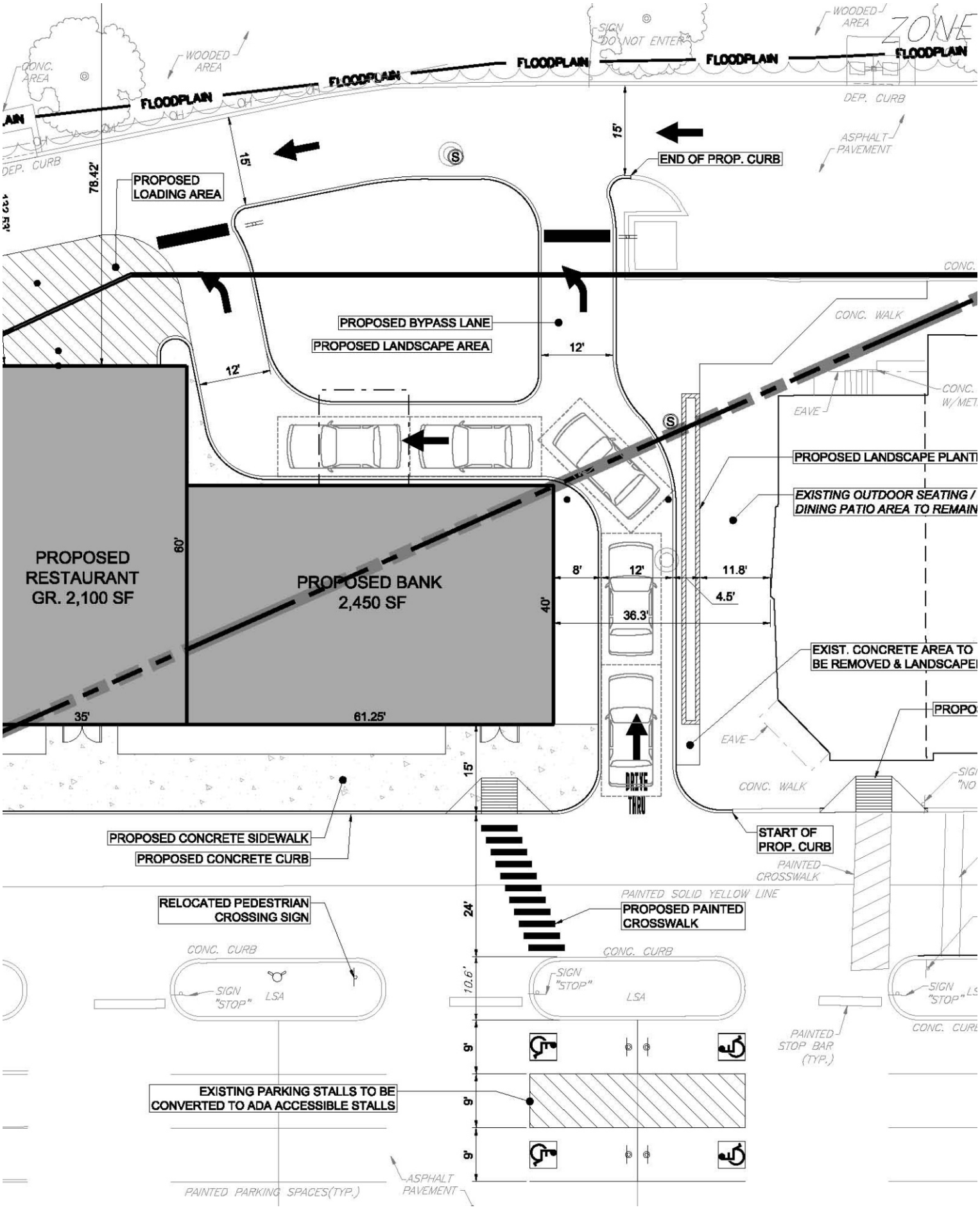
FRANK TAVANI, P.E., PTOE
Principal

attachments

cc: C. Robert Lewis, Esq.
Alex Tweedie, P.E.

[1] Renderings of the proposed Santander branch demonstrate that the 2 in-branch ATMs will be plainly visible to passers-by since the front façade of the bank will be almost entirely glass.

[2] An ATM visit is often not a primary trip; it is frequently made as part of another trip. In the instant example, the proposed bank is located within a large shopping center which features, among many other uses, a large supermarket. Thus, one potential is that a motorist could observe an undesirably long queue at the proposed bank and decide to instead perform another task within the shopping center first, such as go food shopping, and then revisit the bank drive thru again later, to assess if the queue is shorter.


FLOODPLAIN
FLOODPLAIN
FLOODPLAIN
FLOODPLAIN
WOODED AREA
WOODED AREA
CONC. AREA
SIGN "DO NOT ENTER"
DEP. CURB
DEP. CURB
ASPHALT PAVEMENT
15'
15'
78.42'
END OF PROP. CURB
PROPOSED LOADING AREA
PROPOSED BYPASS LANE
PROPOSED LANDSCAPE AREA
12'
12'
CONC. WALK
EAVE
PROPOSED LANDSCAPE PLANTI
EXISTING OUTDOOR SEATING / DINING PATIO AREA TO REMAIN
PROPOSED RESTAURANT GR. 2,100 SF
PROPOSED BANK 2,450 SF
60'
40'
8'
12'
11.8'
4.5'
36.3'
35'
61.25'
EXIST. CONCRETE AREA TO BE REMOVED & LANDSCAPE
EAVE
CONC. WALK
DRIVE THRU
15'
PROPOSED CONCRETE SIDEWALK
PROPOSED CONCRETE CURB
START OF PROP. CURB
PAINTED CROSSWALK
PAINTED SOLID YELLOW LINE
RELOCATED PEDESTRIAN CROSSING SIGN
PROPOSED PAINTED CROSSWALK
24'
CONC. CURB
CONC. CURB
SIGN "STOP"
LSA
SIGN "STOP"
LSA
10.6'
SIGN "STOP"
PAINTED STOP BAR (TYP.)
9'
9'
9'
EXISTING PARKING STALLS TO BE CONVERTED TO ADA ACCESSIBLE STALLS
PAINTED PARKING SPACES(TYP.)
ASPHALT PAVEMENT

COUNTINGcars.com

Drive-Through Queue Generation

Mike Spack, PE, PTOE, Max Moreland, EIT, Lindsay de Leeuw, Nate Hood

1.0 Introduction

This report provides queuing data for businesses with drive-through services. It is intended to be an aid for site designers and reviewers, similar to the Institute of Transportation Engineers' *Trip Generation* and *Parking Generation* reports. The data presentation is modeled on the *Parking Generation* report and data is provided based on at least six sites, similar to data sets marked as statistically significant in *Trip Generation*.

Businesses with drive-through lanes are very common in the United States and having data that gives usage information for drive-through lanes will assist designers as well as cities in determining the appropriate amount of storage needed for proposed drive-through businesses. Data for drive-through queues was published by the ITE Technical Council Committee 5D-10 in 1995 based on information collected between the late 1960's and the 1990's. A paper was also published in 2009 by Mark Stuecheli, PTP giving updated information for bank and coffee shop drive-through lanes. The results from the 2009 study are incorporated into this paper (thank you Mark for your assistance).

2.0 Data Collection

Data was collected using COUNTcam video recording systems at a total of 30 drive-through locations in Minneapolis, MN and several surrounding suburbs between 2010 and 2012 (26 of the 30 videos were recorded in February of 2012, which should represent peak usage in the cold Minnesota winter). Videos of drive-through lanes were collected at banks, car washes, coffee shops, fast food restaurants and pharmacies. A total of six locations were selected for each of the five different land uses. Each location was recorded for between one and five days where the majority of locations were recorded for two consecutive days. The days of the week that each video was recorded on varies.

The 24-hour videos were watched at high speeds with the PC-TAS counting software and maximum queues throughout the day were noted. Most of the COUNTcams were set up such that the entire queue lane could be seen, but at a few locations the drive-through lanes wrapped around the building in a way that the entire queue length would not be able to be seen. For these situations, the COUNTcams were set up so that the ordering window and back of the queue could be seen and it was noted how many vehicles could fit between the ordering window and the front of the queue. For drive-through locations with multiple lanes, the number of lanes was noted but the maximum queue is defined as the sum of the queues at each lane for any given point in time, not the queue per lane. This approach provides overall demand, which may assist designers in determining how many drive through lanes are appropriate in addition to determining how long they should be.

Once the maximum queue for each day at each location was determined, the data was compiled and statistics for each land use were calculated. The average maximum queue, standard deviation, coefficient of variation, range, 85th percentile and 33rd percentile were calculated for each land use.

Data for drive-through coffee shops and banks from the Kansas City, Kansas metropolitan area was published in the 2009 paper New Drive-Through Stacking Information for Banks and Coffee Shops by Mark Stuecheli. This data is included in the analysis.

3.0 Data Analysis

Based on the peak queue lengths, it is apparent that each land use will require a different minimum drive through stacking distance. The results for each land use can be found below. The peak queue lengths for each location, broken down by land use and day of the week, can be found in the Appendix.

3.1 Banks

Data collection was done at six banks with drive-through services (including one credit union) in August 2011 and February 2012. Twelve days of data were collected. The banks were located in the cities of Minneapolis, Robbinsdale and St. Louis Park, MN.

All of the locations had a lane with a drive-through ATM and at least two other lanes. Though service times may differ for ATM lanes compared to the regular lanes, the maximum queues were counted together. This is because based upon what was observed, vehicles would occasionally switch the lane they were in. For example, a vehicle waiting in the ATM line with a queue of three vehicles may move over to a regular line with a queue of only one vehicle. Much of what can be done at the bank's drive-through lane can also be accomplished at that bank's ATM and vice versa. Vehicles being served were counted as being in the queue.

Nine days of data from the Kansas City, Kansas area is also included. This data does not factor in vehicles in ATM lanes.

Table 3.1 – Drive-Through Bank Maximum Queue Statistics

	Minnesota Data	Minnesota + Kansas Data
Number of Data Points	**12**	**21**
Average Maximum Queue (Vehicles)	**5.83**	**5.76**
Standard Deviation (Vehicles)	**1.85**	**2.21**
Coefficient of Variation	**32%**	**38%**
Range (Vehicles)	**3 to 8**	**1 to 10**
85th Percentile (Vehicles)	**8.00**	**8.00**
33rd Percentile (Vehicles)	**5.00**	**5.00**



Figure 3.1.1 – Drive-Through Bank Maximum Queue Frequency – Minnesota Data



Figure 3.1.2 – Drive-Through Bank Maximum Queue Frequency – Minnesota + Kansas Data

The data for Kansas banks was collected between 4:30pm and 6:00pm. While many of the maximum queues for the data collected in Minnesota were between these times, maximum queues occurred between 8:30am and 5:30pm so it is possible that some of the Kansas data does not capture the actual maximum queues for the day.

The number of available lanes at banks, not including the ATM lane, ranged from two to seven lanes (though the most open at one time was five lanes). Even though plenty of lanes were available, cars often stacked at the lane closest to the building, thus additional lanes may not result in shorter queues. With an 85th percentile maximum queue of eight vehicles, the data suggests that banks with drive-through lanes should be able to accommodate 160 feet of vehicle stacking.

3.2 Car Washes

Data collection was done at six car washes with drive-through services (including one full-service car wash) in February 2012. Twelve days of data were collected. The car washes were located in the cities of Falcon Heights, Hopkins, Minneapolis, Roseville and St. Louis Park, MN. Five of the six car washes (excluding the full-service car wash) were located at gas stations. Only the vehicles waiting in line were counted; vehicles being washed were not added to the queue.

Table 3.2 – Drive-Through Car Wash Maximum Queue Statistics

Number of Data Points	**12**
Average Maximum Queue (Vehicles)	**4.42**
Standard Deviation (Vehicles)	**2.31**
Coefficient of Variation	**52%**
Range (Vehicles)	**1 to 10**
85th Percentile (Vehicles)	**6.20**
33rd Percentile (Vehicles)	**3.00**

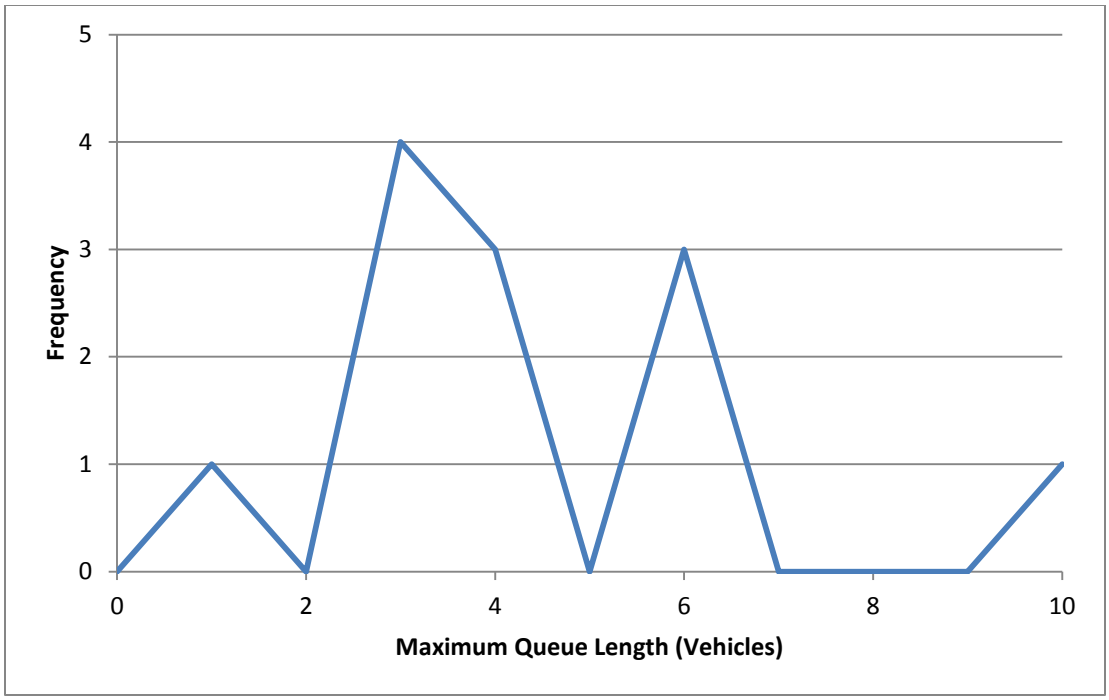


Figure 3.2 – Drive-Through Car Wash Maximum Queue Frequency

Two of the car washes had two lanes while the other four were one lane car washes. The full-service car wash had two lanes and also produced the highest maximum queue of 10 vehicles. The maximum queues for car washes were spread throughout the afternoon from 12:30pm to 8:30pm. With an 85th percentile maximum queue of more than six vehicles, the data suggests that car washes with drive-through lanes should be able to accommodate 140 feet of vehicle stacking throughout the day.

3.3 Coffee Shops

Data collection was done at six coffee shops with drive-through services in November 2010, August 2011 and February 2012. Fourteen days of data were collected. The coffee shops were located in the cities of Edina, Hopkins, Minneapolis, Roseville and St. Louis Park, MN. Vehicles being served were counted as being in the queue. Twelve days of data from the Kansas City, Kansas area is also included.

Table 3.3 – Drive-Through Coffee Shop Maximum Queue Statistics

	Minnesota Data	Minnesota + Kansas Data
Number of Data Points	14	26
Average Maximum Queue (Vehicles)	11.00	10.23
Standard Deviation (Vehicles)	2.25	2.76
Coefficient of Variation	20%	27%
Range (Vehicles)	7 to 16	3 to 16
85th Percentile (Vehicles)	13.50	13.00
33rd Percentile (Vehicles)	10.00	9.91



Figure 3.3.1 – Drive-Through Coffee Shop Maximum Queue Frequency – Minnesota Data

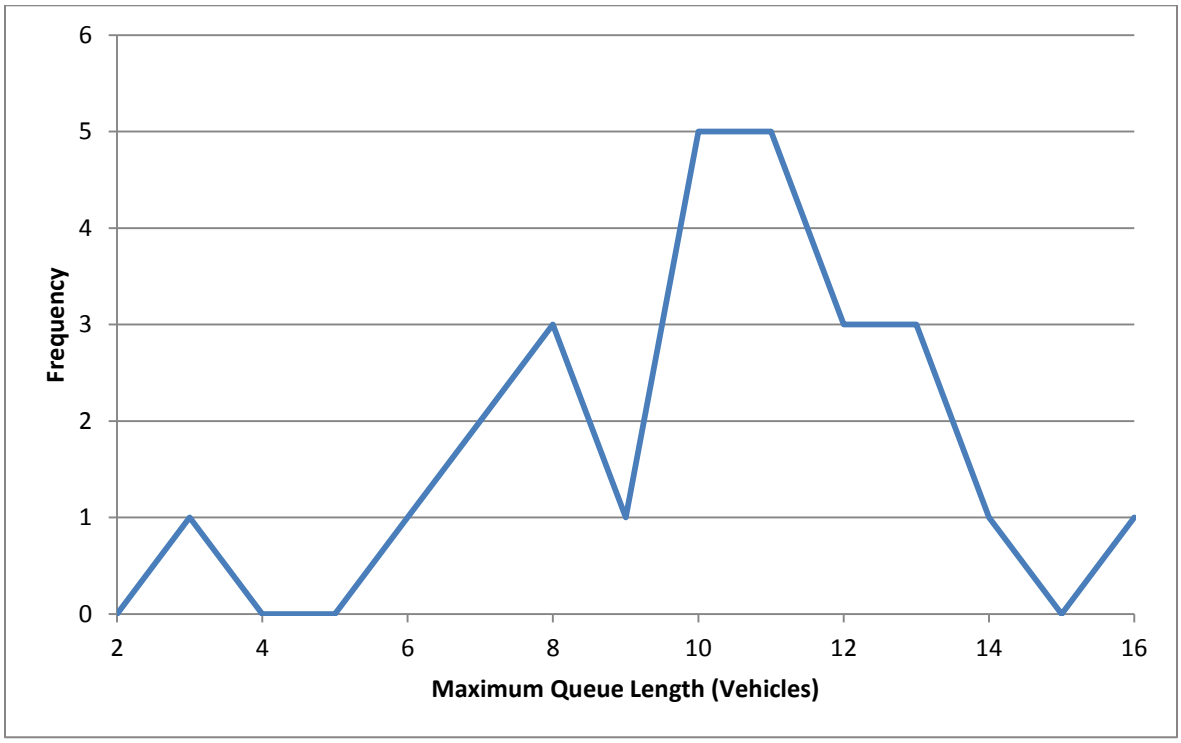


Figure 3.3.2 – Drive-Through Coffee Shop Maximum Queue Frequency – MN + KS Data

Coffee shops produced the longest maximum queues of any of the land uses in this study with all of the maximum queues occurring in the morning. In four of the six cases, the queues spilled out of the parking lot and into the street. These spillovers would typically only happen once or twice a day and last only a few minutes, however, one location had stacking into the street for about 15 minutes in addition to multiple periods of several minutes where cars would queue in the street.

With an 85th percentile maximum queue of 13 vehicles, the data suggests that coffee shops with drive-through lanes should be able to accommodate at least 260 feet of vehicle stacking during morning hours.

3.4 Fast Food Restaurants

Data collection was done at six fast food restaurants with drive-through services in August 2011 and February 2012. Fourteen days of data were collected. The restaurants were located in the cities of Golden Valley, Hopkins, Minneapolis and St. Louis Park, MN. Vehicles being served were counted as being in the queue.

Table 3.4 – Drive-Through Fast Food Restaurant Maximum Queue Statistics

Number of Data Points	**14**
Average Maximum Queue (Vehicles)	**8.50**
Standard Deviation (Vehicles)	**2.68**
Coefficient of Variation	**32%**
Range (Vehicles)	**5-13**
85th Percentile (Vehicles)	**12.00**
33rd Percentile (Vehicles)	**7.90**

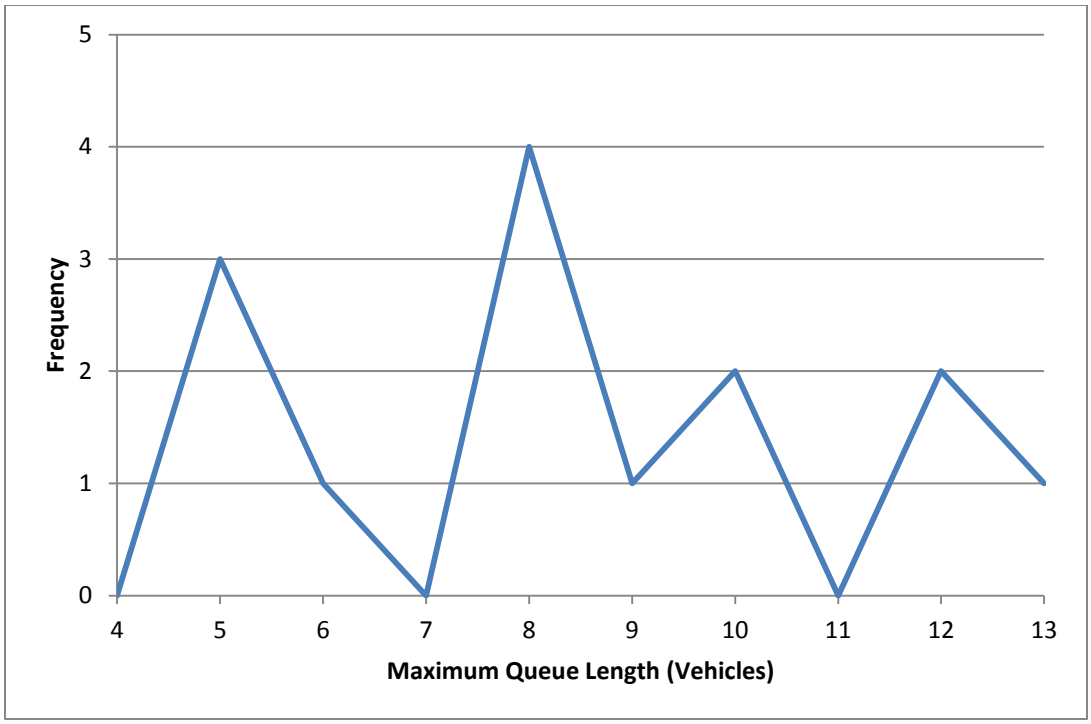


Figure 3.4 – Drive-Through Fast Food Restaurant Maximum Queue Frequency

The maximum queues for fast food restaurants were spread throughout the day from 8:00am to 10:00pm. With an 85th percentile maximum queue of 12 vehicles, the data suggests that fast food restaurants with drive-through lanes should be able to accommodate 240 feet of vehicle stacking throughout the day.

3.5 Pharmacies

Data collection was done at six pharmacies with drive-through services in February 2012. Twelve days of data were collected. The pharmacies were located in the cities of Hopkins, Minneapolis, New Hope and Robbinsdale, MN. Vehicles being served were counted as being in the queue.

Table 3.5 – Drive-Through Pharmacy Maximum Queue Statistics

Number of Data Points	**12**
Average Maximum Queue (Vehicles)	**2.92**
Standard Deviation (Vehicles)	**1.16**
Coefficient of Variation	**40%**
Range (Vehicles)	**1-5**
85th Percentile (Vehicles)	**4.05**
33rd Percentile (Vehicles)	**2.00**



Figure 3.5 – Drive-Through Pharmacy Maximum Queue Frequency

The maximum queues for pharmacies were spread throughout the day from 8:00am to 10:00pm. With an 85th percentile maximum queue of more than 4 vehicles, the data suggests that pharmacies with drive-through lanes should be able to accommodate 100 feet of vehicle stacking throughout the day.

4.0 Conclusions

The 85th percentile maximum queue lengths for each land use are: 160 feet for banks (eight vehicles), 140 feet for car washes (seven vehicles), 260 feet for coffee shops (13 vehicles), 240 feet for fast food restaurants (12 vehicles) and 100 feet for pharmacies (five vehicles).

While some of the locations observed have an excess of space dedicated to drive-through lanes (i.e. some banks and pharmacies), others could occasionally use additional space for drive-through lanes (i.e. coffee shops in the morning).

Fast food restaurants and coffee shops have the longest maximum queues of the five land uses observed. Coffee shops have a tendency for the morning queues to build so long that they spill out onto the street, though, as is expected, their afternoon and evening queues are minimal. Fast food restaurants also have large queues, but they tended to have enough dedicated space that stacking did not go beyond the designated queuing area.

The data collected for this paper along with the data from the papers by Mark Stuecheli and the ITE Technical Committee 5D-10 (see Appendix for both of these) will hopefully provide useful data for traffic engineers and others trying to analyze drive-through queuing storage areas.

5.0 Labor Savings of the COUNTkit

Deploying people in the field to perform this data collection would not have been feasible. Using the COUNTcam video system made it possible to observe the drive through lanes 24 hours a day and the PC-TAS software made the data reduction practical. One location was recorded in November 2010 for 6 hours, three locations were recorded in August 2011 for a total of 202 hours and 26 locations were recorded in February 2012 for a total of 1012 hours. These 1220 hours of video were counted with a total of 120 hours of labor, meaning the videos were watched at approximately 10x speed. Installation of a COUNTcam takes approximately 10 minutes and retrieval takes approximately 5 minutes. This whole project was completed in approximately 3 weeks.

6.0 References

1. Stuecheli, M. (2009). New Drive-Through Stacking Information for Banks and Coffee Shops. *ITE 2009 Annual Meeting and Exhibit.* Print.
2. ITE Technical Committee 5D-10. "Queuing Areas for Drive-Thru Facilities." *ITE Journal* (May 1995): 38-42. Print.
3. Institute of Transportation Engineers. *Parking Generation.* 4th ed. Washington, DC: Institute of Transportation Engineers, 2010. Print.
4. Institute of Transportation Engineers. *Trip Generation.* 8th ed. Washington, DC: Institute of Transportation Engineers, 2008. Print.

7.0 Appendix

A – Day of Week Maximum Queues
B – New Drive-Through Stacking Information for Banks and Coffee Shops
C – ITE Technical Committee 5D-10: Queuing Areas for Drive-Thru Facilities
D – Drive-Through Data Forms

Appendix A

Day of Week Maximum Queues

		Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Fast Food	Arby's				5	5		
	Burger King	6	12				10	8
	McDonald's				12	13		
	McDonald's				9	8		
	Taco Bell				10	8		
	White Castle				8	5		
Car Wash	BP				6	6		
	BP			1	3			
	BP			4	3			
	Holiday				3	4		
	Mister Car Wash				10	6		
	Mobil				4	3		
Coffee	Caribou				11	10		
	Caribou	7	10	12			12	8
	Starbucks				14	16		
	Starbucks				10	11		
	Starbucks			10	12			
	Starbucks				11			
Bank	Citizens Independent Bank			5	5			
	SharePoint Credit Union				3	3		
	TCF	4					8	8
	US Bank				7	7		
	Wells Fargo			8	6			
	Wells Fargo			6				
Pharmacy	CVS			1	2			
	CVS			4	4			
	CVS			2	2			
	Walgreens				4	5		
	Walgreens			3	3			
	Walgreens			3	2			

Appendix B

New Drive-Through Stacking Information for Banks and Coffee Shops

Mark Stuecheli, PTP

Abstract

This paper provides updated queuing information for drive-in banks and new queuing data for coffee shops with drive-through lanes. The data is presented in a format similar to that used in the report for **ITE Technical Council Committee 5D-10**, originally published in 1995.

Significant changes have occurred in the way that bank patrons conduct business with their banks. In recognition of those changes, ITE has adjusted the trip generation information included in the Eighth Edition of **Trip Generation, an ITE Informational Report** to include only data collected since 2000, and the revised trip generation totals are significantly lower than in previous editions. Clearly, the reduced trip generation figures indicate a reduction in bank drive-through business. This report summarizes queuing information included in counts taken in the Kansas City metropolitan area.

In the last few years coffee shops with drive-through lanes have become prevalent throughout the country. Because those businesses were uncommon when the 1995 report was prepared, no data was gathered for those operations. This paper contains information on counts taken at those establishments, once again in the Kansas City metropolitan area.

Based on the count data, recommendations are included for the minimum amount of stacking distance to require for the two types of drive-through businesses that were studied.

Background

ITE Technical Council Committee 5D-10 was formed in 1987 to produce a database of queuing information for various types of drive-through lanes. The report of the findings of the Committee, published in the May 1995 **ITE Journal**, included information on the characteristics of drive-through lane stacking for fast-food restaurants, drive-in banks, car washes, day care centers and dry cleaners. The counts that were included in the Committee report were conducted from the late 1960s through the late 1980s in a limited number of mid-western, southern and eastern states.

As a former member of that Committee, and having submitted drive-through counts for the effort, I am in a position to make some observations about the change in drive-through usage.

Appendix B

This paper analyzes two types of drive-through operations – one that is greatly modified and another that is new since the original report was published. First, significant changes have occurred in the ways that bank patrons conduct business with their financial institutions. On-line banking, direct deposit and the wide usage of ATMs have resulted in greatly reduced trip generation totals for drive-in banks. In recognition of that fact, ITE adjusted the trip generation information for drive-in banks in the Eighth Edition of **Trip Generation, an ITE Informational Report,** to include only data collected since 2000. The trip generation rates during the p.m. peak hour for the newer data are about 44% lower than rates in the Seventh Edition.

The amount of stacking provided for bank drive-through lanes often has a critical impact on the potential site design alternatives for proposed bank properties. If the information included in the 1995 Report were to be used as the basis for establishing stacking requirements, a large area would need to be allocated to the drive-through lanes. On tight sites, that limitation could preclude developing an acceptable layout.

Clearly, the major drop in trip generation rates indicates that fewer customers are using drive-through lanes. That reduction in drive-through usage has an impact on queue lengths and other operational characteristics observed at those facilities. This paper includes updated information on queuing in bank drive-through lanes based on counts taken in the City of Overland Park, Kansas, a suburban community of 171,000 residents in the Kansas City metropolitan area.

The second area of analysis in this paper pertains to observed queuing characteristics for coffee shops with drive-through lanes. In the last few years, drive-through coffee shops have become common throughout the country. Because those businesses were an insignificant factor when the report for **ITE Technical Council Committee 5D-10** was completed, no counts were conducted for that land use category. This paper contains data on queuing for coffee shops with drive-through lanes, based on counts conducted predominantly in the Kansas suburbs of the Kansas City metropolitan area.

As is the case for drive-in banks, the length of stacking required for a site has a major impact on potential site layouts. If a relatively short stacking distance is permitted, the lanes can be fit into very restricted sites or be more easily retrofitted to work with existing buildings. But if more queuing occurs than is provided for in a dedicated lane, the flow of traffic within a parking lot can be seriously restricted by that excess queue. In the worst case, if the drive-through stacking is located close to a public street and the excess queue extends into or near the street, the operation of the adjoining public street may be negatively impacted.

Appendix B

Drive-In Banks

Counts were conducted at ten suburban drive-in banks located throughout Overland Park in the fall of 2008 and the spring of 2009. Both established locations and sites that were relatively new were counted, although all banks had been open for business for at least one year. All but one location had drive-through ATMs. Based on the results of counts taken at a single bank location during a mid-week lunch hour, a mid-week p.m. peak hour, a Friday lunch hour, and a Friday p.m. peak hour; the maximum queue lengths occurred during the Friday p.m. peak hour. Therefore, all counts used in the study were conducted during the Friday p.m. peak hour time period.

The counting process involved noting the maximum per lane and total queues for the drive-through lanes at each location in fifteen minute increments, along with collecting information on the stacking of any drive-through ATM. In all cases the vehicles in the service positions were included in the counts. Where possible, the volumes of vehicles entering and exiting the parking lot also were tabulated. As a way to evaluate the frequency of various maximum queue lengths, the total queue lengths were noted at five minute intervals.

The queuing data was analyzed in ways similar to the methods used in the 1995 Report. Table 1 lists the observed frequency of maximum queue lengths per lane. Figure 1 plots the per lane maximum queue lengths using both the 2009 data and the data that was presented in 1995 (please note that the 1995 data involved fifteen counts, compared to the ten counts in the 2009 data). Figure 2 plots the probability that the queue lengths per lane will not exceed a given maximum queue length, once again presenting both 2009 and 1995 data.

Table 1 – Drive-In Bank 2009 Maximum Queue Length Per Lane

Queue Length	Frequency	Cumulative Frequency	P(q≤N)
0	0	0	0.00
1	1	1	.10
2	4	5	.50
3	4	9	.90
4	1	10	1.00

Note: P(q≤N) indicates probability, based on sample, of queue length of “q” not exceeding length “N”

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Figure 1 – Drive-In Bank 1995 And 2009 Maximum Queue Length Per Lane Data Plot

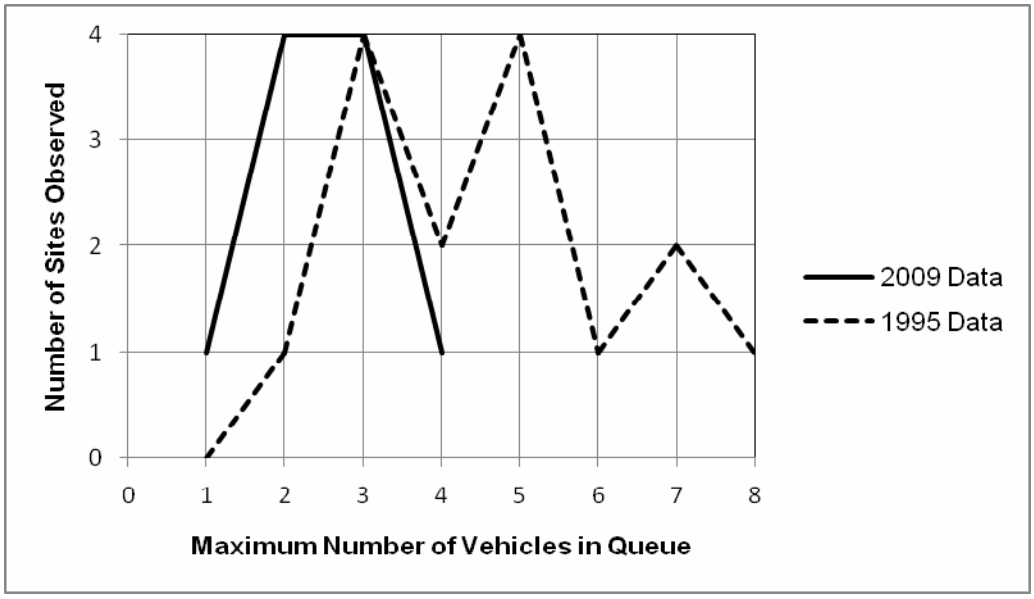
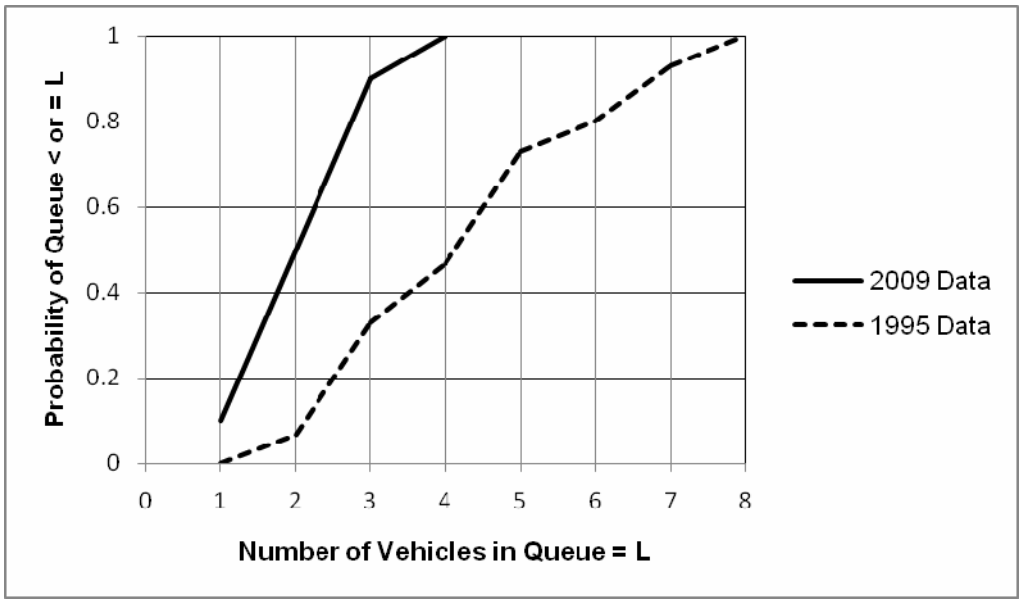


Figure 2 – Drive-In Bank 1995 And 2009 Cumulative Maximum Queue Length Per Lane Data Plot



The differences between the 1995 Report data (as noted earlier, actually based on counts conducted from the late 1960s to the late 1980s) and the 2009 counts are dramatic. The maximum per-lane queue lengths in the current counts were half what they were in the 1995 data.

An attempt was made to determine if such factors as adjoining major street traffic volumes or the size of the building could predict the queuing results, but no correlation was found.

Observations

Some banks, especially those that have been in operation for several years, have a surplus of drive-through lanes and stacking area. That is because those sites were designed to accommodate the much higher demands that existed many years ago. Consequently, they often open only a portion of the available lanes.

In one case, for a main office bank location where it was possible to make a direct comparison between a count conducted in 1988 and a new count in 2008 (actually taken almost precisely 20 years apart), the difference was dramatic. The p.m. peak hour drive-through volumes for the 2008 count were 65% lower than the 1988 count, a much greater drop than would have been indicated by the reduced ITE trip generation figures discussed earlier. The maximum total number of vehicles queued and the maximum queue lengths per lane were correspondingly lower, dropping from 29 to 8 and 7 to 3, respectively. The demographics and development characteristics of the surrounding area have changed little since 1988 and the bank has continued as a stable operation. Considering all of those factors, it is reasonable to assume that the differences are associated with changes in customers' banking habits.

The one incidence of a four car per lane maximum stack was a single occurrence that lasted for only a few minutes. Based on that information, it is reasonable to consider the practical maximum required queue length to be three vehicles.

The maximum queue lengths for ATMS ranged from two to five vehicles. Only one location experienced the longer queue lengths and only for a short time period. All other locations had maximum queue lengths of three vehicles or less.

Coffee Shops With Drive-Through Lanes

Counts were conducted in the fall of 2008 and the spring of 2009 at twelve coffee shops located in the Kansas suburbs of Merriam, Olathe and Overland Park in the Kansas City metropolitan area and also in suburban Kansas City, Missouri. All but two of the establishments were situated in free-standing buildings, and several were located within shopping centers. Three were drive-through-only operations and the remaining nine were full-service locations that included both drive-through lanes and inside seating facilities. Because this type of use is busiest in the morning peak hour, all counts were completed during that time period.

Similar to the process used for drive-in banks, the counting process involved noting the maximum number of vehicles queued in the drive-through lane at each location for fifteen minute increments. As was done for the drive-in bank counts, the vehicle in the

service position was included in the counts. Information on the number of vehicles entering and leaving the parking lot was collected for full-service operations (drive-through-only locations did not have any parking activity). The queuing information was tabulated for both the total length of queue and for the number of vehicles behind the menu board. The observed queue length was noted at five minute intervals as a way to evaluate the frequency of various queue lengths.

Once again, the queuing data was analyzed in ways similar to the methods used in the 1995 Report. Table 2 lists the observed frequency of maximum queue lengths. Figure 3 plots the per-lane maximum queue lengths and Figure 4 plots the probability that the queue will not exceed a given maximum queue length.

Table 2 – Coffee Shop With Drive-Through Maximum Queue Length

Queue Length	Frequency	Cumulative Frequency	P(q≤N)
0	0	0	0.00
1	0	0	0.00
2	0	0	0.00
3	1	1	.08
4	0	1	.08
5	0	1	.08
6	1	2	.17
7	1	3	.25
8	2	5	.42
9	1	6	.50
10	1	7	.58
11	2	9	.75
12	0	9	.75
13	3	12	1.00

Note: P(q≤N) indicates probability, based on sample, of queue length of “q” not exceeding length “N”

Appendix B

Figure 3 – Coffee Shop With Drive-Through Maximum Queue Length Data Plot

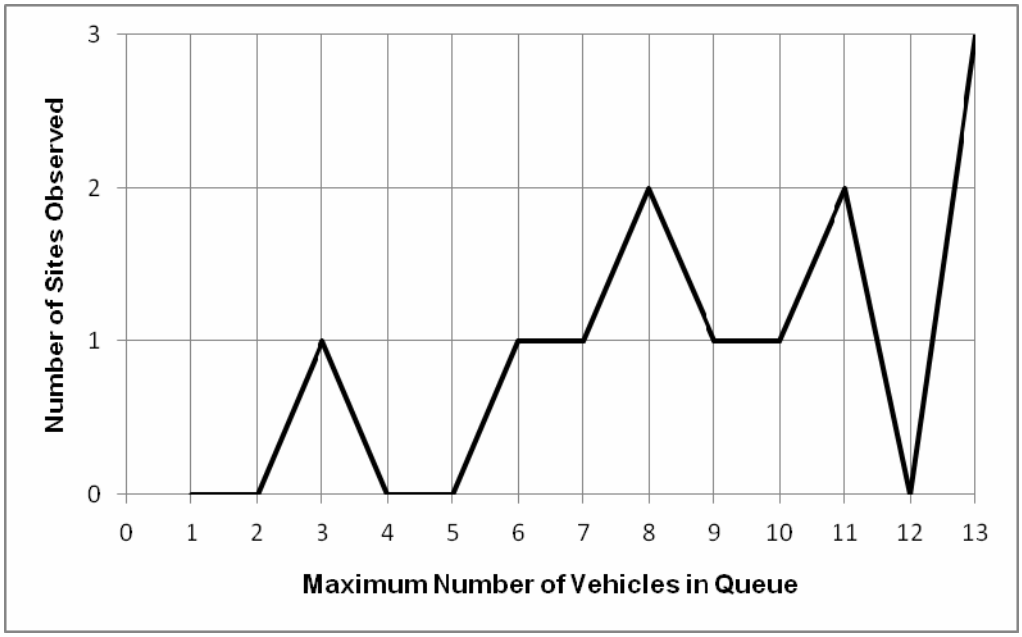
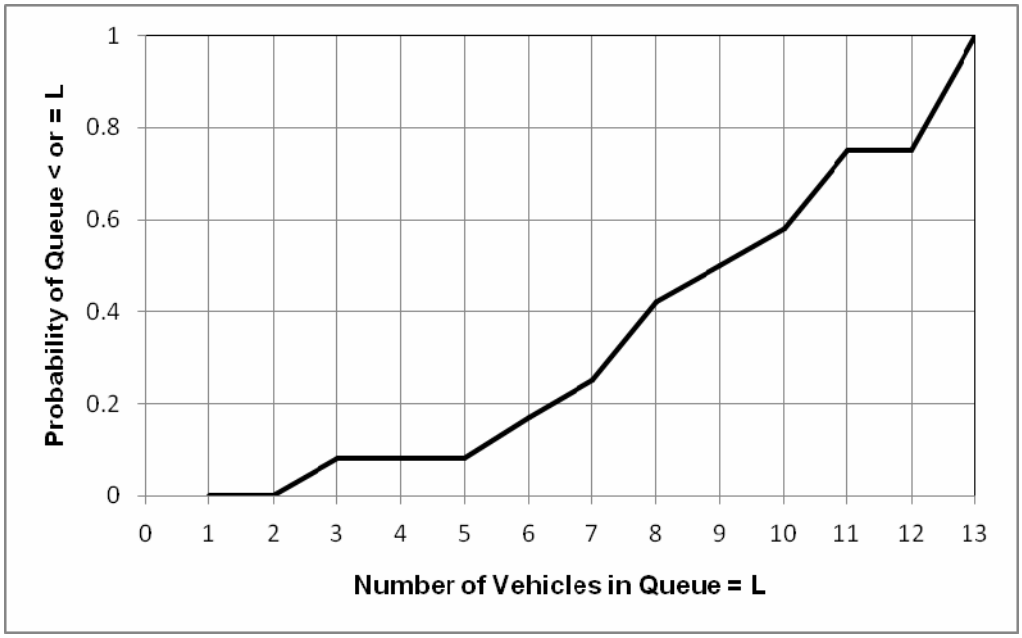


Figure 4 – Coffee Shop With Drive-Through Cumulative Maximum Queue Length Data Plot



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The total trip generation figures were compared to the a.m. peak hour ITE rates for Land Use Code 937, Coffee/Donut Shop with Drive-Through Window, and Land Use Code 938, Coffee/Donut Shop with Drive-Through Window and No Indoor Seating. The observed counts generally fell within the range of counts included in those categories, although two of the rates for the No Indoor Seating category exceeded the published range. No correlation was found between the adjoining major street traffic volumes or the size of the building and either the queuing or the trip generation results.

Observations

Several of the drive-through lanes were under-designed for the usage that was observed and queues spilled-out into parking lot circulation areas. In most cases the excess stacking did not result in disruptions of the operations of surrounding uses, since most other businesses were not open in the early morning. But for those sites where the end of the drive-through lane extended into the coffee shop parking lot, the excess queue often disrupted the movements of drivers who were trying to enter or exit parking spaces or the site itself.

One interesting facet of the data is that the three lowest observed maximum queue lengths were for the drive-through-only locations. The highest observed queue length for those operations was seven vehicles, which occurred only once at one location and only for a very short period of time. A six vehicle maximum stack was a more common occurrence.

The data shows that the volume of drive-through traffic and, therefore, the required stacking distance, is higher for full-service coffee shops than for drive-through-only operations. When total trip generation (both drive-through business and customers who park and walk in) is factored in, the full-service coffee shops did, on average, about two and one-half times the business of drive-through-only facilities. Since all of the full-service operations were Starbucks locations, it may be possible to apply the results of those counts to other proposed suburban Starbucks locations elsewhere in the country.

Total vehicular stacking available for a drive-through lane is an important consideration, but the location of the menu board relative to the pick-up window also impacts the efficiency of a drive-through lane operation. If the spacing is too short, stacking behind the pick-up window will extend into the menu board area, delaying ordering for those farther back in the line. In the counts conducted for this study, the pick-up window to menu board available stacking distances ranged from two to five vehicles.

The operation with the two car stack between the pick-up window and menu board regularly resulted in delays for drivers waiting to order at the menu board. The location with a five car stack rarely experienced delays for those ordering. Based on field observations, if an unlimited amount of stacking were available at a proposed site, the five car spacing would be ideal. Realizing that space for stacking nearly always is limited, an acceptable alternative would be the four car spacing.

Appendix B

Conclusions

Drive-in bank usage has dropped dramatically, as illustrated in the data provided in this report. Consequently, a reduced amount of stacking is required. That reduced area for drive-through stacking can provide more flexibility in the design of bank sites, allowing for development on smaller sites or the provision of increased landscaped areas.

Based on the data that was gathered, the City of Overland Park has reduced its previous requirement for a minimum five car stack per lane to a three car stack (a distance of 60 feet per lane, assuming average vehicle spacing to be 20 feet). That design should be sufficient to accommodate virtually all situations. Vehicular stacking requirements for ATMs have been established, also at a minimum of three car lengths.

Coffee shop drive-through lanes are most heavily used during the morning peak period, and therefore it is important to design sites to accommodate that peak demand. The following recommended minimum stacking lengths should be appropriate in most cases. The only exceptions would be situations in which excess queuing could impact a nearby street or major drive, in which case a more conservative approach should be taken.

Based on the data that was gathered for drive-through-only operations, it appears reasonable to require that a dedicated drive-through lane be provided with a stack of 120 feet – enough to handle six vehicles. That should be sufficient to accommodate nearly all vehicles that are likely to arrive during the morning peak hour time period.

For full service establishments, a 220-foot long drive-through lane, providing eleven cars of total storage, should be adequate to handle the vast majority of the drive-through lane volumes that might be encountered. In those cases where more than eleven vehicles were counted, the duration of the extreme queue lasted for only a few minutes. For the most efficient operation, the distance between the pick-up window and menu board should be at least 80 feet to accommodate four vehicles.

References

1. Gattis, J. L., Chair of ITE Technical Council Committee 5D-10. “Queuing Areas for Drive-Thru Facilities, by ITE Technical Council Committee 5D-10.” *ITE Journal* (May 1995): 38-42.

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Queuing Areas For Drive-Thru Facilities

BY ITE TECHNICAL COUNCIL COMMITTEE 5D-10

ITE Technical Council Committee 5D-10 was formed to collect and analyze basic information that may be used to estimate and evaluate lengths of automobile queues at drive-thru facilities. In addition to fulfilling this objective, this Informational Report constitutes a starting point for compiling a database for drive-thru facility queue length information.

Introduction

When faced with the need to evaluate the future impacts of a planned development, the transportation engineer often employs some form of analogy, estimating the future impacts of as-yet unbuilt development by using the attributes of existing land uses having a similar nature. For instance, the engineer may refer to published trip generation rates, derived from observations made at existing developments, to obtain a figure by which to estimate volumes that will occur at the proposed development.



J. L. Gattis, *P.E., was Chair of Technical Council Committee 5D-10. He is an Assistant Professor in the Department of Civil Engineering at the University of Arkansas in Fayetteville, Ark. He is a Member of ITE.*

Many types of businesses (such as fast-food restaurants, banks and cleaners) utilize drive-thru systems. A similar form of drive-thru operation can be found at sites where passenger pick-up operations occur (such as parents picking up schoolchildren). These drive-thru systems are comprised of a server position (often at a service "window"), and vehicle queuing space in advance

QUEUING DATA SHEET

1.	Type of Service Provided	_____
2.	Day(s) of Week	Sun Mon Tue Wed Thu Fri Sat
3.	Time(s) of Day	_____
4.	Type of Area	CBD ☐ Surburban ☐ Rural ☐
5.	Competition in Area (For Same Services)	High ☐ Medium ☐ Low ☐
6.	Service Rate Measured (Per Window or Aisle or Lane)	_____ Vehicles/Time
7.	Arrival Rate Measured (Per Window or Aisle or Lane)	Avg ____ Max ____ Vehicles/Time
8.	Uniformity Rating	_____ (1 - 10)
9.	Capacity of Queue Storage Area	_____ (Vehicles)
10.	Measured Average Queue	_____ (Vehicles)
11.	Measured Maximum Queue	_____ (Vehicles)
12.	Excess Demand Volume	_____ (Vehicles)
13.	Excess Demand Frequency	_____
14.	Size Sample or Length of Count Data	_____
15.	Narrative Description of Service	_____

Figure 1. Data gathering form used in survey.

of the service position, for waiting in line as those ahead are served first.

When attempting to project lengths of automobile queues at proposed drive-thru facilities, the municipal or private consulting engineers may not find available data by which a projection can be made. While such data may be known by larger business chains that have drive-thru operations, the data do not seem to be generally available to the average traffic engineer trying to size or evaluate automobile queue storage area. True, some publications present results of queuing studies or equations for estimating queue lengths based on known system arrival and service rates.[1-9] But the proposed-site arrival and service rates may be unknown, and the proposed system may not possess attributes (such as negative exponential service time rates) needed for certain equations to properly predict queue lengths.

Drive-thru facilities are perceived as time-savers; as a convenience to the physically challenged, elderly and parents with young children; and as a way to avoid going out into inclement weather. Due to vehicle idling while in line, drive-thru facilities may also be viewed as causing unnecessary fuel consumption and air pollution. The popularity of drive-thru services creates a need to evaluate the queuing capacities of the varied drive-thru facilities. This report provides some basic drive-thru facility queue length information. It is hoped that the database will continue to grow, so that a comprehensive analytical tool may be available for the transportation professional.

Methods

The queue length data gathering form shown in Figure 1 was distributed to committee members in November 1987. The form was accompanied by specific user-instructions to ensure uniformity of procedures and compatibility of results.

Completed forms were returned to the committee chair and data were cataloged by land-use type. The maximum observed queue lengths and the maximum observed queue length frequencies were compiled. Cumulative frequencies and the probability that queues would not exceed an absolute maximum were calculated and shown graphically.

Table 1. Ranges of Fast Food Queue Lengths by Food Type

Food Type	Maximum Queue Range (# in system)	Average Maximum Queue (# in system)	Studies
Donuts	4	4	2
Steak	4	4	2
Chicken	2–9	5	5
Fish	5	5	1
Sandwiches	5	5	1
Mexican	7	7	1
Roast Beef	6–8	7	2
Hamburgers	4–13	7	27

Table 2. Fast Food Queue Lengths

Maximum Queue Length (# in system)	Frequency	Cumulative Frequency	P(q≤N)
1	0	0	0.00
2	2	2	0.05
3	0	2	0.05
4	6	8	0.18
5	4	12	0.27
6	7	19	0.43
7	10	29	0.66
8	7	36	0.82
9	5	41	0.93
10	1	42	0.95
11	0	42	0.95
12	1	43	0.98
13	1	44	1.00

Note: P(q≤N) indicates probability, based on sample, of queue length "q" not exceeding length "N".

Findings

Within this report, data have been compiled for banks, car washes, day care facilities, dry cleaners and fast-food restaurants.

Fast Food

This category includes restaurants characterized by food being prepared in advance of, or shortly after, ordering; by high turnover for eat-in customers; and by long business hours. The ITE land-use codes (LUCs) for this use are LUC 834 (*Trip Generation*, 1991) and 836 (*Parking Generation*, 1987).

Forty-four fast-food restaurants were observed for this study. They ranged from those serving chicken to the hamburger chains. All sites were suburban locations. Queuing was observed mainly during the weekday mid-day peak from the 1970s through the 1990s, at sites in Florida, Kansas, Illinois, Minnesota, Montana, New Jersey, Oklahoma, Pennsylvania and Texas. All fast-food facilities observed for this study had a single-window drive-thru system. The industry is changing, with double- and even triple-window systems being utilized. Further information will be needed on queuing characteristics of these facilities.

The average observed service rate was 54 vehicles per hour (vph); the maximum rate was 108 vph. The maximum observed queue lengths (number of vehicles in line, including vehicle at service position) ranged from two to 13 vehicles (see Table 1). Where there was a menu-order board followed by a service window, the combined total of vehicles in both sequential lines was reported.

The restaurants featuring hamburgers had maximum queues in the upper part of the range. Table 2 shows the frequencies of the observed maximum queue lengths, as well as a probability of a queue of less than a given number

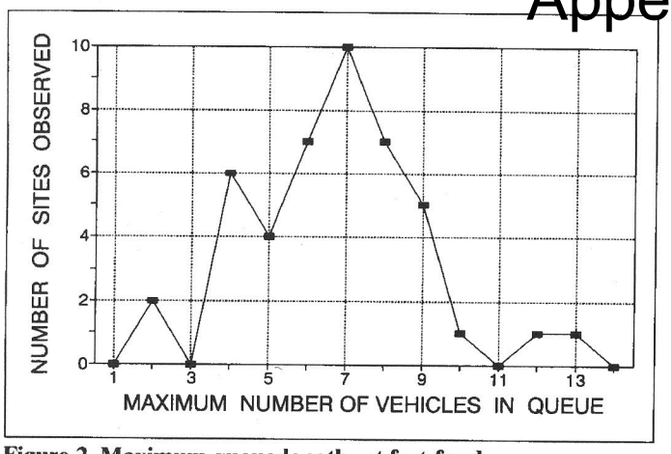


Figure 2. Maximum queue lengths at fast-food.

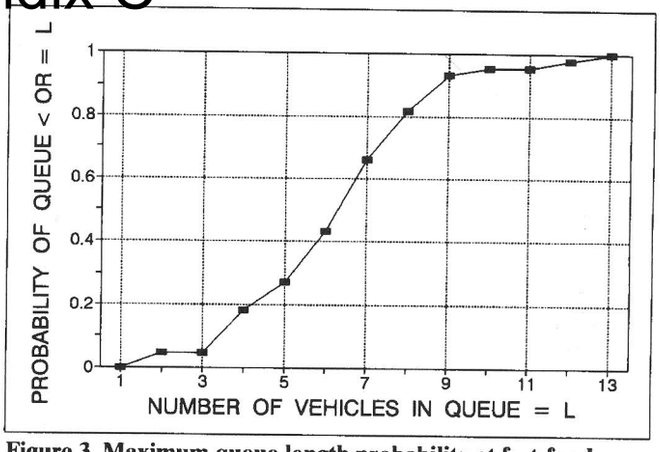


Figure 3. Maximum queue length probability at fast-food.

of vehicles. Figure 2 plots maximum queue length against the observed frequency of occurrence. Figure 3 depicts the probability that at any fast-food site, the queue will not exceed a given maximum queue length. From Table 2 or Figure 3, it can be seen that there was a 95 percent probability that the maximum queue at a site would be no more than 10 vehicles.

The maximum queues were evaluated against days of the week and were found to have no statistical relationship. Likewise, when evaluated against different levels of competition within the area and against service rates, there was no statistical relationship.

Bank

This category includes savings-and-loans with or without automatic teller machines (ATMs) and commercial banks with or without ATMs. Although there were historical differences between banks and savings-and-loans, they are now often indistinguishable to the public. The ITE land-use codes for this use are LUC 912 and 914 (*Trip Generation*, 1991) and LUC 912 (*Parking Generation*, 1987).

The studies analyzed were conducted from the late 1960s through the late 1980s; many were in Illinois, Minnesota, New Jersey and Texas. The size of the bank drive-thru facilities ranged from a minimum of one lane with one teller-window up to an institution with 10 lanes and four tellers.

Observed service rates for these institutions went up to a maximum of 35 vehicles per lane-hour. Maximum observed queues per lane ranged from two to eight vehicles. The maximum system queue lengths (all lanes combined) ranged from five to 29 vehicles. At two sites, it was observed that a queue length exceeding eight vehicles per lane was not tolerated by customers. When the queue length became excessive, customers would park and use walk-in facilities rather than the drive-thru. Thus the collected data reflect a maximum queue per lane of eight vehicles.

Table 3 shows the observed frequency of occurrence of maximum queue lengths per lane. Figure 4 plots the maximum number of vehicles per lane observed. On the basis of the studies received, there is a 100 percent probability that the queue length at a bank drive-thru facility will not exceed eight vehicles per lane, as Figure 5 shows.

Table 4 presents the maximum number of vehicles in an entire drive-thru system (all lanes combined) by ranges, along with the frequency of occurrence. This table shows that the most common maximum number-in-the-system at a bank drive-thru facility fell between six and 10 vehicles, as most observed facilities consisted of two lanes. Table 4 also

Table 3. Bank Queue Lengths

	Maximum Queue Per Lane		
Queue Length	*Frequency*	*Cumulative Frequency*	*P(q≤N)*
0	0	0	0.00
1	0	0	0.00
2	1	1	0.07
3	4	5	0.33
4	2	7	0.47
5	4	11	0.73
6	1	12	0.80
7	2	14	0.93
8	1	15	1.00

Note: P(q≤N) indicates probability, based on sample, of queue length "q" not exceeding length "N".

Table 4. Maximum Number of Vehicles in Bank System (All Lanes)

# in system	*Frequency*	*Cumulative Frequency*	*P(q≤N)*
0 – 5	2	2	0.13
6 – 10	6	8	0.53
11 – 15	3	11	0.73
16 – 20	2	13	0.87
21 – 25	1	14	0.93
26 – 30	1	15	1.00

Note: P(q≤N) indicates probability, based on sample, of queue length "q" not exceeding length "N".

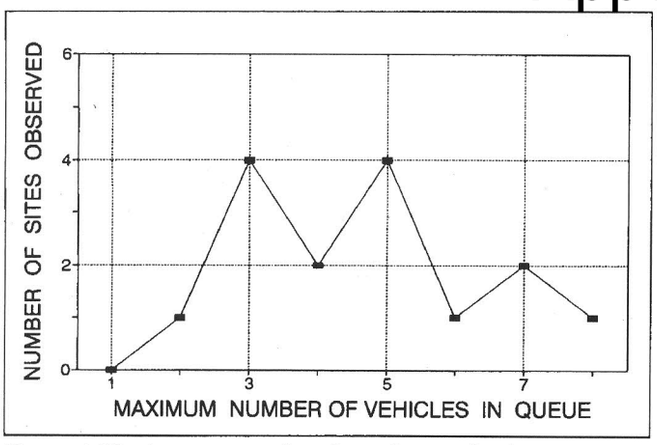


Figure 4. Maximum queue length per lane at bank.

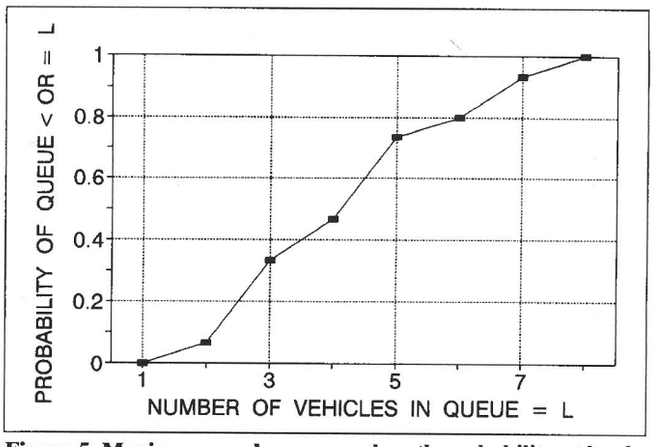


Figure 5. Maximum per lane queue length probability at bank.

gives the probability, based on the studies received, that the number of vehicles in the system will not exceed a certain range.

It should be noted that queuing lengths may be affected by time-of-day banking habits. There may be differences between the central city and a suburb. An area with a large proportion of retired persons may experience unique banking-time behaviors. In addition, the effects of banks incorporating ATMs into drive-thru aisles may also need to be investigated in future queuing studies.

Car Wash

This category includes full-service car washes (offering vacuuming and towel-drying services), exterior tunnel operation (vacuuming and towel drying not a part of the "in-line" operation, but may be offered at separate stations to the side), and self-service car washes (where customers pull into a wash bay, insert coins into a box, and proceed to wash). The ITE land-use code for these uses is LUC 847 (*Trip Generation*, 1991). This land use was not included in the 1987 *Parking Generation* report.

The studies analyzed were conducted from the late 1960s through the late 1980s in Kansas, Illinois, Montana, New Jersey and Texas. They included seven full service car washes, two exterior tunnel car washes, and nine self-service car washes. The number of self-service bays ranged from six to 14 per site. The self-service car washes typically had one or more parallel wash bays; the full-service car wash operations tended to have a single tunnel to serve customers.

Studies at the full-service car washes were made during winter or early spring months. Both full-service car washes consisted of a single tunnel. Observed service rates were 35 vph (maximum queue of nine vehicles) and 27 vph (maximum queue of 26 vehicles). At the site with a 26-vehicle queue, the queue extended off the site and onto an adjacent private street with light traffic volumes.

The self-service car wash studies were conducted on Saturday and Thursday, during late spring and/or summer months. Service rates at self-service car washes ranged from 4.1 vehicles per bay-hour to 5.4 vehicles per bay-hour. The average service rate was 4.77 vehicles per bay-hour. The maximum queue observed at two study sites was three vehicles, and at a third study site the maximum observed was one vehicle. No distinction was made as to whether these were maximum queues per bay or total maximum queues (per entire operation).

Day Care

This category includes facilities that provide a place for children during the day, often while parents are at work. After-school care may also be provided. The ITE land-use code is LUC 565 (*Trip Generation*, 1991). This land use was not included in the 1987 *Parking Generation* report.

Data were submitted for one day-care facility in Texas, during the evening peak hour. The facility had 99 children enrolled and 94 present the day the study was conducted. The day-care facility handled children age 2 through first grade. The facility was operated in a manner that required the parents to park their cars and go inside to get their children.

The hour service rate was 46 vehicles. A maximum of eight vehicles in

This is an Informational Report of the Institute of Transportation Engineers prepared by Technical Council Committee 5D-10. The information in this report has been obtained from experiences of transportation engineering professionals and research. ITE Informational Reports are prepared for informational purposes only and do not include Institute recommendations on which is the best course of action or the preferred application of the data.

Members of Technical Council Committee 5D-10 were J. L. Gattis, P.E. (M), Chair; Grant A. Bacchus, P. Eng. (F); Benedict G. Barkan (F); Robert R. Marvin, P.E. (M); Dale B. McKinney, P.E. (F); Robert A. Nelson, P.E. (F); Seyed M. Safavian (M); James M. Schoen (A); David K. Sorenson, P.E. (A); Mark J. Stuecheli (M); and Jack Wierzenski (A).

Members of the Technical Council Department 5 Standing Committee at the time of approval of this report were Dennis O'Malley (F), Chair; Carol H. Walters, P.E. (M), Assistant Chair; Robert D. McMillen, P.E. (FL); Wamahdri W. Williams (A); and Donald J. Galloway, P.E. (F). Brian S. Bochner, P.E. (F), was the Chair of Technical Council, and John M. Mason, P.E. (F), was the Assistant Chair.

Table 5. Summary of Observed Queue Distances at Drive-Thru Facilities

	Near-maximum number of queued vehicles observed in system (does not include vehicle at service position)	*Lane Length needed to store near-maximum queue (does not include) vehicle at service position)*
Fast-Food (Hamburger)	10 – 1 = 9	60 m (198 feet)
Bank	8 – 1 = 7	47 m (154 feet)
Car Wash (self-service)	3 – 1 = 2	13 m (44 feet)
Day Care	10 – 1 = 9	can store in parallel
Dry Cleaner	3 – 1 = 2	13 m (44 feet)

5 minutes (if sustained, equivalent to 96 vph) were observed; a 20-minute period had 28 vehicles (84 per hour). The maximum number of waiting vehicles was 10 vehicles.

VanWinkle and Kinton reported the results of 29 field studies at day-care establishments in Tennessee. Their findings are in the July 1994 *ITE Journal*.[8]

Dry Cleaners

This category includes facilities that clean clothing and other fabrics that should not be laundered. Often a walk-up window is present. No information is provide for this land use in either the ITE 1991 *Trip Generation* report or the ITE 1987 *Parking Generation* report.

One study was conducted at a dry cleaner with drive-thru facilities in Montana during a weekday p.m. peak period. An average service rate of 41 vph was measured at the single window. The observed maximum queue was three vehicles long. Forty-five percent of the customers used the drive-thru facility.

Conclusions

Table 5 summarizes the observed maximum or near-maximum observed queue lengths, and also lists the stacking distance needed to accommodate these observed queues, based on a front bumper-to-front bumper space occupied length of 22 feet (ft) per vehicle. This 22 ft may not be the exact space that vehicles occupy, but a value ranging from 20 ft to 25 ft seems appropriate for many situations. Because only one day-care facility was observed, and because parents picking up children may park in parallel or in a lot instead of in a single-file line, no stacking length was calculated for this land use.

Due to a change of committee personnel during the course of the data-gathering effort, some of the original forms submitted by committee members are not available. There are some apparent errors in the tables. For instance, the number of studies tallied in Table 1 is 41, while the number in Table 2 is 44. It is not known whether three studies were not included in Table 1, or whether there was double counting in Table 2. The unavailability of the original data forms makes it impossible to recheck the numbers.

The size of this drive-thru facility queuing characteristic database was limited. There is a need to accumulate and analyze more drive-thru queuing system data, so transportation engineers and site planners can be better informed. Additional observations of service rates are also needed in order to determine relationships between service rates and queue lengths, and to evaluate long-term trends in service rates. Finally, investigations of the amount of space occupied per vehicle within a queue are needed so that engineers will have the ability to project not only the number of vehicles that will be in the maximum queue for a given site, but also the queue storage length required for a site.

When collecting queuing data, the recorder should clearly indicate whether the number of vehicles recorded includes or excludes the vehicle(s) in the service position (that is, at the window). The data record must indicate which numbers are for a single queuing line and which totals are for the entire system of multiple queuing lines. An observer should also note instances of arriving vehicles balking or refusing to enter a queue due to excessive length, and how many vehicles were in the queue when the next arrival balked.

Other types of drive-thru operations that could be studied include those at credit unions, funeral homes, gas stations (either gas only, full-service, self-service, or a combination with convenience stores or car washes), libraries, liquor stores, movie theater ticket booths, parking lots and garages (either pick-up ticket or pay, or key, tag, or card), post offices, pre-schools, baby-sitting or school combinations, lower grade schools, stadium ticket sales machines, truck stops and places of worship.

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Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	912
Land Use/Building Type*:	Drive-in Bank

Name of Business:	Citizens Independent Bank
Address:	3700 W Broadway Ave
City:	Robbinsdale
State:	MN
Zip Code:	55422

Date(s)	February 7-8, 2012 (Tuesday-Wednesday)

Weather Conditions	High 32 °F and Clear

Location Within Area (select one):	
CBD	
Urban (non-CBD)	
Suburban (non-CBD)	X
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):	
High	
Medium	X
Low	

Drive-Through Description	4 Lanes + 1 ATM Lane

Gross Floor Area (estimated)	6300

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday	**5**	**3:36pm**
Wednesday	**5**	**2:37pm**
Thursday		
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	912
Land Use/Building Type:	Drive-in Bank

Name of Business:	SharePoint Credit Union
Address:	3670 Aquila Ave S
City:	St. Louis Park
State:	MN
Zip Code:	55426

Date(s)	February 1-2, 2012 (Wednesday-Thursday)

Weather Conditions	High 32-36 °F and Fog

Location Within Area (select one):		
	CBD	
	Urban (non-CBD)	
	Suburban (non-CBD)	X
	Suburban CBD	
	Rural	
	Not Given	

Competition Within Area (select one):		
	High	
	Medium	X
	Low	

Drive-Through Description :	2 Lanes + 1 ATM Lane

Gross Floor Area (estimated)	7,850 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	**3**	**3:28pm**
Thursday	**3**	**8:51am, 10:37am**
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	912
Land Use/Building Type:	Drive-in Bank

Name of Business:	TCF Bank
Address:	8020 Highway 7
City:	St. Louis Park
State:	MN
Zip Code:	55426

Date(s)	August 5-7, 2011 (Friday-Sunday)

Weather Conditions	High 84-88 °F and Clear

Location Within Area (select one):		
	CBD	
	Urban (non-CBD)	
	Suburban (non-CBD)	X
	Suburban CBD	
	Rural	
	Not Given	

Competition Within Area (select one):		
	High	
	Medium	X
	Low	

Drive-Through Description :	5 Lanes + 1 ATM Lane

Gross Floor Area (estimated)	6,000 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday	**4**	**5:18pm**
Monday		
Tuesday		
Wednesday		
Thursday		
Friday	**8**	**12:20pm, 2:20pm**
Saturday	**8**	**11:40am**

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	912
Land Use/Building Type:	Drive-in Bank

Name of Business:	US Bank
Address:	4000 W Broadway Ave
City:	Robbinsdale
State:	MN
Zip Code:	55422

Date(s)	February 7-8, 2012 (Tuesday-Wednesday)

Weather Conditions	High 32 °F and Clear

Location Within Area (select one):		
	CBD	
	Urban (non-CBD)	
	Suburban (non-CBD)	X
	Suburban CBD	
	Rural	
	Not Given	

Competition Within Area (select one):		
	High	
	Medium	X
	Low	

Drive-Through Description :	3 Lanes + 1 ATM Lane

Gross Floor Area (estimated)	21,550 sq. ft.

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday	**7**	**4:47pm, 5:04pm**
Wednesday	**7**	**3:00pm, 5:26pm**
Thursday		
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	912
Land Use/Building Type:	Drive-in Bank

Name of Business:	Wells Fargo
Address:	425 E Hennepin Ave
City:	Minneapolis
State:	MN
Zip Code:	55414

Date(s)	February 7, 2012 (Tuesday)

Weather Conditions	High 32 °F and Clear

Location Within Area (select one):	
CBD	
Urban (non-CBD)	X
Suburban (non-CBD)	
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):	
High	
Medium	X
Low	

Drive-Through Description :	4 Lanes + 1 ATM Lane

Gross Floor Area (estimated)	12,000 sq. ft.

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday	**6**	**1:18pm**
Wednesday		
Thursday		
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	912
Land Use/Building Type:	Drive-in Bank

Name of Business:	Wells Fargo
Address:	2329 Central Ave NE
City:	Minneapolis
State:	MN
Zip Code:	55418

Date(s)	February 7-8, 2012 (Tuesday-Wednesday)

Weather Conditions	High 32 °F and Clear

Location Within Area (select one):	
CBD	
Urban (non-CBD)	X
Suburban (non-CBD)	
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):	
High	
Medium	X
Low	

Drive-Through Description :	7 Lanes (4-5 Lanes were open at various points) + 1 ATM Lane

Gross Floor Area (estimated)	20,125 sq. ft.

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday	**8**	**4:41pm**
Wednesday	**6**	**11:27am, 1:48pm, 2:23pm, 4:32pm, 5:25pm**
Thursday		
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	948
Land Use/Building Type:	Automated Car Wash

Name of Business:	BP
Address:	3012 Excelsior Blvd
City:	Minneapolis
State:	MN
Zip Code:	55416

Date(s)	February 1-2, 2012, (Wednesday-Thursday)
Weather Conditions	High 32-36 °F and Fog

Location Within Area (select one):	
CBD	
Urban (non-CBD)	X
Suburban (non-CBD)	
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):	
High	
Medium	
Low	X

Drive-Through Description :	1 Lane. Only counted the vehicles waiting in line, not the vehicles currently being washed.
Gross Floor Area (estimated)	3,375 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	**6**	**3:08pm**
Thursday	**6**	**3:07pm**
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	948
Land Use/Building Type:	Automated Car Wash

Name of Business:	BP
Address:	2441 Fariview Ave N
City:	Roseville
State:	MN
Zip Code:	55113

Date(s)	February 7-8, 2012 (Tuesday-Wednesday)

Weather Conditions	High 32 °F and Clear

Location Within Area (select one):		
	CBD	
	Urban (non-CBD)	
	Suburban (non-CBD)	X
	Suburban CBD	
	Rural	
	Not Given	

Competition Within Area (select one):		
	High	
	Medium	
	Low	X

Drive-Through Description :	1 Lane. Only counted the vehicles waiting in line, not the vehicles currently being washed.

Gross Floor Area (estimated)	3,150 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday	**1**	**12:58pm**
Wednesday	**3**	**2:53pm**
Thursday		
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	948
Land Use/Building Type:	Automated Car Wash

Name of Business:	BP
Address:	1691 Snelling Ave N
City:	Falcon Heights
State:	MN
Zip Code:	55113

Date(s)	February 7-8, 2012 (Tuesday-Wednesday)
Weather Conditions	High 32 °F and Clear

Location Within Area (select one):		Competition Within Area (select one):	
	CBD		
	Urban (non-CBD)		
X	Suburban (non-CBD)	High	
	Suburban CBD	Medium	
	Rural	Low	X
	Not Given		

Drive-Through Description :	1 Lane. Only counted the vehicles waiting in line, not the vehicles currently being washed.
Gross Floor Area (estimated)	1,500 sq. ft.

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday	**4**	**1:48pm**
Wednesday	**3**	**4:29pm**
Thursday		
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	948
Land Use/Building Type:	Automated Car Wash

Name of Business:	Holiday Gas Station Carwash
Address:	5430 Minnetonka Blvd
City:	St. Louis Park
State:	MN
Zip Code:	55416

Date(s)	February 1-2, 2012 (Wednesday-Thursday)

Weather Conditions	High 32-36 °F and Fog

Location Within Area (select one):	
CBD	
Urban (non-CBD)	
Suburban (non-CBD)	X
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):	
High	
Medium	
Low	X

Drive-Through Description :	1 Lane. Only counted the vehicles waiting in line, not the vehicles currently being washed.

Gross Floor Area (estimated)	3,000 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	**3**	**12:37pm, 1:50pm, 3:43pm, 4:41pm, 5:10pm, 7:04pm, 7:30pm**
Thursday	**4**	**2:38pm, 4:20pm**
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	948
Land Use/Building Type:	Automated Car Wash

Name of Business:	Mister Car Wash
Address:	8650 Highway 7
City:	St. Louis Park
State:	MN
Zip Code:	55426

Date(s)	February 1-2, 2011 (Wednesday-Thursday)

Weather Conditions	High 32-36 °F and Fog

Location Within Area (select one):	
CBD	
Urban (non-CBD)	
Suburban (non-CBD)	X
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):	
High	
Medium	
Low	X

Drive-Through Description :	2 Lanes, Full Service Wash, only vehicles in line were counted, not the vehicles being washed.

Gross Floor Area (estimated)	8,250 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	**10**	**1:03pm**
Thursday	**6**	**4:02pm**
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	948
Land Use/Building Type:	Automated Car Wash
Name of Business:	Mobil Car Wash
Address:	3864 Hopkins Crossroad
City:	Minnetonka
State:	MN
Zip Code:	55305
Date(s)	February 1-2, 2012 (Wednesday-Thursday)
Weather Conditions	High 32-36 °F and Fog

Location Within Area (select one):		
	CBD	
	Urban (non-CBD)	
	Suburban (non-CBD)	X
	Suburban CBD	
	Rural	
	Not Given	

Competition Within Area (select one):		
	High	
	Medium	
	Low	X

Drive-Through Description :	2 lanes. Only vehicles in line were counted, not vehicles being washed.
Gross Floor Area (estimated)	1,225 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	**4**	**6:03pm**
Thursday	**3**	**4:37pm, 6:28pm, 7:39pm, 7:51pm, 8:04pm, 8:23pm**
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	937
Land Use/Building Type:	Coffee/Donut Shop w/ Drive Thru

Name of Business:	Caribou Coffee
Address:	4745 Cedar Ave S
City:	Minneapolis
State:	MN
Zip Code:	55407
Date(s)	February 1-2, 2012 (Wednesday-Thursday)
Weather Conditions	High 32-36 °F and Fog

Location Within Area (select one):		Competition Within Area (select one):	
	CBD		High
X	Urban (non-CBD)		Medium X
	Suburban (non-CBD)		Low
	Suburban CBD		
	Rural		
	Not Given		

Drive-Through Description :	1 Lane
Gross Floor Area (estimated)	1,950 sq. ft.

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	**11**	**8:50am**
Thursday	**10**	**7:57am**
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	937
Land Use/Building Type:	Coffee/Donut Shop w/ Drive Thru

Name of Business:	Caribou Coffee
Address:	5330 Cedar Lake Rd
City:	St. Louis Park
State:	MN
Zip Code:	55416

Date(s)	August 5-9, 2011 (Friday-Tuesday)

Weather Conditions	High 82-88 °F and Clear

Location Within Area (select one):		
	CBD	
	Urban (non-CBD)	
	Suburban (non-CBD)	X
	Suburban CBD	
	Rural	
	Not Given	

Competition Within Area (select one):		
	High	
	Medium	X
	Low	

Drive-Through Description :	1 Lane

Gross Floor Area (estimated)	3,600 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday	**7**	**9:39am, 9:41am**
Monday	**10**	**8:39am**
Tuesday	**12**	**9:26am**
Wednesday		
Thursday		
Friday	**12**	**8:12am**
Saturday	**8**	**8:52am, 10:24am**

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	937
Land Use/Building Type:	Coffee/Donut Shop w/ Drive Thru

Name of Business:	Starbucks
Address:	5121 Gus Young Lane
City:	Edina
State:	MN
Zip Code:	55436

Date(s)	February 7-8, 2012 (Tuesday-Wednesday)

Weather Conditions	High 32 °F and Clear

Location Within Area (select one):		
	CBD	
	Urban (non-CBD)	
	Suburban (non-CBD)	X
	Suburban CBD	
	Rural	
	Not Given	

Competition Within Area (select one):		
	High	
	Medium	
	Low	X

Drive-Through Description :	1 Lane

Gross Floor Area (estimated)	3,000 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	**14**	**7:22am, 7:49am**
Thursday	**16**	**8:56am**
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	937
Land Use/Building Type:	Coffee/Donut Shop w/ Drive Thru

Name of Business:	Starbucks
Address:	1505 Highway 7
City:	Hopkins
State:	MN
Zip Code:	55305

Date(s)	February 1-2, 2012 (Wednesday-Thursday)

Weather Conditions	High 32-36 °F and Fog

Location Within Area (select one):		
	CBD	
	Urban (non-CBD)	
	Suburban (non-CBD)	X
	Suburban CBD	
	Rural	
	Not Given	

Competition Within Area (select one):		
	High	
	Medium	X
	Low	

Drive-Through Description :	1 Lane, Queuing Went Out Onto the Street

Gross Floor Area (estimated)	1,800 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	**10**	**7:42am, 8:41am, 8:59am**
Thursday	**11**	**7:33am**
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	937
Land Use/Building Type:	Coffee/Donut Shop w/ Drive Thru

Name of Business:	Starbucks
Address:	4201 Minnetonka Blvd
City:	St. Louis Park
State:	MN
Zip Code:	55416

Date(s)	November 3, 2010 (Wednesday)
Weather Conditions	High 56 °F and Clear

Location Within Area (select one):	
CBD	
Urban (non-CBD)	
Suburban (non-CBD)	X
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):	
High	
Medium	X
Low	

Drive-Through Description :	1 Lane, Queue Lengths Recorded at 5 min Intervals
Gross Floor Area (estimated)	2,550 sq. ft.

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	**11**	**8:45am**
Thursday		
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	937
Land Use/Building Type:	Coffee/Donut Shop w/ Drive Thru

Name of Business:	Starbucks
Address:	2305 Fairview Ave
City:	Roseville
State:	MN
Zip Code:	55113

Date(s)	February 7-8, 2012 (Tuesday-Wednesday)

Weather Conditions	High 32 °F and Clear

Location Within Area (select one):		
	CBD	
	Urban (non-CBD)	
	Suburban (non-CBD)	X
	Suburban CBD	
	Rural	
	Not Given	

Competition Within Area (select one):		
	High	
	Medium	X
	Low	

Drive-Through Description :	1 Lane

Gross Floor Area (estimated)	1,500 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday	**10**	**8:09am**
Wednesday	**12**	**7:57am**
Thursday		
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	934
Land Use/Building Type:	Fast Food with Drive Thru

Name of Business:	Arby's
Address:	1116 W Lake St
City:	Minneapolis
State:	MN
Zip Code:	55408

Date(s)	February 1-2, 2012 (Wednesday-Thursday)

Weather Conditions	High 32-36 °F and Fog

Location Within Area (select one):	
CBD	
Urban (non-CBD)	X
Suburban (non-CBD)	
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):	
High	
Medium	X
Low	

Drive-Through Description :	1 Lane

Gross Floor Area (estimated)	3,000 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	**5**	**6:04pm**
Thursday	**5**	**6:55pm**
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	934
Land Use/Building Type:	Fast Food with Drive Thru

Name of Business:	Burger King
Address:	6660 Wayzata Blvd
City:	Golden Valley
State:	Minnesota
Zip Code:	55426
Date(s)	August 5-8, 2011
Weather Conditions	High 82-88 °F and Clear

Location Within Area (select one):		Competition Within Area (select one):	
	CBD		
	Urban (non-CBD)		
X	Suburban (non-CBD)	High	
	Suburban CBD	Medium	X
	Rural	Low	
	Not Given		

Drive-Through Description :	1 Lane
Gross Floor Area (estimated)	3,300 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday	**6**	**4:30pm**
Monday	**12**	**12:10pm**
Tuesday		
Wednesday		
Thursday		
Friday	**10**	**12:12pm**
Saturday	**8**	**9:38pm**

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	934
Land Use/Building Type:	Fast Food with Drive Thru
Name of Business:	McDonald's
Address:	5200 Excelsior Blvd
City:	St. Louis Park
State:	MN
Zip Code:	55416
Date(s)	February 1-2, 2012 (Wednesday-Thursday)
Weather Conditions	High 32-36 °F and Fog

Location Within Area (select one):		Competition Within Area (select one):	
	CBD		
	Urban (non-CBD)		
X	Suburban (non-CBD)		
	Suburban CBD		
	Rural		
	Not Given		
		High	
		Medium	X
		Low	

Drive-Through Description :	2 Order Stations
Gross Floor Area (estimated)	3,600 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	**12**	**11:46am**
Thursday	**13**	**12:23pm**
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	934
Land Use/Building Type:	Fast Food with Drive Thru

Name of Business:	McDonald's
Address:	2929 Hennepin Ave S
City:	Minneapolis
State:	MN
Zip Code:	55408

Date(s)	February 1-2, 2012 (Wednesday-Thursday)

Weather Conditions	High 32-36 °F and Fog

Location Within Area (select one):	
CBD	
Urban (non-CBD)	X
Suburban (non-CBD)	
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):	
High	
Medium	X
Low	

Drive-Through Description :	1 Lane

Gross Floor Area (estimated)	3,825 sq. ft.

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	**9**	**8:48am**
Thursday	**8**	**8:54am**
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	934
Land Use/Building Type:	Fast Food with Drive Thru
Name of Business:	Taco Bell
Address:	819 Cambridge St
City:	Hopkins
State:	MN
Zip Code:	55343
Date(s)	February 1-2, 2012 (Wednesday-Thursday)
Weather Conditions	High 32-36 °F and Fog

Location Within Area (select one):		
	CBD	
	Urban (non-CBD)	
	Suburban (non-CBD)	X
	Suburban CBD	
	Rural	
	Not Given	

Competition Within Area (select one):		
	High	
	Medium	X
	Low	

Drive-Through Description :	1 Lane
Gross Floor Area (estimated)	2,500 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	**10**	**12:26pm**
Thursday	**8**	**12:17pm, 6:57pm**
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	934
Land Use/Building Type:	Fast Food with Drive Thru

Name of Business:	White Castle
Address:	1111 Cambridge St
City:	Hopkins
State:	MN
Zip Code:	55343

Date(s)	February 1-2, 2012 (Wednesday-Thursday)

Weather Conditions	High 32-36 °F and Fog

Location Within Area (select one):		
	CBD	
	Urban (non-CBD)	
	Suburban (non-CBD)	X
	Suburban CBD	
	Rural	
	Not Given	

Competition Within Area (select one):		
	High	
	Medium	X
	Low	

Drive-Through Description :	1 Lane

Gross Floor Area (estimated)	1,750 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	**8**	**5:26pm**
Thursday	**5**	**8:13am, 12:10pm, 1:25pm, 3:22pm, 8:54pm**
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	881
Land Use/Building Type:	Pharmacy/Drugstore w/ Drive-Thru
Name of Business:	CVS Pharmacy
Address:	Medicine Lake Rd & Winnetka Ave
City:	New Hope
State:	MN
Zip Code:	55427
Date(s)	February 7-8, 2012 (Tuesday-Wednesday)
Weather Conditions	High 32 °F and Clear

Location Within Area (select one):	
CBD	
Urban (non-CBD)	
Suburban (non-CBD)	X
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):	
High	X
Medium	
Low	

Drive-Through Description :	2 Lanes
Gross Floor Area (estimated)	18, 700 sq. ft.

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday	**1**	**13 times**
Wednesday	**2**	**5:55pm**
Thursday		
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	881
Land Use/Building Type:	Pharmacy/Drugstore w/ Drive-Thru
Name of Business:	CVS
Address:	2426 W Broadway Ave
City:	Minneapolis
State:	MN
Zip Code:	55411
Date(s)	February 7-8, 2012 (Tuesday-Wednesday)
Weather Conditions	High 32 °F and Clear

Location Within Area (select one):		Competition Within Area (select one):	
	CBD		
	Urban (non-CBD)		
X	Suburban (non-CBD)	High	
	Suburban CBD	Medium	X
	Rural	Low	
	Not Given		

Drive-Through Description :	2 Lanes
Gross Floor Area (estimated)	14,200 sq. ft

	Maximum Queue	Time(s) Max Queue Occurred
Sunday		
Monday		
Tuesday	**4**	**5:28pm**
Wednesday	**4**	**6:38pm**
Thursday		
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	881
Land Use/Building Type:	Pharmacy/Drugstore w/ Drive-Thru
Name of Business:	CVS
Address:	3655 Central Ave NE
City:	Minneapolis
State:	MN
Zip Code:	55418
Date(s)	February 7-8, 2012 (Tuesday-Wednesday)
Weather Conditions	High 32 °F and Clear

Location Within Area (select one):		Competition Within Area (select one):	
	CBD		
X	Urban (non-CBD)	High	
	Suburban (non-CBD)	Medium	X
	Suburban CBD	Low	
	Rural		
	Not Given		

Drive-Through Description :	2 Lanes
Gross Floor Area (estimated)	14,200 sq. ft

	Maximum Queue	Time(s) Max Queue Occurred
Sunday		
Monday		
Tuesday	**2**	**1:57pm, 3:35pm, 5:48pm, 6:07pm, 7:10pm**
Wednesday	**2**	**3:03pm, 3:52pm, 4:07pm, 4:46pm, 5:12pm, 5:20pm, 6:43pm**
Thursday		
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	881
Land Use/Building Type:	Pharmacy/Drugstore w/ Drive-Thru
Name of Business:	Walgreens
Address:	540 Blake Rd N
City:	Hopkins
State:	MN
Zip Code:	55343
Date(s)	February 1-2, 2012 (Wednesday-Thursday)
Weather Conditions	High 32-36 °F and Fog

Location Within Area (select one):		
	CBD	
	Urban (non-CBD)	
	Suburban (non-CBD)	X
	Suburban CBD	
	Rural	
	Not Given	

Competition Within Area (select one):		
	High	
	Medium	X
	Low	

Drive-Through Description :	2 Lanes
Gross Floor Area (estimated)	14,375 sq. ft

	Maximum Queue	Time(s) Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	**4**	**2:33pm, 3:31pm, 4:46pm, 4:57pm, 5:28pm, 6:26pm, 6:38pm, 8:20pm, 9:20pm**
Thursday	**5**	**4:30pm, 4:52pm, 5:56pm, 6:00pm**
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	881
Land Use/Building Type:	Pharmacy/Drugstore w/ Drive-Thru
Name of Business:	Walgreens
Address:	4200 Winnetka Ave N
City:	New Hope
State:	MN
Zip Code:	55428
Date(s)	February 7-8, 2012 (Tuesday-Wednesday)
Weather Conditions	High 32 °F and Clear

Location Within Area (select one):		Competition Within Area (select one):	
	CBD		
	Urban (non-CBD)		
X	Suburban (non-CBD)	High	X
	Suburban CBD	Medium	
	Rural	Low	
	Not Given		

Drive-Through Description :	2 Lanes
Gross Floor Area (estimated)	16675 sq. ft.

	Maximum Queue	Time(s) Max Queue Occurred
Sunday		
Monday		
Tuesday	**3**	**4:03pm**
Wednesday	**3**	**8:34am, 4:04pm, 4:51pm**
Thursday		
Friday		
Saturday		

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:	881
Land Use/Building Type:	Pharmacy/Drugstore w/ Drive-Thru
Name of Business:	Walgreens
Address:	4100 W Broadway Ave
City:	Robbinsdale
State:	MN
Zip Code:	55422
Date(s)	February 7-8, 2012 (Tuesday-Wednesday)
Weather Conditions	High 32 °F and Clear

Location Within Area (select one):		Competition Within Area (select one):	
	CBD		
	Urban (non-CBD)		
X	Suburban (non-CBD)	High	X
	Suburban CBD	Medium	
	Rural	Low	
	Not Given		

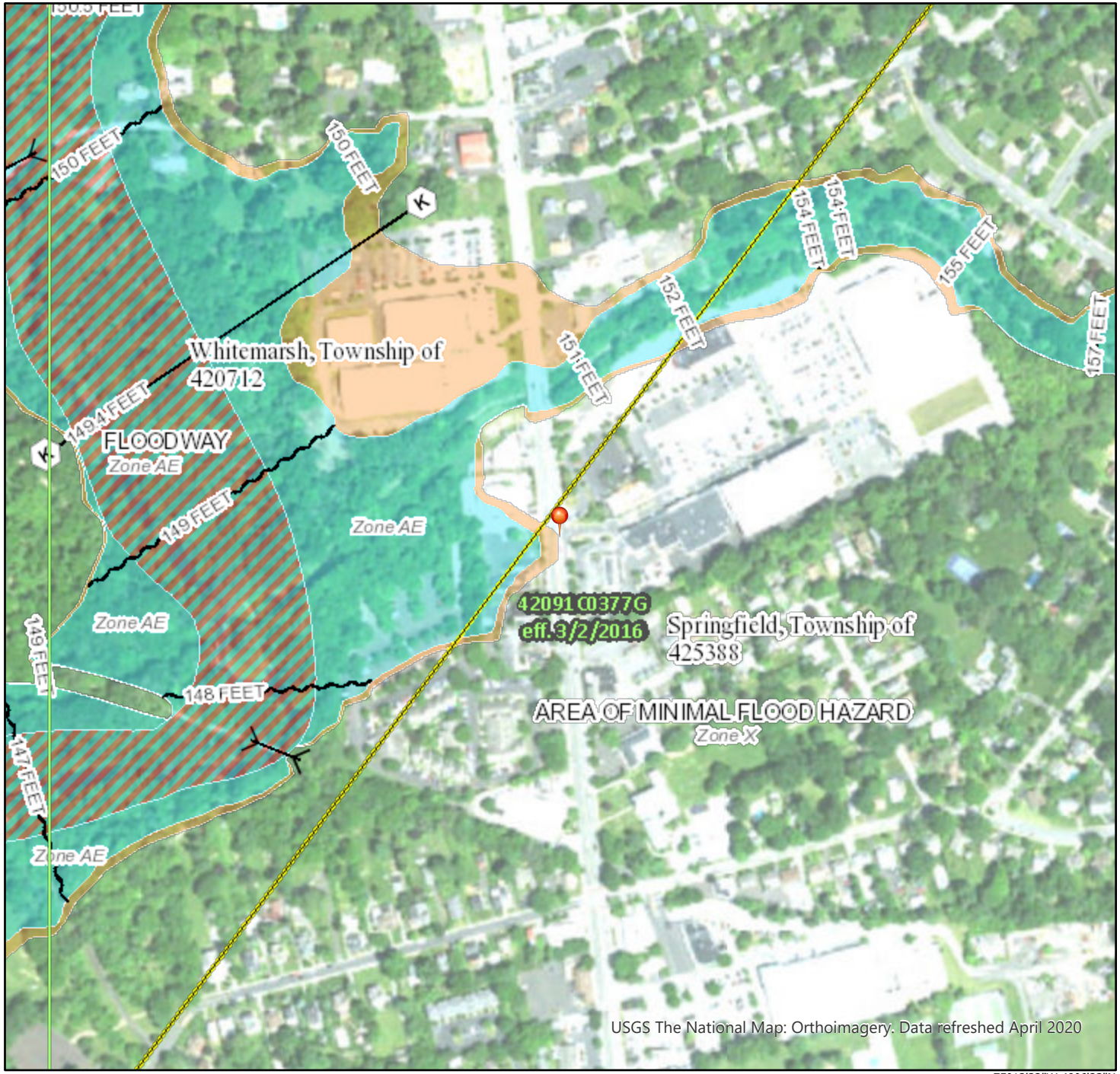
Drive-Through Description :	1 Lane
Gross Floor Area (estimated)	14,400 sq. ft.

	Maximum Queue	Time(s) Max Queue Occurred
Sunday		
Monday		
Tuesday	**3**	**4:49pm**
Wednesday	**2**	**12:49pm**
Thursday		
Friday		
Saturday		

National Flood Hazard Layer FIRMette

FEMA

75°13'9"W 40°6'51"N



75°12'32"W 40°6'23"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 8/28/2020 at 11:55 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

WOODROW & WA ASSOCIATES

April 20, 2021
Revised April 21, 2021

Mark Penecale, Planning Director
Springfield Township
1510 Paper Mill Road
Wyndmoor, PA 19038

Reference: 1890 Bethlehem Pike – Flourtown Shopping Center
New Development Proposal

Dear Mark:

My office is in receipt of various documents related to the proposed introduction of a new bank and restaurant to the Flourtown Shopping Center property. The project is bisected by the municipal boundary delineating both Whitemarsh Township and Springfield Township. We have been in contact with the professional staff in Whitemarsh Township to assure to the best of our ability that our reviews and interests are aligned. The information reviewed is as follows:

1. Landcore Engineering Consultants, P.C. – A 13-sheet set of plans dated March 4, 2021 and bearing no revision date at this time.

2. Landcore Engineering. – A Stormwater Management Report dated March 4, 2021

3. F. Tavani and Associates Traffic Engineers – Drive through queue investigation

4. Landcore Engineering– Sewer Planning Exemption request dated March 4, 2021

5. Springfield Township correspondence from your office dated October 27, 2020, indicating that our zoning hearing board granted a variance for the number of parking stalls in the shopping center.

In general, the plans propose the construction of a new building to house a 2,450 square-foot bank with drive-through, as well as a new 2,100 square-foot restaurant. This work is to occur upon existing paved parking surface and will require the reconfiguration of certain parking lot driveway aisles and entrance experience. Several major topics were revealed during our site observations and plan review.

Approvals / Permits / Reviews - Any approval the board would grant this application must be conditioned the applicant securing the following approvals, permits, and reviews.

- PA DEP – Sewage Facilities Planning

Threshold Issues – The following topics represent the most important aspects of the application from our perspective:

1. **Traffic Circulation** – It is my understanding that the traffic circulation patterns within the shopping center have been the subject of discussion for many years. The introduction of the new

uses and the reconfiguration of the parking lots will impact these discussions. The new intersection that I have labeled as "Point of Interest A" on the attached sketch, as well as the five perpendicular parking spaces that back on to this driveway, need to be investigated with greater scrutiny.

2. **Pedestrian Connectivity** – Pedestrian connectivity from the existing parking lot, as well as from the existing sidewalks on Bethlehem Pike, should be investigated for the shopping center in general, as well as for the new uses. During our site investigation, we observed many people walking throughout the center and out to Bethlehem Pike.

3. **Stormwater Management** – While the proposal does not increase the amount of impervious cover on the property, we would ask for the developer's cooperation to seek improvements to the watershed, including volume reductions and water quality improvements.

4. **Landscaping** – We thank the applicant for taking this opportunity to introduce additional landscaping into the parking lot. The very barren areas will be improved. However, we would ask that the developers also use this opportunity to expand the scope of landscape enhancement in the southeast corner of shopping center.

General Review:

1. This application creates an opportunity to improve the balance of the shopping center aesthetically. As an example, the frontage of the Wells Fargo Bank should have the river rock replenished and landscaping refreshed.

2. This application will trigger inspection of the public portion of sidewalk that will be identified for repair.

3. This application will trigger the conversation regarding the maintenance of the loading areas behind the supermarket with regard to collection of trash, proper maintenance of landscape buffers and shielding of light fixtures.

Subdivision Ordinance Review:

Section 95-7.I – The application is supplemented by a traffic impact analysis. However, this analysis is limited to the stacking provisions of the drive-through bank teller window. The traffic study must be expanded to deal with several issues as follows:

1. The reconfigured parking lot creates a definitive exit and entrance driveway to the southwest side of the newly proposed restaurant. The plan calls for five parking spaces to back into this new significant thoroughfare. I would suggest the spaces should be removed as they represent dangerous traffic conflict.

2. The new configuration of drive aisles creates a fairly significant intersection to the southeastern side of the proposed restaurant and existing parking lot traffic pattern. The traffic study should speak to methods to control traffic, organize a traffic pattern and improve safety at this now key intersection.

3. The existing turning radii onto north bound Bethlehem Pike must be improved to accommodate the truck traffic.

4. It is my understanding that significant discussions have occurred in the past with regard to the traffic pattern and the balance of the shopping center. I believe this application triggers an obligation to revisit the circulation pattern in front of McDonald's, McDonald's delivery vehicles and the general traffic pattern associated with the Movie Tavern.

5. The two-way traffic pattern in front of the Movie Tavern and Dollar Tree should be evaluated for safety improvements for both pedestrians and drivers; at a minimum all paint markings in the facility should be refreshed. Existing deteriorated asphalt paving should be repaired. Consideration should be given to narrowing the driveway in key locations to service traffic calming improvements. Landscape islands, similar to those found in Ambler Borough, can create defined drop-off areas and reduce the speedway conditions that are currently present. These landscape bump outs can serve as pedestrian refuge, narrowing the crossing of traffic pattern from parking spaces to the retail stores.

    a. Chapter 95-10 – This portion of our code identifies the requirements for improving streets abutting the proposed land development. The section speaks to not only paving width, but also to right-of-way width. The ordinance obligates a minimum of a 70-foot right-of-way and a 50-foot cartway. Sheet 3 of 13 of the plan set should clearly identify the existing legal right-of-way, the obligated ultimate right-of-way, as well as the obligated cartway paving width for the frontage of the property.

    b. Chapter 95-11.I (3) – Our code obligates the developer to provide significant parking area landscaping. The existing parking facility for the shopping center falls short of these obligations. The board of commissioners must weigh the nonconforming status of the parking facilities versus an obligation to improve the property to meet current regulations.

I look forward to the opportunity to discuss these opinions and issues in greater detail with the applicant and our elected officials in the coming days.

Sincerely,

Timothy P. Woodrow, P.E.
Interim Township Engineer
Woodrow & Associates, Inc.

TPW/del

cc: A. Michael Taylor, Township Manager – Springfield Township
James J. Garrity, Esq., Wisler Pearlstine, LLP. – Township Solicitor
Alex Tweedie, P.E. – Landcore engineering
Krista Heinrich, P.E. – Whitemarsh Township Engineer
Charles Guttenplan, Director of Planning and Zoning – Whitemarsh Township
Craig Robert Lewis, Esq. – Kaplin Stewart

The Township of Springfield

MONTGOMERY COUNTY, PENNSYLVANIA

Township Bldg., 1510 Paper Mill Rd., Wyndmoor, PA 19038

website: www.SpringfieldMontco.org Phone: 215-836-7600

Fax: 215-836-7180

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President

Eddie T. Graham
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Peter D. Wilson
Michael E. Maxwell
Jonathan C. Cobb
James M. Lee

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A. Michael Taylor
Secretary-Manager

James J. Garrity
Solicitor

Bonny S. Davis
Treasurer / Tax Collector

Mark W. Eisold
Engineer

Craig Robert Lewis, Esq.
Union Meeting Corporate Center
910 Harvest Drive, P. O. Box 3037
Blue Bell, PA 19422-0765

October 27, 2020

Re: **Zoning Hearing Board Application #20-13 for the property located at 1842 Bethlehem Pike, Flourtown, PA 19031. Known as Parcel #520001903007, Parcel #520001904006 and Parcel #520001904105.**

Dear Mr. Lewis,

This letter is sent to inform you that on Monday, October 26, 2020 the Zoning Hearing Board of Springfield Township approved the dimensional variance from Section 114-134. A. (6) of the Zoning Ordinance of Springfield Township to allow for the on-site parking to be reduced from the existing 713 parking stalls to 699 parking stalls.

The approval of this application was unanimous with one condition.

Condition: That noise mitigation be addressed to the satisfaction of the Springfield Township Board of Commissioners during the land development review process.

This approval will expire twelve (12) months from the date of this decision should the required land development application not be submitted. If there are any questions that you may have, please feel free to contact me at 215-836-7600, ext. 1114.

Sincerely,

Mark A. Penecale
Director of Planning & Zoning

Cc: ZHB Members by way of email
ZHB Solicitor by way of email
Michael Taylor, Township Manager, Springfield Township

1559310-1

The Township of Springfield

MONTGOMERY COUNTY, PENNSYLVANIA

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James J. Garrity
Solicitor

Bonny S. Davis
Treasurer / Tax Collector

Timothy P. Woodrow, PE
Engineer

April 22, 2021

Mark Penecale
Director of Planning and Zoning
Springfield Township
1510 Paper Mill Rd.
Wyndmoor, PA 19038

RE: Flourtown Shopping Center
LOCATION: 1874 Bethlehem Pike

Dear Mr. Penecale:

The Springfield Township Emergency Services Board is in receipt of plans for the addition of a new building to be occupied as a restaurant and bank. The building will be located between Mr. P's and the exit to Bethlehem Pike. The building will be located in both Whitemarsh and Springfield Townships. The Board had no objections to the plan and commented only that it appeared fire sprinkler systems were to be installed.

If there should be any questions please feel free to contact me.

Sincerely,

Charles H. Baily
Fire Marshal

Cc: Timothy Woodrow, PE Township Engineer
Michael Taylor, Township Manager

WHITEMARSH TOWNSHIP

To: Charlie L. Guttenplan, Director of Planning & Zoning/Zoning Officer

From: NICHOLAS W. WEAVER, FIRE MARSHAL

Subject: **SLD #02-20 Federal Realty/Flourtown Shopping Center**

Date: April 22, 2021

cc:

This application cannot be approved at this time for the following outstanding items:

1. Update Fire Apparatus Access and Turning plan with correct dimensions. Overall length 49' and wheelbase 23' (Tandem axle).

Nicholas W. Weaver
Fire Marshal
616 Germantown Pike
Lafayette Hill, PA 19444
Phone: 610-825-3535 ext. 2614
Email: nweaver@whitemarshtwp.org

WHITEMARSH TOWNSHIP

To: Richard L. Mellor, Jr., Township Manager

From: SEAN HALBOM, ASST. TOWNSHIP MANAGER

Subject: **April 6, 2021 STC Meeting Summary: SLD# 02-20 (Flourtown Shopping Center)**

Date: August 10, 2020

cc: Krista Heinrich, PC, Township Engineer; Charlie Guttenplan AICP, Director of Planning and Zoning; Pat Doran, Chair, Planning Commission; Robert Bacine, Chair, Zoning Hearing Board

---

At the April 6th, 2021 Shade Tree Commission meeting Alex Tweedie presented on behalf of the applicant for SLD# 02-20, Flourtown Shopping Center. The landscaping plans were approved in a 5-0 vote by the Shade Tree Commission with the following changes to the presented plans:

- All trees displayed with a 2" caliper will be replaced with trees measuring at 3" caliper.
- The non-native tree species will be swapped for a native tree species.
- The non-native perennial plants will be swapped for native perennial species.

Sean Halbom, MPA
Assistant Township Manager
616 Germantown Pike
Lafayette Hill, PA 19444
Phone: 610-825-3535 ext. 2604
Email: shalbom@whitemarshtwp.org

GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES

April 22, 2021

File No. 20-06067

Mr. Richard L. Mellor, Jr., Township Manager
Whitemarsh Township Municipal Building
616 Germantown Pike
Lafayette Hill, PA 19444

Reference: Land Development Plan Review
1890 Bethlehem Pike – Flourtown Shopping Center
Whitemarsh Township, Montgomery County, Pennsylvania
SLD #02-20

Dear Mr. Mellor:

In reference to the above-mentioned property, we have reviewed plans prepared by Landcore Engineering Consultants, PC, dated March 4. 2021, with no noted revisions. The property and the proposed improvements are located in both Springfield and Whitemarsh Townships, and the comments herein refer only to the portions of those located in Whitemarsh Township. The following comments are offered for your consideration:

ZONING ORDINANCE:

During the course of our review, we have identified various potential zoning issues which are offered for your consideration. Please note that the following comments are being provided for use in administering and enforcing the Whitemarsh Township Zoning Ordinance and all determinations with respect to the Ordinance are deferred to the Zoning Officer.

	Section	Description
1.	116-22	The plans must be revised to include a note which states that the permanent removal of topsoil from land within the Township is prohibited.
2.	116-28(A)(2)	The applicant shall furnish a letter from the appropriate authority indicating the availability and supply of water for the proposed project to the Zoning Officer.
3.	116-29	The applicant must obtain the approval of the Whitemarsh Township Authority with regard to any adjusted connection or sanitary sewerage needs.

	Section	Description
4.	116-37	The applicant must follow the procedure for the granting of conditional uses described within this section of the ordinance. In addition to the comments contained in this review, a separate letter was issued on March 26, 2021 related to the Conditional Use application.
5.	116-37(F)	The applicant must provide evidence in sufficient detail to demonstrate that the proposed use or change will not have a harmful effect on local vehicular or pedestrian traffic due to size or bulk of the proposed use or change, expected daily and peak hour traffic generated by the proposed use or change, location of entrance and exit drives or new streets or design and capacity of off-street parking facilities.
6.	116-161	The Floodplain Conservation District shall be shown as an overlay to the existing underlying districts as shown on the zoning map. As such, the Floodplain Conservation District shall serve as a supplement to the underlying district provisions. Section 116-159 states that the Floodplain Conservation District shall include areas adjoining any watercourse, drainage course, or body of water subject to inundation or overflow; as defined by the most recent revision of the FEMA Flood Insurance Study, or the presence of floodplain soils. The plans must be revised to indicate the location of the Floodplain Conservation District, in compliance with this section of the ordinance.
7.	116-161	The boundary of the 100-year floodplain must be revised in order to be consistent with FEMA FIRM Mapping, which indicates the boundary to be defined by elevation 151.5±.
8.	116-184(D)(6)(a)	This section of the ordinance requires the provision of one off-street parking space for every 50 square feet of floor space devoted to patron use or one off-street parking space for every three persons of design capacity based on the Table of the Maximum Floor Area Allowance Per Occupant in the current edition of the Whitemarsh Township Building Code or the maximum occupancy allowance under the provisions of the Whitemarsh Township Fire Prevention Code, whichever number of parking spaces is greater. Note *4 in the Bulk Requirements Table indicate that these were unavailable. The applicant's engineer should coordinate with the Fire Marshal with regard to the maximum occupancy allowance and adjust the parking calculation, if necessary.
9.	116-184(G)	All parking shall conform to the requirements of the Whitemarsh Township Fire Prevention Code as acted and amended. The applicant must obtain approval from the Whitemarsh Township Fire Marshal.
10.	116-258	The Riparian Corridor Conservation District shall be shown as an overlay to the existing underlying districts as shown on the Zoning Map. As such, the Riparian Corridor Conservation District shall serve as a supplement to the underlying district provisions.
11.	116-288(G)	The applicant must submit architectural plans and elevations which demonstrate that the new buildings would have an architectural scale and character commensurate with the existing pre-1940 architecture of the area.
12.	116-290(E)(5)(a)	Drive-through windows are permitted for permitted banks and retail uses, provided that a transportation impact study is submitted in accordance with the applicable standards of § 105-21B(9) of the Subdivision and Land Development Ordinance.

	Section	Description
13.	116-291(A)(2)	All utility lines serving all uses shall be placed underground from the edge of the right-of-way to the place of service. The Board of Supervisors may, upon recommendation of the Township Engineer that underground utilities would be disruptive to the site, allow them to remain above ground for historic buildings.
14.	116-184(D)(6), 116-184(D)(8), 116-291(A)(5)	The parking tabulation appears to indicate that 39 parking spaces are required and 5 are being provided. It appears that these 5 spaces constitute the number of spaces located in Whitemarsh Township, and there may be available parking spaces in the Springfield Township portion of the site. Further, it appears that the total number of parking spaces required by for the entire site is 999, where 699 spaces are being provided. It is our understanding that parking requirements have been addressed as part of both Whitemarsh Township and Springfield Township Zoning Hearing Board Decisions.
15.	116-184(E)	A variance was granted as part of Zoning Hearing Board Decision 2020-36 so as to not require landscape strips within the parking lot.
16.	116-185	A special exception was granted as part of Zoning Hearing Board Decision 2020-36 so as to permit shared parking with the adjacent lot owned by the same owner in Springfield Township.
17.	116-291(A)(7)(b)	A variance was granted as part of Zoning Hearing Board Decision 2020-36 so as to permit parking between the street line and front principal building plane in excess of 25% of the total parking, and to not require a wall and associated landscaping.
18.	116-291(B)	The applicant must provide evidence in sufficient detail to demonstrate compliance with the building design requirements contained in this section of the ordinance.
19.	116-291(B)(7)(a)	All ground-mounted exposed HVAC units or other utility equipment shall be screened from view. This shall be done through the use of masonry walls and landscaping.
20.	116-291(B)(7)(b)	Trash Enclosures shall be screened through the use of masonry walls, landscaping, or similar measures approved by the Board of Supervisors.
21.	116-291(C)	All buffers shall be prescribed in accordance with Subdivision and Land Use Ordinance § 105-52; provided, however, that the width of the buffers shall be based upon the required setbacks as prescribed in § 116-295.
22.	116-291(D)	The lighting plan must be revised in order to demonstrate compliance with the requirements contained in this section of the ordinance.
23.	116-295	If/when adjacent to a residentially zoned and/or used property, the minimum setback shall be 45 feet. In all other cases, minimum side/rear yard setbacks shall be 15 feet. The yard setback along the adjacent land zoned B-Residential must be revised accordingly.
24.	116-296(C)	The Bulk Requirements Table indicates that front yard parking setback is 179.35 feet, which must be revised to reflect the distance from the ultimate right-of-way line and several existing parking spaces adjacent to Bethlehem Pike.

	Section	Description
25.	116-207.1, 116-208, 116-209, 116-210, 116-298	These sections of the ordinance describe signs which are permitted in the districts on which the subject property is located. The plans must be revised to include details for all proposed signs to be installed as part of the design, in order to demonstrate compliance with these sections of the ordinance, unless the intent is do this as a separate permit application following land development approval.

SUBDIVISION AND LAND DEVELOPMENT ORDINANCE

	Section	Description
26.	105-21(B)(1)(f)	The plans must be revised to include a location map showing relation of site to adjoining properties and streets within 1,000 feet. (Scale: one-inch equals 800 feet.)
27.	105-21(B)(1)(n)	The plans must be revised to show existing principal buildings (and their respective uses) and driveways on the peripheral strip. Sewer lines, storm drains, culverts, bridges, utility easements, quarries, railroads, and other significant man-made features within 500 feet of and within the site, including properties across streets.
28.	105-21(B)(9)(c)[2]	The applicant is advised that the Township Planning Commission, at its discretion, may request the preparation of a traffic impact study for any land development.
29.	105-21(B)(9)(c)[2]	The application included a traffic impact analysis limited to study of queuing at the bank drive-through, which must be expanded to address vehicular flow through the site. At a minimum, the following must be addressed: • The transportation impact study shall contain full documentation of the proposed internal and existing external transportation system. This description shall include proposed internal vehicular, bicycle and pedestrian circulation, all proposed ingress and egress locations, all internal roadway widths and rights-of-way, parking conditions, traffic channelizations, and any traffic signals or other intersection control devices within the site. The site design shall be shown to maximize potential public transportation usage to and from the development. • During a site visit, it was observed that the secondary unsignalized site access to the site is heavily used. The proposed improvements appear to align a new drive aisle with an existing drive aisle to the South, which could encourage additional flow to/from the secondary site access. Additional study of this secondary access should be performed, to evaluate the impact of the realignment on overall vehicular flow through the site. Consideration should be given to aligning the secondary site access with the 2-way main East-West drive aisle along the front of the proposed building. The applicant's engineer must also address the interaction between the 5 proposed parking spaces along the new drive aisle. • During a site visit, numerous pedestrians were observed accessing the site via the secondary unsignalized site access to the site via the grass area along the driveway. A pedestrian needs analysis should be performed to evaluate the necessity for a dedicated pedestrian route in this area. • Pavement markings should be provided to supplement the proposed 'do not enter' signage to the one-way drive aisle at the rear of the new building. • The plans must be revised to address traffic flow during construction; especially how vehicles entering from Bethlehem Pike will be routed.

	Section	Description

30. 105-21.1(K)(2) Within the North Transportation Service Area an impact fee in the amount of Two Thousand Eight Hundred and Twenty-Five Dollars ($2,825.00) per anticipated peak hour trip must be provided by the applicant. Based on data documented within the latest edition of the ITE Trip Generation Manual, will generate 71 PM peak hour trips. Therefore, the traffic impact fee totals $200,575.00 ($2,825.00 x 71 peak hour trips).

31. 105-30 As defined by Section 105-29(C) and 105-30(A), streets adjacent to the site are subject to the following requirements:

Street Name	Classification	Required Ultimate R.O.W	Required Cartway Width	Curbs	Sidewalks	Tree Zone
Bethlehem Pike	Arterial	*	*	Required	Required	Required

* As recommended by PADOT or the Montgomery County Roads & Bridges Dept.

The plans must be revised in order to demonstrate compliance with the requirements of this section of the ordinance and to indicate the source or plan reference used to determine the Right-of-way width for Bethlehem Pike (SR 2018).

32. 105-36(E), 105-38(M) In general, no private driveway shall take access to an arterial or major collector street. Driveways shall be so located and designed as to provide a reasonable sight distance at street intersections. The plans must be revised to indicate available site distance at the driveway connection to Bethlehem Pike.

33. 105-37 The plans must be revised to demonstrate compliance with the sight distance requirements of this section of the ordinance and/or the required sight distances contained in the most current revision of Pennsylvania Code Title 67 Chapter 441, whichever is more restrictive.

34. 105-38(U), 105-38(V) All common parking areas shall be adequately lighted during after-dark operating hours and all lights shall be located on raised parking islands, not on the parking surface. A Lighting Plan which indicates an adequate level of illumination in all parking areas must be submitted to the Township.

35. 105-39(A) This section of the ordinance requires that all parking areas shall have at least one tree of three inches minimum caliper for every two parking spaces provided. The 'Plant Schedule' on the Landscaping Plan must be revised to call for 3" cal., instead of 2" cal.

36. 105-47(E) Sidewalks and pedestrian paths shall be adequately lighted, if required by the Board of Supervisors. The required Lighting Plan must also demonstrate compliance with the requirements of this section of the ordinance.

37. 105-47(J) This section of the ordinance states that sidewalks adjacent to angle parking areas shall be set back a minimum of five feet to prevent car overhang from restricting pedestrian movement along the sidewalk.

	Section	Description
38.	105-48	Within any land development, street trees shall be planted along all streets where suitable street trees do not exist. The minimum trunk diameter, measured at a height of six inches above the root ball, shall be three inches. The required Landscaping Plan must show existing and proposed trees, if required, along Bethlehem Pike. Additionally, the note in the Landscape Requirements Chart on Sheet 10 indicating "no street frontage" is not consistent with the plan, and must be revised in order to list the dimension of site street frontage along Bethlehem Pike.
39.	105-49	Interior crosswalks may be required wherever necessary to facilitate pedestrian circulation and to give access to community facilities in blocks of over 1,000 feet in length. The following must be addressed: • There do not appear to be any existing walks connecting the internal site to the sidewalks along Bethlehem Pike. • Two proposed pedestrian crossings in front of the new building must be revised to direct pedestrians to a safe landing area, instead of towards a vehicle drive aisle. • A pedestrian crossing should be provided across the drive through aisle, connecting the existing restaurant to the proposed buildings.
40.	105-52	Buffer yards are required between land developments and along existing streets to soften visual impact, to screen glare, and to create a visual barrier between conflicting land uses. The plans must be revised to provide a table detailing the buffer yard requirements, in accordance with Section 105-52.B as well as the actual buffers provided. All landscaping plans are subject to the review and approval of the Shade Tree Commission.
41.	105-53(D)	This section of the ordinance requires the dedication of land in the amount of 10% of the total Site Area for Park and/or Recreational use. The applicant has the option of offering a fee in lieu of dedicating actual land area and can also provide a combination of a fee in lieu and dedication of land. All offers of land and/or fees in lieu of dedication must meet the requirements of this section of the ordinance.
42.	105-70	The plans must be revised to indicate the type of all proposed traffic control signage currently shown on the plans. Additionally, the following must be addressed: • A 'No right turn' sign must be added to the sign post at the Drive-Through bypass lane • A sign located nearest to the trash enclosure must be labeled • A 'No right turn' sign must be added to the Northbound 2-way approach to the intersection nearest the trash enclosure.
43.	105-76	The applicant must obtain a letter of approval from the Township Fire Marshal in order to ensure that adequate fire protection is provided.
44.	105-81	All electric, telephone and communication service facilities, both main and service lines, shall be provided by underground cables, installed in accordance with the prevailing standards and practices of the utility and other companies providing such service. Final plans shall show locations of all utilities and shall be coordinated with landscaping.
45.	105-83	Street trees and other required plantings shall be in accordance with §§ 105-39, 105-48 and 105-52.

	Section	Description
46.	105-89	The developer shall enter into a written agreement with the Township in the manner and form approved by the Solicitor wherein the developer shall agree, to construct or cause to be constructed at his own expense all proposed improvements shown on the approved land development plan, all in strict accordance with the standards and specifications of the Township and within the time specified in said agreement, and to deposit with the Township financial security in an amount sufficient to cover the cost of all subdivision or land development improvements, including both public and private improvements.

CHAPTER 55 - TREE PROTECTION STANDARDS

	Section	Description
47.	55-4(A)	A Tree Survey Plan prepared in accordance with the requirements contained in this section of the ordinance must be submitted to the Township. The tree survey plan shall be reviewed by the Shade Tree Commission in a public meeting.
48.	55-4(A)(6)	Any tree lost or destroyed within the past five years must be shown on the Tree Survey Plan as a “Removed Tree” and must be replaced as part of the proposed project.
49.	55-4(B)(2)	A note must be added to the plans requiring a pre-construction conference with the Township Shade Tree Commission prior to start of construction.
50.	55-4(B)(6)(a)	This section of the ordinance requires that every tree determined to be living and healthy, with a DBH of 6 inches or greater and which is designated to be removed or which is destroyed, shall be replaced with one or more new shade trees of a type approved by the Township with a trunk diameter of not less than 3 inches in caliper. The total caliper of replacement trees, measured at 6 inches above the ground line, shall equal or exceed the DBH of the tree removed. Calculations that indicate compliance with the tree replacement requirements contained in this section of the ordinance must be added to the plans.
51.	55-4(B)(6)(c)	Replacement trees shall be planted in addition to the trees required by planting requirements otherwise set forth in the Subdivision and Land Development Code.

GRADING, EROSION CONTROL, STORMWATER MANAGEMENT AND BEST MANAGEMENT PRACTICES ORDINANCE:

	Section	Description
52.	58-8(B)	Stormwater facilities shall be accessible to permit periodic maintenance and an access easement shall be provided to permit such access. The following blanket stormwater easement note, must be added to the plan: *'Stormwater facilities shall be owned and maintained by the property owner in perpetuity. The property owner shall provide a blanket stormwater access easement to the Township for the purpose of access to the stormwater facilities. If, in the judgment of the Township Engineer, the owner has failed to maintain the stormwater facilities in such a manner as to ensure their proper functioning, the Township after providing a written notice, shall have the right to enter upon the lands of the owner and to make any repairs as may be necessary to the stormwater facilities to ensure that such facilities function and perform in accordance with the design specifications. Any and all costs incurred by the Township for such repairs and/or maintenance shall be paid in full by the owner. A lien or liens may be placed against the property if the owner fails to remit payment within sixty (60) days.'*
53.	58-11(G)(1)(b)	The plans must be revised to include a note stating the ownership and maintenance of stormwater BMPs shall be the responsibility of the owner or private management entity of the property.
54.	58-11(G)(3)	An as-built survey of all stormwater BMPs must be submitted to the Township in paper and digital (dwg) formats. A note must be added to the plans stating an as-built survey will be completed and submitted in both formats to the Township.
55.	58-11(H)(1)	The property owner shall sign an operations and maintenance agreement with the Township addressing stormwater BMPs that are to be privately owned.
56.	58-12(B)	A note must be added to the plans stating that plans for the earth disturbance activity, bearing the stamp of approval of the Township Engineer, shall be maintained at the site during the progress of the grading work and until the work has been completed.
57.	58-15(C)	Roof drains shall discharge to infiltration areas or vegetative BMPs to the maximum extent practicable. The plans must be revised to indicate the location of all stormwater roof drains.

RESOLUTION 2004-8:

	Section	Description
58.	I(B)(1)	The plans must be revised to indicate how the compost filter sock will be attached to the paved surface.
59.	I(B)(4)(g)	This section of the ordinance requires provisions be made to effectively accommodate the increased runoff caused by changed soil and surface conditions during and after development of the site.
60.	I(B)(4)(n)	A note must be added to the plans to address measures for dust control during grading.

	Section	Description
61.	II(A)(8)	If in the course of reviewing the stormwater management plan, the Township Engineer determines that off-site improvements are necessary to satisfactorily control the stormwater from the site, the applicant shall be responsible for such off-site improvements.
62.	II(C)(1)	All earth disturbance activities shall limit the rate of stormwater runoff so that no greater runoff is permitted from any point on the site than that of the site at its maximum development potential in its natural condition of the same frequency storm, except where deemed necessary by the Township Engineer. Where farm, field, or disturbed earth is the existing condition, meadow shall be used as the starting basis for such calculations, regardless of the actual conditions.
63.	II(C)(2)	The increased runoff from the proposed development must be controlled by permanent runoff control measures. All runoff control measures shall be evaluated for their effectiveness during the one-hundred-year storm. The required stormwater management calculations must demonstrate compliance with the requirements of this section of the ordinance.
64.	II(C)(3)	All plans and designs for stormwater management systems and facilities submitted to the Township for approval shall determine stormwater peak discharge and runoff by use of the Soil Cover Complex Method as set forth in the U.S. Department of Agriculture, Soil Conservation Service Publication entitled, "Urban Hydrology for Small Watersheds," Technical Release #55 or latest edition thereof.
65.	II(C)(8)(d)	The following note shall be attached to all drainage plans and signed and sealed by the applicant's Registered Professional Engineer experienced in geotechnical and soil engineering: *"I certify that the proposed facility is/is not underlain by limestone."*
66.	II(F)(3)(d)(4)[d]	A detailed soils evaluation of the project site shall be performed to determine the suitability of any infiltration BMPs, if any. The evaluation shall be performed by a Registered Professional Engineer experienced in geotechnical engineering or a Certified Professional Soil Scientist and at a minimum, address soil permeability, depth to bedrock, susceptibility to sinkhole formation, and subgrade stability. A copy of the results of the soils evaluation must be submitted to the Township.

ADDITIONAL COMMENTS

67. The construction fence called out on the Erosion and Sediment Control Plan must be shown visually.

Any future submission of the design plans for this project must be accompanied by a letter, prepared by the applicant's engineer, which addresses each of the comments contained in this report. Should you have any questions regarding this matter, please do not hesitate to contact me at this office.

Sincerely,

Krista Heinrich, P.E.
Township Engineer
Gilmore & Associates, Inc.

KH/sl

cc: Mr. Charles L. Guttenplan, AICP – Director of Planning and Zoning
Mr. Sean Kilkenny, Esq.; The Law Offices of Sean Kilkenny, LLC – Township Solicitor *(via email)*
Mr. Sean Halbom – Assistant Township Manager
Mr. Robert A. Sztubinski, B.C.O. – Director of Building & Codes *(via email)*
Mr. Nick Weaver – Fire Marshal
Mr. Mark Penacale, Director of Planning & Zoning, Springfield Township
Mr. Timothy P. Woodrow, PE – Springfield Township Engineer
Mr. Andy Bottaro, Federal Realty Investment Trust – Owner/Applicant
Craig R. Lewis, Esq.– Applicant's Attorney
D. Alexander Tweedie, PE – Landcore Engineering, Applicant's Engineer

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MONTGOMERY COUNTY
BOARD OF COMMISSIONERS

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MONTGOMERY COUNTY
PLANNING COMMISSION

MONTGOMERY COUNTY COURTHOUSE • PO BOX 311
NORRISTOWN, PA 19404-0311
610-278-3722
FAX: 610-278-3941 • TDD: 610-631-1211
WWW.MONTCOPA.ORG

SCOTT FRANCE, AICP
EXECUTIVE DIRECTOR

April 16, 2021

Mark Penecale, Director of Planning & Zoning
Springfield Township
1510 Paper Mill Road
Wyndmoor, Pennsylvania 19038

Mr. Charles L. Guttenplan, AICP, Director of Planning and Zoning
Whitemarsh Township
616 Germantown Pike
Lafayette Hill, Pennsylvania 19444

Re: MCPC #20-0111-003
Plan Name: Flourtown Shopping Center
(4,550 sq. ft. pad site/shopping center on parcels totaling 23.65 acres.)
Situate: North of Springfield Avenue/south of W. Valley Green Road
Springfield & Whitemarsh Townships

Dear Mr. Penecale and Mr. Guttenplan:

We have reviewed the above-referenced land development plan in accordance with Section 502 of Act 247, "The Pennsylvania Municipalities Planning Code," as you requested on March 19, 2021. We forward this letter as a report of our review.

BACKGROUND

The applicant, Federal Realty Investment Trust, is proposing to construct an addition to the existing Flourtown Shopping Center, which would be located at the northwest corner of the property. As proposed, the building would include a 2,100-square foot restaurant and a 2,450-square foot bank with a drive-through lane. The property is located in both Whitemarsh and Springfield Townships, and the improvements are proposed in what is currently an existing parking area. The majority of the restaurant and a portion of the bank are in Whitemarsh, while a small portion of the restaurant and a portion of the bank building are in Springfield. The Whitemarsh portion of the shopping center is split zoned between the VC-3 Village Commercial District and the B-Residential Zoning District, though the proposed pad site development is

entirely in the VC-3 area. The portion of the proposed site in Springfield is in the township's Shopping Center (S) District.

As an existing shopping center, the site contains a parking lot which is primarily located in the Springfield portion of the property. The applicant has received a variance from the Springfield Township Zoning Hearing Board for the number of on-site parking spaces required. The applicant also received a number of variances related to parking requirements from the Whitemarsh Township Zoning Hearing Board. The submission includes documentation from F. Tavani & Associates-Traffic Engineering & Planning, who concluded that the proposed vehicle stacking capacity for the proposed drive thru facility for the bank is adequate. The property is served by public water and sewer, and the plan is dated March 4, 2021.

COMPREHENSIVE PLAN COMPLIANCE

The Future Land Use element of the 2012 Springfield Township Comprehensive Plan identifies the Flourtown Shopping Center as a Community Mixed Use and Services area. In addition, the site is also identified as a Community Mixed Use Area in the Future Land Use Plan of the Montgomery County Comprehensive Plan, *Montco 2040: A Shared Vision*. Community shopping centers, such as Flourtown Shopping Center, and commercial uses, such as the proposed restaurant and bank, are consistent with both land use designations.

The proposed development is consistent with the Whitemarsh Township Selective Comprehensive Plan Update, adopted in November 2020. The plan's and Future Land Use map envisions the shopping center and an area along Bethlehem Pike as a 'Mixed-Use Corridor'. The emphasis of this land use designation is to promote high-density walkable developments.

RECOMMENDATION

The Montgomery County Planning Commission (MCPC) generally supports the applicant's proposal; however, in the course of our review we have identified the following issues that the applicant and both Springfield and Whitemarsh Townships may wish to consider prior to final plan approval. Our comments are as follows:

REVIEW COMMENTS – SPRINGFIELD TOWNSHIP

LANDSCAPING

A. Parking Lot Landscaping. The applicant is proposing to convert four existing parking spaces to ADA accessible parking stalls near the front of the proposed building addition. The applicant should assess the health and condition of the existing trees and vegetation in the planting areas near the ADA parking stalls to ensure that the trees are healthy and no mitigation or replacement trees are warranted.

B. Street Trees. Street trees are required per § 95-11.I (2) of the Springfield Township Subdivision and Land Development Ordinance (SALDO). The applicant is claiming no street frontage; as well, they

claim that they are exempt from the street tree requirement. However, in lieu of the required street trees, the township may consider contributions to the Township Landscape Fund per § 95-11.I (14).

PEDESTRIAN AMENITIES

A. Internal Crosswalk Improvements. The applicant is proposing additional crosswalks to connect the new building to the existing parking area. In addition to these new crosswalks, improvements should be made to the existing pedestrian features in the shopping center. For example, recent aerial imagery from Google Maps shown in the image below indicates that the existing internal crosswalks are faded. These and other similar areas should be examined and repainted as necessary.



B. Enhanced Pedestrian Safety Measures. In addition to the crosswalk connecting the proposed building to the existing parking area, the plan also indicates that a pedestrian crossing sign will also be installed. Given the proposed building's location on a main access drive leading to the traffic signal on Bethlehem Pike, additional pedestrian safety measures should be considered to prevent potential conflicts between pedestrians and vehicles entering/exiting the shopping center. This could potentially include a speed table, a flashing signal, or enhanced pedestrian lighting.

GENERAL COMMENTS

A. Fee in Lieu of Recreational Space. Due to the lack of available space remaining on-site for recreational amenities, as required under § 95-11E of Springfield's SALDO, the township may wish

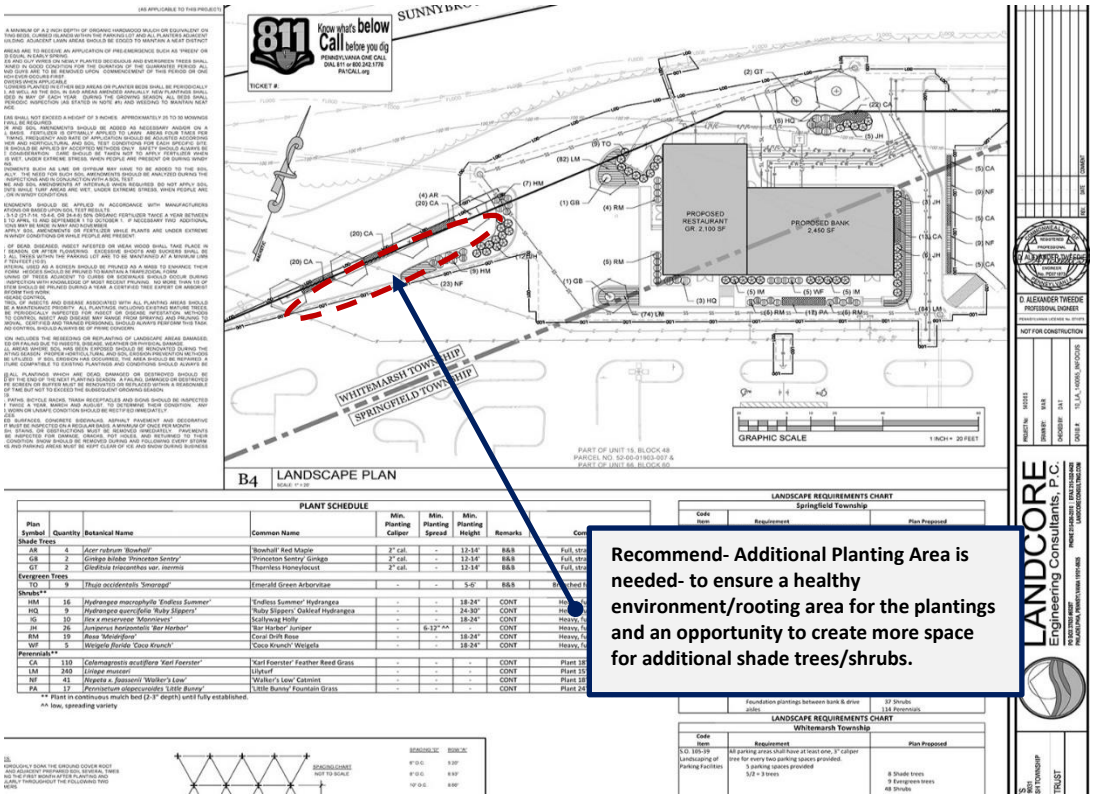
to consider asking the applicant to pay a fee in lieu of provision of recreational space, as provided for in § 95-11E.8.

B. Outdoor Dining. Based on the plan, it doesn't appear that any outdoor dining is being proposed for the new restaurant. In light of the importance and popularity of outdoor dining during the COVID-19 pandemic, the applicant may want to consider adding space for outdoor seating at the proposed restaurant.

REVIEW COMMENTS – WHITEMARSH TOWNSHIP

A. Pedestrian Safety. As mentioned above, a principle access aisle which directs vehicles exiting the shopping center is directly adjacent to the building entrances where pedestrians will walk. This is a concern for both townships with each sharing portions of this access aisle. We recommend that both townships work cooperatively to ensure that a safe pedestrian environment in this area of the development is created to the greatest extent feasible.

B. Landscape Improvements. A large area bordering the traffic aisle is shown being converted from a paved area into a landscape strip which is comprised +/- 4 ft. wide by 100 ft. and is planted with 4- Red Maples and several shrub groupings. The narrow planting strip is shown surrounded by a large paved area which appears is not devoted to any functional purpose other than pavement. We recommend that a larger planting area be developed in this area. This would allow for additional trees and shrubs to be planted and would create a more sustainable environment for the effective growth of the proposed tree and shrub groups. This area is noted below.

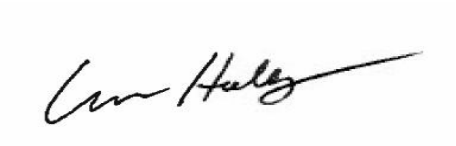


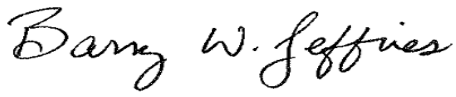
CONCLUSION

We wish to reiterate that MCPC generally supports the applicant's proposal to expand the existing shopping center through the addition of the proposed bank and proposed restaurant; however we believe that our suggested revisions will better achieve both Springfield and Whitemarsh Township's planning objectives for commercial development.

Should the governing body approve a final plat of this proposal, the applicant must present the plan to our office for seal and signature prior to recording with the Recorder of Deeds office. A paper copy bearing the municipal seal and signature of approval must be supplied for our files. Please print the assigned MCPC number (#20-0111-003) on any plans submitted for final recording.

Sincerely,





Aaron Holly, Community Planner
aholly@montcopa.org - 610-278-3748

Barry W Jeffries, ASLA, Senior Design Planner
bjeffrie@montcopa.org - 610-278-3444

c: Andrew Bottaro, Applicant
A. Michael Taylor, Springfield Township Manager
Amanda Helwig, Chair, Springfield Township Planning Commission
Robert Dambman, Chrm., Whitemarsh Township Planning Commission
James Hersh, WhitemarshTownship Engineer
David Sander, Esq., Whitemarsh Township Solicitor

Attachments: Aerial Photo of Site
Applicant's Plan

Whitemarsh Township
Springfield Township
BETHLEHEM PIKE
Flourtown Shoping Center
MCPC #20011002
Montgomery County Planning Commission
Montgomery County Courthouse - Planning Commission
PO Box 311 • Norristown PA 19404-0311
(p) 610.278.3722 • (f) 610.278.3941
www.montcopa.org/planning
Aerial photography provided by NearMap.
0
50
100
200 Feet
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SUNNYBROOK CREEK (ORELAND RUN)
BETHLEHEM PIKE
B DISTRICT
VC-3 DISTRICT
VC-5 DISTRICT
SPRINGFIELD TOWNSHIP
MONTGOMERY TOWNSHIP
PROPOSED BANK
PROPOSED RESTAURANT
GRAPHIC SCALE

UPDATES

Charlie Guttenplan

From:	ourhayloft@comcast.net
Sent:	Wednesday, January 26, 2022 3:01 PM
To:	Laura Nester; Fran Mccusker; Patrice Turenne; Vince Manuele; Jacy Toll
Cc:	kheinrich@gilmore-assoc.com; Charlie Guttenplan
Subject:	FLOURTOWN SHOPPING CENTER - SLD #02-20

Dear Supervisors,
I am Richard Abraham, 670 Bethlehem Pike, Flourtown, PA 19031. I live in Whitemarsh Township, very close to the Flourtown Shopping Center, and am a frequent customer of several businesses there.
I have serious concerns about, and objections to, the proposed Bank with "drive-thru", regarding both the CU and the SALDO applications:

1. Pursuant to Ord. 116-290(5)(a), for a drive thru window, a transportation impact study must be submitted per the standards in 105-21B(9) of SALDO. The Planning Commission recommendation (1/11/2022) requires that you be satisfied that the transportation study submitted by applicant is sufficient. For numerous reasons you should conclude that it is **NOT SUFFICIENT**:

A. Ms. Heinrich, in her correspondence dated 12/30/2021, at #3, details numerous deficiencies in the study submitted, and requests additional information. The **ONLY** response by the applicant does not address **ANY** of Ms. Heinrich's concerns, rather merely stating that a study **"is not warranted or required".** (See Landcore Engineering Consultants letter dated 1/7/2022 - revised 1/10/2022, at page 5.)

B. The traffic study submitted by Travani and Assoc. (letter of 2/10/2021) uses data from 2012 and earlier. It has **NO** analysis of **this** site.

C. That study does not consider the effects of traffic created by the relatively new Movie Tavern.

D. That study does not consider the effect of COVID upon increased use of drive thru banking.

E. That study does not mention traffic flow and congestion within the shopping center.

2. Ord.116-290(5)(d) requires that the "stacking area" of a drive thru not conflict with internal site circulation. The 2012 study relied on by Travani indicates the stacking area needs to accommodate 5.8 cars. The plans submitted show 4 cars in the stacking lane plus the car at the ATM. Therefore there is a high likelihood that a car desiring to use the drive thru will protrude into the **only exit lane** available to the entire shopping center, creating a traffic nightmare and a hazardous condition for pedestrians, especially those using the handicapped parking closest to the proposed bank.

3. There are significant sight line issues that are ignored in heavy traffic areas, both where cars exit the drive thru and also where they need to turn left to exit onto Bethlehem Pike going North. Safety is ignored, creating a hazard.

4. Handicap parking has been removed from spaces abutting Mr. P's, to a location across the extremely busy entry/exit roadway. Our most vulnerable residents will now have to cross the shopping center's only exit lane, and one of its two entrance lanes in order to reach the bank and the shops in the structure housing Mr. P's.

5. Ord. 116-290(5)(c) requires that the drive thru "shall be located behind the building or otherwise shielded from an abutting street". Applicant's plan shows the drive thru on the side of the building, not behind it, and not shielded from view from the abutting street - Bethlehem Pike. Therefore, landscaping "shielding" the drive thru is required and is shown on applicant's landscape plan. However, that landscaping would create a traffic hazard by interfering with the view of incoming traffic by drivers leaving the shopping center.

6. In violation of Ord. 116-259(A), the proposed bank infringes on the side yard requirements of the Riparian Conservation Overlay District because the bank building directly abuts the 100 year flood zone. It is disappointing that the ZHB allowed this variance when the proposed use is not vital to this community. There are already two banks in the Flourtown Shopping Center, plus two more directly across Bethlehem Pike, in addition to the three banks (one abandoned) at the southern end of Flourtown. More significantly, the variance fails to reflect the environmental protection policies and priorities of the recently adopted Comprehensive Plan Update.

I recognize the benefit which will arise from the replacement of asphalt with grass, plants and trees and the addition of a pedestrian sidewalk from Bethlehem Pike to the building housing Mr. P's. However, that benefit cannot be allowed to conceal or overshadow the significant deficiencies and hazards noted above.

Thank you for taking the time to consider my views.

RICHARD ABRAHAM
670 BETHLEHEM PIKE
FLOURTOWN, PA. 19031

ROCKWELL ASSOCIATES
URBAN FORESTRY • ARBORICULTURE • CONSULTING

Urban Foresters - Natural Resource Consultants - Planners - Forensic Arborist

FEDERAL REALTY/FLOURTOWN SHOPPING CENTER

Date: January 26, 2022
To: Sean Halbom, MPA
Assistant Township Manager
Whitemarsh Township, Pennsylvania
From: John Hosbach
Reference: Native Plants
File#: 73714

Dear Sean,

I have reviewed the subject plan sheet (LA 10 of 13 – Rev.2) to opine on the request of the Planning Commission, as it relates to the plant palate being proposed. The applicant is utilizing a native mixture with subject cultivars. This palate will work nicely given the proposed soil, native soil and the site conditions.

The only request I have is to substitute the Scarlet oak for swamp white oak due to the bacterial leaf scorch (vascular disease) that is present in the area.

John Rockwell Hosbach Jr., RCA, Urban Forester| Principal