CHESTER BOROUGH LAND USE BOARD
AGENDA
MAY 14, 2020
7:00 PM

Please select the below link to pre-register for the following meeting. It will require the user to provide your name and email address to setup a free account.

Instructions to Join the following meeting remotely by Zoom.

When: May 14, 2020 07:00 PM Eastern Time (US and Canada)

Topic: Land Use Board meeting

Please click the link below to join the webinar:

https://us02web.zoom.us/j/87626979893

Or iPhone one-tap :

US: +13126266799,,87626979893# or +19294362866,,87626979893#

Or Telephone:

Dial(for higher quality, dial a number based on your current location):

US: +1 312 626 6799 or +1 929 436 2866 or +1 301 715 8592 or +1 346 248 7799 or +1 669 900 6833 or +1 253 215 8782

Webinar ID: 876 2697 9893

International numbers available: https://us02web.zoom.us/u/kdxmwrdq0n

CHESTER BOROUGH LAND USE BOARD
AGENDA
APRIL 9, 2020
7:00 PM

1. CALL TO ORDER

2. OPEN PUBLIC MEETINGS ACT

Adequate notice of this meeting of the Chester Borough Land Use Board was given as required by the "Open Public Meetings Act" as follows: notice was sent to the Observer Tribune and the Daily Record, posted on the bulletin board in the Borough Municipal Building and posted on the Borough website and filed with the Borough Clerk. The Land Use Board will hold a regular meeting by web-based platform providing remote access as. This meeting will be open to the public remotely. Details for public participation will be posted on the website at chesterborough.org. Public can register at Zoom.us and to join :
https://us02web.zoom.us/j/87626979893 Webinar ID: 876 2697 9893

In the event any member of the public cannot access the public file documents or exhibits, and/or cannot access the Zoom web-based virtual meeting room, they may contact the Board Secretary at kbrown@chesterborough.org or 908-879-3660 x 2123

3. SALUTE TO THE FLAG

4. ROLL CALL

Janet Hoven
Kerry Brown
Stan Stevinson
Anita Rhodes
Adam Sorchini
Stanley Quintana, Alternate #2

Steven Warner, Board Attorney
Steve Bolio, Board Engineer

5. MINUTES

A. April 9, 2020

6. BUSINESS

A. Tack Veterinary Holdings, LLC
Amended Site Plan
114 US Highway 206 North Block 103, Lot 51

B. The Car Wash at Chester, LLC
Amended Preliminary and Final Major Site Plan and Variance Application
45 Maple Avenue Block 131, Lot 5

C. Emergent Provisions Ordinance

Ordinance to allow for such prompt municipal action by way of resolutions of limited duration to provide for temporary relief from the requirements of certain existing ordinances such as outside dining.

7. RESOLUTIONS

No resolutions at this time

8. COMMUNICATION/DISCUSSION ITEMS

9. PUBLIC COMMENT

10. ADJOURNMENT

CERTIFICATIONS/APPROVALS

MUNICIPALITY

THIS PLAN IS HEREBY APPROVED BY THE PLANNING BOARD OF THE BOROUGH OF CHESTER, MORRIS COUNTY

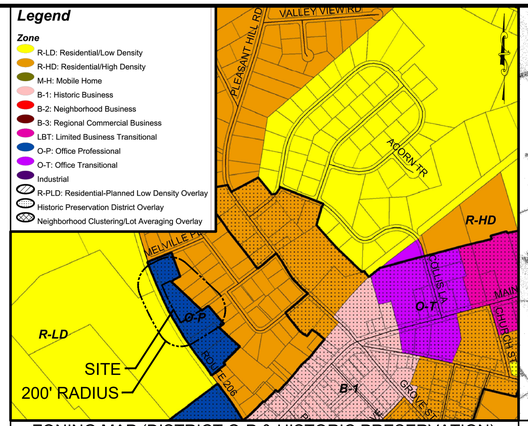
DATE _____ BOARD CHAIRMAN _____

DATE _____ BOARD SECRETARY _____

DATE _____ BOROUGH ENGINEER _____

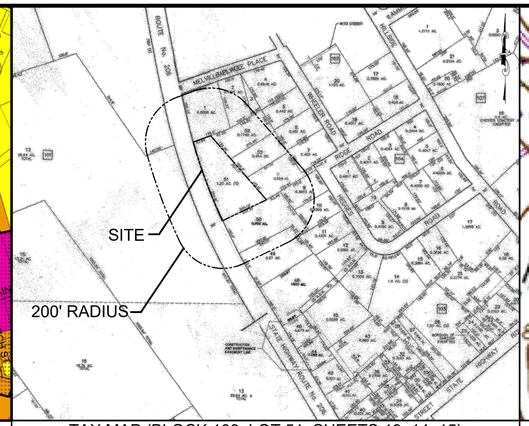
I HEREBY CERTIFY THAT I AM THE PRESENT OWNER OF THE REFERENCED PROPERTY AND THAT I CONSENT TO THE FILING OF THIS MINOR SITE PLAN WITH THE PLANNING BOARD OF THE BOROUGH OF CHESTER

DATE _____ DOUGLAS TACK _____



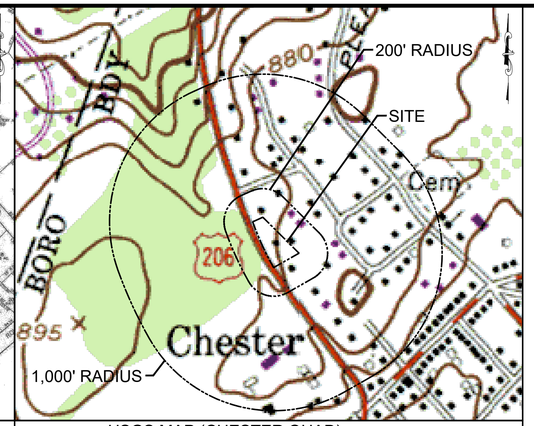
ZONING MAP (DISTRICT O-P & HISTORIC PRESERVATION)

SCALE 1"=600'



TAX MAP (BLOCK 103, LOT 51, SHEETS 13, 14, 15)

SCALE 1"=300'



USGS MAP (CHESTER QUAD)

SCALE 1"=500'

ADDITIONAL PARTIES TO BE NOTIFIED	
PROPERTY OWNER	ADDRESS
PUBLIC SERVICE ELECTRIC & GAS	80 PARK PLACE NEWARK, NJ 07101
NJ AMERICAN WATER CO.	PO BOX 5627 CHERRY HILL, NJ 08034

GENERAL NOTES:

1. OWNER/APPLICANT:
   TACK VETERINARY HOLDINGS, LLC
   C/O DOUGLAS TACK
   114 US HIGHWAY 206 NORTH
   CHESTER, NJ 07930
   PHONE: (908) 399 - 8076
2. BOUNDARY AND TOPOGRAPHIC INFORMATION SHOWN HEREON WAS TAKEN FROM A PLAN ENTITLED "FINAL SURVEY/ SITE AS-BUILT FOR: LOT 51 BLOCK 103 BOROUGH OF CHESTER, MORRIS COUNTY, NEW JERSEY", PREPARED BY CIVIL ENGINEERING, INC., DATED 11/6/15 AND LAST REVISED 6/22/16.

   ADJACENT FEATURES FROM "BOUNDARY & TOPOGRAPHIC SURVEY", PREPARED BY CIVIL ENGINEERING, INC., ROBERT J. WESP, NJPLS No. 35891, DATED 2/26/10 OR LAST REVISED.
3. THESE PLANS ARE NOT TO BE USED AS SURVEYS. REFER TO REFERENCE SOURCE FOR BOUNDARY AND TOPOGRAPHIC INFORMATION (NOTE # 2 ABOVE).
4. ALL ELEVATIONS GIVEN ARE ON NAVD 88 DATUM.
5. THE SUBJECT PARCEL, BLOCK 103 LOT 51, CONSISTS OF 51,974.3 S.F. (1.19 ACRES).

NOTES:

1. SEE ENGINEERING DETAIL SHEETS FOR ALL SITE DETAILS AND SUPPORTING NOTES.
2. THE LOCATION, TYPE, LINE, SIZE, DEPTH, ETC. OF ALL EXISTING UTILITIES, ARE APPROXIMATE. LOCATION OF SERVICE LATERALS MUST BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
3. THE CUMULATIVE INCREASE IN IMPERVIOUS COVERAGE OF THIS SITE PLAN AND PRIOR SITE PLAN (COMBINED) AS COMPARED TO PRE-EXISTING CONDITIONS IS LESS THAN ¼ ACRE.

PRELIMINARY AND FINAL SITE PLANS

BLACK RIVER VETERINARY HOSPITAL

114 US HIGHWAY 206 NORTH
BLOCK 103, LOT 51, TAX MAP SHEET NO. 15
CHESTER BOROUGH, MORRIS COUNTY, NEW JERSEY

PREPARED BY

ENGINEERING & LAND PLANNING ASSOCIATES, INC.
140 WEST MAIN STREET, HIGH BRIDGE, NEW JERSEY 08829

CHESTER BOROUGH ZONING REQUIREMENTS			
ITEM	REQUIRED	EXISTING	PROPOSED
ZONING DISTRICT		O-P (OFFICE PROFESSIONAL ZONE)	
MIN. LOT AREA (AC.)	1 AC.	1.19 AC.	1.19 AC.
MIN. LOT WIDTH (FT)	150 FT	349.92 FT	349.92 FT
MIN. LOT DEPTH (FT)	150 FT	150.51 FT	150.51 FT
BUILDING SETBACKS FOR PRINCIPAL STRUCTURE			
FRONT YARD SETBACK (FT)	50 FT	> 50 FT	> 50 FT
SIDE YARD SETBACK - ONE SIDE (FT)	15 FT	18.4 FT	18.4 FT
SIDE YARD SETBACK - BOTH SIDES (FT)	30 FT	> 30 FT	> 30 FT
REAR YARD SETBACK (FT)	30 FT	37.4 FT	37.4 FT
MAX. BUILDING HEIGHT (FT) (STORY)	35 FT (2 ½ STORIES)	< 35 FT (2 ½ STORIES)	< 35 FT (2 ½ STORIES)
BUILDING SETBACKS FOR ACCESSORY STRUCTURE			
MIN. FRONT YARD SETBACK (FT)	50 FT	N/A	N/A
MIN. SIDE YARD SETBACK (FT)	10 FT	N/A	N/A
MIN. REAR YARD SETBACK (FT)	10 FT	N/A	N/A
MAX. BUILDING LOT COVERAGE (%)	30 %	8.0 %	8.0 %
MAX. IMPERVIOUS COVERAGE (%)	60 %	33.1 %	34.8 %

PLAN INDEX

OUTSIDE AGENCY APPROVALS:

1. NEW JERSEY HIGHLANDS COUNCIL (CONSISTENCY DETERMINATION)
2. MORRIS COUNTY PLANNING BOARD

200 FT CERTIFIED OWNERS' LIST			
BLOCK	LOT	PROPERTY OWNER	ADDRESS
101	12	BOROUGH OF CHESTER	50 NORTH ROAD CHESTER, NJ 07930
101	13	TURKEY FARM ACQUISITION, LLC	3025 ROUTE 10 EAST MORRIS PLAINS, NJ 07950
103	1	HALL, ANDREW E	42 BARTLEY ROAD CHESTER, NJ 07930
103	2	BUCHANAN, EILEEN	20 MELVILLE PLACE, BOX 273 CHESTER, NJ 07930
103	6	LUONGO, JAMES / GILLILAND, HEATHER	3 WHEELER ROAD CHESTER, NJ 07930
103	7	SMITH, JEFFREY & SANDRA	1 WHEELER ROAD CHESTER, NJ 07930
103	9	SOMODY, GEORGE & SUE ANN	23 HEDGES ROAD CHESTER, NJ 07930
103	10	SIEGEL, JOSHUA	21 HEDGES ROAD CHESTER, NJ 07930
103	11	NINES, ROBERT & CLAIRE	19 HEDGES ROAD CHESTER, NJ 07930
103	49	STORMS, DONALD R JR	313 ROUTE 206 N, SUITE 2 CHESTER, NJ 07930
103	50	KRG HOLDINGS, LLC	104 ROUTE 206 CHESTER, NJ 07930
103	52	KALASHIAN, KRAIG J	29 HEDGES ROAD CHESTER, NJ 07930
103	53	FORGIONE, PATRICK / AMANDA	27 HEDGES ROAD CHESTER, NJ 07930
103	54	SCHMEAL, BRUCE & AMY	25 HEDGES ROAD CHESTER, NJ 07930

NOTICE TO BE SERVED FROM CERTIFIED LIST OBTAINED FROM THE BOROUGH.

NOTES:

1. THIS SET OF PLANS HAS BEEN PREPARED FOR THE PURPOSES OF MUNICIPAL AND AGENCY APPROVAL. THIS SET OF PLANS SHALL NOT BE UTILIZED FOR CONSTRUCTION DOCUMENTS UNTIL ALL CONDITIONS OF APPROVAL HAVE BEEN SATISFIED AND EACH DRAWING HAS BEEN MARKED "ISSUED FOR CONSTRUCTION."

E&LP
140 WEST MAIN STREET HIGH BRIDGE, NJ 08829
PH. 908-238-0544 FAX. 908-238-9572
A PROFESSIONAL ASSOCIATION
CERTIFICATE OF AUTHORIZATION NO.: 24GA28021500 EXP. 8/31/2020

NO.	REVISION	BY	DATE
1	REV. PER BOROUGH COMMENTS	EM	2/4/2020

2/4/2020 DATE

JOHN HANSEN
PROFESSIONAL ENGINEER
N.J. P.E. NO. 24GE04194500

PROJECT:

BLACK RIVER
VETERINARY HOSPITAL
SITE PLANS
BLOCK 103, LOT 51
CHESTER BOROUGH

MORRIS COUNTY NEW JERSEY

TITLE:

COVER SHEET

JOB NO.:	19003
SCALE:	N.T.S.
DESIGNED:	EM
CHECKED:	JH
FILENAME:	01_COVER.DWG
DATE:	05/01/2019

DRAWING NO.: 1 / 10

STANDARD LEGEND

EXISTING	PROPOSED	
		RIGHT-OF-WAY / PROPERTY
		SETBACK LINE
		CURB
		DEPRESSED CURB
E	E	UNDERGROUND ELEC.
G	G	UNDERGROUND GAS
W	W	UNDERGROUND WATER
TELE	TELE	UNDERGROUND TELEPHONE
O/H	O/H	OVERHEAD WIRES
S	S	UNDERGROUND SANITARY
X	X	FENCE
		UNDERGROUND PIPE
		TREE LINE
115	115	CONTOUR
		BOLLARD
P	P	P.S.E & G. MANHOLE
S	S	SEWER MANHOLE
W	W	WATER MANHOLE
		MANHOLE
B	B	BELL MANHOLE
W	W	WATER METER
E	E	ELEC. METER
W	W	WATER VALVE
G	G	GAS VALVE
V	V	VALVE
		SAN. SEWER VENT
CO	CO	CLEAN-OUT
		FIRE HYDT.
		"A" SEWER INLET
		"B" SEWER INLET
		D.O.T. BOX
		TRAFF. LIGHT STANDARD
		TRAFF. SIGN
		UTILITY POLE
		OVERHEAD LIGHT
		ROOF DRAIN
		HEADWALL
		HEADWALL AND APRON
		DITCH

EXISTING	PROPOSED	
		MONUMENT
		ROW MONUMENT
		TEST PIT (NUMBER)
		BORING (NUMBER)
		BUILDING TO BE DEMOLISHED
10+00	10+00	BASE LINE
		HIGH POINT
		LOW POINT
B.M.	B.M.	BENCH MARK
		WHITE ASH (FRAXINUS AMERICANA)
		HORSE CHESTNUT (AESCULUS HIPPOCASTANUM)
		EXISTING NORWAY MAPLE (ACER PLATANOIDES)
		NORWAY SPRUCE (PILEA ABIES)
		EXISTING TREE LOCATED OFF SITE (ALONG SOUTHERN PROPERTY LINE)
		CONCRETE
		PERVIOUS PAVEMENT
		BITUMINOUS CONCRETE

STANDARD ABBREVIATIONS

AH., BK.	AHEAD, BACK	J.B.	JUNCTION BOX	RCP, R.C.P.	REINFORCED CONCRETE PIPE
\, B.L.	BASELINE	LT., RT.	LEFT, RIGHT	RMC, R.M.C.	
B.M.	BENCH MARK	L.O.P.	LIMIT OF PAVEMENT (PAVING)	RNMC, R.N.M.C.	RIGID NON-METALLIC CONDUIT
B.T.	BELL TELEPHONE	L.O.M.	LIMIT OF MILLING	ROW, R.O.W.	RIGHT OF WAY
BIT., BITUM.	BITUMINOUS	M.B.	MAILBOX	R.R.	RAILROAD
BLDG.	BUILDING	M.P.	MILE POST	RTE., RT.	ROUTE
, C.L.	CENTERLINE	MAX.	MAXIMUM	SAN.	SANITARY
C.I.P.	CAST IRON PIPE	MIN.	MINIMUM	SDWK.	SIDEWALK
D.I.P.	DUCTILE IRON PIPE	NO.	NUMBER	S.H.D.	STATE HIGHWAY DEPARTMENT
CONC.	CONCRETE	N.T.S.	NOT TO SCALE	SHLD.	SHOULDER
CULV.	CULVERT	PAV'T.	PAVEMENT	, S.L.	SURVEY LINE
D, DIA.	DIAMETER	PERF.	PERFORATED	S.O.D.	SUBBASE OUTLET DRAIN
D.C.	DROP CURB	P.G.L.	PROFILE GRADE LINE	STY.	STORY
DE	DITCH EXCAVATION	|, P.L.	PROPERTY LINE, PROFILE LINE	T	TANGENT
DEP., DP	DEPRESSED CURB	PK	PARKER KAYLON MASONRY NAIL	TBA	TO BE ABANDONED
DH	DRILL HOLE	POC, P.O.C.	POINT ON CURVE	TBR	TO BE REMOVED
DWY	DRIVEWAY	POL, P.O.L.	POINT ON LINE	TEL.	TELEPHONE
E.B., W.B.,	EASTBOUND, WESTBOUND	POT, P.O.T.	POINT ON TANGENT	TEMP.	TEMPORARY
N.B., S.B.	NORTHBOUND, SOUTHBOUND	PRC, P.R.C.	POINT OF REVERSE CURVE	THK., TH.	THICK
EL., ELEV.	ELEVATION	PROP.	PROPOSED	TYP.	TYPICAL
EXIST.	EXISTING	PT, P.T.	POINT OF TANGENCY	U.D.	UNDERDRAIN
GR.	GRATE	PVC, P.V.C.	POLYVINYL CHLORIDE PIPE,	UP, U.P.	UTILITY POLE
HT.	HEIGHT		POINT OF VERTICAL CURVATURE	VAR.	VARIABLE, VARIES
H.W.	HEADWALL	PVI, P.V.I.	POINT OF VERTICAL INTERSECTION	WM	WATER METER
HYD.	HYDRANT	PVT, P.V.T.	POINT OF VERTICAL TANGENCY, PAVEMENT		
INV.	INVERT	R	RADIUS		
IP	IRON PIN	RCCP, R.C.C.P.	REINFORCED CONCRETE CULVERT PIPE		

GENERAL NOTES:

1. APPLICANT:
   TACK VETERINARY HOLDINGS, LLC
   C/O DOUGLAS TACK
   114 US HIGHWAY 206 NORTH
   CHESTER, NJ 07930
   PHONE: (908) 399 - 8076

2. BOUNDARY AND TOPOGRAPHIC INFORMATION SHOWN HEREON WAS TAKEN FROM A PLAN ENTITLED "FINAL SURVEY/SITE AS-BUILT FOR: LOT 51 BLOCK 103 BOROUGH OF CHESTER, MORRIS COUNTY, NEW JERSEY", PREPARED BY CIVIL ENGINEERING, INC., DATED 11/6/15 AND LAST REVISED 6/22/16.

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3. THESE PLANS ARE NOT TO BE USED AS SURVEYS. REFER TO REFERENCE SOURCES FOR BOUNDARY AND TOPOGRAPHIC INFORMATION (NOTE # 2 ABOVE).

4. ALL CROSSWALKS, SIDEWALKS, AND CURB RAMPS WITHIN THE PROJECT LIMITS SHALL CONFORM TO ADA RULES AND REGULATIONS.

5. THE CONTRACTOR SHALL CONFINE ALL CONSTRUCTION ACTIVITIES TO WITHIN THE LIMIT OF WORK AND/OR THE RIGHT-OF-WAY. ALL DISTURBED AREAS ARE TO BE RESTORED TO EXISTING CONDITIONS OR AS INDICATED IN THE CONTRACT DOCUMENTS.

6. THE CONTRACTOR SHALL PROTECT ALL EXISTING STRUCTURES AND IMPROVEMENTS WITHIN THE PROJECT LIMITS AND RIGHT-OF-WAY. THESE FEATURES INCLUDE BUT ARE NOT LIMITED TO TREES, SHRUBS, LANDSCAPING, DRIVEWAYS, MAILBOXES, SIGNAGE, CURBING, SIDEWALKS, UTILITIES, JUNCTION BOXES, POLES, LIGHTING, HYDRANTS, VALVE BOXES, AND STRIPPING.

7. THE CONTRACTOR SHALL OBTAIN ALL CONSTRUCTION PERMITS REQUIRED BY LOCAL, COUNTY OR STATE JURISDICTIONS PRIOR TO THE START OF CONSTRUCTION.

8. THE CONTRACTOR SHALL NOTIFY THE BOROUGH AND MUNICIPAL ENGINEER'S OFFICE 72 HOURS PRIOR TO THE START OF WORK. THE CONTRACTOR SHALL NOTIFY ALL APPROPRIATE AGENCIES PRIOR TO THE START OF CONSTRUCTION AND AS NECESSARY THROUGH PROJECT COMPLETION.

9. HOURS OF WORK SHALL BE RESTRICTED TO ORDINANCE REQUIREMENTS, UNLESS OTHERWISE PERMITTED BY TOWNSHIP.

10. THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS BEFORE BEGINNING CONSTRUCTION.

11. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTION OF THE PROJECT SITE, CONTRACTOR PROPERTY, EQUIPMENT, AND WORK.

12. THE CONTRACTOR IS RESPONSIBLE FOR CLEANING STREETS OF CONSTRUCTION DIRT AND DEBRIS AT CLOSE OF EACH WORK DAY.

13. ANY DAMAGE TO THE PUBLIC ROAD DURING CONSTRUCTION SHALL BE REPLACED TO THE SATISFACTION OF THE STATE PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY.

14. PRIOR TO CONSTRUCTION, THE CONTRACTOR, ALONG WITH CONCURRENCE FROM THE OWNER, SHALL DETERMINE HIS/HER LAY-DOWN AND/OR STAGING AREA LOCATIONS.

15. TRAFFIC INGRESS AND EGRESS FOR DRIVEWAYS AND PEDESTRIAN ACCESS FACILIES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.

16. PAVED SURFACES, PAVEMENT MARKERS AND MARKINGS SHALL BE PROTECTED FROM DAMAGE BY TRACKED EQUIPMENT.

17. PROPERTY MARKERS DISTURBED DURING CONSTRUCTION ARE TO BE REPLACED BY A REGISTERED PUBLIC LAND SURVEYOR FOR THE ORIGINAL PROPERTY OWNER AT NO COST TO OWNER.

18. CONSTRUCTION STAKING WILL BE PROVIDED BY THE CONTRACTOR UNLESS OTHERWISE AGREED TO WITH THE APPLICANT. TWO COPIES OF STAKING NOTES TO BE PROVIDED TO THE ENGINEER PRIOR TO CONSTRUCTION.

19. THE CONTRACTOR SHALL MAINTAIN UPDATED RED-LINED RECORD DRAWINGS ON SITE FOR INSPECTION BY THE ENGINEER.

20. MAINTENANCE AND CLEAN-UP OF THE PROJECT IS REQUIRED FOR THE PROJECT LIMITS AND DURATION, REGARDLESS OF THE CONTRACTOR'S SCOPE OF ACTIVITIES WITHIN THE PROJECT LIMITS.

21. THE REMOVAL OF ANY ABANDONED UTILITIES REQUIRED TO COMPLETE THE WORK SHALL BE INCIDENTAL AND NO SEPARATE PAYMENT SHALL BE MADE.

22. IT IS THE CONTRACTOR'S RESPONSIBILITY TO STOCKPILE NECESSARY MATERIAL ON-SITE OR AT A SECURED OFF-SITE LOCATION AT NO ADDITIONAL EXPENSE TO THE OWNER.

23. THESE DRAWINGS DO NOT INCLUDE THE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. THE CONTRACTOR SHALL BE RESPONSIBLE TO INSURE "ON THE JOB" SAFETY FOR HIS EMPLOYEES, EMPLOYEES OF THE OWNER AND ALL OTHER PERSONS HAVING AUTHORIZED OR UNAUTHORIZED ACCESS TO THE WORK AND THE PUBLIC. CONTRACTOR SHALL PERFORM HIS WORK IN A SAFE MANNER AND IN COMPLIANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.

24. THE LOCATION, TYPE, SIZE, DEPTH, ETC. OF ALL EXISTING UTILITIES ARE APPROXIMATE AND MUST BE VERIFIED IN THE FIELD BY THE CONTRACTOR AND AT HIS OWN EXPENSE PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES OPERATING WITHIN THE CONSTRUCTION SITE 3 DAYS PRIOR TO COMMENCEMENT OF ANY EXCAVATION FOR ACCURATE FIELD LOCATIONS. FOR UTILITY MARKOUT, CALL 8-1-1 OR [FOR NJ, 1-800-272-1000]. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE DESIGN ENGINEER OF ALL DEVIATIONS OF SITE CONDITIONS AND/OR IF DEPARTURES FROM THE APPROVED DESIGN BECOME NECESSARY DUE TO SUCH DEVIATIONS.

25. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LINES, ELEVATIONS, AND MEASUREMENTS, EXERCISING PRECAUTION TO VERIFY ALL DIMENSIONS SHOWN ON DRAWING.

26. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE DESIGN ENGINEER SHOULD DEPARTURES FROM THE APPROVED DESIGN BECOME NECESSARY DUE TO CIRCUMSTANCES WHICH ARISE DURING CONSTRUCTION.

27. ITEMS NOT SPECIFIED BUT NECESSARY FOR PROPER CONSTRUCTION SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR THE SAME AS IF SPECIFIED.

28. THE OWNER IS RESPONSIBLE FOR MAINTAINING BEST MANAGEMENT PRACTICES FOR STORAGE OF DE-ICING MATERIALS. DE-ICING MATERIALS SHALL BE STORED IN ACCORDANCE WITH ALL LOCAL, STATE, & FEDERAL REGULATIONS.

SITE/CIVIL NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING PROPER DRAINAGE OF THE PROJECT SITE AND ALL UPGRADIENT AREAS TO THE SITE.

2. CATCHBASIN GRATE AND HEADERS SHALL BE RESET AS REQUIRED TO MATCH FINISH GRADE ELEVATIONS, UNLESS OTHERWISE NOTED OR DIRECTED BY THE ENGINEER. PLACEMENT GRATES AND HEADERS SHALL BE ALIGNED WITH ADJACENT CURBING AND PAVEMENT.

3. MILLINGS, STONE, SOIL, CONSTRUCTION DEBRIS, AND ALL OTHER RELATED MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR FOR OFF-SITE DISPOSAL.

4. INADEQUATE INSPECTION OF WORKMANSHIP SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO PERFORM THE WORK IN ACCORDANCE WITH APPLICABLE PLANS, SPECIFICATIONS AND REGULATIONS AND TO OBTAIN WRITTEN APPROVAL OF MUNICIPAL OFFICIALS, AND ACCEPTANCE OF THE CONSTRUCTION BY THE OWNER.

5. ALL CONCRETE USED FOR SITE WORK SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI. OR AS NOTED ELSE WHERE IN DRAWINGS.

6. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES INDIVIDUALLY AND SHALL NOTIFY THE UNDERGROUND UTILITIES NOTIFICATION SERVICE AT LEAST 72 HOURS PRIOR TO COMMENCEMENT OF ANY EXCAVATION BY CALLING [1-800-272-1000 IN NJ].

7. SUBBASE MATERIAL FOR SIDEWALKS, CURB, OR ASPHALT SHALL BE FREE OF ORGANIC AND OTHER UNSUITABLE MATERIALS. SHOULD SUBBASE BE DEEMED UNSUITABLE, SUBBASE IS TO BE REMOVED AND FILLED WITH APPROVED FILL MATERIAL COMPACTED TO 95% OPTIMUM DENSITY (AS DETERMINED BY MODIFIED PROCTOR METHOD).

8. ALL CONTRACTORS WORKING ON THIS PROJECT SHALL COMPLY WITH THE REQUIREMENTS OF [29 CFR 1926 OSHA CONSTRUCTION INDUSTRY REGULATIONS & STANDARDS].

9. ALL CONTRACTORS WORKING ON THIS PROJECT SHALL BE RESPONSIBLE FOR ENSURING THAT ALL CONSTRUCTION ACTIVITIES RELATED TO THIS PROJECT ARE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE OSHA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION) STANDARDS.

10. NO EXCAVATION OR FILL SHALL BE MADE WITH A FACE STEEPER THAN THREE (3) HORIZONTAL TO ONE (1) VERTICAL (3:1) UNLESS A RETAINING WALL, CONSTRUCTED IN ACCORDANCE WITH APPROVED STANDARDS IS PROVIDED TO SUPPORT THE FACE OF SLOPE OF SAID EXCAVATION OR FILL.

11. BURYING OF TREES, STUMPS, OR CONSTRUCTION MATERIAL IS PROHIBITED. TREES AND STUMPS MAY BE CHIPPED OR GROUND AND SPREAD ON THE SITE.

12. SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IN PLACE AND FUNCTIONING PRIOR TO ANY OTHER DISTURBANCE ON THE SITE.

13. EXISTING UTILITIES SHOWN ON THESE PLANS HAVE BEEN DEVELOPED FROM UTILITY COMPANY AS-BUILTS AND OR FIELD SURVEY AT THE SITE. COMPLETENESS AND/OR ACCURACY CANNOT BE GUARANTEED. ALL CONTRACTORS WORKING ON THIS PROJECT SHALL COMPLY WITH THE REQUIREMENTS OF [NEW JERSEY ONE CALL] REGARDING NOTIFICATION OF UNDERGROUND UTILITY USERS PRIOR TO EXCAVATION.

NOTES:

1. THIS SET OF PLANS HAS BEEN PREPARED FOR THE PURPOSES OF MUNICIPAL AND AGENCY APPROVAL. THIS SET OF PLANS SHALL NOT BE UTILIZED FOR CONSTRUCTION DOCUMENTS UNTIL ALL CONDITIONS OF APPROVAL HAVE BEEN SATISFIED AND EACH DRAWING HAS BEEN MARKED "ISSUED FOR CONSTRUCTION."

E&LP
140 WEST MAIN STREET HIGH BRIDGE, NJ 08829
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NO.	REVISION	BY	DATE
1	REV. PER BOROUGH COMMENTS	EM	2/4/2020

2/4/2020
DATE

JOHN HANSEN
PROFESSIONAL ENGINEER
N.J. P.E. NO. 24GE04194500

PROJECT:

BLACK RIVER
VETERINARY HOSPITAL
SITE PLANS
BLOCK 103, LOT 51
CHESTER BOROUGH

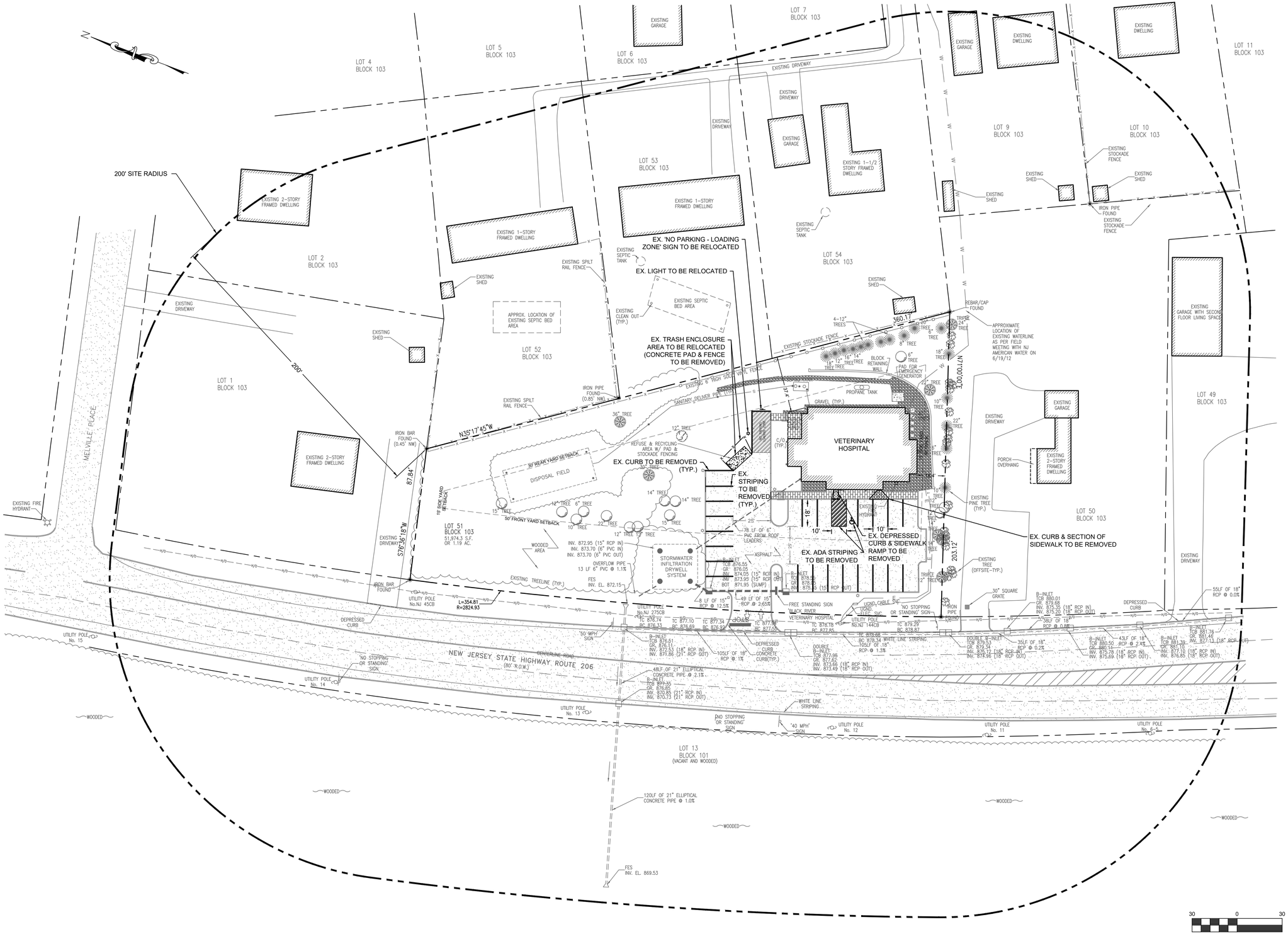
MORRIS COUNTY NEW JERSEY

TITLE:

LEGEND AND NOTES

JOB NO.:	19003
SCALE:	AS SHOWN
DESIGNED:	EM
CHECKED:	JH
FILENAME:	02_LEGEND & NOTES.DWG
DATE:	05/01/2019

DRAWING NO.: 2 / 10



NOTES:

1. ADJACENT FEATURES FROM "BOUNDARY & TOPOGRAPHIC SURVEY", PREPARED BY CIVIL ENGINEERING, INC., ROBERT J. WESP, NJPLS No. 35891, DATED 2/26/10 OR LAST REVISED.
2. EXISTING ON-SITE FEATURES FROM "FINAL SURVEY/ SITE AS-BUILT FOR: LOT 51 BLOCK 103 BOROUGH OF CHESTER, MORRIS COUNTY, NEW JERSEY" PREPARED BY CIVIL ENGINEERING, INC., DATED 11/6/15 AND LAST REVISED 6/22/16.

   ON-SITE FEATURES FROM PLAN REFERENCES REVISED PER SITE INSPECTION PERFORMED ON 1/25/19 & 4/10/19.
3. SEE SHEET 2 FOR ALL DEMOLITION AND SAFETY NOTES.

NOTES:

1. THIS SET OF PLANS HAS BEEN PREPARED FOR THE PURPOSES OF MUNICIPAL AND AGENCY APPROVAL. THIS SET OF PLANS SHALL NOT BE UTILIZED FOR CONSTRUCTION DOCUMENTS UNTIL ALL CONDITIONS OF APPROVAL HAVE BEEN SATISFIED AND EACH DRAWING HAS BEEN MARKED "ISSUED FOR CONSTRUCTION."

E&LP
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A PROFESSIONAL ASSOCIATION
CERTIFICATE OF AUTHORIZATION NO.: 24GA28021500 EXP. 8/31/2020

NO.	REVISION	BY	DATE
1	REV. PER BOROUGH COMMENTS	EM	2/4/2020

2/4/2020
DATE

JOHN HANSEN
PROFESSIONAL ENGINEER
N.J. P.E. NO. 24GE04194500

PROJECT:

BLACK RIVER
VETERINARY HOSPITAL
SITE PLANS
BLOCK 103, LOT 51
CHESTER BOROUGH

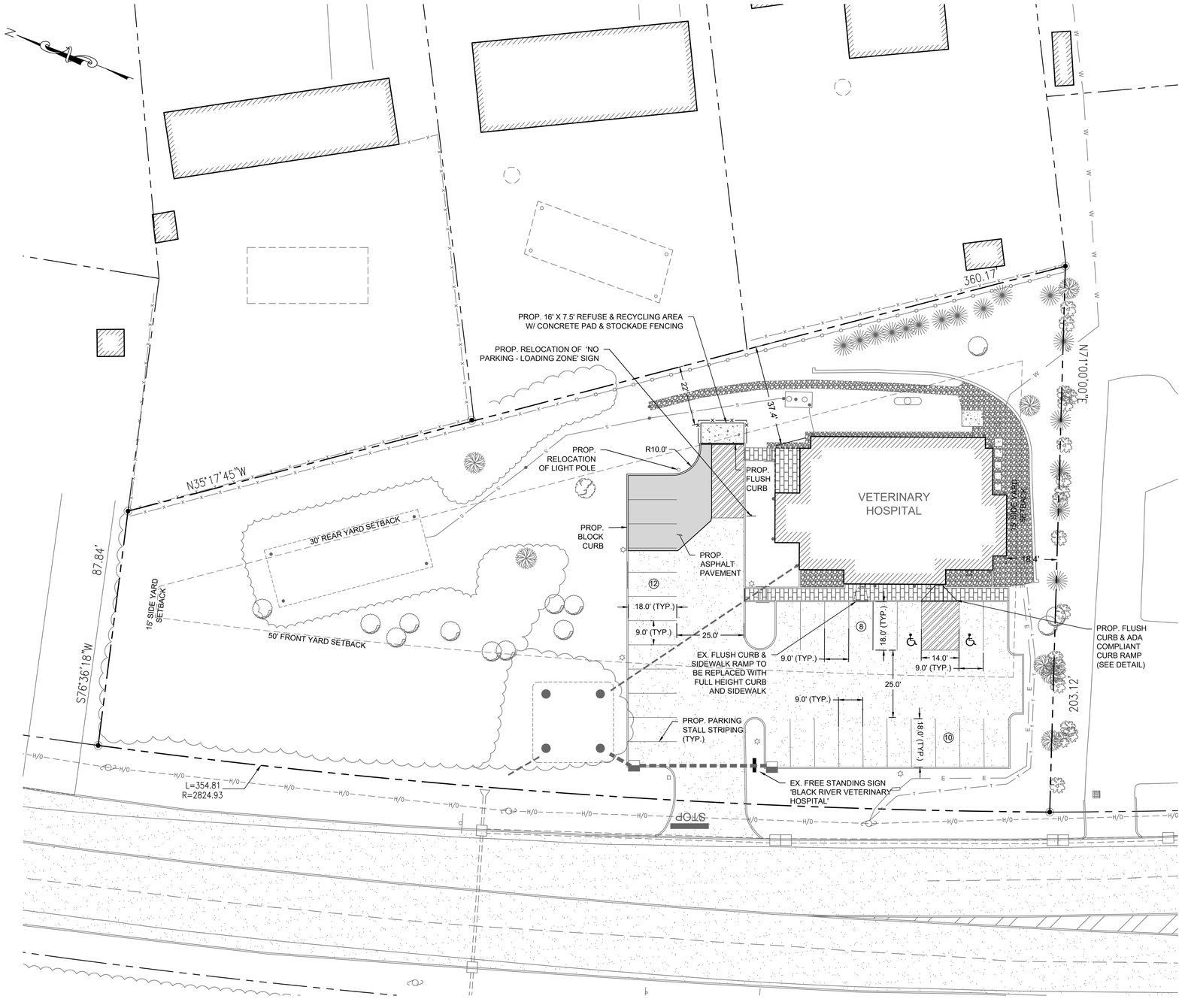
MORRIS COUNTY NEW JERSEY

TITLE:

DEMOLITION PLAN

JOB NO.:	19003
SCALE:	1"=30'
DESIGNED:	EM
CHECKED:	JH
FILENAME:	DEMO.DWG
DATE:	05/01/2019

DRAWING NO.: 3 / 10



IMPERVIOUS MATERIALS

ITEM	EXISTING	PERCENTAGE	PROPOSED	PERCENTAGE
BUILDING	4,161 S.F.	8.0%	4,161 S.F.	8.0%
PARKING LOT & CURBING	10,470 S.F.	25.1%	11,345 S.F.	26.8%
WALKWAYS, CONCRETE PADS, & GRAVEL	2,374 S.F.		2,374 S.F.	
WALLS / SIGNS / MISC.	185 S.F.		185 S.F.	
TOTAL IMPERVIOUS COVERAGE	17,190 S.F.	33.1%	18,065 S.F.	34.8%

CHESTER BOROUGH ZONING REQUIREMENTS

ITEM	REQUIRED	EXISTING	PROPOSED
ZONING DISTRICT		O-P (OFFICE PROFESSIONAL ZONE)	
MIN. LOT AREA (AC.)	1 AC.	1.19 AC.	1.19 AC.
MIN. LOT WIDTH (FT)	150 FT	349.92 FT	349.92 FT
MIN. LOT DEPTH (FT)	150 FT	150.51 FT	150.51 FT
BUILDING SETBACKS FOR PRINCIPAL STRUCTURE			
FRONT YARD SETBACK (FT)	50 FT	> 50 FT	> 50 FT
SIDE YARD SETBACK - ONE SIDE (FT)	15 FT	18.4 FT	18.4 FT
SIDE YARD SETBACK - BOTH SIDES (FT)	30 FT	> 30 FT	> 30 FT
REAR YARD SETBACK (FT)	30 FT	37.4 FT	37.4 FT
MAX. BUILDING HEIGHT (FT) (STORY)	35 FT (2 ½ STORIES)	< 35 FT (2 ½ STORIES)	< 35 FT (2 ½ STORIES)
BUILDING SETBACKS FOR ACCESSORY STRUCTURE			
MIN. FRONT YARD SETBACK (FT)	50 FT	N/A	N/A
MIN. SIDE YARD SETBACK (FT)	10 FT	N/A	N/A
MIN. REAR YARD SETBACK (FT)	10 FT	N/A	N/A
MAX. BUILDING LOT COVERAGE (%)	30 %	8.0 %	8.0 %
MAX. IMPERVIOUS COVERAGE (%)	60 %	33.1 %	34.8 %

PREVIOUSLY APPROVED VARIANCES & WAIVERS PER RESOLUTION FOR APPLICATION NO. 2012-3, DECIDED AND MEMORIALIZED DECEMBER 13, 2012.

VARIANCE(S):

1. THE BOARD GRANTED APPROVAL OF THE VARIANCE FOR A FREESTANDING SIGN LOCATED 10 FEET FROM THE RIGHT-OF-WAY.

DESIGN WAIVER(S):

1. THE BOARD GRANTED THE RELIEF TO REDUCE THE RESIDENTIAL LANDSCAPE BUFFER TO 30.4 FEET.

PREVIOUSLY APPROVED PARKING SCHEDULE

(PER RESOLUTION FOR APPLICATION NO. 2012-3, DECIDED AND MEMORIALIZED DECEMBER 13,2012)

(PER SHEET 4 OF 10 FROM PLAN SET ENTITLED "PRELIMINARY AND FINAL SITE PLANS FOR LOT 51 BLOCK 103 'BLACK RIVER VETERINARY HOSPITAL' SITUATED IN THE BOROUGH OF CHESTER, MORRIS COUNTY, NEW JERSEY", PREPARED BY CIVIL ENGINEERING, INC., DATED 7/6/12 AND LAST REVISED 12/30/12.)

ANIMAL HOSPITAL USE NOT CONTAINED IN ORDINANCE ARTICLE X, 163-80 PARKING AND LOADING REQUIREMENTS. PARKING CALCULATED AS FOLLOWS (CONSISTENT WITH PREVIOUS APPROVAL):

PARKING REQUIRED:

PER ORDINANCE ARTICLE X, 163-80:

5,243 S.F. OFFICE SPACE — 21 TOTAL STALLS REQ.
(1 PARKING STALL REQUIRED FOR EVERY 250 S.F. OFFICE SPACE)
(NO CHANGE UNDER SUBJECT PROPOSAL)

SIMILAR PARKING REQUIREMENTS (FOR COMPARISON ONLY):

PARKING (FOR COMPARISON PURPOSES ONLY):

PER PREVIOUS SITE PLAN -

4 EXAM ROOMS — 8 STALLS
(ASSUME EACH OCCUPIED AND ONE CLIENT IN WAITING AREA FOR EACH) +

6 EMPLOYEES — 6 STALLS
(4 EMPLOYEES + 2 DOCTORS ARE THE MAXIMUM AMOUNT AT THE SITE AT ANY ONE TIME, DURING BUSINESS OPERATING HOURS)
(NO CHANGE UNDER SUBJECT PROPOSAL) — 14 TOTAL STALLS REQ.

PER ORDINANCE ARTICLE X, 163-80 -

5,243 S.F. MEDICAL SPACE — 29 TOTAL STALLS REQ.
(1 PARKING STALL REQUIRED FOR EVERY 180 S.F. MEDICAL SPACE)

ADA STALLS REQUIRED:

26 - 50 STALLS TOTAL — 2 ADA STALLS REQ.

PARKING PROVIDED:

(28) 9' X 18' STALLS PROVIDED
(2) 9' X 18' ADA W/ 14' VAN ACCESSIBLE ISLE PROVIDED

30 TOTAL STALLS PROVIDED FOR SUBJECT APPLICATION

PREVIOUSLY APPROVED LOADING SCHEDULE

(PER RESOLUTION FOR APPLICATION NO. 2012-3, DECIDED AND MEMORIALIZED DECEMBER 13,2012)

(PER SHEET 4 OF 10 FROM PLAN SET ENTITLED "PRELIMINARY AND FINAL SITE PLANS FOR LOT 51 BLOCK 103 'BLACK RIVER VETERINARY HOSPITAL' SITUATED IN THE BOROUGH OF CHESTER, MORRIS COUNTY, NEW JERSEY", PREPARED BY CIVIL ENGINEERING, INC., DATED 7/6/12 AND LAST REVISED 12/30/12.)

LOADING AREA REQUIRED PER ORDINANCE ARTICLE X, 163-83A:

250 S.F. LOADING AREA PER 25 LINEAR FEET OF PRINCIPAL BUILDING FRONTAGE

BUILDING FRONTAGE = 71.1'

71.1' / 25' = 2.84 X 250 = 710 S.F. REQ. LOADING AREA

LOADING AREA PREVIOUSLY APPROVED*:

1 SPACE - 12' X 25' = 300 S.F.

* LOADING AREA COMBINED WITH ACCESS DRIVEWAY TO PARKING AREAS AND REFUSE AND RECYCLING AREA.

NOTES:

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NO.	REVISION	BY	DATE
1	REV. PER BOROUGH COMMENTS	EM	2/4/2020

2/4/2020
DATE

JOHN HANSEN
PROFESSIONAL ENGINEER
N.J. P.E. NO. 24GE04194500

PROJECT:

BLACK RIVER
VETERINARY HOSPITAL
SITE PLANS
BLOCK 103, LOT 51
CHESTER BOROUGH

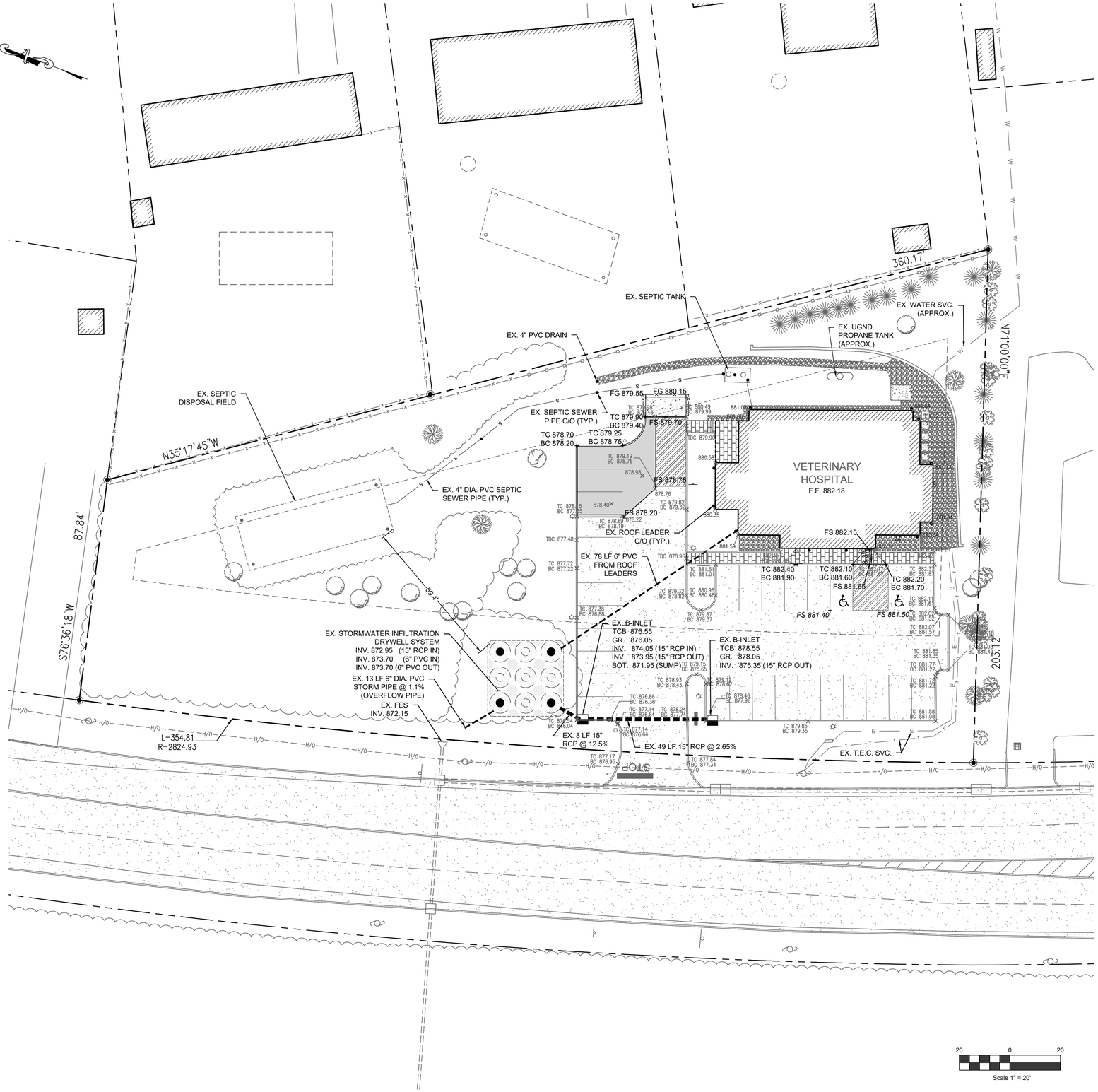
MORRIS COUNTY NEW JERSEY

TITLE:

SITE PLAN

JOB NO.:	19003
SCALE:	1"=20'
DESIGNED:	EM
CHECKED:	JH
FILENAME:	SITE.DWG
DATE:	05/01/2019

DRAWING NO.: 4 / 10



NOTES:

1. ALL EXISTING SPOT ELEVATIONS SHOWN PER PLAN ENTITLED "FINAL SURVEY/SITE AS-BUILT FOR: LOT 51 BLOCK 103 BOROUGH OF CHESTER, MORRIS COUNTY, NEW JERSEY", PREPARED BY CIVIL ENGINEERING, INC., DATED 11/6/15 AND LAST REVISED 6/22/16.
2. ALL ELEVATIONS GIVEN ARE ON NAVD 88 DATUM.
3. ALL EXISTING ELEVATIONS AND SLOPES TO BE VERIFIED IN FIELD BY CONTRACTOR PRIOR TO CONSTRUCTION.

LEGEND

880.58 ×	EXISTING SPOT ELEVATION
FS 878.32 +	EXISTING INTERPOLATED SPOT ELEVATION (VERIFY IN FIELD)
FS 878.32 +	PROPOSED SPOT ELEVATION
2.0% →	PROPOSED SLOPE

NOTES:

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1	REV. PER BOROUGH COMMENTS	EM	2/4/2020

2/4/2020
DATE

JOHN HANSEN
PROFESSIONAL ENGINEER
N.J. P.E. NO. 24GE04194500

PROJECT:

BLACK RIVER
VETERINARY HOSPITAL
SITE PLANS
BLOCK 103, LOT 51
CHESTER BOROUGH

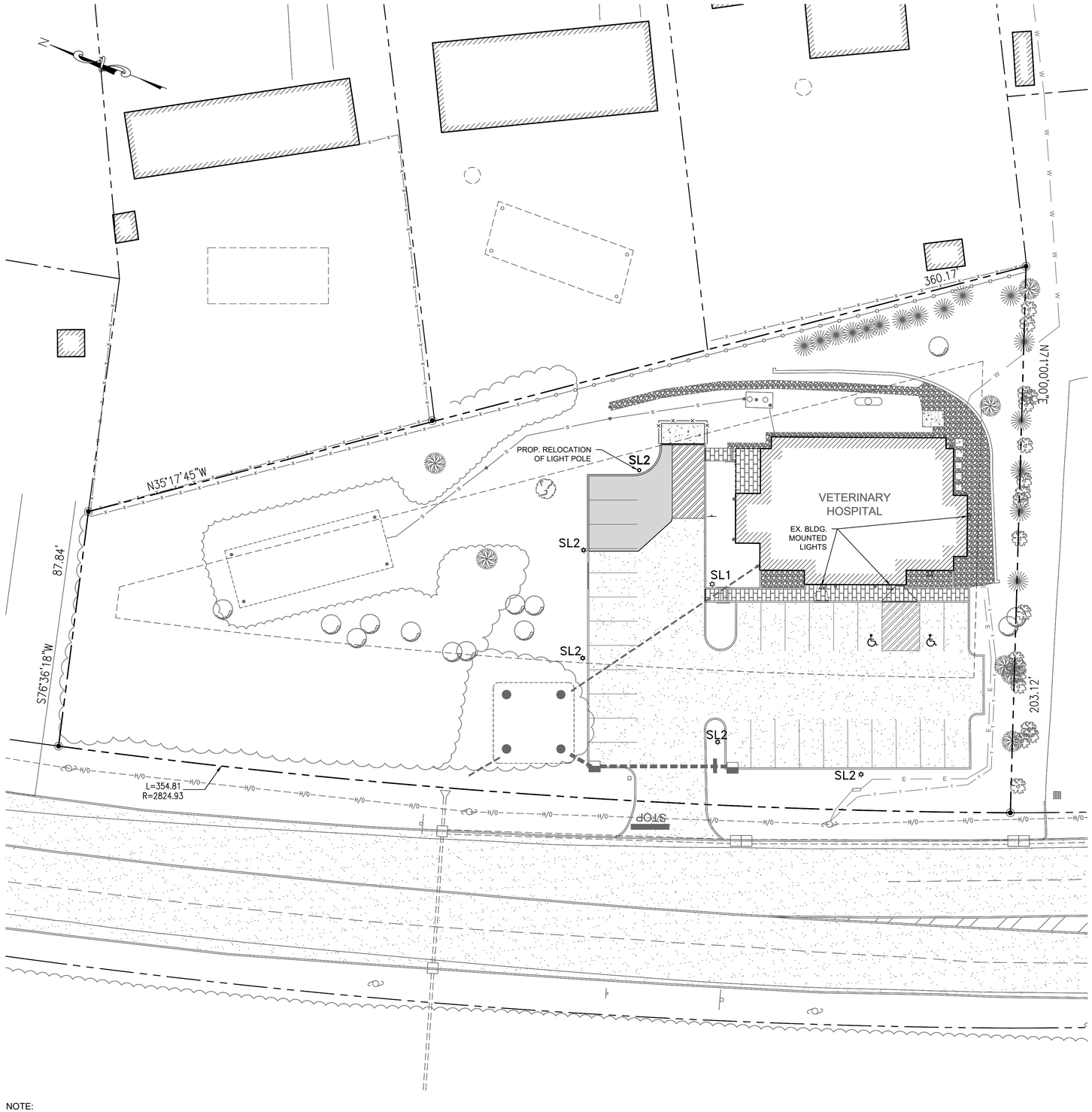
MORRIS COUNTY NEW JERSEY

TITLE:

GRADING & UTILITY PLAN

JOB NO.:	19003
SCALE:	1"=20'
DESIGNED:	EM
CHECKED:	JH
FILENAME:	GRAD_UTIL.DWG
DATE:	05/01/2019

DRAWING NO.: 5 / 10



NOTE:

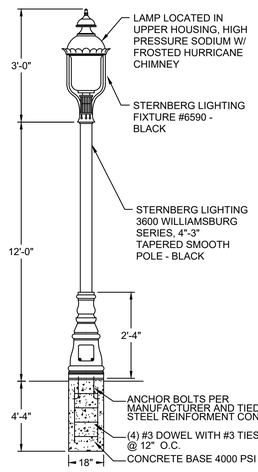
EXISTING LIGHTING SHOWN PER PLAN ENTITLED "FINAL SURVEY/ SITE AS-BUILT FOR: LOT 51 BLOCK 103 BOROUGH OF CHESTER, MORRIS COUNTY, NEW JERSEY", PREPARED BY CIVIL ENGINEERING, INC., DATED 11/6/15 AND LAST REVISED 6/22/16.

20 0 20

Scale 1" = 20'

LUMINAIRE SCHEDULE

Symbol Label	Qty	Catalog #	Description	Lamp	File	Lumens	LLF	Watts
SL1	2	STERNBERG LIGHTING 6590/508/PT/3612T 4/150HPS/R03/FHC/C11	LANTERN CAGE ASSEMBLY w/CLEAR ACRYLIC LENSES VR = 2.2	150W HPS	6590RO3H.IES	16000	0.80	150



STERNBERG LIGHTING POLE & FIXTURE DETAIL

TYPE "SL1" & "SL2"

(N.T.S.)

LIGHTING NOTES:

1.) SITE LIGHTS ARE TO BE TURNED OFF AUTOMATICALLY AT 8PM PREVAILING TIME, EXCEPT FOR SECURITY LIGHTING AS DESIGNATED ON THE ARCHITECTURAL PLANS.

2.) LIGHT FIXTURES ADJACENT TO CURB SHALL BE A MINIMUM OF THREE FEET FROM CURB FACE.

3.) ALL POLE MOUNTED LIGHTING FIXTURES & LIGHTING CALCULATIONS PER RAE LYON OF LIBERTY LIGHTING GROUP, 100 PASSAIC AVE., CHATHAM, NJ 07928. PHONE (973) 701-0600. NO SUBSTITUTION ALLOWED FOR POLES & POLE MOUNTED FIXTURES.

4.) ALL BUILDING & POLE MOUNTED LIGHTING TO BE DIRECTED DOWNWARD

5.) POLES ON NORTHERLY SIDE OF PARKING AREA (SL1) TO BE EQUIPPED WITH HOUSE SIDE SHIELDS.

LIGHTING POWER DENSITY

MAXIMUM LIGHTING POWER DENSITY PER ORDINANCE = .11

LIGHTS ONLY

6 FIXTURES @ 150 WATTS/EA. = 900 WATTS TOTAL

900 WATTS / 11,176 S.F. (PARKING LOT & DRIVEWAY AREA)

= 0.08 LIGHTING POWER DENSITY

LIGHTS AND BALLASTS

6 FIXTURES @ 150 WATTS/EA. + 6 BALLASTS @ 35 WATTS/EA.

= 1100 WATTS TOTAL

1100 WATTS / 11,176 S.F. (PARKING LOT & DRIVEWAY AREA)

= 0.09 LIGHTING POWER DENSITY

LANDSCAPING NOTES:

1. THE EXISTING LANDSCAPING ON SITE IS TO REMAIN. A WAIVER IS REQUESTED FOR CHESTER BOROUGH ORDINANCE SECTION 163-47(A.33). A WAIVER HAS BEEN PREVIOUSLY GRANTED FOR ORDINANCE SECTION 163-49(G) PER RESOLUTION FOR APPLICATION NO. 2012-3, DECIDED AND MEMORIALIZED DECEMBER 13, 2012.
2. DAMAGE TO EXISTING OR NEW WORK BY CONTRACTOR SHALL BE REPAIRED AT HIS EXPENSE.
3. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY WITH REGARDS TO THE CARTING, STORING AND PLANTING OF MATERIALS TO PROTECT ADJACENT PAVEMENT AREAS.
4. ALL TOPSOIL SHALL BE PER MCSCD REQUIREMENTS. SEE SESC NOTES.
5. TOPSOIL AND SEED ALL DISTURBED AREAS AS A RESULT OF ANY AND ALL CONSTRUCTION OR AREAS OF EQUIPMENT STORAGE EQUIPMENT. CONTRACTOR SHALL FIELD VERIFY AREAS OF SEEDING. PROVIDE TOPSOIL TO 6" DEPTH IN ALL LAWN AREA AND 20" DEPTH IN SHRUB BEDS AND GARDEN.
6. ALL REMAINING DISTURBED AREAS SHALL BE SEEDED UNLESS NOTED OTHERWISE. SEE SEEDING PREPARATION NOTES. ALL LAWN AREAS TO BE FERTILIZED PRIOR TO FINAL SEEDING WITH A 10-6-4 FERTILIZER AT THE RATE OF 20 LBS/1000 SF. IN TWO APPLICATIONS.

NOTES:

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CERTIFICATE OF AUTHORIZATION NO.: 24GA28021500 EXP. 8/31/2020

NO.	REVISION	BY	DATE
1	REV. PER BOROUGH COMMENTS	EM	2/4/2020

2/4/2020
DATE

JOHN HANSEN
PROFESSIONAL ENGINEER
N.J. P.E. NO. 24GE04194500

PROJECT:

BLACK RIVER
VETERINARY HOSPITAL
SITE PLANS
BLOCK 103, LOT 51
CHESTER BOROUGH

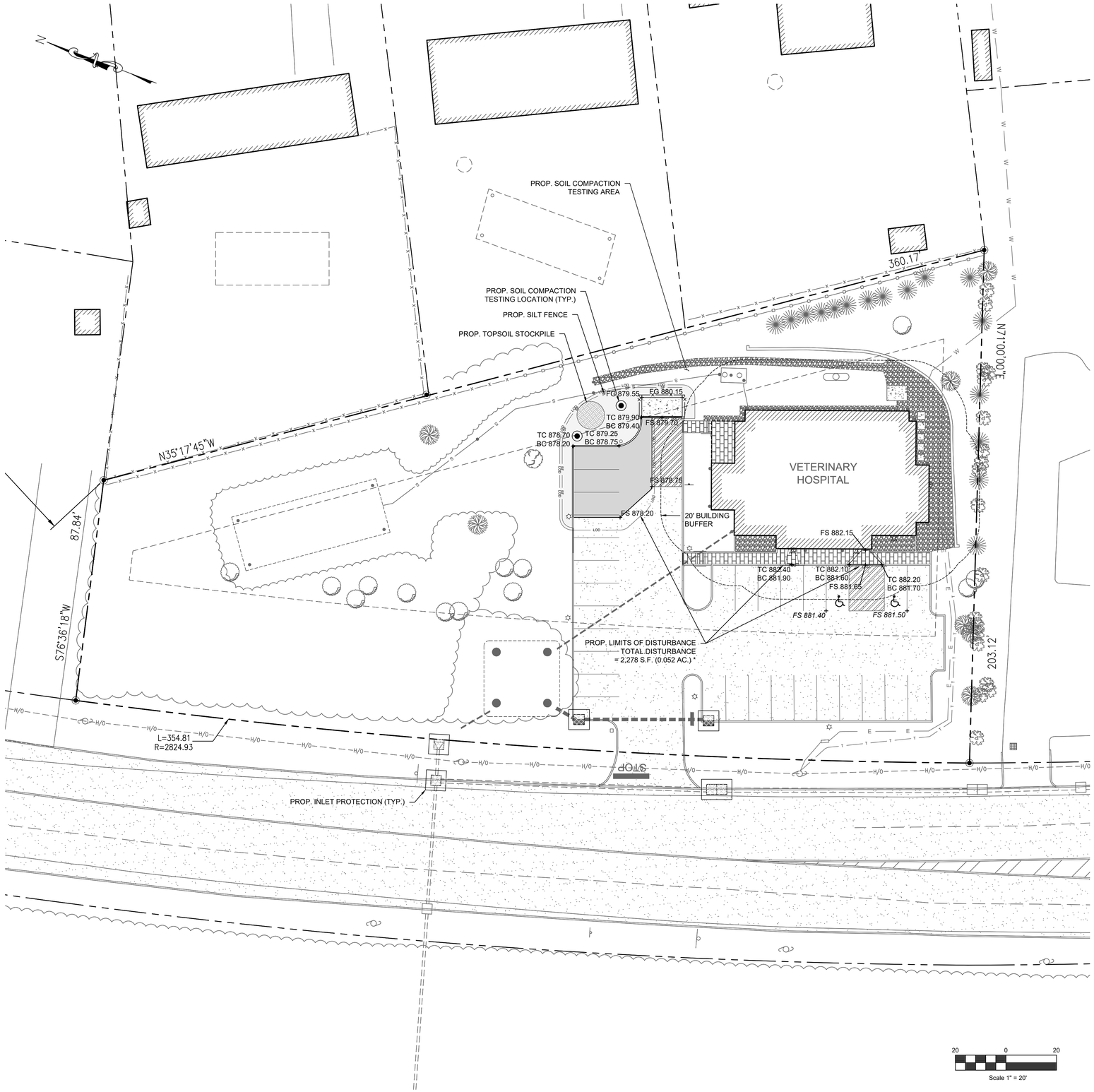
MORRIS COUNTY NEW JERSEY

TITLE:

LIGHTING & LANDSCAPING PLAN

JOB NO.:	19003
SCALE:	1"=20'
DESIGNED:	EM
CHECKED:	JH
FILENAME:	LANDSCAPE & LIGHTING.DWG
DATE:	05/01/2019

DRAWING NO.: 6 / 10



LEGEND

SF SF SF	SILT FENCE
LOD LOD LOD	LIMIT OF DISTURBANCE
	TOPSOIL STOCKPILE
	INLET PROTECTION
	SOIL COMPACTION TESTING AREA
	SOIL COMPACTION TESTING LOCATION

NOTES:

* THIS PROJECT IS EXEMPT FROM MORRIS COUNTY SOIL CONSERVATION DISTRICT APPROVAL SINCE THERE IS LESS THAN 5,000 S.F. OF DISTURBANCE PROPOSED.

ALL SOILS ON SITE ARE GLADSTONE GRAVELLY LOAM, 3-8% SLOPES (GkaoB) AS MAPPED PER WEB SOIL SURVEY.

NOTES:

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1	REV. PER BOROUGH COMMENTS	EM	2/4/2020

2/4/2020
DATE

JOHN HANSEN
PROFESSIONAL ENGINEER
N.J. P.E. NO. 24GE04194500

PROJECT:

BLACK RIVER
VETERINARY HOSPITAL
SITE PLANS
BLOCK 103, LOT 51
CHESTER BOROUGH

MORRIS COUNTY NEW JERSEY

TITLE:

SOIL EROSION & SEDIMENT CONTROL PLAN

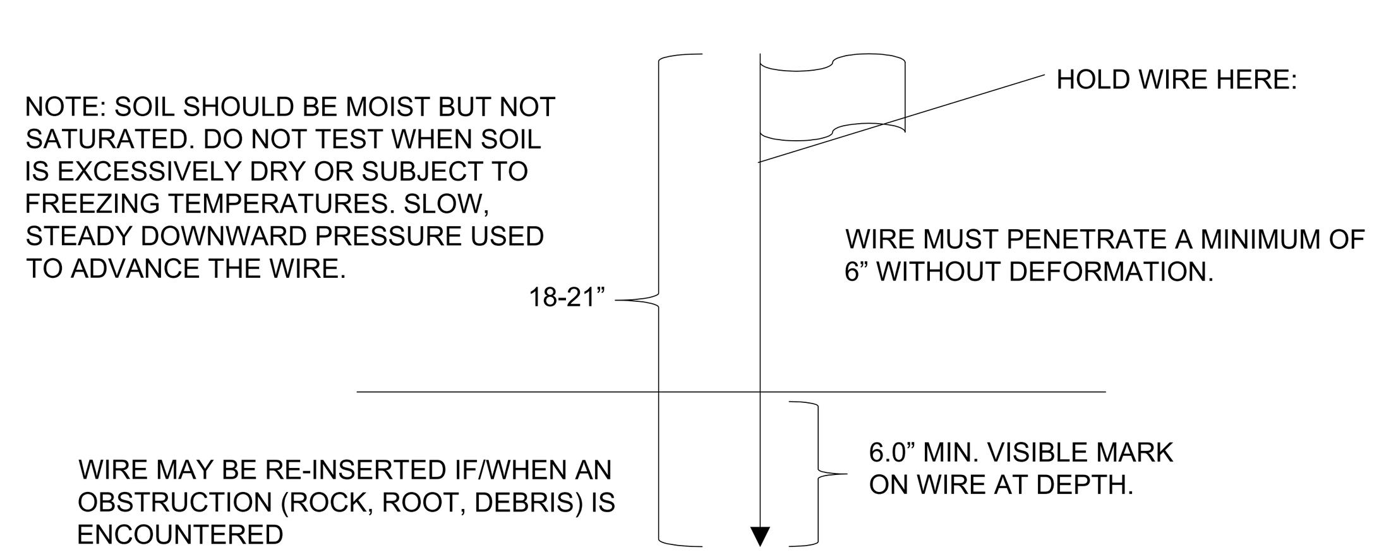
JOB NO.:	19003
SCALE:	1"=20'
DESIGNED:	EM
CHECKED:	JH
FILENAME:	EROSION.DWG
DATE:	05/01/2019

DRAWING NO.: 7 / 10

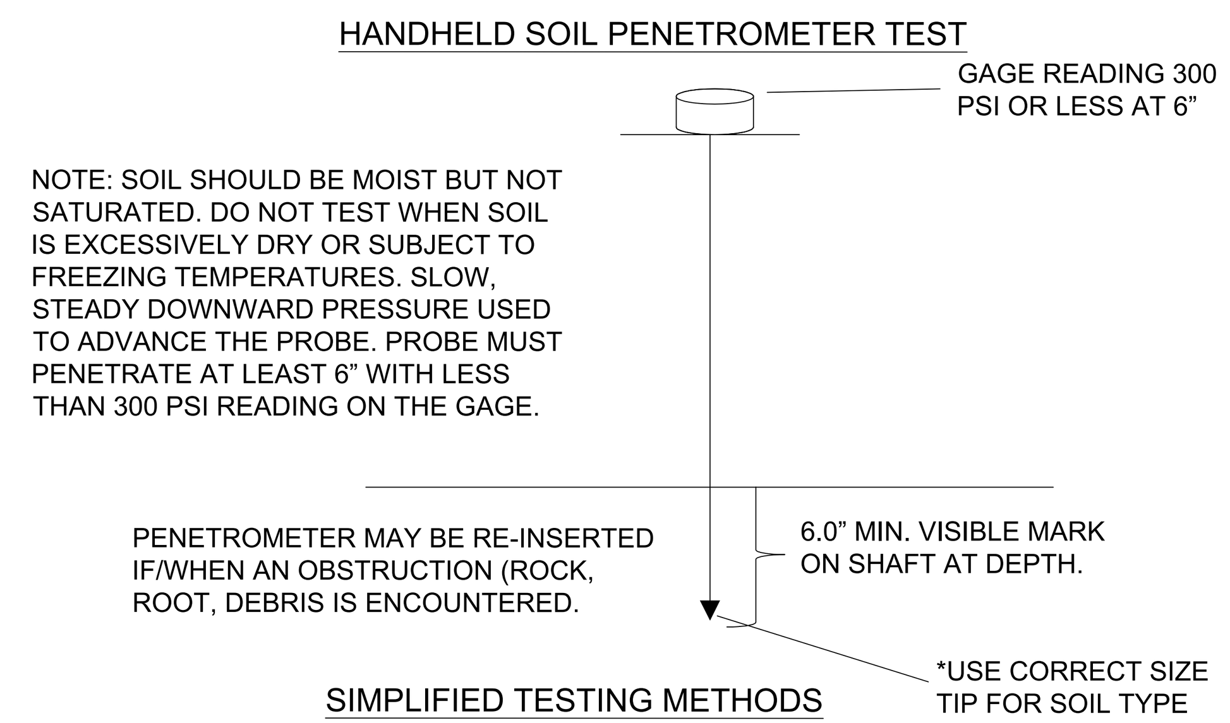
SOIL EROSION AND SEDIMENT CONTROL NOTES:

1. ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY, AND WILL BE IN PLACE PRIOR TO ANY MAJOR SOIL DISTURBANCE, OR IN THEIR PROPER SEQUENCE AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.
2. ANY DISTURBED AREA THAT WILL BE LEFT EXPOSED FOR MORE THAN THIRTY (30) DAYS AND NOT SUBJECT TO CONSTRUCTION TRAFFIC SHALL IMMEDIATELY RECEIVE A TEMPORARY SEEDING. IF THE SEASON PROHIBITS TEMPORARY SEEDING, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW OR HAY AND TACKED IN ACCORDANCE WITH THE NEW JERSEY STANDARDS. SEE NOTE 21 BELOW.
3. PERMANENT VEGETATION IS TO BE ESTABLISHED ON EXPOSED AREAS WITHIN TEN (10) DAYS AFTER FINAL GRADING. MULCH IS TO BE USED FOR PROTECTION UNTIL VEGETATION IS ESTABLISHED. SEE NOTE 22 BELOW.
4. IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING. ALL CRITICAL AREAS (STEEP SLOPES, SANDY SOILS, WET CONDITIONS) SUBJECT TO EROSION WILL RECEIVE A TEMPORARY SEEDING IN ACCORDANCE WITH NOTE 21 BELOW.
5. TEMPORARY DIVERSION BERMS ARE TO BE INSTALLED ON ALL CLEARED ROADWAYS AND EASEMENT AREAS. SEE THE DIVERSION DETAIL.
6. PERMANENT SEEDING AND STABILIZATION TO BE IN ACCORDANCE WITH THE "STANDARDS FOR PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION COVER". SPECIFIED RATES AND LOCATIONS SHALL BE ON THE APPROVED SOIL EROSION AND SEDIMENT CONTROL PLAN.
7. THE SITE SHALL AT ALL TIMES BE GRADED AND MAINTAINED SO THAT ALL STORMWATER RUNOFF IS DIVERTED TO SOIL EROSION AND SEDIMENT CONTROL FACILITIES.
8. ALL SEDIMENTATION STRUCTURES (SILT FENCE, INLET FILTERS, AND SEDIMENT BASINS) WILL BE INSPECTED AND MAINTAINED DAILY.
9. STOCKPILES SHALL NOT BE LOCATED WITHIN 50' OF A FLOODPLAIN, SLOPE, DRAINAGE FACILITY, OR ROADWAY. ALL STOCKPILES BASES SHALL HAVE A SILT FENCE PROPERLY ENTRENCHED AT THE TOE OF SLOPE.
10. A STABILIZED CONSTRUCTION ACCESS WILL BE INSTALLED, WHENEVER AN EARTHEN ROAD INTERSECTS WITH A PAVED ROAD. SEE THE STABILIZED CONSTRUCTION ACCESS DETAIL AND CHART FOR DIMENSIONS.
11. ALL NEW ROADWAYS WILL BE TREATED WITH SUITABLE SUBBASE UPON ESTABLISHMENT OF FINAL GRADE ELEVATIONS.
12. PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES.
13. BEFORE DISCHARGE POINTS BECOME OPERATIONAL, ALL STORM DRAINAGE OUTLETS WILL BE STABILIZED AS REQUIRED.
14. ALL DEWATERING OPERATIONS MUST BE DISCHARGED DIRECTLY INTO A SEDIMENT FILTER AREA. THE FILTER SHOULD BE COMPOSED OF A FABRIC OR APPROVED MATERIAL. SEE THE DEWATERING DETAIL.
15. ALL SEDIMENT BASINS WILL BE CLEANED WHEN THE CAPACITY HAS BEEN REDUCED BY 50%. A CLEAN OUT ELEVATION WILL BE IDENTIFIED ON THE PLAN AND A MARKER INSTALLED ON THE SITE.
16. DURING AND AFTER CONSTRUCTION, THE APPLICANT WILL BE RESPONSIBLE FOR THE MAINTENANCE AND UPKEEP OF THE DRAINAGE STRUCTURES, VEGETATION COVER, AND ANY OTHER MEASURES DEEMED APPROPRIATE BY THE DISTRICT. SAID RESPONSIBILITY WILL END WHEN COMPLETED WORK IS APPROVED BY THE MORRIS COUNTY SOIL CONSERVATION DISTRICT.
17. ALL TREES OUTSIDE THE DISTURBANCE LIMIT INDICATED ON THE SUBJECT PLAN OR THOSE TREES WITHIN THE DISTURBANCE AREA WHICH ARE DESIGNATED TO REMAIN AFTER CONSTRUCTION ARE TO BE PROTECTED WITH TREE PROTECTION DEVICES. SEE THE TREE PROTECTION DETAIL.
18. THE MORRIS COUNTY SOIL CONSERVATION DISTRICT MAY REQUEST ADDITIONAL MEASURES TO MINIMIZE ON SITE OR OFF SITE EROSION PROBLEMS DURING CONSTRUCTION.
19. THE MORRIS COUNTY SOIL CONSERVATION DISTRICT MUST BE NOTIFIED, IN WRITING, AT LEAST 72 HOURS PRIOR TO ANY LAND DISTURBANCE, AND A PRE-CONSTRUCTION MEETING HELD.
20. CONTRACTOR TO SET UP A MEETING WITH THE INSPECTOR FOR PERIODIC INSPECTIONS OF THE TEMPORARY SEDIMENT BASIN PRIOR TO AND DURING ITS CONSTRUCTION.
21. TOPSOIL STOCKPILE PROTECTION
    A. APPLY GROUND LIMESTONE AT A RATE OF 90 LBS PER 1000 SQ. FT.
    B. APPLY FERTILIZER (10-20-10) AT A RATE OF 11 LBS. PER 1000 SQ. FT.
    C. APPLY PERENNIAL RYEGRASS SEED AT 1 LB. PER 1000 SQ. FT. AND ANNUAL RYEGRASS AT 1 LB. PER 1000 SQ. FT.
    D. MULCH STOCKPILE WITH STRAW OR HAY AT A RATE OF 90 LBS. PER 1000 SQ. FT.
    E. APPLY A LIQUID MULCH BINDER OR TACK TO STRAW OR HAY MULCH.
    F. PROPERTY ENTRENCH A SILT FENCE AT THE BOTTOM OF THE STOCKPILE.
22. TEMPORARY STABILIZATION SPECIFICATIONS
    A. APPLY GROUND LIMESTONE AT A RATE OF 90 LBS PER 1000 SQ. FT.
    B. APPLY FERTILIZER (10-20-10) AT A RATE OF 11 LBS. PER 1000 SQ. FT.
    C. APPLY PERENNIAL RYEGRASS SEED AT 1 LB. PER 1000 SQ. FT. AND ANNUAL RYEGRASS AT 1 LB. PER 1000 SQ. FT.
    D. MULCH STOCKPILE WITH STRAW OR HAY AT A RATE OF 90 LBS. PER 1000 SQ. FT.
    E. APPLY A LIQUID MULCH BINDER OR TACK TO STRAW OR HAY MULCH.
23. PERMANENT STABILIZATION SPECIFICATIONS
    A. APPLY TOPSOIL TO A DEPTH OF 5 INCHES (UNSETTLED)
    B. APPLY GROUND LIMESTONE AT A RATE OF 90 LBS PER 1000 SQ. FT.
    C. APPLY FERTILIZER (10-20-10) AT A RATE OF 11 LBS. PER 1000 SQ. FT.
    D. APPLY HARD FESCUE SEED AT 2.7 LBS. PER 1000 SQ. FT. AND CREEPING RED FESCUE SEED AT 0.7 LBS. PER 1000 SQ. FT. AND PERENNIAL RYEGRASS SEED AT 0.25 LBS. PER 1000 SQ. FT/.
    E. MULCH STOCKPILE WITH STRAW OR HAY AT A RATE OF 90 LBS. PER 1000 SQ. FT.
    F. APPLY A LIQUID MULCH BINDER OR TACK TO STRAW OR HAY MULCH.

* NOTE: 72 HOURS PRIOR TO ANY SOIL DISTURBANCE, NOTICE IN WRITING, SHALL BE GIVEN TO THE MORRIS COUNTY SOIL CONSERVATION DISTRICT AND A PRE-CONSTRUCTION MEETING HELD.



HANDHELD SOIL PENETROMETER TEST



SIMPLIFIED TESTING METHODS

PROBING WIRE TEST- 15.5 GA STEEL WIRE (SURVEY FLAG)

(1) COMPACTION TESTING DETAIL

NTS

AGRONOMIC SPECIFICATIONS FOR LAWNS AND CONSTRUCTION SITES

GENERAL
1. ALL DISTURBED AREAS THAT ARE NOT BEING GRADED, NOT UNDER ACTIVE CONSTRUCTION, OR NOT SCHEDULED TO BE PERMANENTLY SEEDED WITHIN 30 DAYS MUST BE TEMPORARILY STABILIZED AS PER SPECIFICATIONS BELOW.

1. ALL EXPOSED AREAS WHICH ARE TO BE PERMANENTLY VEGETATED, ARE TO BE SEEDED AND MULCHED WITHIN 10 DAYS OF FINAL GRADING.

2. STRAW MULCH (HAY MULCH MAY BE SUBSTITUTED IF APPROVED BY THE DISTRICT) IS TO BE APPLIED TO ALL SEEDINGS AT A RATE OF 1-1/2 TO 2 TONS PER ACRE (APPROX. 100 TO 130 BALES PER ACRE).

3. MULCH ANCHORING IS REQUIRED AFTER MULCHING TO MINIMIZE LOSS BY WIND OR WATER. THIS IS TO BE DONE USING ONE OF THE METHODS (CRIMPING, LIQUID MULCH BINDERS, NETTINGS, ETC.) IN THE "STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY".

4. EXISTING WEEDY AND POORLY-VEGETATED AREAS WITH LESS THAN 80 PERCENT PERENNIAL GRASS COVER MUST RECEIVE PERMANENT STABILIZATION (AS SPECIFIED ON BACK).

5. ALL BAGS NEED TO BE SAVED FOR LIME, FERTILIZER, SEED, AND LIQUID MULCH BINDER (IF MULCH ANCHORING METHOD). SUCH PROOFS NEED TO BE SUBMITTED TO THE DISTRICT INSPECTOR FOR VERIFICATION OF MATERIALS AND QUANTITIES USED FOR ALL SEEDINGS.

6. AN ADDITIONAL FEE OF $175.00 PER INSPECTION WILL BE ASSESSED TO THOSE SITES WHERE ADDITIONAL INSPECTIONS ARE NECESSITATED AS A RESULT OF NON-COMPLIANCE WITH THE APPROVED PLAN. THIS INCLUDES ADDITIONAL INSPECTIONS PERFORMED AFTER THE FAILURE OF AN INITIAL REPORT OF COMPLIANCE INSPECTION. THE ENTIRE SITE IS INSPECTED AT THE TIME OF A REQUEST FOR REPORT OF COMPLIANCE.

SEED-BED PREPARATION FOR ALL SEEDINGS

SUB-SOIL PREPARATION: IMMEDIATELY PRIOR TO SEEDING AND TOPSOIL APPLICATION, THE SURFACE SHOULD BE SCARIFIED TO A DEPTH OF 6" TO 12" WHERE THERE HAS BEEN SOIL COMPACTION (e.g. AREAS OF HEAVY CONSTRUCTION TRAFFIC). THIS PRACTICE IS TO BE APPLIED TO ALL COMPACTED AREAS WHERE THERE IS NO DANGER TO UNDERGROUND UTILITIES (CABLES, IRRIGATION SYSTEMS, ETC.).

TOPSOILING: AREAS TO BE SEEDED SHOULD HAVE A MINIMUM OF 5" OF FRIABLE, LOAMY, TOPSOIL FREE OF OBJECTIONABLE WEEDS, STONES, AND DEBRIS.

FINAL GRADING: GRADING IS TO BE SMOOTH OF RUTS AND FREE OF OBJECTIONABLE STONES, DEPRESSIONS, VEHICLE TRACKS, AND ROUGH EDGES. THERE IS TO BE POSITIVE DRAINAGE AWAY FROM ALL BUILDINGS AND DWELLINGS. REFUSE FROM SEEDBED PREPARATION (ROOTS, STICKS, STONES, CONSTRUCTION DEBRIS) MUST BE DISPOSED OF PROPERLY.

LIMING/FERTILIZING: APPLY LIMESTONE AND FERTILIZER TO SOIL TEST RECOMMENDATIONS:
A. LIME IS TO BE APPLIED AT THE RECOMMENDED RATE. LIME MAY BE ANY PRODUCT AS TONS AS THE CCE CALCIUM CARBONATE EQUIVALENCY. PELLETIZED AND LIQUID PRODUCTS MAY BE PREFERRED BECAUSE OF THEIR LACK OF DUST AND EASE OF HANDLING BUT MUST MEET THE FORE-MENTIONED CRITERIA.

B. STARTER FERTILIZER, SPECIFIED AS 10-20-10, IS TO BE APPLIED AT 500 LBS. PER ACRE.

C. LIME AND FERTILIZER ARE TO BE WORKED INTO THE SOIL TO A DEPTH OF 4 INCHES.

TEMPORARY STABILIZATION WITH MULCH ONLY
STRAW MULCH (HAY MULCH MAY BE SUBSTITUTED IF APPROVED BY THE DISTRICT) IS TO BE SPREAD UNIFORMLY AT THE RATE OF 2 TO 2 1/2 TONS PER ACRE (TOTAL GROUND SURFACE COVERAGE). THIS PRACTICE IS LIMITED TO PERIODS WHEN VEGETATIVE COVER CANNOT BE ESTABLISHED DUE TO THE SEASON OR OTHER CONDITIONS. MULCH MUST BE ANCHORED IN ACCORDANCE WITH NEW JERSEY STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL. MULCH ALONE CAN ONLY BE USED FOR SHORT PERIOD AND WILL REQUIRE MAINTENANCE AND RENEWAL. OTHER MULCH MATERIALS MAY BE UTILIZED IF APPROVED BY THE DISTRICT.

TEMPORARY SEEDING
TEMPORARY SEEDING IS TO BE USED ON ALL DISTURBED AREAS WHERE PERMANENT STABILIZATION WILL NOT BE ACCOMPLISHED FOR A PERIOD OF UP TO 6 MONTHS.

PRODUCT	RATE	RECOMMENDED OPTIMUM SEEDING DATES
PERENNIAL RYEGRASS	100 LBS./ACRE	3/15-5/15 & 8/15-10/1
SPRING OATS	86 LBS./ACRE	3/15-6/1 & 8/1-10/1
WINTER CEREAL RYE	112 LBS./ACRE	8/1-11/15
WINTER BARLEY	96 LBS./ACRE	8/15-10/1
PEARL MILLET	20 LBS./ACRE	5/15-8/15
GERMAN OR HUNGARIAN MILLET	30 LBS./ACRE	5/15-8/15

STABILIZATION WITH SOD
STABILIZATION WITH SOD IS PERMITTED IN AREAS WHERE MAINTENANCE AND IRRIGATION ARE ADEQUATE TO INSURE PROPER ESTABLISHMENT AND LONGEVITY. SEEDBED PREPARATION IS TO BE CONSISTENT WITH ANY OTHER STABILIZATION REQUIREMENTS. (LIME AND FERTILIZER BAGS ARE TO BE RETAINED FOR DISTRICT INSPECTION.) ON SLOPES GREATER THAN 3 TO 1, SOD MUST BE PROPERLY ANCHORED TO THE SLOPE IN ACCORDANCE WITH THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL.

PERMANENT SEEDING
A. SEED IS TO BE INCORPORATED INTO THE SOIL TO A DEPTH OF 1/4"-1/2".

B. LAWN SEEDINGS ARE TO BE A MIXTURE OF BLUEGRASS, TURF-TYPE FESCUES, AND TURF-TYPE PERENNIAL RYEGRASSES TO INSURE LONGEVITY, TOLERANCE, AND DURABILITY. NO SEED SHALL BE ACCEPTED WITH A GERMINATION TEST DATE OF MORE THAN 12 MONTHS OLD UNLESS RETESTED.

C. PROFESSIONAL SEED MIXTURES ARE RECOMMENDED RATHER THAN MIXING SEEDS YOURSELF.

D. SEED MIXTURE (AS SPECIFIED BELOW) IS TO BE APPLIED AT A MINIMUM RATE OF 200 LBS. PER ACRE OF PERENNIAL SEED.

E. OPTIMUM SEEDING PERIOD FOR MORRIS COUNTY IS FROM MARCH 1 TO MAY 15 AND AUGUST 15 TO OCTOBER 1. OUTSIDE OF THOSE PERIODS, THE SEEDING RATES ARE TO BE INCREASED BY 50 (i.e.: 300 LBS. PER ACRE OF PERENNIAL SEED INSTEAD OF THE REQUIRED 200 LBS. PER ACRE DURING OPTIMUM PERIODS).

F. SEEDINGS SHOULD RECEIVE AN APPLICATION OF FERTILIZER SUCH AS 10-10-10 OR EQUIVALENT AT 400 LBS. PER ACRE APPROXIMATELY 6 MONTHS AFTER FIRST APPLICATION.

SEEDING MIXTURE FOR GENERAL SEEDING

FROM THE "STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY" (TABLE 4-3);

MIX #12 - TURF-TYPE TALL FESCUE (BLEND OF 3 CULTIVARS)
SEEDING RATE 350 LBS./ACRE
OPTIMUM SEEDING DATES: AUGUST 15 TO OCTOBER 15

DUST CONTROL NOTES

THE FOLLOWING METHODS SHOULD BE CONSIDERED FOR CONTROLLING DUST:

MULCHES

VEGETATIVE COVER

SPRAY-ON ADHESIVES - ON MINERAL SOILS (NOT EFFECTIVE ON MUCK SOILS). KEEP TRAFFIC OFF THESE AREAS.

DUST CONTROL MATERIALS

MATERIAL	WATER DILUTION	TYPE OF NOZZLE	APPLY GAL/AC
ANIONIC ASPHALT EMULSION	7:1	COARSE SPRAY	1200
LATEX EMULSION	12.5:1	FINE SPRAY	235
RESIN IN WATER	4:1	FINE SPRAY	300
POLYACRYLAMIDE (PAM) - SPRAY ON POLYACRYLAMIDE (PAM) - DRY SPRAY	APPLY ACCORDING TO MANUFACTURERS'S INSTRUCTIONS MAY ALSO BE USED AS AN ADDITIVE TO SEDIMENT BASINS TP FLOCCULATE AND PRECIPITATE SUSPENDED COLLOIDS.		
ACIDULATED SOY BEAN SOAP STICK	NONE	COARSE SPRAY	1200

TILLAGE - TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. THIS IS A TEMPORARY EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN PLOWING ON WINDWARD SIDE OF SITE. CHISEL-TYPE PLOWS SPACED ABOUT 18 INCHES APART, AND SPRING-TOOTHED HARROWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT.

SPRINKLING - SITE IS SPRINKLED UNTIL THE SURFACE IS WET.

BARRIERS - SOLID BOARD FENCES, SNOW FENCES, BURLAP FENCES, CRATE WALLS, BALES OF HAY, AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING.

CALCIUM CHLORIDE - SHALL BE IN THE FORM OF LOOSE, DRY GRANULATES OF FLAKES FINE ENOUGH TO FEED THROUGH COMMONLY USED SPREADERS AT A RATE THAT WILL KEEP SURFACE MOIST BUT NOT CAUSE POLLUTION OR PLANT DAMAGE. IF USED ON STEEPER SLOPES, THEN USE OTHER PRACTICES TO PREVENT WASHING INTO STREAMS, OR ACCUMULATION AROUND PLANTS.

STONE - COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.

MULCHING:

MULCHING IS REQUIRED ON ALL SEEDING. MULCH WILL PROTECT AGAINST EROSION BEFORE GRASS IS ESTABLISHED AND WILL PROMOTE FASTER AND EARLIER ESTABLISHMENT. THE EXISTENCE OF VEGETATION SUFFICIENT TO CONTROL SOIL EROSION SHALL BE DEEMED COMPLIANT WITH THIS MULCHING REQUIREMENT.

A. STRAW OR HAY. UNROTTED SMALL GRAIN STRAW, HAY FREE OF SEEDS, TO BE APPLIED AT THE RATE OF 1-1/2 TO 2 TONS PER ACRE (70 TO 90 POUNDS PER 1,000 SQUARE FEET), EXCEPT THAT WHERE A CRIMPER IS USED INSTEAD OF A LIQUID MULCH-BINDER (TACKIFYING OR ADHESIVE AGENT), THE RATE OF APPLICATION IS 3 TONS PER ACRE. MULCH CHOPPER-BLOWERS IS NOT GRIND THE MULCH. HAY MULCH IS NOT RECOMMENDED FOR REESTABLISHING FINE TURF OR LAWNS DUE TO THE PRESENCE OF WEED SEED.

APPLICATION. SPREAD MULCH UNIFORMLY BY HAND OR MECHANICALLY SO THAT AT LEAST 85% OF THE SOIL SURFACE WILL BE COVERED. FOR UNIFORM DISTRIBUTION OF HAND-SPREAD MULCH, DIVIDE AREA INTO APPROXIMATELY 1,000 SQUARE FEET SECTIONS AND DISTRIBUTE 70 TO 90 POUNDS WITHIN EACH SECTION. ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS OF SLOPE, AND COSTS.

1. PEG AND TWINE. DRIVE 8 TO 10 INCH WOODEN PEGS TO WITHIN 2 TO 3 INCHES OF THE SOIL SURFACE EVERY 4 FEET IN ALL DIRECTIONS. STAKES MAY BE DRIVEN BEFORE OR AFTER APPLYING MULCH. SECURE MULCH TO SOIL SURFACE BY STRETCHING TWINE BETWEEN PEGS IN A CRISSCROSS AND SQUARE PATTERN. SECURE TWINE AROUND EACH PEG WITH TWO OR MORE ROUND TURNS.

2. MULCH NETTINGS. STAPLE PAPER, JUICE, COTTON, OR PLASTIC NETTINGS TO THE SOIL SURFACE. USE A DEGRADABLE NETTING IN AREAS TO BE MOWED.

3. CRIMPER (MULCH ANCHORING COULTER TOOL). A TRACTOR-DRAWN IMPLEMENT, SOMEWHAT LIKE A DISC HARROW, ESPECIALLY DESIGNED TO PUSH OR CUT SOME OF THE BROADCAST LONG FIBER MULCH 3 TO 4 INCHES INTO THE SOIL SO AS TO ANCHOR IT AND LEAVE PART STANDING UPRIGHT. THIS TECHNIQUE IS LIMITED TO AREAS TRAVERSABLE BY A TRACTOR, WHICH MUST OPERATE ON THE CONTOUR OF SLOPES, STRAW MULCH RATE MUST BE 3 TONS PER ACRE. NO TACKIFYING OR ADHESIVE AGENT IS REQUIRED.

4. LIQUID MULCH BINDERS. MAY BE USED TO ANCHOR SALT HAY, HAY OR STRAW MULCH.

A. APPLICATIONS SHOULD BE HEAVIER AT EDGES WHERE WIND MAY CATCH THE MULCH, IN VALLEYS, AND AT CRESTS OF BANKS. THE REMAINDER OF THE AREA SHOULD BE UNIFORM IN APPEARANCE.

B. USE OF THE FOLLOWING:

1. ORGANIC AND VEGETABLE BASED BINDERS. NATURALLY OCCURRING, POWDER BASED HYDROPHILIC MATERIALS WHEN MIXED WITH WATER FORMULATES A GEL AND WHEN APPLIED TO MULCH UNDER SATISFACTORY CURING CONDITIONS WILL FORM MEMBRANED NETWORKS OF INSOLUBLE POLYMERS. THE VEGETABLE GEL SHALL BE PHYSIOLOGICALLY HARMLESS AND NOT RESULT IN A PHYTOTOXIC EFFECT OR IMPEDE GROWTH OF TURFGRASS. USE AT RATES AND WEATHER CONDITIONS AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH MATERIALS. MANY NEW PRODUCTS ARE AVAILABLE, SOME OF WHICH MAY NEED FURTHER EVALUATION FOR USE IN THE STATE.

2. SYNTHETIC BINDERS. HIGH POLYMERS SYNTHETIC EMULSION, MISCIBLE WITH WATER WHEN DILUTED AND FOLLOWING APPLICATION TO MULCH, DRYING AND CURING SHALL NO LONGER BE SOLUBLE OR DISPERSIBLE IN WATER. BINDER SHALL BE APPLIED AT RATES RECOMMENDED BY THE MANUFACTURE AND REMAIN TACKY UNTIL GERMINATION OF GRASS.

C. WOOD-FIBER OR PAPER-FIBER MULCH SHALL BE MADE FROM WOOD, PLANT FIBERS OR PAPER CONTAINING NO GROWTH OR GERMINATION INHIBITING MATERIALS, USED AT THE RATE OF 1,500 POUNDS PER ACRE (OR AS RECOMMENDED BY THE PRODUCT MANUFACTURER) AND MAY BE APPLIED BY A HYDROSEEDER, MULCH SHALL NOT BE MIXED IN THE TANK WITH SEED. USE IS LIMITED TO FLATTER SLOPES AND DURING OPTIMUM SEEDING PERIODS IN SPRING AND FALL.

D. PELLETIZED MULCH. COMPRESSED AND EXTRUDED PAPER AND/OR WOOD FIBER PRODUCT, WHICH MAY CONTAIN COPOLYMERS, TACKIFIERS, FERTILIZERS AND COLORING AGENTS. THE DRY PELLETS, WHEN APPLIED TO A SEEDED AREA AND WATERED FORM A MULCH MAT. PELLETIZED MULCH SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MULCH MAY BE APPLIED BY HAND OR MECHANICAL SPREADER AT THE RATE OF 60-75 LBS/1,000 SQ. FT. AND ACTIVATED WITH 0.2 TO 0.4 INCHES OF WATER. THIS MATERIAL HAS BEEN FOUND TO BE BENEFICIAL FOR USE ON SMALL LAWN AND RENOVATION AREAS, SEEDED AREAS WHERE WEED-SEED FREE MULCH IS DESIRED OR ON SITES WHERE STRAW MULCH AND TACKIFIER AGENTS ARE NOT PRACTICAL OR DESIRABLE. APPLYING THE FULL 0.2 TO 0.4 INCHES OF WATER AFTER SPREADING PELLETIZED MULCH ON THE SEEDBED IS EXTREMELY IMPORTANT FOR SUFFICIENT ACTIVATION AND EXPANSION OF THE MULCH TO PROVIDE SOIL COVERAGE.

2. IRRIGATION (WHERE FEASIBLE): IF SOIL MOISTURE IS DEFICIENT SUPPLY NEW SEEDING WITH ADEQUATE WATER (A MINIMUM OF 1/4 INCH APPLIED UP TO TWICE A DAY UNTIL VEGETATION IS WELL ESTABLISHED). THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE IN ABNORMALLY DRY OR HOT WEATHER OR ON DROUGHTY SITES.

3. TOP DRESSING: SINCE SOIL ORGANIC MATTER CONTENT AND SLOW RELEASE NITROGEN FERTILIZER (WATER INSOLUBLE) ARE PRESCRIBED IN SECTION 2A-SEEDBED PREPARATION IN THIS STANDARD, NO FOLLOW-UP OF TOP DRESSING IS MANDATORY, AN EXCEPTION MAY BE MADE WHERE GROSS NITROGEN DEFICIENCY EXISTS IN THE SOIL TO THE EXTENT THAT TURF FAILURE MAY DEVELOP. IN THAT INSTANCE, TOP DRESSING WITH 10-10-10- OR EQUIVALENT AT 300 POUNDS PER ACRE OR 7 POUNDS PER 1,000 SQUARE FEET EVERY 3 TO 5 WEEK UNTIL THE GROSS NITROGEN DEFICIENCY IN THE TURF IS AMELLIORATED.

4. ESTABLISHING PERMANENT VEGETATIVE STABILIZATION: THE QUALITY OF PERMANENT VEGETATION RESTS WITH THE CONTRACTOR. THE TIMING OF SEEDING, PREPARING THE SEEDBED, APPLYING NUTRIENTS, MUCH AND OTHER MANAGEMENT ARE ESSENTIAL.THE SEED APPLICATION RATES IN THE PERMANENT SEEDING TABLE ARE REQUIRED WHEN A REPORT OF COMPLIANCE IS REQUESTED PRIOR TO ACTUAL ESTABLISHMENT OF PERMANENT VEGETATION. UP TO 50% REDUCTION IN APPLICATION RATES MAY BE USED WHEN PERMANENT VEGETATION IS ESTABLISHED PRIOR TO REQUESTING A REPORT OF COMPLIANCE FROM THE DISTRICT. THESE PERMANENT VEGETATION IS ESTABLISHED PRIOR TO REQUESTING A REPORT OF COMPLIANCE FROM THE DISTRICT. THESE RATES APPLY TO ALL METHODS OF SEEDING. ESTABLISHING PERMANENT VEGETATION MEANS 80% VEGETATIVE COVER (OF THE SEEDED SPECIES) AND MOWED ONCE.THIS DESIGNATION OF MOWED ONCE DOES NOT GUARANTEE THE PERMANENCY OF THE TURF SHOULD OTHER MAINTENANCE FACTORS BE NEGLECTED OR OTHERWISE MISMANAGED.

CONSTRUCTION SEQUENCE

1.	INSTALL ALL SOIL EROSION AND SEDIMENT CONTROL DEVICES	1 DAY
2.	SITE CLEARING & ROUGH GRADING	1 WEEK
3.	CONSTRUCTION OF SITE IMPROVEMENTS	2 WEEKS
4.	RESTORE ALL AREAS AS APPROPRIATE COMPLETION OF CONSTRUCTION	1 WEEK
5.	REMOVE SOIL EROSION AND SEDIMENT CONTROL DEVICES	1 DAY

AREA OF DISTURBANCE = 0.052 ACRES

SOIL DE-COMPACTION AND TESTING REQUIREMENTS

SOIL COMPACTION TESTING REQUIREMENTS

1. SUBGRADE SOILS PRIOR TO THE APPLICATION OF TOPSOIL (SEE PERMANENT SEEDING AND STABILIZATION NOTES FOR TOPSOIL REQUIREMENTS) SHALL BE FREE OF EXCESSIVE COMPACTION TO A DEPTH OF 6.0 INCHES TO ENHANCE THE ESTABLISHMENT OF PERMANENT VEGETATIVE COVER.
2. AREAS OF THE SITE WHICH ARE SUBJECT TO COMPACTION TESTING AND/OR MITIGATION ARE GRAPHICALLY DENOTED ON THE CERTIFIED SOIL EROSION CONTROL PLAN.
3. COMPACTION TESTING LOCATIONS ARE DENOTED ON THE PLAN. A COPY OF THE PLAN OR PORTION OF THE PLAN SHALL BE USED TO MARK LOCATIONS OF TESTS, AND ATTACHED TO THE COMPACTION REMEDIATION FORM, AVAILABLE FROM THE LOCAL SOIL CONSERVATION DISTRICT. THIS FORM MUST BE FILLED OUT AND SUBMITTED PRIOR TO RECEIVING A CERTIFICATE OF COMPLIANCE FROM THE DISTRICT.
4. IN THE EVENT THAT TESTING INDICATES COMPACTION IN EXCESS OF THE MAXIMUM THRESHOLDS INDICATED FOR THE SIMPLIFIED TESTING METHODS (SEE DETAILS BELOW), THE CONTRACTOR/OWNER SHALL HAVE THE OPTION TO PERFORM EITHER (1) COMPACTION MITIGATION OVER THE ENTIRE MITIGATION AREA DENOTED ON THE PLAN (EXCLUDING EXEMPT AREAS), OR (2) PERFORM ADDITIONAL,MORE DETAILED TESTING TO ESTABLISH THE LIMITS OF EXCESSIVE COMPACTION WHEREUPON ONLY THE EXCESSIVELY COMPACTED AREAS WOULD REQUIRE COMPACTION MITIGATION. ADDITIONAL DETAILED TESTING SHALL BE PERFORMED BY A TRAINED, LICENSED PROFESSIONAL.

COMPACTION TESTING METHODS

A. PROBING WIRE TEST (SEE DETAIL)
B. HAND-HELD PENETROMETER TEST (SEE DETAIL)
C. TUBE BULK DENSITY TEST (LICENSED PROFESSIONAL ENGINEER REQUIRED
D. NUCLEAR DENSITY TEST (LICENSED PROFESSIONAL ENGINEER REQUIRED)

NOTE: ADDITIONAL TESTING METHODS WHICH CONFORM TO ASTM STANDARDS AND SPECIFICATIONS, AND WHICH PRODUCE A DRY WEIGHT,SOIL BULK DENSITY MEASUREMENT MAY BE ALLOWED SUBJECT TO DISTRICT APPROVAL.

SOIL COMPACTION TESTING IS NOT REQUIRED IF/WHEN SUBSOIL COMPACTION REMEDIATION (SCARIFICATION/TILLAGE (6" MINIMUM DEPTH)OR SIMILAR) IS PROPOSED AS PART OF THE SEQUENCE OF CONSTRUCTION.

PROCEDURES FOR SOIL COMPACTION MITIGATION

PROCEDURES SHALL BE USED TO MITIGATE EXCESSIVE SOIL COMPACTION PRIOR TO PLACEMENT OF TOPSOIL AND ESTABLISHMENT OF PERMANENT VEGETATIVE COVER.

RESTORATION OF COMPACTED SOILS SHALL BE THROUGH DEEP SCARIFICATION/TILLAGE (6" MINIMUM DEPTH) WHERE THERE IS NO DANGER TO UNDERGROUND UTILITIES (CABLES, IRRIGATION SYSTEMS, ETC.). IN THE ALTERNATIVE, ANOTHER METHOD AS SPECIFIED BY A NEW JERSEY LICENSED PROFESSIONAL ENGINEER MAYBE SUBSTITUTED SUBJECT TO DISTRICT APPROVAL.

NOTES:

1. THIS SET OF PLANS HAS BEEN PREPARED FOR THE PURPOSES OF MUNICIPAL AND AGENCY APPROVAL. THIS SET OF PLANS SHALL NOT BE UTILIZED FOR CONSTRUCTION DOCUMENTS UNTIL ALL CONDITIONS OF APPROVAL HAVE BEEN SATISFIED AND EACH DRAWING HAS BEEN MARKED "ISSUED FOR CONSTRUCTION."

E&LP

140 WEST MAIN STREET HIGH BRIDGE, NJ 08829
PH. 908-238-0544 FAX. 908-238-9572
A PROFESSIONAL ASSOCIATION
CERTIFICATE OF AUTHORIZATION NO.: 24GA28021500 EXP. 8/31/2020

NO.	REVISION	BY	DATE
1	REV. PER BOROUGH COMMENTS	EM	2/4/2020

2/4/2020
DATE

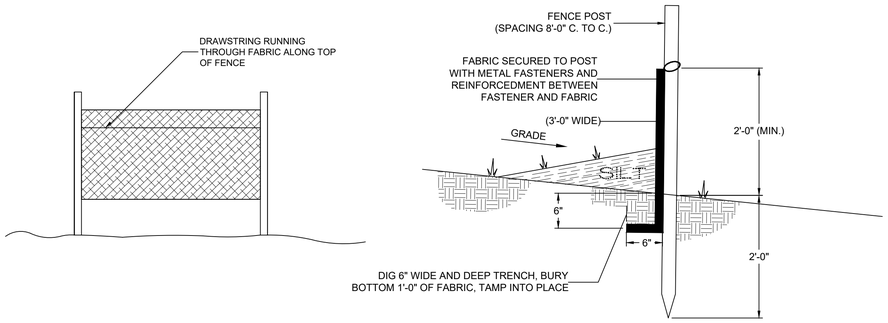
JOHN HANSEN
PROFESSIONAL ENGINEER
N.J. P.E. NO. 24GE04194500

PROJECT:
BLACK RIVER
VETERINARY HOSPITAL
SITE PLANS
BLOCK 103, LOT 51
CHESTER BOROUGH
MORRIS COUNTY NEW JERSEY

TITLE:
SOIL EROSION & SEDIMENT CONTROL NOTES & DETAILS

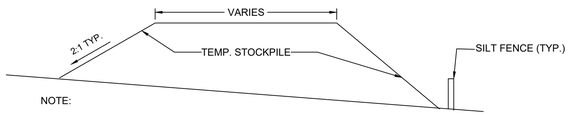
JOB NO.:	19003
SCALE:	AS SHOWN
DESIGNED:	EM
CHECKED:	JH
FILENAME:	DETAILS.DWG
DATE:	05/01/2019

DRAWING NO.: 8 / 10



2 SILT FENCE DETAIL

NTS

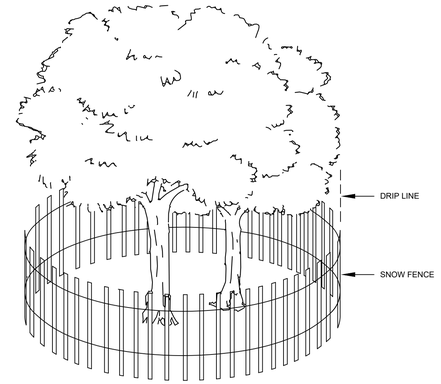


NOTE:

PROVIDE TEMPORARY GRASS COVER AS SPECIFIED IN SCS NOTES.

3 TEMPORARY STOCKPILE

NTS



4 TREE PROTECTION DETAIL

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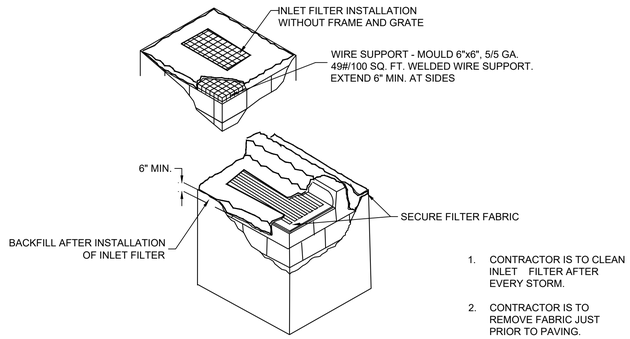
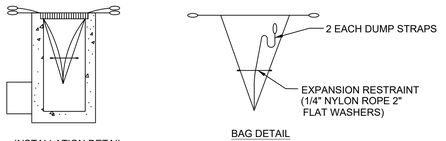
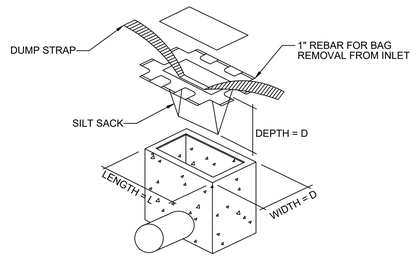


1. CONTRACTOR IS TO CLEAN INLET FILTER AFTER EVERY STORM.
2. CONTRACTOR IS TO REMOVE FABRIC JUST PRIOR TO PAVING.

5 INLET FILTER DETAIL

NTS



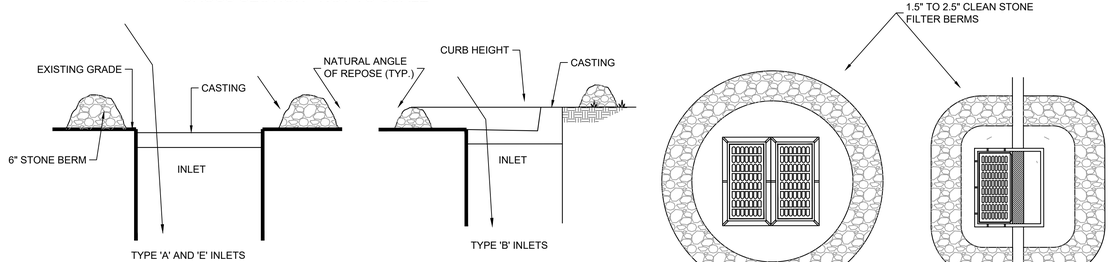


6 SILT SACK

NTS

PLAN VIEW - NOT TO SCALE

CROSS SECTION - NOT TO SCALE



STONE PILES NOT TO EXCEES CURB HEIGHT OR OBSTRUCT FLOW TO AN EXTENT THAT A FLOODING HAZARD IS CREATED

NO STONE OR FILTERS SHALL BE PLACED OVER INLET OPENINGS

7 INLET PROTECTION DETAIL

NTS

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E&LP
140 WEST MAIN STREET HIGH BRIDGE, NJ 08829
PH. 908-238-0544 FAX. 908-238-9572
A PROFESSIONAL ASSOCIATION
CERTIFICATE OF AUTHORIZATION NO.: 24GA28021500 EXP. 8/31/2020

NO.	REVISION	BY	DATE
1	REV. PER BOROUGH COMMENTS	EM	2/4/2020

2/4/2020
DATE

JOHN HANSEN
PROFESSIONAL ENGINEER
N.J. P.E. NO. 24GE04194500

PROJECT:

BLACK RIVER
VETERINARY HOSPITAL
SITE PLANS
BLOCK 103, LOT 51
CHESTER BOROUGH

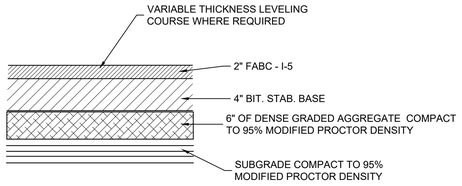
MORRIS COUNTY NEW JERSEY

TITLE:

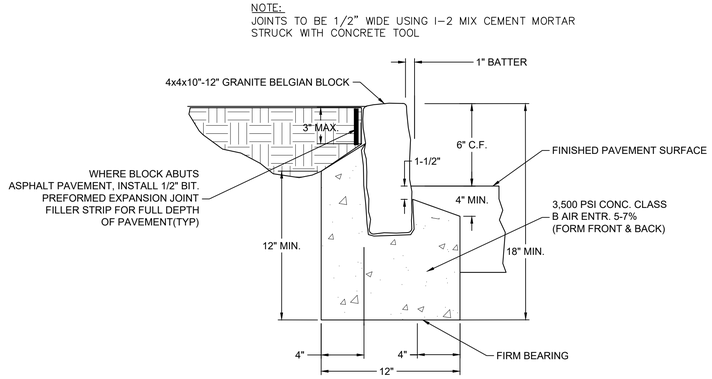
SOIL EROSION & SEDIMENT CONTROL DETAILS

JOB NO.:	19003
SCALE:	AS SHOWN
DESIGNED:	EM
CHECKED:	JH
FILENAME:	DETAILS.DWG
DATE:	05/01/2019

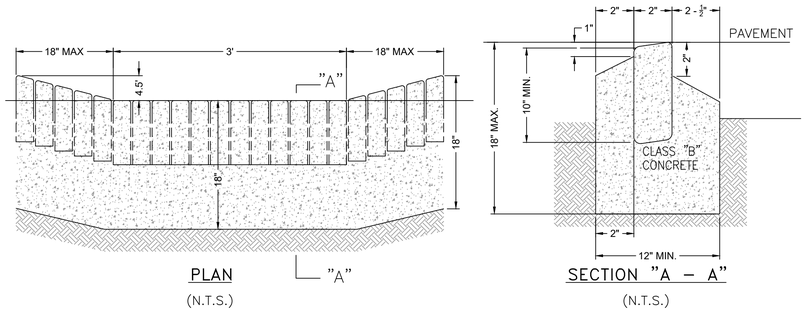
DRAWING NO.: 9 / 10



1 BITUMINOUS PAVING DETAIL
NTS



2 BELGIAN BLOCK GRANITE CURB DETAIL
NTS

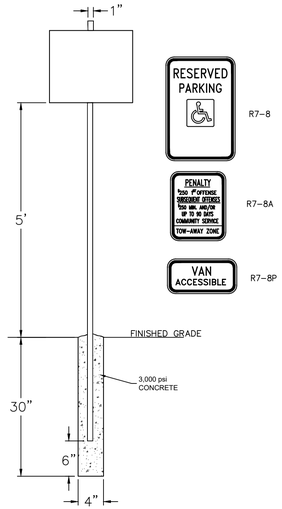


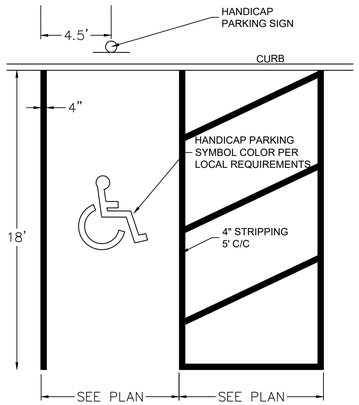
3 FLUSH GRANITE BLOCK CURB DETAIL
NTS

* CURB TO BE FLUSH WITH PARKING LOT AT ALL ACCESSIBLE ROUTES

NOTE:

DETAIL SHOWN PER PREVIOUS APPROVED SITE PLANS ENTITLED "PRELIMINARY AND FINAL SITE PLANS FOR LOT 51 BLOCK 103 'BLACK RIVER VETERINARY HOSPITAL' SITUATED IN THE BOROUGH OF CHESTER, MORRIS COUNTY, NEW JERSEY", PREPARED BY CIVIL ENGINEERING, INC., DATED 7/6/12 AND LAST REVISED 12/30/12.

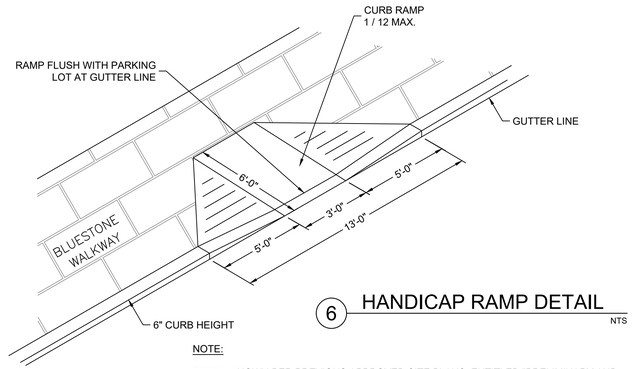




NOTES: SEE PLAN FOR PARKING SPACE DIMENSION AND LOCATION

4 ADA PARKING SIGN DETAIL
NTS

5 ADA PARKING STALL DETAIL
NTS



6 HANDICAP RAMP DETAIL
NTS

NOTE:

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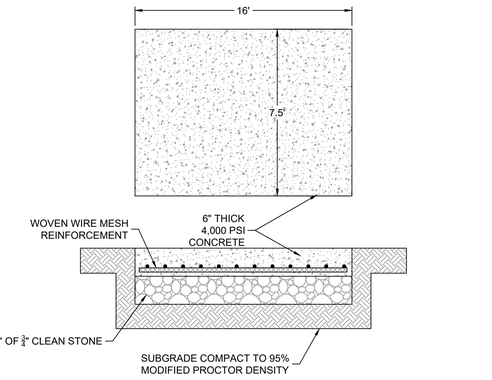
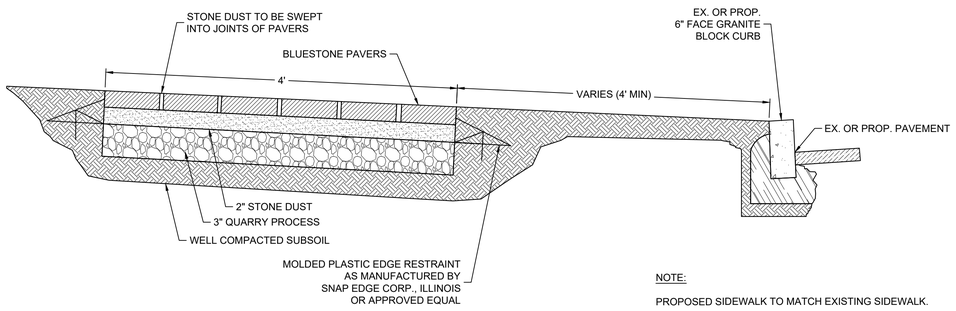


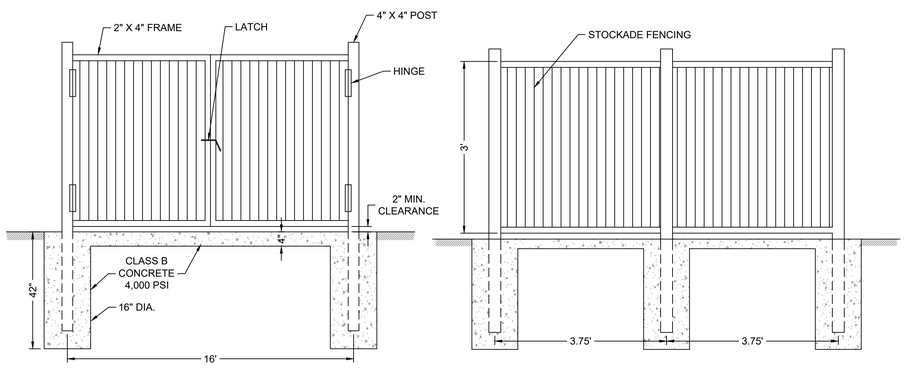
7 CONCRETE PAD FOR REFUSE AREA ENCLOSURE
NTS



NOTE:

PROPOSED SIDEWALK TO MATCH EXISTING SIDEWALK.

8 BLUESTONE PAVER SIDEWALK DETAIL
NTS



9 TRASH ENCLOSURE DETAIL
NTS

NOTES:

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NO.	REVISION	BY	DATE
1	REV. PER BOROUGH COMMENTS	EM	2/4/2020

2/4/2020
DATE

JOHN HANSEN
PROFESSIONAL ENGINEER
N.J. P.E. NO. 24GE04194500

PROJECT:

BLACK RIVER
VETERINARY HOSPITAL
SITE PLANS
BLOCK 103, LOT 51
CHESTER BOROUGH

MORRIS COUNTY NEW JERSEY

TITLE:

CONSTRUCTION DETAILS

JOB NO.:	19003
SCALE:	AS SHOWN
DESIGNED:	EM
CHECKED:	JH
FILENAME:	DETAILS.DWG
DATE:	05/01/2019

DRAWING NO.: 10 / 10

STORMWATER MANAGEMENT REPORT

FOR
"BLACK RIVER VETERINARY HOSPITAL"

Lot 51 Block 103
Borough of Chester
Morris County, NJ

PREPARED BY:

CIVIL ENGINEERING INC.
1 COVE STREET
BUDD LAKE, NEW JERSEY
(973) 426-1776
(973) 426-0716 (FAX)

JAMES GLASSON, P.E.
PROFESSIONAL ENGINEER
NJPE 37703

July 06, 2012

Revised November 30, 2012

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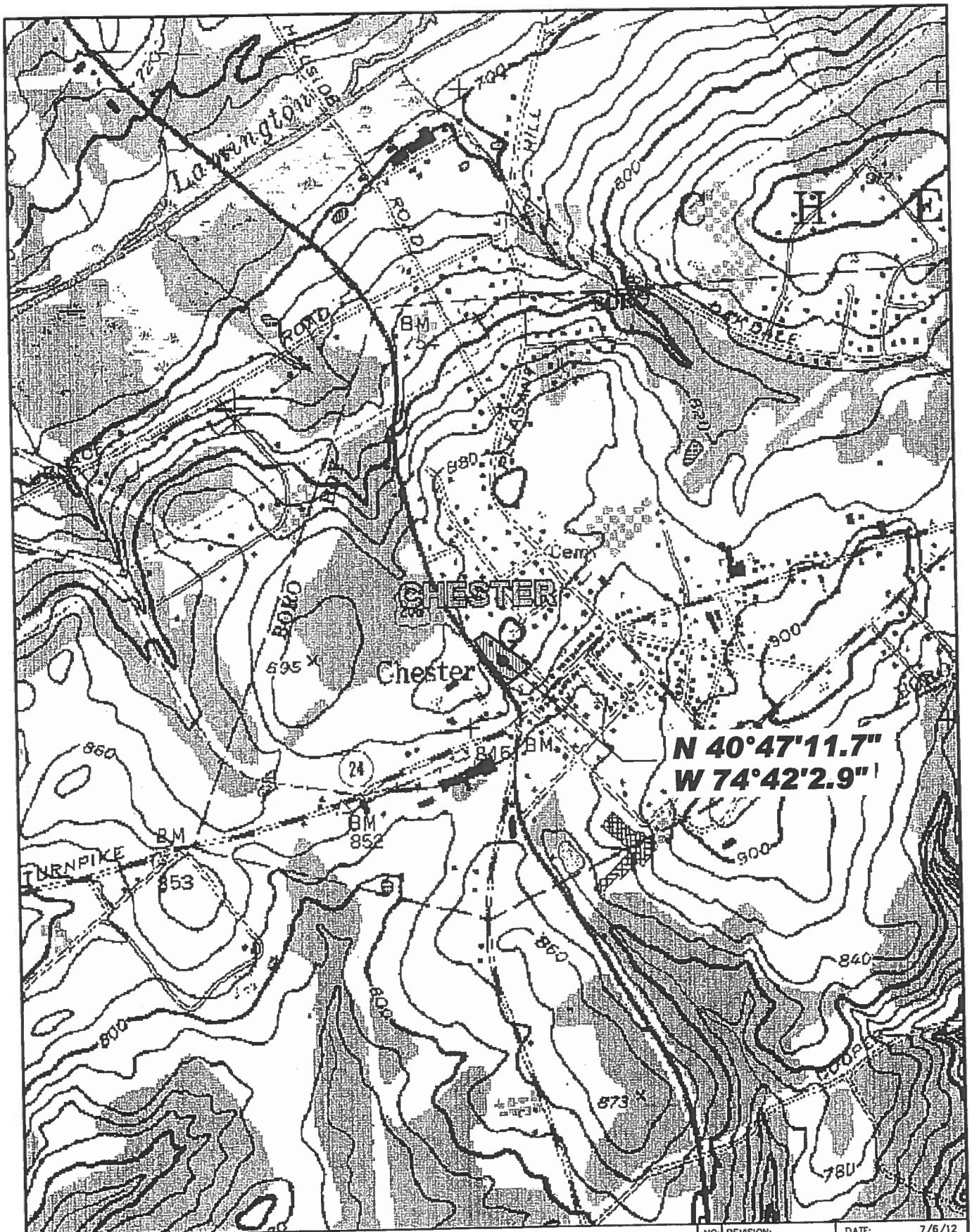

CIVIL ENGINEERING, INC.
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BUDD LAKE, N.J. 07828
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N.J. - C of A #24GA27922000

TACK SITE PLAN
CHESTER
USGS QUADRANGLE MAP
CHESTER BOROUGH
MORRIS COUNTY, NEW JERSEY

NO:	REVISION:		
		DATE:	7/6/12
		SHEET:	1 OF 1
		SCALE:	N.T.S.
		PROJECT NO:	4923
		CHECKED BY:	JG
		DRAWN BY:	NBB

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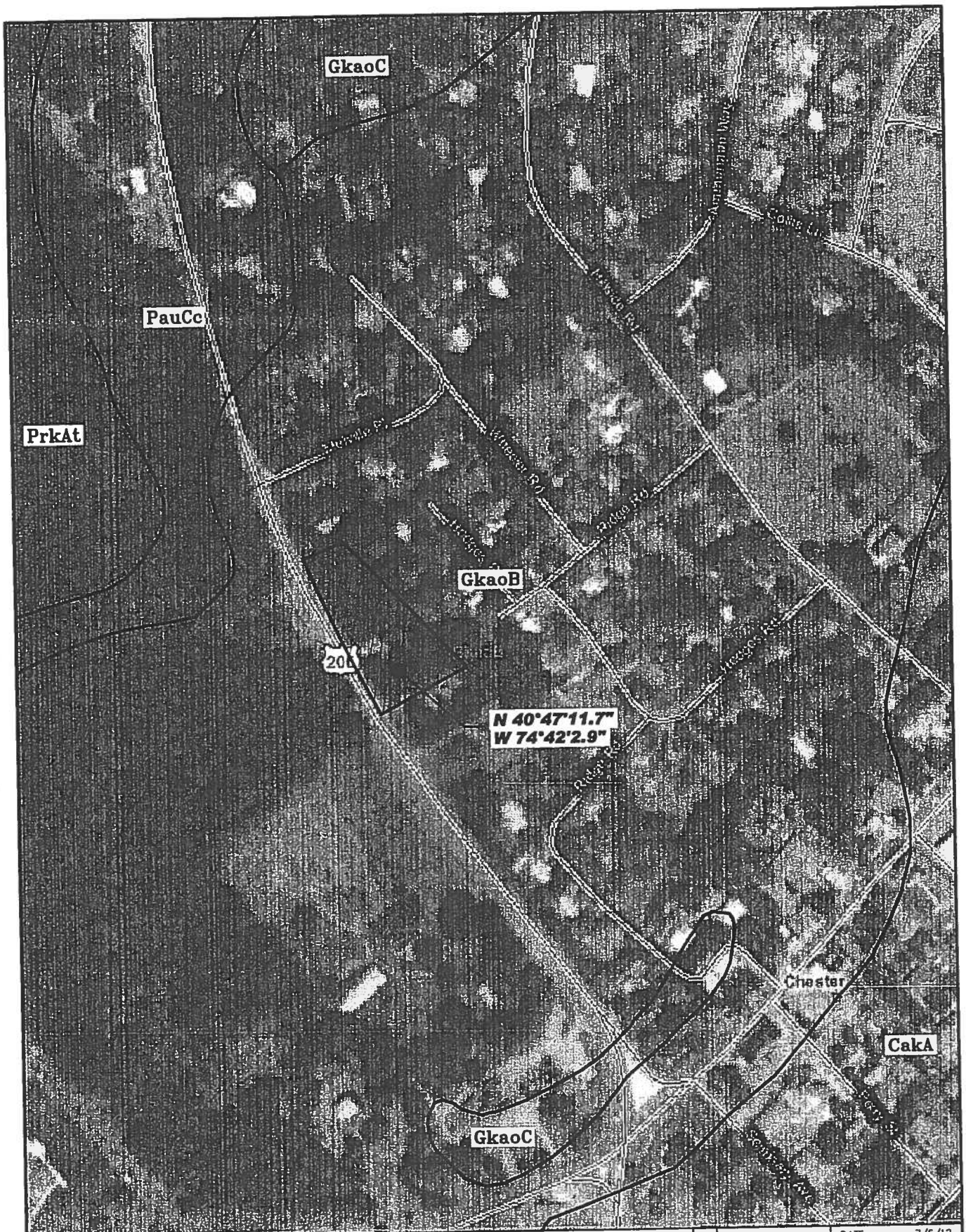

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TACK SITE PLAN
CHESTER
SOIL CLASSIFICATION MAP
CHESTER BOROUGH
MORRIS COUNTY, NEW JERSEY

NO:	REVISION:		
		DATE:	7/6/12
		SHEET:	1 OF 1
		SCALE:	N.T.S.
		PROJECT NO:	4923
		CHECKED BY:	JG
		DRAWN BY:	NBB

SUMMARY

The subject property is known as Lot 51 Block 103 as shown on Sheet 15 of the Borough of Chester Tax Maps. The property contains 1.19 Acres and is located along the northbound side of Route 206 (street address – 114 Route 206).

The site is currently the home of the "Black River Veterinary Hospital" which is comprised of a 1 story 1201 sf. framed building as well as a 7347 sf. asphalt and gravel parking area. The business is served by an on-lot cesspool for sewerage and currently has water supplied by from a New Jersey American owned main within Hedges Road. The property currently does not contain a storm drainage system although there is an 18 inch pipe within a low point on the lot which drains the site to the NJDOT Route 206 Drainage System.

The proposal is to renovate the building and add a 2589 sf. addition to create a new 3790 sf. one story Animal Hospital Building. A 25 space paved and curbed parking lot (10,362 sf.) is also proposed with a designated loading area.

By definition, the project is not a "major development"

- Less than ¼ acre of additional coverage is proposed
- Disturbance is less than 1 acre

This means that the project does not require compliance with the NJ Best Management Practices (BMP) guidelines.

We have analyzed the runoff peak flows based upon the Rational Method while the storage required has been based upon the Modified Rational Method.

Pre Development

Pre Development conditions encompass the area of the entire property (1.19 aces designated as A on the attached Pre Development Drainage Area Plan) which flows to an existing open 18 inch pipe which crosses Route 206.

Pre Development Area A – Peak Flows(1.19 Ac.)

Q_{100} = 3.49 CFS
Q_{10} = 2.50 CFS
Q_2 = 1.84 CFS

Post Development

Post Development Conditions are broken down into 2 areas, Remainder Area A & Area B. Area A encompasses the area of the site (.78 ac.) which continues to flow undetained to the existing 18 inch pipe which crosses Route 206.

Post Development Area A – Peak Flows (.78 Ac.)

Q_{100} = 1.84 CFS
Q_{10} = 1.32 CFS
Q_2 = .97 CFS

Area B encompasses the area of the site (.41 ac.) which contains the improvements including the building (with addition), the new parking lot, etc. which is directed to the on-lot drywell infiltration system.

Post Development Area B – Peak Flows (.41 Ac.)

Q_{100} = 2.92 CFS
Q_{10} = 2.12 CFS
Q_2 = 1.53 CFS

In order to calculate the volume of storage required to infiltrate the 100 YR runoff generated to Area B, we have utilized the Modified Rational Method and analyzed the storage required based upon required IDF Curve 100 YR intensities. The maximum storage calculated is 4230 CF of volume.

To infiltrate this volume, we have design a drywell infiltration system with direct piping from the new roof area and storm drainage piping from the parking areas. The last inlet within the parking lot storm system, prior to the infiltration system, has been equipped with a sump area and hood to eliminate any chance of debris entering the system (details are shown within the Site Plans).

Per NJAC 7:8-5.4(a)3ii, the Peak Post Development Flow offsite to the storm system on Route 206 must be reduced to state factored pre development rates:

Pre Development Area A

Pre Q_{100} = 3.49 CFS @ 80% = 2.79 CFS Allowed
Q_{10} = 2.50 CFS @ 75% = 1.875 CFS Allowed
Q_2 = 1.84 CFS @ 50% = .92 CFS Allowed

Remainder Area A

Post Q_{100} = 1.84 CFS Proposed
Q_{10} = 1.32 CFS Proposed
Q_2 = .91 CFS Proposed

The Post Development Peak Flows offsite (Remainder Area A) have been reduced per state requirements for the 100 year, 10 year and 2 year storms.

Soil Logs and soils tests were performed in the area of the proposed infiltration system on site and the results are attached. The logs and testing prove that the site has adequate soil to provide required infiltration of the runoff and the system can drain within the allotted time period allowed by state requirements (shown within report).

This report should be reviewed in conjunction with the Pre and Post Development Drainage Area Plans attached to the report and also shown within the Site Plans.

PRE DEVELOPMENT AREA A

Pre Development Area A encompasses the entire site (1.19 Ac.) which flows to an open 18 inch storm pipe along the west property line/Route 206 Right of Way line.

Q = CiA

I. C = Runoff Coefficient

C =

Area	Condition	Coefficient
.17 ac.	Pavement, Conc., Roof	.99
.04 ac.	Gravel	.75
.52 ac.	Grass	.45
.46 ac.	woods	.25
1.19	C_{AVG} = .46	

II. i=Intensity = Function of time of Concentration

Tc = 16.2 Minutes (see next page)

III. A = Area = ~~1.41~~ 1.19 Ac.

Q_{100} = ~~6.54~~ CFS ~3.59
Q_{10} = ~~4.74~~ CFS ~2.57
Q_2 = ~~3.51~~ CFS ~1.89

Project LOT 51 BLK 103 - 16

Location CHESTER BOROUGH Checked ____ Date 7/3/12

PRE DEV. AREA A

Circle one: (Present) Developed

Circle one: (T_c) T_t through subarea

NOTES: Space for as many as two segments per flow type can be used for each worksheet.

Include a map, schematic, or description of flow segments.

		Segment ID		
Sheet flow (Applicable to T_c only)		AB		
1. Surface description (table 3-1)		GRASS		
2. Manning's roughness coeff., n (table 3-1)		.24		
3. Flow length, L (total L ≤ 300 ft)	ft	150		
4. Two-yr 24-hr rainfall, P_2	in	3.3		
5. Land slope, s (826 − 879.9 / 150)	ft/ft	4.1%		
6. $T_t = \frac{0.007\,(nL)^{0.8}}{P_2^{0.5}\,s^{0.4}}$ (.123 / .50) Compute T_t	hr	.25	+	= 15 MIN
Shallow concentrated flow		Segment ID		
7. Surface description (paved or unpaved)		BC		
8. Flow length, L (879.8 − 872.15 / 210)	ft	UNPAVED		
9. Watercourse slope, s	ft/ft	210		
10. Average velocity, V (figure 3-1)	ft/s	3.6		
11. $T_t = \frac{L}{3600\,V}$ Compute T_t	hr	3.0		
		.019	+	= 1.2 MIN
Channel flow		Segment ID		
12. Cross sectional flow area, a	ft^2			
13. Wetted perimeter, P_w	ft			
14. Hydraulic radius, $r = \frac{a}{P_w}$ Compute r	ft			
15. Channel slope, s	ft/ft			
16. Manning's roughness coeff., n				
17. $V = \frac{1.49\,r^{2/3}\,s^{1/2}}{n}$ Compute V	ft/s			
18. Flow length, L	ft			
19. $T_t = \frac{L}{3600\,V}$ Compute T_t	hr		+	= 16.2 MIN
20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19)	hr			

Hydrograph for Subcatchment 1S: Pre Dev. Area A

Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)
0.00	0.00	0.92	0.00	1.84	0.00	2.76	0.00
0.02	0.27	0.94	0.00	1.86	0.00	2.78	0.00
0.04	0.54	0.96	0.00	1.88	0.00	2.80	0.00
0.06	0.80	0.98	0.00	1.90	0.00	2.82	0.00
0.08	1.07	1.00	0.00	1.92	0.00	2.84	0.00
0.10	1.34	1.02	0.00	1.94	0.00	2.86	0.00
0.12	1.61	1.04	0.00	1.96	0.00	2.88	0.00
0.14	1.88	1.06	0.00	1.98	0.00	2.90	0.00
0.16	2.15	1.08	0.00	2.00	0.00	2.92	0.00
0.18	2.41	1.10	0.00	2.02	0.00	2.94	0.00
0.20	2.68	1.12	0.00	2.04	0.00	2.96	0.00
0.22	2.95	1.14	0.00	2.06	0.00	2.98	0.00
0.24	3.22	1.16	0.00	2.08	0.00	3.00	0.00
0.26	**3.49**	1.18	0.00	2.10	0.00		
0.28	**3.40**	1.20	0.00	2.12	0.00		
0.30	3.13	1.22	0.00	2.14	0.00		
0.32	2.86	1.24	0.00	2.16	0.00		
0.34	2.59	1.26	0.00	2.18	0.00		
0.36	2.33	1.28	0.00	2.20	0.00		
0.38	2.06	1.30	0.00	2.22	0.00		
0.40	1.79	1.32	0.00	2.24	0.00		
0.42	1.52	1.34	0.00	2.26	0.00		
0.44	1.25	1.36	0.00	2.28	0.00		
0.46	0.98	1.38	0.00	2.30	0.00		
0.48	0.72	1.40	0.00	2.32	0.00		
0.50	0.45	1.42	0.00	2.34	0.00		
0.52	0.18	1.44	0.00	2.36	0.00		
0.54	0.00	1.46	0.00	2.38	0.00		
0.56	0.00	1.48	0.00	2.40	0.00		
0.58	0.00	1.50	0.00	2.42	0.00		
0.60	0.00	1.52	0.00	2.44	0.00		
0.62	0.00	1.54	0.00	2.46	0.00		
0.64	0.00	1.56	0.00	2.48	0.00		
0.66	0.00	1.58	0.00	2.50	0.00		
0.68	0.00	1.60	0.00	2.52	0.00		
0.70	0.00	1.62	0.00	2.54	0.00		
0.72	0.00	1.64	0.00	2.56	0.00		
0.74	0.00	1.66	0.00	2.58	0.00		
0.76	0.00	1.68	0.00	2.60	0.00		
0.78	0.00	1.70	0.00	2.62	0.00		
0.80	0.00	1.72	0.00	2.64	0.00		
0.82	0.00	1.74	0.00	2.66	0.00		
0.84	0.00	1.76	0.00	2.68	0.00		
0.86	0.00	1.78	0.00	2.70	0.00		
0.88	0.00	1.80	0.00	2.72	0.00		
0.90	0.00	1.82	0.00	2.74	0.00		

Hydrograph for Subcatchment 1S: Pre Dev. Area A

Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)
0.00	0.00	0.92	0.00	1.84	0.00	2.76	0.00
0.02	0.19	0.94	0.00	1.86	0.00	2.78	0.00
0.04	0.38	0.96	0.00	1.88	0.00	2.80	0.00
0.06	0.58	0.98	0.00	1.90	0.00	2.82	0.00
0.08	0.77	1.00	0.00	1.92	0.00	2.84	0.00
0.10	0.96	1.02	0.00	1.94	0.00	2.86	0.00
0.12	1.15	1.04	0.00	1.96	0.00	2.88	0.00
0.14	1.35	1.06	0.00	1.98	0.00	2.90	0.00
0.16	1.54	1.08	0.00	2.00	0.00	2.92	0.00
0.18	1.73	1.10	0.00	2.02	0.00	2.94	0.00
0.20	1.92	1.12	0.00	2.04	0.00	2.96	0.00
0.22	2.12	1.14	0.00	2.06	0.00	2.98	0.00
0.24	2.31	1.16	0.00	2.08	0.00	3.00	0.00
0.26	**2.50**	1.18	0.00	2.10	0.00		
0.28	**2.44**	1.20	0.00	2.12	0.00		
0.30	2.25	1.22	0.00	2.14	0.00		
0.32	2.05	1.24	0.00	2.16	0.00		
0.34	1.86	1.26	0.00	2.18	0.00		
0.36	1.67	1.28	0.00	2.20	0.00		
0.38	1.48	1.30	0.00	2.22	0.00		
0.40	1.28	1.32	0.00	2.24	0.00		
0.42	1.09	1.34	0.00	2.26	0.00		
0.44	0.90	1.36	0.00	2.28	0.00		
0.46	0.71	1.38	0.00	2.30	0.00		
0.48	0.51	1.40	0.00	2.32	0.00		
0.50	0.32	1.42	0.00	2.34	0.00		
0.52	0.13	1.44	0.00	2.36	0.00		
0.54	0.00	1.46	0.00	2.38	0.00		
0.56	0.00	1.48	0.00	2.40	0.00		
0.58	0.00	1.50	0.00	2.42	0.00		
0.60	0.00	1.52	0.00	2.44	0.00		
0.62	0.00	1.54	0.00	2.46	0.00		
0.64	0.00	1.56	0.00	2.48	0.00		
0.66	0.00	1.58	0.00	2.50	0.00		
0.68	0.00	1.60	0.00	2.52	0.00		
0.70	0.00	1.62	0.00	2.54	0.00		
0.72	0.00	1.64	0.00	2.56	0.00		
0.74	0.00	1.66	0.00	2.58	0.00		
0.76	0.00	1.68	0.00	2.60	0.00		
0.78	0.00	1.70	0.00	2.62	0.00		
0.80	0.00	1.72	0.00	2.64	0.00		
0.82	0.00	1.74	0.00	2.66	0.00		
0.84	0.00	1.76	0.00	2.68	0.00		
0.86	0.00	1.78	0.00	2.70	0.00		
0.88	0.00	1.80	0.00	2.72	0.00		
0.90	0.00	1.82	0.00	2.74	0.00		

Hydrograph for Subcatchment 1S: Pre Dev. Area A

Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)
0.00	0.00	0.92	0.00	1.84	0.00	2.76	0.00
0.02	0.14	0.94	0.00	1.86	0.00	2.78	0.00
0.04	0.28	0.96	0.00	1.88	0.00	2.80	0.00
0.06	0.42	0.98	0.00	1.90	0.00	2.82	0.00
0.08	0.57	1.00	0.00	1.92	0.00	2.84	0.00
0.10	0.71	1.02	0.00	1.94	0.00	2.86	0.00
0.12	0.85	1.04	0.00	1.96	0.00	2.88	0.00
0.14	0.99	1.06	0.00	1.98	0.00	2.90	0.00
0.16	1.13	1.08	0.00	2.00	0.00	2.92	0.00
0.18	1.27	1.10	0.00	2.02	0.00	2.94	0.00
0.20	1.41	1.12	0.00	2.04	0.00	2.96	0.00
0.22	1.55	1.14	0.00	2.06	0.00	2.98	0.00
0.24	1.70	1.16	0.00	2.08	0.00	3.00	0.00
0.26	**1.84**	1.18	0.00	2.10	0.00		
0.28	**1.79**	1.20	0.00	2.12	0.00		
0.30	1.65	1.22	0.00	2.14	0.00		
0.32	1.51	1.24	0.00	2.16	0.00		
0.34	1.37	1.26	0.00	2.18	0.00		
0.36	1.22	1.28	0.00	2.20	0.00		
0.38	1.08	1.30	0.00	2.22	0.00		
0.40	0.94	1.32	0.00	2.24	0.00		
0.42	0.80	1.34	0.00	2.26	0.00		
0.44	0.66	1.36	0.00	2.28	0.00		
0.46	0.52	1.38	0.00	2.30	0.00		
0.48	0.38	1.40	0.00	2.32	0.00		
0.50	0.24	1.42	0.00	2.34	0.00		
0.52	0.09	1.44	0.00	2.36	0.00		
0.54	0.00	1.46	0.00	2.38	0.00		
0.56	0.00	1.48	0.00	2.40	0.00		
0.58	0.00	1.50	0.00	2.42	0.00		
0.60	0.00	1.52	0.00	2.44	0.00		
0.62	0.00	1.54	0.00	2.46	0.00		
0.64	0.00	1.56	0.00	2.48	0.00		
0.66	0.00	1.58	0.00	2.50	0.00		
0.68	0.00	1.60	0.00	2.52	0.00		
0.70	0.00	1.62	0.00	2.54	0.00		
0.72	0.00	1.64	0.00	2.56	0.00		
0.74	0.00	1.66	0.00	2.58	0.00		
0.76	0.00	1.68	0.00	2.60	0.00		
0.78	0.00	1.70	0.00	2.62	0.00		
0.80	0.00	1.72	0.00	2.64	0.00		
0.82	0.00	1.74	0.00	2.66	0.00		
0.84	0.00	1.76	0.00	2.68	0.00		
0.86	0.00	1.78	0.00	2.70	0.00		
0.88	0.00	1.80	0.00	2.72	0.00		
0.90	0.00	1.82	0.00	2.74	0.00		

POST DEVELOPMENT REMAINDER AREA A

Post Development Area A encompasses the remaining Area (.78 Acres) of the site that continues to flow undetained to the open 18 inch storm pipe along the west property line/Route 206 Right of Way line.

Q = CiA

I. C = Runoff Coefficient

C =	Area	Condition	Coefficient
	.44 ac.	Grass	.45
	.33 ac.	woods	.25
	.01	Conc.	.99

C_{AVG} = .37

II. i=Intensity = Function of time of Concentration

Tc = 16.2 Minutes (see next page)

III. A = Area = .78 ac.

Project LOT 51 BLK 103 By JG Date 7/3/12

Location CHESTER BOROUGH Checked ____

POST DEV AREA A

Circle one: Present (Developed)

Circle one: (T_c) T_t through subarea

NOTES: Space for as many as two segments per flow type can be used for each worksheet.

Include a map, schematic, or description of flow segments.

Sheet flow (Applicable to T_c only)

Segment ID		AB		
1. Surface description (table 3-1)		GRASS		
2. Manning's roughness coeff., n (table 3-1) ..		.24		
3. Flow length, L (total L ≤ 300 ft)	ft	150		
4. Two-yr 24-hr rainfall, P_2	in	3.3		
5. Land slope, s .... 886 − 879 / 150	ft/ft	400		
6. $T_t = \frac{0.007\,(nL)^{0.8}}{P_2^{0.5}\,s^{0.4}}$ .123/.150 Compute T_t	hr	.25	+	= 15

Shallow concentrated flow

Segment ID		BC		
7. Surface description (paved or unpaved)		UNPAVED		
8. Flow length, L	ft	210		
9. Watercourse slope, s .... 879 − 872.5 / 210	ft/ft	3.3		
10. Average velocity, V (figure 3-1)	ft/s	2.9		
11. $T_t = \frac{L}{3600\,V}$ Compute T_t	hr	.02	+	= 1.2

Channel flow

Segment ID				
12. Cross sectional flow area, a	ft^2			
13. Wetted perimeter, p_w	ft			
14. Hydraulic radius, $r = \frac{a}{p_w}$ Compute r	ft			
15. Channel slope, s	ft/ft			
16. Manning's roughness coeff., n				
17. $V = \frac{1.49\, r^{2/3}\, s^{1/2}}{n}$ Compute V	ft/s			
18. Flow length, L	ft			
19. $T_t = \frac{L}{3600\,V}$ Compute T_t	hr		+	= 16.2
20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19)	hr			

Hydrograph for Subcatchment 2S: Post Dev. Area A

Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)
0.00	0.00	0.92	0.00	1.84	0.00	2.76	0.00
0.02	0.14	0.94	0.00	1.86	0.00	2.78	0.00
0.04	0.28	0.96	0.00	1.88	0.00	2.80	0.00
0.06	0.42	0.98	0.00	1.90	0.00	2.82	0.00
0.08	0.57	1.00	0.00	1.92	0.00	2.84	0.00
0.10	0.71	1.02	0.00	1.94	0.00	2.86	0.00
0.12	0.85	1.04	0.00	1.96	0.00	2.88	0.00
0.14	0.99	1.06	0.00	1.98	0.00	2.90	0.00
0.16	1.13	1.08	0.00	2.00	0.00	2.92	0.00
0.18	1.27	1.10	0.00	2.02	0.00	2.94	0.00
0.20	1.41	1.12	0.00	2.04	0.00	2.96	0.00
0.22	1.56	1.14	0.00	2.06	0.00	2.98	0.00
0.24	1.70	1.16	0.00	2.08	0.00	3.00	0.00
0.26	**1.84**	1.18	0.00	2.10	0.00		
0.28	**1.79**	1.20	0.00	2.12	0.00		
0.30	1.65	1.22	0.00	2.14	0.00		
0.32	1.51	1.24	0.00	2.16	0.00		
0.34	1.37	1.26	0.00	2.18	0.00		
0.36	1.23	1.28	0.00	2.20	0.00		
0.38	1.08	1.30	0.00	2.22	0.00		
0.40	0.94	1.32	0.00	2.24	0.00		
0.42	0.80	1.34	0.00	2.26	0.00		
0.44	0.66	1.36	0.00	2.28	0.00		
0.46	0.52	1.38	0.00	2.30	0.00		
0.48	0.38	1.40	0.00	2.32	0.00		
0.50	0.24	1.42	0.00	2.34	0.00		
0.52	0.09	1.44	0.00	2.36	0.00		
0.54	0.00	1.46	0.00	2.38	0.00		
0.56	0.00	1.48	0.00	2.40	0.00		
0.58	0.00	1.50	0.00	2.42	0.00		
0.60	0.00	1.52	0.00	2.44	0.00		
0.62	0.00	1.54	0.00	2.46	0.00		
0.64	0.00	1.56	0.00	2.48	0.00		
0.66	0.00	1.58	0.00	2.50	0.00		
0.68	0.00	1.60	0.00	2.52	0.00		
0.70	0.00	1.62	0.00	2.54	0.00		
0.72	0.00	1.64	0.00	2.56	0.00		
0.74	0.00	1.66	0.00	2.58	0.00		
0.76	0.00	1.68	0.00	2.60	0.00		
0.78	0.00	1.70	0.00	2.62	0.00		
0.80	0.00	1.72	0.00	2.64	0.00		
0.82	0.00	1.74	0.00	2.66	0.00		
0.84	0.00	1.76	0.00	2.68	0.00		
0.86	0.00	1.78	0.00	2.70	0.00		
0.88	0.00	1.80	0.00	2.72	0.00		
0.90	0.00	1.82	0.00	2.74	0.00		

Hydrograph for Subcatchment 2S: Post Dev. Area A

Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)
0.00	0.00	0.92	0.00	1.84	0.00	2.76	0.00
0.02	0.10	0.94	0.00	1.86	0.00	2.78	0.00
0.04	0.20	0.96	0.00	1.88	0.00	2.80	0.00
0.06	0.30	0.98	0.00	1.90	0.00	2.82	0.00
0.08	0.41	1.00	0.00	1.92	0.00	2.84	0.00
0.10	0.51	1.02	0.00	1.94	0.00	2.86	0.00
0.12	0.61	1.04	0.00	1.96	0.00	2.88	0.00
0.14	0.71	1.06	0.00	1.98	0.00	2.90	0.00
0.16	0.81	1.08	0.00	2.00	0.00	2.92	0.00
0.18	0.91	1.10	0.00	2.02	0.00	2.94	0.00
0.20	1.01	1.12	0.00	2.04	0.00	2.96	0.00
0.22	1.12	1.14	0.00	2.06	0.00	2.98	0.00
0.24	1.22	1.16	0.00	2.08	0.00	3.00	0.00
0.26	**1.32**	1.18	0.00	2.10	0.00		
0.28	**1.29**	1.20	0.00	2.12	0.00		
0.30	1.18	1.22	0.00	2.14	0.00		
0.32	1.08	1.24	0.00	2.16	0.00		
0.34	0.98	1.26	0.00	2.18	0.00		
0.36	0.88	1.28	0.00	2.20	0.00		
0.38	0.78	1.30	0.00	2.22	0.00		
0.40	0.68	1.32	0.00	2.24	0.00		
0.42	0.58	1.34	0.00	2.26	0.00		
0.44	0.47	1.36	0.00	2.28	0.00		
0.46	0.37	1.38	0.00	2.30	0.00		
0.48	0.27	1.40	0.00	2.32	0.00		
0.50	0.17	1.42	0.00	2.34	0.00		
0.52	0.07	1.44	0.00	2.36	0.00		
0.54	0.00	1.46	0.00	2.38	0.00		
0.56	0.00	1.48	0.00	2.40	0.00		
0.58	0.00	1.50	0.00	2.42	0.00		
0.60	0.00	1.52	0.00	2.44	0.00		
0.62	0.00	1.54	0.00	2.46	0.00		
0.64	0.00	1.56	0.00	2.48	0.00		
0.66	0.00	1.58	0.00	2.50	0.00		
0.68	0.00	1.60	0.00	2.52	0.00		
0.70	0.00	1.62	0.00	2.54	0.00		
0.72	0.00	1.64	0.00	2.56	0.00		
0.74	0.00	1.66	0.00	2.58	0.00		
0.76	0.00	1.68	0.00	2.60	0.00		
0.78	0.00	1.70	0.00	2.62	0.00		
0.80	0.00	1.72	0.00	2.64	0.00		
0.82	0.00	1.74	0.00	2.66	0.00		
0.84	0.00	1.76	0.00	2.68	0.00		
0.86	0.00	1.78	0.00	2.70	0.00		
0.88	0.00	1.80	0.00	2.72	0.00		
0.90	0.00	1.82	0.00	2.74	0.00		

Hydrograph for Subcatchment 2S: Post Dev. Area A

Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)
0.00	0.00	0.92	0.00	1.84	0.00	2.76	0.00
0.02	0.06	0.94	0.00	1.86	0.00	2.78	0.00
0.04	0.12	0.96	0.00	1.88	0.00	2.80	0.00
0.06	0.18	0.98	0.00	1.90	0.00	2.82	0.00
0.08	0.24	1.00	0.00	1.92	0.00	2.84	0.00
0.10	0.30	1.02	0.00	1.94	0.00	2.86	0.00
0.12	0.36	1.04	0.00	1.96	0.00	2.88	0.00
0.14	0.42	1.06	0.00	1.98	0.00	2.90	0.00
0.16	0.48	1.08	0.00	2.00	0.00	2.92	0.00
0.18	0.54	1.10	0.00	2.02	0.00	2.94	0.00
0.20	0.61	1.12	0.00	2.04	0.00	2.96	0.00
0.22	0.67	1.14	0.00	2.06	0.00	2.98	0.00
0.24	0.73	1.16	0.00	2.08	0.00	3.00	0.00
0.26	0.79	1.18	0.00	2.10	0.00		
0.28	0.85	1.20	0.00	2.12	0.00		
0.30	**0.91**	1.22	0.00	2.14	0.00		
0.32	0.85	1.24	0.00	2.16	0.00		
0.34	0.79	1.26	0.00	2.18	0.00		
0.36	0.73	1.28	0.00	2.20	0.00		
0.38	0.67	1.30	0.00	2.22	0.00		
0.40	0.61	1.32	0.00	2.24	0.00		
0.42	0.54	1.34	0.00	2.26	0.00		
0.44	0.48	1.36	0.00	2.28	0.00		
0.46	0.42	1.38	0.00	2.30	0.00		
0.48	0.36	1.40	0.00	2.32	0.00		
0.50	0.30	1.42	0.00	2.34	0.00		
0.52	0.24	1.44	0.00	2.36	0.00		
0.54	0.18	1.46	0.00	2.38	0.00		
0.56	0.12	1.48	0.00	2.40	0.00		
0.58	0.06	1.50	0.00	2.42	0.00		
0.60	0.00	1.52	0.00	2.44	0.00		
0.62	0.00	1.54	0.00	2.46	0.00		
0.64	0.00	1.56	0.00	2.48	0.00		
0.66	0.00	1.58	0.00	2.50	0.00		
0.68	0.00	1.60	0.00	2.52	0.00		
0.70	0.00	1.62	0.00	2.54	0.00		
0.72	0.00	1.64	0.00	2.56	0.00		
0.74	0.00	1.66	0.00	2.58	0.00		
0.76	0.00	1.68	0.00	2.60	0.00		
0.78	0.00	1.70	0.00	2.62	0.00		
0.80	0.00	1.72	0.00	2.64	0.00		
0.82	0.00	1.74	0.00	2.66	0.00		
0.84	0.00	1.76	0.00	2.68	0.00		
0.86	0.00	1.78	0.00	2.70	0.00		
0.88	0.00	1.80	0.00	2.72	0.00		
0.90	0.00	1.82	0.00	2.74	0.00		

POST DEVELOPMENT AREA B

Post Development Area B encompasses .41 acres of area which contains the proposed site improvements including the building and entire parking area. Theses areas are directed to a proposed storm sewer system which flows to an underground drywell infiltration system.

Q = CiA

I. C = Runoff Coefficient

C =	Area	Condition	Coefficient
	.05 ac.	Grass	.45
	.36 ac.	Roof, Pavement, Conc.	.99

C_{AVG} = .92

II. i=Intensity = Function of time of Concentration

Tc = 10.25 Minutes (see Inlet Calculations)

III. A = Area = .41 ac.

Hydrograph for Subcatchment 3S: Post Dev. Area B to Drywell Infiltration

Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)
0.00	0.00	0.92	0.00	1.84	0.00	2.76	0.00
0.02	0.37	0.94	0.00	1.86	0.00	2.78	0.00
0.04	0.73	0.96	0.00	1.88	0.00	2.80	0.00
0.06	1.10	0.98	0.00	1.90	0.00	2.82	0.00
0.08	1.46	1.00	0.00	1.92	0.00	2.84	0.00
0.10	1.83	1.02	0.00	1.94	0.00	2.86	0.00
0.12	2.19	1.04	0.00	1.96	0.00	2.88	0.00
0.14	2.56	1.06	0.00	1.98	0.00	2.90	0.00
0.16	**2.92**	1.08	0.00	2.00	0.00	2.92	0.00
0.18	**2.80**	1.10	0.00	2.02	0.00	2.94	0.00
0.20	2.43	1.12	0.00	2.04	0.00	2.96	0.00
0.22	2.07	1.14	0.00	2.06	0.00	2.98	0.00
0.24	1.70	1.16	0.00	2.08	0.00	3.00	0.00
0.26	1.34	1.18	0.00	2.10	0.00		
0.28	0.97	1.20	0.00	2.12	0.00		
0.30	0.61	1.22	0.00	2.14	0.00		
0.32	0.24	1.24	0.00	2.16	0.00		
0.34	0.00	1.26	0.00	2.18	0.00		
0.36	0.00	1.28	0.00	2.20	0.00		
0.38	0.00	1.30	0.00	2.22	0.00		
0.40	0.00	1.32	0.00	2.24	0.00		
0.42	0.00	1.34	0.00	2.26	0.00		
0.44	0.00	1.36	0.00	2.28	0.00		
0.46	0.00	1.38	0.00	2.30	0.00		
0.48	0.00	1.40	0.00	2.32	0.00		
0.50	0.00	1.42	0.00	2.34	0.00		
0.52	0.00	1.44	0.00	2.36	0.00		
0.54	0.00	1.46	0.00	2.38	0.00		
0.56	0.00	1.48	0.00	2.40	0.00		
0.58	0.00	1.50	0.00	2.42	0.00		
0.60	0.00	1.52	0.00	2.44	0.00		
0.62	0.00	1.54	0.00	2.46	0.00		
0.64	0.00	1.56	0.00	2.48	0.00		
0.66	0.00	1.58	0.00	2.50	0.00		
0.68	0.00	1.60	0.00	2.52	0.00		
0.70	0.00	1.62	0.00	2.54	0.00		
0.72	0.00	1.64	0.00	2.56	0.00		
0.74	0.00	1.66	0.00	2.58	0.00		
0.76	0.00	1.68	0.00	2.60	0.00		
0.78	0.00	1.70	0.00	2.62	0.00		
0.80	0.00	1.72	0.00	2.64	0.00		
0.82	0.00	1.74	0.00	2.66	0.00		
0.84	0.00	1.76	0.00	2.68	0.00		
0.86	0.00	1.78	0.00	2.70	0.00		
0.88	0.00	1.80	0.00	2.72	0.00		
0.90	0.00	1.82	0.00	2.74	0.00		

Hydrograph for Subcatchment 3S: Post Dev. Area B to Drywell Infiltration

Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)
0.00	0.00	0.92	0.00	1.84	0.00	2.76	0.00
0.02	0.26	0.94	0.00	1.86	0.00	2.78	0.00
0.04	0.53	0.96	0.00	1.88	0.00	2.80	0.00
0.06	0.79	0.98	0.00	1.90	0.00	2.82	0.00
0.08	1.06	1.00	0.00	1.92	0.00	2.84	0.00
0.10	1.32	1.02	0.00	1.94	0.00	2.86	0.00
0.12	1.59	1.04	0.00	1.96	0.00	2.88	0.00
0.14	1.85	1.06	0.00	1.98	0.00	2.90	0.00
0.16	**2.12**	1.08	0.00	2.00	0.00	2.92	0.00
0.18	**2.03**	1.10	0.00	2.02	0.00	2.94	0.00
0.20	1.76	1.12	0.00	2.04	0.00	2.96	0.00
0.22	1.50	1.14	0.00	2.06	0.00	2.98	0.00
0.24	1.24	1.16	0.00	2.08	0.00	3.00	0.00
0.26	0.97	1.18	0.00	2.10	0.00		
0.28	0.71	1.20	0.00	2.12	0.00		
0.30	0.44	1.22	0.00	2.14	0.00		
0.32	0.18	1.24	0.00	2.16	0.00		
0.34	0.00	1.26	0.00	2.18	0.00		
0.36	0.00	1.28	0.00	2.20	0.00		
0.38	0.00	1.30	0.00	2.22	0.00		
0.40	0.00	1.32	0.00	2.24	0.00		
0.42	0.00	1.34	0.00	2.26	0.00		
0.44	0.00	1.36	0.00	2.28	0.00		
0.46	0.00	1.38	0.00	2.30	0.00		
0.48	0.00	1.40	0.00	2.32	0.00		
0.50	0.00	1.42	0.00	2.34	0.00		
0.52	0.00	1.44	0.00	2.36	0.00		
0.54	0.00	1.46	0.00	2.38	0.00		
0.56	0.00	1.48	0.00	2.40	0.00		
0.58	0.00	1.50	0.00	2.42	0.00		
0.60	0.00	1.52	0.00	2.44	0.00		
0.62	0.00	1.54	0.00	2.46	0.00		
0.64	0.00	1.56	0.00	2.48	0.00		
0.66	0.00	1.58	0.00	2.50	0.00		
0.68	0.00	1.60	0.00	2.52	0.00		
0.70	0.00	1.62	0.00	2.54	0.00		
0.72	0.00	1.64	0.00	2.56	0.00		
0.74	0.00	1.66	0.00	2.58	0.00		
0.76	0.00	1.68	0.00	2.60	0.00		
0.78	0.00	1.70	0.00	2.62	0.00		
0.80	0.00	1.72	0.00	2.64	0.00		
0.82	0.00	1.74	0.00	2.66	0.00		
0.84	0.00	1.76	0.00	2.68	0.00		
0.86	0.00	1.78	0.00	2.70	0.00		
0.88	0.00	1.80	0.00	2.72	0.00		
0.90	0.00	1.82	0.00	2.74	0.00		

Hydrograph for Subcatchment 3S: Post Dev. Area B to Drywell Infiltration

Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)
0.00	0.00	0.92	0.00	1.84	0.00	2.76	0.00
0.02	0.19	0.94	0.00	1.86	0.00	2.78	0.00
0.04	0.38	0.96	0.00	1.88	0.00	2.80	0.00
0.06	0.58	0.98	0.00	1.90	0.00	2.82	0.00
0.08	0.77	1.00	0.00	1.92	0.00	2.84	0.00
0.10	0.96	1.02	0.00	1.94	0.00	2.86	0.00
0.12	1.15	1.04	0.00	1.96	0.00	2.88	0.00
0.14	1.34	1.06	0.00	1.98	0.00	2.90	0.00
0.16	**1.53**	1.08	0.00	2.00	0.00	2.92	0.00
0.18	**1.47**	1.10	0.00	2.02	0.00	2.94	0.00
0.20	1.28	1.12	0.00	2.04	0.00	2.96	0.00
0.22	1.09	1.14	0.00	2.06	0.00	2.98	0.00
0.24	0.89	1.16	0.00	2.08	0.00	3.00	0.00
0.26	0.70	1.18	0.00	2.10	0.00		
0.28	0.51	1.20	0.00	2.12	0.00		
0.30	0.32	1.22	0.00	2.14	0.00		
0.32	0.13	1.24	0.00	2.16	0.00		
0.34	0.00	1.26	0.00	2.18	0.00		
0.36	0.00	1.28	0.00	2.20	0.00		
0.38	0.00	1.30	0.00	2.22	0.00		
0.40	0.00	1.32	0.00	2.24	0.00		
0.42	0.00	1.34	0.00	2.26	0.00		
0.44	0.00	1.36	0.00	2.28	0.00		
0.46	0.00	1.38	0.00	2.30	0.00		
0.48	0.00	1.40	0.00	2.32	0.00		
0.50	0.00	1.42	0.00	2.34	0.00		
0.52	0.00	1.44	0.00	2.36	0.00		
0.54	0.00	1.46	0.00	2.38	0.00		
0.56	0.00	1.48	0.00	2.40	0.00		
0.58	0.00	1.50	0.00	2.42	0.00		
0.60	0.00	1.52	0.00	2.44	0.00		
0.62	0.00	1.54	0.00	2.46	0.00		
0.64	0.00	1.56	0.00	2.48	0.00		
0.66	0.00	1.58	0.00	2.50	0.00		
0.68	0.00	1.60	0.00	2.52	0.00		
0.70	0.00	1.62	0.00	2.54	0.00		
0.72	0.00	1.64	0.00	2.56	0.00		
0.74	0.00	1.66	0.00	2.58	0.00		
0.76	0.00	1.68	0.00	2.60	0.00		
0.78	0.00	1.70	0.00	2.62	0.00		
0.80	0.00	1.72	0.00	2.64	0.00		
0.82	0.00	1.74	0.00	2.66	0.00		
0.84	0.00	1.76	0.00	2.68	0.00		
0.86	0.00	1.78	0.00	2.70	0.00		
0.88	0.00	1.80	0.00	2.72	0.00		
0.90	0.00	1.82	0.00	2.74	0.00		

STORAGE REQUIRED TO INFILTRATION SYSTEM

In order to determine the 100 Year volume of runoff generated by Area B, we have used the Modified Rational Method

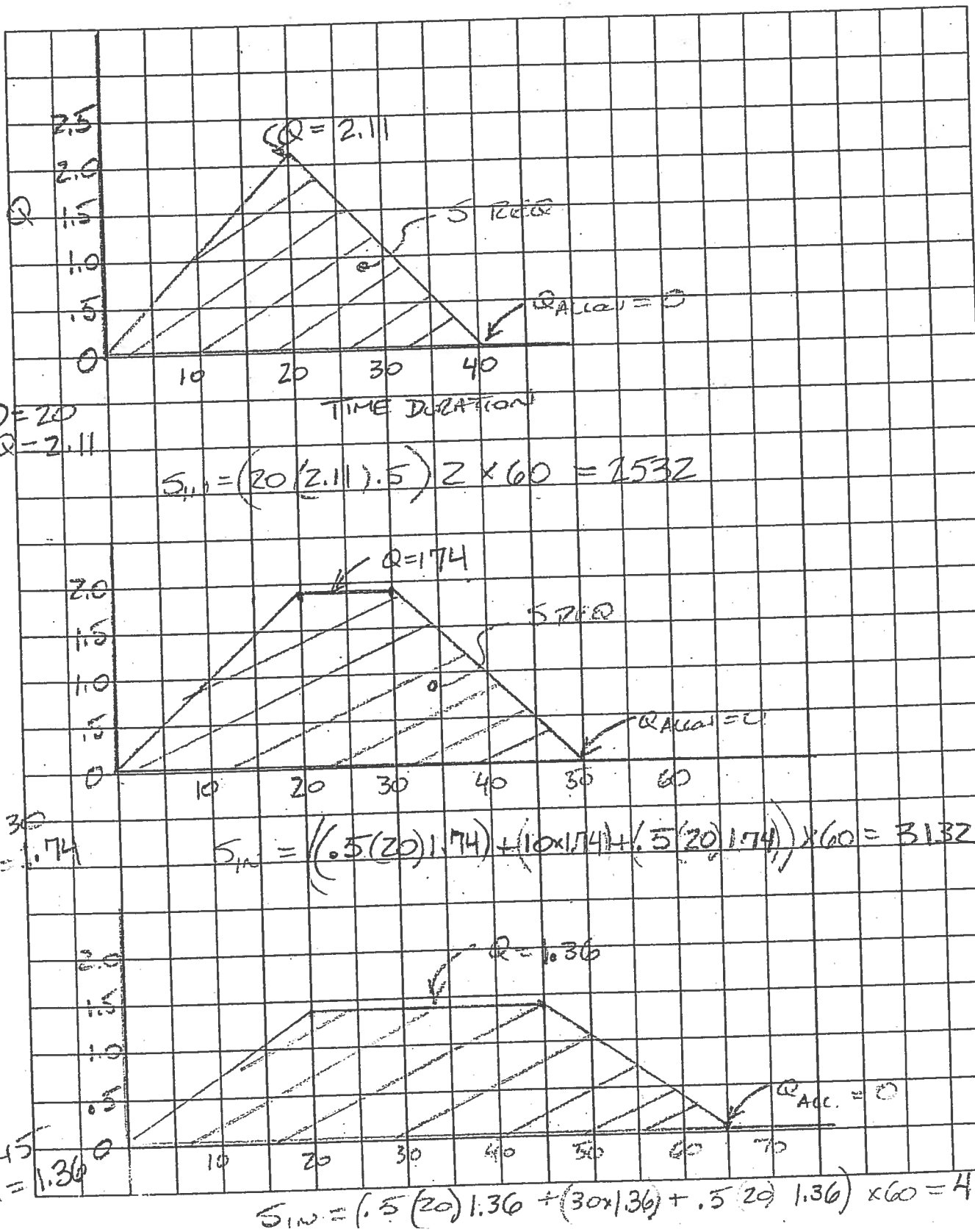
Drainage Area	.41 Ac.
Runoff Coefficient	.92
Time of Concentration	10.25 Min.

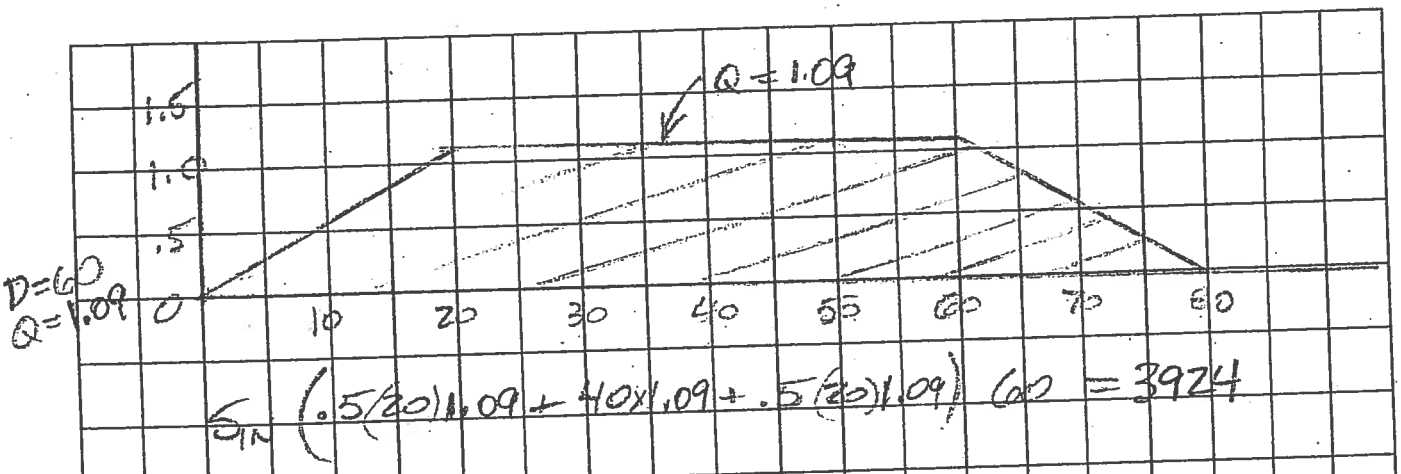
Storm Duration	IDF Curve 100 YR Intensity (in/Hr.)	C	A (Ac.)	Peak Runoff (CiA)
20 min.	5.6	.92	.41	2.11 cfs.
30 min.	4.6	.92	.41	1.74 cfs.
45 min.	3.6	.92	.41	1.36 cfs.
60 min.	2.9	.92	.41	1.09 cfs.
90 min.	2.2	.92	.41	.83 cfs.
120 min.	1.7	.92	.41	.64 cfs.
180 min.	1.3	.92	.41	.49 cfs.
240	1.1	.92	.41	.41 cfs.

Storm Duration	Q in	S in	Q (runoff allowable)	SA (storage allowable)	SR (storage req.)
20 min.	2.11	2532	0	0	2532 cf.
30 min.	1.74	3132	0	0	3132 cf.
45 min.	1.36	4080	0	0	**4080 cf.*** **
60 min.	1.09	3924	0	0	3924 cf.

***** 4080 cf. of storage required**

CIVIL ENGINEERING, INC.





$$S_{IN} \left(.5(20)1.09 + 40\times1.09 + .5(20)1.09\right) 60 = 3924$$

INFILTRATION SYSTEM DESIGN

The soils onsite are Gladstone Gravelly Loams which are in hydrological soils group B. This group allows for drywell infiltration design for storms greater than the groundwater recharge storm event. The design permeability rate of the subgrade soils must be sufficient to fully drain the drywells maximum design storm runoff volume within 72 hours.

Based upon soil logs and soils testing performed on the site, the tested permeability rate of the soils is 10 minutes per inch or 6 inches per hour. Based upon a required factor of safety of two (2), the design rate would be 3 inches per hour.

Using this design rate, the drywell system would have to fully drain the drywells maximum design storm runoff (4080 cf.) within 72 hours. The drywell design requires nine 8 foot diameter drywells in a common excavation at a depth of 90 inches.

90 inches / 3 inches/hr.= 30 hours

This time period of 30 hrs. is within the allowable 72 hour period.

DRYWELL CALCULATIONS

Date: November 28, 2012
Project: Tack-Chester
Job Number: June 23, 1913

4080.00 Total Water (cu. Ft.)

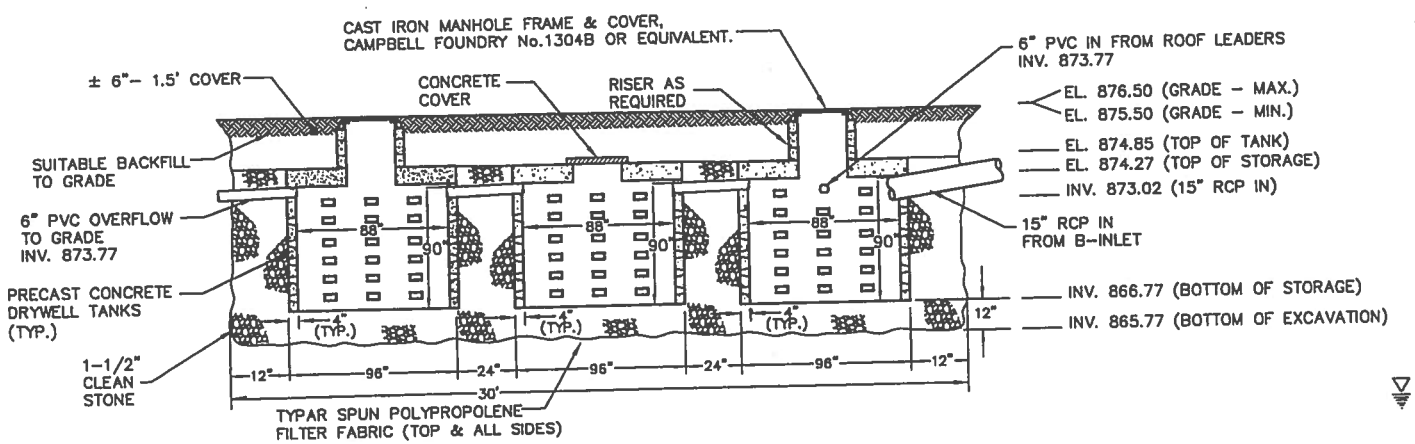
Assumptions

8.3 Inch Storm
33 % Void Ratio Stone
96 Tank Diameter (in.)
90 Tank Depth (in.)
4 Tank wall Thickness (in.)
100 Excavation per Tank (sq. ft.)
1 Depth of Stone Under Tank (ft.)

Tank Volume	=	3.14/4	x	Tank Diameter (ft)	x	Tank Diameter (ft)	x	Tank depth (ft)	=	316.617	Cu. Ft.
	=	0.785	x	7.333333	x	7.333333	x	7.500			
Stone Volume	=	(Excavation Size - Tank Area)			x	Tank Depth (ft)	x	Void Ratio	=	123.156	Cu. Ft.
	=	100.000	-	50.240	x	7.500	x	0.330			
Stone Base	=	Excavation Size (sq ft)			x	Depth of Stone (ft)	x	Void Ratio	=	33.000	Cu. Ft.
	=	100.000			x	1.000	x	0.330			
									+		
								Total Storage	=	472.773	Cu. Ft. per Drywell

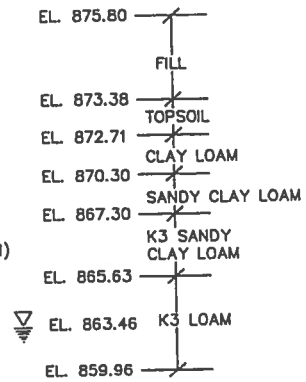
Drywell Units Needed	=	Storage Necessary (Cu. Ft.)	/	Total Storage (Cu. Ft.)	=	8.63	
	=	4080.000	/	472.773			
					=	9	Drywell(s) Necessary

26

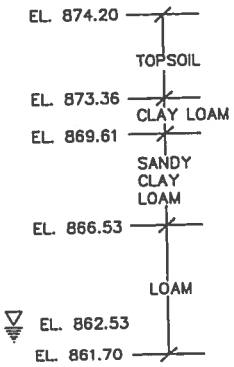


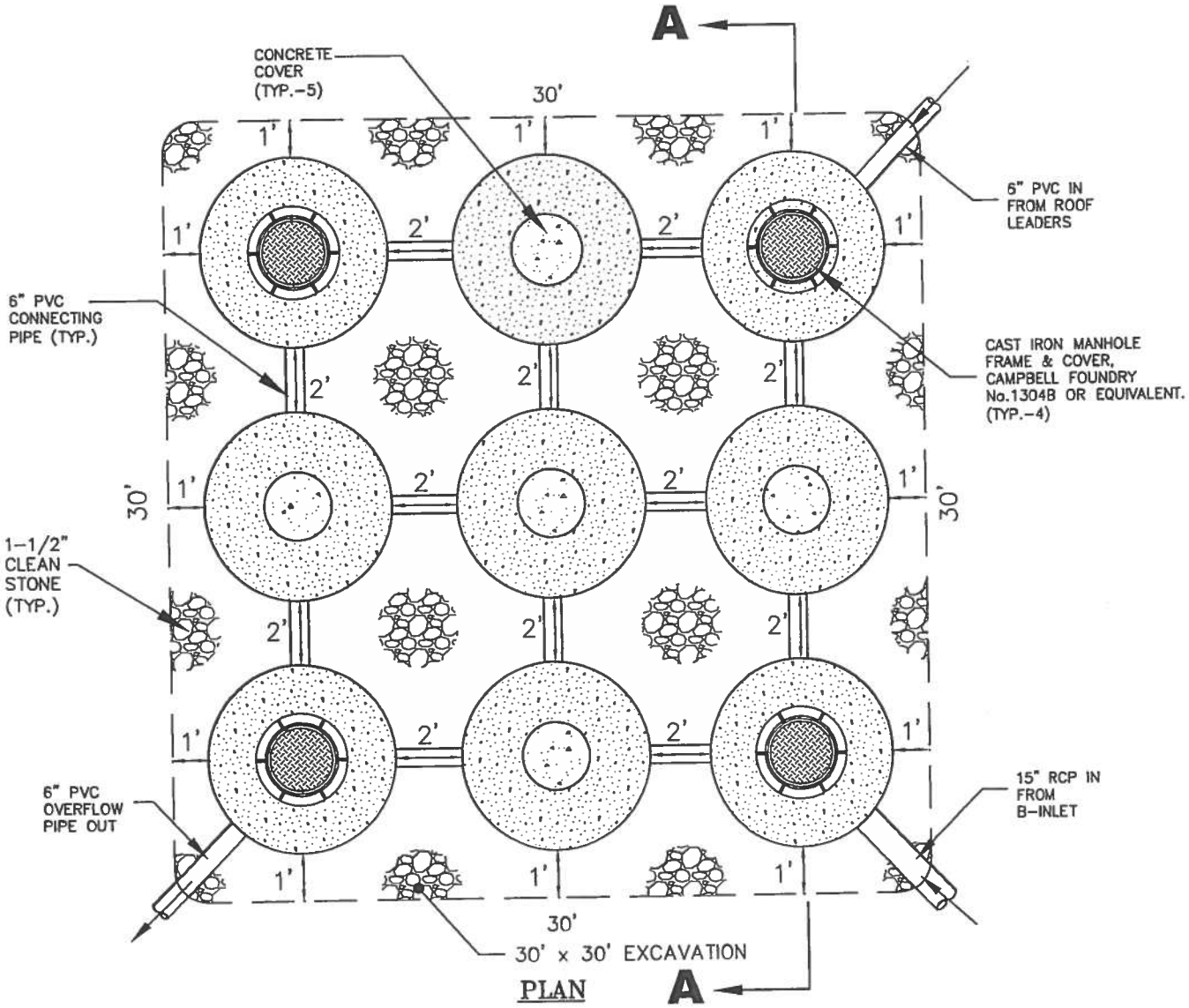
ELEVATION VIEW A–A

SOIL LOG C



SOIL LOG D





DRYWELL DETAIL

(N.T.S.)

For Stormwater Management System

SOIL LOG C- Performed June 22, 2012

0" – 29"	Fill
29" – 37"	Original Topsoil 10YR 3/3
37" – 66"	Clay Loam 5YR 5/8 5% Gravel, 5% Cobble, 2% Stone Subangular Blocky, Friable
66" – 102"	Sandy Clay Loam 7.5YR 5/8 5% Gravel, 5% Cobble, 2% Stone Subangular Blocky, Friable
102" – 122"	Sandy Clay Loam 7.5YR 5/6 5% Gravel, 10% Cobble, 5% Stone Subangular Blocky, Friable
122" – 190"	Loam 10YR 5/6 5% Gravel, 10% Cobble, 2% Stone Single Grain, Loose

Sample @ 108, 128"
Roots to 133"
Mottling 148" – Bottom, Common Medium Distinct 2.5Y 7/2 to 7.5YR 5/8
Seepage @ 163"
No Ledge

SOIL LOG D- Performed June 22, 2012

0" – 10	Topsoil 10YR 3/3
10" – 55"	Clay Loam 5YR 5/8 5% Gravel, 2% Cobble Subangular Blocky, Friable
55" – 92"	Sandy Clay Loam 7.5YR 5/8 5% Gravel, 5% Cobble, 5% Stone Subangular Blocky, Friable
92" – 150"	Loam 10YR 5/6 5% Gravel, 5% Cobble, 2% Stone Single Grain Friable

Percolation Test PT1 @ 100" yields 10 min/in.
Roots to 133"
Mottling 140" – Bottom, Common Medium Distinct 2.5Y 7/2 to 7.5YR 5/8
Water @ 148" after 1 Hr.
No Ledge

COUNTY/MUNICIPALITY Morris/ Chester Borough Block 103
Lot 51

APPLICATION FOR PERMIT TO CONSTRUCT/ALTER/REPAIR
AN INDIVIDUAL SUBSURFACE SEWAGE DISPOSAL SYSTEM

Form 3c. Soil Permeability Class Rating Data

1. Test Number	6	Replicate Letter	A
2.Sample Depth	108"	Soil Pit/ Boring Number	C
		Date Collected:	06/22/12

3. Coarse Fragment Content:

Total Weight of Sample, W.T. grams	450.00
Weight of Material Retained on 2mm Sieve, W.C.F., Grams	122
Weight % Coarse Fragment (W.C.F./W.T. x 100):	27.1%

4. Oven Dried Weight (24 hours at 105 deg C) of 40 Gram Air Dried Sample 39.50

5. Hydrometer Calibration, Rc				5.0 grams	
6. Hydrometer Reading-40 Seconds, R1				17.0 grams	
Temperature of Suspension				68.0 deg F	
7. Corrected Hydrometer Reading, R1'				12.0 grams	
8. Hydrometer Reading-2 Hours, R2				14.5 grams	
Temperature of Suspension				68.0 deg F	
9. Corrected Hydrometer Reading, R2'				9.5 grams	
10. % Sand = (Wt. - R1') / Wt. x 100					
=(	39.5	-	12.0	39.5 x 100 =	69.6%
11. % Clay = R2'/ Wt. x 100 = (			9.5	39.5 x 100 =	24.1%

12. Sieve Analysis:

a: Oven Dry Weight (2 hrs, 105 deg C) Total Sand Fraction (Soil Retained in 0.047 mm sieve)	26.7 grams
b: Weight of Fine Plus Very Fine Sand Fraction (Sand Passing 0.25 mm Sieve)	8.8 grams
c: % Fine Plus Very Fine Sand (b/a)	33.0%

13. Soil Morphology (Natural Soil Samples Only)

Structure of Soil Samples Tested:		Subangular Blocky
Consistence of Soil Samples Tested:	Dry:	
	Moist:	Friable

14. Soil Permeability Class Rating (Based upon average textural analysis of this replicated and other replicate samples) K3

15: I hereby certify that the information furnished on form 3c of this application is true and accurate. I am aware that falsification of data is a violation of Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq.) and is subject to penalties as prescribed in N.J.A.C. 7:14-8.

Signature of Soil Evaluator _____ Date: 7/6/12

Signature of Professional Engineer _____

James Glasson, NJPE 37703
For: Civil Engineering, Inc., 1 Cove Street Budd Lake, NJ 07828

COUNTY/MUNICIPALITY Morris/ Chester Borough Block 103
Lot 51

APPLICATION FOR PERMIT TO CONSTRUCT/ALTER/REPAIR
AN INDIVIDUAL SUBSURFACE SEWAGE DISPOSAL SYSTEM

Form 3c. Soil Permeability Class Rating Data

1. Test Number	6	Replicate Letter	B
2.Sample Depth	108"	Soil Pit/ Boring Number	C
		Date Collected:	06/22/12

3. Coarse Fragment Content:
Total Weight of Sample, W.T. grams 450.00
Weight of Material Retained on 2mm Sieve, W.C.F., Grams 122
Weight % Coarse Fragment (W.C.F./W.T. x 100): 27.1%

4. Oven Dried Weight (24 hours at 105 deg C) of 40 Gram Air Dried Sample 39.50

5. Hydrometer Calibration, Rc 5.0 grams
6. Hydrometer Reading-40 Seconds, R1 17.1 grams
Temperature of Suspension 68.0 deg F
7. Corrected Hydrometer Reading, R1' 12.1 grams
8. Hydrometer Reading-2 Hours, R2 14.3 grams
Temperature of Suspension 68.0 deg F
9. Corrected Hydrometer Reading, R2' 9.3 grams
10. % Sand = (Wt. - R1') / Wt. x 100 39.5 x 100 = 69.4%
=(39.5 - 12.1
11. % Clay = R2'/ Wt. x 100 = (9.3 39.5 x 100 = 23.5%

12. Sieve Analysis:
a: Oven Dry Weight (2 hrs, 105 deg C) Total Sand Fraction (Soil Retained in 0.047 mm sieve) 26.9 grams
b: Weight of Fine Plus Very Fine Sand Fraction (Sand Passing 0.25 mm Sieve) 8.6 grams
c: % Fine Plus Very Fine Sand (b/a) 32.0%

13. Soil Morphology (Natural Soil Samples Only)

Structure of Soil Samples Tested: Subangular Blocky

Consistence of Soil Samples Tested: Dry:
Moist: Friable

14. Soil Permeability Class Rating (Based upon average textural analysis of this replicated and other replicate samples) K3

15: I hereby certify that the information furnished on form 3c of this application is true and accurate. I am aware that falsification of data is a violation of Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq.) and is subject to penalties as prescribed in N.J.A.C. 7:14-8.

Signature of Soil Evaluator _____ Date: 7/6/12

Signature of Professional Engineer _____

James Glasson, NJPE 37703
For: Civil Engineering, Inc., 1 Cove Street Budd Lake, NJ 07828

COUNTY/MUNICIPALITY Morris/ Chester Borough Block 103
Lot 51

APPLICATION FOR PERMIT TO CONSTRUCT/ALTER/REPAIR
AN INDIVIDUAL SUBSURFACE SEWAGE DISPOSAL SYSTEM

Form 3c. Soil Permeability Class Rating Data

1. Test Number	7	Replicate Letter	A
2.Sample Depth	128"	Soil Pit/ Boring Number	C
		Date Collected:	06/22/12

3. Coarse Fragment Content:
   - Total Weight of Sample, W.T. grams: 450.00
   - Weight of Material Retained on 2mm Sieve, W.C.F., Grams: 106
   - Weight % Coarse Fragment (W.C.F./W.T. x 100): 23.6%
4. Oven Dried Weight (24 hours at 105 deg C) of 40 Gram Air Dried Sample: 39.70
5. Hydrometer Calibration, Rc: 5.0 grams
6. Hydrometer Reading-40 Seconds, R1: 23.0 grams
   Temperature of Suspension: 68.0 deg F
7. Corrected Hydrometer Reading, R1': 18.0 grams
8. Hydrometer Reading-2 Hours, R2: 10.0 grams
   Temperature of Suspension: 68.0 deg F
9. Corrected Hydrometer Reading, R2': 5.0 grams
10. % Sand = (Wt. - R1') / Wt. x 100
    =(39.7 - 18.0) 39.7 x 100 = 54.7%
11. % Clay = R2'/ Wt. x 100 = (5.0) 39.7 x 100 = 12.6%
12. Sieve Analysis:
    a: Oven Dry Weight (2 hrs, 105 deg C) Total Sand Fraction (Soil Retained in 0.047 mm sieve): 25.7 grams
    b: Weight of Fine Plus Very Fine Sand Fraction (Sand Passing 0.25 mm Sieve): 8.8 grams
    c: % Fine Plus Very Fine Sand (b/a): 34.2%
13. Soil Morphology (Natural Soil Samples Only)

    Structure of Soil Samples Tested: Single Grain

    Consistence of Soil Samples Tested: Dry:
    Moist: Loose

14. Soil Permeability Class Rating (Based upon average textural analysis of this replicated and other replicate samples): K3

15: I hereby certify that the information furnished on form 3c of this application is true and accurate. I am aware that falsification of data is a violation of Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq.) and is subject to penalties as prescribed in N.J.A.C. 7:14-8.

Signature of Soil Evaluator _____ Date: 7/6/12

Signature of Professional Engineer _____

James Glasson, NJPE 37703
For: Civil Engineering, Inc., 1 Cove Street Budd Lake, NJ 07828

COUNTY/MUNICIPALITY Morris/ Chester Borough Block 103
Lot 51

APPLICATION FOR PERMIT TO CONSTRUCT/ALTER/REPAIR
AN INDIVIDUAL SUBSURFACE SEWAGE DISPOSAL SYSTEM

Form 3c. Soil Permeability Class Rating Data

1. Test Number	7	Replicate Letter	B
2.Sample Depth	128"	Soil Pit/ Boring Number	C
		Date Collected:	06/22/12

3. Coarse Fragment Content:
Total Weight of Sample, W.T. grams 450.00
Weight of Material Retained on 2mm Sieve, W.C.F., Grams 106
Weight % Coarse Fragment (W.C.F./W.T. x 100): 23.6%

4. Oven Dried Weight (24 hours at 105 deg C) of 40 Gram Air Dried Sample 39.70

5. Hydrometer Calibration, Rc 5.0 grams
6. Hydrometer Reading-40 Seconds, R1 23.2 grams
Temperature of Suspension 68.0 deg F
7. Corrected Hydrometer Reading, R1' 18.2 grams
8. Hydrometer Reading-2 Hours, R2 10.1 grams
Temperature of Suspension 68.0 deg F
9. Corrected Hydrometer Reading, R2' 5.1 grams
10. % Sand = (Wt. - R1') / Wt. x 100
=(39.7 - 18.2) 39.7 x 100 = 54.2%
11. % Clay = R2'/ Wt. x 100 = (5.1) 39.7 x 100 = 12.8%

12. Sieve Analysis:
a: Oven Dry Weight (2 hrs, 105 deg C) Total Sand Fraction (Soil Retained in 0.047 mm sieve) 25.5 grams
b: Weight of Fine Plus Very Fine Sand Fraction (Sand Passing 0.25 mm Sieve) 8.6 grams
c: % Fine Plus Very Fine Sand (b/a) 33.7%

13. Soil Morphology (Natural Soil Samples Only)

Structure of Soil Samples Tested: Single Grain

Consistence of Soil Samples Tested: Dry:
Moist: Loose

14. Soil Permeability Class Rating (Based upon average textural analysis of this replicated and other replicate samples) K3

15: I hereby certify that the information furnished on form 3c of this application is true and accurate. I am aware that falsification of data is a violation of Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq.) and is subject to penalties as prescribed in N.J.A.C. 7:14-8.

Signature of Soil Evaluator _____ Date: 7/6/12

Signature of Professional Engineer _____

James Glasson, NJPE 37703
For: Civil Engineering, Inc., 1 Cove Street Budd Lake, NJ 07828

a. Oven Dry Wt. (2 hrs., 105°C) Total Sand Fraction (Soil Retained in 0.047 mm Sieve), grams_____
b. Wt. of Fine Plus Very Fine Sand Fraction (Sand Passing 0.25 mm Sieve), grams_____
c. % Fine Plus Very Fine Sand (b/a)_____

14. Soil Morphology (Natural Soil Samples Only):
    Structure of Soil Horizon Tested_____
    Consistence of Soil Horizon Tested: Dry___ Moist___
15. Soil Permeability Class Rating (Based upon average textural analysis of this replicate and other replicate samples)_____
16. I hereby certify that the information furnished on Form 3c of this application is true and accurate. I am aware that falsification of data is a violation of the Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq) and is subject to penalties as prescribed in N.J.A.C. 7:14-8.
    Signature of Site Evaluator_____ Date_____
    Signature of Professional Engineer_____ License # _____

Form 3d. Percolation Test Data

1. Test Number P11 Replicate (Letter)__ Date Tested 6/22/12
2. Depth 100 "
3. Pre-soak:_____
   X Sandy Textured Soil Only, Shortened Pre-soak—Indicate Time Required for 12 Inches of Water to Drain After Second Filling, Minutes 40
   __ Four Hour Pre-soak Completed—Indicate Result:
   __ Test Hole Drained Within 16 to 24 Hours After Pre-soak
   __ Test Hole Did Not Drain Within 24 Hours After Pre-soak
4. Rate of Fall Data:
   a. Time Interval Selected, Minutes 10
   b. Record the Drop in Water Level During Each Time Interval to the Nearest 1/10th-Inch On the Lines Below:

Depth of Water, Start of Interval (inches)	Depth of Water, End of Interval (inches)	Drop in Water Level(Inches)
9	7 3/4	1 1/4 "
7 3/4	6 3/4	1 "
6 3/4	5 3/4	1 "
4 3/4	3 3/4	1 "
3 3/4	2 3/4	1 "
2 3/4	1 3/4	1 "

5. Percolation Rate:
   a. Time, minutes, Required for a Six-inch Drop in Water Level 60
   b. Percolation Rate = a/6 = 60/6 = 10 min/in
6. I hereby certify that the information furnished on Form 3d of this application is true and accurate. I am aware that falsification of data is a violation of the Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq.) and is subject to penalties as prescribed in N.J.A.C. 7:14-8.
   Signature of Site Evaluator _____ Date 7/6/12
   Signature of Professional Engineer _____ License # 37703

STORM SEWER STRUCTURE WORKSHEET

STRUCTURE	AREA#	AREA (ac)	"C" COEFFICIENT	TIME OF CONCENTRATION
B INLET	B-1	.17 AC.	AREA C PVMT .13 .99 GRASS .04 .45 C = .86	10 MIN. MINIMUM
B INLET	B-2	.15 AC	AREA C PVMT .13 .99 GRASS .02 .45 C = .92	10 MIN. MINIMUM
ROOF	B-3	.09	.99	10 MIN. MINIMUM

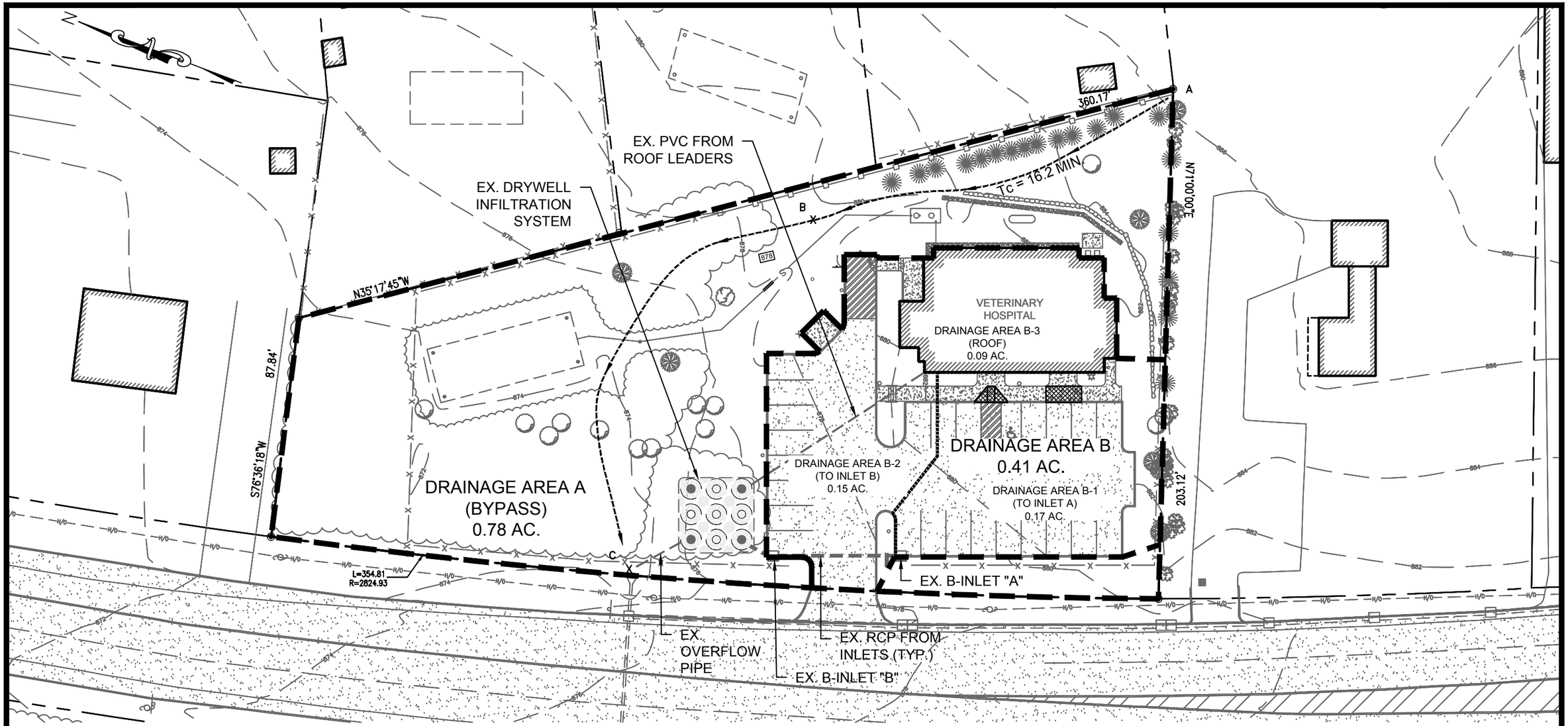
CIVIL ENGINEERING, INC.
1 COVE STREET
BUDD LAKE, N.J. 07828
Telephone: (973) 426-1776
Fax: (973) 426-0716

SHEET: 1 OF: 1

PROJECT NO: 4923 PROJECT NAME: BLACK RIVER
LOCATION: RT 206 CHESTER BOROUGH NJ
COMPUTED BY: JG DATE:
CHECKED BY: DATE:
DESIGN STORM FREQUENCY: 25 YEAR

STORM SEWER TABULATION

LOCATION		RUNOFF DATA									SEWER DESIGN DATA									
				INCREMENTAL AREA			TIME OF CONCENTRATION				PIPE MATERIAL[2] RCP MANNINGS 'n' .013									
STRUCTURE NUMBER[3]		AREA	WEIGHTED RUNOFF COEFFICIENT[4]	TOTAL AREA	OVERLAND THROUGH AREA T_A[4]	THROUGH PIPE T_p	TOTAL T_c OR LONGEST ACCUMULATED T_c	RAINFALL INTENSITY I[4]	PEAK RUNOFF Q		DIAMETER	LENGTH	SLOPE	CAPACITY AT FULL FLOW[4]	VELOCITY AT FULL FLOW V_f[4]	VELOCITY ACTUAL V_A[4]	INV UPPER	INV LOWER	TIME IN PIPE	
UPSTREAM	DOWNSTREAM	(Ac)	$\bar{C}$	AxC	(ΣAxC)	(MIN)	(MIN)	(MIN)	(IN/HR)	(CFS)[1]	(INCHES)	(FT)	(%)	(CFS)	(FPS)	(FPS)			% or V	
(1)	(2)	(3)	(4)	(5)=(3)x(4)	(6)=Σ(5)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)		
B INLET "A"	B INLET "B"	.17	.86	.146	.146	10	—	10	5.8	.85	15	47	4.2	13.5	11.0	3.3	875.18	873.2	.24	
B INLET "B"	DRYWELL	.15	.92	.138	.28	10	.25	10.25	5.75	1.63	15	8	1.0	6.5	5.3	3.7	873.10	873.02	.03	
ROOF	DRYWELL	.09	.99	.089	.089	10	—	10	5.8	.51	8" PVC	87	3.4	3.0	8.0	4.4	876	873.02		

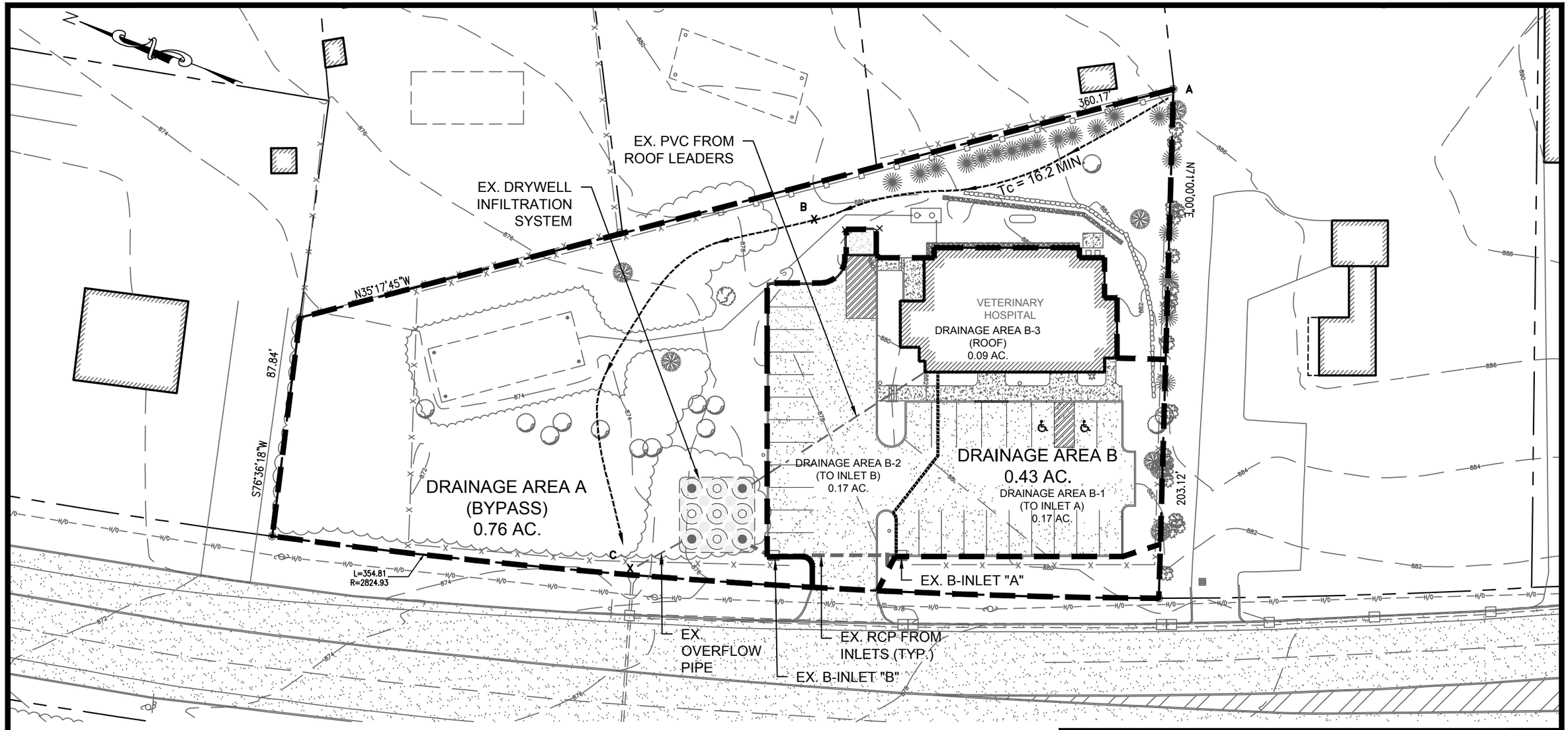


E&LP
140 WEST MAIN STREET HIGH BRIDGE, NJ 08829
(908) 238-0544 FAX: (908)238-9572
A PROFESSIONAL ASSOCIATION

TITLE:

EXISTING DRAINAGE AREA PLAN

LOCATION: 114 US HIGHWAY 206 NORTH BLOCK 103 LOT 51 BOROUGH OF CHESTER MORRIS COUNTY, NJ	SCALE: 1"=40'	PROJECT NO.: 19003
	DATE: 5/1/19	DRAWN BY: EM
	FILENAME: EX.DRAINAGE	SHEET NO.: 1 OF 2



40 0 40

Scale 1" = 40'

E&LP
140 WEST MAIN STREET HIGH BRIDGE, NJ 08829
(908) 238-0544 FAX: (908)238-9572
A PROFESSIONAL ASSOCIATION

TITLE:

POST-DEVELOPMENT DRAINAGE AREA PLAN

LOCATION: 114 US HIGHWAY 206 NORTH BLOCK 103 LOT 51 BOROUGH OF CHESTER MORRIS COUNTY, NJ	SCALE: 1"=40'	PROJECT NO.: 19003
	DATE: 5/1/19	DRAWN BY: EM
	FILENAME: PROP.DRAINAGE	SHEET NO.: 2 OF 2

CIVIL ENGINEERING
ENVIRONMENTAL
SURVEYING
LANDSCAPE ARCHITECTURE
GEOTECHNICAL

STORMWATER MANAGEMENT REPORT

Black River Veterinary Hospital
114 US Highway 206 North
Chester Borough
Block 103, Lot 51
Morris County, New Jersey

Prepared For:
Tack Veterinary Holdings, LLC
C/O Douglas Tack

May 1, 2019

John Hansen
Professional Engineer
N.J. P.E. No. 24GE04194500

E&LP

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140 West Main Street | High Bridge, NJ 08829
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Clinton | Asbury Park | Denville | Philadelphia

TABLE OF CONTENTS

LIST OF APPENDICIES

1. INTRODUCTION

Engineering & Land Planning Associates, Inc. has prepared this Stormwater Management Report on behalf of Tack Veterinary Holdings, LLC, to document the design methodology and associated calculations for the project's stormwater management for the proposed site improvements to be constructed in Chester Borough, Morris County, New Jersey. The subject property is located along the northbound side of Route 206 and is known as Lot 51, Block 103 as shown on Sheet 15 of the borough of Chester Tax Maps.

An existing drywell infiltration system currently stores and infiltrates the stormwater runoff from the developed portion of the site. This system was designed for the site improvements that were proposed in a previous site plan application as shown on a plan set entitled "Preliminary and Final Site Plans for Lot 51 Block 103 'Black River Veterinary Hospital' Situated In: The Borough of Chester, Morris County, New Jersey", prepared by Civil Engineering, Inc., dated 7/6/12 and last revised 12/30/12.

The proposed limit of disturbance is approximately 3,000 square feet (0.068 acres) with a net impervious coverage increase of 832 square feet (0.019 acres) in connection with this application. By definition, the project is not a "major development" as defined by N.J.A.C. 7:8. The stormwater management analysis for this project utilizes the same methodology that was proposed in the stormwater report for the previous site plan application for the existing drywell system. The slight increase in impervious coverage will affect the peak flows for the 2, 10, and 100 year storms. The purpose of this report is to present an analysis of the existing stormwater management system to determine if the existing drywell system is sized large enough to accommodate the increase in peak flows or if additional stormwater management is required.

2. PROJECT DESCRIPTION

2.1 Existing Conditions

The site, identified as Block 103, Lot 51, is located in Chester Borough, Morris County, New Jersey along the northbound side of Route 206 between the intersections with Route 24 and Melville Place. The property consists of approximately 1.19 acres and is developed with a Veterinary Hospital and associated parking lot and utilities. The rest of the lot is wooded with some maintained lawn area. It is trapezoidal in shape and bordered by residential properties.

As per the design plans by Civil Engineering, Inc., the existing stormwater drywell system contains nine (9), 8 foot diameter drywell units that are 7.5 feet in depth and encased in a 30 by 30 square foot stone bed extending 1 foot below the bottom of the drywells. The existing drywell system has a storage volume of 4,254.957 cubic feet. Based on the previous stormwater report entitled "Stormwater Management Report for 'Black River Veterinary Hospital' Lot 51 Block 103 Borough of Chester Morris County, New Jersey", prepared by Civil Engineering Inc., dated July 06, 2012 and last revised November 30, 2012, the drywell system is currently designed to store and infiltrate all of the water that is collected from its drainage area from the 100 year storm event. The drywell system collects runoff from the developed portion of the site through concrete pipe conveying water from two inlets in the parking lot and a PVC pipe from the roof leaders of the veterinary hospital building.

The stormwater runoff that is generated from the undeveloped portions of the site flows undetained in a northwesterly direction across the site and discharges to an existing 18 inch pipe within a low point on the lot which drains to the NJDOT Route 206 Drainage System. Overflow from the drywell system is directed to the same low point via a PVC pipe. Refer to Appendix A for the previous stormwater report.

2.2 Proposed Conditions

The proposed project will include an expansion of the existing asphalt parking lot and relocation of the trash enclosure and associated curbing, fencing, and lighting. The project also proposes restriping of the parking stalls to increase the number of stalls and rearrange the location of the ADA stalls to an area that is more appropriate for handicap access to the veterinary hospital.

The existing stormwater drywell infiltration system shall be used to store and infiltrate the runoff from the proposed improvements.

2.3 Soil Conditions

Per the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey, the site is contained entirely in the Gladstone Gravelly Loam, 3-8% slopes (GkaoB) soils which are in hydrological soil group B.

Soil profile pits were recorded by Civil Engineering, Inc. on 06/22/12, and soil permeability class ratings as well as a percolation test were performed to determine the permeability rate. The soil logs report primarily clay-sandy clay loam to approximately 10 feet below grade, underlain by Loam. The soil permeability results from around 8.5 to 10.5 feet below grade reported K3 soils. Coarse fragments throughout the soil profile range from 12-20%. Some seepage and mottling was encountered starting at 140 inches. Soil logs and Soil Permeability Class Ratings are included in Appendix A as part of the prior stormwater management report.

3. METHODOLOGY

3.1 Stormwater Runoff Calculation Methodology

The stormwater quantity runoff analysis has been performed in accordance with the previous stormwater analysis performed by Civil Engineering, Inc. The previous analysis utilized the rational method to calculate peak flows while the required storage was based upon the modified rational method. The exact same methodology was followed in order to compare predevelopment and post development peak flows and to see if the existing stormwater drywell system is sized to store the 100 year storm volume of runoff generated from the revised drainage area.

The most hydraulically distant flow path was analyzed in the previous stormwater report by Civil Engineering Inc. (Appendix A) to determine the most appropriate time of concentrations. The proposed site improvements will have no effect on the time of concentrations that were calculated in the previous stormwater report. The most hydraulically distant flow path from one drainage area will not be disturbed, and the minimum allowed time of concentrations were used for the other drainage area due to the short flow path. New CN values were calculated for each drainage area. The summary of results and supporting calculations for the existing and proposed stormwater quantity runoff analysis can be found in Appendices B-C of this report.

4. STORMWATER ANALYSIS

4.1 Existing Conditions Stormwater Runoff Quantity

The Existing Drainage Area Plan (Appendix E) illustrates the existing drainage areas on site. The site has been analyzed as two distinct drainage areas. The existing drainage area plan is identical to the proposed post development drainage area plan from 2012 entitled "Post Development Drainage Area Plan for Lot 51 Block 103 Borough of Chester Morris County, New Jersey", prepared by Civil Engineering Inc., dated 7/6/12 and last revised 11/30/12.

Existing Drainage Area A is the area of the project site that bypasses the existing stormwater drywell system and drains directly to the 18 inch pipe that discharges to the NJDOT Route 206 Drainage System. It is approximately 0.78 acres in size and consists almost entirely of pervious cover.

Existing Drainage Area B is the developed portion of the site that is collected by inlets and roof drains and then conveyed to the drywell system. This area consists of the veterinary hospital and parking lot. Existing Drainage Area B is comprised of three sub drainage areas. Sub Drainage Area B-1 drains to a type-B inlet identified as "B-inlet A", and Sub Drainage Area B-2 drains to a type-B inlet identified as "B-inlet B". The type-B inlets are connected and sent to the drywell system by reinforced concrete pipe. Sub Drainage Area B-3 consists of the roof area which is captured and sent to the drywells by PVC pipe.

The runoff coefficients (C), time of concentrations (Tc), and peak flows for the 2, 10, and 100 year storms for the existing drainage areas have been calculated utilizing the rational method for each drainage area.

The pre-development runoff from the drainage areas is listed in the following table:

Drainage Area	2-year Storm	10-year Storm	100-year Storm
EXDA-A	1.00 CFS	1.36 CFS	1.89 CFS
EXDA-B	1.58 CFS	2.19 CFS	3.02 CFS

Refer to Appendices B-C for a summary of the composite runoff coefficients and pre-development peak discharge rates for the 2, 10, and 100 year storms.

4.2 Existing Conditions Drywell Storage

The existing drywell infiltration system was previously designed by Civil Engineering, Inc. to store and infiltrate the 100 year runoff generated from existing Drainage Area B. The storage required was calculated using the Modified Rational Method. Refer to page 19 in Appendix A for a summary of the storage requirements and page 23 for the drywell calculations. The existing drywell system has a total storage volume of 4,254.957 cubic feet. This was sized based on the volume of water generated from Drainage Area B for the 100 year storm with a duration of 45 minutes. However, there was an inconsistency in the previous report for the storage volume needed for this storm duration. The Civil Engineering, Inc. report calculated a required storage volume of 4,080 cubic feet, whereas our firm calculated the storage volume to be 3,672 cubic feet based on the methodology that was used. Refer to Appendix D for the required drywell storage volume calculations.

4.3 Proposed Conditions Stormwater Runoff Quantity

The Proposed Drainage Area Plan (Appendix E), illustrates the proposed drainage areas for the post-development condition. The proposed development includes a slight expansion of Drainage Area B and reduction in Drainage Area A. Refer to Appendix B for the post development runoff coefficients.

The most hydraulically distant flow path for Drainage Area A is unaffected by the proposed development and is, therefore, to remain the same as the prior Civil Engineering, Inc. stormwater report. The prior stormwater report used the minimum time of concentration for Drainage Area B due to the short flow paths to the inlets and added 0.25 minutes for the time to flow through the pipe from inlet to the drywells. The proposed development adds only minimal distance to the flow path to "B-inlet B", so the time of concentration will remain the same.

The post development runoff from the drainage areas is listed in the following table:

Drainage Area	2-year Storm	10-year Storm	100-year Storm
PRDA-A	0.97 CFS	1.32 CFS	1.84 CFS
PRDA-B	1.68 CFS	2.32 CFS	3.20 CFS

Refer to Appendices B-C for a summary of the composite runoff coefficients and post development peak discharge rates for the 2, 10, and 100 year storms.

4.4 Proposed Conditions Drywell Storage

The same methodology used in the Civil Engineering, Inc. report was used to recalculate the required storage for the post development Drainage Area B. The post development storage required for the subject project is 3,888 cubic feet. Refer to Appendix D for the required drywell storage volume calculations. The existing drywell system has a total storage volume of 4,254.957 cubic feet.

5. CONCLUSIONS

In conclusion, the existing stormwater infiltration drywell system has sufficient storage volume to accommodate the additional stormwater runoff from the slight increase in drainage area and impervious coverage in connection with this project.

APPENDIX A

(Attached Separately)

APPENDIX B

Project: **Black River Vet**
Location: **114 Route 206, Chester**
Morris County, NJ

By: EM
Date: 1-Apr-19
Chk'd: JH
Revised:

Watershed: **Existing Drainage Area A**

RUNOFF COEFFICIENT CALCULATIONS:

(rational method)

Soil name and hydrologic group	Cover Description	C	Area (acres)	Product of CN x Area
GkaoB (B)	Woods	0.25	0.33	0.08
GkaoB (B)	Grass	0.45	0.44	0.20
GkaoB (B)	Impervious	0.99	0.01	0.01

'B' Soils:
GkaoB

Totals = 0.78 0.29

Composite C = 0.29 / 0.78 = 0.37

USE C = 0.37

Project: **Black River Vet**
Location: **114 Route 206, Chester**
Morris County, NJ

By: EM
Date: 1-Apr-19
Chk'd: JH
Revised:

Watershed: **Existing Drainage Area B**

RUNOFF COEFFICIENT CALCULATIONS:

(rational method)

Soil name and hydrologic group	Cover Description	C	Area (acres)	Product of CN x Area
GkaoB (B)	Grass	0.45	0.05	0.02
GkaoB (B)	Impervious	0.99	0.36	0.36

'B' Soils:
GkaoB

Totals = 0.41 0.38

Composite C = 0.38 / 0.41 = 0.92

USE C = 0.92

Project: **Black River Vet**
Location: **114 Route 206, Chester**
Morris County, NJ

By: EM
Date: 1-Apr-19
Chk'd: JH
Revised:

Watershed: **Proposed Drainage Area A**

RUNOFF COEFFICIENT CALCULATIONS:

(rational method)

Soil name and hydrologic group	Cover Description	C	Area (acres)	Product of CN x Area
GkaoB (B)	Woods	0.25	0.33	0.08
GkaoB (B)	Grass	0.45	0.42	0.19
GkaoB (B)	Impervious	0.99	0.01	0.01

'B' Soils:
GkaoB

Totals = 0.76 0.28

Composite C = 0.28 / 0.76 = 0.37

USE C = 0.37

Project: **Black River Vet**
Location: **114 Route 206, Chester**
Morris County, NJ

By: EM
Date: 1-Apr-19
Chk'd: JH
Revised:

Watershed: **Proposed Drainage Area B**

RUNOFF COEFFICIENT CALCULATIONS:

(rational method)

Soil name and hydrologic group	Cover Description	C	Area (acres)	Product of CN x Area
GkaoB (B)	Grass	0.45	0.05	0.02
GkaoB (B)	Impervious	0.99	0.38	0.38

'B' Soils:
GkaoB

Totals = 0.43 0.40

Composite C = 0.40 / 0.43 = 0.93

USE C = 0.93

APPENDIX C

PEAK FLOWS SUMMARY SHEET

(Rational Method: Q = C i A)

EXISTING DRAINAGE AREA A

I. Runoff Coefficient (C) = 0.37

II. Time of Concentration (Tc) = 16.2 Minutes
(Taken from Civil Engineering, Inc. Stormwater Report, 11/30/12)

III. Intensity (i): (Functions of Tc)
1. 2 year storm: i = 3.46 in/hr
2. 10 year storm: i = 4.71 in/hr
3. 100 year storm: i = 6.56 in/hr

IV. Area (A) = 0.78 Acres

V. Peak Flows (Q):
1. 2 year storm: Q = 0.37 x 3.46 x 0.78 = 1.00 CFS
2. 10 year storm: Q = 0.37 x 4.71 x 0.78 = 1.36 CFS
3. 100 year storm: Q = 0.37 x 6.56 x 0.78 = 1.89 CFS

EXISTING DRAINAGE AREA B

I. Runoff Coefficient (C) = 0.92

II. Time of Concentration (Tc) = 10.25 Minutes
(Taken from Civil Engineering, Inc. Stormwater Report, 11/30/12)

III. Intensity (i): (Functions of Tc)
1. 2 year storm: i = 4.20 in/hr
2. 10 year storm: i = 5.80 in/hr
3. 100 year storm: i = 8.00 in/hr

IV. Area (A) = 0.41 Acres

V. Peak Flows (Q):
4. 2 year storm: Q = 0.92 x 4.20 x 0.41 = 1.58 CFS
5. 10 year storm: Q = 0.92 x 5.80 x 0.41 = 2.19 CFS
6. 100 year storm: Q = 0.92 x 8.00 x 0.41 = 3.02 CFS

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PROPOSED DRAINAGE AREA A

I. Runoff Coefficient (C) = 0.37

II. Time of Concentration (Tc) = 16.2 Minutes
(Taken from Civil Engineering, Inc. Stormwater Report, 11/30/12)

III. Intensity (i): (Functions of Tc)
1. 2 year storm: i = 3.46 in/hr
2. 10 year storm: i = 4.71 in/hr
3. 100 year storm: i = 6.56 in/hr

IV. Area (A) = 0.76 Acres

V. Peak Flows (Q):
1. 2 year storm: Q = 0.37 x 3.46 x 0.76 = 0.97 CFS
2. 10 year storm: Q = 0.37 x 4.71 x 0.76 = 1.32 CFS
3. 100 year storm: Q = 0.37 x 6.56 x 0.76 = 1.84 CFS

PROPOSED DRAINAGE AREA B

I. Runoff Coefficient (C) = 0.93

II. Time of Concentration (Tc) = 10.25 Minutes
(Taken from Civil Engineering, Inc. Stormwater Report, 11/30/12)

III. Intensity (i): (Functions of Tc)
7. 2 year storm: i = 4.20 in/hr
8. 10 year storm: i = 5.80 in/hr
9. 100 year storm: i = 8.00 in/hr

IV. Area (A) = 0.43 Acres

V. Peak Flows (Q):
10. 2 year storm: Q = 0.93 x 4.20 x 0.43 = 1.68 CFS
11. 10 year storm: Q = 0.93 x 5.80 x 0.43 = 2.32 CFS
12. 100 year storm: Q = 0.93 x 8.00 x 0.43 = 3.20 CFS

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APPENDIX D

DRYWELL STORAGE SUMMARY SHEET

(Modified Rational Method: Q = C i A)

EXISTING DRAINAGE AREA B

I. Runoff Coefficient (C) = 0.92

II. Time of Concentration (Tc) = 10.25 Minutes
(Taken from Civil Engineering, Inc. Stormwater Report, 11/30/12)

III. IDF Curve 100 Year Intensity (i): (Functions of Storm Duration)

a) 20 min. storm duration: i = 5.6 in/hr
b) 30 min. storm duration: i = 4.6 in/hr
c) 45 min. storm duration: i = 3.6 in/hr
d) 60 min. storm duration: i = 2.9 in/hr
e) 90 min. storm duration: i = 2.2 in/hr
f) 120 min. storm duration: i = 1.7 in/hr
g) 180 min. storm duration: i = 1.3 in/hr
h) 240 min. storm duration: i = 1.1 in/hr

IV. Area (A) = 0.41 Acres

V. Peak Flows (Q):

a) 20 min. storm duration: Q = 0.92 x 5.6 x 0.41 = 2.11 CFS
b) 30 min. storm duration: Q = 0.92 x 4.6 x 0.41 = 1.74 CFS
c) 45 min. storm duration: Q = 0.92 x 3.6 x 0.41 = 1.36 CFS
d) 60 min. storm duration: Q = 0.92 x 2.9 x 0.41 = 1.09 CFS
e) 90 min. storm duration: Q = 0.92 x 2.2 x 0.41 = 0.83 CFS
f) 120 min. storm duration: Q = 0.92 x 1.7 x 0.41 = 0.64 CFS
g) 180 min. storm duration: Q = 0.92 x 1.3 x 0.41 = 0.49 CFS
h) 240 min. storm duration: Q = 0.92 x 1.1 x 0.41 = 0.41 CFS

VI. Required Storage (S): (Matching Civil Engineering, Inc. Stormwater Report, 11/30/12 Methodology)

a) 20 min. storm duration: S = (20 x 2.11 x 0.5) x 2 x 60 = 2,532 CF
b) 30 min. storm duration: S = [(0.5 x 20 x 1.74) + (10 x 1.74) + (0.5 x 20 x 1.74)] x 60 = 3,132 CF
c) 45 min. storm duration: S = [(0.5 x 20 x 1.36) + (25 x 1.36) + (0.5 x 20 x 1.36)] x 60 = 3,672 CF *
d) 60 min. storm duration: S = [(0.5 x 20 x 1.09) + (40 x 1.09) + (0.5 x 20 x 1.09)] x 60 = 3,924 CF

* Civil Engineering, Inc. report shows the 45 min. storm duration to generate 4,080 CF due to an inconsistency in the calculations. The drywell storage volume was determined by the 100 year, 45 min. storm duration. The required storage volume for the post development Drainage Area B shall be determined based on the same storm duration.

PROPOSED DRAINAGE AREA B

I. Runoff Coefficient (C) = 0.93

II. Time of Concentration (Tc) = 10.25 Minutes
(Taken from Civil Engineering, Inc. Stormwater Report, 11/30/12)

III. IDF Curve 100 Year Intensity (i): (Functions of Storm Duration)

a) 20 min. storm duration: i = 5.6 in/hr
b) 30 min. storm duration: i = 4.6 in/hr
c) 45 min. storm duration: i = 3.6 in/hr
d) 60 min. storm duration: i = 2.9 in/hr
e) 90 min. storm duration: i = 2.2 in/hr
f) 120 min. storm duration: i = 1.7 in/hr
g) 180 min. storm duration: i = 1.3 in/hr
h) 240 min. storm duration: i = 1.1 in/hr

IV. Area (A) = 0.43 Acres

V. Peak Flows (Q):

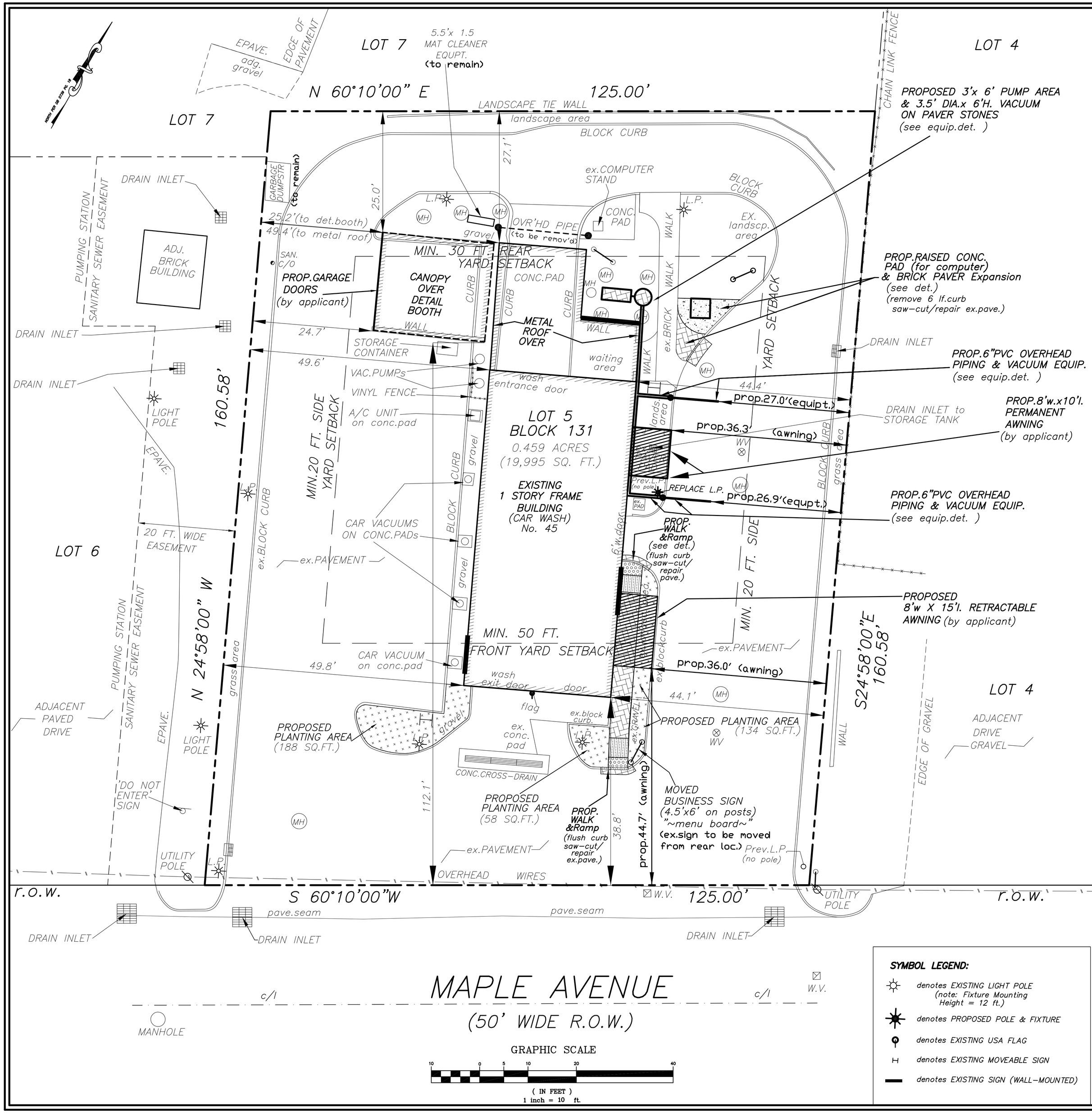
i) 20 min. storm duration: Q = 0.93 x 5.6 x 0.43 = 2.24 CFS
j) 30 min. storm duration: Q = 0.93 x 4.6 x 0.43 = 1.84 CFS
k) 45 min. storm duration: Q = 0.93 x 3.6 x 0.43 = 1.44 CFS
l) 60 min. storm duration: Q = 0.93 x 2.9 x 0.43 = 1.16 CFS
m) 90 min. storm duration: Q = 0.93 x 2.2 x 0.43 = 0.88 CFS
n) 120 min. storm duration: Q = 0.93 x 1.7 x 0.43 = 0.68 CFS
o) 180 min. storm duration: Q = 0.93 x 1.3 x 0.43 = 0.52 CFS
p) 240 min. storm duration: Q = 0.93 x 1.1 x 0.43 = 0.44 CFS

VI. Required Storage (S): (Matching Civil Engineering, Inc. Stormwater Report, 11/30/12 Methodology)

a) 20 min. storm duration: S = (20 x 2.24 x 0.5) x 2 x 60 = 2,688 CF
b) 30 min. storm duration: S = [(0.5 x 20 x 1.84) + (10 x 1.84) + (0.5 x 20 x 1.84)] x 60 = 3,312 CF
c) 45 min. storm duration: S = [(0.5 x 20 x 1.44) + (25 x 1.44) + (0.5 x 20 x 1.44)] x 60 = 3,888 CF
d) 60 min. storm duration: S = [(0.5 x 20 x 1.16) + (40 x 1.16) + (0.5 x 20 x 1.16)] x 60 = 4,176 CF

The Post Develop Drainage Area B required storage volume is 3,888 CF.

APPENDIX E
(Attached Separately)



GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

SYMBOL LEGEND:

- denotes EXISTING LIGHT POLE (note: Fixture Mounting Height = 12 ft.)
- denotes PROPOSED POLE & FIXTURE
- denotes EXISTING USA FLAG
- denotes EXISTING MOVEABLE SIGN
- denotes EXISTING SIGN (WALL-MOUNTED)

CHESTER BOROUGH ZONING SCHEDULE
ZONE B-3 – Regional Commercial Business

ITEMS	B-3 ZONE REQUIREMENTS	EXISTING CONDITIONS	PROPOSED CONDITIONS
MIN. LOT AREA	1 AC (43,560 SQ.FT.)	0.459 AC (19,995 SQ.FT.) (1)	0.459 AC (19,995 SQ.FT.) (1)
MIN. LOT WIDTH (2)	200 FT	125.0 FT (@ STREET LINE) (1) 125.0 FT (AVG. @ SBKS)(1)	125.0 FT (@ STREET LINE) (1) 125.0 FT (AVG. @ SBKS) (1)
MIN. LOT DEPTH (3)	150 FT	160.0 FT	160.0 FT
MAX. DENSITY	N/A	N/A	N/A
OPEN SPACE: MAX. COVERED BY BUILDINGS AND STRUCTURES	30% of LOT AREA (MAX.ALLOW. 5,998 SQ.FT.)	15.4% (3,089 SQ.FT.) (4)	15.4% (3,089 SQ.FT.) (4)
MAX. IMPERVIOUS LOT COVERAGE	65% OF LOT AREA (MAX.ALLOW. 12,996 SQ.FT.)	84.8% (16,962 SQ.FT.)(1)(5)	84.5% (16,905 SQ.FT.)(1) **(6)**
PRINCIPAL BLDG. MIN. FRONT YARD	50 FT	38.8 FT. (BUILDING) (1)	38.8 FT. (BUILDING) **(1)** 44.7 FT. (RETRACT. AWNING) **(6)**
PRINCIPAL BLDG. MIN. SIDE YARD	20 FT.	44.1 FT. (BUILDING)	44.1 FT. (BUILDING) 36.0 FT. (RETRACT. AWNING) 36.3 FT. (PERM. AWNING)
PRINCIPAL BLDG. MIN. BOTH SIDE YARDS	50 FT	93.5 FT. (METAL ROOF & BUILDING WALL)	93.5 FT. (METAL ROOF & BUILDING WALL) 85.4 FT. (METAL ROOF & RETRACT. AWNING)
PRINCIPAL BLDG. MIN. REAR YARD	30 FT	27.1 FT (METAL ROOF) **(1)**	27.1 FT (METAL ROOF) **(1)**
ACCESSORY BUILDING MIN. FRONT YARD	50 FT	112.1 FT. (DETAIL BOOTH)	112.1 FT. (DETAIL BOOTH)
ACCESSORY BUILDING MIN. SIDE YARD	20 FT	24.7 FT. (DETAIL BOOTH)	24.7 FT. (DETAIL BOOTH)
ACCESSORY BUILDING MIN. REAR YARD	30 FT	25.0 FT. (DETAIL BOOTH) **(1)**	25.0 FT. (DETAIL BOOTH) **(1)**
MAX. BLDG. HEIGHT IN STORIES	2.5 STORIES	1 STORY (BUILDING) 1 STORY (DETAIL BOOTH)	1 STORY (BUILDING) 1 STORY (DETAIL BOOTH)
MAX. BLDG. HEIGHT IN FEET	35 FT	< 35 FT. (7)	< 35 FT. (7)
MIN. GROSS FLOOR AREA	N/A	3,089 SQ.FT. (8)	3,089 SQ.FT. (8)

zoning schedule notes:

(1) EXISTING NON-CONFORMING CONDITION.

(2) REQUIRED LOT WIDTH SHALL BE MEASURED AT THE STREET LINE AND THE AVERAGE OF THE LOT WIDTH MEASURED AT THE FRONT AND AT THE REAR SETBACK LINES SHALL NOT BE LESS THAN THE REQUIRED LOT WIDTH.

(3) REQUIRED LOT DEPTH SHALL MEAN THE SHORTEST HORIZONTAL DISTANCE BETWEEN THE FRONT LOT LINE AND A LINE DRAWN PARALLEL TO THE FRONT LINE THROUGH THE MIDPOINT OF THE REAR LOT LINE.

(4) SEE BUILDING COVERAGE TABLE. ALL BUILDINGS ARE TO REMAIN. PROPOSED AWNINGS NOT INCLUDED.

(5) SEE IMPERVIOUS COVERAGE TABLES.

(6) PROPOSED NON-CONFORMING CONDITION. VARIANCE REQUIRED.

(7) SEE AVERAGE GRADE AND BUILDING HEIGHT CALCULATION DETAIL ON SHEET 6.

(8) FLOOR AREA CALCULATED AS SUM OF THE GROSS HORIZONTAL AREA OF THE FIRST FLOOR OF THE EXISTING BUILDINGS MEASURED FROM THE EXTERIOR FACES OF EXTERIOR WALLS. PROPOSED AWNINGS NOT INCLUDED. SEE BUILDING COVERAGE TABLE FOR CALCULATIONS.

ADDITIONAL ZONING CONSIDERATIONS:

1. CHAPTER 163-73.D. B-3 REGIONAL COMMERCIAL ZONE
   EXISTING NON-CONFORMING CAR WASH USE TO REMAIN.
   USE VARIANCE GRANTED FOR EXISTING USE PER RESOLUTION OF APPROVAL (c.1983)(SEE GEN.NOTE #3)
2. ARTICLE X, ZONING – OFF-STREET PARKING AND LOADING
   ORD.SECTION 163-80. OFF-STREET PARKING
   ORD.SECTION 163-83. OFF-STREET LOADING SPACE
   EXISTING NON-CONFORMING CONDITION TO REMAIN.
   PARKING AND LOADING SPACES NOT DESIGNATED.
   ORD.SECTION 163-81. GREEN PARKING BUFFER AND PARKING AREA LANDSCAPING
   PARKING AND/OR LOADING AREAS OF ANY SIZE MAY NOT EXTEND TO THE PROPERTY LINES. A MINIMM OF FIVE-FOOT (5 FT.) BUFFER WILL BE PROVIDED ALONG THE LOT LINES. THIS AREA SHALL NOT BE IMPERVIOUS AND SHALL BE MAINTAINED AS LAWN WITH APPROPRIATE SHRUBBERY AND/OR SHADE TREES.
   EXISTING NON-CONFORMING CONDITION TO REMAIN.
   EXISTING NON CONFORMING SIDE BUFFERS = 3.2 FT. AND 3.7 FT.
   EXISTING NON CONFORMING REAR BUFFER = 2.7 FT.
   PROPOSED PLANTINGS SHOWN ON SHEET 5, "PLANTING PLAN SHEET".
3. ARTICLE XI, ZONING – HISTORIC PRESERVATION AND ARCHITECTURAL REVIEW
   ORD.SECTION 163-85. B-3 REGIONAL COMMERCIAL ZONE IS SUBJECT TO THE HISTORIC PRESERVATION REQUIREMENTS.
4. ARTICLE XII, ZONING – SIGNS **(SEE SHEET 4 FOR SIGN ANALYSIS.)**

EXISTING IMPERVIOUS COVERAGE TABLE

	AREA (SQ.FT.)
PROPERTY (lot area)	**19,995**
EXISTING BUILDING (CAR WASH)	1,995
REAR COVERED ENTRANCE (CAR WASH)	624
ACCESSORY BUILDING (DETAIL BOOTH)	470
GRAVEL SURROUND AREA	861
CONCRETE PAD	6
PAVER-BRICK DRAIN PAD	65
REAR PAVER WALK	224
CONCRETE PAD w/COMPUTER STAND	82
MANHOLES	31
DUMPSTER	40
FRONT CONCRETE EXIT PAD w/ DRAIN	342
EXISTING DRIVE ACCESS & PARKING (PAVEMENT)	12,222

TOTAL EXISTING COVERAGE: 16,962 SQ.FT. (84.8% of lot area)

IMPERVIOUS COVERAGE with PROPOSED IMPROVEMENTS

	AREA (SQ.FT.)
EXISTING GRAVEL AREA (LEFT FRONT) (TO BE RAZED)	-188
EXISTING GRAVEL WAITING AREA (RIGHT FRONT) (TO BE RAZED)	-164
PROPOSED PUMP & VACUUM AREA	+25
PROPOSED CONC.& PAVER AREA (FOR COMPUTER STAND)	+90
PORTION OF PERMANENT AWNING (BEYOND EX.PAVER DRAIN PAD)	+8
PROPOSED WALK (SIDE)	+172

PROPOSED COVERAGE CHANGE: -57 SQ.FT.

THEREFORE, THE TOTAL PROPOSED IMPERVIOUS COVERAGE:
EXISTING: 16,962 SQ.FT.
CHANGE IN COVERAGE: -57 SQ.FT.
TOTAL :16,905 SQ.FT. (84.5% of lot area)

EXISTING BUILDING COVERAGE TABLE

	AREA (SQ.FT.)
PROPERTY (lot area)	**19,995**
EXISTING BUILDING (CAR WASH)	1,995
REAR COVERED ENTRANCE (CAR WASH)	624
ACCESSORY BUILDING (DETAIL BOOTH)	470

TOTAL EXISTING COVERAGE: 3,089 SQ.FT. (15.4% of lot area)

Civil Engineers
Land Surveyors &
Professional Planners

YANNACCONE VILLA & ALDRICH, LLC

460 MAIN STREET, P.O. BOX 459
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N.J. STATE BOARD FOR P.E. & P.L.S. CERTIFICATE OF AUTHORIZATION No. 24GA27934500

CANDICE J. DAVIS
N.J. PROFESSIONAL ENGINEER
NO. 24GE04527000 DATE 02/05/20

NOT VALID WITHOUT SIGNATURE AND RAISED SEAL

NO.	DATE	REVISION

PROJECT TITLE :

THE CAR WASH AT CHESTER, LLC
SITE PLANS
PROPOSED MINOR IMPROVEMENTS
45 MAPLE AVENUE
LOT 5 ~ BLOCK 131
TAX MAP SHEET No. 10
BOROUGH OF CHESTER
MORRIS COUNTY, NEW JERSEY

SHEET TITLE :

ZONING PLAN SHEET

DRAWN BY:	DATE:
RPA/CJD	FEB. 05, 2020
CHECKED BY: CJA	SCALE: 1" = 10'

W.O. 219096
F.B. 769/120
FILE:
COMP FILE: I:/ENG/219096/DWG/219096-siteplan.dwg

GENERAL NOTES

1. SURVEY INFORMATION TAKEN FROM A SURVEY PREPARED BY THIS FIRM, DATED OCTOBER 31, 2019, SIGNED CHRISTOPHER J. ALDRICH, NJLS 34478. SURVEY REFERENCE: NORTH PER DEED BOOK 5739, PAGE 18.
2. EXISTING CONDITIONS, TREES AND TOPOGRAPHIC INFORMATION AS PRESENTED ON THE SUBJECT PROPERTY WERE TAKEN FROM A FIELD SURVEY PERFORMED BY THIS FIRM IN 2019 UNDER THE SUPERVISION OF CHRISTOPHER J. ALDRICH, NJLS 34478. VERTICAL DATUM: NAVD 1988, BASED ON GPS OBSERVATIONS ON OCTOBER 25, 2019.
3. PREVIOUS CAR WASH USE AND SITE PLAN APPROVAL (WITH BULK VARIANCES) REFERENCE: CHESTER BOROUGH BOARD OF ADJUSTMENT RESOLUTIONS OF APPROVAL, SIGNED SEPTEMBER 13, 1983 AND NOVEMBER 8, 1983.
   CONDITION OF APPROVAL:
   1. NO WATER TO BE DRAWN FROM ON-SITE WELL FOR USE IN WASHING/RINSING CARS, OR ANY OTHER USE OF WATER IN THE CAR WASH SYSTEM.
   APPROVED PLAN REFERENCE: "GRADING & DRAINGE PLAN, CHESTER CAR WASH LOT 5-3 - BLOCK 17", PREPARED BY APGAR ASSOCIATES, FAR HILLS, NJ, SIGNED, ROBERT H. FOX, PE, DATED JUNE 28, 1983, LAST REVISED APRIL 12, 1984.
4. PREVIOUS CAR WASH SITE PLAN APPROVAL (SIGNAGE) REFERENCE: CHESTER BOROUGH BOARD OF ADJUSTMENT RESOLUTION OF APPROVAL, SIGNED MAY 12, 1998.
   APPROVED PLAN REFERENCE: "CHESTER CAR WASH LOT 5.3, BLOCK 17" PLAN, PREPARED BY FERRIERO ENGINEERING, INC., CHESTER, NJ, SIGNED PAUL W. FERRIERO, PE, DATED MARCH 4, 1998.
5. ANY DISCREPANCIES IN REFERENCED COORDINATES, ELEVATIONS, EXISTING DIMENSIONS AND DETAILS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND THE DESIGN ENGINEER BEFORE PROCEEDING WITH THE WORK. EXISTING UNDERGROUND UTILITY INFORMATION SHOWN HEREON IS APPROXIMATE AND IS NOT GUARANTEED AS TO ACCURACY OR COMPLETENESS. THE CONTRACTOR SHALL VERIFY ALL INFORMATION PRIOR TO BEGINNING ANY CONSTRUCTION. THE CONTRACTOR SHALL CONTACT ONE CALL SERVICE AT 1-800-272-1000 AND OTHER LOCAL UTILITY COMPANIES AS REQUIRED FOR MARKOUT PRIOR TO ANY EXCAVATION. WHERE EXISTING UNDERGROUND UTILITIES ARE TO BE CROSSED BY PROPOSED CONSTRUCTION, TEST PITS SHALL BE DUG BY THE CONTRACTOR PRIOR TO CONSTRUCTION TO ASCERTAIN EXISTING LOCATIONS, ELEVATIONS, MATERIALS AND SIZES. TEST PIT INFORMATION SHALL BE GIVEN TO THE ENGINEER PRIOR TO CONSTRUCTION TO PERMIT ADJUSTMENTS AS REQUIRED TO AVOID CONFLICTS. EXISTING SEPTIC SYSTEMS AS SHOWN ON ADJACENT LOTS ARE APPROXIMATE ONLY AND WILL NEED TO BE CONFIRMED IN THE FIELD IF NECESSARY.
6. ALL DEBRIS, CONCRETE CHUNKS, TREE STUMPS, AND OTHER UNSUITABLE MATERIAL RESULTING FROM THE SITE GRADING AND EXISTING STRUCTURAL DEMOLITION SHALL BE DISPOSED OF AT AN APPROVED DISPOSAL LOCATION. NO UNSUITABLE MATERIALS SHALL BE PERMITTED TO BE BURIED ON SITE.
7. SINCE THE SUBJECT PROPERTY DOES NOT FRONT ON A COUNTY ROAD AND THE PROPOSED INCREASE IN IMPERVIOUS COVERAGE IS LESS THAN 1/4 ACRE, THE PROPOSED PROJECT IS EXEMPT FROM THE MORRIS COUNTY LAND DEVELOPMENT STANDARDS.
8. BASED ON THE NJDEP NJGeoWebPages AND TO THE BEST OF OUR KNOWLEDGE, THE PROJECT SITE IS NOT ENCUMBERED BY STREAMS OR RIPARIAN ZONES.
9. BASED ON THE NJDEP NJGeoWebPages, PRINTED DECEMBER 2019, THERE ARE NO FRESHWATER WETLANDS OR 150 FT. WETLANDS BUFFERS THAT ENCUMBER THE SUBJECT PROPERTY.
10. THE SUBJECT PROPERTY IS LOCATED WITHIN THE NJDEP HIGHLANDS PLANNING AREA.
11. THE PROPOSED IMPROVEMENTS MAY BE SUBJECT TO APPROVAL BY THE CHESTER BOROUGH HISTORIC COMMITTEE AND SHADE TREE COMMITTEE PRIOR TO THE START OF ANY CONSTRUCTION.
12. PER THE N.J.A.C. 7:8 STORMWATER MANAGEMENT RULES, THE PROPOSED DEVELOPMENT IS NOT CONSIDERED A "MAJOR DEVELOPMENT" SINCE LESS THAN 1 ACRE OF DISTURBANCE AND LESS THAN 1/4 ACRE OF NEW IMPERVIOUS COVERAGE IS PROPOSED. THIS PROJECT IS NOT SUBJECT TO THE N.J.A.C. 7:8 STORMWATER RULES FOR STORMWATER MANAGEMENT CONTROL.
    ALSO,THE PROPOSED PROJECT IS NOT SUBJECT TO THE DESIGN STANDARDS PER THE CHESTER BOROUGH ORDINANCE 2006-3, FOR A 'MINOR DEVELOPMENT' SINCE LESS THAN 2,500 SQ.FT. OF DISTURBANCE AND LESS THAN 1,000 SQ.FT. OF NEW IMPERVIOUS IS PROPOSED.
13. INFORMATION RELATED TO THE PROPOSED EQUIPMENT WERE PROVIDED BY THE APPLICANT.
14. THE EXISTING SITE LIGHTING SHALL REMAIN. ONE FREE-STANDING LIGHT POLE SHALL BE REPLACED.
15. SOLID WASTE COLLECTION: AS PROVIDED BY THE CURRENT ORDINANCE 201-13, SOLID WASTE SHALL NOT BE COLLECTED BEFORE 7:00 AM NOR AFTER 5:00 PM, PREVAILING TIME.
16. THE SUBJECT PROPERTY WILL CONTINUE TO BE SERVED BY PUBLIC WATER, SEWER AND GAS.
17. THIS SET OF PLANS HAS BEEN PREPARED FOR THE PURPOSES OF MUNICIPAL AND AGENCY REVIEW AND APPROVAL. THIS SET OF PLANS SHALL NOT BE UTILIZED AS CONSTRUCTION DOCUMENTS UNTIL ALL CONDITIONS OF APPROVAL HAVE BEEN SATISFIED ON THE DRAWINGS, ALL REQUIRED AGENCY PERMITS HAVE BEEN OBTAINED BY THE OWNER, AND EACH DRAWING SHEET HAS BEEN REVISED TO INDICATE "ISSUED FOR CONSTRUCTION" ACCORDINGLY.
    THIS PROJECT MAY BE SUBJECTED TO APPROVALS FROM THE FOLLOWING AGENCIES: MORRIS COUNTY PLANNING BOARD, MORRIS COUNTY SOIL CONSERVATION DISTRICT CHESTER BOROUGH FIRE PREVENTION BUREAU, ENVIRONMENTAL COMMISSION, SHADE TREE COMMISSION, CHESTER BOROUGH BOARD OF HEALTH AND NJDEP DIVISION OF LAND USE.

SCHEDULE OF EXISTING BUSINESS SIGNS

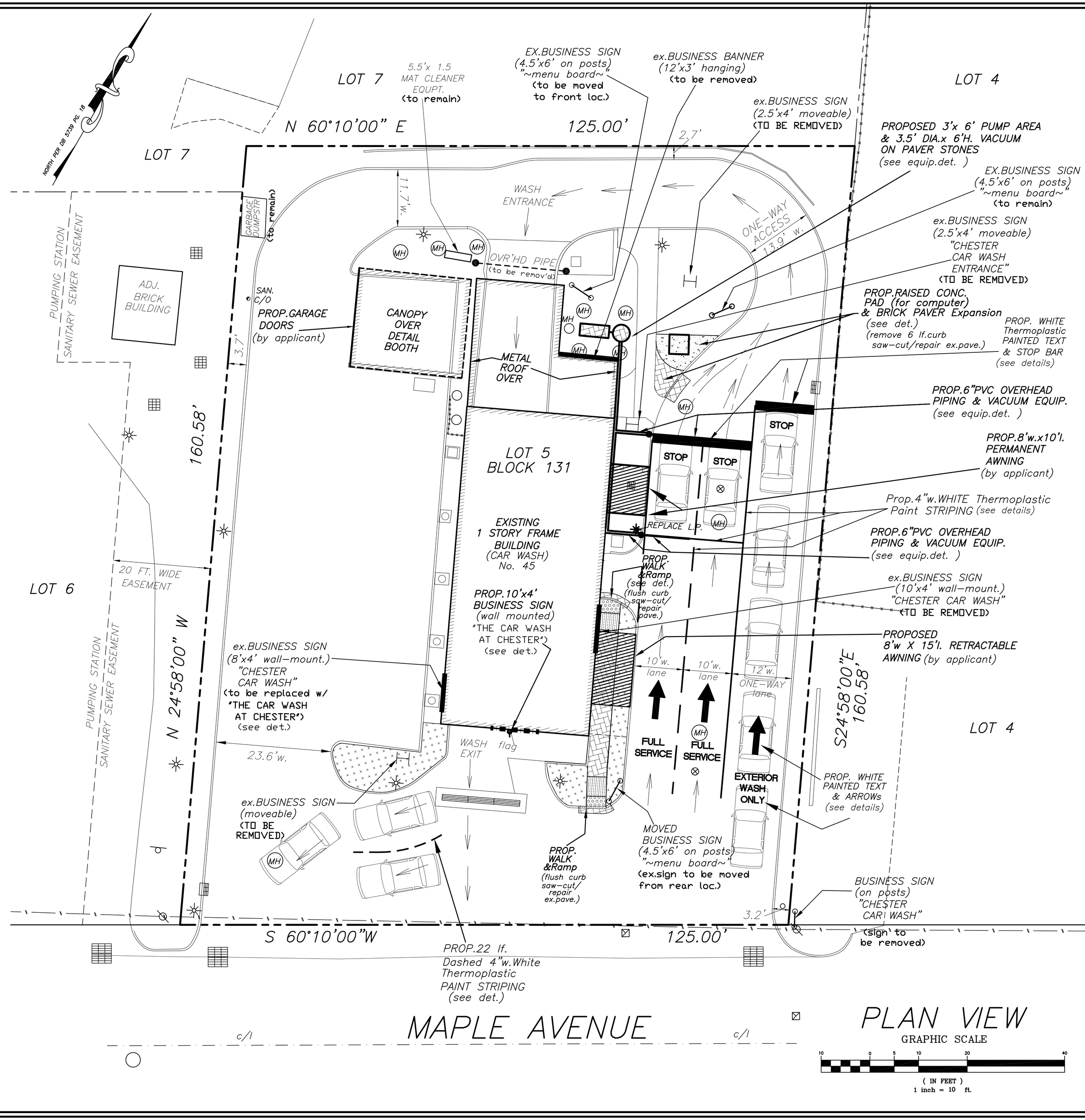
SIGN TYPE	SIGN	MOUNTING	BOTTOM OF SIGN MOUNT (ABOVE GRADE)	LOCATION	SIZE	PROPOSED ACTION
ATTACHED	"CHESTER CAR WASH"	WALL-MOUNT	6 FT.	EASTERLY BUILDING WALL	10'x4' (±40 SQ.FT.)	TO BE REMOVED *
ATTACHED	**"CHESTER CAR WASH"**	**WALL-MOUNT**	**5.5 FT.**	**WESTERLY BUILDING WALL**	**8'x4' (±32 SQ.FT.)**	**TO BE REPLACED * SEE BELOW**
ATTACHED	"CHESTER CAR WASH"	POST-MOUNT	2.5 FT.	OFF SITE	3'x2.6' (8 SQ.FT.)	TO BE REMOVED
FREESTANDING	**"~menu board~"**	**POST-MOUNT**	**4 INCH**	**REAR LANDSCAPE AREA**	**4.5'x6' (27 SQ.FT.)**	**TO REMAIN ***
FREESTANDING	**"~menu board~"**	**POST-MOUNT**	**4 INCH**	**REAR LANDSCAPE AREA**	**4.5'x6' (27 SQ.FT.)**	**TO BE MOVED * SEE BELOW**
TEMPORARY	"CHESTER CAR WASH"	HANGING BANNER	1 FT.	REAR WALL	12'x3' (±36 SQ.FT.)	TO BE REMOVED
TEMPORARY	"CHESTER CAR WASH ENTRANCE"	MOVEABLE	4 INCH	CUSTOMER ENTRANCE	2.5'x4' 10 SQ.FT.)	TO BE REMOVED
TEMPORARY	~blank~"	MOVEABLE	4 INCH	REAR LANDSCAPE AREA	2.5'x4' (10 SQ.FT.)	TO BE REMOVED
TEMPORARY	~blank~"	MOVEABLE	4 INCH	FRONT LANDSCAPE AREA	2.5'x4' (10 SQ.FT.)	TO BE REMOVED

* NOTE: EXISTING NON-CONFORMING SIGNS GRANTED VARIANCE RELIEF PURSUANT TO GEN.NOTE #4.

SCHEDULE OF PROPOSED BUSINESS SIGNS

SIGN TYPE	SIGN	MOUNTING	BOTTOM OF SIGN MOUNT (ABOVE GRADE)	LOCATION	SIZE	HEIGHT (ABOVE GRADE)	PROPOSED ACTION
ATTACHED	"THE CAR WASH AT CHESTER"	WALL-MOUNT	12.0 FT.	FRONT BUILDING WALL	10'x4' (±40 SQ.FT.) (<10% FACE OF BUILDING)	16 FT.	PROPOSED **
ATTACHED	"THE CAR WASH AT CHESTER"	WALL-MOUNT	5.5 FT.	WESTERLY BUILDING WALL	8'x4' (±36 SQ.FT.) (<10% FACE OF BUILDING)	9.5 FT.	EXISTING SIGN TO BE REPLACED *
FREESTANDING	"~menu board~"	POST-MOUNT	4 INCH	REAR LANDSCAPE AREA	4.5'x6' (27 SQ.FT.)	6.3 FT.	EXISTING TO REMAIN *
FREESTANDING	"~menu board~"	POST-MOUNT	4 INCH	FRONT LANDSCAPE AREA	4.5'x6' (27 SQ.FT.)	6.3 FT.	EXISTING SIGN TO NEW FRONT LOCATION *

* NOTE: EXISTING NON-CONFORMING SIGNS GRANTED VARIANCE RELIEF PURSUANT TO GEN.NOTE #4.
** NOTE: PROPOSED NON-CONFORMING SIGN. VARIANCE REQUIRED.



PLAN VIEW

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

Civil Engineers
Land Surveyors &
Professional Planners

YANNACCONE VILLA & ALDRICH, LLC

460 MAIN STREET, P.O. BOX 459
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N.J. STATE BOARD FOR P.E. & P.L.S. CERTIFICATE OF AUTHORIZATION No. 24GA27934500

CANDICE J. DAVIS
N.J. PROFESSIONAL ENGINEER
NO. 24GE04527000 DATE 02/05/20

NOT VALID WITHOUT SIGNATURE AND RAISED SEAL

NO.	DATE	REVISION

PROJECT TITLE :

THE CAR WASH AT CHESTER, LLC SITE PLANS

PROPOSED MINOR IMPROVEMENTS
45 MAPLE AVENUE
LOT 5 ~ BLOCK 131
TAX MAP SHEET No. 10
BOROUGH OF CHESTER
MORRIS COUNTY, NEW JERSEY

SHEET TITLE :

CIRCULATION & SIGNAGE PLAN SHEET

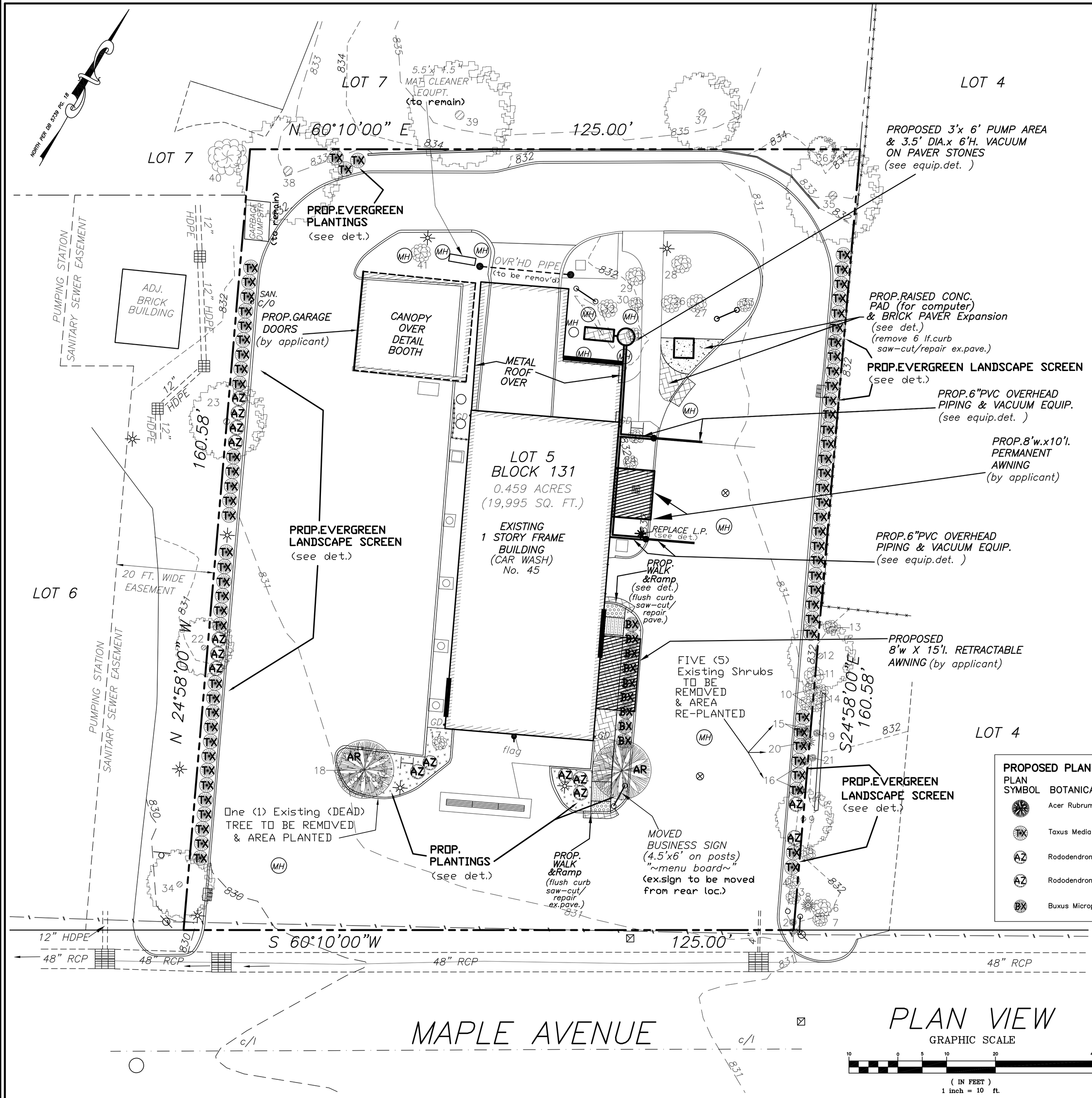
DRAWN BY:	DATE:
KB/CJD	FEB. 05, 2020
CHECKED BY:	SCALE:
CJD	1" = 10'

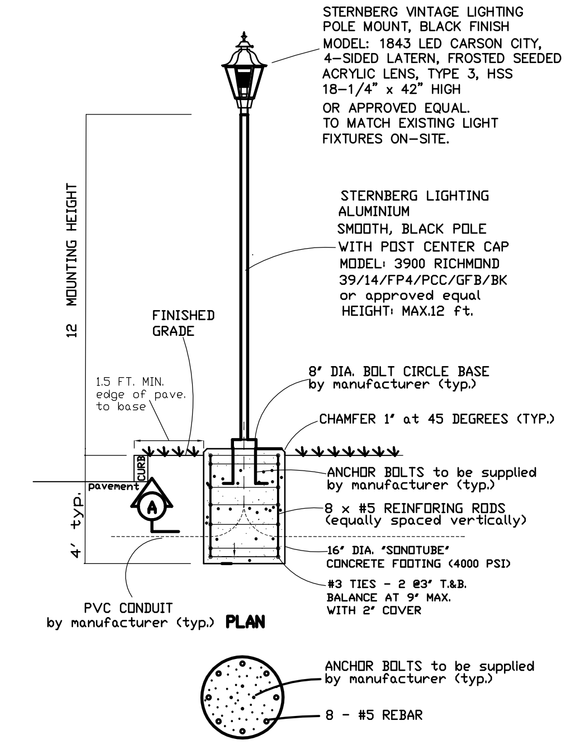
W.O. 219096

F.B. 769/120

FILE:

COMP FILE: I:/ENG/219096/DWG/219096-siteplan.dwg





PROPOSED LIGHT FIXTURE & POLE DETAIL

NOT TO SCALE

NOTE: EXISTING RUINS OF CONC.BASE TO BE REMOVED & REPLACED.

POLE MOUNTED LIGHT FIXTURE NOTES:

1. *LIGHT FIXTURE SHALL BE STERNBERG "CARSON CITY" 1843 LED POST TOP OR APPROVED EQUAL. TO MATCH EXISTING LIGHT FIXTURES ON-SITE.*
2. *POLE AND FIXTURE SHALL BE BLACK.*
3. *LANTERN SHALL INCLUDE A FROSTED CHIMNEY.*
4. *MAX. MOUNTING HEIGHT = 12 FT.*
5. *LIGHT SOURCE SHALL BE WHITE, LED BULB.*
6. *POLES SHALL BE STRAIGHT POLES.*

EXISTING TREE & SHRUB SCHEDULE

No.	DESCRIPTION	No.	DESCRIPTION
1	1.5' DIA.SHRUB (offsite)	23	16" MAPLE
2	1.5' DIA.SHRUB	24	3' DIA.SHRUB
3	3' DIA.SHRUB	25	3' DIA.SHRUB
4	3' DIA.SHRUB	26	4' DIA.SHRUB
5	3' DIA.SHRUB (offsite)	27	4' DIA.SHRUB
6	4' DIA.SHRUB (offsite)	28	4' DIA.SHRUB
7	3' DIA.SHRUB (offsite)	29	4' DIA.SHRUB
8	3" SPRUCE (offsite)	30	3' DIA.SHRUB
9	12" MAPLE (offsite)	31	3' DIA.SHRUB
10	2 x 3' DIA.SHRUB	32	4' DIA.SHRUB
11	4' DIA.SHRUB	33	3' DIA.SHRUB
12	14" MAPLE (offsite)	34	14" MAPLE (offsite)
13	3' DIA.SHRUB (offsite)	35	20" OAK
14	2 x 3' DIA.SHRUB (offsite)	36	6" LOCUST
15	3 x 1.5' DIA.SHRUB	37	16" LOCUST (offsite)
16	2 x 1.5' DIA.SHRUB	38	22" OAK
17	3' DIA.SHRUB	39	22" LOCUST (offsite)
18	10" MAPLE (DEAD)	40	8' DIA.SHRUB (offsite)
19	1.5' DIA.SHRUB (offsite)	41	4' DIA.SHRUB
20	3" SPRUCE		
21	1.5' DIA.SHRUB (offsite)		
22	12" MAPLE (offsite)		

denotes existing planting to be removed

PROPOSED PLANTING SCHEDULE

PLAN SYMBOL	BOTANICAL NAME	COMMON NAME	QTY	SCREENING LOCATION	SIZE
AR	Acer Rubrum 'Red Sunset'	'Red Sunset' Maple	2	ON-SITE Landscape Area	2-2.5" CAL.B&B
TX	Taxus Media Hicksii	'Hicks' Yew	71	Westerly/Easterly Property Limits	24"-30", #7 CAN
AZ	Rododendron 'Delaware Valley White'	'Delaware Valley While' Azalea	9	Northerly/ Westerly/Easterly Property Limits	18"-24", #7 CAN
AZ	Rododendron 'Delaware Valley White'	'Delaware Valley While' Azalea	5	ON-SITE Landscape Area	18"-24", #7 CAN
BX	Buxus Microphylla 'Green Velvet'	'Green Velvet Boxwood'	9	WALKWAY	24"-30"Height, B&B

NOTE: SEE SHEET 6 FOR PLANTING DETAILS

SYMBOL LEGEND:

- *denotes EXISTING LIGHT POLE (note: Fixture Mounting Height = 12 ft.)*
- *denotes PROPOSED POLE & FIXTURE*
- *denotes EXISTING USA FLAG*
- *denotes EXISTING MOVEABLE SIGN*

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CANDICE J. DAVIS
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NO. *24GE04527000* DATE *02/05/20*

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NO.	DATE	REVISION

PROJECT TITLE :

THE CAR WASH AT CHESTER, LLC SITE PLANS

MINOR IMPROVEMENTS PROJECT
45 MAPLE AVENUE
LOT 5 ~ BLOCK 131
TAX MAP SHEET No. 10
BOROUGH OF CHESTER
MORRIS COUNTY, NEW JERSEY

SHEET TITLE :

PLANTING PLAN SHEET

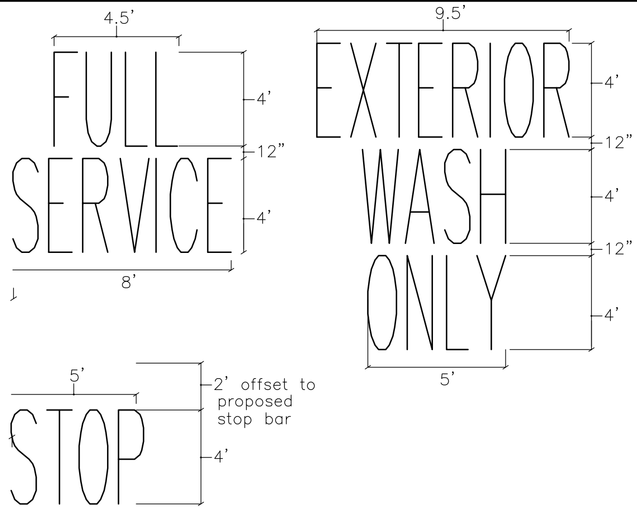
DRAWN BY:	DATE:
KBA/CJD	FEB. 05, 2020
CHECKED BY:	SCALE:
GJD	1" = 10'

W.O. *219096*

F.B. *769/120*

FILE:

COMP FILE: *I:/ENG/219096/DWG/219096-siteplan.dwg*

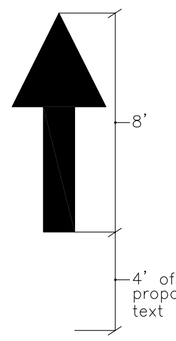


TEXT PAINTING DETAILS

NOT TO SCALE

NOTE: ALL TEXT PAINT TO BE SOLID THERMOPLASTIC WHITE PAINT.

NOTE: SEE PLAN VIEW ON SHEET 4 FOR LOCATIONS.



ARROW DETAIL

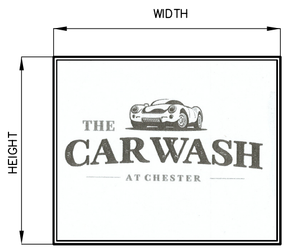
NOT TO SCALE

NOTE: ALL ARROW PAINT TO BE SOLID THERMOPLASTIC WHITE PAINT.

NOTE: SEE PLAN VIEW ON SHEET 4 FOR LOCATIONS.

CUSTOM WALL-MOUNTED WOOD SITE SIGNS

NOT TO SCALE



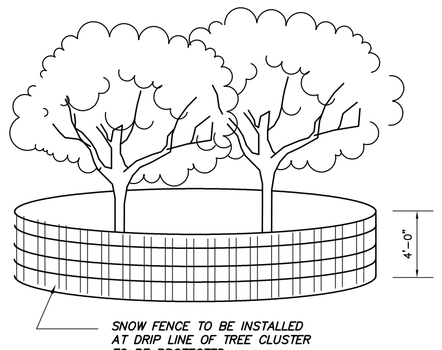
colors:
White background
Blue and tan text
Blue art

NOTE: See business logo provided by the Applicant or approved equal.

NOTE: SEE SITE PLAN SHEET 4 FOR SIGN DIMENSIONS AND LOCATIONS.

* FRONT MOUNTED SIGN: 10' w x 4' h
MOUNT BOTTOM OF SIGN
1 FT. MIN. ABOVE GARAGE OPENING.

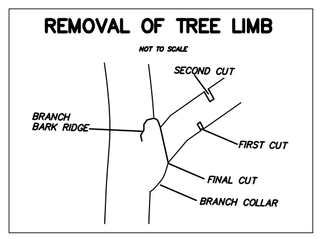
* SIDE MOUNTED SIGN: 8' w x 4' h
MOUNT BOTTOM OF SIGN
5.0 FT. MIN. ABOVE GRADE

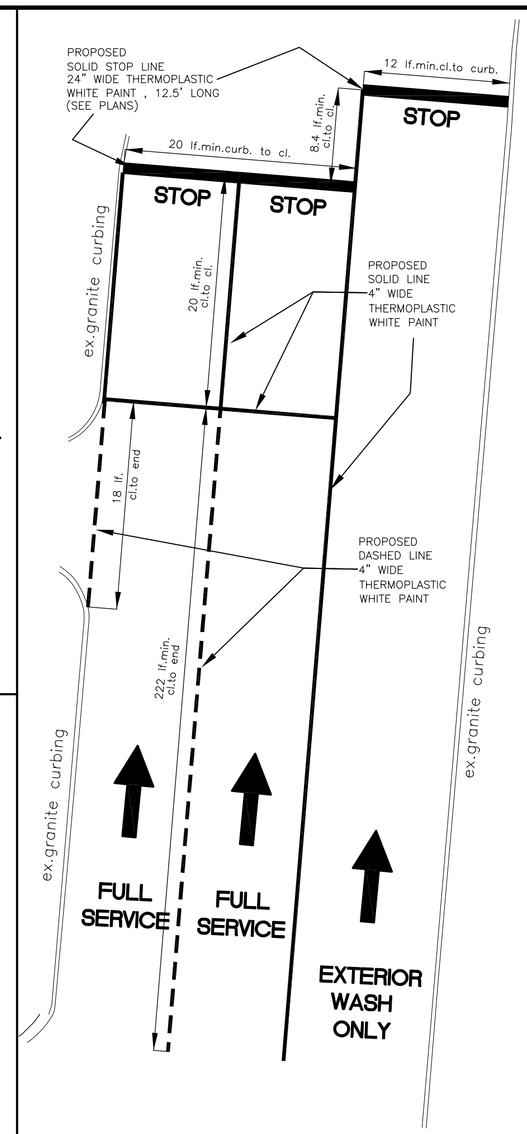


TREE PROTECTION DETAIL

NOT TO SCALE

REMOVAL OF TREE LIMB





LANE PAINTING DETAILS

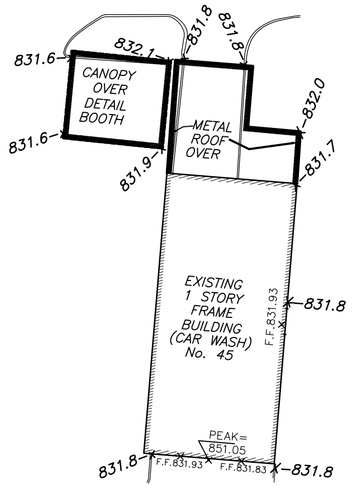
NOT TO SCALE

NOTE: ALL LANE STRIPING TO BE SOLID THERMOPLASTIC WHITE PAINT.

NOTE: SEE PLAN VIEW ON SHEET 4 FOR LOCATIONS.

AVERAGE GRADE & BUILDING HEIGHT CALCULATION DETAIL

NTS



PRINCIPAL BUILDING: CAR WASH BUILDING

BASED ON THE FIELD SURVEY, THE MEAN ELEVATION BETWEEN THE EAVES AND THE ROOF PEAK = [851.05' PEAK + 843.0' EAVE]/2 = 847.0 FT. EL.

THE EXISTING AVERAGE GRADE AS MEASURED AT 7 POINTS ALONG THE FOUNDATION IS 831.8 FT.EL.

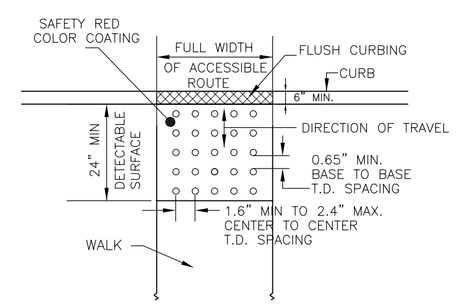
THEREFORE, THE EXISTING BUILDING HEIGHT EQUALS: 847.0 FT. EL. – 831.8 FT. EL. = 15.2 FT. ***< 35 FT. MAX. COMPLIES***

ACCESSORY BUILDING: DETAIL BOOTH

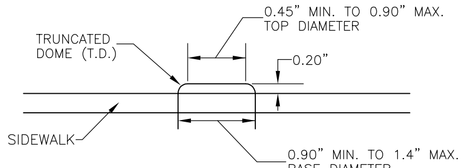
BASED ON THE FIELD SURVEY, THE MEAN ELEVATION BETWEEN THE EAVES AND THE ROOF PEAK = [843.6' PEAK + 840.6' EAVE]/2 = 842.1 FT. EL.

THE EXISTING AVERAGE GRADE AS MEASURED AT 4 POINTS ALONG THE FOUNDATION IS 831.8 FT.EL.

THEREFORE, THE EXISTING BUILDING HEIGHT EQUALS: 842.1 FT. EL. – 831.8 FT. EL. = 10.3 FT. ***< 35 FT. MAX. COMPLIES***



PLAN VIEW



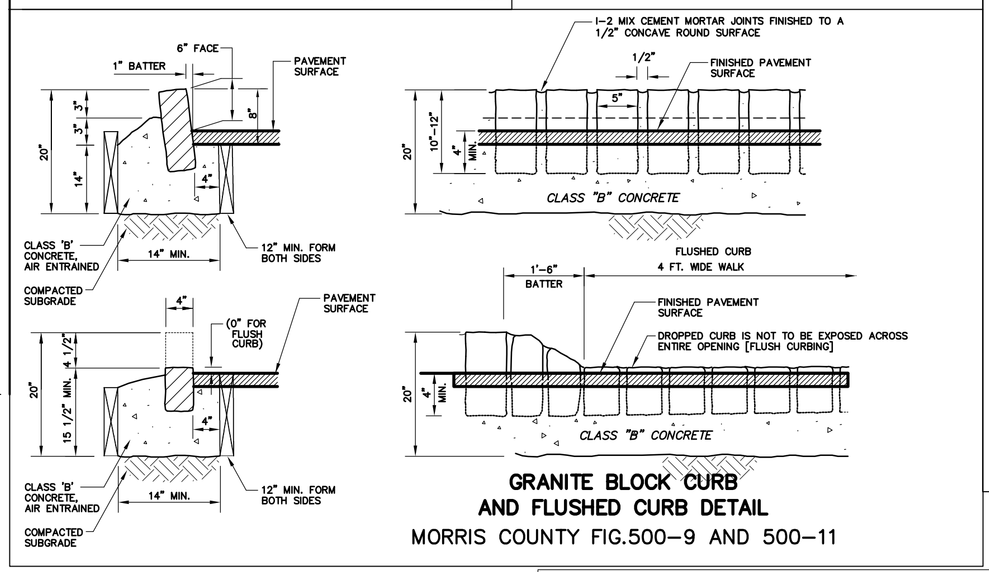
ELEVATION

NOTES:

1. DETECTABLE WARNING SURFACE TO COMPLY WITH N.J.A.C.5:23-7 AND ALL APPLICABLE BUILDING CODES.
2. DETECTABLE WARNING SURFACE TO BE INSTALLED ON ACCESSIBLE WALKS.

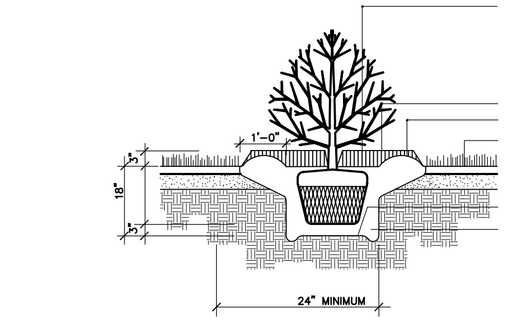
DETECTABLE WARNING SURFACE

NOT TO SCALE



GRANITE BLOCK CURB AND FLUSHED CURB DETAIL

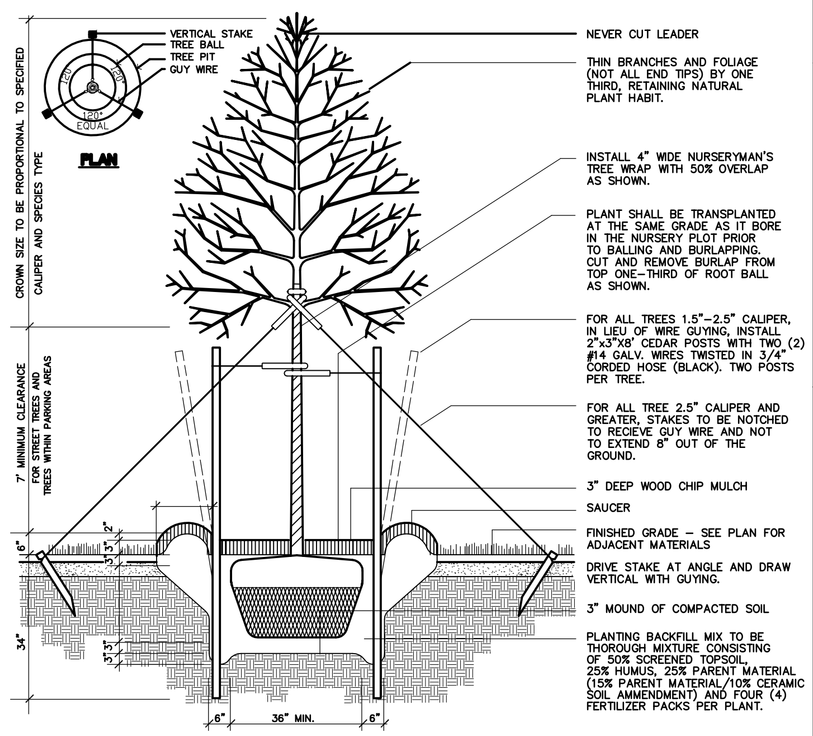
MORRIS COUNTY FIG.500-9 AND 500-11



NOTE: PARKING SPACE LANDSCAPE SCREENING SHALL BE 48" HIGH ARBORVITAE PLANTINGS, 5 FT. CENTER TO CENTER, OR APPROVED EQUAL.

DECIDUOUS AND EVERGREEN SHRUB PLANTING DETAIL

NOT TO SCALE



SHADE TREE PLANTING DETAIL

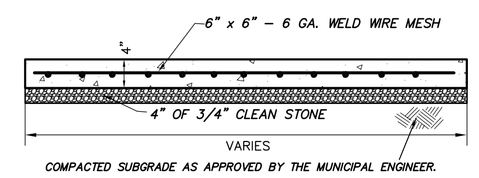
NOT TO SCALE

PLANTING NOTES:

1. *ALL PLANTING BEDS SHALL RECEIVE 3" OF SHREDDED HARDWOOD BARK.*
2. *ALL LANDSCAPING SHALL BE GUARANTEED BY INSTALLER FOR TWO YEARS AND THEREAFTER BY OWNER.*
3. *ANY TREE SUPPORTS SHALL BE COMPLETELY REMOVED AFTER ONE (1) YEAR.*

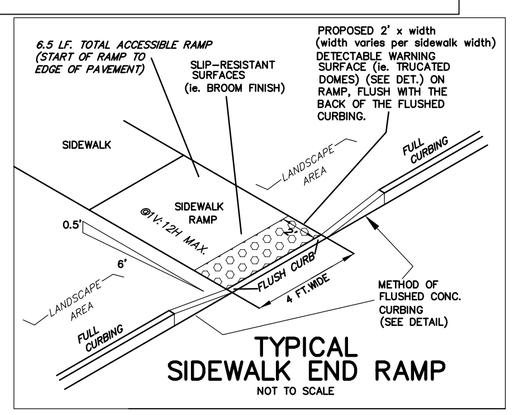
COMPUTER STAND CONCRETE PAD DETAIL

NOT TO SCALE



COMPACTED SUBGRADE AS APPROVED BY THE MUNICIPAL ENGINEER.

NOTE:
PAD TO BE 4"thick 3,500 PSI CONCRETE CLASS B.



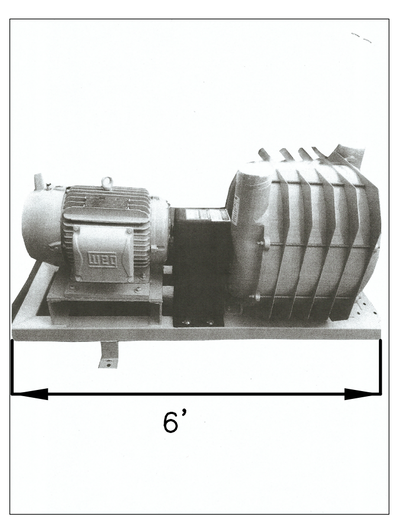
TYPICAL SIDEWALK END RAMP

NOT TO SCALE

PROPOSED OVERHEAD EQUIPMENT DETAIL

NOT TO SCALE

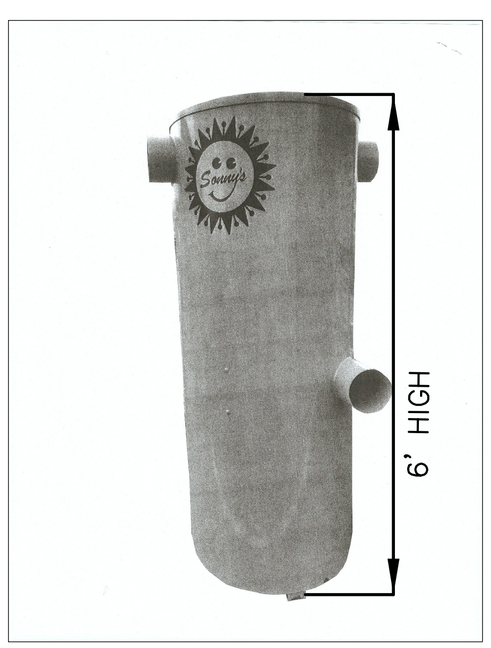
NOTE: Provided by the Applicant.



PROPOSED 3' X 6' X 3' H. PUMP EQUIPMENT DETAIL

NOT TO SCALE

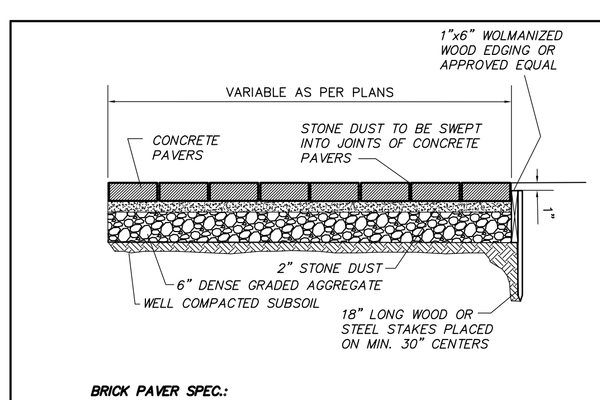
NOTE: Provided by the Applicant.



PROPOSED 3.5' DIA. x 6' H. EQUIPMENT DETAIL

NOT TO SCALE

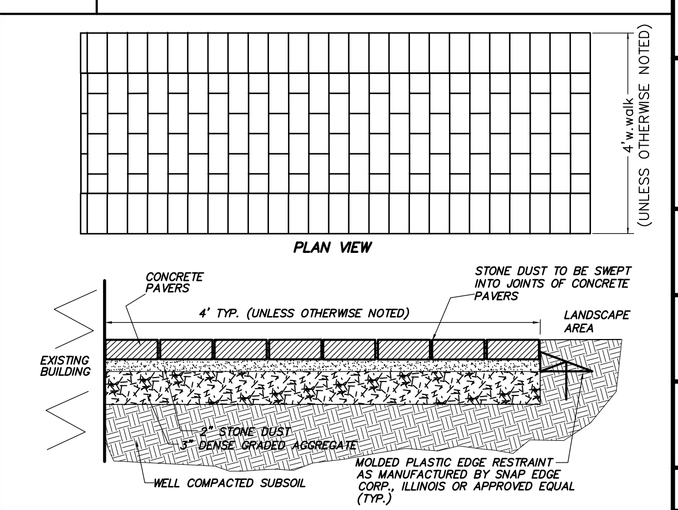
NOTE: Provided by the Applicant.



BRICK PAVER SPEC.:
HANOVER PREST. BRICK – QUARRY RED w/ NATURAL FINISH. SIZE: 4"x8"x2-1/2" AS MANUFACTURED BY: HANOVER PREST-PAVING CO., 240 BENDER ROAD, HANOVER, PA, (717-637-0500) OR APPROVED EQUAL.

CONCRETE BRICK PAVERS DETAIL FOR EQUIPMENT PADS & WALK EXTENSION

NOT TO SCALE
OR APPROVED EQUAL



NOTE:

1. *BRICK PAVER SIDEWALK SHALL BE 4' WIDE.*
2. *HANOVER PREST. BRICK – QUARRY RED w/ NATURAL FINISH. SIZE: 4"x8"x2-1/2" AS MANUFACTURED BY: HANOVER PREST-PAVING CO., 240 BENDER ROAD, HANOVER, PA, (717-637-0500) OR APPROVED EQUAL.*

CONCRETE BRICK PAVER WALK DETAIL

NOT TO SCALE

Civil Engineers
Land Surveyors &
Professional Planners

YANNACCONE VILLA & ALDRICH, LLC

460 MAIN STREET, P.O. BOX 459
CHESTER, NEW JERSEY 07930
PHONE: 908-879-6646
FAX: 908-879-8591
N.J. STATE BOARD FOR P.E. & P.L.S. CERTIFICATE OF AUTHORIZATION No. 24GA27934500

CANDICE J. DAVIS
N.J. PROFESSIONAL ENGINEER
NO. *24GE04527000* DATE *02/05/20*

NO.	DATE	REVISION

PROJECT TITLE :

THE CAR WASH AT CHESTER, LLC SITE PLANS

MINOR IMPROVEMENTS PROJECT
45 MAPLE AVENUE
LOT 5 ~ BLOCK 131
TAX MAP SHEET No. 10
BOROUGH OF CHESTER
MORRIS COUNTY, NEW JERSEY

SHEET TITLE :

CONSTRUCTION DETAIL SHEET

DRAWN BY: CJD	DATE: FEB. 05, 2020
CHECKED BY: CJD	SCALE: AS SHOWN
W.O. 219096	
F.B.	
FILE:	
COMP FILE: i:/eng/219096/dwg/219096-siteplan.dwg	

SHEET 6 OF 6

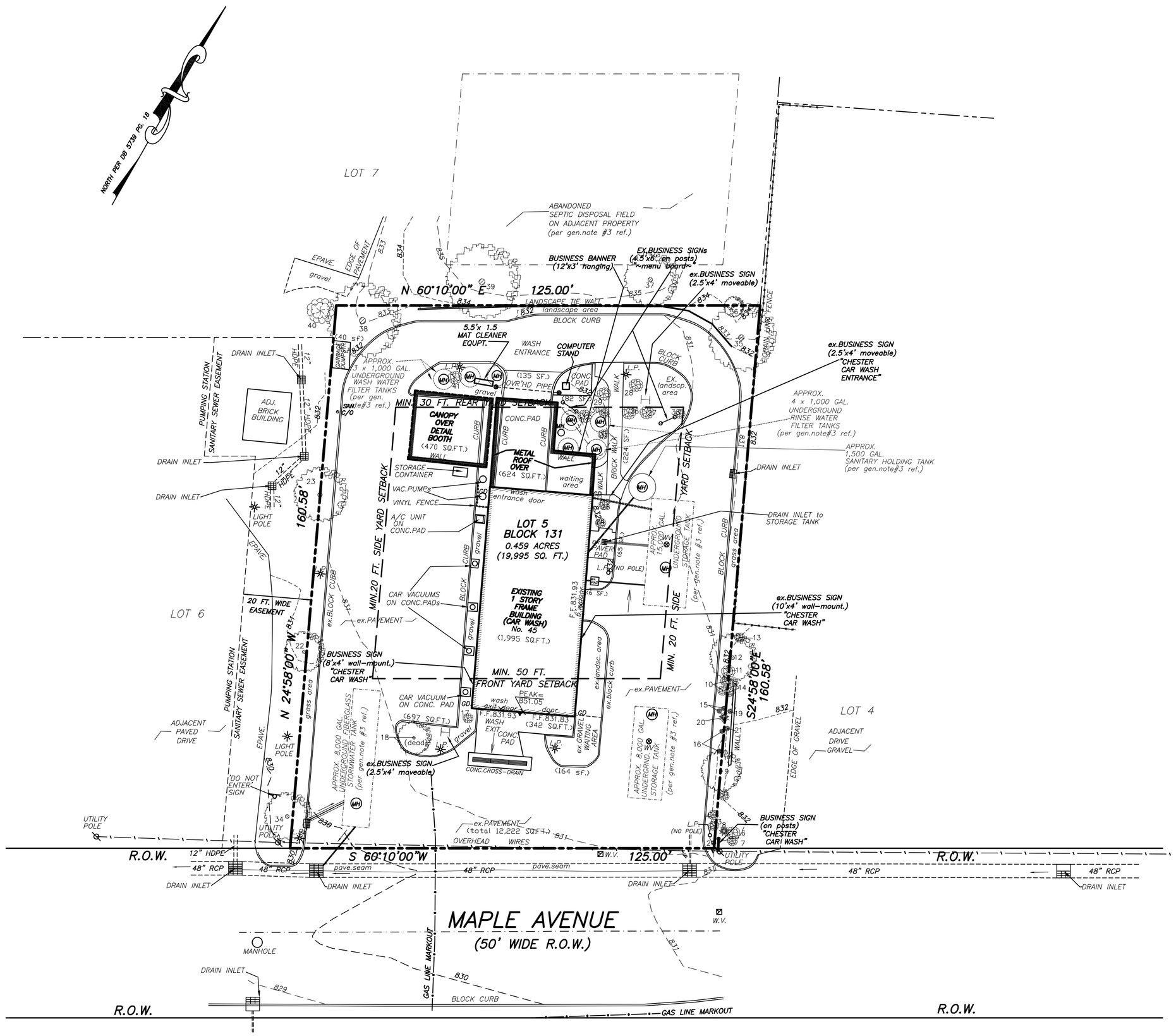
GENERAL NOTES

1. SURVEY INFORMATION TAKEN FROM A SURVEY PREPARED BY THIS FIRM, DATED OCTOBER 31, 2019, SIGNED CHRISTOPHER J. ALDRICH, NJLS 34478. SURVEY REFERENCE: NORTH PER DEED BOOK 5739, PAGE 18.
2. EXISTING CONDITIONS, TREES AND TOPOGRAPHIC INFORMATION AS PRESENTED ON THE SUBJECT PROPERTY WERE TAKEN FROM A FIELD SURVEY PERFORMED BY THIS FIRM IN 2019 UNDER THE SUPERVISION OF CHRISTOPHER J. ALDRICH, NJLS 34478. VERTICAL DATUM: NAVD 1988, BASED ON GPS OBSERVATIONS ON OCTOBER 25, 2019.
3. PREVIOUS CAR WASH USE AND SITE PLAN APPROVAL (WITH BULK VARIANCES) REFERENCE: CHESTER BOROUGH BOARD OF ADJUSTMENT RESOLUTIONS OF APPROVAL, SIGNED SEPTEMBER 13, 1983 AND NOVEMBER 8, 1983.
   CONDITION OF APPROVAL:
   1. NO WATER TO BE DRAWN FROM ON-SITE WELL FOR USE IN WASHING/RINSING CARS, OR ANY OTHER USE OF WATER IN THE CAR WASH SYSTEM.
   APPROVED PLAN REFERENCE: "GRADING & DRAINGE PLAN, CHESTER CAR WASH LOT 5-3 - BLOCK 17", PREPARED BY APGAR ASSOCIATES, FAR HILLS, NJ, SIGNED, ROBERT H. FOX, PE, DATED JUNE 28, 1983, LAST REVISED APRIL 12, 1984.
4. PREVIOUS CAR WASH SITE PLAN APPROVAL (SIGNAGE) REFERENCE: CHESTER BOROUGH BOARD OF ADJUSTMENT RESOLUTION OF APPROVAL, SIGNED MAY 12, 1998.
   APPROVED PLAN REFERENCE: "CHESTER CAR WASH LOT 5.3, BLOCK 17" PLAN, PREPARED BY FERRIERO ENGINEERING, INC., CHESTER, NJ, SIGNED PAUL W. FERRIERO, PE, DATED MARCH 4, 1998.
5. ANY DISCREPANCIES IN REFERENCED COORDINATES, ELEVATIONS, EXISTING DIMENSIONS AND DETAILS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND THE DESIGN ENGINEER BEFORE PROCEEDING WITH THE WORK. EXISTING UNDERGROUND UTILITY INFORMATION SHOWN HEREON IS APPROXIMATE AND IS NOT GUARANTEED AS TO ACCURACY OR COMPLETENESS. THE CONTRACTOR SHALL VERIFY ALL INFORMATION PRIOR TO BEGINNING ANY CONSTRUCTION. THE CONTRACTOR SHALL CONTACT ONE CALL SERVICE AT 1-800-272-1000 AND OTHER LOCAL UTILITY COMPANIES AS REQUIRED FOR MARKOUT PRIOR TO ANY EXCAVATION. WHERE EXISTING UNDERGROUND UTILITIES ARE TO BE CROSSED BY PROPOSED CONSTRUCTION, TEST PITS SHALL BE DUG BY THE CONTRACTOR PRIOR TO CONSTRUCTION TO ASCERTAIN EXISTING LOCATIONS, ELEVATIONS, MATERIALS AND SIZES. TEST PIT INFORMATION SHALL BE GIVEN TO THE ENGINEER PRIOR TO CONSTRUCTION TO PERMIT ADJUSTMENTS AS REQUIRED TO AVOID CONFLICTS. EXISTING SEPTIC SYSTEMS AS SHOWN ON ADJACENT LOTS ARE APPROXIMATE ONLY AND WILL NEED TO BE CONFIRMED IN THE FIELD IF NECESSARY.
6. ALL DEBRIS, CONCRETE CHUNKS, TREE STUMPS, AND OTHER UNSUITABLE MATERIAL RESULTING FROM THE SITE GRADING AND EXISTING STRUCTURAL DEMOLITION SHALL BE DISPOSED OF AT AN APPROVED DISPOSAL LOCATION. NO UNSUITABLE MATERIALS SHALL BE PERMITTED TO BE BURIED ON SITE.
7. SINCE THE SUBJECT PROPERTY DOES NOT FRONT ON A COUNTY ROAD AND THE PROPOSED INCREASE IN IMPERVIOUS COVERAGE IS LESS THAN 1/4 ACRE, THE PROPOSED PROJECT IS EXEMPT FROM THE MORRIS COUNTY LAND DEVELOPMENT STANDARDS.
8. BASED ON THE NJDEP NJGeoWebPages AND TO THE BEST OF OUR KNOWLEDGE, THE PROJECT SITE IS NOT ENCUMBERED BY STREAMS OR RIPARIAN ZONES.
9. BASED ON THE NJDEP NJGeoWebPages, PRINTED DECEMBER 2019, THERE ARE NO FRESHWATER WETLANDS OR 150 FT. WETLANDS BUFFERS THAT ENCUMBER THE SUBJECT PROPERTY.
10. THE SUBJECT PROPERTY IS LOCATED WITHIN THE NJDEP HIGHLANDS PLANNING AREA.
11. THE PROPOSED IMPROVEMENTS MAY BE SUBJECT TO APPROVAL BY THE CHESTER BOROUGH HISTORIC COMMITTEE AND SHADE TREE COMMITTEE PRIOR TO THE START OF ANY CONSTRUCTION.
12. PER THE N.J.A.C. 7:8 STORMWATER MANAGEMENT RULES, THE PROPOSED DEVELOPMENT IS NOT CONSIDERED A "MAJOR DEVELOPMENT" SINCE LESS THAN 1 ACRE OF DISTURBANCE AND LESS THAN 1/4 ACRE OF NEW IMPERVIOUS COVERAGE IS PROPOSED. THIS PROJECT IS NOT SUBJECT TO THE N.J.A.C. 7:8 STORMWATER RULES FOR STORMWATER MANAGEMENT CONTROL.
    ALSO,THE PROPOSED PROJECT IS NOT SUBJECT TO THE DESIGN STANDARDS PER THE CHESTER BOROUGH ORDINANCE 2006-3, FOR A "MINOR DEVELOPMENT" SINCE LESS THAN 2,500 SQ.FT. OF DISTURBANCE AND LESS THAN 1,000 SQ.FT. OF NEW IMPERVIOUS IS PROPOSED.
13. INFORMATION RELATED TO THE PROPOSED EQUIPMENT WERE PROVIDED BY THE APPLICANT.
14. THE EXISTING SITE LIGHTING SHALL REMAIN. ONE FREE-STANDING LIGHT POLE SHALL BE REPLACED.
15. SOLID WASTE COLLECTION: AS PROVIDED BY THE CURRENT ORDINANCE 201-13, SOLID WASTE SHALL NOT BE COLLECTED BEFORE 7:00 AM NOR AFTER 5:00 PM, PREVAILING TIME.
16. THE SUBJECT PROPERTY WILL CONTINUE TO BE SERVED BY PUBLIC WATER, SEWER AND GAS.
17. THIS SET OF PLANS HAS BEEN PREPARED FOR THE PURPOSES OF MUNICIPAL AND AGENCY REVIEW AND APPROVAL. THIS SET OF PLANS SHALL NOT BE UTILIZED AS CONSTRUCTION DOCUMENTS UNTIL ALL CONDITIONS OF APPROVAL HAVE BEEN SATISFIED ON THE DRAWINGS, ALL REQUIRED AGENCY PERMITS HAVE BEEN OBTAINED BY THE OWNER, AND EACH DRAWING SHEET HAS BEEN REVISED TO INDICATE "ISSUED FOR CONSTRUCTION" ACCORDINGLY, THIS PROJECT MAY BE SUBJECTED TO APPROVALS FROM THE FOLLOWING AGENCIES: MORRIS COUNTY PLANNING BOARD, MORRIS COUNTY SOIL CONSERVATION DISTRICT CHESTER BOROUGH FIRE PREVENTION BUREAU, ENVIRONMENTAL COMMISSION, SHADE TREE COMMISSION, CHESTER BOROUGH BOARD OF HEALTH AND NJDEP DIVISION OF LAND USE.

SCHEDULE OF EXISTING BUSINESS SIGNS

SIGN TYPE	SIGN	MOUNTING	BOTTOM OF SIGN MOUNT (ABOVE GRADE)	LOCATION	SIZE
ATTACHED	"CHESTER CAR WASH"	WALL-MOUNT	6 FT.	EASTERLY BUILDING WALL	10'x4' (±40 SQ.FT.)
ATTACHED	"CHESTER CAR WASH"	WALL-MOUNT	5.5 FT.	WESTERLY BUILDING WALL	8'x4' (±32 SQ.FT.)
ATTACHED	"CHESTER CAR WASH"	POST-MOUNT	2.5 FT.	OFF SITE	3'x2.6' (8 SQ.FT.)
FREESTANDING	"~menu board~"	POST-MOUNT	4 INCH	REAR LANDSCAPE AREA	4.5'x6' (27 SQ.FT.)
FREESTANDING	"~menu board~"	POST-MOUNT	4 INCH	REAR LANDSCAPE AREA	4.5'x6' (27 SQ.FT.)
TEMPORARY	"CHESTER CAR WASH"	HANGING BANNER	1 FT.	REAR WALL	12'x3' (±36 SQ.FT.)
TEMPORARY	"CHESTER CAR WASH ENTRANCE"	MOVEABLE	4 INCH	CUSTOMER ENTRANCE	2.5'x4' 10 SQ.FT.)
TEMPORARY	~blank~"	MOVEABLE	4 INCH	REAR LANDSCAPE AREA	2.5'x4' (10 SQ.FT.)
TEMPORARY	~blank~"	MOVEABLE	4 INCH	FRONT LANDSCAPE AREA	2.5'x4' (10 SQ.FT.)

* NOTE: EXISTING NON-CONFORMING SIGNS GRANTED VARIANCE RELIEF PURSUANT TO GEN.NOTE #4.



PLAN VIEW

GRAPHIC SCALE
0' 20' 40' 60'
SCALE: 1" = 20'

SYMBOL LEGEND:

- denotes EXISTING LIGHT POLE (note: Fixture Mounting Height = 12 ft.)
- denotes EXISTING USA FLAG
- denotes EXISTING MOVEABLE SIGN
- denotes EXISTING PLANTINGS

SOIL TYPE LEGEND

MAP SYMBOL	SOIL TYPE	SLOPES	SEASONAL HIGH WATER TABLE DEPTH	HYDROLOGIC SOIL GROUP
CakA	CALIFON LOAM	0-3%	18"	B

NOTE: THE ENTIRE SUBJECT PROPERTY IS MAPPED WITH CakA SOILS.

NOTE: THE SOIL TYPE SHOWN HEREON HAS BEEN TAKEN FROM THE "SOIL SURVEY OF MORRIS COUNTY, NEW JERSEY", PER THE NJDEP WEBSITE, EFF. DECEMBER 2019: http://njwebmap.state.nj.us/NJGeoWebPages -SSURGO LAYER.

EXISTING TREE & SHRUB SCHEDULE

No.	DESCRIPTION
1	1.5" DIA.SHRUB (offsite)
2	1.5" DIA.SHRUB
3	3" DIA.SHRUB
4	3" DIA.SHRUB
5	3" DIA.SHRUB (offsite)
6	4" DIA.SHRUB (offsite)
7	3" DIA.SHRUB (offsite)
8	3" SPRUCE (offsite)
9	12" MAPLE (offsite)
10	2 x 3" DIA.SHRUB
11	4" DIA.SHRUB
12	14" MAPLE (offsite)
13	3" DIA.SHRUB (offsite)
14	2 x 3" DIA.SHRUB (offsite)
15	3 x 1.5" DIA.SHRUB
16	2 x 1.5" DIA.SHRUB
17	3" DIA.SHRUB
18	10" MAPLE (DEAD)
19	1.5" DIA.SHRUB (offsite)
20	3" SPRUCE
21	1.5" DIA.SHRUB (offsite)
22	12" MAPLE (offsite)
23	16" MAPLE
24	3" DIA.SHRUB
25	3" DIA.SHRUB
26	4" DIA.SHRUB
27	4" DIA.SHRUB
28	4" DIA.SHRUB
29	4" DIA.SHRUB
30	3" DIA.SHRUB
31	3" DIA.SHRUB
32	4" DIA.SHRUB
33	3" DIA.SHRUB
34	14" MAPLE (offsite)
35	20" OAK
36	6" LOCUST
37	16" LOCUST (offsite)
38	22" OAK
39	22" LOCUST (offsite)
40	8" DIA.SHRUB (offsite)
41	4" DIA.SHRUB

EXISTING IMPERVIOUS COVERAGE TABLE

	AREA (SQ.FT.)
PROPERTY (lot area)	**19,995**
EXISTING BUILDING (CAR WASH)	1,995
REAR COVERED ENTRANCE (CAR WASH)	624
ACCESSORY BUILDING (DETAIL BOOTH)	470
GRAVEL SURROUND AREA	861
CONCRETE PAD	6
PAVER-BRICK DRAIN PAD	65
REAR PAVER WALK	224
CONCRETE PAD w/COMPUTER STAND	82
MANHOLES	31
DUMPSTER	40
FRONT CONCRETE EXIT PAD w/ DRAIN	342
EXISTING DRIVE ACCESS & PARKING (PAVEMENT)	12,222
TOTAL EXISTING COVERAGE:	**16,962 SQ.FT.** (84.8% of lot area)

Civil Engineers
Land Surveyors &
Professional Planners

YANNACCONE VILLA & ALDRICH, LLC

460 MAIN STREET, P.O. BOX 459
CHESTER, NEW JERSEY 07930
PHONE: 908-879-6646
FAX: 908-879-8591
N.J. STATE BOARD FOR P.E. & P.L.S. CERTIFICATE OF AUTHORIZATION No. 24GA27934500

CANDICE J. DAVIS
N.J. PROFESSIONAL ENGINEER
NO. 24GE04527000 DATE 02/05/20

CHRISTOPHER J. ALDRICH
N.J. PROFESSIONAL LAND SURVEYOR
NO. 34478 DATE 02/05/20

NOT VALID WITHOUT SIGNATURE AND RAISED SEAL

NO.	DATE	REVISION

PROJECT TITLE:
THE CAR WASH AT CHESTER, LLC SITE PLANS
PROPOSED MINOR IMPROVEMENTS
45 MAPLE AVENUE
LOT 5 ~ BLOCK 131
TAX MAP SHEET No. 10
BOROUGH OF CHESTER
MORRIS COUNTY, NEW JERSEY

SHEET TITLE:
EXISTING CONDITIONS & ENVIRONMENTAL CONSTRAINTS PLAN SHEET

DRAWN BY:	DATE:
KB/CJD	FEB. 05, 2020
CHECKED BY:	SCALE:
CJA	1" = 20'

W.O. 219096
F.B. 769/120
FILE:
COMP FILE: I:/ENG/219096/DWG/219096-siteplan-existingconditions.dwg

THE CAR WASH AT CHESTER, LLC SITE PLANS

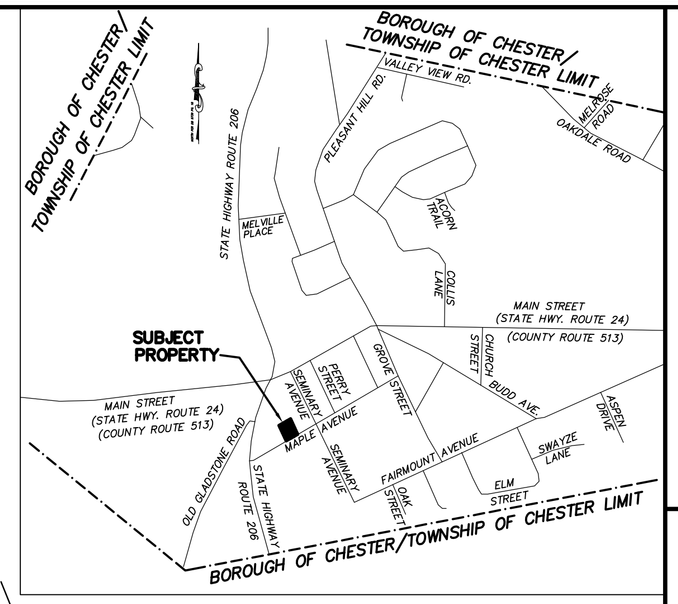
PROPOSED MINOR IMPROVEMENTS

45 MAPLE AVENUE

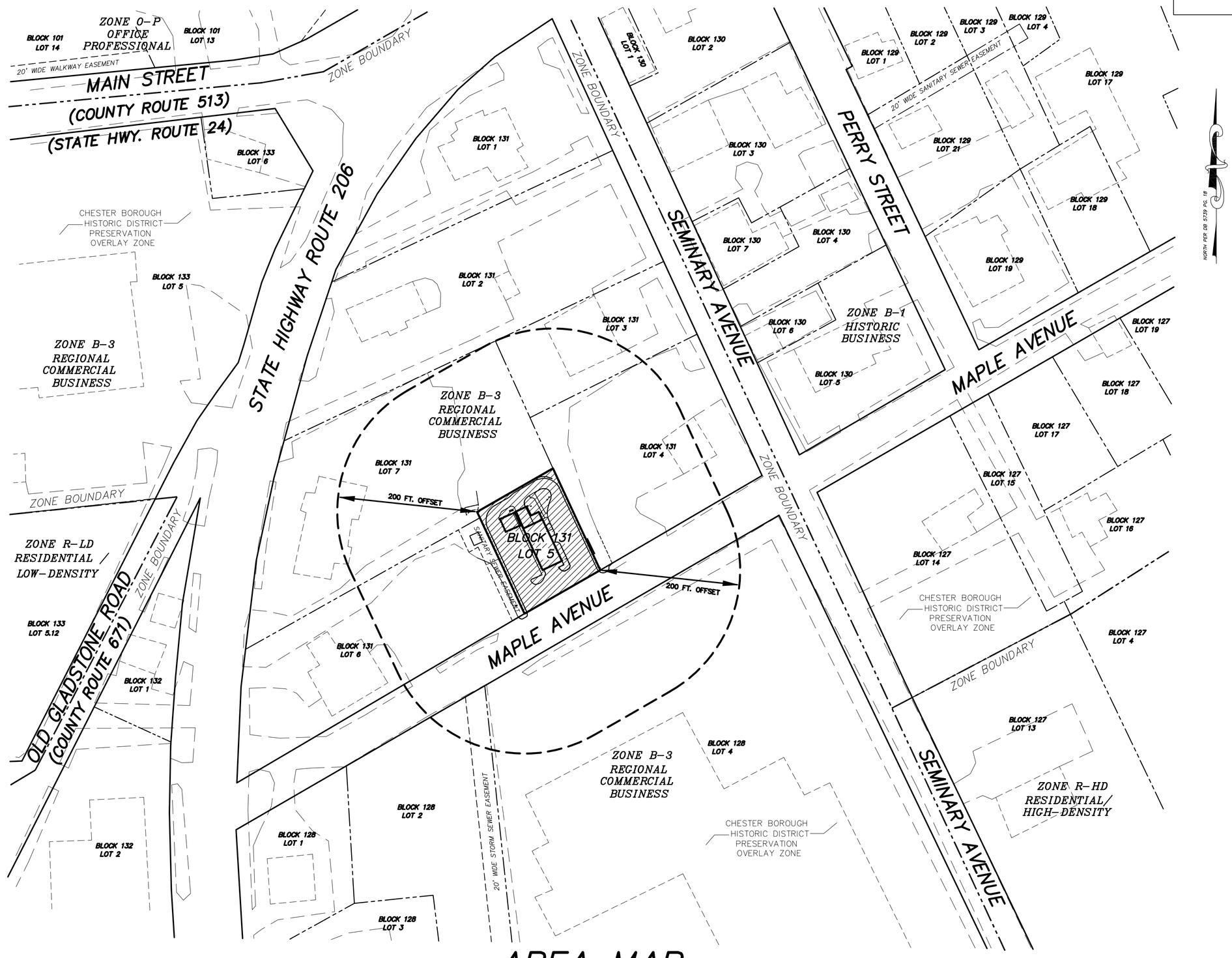
LOT 5 – BLOCK 131

CHESTER BOROUGH TAX MAP SHEET No. 10

BOROUGH OF CHESTER, MORRIS COUNTY, NJ



KEY MAP
SCALE: 1=1000'



AREA MAP

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

PROPERTY OWNERS WITHIN 200 FT. OF LOT 5, BLOCK 131

BASED ON A CERTIFIED LIST FROM THE BOROUGH OF CHESTER TAX COLLECTOR, DATED NOVEMBER 4, 2019.

BLOCK	LOT	LOCATION	NAME & ADDRESS
128	2	24 MAPLE AVENUE	DPF CHESTER LL MARVIN F POER & CO 3520 PIEDMONT RD NE #410 ATLANTA, GA 30305
128	4	141–205 ROUTE 206	DPF CHESTER LL MARVIN F POER & CO 3520 PIEDMONT RD NE #410 ATLANTA, GA 30305
131	2	24 SEMINARY AVENUE	HAMILTONS CHESTER LLC 24 SEMINARY AVENUE CHESTER, NJ 07930
131	3	30 SEMINARY AVENUE	HAROLD HARTH PO BOX 121 OLDWICK, NJ 08858
131	4	65 MAPLE AVENUE	CHESTER 65 LLC 4 GALLOWAE HOLMDALE, NJ 07733
131	6	25 MAPLE AVENUE	438700 PNC BANK CHESTER J005 PO BOX 182725 COLUMBUS, OH 43218–2725
131	7	65 ROUTE 206	HARRIS & JOHNSON INC / FYLA LLC 4 GALLOWAE HOLMDEL, NJ 07733

PUBLIC SERVICE ELECTRIC & GAS
REAL ESTATE SERVICES
80 PARK PLACE
NEWARK, NJ 07101

NJ AMERICAN WATER CO.
PO BOX 5627
CHERRY HILL, NJ 08034

APPROVED BY THE BOROUGH OF CHESTER LAND USE BOARD:

Chairperson Date

Secretary Date

Borough Engineer Date

REFERENCE NOTES:

1. LOT 5, BLOCK 131, AS SHOWN ON BOROUGH OF CHESTER TAX MAP SHEET No. 10.
2. ADJACENT BUILDINGS, ROADWAYS AND WOODED AREAS ARE TAKEN FROM THE NJ–GeoWeB https://njwebmap.state.nj.us/NJGeoWeb, 2015 Natural Imagery.
3. CHESTER BOROUGH ZONE DISTRICTS AS SHOWN PER THE CHESTER BOROUGH ZONING MAP, ZONING MAP AMENDMENT, PREPARED BY BANISCH ASSOCIATES, INC., DATED JUNE 2005. THE SUBJECT PROPERTY IS LOCATED WITHIN THE B–3 ZONE AND HISTORIC DISTRICT PRESERVATION OVERLAY.
4. THE SUBJECT PROPERTY IS LOCATED WITHIN THE NJDEP HIGHLANDS PLANNING ZONE.

PROPERTY OWNER
45 MAPLE LLC
c/o DANIEL SOUREK
383 RIDGEDALE AVENUE
EAST HANOVER, NJ 07936–1445
201–625–2443

APPLICANT
THE CAR WASH AT CHESTER LLC
c/o DANIEL SOURK
615 PALISADE AVENUE, APT.5
CLIFFSIDE PARK, NJ 07010
201–625–2443

ATTORNEY
ANTHONY J. SPOSARO, ESQ.
444 EAST MAIN STREET
PO BOX 836
CHESTER, NJ 07930
908–879–8400

CIVIL ENGINEER
CANDICE J. DAVIS, PE
YANNACCONE, VILLA & ALDRICH, LLC
460 MAIN STREET, PO BOX 459
CHESTER, NEW JERSEY 07930
908–879–6646

LAND SURVEYOR
CHRISTOPHER J. ALDRICH, PLS
YANNACCONE, VILLA & ALDRICH, LLC
460 MAIN STREET
P.O. BOX 459
CHESTER, NEW JERSEY 07930
908–879–6646

PROJECT DRAWING INDEX

SHEET NO.	DESCRIPTION
ENGINEERING SITE PLANS PREPARED BY YANNACCONE, VILLA & ALDRICH LLC	
1 of 6	TITLE SHEET
2 of 6	EXISTING CONDITIONS & ENVIRONMENTAL CONSTRAINTS PLAN SHEET
3 of 6	ZONING PLAN SHEET
4 of 6	CIRCULATION & SIGNAGE PLAN SHEET
5 of 6	PLANTING PLAN SHEET
6 of 6	CONSTRUCTION DETAIL SHEET

Civil Engineers
Land Surveyors &
Professional Planners

YANNACCONE VILLA & ALDRICH, LLC

460 MAIN STREET, P.O. BOX 459
CHESTER, NEW JERSEY 07930
PHONE: 908–879–6646
FAX: 908–879–8591

N.J. STATE BOARD OF P.E. & L.S.
CERTIFICATION OF AUTHORIZATION
No. 24GA27934500

CANDICE J. DAVIS
N.J. PROFESSIONAL ENGINEER
NO. 24GE04527000 DATE 02/05/20

NOT VALID WITHOUT SIGNATURE AND RAISED SEAL

NO.	DATE	REVISION

PROJECT TITLE :
THE CAR WASH AT CHESTER, LLC SITE PLANS
PROPOSED MINOR IMPROVEMENTS
45 MAPLE AVENUE
LOT 5 ~ BLOCK 131
TAX MAP SHEET No. 10
BOROUGH OF CHESTER
MORRIS COUNTY, NEW JERSEY

SHEET TITLE :
TITLE SHEET

DRAWN BY:	DATE:
CJD	FEB. 05, 2020
CHECKED BY:	SCALE:
GEY	1"=100'

W.O. 219096
F.B.
FILE:
COMP FILE: I:/ENG/219096/219096–siteplan–titlesheet.dwg