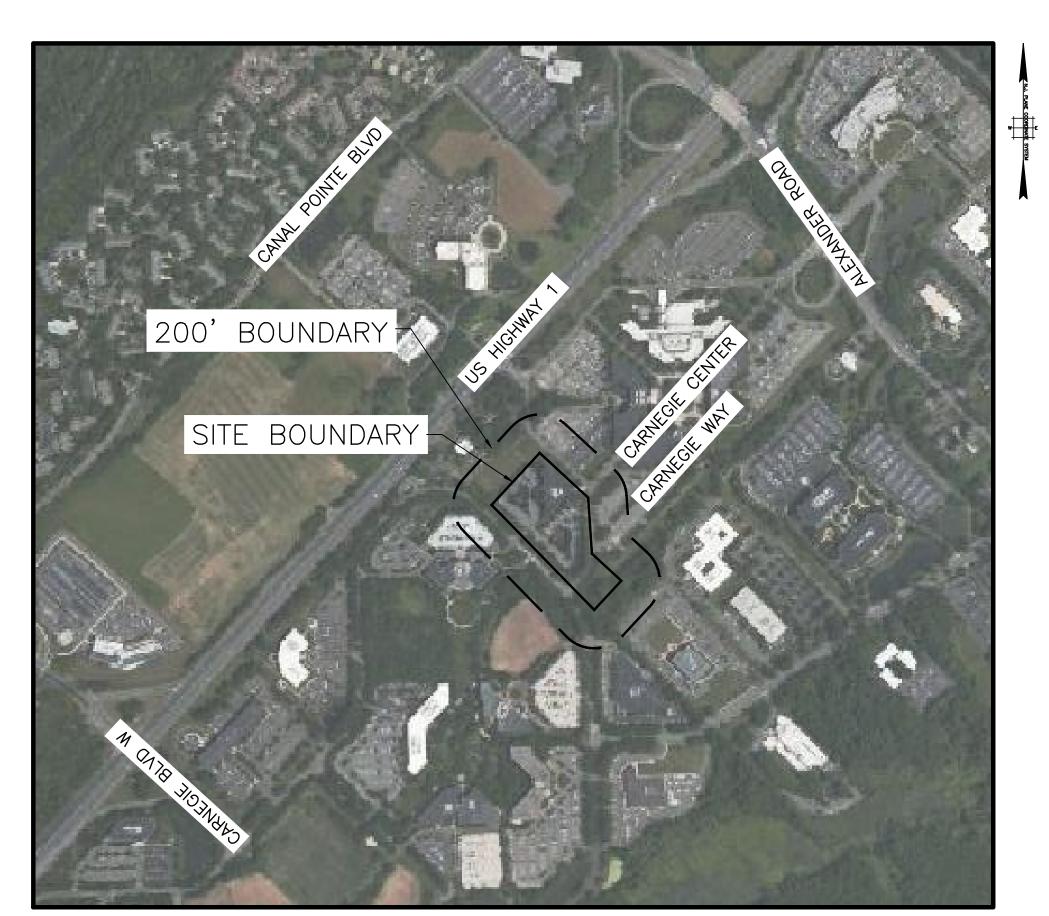
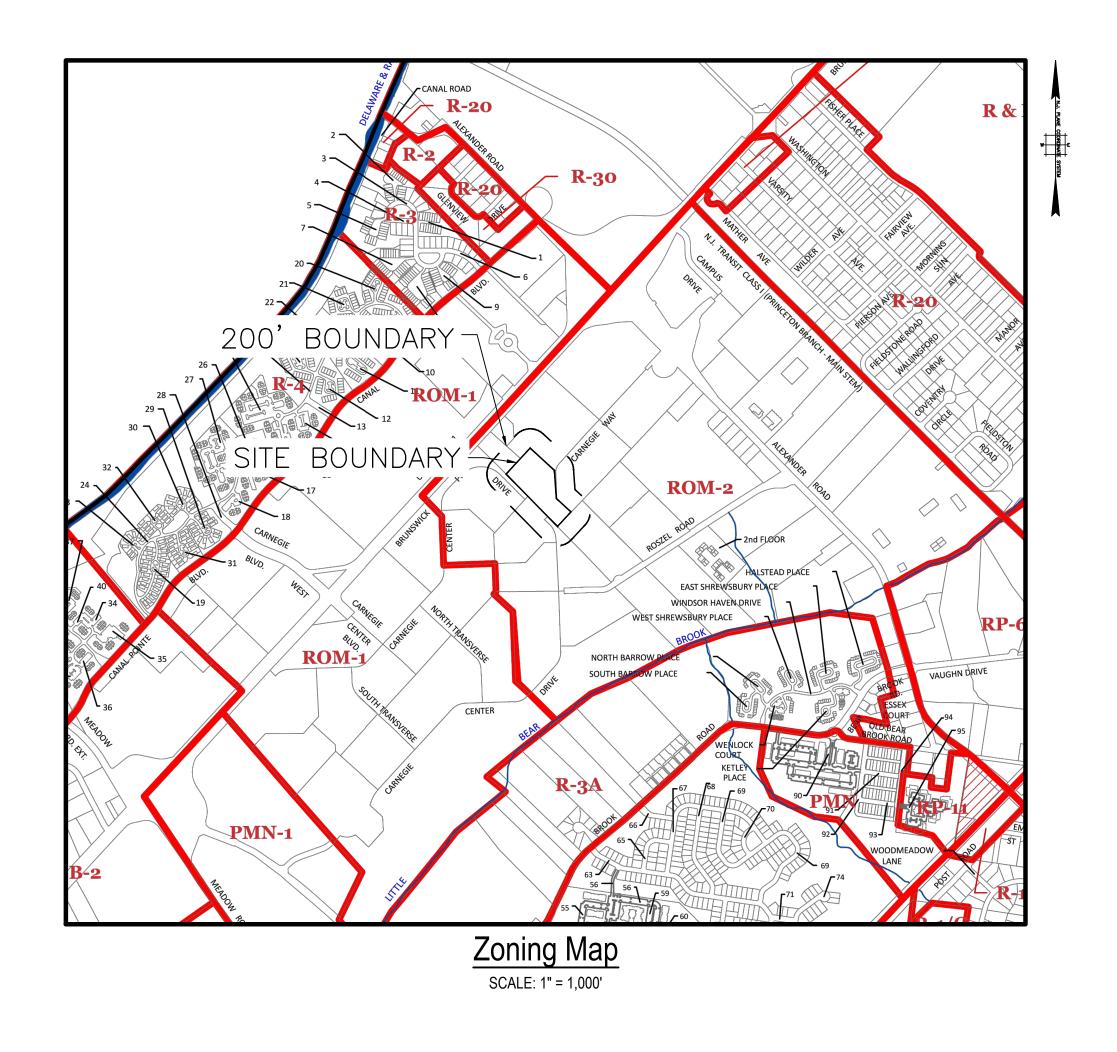
WEST WINDSOR TOWNSHIP, MERCER COUNTY, NEW JERSEY



Vicinity Map SCALE: 1" = 500'

Sheet List Table							
Sheet Number	DRAWING	Sheet Title					
1	CVR-1	COVER SHEET					
2	LEG-1	LEGEND & GENERAL NOTES					
3	OVR-1	EXISTING CONDITIONS PLAN — OVERALL					
4	DEM-1	EXISTING CONDITIONS & DEMOLITION PLAN					
5	CSP-1	CONSTRUCTION PLAN					
6	LSP-1	LANDSCAPE PLAN					
7	SEP-1	SOIL EROSION & SEDIMENT CONTROL PLAN					
8	SED-1	SOIL EROSION & SEDIMENT CONTROL NOTES					
9	SED-2	SOIL EROSION & SEDIMENT CONTROL DETAILS					
10	CSD-1	CONSTRUCTION DETAILS					
11	CSD-2	CONSTRUCTION DETAILS					
12	CSD-3	CONSTRUCTION DETAILS					
13	CSD-4	CONSTRUCTION DETAILS					
14	TTP-1	TRUCK TURNING PLAN - WB-50					
15	TTP-2	TRUCK TURNING PLAN - WB-50					
16	TTP-3	TRUCK TURNING PLAN — FIRE TRUCK					



SITE & ADJACENT ZONING DISTRICTS						
DESIGNATION	ZONING CLASSIFICATION					
ROM-1	RESEARCH OFFICE / LIMITED MANUFACTURING					
ROM-2	RESEARCH OFFICE / LIMITED MANUFACTURING					
ROM-5	RESEARCH OFFICE / LIMITED MANUFACTURING					
B-2	NEIGHBORHOOD CENTER					

# OWNER/APPLICANT BOSTON PROPERTIES, L.P.

101 CARNEGIE CENTER, SUITE 104 PRINCETON, NJ 08540 PHONE: 609-452-1444

# **DESIGN TEAM** Site Design & Landscape Architecture

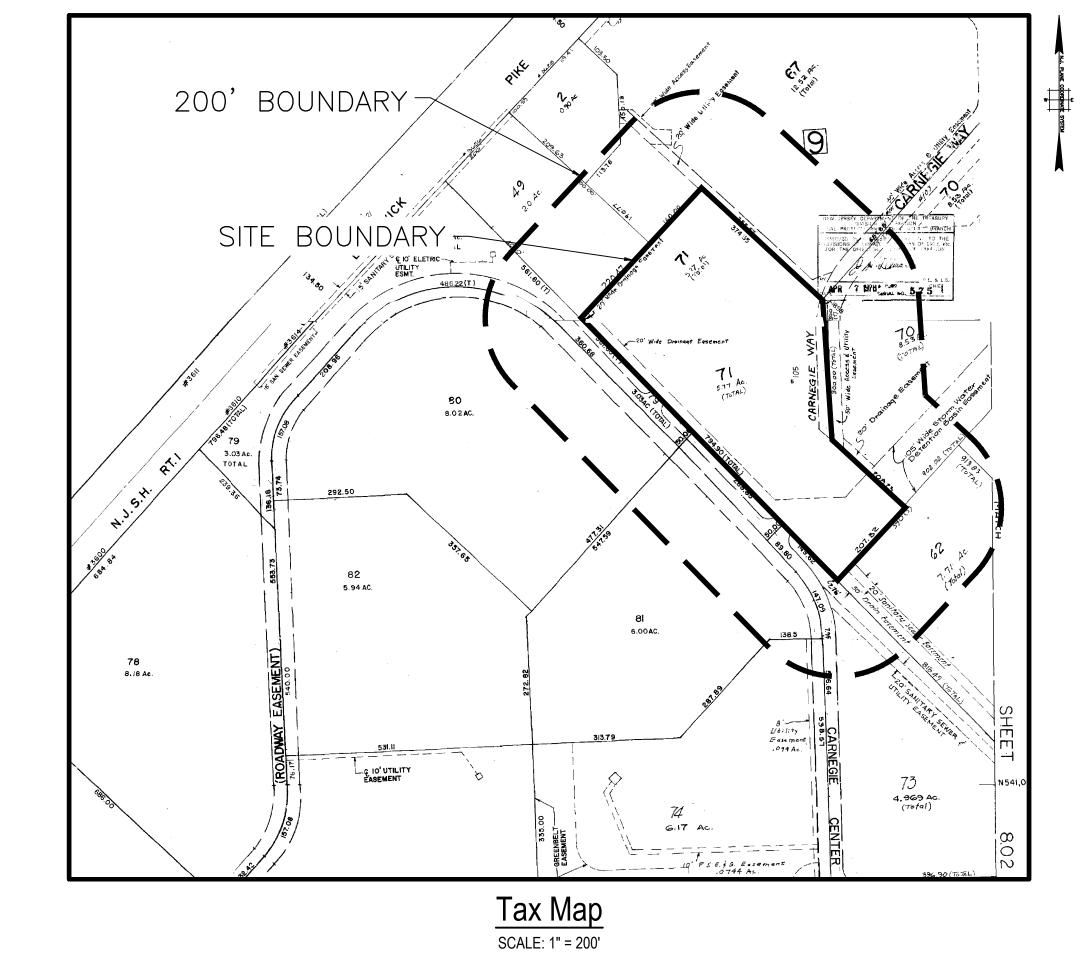
# T & M Associates

11 Tindall Road Middletown, NJ 07748 Phone: 732-671-6400

# Architecture

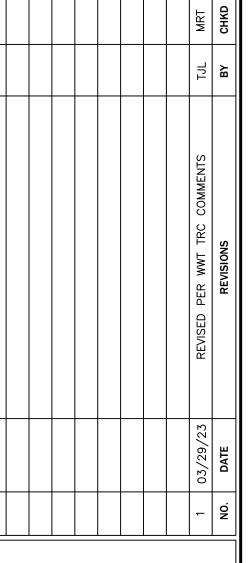
# SGA Architecture

54 W 21st, Floor 12 New York, NY 10010 Phone: 857-300-2610



APPROVED BY THE MERCER COUNTY PLANNING BOARD:

PLANNING DIRECTOR	DATE
RECORDING SECRETARY	DATE
APPROVED BY THE WEST WINDSOR TOWNSHIP ZONING BO	DARD OF ADJUSTMENT:
CHAIRPERSON	DATE
SECRETARY	DATE
MUNICIPAL ENGINEER	DATE



MICHAEL R. THOMAS, P.E.



OFFICES LOCATED IN: CALIFORNIA, INDIANA, KENTUCKY, MASSACHUSETTS, MICHIGAN, NEW JERSEY, 03/10/2023

F-10001.2.6 STORAGE CONTAINERS/STORAGE TRAILERS/STORAGE UNITS

# Variance & Waivers Requested

**VARIANCE REQUESTED** 

1. ORDINANCE SECTION 200-226A.(2): A 40' SIDEYARD SETBACK FOR ACCESSORY STRUCTURES IS REQUIRED,

2. ORDINANCE SECTION 200-226A.(2): A 40' SIDEYARD SETBACK FOR ACCESSORY STRUCTURES IS REQUIRED,

3. **ORDINANCE SECTION 200-226A.(2):** A 40' SIDEYARD SETBACK FOR ACCESSORY STRUCTURES IS REQUIRED,

4. ORDINANCE SECTION 200-226A.(2): A 40' SIDEYARD SETBACK FOR ACCESSORY STRUCTURES IS REQUIRED,

5. **ORDINANCE SECTION 200-226A.(2):** A 125' FRONTYARD SETBACK FOR ACCESSORY STRUCTURES IS

6. ORDINANCE SECTION 200-226A.(2): A 125' FRONTYARD SETBACK FOR ACCESSORY STRUCTURES IS

WHEREAS 38.4' IS PROVIDED FOR THE GENERATOR IN THE NORTHWESTERN CORNER OF THE LOT.

WHEREAS 27.4 IS PROVIDED FOR THE NITROGEN TANK STORAGE AREA.

WHEREAS 31.3' IS PROVIDED FOR THE HYDROGEN TANK STORAGE AREA.

REQUIRED, WHEREAS 78.2' IS PROVIDED FOR THE FILLING STATION AREA.

REQUIRED, WHEREAS 88.0' IS PROVIDED FOR THE FILLING STATION AREA.

West Windsor Township

Block Lot Name Address

Qfarm Boston, MA 02199

55D-12 - Notice of Applications.

Notification also required for:

T6B, Newark, NJ 07102

APPLICANT T& M Associates, 11 Tindall Road, Middletown, NJ 07748 Attn: Melissa Barnes

bottom of this form when utilizing the following page:

PRESENT OWNER: 105 Carnegie Center Associates c/o G. Butler, 800 Boylston St., STE 1900, Boston, MA 02199

Please find the requested list generated by this office. Please note the statement at the

19 Roszel Rd LLC MTN; Development, 56 Livingston Ave. #200, Roseland, NJ 07068

101 Carnegie Center Associates c/o Boston Properties, G. Butler, 800 Boylston St., STE

04 Carnegie Center Associates c/o Boston Properties, G. Butler, 800 Boylston St., STE

11 Associates c/o Boston Properties, G. Butler, 800 Boylston St., STE 1900, Boston, MA

210 Associates c/o Boston Properties, G. Butler, 800 Boylston St., STE 1900, Boston, MA

Princeton Childcare c/o Boston Properties, G. Butler, 800 Boylston St., STE 1900, Boston,

206 Associates c/o Boston Properties, G. Butler, 800 Boylston St., STE 1900, Boston, MA

800 Carnegie Owner, LLC c/o Boston Properties, G. Butler, 800 Boylston St., STE 1900,

Mercer County Dept. of Transportation, 640 S. Broad St., Admin. Bldg, Room 301,

Public Service Electric and Gas Company, Manager-Corporate Properties, 80 Park Plaza,

NJ American Water Company Inc., GIS Supervisor, 1 Water Street, Camden, NJ 08102-

Verizon-NJ c/o Wireline Engineering, 999 W. Main St. Flr2, Freehold, NJ 07728

List prepared and certified by: Lisa Komjati A. Komisti 10/6/22

It is the applicant's responsibility to notify the appropriate State, County, and other such agencies as determined

State Law now requires that applicants with respect to certain applications for development provide notice to

NOTE: - Service must be made in conformance with the Municipal Land Use, Chapter 291, Laws of NJ 1975, 040-

public utilities and cable television companies in accordance with N.J.S.A. 40:55D-12(h).

Comcast, Monmouth Cluster, 751 Brick Blvd., Brick, NJ 08723

JCP&L Real Estate, PO Box 1911, Morristown, NJ 07962

Stone House at Carnegie Center LLC, 8 Revere Ct, Princeton Junction, NJ 08550

Jeevan Properties LLC, 101-5 Ballantine Rd, Bernardsville, NJ 07924

63.02 Roszel Rd Office Condo c/o Iss., PO Box 5910, Princeton, NJ 08543-5910

WHEREAS 33.4' IS PROVIDED FOR THE FILLING STATION AREA.

### **WAIVERS REQUESTED**

- 1. ORDINANCE SECTION 200-15.C(2)(C): WHERE A SURVEY MAP PREPARED BY A LICENSED NJ LAND SURVEYOR IS REQUIRED, AN EXISTING CONDITIONS PLAN HAS BEEN PROVIDED SIGNED BY A NJ LICENSED
- ORDINANCE SECTION 200-15.C(2)(D): WHERE A COPY OF THE DEED FOR ON-SITE EASEMENTS IS REQUIRED, THE DEED REFERENCES HAVE BEEN PROVIDED ON THE SITE PLAN FOR EXISTING ON-SITE EASEMENTS.
- ORDINANCE SECTION 200-15.C(2)(F): WHERE THE LOCATION OF WETLANDS IS REQUIRED. A WETLANDS
- AFFIDAVIT HAS BEEN PROVIDED BY AN ENVIRONMENTAL SCIENTIST INDICATING THAT NO WETLANDS 4. ORDINANCE SECTION 200-15.C(2)(M): WHERE THE LOCATION OF ALL UTILITIES IS REQUIRED, EXISTING
- STORMWATER UTILITIES AND PROPOSED ELECTRIC UTILITIES ARE PROVIDED. ORDINANCE SECTION 200-27D.(1)(2): WHERE 4 OFF-STREET LOADING SPACES ARE REQUIRED, 2 ARE
- 6. ORDINANCE SECTION 200-28D.(2)(B): WHERE 141 PARKING SPACES ARE REQUIRED FOR BUILDING 105,
- 192 ARE PROVIDED. ORDINANCE SECTION 200-27B: EACH SPACE IN EXCESS OF 1/300 SQUARE FEET CONSTRUCTED WITH A PERVIOUS SURFACE, WHEREAS 0 ARE PROVIDED.

### PARKING, BICYCLE AND LOADING REQUIREMENTS

		BUILDING	G.F.A. (S.F.)	NUMBER OF FLOORS	PARKING SPACES	STANDARD CARS	COMPACT CARS	% COMPACT	HANDICAP SPACES	BIKE SPACES	LOADING SPACES
	REQUIRED EXISTING PARKING	105	69,648	3	279	<u>&lt;</u> 140	<u>&lt;</u> 140	<u>&lt;</u> 50%	7	12	2
	EXISTING PARKING	105	69,648	3	239 (ENC)	137	102	42.7%	3 (ENC)	7 (ENC)	O (ENC)
	REQUIRED PARKING FOR PROPOSED USE	105	58,458	3	141	<u>&lt;</u> 83	<u>&lt;</u> 83	<u>&lt;</u> 50%	6	10	4
	PROPOSED PARKING	105	58,458	3	192 (W)	132	65	33.9%	7	14	2 (W)

(ENC) EXISTING NON-CONFORMITY. (W) WAIVER REQUESTED.

### EXISTING PARKING REQUIREMENTS

<u>USE</u>	REQUIREMENT 1 SPACE/250 SF WITH EACH	<u>AREA</u>	<u>TOTAL</u>
GENERAL OFFICE	SPACE IN EXCESS OF 1/300 SF WITH PERVIOUS SURFACE	69,648 SF	279

### PROPOSED PARKING REQUIREMENTS

USE GENERAL OFFICE	REQUIREMENT  1 SPACE/250 SF WITH EACH SPACE IN EXCESS OF 1/300 SF WITH PERVIOUS SURFACE	AREA 11,692 SF	<b>TOTAL</b> 47
RESEARCH LABORATORIES	1 SPACE/500 SF OF BUILDING FLOOR AREA	46,766 SF	94
		=	141

# EXISTING LOADING AND BICYCLE REQUIREMENTS

LOADING	SPACE	REQUIREMENT

IN NO CASE SHALL THE REQUIRED SPACE BE LESS THAN ONE LOADING AREA;

ADDITIONAL SPACES SHALL BE PROVIDED AS FOLLOWS:

GENERAL OFFICE (AREA = 69,648 SF):

BUILDING FLOOR AREA (SF) 10,001 TO 100,000

TOTAL SUM=

GENERAL OFFICE

BICYCLE PARKING REQUIREMENTS

# LOADING SPACE REQUIREMENTS

PROPOSED LOADING AND BICYCLE REQUIREMENTS

1 SPACE/20 PARKING SPACES:

IN NO CASE SHALL THE REQUIRED SPACE BE LESS THAN ONE LOADING AREA;

REQUIREMENT

TOTAL=

ADDITIONAL SPACES SHALL BE PROVIDED AS FOLLOWS:

GENERAL OFFICE (AREA = 11,692 SF):

BUILDING FLOOR AREA (SF) 10,001 TO 100,000

NUMBER OF BERTHS

NUMBER OF BERTHS

RESEARCH LABORATORIES (MANUFACTURING) (AREA = 46,766 SF):

NUMBER OF BERTHS BUILDING FLOOR AREA (SF) FIRST 10,001 TO 20,000

EACH ADDITIONAL 20,000 OR MAJOR FRACTION THEREOF UP TO A MAXIMUM OF 60,000

TOTAL= GENERAL OFFICE AND RESEARCH LABORATORIES TOTAL SUM=

**BICYCLE PARKING REQUIREMENTS** 

<u>REQUIREMENT</u> PARKING SPACES TOTAL GENERAL 1 SPACE/20 PARKING SPACES:

# General Notes

- THESE GENERAL NOTES APPLY TO ALL SHEETS IN THIS SET OF PLANS. EXISTING UTILITY INFORMATION SHOWN HEREON HAS BEEN COLLECTED FROM VARIOUS SOURCES AND IS NOT GUARANTEED AS TO ACCURACY OR COMPLETENESS. THE CONTRACTOR SHALL VERIFY ALL INFORMATION TO HIS SATISFACTION PRIOR TO EXCAVATION, DRIVING OF PILES, OR ANY OTHER SUBSURFACE DISTURBANCE. WHERE EXISTING UTILITIES ARE TO BE CROSSED BY PROPOSED CONSTRUCTION, TEST PITS SHALL BE DUG BY THE CONTRACTOR PRIOR TO CONSTRUCTION TO ASCERTAIN EXISTING INVERTS. MATERIALS AND SIZES. TEST PIT INFORMATION SHALL BE GIVEN TO THE ENGINEER PRIOR TO CONSTRUCTION OR STRUCTURE FABRICATION TO PERMIT ADJUSTMENTS AS REQUIRED TO AVOID CONFLICTS.
- ALL DIMENSIONS AND GRADES SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION FOR NECESSARY PLAN CHANGES. NO EXTRA COMPENSATION SHALL BE MADE TO THE CONTRACTOR FOR WORK HAVING TO BE REDONE DUE TO DIMENSIONS OR GRADES SHOWN INCORRECTLY ON THESE PLANS IF SUCH NOTIFICATION HAS NOT BEEN GIVEN.
- ALL MATERIALS, WORKMANSHIP, AND CONSTRUCTION FOR SITE IMPROVEMENTS SHOWN HEREON SHALL BE IN ACCORDANCE WITH: A. NJDOT "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", AS CURRENTLY AMENDED. B. CURRENT, PREVAILING MUNICIPAL AND/OR COUNTY SPECIFICATIONS, STANDARDS AND REQUIREMENTS.

C. CURRENT, PREVAILING UTILITY COMPANY/AUTHORITY SPECIFICATIONS, STANDARDS AND REQUIREMENTS.

- D. NATIONAL FIRE PROTECTION ASSOCIATION AND AMERICAN WATER WORKS ASSOCIATION STANDARDS, AS CURRENTLY AMENDED. THE CONTRACTOR SHALL NOTIFY THE UNDERSIGNED PROFESSIONAL IMMEDIATELY IF ANY FIELD CONDITIONS ENCOUNTERED DIFFER MATERIALLY
- FROM THOSE PRESENTED HEREON. ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND THE REQUIREMENTS OF THE GOVERNING
- AUTHORITIES OR AGENCIES. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH CURRENT OSHA STANDARDS.
- ALL PIPE LENGTHS ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE.
- NJDOT STANDARD ROADWAY CONSTRUCTION / TRAFFIC CONTROL / BRIDGE CONSTRUCTION DETAILS, LATEST REVISION, ARE APPLICABLE TO THIS PROJECT EXCEPT FOR THOSE DETAILS CONTAINED HEREIN.
- THE SUITABILITY OF EXCAVATED MATERIAL FOR USE AS BACKFILL SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER.
- THE CONTRACTOR SHALL VERIFY THE LOCATION, GRADE, AND INVERT ELEVATION OF ALL EXISTING UTILITY STRUCTURES. THE CONTRACTOR SHALL COORDINATE UTILITY INSTALLATION WITH THE RESPECTIVE UTILITY COMPANY IF APPLICABLE. THE UTILITY COMPANY
- SHALL VERIFY INSTALLATION LOCATION(S). THE CONTRACTOR SHALL RAISE/ADJUST ALL UTILITY VALVE COVERS, FRAMES, GRATES, ETC., WITHIN THE CONSTRUCTION AREA TO THE
- PROPOSED GRADE. REFER TO DEMOLITION AND UTILITY REMOVAL PLANS FOR DETAILS ON UTILITIES TO BE ABANDONED AND UTILITIES TO
- 14. CONTOURS AND SPOT ELEVATIONS INDICATE FINISHED GRADE.
- ALL DISTURBED AREAS NOT RECEIVING IMPERVIOUS SURFACE OR LANDSCAPING SHALL BE RESTORED IN ACCORDANCE WITH THE LANDSCAPING/SOIL EROSION AND SEDIMENT CONTROL SEEDING SPECIFICATIONS.
- SITE GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND THE RECOMMENDATION SET FORTH BY THE DESIGN ENGINEER. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL SOFT, YIELDING, OR UNSUITABLE MATERIALS AND REPLACING WITH SUITABLE MATERIALS AS APPROVED BY THE ENGINEER. ALL EXCAVATED OR FILLED AREAS SHALL BE COMPACTED TO 95% MODIFIED PROCTOR MAXIMUM DENSITY. MOISTURE CONTENT AT TIME OF PLACEMENT SHALL NOT EXCEED 2% ABOVE OR 3% BELOW OPTIMUM.
- ELECTRIC, TELEPHONE, CATV AND ALL OTHER WIRE SERVED UTILITY EXTENSIONS AND SERVICES SHALL BE INSTALLED UNDERGROUND WITH STANDARDS ESTABLISHED BY THE SERVICING UTILITY COMPANY.
- ALL AREAS WHERE NATURAL VEGETATION AND/OR SPECIMEN TREES ARE TO REMAIN SHALL BE PROTECTED BY THE ERECTION OF FENCING, AND NO DISTURBANCE SHALL OCCUR PRIOR TO INSPECTION BY THE OWNER OR OWNER'S REPRESENTATIVE AND THE ISSUANCE OF WRITTEN AUTHORIZATION TO PROCEED WITH THE CONSTRUCTION. THESE PROTECTIVE MEASURES SHALL NOT BE ALTERED OR REMOVED WITHOUT THE APPROVAL OF THE OWNER OR OWNER'S REPRESENTATIVE.
- ALL PROPOSED CONSTRUCTION IS TO CONFORM TO THE LATEST EDITION OF THE NEW JERSEY UNIFORM CONSTRUCTION CODE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE EXISTENCE AND LOCATION OF ALL EXISTING UTILITIES WITHIN THE LIMITS OF WORK THRU THE USE OF RECORD DOCUMENTS PROVIDED BY THE OWNER AND THE ENGINEER, AND FIELD SURVEY AND/OR TEST PIT EXCAVATIONS IF SAME ARE DETERMINED TO BE NECESSARY. CONTRACTOR ALSO RESPONSIBLE FOR CALLING 1-800-272-1000 FOR UTILITY MARKOUT PRIOR TO CONSTRUCTION.
- TWO SURVEY BENCHMARKS SHALL BE ESTABLISHED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION ACTIVITIES.
- THE PROPOSED IMPROVEMENTS ARE LOCATED IN ZONE "B" IN ACCORDANCE WITH THE DELAWARE AND RARITAN CANAL COMMISSION REGULATIONS AND MAPPING.
- REMOVAL OF OFF-SITE DEMOLITION AND EXCAVATION MATERIALS SHALL BE IN CONFORMANCE WITH STATE AND LOCAL REGULATIONS.
- THE PROPOSED IMPROVEMENTS ARE LOCATED OUTSIDE THE TOWNSHIP GREENBELT ZONE AND NEARBY ENVIRONMENTALLY SENSITIVE AREAS.
- COMPACT PARKING SPACES ARE TO BE STRIPED IN BLUE LINES (IF REQUIRED).
- STANDARD PARKING SPACES ARE TO BE STRIPED IN WHITE LINES
- HANDICAP PARKING SPACES ARE TO BE STRIPED IN BLUE LINES.
- THE SIZE AND MANUFACTURER OF THE PROPOSED GENERATOR ENCLOSURE SHALL BE DETERMINED BY THE APPLICANT PRIOR TO THE START OF
- THE PROPOSED IMPROVEMENTS ARE LESS THAN 5000 S.F. OF GROUND DISTURBANCE, LESS THAN 0.25 ACRE OF NEW IMPERVIOUS, AND LESS HAN 1 ACRE OF OVERALL DISTURBANCE.
- ANY PROPOSED DIESEL GENERATOR WITH A TANK GREATER THAN 50 GALLONS IN SIZE SHALL REQUIRE A SPILL PREVENTION PLAN.
- THE SITE IS OUTSIDE OF EXISTING WETLANDS AREAS, RIPARIAN ZONES, TRANSITIONS AREAS, AND OTHER ENVIRONMENTAL CONSTRAINTS, PER
- SITE INVESTIGATION PERFORMED BY T&M ASSOCIATES ON SEPTEMBER 29, 2022. NO NEW EXTERIOR REFUSE OR RECYCLING STORAGE WILL BE GENERATED AS A RESULT OF THE PROPOSED IMPROVEMENTS.
- PROPOSED TRASH ROOM SHALL BE LOCATED INSIDE THE EXISTING BUILDING.
- ALL REFUSE AND RECYCLING SHALL BE COORDINATED WITH A PRIVATE COLLECTION COMPANY.
- CONSTRUCTION SHALL COMPLY WITH CURRENT ADA AND BARRIER FREE ACCESS STANDARDS
- ALL CURB IMPROVEMENTS SHALL COMPLY WITH THE CURRENT ADA REGULATIONS AND ARE SUBJECT TO REVIEW AND APPROVAL BY NJDOT. THE CONTRACTOR IS ADVISED THAT ALL CURB RAMPS SHALL BE CONSTRUCTED IN STRICT CONFORMANCE WITH THE DETAILS ON SHEET 10. ANY NEWLY CONSTRUCTED CURB RAMPS NOT MEETING THESE REQUIREMENTS SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
- SHOP DRAWING TO BE SUBMITTED TO DESIGN ENGINEER PRIOR TO CONSTRUCTION.
- GAS CYLINDERS WILL BE STORED OUTSIDE AT DESIGNATED STORAGE AREAS.
- HYDROGEN TANKS WILL BE ACCESSED BY TRUCKS ON A WEEKLY BASIS FOR FILLING.
- ALL HAZARDOUS GAS STORAGE WILL BE CONSTRUCTED, INSTALLED AND OPERATED IN ACCORDANCE WITH THE NFPA STANDARDS.

# Zoning Information Table

### ZONE ROM-2, OFFICE / MANUFACTURING 105 CARNEGIE CENTER (BLOCK 9, LOT 71) PRINCIPAL USE: PROFESSIONAL OFFICE (EXISTING PERMITTED USE) PROFESSIONAL OFFICE & RESEARCH LABORATORY(PROPOSED PERMITTED USE)

**ORDINANCE** 

ZONING DATA	REQUIREMENTS	<u>EXISTING</u>	PROPOSED_
MIN. LOT AREA	5 AC.	5.766 AC.	NO CHANGE
MIN. LOT FRONTAGE	300'	300'	NO CHANGE
MIN. LOT WIDTH	350'	N/A	N/A
MIN. FRONT YARD SETBACK (PRINCIPAL BUILDING, CARNEGIE CENTER DRIVE)	125'	N/A	NO CHANGE
MIN. FRONT YARD SETBACK (ACCESSORY STRUCTURE, CARNEGIE CENTER DRIVE)	125'	N/A	78.2'(1)(V)
MIN. FRONT YARD SETBACK (CARNEGIE WAY)	125'	85.72'(ENC)	NO CHANGE
MIN. SIDE YARD SETBACK (PRINCIPAL BUILDING)	40'	46.95'	NO CHANGE
MIN. SIDE YARD SETBACK (ACCESSORY STRUCTURE)	40'	N/A	27.4'(2)(V)
MIN. REAR YARD SETBACK (PRINCIPAL BUILDING)	40'	N/A	N/A
MIN. LANDSCAPE BUFFER (CARNEGIE CENTER DRIVE)	75'	28'(ENC)	NO CHANGE
MIN. LANDSCAPE BUFFER (CARNEGIE WAY)	75'	68'(ENC)	NO CHANGE
MAX F.A.R.(3)	30%	27.9%(4)	23.3%(5)
MAX M.I.C.	50%	48.93%	48.89%(6)
MAX. GROSS DENSITY	N/A	N/A	N/A
MAX. HEIGHT (PRINCIPAL STRUCTURE)	45'/3 ST.	42'/3 ST.(7)	NO CHANGE(8)

NOTE: (1) 78.2' SETBACK VARIANCE REQUIRED FOR PROPOSED FILLING STATION PAD. AN ACCESSORY STRUCTURE FRONT YARD SETBACK VARIANCE WILL ALSO BE REQUIRED FOR THE PROPOSED

- NITROGEN TANK PAD AT 88'. (2) 27.4' SETBACK VARIANCE REQUIRED FOR PROPOSED NITROGEN TANK PAD, ACCESSORY STRUCTURE SIDE YARD SETBACK VARIANCES WILL ALSO BE REQUIRED FOR THE HYDROGEN TANK PAD, FILLING STATION PAD AND GENERATOR AT
- 31.3', 34.1' AND 38.4', RESPECTIVELY. (3) EXISTING BUILDING 105 GROSS FLOOR AREA IS 69,648 SF, AND PROPOSED BUILDING 105 GROSS FLOOR AREA IS 58,458 SF. (4) 69,648 SF (EXISTING G.F.A)/251,167 SF= 27.9%
- (5) 58,458 SF (PROPOSED G.F.A)/251,167 SF = 23.3% (6) A REDUCTION OF 80SF IN TOTAL IMPERVIOUS COVERAGE IS PROPOSED WITH THIS (7) BUILDING HEIGHT EXCLUDES EXISTING DECORATIVE ARCHITECTURAL ROOFTOP ELEMENT.
- (8) BUILDING HEIGHT EXCLUDES EXISTING DECORATIVE ARCHITECTURAL ROOFTOP ELEMENT AND PROPOSED MECHANICAL ROOM PENTHOUSE. MAXIMUM BUILDING HEIGHT INCLUDING MECHANICAL PENTHOUSE IS 60-5". (V) VARIANCE REQUESTED

MICHAEL R. THOMAS, P.E. DEPARTMENT MANAGER

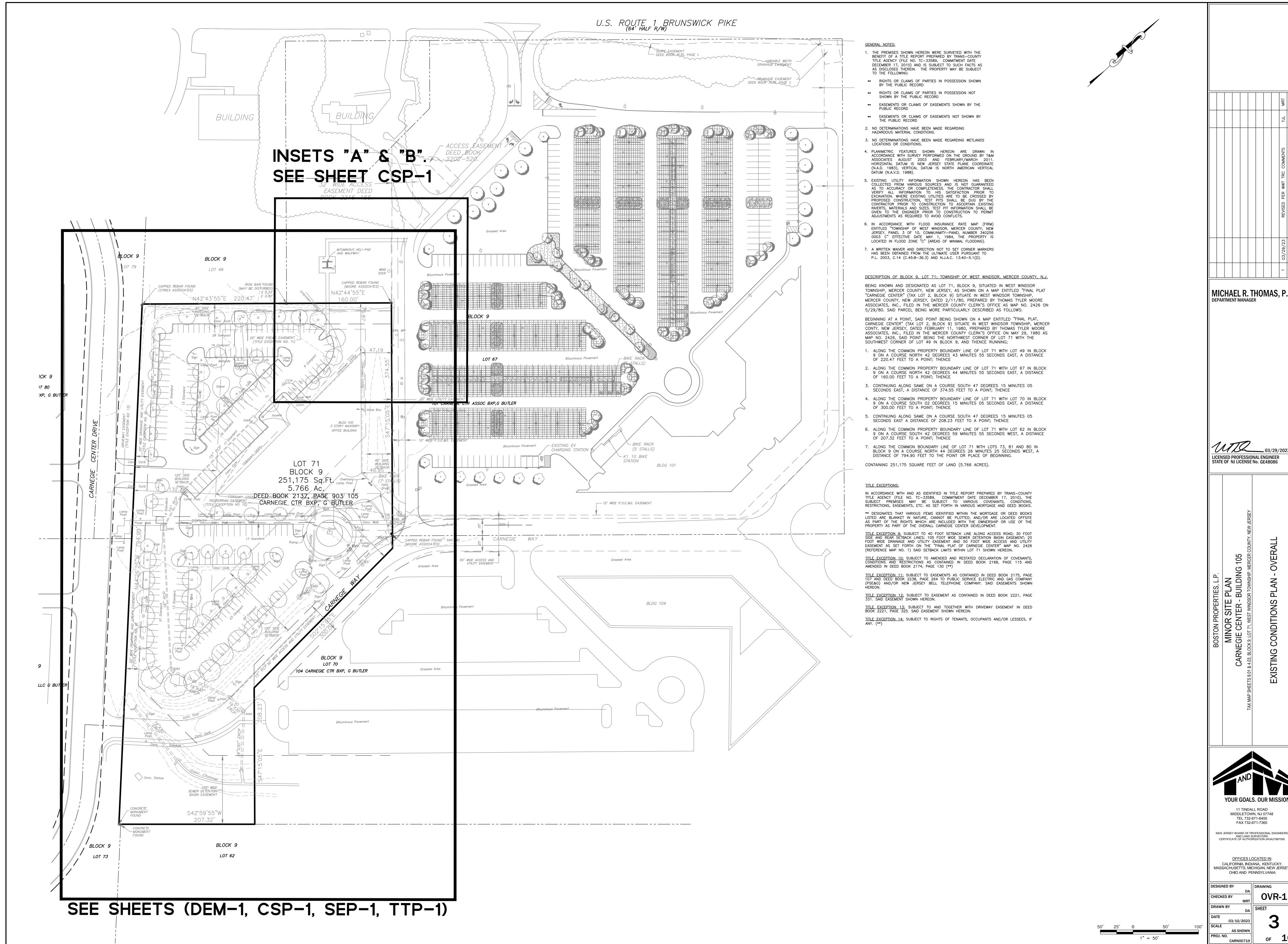
ICENSED PROFESSIONAL ENGINEER STATE OF NJ LICENSE No. GE48086

D

11 TINDALL ROAD MIDDLETOWN, NJ 07748 TEL 732-671-6400 FAX 732-671-7365 NEW JERSEY BOARD OF PROFESSIONAL ENGINEERS AND LAND SURVEYORS CERTIFICATE OF AUTHORIZATION 24GA27987500

OFFICES LOCATED IN: CALIFORNIA, INDIANA, KENTUCKY, MASSACHUSETTS, MICHIGAN, NEW JERSEY, OHIO AND PENNSYLVANIA

DESIGNED BY CHECKED B **DRAWN BY** 03/10/2023



MICHAEL R. THOMAS, P.E.

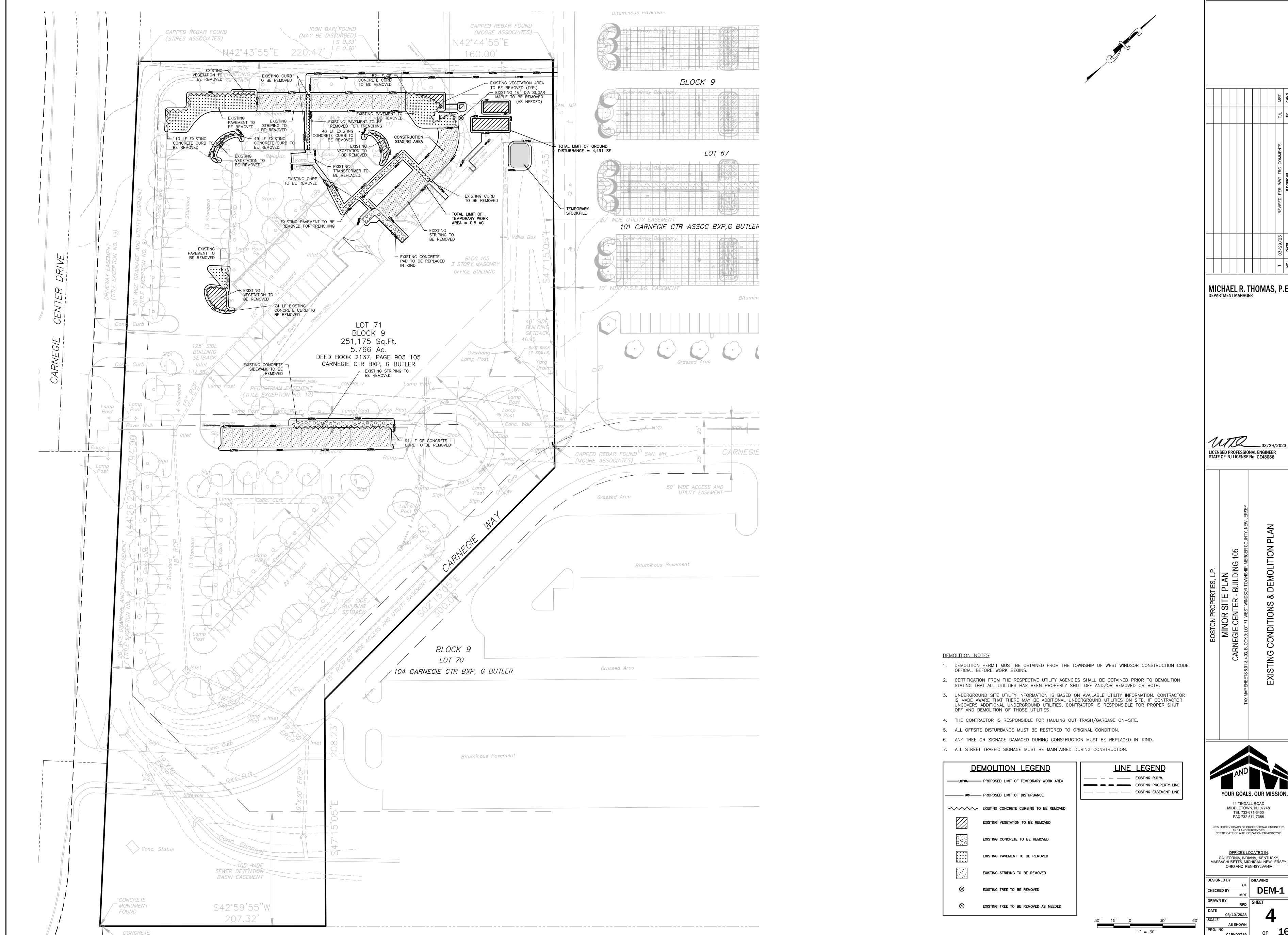
STATE OF NJ LICENSE No. GE48086

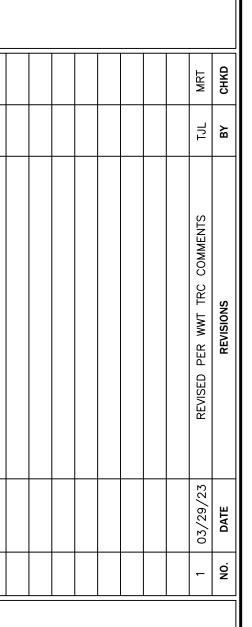


MIDDLETOWN, NJ 07748 TEL 732-671-6400 FAX 732-671-7365

OFFICES LOCATED IN:

MASSACHUSETTS, MICHIGAN, NEW JERSEY





MICHAEL R. THOMAS, P.E. DEPARTMENT MANAGER

LICENSED PROFESSIONAL ENGINEER STATE OF NJ LICENSE No. GE48086

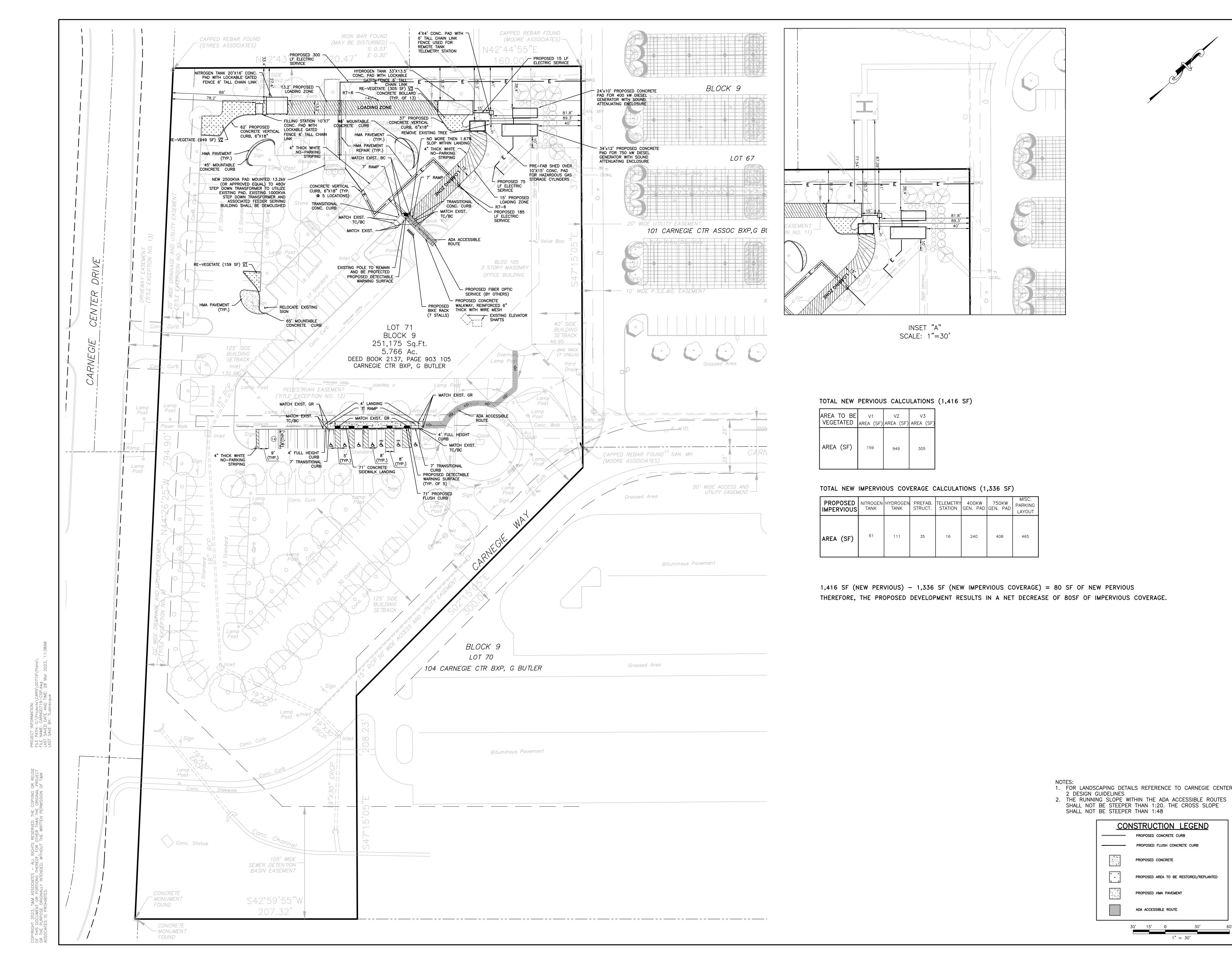


FAX 732-671-7365 NEW JERSEY BOARD OF PROFESSIONAL ENGINEERS

OFFICES LOCATED IN: CALIFORNIA, INDIANA, KENTUCKY,

03/10/2023

AS SHOWN



MICHAEL R. THOMAS, P.E. DEPARTMENT MANAGER

LICENSED PROFESSIONAL ENGINEER STATE OF NJ LICENSE No. GE48086

BOSTON PROPERTIES, L.P.

MINOR SITE PLAN

EGIE CENTER - BUILDING 105

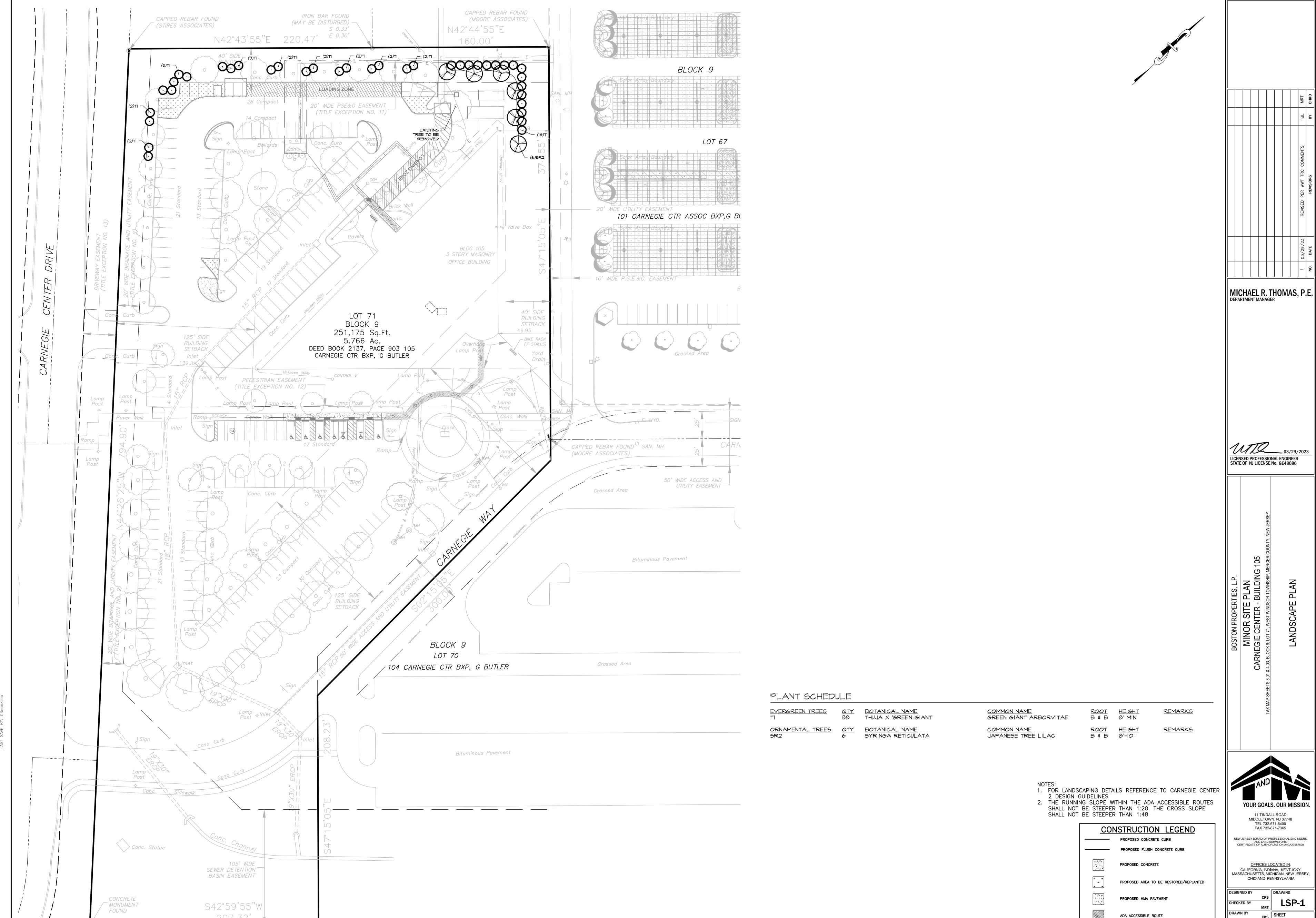
11 TINDALL ROAD MIDDLETOWN, NJ 07748 TEL 732-671-6400

FAX 732-671-7365

NEW JERSEY BOARD OF PROFESSIONAL ENGINEERS AND LAND SURVEYORS CERTIFICATE OF AUTHORIZATION 24GA27987500

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DESIGNED BY CHECKED BY DRAWN BY 03/10/2023

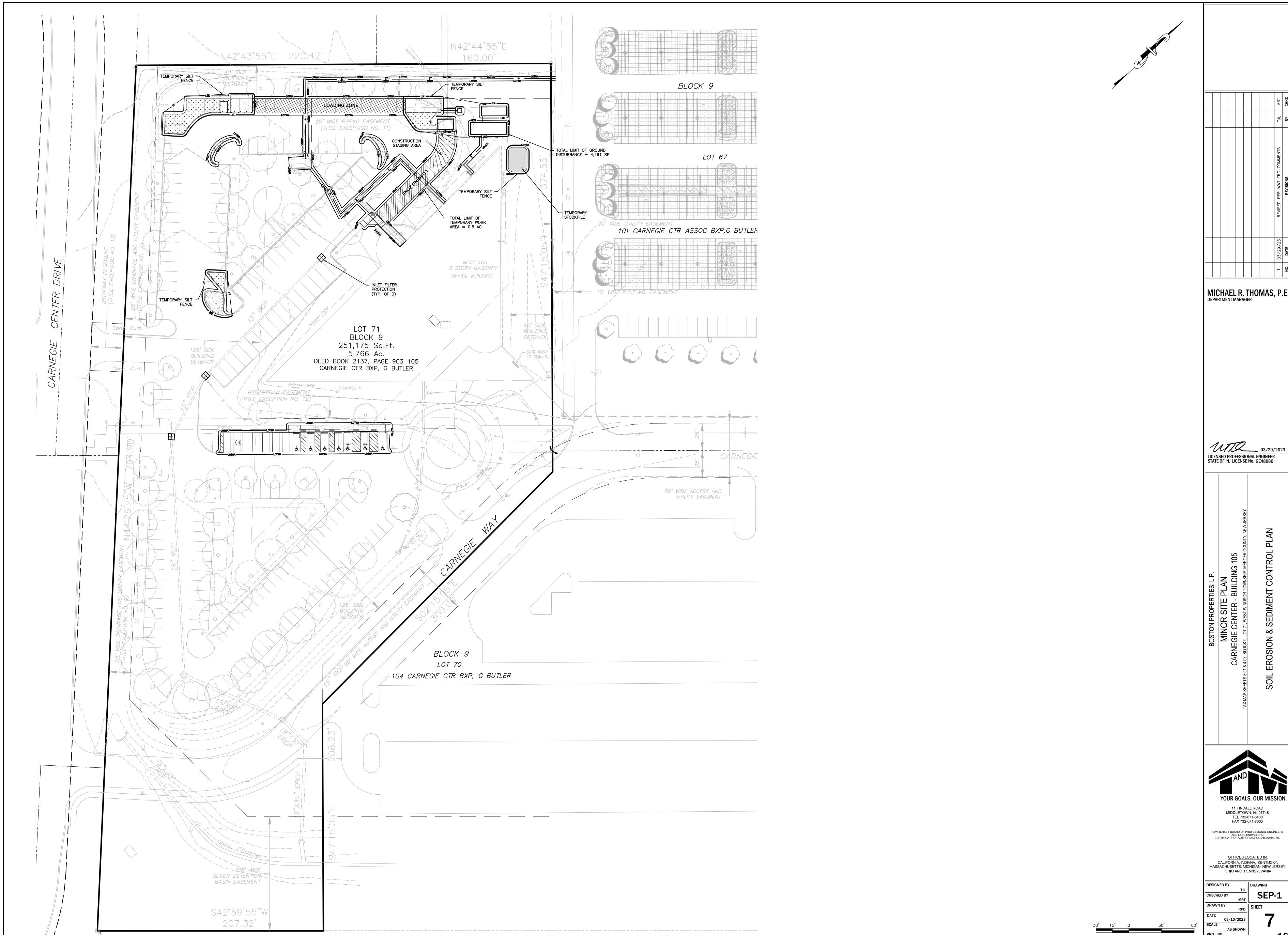


CONCRETE

→ MONUMENT FOUND

CALIFORNIA, INDIANA, KENTUCKY, MASSACHUSETTS, MICHIGAN, NEW JERSEY, OHIO AND PENNSYLVANIA 03/10/2023

AS SHOWN



MICHAEL R. THOMAS, P.E.

LICENSED PROFESSIONAL ENGINEER STATE OF NJ LICENSE No. GE48086



OFFICES LOCATED IN:
CALIFORNIA, INDIANA, KENTUCKY,
MASSACHUSETTS, MICHIGAN, NEW JERSEY, OHIO AND PENNSYLVANIA

03/10/2023

### On exposed soils that have the potential for causing off—site environmental damage. Methods and Materials

### Site Preparation Grade as needed and feasible to permit the use of conventional equipment for seedbed preparation, seeding, mulch application, and mulch anchoring. All grading should be done in accordance with Standards for Land Grading, p. 19-1, for Soil Erosion and Sediment Control in New Jersey (S.S.E.SC.N.J). Install needed erosion control practices or facilities such as diversions, grade <u>Definitio</u> stabilization structures, channel stabilization measures, sediment basins, and waterways. Stabilizing exposed soils with non-vegetative material. See Standard 11 through 42 (S.S.E.S.C.N.J.).

to underground utilities (cables, irrigation systems, etc.). Apply ground limestone and fertilizer according to soil test recommendations such as those offered by Rutgers Cooperative Extension. Soil sample mailers are available from the local Rutgers Cooperative Extension offices. Fertilizer shall be applied at the rate of 500 pounds per acre or 11 pounds per 1,000 square feet of 10-20-10 or equivalent with 50% water insoluble nitrogen unless a soil test indicates otherwise. Apply limestone at the rate of 2 tons/acre unless a soil test indicated otherwise. Calcium carbonate is the equivalent and standard for measuring the ability of liming

materials to neutralize soil acidity and supply calcium and magnesium to grasses and

has been soil composition. This practice is permissible only where there is no danger

gumes. The table below is a general guideline for limestone application.							
TABLE: LIMESTONE* APPLICATION RATE BY SOIL TEXTURE							
SOIL TEXTURE TONS/ACRE LBS./1,000 SQ. FT.							
Clay, clay loam, and high organic soil 3 135							
Sandy loam, loam, silt loam 2 90							
Loamy sand, sand 1 45							
* — Pulverized dolomitic limestone is preferred for most soils south of the New Brunswick—Trenton line.							

Work lime and fertilizer into the soil as nearly as practical to a depth of 4 inches with a disc. springtooth harrow or other suitable equipment. The final harrowing or discing operation should be on the general contour, Inspect seedbed just before seeding. If traffic has left the soil compacted, the area must be retilled as above. Soils high on sulfides or having a pH of 4 or less refer to Standard for Management of High Acid Producing Soils, pg. 1-1 of the Standards for Soil Erosion and Sediment Control in New Jersey. discing operation should be on the general contour. Continue

Seeding
Select seed from recommendations in table.

tillage until a reasonably uniform seedbed is prepared.

	SEEDING RATES (1)  OPTIMUM SEEDING DATE (2)  OPTIMUM SEED DEPTH (4)						
SEED TYPES (POUNDS) Based on Plant Hardiness Zone					ess Zone (3)	(inches)	
	Per 1,000						
COOL SEASON GRASSES							
Perennial Ryegrass	100	1.0	3/15-6/1	3/15/2015	2/15-5/1	0.5	
			8/9-9/15	8/15-10/1	8/15-10/15		
Spring Oats	86	2.0	3/15-6/1	3/1-5/15	2/15-5/1	1.0	
			8/1-9/15	8/15-10/1	8/15-10/15		
Winter Berley	96	2.2	8/1-9/15	8/15-10/1	8/15-10/15	1.0	
Winter Cereal Rye	112	2.8	8/1-11/1	8/1–11/1 5	8/1-12/15	1.0	
WARM SEASON GRASSES							
Pearl Millet	20	0.5	6/1-8/1	5/15-8/1 5	5/1-9/1	1.0	
Millet (German or Hungarian)	30	0.7	6/1-8/1	5/15-8/1 5	5/1-9/1	1.0	
Weeping Lovegrass	5	5.0	6/1-8/1	5/15-8/1 5	5/1-9/1	1.0	
						i	

1) — Seeding rate for warm season grass, shall be adjusted to reflect the amount of Pure Line Seed (PLS) as determined by a germination test result. No adjustment is required for cool season grasses. 2) — May be planted throughout summer if soil moisture is adequate or can be irrigated

(3) — Plant Hardiness Zone (see below) Zone 5b (-10 to -15) Portions of Sussex and Warren Counties Zone 6a (-5 to -10) Portions of Sussex, Warren, Passaic, Morris, Somerset and

Zone 6b (0 to −5) Portions of Bergen, Camden, Essex and Gloucester, Hunterdon, Mercer, Middlesex, Hudson, Monmouth, Ocean, Burlington, Morris, Passaic, Somerset, Union, Atlantic, Cumberland, and Cape May counties. Zone 7a (5 to 0) Portions of Camden, Gloucester, Salem, Cumberland, Cape May, Atlantic, Burlington, Ocean, and Monmouth counties.

Zone 7b (10 to 5) Portions of Cape May, Atlantic, Ocean and Monmouth counties. (4) — Twice the depth for sandy soils Conventional Seeding — Apply seed uniformly by hand, cyclone (centrifugal) seeder, <u>VEGETATIVE COVER</u> — SEE STANDARD FOR TEMPORARY VEGETATIVE COVER, PERMANENT drop seeder, drill or cultipacker seeder. Except for drilled, hydroseeded or cultipacked VEGETATIVE COVER FOR SOIL STABILIZATION, AND PERMANENT STABILIZATION WITH SOD. 3

seedings, seed shall be incorporated into the soil, to a depth of 1/4 to 1/2 inch, by raking or dragging. Depth of seed placement may be 1/4 inch deeper on course Hydroseeding is a broadcast seeding method usually involving a truck or trailer

mounted tank, with an agitation system and hydraulic pump for mixing seed, water and fertilizer and spraying the mix onto the prepared seedbed. Mulch shall not be included in the tank with seed. Short fibered mulch may be applied with a hydroseeder following seeding. Hydroseeding is not a preferred seeding method because seed and fertilizer are applied to the surface and not incorporated into the soil. Poor seed to soil contact occurs reducing seed germination and growth. Hydroseeding may be used for areas too steep may used for areas too steep for conventional SPRINKLING — SITE IS SPRINKLED UNTIL THE SURFACE IS WET. equipment to traverse or too obstructed with rocks, stumps, etc.

After seeding, firming the soil with a corrugated roller will assure good seed-to-soil contact, restore capaillarity, and improve seeding emergence. This is the preferred method. When performing on the contour sheet erosion method. When performed on the contour, sheet erosion will be minimized and water conservation on site will be <u>CALCIUM CHLORIDE</u> — SHALL BE IN THE FORM OF LOOSE, DRY GRANULATES OF FLAKES FINE

Mulching is required on all seeding. Mulch will insure against erosion pbefore grass is established and will promote aster and earlier establishment. (The existence of vegetation sufficient to control soil erosion shall be deemed in compliance with this STONE - COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL. mulchina requirement

Straw or Hay. Unrotted small grain straw, hay free of seeds, or salt hay 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 liquid mulch—binder (tackifying or adhesive agent), the rate of application is 3 tons per acre. Mulch chopperblowers must not grind the mulch. Hay mulch is not recommended for establishing fine turf or lawns due to the presence of weed seed. Application. Spread uniformly b hand mechanically so that approximately 85% of the soil surface will be covered. For uniform distribution of hand-spread mulch, divide area into approximately 1,000 sauare feet sections and distribute 70 to 90 pounds within each section. Anchoring should 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 or the area. steepness of slopes, and costs.

Peg and Twine - Drive 8 to 10 inch wooden pegs to within 2 to 3 inches of the soil surface every 4 feet in in all directions. Stakes may be driven before or after applying mulch. Secure mulch to soil surface by stretching twine between pegs in a criss-cross and square pattern. Secure twine around each peg with two two or more

Mulch Nettings - Staple paper, jute, cotton, or plastic nettings to the soil surface. Use a degradable netting in areas to be mowed.

<u>Crimper (mulch anchoring tool)</u> — A tractor—drawn implement, somewhat like a discharrow, 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 traversed by a tractor, which must operate on the contour of slopes. Straw mulch rate must be 3 tons per acre. No tackifying or or

<u>Liquid Mulch-Binders</u> - May be used to anchor salt hay or straw mulches.

adhesive agent is require.

Applications should be heavier at edges where wind catches the mulch, in valleys, and at crests of banks. Remainder of area should be uniform in appearance.

1) Emulsified asphalt - (SS-1, CSS-1, CMS-2, MS-2, RS-1, RS-2, CRS-1, and CRS-2). Apply 0.04 gal./sq. yd. or 194 gal./acre on flat slopes less than 8 feet high. On slopes 8 feet or more high, use 0.075 gal./sq. yd. or 363 gal./acre. These materials may be difficult to apply uniformly and will discolor surfaces.

(2) 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 conditions as recommended as recommended by the manufacturer to anchor materials. Many new products are available, some of which may need further evaluation for use in this state.

Synthetic binders - High polymer synthetic emulsion, miscible with water when diluted and following application to mulch, drying and curing shall no longer be soluble or dispersible in water. It may be applied at rates recommended by the manufacturer and remain tacky until aermination of arass.

months which are not being graded, not under active construction or not scheduled for B. Wood—fiber or paper—fiber mulch. Shall be made from wood, plant fibers or paper needed for long term protection. 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 Purpose

To permanently stabilize the soil, assuring conservation of soil and water, and to enhance applied by a hydroseeder. This mulch shall not be mixed in the tank with the seed. Use is limited to flatter slopes and during optimum seeding periods in spring and fall.

Pelletized mulch. Compressed and extruded paper and/or wood fiber product, which Slows the overland movement of stormwater runoff, increases infiltration and retains soil may contain co-polymers, tackifiers, fertilizers and coloring agents. The dry pellets, and nutrients on site, protecting streams or other stormwater conveyances. when applied to a seeded area and watered, form a mulch mat. Pelletized mulch shall be applied in accordance with the manufacturers recommendations. Mulch may be applied by hand or mechanical spreader at the rate of 60-75 lbs/1,000 square feet and activated with 0.2 to 0.4 inches of water. This material has been found to be beneficial for use on small lawn or renovation areas, seeded areas where weed-seed free mulch is desired or on sites where straw mulch and tackifier agent are not practical or desirable. Applying the full 0.2 to 0.4 inches of water after spreading pelletized mulch on the seed bed is extremely important for sufficient activation and expansion of the mulch to provide soil coverage.

### STANDARD FOR STABILIZATION WITH MULCH ONLY

needed for a short period until more suitable protection can be applied.

Immediately prior to seeding, the surface should be scarified 6" to 12" where there Purpose

has been soil composition. This practice is permissible only where there is no danger. To protect exposed soil surfaces from erosion damage and to reduce offsite environmental

<u>Water Quality Enhancement</u> Provides temporary mechanical protection against wind or rainfall induced soil erosion until

permanent vegetative cover may be established. his practice is applicable to areas subject to erosion, where the season and other onditions may not be suitable for growing an erosion resistant cover or where stabilization

1. Site Preparation A. Grade as needed and feasible to permit the use of conventional equipment and mulch anchoring. All grading should be done in accordance with Standards for Land Grading,

B. Install needed erosion control practices or facilities such as diversions, grade stabilization structures, channel stabilization measures, sediment basins, and waterways. See Standards 11 through 42. R. Work lime and fertilizer into the soil as nearly as practical to a depth of 4 inches

Unrotted small-grain straw, or salt hay 2.0 to 2.5 tons per acre is spread uniformly at 90 to 115 pounds per 1,000 square feet and anchored with a mulch anchorina to liquid mulch binders, or netting tie down. Other suitable materials may be used if approved by the Soil Conversation District. Asphalt emulsions recommended at the rate of 600 to 1,200 gallons per acre. This is

suitable for a limited period of time where travel by people, animals, or machines is Synthetic or organic soil stabilizers may be used under suitable conditions and in III

<u>Seeding</u> Seed mix shall be as follows: quantities as recommended by the manufacturer. D. Wood-fiber or paper-fiber mulch at the rate of 1,500 pounds per acre (or according to the manufacturer's requirements) may be applied by a hydroseeder.

Mulch netting, such as paper jute, excelsior, cotton, or plastic, may be used F. Woodchips applied uniformly to a minimum depth of 2 inches may be used. Woodchips will not be used on areas where flowing water could wash them into an inlet and plug

G. Gravel, crush stone, or slag at the rate of 9 cubic yards per 1,000 sq. ft. applied uniformly to a minimum depth of 3 inches may be used. Size 2 or 3 (astm c-33) is 3. Mulch anchoring should be accomplished immediately after placement of hay or straw

mulch to minimize loss by wind or water. This may be done by one of the following methods, depending upon the size of the area and steepness of slopes. A. Peg and Drive — Drive 8 to 10 inch peg to within 2 to 3 inches of the soil surface B. every 4 feet in all directions. Stakes may be driven before of after applying mulch. Secure mulch to soil surface by stretching twine between pegs in a cris-cross and square pattern. Secure twine around each peg with two or more round turns.

B. Mulch nettings — Staple paper, cotton, mad plastic nettings over mulch. Use a degradable netting in areas to be mowed. Netting is usually available in rolls 4 feet

C. Crimper Mulch Anchoring Coulter Tool - A tractor-drawn implement especially designed to punch and anchor mulch into the soil surface. This practice affords maximum erosion control, but its use is limited to those slopes upon which the tractor can operate safely. Soil penetration should be about 3 to 4 inches. On sloping land, the

D. Liquid Mulch - Binders 1. Application should be heavier at edge where wind catches the mulch, in valleys, and at crests of banks. Remainder of area should be uniform in appearance.

Emulsified Asphalt – (SS-1, CSS-1, CMS-2, MS-2, RS-1, RS-2, CRS-1, and CRS-2). Apply 0.04 gal/sq/yd or 194 gal/acre on flat areas and on slopes less than 8 ft. of more high, use 0.075 gal/sq/yd or 363 gal/acre. This materials may be difficult to apply uniformly and will discolor surfaces.

Organic and Vegetable Based Binders — Naturally occurring, powder based hydrophilic material that mixed with water formulates a gel and when applied to mulch under satisfactory curing conditions will form membrane networks of insoluble polymers. The vegetable gel shall be physiologically harmless and not result in a phytotoxic effect of impede growth of turfgrass. Vegetable based gels shall be applied at rates and weather

Synthetic Binders - High polymer synthetic emulsion, miscible with water when diluted and following application to mulch, drying and curing shall no longer be soluble or dispersible in water. It shall be applied at rates and weather conditions recommended by the manufacturer and remain tacky until germination of grass.

# **DUST CONTROL NOTES**

THE FOLLOWING METHODS SHOULD BE CONSIDERED FOR CONTROLLING DUST:

MULCHES - SEE STANDARD FOR STABILIZATION WITH MULCHES ONLY (SEE THIS SHEET).

(SEE THIS SHEET). SPRAY-ON ADHESIVES - ON MINERAL SOILS (NOT EFFECTIVE ON MUCK SOILS). KEEP TRAFFIC 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 12 INCHES APART, AND SPRING-TOOTHED HARROWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT.

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 (2) Organic and Vegetable Based Binders — Naturally occurring, powder based, hydrophilic

materials when mixed with water formulates a gel and when applied to mulch under TO FEED THROUGH COMMONLY USED SPREADERS AT A RATE THAT WILL KEEP satisfactory curing conditions will form membraned networks of insoluble polymers. The SURFACE MOIST BUT NOT CAUSE POLLUTION OR PLANT DAMAGE. IF USED ON STEEPER vegetable gel shall be physiologically harmless and not result in a phytotoxic effect or SLOPES, THEN USE OTHER PRACTICES TO PREVENT WASHING INTO STREAMS, OR impede growth of turfgrass. Use at rates and weather conditions as recommended by ACCUMULATION AROUND PLANTS. the manufacturer to anchor mulch materials. Many new products are available, some of which may need further evaluation for use in this state.

TABLE 16-	TABLE 16-1: DUST CONTROL MATERIALS							
MATERIAL	WATER DILUTION	TYPE OF NOZZLE	APPLY GALLONS/ACRE					
ANIONIC ASPHALT EMULSION	7:1	COARSE SPRAY	1200					
LATEX EMULSION	12.5:1 FINE SPRAY		235					
RESIN IN WATER	4:1	FINE SPRAY	235					
POLYACRYLAMIDE (PAM) - SPRAY ON	INSTRUCTIONS. MAY ALSO BE USED AS AN ADDITIVE							
POLYACRYLAMIDE (PAM) - DRY ON	TO SEDIMENT BASINS TO FLOCCULATE AND PRECIPITATE SUSPENDED COLLOIDS.							
ACIDULATED SOY BEAN SOAP STICK NONE COARSE SPRAY 1200								

STANDARD FOR PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION

Establishment of permanent vegetative cover on exposed soils where perennial vegetation is

exposed soils that have a potential for causing off-site environmental damage.

Erosion and Sediment Control in New Jersey.

SOIL TEXTURE

Sandy loam, loam, silt loam

New Brunswick-Trenton line.

KIND OF SEED

BARON' KENTUCKY BLUEGRASS

'PALMER 2' PERENNIAL RYEGRASS

JAMESTOWN 2' CHEWING FESCUSE

'REBEL' JR. TALL FESECUE

with rocks, stumps, etc.

mulching requirement).

conservation on the site will be maximized.

the area, steepness of slopes, and costs.

adhesive agent is required.

Loamy sand, sand

uniform seedbed is prepared.

Clay, clay loam, and high organic soil

Seedbed Preparation

to underground utilities (cables, irrigation systems, etc.).

Grade as needed and feasible to permit the use of conventional equipment for

seedbed preparation, seeding, mulch application, and mulch anchoring. All grading

stabilization structures, channel stabilization measures, sediment basins, and waterways.

See Standards 11 through 42. Standards for Soil Erosion and Sediment Control in New

Immediately prior to seeding, the surface should be scarified 6" to 12" where there

has been soil compaction. This practice is permissible only where there is no danger

Apply ground limestone and fertilizer according to soil test recommendations such as

those offered by Rutgers Cooperative Extension. Soil sample mailers are available from

the local Rutgers Cooperative Extension offices. Fertilizer shall be applied at the rate

of 500 pounds per acre or 11 pounds per 1,000 square feet of 10-20-10 o

equivalent with 50% water insoluble nitrogen unless a soil test indicates otherwise.

Apply limestone in accordance with the table below and the results of soil testina

Calcium carbonate is the equivalent and standard for measuring the ability of limin

materials to neutralize soil acidity and supply calcium and magnesium to grasses an

TABLE: LIMESTONE\* APPLICATION RATE BY SOIL TEXTURE

- Pulverized dolomitic limestone is preferred for most soils south of the

with a disc, springtooth harrow, or other suitable equipment. The final harrowing or

discing operation should be on the general contour. Continue tillage until a reasonably

Immediately prior to seeding, the surface should be scarified 6" to 12" where there

has been soil compaction. This practice is permissible only where there is no danger

to underground utilities (cables, irrigation systems, etc.). D. High acid producing soil.

Soils having a pH of 4 or less or containing iron sulfide shall be covered with a

minimum of 12 inches of soil having a pH of 5 or more before initiating seedbed

SEED MIXTURE #G

Conventional Seeding — Apply seed uniformly by hand, cyclone (centrifugal) seeder

drop seeder, drill or cultipacker seeder. Except for drilled, hydroseeded or cultipacked

seedings, seed shall be incorporated into the soil within 24 hours of seedbed

preparation to a depth of 1/4 to 1/2 inch, by raking or dragging. Depth of seed

Hydroseeding is a broadcast seeding method usually involving a truck or traile

mounted tank, with an agitation system and hydraulic pump for mixing seed, water

and fertilizer and spraying the mix onto the prepared seedbed. Mulch shall not be

included in the tank with seed. Short fibered mulch may be applied with a

hydroseeder following seeding. Hydroseeding is not a preferred seeding method because

seed and fertilizer are applied to the surface and not incorporated into the soil. Poor

seed to soil contact occurs reducing seed germination and growth. Hydroseeding may

be used for areas too steep for conventional equipment to traverse or too obstructed

After seeding, firming the soil with a corrugated roller will assure good seed-to-soi

contact, restore capillarity, and improve seeding emergence. This is the preferred

method. When performed on the contour, sheet erosion will be minimized and water

Mulching is required on all seeding. Mulch will insure 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 compliance with this

Straw or Hay. Unrotted small grain straw, hay free of seeds, or salt hay 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 liquid mulch (tackifying o

adhesive agent), the rate of application is 3 tons per acre. Mulch chopper-blowers

must not grind the mulch. Hay mulch is not recommended for establishing fine turn

or lawns due to the presence of weed seed. Application. Spread uniformly by hand

mechanically so that approximately 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

should be accomplished immediately after placement to minimize loss by wind o

<u>Peg and Twine</u> — Drive 8 to 10 inch wooden pegs to within 2 to 3 inches of the soil surface 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

criss—cross and square pattern. Secure twine around each peg with two or more

Mulch Nettings — Staple paper, jute, cotton, or plastic nettings to the soil surface

<u>Crimper (mulch anchoring tool)</u> — A tractor—drawn implement, somewhat like a lisc—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

<u>Liquid Mulch-Binders</u> - May be used to anchor salt hay or straw mulches.

Applications should be heavier at edges where wind catches the mulch, in valleys, and

at crests of banks. Remainder of area should be uniform in appearance. b. Use one

(1) Emulsified asphalt - (SS-1, CSS-1, CMS-2, MS-2, RS-1, RS-2, CRS-1, and

(3) Synthetic binders — High polymer synthetic emulsion, miscible with water when diluted

and following application to mulch, drying and curing shall no longer be soluble or

dispersible in water. It shall be applied at rates recommended by the manufacturer

Wood-fiber or paper-fiber mulch. Shall be made from wood, plant fibers or pape

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. This mulch shall not be mixed in the tank with the seed

Use is limited to flatter slopes and during optimum seeding periods in spring and fall.

Pelletized mulch. Compressed and extruded paper and/or wood fiber product, which

may contain co-polymers, tackifiers, fertilizers and coloring agents. The dry pellets

when applied to a seeded area and watered, from a mulch mat. Pelletized mulch shall be applied in accordance with the manufacturers recommendations. Mulch may b applied by hand or mechanical spreader at the rate of 60-75 lbs per 1,000 square

feet and activated with 0.2 to 0.4 inches of water. This material has been found t

be beneficial for use on small lawn or renovation areas, seeded areas when

V. <u>Irrigation (</u>where feasible)
If soil moisture is deficient, and mulch is not used, supply new seedings with

adequate water (a minimum of 1/4 inch twice a day until vegetation is well

established). This is especially true when seedings are made in abnormally dry or hot

Since slow release nitrogen fertilizer (water insoluble is prescribed in Section II.A.

Seedbed preparation in this standard, no follow-up of topdressing is mandatory. An exception may be made where gross nitrogen deficiency exists to the extent that turf

failure may develop. In that instance, topdress with 10-10-10 or equivalent at 400

VII. <u>Establishing Permanent Vegetative Stabilization</u>
The quality of permanent vegetation rests with the contractor. The timing of seeding

preparing the seedbed, applying nutrients, mulch and other management are essentia The seed application rate is 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. This rate applies to all methods of seeding.

Establishing permanent vegetation means 80% vegetative cover (of the seeded species)

activation and expansion of the mulch to provide soil coverage.

weed—seed free mulch is desired or on sites where straw mulch and tackifier agent are not practical or desirable. Applying the full 0.2 to 0.4 inches of water after spreading pelletized mulch on the seed bed is extremely important for sufficient

materials may be difficult to apply uniformly and will discolor surfaces.

and remain tacky until germination of grass.

weather or on droughty sites.

pounds per 1,000 square feet.

and mowed once

VI. <u>Topdressing</u>

CRS-2). Apply 0.04 gal./sq. yd. or 194 gal./acre on flat slopes less than 8 feet

high. On slopes 8 feet or more high, use 0.075 gal./sq. yd. or 363 gal./acre. These

water. This may be done by one of the following methods, depending upon the size of

placement may be 1/4 inch deeper on coarse textured soil.

preparation. See standard for Management of High Acid Producing Soils.

1

TONS/ACRE LBS./1.000 SQ. FT.

1.35

MINIMUM APPLICATION RATE

60

50

30

200

% PURITY | % GERMINATION | POUNDS/ACRE

85

legumes. Table below is a general guideline for limestone application rates.

should be in accordance with Standards for Land Grading, p. 19-1, Standards for S

B. Install needed erosion control practices or facilities such as diversions, grade

### MERCER COUNTY SOIL CONSERVATION DISTRICT SOIL EROSION AND SEDIMENT CONTROL NOTES

be mailed, faxed or emailed to:

Phone: 609-586-9603 Fax: 609-586-1117 Email: mercersoil@aol.com 2. If applicable to this project, the owner should be aware of his or her obligation to file for a NJPDES Construction Activity Stormwater 5G3 Permit (NJG0088323) via the NJDEP online permitting system (www.nj.gov/dep/online) and to maintain the associated best management practices and Stormwater Pollution Prevention Plan self—inspection logbook onsite at all times. This permit must be filed prior to the start of soil disturbance. The online application process will require entry of an SCD certification code, which is provided by the Soil Conservation District upon certification of the Soil Erosion and Sediment

3. The Mercer County Soil Conservation District shall be notified of any changes in ownership. 4. Any changes to the Certified Soil Erosion and Sediment Control Plan, including an increase in the limit of disturbance, will require the submission of revised Soil Erosion and Sediment Control Plans to the District for recertification. The revised plans must meet all current State Soil Erosion & Sediment Control STANDARDS.

5. A copy of the certified Soil Erosion and Sediment Control plan shall be maintained on site at all times. 6. All Soil Erosion and Sediment Control practices shall be installed prior to any major soil disturbances, or in their proper sequence as outlined within the Sequence of Construction on the Certified Soil Erosion and Sediment Control Plan, and maintained until permanent protection is established. 7. All work shall be done in accordance with the current STANDARDS for Soil Erosion and Sediment Control in NJ. If language contained within any other permit for this project is more restrictive than (but not contradictory to) what is contained within these notes or on the Certified Soil Erosion and Sediment Control Plan, then the more restrictive permit requirements shall

8. The Standard for Stabilized Construction Access requires the installation of a 1½" to 2½" clean stone tracking pad at all construction driveways immediately after initial site disturbance, whether identified on the certified plan or not. The width shall span the full width of egress, and length shall be 50 ft. or more, depending on site conditions and as required by the STANDARD. This shall include individual lot access points within residential subdivisions. If the egress is to a County road, then a 20 ft. long paved transition shall be provided between the edge of pavement and the stone access pad. 9. A sub—base course will be applied immediately following rough grading and installation of improvements in order to stabilize streets, roads, driveways and parking areas. In areas where no utilities are present, the sub—base shall be installed within 15 days of preliminary grading, provided that all other requirements related to detention basins, swales and the Sequence of

10. Any disturbed areas that will be left exposed more than 14 days and not subject to construction activity will immediately receive temporary stabilization. If the season prevents establishment of a temporary vegetative cover, or if the area is not topsoiled, then the disturbed areas will be mulched with straw, or equivalent material, at a rate of two (2) tons per acre. according to State STANDARDS. Sloped greas in excess of 3H:1V shall be provided with erosion control blankets. Critical areas subject to erosion (i.e. steep slopes, roadway embankments, environmentally sensitive areas) will receive temporary stabilization immediately after initial disturbance or rough grading. 11. Any steep slopes (i.e. slopes greater than 3:1) receiving pipeline or utility installation will be backfilled and stabilized daily

12. Permanent vegetation shall be seeded or sodded on all exposed areas within ten (10) days after final grading and topsoiling. All agronomic requirements contained within the STANDARDS and on the Certified Plan shall be employed. Mulch with binder, in accordance with the STANDARDS, shall be used on all seeded areas. Save all tags and/or bags used for seed, lime and fertilizer, and provide them to the District inspector to verify that mixtures and rates meet the STANDARDS. 13. At the time when the site preparation for permanent vegetative stabilization is going to be accomplished, any soil that will not provide a suitable environment to support adequate vegetative ground cover, shall be removed or treated in such a way that will permanently adjust the soil conditions and render it suitable for vegetative ground cover. If the removal or

have to be employed. 14. During the course of construction, soil compaction may occur within haul routes, staging areas and other project areas. In accordance with the Standard for Topsoiling, compacted surfaces should be scarified 6" to 12" immediately prior to topsoil application. This will help ensure a good bond between the topsoil and subsoil. This practice is permissible only where there is no danger to underground utilities (cables, irrigation systems, etc.).

treatment of the soil will not provide suitable conditions, then non-vegetative means of permanent ground stabilization will

15. Prior to seeding, topsoil shall be worked to prepare a proper seedbed. This shall include raking of the topsoil and removal of debris and stones, along with other requirements of the Standard for Permanent Vegetative Cover for Soil Stabilization. 16. In accordance with the STANDARD for Management of High Acid Producing Soils, any soil having a pH of 4 or less or containing iron sulfides shall be buried with limestone in accordance with the STANDARD and be covered with a minimum of 12" of soil having a pH of 5 or more prior to topsoil application and seedbed preparation. If the area is to receive tree or

shrub plantings, or is located on a slope, then the area shall be covered with a minimum of 24" of soil having a pH of 5 17. Mulching to the STANDARDS is required for obtaining a Conditional Report of Compliance. Conditional ROC's are only issued when the season prohibits seeding. Permanent stabilization must then be completed during the optimum seeding season immediately following the Conditional ROC, or the completion of work in a given area. 18. Hydroseeding is a two-step process. The first step includes seed, fertilizer, lime, etc., along with minimal amounts of mulch

to promote consistency, good seed—to—soil contact, and give a visual indication of coverage. Upon completion of the seeding operation, hydromulch should be applied at a minimum rate of 1500 lbs. per acre in second step. The use of hydro-mulch, as opposed to straw, is limited to optimum seeding dates as listed in the STANDARDS. The use of Hydromulch on sloped 19. The contractor is responsible for keeping all adjacent roads clean during life of the construction project. All sediment

washed, dropped, tracked or spilled onto paved surfaces shall be immediately removed. 20. The developer shall be responsible for remediating any erosion or sediment problems that arise as a result of onaoina construction, and for employing additional erosion and sediment control measures at the request of the Mercer County S 21. Conduit Outlet Protection must be installed at all required outfalls prior to the drainage system becoming operational.

22. All detention / retention basins must be fully constructed (inclusive of all structural components and liners) and permanently stabilized prior to paving or prior to the addition of any impervious surfaces. Permanent stabilization includes, but may not be limited to: topsoil, seed, straw mulch and binders or erosion control blankets on all seeding, all agronomic requirements as specified on the Certified Soil Erosion and Sediment Control Plan, installation of the outflow control structures and discharge storm drainage piping, low flow channels, conduit outlet protection, emergency spillways, and lap ring protection. 23. The riding surface of all utility trenches within paved areas shall be 3/4" clean stone or base pavement until such time as

final pavement has been installed. Temporary soil riding surfaces are prohibited. 24. All construction dewatering (trenches, excavations, etc.) must be done through an inlet or outlet filter in accordance with the Standard for Dewatering or as depicted on the Certified Soil Erosion and Sediment Control Plan. Discharge dewatering operation must contain perennial vegetation or similar stable surface. 25. All swales or channels that will receive runoff from paved surfaces must be permanently stabilized prior to the installation of

of a Certificate of Occupancy or Temporary Certificate of Occupancy, respectively.

pavement. If the season prohibits the establishment of permanent stabilization, the swales or channels may be temporarily stabilized in accordance with the STANDARDS. 26. NJSA 4:24-39 et seq. requires that no Certificate of Occupancy or Temporary Certificate of Occupancy be issued by the Municipality before the provisions of the Certified Soil Erosion and Sediment Control Plan have been satisfied. Therefore, all site work for site plans and all work around individual lots in subdivisions must be completed before the District issues a Report of Compliance or Conditional Report of Compliance, which must be forwarded to the Municipality prior to the issuance

1. The Mercer County Soil Conservation District shall be notified 48 hours prior to starting land disturbance activity. Notice may MCSCD, 508 Hughes Drive, Hamilton Square, NJ 08690

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зинэ	ВУ	REVISIONS	DATE
MRT	TJL	REVISED PER WWT TRC COMMENTS	03/29/23

MICHAEL R. THOMAS. P.E. DEPARTMENT MANAGER

ICENSED PROFESSIONAL ENGINEER STATE OF NJ LICENSE No. GE48086

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11 TINDALL ROAD MIDDLETOWN, NJ 07748 TEL 732-671-6400 FAX 732-671-7365

NEW JERSEY BOARD OF PROFESSIONAL ENGINEERS

AND LAND SURVEYORS CERTIFICATE OF AUTHORIZATION 24GA27987500

OFFICES LOCATED IN: CALIFORNIA. INDIANA. KENTUCKY. MASSACHUSETTS MICHIGAN NEW JERSEY OHIO AND PENNSYLVANIA

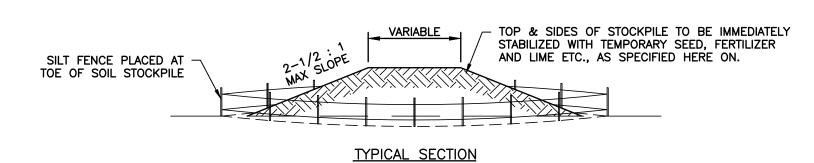
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### GENERAL NOTES

- 1. ALL TREES WITHIN 25' OF THE CONSTRUCTION LIMITS SHALL BE PROTECTED FROM DAMAGE.
- 2. NO BOARDS OR OTHER MATERIALS MAY BE NAILED OR OTHERWISE ATTACHED TO ANY TREE DURING CONSTRUCTION.
- 3. NO FEEDER ROOTS WITHIN THE PROTECTION ZONE SHALL BE CUT OR DISTURBED.
- 4. DAMAGED TRUNKS OR ROOTS SHALL HAVE DAMAGED BARK REMOVED IMMEDIATELY. NO TREE PAINT SHALL BE APPLIED. EXPOSED ROOTS SHALL BE COVERED WITH TOPSOIL. WHERE DAMAGED, CONTRACTOR SHALL CUT THE ROOT CLEANLY. FOR SERIOUS DAMAGE, A PROFESSIONAL ARBORIST SHALL BE CONSULTED.
- SHALL BE CONSULTED.

  5. WHERE NECESSARY, TREE BRANCHES SHALL BE PRUNED TO NATURAL TARGETS.
- 6. TO DETERMINE THE CRITICAL ROOT RADIUS, OR PROTECTION ZONE, THE SUBJECT TREE SHALL BE MEASURED 4.5' ABOVE GRADE ON THE UPHILL SIDE OF THE TREE. FOR YOUNG, HEALTHY, AND TOLERANT SPECIES, 1' PROTECTION RADIUS SHALL BE PROVIDED FOR EACH INCH OF TREE TRUNK DIAMETER. FOR OLDER, STRESSED, OR SENSITIVE SPECIES, 1.5" OF PROTECTION RADIUS SHALL BE PROVIDED FOR EACH INCH OF TRUNK DIAMETER.
- 7. TREE PROTECTION FENCING SHALL BE INSTALLED AT THE LIMIT OF THE CRITICAL ROOT RADIUS.

  TREE PROTECTION DURING CONSTRUCTION



NOTE: STOCKPILES TO BE SITE IN FIELD

TEMPORARY TOPSOIL STOCKPILE

# STANDARD FOR DEWATERING

# DEFINITION

The removal and discharge of sediment—laden water from an excavated area, construction site or sediment basin.

# PURPOSE

To properly remove suspended sediments and water from areas through filtration and/or settlement prior to discharging water to a receiving water course or body.

<u>CONDITIONS WHERE PRACTICE APPLIES</u>

# During construction excavated facilities need to be dewatered to facilitate or complete the construction process. The water pumped out of the excavated areas contain sediments that must be removed prior to the discharging to receiving bodies of water. This standard does not address the removal of ground water through well points etc. This standard describes the following practices for the removal of sediment-laden waters from excavation areas: removable pumping stations, sump pits, portable

sedimentation tanks and silt control bags

WATER QUALITY ENHANCEMENT

Water discharged from excavated areas on construction sites may be a significant contributor of sediment to surface waters during construction. Water must be removed and disposed of in order for

construction to move forward. Typically, water is pumped or containment berms are breached and sediment laden waters are permitted to flow uncontrolled into surface waters such as streams or lakes.

# By employing practices described in this standard, the majority of sediment suspended in water may easily be removed prior to leaving the site. Filters and materials described herein are readily available and are easy to install and maintain.

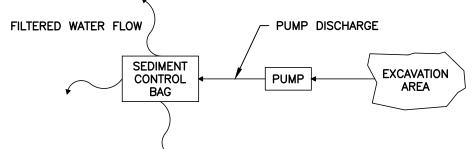
- DESIGN CRITERIA

  1. Sediment Tank/Silt Control Bags are containers through which sediment laden water is pumped to trap and retain the sediment. A sediment tank or a silt control bag is to be used on sites where excavations are deep, and space is limited and where direct discharge of sediment laden water to steam and storm drainage systems is to be avoided.
- A. Location. Containers(tanks or bags) shall be located for ease of clean—out and disposal of the trapped sediment and to minimize interference with construction activities and pedestrian traffic. Bags shall no be placed directly into receiving waters.

Construction Specifications

- B. <u>Tank size</u>. The following formula should be used in determining the storage volume of the tank: 1 cubic foot of storage for each gallon per minute of pump discharge capacity. typical tank configuration is shown on Detail 14-3. Tanks may be connected in series to increase effectiveness.
- C. Tanks consist of two concentric circular pipes (CMP), attached to a watertight baseplate. The inner CMP is perforated with 1" holes on 6" centers and is wrapped with geotextile and hardware cloth. Pumped water is discharged into the inner CMP where it flows through the geotextile into the space between the two CMPs. A discharge line is attached to the outer CMP and draws filtered water from the annulus between the two concentric CMPs. The discharge line may be connected to another tank where it drains to the inner CMP of the second tank. This series connection may be continued indefinitely.
- series connection may be continued indefinitely.

  D. Sediment Control Bags must be located away from receiving waters and disposed of according to manufacturer's instructions.

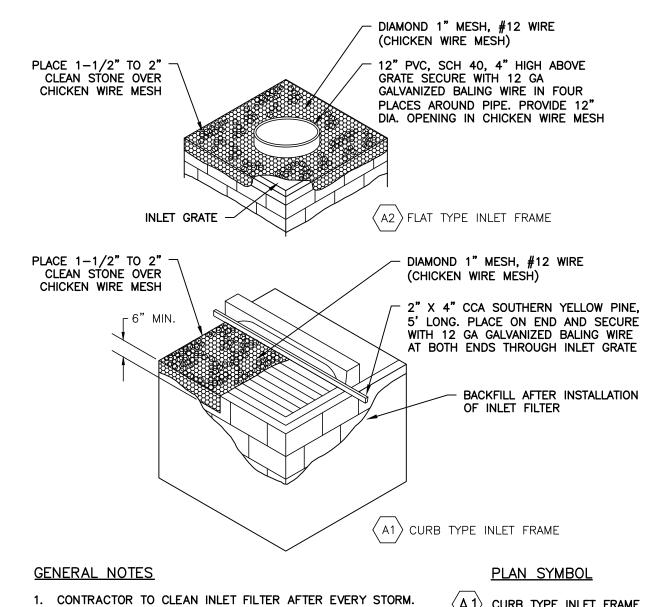


# GENERAL NOTES

- 1. BAG MUST BE LOCATED AWAY FROM RECEIVING WATERS AND FILTER FARRIC TO ENHANCE SEDIMENT OF
- BAG MAY BE SURROUNDED BY STAKED HAY BALES AND FILTER FABRIC TO ENHANCE SEDIMENT CAPTURE.
   BAGS MUST BE DISPOSED OF ACCORDING TO MANUFACTURERS INSTRUCTIONS.
- 4. BAGS MAY NOT BE REUSED.

SEDIMENT CONTROL BAG FOR DEWATERING

NOTE: USE ONLY IF & WHERE DIRECTED



1. CONTRACTOR TO CLEAN INLET FILTER AFTER EVERY STORM.

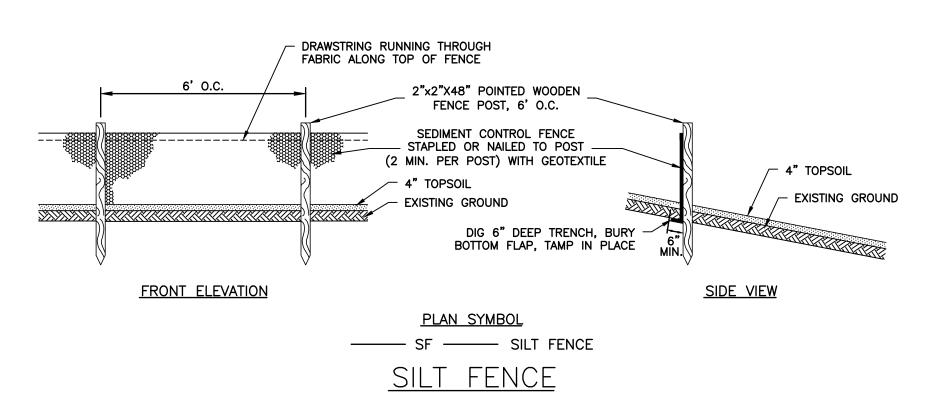
2. FILTER FABRIC, WOOD PIECE OR PVC PIPE TO BE REMOVED AFTER PAVING OR FINAL GRADING AND ESTABLISHMENT OF VEGETATION.

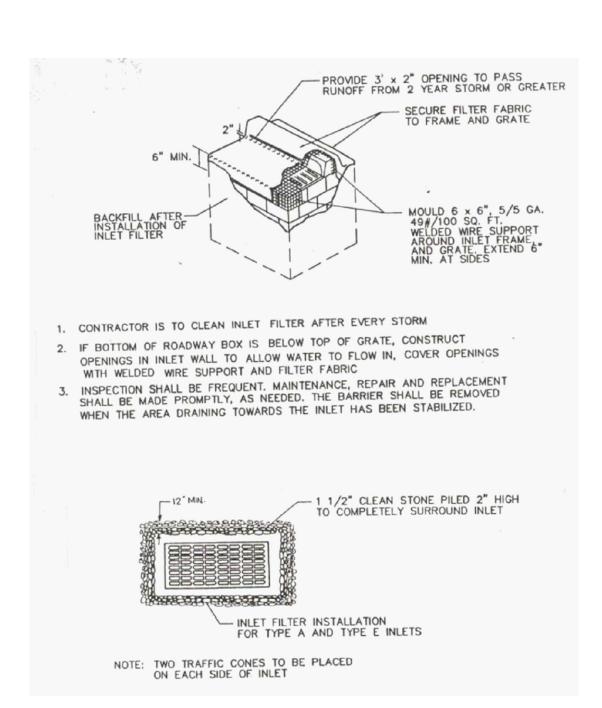
(A 1) CURB TYPE INLET FRAME

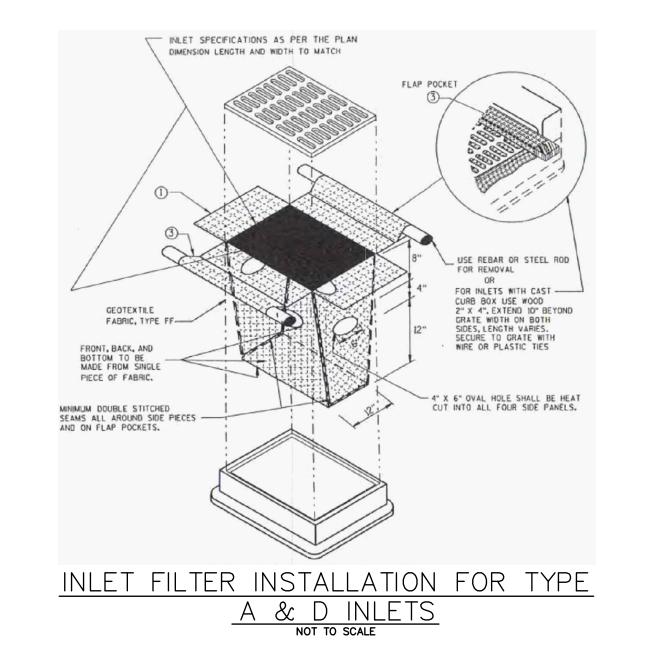
(A 2) FLAT TYPE INLET FRAME

3. FILTER FABRIC SHALL BE MIRAFI 140N, OR APPROVED EQUAL.

INLET FILTER PROTECTION







1 03/29/23 REVISED PER WWT TRC COMMENTS TJL MRT

NO. DATE BY CHKD

MICHAEL R. THOMAS, P.E.

LICENSED PROFESSIONAL ENGINEER STATE OF NJ LICENSE No. GE48086

CARNEGIE CENTER - BUILDING 105
ETS 8.01 & 4.03, BLOCK 9; LOT 71, WEST WINDSOR TOWNSHIP, MERCER COUNTY, NEW JERSEY
IL EROSION & SEDIMENT CONTROL DETAILS



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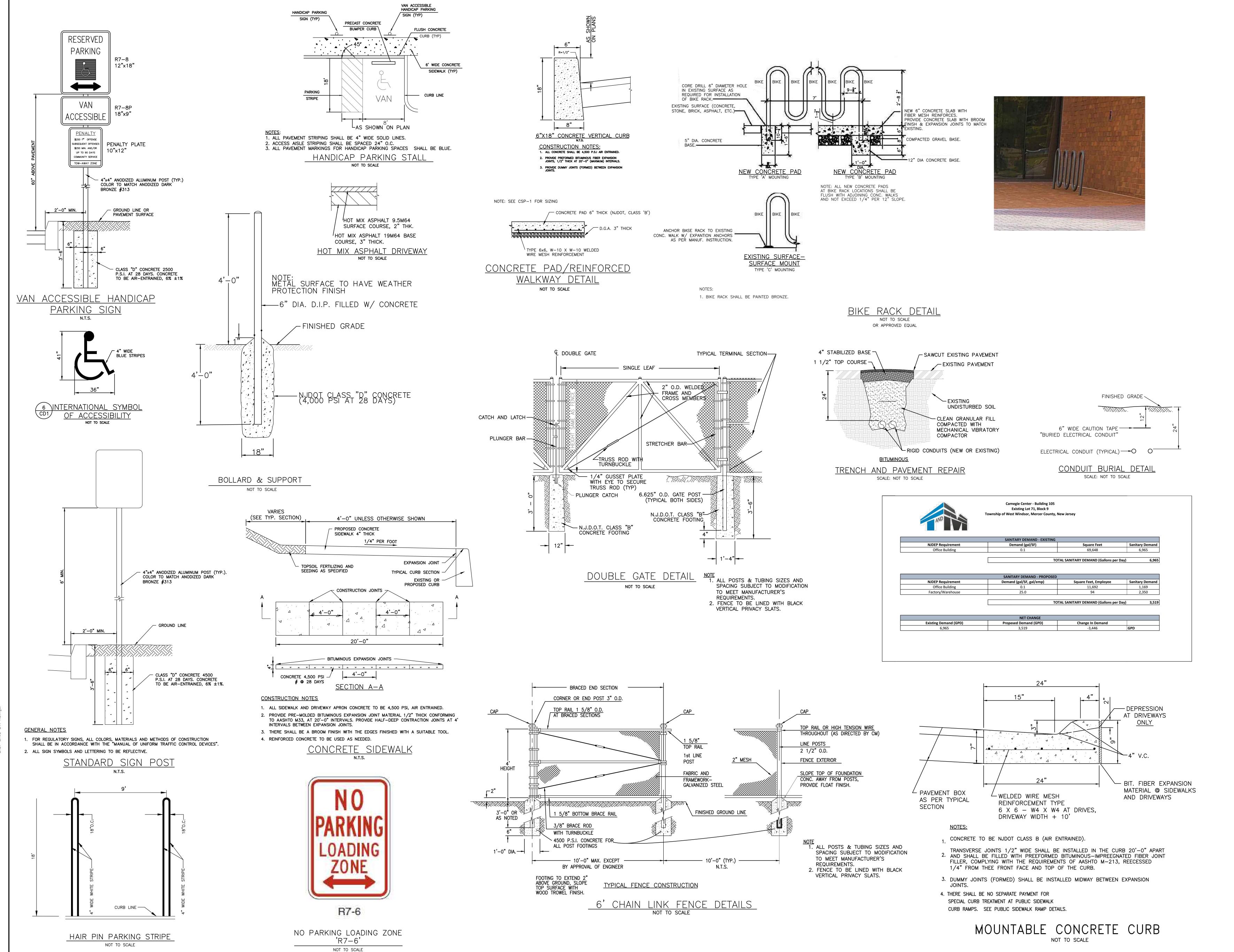
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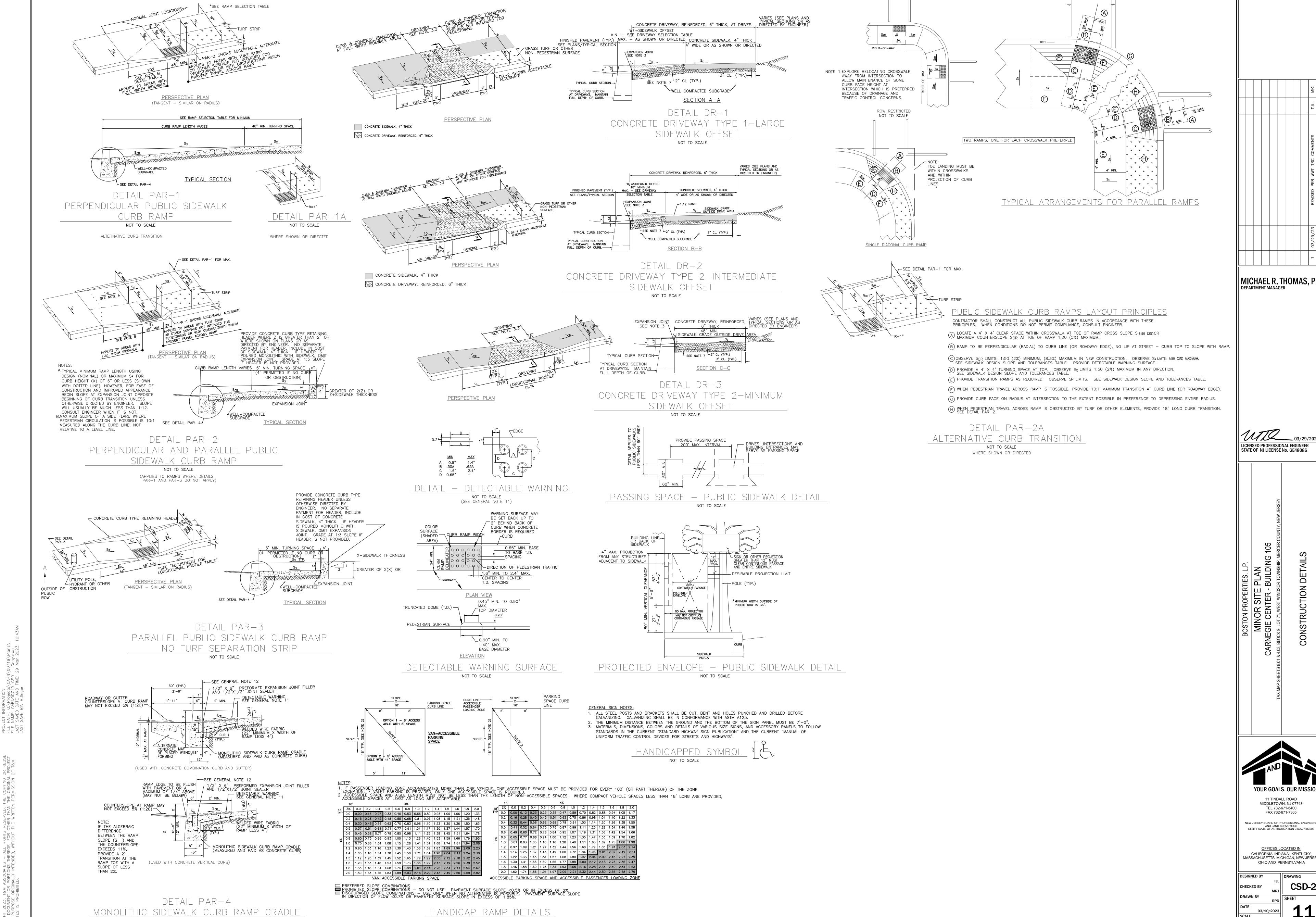
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CSD-2 **SHEET** 03/10/2023 SCALE AS SHOWN

CARN00719

PACKAGE	PERFORMANCE	

Standby & Prime: 60Hz

Performance	Standby	Prime
Frequency	60	O Hz
Genset Power Rating	938 kVA	850 kVA
Genset power rating with fan @ 0.8 power factor	750 ekW	680 ekW
Emissions	EPA	TIER II
Performance Number	EM3842	EM3843
Fuel Consumption		
100% load with fan, L/hr (gal/hr)	205.5 (54.2)	188.5 (49.7)
75% load with fan, L/hr (gal/hr)	164.3 (43.4)	146.3 (38.6)
50% load with fan, L/hr (gal/hr)	108.9 (28.7)	100.3 (26.5)
25% load with fan, L/hr (gal/hr)	63.5 (16.7)	59.4 (15.6)
Cooling System <sup>1</sup>		
Radiator air flow restriction (system), kPa (in. Water)	0.12 (0.48)	0.12 (0.48)
Radiator air flow, m³/min (cfm)	900 (31783)	900 (31783)
Engine coolant capacity, L (gal)	20.8 (5.5)	20.8 (5.5)
Radiator coolant capacity, L (gal)	77 (20.3)	77 (20.3)
Total coolant capacity, L (gal)	97.8 (25.8)	97.8 (25.8)
Inlet Air		
Combustion air inlet flow rate, m³/min (cfm)	67.3 (2376)	65.6 (2316)
Max. Allowable Combustion Air Inlet Temp, °C (°F)	49 (120)	49 (120)
Exhaust System		
Exhaust stack gas temperature, °C (°F)	452.9 (847.2)	432.9 (811.2)
Exhaust gas flow rate, m³/min (cfm)	170.7 (6028)	161 (5686)
Exhaust system backpressure (maximum allowable) kPa (in. water)	10.0 (40.0)	10.0 (40.0)
Heat Rejection		
Heat rejection to jacket water, kW (Btu/min)	225 (12795)	208 (11828)
Heat rejection to exhaust (total) kW (Btu/min)	714 (40604)	664 (37761)
Heat rejection to aftercooler, kW (Btu/min)	272 (15468)	253 (14387)
Heat rejection to atmosphere from engine, kW (Btu/min)	142 (8075)	123 (6995)

# Cat® C18 DIESEL GENERATOR SETS

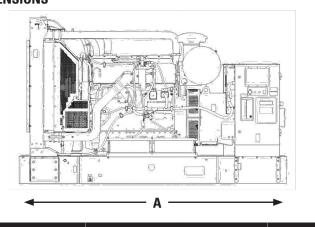
Emissions (Nominal) <sup>2</sup>			Standb	у	Prime		
NOx, mg/Nm³ (g/hp-hr)			2468 (5.4	12)	2213 (4.91)		
CO, mg/Nm³ (g/hp-hr)			100.1 (0.2	22)	75.6 (0.17)		
HC, mg/Nm³ (g/hp-hr)		23.5 (0.06)			24.1 (0.06)		
PM, mg/Nm³ (g/hp-hr)		11.7 (0.03)			10.6 (0.03)		
Alternator³							
Voltages	208V		220V	240V	480V	600V	
Motor starting capability @ 30% Voltage Dip	1917 skV	Ά	2129 skVA	2501 skVA	2512 skVA	2512 skVA	
Current	208V 1917 skV/ 2602.2 am		2460.3 amps	2512 amps	1127.6 amps	902.1 amps	
ges 20 r starting capability @ 30% Voltage Dip 1917			1.070041	1.070041	1.070041	1.030041	

AREP

### **WEIGHTS & DIMENSIONS**

Excitation

Temperature Rise



130 °C | 130 °C | 130 °C | 105 °C | 130 °C

CAT®

AREP

**CAT**®

Tool Set.

Dim "A" mm (in) Dim "B" mm (in) Dry Weight kg (lb) 3512 (138) 1746 (69) 2322 (92) 4863 (10721)

### **APPLICABLE CODES AND STANDARDS:**

AS1359, CSA C22.2 No100-04, UL142, UL489, UL869, UL2200, NFPA37, NFPA70, NFPA99, NFPA110, IBC, IEC60034-1, ISO3046, ISO8528, NEMA MG1-22, NEMA MG1-33, 2006/95/EC, 2006/42/EC, 2004/108/EC. Note: Codes may not be available in all model configurations. Please consult your local Cat Dealer representative for availability.

**STANDBY:** Output available with varying load for the duration of the interruption of the normal source power. Average power output is 70% of the standby power rating. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year. **PRIME:** Output available with varying load for an unlimited time. Average power

output is 70% of the prime power rating. Typical peak demand is 100% of prime rated ekW with 10% overload capability for emergency use for a maximum of 1 hour in 12. Overload operation cannot exceed 25 hours per year RATINGS: Ratings are based on SAE J1349 standard conditions. These ratings also apply at ISO3046 standard conditions.

### **DEFINITIONS AND CONDITIONS** <sup>1</sup> For ambient and altitude capabilities consult your Cat dealer. Air flow restriction

(system) is added to existing restriction from factory. <sup>2</sup> Emissions data measurement procedures are consistent with those described in EPA CFR 40 Part 89, Subpart D & E and ISO8178-1 for measuring HC, CO, PM, NOx. Data shown is based on steady state operating conditions of 77° F, 28.42 in HG and number 2 diesel fuel with 35° API and LHV of 18,390 BTU/lb. The nominal emissions data shown is subject to instrumentation, measurement, facility and engine to engine variations. Emissions data is based on 100% load and thus cannot be used to compare to EPA regulations which use values based

on a weighted cycle. <sup>3</sup> UL 2200 Listed packages may have oversized generators with a different temperature rise and motor starting characteristics. Generator temperature rise is based on a 40° C ambient per NEMA MG1-32.

# **LET'S DO THE WORK.**

LEHE1772-04 (05/20)

Materials and specifications are subject to change without notice. The International System of Units (SI) is used in this publication.

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# DIESEL GENERATOR SET CAT C18 ENGINE SERIES

NOT TO SCALE NOTE: PROPOSED DIESEL GENERATOR SHALL INCLUDE SOUND ATTENUATING ENCLOSURE.

# Cat® C15 DIESEL GENERATOR SETS



# **BENEFITS & FEATURES**

LEHE1772-04

# CAT® GENERATOR SET PACKAGE

Cat generator set packages have been fully prototype tested and certified torsional vibration analysis reports are available. The packages are designed to meet the NFPA 110 requirement for loading, conform to the ISO 8528-5 steady state and fill transient response requirements.

# **CAT DIESEL ENGINES**

The four-cycle Cat diesel engine combines consistent performance with excellent fuel economy and transient response that meets or exceeds ISO 8528-5. The engines feature a reliable, rugged, and durable design that has been field proven in thousands of applications worldwide in emergency standby installations.

# **COOLING SYSTEM**

The cooling system has been designed and tested to ensure proper generator set cooling, and includes the radiator, fan, belts, and all guarding installed as standard. Contact your Cat dealer for specific ambient and altitude capabilities.

# The generators used on Cat packages have been designed and

LEHE1574-02

tested to work with the Cat engine. The generators are built with robust Class H insulation and provide industry-leading motor starting capability and altitude capabilities.

# EMCP CONTROL PANELS

The EMCP controller features the reliability and durability you have to come to expect from your Cat equipment. The EMCP 4 is a scalable control platform designed to ensure reliable generator set operation, providing extensive information about power output and engine operation. EMCP 4 systems can be further customized to meet your needs through programming and expansion modules.

# 350ekW - 500ekW

60 Hz						
ndby	Prime					
ekW	320 ekW					

	Standby	Prime	
	350 ekW	320 ekW	
	400 ekW	365 ekW	
	450 ekW	410 ekW	
	500 ekW	455 ekW	
SF	ECIFICATIONS		

or control to						
ENGINE SPECIFICATIO	NS					
Engine Model	Cat® C15 ACERT In-line 6, 4-cycle die					
Bore x Stroke	137mm x 171mm (5.4in x 6.8in)					
Displacement	15.2 L (928 in³)					
Compression Ratio	16.1:1					
Aspiration	Turbocharged Air-to-Air Aftercooled					
	Ĭ					

Electronic ADEM™A4

EPA TIER III

# GENERATOR SET SPECIFICATIONS

Emission

Certifications

JENEKATUK SET SPECIFICA	ATTUNS
Alternator Design	Brushless Single Bearing, 4 Pole
Stator	2/3 Pitch
No. of Leads	12
Available Voltage Options	600/480/440/240/220V
Frequency	60Hz
Alternator Voltage	24V
Alternator Insulation & IP	Class H; IP23
Standard Temperature Rise	125/130 Deg C
Available Excitation Options	Self-Excited, PMG
Voltage Regulation, Steady State +/-	≤1%

# Cat® C15 DIESEL GENERATOR SETS

STANDARD EQUIF	PMENT	OPTIONALEQUIPMENT			
Air inlet system	Aftercooler core. Turbocharger	Air inlet system	Single/Dual Element Air Cleaner Heavy Duty Air Cleaner		
Control panels  Cooling system	EMCP4.2 control panel.  Coolant drain line with valve; terminated on edge of base. Fan and belt guards. Coolant Level Sensor Thermostats and housing, full open temperature 92 deg C (198 deg F).	Control panels	EMCP 4.4 Local Annunciator Remote Annunciators Discrete I/O Module Device Server Volt Free Contact Earth (Ground) Fault Relay		
Exhaust system	Coolant level sight gauge. Jacket water pump, gear driven, centrifugal. Caterpillar Extended Life Coolant.  Exhaust manifold; dry.	Circuit Breakers	3-Pole 100% Rated — Single (Manual & Motorized). 3-Pole 100% Rated — Dual & Third (Manu External Paralleling Auxiliary Contacts		
LAHdust System	Primary fuel filter w/integral water separator & secondary filter.	Enclosures	Neutral Bar Sound Attenuated (SA). Weather Protective		
Fuel system	Fuel cooler. Fuel priming pump.	Cooling system	Stone guards.		
	Flexible fuel lines. Engine fuel transfer pump	Mufflers	Industrial grade (10 dBA) Residential and Critical grade (25 dBA)		
Generators and	Brushless, self-excited 2/3 pitch, random wound. IP23 Protection.	Base / Fuel Tank	Audio & Visual Fuel Alarm		
generator attachments	Insulation Class H and temperature rise Power centre, IP22 bottom cable entry	Fuel System	Integral 670 Gal Tank Base Sub Tank Bases: 660, 1000, 1900, 2200 G		
Governing system	Segregated low voltage wiring pane Cat Electronic Governor (ADEM A4).	Generators and	Excitation — Self Excitation — Internal / AREP / PMG		
Protection System	Safety Shutoff – High Water Temperature Safety Shutoff – Low Oil Pressure Safety Shutoff – Overspeed Coolant Level Sensor	generator attachments	Oversize Coastal Protection (CIP) Space Heater Control		
	Narrow Skid Wide / Standard	Starting/charging system	Standard Battery Set Oversize Battery Set.		
Base / Fuel Tank	Sub Tank Base — UL & ULC Listed Integral Tank Base — UL & ULC Listed Spill Containment Overfill Prevention Valve	Certifications	UL2200 Listed CSA 22.2 Certification of Compliance — IBC Seismi Certification of Compliance — IBC Seismi		
Starting/charging	24-Volt Electric Starting Motor		and OSHPD		

Charging Alternator

Certifications EPA Stationary Emergency Use

# **WEIGHTS & DIMENSIONS** $\leftarrow$ B $\rightarrow$ $\leftarrow$ $\rightarrow$

# **350 ekW** | 3476 (137) | 1628 (64) | 2128 (84) | 3939 (8683) **400 ekW** 3476 (137) 1628 (64) 2128 (84) 4066 (8963) **500 ekW** 3476 (137) 1628 (64) 2128 (84) 4365 (9623)

DIESEL GENERATOR SET CAT C15

1/9

ENGINE SERIES NOT TO SCALE

LEHE1574-02

NOTE: PROPOSED DIESEL GENERATOR SHALL INCLUDE SOUND ATTENUATING ENCLOSURE.

# 12.5 FT GROUNDING BLOCK

NOTE:
(1) ENCLOSURE DESIGNED TO REDUCE SOURCE NOISE TO 65 DBA AT 23' 8PT AVERAGE. (2) APPROX. WEIGHT: 27,000 LBS. (3) FUEL TANK CAPACITY 24 HR RUNTIME= 360 USABLE GALLONS. (4) CONTRACTOR TO USE SOUND ATTENUATING ENCLOSURE DESIGNED BY ROBINSON, INC. OR APPROVED EQUAL. (5) CONTRACTOR TO VERIFY 65 DBA MAXIMUM NOISE CRITERIA AT PROPERTY LINE FOLLOWING

INSTALLATION.

BATTERY CHARGER-

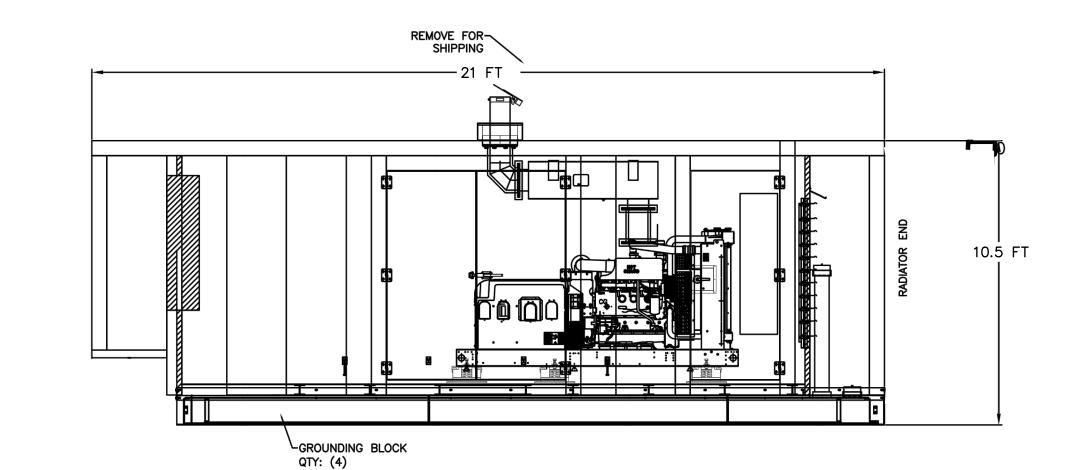
NQ PANEL BOARD 100A, 120/240V, 1ø

8.5 FT

# CAT C18 SOUND ATTENUATING ENCLOSURE

NOT TO SCALE

BATTERY CHARGER-NQ PANEL BOARD 100A, 120/240V, 1ø 6.75 FT 答



(1) ENCLOSURE DESIGNED TO REDUCE SOURCE NOISE TO 65 DBA AT 23' 8PT AVERAGE. (2) APPROX. WEIGHT: 27,000 LBS. (3) FUEL TANK CAPACITY 24 HR RUNTIME= 360 USABLE GALLONS. (4) CONTRACTOR TO USE SOUND ATTENUATING ÈNCLOSURE DESIGNED BY ROBINSON, INC. OR APPROVED EQUAL.

(5) CONTRACTOR TO VERIFY 65 DBA MAXIMUM

NOISE CRITERIA AT PROPERTY LINE FOLLOWING

INSTALLATION.

CAT C15 SOUND ATTENUATING ENCLOSURE

NOT TO SCALE

MICHAEL R. THOMAS, P.E. DEPARTMENT MANAGER

LICENSED PROFESSIONAL ENGINEER STATE OF NJ LICENSE No. GE48086

NG

MINOR SITE PLAN
GIE CENTER - BUILDIN

11 TINDALL ROAD MIDDLETOWN, NJ 07748 TEL 732-671-6400 FAX 732-671-7365

NEW JERSEY BOARD OF PROFESSIONAL ENGINEERS AND LAND SURVEYORS CERTIFICATE OF AUTHORIZATION 24GA27987500

> OFFICES LOCATED IN: CALIFORNIA, INDIANA, KENTUCKY, MASSACHUSETTS, MICHIGAN, NEW JERSEY, OHIO AND PENNSYLVANIA

DRAWING CHECKED BY **DRAWN BY** 03/10/2023 AS SHOWN





# <u>ACCESSORY 6' BOARD ON BOARD</u> FENCE ENCLOSURE

NOT TO SCALE NOTE: CONTRACTOR TO UTILIZE ASHEVILLE FENCE (828-665-8900) FOR BROWN ACCESSORY STRUCTURE ENCLOSURE(S) OR APPROVED EQUAL.

This gas cylinder cage holds up to 20 cylinders (9" diameter) in vertical position (12 and 8 per compartment). The tank cabinet features steel galvanized screen that is coated with hi-build electrostatic powder coating. The top and back is made from solid galvanized steel panels. The door includes tamper resistant stainless steel hinges and has a heavy duty lock receiver (lock is not included). There is "Flammable Gas - No Smoking" signage on the front of the cabinet. Meets OSHA and NFPA requirements for cylinder storage. There are four 1/2" pre-drilled holes in the 3/16" thick bright aluminum diamond plate floor of each compartment available for anchoring. Ships assembled. This product is made in the USA. Optional safety chain set available for purchase separately. Cabinet dimensions (WxDxH): External: 76" x 29" x 82" MPN: HP20322SA

# Get more information:

Call 1-877-805-8650 (M-F, 9-5 p.m. CST) if you have questions about this product.

# PREFABRICATED GAS STORAGE

<u>ENCLOSURE</u>

NOT TO SCALE

NOTE: CONTRACTOR TO USE SAFETY

(877-805-8650) PRE-FABRICATED OUTDOOR

STEEL & MESH GAS 20-CYLINDER CAGE OR

APPROVED EQUAL.

HAZARDOUS GAS STORAGE ANTICIPATED

INCLUDES: ARSINE, PHOSPHINE, HELIUM,

SILANE, OXYGEN, HYDROGEN ARGON, NITROGEN

, CARBON DIOXIDE, AMMONIA,

HEXAFLUOROETHANE, METHANE, CHLORINE,

SILICON TETRACHLORIDE, BORON TRICHLORIDE,

TRIFLUORO METHANE.



FILLING STATION

NOT TO SCALE NOTE: MESSER FILLING (OR APPROVED EQUAL) MAXIMUM HEIGHT NOT TO EXCEED 16 FEET. CHAIN LINK FENCE SHOWN HEREIN WILL BE REPLACED WITH PROPOSED FENCE ENCLOSURE DETAIL NOTED ABOVE. BARBED WIRE FENCE IS PROHIBITED.



HYDROGEN GAS STORAGE TANK

NOT TO SCALE NOTE: MESSER HYDROGEN STORAGE TANK (OR APPROVED EQUAL) MAXIMUM HEIGHT NOT TO EXCEED 6 FEET. CHAIN LINK FENCE SHOWN HEREIN WILL BE REPLACED WITH PROPOSED FENCE ENCLOSURE DETAIL NOTED ABOVE. BARBED WIRE FENCE IS PROHIBITED.



NITROGEN GAS STORAGE TANK

NOT TO SCALE NOTE: MESSER NITROGEN STORAGE TANK (OR APPROVED EQUAL) MAXIMUM HEIGHT NOT TO EXCEED 25 FEET. CHAIN LINK FENCE SHOWN HEREIN WILL BE REPLACED WITH PROPOSED FENCE ENCLOSURE DETAIL NOTED ABOVE.

BARBED WIRE FENCE IS PROHIBITED.

				MRT	СНКD
				Th	ВУ
				REVISED PER WWT TRC COMMENTS	REVISIONS
				03/29/23	DATE
					NO.

MICHAEL R. THOMAS, P.E. DEPARTMENT MANAGER

LICENSED PROFESSIONAL ENGINEER STATE OF NJ LICENSE No. GE48086



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DESIGNED BY 03/10/2023

