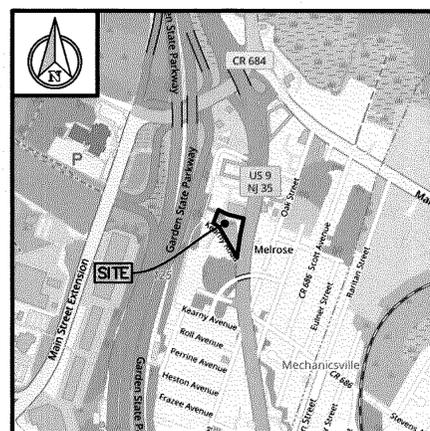


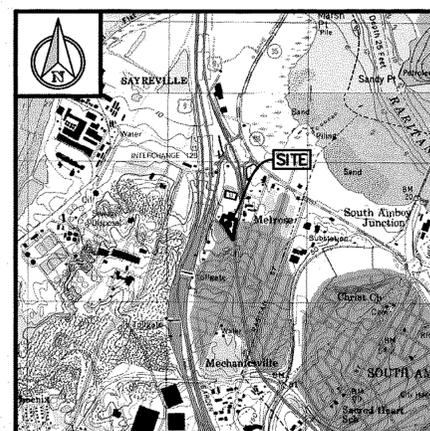
PRELIMINARY/FINAL SITE PLAN
for

CARAVAN, LLC

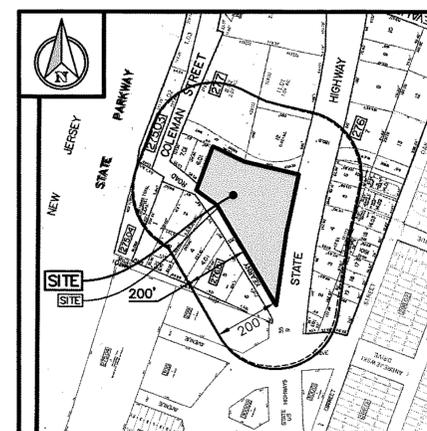
BOROUGH OF SAYREVILLE
MIDDLESEX COUNTY
NEW JERSEY
BLOCK 277, LOT 1-5 & 13-14



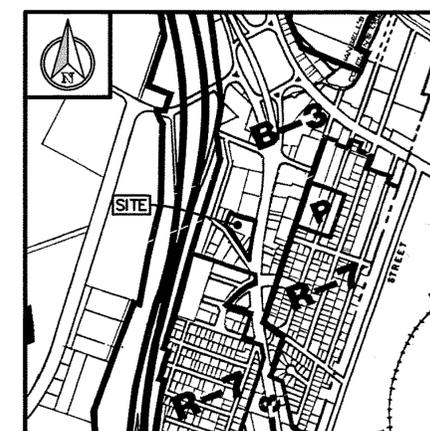
ROAD MAP
1"=1,000'



U.S.G.S. MAP
1"=2,000'



TAX MAP
1"=300'



ZONE MAP
1"=1,000'

200' OWNERS LIST

BLOCK LOT	NAME & ADDRESS	BLOCK LOT	NAME & ADDRESS
275.03 1.02	B & C Enterprises, LLC 7061 Highway 35 & 9 South Amboy, NJ 08879	276.01 3	Wioletta Paluzzi 33 Kearney Road South Amboy, NJ 08879
275.04 1	Garden State Parkway Authority Administration Building Woodbridge, NJ 07095	276.01 3.01	Jonathan Mocarski 33 Kearney Road South Amboy, NJ 08879
276 1	Russell J. Powell, Jr. 325 Oak Street South Amboy, NJ 08879	276.01 4, 4.01	Edward John McDonough 122 Janson Avenue Iselin, NJ 08830
276 1.01	Viascom Outdoor, Inc. 185 Highway 46 Fairfield, NJ 07006	276.01 5	Patricia L. Scully - Estate 27 Kearney Road South Amboy, NJ 08879
276 2,3	7049 Hwy 35 LLC 109 University Drive Lincroft, NJ 07738	276.01 6	Michael P. & Catherine J. O'Connor 21 Kearney Road South Amboy, NJ 08879
276 4, 17.01	Amber, LLC 4 Hauser Lane Matawan, NJ 07747	277 6.01	Robert & Catherine Porter 42 Kearney Road South Amboy, NJ 08879
276 5	Arkady Mshaidov 52 Fern Road East Brunswick, NJ 08816	277 7.01	MRT Rental Properties, LLC 256 Maxim Road Howell, NJ 07731
276 6, 7.01	Miguel A. Marmolejos 358 Reclar Street, Apt. 218 Perth Amboy, NJ 08861	277 8.02	B & C Enterprises, LLC 11,01, 12 7061 Highway 35 & 9 North South Amboy, NJ 08879
276 7	Octagon Management, LLC c/o Medina 99 Vliet Street Spotswood, NJ 08884	299 1	SPJP Property, LLC 1180 St. Georges Avenue, #3 Avenel, NJ 07001
276 19	Kim & Deborah Van Pelt 327 Oak Street South Amboy, NJ 08879		Middlesex County Utilities Authority P.O. Box 159 Sayreville, NJ 08872
276.01 1	Luke Genzlinger 41 Kearney Road South Amboy, NJ 08879		
276.01 2	Barbara A. Lofus 39 Kearney Road South Amboy, NJ 08879		

SHEET INDEX

SHEET #	DWG. #	TITLE
SHEET 1	CV-1	COVER SHEET
SHEET 2	OP-1	OVERALL PLAN
SHEET 3	EC-1	EXISTING CONDITIONS PLAN
SHEET 4	GE-1	GEOMETRY PLAN
SHEET 5	GU-1	GRADING & UTILITY PLAN
SHEET 6	LT-1	LIGHTING PLAN
SHEET 7	LA-1	LANDSCAPE PLAN
SHEET 8	SE-1	SOIL EROSION & SEDIMENT CONTROL PLAN
SHEET 9	SED-1	SOIL EROSION & SEDIMENT CONTROL DETAILS (1)
SHEET 10	SED-2	SOIL EROSION & SEDIMENT CONTROL DETAILS (2)
SHEET 11	DE-1	CONSTRUCTION DETAILS (1)
SHEET 12	DE-2	CONSTRUCTION DETAILS (2)
SHEET 13	DE-3	CONSTRUCTION DETAILS (3)
SHEET 14	DE-4	CONSTRUCTION DETAILS (4)
SHEET 15	DE-5	CONSTRUCTION DETAILS (5)
SHEET 16	DE-6	NJDOT TYPICAL SECTIONS AND CONSTRUCTION DETAILS
SHEET 17	TM-1	TRUCK MOVEMENT PLAN

OWNER
PM CARA HOLDINGS, LLC
CARACAPPA VENTURES, LLC
615 BLOOMFIELD STREET,
HOBOKEN, NJ 07030

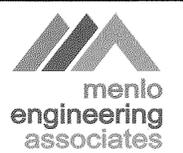
APPLICANT
CARAVAN LLC
95 OAKLAND MILLS ROAD
MANALAPAN, NJ 07726

APPROVED BY

CHAIRMAN	DATE
SECRETARY	DATE
ENGINEER	DATE



THE STATE OF NEW JERSEY REQUIRES NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATE.



Civil Engineering Consultants
Landscape Architects
Professional Planners
261 Cleveland Avenue
Highland Park, NJ 08904
menloeng.com
732-846-8585 732-846-9439
Certificate of Authorization: 24GA27951900

CARAVAN, LLC

BOROUGH OF SAYREVILLE
MIDDLESEX COUNTY
NEW JERSEY

BLOCK 277,
LOTS 1-5 & 13-14
TAX MAP SHEET 93
2.06 ACRES

COVER SHEET

DRAWN BY: RM
DESIGNED BY: RM
APPROVED BY: ST
THIS WORK PREPARED UNDER MY IMMEDIATE SUPERVISION
Scott H. Turner
SCOTT H. TURNER
PROFESSIONAL ENGINEER
N.J.P.E.# 43811

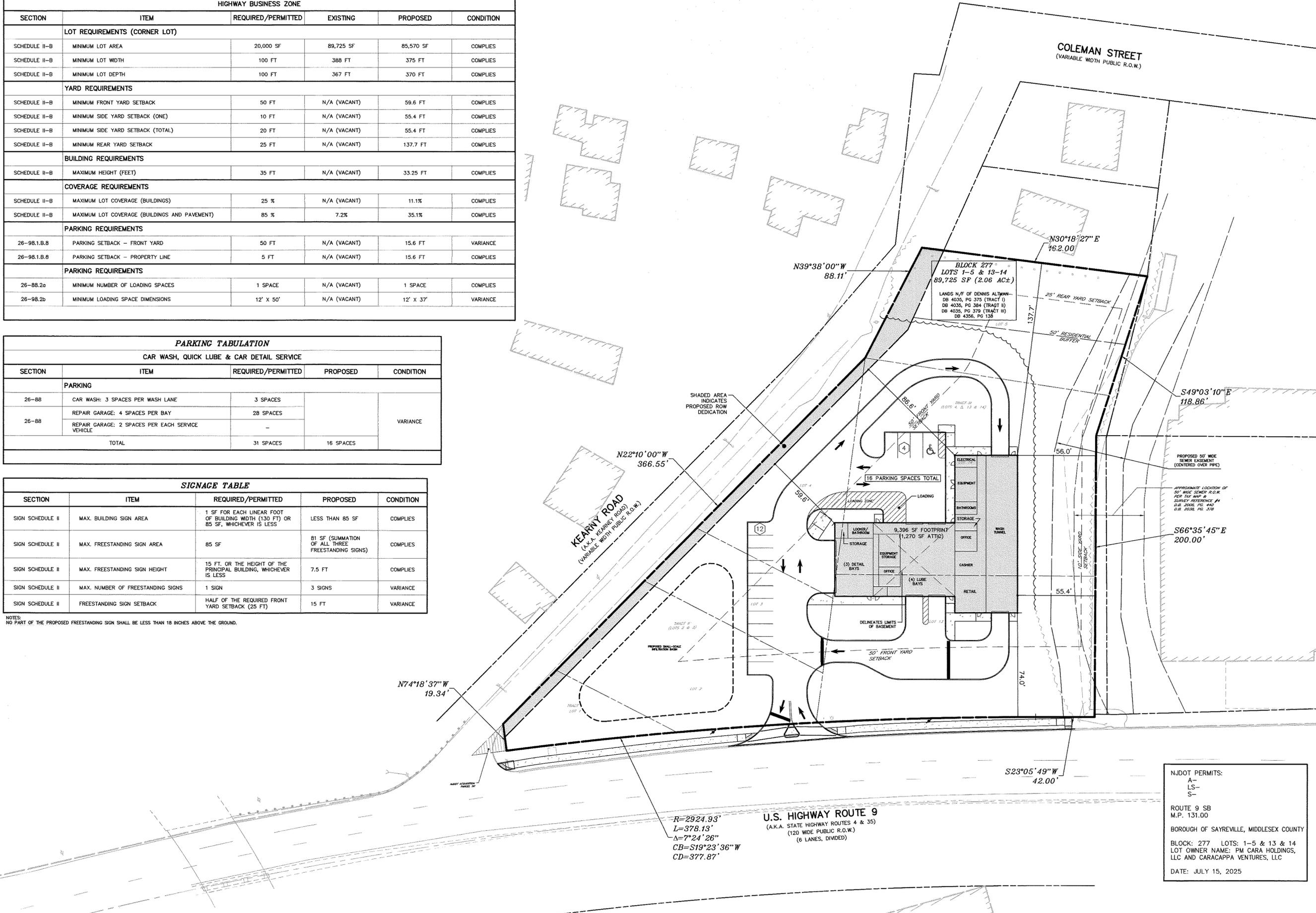
PROJECT NUMBER	2023.091	CV-1
DATE OF ISSUE	JUNE 9, 2025	
REVISED THROUGH	DECEMBER 17, 2025	1

B-3 ZONE DATA					
HIGHWAY BUSINESS ZONE					
SECTION	ITEM	REQUIRED/PERMITTED	EXISTING	PROPOSED	CONDITION
LOT REQUIREMENTS (CORNER LOT)					
SCHEDULE II-B	MINIMUM LOT AREA	20,000 SF	89,725 SF	85,570 SF	COMPLIES
SCHEDULE II-B	MINIMUM LOT WIDTH	100 FT	388 FT	375 FT	COMPLIES
SCHEDULE II-B	MINIMUM LOT DEPTH	100 FT	367 FT	370 FT	COMPLIES
YARD REQUIREMENTS					
SCHEDULE II-B	MINIMUM FRONT YARD SETBACK	50 FT	N/A (VACANT)	59.6 FT	COMPLIES
SCHEDULE II-B	MINIMUM SIDE YARD SETBACK (ONE)	10 FT	N/A (VACANT)	55.4 FT	COMPLIES
SCHEDULE II-B	MINIMUM SIDE YARD SETBACK (TOTAL)	20 FT	N/A (VACANT)	55.4 FT	COMPLIES
SCHEDULE II-B	MINIMUM REAR YARD SETBACK	25 FT	N/A (VACANT)	137.7 FT	COMPLIES
BUILDING REQUIREMENTS					
SCHEDULE II-B	MAXIMUM HEIGHT (FEET)	35 FT	N/A (VACANT)	33.25 FT	COMPLIES
COVERAGE REQUIREMENTS					
SCHEDULE II-B	MAXIMUM LOT COVERAGE (BUILDINGS)	25 %	N/A (VACANT)	11.1%	COMPLIES
SCHEDULE II-B	MAXIMUM LOT COVERAGE (BUILDINGS AND PAVEMENT)	85 %	7.2%	35.1%	COMPLIES
PARKING REQUIREMENTS					
26-98.1.B.8	PARKING SETBACK - FRONT YARD	50 FT	N/A (VACANT)	15.6 FT	VARIANCE
26-98.1.B.8	PARKING SETBACK - PROPERTY LINE	5 FT	N/A (VACANT)	15.6 FT	COMPLIES
PARKING REQUIREMENTS					
26-88.2a	MINIMUM NUMBER OF LOADING SPACES	1 SPACE	N/A (VACANT)	1 SPACE	COMPLIES
26-98.2b	MINIMUM LOADING SPACE DIMENSIONS	12' X 50'	N/A (VACANT)	12' X 37'	VARIANCE

PARKING TABULATION					
CAR WASH, QUICK LUBE & CAR DETAIL SERVICE					
SECTION	ITEM	REQUIRED/PERMITTED	PROPOSED	CONDITION	
PARKING					
26-88	CAR WASH: 3 SPACES PER WASH LANE	3 SPACES		VARIANCE	
26-88	REPAIR GARAGE: 4 SPACES PER BAY	28 SPACES			
26-88	REPAIR GARAGE: 2 SPACES PER EACH SERVICE VEHICLE				
TOTAL		31 SPACES	16 SPACES		

SIGNAGE TABLE					
SECTION	ITEM	REQUIRED/PERMITTED	PROPOSED	CONDITION	
SIGN SCHEDULE II	MAX. BUILDING SIGN AREA	1 SF FOR EACH LINEAR FOOT OF BUILDING WIDTH (130 FT) OR 85 SF, WHICHEVER IS LESS	LESS THAN 85 SF	COMPLIES	
SIGN SCHEDULE II	MAX. FREESTANDING SIGN AREA	85 SF	81 SF (SUMMATION OF ALL THREE FREESTANDING SIGNS)	COMPLIES	
SIGN SCHEDULE II	MAX. FREESTANDING SIGN HEIGHT	15 FT. OR THE HEIGHT OF THE PRINCIPAL BUILDING, WHICHEVER IS LESS	7.5 FT	COMPLIES	
SIGN SCHEDULE II	MAX. NUMBER OF FREESTANDING SIGNS	1 SIGN	3 SIGNS	VARIANCE	
SIGN SCHEDULE II	FREESTANDING SIGN SETBACK	HALF OF THE REQUIRED FRONT YARD SETBACK (25 FT)	15 FT	VARIANCE	

NOTES:
NO PART OF THE PROPOSED FREESTANDING SIGN SHALL BE LESS THAN 18 INCHES ABOVE THE GROUND.



$R=2924.93'$
 $L=378.13'$
 $\Delta=7^{\circ}24'26''$
 $CB=S19^{\circ}23'36''W$
 $CD=377.87'$

U.S. HIGHWAY ROUTE 9
(A.K.A. STATE HIGHWAY ROUTES 4 & 35)
(120 WIDE PUBLIC R.O.W.)
(6 LANES, DIVIDED)

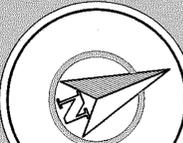
NJDOT PERMITS:
A-
LS-
S-

ROUTE 9 SB
M.P. 131.00

BOROUGH OF SAYREVILLE, MIDDLESEX COUNTY

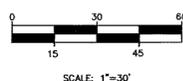
BLOCK: 277 LOTS: 1-5 & 13 & 14
LOT OWNER NAME: PM CARA HOLDINGS, LLC AND CARACAPPA VENTURES, LLC

DATE: JULY 15, 2025



HORIZONTAL DATUM : DB 4035, PG 379

GRAPHIC SCALE



SCALE: 1"=30'

REVISIONS	
1) NJDOT REVS	07/15/25
2) TOWNSHIP REVS	12/17/25

THIS DRAWING IS FOR PERMIT PURPOSES ONLY
NOT FOR CONSTRUCTION UNTIL THIS BOX HAS BEEN CHECKED AND DATED

CHKD BY: _____ DATE: _____



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menlo engineering associates
Civil Engineering Consultants
Landscape Architects
Professional Planners

261 Cleveland Avenue
Highland Park, NJ 08904

menloeng.com in f

732-846-8585 732-846-9439

Certificate of Authorization : 246A27951900

CARAVAN, LLC

BOROUGH OF SAYREVILLE
MIDDLESEX COUNTY
NEW JERSEY

BLOCK 277
LOTS 1-5 & 13-14
TAX MAP SHEET 93
2.06 ACRES

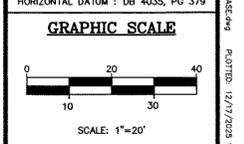
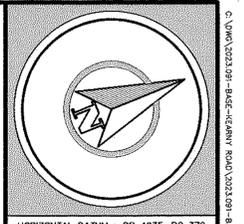
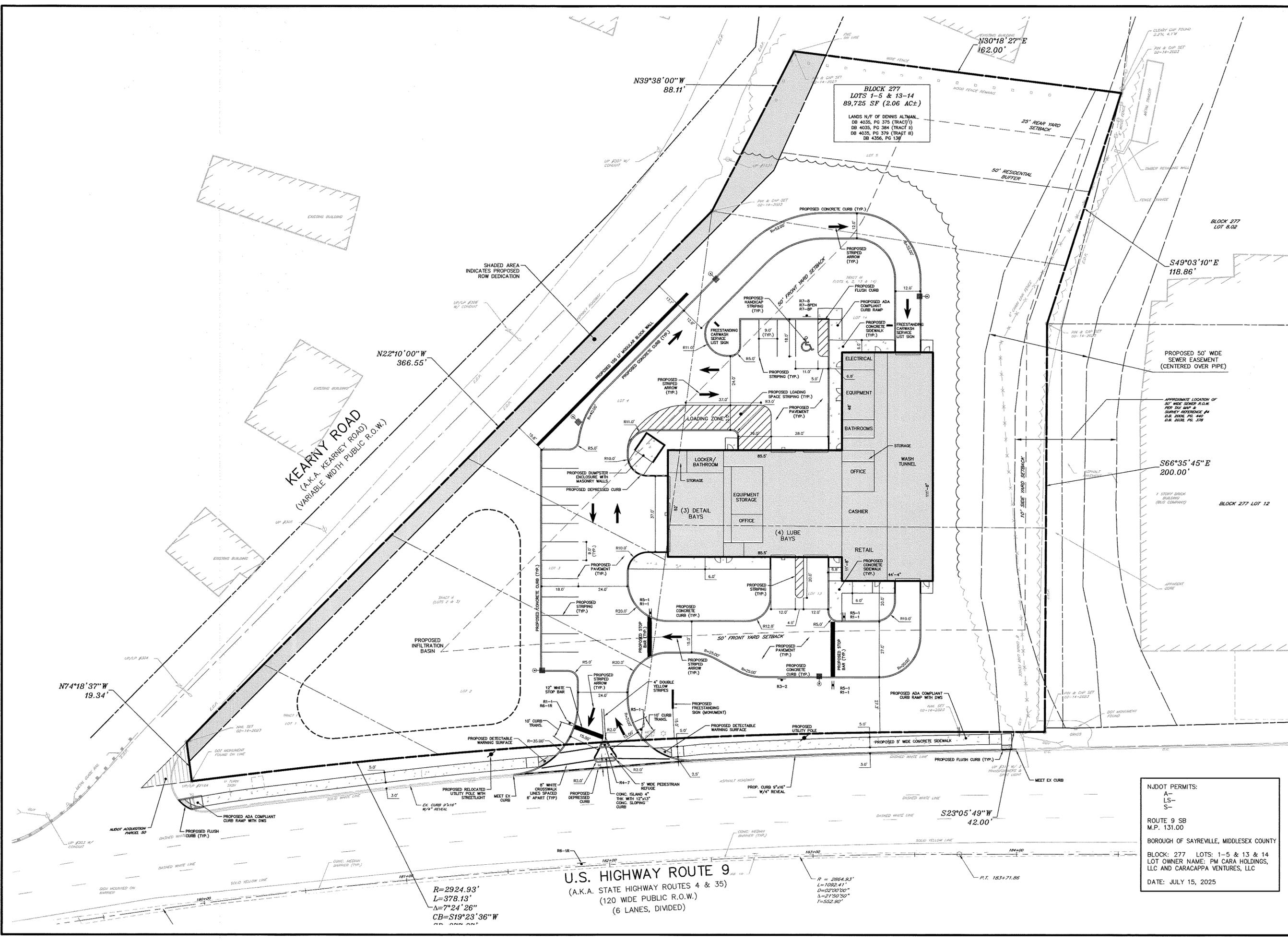
OVERALL PLAN

DRAWN BY	RM
DESIGNED BY	RM
APPROVED BY	SHT

THIS WORK PREPARED UNDER MY IMMEDIATE SUPERVISION


SCOTT H. TURNER
PROFESSIONAL ENGINEER
N.J.P.E.# 43811

PROJECT NUMBER	2023.091	OP-1
DATE OF ISSUE	JUNE 9, 2025	
REVISION	2	DECEMBER 17, 2025



REVISIONS

NO.	DESCRIPTION	DATE
1)	NJDOT REVS	07/15/25
2)	TOWNSHIP REVS	12/17/25

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menlo engineering associates

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281 Cleveland Avenue
 Highland Park, NJ 08904

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Certificate of Authorization : 245427951900

CARAVAN, LLC

BOROUGH OF SAYREVILLE
 MIDDLESEX COUNTY
 NEW JERSEY

Block 277
 LOTS 1-5 & 13-14
 TAX MAP SHEET 93
 2.06 ACRES

GEOMETRY PLAN

NJDOT PERMITS:
 A-
 LS-
 S-

ROUTE 9 SB
 M.P. 131.00

BOROUGH OF SAYREVILLE, MIDDLESEX COUNTY

Block: 277 LOTS: 1-5 & 13 & 14
 LOT OWNER NAME: PM CARA HOLDINGS, LLC AND CARACAPPA VENTURES, LLC

DATE: JULY 15, 2025

PROJECT NUMBER	2023.091	GE-1
DATE OF ISSUE	JUNE 9, 2025	
REVISION	2	4

$R=2924.93'$
 $L=378.13'$
 $\Delta=7^{\circ}24'26''$
 $CB=S19^{\circ}23'36''W$

$R=2864.93'$
 $L=1022.41'$
 $\Delta=21^{\circ}50'50''$
 $T=552.90'$

$S23^{\circ}05'49''W$
 42.00'

$N74^{\circ}18'37''W$
 19.34'

$N22^{\circ}10'00''W$
 366.55'

$N39^{\circ}38'00''W$
 88.11'

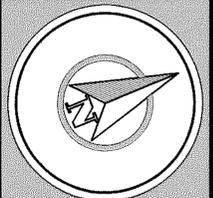
$N30^{\circ}18'27''E$
 162.00'

$S49^{\circ}03'10''E$
 118.86'

$S66^{\circ}35'45''E$
 200.00'

N.J.DOT ITS NOTES:

1. CONTRACTOR TO APPLY FOR FIBER OPTIC MARK-OUT REQUEST TO TRAFFIC OPERATIONS CENTER NORTH, TEN (10) STATE BUSINESS DAYS PRIOR TO PROPOSED WORK. THE FORM IS AVAILABLE AT N.J.DOT WEBSITE: (<http://www.state.nj.us/transportation/eng/elec/ITS/markout.shtm>)
2. CONTRACTOR TO CONDUCT TEST PITS BY HAND DIGGING TO DETERMINE THE DEPTH OF THE EXISTING FIBER OPTIC CONDUIT, PRIOR TO USING CONSTRUCTION EQUIPMENT.
3. FOR MITIGATING ANY IMPACT TO FIBER OPTIC CABLE CONDUIT, PROVIDE CONCRETE ENCASUREMENT FOR THE PROTECTION OF ITS CONDUIT COVERING THE LENGTH OF FIBER CONDUIT WITHIN THE LIMITS OF THE PROJECT WHERE THE PROPOSED CONCRETE CURB IS WITHIN TWO FEET OF ITS CONDUITS AND WHERE EXISTING CONDUIT IS CROSSING PROPOSED DRIVEWAY, PER ITS STANDARD DETAIL (ITS-704-05).
4. CONTRACTOR TO CONTACT MICHAEL JULIANO AT 732-697-7460 FOR ALLOWABLE SYSTEM DOWNTIME.



HORIZONTAL DATUM : DB 4035, PG 379

GRAPHIC SCALE



SCALE: 1"=20'

REVISIONS

NO.	DESCRIPTION	DATE
1)	NJDOT REVS	07/15/25
2)	TOWNSHIP REVS	12/17/25

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CHKD BY: _____ DATE: _____



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CARAVAN, LLC

BOROUGH OF SAYREVILLE
MIDDLESEX COUNTY
NEW JERSEY

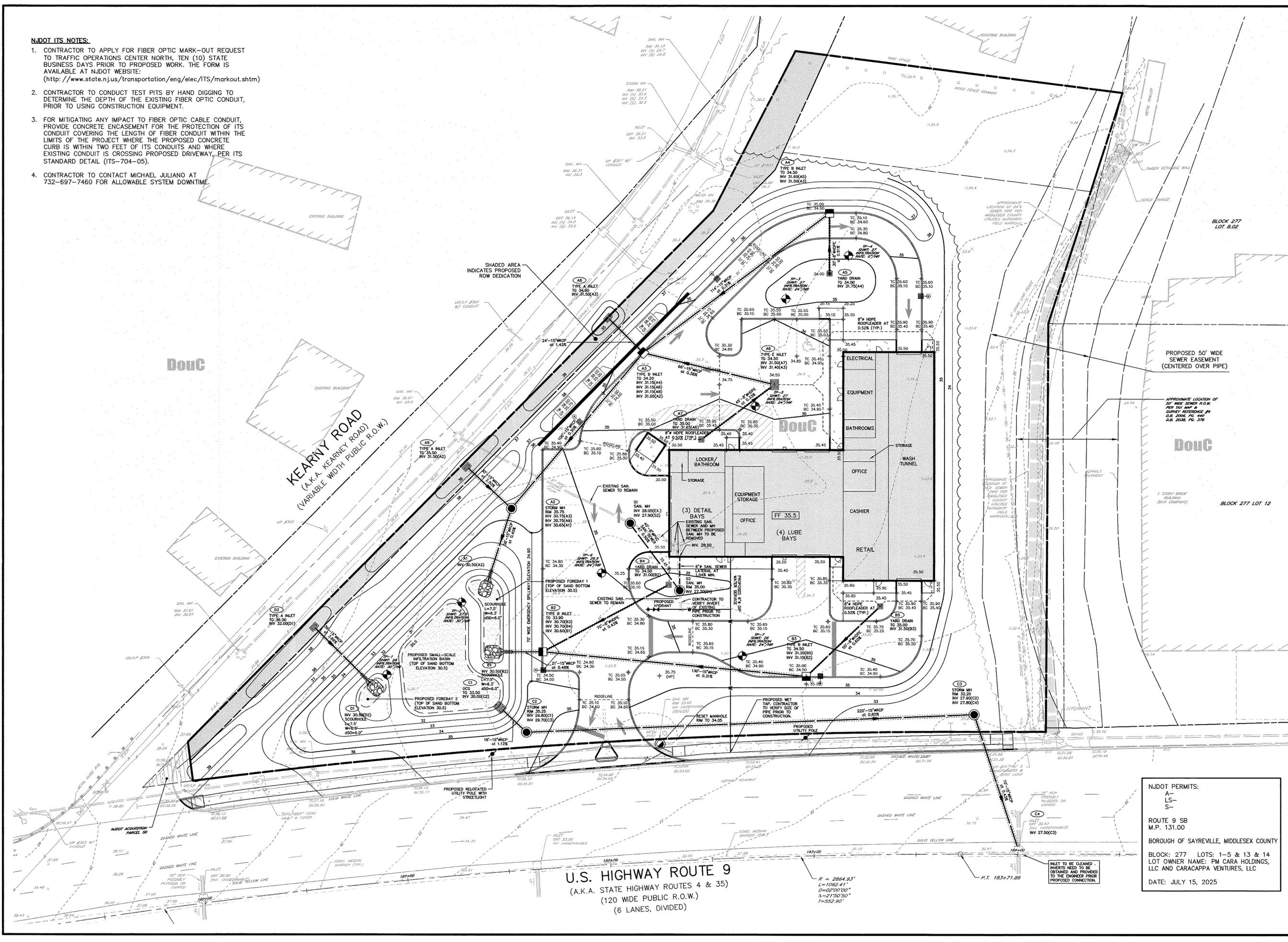
BLOCK 277
LOTS 1-5 & 13-14
TAX MAP SHEET 93
2.06 ACRES

GRADING & UTILITY PLAN

DRAWN BY: _____ RM
DESIGNED BY: _____ RM
APPROVED BY: _____ SHT

THIS WORK PREPARED UNDER MY IMMEDIATE SUPERVISION.
SCOTT H. TURNER
PROFESSIONAL ENGINEER
N.J.P.E.# 43811

PROJECT NUMBER	DATE OF ISSUE	REVISION	CU-1
2023.091	JUNE 9, 2025	2	5



U.S. HIGHWAY ROUTE 9
(A.K.A. STATE HIGHWAY ROUTES 4 & 35)
(120 WIDE PUBLIC R.O.W.)
(6 LANES, DIVIDED)

$R = 2864.93'$
 $L = 1082.41'$
 $D = 02^{\circ}00'00''$
 $\Delta = 21^{\circ}50'00''$
 $T = 52^{\circ}50'00''$

NJDOT PERMITS:
LS-
S-
ROUTE 9 SB
M.P. 131.00
BOROUGH OF SAYREVILLE, MIDDLESEX COUNTY
BLOCK: 277 LOTS: 1-5 & 13 & 14
LOT OWNER NAME: PM CARA HOLDINGS,
LLC AND CARACAPPA VENTURES, LLC
DATE: JULY 15, 2025

INLET TO BE CLEANED
INVERTS NEED TO BE
OBTAINED AND PROVIDED
TO THE ENGINEER FROM
PROPOSED CONNECTION.

LIGHTING SCHEDULE:

LABEL	QUANTITY	TYPE OF MOUNT	WATTAGE / COLOR / DRIVER	MOUNTING HEIGHT	POLE HEIGHT	FOUNDATION HEIGHT	DISTRIBUTION	CATALOG NUMBER	POLE CATALOG NUMBER
ML1	3	WALL MOUNTED	37 WATTS LED / 3,000 K / 70 CRI	12.0' *	N/A	N/A	TYPE T1T4 WITH H5	LITHONIA LIGHTING D-SERIES SIZE DSXII LED-F5-30K-10CRI-T1T4-MVOLT-SPA-HS-DBLXD	N/A
SL1	3	SINGLE SQUARE POLE	68 WATTS LED / 3,000 K / 70 CRI	24.5' **	22.0'	2.5' **	TYPE BLC3	LITHONIA LIGHTING SQUARE STRAIGHT STEEL POLES 555-22-46-DM19AS--DBLXD (OR APPROVED EQUAL)	LITHONIA LIGHTING SQUARE STRAIGHT STEEL POLES 555-22-46-DM19AS--DBLXD (OR APPROVED EQUAL)
SL2	1	SINGLE SQUARE POLE	68 WATTS LED / 3,000 K / 70 CRI	24.5' **	22.0'	2.5' **	TYPE T3M WITH H5	LITHONIA LIGHTING D-SERIES SIZE DSXII LED-F2-30K-10CRI-T3M-MVOLT-SPA-HS-DBLXD	LITHONIA LIGHTING SQUARE STRAIGHT STEEL POLES 555-22-46-DM19AS--DBLXD (OR APPROVED EQUAL)
SL3	1	SINGLE SQUARE POLE	68 WATTS LED / 3,000 K / 70 CRI	24.5' **	22.0'	2.5' **	TYPE T4M WITH H5	LITHONIA LIGHTING D-SERIES SIZE DSXII LED-F2-30K-10CRI-T4M-MVOLT-SPA-HS-DBLXD	LITHONIA LIGHTING SQUARE STRAIGHT STEEL POLES 555-22-46-DM19AS--DBLXD (OR APPROVED EQUAL)

* ABOVE FINISHED FLOOR
 ** ABOVE PAVEMENT
 (CONTACT MANUFACTURER FOR EXACT LIGHT FIXTURE AND POLE SPECIFICATIONS.)

Calculation Summary		CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Label	PAVEMENT AREA	ILLUMINANCE	Fc	1.28	3.9	0.5	2.56	7.80

LIGHTING NOTES:

- A CONCRETE FOOTING BELOW FINISHED GRADE SHALL BE INSTALLED FOR EACH FIXTURE. SIZE AND DEPTH TO BE DESIGNED BY STRUCTURAL ENGINEER.
- PARKING AREA POLES TO BE STEEL, NON-TAPERED, SQUARE TO MATCH FIXTURE.
- LIGHT FIXTURES AND POLES TO BE INSTALLED AS PER MANUFACTURERS' SPECIFICATIONS.
- PARKING AREA LIGHTING CONTROLS SHALL BE PHOTOCELL ACTIVATED AND TIMER DEACTIVATED DURING HOURS OF OPERATION.
- LIGHT STANDARDS LOCATED IN PLANTING AREAS AND TURF AREAS SHALL BE A MINIMUM OF 30' OFF PAVEMENT CURB FACE. FOOTINGS WITHIN PARKING AREAS SHALL BE 30" ABOVE ADJACENT PAVEMENT GRADE. ALL FOUNDATIONS SHALL BE CYLINDRICAL. POLE HEIGHTS SHALL BE ADJUSTED FOR APPROPRIATE FOUNDATIONS USED WHILE MAINTAINING LUMINAIRE MOUNTING HEIGHT.
- ALL CIRCUIT DIAGRAMS AND ELECTRICAL PLANS FOR EXTERIOR LIGHTING TO SERVICE PANEL SHALL BE DESIGNED BY INTERIOR LIGHTING CONTRACTOR/ENGINEER.
- INSTALLATION OF ALL SITE LIGHTING ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH ALL APPLICABLE STANDARDS, CODES, AND LAWS.
- THIS PLAN WAS PRODUCED USING LIGHTING ANALYSIS AGI PROGRAM WITH THE APPROPRIATE PHOTOMETRIC FILES SUPPLIED BY LITHONIA LIGHTING, CONTERS SA.
- THE CONTRACTOR SHALL FIELD VERIFY EXISTING OVERHEAD WIRES FOR CLEARANCE REQUIREMENTS. THE CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT/ENGINEER FOR ANY CONFLICTS PRIOR TO ORDERING LIGHTING EQUIPMENT.
- THE CONTRACT DRAWINGS INDICATE THE APPROXIMATE LOCATION OF EXISTING SUBSURFACE UTILITIES IN THE VICINITY OF THE PROJECT AND ARE NOT GUARANTEED FOR ACCURACY AND/OR COMPLETENESS. CONTRACTOR TO VERIFY THE DEPTH AND LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION (1-800-272-1000). ANY CONFLICTS WITH PROPOSED CONSTRUCTION ARE TO BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER, AND LANDSCAPE ARCHITECT. ALL EXISTING UTILITIES THAT ARE TO BE RELOCATED OR ALTERED IN ANY MANNER SHALL BE DONE IN ACCORDANCE WITH THE RESPECTIVE UTILITY COMPANIES STANDARDS. ALL EXISTING UTILITIES EXPOSED DURING CONSTRUCTION ARE TO BE SUPPORTED UNTIL BACKFILL IS IN PLACE.
- ANY LIGHT FIXTURE SUBSTITUTIONS PROPOSED BY THE CONTRACTOR SHALL BE ACCOMPANIED BY A POINT BY POINT CALCULATION VERIFYING THE SUBSTITUTED FIXTURES PERFORMANCE AND DEMONSTRATING THAT THE REVISED LIGHT LEVELS MATCH THE APPROVED PLANS. MENO ENGINEERING WILL NOT PERFORM REVISED LIGHTING CALCULATIONS UNLESS AUTHORIZED BY THE OWNER. THE REVISED LIGHT LEVELS MUST BE RESUBMITTED TO THE MUNICIPAL REVIEWING ENGINEER FOR APPROVAL.
- THIS PLAN IS TO BE UTILIZED FOR LIGHTING PURPOSES ONLY. REFER TO BUILDING MEP OR ELECTRICAL CONTRACTOR AND PLANS TO DETERMINE REQUIRED VOLTAGES AND REQUIRED SPECIFICATIONS FOR ALL SITE LIGHTING.
- THIS PLAN REQUIRES HAS GRANTED A WAIVER FROM SECTION 26-46.8.4.4 RESTRICTING THE LIGHT INTENSITY AT THE GROUND LEVEL AT THE PROPERTY LINE TO BE A MAXIMUM OF 0.5 FOOTCANDLES. THE PLAN PROVIDES A MAXIMUM LIGHT LEVEL AT THE PROPERTY LINE BY THE DRIVEWAY ENTRANCE/EXIT OF 0.6 FOOTCANDLES.

SHADE AREA INDICATES PROPOSED ROW DEDICATION

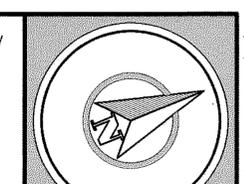
KEARNEY ROAD
 (A.K.A. KEARNEY ROAD)
 (VARIABLE WIDTH PUBLIC R.O.W.)

U.S. HIGHWAY ROUTE 9
 (A.K.A. STATE HIGHWAY SECTIONS 4 & 35)
 (120' WIDE PUBLIC R.O.W.)
 (6 LANES, DIVIDED)

$R=2924.93'$
 $L=378.13'$
 $\Delta=7^{\circ}24'26''$
 $CB=S19^{\circ}23'36''W$

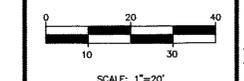
NOTES:

- PER NJDOT ROADWAY DESIGN MANUAL SECTION 11.4 "LIGHT TRESPASS FROM OFF-SITE DEVELOPMENT", SPILLOVER LIGHTING FROM PROJECTS ADJACENT TO STATE HIGHWAYS SHALL NOT EXCEED 0.2fc AT THE CURB/EDGE OF TRAVELED WAY. ALONG THE ROUTE 9 FRONTAGE, THIS PROJECT EXCEEDS THE LIGHTING LEVELS BECAUSE OF THE EXISTING UTILITY OWNED STREETLIGHTS ALONG ROUTE 9.



HORIZONTAL DATUM : DB 4035, PG 379

GRAPHIC SCALE

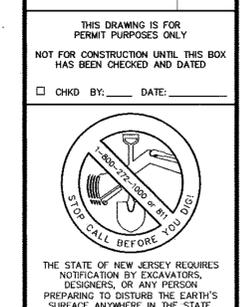


REVISIONS

NO.	DESCRIPTION	DATE
1	NJDOT REVS	07/15/25
2	TOWNSHIP REVS	12/17/25

THIS DRAWING IS FOR PERMIT PURPOSES ONLY. NOT FOR CONSTRUCTION UNTIL THIS BOX HAS BEEN CHECKED AND DATED.

CHKD BY: _____ DATE: _____



THE STATE OF NEW JERSEY REQUIRES NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATE.

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 Civil Engineering Consultants
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Certificate of Authorization : 240A27819100

CARAVAN, LLC

BOROUGH OF SAYREVILLE
 MIDDLESEX COUNTY
 NEW JERSEY

BLOCK 277
 LOTS 1-5 & 13-14
 TAX MAP SHEET 93
 2.06 ACRES

LIGHTING PLAN

DATE: JULY 15, 2025

PROJECT NUMBER: 2023.091 | LT-1
 DATE OF ISSUE: JUNE 9, 2025
 REVISION: 2 | DECEMBER 17, 2025 | 6

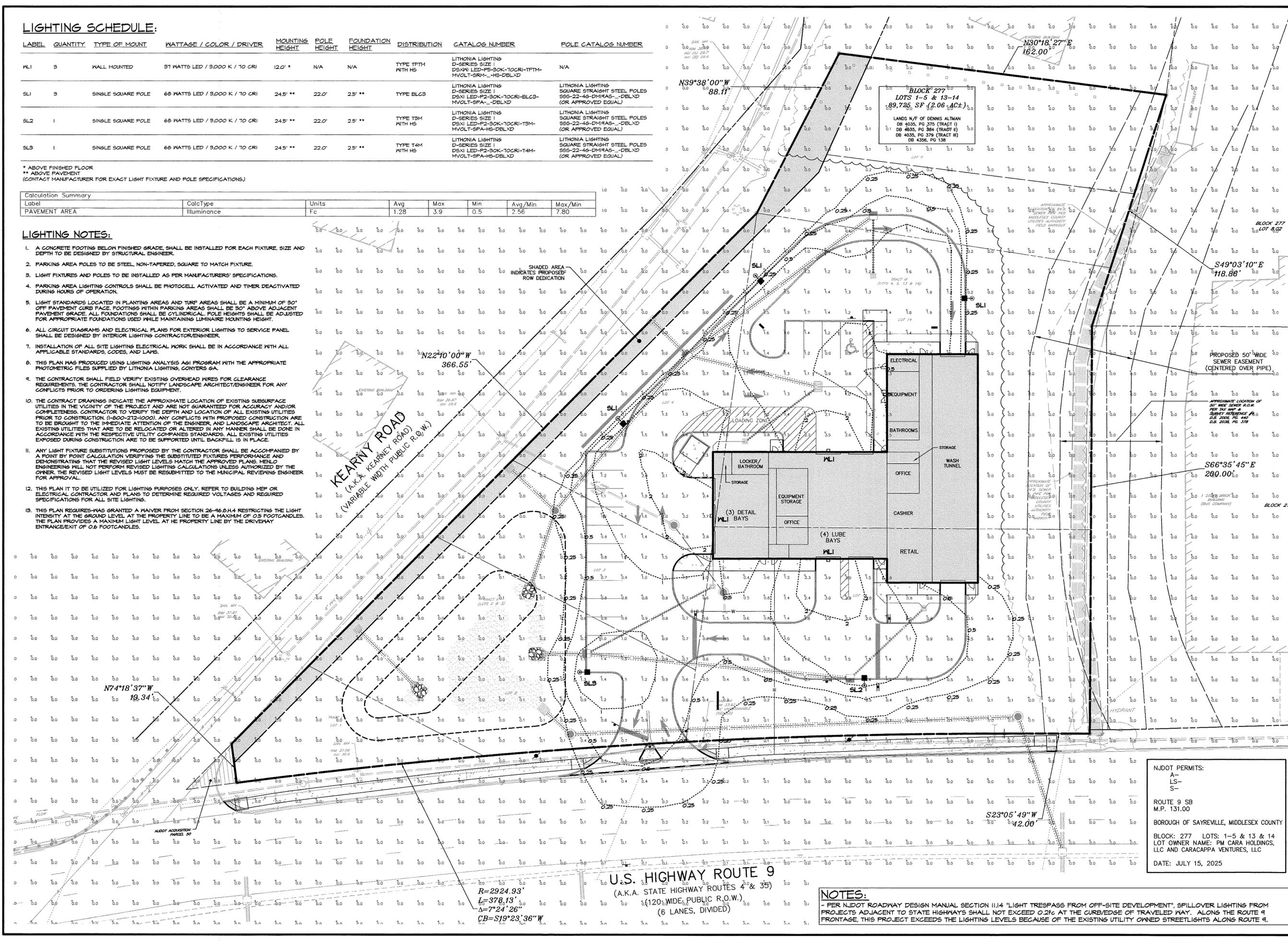
NJDOT PERMITS:
 A-
 LS-
 S-

ROUTE 9 SB
 M.P. 131.00

BOROUGH OF SAYREVILLE, MIDDLESEX COUNTY

BLOCK: 277 LOTS: 1-5 & 13 & 14
 LOT OWNER NAME: PM CARA HOLDINGS, LLC AND CARACAPPA VENTURES, LLC

DATE: JULY 15, 2025

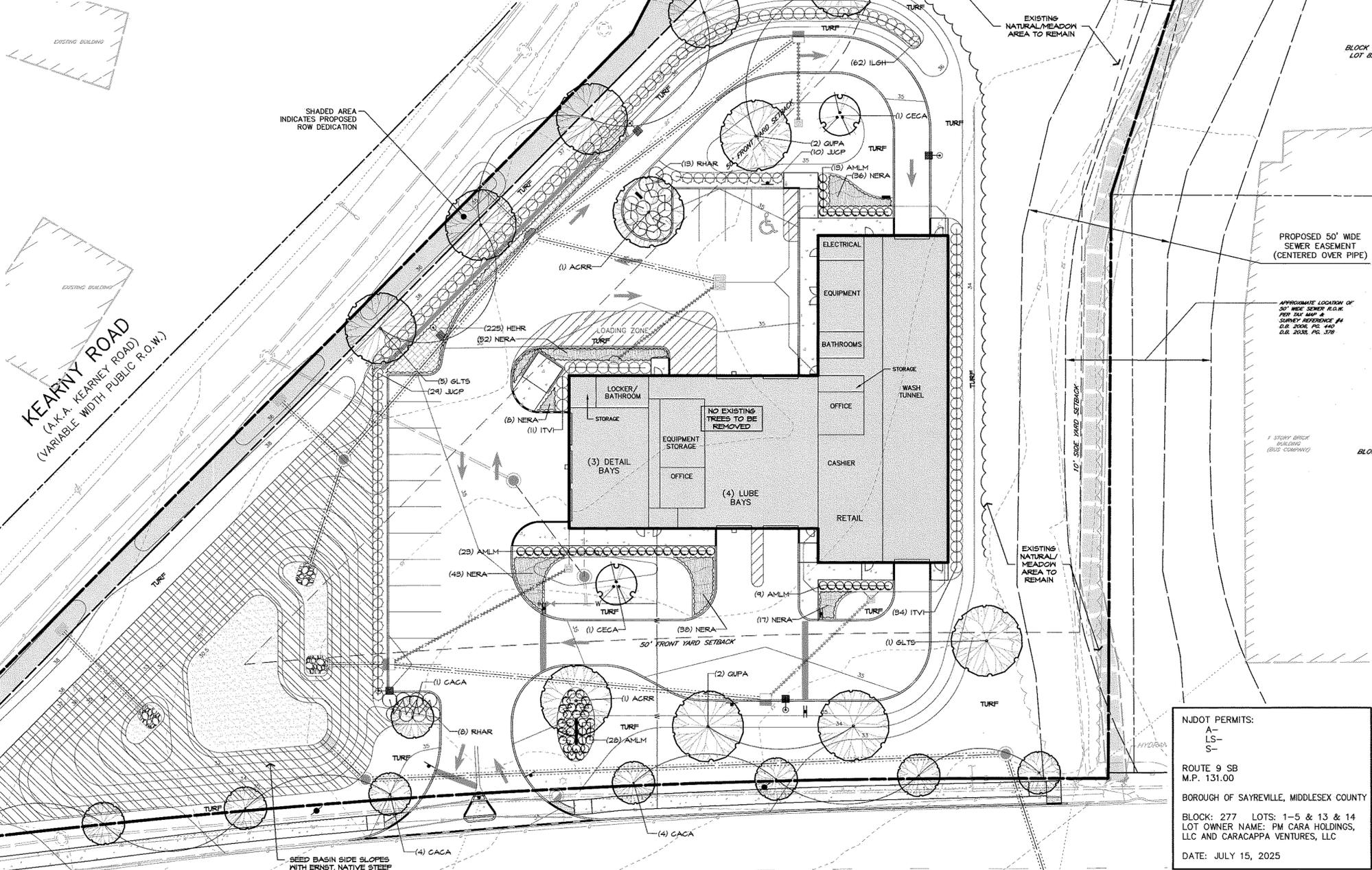


PLANT SCHEDULE

CODE	QTY	BOTANICAL NAME	COMMON NAME	MATURE SPREAD	MATURE HEIGHT	GALIPER	PLANTING HT.	TYPE	REMARKS
DECIDUOUS TREES									
ACRR	2	ACER RUBRUM 'FRANKSRED'	RED SUNSET MAPLE	40'	50'	3"-3.5" CAL.	14'-16'	B4B	STRAIGHT, SYMMETRICAL, FULL CROWN, HEAD TO T
CACA	1	AMERINDIA CANADENSIS	AMERICAN HORSEBEAN	20'	20'	3"-3.5" CAL.	14'-16'	B4B	STRAIGHT, SYMMETRICAL, FULL CROWN, HEAD TO T
GLTS	6	GLEPHTSIA TRIACANTHOS INERMIS 'SHADEMASTER'	SHADEMASTER THORNTLESS LOCUST	40'	40'	3"-3.5" CAL.	14'-16'	B4B	STRAIGHT, SYMMETRICAL, FULL CROWN, HEAD TO T
QUFA	4	QUERCUS PALUSTRIS	PIN OAK	40'	75'	3"-3.5" CAL.	14'-16'	B4B	STRAIGHT, SYMMETRICAL, FULL CROWN, HEAD TO T
EVERGREEN TREES									
THFC	31	THUJA FLICATA 'GREEN GIANT'	GREEN GIANT ARBORVITAE	15'	30'		6'-7'	B4B	STRAIGHT, SYMMETRICAL, DENSE, LOW BRANCHED
FLOWERING TREES									
CECA	2	CERCIS CANADENSIS	EASTERN REDBUD	20'	30'	(3) STEM CLUMP	4'-10'	B4B	(3) STEM CLUMP, SYMMETRICAL, LOW BRANCHED
SHRUBS									
AHLM	73	ARONIA MELANOCARPA 'LOW SCAPE MOUND'	LOW SCAPE MOUND BLACK CHOKEBERRY	4'	2'	18"-24"		B4B	(4) CANES MIN, WELL FURNISHED
ILGH	62	ILEX GLABRA 'CHAMZIN'	NORDIC HOLLY	4'	4'	2.5'-3'		#5 CAN	WELL FURNISHED, DENSE, LOW BRANCHED, SPACE EVENLY
ITVI	45	ITEA VIRGINICA 'LITTLE HENRY'	LITTLE HENRY SWEETSPIRE	4'	4'	24"-30"		#5 CAN	WELL FURNISHED, LOW BRANCHED, DENSE, SPACE EVENLY
JJCP	34	JUNIPERUS CHINENSIS 'PFITZERIANA COMPACTA'	COMPACTA PFITZER	6'	4'	2.5'-3'		#5 CAN	WELL FURNISHED, DENSE
PHFR	21	PHOTINIA X FRASERI	PHOTINIA	10'	10'			#5 CAN	DENSE, WELL FURNISHED, SYMMETRICAL
RHAR	21	RHUS AROMATICA 'GRO-LOW'	GRO-LOW FRAGRANT SUMAC	8'	3'	18"-24"		#5 CAN	DENSE, WELL FURNISHED, SYMMETRICAL, LOW BRANCHED
GROUND COVERS									
HEHR	225	HEMEROCALLIS HYBRID 'HAPPY RETURNS'	HAPPY RETURNS DAYLILY	#1 CAN @18" OC	15"	15"		(3) FAN CLUMP, WELL ROOTED	
NERA	144	NEPETA RACEMOSA 'WALKER'S LOW'	CATMINT	#1 CAN @24" OC	15"	15"		COMPACT, HEAVY CLUMP	

GENERAL LANDSCAPE NOTES:

- NO SUBSTITUTIONS IN THE PLANT LIST IS TO BE MADE UNLESS AUTHORIZED BY THE LANDSCAPE ARCHITECT AND APPROVED BY THE OWNER AND THE TOWNSHIP.
- ALL DISTURBED AND PERMANENT TURF AREAS SHALL BE SEEDED WITH A GENERAL PURPOSE MIXTURE SIMILAR TO THE FOLLOWING: 50% SEED MIX #4 (TALL TURF FESCUE, KENTUCKY BLUEGRASS), PERENNIAL RYEGRASS OR APPROVED EQUAL. SEE SCS DETAIL SHEETS FOR SEEDING SPECIFICATIONS.
- ALL PLANTING BEDS TO BE MULCHED WITH (3) INCH MINIMUM MULCH (SEE PLANTING NOTE #20). MULCH VOLCANOES (MOUNDS) AROUND TREES ARE PROHIBITED.
- TOPSOIL: PROTECT TOPSOIL FROM THE SITE OR USED AS SPILL. ALL TOPSOIL MOVED DURING THE COURSE OF CONSTRUCTION SHALL BE REDISTRIBUTED ON ALL REGRADED SURFACES SO AS TO PROVIDE AN EVEN COVER AND SHALL BE STABILIZED BY SEEDING OR PLANTING. ALL REGRADED TURF AREAS SHALL BE COVERED BY A SIX (6) INCH MINIMUM THICKNESS OF TOPSOIL. IF SUFFICIENT TOPSOIL IS NOT AVAILABLE ON THE SITE, TOPSOIL, MEETING OR EXCEEDING THE MINIMUM REQUIREMENTS OF THE NJDOT SPECIFICATIONS, SHALL BE PROVIDED TO RESULT IN A SIX (6) INCH MINIMUM THICKNESS. ANY IMPORTED TOPSOIL OR SUBSOIL SHALL BE NJDOT CERTIFIED FREE OF ANY TOXIC OR HARMFUL CHEMICALS.
- LANE AREAS SHALL MAINTAIN A MINIMUM SLOPE OF 2% AND A MAXIMUM OF (3) FEET HORIZONTAL TO (1) FOOT VERTICAL AND COMPACTED AREAS SHALL BE TILLED TO A DEPTH OF EIGHTEEN (18) INCHES.
- UNACCEPTABLE PLANT MATERIALS: MATERIALS WHICH HAVE DAMAGED OR CROOKED LEADERS, DEFORMED GROWTH HABIT, ABRASIONS OF THE BARK, SUBCUTS, WINDBURN, DISHOURING KNOTS, OR FRESH CUTS OF LIMBS OVER 3/4 IN. WHICH HAVE NOT COMPLETELY CALLOSED SHALL BE REJECTED. IN ADDITION, TREES HAVING THEIR CENTRAL LEADERS REAGED BACK SHALL ALSO BE REJECTED.
- SHRUB PLANTING ISLANDS, PARKING AREA ISLANDS AND FOUNDATION PLANTING BEDS SHALL RECEIVE A MINIMUM OF (2) FEET OF TOPSOIL. MIXTURE MEETING OR EXCEEDING THE MINIMUM NJDOT SPECIFICATIONS.
- ALL PLANT MATERIALS LOCATED WITHIN SIGHT TRIANGLES AND PARKING LOT ISLANDS SHALL BE MAINTAINED NOT TO EXCEED A MAXIMUM OF (30) INCHES ABOVE PAVEMENT AND TREES SHALL BE MAINTAINED TO MAINTAIN A MINIMUM CLEARANCE OF (7) FEET ABOVE THE TOP OF CURB OR SIDEWALK FOR SIGHT VISIBILITY.
- THE CONTRACT DRAWINGS INDICATE THE APPROXIMATE LOCATION OF EXISTING SUBSURFACE UTILITIES IN THE VICINITY OF THE PROJECT AND ARE NOT GUARANTEED FOR ACCURACY AND/OR COMPLETENESS. CONTRACTOR TO VERIFY DEPTH AND LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION (800-375-1000). ANY CONFLICTS WITH PROPOSED CONSTRUCTION ARE TO BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER AND THE LANDSCAPE ARCHITECT. ALL EXISTING UTILITIES THAT ARE TO BE RELOCATED OR ALTERED IN ANY MANNER SHALL BE DONE IN ACCORDANCE WITH THE RESPECTIVE UTILITY COMPANIES STANDARDS. ALL EXISTING UTILITIES EXPOSED DURING CONSTRUCTION SHALL BE SUPPORTED UNTIL BACKFILL IS IN PLACE.
- IRRIGATION SHALL BE PROVIDED FOR PLANT MATERIAL IF INDICATED ON THE PLAN OR AT THE OWNER'S DIRECTION. DESIGN TO BE PROVIDED BY IRRIGATION PROFESSIONAL. ALL LANDSCAPE AREAS PROVIDED WITH AUTOMATIC IRRIGATION SYSTEMS SHALL BE THEIR CONTROLLED AND PROVIDED WITH AN AUTOMATIC RAINFALL SHUTOFF DETECTION DEVICE.
- FINAL LOCATIONS OF BUFFER PLANTINGS (IF REQUIRED) LOCATED WITHIN EXISTING TREE CANOPY AREAS SHALL BE PLACED BASED ON EXISTING TREE LOCATIONS IDENTIFIED IN THE FIELD. EVERGREENS SHALL BE PLACED WHERE GAPS APPEAR IN THE TREE CANOPY. FINAL LOCATIONS TO BE APPROVED BY TOWNSHIP ENGINEER OR TOWNSHIP LANDSCAPE ARCHITECT.
- SEE DETAIL SHEETS FOR ADDITIONAL PLANTING NOTES AND DETAILS.
- ALL SHADE TREES, EVERGREENS, AND FLOWERING TREES SHALL BE PROVIDED WITH 'TREESATOR ORIGINAL OR JR. PRO' TM WATERING BASS, RINGS OR APPROVED EQUAL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING WATER TO ALL PLANTINGS AND LANI AREAS UNTIL FINAL ACCEPTANCE.
- PRIOR TO THE INSTALLATION OF ANY PLANT MATERIAL, SEEDING OR SOODING OF LANI AREAS, THE CONTRACTOR SHALL OBTAIN PHYSICAL, CHEMICAL AND SOIL FERTILITY TESTS AT AN APPROVED LAB TO DETERMINE SOIL COMPOSITION AND SUITABILITY. THE TESTING SHALL BE A RATE OF EITHER ONE TEST PER 500 SQ YARDS OF PLANTING MIX OR ONE TEST PER 1000 SQ YD OF LANDSCAPE SURFACE AREA. THE SOILS SHALL BE ANALYZED IN ACCORDANCE WITH THE TEST RESULTS FOR OPTIMAL PLANT AND LANI GROWTH. THE RESULTS OF ALL TESTING SHALL BE SUBMITTED TO THE LANDSCAPE ARCHITECT FOR REVIEW.
- STEEP SLOPE AREAS INDICATED TO BE SEEDED WITH NATIVE GRASSES SHALL BE SEEDED WITH WITH ERNST SEED MIX (ERNMX-10-1). NATIVE STEEP SLOPE MIX WITH ANNUAL RYEGRASS MIX OR APPROVED EQUAL. AT THE RATES INDICATED BY THE SEED MANUFACTURER. (NON ORGE ANNUALLY) ALL SLOPES OVER 5:1 OR OVER 50' IN LENGTH SHALL HAVE A SLOPE STABILIZATION FABRIC IN ACCORDANCE WITH SCS STANDARDS. FOR ALL AREAS INDICATED TO BE SEEDED, THE CONTRACTOR SHALL ADHERE TO THE INSTALLATION PROCEDURES OUTLINED BY THE SEED MANUFACTURER. SEE DETAIL SHEET FOR SEED MIX COMPOSITION, COVER, GRASS RECOMMENDATION AND MULCHING REQUIREMENTS. CONTACT MANUFACTURER FOR RECOMMENDED RATE FOR SPECIFIC SITE CONDITIONS AND PROPER SEEDING PROCEDURES. SEE SOURCE AT: [HTTP://WWW.ERNSTSEED.COM](http://www.ernstseed.com)
- ALL PLANTED MATERIAL SHALL BE REQUIRED TO BE LABELED AND TAGGED AT THE TIME OF PLANTING. THE PLANT TAGS SHALL REMAIN IN PLACE UNTIL FINAL INSPECTION OF PLANTINGS AND AS-BUILT IS SUBMITTED FOR APPROVAL.
- AREAS INDICATED TO BE PROVIDED WITH RIVER STONE SHALL BE A 4 INCH DEPTH OF 1 TO 3 INCH DIAMETER RIVER STONE OVER NEED BARRIER FABRIC.
- AREAS INDICATED TO BE PLANTED WITH FOUNDATION PLANTINGS ARE TO BE COORDINATED WITH FINAL ARCHITECTURAL DRAWINGS.



STANDARD FOR PERMANENT VEGETATIVE COVER

- 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 STANDARD FOR LAND GRADING.
 - IMMEDIATELY PRIOR TO SEEDING AND TOPSOIL APPLICATION, THE SUBSOIL SHALL BE EVALUATED FOR COMPACTION IN ACCORDANCE WITH THE STANDARD FOR LAND GRADING.
 - TOPSOIL SHOULD BE HANDLED ONLY WHEN IT IS DRY ENOUGH TO WORK WITHOUT DAMAGING THE SOIL STRUCTURE. A UNIFORM APPLICATION TO A DEPTH OF 4 INCHES IS REQUIRED ON ALL SITES. TOPSOIL SHALL BE AMENDED WITH ORGANIC MATTER, AS NEEDED, IN ACCORDANCE WITH THE STANDARD FOR TOPSOILS.
 - INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS DIVERSIONS, GRADE-STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS.

- SEEDBED PREPARATION**
 - UNIFORMLY APPLY GROUND LIMESTONE AND FERTILIZER TO TOPSOIL WHICH HAS BEEN SPREAD AND FIRMED, ACCORDING TO SOIL TEST RESULTS. SEEDING SHALL BE ACCORDING TO THE EXTENSION SOIL SAMPLE MAPS ARE AVAILABLE FROM THE LOCAL RUTGERS CO-OPERATIVE EXTENSION OFFICES (HTTP://NAJES.RUTGERS.EDU/COUNTY/). FERTILIZER SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE OR 11 POUNDS PER 1,000 SQUARE FEET OF 10-10-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS A SOIL TEST INDICATES OTHERWISE AND INCORPORATED INTO THE SURFACE 4 INCHES. IF FERTILIZER IS NOT INCORPORATED, APPLY ONE-HALF THE RATE DESCRIBED ABOVE SURFACE SEEDING PREPARATION AND REPEAT ANOTHER ONE-HALF RATE APPLICATION OF THE SAME FERTILIZER WITHIN 3 TO 5 WEEKS AFTER SEEDING.
 - WORK LIME AND FERTILIZER INTO THE TOPSOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRING-TOOTH HARROW, OR OTHER SUITABLE EQUIPMENT. THE FINAL ARROWING OR DISKING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLE UNIFORM SEEDBED IS PREPARED.
 - HIGH ACID PRODUCING 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 REPARATION. SEE STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOILS FOR SPECIFIC REQUIREMENTS.

- SEEDING**
 - SELECT A MIXTURE FROM TABLE 4-2 OR USE A MIXTURE RECOMMENDED BY RUTGERS CO-OPERATIVE EXTENSION OR NATURAL RESOURCES CONSERVATION SERVICE WHICH IS APPROVED BY THE SOIL CONSERVATION DISTRICT. SEED GERMINATION SHALL HAVE BEEN TESTED WITHIN 12 MONTHS OF THE PLANTING DATE. NO SEED SHALL BE ACCEPTED WITH A GERMINATION TEST DATE MORE THAN 12 MONTHS OLD UNLESS RETESTED.

- SEEDING RATES**
 - SEEDING RATES SPECIFIED ARE REQUIRED WHEN A REPORT OF COMPLIANCE IS REQUESTED PRIOR TO ACTUAL ESTABLISHMENT OF PERMANENT VEGETATION. SEEDING RATES MAY BE USED WHEN PERMANENT VEGETATION IS ESTABLISHED PRIOR TO A REPORT OF COMPLIANCE INSPECTION. THESE RATES APPLY TO ALL METHODS OF SEEDING. ESTABLISHING PERMANENT VEGETATION MEANS SOIL VEGETATIVE COVER WITH THE SPECIFIED SEED MIXTURE FOR THE SEEDING AREA AND MOWED ONCE.
 - WARM-SEASON MIXTURES ARE GRASSES AND LEGUMES WHICH MAXIMIZE GROWTH AT HIGH TEMPERATURES, GENERALLY 80°F AND ABOVE. SEE TABLE 4-2 MIXTURES 1 TO 7. PLANTING RATES FOR WARM-SEASON GRASSES SHALL BE THE AMOUNT OF PURE LIVE SEED (PLS) AS DETERMINED BY GERMINATION TESTING RESULTS.
 - COOL-SEASON MIXTURES ARE GRASSES AND LEGUMES WHICH MAXIMIZE GROWTH AT TEMPERATURES BELOW 65°F. MANY GRASSES BECOME ACTIVE AT 65°F. SEE TABLE 4-2 MIXTURES 8 TO 10. ADJUSTMENT OF PLANTING RATES TO COMPENSATE FOR THE AMOUNT OF PLS IS NOT REQUIRED FOR COOL SEASON GRASSES.
- CONVENTIONAL SEEDING** IS PERFORMED BY APPLYING SEED UNIFORMLY BY HAND, CYCLONE (CENTRIFUGAL) SEEDER, DROP SEEDER, DRILL OR CULPACKEER SEEDER. EXCEPT FOR DRILLED, HYDROSEEDER OR CULPACKEER SEEDING, SEED SHALL BE INCORPORATED INTO THE SOIL WITHIN 24 HOURS OF SEEDING PREPARATION TO A DEPTH OF 1/4 TO 1/2 INCH, BY RANKING OR DRAGGING. DEPTH OF SEED PLACEMENT MAY BE 1/4 INCH DEEPER ON COARSE-TEXTURED SOIL.
- AFTER SEEDING**, FIRING THE SOIL WITH A CORRUGATED ROLLER WILL ASSURE GOOD SEED-TO-SOIL CONTACT, RESTORE CAPILLARITY, AND IMPROVE SEEDLING EMERGENCE. THIS IS THE PREFERRED METHOD, WHEN FORMED ON THE CONTOUR, SHEET EROSION WILL BE MINIMIZED AND WATER CONSERVATION ON SITE WILL BE MAXIMIZED.
- 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. SHORT FIBERED MULCH MAY BE APPLIED WITH A HYDROSEEDER FOLLOWING SEEDING. (ALSO SEE SECTION 4-MULCHING BELOW). HYDROSEEDING IS NOT A REFERRED SEEDING METHOD BECAUSE SEED AND FERTILIZER ARE APPLIED TO THE SURFACE AND NOT INCORPORATED INTO THE SOIL. WHEN POOR SEED TO SOIL CONTACT OCCURS, THERE IS A REDUCED SEED GERMINATION AND GROWTH.

- 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 DETERMINED COMPLIANCE WITH THIS MULCHING REQUIREMENT.

- STRAW OR HAY, UNROTTED SMALL GRAIN STRAW** 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 MUST NOT GRIND THE MULCH. HAY MULCH IS NOT RECOMMENDED FOR ESTABLISHING FINE TURF OR LAWNS DUE TO THE PRESENCE OF WEED SEEDS.

APPLICATION - SPREAD MULCH UNIFORMLY BY HAND OR MECHANICALLY SO THAT AT LEAST 80% OF THE SOIL SURFACE IS 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 SLOPES, 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 CRISS-CROSS AND A SQUARE PATTERN. SECURE TWINE AROUND EACH PEG WITH TWO OR MORE ROUND TURNS.
2. MULCH NETTINGS - STAPLE PAPER, JUTE, 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 ONE OF THE FOLLOWING:
 - 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 PHYTOOTOXIC EFFECT OR IMPIDE 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 THIS STATE.
 - SYNTHETIC BINDERS - HIGH POLYMER SYNTHETIC EMULSION, MISCIBLE WITH WATER WHEN DILUTED AND, FOLLOWING APPLICATION OF MULCH, DRYING AND CURING, SHALL NO LONGER BE SOLUBLE OR DISPERSIBLE IN WATER. BINDER SHALL BE APPLIED AT RATES RECOMMENDED BY THE MANUFACTURER AND REMAIN TACKY UNTIL GERMINATION OF GRASS.

NOTE: ALL NAMES GIVEN ABOVE ARE REGISTERED TRADE NAMES. THIS DOES NOT CONSTITUTE A RECOMMENDATION OF THESE PRODUCTS TO THE EXCLUSION OF OTHER PRODUCTS.

- 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.
- 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, 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 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 WITH MULCH ARE 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 SPREADING PELLETIZED MULCH ON THE SEED BED IS EXTREMELY IMPORTANT FOR SUFFICIENT ACTIVATION AND EXPANSION OF THE MULCH TO PROVIDE SOIL COVERAGE.

- IRRIGATION (WHERE FEASIBLE)**

IF SOIL MOISTURE IS DEFICIENT SUPPLY NEW SEEDING WITH ADEQUATE WATER (A MINIMUM OF 1/4 INCH APPLIED UP TO TWO 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.

- TOPDRESSING**

SINCE SOIL ORGANIC MATTER CONTENT AND SLOW RELEASE NITROGEN FERTILIZER (WATER INSOLUBLE) ARE PROHIBITED IN SECTION 2A - SEEDBED PREPARATION IN THIS STANDARD, NO FOLLOW-UP OF TOPDRESSING 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, TOPDRESS WITH 10-10-10 OR EQUIVALENT AT 300 POUNDS PER ACRE OR 9 POUNDS PER 1,000 SQUARE FEET EVERY 3 TO 5 WEEKS UNTIL THE GROSS NITROGEN DEFICIENCY IN THE TURF IS AMELIORATED.

- ESTABLISHING PERMANENT VEGETATIVE STABILIZATION**

THE QUALITY OF PERMANENT VEGETATION RESTS WITH THE CONTRACTOR. THE TIMING OF SEEDING, PREPARING THE SEEDBED, APPLYING NUTRIENTS, MULCH AND OTHER MAINTENANCE ARE ESSENTIAL. THE SEED APPLICATION RATES IN TABLE 4-2 ARE REQUIRED WHEN A REPORT OF COMPLIANCE IS REQUESTED PRIOR TO ACTUAL ESTABLISHMENT OF PERMANENT VEGETATION. UP TO SOIL REDUCTION IN APPLICATION RATES MAY BE USED WHEN 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 SOIL VEGETATIVE COVER (OF THE SEEDED SPECIES) AND MOWED ONCE. NOTE: THIS DESIGNATION OF MOWED ONCE DOES NOT GUARANTEE THE PERMANENCY OF THE TURF SHOULD OTHER MAINTENANCE FACTORS BE NEGLECTED OR OTHERWISE MISMANAGED.

STANDARD FOR TEMPORARY VEGETATIVE COVER

- 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 STANDARD FOR LAND GRADING, PG. 19-1.
 - 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.
 - IMMEDIATELY PRIOR TO SEEDING, THE SURFACE SHOULD BE SCARRIFIED 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.).

- SEEDBED PREPARATION**
 - APPLY GROUND LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS SUCH AS OFFERED BY RUTGERS CO-OPERATIVE EXTENSION SOIL SAMPLE MAPS ARE AVAILABLE FROM THE LOCAL RUTGERS CO-OPERATIVE EXTENSION OFFICES. FERTILIZER SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE OR 11 POUNDS PER 1,000 SQUARE FEET OF 10-10-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS A SOIL TEST INDICATES OTHERWISE. CALCIUM CARBONATE IS THE EQUIVALENT AND STANDARD FOR MEASURING THE ABILITY OF LIQUID MATERIALS TO NEUTRALIZE SOIL ACIDITY AND SUPPLY CALCIUM AND MAGNESIUM TO GRASSES AND LEGUMES.
 - WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRING-TOOTH HARROW, OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISKING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLE UNIFORM SEEDBED IS PREPARED.
 - INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED, THE AREA MUST BE RETILLED IN ACCORDANCE WITH THE ABOVE.
 - SOILS HIGH IN SULFIDES OR HAVING A PH OF 4 OR LESS REFER TO STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOILS, PG. 1-1.

- SEEDING**
 - SELECT SEED FROM RECOMMENDATIONS IN TABLE 7-2.
 - CONVENTIONAL SEEDING. APPLY SEED UNIFORMLY BY HAND, CYCLONE (CENTRIFUGAL) SEEDER, DROP SEEDER, DRILL OR CULPACKEER SEEDER. EXCEPT FOR DRILLED, HYDROSEEDER OR CULPACKEER SEEDING, SEED SHALL BE INCORPORATED INTO THE SOIL TO A DEPTH OF 1/4 TO 1/2 INCH, BY RANKING OR DRAGGING. DEPTH OF SEED PLACEMENT MAY BE 1/4 INCH DEEPER ON COARSE TEXTURED SOIL.
 - 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. SHORT FIBERED MULCH MAY BE APPLIED WITH A HYDROSEEDER FOLLOWING SEEDING. (ALSO SEE SECTION 4-MULCHING BELOW). HYDROSEEDING IS NOT A REFERRED SEEDING METHOD BECAUSE SEED AND FERTILIZER ARE APPLIED TO THE SURFACE AND NOT INCORPORATED INTO THE SOIL. WHEN POOR SEED TO SOIL CONTACT OCCURS, THERE IS A REDUCED SEED GERMINATION AND GROWTH.

- AFTER SEEDING**, FIRING THE SOIL WITH A CORRUGATED ROLLER WILL ASSURE GOOD SEED-TO-SOIL CONTACT, RESTORE CAPILLARITY, AND IMPROVE SEEDLING EMERGENCE. THIS IS THE PREFERRED METHOD, WHEN FORMED ON THE CONTOUR, SHEET EROSION WILL BE MINIMIZED AND WATER CONSERVATION ON SITE WILL BE MAXIMIZED.
- MULCHING**

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 DETERMINED COMPLIANCE WITH THIS MULCHING REQUIREMENT.

- STRAW OR HAY, UNROTTED SMALL GRAIN STRAW** 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 MUST NOT GRIND THE MULCH. HAY MULCH IS NOT RECOMMENDED FOR ESTABLISHING FINE TURF OR LAWNS DUE TO THE PRESENCE OF WEED SEEDS.

APPLICATION - SPREAD MULCH UNIFORMLY BY HAND OR MECHANICALLY SO THAT APPROXIMATELY 80% OF THE SOIL SURFACE IS 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 SLOPES, 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 CRISS-CROSS AND A SQUARE PATTERN. SECURE TWINE AROUND EACH PEG WITH TWO OR MORE ROUND TURNS.
2. MULCH NETTINGS - STAPLE PAPER, JUTE, 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 ONE OF THE FOLLOWING:
 - 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 PHYTOOTOXIC EFFECT OR IMPIDE 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 THIS STATE.
 - SYNTHETIC BINDERS - HIGH POLYMER SYNTHETIC EMULSION, MISCIBLE WITH WATER WHEN DILUTED AND, FOLLOWING APPLICATION OF MULCH, DRYING AND CURING, SHALL NO LONGER BE SOLUBLE OR DISPERSIBLE IN WATER. BINDER SHALL BE APPLIED AT RATES RECOMMENDED BY THE MANUFACTURER AND REMAIN TACKY UNTIL GERMINATION OF GRASS.

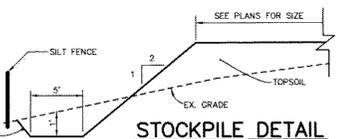
NOTE: ALL NAMES GIVEN ABOVE ARE REGISTERED TRADE NAMES. THIS DOES NOT CONSTITUTE A RECOMMENDATION OF THESE PRODUCTS TO THE EXCLUSION OF OTHER PRODUCTS.

- 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.
- 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, 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 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 WITH MULCH ARE 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 SPREADING PELLETIZED MULCH ON THE SEED BED IS EXTREMELY IMPORTANT FOR SUFFICIENT ACTIVATION AND EXPANSION OF THE MULCH TO PROVIDE SOIL COVERAGE.

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.

TABLE 7-2
TEMPORARY VEGETATIVE STABILIZATION GRASSES, SEEDING RATES, DATES AND DEFIN.

SEED SELECTIONS	SEEDING RATE (pounds/Acre)	OPTIMUM SEEDING DATE Based on Plant Hardiness Zone 3	OPTIMUM SEED DEPTH (inches)		
			Zone 5b, 6s	Zone 6b	Zone 7a, b
COOL SEASON GRASSES					
1. PERENNIAL RYEGRASS	100	3/15-3/17, 6/1/5, 8/1/5, 9/15/10	2/15-5/1	2/15-5/1	0.5
2. SPRING OATS	86	2.0 3/15-3/17, 6/1/5, 8/1/5, 9/15/10	2/15-5/1	2/15-5/1	1.0
3. WINTER BARLEY	96	2.2 8/1/5, 9/15/10	8/15-10/15	8/15-10/15	1.0
4. ANNUAL RYEGRASS	100	1.0 3/15-3/17, 6/1/5, 8/1/5, 9/15/10	2/15-5/1	2/15-5/1	0.5
5. WINTER CEREAL RYE	112	2.8 8/1/5, 11/1/15	8/15-12/15	8/15-12/15	1.0
WARM SEASON GRASSES					
6. PEARL MILLET	20	0.5 6/1/5, 8/1/5	5/1-9/1	5/1-9/1	1.0
7. MILLET (GERMAN OR HUNGARIAN)	30	0.7 6/1/5, 8/1/5	5/1-9/1	5/1-9/1	1.0



SOIL EROSION AND SEDIMENT CONTROL NOTES

- THE FREEDHOOD SOIL CONSERVATION DISTRICT SHALL BE NOTIFIED FORTY-EIGHT (48) HOURS IN ADVANCE OF ANY SOIL DISTURBING ACTIVITY.
- ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES ARE TO BE INSTALLED PRIOR TO SOIL DISTURBANCE, OR IN THEIR PROPER SEQUENCE, AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.
- ANY CHANGES TO THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLANS WILL REQUIRE THE SUBMISSION OF REVISED SOIL EROSION AND SEDIMENT CONTROL PLANS TO THE DISTRICT FOR RE-CERTIFICATION. THE REVISED PLANS MUST MEET ALL CURRENT STATE SOIL EROSION AND SEDIMENT CONTROL STANDARDS.
- N.J.S.A. 4:24-39 ET. SEQ. REQUIRES THAT NO CERTIFICATES OF OCCUPANCY BE ISSUED BEFORE THE DISTRICT DETERMINES THAT A PROJECT OR PORTION THEREOF IS IN FULL COMPLIANCE WITH THE CERTIFICATION PLAN. THE DISTRICT WILL NOT ISSUE A CERTIFICATE OF OCCUPANCY UNTIL A REPORT OF COMPLIANCE HAS BEEN ISSUED. UPON WRITTEN REQUEST FROM THE APPLICANT, THE DISTRICT WILL ISSUE A REPORT OF COMPLIANCE WITH CONDITIONS ON A LOT-BY-LOT OR SECTION-BY-SECTION BASIS. PROVIDED THAT THE PROJECT OR PORTION THEREOF IS IN SATISFACTORY COMPLIANCE WITH THE SEQUENCE OF DEVELOPMENT AND TEMPORARY MEASURES FOR SOIL EROSION AND SEDIMENT CONTROL HAVE BEEN IMPLEMENTED, INCLUDING PROVISIONS FOR STABILIZATION AND SITE WORK.
- ANY DISTURBED AREAS THAT WILL BE LEFT EXPOSED MORE THAN SIXTY (60) DAYS, AND NOT SUBJECT TO CONSTRUCTION TRAFFIC, WILL IMMEDIATELY RECEIVE A TEMPORARY SEEDING. IF THE SEASON PREVENTS THE ESTABLISHMENT OF TEMPORARY COVER, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW, OR EQUIVALENT MATERIAL, AT A RATE OF 2 TO 2 1/2 TONS PER ACRE, ACCORDING TO THE STANDARD FOR STABILIZATION WITH MULCH ONLY.
- IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING, ALL CRITICAL AREAS SUBJECT TO EROSION (I.E. SOIL STOCKPILES, STEEP SLOPES AND ROADWAY EMBANKMENTS) SHALL RECEIVE TEMPORARY SEEDING IN COMBINATION WITH STRAW MULCH OR A SUITABLE EQUIVALENT, AND A MULCH ANCHOR, IN ACCORDANCE WITH STATE STANDARDS.
- A SUB-BASE COURSE WILL BE APPLIED IMMEDIATELY FOLLOWING ROUGH GRADING AND INSTALLATION OF IMPROVEMENTS TO STABILIZE STREETS, ROADS, DRIVEWAYS, AND PARKING AREAS, IN AREAS WHERE NO UTILITIES ARE PRESENT, THE SUB-BASE SHALL BE INSTALLED WITHIN FIFTEEN (15) DAYS OF THE PRELIMINARY GRADING.
- THE STANDARD FOR STABILIZED CONSTRUCTION ACCESS REQUIRES THE INSTALLATION OF A PAD OF CLEAN CRUSHED STONE AT POINTS WHERE TRAFFIC WILL BE ACCESSING THE CONSTRUCTION SITE. AFTER INTERIOR ROADWAYS ARE PAVED, INDIVIDUAL LOTS REQUIRE A STABILIZED CONSTRUCTION ACCESS CONSISTING OF ONE INCH TO TWO INCH (1"-2") STONE FOR A MINIMUM LENGTH OF TEN FEET (10') EQUAL TO THE LOT ENTRANCE WIDTH. ALL OTHER ACCESS POINTS SHALL BE BLOCKED OFF.
- ALL SOIL WASHED, DROPPED, SPILLED, OR TRACKED OUTSIDE THE LIMIT OF DISTURBANCE OR ONTO PUBLIC RIGHT-OF-WAYS WILL BE REMOVED IMMEDIATELY.
- PERMANENT VEGETATION IS TO BE SEEDED OR SOODED ON ALL EXPOSED AREAS WITHIN TEN (10) DAYS AFTER FINAL GRADING.
- AT THE TIME THAT SITE PREPARATION FOR PERMANENT VEGETATIVE STABILIZATION IS GOING TO BE ACCOMPLISHED, ANY SOIL THAT DOES NOT PROVIDE A SUITABLE ENVIRONMENT TO SUPPORT ADEQUATE VEGETATIVE GROUND COVER SHALL BE REMOVED OR TREATED TO SUCH A WAY THAT IT WILL PERMANENTLY ADJUST THE PERMANENT VEGETATIVE GROUND COVER. THE REMOVAL OF PERMANENT VEGETATIVE GROUND COVER WILL NOT PROVIDE SUITABLE CONDITIONS. NON-VEGETATIVE MEANS OF PERMANENT GROUND STABILIZATION WILL HAVE TO BE EMPLOYED.
- 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 ULTIMATELY PLACED OR BURIED WITH LIMESTONE APPLIED AT THE RATE OF 10 TONS/ACRE, (OR 450 LBS./1,000 SQ. FT. OF SURFACE AREA) AND COVERED WITH A MINIMUM OF 12" OF SETTLED SOIL WITH A PH OF 5 OR MORE, OR 24" WHERE TREES OR SHRUBS ARE TO BE PLANTED.
- CONDUIT OUTLET PROTECTION MUST BE INSTALLED AT ALL REQUIRED OUTFALLS PRIOR TO THE DRAINAGE SYSTEM BECOMING OPERATIONAL.
- UNFILTERED DETAHERING IS NOT PERMITTED. NECESSARY PRECAUTIONS MUST BE TAKEN DURING ALL DETAHERING OPERATIONS TO MINIMIZE SEDIMENT TRANSPORT. ANY DETAHERING METHODS USED MUST BE IN ACCORDANCE WITH THE STANDARD FOR DETAHERING.
- SHOULD THE CONTROL OF DUST AT THE SITE BE NECESSARY, THE SITE WILL BE SPRINKLED UNTIL THE SURFACE IS WET. TEMPORARY VEGETATIVE COVER SHALL BE ESTABLISHED OR MULCH SHALL BE APPLIED AS REQUIRED BY THE STANDARD FOR DUST CONTROL.
- STOCKPILE ANCHORING LOCATIONS ESTABLISHED IN THE FIELD SHALL BE PLACED WITHIN THE LIMIT OF DISTURBANCE ACCORDING TO THE CERTIFIED PLAN. STAKES AND STOCKPILES NOT LOCATED WITHIN THE LIMIT OF DISTURBANCE WILL REQUIRE CERTIFICATION OF A REVISED SOIL EROSION AND SEDIMENT CONTROL PLAN. CERTIFICATION OF A NEW SOIL EROSION AND SEDIMENT CONTROL PLAN MAY BE REQUIRED FOR THESE ACTIVITIES IF AN AREA GREATER THAN 5,000 SQUARE FEET IS DISTURBED.
- ALL SOIL STOCKPILES ARE TO BE TEMPORARILY STABILIZED IN ACCORDANCE WITH SOIL EROSION AND SEDIMENT CONTROL NOTE #8.
- THE PROJECT OWNER SHALL BE RESPONSIBLE FOR ANY EROSION OR SEDIMENTATION THAT MAY OCCUR BELOW STORMWATER OUTFALLS OR OFFSITE AS A RESULT OF CONSTRUCTION OF THE PROJECT.

STANDARD FOR STABILIZATION WITH MULCH ONLY

DEFINITION
STABILIZING EXPOSED SOILS WITH NON-VEGETATIVE MATERIALS EXPOSED FOR PERIODS LONGER THAN 14 DAYS

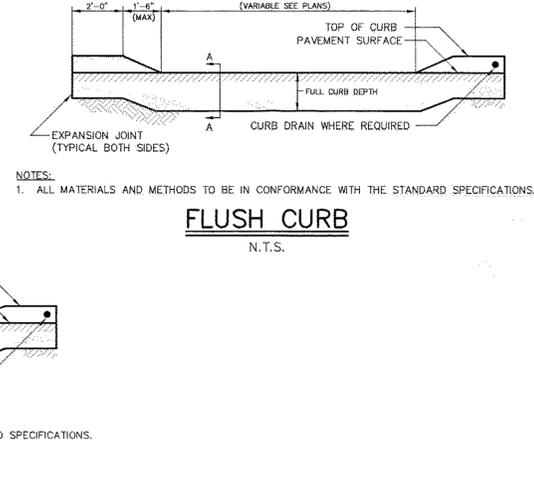
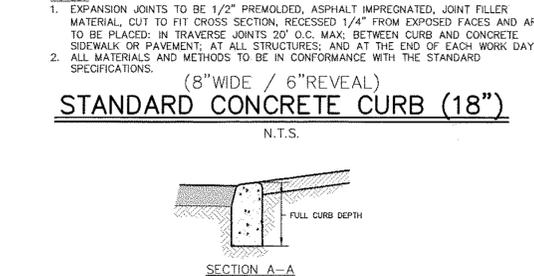
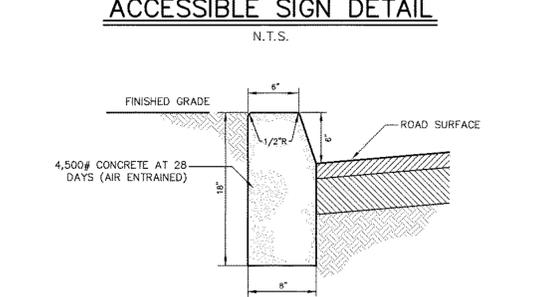
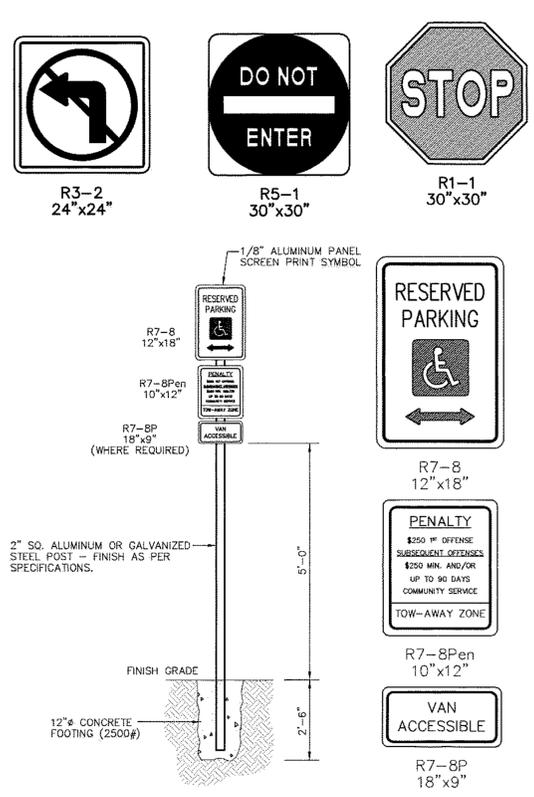
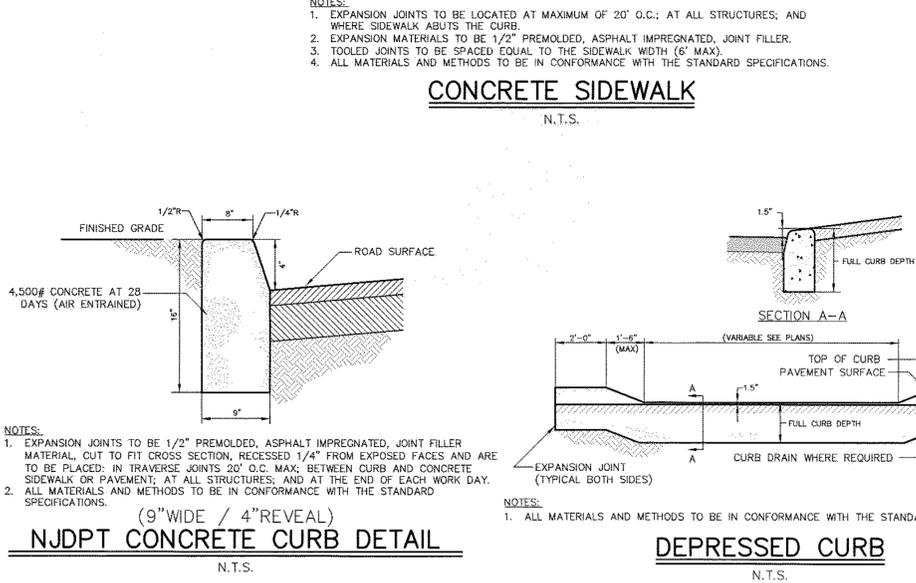
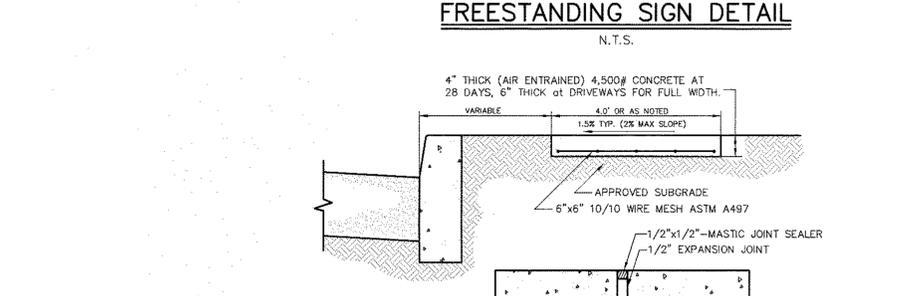
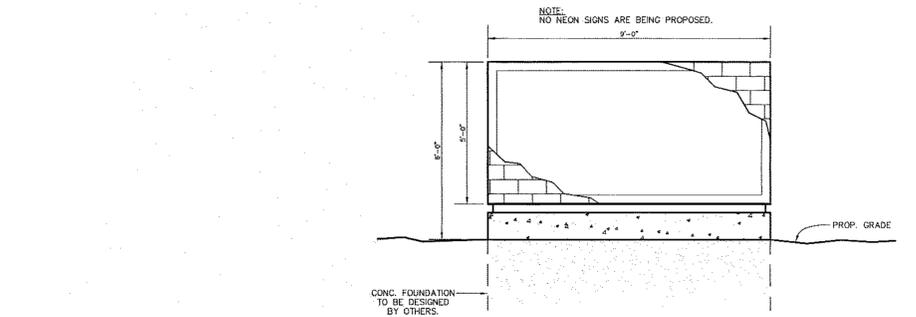
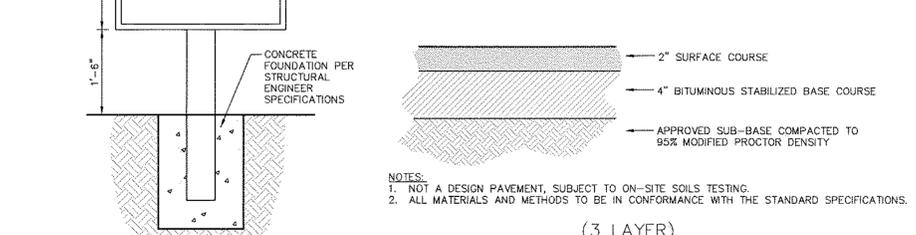
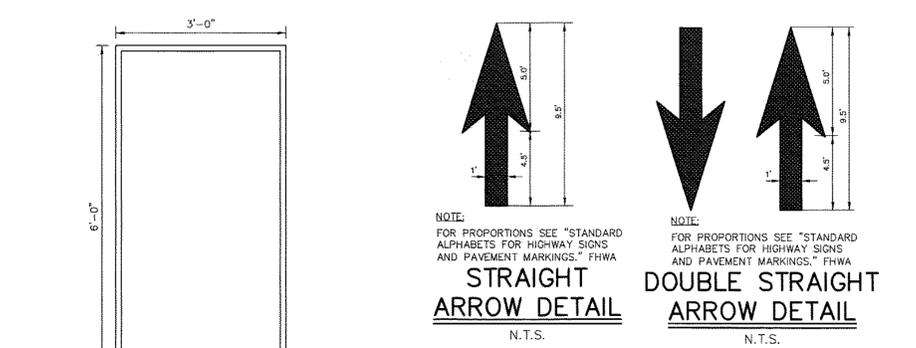
PURPOSE
TO PROTECT EXPOSED SOIL SURFACES FROM EROSION DAMAGE AND TO REDUCE OFFSITE ENVIRONMENTAL DAMAGE.

WATER QUALITY ENHANCEMENT
PROVIDES TEMPORARY MECHANICAL PROTECTION AGAINST WIND OR RAINFALL INDUCED SOIL EROSION UNTIL PERMANENT VEGETATIVE COVER MAY BE ESTABLISHED.

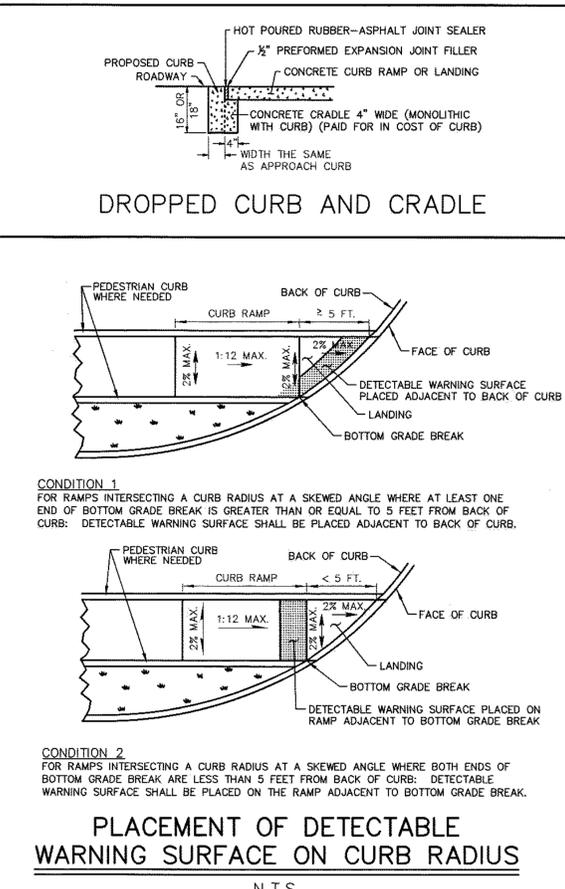
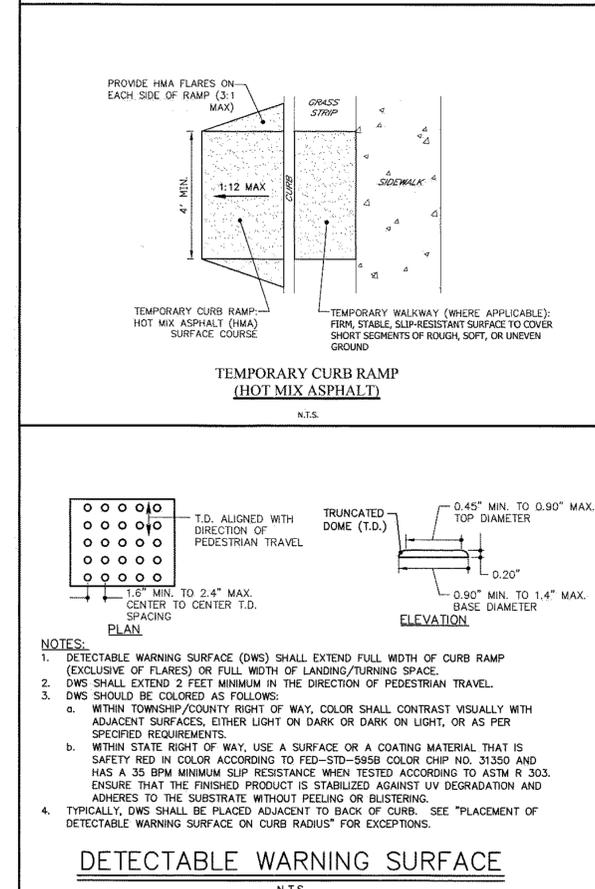
WHERE APPLICABLE
THIS PRACTICE IS APPLICABLE TO AREAS SUBJECT TO EROSION, WHERE THE SEASON AND OTHER CONDITIONS MAY NOT BE SUITABLE FOR GROWING AN EROSION-RESISTANT COVER OR WHERE STABILIZATION IS NEEDED FOR A SHORT PERIOD UNTIL MORE SUITABLE PROTECTION CAN BE APPLIED.

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.
 - 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.
- PROTECTIVE MATERIALS**
 - UNROTTED SMALL-GRAIN STRAW AT 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 ANCHORING TOOL. LIQUID MULCH BINDERS, OR NETTING THE DOWN APPROVED MATERIALS MAY BE USED IF APPROVED BY THE SOIL CONSERVATION DISTRICT. THE APPROVED RATES ABOVE HAVE BEEN MET WHEN THE MULCH COVERS THE GROUND COMPLETELY UPON VISUAL INSPECTION, I.E. THE SOIL CANNOT BE SEEN BELOW THE MULCH.
 - SYNTHETIC OR ORGANIC SOIL STABILIZERS MAY BE USED UNDER SUITABLE CONDITIONS AND IN QUANTITIES AS RECOMMENDED BY THE MANUFACTURER.
 - 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, COTTON, OR PLASTIC, MAY BE USED.
 - WOODCHIPS APPLIED UNIFORMLY TO A MINIMUM DEPTH OF 2 INCHES MAY BE USED. WOODCHIPS WILL NOT BE USED IN AREAS WHERE FLOWING WATER COULD WASH THEM INTO AN INLET AND PLUG IT.
 - GRAVEL, CRUSHED 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 RECOMMENDED.
- 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:
 - 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 CRISS-CROSS AND A SQUARE PATTERN. SECURE TWINE AROUND EACH PEG WITH TWO OR MORE ROUND TURNS.
 - MULCH NETTINGS - STAPLE PAPER, COTTON, OR PLASTIC NETTINGS OVER MULCH. USE DEGRADABLE NETTING IN AREAS TO BE MOWED. NETTING IS USUALLY AVAILABLE IN ROLLS 4 FEET WIDE AND UP TO 300 FEET LONG.
 - 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 OPERATION SHOULD BE ON THE CONTOUR.
- LIQUID MULCH-BINDERS**
 - 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.
 - USE ONE OF THE FOLLOWING:
 - ORGANIC AND VEGETABLE BASED BINDERS - NATURALLY OCCURRING, POWDER-BASED, HYDROPHILIC MATERIALS THAT 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 PHYTOOTOXIC EFFECT OR IMPIDE GROWTH OF TURFGRASS. VEGETABLE BASED GELS SHALL BE APPLIED AT RATES AND WEATHER CONDITIONS AS RECOMMENDED BY THE MANUFACTURER.
 - SYNTHETIC BINDERS - HIGH POLYMER SYNTHETIC EMULSION, MISCIBLE WITH WATER WHEN DILUTED AND FOLLOWING APPLICATION OF MULCH, DRYING AND CURING SHALL NO LONGER BE SOLUBLE OR DISPERSIBLE IN WATER. IT SHALL BE APPLIED AT RATES



- ### GENERAL ADA NOTES
- PEDESTRIAN CURBS**
 - PEDESTRIAN CURBS ARE PERMITTED WHEN ADJACENT TO NON-WALK AREAS OR ELEVATION DIFFERENCES WHICH CANNOT BE ACCOMMODATED BY FLARES OR GRADING.
 - CROSSWALKS**
 - FOR CURB RAMPS THAT LEAD TO A SINGLE CROSSWALK, THE RAMP (EXCLUDING FLARES) TO BE FULLY INSIDE OF MARKED CROSSWALK LINES.
 - SHOULD BE PLACED A MINIMUM DISTANCE OF 4'-0" FROM STOP AND YIELD LINES.
 - FOR UN-SIGNALIZED AREAS, CROSSWALKS SHOULD BE PLACED A MINIMUM DISTANCE OF 20'-0" AWAY FROM ON ROAD PARKING ZONES. FOR SIGNALIZED AREAS, CROSSWALKS SHOULD BE PLACED A MINIMUM DISTANCE OF 30'-0" FROM ON ROAD PARKING ZONES.
 - PEDESTRIAN CROSSWALKS ARE 6'-0" MINIMUM MEASURED FROM INSIDE THE PAINTED EDGE TO INSIDE PAINTED EDGE AND THE INSIDE LINES MUST BE OUTSIDE THE PROJECTED CURB LINES.
 - AVOID USING THE PARALLEL LINE CROSSWALK DESIGN. INSTEAD USE THE LONGITUDINAL, LADDER-STYLE, LINES AT 6'-0" LONG AND 1'-2" WIDE WITH A SPACING OF 1'-2" APART. SPACING SHOULD BE DESIGNED SO THE PAINTED AREAS AVOID THE WHEEL PATHS.
 - CURB RAMPS**
 - CONSTRUCT CURB RAMPS WITH A MINIMUM 4'-0" X 4'-0" CLEAR SPACE BEFORE THE CURB FACE, WITHIN THE WIDTH OF THE CROSSWALK.
 - SLOPES THAT EXCEED 8.00%, OR CONTRACT DOCUMENTS AS APPLICABLE, WILL NOT BE ACCEPTED AND WILL BE RECONSTRUCTED.
 - PROVIDE SLIP RESISTANT TEXTURE ON CURB RAMP BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP. EXTEND TEXTURE THE FULL WIDTH AND LENGTH OF THE CURB RAMP INCLUDING FLARED SIDE RAMPS.
 - TO AVOID CHASING GRADE INDEFINITELY WHEN TRAVERSING THE HEIGHT OF CURB, RAMP LENGTH NOT TO EXCEED 15'-0", ADJUST RAMP SLOPE AS NEEDED TO PROVIDE ACCESS TO THE MAXIMUM EXTENT FEASIBLE.
 - FOR NEW CONSTRUCTION AND ALTERATIONS, CONSTRUCT CURB RAMP AND FLARE SLOPES WITH THE FLATTEST SLOPE POSSIBLE.
 - DO NOT EXCEED 2.00% CROSS SLOPE ON THE CURB RAMP OR PEDESTRIAN ACCESSIBLE ROUTE (MEASURED PERPENDICULAR TO THE DIRECTION OF TRAVEL).
 - CURB RAMP AND SIDE FLARE LENGTHS ARE VARIABLE AND BASED ON CURB HEIGHT AND THE SIDEWALK SLOPE.
 - CURB RAMP WIDTH IS 4'-0" MINIMUM.
 - AVOID CURB RAMP DESIGNS WHERE THE WIDTH OF THE CROSSWALK WILL NEED TO BE GREATER THAN 10'-0" WIDE.
 - ALL SLOPES ARE MEASURED WITH RESPECT TO A LEVEL PLANE. THEREFORE, THE LENGTH OF RAMP IS NOT SOLELY DEPENDANT ON THE HEIGHT OF CURB. (FOR EXAMPLE, A 6" CURB DOES NOT NECESSARILY MEAN A RAMP LENGTH OF 6'-0" FOR A 12:1 SLOPE.)
 - THE CHANGE IN GRADE AT THE BOTTOM OF THE CURB RAMP AND ADJOINING ROAD SURFACE IS NOT TO EXCEED AN ALGEBRAIC DIFFERENCE OF 11.00%. THE COUNTER SLOPE OF THE CUTTER OR ROAD AT THE FOOT OF A CURB RAMP, LANDING OR BLENDED TRANSITION IS NOT TO EXCEED 8.00% AND IT IS NOT NECESSARY TO HAVE THE LENGTH GREATER THAN 15'-0".
 - WHEN TWO CROSSWALKS LEAD TO A SINGLE CURB RAMP, THE MAXIMUM RUNNING SLOPE IS 5% WITH A MAXIMUM 2% CROSS SLOPE. THESE TYPES OF RAMPS REQUIRE THE ENGINEERING DEPARTMENT'S APPROVAL AS THEY ARE NOT PREFERRED.
 - DEPRESSED CURBS**
 - CONSTRUCT TOP OF PLAIN CEMENT CONCRETE DEPRESSED CURB TO BE FLUSH WITH ADJACENT SURFACES (RAMPS, SIDEWALKS, FLARES).
 - CONSTRUCT DEPRESSED CURB FOR CURB RAMPS FLUSH TO ADJACENT ROADWAY. GRADE EDGE OF ROAD ELEVATIONS AT THE FLOW LINE TO ENSURE POSITIVE DRAINAGE AND PREVENT PONDING. FOR LEVEL LANDINGS BEHIND DEPRESSED CURB, ADJUST SLOPES TO PROVIDE POSITIVE DRAINAGE. THE VERTICAL ALIGNMENT OF A CURB RAMP, EXCLUDING FLARES, SHALL BE PLANAR. GRADE BREAKS SHALL BE FLUSH AND PERPENDICULAR TO THE DIRECTION OF THE RAMP RUN. RAMP TRANSITIONS BETWEEN WALKS, CUTTERS, LANDINGS, OR STREETS SHALL BE FLUSH AND FREE OF ABRUPT VERTICAL CHANGES (1/4" MAXIMUM).
 - WHEN TWO CROSSWALKS LEAD TO A SINGLE CURB RAMP, THE DEPRESSED CURB MUST EXTEND FROM THE OUTER MOST EDGE OF EACH CROSSWALK.
 - DETECTABLE WARNING SURFACES**
 - NO SEPARATION BETWEEN DETECTABLE WARNING SURFACES FOR MEDIANS LESS THAN 4'-0" BETWEEN BACK OF CURBS.
 - PROVIDE DETECTABLE WARNING SURFACES (DWS) 24" MINIMUM (IN THE DIRECTION OF PEDESTRIAN TRAVEL) ACROSS FULL WIDTH OF RAMP AT THE GRADE BREAK NEAR STREET EDGE. PROVIDE DWS THAT CONTRAST VISUALLY WITH ADJACENT WALKWAY SURFACES, EITHER LIGHT-ON-DARK OR DARK-ON-LIGHT FOR THE FULL WIDTH OF RAMP.
 - ALIGN DETECTABLE WARNING SURFACE TRUNCATED DOMES ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF THE RAMP AND PERPENDICULAR TO CURB WHEN APPROPRIATE.
 - DETECTABLE WARNING SURFACES SHALL BE SAFETY RED COLOR, EXCEPT IF THE MUNICIPALITIES HAVE ESTABLISHED AN ALTERNATIVE COLOR SCHEME.
 - FOR TWO CROSSWALKS LEADING TO A SINGLE CURB RAMP, THE DETECTABLE WARNING SURFACE MUST BE PLACED ALONG THE ENTIRE DEPRESSED CURB AND THE DOMES MUST BE PLACED IN SUCH A WAY THAT THE DIRECTION OF TRAVEL IS ORIENTED INTO THE CROSSWALK.
 - DRIVEWAYS**
 - 5.00% MAXIMUM SLOPE FOR THE DRIVEWAY APRON.
 - 1 1/2" MAXIMUM VERTICAL CHANGE IN HEIGHT BETWEEN THE ROAD SURFACE AND THE DEPRESSED CURB AT THE DRIVEWAY APRON.
 - JOINTS**
 - PROVIDE EXPANSION JOINT MATERIAL 1/2" THICK WHERE CURB RAMP ADJOINS ANY RIGID PAVEMENT, SIDEWALK OR STRUCTURE WITH THE TOP OF JOINT FILLER FLUSH WITH ADJACENT CONCRETE SURFACE. SEAL JOINTS WITH AN APPROVED SEALING MATERIAL.
 - LANDINGS (AKA TURNING SPACE)**
 - LANDING AREA, APPROACH SIDEWALK TRANSITIONS, AND CURB RAMP SHALL BE KEPT CLEAR OF OBSTRUCTIONS, UNLESS AN EXCEPTION IS GRANTED.
 - DO NOT EXCEED 2.00% SLOPE IN ALL DIRECTIONS.
 - LANDING AREA SHOULD BE 4'-0" X 4'-0" MINIMUM CLEAR SPACE. IF THE TURNING SPACE IS CONSTRAINED ON 2 OR MORE SIDES, IT MUST BE 4'x5' WITH THE 5' LENGTH ALONG THE UNSTRUCTURED SIDE. FOR TWO CROSSWALKS LEADING TO A LANDING AREA MUST HAVE A MINIMUM OF A 5'-0" DEPTH (INCLUDING THE DETECTABLE WARNING SURFACE) ALONG THE DEPRESSED CURB/ROADWAY.
 - ENGINEERING DEPARTMENT APPROVAL IS REQUIRED IF LANDING FOR TURNING MANEUVER IS NOT ON THE SIDEWALK, I.E. IF THE LANDING AREA "CLEAR SPACE" IS IN THE ROADWAY.
 - 4'x4' LANDINGS ARE REQUIRED AT EVERY ACCESSIBLE PEDESTRIAN SIGNAL/PUSHBUTTON LOCATION.
 - NON-WALK SURFACES**
 - NON-WALK AREA IS AN OBSTRUCTION OR GRASS/NON-PAVED AREA ADJACENT TO THE PEDESTRIAN ACCESS ROUTE THAT IS NOT USED BY THE PEDESTRIAN FOR ACCESS.
 - PEDESTRIAN PUSHBUTTONS**
 - THE DETAILS DEPICT PEDESTRIAN PUSHBUTTON POLES TO ILLUSTRATE THE RECOMMENDED PLACEMENT OF PEDESTRIAN PUSHBUTTONS. FOR ALTERATION PROJECTS PROVIDE ACCESS TO EXISTING PEDESTRIAN PUSHBUTTONS TO THE MAXIMUM EXTENT FEASIBLE. INSTALL PEDESTRIAN PUSHBUTTON STUB POLES, WHERE APPLICABLE, SO AS NOT TO CREATE PEDESTRIAN OBSTRUCTIONS.
 - NEW CONSTRUCTION MUST COMPLY WITH RECOMMENDED LOCATIONS FOR ALTERATION PROJECTS LOCATE PEDESTRIAN PUSHBUTTONS, TO THE MAXIMUM EXTENT FEASIBLE (SEE 2009 MUTCD FIG 4E-3).
 - ADJACENT TO A LEVEL NON-SLIP SURFACE TO PROVIDE ACCESS FROM A WHEELCHAIR, AND WHERE THERE IS A NON-SLIP WHEELCHAIR ACCESSIBLE ROUTE TO THE RAMP
 - WITHIN 5'-0" OF THE CROSSWALK EXTENDED
 - BETWEEN 1'-6" AND 10'-0" OF THE EDGE OF CURB, SHOULDER OR PAVEMENT
 - PARALLEL TO THE CROSSWALK TO BE USED
 - MOUNT PEDESTRIAN PUSHBUTTON 42" ABOVE THE SIDEWALK OR FINISHED GRADE TO THE CENTER OF THE PUSHBUTTON AND 10" MAXIMUM LATERALLY FROM LANDING.
 - SIDE FLARES**
 - SLOPES ARE MEASURED WITH RESPECT TO A LEVEL PLANE. THEREFORE, THE LENGTH OF RAMP IS NOT SOLELY DEPENDANT ON THE HEIGHT OF CURB. (FOR EXAMPLE, A 6" CURB DOES NOT NECESSARILY MEAN A RAMP LENGTH OF 6'-0" FOR A 12:1 SLOPE.)
 - SIDE FLARES TO 0.00% MAXIMUM SLOPE WHERE THE PEDESTRIAN PATH CROSSES THE CURB RAMP
 - SIDE FLARES MUST BE PARALLEL TO THE CURB LINE
 - CURB RAMP AND SIDE FLARE LENGTHS ARE VARIABLE AND BASED ON CURB HEIGHT AND THE SIDEWALK SLOPE
 - GRADE GRASS AREAS OR OTHER NON-WALK AREAS AT 3:1 (1:3) MAXIMUM. DO NOT INSTALL CHEEK WALLS THAT INTERSECT THE PEDESTRIAN ACCESS ROUTE
 - SIDE FLARE WIDTH IS TYPICALLY 24" AND A MINIMUM OF 12".
 - TRAVEL LANES**
 - THE TRAVEL LANE IS DEFINED BY THE OUTSIDE EDGE OF THE WHITE PAVEMENT MARKING LINE. IF A WHITE PAVEMENT MARKING LINE DOES NOT EXIST, THE TRAVEL LANE IS DEFINED BY THE CONTRACT DOCUMENTS.
 - MODIFY CONSTRUCTION DETAILS TO ADAPT DIMENSIONS TO EXISTING CURB HEIGHTS WHERE THE CURB IS LESS OR MORE THAN THE STANDARD 6" HEIGHT.**
 - CONTRACTOR MUST MEET THE STANDARDS CONTAINED HEREIN UNLESS OTHERWISE NOTED OR DIRECTED.**
 - PREFERRED AND ALTERNATE TREATMENTS SHOULD NOT BE INTERMIXED WITHIN THE SAME INTERSECTION.**
 - ALL HANDICAP RAMPS CONSTRUCTED IN THIS CONTRACT SHALL MEET ACCESSIBILITY REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT.**
 - THE CONTRACTOR IS REQUIRED TO CONTACT THE TRAFFIC ENGINEERING DEPARTMENT ABOUT THE CONSTRUCTION OF ALL HANDICAP CURB RAMPS AT SIGNALIZED INTERSECTIONS AND VERIFY THE STRIPING PLAN IS IN ACCORDANCE WITH THE MOST RECENT NO PASSING ZONE PLAN.**
 - GRADE BREAKS**
 - GRADE BREAKS AT THE TOP AND BOTTOM OF THE CURB RAMP SHALL BE PERPENDICULAR TO THE DIRECTION OF THE RAMP RUN.
 - GRADE BREAKS ARE NOT PERMITTED ON THE SURFACE OF RAMP RUNS OR LANDING AREAS.
 - SURFACE SLOPES THAT MEET AT THE GRADE BREAKS SHALL BE FLUSH.
 - FOR NEW CONSTRUCTION AND ALTERATIONS, CONSTRUCT CURB RAMP AND FLARE SLOPES WITH THE FLATTEST SLOPE POSSIBLE.**
 - ALL VERTICAL SURFACE DISCONTINUITIES SHALL NOT EXCEED 1/4" IN HEIGHT. ANY VERTICAL SURFACE DISCONTINUITY BETWEEN 1/4" AND 1/2" SHALL BE BEVELED AT A SLOPE NO GREATER THAN 50% ACROSS THE ENTIRE DISCONTINUITY.**
 - HORIZONTAL OPENINGS IN GRATES AND JOINTS SHALL NOT EXCEED 1/2" IN DIAMETER AND THE GRATES SHALL BE PLACED SO THE LONG DIMENSION IS PERPENDICULAR TO THE DIRECTION OF TRAVEL.**



CONSTRUCTION DETAIL NOTES

- ALL TRAFFIC SIGNS AND PAVEMENT MARKINGS SHALL CONFORM TO THE CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- ALL CONSTRUCTION DETAILS SHALL BE SUPERSEDED BY APPLICABLE MUNICIPAL COUNTY OR STATE DETAILS UNLESS OTHERWISE NOTED. STRUCTURAL DETAILS ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. SHOP DRAWINGS SHALL BE PROVIDED TO THE TOWNSHIP ENGINEER FOR ALL WALLS AND STRUCTURAL ELEMENTS PRIOR TO CONSTRUCTION.
- SHOP DRAWINGS SHALL BE PROVIDED FOR ALL PRECAST STRUCTURES PRIOR TO THE ORDERING OF MATERIALS.
- DETAILS ASSUME APPROPRIATE LOAD BEARING CAPACITY AND COMPACTION OF SOILS. ACTUAL FIELD CONDITIONS SHALL BE CONFIRMED BY ON-SITE GEOTECHNICAL ENGINEER.
- RESIDENTIAL DEVELOPMENTS SHALL CONFORM TO DETAILS WITHIN THE CURRENT EDITION OF THE RESIDENTIAL SITE IMPROVEMENT STANDARDS (R.S.I.S.).
- ALL CONSTRUCTION DETAILS ARE NOT TO SCALE (N.T.S.) UNLESS OTHERWISE NOTED.

REVISIONS

NO.	DATE	DESCRIPTION

THIS DRAWING IS FOR PERMIT PURPOSES ONLY
NOT FOR CONSTRUCTION UNTIL THIS BOX HAS BEEN CHECKED AND DATED

CHKD BY: _____ DATE: _____

menlo engineering associates
Civil Engineering Consultants
Landscape Architects
Professional Planners
261 Cleveland Avenue
Highland Park, NJ 08904
menloeng.com
732-846-8585 732-846-9439
Certificate of Authorization: 24CA27951900

CARAVAN, LLC
BOROUGH OF SAYREVILLE
MIDDLESEX COUNTY
NEW JERSEY

BLOCK 277
LOTS 1-5 & 13-14
TAX MAP SHEET 93
2.06 ACRES

CONSTRUCTION DETAILS (1)

DRAWN BY: _____ RW
DESIGNED BY: _____ RW
APPROVED BY: _____ ST

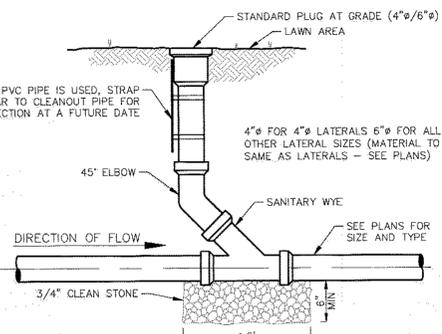
THIS WORK PREPARED UNDER MY MUNICIPAL SUPERVISION

SCOTT H. TURNER
PROFESSIONAL ENGINEER
N.J.P.E.# 43811

PROJECT NUMBER: 2023.091 DE-1
DATE OF ISSUE: JUNE 9, 2025
REVISION: _____

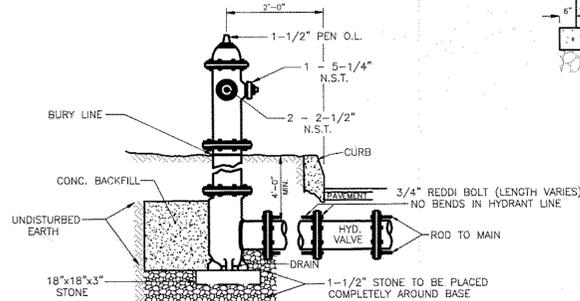
11

- NOTES:**
1. ALL CONSTRUCTION SHALL MEET STANDARD SPECIFICATIONS, THE LATEST EDITION.
 2. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST OSHA STANDARDS.



CLEANOUT (IN-LINE)

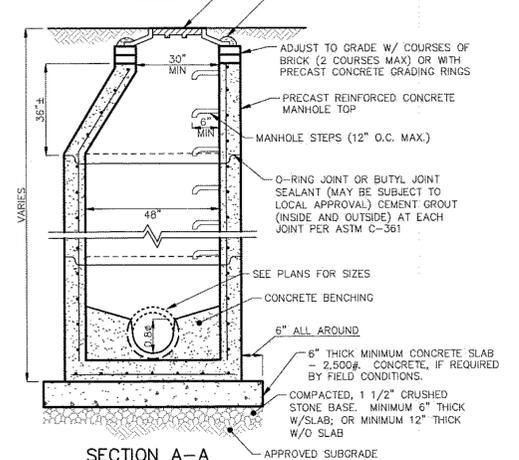
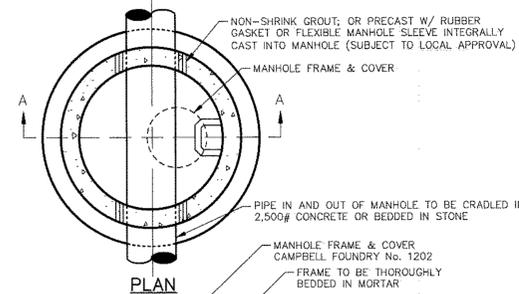
N.T.S.



FIRE HYDRANT DETAIL

N.T.S.

- MANHOLE NOTES:**
1. ALL CONSTRUCTION SHALL MEET STANDARD SPECIFICATIONS, THE LATEST EDITION.
 2. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST OSHA STANDARDS.
 3. EXTERIOR SURFACES SHALL BE PAINTED WITH TWO (2) COATS OF BITUMINOUS WATERPROOFING MATERIAL.
 4. CONCRETE AND REINFORCEMENT TO BE IN ACCORDANCE WITH ASTM C478, THE LATEST EDITION.
 5. DETAILED SHOP DRAWINGS TO BE SUBMITTED TO ENGINEER FOR APPROVAL PRIOR TO ORDERING.

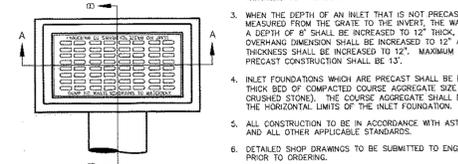


CONCRETE MANHOLE (48\"/>

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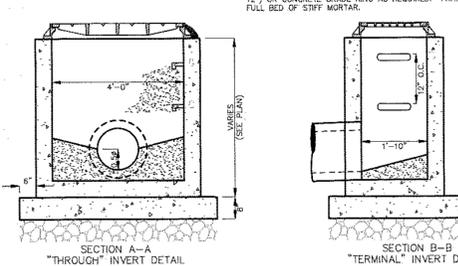
GENERAL NOTES:

1. INLETS MAY BE CONSTRUCTED OF BRICK, CONCRETE, CONCRETE BLOCK OR PRECAST CONCRETE. WALLS SHALL BE 8\"/>
- 2. IF WALL CONSTRUCTION IS BRICK OR BLOCK, THE WALLS SHALL BE PLASTERED BOTH INSIDE AND OUTSIDE WITH 1/2\"/>
- 3. WHEN THE DEPTH OF AN INLET THAT IS NOT PRECAST EXCEEDS 8\"/>
- 4. INLET FOUNDATIONS WHICH ARE PRECAST SHALL BE PLACED ON A 6\"/>
- 5. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ASTM DESIGNATION C478 AND ALL OTHER APPLICABLE STANDARDS.
- 6. DETAILED SHOP DRAWINGS TO BE SUBMITTED TO ENGINEER FOR APPROVAL PRIOR TO ORDERING.
- 7. FRAME AND GRATE TO BE CAMPBELL FOUNDRY - #3425 - BICYCLE SAFE GRATE (LETTERING - "DUMP NO WASTE" (FISH) DRAINS TO WATERWAY" OR APPROVED EQUAL. ADJUST TO GRADE WITH CONCRETE BRICK (MAX 12\"/>

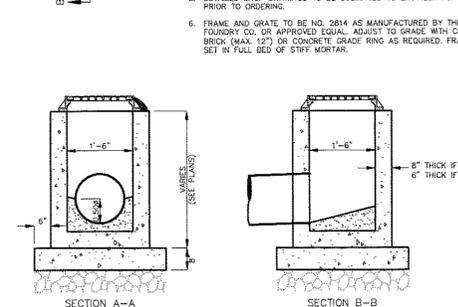
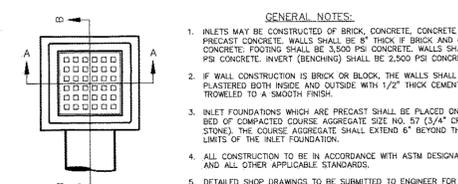


TYPE "A" INLET

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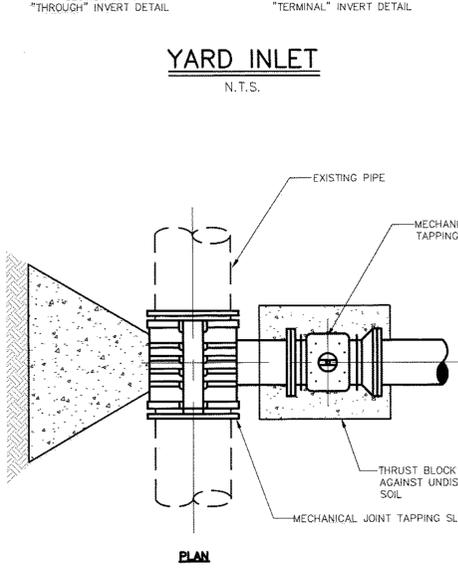


NOTE: THIS DETAIL SHALL BE USED IF YARD INLETS ARE DEEMED NECESSARY DUE TO FIELD CONDITIONS.



YARD INLET

N.T.S.

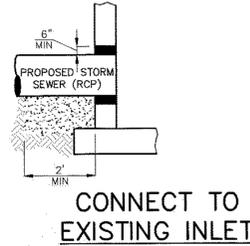


TAPPING SLEEVE AND VALVE

N.T.S.

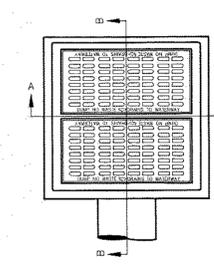
TAPPING NOTES:

1. INSTALLATION OF TAPPING SLEEVE AND VALVE AND INSERTION VALVE SHALL BE CONDUCTED UNDER "WET" CONDITIONS. EXISTING MAINS SHALL BE LEFT IN SERVICE AT ALL TIMES DURING TAPPING OR INSERTION.
2. CONCRETE THRUST BLOCK UNDER VALVES SHALL HAVE A SOIL BEARING AREA EQUAL TO THAT OF A 45\"/>



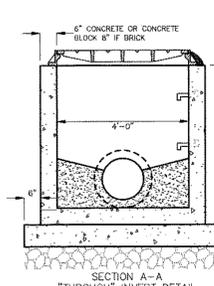
CONNECT TO EXISTING INLET

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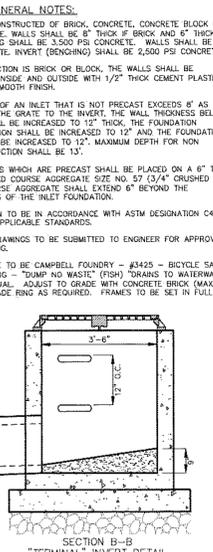


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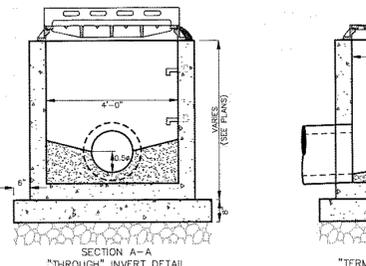


- GENERAL NOTES:**
1. INLETS MAY BE CONSTRUCTED OF BRICK, CONCRETE, CONCRETE BLOCK OR PRECAST CONCRETE. WALLS SHALL BE 8\"/>
 - 2. IF WALL CONSTRUCTION IS BRICK OR BLOCK, THE WALLS SHALL BE PLASTERED BOTH INSIDE AND OUTSIDE WITH 1/2\"/>
 - 3. WHEN THE DEPTH OF AN INLET THAT IS NOT PRECAST EXCEEDS 8\"/>
 - 4. INLET FOUNDATIONS WHICH ARE PRECAST SHALL BE PLACED ON A 6\"/>
 - 5. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ASTM DESIGNATION C478 AND ALL OTHER APPLICABLE STANDARDS.
 - 6. DETAILED SHOP DRAWINGS TO BE SUBMITTED TO ENGINEER FOR APPROVAL PRIOR TO ORDERING.
 - 7. FRAME AND GRATE TO BE CAMPBELL FOUNDRY - #3425 - BICYCLE SAFE GRATE (LETTERING - "DUMP NO WASTE" (FISH) DRAINS TO WATERWAY" OR APPROVED EQUAL. ADJUST TO GRADE WITH CONCRETE BRICK (MAX 12\"/>



TYPE "B" INLET

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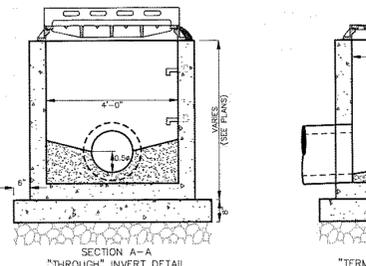
CONNECT TO EXISTING INLET

N.T.S.

- GENERAL NOTES:**
1. INLETS MAY BE CONSTRUCTED OF BRICK, CONCRETE, CONCRETE BLOCK OR PRECAST CONCRETE. WALLS SHALL BE 8\"/>
 - 2. IF WALL CONSTRUCTION IS BRICK OR BLOCK, THE WALLS SHALL BE PLASTERED BOTH INSIDE AND OUTSIDE WITH 1/2\"/>
 - 3. WHEN THE DEPTH OF AN INLET THAT IS NOT PRECAST EXCEEDS 8\"/>
 - 4. INLET FOUNDATIONS WHICH ARE PRECAST SHALL BE PLACED ON A 6\"/>
 - 5. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ASTM DESIGNATION C478 AND ALL OTHER APPLICABLE STANDARDS.
 - 6. DETAILED SHOP DRAWINGS TO BE SUBMITTED TO ENGINEER FOR APPROVAL PRIOR TO ORDERING.
 - 7. FRAME AND GRATE TO BE CAMPBELL FOUNDRY - #2818 CURB INLET - NJ TYPE B - WITH BICYCLE SAFE GRATE AND TYPE "N" COG CURB PIECE (LETTERING "DUMP NO WASTE" (FISH) DRAINS TO WATERWAY". ADJUST TO GRADE WITH CONCRETE BRICK (MAX 12\"/>

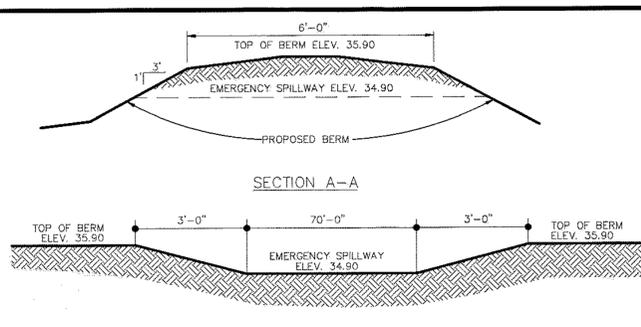
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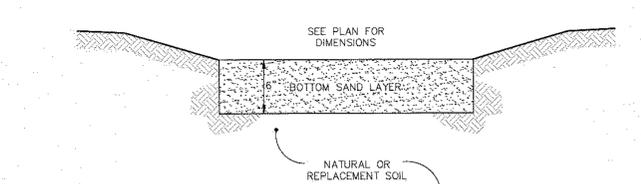
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DETENTION BASIN BERM CROSS SECTION

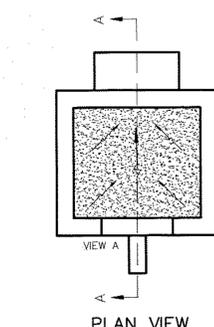
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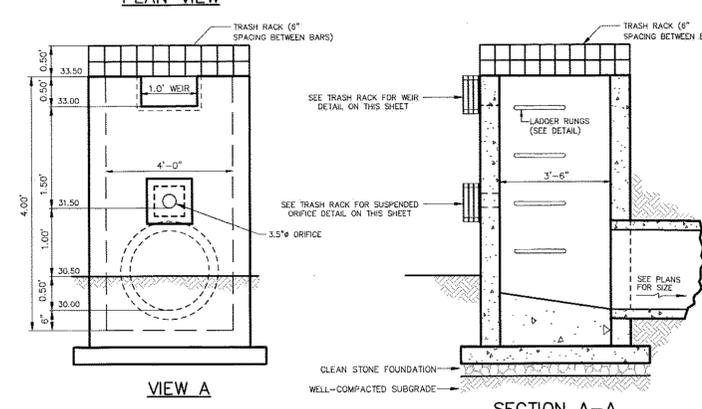
- NOTES:**
1. BOTTOM SAND LAYER MUST CONSIST OF K5 SAND WITH A MAXIMUM OF 15% FINES AND A MINIMUM PERMEABILITY RATE OF 20 INCHES PER HOUR.
 2. BASIN CONSTRUCTION MUST NOT COMPACT SOILS BELOW BASIN BOTTOM.

INFILTRATION BASIN SAND BOTTOM

N.T.S.



PLAN VIEW



VIEW A

OUTLET CONTROL STRUCTURE DETAIL

N.T.S.

- NOTES:**
1. BEARING AREAS ARE BASED ON UNDISTURBED SOIL WITH A BEARING CAPACITY OF 1,000 POUNDS PER SQUARE FOOT FOR A LESSER SOIL BEARING CAPACITY THESE AREAS SHALL BE INCREASED ACCORDINGLY.
 2. ALL CONCRETE THRUST BLOCKS SHALL BE CLASS "B" CONCRETE.
 3. THRUST BLOCKS SHALL BE POURED AGAINST UNDISTURBED EARTH.
 4. NO JOINT SHALL BE COVERED WITH CONCRETE.
 5. APPROVED MECHANICAL JOINT RESTRAINTS ARE REQUIRED AT ALL VERTICAL BENDS AND MAY BE USED IN LIEU OF THRUST BLOCKS AT HORIZONTAL BENDS AT THE OPENING OF THE ENGINEER, AT NO ADDITIONAL COST TO THE OWNER.
 6. A BITUMASTIC COATING SHALL BE APPLIED TO ALL BOLTS, NUTS, WASHERS, RODS, THRUST RESTRAINT BOLTS AND ALL UNCOATED HARDWARE.
 7. 6 MIL. POLY SHEATHING SHALL BE PLACED BETWEEN FITTINGS AND CONCRETE THRUST BLOCKS.

DIAMETER OF PIPE (d)	22 1/2\"/> <th>45\"/> <th>90\"/> <th>TEE CONNECTION</th> <th>45\"/> <th>PLUG</th> </th></th></th>	45\"/> <th>90\"/> <th>TEE CONNECTION</th> <th>45\"/> <th>PLUG</th> </th></th>	90\"/> <th>TEE CONNECTION</th> <th>45\"/> <th>PLUG</th> </th>	TEE CONNECTION	45\"/> <th>PLUG</th>	PLUG
4"	0.5	1.4	2.6	1.8	2.2	2.0
6"	1.5	3.0	6.0	4.0	4.5	4.5
8"	2.5	5.0	9.5	6.5	9.5	8.0
10"	4.1	8.0	13.0	9.5	12.5	12.5
12"	5.5	11.5	19.0	13.5	16.0	18.0
16"	9.0	18.0	33.0	23.0	27.0	32.0
20"	14.0	28.0	51.0	36.0	42.0	50.5

A-CONTACT BEARING AREA OF BLOCK WITH EARTH, SQUARE FEET

TABLE OF THRUST BLOCKS

N.T.S.

CONSTRUCTION DETAIL NOTES

1. ALL TRAFFIC SIGNS AND PAVEMENT MARKINGS SHALL CONFORM TO THE CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
2. ALL CONSTRUCTION DETAILS SHALL BE SUPERSEDED BY APPLICABLE MUNICIPAL, COUNTY OR STATE DETAILS UNLESS OTHERWISE NOTED.
3. STRUCTURAL DETAILS SHALL BE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. SHOP DRAWINGS SHALL BE PROVIDED TO THE TOWNSHIP ENGINEER FOR ALL WALLS AND STRUCTURAL ELEMENTS PRIOR TO CONSTRUCTION.
4. SHOP DRAWINGS SHALL BE PROVIDED FOR ALL PRECAST STRUCTURES PRIOR TO THE ORDERING OF MATERIALS.
5. DETAILS ASSUME APPROPRIATE LOAD BEARING CAPACITY AND COMPACTION OF SOILS. ACTUAL FIELD CONDITIONS SHALL BE CONFIRMED BY ON-SITE GEOTECHNICAL ENGINEER.
6. RESIDENTIAL DEVELOPMENTS SHALL CONFORM TO DETAILS WITHIN THE CURRENT EDITION OF THE RESIDENTIAL SITE IMPROVEMENT STANDARDS (R.S.I.S.).
7. ALL CONSTRUCTION DETAILS ARE NOT TO SCALE (N.T.S.) UNLESS OTHERWISE NOTED.

REVISIONS

NO.	DATE	DESCRIPTION

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CHKD BY: _____ DATE: _____



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 Civil Engineering Consultants
 Landscape Architects
 Professional Planners
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 Highland Park, NJ 08904
 menloeng.com
 732-846-8585 732-846-9439
 Certificate of Authorization: 246A27951900

CARAVAN, LLC
 BOROUGH OF SAYREVILLE
 MIDDLESEX COUNTY
 NEW JERSEY

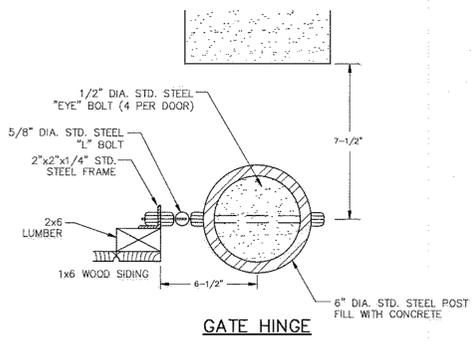
BLOCK 277
 LOTS 1-5 & 13-14
 TAX MAP SHEET 93
 2.06 ACRES

CONSTRUCTION DETAILS (2)

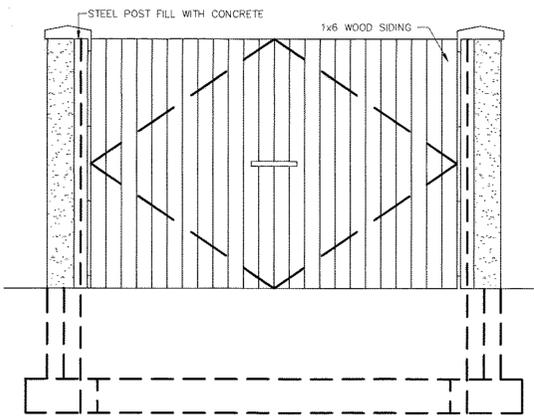
DRAWN BY: _____ RM
 DESIGNED BY: _____ RM
 APPROVED BY: _____ ST

THIS WORK PREPARED UNDER MY SUPERVISION.
SCOTT H. TURNER
 PROFESSIONAL ENGINEER
 NJPE# 43811

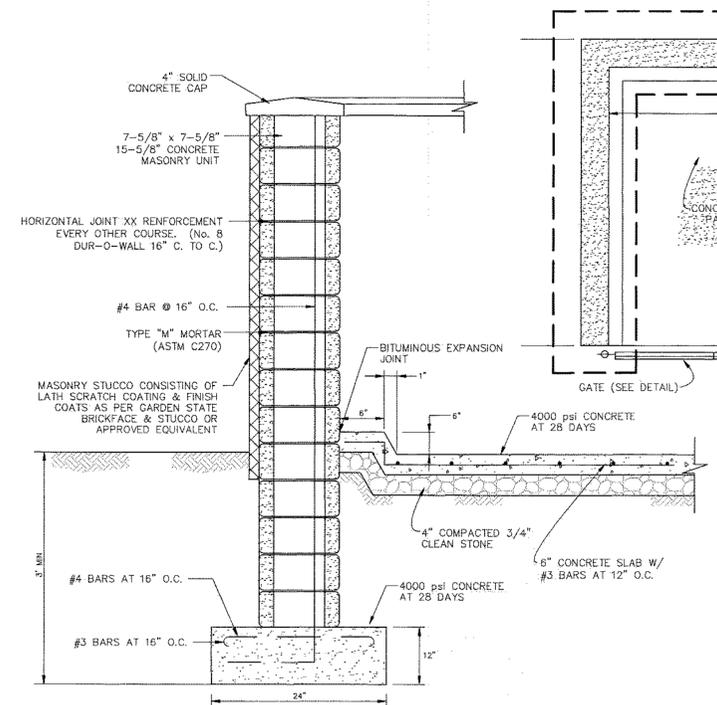
PROJECT NUMBER: 2023.091 DE-2
 DATE OF ISSUE: JUNE 9, 2025
 REVISION: _____ 12



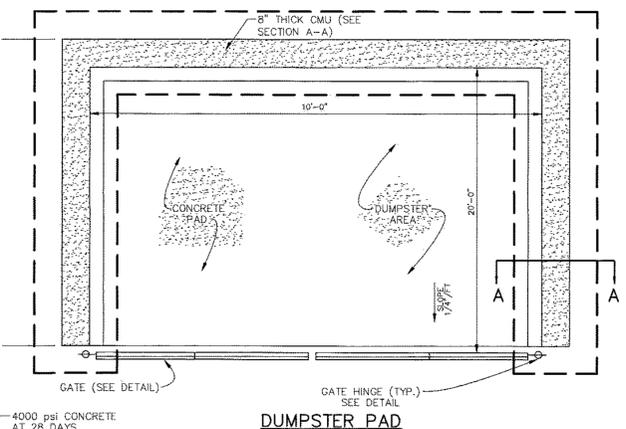
GATE HINGE
N.T.S.



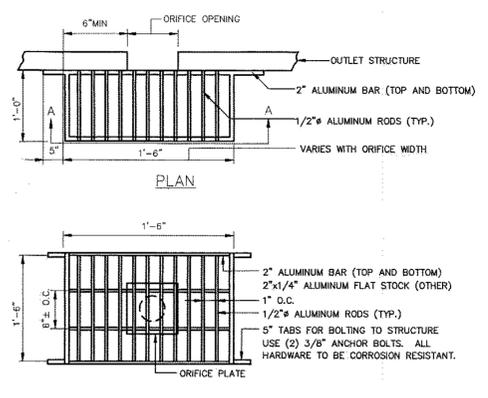
DUMPSTER ENCLOSURE GATE
N.T.S.



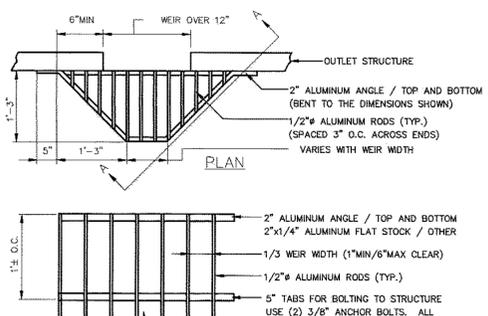
RECYCLING & DUMPSTER ENCLOSURE DETAIL
N.T.S.



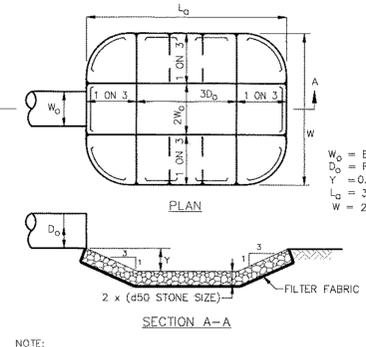
DUMPSTER PAD
N.T.S.



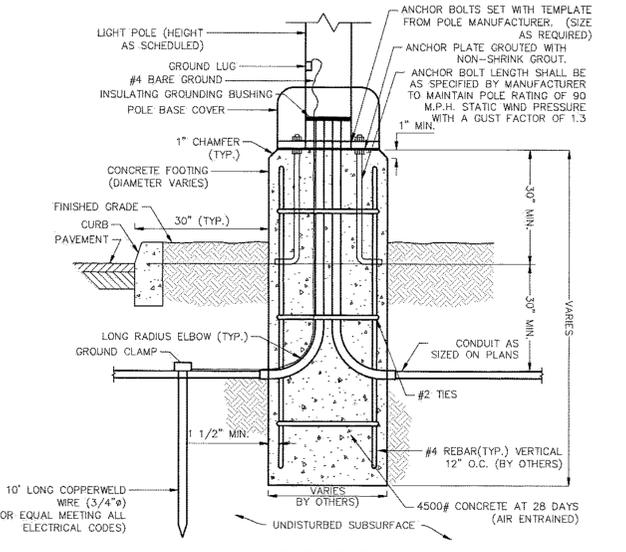
TRASH RACK FOR SUSPENDED ORIFICE
N.T.S.



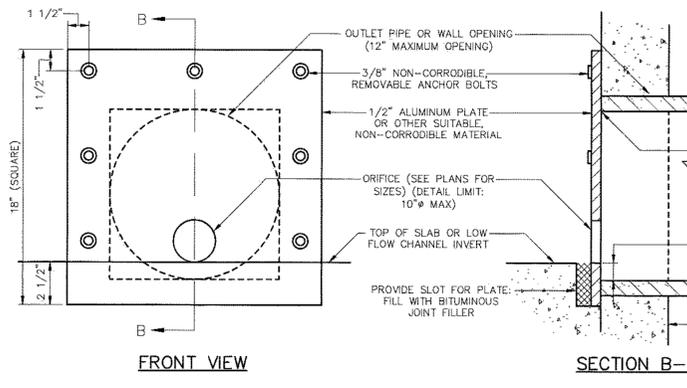
TRASH RACK FOR WEIR
N.T.S.



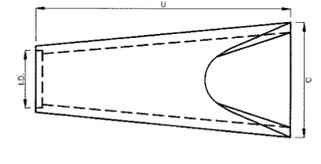
PREFORMED SCOUR HOLE
N.T.S.



RAISED SITE LIGHT POLE FOUNDATION DETAIL (IN GRASSED AREAS)
N.T.S.



ORIFICE PLATE DETAIL
N.T.S.

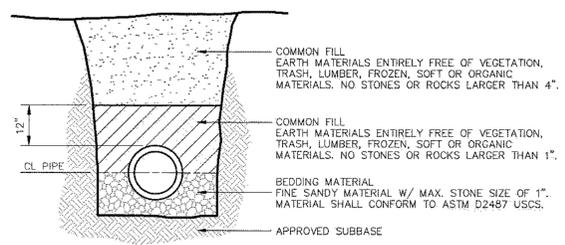


FLARED END SECTION
N.T.S.

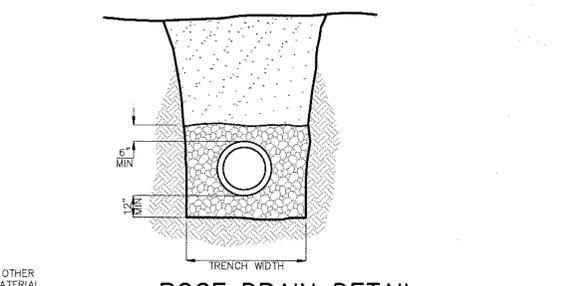
NOTES:
1. MINOR VARIATIONS TO THE ABOVE DIMENSIONS ARE ACCEPTABLE WITH THE EXCEPTION OF THE INSIDE DIAMETER DIMENSION.
2. A 1 INCH THICK MORTAR BED AND A 6 INCH DEEP LAYER OF COARSE AGGREGATE ARE REQUIRED WHEN A PRECAST CONCRETE CUTOFF WALL IS USED.
3. NO SEPARATE PAYMENT WILL BE MADE FOR THE CONCRETE CUTOFF WALL. THE COST OF THE CONCRETE CUTOFF WALL SHALL BE INCLUDED IN THE COST OF THE END SECTION.
4. THE WIDTH OF THE CONCRETE CUTOFF WALL SHALL BE EQUAL TO THE MAXIMUM WIDTH OF THE END SECTION AS INDICATED ON THE DETAIL BY DIMENSION "C". HOWEVER, IF THE ACTUAL MAXIMUM WIDTH EXCEEDS THE CHART VALUE OF "C", THE WIDTH OF THE CONCRETE CUTOFF WALL SHALL EQUAL THE ACTUAL MAXIMUM WIDTH OF THE END SECTION.

DIMENSIONS (INCHES)												
I.D.	12	15	18	21	24	27	30	36	42	48	54	60
A	2	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/2	4	4 1/2	5	5 1/2	6
U	72	72	72	72	72	72	72	96	96	96	96	96
C	28	34.5	41	47.5	54	60.5	67	80	87	94	101	108

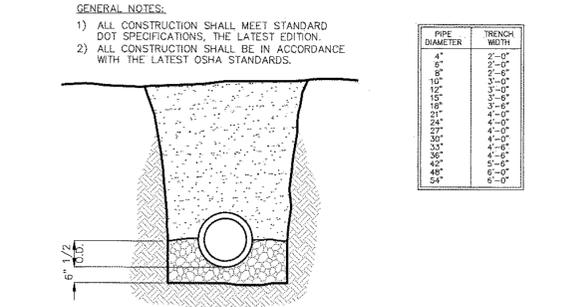
GENERAL NOTES:
1) ALL CONSTRUCTION SHALL MEET STANDARD DOT SPECIFICATIONS, THE LATEST EDITION.
2) ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST OSHA STANDARDS.



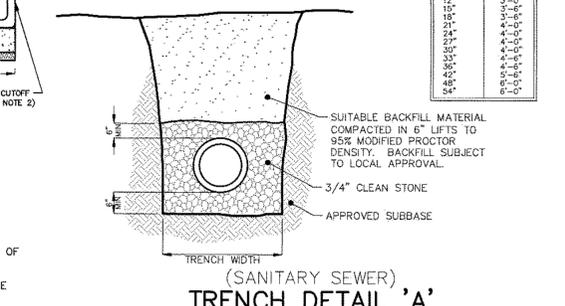
(WATER MAIN) TRENCH DETAIL
N.T.S.



ROOF DRAIN DETAIL
N.T.S.



(STORM SEWER) TRENCH DETAIL 'A'
N.T.S.



(SANITARY SEWER) TRENCH DETAIL 'A'
N.T.S.

CONSTRUCTION DETAIL NOTES

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Certificate of Authorization: 24027951900

CARAVAN, LLC

BOROUGH OF SAYREVILLE MIDDLESEX COUNTY NEW JERSEY

BLOCK 277 LOTS 1-5 & 13-14 TAX MAP SHEET 93 2.06 ACRES

CONSTRUCTION DETAILS (3)

DRAWN BY: _____ RM
DESIGNED BY: _____ RM
APPROVED BY: _____ SF

THIS WORK PREPARED UNDER MY IMMEDIATE SUPERVISION.

SCOTT H. TURNER
PROFESSIONAL ENGINEER
N.J.P.E.# 43811

PROJECT NUMBER	2023.091	DE-3
DATE OF ISSUE	JUNE 9, 2025	13
REVISION		

D-Series Size 1 LED Area Luminaire



Specifications

EPA: 0.69 ft² (0.064 m²)

Length: 32.71" (836 mm)

Width: 14.26" (362 mm)

Height H1: 7.88" (200 mm)

Height H2: 2.73" (69 mm)

Weight: 34 lbs (15.4 kg)

Introduction

The modern styling of the D-Series features a highly refined aesthetic that blends seamlessly with its environment. The D-Series offers the benefits of the latest in LED technology into a high performance, high efficiency, long-life luminaire.

The photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. D-Series outstanding photometry aids in reducing the number of poles required in area lighting applications with typical energy savings of 65% and expected service life of over 100,000 hours.

Items marked by a shaded background qualify for the Design Select program and ship in 15 days or less. To learn more about Design Select, visit www.lithonia.com/designselect. See ordering one for details.

EXAMPLE: DSX1 LED P7 40K 70CRI TSM MVOLT SPTA NTAIRZ PIRHN DBXBD

DSX1 LED	Forward optics	Back optics	AFR	TSM	MVOLT	Shipped included
P1	P6	30K	300K	70CRI	AFR	AFR
P2	P7	40K	400K	70CRI	TSM	TSM
P3	P8	50K	500K	70CRI	MVOLT	MVOLT
P4	P9	50K	500K	70CRI	AFR	AFR
P5	P10	50K	500K	70CRI	TSM	TSM
P6	P11	50K	500K	70CRI	MVOLT	MVOLT

DSX1 LED	Forward optics	Back optics	AFR	TSM	MVOLT	Shipped included
P1	P6	30K	300K	70CRI	AFR	AFR
P2	P7	40K	400K	70CRI	TSM	TSM
P3	P8	50K	500K	70CRI	MVOLT	MVOLT
P4	P9	50K	500K	70CRI	AFR	AFR
P5	P10	50K	500K	70CRI	TSM	TSM
P6	P11	50K	500K	70CRI	MVOLT	MVOLT

DSX1 LED	Forward optics	Back optics	AFR	TSM	MVOLT	Shipped included
P1	P6	30K	300K	70CRI	AFR	AFR
P2	P7	40K	400K	70CRI	TSM	TSM
P3	P8	50K	500K	70CRI	MVOLT	MVOLT
P4	P9	50K	500K	70CRI	AFR	AFR
P5	P10	50K	500K	70CRI	TSM	TSM
P6	P11	50K	500K	70CRI	MVOLT	MVOLT

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Ordering Information

Accessories

DSX1 LED P1 P6 30K 300K 70CRI AFR TSM MVOLT 100W 277V 1500lm
 DSX1 LED P2 P7 40K 400K 70CRI TSM MVOLT 100W 277V 1500lm
 DSX1 LED P3 P8 50K 500K 70CRI MVOLT 100W 277V 1500lm
 DSX1 LED P4 P9 50K 500K 70CRI AFR TSM MVOLT 100W 277V 1500lm
 DSX1 LED P5 P10 50K 500K 70CRI TSM MVOLT 100W 277V 1500lm
 DSX1 LED P6 P11 50K 500K 70CRI MVOLT 100W 277V 1500lm

Shield Accessories

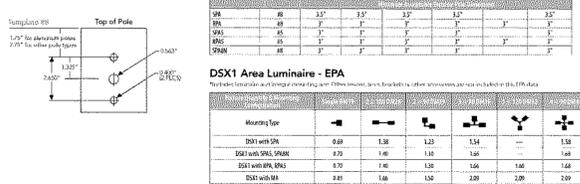


Drilling

HANDHOLE ORIENTATION

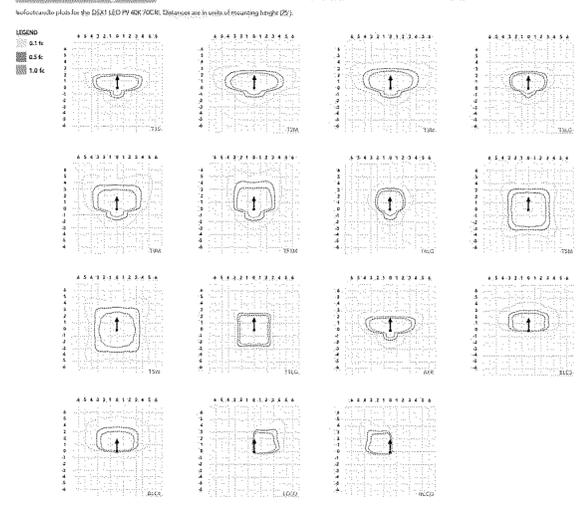
Tenon Mounting Slipfitter

Mounting Type	Sub A	Sub B	Sub C	Sub D	Sub E	Sub F
DSX1 with SPAL SPSB	0.89	1.36	1.23	1.54	1.18	1.48
DSX1 with RPL RPA	0.79	1.46	1.20	1.66	1.46	1.68
DSX1 with RPL RPA	0.89	1.56	1.50	2.00	2.00	2.00



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Photometric Diagrams



Performance Data

Lumen output table with columns for luminaire model, height, and lumen output.

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Performance Data

Lumen output table with columns for luminaire model, height, and lumen output.

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SL LIGHT FIXTURE DETAILS-1

N.T.S.

SL LIGHT FIXTURE DETAILS-2

N.T.S.

SL LIGHT FIXTURE DETAILS-3

N.T.S.

SL LIGHT FIXTURE DETAILS-4

N.T.S.

LITHONIA LIGHTING

ANCHOR BASE POLES

SSS SQUARE STRAIGHT STEEL

ANCHOR BASE POLES

SSS SQUARE STRAIGHT STEEL

ANCHOR BASE POLES

SSS SQUARE STRAIGHT STEEL

SSS Square Straight Steel Poles

ORDERING INFORMATION

Example: SSS 20 SC DM28AS DBXBD

Series	Nominal Height	Nominal Base Size	Mounting	Options	Finish
SSS	10'-0"	4C	PM	Shipped installed	SSS
	12'-0"	4C	PM	Vibration damper*	SSS
	14'-0"	4C	PM	J-hook for cable strain relief†	SSS
	16'-0"	4C	PM	Hexagonal nut bracket	SSS
	18'-0"	4C	PM	1" coupling†	SSS
	20'-0"	4C	PM	1 1/2" threaded nipple†	SSS
	22'-0"	4C	PM	1 1/2" threaded nipple†	SSS
	24'-0"	4C	PM	1 1/2" threaded nipple†	SSS
	26'-0"	4C	PM	1 1/2" threaded nipple†	SSS
	28'-0"	4C	PM	1 1/2" threaded nipple†	SSS
	30'-0"	4C	PM	1 1/2" threaded nipple†	SSS
	32'-0"	4C	PM	1 1/2" threaded nipple†	SSS
	34'-0"	4C	PM	1 1/2" threaded nipple†	SSS
	36'-0"	4C	PM	1 1/2" threaded nipple†	SSS
	38'-0"	4C	PM	1 1/2" threaded nipple†	SSS
	40'-0"	4C	PM	1 1/2" threaded nipple†	SSS
	42'-0"	4C	PM	1 1/2" threaded nipple†	SSS
	44'-0"	4C	PM	1 1/2" threaded nipple†	SSS
	46'-0"	4C	PM	1 1/2" threaded nipple†	SSS
	48'-0"	4C	PM	1 1/2" threaded nipple†	SSS
	50'-0"	4C	PM	1 1/2" threaded nipple†	SSS

SSS Square Straight Steel Poles

TECHNICAL INFORMATION — EPA (ft²) WITH 1.3 GUOST

Category Number	Nominal Shaft Length (ft.)	Pole Shaft Size (Nominal x Top x XTL)	Wall thickness (in.)	GAUGE	60 MPH Max. weight	90 MPH Max. weight	100 MPH Max. weight	Approximate shipping weight (lbs.)
SSS 10 4C	10	4.8 x 10.0	0.120"	11	36.6	76.5	21.8	59.3
SSS 12 4C	12	4.8 x 12.0	0.120"	11	26.4	61.9	18.8	47.9
SSS 14 4C	14	4.8 x 14.0	0.120"	11	19.9	49.8	15.3	29.3
SSS 16 4C	16	4.8 x 16.0	0.120"	11	15.0	38.8	11.8	22.3
SSS 18 4C	18	4.8 x 18.0	0.120"	11	12.0	31.5	9.2	18.8
SSS 20 4C	20	4.8 x 20.0	0.120"	11	9.4	26.0	6.7	16.0
SSS 22 4C	22	4.8 x 22.0	0.120"	11	7.4	21.0	5.3	13.0
SSS 24 4C	24	4.8 x 24.0	0.120"	11	5.7	17.0	4.1	10.0
SSS 26 4C	26	4.8 x 26.0	0.120"	11	4.4	13.0	3.1	7.0
SSS 28 4C	28	4.8 x 28.0	0.120"	11	3.4	10.0	2.3	5.0
SSS 30 4C	30	4.8 x 30.0	0.120"	11	2.6	7.0	1.7	3.0
SSS 32 4C	32	4.8 x 32.0	0.120"	11	2.0	5.0	1.3	2.0
SSS 34 4C	34	4.8 x 34.0	0.120"	11	1.5	4.0	1.0	1.5
SSS 36 4C	36	4.8 x 36.0	0.120"	11	1.1	3.0	0.8	1.0
SSS 38 4C	38	4.8 x 38.0	0.120"	11	0.8	2.0	0.6	0.8
SSS 40 4C	40	4.8 x 40.0	0.120"	11	0.6	1.5	0.5	0.6
SSS 42 4C	42	4.8 x 42.0	0.120"	11	0.5	1.0	0.4	0.5
SSS 44 4C	44	4.8 x 44.0	0.120"	11	0.4	0.8	0.3	0.4
SSS 46 4C	46	4.8 x 46.0	0.120"	11	0.3	0.6	0.3	0.3
SSS 48 4C	48	4.8 x 48.0	0.120"	11	0.2	0.5	0.2	0.2
SSS 50 4C	50	4.8 x 50.0	0.120"	11	0.2	0.4	0.2	0.2

SSS Square Straight Steel Poles

ANCHORAGE AND TEMPLATE INFORMATION

Shaft base size	Bolt size	Bolt projection	Base anchor	Base plate thickness	Template description*	Anchor bolt description	Bolt size (in.) Dia x L	Anchor bolt/Template Combo
4" x 4"	1/2"	3.25"	4.25"	0.25"	ASTM A36 PL 100004	ASTM A307	1/4 x 18 x 3	ASTM A307-4C
4" x 6"	1/2"	3.25"	4.25"	0.25"	ASTM A36 PL 100004	ASTM A307	1/4 x 18 x 3	ASTM A307-4C
6" x 6"	3/4"	3.75"	4.75"	0.3125"	ASTM A36 PL 100004	ASTM A307	3/8 x 24 x 3	ASTM A307-6C
6" x 8"	3/4"	3.75"	4.75"	0.3125"	ASTM A36 PL 100004	ASTM A307	3/8 x 24 x 3	ASTM A307-6C
8" x 8"	1"	4.5"	5.5"	0.375"	ASTM A36 PL 100004	ASTM A307	1/2 x 30 x 4	ASTM A307-8C
8" x 10"	1"	4.5"	5.5"	0.375"	ASTM A36 PL 100004	ASTM A307	1/2 x 30 x 4	ASTM A307-8C
10" x 10"	1 1/4"	5.5"	6.5"	0.4375"	ASTM A36 PL 100004	ASTM A307	5/8 x 36 x 4	ASTM A307-10C
10" x 12"	1 1/4"	5.5"	6.5"	0.4375"	ASTM A36 PL 100004	ASTM A307	5/8 x 36 x 4	ASTM A307-10C
12" x 12"	1 1/2"	6.5"	7.5"	0.500"	ASTM A36 PL 100004	ASTM A307	3/4 x 42 x 4	ASTM A307-12C
12" x 14"	1 1/2"	6.5"	7.5"	0.500"	ASTM A36 PL 100004	ASTM A307	3/4 x 42 x 4	ASTM A307-12C
14" x 14"	1 3/4"	7.5"	8.5"	0.5625"	ASTM A36 PL 100004	ASTM A307	7/8 x 48 x 4	ASTM A307-14C
14" x 16"	1 3/4"	7.5"	8.5"	0.5625"	ASTM A36 PL 100004	ASTM A307	7/8 x 48 x 4	ASTM A307-14C
16" x 16"	2"	8.5"	9.5"	0.625"	ASTM A36 PL 100004	ASTM A307	1 x 54 x 4	ASTM A307-16C
16" x 18"	2"	8.5"	9.5"	0.625"	ASTM A36 PL 100004	ASTM A307	1 x 54 x 4	ASTM A307-16C
18" x 18"	2 1/4"	9.5"	10.5"	0.6875"	ASTM A36 PL 100004	ASTM A307	1 1/4 x 60 x 4	ASTM A307-18C
18" x 20"	2 1/4"	9.5"	10.5"	0.6875"	ASTM A36 PL 100004	ASTM A307	1 1/4 x 60 x 4	ASTM A307-18C
20" x 20"	2 1/2"	10.5"	11.5"	0.750"	ASTM A36 PL 100004	ASTM A307	1 1/2 x 66 x 4	ASTM A307-20C
20" x 22"	2 1/2"	10.5"	11.5"	0.750"	ASTM A36 PL 100004	ASTM A307	1 1/2 x 66 x 4	ASTM A307-20C
22" x 22"	2 3/4"	11.5"	12.5"	0.8125"	ASTM A36 PL 100004	ASTM A307	1 3/4 x 72 x 4	ASTM A307-22C
22" x 24"	2 3/4"	11.5"	12.5"	0.8125"	ASTM A36 PL 100004	ASTM A307	1 3/4 x 72 x 4	ASTM A307-22C
24" x 24"	3"	12.5"	13.5"	0.875"	ASTM A36 PL 100004	ASTM A307	1 3/4 x 72 x 4	ASTM A307-24C
24" x 26"	3"	12.5"	13.5"	0.875"	ASTM A36 PL 100004	ASTM A307	1 3/4 x 72 x 4	ASTM A307-24C
26" x 26"	3 1/4"	13.5"	14.5"	0.9375"	ASTM A36 PL 100004	ASTM A307	1 3/4 x 72 x 4	ASTM A307-26C
26" x 28"	3 1/4"	13.5"	14.5"	0.9375"	ASTM A36 PL 100004	ASTM A307	1 3/4 x 72 x 4	ASTM A307-26C
28" x 28"	3 1/2"	14.5"	15.5"	1.000"	ASTM A36 PL 100004	ASTM A307	1 3/4 x 72 x 4	ASTM A307-28C
28" x 30"	3 1/2"	14.5"	15.5"	1.000"	ASTM A36 PL 100004	ASTM A307	1 3/4 x 72 x 4	ASTM A307-28C
30" x 30"	3 3/4"	15.5"	16.5"	1.0625"	ASTM A36 PL 100004	ASTM A307	1 3/4 x 72 x 4	ASTM A307-30C
30" x 32"	3 3/4"	15.5"	16.5"	1.0625"	ASTM A36 PL 100004	ASTM A307	1 3/4 x 72 x 4	ASTM A307-30C
32" x 32"	4"	16.5"	17.5"	1.125"	ASTM A36 PL 100004	ASTM A307	1 3/4 x 72 x 4	ASTM A307-32C
32" x 34"	4"	16.5"	17.5"	1.125"	ASTM A36 PL 100004	ASTM A307	1 3/4 x 72 x 4	ASTM A307-32C
34" x 34"	4 1/4"	17.5"	18.5"	1.1875"	ASTM A36 PL 100004	ASTM A307	1 3/4 x 72 x 4	ASTM A307-34C
34" x 36"	4 1/4"	17.5"	18.5"	1.1875"	ASTM A36 PL 100004	ASTM A307	1 3/4 x 72 x 4	ASTM A307-34C
36" x 36"	4 1/2"	18.5"	19.5"	1.250"	ASTM A36 PL 100004	ASTM A307	1 3/4 x 72 x 4	ASTM A307-36C
36" x 38"	4 1/2"	18.5"	19.5"	1.250"	ASTM A36 PL 100004	ASTM A307	1 3/4 x 72 x 4	ASTM A307-36C
38" x 38"	4 3/4"	19.5"	20					

