PRELIMINARY AND FINAL

SITE PLAN

FOR

PALS GROUP HOME L O T 22 I N B L O C K 46

SITUATE IN

THE TOWNSHIP OF HOPEWELL MERCER COUNTY, NEW JERSEY

LEGEND					
<u>ITEM</u>	<u>EXISTING</u>	PROPOSED			
SIGN	q	•			
GUY POLE	O -	O -			
UTILITY POLE	-0-	-•-			
SANITARY SEWER					
STORM SEWER	===				
INLET		A B B			
SQ. MH W\ CIRCULAR COVER					
MANHOLE	0				
FIRE HYDRANT		+			
UTILITY VALVE	——⊗——	—• —			
WATER MAIN	W	——w—			
GAS MAIN	—— G——	—— G ——			
ELECTRIC LINE	—— E——	— E/T/C —			
TELEPHONE LINE		— E/T/C —			
ELECTRIC, TELEPHONE & CABL	.E	— E/T/С —			
CONTOUR LINES	100	 100			
GRADE ELEVATION	X ^{100.0}	x 100.0			
CONCRETE CURB					
OVERHEAD WIRE					
CHAINLINK FENCE	X	X			
SECURITY FENCE	O	<u> </u>			

PREPARED BY HOPEWELL VALLEY ENGINEERING, P.C. 1600 REED ROAD, SUITE A PENNINGTON, N.J. 08534-5002

ISSUANCE DATE: 03/01/23

LAST REVISED: _____

<u> </u>	<u>ZONING RI</u>	<u>EQUIREME</u>	<u>NTS</u>			
INDU A GROUP I	JSTRIAL/O HOME IS	COMMERCI NOT A PE	AL (IC) ERMITTED L	JSE ⁽²⁾		
	REQ	UIRED (1)	EXIS	<u>TING</u>	PROF	OSED
LOT AREA (AC)	5 2.09 (3)		2.09 ⁽²⁾			
LOT WIDTH (FT)	300		278± ⁽³⁾		278±(2)	
LOT DEPTH (FT)	300		320		320	
BUILDING SETBACK (FT)	•		•	•		
FRONT YARD SETBACK (FT)	100		22.9(3)		116±	
SIDE YARD (FT)	80		73.8 ⁽³⁾		87±	
REAR YARD (FT)	80		> 80		130±	
LOT COVERAGE (MAX %)	40		11.7		16.7	
BUILDING COVERAGE (MAX%)	20		8		9.6	
MAX. BUILDING HEIGHT (FT)	35		< 35		< 35	
MAX. FLOOR AREA RATIO	0.1		0.01		0.096	
ACCESSORY BUILDING SETBACK (FT) (BARN)	BARN	SHED	BARN	SHED	BARN	SHED
FRONT YARD SETBACK (FT)	100	100	3 (3)	< 100 (3)	3 (2)	N/A
SIDE YARD (FT)	100	10	18.1(3)	> 10	18.1 (2)	N/A
REAR YARD (FT)	100	10	> 100	> 10	> 100	N/A

- (1) PER SECTION 17-167 e. ZONING REQUIREMENTS HAVE BEEN DETERMINED APPLYING THE MOST RESTRICTIVE REQUIREMENTS FROM THE HBO (17-163 e.) AND OP (17-166 e.) ZONES.
- (2) USE AND BULK VARIANCES WERE GRANTED BY THE HOPEWELL TOWNSHIP ZONING BOARD OF ADJUSTMENT PER RESOLUTION CASE No. 2022-02. DATED 05/04/22.
- (3) EXISTING NON-CONFORMITY

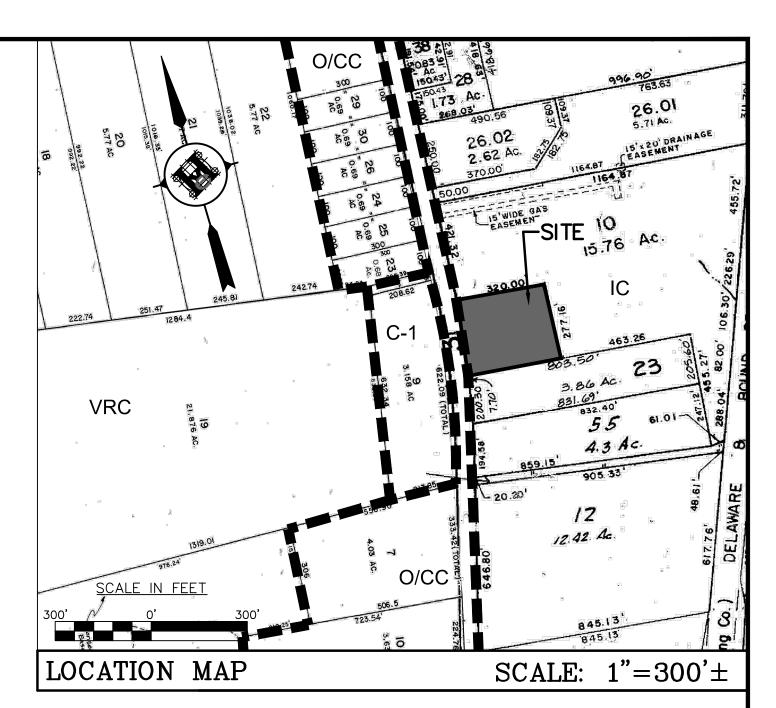
1 RESIDENTIAL UNIT / 2.09 AC = 0.48 UNITS / AC

- (1) A VARIANCE FROM SECTION 17-85(a) FENCES AND HEDGES TO PERMIT AN 8' HIGH DEER FENCE WHERE 4 OR 6 FEET IS PERMITTED.
- (2) A VARIANCE FROM SECTION 17-85(c) FENCES AND HEDGES TO PERMIT A FENCE IN THE FRONT YARD SETBACK AREA.

INDEX OF DRAWINGS

7 - SOIL EROSION AND SEDIMENT CONTROL NOTES 8 - SEWAGE DISPOSAL AND WATER SUPPLY PLAN 9 - ENVIRONMENTAL INVENTORY PLAN 10 - SOIL TEST RESULTS AND TURNING PLAN

CERTIFIED PROPERTY OWNERS LIST



APPROVAL SIGNATURES

OWNER/APPLICANT PENNINGTON 67, LLC 46 YARD ROAD PENNINGTON, NJ 08534 APPROVED BY HOPEWELL TOWNSHIP PLANNING BOARD PLANNING BOARD CHAIRPERSON DATE PLANNING BOARD ENGINEER PLANNING BOARD SECRETARY



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PRELIMINARY

2 Mar 2023

PALS GROUP HOME LOT 22 BLOCK 46

COVER SHEET

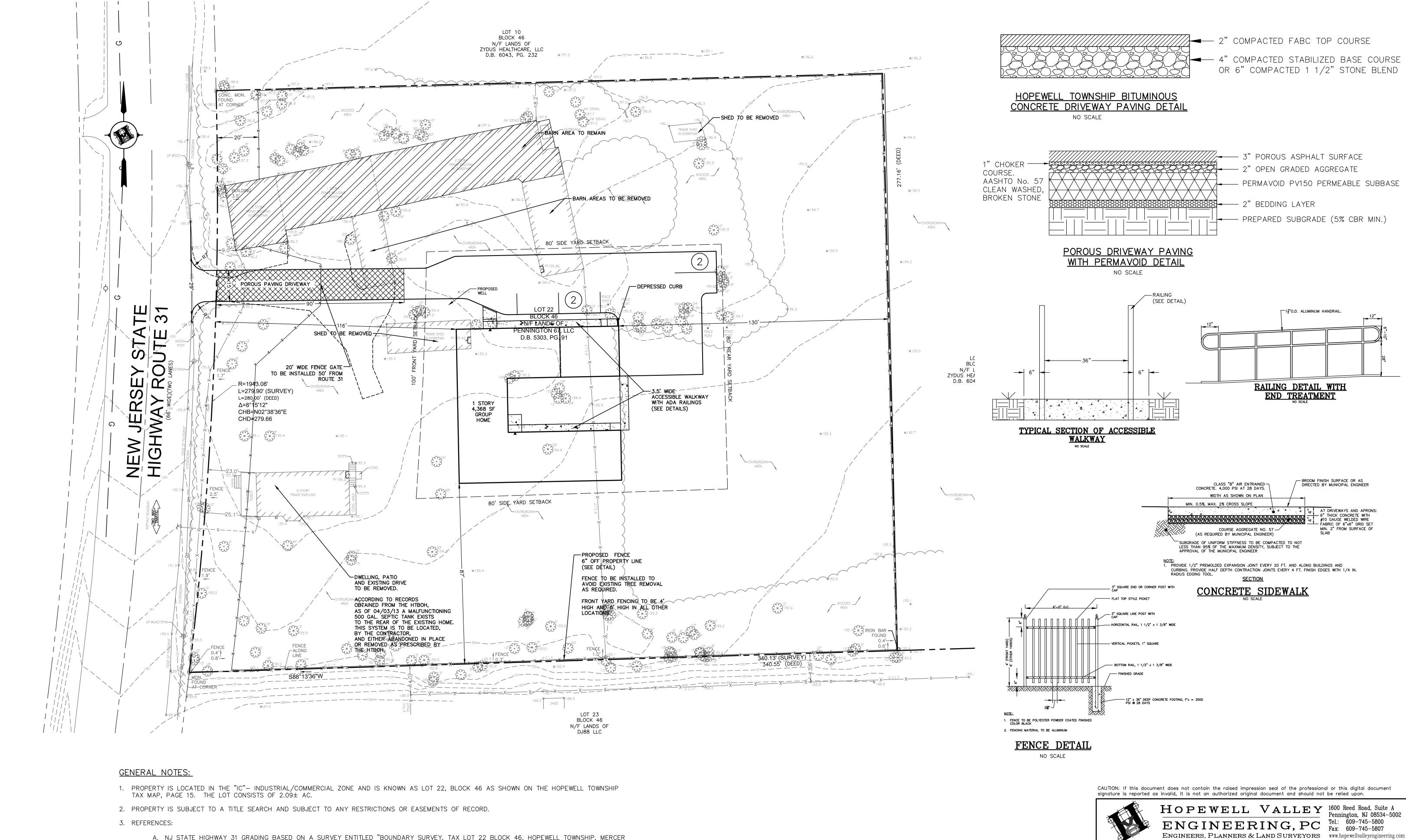
HOPEWELL TOWNSHIP, MERCER COUNTY, NEW JERSEY

Sheet 1 of 10 RUSSELL M. SMITH
N.J. PROFESSIONAL ENGINEER NO. 33065

DESCRIPTION OF REVISION

NO. DATE

BY CHK'D



- A. NJ STATE HIGHWAY 31 GRADING BASED ON A SURVEY ENTITLED "BOUNDARY SURVEY, TAX LOT 22 BLOCK 46, HOPEWELL TOWNSHIP, MERCER COUNTY, NEW JERSEY" PREPARED BY HOPEWELL VALLEY ENGINEERING, DATED 01/26/06.
- B. SOIL TEST LOCATIONS BASED ON A SKETCH IN A REPORT PREPARED BY BARKLEY ENGINEERING, LLC DATED 02/26/08.
- C. GROUP HOME FOOTPRINT AND DRIVEWAY LAYOUT BASED ON A PLAN PREPARED BY MPOA ARCHITECTURE, DATED 04/01/20 AND LAST REVISED 01/22/23.
- D. HOPEWELL TOWNSHIP TAX MAP SHEETS 14.04 AND 15.
- E. A SURVEY ENTITLED "BOUNDARY AND TOPOGRAPHIC SURVEY LOT 22 BLOCK 46" PREPARED BY GALAS SURVEYING GROUP DATED 08/04/22.



03/01/23 1" = 20'AWS Check: RMS 1106627B FB:N/A SP01627B - Vps

PRELIMINARY 2 Mar 2023 LAYOUT CONTROL PLAN

PALS GROUP HOME LOT 22 BLOCK 46

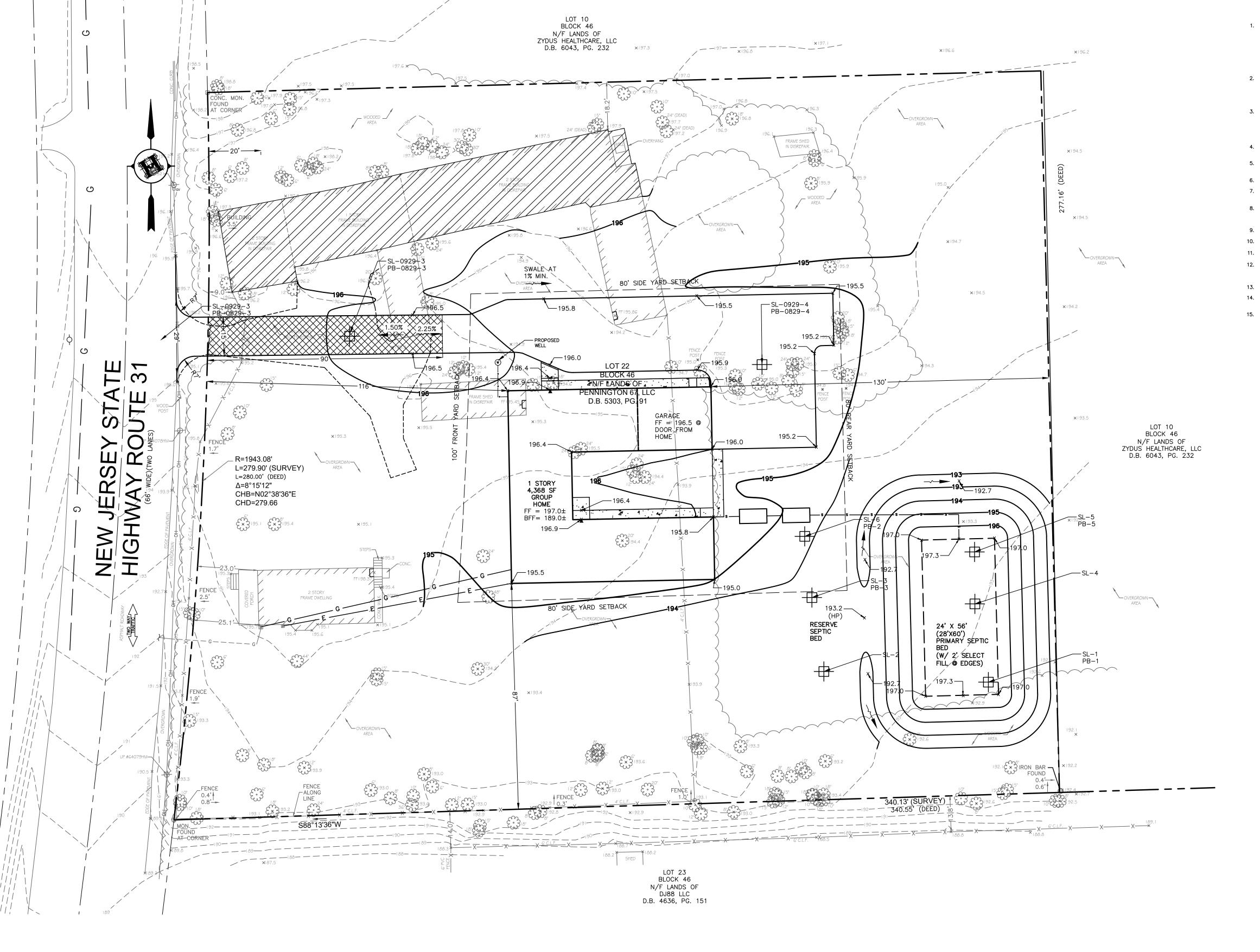
SITUATE IN HOPEWELL TOWNSHIP, MERCER COUNTY, NEW JERSEY

Sheet **2** of **10**

NO. DATE DESCRIPTION OF REVISION

BY CHK'D

RUSSELL M. SMITH
N.J. PROFESSIONAL ENGINEER NO. 33065



1. PARTIAL LIST OF UTILITIES THAT MAY SERVICE THE SITE:

ELECTRIC: PSE&G GAS: PSE&G TELEPHONE: VERIZON WATER: PRIVATE WELL SANITARY SEWER: SEPTIC SYSTEM

CONTRACTOR IS ADVISED TO CALL 1-800-272-1000 PRIOR TO CONSTRUCTION TO LOCATE ANY EXISTING UTILITIES.

2. THE PROPOSED UTILITIES SHALL BE OWNED AND MAINTAINED AS FOLLOWS:

STORM SEWER: TOWNSHIP SEPTIC SYSTEM: OWNER WELL: OWNER

3. THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL UTILITIES SHOWN HEREON ARE APPROXIMATE ONLY. NO GUARANTEE IS HEREIN MADE OR IMPLIED THAT ALL UNDERGROUND UTILITIES ARE SHOWN. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE TYPE, SIZE AND LOCATION OF ALL EXISTING UTILITIES PRIOR TO STARTING THE WORK. THIS VERIFICATION MAY INCLUDE PERFORMING TEST PITS OR OTHER SUBSURFACE EXPLORATION TO DETERMINE THE LOCATION OF EXISTING UTILITIES AT ALL CRITICAL POINTS INCLUDING CROSSING POINTS OF ALL OTHER UTILITIES. SHOULD ANY CONFLICT OCCUR, THE ENGINEER IS AVAILABLE, FOR A FEE, TO MAKE SUCH ADJUSTMENTS TO THE ORIGINAL DESIGN, AS REQUIRED, TO MEET FIELD CONDITIONS ENCOUNTERED. CONTRACTOR IS ADVISED TO CALL 1-800-272-1000 PRIOR TO CONSTRUCTION.

4. ALL PROPOSED UTILITIES SHALL BE INSTALLED UNDERGROUND.

5. ALL UTILITIES TO BE INSTALLED IN STRICT ACCORDANCE WITH THE RULES, REGULATIONS AND SPECIFICATIONS OF THE GOVERNMENTAL AGENCIES AND UTILITY COMPANIES HAVING JURISDICTION THEREOVER.

6. WATERTIGHT PLUGS SHALL BE PROVIDED AT TERMINAL ENDS OF ALL PROPOSED UTILITIES.

7. ALL EXISTING UTILITY VALVE BOX COVERS, MANHOLE FRAMES AND COVERS, UTILITY JUNCTION BOX COVERS AND INLET FRAMES AND GRATES SHALL BE RESET TO GRADE AS REQUIRED.

8. ALL EXISTING UTILITIES WHICH PROJECT ABOVE GRADE, SUCH AS FIRE HYDRANTS AND UTILITY POLES, WHICH INTERFERE WITH PROPOSED IMPROVEMENTS SHALL BE RELOCATED AS REQUIRED. ANY EXISTING UTILITIES TO BE RELOCATED SHALL BE DESIGNED AND APPROVED BY THE GOVERNMENTAL AGENCIES AND UTILITY COMPANY HAVING JURISDICTION THEREOVER.

9. STORM SEWER AND SANITARY SEWER LENGTHS INDICATED ON PLANS AND PROFILES REPRESENT LENGTHS FROM CENTERLINE OF STRUCTURE TO CENTERLINE STRUCTURE.

10. UNLESS OTHERWISE NOTED, PIPE USED FOR STORM DRAIN CONSTRUCTION IS TO BE REINFORCED CONCRETE, CLASS III, WALL "B" (A.S.T.M. C-76).

11. ALL SUBSURFACE DRAINS ENCOUNTERED DURING CONSTRUCTION SHALL BE EXTENDED AND CONNECTED TO THE NEAREST STORM DRAIN STRUCTURE.

12. UNLESS OTHERWISE NOTED, ALL PIPE USED FOR SANITARY SEWER CONSTRUCTION SHALL BE TYPE PSM POLYVINYL CHLORIDE (PVC) SEWER PIPE AND FITTINGS, SDR-35 CONFORMING TO THE REQUIREMENTS OF A.S.T.M. D3034. THE PIPE SHALL BE JOINED WITH AN INTEGRAL BELL AND SPIGOT TYPE RUBBER GASKETED JOINT. GASKETS SHALL CONFORM TO

13. WATER PIPES AND SANITARY SEWERS PIPES SHALL BE SEPARATED BY A 10 FOOT MINIMUM DISTANCE HORIZONTALLY OR 18 INCHES MINIMUM DISTANCE VERTICALLY.

14. A SEPARATE SEPTIC DESIGN PLAN SHOWING DETAILS AND SPECIFICATIONS OF THE PROPOSED SEPTIC SYSTEM WILL BE PREPARED FOR THE REVIEW AND APPROVAL OF THE NJDEP AND HOPEWELL TOWNSHIP BOARD OF HEALTH AFTER THE SITE PLAN APPROVAL.

15. THE EXISTING ONSITE WELLS TO BE ABANDONED SHALL BE IN ACCORDANCE WITH ALL APPLICABLE HOPEWELL TOWNSHIP BOARD OF HEALTH AND NJDEP REGULATIONS

STORMWATER MANAGEMENT CALCULATIONS (PER SECTION 17-82)

PROPOSED MOTOR VEHICLE SURFACE (PMVS) = 6,615 SF

THE REGULATED MOTOR VEHICLE SURFACE (RMVS) IS THE PMVS MINUS EXISTING REGULATED MOTOR VEHICLE SURFACE (ERMVS) PLUS 250 SF.

RMVS = PRVMS - (ERVMS+250) = 6,615 - (2,960 + 250) = 3,405 SF

PER 17-82.5 D) 1: 3" OF RUNOFF PER EACH SQUARE FOOT OF RMVS MUST BE RECHARGED ONSITE.

TO RECHARGE PERVIOUS PAVING IN THE DESIGNATED AREA OF THE DRIVEWAY WITH STONE/PERMAVOID BASE (SEE DETAIL) IS PROPOSED. AS FOLLOWS:

VOLUME TO BE RECHARGED = RMVS X (0.25 FT) = 3,405 X 0.25 = 851.25 CF (SAY 852 CF)

PERMAVOID PV150 UNIT

 PERMAVOID PV150 UNIT AREA = 2.33 FT X 1.17 FT = 2.73 SF

= 2.73 SF X ($\frac{5}{12}$ IN/FT) X 0.40 (VOIDS) = 0.45 CF/UNIT VOLUME OF STONE PER UNIT

- TOTAL VOLUME PER PERMAVOID UNIT = 1.27 + 0.45 = 1.73 CF/UNIT

(852 CF) / (1.73 CF/UNT) = 494.5 UNITS $(494.5 \text{ UNITS}) \times (2.73 \text{ SF/UNIT}) = 1349.99 \text{ SF (SAY 1350 SF)} = \text{MINIMUM 15 FT X 90 FT DRIVEWAY AREA}$ REQUIRED.

GRADING NOTES

1. THE EXISTING TOPOGRAPHIC INFORMATION SHOWN HEREON IS OBTAINED FROM PLAN ENTITLED "BOUNDARY AND TOPOGRAPHIC SURVEY LOT 22, BLOCK 46, 67 NEW JERSEY HIGHWAY ROUTE 31, PENNINGTON, TOWNSHIP OF HOPEWELL, MERCER COUNTY, STATE OF NEW JERSEY" PREPARED BY GALLAS SURVEYING GROUP, DATED 08/08/22, LAST REVISED 08/15/22.

ALL ELEVATIONS SHOWN HEREON ARE EXISTING OR FINISHED PAVEMENT GRADES.

THE FOLLOWING MINIMUM GRADES ARE REQUIRED UNLESS OTHERWISE SPECIFIED:

2% OVERLAND IN LAWN AREAS

1% IN GRASS SWALES

1.5% OVERLAND IN PARKING AREAS 0.75% IN CURBED GUTTERLINES

SOIL STABILIZATION SHALL BE IN ACCORDANCE WITH APPROVED SOIL EROSION AND SEDIMENT CONTROL PLANS AND / OR MERCER COUNTY SOIL CONSERVATION DISTRICT STANDARDS.

BASEMENTS ARE NOT PROPOSED.

LIGHTWEIGHT CONSTRUCTION EQUIPMENT SHALL BE USED BY THE CONTRACTOR WHEN GRADING PROPOSED OPEN SPACES, BASIN AND LAWN AREAS.

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ENGINEERING, PC Tel: 609-745-5800 Fax: 609-745-5807 ENGINEERS, PLANNERS & LAND SURVEYORS www.hopewellvalleyengineering.com

03/01/23 1" = 20'AWS Check: RMS 1106627B FB:N/A SP01627B - Vps

PRELIMINARY

2 Mar 2023

GRADING, STORMWATER AND UTILITY PLAN

PALS GROUP HOME LOT 22 BLOCK 46

SITUATE IN

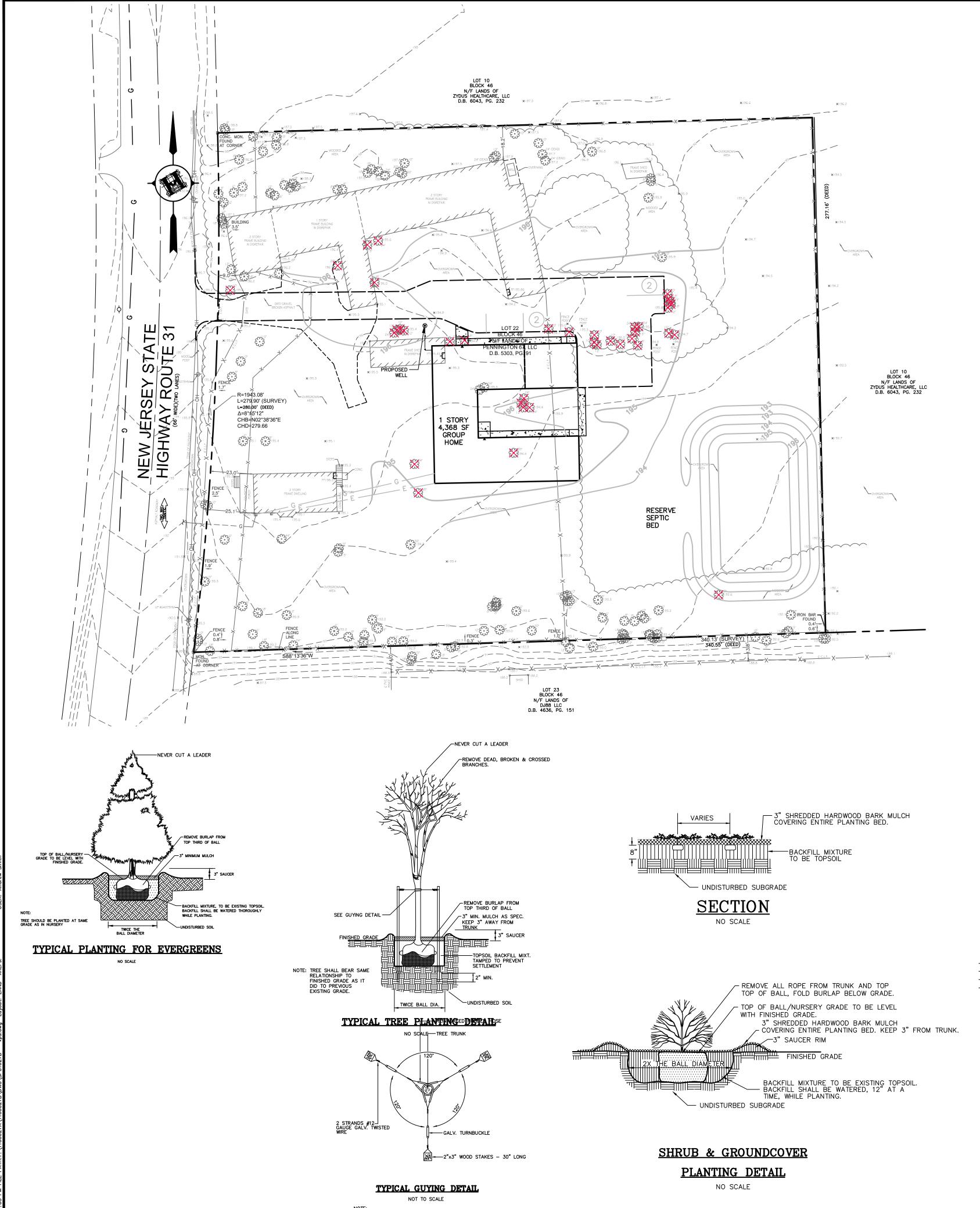
HOPEWELL TOWNSHIP, MERCER COUNTY, NEW JERSEY

RUSSELL M. SMITH
N.J. PROFESSIONAL ENGINEER NO. 33065

Sheet 3 of 10

NO. DATE DESCRIPTION OF REVISION

BY CHK'D



NO TREE IS TO BE GUYED OR STAKED UNLESS THE TREE IS PLANTED ON A STEEP SLOPE OR IN A HIGH WIND AREA.

TREES, SHRUBS AND GROUNDCOVERS

PRUNING: PRUNE TREES TO REMOVE DEAD AND DISEASED WOOD AND TO IMPROVE OVERALL HABIT. PRUNE SHRUBS AS NEEDED, AFTER FLOWERING ONLY. PRUNE AT LEAST ONCE PER YEAR. PLANT MATERIAL SHOWN PLANTED IN A MASS OR TOUCHING EACH OTHER ARE TO BE ALLOWED TO GROW TOGETHER IN ORDER TO BE ABLE TO PERFORM AS A SCREEN OR HEDGE. PRUNE HEDGES WIDER AT BASE THAN TOP TO AVOID SHADE ON BOTTOM OF PLANT.

FERTILIZER: RATIO 2:1:1 AT 2-3 LBS. ACTUAL NITROGEN PER 1,000 SQ. FT. FERTILIZE IN SPRING ONLY.

PESTICIDE: APPLY PESTICIDES AS NEEDED FOR SPECIFIC DISEASES OR INSECT PESTS. WEED CONTROL: WEED ALL BEDS AS NEEDED TO KEEP WELL GROOMED AND

WATER: WATER ALL NEW PLANT MATERIAL AS NEEDED THROUGH FIRST AND SECOND GROWING SEASON. IF RAIN IS INSUFFICIENT, WATER ALL WOODY PLANTS THOROUGHLY TWO TIMES PER WEEK.

MULCH: RENEW AGED TRIPLE-GROUND MULCH TO 3" DEPTH EVERY YEAR.

LEAF REMOVAL: REMOVE LEAVES FROM ALL BEDS, TURF AREAS, PARKING AREAS AND WALKS.

REPLACEMENTS: REPLACE ALL DEAD SHRUBS AND TREES WITHIN NEXT PLANTING

<u>TURF</u>

UNLESS OTHERWISE INDICATED USE SOD TO REPLACE DISTURBED GRASS AREAS.

BASIN AND BIOSWALE GRASS MIX:

RELATIVELY WEED FREE.

45% PIXIE TALL FESCUE

25% SUNUP POA TRIVIALIS 10% ADVENT PERENNIAL RYEGRASS

10% FULTS OR SALTY ALKALIGRASS

5% REED CANARYGRASS 5% RED TOP

PLANTING PROCEDURE: APPLY 125 TO 170 LBS PER ACRE BETWEEN 8/20 AND 10/15.

RENEWAL PROCEDURES: OVER SEED THIN SPOTS IN SPRING AND FALL. THATCH AS NECESSARY. (4/1 TO 5/31 AND 8/16 TO 10/15).

FERTILIZER: RATIO 3:1:2 AT 1 LB. NITROGEN PER 1,000 SQ. FT. FERTILIZE TWO TIMES PER YEAR.

PESTICIDES: INSPECT AND APPLY AS NEEDED FOR DISEASES AND

MOW: MAINTAIN A 2" HEIGHT. MOW AT LEAST ONCE PER WEEK. REMOVE CLIPPING FROM DETENTION BASIN (IF APPLICABLE).

EDGING: TRIM LAWN AND GROUND COVERS ALONG SIDEWALKS AND

SHRUB BED EDGES. RAKE AS NEEDED.

GENERAL MAINTENANCE

PAVEMENT: REPAIR OR REPLACE ALL DAMAGED PAVING AS NECESSARY. REMOVE ALL STAINS.

THE LANDSCAPE CONTRACTOR MUST PROVIDE THE OWNER WITH WRITTEN MAINTENANCE INTERVENTIONS.

NOTE:

SCALE IN FEET

THE LANDSCAPE DESIGNS SHOWN ON THIS PLAN WERE PREPARED BY

TREES TO BE REMOVED					
# OF TREES	TOTAL DBH (IN)				
7	70				
5	60				
7	105				
2	36				
3	60				
7	168				
1	48				
32	547				
	# OF TREES 7 5 7 2 3 7				

TOTAL TREES TO BE REMOVED = 32 TOTAL REMOVED TREE DIAMETER = 547"

TOTAL TREE DIAMETER TO BE REPLACED = 547 - 150 = 397" TOTAL REPLACEMENT TREES (PER ORD SECTION 12-4.9b1-3):

- WE WILL REPLACE THE SEVEN (7) 24", THE SEVEN (7) 15", THE THREE (3) 20", THE TWO (2) 18" AND THREE (3) 10" TREES FOR A TOTAL OF 399" OF REPLACEMENT TREES. - PER THE TABLE IN SECTION 12-4.9b1:

-THE SEVEN (7) 24" TREES WILL REQUIRE TWENTY EIGHT (28) 3\frac{1}{2}" TO 4" REPLACEMENTS -THE THREE (3) 20" AND TWO (2) 18" TREES WILL REQUIRE TEN (10) 3" REPLACEMENTS -THE SEVEN (7) 15" AND THREE (3) 10" TREES WILL REQUIRE TWENTY (20) 2 TO 21" REPLACEMENTS -WE WILL NEED 58 TOTAL REPLACEMENT TREES.

LANDSCAPE PLANTING NOTES

- 1. BEFORE PLANTING, CONTRACTOR SHALL TEST TOPSOIL FOR PH, FERTILIZER SALTS AND BULK DENSITY. DEPENDING ON TEST RESULTS, SOIL SHALL BE AMENDED WITH LIMESTONE AND FERTILIZER TO CREATE OPTIMUM GROWING CONDITIONS FOR SPECIFIC PLANTS.
- 2. TREES, SHRUBS AND GROUND COVERS SHALL BE AS INDICATED ON THE PLANT LIST. ALL TREES, SHRUBS AND GROUND COVERS SHALL BE PLANTED, STAKED AND MULCHED IN ACCORDANCE WITH THE PLANTING DETAILS.
- 3. THE CONTRACTOR SHALL OBTAIN THE LANDSCAPE ARCHITECT'S APPROVAL FOR LAYOUT OF PLANT MATERIAL PRIOR TO INSTALLATION OF PLANTS. THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS OR OBSTACLES TO THE WORK ENCOUNTERED BY THE CONTRACTOR.
- 4. NO PLANT SUBSTITUTIONS SHALL BE PERMITTED WITH REGARD TO SIZE, SPECIES OR VARIETY WITHOUT THE WRITTEN PERMISSION OF THE TOWNSHIP LANDSCAPE ARCHITECT AND/OR CORRESPONDING APPROVAL FROM THE TOWNSHIP ENGINEER.
- 5. ALL PLANTS TO CONFORM TO THE AMERICAN STANDARDS FOR NURSERY STOCK, ASNS, LATEST EDITION, AS PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN. THIS STANDARD IS SET BY THE AMERICAN NATIONAL STANDARDS INSITUTE.
- 6. PLANTS SHALL BE TYPICAL OF THEIR SPECIES AND VARIETY, HAVE NORMAL GROWTH HABITS, WELL DEVELOPED BRANCHES, DENSELY FOLIATED, VIGOROUS ROOT SYSTEMS AND BE FREE FROM DEFECTS AND INJURIES.
- 7. B&B PLANTS SHALL BE HANDLED FROM THE BOTTOM OF THE ROOT BALL ONLY. PLANTS WITH BROKEN, SPLIT OR DAMAGED ROOT BALLS SHALL BE REJECTED.
- 8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLANTING AT CORRECT GRADES AND ALIGNMENT AS SHOWN ON THE PLANTING PLAN.
- 9. THE CONTRACTOR SHALL REPORT ANY SOIL OR DRAINAGE CONDITIONS CONSIDERED DETRIMENTAL TO THE GROWTH OF THE PROPOSED PLANT MATERIAL.
- 10. INSOFAR AS IT IS PRACTICABLE. THE PLANTING MATERIAL SHALL BE PLANTED ON THE DAY OF DELIVERY. IN THE EVENT THIS IS NOT POSSIBLE. THE CONTRACTOR SHALL PROTECT ALL STOCK NOT PLANTED. PLANTS SHALL NOT REMAIN UNPLANTED FOR LONGER THAN A TWO (2) DAY PERIOD AFTER DELIVERY.
- 11. PLANTING OPERATIONS SHALL BE PERFORMED DURING PERIODS WITHIN THE PLANTING SEASON WHEN WEATHER AND SOIL CONDITIONS ARE SUITABLE AND IN ACCORDANCE WITH MUNICIPAL ORDINANCES.
- 12. PLANT MATERIALS MUST BE GUARANTEED FOR A PERIOD OF TWO YEARS AFTER FINAL ACCEPTANCE OF THE DEVELOPMENT. ANY PLANT MATERIAL THAT HAS 25% OR GREATER DEAD BRANCHES SHALL BE CONSIDERED DEAD. A TREE SHALL BE CONSIDERED DEAD WHEN THE MAIN LEADER HAS DIED OR 25% OF THE CROWN IS DEAD. ANY DEAD MATERIAL SHALL BE REPLACED AND INSTALLED ACCORDING TO APPROVED PLANTING PRACTICES.

GENERAL LANDSCAPING NOTES

- 1. ALL SHRUB MASSES TO BE MULCHED WITH AGED TRIPLE-GROUND MULCH, DARK BROWN COLOR, 3" DEEP.
- 2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD AND NOTIFY THE ENGINEER IF ANY DISCREPANCIES ARE ENCOUNTERED.
- 3. ALL BEDLINES SHALL BE CUT FOUR (4) INCHES INTO A "V" SHAPED GROOVE TO PROVIDE A WELL DEFINED EDGE. THE LAYOUT OF ALL BEDLINES SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT ON-SITE PRIOR TO CUTTING.
- 4 THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL UTILITY MARK OUTS AND COMPLIANCE WITH ALL FEDERAL, STATE OR LOCAL CODES; LAWFUL ORDERS; OR REGULATIONS GOVERNING UPON THIS WORK.
- 5 COMPACTED SUBGRADE SHALL BE LOOSENED BEFORE SPREADING NEW TOPSOIL. NEW TOPSOIL SHALL BE SPREAD TO MEET PROPOSED GRADE LINES.

6. DETENTION BASIN AND BIOSWALE TO BE SEEDED AS SHOWN IN THE TURF NOTES.

7. REMAINING GRASS AREAS TO BE SODDED

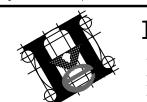
8. ALL CLEARED GROUND NOT INDICATED FOR PLANTING OF GROUND COVERS SHALL BE SEEDED AS PER LAWN SEEDING NOTES.

9. LANDSCAPE PLAN IS TO BE USED FOR PLANTING PURPOSES ONLY. SEE ENGINEER'S DRAWING FOR CONSTRUCTION DOCUMENTATION.

10. ALL EXISTING TREES TO REMAIN UNLESS OTHERWISE NOTED.

11. NO IRRIGATION IS PROPOSED.

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Pennington, NJ 08534-5002 **ENGINEERING, PC** Tel.: 609-745-5800 Fax: 609-745-5807 Tel.: 609-745-5800 ENGINEERS, PLANNERS & LAND SURVEYORS www.hopewellvalleyengineering.com

03/01/23 1" = 30'AWS Check: RMS 1106627B | FB:N/A SP01627B - Vps

2 Mar 2023

BY CHK'D

PALS GROUP HOME LOT 22 BLOCK 46

LANDSCAPE & TREE REMOVAL PLAN

PRELIMINARY

HOPEWELL TOWNSHIP, MERCER COUNTY, NEW JERSEY

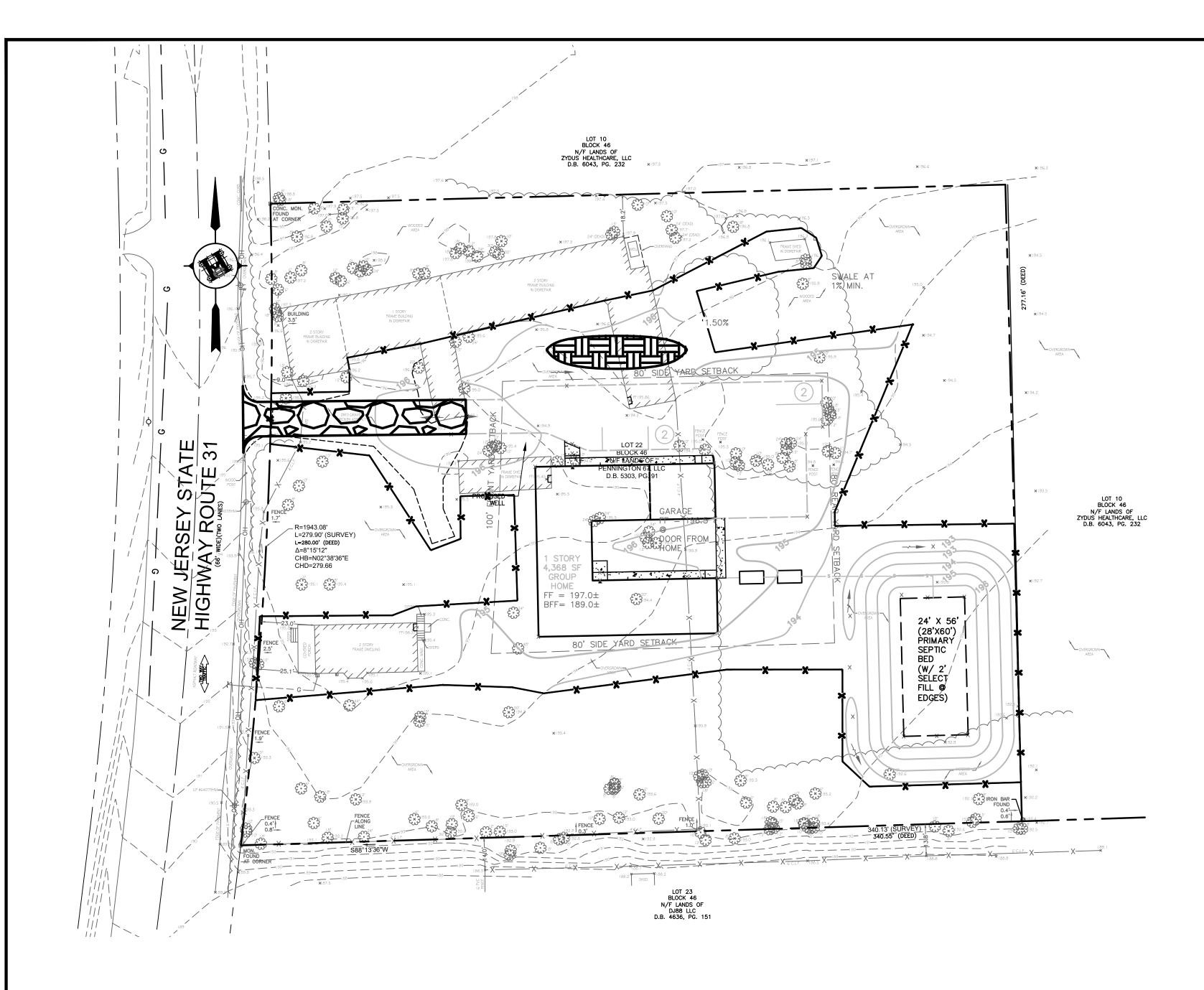
SITUATE IN

Sheet 4 of 10

RUSSELL M. SMITH
N.J. PROFESSIONAL ENGINEER NO. 33065

DESCRIPTION OF REVISION

NO. DATE



FULL WIDTH OF CARTWAY 1' OF STONE (SEE NOTE 2) -PROVIDE APPROPRIATE TRANSITION BETWEEN STAB. -

1. PLACE STABILIZED CONSTRUCTION ENTRANCE AT LOCATION(S) AS SHOWN ON THE SOIL EROSION AND SEDIMENT CONTROL PLAN. STONE SIZE SHALL BE 1-1/2" TO 2" CRUSHED STONE.

THE THICKNESS OF THE STAB. CONST. ENT. SHALL NOT BE LESS THAN 1'

THE WIDTH AT THE EXIST. PAVEMENT SHALL NOT BE LESS THAN THE FULL WIDTH OF POINTS OF INGRESS AND

ECRESS.

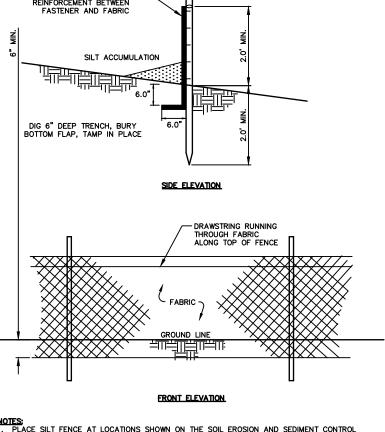
THE STAB. CONST. ENT. SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO THE R.O.W./PAVEMENT THIS REQUIRES PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR ADDITIONAL LENGTH AS CONDITIONS DEMAND AND REPAIR AND / OR CLEANOUT OR ANY MEASURE USED TO TRAP SEDIMENT. 6. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO THE PUBLIC ROADWAY MUST BE REMOVED IMMEDIATELY.

STABILIZED CONSTRUCTION ENTRANCE

NOTES:

1. TOPSOIL STOCKPILES TO BE PLACED AS DETERMINED IN THE FIELD.

2. STOCKPILE NOT TO BE PLACED IN AREA WITH CONCENTRATED FLOW, WETLANDS, EXTREME SLOPE OR WITHIN 100' OF A NATURAL STREAM. TEMPORARY TOPSOIL STOCKPILE



NOTES:

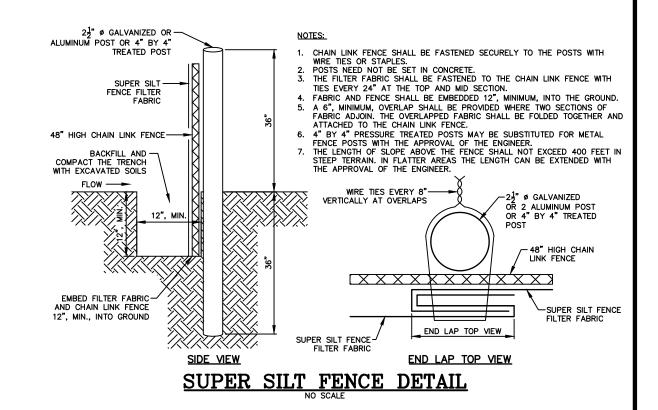
1. PLACE SILT FENCE AT LOCATIONS SHOWN ON THE SOIL EROSION AND SEDIMENT CONTROL PLAN.

2. SILT FENCE SHALL BE INSTALLED SO WATER CANNOT BYPASS THE FENCE AROUND ITS ENDS.

3. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE AS PROMPTLY AS POSSIBLE.

4. SILT FENCE SHALL REMAIN IN PLACE FOR THE DURATION OF THE PROJECT UNLESS OTHERWISE INSTRUCTED.

SEDIMENT FILTER



TOTAL DISTURBANCE:

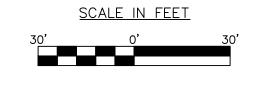
42,570 SF± OR 0.98 AC

THIS PLAN IS FOR SOIL EROSION AND SEDIMENT CONTROL PURPOSES ONLY

SEQUENCE OF CONSTRUCTION

- 1. THE MERCER COUNTY SOIL CONSERVATION DISTRICT (MCSCD) SHALL BE NOTIFIED 48 HOURS PRIOR TO THE START OF ANY LAND DISTURBANCE ACTIVITIES.
- 2. INSTALL SUPER SILT FENCE & SEDIMENT FILTER FENCE AROUND SITE AS SHOWN ON PLANS. (2
- 3. INSTALL INLET PROTECTION AND GRADE STONE CONSTRUCTION ACCESS ROAD. (2 DAYS)
- 4. DEMOLISH, CLEAR, STOCKPILE TOPSOIL, AND GRADE. (2 WEEKS)
- 5. BEGIN CONSTRUCTION OF STORM SEWER, BUILDINGS, PARKING AREA AND DRIVEWAY. (ON
- 6. SCARIFY/TILL THE SUBSOIL AREAS TO A MINIMUM DEPTH OF 6". APPLY 5 INCHES OF TOPSOIL, SEED AND MULCH ALL REQUIRED AREAS IMMEDIATELY FOLLOWING FINAL GRADING. INTERMEDIATE STABILIZATION OF DISTURBED AREAS SHALL BE IN ACCORDANCE WITH THE MERCER COUNTY SOIL CONSERVATION DISTRICT (MCSCD) STANDARDS. (1 WEEK)
- 7. PAVE ALL AREAS WITH SURFACE COURSE. (4 DAYS)
- 8. INSTALL LANDSCAPING AND LIGHTING MATERIALS (3 DAYS)
- 9. WHEN CONSTRUCTION IS COMPLETE REMOVE ACCUMULATED SEDIMENT IN THE BASIN, RESTORE ALL AREAS ON THE SITE WITH PERMANENT STABILIZATION AND REMOVE TEMPORARY SOIL EROSION MATERIALS WITH THE APPROVAL OF THE MCSCD. (1 WEEK)

- 1. THE CONTRACTOR IS RESPONSIBLE FOR INSURING THAT NO SOIL IS TRACKED OFF SITE. MECHANICAL SWEEPING MAY BE REQUIRED AT THE DIRECTION OF HOPEWELL
- 2. THE CONTRACTOR WILL IMMEDIATELY REMOVE ALL SEDIMENT WASHED, TRACKED OR SPILLED ONTO PAVED
- 3. IN LIEU OF POST CONSTRUCTION COMPACTION TESTING THE CONTRACTOR SHALL SCARIFY/TILL THE SUBSOIL TO A DEPTH OF 6" PRIOR TO TOPSOILING (SEE CONSTRUCTION SEQUENCE).
- 4. LIGHTWEIGHT CONSTRUCTION EQUIPMENT SHALL BE USED BY THE CONTRACTOR WHEN GRADING PROPOSED OPEN SPACES, BASIN AND LAWN AREAS.



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03/01/23 1" = 30'AWS Check: RMS 1106627B FB:N/A SP01627B - Vps

PALS GROUP HOME

SOIL EROSION AND SEDIMENT CONTROL PLAN

LOT 22 BLOCK 46 SITUATE IN

HOPEWELL TOWNSHIP, MERCER COUNTY, NEW JERSEY **PRELIMINARY** 2 Mar 2023

BY CHK'D

Sheet 5 of 10 RUSSELL M. SMITH
N.J. PROFESSIONAL ENGINEER NO. 33065

NO. DATE DESCRIPTION OF REVISION

STANDARD FOR TOPSOILING

THE PERPETUATION OF VEGETATIVE COVER.

STANDARD FOR MAINTAINING VEGETATION

TO ASSURE THE CONTINUING VIGOR AND FUNCTION OF THE VEGETATIVE COVER AND THE ENHANCEMENT OF THE ENVIRONMENT. IT IS USUALLY LESS COSTLY TO CARRY ON A MAINTENANCE PROGRAM THAT IT IS TO MAKE REPAIRS AFTER AN EXTENDED

WATER QUALITY ENHANCEMENT

ENSURES ADEQUATE PERMANENT COVER AND PREVENTS EXPOSURE OF SOILS TO EROSION AND OFF SITE SEDIMENTATION FROM STORMWATER RUNOFF IMPACTS

ON AREAS WHERE EXISTING VEGETATION PROTECTS OR ENHANCES THE ENVIRONMENT.

A PREVENTIVE MAINTENANCE PROGRAM ANTICIPATES REQUIREMENTS AND ACCOMPLISHES WORK WHEN IT CAN BE DONE WITH LEAST EFFORT AND EXPENSE TO INSURE ADEQUATE VEGETATIVE COVER.

MAINTENANCE SHOULD OCCUR ON A REGULAR BASIS. CONSISTENT WITH FAVORABLE PLANT GROWTH, SOIL, AND CLIMATIC CONDITIONS. THIS INVOLVES REGULAR SEASONAL WORK FOR MOWING, FERTILIZING, LIMING, WATERING, PRUNING, FIRE CONTROL, WEED AND PEST CONTROL, RESEEDING, AND TIMELY REPAIRS.

THE DEGREE OF PREVENTIVE MAINTENANCE NEEDED DEPENDS UPON THE TYPE OF VEGETATION AND ITS PROPOSED FUNCTION OR

- 1. MOWING IS A RECURRING PRACTICE AND ITS INTENSITY DEPENDS UPON THE FUNCTION OF THE GROUND COVER. ON HIGH TO MODERATE (A TO B) MAINTENANCE AREAS, SUCH AS LAWNS, CERTAIN RECREATION FIELDS, AND PICNIC AREAS, MOWING WILL BE FREQUENT (2 TO 7 DAY INTERVALS). LOW MAINTENANCE (D) AREAS MAY BE LEFT UNMOWED TO PERMIT NATURAL SUCCESSION. SEE PG. 4-13 FOOTNOTE #4, MAINTENANCE LEVELS A, B, C AND D IN THE STANDARD FOR PERMANENT VEGETATIVE COVER, TABLE 4-3 OF THE STANDARDS.
- INCORPORATION OF ORGANIC MATTER (FOR EXAMPLE, MATURE COMPOST)_ INTO THE SOIL WILL SUBSTANTIALLY REDUCE THE NEED FOR FERTILIZER AND IRRIGATION INPUTS.
- 3. FERTILIZER AND LIME SHOULD BE APPLIED AS NEEDED TO MAINTAIN A DENSE STAND OF DESIRABLE SPECIES FREQUENTLY MOWED AREAS AND THOSE ON SANDY SOILS WILL REQUIRE MORE FERTILIZATION BUT AT LOWER NUTRIENT RATES PER APPLICATION...
- 4. LIME REQUIREMENT SHOULD BE DETERMINED BY SOIL TESTING EVERY 2 OR 3 YEARS. FERTILIZATION INCREASES THE NEED FOR LIMING. CONTACT THE LOCAL COUNTY EXTENSION OFFICE FOR DETAILS ON SOIL TESTING AND FERTILIZATION AND PEST CONTROL RECOMMENDATIONS ONLINE AT HTTP: //NJAES.RUTGERS.EDU/COUNTY.
- WEED INVASION MAY RESULT FROM ABUSIVE MOWING AND INADEQUATE FERTILIZATION AND LIMING. BRUSH INVASION IS A COMMON CONSEQUENCE OF LACK OF MOWING. THE AMOUNT OF WEEDS OR BRUSH THAT CAN BE TOLERATED IN ANY VEGETATED AREA DEPENDS UPON THE INTENDED USE OF THE LAND. DRAINAGEWAYS ARE SUBJECT TO RAPID INFESTATION BY WEEDS AND WOODY PLANTS. THESE SHOULD BE CONTROLLED, SINCE THEY OFTEN REDUCE DRAINAGEWAY EFFICIENCY. CONTROL OF WEEDS OR BRUSH IS ACCOMPLISHED BY USING HERBICIDES OR MECHANICAL
- 6. FIRE HAZARD IS GREATER WHERE DRY VEGETATION HAD ACCUMULATED. THE TALLER THE VEGETATION, THE GREATER THE HAZARD.
- 8. PRUNE TREES AND SHRUBS TO REMOVE DEAD OR DAMAGED BRANCHES. REMOVE UNDESIRABLE OR INVASIVE PLANTS TO MAINTAIN INTEGRITY OF THE LANDSCAPE AND ENHANCE QUALITY OF PERMANENT VEGETATIVE COVER.

STANDARD FOR PERMANENT STABILIZATION WITH SOD

ESTABLISHING PERMANENT VEGETATION USING SOD.

TO PERMANENTLY STABILIZE TOPSOIL WITH AN IMMEDIATE AESTHETIC COVERING, THUS ASSURING CONSERVATION OF SOIL AND WATER, AND TO ENHANCE THE ENVIRONMENT.

PROVIDES AN IMMEDIATE, PERMANENT VEGETATIVE COVER TO THE SOIL FROM THE IMPACTS OF WIND OR RAIN AND PREVENTS SOIL AND NUTRIENT LOSSES TO STREAMS AND OTHER STORMWATER CONVEYANCES FROM STORMWATER RUNOFF. WHERE APPLICABLE

ON EXPOSED SOILS THAT HAVE A POTENTIAL FOR CAUSING OFF-SITE ENVIRONMENTAL DAMAGE WHERE AN IMMEDIATE, PERMANENT VEGETATIVE COVER IS DESIRED. WATER (RAIN OR IRRIGATION) IS REQUIRED FOR SUCCESS; ACCESS TO IRRIGATION IS ESSENTIAL DURING DROUGHT.

1. HIGHLY CULTIVATED SOD IS PREFERRED OVER NATIVE OR PASTURE SOD.

- 2. SOD SHOULD BE FREE OF BROADLEAF WEEDS AND UNDESIRABLE COARSE AND FINE WEED GRASSES
- 3. SOD SHOULD BE OF UNIFORM THICKNESS, APPROXIMATELY 5/8 INCH, PLUS OR MINUS 1/4 INCH, AT TIME OF CUTTING (EXCLUDES TOP
- 4. SOD SHOULD BE VIGOROUS AND DENSE AND BE ABLE TO RETAIN ITS OWN SHAPE AND WEIGHT WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP FROM THE UPPER 10 PERCENT OF THE STRIP. BROKEN PADS OR TORN AND UNEVEN ENDS WILL NOT BE ACCEPTABLE
- 5. FOR DROUGHTY SITES, A SOD OF TURF-TYPE TALL FESCUE AND OF TURF-TYPE TALL FESCUE MIXED WITH KENTUCKY BLUEGRASS IS PREFERRED OVER A 100% KENTUCKY BLUEGRASS SOD. ALTHOUGH NOT WIDELY AVAILABLE, A SOD OF FINE FESCUE IS ALSO ACCEPTABLE
- 6. ONLY MOIST, FRESH, UNHEATED SOD SHOULD BE USED. SOD SHOULD BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 24 HOURS OR LESS DURING SUMMER MONTHS.
- I. SITE PREPARATION GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR LIMING, FERTILIZING, AND SOIL PREPARATION. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH STANDARD FOR LAND GRADING
- B. TOPSOIL SHOULD BE HANDLED ONLY WHEN IT IS DRY ENOUGH TO WORK WITHOUT DAMAGING THE SOIL STRUCTURE. A UNIFORM APPLICATION TO A DEPTH OF 6" (UNSETTLED) IS REQUIRED ON ALL SITES. SEE THE STANDARD FOR TOPSOILING FOR TOPSOIL AND AMENDMENT

INSTALL NEEDED EROSION CONTROL PRACTICES AND FACILITIES, SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES. SEDIMENT BASINS. AND WATERWAYS.

II. SOIL PREPARATION

UNIFORMLY APPLY GROUND LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS SUCH AS OFFERED BY RUTGERS COOPERATIVE EXTENSION. SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL RUTGERS COOPERATIVE EXTENSION OFFICE: (HTTP: //NJAES.RUTGERS.EDU/COUNTY/). FERTILIZER SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE OR 11 POUNDS PER 1,000 SQUARÉ FEET USING 10-10-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS A SOIL TEST INDICATES OTHERWISE AND INCORPORATED INTO THE SURFACE 4". IF FERTILIZER IS NOT INCORPORATED, APPLY 1/2 THE RATE DESCRIBED ABOVE DURING SEEDBED PREPARATION AND REPEAT ANOTHER 1/2 RATE APPLICATION OF THE SAME FERTILIZER WITHIN 3 TO 5 WEEKS AFTER SEEDING. APPLY LIMESTONE AT THE RATE OF 2 TONS/ACRE UNLESS SOIL TESTING INDICATES OTHERWISE, CALCIUM CARBONATE IS THE EQUIVALENT AND STANDARD FOR MEASURING THE ABILITY OF LIMITING MATERIALS TO NEUTRALIZE SOIL ACIDITY AND SUPPLY CALCIUM AND MAGNESIUM TO GRASSES A LEGUMES. TABLE 6-1 IS A GENERAL GUIDELINE FOR LIMESTONE APPLICATION RATES.

TABLE 6-1 LIMESTONE(1) APPLICATION RATE BY SOIL TEXTURE

TONS/ACRE LBS./1,000 SQ. FT. SOIL TEXTURE CLAY, CLAY LOAM AND HIGH ORGANIC SOIL SANDY LOAM, LOAM, SILT LOAM

(1)PULVERIZED DOLOMITIC LIMESTONE IS PREFERRED FOR MOST SOILS SOUTH OF THE NEW BRUNSWICK-TRENTON LINE; HOWEVER,

WORK LIME AND FERTILIZER INTO THE TOPSOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRINGTOOTH HARROW, OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISCING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLY UNIFORM, FINE SEEDBED IS PREPARED

REMOVE FROM THE SURFACE ALL OBJECTS THAT WOULD PREVENT GOOD SOD TO TOPSOIL CONTACT AND REMOVE ALL OTHER DEBRIS, SUCH AS WIRE, CABLE, TREE ROOTS, PIECES OF CONCRETE, CLODS, LUMPS, OR OTHER UNSUITABLE MATERIAL.

D. INSPECT SITE JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED, THE AREA MUST BE RETILLED AND FIRMED IN ACCORDANCE WITH THE ABOVE.

SOD STRIPS SHOULD BE LAID ON THE CONTOUR, NEVER UP AND DOWN THE SLOPE, STARTING AT THE BOTTOM OF THE SLOPE AND WORKING UP. ON STEEP SLOPES, THE USE OF LADDERS WILL FACILITATE THE WORK AND PREVENT DAMAGE TO THE SOD. DURING PERIODS OF

HIGH TEMPERATURE, LIGHTLY IRRIGATE THE SOIL IMMEDIATELY PRIOR TO LAYING THE SOD. B. PLACE SOD STRIPS WITH SNUG, EVEN JOINTS THAT ARE STAGGERED. OPEN SPACES INVITE EROSION.

LIGHTLY ROLL OR TAMP SOD IMMEDIATELY FOLLOWING PLACEMENT TO INSURE SOLID CONTACT OF ROOT MAT AND SOIL SURFACE. DO NOT OVERLAP SOD. ALL JOINTS SHOULD BE BUTTED TIGHTLY IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE DRYING OF THE ROOTS ON SLOPES GREATER THAN 3 TO 1, SECURE SOD TO SURFACE SOIL WITH WOOD PEGS, WIRE STAPLES, BIODEGRADABLE PLASTIC SPIKES, OR SPLIT SHINGLES (8 TO 10 INCHES LONG BY 3/4 INCH WIDE).

SURFACE WATER CANNOT ALWAYS BE DIVERTED FROM FLOWING OVER THE FACE OF THE SLOPE, BUT A CAPPING STRIP OF HEAVY JUTE OR PLASTIC NETTING, PROPERLY SECURED, ALONG THE CROWN OF THE SLOPE AND EDGES WILL PROVIDE EXTRA PROTECTION AGAINST LIFTING AND UNDERCUTTING OF SOD. THE SAME TECHNIQUE CAN BE USED TO ANCHOR SOD IN WATER-CARRYING CHANNELS AND OTHER CRITICAL AREAS. WIRE STAPLES MUST BE USED TO ANCHOR NETTING IN CHANNEL WORK.

IMMEDIATELY FOLLOWING INSTALLATION, SOD SHOULD BE WATERED UNTIL MOISTURE PENETRATES THE SOIL LAYER BENEATH SOD TO A DEPTH OF 1 INCH. MAINTAIN OPTIMUM MOISTURE FOR AT LEAST TWO WEEKS. TOPDRESSING - SINCE SOIL ORGANIC MATTER AND SLOW RELEASE NITROGEN FERTILIZER (WATER INSOLUBLE) ARE PRESCRIBED IN SECTIONS 1 AND 2 IN THIS STANDARD, A FOLLOW-UP TOPDRESSING IS NOT MANDATORY, EXCEPT WHERE GROSS NITROGEN DEFICIENCY EXISTS TO THE EXTENT THAT TURF FAILURE MAY DEVELOP, TOPDRESSING SHALL THEN BE APPLIED. TOPDRESS WITH 10-10-10 OR EQUIVALENT AT 400 POUNDS PER ACRE OR 7 POUNDS PER 1,000 SQUARE FEET EVERY 3 TO 5 WEEKS UNTIL THE GROSS NITROGEN DEFICIENCY IN THE TURF

TOPSOILING ENTAILS THE DISTRIBUTION OF SUITABLE QUALITY SOIL ON AREAS TO BE VEGETATED.

TO IMPROVE THE SOIL MEDIUM FOR PLANT ESTABLISHMENT AND MAINTENANCE.

GROWTH AND ESTABLISHMENT OF A VIGOROUS VEGETATIVE COVER IS FACILITATED BY TOPSOIL, PREVENTING SOIL LOSS BY WIND AND RAIN OFFSITE AND INTO STREAMS AND OTHER STORMWATER CONVEYANCES.

TOPSOIL SHALL BE USED WHERE SOILS ARE TO BE DISTURBED AND WILL BE REVEGETATED.

I. MATERIALS

A. TOPSOIL SHOULD BE FRIABLE(1), LOAMY(2), FREE OF DEBRIS, OBJECTIONABLE WEEDS AND STONES, AND CONTAIN NO TOXIC SUBSTANCE OR ADVERSE CHEMICAL OR PHYSICAL CONDITION THAT MAY BE HARMFUL TO PLANT GROWTH. SOLUBLE SALTS SHOULD NOT BE EXCESSIVE (CONDUCTIVITY LESS THAN 0.5 MILLIMHOS PER CENTIMETER. MORE THAN 0.5 MILLIMHOS MAY DESICCATE SEEDLINGS AND ADVERSELY IMPACT GROWTH). IMPORTED TOPSOIL SHOULD HAVE A MINIMUM ORGANIC MATTER CONTENT OF 2.75 PERCENT. ORGANIC MATTER CONTENT MAY BE RAISED BY ADDITIVES.

(1)FRIABLE MEANS EASILY CRUMBLES IN THE FINGERS, AS DEFINED IN MOST SOILS TEXTS.
(2)LOAMY MEANS TEXTURE GROUPS CONSISTING OF COARSE LOAMY SANDS, SANDY LOAM, FINE AND VERY FINE SANDY LOAM, CLAY LOAM, CLAY LOAM, SANDY CLAY LOAM AND SILTY CLAY LOAM TEXTURES AND HAVING LESS THAN 35% COARSE FRAGMENTS (PARTICLES LESS THAN 2MM IN SIZE) AS DEFINED IN THE

B. TOPSOIL SUBSTITUTE IS A SOIL MATERIAL WHICH MAY HAVE BEEN AMENDED WITH SAND, SILT, CLAY, ORGANIC MATTER, FERTILIZER OR LIME AND HAS THE APPEARANCE OF TOPSOIL. TOPSOIL SUBSTITUTES MAY BE UTILIZED ON SITES WITH INSUFFICIENT TOPSOIL FOR ESTABLISHING PERMANENT VEGETATION. ALL TOPSOIL SUBSTITUTE MATERIALS SHALL MEET REQUIREMENTS OF TOPSOIL NOTED ABOVE. SOIL TESTS SHALL BE PERFORMED TO DETERMINE THE COMPONENTS OF THE SAND, SILT, CLAY, ORGANIC MATTER, SOLUBLE SALTS AND PH LEVEL.

II. STRIPPING AND STOCKPILING

- A. FIELD EXPLORATION SHOULD BE MADE TO DETERMINE WHETHER QUANTITY AND OR QUALITY OF SURFACE SOIL JUSTIFIES
- B. STRIPPING SHOULD BE CONFINED TO THE IMMEDIATE CONSTRUCTION AREA.
- C. WHERE FEASIBLE, LIME MAY BE APPLIED BEFORE STRIPPING AT A RATE DETERMINED BY SOIL TESTS TO BRING THE SOIL
- D. A 4-6 INCH STRIPPING DEPTH IS COMMON, BUT MAY VARY DEPENDING ON THE PARTICULAR SOIL.
- F. STOCKPILES SHOULD BE VEGETATED IN ACCORDANCE WITH STANDARDS PREVIOUSLY DESCRIBED HEREIN; SEE STANDARDS FOR PERMANENT OR TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION IN THIS PLAN SET. WEED SHOULD NOT BE

E. STOCKPILES OF TOPSOIL SHOULD BE SITUATED SO AS NOT TO OBSTRUCT NATURAL DRAINAGE OR CAUSE OFF-SITE

- A. GRADE AT THE ONSET OF THE OPTIMAL SEEDING PERIOD SO AS TO MINIMIZE THE DURATION AND AREA OF EXPOSURE OF DISTURBED SOIL TO EROSION, IMMEDIATELY PROCEED TO ESTABLISH VEGETATIVE COVER IN ACCORDANCE WITH THE
- B. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT SEEDBED PREPARATION, MULCH
- C. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE TO CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, EEDING, MULCH APPLICATION AND ANCHORING, AND MAINTENANCE. SEE THE STANDARD FOR LAND GRADING, PG. 19-1
- D. AS GUIDANCE FOR IDEAL CONDITIONS, SUBSOIL SHOULD BE TESTED FOR LIME REQUIREMENT. LIMESTONE, IF NEEDED SHOULD BE APPLIED TO BRING SOIL TO A PH OF APPROXIMATELY 6.5 AND INCORPORATED INTO THE SOIL AS NEARLY AS
- E. PRIOR TO TOPSOILING, THE SUBSOIL SHALL BE IN COMPLIANCE WITH THE STANDARD FOR LAND GRADING, P.G.19-1.
- F. EMPLOY NEEDED EROSION CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENTATION BASINS, AND WATERWAYS. SEE STANDARDS 11 THROUGH 42.
- A. TOPSOIL SHOULD BE HANDLED ONLY WHEN IT IS DRY ENOUGH TO WORK WITHOUT DAMAGING SOIL STRUCTURE; I.E., LESS B. A UNIFORM APPLICATION TO AN AVERAGE DEPTH OF 5.0 INCHES, MINIMUM OF 4 INCHES, FIRMED IN PLACE IS REQUIRED. ALTERNATIVE DEPTHS MAY BE CONSIDERED WHERE SPECIAL REGULATORY AND/OR INDUSTRY DESIGN STANDARDS ARE APPROPRIATE SUCH AS ON GOLF COURSES, SPORTS FIELDS, LANDFILL CAPPING, ETC.. SOILS WITH A PH OF 4.0 OR LESS

OR CONTAINING IRON SULFIDE SHALL BE COVERED WITH A MINIMUM DEPTH OF 12 INCHES OF SOIL HAVING A PH OF 5.0

OR MORE, IN ACCORDANCE WITH THE STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOIL (PG. 1-1) PURSUANT TO THE REQUIREMENTS IN SECTION 7 OF THE STANDARD FOR PERMANENT VEGETATIVE STABILIZATION, THI CONTRACTOR IS RESPONSIBLE TO ENSURE THAT PERMANENT VEGETATIVE COVER BECOMES ESTABLISHED ON AT LEAS 80% OF THE SOILS TO BE STABILIZED WITH VEGETATION. FAILURE TO ACHIEVE THE MINIMUM COVERAGE MAY REQUIRE ADDITIONAL WORK TO BE PERFORMED BY THE CONTRACTOR TO INCLUDE SOME OR ALL OF THE FOLLOWING:
SUPPLEMENTAL SEEDING, RE-APPLICATION OF LIME AND FERTILIZERS, AND/OR THE ADDITION OF ORGANIC MATTER (I.E. COMPOST) AS A TOP DRESSING. SUCH ADDITIONAL MEASURES SHALL BE BASED ON SOIL TESTS SUCH AS THOSE FFERED BY RUTGERS COOPERATIVE EXTENSION SERVICE OR OTHER APPROVED LABORATORY FACILITIES QUALIFIED TO

STANDARD FOR STABILIZATION WITH MULCH ONLY DEFINITION

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

TO PROTECT EXPOSED SOIL SURFACES FROM EROSION DAMAGE AND TO REDUCE OFF-SITE 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 ON EROSION-RESISTANT COVER OR WHERE STABILIZATION IS NEEDED FOR A SHORT PERIOD UNTIL MORE SUITABLE PROTECTION CAN BY APPLIED

METHODS AND MATERIALS I. SITE PREPARATION

RECOMMENDED BY THE MANUFACTURER

TEST SOIL SAMPLES FOR AGRONOMIC PROPERTIES.

- A. GRADE, AS NEEDED AND FEASIBLE, TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION AND ANCHORING MULCH. ALL GRADING SHOULD BY DONE IN ACCORDANCE WITH STANDARDS
- B. INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS. SEE STANDARDS 11 THROUGH 42.

II. PROTECTIVE MATERIALS

- A. UNROTTED SMALL-GRAIN STRAW, OR SALT HAY 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 TIE DOWN. OTHER SUITABLE MATERIALS MAY BE USED IF APPROVED BY THE SOIL CONSERVATION DISTRICT. THE APPROVED RATES ABOVE HAVE BEEN MET WHEN THE MUCH COVERS THE GROUND COMPLETELY UPON VISUAL INSPECTION, I.E. THE SOIL CANNOT BE SEEN BELOW THE MULCH.
- B. SYNTHETIC OR ORGANIC SOIL STABILIZERS MAY BE USED UNDER SUITABLE CONDITIONS AND IN SUFFICIENT QUANTITIES AS
- WOOD-FIBER OR PAPER-FIBER MULCH AT THE RATE OF 1,500 POUNDS PER ACRE (OR ACCORDING TO THE
- MANUFACTURER'S REQUIREMENTS) APPLIED BY A HYDROSEEDER. D. MULCH NETTING, SUCH AS PAPER JUTE, EXCELSIOR, COTTON, OR PLASTIC, MAY BE USED.
- F. WOODCHIPS APPLIED UNIFORMLY TO A MINIMUM DEPTH OF 2 INCHES MAY BE USED. WOODCHIPS WILL NOT BE USED ON AREAS WHERE FLOWING WATER COULD WASH THEM INTO AN INLET AND PLUG IT
- MINIMUM DEPTH OF 3 INCHES MAY BE USED. SIZE 2 OR 3 (ASTM C-33) IS RECOMMENDED. III. MULCH ANCHORING - SHOULD BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT OF HAY OR STRAW MULCH TO MINIMIZE THE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE TO THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE

F. GRAVEL, CRUSHED STONE, OR SLAG AT THE RATE OF 9 CUBIC YARDS PER 1,000 SQ. FT. APPLIED UNIFORMLY TO A

- AREA AND STEEPNESS OF SLOPES. A. PEG AND TWINE - DRIVE 8 TO 10 INCH WOOD PEGS TO WITHIN 2 TO 3 INCHES OF THE SOIL SURFACE EVERY 4 FEET IN ALL DIRECTIONS. STAKES MAY BE DRIVEN BEFORE OR AFTER APPLYING MULCH. SECURE MULCH TO SOIL SURFACE BY
- STRETCHING TWINE BETWEEN PEGS IN A CRISSCROSS AND A SQUARE PATTERN. SECURE TWINE AROUND EACH PEG WITH TWO OR MORE ROUND TURNS. B. MULCH NETTINGS - STAPLE PAPER, COTTON, OR PLASTIC NETTINGS OVER MULCH. USE A 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 AFFECTS MAXIMUM EROSION CONTROL, BUT ITS USE IS LIMITED O 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 D. LIQUID MULCH-BINDERS

- 1. APPLICATIONS SHOULD BE HEAVIER AT EDGES WHERE WIND CATCHES THE MULCH, IN VALLEYS, AND AT CRESTS OF BANKS. REMAINDER OF AREA SHOULD BE UNIFORM IN APPEARANCE.
- 2. USE ONE OF THE FOLLOWING:
 - a. ORGANIC AND VEGETABLE BASED BINDERS NATURALLY OCCURRING, POWDER BASED HYDROPHILIC MATERIALS THAT MIXED WITH WATER FORMULATES A GEL AND WHEN APPLIED TO MULCH UNDER SATISFACTORY CURING CONDITIONS WILL FORM MEMBRANE NETWORKS OF INSOLUBLE POLYMERS. THE VEGETABLE GEL SHALL BE PHYSIOLOGICALLY HARMLESS AND NOT RESULT IN A PHYTO-TOXIC EFFECT OR IMPEDE GROWTH OF TURFGRASS. VEGETABLE BASED GELS SHALL BE APPLIED AT RATES AND WEATHER CONDITIONS RECOMMENDED BY THE MANUFACTURER.
 - b. SYNTHETIC BINDERS HIGH POLYMER SYNTHETIC EMULSION, MISCIBLE WITH WATER WHEN DILUTED AND LLOWING APPLICATION TO MULCH, DRYING AND CURING SHALL NO LONGER BE SOLUBLE OR DISPERSIBLE IN WATER. IT SHALL BE APPLIED AT RATES AND WEATHER CONDITIONS RECOMMENDED BY THE MANUFACTURER AND REMAIN TACKY UNTIL GERMINATION OF GRASS.

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

STANDARDS FOR TREE PROTECTION DURING CONSTRUCTION

PROTECTION OF TREES FROM ENVIRONMENTAL AND MECHANICAL INJURY DURING CONSTRUCTION ACTIVITIES.

TO PROTECT TREES FOR EROSION AND SEDIMENT CONTROL, SHADE, AESTHETICS, WILDLIFE, DUST CONTROL, NOISE ABATEMENT

WATER QUALITY ENHANCEMENT LIMITING AREAS OF SITE DISTURBANCE AND RE-VEGETATING WITH PERMANENT COVER, MINIMIZES OFF SITE AND NEGATIVE DOWNSTREAM WATER QUALITY IMPACTS CAUSED BY STORMWATER RUNOFF. MATURE TREES PROVIDE STRUCTURAL STABILITY FOR SOILS, PROMOTE PROPER WATER MOVEMENT THROUGH THE SOIL PROFILE AND MODERATE CHANGES IN TEMPERATURE

ON NEW DEVELOPMENT SITES WITH EXISTING TREES.

- 1. RECONNAISSANCE SHOULD BE PERFORMED BEFORE LAND CLEARING BEGINS TO IDENTIFY DEAD AND WEAK TREES TO BE REMOVED AND HEALTHY TREES TO REMAIN, TO CREATE AESTHETICALLY PLEASING DEVELOPMENT SITE WITH VEGETATION RATHER THAN THE PRESENCE OF DEAD OR DYING TREES. INVENTORY THE SITE AND CLEARLY MARK THE TREES AND STANDS OF TREES TO BE SAVED. CONSIDER RELOCATING STREETS, HOUSES, OR OTHER STRUCTURES IF NECESSARY AND FEASIBLE. ONCE CLEARING BEGINS AND DAMAGE TO THE TREES OCCURS, VALUABLE SPECIMENS MAY BE LOST.
- A. CHARACTERISTICS OF TREES TO BE PROTECTED AND SAVED. THE FOLLOWING LISTS CHARACTERISTICS THAT SHOULD BE EVALUATED BEFORE DECIDING TO REMOVE OR PROTECT A TREE.

AND OXYGEN PRODUCTION.

ALONG STREAMS AND OTHER WATER BODIES.

- TREE HEALTH IS THE OVERALL CONDITION OF THE TREE. A TREE OF LOW VIGOR IS MORE SUSCEPTIBLE TO DAMAGE BY ENVIRONMENTAL CHANGES THAN HEALTHY TREES AND IS MORE SUSCEPTIBLE TO INSECT AND DISEASE ATTACKS. INDICATIONS OF POOR VIGOR INCLUDE THE DYING OF THE TIPS OF BRANCHES AND ENTIRE LIMBS, SMALL ANNUAL TWIG GROWTH, STUNTED LEAF SIZE, SPARSE FOLIAGE, AND POOR FOLIAGE COLOR. AVOID SAVING HOLLOW OR ROTTEN TREES, TREES CRACKED, SPLIT, LEANING OR CROOKED, OOZING SAP, OR WITH BROKEN TOPS. USE WOODCHIPS GENERATED FROM REMOVAL OF TREES OF POOR HEALTH AND SPREAD THEM AROUND THE ROOT ZONES TO HELP PROTECT THE TREES THAT REMAIN.
- LARGE, PICTURESQUE TREES MAY BE MORE AESTHETICALLY VALUABLE THAN SMALLER, YOUNG TREES, BUT ALSO REQUIRE MORE EXTENSIVE PROTECTION MEASURES. IF LEAVING AN OLDER TREE, BE SURE IT IS SOUND AND

MOUNTAIN ASH (D), SASSAFRAS (I), SCHOLARTREE (D), RED BUD (D)

(3). SPECIES (THE RIGHT TREES FOR THE RIGHT LOCATIONS) MANY SPECIES OF TREES FOUND IN NEW JERSEY WOODLANDS ARE NOT SUITABLE FOR SHADE TREE USES AROUND BUILDINGS. AVOID PROTECTING TREES THAT ARE SHORT-LIVED, BRITTLE, HAVE SOFT WOOD, MESSY EAVES, FRUIT, OR ARE FREQUENTLY ATTACKED BY INSECTS AND DISEASE. TREE ROOT SYSTEMS WHICH DO NO ADAPT WELL TO CUTS AND FILLS MAY NOT BE A SUITABLE ALTERNATIVE. THE FOLLOWING ARE SEVERELY AFFECTED BY COMPACTED CONSTRUCTION FILLS: ASPEN, BEECH, PAPER BIRCH, EASTERN RED CEDAR, BLACK CHERRY, DOGWOOD, KATSURA TREE, LINDEN, PAPERBARK MAPLE, SUGAR MAPLE, BLACK OAK, PIN OAK, RED OAK, WHITE OAK, PINES, AND TULIPTREE. SEE TABLE 9-1 OF THE STANDARDS FOR A MORE COMPLETE LIST OF CONSTRUCTION IMPACTS TO INDIVIDUAL TREE SPECIES.

AVOID LEAVING TREES IN HIGHLY VISIBLE AREAS OF SPECIMENS THAT ARE FREQUENT TARGETS OF INSECTS AND DISEASES. AMERICAN ELM, FOR EXAMPLE, COULD BE LOST DUE TO DUTCH ELM DISEASE. WILD CHERRY, ANOTHER EXAMPLE, IS A FAVORITE HOST OF THE TENT CATERPILLAR, WHICH CAUSES DEFOLIATION OF THE TREES IN EARLY SUMMER. THE FOLLOWING ARE SUSCEPTIBLE TO INSECTS (I) AND DISEASE (D): WHITE ASH (D), BIRCH (I), BUTTERNUT (D), CRABAPPLES (D), SOME ELMS (D), HAWTHORN (D), HEMLOCK (I), LINDEN (I), SUGAR MAPLE (D),

CHOOSE TREES THAT ARE AESTHETICALLY PLEASING, EXHIBITING GOOD SHAPE AND FORM. AVOID LEANING CROOKED AND MISSHAPEN TREES. OCCASIONALLY, AN ODD-SHAPED TREE OR ONE OF UNUSUAL FORM MAY ADD INTEREST TO THE LANDSCAPE IF STRATEGICALLY LOCATED. BE SURE THE TREE IS STRUCTURALLY SOUND AND

(6). SPRING AND AUTUMN COLORATION

SPECIES DIFFER IN FALL COLOR. SOME ARE BRIGHT RED, OTHERS ORANGE AND YELLOW. OTHER SPECIES EXHIBIT (7), WILDLIFE BENEFITS

FAVOR TREES THAT ARE PREFERRED BY WILDLIFE FOR FOOD, COVER, AND NESTING, A MIXTURE OF EVERGREENS AND HARDWOODS IS BENEFICIAL. EVERGREEN TREES ARE IMPORTANT FOR COVER DURING THE WINTER MONTHS.

IREE SPECIES VARY GREATLY TO SUSCEPTIBILITY TO AIR POLLUTION. SYMPTOMS VARY FROM BROWNING ON THE

(8). AIR POLLUTION SUSCEPTIBILITY

EDGES OF THE LEAVES AND NEEDLES, TO STUNTING OF GROWTH, TO DEATH OF THE TREE. THE FOLLOWING SHOW TOLERANCE TO URBAN STRESS AND ARE LESS LIKELY TO PRESENT PROBLEMS WITH SIDEWALKS: BALD CYPRESS, CORK TREE, AMUR MAPLE, KENTUCKY COFFEE TREE, CRABAPPLE, DAWN REDWOOD, GINKGO (MALE), GOLDEN RAINTREE, HAWTHORN, HONEYLOCUST, EUROPEAN HORNBEAM, HORSECHESTNUT, LINDENS, OAKS, (EXCLUDING PIN), PEAR, SCHOLARTREE, SOURGUM (TUPELO), SWEETGUM, YEWS, ZELKOVA.

(9). SPECIES LONGEVITY

- FAVOR TREES WHOSE LIFE SPAN IS LONG, SUCH AS OAK, BEECH, AND TULIP POPLAR. SHORT-LIVED TREES (BLACK LOCUST, GRAY BIRCH, ASPEN) SHOULD BE AVOIDED FOR USE AS SHADE, LAWN, OR SPECIMEN TREES. ALTHOUGH SOME SHORT-LIVED TREES HAVE AN ATTRACTIVE FORM OR PLEASING COLORATIONS IN THE SPRING OR FALL, SUCH TREES MAY NOT LIVE FOR A LONG TIME.
- B. CRITERIA FOR PROTECTING REMAINING TREES: 1. GENERAL MECHANICAL DAMAGE - SEE FIGURE 9-3 OF THE STANDARDS FOR CORRECT ROOT ZONE CALCULATION AND
- PLACEMENT OF TREE PROTECTION. 2. BOX TREES WITHIN 25 FEET OF A BUILDING SITE TO PREVENT MECHANICAL INJURY. FENCING OR OTHER BARRIER SHOULD
- BE INSTALLED AT THE DRIP LINE OF THE TREE BRANCHES OR BEYOND. SEE FIGURE 9-3 OF THE STANDARDS. TREE ROOT SYSTEMS COMMONLY EXTEND WELL BEYOND THE DRIP LINE.

PROFESSIONAL FORESTER OR CERTIFIED TREE EXPERT.

THE HARDWOODS ARE MORE VALUABLE FOR FOOD.

- 3. BOARDS WILL NOT BE NAILED TO TREES DURING BUILDING OPERATIONS. 4. FEEDER ROOTS SHOULD NOT BE CUT IN AN AREA INSIDE THE PROTECTED ROOT ZONE (PRZ).
- 5. DAMAGED TRUNKS OR EXPOSED ROOTS SHOULD HAVE DAMAGED BARK REMOVED IMMEDIATELY AND NO PAINT SHALL BE APPLIED. EXPOSED ROOTS SHOULD BE COVERED WITH TOPSOIL IMMEDIATELY AFTER EXCAVATION IS COMPLETE. ROOTS SHALL BE PRUNED TO GIVE A CLEAN, SHARP SURFACE AMENABLE TO HEALING. ROOTS EXPOSED DURING HOT WEATHER SHOULD BE IRRIGATED TO PREVENT PERMANENT TREE INJURY. CARE FOR SERIES INJURY SHOULD BE PRESCRIBED BY A
- 6. TREE LIMB REMOVAL, WHERE NECESSARY, WILL BE DONE AS NATURAL TARGET PRUNING TO REMOVE THE DESIRED BRANCH AS CLOSE AS POSSIBLE TO THE BRANCH COLLAR. THERE SHOULD BE NO FLUSH CUTS. FLUSH CUTS DESTROY A MAJOR DEFENSE SYSTEM OF THE TREE (SEE FIGURE 9-1 OF THE STANDARDS). NO TREE PAINT SHALL BE APPLIED. ALL CUTS SHALL BE MADE AT THE OUTSIDE EDGE OF THE BRANCH COLLAR (FIG. 9-1 AND 9-2 OF THE STANDARDS). CUTS MADE TOO FAR BEYOND THE BRANCH COLLAR MAY LEAD TO EXCESS SPROUTING, CRACKS AND ROT. REMOVAL OF A "V" CROTCH SHOULD BE CONSIDERED FOR FREE STANDING SPECIMEN TREES (SEE FIGURE 9-2 OF THE STANDARDS) TO AVOID

NOTE: FOR MORE SPECIFIC DATA ON CERTAIN TREE CHARACTERISTICS, BY SPECIES, SEE TABLE 9.1, TREE CHARACTERISTICS OR CONSULT A LOCAL PROFESSIONAL TREE EXPERT, SOIL CONSERVATION DISTRICT OR RUTGERS COOPERATIVE EXTENSION.

REQUIRED SOIL EROSION AND SEDIMENT CONTROL NOTES

THE MERCER COUNTY SOIL CONSERVATION DISTRICT SHALL BE NOTIFIED 48 HOURS PRIOR TO STARTING LAND DISTURBANCE ACTIVITY. NOTICE MAY BE MAILED, FAXED OR EMAILED

PHONE: 609-586-9603 FAX: 609-586-1117 EMAIL: PAULS1MERCER@AOL.COM

- 2. IF APPLICABLE TO THIS PROJECT, THE OWNER SHOULD BE AWARE OF HIS OR HER OBLIGATION TO FILE FOR A NJPDES CONSTRUCTION ACTIVITY STORMWATER 5G3 PERMIT (NJG0088323) VIA THE NJDEP ONLINE PERMITTING SYSTEM (WWW.NJ.GOV/DEP/ONLINE) AND TO MAINTAIN THE ASSOCIATED BEST MANAGEMENT PRACTICES AND STORMWATER POLLUTION PREVENTION PLAN SELF-INSPECTION LOGBOOK ONSITE AT ALL TIMES. THIS PERMIT MUST BE FILED PRIOR TO THE START OF SOIL DISTURBANCE. THE ONLINE APPLICATION PROCESS WILL REQUIRE ENTRY OF AN SCD CERTIFICATION CODE, WHICH IS PROVIDED BY THE SOIL CONSERVATION DISTRICT UPON CERTIFICATION OF THE SOIL EROSION AND SEDIMENT
- 3. THE MERCER COUNTY SOIL CONSERVATION DISTRICT SHALL BE NOTIFIED OF ANY CHANGES IN OWNERSHIP.
- 4. ANY CHANGES TO THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLAN, INCLUDING AN INCREASE IN THE LIMIT OF DISTURBANCE, WILL REQUIRE THE SUBMISSION OF REVISED SOIL EROSION AND SEDIMENT CONTROL PLANS TO THE DISTRICT FOR RECERTIFICATION. THE REVISED PLANS MUST MEET ALL CURRENT STATE SOIL EROSION & SEDIMENT CONTROL
- 5. A COPY OF THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON SITE AT ALL TIMES.
- 6. ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE INSTALLED PRIOR TO ANY MAJOR SOIL DISTURBANCES, OR IN THEIR PROPER SEQUENCE AS OUTLINED WITHIN THE SEQUENCE OF CONSTRUCTION ON THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLAN, AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.
- 7. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CURRENT STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NJ. IF LANGUAGE CONTAINED WITHIN ANY OTHER PERMIT FOR THIS PROJECT IS MORE RESTRICTIVE THAN (BUT NOT CONTRADICTORY TO) WHAT IS CONTAINED WITHIN THESE NOTES OR ON THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLAN, THEN THE MORE RESTRICTIVE PERMIT REQUIREMENTS SHALL BE FOLLOWED.
- 8. THE STANDARD FOR STABILIZED CONSTRUCTION ACCESS REQUIRES THE INSTALLATION OF A 1½" TO 2½" CLEAN STONE TRACKING PAD AT ALL CONSTRUCTION DRIVEWAYS IMMEDIATELY AFTER INITIAL SITE DISTURBANCE, WHETHER IDENTIFIED ON THE CERTIFIED PLAN OR NOT. THE WIDTH SHALL SPAN THE FULL WIDTH OF EGRESS, AND LENGTH SHALL BE 50 FT. OR MORE, DEPENDING ON SITE CONDITIONS AND AS REQUIRED BY THE STANDARD. THIS SHALL INCLUDE INDIVIDUAL LOT ACCESS POINTS WITHIN RESIDENTIAL SUBDIVISIONS. IF THE EGRESS IS TO A COUNTY ROAD, THEN A 20 FT. LONG PAVED TRANSITION SHALL BE PROVIDED BETWEEN THE EDGE OF PAVEMENT AND THE STONE ACCESS PAD.
- 9. A SUB-BASE COURSE WILL BE APPLIED IMMEDIATELY FOLLOWING ROUGH GRADING AND INSTALLATION OF IMPROVEMENTS IN ORDER TO STABILIZE STREETS, ROADS, DRIVEWAYS AND PARKING AREAS. IN AREAS WHERE NO UTILITIES ARE PRESENT, THE SUB-BASE SHALL BE INSTALLED WITHIN 15 DAYS OF PRELIMINARY GRADING, PROVIDED THAT ALL OTHER REQUIREMENTS RELATED TO DETENTION BASINS, SWALES AND THE SEQUENCE OF CONSTRUCTION HAVE BEEN MET.
- THE SEASON PREVENTS ESTABLISHMENT OF A TEMPORARY VEGETATIVE COVER, OR IF THE AREA IS NOT TOPSOILED, THEN THE DISTURBED AREAS WILL BE MULCHED WITH STRAW, OR EQUIVALENT MATERIAL, AT A RATE OF TWO (2) TONS PER ACRE, ACCORDING TO STATE STANDARDS. SLOPED AREAS IN EXCESS OF 3H:1V SHALL BE PROVIDED WITH EROSION CONTROL BLANKETS. CRITICAL AREAS SUBJECT TO EROSION (I.E. STEEP SLOPES, ROADWAY EMBANKMENTS, ENVIRONMENTALLY SENSITIVE AREAS) WILL RECEIVE TEMPORARY STABILIZATION IMMEDIATELY AFTER INITIAL DISTURBANCE OR ROUGH GRADING.

10. ANY DISTURBED AREAS THAT WILL BE LEFT EXPOSED MORE THAN 14 DAYS AND NOT SUBJECT TO CONSTRUCTION ACTIVITY WILL IMMEDIATELY RECEIVE TEMPORARY STABILIZATION. IF

11. ANY STEEP SLOPES (I.E. SLOPES GREATER THAN 3:1) RECEIVING PIPELINE OR UTILITY INSTALLATION WILL BE BACKFILLED AND STABILIZED DAILY, AS THE INSTALLATION PROCEEDS. 12. PERMANENT VEGETATION SHALL BE SEEDED OR SODDED ON ALL EXPOSED AREAS WITHIN TEN (10) DAYS AFTER FINAL GRADING AND TOPSOILING. ALL AGRONOMIC REQUIREMENTS CONTAINED WITHIN THE STANDARDS AND ON THE CERTIFIED PLAN SHALL BE EMPLOYED. MULCH WITH BINDER, IN ACCORDANCE WITH THE STANDARDS, SHALL BE USED ON ALL

SEEDED AREAS. SAVE ALL TAGS AND/OR BAGS USED FOR SEED, LIME AND FERTILIZER, AND PROVIDE THEM TO THE DISTRICT INSPECTOR TO VERIFY THAT MIXTURES AND RATES MEET

- 13. AT THE TIME WHEN THE SITE PREPARATION FOR PERMANENT VEGETATIVE STABILIZATION IS GOING TO BE ACCOMPLISHED, ANY SOIL THAT WILL NOT PROVIDE A SUITABLE ENVIRONMENT TO SUPPORT ADEQUATE VEGETATIVE GROUND COVER, SHALL BE REMOVED OR TREATED IN SUCH A WAY THAT WILL PERMANENTLY ADJUST THE SOIL CONDITIONS AND RENDER IT SUITABLE FOR VEGETATIVE GROUND COVER. IF THE REMOVAL OR TREATMENT OF THE SOIL WILL NOT PROVIDE SUITABLE CONDITIONS, THEN NON-VEGETATIVE MEANS OF
- 14. DURING THE COURSE OF CONSTRUCTION, SOIL COMPACTION MAY OCCUR WITHIN HAUL ROUTES, STAGING AREAS AND OTHER PROJECT AREAS. IN ACCORDANCE WITH THE STANDARD FOR TOPSOILING, COMPACTED SURFACES SHOULD BE SCARIFIED 6" TO 12" IMMEDIATELY PRIOR TO TOPSOIL APPLICATION. THIS WILL HELP ENSURE A GOOD BOND BETWEEN THE
- TOPSOIL AND SUBSOIL. THIS PRACTICE IS PERMISSIBLE ONLY WHERE THERE IS NO DANGER TO UNDERGROUND UTILITIES (CABLES, IRRIGATION SYSTEMS, ETC.). 15. PRIOR TO SEEDING, TOPSOIL SHALL BE WORKED TO PREPARE A PROPER SEEDBED. THIS SHALL INCLUDE RAKING OF THE TOPSOIL AND REMOVAL OF DEBRIS AND STONES, ALONG WITH OTHER REQUIREMENTS OF THE STANDARD FOR PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION.

16. IN ACCORDANCE WITH THE STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOILS, ANY SOIL HAVING A PH OF 4 OR LESS OR CONTAINING IRON SULFIDES SHALL BE BURIED

WITH LIMESTONE IN ACCORDANCE WITH THE STANDARD AND BE COVERED WITH A MINIMUM OF 12" OF SOIL HAVING A PH OF 5 OR MORE PRIOR TO TOPSOIL APPLICATION AND

- SEEDBED PREPARATION. IF THE AREA IS TO RECEIVE TREE OR SHRUB PLANTINGS, OR IS LOCATED ON A SLOPE, THEN THE AREA SHALL BE COVERED WITH A MINIMUM OF 24" OF SOIL HAVING A PH OF 5 OR MORE. 17. MULCHING TO THE STANDARDS IS REQUIRED FOR OBTAINING A CONDITIONAL REPORT OF COMPLIANCE. CONDITIONAL ROC'S ARE ONLY ISSUED WHEN THE SEASON PROHIBITS
- OF WORK IN A GIVEN AREA. 18. HYDROSEEDING IS A TWO-STEP PROCESS. THE FIRST STEP INCLUDES SEED, FERTILIZER, LIME, ETC., ALONG WITH MINIMAL AMOUNTS OF MULCH TO PROMOTE CONSISTENCY, GOOD SEED-TO-SOIL CONTACT. AND GIVE A VISUAL INDICATION OF COVERAGE, UPON COMPLETION OF THE SEEDING OPERATION, HYDROMULCH SHOULD BE APPLIED AT A MINIMUM RATE
- HYDROMULCH ON SLOPED AREAS IS DISCOURAGED. 19. THE CONTRACTOR IS RESPONSIBLE FOR KEEPING ALL ADJACENT ROADS CLEAN DURING LIFE OF THE CONSTRUCTION PROJECT. ALL SEDIMENT WASHED, DROPPED, TRACKED OR SPILLED

OF 1500 LBS. PER ACRE IN SECOND STEP. THE USE OF HYDRO-MULCH, AS OPPOSED TO STRAW, IS LIMITED TO OPTIMUM SEEDING DATES AS LISTED IN THE STANDARDS. THE USE OF

- ONTO PAVED SURFACES SHALL BE IMMEDIATELY REMOVED. 20. THE DEVELOPER SHALL BE RESPONSIBLE FOR REMEDIATING ANY EROSION OR SEDIMENT PROBLEMS THAT ARISE AS A RESULT OF ONGOING CONSTRUCTION, AND FOR EMPLOYING
- ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES AT THE REQUEST OF THE MERCER COUNTY SOIL CONSERVATION DISTRICT. 21. CONDUIT OUTLET PROTECTION MUST BE INSTALLED AT ALL REQUIRED OUTFALLS PRIOR TO THE DRAINAGE SYSTEM BECOMING OPERATIONAL.
- 22. ALL DETENTION / RETENTION BASINS MUST BE FULLY CONSTRUCTED (INCLUSIVE OF ALL STRUCTURAL COMPONENTS AND LINERS) AND PERMANENTLY STABILIZED PRIOR TO PAVING OR PRIOR TO THE ADDITION OF ANY IMPERVIOUS SURFACES. PERMANENT STABILIZATION INCLUDES, BUT MAY NOT BE LIMITED TO: TOPSOIL, SEED, STRAW MULCH AND BINDERS OR EROSION CONTROL BLANKETS ON ALL SEEDING, ALL AGRONOMIC REQUIREMENTS AS SPECIFIED ON THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLAN, INSTALLATION OF THE OUTFLOW CONTROL STRUCTURES AND DISCHARGE STORM DRAINAGE PIPING, LOW FLOW CHANNELS, CONDUIT OUTLET PROTECTION, EMERGENCY SPILLWAYS, AND LAP RING
- 23. THE RIDING SURFACE OF ALL UTILITY TRENCHES WITHIN PAVED AREAS SHALL BE 3/4" CLEAN STONE OR BASE PAVEMENT UNTIL SUCH TIME AS FINAL PAVEMENT HAS BEEN
- INSTALLED. TEMPORARY SOIL RIDING SURFACES ARE PROHIBITED. 24. ALL CONSTRUCTION DEWATERING (TRENCHES, EXCAVATIONS, ETC.) MUST BE DONE THROUGH AN INLET OR OUTLET FILTER IN ACCORDANCE WITH THE STANDARD FOR DEWATERING OR AS DEPICTED ON THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLAN. DISCHARGE LOCATIONS FOR THE DEWATERING OPERATION MUST CONTAIN PERENNIAL VEGETATION

25. ALL SWALES OR CHANNELS THAT WILL RECEIVE RUNOFF FROM PAVED SURFACES MUST BE PERMANENTLY STABILIZED PRIOR TO THE INSTALLATION OF PAVEMENT. IF THE SEASON

26. NJSA 4: 24-39 ET SEQ. REQUIRES THAT NO CERTIFICATE OF OCCUPANCY OR TEMPORARY CERTIFICATE OF OCCUPANCY BE ISSUED BY THE MUNICIPALITY BEFORE THE PROVISIONS OF

THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLAN HAVE BEEN SATISFIED. THEREFORE, ALL SITE WORK FOR SITE PLANS AND ALL WORK AROUND INDIVIDUAL LOTS IN

PROHIBITS THE ESTABLISHMENT OF PERMANENT STABILIZATION. THE SWALES OR CHANNELS MAY BE TEMPORARILY STABILIZED IN ACCORDANCE WITH THE STANDARDS.

SUBDIVISIONS MUST BE COMPLETED BEFORE THE DISTRICT ISSUES A REPORT OF COMPLIANCE OR CONDITIONAL REPORT OF COMPLIANCE, WHICH MUST BE FORWARDED TO THE MUNICIPALITY PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY OR TEMPORARY CERTIFICATE OF OCCUPANCY, RESPECTIVELY,

MERCER COUNTY SOIL CONSERVATION DISTRICT

590 HUGHES DRIVE HAMILTON SQUARE, NJ 08690

609-586-9603

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HOPEWELL TOWNSHIP, MERCER COUNTY, NEW JERSEY

SOIL EROSION AND SEDIMENT CONTROL NOTES

RUSSELL M. SMITH

NO. DATE DESCRIPTION OF REVISION

SITUATE IN

Sheet 6 of 10

OR SIMILAR STABLE SURFACE.

03/01/23

AS SHOWN

RMS

AWS Check:

2 Mar 2023

1106627B

BY CHK'D

PALS GROUP HOME LOT 22 BLOCK 46

STANDARD FOR TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION

ESTABLISHMENT OF TEMPORARY VEGETATIVE COVER ON SOILS EXPOSED FOR PERIODS OF 2 TO 6 MONTHS WHICH ARE NOT

BEING GRADED, NOT UNDER ACTIVE CONSTRUCTION OR NOT SCHEDULED FOR PERMANENT SEEDING WITHIN 60 DAYS.

TO TEMPORARILY STABILIZE THE SOIL AND REDUCE DAMAGE FROM WIND AND WATER EROSION UNTIL PERMANENT STABILIZATION IS ACCOMPLISHED.

PROVIDES TEMPORARY PROTECTION AGAINST THE IMPACTS OF WIND AND RAIN, SLOWS THE OVER LAND MOVEMENT OF STORMWATER RUNOFF, INCREASES INFILTRATION AND RETAINS SOIL AND NUTRIENTS ON SITE, PROTECTING STREAMS OR OTHER STORMWATER CONVEYANCES.

ON EXPOSED SOILS THAT HAVE THE POTENTIAL FOR CAUSING OFF-SITE ENVIRONMENTAL DAMAGE.

I. SITE PREPARATION

- GRADE, AS NEEDED AND FEASIBLE, TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION AND ANCHORING MULCH. ALL GRADING SHOULD BY DONE IN ACCORDANCE WITH STANDARDS FOR LAND GRADING. P. 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
- IMMEDIATELY PRIOR TO SEEDING, THE SURFACE SHOULD BE SCARIFIED 6" TO 12" WHERE THERE HAS BEEN SOIL COMPACTION. THIS PRACTICE IS PERMISSIBLE ONLY WHERE THERE IS NO DANGER TO UNDERGROUND UTILITIES (CABLES, IRRIGATION SYSTEMS, ETC.)

- APPLY GROUND LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS SUCH AS OFFERED BY RUTGERS CO-OPERATIVE EXTENSION. SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL RUTGERS COOPERATIVE EXTENSION OFFICES. FERTILIZER SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE OR 1 POUNDS PER 1,000 SQUARE FEET OF 10-20-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS A SOIL TEST INDICATES OTHERWISE. APPLY LIMESTONE AT THE RATE OF 2 TONS/ACRE UNLESS SOIL TESTING INDICATED OTHERWISE. CALCIUM CARBONATE IS THE EQUIVALENT AND STANDARD FOR MEASURING THE ABILITY OF LIMING MATERIALS TO NEUTRALIZE SOIL ACIDITY AND SUPPLY CALCIUM AND MAGNESIUM TO GRASSES AND
- B. WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4" WITH A DISK, SPRINGTOOTH 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 PREPARE
- INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAD LEFT THE SOIL COMPACTED, THE AREA MUST BE RETILLED IN ACCORDANCE WITH THE ABOVE.
- WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 A DISC, SPRINGTOOTH HARROW, OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISCING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLY UNIFORM OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE
- INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED, THE AREA MUST BE RETILLED IN ACCORDANCE WITH THE ABOVE.
- F. SOILS HIGH IN SULFIDES OR HAVING A PH OF 4 OR LESS, REFER TO STANDARD FOR MANAGEMENT OF HIGH ACID

A. SELECT SEED FROM THE RECOMMENDATIONS UNDER "SITE SPECIFIC SEEDING SPECIFICATIONS - MERCER COUNTY"

- CONVENTIONAL SEEDING. APPLY SEED UNIFORMLY BY HAND, CYCLONE (CENTRIFUGAL) SEED, DRILL OR CULTIPACKER SEEDER. EXCEPT FOR DRILLED, HYDROSEEDED OR CULTIPACKED SEEDLING, SEED SHALL BE INCORPORATED INTO THE SOIL, TO A DEPTH OF 1/4 TO 1/2 INCH, BY RAKING OR DRAGGING. DEPTH OF SEED PLACEMENT MAY BE 1/4 INCH DEEPER ON 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 WITH SEED. SHORT FIBERED MULCH MAY BE APPLIED WITH A HYDROSEEDER FOLLOWING SEEDING. (ALSO SEE SECTION IV MULCHING)
 HYDROSEEDING IS NOT A PREFERRED SEEDING METHOD BECAUSE SEED AND FERTILIZER ARE APPLIED TO THE
 SURFACE AND NOT INCORPORATED INTO THE SOIL. POOR SEED TO SOIL CONTACT OCCURS REDUCING SEED ERMINATION AND GROWTH. HYDROSEEDING MAY BE USED FOR AREAS TOO STEEP FOR CONVENTIONAL EQUIPMENT
- AFTER SEEDING, FIRMING THE SOIL WITH A CORRUGATED ROLLER WILL ASSURE GOOD SEED TO SOIL CONTACT, RESTORE CAPILLARITY, AND IMPROVE SEEDING EMERGENCE. THIS IS THE PREFERRED METHOD. WHEN PERFORMED ON THE CONTOUR, SHEET EROSION WILL BE MINIMIZED AND WATER CONSERVATION ON SITE WILL BE MAXIMIZED.

IV. 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 DEEMED COMPLIANCE WITH THIS MULCHING REQUIREMENT A. STRAW OR HAY. UNROTTED SMALL GRAIN STRAW, HAY FREE OF SEEDS, OR SALT HAY TO BE APPLIED AT THE RATE OF 1-1/2 TO 2 TONS PER ACRE (70 TO 90 POUNDS PER 1,000 SQUARE FEET), EXCEPT THAT WHERE A CRIMPER IS USED INSTEAD OF 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<u>NO</u> RECOMMENDED FOR ESTABLISHING FINE TURF OR LAWNS DUE TO THE PRESENCE OF WEED SEEI
- APPLICATION. SPREAD MULCH UNIFORMLY BY HAND OR MECHANICALLY SO THAT APPROXIMATELY 85% OF THE SOIL SURFACE WILL BE COVERED. FOR UNIFORM DISTRIBUTION OF HAND-SPREAD MULCH, DIVIDE AREA INTO APPROXIMATELY 1,000 SQUARE FEET SECTIONS AND DISTRIBUTE 70 TO 90 POUNDS WITHIN EACH SECTION. ANCHORING 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
- 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 O 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 CATCHES THE MULCH, IN VALLEYS, AND AT CRESTS OF BANKS. THE REMAINDER OF AREA SHOULD BE UNIFORM IN APPEARANCE.
- b. USE ON OF THE FOLLOWING:
- 1) EMULSIFIED ASPHALT (SS-1, CSS-1, CMS-2, MS-2, RS-1, RS-2, CRS-1, AND CRS-2.) APPLY 0.04 GAL./SQ. YD. OR 194 GAL./ACRE ON FLAT AREAS AND ON SLOPES LESS THAN 8 FEET OR MORE HIGH, USE 0.075 GAL./ACRE. THESE MATERIALS MAY BE DIFFICULT TO APPLY UNIFORMLY AND WILL DISCOLOR
- 2) ORGANIC AND VEGETABLE BASED BINDERS NATURALLY OCCURRING, POWDER BASED, HYDROPHILIC MATERIALS WHEN MIXED WITH WATER FORMULATES A GEL AND WHEN APPLIED TO MULCH UNDER SATISFACTORY CURING CONDITIONS WILL FORM MEMBRANED NETWORKS OF INSOLUBLE POLYMERS. THE VEGETABLE GEL SHALL BE PHYSIOLOGICALLY HARMLESS AND NOT RESULT IN A PHYTOTOXIC EFFECT OF IMPEDE GROWTH OF TURFGRASS. USE AT RATES AND WEATHER CONDITIONS AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH MATERIALS. MANY NEW PRODUCTS ARE AVAILABLE, SOME OF WHICH MAY NEED FURTHER EVALUATION FOR USE IN THIS STATE.
- 3) SYNTHETIC BINDERS HIGH POLYMER SYNTHETIC EMULSION, MISCIBLE WITH WATER WHEN DILUTED AND FOLLOWING APPLICATION TO MULCH, DRYING AND CURING SHALL NO LONGER BE SOLUBLE OR DISPERSIBLE IN WATER. IT SHALL BE APPLIED AT RATES RECOMMENDED BY THE MANUFACTURER 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 PONDS PER ACRE (OR AS RECOMMENDED BY THE PRODUCT MANUFACTURER) AND MAY BE APPLIED BY A HYDROSEEDER. THIS MULCH SHALL NOT BE MIXED IN THE TANK WITH 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, TACKFILLERS, 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 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 BEN FOUND TO BE BENEFICIAL FOR USE ON SMALL LAWN OR RENOVATION AREAS, SEEDED AREAS WHERE WEED-SEED FREE MULCH IS DESIRED OR ON SITES WHERE STRAW MULCH AND TACKIFIÉR AGENT ARE NOT

APPLYING THE FULL 0.2 TO 0.4 INCHES OF WATER AFTER SPREADING PELLETIZED MULCH ON THE SEED BED IS EXTREMELY IMPORTANT FOR SUFFICIENT ACTIVATION AND EXPANSION OF THE MULCH TO PROVIDE SOIL COVERAGE

STANDARD FOR PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION

ESTABLISHMENT OF PERMANENT VEGETATIVE COVER ON EXPOSED SOILS WHERE PERENNIAL VEGETATION IS NEEDED FOR LONG TERM PROTECTION.

TO PERMANENTLY STABILIZE THE SOIL, ASSURING CONSERVATION OF SOIL AND WATER, AND TO ENHANCE THE ENVIRONMENT. WATER QUALITY ENHANCEMENT

SLOWS THE OVER-LAND MOVEMENT OF STORMWATER RUNOFF, INCREASES INFILTRATION AND RETAINS SOIL AND NUTRIENTS ON SITE, PROTECTING STREAMS OR OTHER STORMWATER CONVEYANCES.

ON EXPOSED SOILS THAT HAVE A POTENTIAL FOR CAUSING OFF-SITE ENVIRONMENTAL DAMAGE.

- A. 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
- B. IMMEDIATELY PRIOR TO SEEDING AND TOPSOIL APPLICATION, THE SUBSOIL SHALL BE EVALUATED FOR COMPACTION IN ACCORDANCE WITH THE STANDARD FOR LAND GRADING.
- C. TOPSOIL SHOULD BE HANDLED ONLY WHEN IT IS DRY ENOUGH TO WORK WITHOUT DAMAGING THE SOIL STRUCTURE. A UNIFORM APPLICATION TO A DEPTH OF 5 INCHES (UNSETTLED) IS REQUIRED ON ALL SITES. TOPSOIL SHALL BE AMENDED WITH ORGANIC MATTER, AS NEEDED, IN ACCORDANCE WITH THE STANDARD FOR TOPSOILING.
- D. INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS DIVERSIONS, GRADE-STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS.

- A. UNIFORMLY APPLY GROUND LIMESTONE AND FERTILIZER TO TOPSOIL WHICH HAS BEEN SPREAD AND FIRMED, ACCORDING TO SOIL TEST RECOMMENDATIONS SUCH AS OFFERED BY RUTGERS CO-OPERATIVE EXTENSION SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL RUTGERS COOPERATIVE EXTENSION OFFICES (HTTP: //NJAES.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 DURING SEEDBED 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 HARROWING OR DISKING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLE UNIFORM SEEDBED IS PREPARED.
- C. HIGH ACID PRODUCING SOIL. SOILS HAVING A PH OF 4 OR LESS OR CONTAINING IRON SULFIDE SHALL BE COVERED WITH A MINIMUM OF 12 INCHES OF SOIL HAVING A PH OF 5 OR MORE BEFORE INITIATING SEEDBED REPARATION. SEE STANDARD FOR MANAGEMENT OF HIGH ACID-PRODUCING SOILS FOR SPECIFIC REQUIREMENTS.

- A. SELECT A MIXTURE FROM TABLE 4-3 OR USE A MIXTURE RECOMMENDED BY RUTGERS COOPERATIVE 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 SPECIFIED ARE REQUIRED WHEN A REPORT OF COMPLIANCE IS REQUESTED PRIOR TO ACTUAL ESTABLISHMENT OF PERMANENT VEGETATION. UP TO 50% REDUCTION IN 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 80% VEGETATIVE COVERAGE WITH THE SPECIFIED SEED MIXTURE FOR THE SEEDED AREA AND MOWED ONCE.
- 2. WARM-SEASON MIXTURES ARE GRASSES AND LEGUMES WHICH MAXIMIZE GROWTH AT HIGH TEMPERATURES, GENERALLY 850 F AND ABOVE. SEE TABLE 4-3 MIXTURES 1 TO 7. PLANTING RATES FOR WARM-SEASON GRASSES SHALL BE THE AMOUNT OF PURE LIVE SEED (PLS) AS DETERMINED BY GERMINATION TESTING
- 3. COOL-SEASON MIXTURES ARE GRASSES AND LEGUMES WHICH MAXIMIZE GROWTH AT TEMPERATURES BELOW RATES TO COMPENSATE FOR THE AMOUNT OF PLS IS NOT REQUIRED FOR COOL SEASON GRASSES.
- B. CONVENTIONAL SEEDING IS PERFORMED BY APPLYING SEED UNIFORMLY BY HAND, CYCLONE (CENTRIFUGAL) SEEDER, DROP SEEDER, DRILL OR CULTIPACKER SEEDER. EXCEPT FOR DRILLED, HYDROSEEDED OR CULTIPACKED SEEDINGS, SEED SHALL BE INCORPORATED INTO THE SOIL WITHIN 24 HOURS OF SEEDBED PREPARATION TO A DEPTH OF 1/4 TO 1/2 INCH, BY RAKING OR DRAGGING. DEPTH OF SEED PLACEMENT MAY BE 1/4 INCH DEEPER ON
- C. AFTER SEEDING, FIRMING 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 PERFORMED ON THE CONTOUR, SHEET EROSION WILL BE MINIMIZED AND WATER CONSERVATION ON SITE WILL BE MAXIMIZED.
- D. HYDROSEEDING IS A BROADCAST SEEDING METHOD USUALLY INVOLVING A TRUCK, OR TRAILER-MOUNTED TANK, WITH AN AGITATION SYSTEM AND HYDRAULIC PUMP FOR MIXING SEED, WATER AND FERTILIZER AND SPRAYING THE MIX ONTO THE PREPARED SEEDBED. MULCH SHALL NOT BE INCLUDED IN THE TANK WITH SEED. SHORT-FIBERED MULCH MAY BE APPLIED WITH A HYDROSEEDER FOLLOWING SEEDING. (ALSO SEE SECTION 4-MULCHING BELOW). HYDROSEEDING IS NOT A PREFERRED 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.

IV. MULCHING - MULCHING IS REQUIRED ON ALL SEEDING. MULCH WILL PROTECT AGAINST EROSION BEFORE GRASS IS ESTABLISHED AND WILL PROMOTE FASTER AND EARLIER ESTABLISHMENT. THE EXISTENCE OF VEGETATION SUFFICIENT TO CONTROL SOIL EROSION SHALL BE DEEMED COMPLIANCE WITH THIS MULCHING REQUIREMENT. A. STRAW OR HAY. UNROTTED SMALL GRAIN STRAW, HAY FREE OF SEEDS, TO BE APPLIED AT THE RATE OF 1-1/2 TO 2 TONS PER ACRE (70 TO 90 POUNDS PER 1,000 SQUARE FEET), EXCEPT THAT WHERE A CRIMPER IS USED INSTEAD OF A LIQUID MULCH-BINDER (TACKIFYING OR ADHESIVE AGENT), THE RATE OF APPLICATION IS 3 TONS PER ACRE. MULCH CHOPPER-BLOWERS MUST NOT GRIND THE MULCH. HAY MULCH IS NOT RECOMMENDED FOR ESTABLISHING FINE TURF OR LAWNS DUE TO THE PRESENCE OF WEED SEED.

APPLICATION - SPREAD MULCH UNIFORMLY BY HAND OR MECHANICALLY SO THAT AT LEAST 85% 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 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.

- 1. 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.
- (1) ORGANIC AND VEGETABLE BASED BINDERS NATURALLY OCCURRING, POWDER-BASED, HYDROPHILIC MATERIALS WHEN MIXED WITH WATER FORMULATES A GEL AND WHEN APPLIED TO MULCH UNDER SATISFACTORY CURING CONDITIONS WILL FORM MEMBRANED NETWORKS OF INSOLUBLE POLYMERS. IHE VEGETABLE GEL SHALL BE PHYSIOLOGICALLY HARMLESS AND NOT RESULT IN A PHYTOTOXIC EFFECT OR IMPEDE GROWTH OF TURF GRASS. 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.
- (2) 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.

- B. 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 DURING OPTIMUM PERIODS IN SPRING AND
- C. 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 WHERE WEED—SEED FREE MULCH IS DESIRED, OR ON SITES WHERE STRAW MULCH AND TACKIFIER AGENT ARE NOT PRACTICAL OR DESIRABLE. APPLYING THE FULL 0.2 TO 0.4 INCHES OF WATER AFTER SPREADING PELLETIZED MULCH ON THE SEED BED IS EXTREMELY IMPORTANT FOR SUFFICIENT ACTIVATION AND EXPANSION OF THE MULCH

V. IRRIGATION (WHERE FEASIBLE)

TO PROVIDE SOIL COVERAGE.

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

SINCE SOIL ORGANIC MATTER CONTENT AND SLOW RELEASE NITROGEN FERTILIZER (WATER INSOLUBLE) ARE PRESCRIBED IN SECTION 2A - SEEDBED PREPARATION IN THIS STANDARD, NO FOLLOW-UP OF 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 7 POUNDS PER 1,000 SQUARE FEET EVERY 3 TO 5 WEEKS UNTIL THE GROSS NITROGEN DEFICIENCY IN THE TURF IS AMELIORATED.

VII. 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 MANAGEMENT ARE ESSENTIAL. THE SEED APPLICATION RATES IN TABLE 4—3 ARE REQUIRED WHEN A REPORT OF COMPLIANCE IS REQUESTED PRIOR TO ACTUAL ESTABLISHMENT OF PERMANENT VEGETATION. UP TO 50% REDUCTION IN APPLICATION RATES MAY BE USED WHEN PERMANENT VEGETATION IS ESTABLISHED PRIOR TO REQUESTING A REPORT OF COMPLIANCE FROM THE DISTRICT, THESE RATES APPLY TO ALL METHODS OF SEEDING. ESTABLISHING PERMANENT VEGETATION MEANS 80% 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. 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.

SITE SPECIFIC SEEDING SPECIFICATIONS - MERCER COUNTY TEMPORARY SEEDING MIXES

SUMMER TO EARLY FALL 100% PERENNIAL RYEGRASS RATE:

100 LBS/ACRE

MIX: LATE FALL 100% CEREAL RYEGRASS RATE: 112 LBS/ACRE

40% MILLET (GERMAN OR HUNGARIAN) 20% WEEPING LOVEGRASS RATE: 100 LBS/ACRE

RECOMMENDED PERMANENT SEEDING MIXES

OPTIMUM SEEDING DATES: MARCH 1 TO MAY 15 AND AUGUST 15 TO OCTOBER 15

LAWNS-RATE 200 LBS/ACRE

80% TALL FESCUE TURF TYPE (LOW GROWING VARIETIES)*# 10% PERENNIAL RYEGRASS (LOW GROWING VARIETIES) (*INCLUDE THREE DIFFERENT VARIETIES IN THE MIX)

15% KENTUCKY BLUEGRASS

MIX: LAWNS-LOW MAINTENANCE,

MIX: LAWNS-QUALITY SUN AND SHADE 20% PERENNIAL RYEGRASS 30% CHEWINGS FESCUE 35% CREEPING RED FESCUE

OR CREEPING RED FESCUE* 20% KENTUCKY BLUEGRASS 15% PERENNIAL RYEGRASS

MERCER CO. SCD PREFERRED MIX FOR LAWNS
AND DETENTION BASINS
70% TURF TYPE TALL FESCUE 20% PERFNNIAL RYFGRASS 10% KENTUCKY BLUEGRASS

(*INCLUDE AT LEAST TWO DIFFERENT VARIETIES IN MIX) (# EXCLUDE K-31)

CONSERVATION PLANTINGS

MIX: RECLAMATION, EROSION CONTROL & ACID SOILS -RATE: 150 LBS/ACRE 40% SWITCHGRASS 25% SERECIA LESPEDEZA OR FLAT PEA 15% TALL FESCUE OR CREEPING RED FESCUE

5% BIRDSFOOT TREFOIL

MIX: WILDFLOWER MEADOW RATE: 50 LBS/ACRE 72% HARD OR SHEEPS FESCUE 22% NORTHEAST/MID-ATLANTIC WILDFLOWER MIXTURE 6% BIRDSFOOT TREFOIL

MIX: WILDLIFE HABITAT ENHANCEMENT RATE: 100 LBS/ACRE 40% SWITCHGRASS OR COASTAL PANICGRASS 30% CANADA BLUEGRASS OR SMOOTH BROMEGRASS 10% ORCHARDGRASS 10% WHITE CLOVER 5% JAPANESE MILLET 5% BIRDFOOT TREFOIL

NO. DATE

MIX: WATERWAYS & WET BASIN* 30% CANADA BLUEGRASS OR SMOOTH BROMEGRASS 15% ROUGH BLUEGRASS (SHADE) OR TALL FESCUE (OPEN) 10% ALSIKE CLOVER OR LÁDINO WHITE CLOVER 10% BIRDSFOOT TREFOIL OR CREEPING FOXTAIL 4% JAPANESE MILLET 1% RED TOP (*SHOULD NOT BE MOWED LESS THAN 6 INCHES)

ALL SOIL STABILIZATION TO BE IN ACCORDANCE WITH "STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY", JANUARY 2014, REVISED 2017 EDITION. ALL TOPSOIL SHALL BE A MINIMUM OF 6". VEGETATION SHALL BE MAINTAINED UNTIL ACCEPTANCE BY LOCAL AND/ OR COUNTY SOIL CONSERVATION DISTRICT. ALL SEED SHALL BE CERTIFIED. THIS PROJECT IS IN ZONE 6.

STANDARD FOR DUST CONTROL

THE CONTROL OF DUST ON CONSTRUCTION SITES AND ROADS.

TO PREVENT BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES, REDUCED ON-SITE DAMAGE AND HEALTH HAZARDS, AND IMPROVE TRAFFIC SAFETY.

CONDITION WHERE PRACTICE APPLIES

THIS PRACTICE IS APPLICABLE TO AREAS SUBJECT TO DUST BLOWING AND MOVEMENT WHERE ON—SITE AND OFF—SITE DAMAGE IS LIKELY WITHOUT TREATMENT. CONSULT WITH LOCAL MUNICIPAL ORDINANCES ON ANY RESTRICTIONS. SEDIMENTS DEPOSITED AS "DUST" ARE OFTEN FINE COLLOIDAL MATERIAL WHICH IS EXTREMELY DIFFICULT TO REMOVE FROM

WATER ONCE IT BECOMES SUSPENDED. USE OF THIS STANDARD WILL HELP TO CONTROL THE GENERATION OF DUST FROM

CONSTRUCTION SITES AND SUBSEQUENT BLOWING AND DEPOSITION INTO LOCAL SURFACE WATER RESOURCES.

THE FOLLOWING METHODS SHOULD BE CONSIDERED FOR CONTROLLING DUST:

<u>MULCHES</u> - SEE STANDARD STABILIZATION WITH MULCHES ONLY.

<u>VEGETATIVE COVER</u> — SEE STANDARD FOR: TEMPORARY VEGETATIVE COVER, PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION, AND PERMANENT STABILIZATION WITH SOD.

SPRAY ON ADHESIVES - ON MINERAL SOILS (NOT EFFECTIVE ON MUCK SOILS.

DUST CONTROL MATERIALS MATERIAL COARSE SPRAY 1200 ANIONIC ASPHALT EMULSION APPLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS. MAY POLYACRYLAMIDE (PAM) - SPRAY ON POLYACRYLAMIDE (PAM) - DRY SPRAY ALSO BE USED AS AN ADDITIVE TO SEDIMENT BASINS TO FLOCCULATE AND PRECIPITATE SUSPENDED COLLOIDS. SEE SEDIMENT BASIN STANDARDS, P.G.26-1.

ILLAGE - TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. THIS IS A TEMPORARY EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN PLOWING ON WINDWARD SIDE OF SITE. CHISEL—TYPE PLOWS SPACED ABOUT 12 INCHES APART, AND SPRING-TOOTHED HARROWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED

COARSE SPRAY

SPRINKLING - SITE IS SPRINKLED UNTIL THE SURFACE IS WET.

ACIDULATED SOY BEAN STICK

BARRIERS - SOLID BOARD FENCES, SNOW FENCES, BURLAP FENCES, CRATE WALLS, BALES OF HAY, AND SIMILAR MATERIAL

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

STONE - COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.

MANAGEMENT OF HIGH ACID PRODUCING SOIL

- 1. LIMIT THE EXCAVATION AREA AND EXPOSURE TIME WHEN HIGH ACID PRODUCING SOILS ARE ENCOUNTERED.
- 2. TOPSOIL STRIPPED FROM THE SITE SHALL BE STORED SEPARATELY FROM TEMPORARILY STOCKPILED HIGH ACID PRODUCING
- 3. STOCKPILES OF HIGH ACID PRODUCING SOIL SHOULD BE LOCATED ON LEVEL LAND TO MINIMIZE ITS MOVEMENT, ESPECIALLY WHEN THIS MATERIAL HAS A HIGH CLAY CONTENT.
- 4. TEMPORARILY STOCKPILED HIGH ACID PRODUCING SOIL MATERIAL TO BE EXPOSED MORE THAN 30 DAYS SHOULD BE COVERED WITH PROPERLY ANCHORED, HEAVY GRADE SHEETS OF POLYETHYLENE WHERE POSSIBLE. IF NOT POSSIBLE STOCKPILES SHALL BE COVERED WITH A MINIMUM OF 3 TO 6 INCHES OF WOOD CHIPS TO MINIMIZE EROSION OF THE STOCKPILE. SILT FENCE SHALL BE INSTALLED AT THE TOE OF SLOPE TO CONTAIN MOVEMENT OF THE STOCKPILED MATERIAL. TOPSOIL SHALL NOT BE APPLIED TO THE STOCKPILES TO PREVENT TOPSOIL CONTAMINATION WITH HIGH ACID
- 5. HIGH ACID PRODUCING SOILS WITH A PH OF 4 OR LESS, OR CONTAINING IRON SULFITE, (INCLUDING BORROW FROM CUTS OR DREDGED SEDIMENT) SHALL BE ULTIMATELY PLACED OR BURIED WITH LIMESTONE APPLIED AT THE RATE OF 6 TONS PER ACRE (OR 275 POUNDS PER 1,000 SQUARE FEET OF SURFACE AREA) AND COVERED WITH A MINIMUM OF 12 INCHES
- OF SETTLED SOIL WITH A PH OF 5 OR MORE EXCEPT AS FOLLOWS: A. AREAS WHERE TREES OR SHRUBS ARE TO BE PLANTED SHALL BE COVERED WITH A MINIMUM OF 24 INCHES OF SOIL
- WITH A PH OF 5 OR MORE. B. DISPOSAL AREAS SHALL NOT BE LOCATED WITHIN 24 INCHES OF ANY SURFACE OF A SLOPE OR BANK, SUCH AS
- 6. EQUIPMENT USED FOR MOVEMENT OF HIGH ACID PRODUCING SOILS SHOULD BE CLEANED AT THE END OF EACH DAY TO PREVENT THE SPREADING OF HIGH ACID SOIL MATERIALS TO OTHER PARTS OF THE SITE, INTO STREAMS OR STORM WATER CONVEYANCES AND TO PROTECT MACHINERY FROM ACCELERATED RUSTING.
- 7. NON VEGETATIVE EROSION CONTROL PRACTICES (STONE TRACKING PADS, STRATEGICALLY PLACED LIMESTONE CHECK DAM, SILT FENCE, WOOD CHIPS) SHOULD BE INSTALLED TO LIMIT THE MOVEMENT OF HIGH PRODUCING SOILS FROM, AROUND OR

8. FOLLOWING BURIAL OR REMOVAL OF HIGH ACID PRODUCING SOILS, TOPSOILING AND SEEDING OF THE SITE (SEE

TOPSOILING) MONITORING MUST CONTINUE FOR A MINIMUM OF 6 MONTHS TO ASSURE THERE IS ADEQUATE STABILIZATION AND THAT NO HIGH ACID SOIL PROBLEMS EMERGE. IF PROBLEMS STILL EXIST THE AFFECTED AREA MUST BE TREATED AS INDICATED ABOVE TO CORRECT THE PROBLEM. 9. MONITORING OF AREAS WHERE HIGH ACID PRODUCING SOIL HAS BEEN PLACED OR BURIED SHOULD BE PERFORMED FOR

AT LEAST 2 YEARS OR LONGER IF PROBLEMS OCCUR, TO ASSURE THERE IS NO MIGRATION OF POTENTIAL ACID LEACHATE.

TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION; PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION; AND

THE REFERENCES TO THE STANDARDS THROUGHOUT THESE NOTES REFER TO THE "STANDARDS FOR SOIL EROSION AND

SEDIMENT CONTROL IN NEW JERSEY", ADOPTED JANUARY 2014, REVISED 2017.

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PRELIMINARY 2 Mar 2023

PALS GROUP HOME LOT 22 BLOCK 46

SITUATE IN

HOPEWELL TOWNSHIP, MERCER COUNTY, NEW JERSEY

SOIL EROSION AND SEDIMENT CONTROL NOTES

Pennington, NJ 08534-5002

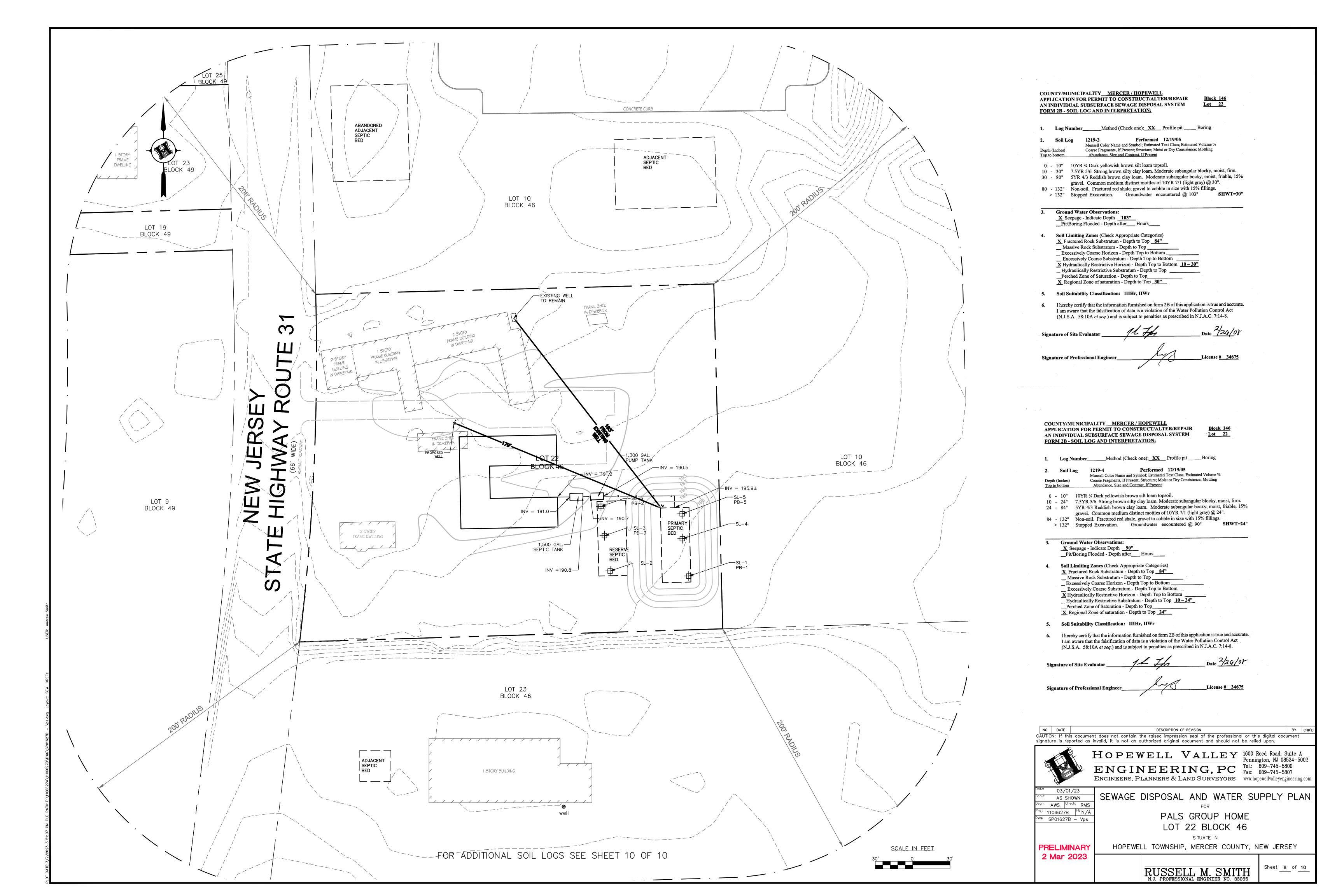
Sheet **7** of **10**

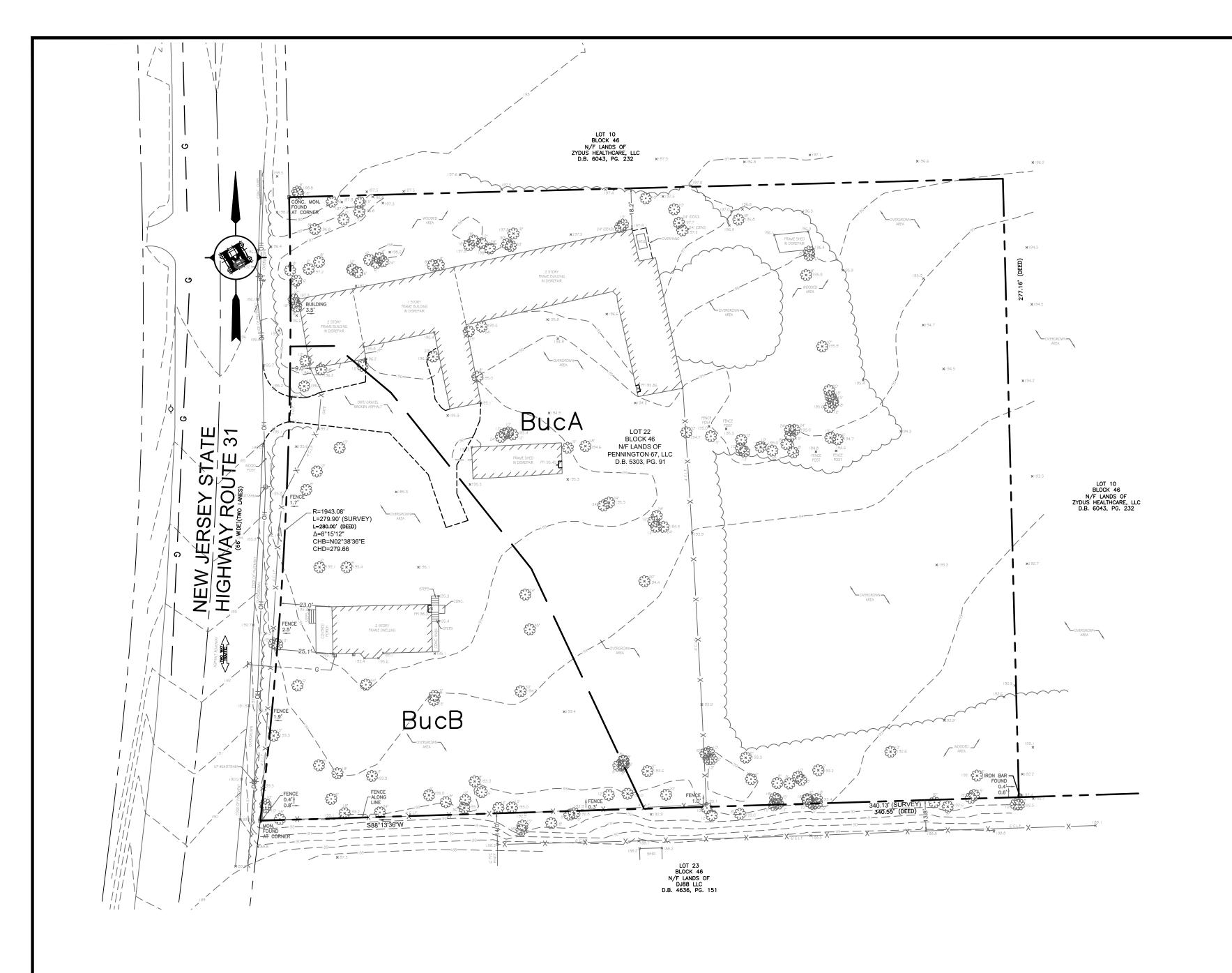
Tel.: 609-745-5800

RUSSELL M. SMITH

DESCRIPTION OF REVISION

BY CHK'D





<u>GEOLOGY</u> SEDIMENTARY FORMATIONS

RI TRIASSIC LOCKATONG

GROUND WATER RECHARGE

RELATIVE NATURAL RECHARGE

6 POOR

SOILS LEGEND

BucA

BucA = BUCKS SILT LOAM, 0 TO 2 PERCENT SLOPES BucB = BUCKS SILT LOAM, 2 TO 6 PERCENT SLOPES

CRITICAL AREA SUMMARY	
1. SLOPES > 18 PERCENT = 0 A	C.
2. 100 YEAR FLOOD HAZARD AREA = 0 A	C.
3. HOPEWELL TOWNSHIP STREAM CORRIDOR (WITHIN = 0 A 150' OF STREAM BANK)	C.
4. SEASONAL HIGH WATER TABLE = 0 A < ONE (1) FOOT DEPTH (S.C.S)	С

GOOD TO EXCELLENT GROUND WATER RECHARGE AREAS

6. DEPTH TO BEDROCK < 2 FEET

8. DRCC STREAM CORRIDOR

7. BEECH GROVE CLIMAX VEGETATION

<u>DEPTH TO</u> SEASONAL HIGH WATER

6' - 10'

= 0 AC.

= 0 AC.

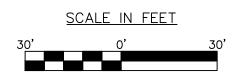
= 0 AC. = 0 AC.

REFERENCES:

 THE CRITICAL AREAS AND UNDERLYING GEOLOGY OF THE SITE WERE OBTAINED FROM THE HOPEWELL TOWNSHIP NATURAL RESOURCE INVENTORY MAPS PREPARED BY JOHN ROGERS FRITTS GOLDEN, ENVIRONMENTAL CONSULTANTS, 1975.

NOTE:

THE PHYSICAL FEATURES SHOWN ON THIS PLAN WERE OBTAINED FROM THE ABOVE REFERENCES.



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ENVIRONMENTAL INVENTORY PLAN

FOR

FINAL S. CROLLD. LIONE

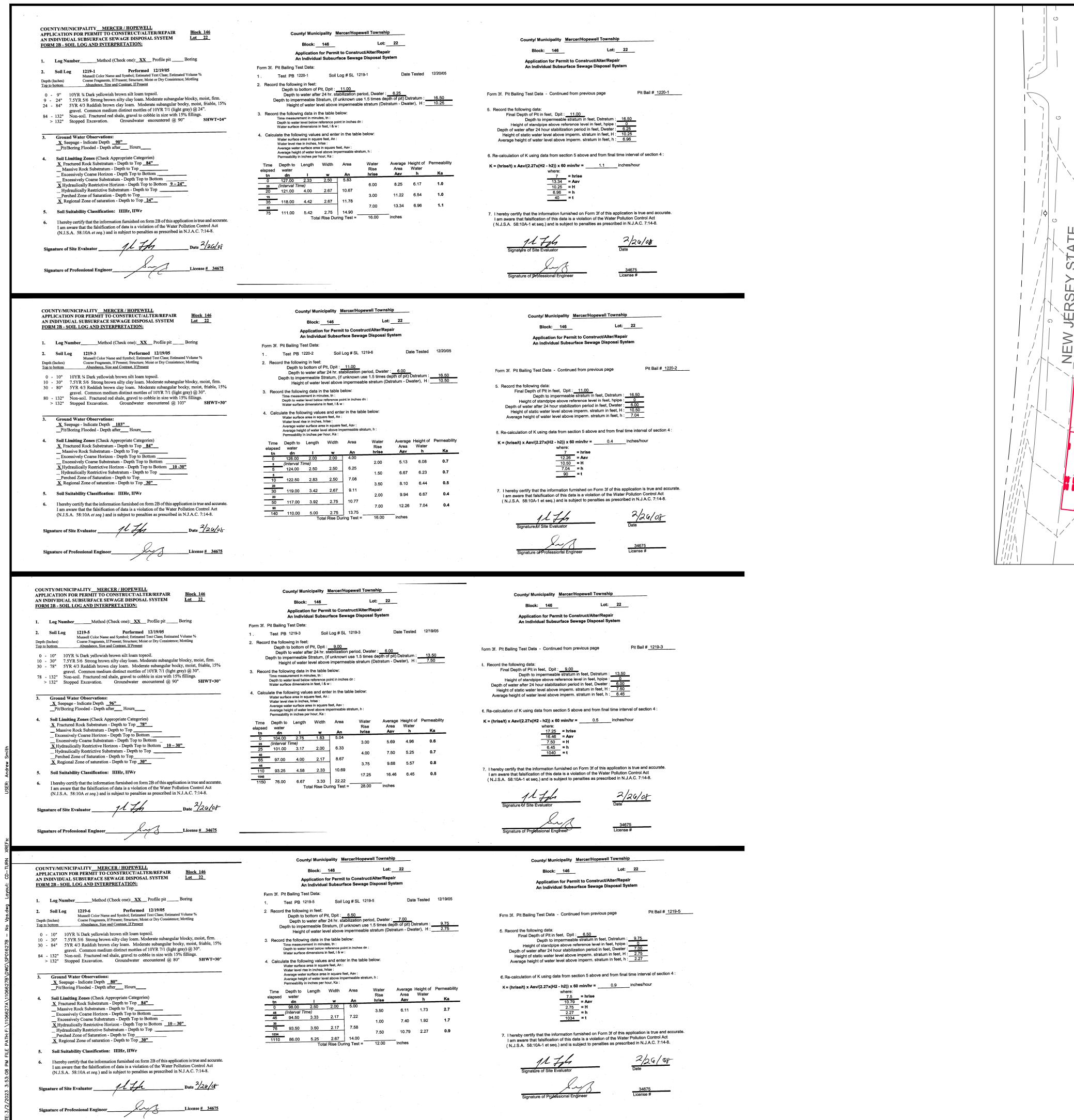
PALS GROUP HOME LOT 22 BLOCK 46

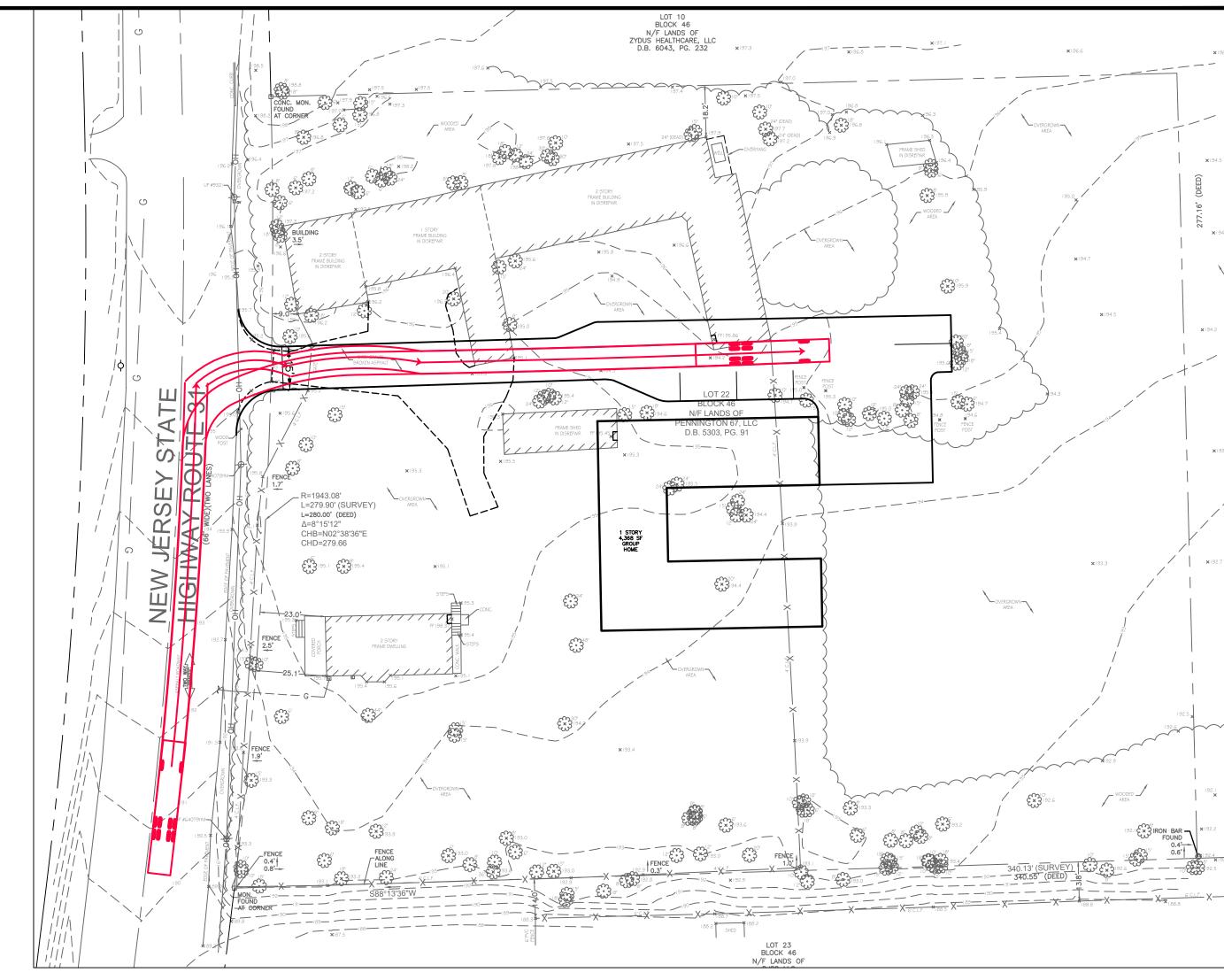
HOPEWELL TOWNSHIP, MERCER COUNTY, NEW JERSEY

RUSSELL M. SMITH
N.J. PROFESSIONAL ENGINEER NO. 33065

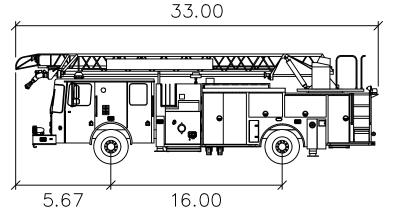
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NO. DATE DESCRIPTION OF REVISION BY CHK'D





FIRE TRUCK TURNING DETAIL SCALE: 1"=30'



Titusville TS53

: 8.07 feet Width : 8.07 feet Track Lock to Lock Time: 6.0 sec

: 33.1° Steering Angle

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SOIL TEST RESULTS AND TURNING PLAN

PALS GROUP HOME LOT 22 BLOCK 46

SITUATE IN HOPEWELL TOWNSHIP, MERCER COUNTY, NEW JERSEY

Sheet **10** of **10**

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