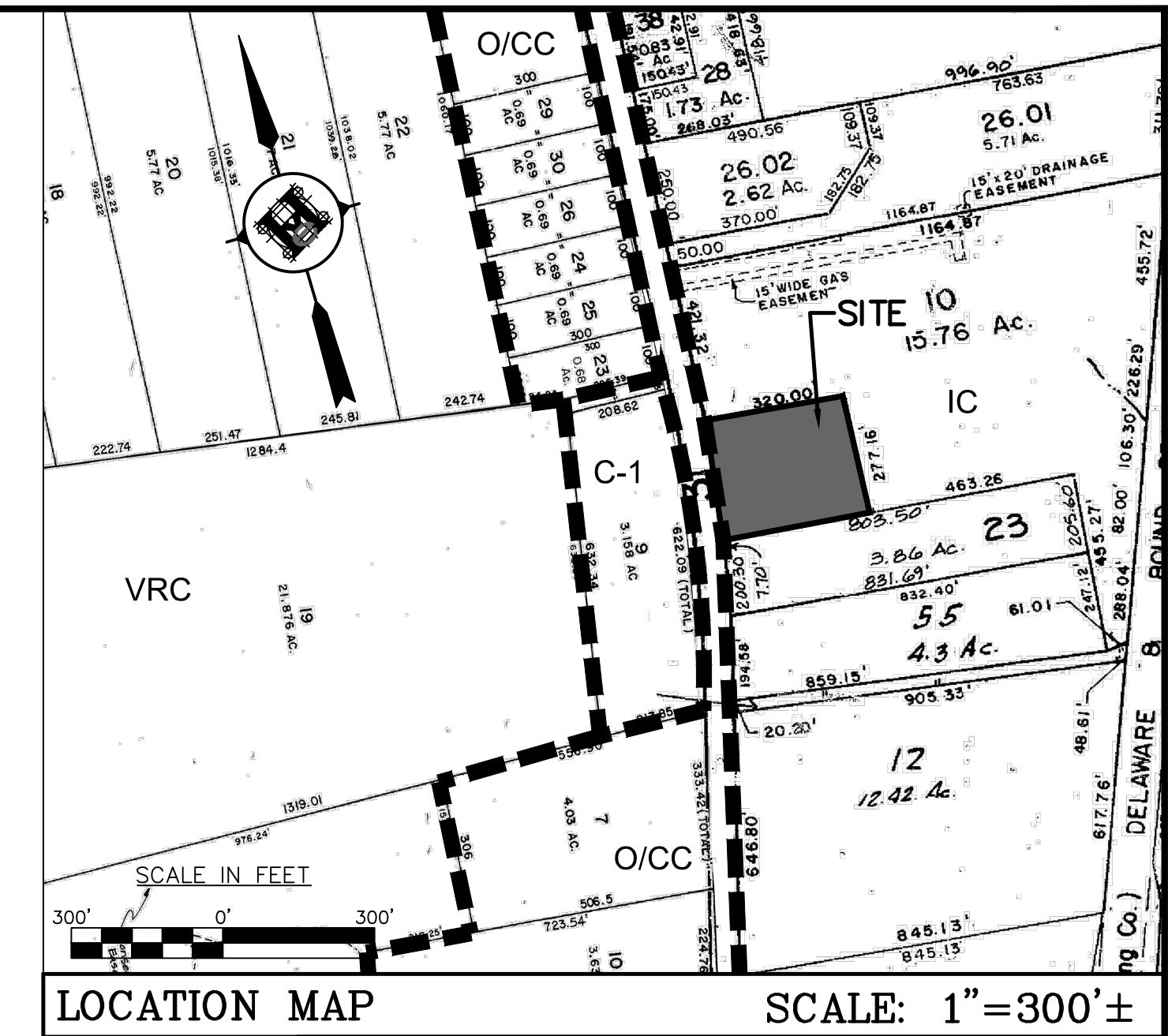


PRELIMINARY AND FINAL
S I T E P L A N
 FOR
P A L S G R O U P H O M E
L O T 2 2 I N B L O C K 4 6
 SITUATE IN
THE TOWNSHIP OF HOPEWELL
MERCER COUNTY, NEW JERSEY



ITEM	EXISTING	PROPOSED
SIGN	□	■
GUY POLE	○	●
UTILITY POLE	○	●
SANITARY SEWER	—	—
STORM SEWER	—	—
INLET	□	A ■ B ■ D ■ E ■
SQ. MH W/ CIRCULAR COVER	⊗	⊗
MANHOLE	⊙	⊙
FIRE HYDRANT	⊕	⊕
UTILITY VALVE	⊖	⊖
WATER MAIN	—W—	—W—
GAS MAIN	—G—	—G—
ELECTRIC LINE	—E—	—E/1/C—
TELEPHONE LINE	—T—	—E/1/C—
ELECTRIC, TELEPHONE & CABLE	—	—E/1/C—
CONTOUR LINES	—100—	—100—
GRADE ELEVATION	x100.0	x100.0
CONCRETE CURB	—	—
OVERHEAD WIRE	—	—
CHAINLINK FENCE	—X—	—X—
SECURITY FENCE	—O—	—O—

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

ISSUANCE DATE: 03/01/23
 LAST REVISED: _____

INDEX OF DRAWINGS	
1	COVER SHEET
2	LAYOUT CONTROL PLAN
3	GRADING, STORMWATER AND UTILITY PLAN
4	LANDSCAPE & TREE REMOVAL PLAN
5	SOIL EROSION & SEDIMENT CONTROL PLAN
6	SOIL EROSION AND SEDIMENT CONTROL NOTES
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

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 _____ DATE _____

PLANNING BOARD SECRETARY _____ DATE _____

CERTIFIED PROPERTY OWNERS LIST

ZONING REQUIREMENTS						
INDUSTRIAL/COMMERCIAL (IC) A GROUP HOME IS NOT A PERMITTED USE ⁽²⁾						
	REQUIRED ⁽¹⁾		EXISTING		PROPOSED	
LOT AREA (AC)	5	2.09 ⁽³⁾	2.09 ⁽³⁾	2.09 ⁽²⁾	2.09 ⁽²⁾	2.09 ⁽²⁾
LOT WIDTH (FT)	300	278± ⁽³⁾	278± ⁽³⁾	278± ⁽²⁾	278± ⁽²⁾	278± ⁽²⁾
LOT DEPTH (FT)	300	320	320	320	320	320
BUILDING SETBACK (FT)						
FRONT YARD SETBACK (FT)	100	22.9 ⁽³⁾	22.9 ⁽³⁾	116±	116±	116±
SIDE YARD (FT)	80	73.8 ⁽³⁾	73.8 ⁽³⁾	87±	87±	87±
REAR YARD (FT)	80	> 80	> 80	130±	130±	130±
LOT COVERAGE (MAX %)	40	11.7	11.7	16.7	16.7	16.7
BUILDING COVERAGE (MAX%)	20	8	8	9.6	9.6	9.6
MAX. BUILDING HEIGHT (FT)	35	< 35	< 35	< 35	< 35	< 35
MAX. FLOOR AREA RATIO	0.1	0.01	0.01	0.096	0.096	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

- NOTES:
- 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.
 - USE AND BULK VARIANCES WERE GRANTED BY THE HOPEWELL TOWNSHIP ZONING BOARD OF ADJUSTMENT PER RESOLUTION CASE No. 2022-02. DATED 05/04/22.
 - EXISTING NON-CONFORMITY

GROSS DENSITY:
 1 RESIDENTIAL UNIT / 2.09 AC = 0.48 UNITS / AC

REQUIRED "C" VARIANCES:

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

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**HOPEWELL VALLEY
ENGINEERING, PC**
ENGINEERS, PLANNERS & LAND SURVEYORS

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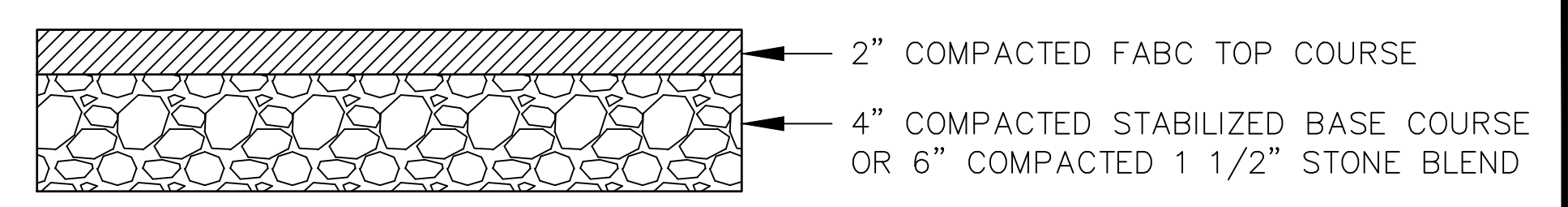
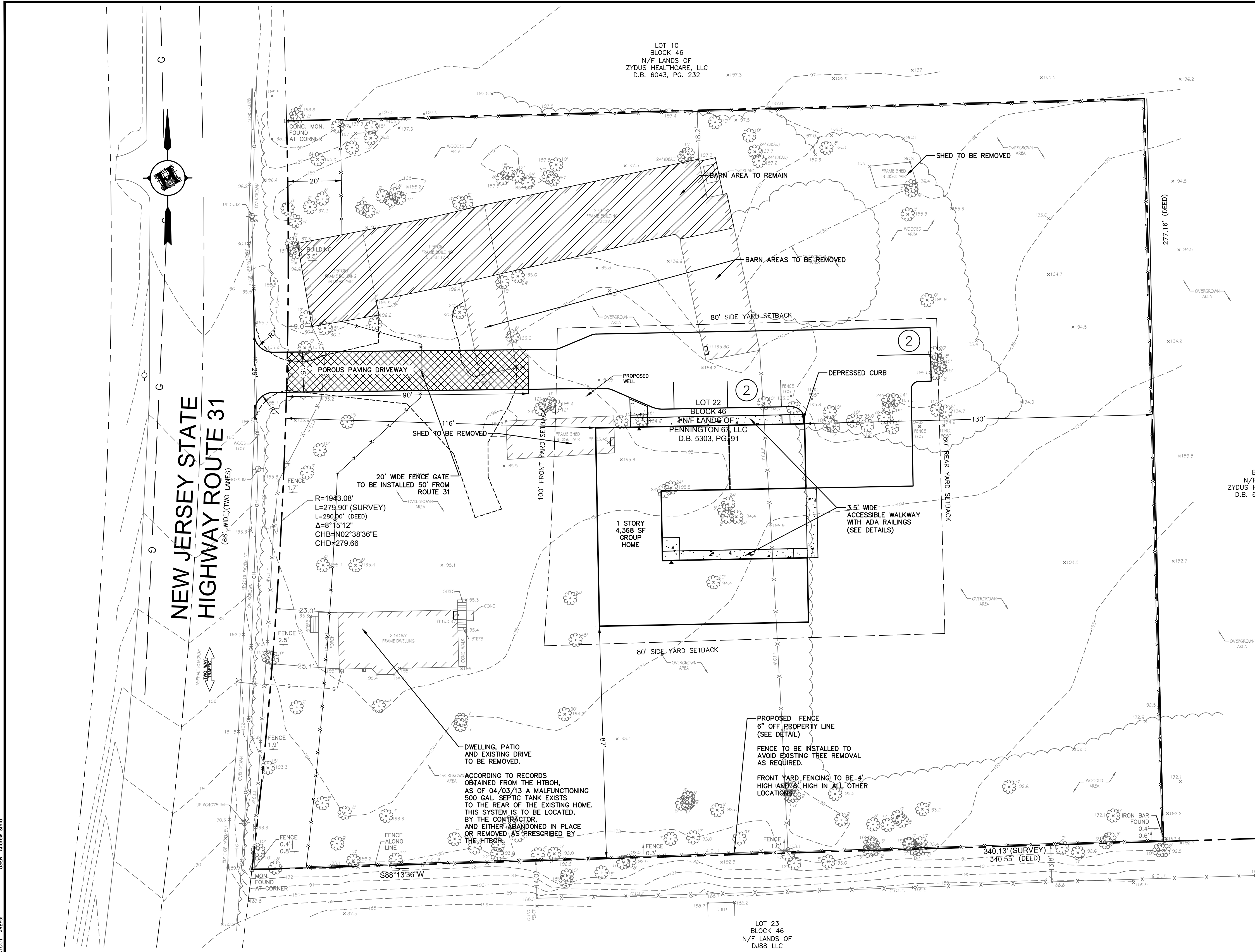
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COVER SHEET
 FOR
PALS GROUP HOME
LOT 22 BLOCK 46
 SITUATE IN
 HOPEWELL TOWNSHIP, MERCER COUNTY, NEW JERSEY

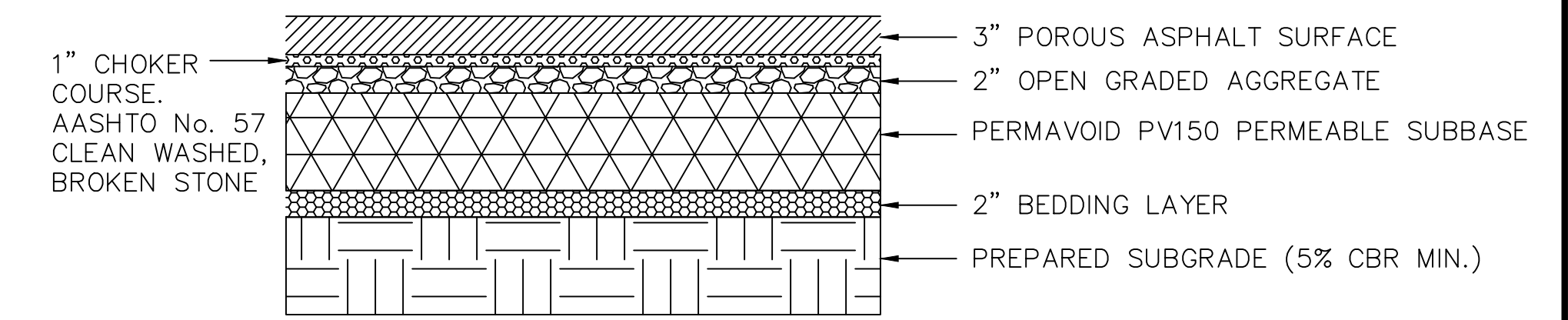
RUSSELL M. SMITH
 N.J. PROFESSIONAL ENGINEER NO. 33065

Sheet 1 of 10

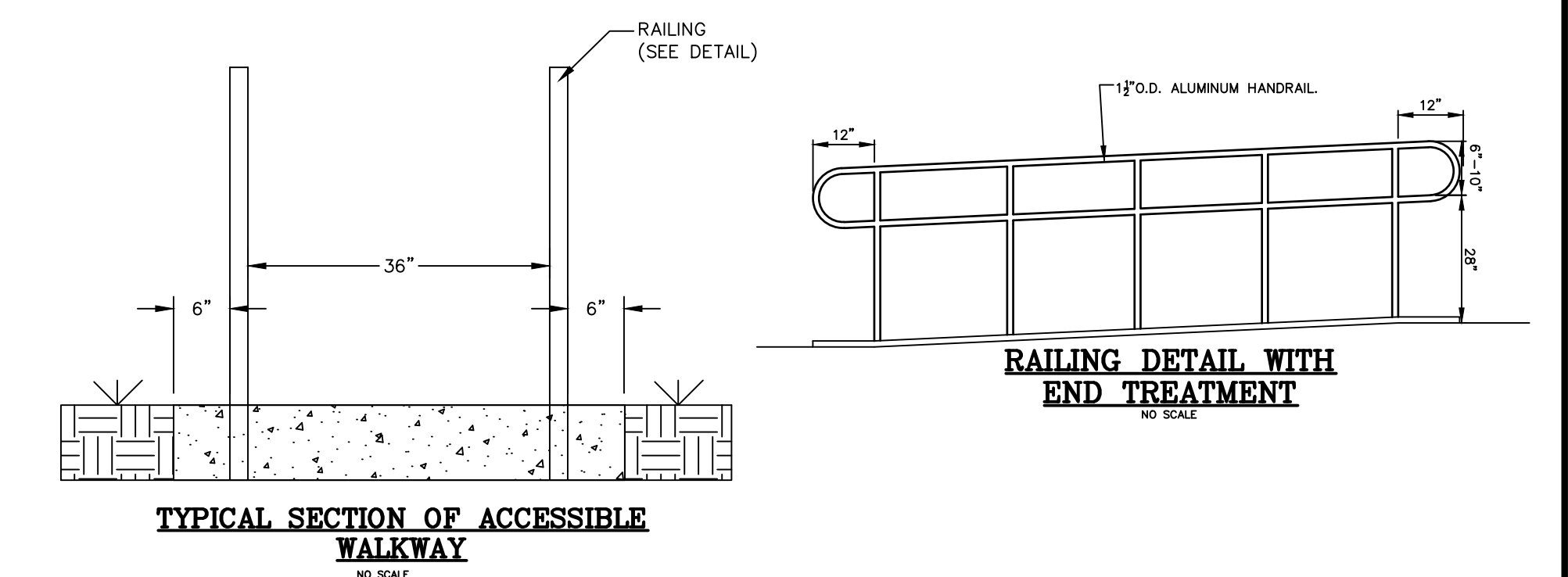
PRELIMINARY
2 Mar 2023



HOPEWELL TOWNSHIP BITUMINOUS CONCRETE DRIVEWAY PAVING DETAIL
NO SCALE

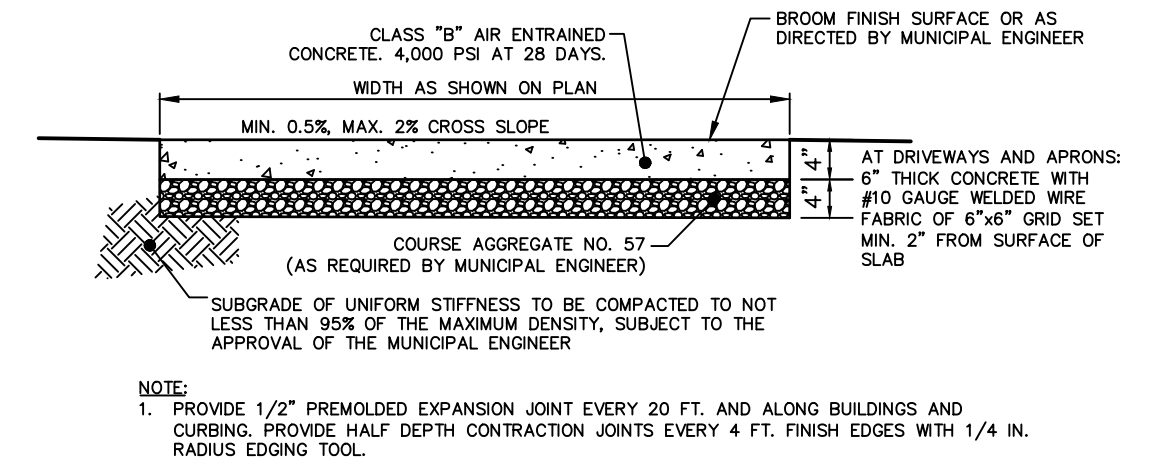


POROUS DRIVEWAY PAVING WITH PERMAVOID DETAIL
NO SCALE

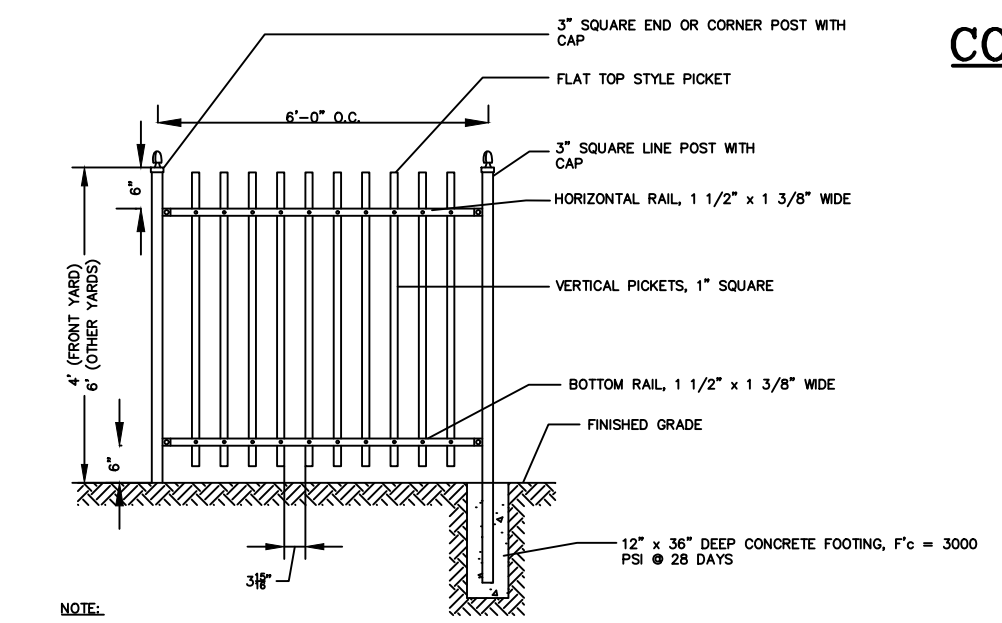


TYPICAL SECTION OF ACCESSIBLE WALKWAY
NO SCALE

RAILING DETAIL WITH END TREATMENT
NO SCALE



CONCRETE SIDEWALK
NO SCALE



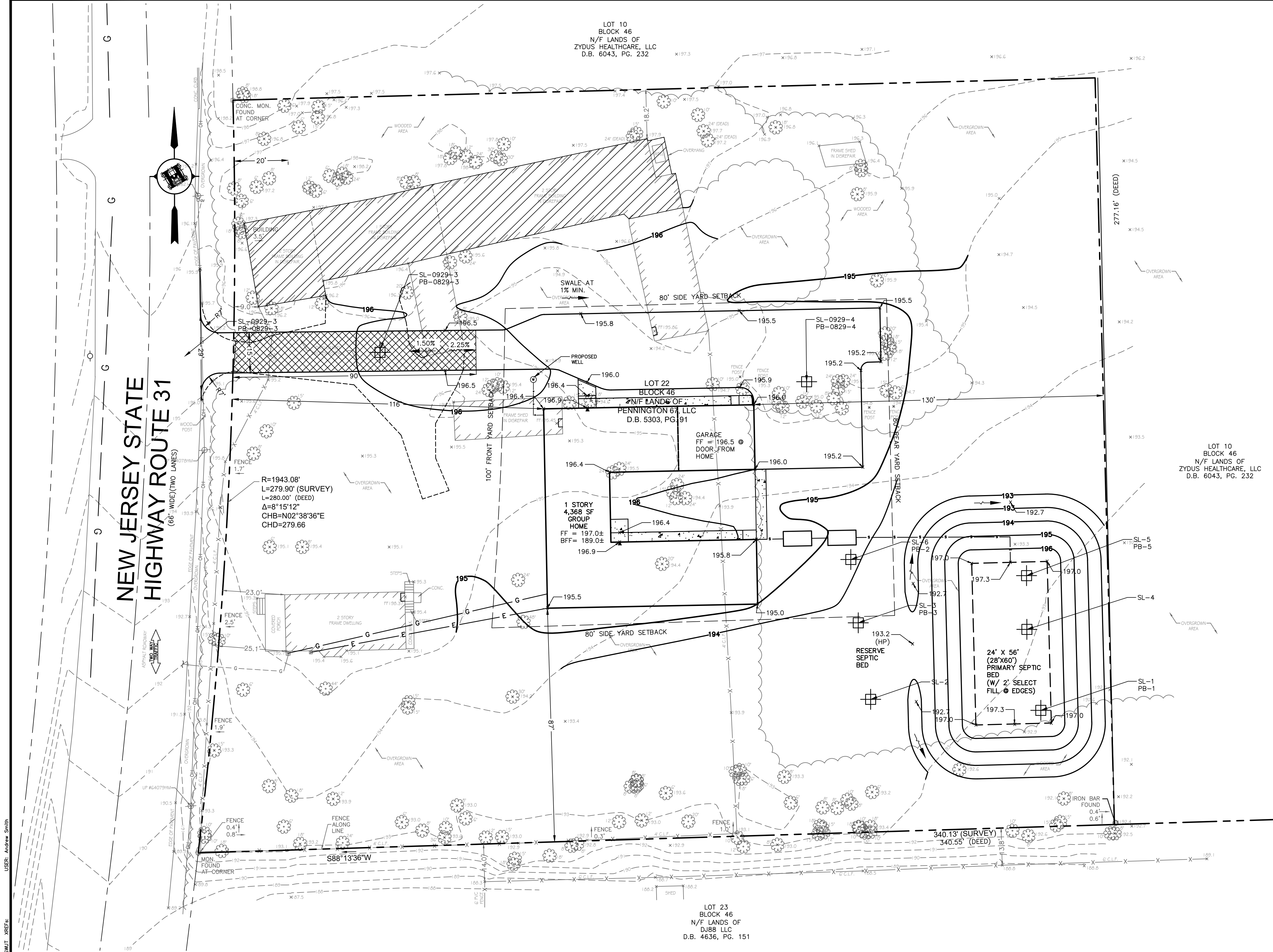
FENCE DETAIL
NO SCALE

GENERAL NOTES:

- PROPERTY IS LOCATED IN THE "IC" - INDUSTRIAL/COMMERCIAL ZONE AND IS KNOWN AS LOT 22, BLOCK 46 AS SHOWN ON THE HOPEWELL TOWNSHIP TAX MAP, PAGE 15. THE LOT CONSISTS OF 2.09± AC.
- PROPERTY IS SUBJECT TO A TITLE SEARCH AND SUBJECT TO ANY RESTRICTIONS OR EASEMENTS OF RECORD.
- REFERENCES:
 - 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.
 - SOIL TEST LOCATIONS BASED ON A SKETCH IN A REPORT PREPARED BY BARKLEY ENGINEERING, LLC DATED 02/26/08.
 - GROUP HOME FOOTPRINT AND DRIVEWAY LAYOUT BASED ON A PLAN PREPARED BY MPOA ARCHITECTURE, DATED 04/01/20 AND LAST REVISED 01/22/23.
 - HOPEWELL TOWNSHIP TAX MAP SHEETS 14.04 AND 15.
 - A SURVEY ENTITLED "BOUNDARY AND TOPOGRAPHIC SURVEY LOT 22 BLOCK 46" PREPARED BY GALAS SURVEYING GROUP DATED 08/04/22.

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	HOPEWELL VALLEY ENGINEERING, PC ENGINEERS, PLANNERS & LAND SURVEYORS 1600 Reed Road, Suite A Pennington, NJ 08534-5002 Tel: 609-745-5800 Fax: 609-745-5807 www.hopewellvalleyengineering.com
	LAYOUT CONTROL PLAN FOR PALS GROUP HOME LOT 22 BLOCK 46 SITUATE IN HOPEWELL TOWNSHIP, MERCER COUNTY, NEW JERSEY
Date: 03/01/23 Scale: 1" = 20' Drawn: AWS Check: RMS PLO: 1106627B PPR: SP01627B - Vps	PRELIMINARY 2 Mar 2023
NO. DATE DESCRIPTION OF REVISION BY CHK'D	RUSSELL M. SMITH N.J. PROFESSIONAL ENGINEER NO. 33065



- UTILITY NOTES**
- PARTIAL LIST OF UTILITIES THAT MAY SERVICE THE SITE:
ELECTRIC: PSE&G
GAS: PSE&G
TELEPHONE: VERIZON
WATERS: PRIVATE WELL
SANITARY SEWER: SEPTIC SYSTEM
CONTRACTOR IS ADVISED TO CALL 1-800-272-1000 PRIOR TO CONSTRUCTION TO LOCATE ANY EXISTING UTILITIES.
 - THE PROPOSED UTILITIES SHALL BE OWNED AND MAINTAINED AS FOLLOWS:
STORM SEWER: TOWNSHIP
SEPTIC SYSTEM: OWNER
WELL: OWNER
 - 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.
 - ALL PROPOSED UTILITIES SHALL BE INSTALLED UNDERGROUND.
 - ALL UTILITIES TO BE INSTALLED IN STRICT ACCORDANCE WITH THE RULES, REGULATIONS AND SPECIFICATIONS OF THE GOVERNMENTAL AGENCIES AND UTILITY COMPANIES HAVING JURISDICTION THEREOVER.
 - WATERTIGHT PLUGS SHALL BE PROVIDED AT TERMINAL ENDS OF ALL PROPOSED UTILITIES.
 - 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.
 - 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.
 - STORM SEWER AND SANITARY SEWER LENGTHS INDICATED ON PLANS AND PROFILES REPRESENT LENGTHS FROM CENTERLINE OF STRUCTURE TO CENTERLINE STRUCTURE.
 - UNLESS OTHERWISE NOTED, PIPE USED FOR STORM DRAIN CONSTRUCTION IS TO BE REINFORCED CONCRETE, CLASS III, WALL "B" (A.S.T.M. C-76).
 - ALL SUBSURFACE DRAINS ENCOUNTERED DURING CONSTRUCTION SHALL BE EXTENDED AND CONNECTED TO THE NEAREST STORM DRAIN STRUCTURE.
 - 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 A.S.T.M. F477.
 - WATER PIPES AND SANITARY SEWERS PIPES SHALL BE SEPARATED BY A 10 FOOT MINIMUM DISTANCE HORIZONTALLY OR 18 INCHES MINIMUM DISTANCE VERTICALLY.
 - 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.
 - 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 = PMVS - (ERMVS+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 = 1.27 CF/UNIT
 - PERMAVOID PV150 UNIT AREA = 2.33 FT X 1.17 FT = 2.73 SF
 - VOLUME OF STONE PER UNIT = 2.73 SF X (1/8 IN/FT) X 0.40 (VOIDS) = 0.45 CF/UNIT
 - TOTAL VOLUME PER PERMAVOID UNIT = 1.27 + 0.45 = 1.73 CF/UNIT
 (852 CF) / (1.73 CF/UNIT) = 494.5 UNITS
 (494.5 UNITS) X (2.73 SF/UNIT) = 1349.99 SF (SAY 1350 SF) = MINIMUM 15 FT X 90 FT DRIVEWAY AREA REQUIRED.

GRADING NOTES

- 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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Site: 03/01/23
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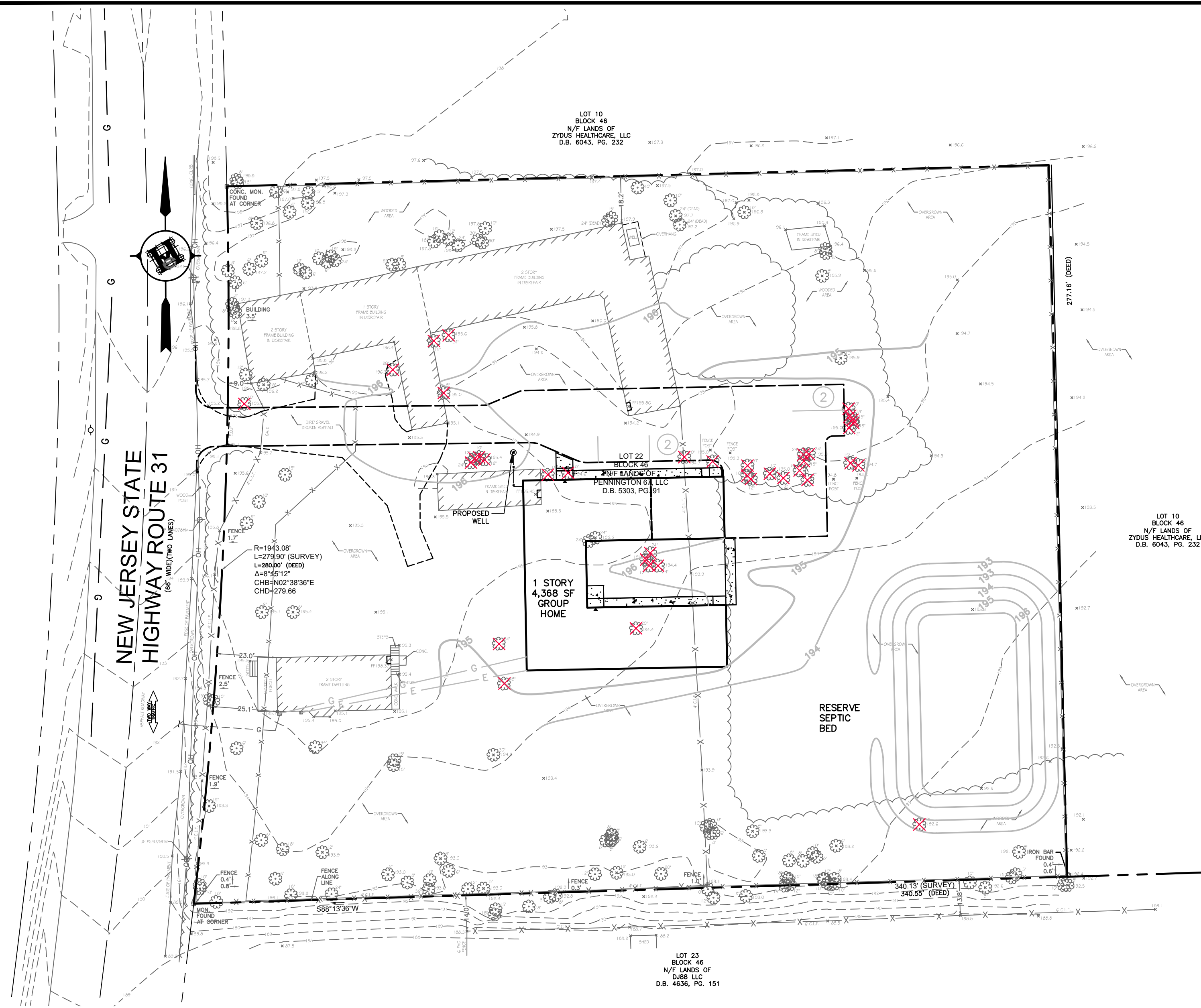
GRADING, STORMWATER AND UTILITY PLAN
 FOR
PALS GROUP HOME
 LOT 22 BLOCK 46
 SITUATE IN
 HOPEWELL TOWNSHIP, MERCER COUNTY, NEW JERSEY

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

PRELIMINARY
 2 Mar 2023

Sheet 3 of 10

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK'D



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 RELATIVELY WEED FREE.

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 SEASON.

TURF

UNLESS OTHERWISE INDICATED USE SOD TO REPLACE DISTURBED GRASS AREAS.

BASIN AND BIOSWALE GRASS MIX:
 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 INSECTS.

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.

LANDSCAPE PLANTING NOTES

- 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.
- 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.
- 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.
- 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.
- 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 INSTITUTE.
- 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.
- 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.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLANTING AT CORRECT GRADES AND ALIGNMENT AS SHOWN ON THE PLANTING PLAN.
- THE CONTRACTOR SHALL REPORT ANY SOIL OR DRAINAGE CONDITIONS CONSIDERED DETRIMENTAL TO THE GROWTH OF THE PROPOSED PLANT MATERIAL.
- 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.
- PLANTING OPERATIONS SHALL BE PERFORMED DURING PERIODS WITHIN THE PLANTING SEASON WHEN WEATHER AND SOIL CONDITIONS ARE SUITABLE AND IN ACCORDANCE WITH MUNICIPAL ORDINANCES.
- 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.

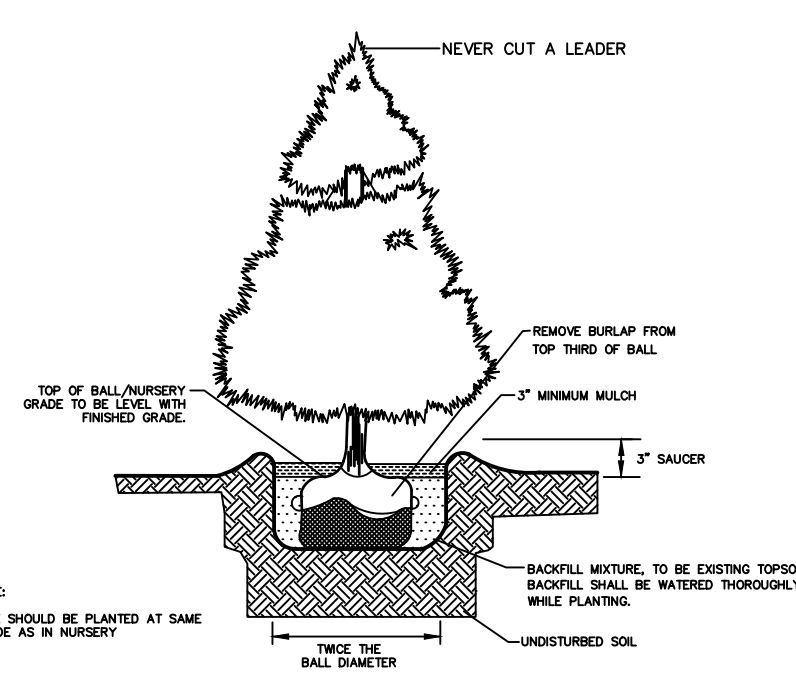
GENERAL LANDSCAPING NOTES

- ALL SHRUB MASSES TO BE MULCHED WITH AGED TRIPLE-GROUND MULCH, DARK BROWN COLOR, 3" DEEP.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD AND NOTIFY THE ENGINEER IF ANY DISCREPANCIES ARE ENCOUNTERED.
- 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.
- 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.
- COMPACTED SUBGRADE SHALL BE LOOSENED BEFORE SPREADING NEW TOPSOIL. NEW TOPSOIL SHALL BE SPREAD TO MEET PROPOSED GRADE LINES.
- DETENTION BASIN AND BIOSWALE TO BE SEED AS SHOWN IN THE TURF NOTES.
- REMAINING GRASS AREAS TO BE SODDED
- ALL CLEARED GROUND NOT INDICATED FOR PLANTING OF GROUND COVERS SHALL BE SEED AS PER LAWN SEEDING NOTES.
- LANDSCAPE PLAN IS TO BE USED FOR PLANTING PURPOSES ONLY. SEE ENGINEER'S DRAWING FOR CONSTRUCTION DOCUMENTATION.
- ALL EXISTING TREES TO REMAIN UNLESS OTHERWISE NOTED.
- NO IRRIGATION IS PROPOSED.

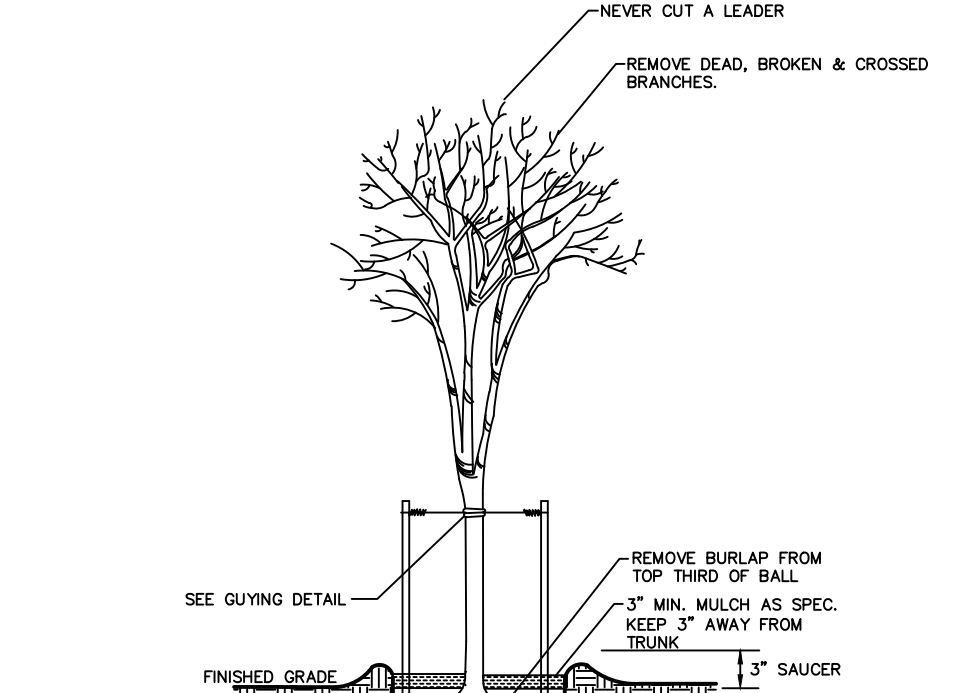
NOTE:
THE LANDSCAPE DESIGNS SHOWN ON THIS PLAN WERE PREPARED BY

TREES TO BE REMOVED		
DBH (IN)	# OF TREES	TOTAL DBH (IN)
10	7	70
12	5	60
15	7	105
18	2	36
20	3	60
24	7	168
48	1	48
32		547

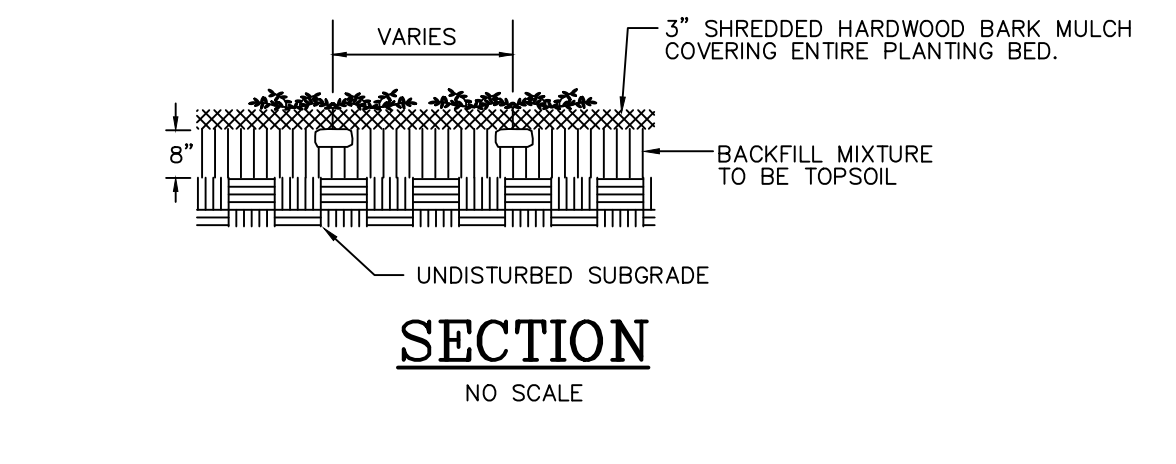
TOTAL TREES TO BE REMOVED = 32
 TOTAL REMOVED TREE DIAMETER = 547"
 TOTAL TREE DIAMETER TO BE REPLACED = 547 - 150 = 397"
 TOTAL REPLACEMENT TREES (PER ORD SECTION 12-4.9b1-3):
 - WE WILL REPLACE THE SEVEN (7) 24", THE SEVEN (7) 15", THE THREE (3) 20", THE TWO (2) 18" AND THREE (3) 10" TREES FOR A TOTAL OF 399" OF REPLACEMENT TREES.
 - PER THE TABLE IN SECTION 12-4.9b1:
 - THE SEVEN (7) 24" TREES WILL REQUIRE TWENTY EIGHT (28) 3 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 2 1/2" REPLACEMENTS
 - WE WILL NEED 58 TOTAL REPLACEMENT TREES.



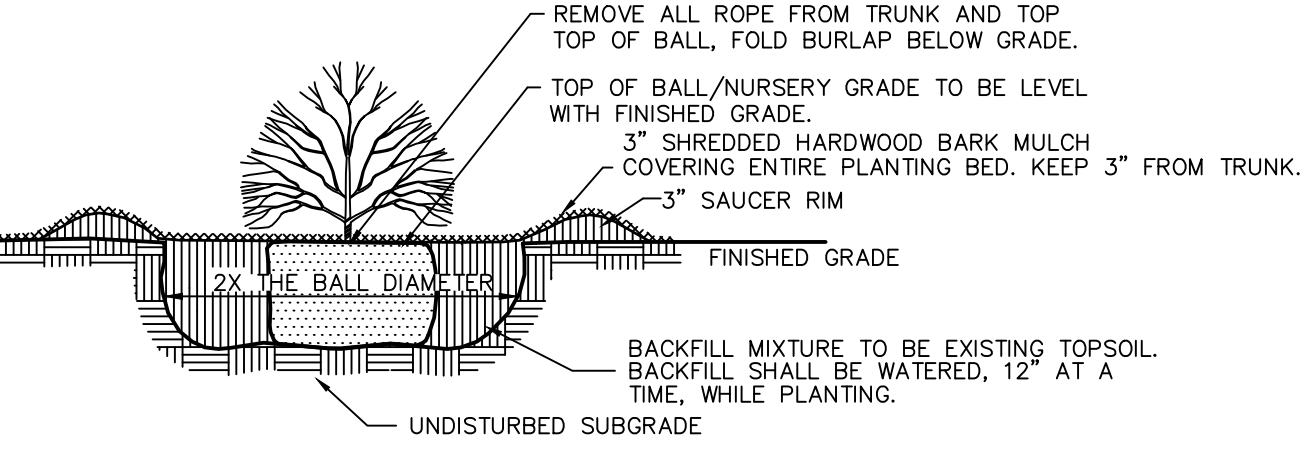
TYPICAL PLANTING FOR EVERGREENS
NO SCALE



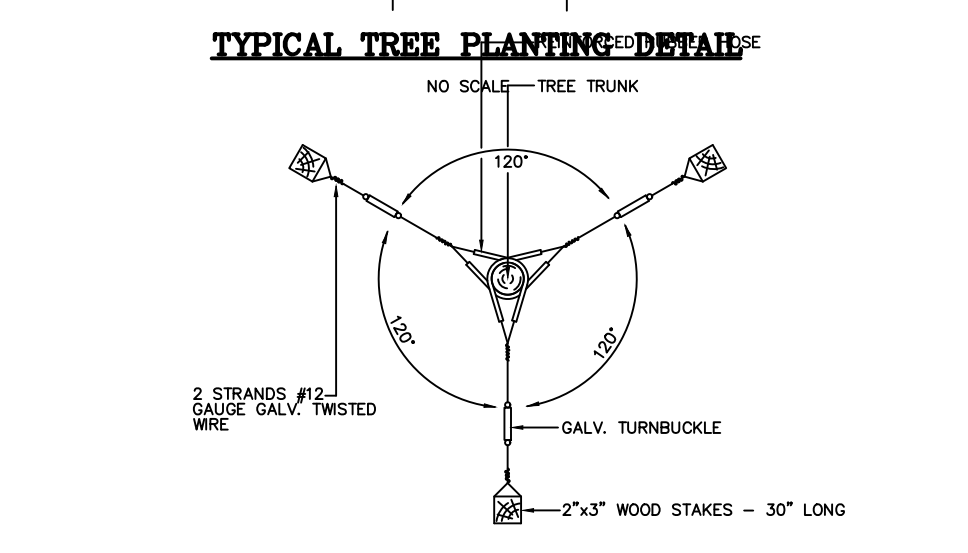
TYPICAL TREE PLANTING DETAIL
NO SCALE - TREE TRUNK



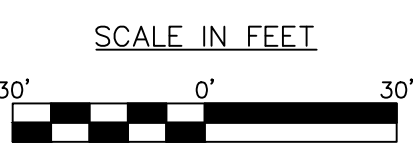
SECTION
NO SCALE



SHRUB & GROUNDCOVER PLANTING DETAIL
NO SCALE



TYPICAL GUYING DETAIL
NOT TO SCALE



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 www.hopewellvalleyengineering.com

DATE: 03/01/23
 SCALE: 1" = 30'
 DESIGNED: AWS CHECKED: RMS
 DRAWN: 1106627B REVISION: N/A
 APPR: SP01627B - Vps

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2 Mar 2023

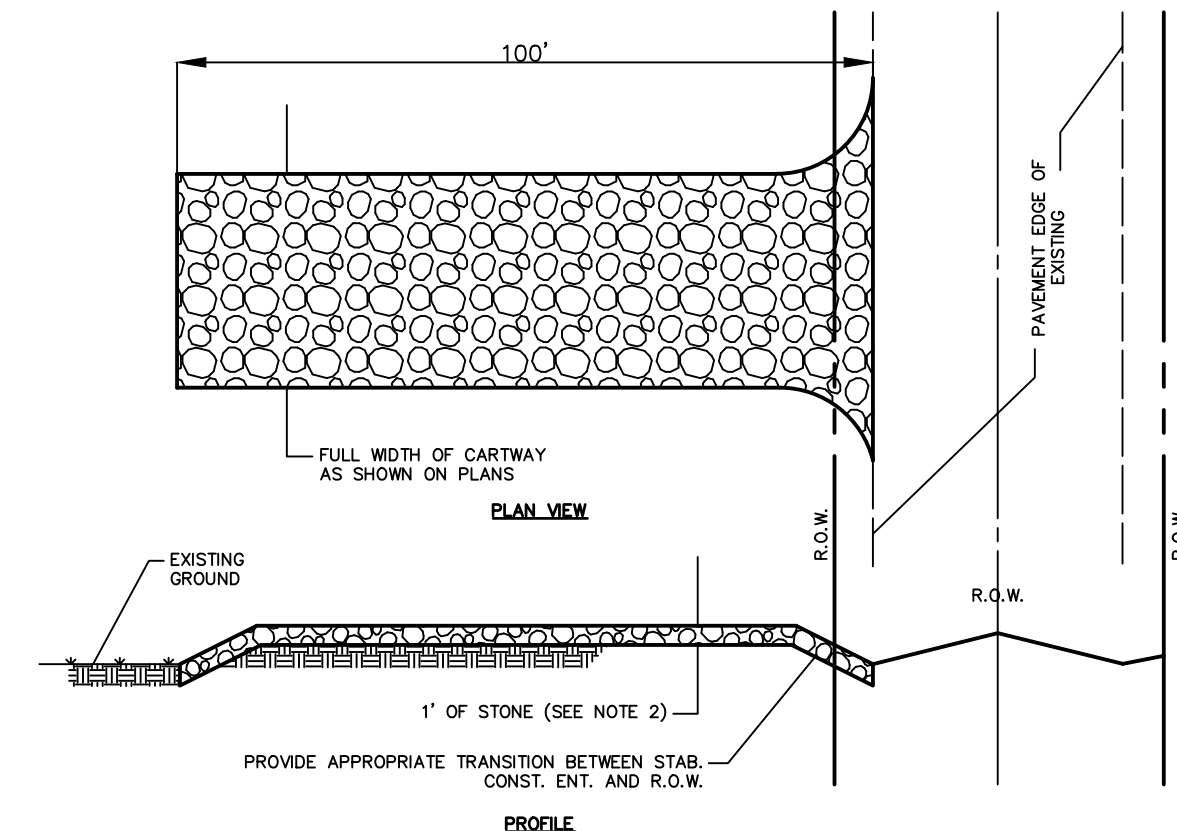
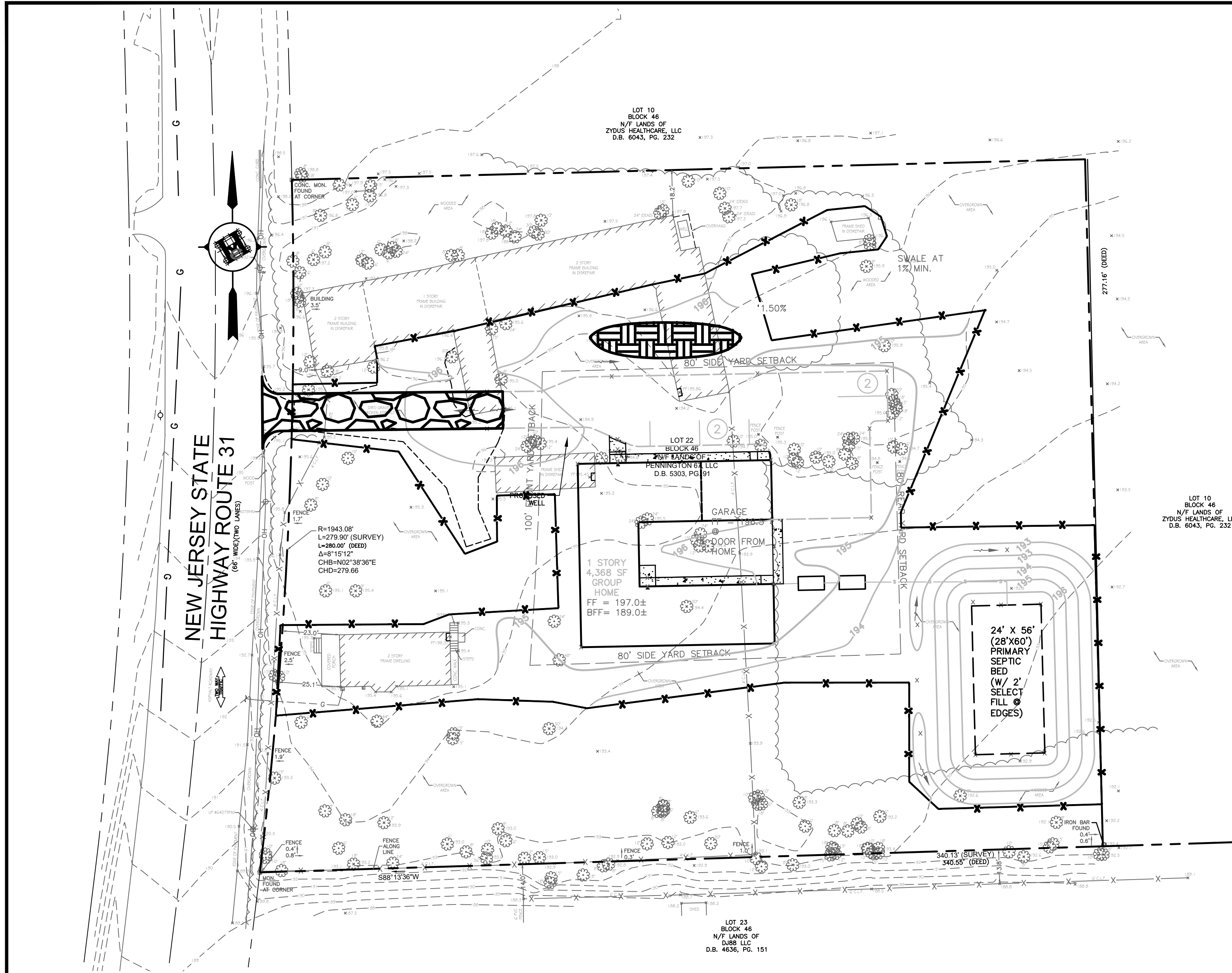
LANDSCAPE & TREE REMOVAL PLAN
 FOR
PALS GROUP HOME
 LOT 22 BLOCK 46
 SITUATE IN
 HOPEWELL TOWNSHIP, MERCER COUNTY, NEW JERSEY

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

Sheet 4 of 10

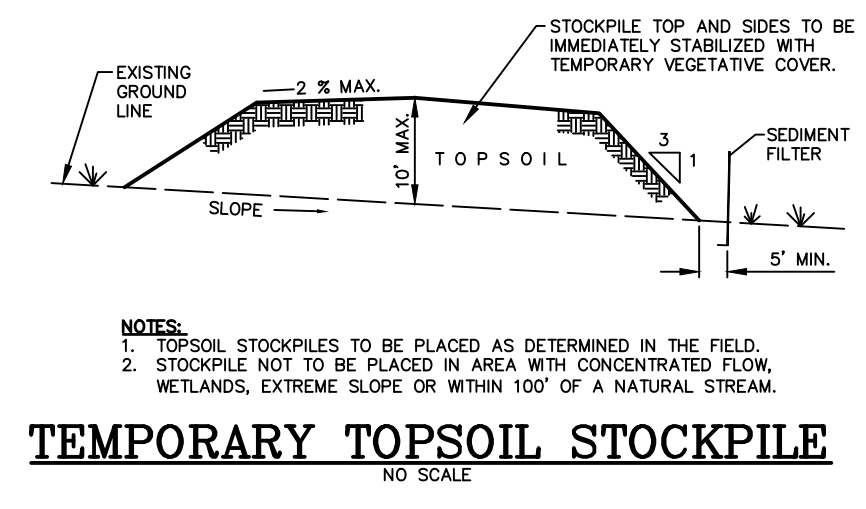
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 VPS: VPS LAYOUT: LAND XREF:

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK'D



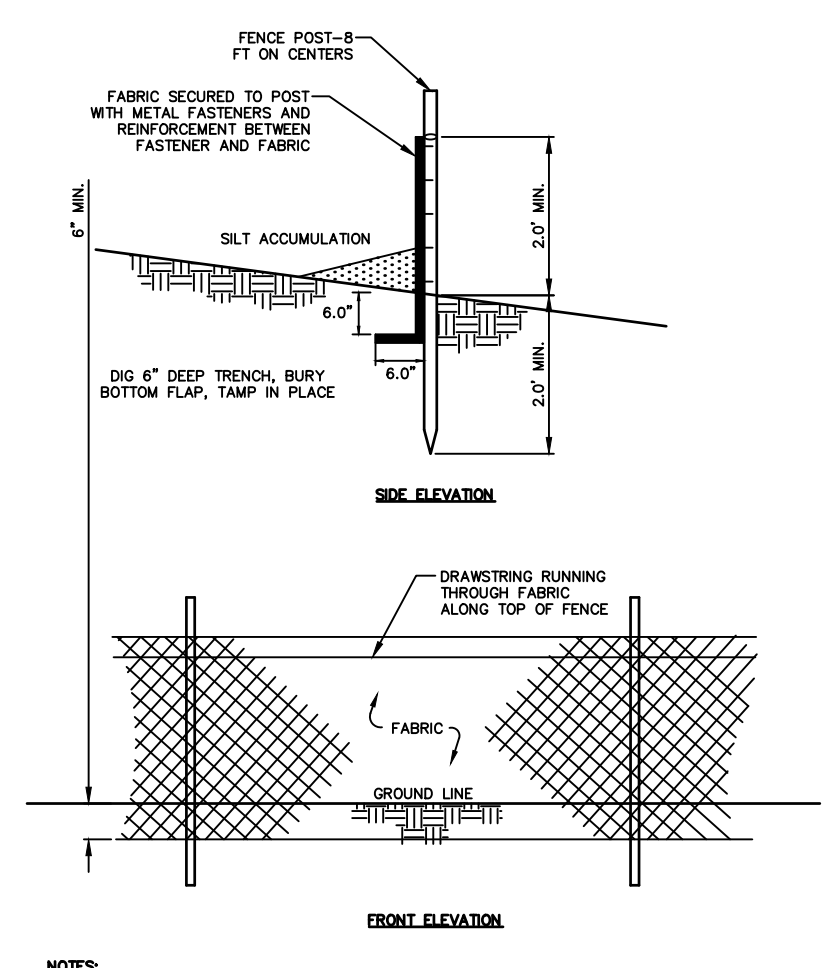
STABILIZED CONSTRUCTION ENTRANCE
NO SCALE

NOTES:
 1. PLACE STABILIZED CONSTRUCTION ENTRANCE AT LOCATION(S) AS SHOWN ON THE SOIL EROSION AND SEDIMENT CONTROL PLAN.
 2. STONE SIZE SHALL BE 1-1/2" TO 2" CRUSHED STONE.
 3. THE THICKNESS OF THE STAB. CONST. ENT. SHALL NOT BE LESS THAN 1".
 4. THE WIDTH AT THE EXIST. PAVEMENT SHALL NOT BE LESS THAN THE FULL WIDTH OF POINTS OF INGRESS AND EGRESS.
 5. 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.



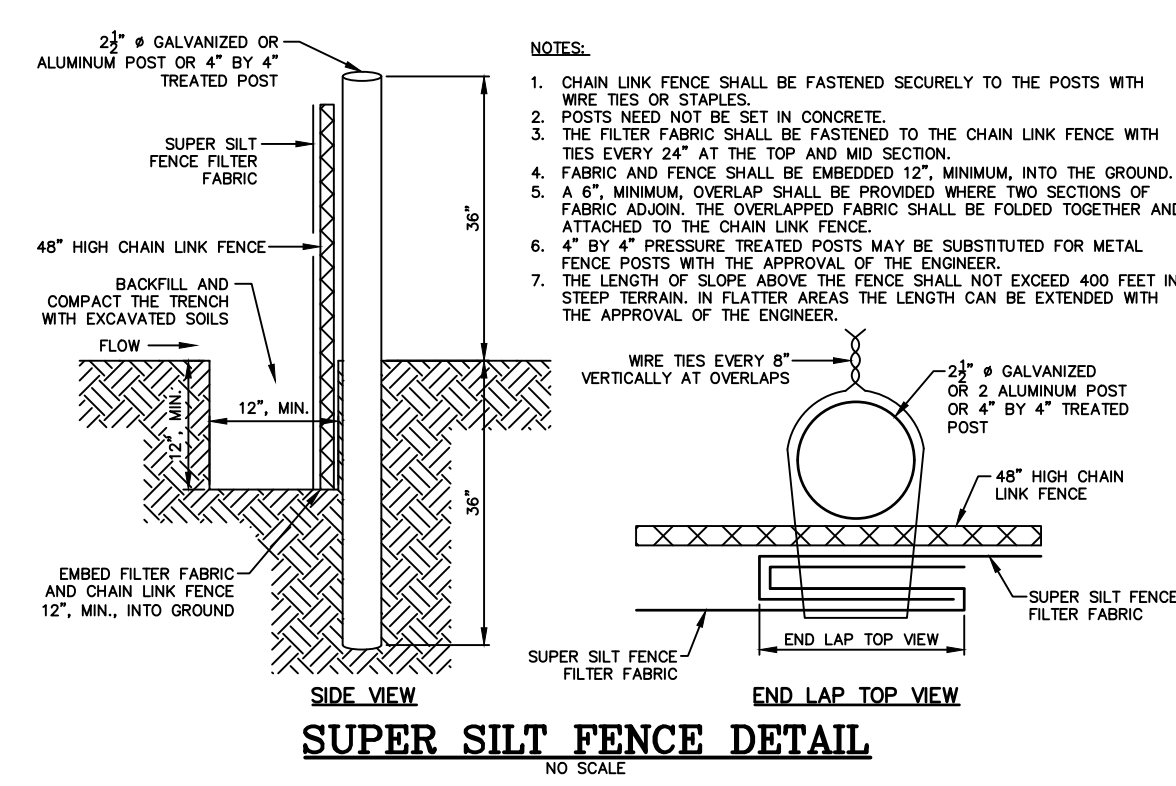
TEMPORARY TOPSOIL STOCKPILE
NO SCALE

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.



SEDIMENT FILTER
NO SCALE

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.



SUPER SILT FENCE DETAIL
NO SCALE

NOTES:
 1. CHAIN LINK FENCE SHALL BE FASTENED SECURELY TO THE POSTS WITH WIRE TIES ON STAPLES.
 2. POSTS NEED NOT BE SET IN CONCRETE.
 3. THE FILTER FABRIC SHALL BE FASTENED TO THE CHAIN LINK FENCE WITH TIES EVERY 24" AT THE TOP AND MID SECTION.
 4. FABRIC AND FENCE SHALL BE EMBEDDED 12" MINIMUM INTO THE GROUND.
 5. A 6" MINIMUM OVERLAP SHALL BE PROVIDED WHERE TWO SECTIONS OF FABRIC ADJOIN. THE OVERLAP FABRIC SHALL BE FOLDED TOGETHER AND ATTACHED TO THE CHAIN LINK FENCE.
 6. 4" BY 4" PRESSURE TREATED POSTS MAY BE SUBSTITUTED FOR METAL FENCE POSTS WITH THE APPROVAL OF THE ENGINEER.
 7. THE LENGTH OF SLOPE ABOVE THE FENCE SHALL NOT EXCEED 400 FEET IN STEEP TERRAIN. IN FLATTER AREAS THE LENGTH CAN BE EXTENDED WITH THE APPROVAL OF THE ENGINEER.

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 (MCSO) 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 DAYS)
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 GOING)
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 (MCSO) 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 MCSO. (1 WEEK)

- NOTES:
1. THE CONTRACTOR IS RESPONSIBLE FOR INSURING THAT NO SOIL IS TRACKED OFF SITE. MECHANICAL SWEEPING MAY BE REQUIRED AT THE DIRECTION OF HOPEWELL TOWNSHIP.
 2. THE CONTRACTOR WILL IMMEDIATELY REMOVE ALL SEDIMENT WASHED, TRACKED OR SPILLED ONTO PAVED SURFACES.
 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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 PLOT NO: 1106627B
 PROJECT: SP01627B - Vps

SOIL EROSION AND SEDIMENT CONTROL PLAN
FOR
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 5 of 10

PLOT DATE: 3/2/2023 3:31:05 PM FILE PATH: F:\1106627B\DWG\SP01627B.dwg USER: Andrew Smith

STANDARD FOR TOPSOILING

DEFINITION

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

PURPOSE

TO IMPROVE THE SOIL MEDIUM FOR PLANT ESTABLISHMENT AND MAINTENANCE.

WATER QUALITY ENHANCEMENT

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

WHERE APPLICABLE

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

I. MATERIALS

METHODS AND 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... B. TOPSOIL SUBSTITUTE IS A SOIL MATERIAL WHICH MAY BE AMENDED WITH SAND, SILT, CLAY, ORGANIC MATTER, FERTILIZER OR LIME AND HAS THE APPEARANCE OF TOPSOIL.

II. STRIPPING AND STOCKPIILING

- A. FIELD EXPLORATION SHOULD BE MADE TO DETERMINE WHETHER QUANTITY AND OR QUALITY OF SURFACE SOIL JUSTIFIES STRIPPING... 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 PH TO 6.5... III. SITE PREPARATION 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...

STANDARD FOR MAINTAINING VEGETATION

DEFINITION

THE PERPETUATION OF VEGETATIVE COVER.

PURPOSE

TO ASSURE THE CONTINUING COVER 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 PERIOD OF NEGLECT.

WATER QUALITY ENHANCEMENT

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

WHERE APPLICABLE

ON AREAS WHERE EXISTING VEGETATION PROTECTS OR ENHANCES THE ENVIRONMENT.

METHODS AND MATERIALS

A PREVENTIVE MAINTENANCE PROGRAM ANTIPECIATES 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 USE.

- 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)... 2. INCORPORATION OF ORGANIC MATTER (FOR EXAMPLE, MATURE COMPOST)... 3. FERTILIZER AND LIME SHOULD BE APPLIED AS NEEDED TO MAINTAIN A DENSE STAND OF DESIRABLE SPECIES...

STANDARD FOR PERMANENT STABILIZATION WITH SOD

DEFINITION

ESTABLISHING PERMANENT VEGETATION USING SOD.

PURPOSE

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

WATER QUALITY ENHANCEMENT

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 AND STORMWATER RUNOFF.

WHERE APPLICABLE

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

METHODS AND MATERIALS

- 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... 4. SOD SHOULD BE WOODOUS 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...

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 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 A RESISTANT COVER OR WHERE STABILIZATION IS NEEDED FOR A SHORT PERIOD UNTIL MORE SUITABLE PROTECTION CAN BE APPLIED.

METHODS AND MATERIALS

- I. SITE PREPARATION A. GRADE, AS NEEDED AND FEASIBLE, TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION AND ANCHORING MULCH... B. INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS... 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... B. SYNTHETIC OR ORGANIC SOIL STABILIZERS MAY BE USED UNDER SUITABLE CONDITIONS AND IN SUFFICIENT QUANTITIES AS RECOMMENDED BY THE MANUFACTURER... III. MULCH ANCHORING - SHOULD BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT OF HAY OR STRAW MULCH TO MINIMIZE THE LOSS BY WIND OR WATER...

- 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... B. MULCH NETTINGS - STAPLE PAPER, COTTON, OR PLASTIC NETTINGS OVER MULCH... C. CRUMPER MULCH ANCHORING COLLAR TOOL - A TRACTOR-DRAWN IMPLEMENT ESPECIALLY DESIGNED TO PUNCH AND ANCHOR MULCH TO THE SOIL SURFACE... D. LIQUID MULCH-BINDERS 1. APPLICATIONS SHOULD BE HEAVIER AT EDGES WHERE WIND CATCHES THE MULCH... 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... b. SYNTHETIC BINDERS - HIGH POLYMER SYNTHETIC EMULSION, MISCIBLE WITH WATER WHEN DILUTED...

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

DEFINITION

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

PURPOSE

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

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 ALONG STREAMS AND OTHER WATER BODIES.

WHERE APPLICABLE

ON NEW DEVELOPMENT SITES WITH EXISTING TREES.

METHODS AND MATERIALS

- 1. RECONNAISSANCE SHOULD BE PERFORMED BEFORE LAND CLEARING BEGINS TO IDENTIFY DEAD AND WEAK TREES TO BE REMOVED AND HEALTHY TREES TO REMAIN... (1) TREE MOOR TREE HEALTH IS THE OVERALL CONDITION OF THE TREE... (2) TREE AGE LARGE, PICTURESQUE TREES MAY BE MORE AESTHETICALLY VALUABLE THAN SMALLER, YOUNG TREES... (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... (4) RESISTANT TO INSECTS AND DISEASES AVOID LEAVING TREES IN HIGHLY VISIBLE AREAS OF SPECIMENS THAT ARE FREQUENT TARGETS OF INSECTS AND DISEASES... (5) TREE AESTHETICS CHOOSE TREES THAT ARE AESTHETICALLY PLEASING, EXHIBITING GOOD SHAPE AND FORM... (6) SPRING AND AUTUMN COLORATION SPECIES DIFFER IN FALL COLOR... (7) WILDLIFE BENEFITS FAVOR TREES THAT ARE PREFERRED BY WILDLIFE FOR FOOD, COVER, AND NESTING... (8) AIR POLLUTION SUSCEPTIBILITY TREE SPECIES VARY GREATLY TO SUSCEPTIBILITY TO AIR POLLUTION... (9) SPECIES LONGEVITY FAVOR TREES WHOSE LIFE SPAN IS LONG, SUCH AS OAK, BECH, AND TULIP POPLAR...

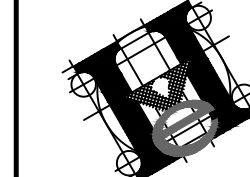
REQUIRED SOIL EROSION AND SEDIMENT CONTROL NOTES

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

MCSO, 590 HUGHES DRIVE, HAMILTON SQUARE, NJ 08690 PHONE: 609-586-9603 FAX: 609-586-1117 EMAIL: PAULSMERCER@OL.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 503 PERMIT (NJ0208322) VIA THE NJDEP ONLINE PERMITTING SYSTEM (WWW.NJDEP/DEP/ONLINE) AND TO MAINTAIN THE ASSOCIATED BEST MANAGEMENT PRACTICES AND STORMWATER POLLUTION PREVENTION PLAN SELF-INSPECTION LOGBOOK ON-SITE AT ALL TIMES... 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... 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... 7. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CURRENT STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN N.J. 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 1 1/2" TO 2" CLEAN STONE TRACKING PAD AT ALL CONSTRUCTION DRIVEWAYS IMMEDIATELY AFTER INITIAL SITE DISTURBANCE... 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... 10. ANY DISTURBED AREAS THAT WILL BE LEFT EXPOSED MORE THAN 14 DAYS AND NOT SUBJECT TO CONSTRUCTION ACTIVITY WILL IMMEDIATELY RECEIVE TEMPORARY STABILIZATION... 11. ANY STEEP SLOPES (I.E. SLOPES GREATER THAN 3:1) RECEIVING PIPELINE OR UTILITY INSTALLATION WILL BE BACKFILLED AND STABILIZED DAILY... 12. PERMANENT VEGETATION SHALL BE SEEDED OR SOODED ON ALL EXPOSED AREAS WITHIN TEN (10) DAYS AFTER FINAL GRADING AND TOPSOILING... 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... 14. DURING THE COURSE OF CONSTRUCTION, SOIL COMPACTION MAY OCCUR WITHIN HAUL ROUTES, STAGING AREAS AND OTHER PROTECTION AREAS... 15. PRIOR TO SEEDING, TOPSOIL SHALL BE WORKED TO PREPARE A PROPER SEEDBED... 16. IN ACCORDANCE WITH THE STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOILS... 17. MULCHING TO THE STANDARDS IS REQUIRED FOR OBTAINING A CONDITIONAL REPORT OF COMPLIANCE... 18. HYDROSEEDING IS A TWO-STEP PROCESS... 19. THE CONTRACTOR IS RESPONSIBLE FOR KEEPING ALL ADJACENT ROADS CLEAN DURING LIFE OF THE CONSTRUCTION PROJECT... 20. THE DEVELOPER SHALL BE RESPONSIBLE FOR REMEDIATING ANY EROSION OR SEDIMENT PROBLEMS THAT ARISE AS A RESULT OF ONGOING CONSTRUCTION... 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... 23. THE RIDING SURFACE OF ALL UTILITY TRENCHES WITHIN PAVED AREAS SHALL BE 3/4" CLEAN STONE OR BASE PAVEMENT... 24. ALL CONSTRUCTION DEWATERING (TRENCHES, EXCAVATIONS, ETC) MUST BE DONE THROUGH AN INLET OR OUTLET FILTER... 25. ALL SWALES OR CHANNELS THAT WILL RECEIVE RUNOFF FROM PAVED SURFACES MUST BE PERMANENTLY STABILIZED PRIOR TO THE INSTALLATION OF PAVEMENT... 26. NUSA 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...

MERCER COUNTY SOIL CONSERVATION DISTRICT 590 HUGHES DRIVE HAMILTON SQUARE, NJ 08690 609-586-9603



HOPWELL VALLEY ENGINEERING, PC ENGINEERS, PLANNERS & LAND SURVEYORS 1600 Reed Road, Suite A Pennington, NJ 08534-5002 Tel: 609-745-5800 Fax: 609-745-5807 www.hopwellvalleyengineering.com

03/01/23 AS SHOWN AWS RMS 1106627B N/A 1106627B - No Vps SOIL EROSION AND SEDIMENT CONTROL NOTES FOR PALS GROUP HOME LOT 22 BLOCK 46 SITUATE IN HOPEWELL TOWNSHIP, MERCER COUNTY, NEW JERSEY

PRELIMINARY 2 Mar 2023

RUSSELL M. SMITH N.J. PROFESSIONAL ENGINEER NO. 33065 Sheet 6 of 10

Table with 5 columns: NO., DATE, DESCRIPTION OF REVISION, BY, CHK'D

STANDARD FOR TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION

DEFINITION

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.

PURPOSE

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

METHODS AND MATERIALS

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, PREVENTING STREAMS OR OTHER STORMWATER CONVEYANCES.

WHERE APPLICABLE

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

METHODS AND MATERIALS

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 BE DONE IN ACCORDANCE WITH STANDARDS FOR LAND GRADING, P. 19-1.

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.

C. 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.).

I. SITE PREPARATION

A. 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 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. 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 LEGUMES.

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 PREPARED.

C. INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAD LEFT THE SOIL COMPACTED, THE AREA MUST BE RETILLED IN ACCORDANCE WITH THE ABOVE.

D. WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4" INCHES 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 PREPARED.

E. 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 PRODUCING SOILS.

II. SEEDBED PREPARATION

A. UNFORMALLY 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 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. 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 LEGUMES.

B. WORK LIME AND FERTILIZER INTO THE TOPSOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISK, 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 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 PREPARATION. SEE STANDARD FOR MANAGEMENT OF HIGH ACID-PRODUCING SOILS FOR SPECIFIC REQUIREMENTS.

III. SEEDING

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

B. CONVENTIONAL SEEDING. APPLY SEED UNIFORMLY BY HAND, CYCLONE (CENTRIFUGAL) SEED, DRILL OR CULTIPACKER SEEDER. EXCEPT FOR DRILLED, HYDROSEEDER OR CULTIPACKED SEEDINGS, SEED SHALL BE INCORPORATED INTO THE SOIL TO A DEPTH OF 1/4 TO 1/2 INCH, BY RAKING OR DRAGGING. DEPTH OF SEED PLACEMENT MAY BE 1/4 INCH DEEPER ON COARSE TEXTURED SOIL.

C. 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 GERMINATION AND GROWTH. HYDROSEEDING MAY BE USED FOR AREAS TOO STEEP FOR CONVENTIONAL EQUIPMENT TO TRAVERSE OR TOO OBSTRUCTED WITH ROCKS, STUMPS, ETC.

D. 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 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 DETERMINED 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 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 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 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.

o 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 ONE OF THE FOLLOWING:

1) EMULSIFIED ASPHALT - (S5-1, 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 4 FEET OR MORE HIGH. USE 0.075 GAL./ACRE. THESE MATERIALS MAY BE DIFFICULT TO APPLY UNIFORMLY AND WILL DISCOLOR SURFACES.

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

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. 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.

B. PELLETED 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 SEEDBED AREA AND WATERED, FORM A MULCH MAT. PELLETED 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 PELLETED 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

DEFINITION

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

PURPOSE

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.

WHERE APPLICABLE

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

METHODS AND MATERIALS

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 STANDARD FOR LAND GRADING.

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.

II. SEEDBED PREPARATION

A. UNFORMALLY 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 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. 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 LEGUMES.

B. WORK LIME AND FERTILIZER INTO THE TOPSOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISK, 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 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 PREPARATION. SEE STANDARD FOR MANAGEMENT OF HIGH ACID-PRODUCING SOILS FOR SPECIFIC REQUIREMENTS.

III. SEEDING

A. SELECT A MIXTURE FROM TABLE 4-3 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.

1. 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 SEEDBED AREA AND MOWED ONCE.

2. WARM-SEASON MIXTURES ARE GRASSES AND LEGUMES WHICH MAXIMIZE GROWTH AT HIGH TEMPERATURES, GENERALLY 85°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 RESULTS.

3. COOL-SEASON MIXTURES ARE GRASSES AND LEGUMES WHICH MAXIMIZE GROWTH AT TEMPERATURES BELOW 85°F. MANY GRASSES BECOME ACTIVE AT 60°F. SEE TABLE 4-3, MIXTURES 8-20. ADJUSTMENT OF PLANTING 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, DRIP SEEDER, DRILL OR CULTIPACKER SEEDER. EXCEPT FOR DRILLED, HYDROSEEDER 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 COARSE-TEXTURED SOIL.

C. 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 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 DETERMINED 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 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.

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

o 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:

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

C. PELLETED 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 SEEDBED AREA AND WATERED, FORM A MULCH MAT. PELLETED 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 PELLETED MULCH ON THE SEED BED IS EXTREMELY IMPORTANT FOR SUFFICIENT ACTIVATION AND EXPANSION OF THE MULCH TO PROVIDE SOIL COVERAGE.

V. IRRIGATION (WHERE FEASIBLE)

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

VI. TOPDRESSING

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 THOSE INSTANCES, 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 SEEDBED 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

MIX: EARLY SPRING/LATE SUMMER TO EARLY FALL 100% PERENNIAL RYEGRASS RATE: 100 LBS/ACRE	MIX: LATE FALL 100% CEREAL RYEGRASS RATE: 112 LBS/ACRE	MIX: MID-SUMMER 40% PEARL MILLET OR CREEPING RED FESCUE* 20% PERENNIAL RYEGRASS 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

MIX: LAWNS-LOW MAINTENANCE, DROUGHTY & HEAVY TRAFFIC 80% TALL FESCUE TURF TYPE (LOW GROWING VARIETIES)* 10% PERENNIAL RYEGRASS (LOW GROWING VARIETIES) 15% KENTUCKY BLUEGRASS

MIX: LAWNS-QUALITY SUN AND SHADE 20% PERENNIAL RYEGRASS 30% CHEWINGS FESCUE 35% CREEPING RED FESCUE 15% KENTUCKY BLUEGRASS

MIX: SHADE 65% HARD, CHEWINGS, OR CREEPING RED FESCUE* 20% PERENNIAL RYEGRASS 15% PERENNIAL RYEGRASS 10% KENTUCKY BLUEGRASS

MIX: WILDFLOWER MEADOW RATE: 80 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% BIRDSFOOT TREFOIL

MIX: WATERWAYS & WET BASINS RATE: 100 LBS/ACRE 40% SWITCHGRASS 30% CANADA BLUEGRASS OR SMOOTH BROMEGRASS 15% ROUGH BLUEGRASS (SHADE) OR TALL FESCUE 10% ALSIKE CLOVER OR LADINO WHITE CLOVER 10% BIRDSFOOT TREFOIL OR CREEPING FOXTAIL 1% RED TOP

(SHOULD NOT BE MOWED LESS THAN 6 INCHES)

NOTE: 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

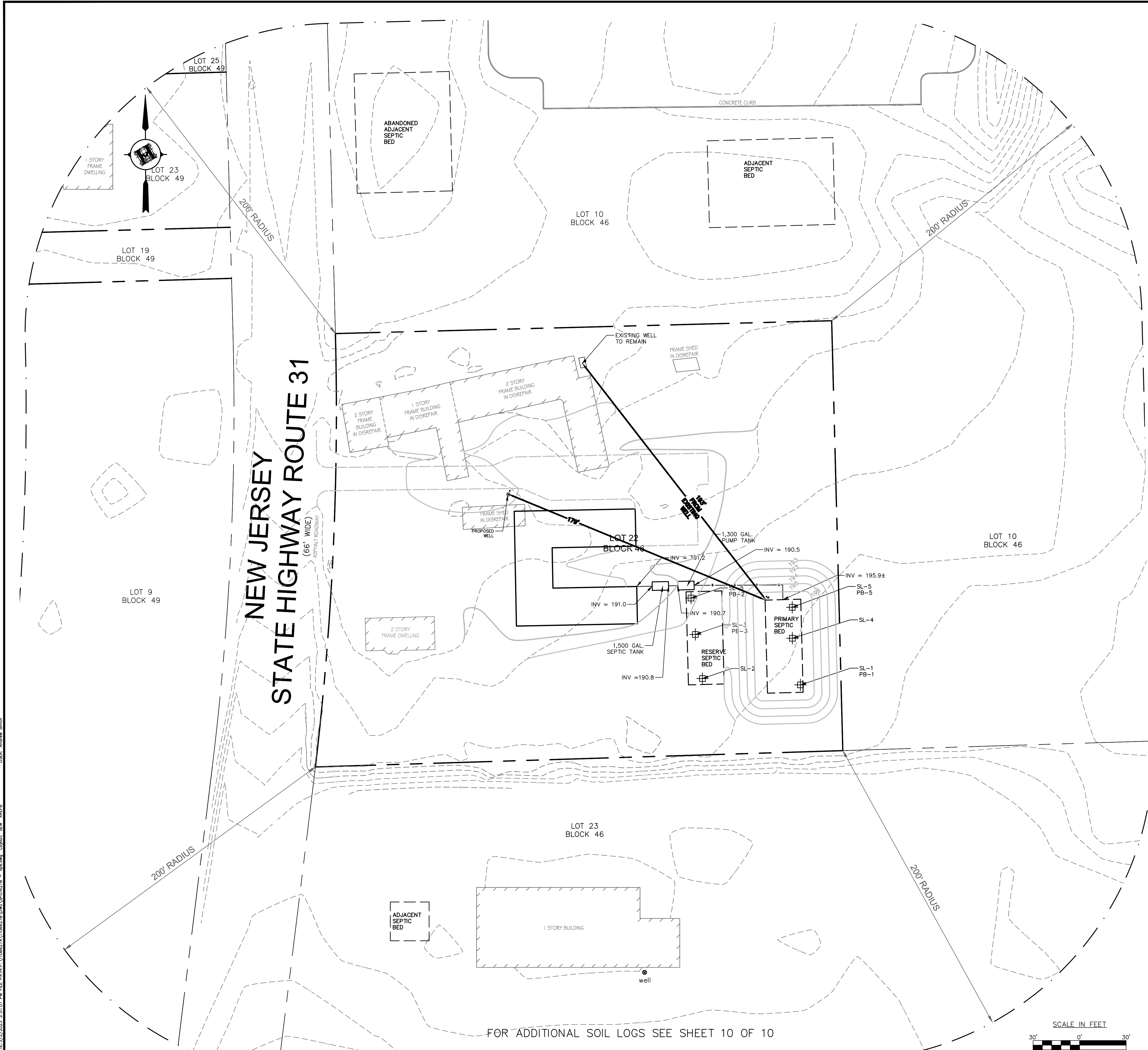
DEFINITION

THE CONTROL OF DUST ON CONSTRUCTION SITES AND ROADS.

PURPOSE

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



COUNTY/MUNICIPALITY MERCER / HOPEWELL
 APPLICATION FOR PERMIT TO CONSTRUCT/ALTER/REPAIR AN INDIVIDUAL SUBSURFACE SEWAGE DISPOSAL SYSTEM
 FORM 2B - SOIL LOG AND INTERPRETATION: Block 146
Lot 22

- Log Number Method (Check one): XX Profile pit Boring
- Soil Log 1219-2 Performed 12/19/05
 Munsell Color Name and Symbol, Estimated Text Class, Estimated Volume %
 Coarse Fragments, If Present; Structure; Moist or Dry Consistence; Mottling
 Top to bottom Abundance, Size and Contrast, If Present
 0 - 10" 10YR 4/3 Dark yellowish brown silt loam topsoil.
 10 - 30" 7.5YR 5/6 Strong brown silty clay loam. Moderate subangular blocky, moist, firm.
 30 - 80" 5YR 4/3 Reddish brown clay loam. Moderate subangular blocky, moist, friable, 15% gravel. Common medium distinct mottles of 10YR 7/1 (light gray) @ 30".
 80 - 132" Non-soil. Fractured red shale, gravel to cobble in size with 15% fillings.
 > 132" Stopped Excavation. Groundwater encountered @ 103" SHWT-30"
- Ground Water Observations:
 Seepage - Indicate Depth 103"
 Pit/Boring Flooded - Depth after Hours
- Soil Limiting Zones (Check Appropriate Categories)
 Fractured Rock Substratum - Depth to Top 84"
 Massive Rock Substratum - Depth to Top
 Excessively Coarse Horizon - Depth Top to Bottom
 Excessively Coarse Substratum - Depth Top to Bottom
 Hydraulically Restrictive Horizon - Depth Top to Bottom 10 - 30"
 Hydraulically Restrictive Substratum - Depth to Top
 Perched Zone of Saturation - Depth to Top
 Regional Zone of saturation - Depth to Top 30"
- Soil Suitability Classification: IIHr, IIWr
- I hereby certify that the information furnished on form 2B of this application is true and accurate. I am aware that the falsification of data is a violation of the Water Pollution Control Act (N.J.S.A. 58:10A et seq.) and is subject to penalties as prescribed in N.J.A.C. 7:14-8.

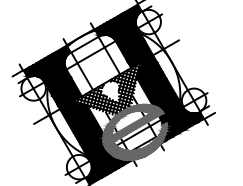
Signature of Site Evaluator [Signature] Date 2/24/08
 Signature of Professional Engineer [Signature] License # 34675

COUNTY/MUNICIPALITY MERCER / HOPEWELL
 APPLICATION FOR PERMIT TO CONSTRUCT/ALTER/REPAIR AN INDIVIDUAL SUBSURFACE SEWAGE DISPOSAL SYSTEM
 FORM 2B - SOIL LOG AND INTERPRETATION: Block 146
Lot 22

- Log Number Method (Check one): XX Profile pit Boring
- Soil Log 1219-4 Performed 12/19/05
 Munsell Color Name and Symbol, Estimated Text Class, Estimated Volume %
 Coarse Fragments, If Present; Structure; Moist or Dry Consistence; Mottling
 Top to bottom Abundance, Size and Contrast, If Present
 0 - 10" 10YR 4/3 Dark yellowish brown silt loam topsoil.
 10 - 24" 7.5YR 5/6 Strong brown silty clay loam. Moderate subangular blocky, moist, firm.
 24 - 84" 5YR 4/3 Reddish brown clay loam. Moderate subangular blocky, moist, friable, 15% gravel. Common medium distinct mottles of 10YR 7/1 (light gray) @ 24".
 84 - 132" Non-soil. Fractured red shale, gravel to cobble in size with 15% fillings.
 > 132" Stopped Excavation. Groundwater encountered @ 90" SHWT-24"
- Ground Water Observations:
 Seepage - Indicate Depth 90"
 Pit/Boring Flooded - Depth after Hours
- Soil Limiting Zones (Check Appropriate Categories)
 Fractured Rock Substratum - Depth to Top 84"
 Massive Rock Substratum - Depth to Top
 Excessively Coarse Horizon - Depth Top to Bottom
 Excessively Coarse Substratum - Depth Top to Bottom
 Hydraulically Restrictive Horizon - Depth Top to Bottom 10 - 24"
 Hydraulically Restrictive Substratum - Depth to Top
 Perched Zone of Saturation - Depth to Top
 Regional Zone of saturation - Depth to Top 24"
- Soil Suitability Classification: IIHr, IIWr
- I hereby certify that the information furnished on form 2B of this application is true and accurate. I am aware that the falsification of data is a violation of the Water Pollution Control Act (N.J.S.A. 58:10A et seq.) and is subject to penalties as prescribed in N.J.A.C. 7:14-8.

Signature of Site Evaluator [Signature] Date 2/24/08
 Signature of Professional Engineer [Signature] License # 34675

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK'D
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www.hopewellvalleyengineering.com

SEWAGE DISPOSAL AND WATER SUPPLY PLAN
FOR
PALS GROUP HOME
LOT 22 BLOCK 46
SITUATE IN
HOPEWELL TOWNSHIP, MERCER COUNTY, NEW JERSEY

DATE: 03/01/23
SCALE: AS SHOWN
DRAWN: AWS
CHECK: RMS
PROJECT: 1106627B
SHEET: SP01627B - Vps

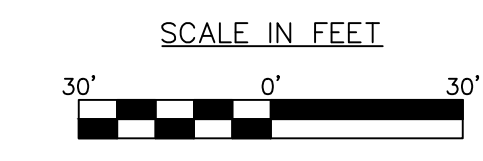
PRELIMINARY
2 Mar 2023

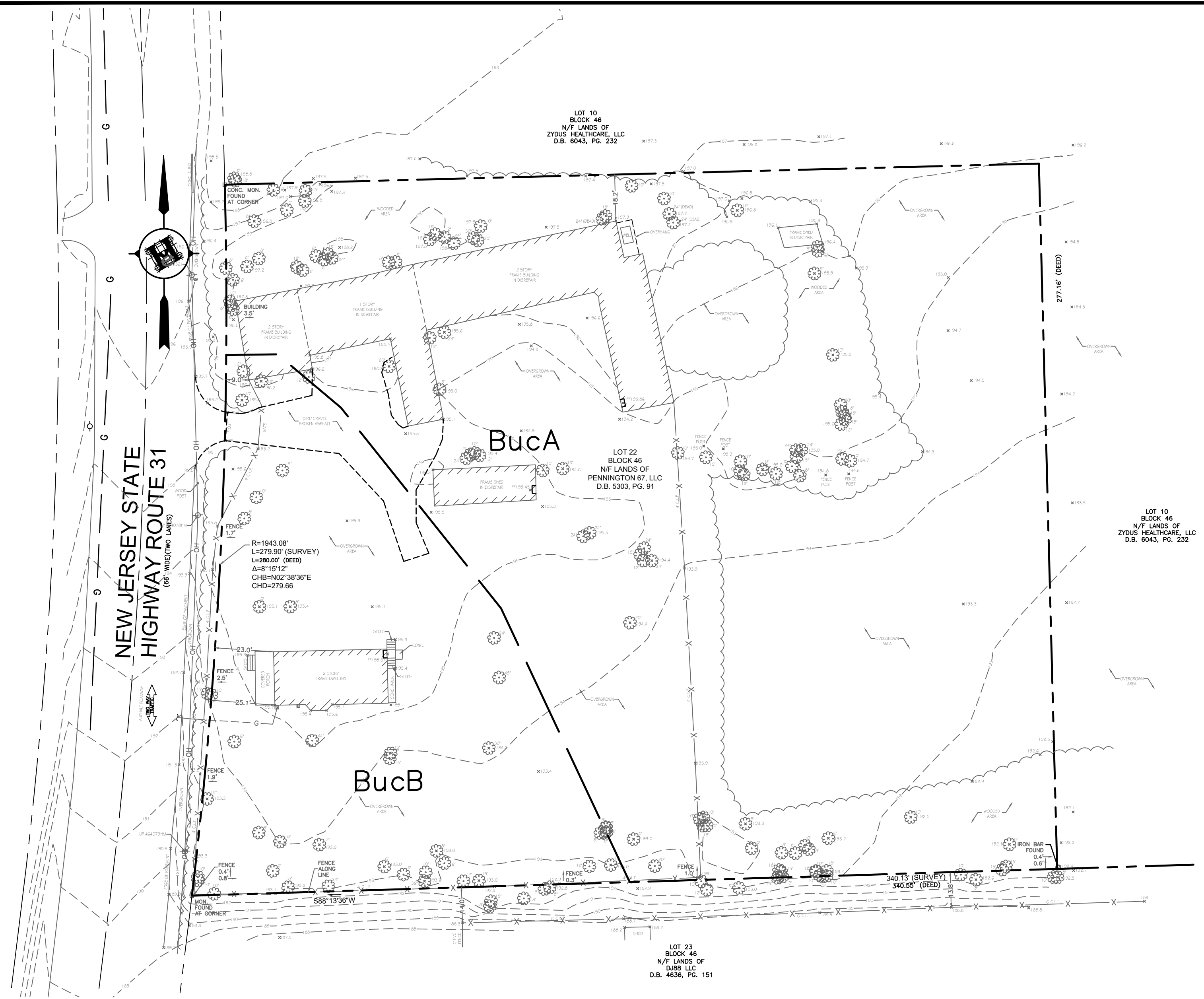
RUSSELL M. SMITH
N.J. PROFESSIONAL ENGINEER NO. 33065

Sheet 8 of 10

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FOR ADDITIONAL SOIL LOGS SEE SHEET 10 OF 10





GEOLOGY
 SEDIMENTARY FORMATIONS
 R1 TRIASSIC
 LOCKATONG

GROUND WATER RECHARGE
 RELATIVE NATURAL RECHARGE
 6 POOR

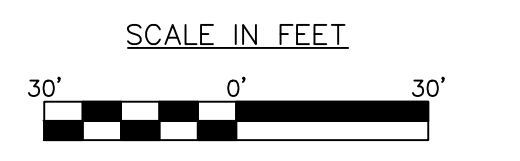
SOILS LEGEND
 BucA = BUCKS SILT LOAM, 0 TO 2 PERCENT SLOPES
 BucB = BUCKS SILT LOAM, 2 TO 6 PERCENT SLOPES

SOIL	DEPTH TO BEDROCK	DEPTH TO SEASONAL HIGH WATER
BucA	2' - 6'	6' - 10'
BucB	2' - 6'	6' - 10'

- CRITICAL AREA SUMMARY**
- 1. SLOPES > 18 PERCENT = 0 AC.
 - 2. 100 YEAR FLOOD HAZARD AREA = 0 AC.
 - 3. HOPEWELL TOWNSHIP STREAM CORRIDOR (WITHIN 150' OF STREAM BANK) = 0 AC.
 - 4. SEASONAL HIGH WATER TABLE < ONE (1) FOOT DEPTH (S.C.S) = 0 AC.
 - 5. GOOD TO EXCELLENT GROUND WATER RECHARGE AREAS = 0 AC.
 - 6. DEPTH TO BEDROCK < 2 FEET = 0 AC.
 - 7. BEECH GROVE CLIMAX VEGETATION = 0 AC.
 - 8. DRCC STREAM CORRIDOR = 0 AC.

REFERENCES:
 1. 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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 www.hopewellvalleyengineering.com

Date: 03/01/23
 Scale: AS SHOWN
 Design: AWS Check: RMS
 PLOT: 1106627B [E]N/A
 PLOT: SP01627B - Vps

ENVIRONMENTAL INVENTORY PLAN
 FOR
PALS GROUP HOME
 LOT 22 BLOCK 46
 SITUATE IN
 HOPEWELL TOWNSHIP, MERCER COUNTY, NEW JERSEY

PRELIMINARY
 2 Mar 2023

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

Sheet 9 of 10

NO.	DATE	DESCRIPTION OF REVISION	BY	CHK'D

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