

MINOR SITE PLAN

PREPARED FOR

PICKLEBALL COURTS

CRESTMONT COUNTRY CLUB

LOT 1.01 BLOCK 174

SITUATED IN

WEST ORANGE TOWNSHIP

ESSEX COUNTY, NEW JERSEY

OWNER/APPLICANT

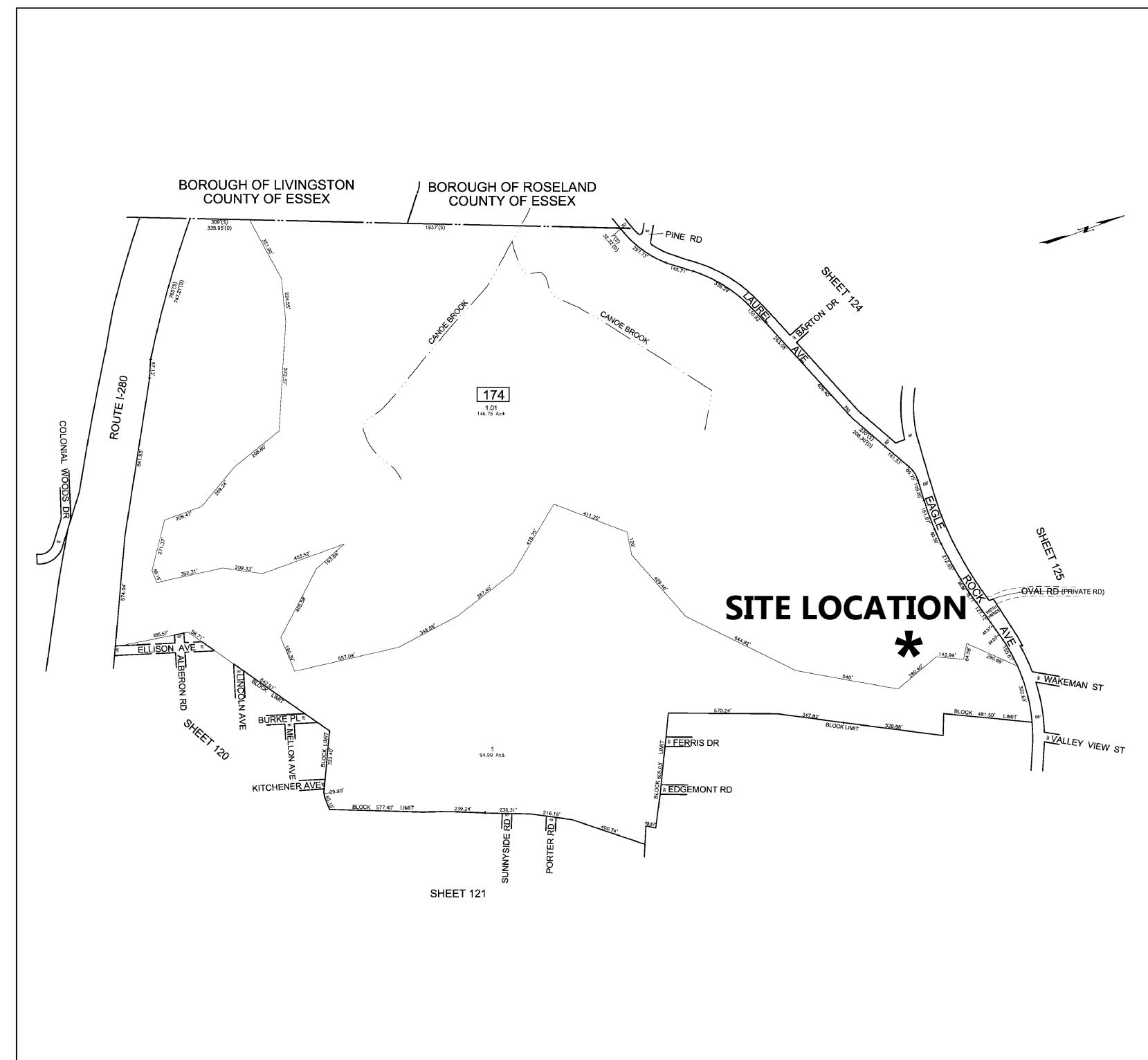
CRESTMONT COUNTRY CLUB
750 EAGLE ROCK AVENUE
WEST ORANGE, NJ 07052
917-374-6270

WEST ORANGE TAX MAP INFORMATION:

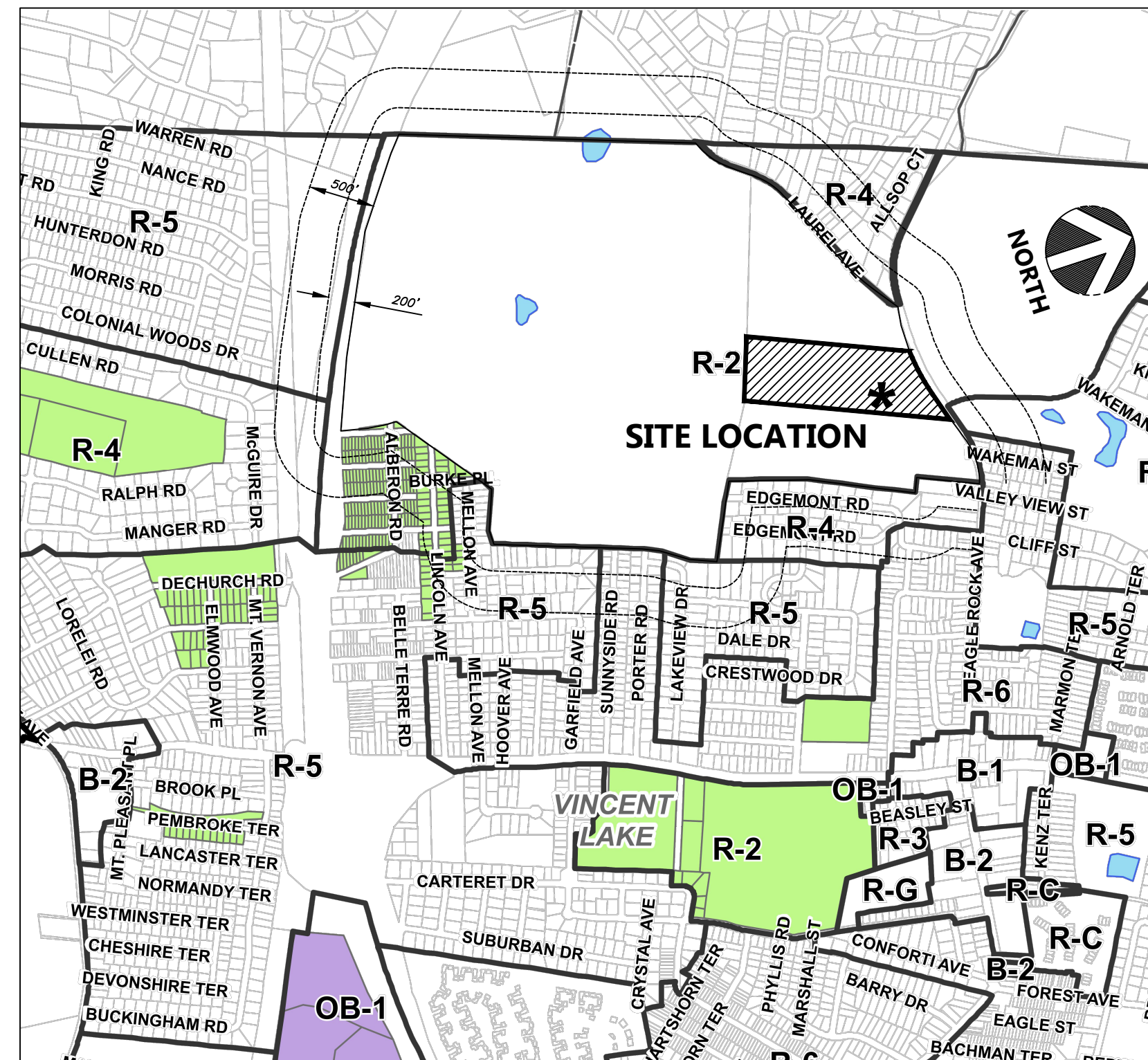
BLOCK _____ 174
LOT _____ 1.01
SHEET _____ 123

LIST OF REQUIRED APPROVALS:

- WEST ORANGE TOWNSHIP PLANNING BOARD
- ESSEX COUNTY PLANNING BOARD
- HUDSON-ESSEX-PASSAIC SOIL CONSERVATION DISTRICT



TAX MAP
1" = 700'



SITE LOCATION MAP
1" = 1,000'

INDEX OF SHEETS

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2	200 FT PROPERTY OWNERS LIST
3	OVERALL PLAN
4	AERIAL PLAN
5	EXISTING CONDITIONS & DEMOLITION PLAN
6	SITE PLAN
7	GRADING, DRAINAGE, UTILITY & SOIL EROSION SEDIMENT CONTROL PLAN
8-9	SOIL EROSION SEDIMENT CONTROL NOTES & DETAILS
10	CONSTRUCTION DETAILS

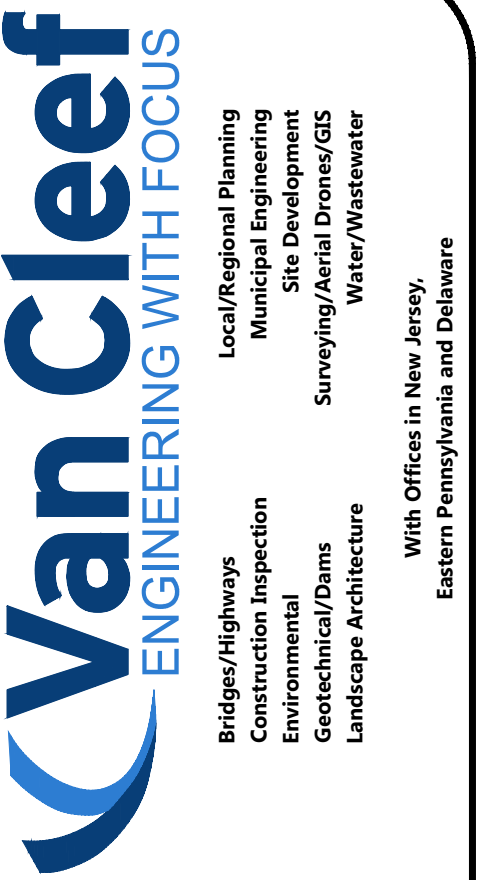
PLANNING BOARD APPROVAL:

APPROVED AT A MEETING OF THE WEST ORANGE PLANNING BOARD HELD ON

CHAIRMAN _____ DATE _____
SECRETARY _____ DATE _____
ENGINEER _____ DATE _____

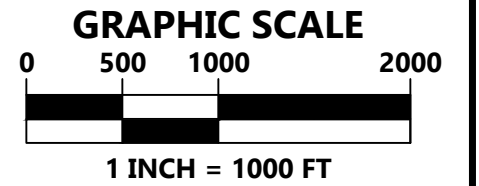


VAN CLEEF ENGINEERING ASSOCIATES, LLC
4 AAA DRIVE, SUITE 103, HAMILTON, NJ 08691
WEB: WWW.VANCLEEFENGINEERING.COM
PHONE (609) 689-1100
CERT. OF AUTHORIZATION NO. 24GA28132300



REV	DESCRIPTION	AUTH	DATE
1	REV FOR PLANNING BOARD SUBMISSION	JAB	05/04/23
2	REV TOWNSHIP ENGINEER REVIEW LETTER	JAB	06/16/23

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1	REV FOR PLANNING BOARD SUBMISSION	JAB	05/04/23
2	REV TOWNSHIP ENGINEER REVIEW LETTER	JAB	06/16/23



PLAN NOTATION
ONLY THOSE PLANS WHICH CONTAIN A DIGITAL IMPRESSION, OR COLORIZED INK SEAL OF THE RESPONSIBLE PROFESSIONAL SHALL BE CONSIDERED VALID. THIS PLAN HAS BEEN SPECIFICALLY PREPARED FOR THE OWNER DESIGNATED HEREON. ANY MODIFICATION, REVISION, DUPLICATION OR USE WITHOUT THE WRITTEN CONSENT OF VAN CLEEF ENGINEERING ASSOCIATES IS PROHIBITED. RELIANCE ON THIS PLAN FOR ANY PURPOSE OTHER THAN THAT WHICH IS INTENDED SHALL BE AT THE SOLE DISCRETION AND LIABILITY OF THE APPLICABLE PARTY.

JAMES A. BASH
NEW JERSEY PROFESSIONAL
ENGINEER NUMBER 24GE052258005
6/16/23
DATE



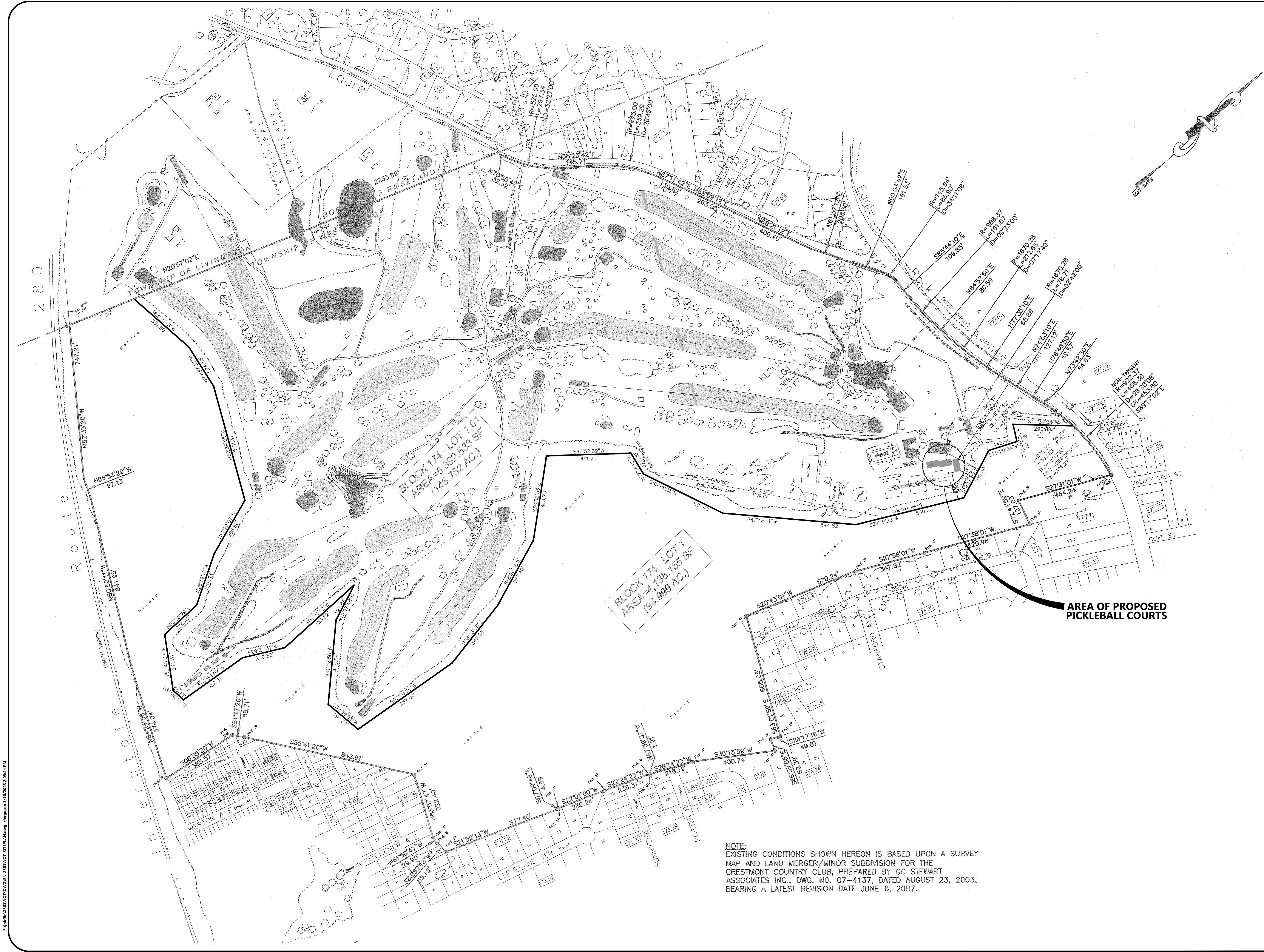
COVER SHEET
FOR

PICKLEBALL COURTS
CRESTMONT COUNTRY CLUB

DATE: JAN. 23, 2023
SCALE: AS NOTED
DESIGNED BY: J.A.B.
DRAWN BY: R.R.F.
CHECKED BY: J.A.B.
JOB NUMBER: 2301WOT

LOT 1.01 BLOCK 174

WEST ORANGE TOWNSHIP
ESSEX COUNTY, NEW JERSEY



NOTE:
EXISTING CONDITIONS SHOWN HEREON IS BASED UPON A SURVEY
MAP AND LAND MERGER/MINOR SUBDIVISION FOR THE
CRESTMONT COUNTRY CLUB, PREPARED BY GC STEWART
ASSOCIATES INC., DWG. NO. 07-4137, DATED AUGUST 23, 2003,
BEARING A LATEST REVISION DATE JUNE 6, 2007.

Van Cleef
ENGINEERING WITH FOCUS

Local/Regional Planning
Municipal Engineering
Construction Inspection
Environmental
Geotechnical/Dams
Landscape Architecture

Bridges/Highways
Site Development
Surveying/Aerial Drones/GIS
Water/Wastewater

REV	DESCRIPTION	DATE
1	REV FOR PLANNING BOARD SUBMISSION	JAB 05/04/23

SERIAL NO. _____

TO LOCATE UNDERGROUND UTILITIES
IF YOU'RE GOING TO DIG, BLAST OR DRILL
THREE (3) WORKING DAYS NOTICE
REMEMBER
IT'S THE LAW!
Know what's below.
Call before you dig.
1-800-272-1000

Dig Safely.

GRAPHIC SCALE

0 100 200 400

1 INCH = 200 FT

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JAMES A. BASH
NEW JERSEY PROFESSIONAL
ENGINEER NUMBER 246852258005

1/23/23
DATE

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CERT. OR AUTHORIZATION NO. 246A28132300

OVERALL PLAN
FOR
**PICKLEBALL COURTS
CRESTMONT COUNTRY CLUB**

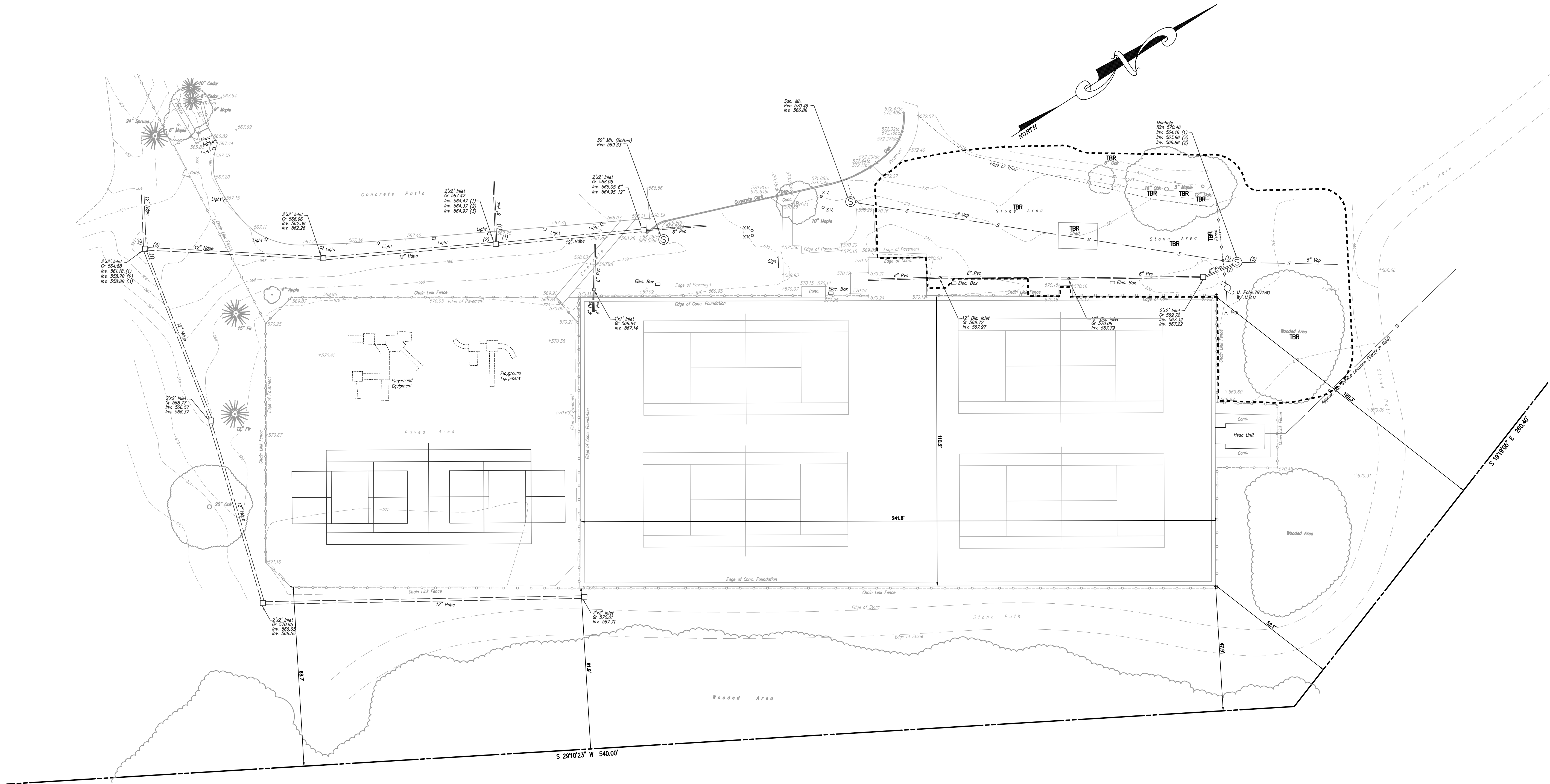
DATE:	JAN. 23, 2023
SCALE:	1"=200'
DESIGNED BY:	J.A.B.
DRAWN BY:	R.R.F.
CHECKED BY:	J.A.B.
JOB NUMBER:	2301WOT

LOT 1.01 BLOCK 174

WEST ORANGE TOWNSHIP
ESSEX COUNTY, NEW JERSEY

03 of 10

P:\garden\2301\WOT\DWG\EN_2301\WOT_5177P-AN.dwg J:\ash J:\ash 6/16/2023 9:42:57 AM



EXISTING CONDITION & DEMOLITION PLAN
SCALE: 1"=20'

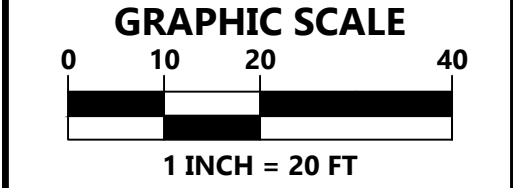
REV/DESCRIPTION	AUTH	DATE
1 PER TOWNSHIP ENGINEER REVIEW LETTER OF 06/16/23	ABC	06/16/23
2 KEY FOR PLANNING BOARD SUBMISSION	AB	05/04/23

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James A. Bash
JAMES A. BASH
NEW JERSEY PROFESSIONAL
ENGINEER NUMBER 24695258005
6/16/23
DATE

Van Cleef
ENGINEERING WITH FOCUS

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PHONE (609) 689-1100
CERT. OF AUTHORIZATION NO. 246A28132300

EXISTING CONDITION & DEMOLITION PLAN
FOR
PICKLEBALL COURTS
CRESTMONT COUNTRY CLUB

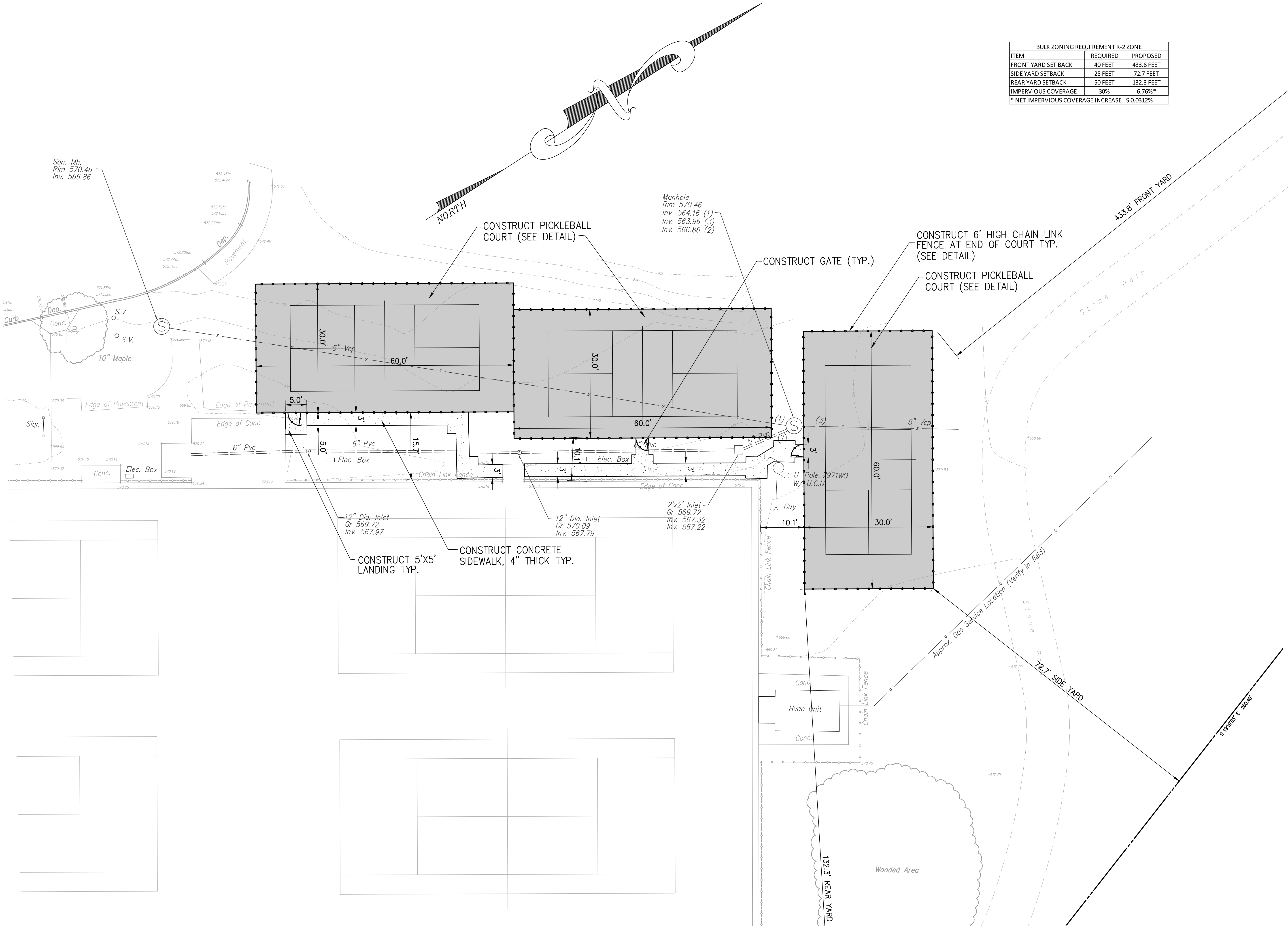
DATE:	JAN. 23, 2023
SCALE:	1"=20'
DESIGNED BY:	J.A.B.
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JOB NUMBER:	2301WOT

LOT 1.01 BLOCK 174

WEST ORANGE TOWNSHIP
ESSEX COUNTY, NEW JERSEY

05 of 10

P:\gdp\13-2301\WOT\DWG\EN-2301\WOT-SEITEP-AN.dwg John 6/16/2023 9:49:27 AM



BULK ZONING REQUIREMENT R-2 ZONE		
ITEM	REQUIRED	PROPOSED
FRONT YARD SET BACK	40 FEET	433.8 FEET
SIDE YARD SETBACK	25 FEET	72.7 FEET
REAR YARD SETBACK	50 FEET	132.3 FEET
IMPERVIOUS COVERAGE	30%	6.76%*
* NET IMPERVIOUS COVERAGE INCREASE IS 0.0312%		

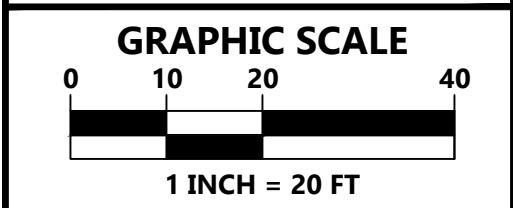
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1	PER TOWNSHIP ENGINEER REVIEW LETTER	JAB	06/16/23
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James A. Bash
JAMES A. BASH
NEW JERSEY PROFESSIONAL
ENGINEER NUMBER 246052258005
6/16/23
DATE

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CERT. OF AUTHORIZATION NO. 246A28132300

SITE PLAN
FOR
**PICKLEBALL COURTS
CRESTMONT COUNTRY CLUB**

DATE: JAN. 23, 2023
SCALE: 1"=20'
DESIGNED BY: J.A.B.
DRAWN BY: R.R.F.
CHECKED BY: J.A.B.
JOB NUMBER: 2301WOT

LOT 1.01 BLOCK 174
WEST ORANGE TOWNSHIP
ESSEX COUNTY, NEW JERSEY

SOIL COMPACTION EXEMPTION NOTICE

AS DETERMINED BY THE STATE POLICY MAP, THE PROJECT AREA FALLS WITHIN THE METROPOLITAN PLANNING AREA (PA1). UNDER EXISTING CONDITIONS, THE SITE IS NOT COVERED IN WOODY VEGETATION NOR REGROWTH. IN ACCORDANCE WITH NEW JERSEY STANDARD FOR LAND GRADING (REVISED 2017), NON WOODY VEGETATED PA1 AREAS FALL UNDER THE SOIL COMPACTION EXEMPTION LIST AS A "URBAN REDEVELOPMENT" AND IS DEFINED BY NJDEP AS "PREVIOUSLY DEVELOPED".

NOTE: THE PROPOSED PICKLEBALL COURTS ARE TO BE CONSTRUCTED ON AN AREA THAT HAS EXISTING AN IMPERVIOUS SURFACE (GRAVEL). THESE IMPROVEMENTS DO NOT INCREASE IMPERVIOUS COVERAGE OR DISTURB MORE THAN 1 ACRE OF LAND. NO MOTOR VEHICLE SURFACES ARE PROPOSED. THIS WORK DOES NOT MEET THE THRESHOLD TO BE CONSIDERED MAJOR DEVELOPMENT AND STORMWATER MANAGEMENT FEATURES ARE NOT WARRANTED.

STABILIZED CONSTRUCTION ENTRANCE

SILT FENCE TYP.

Stone Path

Stone Path

TOPSOIL STOCKPILE

Wooded Area

GRADING, DRAINAGE, UTILITY & SOIL EROSION SEDIMENT CONTROL PLAN

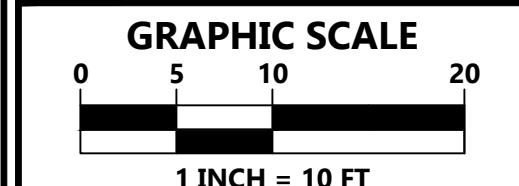
SCALE: 1"=20'

1	REV FOR PLANNING BOARD SUBMISSION	JAB	05/04/23
2	PER TOWNSHIP HEFSCD COMMENTS	JAB	03/17/23
REV/DESCRIPTION	AUTH DATE		

SERIAL NO. _____

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James A. Bash
JAMES A. BASH
NEW JERSEY PROFESSIONAL
ENGINEER NUMBER 24685258005
3/17/23
DATE

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**GRADING, DRAINAGE,
UTILITY & SOIL
EROSION SEDIMENT
CONTROL PLAN**
FOR
**PICKLEBALL COURTS
CRESTMONT COUNTRY
CLUB**

DATE: JAN. 23, 2023
SCALE: 1"=20'
DESIGNED BY: J.A.B.
DRAWN BY: R.R.F.
CHECKED BY: J.A.B.
JOB NUMBER: 2301WOT

LOT 1.01 BLOCK 174
WEST ORANGE TOWNSHIP
ESSEX COUNTY, NEW JERSEY

MANAGEMENT OF HIGH ACID-PRODUCING SOILS

Where Applicable

This practice is applicable to any high acid-producing soil materials. Such materials have been found in the Coastal Plain areas of Burlington, Camden, Cumberland, Gloucester, Mercer, Middlesex, Monmouth, Ocean, Salem and Somerset Counties.

Methods and Materials

1. Limit the excavation area and exposure time when high acid-producing soils are encountered.
2. Topsoil stripped from the site should be stored separately from temporarily stockpiled high acid-producing soils.
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 stockpiling high acid-producing soil material should be stored more than 48 hours 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 high acid-producing soil material at the toe of the slope to contain movement of the stockpiled material. Topsoil shall not be applied to the stockpiles to prevent topsoil contamination with high acid-producing soil.
5. High acid-producing soils with a pH of 4.0 or less or containing iron sulfide (including borrow from cuts or dredged sediments) shall be ultimately placed or buried with limestone applied at the rate of 10 tons per acre (or 450 pounds per 1,000 square feet of surface area) and covered with a minimum of 12 inches of settled soil with a pH of 5.0 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 5.0 or more.
 - b. Disposal areas shall not be located within 24 inches of any surface of a slope or bank, such as terraces, stream banks, ditches, and others, to prevent potential lateral leaching damages.
 - c. Equipment used for movement of high acid-producing soils should be cleaned at the end of each day to prevent spreading of high acid-producing soil materials to other parts of the site, into streams or stormwater conveyances, and to protect machinery from accelerated rusting.
 - d. Non-vegetative erosion control practices (stone trapping pads, strategically placed limestone check dam, sediment barrier, wood chips) should be installed to limit the movement of high acid-producing soils from, around, or off the site.
6. Following burial or removal of high acid-producing soil, topsoiling and seeding of the site (see Temporary Vegetative Cover for Soil Stabilization, Permanent Vegetative Cover for Soil Stabilization, and Topsoiling), monitoring must continue for a minimum of 6 months to ensure there is adequate stabilization and that no high acid-producing soil problems emerge. If problems still exist, the affected area must be treated as indicated above to correct the problem.

MAINTAINING VEGETATION

Methods and Materials

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, seed 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) and typically at a height of 2.5 to 3 inches. Return clippings from mowing (mowing mower) to the turf to reduce the amount of fertilizer needed to maintain the turf by as much as 50%. Some turf mixtures can be mowed as naturalized stands requiring only one (cool season mixtures) or two (warm season mixtures) mowings per year. Mowing of naturalized areas is typically done at heights no less than 4 inches and should not be done between April 1st and July 15th to avoid disturbing ground nesting birds. The large amount of clipping debris generated by mowing naturalized areas will need to be removed and/or dispersed so the vegetation is not smothered. Burning of naturalized areas is another procedure used to manage naturalized turfs. Low maintenance (D) areas may be left unmowed to permit natural succession. See pp. 4-13 footnote #4, Maintenance Levels A, B, C and D in the Standard for Permanent Vegetative Cover, Table 4-3.
2. 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 frequent fertilization but at lower nutrient rates per application.
4. Lime requirement should be determined by soil testing every 2 or 3 years. Fertilization may increase the need for lime. Contact the local county extension office for details on soil testing and fertilization and pest control recommendations online at <http://njres.rutgers.edu/county/>.
5. Fertilization and additions of other soil amendments are not recommended for managing native vegetation such as in the Pinelands National Reserve. See the Standard for Permanent Vegetative Cover for specific requirements in the PNR.
6. Weed invasion may result from abusive mowing and from inadequate fertilizing and liming. Many newly established grasses will not survive if mowed at heights below 2.5 inches and at intervals greater than 7 days. Brush invasion is a common consequence of lack of mowing. The amount of weeds or brush that can be tolerated in any given area depends upon the intended use of the land. Drainage ways are subject to rapid infestation by weed and woody plants. These should be controlled, since they often reduce drainage way efficiency. Control of weeds or brush should be accomplished by using herbicides or mechanical methods.
7. Fire hazard is greater where dry vegetation has 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.

PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION

Methods and Materials

1. **Site Preparation**
 - 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.
2. **Seedbed Preparation**
 - A. Uniformly apply ground limestone and fertilizer to topsoil which has been spread and firmed, according to soil test results and recommendations by Rutgers Co-operative Extension Soil sample mailers are available from the local Rutgers Cooperative Extension offices (http://njres.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.
 - B. Work time 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 preparation. See Standard for Management of High Acid-Producing Soils for specific requirements.
3. **Seeding**
 - 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.
 - B. 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.
 - C. 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.
 - D. Cool-season mixtures are grasses and legumes which maximize growth at temperatures below 85°F. Many grasses become dormant at 65°F or lower. Planting rates for cool-season grasses shall be the amount of PLS as determined by germination testing results.
 - E. Conventional Seeding is performed by applying seed uniformly by hand, cyclone (centrifugal) seeder, drop seeder, drill or catpucker seeder. Except for drilled, hydroseeded or catpucker seedings, seed shall be in soil within 24 hours of seedbed preparation. Seed shall be applied 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.
 - F. After seeding, firming the soil with a corrugated roller will assure good seed-to-soil contact, restore compaction, 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.
 - G. 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.

4. 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 seeding 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 foot 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 couler 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 soil 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 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 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 site.
 - (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 grasses.

Note: All names given above are registered trade names. This does not constitute a recommendation of these products to the exclusion of other products.

Application	PLANTING MIXTURES BY SOIL DRAINAGE CLASS/1 (see Table 4-3)		
	Excessively Drained	Well to Moderately Well Drained	Somewhat Poorly to Poorly Drained
Residential/commercial lots	10, 12, 15	6, 10, 12, 13, 14, 15	16
Pond and channel banks, ditches, berms and dams	2, 5, 6, 10	5, 6, 7, 8, 9, 15	2, 8, 16, 17
Drainage ditches, swales, detention basins	2, 9, 11	2, 7, 9, 11, 12, 17	2, 9, 16, 17
Filter Strips	12	11, 12	11, 12
Grassess waterway, spillways	2, 3, 9, 10, 12	6, 7, 9, 10, 11, 12	2, 9, 11, 12
Recreation areas, athletic fields	5, 12, 15, 18	12, 13, 14, 15, 18	16
Special Problem Sites Steep slopes and banks, roadsides, borrow areas	2, 3, 4, 6	2, 5, 7, 8, 9, 10, 15, 18	2, 9, 10, 11, 12
Sand and gravel pits, Sanitary landfills	1, 2, 3, 4, 6, 20	1, 2, 3, 4, 5, 6, 8, 15, 20	2, 8
Dredged material, spoilbanks, borrow areas	2, 3, 6, 20	2, 3, 6, 11	2, 8
Streambanks & shorelines 2	2, 8, 20, 21a	2, 8, 19b, 20, 21a, 21b	2, 8, 19a, 21a,b,c,d
Utility rights-of-way	3,7,18b	3, 7	8, 9, 17

1. Refer to Soil Surveys for drainage class descriptions.
2. Refer to Soil Bioengineering Standard for additional seed mixtures.
3. Spillways only
4. See Appendix E for description of turf grasses and cultivars

Standard for Soil Erosion and Sediment Control in New Jersey										January 2014			
PERMANENT VEGETATIVE MIXTURES, PLANTING RATES AND PLANTING DATES/1													
SEED MIXTURE 2	PLANTING RATE 7	PLANTING DATES										MAINTENANCE CURVE 8	REMARKS
		O = Optimal Planting period A = Acceptable Planting period											
		PLANT HARDINESS ZONES (see Figure 4-1)											
		Zone 5b, 6a		Zone 6b		Zone 7a, 7b		Zone 7c, 7d		Zone 7e, 7f			
		10/15/15	10/15/15	10/15/15	10/15/15	10/15/15	10/15/15	10/15/15	10/15/15	10/15/15	10/15/15		
1A. For Pinelands National Reserve Seed mixtures see Table 4-4 page 4-17													
1. Switgrass and/or Coastal panicgrass plus or Flupus	15 15 20 20	35 35 40 40	O	O	O	O	O	O	O	O	O	C-D	
2. Dactyloctenium or Switgrass Ryegrass	15 20 40	35 40 40	O	O	O	O	O	O	O	O	O	C-D	
3. Switgrass Dactyloctenium Little Bluestem Sheep fescue plus Perennial poa	15 20 20 10	35 40 40 25	O	O	O	O	O	O	O	O	O	C-D	
4. Switgrass Big Bluestem Little Bluestem Santa Ingegrass Coastal panicgrass	15 20 20 10	35 40 40 25	O	O	O	O	O	O	O	O	O	C-D	
5. Bermudagrass Zoysiagrass (seed) Zoysiagrass (sprigs)	15 30	35 60	O	O	O	O	O	O	O	O	O	A-D	
COOL SEASON SEED MIXTURES													
6. Fine Fescue (Blond) Hard Fescue Chewings fescue Slowing Creeping Red Fescue Kentucky Bluegrass Perennial ryegrass plus White clover (see note at right)	150 45 20 5 5 5 5	3 1 5 5 5 5 5	A	A5	O	A	A5	O	A	A5	O	B-D	
7. Slowing Creeping red fescue Kentucky Bluegrass Perennial ryegrass Ryegrass plus White clover	150 50 20 5 5	3 1 5 5 5	A	A5	O	A	A5	O	A	A5	O	B-D	
8. Tall fescue (broad type) or Slowing Creeping red fescue or Perennial ryegrass Flupus	30 30 30 25	7 7 7 60	O	A6	O	A6	O	A6	O	A6	O	B-D	
9. Dactyloctenium Ryegrass Wild eye (Elymus) Switgrass	20 20 15 25	45 65 35 60	O	O	O	O	O	O	O	O	O	C-D	

Table 4-3 Footnotes:

1. See Appendix B for descriptions of turf grass mixtures and cultivars. The actual amount of warm-season grass mixture used in Table 3 (seed mix 1-7) shall be adjusted to reflect the amount of PLS as determined by germination testing results. No adjustment is required for cool-season grasses (seed mixtures 8-20).
2. Seeding mixtures and/or rates not listed above may be used if recommended by the local Soil Conservation District, Natural Resources Conservation Service, or Rutgers Cooperative Extension may be used if approved by the Soil Conservation District. Legumes (white clover, alfalfa, lespedeza) should be mixed with proper inoculant prior to planting.
3. 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 of the seeded area and mowed once. Grass seed mixture checked by the State Seed Analyst, New Jersey Department of Agriculture, Trenton, New Jersey, will assure the purchaser that the mixture obtained is the mixture ordered, pursuant to the N.J. State Seed Law, N.J.S.A. 4:8-17.13 et seq. O = optimal planting period & = acceptable planting period
4. Maintenance Level:
 - A. Intensive mowing, (2-4 days), fertilization, lime, pest control and irrigation (Examples – high-maintenance lawns, commercial and recreation areas, public facilities).
 - B. Frequent mowing, (4-7 days), occasional fertilization, lime and weed control (Examples – home lawns, commercial sites, school sites).
 - C. Periodic mowing (7-14 days), occasional fertilization and lime (Examples – home lawns, parks).
 - D. Infrequent or no mowing, fertilization and lime the first year of establishment (Examples – roadsides, recreation areas, public open spaces).
5. Summer seedings should only be conducted when the site is irrigated. Mixes including white clover require that at least six weeks of growing season remain after seeding to ensure establishment before freezing conditions.

STANDARD FOR STABILIZATION WITH MULCH ONLY

Where Applicable

This practice is applicable to areas subject to erosion, where the season and other conditions may not be suitable for growing an erosion-resistant cover or where stabilization is needed for a short period until more suitable protection can be applied.

Methods and Materials

1. **Site Preparation**
 - 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 Standards for Land Grading.
 - B. Install needed erosion control practices or facilities such as diversions, grade stabilization structures, channel stabilization measures, sediment basins, and waterways. See Standards 11 through 42.
 - C. **Protective Materials**
 - a. Unrotted small-grain straw, at 2.0 to 2.5 tons per acre, is spread uniformly at 80 to 115 pounds per 1,000 square feet and anchored with a mulch anchoring tool, liquid mulch binders, or netting like twine. Other suitable materials may be used if approved by the Soil Conservation District. The approved rates above have been met when the mulch covers the ground completely upon visual inspection, i.e. the soil cannot be seen below the mulch.
 - b. Synthetic or organic soil stabilizers may be used under suitable conditions and in quantities as recommended by the manufacturer.
 - c. Wood-fiber or paper-fiber mulch at the rate of 1,500 pounds per acre (or according to the manufacturer's requirements) may be applied by a hydroseeder.
 - d. Mulch netting, such as paper jute, excelsior, cotton, or plastic, may be used.
 - e. 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.
2. **Gravel, crushed stone, or slag at the rate of 9 cubic yards per 1,000 sq. ft. applied uniformly to a minimum depth of 3 inches may be used. Size 2 or 3 (ASTM C-33) is recommended.**
3. **Mulch Anchoring** – should be accomplished immediately after placement of hay or straw mulch to minimize loss by wind or water. This may be done by one of the following methods, depending upon the size of the area and steepness of slopes.
 - a. Peg and 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.
 - b. Mulch Nettings – Staple paper, cotton, or plastic nettings over mulch. Use degradable netting in areas to be mowed. Netting is usually available in rolls 4 feet wide and up to 300 feet long.
 - c. Crimper (mulch anchoring couler tool) – A tractor-drawn implement, especially designed to punch and anchor mulch practice surfaces. This practice is limited to areas traversable by a tractor, which must operate on the contour of slopes. Soil penetration should be about 3 to 4 inches. On sloping land, the operation should be on the contour.
4. **Liquid Mulch-Binders**
 - a. Applications should be heavier at edges where wind catches 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 that mixed with water formulates a gel and when applied to mulch under satisfactory curing conditions will form membraned networks of insoluble polymers. The vegetable gel shall be physiologically harmless and not result in a phytotoxic effect or impede growth of turfgrass. Vegetable based gels shall be applied at rates and weather conditions recommended by the manufacturer.
 - (2) Synthetic Binders – High polymer synthetic emulsion, miscible with water when diluted and following application to mulch, drying and curing shall no longer be soluble or dispersible in water. It shall be applied at rates and weather conditions recommended by the manufacturer and remain tacky until germination of grass.

TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION

Where Applicable

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

Methods and Materials

1. **Site Preparation**
 - 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 Standards for Land Grading, pg. 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.).
2. **Seeding 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 Cooperative Extension offices (http://njres.rutgers.edu/county/). Fertilizer shall be applied at the rate of 500 pounds per acre or 11 pounds per 1,000 square feet of 10-20-10 or equivalent with 50% water insoluble nitrogen unless a soil test indicates otherwise. Apply limestone at the rate indicated by soil testing. 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 time and fertilizer into the soil as nearly as practical to a depth of 4 inches with a disc, springtooth harrow, or other suitable equipment. The final harrowing or 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 has left the soil compacted, the area must be retitled in accordance with the above.
 - D. Soils high in sulfides or having a pH of 4 or less refer to Standard for Management of High Acid Producing Soils, pg. 1-1.
3. **Seeding**
 - A. Select seed from recommendations in Table 7-2.

STANDARD FOR PERMANENT STABILIZATION WITH SOIL

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.

Methods and Materials

1. High quality cultivated seed is preferred over native or pasture seed.
2. Sod should be free of broadleaf weeds and undesirable coarse and fine weed grasses.
3. Sod should be of uniform thickness, typically 5/8 inch, plus or minus 1/4 inch, at time of cutting (excludes top growth).
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 pods and rolls or torn and uneven ends will not be acceptable.
5. For droughty sites, a sod of turf-type tall fescue or 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 for droughty sites.
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.
7. **Site Preparation**
 - A. Grade as needed and feasible to permit the use of conventional equipment for liming, fertilizing, incorporation of organic matter, and other soil preparation procedures. 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 inches (unsettled) is required on all sites. See the Standard for Topsoiling for topsoil and amendment requirements.
 - C. Install needed erosion control practices or facilities such as diversions, grade stabilization structures, channel stabilization measures, sediment basins, and waterways.

2. **Soil Preparation**
 - A. Uniformly 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 (http://njres.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 X the rate described above during seedbed preparation and repeat another ½ 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 liming materials to neutralize soil acidity and supply calcium and magnesium to grasses and legumes. Limestone application rates shall be established through soil testing.
 - B. Pulverized dolomitic limestone is preferred for most soils south of the New Brunswick-Trenton line; however, this should be confirmed by soil testing.
 - C. Work time 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 disking operation should be on the general contour. Continue tillage until a reasonably uniform, fine seedbed is prepared.
 - D. Remove from the surface all objects that would prevent good seed to topsoil contact and remove all other debris, such as wire, cable, tree roots, pieces of concrete, clumps, or other unsuitable material.
 - E. Inspect site just before sodding, if traffic has left the soil compacted, the area must be retitled and firmed in accordance with the above.
 3. **Sod Placement**
 - A. 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 6-2 Standards for Soil Erosion and Sediment Control in New Jersey January 2014 work and prevent damage to the soil. During periods of high temperature, lightly irrigate the soil immediately prior to laying the sod.
 - B. Place sod strips with snug, even joints (seams) that are staggered. Open spaces invite erosion.
 - C. 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 to prevent voids which would cause drying of the roots and invasion of weeds.
 - D. 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).
 - E. Surface water control should be diverted from flowing over the face of the slope, but a coping 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.
 - F. Immediately following installation, sod should be watered until water penetrates the soil layer beneath sod to a depth of 1 inch. Maintain optimum water for at least two weeks.
 4. **Topsoiling**
 - A. Topsoil should be applied uniformly to a minimum depth of 4 inches. Fertilizer (water insoluble) are prescribed in Sections 1 and 2 in this Standard, a follow-up topsoiling is not mandatory, except where gross nitrogen deficiency exists in the soil to the extent that turf failure may develop, topsoiling shall then be applied. Topsoil 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 is ameliorated.

SEED SELECTIONS	SEEDING RATE 1 (pounds)		OPTIMUM SEEDING DATE 2 Based on Plant Hardiness Zone 3			OPTIMUM SEED DEPTH (inches)
	Per Acre	Per 1000 Sq. Ft.	ZONE 5b, 6a	ZONE 6b	ZONE 7a, b	
COOL SEASON GRASSES						
1. Perennial ryegrass	100	1.0	3/15-6/1 8/1-9/15	3/1-5/15 8/15-10/1	2/15-5/1 8/15-10/15	0.5
2. Spring oats	86	2.0	3/15-6/1 8/1-9/15	3/1-5/15 8/15-10/1	2/15-5/1 8/15-10/15	1.0
3. Winter Barley	96	2.2	8/1-9/15	8/15-10/1	8/15-10/15	1.0
4. Annual ryegrass	100	1.0	3/15-6/1 8/1-9/15	3/15-6/1 8/1-9/15	2/15-5/1 8/15-10/15	0.5
5. Winter Cereal Rye	112	2.8	8/1-11/1	8/1-11/15	8/1-12/15	1.0
WARM SEASON GRASSES						
6. Pearl millet	20	0.5	6/1-8/1	5/15-8/15	5/1-9/1	1.0
7. Millet (German or Hungarian)	30	0.7	6/1-8/1	5/15-8/15	5/1-9/1	1.0

1 Seeding rate for warm season grass, selections 5 - 7 shall be adjusted to reflect the amount of Pure Line Seed (PLS) as determined by a germination test result. No adjustment is required for cool season grasses.

2 May be planted throughout summer if soil moisture is adequate or seeded area can be irrigated.

3 Plant Hardiness Zone (see figure 7-1)

4 Twice the depth for sandy soils

STANDARD FOR TREE PROTECTION DURING CONSTRUCTION

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, 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.

1. Tree Vigor
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 crooked, 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.

2. Tree Age
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 healthy.

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 leaves, fruit, or are frequently attacked by insects and disease. Tree root systems which do not 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.

4. Resistant to Insects and Diseases

Avoid leaving trees in highly visible areas or 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), Mountain Ash (D), Sassafras (I), Scholartree (D), Redbud (D)

5. Tree Aesthetics
Choose trees that are aesthetically pleasing, exhibiting good shape and form. Avoid leaning, crooked, and mishapen 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 vigorous.

6. Spring and Autumn Coloration
Species differ in fall color. Some are bright red, others orange and yellow. Other species exhibit no autumn color, such as walnut, locust, and sycamore.

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. The hardwoods are more valuable for food.

8. Air Pollution Susceptibility
Tree species vary greatly to susceptibility to air pollution. Symptoms vary from browning on the 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: Baldcypress, Corktree, Amur maple, Kentucky coffee tree, Crabapple, Downy dogwood, Ginkgo (male), Goldenrain tree, Hackberry, Hawthorn, Honeylocust, European hornbeam, Horseshoe vine, 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 coloration in the spring or fall, such trees may not live for a long time and thus may not be worth preserving.

B. Criteria for protecting remaining trees:

1. General mechanical damage – see Tree Protection During Construction Detail 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 beyond the Critical Root Radius see Tree Protection During Construction Detail. Tree root systems commonly extend well beyond the drip line.
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 serious injury should be prescribed by a professional forester or licensed tree expert.
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. No tree paint shall be applied. All cuts shall be made at the outside edge of the branch collar. 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 to avoid future splitting damage.

Note: For more specific data on certain tree characteristics by species, see Table 9.1 of the Standards for Soil Erosion and Sediment Control in New Jersey for 2014, or consult with a Licensed Professional Tree Expert, Soil Conservation District or Rutgers Cooperative Extension.

SOIL EROSION AND SEDIMENT CONTROL NOTES

(To be included on the signed erosion control plan sheet)

1. All soil erosion and sediment control practices on this plan will be constructed in accordance with the "New Jersey Standards for Soil Erosion and Sediment Control" 7th Edition last revised July 2017, effective December 2017. These measures will be installed prior to any major soil disturbance or in their proper sequence and maintained until permanent protection is established.

2. Soil to be exposed or stockpiled for a period of greater than 14 days, and not under active construction, may be required to be temporarily mulched, and seeded or otherwise provided with vegetative cover as per Appendix A3. This temporary cover shall be maintained until such time whereby permanent revegetation is established.

3. Seeding Dates: The following seeding dates are recommended to best establish permanent vegetative cover within most locations in the HEPSCD: Spring - 3/15-5/15 and Fall - 8/15 - 10/1.

4. Sediment fences are to be properly trenched and maintained until permanent vegetative cover is established

5. All storm drainage inlets shall be protected by one of the practices accepted in the Standards, and protection shall remain until permanent stabilization has been established. Storm drainage outlet points shall be protected as required before they become functional.

6. Mulch materials shall be un-rotted small grain straw applied at the rate of 70 to 90 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.

7. All erosion control devices shall be periodically inspected, maintained and corrected by the contractor. Any damage incurred by erosion shall be rectified immediately.

8. The Hudson-Essex-Passaic Soil Conservation District will be notified in writing at least 48 hours prior to any soil disturbing activities. Fax - (862) 333-4507 OR email - INFORMATION@HEPSCD.ORG

9. The applicant must obtain a District issued Report-of-Compliance prior to applying for the Certificate of Occupancy or Temporary Certificate of Occupancy from the respective municipality, NJ - DCA or any other controlling agency. Contact the District at 862-333-4505 to request a Final Inspection, giving advanced notice upon completion of the revegetation measures. A performance deposit may be posted with the District when winter weather or snow cover prohibits the proper application of seed, mulch, fertilizer or hydro-seed.

10. Paved roadways must be kept clean at all times. Do not utilize a fire or garden hose to clean roads unless the runoff is directed to a properly designed and functioning sediment basin. Water pumped out of the excavated areas contains sediments that must be removed prior to discharging to receiving bodies of water using removable pumping stations, sump pits, portable sedimentation tanks and/or silt control bags.

11. All surfaces having lawn or landscaping as final cover are to be provided topsoil prior to re-seeding, sodding or planting. A depth of 5.0 inches, firm in place, is required, as per the Standards for Topsoiling and Land Grading, effective December 2017.

12. All plan revisions must be submitted to the District for proper review and approval.

13. A crushed stone wheel cleaning tracking-pad is to be installed at all site exits using 2 1/2" - 1" crushed angular stone (ASTM 2 or 3) to a minimum length of 50 feet and minimum depth of 6". All driveways must be provided with crushed stone until paving is complete.

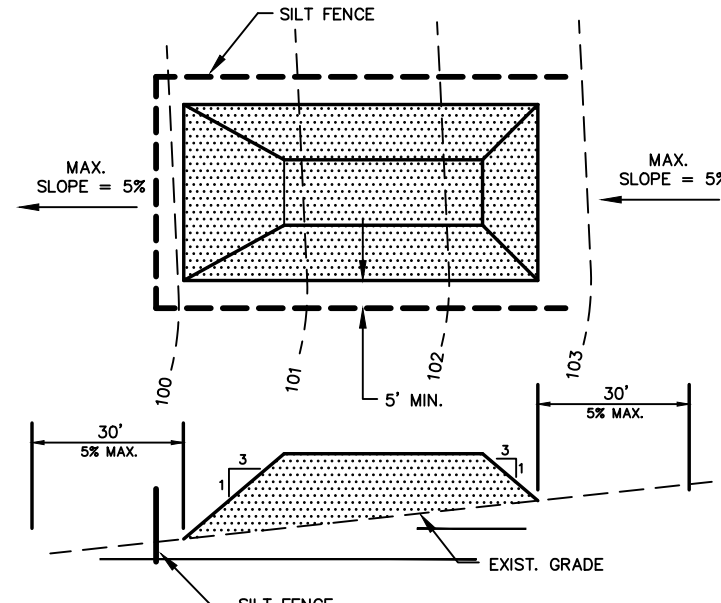
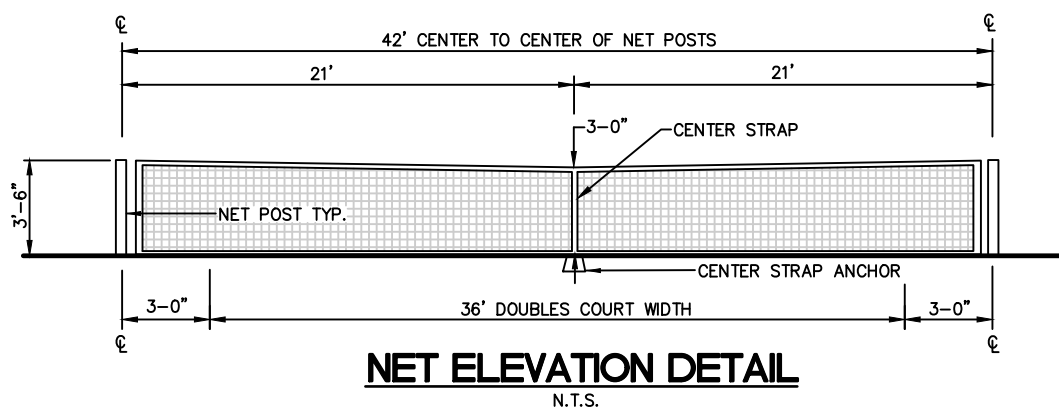
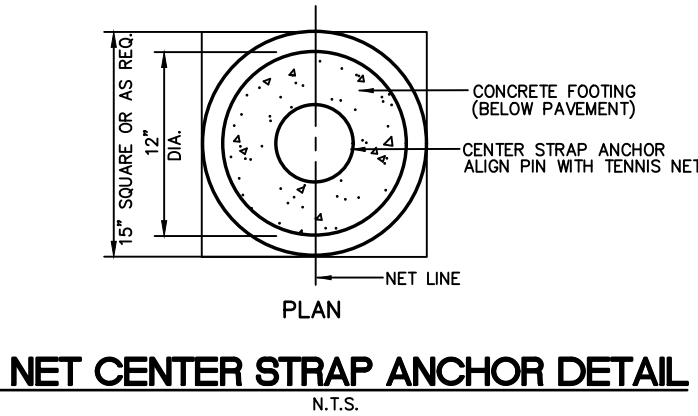
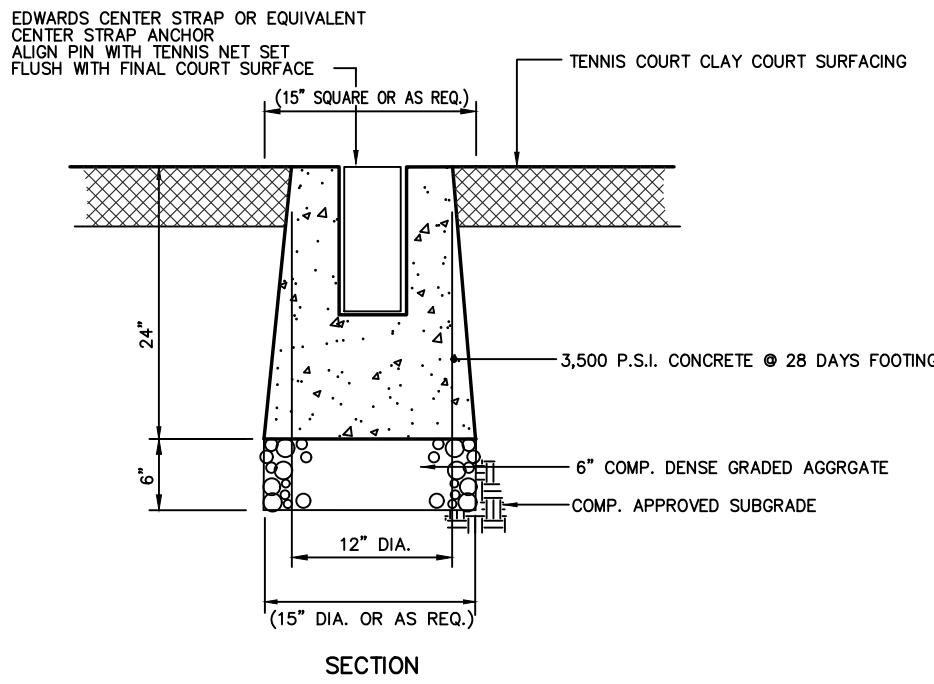
14. Steep slopes incurring disturbance may require additional stabilization measures. These "special" measures shall be designed by the applicant's engineer and be approved by the Soil Conservation District.

15. The Hudson-Essex-Passaic Soil Conservation District shall be notified, in writing, for the sale of any portion of the project or for the sale of individual lots. New owners' information shall be provided. Additional measures deemed necessary by District officials shall be implemented as conditions warrant.

<http://hepscoi.nj.org>
HEPSCD251SESCNOTES_7THEDREV2017.DOC

SEQUENCE OF CONSTRUCTION

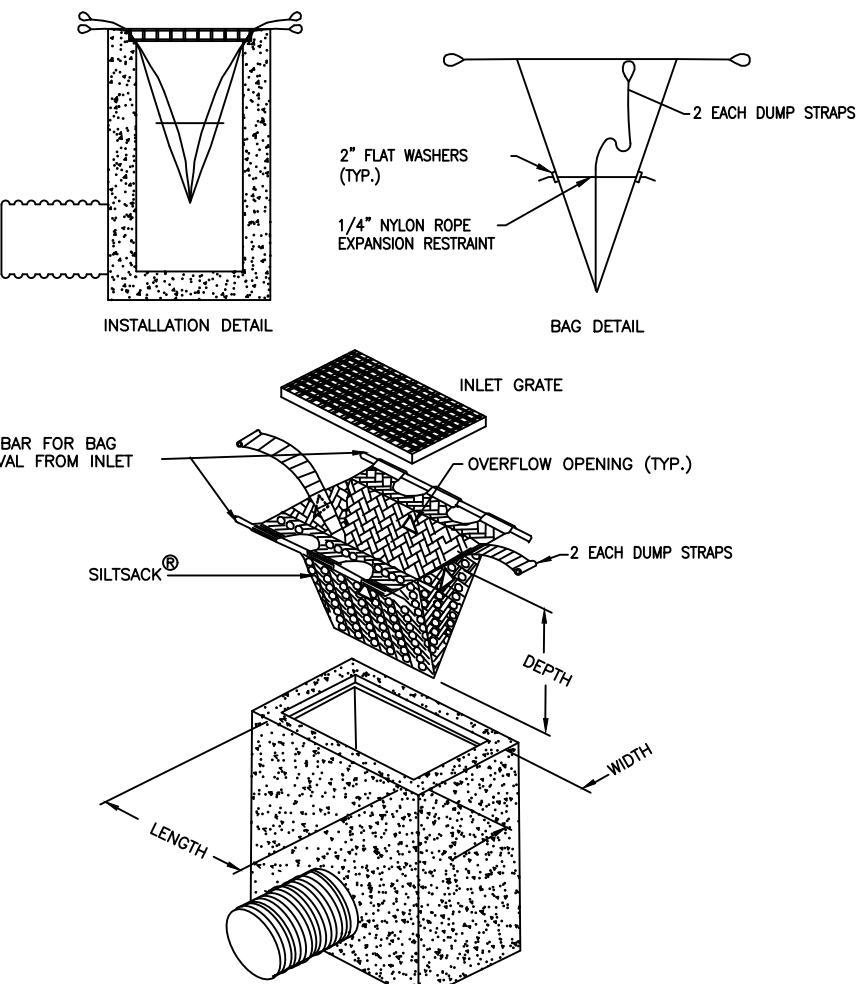
1. INSTALL ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON PLANS.
2. CLEAR AND GRUB ALL AREAS IN ACCORDANCE WITH THE LIMITS OF DISTURBANCE AS SHOWN ON THE SOIL EROSION AND SEDIMENT CONTROL PLAN. IMMEDIATELY REMOVE DEBRIS FROM SITE.
3. STRIP, STOCKPILE AND STABILIZE TOPSOIL AT LOCATIONS AS SHOWN ON PLANS.
4. ROUGH GRADE COURT SUBGRADE.
5. INSTALL SUBBASE IF REQUIRED BY PROOF ROLL. INSTALL BITUMINOUS STABILIZED BASE.
6. INSTALL F.A.B.C. TOP COURSE PAVING & COURT SURFACE.
7. INSTALL FENCE AND GATE AROUND NEW TENNIS COURT
8. APPLY SURFACE, PAINT AND STRIPING WITH NEW NET, ANCHOR AND POSTS
9. REMOVE AND REPLACE ALL BROKEN CURB, SIDEWALK AND DISTRESSED PAVEMENT.
10. STABILIZE ANY REMAINING DISTURBED AREAS.
11. FINE GRADE AND STABILIZE ALL DISTURBED AREAS IN ACCORDANCE WITH THE MINIMUM STABILIZATION REQUIREMENTS APPLY 5 INCHES OF TOPSOIL WHERE APPLICABLE.
12. REMOVE ALL SOIL EROSION AND SEDIMENT CONTROL DEVICES.



- NOTES:
1. PLACE STOCKPILES AT LOCATIONS AS SHOWN ON THE SOIL EROSION AND SEDIMENT CONTROL PLAN.
 2. ALL SIDE SLOPES SHALL BE 3 TO 1 OR FLATTER.
 3. STOCKPILE SHALL RECEIVE A VEGETATIVE COVER IN ACCORDANCE WITH STABILIZATION REQUIREMENTS.
 4. SILT FENCE SHALL BE INSTALLED AS DETAILED HEREON.

TOPSOIL STOCKPILE

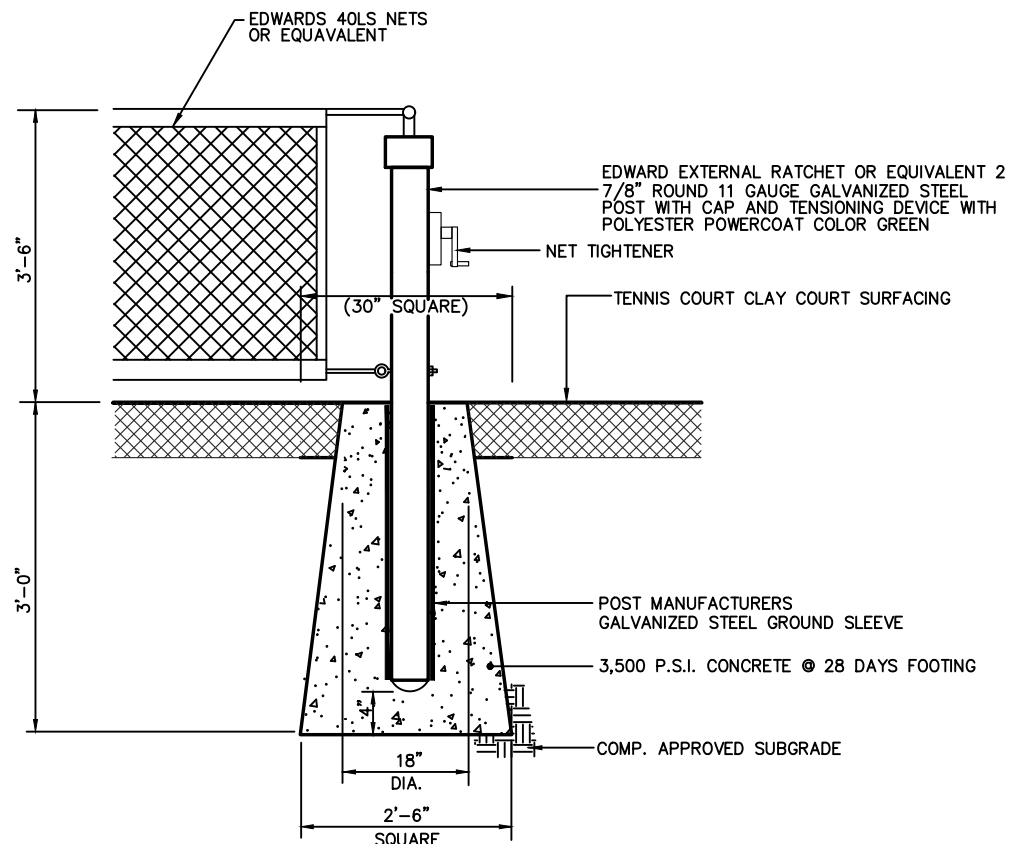
NOT TO SCALE



- NOTES:
1. INLET FILTER BAGS SHOULD BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT.
 2. FILTER BAGS SHOULD BE CLEANED AND/OR REPLACED WHEN THE BAG IS 1/2 FULL.
 3. DAMAGED FILTER BAGS SHOULD BE REPLACED.
 4. NEEDED REPAIRS SHOULD BE INITIATED IMMEDIATELY AFTER THE INSPECTION.

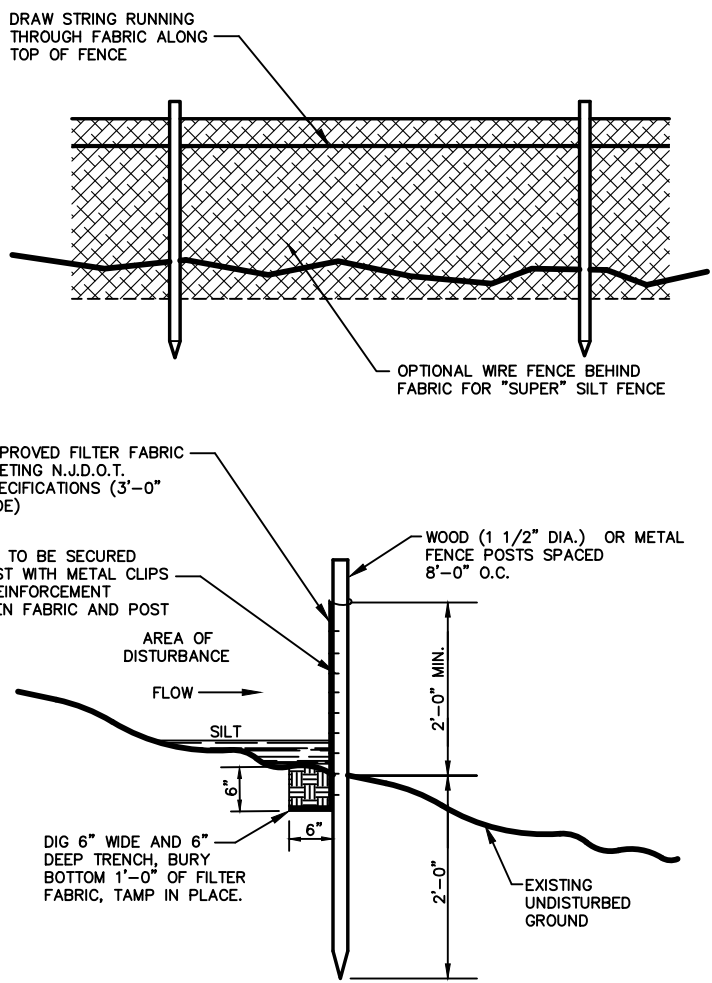
FILTER BAG INLET PROTECTION

N.T.S.



SECTION VIEW NET POST DETAIL

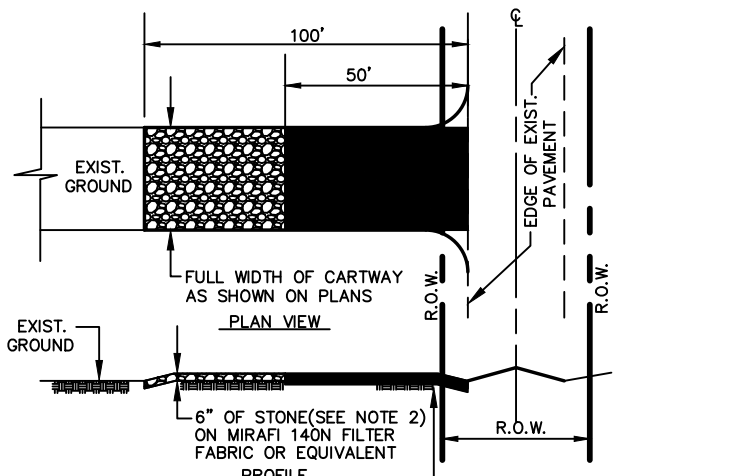
N.T.S.



- NOTES:
1. PLACE SILT FENCE AT LOCATIONS AS SHOWN ON THE SOIL EROSION AND SEDIMENT CONTROL PLAN.
 2. THE SLOPE OF THE LAND FOR AT LEAST 30 FEET ADJACENT TO ANY SILT FENCE SHALL NOT EXCEED 5% IF SLOPE EXCEEDS 5% SILT FENCE SHALL BE BACKED UP WITH SNOW FENCE.
 3. SILT FENCE SHALL BE INSTALLED SO WATER CANNOT BYPASS THE FENCE AROUND ITS ENDS.
 4. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE AS PROMPTLY AS POSSIBLE.
 5. SILT FENCE SHALL BE REMOVED WHEN CONTRIBUTORY DRAINAGE AREA HAS BEEN STABILIZED IN AN APPROVED FASHION.

SILT FENCE WITH SUPER SILT FENCE OPTION

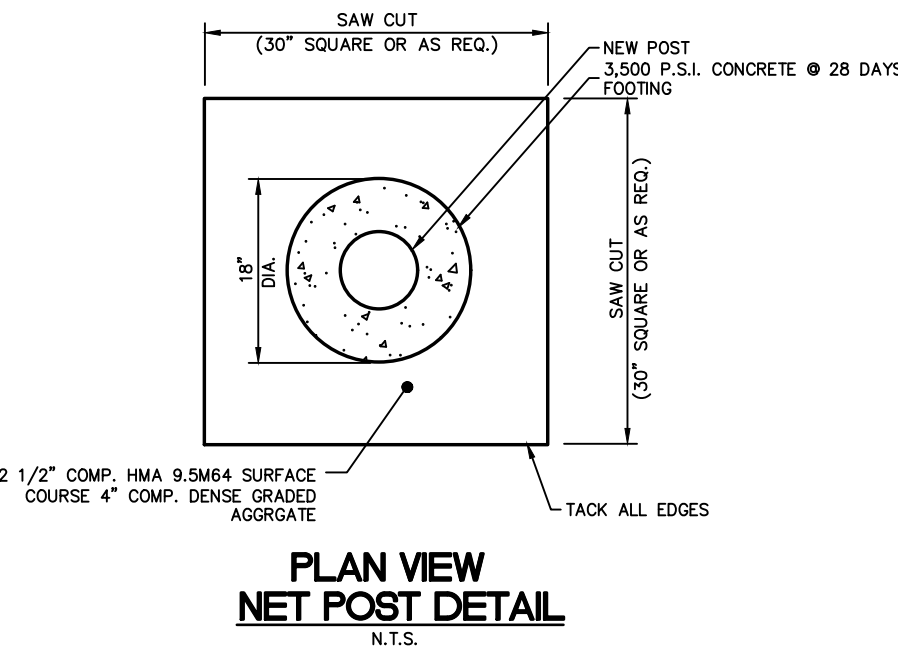
NOT TO SCALE



- 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" CLEAN WASHED CRUSHED STONE.
 3. THE THICKNESS OF THE STAB. CONST. ENT. SHALL NOT BE LESS THAN 6".
 4. THE WIDTH AT THE EXIST. PAVEMENT SHALL NOT BE LESS THAN THE FULL WIDTH OF POINT 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 OF ANY MEASURE USED TO TRAP SEDIMENT.
 6. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO THE PUBLIC ROADWAY MUST BE REMOVED IMMEDIATELY.
 7. WHERE TRACKING OF SOIL ONTO ROADWAYS IS A CONTINUOUS OCCURRENCE, ALL CONTRACTORS, BOTH SITE AND DWELLING CONTRACTORS, SHALL BE REQUIRED TO BROOMSWEEP THE ROADWAY AT TWO-HOUR INTERVALS MINIMUM AND PRIOR TO LEAVING THE CONSTRUCTION SITE AT THE DAY END.
 8. WHERE SLOPE OF THE ACCESS ROAD EXCEEDS 5% A STABILIZED BASE OF OT MIX ASPHALT BASE COURSE HMA19M64 SHALL BE INSTALLED. THICKNESS OF BASE COURSE TO BE PRESCRIBED BY THE LOCAL MUNICIPALITY.

STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE



PLAN VIEW NET POST DETAIL

N.T.S.

REFERENCE :

"STANDARD FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY" ADOPTED FEBRUARY 2014 BY THE NEW JERSEY STATE SOIL CONSERVATION COMMITTEE.

REV	DESCRIPTION	AUTH	DATE
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SERIAL NO. _____

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THREE (3) WORKING DAYS NOTICE
REMEMBER
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JAMES A. BASH
NEW JERSEY PROFESSIONAL
ENGINEER NUMBER 246052258005
1/23/23
DATE

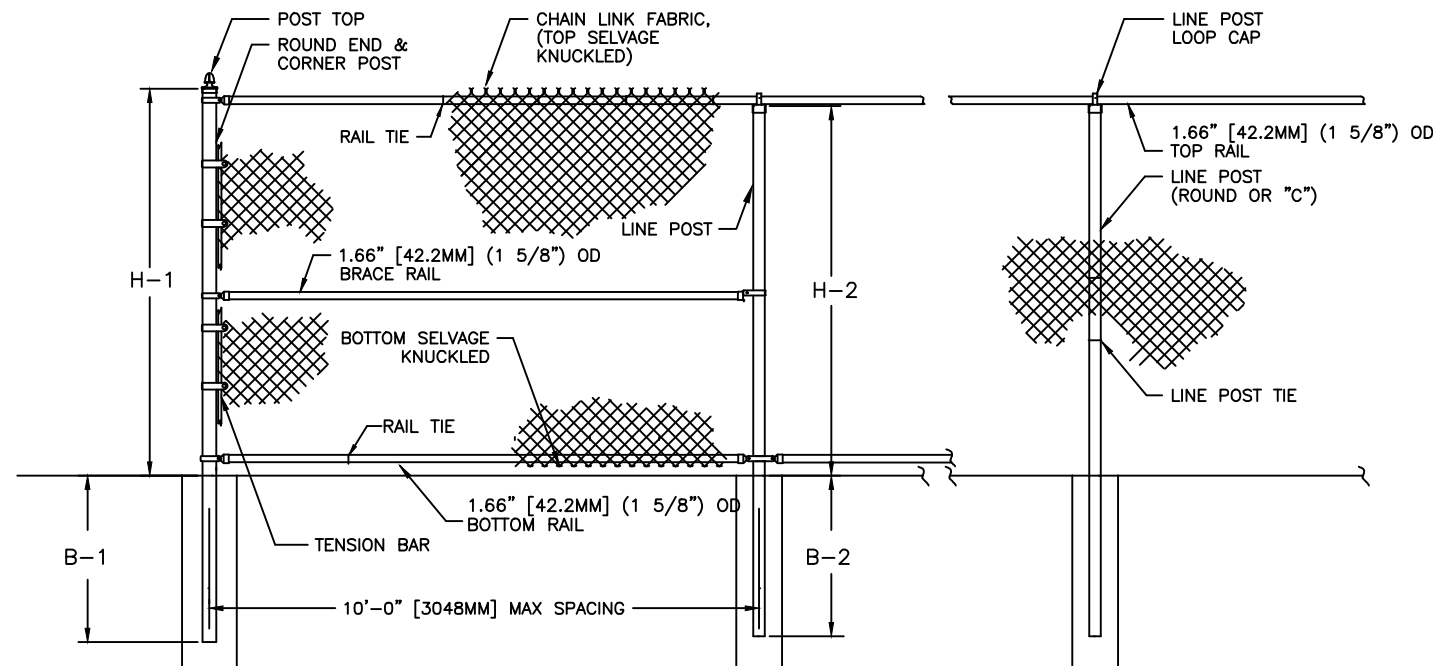
SOIL EROSION
SEDIMENT CONTROL
NOTES & DETAILS
FOR
PICKLEBALL COURTS
CRESTMONT COUNTRY
CLUB

DATE:	JAN. 23, 2023
SCALE:	N.T.S.
DESIGNED BY:	J.A.B.
DRAWN BY:	R.R.F.
CHECKED BY:	J.A.B.
JOB NUMBER:	2301WOT

LOT 1.01 BLOCK 174

WEST ORANGE TOWNSHIP
ESSEX COUNTY, NEW JERSEY

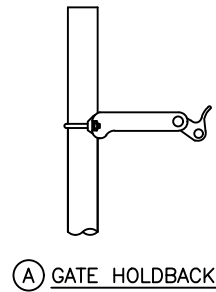
FENCE HEIGHT NOMINAL HEIGHT	END & CORNER POSTS			LINE POSTS		
	B-1 BAR LENGTH	H-1 HEIGHT ABOVE GRADE	POST DIA.	B-2 BAR LENGTH	H-2 HEIGHT ABOVE GRADE	POST DIA.
6'-0" [1829MM]	9'-0" [2743MM]	6'-0 5/8" [1845MM]	2 3/2"	8'-8" [2642MM]	5'-8 7/8" [1749MM]	2 1/2"



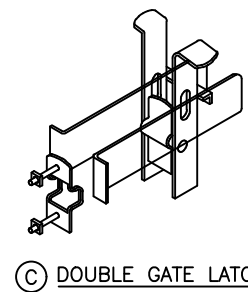
FENCE SECTION ELEVATION - ROUND END POSTS

- NOTES:
1. METRIC DIMENSIONS ARE NOMINAL EQUIVALENTS TO U.S. DIMENSIONS.
 2. ALL POSTS, FABRIC AND HARDWARE TO BLACK VINYL COATED.
 3. SEE SPECIFICATIONS FOR FOOTING AND POST SPACING DIMENSIONS

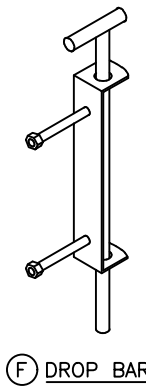
TYPICAL HIGH FENCE
ROUND END POSTS, WITH TOP RAIL &
WITHOUT BARBED WIRE



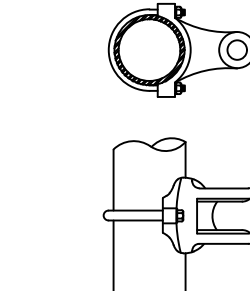
A GATE HOLDBACK



C DOUBLE GATE LATCH



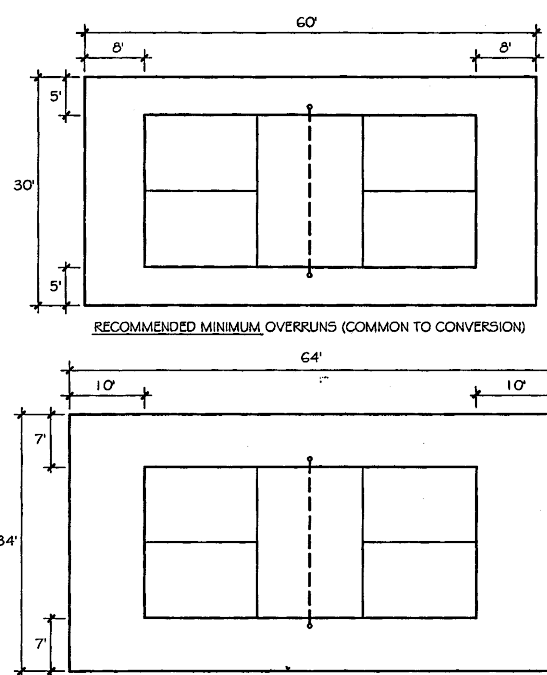
F DROP BAR



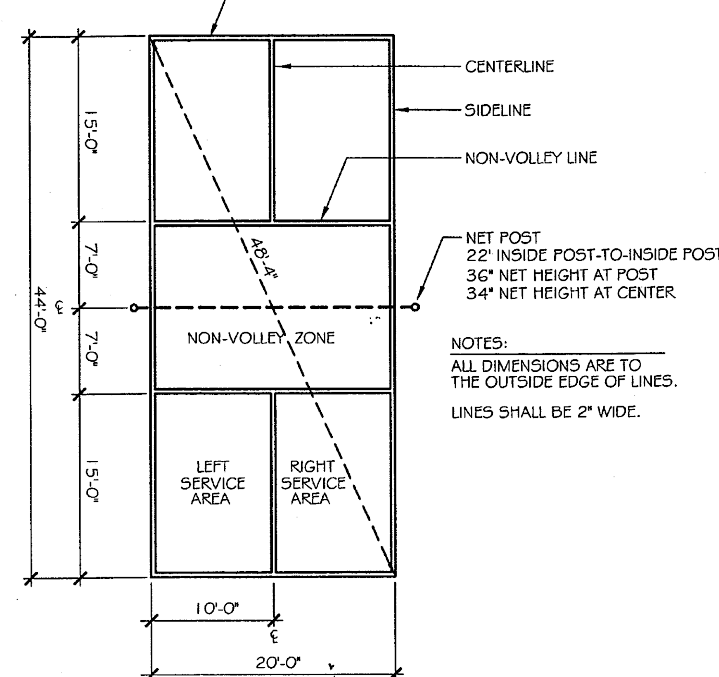
D ROUND POST HINGE
FOR 3" [76MM], 4" [102MM],
6 5/8" [168MM], 8 5/8" [219MM] AND
10 3/4" [273MM] OD POSTS

1. METRIC DIMENSIONS ARE NOMINAL EQUIVALENTS TO U.S. DIMENSIONS.
2. SPECIFICATIONS SHOWN CAN BE CHANGED BY WATER-WALCO ONLY.

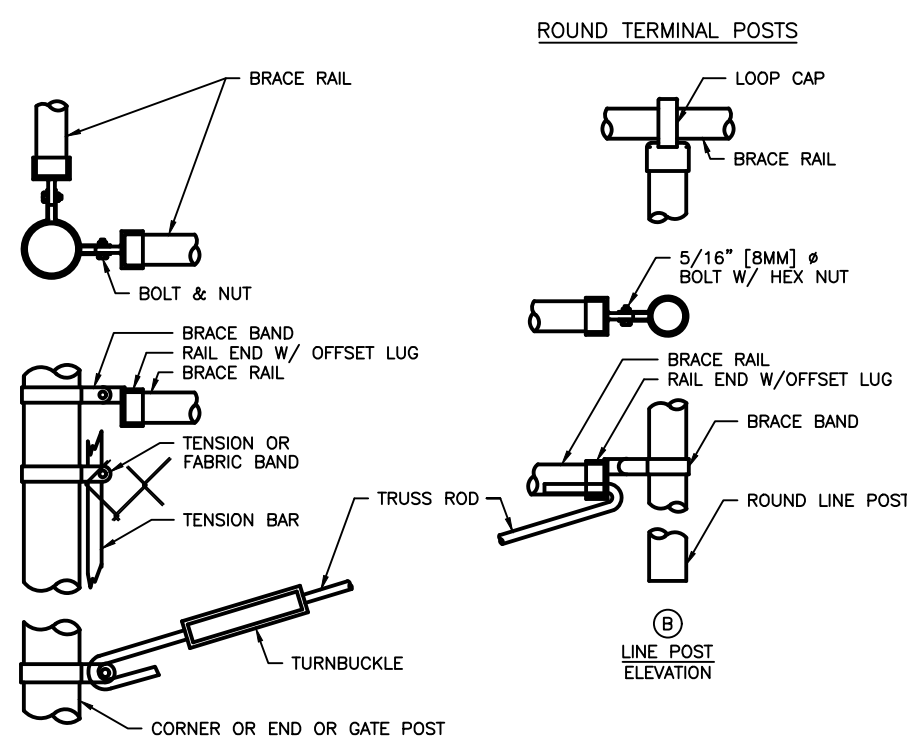
SWING GATE HARDWARE
NOT TO SCALE



PICKLEBALL COURT OVERRUNS
NOT TO SCALE



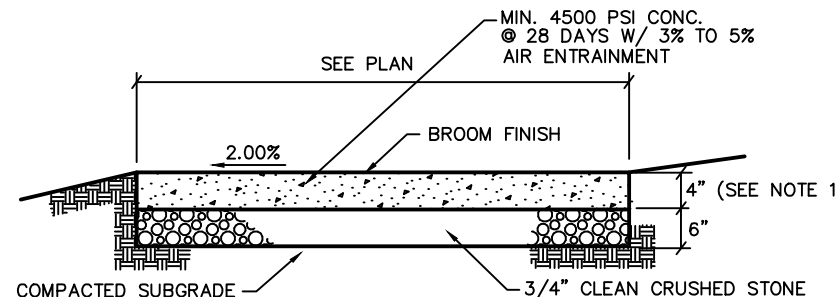
PICKLEBALL
COURT - PLAYING LINE LAYOUT
NOT TO SCALE



END, CORNER, OR GATE POST
ELEVATION

- NOTES:
1. METRIC DIMENSIONS ARE NOMINAL EQUIVALENTS TO U.S. DIMENSIONS.
 2. ALL POSTS, FABRIC AND HARDWARE TO BLACK VINYL COATED.
 3. ALL MATERIAL TO CONFORM TO FEDERAL SPEC 88-1-1910 (1-25-74).
 4. ALL GALVANIZED FITTINGS TO CONFORM TO ASTM-A153.

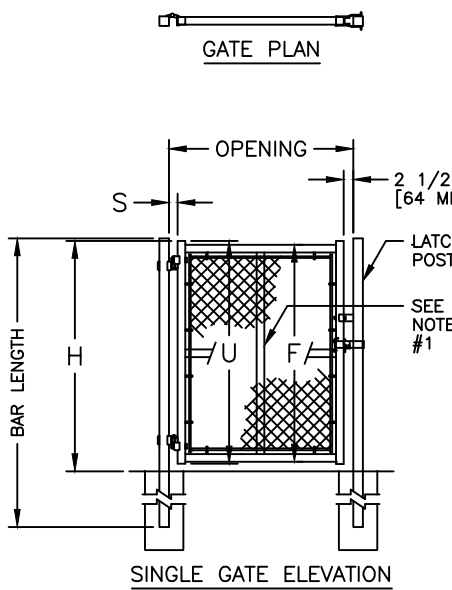
TYPICAL HIGH FENCE
ROUND POST DETAILS



- NOTES:
1. AT DRIVEWAY CROSSINGS, SIDEWALK SHALL BE 6" THK. AND SHALL CONTAIN NO. 10 6" X 6" WIRE MESH 2' UP FROM THE BOTTOM OF THE SIDEWALK.
 2. THE TOWNSHIP ENGINEER SHALL APPROVE ALL SUBGRADES PRIOR TO THE POURING OF ANY CONCRETE.
 3. EXPANSION JOINTS SHALL BE PROVIDED AT 20' (MAX.) INTERVALS JOINTS SHALL BE FILLED WITH 1/2" BIT. EXPANSION JOINT FILLER.
 4. ALL SIDEWALK THAT IS BROKEN, CRACKED OR OUT OF ALIGNMENT SHALL BE REPLACED PRIOR TO ACCEPTANCE.
 5. PROVIDE HALF DEPTH CONTRACTION JOINTS EVERY 4 FEET.
 6. ALL EXPOSED CONC. SURFACES TO BE TREATED WITH LUMISEAL PLUS CURE AND SEAL COMPOUND OR EQUIVALENT PER MANUFACTURER'S INSTRUCTIONS.

CONCRETE SIDEWALK

NO SCALE

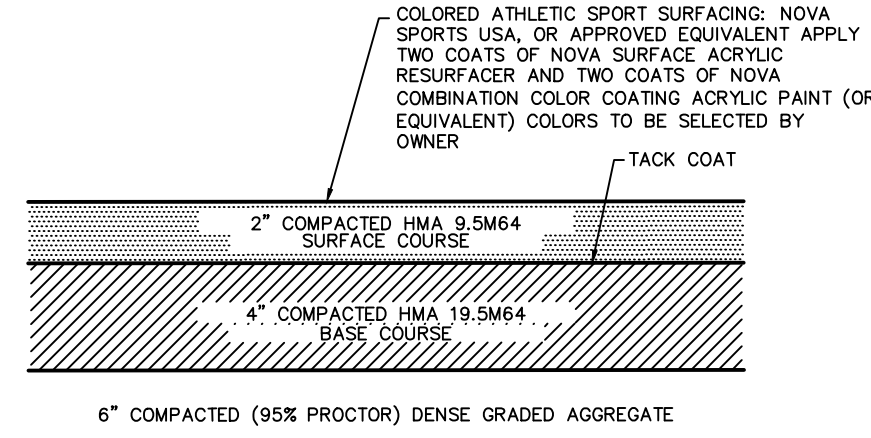


SINGLE GATE ELEVATION

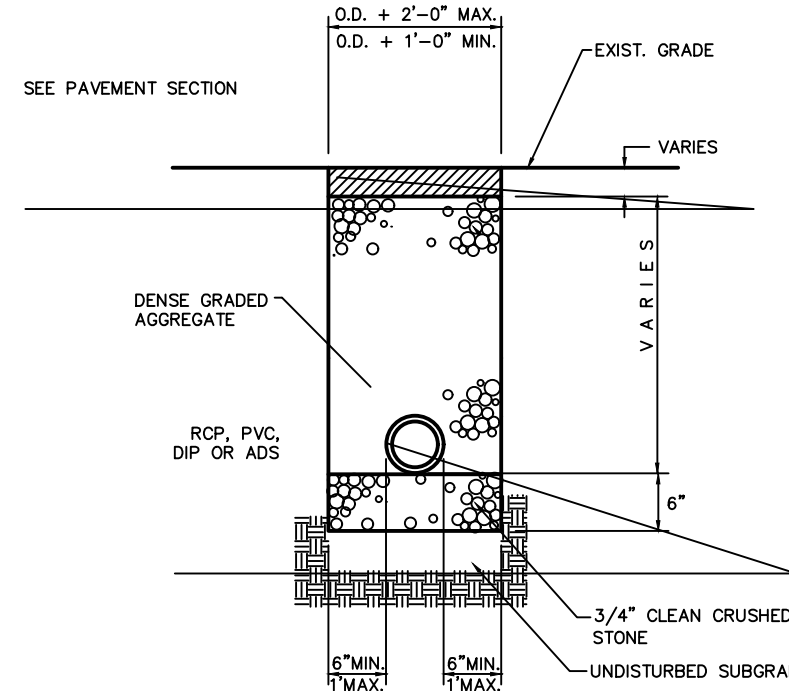
- NOTE:
1. CENTER UPRIGHT REQUIRED ON GATE LEAVES 8'-0" [2438MM] & WIDER. CENTER RAIL REQUIRED ON GATE LEAVES 10'-0" [3048MM] & HIGHER.
 2. ALL POSTS, FABRIC AND HARDWARE TO BLACK VINYL COATED.

SINGLE LEAF GATES		
OPENING	GATE POSTS	HINGE SPACE (S)
FACE TO FACE	SQ & RND SIZES	POST TO UPRIGHT
3'-0" [914MM]	2 1/2" [63.5MM] SQ	FOR SQUARE & ROUND GATE POSTS:
6'-0" [1829MM]	2.875" [73MM] OD	2 1/4" [57MM]

TYPICAL SWING GATE
NOT TO SCALE

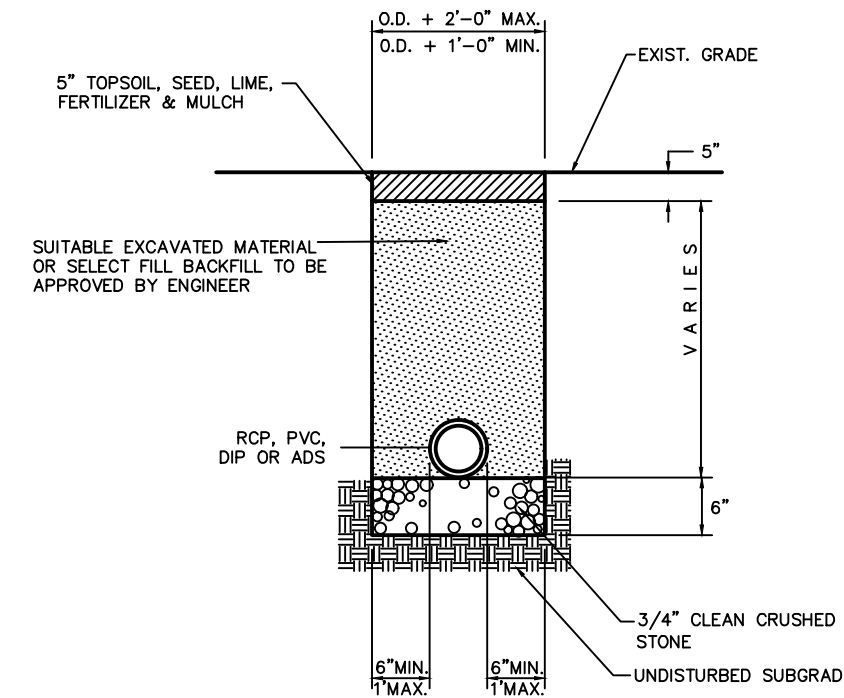


PICKLEBALL COURT
PAVEMENT CROSS-SECTION
NOT TO SCALE



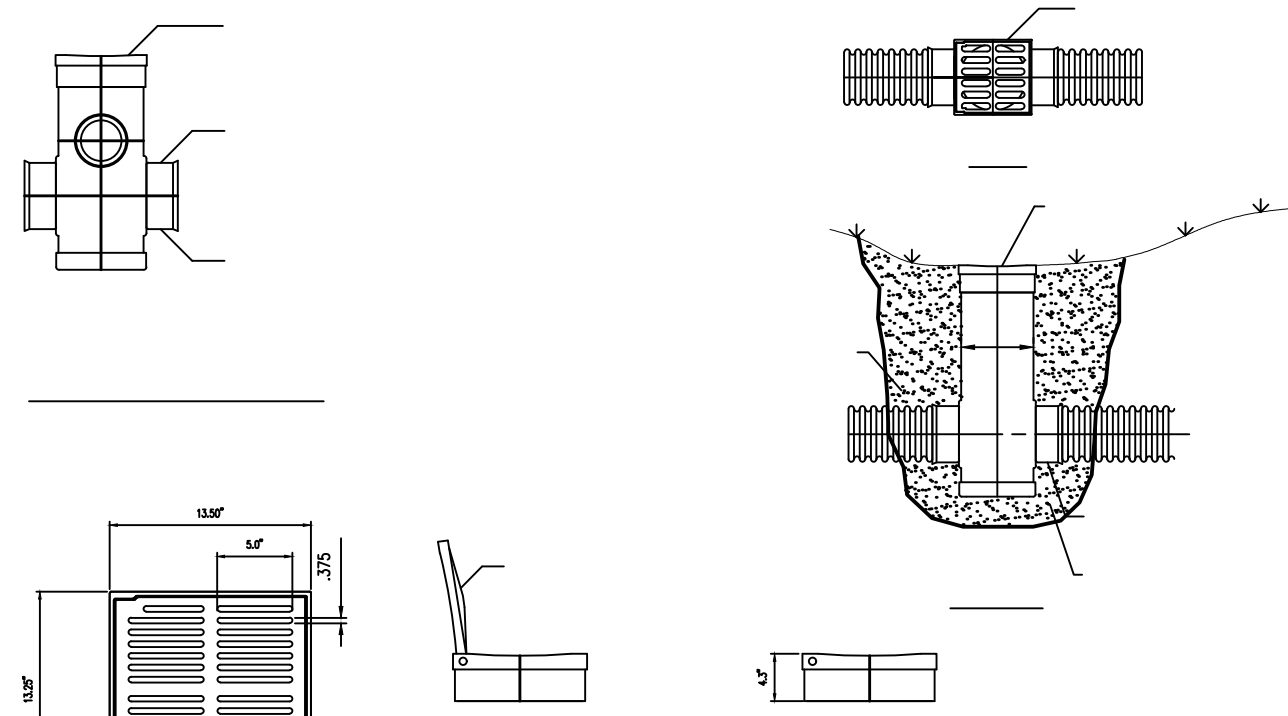
STORM SEWER TRENCH: PAVEMENT AND SIDEWALK

NOT TO SCALE



STORM SEWER TRENCH: OFF-ROAD

NOT TO SCALE



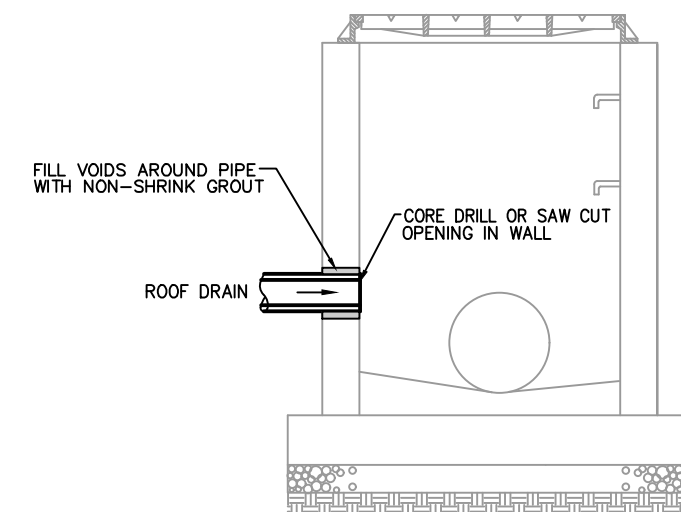
AS MANUFACTURED BY KYLOPLAST AMERICA INC.
800-859-0328 OR APPROVED EQUAL.

NOTES:

1. GRATES TO BE HINGED.
2. GRATES TO BE H-10 RATED FOR PEDESTRIAN USE.
3. BACKFILL SHALL BE 3/4" CLEAN CRUSHED STONE.

12" DRAIN BASIN DETAIL

NO SCALE



SECTION

DRAIN CONNECTION TO INLET
N.T.S.

REV/DESCRIPTION	AUTH	DATE
1 PER TOWNSHIP ENGINEER REVIEW LETTER	JAB	06/16/23
2 KEY FOR PLANNING BOARD SUBMISSION	JAB	05/04/23

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JAMES A. BASH
NEW JERSEY PROFESSIONAL
ENGINEER NUMBER 24695258005
6/16/23
DATE

Van Cleef
ENGINEERING WITH FOCUS

VAN CLEEF ENGINEERING ASSOCIATES, LLC
4 AAA DRIVE, SUITE 103, HAMILTON, NJ 08691
WEB: WWW.VANCLEEFENGINEERING.COM
PHONE (609) 689-1100
CERT. OF AUTHORIZATION NO. 246A28123300

CONSTRUCTION DETAILS
FOR

**PICKLEBALL COURTS
CRESTMONT COUNTRY CLUB**

DATE:	JAN. 23, 2023
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LOT 1.01 BLOCK 174

WEST ORANGE TOWNSHIP
ESSEX COUNTY, NEW JERSEY