





CONTRACTOR NOTES

SCHEDULE OF SHEETS	SHEET NUMBER	ORIGINAL DATE	LAST REVISION DATE
.....	1 OF 9	6/15/22	-
AS & DEMOLITION PLAN	2 OF 9	6/15/22	-
.....	3 OF 9	6/15/22	-
FOUNDATION PLAN	4 OF 9	6/15/22	-
ROUTING PLAN	5 OF 9	6/15/22	-
SECTIONS	6 OF 9	6/15/22	-
SECTIONS	7 OF 9	6/15/22	-
SECTIONS	8 OF 9	6/15/22	-
WATER CONTROL DETAILS.....	9 OF 9	6/15/22	-

ZONING INFORMATION	
<u>TOWNSHIP OF DENNIS APPROVAL BLOCK</u>	
Chairman _____	Date _____
Secretary _____	Date _____
Engineer _____	Date _____

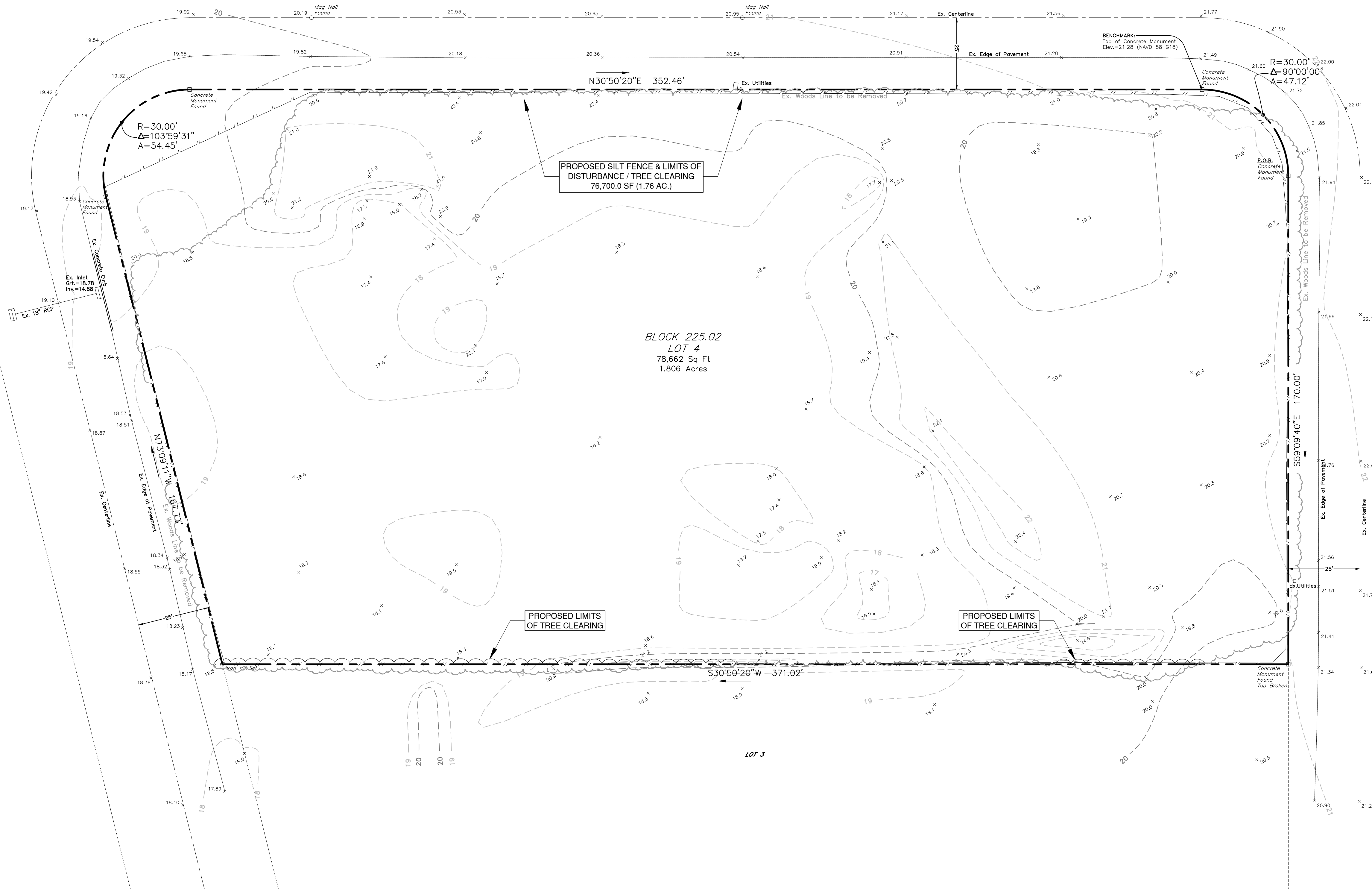
<div style="display: flex; justify-content: space-between; align-items: center;"><div style="text-align: center;"><div style="margin-top: 10px;">Engineering Design Associates, P.A. <small>Engineers Environmental Planners Landscape Architects</small></div></div><div style="text-align: center;">COVER SHEET BLOCK 225.02, LOT 4 TOWNSHIP OF DENNIS CAPE MAY COUNTY, NEW JERSEY</div></div> <div style="margin-top: 20px; text-align: center;">CAMBRIDGE PROFESSIONAL OFFICES 5 Cambridge Drive Ocean View New Jersey 08230 (609) 390-0332 • Fax (609) 390-9204 • www.engineeringdesign.com • CERTIFICATE OF AUTHORIZATION# 245A29793030</div>		
JOSEPH H. MAFFEI PROFESSIONAL ENGINEER N.J.P.E. LIC. #37894		
 		
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REVISION	DATE	BY
		
DATE: 06/15/22	DRAWN BY: NEW	
SCALE: AS NOTED	CHECKED BY: CJC	
PROJECT #: 9652	SHEET: 1 OF 9	

BLOCK 225.01
LOT 8.10

BLOCK 225.01
LOT 8.11

BLOCK 225.01
LOT 8.12

STONEY (50' WIDE) COURT



BLOCK 225.01
LOT 8.01

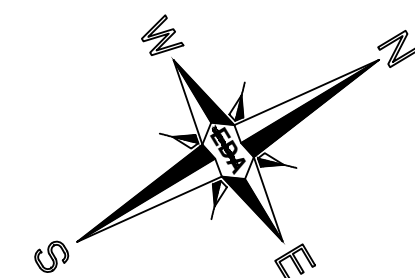
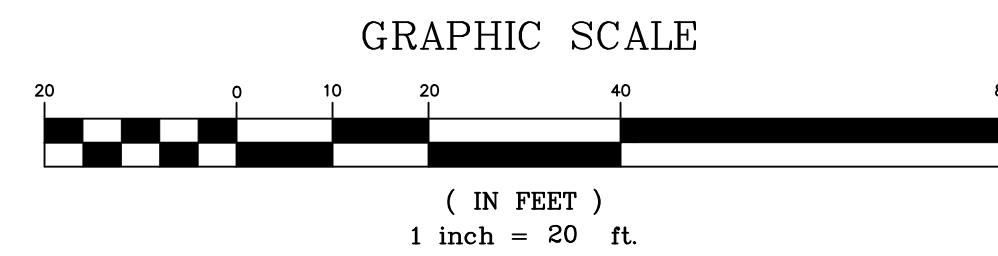
BLOCK 225.01
LOT 8.07

BLOCK 225.01
LOT 8.02

EXISTING CONDITIONS & DEMOLITION PLAN



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EXISTING CONDITIONS & DEMOLITION PLAN
BLOCK 225.02 LOT 4
TOWNSHIP OF DENNIS
CAPE MAY COUNTY, NEW JERSEY

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REVISION	DATE	BY
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DATE: 6/15/22

DRAWN BY: NEW

SCALE: 1" = 20'

CHECKED BY: JHM

PROJECT #: 9652

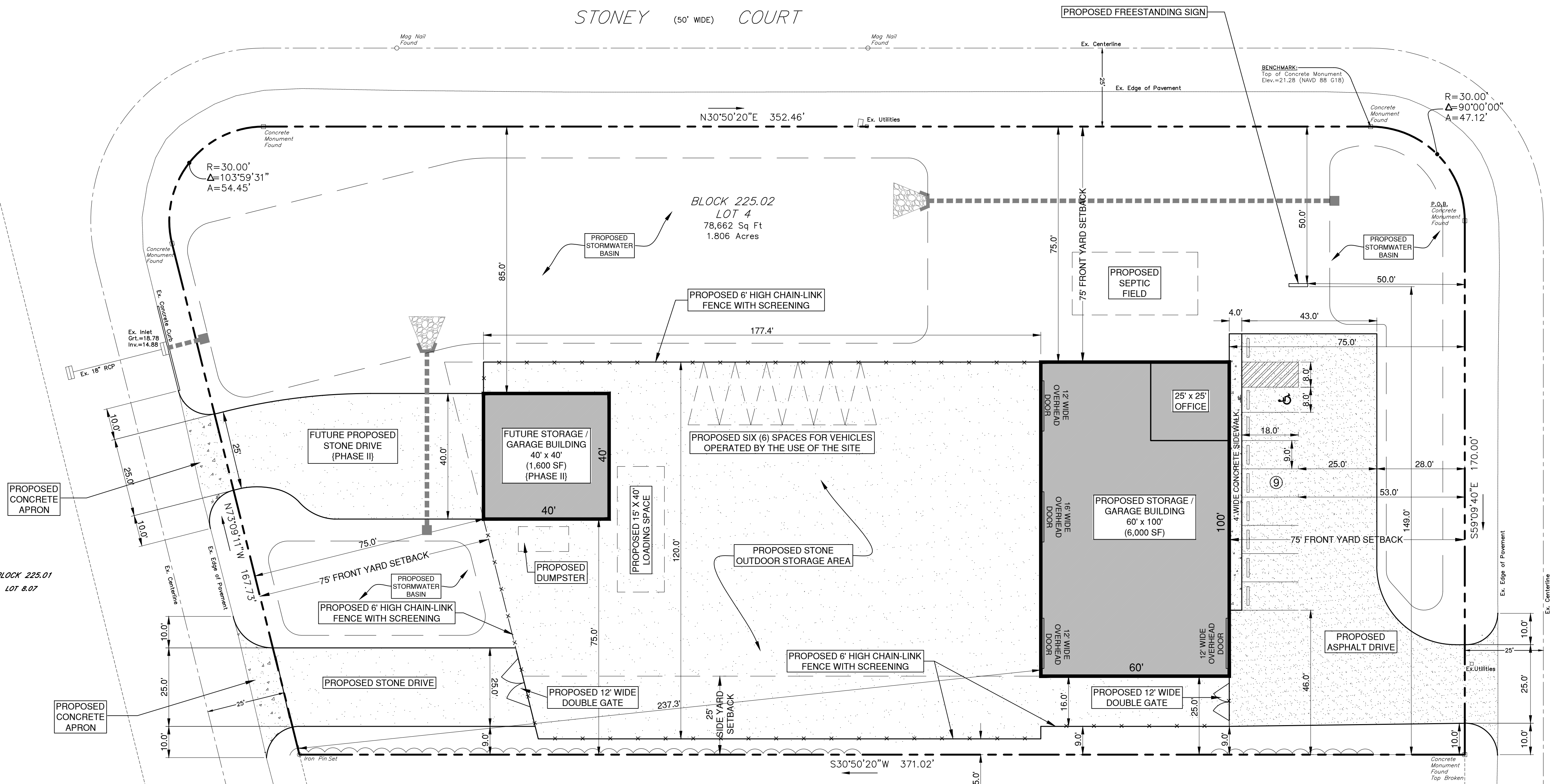
SHEET: 2 OF 9

BLOCK 225.01
LOT 8.10

BLOCK 225.01
LOT 8.11

BLOCK 225.01
LOT 8.12

STONE Y (50' WIDE) COURT



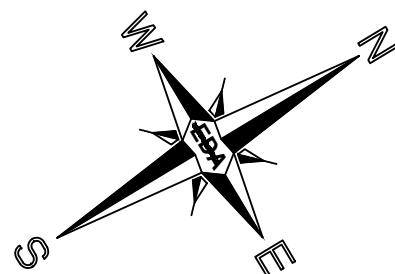
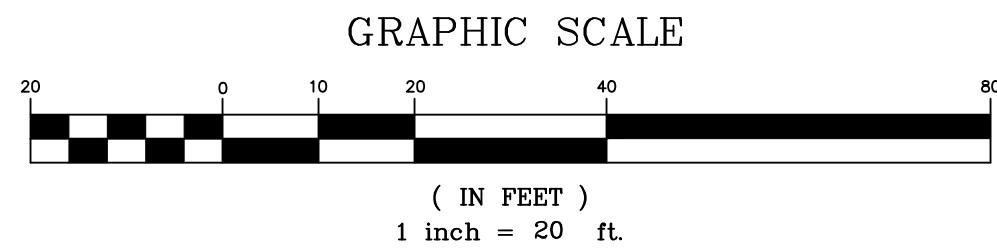
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LOT 8.01

BLOCK 225.01
LOT 8.02

MAJOR SITE PLAN



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MAJOR SITE PLAN
BLOCK 225.02 LOT 4
TOWNSHIP OF DENNIS
CAPE MAY COUNTY, NEW JERSEY

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DATE: 6/15/22 DRAWN BY: NEW

SCALE: 1" = 20' CHECKED BY: JHM

PROJECT #: 9652 SHEET: 3 OF 9

BLOCK 225.01
LOT 8.10

BLOCK 225.01
LOT 8.11

BLOCK 225.01
LOT 8.12

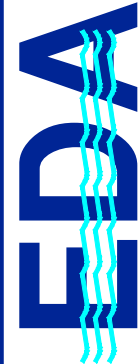
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LOT 8.01

BLOCK 225.01
LOT 8.02

GRADING & DRAINAGE PLAN



Engineers - Landscape Architects - Planners



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Joseph H. Maffei

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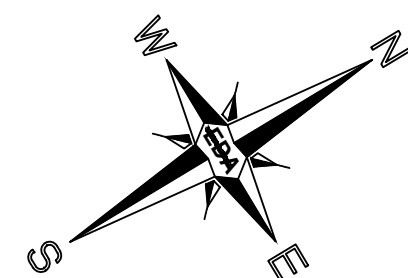
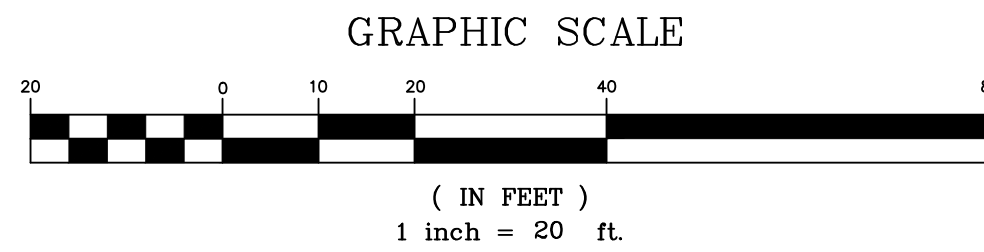
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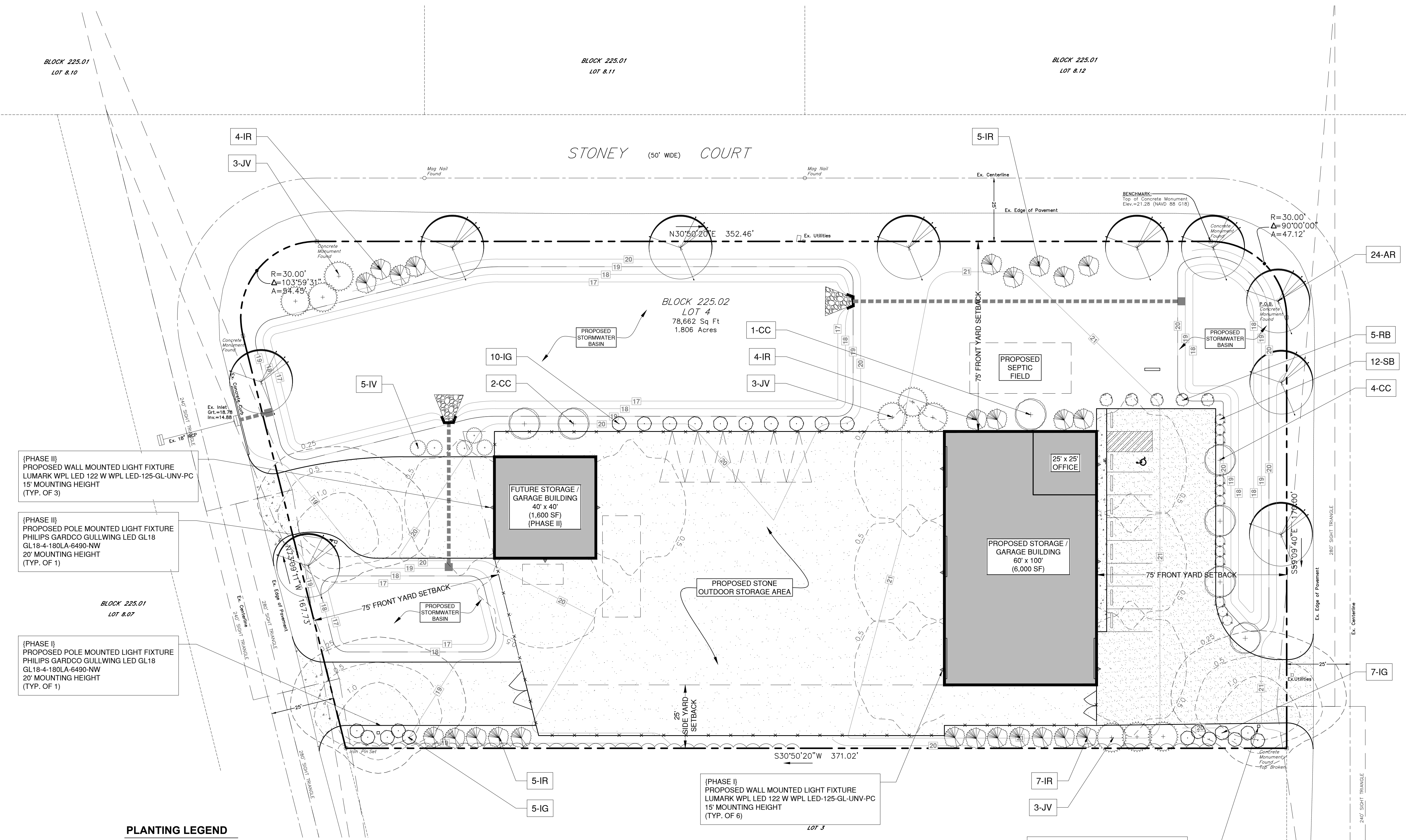
SCALE: 1" = 20'

CHECKED BY: JHM

PROJECT #: 9652

SHEET: 4 OF 9





{PHASE II}
PROPOSED WALL MOUNTED LIGHT FIXTURE
LUMARK WPL LED 122 W WPL LED-125-GL-UNV-PC
15' MOUNTING HEIGHT
(TYP. OF 3)

{PHASE II}
PROPOSED POLE MOUNTED LIGHT FIXTURE
PHILIPS GARDCO GULLWING LED GL18
GL18-4-180LA-6490-NW
20' MOUNTING HEIGHT
(TYP. OF 1)

{PHASE I}
PROPOSED POLE MOUNTED LIGHT FIXTURE
PHILIPS GARDCO GULLWING LED GL18
GL18-4-180LA-6490-NW
20' MOUNTING HEIGHT
(TYP. OF 1)

{PHASE I}
PROPOSED WALL MOUNTED LIGHT FIXTURE
LUMARK WPL LED 122 W WPL LED-125-GL-UNV-PC
15' MOUNTING HEIGHT
(TYP. OF 6)

{PHASE I}
PROPOSED POLE MOUNTED LIGHT FIXTURE
PHILIPS GARDCO GULLWING LED GL18
GL18-4-180LA-6490-NW
20' MOUNTING HEIGHT
(TYP. OF 1)

PLANTING LEGEND

TREES

ABRV	BOTANICAL NAME	COMMON NAME	SIZE	NOTES	QTY
AR	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	2.5" CAL.	B&B	10
CC	CERCIS CANADENSIS	EASTERN REDBUD	6"-7"	B&B	7
IR	ILEX X 'RUTZAN'	RED BEAUTY HOLLY	3'-4'	B&B	25
JV	JUNIPERUS VIRGINIANA	EASTERN RED CEDAR	5'-6'	B&B	9

SHRUBS

IG	ILEX GLABRA 'SHAMROCK'	SHAMROCK INKBERRY HOLLY	#5	CONT.	22
IV	ITEA VIRGINICA 'HENRY'S GARNET'	HENRY'S GARNET SWEETSPICE	#5	CONT.	5
RB	RHODODENDRON 'BLAAUWS PINK'	BLAAUWS PINK AZALEA	#3	CONT.	5
SB	SPIREA X BUMALDA 'ANTHONY WATERER'	ANTHONY WATERER SPIREA	#3	CONT.	12

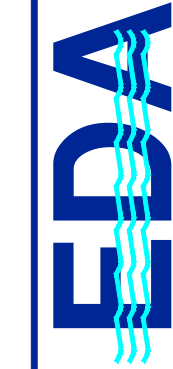
CONTRACTOR NOTES

- DRAWINGS TO BE SCALED FOR PURPOSES OF LOCATING SOIL BERMS, PLANT MATERIAL, PLANTING BEDS, GROUND COVER AREAS AND OTHER SITE AMENITIES SHOWN. DRAWINGS ARE DIAGRAMATIC; PLANT MATERIAL SUBJECT TO FIELD ADJUSTMENT.
 - ALL PLANT MATERIAL TO BE SET IN PREPARED MULCH BEDS. FINAL BED LINES TO BE APPROVED IN THE FIELD BY THE LANDSCAPE ARCHITECT OR REPRESENTATIVE.
 - ALL PLANT MATERIAL TO BE IRRIGATED.
 - LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF ALL PLANT MATERIAL QUANTITIES. ANY DISCREPANCY SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT. PLAN HOLDS PRECEDENT.
- GRASSES
AREAS TO BE SEEDED SHALL CONSIST OF THE FOLLOWING SEED MIXTURES TO INSURE A HIGH QUALITY GRASS.
- REBEL II TALL FESCUE - 8 LBS PER 1000 SF
ECLIPSE KENTUCKY BLUE GRASS - 4 LBS PER 1000 SF
- FERTILIZING AND LIMING SHALL BE COMPLETED PRIOR TO SEEDING LAWN AREAS
TWICE PER YEAR.
- PLANTING BED - TO BE CONSTRUCTED AS SHOWN ON PLAN. USE THE FOLLOWING SPECIFICATIONS OR AN APPROVED EQUAL.
- A. MULCH - BEDS TO BE FILLED WITH A 4" LAYER OF LICORICE ROOT MULCH (RIGHT DRESS INC.)
B. WEED BARRIER - MULCH TO BE PLACED OVER TERRA TOP LS WEED CONTROL FABRIC OR 4 MIL BLACK POLYETHYLENE.
C. EDGING - PLANTING BED TO BE EDGED WITH BLACK DIAMOND POLYETHYLENE BED DIVIDER (VALLEY VIEW SPECIALTIES CO.)

LANDSCAPE & LIGHTING PLAN



Engineers - Landscape Architects - Planners



LANDSCAPE & LIGHTING PLAN
BLOCK 225.02 LOT 4
TOWNSHIP OF DENNIS
CAPE MAY COUNTY, NEW JERSEY

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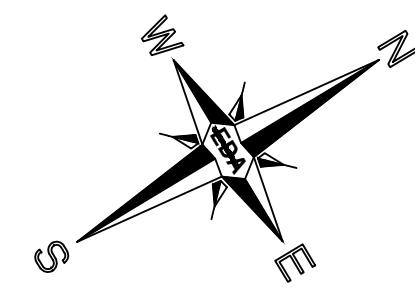
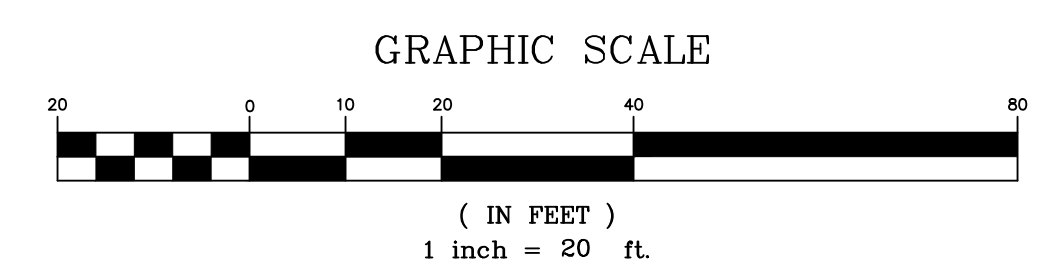
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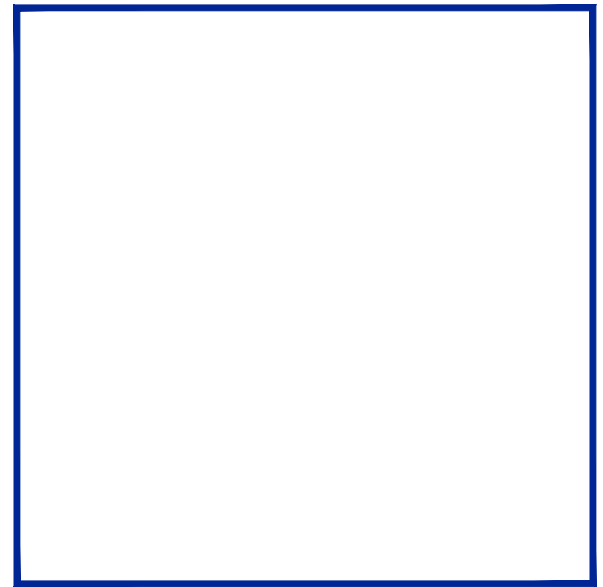
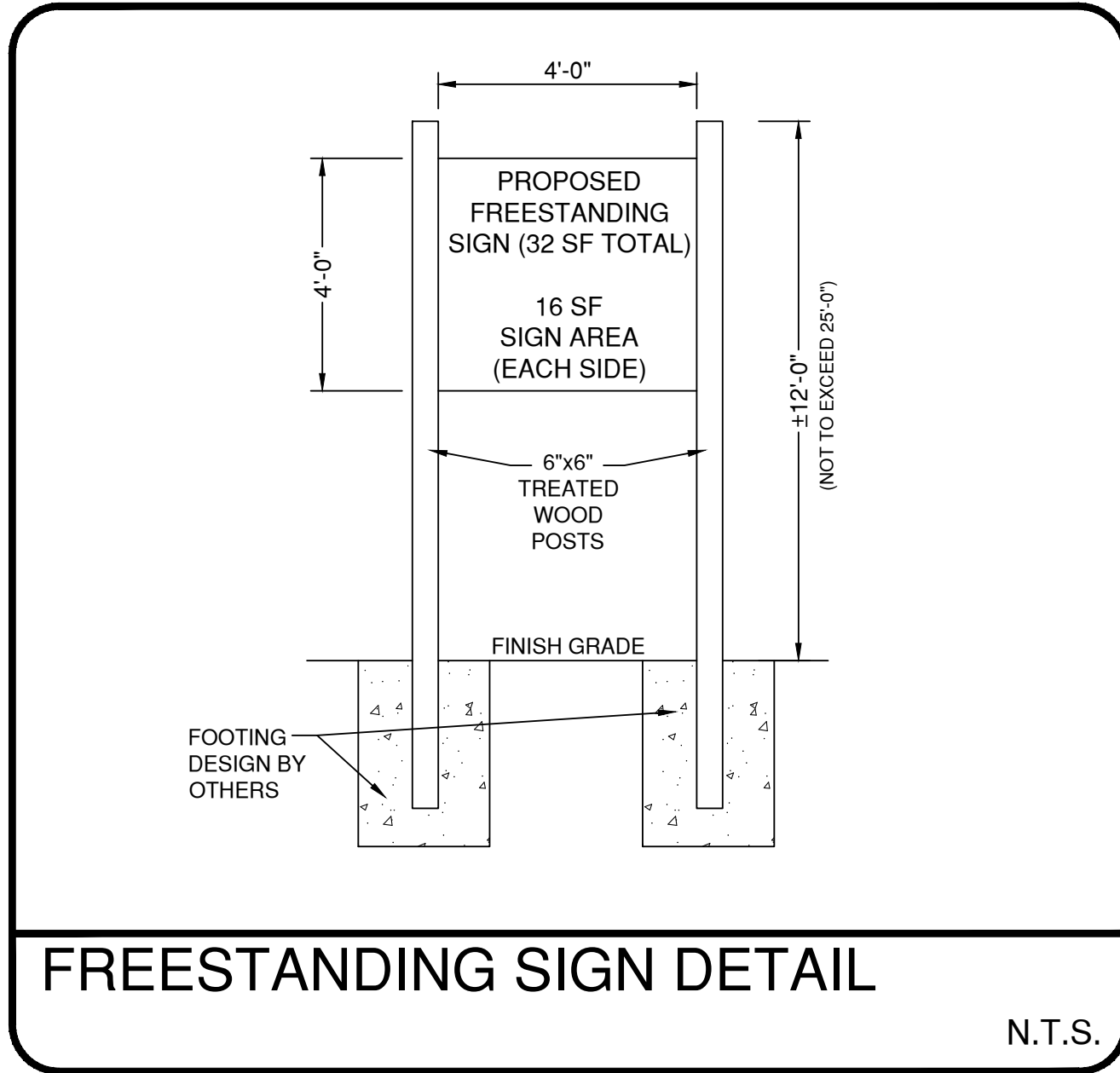
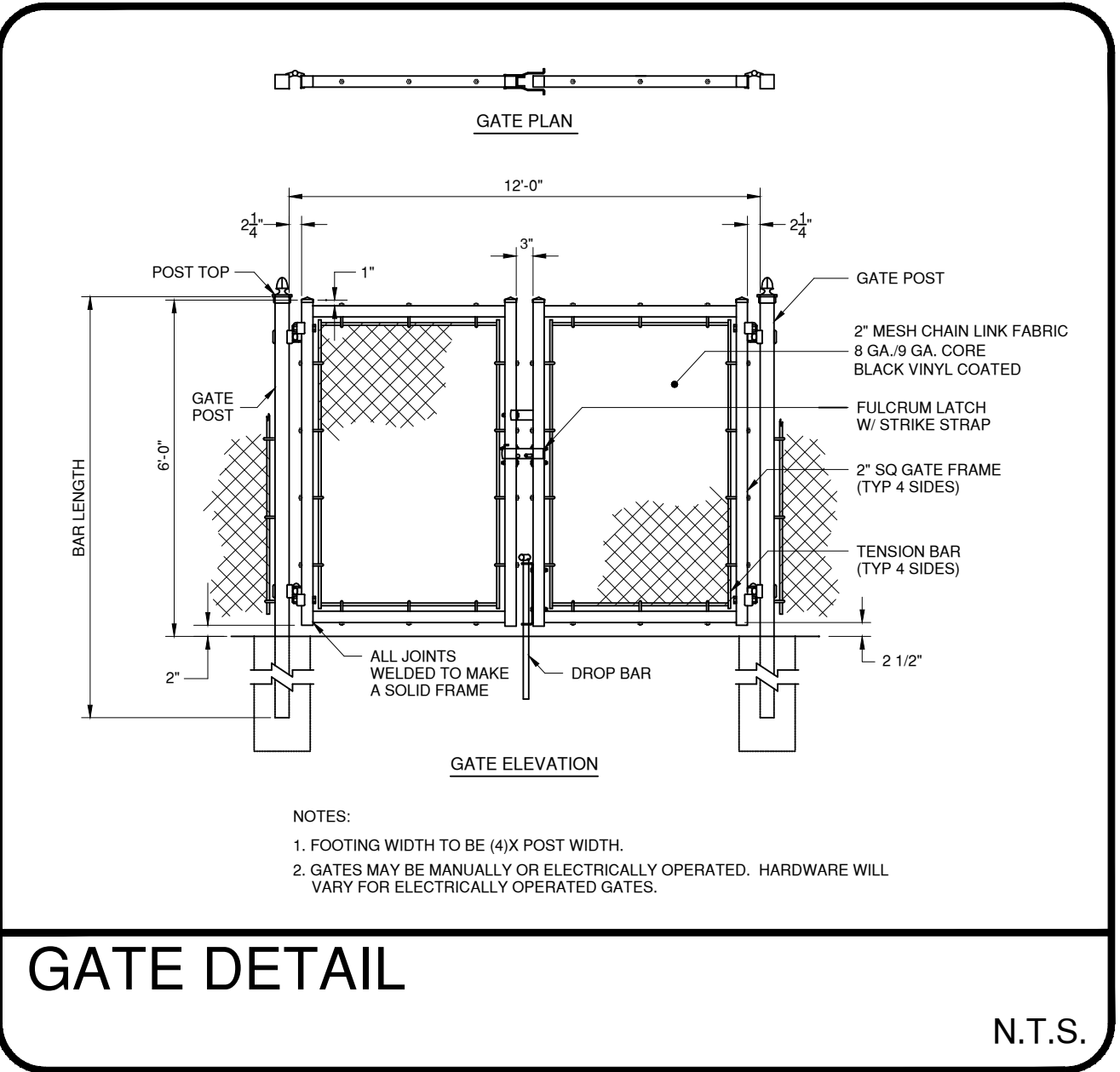
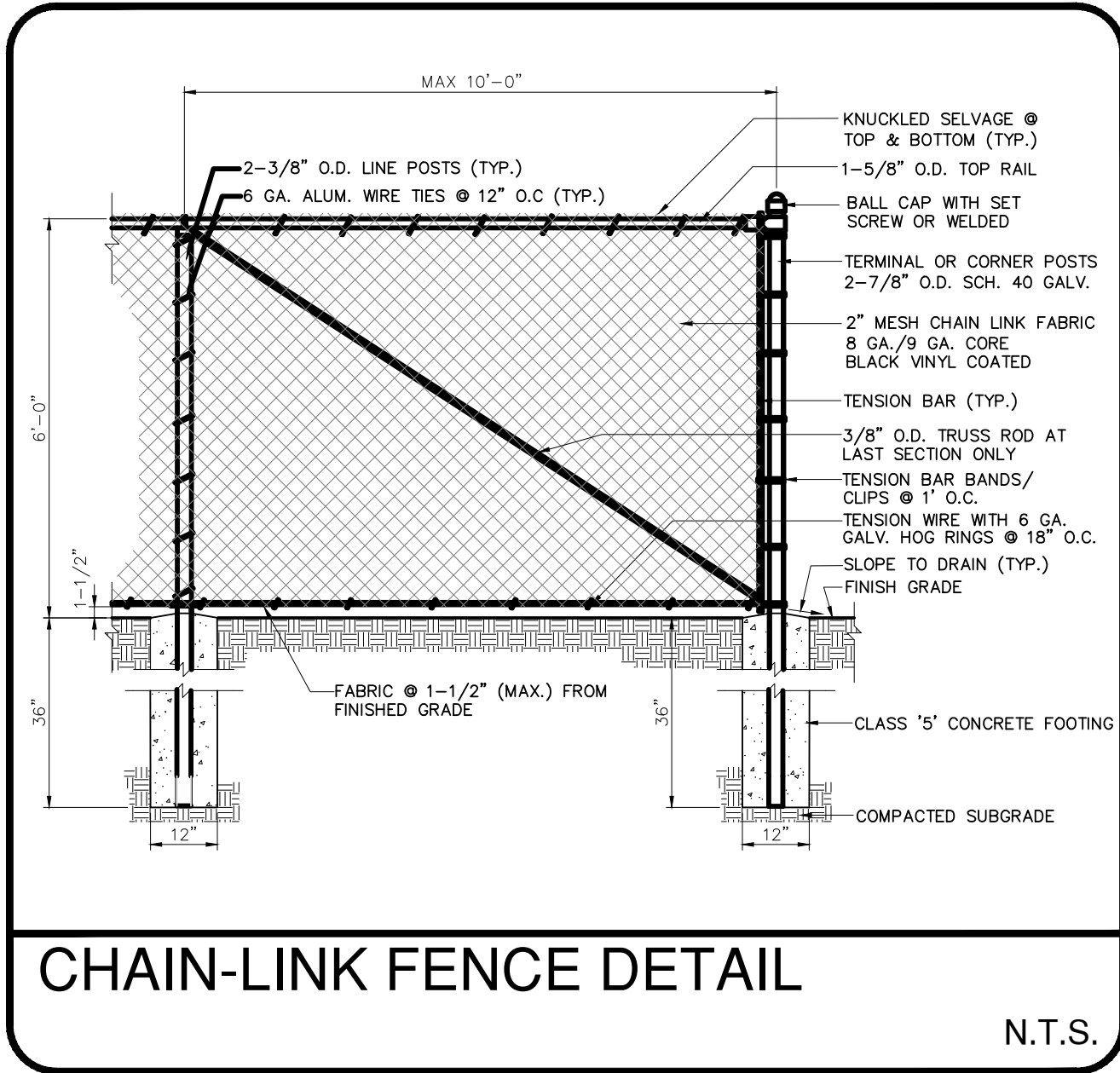
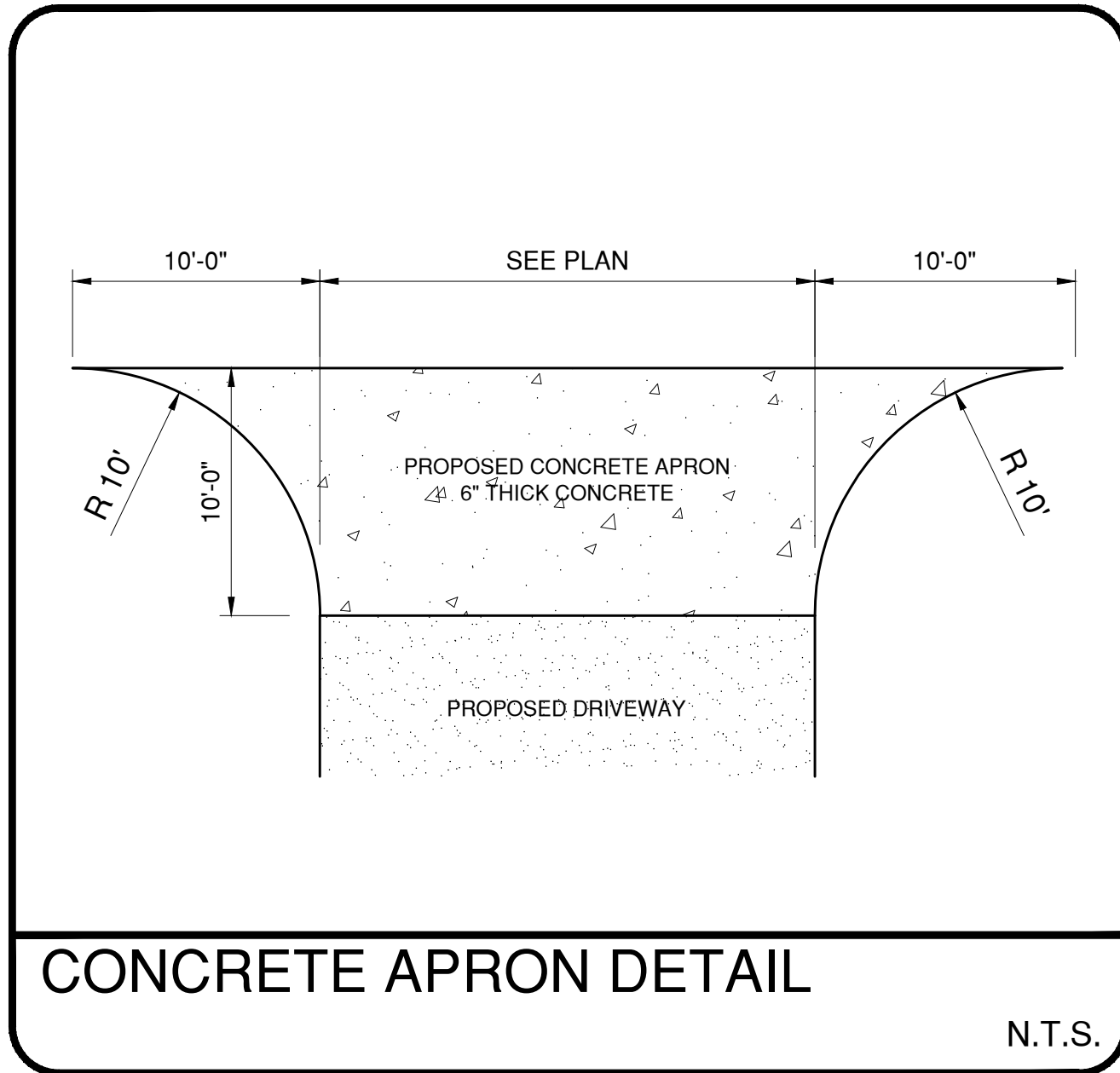
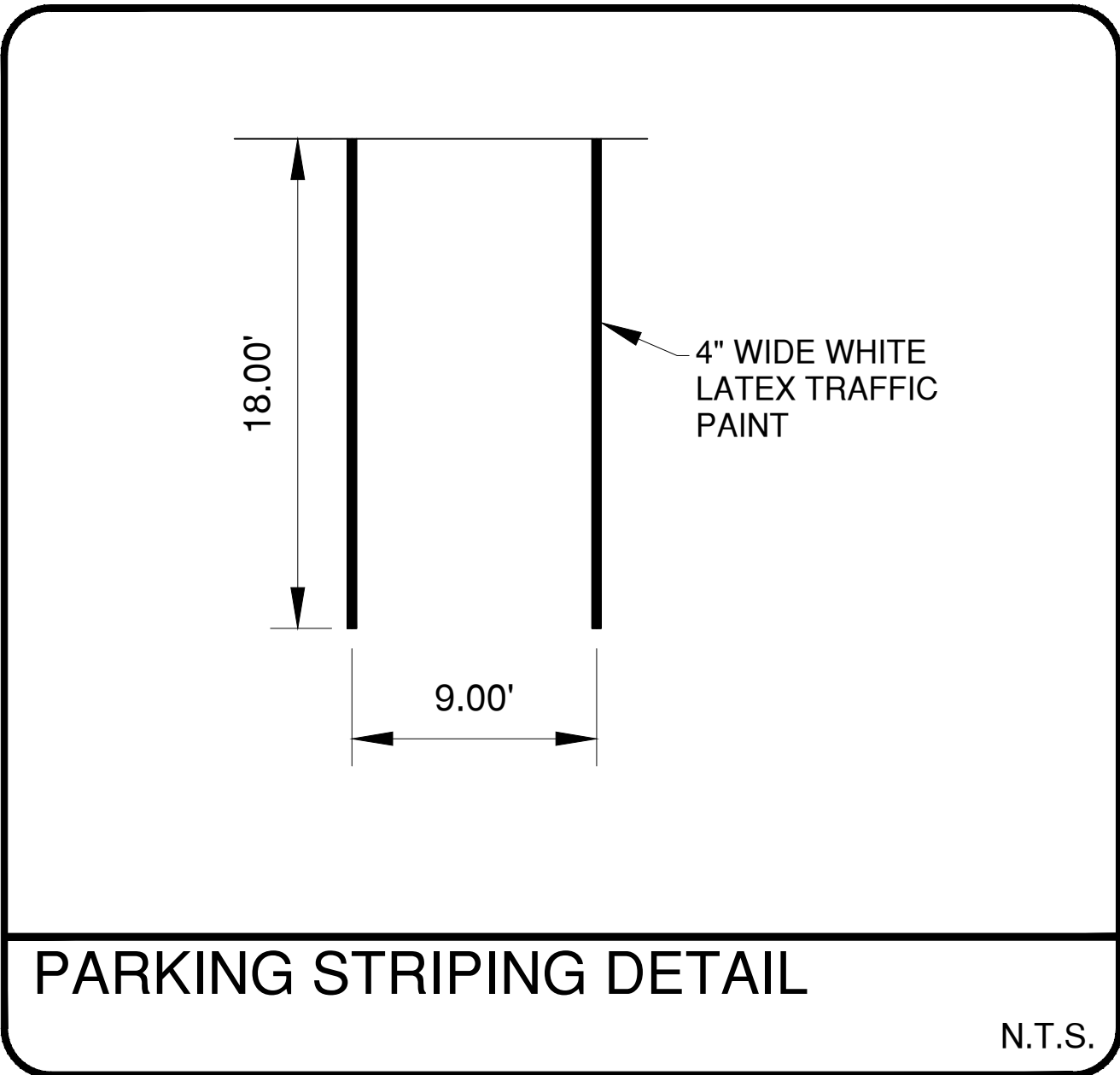
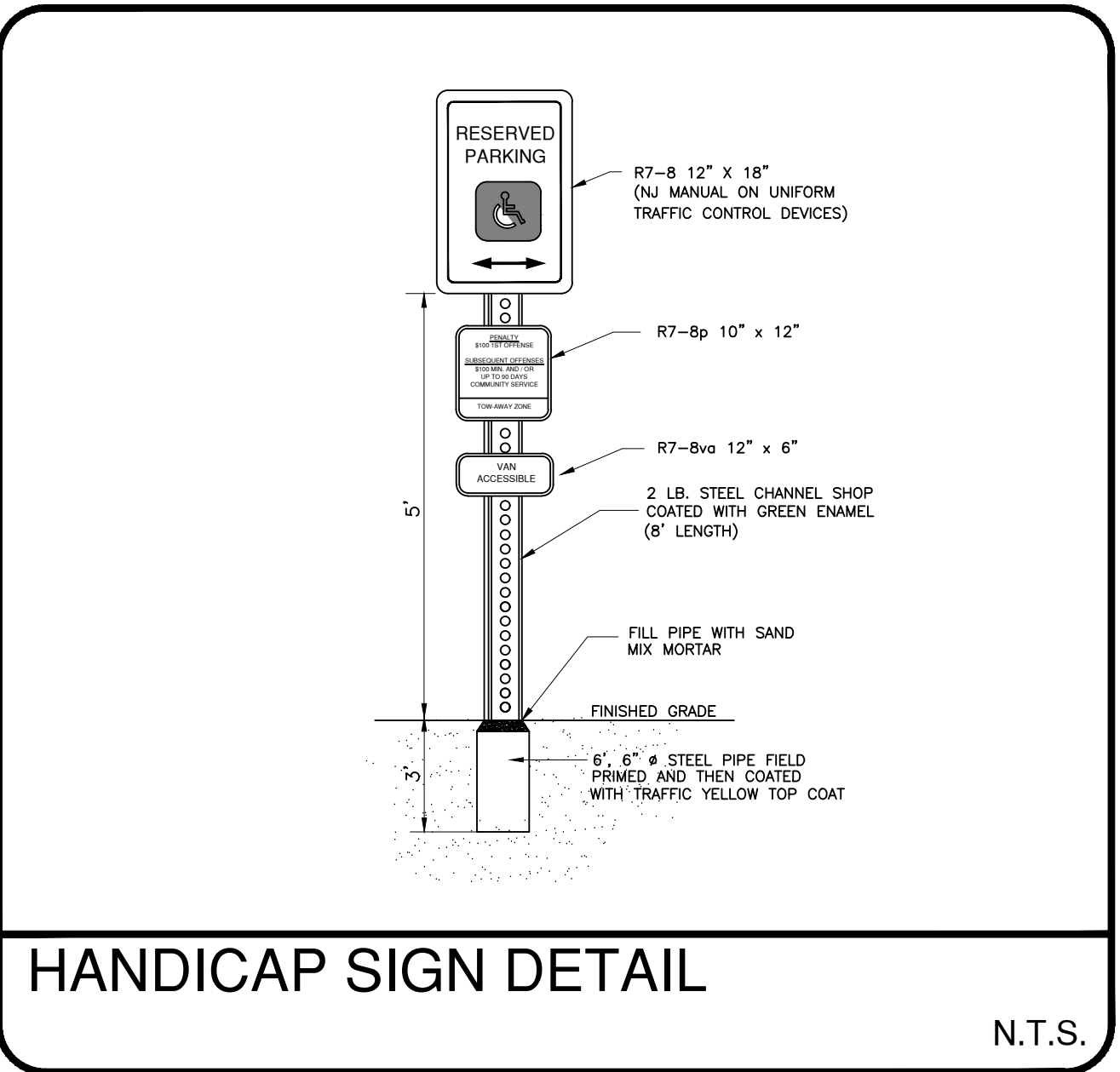
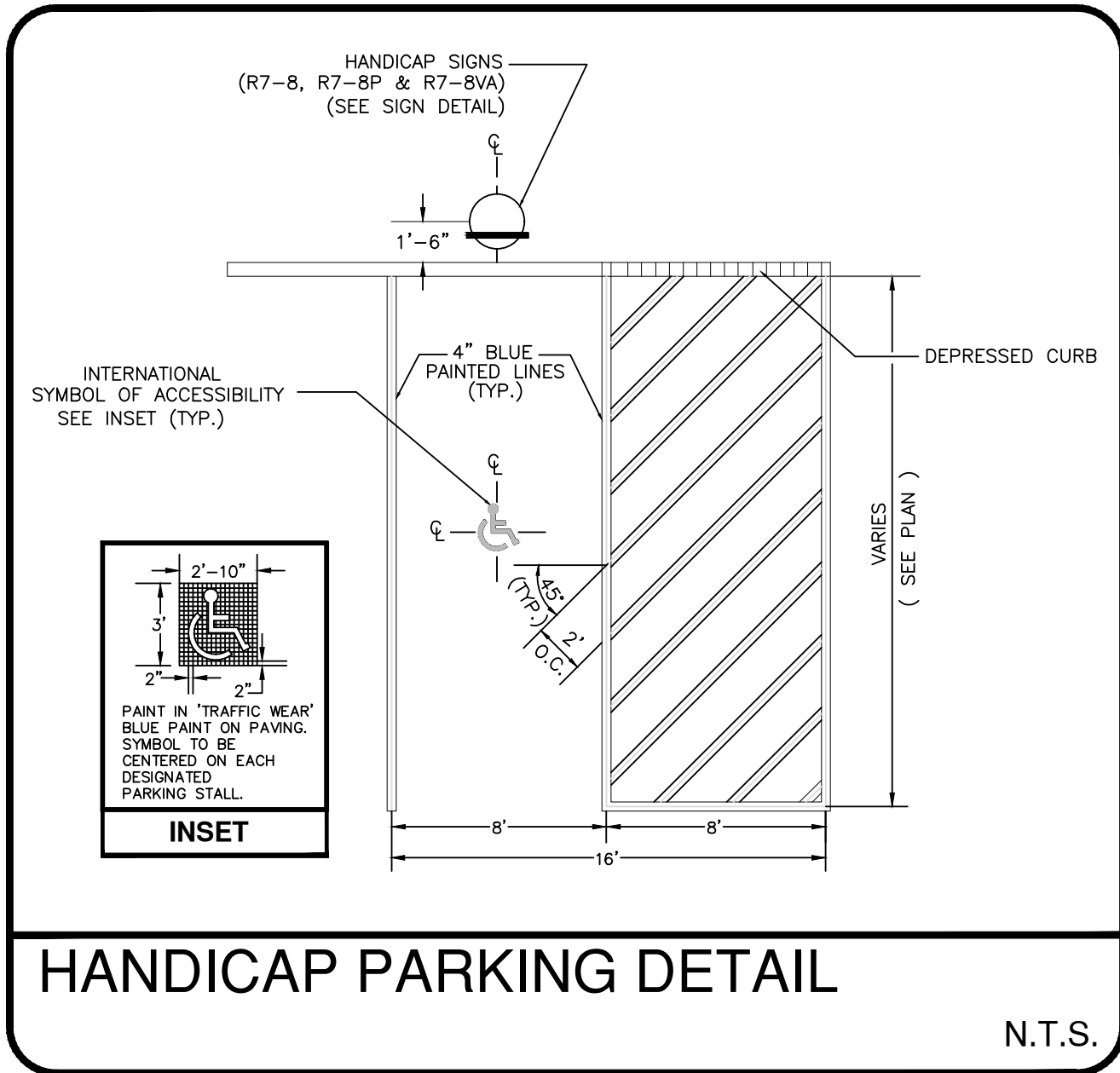
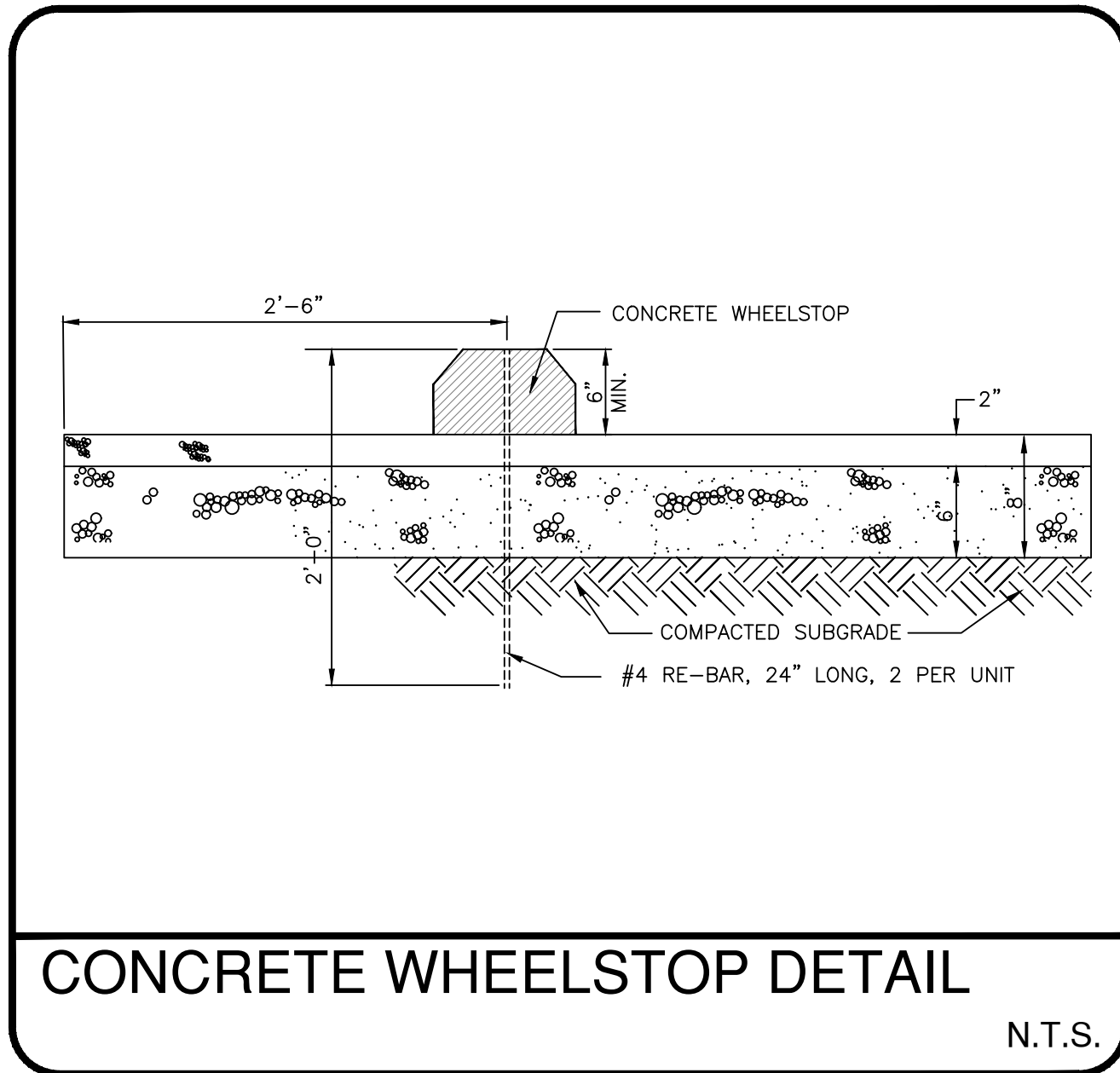
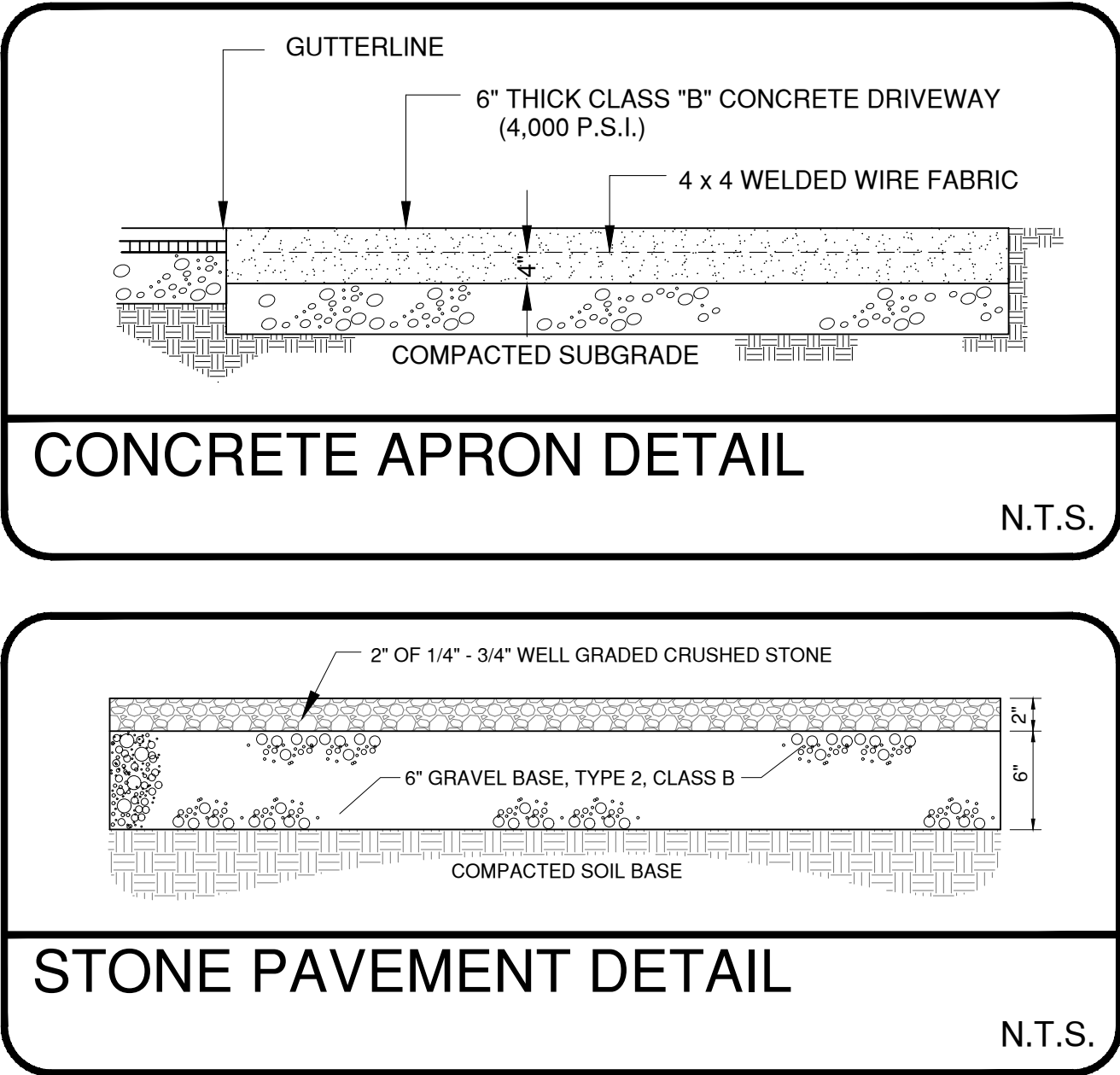
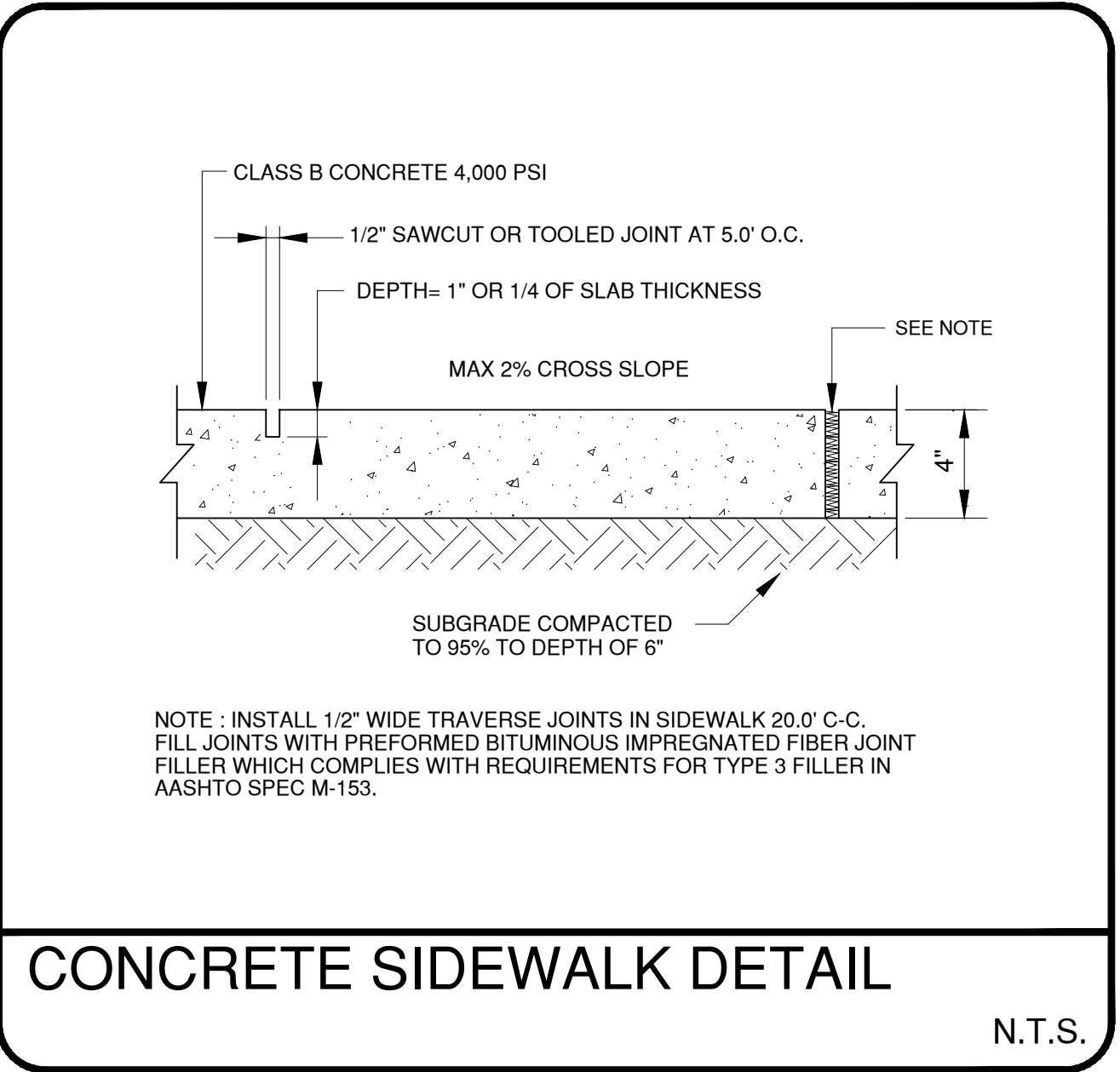
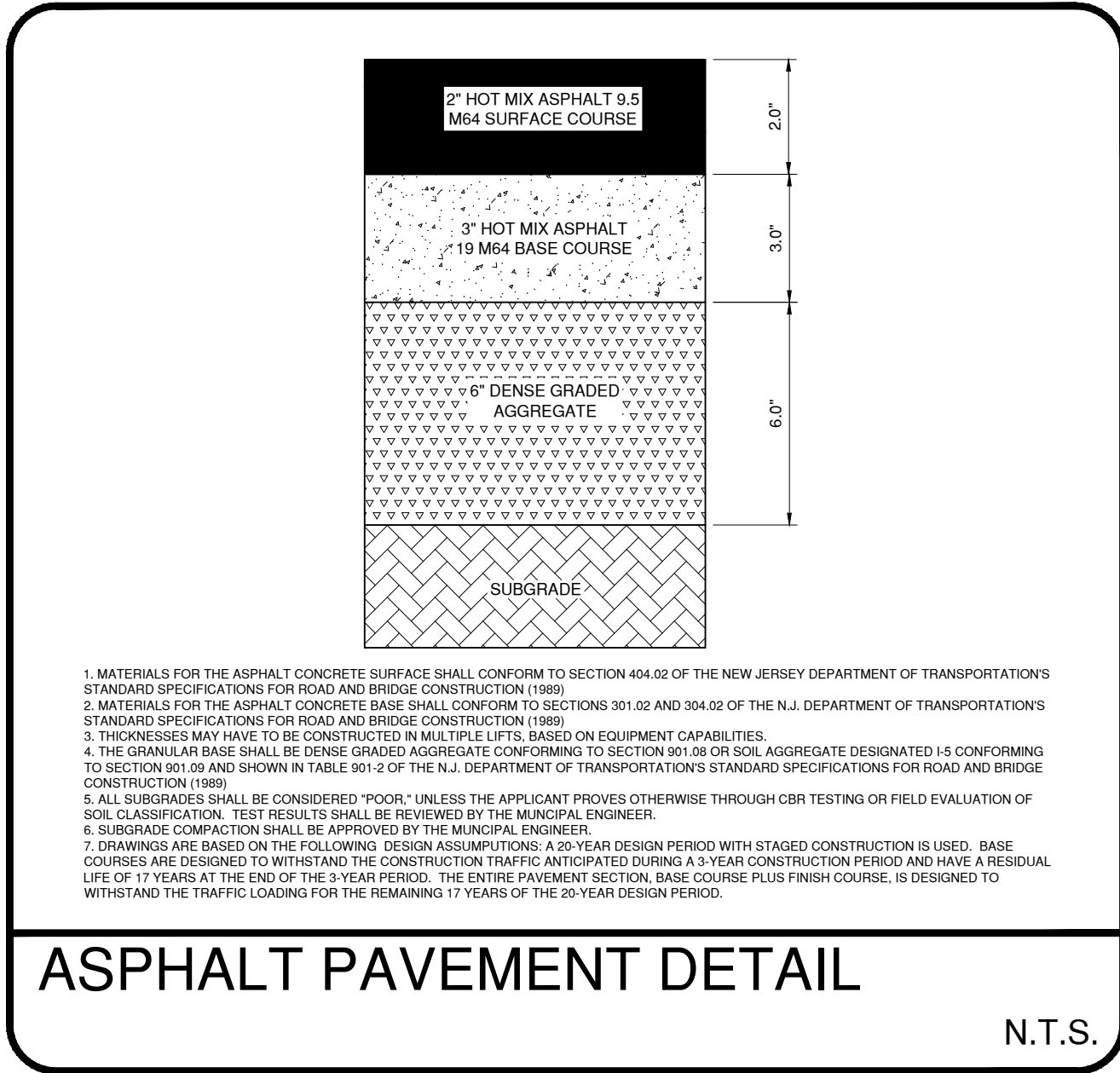
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SCALE: 1" = 20'	CHECKED BY: JHM
PROJECT #: 9652	SHEET: 5 OF 9



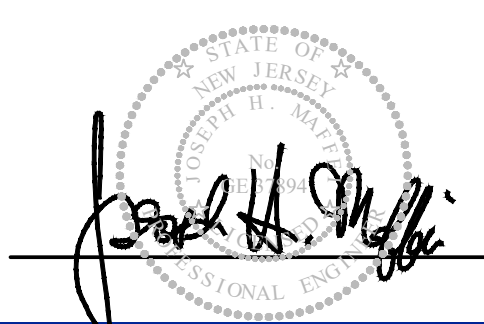




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ENGINEERING DETAILS
BLOCK 225.02, LOT 4
TOWNSHIP OF DENNIS
CAPE MAY COUNTY, NEW JERSEY

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DATE: 6/15/22	DRAWN BY: NEW
SCALE: AS NOTED	CHECKED BY: JHM
PROJECT #: 9652	SHEET: 6 OF 9





Architects - Planners







PROJECT #: 9652	SHEET: 7 OF 9
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SOIL EROSION AND SEDIMENT CONTROL PLAN

- All applicable erosion and sediment control practices shall be in place prior to any grading or installation of proposed structures or utilities.
- Soil Erosion and Sediment Control practices on this plan shall be constructed in accordance with the standards for Soil Erosion and Sediment Control in New Jersey.
- Applicable erosion and sediment control practices shall be left in place until construction is completed and/or the area is stabilized.
- The contractor shall perform all measures required to install all measures required to reasonably control soil erosion resulting from construction operations and prevent excessive flow of sediment from the construction site.
- Any disturbed area that is to be left exposed for more than thirty (30) days and not subject to construction traffic shall immediately receive a temporary seeding and fertilization in accordance with the New Jersey Standards and their rates should be included in the narrative. If the season prohibits temporary seeding, the disturbed areas will be mulched with salt hay or equivalent and anchored in accordance with the New Jersey Standards (i.e. peg and twine, mulch netting or liquid mulch binder).
- It shall be the responsibility of the developer to provide confirmation of time, fertilizer and seed application rates and rates of application at the request of the Cape Atlantic Soil Conservation District.
- All critical areas subject to erosion will receive a temporary seeding in combination with straw mulch at a rate of 2 tons per acre, according to the New Jersey Standards immediately following rough grading.
- The site shall at all times be graded and maintained such that all storm water runoff is diverted to soil erosion and sediment control facilities.
- All sedimentation structures will be inspected and maintained on a regular basis and after every storm event.
- A crushed stone, tire cleaning pad will be installed wherever a construction access exists. The stabilized pad will be installed according to the standards for stabilized construction access.
- All driveways must be stabilized with 2 1/2" crushed stone or subbase prior to individual lot construction.
- All paved areas must be kept clean at all times.
- All catch basin inlets will be protected according to the certified plan.
- All storm drainage outlets will be stabilized, as required, before the discharge points become operational.
- All dewatering operations must discharge directly into a sediment filter area. The sediment filter must be composed of a suitable sediment filter fabric. (see detail). The basin must be dewatered to normal pool within 10 days of the design storm.
- NJSA 4:24-39, Eri. Sec. requires that no certificate of occupancy be issued before all provisions of the certified soil erosion and sediment control plan have been complied with for permanent measures. All site work for the project must be completed prior to the district issuing a report of compliance as a prerequisite to the issuance of a certificate of occupancy by the municipality.
- Mulching is required on all seeded areas to insure against erosion before grass is established. To promote earlier vegetation cover.
- Off-site sediment disturbance may require additional control measures to be determined by the erosion control inspector.
- A copy of the certified Soil Erosion and Sediment Control Plan must be maintained on the project site during construction.
- The Cape Atlantic Soil Conservation District shall be notified 48 hours prior to any land disturbance.
- Any conveyance of this project prior to its completion will transfer full responsibility for compliance with the certified plan to any subsequent owners.
- Immediately after the completion of stripping and stockpiling of topsoil, the stockpile must be stabilized according to the standard for temporary vegetative cover. Stabilize topsoil with straw mulch for protection if the season does not permit the application and establishment of temporary seeding. All soil stockpiles are not to be located within fifty (50) feet of a floodplain, slope, roadway or drainage facility and the base must be protected with a sediment filter.
- Any changes to the site plan will require the submission of a revised Soil Erosion and Sediment Control Plan to the Cape Atlantic Soil Conservation District. The revised plan must be in accordance with the current New Jersey Standards for Soil Erosion and Sediment Control.
- Methods for the management of high acid producing soils shall be in accordance with the standards. High acid producing soils are those found to contain iron sulfides or have a pH of 4 or less.
- Temporary and permanent seeding measures must be applied according to the New Jersey Standards, and mulched with salt hay or equivalent and anchored in accordance with the New Jersey Standards (i.e. peg and twine, mulch netting or liquid mulch binder).
- Minimum site slopes of all exposed surfaces shall not be constructed steeper than 3:1 unless otherwise approved by the district.
- Dust is to be controlled by an approved method according to the New Jersey Standards and may include watering with a solution of calcium chloride and water.
- Adjoining properties shall be protected from excavation and land filling operations on the proposed site.
- Use staged construction methods to minimize exposed surfaces, where applicable.
- All vegetative material shall be selected in accordance with American Standards for Nursery Stock of the American Association of the Nurseryman and in accordance with the New Jersey Standards.
- Natural vegetation and species shall be retained where specified on the Landscaping Plan.
- The soil erosion inspector may require additional soil erosion measures to be installed, as directed by the district inspector.

STORMWATER MANAGEMENT MAINTENANCE PROGRAM

BASIN MAINTENANCE

In order to ensure that all retention and detention basins function properly, a maintenance program must be followed. The following are the minimum requirements for the maintenance of all basins.

- Annual visual inspection of outlet structures and basins.
- Inspection of outlet structures to include checking for obstructions of outfall pipes and the accumulation of silts and sediments.
- Inspection of basins to include the removal of debris and accumulated particles such as silts and sediments.
- For maintenance of vegetated basins:
 - Mowing of grass is required regularly to ensure the aesthetic quality of the site. All clippings shall be raked and bagged to avoid thick buildup.
 - A dense turf, with extensive root growth, is encouraged to reduce erosion and enhance infiltration throughout the bottom and the side of the basin. Well-established turf of the floor and sides will grow through sediment deposits, thus forming a porous turf and preventing the formation of an impermeable layer.
 - Grasses of the fescue family are recommended for seeding, primarily due to their adaptability to dry sandy soils, drought resistance, hardiness, and ability to withstand brief inundations. Fescues will also permit longer intervals between mowings.
 - Seed type: A mixture of the following special water-tolerant seed will ensure a high quality grass for retention basins.

INGREDIENTS		
Mixture	SEEDING RATE	
Fescue	2.1lb./1,000 SF	
Perennial Rye Grass	0.25lb./1,000 SF	
Kentucky Bluegrass	0.25lb./1,000 SF	
White Clover	0.10lb./1,000 SF	

- Fertilizing and liming: Bi-annually.
 - Fertilize with 10-20-10 at a rate of 1 lbs./1,000 SF
 - Lime with pulverized dolomite limestone at a rate of 90lbs./1,000 SF
- Long term Maintenance
 - In order to ensure proper function of all basins, every seven years each basin bottom shall be scarified to a depth of 4" to remove sediments and silts. Then 4" of topsoil must be added and resseed.

STORM WATER STRUCTURE MAINTENANCE

Maintenance is the work required to keep structures in practice, or restore them to their original physical and functional condition. Maintenance as it applies to this situation shall be divided into two stages; that which is necessary to allow for continuing performance of storm water controls during the construction period and long term maintenance following construction. Both stages are necessary for the life of the storm water structures and systems.

MINIMUM REQUIREMENTS FOR MAINTENANCE

- TRENCHES/SWALES**
 - Trenches/Swales to be inspected for rubbish or channel obstructions, bank failure, accumulation of silts and sediments, undesirable vegetation growth, rodents, and overall system failure.
- OUTLET STRUCTURE/CONDUIT**
 - Inspection of outlet structures and conduit to include checking for obstruction of pipe, accumulation of silts and sediments, cracking, corrosion, deterioration from freezing, salt or chemicals, excessive wear or damage from settling.
- SPILLWAYS/INLETS/MANHOLES**
 - Inspection to include checking for cracking, rodents, obstructions (silt-sediment, trash or other.) Check any gates, racks, or grates, for damage from corrosion, ice debris, etc. Check for unauthorized modifications, tampering or vandalism.
- LONG TERM MAINTENANCE**
 - As noted, any basin, pipe, pit, trench or inlet not functioning as designed will be thoroughly as prescribed. Any system that continues to remain inoperable after thorough cleaning must be removed and replaced.

RESPONSIBILITY

All on-site retention facilities shall be the sole responsibility of the developer/owner, his assigns and/or heir. The responsibility shall include but not be limited to installation, inspection, and maintenance.

DETENTION FACILITY MAINTENANCE

The primary mechanical equipment used in the Annual Maintenance of the Basins will be for lawn cutting. The exact type and size of this equipment is to be determined by the maintenance service under contract for the project.

MULCHING

Mulching is required on all seeding. It is defined as stabilizing exposed soils with non-vegetative materials. The purpose is to protect exposed soil surfaces from erosion damage and to reduce offsite environmental damage. Mulching provides temporary mechanical protection against wind or rainfall induced soil erosion until permanent vegetative cover may be established. 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.

SITE PREPARATION

- Grade as needed and feasible to permit the use of conventional equipment for seedbed preparation, seeding, mulch application, and mulch anchoring. All grading should be done in accordance with Standards for Land Grading, pg.19-1.
- Install needed erosion control practices or facilities such as diversions, grade stabilization structures, channel stabilization measures, sediment basins, and waterways. See Standards 11 through 42.

PROTECTIVE MATERIALS

- Mulch materials should be unrotted small grain straw, which is to be spread uniformly at the rate of 2.0 to 2.5 tons per acre (90 to 115 pounds per 1,000 square feet.)
 - Synthetic or organic soil stabilizers may be used under suitable conditions and in quantities as recommended by the manufacturer.
 - Wood-chip or paper-fiber mulch at a rate of 1,500 pounds per acre may be applied by a hydroseeder.
 - Mulch netting such as paper, jute, excelsior, cotton, or plastic, excelsior, cotton, or plastic, may be applied.
 - 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.
 - Gravel, crushed stone, or slag at the rate of 9 cubic yards per 1,000 SF applied uniformly to a minimum depth of 3 inches may be used. Size 2 or 3 (ASTM C-39) is recommended.
- Mulch anchoring should be accomplished immediately after placement to minimize loss by wind or water. This may be done by one of the following methods, depending upon the size of the area, steepness of slopes, and costs depending upon the size of the area, steepness of slopes, and costs:
 - Peg and Twine - Drive 8 to 10 inch wooden pegs to within 2 to 3 inches of the soil surface every 4 feet in all directions. Stakes may be driven before or after applying mulch. Secure mulch to soil surface by stretching twine between pegs in a cross-cross and a square pattern. Secure twine with two or more round turns.
 - Mulch Nettings - Staple paper, cotton, or plastic nettings to the soil surface. Use a tractor-driven netting in areas to be mowed.
 - Crimper (mulch anchoring tool) - A tractor-drawn implement, somewhat like a disc-harrow, especially designed to push or customer of the broadcast long fiber into the soil as to anchor it and leave it in a standing upright. This technique is limited to areas traversable by a tractor, which must operate on the contour of slopes. Straw mulch rate to be 3 tons per acre. No tackifying or adhesive agent is required.

- Liquid Mulch-Binders - May be used to anchor salt hay, hay, or straw mulches
- Applications should be heavier at edges where wind catches the mulch, in valleys, and at crests of banks. Remainder of area should be uniform in appearance.
- Use one of the following:
 - Organic and Vegetable Based Binders - Naturally occurring, power based, hydrophilic materials that mixed with formulates a gel and when applied to mulch under satisfactory curing conditions forming continuous film membrane networks of insoluble polymers. The vegetative gel shall be physiologically harmless and not result in a phytotoxic effect or impede growth of turfgrasses. Vegetable based gels shall be applied at rates and weather conditions recommended by the manufacturer.
 - High polymer synthetic emulsion, with water when diluted and following application to mulch, drying and curing shall no longer be soluble or dispersed in water. It shall be applied at rates weather conditions recommended by the manufacturer and remain tacky until germination of grass.

STANDARDS FOR TOPSOILING

METHODS AND MATERIALS

- Materials**
 - Topsoil should be friable 1, loamy2, free of debris, objectionable weeds and stones, and contain no toxic substance or adverse chemical or physical condition that may be harmful to plant growth. Soluble salts should not be excessive (conductivity less than 0.5 millimhos per centimeter. More than 0.5 millimhos may indicate seedlings and adversely impact growth). Imported topsoil shall have a minimum organic matter content of 2.75 percent. Organic matter content may be raised by additives.
 - Topsoil substitute is a soil material which may have been amended with sand, silt, clay, organic matter, fertilizer or lime and has the appearance of topsoil. Topsoil substitutes may be utilized on sites with insufficient topsoil for establishing permanent vegetation. All topsoil substitute materials shall meet the requirements of topsoil noted above. Soil tests shall be performed to determine the components of sand, silt, clay, organic matter, soluble salts and pH level.
- Stripping and Stockpiling**
 - Field exploration should be made to determine whether quantity and/or quality of surface soil justifies stripping.
 - Stripping shall be confined to the immediate construction area.
 - Where feasible, time may be applied before stripping at a rate determined by soil tests to bring the soil pH to approximately 6.5.
 - A 4 inch stripping depth is common, but may vary depending on the particular soil.
 - Stockpiles of topsoil should be situated so as not to obstruct natural drainage or cause off-site environmental damage.
- Stockpiles should be vegetated in accordance with the standards for Permanent Vegetation (pg. 4-1) or Temporary (pg. 5-1) Vegetative Cover for Soil Stabilization. Weeds should not be allowed to grow on stockpiles.

- Site Preparation**
 - Grade at the onset of the optimal seeding period so as to minimize the duration and area of exposure of disturbed soil to erosion.
 - Immediately proceed to establish vegetative cover in accordance with the specified seed mixture. Time is of the essence
 - Grade as needed and feasible to permit the use of conventional equipment for seedbed preparation, seeding, mulch application and anchoring, and maintenance.
 - As guidance for ideal conditions, subsoil should be tested for lime requirement. Limestone, if needed, should be applied to bring soil to a pH of approximately 6.5 and incorporated into the soil as nearly as practical to a depth of 4 inches.
 - Prior to topsoiling, the subsoil shall be in compliance with the Standard for Land Grading, pg. 19-1.
 - Employ needed erosion control practices such as diversions, grade stabilization structures, channel stabilization measures, sedimentation basins, and waterways. See Standards 11 through 42.
- Applying Topsoil**
 - Topsoil should be handled only when it is dry enough to work without damaging soil structure; i.e., less than field capacity (see glossary).
 - A uniform application to an average depth of 5.0 inches, minimum of 4 inches, firmed in place is required. Alternative depths may be considered where special regulatory and/or industry design standards are appropriate such as on golf courses, sports fields, landfill capping, etc. Soils with a pH of 4.0 or less or containing iron sulfides shall be covered with a minimum depth of 12 inches of soil having a pH of 5.0 or more, in accordance with the Standard for Management of High Acid Producing Soil (pg. 1-1).
 - Pursuant to the requirements in Section 7 of the Standard for Permanent Vegetative Stabilization, the contractor is responsible to ensure that permanent vegetative cover becomes established within 80% of the soils to be stabilized with vegetation. Failure to achieve the minimum coverage may require additional work to be performed by the contractor to include some or all of the following: supplemental seeding, re-application of lime and fertilizers, and/or the addition of organic matter (i.e. compost) as a top dressing. Such additional measures shall be based on soil tests submitted as directed herein; see standards for Permanent Vegetation (pg. 4-1) or Temporary (pg. 5-1) Vegetative Cover for Soil Stabilization. Weeds should not be allowed to grow on stockpiles.

DUST CONTROL STANDARDS

The following methods should be considered for dust control at the request of the Township Construction Code Official, or upon inspection by an S.C.D. official.

- Spray - On Adhesive - On mineral soils (not effective on muck soils). Keep traffic off these areas.

	Water Dilution	Type of Nozzle	Apply Gallons/Acre
Anticong asphalt emulsion	7:1	Cone spray	1,200
Latex emulsion	12:1/2:1	Fine spray	235
Resin in water	4:1	Fine spray	300

- Tillage - To roughen surface and bring seeds to the surface. This is a temporary emergency measure which should be used before soil blowing starts. Begin plowing on windward side of site. Chisel-type plows spaced about 12 inches apart, and spring-topped harrows are suitable.
- Sprinkling - Site is sprinkled until the surface is wet.
- Barriers - Solid board fences, snow fences, barbed fences, crate walls, bales of hay and similar material can be used to crate walls, bales of hay and similar material can be used to crate soil blowing.
- Calcium Chloride - Shall be in the form of loose dry granules at a rate that will keep surface moist but not cause or flakes fine enough to feed through commonly used spreaders, pollution or plant damage. If used on steeper slopes, then pollution or plant damage. If used on steeper slopes, then pollution or plant damage.
- Stone - Cover surface with crushed stone or coarse gravel.
- Mulch - Stabilization with approved mulches and vegetation cover being temporary of permanent.

SEEDING SPECIFICATIONS

Temporary Seeding	Fertilizer	10-20-10 or equivalent	11 Lbs./1,000 SF
Limestone	(50% Calcium plus Mgo)	90 Lbs./1,000 SF	90 Lbs./1,000 SF
Perennial Ryegrass	(Lolium multiflorum)	1 Lb./1,000 SF	1 Lb./1,000 SF

Permanent Seeding	Fertilizer	10-20-10 or equivalent	11 Lbs./1,000 SF
Limestone	(50% Calcium plus Mgo)	90 Lbs./1,000 SF	90 Lbs./1,000 SF
Mixture B-15	(Kentucky Bluegrass (Three Cultivar Blend) Hard Fescue Perennial Ryegrass	4.0 Lbs./1,000 SF	0.7 Lbs./1,000 SF

FERTILIZER

Work lime and fertilizer into soil as nearly as practical to depth of four inches (4"). Remove from the surface all stones two inches (2") or larger. Roll soil to firm the seed bed where feasible. Use specifications as shown above.

Note: Optimum seeding dates February 1 to April 30 and August 15 to October 30.

STANDARD FOR LAND GRADING

PLANNING CRITERIA

The grading plan and installation shall be based upon adequate topographic surveys and investigations. The plan is to show the location, slope, cut, fill and finish elevation of the surfaces to be graded. The plan should also include auxiliary practices for safe disposal of runoff water, slope stabilization, erosion control and drainage. Facilities such as waterways, ditches, diversions, grade stabilization structures, retaining walls and subsurface drains should be included where necessary.

Erosion control measures shall be designed and installed in accordance with the applicable standard contained herein.

The development and establishment of the plan shall include the following:

- The cut face of earth excavations and fills shall be no steeper than the safe angle of repose for the materials encountered and flat enough for proper maintenance.
 - The permanently exposed faces of earth cuts and fills shall be vegetated or otherwise protected from erosion.
 - Provisions shall be made to safely conduct surface water to storm drains or suitable water courses and to prevent surface runoff from damaging cut faces and fill slopes.
 - Subsurface drainage is to be provided in areas having a high water table, to intercept seepage that would adversely affect slope stability, building foundations or create undesirable wetness. See Standard for Subsurface Drainage, pg. 32-1.
 - Adjoining property shall be protected from excavation and filling operations.
 - Fill shall not be placed adjacent to the bank of a stream or channel, unless provisions are made to protect the hydraulic, biological, aesthetic and other environmental functions of the stream.
- Soil Management and Preparation**
- Subgrade soils prior to the application of topsoil shall be free of excessive compaction to a depth of 6.0 inches to enhance the establishment of permanent vegetative cover.
- This section of this Standard addresses the potential for excessive soil compaction in light of the intended land use, testing for excessive soil compaction where permanent vegetation is to be established and mitigation of excessive soil compaction when appropriate.
- Due to use or setting, certain disturbed areas will not require compaction remediation including, but not limited to the following:
- Within 20 feet of building foundations with basements, 12 feet from slab or crawl space construction.
 - Where soils or gravel surfaces will be required to support post-construction vehicular traffic loads such as roads, parking lots and driveways (including gravel surfaces), bicycle paths or pedestrian walkways (sidewalks etc)
 - Airports, railways or other transportation facilities
 - Areas requiring industry or government specified soil designs, including golf courses, landfills, wetland restoration, septic disposal fields, wetland ponds, etc.
 - Areas governed or regulated by other local, state or federal regulations which dictate soil conditions
 - Brownfields (capped uses), urban redevelopment areas, in-fill areas, recycling yards, junk yards, quarries and
 - Slopes determined to be inappropriate for safe operation of equipment
 - Portions of a site where no heavy equipment travel or other disturbance has taken place
 - Areas receiving temporary vegetative stabilization in accordance with the Standard.
 - Where the area available for remediation practices is 500 square feet or less in size.
 - Locations containing shallow (close to the surface) bedrock conditions.

Areas of the site which are subject to compaction testing and/or mitigation shall be graphically denoted on the certified soil erosion control plan.

Soil compaction remediation or testing to prove remediation is not necessary will be required in areas where permanent vegetation is to be established that are not otherwise exempted above. Testing method shall be selected, and soil compaction testing shall be performed by the contractor or other project owner's representative (i.e. geotechnical engineer). A minimum of two (2) tests shall be performed for projects with an overall limit of disturbance of up to one (1) acre and at a rate of two (2) tests per acre of the overall limit of disturbance for larger areas which shall be evenly distributed over the area of disturbance subject to testing. Tests shall be performed in areas representative of the construction activity prevailing in the area. In the event this testing indicates compaction in excess of the maximum thresholds indicated for the testing method, the contractor/owner shall have the option to perform compaction mitigation over the entire disturbed area (excluding exempt areas) or to perform additional testing to establish the limits of excessive compaction whereupon only the excessively compacted areas would require compaction mitigation.

Soil compaction testing is not required if when subsoil compaction remediation (scarification/tillage (6" minimum depth) or similar) is proposed as part of the sequence of construction.

Soil Test Method Options

- Probing Wire Test Method**

This test shall be conducted with a firm wire (15-1/2 gauge steel wire - e.g. survey marker flag, straight wire stock, etc.), 18 to 21 inches in length, with 6" inches from one end visibly marked on the wire. Conduct wire flag test by holding the wire flag near the flag end and push it vertically into the soil at several different locations in the field to the lesser of a 6 inch depth or the depth at which it bends due to resistance in the soil. Record the depth at which it bends due to resistance in the soil. The wire should penetrate without bending or deforming at least 6" into the ground by hand, without the use of tools. If penetration fails and an obstruction is suspected (rocks, root, debris, etc.) the test can be repeated in the same general area. If the test is successful the soil is not excessively compacted. If the wire is difficult to insert (wire bends or deforms prior to reaching 6 inches in depth) the soil may be excessively compacted and compaction mitigation or further testing via method 3 or 4 below is required, the choice of which is at the contractor/owner's discretion.
- Handheld Soil Penetrometer Test Method**

This test shall be conducted based on the Standard Operation Procedure (SOP) #RCE2010-001, prepared by the Rutgers Cooperative Extension, implemented June 1, 2010, last revised February 28, 2011. A result of less than or equal to 300 psi shall be considered passing. If the result is greater than 300 psi the soil may be excessively compacted and compaction mitigation or further testing via method 3 or 4 below is required, the choice of which is at the contractor/owner's discretion.

3. Tube Bulk Density Test Method

This test shall be certified by a New Jersey Licensed Professional Engineer utilizing only undisturbed samples (reconstitution of the sample not permitted) collected utilizing the procedure for Soil Bulk Density Tests as described in the USDA NRCS Soil Quality Test Kit Guide, Section 1-4, July 2001. When the texture of the soil to be tested is a sand or loamy sand and lack of soil cohesion or the presence of large amounts of coarse fragments, roots or worm channels prevent the taking of undisturbed samples, this test shall not be used. Where the results of replicate tests are by more than ten percent (10%), the samples shall be examined for the following defects:

- Cracks, worm channels, large root channels or poor soil tube contact within the samples;
- Large pieces of gravel, roots or other foreign objects;
- Smearing or compaction of the upper or lower surface of the samples.

If any of the defects described in 3 (iii) above are found, the defective core(s) shall be discarded and the test repeated using a new replicate sample for each defective replicate sample. The bulk density (defined as the weight of dry soil per volume) results shall be compared with the Maximum Dry Bulk Densities in Table 19-1. A result of less than or equal to the applicable maximum bulk density shall be considered passing. If the result is greater than the maximum bulk density the soil shall be considered excessively compacted and compaction mitigation is required.

4. Nuclear Density Test Method

This test shall be certified by a New Jersey Licensed Professional Engineer and conducted by a nuclear gauge certified inspector pursuant to ASTM D6939. The bulk density measurement results shall be compared with the Maximum Dry Bulk Densities in Table 19-1. A result of less than or equal to the applicable maximum bulk density shall be considered passing. If the result is greater than the maximum bulk density the soil shall be considered excessively compacted and compaction mitigation is required.

Maximum Dry Bulk Densities (grams/cubic centimeter) by soil type

Soil Type/Texture	Bulk Density (g/cc)
Coarse, Medium and Fine Sands and Loamy Sands	1.80
Very Fine Sand and Loamy Very Fine Sand	1.77
Sandy Loam	1.75
Loam, Sandy Clay Loam	1.70
Clay Loam	1.65
Sandy Clay	1.60
Silt, Silty Loam	1.55
Silty Clay Loam	1.50
Silty Clay	1.45
Clay	1.40

Source: USDA Natural Resource Conservation Service, Soil Quality Information Sheet, Soil Quality Resource Concepts: Compaction, April 1998

Additional testing methods which conform to ASTM standards and specifications, and which produce a dry weight, soil bulk density measurement may be allowed subject to District approval.

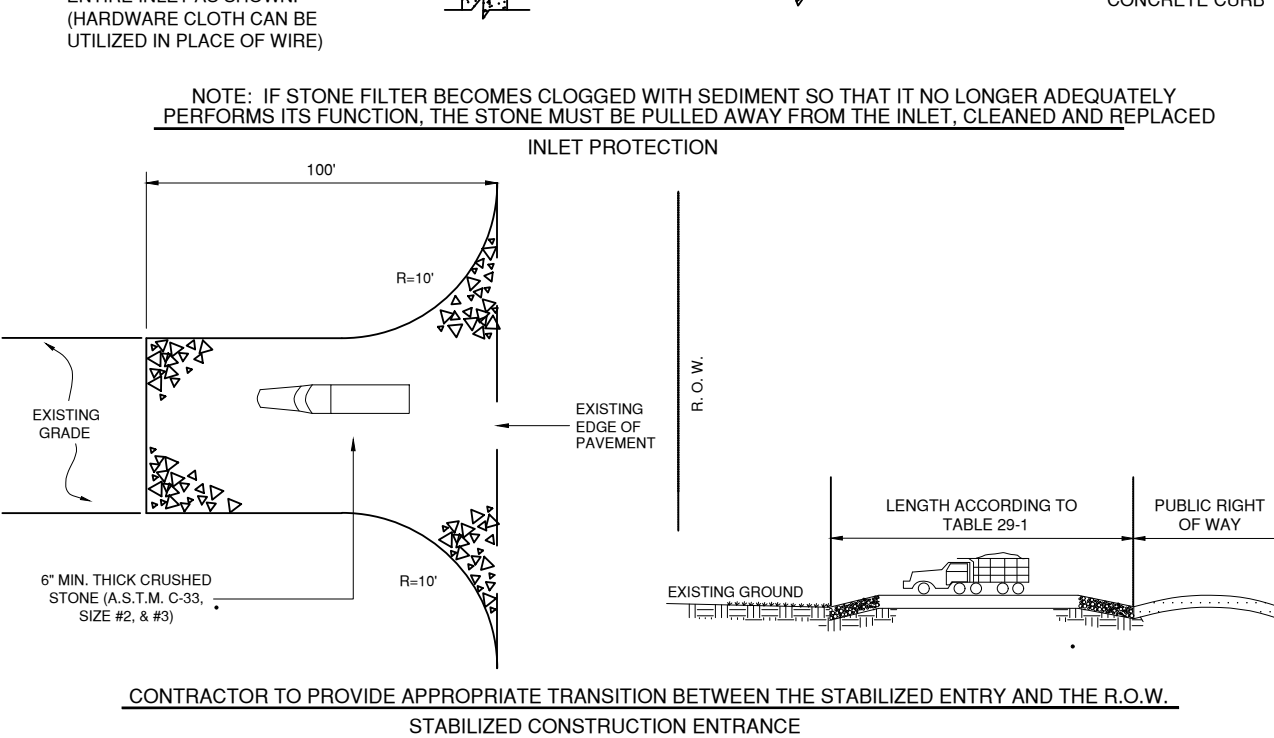
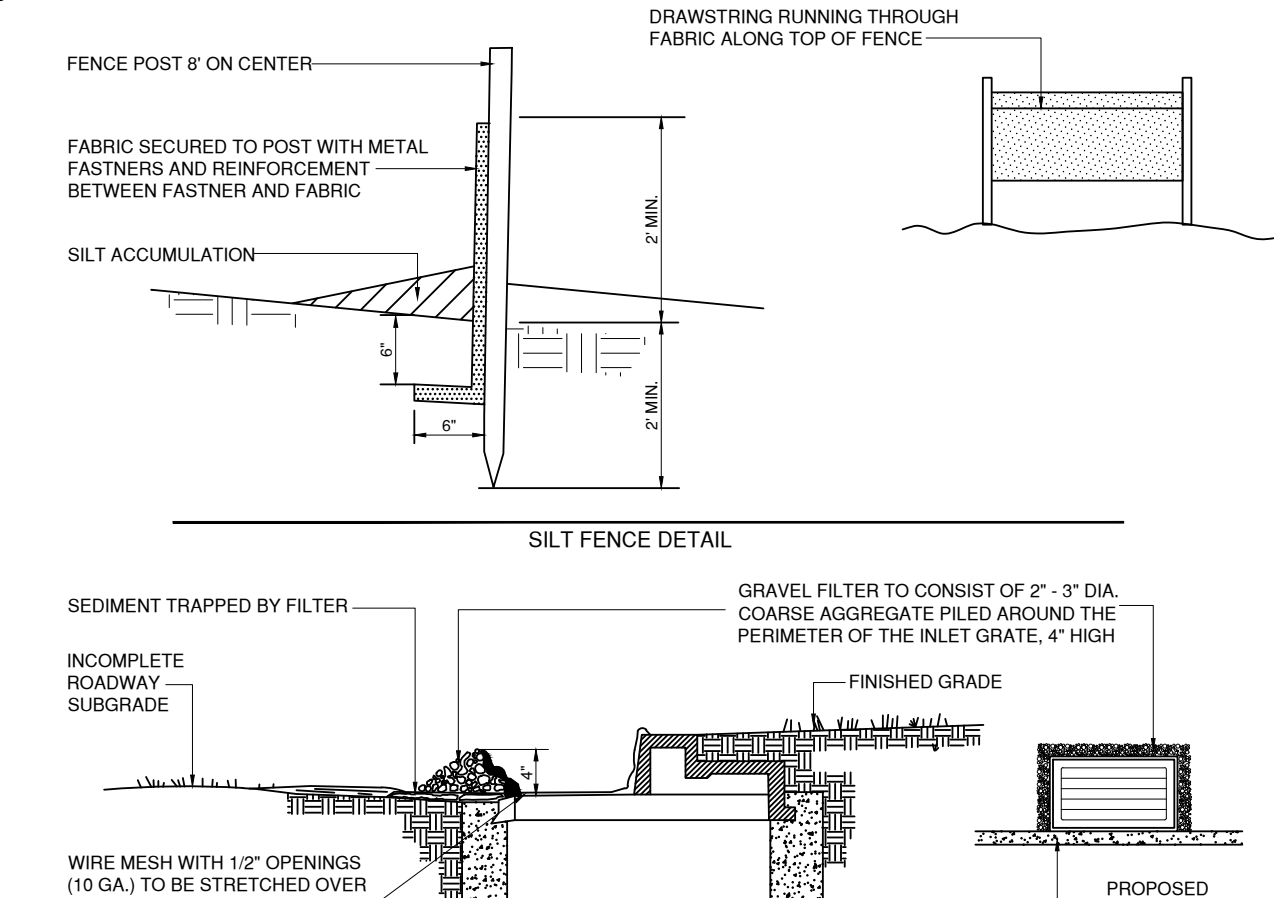
Procedures for Soil Compaction Mitigation

If subgrade soils are determined to be excessively compacted by testing, as identified above, procedures shall be used to mitigate excessive soil compaction prior to placement of topsoil and establishment of permanent vegetative cover. Restoration of compacted soils shall be through deep scarification/tillage (6" minimum depth) where there is no danger to underground utilities (cables, irrigation systems, etc.) or in the alternative, another method as specified by a New Jersey Licensed Professional Engineer.

Installation Requirements

- Timber, logs, brush, rubbish, rocks, stumps and vegetative matter which will interfere with the grading operation or affect the planned stability or fill areas shall be removed and disposed of according to the plan.
- Topsoil is to be stripped and stockpiled in amounts necessary to complete finish grading of all exposed areas requiring topsoil. See Standard for Topsoiling.
- Fill material is to be free of brush, rubbish, timber, logs, vegetative matter and stumps in amounts that will be detrimental to constructing stable fills.
- All structural fills shall be compacted as determined by structural engineering requirements for their intended purpose and as required to reduce slippage, erosion or excessive saturation.
- All disturbed areas shall be left with a neat and finished appearance and shall be protected from erosion. See Standards for Permanent Vegetative Cover for Soil Stabilization.
- Trees to be retained shall be protected if necessary in accordance with the Standard for Tree Protection During Construction.

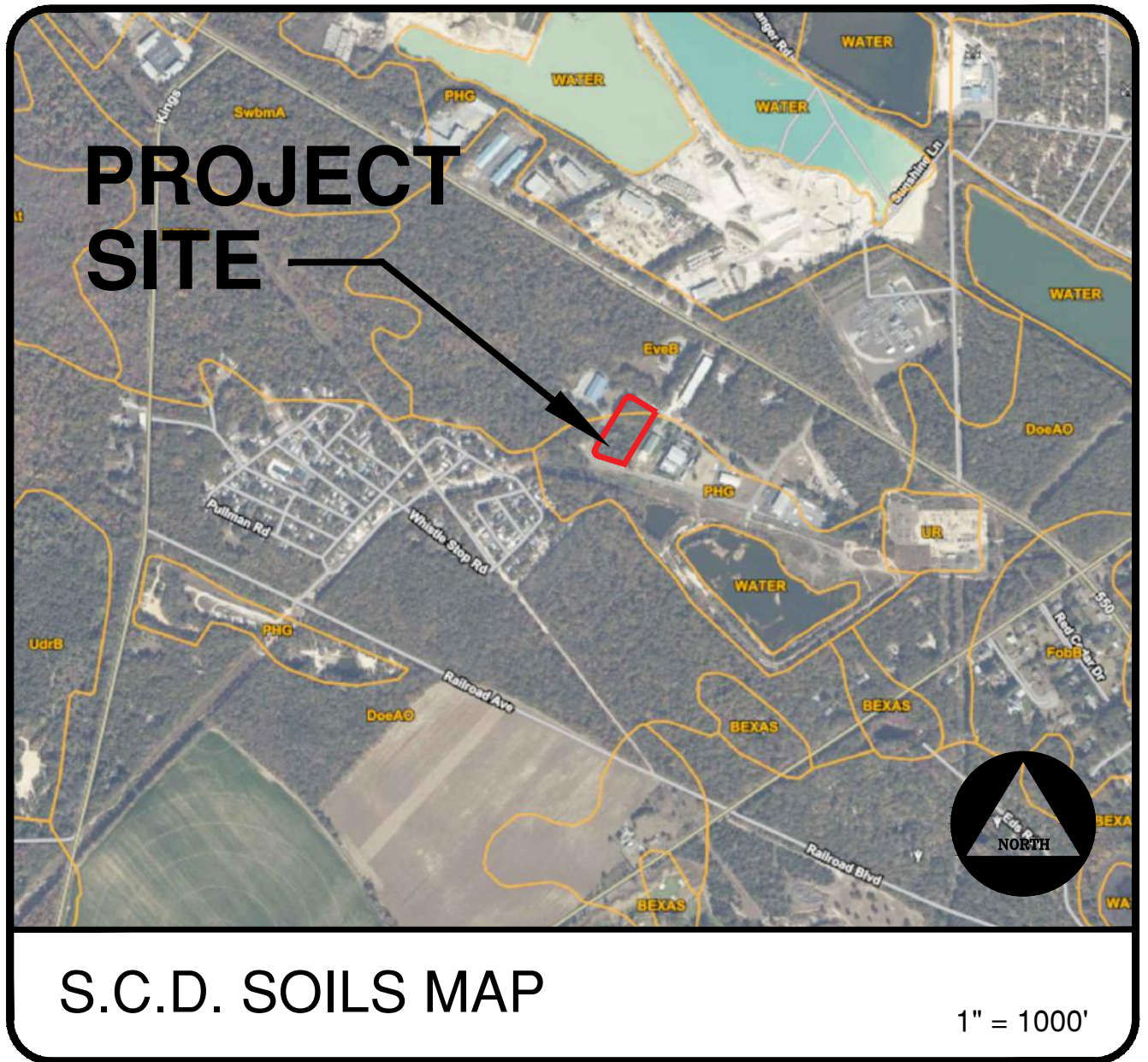
SOIL CONSERVATION NOTES



The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto roadways. This may require periodic dressing with additional stone or additional length as conditions demand and repair and/or cleanup of any measures used to trap sediment. All sediment spilled, dropped, washed, or tracked onto roadways (public or private) or other impervious surfaces must be removed immediately.

Where accumulation of dust/sediment is inadequately cleaned or removed by conventional methods, a power broom or street sweeper will be required to clean paved or impervious surfaces. All other access points which are not stabilized shall be blocked off.

SOIL CONSERVATION DETAILS



Soil Type: Evesboro Sand (EveB)

Evesboro sand consists of nearly level or gently sloping, excessively drained, loose sandy soil. Permeability is rapid in typical sand areas. The seasonal high water table is at a depth of between 1.5 to 3.5 feet below.

Classification: 0-5 percent slopes
Land capability classification (nonirrigated): 2w
Hydrologic group: B
Description as per U.S.D.A. Soil Conservation Service, County Soil Survey dated February, 1977.

Soil Type: Pits, sand, and gravel (PHG)

Pits are open excavations from which soil material has been removed for use as construction material or road aggregate. Some pits are filled with water.

Classification: Nearly level
Land capability classification (nonirrigated): 8s
Hydrologic group: Not specified
Description as per U.S.D.A. Soil Conservation Service, County Soil Survey dated February, 1977.

SOILS DESCRIPTION

PHASE	OPERATION	TIME PERIOD
A	ESTABLISH EROSION CONTROL MEASURES	2 DAYS
B	SITE CLEARING	15 DAYS
C	ROUGH GRADING	10 DAYS
D	CONSTRUCT STORM WATER BASIN INCLUDING VEGETATIVE STABILIZATION	15 DAYS
E	CONSTRUCT SEPTIC SYSTEM & WELL	5 DAYS
F	CONSTRUCT STORM DRAINAGE STRUCTURES	5 DAYS
G	FINE GRADE AND CONSTRUCT STONE BASE	5 DAYS
H	CONSTRUCT DRAINAGE SWALES	2 DAYS
I	SOIL COMPACTION TESTING PRIOR TO THE INSTALLATION OF TOPSOIL	1 DAY
J	RESTORATION AS REQUIRED	N/A
K	PERFORM TEMPORARY SEEDING AS NECESSARY	2 DAYS
L	PERFORM PAVING AND CONSTRUCT SIDEWALKS	5 DAYS
M	LAY BUILDING FOUNDATIONS	90 DAYS
N	PERFORM PERMANENT SEEDING AND LANDSCAPING	5 DAYS

VARIOUS LOT GRADING TO CONTINUE THROUGHOUT CONSTRUCTION SEQUENCE.
DURATION OF EACH SEQUENCE WILL VARY DUE TO SECTIONALIZATION AND MARKET CONDITIONS.
CONSTRUCTION WILL BEGIN SUMMER 2022.

CONSTRUCTION SEQUENCE

LAND COVER

- Total Area of Site: 1.806 Acres
- Present Cover: Vacant / Woodlands
- Total Area of Disturbance: 1.76 Acres
- Adjacent Site Conditions: Developed / Woodlands

RESPONSIBILITY

All soil erosion and sediment control measures and facilities shall be the sole responsibility of the developer/owner. The responsibility shall include, but not be limited to installation, inspection, and maintenance of conditions during and following construction.

APPLICANT/OWNERS:

PROJECT LOCATION:

Francis John Klebaur
13 Megan Lane
Ocean View, NJ 08230
Phone (609) 624-1958

30 Stoney Court
Dennis Township, NJ

GENERAL INFORMATION

SOIL CONSERVATION NOTES

SOIL CONSERVATION NOTES

SOIL CONSERVATION DETAILS

JOSEPH H. MAFFEI

PROFESSIONAL ENGINEER
N.J.P.E. LIC. #37894



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