		200' OWNER	SLIST
<b>BLOCK</b>	<u>LOT</u>	PROPERTY LOCATION	PROPERTY OWNER & ADDRESS
20	10	101 ORMONT RD	FEKETE, KENNETH S JR & STEPHANIE  101 ORMONT RD
			CHATHAM, NJ 07928
20	11	97 ORMONT RD	STYPLE, WILLIAM & NANCY
			97 ORMONT RD
			CHATHAM, NJ 07928
20	12	93 ORMONT RD	MUELLER, WILLIAM A & SHARON K
			93 ORMONT RD
20	14	47 SUSAN DR	CHATHAM, NJ 07928 MESZAR, IBOLYA FLORA
20	1.7	TO CONTROLL	47 SUSAN DR
			CHATHAM, NJ 07928
20	15	43 SUSAN DR	VAZIRI, MARIAM
			28 BEECHWOOD RD
20	16	20 CHCAN DD	SUMMIT, NJ 07901 NNG REAL PROPERTY I LLC
20	16	39 SUSAN DR	39 SUSAN DR
			CHATHAM, NJ 07928
20	17	35 SUSAN DR	DIRU, HAPPINESS
			35 SUSAN DR
			CHATHAM, NJ 07928
20	18	31 SUSAN DR	157 GRAND LLC
			31 SUSAN DR
20	19	27 SUSAN DR	CHATHAM, NJ 07928
20	19	27 SUSAN DR	LIN, STEVE & LAURIE HUANG 94 SAW MILL RD
			KINNELON, NJ 07405
20	7	115 ORMONT RD	HEFELE, JOHN R & FLORENCE L
		TIO GRAWGITT NE	115 ORMONT RD
			CHATHAM, NJ 07928
20	8	109 ORMONT RD	NGHIEM, HUAN/MAUREEN
			109 ORMONT RD
			CHATHAM, NJ 07928
20	9	105 ORMONT RD	DONNABELLA, VINCENT & CATHERINE D
			105 ORMONT RD
27	23	50 SUSAN DR	CHATHAM, NJ 07928 CORTESE, MICHAEL A & COLLEEN F
21	23	50 SUSAN DR	50 SUSAN DR
			CHATHAM, NJ 07928
27	24	46 SUSAN DR	JOHANSON, MARY E
			46 SUSAN DR
			CHATHAM, NJ 07928
27	25	40 SUSAN DR	AL-JIJAKLI, SARAB AHMAD/HAMAD, NINA
			40 SUSAN DR
27	26	36 SUSAN DR	CHATHAM, NJ 07928 DEVINE, HUGH & VIRGINIA M SCHMITT
21	20	36 SUSAN DR	36 SUSAN DR
			CHATHAM, NJ 07928
27	27	32 SUSAN DR	ANTONIADES, NICOLAS & SHARON X WU
			32 SUSAN DR
			CHATHAM, NJ 07928
27	28	28 SUSAN DR	MATKOWSKI, MICHAEL & ROBYN FERA
			28 SUSAN DR
			CHATHAM, NJ 07928
THE EOI		G COMPANIES MUST ALSO B	E NOTIFIED
THE FUL	LOVVIIN	G COMPANIES MUST ALSO B	E NOTIFIED
COMCAST	OF CENT	RAL NEW JERSEY II, LLC	100 RANDOLPH ROAD
		,	SOMERSET, NJ 08873
TRANSCON	ITINENTA	L GAS PIPELINE CORP.	PO BOX 1396
			HOUSTON, TX 77252
TEXAS EAS	TERN TR	ANSMISSION CORP.	5400 WESTHEIMER CT., SUITE 692
IODAL TE	DE 41 =-	TATE DEL (EL OE) (EL E	HOUSTON, TX 77056
JCP&L CO.	REAL ES	TATE DEVELOPMENT	300 MADISON AVENUE
DUBLIC CE	ם/וכב בי	ECTRIC & GAS COMPANY	MORRISTOWN, NJ 07962 MANAGER-CORPORATE PROPERTIES
PUBLIC SEI	INVIOE EL	LOTNIC & GAS CONFANT	80 PARK PLAZA, T6B
			NEWARK, NJ 07102
NEW JERSI	EY-AMER	RICAN WATER CO.	167 J.F. KENNEDY PARKWAY
NEW JERSI	EY-AMER	RICAN WATER CO.	167 J.F. KENNEDY PARKWAY SHORT HILLS, NJ 07078

	DESIGN WAIVER/VARIANCE SCHEDULE	
	39 SUSAN DRIVE- TOWNSHIP OF CHATHAM	
Code Regulation	Required	Proposed
§ 30-96.24 g.1 Steep Slope Protection	Applicant is permitted to disturb slopes of greater than 25% up to 500 square feet in total area.	Proposed disturbance = 8,649.58 sf
§ 30-96.15.d.2(d)(1) Walls and Fences	The maximum height of any structural retaining wall, section of structural retaining wall, or tier of a structural retaining wall shall be six feet.	Proposed wall higher than 6 ft.
§ 30-96.15 d.2.(e) (1) Walls and Fences	A structural retaining wall shall be located no closer to a property line than twice the height of the wall or wall segment closest to the property line, and the applicant must demonstrate that a failure of the structural retaining wall will not have an adverse impact on any adjoining property.	Less than twice the height.
§ 30-96.20 g.2 Lot Grading Plans	There shall be no change in existing grade that raises the elevation of the lot within five feet of a property line. Furthermore, there shall be no change in existing grade, which raises any portion of the lot within 15 feet of a property line to an elevation that is more than four feet above the existing ground level at the property line. Any new grade shall be at an even slope with the toe of the slope at the ground level which exists at five feet inside the property line; provided, however, that, when necessary, swales shall be created in order to control surface waters in a manner that will protect abutting lands. Retaining walls shall not exceed six feet in height provided that for each six inches in height above the pre- or post-construction grade at the toe of the wall, a retaining wall shall be set back one foot from the property line to which it is adjacent. Distances from property lines shall be measured at right angles to straight portions and radial to curved portions.	Raised grades within 5 ft. of property line
§ 30-96.20 g.4 Lot Grading Plans	An area of at least 10 feet in width around the foundation of any building shall be graded downward, away from the foundation, in accordance with the requirements of the New Jersey Uniform Construction Code.	Driveway slopes down towards the building. / No grading proposed in the rea area. Existing topography to remain.

# PROTECT YOURSELF A PHONE CALL CAN BE YOUR INSURANCE POLICY

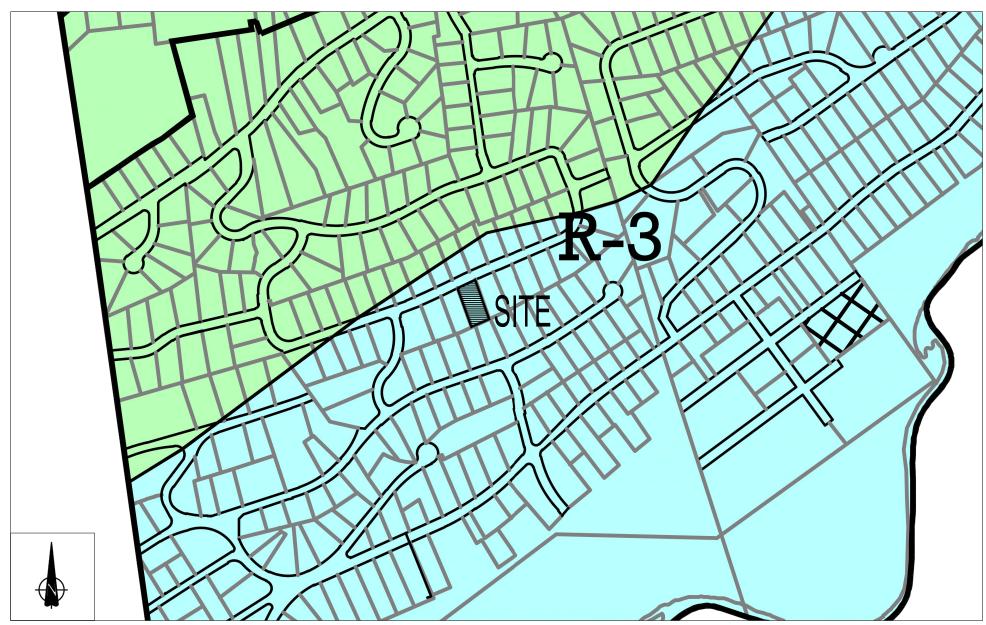


# PROPERTY OWNER/APPLICANT:

NNG REAL PROPERTY I, LLC 184 SOUTH LIVINGSTON AVENUE **SUITE 9-240** LIVINGSTON, NJ 07039

# SITE PLAN

# 39 SUSAN DRIVE TAX LOT 16 BLOCK 20 TOWNSHIP OF CHATHAM MORRIS COUNTY, NEW JERSEY



**ZONING MAP** SCALE ±1"=250'

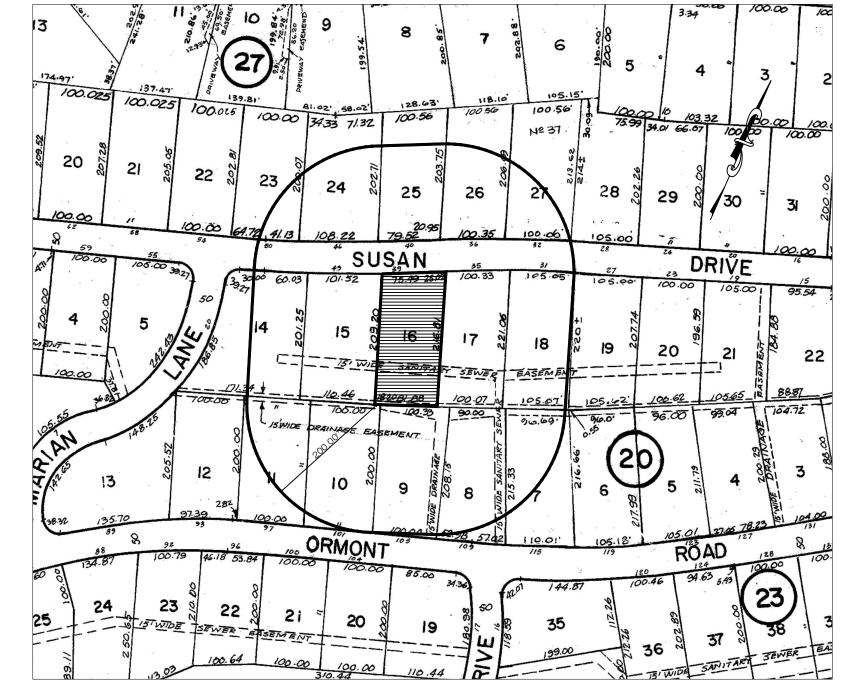
SCHEDULE OF GE	NERAL ZONING REQUIRI	EMENTS (ZONE	R-3, RESIDENCE D	ISTRICT)	
BL	OCK 20- 39 SUSAN DRIVE	- TOWNSHIP	OF CHATHAM		
Regulation	General	Existing	Proposed	Comment	
	Requirements	Lot 16	Lot 16		
Principal Permitted Uses *	One-Family Dwelling	Vacant	One-Family Dwelling	Conforming	
Min. Lot Area	20,000 sf	21,322.43 sf	21,322.43 sf	Conforming	
Max. Depth of Measurement	200 ft.	216.81 (e)	216.81 (e)	Pre-existing Nonconformit	
Min. Lot Width (Street Line)**	90 ft.	100.51 ft.	100.51 ft.	Conforming	
Min. Lot Width (Setback Line)	100 ft.	100.50 ft.	100.50 ft.	Conforming	
Min. Front Yard	50 ft.	N/A	35.84 ft. (V)	Variance is Required	
Min. Rear Yard	50 ft.	N/A	132.86 ft.	Conforming	
Min. Side Yard	15 ft.	N/A	15 ft.	Conforming	
Min. Side Yard (Combined)	30% (30.15 ft.)	N/A	31.02 ft.	Conforming	
Min. Side Yard (Balcony)*****	12 ft.	N/A	15.90 ft.	Conforming	
Max. Building Height (story/ft.)	2.5 Sty./35 ft.	N/A	3 Sty./ 51.40 ft. (V)	Variance is Required	
Max. Building Coverage***	2,679.35 sf	N/A	2,590.55 sf	Conforming	
Max.Impervious Lot Coverage****	6,264.49 sf	N/A	3,852.93 sf	Conforming	
Notes:	-				
(e) Pre-existing Nonconformity	N/A - Denotes Not Applicable				
(V) Variance is Required	NA - Denotes Not Available				

Density shall not exceed one (1) lot for every one and one-half (1 1/2) gross acres of subdivision tract area. \*\* Except that if there are three or more developed lots on the same side of the street within 200 feet of any particular undeveloped lot and none of such developed lots has a front yard as deep as 50 feet then the front yard of the undeveloped lot shall not be required to be deeper than the deepest front yard of such developed lots, provided, however, that in no event shall the front yard of the undeveloped lot be less than 35 feet.

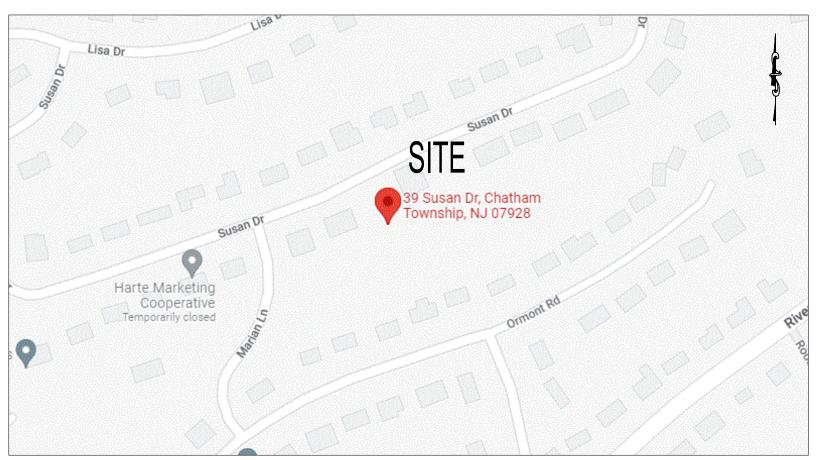
\* 2,000 square feet plus 6% of lot area greater than 10,000 square feet

\*\* 4,000 square feet plus 20% of lot area greater than 10,000 square feet

\*Projections into Required Yards. Notwithstanding any other provision of this section, the following may project into any front, side or rear yard required in the various zones: chimneys; and portions of a building, provided that no such portion of a building shall project more than three feet into any required front, side or rear yard.



200' RADIUS / TAX MAP



**KEY MAP** SCALE ±1"=250'

APPROVED BY PLANNING BOARD - TOWNSHIP OF CHATHAM				
BOARD SECRETARY:	DATE:			
BOARD CHAIRMAN:	DATE:			
BOARD ENGINEER:	DATE:			

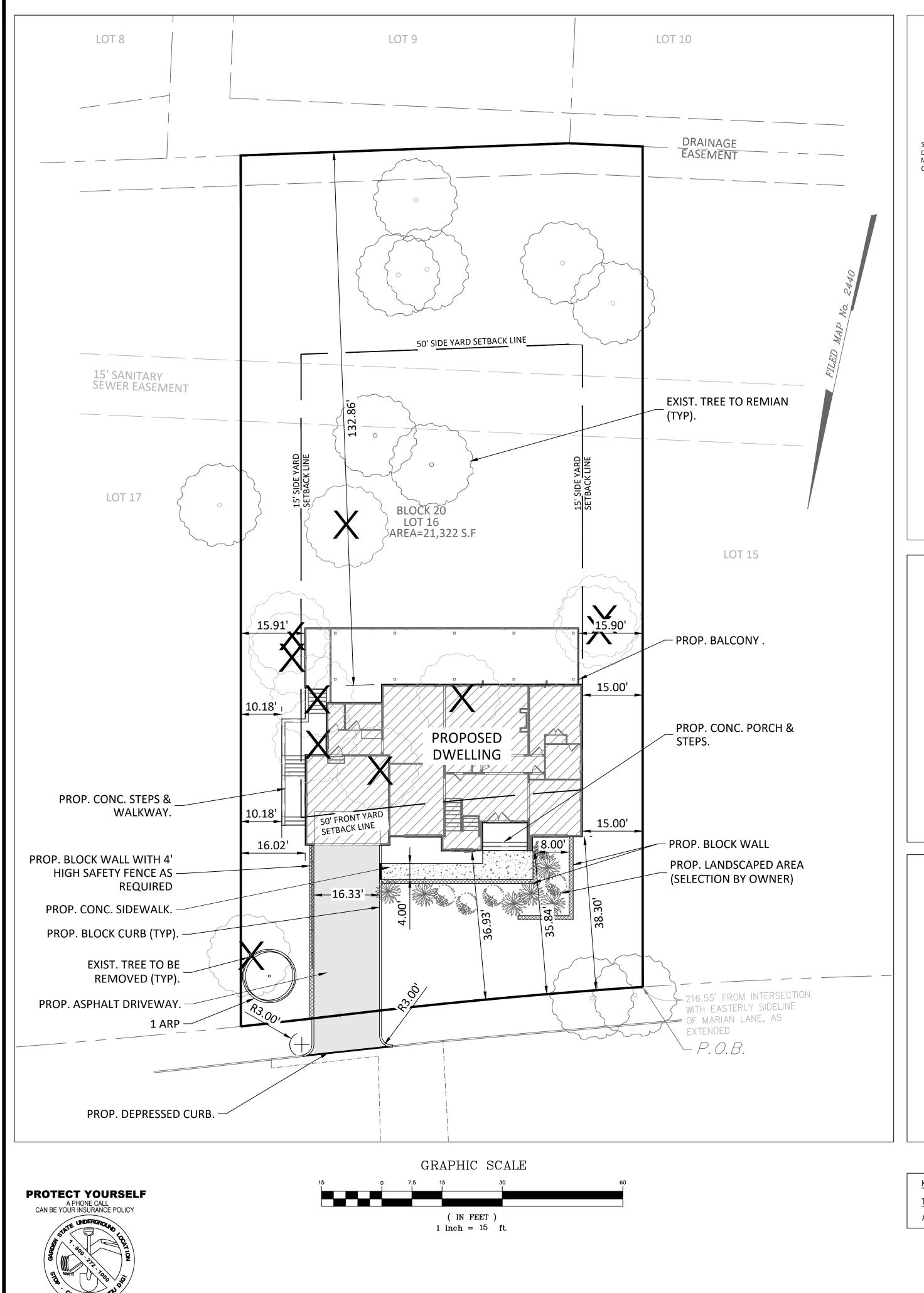
SHEET	INDEX OF DRAWINGS	ISSUED	REVISED
1	COVER SHEET	12/28/22	06/02/23
2	SITE DEVELOPMENT PLAN	12/28/22	10/17/23
3	GRADING AND UTILITY PLAN	12/28/22	10/17/23
4	CONSTRUCTION DETAILS	12/28/22	10/17/23
5	SOIL EROSION AND SEDIMENT CONTROL PLAN	12/28/22	06/02/23
6	SOIL EROSION AND SEDIMENT CONTROL NOTES AND DETAILS	12/28/22	N/A

						1 PER ENGINEERING REV	Ha ON	© 2022 AWZ Engineering. Inc. All Rights R
DRAWN BY	LF/IG DATE:	07/06/22	DESIGNED BY	AK DATE:	07/06/22	APPROVED BY	AK	DATE:
	ADNAN A. KHAN, P.E., C.M.E.	PROFESSIONAL ENGINEER		10/17/23	( Allen A. Khon DATE	)	N.J. LICENSE NO. 39812 P.A. LICENSE NO. 45052E	N.Y. LICENSE NO. 086435 M.D. LICENSE NO. 41803
			ANTS	J 07045			18.com	18400

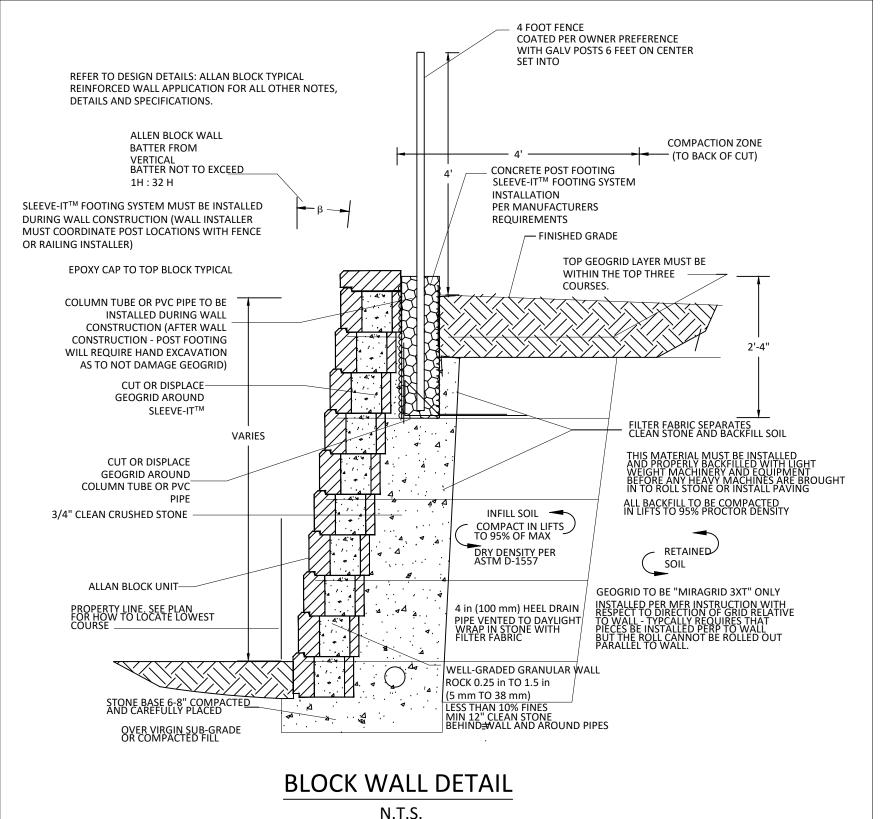
**JOB NUMBER:** 22-0605

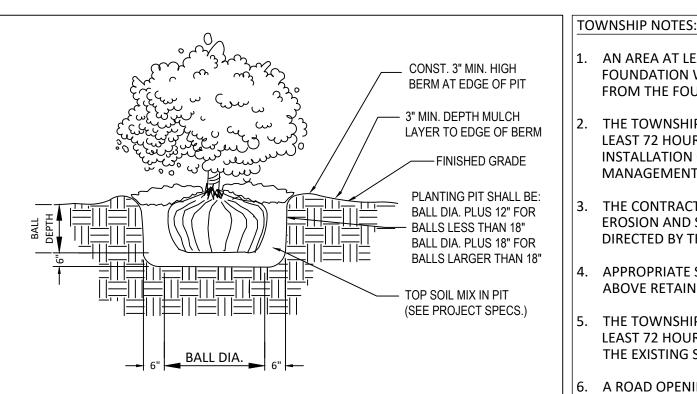
SCALE: AS SHOWN

C-01



WHAT YOU DON'T KNOW CAN HURT YOU





SHRUB PLANTING DETAIL

1. AN AREA AT LEAST 10 FEET WIDE AROUND THE FOUNDATION WILL BE GRADED DOWNWARD AWAY FROM THE FOUNDATION.

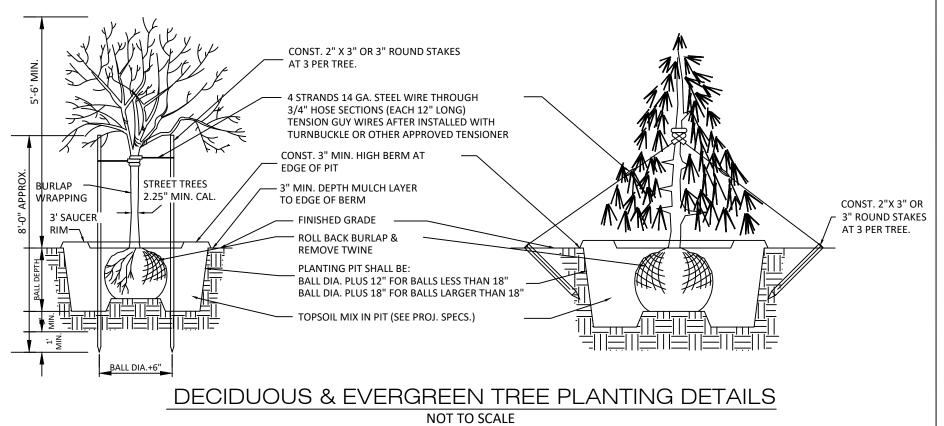
THE TOWNSHIP ENGINEER MUST BE NOTIFIED AT LEAST 72 HOURS IN ADVANCE OF THE INSTALLATION OF THE STORMWATER MANAGEMENT SYSTEM AND APPURTENANCES.

. THE CONTRACTOR WILL ADD ADDITIONAL SOIL EROSION AND SEDIMENT CONTROL MEASURES AS DIRECTED BY THE TOWNSHIP ENGINEER.

APPROPRIATE SAFETY MEASURES WILL BE TAKEN
ABOVE RETAINING WALLS.

5. THE TOWNSHIP ENGINEER MUST BE NOTIFIED AT LEAST 72 HOURS PRIOR TO THE CONNECTION TO THE EXISTING SANITARY SEWER.

A ROAD OPENING PERMIT FROM THE TOWNSHIP DPW IS TO BE OBTAINED PRIOR TO ANY WORK WITHIN THE STREET RIGHT-OF-WAY.



## PROPOSED PLANTING SCHEDULE

KEY	<u>QTY</u>	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
TREE(S)						
ARP	1	$\odot$	ACER RUBRUM 'RED SUNSET'	RED SUNSET RED MAPLE	4" CAL.	B+B

GENERAL NOTES:

- 1. PARCEL IS KNOWN AS TAX LOT 16, IN BLOCK 20 AS SHOWN ON THE TAX MAPS OF THE TOWNSHIP OF CHATHAM.
- 2. PARCEL IS LOCATED ENTIRELY IN THE R-3 (SINGLE FAMILY) DISTRICT AS SHOWN ON THE ZONING MAP OF THE TOWNSHIP OF CHATHAM.
- 3. THIS IS A SITE DEVELOPMENT PLAN AND NOT A SURVEY. DO NOT SCALE DRAWINGS FOR LOCATIONS OF ADJACENT STRUCTURES AND SURROUNDING PHYSICAL CONDITIONS. THESE ITEMS MAY BE SCHEMATIC ONLY EXCEPT WHERE DIMENSIONS ARE SHOWN THERETO.
- 4. ELEVATIONS AND CONTOURS SHOWN ON THIS PLAN ARE BASED ON THE SURVEY PERFORMED AND PROVIDED BY ABC SURVEYS, LLC OF CHATHAM, NJ, DATED 04/01/19 AND ARE BASED ON ASSUMED DATUM.
- PROPOSED BUILDING FOOTPRINT SHOWN HERE IS BASED ON ARCHITECTURAL PLANS PROVIDED BY AS ARCHITECTURAL DESIGN, LLC OF ROSELAND, NJ, DATED 11/22/22. LAST REVISED ON 05/11/23.
- 6. IF THIS DOCUMENT DOES NOT CONTAIN A RAISED IMPRESSION SEAL OF THE PROFESSIONAL, IT IS NOT AN AUTHORIZED ORIGINAL, AND MAY HAVE BEEN ALTERED.
- THE CONTRACTOR SHALL NOTIFY THE UNDERSIGNED PROFESSIONAL IMMEDIATELY IF ANY FIELD CONDITIONS ENCOUNTERED DIFFER FROM THOSE SHOWN HEREON.
- 8. UTILITY INFORMATION SHOWN HEREON HAS BEEN COLLECTED FROM VARIOUS SOURCES AND IS NOT GUARANTEED AS TO ACCURACY AND COMPLETENESS. THE CONTRACTOR SHALL VERIFY ALL UTILITY INFORMATION TO HIS SATISFACTION PRIOR TO COMMENCEMENT OF ANY WORK, THE CONTRACTOR SHALL PERFORM TEST PITS WHERE EXISTING UTILITIES ARE TO BE CROSSED. TEST PIT INFORMATION SHALL BE GIVEN TO THE ENGINEER PRIOR TO CONSTRUCTION TO PERMIT ADJUSTMENTS AS MAY BE REQUIRED TO AVOID CONFLICTS.
- O. ALL EXISTING UTILITIES THAT ARE TO BE RELOCATED OR ALTERED IN ANY MANNER ARE TO BE DONE IN ACCORDANCE WITH THE RESPECTIVE UTILITY COMPANIES STANDARDS. ALL THE EXISTING UTILITIES EXPOSED DURING CONSTRUCTION ARE TO BE SUPPORTED UNTIL BACKFILL IS IN PLACE. ANY CROSSING LESS THAN ONE FOOT CLEAR TO BE SUPPORTED WITH A SADDLE (CONCRETE OR SAND) AS NOTED.
- 10. SITE GRADING AND UTILITY WORK ARE TO BE PERFORMED IN A MANNER TO MINIMIZE DAMAGE TO EXISTING VEGETATION AND TREES. ALL AREAS NOT AFFECTED BY CONSTRUCTION ARE TO REMAIN NATURAL AND UNDISTURBED.
- 11. LOCATION OF PROPOSED ROOF DRAINS ARE APPROXIMATE AND SHALL BE COORDINATED WITH THE PROJECT ARCHITECT PRIOR TO CONSTRUCTION. ALL PROPOSED ROOF LEADERS TO BE DISCHARGED AT GRADE TO SPLASH PADS AWAY FROM THE FOUNDATION AND ADJACENT PROPERTIES.
- 12. ALL SEWER LINES SHALL BE LOCATED AT LEAST 10 FEET HORIZONTALLY FROM POTABLE WATER LINES AND/OR AT LEAST 18 INCHES BELOW POTABLE WATER LINES AND IN SEPARATE TRENCHES.
- 13. ALL UTILITIES SHALL BE INSTALLED UNDERGROUND. DESIGN AND INSTALLATION OF WATER, ELECTRIC, GAS, TELEPHONE AND CABLE TO BE PROVIDED BY RESPECTIVE UTILITY COMPANIES.
- 14. WATER AND GAS SERVICE MATERIALS, BURIAL DEPTH, AND COVER REQUIREMENTS SHALL BE SPECIFIED BY THE LOCAL UTILITY COMPANY. CONTRACTOR'S PRICE FOR WATER SERVICE SHALL INCLUDE ALL FEES AND APPURTENANCES REQUIRED BY THE UTILITY TO PROVIDE A COMPLETE WORKING SERVICE. UTILITY CONNECTIONS SHALL COMPLY WITH THE COUNTY/MUNICIPAL ROAD OPENING PERMIT REQUIREMENTS.
- L5. THE TOPS OF EXISTING MANHOLES, INLET STRUCTURES, AND SANITARY CLEAN OUTS SHALL BE ADJUSTED, IF REQUIRED, TO MATCH PROPOSED GRADES IN ACCORDANCE WITH ALL APPLICABLE STANDARDS.
- 16. NO ON-SITE SOIL TESTING AND GROUNDWATER ASSESSMENT HAS BEEN PERFORMED ON THIS PROJECT BY THE DESIGN ENGINEER. IT SHALL BE THE OWNERS AND/OR CONTRACTORS RESPONSIBILITY TO CONDUCT SOIL TESTING AND GROUNDWATER ELEVATION DETERMINATION TO CONFIRM APPLICABILITY OF PROPOSED IMPROVEMENTS, CONSTRUCT ABILITY OF THE PROPOSED FINISHED GRADES AND CONSTRUCTION TECHNIQUES WITH RESPECT TO SUBSURFACE SOIL AND GROUNDWATER CONDITIONS.
- 17. COMPACTING IN FILL AREAS BENEATH ALL PROPOSED UTILITIES AND STRUCTURES SHOULD MEET ALL MANUFACTURERS AND MUNICIPAL REQUIREMENTS AND BE EQUAL TO THE MINIMUM 95% MODIFIED PROCTOR DENSITY.
- 18. THIS SET OF PLANS HAS BEEN PREPARED FOR PURPOSES OF MUNICIPAL AND AGENCY REVIEW AND APPROVAL. THIS SET OF PLANS SHALL NOT BE UTILIZED AS CONSTRUCTION DOCUMENTS UNTIL ALL CONDITIONS OF APPROVAL HAVE BEEN SATISFIED AND THE DRAWINGS MARKED "ISSUED FOR CONSTRUCTION".
- 19. ALL MATERIAL, WORKMANSHIP AND CONSTRUCTION FOR SITE IMPROVEMENTS SHOWN HEREON SHALL BE PERFORMED IN STRICT CONFORMANCE WITH:
- NJDOT "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", A CURRENTLY
- CURRENT PREVAILING MUNICIPAL AND/OR COUNTY SPECIFICATIONS,
   STANDARDS, AND REQUIREMENTS.
- CURRENT PREVAILING UTILITY COMPANY/AUTHORITY SPECIFICATIONS, STANDARDS, AND
   PROJUBEMENTS.
- "RESIDENTIAL SITE IMPROVEMENT STANDARDS", N.J. ADMINISTRATIVE CODE TITLE 5, CHAPTER 21, AS CURRENTLY AMENDED.
- STANDARDS AND/OR CONDITIONS OF ANY OTHER GOVERNING BODIES HAVING JURISDICTION.
- 20. CONSTRUCTION WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE SAFETY CODES. APPLICABLE SAFETY CODES SHALL MEAN THE LATEST EDITION INCLUDING ANY AND ALL AMENDMENTS, REVISIONS AND ADDITIONS THERETO OF THE FEDERAL DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION'S "OCCUPATIONAL SAFETY AND HEALTH STANDARDS" (OSHA); "SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION" OF THE STATE OF NEW JERSEY, DEPARTMENT OF LABOR AND INDUSTRY, BUREAU OF ENGINEERING AND SAFETY; "CONSTRUCTION SAFETY CODE", AND "MAINTENANCE, CONSTRUCTION AND DEMOLITION," AND "BUILDING CODE".
- 21. CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR, WHO SHALL ALSO BE SOLELY RESPONSIBLE FOR THE MEANS, METHODS, AND SEQUENCING OF CONSTRUCTION OPERATIONS. UNDER NO CIRCUMSTANCES SHOULD THE INFORMATION PROVIDED HERE BE INTERPRETED TO MEAN THAT AWZ ENGINEERING, INC. IS ASSUMING RESPONSIBILITY FOR CONSTRUCTION SITE SAFETY OR THE CONTRACTOR'S ACTIVITIES; SUCH RESPONSIBILITY IS NOT BEING IMPLIED AND SHOULD NOT BE INFERRED.
- 22. ALL REQUIRED SOIL EROSION AND SEDIMENT CONTROL DEVICES MUST BE INSTALLED PRIOR TO ANY SITE DISTURBANCE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SUPPLY ANY ADDITIONAL SOIL EROSION & SEDIMENT CONTROL MEASURES AS REQUESTED BY THE GOVERNING SOIL CONSERVATION DISTRICT.
- TOP SOILING & SEEDING WILL BE PLACED IN THE AREAS DISTURBED DURING CONSTRUCTION AND / OR AS DIRECTED BY THE ENGINEER.

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ENGINEERS • SCIENTISTS • CONSUL in Office: 150 River Road, Suite B3, Montville Pennsylvania Office: Scranton, PA 1850 Tel: 973-588-7080 Fax.: 973-588-7079 www.awzengineering.com e-mail: info@awzengine New Jersey Certificate of Authorization No.: 24GAZ

WNSHIP OF CHATHAM
IS COUNTY, NEW JERSEY
DEVELOPMENT PLAN

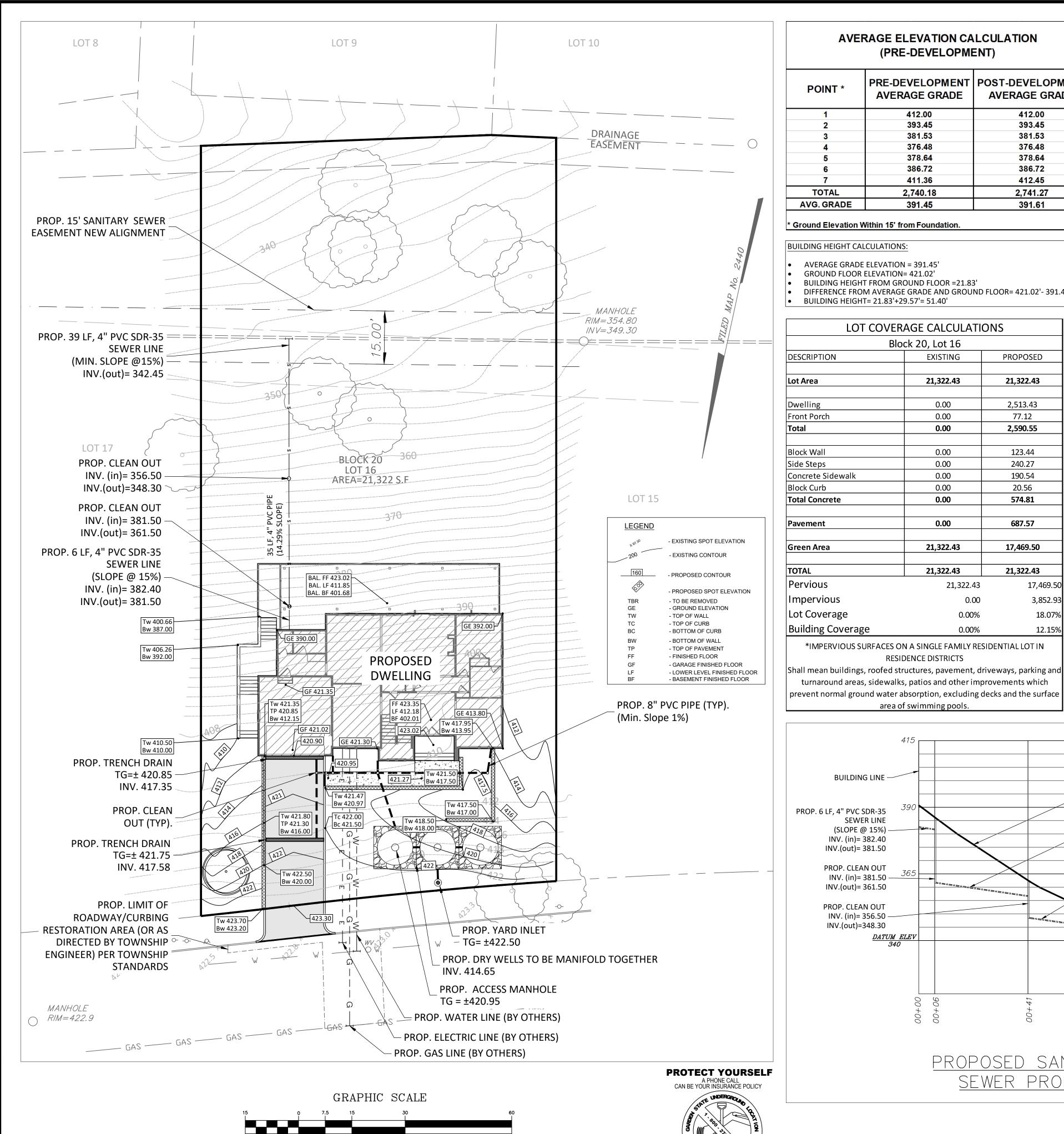
39 SUS TOWNSHIP MORRIS COUP

JOB NUMBER: 22-0605

SCALE: AS SHOWN

C-02

SHEET 2 OF 4



( IN FEET )

1 inch = 15 ft.

## AVERAGE ELEVATION CALCULATION (PRE-DEVELOPMENT)

POINT *	PRE-DEVELOPMENT AVERAGE GRADE	POST-DEVELOPMENT AVERAGE GRADE
1	412.00	412.00
2	393.45	393.45
3	381.53	381.53
4	376.48	376.48
5	378.64	378.64
6	386.72	386.72
7	411.36	412.45
TOTAL	2,740.18	2,741.27
AVG. GRADE	391.45	391.61

### \* Ground Elevation Within 15' from Foundation.

#### BUILDING HEIGHT CALCULATIONS:

- AVERAGE GRADE ELEVATION = 391.45'
- **GROUND FLOOR ELEVATION= 421.02'**
- BUILDING HEIGHT FROM GROUND FLOOR =21.83' DIFFERENCE FROM AVERAGE GRADE AND GROUND FLOOR= 421.02'- 391.45' = 29.57'
- BUILDING HEIGHT= 21.83'+29.57'= 51.40'

Bl	ock 20, Lot 16	
DESCRIPTION	EXISTING	PROPOSED
Lot Area	21,322.43	21,322.43
Dwelling	0.00	2,513.43
Front Porch	0.00	77.12
Total	0.00	2,590.55
Block Wall	0.00	123.44
Side Steps	0.00	240.27
Concrete Sidewalk	0.00	190.54
Block Curb	0.00	20.56
Total Concrete	0.00	574.81
Pavement	0.00	687.57
Green Area	21,322.43	17,469.50
TOTAL	21,322.43	21,322.43
Pervious	21,322.43	17,469.50
Impervious	0.00	3,852.93
Lot Coverage	0.00%	18.07%
Building Coverage	0.00%	12.15%

**RESIDENCE DISTRICTS** 

area of swimming pools.

**BUILDING LINE -**

**SEWER LINE** 

(SLOPE @ 15%)

INV. (in)= 382.40

INV.(out)= 381.50

PROP. CLEAN OUT

INV.(out)= 361.50

PROP. CLEAN OUT

INV. (in)= 356.50 -

INV.(out)=348.30

WHAT YOU DON'T KNOW CAN HURT YOU THE STATE OF NEW JERSEY REQUIRES NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATE.

DATUM ELEV 340

PROPOSED SANITARY
SEWER PROFILE

INV. (in)= 381.50 -

### MAINTENANCE OF UNDERGROUND STORM FACILITIES:

UNDERGROUND STORM SYSTEM - The underground drainage system, including all pipes, manholes, catch basins, inlets and appurtenances must be inspected for clogging and excessive debris and sediment accumulation at least annually as well as after every storm exceeding 2 inches of rainfall. Sediment removal should take place when all runoff has drained from the conveyance network and the systems are reasonably dry. Disposal of debris, trash, sediment, and other waste material should be done at suitable disposal/recycling sites and in compliance with all applicable local, state, and federal waste

All structural components must be inspected for cracking, subsidence, breaching, wearing, and deterioration at least annually. The condition of surrounding and above lying materials shall be inspected for evidence of potential failures or deterioration.

Two people will be needed to perform routine maintenance of the conveyance systems. The routine equipment to be utilized for the maintenance tasks include a jet vacuum vehicle, shovels, lighting equipment and a wheel barrel or truck for the hauling off of debris. No manufacturer's instructions or user manuals are available for maintenance of these components. Maintenance would only take place in the adjacent components of the system, i.e. the catch basins, pipes, and other units outside the seepage pit system. Water, mosquito control chemicals, and concrete repair materials may also be required depending on the condition of the structure.

RESPONSIBLE PARTY FOR ALL STORM STRUCTURE MAINTENANCE

See maintenance agreement for information regarding responsible parties for all storm structure maintenance.

FINISHED GRADE LINE

SEWER LINE

SEWER LINE

PROP. 35 LF, 4" PVC SDR-35

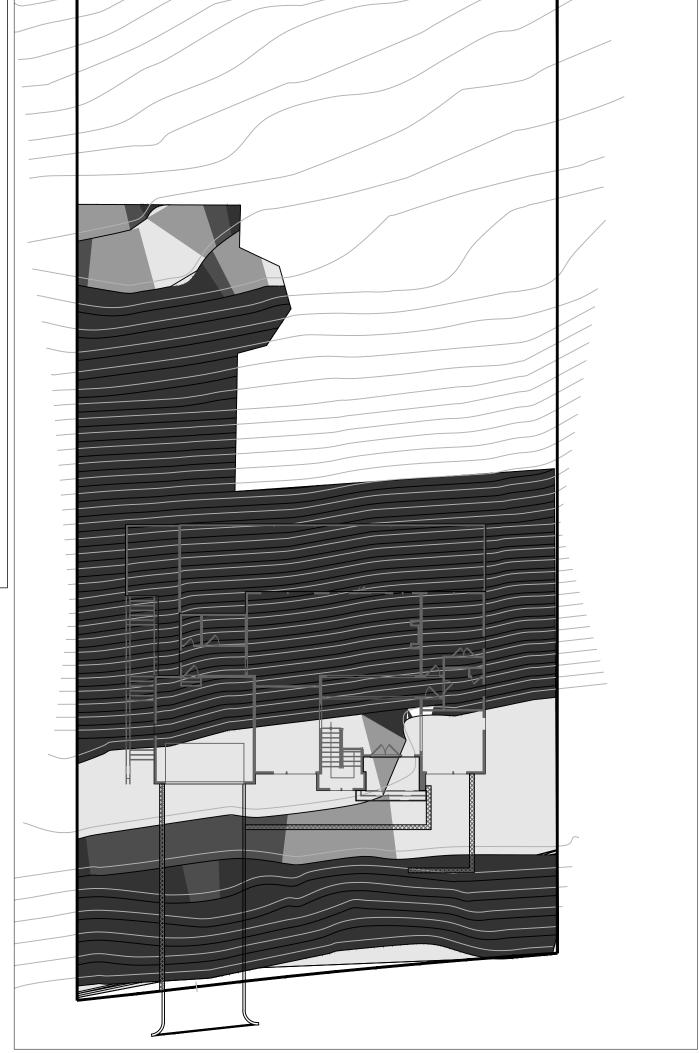
PROP. 39 LF, 4" PVC SDR-35

(MIN. SLOPE @14.28%)

INV.(out)= 356.50

(MIN. SLOPE @15%)

INV.(out)= 342.45

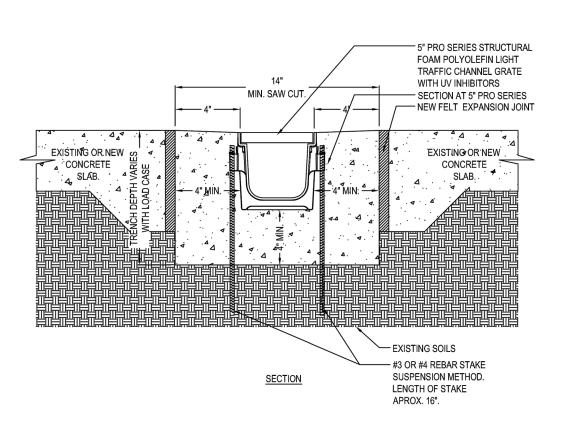


#### SLOPE ANALYSIS SCALE : 1" = 20'

Slopes Table within Limit of Disturbance						
Number	Minimum Slope	Maximum Slope	Color	Allowable Area of Disturbance. SF	Proposed Area of Disturbance. SF	
1	0.00%	15.00%		_	2679.31	
2	15.00%	20.00%		3500.00	708.73	
3	20.00%	25.00%		1000.00	521.95	
4	25.00%	100.00%		500.00	8649.58	



NDS, INC. 851 NORTH HARVARD AVE. LINDSAY, CA 93247 TOLL FREE: 1-800-726-1994 PHONE: (559) 562-9888 FAX: (559) 562-4488 www.ndspro.com



- NOTES:

  1. CHANNELS TO BE INSTALLED WITH GRATE. GRATE TO BE PROTECTED FROM CONCRETE POUR 2. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
- 3. DO NOT SCALE DRAWING. 4. THIS DRAWING IS INTENDED FOR USE BY ARCHITECTS, ENGINEERS, CONTRACTORS, CONSULTANTS AND DESIGN
- PROFESSIONALS FOR PLANNING PURPOSES ONLY. 5. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.

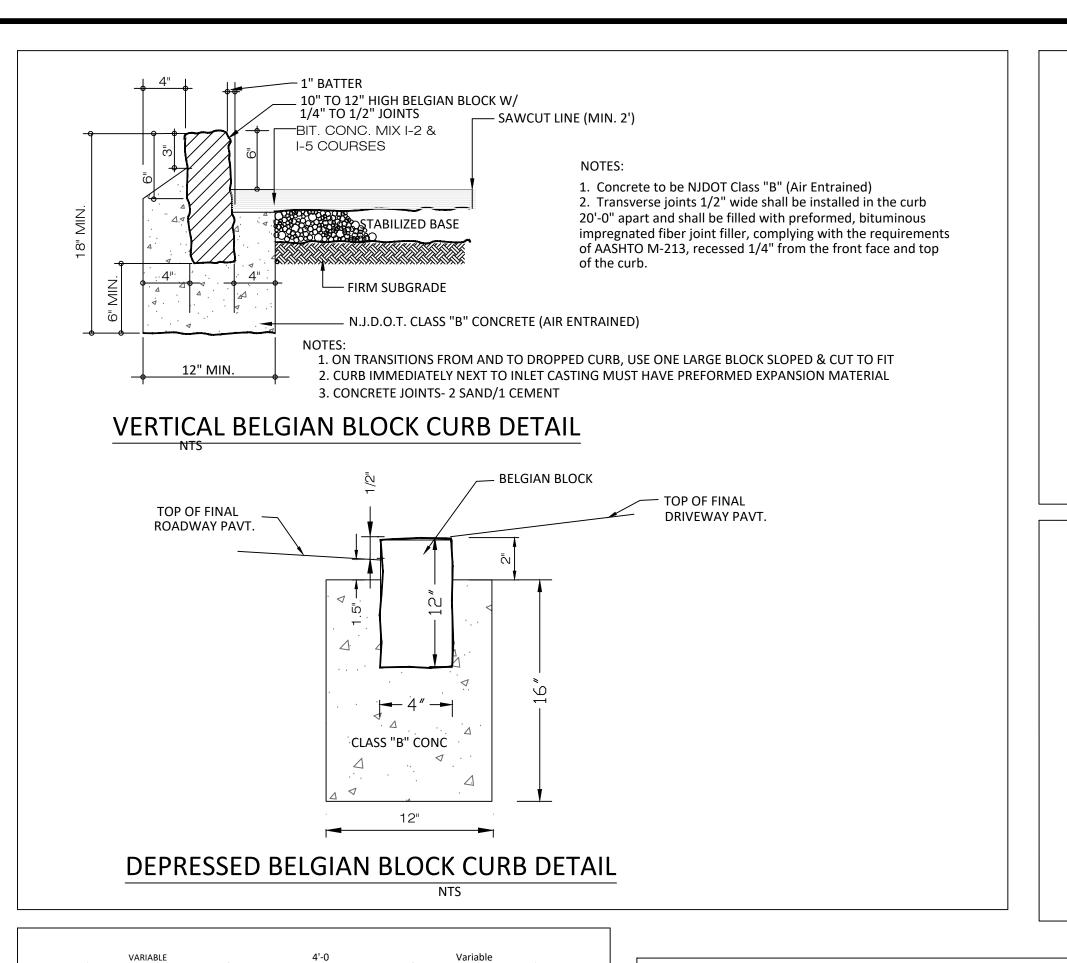
**PRO SERIES CHANNEL DRAIN SYSTEM** 5" PRO SERIES INSTALLATION DETAIL - LOAD CLASS 'A' & 'B' - 4" ENCASEMENT REBAR SUSPENSION

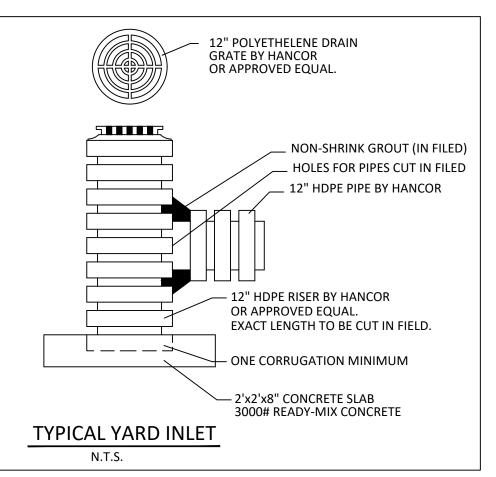
**JOB NUMBER:** 

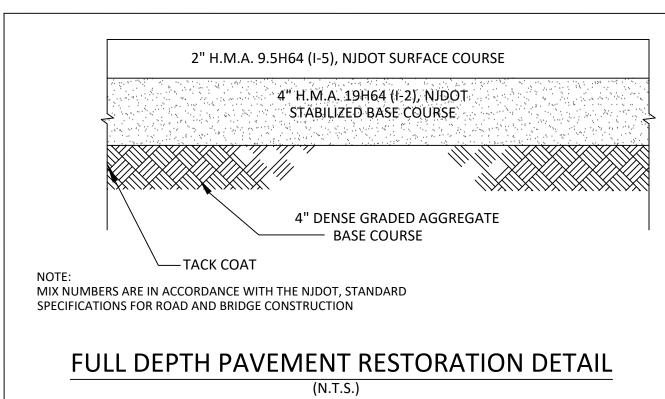
22-0605

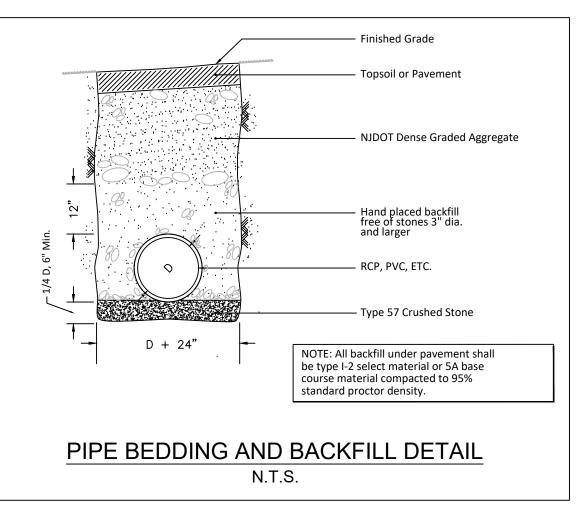
SCALE: AS SHOWN

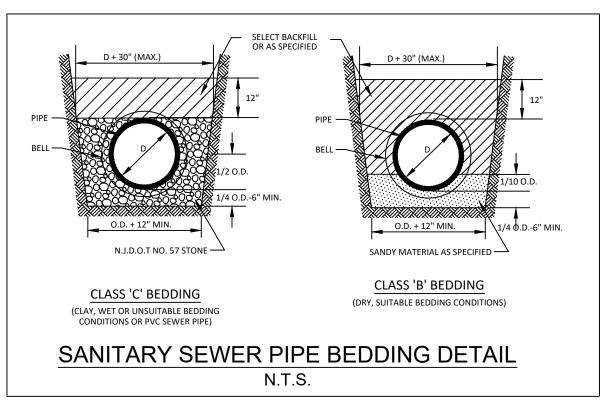
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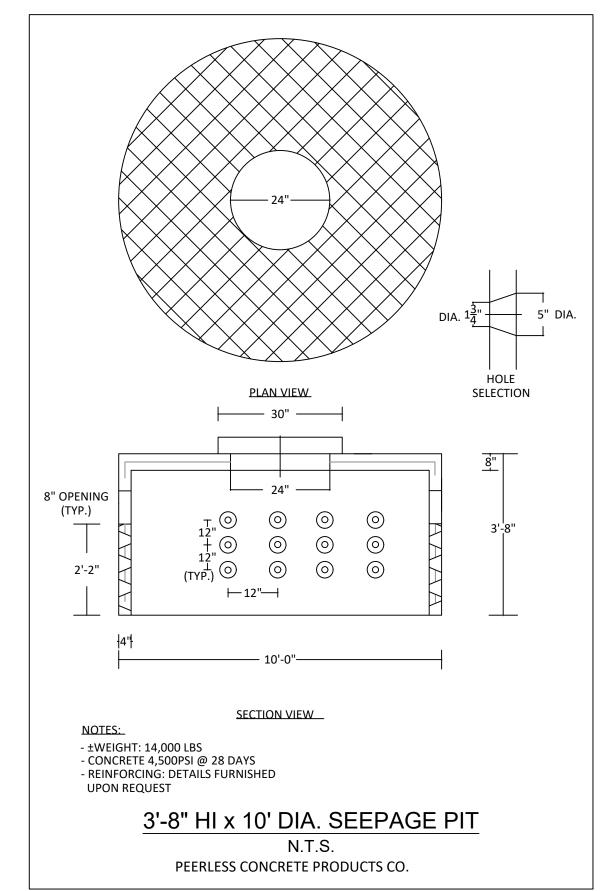


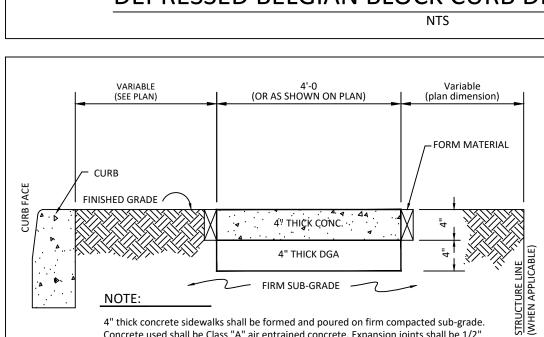




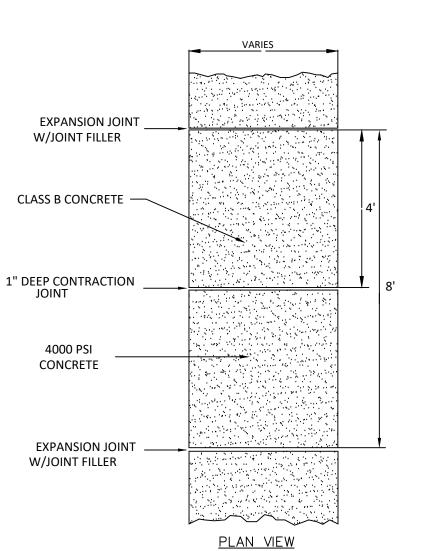






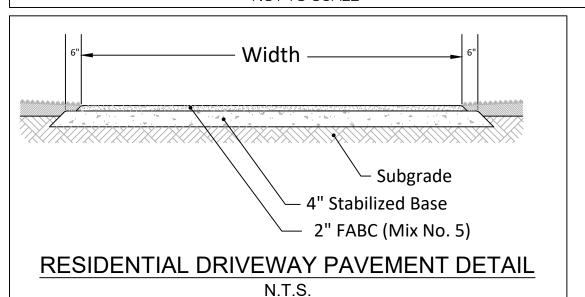


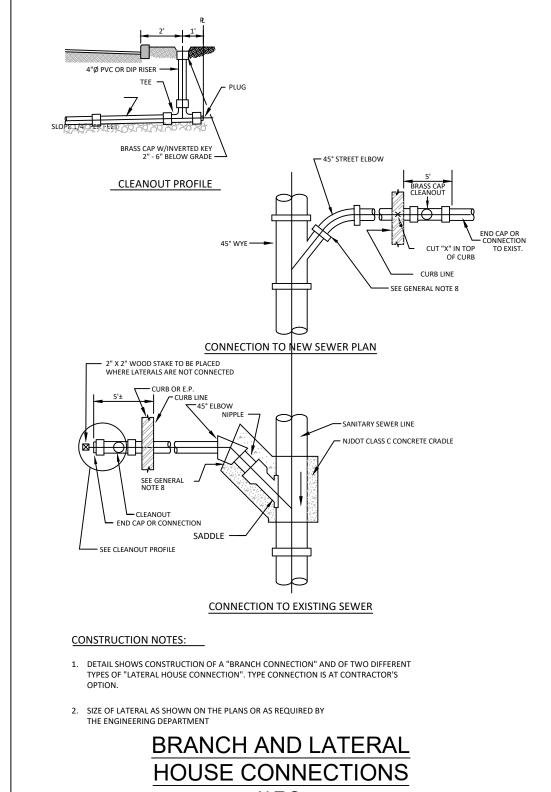
4" thick concrete sidewalks shall be formed and poured on firm compacted sub-grade. Concrete used shall be Class "A" air entrained concrete. Expansion joints shall be 1/2" pre-moulded filler and spaced at 20'-0 on center with control joints every 5'-0 in between. Surface shall receive a broom finish and edges shall be finished with an edging tool. Remove forms after concrete has set and backfill along edges after concrete has dried white.

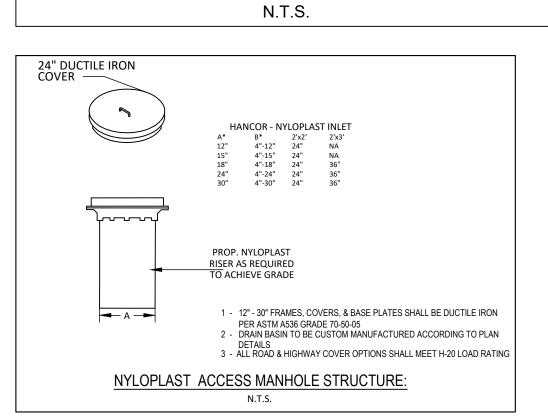


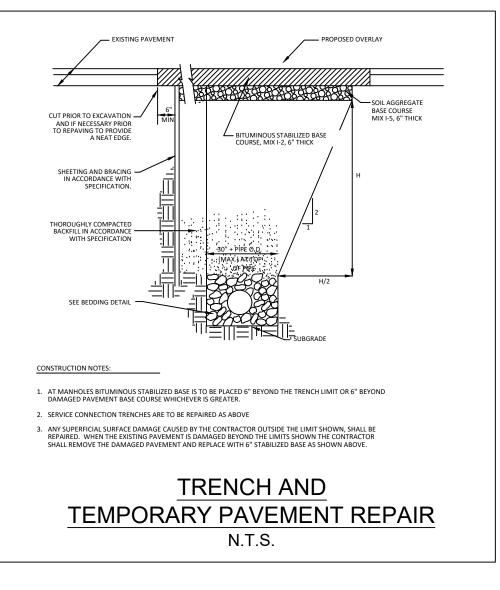
CONCRETE SIDEWALK DETAIL

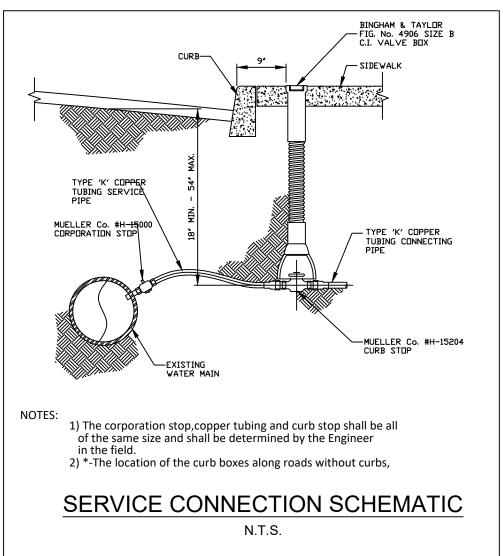
NOT TO SCALE

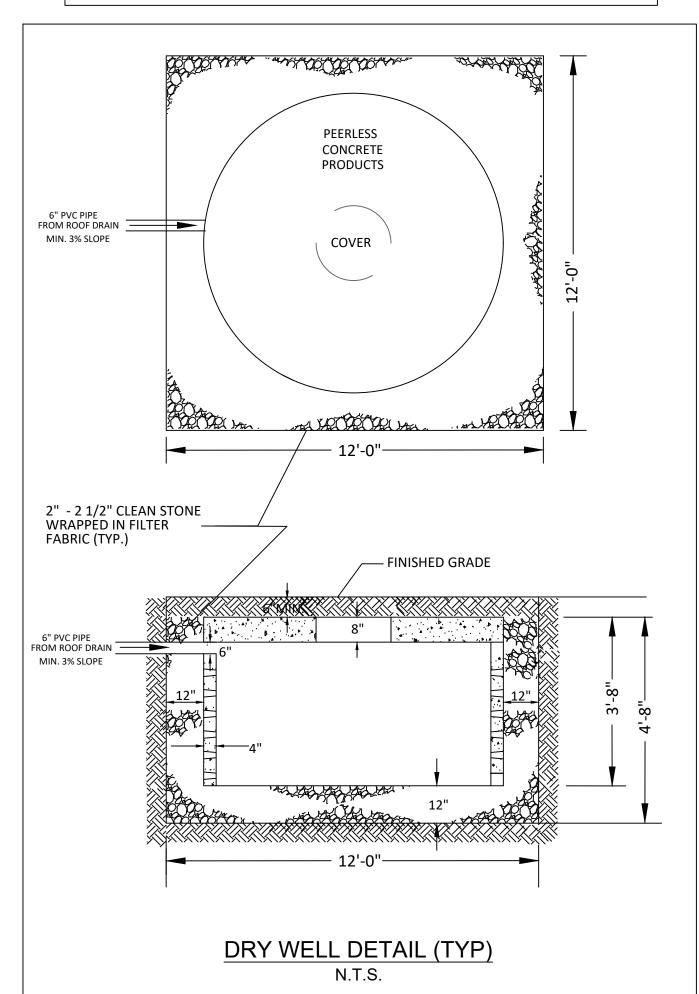


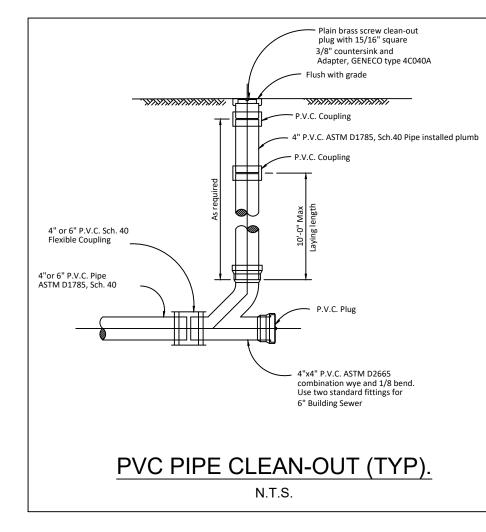


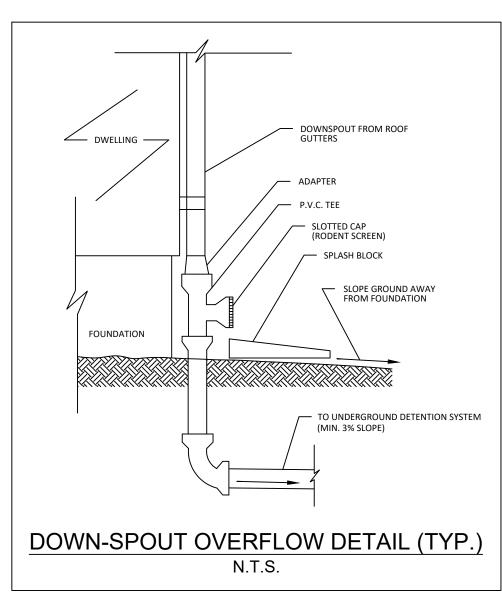


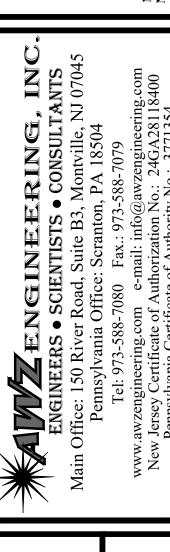












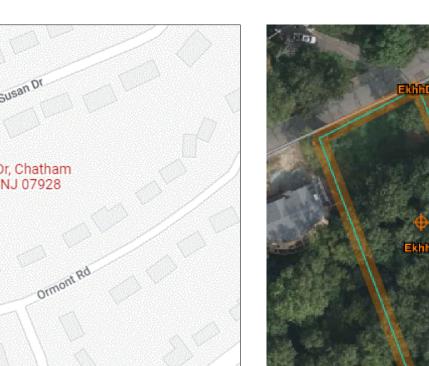
KHAN, SIONAL E

39 SUSAN DRIVE
TOWNSHIP OF CHATHAM
MORRIS COUNTY, NEW JERSEY

JOB NUMBER: 22-0605

SCALE: AS SHOWN

C-04



operative

**KEY MAP** 

SCALE: ±1" = 250

**USDA WEB SOIL SURVEY MAP** 

SOIL MANAGEMENT NOTE: BASED ON THE STATE OF NEW JERSEY LAND USE CLASSIFICATION SYSTEM THE SITE IS UNDER URBAN REDEVELOPMENT AREA, LAND USE CODE 1,110. THEREFORE, THE PROPOSED PROJECT DOES NOT REQUIRE COMPACTION REMEDIATION, AS PER EXEMPTION #6 UNDER SOIL MANAGEMENT AND PREPARATION STANDARDS FOR SOIL AND SEDIMENT CONTROL IN NEW

#### STEEP SLOPE PROTECTION NOTES

1. THE SEQUENCE OF CONSTRUCTION SHOULD BE SUCH THAT THE TOTAL AREA OF STEEP SLOP DISTURBED AT ONE TIME IS 1,000 SF OR LESS.

2. IF DIRECTED BY THE TOWNSHIP ENGINEER, THE CONTRACTOR SHALL INSTALL SECONDARY SOIL EROSION AND SEDIMENT CONTROL MEASURES TO ACT AS ADDITIONAL PROTECTION OF DOWNSTREAM PROPERTIES.

3. THE CONTRACTOR SHALL INSTALL SNOW FENCE AT THE PROPOSED LIMIT OF DISTURBANCE TO PREVENT FURTHER DISTURBANCE.

4. PROPOSED DISTURBANCE OF SOIL SHALL BE EXECUTED IN A MANNER THAT WILL NOT CAUSE EROSION OR OTHER UNSUITABLE CONDITIONS.

5. ANY FILL PLACED ON THE SITE SHALL BE PROPERLY STABILIZED.

6. ALL SILT FENCE SHALL BE "SUPER" SILT FENCE AS DEFINED IN STANDARDS FOR SESC IN NEW JERSEY AS PROMULGATED BY THE NJDA, STATE SOIL CONSERVATION

7. THE DRY WELLS AND ROOF LEADER DRAINS ARE TO BE INSTALLED AND CERTIFIED PRIOR TO CONSTRUCTION OF THE ROOF OF THE HOUSE. UPON COMPLETION OF THE ROOF OF THE HOUSE, TEMPORARY GUTTERS AND DOWNSPOUTS SHOULD BE

## DUST CONTROL NOTES

THE FOLLOWING METHODS SHOULD BE CONSIDERED FOR CONTROLLING DUST: MULCHES - SEE STANDARD FOR STABILIZATION WITH MULCHES ONLY (PG. 5-1) OF STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY. NOTE: ALL PAGE REFERENCES ARE FOR ABOVE DOCUMENT DATED 7/99. VEGETATIVE COVER - SEE STANDARD FOR TEMPORARY VEGETATIVE COVER (PG. 7-1), PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION (PG 4-1), AND PERMANENT STABILIZATION WITH SOD (PG. 6-1) SPRAY-ON ADHESIVES - ON MINERAL SOILS (NOT EFFECTIVE ON MUCK SOILS). KEEP TRAFFIC OFF THESE AREAS.

IMMEDIATELY INSTALLED AND CONNECTED TO THE DRY WELLS.

#### TABLE 16-1: DUST CONTROL MATERIALS

MATERIAL	WATER DILUTION	TYPE OF NOZZLE	APPLY GALLONS/ACRE
ANIONIC ASPHALT EMULSION	7:1	COARSE SPRAY	1200
LATEX EMULSION	12.5:1	FINE SPRAY	235
BASIN IN WATER	4:1	FINE SPRAY	300
POLYACRYLAMIDE (PAM) - SPRAY ON	APPLY ACCORD INSTRUCTIONS.		
POLYACRYLAMIDE (PAM)-SDRY SPRAY	MAY ALSO BE USEDIMENT BASIN PRECIPITATE SU	NS TO FLOCCUL ISPENDED COLL	ATE AND OIDS.
,	SEE SEDIMEI	NT BASIN STAND	DARD (PG.26-1)
ACIDULATED SOY BEAN SOAP STICK	NONE	COARSE SPRAY	1200

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

SPRINKLING - SITE IS SPRINKLED UNTIL THE SURFACE IS WET. BARRIERS - SOLID BOARD FENCES, SNOW FENCES, BURLAP FENCES, CRATE WALLS, BALES OF HAY, AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING.

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

INSTALLED VERTICALLY DOWNSLOPE WHEN NOT

4" OVERLAP

ISOMETRIC VIEW

TYPICAL SLOPE

PLACING BLANKETS.

(SEE DESIGN GUIDELINES).

SOIL STABILIZATION

1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS.

2. APPLY PERMANENT SEEDING BEFORE

BLANKETS SHALL HAVE GOOD SOIL CONTACT

. LAY BLANKETS LOOSELY AND STAKE OR

STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.

4. CAN ALSO USE FASCINES IN LIEU OF

A STREAM CHANNEL

1. THE CONTRACTOR SHALL PREPARE A PLAN FOR THE PROPER DEWATERING OF EACH STREAM CROSSING PRIOR TO EXCAVATING AND MORRIS COUNTY SOIL CONSERVATION DISTRICT FOR APPROVAL. THE DISTRICT SHALL BE NOTIFIED FOR INSPECTION

2. ANY AREAS USED FOR CONTRACTOR'S STAGING, INCLUDING BUT NOT LIMITED TO, TEMPORARY STORAGE OF STOCKPILE MATERIALS (e.g. CRUSHED STONE, QUARRY PROCESS STONE, SELECT FILL, EXCAVATED MATERIALS, ETC.) SHALL BE ENTIRELY CONTROL SEDIMENT RUNOFF.

3. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE MORRIS COUNTY SOIL CONSERVATION DISTRICT OF ANY STAGING AND/OR STOCKPILE LOCATION AREAS AND FOR OBTAINING A SOIL EROSION AND SEDIMENT CONTROL CERTIFICATION FOR THESE AREAS.

BE INSTALLED AT THE CONTRACTOR'S STAGING YARD AND/OR STOCKPILE AREAS TO PREVENT OFF-SITE TRACING OF SEDIMENT BY CONSTRUCTION VEHICLE ONTO PUBLIC ROADS. BLANKET SHALL BE 15 FT. x 50 FT. x 6 IN. (MINIMUM), CRUSHED STONE 2-1/2 INCHES IN DIAMETER. SAID BLANKET SHALL BE UNDERLAIN WITH A SUITABLE SYNTHETIC SEDIMENT FILTER FABRIC AND MAINTAINED IN GOOD ORDER.

#### NOTES FOR ROAD WORK

THE STREAM BED. PLAN SHALL BE FORWARDED TO THE ENGINEER

PROTECTED BY A SILT FENCE ALONG THE LOW ELEVATION SIDE TO

4. A CRUSHED STONE, VEHICLE WHEEL-CLEANING BLANKET SHALL

PRIOR TO EACH STREAM CROSSING CONSTRUCTION.

11. TEMPORARY STABILIZATION - ANY DISTURBED AREA THAT WILL BE LEFT EXPOSED FOR MORE THAN THIRTY (30) DAYS AND NOT SUBJECT TO CONSTRUCTION ACTIVITIES SHALL IMMEDIATELY BE STABILIZED UPON DISTURBANCE BY APPLYING THE FOLLOWING:

> a. GROUND LIMESTONE AT A RATE OF 90 POUNDS PER 1,000 SQUARE FEET. b. FERTILIZER AT A RATE OF 14 POUNDS PER 1,000 SQUARE FEET USING A 10-20-10 ANALYSIS OR AN EQUIVALENT WORKED INTO THE SOIL A MINIMUM OF 4". c. SEED SHALL BE ANNUAL RYEGRASS AT NOT LESS THAN 1 POUND PER 1,000 SQUARE

CHATHAM TOWNSHIP - SOIL EROSION AND SEDIMENT CONTROL NOTES

ANY OTHER MEASURES DEEMED APPROPRIATE BY THE TOWNSHIP.

5. ALL PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES.

UPON ESTABLISHMENT OF FINAL GRADE ELEVATIONS.

ESTABLISHMENT OF PERMANENT VEGETATIVE COVER.

THE EXIT ROADWAY OR DRIVEWAY, AND WILL BE PROPERLY MAINTAINED.

PROTECTION IS ESTABLISHED.

SEEDED AND MULCHED.

FENCE OR SEDIMENT FENCE.

1. ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES ON THIS PLAN WILL BE

CONSTRUCTED IN ACCORDANCE WITH THE "NEW JERSEY STANDARDS FOR SOIL EROSION

2. CHATHAM TOWNSHIP WILL BE NOTIFIED 72 HOURS PRIOR TO ANY LAND DISTURBANCE.

MAINTENANCE AND UNKEEP OF THE DRAINAGE STRUCTURES, VEGETATION COVER, AND

4. A CRUSHED STONE VEHICLE WHEEL CLEANING BLANKET WILL BE INSTALLED WHENEVER A

CONSTRUCTION ACCESS ROAD INTERSECTS ANY PAVED ROADWAY. SAID BLANKET WILL BE COMPOSED OF 2-1/2" CRUSHED STONE, WILL BE AT LEAST 50 FEET LONG AND THE WIDTH OF

6. ALL NEW ROADWAYS AND DRIVEWAYS WILL BE TREATED WITH A SUITABLE SUB--BASE

TEMPORARILY SEEDED AND MULCHED UNTIL PROPER WEATHER CONDITIONS EXIST FOR THE

8. ALL SOIL STOCKPILED FOR A PERIOD OF GREATER THAN 30 DAYS WILL BE TEMPORARILY

9. STOCKPILES SHALL NOT BE LOCATED WITHIN 50' OF A FLOODPLAIN SLOPE, DRAINAGE

FACILITY, OR ROADWAY. ALL STOCKPILE BASES SHALL BE PROTECTED BY A "SUPER" SILT

10. IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING. ALL CRITICAL

AREAS SUBJECT TO EROSION WILL RECEIVE A TEMPORARY SEEDING IN COMBINATION WITH

STRAW MULCH OR SUITABLE EQUAL, AT A 2 TON/ACRE RATIO RATE, ACCORDING TO STATE

7. DISTURBED AREAS SHALL BE MAINTAINED IN A ROUGH GRADED CONDITION AND

3. DURING AND AFTER CONSTRUCTION, THE OWNER WILL BE RESPONSIBLE FOR THE

AND SEDIMENT CONTROL," ( REVISED 1987) AND WILL BE IN PLACE PRIOR TO ANY SOIL DISTURBANCE OR IN THEIR PROPER SEQUENCE AND MAINTAINED UNTIL PERMANENT

d. MULCH ALL NEWLY SEEDED AREA WITH UN-ROTTED SALT HAY OR SMALL GRAIN STRAW AT A RATE OF 90 POUNDS PER 1,000 SQUARE FEET ACCORDING TO THE NJ STANDARD. MULCH SHALL NOT BE GROUNDED INTO SHORT PIECES AND IN NO CASE SHALL MORE THAN 5 DAYS ELAPSE BETWEEN SEEDING AND MULCHING.

. GAL./1,000 SF. OR BY APPROVED METHODS (i.e. PEG AND TWINE, MULCH NETTING). 12. BETWEEN OCTOBER 1 AND MARCH 1 AND WHEN THE SEASON PROHIBITS TEMPORARY

e. MULCH SHALL BE ANCHORED WITH A LIQUID MULCH BINDER APPLIED AT A RATE OF

SEEDING OR WHEN DISTURBED AREAS ARE SCHEDULED FOR IMMEDIATE LANDSCAPING, APPLYING THE AFOREMENTIONED ITEMS "d" AND "e" WILL BE ADEQUATE .

13. SEEDING DATES - FOLLOWING ARE RECOMMENDED SEEDING DATES FOR THE ESTABLISHMENT OF TEMPORARY OR PERMANENT VEGETATION.

a. SPRING: MARCH 1 - MAY 15 b. FALL: AUGUST 15 - OCTOBER 1

14. PERMANENT VEGETATION COVER IS TO BE ESTABLISHED ON EXPOSED AREAS WITHIN 10 DAYS AFTER FINAL GRADING. MULCH IS TO BE USED FOR PROTECTION UNTIL FINAL VEGETATION IS ESTABLISHED.

5. PERMANENT SEEDING AND STABILIZATION TO BE IN ACCORDANCE WITH THE STANDARDS FOR PERMANENT VEGETATIVE COVER - ALL EXPOSED SURFACES WILL BE TREATED WITH 4" OF TOPSOIL PRIOR TO FINAL STABILIZATION AND THE FOLLOWING ITEMS APPLIED AT THE DESIGNATED RATES:

a. LIME SHALL BE APPLIED AT 90 POUNDS PER 1.000 SOUARE FEET CONSISTING OF GROUND LIMESTONE INCORPORATED INTO THE TOP 4" OF TOPSOIL b. FERTILIZER SHALL BE 14 POUNDS PER 1,000 SQUARE FEET 10-20-10 INCORPORATED NTO THE TOP 4" OF TOPSOIL

c. SEED SHALL BE 25 POUNDS PER ACRE OF KENTUCKY BLUEGRASS, 15 POUNDS PER ACRE OF RED FESCUE, SPREADING FESCUE AT 15 POUNDS PER ACRE, AND 10 POUNDS PER ACRE OF PERENNIAL RYEGRASS.

d. IN SHADE AREAS INCREASE RED FESCUE 20 POUNDS PER ACRE AND DECREASE KENTUCKY BLUEGRASS 20 POUNDS PER ACRE. e. MULCH ALL NEWLY SEEDED AREA WITH UN-ROTTED SALT HAY OR EMAIL GRAIN STRAW AT A RATE OF 90 POUNDS PER 1,000 SQUARE FEET ACCORDING TO THE NJ

STANDARD. MULCH SHALL NOT BE GROUND INTO SHORT PIECES AND IN NO CASE SHALL MORE THAN 5 DAYS ELAPSE BETWEEN SEEDING AND f. MULCH SHALL BE ANCHORED WITH A LIQUID MULCH BINDER APPLIED AT A RATE OF

1 GAL./1,000 SF. OR BY APPROVED METHODS (i.e. PEG AND TWINE, MULCH NETTING). 16. MAXIMUM SIDE SLOPES OF ALL EXPOSED SURFACES SHALL NOT EXCEED 3:1 UNLESS

OTHERWISE APPROVED BY THE TOWNSHIP.

17. THE SITE SHALL, AT ALL TIMES, BE GRADED AND MAINTAINED SUCH THAT ALL STORM WATER RUN-OFF IS DIVERTED TO SOIL EROSION AND SEDIMENT CONTROL FACILITIES.

18. ALL DEWATERING OPERATIONS MUST DISCHARGE DIRECTLY INTO A SEDIMENT FILTER AREA. THE SEDIMENT FILTER SHOULD BE COMPOSED OF A SUITABLE FILTER FABRIC FILTER.

19. ALL SEDIMENTATION STRUCTURES WILL BE INSPECTED AND MAINTAINED ON A REGULAR

20. ALL STORM DRAIN INLETS SHALL BE PROTECTED WITH GRAVEL FILTER TO PREVENT ENTRY OF SEDIMENT CARRIED BY RUN-OFF WATER UNTIL VEGETATION AND/OR PAVING IS

21. ALL STORM DRAINAGE OUTLETS WILL BE STABILIZED AS REQUIRED BEFORE THE DISCHARGE POINTS BECOME OPERATIONAL.

22. ALL TREES TO REMAIN AFTER CONSTRUCTION ARE TO BE PROTECTED WITH TREE PROTECTION DEVICES OR SEDIMENT BARRIERS.

23. THE TOWNSHIP MAY REQUEST ADDITIONAL MEASURE TO MINIMIZE ON OR OFFSITE EROSION PROBLEMS DURING CONSTRUCTION.

24. SEQUENCE OF CONSTRUCTION: a. INSTALL VEHICLE WHEEL CLEANING BLANKET AND INLET PROTECTION. b. INSTALL SUPER SILT FENCE AROUND THE AREA OF DISTURBANCE AND STEEP SLOPE AREAS AS IDENTIFIED.

c. CLEAR SITE. d. STRIP AND STOCKPILE SOIL.

g. PROVIDE PERMANENT STABILIZATION.

e. CONSTRUCT SITE IMPROVEMENTS. f. PROVIDE TEMPORARY STABILIZATION, IF REQUIRED.

h. REMOVE TEMPORARY SILT FENCE, INLET PROTECTION AND OTHER SOIL EROSION

25. A COPY OF THE SOIL EROSION AND SEDIMENT CONTROL PLAN MUST BE ON-SITE AT ALL TIMES AND MADE AVAILABLE TO A TOWNSHIP REPRESENTATIVE DURING INSPECTION.

MORRIS COUNTY SOIL CONSERVATION DISTRICT SOIL EROSION AND SEDIMENT CONTROL NOTES:

1. ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY, AND WILL BE IN PLACE PRIOR TO ANY MAJOR SOIL DISTURBANCE, OR IN THEIR PROPER SEQUENCE AND MAINTAINED UNTIL

2. ANY DISTURBED AREA THAT WILL BE LEFT EXPOSED FOR MORE THAN THIRTY (30) DAYS AND NOT SUBJECT TO CONSTRUCTION TRAFFIC SHALL IMMEDIATELY RECEIVE A TEMPORARY SEEDING. IF THE SEASON PROHIBITS TEMPORARY SEEDING, THE DISTURBED AREA WILL BE MULCHED WITH STRAW OR HAY AND TACKED IN ACCORDANCE WITH THE NEW JERSEY STANDARDS. SEE NOTE 21 BELOW.

3. PERMANENT VEGETATION IS TO BE ESTABLISHED ON EXPOSED AREAS WITHIN TEN (10) DAYS AFTER FINAL GRADING. MULCH IS TO BE USED FOR PROTECTION UNTIL VEGETATION IS ESTABLISHED. SEE

4. IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING, ALL CRITICAL AREAS (STEEP SLOPES, SANDY SOILS, WET CONDITIONS) SUBJECT TO EROSION WILL RECEIVE A TEMPORARY SEEDING IN ACCORDANCE WITH NOTE 21 BELOW.

5. TEMPORARY DIVERSION BERMS ARE TO BE INSTALLED ON ALL CLEARED ROADWAYS AND EASEMENT AREAS. SEE THE DIVERSION DETAIL.

6. PERMANENT SEEDING AND STABILIZATION TO BE IN ACCORDANCE WITH THE "STANDARDS FOR PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION COVER". SPECIFIED RATES AND LOCATIONS SHALL BE ON THE APPROVED SOIL EROSION AND SEDIMENT CONTROL PLAN.

7. THE SITE SHALL AT ALL TIMES BE GRADED AND MAINTAINED SO THAT ALL STORM WATER RUNOFF IS DIVERTED TO SOIL EROSION AND SEDIMENT CONTROL FACILITIES.

8. ALL SEDIMENTATION STRUCTURES (SILT FENCE, INLET FILTERS, AND SEDIMENT BASINS) WILL BE

9. STOCKPILES SHALL NOT BE LOCATED WITHIN 50' OF A FLOODPLAIN, SLOPE, DRAINAGE FACILITY, OR ROADWAY. ALL STOCKPILE BASES SHALL HAVE A SILT FENCE PROPERLY ENTRENCHED AT THE TOE OF

10. A STABILIZED CONSTRUCTION ACCESS WILL BE INSTALLED, WHENEVER AN EARTHEN ROAD INTERSECTS WITH A PAVED ROAD. SEE THE STABILIZED CONSTRUCTION ACCESS DETAIL AND CHART

11. ALL NEW ROADWAYS WILL BE TREATED WITH A SUITABLE SUB BASE UPON ESTABLISHMENT OF FINAL GRADE ELEVATIONS.

12. PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES.

13. BEFORE DISCHARGE POINTS BECOME OPERATIONAL, ALL STORM DRAINAGE OUTLETS WILL BE

14. ALL DEWATERING OPERATIONS MUST BE DISCHARGED DIRECTLY INTO A SEDIMENT FILTER AREA. THE FILTER SHOULD BE COMPOSED OF A FABRIC OR APPROVED MATERIAL. SEE THE DEWATERING

15. ALL SEDIMENTATION BASINS WILL BE CLEANED WHEN THE CAPACITY HAS BEEN REDUCED BY 50%. A CLEAN OUT ELEVATION WILL BE IDENTIFIED ON THE PLAN AND A MARKER INSTALLED ON THE SITE.

16. DURING AND AFTER CONSTRUCTION, THE APPLICANT WILL BE RESPONSIBLE FOR THE MAINTENANCE AND UPKEEP OF THE DRAINAGE STRUCTURES, VEGETATIVE COVER, AND ANY OTHER MEASURES DEEMED APPROPRIATE BY THE DISTRICT. SAID RESPONSIBILITY WILL END WHEN COMPLETED WORK IS APPROVED BY THE MORRIS COUNTY SOIL CONSERVATION DISTRICT.

17. ALL TREES OUTSIDE THE DISTURBANCE LIMIT INDICATED ON THE SUBJECT PLAN OR THOSE TREES WITHIN THE DISTURBANCE AREA WHICH ARE DESIGNATED TO REMAIN AFTER CONSTRUCTION ARE TO BE PROTECTED WITH TREE PROTECTION DEVICES. SEE THE TREE PROTECTION DETAIL.

18. THE MORRIS COUNTY SOIL CONSERVATION DISTRICT MAY REQUEST ADDITIONAL MEASURES TO MINIMIZE ON SITE OR OFF SITE EROSION PROBLEMS DURING CONSTRUCTION.

19. THE MORRIS COUNTY SOIL CONSERVATION DISTRICT MUST BE NOTIFIED, IN WRITING, AT LEAST 72 HOURS PRIOR TO ANY LAND DISTURBANCE, AND A PRE-CONSTRUCTION MEETING HELD.

20. CONTRACTOR TO SET UP A MEETING WITH THE INSPECTOR FOR PERIODIC INSPECTIONS OF THE TEMPORARY SEDIMENT BASIN PRIOR TO AND DURING ITS CONSTRUCTION.

21. TOPSOIL STOCKPILE PROTECTION

a) APPLY GROUND LIMESTONE AT A RATE OF 90 LBS. PER 1000 SQ. FT b) APPLY FERTILIZER (10-20-10) AT A RATE 11 LBS. PER 1000 SQ. FT.

c) APPLY PERENNIAL RYEGRASS SEED AT 1 LB. PER 1000 SQ. FT. AND ANNUAL RYEGRASS AT 1 LB. PER d) MULCH STOCKPILE WITH STRAW OR HAY AT A RATE OF 90 LBS. PER 1000 SQ. FT.

e) APPLY A LIQUID MULCH BINDER OR TACK TO STRAW OR HAY MULCH. f) PROPERLY ENTRENCH A SILT FENCE AT THE BOTTOM OF THE STOCKPILE.

22. TEMPORARY STABILIZATION SPECIFICATIONS

a) APPLY GROUND LIMESTONE AT A RATE OF 90 LBS. PER 1000 SQ. FT b) APPLY FERTILIZER (10-20-10) AT A RATE 11 LBS. PER 1000 SQ. FT.

c) APPLY PERENNIAL RYEGRASS SEED AT 1 LB. PER 1000 SQ. FT. AND ANNUAL RYEGRASS AT 1 LB. PER d) MULCH STOCKPILE WITH STRAW OR HAY AT A RATE OF 90 LBS. PER 1000 SQ. FT.

e) APPLY A LIQUID MULCH BINDER OR TACK TO STRAW OR HAY MULCH.

23. PERMANENT STABILIZATION SPECIFICATIONS a) APPLY TOPSOIL TO A DEPTH OF 5 INCHES (UNSETTLED)

b) APPLY GROUND LIMESTONE AT A RATE OF 90 LBS. PER 1000 SQ. FT. AND WORK FOUR INCHES INTO

c) APPLY FERTILIZER (10-20-10) AT A RATE 11 LBS. PER 1000 SQ. FT. d) APPLY HARD FESQUE SEED AT 2.7 LBS. PER 1000 SQ. FT. AND CREEPING RED FESQUE SEED AT 0.7 LBS. PER 1000 SQ. FT. AND PERENNIAL RYEGRASS SEED AT 0.25 LBS. PER 1000 SQ. FT.

e) MULCH STOCKPILE WITH STRAW OR HAY AT A RATE OF 90 LBS. PER 1000 SQ. FT. f) APPLY A LIQUID MULCH BINDER OR TACK TO STRAW OR HAY MULCH. OTHER APPROVED METHODS (i.e. PEG AND TWINE, OR MULCH NETTING) MAY BE USED. IF POSSIBLE, PLANT BETWEEN MARCH 1 & MAY 15, OR BETWEEN AUGUST 15 & OCTOBER 1.

NOTE: 72 HOURS PRIOR TO ANY SOIL DISTURBANCE, NOTICE IN WRITING, SHALL BE GIVEN TO THE MORRIS COUNTY SOIL CONSERVATION DISTRICT AND A PRE-CONSTRUCTION MEETING HELD.

MORRIS COUNTY SOIL CONSERVATION DISTRICT NOTES FOR ROAD WORK

1. THE CONTRACTOR SHALL PREPARE A PLAN FOR THE PROPER DEWATERING OF EACH STREAM CROSSING PRIOR TO EXCAVATING THE STREAM BED. PLAN SHALL BE FORWARDED TO THE ENGINEER AND MORRIS COUNTY SOIL CONSERVATION DISTRICT FOR APPROVAL. THE DISTRICT SHALL BE NOTIFIED FOR INSPECTION PRIOR TO EACH STREAM CROSSING CONSTRUCTION.

2. ANY AREAS USED FOR CONTRACTOR'S STAGING, INCLUDING BUT NOT LIMITED TO, TEMPORARY STORAGE OF STOCKPILE MATERIALS (e.g. CRUSHED STONE, QUARRY PROCESS STONE, SELECT FILL, EXCAVATED MATERIALS, ETC.) SHALL BE ENTIRELY PROTECTED BY A SILT FENCE ALONG THE LOW ELEVATION SIDE TO CONTROL SEDIMENT RUNOFF.

3. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE MORRIS COUNTY SOIL CONSERVATION DISTRICT OF ANY STAGING AND/OR STOCKPILE LOCATION AREAS AND FOR OBTAINING A SOIL EROSION AND SEDIMENT CONTROL CERTIFICATION FOR THESE AREAS.

4. A CRUSHED STONE, VEHICLE WHEEL-CLEANING BLANKET SHALL BE INSTALLED AT THE CONTRACTOR'S STAGING YARD AND/OR STOCKPILE AREAS TO PREVENT OFF-SITE TRACING OF SEDIMENT BY CONSTRUCTION VEHICLE ONTO PUBLIC ROADS. BLANKET SHALL BE 15 FT. x 50 FT. x 6 IN. MINIMUM), CRUSHED STONE 2-1/2 INCHES IN DIAMETER. SAID BLANKET SHALL BE UNDERLAIN WITH A SUITABLE SYNTHETIC SEDIMENT FILTER FABRIC AND MAINTAINED IN GOOD ORDER.

JOB NUMBER: 22-0605

**SCALE: AS SHOWN** 

S-01

SHEET 1 OF 2

CONSTRUCTION GUIDELINES

. PRIOR TO PLACING A ROLLED EROSION CONTROL PRODUCT (RECP), A TOPSOIL SEEDBED SHOULD BE PREPARED, SMOOTH GRADED, AND SEEDED AND FERTILIZED. IT IS IMPERATIVE THAT SEEDING OCCUR PRIOR TO PLACEMENT OF THE RECP TO ENSURE PROPER CONTACT BETWEEN SEED AND SOIL. SOME MANUFACTURERS CAN EMBED THE SPECIFIED SEED MIXTURE INTO THE PRODUCT DURING THE MANUFACTURING PROCESS (IF THIS PROCESS IS USED, FOLLOW THE MANUFACTURER'S RECOMMENDED

2. AFTER SEEDING, THE APPROPRIATE RECP MAY BE PLACED AND ANCHORED WITH STAKES OR STAPLES. THE MANUFACTURER WILL PROVIDE SPECIFICATIONS FOR THE PATTERN AND SPACING OF ANCHOR STAKES OR STAPLES, OVERLAP BETWEEN ROLLS (TYPICALLY 6 INCHES), AND ANY ADDITIONAL PRODUCT

. SUBSEQUENT SEGMENTS OF RECPS SHOULD HAVE THEIR UPSTREAM EDGES TRENCHED IN, AND THE UNDER THE PRODUCT.

INSTALLATION SPECIFICATIONS).

REQUIREMENTS.

3. IT IS IMPORTANT THAT THE STAKES OR STAPLES BI PROPERLY INSTALLED TO PREVENT "TENTING" OF THE PRODUCT AS THE VEGETATION BEGINS TO GROW AND PUSH UP ON THE MATTING. THIS CAN IMPACT VEGETATIVE ESTABLISHMENT AND THE PRODUCT CAN BECOME ENTANGLED IN MOWING EQUIPMENT.

4. AT THE TOPS OF SLOPES AND AT THE ENTRANCE TO A CHANNEL, THE LEADING EDGE OF THE RECP SHOULD BE TRENCHED INTO THE GROUND, APPROXIMATELY 6 INCHES, ANCHORED IN PLACE WITH STAKES OR STAPLES, AND BACKFILLED. THIS PREVENTS RUNOFF FROM LIFTING THE LEADING EDGE, AND FLOWING BETWEEN THE GROUND AND THE RECP.

DOWNSTREAM EDGE SHOULD SLIGHTLY OVERLAP THE NEXT SECTION TO PREVENT WATER FROM FLOWING

ACCORDING TO USDA WEB SOIL SURVEY, THE MAP UNIT SYMBOL FOR 100% OF THE SITE IS "EkhhC" (ELLINGTON LOAMY SUBSTRATUM VARIANT FINE SANDY LOAM), 8 TO 15 PERCENT SLOPES.

—15cm (6")

1(1 1/2")

STAPLES

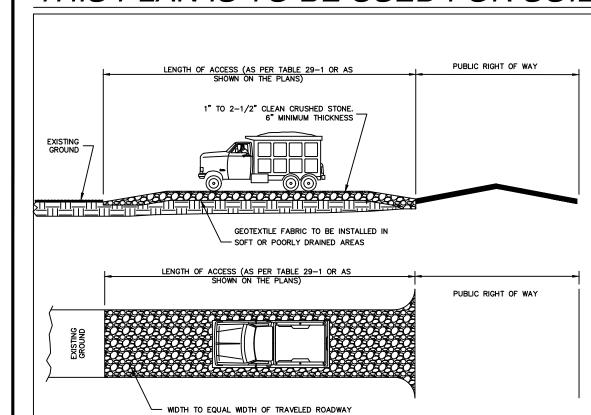
EROSION CONTROL BLANKETS

SLOPE INSTALLATION

(12")

THIS PLAN IS TO BE USED FOR SOIL EROSION CONTROL PURPOSES ONLY

## THIS PLAN IS TO BE USED FOR SOIL EROSION CONTROL PURPOSES ONLY



LENGTH OF STABILIZED CONSTRUCTION ACCESS (TABLE 29-1)					
PERCENT SLOPE	LENGTH DF ST	ONE REQUIRED			
OF ROADWAY	COARSE GRAINED SOILS	FINE GRAINED SOILS			
0 TO 2%	50 FT	100 FT			
2 TO 5%	100 FT	200 FT			
>5%	Entire surface stak	oilized with FABC base			
	course per governing (	authority requirements.			

1. ALL INDIVIDUAL LOT INGRESS/EGRESS POINTS SHALL REQUIRE STABILIZED CONSTRUCTION ENTRANCE ACCESS. 2. PLACE STABILIZED CONSTRUCTION ENTRANCE AT LOCATIONS AS SHOWN ON THE SOIL EROSION AND SEDIMENT CONTROL PLAN.

3. STONE SIZE SHALL BE ASTM C-33, SIZE NO. 2 DR 3, CRUSHED STONE. 4. THE THICKNESS OF THE STABILIZED CONSTRUCTION ENTRANCE SHALL NOT BE LESS THAN 6'. 5. THE WIDTH AT THE EXISTING PAVEMENT SHALL NOT BE LESS THAN THE FULL WIDTH OF POINTS OF INGRESS AND EGRESS.

# 6. THE STABILIZED CONSTRUCTION ENTRANCE 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 LENGTH AS CONDITIONS DEMAND AND REPAIR AND/OR CLEAN OUT OF ANY MEASURE USED TO TRAP SEDIMENT.

7. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO THE PUBLIC ROADWAY MUST BE REMOVED IMMEDIATELY. 3. WHERE TRACKING OF SOIL ONTO ROADWAYS IS A CONTINUAL OCCURRENCE, ALL CONTRACTORS BOTH SITE AND DWELLING CONTRACTORS, SHALL BE REQUIRED TO BROOM SWEEP THE ROADWAY IT 2 HOUR INTERVALS MINIMUM AND PRIOR TO LEAVING THE CONSTRUCTION SITE AT THE END IF THE DAY.

PROPOSED SEQUENCE OF DEVELOPMENT	
Installation of all sediment and erosion control devices (including silt fences and stabilized construction access) prior to any major soil disturbances or in their proper sequence and maintenance until permanent protection is established.	1 Week
Site demolition, clearing, clear and remove all debris as necessary. All remaining vegetation to be properly protected and to remain in its natural state.	2 Weeks
General and preliminary grading of all pavement areas	2 Week
Layout and location of all proposed utilities.	1 Week
Construction of all proposed improvements. installation of all erosion control measures affected by said facilities such as inlet sediment barriers.	25 Weeks
Pavement subbase course to be applied immediately following preliminary grading and construction of improvements in order to stabilize pavement areas.	1 Week
Installation of all pavement base material.	1 Week
Fine grading of all lot areas and basins including construction of all soil erosion control as necessary.	1 Week
Stabilization of all off pavement areas.	1 Week
Complete all landscaping and vegetative cover.	1 Week
Removal of all temporary sediment and erosion control devices.	upon completion

#### STANDARD FOR TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION

Establishment of temporary vegetative cover on soils exposed for periods of two to six months which are not being graded, not under active construction or not scheduled for permanent seeding within

PURPOSE
To temporarily stabilize the soil and reduce damage from wind and water erosion until permanent

WATER QUALITY ENHANCEMENT Provides temporary protection against the impacts of wind and rain, slows the over land movement of stormwater runoff, increases infiltration and retains soil and nutrients on site, protecting streams or

#### WHERE APPLICABLE On exposed soils that have the potential for causing off—site environmental damage. METHODS AND MATERIALS SITE PREPARATION

SEEDBED 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, page 19-1.

A. Apply 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

square feet of 10-20-10 or equivalent with 50% water insoluble nitrogen unless a soil test indicates otherwise.Calcium carbonate is the equivalent and standard for measuring the ability of liming materials

offices. Fertilizer shall be applied at the rate of 500 pounds per acre of 11 lbs. per 1000

to neutralize soil acidity and supply calcium magnesium to grasses and legumes.

B. Install needed erosion control practices or facilities such as diversions, grade stabilization structures, underground utilities (cables, irrigation systems, etc.) channel stabilization measures, sediment basins, and waterways. See Standards 11 through 42.

C. Immediately prior to seeding and topsoil application, 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.)

according to soil test recommendations such as offered by Rutgers Co—operative Extension. Soil sample mailers are available from the local Rutgers Cooperative Extension offices. Fertilizer shall be applied at the rate of 500 pounds per acre of 11 lbs. per 1000

B. Work lime 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 discing operation should be 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 retilled

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.

SEEDING A. Select seed from recommendations in Table 7-2.

		TABLE 7	<u>-2</u>					
TEMPORARY VEGETATIVE	STABILIZA	TION GRASS	SES, SEEDIN	NG RATES,	DATES AND	DEPTH.		
SEED SELECTIONS		RATE <sup>1</sup>		M SEEDING Plant Hardine		OPTIMUM SEEDING		
	Per Acre	Per 1000 Sq. Ft.	ZONE 5b,6s	ZONE 6b	ZONE 7a,b	DEPTH <sup>4</sup> (inches)		
COLD SEASON GRASSES								
1. Perennial ryegrass	100	1.0		3/1-5/15 8/15-10/1	2/15-5/1 8/15-10/15	0.5		
2. Spring oats	86	2.0		3/1-5/15 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	110	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	0.25		
1. Seeding rate for warm se						mount of		

Pure Line Seed (PLS) as determined by a germination test result. No adjustment is required for 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, pg. 7-4.) 4. Twice the depth for sandy soils.

B. Conventional Seeding. Apply seed uniformly by hand, cyclone (centrifugal) seeder, drop seeder, drill or cultipacker seeder. Except for drilled, hydroseeded or cultipacked seedings, seed shall be incorporated into the soil, to a depth of 1/4 to 1/2 inch, by raking or dragging. Depth of seed placement may

C. Hydroseeding is a broadcast seeding method usually involving a truck or trailer mounted tank, with an agitation system and hydraulic pump for mixing seed, water and fertilizer and spraying the mix onto the prepared seedbed. Mulch shall not be included in the tank with seed. Short fibered mulch may be applied with a hydroseeder following seeding. (also see Section IV Mulching) Hydroseeding is not a preferred seeding method because seed and fertilizer are applied to the surface and not incorporated into the soil. Poor seed to soil contact occurs reducing seed germination and growth. Hydroseeding may be used for areas too steep for conventional equipment to traverse or too obstructed with rocks, stumps, etc.

D. After seeding, firming the soil with a corrugated roller will assure good seed—to—soil contact, restore capillarity, and improved 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. MULCHING

Mulching is required on all seeding. Mulch will insure against erosion before grass is established and wil promote faster and earlier establishment. The existence of vegetation sufficient to control soil erosion shall be deemed compliance with this mulching requirement.

Straw or Hay. Unrotted small grain straw, hay free of seeds, or salt hay to be applied at the rate of 1-1/2 to 2 tons per acre (70 to 90 pounds per 1,000 square feet), except that where a crimper is used instead of a liquid mulch-binder (tackifying or adhesive agent), the rate of application is 3 tons per acre. Mulch chopper-blowers must not grind the mulch. Hay mulch is not recommended for

establishing fine turf or lawns due to the presence of weed seed.

of which may need further evaluation for use in this state.

Application. Spread mulch uniformly by hand or mechanically so that approximately 85% of the soil surface will be covered. For uniform distribution of hand—spread mulch, divide area into approximately 1,000 square feet sections and distribute 70 to 90 pounds within each section. Anchoring shall be accomplished immediately after placement to minimize loss by wind or water. This may be done by one of the following methods, depending upon the size of the area, steepness of

Peg and Twine. Drive 8 to 10 inch wooden pegs to within 2 to 3 inches of the soil surface every 4 feet in all directions. Stakes may be driven before or after applying mulch. Secure mulch to soil surface by stretching twine between pegs in a criss-cross and a square pattern. Secure twine around each peg with two or more round turns.

Mulch Nettings. Staple paper, jute, cotton, or plastic nettings to the soil surface. Use a degradable netting in areas to be moved. Crimper (mulch anchoring coulter tool). A tractor-drawn implement, somewhat like a disc-harrow, especially designed to push or cut some of the broadcast long fiber mulch 3 to 4 inches into the soil so as to anchor it and leave part standing upright. This technique is limited to areas traversable by a tractor, which must operate on the contour of slopes. Straw mulch rate must be 3 tons per acre. No tackifying or adhesive agent is required.

Liquid Mulch—Binders. May be used to anchor salt hay, hay or straw mulch. a. Applications should be heavier at edges where wind may catch the mulch, in valleys, and at crests

Use one of the following: (1) Organic and Vegetable Based Binders - Naturally occuring, powder based, hydrophilic materials when 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

(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 recommended by the manufacturer and remain tacky until germination of grass.

Note: All names given above are registered trade names. This does not constitute a recommendation of these products to the exclusion of other products. Wood-fiber or paper-fiber mulch. Shall be made from wood, plant fibers or paper containing no growth or germination inhibiting materials, used at the rate of 1,500 pounds per acre (or as recommended by the product manufacturer) and may be applied by a hydroseeder. This mulch shall not be mixed in the

tank with seed. Use is limited to flatter slopes and during optimum seeding periods in spring and fall. Pelletized mulch. Compressed and extruded paper and/or wood fiber product, which may contain co-polymers, tackifiers, fertilizers and coloring agents. The dry pellets, when applied to a seeded area area and watered, form a mulch mat. Pelletized mulch shall be applied in accordance with the manufacturers recommendations. Mulch may be applied by hand or mechanical spreader at the rate of 60-75 lbs./1,000 square feet and activated with 0.2 to 0.4 inches of water. This material has been found to be beneficial for use on small lawn or renovation areas, seeded areas where weed—seed free mulch is desired or on sites where straw mulch and tackifier agent are not practical or desirable.

Applying the full 0.2 to 0.4 inches of water after spreading pelletized mulch on the seed bed is extremely important for sufficient activation and expansion of the mulch to provide soil coverage.

#### STANDARD FOR PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION

<u>DEFINITION</u>
Establishment of permanent vegetative cover on exposed soils where perennial vegetation is needed for long term protection

To permanently stabilize the soil, assuring conservation of soil and water, and to enhance the

Slows the over land movement of stormwater runoff, increases infiltration and retains soil and nutrients on site, protecting streams or other stormwater conveyances. WHERE APPLICABLE

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

3. Immediately prior to seeding and topsoil application, 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

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. See Standards 11 through 42.

a. Uniformly apply ground limestone and fertilizer to topsoil which has been spread and firmed, 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 lime 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 discing operation should be the general contour. Continue tillage until a reasonable uniform seedbed is prepared. C. High acid producing soil. Soils having a pH of 4 or less or containing iron sulfide shall be covered with a minimum of 12 inches of soil having a pH of 5 or more before initiating seedbed reparation. See Standard for Management of High Acid—Producing Soils for specific requirements.

A. Select a mixture from Table 4-3 or use mixture recommended by Rutgers Cooperative Extension or Natural Resources Conservation Service which is approved by the Soil Conservation District. Seed germaination shall have been tested within 12 months of the planting date. No seed shall be accepted

with a germination test date more than 12 months old unless retested (1) Seeding rates specified are required whan a report of compliance is requested prior to actual establishment of permanent vegetation. Up to 50% reduction in rates may be used when permanent vegetation is established prior to a report of compliance inspection. These rates apply to all methods of seeding. Establishing permanent vegetation means 80% vegetative coverage with the specified seed mixture for the seeded area and mowed once.

(2) Warm season mixtures are grasses and legumes which maximize growth at high temperatures, generally 85°F and above. See Table 4—3, mixtures 1 to 7. Planting rates for warm season grasses shall be the amount of Pure Live Seed (PLS) as determined by germination testing results. (3) Cool Season Mixtures are grasses and legumes which maximize growth at temperatures below 85°F. Many grasses become active at 65°F. See Table 3, mixtures 8-20. Adjustment of planting rates to compensate for the amount of Pure Live Seed is not required for cool season grasses.

B. Conventional Seeding is performed by applying seed uniformly by hand, cyclone (centrifugal) seeder, drop seeder, drill or cultipacker seeder. Except for drilled, hydroseeded or cultipacked seedings, seed shall be incorporated into the soil within 24 hours of seedbed preparation to a depth of 1/4 to 1/2 inch, by raking or dragging. Depth of seed placement may be 1/4 inch deeper on coarse textured soil. C. After seeding, firming the soil with a corrugated roller will assure good seed-to soil contact restore capillarity, and improve seeding emergence. this is preferred method. When performed on the contour, sheet erosion will be minimize and water conservation on site will be maximized.

D. <u>Hydroseeding</u> is a broadcast seeding method usually involving a truck or trailer mounted tank, with an agitation system and hydraulic pump for mixing seed, water and fertilizer and spraying the mix onto the prepared seedbed. Mulch shall not be included in the tank with seed. Short fibered mulch may be applied with a hydroseeder following seeding. (also see Section IV Mulching) Hydroseeding is not a preferred seeding method because seed and fertilizer are applied to the surface and not incorporated into the soil. Poor seed to soil contact occurs reducing seed germination and growth. Hydroseeding may be used for areas too steep for conventional equipment to traverse or too obstructed with rocks, stumps, etc.

Mulching is required on all seeding. Mulch will insure against erosion before grass is established and will promote faster and earlier establishment. The existence of vegetation sufficient to control soil erosion shall be deemed compliance with this mulching requirement. Straw or Hay. Unrotted small grain straw, hay free of seeds, or salt hay to be applied at the rate of 1-1/2 to 2 tons per acre (70 to 90 pounds per 1,000 square feet), except that where a crimper is used instead of a liquid mulch-binder (tackifying or adhesive agent), the rate of application is 3 tons

per acre. Mulch chopper-blowers must <u>not</u> grind the mulch. Hay mulch is not recommended for establishing fine turf or lawns due to the presence of weed seed Application. Spread mulch uniformly by hand or mechanically so that approximately 85% of the soil surface will be covered. For uniform distribution of hand—spread mulch, divide area into approximately 1,000 square feet sections and distribute 70 to 90 pounds within each section.

Anchoring shall be accomplished immediately after placement to minimize loss by wind or water. This

may be done by one of the following methods, depending upon the size of the area, steepness of

Peg and Twine. Drive 8 to 10 inch wooden pegs to within 2 to 3 inches of the soil surface every 4 feet in all directions. Stakes may be driven before or after applying mulch. Secure mulch to soil surface by stretching twine between pegs in a criss-cross and a square pattern. Secure twine around each peg with two or more round turns.

Mulch Nettings. Staple paper, jute, cotton, or plastic nettings to the soil surface. Use a degradable Crimper (mulch anchoring coulter tool). A tractor—drawn implement, somewhat like a disc—harrow, especially designed to push or cut some of the broadcast long fiber mulch 3 to 4 inches into the soil so as to anchor it and leave part standing upright. This technique is limited to areas traversable by a tractor, which must operate on the contour of slopes. Straw mulch rate must be 3 tons per acre. No tackifying or adhesive agent is required.

Liquid Mulch—Binders. May be used to anchor salt hay, hay or straw mulch. a. Applications should be heavier at edges where wind may catch the mulch, in valleys, and at crests of banks. The remainder of the area should be uniform in appearance.

(1) Organic and Vegetable Based Binders — Naturally occuring, powder based, hydrophilic materials when 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 state.

(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 recommended by the manufacturer and remain tacky until germination of grass.

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

Wood-fiber or paper-fiber mulch. Shall be made from wood, plant fibers or paper containing no growth or germination inhibiting materials, used at the rate of 1,500 pounds per acre (or as recommended by the product manufacturer) and may be applied by a hydroseeder. This mulch shall not be mixed in the tank with seed. Use is limited to flatter slopes and during optimum seeding periods in spring and fall.

Pelletized mulch. Compressed and extruded paper and/or wood fiber product, which may contain co-polymers, tackifiers, fertilizers and coloring agents. The dry pellets, when applied to a seeded area area and watered, form a mulch mat. Pelletized mulch shall be applied in accordance with the manufacturers recommendations. Mulch may be applied by hand or mechanical spreader at the rate of 60-75 lbs./1,000 square feet and activated with 0.2 to 0.4 inches of water. This material has been found to be beneficial for use on small lawn or renovation areas, seeded areas where weed-seed free mulch is desired or on sites where straw mulch and tackifier agent are not practical or desirable. Applying the full 0.2 to 0.4 inches of water after spreading pelletized mulch on the seed bed is extremely important for sufficient activation and expansion of the mulch to provide soil coverage.

If soil moisture is deficient, and mulch is not used, supply new seedings with adequate water (a minimum of 1/4 inch twice a day until vegetation is well established). This is especially true when seedings are made in abnormally dry or hot weather or on droughty sites.

Since soil organic matter content and slow fertilizer (water insoluble) are prescribed in Section 2A. Seedbed Preparation in this Standard, no follow-up of topdressing is mandatory.

An exception may be made where gross nitrogen deficiency exists to the extent that turf failure may develop. In that instance, topdress with 10-10-10 or equivalent at 300 pounds per acre or 7 pounds per 1,000 square feet every 3 to 5 weeks until the gross until the gross nitrogen deficiency

in the turf is ameliorated ESTABLISHING PERMANENT VEGETATIVE STABILIZATION

The quality of permanent vegetation rests with the contractor. The timing of seeding, preparing the the seedbed, applying nutrients, mulch and other management are essential. The seed application rates in Table 4-3 are required when a <u>Report of Compliance</u> is requested prior to actual establishment of permanent vegetation. Up to 50% reduction in application rates may be used when permanent vegetation is established prior to requesting a <u>Report of Compliance</u> from the district. These rates apply to all methods of seeding. <u>Establishing permanent vegetation means 80% vegetative cover (of the seeded</u> species) and mowed once. Note this designation of mowed once does not guarantee the permanency of the turf should other maintenance factors be neglected or otherwise mismanaged.

<u>TABLE 4-2</u>

PERMANEN	IT STABILIZATION MI	XTURES FOR VARIOUS I	JSES					
Application	PLANTING MIXTURES BY SOIL DRAINAGE CLASS/1 (see Table 4-3)							
Application	Excessively <u>Drained</u>	Well to Moderately Well <u>Drained</u>	Somewhat Poorly to Poorly <u>Drained</u>					
Residential/commercial lots	10, 12, 15	6, 10, 12, 13, 14, 15	16					
Pond and channel banks, dikes, 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					
Grasses 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 slope and banks, roadsides, borrow areas	2, 3, 6, 8	2, 3, 5, 7, 8, 9, 10, 15 18	2, 9, 10, 11, 12					
Sand and gravel pits, Sanitary landfills	1, 2, 3, 4, 6, 21	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 & shorelines²	2, 8, 20, 21a	2, 8, 19b, 20, 21a, 21b	2, 8, 19a, 21a,b,c,d					
Utility rights—of—way	3, 7, 180	3, 7	8, 9, 17					

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

PERM	ANEN	T VE	GETA <sup>-</sup>	TIVE I	MIXTU		LE 4- PLAN		RATI	ES AN	ND PL	_ANTIN(	G DATES <sup>1</sup>
SEED MIXTURE <sup>2</sup>	PLANTING RATE/3			PLANTING DATES  O = Optimal Planting period  A = Acceptable Planting period									REMARKS
	PLAN	RATE		LANT e 5b,		1	ZONE one 6	S (se	1	ire 4- ne 7a	-	MAINTENANCE LEVEL/4	
	lbs./ acre	lbs./ 1000 sq. ft.	3/15-		8/1-	3/1-	5/1-	8/15- 10/15	2/1-	5/1-	8/15-	MAI	
WARM SEASON SEED MIXTURES				•			•			•	•	•	
1 A. FOR PINELANDS NATIONAL RESERVE SEED MIXTURES SEE TABLE 4.4 PG 4-17 OF THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN			0			O			0				
NEW JERSEY.  1. SWITCHGRASS AND /OR COASTAL PANICGRASS PLUS OR FLATPEA.	15 15 20	.35 .45 .45	O			O			O			C-D	
2. DEERTONGUE OR SWITCHGRASS REDTOP	15 20 1	.35 .45 .1	0			0			0			C-D	USE DEERTONGUE IF I <4.0.SWITCHGRASS IS SUPERIOR WILDLIFE P USE FOR WATERWAYS
3. SWITCH GRASS DEERTONGUE LITTLE BLUESTEM SHEEP FESCUE PLUS PARTRIDGE PEA	15 10 20 20 10	.35 .25 .45 .45	0			0			0			C-D	REDTOP PROVIDES QUEOVER.  PINELANDS MIXTURE
4. SWITCHGRASS BIG BLUESTEM LITTLE BLUESTEM SAND LOVEGRASS COASTAL PANICGRASS	10 5 5 4	.25 .10 .10	0			0			0			C-D	NATIVE WARM-SEASC MIXTURE.
5. BERMUDAS ZOYSIAGRASS (SEED) ZOYSIAGRASS (SPRIGS)	15 30	.25 .35 .70	0			0			0			A-D	BERMUDAGRASS HA: SUPERIOR SALT TOLERANCE. ZOYSIA GREATER WEAR
				5			5			5			TOLERANCE.
COOL SEASON SEED MIXTURES			Α	Α	0	Α	<b>A</b>	0	Α	Α	0		MAINTENANCE MIXTU
6. FINE FESCUE (BLEND) HARD FESCUE CHEWINGS FESCUE STRONG CREEPING RED FESCUE KENTUCKY BLUEGRASS PERENNIAL RYEGRASS PLUS WHITE CLOVER	45 10 5	.50										B-D	WHITE CLOVER CAN REMOVED WHEN USI ESTABLISH LAWNS.
7. STRONG CREEPING RED FESCUE KENTUCKY BLUE GRASS PERENNIAL RYEGRASS OR REDTOP PLUS WHITE CLOVER	130 50 20 10 5	3 1 .5 .25 .10	A	<b>A</b>	0	A	<b>A</b>	0	A	<b>A</b>	0	B-D	SUITABLE WATERWAY CANADA BLUEGRASS MORE DROUGHT TOLERANT. USE REDTOP FOR INCREASES DROUGHT TOLERANCE.
8. TALL FESCUE (TURFT-TYPE) OR STRONG CREEPING RED FESCUE OR PERENNIAL RYEGRASS FLATPEA	30 30 30 25	.70 .70 .70 .60	0	<b>A</b> <sup>6</sup>		0	<b>A</b> <sup>6</sup>		0	<b>A</b>		B-D	TALL FESCUE BEST SELECTED FOR DROU CONDITIONS. USE CREEPING RED FESCUE IN HEAVY SH. USE FLATPEA TO SUP WOODY VEGETATION
9. DEERTONGE REDTOP WILD RYE (ELYMUS) SWITCHGRASS	20 2 15 25	.45 .05 .35	0			0			0			C-D	NATIVE WET MIX.
10. TALL FESCUE (TURF-TYPE) PERENNIAL RYEGRASS OR WHITE CLOVER	265 20 5	6 5 .10	0	<b>A</b> <sup>5</sup>	<b>A</b> <sup>5</sup>	o	<b>A</b> <sup>5</sup>	<b>A</b> <sup>5</sup>	0	<b>A</b>	<b>A</b>	B-D	WHITE CLOVER CA EXCLUDED ON LAW SITES
11. KENTUCKY BLUEGRASS TURF-TYPE TALL FESCUE	45 22	1 5	A	<b>A</b> <sup>5</sup>	0	A	<b>A</b> <sup>5</sup>	0	A	<b>A</b> <sup>5</sup>	0	C-D	FILTER STRIP USE F NUTRIENT UPTAKE.
12. TURF- TYPE (BLEND OF 3 CULTIVARS)	350	8	A	<b>A</b> <sup>5</sup>	0	Α	<b>A</b> <sup>5</sup>	0	A	<b>A</b> <sup>5</sup>	0	C-D	USE IN A MANAGED FILTER STRIP FOR NUTRIENT UPTAKE.
13. HARD FESCUE AND/OR CHEWING FESCUE AND/OR STRONG CREEPING RED FESCUE PRENNIAL RYEGRASS KY. BLUEGRASS (BLEND)	45 45	4 1 1	A	<b>A</b> <sup>5</sup>	0	Α	<b>A</b> <sup>5</sup>	0	A	<b>A</b> <sup>5</sup>	0	A-C	GENERAL LAWN RECREATION.
14. TALL FESCUE KY. BLUEGRASS (BLEND) PERENNIAL RYEGRASS	265 20 20	.50 .50	A	<b>A</b> <sup>5</sup>	0	Α	Ā	0	A	<b>A</b> <sup>5</sup>	0	A-B	ATHLETIC FIELD/3 CULTIVAR MIX OF KY. BLUEGRASS
15. HARD FESCUE CHEWINGS FESCUE STRONG CREEPING RED FESCUE PERENNIAL RYEGRASS	130 45 45 10	3 1 1 .25	A	A <sup>5</sup>	0	Α	<b>A</b> <sup>5</sup>	0	A	$A^5$	0	C-D	LOW MAINTENANCE FINE FESCUE LAWN
16. ROUGH BLUEGRASS STRONG CREEPING RED FESCUE	90	2.0	Α	<b>A</b> <sup>5</sup>	0	Α	<b>A</b> <sup>5</sup>	0	Α	<b>A</b> <sup>5</sup>	0	C-D	MOIST SHADE
17. CREEPING BENTGRASS CREEPING RED FESCUE ALKALI SALTGRASS	45 45 45	1 1 1	Α	<b>A</b>	0	Α	<b>A</b>	0	Α	<b>A</b> <sup>5</sup>	0	B-D	USE BENTGRASS UNDER WETTER CONDITIONS. SALTGRASS WILL ON PERSISTENT UNDER SALINE CONDITIONS
18. HARD OR SHEEPS FESCUE N.E. WILDFLOWER MIXTURE	25 12	.60 .35	0	Α	0	0	Α	0	0	Α	0	C-D	REGIONAL WILDFLOWER MIX HYDROSEEDING NOI RECOMMENDED.
19. A. SMOOTH CORDGRASS B. SALTMEADOWN CORDGRASS	veg veg					0	Before 7/1		O	Before 7/1		D	PLANTED IN THE INTERTIDAL ZONE. PLANTED ABOVE MEA SEA LEVEL.
20. AMERICAN BEACHGRASS COASTAL PANICGRASS	veg 20	.45				Before 4/1			0			D	COASTAL PANICGRAS MAY BE INTERSEEDE BETWEEN ROWS OF
21. A. PURPLEOSIER WILLOW B. DWARF WILLOW	veg veg		Before			Before			Before			D	ALSO REFER TO CHAPTERS 16 & 18

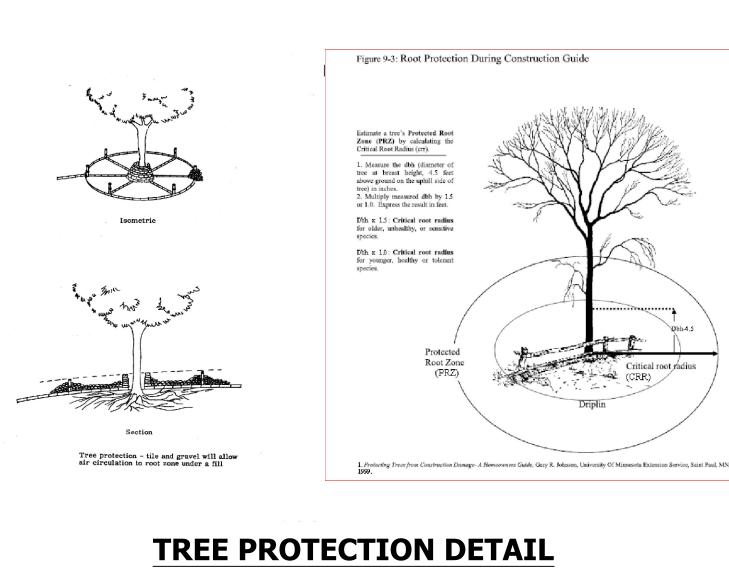
1 See Appendix B for descriptions of turf grass mixtures and cultivars. The actual amount of warm season grass mixture used in Table 3 (seed mix 1-7) shall be adjusted to reflect the amount of Pure Live Seed (PLS) as determined by germination testing results. No adjustment is required for cool season shall be adjusted to reflect the amount of Pure Live Seed (PLS) as determined by germination testing results. No adjustment is required for cool season grasses (seed mixtures 8-20).

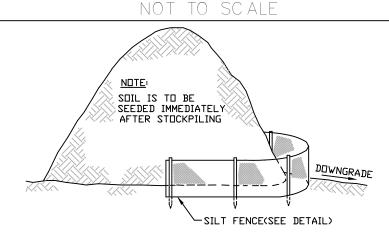
2 Seeding mixtures and/or rates not listed above may be used if recommended by the local Soil Conservation District, Natural Resources Conservation Service; recommendations of Rutgers Cooperative Extension may be used if approved by the Soil Conservation District. Legumes (white clover, flatpea, lespedeza) should be mixed with proper innoculant 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.

0=optimal planting period A=acceptable planting period Maintenance Level: Intensive moving, (2-4 days), fertilization, lime, pest control and irrigation (Examples — high maintenance lawns, commercial and recreation areas, public facilities). Frequent moving, (4-7 days), occasional fertilization, lime and weed control (Examples — home lawns, commercial sites, school sites). Periodic mowing (7-14 days), occasional fertilization and lime (Examples — home lawns, parks). Infrequent or no mowing, fertilization and lime the first year of establishment (Examples — roadsides, recreation areas, public facilities that the set of proving season after

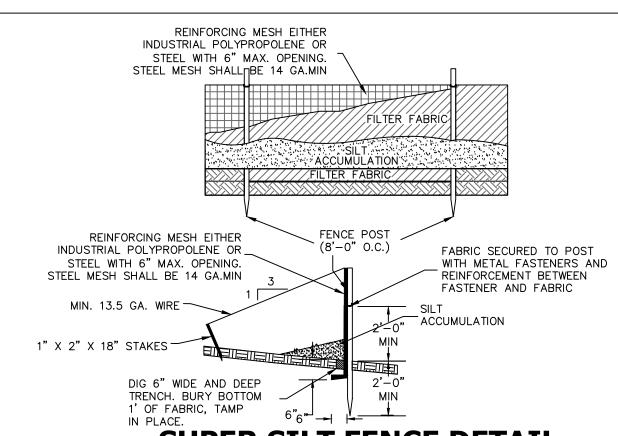
5 Summer seddings should be only conducted when the site is irrigated. Mixes including white clover require that at least six weeks of growing season after seeding to ensure establishment before freezing conditions.



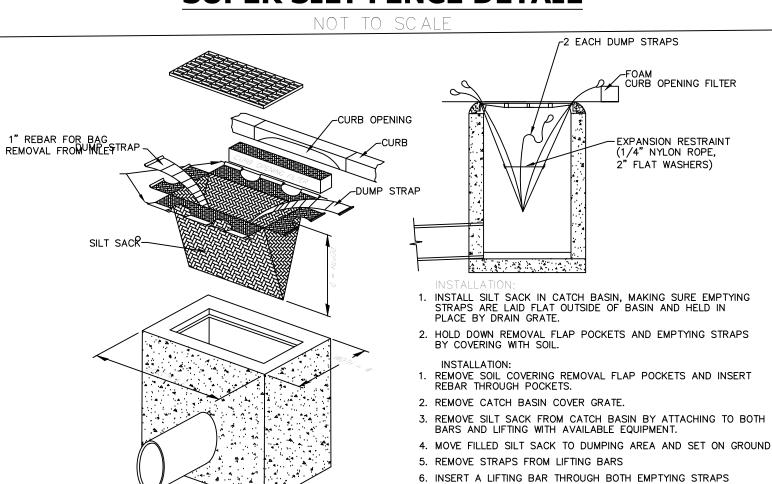


## **TOPSOIL STOCKPILING DETAIL**

NOT TO SCALE



## **SUPER SILT FENCE DETAIL**



1. CONTRACTOR TO CHECK AND IF REQUIRED MAINTAIN AND CLEAN THE SILT SACK AFTER EVERY RAIN EVENT.

7. LIFT WITH AVAILABLE EQUIPMENT WITH EMPTYING STRAPS

FILTER RUNOFF FROM THE 1 YEAR. 24 HOUR STORM EVENT AND SHALL. SAFELY CONVEY HIGHER FLOWS DIRECTLY INTO THE STORM SEWER SYSTEM.

## TRENCH DRAIN INLET PROTECTION DETAIL

NOT TO SCALE

2. THE INLET PROTECTION DEVICE WILL BE DESIGNED TO CAPTURE OR

KHAN, SIONAL

39 SUS, NSHIP

**JOB NUMBER:** 22-0605

SCALE: AS SHOWN

S-02

SHEET 2 OF 2