

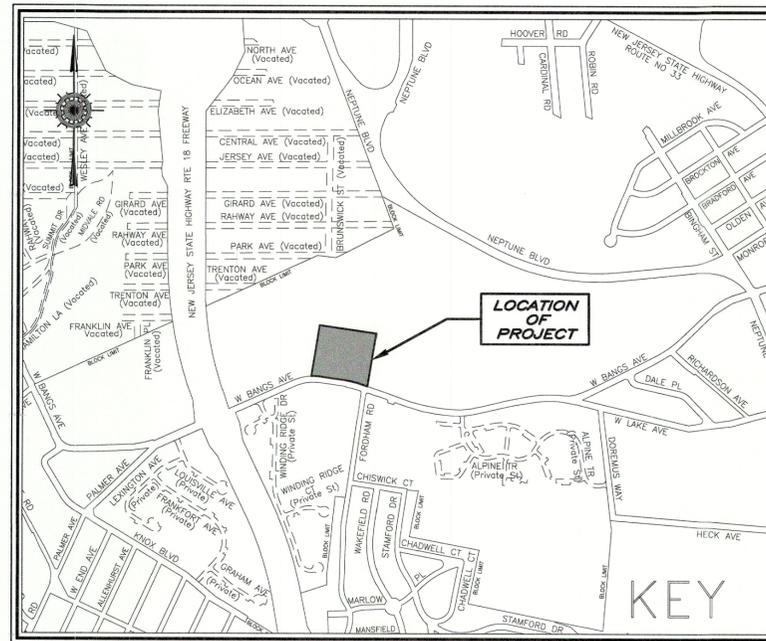
IMPROVEMENTS TO LOFFREDO FIELDS PHASE 2

IN THE

TOWNSHIP OF NEPTUNE

MONMOUTH COUNTY, NEW JERSEY

TOWNSHIP OF NEPTUNE	
MAYOR:	KEVIN McMILLAN
DEPUTY MAYOR:	DEREL M. STROUD
COMMITTEE MEMBERS:	ROBERT LANE, Jr. TASSIE YORK BRYAN ACCIANI
ADMINISTRATOR:	STEPHANIE OPEGARD



LIST OF DRAWINGS	
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1	COVER SHEET
2	SITE PLAN
3	CONSTRUCTION DETAILS
4	SOIL EROSION AND SEDIMENT CONTROL

GENERAL NOTES

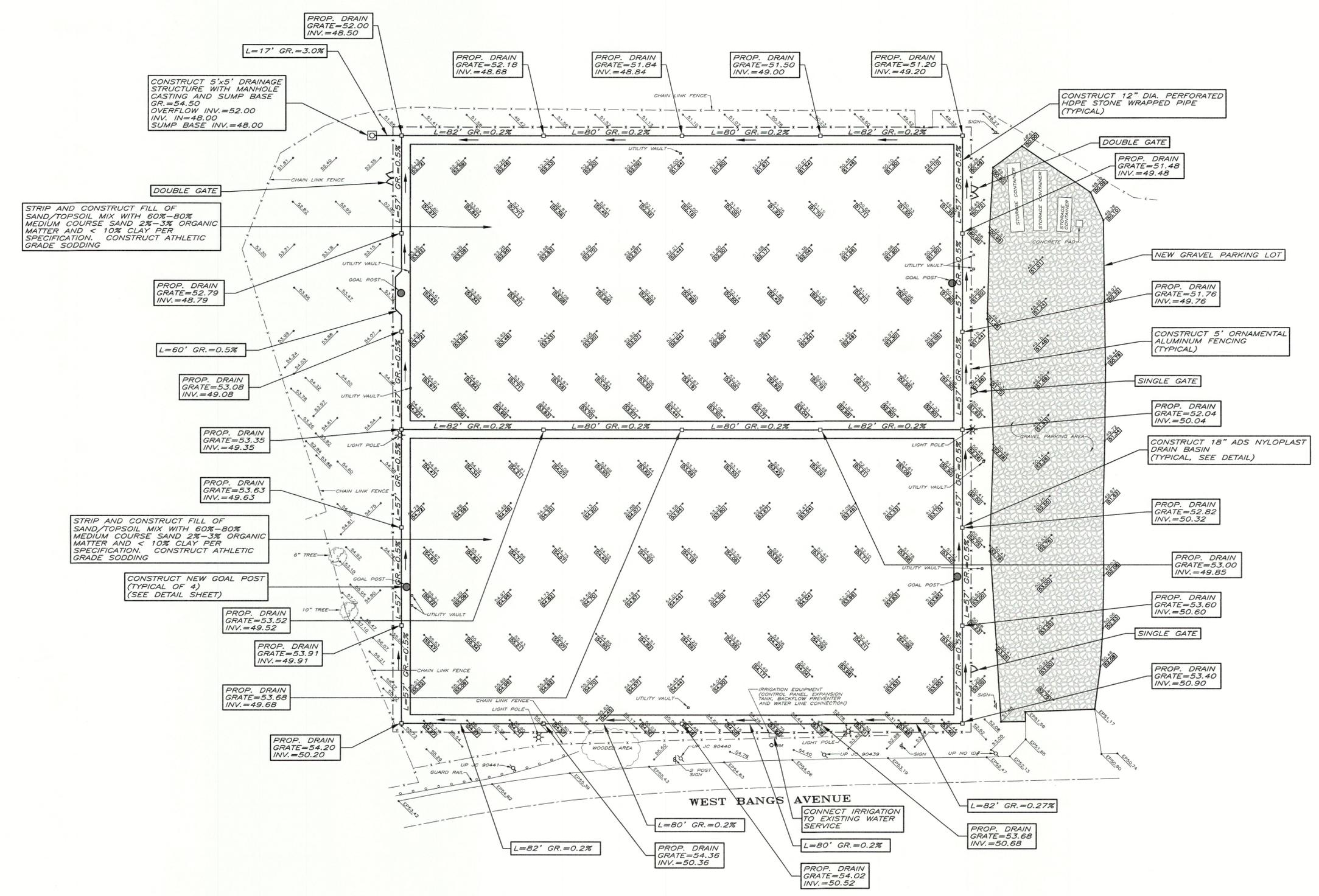
1. THE CONTRACTOR SHALL MEASURE AND VERIFY ALL DIMENSIONS AND CONDITIONS AT THE SITE PRIOR TO SUBMISSION OF HIS BID. HE SHALL NOTIFY THE ENGINEER OF ANY CONDITION WHICH MAY ALTER THE INTENT OF THE PROJECT.
2. THE CONTRACT DRAWINGS INDICATE THE APPROXIMATE LOCATION OF EXISTING SUBSURFACE UTILITIES IN THE VICINITY OF THE PROJECT AND ARE NOT GUARANTEED FOR ACCURACY AND/OR COMPLETENESS. CONTRACTOR TO VERIFY DEPTH AND LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION (1-800-372-1235). ANY CONTACTS WITH PROPOSED CONSTRUCTION ARE TO BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER SO THAT CHANGES CAN BE MADE TO THE DESIGN TO CARRY OUT THE INTENT OF THE WORK. NO SEPARATE PAYMENT SHALL BE MADE FOR THE ABOVE WORK. CONTRACTOR'S COST SHALL BE INCLUDED IN OTHER VARIOUS RELATED WORK ITEMS.
3. THE CONTRACTOR SHALL EXERCISE CARE IN EXCAVATING ADJACENT TO EXISTING SPRINKLER SYSTEMS IN ORDER NOT TO DAMAGE THEM. ANY PARTS FOR THE SPRINKLER SYSTEM THAT WERE REMOVED AND/OR DAMAGED DURING THE PROJECT SHALL BE REPLACED AND/OR REPAIRED BY THE CONTRACTOR AT NO EXTRA COST TO THE OWNER. IF THE CONTRACTOR DOES NOT REPAIR THE SPRINKLER WITHIN A REASONABLE TIME FRAME, THE HOMEOWNER WILL HAVE THE RIGHT TO REPAIR THE DAMAGE AND SUBMIT THE BILL TO THE CONTRACTOR FOR REIMBURSEMENT.
4. ADDITIONAL CONCRETE SIDEWALKS AND CURBING MAY BE MARKED BY THE ENGINEER FOR REPLACEMENT THROUGHOUT THE PROJECT.
5. THE CONTRACTOR SHALL EXERCISE EXTREME CARE WHEN WORKING AROUND EXISTING TREES TO AVOID DAMAGE TO TREE LIMBS AND ROOT SYSTEMS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF HE FEELS THAT TRIMMING OF LIMBS AND ROOTS ARE REQUIRED.
6. ALL CASTINGS REMOVED OR REPLACED AS PART OF THIS PROJECT ARE THE PROPERTY OF THE TOWNSHIP OF NEPTUNE.
7. ANY SIGNS OR MAILBOXES THAT REQUIRE TEMPORARY REMOVAL MUST BE REINSTALLED BY THE CONTRACTOR AT HIS COST.
8. NO SPECIFIC PAYMENT FOR STOP SIGN AND STREET SIGN RELOCATION WILL BE MADE FOR ANY WORK ASSOCIATED. ALL ASSOCIATED LABOR MATERIALS AND EQUIPMENT COSTS SHALL BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS IN THE PROPOSAL.
9. ALL EXISTING BRICK AND SLATE WALKS AND DRIVEWAYS, VARIOUS TYPE DRIVEWAY CURBINGS SUCH AS 1" CONCRETE, BRICK, TIMBER, ETC. ARE TO BE REMOVED AND RESET BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. PRICE FOR THIS WORK SHALL BE INCLUDED IN OTHER RELATED BID ITEMS.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF THE TREES AS SHOWN ON THE CONTRACT DRAWINGS AND AS SPECIFIED IN THE SPECIFICATIONS.
11. THE NEW JERSEY DEPARTMENT OF TRANSPORTATION 2019 STANDARD SPECIFICATION FOR ROADWAY AND BRIDGE CONSTRUCTION WILL GOVERN.
12. ALL EXISTING AND PROPOSED SIGNS SHALL HAVE AN UNDER CLEARANCE OF 7 FEET.



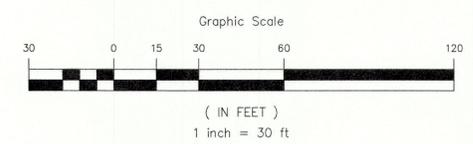
COVER SHEET

REV.	DESCRIPTION	BY	CHK.	DATE

 LEON S. AVAKIAN, INC. Consulting Engineers 788 WAYSIDE ROAD NEPTUNE, NEW JERSEY 07753 OFFICE: (732) 922-9229 FAX: (732) 922-0044	TOWNSHIP OF NEPTUNE				
	IMPROVEMENTS TO LOFFREDO FIELDS PHASE 2				
SAMUEL J. AVAKIAN P.E. & P.L.S. PROFESSIONAL ENGINEER N.J. LIC NO. GB42589 	IN THE				
	TOWNSHIP OF NEPTUNE				
MONMOUTH COUNTY, NEW JERSEY					
SCALE	DATE	DRAWN BY	CHECKED	JOB NO.	SHEET
Not To Scale	Sep. 3, 2025	L.P.C.	S.J.A.	NT 25-09	1 of 4



SITE PLAN



REF. NT 25-09 IMP TO LOFFREDO FIELDS PH-2

REV.	DESCRIPTION	BY	CHK.	DATE

LSA
LEON S. AVAKIAN, INC.
Consulting Engineers
788 WAYSIDE ROAD
NEPTUNE, NEW JERSEY 07753
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SAMUEL J. AVAKIAN P.E. & P.L.S.
PROFESSIONAL ENGINEER N.J. LIC NO. GB42589

TOWNSHIP OF NEPTUNE
IMPROVEMENTS TO LOFFREDO FIELDS PHASE 2
IN THE
TOWNSHIP OF NEPTUNE
MONMOUTH COUNTY, NEW JERSEY

SCALE 1" = 30'	DATE Sep. 3, 2025	DRAWN BY L.P.C.	CHECKED S.J.A.	JOB NO. NT 25-09	SHEET 2 of 4
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SOIL EROSION AND SEDIMENT CONTROL NOTES

1. THE FREEHOLD SOIL CONSERVATION DISTRICT SHALL BE NOTIFIED FORTY-EIGHT (48) HOURS IN ADVANCE OF ANY SOIL DISTURBING ACTIVITY.
2. ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES ARE TO BE INSTALLED PRIOR TO SOIL DISTURBANCE, OR IN THEIR PROPER SEQUENCE, AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.
3. ANY CHANGES TO THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLANS WILL REQUIRE THE SUBMISSION OF REVISED SOIL EROSION AND SEDIMENT CONTROL PLANS TO THE DISTRICT FOR RE-CERTIFICATION. THE REVISED PLANS MUST MEET ALL CURRENT SOIL EROSION AND SEDIMENT CONTROL STANDARDS.
4. N.J.S.A. 4-24-38 ET SEQ. REQUIRES THAT NO CERTIFICATES OF OCCUPANCY BE ISSUED BEFORE THE DISTRICT DETERMINES THAT A PROJECT OR PORTION THEREOF IS IN FULL COMPLIANCE WITH THE CERTIFIED PLAN AND STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL. THE DISTRICT MAY ISSUE A REPORT OF COMPLIANCE WITH CONDITIONS ON A LOT-BY-LOT OR SECTION-BY-SECTION BASIS, PROVIDED THAT THE PROJECT OR PORTION THEREOF IS IN SATISFACTORY COMPLIANCE WITH THE SEQUENCE OF DEVELOPMENT AND TEMPORARY PROTECTION MEASURES AND SEDIMENT CONTROL. WHEN IMPLEMENTED, INCLUDING PROVISIONS FOR STABILIZATION AND SITE WORK.
5. ANY DISTURBED AREA WILL BE LEFT EXPOSED MORE THAN SIXTY (60) DAYS, AND NOT SUBJECT TO CONSTRUCTION TRAFFIC, WILL IMMEDIATELY RECEIVE A TEMPORARY SEEDING. IF THE SEASON PREVENTS ESTABLISHMENT OF TEMPORARY COVER, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW OR EQUIVALENT MATERIAL AT A RATE OF 10 TO 15 TONS PER ACRE, ACCORDING TO THE STANDARD OF STABILIZATION WITH MULCH ONLY.
6. IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING, ALL CRITICAL AREAS SUBJECT TO EROSION (I.E. SOIL STOCKPILES, STEEP SLOPES AND ROADWAY EMBANKMENTS) WILL RECEIVE TEMPORARY SEEDING IN COMBINATION WITH STRIP MULCH OR A SUITABLE FERTILIZER, AND A MULCH ANCHOR, IN ACCORDANCE WITH STATE STANDARDS.
7. A SUB-BASE COURSE WILL BE APPLIED IMMEDIATELY FOLLOWING ROUGH GRADING AND INSTALLATION OF IMPROVEMENTS TO STABILIZE STREETS, ROADS, DRIVEWAYS, AND PARKING AREAS. IN AREAS WHERE NO UTILITIES ARE PRESENT, THE SUB-BASE SHALL BE INSTALLED WITHIN FIFTEEN (15) DAYS OF PRELIMINARY GRADING.
8. THE STANDARD FOR STABILIZED CONSTRUCTION ACCESS REQUIRES THE INSTALLATION OF A PAD OF CLEAN CRUSHED STONE AT POINTS WHERE TRAFFIC WILL BE ACCESSING THE CONSTRUCTION SITE. AFTER INTERIOR DRIVEWAYS ARE PAVED, INDIVIDUAL LOTS SHOULD HAVE A STABILIZED CONSTRUCTION ACCESS CONSISTING OF ONE INCH TO TWO INCH (1"-2") STONE FOR A MINIMUM LENGTH OF TEN FEET (10') EQUAL TO THE LOT FRONTAGE WIDTH. ALL OTHER ACCESS POINTS SHALL BE BLOCKED OFF.
9. ALL SOIL WASHED, DROPPED, SPILLED, OR TRACKED OUTSIDE THE LIMIT OF DISTURBANCE OR ONTO PUBLIC RIGHT-OF-WAYS WILL BE REMOVED IMMEDIATELY.
10. PERMANENT VEGETATION IS TO BE SEED OR SOODED ON ALL EXPOSED AREAS WITHIN TEN (10) DAYS AFTER FINAL GRADING.
11. AT THE TIME THAT SITE PREPARATION FOR PERMANENT VEGETATIVE STABILIZATION IS GOING TO BE COMPLETED, ANY SOIL THAT WILL NOT PROVIDE A SUITABLE ENVIRONMENT TO SUPPORT ADEQUATE VEGETATIVE GROUND COVER SHALL BE REMOVED OR TREATED IN SUCH A MANNER THAT IT WILL PERMANENTLY ADJUST THE SOIL CONDITIONS, NON-VEGETATIVE MEANS OF PERMANENT GROUND STABILIZATION WILL HAVE TO BE EMPLOYED.
12. IN ACCORDANCE WITH THE STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOILS, ANY SOIL HAVING A pH OF 4.0 OR LESS OR CONTAINING SULFUR DIOXIDE AT A RATE OF 10 TONS PER ACRE OR MORE, OR 24" WHERE TREES OF SPURGES ARE TO BE PLANTED.
13. CONDUIT PROTECTION SHALL BE INSTALLED AT ALL REQUIRED OUTFALLS PRIOR TO THE DRAINAGE SYSTEM BECOMING OPERATIONAL.
14. UNLINED DRAINAGE IS NOT PERMITTED. NECESSARY PRECAUTIONS MUST BE TAKEN DURING ALL DRAINAGE OPERATIONS TO MINIMIZE SEDIMENT TRANSPORT. ANY DRAINAGE METHODS USED MUST BE IN ACCORDANCE WITH THE STANDARD FOR WEATHERING.
15. SHOULD THE CONTROL OF DUST BE NECESSARY, THE SITE WILL BE SPRINKLED UNTIL THE SURFACE IS WET, TEMPORARY VEGETATIVE COVER SHALL BE ESTABLISHED OR MULCH SHALL BE APPLIED AS REQUIRED BY THE STANDARD FOR DUST CONTROL.
16. STOCKPILES AND STAGING LOCATIONS ESTABLISHED IN THE FIELD SHALL BE PLACED WITHIN THE LIMIT OF DISTURBANCE ACCORDING TO THE CERTIFIED PLAN. STAGING AND STOCKPILES NOT LOCATED WITHIN THE LIMIT OF DISTURBANCE WILL REQUIRE SOIL EROSION AND SEDIMENT CONTROL PLAN. CERTIFICATION OF A NEW SOIL EROSION AND SEDIMENT CONTROL PLAN MAY BE REQUIRED FOR THESE ACTIVITIES IF AN AREA GREATER THAN 1,000 SQUARE FEET IS DISTURBED.
17. ALL SOIL STOCKPILES ARE TO BE TEMPORARILY STABILIZED IN ACCORDANCE WITH SOIL EROSION AND SEDIMENT CONTROL NOTES 1-15.
18. THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR ANY EROSION OR SEDIMENTATION THAT MAY OCCUR BELOW STORMWATER OUTFALLS OR OFFSITE AS A RESULT OF CONSTRUCTION OF THE PROJECT.

GENERAL NOTES

STOCKPILES SHALL NOT BE PLACED WITHIN THE PROJECT LIMITS. ANY EXCESS MATERIAL SHALL BE IMMEDIATELY REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

APPLICATION	PLANTING MIXTURES BY SOIL DRAINAGE CLASS ¹ (SEE TABLE 4-3)		
	EXCESSIVELY DRAINED	MILD TO MODERATELY WELL DRAINING	SOMEWHAT POORLY TO POORLY DRAINING
RESIDENTIAL/COMMERCIAL POND AND CHANNEL BANKS, DIKES, BERMS AND DAMS	10, 12, 15	6, 10, 12, 13, 14, 15	16
DRAINAGE DITCHES, SWALES, DETENTION BASINS	2, 5, 6, 10	5, 6, 7, 8, 9, 15	2, 8, 16, 17
FILTER STRIPS	12	11, 12	11, 12
GRASSES WATERWAY, SPILLWAYS	2, 3, 9, 10, 12	6, 7, 9, 10, 11, 12	2, 8, 9, 11, 12
RECREATION AREAS, ATHLETIC FIELDS	5, 12, 15, 18	12, 13, 14, 15, 18	16
SPECIAL PROBLEM SITES STEEP SLOPES AND BANKS, ROADSIDES, BORROW AREAS	2, 3, 4, 6	2, 3, 5, 7, 8, 9, 10, 15, 18	2, 8, 9, 10, 11, 12
SAND AND GRAVEL PITS, SANITARY LANDFILLS	1, 2, 3, 4, 6, 20	1, 2, 3, 4, 6, 8, 15, 20	2, 8
DREDGED MATERIAL, SPOILBANKS, BORROW AREAS	2, 3, 6, 20	2, 3, 6, 11	2, 8
STREAMBANKS & SHOULDERWAYS ²	2, 8, 20, 21a	2, 8, 19, 20, 21a, 21b	2, 8, 19a, 21a,b,c,d
UTILITY RIGHTS-OF-WAY	3, 7, 18b	3, 7	8, 9, 17

1. REFER TO SOIL SURVEYS FOR DRAINAGE CLASS DESCRIPTIONS.
2. REFER TO SOIL BIOENGINEERING STANDARD FOR ADDITIONAL SEED MIXTURES.
3. SPILLWAYS ONLY.
4. SEE APPENDIX E FOR DESCRIPTION OF TURF GRASSES AND CULTIVARS.

DUST CONTROL NOTE

DUST GENERATION SHALL BE CONTROLLED ON A CONSISTENT BASIS BY WETTING THE SURFACE AND/OR APPLICATION OF CALCIUM CHLORIDE.
NOTE: THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL PERMANENT SOIL EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION. THE PROPERTY OWNERS SHALL ASSUME THIS RESPONSIBILITY AFTER CONSTRUCTION HAS BEEN COMPLETED AND CERTIFICATES OF OCCUPANCY ARE ISSUED.

CONSTRUCTION SEQUENCE

CONSTRUCTION COMMENCEMENT DATE: SPRING OF 2028		
INSTALLATION OF SILT FENCE ALONG LIMIT OF DISTURBANCE LINE IN AREAS DELINEATED ON "SOIL EROSION CONTROL PLANS"	2 DAYS	
INSTALLATION OF STONE TRACKING PADS AT CONSTRUCTION ENTRANCE	3 DAYS	
CONSTRUCTION OPERATIONS	3 WEEKS	
LANDSCAPING WITH PERMANENT SOODING	2 WEEKS	

TEMPORARY VEGETATIVE COVER

METHODS AND MATERIALS

1. **SITE PREPARATION**
 - A. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH STANDARD FOR LAND GRADING.
 - B. INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS. SEE STANDARDS 11 THROUGH 42.
 - C. IMMEDIATELY PRIOR TO SEEDING, THE SURFACE SHOULD BE SCARIFIED 6" TO 12" WHERE THERE HAS BEEN SOIL COMPACTION. THIS PRACTICE IS PROMISCUOUS ONLY WHERE THERE IS NO DANGER TO UNDERGROUND UTILITIES (CABLES, IRRIGATION SYSTEMS, ETC.).
2. **SEEDBED PREPARATION**
 - A. APPLY GROUND LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS SUCH AS OFFERED BY RUTGERS CO-OPERATIVE EXTENSION. SOIL SAMPLE MAJORS ARE AVAILABLE FROM LOCAL RUTGERS CO-OPERATIVE EXTENSION OFFICES. FERTILIZER SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE OR 11 POUNDS PER 1,000 SQUARE FEET OF 10-20-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS A SOIL TEST INDICATES OTHERWISE. CALCIUM CARBONATE IS THE EQUIVALENT STANDARD FOR MEASURING THE ABILITY OF LIMITING MATERIALS TO NEUTRALIZE SOIL ACIDITY AND SUPPLY CALCIUM CARBONATE TO THE EQUIVALENT STANDARD FOR MEASURING THE ABILITY OF LIMING MATERIALS TO NEUTRALIZE SOIL ACIDITY AND SUPPLY CALCIUM AND MAGNESIUM TO GRASSES AND LEGUMES.
 - B. WORK LIME AND FERTILIZER INTO THE SOIL AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRINGTOOTH HARROW, OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OF SOODING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLE UNIFORM SEEDBED IS PREPARED.
 - C. INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED, THE AREA MUST BE RETILLED IN ACCORDANCE WITH THE ABOVE.
 - D. SOILS HIGH IN SULFIDES HAVING A pH OF 4 OR LESS REFER TO STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOILS, PG. 1-1.
3. **SEEDING**
 - A. SELECT SEED FROM RECOMMENDATIONS IN TABLE 7-2.

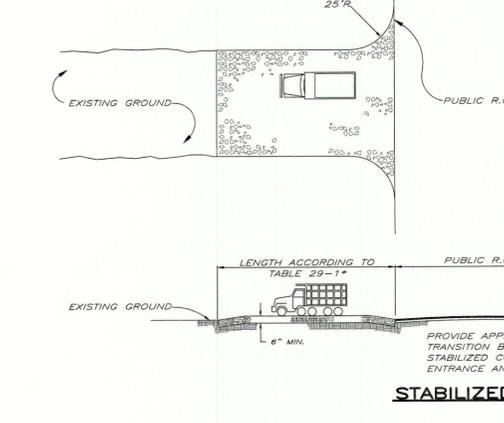
PERMANENT VEGETATIVE COVER

- A. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH STANDARD FOR LAND GRADING.
 - B. IMMEDIATELY PRIOR TO SEEDING AND SOODING, THE SURFACE SHALL BE EVALUATED FOR COMPACTION IN ACCORDANCE WITH THE STANDARD FOR LAND GRADING.
 - C. TOPSOIL SHOULD BE HANDLED ONLY WHEN IT IS DRY ENOUGH TO WORK WITHOUT DAMAGING THE SOIL STRUCTURE. A UNIFORM APPLICATION TO A DEPTH OF 5 INCHES IS REQUIRED ON ALL TOPSOIL. TOPSOIL SHALL BE ANCHORED WITH ORGANIC MATTER, IF 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.
- SEEDBED PREPARATION**
- A. UNIFORMLY APPLY GROUND LIMESTONE AND FERTILIZER TO TOPSOIL WHICH HAS BEEN SPREAD AND FIRMED ACCORDING TO SOIL TEST RECOMMENDATIONS SUCH AS OFFERED BY RUTGERS CO-OPERATIVE EXTENSION SOIL SAMPLE MAJORS AREA AVAILABLE FROM LOCAL RUTGERS CO-OPERATIVE EXTENSION OFFICES. FERTILIZER SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE OR 11 POUNDS PER 1,000 SQUARE FEET OF 10-20-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS A SOIL TEST INDICATES OTHERWISE. CALCIUM CARBONATE IS THE EQUIVALENT STANDARD FOR MEASURING THE ABILITY OF LIMITING MATERIALS TO NEUTRALIZE SOIL ACIDITY AND SUPPLY CALCIUM CARBONATE TO THE EQUIVALENT STANDARD FOR MEASURING THE ABILITY OF LIMING MATERIALS TO NEUTRALIZE SOIL ACIDITY AND SUPPLY CALCIUM AND MAGNESIUM TO GRASSES AND LEGUMES.
 - B. WORK LIME AND FERTILIZER INTO THE SOIL AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRINGTOOTH HARROW, OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OF SOODING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLE UNIFORM SEEDBED IS PREPARED.
 - C. HIGH ACID PRODUCING SOILS HAVING A pH OF 4 OR LESS OR CONTAINING RICH SULFIDE SHALL BE COVERED WITH A MINIMUM OF 12 INCHES OF SOIL HAVING A pH OF 5 OR MORE BEFORE INITIATING SEEDBED PREPARATION. SEE STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOILS FOR SPECIFIC REQUIREMENTS.
- SEEDING**
- A. SELECT A MIXTURE FROM TABLE 4-3 OR USE A MIXTURE RECOMMENDED BY RUTGERS CO-OPERATIVE EXTENSION OR NATURAL RESOURCES CONSERVATION SERVICE WHICH IS APPROVED BY THE SOIL CONSERVATION DISTRICT. SEED SELECTION 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 TESTED.
 - B. SEEDING RATES SPECIFIED ARE REQUIRED WHEN A REPORT OF COMPLIANCE IS REQUESTED PRIOR TO ACTUAL ESTABLISHMENT OF PERMANENT VEGETATION. THIS REPORT IS REQUIRED PRIOR TO ALL METHODS OF SEEDING. ESTABLISHING PERMANENT VEGETATION MEANS BOX VEGETATIVE COVER WITH THE SPECIFIED SEED MIXTURE FOR THE SEEDED AREA AND MOVED ONCE.
 - C. WARM-SEASON MIXTURES ARE GRASSES AND LEGUMES WHICH MAXIMIZE GROWTH AT HIGH TEMPERATURES, GENERALLY HOT AND ABOVE. SEE TABLE 4-3 MIXTURES 1 TO 3. PLANTING RATES FOR WARM-SEASON MIXTURES SHALL BE THE AMOUNT OF PURE LIME SEED (PLS) AS DETERMINED BY GERMINATION TESTING RESULTS.
 - D. COOL-SEASON MIXTURES ARE GRASSES AND LEGUMES WHICH MAXIMIZE GROWTH AT TEMPERATURES BELOW 85°F. MANY GRASSES BECOME ACTIVE AT 65°F. SEE TABLE 4-3 MIXTURES 4-20. ADJUSTMENT OF PLANTING RATES IS PERFORMED BY APPLYING SEED UNIFORMLY BY HAND, CYCLONE (CENTRIFUGAL) SEEDER, DRIP SEEDER, DRILL, OR OUTDRIPPER SEEDER. EXCEPT FOR DRILLED, HYDROSEDED OR CILTRAPPED SEEDINGS, SEED SHALL BE INCORPORATED INTO THE SOIL WITHIN 24 HOURS OF SEEDBED PREPARATION TO A DEPTH OF 3/4" TO 1" BY HAND OR BY USING A CORRUGATED ROLLER WILL ASSURE GOOD SEED-TO-SOIL CONTACT, RESTORE CAPILLARITY AND IMPROVE SEEDLING EMERGENCE. THIS IS THE PREFERRED METHOD. WHEN PERFORMED ON A CONTOUR, SHEET EROSION WILL BE MINIMIZED AND WATER CONSERVATION ON SITE WILL BE MAXIMIZED.
 - E. 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. MULCH SHOULD BE APPLIED AT A RATE OF 100 POUNDS PER ACRE. HYDROSEEDING IS NOT A PREFERRED SEEDING METHOD BECAUSE SEED AND FERTILIZER ARE APPLIED TO THE SURFACE AND NOT INCORPORATED INTO THE SOIL. WHEN POOR SEED TO SOIL CONTACT OCCURS, THERE IS A REDUCED SEED GERMINATION AND GROWTH.

- MULCHING**
- MULCHING IS REQUIRED ON ALL SEEDING. MULCH WILL PROTECT AGAINST EROSION BEFORE GRASS IS ESTABLISHED AND WILL PROMOTE FASTER AND EARLIER ESTABLISHMENT. THE EXISTENCE OF VEGETATION SUFFICIENT TO CONTROL SOIL EROSION SHALL BE DETERMINED COMPLIANCE WITH THIS MAJOR REQUIREMENT.
- A. STRAW OR HAY: UNROTATED SMALL GRASS STRAW, HAY FREE OF SEEDS, TO BE APPLIED AT THE RATE OF 1-1/2 TO 2 TONS PER ACRE (70 TO 90 POUNDS PER 1,000 SQUARE FEET). THE RATE OF APPLICATION IS 3 TONS PER ACRE. MULCH CHOPPER-BLEND MUST NOT GRIND THE MULCH. HAY MULCH IS NOT RECOMMENDED FOR ESTABLISHING FINE TURF OR LAWNS DUE TO THE PRESENCE OF WEED SEED.
 - B. MULCH SPREADER: MULCH UNIFORMLY BY HAND OR MECHANICALLY SO THAT AT LEAST 80% OF THE SOIL SURFACE IS COVERED. FOR UNIFORM DISTRIBUTION OF HAND-SPREAD MULCH, DIVIDE AREA INTO APPROXIMATELY 1,000 SQUARE FEET SECTIONS AND DISTRIBUTE 70 TO 90 POUNDS WITHIN EACH SECTION.
 - C. MULCHING SHOULD BE ACCOMPLISHED IMMEDIATELY FOLLOWING PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS OF SLOPES, AND COSTS:
 1. PEG AND TWINE: DRIVE 8 TO 10 INCH WOODEN PEGS TO WITHIN 2 TO 3 INCHES OF THE SOIL SURFACE, 4 FEET IN ALL DIRECTIONS. STAKES MAY BE DRIVE BEFORE OR AFTER APPLYING MULCH. SECURE MULCH TO SOIL SURFACE BY STRETCHING TWINE BETWEEN PEGS IN A CRISS-CROSS AND SQUARE PATTERN.
 2. MULCH NETTINGS: STAPLE PAPER, JUTE, COTTON, OR PLASTIC NETTINGS TO THE SOIL SURFACE. USE A DESIRABLE NETTING IN EACH CASE TO BE USED.
 3. CRIPPER (MULCH ANCHORING COLLAR TOOL): A TRACTOR-DRAWN IMPLEMENT, SOMEWHAT LIKE A DISC HARROW, ESPECIALLY DESIGNED TO PUSH OR CUT SOME OF THE LONGEST FIBER MULCH TO 4 INCHES INTO THE SOIL AS TO ANCHOR IT AND LEAVE PART STANDING UPRIGHT. THIS TECHNIQUE IS LIMITED TO AREAS TRAVELABLE BY A TRACTOR, WHICH MUST OPERATE AT A SPEED OF 2 TO 4 MPH. STRAW MULCH RATES MUST BE 3 TONS PER ACRE. MULCHING OR TACKLING OR ADHESIVE AGENT IS REQUIRED.
 4. LIQUID MULCH-BINDERS: MAY BE USED TO ANCHOR SALT HAY, HAY OR STRAW MULCH.
 - D. APPLICATION SHOULD BE HEAVY 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.
- USE ONE OF THE FOLLOWING:
- (1) ORGANIC AND VEGETABLE BASED BINDERS - NATURALLY OCCURRING, POWDER-BASED. HYDROPHILIC MATERIALS WHEN MIXED WITH WATER FORMULATES A GEL AND WHEN APPLIED TO MULCH UNDER SATISFACTORY CURING CONDITIONS WILL FORM MEMBRANED NETWORKS OF INSOLUBLE POLYMERS. THE VEGETABLE GEL SHALL BE PHYSIOLOGICALLY HARMLESS AND NOT RESULT IN A PHOTOLOGIC EFFECT OR IMPIDE GROWTH OF PLANTS. USE AT RATES AND WEATHER CONDITIONS AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH MATERIALS. MANY NEW PRODUCTS ARE AVAILABLE, SOME OF WHICH MAY NEED FURTHER EVALUATION FOR USE IN THIS STATE.
 - (2) SYNTHETIC BINDERS-HIGH POLYMER SYNTHETIC EMULSION, MISCIBLE WITH WATER WHEN DILUTED, AND FOLLOWING APPLICATION OF MULCH, DRYING AND CURING, SHALL NO LONGER BE SOLUBLE OR DISPERSIBLE IN WATER. BINDER SHALL BE APPLIED AT RATES RECOMMENDED BY THE MANUFACTURER AND REMAIN TACKY UNTIL GERMINATION OF GRASS.
- NOTE: ALL NAMES GIVE ABOVE ARE REGISTERED TRADE NAMES. THIS DOES NOT CONSTITUTE A RECOMMENDATION THESE PRODUCTS TO THE EXCLUSION OF OTHER PRODUCTS.
- B. WOOD-FIBER OR PAPER-FIBER MULCH - SHALL BE MADE FROM WOOD, PLANT FIBERS OR PAPER CONTAINING NO GROWTH OR GERMINATION INHIBITING MATERIALS. USED AT A RATE OF 1,000 POUNDS PER ACRE (OR AS RECOMMENDED BY THE PRODUCT MANUFACTURER) AND MAY BE APPLIED BY A HYDROSEDER. **MULCH SHALL NOT BE MIXED IN THE TANK WITH SEED.** USE IS LIMITED TO FLATTER SLOPES DURING OPTIMUM SEEDING PERIODS IN SPRING AND FALL.
 - C. PELLETTED MULCH - COMPRESSED AND EXTENDED PAPER AND/OR WOOD FIBER PRODUCT, WHICH MAY CONTAIN CO-POLYMERS, TACKIFIERS, FERTILIZERS, AND COLORING AGENTS. THE DRY PELLETS, WHEN APPLIED TO A SEEDBED WITH WATER, FORM A MULCH MAT. PELLETTED MULCH SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MULCH MAY BE APPLIED BY HAND OR MECHANICAL SPREADER AT THE RATE OF 80-125 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, SEEDS ARE WHERE WEED-FREE SEED BED 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 PELLETTED MULCH ON THE SEED BED IS EXTREMELY IMPORTANT FOR SUFFICIENT ACTIVATION AND EXPANSION OF THE MULCH TO PROVIDE SOIL COVERAGE.

- IRRIGATION (WHERE FEASIBLE)**
- IF SOIL MOISTURE IS DEFICIENT SUPPLY NEW SEEDING WITH ADEQUATE WATER (A MINIMUM OF 1/2 INCH APPLIED UP TO THREE (3) DAY UNTIL VEGETATION IS WELL ESTABLISHED). THIS IS ESPECIALLY TRUE WHEN SEEDING ARE MADE IN ABNORMALLY DRY OR HOT WEATHER OR HOT WEATHER OR ON DROUGHTY SITES.
- TOPDRESSING**
- SINCE SOIL ORGANIC MATTER CONTENT AND SLOW RELEASE NITROGEN FERTILIZER (WATER INSOLUBLE) ARE PRESCRIBED IN SECTION 2A - SEEDBED PREPARATION IN THIS STANDARD, NO FOLLOW-UP OF TOPDRESSING IS MANDATORY. AN EXCEPTION MAY BE MADE WHERE GROSS NITROGEN DEFICIENCY EXISTS IN THE SOIL TO THE EXTENT THAT PERMANENT VEGETATION WILL DEVELOP. IN THAT INSTANCE, TOPDRESS WITH 10-10-10 OR EQUIVALENT AT 300 POUNDS PER ACRE OR 7 POUNDS PER 1,000 SQUARE FEET EVERY 3 TO 5 WEEKS UNTIL THE GROSS NITROGEN DEFICIENCY IN THE TURF IS AMELIORATED.
- ESTABLISHING PERMANENT VEGETATIVE STABILIZATION**
- THE QUALITY OF PERMANENT VEGETATION RESTS WITH THE CONTRACTOR. THE TIMING OF SEEDING, PREPARING THE SEEDBED, APPLYING NUTRIENTS, MULCH AND OTHER MANAGEMENT ARE ESSENTIAL. THE SEED AND SOODING RATES IN TABLE 4-3 ARE REQUIRED WHEN A REPORT OF COMPLIANCE IS REQUESTED PRIOR TO ACTUAL ESTABLISHMENT OF PERMANENT VEGETATION. UP TO SOE REDUCTION IN APPLICATION RATES MAY BE USED WHEN PERMANENT VEGETATION IS ESTABLISHED PRIOR TO REQUESTING A REPORT OF COMPLIANCE FROM THE DISTRICT. THESE RATES APPLY TO ALL METHODS OF SEEDING. ESTABLISHING PERMANENT VEGETATION MEANS BOX VEGETATIVE COVER (OF THE SEEDS SPECIES) AND MOVED ONCE. NOTE THIS RECOMMENDATION OF MOVING ONCE DOES NOT GUARANTEE THE PERMANENCY OF THE USE SHOULD OTHER MAINTENANCE FACTORS BE NEGLECTED OR OTHERWISE MISMANAGED. **MULCH SHALL NOT BE MIXED IN THE TANK WITH SEED.** USE IS LIMITED TO FLATTER SLOPES AND DURING OPTIMUM SEEDING PERIODS IN SPRING AND FALL.

- PERMANENT VEGETATIVE MIXTURES, PLANTING RATES, AND DATES¹**
- | SEED MIXTURE ² | PLANTING RATE ³ | PLANTING DATES | | | | | | | | | | | | REMARKS |
|--|----------------------------|--|---------------|----------------|----------------|----------------|----------------|--|--------------|----------------|----------------|----------------|----------------|----------------|
| | | 0=OPTIMAL PLANTING PERIOD A=ACCEPTABLE PLANTING PERIOD | | | | | | PLANT HARDINESS ZONES (SEE FIGURE 4-1) | | | | | | |
| | | ZONE 5a,6a | | ZONE 6a | | ZONE 7a,7b | | ZONE 8a | | ZONE 9a | | ZONE 10a | | |
| | | US/ACRE | 10/500 | 3/15-5/31 | 6/1-7/31 | 10/1 | 4/30 | 3/1-3/14 | 5/1-5/14 | 8/1-9/14 | 10/1 | 10/1 | | |
| WARM SEASON SEED MIXTURES | | | | | | | | | | | | | | |
| 1A. FOR PRAIRIES NATIONAL RESERVE SEED MIXTURES SEE TABLE 4-4: PAGES 4-17 | | | | | | | | | | | | | | |
| 1. SWITCHGRASS OR COASTAL PANICGRASS PLUS OR FLATPEA | 15 | 35 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | C-0 |
| 2. DEERTONGUE OR SWITCHGRASS REDTOP | 15 | 35 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | C-0 |
| 3. SWITCHGRASS DEERTONGUE LITTLE BLUESTEM TALL FESCUE PLUS PASTURE PEA | 15 | 35 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | C-0 |
| 4. SWITCHGRASS LITTLE BLUESTEM SAND LYLEGRASS COASTAL PANICGRASS | 10 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | C-0 |
| 5. BERMUDAGRASS HAD SUPERIOR SALT TOLERANCE | 15 | 35 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | A-B |
| 6. FINE FESCUE (BLVD) HARD FESCUE CHEWINGS FESCUE STRONG CREeping RED FESCUE KENTUCKY BLUEGRASS PERENNIAL RYEGRASS PLUS WHITE CLOVER (SEE NOTE AT RIGHT) | 45 | 1 | A | A ⁵ | O | A | A ⁵ | O | A | A ⁵ | O | A | A ⁵ | B-0 |
| 7. STRONG CREeping RED FESCUE KENTUCKY BLUEGRASS PERENNIAL RYEGRASS PLUS WHITE CLOVER (SEE NOTE AT RIGHT) | 130 | 3 | A | A ⁵ | O | A | A ⁵ | O | A | A ⁵ | O | A | A ⁵ | B-0 |
| 8. TALL FESCUE (TURF-TYPE) OR STRONG CREeping RED FESCUE OR PERENNIAL RYEGRASS FLORAFLA | 130 | 7 | O | A ⁶ | O | A ⁶ | O | A ⁶ | O | A ⁶ | O | A ⁶ | O | A ⁶ |
| 9. DEERTONGUE WILD FINE (ELVANS) SWITCHGRASS | 20 | 345 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | C-0 |
| 10. TALL FESCUE (TURF-TYPE) PERENNIAL RYEGRASS OR WHITE CLOVER (SEE NOTE AT RIGHT) | 265 | 6 | O | A ⁵ | A ⁵ | O | A ⁵ | A ⁵ | O | A ⁵ | A ⁵ | O | A ⁵ | C-0 |
| 11. KENTUCKY BLUEGRASS TURF-TYPE TALL FESCUE | 45 | 1 | A | A ⁵ | O | A | A ⁵ | O | A | A ⁵ | O | A | A ⁵ | C-0 |
| 12. TURF-TYPE TALL FESCUE (BLEND OF 3 CULTIVARS) | 350 | 8 | A | A ⁵ | O | A | A ⁵ | O | A | A ⁵ | O | A | A ⁵ | C-0 |
| 13. HARD FESCUE AND/OR CHEWINGS FESCUE AND/OR STRONG CREeping RED FESCUE PERENNIAL RYEGRASS KY BLUEGRASS (BLEND) | 175 | 4 | A | A ⁵ | O | A | A ⁵ | O | A | A ⁵ | O | A | A ⁵ | A-C |
| 14. TALL FESCUE KY BLUEGRASS (BLEND) PERENNIAL RYEGRASS (BLVD) | 265 | 6 | O | A ⁵ | O | A ⁵ | O | A ⁵ | O | A ⁵ | O | A ⁵ | O | A-B |
| 15. HARD FESCUE CHEWINGS FESCUE STRONG CREeping RED FESCUE PERENNIAL RYEGRASS | 130 | 3 | A | A ⁵ | O | A | A ⁵ | O | A | A ⁵ | O | A | A ⁵ | C-0 |
| 16. ROUGH BLUEGRASS STRONG CREeping RED FESCUE | 90 | 2.0 | A | A ⁵ | O | A | A ⁵ | O | A | A ⁵ | O | A | A ⁵ | C-0 |
| 17. CREeping BENTGRASS CREeping RED FESCUE ALFAKI SALTBASS | 45 | 1 | A | A ⁵ | O | A | A ⁵ | O | A | A ⁵ | O | A | A ⁵ | B-0 |
| 18. HARD OR SHEEPS FESCUE PLUS BLOWFLOWER MIXTURE | 25 | 0.60 | O | A ⁵ | O | A ⁵ | O | A ⁵ | O | A ⁵ | O | A ⁵ | O | C-0 |
| 19. A SMOOTH CORDEGRASS B. SAILMEADOW CORDEGRASS | VEG | VEG | BEFORE MAY 10 | 0 | BEFORE JULY 1 | 0 | BEFORE JULY 1 | 0 | BEFORE APRIL | 0 | BEFORE MAY 1 | 0 | BEFORE MAY 1 | D |
| 20. AMERICAN BROOMSWEED COASTAL PANICGRASS | VEG | VEG | BEFORE MAY 10 | 0 | BEFORE MAY 10 | 0 | BEFORE MAY 1 | 0 | BEFORE MAY 1 | 0 | BEFORE MAY 1 | 0 | BEFORE MAY 1 | D |
| 21. A PURPLEFLOWER WILLOW B. SWAMP WILLOW C. REEDER DODGEWOOD D. SLANT DODGEWOOD | VEG | VEG | BEFORE MAY 10 | 0 | BEFORE MAY 10 | 0 | BEFORE MAY 1 | 0 | BEFORE MAY 1 | 0 | BEFORE MAY 1 | 0 | BEFORE MAY 1 | D |



PERCENT SLOPE OF ROADWAY	LENGTH OF STONE REQUIRED
0 TO 2%	50 FT. 100 FT.
2 TO 5%	100 FT. 200 FT.
>5%	ENTIRE SURFACE STABILIZED WITH FEAC BASE COURSE

1. AS PRESCRIBED BY LOCAL ORDINANCE OR OTHER GOVERNING AUTHORITY.

STANDARDS FOR TOPSOILING

- MATERIALS**
- A. TOPSOIL SHOULD BE FRABLE, LOAMY, 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 MILLIMOHS PER CENTIMETER.