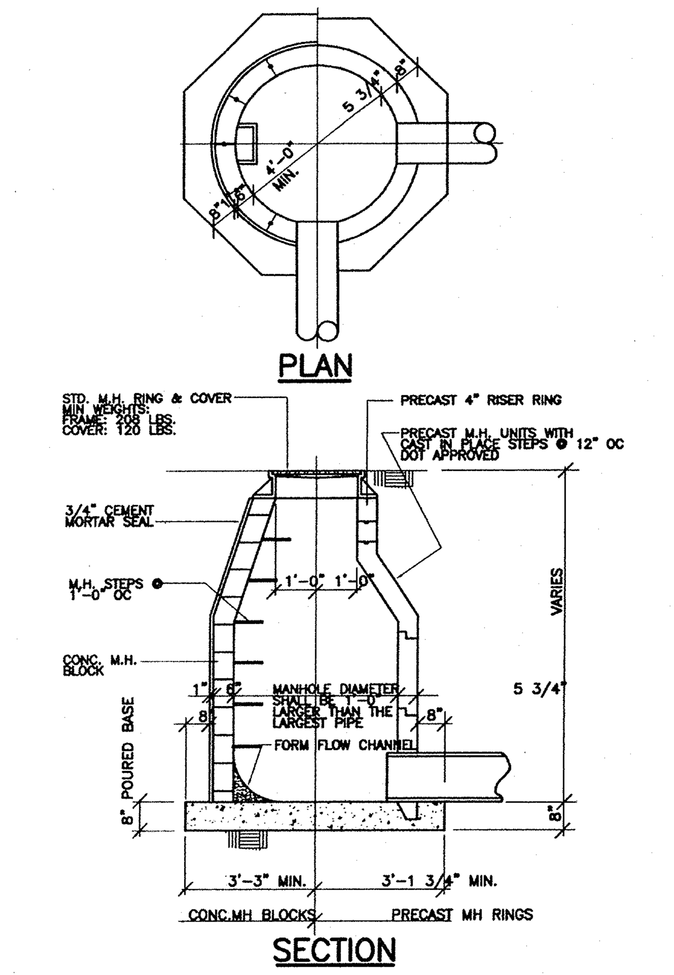
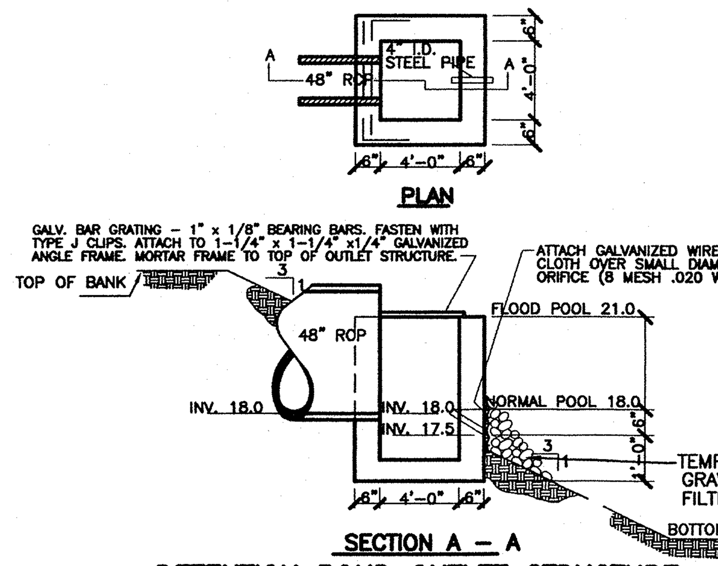
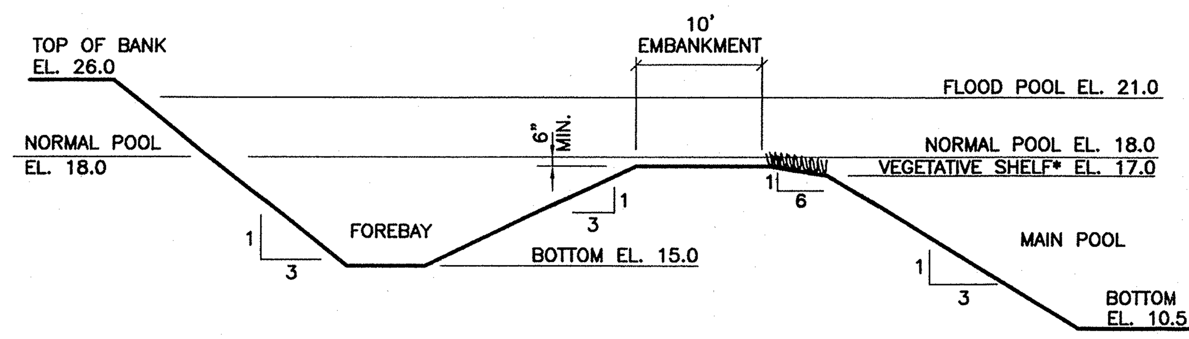
NOTE
1. CONTRACTOR MAY USE BRICK WITH MAX. CORBEL 1" PER COURSE
2. CONTRACTOR MAY USE ECCENTRIC M.H. UNIT



STORM DRAIN MANHOLE DETAIL
NTS

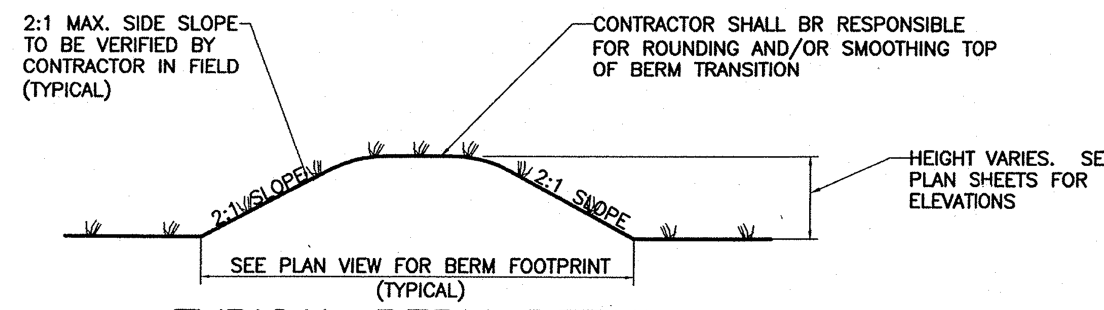


DETENTION POND OUTLET STRUCTURE
NTS

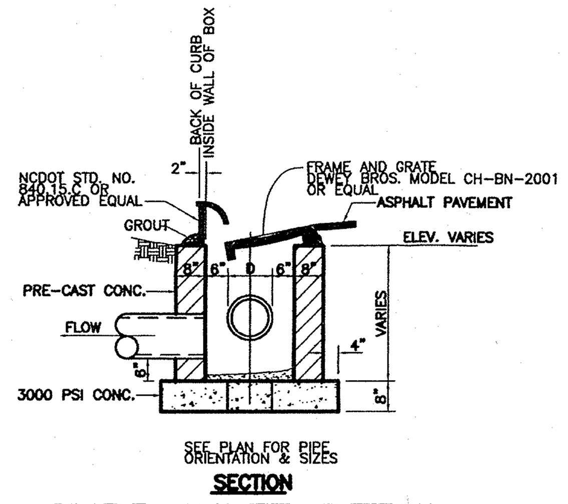


DETENTION POND & FOREBAY SECTION
NTS

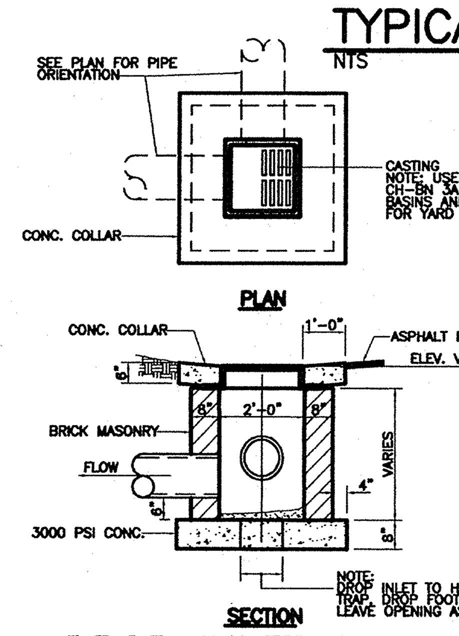
* SHELF TO BE PLANTED WITH A MINIMUM OF 1 PLANT 20' ON CENTER
SPECIES TYPES: COMMON THREE-SQUARE, DUCKWEED, POND WEED, SEDGES, SMARTWEED, WATERWEED, WILD CHERRY



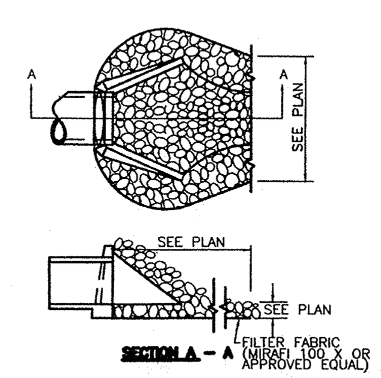
TYPICAL BERM DETAIL
NTS



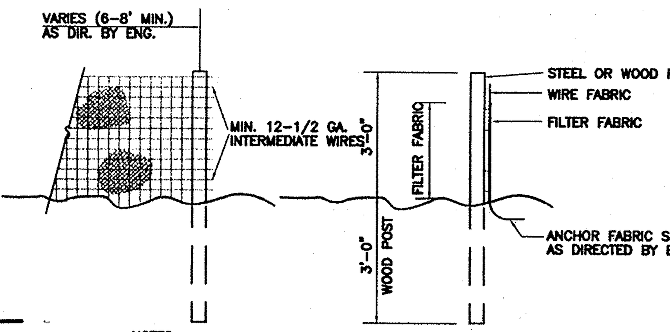
CURB INLET DETAIL
NTS



DROP INLET DETAIL
NTS

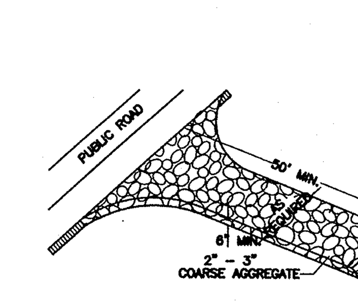


ENERGY DISSIPATOR
NTS

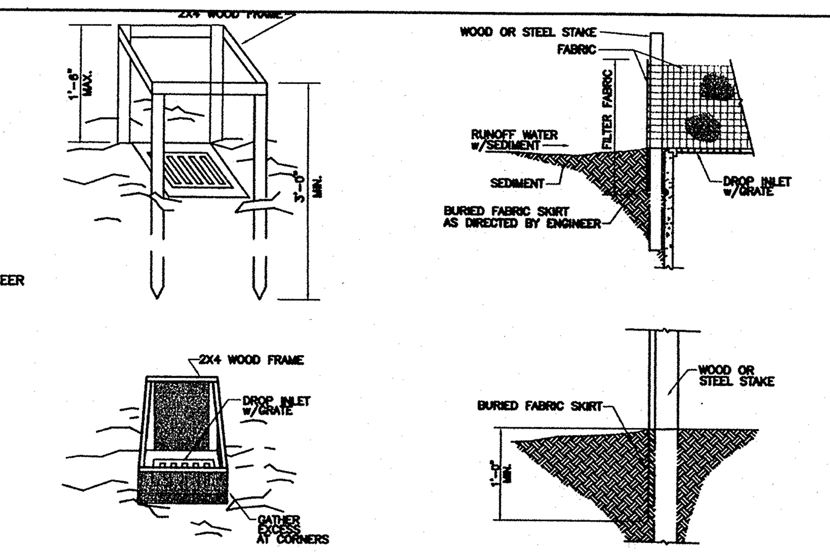


NOTES:
1. FENCE FABRIC SHALL BE A MIN. OF 32" IN WIDTH AND SHALL HAVE A MIN. OF SIX LINE WIRES WITH 12" STAY SPACING.
2. FABRIC SHALL BE FOR EROSION CONTROL AND MIN. OF 36" IN WIDTH. FABRIC SHALL BE FASTENED ADEQUATELY TO THE WIRE FABRIC AS DIRECTED BY THE ENGINEER.
3. STEEL POST SHALL BE 5'-0" IN HEIGHT AND BE OF THE SELF-FASTENER STEEL ANGLE TYPE.
4. WOOD POST SHALL BE A MIN. OF 6' IN HEIGHT AND 3' TO 4' IN DIAMETER. WIRE FABRIC SHALL BE FASTENED TO WOODEN POST WITH NOT LESS THAN #9 WIRE STAOLE 1 1/2" LONG

TEMPORARY SILT FENCE
NTS

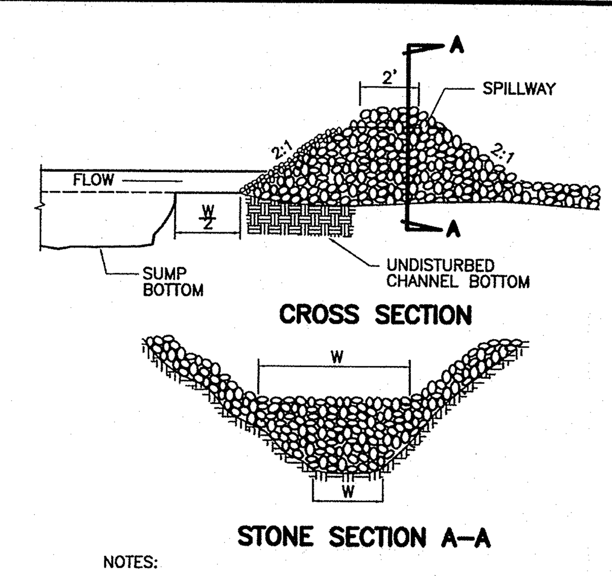


TEMPORARY GRAVELLED CONSTRUCTION ENTRANCE
NTS



NOTES:
1. AS SYNTHETIC FABRIC, USE A PERVIOUS SHEET OF NYLON, POLYESTER, OR ETHYLENE YARN-EXTRA STRENGTH (50 LB/ 1INCH MIN.)-THAT CONTAINS ULTRAVIOLET RAY INHIBITORS AND STABILIZERS. FABRIC SHOULD BE SUFFICIENTLY POROUS TO PROVIDE ADEQUATE DRAINAGE OF THE TEMPORARY SEDIMENT POOL. BURLAP MAY BE USED FOR SHORT-TERM APPLICATIONS. IT MUST BE REPLACED EVERY 60 DAYS.
2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS.
3. FOR STAKES, USE 2x4-INCH WOOD(PREFERRED)OR EQUIVALENT METAL WITH A MINIMUM LENGTH OF 3 FT.
4. SPACE STAKES EVENLY AROUND THE PERIMETER OF THE INLET A MAXIMUM OF 3 FT APART, AND SECURELY DRIVE THEM INTO THE GROUND, APPROXIMATELY 18 INCHES DEEP.
5. TO PROVIDE NEEDED STABILITY TO THE INSTALLATION, FRAME WITH 2x4-INCH WOOD STRIPS AROUND THE CREST OF THE OVERFLOW AREA AT A MAXIMUM OF 1.5 FT ABOVE THE DROP INLET CREST.
6. PLACE THE BOTTOM 12 INCHES OF THE FABRIC IN A TRENCH AND BACKFILL THE TRENCH WITH AT LEAST 4 INCHES OF CRUSHED STONE OR 12 INCHES OF COMPACTED SOIL.
7. FASTEN FABRIC SECURELY TO THE STAKES AND FRAME. JOINTS MUST BE OVERLAPPED TO THE NEXT STAKE.
8. THE TOP OF THE FRAME AND FABRIC MUST BE WELL BELOW THE GROUND ELEVATION DOWNSLOPE FROM THE DROP INLET TO KEEP RUNOFF FROM BYPASSING THE INLET. IT MAY BE NECESSARY TO BUILD A TEMPORARY DIKE ON THE DOWNSLOPE SIDE OF THE STRUCTURE.

TEMPORARY FABRIC DROP INLET EROSION CONTROL
NTS

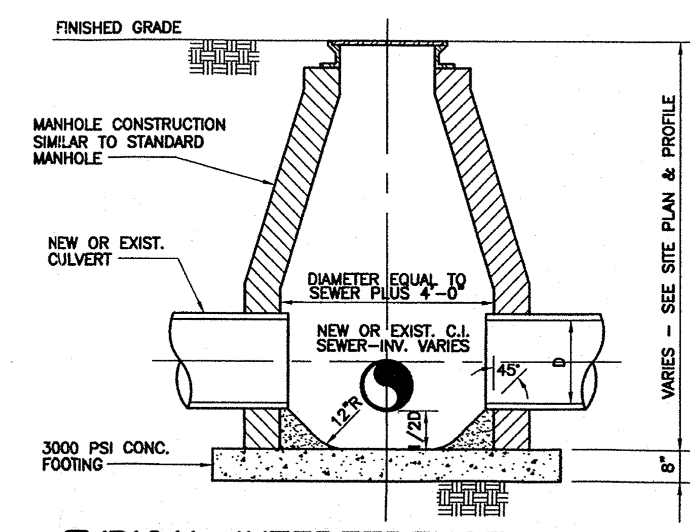


NOTES:
1. SEDIMENT TRAP WILL BE CONSTRUCTED FIRST, SUMP SECONDLY.
2. SEDIMENT TRAP HEIGHT TO BOTTOM OF SPILLWAY WILL BE NO LESS THAN TWO FEET.
3. SPILLWAY DEPTH SHALL BE ONE FOOT.
4. STONE FACE SHOULD BE NO LESS THAN 6 INCHES MEASURED PERPENDICULARLY FROM THE FACE OF THE LARGE STONE.
5. SUMP DIMENSIONS SHOULD ALLOW FOR A MINIMUM OF 1800 CF OF SEDIMENT STORAGE.
6. DEPTH OF SEDIMENT IN SUMP WILL BE CHECKED AFTER EACH STORM AND CLEANED AS NECESSARY (MIN. ONCE A YEAR).
7. REMOVAL OF SEDIMENT TRAP WILL BE DONE IN SUCH A WAY AS TO LIMIT SILTATION.

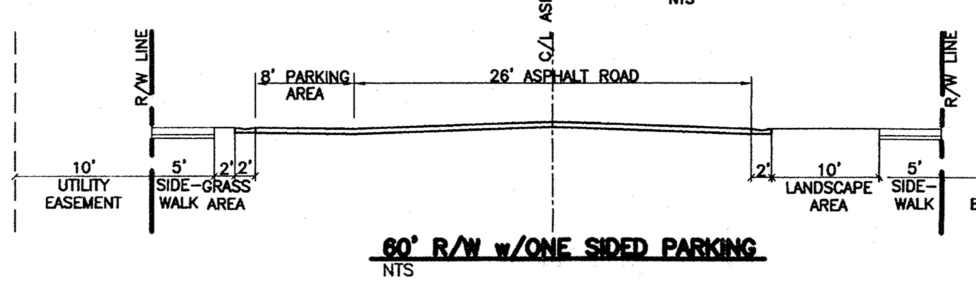
TEMPORARY SEDIMENT TRAP DETAIL
NTS

TEMPORARY SEDIMENT TRAP TABLE

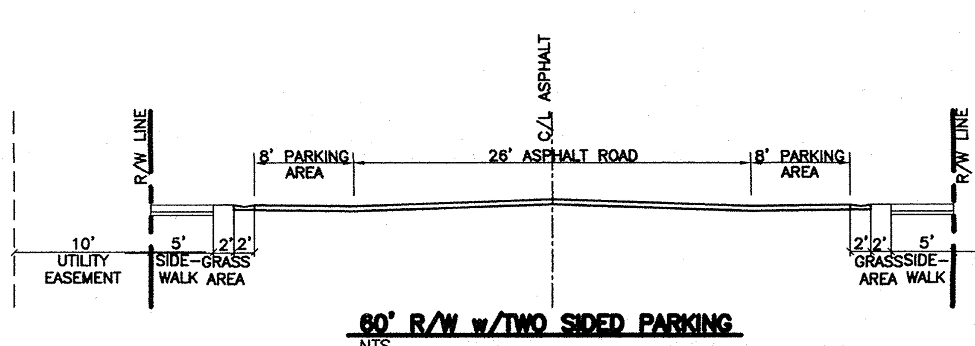
No.	DISTURBED AREA (Ac)	REQ'D VOLUME (cu. ft.)	LENGTH (FT)	WIDTH (FT)	DEPTH (FT)	PROVIDED VOLUME (cu. ft.)
1	4.83	8694	75	40	3	9000



TYPICAL INTERFERENCE MANHOLE
NTS



60' R/W w/ONE SIDED PARKING
NTS



60' R/W w/TWO SIDED PARKING
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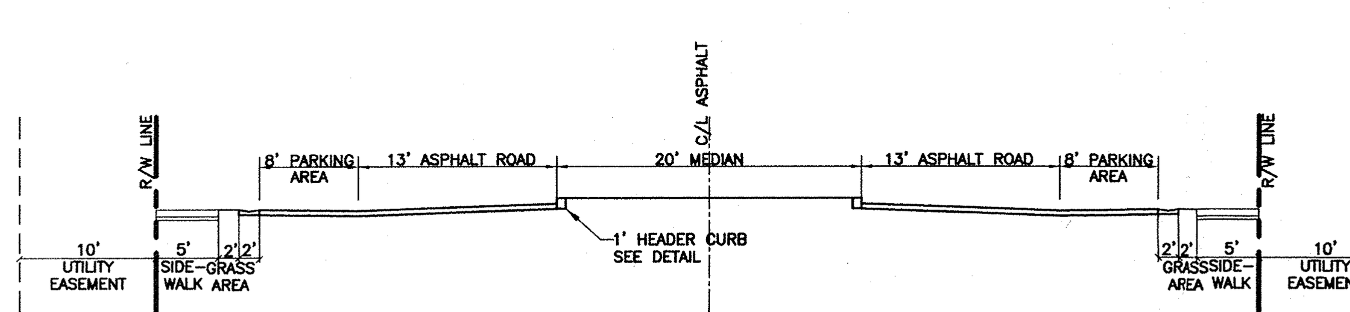
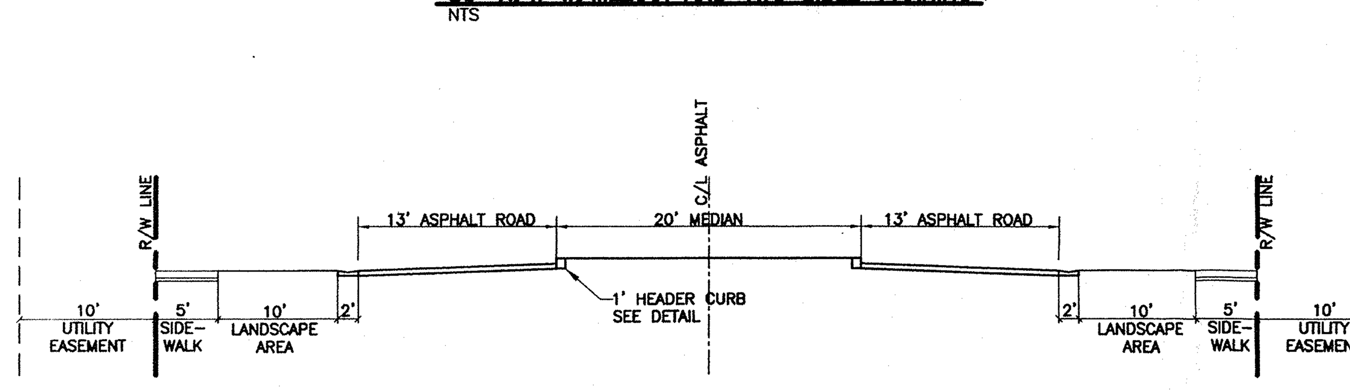
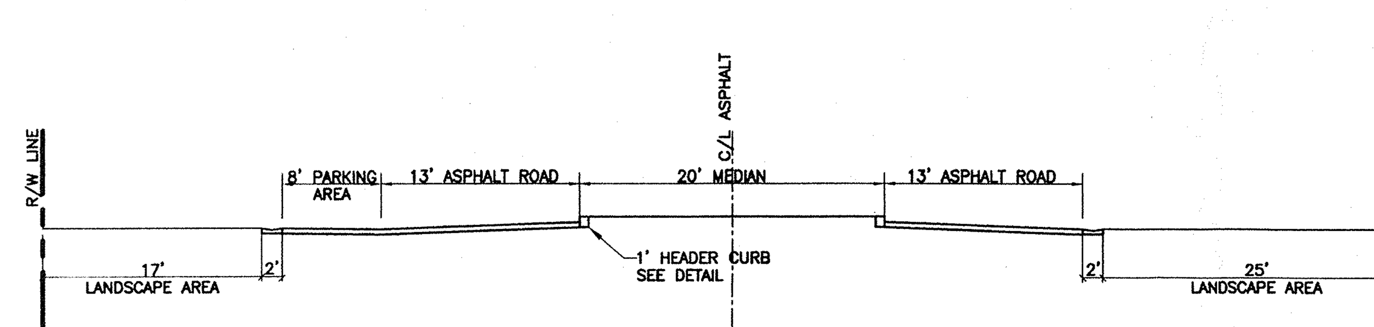


80' R/W w/MEDIAN AND TWO SIDED PARKING
NTS



80' R/W w/MEDIAN
NTS



100' R/W w/MEDIAN AND ONE SIDED PARKING
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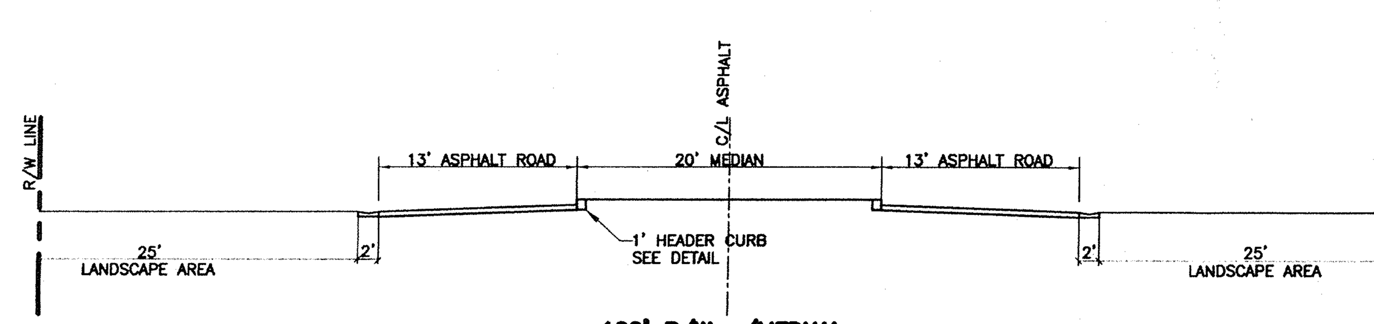

100' R/W w/MEDIAN
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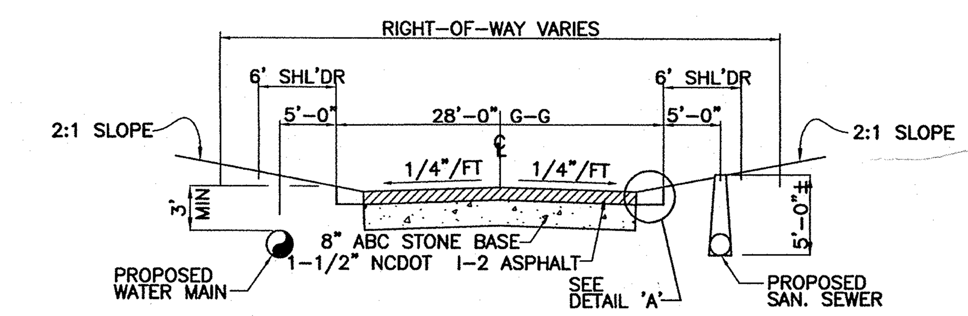
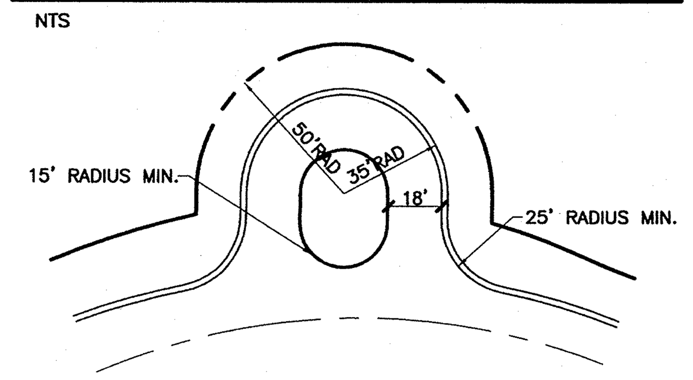
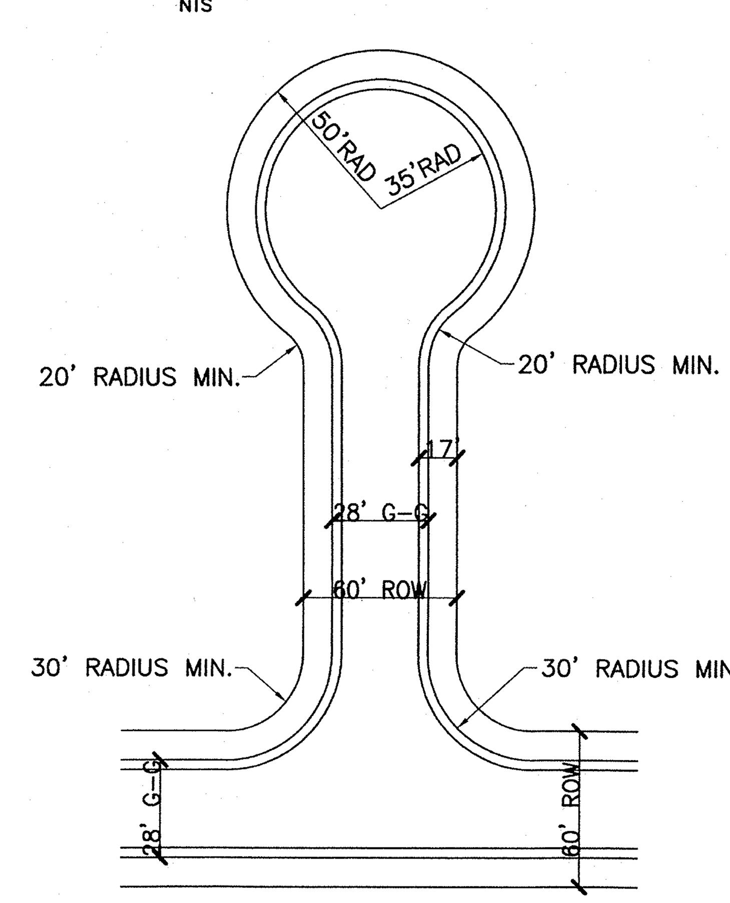


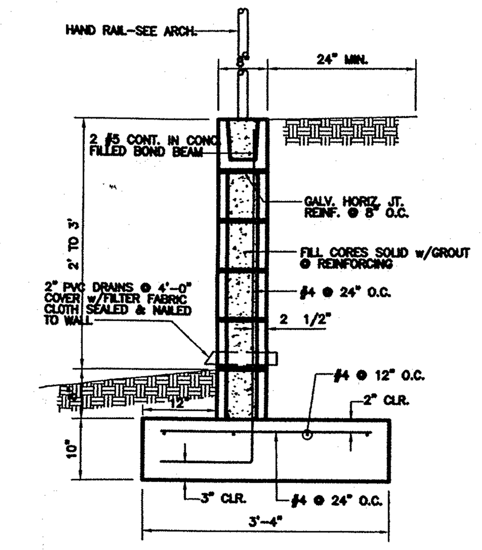
TYPICAL ROAD CROSS-SECTION
NTS



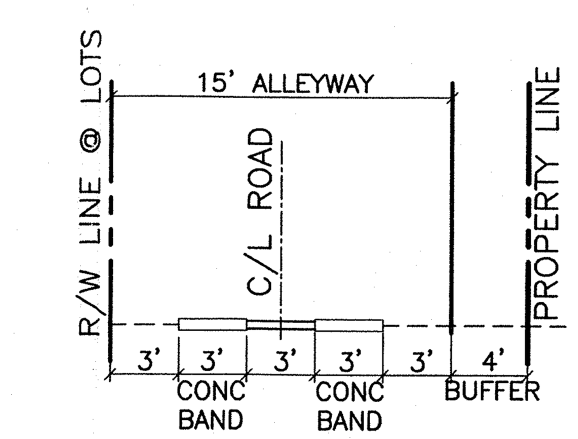
CUL-DE-SAC DETAIL
NTS



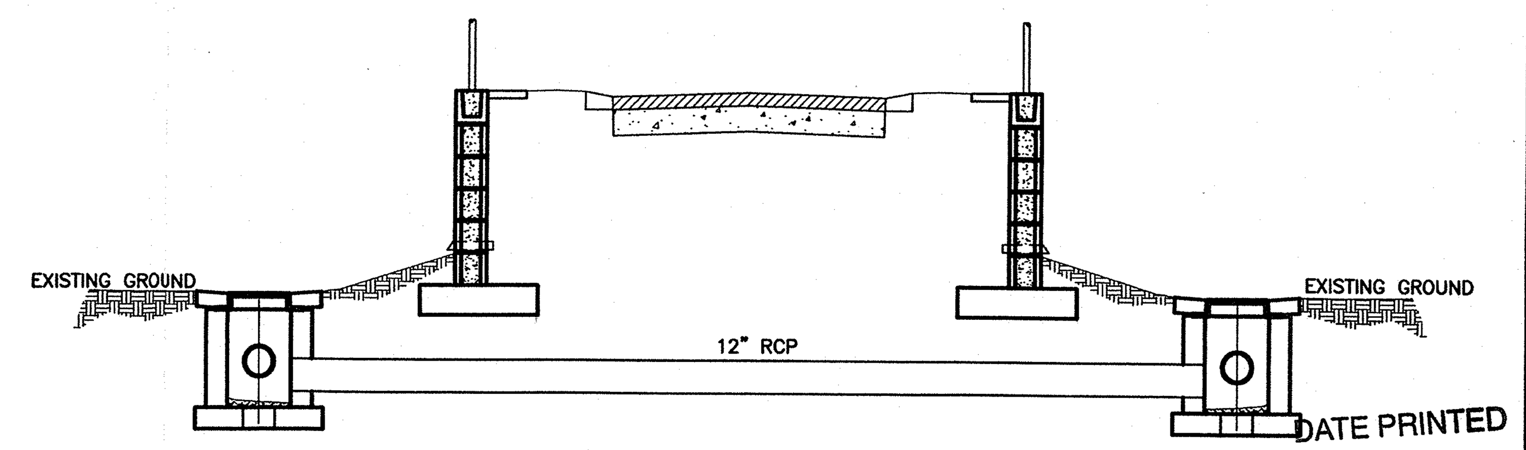
TYPICAL 60' ROAD PLAN
NTS



TYPICAL RETAINING WALL SECTION
NTS



ONE-WAY REAR ENTRY ACCESS
NTS



WETLAND RETAINING WALL & DROP INLET DETAIL
NTS

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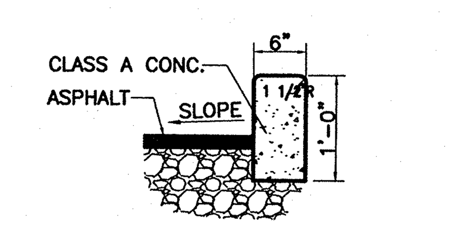
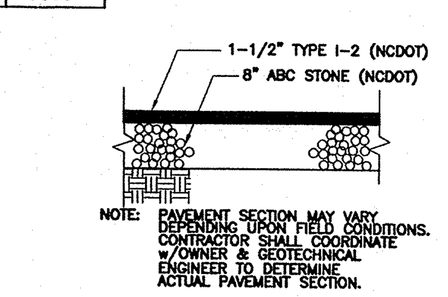
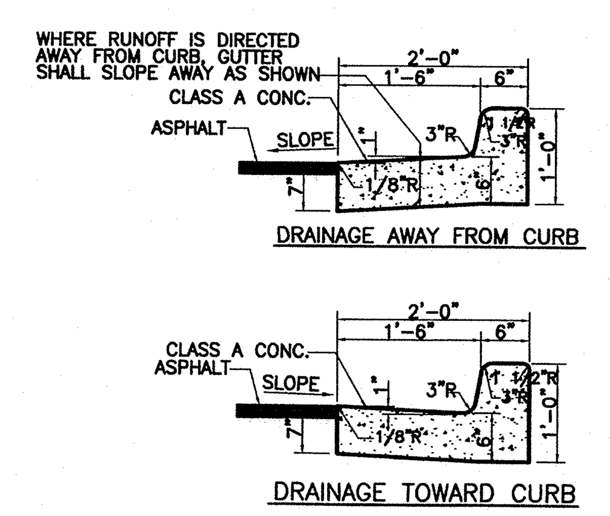


HEADER CURB SECTION
NTS



NOTE: PAVEMENT SECTION MAY VARY DEPENDING UPON FIELD CONDITIONS. CONTRACTOR SHALL COORDINATE w/OWNER & GEOTECHNICAL ENGINEER TO DETERMINE ACTUAL PAVEMENT SECTION.

PAVEMENT SECTION
NTS



TYPICAL CURB SECTION DETAIL 'A'
NTS

SITE WORK NOTES
1. THE CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIARIZED WITH EXISTING CONDTIONS BOTH ON AND IMMEDIATELY ADJACENT TO THE SITE.
2. CLEARING: CONTRACTOR SHALL REMOVE ALL TREES AND VEGETATION WITHIN LIMITS OF CONSTRUCTION UNLESS OTHERWISE DESIGNATED TO REMAIN.
3. GRUBBING AND STRIPPING: CONTRACTOR SHALL RAKE AND REMOVE ROOTS, STUMPS, VEGETATION, DEBRIS, EXISTING STRUCTURES ABOVE AND BELOW GRADE, ORGANIC MATERIAL OR ANY OTHER UNSUITABLE MATERIAL WITHIN LIMITS OF CONSTRUCTION.
4. MUCKING: CONTRACTOR SHALL COORDINATE WITH OWNER AND THEIR GEOTECHNICAL REPRESENTATIVE TO COORDINATE REMOVAL OF ANY SOFT AREAS.
5. DISPOSAL: CLEARED, GRUBBED, STRIPPED OR OTHER WASTE MATERIAL SHALL BE REMOVED FROM SITE AND DISPOSED OF IN A PROPERLY PERMITTED FACILITY.
6. FILL AND COMPACTION SHOULD COMPLY WITH GEOTECHNICAL REPORT.
7. THE CONTRACTOR SHALL NOTE THAT THE GRADING PLAN MAY NOT REPRESENT A BALANCED EARTHWORK CONDITION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CUT AND FILL QUANTITIES AND COMPLETE INSTALLATION TO SPECIFIED GRADES.
8. THE CONTRACTOR SHALL FURNISH SUITABLE BORROW MATERIAL FROM AN OFF-SITE PROPERLY PERMITTED FACILITY AS REQUIRED.
9. THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES DURING CONSTRUCTION. BEFORE COMMENCING ANY EXCAVATIONS IN OR ALONG ROADWAYS OR RIGHT-OF-WAYS, PUBLIC AREAS OR IN PRIVATE EASEMENTS, THE CONTRACTOR SHALL NOTIFY ALL APPROPRIATE PERSONNEL OF THEIR INTENT TO EXCAVATE, IN WRITING, NOT LESS THAN 10 DAYS PRIOR TO EXCAVATING.
10. THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE DISCONNECTION/ RECONNECTION AND/OR THE RELOCATION OF ALL EXISTING UTILITIES WITH APPROPRIATE PERSONNEL.
11. EXISTING SURVEYING PERFORMED BY ROGER SEITER, PLS AND SUPPLIED BY THE OWNER.
12. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AT THE SITE. FURTHERMORE THE CONTRACTOR SHALL REPORT ALL DISCREPANCIES OR QUESTIONS TO THE ENGINEER PRIOR TO INSTALLATION.
13. THE CONTRACTOR SHALL PROVIDE ANY AND ALL LAYOUT REQUIRED TO CONSTRUCT HIS WORK UNLESS OTHERWISE DIRECTED BY OWNER.
14. ALL PVC UTILITY MAINS SHALL BE INSTALLED WITH A MINIMUM OF 36" COVER AT FINAL GRADE.
15. ALL SERVICE CONNECTIONS SHALL BE INSTALLED TO MEET ALL LOCAL AND STATE CODES. METERS, TAPS, MATERIALS, WORKMANSHIP AND ALL FEES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL COMPLY WITH ALL REQUIREMENTS.
16. ALL PAVEMENT, BASE AND SUBGRADE SHALL COMFORM TO NCDOT STANDARDS INCLUDING WORKMANSHIP, MATERIALS AND EQUIPMENT. APPROPRIATE BARRICADES, SIGNS, LIGHTS OR OTHER TRAFFIC CONTROL DEVICES SHALL BE PROVIDED IN ACCORDANCE WITH NCDOT TO MAINTAIN SAFETY AND TWO WAY TRAFFIC.
17. ALL AREAS SHALL BE GRADED FOR POSITIVE DRAINAGE. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO INSTALLATION. ALL AREAS SHALL BE SLOPED TO DRAIN AWAY FROM BUILDINGS AT ALL TIMES.
18. CONCRETE STORM DRAINAGE PIPE SHALL BE CLASS III WITH RUBBER GASKETED JOINTS AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.
19. USE WHITE LANE MARKING PAINT FOR ALL PAVEMENT MARKINGS. PAINT SHALL BE A CHLORINATED RUBBER ALKYD, FS TT-P-115, TYPE III, FACTORY MIXED, QUICK DRYING, NON BLEEDING. REFLECTIVE MATERIAL MAY BE ADDED AT OWNER'S OPTION FOR NIGHT REFLECTING.
20. DUCTILE IRON SHALL BE CLASS 50.
21. CONCRETE FOR WALKS, CURBS AND DRIVES SHALL HAVE A MINIMUMN COMPRESSIVE STRENGTH OF 3000 PSI @ 28 DAYS – AIR ENTRAINED.
22. FIELD TESTING SHALL BE DONE BY AN INDEPENDENT TESTING LABORATORY PAID FOR BY THE OWNER. FURTHER TESTING REQUIRED DUE TO A FAILED TEST WILL BE PAID FOR BY THE CONTRACTOR.

CONSTRUCTION SEQUENCE
1. NO CUT SLOPE OR FILL SLOPE SHALL EXCEED A RISE OR FALL OF ONE FOOT FOR EVERY RUN OF 3 FEET (1 VERTICAL TO 3 HORIZONTAL).
2. NO SEDIMENT WILL BE ALLOWED TO EXIT THE SITE. ALL EROSION SHALL BE CONTROLLED INCLUDING SIDE SLOPES DURING AND AFTER CONSTRUCTION.
3. INSTALL PRIMARY EROSION CONTROL MEASURES BEFORE BEGINNING CONSTRUCTION INCLUDING BUT NOT LIMITED TO GRAVELLED CONSTRUCTION ENTRANCE, SILT FENCE, CHECK DAMS, ETC. INSTALL ALL SECONDARY EROSION CONTROL MEASURES AS SOON AS POSSIBLE AFTER BEGINNING CONSTRUCTION.
4. ALL EROSION CONTROL MEASURES TO BE INSPECTED AFTER EACH RAIN. SILT FENCE, SILT TRAPS, AND INLET PROTECTION TO BE CLEANED WHEN HALF FULL.
5. IF APPLICABLE, CONSTRUCT PROPOSED RETENTION POND TO ACT AS A SEDIMENT BASIN DURING CONSTRUCTION. REMOVE ACCUMULATION OF SILT AS REQUIRED TO ALLOW PROPER FUNCTIONING. RESTORE POND TO DESIGN LEVELS AT THE COMPLETION OF CONSTRUCTION.
6. IF APPLICABLE, INSTALL DROP INLETS WITH INLET PROTECTION TO ACT AS SILT TRAPS DURING CONSTRUCTION. REMOVE ACCUMULATED SILT AS NEEDED TO PREVENT SILT FROM ENTERING STORM DRAIN PIPING.
7. A 4" LAYER OF TOPSOIL SHALL BE APPLIED TO ALL NEW AREAS TO BE GRASSED.
8. ALL DISTURBED AREAS SHALL BE SEEDED IN ACCORDANCE WITH SEEDING SCHEDULE AS SOON AS POSSIBLE BUT NO LATER THAN 30 DAYS AFTER DISTURBANCE. ALL SLOPED AREAS TO BE SEEDED NO LATER THAN 15 DAYS.
9. MAINTAIN ALL EROSION CONTROL MEASURES UNITL PROJECT IS COMPLETE.
10. MORE STRINGENT MEASURES MAY BE REQUIRED TO HALT EROSION IF THOSE ON THIS PLAN PROVE TO BE LESS EFFECTIVE.
11. REMOVE ALL TEMPORARY EROSION CONTROL MEASURES UPON COMPLETION OF CONSTRUCTION. ALL PERMANENT MEASURES SHALL BE WELL ESTABLISHED PRIOR TO PROJECT COMPLETION.

MAINTENANCE REQUIREMENTS
1. CONSTRUCTION ENTRANCE MUST BE MAINTAINED TO PREVENT MUD OR SEDIMENT FROM LEAVING SITE. PERIODIC TOP DRESSING WITH TWO INCH STONE MAY BE REQUIRED.
2. ALL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL, BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS WILL BE MADE IMMEDIATELY TO MAINTAIN ALL PRACTICES AS DESIGNED.
3. SEDIMENT BASINS WILL BE CLEANED WHEN THE LEVEL OF SEDIMENT REACHES 2.0 FEET BELOW THE TOP OF THE RISER. #57 GRAVEL WILL BE CLEANED OR REPLACED WHEN THE SEDIMENT POOL NO LONGER DRAINS PROPERLY.
4. SEDIMENT WILL BE REMOVED FROM BEHIND THE SEDIMENT FENCE WHEN IT BECOMES ABOUT 0.5 FEET DEEP AT THE FENCE. THE SEDIMENT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER.
5. ALL SEEDED AREAS WILL BE FERTILIZED, RESEEDED AS NECESSARY, AND MULCHED ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER.

FALL-WINTER PERMANENT GRASSING DETAIL
SEEDING MIXTURE

SPECIES	RATE (lb/acre)
TALL FESCUE (BLEND OF TWO OR THREE IMPROVED VARIETIES)	200
RYE (GRAIN)	25

SEEDING DATES
JANUARY – APRIL
AUGUST – DECEMBER

SOIL AMENDMENTS
APPLY LIME AND FERTILIZER ACCORDING TO SOIL TESTS, OR APPLY 3,000-5,000 lb/acre GROUND AGRICULTURAL LIMESTONE (USE THE LOWER RATE ON SANDY SOILS) AND 1,000 lb/acre 10-10-10 FERTILIZER.

MULCH
APPLY 4,000 lb/acre GRAIN STRAW OR EQUIVALENT COVER OF ANOTHER SUITABLE MULCH. ANCHOR STRAW BY TACKING WITH ASPHALT, ROVING, OR NETTING OR BY CRIMPING WITH A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE
FERTILIZE ACCORDING TO SOIL TESTS OR APPLY 40 lb/acre NITROGEN IN JANUARY OR FEBRUARY, 40 lb IN SEPTEMBER AND 40 lb IN NOVEMBER, FROM A 12-4-8, 16-4-8, OR SIMILAR TURF FERTILIZER. AVOID FERTILIZER APPLICATIONS DURING WARM WEATHER, AS THIS INCREASES STAND LOSSES TO DISEASE. RESEED, FERTILIZE, AND MULCH DAMAGED AREAS IMMEDIATELY. MOW TO A HEIGHT OF 2.5-3.5 INCHES AS NEEDED.

SPRING-SUMMER PERMANENT GRASSING DETAIL
SEEDING MIXTURE

SPECIES	RATE (lb/acre)
PENSACOLA BAHIAGRASS	50
SERICEA LESPEDEZA	30
COMMON BERMUDAGRASS	10
GERMAN MILLET	10
TALL FESCUE	50

SEEDING NOTES
1. WHERE A NEAT APPEARANCE IS DESIRED, OMIT SERICEA.
2. USE COMMON BERUDAGRASS ONLY ON ISOLATED SITES WHERE IT CANNOT BECOME A PEST. BERMUDAGRASS MAY BE REPLACED WITH 5 lb/acre CENTIPEDEGRASS.

SEEDING DATES
APRIL 1 – JULY 15

SOIL AMENDMENTS
APPLY LIME AND FERTILIZER ACCORDING TO SOIL TESTS, OR APPLY 3,000 lb/acre GROUND AGRICULTURE LIMESTONE AND 500 lb/acre 10-10-10 FERTILIZER.

MULCH
APPLY 4,000 lb/acre GRAIN STRAWOR EQUIVALENT COVER OF ANOTHER SUITABLE MULCH. ANCHOR BY TACKING WITH ASPHALT, ROVING, OR NETTING OR BY CRIMPING WITH A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE
REFERTILIZE THE FOLLOWING APRIL WITH 50 lb/acre NITROGEN. REPEAT AS GROWTH REQUIRES. MAY BE MOWED ONLY ONCE A YEAR. WHERE A NEAT APPEARANCE IS DESIRED, OMIT SERICEA AND MOW AS OFTEN AS NEEDED.

LATE WINTER & EARLY SPRING TEMPORARY GRASSING DETAIL
SEEDING MIXTURE

SPECIES	RATE (lb/acre)
Rye (grain)	120
Annual lespedeza (Kobe in Piedmont and Coastal Plain, Korean in Mountains)	50

Omit annual lespedeza when duration of temporary cover is not to extend beyond June.

SEEDING DATES:
Mountains – Above 2500 ft: Feb. 15–May 15
Below 2500 ft: Feb. 1–May 1
Piedmont – Jan. 1–May 1
Coastal Plain – Dec. 1–Apr. 15

SOIL AMENDMENTS
Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10-10-10 fertilizer.

MULCH
APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE
Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

TEMPORARY SUMMER GRASSING DETAIL
SEEDING MIXTURE

SPECIES	RATE (lb/acre)
GERMAN MILLET	40

IN THE PIEDMONT AND MOUNTAINS, A SMALL-STEMMED SUNDANGRASS MAY BE SUBSTITUTED AT A RATE OF 50 LB/ACRE.

SEEDING NOTES
MOUNTAINS – MAY 15–AUG. 15
PIEDMONT – MAY 1–AUG. 15
COASTAL PLAN – APR. 15–AUG. 15

SOIL AMENDMENTS
FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 750 LB/ACRE 10-10-10 FERTILIZER.

MULCH
APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE
REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, REFERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

TEMPORARY FALL GRASSING DETAIL
SEEDING MIXTURE

SPECIES	RATE (lb/acre)
Rye (grain)	120

SEEDING NOTES
MOUNTAINS – AUG. 15–DEC. 15
COASTAL PLAN and PIEDMONT – AUG. 15–DEC 30

SOIL AMENDMENTS
FOLLOW SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 1,000 LB/ACRE 10-10-10 FERTILIZER.

MULCH
APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE
Repair and refertilize damaged areas immediately. Topdress with 50 lb/acre of nitrogen in March. If it is necessary to extend temporary cover beyond June 15, overseed with 50 lb/acre Kobe (Piedmont and Coastal Plain) or Korean (Mountains) lespedeza in late February or early March.

REVISIONS		
No./Date	Description	By

DETAILS AND NOTES
CADES COVE
SOUTHPORT, NORTH CAROLINA

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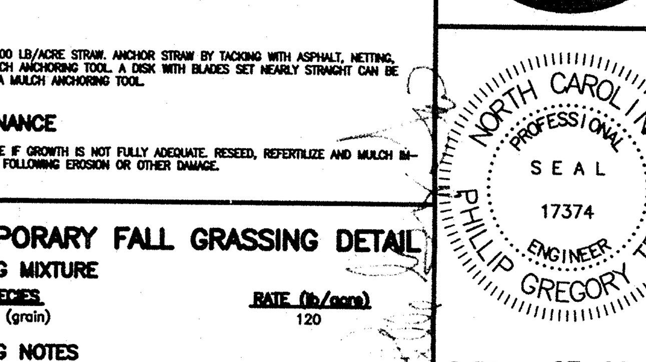

DATE 07-29-05
DESIGN PGT
DRAWN JLR

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