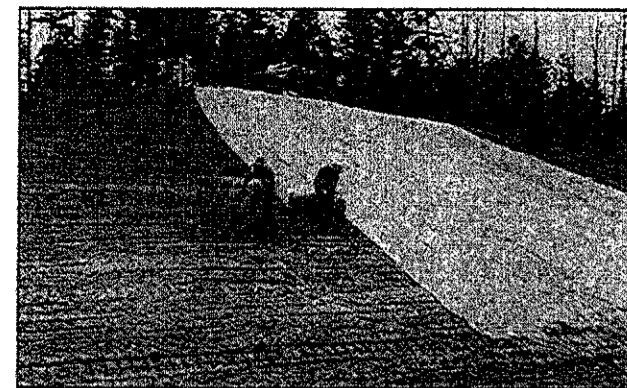


Erosion Control Matting and Blankets

Mb



DEFINITION

A protective covering (blanket) or soil stabilization mat used to establish permanent vegetation on steep slopes, channels, or shorelines.

PURPOSE

- To provide a microclimate which protects young vegetation and promotes its establishment.
- To reinforce the turf to resist forces of erosion during storm events.

CONDITIONS

Matting and blankets can be applied on steep slopes where erosion hazard is high and planting is likely to be too slow in providing adequate protective cover. Concentrated flow areas, all slopes steeper than 2.5:1 and with a height of ten feet or greater, and cuts and fills within stream buffers, shall be stabilized with the appropriate erosion control matting or blankets. Maintenance of final vegetative cover must be considered when choosing blankets versus matting.

On streambanks or tidal shorelines where moving water is present, matting can prevent new plantings from being washed away.

PLANNING CONSIDERATIONS

Care must be taken to choose the type of blanket or matting which is most appropriate for the specific needs of a project. Two general types of blankets and mats are discussed within this specification. Due to

the abundance of erosion control matting and blanket products available, all of the advantages, disadvantages, and specifications of all manufactured products will not be discussed in this manual. Manufacturer's instructions and recommendations, as well as a site visit by designer and plan reviewer is highly recommended to determine a product's appropriateness.

Temporary Erosion Control Blankets

This includes temporary "combination" blankets (rolled erosion control blankets-RECB) consisting of a plastic netting which covers and is intertwined with a natural organic or manmade mulch; or, a jute mesh which is typically homogeneous in design and can act alone as a soil stabilization blanket.

Temporary blankets as a minimum shall be used to stabilize concentrated flow areas with a velocity less than 5 ft/sec and slopes 2.5:1 or steeper with a height of 10 feet or greater. Because temporary blankets will deteriorate in a short period of time, they provide no enduring reduction in erosion protection.

Benefits of using erosion control blankets include the following:

1. Protection of the seed and soil from raindrop impact and subsequent displacement.
2. Thermal consistency and moisture retention for seedbed area.
3. Stronger and faster germination of grasses and legumes.
4. Planing off excess stormwater runoff.
5. Prevention of sloughing of topsoil added to steeper slopes.

Permanent Erosion Control Matting

Consists of a permanent non-degradable, three-dimensional plastic structure which can be filled with soil prior to planting. These mats are also known as permanent soil reinforcing mats (turf reinforcement matting). Roots penetrate and become entangled in the matrix, forming a continuous anchorage for surface growth and promoting enhanced energy dissipation. Matting shall be used when a vegetative lining is desired in stormwater conveyance channels where the velocity is between five and ten feet per second.

Benefits of using erosion control matting include the following:

1. All benefits gained from using erosion control blankets.

2. Causes soil to drop out of stormwater and fill matrix with fine soils which become the growth medium for the development of roots.
3. Acts with the vegetative root system to form an erosion resistant cover which resists hydraulic lift and shear forces when embedded in the soil within stormwater channels.

Materials

All blanket and matting materials shall be on the Georgia Department of Transportation Qualified Products List (QPL # 62 for blankets, QPL # 49 for matting).

All blankets shall be nontoxic to vegetation and to the germination of seed and shall not be injurious to the unprotected skin of humans. At a minimum, the plastic netting shall be intertwined with the mulching material/fiber to maximize strength and provide for ease of handling.

Temporary Blankets

Machine produced temporary combination blankets shall have a consistent thickness with the organic material evenly distributed over the entire blanket area. All combination blankets shall have a minimum width of 48 inches. Machine produced combination blankets include the following:

a. **Straw blankets** are combination blankets that consist of weed-free straw from agricultural crops formed into a blanket. Blankets with a top side of photodegradable plastic mesh with a maximum mesh size of 5/16 x 5/16 inch and sewn to the straw with biodegradable thread is appropriate for slopes. The blanket shall have a minimum thickness of 3/8 inch and minimum dry weight of 0.5 pounds per square yard.

b. **Excelsior blankets** are combination blankets that consist of curled wood excelsior (80% of fibers are six inches or longer) formed into a blanket. The blanket shall have clear markings indicating the top side of the blanket and be smolder resistant. Blankets shall have photodegradable plastic mesh having a maximum mesh size of 1 1/2 x 3 inches. The blanket shall have a minimum thickness of 1/4 of an inch and a minimum dry weight of 0.8 pounds per square yard. Slopes require excelsior matting with the top side of the blanket covered in the plastic mesh, and for waterways, both sides of the blanket require plastic mesh.

c. **Coconut fiber blankets** are combination blankets that consist of 100% coconut fiber formed into a blanket. The minimum thickness of the blanket shall

be 1/4 of an inch with a minimum dry weight of 0.5 pounds per square yard. Blankets shall have photodegradable plastic mesh, with a maximum mesh size of 5/8 x 5/8 inch and sewn to the fiber with a breakdown resistant synthetic yarn. Plastic mesh is required on both sides of the blanket if used in waterways. A maximum of two inches is allowable for the stitch pattern and row spacing.

d. **Wood fiber blankets** are combination blankets that consist of reprocessed wood fibers that do not possess or contain any growth or germination inhibiting factors. The blanket shall have a photodegradable plastic mesh, with a maximum mesh size of 5/8 x 3/4 inch, securely bonded to the top of the mat. The blanket shall have a minimum dry weight of 0.35 pounds per square yard. A maximum of two inches is allowable for the stitch pattern and row spacing. This practice shall be applied only to slopes.

e. **Jute Mesh** can be applied to slopes. Jute mesh with a 48 inch width shall show between 76 and 80 warpings and a one yard length shall show between 39 to 43 weftings. The woven mesh shall be at least 45 inches wide. Yarn shall have a unit weight of at least 0.9 pounds per square yard, but not more than 1.5 pounds per square yard.

Permanent Matting

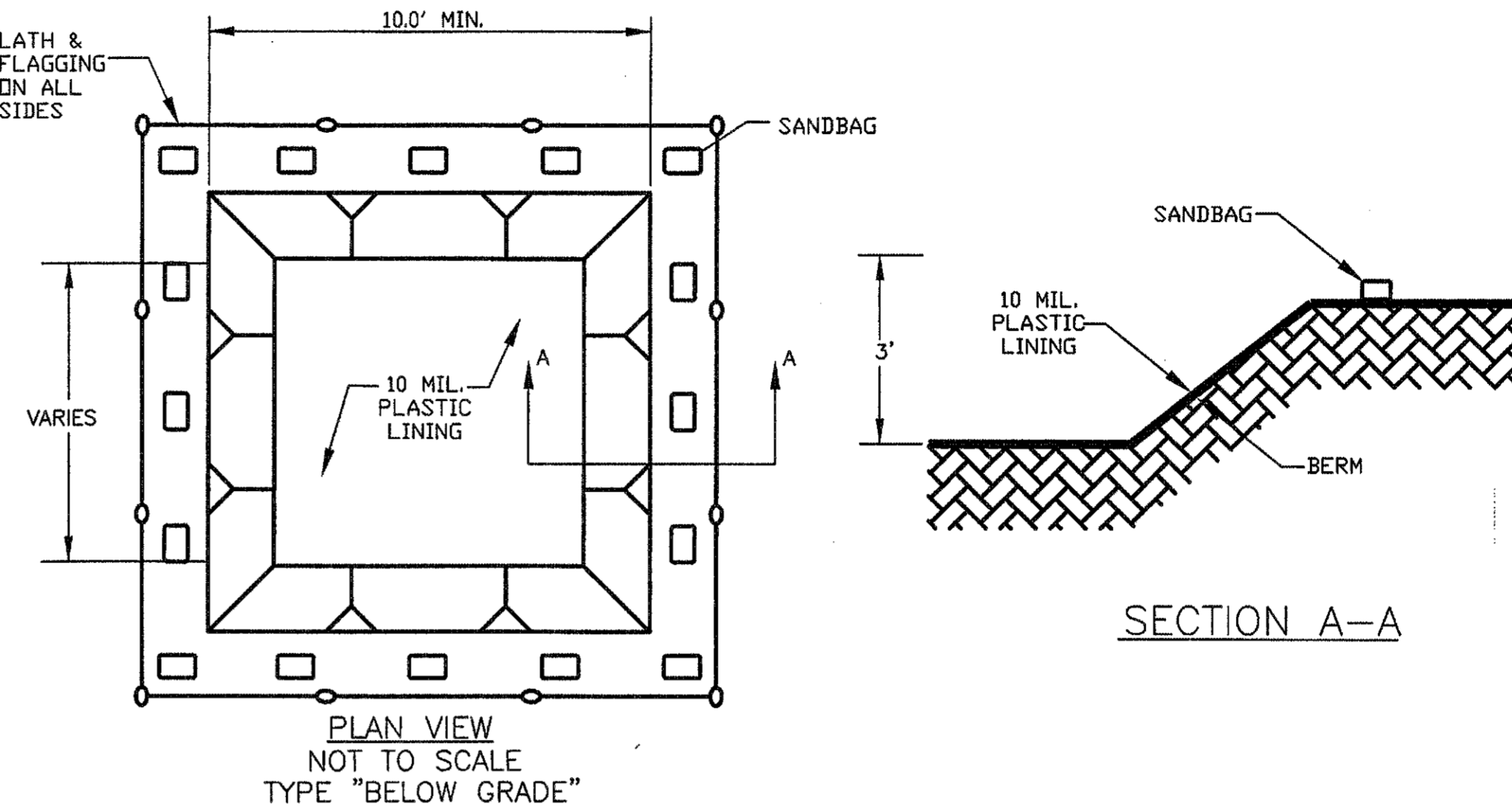
Permanent matting shall consist of a lofty web of mechanically or melt bonded polymer nettings, monofilaments or fibers which are entangled to form a strong and dimensionally stable matrix. Polymer welding, thermal or polymer fusion, or the placement of fibers between two high strength, biaxially oriented nets bound securely together by parallel lock stitching with polyolefin, nylon or polyester threads are all appropriate bonding methods. Mats shall maintain their shape before, during, and after installation, under dry or water saturated conditions. Mats must be stabilized against ultraviolet degradation and shall be inert to chemicals normally encountered in a natural soil environment.

The mat shall conform to the following physical properties:

Property	Minimum Value
Thickness	0.5 inch
Weight	0.6 PSY
Roll Width	38 inches
Tensile Strength	
Length (50% elongation)	15 lbs./in.
Length (ultimate)	20 lbs./in.

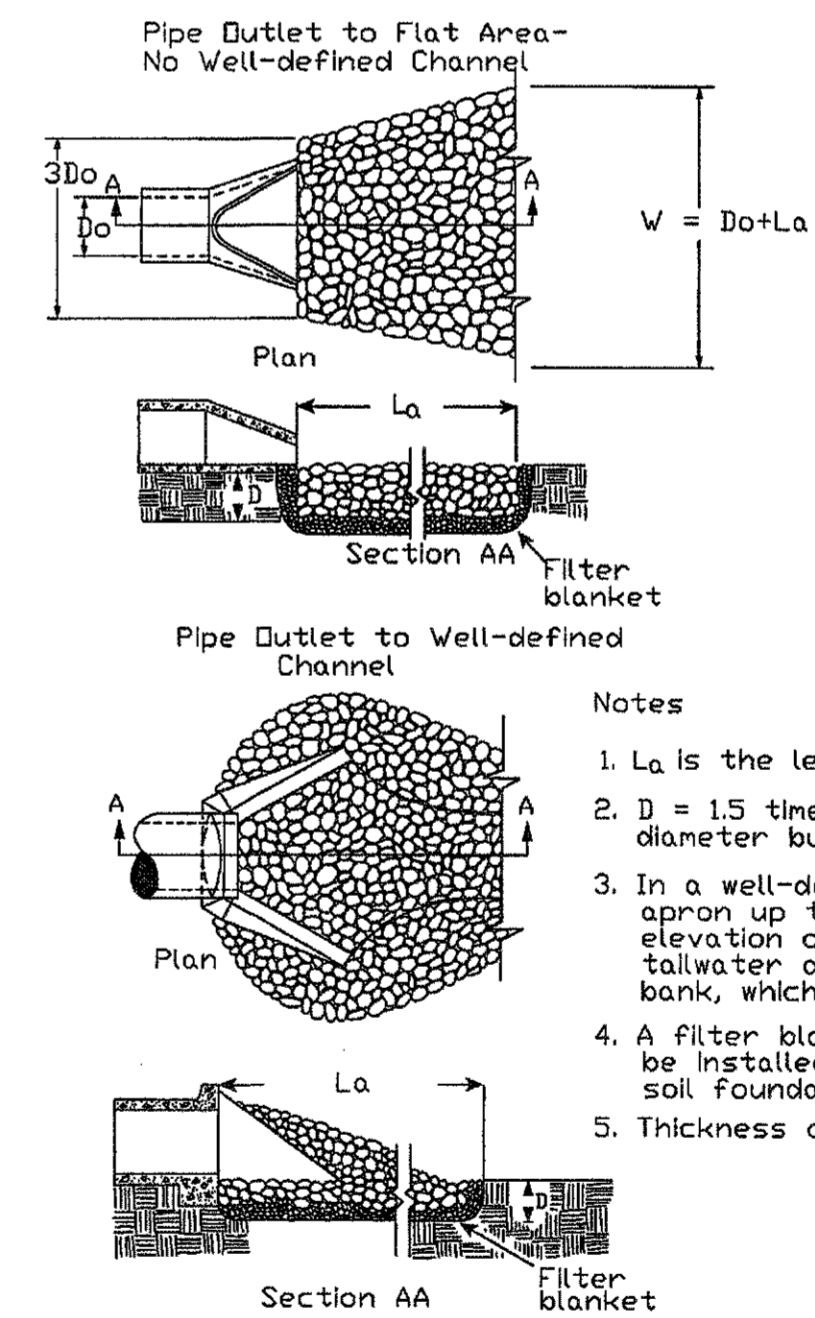
CONCRETE WASHDOWN

1. THE CONTRACTOR MUST PROVIDE A DESIGNATED AREA FOR CONCRETE WASHDOWN OF TOOLS, CONCRETE MIXER CHUTES, HOPPERS, AND THE REAR OF THE VEHICLES. THIS AREA MUST HAVE A CONCRETE WASHOUT FACILITY AND SHALL BE CONSTRUCTED ACCORDING TO THE DETAIL SHOWN BELOW.
2. THE CONCRETE WASHOUT FACILITY SHALL BE LOCATED A MINIMUM OF 50 FEET FROM STORM DRAINS, OPEN DITCHES, OR WATER BODIES.
3. WASH OUT DISCHARGE FROM THE CLEANING OF CONCRETE TRUCKS, TOOLS, AND OTHER EQUIPMENT SHALL NOT BE DISCHARGED INTO STORM DRAINS, OPEN DITCHES, STREETS, OR STREAMS.
4. EXCESS CONCRETE SHALL NOT BE DISPOSED OF ON SITE. ALL EXCESS CONCRETE SHALL BE TRANSPORTED OFF-SITE AND DISPOSED OF PROPERLY.
5. IT IS PROHIBITED TO WASH OUT THE MIXING DRUM OF CONCRETE TRUCKS ON-SITE.



CONCRETE TRUCK WASHDOWN

N.T.S.



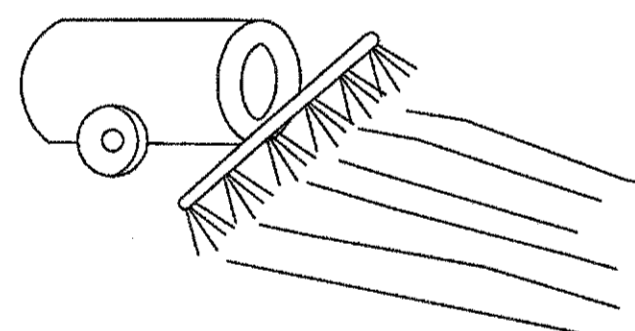
Notes

1. La is the length of the riprap apron.
2. D = 1.5 times the maximum stone diameter but not less than 6".
3. In a well-defined channel extend the apron up the channel banks to an elevation of 6" above the maximum tailwater depth of to the top of the bank, whichever is less.
4. A filter blanket or filter fabric should be installed between the riprap and soil foundation.
5. Thickness of riprap is 2".

LOCATION	Q25 (cfs)	V25 (fps)	TAILWATER CON.	Do (in.)	3Do(ft.)	d50 (in.)	dmax (in.)	D (in.)	La (ft.)	W (ft.)
HW A-1	30.32	7.48	Tw>0.5 DIAMETER	30"	7.5'	6"	13.5"	9"	25'	33.5'
HW B-1	41.81	8.54	Tw>0.5 DIAMETER	42"	10.5'	6"	13.5"	9"	30'	27.5'
HW C-1	6.12	4.96	Tw>0.5 DIAMETER	18"	4.5'	6"	13.5"	9"	15'	16.5'
HW D-1	4.25	4.5	Tw>0.5 DIAMETER	18"	4.5'	6"	13.5"	9"	15'	16.5'

ST STORM DRAIN OUTLET PROTECTION
NOT TO SCALE

DUST CONTROL



TEMPORARY METHODS

MULCHES. SEE STANDARD DS1 - DISTURBED AREA STABILIZATION (WITH MULCHING ONLY). SYNTHETIC RESINS MAY BE USED INSTEAD OF ASPHALT TO BIND MULCH MATERIAL. REFER TO STANDARD TB-TACKIFIERS AND BINDERS. RESINS SUCH AS CURASOL OR TERRATAK SHOULD BE USED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

VEGETATIVE COVER. SEE STANDARD DS2 - DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING).

SPRAY-ON ADHESIVES. THESE ARE USED ON MINERAL SOILS (NOT EFFECTIVE ON MUCK SOILS). KEEP TRAFFIC OFF THESE AREAS. REFER TO STANDARD TB-TACKIFIERS AND BINDERS.

TILLAGE. THIS PRACTICE IS DESIGNED TO ROUGHEN AND BRING CLODS TO THE SURFACE. IT IS AN EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE WIND EROSION STARTS.

IRRIGATION. THIS IS GENERALLY DONE AS AN EMERGENCY TREATMENT. SITE IS SPRINKLED WITH WATER UNTIL THE SURFACE IS WET. REPEAT AS NEEDED.

BARRIERS. SOLID BOARD FENCES, SNOWFENCES, BURLAP FENCES, CRATE WALLS, BALES OF HAY AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING. BARRIERS PLACED AT RIGHT ANGLES TO PREVAILING CURRENTS AT INTERVALS OF ABOUT 15 TIMES THEIR HEIGHT ARE EFFECTIVE IN CONTROLLING WIND EROSION.

CALCIUM CHLORIDE. APPLY AT RATE THAT WILL KEEP SURFACE MOIST. MAY NEED RETREATMENT.

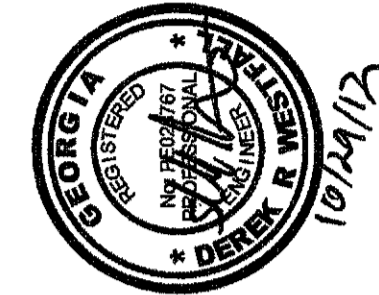
PERMANENT METHODS
PERMANENT VEGETATION. SEE STANDARD DS3 -DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION). EXISTING TREES AND LARGE SHRUBS MAY AFFORD VALUABLE PROTECTION IF LEFT IN PLACE.

TOPSOILING. THIS ENTAILS COVERING THE SURFACE WITH LESS EROSION SOIL MATERIAL. SEE STANDARD TP - TOPSOILING.

STONE. COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL. SEE STANDARD CR-CONSTRUCTION ROAD STABILIZATION.

Du DUST CONTROL

Atlanta



PEACHTREE CREEK SOUTH FORK
RELIEF STORAGE AND PUMPING STATION



CITY OF ATLANTA

DEPARTMENT of WATERSHED MANAGEMENT

REV	DATE	REVISION DESCRIPTION
0	10/28/12	100 PERCENT BID PACKAGE

THIS LINE IS ONE INCH LONG WHEN PLOTTED FULL SCALE
THIS DRAWING MUST BE USED IN CONJUNCTION WITH THE APPLICABLE OR GOVERNING TECHNICAL SPECIFICATIONS AND OTHER CONTRACT DOCUMENTS.

PROJECT NO: FC-6260
DATE: OCTOBER 2012
RESP PROF: DW DESIGNER: PD CHECKER: TC

SHEET TITLE
CIVIL
00 - GENERAL
EROSION DETAILS

SHEET NO. CE-503 REV. 0

Derek Westfall
GSWCC LEVEL II DESIGN PROFESSIONAL

0000010475
CERTIFICATION #