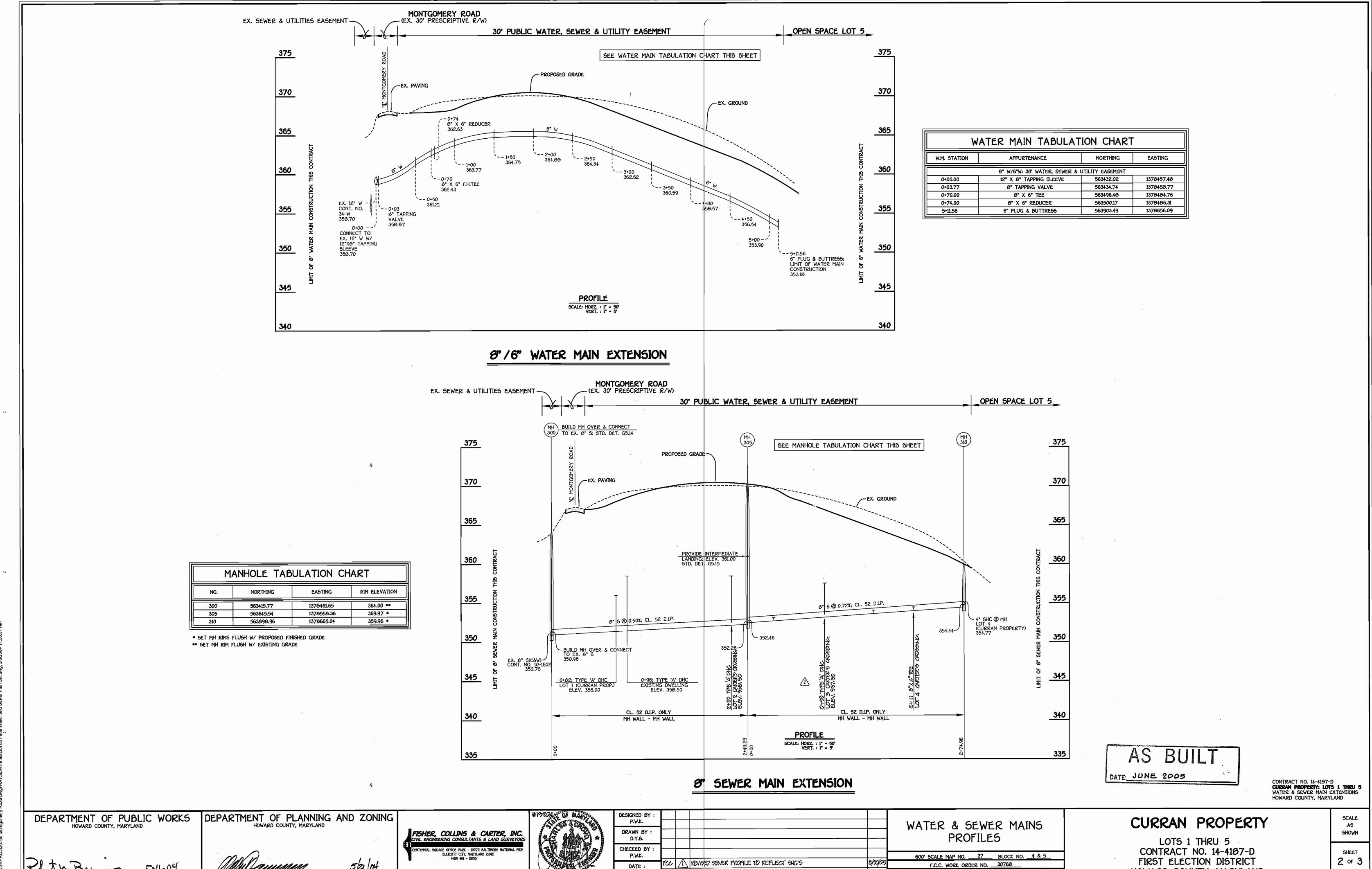


WACDOWED CHARLES MALL COMMAND DATABLE CHARLES CHARLES CHARLES CHARLES OF CHAR



MAY. 2004

BY NO.

HOWARD COUNTY, MARYLAND

FILE NAME : 30760 FINAL WATER AND SEWER PLAN SHT

VACOCIDED NOTES Management Boothdeman MATCENACIDATES Final Mater and Course Disa Cht dura E/E/2004

PURPOSE

VEGETATIVE STABILIZATION SPECIFICATIONS ARE USED TO PROMOTE THE ESTABLISHMENT OF VEGETATION ON EXPOSED SOIL. WHEN SOIL IS STABILIZED WITH VEGETATION, THE SOIL IS LESS LIKELY TO ERODE AND MORE LIKELY TO ALLOW INFILTRATION OF RAINFALL. THEREBY REDUCING SEDIMENT LOADS AND RUN-OFF TO DOWNSTREAM AREAS, AND IMPROVING WILDLIFE HABITAT AND VISUAL

#### CONDITIONS WHERE PRACTICE APPLIES

THIS PRACTICE SHALL BE USED ON DENUDED AREAS AS SPECIFIED ON THE PLANS AND MAY BE USED ON HIGHLY ERODIBLE OR CRITICALLY ERODING AREAS. THIS SPECIFICATION IS DIVIDED INTO TEMPORARY SEEDING, TO QUICKLY ESTABLISH VEGETATIVE COVER FOR SHORT DURATION (UP TO ONE YEAR), AND PERMANENT SEEDING, FOR LONG TERM VEGETATIVE COVER. EXAMPLES OF APPLICABLE AREAS FOR TEMPORARY SEEDING ARE TEMPORARY SOIL STOCKPILES, CLEARED AREAS BEING LEFT IDLE BETWEEN CONSTRUCTION PHASES, EARTH DIKES, ETC. AND FOR PERMANENT SEEDING ARE LAWNS, DAMS, CUT AND FILL SLOPES AND OTHER AREAS AT FINAL GRADE, FORMER STOCKPILE AND STAGING AREAS, ETC.

#### EFFECTS ON WATER QUALITY AND QUANTITY

planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates OF RUNOFF, INFILTRATION EVAPORATION, TRANSPIRATION, PERCOLATION, AND GROUNDWATER RECHARGE. VEGETATION, OVER TIME, WILL INCREASE ORGANIC MATTER CONTENT AND IMPROVE THE WATER HOLDING CAPACITY OF THE SOIL AND SUBSEQUENT PLANT

VEGETATION WILL HELP REDUCE THE MOVEMENT OF SEDIMENT, NUTRIENTS, AND OTHER CHEMICALS CARRIED BY RUNOFF TO RECEIVING WATERS. PLANTS WILL ALSO HELP PROTECT GROUNDWATER SUPPLIES BY ASSIMILATING THOSE SUBSTANCES PRESENT SEDIMENT CONTROL DEVICES MUST REMAIN IN PLACE DURING GRADING, SEEDBED PREPARATION, SEEDING, MULCHING AND VEGETATIVE

ESTABLISHMENT TO PREVENT LARGE QUANTITIES OF SEDIMENT AND ASSOCIATED CHEMICALS AND NUTRIENTS FROM WASHING INTO **SURFACE WATERS** 

### SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS

- A. SITE PREPARATION INSTALL EROSION AND SEDIMENT CONTROL STRUCTURES (EITHER TEMPORARY OF PERMANENT) SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, BERMS, WATERWAYS, OR SEDIMENT CONTROL BASINS.
- ii. PERFORM ALL GRADING OPERATIONS AT RIGHT ANGLES TO THE SLOPE. FINAL GRADING AND SHAPING IS NOT USUALLY NECESSARY FOR TEMPORARY SEEDING. III. SCHEDULE REQUIRED SOIL TESTS TO DETERMINE SOIL AMENDMENT COMPOSITION AND APPLICATION RATES FOR SITES
- HAVING DISTURBED AREA OVER 5 ACRES. B. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)
  - SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OVER 5 ACRES. SOIL ANALYSIS MAY BE PERFORMED BY THE UNIVERSITY OF MARYLAND OR A RECOGNIZED COMMERCIAL LABORATORY, SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.
- ii. FERTILIZERS SHALL BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROVED EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS SHALL ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE STATE FERTILIZER LAWS AND SHALL BEAR THE NAME, TRADEMARK AND WARRANTEE OF THE PRODUCER.
- iii. LIME MATERIALS SHALL BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED) WHICH CONTAINS AT LEAST 50% TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE SHALL BE GROUND TO SUCH FINENESS that at least 50% will pass through a \*100 mesh sieve and 90-100% will pass through a \*20 mesh sieve. iv. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3-5" OF SOIL BY DISKING OR OTHER SUITABLE MEANS. SEEDBED PREPARATION
- TEMPORARY SEEDING a. SEEDBED PREPARATION SHALL CONSIST OF LOOSENING SOIL TO A DEPTH OF 3" TO 5" BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED IT SHOULD NOT BE ROLLED OR DRAGGED SMOOTH, BUT LEFT IN THE ROUGHENED CONDITION. SLOPED AREAS (GREATER THAN 3:1) SHOULD BE TRACKED LEAVING THE SURFACE IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
- APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3-5" OF SOIL BY DISKING OR OTHER SUITABLE MEANS. PERMANENT SEEDING
- a. MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT SOIL pH SHALL BE BETWEEN 6.0 AND 7.0.
  - SOLUBLE SALTS SHALL BE LESS THAN 500 PARTS PER MILLION (PPM). THE SOIL SHALL CONTAIN LESS THAN 40CLAY, BUT ENOUGH FINE GRAINED MATERIAL 030% SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION IS IF LOVEGRASS OR SERECIA LESPEDEZAS IS TO BE PLANTED, THEN A SANDY SOIL (<30% SILT PLUS CLAY) WOULD BE ACCEPTABLE.
  - SOIL SHALL CONTAIN 1.5% MINIMUM ORGANIC MATTER BY WEIGHT. SOIL MUST CONTAIN SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION. IF THESE CONDITIONS CANNOT BE MET BY SOILS ON SITE, ADDING TOPSOIL IS REQUIRED
- IN ACCORDANCE WITH SECTION 21 STANDARD AND SPECIFICATION FOR TOPSOIL. AREAS PREVIOUSLY GRADED IN CONFORMANCE WITH THE DRAWINGS SHALL BE MAINTAINED IN A TRUE AND EVEN GRADE, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3-5" TO PERMIT BONDING OF THE TOPSOIL TO THE SURFACE AREA AND TO CREATE HORIZONTAL EROSION CHECK SLOTS TO PREVENT TOPSOIL FROM SLIDING DOWN A SLOPE.
- c. APPLY SOIL AMENDMENTS AS PER SOIL TESTS OR AS INCLUDED ON THE PLANS. MIX SOIL AMENDMENTS INTO THE TOP 3-5" OF TOPSOIL BY DISKING OR OTHER SUITABLE MEANS. LAWN AREAS SHOULD BE RAKED TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED AND APPLICATION. WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED, PREPARATION, LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE. STEEP SLOPES (STEEPER THAN 3:1) SHOULD BE TRACKED BY A DOZER LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. THE TOP 1-3" OF SOIL SHOULD BE LOOSE AND FRIABLE. SEEDBED LOOSENING MAY NOT BE NECESSARY ON NEWLY DISTURBED AREAS.
- SEED SPECIFICATIONS i. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED SHALL BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED SHALL HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON THIS JOB.
- NOTE: SEED TAGS SHALL BE MADE AVAILABLE TO THE INSPECTOR TO VERIFY TYPE AND RATE OF SEED USED. ii. INOCULATION - THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES SHALL BE A PURE CULTURE OF nitrogen-fixing bacteria prepared specifically for the species. Inoculants shall not be used later than THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANT AS DIRECTED ON PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75°-80° F. CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.
- METHODS OF SEEDING HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER). BROADCAST OR DROP SEEDED, OR A CULTIPACKER SEDER. a. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES AMOUNTS WILL NOT EXCEED
- THE FOLLOWING: NITROGEN; MAXIMUM OF 100 LBS. PER ACRE TOTAL OF SOLUBLE NITROGEN; P205 (PHOSPHOROUS); 200 LBS/AC; K20 (POTASSIUM): 200 LBS/AC. b. LIME - USE ONLY GROUND AGRICULTURAL LIMESTONE, (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING).
  NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNT OR
- HYDRATED LIME WHEN HYDROSEEDING. SEED AND FERTILIZER SHALL BE MIXED ON SITE AND SEEDING SHALL BE DONE IMMEDIATELY AND WITHOUT
- INTERRUPTION. ii. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS a. SEED SPREAD DRY SHALL BE INCORPORATED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON THE FEMPORARY OR PERMANENT SEEDING SUMMARIES OR TABLES 265 OR 266. THE SEEDED AREA SHALL THEN BE
- ROLLED WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT. WHERE PRACTICAL, SEED SHOULD BE APPLIED IN TWO DIRECTIONS PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.
- a. CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING. WHERE PRACTICAL, SEED SHOULD BE APPLIED IN TWO DIRECTIONS PERPENDICULAR TO EACH OTHER. APPLY HALF
- THE SEEDING RATE IN EACH DIRECTION. MULCH SPECIFICATIONS (IN ORDER OF PREFERENCE) STRAW SHALL CONSIST OF THOROUGHLY THRESHED WHEAT, RYE OR OAT STRAW, REASONABLE BRIGHT IN COLOR, AND
- SHALL NOT BE MUSTY, MOLDY. CAKED, DECAYED, OR EXCESSIVELY DUSTY AND SHALL BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW. WOOD CELLULOSE FIBER MULCH (WCFM)
- a. WCFM SHALL CONSIST OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS
- PHYSICAL STATE. WCFM SHALL BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.
- WCFM, INCLUDING DYE, SHALL CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS WCFM MATERIALS SHALL BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL SHALL FORM BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND SHALL COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE Grass seedlings.
- WCFM MATERIAL SHALL CONTAIN NO ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE
- WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH TO APPROXIMATELY 10 MM., DIAMETER APPROXIMATELY 1 MM., PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6% MAXIMUM AND WATER HOLDING CAPACITY OF 90% MINIMUM.

- NOTE: ONLY STERILE STRAW MULCH SHOULD BE USED IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED. MULCHING SEEDED AREAS - MULCH SHALL BE APPLIED TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
- i. IF GRADING IS COMPLETED OUTSIDE OF THE SEEDING SEASON, MULCH ALONE SHALL BE APPLIED AS PRESCRIBED IN this section and maintained until the seeding season returns and seeding can be performed in accordance WITH THESE SPECIFICATIONS.
- ii. WHEN STRAW MULCH IS USED, IT SHALL BE SPREAD OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS/ACRE. MULCH SHALL BE APPLIED TO A UNIFORM LOOSE DEPTH OF BETWEEN 1" AND 2". MULCH APPLIED SHALL ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. IF A MULCH ANCHORING TOOL IS TO BE USED,
- THE RATE SHOULD BE INCREASED TO 2.5 TONS/ACRE. iii. WOOD CELLULOSE FIBER USED AS A MULCH SHALL BE APPLIED AT A NET DRY WEIGHT OF 1,500 LBS, PER ACRE. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER, AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 LBS. OF WOOD
- CELLULOSE FIBER PER 100 GALLONS OF WATER. SECURING STRAW MULCH (MULCH ANCHORING): MULCH ANCHORING SHALL BE PERFORMED IMMEDIATELY FOLLOWING MULCH APPLICATION TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY
- PREFERENCE), DEPENDING UPON SIZE OF AREA AND EROSION HAZARD: i. A MULCH ANCHORING TOOL IS AS TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF TWO (2) INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD BE
- USED ON THE CONTOUR IF POSSIBLE. ii. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. THE FIBER BINDER SHALL BE APPLIED AT A NET DRY
- WEIGHT OF 750 POUNDS/ACRE. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER. APPLICATION OF LIQUID BINDERS SHOULD BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND CREST OF BANKS. THE REMAINDER OF AREA SHOULD BE APPEAR UNIFORM AFTER BINDER APPLICATION. SYNTHETIC BINDERS-SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70 PETROSET, TERRA TAX II, TERRA TACK AR OR OTHER APPROVED EQUAL MAY BE USED AT RATES RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH. LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
- NETTING IS USUALLY AVAILABLE IN ROLLS 4' TO 15' FEET WIDE AND 300 TO 3,000 FEET LONG. INCREMENTAL STABILIZATION - CUT SLOPES ALL CUT SLOPES SHALL BE DRESSED, PREPARED, SEEDED AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE EXCAVATED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 15'.
- CONSTRUCTION SEQUENCE (REFER TO FIGURE 3 BELOW): . EXCAVATE AND STABILIZE ALL TEMPORARY SWALES, SIDE DITCHES, OR BERMS THAT WILL BE USED TO CONVEY
- RUNOFF FROM THE EXCAVATION. PERFORM PHASE 1 EXCAVATION, DRESS, AND STABILIZE. PERFORM PHASE 2 EXCAVATION, DRESS, AND STABILIZE. OVERSEED PHASE 1 AREAS AS NECESSARY.
- PERFORM FINAL PHASE EXCAVATION, DRESS, AND STABILIZE. OVERSEED PREVIOUSLY SEEDED AREAS NECESSARY. NOTE: ONCE EXCAVATION HAS BEGUN THE OPERATION SHOULD FROM GRUBBING THROUGH THE COMPLETION OF GRADING AND PLACEMENT OF TOPSOIL (IF REQUIRED) AND PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OF COMPLETING THE OPERATION OUT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY STABILIZATION.
- INCREMENTAL STABILIZATION OF EMBANKMENTS FILL SLOPES EMBANKMENTS SHALL BE CONSTRUCTED IN LIFTS AS PRESCRIBED ON THE PLANS. SLOPES SHALL BE STABILIZED IMMEDIATELY WHEN THE VERTICAL HEIGHT OF THE MULTIPLE LIFTS REACHES 15", OR
- WHEN THE GRADING OPERATION CEASES AS PRESCRIBED IN THE PLANS. AT THE END OF EACH DAY, TEMPORARY BERMS AND PIPE SLOPE DRAINS SHOULD BE CONSTRUCTED ALONG THE TOP EDGE
- OF THE EMBANKMENT TO INTERCEPT SURFACE RUNOFF AND CONVEY IT DOWN THE SLOPE IN A NON-EROSIVE MANNER TO A SEDIMENT TRAPPING DEVICE. CONSTRUCTION SEQUENCE: REFER TO FIGURE 4 (BELOW): a. EXCAVATE AND STABILIZE ALL TEMPORARY SWALES, SIDE DITCHES, OR BERMS THAT WILL BE USED TO DIVERT
- RUNOFF AROUND THE FILL. CONSTRUCT SLOPE SILT FENCE ON LOW SIDE OF FILL AS SHOWN IN FIGURE 5, UNLESS OTHER METHODS SHOWN ON THE PLANS ADDRESS THIS AREA.
- b. PLACE PHASE 1 EMBANKMENT, DRESS, AND STABILIZE. PLACE PHASE 2 EMBANKMENT, DRESS, AND STABILIZE.
- d. Place final phase embankment, dress, and stabilize. Overseed previously seeded areas as neccessary. NOTE: ONCE THE PLACEMENT OF FILL HAS BEGUN THE OPERATION SHOULD BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION OF AND PLACEMENT OF TOPSOIL (IF REQUIRED) GRADING AND PERMANENT SEED AND MULCH. ANY YTERRUPTIONS IN THE OPERATION OR COMPLETING THE OPERATION UOT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY STABILIZATION

#### SECTION 2 - TEMPORARY SEEDING

VEGETATION - ANNUAL GRASS OR GRAIN USED TO PROVIDE COVER ON THE DISTURBED AREAS FOR UP TO 12 MONTHS. FOR LONGER DURATION OF VEGETATIVE COVER, PERMANENT SEEDING IS REQUIRED.

- A. SEED MIXTURES TEMPORARY SEEDING
  I. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE 26 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE 5) AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW, ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLANS AND COMPLETED, THEN TABLE 26 MUST BE PUT ON THE PLANS.
- FOR SITES HAVING SOIL TESTS PERFORMED, THE RATES SHOWN ON THE TABLE SHALL BE DELETED AND ihe rates recommended by the testing agency shall be written in soil tests are not required for

SEED MIXTURE (HARDINESS ZONE6b) FROM TABLE 26					FERTILIZER RATE	LIME RATE	
NO.	SPECIES	APPLICATION RATE ( b/ac)	SEEDING DATES	SEEDING DEPTHS	(10-10-10)		
1	BARLEY OATS RYE	122 96 140	3/1 - 5/15, 8/15 - 10/15	1" - 2" 1" - 2" 1" - 2"	600 lb/ac (15 lb/1000sf)	2 tons/ac (100 lb/1000sf)	

### SECTION 3 - PERMANENT SEEDING

seeding grass and legumes to establish ground cover for a minimum of one year on disturbed areas generally

- SELD MIXTURES PERMANENT SEEDING

  1. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE 25 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE 5) AND ENTER THEM IN THE PERMANENT SEEDING SUMMARY BELOW, ALONG WITH APPLICATION RATES AND SEEDING DATES. SEEDING DEPTHS CAN BE ESTIMATED USING TABLE 26. IF THIS SUMMARY IS NOT PUT ON THE CONSTRUCTION PLANS AND COMPLETED, THEN TABLE 25 MUST BE PUT ON THE PLANS. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SUCH AS SHORELINES, STREAMBANKS, OR DUNES OR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-5CS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 CRITICAL AREA PLANTING. FOR SPECIAL LAWN MAINTENANCE AREAS, SEE SECTIONS IV SOD V TURFGRASS.

  II. FOR SITES HAVING DISTURBED AREA OVER 5 AREAS, THE RATES SHOWN ON THIS TABLE SHALL BE DELETED AND THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY SHALL BE WRITTEN IN.

  III. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREAFORM FERTILIZER (46-0-0) AT 3 1/2 LBS/1000 SQ. FT. (LBS./AC.), IN ADDITION TO THE ABOVE SOIL AMENDMENTS SHOWN IN THE TABLE BELOW, TO BE PERFORMED AT THE TIME OF SEEDING.

	SEED MIXTURE (HARDINESS ZONE6b) FROM TABLE 25					FERTILIZER RATE (10-20-20)		
NO.	SPECIES	APPLICATION RATE (Jb/ac)	SEEDING DATES	SEEDING DEPTHS	N.	P205	K20	
3	TALL FESCUE (05%) PERENNIAL RYE GRASS (10%) KENTUCKY BLUEGRASS (5%)	125 15 10	3/1 - 5/1 <b>5</b> , 8/15 - 10/15	1" - 2"	90 lb/ac (2.0 lb/	175  b/ac (4  b/	175 lb/ac (4 lb/	2 tons/ac (100 lb/
10	TALL FESCUE (00%) HARD FESCUE (20%)	120 30	3/1 - 5/15, 0/15 - 10/15	i" - 2"	1000sf)	1000sf)	1000sf)	1000sf)

### BLAZE ORANGE PLASTIC MESH

DEVELOPER'S CERTIFICATION T/WE HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNE NVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING

THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS bull W. Knighel, FOR: LAND DOSIGN & Devotopment, INC. 050604

ENGINEER'S CERTIFICATION I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY

PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS

PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

# SEDIMENT CONTROL NOTES

- 1) A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL
- DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1055). 2) ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR
- SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN; a) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1, b) 14 DAYS AS TO ALL OTHER
- DISTURBED OR GRADED AREAS ON THE PROJECT SITE. 4) ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12,
- OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE. 5) ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 51), SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50), AND MULCHING (SEC. 52), TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- 6) ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- 7) SITE ANALYSIS TOTAL AREA OF SITE . . . . . . . . . . 5.30 ACRES (RECORD PLAT) TOTAL CUT > N/A; WATER & SEWER MAIN INSTALLATION ONLY
- OFFSITE WASTE/BORROW AREA LOCATION 8) ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF
- DISTURBANCE ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- 10) ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- 11) TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THE THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

## SECTION 21: STANDARD AND SPECIFICATIONS FOR TOPSOIL

1) DEFINITION: PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT YEGETATION.
2) PURPOSE: TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. 3) SPECIFICATIONS: A.TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY

LOAM, OR LOAMY SAND. B.TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING SUBSOILS. C.TOPSOIL SHALL CONTAIN LESS THAN 5% BY VOLUME OF CINDERS, GRAVEL, STICKS, ROOTS, TS:ASH, OR OTHER MATERIALS LARGER THAN 1.5" IN DIAMETER.

A.TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4"- 8" LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4"; AVOID SURFACE IRREGULARITIES.

B.PLACE TOPSOIL AND APPLY SOIL AMENDMENTS AS SPECIFIED IN "STANDARDS AND

SPECIFICATIONS FOR VEGETATIVE STABILIZATION". C.TOPSOIL SHALL NOT BE PLACED DURING FROZEN, MUDDY, OR EXCESSIVELY WET

BULGES OCCUR OR WHEN SEDIMENT ACCUMULATION REACHED 50% OF THE FABRIC HEIGHT. SILT FENCE

10' MAXIMUM CENTER TO

FLOW

36" MINIMUM FENCE

FLOW

FILTER

CLOTH ~--

POST LENGTH

EMBED GEOTEXTILE CLASS F

INTO THE GROUND

CONSTRUCTIONS SPECIFICATIONS

50 LBS/IN (MIN.)

20 LBS/IN (MIN.)

75% (MIN.)

FOLDED AND STAPLED TO PREVENT SEDIMENT BYPASS.

1. FENCE POSTS SHALL BE A MINIMUM OF 36" LONG DRIVEN 16" MINIMUM INTO THE

2. GEOTEXTILE SHALL FASTENED SECURELY TO EACH FENCE POST WITH WIRE TIES

GROUND. WOOD POSTS SHALL BE 11/2" X 11/2" SQUARE (MINIMUM) CUT, OR 13/4" DIAMETER

(MINIMUM) ROUND AND SHALL BE OF SOUND QUALITY HARDWOOD. STEEL POSTS WILL BE

STANDARD 'T' OR 'U' SECTION WEIGHTING NOT LESS THAN 1.00 POUND PER LINEAR FOOT.

OR STAPLES AT TOP OR MID-SECTION AND SHALL MEET THE FOLLOWING REQUIREMENTS

0.3 GAL. FT. / MINUTE (MAX.)2

3. WHERE ENDS OF GEOTEXTILE FABRIC COME TOGETHER, THEY SHALL BE OVERLAPPED,

4. SILT FENCE SHALL BE INSPECTED AFTER EACH RAINFALL EVENT AND MAINTAINED WHEN

A MINIMUM OF B" VERTICALLY

- Center -

PERSPECTIVE VIEW

TOP VIEW

POSTS ¬

STAPLE

JOINING TWO ADJACENT SILT

FENCE SECTIONS

FOR GEOTEXTILE CLASS 'F':

TENSILE STRENGTH

TENSILE MODULUS

FILTERING EFFICIENCY

FLOW RATE

SECTION A

# SEQUENCE OF CONSTRUCTION

- 36" MINIMUM LENGTH FENCE POST.

16" MINIMUM HEIGHT OF

GEOTEXTILE CLASS F

- 6" MINIMUM DEPTH IN

FENCE POST SECTION

MINIMUM 20" ABOVE

-- FENCE POST DRIVEN A

MINIMUM OF 16" INTO

STANDARD SYMBOL

UNDISTURBED

GROUND

GROUND

\_ THE GROUND

TEST: MSMT 509

TEST: MSMT 509

TEST: MSMT 322

TEST: MSMT 322

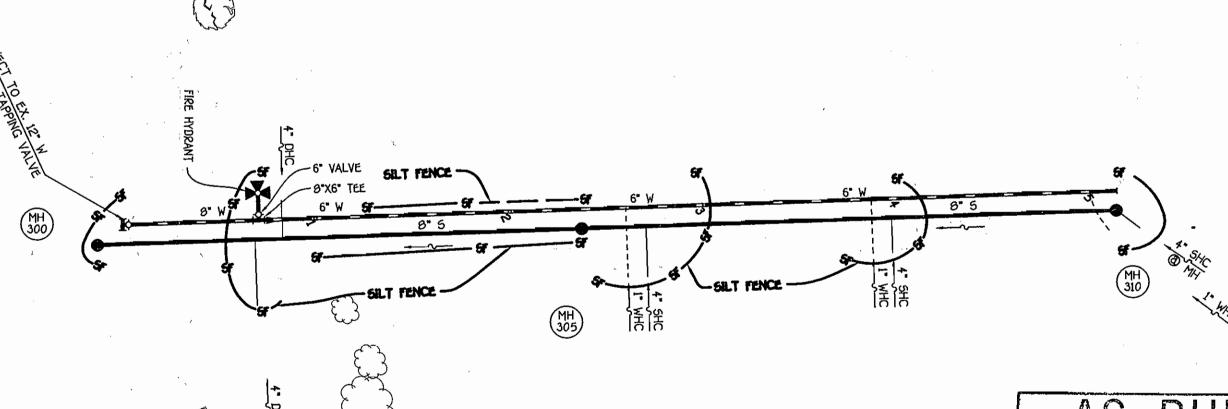
DRIVEN A MINIMUM OF 16" INTO

GROUND

CROSS SECTION

- OBTAIN THE REQUIRED GRADING PERMIT.

  NOTIFY MISS UTILITY 40 HOURS BEFORE ANY WORK
  (1-800-257-7777). NOTIFY HOWARD COUNTY CONSTRUCTION/INSPECTION
- Division 24 Hours before starting any work ((410)313-1870). INSTALL THE REQUIRED SEDIMENT AND EROSION CONTROL DEVICES AS
- INDICATED ON THIS SHEET. CLEAR AND GRUB AS NECESSARY, ONLY AS REQUIRED FOR EXCAVATION AND INSTALLATION OF THE WATER & SEWER MAINS, AND ONLY
- WITHIN THE DESIGNATED WATER, SEWER AND UTILITY EASEMENT: NOTE: THE LENGTH OF OPEN WATER & SEWER MAIN TRENCH SHALL BE
- LIMITED TO THREE (3) PIPE LENGTHS OR THAT WHICH WILL BE BACKFILLED AND STABILIZED WITHIN ONE CO WORKING DAY, WHICHEVER IS SHORTER. CONSTRUCT THE WATER & SEWER MAINS AND APPURTENANCES . STABILIZE SEED AND MULCH ALL DISTURBED AREAS IN ACCORDANCE
- WITH THE PERMANENT SEEDING NOTES SHOWN ON THIS SHEET.
  FOLLOWING SUCCESSFUL STABILIZATION OF ALL DISTURBED AREAS,
  AND AFTER PERMISSION HAS BEEN OBTAINED FROM THE HOWARD
  COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE ALL EROSION AND
  SEDIMENT CONTROL DEVICES.



NOTE: THIS PLAN VIEW TO BE USED ONLY FOR EROSION & SEDIMENT CONTROL MEASURES.

DATE: JUNE 2005

NOTE: SEE PLAN VIEW SHEET 1 OF 3 FOR LIMIT OF DISTURBANCE (LOD).

CONTRACT NO. 14-4107-D CURRAN PROPERTY; LOTS 1 THRU 5 water & sewer main extensions HOWARD COUNTY, MARYLAND

EROSION & SEDIMENT CONTROL PLAN

SEDIMENT CONTROL NOTES & DETAILS

# CURRAN PROPERTY

LOTS 1 THRU 5 CONTRACT NO. 14-4187-D FIRST ELECTION DISTRICT SHEET

HOWARD COUNTY, MARYLAND HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS

DEPARTMENT OF PLANNING AND ZONING

FISHER, COLLINS & CARTER, INC. IL ENGINEERING CONSULTANTS & LAND SÜRVEYOR ouare office park – 10272 baltimòre national pi ELLICOTT CITY, MARYLAND 21042

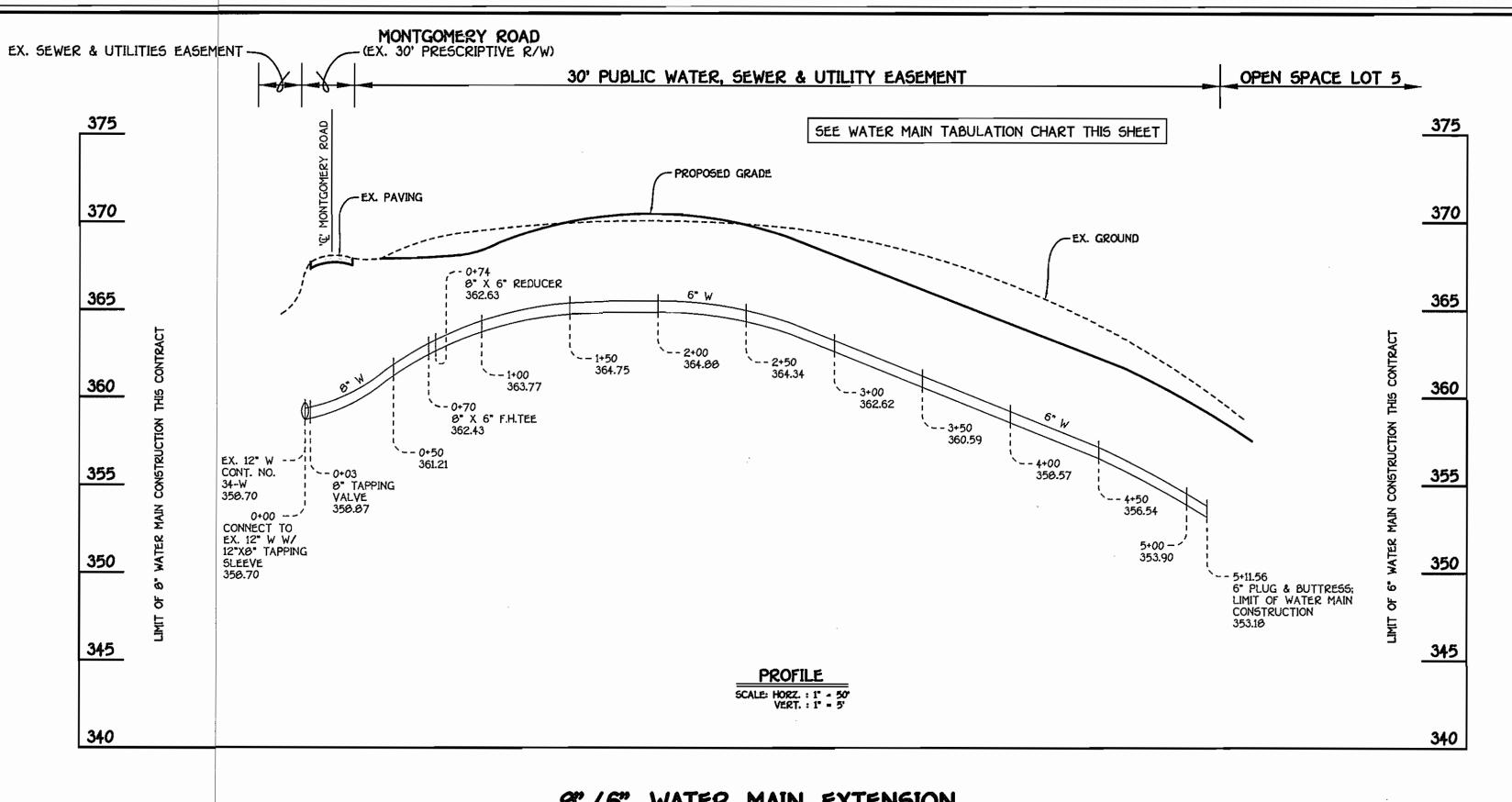
13204 32 OF MAR

DESIGNED BY P.W.K DRAWN BY D.Y.B. CHECKED BY P.W.K. DATE: MAY, 2004

REVISION

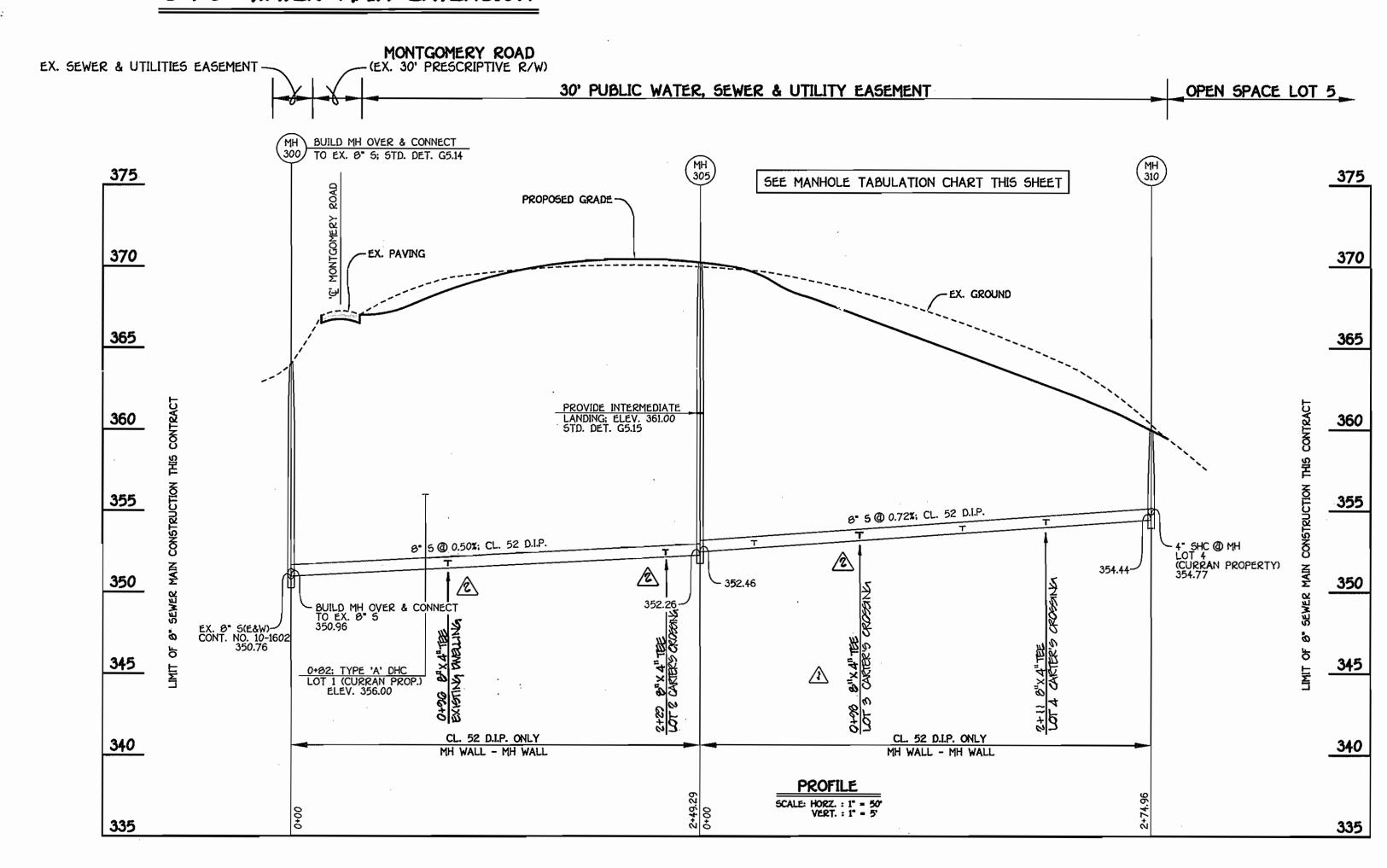
600' SCALE MAP NO. 37 BLOCK NO. 4 & 5 F.C.C. WORK ORDER NO. 30768 DATE | FILE NAME : 30760 FINAL WATER AND SEWER DETAILS SHT

HOWARD COUNTY, MARYLAND



WATER MAIN TABULATION CHART								
W.M. STATION	APPURTENANCE	NORTHING	easting					
	6" W/6"W: 30" WATER, SEWER & UTILITY EASEMENT							
0+00.00	12" X 8" TAPPING SLEEVE	563432.02	1370457.40					
0+03.77	0" TAPPING VALVE	563434.74	1376456.77					
0+70.00	0" x 6" Tee	563496.48	1370404.76					
0+74.00	8" X 6" REDUCER	563500.17	1378486.31					
5+11.56	6" PLUG & BUTTRESS	563903.49	1378656.09					

# 8"/6" WATER MAIN EXTENSION



563898.96 1378665.04 \* SET MH RIMS FLUSH W/ PROPOSED FINISHED GRADE \*\* SET MH RIM FLUSH W/ EXISTING GRADE

563415.77

563645.54

MANHOLE TABULATION CHART

13**78461.65** 

1370550.36

RIM ELEVATION

364.00 \*\*

369.97 \*

359.96 \*

# 8" SEWER MAIN EXTENSION

DATE: JUNE 2005

CONTRACT NO. 14-4107-D

CURRAN PROPERTY: LOTS 1 THRU 5

WATER & SEWER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

305

FISHER, COLLINS & CARTER, INC. Uare office park – 10272 baltimore national pi Ellicott city, maryland 21042 (410) 461 – 2855



DESIGNED BY :				
P.W.K.				
DRAWN BY : D.Y.B.				
D. (.D.			,	
CHECKED BY : P.W.K.	FCC	12	revised type in thus to 8"x4" tees for lots 1,2 &3	2/2
DATE : May, 2004	ECC	$\Lambda$	REVISED SEVER PROPILE TO REPLECT SHO'S	8/3
	BY	NO.	REVISION	DΑ

WATER & SEWER MAINS PROFILES

600' SCALE MAP NO. 37 BLOCK NO. 4 & 5 F.C.C. WORK ORDER NO. 30760 FILE NAME : 30760 FINAL WATER AND SEWER PLAN SHT

CURRAN PROPERTY

LOTS 1 THRU 5 CONTRACT NO. 14-4107-D FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SHEET 2 of 3

**SCALE** 

SHOWN

