EROSION CONTROL NOTES

1. **DESCRIPTION OF CONSTRUCTION:**
A SITE PLAN FOR A PARKING LOT CONSTRUCTION WITH APPROPRIATE STORM SEWER.

2. **AREA AFFECTED BY CONSTRUCTION (GRADED AREA):**
1.69 ACRES.

3. **EXISTING SOIL DATA:**
ROSSMOYNE–URBAN LAND COMPLEX 0–8%

4. **RECEIVING WATERS:**
TRIBUTARY TO SYCAMORE CREEK

5. **POTENTIAL POLLUTION SOURCES:**
– REMOVAL OF NATURAL PLANT COVER.
– CUT AND FILL AREAS EXPOSED TO EROSION AND RUNOFF PRIOR TO STABILIZATION.
– CHANGES IN VOLUME AND DURATION OF WATER CONCENTRATIONS CAUSED BY ALTERING STEEPNESS, DISTANCE AND SURFACE ROUGHNESS.
– ROADWAY SUBGRADE PRIOR TO PAVING.
– REDUCTION OF PERMEABILITY OF SOILS CAUSING ADDITIONAL RUNOFF DUE TO COMPACTION BY HEAVY EQUIPMENT.

6. **RUNOFF COEFFICIENTS: (FOR APPROPRIATE DRAINAGE AREA)**
PRE–DEVELOPMENT RUNOFF COEFFICIENT = 0.55
POST CONSTRUCTION RUNOFF COEFFICIENT = 0.75

7. **PROJECT SCHEDULE:**
BEGIN CONSTRUCTION: WINTER 2012
END CONSTRUCTION: FALL 2012

GENERAL CONSTRUCTION SEQUENCE *
A. INSTALL SEDIMENT CONTROL MEASURES
B. PRESERVE AND PROTECT EXISTING VEGETATION
C. INSTALL STORM WATER MANAGEMENT MEASURES
D. CONSTRUCT SITE UTILITIES
E. GRADE SITE / STOCKPILE TOPSOIL
F. TEMPORARY VEGETATIVE STABILIZATION OF CONTROL MEASURES
G. VEGETATIVE COVER ON ALL AREAS TO BE EXPOSED LONGER THAN 45 DAYS
H. INSTALL ROAD AND PARKING SUBGRADE
I. SURFACE ROADS AND PARKING
J. PERMANENT VEGETATIVE STABILIZATION

* TO BE FOLLOWED IN GENERAL ORDER FOR BEST MANAGEMENT PRACTICE, SOME INDIVIDUAL SITE CONSTRUCTION MAY NOT ALLOW FOR EXACT SEQUENCE.

8. **CONTROL MEASURES FOR STORM WATER RUNOFF, EROSION AND SEDIMENT:**

STABILIZATION OF DENUDED AREAS AND SOIL STOCKPILES

PERMANENT OR TEMPORARY SOIL STABILIZATION WILL BE APPLIED TO DENUDED AREAS WITHIN 7 DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. SOIL STABILIZATION WILL ALSO BE APPLIED TO DENUDED AREAS WHICH MAY NOT BE AT FINAL GRADE BUT WILL REMAIN UNDISTURBED FOR MORE THAN 45 DAYS. APPLICABLE PRACTICES INCLUDE VEGETATIVE ESTABLISHMENT, MULCHING, AND THE EARLY APPLICATION OF GRAVEL BASE ON AREAS TO BE PAVED. SOIL STABILIZATION MEASURES WILL BE SELECTED TO BE APPROPRIATE FOR THE TIME OF YEAR, SITE CONDITIONS, AND ESTIMATED DURATION OF USE. SOIL STOCKPILES WILL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES TO PREVENT SOIL LOSS.

ESTABLISHMENT OF PERMANENT VEGETATION

A PERMANENT VEGETATIVE COVER WILL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION WILL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED WHICH IS MATURE ENOUGH TO CONTROL SOIL EROSION SATISFACTORILY AND TO SURVIVE SEVERE WEATHER CONDITIONS.

PROTECTION OF ADJACENT PROPERTIES

PROPERTIES ADJACENT TO THE SITE OF LAND DISTURBANCE WILL BE PROTECTED FROM SEDIMENT DEPOSITION. THIS WILL BE ACCOMPLISHED BY PRESERVING A WELL VEGETATED BUFFER STRIP AROUND THE LOWER PERIMETER OF LAND DISTURBANCE, BY INSTALLING PERIMETER CONTROLS SUCH AS SEDIMENT TRAPS, FILTERS OR DIKES, OR SEDIMENT BASINS, OR BY A COMBINATION OF SUCH MEASURES. VEGETATED FILTER STRIPS MAY BE USED ALONE ONLY WHERE RUNOFF IN SHEET FLOW IS EXPECTED. FILTER STRIPS SHOULD BE AT LEAST 15 FEET IN WIDTH. IF AT ANY TIME IT IS FOUND THAT A VEGETATED FILTER STRIP ALONE IS INEFFECTIVE IN STOPPING SEDIMENT MOVEMENT INTO ADJACENT PROPERTY, ADDITIONAL PERIMETER CONTROLS MUST BE PROVIDED.

TIMING AND STABILIZATION OF SEDIMENT TRAPPING MEASURES

SEDIMENT BASINS, DIVERSIONS, SEDIMENT TRAPS, AND OTHER MEASURES INTENDED TO TRAP SEDIMENT ON–SITE WILL BE CONSTRUCTED AS A FIRST STEP IN GRADING AND BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE. EARTHEN STRUCTURES SUCH AS DAMS, DIKES, AND DIVERSIONS WILL BE SEEDED AND MULCHED AFTER INSTALLATION.

SEDIMENT BASINS

STORMWATER RUNOFF CONTAINING DAMAGING AMOUNTS OF SEDIMENT SHALL PASS THROUGH A SEDIMENT BASIN OR OTHER SUITABLE SEDIMENT TRAPPING FACILITY.

CUT AND FILL SLOPES

CUT AND FILL SLOPES WILL BE DESIGNED AND CONSTRUCTED IN A MANNER WHICH WILL MINIMIZE EROSION. SLOPES WHICH ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE YEAR OF CONSTRUCTION WILL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES UNTIL THE PROBLEM IS CORRECTED.

STORMWATER MANAGEMENT

CONCENTRATED STORMWATER RUNOFF LEAVING THE SITE WILL BE DISCHARGED DIRECTLY INTO A WELL DEFINED ADEQUATELY PROTECTED NATURAL OR MAN–MADE OFF SITE RECEIVING CHANNEL OR PIPE. IF NO OFF SITE CHANNEL OR PIPE EXISTS, THE STORMWATER WILL BE DETAINED ON SITE IN A SUITABLE RETENTION/DETENTION FACILITY.

STABILIZATION OF WATERWAYS AND OUTLETS

ALL ON SITE STORMWATER CONVEYANCE CHANNELS WILL BE DESIGNED AND CONSTRUCTED TO WITHSTAND THE EXPECTED VELOCITY OF FLOW FROM A 10 YEAR FREQUENCY STORM WITHOUT EROSION. DESIGN FOR A LARGER MAY BE NECESSARY FOR PROTECTION FROM THE STORMWATER FLOW. STABILIZATION ADEQUATE TO PREVENT EROSION WILL ALSO BE PROVIDED AT THE OUTLETS OF ALL PIPES AND PAVED CHANNELS.

STORM WATER INLET PROTECTION

ALL STORM SEWER INLETS WHICH ARE MADE OPERABLE DURING CONSTRUCTION WILL BE PROTECTED SO THAT SEDIMENT–LADEN WATER WILL NOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.

WORKING IN OR CROSSING WATERCOURSES

CONSTRUCTION VEHICLES WILL BE KEPT OUT OF WATERCOURSES WHENEVER POSSIBLE. WHERE IN–CHANNEL WORK IS NECESSARY, PRECAUTIONS WILL BE TAKEN TO STABILIZE THE WORK AREA DURING CONSTRUCTION TO MINIMIZE EROSION. THE CHANNEL (INCLUDING BED AND BANKS) WILL ALWAYS BE RESTABILIZED IMMEDIATELY AFTER IN–CHANNEL WORK IS COMPLETED. WHERE A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES REGULARLY DURING CONSTRUCTION, A TEMPORARY STREAM CROSSING WILL BE PROVIDED.

CONSTRUCTION ACCESS ROUTES AND PARKING AREAS

WHENEVER CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED PUBLIC ROADS, PROVISIONS WILL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT (MUD) BY RUNOFF OR VEHICLE TRACKING ONTO THE PAVED SURFACE. TEMPORARY CONSTRUCTION ROADS WILL FOLLOW THE CONTOUR OF THE NATURAL TERRAIN TO THE EXTENT POSSIBLE. SLOPES SHOULD NOT EXCEED 10 PERCENT. ROADBEDS SHALL BE AT LEAST 14 FEET WIDE FOR ONE–WAY TRAFFIC AND 20 FEET WIDE FOR TWO–WAY TRAFFIC. TEMPORARY PARKING AREAS WILL BE LOCATED ON NATURALLY FLAT AREAS WHENEVER POSSIBLE TO MINIMIZE GRADING. GRADES FOR SAID PARKING AREAS SHOULD BE SUFFICIENT TO PROVIDE DRAINAGE BUT NOT EXCEED 4 PERCENT SLOPE. BOTH TEMPORARY AND PERMANENT ROADS AND PARKING AREAS MAY REQUIRE PERIODIC TOP DRESSING WITH NEW GRAVEL. SEEDED AREAS ADJACENT TO ROADS AND PARKING AREAS WILL BE CHECKED PERIODICALLY TO ENSURE THAT A VIGOROUS STAND OF VEGETATION IS MAINTAINED.

DISPOSITION OF TEMPORARY MEASURES

ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES WILL BE DISPOSED OF AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED. TRAPPED SEDIMENT AND OTHER DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES WILL BE PERMANENTLY STABILIZED TO PREVENT EROSION AND SEDIMENTATION.

MAINTENANCE

ALL TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL MEASURES WILL BE MAINTAINED AND REPAIRED AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION.

• STORM INLET PROTECTION

INLET STRUCTURES SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED. SEDIMENT SHALL BE REMOVED AND THE INLET PROTECTION SHALL BE RESTORED TO ITS ORIGINAL WORKING CONDITION. AT NO TIME SHALL MORE THAN A 2" BUILD UP OF SEDIMENT REMAIN AROUND THE INLET PROTECTION.

• FILTER STRIPS

A HEALTHY GROWTH OF VEGETATION CAN BEST BE MAINTAINED BY FERTILIZING, REMOVING SEDIMENT WHEN FILTER BECOMES CLOGGED, AND BY PREVENTING CONSTRUCTION TRAFFIC FROM DRIVING ACROSS FILTER STRIPS.

• SILT FENCES AND FILTER BARRIERS

SILT FENCES AND FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.

• STRAW BALE BARRIERS

STRAW BALE BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.

9. **CONSTRUCTION CONTROL PRACTICES:**

SILT FENCE (SF) (SEE DETAIL)

MATERIAL: SYNTHETIC FILTER FABRIC SHALL BE A SHEET OF PROPYLENE, NYLON, POLYESTER OR ETHYLENE YARN AND SHALL BE CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE FOLLOWING REQUIREMENTS.

PHYSICAL PROPERTY	REQUIREMENTS
FILTERING EFFICIENCY	75 PERCENT (MIN)
TENSILE STRENGTH AT 20% (MAX) ELONGATION	EXTRA STRENGTH 50 lbs/lin. in. (MIN) STANDARD STRENGTH 30 lbs/lin. in. (MIN)
FLOW RATE	0.3 gal./sq. ft./min. (MIN)

* REQUIREMENTS REDUCED BY 50% AFTER 6 MONTHS OF INSTALLATION.

SYNTHETIC FILTER FABRIC SHALL CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 6 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE OF ZERO DEGREES F TO 120 DEGREES F.

BURLAP SHALL BE 10 OUNCES PER SQ. YD. OF FABRIC.

POSTS FOR SILT FENCES SHALL BE EITHER 4" x 4" WOOD OR STEEL WITH A MIN. LENGTH OF 5 FEET. STEEL POSTS SHALL HAVE PROJECTIONS FOR FASTENING WIRE TO THEM.

WIRE FENCE REINFORCEMENT FOR SILT FENCES USING STANDARD STRENGTH FILTER CLOTH SHALL BE A MIN. OF 42 INCHES IN HEIGHT, A MIN. OF 14 GA. AND SHALL HAVE A MAX. MESH SPACING OF 6 INCHES.

THE STANDARD STRENGTH FILTER FABRIC SHALL BE STAPLED OR WIRED TO THE FENCE, AND 8 INCHES OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. THE FABRIC SHALL NOT EXCEED 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE. FILTER FABRIC SHALL NOT BE STAPLED TO EXISTING TREES.

THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MIN. 6 INCH OVERLAP, AND SECURELY SEALED.

POSTS SHALL BE SPACED AT A MAX. OF 10 FEET APART. WHEN EXTRA STRENGTH FABRIC IS USED WITHOUT THE WIRE SUPPORT FENCE, POST SPACING SHALL NOT EXCEED 6 FEET.

WHEN EXTRA STRENGTH FILTER FABRIC AND CLOSER POST SPACING ARE USED, THE WIRE MESH SUPPORT FENCE MAY BE ELIMINATED. IN SUCH A CASE, THE FILTER FABRIC IS STAPLED OR WIRED DIRECTLY TO THE POSTS WITH ALL OTHER PROVISIONS APPLYING.

CHECK DAM (CD) (SEE DETAIL)

CHECK DAMS ARE USUALLY INEFFECTIVE FOR CATCHING SEDIMENT BUT CAN SLOW FLOW VELOCITIES AND REDUCE CHANNEL EROSION. ROCK TYPE AND SIZE OF THE DAM ARE TO BE DETERMINED BY THE ENGINEER.

IF AT ANY TIME IT IS FOUND THAT A CHECK DAM ALONE IS INEFFECTIVE IN ADEQUATELY PERFORMING ITS FUNCTION, ADDITIONAL CONTROL MEASURES MUST BE PROVIDED.

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT (SEE DETAIL)

CONSTRUCTION SPECIFICATIONS

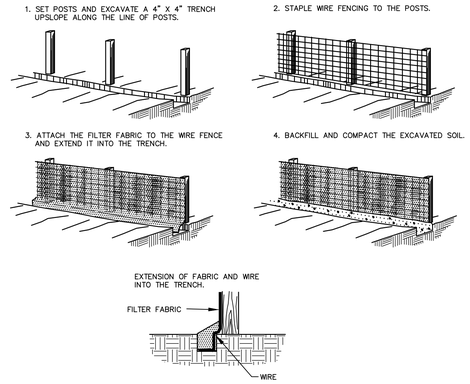
1. THE AGGREGATE SIZE FOR CONSTRUCTION OF THE PAD SHALL BE 2–TO 3–INCH STONE. PLACE THE GRAVEL TO THE SPECIFIC GRADE AND DIMENSIONS SHOWN ON THE PLANS, AND SMOOTH IT.
2. THE THICKNESS OF THE PAD SHALL NOT BE LESS THAN 6 INCHES. USE GEOTEXTILE FABRICS, IF NECESSARY, TO IMPROVE STABILITY OF THE FOUNDATION IN LOCATIONS SUBJECT TO SEEPAGE OR HIGH WATER TABLE. GEOTEXTILE SHALL HAVE A GRAB TENSILE STRENGTH OF 200 LB. AND A MULLEN BURST STRENGTH OF AT LEAST 190 LB.
3. THE WIDTH OF THE PAD SHALL NOT BE LESS THAN THE FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS AND IN ANY CASE SHALL NOT BE LESS THAN 12 FEET WIDE.
4. THE LENGTH OF THE PAD SHALL BE AS REQUIRED, BUT NOT LESS THAN 50 FEET.
5. LOCATE CONSTRUCTION ENTRANCES AND EXITS TO LIMIT SEDIMENT LEAVING THE SITE AND TO PROVIDE FOR MAXIMUM UTILITY BY ALL CONSTRUCTION VEHICLES. AVOID ENTRANCES WHICH HAVE STEEP GRADES AND ENTRANCES AT CURVES IN PUBLIC ROADS.
6. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
7. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS–OF–WAY SHALL BE REMOVED IMMEDIATELY. PROVIDE DRAINAGE TO CARRY WATER TO A SEDIMENT TRAP OR OTHER SUITABLE OUTLET.
8. WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS–OF–WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
9. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE THROUGH USE OF SAND BAGS, GRAVEL, STRAW BALES, OR OTHER APPROVED METHODS.
10. A CULVERT SHALL BE CONSTRUCTED UNDER THE ENTRANCE IF NEEDED TO PREVENT SURFACE WATER FLOWING ACROSS THE ENTRANCE AND FROM BEING DIRECTED OUT ONTO PAVED SURFACES.

INSPECTION AND MAINTENANCE

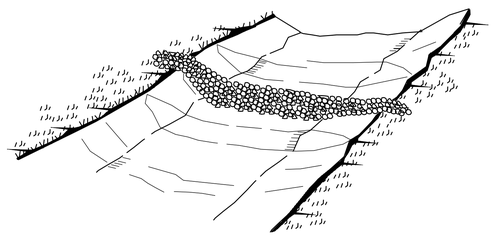
1. MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE.
2. REPLACE GRAVEL MATERIAL WHEN SURFACE VOIDS ARE VISIBLE.
3. AFTER EACH RAINFALL, INSPECT ANY STRUCTURE USED TO TRAP SEDIMENT AND CLEAN IT OUT AS NECESSARY.
4. IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS. REMOVE ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS WITHIN 24 HOURS.

10. **FINAL SITE STABILIZATION**

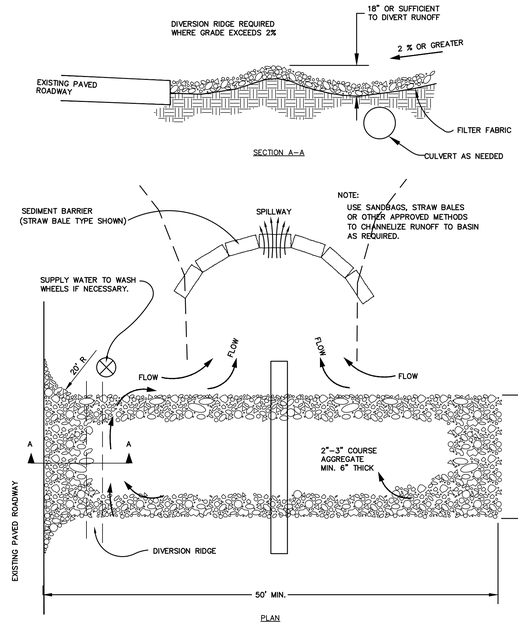
FINAL SITE STABILIZATION IS CONSIDERED ACHIEVED ONCE ALL TEMPORARY EROSION AND SEDIMENT CONTROL PRACTICES ARE REMOVED AND DISPOSED OF AND ALL TRAPPED SEDIMENT HAS BEEN PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION.



SILT FENCE (SF)



CHECK DAM (CD)

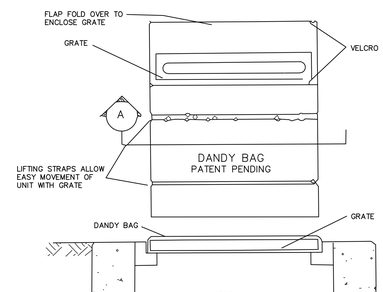


TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT

DANDY BAG NOTES:

1. TO BE INSTALLED ON EXISTING CATCH BASINS PRIOR TO STARTING CONSTRUCTION.

2. TO BE INSTALLED ON PROPOSED CATCH BASINS ONCE BUILT AND TO REMAIN ON UNTIL 75% OF THE LANDSCAPE AREA IS VEGETATED.



INSTALLATION: STAND GRATE ON END. PLACE DANDY BAG OVER GRATE. ROLL GRATE OVER SO THAT OPEN END IS UP.
PULL UP SLACK. TUCK FLAP IN PRESS VELCRO STRIPS TOGETHER. BE SURE END OF GRATE IS COMPLETELY COVERED BY FLAP OR DANDY BAG WILL NOT WORK PROPERLY.
HOLDING HANDLES CAREFULLY PLACE DANDY BAG WITH GRATE INSERTED INTO CATCH BASIN FRAME.
MAINTENANCE WITH A STIFF BRISTLE BROOM OR SQUARE POINT SHOVEL. REMOVE SILT & OTHER DEBRIS OFF SURFACE AFTER EACH EVENT. REMOVE FINE MATERIAL FROM INSIDE EVELOPE AS NEEDED.

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DANDY BAG DETAIL

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THE JEWISH HOSPITAL
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Seal:

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DAVID V. WRIGHT, III
E–68774
REGISTERED
PROFESSIONAL ENGINEER

Description:	Date:	No:

N

Key Plan:

EROSION CONTROL NOTES & DETAILS

Project No.: Scale: NO SCALE

Sheet No.: C700

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