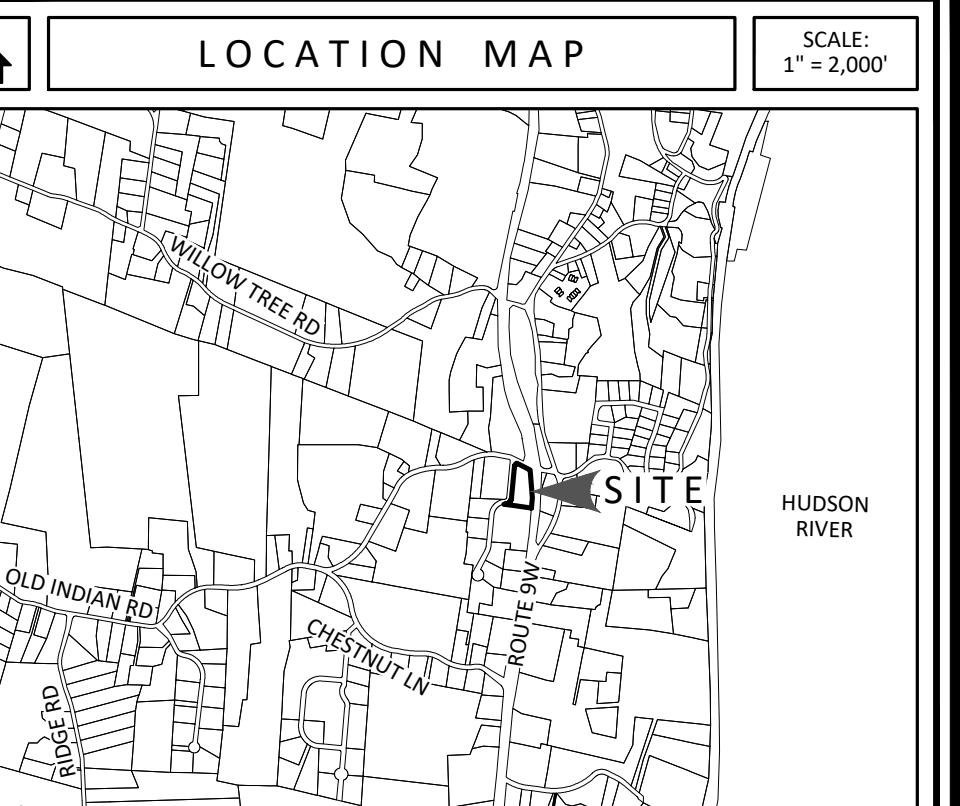


DEEP TEST RESULTS			
TEST	ROCK DEPTH	WATER DEPTH	SOIL PROFILE
DT-1	40"	--	0"-12" - TOPSOIL 12"-24" - GRAVELLY LOAM 24"-40" - CLAY
DT-2	38"	--	0"-8" - TOPSOIL 8"-38" - GRAVELLY LOAM

NOTE: DEEP TESTS WERE COMPLETED ON DECEMBER 9, 2022 IN THE PRESENCE OF ULSTER COUNTY DEPARTMENT OF HEALTH REPRESENTATIVE CHRIS KRESSER.

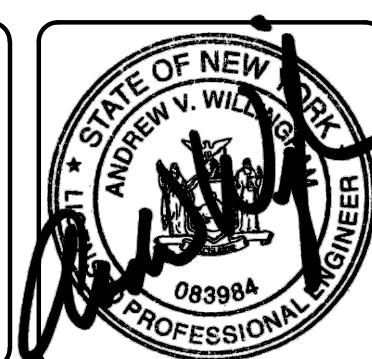
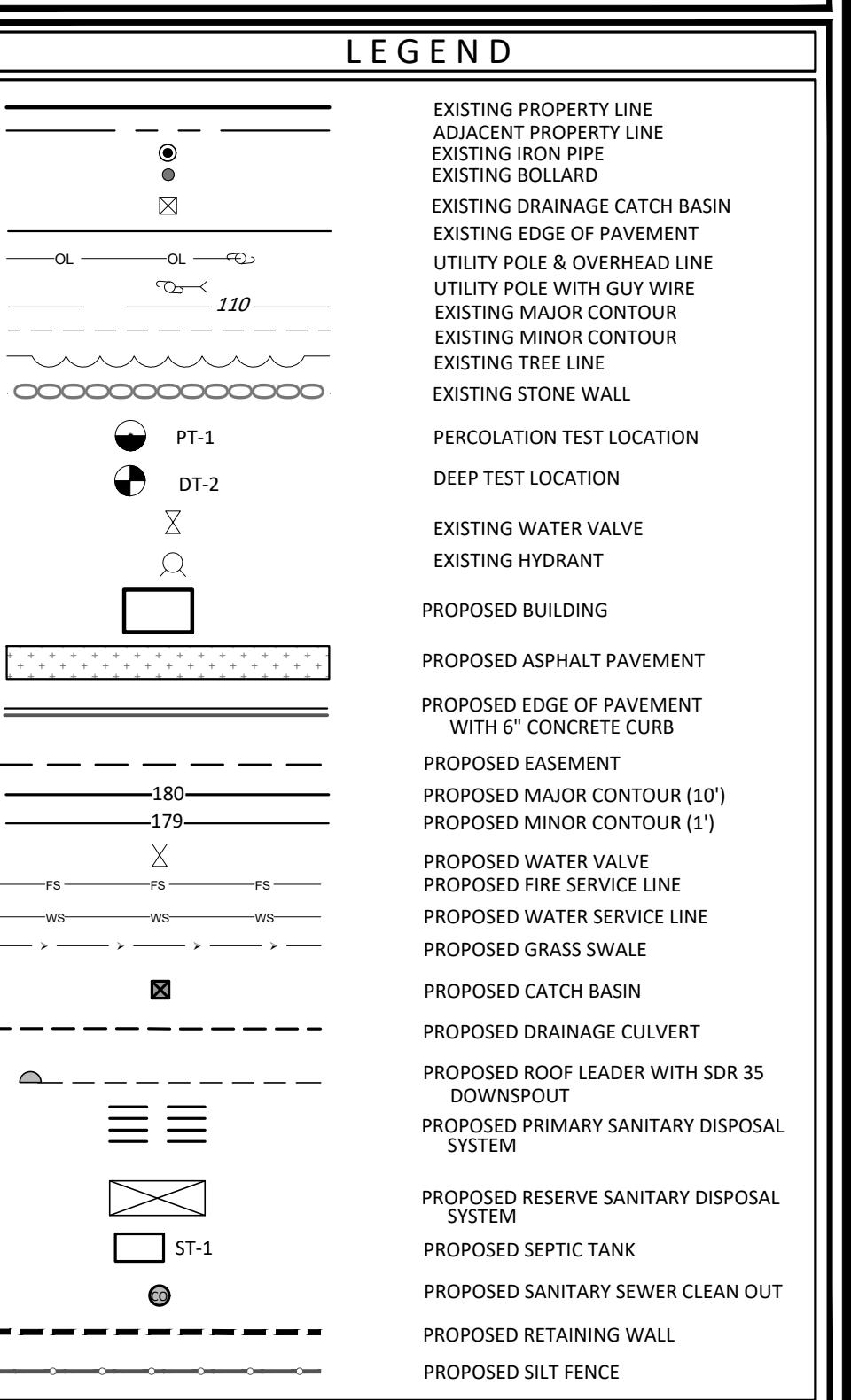
PERCOLATION TEST RESULTS		
TEST	HOLE DEPTH	STABILIZED RATE
PT-1	12"	29 M
PT-2	12"	14 M

NOTE: PERCOLATION TESTING WAS CONDUCTED BY WILLINGHAM ENGINEERING ON DECEMBER 19, 2022.



PROPERTY INFORMATION	
BOOK AND PAGE:	L 6811 P 43
SECTION-BLOCK-LOT:	103.3-1-17.10
PARCEL AREA:	2.0 ACRES
ZONING DISTRICT:	RAG1 - AGRICULTURAL RESIDENCE
OWNER:	KEEBOMED INC 6254 N ROCKWELL ST UNIT 1 CHICAGO, IL 60659

S U R V E Y N O T E S



ALL RIGHTS RESERVED. COPY OR REPRODUCTION OF THIS PLAN OR ANY PORTION THEREOF, IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF THE DESIGN ENGINEER, SURVEYOR, OR ARCHITECT.

UNDER ARTICLE 145 (ENGINEERING), SECTION 7209 (2) OF THE NEW YORK STATE EDUCATION LAW, IT IS UNLAWFUL FOR ANY PERSON TO ALTER ANY ITEM ON THIS DRAWING, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED SURVEYOR. IF ANY ITEM IS ALTERED, THE ALTERING ENGINEER AND/OR SURVEYOR SHALL AFFIX TO THE ITEM HIS SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS SIGNATURE AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



willingham engineering

183 Main Street
New Paltz, New York 12561
T 845.255.0210 F 845.256.8110
www.willinghamengineering.com

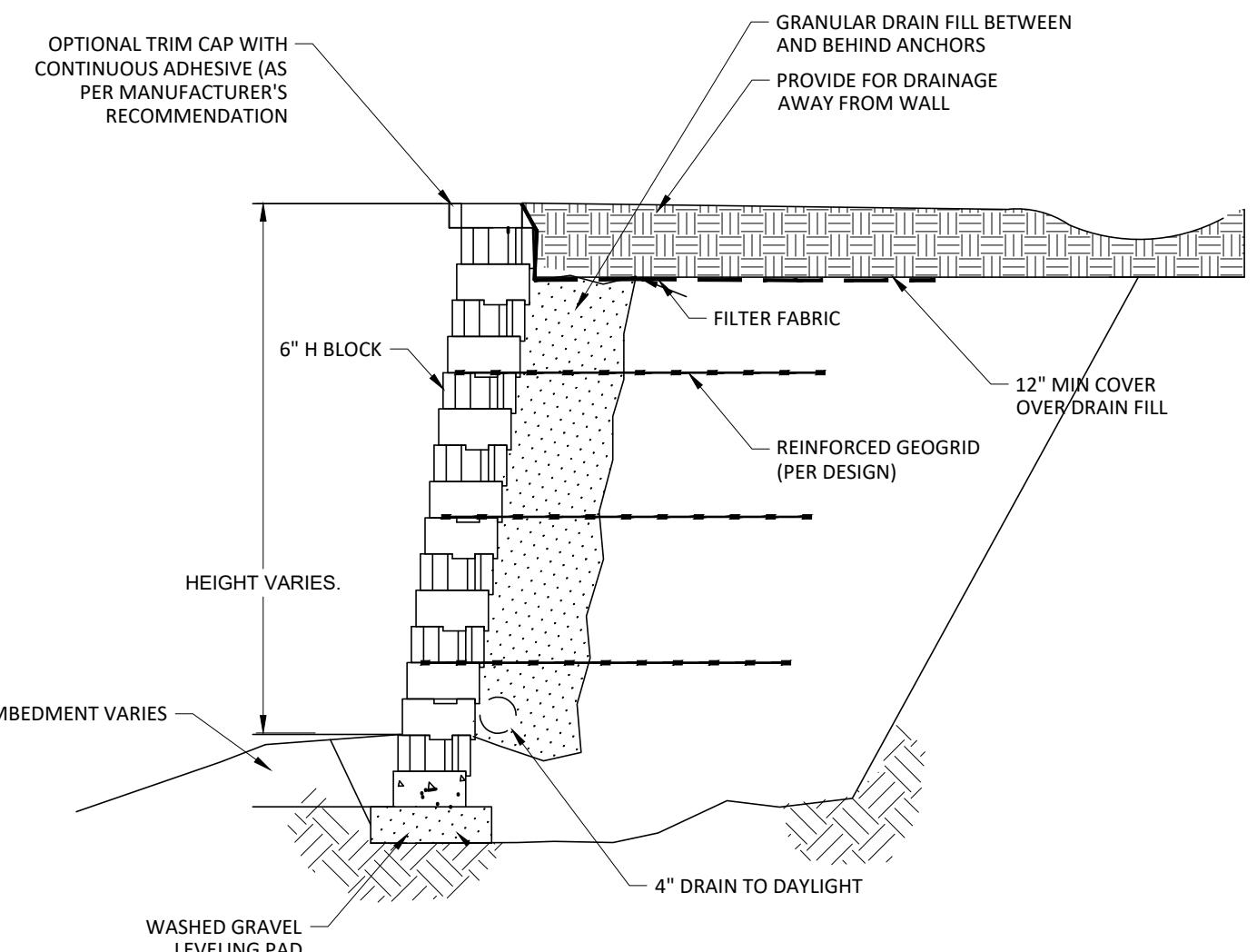
GRADING & UTILITY PLAN

KEEBOMED INC.

ROUTE 9W

TOWN OF MARLBOROUGH, NEW YORK

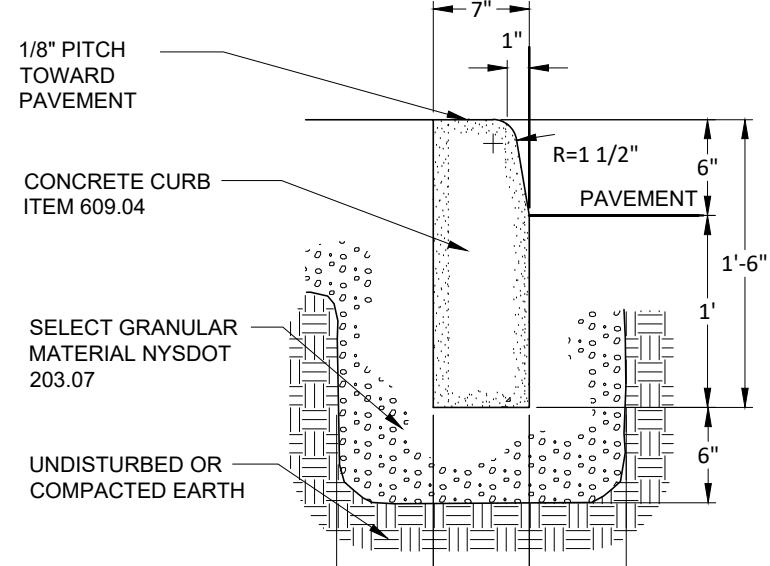
DRAWN BY	CHECKED BY
AVW	
DATE	SCALE
1/27/23	1" = 30'
PROJECT NO.	
22079	
SHEET NO.	
SP-2	



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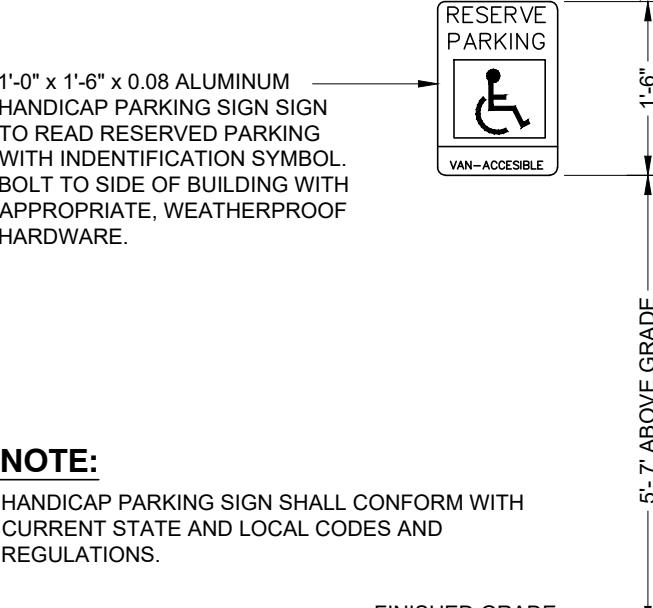
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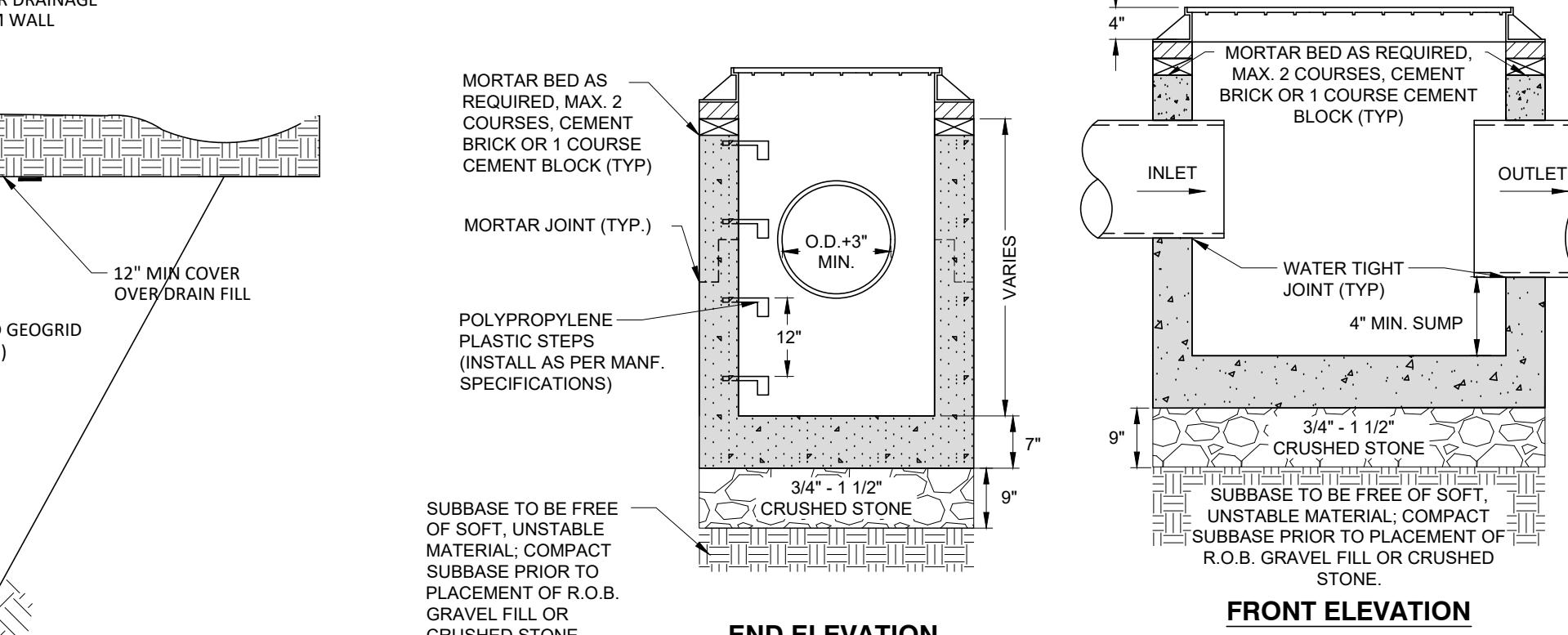
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6 SD-1 CONCRETE CURB DETAIL



NOTE:
HANDICAP PARKING SIGN SHALL CONFORM WITH CURRENT STATE AND LOCAL CODES AND REGULATIONS.

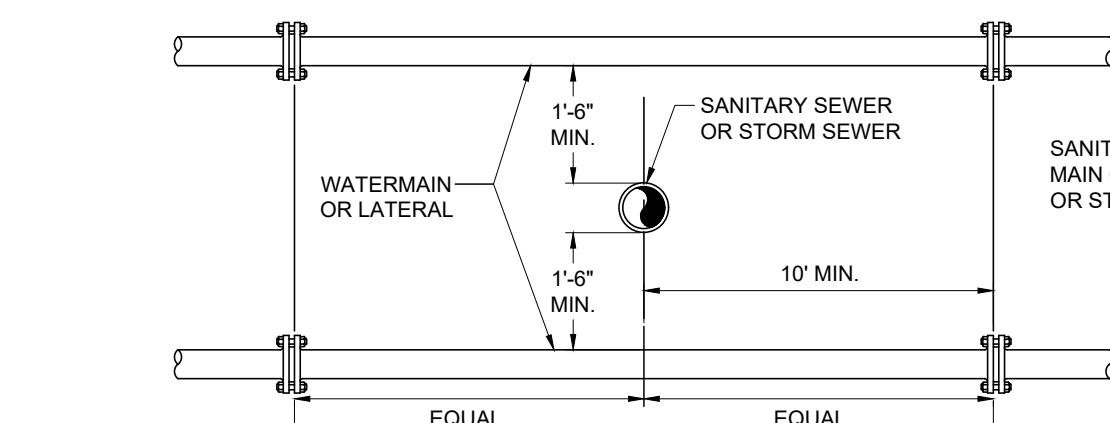
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34" x 30"

3'-4.75" x 3'-4.75"

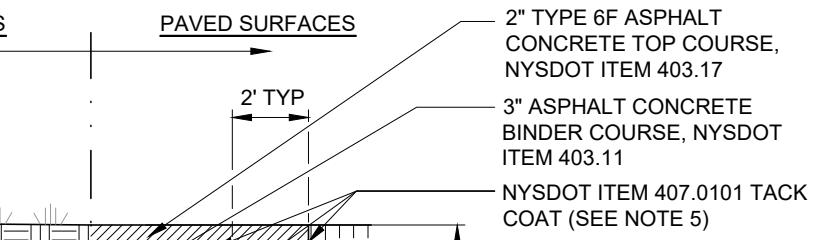
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HORIZONTAL SEPARATION

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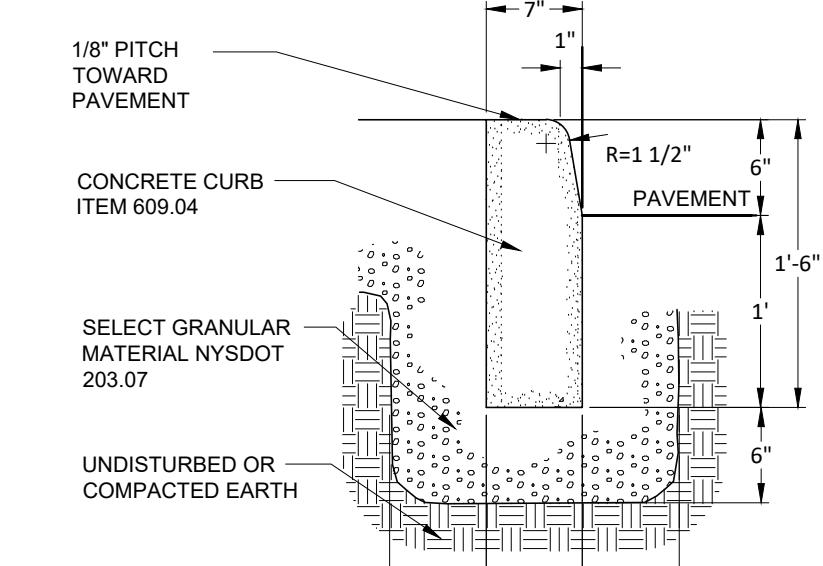


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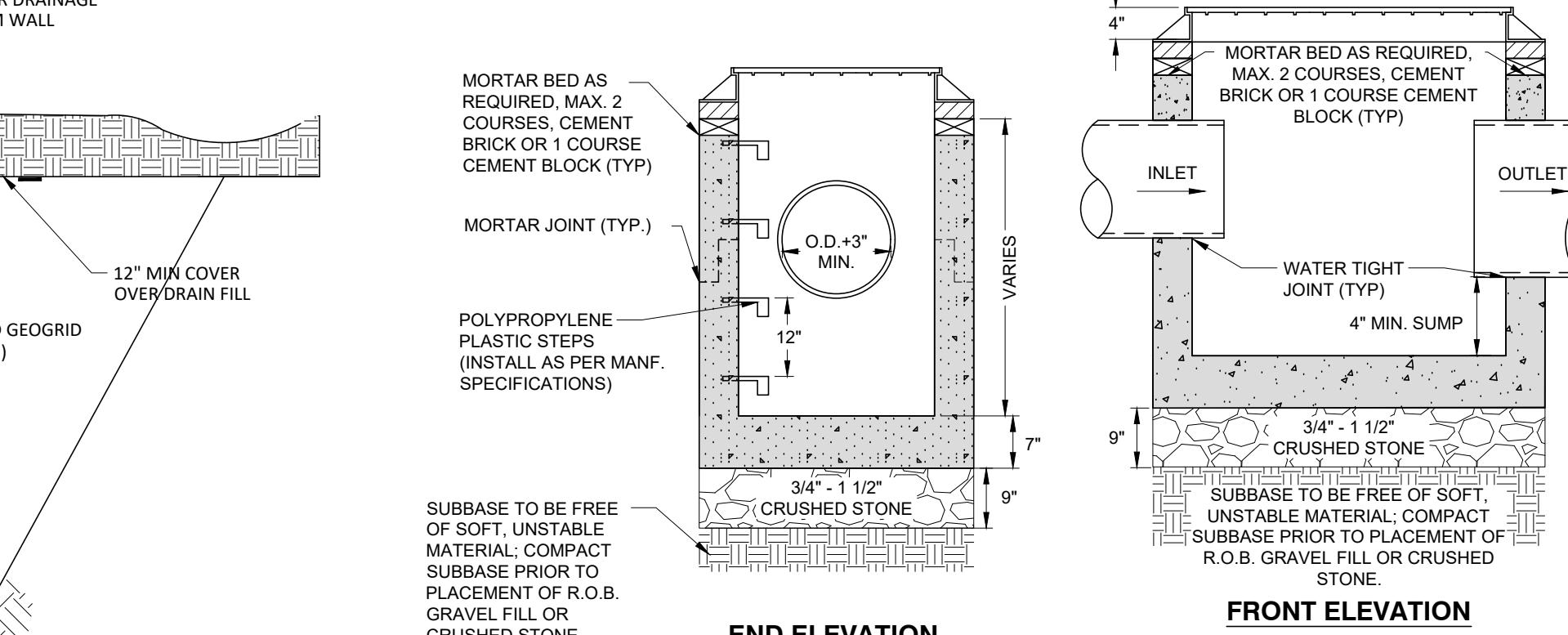
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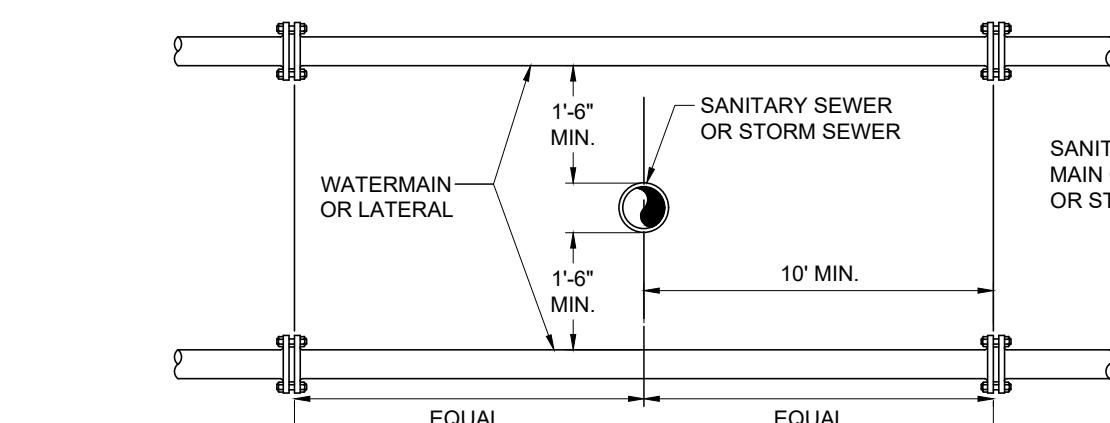
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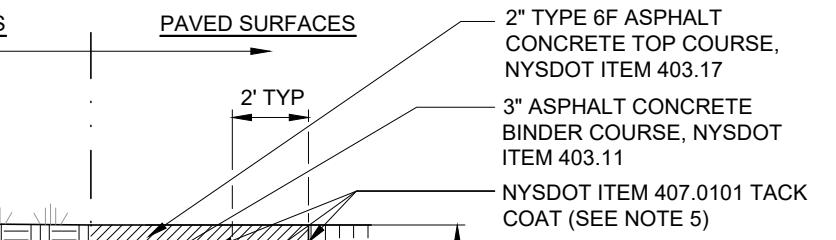
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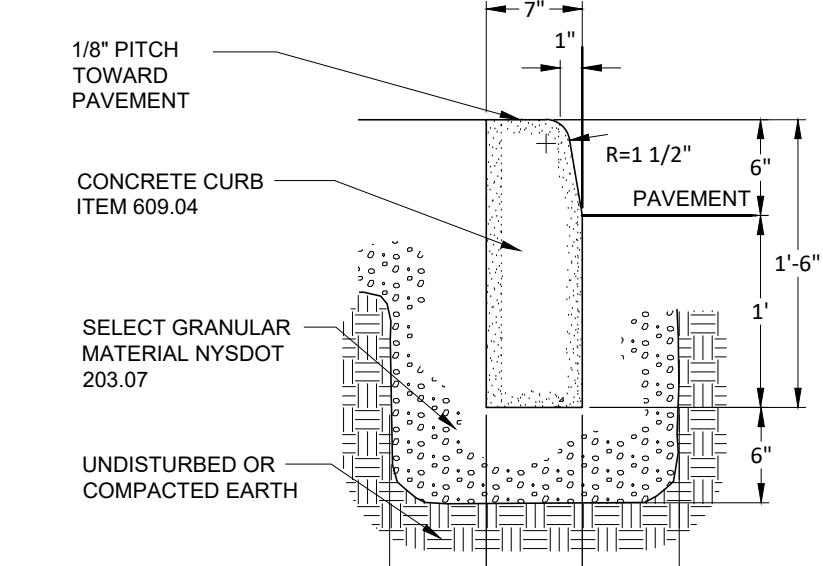


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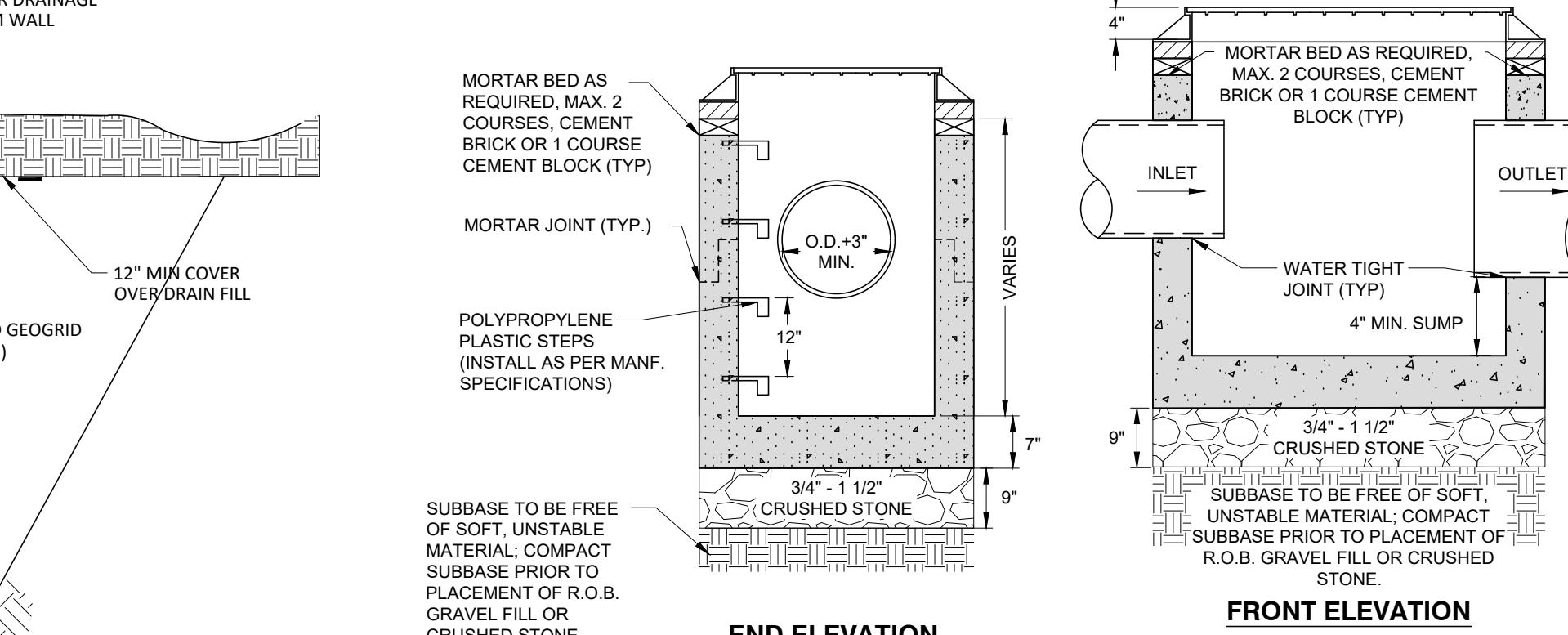
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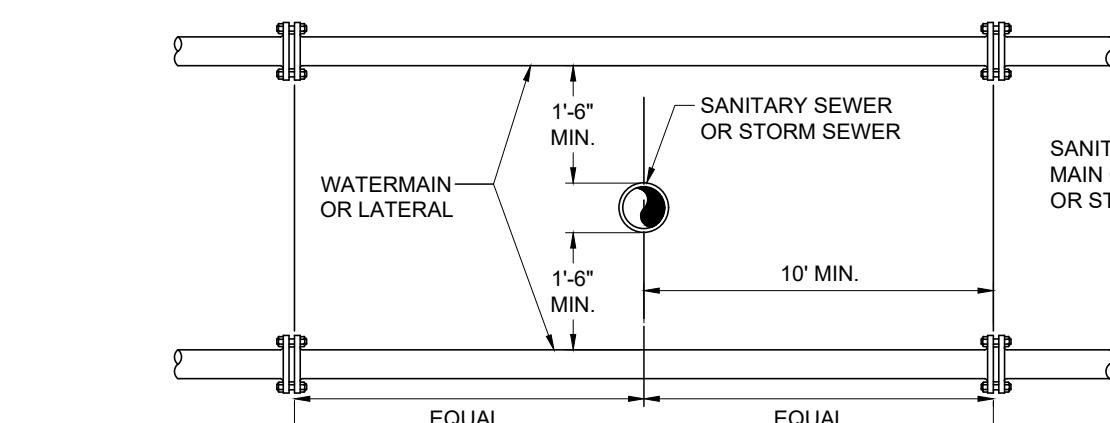
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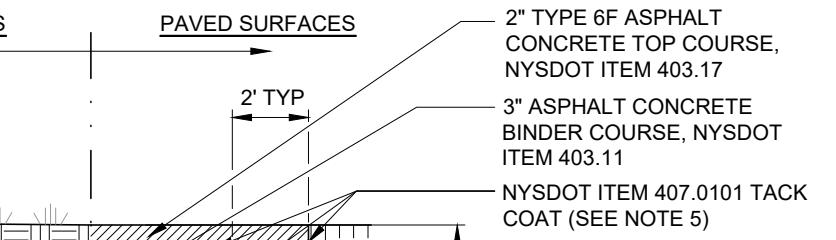
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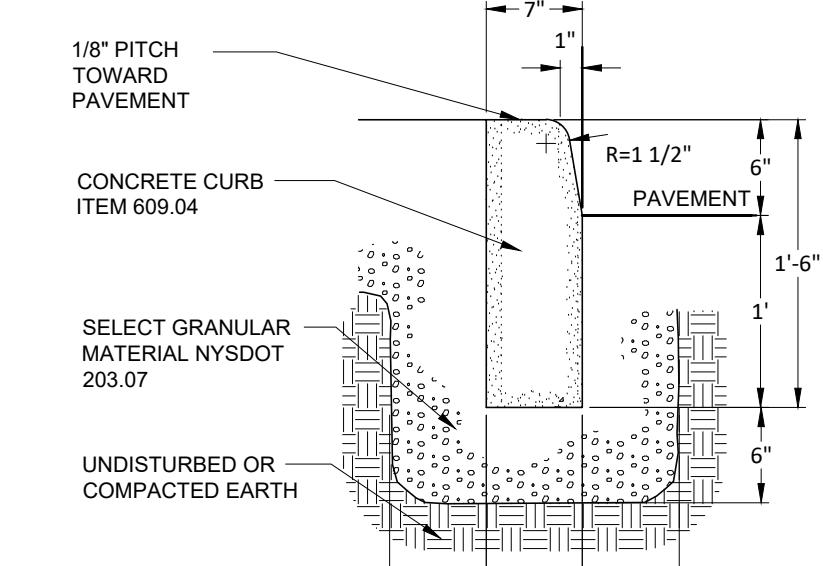


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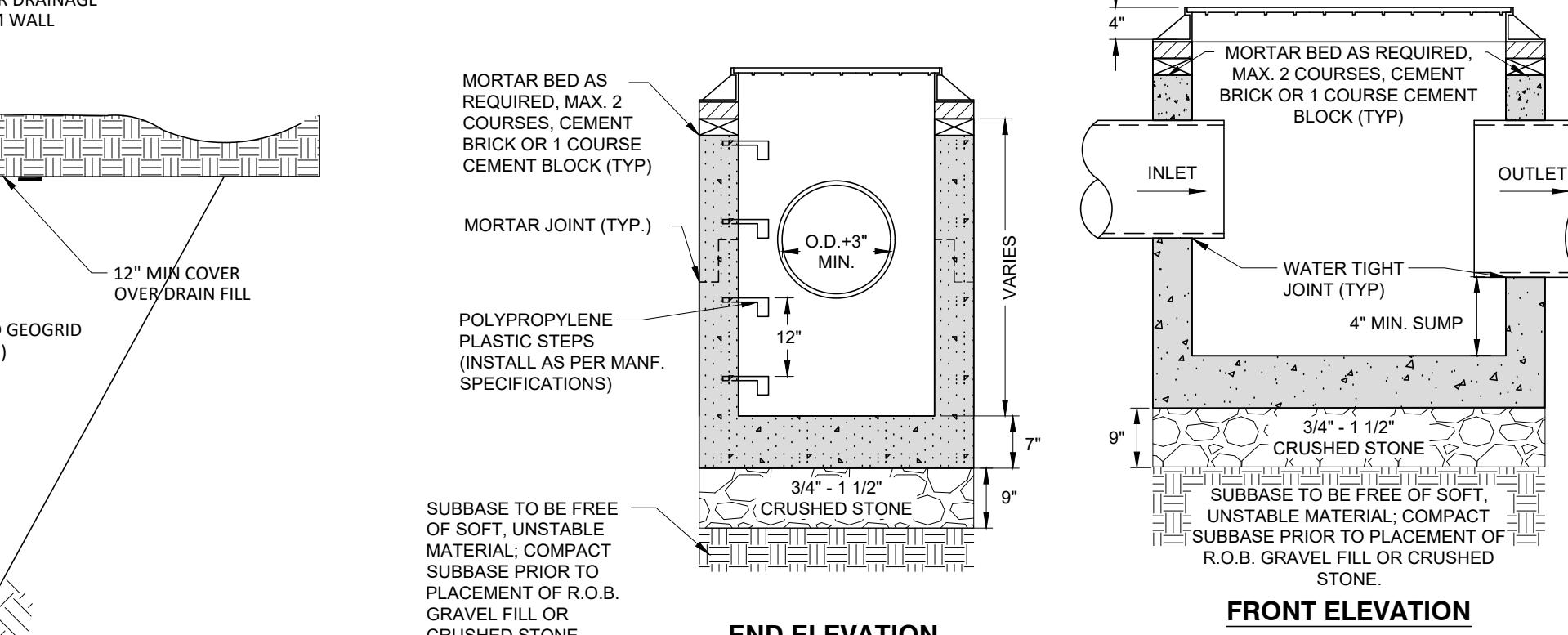
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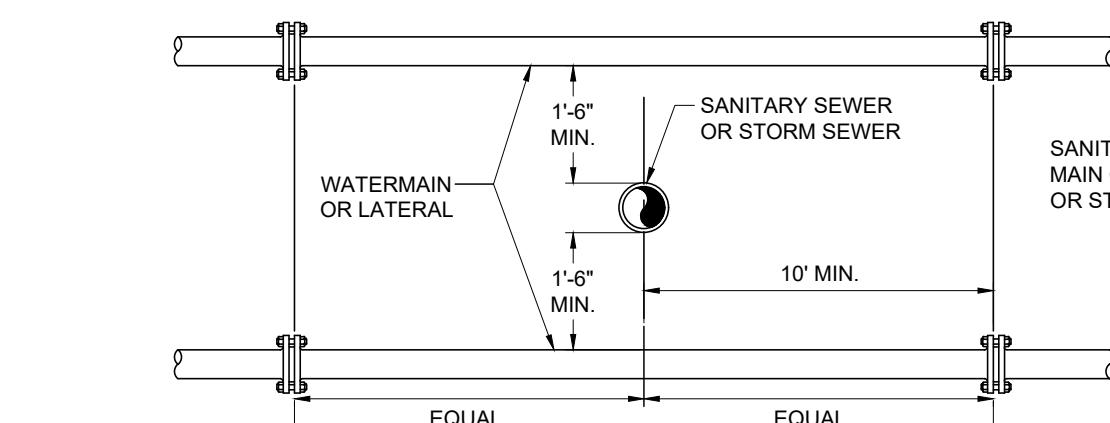
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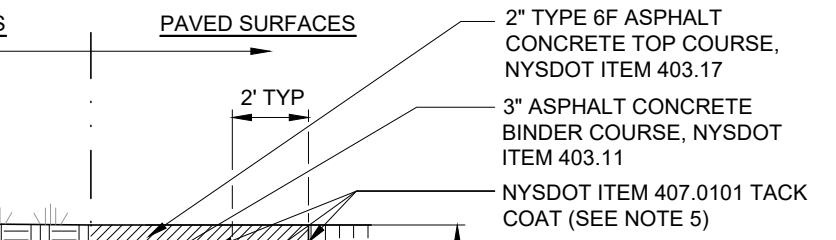
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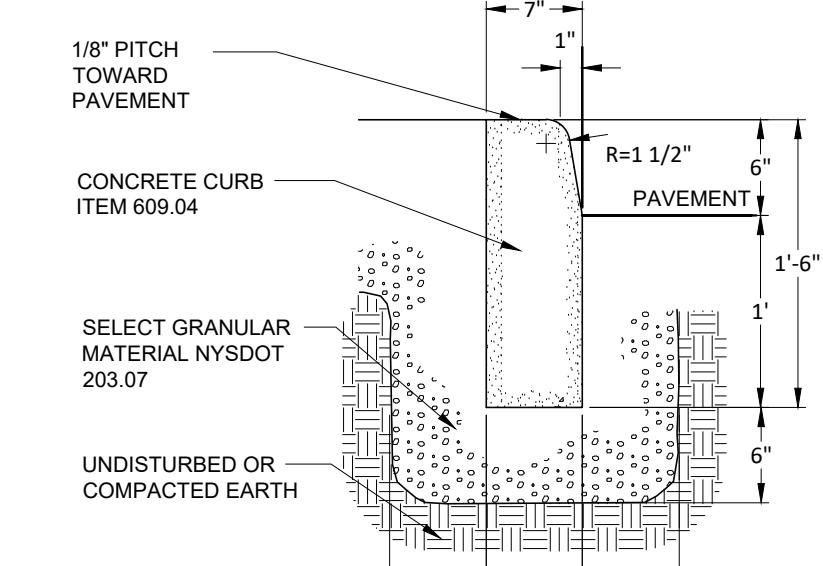


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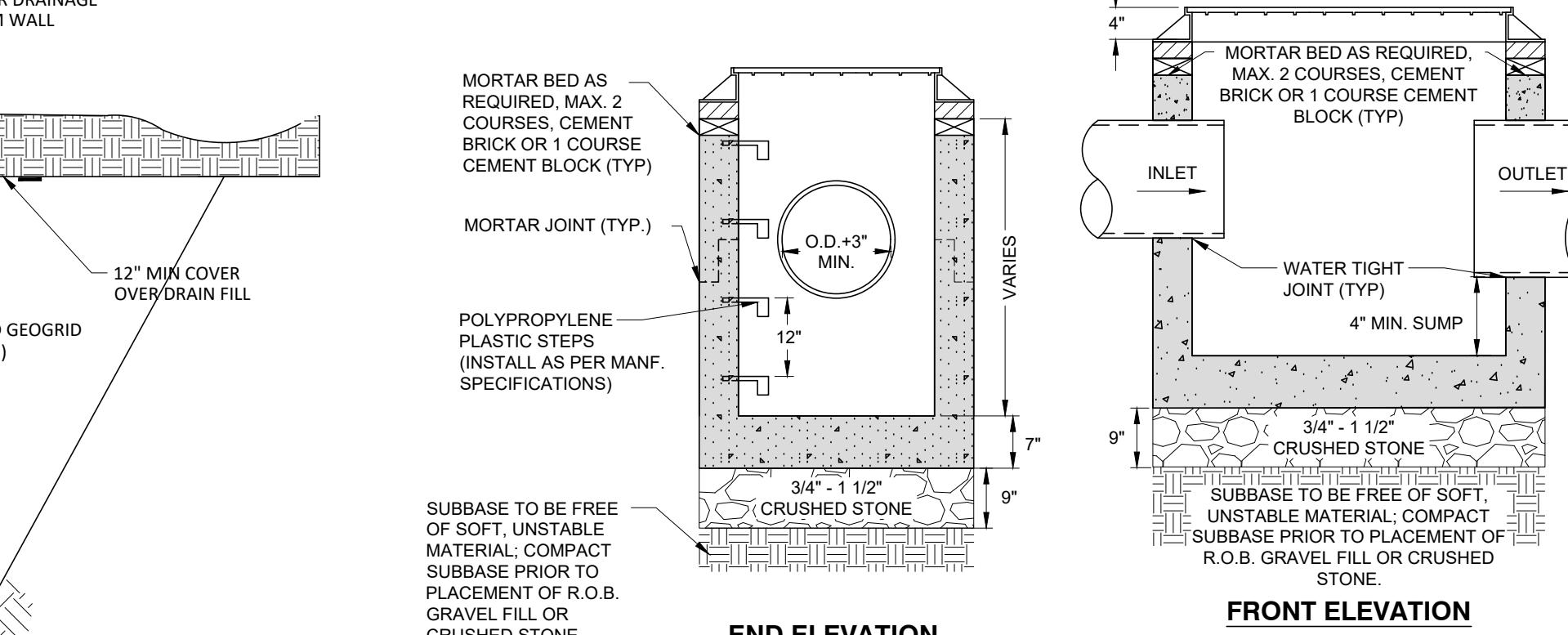
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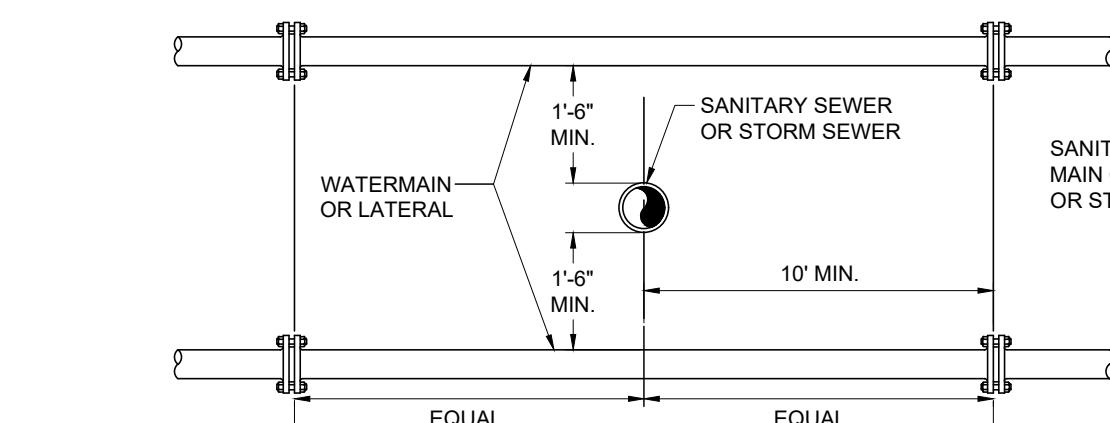
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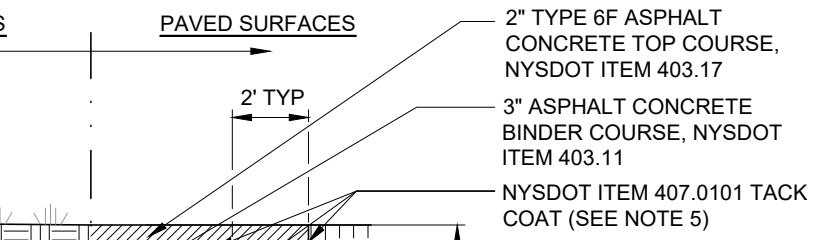
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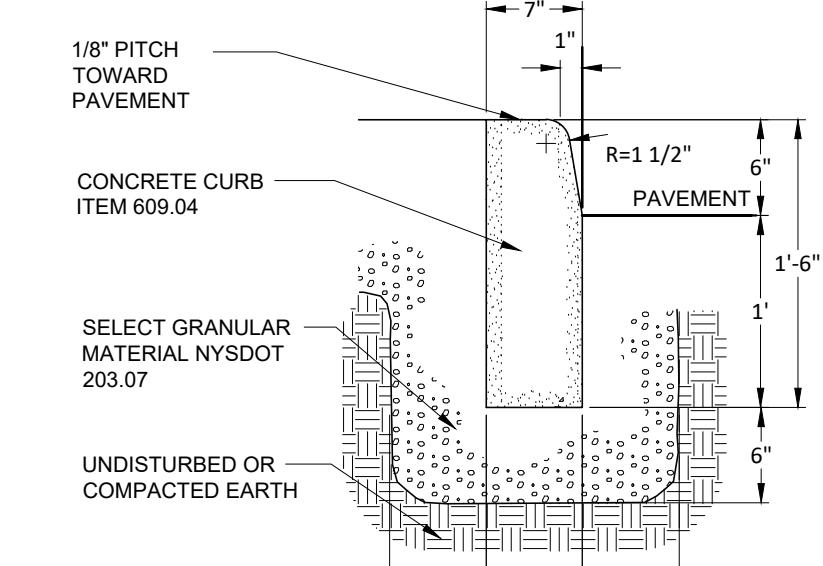


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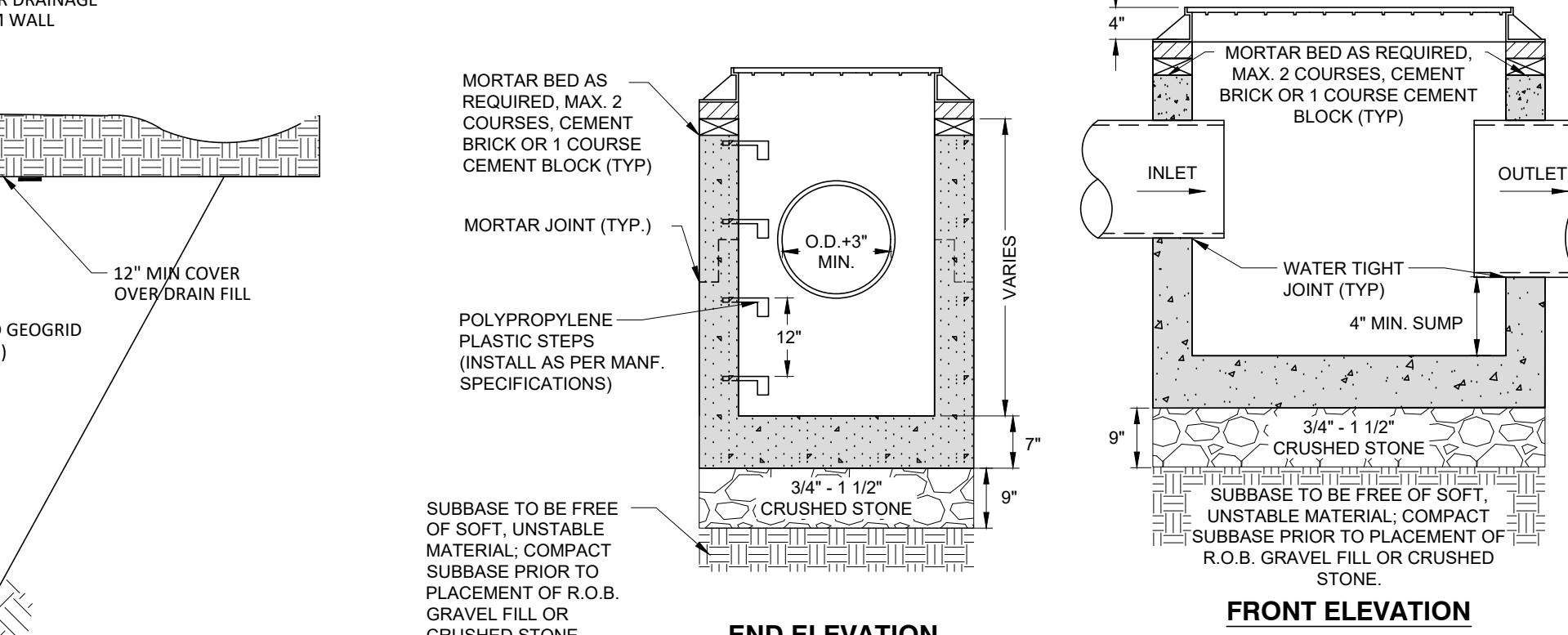
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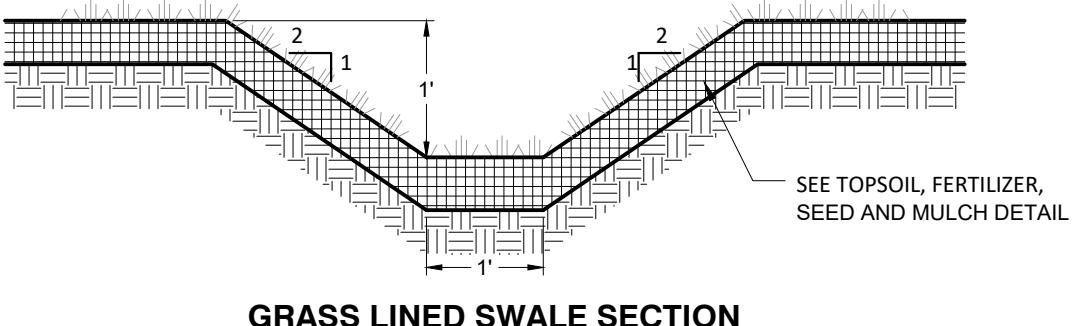
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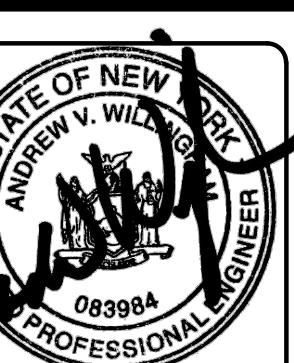
GRASS LINED SWALE SECTION

1
SD-2
GRASS SWALE DETAIL
SCALE: N.T.S.

DISINFECTION WATER SYSTEM NOTES																	
1. ALL PIPE, FITTINGS AND ACCESSORIES SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH THE LATEST REVISION OF ANSI/AWWA C600. NEWLY INSTALLED DUCTILE IRON WATER MAINS SHALL BE DISINFECTED IN ACCORDANCE WITH THE LATEST REVISION OF ANSI/AWWA C651 PRIOR TO PLACING IN SERVICE, AS DIRECTED BY THE TOWN OF LLOYD WATER DEPARTMENT.																	
DISINFECTION OF POTABLE WATER SERVICES MAINS																	
1. DISINFECTION WILL BE ACCOMPLISHED AFTER PIPE HAS PASSED ANY LEAKAGE TESTS.																	
2. THE MUNICIPALITY AND THE ENGINEER SHALL BE NOTIFIED AT LEAST 48 HOURS PRIOR TO THE START OF PRESSURE TESTING, LEAKAGE TESTING, AND DISINFECTION.																	
3. DISINFECTION SHALL BE PERFORMED IN ACCORDANCE WITH AWWA STANDARD C 651-05 OR LATER ADDITION. (EXCLUDING SECTION 5.1 COVERING THE TABLET METHOD).																	
4. CHLORINE-WATER SOLUTION IS PREPARED BY ADDING SODIUM HYPOCHLORITE TO WATER IN ACCORDANCE WITH THE FOLLOWING TABLE (VERIFY AGAINST TOWN REQUIREMENTS): CHLORINE REQUIRED TO PRODUCE 25 MG/L CONCENTRATION IN 100 FT. OF PIPE BY DIAMETER																	
<table border="1"> <thead> <tr> <th>PIPE SIZE INCHES</th> <th>100 PERCENT CHLORINE POUNDS</th> <th>1 PERCENT CHLORINE SOLUTIONS GALLONS</th> </tr> </thead> <tbody> <tr> <td>4</td> <td>0.013</td> <td>0.16</td> </tr> <tr> <td>6</td> <td>0.030</td> <td>0.36</td> </tr> <tr> <td>8</td> <td>0.054</td> <td>0.65</td> </tr> <tr> <td>10</td> <td>0.085</td> <td>1.02</td> </tr> </tbody> </table>			PIPE SIZE INCHES	100 PERCENT CHLORINE POUNDS	1 PERCENT CHLORINE SOLUTIONS GALLONS	4	0.013	0.16	6	0.030	0.36	8	0.054	0.65	10	0.085	1.02
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5. PRODUCT DETERIORATION MUST BE CONSIDERED IN COMPUTING THE QUANTITY OF SODIUM HYPOCHLORITE REQUIRED FOR THE DESIRED CONCENTRATION.																	
6. CHLORINE-WATER SOLUTION SHALL BE INTRODUCED INTO THE WATER MAIN WITH A GASOLINE OR ELECTRICALLY POWERED CHEMICAL FEED PUMP DESIGNED FOR FEEDING CHLORINE SOLUTIONS. FEED LINES SHALL BE OF SUCH MATERIAL AND STRENGTH TO PERMIT THEM TO WITHSTAND SAFELY THE MAXIMUM PRESSURE THAT MAY BE CREATED BY PUMP. ALL CONNECTIONS SHALL BE CHECKED FOR TIGHTNESS BEFORE HYPOCHLORITE SOLUTION IS APPLIED TO MAIN.																	
7. THE CONTRACTOR SHALL FURNISH AND INSTALL A CORPORATION STOP JUST DOWNSTREAM FROM THE NEWLY INSTALLED GATE VALVE.																	
8. GENERALLY, THE FOLLOWING PROCEDURE SHALL BE USED TO DISINFECT THE NEW MAIN. THE CONTRACTOR SHALL HOWEVER, REVIEW THEIR PROPOSED PROCEDURES WITH THE ENGINEER AT LEAST 48 HOURS PRIOR TO START OF DISINFECTION. ALL DISINFECTION PROCEDURES MUST BE APPROVED BY THE ENGINEER BEFORE DISINFECTION STARTS.																	
8.1. SHUT OFF ALL GATES AND HYDRANTS MUST BE CLOSED. THE NEW MAIN SHOULD ALREADY BE FULL OF WATER FROM THE HYDROSTATIC TESTS. IF NOT, IT SHALL BE FILLED.																	
8.2. MIX CHLORINE-WATER SOLUTION IN 55 GALLON DRUMS; CONNECT FEED LINE TO PUMP AND NEW MAIN.																	
8.3. OPEN GATE VALVE ON THE HYDRANT LEAD OF END HYDRANT, THEN OPEN HYDRANT FULLY. (NOTE: HYDRANT MUST ALWAYS BE EITHER FULLY OPENED OR FULLY CLOSED; THE HYDRANT FLOW MAY BE CONTROLLED BY THROTTLING THE GATE VALVE ON THE HYDRANT LEAD).																	
8.4. START PUMPING CHLORINE-WATER SOLUTION INTO WATER MAIN; THEN OPEN UPSTREAM GATE VALVE SLOWLY UNTIL FLOW FROM HYDRANT IS PROPORTIONATE TO THE AMOUNT OF CHLORINE-WATER SOLUTION BEING PUMPED (30 PARTS WATER TO 1 PART CHLORINE-WATER SOLUTION). IF A WATER METER IS NOT AVAILABLE, DISCHARGE RATE MAY BE DETERMINED BY USING EITHER A PITOT GAUGE IN THE DISCHARGE OR BY MEASURING THE TIME TO FILL A CONTAINER OF KNOWN VOLUME (SUCH AS A 55 GALLON BARREL). THE PUMPING RATE CAN BE DETERMINED BY MEASURING THE DROP IN LEVEL IN A GATE LEAD WITH TIME.																	
8.5. AFTER HYDRANT FLOW AND PUMPING RATE HAVE BEEN ADJUSTED, MAINTAIN A CONSTANT FLOW SO THAT CHLORINE CONCENTRATION IN THE MAIN IS MAINTAINED AT A MINIMUM OF 25 PPM.																	
8.6. PERIODICALLY CHECK HYDRANT DISCHARGE FOR CHLORINE CONCENTRATION BY USING A FIELD CHLORINE RESIDUAL TEST KIT. MAINTAIN HYDRANT DISCHARGE AND PUMPING RATE UNTIL THE MINIMUM CHLORINE CONCENTRATION OF 25 PPM HAS BEEN ACHIEVED THROUGHOUT THE ENTIRE MAIN DISINFECTED.																	
8.7. AFTER THE REQUIRED CONCENTRATION HAS BEEN ACHIEVED, ALL VALVES AND HYDRANTS ON THE MAIN LINE BETWEEN THE UPSTREAM GATE VALVE AND THE DISCHARGE HYDRANT SHALL BE OPERATED IN ORDER TO DISINFECT THE INTERNAL APPURTENANCES. DO NOT OPERATE ANY GATE VALVE THAT IS LOCATED IN A SECTION OF THE EXISTING WATER MAIN THAT IS IN SERVICE.																	
9. AFTER THE ENGINEER HAS TAKEN A WATER SAMPLE AND VERIFIED THE MINIMUM 25 PPM CHLORINE CONCENTRATION, THE CONTRACTOR SHALL RETAIN THE CHLORINATED WATER IN THE MAIN BY THE FOLLOWING METHOD:																	
9.1. FIRST, CLOSE THE UPSTREAM GATE VALVE.																	
9.2. SECOND, CLOSE THE DISCHARGE HYDRANT.																	
9.3. THIRD, SHUT OFF THE PUMP.																	
10. CHLORINATED WATER SHALL REMAIN IN THE MAIN FOR A MINIMUM OF 24 HOURS.																	
11. IF THE CHLORINE RESIDUAL IS LESS THAN 10 PPM AT THE END OF THE 24 HOURS, REPEAT SYSTEM TREATMENT.																	
12. ANY SECTION OF PIPE, VALVES OR FITTINGS, INCLUDING TAPPING SLEEVES AND VALVES WHICH ARE INSTALLED OUTSIDE THE LIMITS OF THE SYSTEM SUBJECT TO THE CHLORINATION PROCEDURES SPECIFIED ABOVE, SHALL BE SPRAYED OR SWABBED WITH A 1% HYPOCHLORITE SOLUTION PRIOR TO INSTALLATION.																	
13. AFTER THE ENGINEER HAS TAKEN A WATER SAMPLE AND VERIFIED THE MINIMUM 10 PPM CHLORINE RESIDUAL, CONTRACTOR SHALL THOROUGHLY FLUSH CHLORINATED WATER FROM THE MAIN BY THE FOLLOWING METHOD:																	
13.1. FIRST, OPEN THE DISCHARGE HYDRANT.																	
13.2. SECOND, OPEN THE UPSTREAM GATE VALVE.																	
13.3. THIRD, OPEN ANY HYDRANTS ON THE MAIN LINE TO REMOVE ALL CHLORINATED WATER FROM THE HYDRANT LEADS.																	
14. FLUSH THE MAIN WITH POTABLE WATER IN SUCH A MANNER THAT DOES NOT ADVERSELY AFFECT FISH, PLANT, OR ANIMAL LIFE.																	
15. THE NUMBER AND TYPE OF WATER SAMPLES TO BE TAKEN SHALL BE DETERMINED BY THE ENGINEER.																	
16. WATER SAMPLES SHALL BE TAKEN AT THE CONTRACTOR IN STERILIZED BOTTLES.																	
17. ANALYZE WATER SAMPLES IN ACCORDANCE WITH STANDARD METHODS FOR EXAMINATION OF WATER AND WASTEWATER, LATEST EDITION, PUBLISHED BY AMERICAN WATER WORKS ASSOCIATION.																	
18. IF A BACTERIOLOGICAL TEST PROVES THE WATER QUALITY TO BE UNACCEPTABLE: REPEAT SYSTEM TREATMENT.																	
19. IF A BACTERIOLOGICAL TEST PROVES WATER TO BE ACCEPTABLE, REMOVE FEED LINE AND CORPORATION STOP. CORPORATION STOP WILL BE REPLACED WITH A THREADED BRASS PLUG UNLESS OTHERWISE DIRECTED BY ENGINEER.																	
20. SAMPLES MUST BE BACTERIOLOGICALLY SAFE BEFORE WATER MAIN IS PLACED IN SERVICE.																	

GENERAL WATER SYSTEM NOTES		
1. ALL WATER LINES SHALL BE DUCTILE IRON PIPE, CLASS 52 UNLESS OTHERWISE SPECIFIED BY OR APPROVED BY THE TOWN OF LLOYD WATER DEPARTMENT. ALL MECHANICAL JOINING SHALL EMPLOY "MEGALUG" CONNECTIONS, OR AS ALTERNATELY SPECIFIED BY THE TOWN OF LLOYD WATER DEPARTMENT. ALL WATER PIPING CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS OF THE TOWN OF LLOYD WATER DEPARTMENT.		
2. DUCTILE IRON PIPE SHALL BE DESIGNED IN ACCORDANCE WITH THE LATEST REVISION OF ANSI/AWWA C150/A21.50 FOR A MINIMUM 150 psi SURGE ALLOWANCE (IF ANTICIPATED SURGE PRESSURES ARE OTHER THAN 100 psi, THE ACTUAL ANTICIPATED PRESSURE SHOULD BE USED); A 2 TO 1 FACTOR OF SAFETY ON THE SUM OF WORKING PRESSURE PLUS SURGE PRESSURE; AND A DEPTH COVER OF 5 FEET.		
3. PIPE SHALL HAVE STANDARD ASPHALTIC COATING ON THE EXTERIOR. PIPE SHALL ALSO HAVE A CEMENT-MORTAR LINING ON THE INTERIOR IN ACCORDANCE WITH ANSI/AWWA C104/A21.4, OF LATEST REVISION.		
4. THE CLASS OR NOMINAL THICKNESS, NET WEIGHT WITHOUT LINING, AND CASTING PERIOD SHALL BE CLEARLY MARKED ON EACH LENGTH OF PIPE. ADDITIONALLY, THE MANUFACTURER'S MARK, COUNTRY WHERE CAST, YEAR IN WHICH THE PIPE WAS PRODUCED, AND THE LETTERS "D" OR "DUCTILE" SHALL BE CAST OR STAMPED ON THE PIPE.		
5. EACH PIPE SHALL BE SUBJECTED TO A HYDROSTATIC PRESSURE TEST OF AT LEAST 500 psi AT THE POINT OF MANUFACTURE.		
6. ALL NEW WATER MAIN INSTALLATIONS SHALL BE HYDROSTATICALLY TESTED PER AWWA STANDARD C 600 (LATEST REVISION) AT A PRESSURE OF 150 psi OR 1.25 TIMES THE WORKING PRESSURE OF THE SYSTEM AS A MINIMUM. ALLOWABLE LEAKAGE OF THIS TEST SHALL BE AS DEFINED IN SECTION 4.2 OF AWWA SPECIFICATION.		
7. THE WATER LINE MAY BE FLEXED WITHIN PIPE SPECIFICATIONS OR LAID DEEPER IN AREAS WHERE CROSSINGS WITH THE SANITARY LINE OCCUR, TO ACHIEVE THE REQUIRED 1.5' VERTICAL SEPARATION DISTANCE. IF THIS DISTANCE CANNOT BE REASONABLY ACHIEVED, THE CONTRACTOR SHALL EITHER CUT AND JOIN THE PIPE OR CONCRETE ENCASE BOTH LINES 10' IN EACH DIRECTION. (SEE WATERLINE OFFSET DETAIL FOR FURTHER INFORMATION).		
8. ALL PIPES SHALL BE FURNISHED WITH PUSH-ON TYPE JOINTS, SUCH AS TYTON, OR FASTLITE. JOINTS SHALL BE IN ACCORDANCE WITH ANSI/AWWA C110/A21.11, OF LATEST REVISION, AND BE FURNISHED COMPLETE WITH ALL NECESSARY ACCESSORIES.		
9. FITTINGS SHALL BE DUCTILE IRON. FITTINGS SHALL CONFORM TO THE LATEST REVISION OF EITHER ANSI/AWWA C110/A21.10 OR ANSI/AWWA C153/A21.53. FITTINGS AND ACCESSORIES SHALL BE FURNISHED WITH EITHER PUSH-ON OR MECHANICAL TYPE MEGALUG JOINTS WHERE JOINT RESTRAINT IS REQUIRED IN ACCORDANCE WITH ANSI/AWWA C111/A21.11, OF THE LATEST REVISION.		
10. THE WATER MAIN IS TO BE INSTALLED AT A CONTINUOUS GRADE WITH NO ABRUPT HIGH OR LOW POINTS.		
11. WATER MAIN SHUT-OFF, INSTALLATION, AND TESTING SHALL BE COORDINATED WITH THE TOWN OF LLOYD WATER DEPARTMENT.		
12. BACKFLOW PREVENTION WILL BE REQUIRED IN THE FORM OF A DOUBLE CHECK VALVE ASSEMBLY FOR EACH SERVICE CONNECTION.		

TESTING WATER SYSTEM NOTES																																																																																																										
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2. AFTER PRESSURE TEST AND INSPECTIONS HAVE BEEN PERFORMED, EVIDENCE OF COMPLIANCE SHALL BE FORWARDED TO OWNER/ENGINEER AND THE MUNICIPALITY PRIOR TO ACCEPTANCE.																																																																																																										
3. ALL WATER FOR TESTS SHALL BE FURNISHED AND DISPOSED OF BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE. SOURCE AND/OR QUALITY OF WATER WHICH THE CONTRACTOR PROPOSED TO USE IN TESTING LINES SHALL BE ACCEPTABLE TO THE ENGINEER.																																																																																																										
4. HYDROSTATIC PRESUMPTIVE TESTS MAY BE PERFORMED WHEN SYSTEM IS PARTIALLY BACKFILLED TO SIMPLY CHECK WORK, BUT ACCEPTANCE OF SYSTEM SHALL BE BASED ON HYDROSTATIC TESTS RUN ON FINISHED SYSTEM AFTER IT HAS BEEN COMPLETELY BACKFILLED. ALL HYDROSTATIC TESTS SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 4 OF AWWA STANDARD C 600 OR LATER ADDITION, AS MODIFIED HEREIN.																																																																																																										
5. FOR HYDROSTATIC TEST, SYSTEM SHALL BE PREPURGED AND MAINTAINED AT A PRESSURE OF 150 psi. OR 1.25 TIMES THE WORKING PRESSURE, WHICH EVER IS GREATER, BASED ON THE ELEVATION OF THE LOWEST POINT IN THE SECTION BEING TESTED AND CORRECTED TO THE ELEVATION OF THE GAUGE. LEAKAGE TEST DURATION SHALL BE A MINIMUM OF TWO HOURS AFTER LEAKAGE RATE HAS STABILIZED.																																																																																																										
6. IF LEAKAGE IN SYSTEM EXCEEDS THE SPECIFIED AMOUNT, THE CONTRACTOR SHALL, AT NO ADDED COST TO THE OWNER, LOCATE, REPAIR, AND/OR REPLACE DEFECT(S) AND RE-TEST THE PIPING SYSTEM.																																																																																																										
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ALL RIGHTS RESERVED. COPY OR REPRODUCTION OF THIS PLAN OR ANY PORTION THEREOF, IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF THE DESIGN ENGINEER, SURVEYOR, ARCHITECT.

UNDER ARTICLE 145 (ENGINEERING), SECTION 7209 (2) OF THE NEW YORK STATE EDUCATION LAW, IT IS UNWISE TO MAKE ANY ALTERATION TO ANY ITEM ON THIS DRAWING, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED SURVEYOR. IF ANY ITEM IS ALTERED, THE ALTERING ENGINEER AND/OR SURVEYOR SHALL AFFIX TO THE ITEM HIS SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS SIGNATURE AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

EROSION AND SEDIMENT CONTROL NOTES - GENERAL

ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE STANDARDS AND PRINCIPLES OF THE NEW YORK STATE EROSION AND SEDIMENT CONTROL AND THE LOCAL MUNICIPALITY EROSION AND SEDIMENT CONTROL STANDARDS AND PRACTICES. IF SUCH A DOCUMENT EXISTS, THE INTENT OF THE OUTLINED MEASURES IS TO MINIMIZE EROSION AND SEDIMENTATION DURING CONSTRUCTION, STABILIZE AND PROTECT THE SITE FROM EROSION AFTER CONSTRUCTION IS COMPLETE AND MITIGATE ANY ADVERSE IMPACTS TO STORMWATER QUALITY RESULTING FROM SEDIMENT RUNOFF CAUSED BY DEVELOPMENT ACTIVITIES.

NO SOIL STOCKPILE OR GRADED AREA SHALL REMAIN EXPOSED FOR MORE THAN 14 DAYS. THE EXPOSED AREAS OR SOIL STOCKPILE SHALL BE STABILIZED WITHIN THE 14 DAY PERIOD. STABILIZATION MEASURES TO BE USED INCLUDE TEMPORARY SEDDING, PERMANENT SEDDING, MULCHING AND STONE RIP RAP. DURING CONSTRUCTION, RUNOFF SHALL BE DIVERTED AND PROVIDED WITH BARRIER FILTERS. STONE RIP RAP SHALL BE PROVIDED AT THE OUTLETS OF DRAINAGE PIPES WHERE EROSION VELOCITIES ARE ENCOUNTERED.

TIMING OF CONTROL MEASURES

AS INDICATED ABOVE IN THE CONSTRUCTION SEQUENCE SCHEDULE, ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO COMMENCING ANY CLEARING OR GRADING OF THE SITE. STRUCTURAL CONTROLS SHALL BE INSTALLED CONCURRENTLY WITH THE APPLICABLE ACTIVITY. AREAS WHERE CONSTRUCTION ACTIVITY TEMPORARILY CEASES FOR MORE THAN TWENTY ONE (21) DAYS WILL BE STABILIZED WITH A TEMPORARY SEED AND MULCH WITHIN FOURTEEN (14) DAYS OF THE LAST DISTURBANCE. ONCE CONSTRUCTION ACTIVITY CEASES PERMANENTLY IN AN AREA, SILT FENCES AND HAY BALE BARRIERS AND ANY EARTH DIKES WILL BE REMOVED ONCE PERMANENT MEASURES AND STABILIZATION ARE ESTABLISHED.

GENERAL INSPECTION AND MAINTENANCE PRACTICE

THESE ARE THE GENERAL INSPECTION AND MAINTENANCE PRACTICES THAT WILL BE USED TO IMPLEMENT THE PLAN DURING INSPECTION.

- THE SMALLEST PRACTICAL PORTION OF THE SITE WILL BE DISTURBED AT ONE TIME.
- ALL CONTROL MEASURES WILL BE INSPECTED AT LEAST ONCE EACH WEEK.
- ALL MEASURES WILL BE MAINTAINED IN GOOD WORKING ORDER. IF A REPAIR IS NECESSARY IT WILL BE INITIATED WITHIN 24 HOURS OF REPORT.
- A MAINTENANCE INSPECTION REPORT WILL BE MADE AFTER EACH INSPECTION.
- THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL MEASURES THROUGHOUT THE COURSE OF CONSTRUCTION.

INSTALLATION NOTES

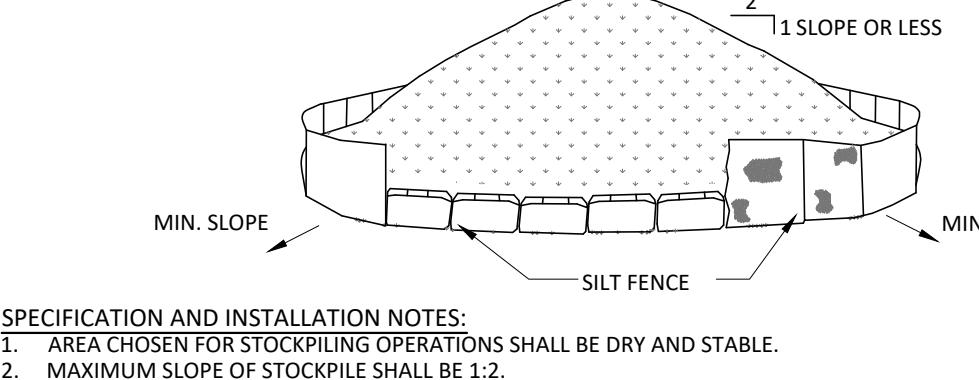
- TEMPORARY SEEDING SHOULD BE MADE WITHIN 24 HOURS OF CONSTRUCTION OR DISTURBANCE. IF NOT, THE SOIL MUST BE SEEDED PRIOR TO SEEDING.
- IN ORDER FOR MULCH TO BE EFFECTIVE IT MUST BE PLACED PRIOR TO MAJOR STORM EVENTS. IT WILL BE NECESSARY TO CLOSELY MONITOR WEATHER PREDICTIONS TO HAVE ADEQUATE WARNING OF SIGNIFICANT STORMS.
- THE PERIOD TO MULCH CAN RANGE FROM 14 TO 21 DAYS OF INACTIVITY ON AN AREA. THE LENGTH OF TIME VARYING WITH SITE CONDITIONS. PROFESSIONAL JUDGMENT SHALL BE USED TO EVALUATE THE INTERACTION OF SITE CONDITIONS (SOIL ERODABILITY, SEASON OF YEAR, EXTENT OF DISTURBANCE, PROXIMITY TO SENSITIVE RESOURCES, ETC.) AND THE POTENTIAL IMPACT OF EROSION ON ADJACENT AREAS IN ORDER TO CHOOSE AN APPROPRIATE TIME RESTRICTION.
- WHEN MULCH IS APPLIED TO PROVIDE PROTECTION OVER WINTER (PAST THE GROWING SEASON) IT SHALL BE AT THE RATE OF 6,000 LBS OF HAY OR STRAW PER ACRE. A TACKIFIER MAY BE ADDED TO THE MULCH.
- SEDIMENT BARRIERS SHALL BE INSTALLED PRIOR TO ANY SOIL DISTURBANCE OF THE CONTRIBUTING DRAINAGE AREA ABOVE THEM. REFER TO CONSTRUCTION SEQUENCING SCHEDULE IN SWPPP REPORT FOR FURTHER INFORMATION.
- 130 (MIN.) POUNDS PURE LIVE SEED PER ACRE
- MULCH: LAYER OF COMMON HAY OR STRAW; 2 TONS PER ACRE
- FERTILIZER: COMMERCIAL 30-10-20, SLOW RELEASE APPLICATION RATE AS PER MANUFACTURER'S RECOMMENDATIONS (NO MORE THAN 1 LB NITROGEN PER 1000 SQ.FT)
- EXISTING GRADE
- TOPSOIL: MIN. OF 4" DEPTH IN MOWED AREAS, 2" IN UNMOWED AREAS
- SEEDING NOTES:
 - PROVIDE FRESH, CLEAN, NEW SEED COMPLYING WITH ESTABLISHED TOLERANCES FOR GERMINATION AND PURITY IN ACCORDANCE WITH THE U. S. DEPARTMENT OF AGRICULTURE RULES AND REGULATIONS UNDER THE LATEST EDITION OF THE FEDERAL SEED ACT. SEED SHALL BE MIXED BY THE DEALER AND SHALL BE DELIVERED TO THE SITE IN SEALED CONTAINERS WHICH SHALL BEAR THE DEALER'S GUARANTEE ANALYSIS.
 - SEED MIXTURES:
 - FOR TEMPORARY SEED - OR AREAS THAT WILL NOT BE MAINTAINED: RAPIDLY GERMINATING ANNUAL RYEGRASS: 30 LBS PER ACRE PERENNIAL RYEGRASS: 100 LBS PER ACRE
 - SEED RYE: 30 LBS PER ACRE
 - FOR USE ON LAWN AREAS (AREAS TO BE MAINTAINED) ALTERNATE A (SUNNY SITE): 65% KENTUCKY BLUE GRASS BLEND: 85-114 LBS PER ACRE 20% PERENNIAL RYEGRASS: 26-35 LBS PER ACRE 15% FINE FESCUE: 19-26 LBS PER ACRE TOTAL: 130-175 LBS PER ACRE
 - ALTERNATE B (SHADY SITE): 80% KENTUCKY BLUE GRASS BLEND*: 105-138 LBS PER ACRE 20% PERENNIAL RYEGRASS: 25-37 LBS PER ACRE TOTAL: 130-175 LBS PER ACRE
 - * SHADE TOLERANT
- APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, OR HYDRO SEEDER (SLURRY INCLUDING SEED AND FERTILIZER). HYDRO-SEEDINGS, WHICH INCLUDE MULCH, MAY BE LEFT ON SOIL SURFACE. SEEDING RATES MUST BE INCREASED 10% WHEN HYDRO-SEEDED.
- MULCH SEDED AREAS WITH STRAW MULCH (2000 LBS PER ACRE).
- SEED UNTIL FULLY SATURATE SOIL LAYER, BUT NOT DISLOCATE PLANTING SOIL.
- SEED BETWEEN APRIL 1ST AND MAY 15TH OR AUGUST 15TH AND OCTOBER 15TH. SEEDING MAY OCCUR BETWEEN MAY 15TH AND AUGUST 15TH IF ADEQUATE IRRIGATION IS PROVIDED.

TOPSOIL APPLICATION NOTES

- TOPSOIL SHALL BE DISTURBED TO A UNIFORM DEPTH OVER THE AREA. IT SHALL NOT BE PLACED WHEN IT IS PARTIALLY FROZEN, MUD ON OR ON PAVED SURFACES, OVER ICE, SNOW OR STANDING WATER.
- APPLY TOPSOIL IN THE FOLLOWING AMOUNTS FOR INTENDED USE:
 - MOWED LAWN: 4-8 INCHES
 - UNMOWED AREA: 2-4 INCHES
 - COMPLETE ROUGH GRADING AND FINAL GRADE, ALLOWING FOR DEPTH OF TOPSOIL TO BE ADDED. SCARIFY ALL COMPACT, SLOWLY PERMEABLE, MEDIUM AND FINE TEXTURED SUBSOIL AREAS. SCARIFY AT APPROXIMATELY RIGHT ANGLES TO THE SLOPE DIRECTION IN SOIL AREAS THAT ARE STEEPER THAN 5%.
 - MOVE REFUSE, WOOD PLANT PARTS, STONES OVER 3 INCHES IN DIAMETER, AND OTHER LITTER.
- TOPSOIL, SEED AND MULCH SHALL BE OF A BETTER OR EQUAL QUALITY OF THE EXISTING ADJACENT TOPSOIL AND SHALL MEET THE FOLLOWING CRITERIA:
 - TOPSOIL SHALL HAVE AT LEAST 2%, BUT NOT MORE THAN 6% BY WEIGHT OF FINE TEXTURED STABLE ORGANIC MATERIAL.
 - TOPSOIL SHALL HAVE NOT LESS THAN 20% FINE TEXTURED MATERIAL (PASSING THE NO. 200 SIEVE) AND NOT MORE THAN 15% CLAY.
 - TOPSOIL SHALL BE RELATIVELY FREE OF STONES OVER 1" DIAMETER, THRASH, NOXIOUS WEEDS, AND WILL HAVE LESS THAN 10% GRAVEL BY VOLUME.
- INSPECTION & MAINTENANCE NOTES:
 - TEMPORARY SEEDING AND PLANTING WILL BE INSPECTED FOR BARE SPOTS, WASHOUTS, AND UNHEALTHY GROWTH. TEMPORARY SEEDINGS SHALL BE PERIODICALLY INSPECTED. AT A MINIMUM 95% OF THE SOIL SURFACE SHOULD BE COVERED BY VEGETATION. IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHALL BE MADE AND OTHER TEMPORARY MEASURES USED IN THE INTERIM. (MULCH, FILTER BARRIERS, CHECK DAMS, ETC.)
 - ALL MULCHES MUST BE INSPECTED PERIODICALLY, IN PARTICULAR AFTER RAINSTORMS, TO CHECK FOR RILL EROSION. IF LESS THAN 90% OF THE SOIL SURFACE IS COVERED BY MULCH, ADDITIONAL MULCH SHALL BE APPLIED IMMEDIATELY.
 - AERATE COMPACTED OR HEAVY USED AREAS, ANNUALLY AS SOON AS THE SOIL MOISTURE CONDITIONS PERMIT. AERATE AREA 6 TO 8 TIMES USING A SPOON HOLLOW TINE TYPE AERATOR. DO NOT USE SPIKE EQUIPMENT. RESEED AREA AND THIN AREAS ANNUALLY WITH ORIGINAL SPECIES.
 - SOIL SHALL MAINTAIN A pH OF 6.0-7.0.

TOPSOIL, SEED AND MULCH DETAIL

SCALE: NTS

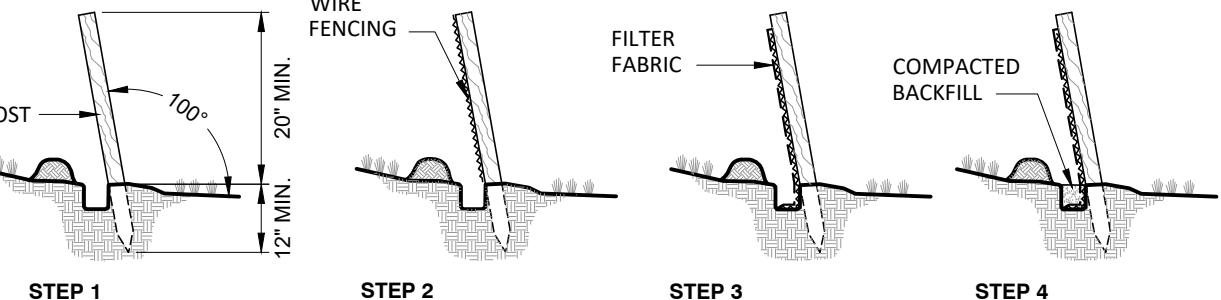


SPECIFICATION AND INSTALLATION NOTES:

- AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
- MAXIMUM SLOPE OF STOCKPILE SHALL BE 1:2.
- FOR STOCKPILE SITES, EACH PILE SHALL BE SURROUNDED WITH EITHER SILT FENCING OR HAY BALES AND STABILIZED WITH VEGETATION OR COVERED.
- SEE SPECIFICATIONS ON INSTALLATION OF SILT FENCE.

SOIL STOCKPILE DETAIL

SCALE: NTS



MATERIAL NOTES:

- 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 RANGE OF 0 DEGREES TO 120 DEGREE F. SYNTHETIC FILTER FABRIC SHALL BE CERTIFIED BY THE MANUFACTURER OR SUPPLIERS AS CONFORMING TO THE FOLLOWING REQUIREMENTS:

FABRIC PROPERTIES	MIN. ACCEPTED VALUE	TEST METHOD
GRAB TENSILE STRENGTH (lbs)	90	ASTM D1682
ELONGATION FAILURE AT (%)	50	ASTM D1682
MULLEN BURST STRENGTH (psi)	190	ASTM D3786
PUNCTURE STRENGTH (lbs)	40	ASTM D751 (MODIFIED)
SLURRY FLOW RATE (gal/min/sf)	0.3	US STD Sieve CW-02215
EQUIVALENT OPENING SIZE	40-80	US STD Sieve CW-02215
ULTRAVIOLET RADIATION STABILITY (%)	90	ASTM G-26

2. THE HEIGHT OF THE SILT FENCE SHALL NOT EXCEED 36 INCHES.

3. THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID THE USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT SUPPORT POSTS, WITH A 6 INCH OVERLAP MINIMUM AND SHALL BE SECURED SEAL.

INSTALLATION NOTES:

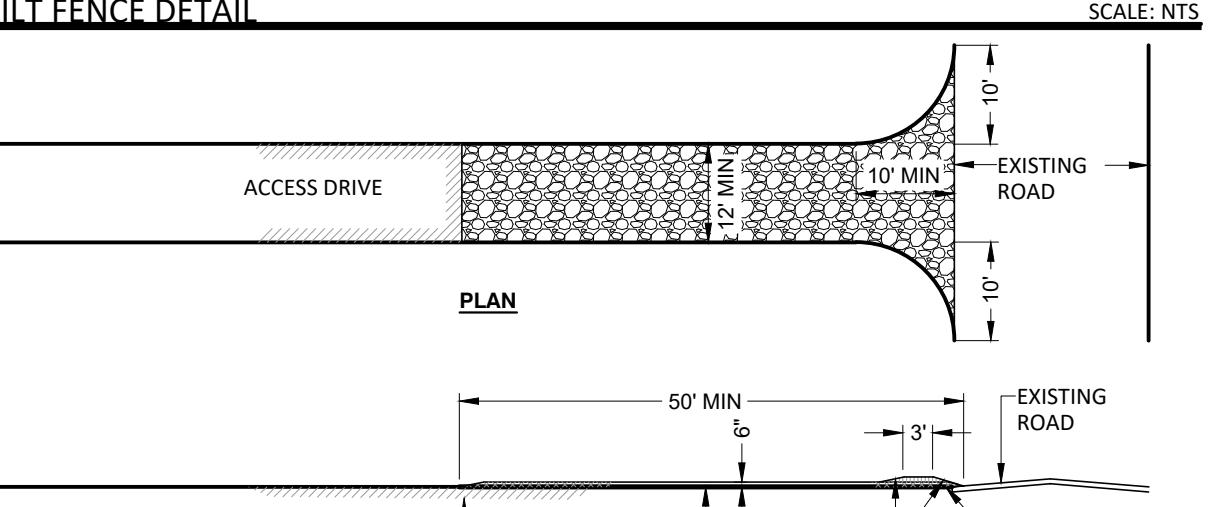
- WHEN STANDARD STRENGTH FILTER FABRIC IS USED, A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE FILTER FABRIC. THE WIRE MESH SUPPORT FENCE SHALL BE TIED TO THE FILTER FABRIC, NOT THE VINES, OR HOG RINGS. THE WIRE SHALL NOT EXCEED MORE THAN 35 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
- THE "STANDARD STRENGTH" FILTER FABRIC SHALL BE STAPLED OR WIRED TO THE FENCE, AND EIGHT (8) INCHES OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. FILTER FABRIC SHALL NOT BE STAPLED TO EXISTING STONES.
- WHEN EXTRA STRONG 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.
- SILT FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.
- POSTS SHALL BE SET AT A MAXIMUM OF 10 FEET APART AND DRIVEN SECURELY INTO THE GROUND.

5. INSPECTION & MAINTENANCE NOTES:

- STRAW BALE BARRIER AND SILT FENCE BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. THEY SHALL BE REPAIRED IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THEM. ANY REQUIRED REPAIRS SHALL BE MADE WITHIN 24 HOURS OF CONTRACTOR NOTIFICATION. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THEM, SEDIMENT BARRIERS SHALL BE REPLACED WITH A TEMPORARY CHECK DAM.
- SHOULD THE FABRIC ON A SILT FENCE OR FILTER BARRIER DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER IS STILL NECESSARY, THE FABRIC SHALL BE REPLACED IMMEDIATELY.
- SEDIMENT DEPOSITS SHOULD BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE THIRD (1/3) THE HEIGHT OF THE BARRIER.
- ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHOULD BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED, AND SEADED.
- Maintenance shall be performed as needed and material removed when "bulges" in the silt fences develop.

SILT FENCE DETAIL

SCALE: NTS



SPECIFICATIONS AND INSTALLATION NOTES:

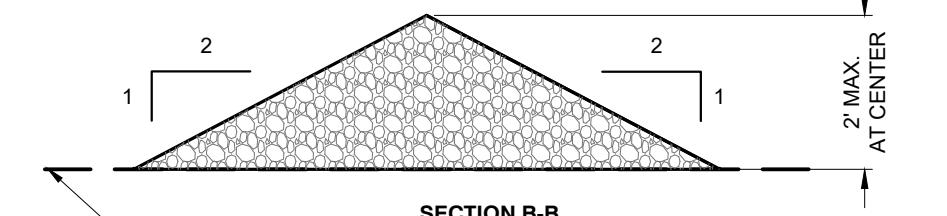
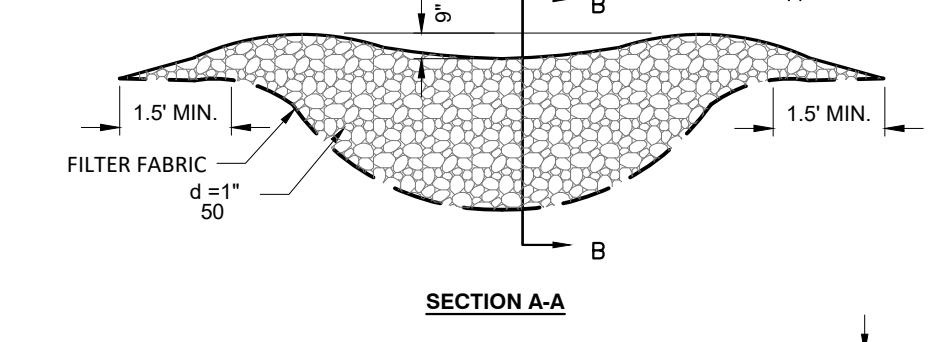
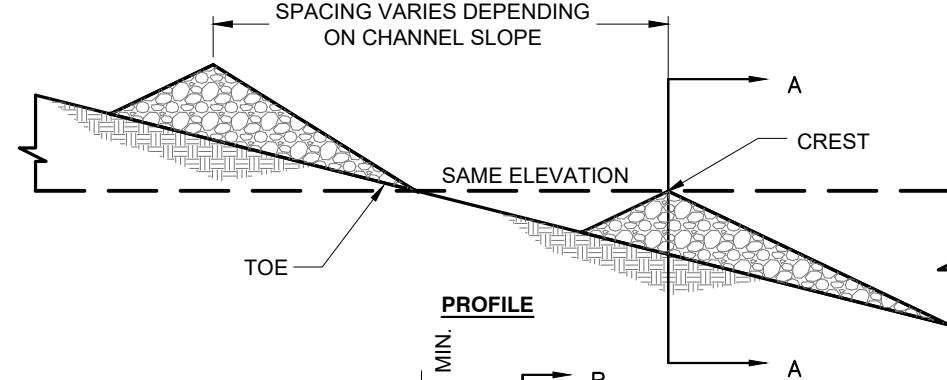
- PRIOR TO INITIATION OF CONSTRUCTION ACTIVITIES AT THE PROJECT SITE, STABILIZED CONSTRUCTION ENTRANCE SHALL BE CONSTRUCTED AT ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS.
- STONE SIZE - USE 2" STONE OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
- THICKNESS - NOT LESS THAN 6 INCHES.
- WIDTH - 12 FEET MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
- LENGTH - AS REQUIRED, BUT NOT LESS THAN 50 FEET.
- STAPLE - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE. THE FILTER CLOTH SHALL BE WOVEN.
- SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.

INSPECTION & MAINTENANCE NOTES:

- PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAINFALL.
- THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OF SEDIMENT ON TO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH AGGREGATE, WHICH DRAINS INTO AN APPROVED SEDIMENT-TRAPPING DEVICE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING STORM DRAINS, DITCHES OR WATERWAYS.
- SOIL SHALL MAINTAIN A pH OF 6.0-7.0.

STABILIZED CONSTRUCTION ENTRANCE DETAIL

SCALE: NTS

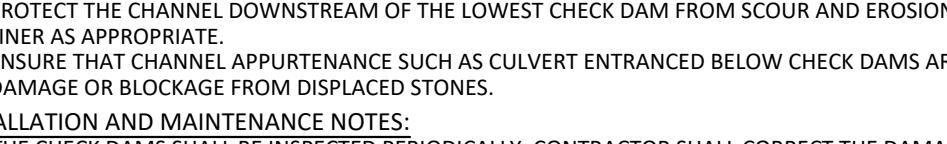


MATERIAL NOTES:

- WATTERLS SHALL BE AMERICAN EXCELSIOR COMPANY'S PREMIER STRAW WATTERLS OR APPROVED EQUIVALENT.
- ORGANIC, AGRICULTURAL STRAW FIBERS MUST BE WEED FREE ENCASED IN POLYPROPYLENE OR FIBERNET.
- 75% OF FIBERS MUST BE A MINIMUM OF 4" LONG.
- NET OPENINGS MUST BE APPROXIMATELY 0.5" WIDE BY 1.0" LONG.
- ALL COMPONENTS MUST BE BIODERADABLE.

EROSION CONTROL BLANKET DETAIL

SCALE: NTS



EROSION CONTROL BLANKET DETAIL

SCALE: NTS

SPECIFICATIONS AND INSTALLATION NOTES:

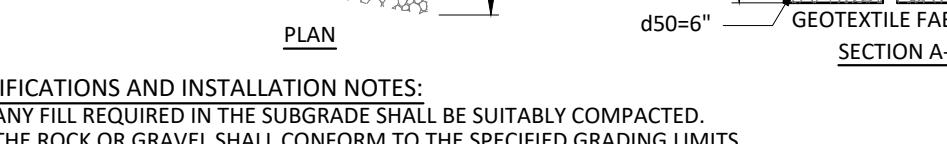
- STONE SHALL BE PLACED ON A FILTER FABRIC FOUNDATION.
- SET SPACING OF CHECK DAMS SUCH THAT THE ELEVATION OF THE CREST OF THE DOWNSTREAM DAM IS THE SAME AS THE TOE OF THE UPSTREAM DAM.
- EXTEND THE STONE A MINIMUM OF 1.5 FEET BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
- PLACE STONE 12 FEET DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR FILTER FABRIC AS APPROPRIATE.
- ENSURE THAT CHANNEL APPROPRIANCE SUCH AS CULVERT ENTRANCED BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONES.

INSTALLATION AND MAINTENANCE NOTES:

- THE CHECK DAMS SHALL BE INSPECTED PERIODICALLY. CONTRACTOR SHALL CORRECT THE DAMAGE WITHIN 24 HOURS OF NOTIFICATION.
- WHEN INSTALLING IN A CHANNEL BOTTOM, WATTLE INSTALLATION SHALL CONTINUE THREE FEET ABOVE THE ANTICIPATED HIGH WATER MARK.
- WATTLE SHALL REMAIN IN PLACE UNTIL FULLY ESTABLISHED VEGETATION AND ROOT SYSTEMS ARE PRESENT AND CAN SURVIVE ON THEIR OWN. WATTERLS ARE NOT REMOVED AND WILL DEGRADE IN PLACE.
- INSPECTION AND MAINTENANCE NOTES:

STONE CHECK DAM DETAIL

SCALE: NTS



STONE CHECK DAM DETAIL

SCALE: NTS

SPECIFICATIONS AND INSTALLATION NOTES:

- STONE SHALL BE PLACED ON A FILTER FABRIC FOUNDATION.
- ENDS OF WATTERLS SHALL BE TURNED UP THE SLOPE SO AS TO RETAIN WATER AND PREVENT ITS RELEASE FROM THE END OF THE WATTLE.
- WATTERLS SHALL BE SECURED TO THE SUBGRADE BY WOODEN STAKES SPACED EVERY FOUR LINEAL FEET ACROSS THE LENGTH OF THE WATTLE. STAKES SHALL BE DRIVEN THROUGH THE CENTER OF THE WATTLE AND INTO THE GROUND A MINIMUM OF 24" WITHIN TWO FEET OF THE END OF THE WATTLE.
- IF WATTERLS ARE JOINED TOGETHER BY ABUTTING THE ENDS, TIE THE ENDS TOGETHER USING HEAVY TWINE OR PLASTIC LOADING STRAP.

INSTALLATION AND MAINTENANCE NOTES:

- THE CHECK DAMS SHALL BE INSPECTED PERIODICALLY. CONTRACTOR SHALL CORRECT THE DAMAGE WITHIN 24 HOURS OF NOTIFICATION.
- WHEN INSTALLING IN A CHANNEL BOTTOM, WATTLE INSTALLATION SHALL CONTINUE THREE FEET ABOVE THE ANTICIPATED HIGH WATER MARK.
- WATTLE SHALL REMAIN IN PLACE UNTIL FULLY ESTABLISHED VEGETATION AND ROOT SYSTEMS ARE PRESENT AND CAN SURVIVE ON THEIR OWN. WATTERLS ARE NOT REMOVED AND WILL DEGRADE IN PLACE.
- INSPECTION AND MAINTENANCE NOTES:

STONE CHECK DAM DETAIL