<u>PRACTICE: STABILIZED CONSTRUCTION EXIT POINTS:</u> IN ORDER TO ELIMINATE TRACK OUT FROM VEHICLES, STABILIZED CONSTRUCTION EXITS MUST BE INSTALLED AT THE LOCATIONS WHERE VEHICLES WILL EXIT THE SITE. THE CONTRACTOR MUST RESTRICT VEHICLE USE TO THE DESIGNATED EXIT LOCATIONS. PRIOR TO VEHICLE EXIT, IF THE STABILIZED EXIT IS NOT EFFECTIVELY REMOVING SEDIMENT FROM THE TIRES AND IT IS BEING TRACKED OUT OF THE WORK ZONE, VEHICLE TIRES MUST BE WASHED OR SIMILAR METHOD PROVIDED TO EFFECTIVELY REMOVE SEDIMENT FROM WHEELS AND PREVENTING TRACK-OUT (E.G. THROUGH THE USE OF RUMBLE STRIPS OR AGGREGATE STONE EITHER ALONE OR IN COMBINATION WITH OTHER PRACTICES). NO VISIBLE SIGNS OF SOIL TRACKING FROM VEHICLES SHOULD BE PRESENT ON PUBLIC ROADWAYS EXITING THE

LOCATION PLAN

<u>(NSTALLATION:</u> THE STABILIZED CONSTRUCTION EXITS WILL CONSIST OF AN 8 INCH LAYER OF 2" (MIN.) STONE, PLACED OVER A LAYER OF GEOTEXTILE FABRIC IN ORDER TO PROVIDE SEPARATION FROM THE UNDERLYING SOIL AND PREVENT THE STONE FROM BEING GROUND DOWN INTO THE SOIL. THE STABILIZED CONSTRUCTION EXITS MUST BE WIDE ENOUGH TO COVER THE ENTIRE WIDTH OF THE EXIT AND FLARED WHERE IT MEETS THE ROADWAY TO ACCOMMODATE LONGER CONSTRUCTION VEHICLES. THE STABILIZED CONSTRUCTION EXIT MUST BE LONG ENOUGH TO ALLOW MUD AND SEDIMENT TO BECOME DISLODGED FROM VEHICLE TIRES, AND/OR A MINIMUM OF SIXTY FEET (60') IN LENGTH.

<u>MAINTENANCE:</u> DURING THE COURSE OF CONSTRUCTION THE STABILIZED CONSTRUCTION EXIT WILL BECOME FILLED WITH ACCUMULATED SEDIMENT AND/OR THE STONE WILL BECOME COMPACTED. THE CONTRACTOR MUST REPAIR THE EXIT AS NECESSARY BY REMOVING ACCUMULATED SEDIMENT, REPLACING THE STONE OR BACK-BLADING THE STONE TO REFRESH IT. IF TRACKING OF SEDIMENT OCCURS, THE CONTRACTOR MUST REMOVE DEPOSITED SEDIMENT BY COMPLYING WITH THE FOLLOWING REQUIREMENTS:

· WHERE TRACK-OUT OF SEDIMENT OCCURS FROM THE SITE ONTO OFF-SITE STREETS, SIDEWALKS, AND OTHER PAVED AREAS, DEPOSITS MUST BE SWEPT, SHOVELED, OR VACUUMED TO REMOVE TRACK-OUT MATERIAL OR OTHER SEDIMENT DEPOSITS BY THE END OF THE SAME WORK DAY IN WHICH THE TRACK OUT IS DISCOVERED.

· HOSING OR SWEEPING TRACKED-OUT SEDIMENT INTO ANY STORMWATER CONVEYANCE, (UNLESS IT IS CONNECTED TO A SEDIMENT BASIN, SEDIMENT TRAP, OR SIMILARLY EFFECTIVE CONTROL), STORM DRAIN INLET, OR SURFACE WATER IS PROHIBITED.

STABILIZED CONSTRUCTION ENTRANCE / EXIT

2"x2"x36" WOODEN STAKES PLACED 10' ON CENTER -AREA TO BE PROTECTED 2"x2"x36" WOODEN STAKES 12" DIAMETER PLACED 10' ON CENTER -- COMPOST FILTER TUBE COMPOST FILTER TUBE WATER FLOW UNDISTURBED WORK AREA WORK AREA <u>SECTION</u> **PLAN VIEW**

- 1. PREFABRICATED COMPOST TUBE SHALL BE FILTREXX SOXX OR APPROVED EQUAL 2. MATERIAL FOR SOCKS SHALL CONSIST OF SANITIZED MATURE COMPOST, FREE OF VIABLE WEED SEEDS AND FOREIGN DEBRIS SUCH AS GLASS AND PLASTIC. COMPOST SHALL BE IN SHREDDED OR GRANULAR FORM AND FREE FROM HARD LUMPS. IN ADDITION, NO KILN-DRIED WOOD OR CONSTRUCTION DEBRIS SHALL BE ALLOWED.
- 3. TUBES SHALL CONSIST OF JUTE MESH OR OTHER APPROVED BIODEGRADABLE MATERIAL.

PRACTICE PERIMETER CONTROLS: PERIMETER STORMWATER SEDIMENT CONTROLS FOR THIS PROJECT WILL CONSIST OF A ROW OF SILT FENCE AND/OR FIBER ROLLS WHICH MUST BE INSTALLED PRIOR TO COMMENCING EARTH DISTURBING ACTIVITIES. AT A MINIMUM, THE SEDIMENT CONTROLS MUST BE INSTALLED IN THE LOCATIONS SHOWN ON THE PLAN. CONTROLS MUST BE PLACED ALONG THE CONTOUR IN THE FLATTEST AREA POSSIBLE AT A DISTANCE FROM THE TOE OF SLOPE AND THE ENDS PLACED UP SLOPE FROM THE REST OF THE CONTROL. PERIMETER CONTROL MEASURES MUST BE USED AROUND SOIL STOCKPILES AS A SEDIMENT CONTROL MEASURE.

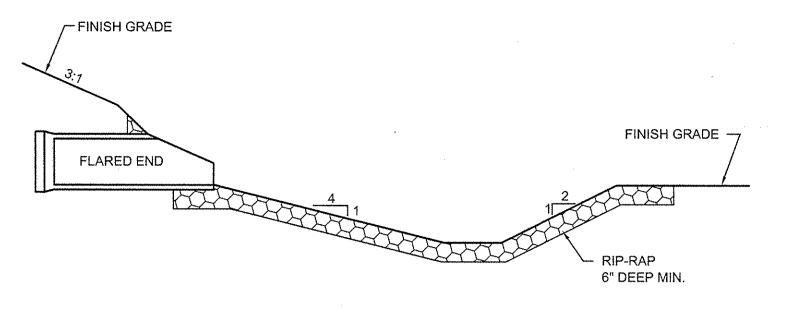
COMPOST FILTER TUBE: A COMPOST FILTER TUBE IS A TYPE OF CONTAINED COMPOST FILTER BERM CONSISTING OF A MESH TUBE FILLED WITH COMPOSTED MATERIAL THAT IS PLACED PERPENDICULAR TO SHEET-FLOW RUNOFF TO CONTROL EROSION AND RETAIN SEDIMENT IN DISTURBED AREAS. THE COMPOST FILTER TUBE ACTS AS A FILTER TO RETAIN SEDIMENT AND OTHER POLLUTANTS (E.G., SUSPENDED SOLIDS, NUTRIENTS) WHILE ALLOWING THE WATER TO FLOW THROUGH.IT. TUBES ARE ASSEMBLED BY TYING A KNOT IN ONE END OF THE MESH TUBE, FILLING THE TUBE WITH THE COMPOSTED MATERIAL (USUALLY USING A PNEUMATIC BLOWER), THEN KNOTTING THE OTHER END ONCE THE DESIRED LENGTH IS REACHED.

INSTALLATION REQUIREMENTS: NO TRENCHING IS REQUIRED; THEREFORE, SOIL IS NOT DISTURBED UPON INSTALLATION. ONCE THE FILTER TUBE IS FILLED AND PUT IN PLACE, IT SHOULD BE ANCHORED TO THE SLOPE BY STAKES THROUGH THE CENTER OF THE TUBE AT REGULAR INTERVALS; ALTERNATIVELY, STAKES CAN BE PLACED ON THE DOWNSTREAM SIDE OF THE TUBE. THE ENDS OF THE FILTER TUBE SHOULD BE DIRECTED UPSLOPE, TO PREVENT STORMWATER FROM RUNNING AROUND THE END OF THE TUBE.

MAINTENANCE REQUIREMENTS: . IF THERE IS EXCESSIVE PONDING BEHIND THE FILTER TUBE OR ACCUMULATED SEDIMENT REACHES THE TOP OF THE TUBE, AN ADDITIONAL TUBE SHOULD BE ADDED ON TOP OR IN FRONT OF THE EXISTING FILTER TUBE IN THESE AREAS. RIPPED OR TORN SECTIONS MUST BE REPLACED.

COMPOST FILTER TUBE

NOT TO SCALE

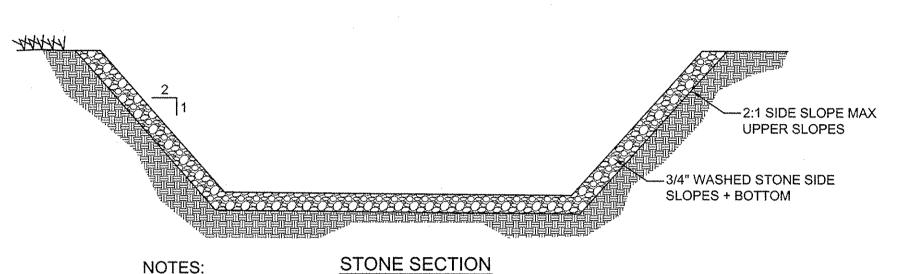


<u>ICE: OUTLET STABILIZATION AND VELOCITY DISSIPATION .</u> OUTLET STABILIZATION AND VELOCITY DISSIPATION MEASURES WILL BE INSTALLED AT THE OUTLETS OF DRAINAGE CHANNELS, CONVEYANCES, SWALES, OR DIVERSIONS, AND BASIN OUTLETS, WHERE THE VELOCITY OF THE DISCHARGE MAY RESULT IN EROSION AT THE OUTLET OR RECEIVING CHANNEL OR DEVELOPMENT OF A PLUNGE POOL. OUTLET STABILIZATION/VELOCITY DISSIPATION MEASURES WILL INCLUDE THE PLACEMENT OF RIPRAP OR CONSTRUCTION OF A CONCRETE DISSIPATION STRUCTURE AT THE DISCHARGE LOCATION.

<u>INSTALLATION REQUIREMENTS:</u> DURABLE ANGULAR ROCK SHALL BE UNDERLAIN FILTER FABRIC AND ALIGNED WITH THE RECEIVING WATER OR BASIN.

<u>MAINTENANCE REQUIREMENTS:</u> INSPECT THE APRON FOR DISPLACEMENT OF RIPRAP AND ANY DAMAGE TO UNDERLYING FABRIC REPAIR FABRIC AND REPLACE RIP RAP THAT HAS WASHED AWAY. IF RIPRAP CONTINUES TO WASH AWAY, REPLACE WITH LARGER DIAMETER ROCK. INSPECT FOR SCOUR BENEATH THE RIP RAP AND AROUND THE OUTLET AND REPAIR DAMAGE TO SLOPE.

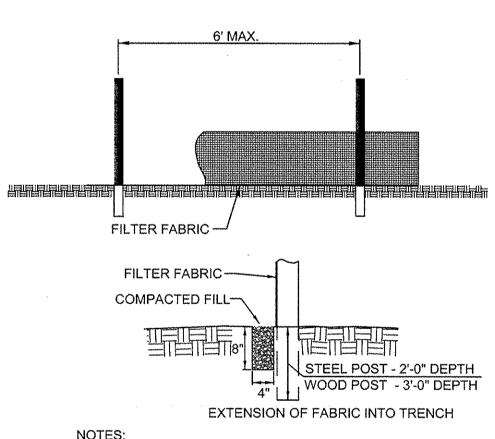
OUTLET STABILIZATION



CONTRACTOR TO DEWATER THE SEDIMENT TRAP WITHIN 72 HOURS. PUMP INTAKE SHALL BE LOCATED AS CLOSE TO THE TOP OF THE WATER COLUMN AND WATER SHALL NOT BE DRAWN FROM THE BOTTOM OF THE TRAP. DEWATERING FLUIDS MUST BE ROUTED THROUGH A FILTER BAG PRIOR TO DISCHARGE.

PRACTICE: SEDIMENT TRAP AND LINEAR SEDIMENT TRENCH: A SEDIMENT TRAP AND LINEAR SEDIMENT TRENCH, CONSISTS OF A SHALLOW LINEAR DEPRESSION OR EXCAVATION LINED WITH STONE WHERE RUNOFF IS DIRECTED AND ALLOWED TO INFILTRATE THE GROUND. THE TRENCH AND TRAP MUST BE CLEARED OF SEDIMENT WHEN IT REACHES A DEPTH OF 1/4 THE DESIGN DEPTH. FOR THIS PROJECT, TRAPS AND TRENCHES WILL BE USED THROUGHOUT THE WORK ZONES TO CAPTURE CONSTRUCTION TERM RUNOFF FROM LOCALIZED AREAS.

SEDIMENT TRAP/TRENCH



- 1. FILTER FABRIC SHALL BE A MINIMUM OF 36" IN WIDTH. 2. STEEL POST SHALL BE 5'-0" IN HEIGHT AND BE OF THE
- SELF-FASTENER ANGLE STEEL TYPE.
- 3. WOOD POST SHALL BE 6'-0" IN HEIGHT AND 3" IN DIAMETER.

PRACTICE: SILT FENCE: SILT FENCE IS A SEDIMENT CONTROL MEASURE CONSISTING OF A LENGTH OF DTEXTILE FABRIC STRETCHED BETWEEN ANCHORING POSTS SPACED AT REGULAR INTERVALS. THE FENCE IS USED TO INTERCEPT FLOWS, SLOW SHEET FLOW RUNOFF AND ALLOW PONDING OF FLOW AND SEDIMENT TO SETTLE OUT. THE FILTER FABRIC SHOULD BE ENTRENCHED IN THE GROUND BETWEEN THE SUPPORT POSTS. SILT FENCE WILL BE INSTALLED AS PERIMETER PROTECTION AND WILL ALSO BE USED FOR STOCKPILE CONTROL AND ALONG SLOPE BOUNDARIES THAT WILL RECEIVE STORMWATER FLOW FROM DISTURBED AREAS.

INSTALLATION: THE GEOTEXTILE FABRIC MUST BE ENTRENCHED IN THE GROUND BETWEEN THE SUPPORT POSTS. SILT FENCE IS EFFECTIVE IN TREATING LOW VELOCITY SHEET FLOW AND IS NOT INTENDED FOR USE IN AREAS OF CONCENTRATED OR CHANNELIZED FLOW. THE STAKES USED TO ANCHOR THE FILTER FABRIC SHOULD BE WOOD OR METAL. ERECT SILT FENCE IN A CONTINUOUS FASHION FROM A SINGLE ROLL OF FABRIC TO ELIMINATE GAPS IN THE FENCE. IF A CONTINUOUS ROLL OF FABRIC IS NOT AVAILABLE, OVERLAP THE FABRIC FROM BOTH DIRECTIONS ONLY AT STAKES OR POSTS; OVERLAP AT LEAST 6 INCHES. EXCAVATE A TRENCH TO BURY THE BOTTOM OF THE FABRIC FENCE AT LEAST 6 INCHES BELOW THE GROUND SURFACE TO PREVENT GAPS FROM FORMING AT THE GROUND SURFACE.

MAINTENANCE: SILT FENCE MUST BE INSPECTED FOR RIPS, TEARS, AND GAPS BETWEEN THE FENCE AND THE GROUND. ACCUMULATED SEDIMENT MUST BE REMOVED FROM THE SILT FENCE WHEN IT REACHES 1/2 OF THE EXPOSED HEIGHT OF THE FABRIC. AN ADEQUATE RESERVE OF SILT FENCE MUST BE KEPT ON SITE AT ALL TIMES FOR EMERGENCY AND/OR ROUTINE REPLACEMENT. IF GAPS OR TEARS ARE DISCOVERED, REPAIR OR REPLACE THE FABRIC IMMEDIATELY. SILT FENCE SHALL BE REMOVED ONLY AFTER EXPOSED SOILS IN THE CONTRIBUTING DRAINAGE AREA ACHIEVE FINAL STABILIZATION.

NOT TO SCALE

EROSION PREVENTION AND SEDIMENT CONTROL NOTES

THE BEST MANAGEMENT PRACTICES PROVIDED HEREIN REPRESENT THE MINIMUM MEASURES TO BE EMPLOYED DURING EACH PHASE OF CONSTRUCTION. SPECIFIC SEQUENCING PLANS WILL BE DEVELOPED FOR EACH PHASE OF CONSTRUCTION AS DESIGN IS ADVANCED.

THE CONTRACTOR MUST PERFORM ACTIVITIES IN ACCORDANCE WITH THE REQUIREMENTS OF THE EPA 2012 GENERAL PERMIT FOR DISCHARGES FROM CONSTRUCTION ACTIVITIES AND THE ORDER OF CONDITIONS ISSUED BY

PER THE EPA CONSTRUCTION GENERAL PERMIT, SINCE THE PROJECT WILL DISCHARGE TO A SURFACE WATER THAT IS IMPAIRED FOR SEDIMENT (TURBIDITY), THE CONTRACTOR MUST PERFORM INSPECTIONS AND PREPARE INSPECTION REPORTS EVERY 7 CALENDAR DAYS AND WITHIN 24 HOURS OF THE OCCURRENCE OF A STORM EVENT

THESE EROSION AND SEDIMENTATION PLANS WILL BE INCORPORATED INTO THE FINAL PROJECT STORMWATER POLLUTION PREVENTION PLAN.

NO EARTH DISTURBING ACTIVITIES SHALL BE PERFORMED UNTIL THE COMPLETION OF INSTALLATION OF PERIMETER SEDIMENT CONTROL MEASURES.

TEMPORARY STABILIZATION PRACTICES MUST BE INITIATED AS SOON AS PRACTICABLE ON PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN 7 DAYS AFTER CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. THE 7 DAY PERIOD REFLECTS THE EPA CONSTRUCTION GENERAL PERMIT REQUIREMENTS FOR DISCHARGES TO A SEDIMENT IMPAIRED (TURBIDITY) SURFACE WATER.

• UNLESS INFEASIBLE, CONTAIN AND SECURELY PROTECT FROM WIND. SOIL STOCKPILE CONTROL

STOCKPILES MUST BE LOCATED OUTSIDE OF BUFFER AREAS AND

PHYSICALLY SEPARATED FROM OTHER STORMWATER CONTROLS.

• PROTECT FROM CONTACT WITH STORMWATER (INCLUDING RUN-ON) USING A

TEMPORARY PERIMETER SEDIMENT BARRIER (SILT FENCE OR FIBER ROLL):

TO AVOID DIRECT CONTACT WITH PRECIPITATION OR TO MINIMIZE SEDIMENT

• DO NOT HOSE DOWN OR SWEEP SOIL OR SEDIMENT ACCUMULATED ON PAVEMENT

CONNECTED TO A SEDIMENT BASIN, SEDIMENT TRAP, OR SIMILARLY EFFECTIVE

OR OTHER IMPERVIOUS SURFACES INTO ANY STORMWATER CONVEYANCE (UNLESS

OR SOIL, THE FOLLOWING MEASURES MUST BE FOLLOWED:

FROM OTHER STORMWATER CONTROLS IMPLEMENTED:

• PROVIDE COVER OR APPROPRIATE TEMPORARY STABILIZATION

CONTROL), STORM DRAIN INLET, OR SURFACE WATER; AND

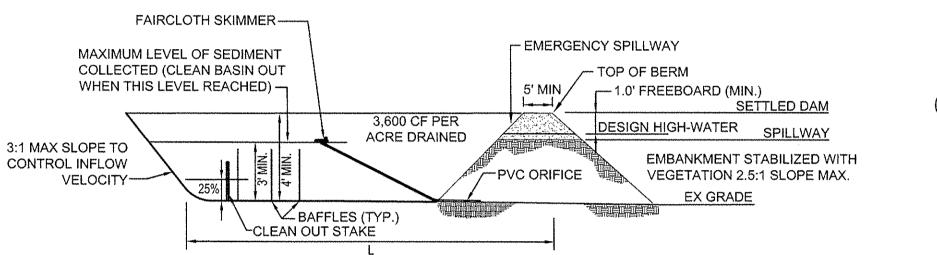
PRACTICE: CONTROL DISCHARGES FROM SEDIMENT OR SOIL STOCKPILES . FOR ANY

STOCKPILED OR LAND CLEARING DEBRIS COMPOSED, IN WHOLE OR IN PART, OF SEDIMENT

LOCATE THE PILES OUTSIDE OF ANY NATURAL BUFFERS AND PHYSICALLY SEPARATE

COMPOST FILTER TUBE

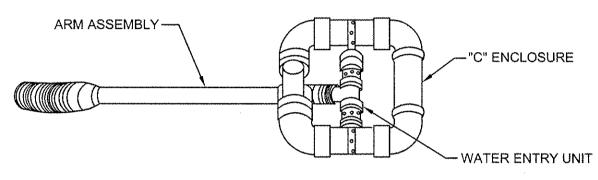
STABILIZE PILE WITH **VEGETATION OR COVER -**



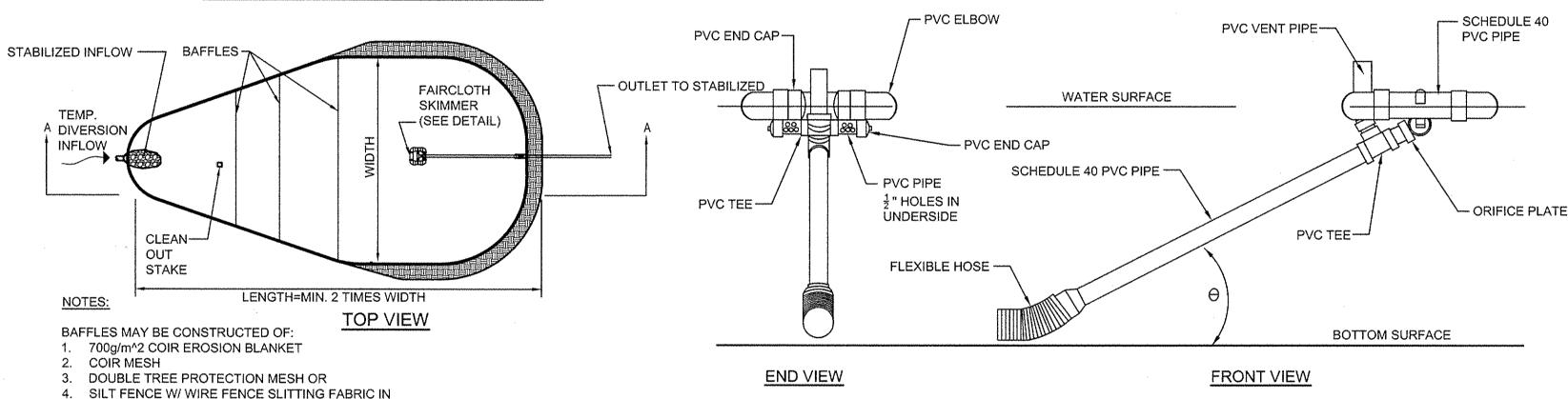
SECTION A-A THROUGH EMBANKMENT

ALTERNATING SQUARES

SEDIMENT BASIN WITH SKIMMER OUTLET



PERSPECTIVE VIEW



SURFACE SKIMMER DETAIL (FAIRCLOTH SKIMMER OR APPROVED EQUAL)

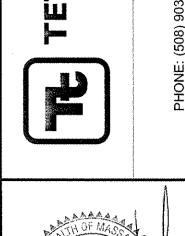
NOT TO SCALE RACTICE: SEDIMENT BASINS: TEMPORARY SEDIMENT BASINS ARE A SEDIMENT CONTROL PRACTICE WHICH CONSISTS OF AN EXCAVATED OR NATURAL DEPRESSION THAT DETAINS/RETAINS STORM WATER RUNOFF ALLOWING EDIMENTS TO SETTLE OUT OF SUSPENSION PRIOR TO DISCHARGE VIA SUITABLY STABILIZED OUTLET. EFFECTIVE IMPLEMENTATION OF EROSION CONTROL PRACTICES ON EXPOSED SOILS LOCATED UPSLOPE WITHIN THE CONTRIBUTING DRAINAGE AREA WILL SIGNIFICANTLY REDUCE MAINTENANCE REQUIREMENTS. PER THE EPA CONSTRUCTION GENERAL PERMIT, THE TEMPORARY BASINS SHOWN WERE SIZED BASED ON 3,600 CUBIC FEET PER ACRE DRAINED. IN ADDITION TO THE REQUIRED SEDIMENT BASIN, A SERIES OF SEDIMENT TRAPS AND/OR TRENCHES WILL BE DESIGNED IN SELECT LOCATIONS AT THE SITE WHERE RUNOFF IS EXPECTED TO OCCUR AND ACCUMULATE DURING CONSTRUCTION.

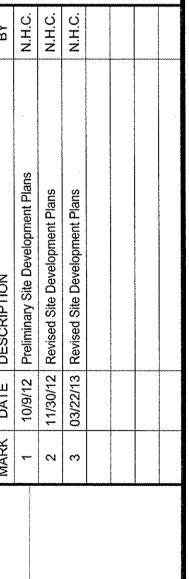
IN ACCORDANCE WITH 2012 EPA CONSTRUCTION GENERAL PERMIT, THE DISCHARGE FROM THE BASIN MUST UTILIZE OUTLET STRUCTURES WHICH DRAW WATER FROM THE SURFACE IN ORDER TO MINIMIZE THE DISCHARGE OF POLLUTANTS. FOR THIS PROJECT, A FLOATING SKIMMER WILL BE USED AND SPECIFIC INSTALLATION AND MAINTENANCE REQUIREMENTS FOR THE SKIMMER WHICH CAN BE FOUND ON THE MANUFACTURER'S WEB SITE

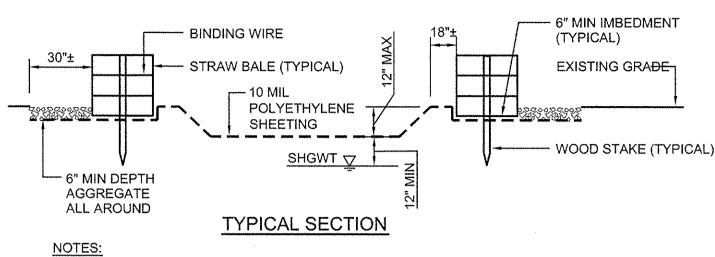
INSTALLATION REQUIREMENTS: CONSTRUCTION OF THE BASINS AND TRAPS MUST OCCUR BEFORE EARTH DISTURBANCE ACTIVITIES COMMENCE. THE SIDE SLOPES AND BOTTOMS OF THE TEMPORARY BASIN AND/OR TRAP MUST BE APPROPRIATELY STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.

MAINTENANCE REQUIREMENTS: REMOVE ACCUMULATED SEDIMENT BEFORE IT REACHES 1/2 OF THE CAPACITY OF THE SEDIMENT BASIN IN ORDER TO MAXIMIZE SEDIMENT SETTLING POTENTIAL AND MINIMIZE THE POSSIBILITY OF SEDIMENT WASHOUT DURING HIGH INTENSITY/LONG DURATION STORM EVENTS. INSPECT BASINS AFTER EACH STORM EVENT TO ENSURE PROPER DRAINAGE AND DETERMINE THE NEED FOR REPAIRS. REPLACE MATERIAL ERODED FROM EARTHEN EMBANKMENTS OR STONES DISLODGED FROM STONE CHECK DAMS IMMEDIATELY.









- 1. CONTAINMENT MUST BE STRUCTURALLY SOUND AND LEAK FREE AND CONTAIN ALL LIQUID WASTES.
- 2. CONTAINMENT DEVICES MUST BE OF SUFFICIENT QUANTITY OR VOLUME TO COMPLETELY CONTAIN THE LIQUID WASTES GENERATED.
- WASHOUT AREA(S) SHALL BE INSTALLED IN A LOCATION EASILY ACCESSIBLE BY CONCRETE TRUCKS.
- 4. ONE OR MORE AREAS MAY BE INSTALLED ON THE CONSTRUCTION SITE AND MAY BE RELOCATED AS CONSTRUCTION PROGRESSES.

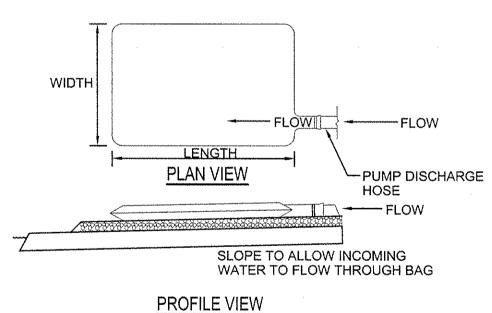
PRACTICE CONCRETE WASHOUT AREAS: CONCRETE WASHOUT AREAS CONSIST OF A PREFABRICATED OR SITE-BUILT IMPERMEABLE CONTAINMENT AREA SIZED TO HOLD CONCRETE WASTES AND WASH WATER. CONCRETE WASHOUTS WILL BE USED TO CONTAIN CONCRETE AND LIQUIDS WHEN THE CHUTES OF CONCRETE MIXERS AND HOPPERS OF CONCRETE PUMPS ARE RINSED OUT AFTER DELIVERY. THE WASHOUT FACILITIES CONSOLIDATE SOLIDS FOR EASIER DISPOSAL AND PREVENT RUNOFF OF LIQUIDS.

NSTALLATION REQUIREMENTS: THE CONCRETE WASHOUT AREA MUST BE CONSTRUCTED PRIOR TO PLACEMENT OF CONCRETE ON-SITE. THE CONCRETE WASHOUT AREA MUST BE LOCATED IN AN AREA WHERE ITS LIKELIHOOD OF CONTRIBUTING TO STORM WATER DISCHARGES IS NEGLIGIBLE. WASHOUTS SHALL BE LOCATED A MINIMUM OF FIFTY FEET (50') FROM ANY STORM DRAIN INLETS, STORM WATER CONVEYANCE, SURFACE WATER OR WETLAND. THESE SPECIALLY DESIGNATED AREAS SHOULD BE PROPERLY SIGNED AND ONSITE PERSONNEL MUST INFORM THE CONCRETE VENDORS OF THE LOCATION.

MAINTENANCE REQUIREMENTS: THE HARDENED RESIDUE FROM THE CONCRETE WASHOUT AREA WILL BE DISPOSED OF IN THE SAME MANNER AS OTHER NON-HAZARDOUS CONSTRUCTION WASTE MATERIALS OR MAY BE BROKEN UP AND USED ONSITE AS APPROPRIATE. IT IS ALSO ACCEPTABLE FOR WASTE CONCRETE TO BE POURED INTO FORMS TO MAKE RIPRAP OR OTHER USEFUL CONCRETE PRODUCTS. CHECK ALL CONCRETE WASHOUT FACILITIES DAILY TO DETERMINE IF THEY HAVE BEEN FILLED TO 75 PERCENT CAPACITY, WHICH IS WHEN MATERIALS MUST BE REMOVED. BOTH ABOVE- AND BELOW- GROUND SELF-INSTALLED WASHOUTS SHOULD BE INSPECTED DAILY TO ENSURE THAT PLASTIC LININGS ARE INTACT AND SIDEWALLS HAVE NOT BEEN DAMAGED BY CONSTRUCTION ACTIVITIES.

MATERIAL REMOVAL: CONCRETE WASHOUTS ARE DESIGNED TO PROMOTE EVAPORATION WHERE FEASIBLE. HOWEVER, IF STORED LIQUIDS HAVE NOT EVAPORATED AND THE WASHOUT IS NEARING CAPACITY, VACUUM AND DISPOSE OF THEM IN AN APPROVED MANNER - CHECK WITH THE LOCAL SANITARY SEWER AUTHORITY TO DETERMINE IF THERE ARE SPECIAL DISPOSAL REQUIREMENTS FOR CONCRETE WASH WATER. REMOVE LIQUIDS OR COVER THE STRUCTURES BEFORE PREDICTED RAINSTORMS TO PREVENT OVERFLOWS. PREFABRICATED AND WATERTIGHT WASHOUT CONTAINER PROVIDERS GENERALLY OFFER A VACUUM SERVICE TO REMOVE THE LIQUID MATERIAL.

CONCRETE WASHOUT AREA



- 1. THE PRIMARY PURPOSE OF THE FILTER BAG IS TO RETAIN SILT, SAND, AND FINES DURING DEWATERING OPERATIONS WHILE ALLOWING WATER TO PASS THROUGH THE BAG.
- 2. FILTER BAGS MAY ALSO BE PLACED ON COARSE AGGREGATE, STONE, OR HAYBALES TO INCREASE FILTRATION EFFICIENCY.
- 3. THE NECK OF THE FILTER BAG SHALL BE STRAPPED TIGHTLY TO THE DISCHARGE HOSE.
- 4. A FILTER BAG IS FULL WHEN IT NO LONGER CAN EFFICIENTLY FILTER SEDIMENT OR ALLOW WATER TO PASS AT A REASONABLE RATE.

PRACTICE DEWATERING: DISCHARGING GROUNDWATER OR ACCUMULATED STORMWATER THAT IS REMOVED FROM EXCAVATIONS, TRENCHES, FOUNDATIONS, VAULTS, OR OTHER POINTS OF ACCUMULATION ASSOCIATED WITH A CONSTRUCTION ACTIVITY ARE PROHIBITED, UNLESS SUCH WATERS ARE FIRST TREATED BY AN APPROPRIATE CONTROL FOR SEDIMENT. UNCONTAMINATED, NON-TURBID DEWATERING WATER, MAY BE DISCHARGED WITHOUT BEING ROUTED TO A CONTROL. APPROPRIATE CONTROLS INCLUDE, BUT ARE NOT LIMITED TO, SEDIMENT BASINS OR TRAPS, DEWATERING TANKS, WEIR TANKS, OR FILTRATION SYSTEMS (E.G., BAG OR SAND FILTERS) THAT ARE DESIGNED TO REMOVE SEDIMENT. THE FOLLOWING DISCHARGE REQUIREMENTS FOR DEWATERING ACTIVITIES MUST BE MET:

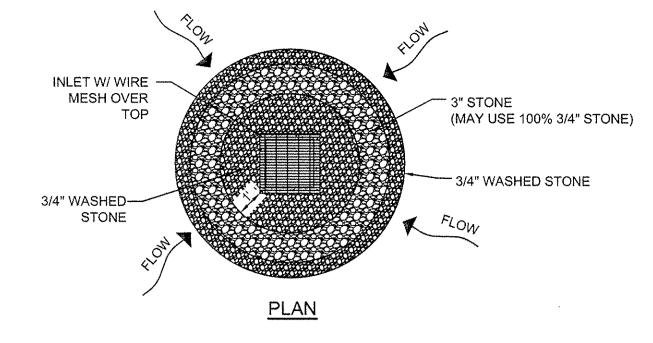
- DISCHARGE MUST BE LOCATED OUTSIDE OF WETLANDS;
- IF A WELL VEGETATED AREA IS NOT AVAILABLE, OR IF THE DISCHARGE WILL BE WITHIN 100 FEET OF A WETLAND OR STREAM BANK, THE FILTER BAG SHALL BE LOCATED IN A CONTAINMENT STRUCTURE, SUCH AS HAY BALES;
- DO NOT DISCHARGE FLOATING SOLIDS OR VISIBLE FOAM;

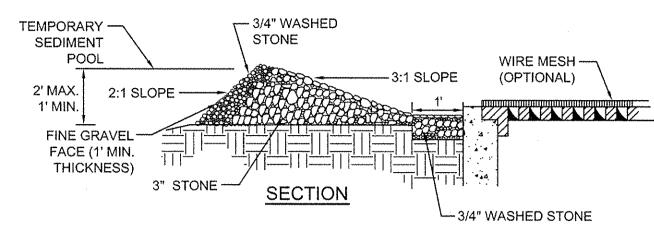
PROCESS: AND

- USE AN OIL-WATER SEPARATOR OR SUITABLE FILTRATION DEVICE (SUCH AS A CARTRIDGE FILTER) THAT IS DESIGNED TO REMOVE OIL, GREASE, OR OTHER PRODUCTS IF DEWATERING WATER IS FOUND TO CONTAIN THESE MATERIALS;
- TO THE EXTENT FEASIBLE, UTILIZE VEGETATED, UPLAND AREAS OF THE SITE TO INFILTRATE DEWATERING WATER BEFORE
- DISCHARGE. IN NO CASE WILL SURFACE WATERS BE CONSIDERED PART OF THE TREATMENT AREA; AT ALL POINTS WHERE DEWATERING IS DISCHARGED, COMPLY WITH VELOCITY DISSIPATION REQUIREMENTS OF EPA
- CONSTRUCTION GENERAL PERMIT; WITH BACKWASH WATER, EITHER HAUL IT AWAY FOR DISPOSAL OR RETURN IT TO THE BEGINNING OF THE TREATMENT
- REPLACE AND CLEAN THE FILTER MEDIA USED IN DEWATERING DEVICES WHEN THE PRESSURE DIFFERENTIAL EQUALS OR EXCEEDS THE MANUFACTURER'S SPECIFICATIONS.

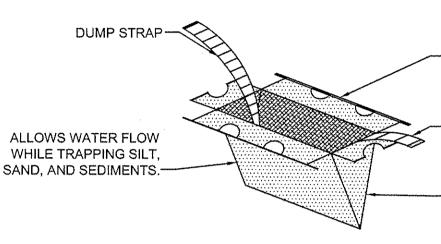
DEWATERING FILTER BAG DETAIL

NOT TO SCALE





GRAVEL DROP INLET PROTECTION (GRAVEL DONUT) FOR USE IN UNPAVED AREAS ONLY



NON-PAVED AREAS.

EROSION OR FLOODING.

- PIPE POCKET TO ACCEPT UP TO 2" DIAMETER SCHEDULE 80 PIPE. PIPE IS INSTALLED TO FACILITATE THE HOISTING OF THE FILLED BAG FROM THE CATCH BASIN -INVERSION STRAPS. ONCE REMOVED FROM THE CATCH BASIN, THE BAG IS HOISTED FROM THE INVERSION STRAPS TO EMPTY THE CONTENTS TURNING THE BAG INSIDE OUT. CONSTRUCTED OF HIGH STRENGTH WOVEN GEOTEXTILE FABRIC. ALL SEAMS DOUBLE STITCHED WITH HEAVY DUTY MARINE QUALITY THREADS. ACF ENVIRONMENTAL MODEL # SIL T02X02 HIGH VISIBILITY YELLOW OR APPROVED EQUAL.

GEOTEXTILE CATCH BASIN INLET PROTECTION FOR USE IN PAVED AREAS ONLY

TORM DRAIN INLET PROTECTION: INLET PROTECTION MEASURES REMOVE SEDIMENT FROM THE O ENTRY INTO THE STORM DRAIN INLETS. EXAMPLES OF INLET PROTECTION MEASURES INCLUDE EXCAVATIONS AROUND THE PERIMETER OF THE DROP INLET, FABRIC BARRIERS AROUND INLET ENTRANCE, BLOCK AND GRAVEL PROTECTION, AND STONE-FILLED BAG BERMS. INLET PROTECTION PRACTICES TYPICALLY FUNCTION BY SLOWING AND DETAINING SEDIMENT-LADEN RUNOFF AND ALLOWING SEDIMENT TO SETTLE OUT OF SUSPENSION. INLET PROTECTION MUST BE INSTALLED IN NEW STORM DRAIN INLETS IMMEDIATELY UPON INSTALLATION, AND INSTALLED IN EXISTING STORM DRAIN INLETS BEFORE ADJACENT AREAS ARE DISTURBED. TYPES OF INLET PROTECTION FOR THIS

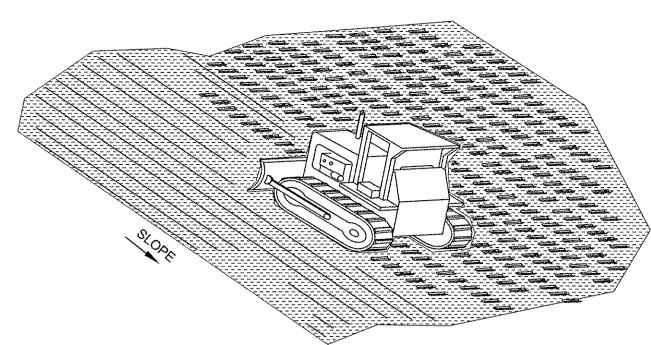
EXCAVATIONS: A SMALL EXCAVATION AROUND THE PERIMETER OF THE STORM DRAIN INLET CREATES A SMALL POOL THAT ALLOWS SEDIMENT TO SETTLE OUT OF SUSPENSION. THIS MAY BE USED IN NON-PAVED AREAS. GEOTEXTILE BARRIERS: POROUS FABRIC PLACED INSIDE A CATCH BASIN INLET TO CREATE A SHIELD AGAINST

SEDIMENT WHILE ALLOWING WATER TO FLOW INTO THE DRAIN. THIS METHOD INCLUDES SILT SACKS, FILTER FABRIC, A RING OF SILT FENCE, ETC. NOTE: THIS METHOD MAY ONLY BE USED WHERE THE INLET IS LOCATED ON A PAVED SURFACE AND THE CONTRIBUTING AREA IS PAVED. GRAVEL/STONE BARRIERS: GRAVEL/STONE CAN BE USED TO SLOWING AND DETAINING SEDIMENT-LADEN RUNOFF AND ALLOW SEDIMENT TO SETTLE OUT OF SUSPENSION. IT IS IMPORTANT TO USE CLEAN, WASHED STONE AND

NSTALLATION REQUIREMENTS: THE CONTRACTOR MUST PROVIDE INLET PROTECTION FOR DISCHARGES TO ANY STORM DRAIN INLET THAT CARRIES STORMWATER FLOW FROM THE SITE DIRECTLY TO A SURFACE WATER (AND IT IS NOT FIRST DIRECTED TO A SEDIMENT BASIN, SEDIMENT TRAP, OR SIMILARLY EFFECTIVE CONTROL). THE CONTRACTOR MUST NOT ALLOW ACCUMULATED SEDIMENT TO BLOCK STORM DRAIN INLETS, THIS MAY CAUSE STORM WATER RUNOFF TO BYPASS THE STORM WATER CONVEYANCE SYSTEM AND CREATE PROBLEMS DOWN-SLOPE INCLUDING ADDITIONAL

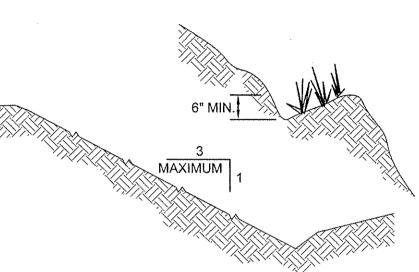
PREVENT IT FROM BEING WASHED INTO THE STORMWATER CONVEYANCE SYSTEM. THIS MAY BE USED IN

MAINTENANCE REQUIREMENTS: CLEAN, OR REMOVE AND REPLACE, THE PROTECTION MEASURES AS SEDIMENT ACCUMULATES, THE FILTER BECOMES CLOGGED, AND/OR PERFORMANCE IS COMPROMISED. WHERE THERE IS EVIDENCE OF SEDIMENT ACCUMULATION ADJACENT TO THE INLET PROTECTION MEASURE, THE DEPOSITED SEDIMENT MUST BE REMOVED BY THE END OF THE SAME WORK DAY IN WHICH IT WAS FOUND OR BY THE END OF THE FOLLOWING WORK DAY IF REMOVAL BY THE SAME WORK DAY IS NOT FEASIBLE. THE CONTRACTOR SHALL PAY PARTICULAR ATTENTION TO THE USE OF GEOTEXTILE IN EXISTING PUBLIC ROADWAYS TO ENSURE THAT THE FABRIC DOES NOT BECOME CLOGGED AND RESULT IN LOCALIZED STREET FLOODING.



NOTE:

USE DOZER TRACKS TO CREATE GROOVES PERPENDICULAR TO THE SLOPE. GROOVES WILL CATCH SEED, FERTILIZER, MULCH, RAINFALL AND DECREASE SEDIMENT IN RUNOFF.



CULTIVATE SOILS TO CREATE FURROWS PERPENDICULAR TO SLOPE. CONTOURS/FURROWS WILL CATCH SEED, FERTILIZER, MULCH, RAINFALL AND DECREASE RUNOFF.

SURFACE ROUGHENING

NOT TO SCALE

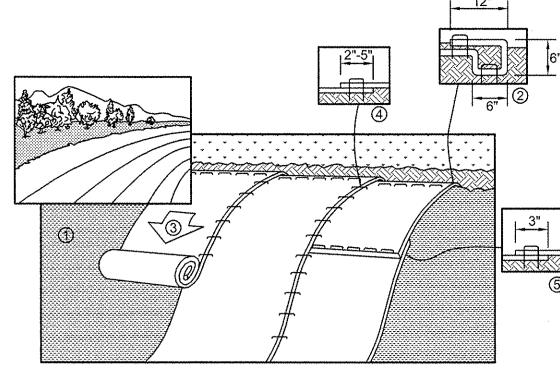
SEEDING RATES LBS/1000 S.F. & LBS/ACRES									
SPECIES	RECOMMENDED SEEDING DATES								
ANNUAL RYEGRASS	1	40	APRIL 1 TO JUNE 1 AUG. 1 TO SEPT. 15						
FOXTAIL MILLET	0.7	30	MAY 1 TO JUNE 30						
OATS	2	80	APRIL 1 TO JULY 1 AUG. 15 TO SEPT. 15						
WINTER RYE	3	120	AUG. 15 TO OCT. 15						

MULCHING: MULCHING IS AN EROSION CONTROL PRACTICE THAT INVOLVES USING MATERIALS SUCH AS HAY, STRAW, WOOD CHIPS/FIBERS, ETC. TO PROTECT EXPOSED SOILS. MULCH MUST BE APPLIED AT THE APPROPRIATE RATE AND PROPERLY ANCHORED (USING NETTING, TACKIFIERS OR AN ANCHORING TOOL). MULCHING IS HIGHLY EFFECTIVE, AND WHEN INSTALLED CORRECTLY PROVIDES A LEVEL OF PROTECTION COMPARABLE TO DENSE VEGETATIVE COVER. THE HAY OR STRAW MULCH SHALL BE AIR-DRIED, FREE OF UNDESIRABLE SEEDS AND COARSE MATERIALS. APPLICATION RATE MUST BE 2 BALES (70-90 LBS) PER 1,000 SQUARE FEET OR 1,5 TO 2 TONS PER ACRE. NO BARE SPOTS SHOWING AND SHALL ONLY BE APPLIED TO SLOPES 3:1 OR FLATTER. ANCHORING METHODS INCLUDING NETTING WITH JUTE, WOOD FIBER OR PLASTIC: OR APPLY MULCH AND TRACK SURFACE UP AND DOWN THE SLOPE SO CLEAT MARKS ARE PARALLEL TO THE CONTOURS. FOR OVERWINTER APPLICATION, THE RATE SHALL BE 150 LBS PER 1,000 SQUARE FEET OR 3 TONS/ACRE. MULCH SHALL NOT BE SPREAD ON TOP OF SNOW; SNOW MUST BE REMOVED DOWN TO A ONE-INCH DEPTH OR LESS PRIOR TO APPLICATION.

EMPORARY SEEDING: TEMPORARY SEEDING IS AN EROSION CONTROL PRACTICE THAT CONSISTS OF USING SELECT VARIETIES OF GRASSES TO ESTABLISH VEGETATIVE COVER. TEMPORARY SEEDING UTILIZES ANNUAL SPECIES THAT ESTABLISH QUICKLY, ARE NOT PERSISTENT OR INVASIVE, BUT PROVIDE LONG TERM TEMPORARY COVER. TEMPORARY SEEDING CAN BE USED ON DISTURBED AREAS REQUIRING TEMPORARY PROTECTION UNTIL PERMANENT VEGETATION IS ESTABLISHED OR ON AREAS WHICH MAY BE RE-DISTURBED FOLLOWING A PERIOD OF INACTIVITY (7 DAYS OR MORE). TEMPORARY SEEDING RATES AND SPECIFICATIONS

SEEDING FOR TEMPORARY COVER

ARE PROVIDED BELOW.



1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.

BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACK FILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO PREPARED SOIL AND FOLD REMAINING 12" PORTION OF THE BLANKET BACK OVER SEED AND SOIL. SECURE BLANKET OVER SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.

3. ROLL THE BLANKETS DOWN ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH THE APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN

4. GUIDE. WHEN USING OPTIONAL DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.

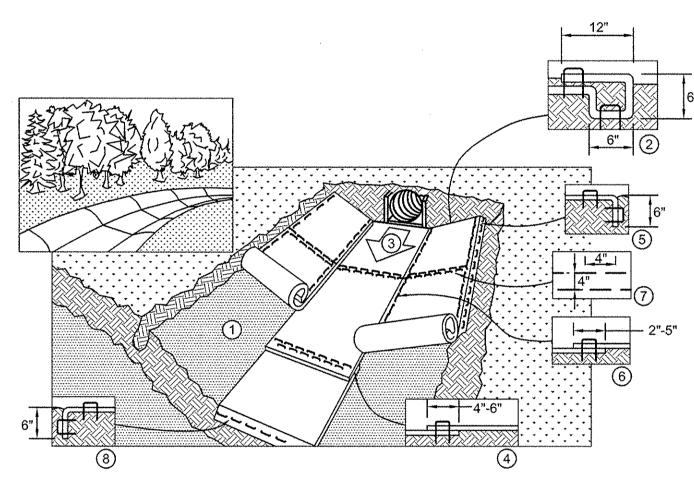
5. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED

6. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH.

7. EROSION CONTROL BLANKETS SHALL BE INSTALLED FOLLOWING MANUFACTURERS SPECIFICATIONS.

IN LOOSE SOIL CONDITIONS THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY ANCHOR THE BLANKETS

EROSION CONTROL BLANKET DETAIL FOR SLOPE INSTALLATION



PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.

BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL THE TRENCH AFTER STAPLING. APPLY SEED TO SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND SOIL. SECURE BLANKET OVER SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" ACROSS THE WIDTH OF THE BLANKET.

ROLL CENTER BLANKET IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.

4. PLACE CONSECUTIVE BLANKETS END OVER END (SHINGLE STYLE) WITH A 4"-6" OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER TO SECURE BLANKETS.

5. FULL LENGTH EDGE OF BLANKETS AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.

6. ADJACENT BLANKETS MUST BE OVERLAPPED APPROXIMATELY 2"-5" (DEPENDING ON BLANKET SIZE) AND

7. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30' TO 40' INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER OVER ENTIRE WIDTH OF THE

8. THE TERMINAL END OF BLANKETS MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.

CRITICAL POINTS A) OVERLAPS AND SEAMS

B) PROJECTED WATER LINE

C) CHANNEL BOTTOM/SIDE

SLOPE VERTICES

* HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.

** IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY ANCHOR THE BLANKETS.

TEMPORARY STABILIZATION: TEMPORARY STABILIZATION MEASURES MUST BE INITIATED AS SOON AS PRACTICABLE ON PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN 7 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. THE FOLLOWING TEMPORARY STABILIZATION PRACTICES MAY BE USED FOR THIS PROJECT:

EROSION CONTROL BLANKETS: EROSION CONTROL BLANKETS CONSIST OF NATURAL OR SYNTHETIC GEOTEXTILE FABRIC FORMED INTO LONG SHEETS OR MATS THAT ARE ROLLED OUT OVER EXPOSED SOILS AND FASTENED WITH STAKES, PEGS OR STAPLES. THEY ARE USED IN AREAS WHERE HIGH RUNOFF VELOCITY MAKES TRADITIONAL MULCHING INEFFECTIVE. BLANKETS ARE HIGHLY EFFECTIVE AT STABILIZING STEEP SLOPES (3:1 OR STEEPER).

SOIL ROUGHENING: SOIL ROUGHENING IS A PRACTICE THAT INVOLVES CREATING GROOVES OR IMPRESSIONS IN EXPOSED SOIL SURFACES WITH TRACKED CONSTRUCTION EQUIPMENT (BULLDOZER. EXCAVATOR, ETC.). SLOPES THAT ARE NOT FINE GRADED OR SMOOTHED, BUT LEFT IN A ROUGHENED CONDITION REDUCE EROSION BY DECREASING SLOPE LENGTH AND RUNOFF VELOCITY, INCREASING INFILTRATION, TRAPPING SEDIMENT, AND ALLOWING SEED TO TAKE HOLD AND GROW. IMPRESSIONS MUST BE MADE PERPENDICULAR TO THE SLOPE CONTOURS (NEVER PARALLEL TO THE CONTOUR); IMPROPER USE OF THIS TECHNIQUE CAN ACTUALLY ACCELERATE EROSION.

EROSION CONTROL BLANKET DETAIL FOR CHANNEL INSTALLATION

NOT TO SCALE

ZZZ

Project No.: 127-3659-1200 esigned By: A.F.T./M.K.M Drawn By: J.V.B./S.C.V Checked Bv: N.H.C./R.F.D.

3000

5000

6000

15'-7"

15'-7"

19'-11"

19'-11"

SURFACE TREATMENT VARIES

9'-7"

9'-7"

9-11"

8'-6.5"

8'-6.5"

8'-11"

10'-5"

5'-0"

6'-3"

6'-2"

7'-2"

STANDARD GREASE TRAP DETAIL

(BOSTON WATER AND SEWER COMMISSION STANDARD DETAIL)

N.T.S.

3'-9" 5'-0" 4'-9" 5'-9"

4" ROOF DRAIN FLOOR -EXTRA HEAVY C.J. INLET 4" ROOF DRAIN -FROM WASH STAND OR FLOOR DRAIN ----BEND C.I. **OUTLET TO** SANITARY SEWER ALL INLET TRAPS TO BE EXTRA HEAVY C.I. PIPE OR P.V.C. PROVIDED IN ACCORDANCE ASTM D3034 SDR35 WITH 248 CMR 2.00 ---- D MIN. ----ALUMINUM OR PLASTIC COATED 8"POURED IN PLACE CONCRETE; WROUGHT IRON STEPS CAN BE 8"SOLID CONCRETE BLOCKS WITH USED. FULL MORTARED JOINTS, HORZ. AND VERT., PLASTERED INSIDE AND OUTSIDE. WROUGHT IRON STEPS PORTLAND CEMENT MORTAR USED SHALL CONSIST OF 1 PART CEMENT, 2 PARTS SAND. CEMENT BRICK, HOLLOW CONCRETE, OR CINDER BLOCK MASONRY MUST NOT BE GENERAL CONSTRUCTION NOTES: BASIN TO BE LOCATED OUTSIDE OF BUILDING WHERE ALL OIL AND GASOLINE MUST BE REMOVED BEFORE CLEANING OUT THE BASIN, AND MUST NOT BE

POSSIBLE, COVER TO HAVE A CENTER HOLE. A TIGHT COVER MUST BE USED IF BASIN IS LOCATED

OPENING SHALL BE NOT LESS THAN 24" DIA.

INSIDE OF BUILDING.

NORMAL WATER LINE.

EXCLUDED.

DISCHARGED INTO THE SEWER THROUGH OTHER SPECIFICATIONS FOR COVERING SPECIAL CASES OR CONDITIONS, SHALL BE APPROVED BY THE LOCAL AUTHORITIES, AND THE AUTHORITIES OF THE M.W.R.A. THE CATCH BASIN SHALL BE SO LOCATED AND CONSTRUCTED THAT SURFACE WATER SHALL BE 10. WROUGHT IRON STEPS SHALL BE SPACED ABOUT 18"

> BOTH VENTS SHALL BE EXTENED INDEPENDENTLY 18" ABOVE THE ROOF, OR AS APPROVED BY THE LOCAL AUTHORITIES, AND THE AUTHORITIES OF THE M.W.R.A. (OUTLET PIPE TO BE 45 DEGREE ANGLE)

THE NEW CATCH BASIN MUST BE FILLED WITH CLEAN WATER BEFORE USING, AND AFTER BEING EMPTIED FOR PERIODIC CLEANING.

INLET PIPE SHALL BE AT LEAST FOUR INCHES ABOVE

WHERE SUBJECT TO FROST OR CRUSHING CONDITIONS,

OUTLET SHALL BE AT LEAST THREE FEET BELOW THE

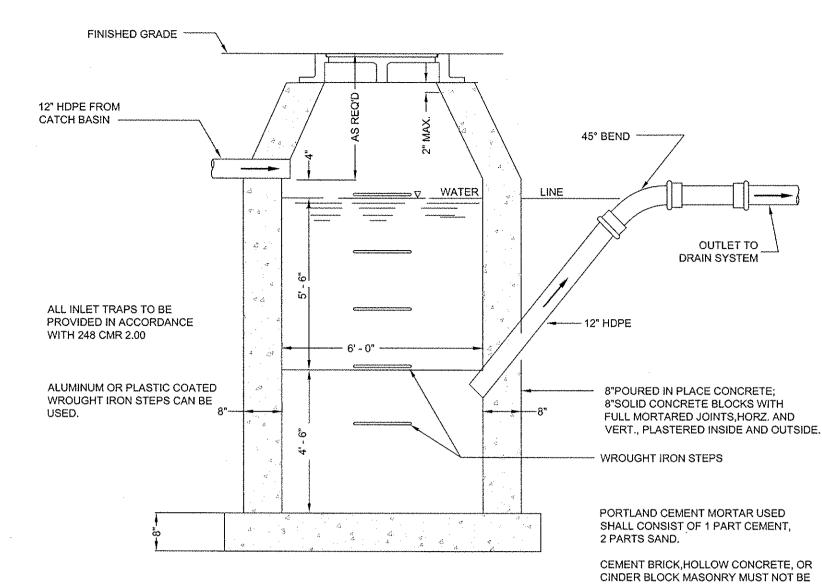
INLET	а	A	В	INLET	D	Α	В
4"	3'-6"Ø	3'-0"	2'-6"	8"	5'-0"Ø	6'~0"	5'-0"
5"	3'-6"Ø	5'-0"	4'-0"	7	5'-6"x 5'-6"	4'-6"	4'-0"
	3'-6"x 3'-6"	4'-0"	3'-0"		6'-0"Ø	4'-0"	3'-6"
	4'-0"	3'-8"	3'-0"		6'-0"x 6'-0"	3'-0"	2'-6"
	4'-0"x 4'-0"	3'-0"	2'-6"		6'-6"Ø	3'-6"	3'-0"
	4'-6"	3'-0"	2'-6"	-	6'-6"x 6'-6"	3'-0"	2'-6"
6*	4'-0"Ø	5'-0"	4'-6"	10"	5'-6"Ø	7'-6"	6'-6"
	4'-0"× 4'-0"	4'-0"	3'-6"			, .	0-0
	4'-6"Ø	4'-0"	3'-6"		6'-0"x 6'-0"	5'-6"	4'-6"
	4'-6"x 4'-6"	3'-6"	3'-0"		6'-0"Ø	6'-6"	5'-6"
	5'-0"Ø	3'-6"	3'-0"			0-0	3-0
	5'-0"x 5'-0"	3'-0"	2'-6"		6'-6"x 6'-6"	5'-0"	4'-0"

FOR INLETS LARGER THAN 10" THE DESIGN AND DIMENSIONS WILL BE DETERMINED FOR EACH PARTICULAR

STANDARD OIL AND GREASE SEPARATOR DETAIL

N.T.S.

2. PRE-CAST SEPARATORS ARE TO HAVE ALL SPECIFIED HOLES EITHER CORE-BORED OR CAST IN PLACE. (FOR USE WITH PARKING STRUCTURES) (BOSTON WATER AND SEWER COMMISSION STANDARD DETAIL)



GENERAL CONSTRUCTION NOTES

BASIN TO BE LOCATED DOWNSTREAM OF ALL CATCH BASINS WITHIN LOADING AREAS.

2. OPENING SHALL BE NOT LESS THAN 24" DIA. INLET PIPE SHALL BE AT LEAST FOUR INCHES ABOVE NORMAL WATER LINE.

WHERE SUBJECT TO FROST OR CRUSHING CONDITIONS, OUTLET SHALL BE AT LEAST THREE FEET BELOW THE THE NEW BASIN MUST BE FILLED WITH CLEAN WATER

PERIODIC CLEANING.

CHAMBERS SHALL MEET ASTM F2922

NOMINAL 3/4" - 2" [19 mm - 51 mm]

(AASHTO M43 #3 THROUGH #57

STONE SIZES ALLOWED) -

POLYETHYLENE (PE) CORRUGATED WALL

STORMWATER COLLECTION CHAMBERS"

CLEAN, CRUSHED, ANGULAR STONE

SC-740 END CAP

ADS 601

NON-WOVEN

EQUAL) ALL AROUND

GEOTEXTILE (OR

ANGULAR STONE

"STANDARD SPECIFICATION FOR

ACCORDANCE WITH ALL LOCAL, STATE & FEDERAL REGULATIONS. 7. WROUGHT IRON STEPS SHALL BE SPACED ABOUT 18"

ALL OIL AND GASOLINE MUST BE REMOVED BEFORE

CLEANING OUT THE BASIN, AND BE DISPOSED OF IN

8. OUTLET PIPE TO BE 45 DEGREE ANGLE. PRE-CAST SEPARATORS ARE TO HAVE ALL SPECIFIED HOLES EITHER CORE-BORED OR CAST IN PLACE. BEFORE USING, AND AFTER BEING EMPTIED FOR

CHAMBERS SHALL BE DESIGNED IN

"STANDARD PRACTICE FOR STRUCTURAL

-3'MIN. BELOW

GROUND SURFACE

- 6"-90° BEND WHERE

20" FIBER FORM TO

BE LEFT IN PLACE

6" MIN. COVER

+ EXISTING

SEWER MAIN

REQUIRED

18" MIN.

ACCORDANCE WITH ASTM F2787

WALL STORMWATER COLLECTION

ACCEPTABLE FILL MATERIALS

- CHAMBERS".

STORMTECH SC-740 CHAMBER SYSTEM

TYPICAL CROSS SECTION DETAIL

N.T.S.

FILL UNDER CONNECTION

TO UNDISTURBED EARTH

WITH CRUSHED STONE -

COMPACTED

STONE (M2.01.04)

CRUSHED

BEDDING

L-EXISTING

N.T.S.

SEWER

3/4" MINIMUM SEWER CHIMNEY

STANDARD OIL AND GREASE SEPARATOR DETAIL (FOR USE IN LOADING AREAS)

(BOSTON WATER AND SEWER COMMISSION STANDARD DETAIL)

SADDLE. MAXIMUM STUB - 30° VERT. BEND LENGTH=8"----IF REQUIRED BELL END STUB SANITARY BUILDING CONNECTION PROPOSED SEWER

CONNECTION TO CLAY, PVC, CONCRETE AND IRON PIPES

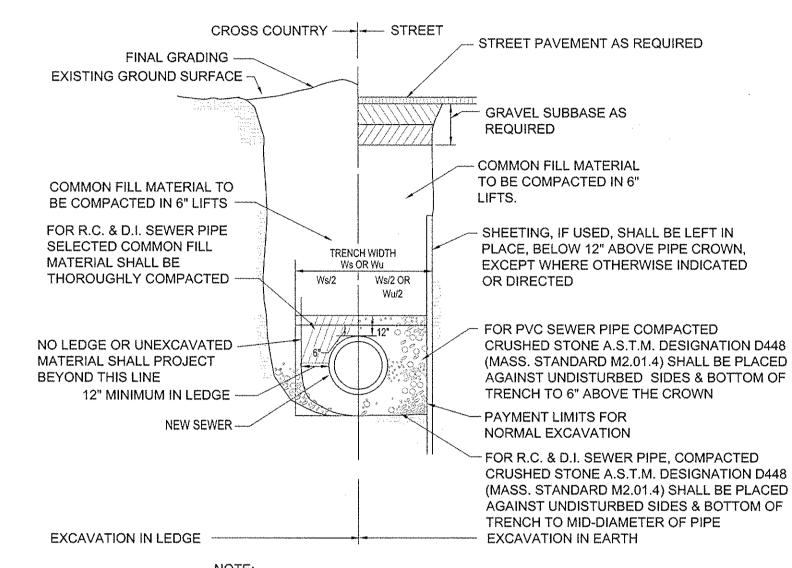
SHALL BE MADE BY CORING EXISTING CONDUIT AS INDICATED BELOW OR USING AN APPROVED GASKET

SEWER CONNECTION DETAIL

SANITARY

SEWER

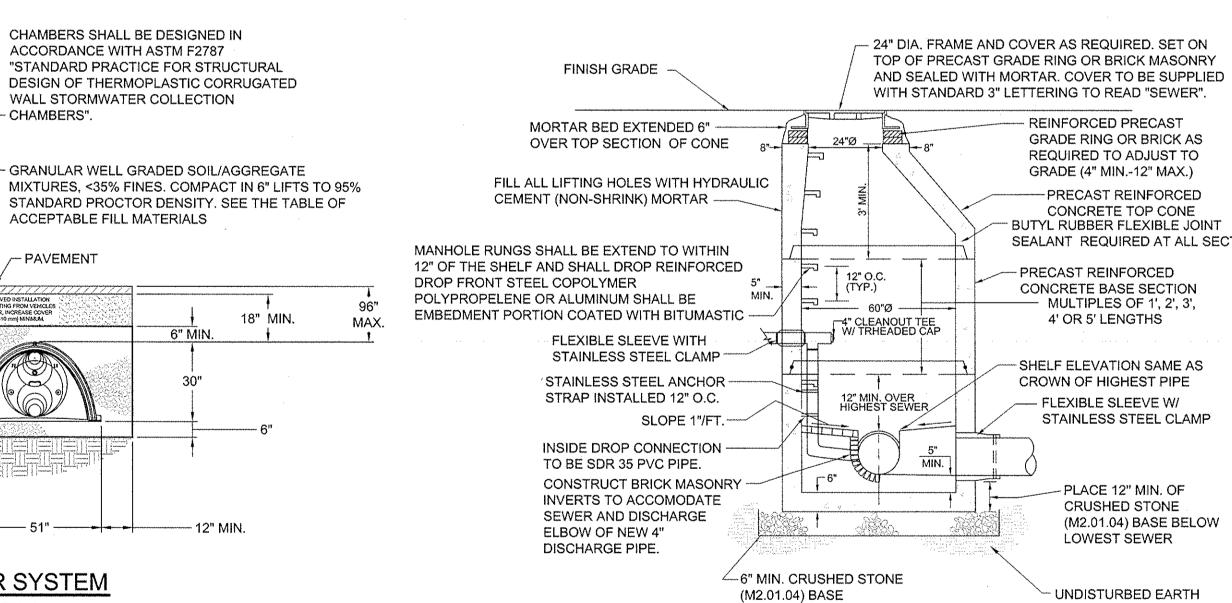
N.T.S.



ALL NON-STRUCTURAL FILL TO BE COMPACTED TO 95% OF MAXIMUM DENSITY AS PER ASTM D1557

SEWER TRENCH SECTION DETAIL

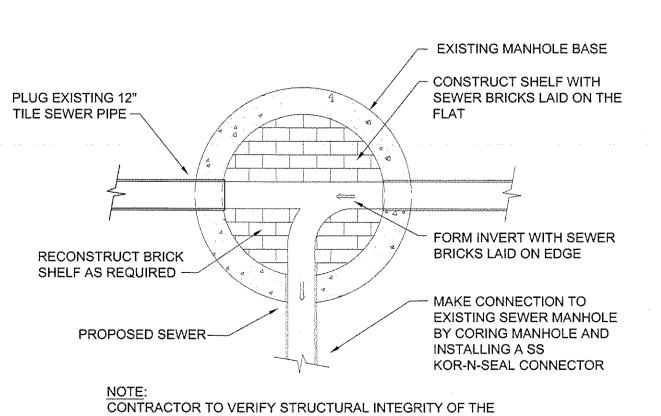
N.T.S.



COAT MANHOLE EXTERIOR W/ 2 COATS OF BITUMINOUS WATERPROOFING.

DROP SEWER MANHOLE (TOWN OF WESTWOOD STANDARD DETAIL #45)

N.T.S.



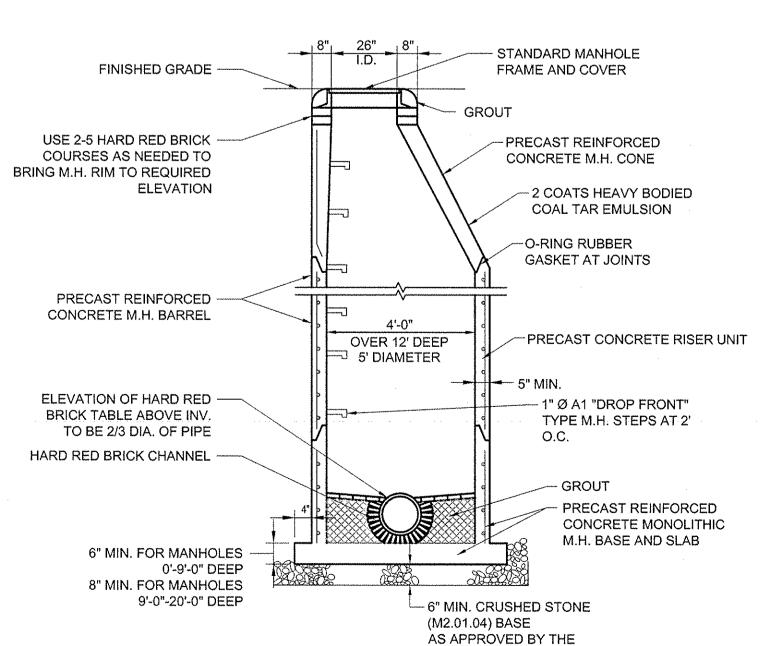
EXISTING SEWER MANHOLE. THE CONTRACTOR SHALL CARRY A LUMP SUM ALTERNATE FOR RECONSTRUCTION OF THE MANHOLE IF CONDITIONS DICTATE.

> SEWER CONNECTION N.T.S.

FINISHED GRADE -USE 2-5 HARD RED BRICK -COURSES AS NEEDED TO BRING M.H. RIM TO REQUIRED **ELEVATION** PRECAST REINFORCED CONCRETE M.H. BARREL OVER 12' DEEP ☐ 5' DIAMETER ELEVATION OF HARD RED -BRICK TABLE ABOVE INV. TO BE 2/3 DIA. OF PIPE HARD RED BRICK CHANNEL -

> TYPICAL SEWER MANHOLE (TOWN OF WESTWOOD STANDARD DETAIL #44)

ENGINEER



N.T.S.

CAST-IN-PLACE 3000 PSI CONCRETE (TYPE I) **ENCASEMENT** 2" THICK JACKET SEWER LINE POLYURETHANE SEE PLANS FOR PIPE **INSULATION CUT AND** WIRED IN PLACE AROUND PIPE COMPACTED SUBGRADE

SEWER LINE SHALL BE INSULATED WHEN COVER IS LESS THAN FOUR (4) FEET UNLESS INDICATED OTHERWISE ON PLANS. PROVIDE CONCRETE ENCASEMENT IN VEHICULAR AREAS WHEN COVER IS LESS THAN THREE (3)

> **INSULATED SEWER** N.T.S.

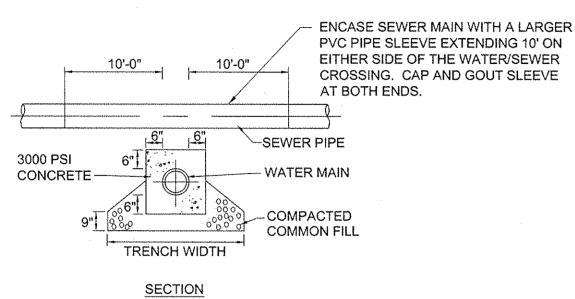
SEALANT REQUIRED AT ALL SECTIONS (M2.01.04) BASE BELOW

- 2 m

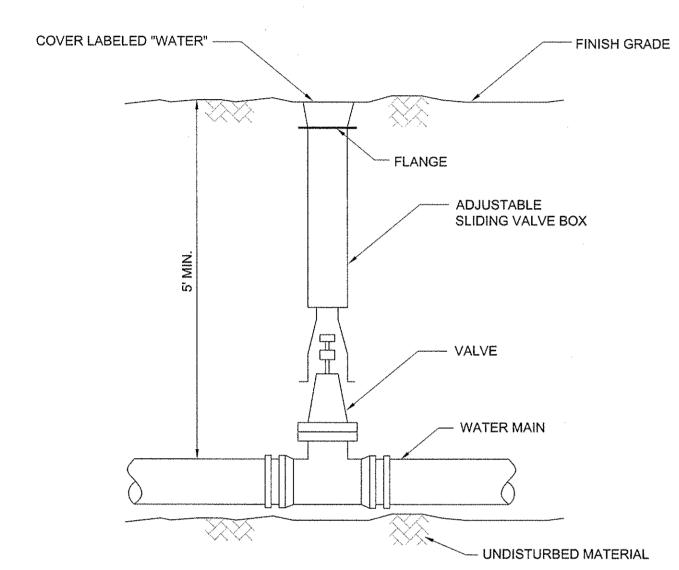
Project No.: 127-3659-12003 วesigned By: A.F.T./M.K,M. J.V.B./S.C.V. Drawn By:

Bar Measures 1 inch

N.H.C./R.F.D. Checked By:

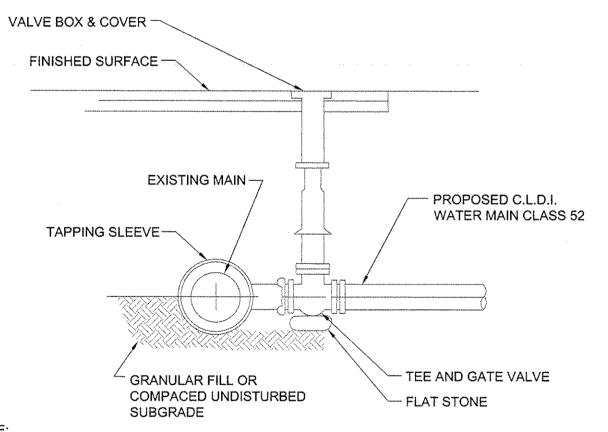


CONCRETE ENCASEMENT DETAIL N.T.S.



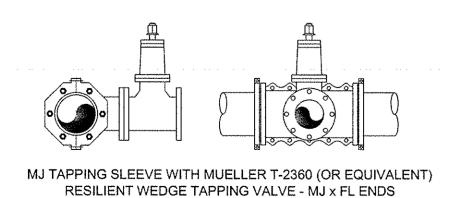
1. ALL GATE VALVES ON MAINLINE PIPE SHALL BE LOCATED A CONSISTENT DISTANCE OF THREE FEET FROM THE TEE, EXCEPT WHERE VALVES WOULD ALIGN UNDER OTHER PIPELINES.

> **BURIED GATE VALVE** N.T.S. (DWWD STANDARD DETAIL)



COORDINATE CONNECTION AND INSTALLATION WITH TOWN OF WESTWOOD WATER DEPARTMENT. TAPPING SLEEVE AND GATE VALVE SHALL BE PER TOWN SPECIFICATIONS.
 ALL VALVES ON HYDRANTS, DOMESTIC SERVICES, AND FIRE SERVICES SHALL BE LOCATED AT THE TEE.
 ANCHOR TEES SHALL BE USED EXCEPT IN EXTENUATING CIRCUMSTANCES.

TYPICAL WATER MAIN CONNECTION N.T.S.

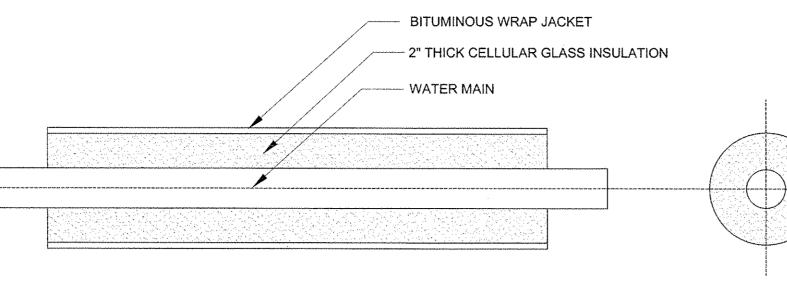


ALL MAIN LINE VALVES - (OPEN RIGHT, NON RISING STEM) SIZES 3" TO 12" - (GATE VALVES) SIZES GREATER THAN 12" - (BUTTERFLY VALVES) MUELLER - KENNEDY - DARLING - EPOXY COATED

OPEN RIGHT

TAPPING SLEEVE & VALVE

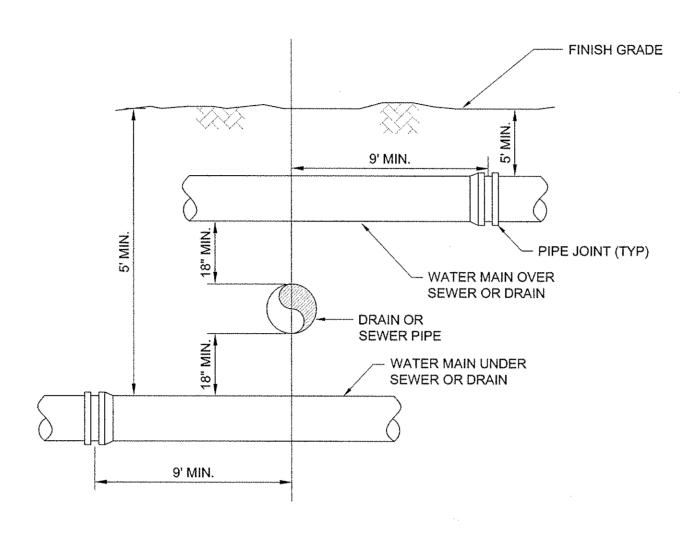
MUELLER RESILIENT SEAT EPOXY COATED, AWWA APPROVED



NOTE

AT ALL LOCATIONS WHERE THE PROPOSED WATER MAIN IS TO BE INSTALLED WITH LESS THAN 4' OF COVER, THE PIPE SHALL BE INSULATED WITH 2" THICK CELLULAR GLASS INSULATION AND BITUMINOUS WRAP JACKET.

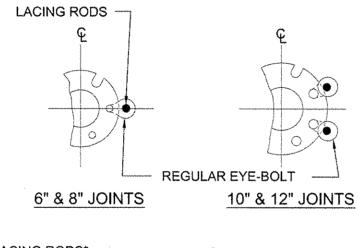
INSULATED WATER PIPE DETAIL N.T.S.

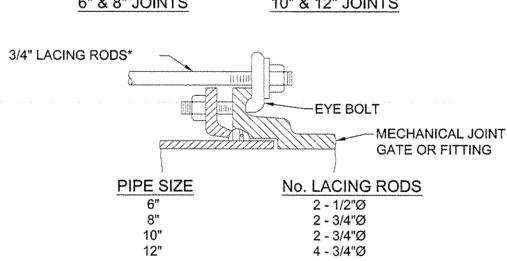


SEWER OR DRAIN CROSSING DETAIL N.T.S.

(DWWD STANDARD DETAIL)

THRUST RESTRAINT - LACING METHOD





* STANDARD LENGTHS ARE 6' & 10'. COUPLINGS MAY BE USED FOR LONGER LENGTHS.

. TIE RODS MAY ONLY BE USED FOR 6-INCH, 8-INCH OR 12-INCH PIPE WHERE USE OF A JOINT

RESTRAINT SYSTEM IS NOT FEASIBLE. EYE-BOLTS AND LACING RODS ARE TO BE FABRICATED FROM A-36 STEEL.

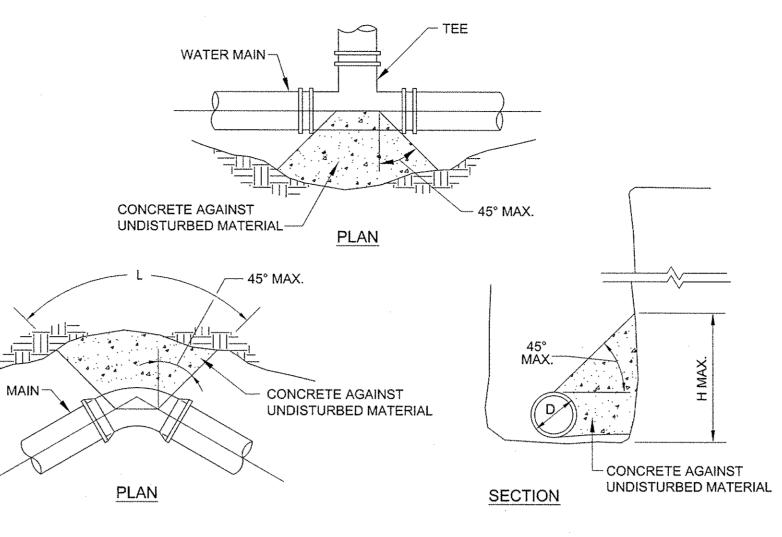
3. STEEL LACING RODS SHALL HAVE A YIELD STRESS OF NOT LESS THAN 36,000 P.S.I. 4. EYE-BOLTS SHALL HAVE A MINIMUM TENSILE STRENGTH OF 7,000 LBS. EACH.

MECHANICAL JOINT LACING DETAIL

N.T.S.

TABLE 1 - REQUIRED LENGTH OF RESTRAINED JOINTS FROM FITTINGS (FEET)										
PIPE SIZE 90° BEND 45° BEND OR WYE BRANCH 22 1/2° BEND 11 1/4° BEND PLUG OR CAP (BRANCH)										
6"	25 (30.5)	10.5 (12.5)	5 (6)	2.5 (3)	43 (64)	34 (51)				
8"	33 (40)	13.5 (16.5)	6.5 (8)	3 (4)	55 (82)	47 (70)				
10"	40 (48.5)	16.5 (20)	8 (9.5)	4 (5)	67 (100)	58 (87)				
12"	47 (56.5)	19.5 (23.5)	9.5 (11.5)	4.5 (5.5)	79 (118)	70 (105)				
16"	59.5 (72)	24.5 (30)	12 (14.5)	6 (7)	101 (152)	92 (139)				
20"	72 (86.5)	30 (36)	14.5 (17)	7 (8.5)	123 (184)	114 (171)				
24"	84 (100)	35 (41)	16.5 (20)	8 (10)	144 (216)	134 (202)				
30"	100 (120)	41 (50)	20 (24)	10 (12)	174 (261)	165 (247)				

- 1. RESTRAINED LENGTHS LISTED IN PARENTHESES ARE FOR PIPE WRAPPED IN POLYETHYLENE. THE OTHER ASSOCIATED LENGTHS ARE FOR PLAIN UNWRAPPED DUCTILE IRON PIPE. 2. THE CONTRACTOR SHALL USE THIS TABLE IN CONJUNCTION WITH THE APPROPRIATE PIPE
- SPECIFICATION SECTION. 3. TABLE BASED ON 150 PSI TEST PRESSURE.
- 4. INDICATES THE REQUIRED RESTRAINED JOINT LENGTH (FT) IN EACH DIRECTION.



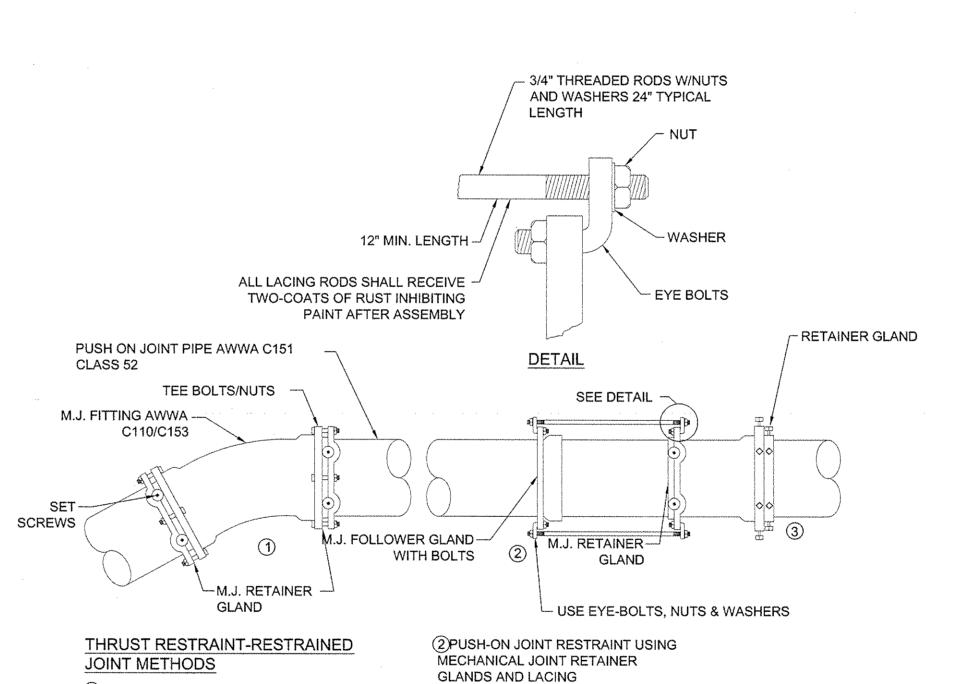
ALL ELBOWS, BENDS, AND CAPS SHALL BE BRACED WITH CONCRETE THRUST BLOCKS. JOINTS SHALL NOT BE ENCASED

- IN CONCRETE. 2. BEARING AREA IS AREA OF CONCRETE IN CONTACT WITH
- WALL OF TRENCH (H X L). HEIGHT AND LENGTH AS REQUIRED TO OBTAIN BEARING
- AREA SHOWN IN THE TABLE WITH H APPROX. 1/2 L. 4. THRUST BLOCK SIZING BASED ON 150 PSI PRESSURE AND
- 2000 PSI SOIL BEARING CAPACITY.

5.	THRUST BLOCKS SHALL BE USED ONLY IN LOCATIONS WHERE
	JOINT RESTRAINT METHODS ARE NOT FEASIBLE.
	JOINT RESTRAINT METHODS ARE NOT FEASIBLE.

	BEARING AREA FOR VARIOUS DIAMETERS											
	FITTING	2"	4"	6"	8"	10"	12"	16"				
	1/32 BEND (11 1/4°)	2 S.F.	3 S.F.	5 S.F.								
	1/16 BEND (22 1/2°)	2 S.F.	2 S.F.	2 S.F.	3 S.F.	3 S.F.	4 S.F.	5 S.F.				
	1/8 BEND (45°)	2 S.F.	2 S.F.	2 S.F.	3 S.F.	5 S.F.	7 S.F.	12 S.F.				
	1/4 BEND (90°)	3 S.F.	3 S.F.	3 S.F.	6 S.F.	9 S.F.	12 S.F.	21 S.F.				
{	TEE/PLUG	2 S.F.	2 S.F.	3 S.F.	4 S.F.	6 S.F.	9 S.F.	16 S.F.				

WATER MAIN THRUST BLOCK DETAIL N.T.S.



(3) PUSH-ON JOINT RETAINER GLANDS ALL JOINTS TO BE MECHANICAL RESTRAINT MEGALUG OR APPROVED EQUAL.

2. RESTRAINING GASKETS SHALL BE USED ON PUSH-JOINT PIPE.

TYPICAL RESTRAINED JOINTS DETAIL N.T.S.

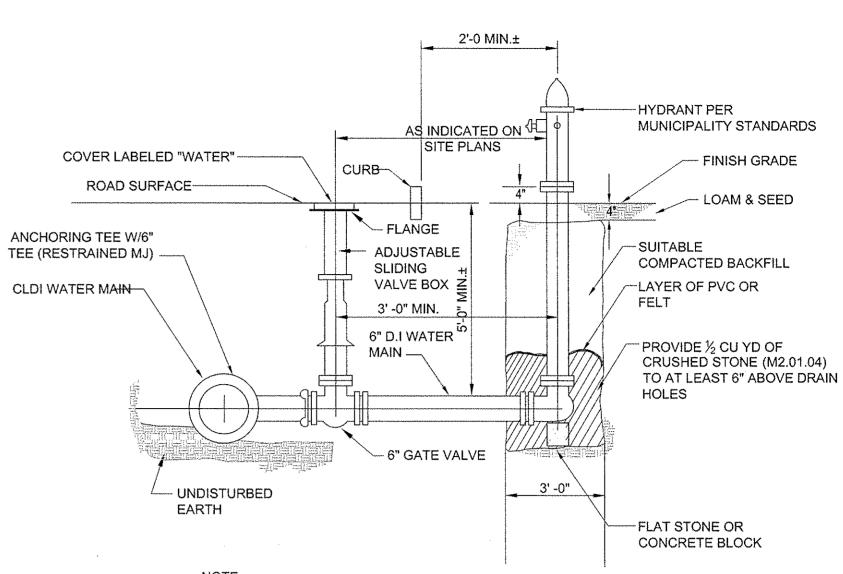
TABLE 2 - REQUIRED LENGTH OF RESTRAINED JOINTS FROM FITTINGS (FEET)										
PIPE SIZE 90° BEND 45° BEND OR WYE BRANCH 22 1/2° BEND 11 1/4° BEND PLUG OR CAP (BRANCH										
6"	40	16.8	8	4	68.8	54.4				
8"	52.8	21.6	10.4	4.8	88	75.2				
10"	64	26.4	12.8	6.4	107.2	92.8				
12"	75.2	31.2	15.2	7.2	126.4	112				

1. RESTRAINED LENGTHS LISTED ARE FOR PLAIN UNWRAPPED DUCTILE IRON PIPE. 2. THE CONTRACTOR SHALL USE THIS TABLE IN CONJUNCTION WITH THE APPROPRIATE PIPE

SPECIFICATION SECTION.

1 MECHANICAL JOINT RETAINER GLANDS

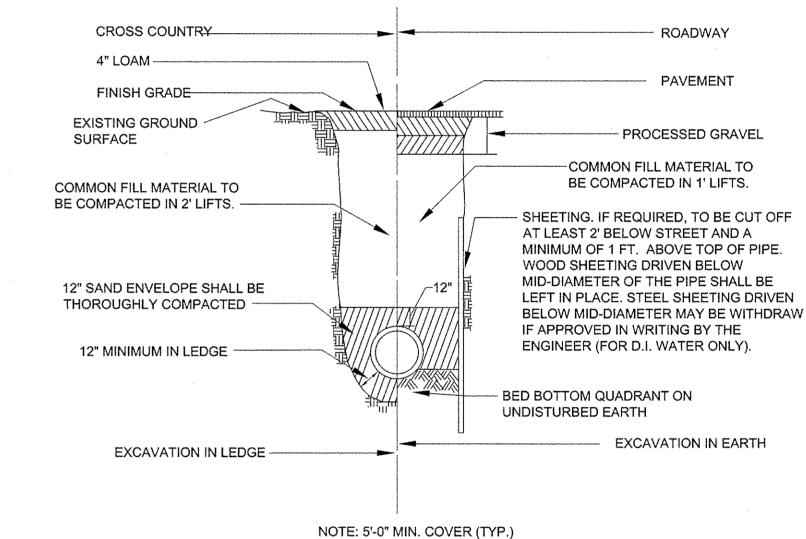
3. TABLE BASED ON 240 PSI TEST PRESSURE. 4. INDICATES THE REQUIRED RESTRAINED JOINT LENGTH (FT) IN EACH DIRECTION.

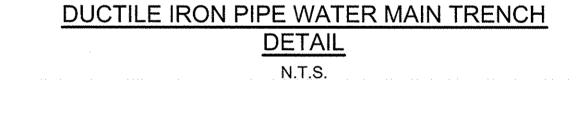


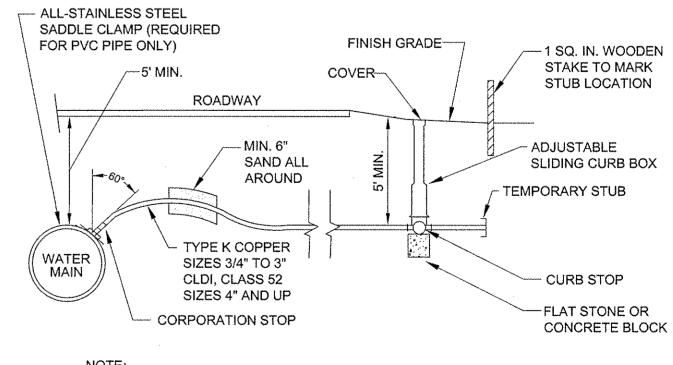
. ALL JOINTS TO BE MECHANICAL RESTRAINT MEGALUG OR APPROVED EQUAL. 2. VALVES SHALL BE LOCATED AT THE TEE. 3. ANCHOR TEES SHALL BE USED EXCEPT IN EXTENUATING CIRCUMSTANCES.

HYDRANT AND VALVE DETAIL

N.T.S. (DWWD STANDARD DETAIL)







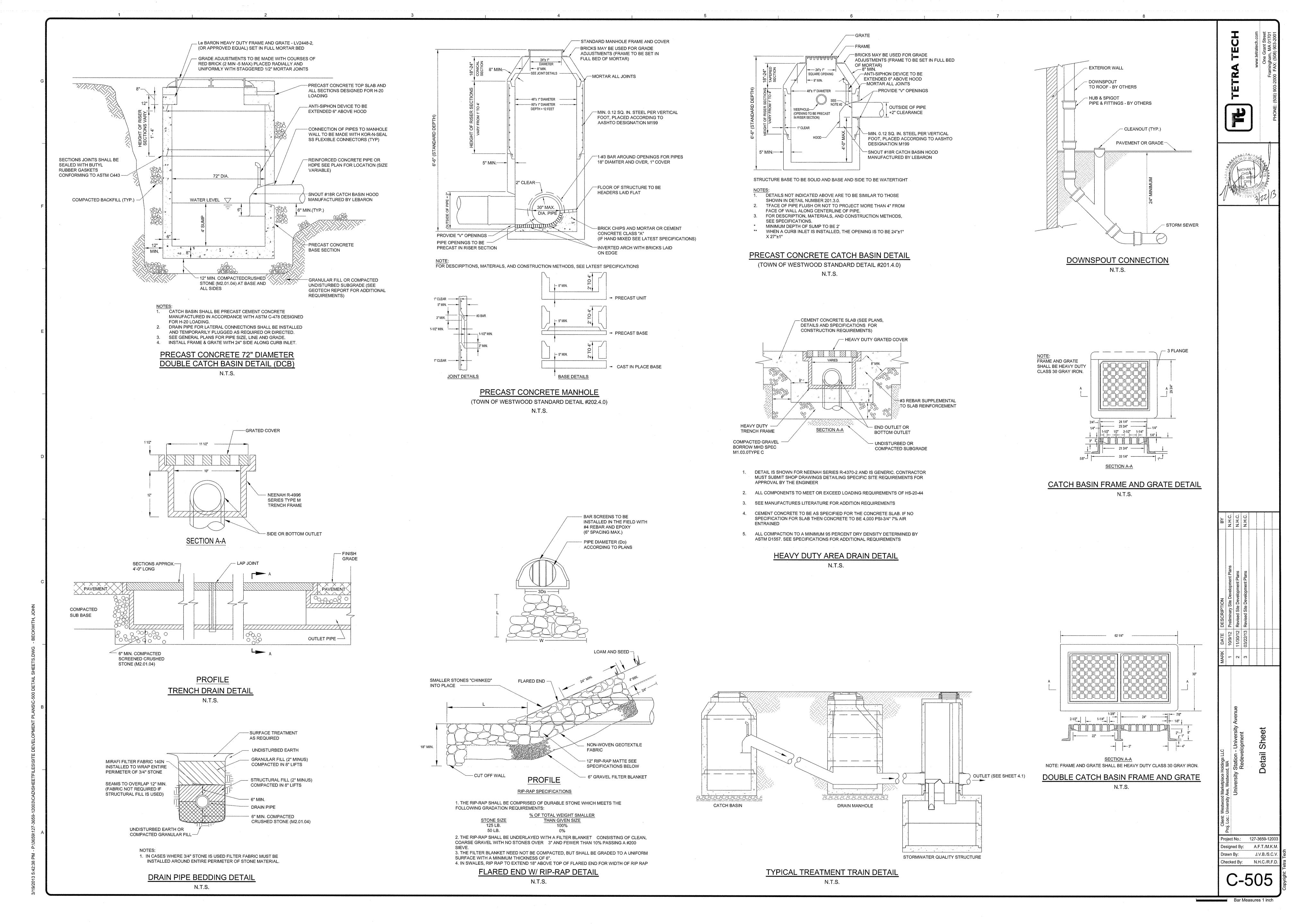
NOTE: TUBING, CORPORATION COCK & CURB STOP SHALL BE AS REQUIRED.

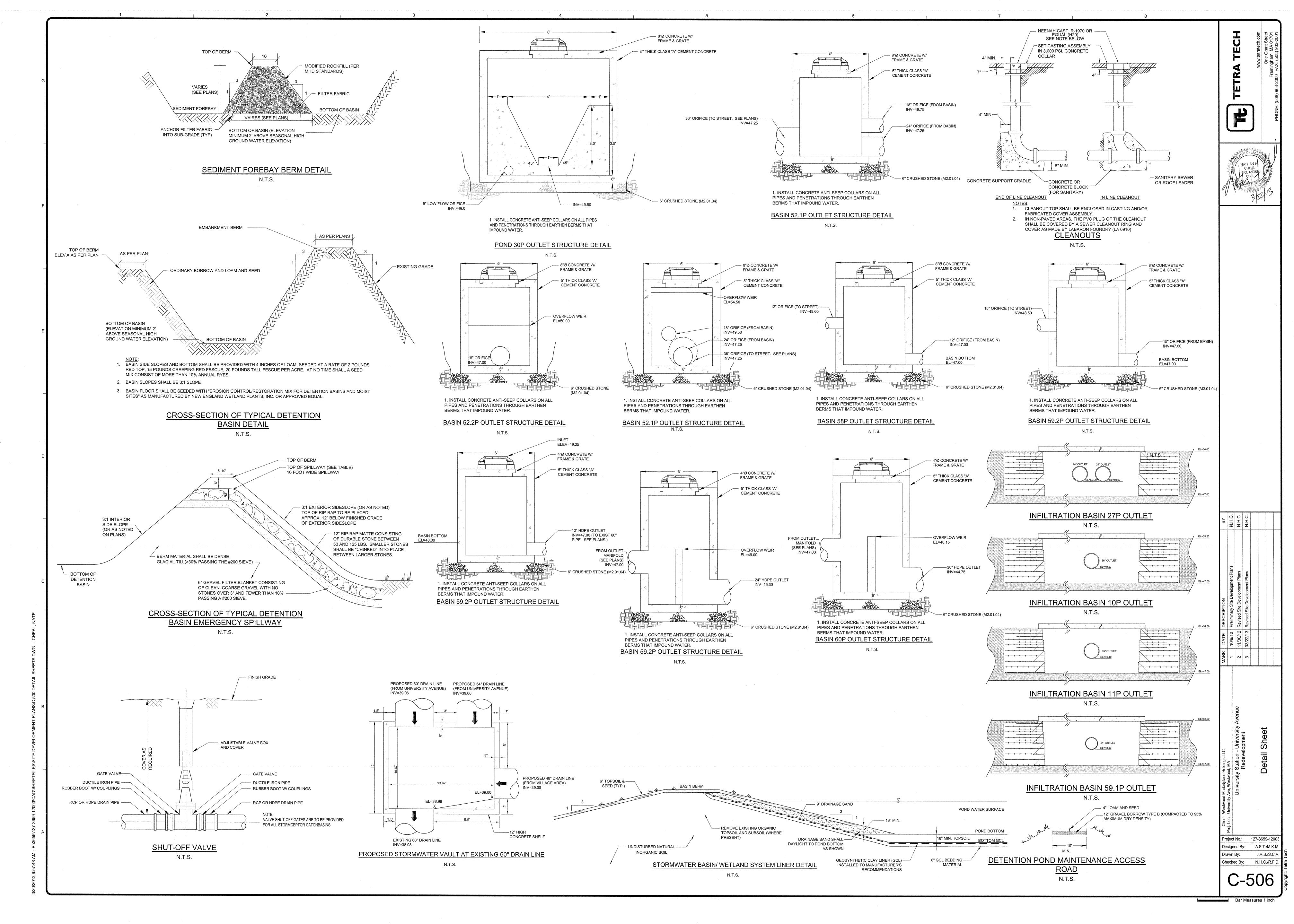
WATER SERVICE DETAIL N.T.S. (DWWD STANDARD DETAIL)

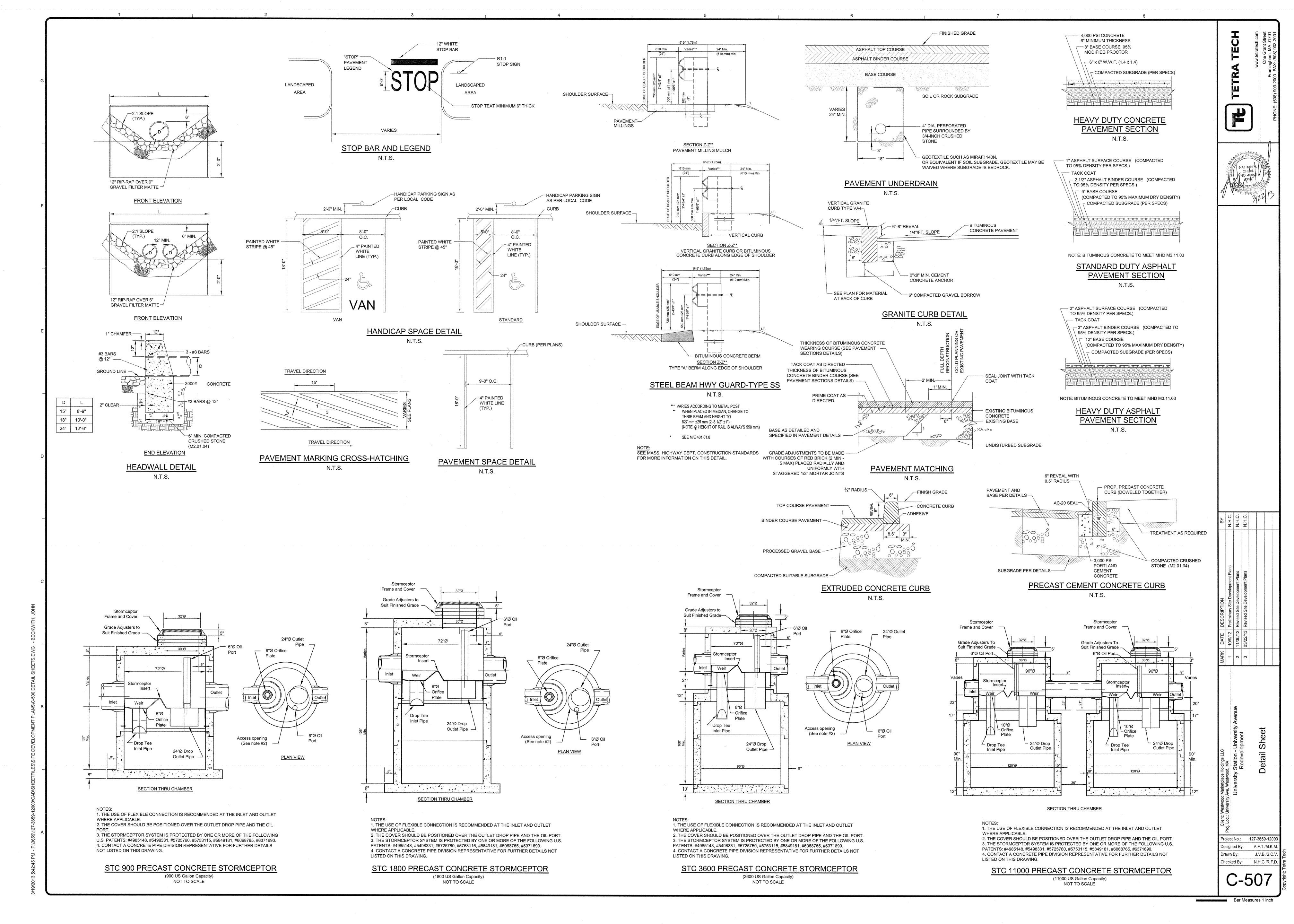
> Project No.: 127-3659-12003 A.F.T./M.K.M Designed By: J.V.B./S.C.V. Checked By: N.H.C./R.F.D.

BY N.H.C.

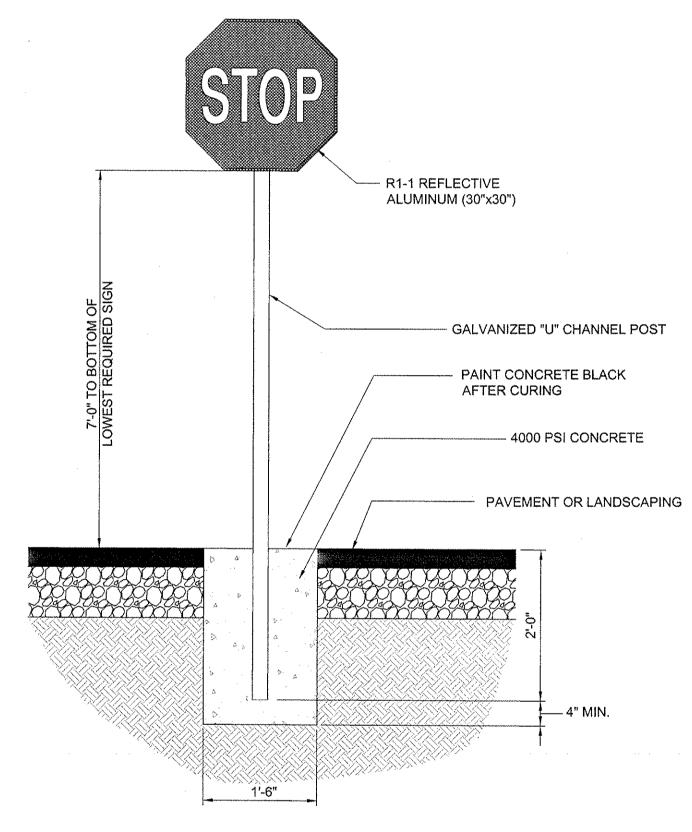
Bar Measures 1 inch



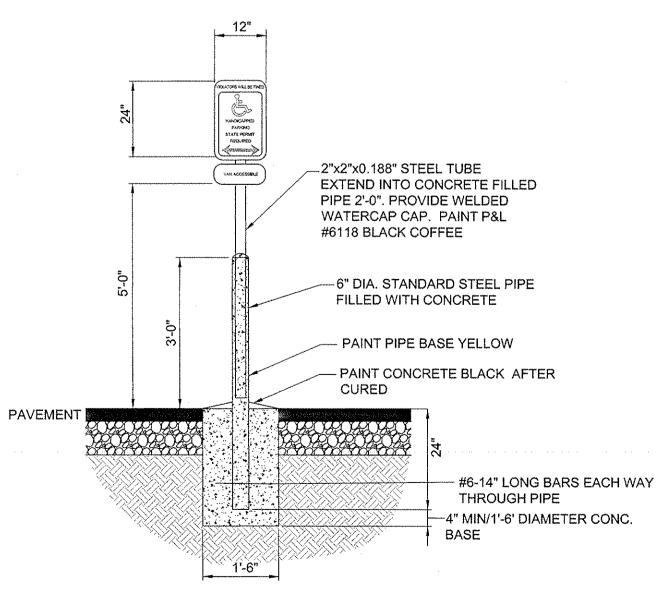




BOLLARD DETAIL N.T.S.

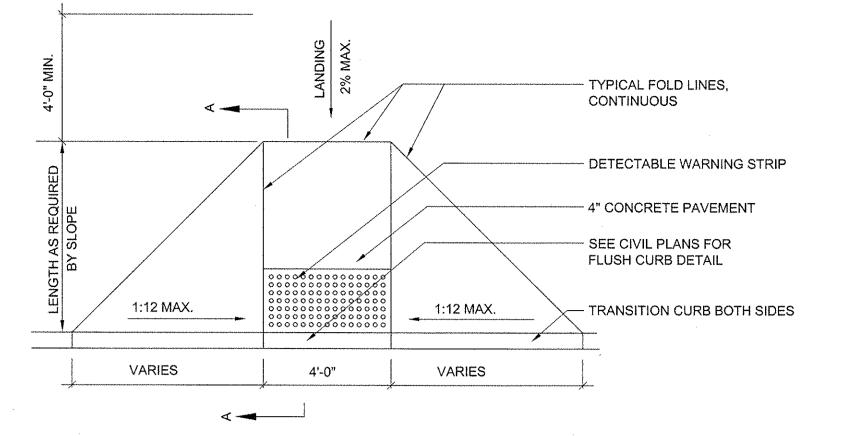


SIGN POST DETAIL N.T.S.

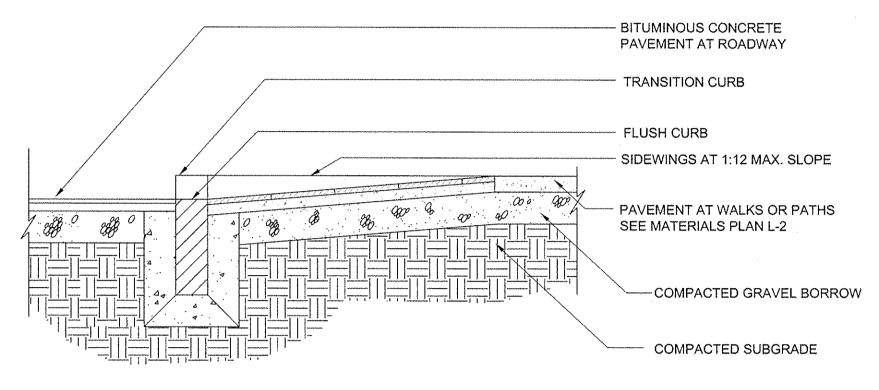


NOTE:
ONE SIGN AT EACH HANDICAP SPACE. WHERE
HANDICAP SPACES FACE EACH OTHER
WITHOUT A WALKWAY, THERE SHALL BE ONE
POST WITH SIGNS MOUNTED ON BOTH SIDES.

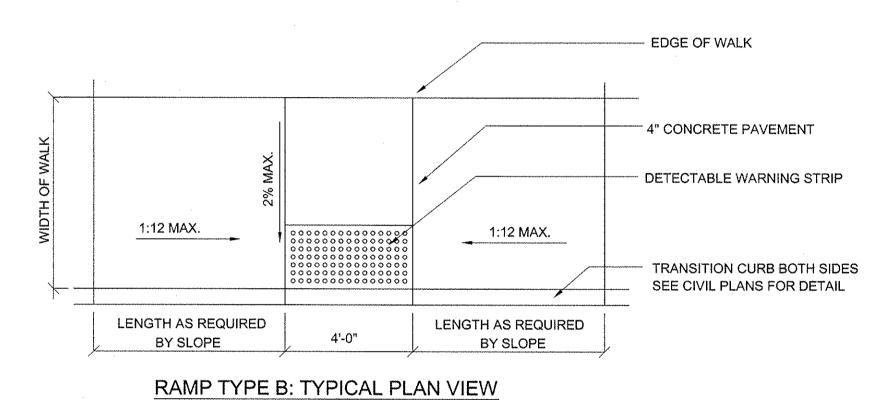
ACCESSIBLE SPACE SIGN POST/BASE



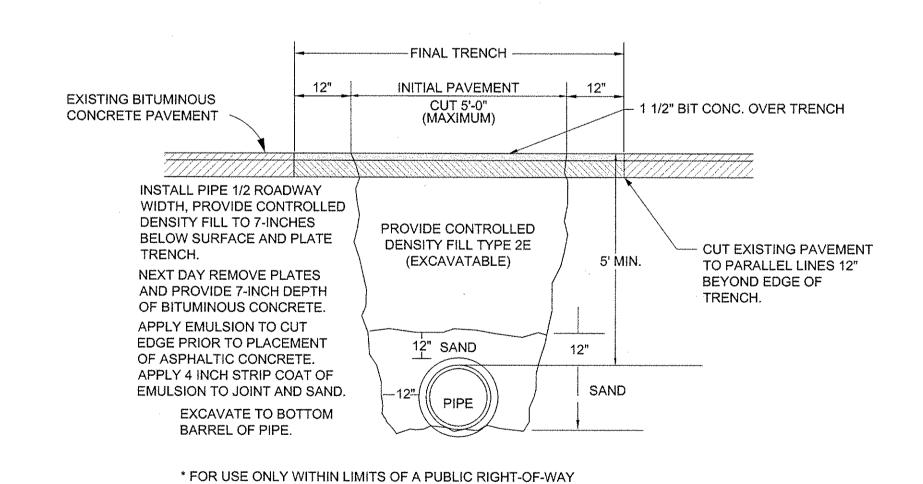
RAMP TYPE A: TYPICAL PLAN VIEW



RAMP TYPE A: TYPICAL CROSS SECTION A-A



ADA HANDICAP ACCESSIBLE RAMPS
N.T.S.

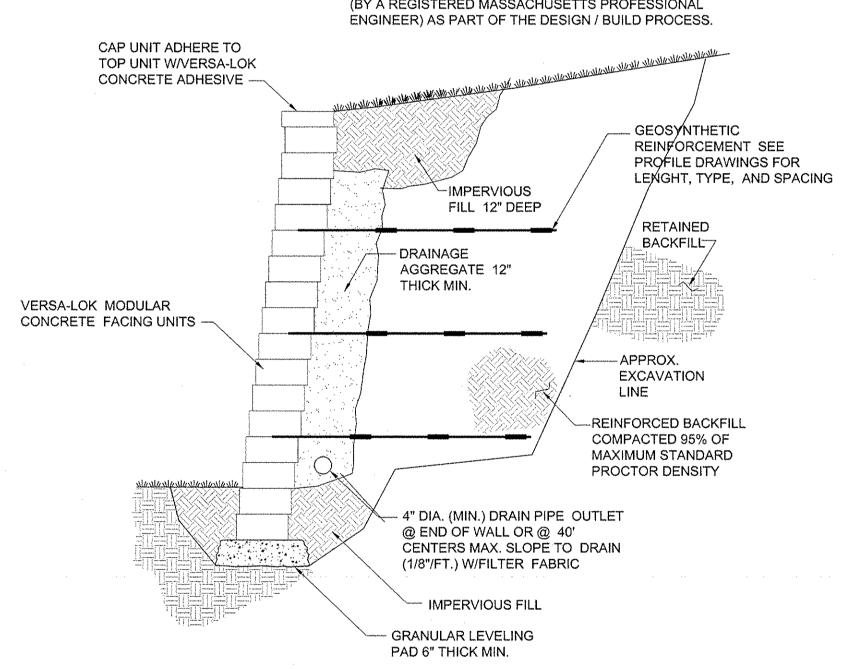


FLOWABLE FILL TRENCH

N.T.S.

(REFER TO STREET OPENING PERMIT)

NOTE:
ACTUAL RETAINING WALL AND RETAINING WALL DESIGN
PROVIDED BY OTHERS. THE CONTRACTOR SHALL BE
RESPONSIBLE FOR OBTAINING THE RETAINING WALL DESIGN
(BY A REGISTERED MASSACHUSETTS PROFESSIONAL
ENGINEER) AS PART OF THE DESIGN / BUILD PROCESS.



MODULAR CONCRETE UNIT

TYPICAL SECTION-REINFORCED RETAINING WALL N.T.S.

TRAFFIC SIGN SUMMARY

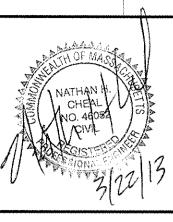
IDENTIFI- CATION	SIZE OF SIGN		TEXT	NUMBER OF	COLOR			POST SIZE AND	UNIT AREA	AREA IN
NUMBER	WIDTH (mm)	HEIGHT (mm)	1 6.7	SIGNS REQUIRED	BACK- GROUND	LEGEND	BORDER	NUMBER REQUIRED	(m²)	SQUARE METER
R1-1	750	750	STOP		RED	WHITE	WHITE	P5-10	0.56	6.16
R5-1	750	750	DO NOT ENTER		RED	WHITE	RED	P5-9	0.56	5.04
R6-1	900	300	ONE WAY		WHITE/ BLACK	BLACK	WHITE	P5-13	0.27	3.51
R7-6V	300	450	TOW ZONE HP-V Plate Parking Only		WHITE	RED	RED	P5-1	0.14	0.14

NOTES:

1. HIGH INTENSITY REFLECTIVE SHEETING TYPE III (CONFORMING TO SECTION M9.30.0) SHALL BE USED. SIGNS MUST MEET TOWN OF WESTWOOD SIGN STANDARDS AND/OR "STANDARD HIGHWAY SIGNS AS SPECIFIED IN THE 2003 M.U.T.C.D."

TETRA TECH
www.tetratech.com





10/9/12 Preliminary Site Development Plans N.H.C.
03/22/13 Revised Site Development Plans N.H.C.

c.: University Ave, Westwood, MA
University Station - University Avenue
Redevelopment
Detail Sheet

Project No.: 127-3659-12003

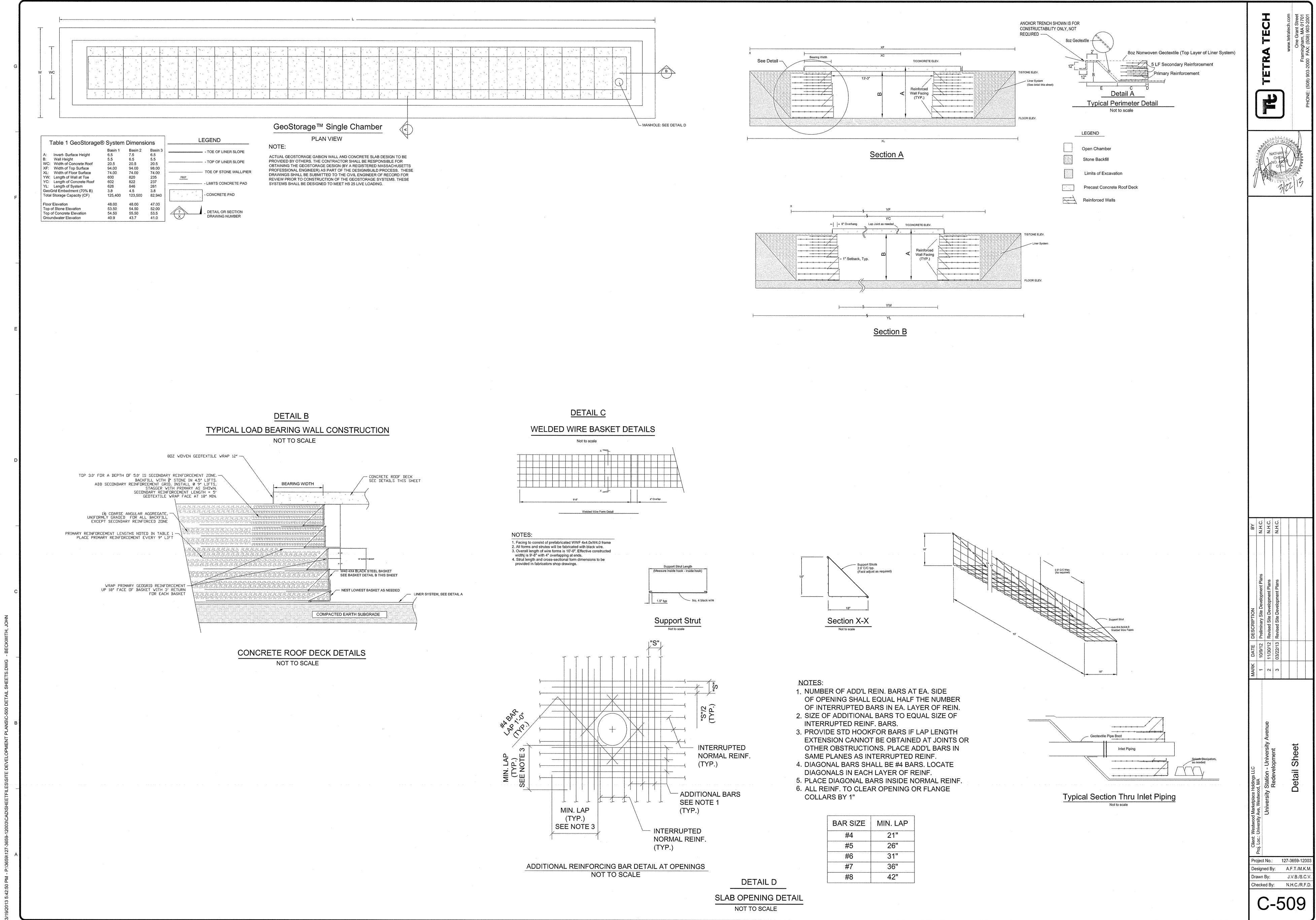
Designed By: A.F.T./M.K.M.

Drawn By: J.V.B./S.C.V.

Checked By: N.H.C./R.F.D.

C-508

^{2.} FOR TEXT HEIGHT SEE TOWN OF WESTWOOD SIGN STANDARDS AND/OR "STANDARD HIGHWAY SIGNS AS SPECIFIED IN THE 2003 M.U.T.C.D."



Rar Maggurae 1

