

STORMWATER SYSTEM MAINTENANCE NOTES:

THE DRAINAGE SYSTEMS ARE TO BE MONITORED THROUGHOUT THE ENTIRE CONSTRUCTION PERIOD BY THE CONTRACTOR. UPON COMPLETION OF THE PROJECT THE CONTRACTOR SHALL DO A FULL MAINTENANCE OF THE STORMWATER SYSTEM AND SITE. UPON COMPLETION OF THE CONTRACTOR'S FINAL MAINTENANCE CLEAN UP THE PROJECT MONITORING SHALL BE THE RESPONSIBILITY OF THE CARLSLE SCHOOL DEPARTMENT, HEREAFTER REFERRED TO AS THE OWNER. DURING CONSTRUCTION THE CONTRACTOR SHALL BE REQUIRED TO KEEP A LOG OF ALL INSPECTIONS AND REQUIRED MAINTENANCE. THIS LOG SHALL BE MADE AVAILABLE TO THE CONSERVATION COMMISSION, DPW, BOH, ARCHITECT & ENGINEER AT ALL TIMES.

UPON SUBSTANTIAL COMPLETION OF THE PROJECT, THE OWNER SHALL DESIGNATE A QUALIFIED PROFESSIONAL ENTITY OR INDIVIDUAL TO PERFORM ALL MONITORING, THE NAME, ADDRESS AND TELEPHONE NUMBER OF THE ENTITY OR INDIVIDUAL SHALL BE PROVIDED TO THE LOCAL CONSERVATION COMMISSION, DPW & BOH. THE OWNER'S REPRESENTATIVE SHALL BE REQUIRED TO KEEP A LOG OF ALL REQUIRED INSPECTIONS AND MAINTENANCE REQUIRED. THE LOG SHALL BE MADE AVAILABLE TO THE CONSERVATION COMMISSION, DPW & BOH.

THE DRAINAGE SYSTEMS INCLUDE DEEP-SUMP CATCH BASINS, WATER QUALITY STRUCTURES, AND INFILTRATION/RETENTION BASINS. THESE FACILITIES PROVIDE PARTIAL TREATMENT OF STORMWATER RUNOFF PRIOR TO DISCHARGE TO RESOURCE AREAS AND/OR INFILTRATION TO GROUNDWATER.

CONSTRUCTION MONITORING/MAINTENANCE PROCEDURES SHALL BE AS FOLLOWS (RESPONSIBILITY OF CONTRACTOR)

- SILT BARRIER:**
MONITOR SILT BARRIER ON A WEEKLY BASIS AND AFTER EVERY RAIN STORM. REPAIR ANY DAMAGED AREAS IMMEDIATELY. REMOVE AND DISPOSE OF ALL CAPTURED SEDIMENT.
- PAVED AREAS:**
PARKING LOT, ROAD AND ALL ACCESS WAYS AND GUTTERS SHALL BE SWEEPED CLEAN OF ALL DEBRIS. SWEEPING SHALL BE PERFORMED ON A WEEKLY BASIS.
- CATCH BASINS AND DRAIN MANHOLES:**
ALL CATCH BASINS AND DRAIN MANHOLES SHALL BE INSTALLED AS DETAILED AND INSPECTED AFTER EVERY RAIN STORM. SHOULD CATCH BASIN SUMPS BECOME FILLED WITH SEDIMENT TO HALF ITS DEPTH (2) OR (1) FOR DRAIN MANHOLES THEY SHALL BE CLEANED IMMEDIATELY.
- WATER QUALITY INLETS:**
ALL WATER QUALITY INLETS SHALL BE INSTALLED AS DETAILED AND INSPECTED AFTER EVERY RAIN STORM. SHOULD STRUCTURE BECOME FILLED WITH SEDIMENT TO A DEPTH OF 10" WITHIN CHAMBER, THEY SHALL BE CLEANED IMMEDIATELY.
- SUBSURFACE DETENTION/INFILTRATION BEDS:**
SUBSURFACE INFILTRATION BEDS SHALL BE INSPECTED AFTER EVERY RAIN STORM. CARE SHALL BE TAKEN TO PREVENT SILTATION OF THE BEDS AFTER INSTALLATION. PRETREATMENT BMP'S (CATCH BASINS AND WATER QUALITY STRUCTURES) MUST BE MAINTAINED AND CLEANED PER THE AFOREMENTIONED PROCEDURES TO ENSURE PROPER FUNCTIONING. BEDS SHALL BE MONITORED FOR ANY PONDING AND SEDIMENT/DEBRIS. SEDIMENT AND DEBRIS SHALL BE REMOVED BY A VAC-TRUCK.
- SWALES:**
SWALES SHALL BE INSPECTED AFTER EVERY RAIN STORM. SWALES SHALL BE MONITORED FOR ANY SLOPE EROSION, PONDING AND SEDIMENTATION. ACCUMULATED SEDIMENT AND DEBRIS SHALL BE REMOVED, BY HAND AND DISPOSED OF. MAINTAIN ALL EROSION CONTROL MEASURES DURING THE COURSE OF CONSTRUCTION AND IN ACCORDANCE WITH THE SWPPP.

DISPOSAL OF THE ACCUMULATED SEDIMENT MUST BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL GUIDELINES AND REGULATIONS.

POST CONSTRUCTION MONITORING/MAINTENANCE PROCEDURES SHALL BE AS FOLLOWS (RESPONSIBILITY OF THE OWNER)

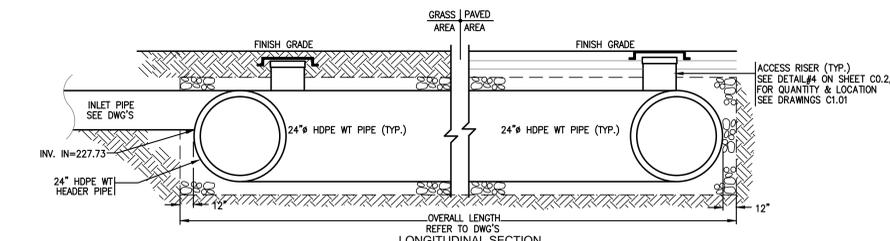
- PAVED AREAS:**
PARKING LOT, ROAD AND ALL ACCESS WAYS AND GUTTERS SHALL BE SWEEPED CLEAN OF ALL DEBRIS. SWEEPING SHALL BE PERFORMED TWICE ANNUALLY, SPRING AND FALL OF EVERY YEAR.
- CATCH BASINS AND DRAIN MANHOLES:**
ALL CATCH BASINS SHALL BE INSPECTED TO ENSURE THEY HAVE ADEQUATE SUMP CAPACITY, OIL/GREASE TRAPS ARE IN PLACE, FRAMES AND GRATES ARE NOT DAMAGED. ALL DRAIN MANHOLES SHALL BE INSPECTED TO ENSURE COVERS AND GRATES ARE NOT DAMAGED AND ARE DRAINING FREELY. CATCH BASINS SHALL BE INSPECTED FOUR TIMES A YEAR. MANHOLES SHALL BE INSPECTED ANNUALLY. CATCH BASIN SUMPS SHALL BE CLEANED AT LEAST FOUR TIMES A YEAR AT A MINIMUM. IN ADDITION TO THIS REQUIREMENT, SHOULD CATCH BASIN SUMPS BECOME FILLED WITH SEDIMENT TO HALF ITS DEPTH (2) THEY SHALL BE CLEANED.
- WATER QUALITY INLETS:**
ALL WATER QUALITY STRUCTURES SHALL BE INSPECTED TO ENSURE MANHOLE FRAMES AND COVERS ARE NOT DAMAGED, AND UNIT IS DRAINING FREELY. INSPECT EVERY (6) MONTHS FOR THE FIRST YEAR, AND NO LESS THAN ANNUALLY THEREAFTER. INSPECT UNIT IMMEDIATELY AFTER ANY FUEL OIL OR CHEMICAL SPILL. CLEAN UNIT ONCE SEDIMENT DEPTH REACHES 15%, APPROXIMATELY 10", OF STORAGE CAPACITY.
- SUBSURFACE DETENTION/INFILTRATION BEDS:**
SUBSURFACE INFILTRATION BEDS SHALL BE INSPECTED TWICE ANNUALLY, IN MARCH AND OCTOBER, AND AFTER EVERY MAJOR STORM EVENT (1" OR GREATER RAINFALL OVER A 24 HOUR PERIOD). BEDS SHALL BE MONITORED FOR ANY PONDING AND SEDIMENTATION/DEBRIS. SEDIMENT AND DEBRIS SHALL BE REMOVED BY A VAC-TRUCK. AFTER THE MAJOR STORM EVENT THE SYSTEM SHALL BE MONITORED FOR A 72 HOUR PERIOD. IF SYSTEM FAILS TO DRAIN WITHIN A 72 HOUR PERIOD THE OWNER SHALL RETAIN A QUALIFIED PROFESSIONAL ENGINEER TO ASSESS WHETHER THE INFILTRATION BED HAS FAILED AND RECOMMENDED ANY CORRECTIVE ACTION THAT IS REQUIRED.
- BIO-RETENTION AREAS:**
ALL BIO-RETENTION AREAS SHALL BE INSPECTED TO ENSURE PLANT MATERIAL IS MAINTAINED AND PRUNED, AREA IS FREE OF TRASH. DO NOT STORE SNOW IN BIO-RETENTION AREA. INSPECT AREAS EVERY (3) MONTHS, REMOVE ANY ACCUMULATED TRASH, REMOVE AND REPLACE ANY DEAD VEGETATION IN SPRING OR FALL. PRUNE PLANTINGS IN SPRING AND FALL AS NECESSARY. INSPECT SOD FILTER STRIP FOR EROSION. REPLACE HARDWOOD MULCH EVERY TWO (2) YEARS. REPLACE ENTIRE MEDIA AND ALL VEGETATION AS NEEDED SHOULD SYSTEM FAIL.
- SWALES:**
SWALES SHALL BE INSPECTED TWICE ANNUALLY, IN MARCH AND OCTOBER. SWALES SHALL BE MONITORED FOR SLOPE EROSION, PONDING AND SEDIMENTATION. SEDIMENT AND DEBRIS SHALL BE REMOVED BY HAND ON AN ANNUAL BASIS. GRASS SHALL BE MOWED AT LEAST TWICE PER YEAR WITH CLIPPINGS REMOVED. GRASS SHALL NOT BE CUT SHORTER THAN 4" TALL.
- RIP-RAP SPILLWAYS & LEVEL SPREADERS:**
INSPECT ALL RIP-RAP SPILLWAYS AND LEVEL SPREADERS TWICE A YEAR, AND AFTER EVERY MAJOR STORM EVENT (1" RAINFALL OVER A 24-HOUR PERIOD). INSPECT IF RIP-RAP HAS BEEN DAMAGED AND NOTE ANY EROSION.

DISPOSAL OF THE ACCUMULATED SEDIMENT MUST BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL GUIDELINES AND REGULATIONS. IF ANY STRUCTURE OR OUTFALL INDICATES THE PRESENCE OF PETROLEUM IT SHALL BE REMOVED AND DISPOSED OF IMMEDIATELY IN ACCORDANCE WITH APPLICABLE REGULATIONS.

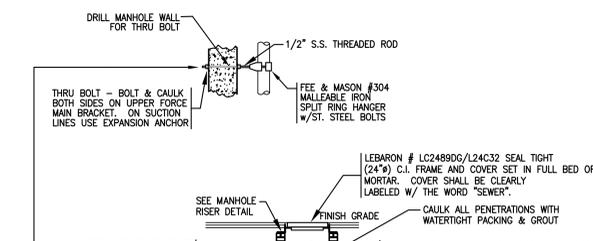
THE RESULTS OF THE INSPECTIONS, ALONG WITH THE DETERMINATION OF ANY REMEDIAL WORK THAT MAY BE FOUND TO BE NECESSARY AS A RESULT OF THE INSPECTION, SHALL BE SUBMITTED TO THE CONSERVATION COMMISSION WITHIN (30) DAYS OF THE INSPECTION. PROVISIONS FOR INSPECTIONS AND ANY REMEDIAL REPAIRS DEEMED NECESSARY SHALL BE THE RESPONSIBILITY OF THE OWNER.

OPERATION PROCEDURES DURING CONSTRUCTION SHALL BE BY THE CONTRACTOR AFTER PROJECT COMPLETION OPERATION PROCEDURES SHALL BE THE RESPONSIBILITY OF THE OWNER AND ARE AS FOLLOWS:

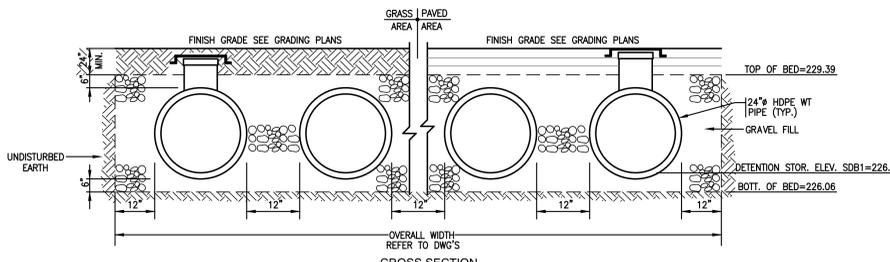
- GOOD HOUSE KEEPING AND MATERIAL MANAGEMENT:** REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES TO STORMWATER RUNOFF. A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) SHALL BE DEVELOPED BY THE CONTRACTOR WHICH SHALL INCLUDE THE FOLLOWING AT A MINIMUM:
 - ALL MATERIALS STORED ON-SITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE.
 - PRODUCTS SHALL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL.
 - SUBSTANCES SHOULD NOT BE MIXED WITH ONE ANOTHER, UNLESS RECOMMENDED BY THE MANUFACTURER.
 - WHENEVER POSSIBLE, ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF A CONTAINER.
 - THE SYSTEM'S MANAGER SHALL INSPECT THE SITE DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ON-SITE DURING ALL CONSTRUCTION PHASES.
 - ORIGINAL MATERIALS LABELS AND MATERIAL SAFETY DATA SHEETS SHALL BE KEPT; THEY RETAIN IMPORTANT INFORMATION.
 - PETROLEUM PRODUCTS:
 - ALL ON-SITE VEHICLES AND PARKING AREAS SHALL BE REGULARLY MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO PREVENT LEAKAGE.
 - PETROLEUM PRODUCTS SHALL BE STORED UNDER COVER AND SHALL BE IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED.
 - FERTILIZERS:
 - FERTILIZERS SHALL ONLY BE USED IN THE MINIMUM AMOUNTS AS RECOMMENDED BY THE MANUFACTURER.
 - THE CONTENTS OF ANY UN-USED FERTILIZER SHALL BE TRANSFERRED TO A CLEARLY LABELED, SEALABLE PLASTIC BIN, TO AVOID SPILLAGE.
 - PAINTS, SOLVENTS:
 - ALL PAINTS AND SOLVENTS SHALL BE STORED IN ORIGINAL MANUFACTURER'S CONTAINERS IN A COVERED LOCATION.
 - THE USE OF PAINTS AND SOLVENTS SHALL, WHENEVER POSSIBLE, BE LIMITED TO SERVICE OR STORAGE BAYS. WHERE NOT POSSIBLE, THE WORK AREA SHALL BE PROTECTED WITH IMPERMEABLE DROP CLOTHES OR TARPIS. AT NO POINT SHALL PAINT AND SOLVENTS BE USED IN PARKING OR ACCESS WAYS THAT ARE TRIBUTARY TO THE DRAINAGE SYSTEM.
- SPILL CONTROL PRACTICES:**
 - MANUFACTURER'S RECOMMENDED METHODS SHALL BE CLEARLY POSTED FOR SPILL CLEAN-UP AND SITE PERSONNEL SHALL BE MADE AWARE OF THE PROCEDURES AND THE LOCATIONS OF CLEAN-UP INFORMATION AND SUPPLIES.
 - MATERIAL AND EQUIPMENT NECESSARY FOR SPILL CLEAN-UP WILL BE KEPT ON-SITE IN A DESIGNATED MATERIAL STORAGE AREA. EQUIPMENT WILL INCLUDE, BUT NOT BE LIMITED TO, BROOMS, DUST PANS, MOPS, RAGS, GLOVES, GOGGLES, ABSORBENT MATERIALS, SAND, SAWDUST AND PLASTIC & METAL TRASH CONTAINERS SPECIFICALLY KEPT AND LABELED FOR THIS PURPOSE.
 - ALL SPILLS WILL BE CLEANED-UP IMMEDIATELY AFTER DISCOVERY.
 - SPILLS OF TOXIC OR HAZARDOUS MATERIAL OR NATURE WILL BE REPORTED TO THE APPROPRIATE STATE, LOCAL, OR FEDERAL AGENCY, AS REQUIRED BY LAW.
 - THE SPILL PREVENTION PLAN WILL INCLUDE PROVISIONS TO ADAPT THE PLAN TO ENSURE THAT SPILLS WILL NOT REOCCUR, AND HOW TO CLEANUP THE SPILL IF THERE IS ANOTHER ONE.
- SITE OPERATIONS AND DAILY USE:** SHALL CONSIDER THE ULTIMATE DISPOSITION OF STORMWATER AND OTHER SITE-GENERATED FORMS OF RUNOFF. THE WASHING OF VEHICLES SHALL BE LIMITED AREAS WITHIN THE BUILDING, AS THEY ARE SERVED BY THE FLOOR DRAIN SYSTEM. WASH WATER WITH ITS COMBINATION OF SOLVENTS, DETERGENTS AND OIL/GREASES SHOULD NOT BE ALLOWED TO ENTER ANY PART OF THE ON-SITE DRAINAGE SYSTEM.
- SNOW PLOWING:** SNOW PLOWING OPERATIONS SHALL STOCKPILE SNOW, ICE AND ACCUMULATED MATERIALS IN AREAS WHERE SNOW MELT WILL FLOW INTO THE ON-SITE DRAINAGE SYSTEMS, INCLUDING DRAINAGE BASINS. NO PLOWING OR STORAGE OF SNOW INTO WETLANDS OR BIO-RETENTION AREAS.
- SALT USE:** SITE-WIDE SHALL BE APPLIED TO THE MINIMUM EXTENT POSSIBLE TO MAINTAIN SAFE CONDITIONS, AND ONLY IF NOT SPECIFICALLY EXCLUDED BY ANY SPECIAL CONDITIONS AS PART OF AN ORDER OF CONDITIONS ISSUED BY THE CONSERVATION COMMISSION.



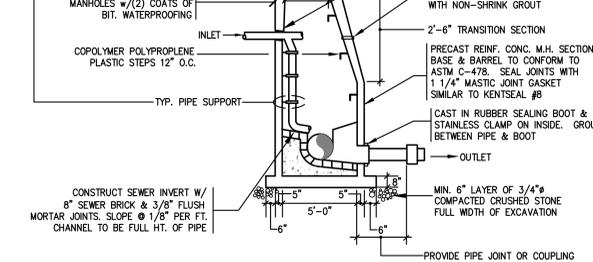
4 SUBSURFACE DETENTION BED #1 DETAIL
CO.2 N.T.S.



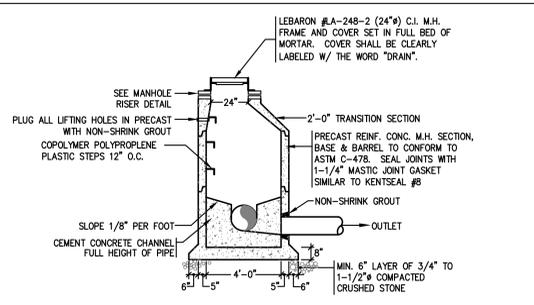
7 INSIDE DROP SEWER MANHOLE DETAIL
CO.2 N.T.S.



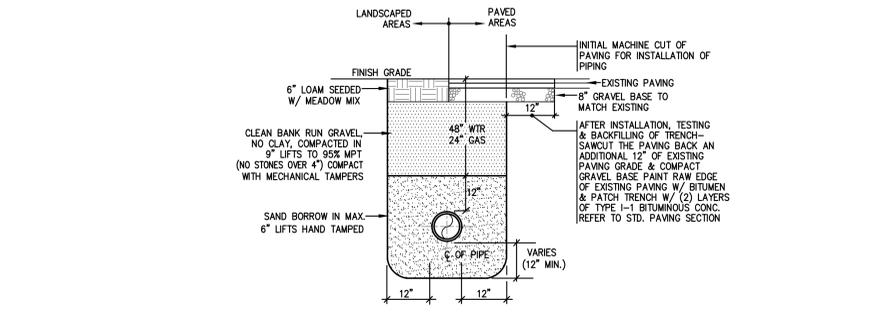
5 TYP. TRENCH SECTION FOR WATER & GAS
CO.2 N.T.S.



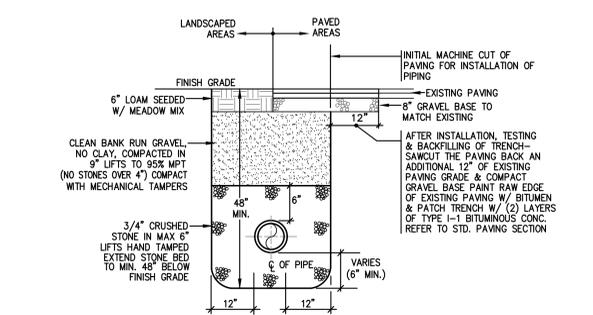
8 TYPICAL TRENCH SECTION FOR DRAINAGE & SEWER
CO.2 N.T.S.



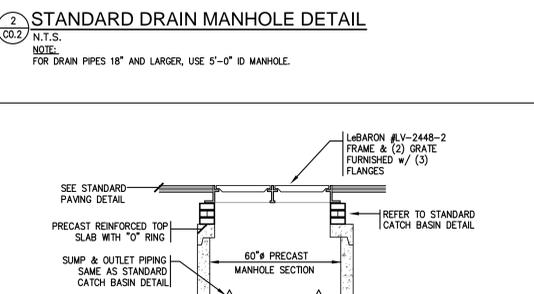
2 STANDARD DRAIN MANHOLE DETAIL
CO.2 N.T.S.



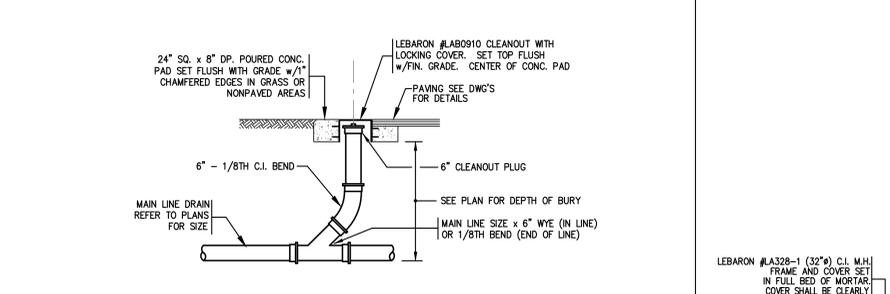
6 GROUND CLEANOUT DETAIL
CO.2 N.T.S.



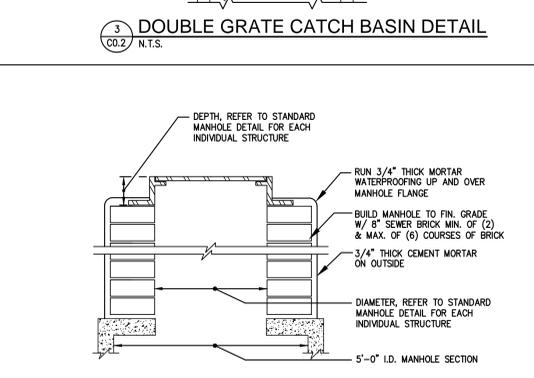
10 STANDARD DRAIN MANHOLE WITH SLUICE GATE
N.T.S.



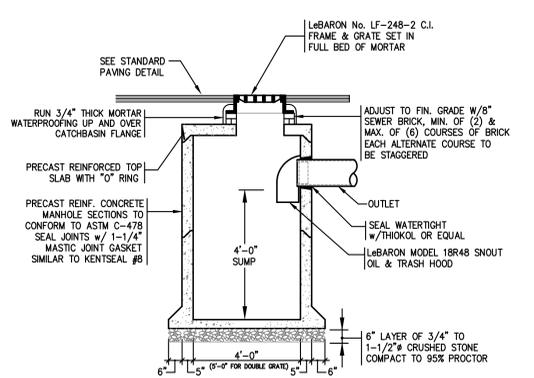
3 DOUBLE GRATE CATCH BASIN DETAIL
CO.2 N.T.S.



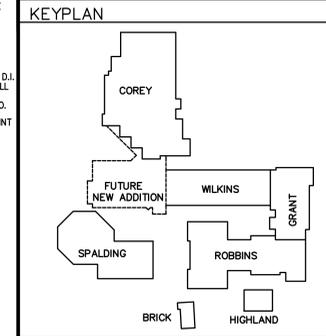
9 TYPICAL RETENTION POND ACCESS RISER DETAIL
CO.2 N.T.S.



11 MANHOLE RISER DETAIL
N.T.S.



1 CATCH BASIN DETAIL
CO.2 N.T.S.



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SITE PLAN REVIEW
09-09-2010

Carlsle Public School
Carlsle, MA
Site Notes & Details

SCALE: As indicated
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CHECKED BY: CUG

C0.2

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