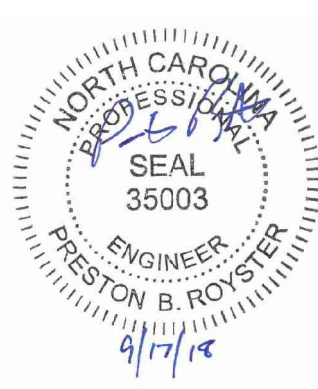


Coulter  
Jewell  
Thames P.A.

111 West Main Street  
Durham, N.C. 27701  
p 919.682.0368  
f 919.688.5646  
www.cjtpa.com

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Project

**DURHAM TECH  
FACILITIES  
BUILDING**  
DURHAM, NC

DURHAM TECH.  
COMM. COLLEGE  
1616 COOPER ST.  
DURHAM, NC 27703  
919-743-5722

PIN:  
0830-07-58-4362  
0830-06-48-8582

CJT Job Number: 1707

Drawn WJC/PBR  
Checked WJC  
Date 07/02/2018  
Revisions

CONSTRUCTION  
DRAWINGS

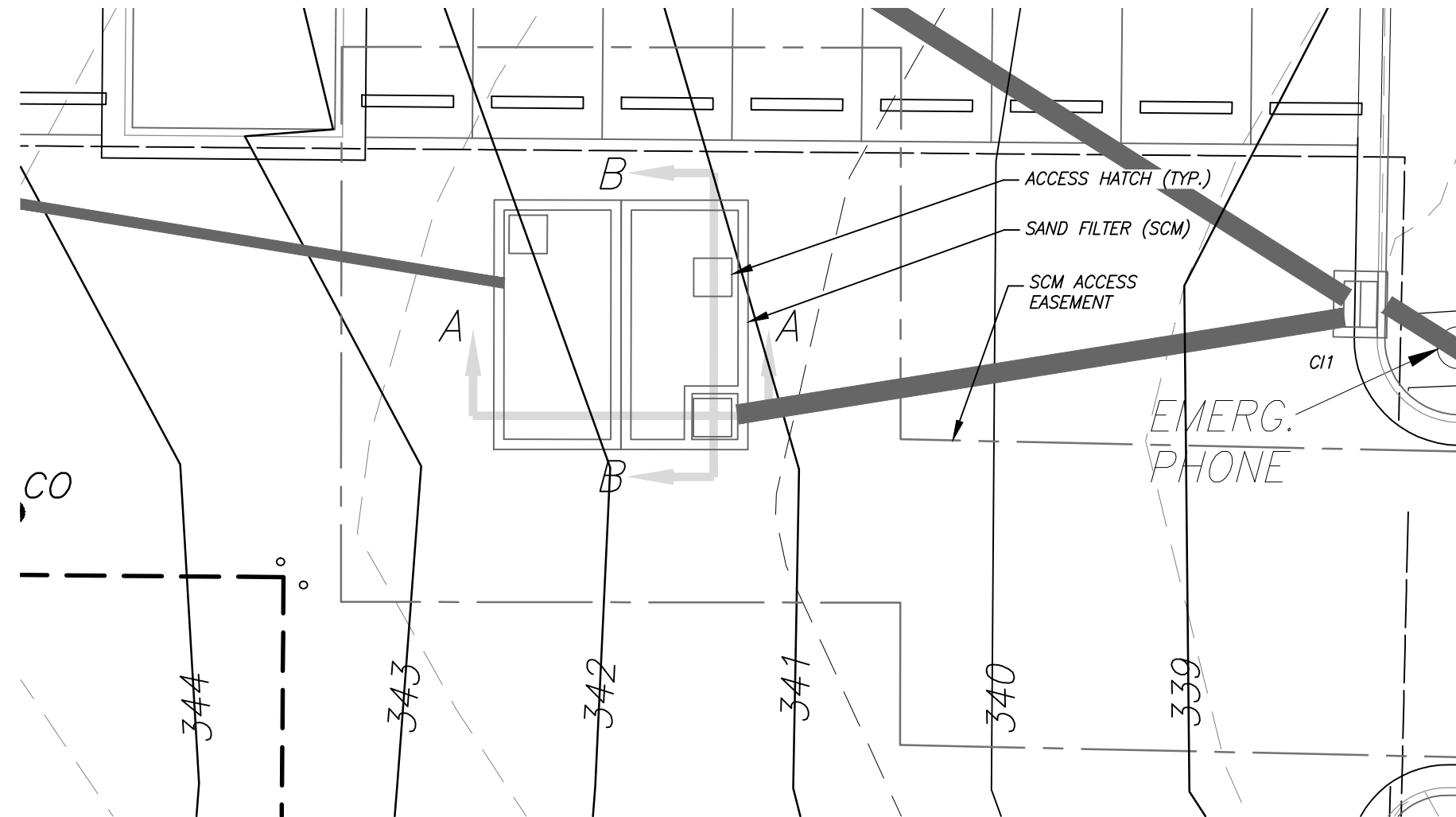
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Sheet Title

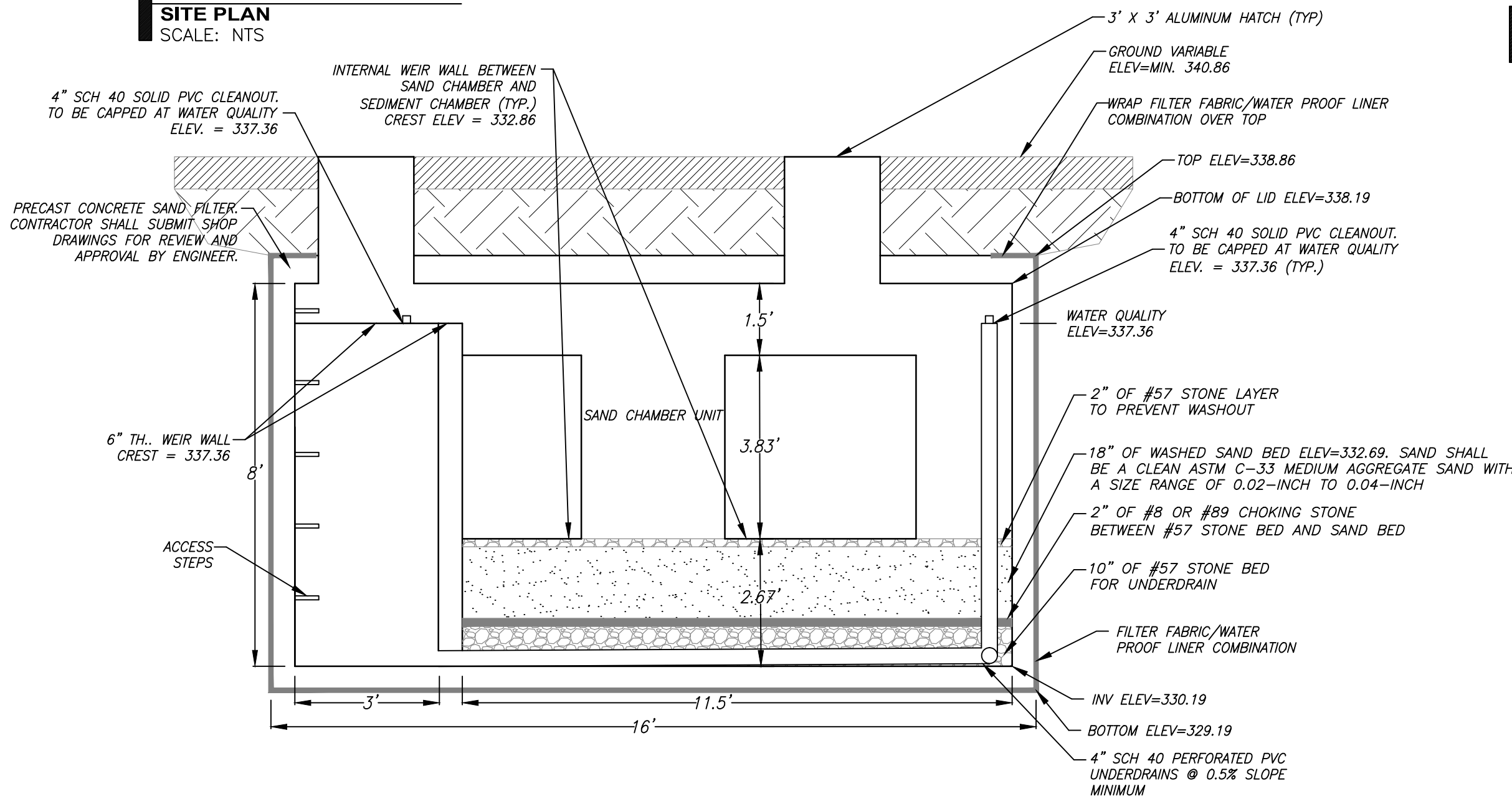
**SANDFILTER  
DETAILS**

Sheet Number

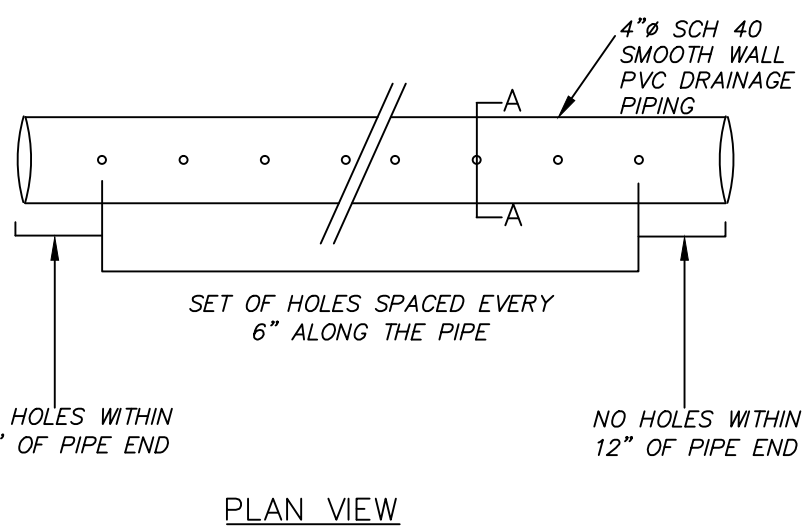
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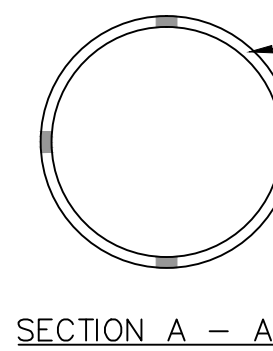
**1/CD-9.0  
SITE PLAN**  
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**4/CD-9.0  
SANDFILTER SECTION B-B**  
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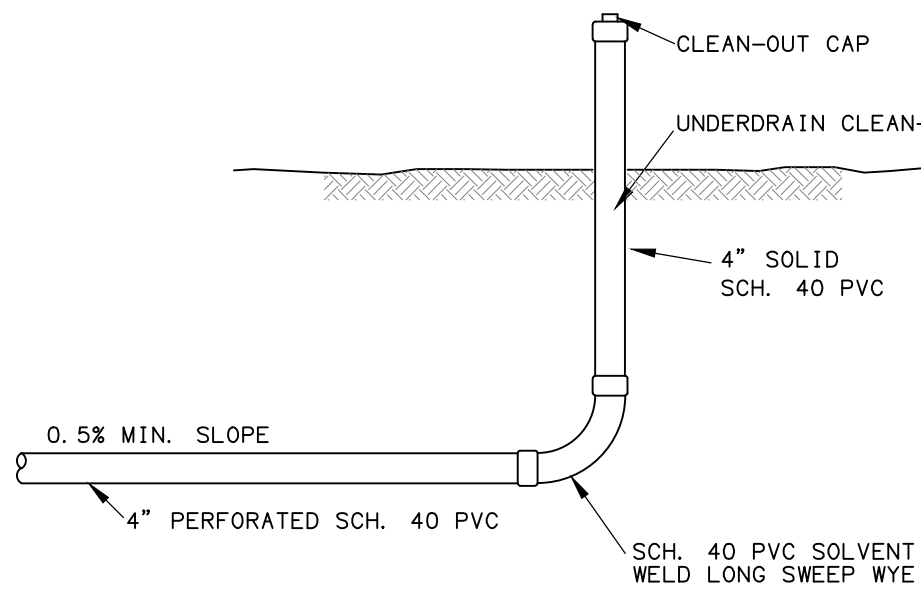


PLAN VIEW

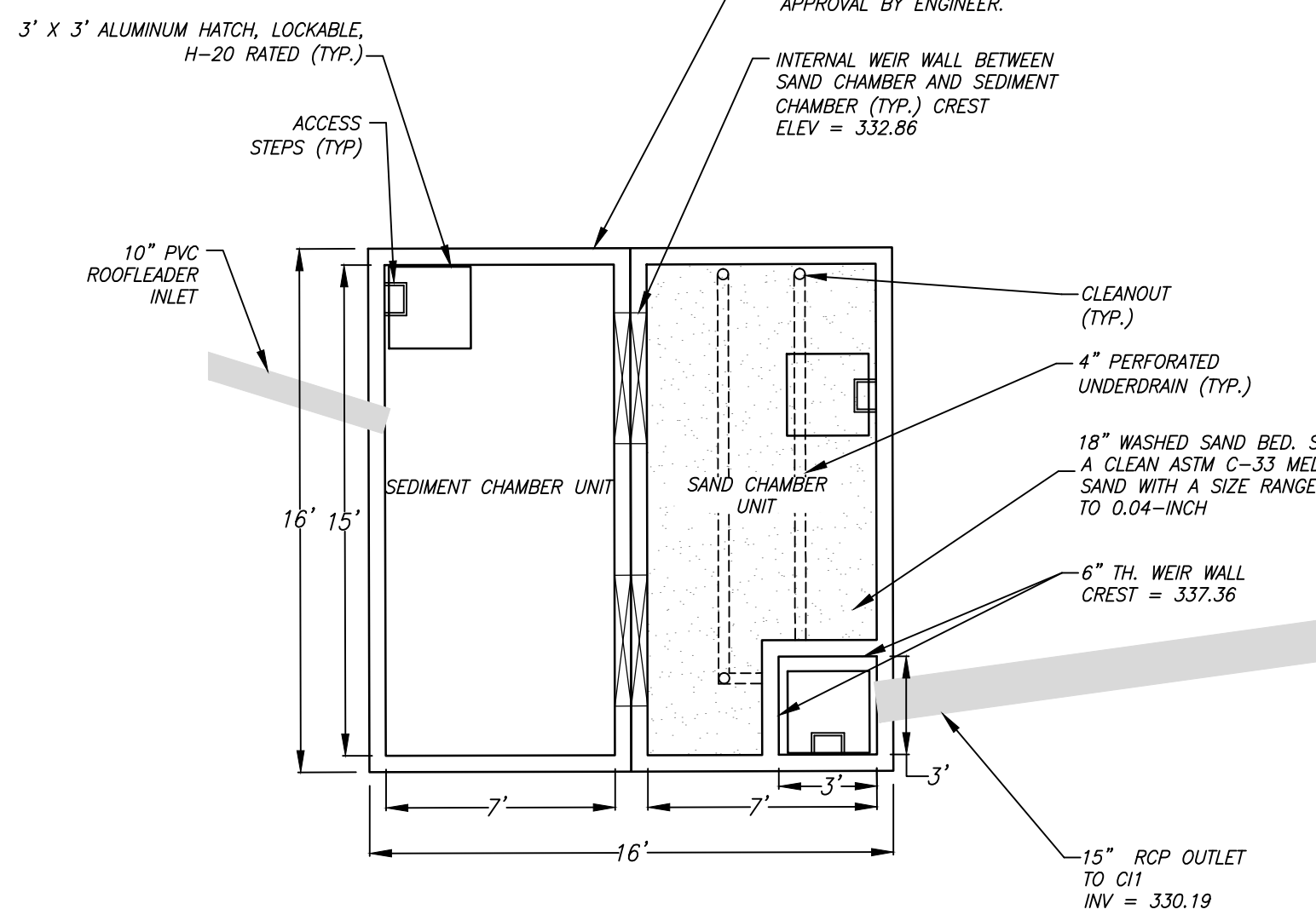


SECTION A - A

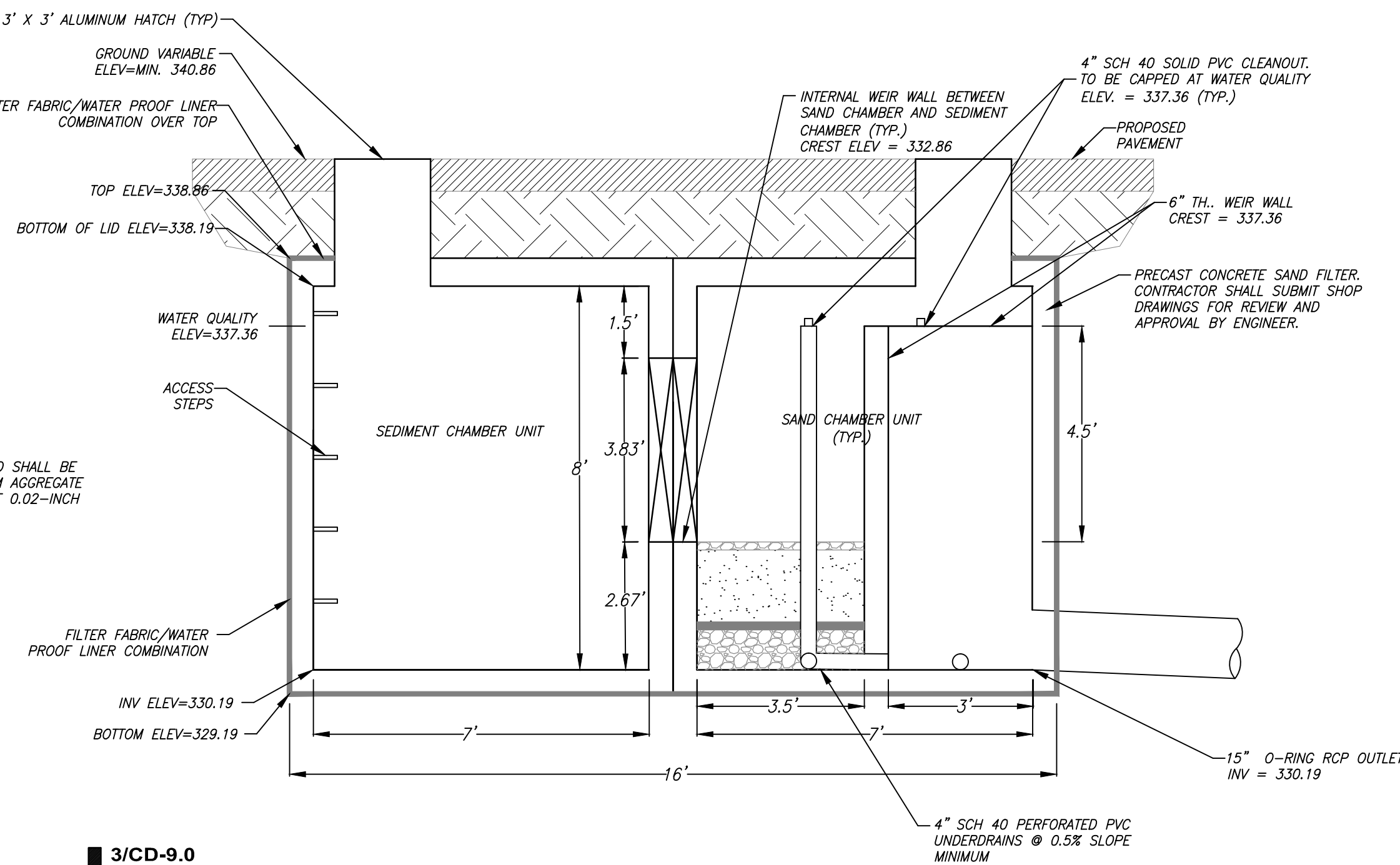
**5/CD-9.0  
PERFORATED UNDERDRAINS**  
NTS



**6/CD-9.0  
UNDERDRAIN CLEANOUT**  
NTS



**2/CD-9.0  
SANDFILTER PLAN**  
SCALE: NTS



**3/CD-9.0  
SANDFILTER SECTION A-A**  
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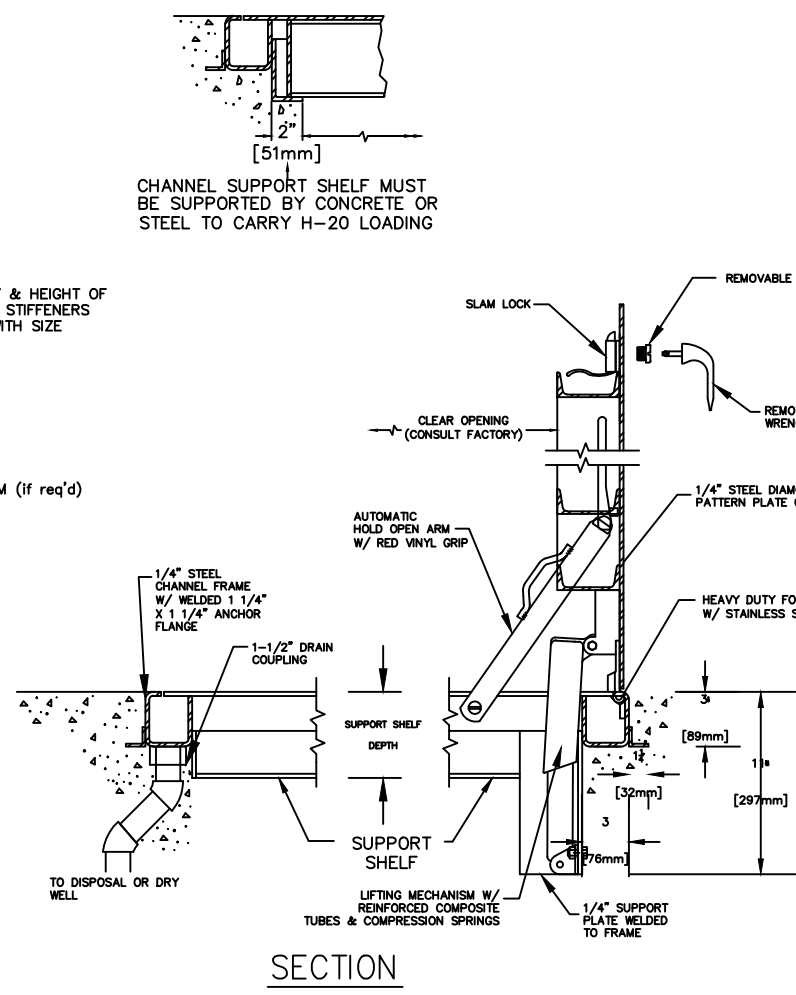
THE SEASONAL HIGH WATER TABLE (SHWT) ELEVATION WAS DETERMINED AT A LOCATION APPROX. 135 FT DOWNHILL FROM THE PROPOSED SANDFILTER. THE SHWT IS ASSUMED TO BE AT THE SAME DEPTH AS THE READING LOCATION WITH AN ELEVATION OF 336.25.

#### AS-BUILT DRAWING REQUIREMENTS

- CONTRACTOR TO PROVIDE RECORD DRAWINGS & SURVEY DURING CONSTRUCTION, AS NEEDED, FOR CITY OF DURHAM AS-BUILT REQUIREMENTS (SECTION 4.0). IF BMP'S ARE PART OF THE SITE PROJECT THE CONTRACTOR WILL PROVIDE TESTING & CERTIFICATION AS REQUIRED BY THE CITY OF DURHAM AS-BUILT REQUIREMENTS (SECT 4.1 THRU 4.8).
- ALSO, APPROVED AS-BUILT DRAWINGS ARE REQUIRED FOR ISSUANCE OF THE CERTIFICATE OF OCCUPANCY. SOME ITEMS WILL REQUIRE SURVEY DURING CONSTRUCTION IN ORDER TO COMPLETE AS-BUILT AND LOGICAL SUBMITTAL. REQUIREMENTS, PLEASE REFER AS-BUILT REQUIREMENTS IN THE CITY OF DURHAM REFERENCE GUIDE FOR DEVELOPMENT.
- FOR EACH STORMWATER BMP FACILITY, A COMPLETED CITY OF DURHAM DESIGN SUMMARY SHALL BE PROVIDED NO LATER THAN THE FIRST CONSTRUCTION DRAWING SUBMITTAL.
- AN EXECUTED STORM WATER FACILITY OPERATION AND MAINTENANCE PERMIT AGREEMENT (PREPARED BY STORMWATER SERVICES, CITY OF DURHAM), PAYMENT OF STORM WATER FACILITY PERMIT FEE (\$3,500 PER DETENTION / WATER QUALITY DEVICE) AND PERPETUAL SURETY FOR THE CONTINUED MAINTENANCE OF THE FACILITY.
- THE MAINTENANCE AND RECONSTRUCTION RESPONSIBILITY OF THE STORMWATER BMP'S WITHIN THE BMP MAINTENANCE AND ACCESS EASEMENT RESTS WITH THE PROPERTY OWNER/RESPONSIBLE PARTY PER THE STORMWATER FACILITY AGREEMENT RECORDED AT BK: PG:
- THE SYSTEM SHALL REMAIN WATERTIGHT FOR THE MAXIMUM HYDROSTATIC PRESSURE, CALCULATED ON THE UPSTREAM SIDE OF THE CONTROL STRUCTURE, EXPERIENCED IN THE 10-YEAR STORM EVENT. THIS REQUIREMENT CAN BE SATISFIED BY COMPLYING WITH ONE OR BOTH OF THE FOLLOWING METHODS:
  - DEMONSTRATE, BY MANUFACTURE CERTIFICATION AND TEST RESULTS, THAT THE SAND FILTER SYSTEM HAS BEEN TESTED AND SHOWN TO MEET ACCEPTABLE WATER TIGHTNESS STANDARD AS COVERED IN THE PRODUCT DESIGN.
  - PLUG OR BLOCK ALL ORIFICES AND WEIRS THAT WOULD ACTIVATE DURING A 10-YEAR STORM, SHUT OFF ANY PUMPS ASSOCIATED WITH THE DEVICE, WAIT FOR A COUPLE OF STORM EVENTS TO FILL THE DEVICE, MEASURE THE DEPTH OF WATER IN THE DEVICE AFTER 24 HOURS. IF NO APPRECIABLE WATER-LOSS (LESS THAN 1% BY VOLUME) HAS BEEN MEASURED/OBSERVED, THE DEVICE WILL BE DEEMED WATER-TIGHT. IF, HOWEVER, GREATER THAN 1% OF THE CAPTURED VOLUME HAS BEEN LOST IN 24 HOURS, THE FACILITY SHALL BE FIXED SUCH THAT COMPLIANCE WITH THIS REQUIREMENT HAS BEEN ACHIEVED.

#### NOTES:

- PRE-CAST CONCRETE STRUCTURES ARE ACCEPTABLE FOR THESE SYSTEMS. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF STRUCTURES INCLUDING SEALED ENGINEERING DRAWINGS FOR APPROVAL BY OWNER. STRUCTURE SHALL BE WATERTIGHT.
- ALL PRECAST CONCRETE STRUCTURES, GRATES, COVERS, AND CONNECTIONS ARE TO BE RATED FOR H-20 LOADING (MINIMUM). CONTRACTOR TO PROVIDE VERIFICATION.
- ACCESS STEPS SHALL BE PROVIDED AT ALL ACCESS PORTS.
- ALL BACKFILL AND UNDERLYING SOILS FOR STORMWATER FACILITIES MUST BE OBSERVED AND CERTIFIED BY A GEOTECHNICAL ENGINEER THAT IS A REGISTERED NCE.
- ALL JOINTS ARE TO BE WATERTIGHT AND GROUTED. ALL PIPES ARE TO BE STRUCK EVEN WITH THE INSIDE WALLS OF STRUCTURES. ALL PIPE PENETRATIONS ARE TO BE GROUTED AND WATER TIGHT. CONTRACTOR TO PROVIDE SHOP DRAWINGS/SPECIFICATIONS VERIFYING THESE REQUIREMENTS. CONTRACTOR MUST PROVIDE DOCUMENTATION FROM THE MANUFACTURER THAT THE JOINTS ARE WATERTIGHT AND BUILT TO WITHSTAND THE MAXIMUM HYDROSTATIC PRESSURE CALCULATED AT THE INLET TO THE UNDERGROUND STRUCTURE DURING THE 10-YR STORM ACCORDING TO AN ACCEPTABLE ASTM OR AASHTO WATER TIGHTNESS STANDARD. POST-CONSTRUCTION LEAK TEST IS REQUIRED. 1% VOLUME LOSS OR LESS OVER 48 HOURS IS REQUIRED.
- ALL BACKFILL MUST BE COMPACTED TO 98% (MIN).
- THE MEDIA IN THE SAND FILTER SHALL BE CLEANED, WASHED COARSE MASONRY SAND, SUCH AS ASTM C33. THE SAND PARTICLES SHALL BE LESS THAN 2MM AVERAGE DIAMETER.
- PURCHASE RECEIPTS FOR SAND MATERIAL USED IN FILLING THE SYSTEM MUST BE PROVIDED WITH THE AS-BUILT, PRIOR TO THE ISSUANCE OF CERTIFICATE OF OCCUPANCY. RECEIPT SHALL IDENTIFY ASTM SPECIFICATION.



SECTION

**7/CD-9.0  
LOCKABLE ACCESS HATCH**  
NTS