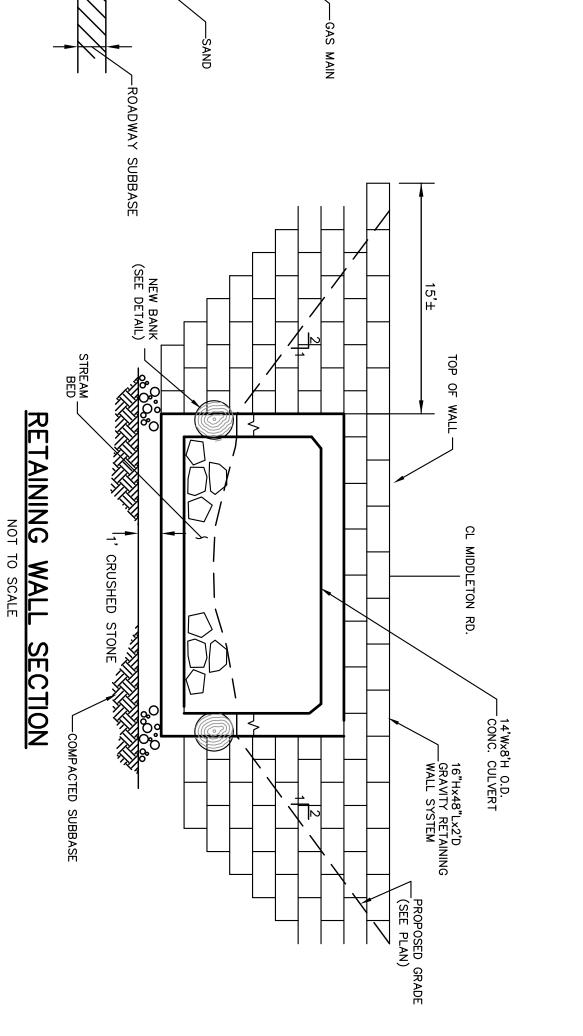


GAS MAIN SUPPORT

- PROVIDE SUPPORT EVERY 15 FEET. IF EXCAVATION SLOPE IS 1:1 THE APPROXIMATE LENGTH OF SUPPORT IS 42' \pm . IF EXCAVATION SLOPE IS 2:1 THEN THE APPROXIMATE LENGTH OF SUPPORT IS 66' \pm
- IF COUPLINGS OR FITTINGS ARE UNCOVERED THEN A STRAP IS NEEDED AT EACH LOCATION.
- CONTRACTOR SHALL SUBMIT HIS METHOD OF SUPPORTING THE GAS MAIN IN PLACE FOR APPROVAL BY NATIONAL GRID.
- GAS FACILITIES SHOULD NOT BE UNDERMINED WITHOUT ADEQUATE SUPPORT. ALL SUPPORT LINES SHALL BE TENSIONED SO THAT NO DEFLECTION WILL OCCUR WHEN THE FACILITY IS UNDERMINED. THIS TENSION SHALL BE CHECKED AT THE START AND END OF EACH DAY AND ADJUSTED AS NECESSARY. WHERE A COUPLING, GAS SERVICE, CLAMP, VALVE, DRIP LINE OR OTHER APPURTENANCES EXISTS ON THE EXPOSED SECTION OF MAIN, AND ADDITIONAL SUPPORT SHALL BE INSTALLED AT THE LOCATION.
- WHEN SUPPORTING AN EXPOSED FACILITY, THE PIPE COATING SHALL BE PROTECTED WITH ROCK SHIELD, (ROCK SHIELD TO BE FURNISHED BY NATIONAL GRID) OR OTHER LIKE MATERIAL CUT TO A MINIMUM WIDTH OF THE SUPPORTED PIPE DIAMETER. SUPPORT LINES SHALL BE A MINIMUM OF 3/4" POLYPROPYLENE OR BETTER.

CRUSHED STONE LEVELING PAD (6" MINIMUM THICKNESS) —12" DRAINAGE ZONE (3/4" CRUSHED STONE) -DRAIN TILE SUBCUT TO DEPTH 'D' AS REQUIRED AND REPLACE WITH SUITABLE COMPACTED STRUCTURAL FILL TO ACHIEVE THE REQUIRED BEARING CAPACITY AND SLIDING RESISTANCE AS DIRECTED BY THE SITE GEOTECHNICAL ENGINEER. ALL STRUCTURAL FILL IS TO BE COMPACTED TO A MINIMUM 98% STANDARD PROCTOR DENSITY.

GRAVITY WALL CROSS **SECTION**



CULVERT SECTION

NOT TO SCALE

SECTION A-A

1' CRUSHED STONE

EXCAVATION SLOPE (SEE NOTE 1 ABOVE)

6,

>

INSIDE DIMENSIONS 6'H×12'W

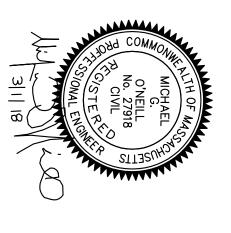
1'(TYP.)-

EX. 4" COATED STEEL PIPE GAS MAIN -(TO BE SUPPORTED IN PLACE)

JOINT (TYP. OF EACH CULVERT -SECTION-LOCATION TO BE DETERMINED BY MANUFACTURER

PRECAST CONCRETE CULVERT NOTES:

- CONTRACTOR SHALL SUBMIT PRECAST CONCRETE CULVERT DESIGN CALCULATIONS AND SHOP DRAWINGS SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE COMMONWEALTH OF MASSACHUSETTS FOR APPROVAL PRIOR TO FABRICATION.
- THE CONTRACTOR SHALL APPROVE ALL ELEVATIONS AND DIMENSIONS OF THE SHOP DRAWINGS PRIOR TO FABRICATION.
- ALL CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 5000 PSI. CEMENT TO BE TYPE III CONFORMING TO ASTM C-150.
- ALL REINFORCING STEEL SHALL BE GRADE 60 BARS AND CONFORM TO ASTM A615. ALL REINFORCING SHALL BE BENT COLD. UNLESS OTHERWISE NOTED, REINFORCING SPLICE LENGTHS SHALL BE AS FOLLOWS:
- BAR SIZE SPLICE LENGTH (IN)
- REINFORCEMENT SHALL BE PLACED WITH A MINIMUM OF 1½" COVER FROM THE FACE OF CONCRETE.
- THE LOADING FOR THE STRUCTURE IS HL-93 WITH 48" OF SOIL COVER AND 6-1/2" HOT MIX ASPHALT PAVEMENT.
- A PRESUMPTIVE BEARING CAPACITY OF 2000 PSF SHALL BE USED IN THE DESIGN OF THE CULVERT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SUBGRADE PREPARATION SUCH THAT THE DESIGN BEARING CAPACITY SHALL BE ACHIEVED. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF THIS BEARING CAPACITY CANNOT BE MET.
- CONTRACTOR SHALL SUBMIT AN ERECTION PROCEDURE/SHOP DRAWING FOR APPROVAL PRIOR TO STARTING ANY CONSTRUCTION.



CULVERT DETAILS

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MIDDLETON MIDDLETON ROAD BOXFORD, MASSACHUSETTS ROAD DR-4214-MA CULVERT REPLACEMENT

MARCH 1, 2018