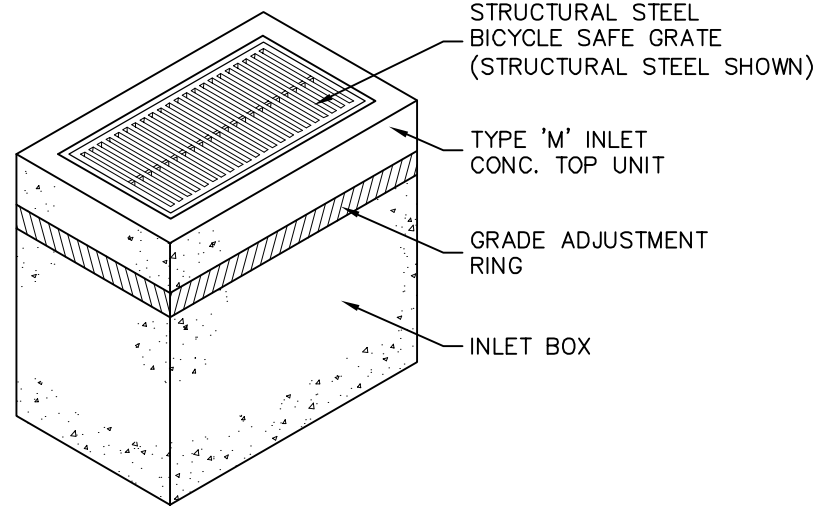
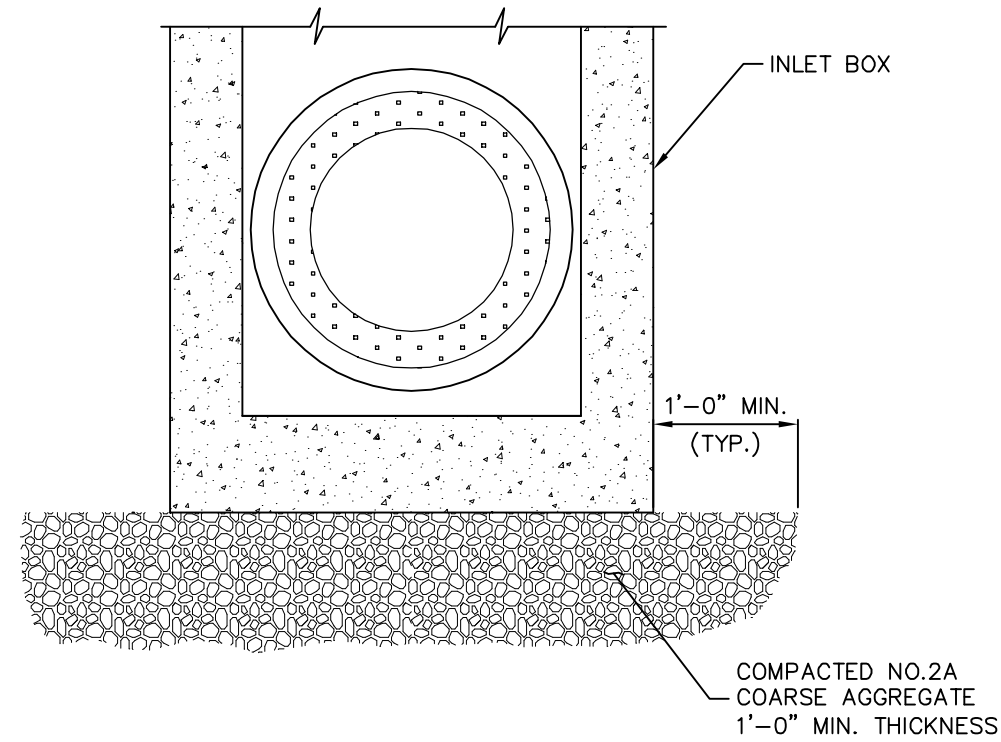


three inches = one foot  
one and one half inches = one foot  
one inch = one foot  
three quarters inch = one foot  
one half inch = one foot  
three eighths inch = one foot  
one quarter inch = one foot  
one eighth inch = one foot



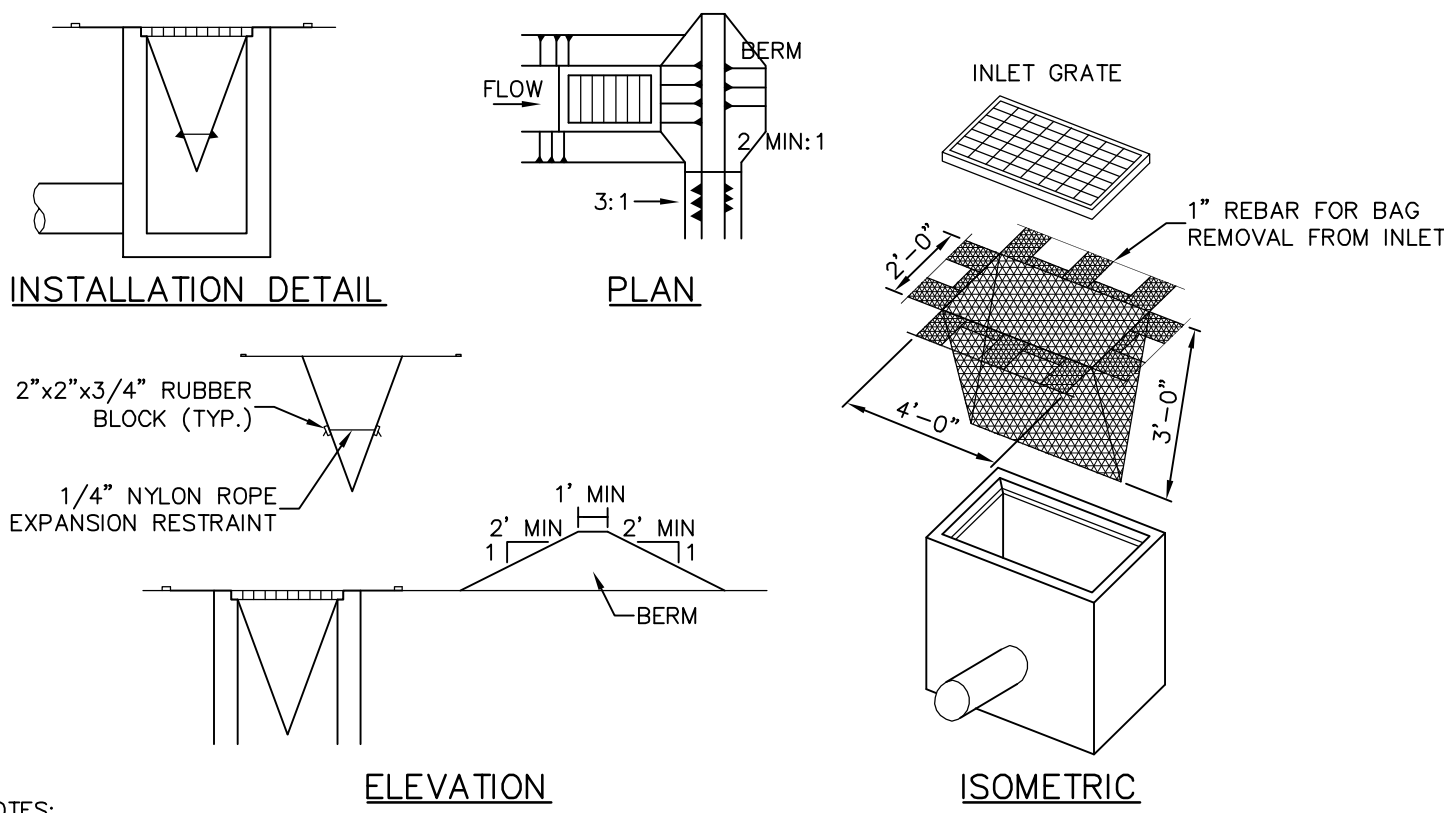
- NOTES:
1. ALL MATERIALS AND CONSTRUCTION METHODS TO MEET THE REQUIREMENTS OF PENNDOT PUBLICATION 408 AND 72M (RC-34M), LATEST REVISION.
  2. ALL STRUCTURES AND ASSEMBLIES TO BE PRE-CAST, UNLESS OTHERWISE NOTED.
  3. ALL PIPE CONNECTIONS TO BE WATERTIGHT.

**(A) TYPE 'M' INLET**  
NOT TO SCALE



- NOTES:
1. FOR ADDITIONAL NOTES SEE RC46M SHEETS 1, 2, AND 3 OF 44.
  2. STANDARD INLET BOXES SHOWN. PROVIDE TOP SLABS FOR OTHER INLET TYPES.
  3. SEE RC-45M FOR DETAILS FOR THE CONCRETE TOP UNITS, FRAMES, AND GRATES.
  4. PROVIDE GRADE ADJUSTMENT RINGS WHEN REQUIRED. SEE RC-45M FOR DETAILS.
  5. CONSTRUCT OR PLACE INLET BOXES UNLESS OTHERWISE INDICATED OR DIRECTED.
  6. CONSTRUCT OR PLACE INLET BOXES ON A SUBBASE CONSTRUCTED OF COMPACTED NO. 2A COARSE AGGREGATE. PLACE AND COMPACT IN 4" LAYERS TO PROVIDE A 1'-0" MINIMUM DEPTH.

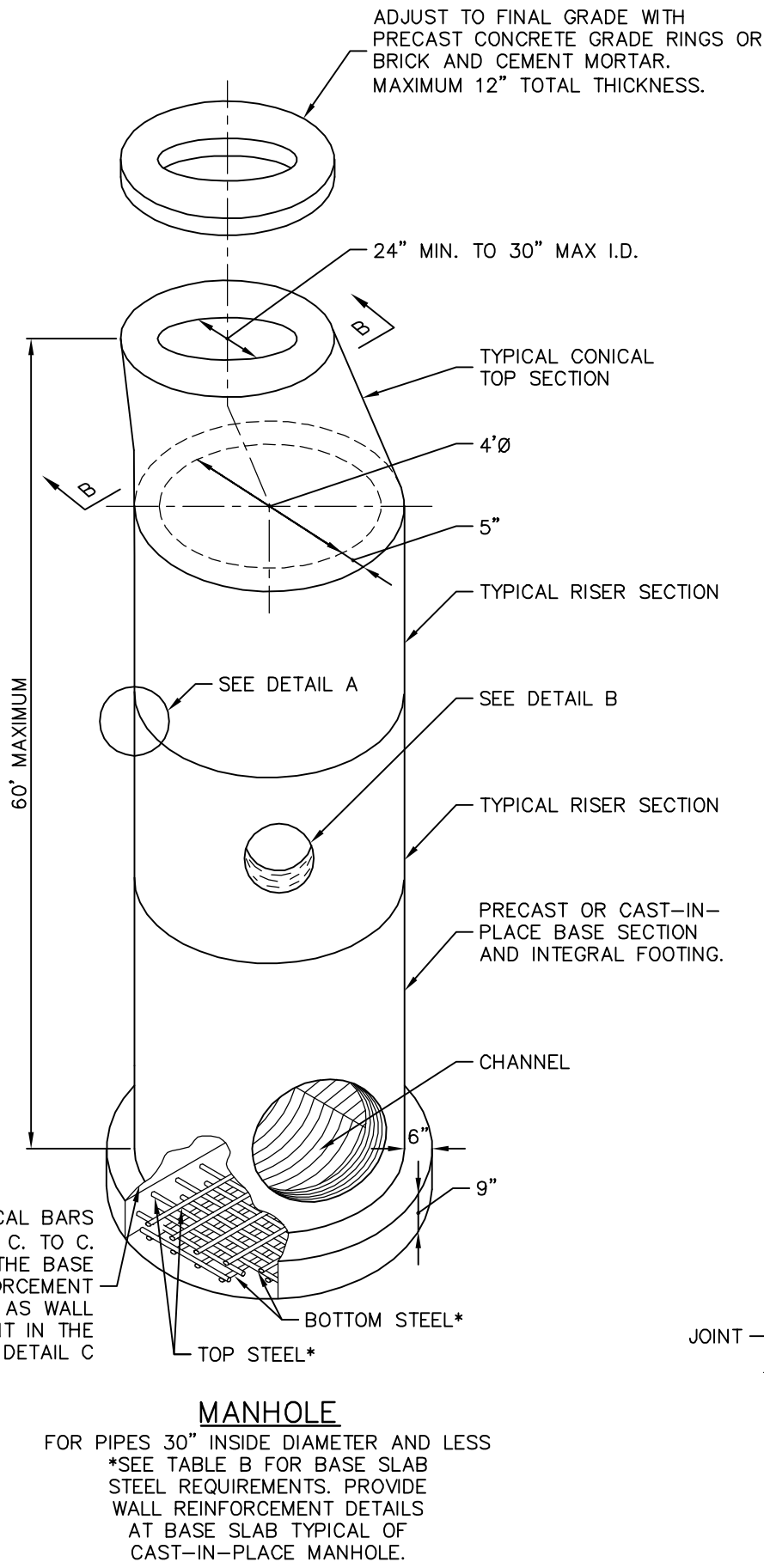
**(B) INLET BOX -- SUBBASE PREPARATION**  
NOT TO SCALE



- NOTES:
1. MAXIMUM DRAINAGE AREA = 1/2 ACRE.
  2. SEDIMENT MUST BE REMOVED FROM STORM WATER INLET PROTECTION AFTER EACH RUNOFF EVENT IF INLETS UTILIZING INLET PROTECTION ARE NOT DRAINING TO A SEDIMENT TRAP OR BASIN.
  3. INLET PROTECTION IS NOT REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS REQUIRED FOR ALL INSTALLATIONS.
  4. EARTHEN BERM SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. EARTHEN BERM IN CHANNEL SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED OR TO REMAIN PERMANENTLY.
  5. THIS IS A TEMPORARY BEST MANAGEMENT PRACTICE TO BE REMOVED BY CONTRACTOR FOLLOWING A MINIMUM OF 70% STABILIZATION OF CONTRIBUTING DRAINAGE AREA.

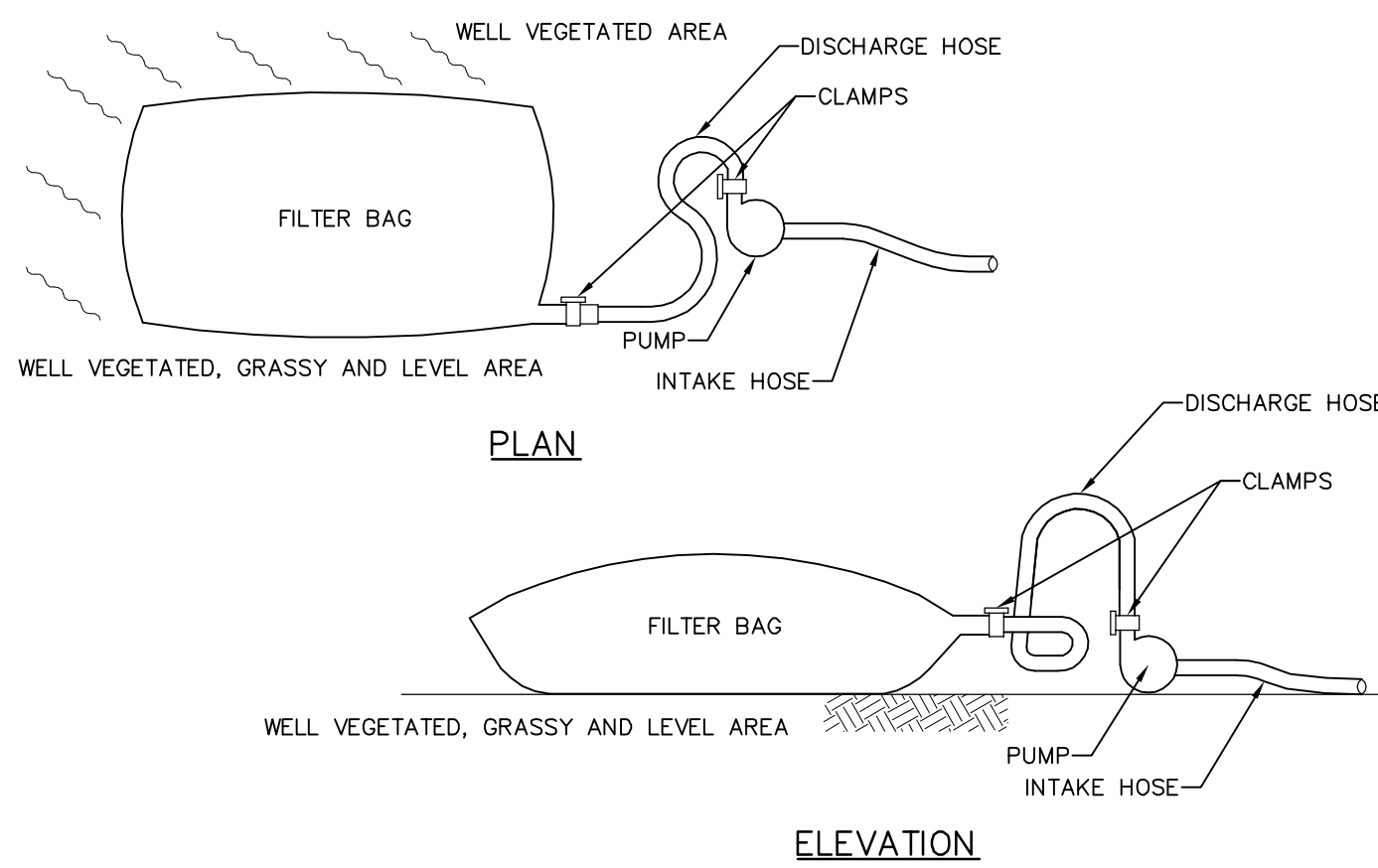
DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

**(H) FILTER BAG INLET PROTECTION FOR CHANNEL OR ROADSIDE SWALE**  
NOT TO SCALE



- NOTES:
1. PRECAST MANHOLES MEETING THE REQUIREMENTS OF PUBLICATION 408, SECTION 714, MAY BE SUBSTITUTED FOR THE STANDARD CAST-IN-PLACE MANHOLE. FOR DEVIATION OR MODIFICATION OF THE STANDARDS, SUBMIT SHOP DRAWINGS FOR APPROVAL.
  2. FOR RISERS OR BASE SECTIONS WITH OPENINGS, PROVIDE A MINIMUM HEIGHT OF SECTION SO AS TO PROVIDE AN UNJOINT WALL EQUAL TO 20% OF THE OPENING, BUT NO LESS THAN 8", BETWEEN THE OPENING AND THE CLOSEST JOINT BETWEEN RISERS -- SEE DETAIL B.
  3. FOR PRECAST RISER OR BASE SECTIONS WITH ONE OPENING LOCATED AT DEPTHS TO 60', PROVIDE CIRCUMFERENTIAL REINFORCEMENT IN ACCORDANCE WITH SECTION B-B. FOR SECTIONS WITH TWO OR MORE OPENINGS, LOCATED AT DEPTHS OF 10' AND LESS, PROVIDE CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.16 IN<sup>2</sup>/VERTICAL FT. FOR THE HEIGHT OF RISER OR BASE SECTION.
  4. FOR RISERS OR BASE SECTIONS WITH TWO OR MORE OPENINGS, LOCATED AT A DEPTH GREATER THAN 10', BUT LESS THAN OR EQUAL TO 25', PROVIDE CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.44 IN<sup>2</sup>/VERTICAL FT. FOR THE HEIGHT OF THE RISER OR BASE SECTION.
  5. FOR RISERS OR BASE SECTIONS WITH TWO OR MORE OPENINGS, LOCATED AT DEPTHS GREATER THAN 25', USE A 10" THICK WALL RISER OR BASE SECTION WITH CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.22 IN<sup>2</sup>/VERTICAL FT. EACH FACE.
  6. MARK RISERS OR BASE SECTIONS WITH HOLES CLEARLY WITH MAXIMUM ALLOWABLE DEPTH.
  7. PROVIDE ADDITIONAL REINFORCEMENT BARS AROUND OPENINGS AS SHOWN ON REINFORCEMENT DETAILS AT OPENINGS.
  8. PROVIDE MANHOLE STEPS MEETING THE REQUIREMENTS OF PUBLICATION 408, SECTION 605-2(c). ALTERNATE CONFIGURATIONS AND DIMENSIONS, AS APPROVED BY THE ENGINEER, MAY BE USED.
  9. PROVIDE MINIMUM 1" SECTION DIMENSION FOR METAL STEPS. PROVIDE MINIMUM 3/4" SECTION DIMENSION FOR NON-DETERIORATING MATERIAL STEPS.
  10. MECHANICAL ANCHOR REQUIRED FOR INSTALLATION OF STEPS WITHOUT HOLES.
  11. THE ALTERNATE OPENING REINFORCEMENT DETAIL IS NOT DESIRABLE BY DESIGN. USE IT TO MEET EXISTING PIPE ELEVATIONS.
  12. ALL PIPE CONNECTIONS TO BE WATERTIGHT.

**(C) MANHOLE -- PRECAST**  
NOT TO SCALE



- NOTES:
1. FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS.
  2. A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES MUST BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED.
  3. BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE HOSE SHALL BE PROVIDED. EROSION RESISTANT AREAS, WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE FLOW PATH SHALL BE PROVIDED. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%.
  4. THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED.
  5. THE PUMPING RATE SHALL BE NO GREATER THAN 750 G.P.M. OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKE SHOULD BE FLOATING AND SCREENED.
  6. FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.
  7. SHOULD ADEQUATE VEGETATION NOT EXIST, BAG SHALL BE PLACED ON A BED OF 6" OF AASHTO #57 STONE, OR AS DIRECTED BY THE COUNTY CONSERVATION DISTRICT.

**(I) PUMPED WATER FILTER BAG**  
NOT TO SCALE

TABLE B		
PRECAST MANHOLE HEIGHT	TOP STEEL REQUIREMENTS	BOTTOM STEEL REQUIREMENTS
0'-0" TO 3'-0"	NO. 4 BARS AT 6" C. TO C. OR 0.33 IN <sup>2</sup> /FT WWF 6" MAXIMUM SPACING	NO. 4 BARS AT 12" C. TO C. OR 0.16 IN <sup>2</sup> /FT WWF 6" MAXIMUM SPACING
> 3'-0" TO 6'-0"	NO. 5 BARS AT 6" C. TO C. OR 0.56 IN <sup>2</sup> /FT WWF 6" MAXIMUM SPACING	

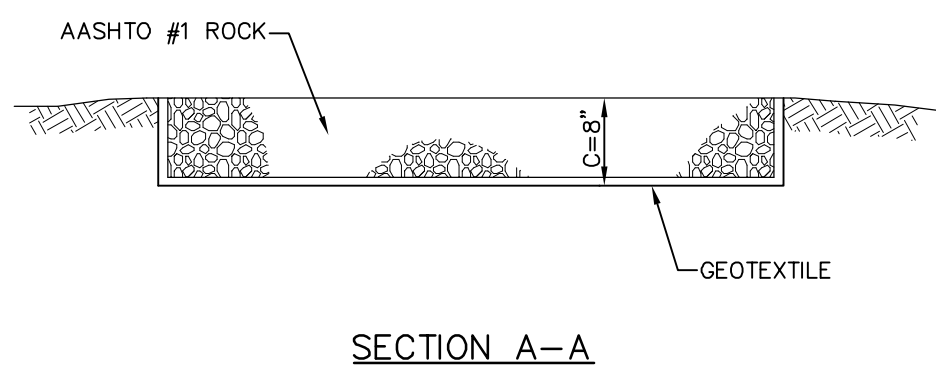
WALL REINFORCEMENT CIRCUMFERENTIAL FULL DEPTH 0.12in<sup>2</sup>/VERTICAL FT VERTICAL FULL DEPTH 0.12in<sup>2</sup>/HORIZONTAL FT PLACE REINFORCEMENT MESH CENTRALLY IN WALL SEE NOTES 5 AND 6 FOR STEEL REQUIREMENTS AT OPENINGS.

**SECTION B-B**

**DETAIL A**

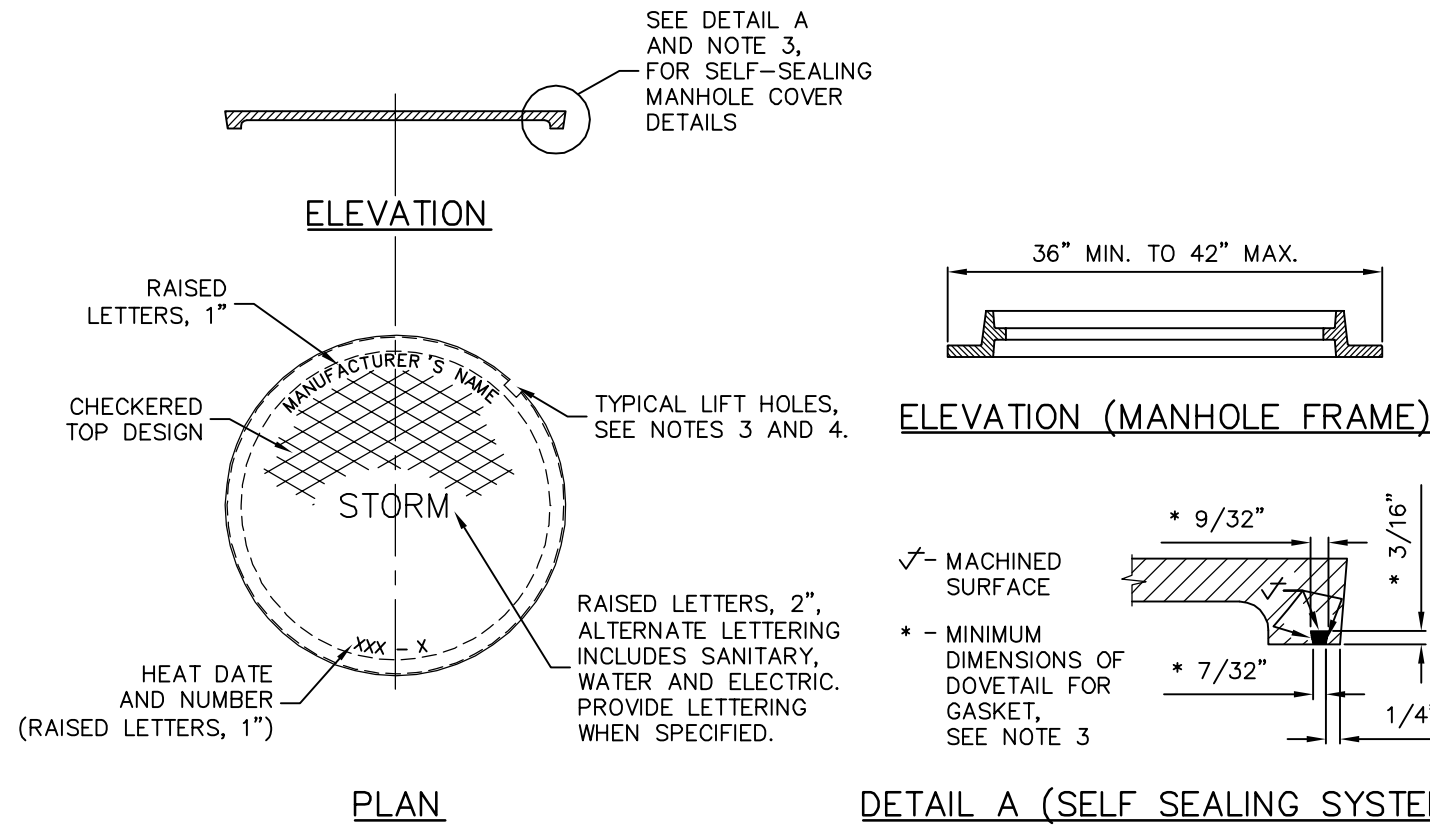
**DETAIL B**

**DETAIL C**



- NOTES:
1. ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE.
  2. AT THE END OF EACH CONSTRUCTION DAY, ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE.
  3. GEOTEXTILE FABRIC, AS SPECIFIED IN PENNDOT PUBLICATION 408, SECTION 735, TABLE A, CLASS 4, TYPE B.

**(J) ROCK CONSTRUCTION ENTRANCE**  
NOT TO SCALE



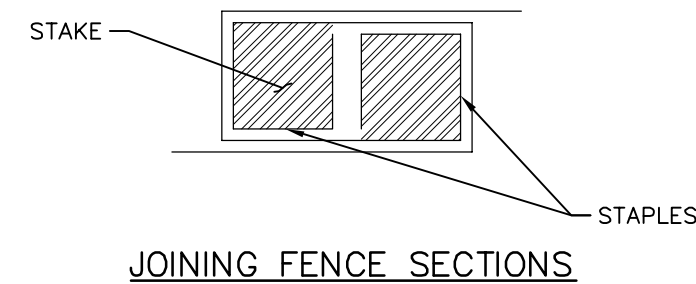
- NOTES:
1. ALL MATERIALS AND CONSTRUCTION METHODS TO MEET THE REQUIREMENTS OF PENNDOT PUBLICATION 408 AND 72-M (RC-34M), LATEST REVISION.

**(D) STORM MANHOLE COVER -- CAST IRON-PLATEN**  
NOT TO SCALE

TEMPORARY SEEDING		PERMANENT SEEDING	
TYPE OF COVER AND SPECIES OR MIXTURES	AMOUNT PER 1,000 SF	TYPE OF COVER AND SPECIES OR MIXTURES	AMOUNT PER 1,000 SF
50% ANNUAL RYE	5.0 LB	20% PENNINE RYEGRASS	1.2 LB
50% WINTER RYE	5.0 LB	50% KENTUCKY BLUEGRASS	3.0 LB
TOTAL	10 LB	50% PENNLAWN FESCUE	1.8 LB
RECOMMENDED FERTILIZATION RATE		TOTAL	6 LB
LIME	1 TON PER ACRE	RECOMMENDED FERTILIZATION RATE	
FERTILIZER	150 LBS 10-10-10 PER ACRE	LIME	14 TONS PER ACRE
MULCH	3 TONS PER ACRE	FERTILIZER	500 LBS 10-20-20 PER ACRE
		MULCH	3 TONS PER ACRE

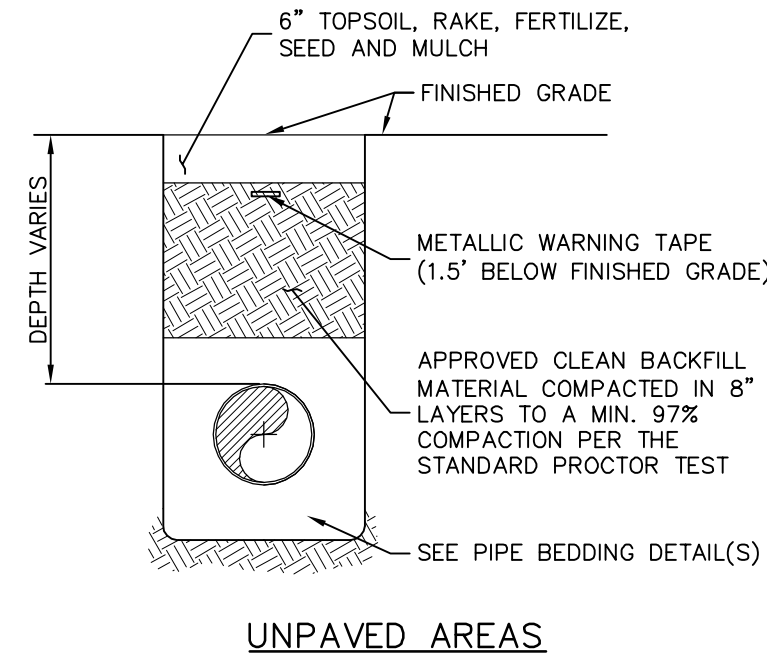
- NOTES:
1. SEED SHALL BE A MINIMUM 90% PURITY AND 85% GERMINATION.
  2. LIME SHALL BE AGRICULTURAL LIMESTONE AT 90% MINIMUM OF CARBONATES.

**(F) SEEDING SPECIFICATIONS**  
NOT TO SCALE



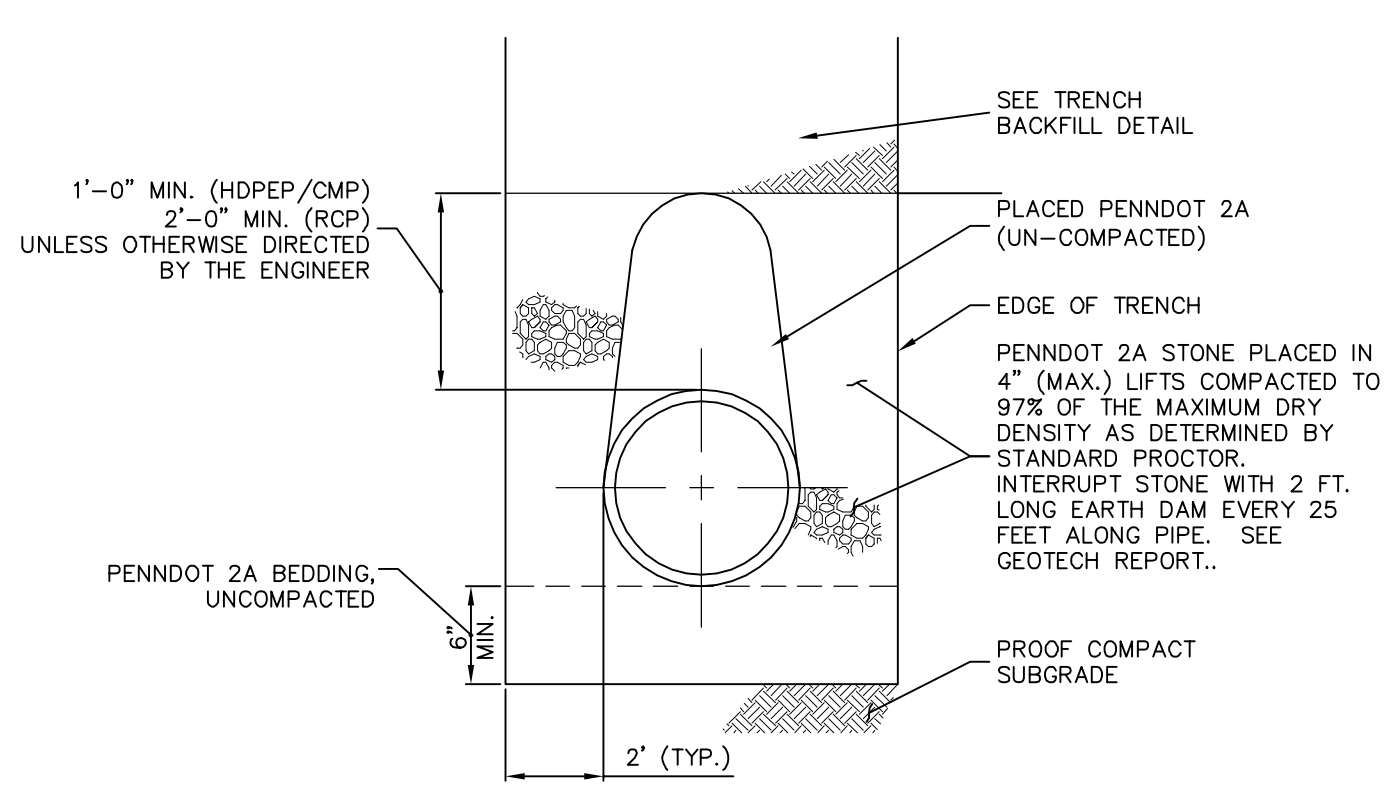
- NOTES:
1. \*STAKES SPACED @ 8' MAXIMUM. USE 2" X 2" WOOD OR EQUIVALENT STEEL STAKES.
  2. FILTER FABRIC FENCE MUST BE PLACED AT LEVEL EXISTING GRADE. BOTH ENDS OF THE BARRIER MUST BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT.
  3. SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE ABOVE GROUND HEIGHT OF THE FENCE.
  4. ANY SECTION OF FILTER FABRIC FENCE, WHICH HAS BEEN UNDERMINED OR TOPPED MUST BE IMMEDIATELY REPLACED WITH A ROCK FILTER OUTLET. SEE STANDARD CONSTRUCTION DETAIL #18.
  5. GEOTEXTILE FABRIC, AS SPECIFIED IN PENNDOT PUBLICATION 408, SECTION 735, TABLE A, CLASS 3, TYPE A.

**(K) STANDARD FILTER FABRIC FENCE (18" HIGH)**  
NOT TO SCALE



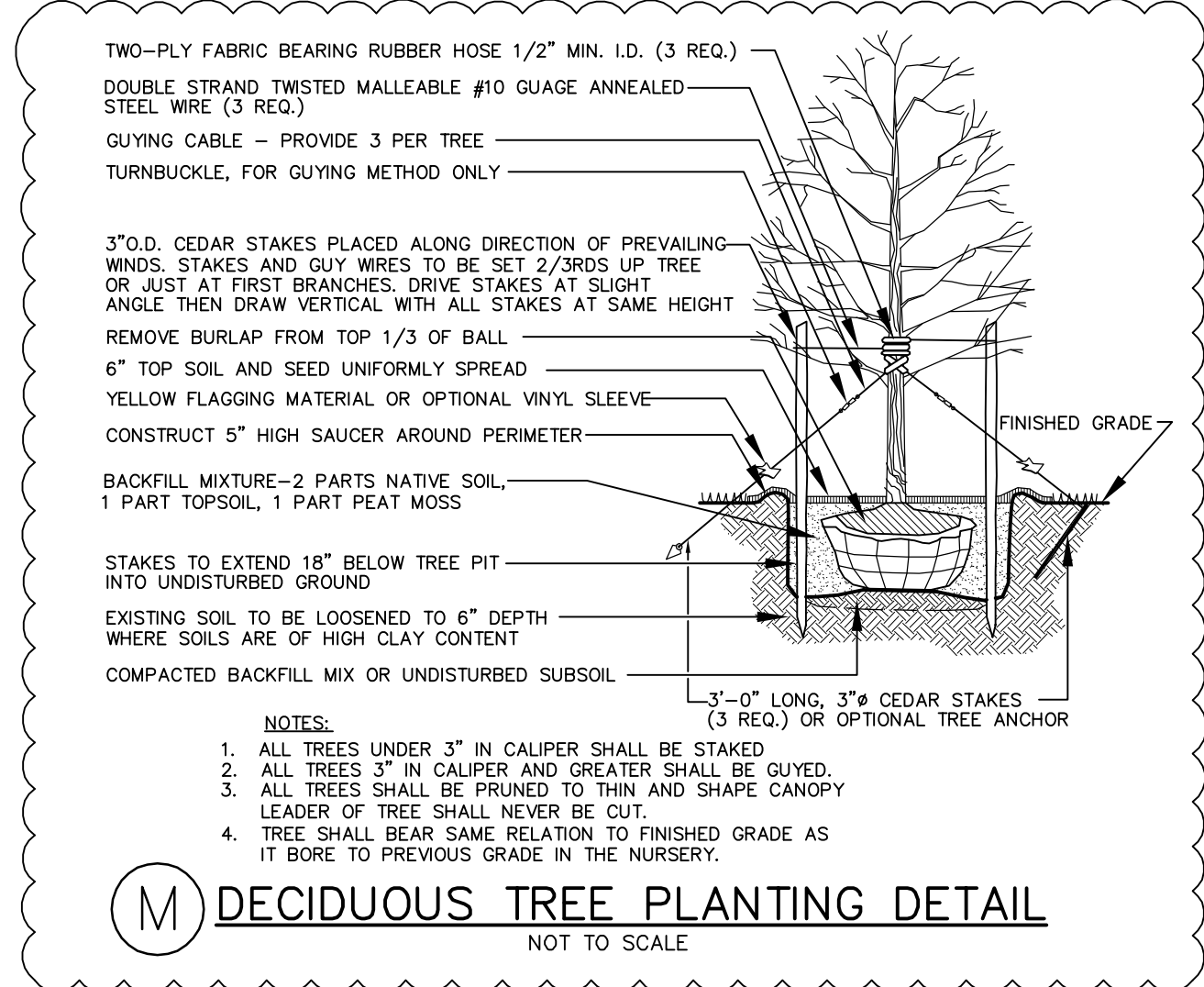
- NOTES:
1. TRENCH COMPACTION TO BE TESTED, AT THE DEVELOPER'S EXPENSE, IN ACCORDANCE WITH PENNDOT PUB 408, LATEST REVISION, AS REQUIRED BY THE MUNICIPALITY/AUTHORITY HAVING JURISDICTION.
  2. CLEAN FILL MUST BE APPROVED BY THE MUNICIPALITY/AUTHORITY HAVING JURISDICTION PRIOR TO PLACEMENT IN THE TRENCH.
  3. AREAS AROUND MANHOLES, INLETS, AND OTHER APPURTENANCES SHALL BE HAND COMPACTED AS DIRECTED BY THE MUNICIPALITY/AUTHORITY HAVING JURISDICTION.
  4. NO SLAG MATERIALS OR CONSTRUCTION DEBRIS SHALL COMPLY WITH PENNDOT SPECIFICATIONS, PUBLICATION 408 AND 67 PA CODE SECTION 459.
  5. IF WATER IS ENCOUNTERED IN THE EXCAVATION TRENCH, AASHTO #57 AGGREGATE MUST BE USED.
  6. ALL MATERIALS AND CONSTRUCTION METHODS SHALL COMPLY WITH PENNDOT SPECIFICATIONS, PUBLICATION 408 AND 67 PA CODE SECTION 459.
  7. UNDER NO CIRCUMSTANCES SHALL WATER BE ALLOWED TO COLLECT IN EXCAVATED TRENCHES. ANY WATER IN THE TRENCHES SHALL BE REMOVED THROUGH A PUMPED WATER FILTER BAG.

**(E) BACKFILL -- TRENCH**  
NOT TO SCALE

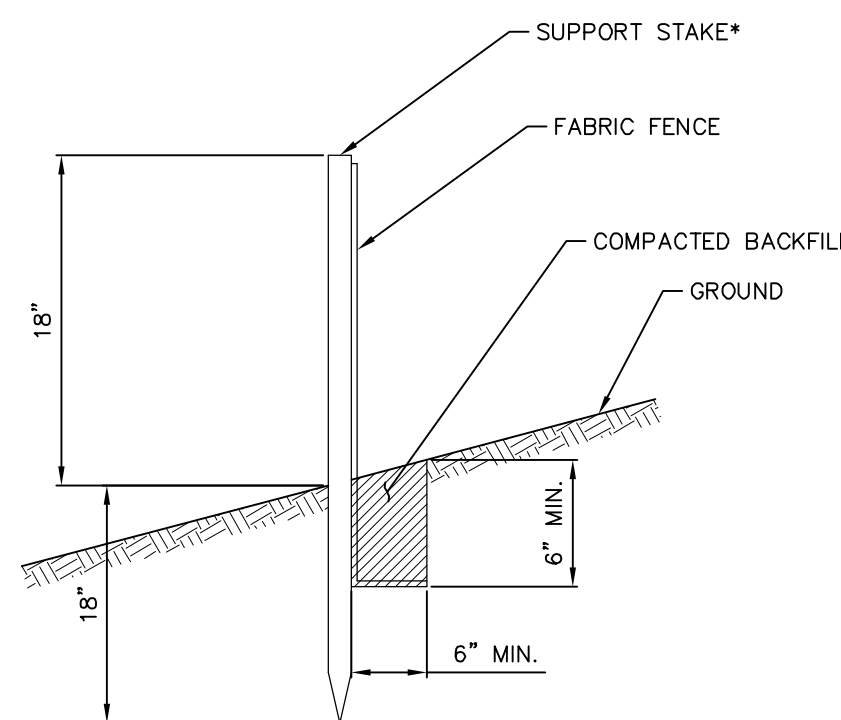


- NOTES:
1. IF TRENCH IS EXTREMELY WET DUE TO HIGH GROUNDWATER, USE AASHTO #57 STONE UP TO THE HANDHOLES OF THE PIPE. REMAINDER OF BEDDING TO BE PENNDOT 2A.
  2. FOLLOW PIPE INSTALLATION PROCEDURES PER PENNDOT PUBLICATION 72M -- RC-30M.

**(G) PIPE BEDDING -- STORM SEWER**  
NOT TO SCALE



**(M) DECIDUOUS TREE PLANTING DETAIL**  
NOT TO SCALE



**(L) UNDERDRAIN**  
NOT TO SCALE

**CONSTRUCTION DOCUMENTS**

<b>CONSULTANTS:</b> <b>TM ASSOCIATES</b> 525 PLYMOUTH ROAD, SUITE 315 PLYMOUTH MEETING, PA 19462 TEL 484-530-1270 FAX 484-530-1277		<b>Civil:</b> CHRISTOPHER W. JENSEN, P.E. 1600 ASSOCIATES PROFESSIONAL ENGINEER PENNSYLVANIA LICENSE NO. PED76464		<b>ARCHITECT/ENGINEERS:</b> <b>Miller-Remick LLC</b> W.E.P. & Structural Engineering A Veteran Owned Small Business 1010 KINGS HIGHWAY SOUTH BUILDING ONE - 1st FLOOR CHERRY HILL, NEW JERSEY 08034 PHONE: (856)429-4000 FAX: (856)429-5002		<b>Drawing Title</b> <b>CONSTRUCTION DETAILS</b> NO SCALE		<b>Project Title</b> <b>THERMAL STORAGE FOR CHILLER PLANT</b>		<b>Project Number</b> <b>595-11-131</b>		<b>Office of Construction and Facilities Management</b>	
<b>Addendum #1</b> Revisions		<b>Signature:</b>		<b>Approved Project Director</b>		<b>Location</b> <b>VA MED. CENTER, LEBANON, PA</b>		<b>Building Number</b> <b>N/A</b>		<b>Drawing Number</b> <b>CS-301</b>		<b>Department of Veterans Affairs</b>	
<b>Date</b> 06-11-2012		<b>Date</b>		<b>Date</b> 5/15/2012		<b>Checked</b>		<b>Drawn</b>		<b>Dwg. 07 of 36</b>			