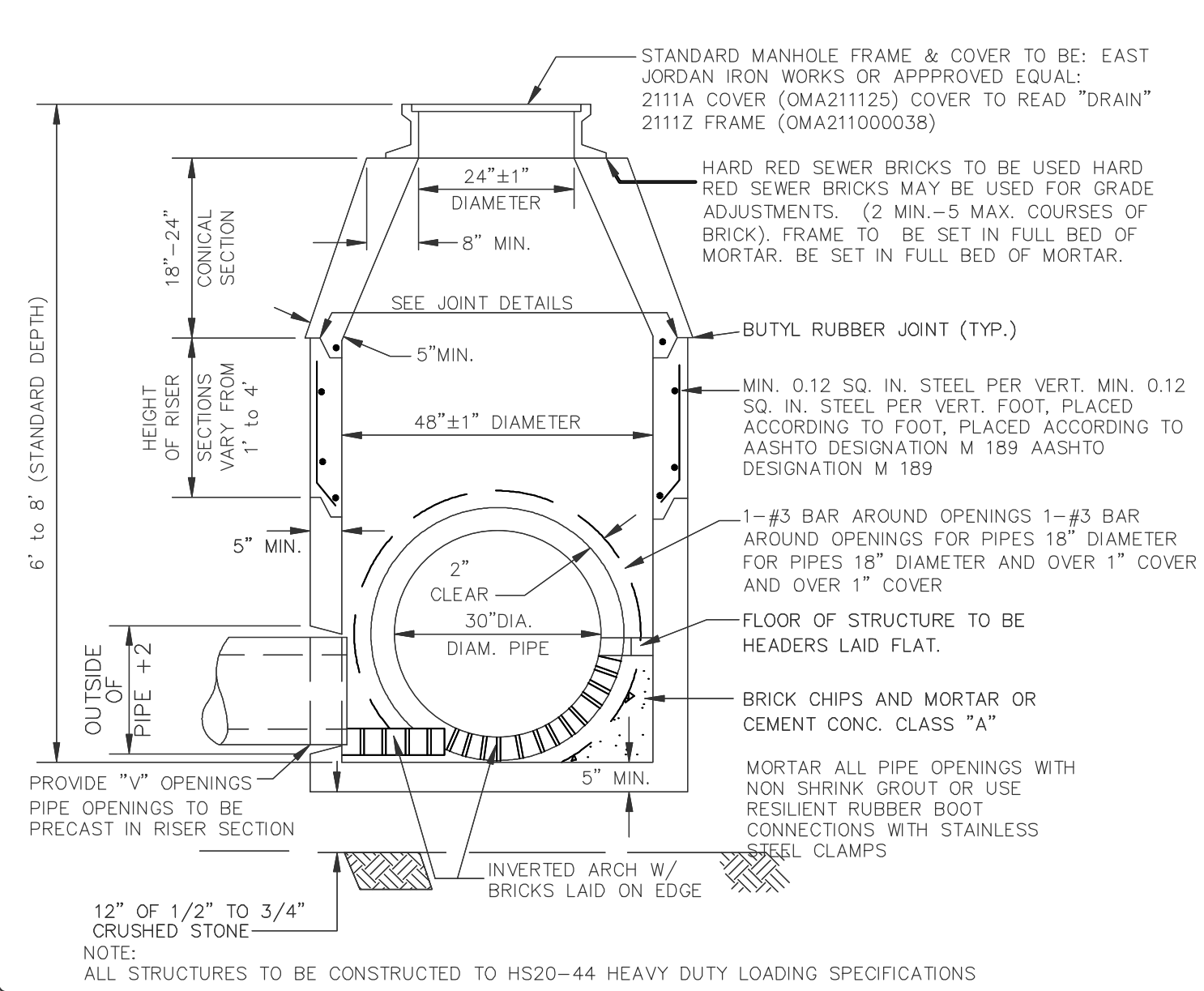


PRECAST CONCRETE MANHOLE
NOT TO SCALE



H.D.P.E. DRAIN PIPE MATERIALS AND INSTALLATION

- 1.) ALL PIPE SHALL CONFORM TO MASSDOT SECTION M5.03.10.
- 2.) PIPE SHALL BE SMOOTH INTERIOR WALL AND CORRUGATED EXTERIOR WALL AND SHALL BE BELL AND SPIGOT CONNECTION.
- 3.) PIPE SHALL COMPLY WITH REQUIREMENTS AND MARKINGS FOUND IN AASHTO DESIGNATIONS M252 AND M294.
- 4.) ALL PIPE SHALL SUPPORT AN HS-20 LIVE LOAD WITH A MAXIMUM DEFLECTION OF 5% OF THE PIPE DIAMETER.
- 5.) ALL PIPE AND FITTINGS SHALL BE MADE FROM VIRGIN POLYETHYLENE COMPOUNDS WHICH CONFORM TO CURRENT AASHTO CLASSIFICATIONS AND ALSO AS DEFINED IN ASTM D3530.
- 6.) PIPES SHALL BE CAREFULLY LAID TO LINES AND GRADES AS SHOWN ON DESIGN PLANS.
- 7.) PIPE BEDDING MATERIAL SHALL BE PLACED TO A DEPTH OF NO LESS THAN SIX-INCHES BELOW THE INVERT OF THE PIPE.
- 8.) TRENCHES FOR DRAIN LINES SHALL PROVIDE MINIMUM OF TWELVE-INCHES (12") OF HORIZONTAL CLEARANCE FROM SIDES OF PIPE TO EDGE OF TRENCH.
- 9.) INSTALLATION OF H.D.P.E. PIPE SHALL BE IN ACCORDANCE WITH ASTM D2321 AND AS RECOMMENDED BY THE MANUFACTURER.
- 10.) WATER TIGHT JOINTS SHALL BE USED ON ALL PIPES IN ACCORDANCE WITH ASTM D3212. PIPE JOINTS SHALL BE BELL AND SPIGOT WITH ELASTOMERIC RUBBER GASKETS MEETING OR EXCEEDING ASTM F477.
- 11.) PIPE BEDDING MATERIAL OR 3/4" CRUSHED STONE SHALL BE CAREFULLY BACKFILLED AND COMPACTED AROUND PIPE TO A DEPTH OF TWELVE-INCHES ABOVE THE TOP OF PIPE.
- 12.) MATERIAL FOR BACKFILLING THE REMAINDER OF THE TRENCH, PAVEMENT AND PAVEMENT BASE MATERIAL EXCLUDED, SHALL BE BACKFILLED AND COMPACTED IN TWELVE-INCH LIFTS WITH SUITABLE MATERIAL WITH NO STONES GREATER THAN FOUR-INCHES IN DIAMETER. MATERIAL SHOULD BE FREE OF ORGANICS AND DEBRIS.
- 13.) TRENCH SHALL BE FINISHED WITH SIX-INCHES (6") OF LOAM AND SEED IN NON PAVED AREAS AND PREPARED IN ACCORDANCE WITH PAVEMENT STRUCTURE IN PAVED AREAS.

SUBSURFACE INFILTRATION SYSTEM MATERIALS AND INSTALLATION

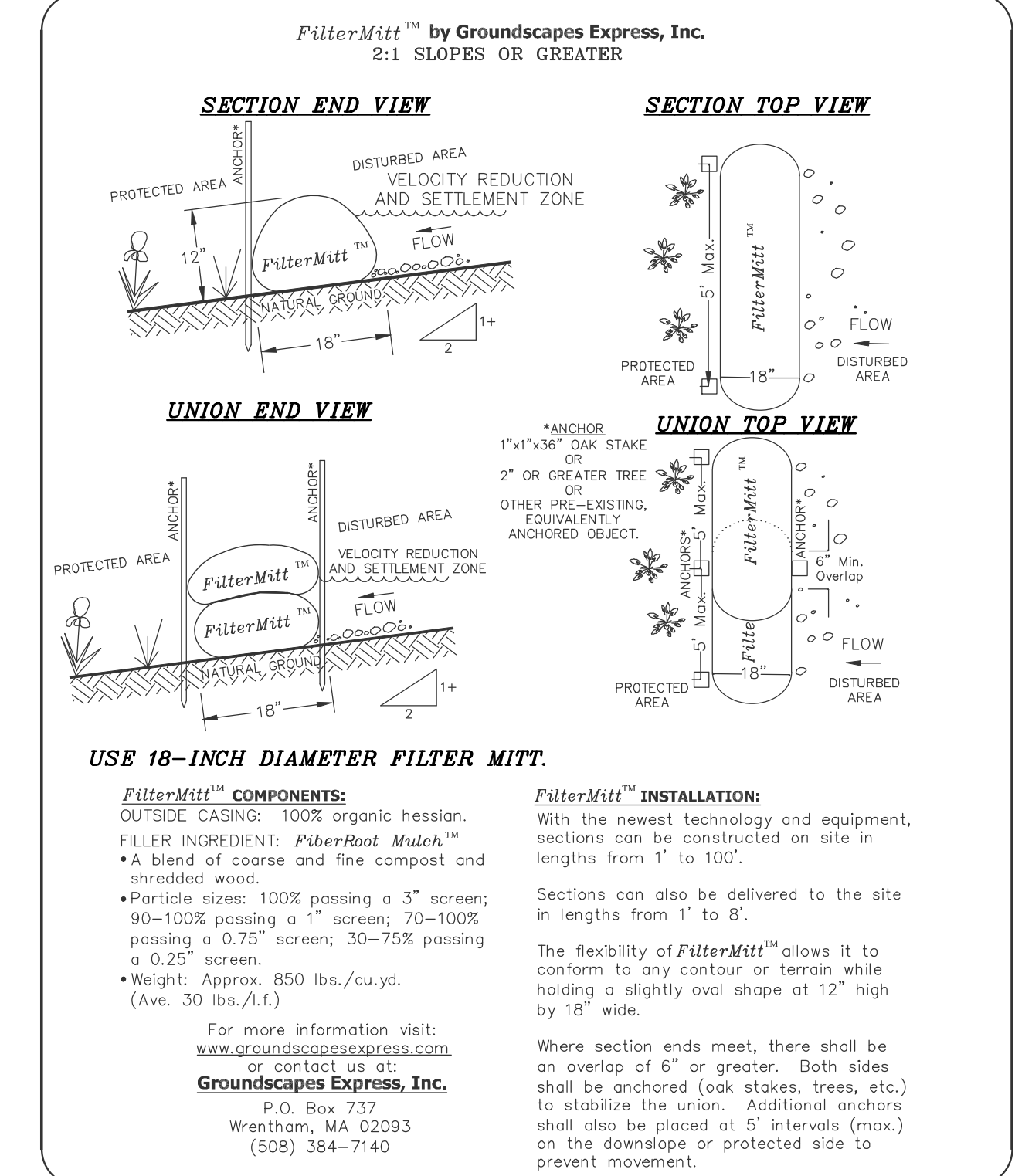
- 1.) ALL MATERIALS ASSOCIATED SHALL BE IN ACCORDANCE WITH THE DESIGN PLANS AND THE TOWN OF MENDON DEPARTMENT OF PUBLIC WORKS CONSTRUCTION STANDARDS.
- 2.) SUBSURFACE LEACHING CHAMBERS SHALL BE SHEA DW-SDW GALLEYS OR APPROVED EQUAL.
- 3.) FILTER FABRIC SHALL BE MIRAFI 140N (TENCATE INDUSTRIES) OR APPROVED EQUAL.
- 4.) ACCESS MANHOLES SHALL BE REQUIRED AT LOCATIONS SPECIFIED ON DESIGN PLANS.
- 5.) ACCESS MANHOLES SHALL CONSIST OF EAST JORDAN IRON WORKS 2111Z/2111A, HEAVY DUTY FRAME AND COVER AND SHALL MEET OR EXCEED HS-20 LOADING REQUIREMENTS.
- 6.) ACCESS MANHOLES SHALL BE ADJUSTED TO FINISH GRADE WITH PRECAST CONCRETE RISERS AND/OR LAYERS OF BRICK AND MORTAR.
- 7.) EXCAVATION FOR PRECAST LEACHING CHAMBERS SHALL BE DONE CAREFULLY TO AVOID SMEARING AND COMPACTION OF BOTTOM AND EXCAVATION SIDEWALLS.
- 8.) ANY UNSUITABLE MATERIAL SHALL BE REMOVED AND REPLACED WITH FREE DRAINING MATERIAL, INCLUDING BUT NOT LIMITED TO TITLE V SAND.
- 9.) ALL PRECAST LEACHING CHAMBERS SHALL BE PLACED ON A TWELVE-INCH (12") DEEP LAYER OF COMPACTED 3/4" TO 1 1/2" DOUBLE WASHED CRUSHED STONE.
- 10.) PRECAST LEACHING CHAMBERS SHALL BE CAREFULLY PLACED AT THE SAME ELEVATION IN ROWS AND BUTTED TOGETHER SO NO VOIDS EXIST BETWEEN UNITS.
- 11.) AREAS BETWEEN ROWS OF PRECAST LEACHING CHAMBERS SHALL BE FILLED WITH 3/4" TO 1 1/2" DOUBLE WASHED STONE.
- 12.) ALL PIPES SHALL BE SECURELY MORTARED IN PLACE TO PROVIDE WATER TIGHT CONNECTIONS.
- 13.) FILTER FABRIC SHALL BE INSTALLED AROUND THE SIDES, AND ON TOPO OF THE PRECAST LEACHING CHAMBERS.
- 14.) CONTRACTOR SHALL OVERLAP ROWS OF FILTER FABRIC ONE-HALF FOOT (0.5') AND CAREFULLY BACKFILL AROUND AND ON TOP OF THE LEACHING CHAMBERS TO AVOID SHIFTING OR TEARING FILTER FABRIC.
- 15.) INSTALL AND COMPACT 3/4" TO 1 1/2" DOUBLE WASHED STONE IN TWELVE-INCH (12") LIFTS FOR A DISTANCE OF TWO-FOOT (2') AROUND THE PERIMETER OF LEACHING CHAMBERS.

DRAINAGE MATERIALS NOTES:

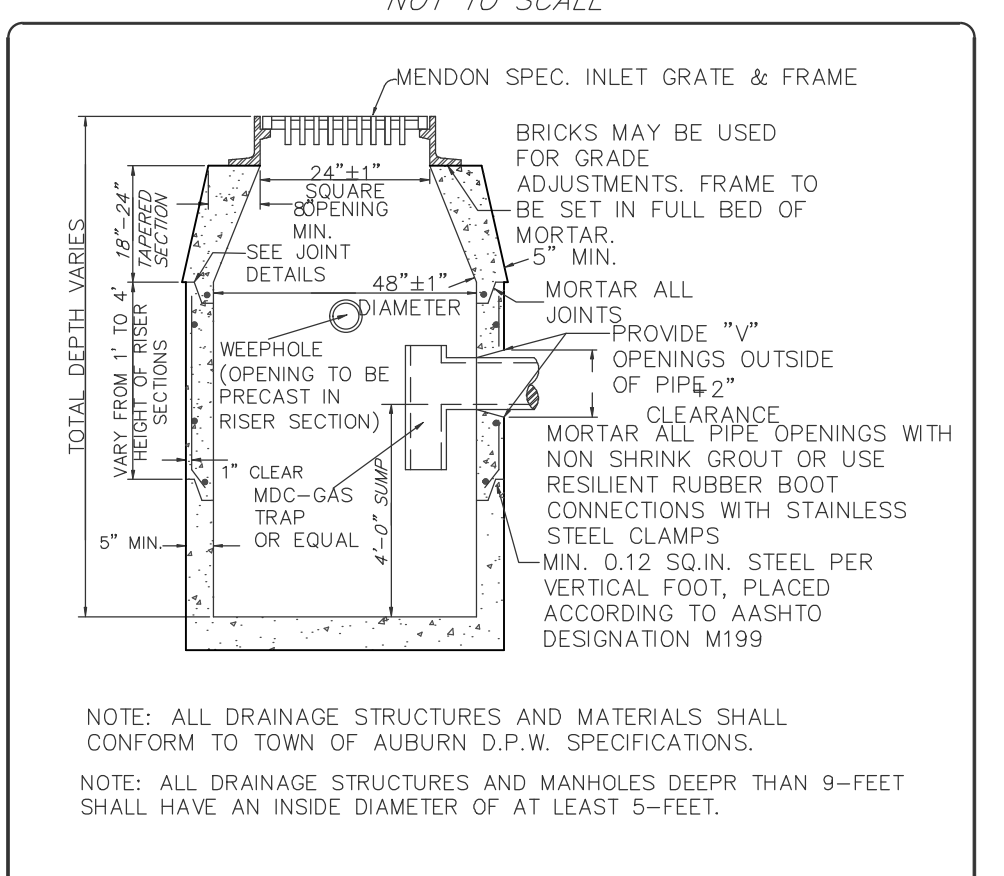
PRECAST CONCRETE DRAIN MANHOLE MATERIALS AND INSTALLATION

- 1.) ALL MATERIALS ASSOCIATED SHALL BE IN ACCORDANCE WITH THE DESIGN PLANS, THE TOWN OF MENDON DEPARTMENT OF PUBLIC WORKS CONSTRUCTION STANDARDS.
- 2.) STORMCEPTOR UNITS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
- 3.) FILTER FABRIC SHALL BE MIRAFI 140N (TENCATE INDUSTRIES) OR APPROVED EQUAL.
- 4.) MANHOLES SHALL BE CONSTRUCTION OF REINFORCED PRECAST CONCRETE BASE SECTION, BARREL SECTION AND DOME SECTION MEETING THE REQUIREMENTS OF ASTM C78 AND AASHTO M199. CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 P.S.I.
- 5.) IN CASES WHERE VERTICAL TOLERANCE DOES NOT PERMIT A CONE TOP SECTION, A PRECAST CONCRETE FLAT SECTION MAY BE USED.
- 6.) MANHOLES SHALL MEET OR EXCEED HS-20 LOADING REQUIREMENTS.
- 7.) MANHOLES SHALL HAVE A MINIMUM OPENING OF 26-INCHES AND A MINIMUM INSIDE DIAMETER OF FOUR-FOOT (4').
- 8.) MANHOLES SHALL HAVE TONGUE AND GROOVE JOINTS BETWEEN SECTIONS THAT ARE MORTARED OR SEALED WITH BUTYL RUBBER SEALANTS.
- 9.) PIPE INLETS AND OUTLETS SHALL BE SEALED WITH MORTAR OR RUBBER SEALANTS OR BOOT TYPE CONNECTIONS.
- 10.) DRAIN MANHOLES SHALL BE PLACED ON A LAYER OF COMPACTED, LEVEL, BEDDING MATERIAL NOT LESS THAN SIX-INCHES IN HEIGHT.
- 11.) EXCAVATION AROUND THE MANHOLE STRUCTURES SHALL BE BACKFILLED AND COMPACTED IN TWELVE-INCH (12") LIFTS WITH SUITABLE MATERIALS.
- 12.) ROAD BASE MATERIAL AND PAVEMENT MATERIALS SHALL BE INSTALLED AROUND STRUCTURES IN ACCORDANCE WITH BASE AND PAVEMENT PREPARATION INSTRUCTIONS.
- 13.) MANHOLE ACCESS FRAME AND COVER SHALL CONSIST OF EAST JORDAN IRONWORKS 2111A/2111Z FRAME AND COVER.
- 14.) FRAME AND COVER SHALL BE ADJUSTED TO FINISH GRADE USING LAYERS OF MORTAR AND BRICK.
- 15.) FRAME AND COVERS SHALL MEET ASTM A888 AND MADE FROM CLASS 20, GREY CAST IRON.

EROSION CONTROL BARRIER
NOT TO SCALE

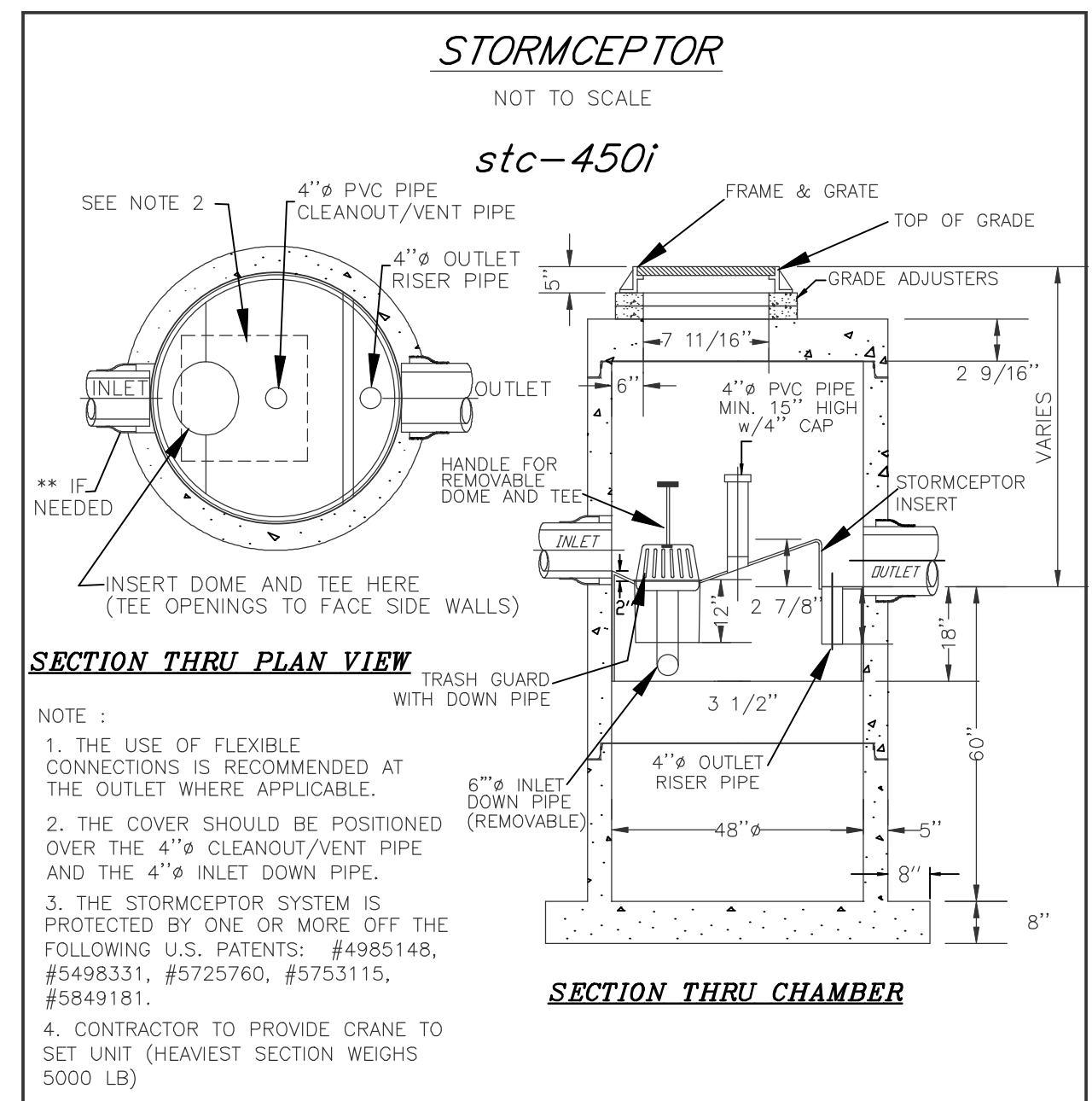


PRECAST CONCRETE CATCH BASIN
NOT TO SCALE

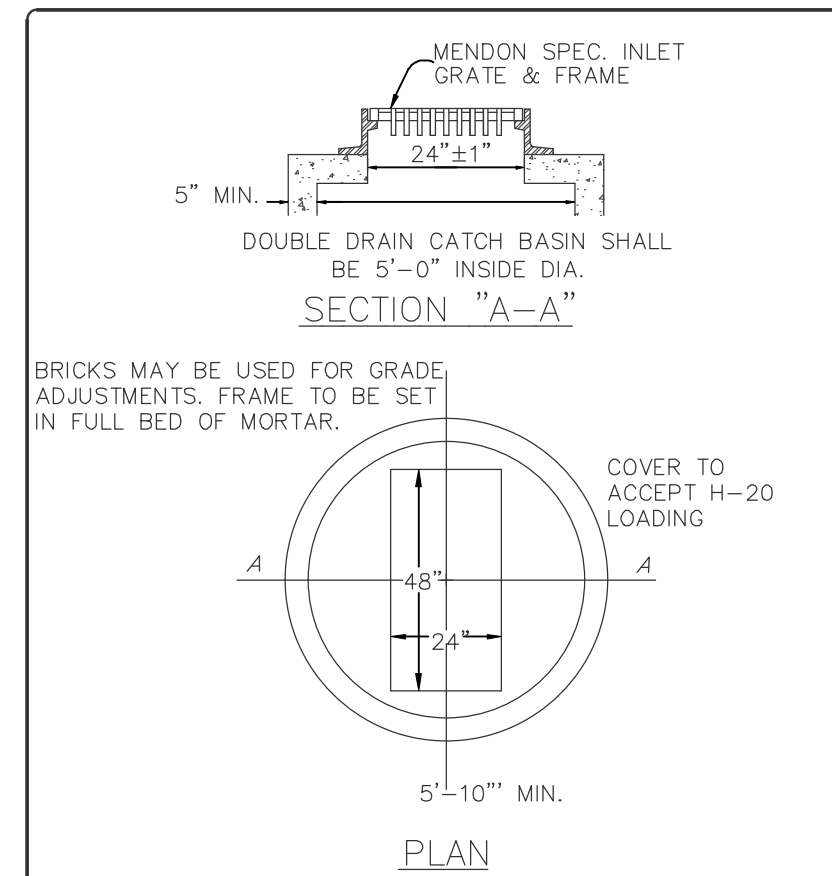


PRECAST CONCRETE DRAIN CATCH BASIN MATERIALS AND INSTALLATION

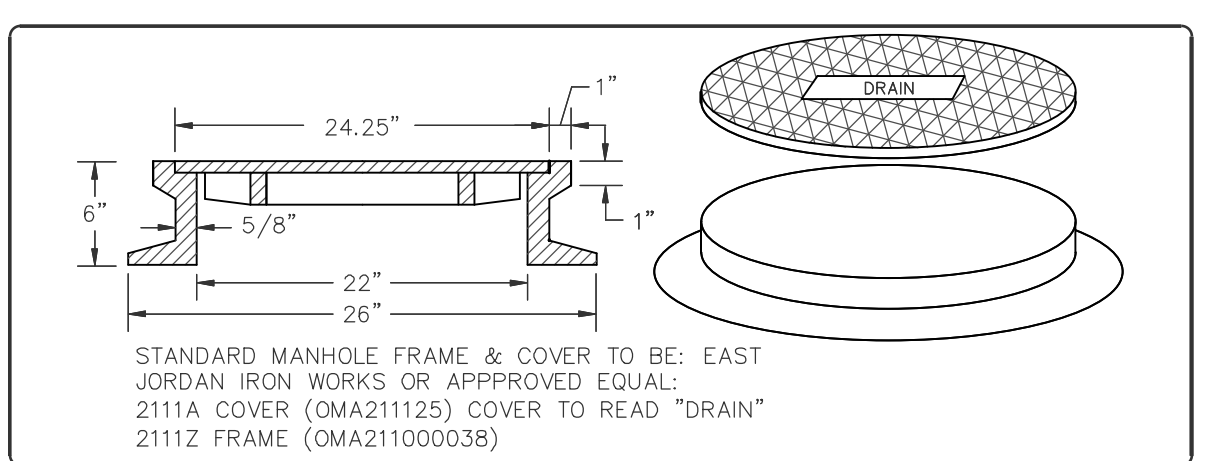
- 1.) ALL MATERIALS ASSOCIATED SHALL BE IN ACCORDANCE WITH THE DESIGN PLANS, THE TOWN OF MENDON DEPARTMENT OF PUBLIC WORKS CONSTRUCTION STANDARDS.
- 2.) ALL CATCH BASINS SHALL HAVE A SLUMP OF AT LEAST FOUR-FOOT (48-INCHES) BELOW THE INVERT OF THE OUTLET PIPE AND SHALL HAVE A HOOD ON OUTLET PIPES.
- 3.) CATCH BASIN HOODS SHALL EXTEND AT LEAST ONE-FOOT BELOW THE INVERT OF THE OUTLET PIPE.
- 4.) CATCH BASINS SHALL BE CONSTRUCTED OF REINFORCED PRECAST CONCRETE BASE SECTION, BARREL SECTION AND DOME SECTION MEETING THE REQUIREMENTS OF ASTM C78 AND AASHTO M199. CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 P.S.I.
- 5.) IN CASES WHERE VERTICAL TOLERANCE DOES NOT PERMIT A CONE TOP SECTION, A PRECAST CONCRETE FLAT SECTION MAY BE USED.
- 6.) CATCH BASINS SHALL MEET OR EXCEED HS-20 LOADING REQUIREMENTS.
- 7.) CATCH BASINS SHALL HAVE A MINIMUM OPENING OF 26-INCHES AND A MINIMUM INSIDE DIAMETER OF FOUR-FOOT (4').
- 8.) CATCH BASINS SHALL HAVE TONGUE AND GROOVE JOINTS BETWEEN SECTIONS THAT ARE MORTARED OR SEALED WITH BUTYL RUBBER SEALANTS.
- 9.) PIPE INLETS AND OUTLETS SHALL BE SEALED WITH MORTAR OR RUBBER SEALANTS OR BOOT TYPE CONNECTIONS.
- 10.) DRAIN MANHOLES SHALL BE PLACED ON A LAYER OF COMPACTED, LEVEL, BEDDING MATERIAL NOT LESS THAN SIX-INCHES IN HEIGHT.
- 11.) CATCH BASIN SECTIONS SHALL BE CAREFULLY PLACED SO THAT ALL SECTIONS ARE LEVEL AND PLUMB.
- 12.) EXCAVATION AROUND THE MANHOLE STRUCTURED SHALL BE BACKFILLED AND COMPACTED IN TWELVE-INCH (12") LIFTS WITH SUITABLE MATERIALS.
- 13.) ROAD BASE MATERIAL AND PAVEMENT MATERIALS SHALL BE INSTALLED AROUND STRUCTURES IN ACCORDANCE WITH BASE AND PAVEMENT PREPARATION INSTRUCTIONS.
- 14.) MANHOLE ACCESS FRAME AND COVER SHALL CONSIST OF EAST JORDAN IRONWORKS 5523A/5524Z FRAME AND COVER AND 5520 M5 COVER.
- 15.) FRAME AND COVER SHALL BE ADJUSTED TO FINISH GRADE USING LAYERS OF MORTAR AND BRICK.



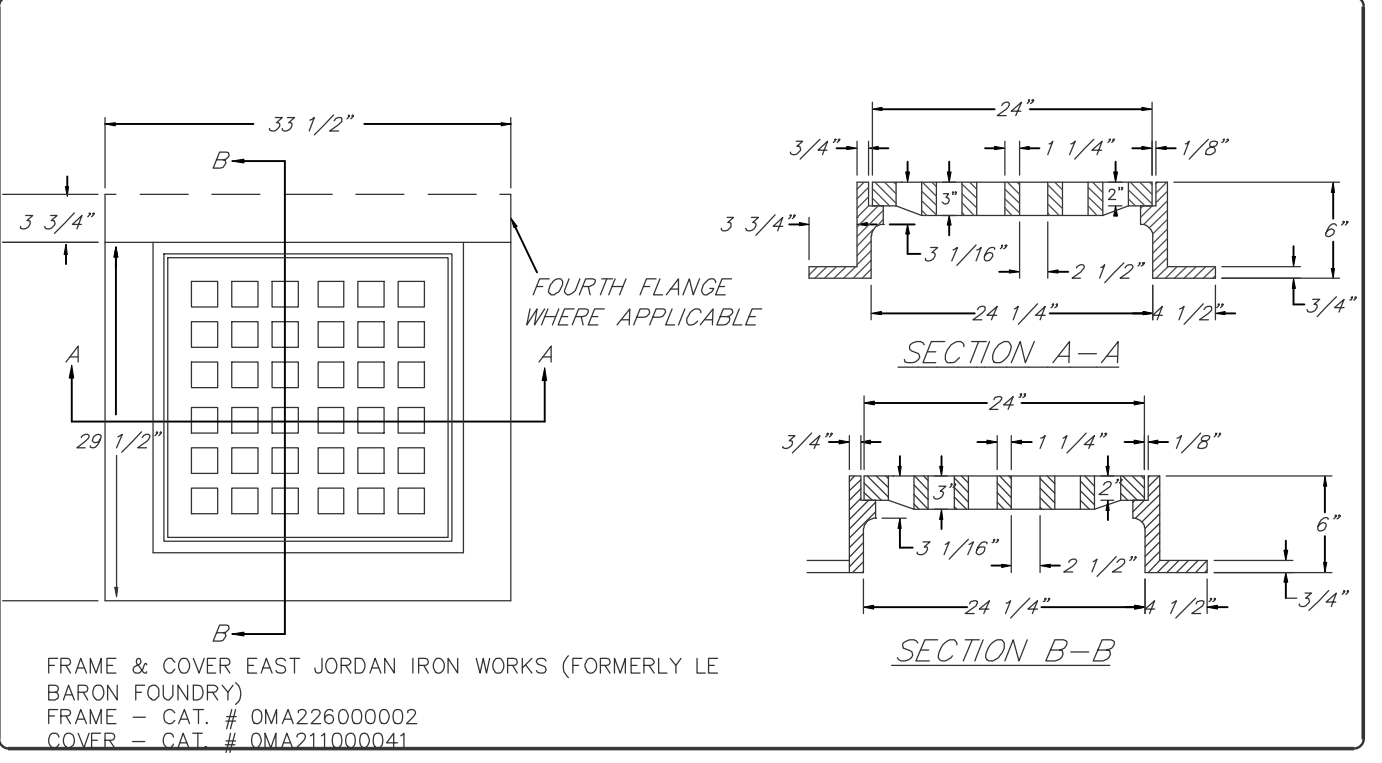
DOUBLE GRATE CATCH BASIN TOP
NOT TO SCALE



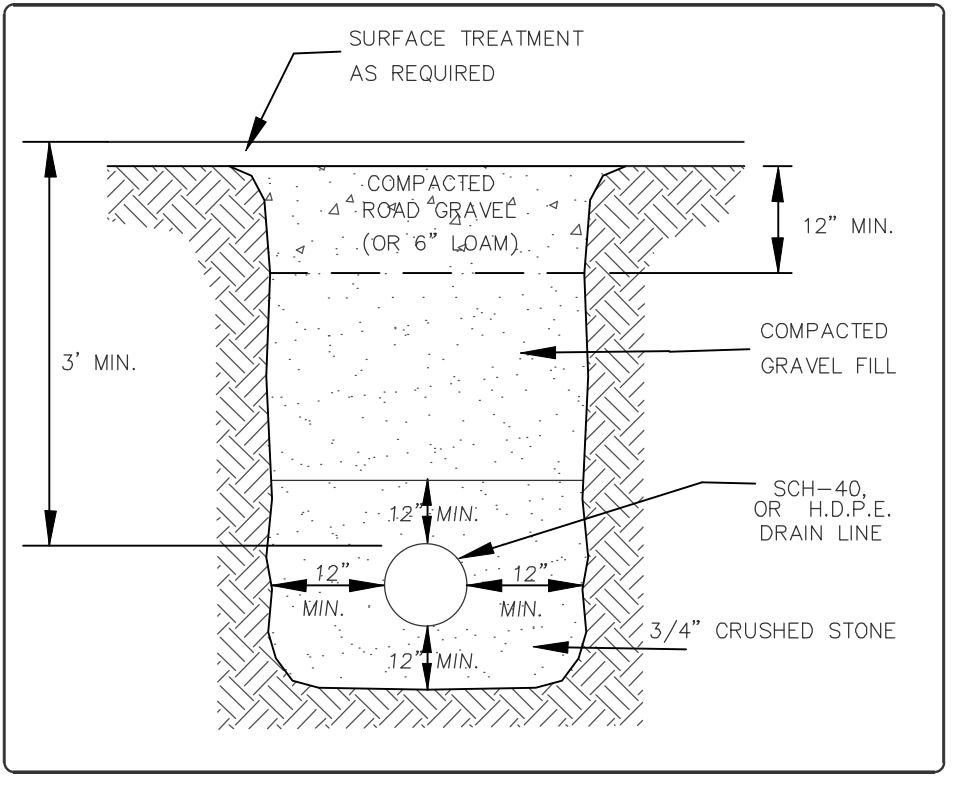
STANDARD DRAIN MANHOLE FRAME & COVER
NOT TO SCALE



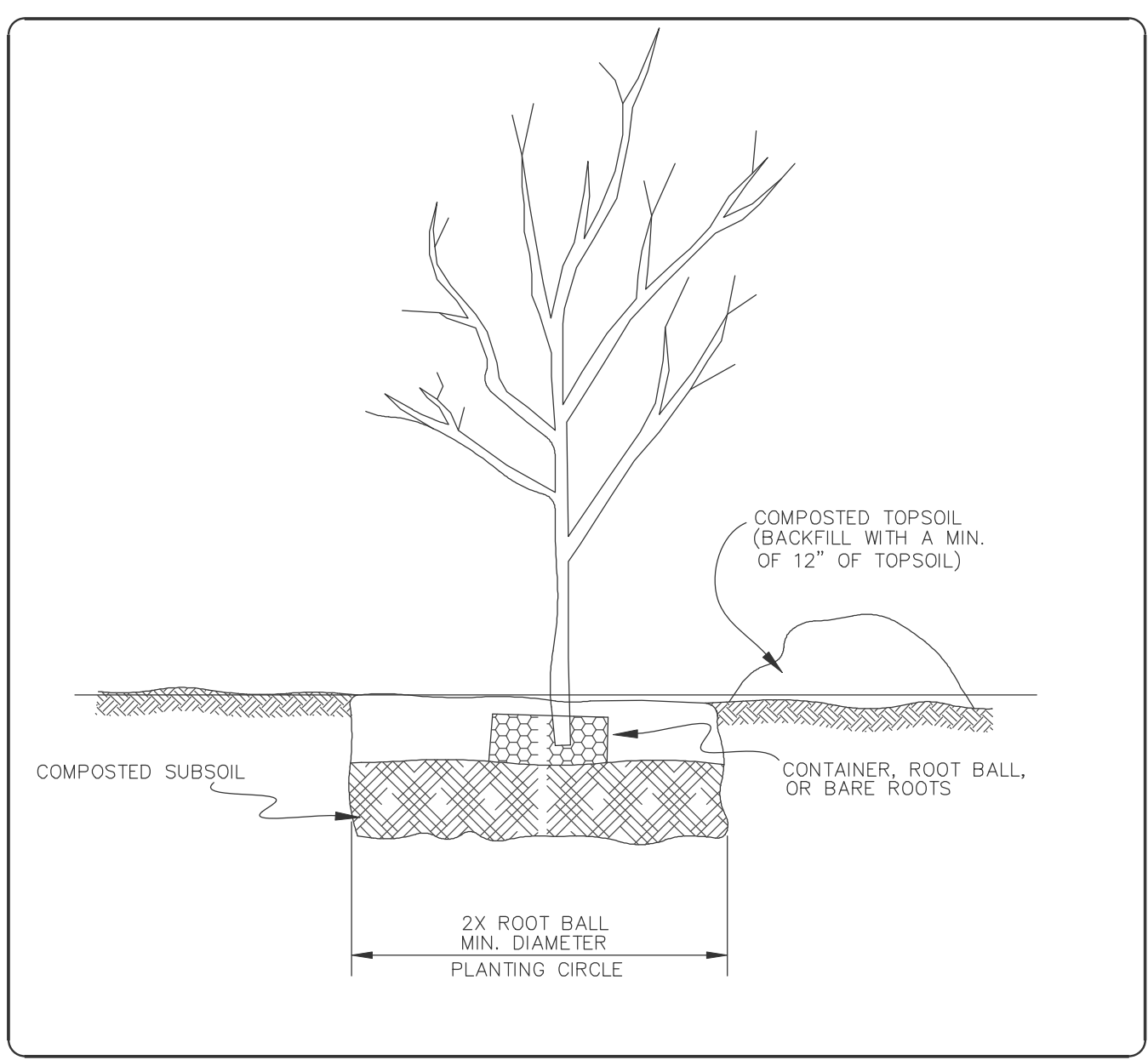
SQUARE CATCH BASIN FRAME & GRATE
NOT TO SCALE



TYPICAL DRAIN LINE TRENCH
NOT TO SCALE



TREE PLANTING DETAIL
NOT TO SCALE



FOR METROWEST ENGINEERING, INC. DATE
ROBERT A. GEMMA, P.E.(CIVIL) # 31967

DETAILS PLAN
#35 CAPE ROAD
IN
MENDON, MASS

PREPARED FOR:
ARES CONSTRUCTION
38 PHASANT LANE
MANCHESTER, NH 03109

PROPERTY OF:
WENCER REALTY, LLC
1040 SOUTH MAIN STREET
BELLINGHAM, MA 02019

ENGINEERS & SURVEYORS:
MWE METROWEST ENGINEERING, INC.
75 FRANKLIN STREET
FRAMINGHAM, MA 01702
TELE: (508) 626-0063
EMAIL: INFO@MWEENGINEERING.COM

SHEET C701 DATE: JANUARY 4, 2021

CALC'D BY: BTN FIELD BK: 712 CAD FILE: ARES_P SITE PLAN3.dwg
DRAFTER: JTS/BTN PROJECT: MND_CAP DWG FILE: SP010421.dwg