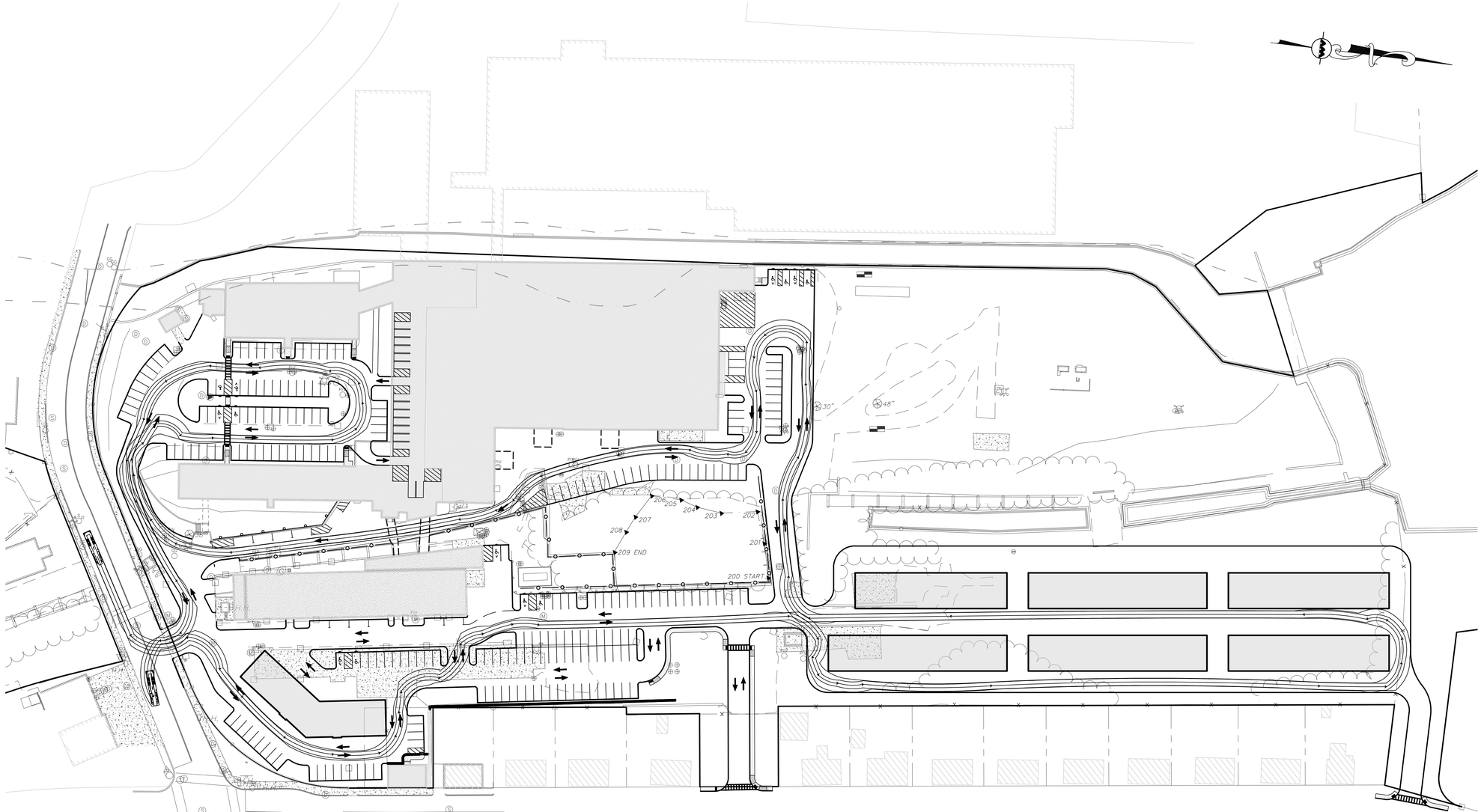
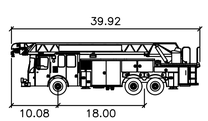




Smeal Aerial RM 100ft

	feet
Width	: 8.33
Track	: 7.92
Lock to Lock Time	: 6.0
Steering Angle	: 45.0

PLAN NOTES:

1. EXISTING CONDITIONS ARE BASED UPON PLAN ENTITLED "EXISTING CONDITIONS – 1381 CRANSTON STREET – CRANSTON, RI" AS PREPARED BY ALLEN & MAJOR ASSOCIATES, INC.

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

DIG SAFE

BEFORE YOU DIG
CALL 811 OR
1-888-DIG-SAFE
1-888-344-7233

R:\PROJECTS\2038-08\CIVIL\DRAWINGS\CURRENT\C-2038-08_TRUCK TURNING PLAN.DWG

BRIAN D. JONES
No. 11089
REGISTERED
PROFESSIONAL ENGINEER
CIVIL

01.25.23

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

APPLICANT\OWNER:

CPW TRUE STORAGE LLC
670 N. COMMERCIAL STREET, SUITE 303
MANCHESTER, NH 03101

PROJECT:

SITE REDEVELOPMENT
ASSESSORS MAP 8, LOTS 195, 1617 & 2711
1381 CRANSTON STREET - CRANSTON, RI

PROJECT NO.	2038-08	DATE:	01-25-2023
SCALE:	1" = 60'	DWG.:C2038-08_TRUCK TURNING PLAN	
DESIGNED BY:	JRG	CHECKED BY:	MAM

PREPARED BY:

ALLEN & MAJOR ASSOCIATES, INC.
civil engineering ♦ land surveying
environmental consulting ♦ landscape architecture
www.allenmajor.com
100 COMMERCE WAY, SUITE 5
WOBURN MA 01801
TEL: (781) 935-6889
FAX: (781) 935-2896

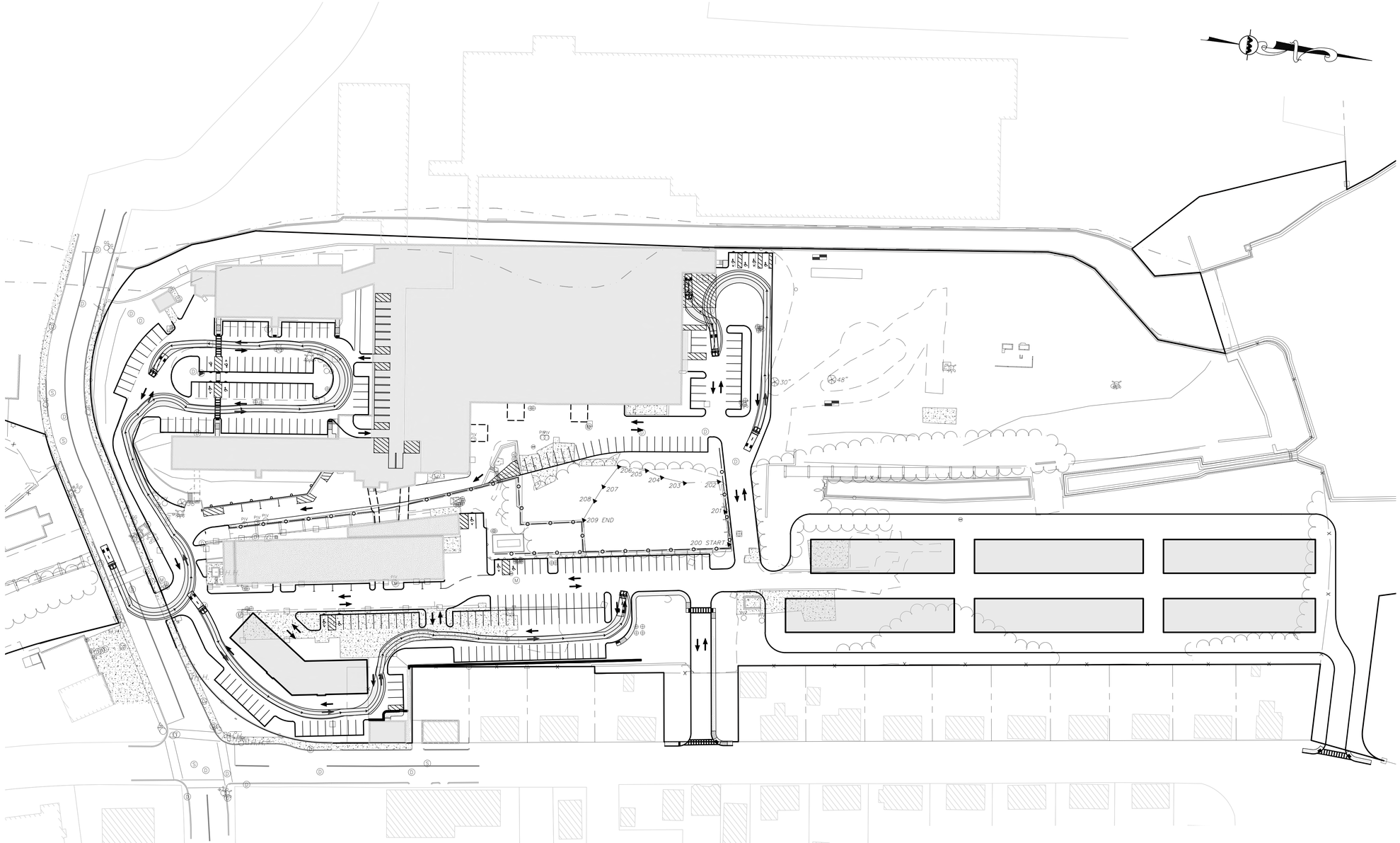
WOBURN, MA ♦ LAKEVILLE, MA ♦ MANCHESTER, NH

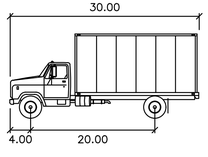
DRAWING TITLE:

TRUCK TURNING PLAN
FIRE TRUCK

SHEET No.

C-106A





SU–30

	feet
Width	: 8.00
Track	: 8.00
Lock to Lock Time	: 6.0
Steering Angle	: 31.8

PLAN NOTES:

1. EXISTING CONDITIONS ARE BASED UPON PLAN ENTITLED "EXISTING CONDITIONS – 1381 CRANSTON STREET – CRANSTON, RI" AS PREPARED BY ALLEN & MAJOR ASSOCIATES, INC.

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

DIG SAFE

BEFORE YOU DIG
CALL 811 OR
1–888–DIG–SAFE
1–888–344–7233

R:\PROJECTS\2038-08\CIVIL\DRAWINGS\CURRENT\C-2038-08_TRUCK TURNING PLAN.DWG

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PROJECT:

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1381 CRANSTON STREET - CRANSTON, RI

PROJECT NO.	2038-08	DATE:	01-25-2023
SCALE:	1" = 60'	DWG.:	C2038-08_TRUCK TURNING PLAN
DESIGNED BY:	JRG	CHECKED BY:	MAM

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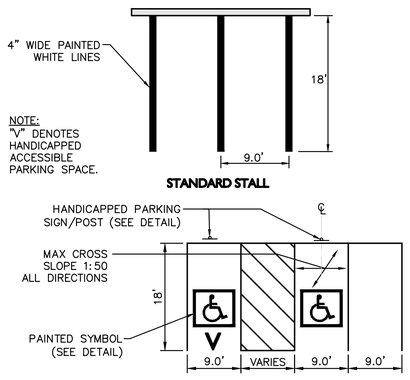
WOBURN, MA ♦ LAKEVILLE, MA ♦ MANCHESTER, NH

DRAWING TITLE:

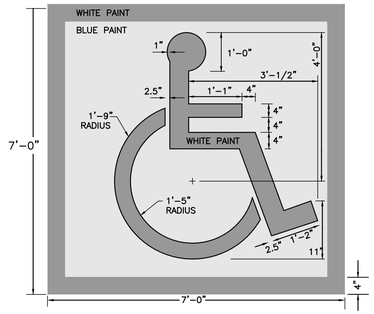
TRUCK TURNING PLAN
SU-30 BOX TRUCK

SHEET No.

C-106B

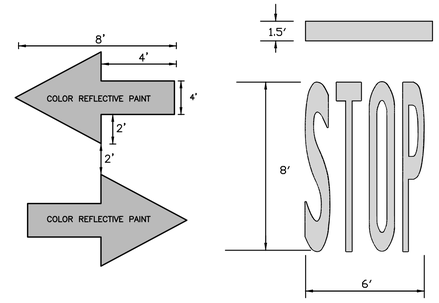


HANDICAP & STANDARD PARKING STRIPING — NOT TO SCALE — 1



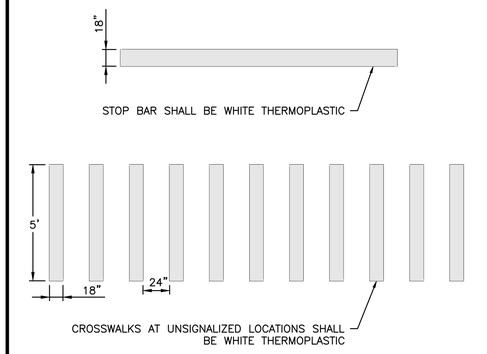
SYMBOL TO BE CENTERED ON WIDTH OF PARKING STALL. SYMBOL IS REQUIRED TO CONTRAST WITH BACKGROUND. USE WHITE ON BLUE (COLOR #105090 IN FEDERAL STANDARD 5952) DOUBLE COAT.

PAVEMENT MARKING - ADA SYMBOL — NOT TO SCALE — 2

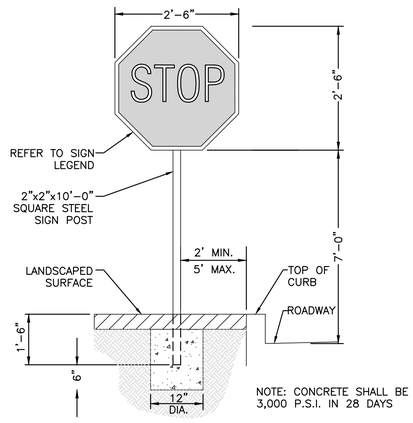


NOTES:
1. USE WHITE REFLECTIVE PAVEMENT MARKING PAINT, TWO COATS MINIMUM
2. ALL PAVEMENT MARKING AND SIGNAGE SHALL CONFORM TO THE MOST CURRENT EDITION OF MASSDOT' S MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

PAVEMENT LETTERING — NOT TO SCALE — 3

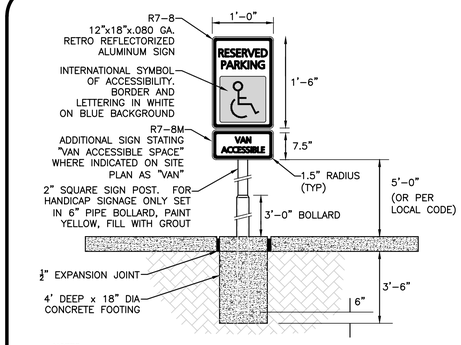


PAVEMENT MARKINGS DETAIL — NOT TO SCALE — 4



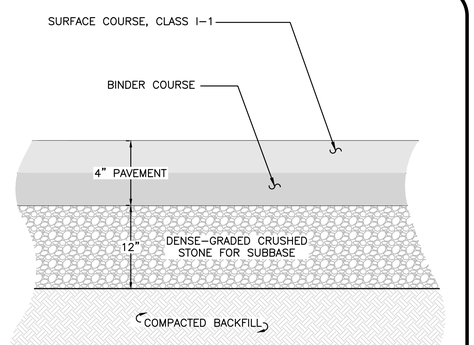
NOTE: CONCRETE SHALL BE 3,000 P.S.I. IN 28 DAYS

STOP SIGN DETAIL (R1-1) — NOT TO SCALE — 5



NOTES:
1. SPECIFIC CODE SHALL BE REFERENCED FOR LOCAL AND STATE REQUIREMENTS.
2. PROVIDE (1) SIGN PER HANDICAP SPACE. SEE SITE PLAN FOR EXACT LOCATION.
3. EXPANSION JOINT MATERIAL NOT REQUIRED WITH FLEXIBLE PAVEMENT.

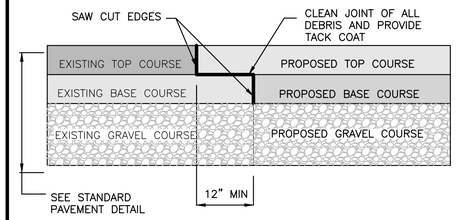
ADA ACCESSIBLE PARKING SIGNAGE (R7-8 & R7-8M) — NOT TO SCALE — 6



NOTES:
1. CLEANLY SAW CUT EXISTING PAVEMENT AND ENSURE A SMOOTH TRANSITION BETWEEN EXISTING AND PROPOSED PAVEMENT.

FULL DEPTH PAVEMENT SECTION — NOT TO SCALE — 7

NOTE:
TACK COAT – PROVIDE EMULSIFIED ASPHALT WHICH CONFORMS TO THE REQUIREMENTS OF THE STATE SPECIFICATIONS, DILUTED WITH ONE PART WATER TO ONE ONE PART ASPHALT FOLLOWING AASHTO M140/ASTM D997, OR AASHTO M208/ASTM D2397, SS-1H, CSS-1, OR CSS-1H.

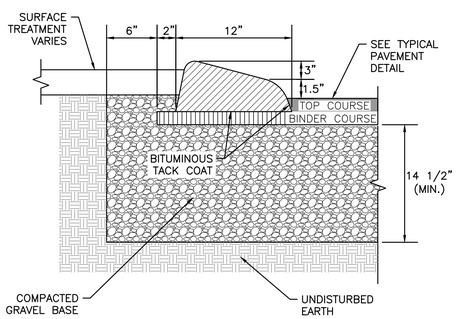


PAVEMENT KEY-CUT DETAIL — NOT TO SCALE — 8

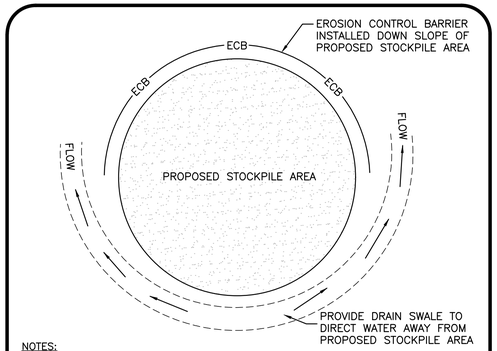
MUTCD NUMBER	SIGN	SIZE (MIN)	MOUNTING HEIGHT	DESCRIPTION	RETRO-FLECTIVE
R7-8(M) (MODIFIED)		12"x24"	7' – 0"	RED ON WHITE	YES
R7-8		12"x18"	7' – 0"	GREEN & BLUE ON WHITE	YES
R1-1	STOP	30"x30"	7' – 0"	WHITE ON RED	YES
R5-1		30"x30"	7' – 0"	RED ON WHITE	YES

NOTES:
1. TRAFFIC AND SAFETY SIGNAGE SHALL COMPLY WITH MUTCD STANDARDS.
2. WHERE APPLICABLE THE SIGN SUPPORT SHALL COMPLY WITH THE BREAKAWAY REQUIREMENTS OF THE LATEST EDITION OF AASHTO'S "SPECIFICATION FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRIES, AND TRAFFIC SIGNALS".

SIGN TABLE — NOT TO SCALE — 9

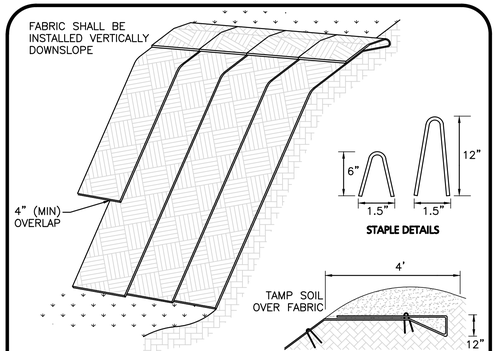


CAPE COD BERM — NOT TO SCALE — 10



NOTES:
1. SOIL AND FILL STOCKPILES EXPECTED TO REMAIN IN PLACE FOR LESS THAN 90 DAYS SHALL BE COVERED WITH STRAW AND MULCH (AT 100LBS/1,000 SF), OR WITH AN ANCHORED TARP WITHIN 7 DAYS OR PRIOR TO ANY RAINFALL.
2. SOIL AND FILL STOCKPILES EXPECTED TO REMAIN IN PLACE FOR 90 DAYS OR MORE SHALL BE SEEDED WITH WINTER RYE (FOR FALL SEEDING AT 1LB/1,000 SF) OR OATS (FOR SUMMER SEEDING AT 2LB/1,000 SF) AND THEN COVERED WITH STRAW MULCH (AT 100LB/1,000 SF) OR AN ANCHORED TARP WITHIN 7 DAYS OR PRIOR TO ANY RAINFALL.

STOCKPILE PROTECTION DETAIL — NOT TO SCALE — 11



NOTE:
1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS.
2. FABRIC SHALL HAVE GOOD SOIL CONTACT.
3. APPLY PERMANENT SEEDING BEFORE PLACING FABRIC.
4. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.
5. CHOOSE MATERIAL BASED ON SLOPE, SOILS, AND APPLICATION.

EROSION CONTROL FABRIC — NOT TO SCALE — 12

R:\PROJECTS\2038-08\CIVIL\DRAWINGS\CURRENT\C-2038-08_DETAILS.DWG

BRIAN D. JONES
No. 11089
REGISTERED PROFESSIONAL ENGINEER
CIVIL
01.25.23

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

APPLICANT\OWNER:

CPW TRUE STORAGE LLC
670 N. COMMERCIAL STREET, SUITE 303
MANCHESTER, NH 03101

PROJECT:

SITE REDEVELOPMENT
ASSESSORS MAP 8, LOTS 195, 1617 & 2711
1381 CRANSTON STREET - CRANSTON, RI

PROJECT NO.	2038-08	DATE:	01-25-2023
SCALE:	AS SHOWN	DWG.:	C-2038-08_DETAILS
DESIGNED BY:	JRG	CHECKED BY:	MAM

PREPARED BY:

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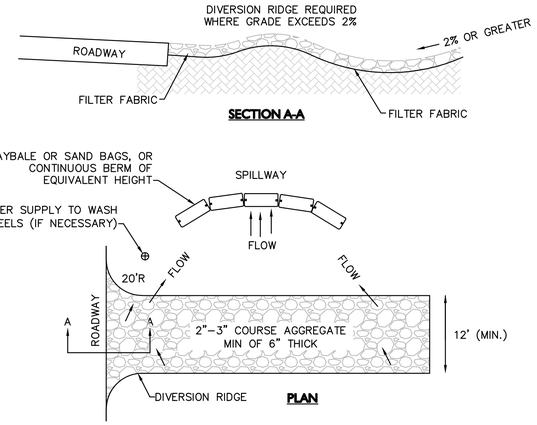
FAX: (781) 935-2896
WOBURN, MA ♦ LAKEVILLE, MA ♦ MANCHESTER, NH

DRAWING TITLE: DETAILS

SHEET No. C-501



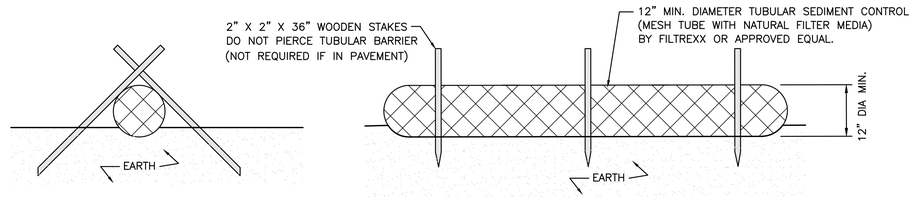
NOTES:
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.

2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTERING THE PUBLIC RIGHT-OF-WAY.

3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

4. USE SANDBAGS, HAYBALES, OR OTHER APPROVED METHODS TO CHANNELIZE RUNOFF TO BASIN AS REQUIRED.

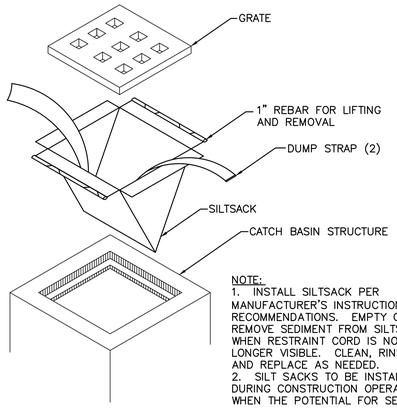
TEMPORARY CONSTRUCTION ENTRANCE/EXIT — 1
NOT TO SCALE



NOTES:

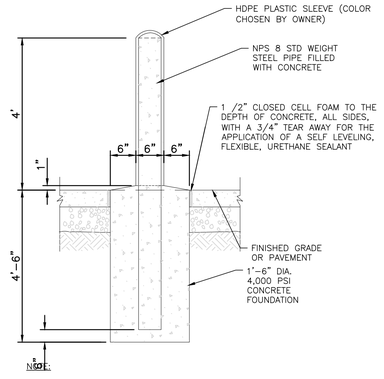
1. ALL MATERIALS TO MEET MANUFACTURERS SPECIFICATIONS.
2. INSTALL WOODEN STAKES IN A CRISS-CROSS PATTERN EVERY 8' ON CENTER.
2. OVERLAP TUBULAR BARRIER SEGMENTS A MINIMUM OF 12".
3. THE CONTRACTOR SHALL MAINTAIN THE TUBULAR BARRIERS IN A FUNCTIONAL CONDITION AT ALL TIMES. THE CONTROLS SHALL BE ROUTINELY INSPECTED BY THE CONTRACTOR.
4. WHERE THE TUBULAR BARRIERS REQUIRE REPAIR OR SEDIMENT REMOVAL, IT WILL BE COMPLETED BY THE CONTRACTOR AT NO ADDITIONAL COST.
5. AT A MINIMUM, THE CONTRACTOR SHALL REMOVE SEDIMENTS COLLECTED AT THE BASE WHEN THEY REACH 1/3 THE EXPOSED HEIGHT OF THE BARRIER.

TUBULAR SEDIMENT BARRIER — 2
NOT TO SCALE



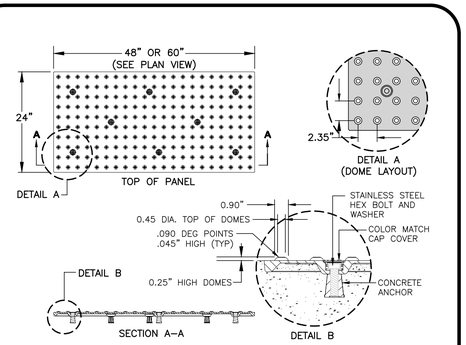
NOTE:
1. INSTALL SILTSACK PER MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS. EMPTY OR REMOVE SEDIMENT FROM SILTSACK WHEN RESTRAINT CORD IS NO LONGER VISIBLE. CLEAN, RINSE, AND REPLACE AS NEEDED.
2. SILT SACKS TO BE INSTALLED DURING CONSTRUCTION OPERATIONS WHEN THE POTENTIAL FOR SEDIMENT TO ENTER EXISTING & PROPOSED BASINS EXISTS.

SILT SACK INLET DETAIL — 3
NOT TO SCALE



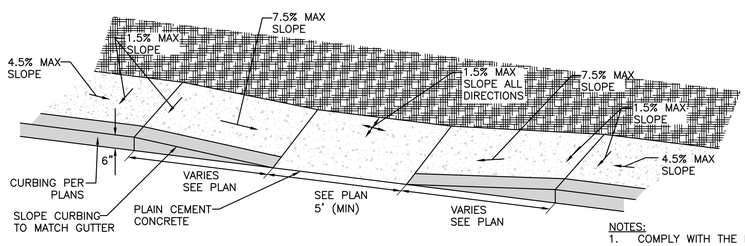
NOTE:
STEEL PIPE FOR PIPE GUARDS SHALL CONFORM TO ASTM A53, TYPE E OR S, GRADE B GALVANIZED, MINIMUM WALL THICKNESS 0.322 INCHES.

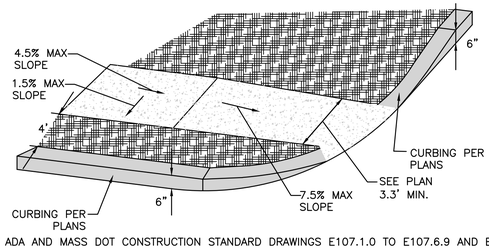
TYPICAL BOLLARD DETAIL — 4
NOT TO SCALE

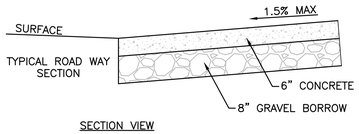


NOTES:
1. VENDOR INFORMATION: "ADATILE" WET SET ADA REPLACEABLE TACTILE (OR APPROVED EQUAL) AS MANUFACTURED BY ADATILE, PHONE: 1-800-372-0519, WWW.ADATILE.COM, EMAIL: INFO@ADATILE.COM
2. COLOR SHALL BE RED.
3. INSTALL PER MANUFACTURER'S INSTALLATION GUIDELINES.

WET SET ADA REPLACEABLE TACTILE PANEL — 5
NOT TO SCALE







SECTION VIEW

NOTES:
1. COMPLY WITH THE LATEST ADA AND MASS DOT CONSTRUCTION STANDARD DRAWINGS E107.1.0 TO E107.6.9 AND E107.9.0
2. THE DIMENSIONS SHOWN AT ROADWAY EDGE ARE FIXED DISTANCES.
3. RAMP CROSS SECTION TO BE THE SAME AS ADJACENT SIDEWALK; I.E. DEPTH OF SURFACE AND FOUNDATION.
4. PORTLAND CEMENT CONCRETE RAMPS ARE TO BE TEXTURED BY BROOMING IN A DIRECTION PARALLEL TO THE LENGTH OF THE RAMP.
5. IN NO CASE ARE THE RAMPS TO BE PLACED BEHIND THE STOP LINE.
6. THE DIMENSIONS ARE SUBJECT TO CHANGE IN THE FIELD IF EXISTING APPURTENANCES OR CONDITIONS WILL MAKE THE RAMP LOCATIONS IMPRACTICAL OR UNSAFE. CONSULT CIVIL ENGINEER PRIOR TO MAKING ANY MODIFICATIONS.

ACCESSIBLE RAMP & CURB TRANSITION — 6
NOT TO SCALE

R:\PROJECTS\2038-08\CIVIL\DRAWINGS\CURRENT\C-2038-08_DETAILS.DWG

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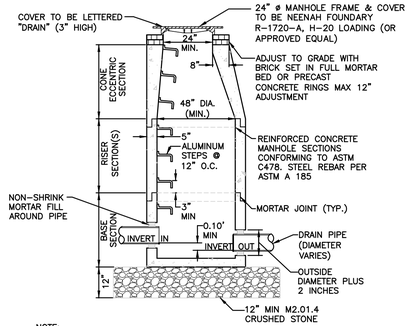
WOBURN, MA ♦ LAKEVILLE, MA ♦ MANCHESTER, NH

DRAWING TITLE:

DETAILS

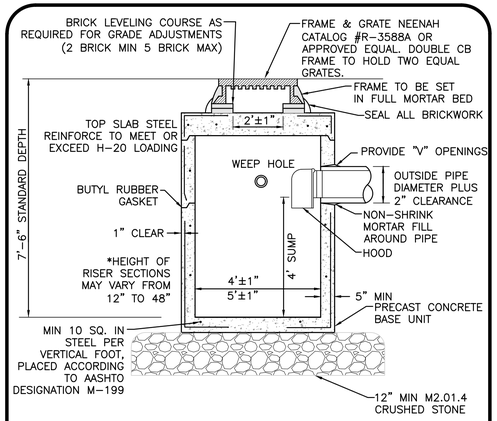
SHEET No.

C-502

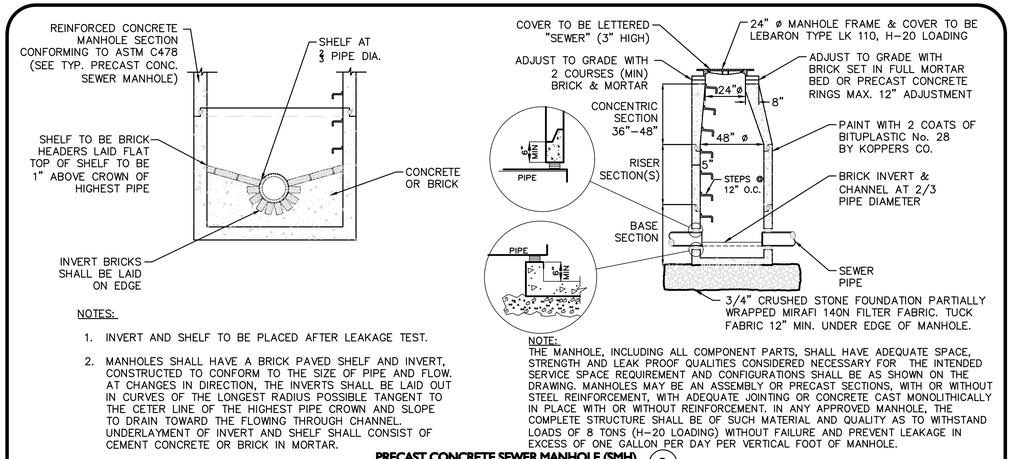


NOTE:
1. THE MANHOLE, INCLUDING ALL COMPONENT PARTS, SHALL HAVE ADEQUATE SPACE AND STRENGTH QUALITIES CONSIDERED NECESSARY FOR THE INTENDED SERVICE. SPACE REQUIREMENT AND CONFIGURATIONS SHALL BE AS SHOWN ON THE DRAWING. THE COMPLETE STRUCTURE SHALL BE OF SUCH MATERIAL AND QUALITY AS TO WITHSTAND (H-20 LOADING) WITHOUT FAILURE. VERTICAL FOOT OF MANHOLE.

PRECAST DRAIN MANHOLE (1)
NOT TO SCALE



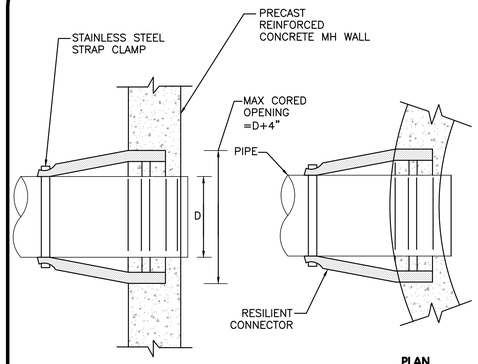
PRECAST CATCH BASIN (2)
NOT TO SCALE



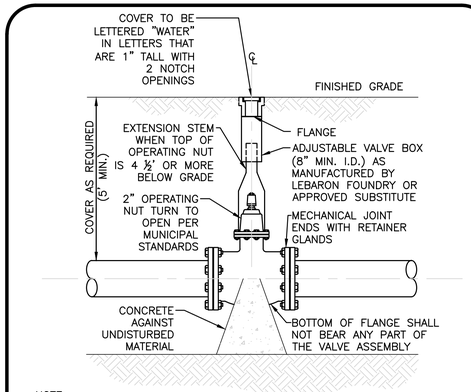
NOTES:
1. INVERT AND SHELF TO BE PLACED AFTER LEAKAGE TEST.
2. MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW. AT CHANGES IN DIRECTION, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CETER LINE OF THE HIGHEST PIPE CROWN AND SLOPE TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF CEMENT CONCRETE OR BRICK IN MORTAR.

NOTE:
THE MANHOLE, INCLUDING ALL COMPONENT PARTS, SHALL HAVE ADEQUATE SPACE, STRENGTH AND LEAK PROOF QUALITIES CONSIDERED NECESSARY FOR THE INTENDED SERVICE SPACE REQUIREMENT AND CONFIGURATIONS SHALL BE AS SHOWN ON THE DRAWING. MANHOLES MAY BE AN ASSEMBLY OR PRECAST SECTIONS, WITH OR WITHOUT STEEL REINFORCEMENT, WITH ADEQUATE JOINTING OR CONCRETE CAST MONOLITHICALLY IN PLACE WITH OR WITHOUT REINFORCEMENT. IN ANY APPROVED MANHOLE, THE COMPLETE STRUCTURE SHALL BE OF SUCH MATERIAL AND QUALITY AS TO WITHSTAND LOADS OF 8 TONS (H-20 LOADING) WITHOUT FAILURE AND PREVENT LEAKAGE IN EXCESS OF ONE GALLON PER DAY PER VERTICAL FOOT OF MANHOLE.

PRECAST CONCRETE SEWER MANHOLE (SMH) (3)
NOT TO SCALE

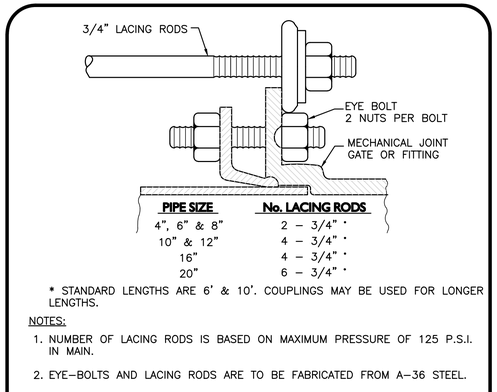


WATERTIGHT RESILIENT CONNECTION TO SEWER MANHOLES (4)
NOT TO SCALE



NOTE:
1.) CONTRACTOR MAY USE ANCHOR TEES AT HIS OPTION.
2.) HYDRANTS AND VALVES TO OPERATE PER MUNICIPAL STANDARDS

GATE VALVE DETAIL (5)
NOT TO SCALE



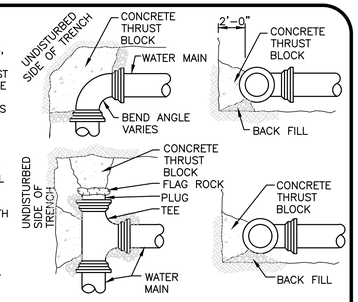
PIPE SIZE	No. LACING RODS
4", 6" & 8"	2 – 3/4" ·
10" & 12"	4 – 3/4" ·
16"	4 – 3/4" ·
20"	6 – 3/4" ·

* STANDARD LENGTHS ARE 6' & 10'. COUPLINGS MAY BE USED FOR LONGER LENGTHS.

NOTES:
1. NUMBER OF LACING RODS IS BASED ON MAXIMUM PRESSURE OF 125 P.S.I. IN MAIN.
2. EYE-BOLTS AND LACING RODS ARE TO BE FABRICATED FROM A-36 STEEL.
3. STEEL LACING RODS SHALL HAVE A YIELD STRESS OF NOT LESS THAN 36,000 P.S.I.
4. EYE-BOLTS SHALL HAVE A MINIMUM TENSILE STRENGTH OF 7,000 LBS. EACH.

MECHANICAL JOINT LACING DETAIL (6)
NOT TO SCALE

NOTES:
1. ALL WATER MAIN FITTINGS, BENDS, TEES, PLUGS ETC. SHALL BE RESTRAINED W/ THRUST BLOCKS EXCEPT WHERE NOTED.
2. ALL THRUST BLOCKS & COLLARS SHALL BE INSTALLED SO THAT THEY BEAR AGAINST UNDISTURBED EARTH.
3. SIZE OF CONCRETE THRUST BLOCKS SHALL BE AS NOTED BELOW.
4. MINIMUM COMPRESSIVE STRENGTH OF THRUST BLOCK CONCRETE SHALL BE 3,000 P.S.I.
5. KEEP CONCRETE CLEAR OF MECHANICAL JOINTS.
6. THE BELOW PREDICATED ON A WATER PRESSURE OF 225 PSI AND A SOIL RESISTANCE OF 2000 PSF (TILL). FOR OTHER SOILS THE VALUES IN THE ABOVE TABLE SHALL BE MULTIPLIED BY:



MINIMUM THRUST BLOCK BEARING AREAS

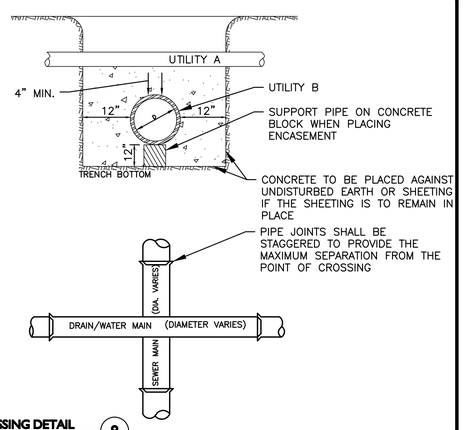
PIPE ø	90° BEND (SQ. FT.)	45° BEND (SQ. FT.)	22.5° BEND (SQ. FT.)	TEES, PLUGS, CAPS & HYD. (SQ.FT.)
6"	5	3	3	4
8"	9	6	3	9
10"	13	7	4	12
12"	20	10	5	16

THRUST BLOCK DETAILS (7)
NOT TO SCALE

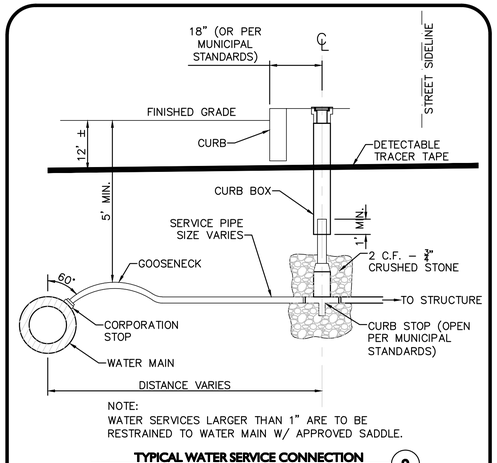
NOTES:

WHENEVER CONDITIONS PREVENT A LATERAL SEPARATION OF 10 FEET BETWEEN A SEWER MAIN AND A WATER/DRAIN MAIN:

1. THE WATER/DRAIN MAIN SHALL BE LAID IN A SEPARATE TRENCH AND THE DIFFERENCE IN ELEVATION BETWEEN THE WATER/DRAIN MAIN AND THE SEWER MAIN SHALL BE AT LEAST 18 INCHES.
2. THE PIPE CROSSING SHALL OCCUR AS CLOSE TO 90° AS PRACTICABLE.
3. THE PIPE JOINTS SHALL BE STAGGERED TO PROVIDE THE MAXIMUM SEPARATION FROM THE POINT OF CROSSING.
4. THE CROSSING SHALL BE ENCASED IN CONCRETE FOR THE ENTIRE WIDTH OF THE TRENCH AND FOR A DISTANCE OF 10 LINEAR FEET CENTERED ON THE CROSSING.
5. UTILITIES A AND B CAN BE EITHER NEW OR EXISTING.
6. WHEN ONE UTILITY IS A SANITARY SEWER. IT IS PREFERABLE TO BE POSITIONED AS SHOWN FOR UTILITY B.
7. ENCASEMENT EXTENDS 10'-0" ON EACH SIDE OF THE CENTERLINE OF UTILITY A.
8. PIPE MUST BE BRACED VERTICALLY AND HORIZONTALLY TO PREVENT FLOATATION DURING PLACEMENT OF CONCRETE.



SEWER, WATER/DRAIN CROSSING DETAIL (8)
NOT TO SCALE



NOTE:
WATER SERVICES LARGER THAN 1" ARE TO BE RESTRAINED TO WATER MAIN W/ APPROVED SADDLE.

TYPICAL WATER SERVICE CONNECTION (9)
NOT TO SCALE

BRIAN D. JONES
No. 11089
REGISTERED PROFESSIONAL ENGINEER
CIVIL
01.25.23

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

APPLICANT\OWNER:
CPW TRUE STORAGE LLC
670 N. COMMERCIAL STREET, SUITE 303
MANCHESTER, NH 03101

PROJECT:
SITE REDEVELOPMENT
ASSESSORS MAP 8, LOTS 195, 1617 & 2711
1381 CRANSTON STREET - CRANSTON, RI

PROJECT NO.	2038-08	DATE:	01-25-2023
SCALE:	AS SHOWN	DWG.:	C-2038-08_DETAILS
DESIGNED BY:	JRG	CHECKED BY:	MAM

PREPARED BY:
ALLEN & MAJOR ASSOCIATES, INC.
civil engineering ♦ land surveying
environmental consulting ♦ landscape architecture
www.allenmajor.com
100 COMMERCE WAY, SUITE 5
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TEL: (781) 935-6889
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WOBURN, MA ♦ LAKEVILLE, MA ♦ MANCHESTER, NH

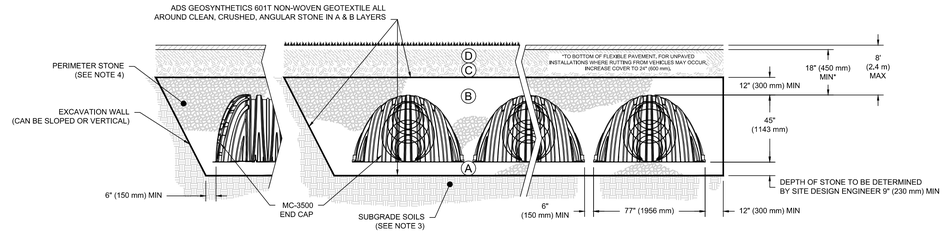
DRAWING TITLE: DETAILS
SHEET No. C-503

R:\PROJECTS\2038-08\CIVIL\DRAWINGS\CURRENT\C-2038-08_DETAILS.DWG

ACCEPTABLE FILL MATERIALS: STORMTECH MC-3500 CHAMBER SYSTEMS

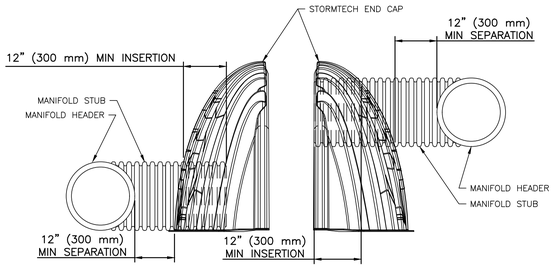
MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS. NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



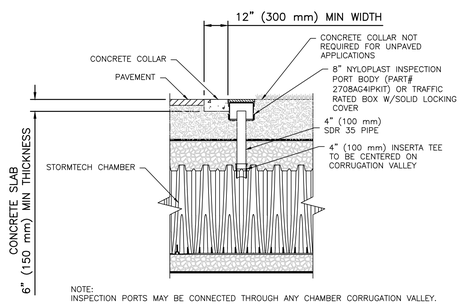
NOTES:
1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
2. MC-3500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 500 LBS/FT/% AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

MC-3500 CROSS SECTION
NOT TO SCALE



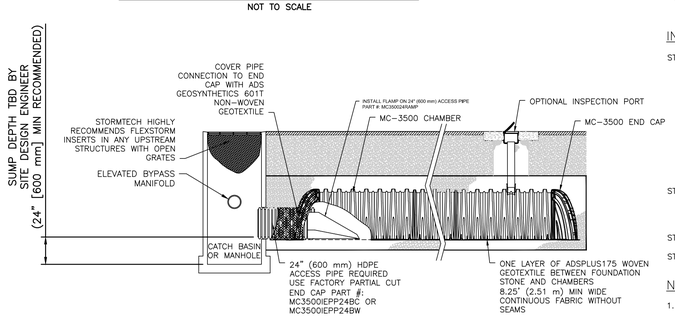
NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.

MC-3500 END CAP
NOT TO SCALE



NOTE:
INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION VALLEY.

4" PVC INSPECTION PORT
NOT TO SCALE



ISOLATOR ROW PLUS DETAIL
NOT TO SCALE

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

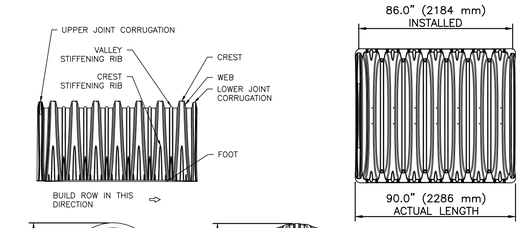
STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

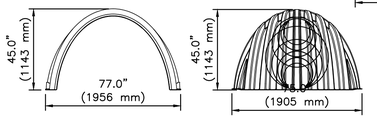
STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

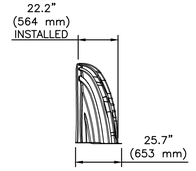
STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.







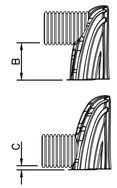
NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	77.0" X 45.0" X 86.0"	(1956 mm X 1143 mm X 2184 mm)
CHAMBER STORAGE	109.9 CUBIC FEET	(3.11 m³)
MINIMUM INSTALLED STORAGE*	175.0 CUBIC FEET	(4.96 m³)
WEIGHT	134 lbs.	(60.8 kg)

NOMINAL END CAP SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	75.0" X 45.0" X 22.2"	(1905 mm X 1143 mm X 564 mm)
END CAP STORAGE	14.9 CUBIC FEET	(0.42 m³)
MINIMUM INSTALLED STORAGE*	45.1 CUBIC FEET	(1.28 m³)
WEIGHT	49 lbs.	(22.2 kg)

*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION, 6" (152 mm) STONE BETWEEN CHAMBERS, 6" (152 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY.



PARTIAL CUT HOLES AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
PARTIAL CUT HOLES AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W"
END CAPS WITH A WELDED CROWN PLATE END WITH "C"

PART #	STUB	B	C
MC3500IEPP06T	6" (150 mm)	33.21" (844 mm)	---
MC3500IEPP06B		---	0.66" (17 mm)
MC3500IEPP08T	8" (200 mm)	31.16" (791 mm)	---
MC3500IEPP08B		---	0.81" (21 mm)
MC3500IEPP10T	10" (250 mm)	29.04" (738 mm)	---
MC3500IEPP10B		---	0.93" (24 mm)
MC3500IEPP12T	12" (300 mm)	26.36" (670 mm)	---
MC3500IEPP12B		---	1.35" (34 mm)
MC3500IEPP15T	15" (375 mm)	23.39" (594 mm)	---
MC3500IEPP15B		---	1.50" (38 mm)
MC3500IEPP18TC	18" (450 mm)	20.03" (509 mm)	---
MC3500IEPP18TW			
MC3500IEPP18BC		---	1.77" (45 mm)
MC3500IEPP18BW			
MC3500IEPP24TC	24" (600 mm)	14.48" (368 mm)	---
MC3500IEPP24TW			
MC3500IEPP24BC		---	2.06" (52 mm)
MC3500IEPP24BW			
MC3500IEPP30BC	30" (750 mm)	---	2.75" (70 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL

CUSTOM PARTIAL CUT INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-3500 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

TECHNICAL SPECIFICATIONS
NOT TO SCALE

MC-3500 STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH MC-3500.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
6. CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
7. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT/% THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
8. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
   - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
   - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
   - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

MC-3500 STANDARD DETAIL
NOT TO SCALE

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Advanced Drainage Systems, Inc.

BRIAN D. JONES
No. 11089
REGISTERED PROFESSIONAL ENGINEER
CIVIL
01.25.23

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

APPLICANT\OWNER:
CPW TRUE STORAGE LLC
670 N. COMMERCIAL STREET, SUITE 303
MANCHESTER, NH 03101

PROJECT:
SITE REDEVELOPMENT
ASSESSORS MAP 8, LOTS 195, 1617 & 2711
1381 CRANSTON STREET - CRANSTON, RI

PROJECT NO.	2038-08	DATE:	01-25-2023
SCALE:	AS SHOWN	DWG.:C-2038-08_DETAILS	
DESIGNED BY:	JRG	CHECKED BY:	MAM

PREPARED BY:
ALLEN & MAJOR ASSOCIATES, INC.
civil engineering ♦ land surveying
environmental consulting ♦ landscape architecture
www.allenmajor.com
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WOBURN, MA 01801
TEL: (781) 935-6889
FAX: (781) 935-2896
WOBURN, MA ♦ LAKEVILLE, MA ♦ MANCHESTER, NH

DRAWING TITLE:
DETAILS

SHEET No.
C-504