WARNING:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR CALLING FOR LOCATIONS OF ALL EXISTING UTILITIES. THEY SHALL COOPERATE WITH ALL UTILITY COMPANIES IN MAINTAINING THEIR SERVICE AND/OR RELOCATION OF LINES.

THE CONTRACTOR SHALL CONTACT GOPHER STATE ONE CALL AT 651-454-0002 AT LEAST 48 HOURS IN ADVANCE FOR THE LOCATIONS OF ALL UNDERGROUND WIRES, CABLES, CONDUITS, PIPES, MANHOLES, VALVES OR OTHER BURIED STRUCTURES BEFORE DIGGING. THE CONTRACTOR SHALL REPAIR OR REPLACE THE ABOVE WHEN DAMAGED DURING CONSTRUCTION AT NO COST TO THE OWNER.

GOPHER STATE ONE CALL
TWIN CITY AREA: 651-454-0002
TOLL FREE 1-800-252-1166
CALL BEFORE YOU DIG
PAVING, MARKING, AND SIGNAGE NOTES

1. CONTRACTOR MUST OBTAIN PUBLIC RIGHT-OF-WAY PERMITS IF REQUIRED. NOTE: CITY OF CRYSTAL, SPECIFICATIONS AND DIMENSIONS MUST BE SPECIFIED, AND AN EASEMENT PERMIT MUST BE OBTAINED, AS NEEDED. USE OF APPLICABLE REGULATIONS.

2. CONTRACTOR MUST PROVIDE A WORKMANSHIP INSPECTION AND VERIFY THE WORK IS ACCORDING TO PERMITS AND SPECIFICATIONS. CONTRACTOR MUST SUBMIT A STAGING PLAN TO THE ENGINEER FOR REVIEW BEFORE STARTING WORK.

3. CONSTRUCTION OF Curb and Gutter Shall be in accordance with the specifications and the applicable subdivision, city, county, and state codes.

4. CONSTRUCTION OF roads, streets, avenues, drives, alleys, sidewalks, and curbs shall be in accordance with the applicable subdivision, city, county, and state codes.

5. CONTRACTOR SHALL ANTICIPATE PRIVATE UTILITY CONFLICTS THROUGHOUT THE PROJECT. SUB CUT AND TRENCH AREAS AND MUST COORDINATE THE RELOCATION OR PROTECTION OF EXISTING UTILITIES, OR INSTALLATION OF NEW UTILITY INSTALLATIONS.

6. CONTRACTOR SHALL PROVIDE 24 INCH MINIMUM VERTICAL SEPARATION (OUTSIDE EDGE OF PIPE TO OUTSIDE EDGE OF PIPE/STRUCTURE) BETWEEN WATER LINES AND SANITARY OR STORM LINES AND STRUCTURES. CONTRACTOR SHALL PROVIDE 10 FEET MINIMUM HORIZONTAL SEPARATION (OUTSIDE EDGE OF PIPE TO OUTSIDE EDGE OF PIPE/STRUCTURE) BETWEEN WATER LINES AND SANITARY OR STORM LINES AND STRUCTURES. CONTRACTOR SHALL MAINTAIN, AT ALL TIMES, STORMWATER CONVEYANCE ONTO THE PROPERTY AND MANAGE THE DRAINAGE FROM THE PROPERTY.

7. CONSTRUCTION OF roads, streets, avenues, drives, alleys, sidewalks, and curbs shall be in accordance with the applicable subdivision, city, county, and state codes. CONSTRUCTION AND MATERIALS WITHIN PUBLIC RIGHT-OF-WAY MUST BE IN ACCORDANCE WITH CITY OF CRYSTAL SPECIFICATIONS AND GOVERN THE SPECIFICATIONS GOVERNING SPECIFICATIONS.

8. CONSTRUCTION OF roads, streets, avenues, drives, alleys, sidewalks, and curbs shall be in accordance with the applicable subdivision, city, county, and state codes. CONSTRUCTION AND MATERIALS WITHIN PUBLIC RIGHT-OF-WAY MUST BE IN ACCORDANCE WITH CITY OF CRYSTAL SPECIFICATIONS AND GOVERN THE SPECIFICATIONS GOVERNING SPECIFICATIONS.

9. CONTRACTOR SHALL INSTALL A MINIMUM OF 6 INCHES CLASS 5 AGGREGATE BASE UNDER CURB AND GUTTER, SEE REFERENCES. OFFSET STABILITY PROBLEMS DUE TO WATER SEEPAGE OR STEEP SLOPES AND PUBLIC SAFETY.

10. CONSTRUCTION OF roads, streets, avenues, drives, alleys, sidewalks, and curbs shall be in accordance with the applicable subdivision, city, county, and state codes. CONSTRUCTION AND MATERIALS WITHIN PUBLIC RIGHT-OF-WAY MUST BE IN ACCORDANCE WITH CITY OF CRYSTAL SPECIFICATIONS AND GOVERN THE SPECIFICATIONS GOVERNING SPECIFICATIONS.

11. CONSTRUCTION OF roads, streets, avenues, drives, alleys, sidewalks, and curbs shall be in accordance with the applicable subdivision, city, county, and state codes. CONSTRUCTION AND MATERIALS WITHIN PUBLIC RIGHT-OF-WAY MUST BE IN ACCORDANCE WITH CITY OF CRYSTAL SPECIFICATIONS AND GOVERN THE SPECIFICATIONS GOVERNING SPECIFICATIONS.

12. CONSTRUCTION OF roads, streets, avenues, drives, alleys, sidewalks, and curbs shall be in accordance with the applicable subdivision, city, county, and state codes. CONSTRUCTION AND MATERIALS WITHIN PUBLIC RIGHT-OF-WAY MUST BE IN ACCORDANCE WITH CITY OF CRYSTAL SPECIFICATIONS AND GOVERN THE SPECIFICATIONS GOVERNING SPECIFICATIONS.

13. CONSTRUCTION OF roads, streets, avenues, drives, alleys, sidewalks, and curbs shall be in accordance with the applicable subdivision, city, county, and state codes. CONSTRUCTION AND MATERIALS WITHIN PUBLIC RIGHT-OF-WAY MUST BE IN ACCORDANCE WITH CITY OF CRYSTAL SPECIFICATIONS AND GOVERN THE SPECIFICATIONS GOVERNING SPECIFICATIONS.

14. CONTRACTOR SHALL CONFORM TO AND CONDUCT INSPECTIONS IN ACCORDANCE WITH THE SWPPP. CONSTRUCTION AND MATERIALS WITHIN PUBLIC RIGHT-OF-WAY MUST BE IN ACCORDANCE WITH CITY OF CRYSTAL SPECIFICATIONS AND GOVERN THE SPECIFICATIONS GOVERNING SPECIFICATIONS.

15. CONTRACTOR SHALL CONFORM TO AND CONDUCT INSPECTIONS IN ACCORDANCE WITH THE SWPPP. CONSTRUCTION AND MATERIALS WITHIN PUBLIC RIGHT-OF-WAY MUST BE IN ACCORDANCE WITH CITY OF CRYSTAL SPECIFICATIONS AND GOVERN THE SPECIFICATIONS GOVERNING SPECIFICATIONS.
**PROJECT TITLE:** KENTUCKY AVE WATER QUALITY IMPROVEMENT

**STATE OF MINNESOTA**

**ENGINEER:** HENNEPIN COUNTY, MINNESOTA

**DATE:** 04/15/2020

**LICENSE NO.:** 25817

**CLIENT:** WWW.WENCK.COM

**FAX:** 952-831-1268

**ADJUST ENTRANCE LENGTH AS UNDERGROUND INSTALLATION PROGRESSES**

**KEYNOTES**

1. REMOVE SPRINKLER HEAD
2. REMOVE CURB AND GUTTER
3. CLEAR AND GRUB AREA (TYP.)
4. SALVAGE ROCK TO REPLACE IN SAME LOCATION AND REMOVE PARKING LOT ISLAND
5. COMPARE EROSION CONTROL PLAN TO PRE-CONSTRUCTION PLAN

**GENERAL NOTES**

- **WARNING:** THE CONTRACTOR SHALL CONTRACT SPRINKLER PIPES AT THE LOCATIONS SHOWN IN THIS SHEET AND SHALL ADJUST THE LENGTH OF THE PIPES TO MATCH THE ACTUAL LOCATION OF THE EXISTING SPRINKLER HEADS. THE CONTRACTOR SHALL CONTRACT FOR THE REMOVAL OF THE EXISTING PIPES AND OR THE INSTALLATION OF NEW PIPES.
- **KEYNOTE:**
  - 1. REMOVE BITUMINOUS PAVEMENT (TYP.)
  - 2. REMOVE CURB AND GUTTER (TYP.)
  - 3. CLEAR AND GRUB AREA (TYP.)
  - 4. SALVAGE ROCK TO REPLACE IN SAME LOCATION AND REMOVE PARKING LOT ISLAND
  - 5. COMPARE EROSION CONTROL PLAN TO PRE-CONSTRUCTION PLAN
- **LAYOUT:** INSTALL ROCK CONSTRUCTION ENTRANCE - AFTER BITUMINOUS SURFACE REMOVAL, ADJUST ENTRANCE LENGTH AS UNDERGROUND INSTALLATION PROGRESSES
- **CONSTRUCTION TRAFFIC TO ACCESS THE SITE FROM WEST BROADWAY AVENUE, REMOVE TRACKED AND ACCUMULATED SEDIMENTS AT END OF EACH WORK DAY**
- **EXISTING BUILDING**

**LICENSE NO.:** 25817

**DATE:** 04/15/2020

**CLIENT:** WWW.WENCK.COM

**FAX:** 952-831-1268

**ADJUST ENTRANCE LENGTH AS UNDERGROUND INSTALLATION PROGRESSES**

**KEYNOTES**

1. REMOVE BITUMINOUS PAVEMENT (TYP.)
2. REMOVE CURB AND GUTTER (TYP.)
3. CLEAR AND GRUB AREA (TYP.)
4. SALVAGE ROCK TO REPLACE IN SAME LOCATION AND REMOVE PARKING LOT ISLAND
5. COMPARE EROSION CONTROL PLAN TO PRE-CONSTRUCTION PLAN

**GENERAL NOTES**

- **WARNING:** THE CONTRACTOR SHALL CONTRACT SPRINKLER PIPES AT THE LOCATIONS SHOWN IN THIS SHEET AND SHALL ADJUST THE LENGTH OF THE PIPES TO MATCH THE ACTUAL LOCATION OF THE EXISTING SPRINKLER HEADS. THE CONTRACTOR SHALL CONTRACT FOR THE REMOVAL OF THE EXISTING PIPES AND OR THE INSTALLATION OF NEW PIPES.
- **KEYNOTE:**
  - 1. REMOVE BITUMINOUS PAVEMENT (TYP.)
  - 2. REMOVE CURB AND GUTTER (TYP.)
  - 3. CLEAR AND GRUB AREA (TYP.)
  - 4. SALVAGE ROCK TO REPLACE IN SAME LOCATION AND REMOVE PARKING LOT ISLAND
  - 5. COMPARE EROSION CONTROL PLAN TO PRE-CONSTRUCTION PLAN
- **LAYOUT:** INSTALL ROCK CONSTRUCTION ENTRANCE - AFTER BITUMINOUS SURFACE REMOVAL, ADJUST ENTRANCE LENGTH AS UNDERGROUND INSTALLATION PROGRESSES
- **CONSTRUCTION TRAFFIC TO ACCESS THE SITE FROM WEST BROADWAY AVENUE, REMOVE TRACKED AND ACCUMULATED SEDIMENTS AT END OF EACH WORK DAY**
- **EXISTING BUILDING**
1. SAWCUT AND MATCH EXISTING BITUMINOUS ELEVATIONS (TYP.)
2. BITUMINOUS PAVEMENT PARKING LOT. SEE BITUMINOUS PAVING - PARKING LOT SECTION ON SHEET C-801.
3. B612 CURB AND GUTTER. SEE DETAIL.
4. B612 CURB AND GUTTER WITH RAIN GUARDIAN TURRET. SEE DETAIL.
5. LATEX PAINT PARKING STRIPE (TYP.)
6. BITUMINOUS PATCHING. SEE BITUMINOUS PATCHING - PUBLIC STREET SECTION ON SHEET C-801.
7. UNDERGROUND INFILTRATION SYSTEM FOOTPRINT
8. SURFACE INFILTRATION BASIN
9. SALT-TOLERANT SOD
10. MATCH EXISTING CURB (TYP.)
SELECT GRANULAR SUBGRADE MEETING MNDOT SPEC 3149-4 (SALVAGE ON SITE)

1.5" SPWEA340C WEAR COURSE PER MNDOT 2360

2" SPNWB330B NON-WEAR COURSE PER MNDOT 2360

6" MNDOT CLASS 5 AGGREGATE BASE (100% CRUSHED)

BITUMINOUS TACK COAT PER MNDOT 2357

1.5" SPWEA340C WEAR COURSE PER MNDOT 2360

1.5" SPNWB330B NON-WEAR COURSE PER MNDOT 2360

6" MNDOT CLASS 5 AGGREGATE BASE (100% CRUSHED)

SELECT GRANULAR SUBGRADE MEETING MNDOT SPEC 3149-4 (SALVAGE ON SITE)
RAIN GUARDIAN TUNNEL PRETREATMENT CHAMBER

BIORETENTION PONDING DEPTH: 1'

TYPICAL DETAIL

DRILL 3 HOLE IN RAIN GUARDIAN BASE

EMBED 2 - 3" DIAMETER BY 16" CONCRETE ANCHORS IN CURB APRON. TIE TO REBAR. MINIMUM 2" CONCRETE COVER OVER TOP AND BOTTOM OF ANCHOR

GROUT ANNULAR SPACE AROUND BOLT, ADD GROUT FOR FLAT SURFACE BEHIND WASHER SECURE WITH 2-3" DIAMETER WASHERS AND 5/8" LOCKING NUT.

ANCHOR RAIN GUARDIAN

NOT TO SCALE

CENTER ISLAND INFILTRATION BASIN

NOT TO SCALE

PIPE BEDDING

NOT TO SCALE

SOD INSTALLATION

NOT TO SCALE

SHINGLED OVERLAY SOD IN LOW DIRECTION

USE SALT TOLERANT SOD

OVERFLOW STRUCTURE INLET ELEV. 871.5

MATCH TOP OF CURB ELEVATION....

SAVAGE EUROPE ANALYZE SOD

SAVAGED ROCK FROM CENTER ISLAND

THICKNESS DEPENDENT ON AVAILABLE QUANTITY: MAXIMUM 3"
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 CO-POLYMER.
3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
4. CHAMBERS SHALL BE STORMTECH MC-3500.
5. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE CO-POLYMER.
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" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
7. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.

NOTES FOR CONSTRUCTION EQUIPMENT

1. STORMTECH MC-3500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER’S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS.
4. BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
5. STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
6. STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
7. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
8. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
9. STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
10. USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE PRACTICE.
11. THE USE OF EQUIMENT OVER MC-3500 CHAMBERS IS LIMITED:
   • NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   • NO RUBBER TIRED LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
   • WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
   • FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.
   • USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE PRACTICE.
   • ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.
   • CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

KENTUCKY AVE WQ IMPROVEMENTS
CRYSTAL, MN
NOTES
- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECHNICAL NOTE 6.32 FOR MANIFOLD SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE-SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE IN SITU SOLS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.

PROPOSED LAYOUT
100 STORMTECH MC-3500 CHAMBERS
28 STORMTECH MC-3500 END CAPS
9 STONE ABOVE (tt)
45 % STONE VOID
20.262 INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED)
6.097 SYSTEM AREA (ft²)
326 SYSTEM PERIMETER (ft)

PROPOSED ELEVATIONS
877.00 MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED)
871.00 MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC)
870.50 MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT)
870.50 MINIMUM ALLOWABLE GRADE (TOP OF RIGID PAVEMENT)
870.00 TOP OF STONE
867.20 TOP OF MC-3500 CHAMBER
865.42 24" ISOLATOR ROW CONNECTION INVERT
865.25 BOTTOM OF MC-3500 CHAMBER
864.50 BOTTOM OF STONE

15" X 15" ADS N-12 TOP MANIFOLD
INVERT 23.39" ABOVE CHAMBER BASE
(SEE NOTES)

STRUCTURE STMH-2 PER PLAN SHOWN (ELEVATED BYPASS MANIFOLD REMOVED)
MAXIMUM INLET FLOW 10.8 CFS
(DESIGN BY ENGINEER / PROVIDED BY OTHERS)
PLACED MINIMUM 17.5" OF ADS GEOSYNTHETICS 3/16THS WOVEN
GEOTEXTILE OVER BEDDING STONE AND UNDERNEATH CHAMBER
FEET FOR SCOUR PROTECTION AT ALL CHAMBER INLET ROWS

15" ADS N-12 TOP CONNECTION
INVERT 23.36" ABOVE CHAMBER BASE
(SEE NOTES)

24" PARTIAL CUT END CAP, PART# MC3500EPP24BC OR
MC3500EP24BX
TYP OF ALL MC-3500 24" BOTTOM CONNECTIONS AND ISOLATOR ROWS
THIS DRAWING HAS BEEN PREPARED BASED ON INFORMATION PROVIDED TO ADS UNDER THE DIRECTION OF THE SITE DESIGN ENGINEER OR OTHER PROJECT REPRESENTATIVE. THE SITE DESIGN ENGINEER SHALL REVIEW THIS DRAWING PRIOR TO CONSTRUCTION. IT IS THE ULTIMATE RESPONSIBILITY OF THE SITE DESIGN ENGINEER TO ENSURE THAT THE PRODUCT(S) DEPICTED AND ALL ASSOCIATED DETAILS MEET ALL APPLICABLE LAWS, REGULATIONS, AND PROJECT REQUIREMENTS.
### MATERIAL LOCATION

<table>
<thead>
<tr>
<th></th>
<th>DESCRIPTION</th>
<th>AASHTO MATERIAL CLASSIFICATIONS</th>
<th>COMPACTION / DENSITY REQUIREMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>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.</td>
<td>any soil/rock materials, native soils, or per engineer's plans. check plans for pavement subgrade requirements.</td>
<td>prepare per site design engineer's plans. paved installations may have stringent material and preparation requirements.</td>
</tr>
<tr>
<td>C</td>
<td>initial fill: fill material for layer C' starts from the top of the emplacement stone (or layer) to 24&quot; (600 mm) above the top of the chamber. note that pavement subbase may be a part of the C' layer.</td>
<td>granular well-graded soil/aggregate mixtures, &lt;35% fines or processed aggregate. most pavement subbase materials can be used in lieu of this layer.</td>
<td>aashto m145¹ a-1, a-2-4, a-3 or aashto m43⁷ 3, 357, 4, 467, 5, 56, 57, 6, 67, 7, 78, 8, 89, 9, 10 begin compactions after 24&quot; (600 mm) of material over the chambers is reached. compacted additional layers in 12&quot; (300 mm) max lifts to a min. 95% proctor density for well graded material and 95% relative density for processed aggregate materials.</td>
</tr>
<tr>
<td>B</td>
<td>emplacement stone: fill surrounding the chambers from the foundation stone (X layer) to the C' layer above.</td>
<td>clean, crushed, angular stone</td>
<td>no compaction required.</td>
</tr>
<tr>
<td>A</td>
<td>foundation stone: fill below chambers from the subgrade up to the foot (bottom) of the chamber.</td>
<td>clean, crushed, angular stone</td>
<td>plate compact or roll to achieve a flat surface.²³ plate compact or roll to achieve a flat surface.²³</td>
</tr>
</tbody>
</table>

### NOTES:

1. **PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.**

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. **CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, “STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS” CHAMBER CLASSIFICATION 45/L7s DESIGNATION SS.**

4. **MC-3500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 “STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS.”**

5. **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.**

6. **PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.**

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 AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 500 LBS/IN/N 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.**

### ACCEPTABLE FILL MATERIALS: STORMTECH MC-3500 CHAMBER SYSTEMS

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>AASHTO MATERIAL CLASSIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>clean, crushed, angular stone</td>
<td>aashto m43⁷ 3, 4</td>
</tr>
<tr>
<td>smooth, clean, well-graded fill</td>
<td>aashto m53³ 6, 67, 7, 78, 8, 89, 9, 10</td>
</tr>
<tr>
<td>processed aggregate</td>
<td>aashto m145¹ a-1, a-2-4, a-3</td>
</tr>
<tr>
<td>granular well-graded soil</td>
<td>aashto m145¹ a-3, a-4</td>
</tr>
<tr>
<td>coarse, clean, well-graded fill</td>
<td>aashto m43⁷ 3, 357, 4, 467, 5, 56, 57, 6, 67, 7, 78, 8, 89, 9, 10</td>
</tr>
</tbody>
</table>

**NOTE:**

- 1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, AND 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, 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 MATERIALS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER C' OR D' AT THE SITE DESIGN ENGINEER’S DISCRETION.
**INSPECTION & MAINTENANCE**

**STEP 1)** INSPECT ISOLATOR ROW FOR SEDIMENT

A. Check isolation ports (if present)
   1. Remove/open lid on NYLOPLAST inline drain
   2. Remove and clean FLEXSTORM filter if installed
   3. Using a flashlight and stadia rod, measure depth of sediment and record on maintenance log
   4. Lower a camera into isolation row for visual inspection of sediment levels (optional)
   5. If sediment is at or above 3" (80 mm), proceed to step 2. If not, proceed to step 3.

B. All isolation rows
   1. Remove cover from structure at upstream end of isolation row
   2. Using a flashlight, inspect down the isolation row 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
   3. If sediment is at or above 3" (80 mm), proceed to step 2. If not, proceed to step 3.

**STEP 2)** CLEAN OUT ISOLATION ROW 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.

**CONNECTION DETAIL**

**4" PVC INSPECTION PORT DETAIL**

**NOTES:**

1. Inspection ports may be connected through any chamber corrugation valley.
2. All Schedule 40 fittings to be solvent cemented (4" PVC not provided by ADS).
### NOMINAL CHAMBER SPECIFICATIONS

<table>
<thead>
<tr>
<th>SIZE (W X H X INSTALLED LENGTH)</th>
<th>77.0&quot; X 45.0&quot; X 86.0&quot; (1956 mm X 1143 mm X 2184 mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHAMBER STORAGE</td>
<td>109.9 CUBIC FEET (3.11 m³)</td>
</tr>
<tr>
<td>MINIMUM INSTALLED STORAGE*</td>
<td>699 lbs. (314.0 kg)</td>
</tr>
<tr>
<td>WEIGHT</td>
<td></td>
</tr>
</tbody>
</table>

*ASSUMES 12" (305 mm) STONE ABOVE, 6" (152 mm) STONE FOUNDATION, 4" (100 mm) STONE BETWEEN CHAMBERS, 6" (152 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY.

### NOMINAL END CAP SPECIFICATIONS

<table>
<thead>
<tr>
<th>SIZE (W X H X INSTALLED LENGTH)</th>
<th>75.0&quot; X 45.0&quot; X 22.2&quot; (1905 mm X 1143 mm X 564 mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>END CAP STORAGE</td>
<td>14.9 CUBIC FEET (0.43 m³)</td>
</tr>
<tr>
<td>MINIMUM INSTALLED STORAGE*</td>
<td>43 lbs. (19.5 kg)</td>
</tr>
<tr>
<td>WEIGHT</td>
<td></td>
</tr>
</tbody>
</table>

### PARTIAL CUT HOLES

- At Bottom of End Cap for Part Numbers Ending with "B".
- 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".

### CUSTOM INVERT LOCATIONS

- 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.
NYLOPLAST DRAIN BASIN

INTEGRATED DUCTILE IRON FRAME & GRATE/SOLID TO MATCH BASIN O.D.

18" (457 mm) MIN WIDTH

AASTHO H-20 CONCRETE SLAB
8" (203 mm) MIN THICKNESS

TRAFFIC LOADS: CONCRETE DIMENSIONS ARE FOR GUIDELINE PURPOSES ONLY. ACTUAL CONCRETE SLAB MUST BE DESIGNED GIVING CONSIDERATION FOR LOCAL SOIL CONDITIONS, TRAFFIC LOADING & OTHER APPLICABLE DESIGN FACTORS

ADAPTER ANGLES VARIABLE 0°- 360° ACCORDING TO PLANS

VARIABLE SUMP DEPTH ACCORDING TO PLANS
8" (152 mm) MIN ON 8-24" (200-600 mm), 10" (254 mm) MIN ON 30" (750 mm)

INVERT ACCORDING TO PLAN/STAKE OFF

WATERTIGHT JOINT (CORRUGATED HDPE SHOWN)

VARIOUS TYPES OF INLET AND OUTLET ADAPTERS AVAILABLE: 4-30" (100-750 mm) FOR CORRUGATED HDPE

NOTES
1. 8-30" (200-750 mm) GRATES/SOLID COVERS SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
2. 12-30" (300-750 mm) FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
3. DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS
4. DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS & HANCOR DUAL WALL) & SDR 35 PVC
5. FOR COMPLETE DESIGN AND PRODUCT INFORMATION: WWW.NYLOPLAST-US.COM
6. TO ORDER CALL: 800-821-6710

A PART # GRATE/SOLID COVER OPTIONS

<table>
<thead>
<tr>
<th>A</th>
<th>PART #</th>
<th>GRATE/SOLID COVER OPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>8&quot;</td>
<td>2808AG</td>
<td>PEDESTRIAN LIGHT DUTY PEDESTRIAN LIGHT DUTY PEDESTRIAN LIGHT DUTY PEDESTRIAN LIGHT DUTY PEDESTRIAN LIGHT DUTY</td>
</tr>
<tr>
<td>10&quot;</td>
<td>2810AG</td>
<td>PEDESTRIAN LIGHT DUTY PEDESTRIAN LIGHT DUTY PEDESTRIAN LIGHT DUTY PEDESTRIAN LIGHT DUTY PEDESTRIAN LIGHT DUTY</td>
</tr>
<tr>
<td>12&quot;</td>
<td>2812AG</td>
<td>PEDESTRIAN LIGHT DUTY PEDESTRIAN LIGHT DUTY PEDESTRIAN LIGHT DUTY PEDESTRIAN LIGHT DUTY PEDESTRIAN LIGHT DUTY</td>
</tr>
<tr>
<td>15&quot;</td>
<td>2816AG</td>
<td>PEDESTRIAN AASHTO H-10 PEDESTRIAN AASHTO H-10 PEDESTRIAN AASHTO H-10 PEDESTRIAN AASHTO H-10 PEDESTRIAN AASHTO H-10</td>
</tr>
<tr>
<td>18&quot;</td>
<td>2818AG</td>
<td>PEDESTRIAN AASHTO H-10 PEDESTRIAN AASHTO H-10 PEDESTRIAN AASHTO H-10 PEDESTRIAN AASHTO H-10 PEDESTRIAN AASHTO H-10</td>
</tr>
<tr>
<td>24&quot;</td>
<td>2824AG</td>
<td>PEDESTRIAN AASHTO H-10 PEDESTRIAN AASHTO H-10 PEDESTRIAN AASHTO H-10 PEDESTRIAN AASHTO H-10 PEDESTRIAN AASHTO H-10</td>
</tr>
<tr>
<td>30&quot;</td>
<td>2830AG</td>
<td>PEDESTRIAN AASHTO H-20 PEDESTRIAN AASHTO H-20 PEDESTRIAN AASHTO H-20 PEDESTRIAN AASHTO H-20 PEDESTRIAN AASHTO H-20</td>
</tr>
</tbody>
</table>

BACKFILL MATERIAL BELOW AND TO SIDES OF STRUCTURE SHALL BE ASTM 5232 CLASS I OR II CRUSHED STONE OR GRAVEL AND BE PLACED UNIFORMLY IN 12" (305 mm) LIFTS AND COMPACTED TO MIN OF 90%
BUILD NEW STORM MANHOLE
OVER EXISTING STORM SEWER

STMH-1
RIM=872.62
18" INV IN=868.70 (SW)
12" INV IN=868.80 (NW)
24" INV OUT=867.00 (S)
18" INV OUT=868.70 (NE)

STMH-2 WITH PRESERVER
RIM=873.03
24" INV IN=866.70 (W)
24" INV OUT=866.70 (E)
4' SUMP=862.70

STMH-1 TO ADS MC-3500 PROFILE

ADS MC-3500 SYSTEM NOT DRAWN TO SCALE
ADS MC-3500