# INDEX

## SECTION 1 - SANITARY SEWER

<table>
<thead>
<tr>
<th>City Plate No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAN-1</td>
<td>SANITARY SEWER MANHOLE</td>
</tr>
<tr>
<td>SAN-2</td>
<td>SANITARY SEWER JUNCTION MANHOLE</td>
</tr>
<tr>
<td>SAN-3</td>
<td>SANITARY SEWER JUNCTION MANHOLE WITH REINFORCED TOP SLAB</td>
</tr>
<tr>
<td>SAN-4</td>
<td>SANITARY SEWER OUTSIDE DROP INLET MANHOLE</td>
</tr>
<tr>
<td>SAN-5</td>
<td>WATERTIGHT CASTING FOR SANITARY SEWER MANHOLE</td>
</tr>
<tr>
<td>SAN-7</td>
<td>SANITARY SEWER INSIDE DROP INLET MANHOLE</td>
</tr>
</tbody>
</table>

LAST REVISION: December 2019
# INDEX

**SECTION 2 - WATER MAIN**

<table>
<thead>
<tr>
<th>PLATE NO.</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>WAT-3</td>
<td>GATE VALVE AND BOX INSTALLATION</td>
</tr>
<tr>
<td>WAT-4</td>
<td>BUTTERFLY VALVE AND BOX INSTALLATION</td>
</tr>
<tr>
<td>WAT-5</td>
<td>WATER MAIN WET TAP</td>
</tr>
<tr>
<td>WAT-6</td>
<td>CONCRETE THRUST BLOCKING</td>
</tr>
<tr>
<td>WAT-8</td>
<td>HYDRANT DETAIL W/ MEGALUGS</td>
</tr>
<tr>
<td>WAT-9</td>
<td>HYDRANT DETAIL WITH VERTICAL BEND &amp; MEGALUGS</td>
</tr>
<tr>
<td>WAT-10</td>
<td>WATERMAIN OFFSET W/ MEGALUGS</td>
</tr>
<tr>
<td>WAT-11</td>
<td>INSULATION DETAIL</td>
</tr>
<tr>
<td>City Plate No.</td>
<td>Description</td>
</tr>
<tr>
<td>---------------</td>
<td>-------------</td>
</tr>
<tr>
<td>STO-1</td>
<td>STORM SEWER MANHOLE</td>
</tr>
<tr>
<td>STO-2</td>
<td>STORM SEWER JUNCTION MANHOLE</td>
</tr>
<tr>
<td>STO-3</td>
<td>STORM SEWER JUNCTION MANHOLE WITH REINFORCED TOP SLAB</td>
</tr>
<tr>
<td>STO-4</td>
<td>STORM SEWER JUNCTION MANHOLE WITH REINFORCED TOP SLAB AND SUMP</td>
</tr>
<tr>
<td>STO-5</td>
<td>CATCH BASIN MANHOLE</td>
</tr>
<tr>
<td>STO-6</td>
<td>CATCH BASIN MANHOLE WITH SUMP</td>
</tr>
<tr>
<td>STO-7</td>
<td>CATCH BASIN</td>
</tr>
<tr>
<td>STO-8</td>
<td>CATCH BASIN WITH SUMP</td>
</tr>
<tr>
<td>STO-9</td>
<td>PRECAST SHALLOW STORM SEWER STRUCTURE</td>
</tr>
<tr>
<td>STO-12</td>
<td>FLARED END SECTION WITH TRASH GUARD</td>
</tr>
<tr>
<td>STO-13</td>
<td>RIP RAP AT FLARED END SECTION</td>
</tr>
<tr>
<td>STO-14</td>
<td>GROUTED RIP RAP AT FLARED END SECTION</td>
</tr>
<tr>
<td>STO-18</td>
<td>ENERGY DISSIPATER AND TRASH GUARD</td>
</tr>
<tr>
<td>STO-19</td>
<td>PERFORATED PVC DRAIN TILE PIPE</td>
</tr>
<tr>
<td>STO-20</td>
<td>RESIDENTIAL STORM DRAIN SERVICE</td>
</tr>
<tr>
<td>STO-24</td>
<td>SEEPAGE COLLAR</td>
</tr>
<tr>
<td>STO-25</td>
<td>OUTLET STRUCTURE</td>
</tr>
<tr>
<td>STO-27</td>
<td>STORM SEWER SERVICE CONNECTION TO RCP</td>
</tr>
<tr>
<td>STO-31</td>
<td>OVERFLOW WEIR WITH LOW FLOW CONTROL</td>
</tr>
<tr>
<td>STO-35</td>
<td>TYPICAL NURP POND DESIGN</td>
</tr>
<tr>
<td>STO-36</td>
<td>SKIMMER STRUCTURE</td>
</tr>
<tr>
<td>STO-37</td>
<td>OVERFLOW STRUCTURE</td>
</tr>
<tr>
<td>STO-38</td>
<td>OFF STREET CATCH BASIN WITH CONCRETE STOOL GRATE FRAME</td>
</tr>
<tr>
<td>STO-39</td>
<td>OUTLET STRUCTURE WITH POND DRAW DOWN PIPE AND GATE VALVE</td>
</tr>
<tr>
<td>STO-40</td>
<td>OVERFLOW STRUCTURE WITH TRASH GUARD</td>
</tr>
<tr>
<td>STO-42</td>
<td>TYPICAL POND AND INFILTRATION BASIN LAYOUT</td>
</tr>
</tbody>
</table>
# INDEX

## SECTION 4 - BEDDING

<table>
<thead>
<tr>
<th>City Plate No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BED-1</td>
<td>PIPE FOUNDATION &amp; BEDDING METHODS FOR PVC &amp; POLYPROPYLENE PIPE</td>
</tr>
<tr>
<td>BED-2</td>
<td>PIPE FOUNDATION &amp; BEDDING METHODS FOR RCP &amp; DIP</td>
</tr>
<tr>
<td>BED-3</td>
<td>IMPROVED PIPE FOUNDATION FOR RCP, DIP, PVC &amp; POLYPROPYLENE PIPE</td>
</tr>
<tr>
<td>BED-4</td>
<td>PIPE BEDDING IN ROCK FOR PVC, RCP &amp; DIP</td>
</tr>
<tr>
<td>City Plate No.</td>
<td>Description</td>
</tr>
<tr>
<td>---------------</td>
<td>------------------------------------------------------------</td>
</tr>
<tr>
<td>SER-1</td>
<td>SEWER AND WATER SERVICE CONNECTIONS</td>
</tr>
<tr>
<td>SER-1A</td>
<td>SEWER AND WATER SERVICE CONNECTIONS</td>
</tr>
<tr>
<td>SER-1B</td>
<td>MULTI FAMILY (SLAB ON GRADE) SEWER &amp; WATER SERVICE</td>
</tr>
<tr>
<td></td>
<td>CONNECTIONS</td>
</tr>
<tr>
<td>SER-2</td>
<td>SERVICE RISER</td>
</tr>
<tr>
<td>SER-3</td>
<td>PVC SERVICE LINE CLEANOUTS</td>
</tr>
<tr>
<td>SER-4</td>
<td>SERVICE CONNECTION TO RCP</td>
</tr>
<tr>
<td>SER-5</td>
<td>DIP IRRIGATION SERVICE</td>
</tr>
<tr>
<td>SER-5A</td>
<td>DIP IRRIGATION SERVICE BY PRIVATE CONTRACTOR</td>
</tr>
<tr>
<td>SER-6</td>
<td>DIP RISER CONNECTION TO RCP</td>
</tr>
<tr>
<td>SER-7</td>
<td>PRIVATE CONNECTIONS TO EXISTING PUBLIC UTILITIES</td>
</tr>
<tr>
<td>SER-8</td>
<td>CURB BOX AND CLEANOUT PROTECTION IN DRIVEWAY</td>
</tr>
<tr>
<td>SER-9</td>
<td>4&quot; WATER AND 6&quot; SEWER SERVICE FOR MULTI-UNIT BUILDINGS</td>
</tr>
<tr>
<td>SER-9A</td>
<td>LOCATING REQUIREMENTS FOR SINGLE FAMILY HOUSES</td>
</tr>
<tr>
<td>SER-9B</td>
<td>LOCATING REQUIREMENTS FOR MULTI-UNIT BUILDINGS</td>
</tr>
<tr>
<td>SER-10</td>
<td>2&quot; POLYETHYLENE PIPE IRRIGATION SERVICE</td>
</tr>
<tr>
<td>SER-10A</td>
<td>POLYETHYLENE IRRIGATION SERVICE BY PRIVATE CONTRACTOR</td>
</tr>
<tr>
<td>Plate No.</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------</td>
</tr>
<tr>
<td>STR-1</td>
<td>CURB AND GUTTER</td>
</tr>
<tr>
<td>STR-2</td>
<td>CURB AND GUTTER TRANSITIONS</td>
</tr>
<tr>
<td>STR-3</td>
<td>SURMOUNTABLE CURB AND GUTTER CONSTRUCTION AT CATCH BASIN</td>
</tr>
<tr>
<td>STR-4</td>
<td>B618 CURB AND GUTTER CONSTRUCTION AT CATCH BASIN</td>
</tr>
<tr>
<td>STR-5</td>
<td>PEDESTRIAN CURB RAMP - GENERAL LOCATION</td>
</tr>
<tr>
<td>STR-6</td>
<td>DOUBLE PEDESTRIAN CURB RAMP - GENERAL LOCATION</td>
</tr>
<tr>
<td>STR-8</td>
<td>CONCRETE DRIVEWAY APRON - COMMERCIAL</td>
</tr>
<tr>
<td>STR-9</td>
<td>CONCRETE DRIVEWAY APRON - RESIDENTIAL</td>
</tr>
<tr>
<td>STR-10</td>
<td>CONCRETE VALLEY GUTTER</td>
</tr>
<tr>
<td>STR-11</td>
<td>PERMANENT BARRICADE</td>
</tr>
<tr>
<td>STR-12</td>
<td>PRIVATE UTILITY CONDUIT CROSSING</td>
</tr>
<tr>
<td>STR-12A</td>
<td>DIP IRRIGATION CONDUIT CROSSING</td>
</tr>
<tr>
<td>STR-12B</td>
<td>PRIVATE UTILITY CONDUIT CROSSING - RURAL SECTION</td>
</tr>
<tr>
<td>STR-13</td>
<td>MAIL BOX INSTALLATION</td>
</tr>
<tr>
<td>STR-14</td>
<td>TYPICAL RESIDENTIAL STREET SECTION</td>
</tr>
<tr>
<td>STR-15</td>
<td>TYPICAL PRIVATE STREET SECTION</td>
</tr>
<tr>
<td>STR-15A</td>
<td>TYPICAL RESIDENTIAL STREET SECTION - RURAL ESTATE</td>
</tr>
<tr>
<td>STR-16</td>
<td>BITUMINOUS JOINT SAW AND SEAL</td>
</tr>
<tr>
<td>STR-16A</td>
<td>BITUMINOUS JOINT SAW AND SEAL WITH OVER BAND</td>
</tr>
<tr>
<td>STR-17</td>
<td>TYPICAL BITUMINOUS TRAIL INTERSECTION</td>
</tr>
<tr>
<td>STR-18</td>
<td>CATCH BASIN AND MANHOLE ADJUSTMENT</td>
</tr>
<tr>
<td></td>
<td>(HIGH DENSITY POLYETHYLENE RINGS)</td>
</tr>
<tr>
<td>STR-18A</td>
<td>MANHOLE AND GATE VALVE ADJUSTMENT IN PAVEMENT</td>
</tr>
<tr>
<td>STR-19</td>
<td>STREET NAME BLADE SIGNS - PUBLIC STREETS</td>
</tr>
<tr>
<td>STR-20</td>
<td>STREET NAME BLADE SIGNS - PRIVATE STREETS</td>
</tr>
<tr>
<td>STR-21</td>
<td>RURAL ROADWAY STREET AND COMMERCIAL ENTRANCE</td>
</tr>
<tr>
<td>STR-22</td>
<td>RURAL ROADWAY STREET AND COMMERCIAL ENTRANCE</td>
</tr>
<tr>
<td>STR-23</td>
<td>STRUCTURE MARKER SIGN</td>
</tr>
<tr>
<td>STR-24</td>
<td>FUTURE ROAD EXTENSION SIGN</td>
</tr>
<tr>
<td>STR-25</td>
<td>TYPICAL INTERIM RESIDENTIAL STREET SECTION</td>
</tr>
<tr>
<td>STR-26</td>
<td>TYPICAL SECTION FOR BITUMINOUS TRAIL AND CONCRETE SIDEWALK</td>
</tr>
<tr>
<td>STR-27</td>
<td>TYPICAL TRAFFIC SIGN INSTALLATION - BOULEVARD</td>
</tr>
<tr>
<td>STR-27A</td>
<td>TYPICAL TRAFFIC SIGN INSTALLATION - STREET NAME BLADE SIGN</td>
</tr>
<tr>
<td>STR-28</td>
<td>TYPICAL TRAFFIC SIGN INSTALLATION - MEDIAN</td>
</tr>
<tr>
<td>STR-29</td>
<td>CONCRETE CURB REPLACEMENT DRIVE LOCATION (BITUMINOUS D/W APRON)</td>
</tr>
<tr>
<td>STR-30</td>
<td>CONCRETE CURB REPLACEMENT DRIVE LOCATION (CONCRETE D/W APRON)</td>
</tr>
<tr>
<td>STR-31</td>
<td>CONCRETE CURB REPLACEMENT NON DRIVEWAY LOCATION</td>
</tr>
</tbody>
</table>
# INDEX

## SECTION 6 - STREETS

<table>
<thead>
<tr>
<th>City Plate No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STR-32</td>
<td>CROSSWALK SIGNAGE DETAIL</td>
</tr>
<tr>
<td>STR-33</td>
<td>CONCRETE CURB PROTECTION</td>
</tr>
<tr>
<td>STR-34</td>
<td>STREET TYPICAL SECTION FOR RESIDENTIAL STREETS</td>
</tr>
<tr>
<td>STR-35</td>
<td>STRIPING DETAIL WITH CONCRETE MEDIAN</td>
</tr>
<tr>
<td>STR-36</td>
<td>STRIPING DETAIL WITH TWO WAY LEFT TURN LANES</td>
</tr>
<tr>
<td>STR-37</td>
<td>STRIPING DETAIL WITH STRIPED MEDIAN</td>
</tr>
<tr>
<td>STR-38</td>
<td>CONCRETE APPROACH NOSE DETAIL</td>
</tr>
<tr>
<td>STR-39</td>
<td>PARKING BAY NOSE DETAIL</td>
</tr>
<tr>
<td>STR-40</td>
<td>HIGH CAPACITY CONCRETE APRON (SURMOUNTABLE CURB)</td>
</tr>
<tr>
<td>STR-41</td>
<td>HIGH CAPACITY CONCRETE APRON (B618 CURB)</td>
</tr>
<tr>
<td>STR-42</td>
<td>CITY PROPERTY MONUMENT</td>
</tr>
<tr>
<td>STR-43</td>
<td>RURAL ROADWAY DRIVEWAY CULVERT</td>
</tr>
</tbody>
</table>
## INDEX

### SECTION 7 - EROSION CONTROL

<table>
<thead>
<tr>
<th>Plate No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERO-1A</td>
<td>SILT FENCE - MACHINE SLICED</td>
</tr>
<tr>
<td>ERO-1B</td>
<td>SILT FENCE - CURB PROTECTION</td>
</tr>
<tr>
<td>ERO-1C</td>
<td>SILT FENCE - STANDARD</td>
</tr>
<tr>
<td>ERO-1D</td>
<td>SILT FENCE - J-HOOK</td>
</tr>
<tr>
<td>ERO-2</td>
<td>EROSION CONTROL BLANKET INSTALLATION</td>
</tr>
<tr>
<td>ERO-3</td>
<td>FLOATING SILT CURTAIN</td>
</tr>
<tr>
<td>ERO-4A</td>
<td>INLET PROTECTION - SILT BOX FOR CATCH BASIN BEFORE ROAD CONSTRUCTION</td>
</tr>
<tr>
<td>ERO-4B</td>
<td>INLET PROTECTION - ROCK FILTER FOR CATCH BASIN DURING ROAD CONSTRUCTION</td>
</tr>
<tr>
<td>ERO-4C</td>
<td>INLET PROTECTION - CATCH BASIN INSERT AFTER PAVING</td>
</tr>
<tr>
<td>ERO-4D</td>
<td>INLET PROTECTION - SILT BOX FOR BEEHIVE CASTING</td>
</tr>
<tr>
<td>ERO-5A</td>
<td>DITCH CHECK / WEEPER - SIZING AND MATERIALS</td>
</tr>
<tr>
<td>ERO-5D</td>
<td>DITCH CHECK - TRIANGULAR SILT DIKE</td>
</tr>
<tr>
<td>ERO-5E</td>
<td>SEDIMENT CONTROL LOG DITCH CHECK</td>
</tr>
<tr>
<td>ERO-6B</td>
<td>PIPE CHECK - SEDIMENT CONTROL LOG WEIR OR ROCK WEIR</td>
</tr>
<tr>
<td>ERO-7</td>
<td>CONSTRUCTION ENTRANCE - ROCK OR WOOD / MULCH</td>
</tr>
<tr>
<td>ERO-8A</td>
<td>TEMPORARY SEDIMENTATION BASIN - PIPE OUTLET</td>
</tr>
<tr>
<td>ERO-8B</td>
<td>TEMPORARY SEDIMENTATION BASIN - STANDPIPE OUTLET</td>
</tr>
<tr>
<td>ERO-8C</td>
<td>TEMPORARY SEDIMENT TRAP / BASIN</td>
</tr>
<tr>
<td>ERO-8D</td>
<td>TEMPORARY SEDIMENT TRAP / BASIN - WITH RIP RAP</td>
</tr>
<tr>
<td>ERO-8E</td>
<td>TEMPORARY SEDIMENT TRAP / BASIN - ON FUTURE STREET SUBGRADE</td>
</tr>
<tr>
<td>ERO-10</td>
<td>DIVERSION MOUND AND TEMPORARY PIPE DOWN DRAIN</td>
</tr>
<tr>
<td>ERO-11</td>
<td>SLOPE TRACKING</td>
</tr>
<tr>
<td>ERO-12A</td>
<td>SUPER DUTY PERIMETER CONTROL - SILT FENCE / CONCRETE BARRIER SYSTEM</td>
</tr>
<tr>
<td>ERO-12C</td>
<td>PERIMETER / SEDIMENT CONTROL - HAY BALES</td>
</tr>
</tbody>
</table>
INDEX

SECTION 8 - GRADING

<table>
<thead>
<tr>
<th>City Plate No.</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRD-1</td>
<td>REQUIRED LOT GRADING INFORMATION</td>
</tr>
<tr>
<td>GRD-2</td>
<td>REQUIRED LOT GRADING INFORMATION</td>
</tr>
<tr>
<td>GRD-3</td>
<td>REQUIRED LOT GRADING INFORMATION</td>
</tr>
<tr>
<td>GRD-4</td>
<td>REQUIRED LOT GRADING INFORMATION</td>
</tr>
<tr>
<td>GRD-5</td>
<td>EMERGENCY OVERFLOW DETAIL</td>
</tr>
<tr>
<td>GRD-6</td>
<td>ORANGE CONSTRUCTION SAFETY FENCE</td>
</tr>
</tbody>
</table>

LAST REVISION: Dec. 2003

PLATE NO.
PRECAST INVERT MUST BE 1/2 DIAMETER OF THE PIPE AND BENCHES SLOPED 2" TOWARD THE INVERT.

MANHOLE STEPS SHALL BE PLACED SO THAT OFFSET VERTICAL PORTION OF CONE IS FACING DOWNSTREAM.

CASTING AND ADJUSTMENT RINGS.

PIECE SHALL BE CUT TO EXTEND INSIDE MANHOLE WALL AND HAVE A WATER TIGHT SEAL.

ALL DOG HOUSES SHALL BE MORTARED ON INSIDE AND OUTSIDE.

SANITARY SEWER MANHOLE

SAN-1

Woodbury

LAST REVISION: November 2019

PLATE NO.
**PLAN**

- **Precast Invert**
  - Must be 1/2 diameter of pipe and benches should be sloped 2" toward invert.

- **Manhole Steps**
  - Shall be placed so that offset vertical portion of cone is facing downstream.

- **Casting and Adjustment Rings**

**SECTION**

- **Manhole Steps**

- **Pipe**
  - Shall be cut to extend inside manhole wall and have a water tight seal.

- **All Dog Houses**
  - Shall be mortared on both inside and outside.

**SANITARY SEWER JUNCTION MANHOLE**

- **Plate No.** SAN-2

- **Last Revision:** November 2019

- **Dimensions**:
  - 36"-48"
  - 27"
  - Varies 12"-24"
PLAN

CASTING AND ADJUSTMENT RINGS.

MANHOLE STEPS SHALL BE PLACED SO THAT OFFSET VERTICAL PORTION OF CONE IS FACING DOWNSTREAM.

SECTION

PIPE SHALL BE CUT TO EXTEND INSIDE MANHOLE WALL AND HAVE A WATER TIGHT SEAL.

ALL DOG HOUSES SHALL BE MORTARED ON THE INSIDE AND OUTSIDE.

SANITARY SEWER JUNCTION MANHOLE WITH REINFORCED TOP SLAB

LAST REVISION: November 2019
PLATE NO. SAN-3
HORSESHOE DETAILS

CASTING AND ADJUSTMENT RINGS.

MANHOLE STEPS.

ALL PIPES SHALL BE CUT TO EXTEND INSIDE MANHOLE WALL AND HAVE A WATER TIGHT SEAL.

PRECAST INVERT SHOULD BE 1/2 DIAMETER OF PIPE AND BENCHES SLOPED 2" TOWARD INVERT.

ALL DOG HOUSES SHALL BE MORTARED ON THE INSIDE AND OUTSIDE.

SECTION

SANITARY SEWER OUTSIDE DROP INLET MANHOLE
ECCENTRIC SIDE
OF MANHOLE

4-1" DIA. HOLES IN
MANHOLE FRAME EVENLY
SPACED

PLAN VIEW TOP
COVER REMOVED

TIE DOWN DETAIL

WASHER 1/8" T.
2" O.D.,3/4"I.D.
2 REQ./ BOLT

5/8" GALVANIZED
BOLT

THREAD INSERT
TO ACCEPT A 3/4"
BOLT 4 REQUIRED

2"MIN

4"

MANHOLE CONE
REINFORCING

NEENAH R-1755-G FRAME
AND COVER OR EQUAL WITH
2 CONCEALED PICK HOLES

ECCENTRIC
WATERTIGHT MANHOLE

WATERTIGHT CASTING FOR
SANITARY SEWER MANHOLE

LAST REVISION:
November 2017

PLATE NO.
SAN-5
Casting and Adjustment Rings.

Manhole Steps.

Manhole Transition.

Hole for TEE shall be 4" larger than pipe size to allow bell to be positioned inside manhole wall.

All drop manholes shall be lined unless noted otherwise.

Stainless steel pipe bracket (MIN. 2 required, 5' spacing).

90° bend. Install 0.2' above through invert. Position bend to angle downstream.

All pipes shall be cut to extend inside manhole wall and have a water tight seal.

Invert and benches are to be poured in the field and include the 90° bend. Invert should be 1/2 diameter of pipe and benches sloped 2" toward invert.

All dog houses shall be mortared on the inside and outside.

Sanitary Sewer Inside Drop Inlet Manhole

Woodbury

Last Revision: November 2019

Plate No. SAN-7
NOTE:
INSTALL NUT EXTENDER TO 7' DEPTH ON ALL VALVES WITH OVERDEPTH

7.5' MINIMUM COVER REQUIRED OVER TOP OF WATER MAIN.

TOP

GRADE

ADJUST TOP TO 3/4" BELOW
GRADE. BOX TO BE SET TO
PROVIDE 12" OF ADJUSTMENT.

EXTENSION

RESILIANT WEDGE VALVE

BOTTOM

1/4" STEEL GATE VALVE
ADAPTOR W/ PROTECTIVE
COATING AS MANUFACTURED
BY ADAPTOR, INC. OR EQUAL.

BASE

8" CONC. BLOCK

COARSE FILTER
AGGREGATE PER
MnDOT SPEC. 3149.2H

GATE VALVE AND BOX
INSTALLATION

WAT-3
NOTE:
INSTALL NUT EXTENDER TO 7' DEPTH ON ALL VALVES WITH OVERDEPTH.

DROP LID

TOP

GRADE

EXTENSION

BOTTOM

1/4" STEEL GATE VALVE ADAPTOR W/ PROTECTIVE COATING AS MANUFACTURED BY ADAPTOR, INC. OR EQUAL.

COURSE FILTER AGGREGATE PER MnDOT SPEC. 3149.2H

NOTE: INSTALL NUT EXTENDER TO 7' DEPTH ON ALL VALVES WITH OVERDEPTH

ADJUST TOP TO 3/4" BELOW GRADE. BOX TO BE SET TO PROVIDE 12" OF ADJUSTMENT.

BUTTERFLY VALVE

END VIEW

8" CONC. BLOCK

BUTTERFLY VALVE AND BOX INSTALLATION

LAST REVISION: December 2019

PLATE NO. WAT-4
STAINLESS STEEL TAPPING SLEEVE

7.5' MINIMUM COVER REQUIRED OVER TOP OF WATER MAIN.

RESILIENT WEDGE VALVE

COURSE FILTER AGGREGATE PER MnDOT SPEC. 3149.2H

COMPACTED GRANULAR BACKFILL

UNDISTURBED EARTH

CONCRETE THRUST BLOCK

8" CONC. BLOCK

COURSE FILTER AGGREGATE PER MnDOT SPEC. 3149.2H

WATER MAIN WET TAP

LAST REVISION: February 2012

PLATE NO. WAT-5
NOTES:
1. SHAPE OF BACK OF BUTTRESS MAY VERY AS LONG AS Poured AGAINST FIRM UNDISTURBED EARTH.
2. DIMENSION C1,C2,C3 SHOULD BE LARGE ENOUGH TO MAKE ANGLE 0 EQUAL TO OR LARGER THAN 45°.
3. DIMENSION A1,A2,A3 SHOULD BE AS LARGE AS POSSIBLE WITHOUT INTERFERING WITH MJ BOLTS.
4. 0 = 45° MINIMUM.
5. PLACE POLYETHYLENE BETWEEN CONCRETE & PIPE.

 Theta - SEE NOTE 4

<table>
<thead>
<tr>
<th>PIPE SIZE</th>
<th>22 1/2° BEND</th>
<th>45° BEND</th>
<th>90° BEND</th>
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<tbody>
<tr>
<td></td>
<td>B1</td>
<td>D1</td>
<td>B2</td>
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<tr>
<td>12&quot;</td>
<td>1'-10&quot;</td>
<td>1'-10&quot;</td>
<td>3'-4&quot;</td>
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<td>16&quot;</td>
<td>3'-0&quot;</td>
<td>2'-0&quot;</td>
<td>3'-10&quot;</td>
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<td>20&quot;</td>
<td>3'-6&quot;</td>
<td>2'-8&quot;</td>
<td>3'-6&quot;</td>
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<td>24&quot;</td>
<td>4'-4&quot;</td>
<td>3'-0&quot;</td>
<td>6'-10&quot;</td>
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<td>30&quot;</td>
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<td>9'-3&quot;</td>
</tr>
</tbody>
</table>

SECTION A-A

PLAN 90° BENDS

PLAN 45° BENDS

PLAN 22 1/2° BENDS

CONCRETE SHALL BE IN CONTACT WITH THIS QUADRANT OF PIPE

BEDDING MATERIAL UNDISTURBED EARTH CONCRETE

CONCRETE THRUST BLOCKING

LBASE REVISION: January 2018

PLATE NO. WAT-6
COARSE FILTER AGGREGATE PER MNDOT SPEC. 3149.2H
COVER WITH POLYETHYLENE.

HYDRANT FLAG

BACKFILL TO BE TAMPERED

0.1' TO 0.3' REQUIRED (GROUND TO FLANGE)

TIE ALL JOINTS WITH MEGALUGS (4 REQ.)

HYDRANT DETAIL W/ MEGALUGS

LAST REVISION: February 2012

PLATE NO. WAT-8
COARSE FILTER AGGREGATE
PER MNDOT SPEC. 3149.2H
COVER WITH POLYETHYLENE.

0.1' TO 0.3' REQUIRED
(GROUND TO FLANGE)

BACKFILL TO BE TAMPED

HYDRANT FLAG

5'

7.5' MIN.

VARIABLE

3'

4"X4" VERTICAL BLOCK

4"X4" THRUST BLOCK

8" CONCRETE BLOCK

6" 1/8 BEND

TIE ALL JOINTS WITH MEGALUGS (6 REQ.)

HYDRANT DETAIL WITH VERTICAL BEND & MEGALUGS

LAST REVISION: February 2012

PLATE NO. WAT-9
WATERMAIN
SEE PLAN
TIE ALL JOINTS WITH MEGALUGS (8 REQ.)
45° BEND
MECH. COMPACTED BACKFILL
OBSTRUCTION
GRADE
45° BEND
SEE PLAN
WATERMAIN (SEE PLAN)
45° BEND
1'-6"
45° BEND
45° BEND
WATER MAIN OFFSET W/ MEGALUGS
LAST REVISION: April 2018
PLATE NO. WAT-10
DESIGN OR EXISTING GRADE

NOTE: PIPE SHALL BE CENTERED UNDER INSULATION UNLESS OTHERWISE SPECIFIED.

<table>
<thead>
<tr>
<th>COVER OVER PIPE - a</th>
<th>WIDTH OF INSULATING BOARD - b</th>
</tr>
</thead>
<tbody>
<tr>
<td>2'</td>
<td>11'</td>
</tr>
<tr>
<td>3'</td>
<td>9'</td>
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<td>4'</td>
<td>7'</td>
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<td>5'</td>
<td>5'</td>
</tr>
<tr>
<td>6'</td>
<td>3'</td>
</tr>
</tbody>
</table>
MANHOLE STEPS SHALL BE PLACED SO THAT OFFSET VERTICAL PORTION OF CONE IS FACING DOWNSTREAM.

PIPE SHALL BE CUT TO EXTEND INSIDE MANHOLE WALL

GROUT BOTTOM OF MANHOLE TO 1/2 DIAMETER AT PIPE AND SLOPE GROUT 2" TOWARD INVERT.

FLOW PLAN

CASTING AND ADJUSTMENT RINGS.

PLAN

MANHOLE STEPS.

DOGHOUSES MUST BE MORTARED BOTH INSIDE AND OUTSIDE.

SECTION

PLACE 2 BEADS OF RAMNEK OR EQUAL, BETWEEN BOTTOM SLAB AND BARREL SECTION

STORM SEWER MANHOLE
MANHOLE STEPS SHALL BE PLACED SO THAT OFFSET VERTICAL PORTION OF CONE IS FACING DOWNSTREAM.

PIPE SHALL BE CUT TO EXTEND INSIDE MANHOLE WALL

CASTING AND ADJUSTMENT RINGS.

DOGHOUSES MUST BE MORTARED BOTH INSIDE AND OUTSIDE.

PLACE 2 BEADS OF RAMNEK OR EQUAL, BETWEEN BOTTOM SLAB AND BARREL SECTION.

GROUT BOTTOM OF MANHOLE TO 1/2 DIAMETER AT PIPE AND SLOPE GROUT 2" TOWARD INVERT.

PLAN

SECTION

STORM SEWER JUNCTION MANHOLE
Casting and Adjustment Rings.

Top of barrel section below top slab to have flat top edge sealed with 2 beads of Ramnek or equal.

Manhole steps shall be placed so that offset vertical portion of cone is facing downstream.

Pipe shall be cut to extend inside manhole wall.

Manhole steps shall be placed so that offset vertical portion of cone is facing downstream.

Grout bottom of manhole to 1/2 diameter at pipe and slope grout 2" toward invert.

Doghouses must be mortared both inside and outside.

Place 2 beads of Ramnek or equal, between bottom slab and barrel section.

Storm sewer junction manhole with reinforced top slab.
CASTING AND ADJUSTMENT RINGS.

TOP OF BARREL SECTION BELOW TOP SLAB TO HAVE FLAT TOP EDGE SEALED WITH 2 BEADS OF RAMNEK OR EQUAL.

MANHOLE STEPS.

PIPE SHALL BE CUT TO EXTEND INSIDE MANHOLE WALL.

DOGHOUSES MUST BE MORTARED BOTH INSIDE AND OUTSIDE.

PLACE 2 BEADS OF RAMNEK OR EQUAL BETWEEN BOTTOM SLAB AND BARREL SECTION.

SECTION

STORM SEWER JUNCTION MANHOLE WITH REINFORCED TOP SLAB AND SUMP

LAST REVISION: November 2019

PLATE NO. STO-4
24"x36" SLAB OPENING FOR CASTING.

DIMENSION FROM BACK OF CURB TO CENTER OF STRUCTURE.
4' DIA. MH - 9" IN FROM BACK OF CURB
5' DIA. MH - 3" IN FROM BACK OF CURB
6' DIA. MH - 3" BEHIND BACK OF CURB
7' DIA. MH - 9" BEHIND BACK OF CURB
8' DIA. MH - 15" BEHIND BACK OF CURB

PIPE SHALL BE CUT TO EXTEND INSIDE MANHOLE WALL.

CASTING AND ADJUSTMENT RINGS.

TOP OF BARREL SECTION UNDER TOP SLAB TO HAVE FLAT TOP EDGE SEALED WITH 2 BEADS OF RAMNEK OR EQUAL.

DOGHOUSES SHALL BE MORTARED ON BOTH THE OUTSIDE AND INSIDE.

MANHOLE STEPS.

MORTARED INVERT.

PLACE 2 BEADS OF RAMNEK OR EQUAL, BETWEEN BOTTOM SLAB AND BARREL SECTION.

CATCH BASIN MANHOLE

LAST REVISION: November 2019
PLATE NO. STO-5
PLAN

24"X36" SLAB OPENING FOR CASTING.

DIMENSION FROM BACK OF CURB TO CENTER OF STRUCTURE.
4' DIA. MH - 9" IN FROM BACK OF CURB
5' DIA. MH - 3" IN FROM BACK OF CURB
6' DIA. MH - 3" BEHIND BACK OF CURB
7' DIA. MH - 9" BEHIND BACK OF CURB
8' DIA. MH - 15" BEHIND BACK OF CURB

CASTING AND ADJUSTMENT RINGS.

TOP OF BARREL SECTION UNDER TOP SLAB TO HAVE FLAT TOP EDGE SEALED WITH 2 BEADS OF RAMNEK OR EQUAL.

SECTION

PLACE 2 BEADS OF RAMNEK OR EQUAL, BETWEEN BOTTOM SLAB AND BARREL SECTION.

MORTARED INVERT

MANHOLE STEPS.

DOGHOUSES SHALL BE MORTARED ON BOTH THE OUTSIDE AND INSIDE.

PIPE DIA.

VARIES 12"-24"

VARIES 5'-0" MIN.

VARIES 4'-0"

MORTARED INVERT

CATCH BASIN MANHOLE WITH SUMP

LAST REVISION:
November 2019

PLATE NO.
STO-6
DIRECTION OF FLOW

PLAN

CASTING AND ADJUSTMENT RINGS.

DOGHOUSES SHALL BE MORTARED ON BOTH THE INSIDE AND OUTSIDE.

PLACE 2 BEADS OF RAMNEK OR EQUAL, BETWEEN BOTTOM SLAB AND BARREL SECTION.

SECTION

24" X 36" PRECAST

MORTARED INVERT

VARIES

6"

PRECAST

MORTARED INVERT

PLACE 2 BEADS OF RAMNEK OR EQUAL, BETWEEN BOTTOM SLAB AND BARREL SECTION.

CATCH BASIN

LAST REVISION: November 2019

PLATE NO. STO-7
NOTE:
VANE GRATE SHOWN

DIRECTION OF FLOW

PLAN

CASTING AND
ADJUSTMENT RINGS.

DOGHOUSES SHALL BE
MORTARED ON BOTH THE
INSIDE AND OUTSIDE.

3" MINIMUM

PLACE 2 BEADS OF
RAMNEK OR EQUAL,
BETWEEN BOTTOM SLAB
AND BARREL SECTION.

4"  
3"  

24" X 36"
PRECAST

VARES

MORTARED INVERT

SECTION

CATCH BASIN WITH SUMP

LAST REVISION:
November 2019

PLATE NO.
STO-8
OPENING SIZE AND LOCATION TO MATCH CASTING AND ADJUSTMENT RING TYPE.

PIPE SHALL BE CUT TO EXTEND INSIDE MANHOLE WALL. DOGHOUSES MUST BE MORTARER BOTH INSIDE AND OUTSIDE.

REINFORCED CONCRETE PIPE

TOP OF BARREL SECTION BELOW TOP SLAB TO HAVE FLAT TOP EDGE SEALED WITH 2 BEADS OF RAMNEK OR EQUAL.

FILL ENTIRE SUMP WITH MORTAR, AND COMPLETE INVERT

PLACE 2 BEADS OF RAMNEK OR EQUAL, BETWEEN BOTTOM SLAB AND BARREL SECTION.

REFER TO SCHEDULE FOR DIAMETER OF STRUCTURE

12" MIN.
INSTALL TRASH GUARDS:
- ON ALL FLARED END SECTIONS WHERE WATER ENTERS THE PIPE
- ON FLARED END SECTIONS GREATER THAN 24" WHERE WATER EXITS THE PIPE

PROVIDE 3 ANCHOR CLIPS TO FASTEN TRASH GUARD TO FLARED END SECTION. HOT DIP GALVANIZE AFTER FABRICATION.

TIE LAST 3 PIPE JOINTS. USE 2 TIE BOLT FASTENERS PER JOINT. INSTALL ON OUTSIDE AND AT 60° FROM TOP OR BOTTOM OF PIPE.

ISOMETRIC

ISOMETRIC

PIPE SIZE ROUND BARS 'H' BOLTS
12" - 18" 3/4"∅ 3"-4" 5/8"
21" - 42" 1"∅ 4"-6" 3/4"
48" - 72" 1 1/4"∅ 6"-8" 1"

SEE CITY PLATE NO. STO-13 AND STO-14 FOR RIPRAPP PLACEMENT.
RIPRAP REQUIREMENTS

<table>
<thead>
<tr>
<th>CY</th>
<th>CLASS</th>
<th>DEPTH</th>
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<tbody>
<tr>
<td>12&quot; TO 24&quot;</td>
<td>CL.3</td>
<td>3'</td>
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<tr>
<td>27&quot; TO 33&quot;</td>
<td>CL.3</td>
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<tr>
<td>36&quot; TO 48&quot;</td>
<td>CL.3</td>
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<tr>
<td>54&quot; AND UP</td>
<td>CL.4</td>
<td>4'</td>
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(ONE CUBIC YARD IS APPROX. 2,800 LBS.)

RIPRAP AREA SIZES

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<tr>
<th>D</th>
<th>Q</th>
<th>R</th>
<th>S</th>
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<tbody>
<tr>
<td>12&quot;</td>
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4" CONCRETE COVERING RIP RAP (BROOM FINISH)

EXTEND FABRIC AND RIP RAP UNDER FLARED END SECTION

MAINTAIN ACCESS TO TRASH

GUARD BRACKET

SECTION A-A

SECTION B-B

RIPRAP AT FLARED END SECTION

LAST REVISION: November 2017

PLATE NO. STO-13
**RIPRAP REQUIREMENTS**

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<td>20 TO 25</td>
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<td>36&quot;</td>
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<td>25 TO 38</td>
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<tr>
<td>48&quot;</td>
<td></td>
<td>54&quot; AND UP</td>
</tr>
<tr>
<td>54&quot;</td>
<td></td>
<td>72 AND UP</td>
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ONE CUBIC YARD IS APPROX. 2,800 LBS.

**RIPRAP AREA SIZES**

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<td>54&quot;</td>
<td>25'</td>
<td>22'</td>
<td>13'</td>
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**PLAN**

- **4" CONCRETE COVERING RIP RAP (BROOM FINISH)**
- **EXTEND FABRIC AND RIP RAP UNDER FLARED END SECTION**
- **GROUTED RIPRAP AT FLARED END SECTION**

---

**SECTION A-A**

- **GEOTEXTILE FABRIC TYPE IV**
- **GROUT PLACED AT MIDPOINT OF RIPRAP DEPTH.**

**SECTION B-B**

- **GEOTEXTILE FABRIC TYPE IV**
- **GROUT PLACED AT MIDPOINT OF RIPRAP DEPTH.**

---

**GROUTED RIPRAP AT FLARED END SECTION**

---

**LAST REVISION:**

November 2017

**PLATE NO.:**

STO-14
STEEL PLATE - BOLT TO CONCRETE WITH STAINLESS STEEL BOLTS. HOT DIP GALVANIZE AFTER FABRICATION.

NOTE:
TIE LAST 3 JOINTS. USE 2 TIE BOLT FASTENERS PER JOINT. INSTALL ON OUTSIDE OF PIPE AND AT 60° FROM TOP OR BOTTOM OF PIPE.
COARSE FILTER AGGREGATE
MNDOT 3149.2.H (MODIFIED)
WRAPPED IN FILTER FABRIC

PVC PERFORATED PIPE

AGGREGATE BACKFILL

STREET SUBGRADE

TRENCH DETAIL

1/4" Ø HOLE TYPICAL

90°

160°

PIPE DETAIL

PERFORATED PVC DRAIN TILE PIPE

LAST REVISION: January 2018

PLATE NO. STO-19
4" PVC CAP
FLUSH TO GRADE

4" PVC BEND

6"X4" PVC WYE

FILTER AGGREGATE
PER STO-19

VARIES
3' MIN

VARIES
3' MIN

RESIDENTIAL STORM DRAIN SERVICE

PLATE NO.
STO-20

LAST REVISION:
December 2016
NOTE:
COLLAR MUST BE ADEQUATELY FRAMED USING WOOD OR OTHER ACCEPTABLE MATERIAL

NOTE:
COLLAR MUST BE ADEQUATELY FRAMED USING WOOD OR OTHER ACCEPTABLE MATERIAL

NOTE:
COLLAR MUST BE ADEQUATELY FRAMED USING WOOD OR OTHER ACCEPTABLE MATERIAL

POURED IN PLACE
CONC. SEEPAGE COLLAR

UNDISTURBED SOIL

SECTION A-A

UNDISTURBED SOIL

12"

POURED IN PLACE
CONC. SEEPAGE COLLAR

SEEPAGE COLLAR

LAST REVISION:
March 2008

PLATE NO.
STO-24
OUTLET STRUCTURE NOTES:
1. OUTLET STRUCTURE SHALL BE REINFORCED PRECAST CONCRETE.
2. GRATING SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.
3. ALL ANCHOR BOLTS SHALL BE 1/2" S.S.
NOTE: SERVICE CONNECTIONS TO BE AT 2:00 OR 10:00

KOR-N-TEE SERVICE CONNECTION OR APPROVED EQUAL WITH STUB 4" OR 6" PVC SCH 40 AND GLUED PLUG

LENGTH OF PIPE AS SPECIFIED AND 4" OR 6" PLUG

REINFORCED CONCRETE STORM SEWER PIPE

STORM SEWER SERVICE CONNECTION TO RCP

PLATE NO. STO-27

LAST REVISION: April 2004
13' TYPICAL

VARIES

TOP POND BERM

RIP RAP

48''

48''

48''

CAST IN PLACE OR PRECAST CONCRETE
45° OR 90° V-NOTCH WEIR, 12'' THICK.
BEDDING (3149.2H) UNDER WEIR AS REQUIRED BY ENGINEER IN FIELD.

VARIES

VARIES

48''

VARIES 6'' TYP.

VARIES 6'' TYP.

90° V-NOTCH

45° V-NOTCH

OVERFLOW WEIR
WITH LOW FLOW CONTROL

LAST REVISION:
March 2002

PLATE NO.
STO-31
PROPOSED STORM SEWER

PINE STREET

PROPERTY LINE

PROPOSED BUILDING PAD

LOT 1

LOT 2

POND EASEMENT / OUTLOT ACCESS (EOF)

CROSS SECTION

15' WIDE MAINTENANCE ACCESS TO POND AT MAXIMUM SLOPE OF 10:1

ORANGE CONSTRUCTION SAFETY FENCE SEE DETAIL PLATE GRD-6

NORMAL WATER LEVEL

A-A

TYPICAL POND CROSS SECTION

B-B

TYPICAL EMERGENCY OVERFLOW (EOF) CROSS SECTION

TYPICAL LOWEST GROUND ELEVATION ADJACENT TO STRUCTURE MUST BE AT LEAST 3' ABOVE HWL AND 1' ABOVE THE POND E.O.F.

POND EASEMENT TO BE 1' ABOVE HWL

945.5

MIN. RAD. 3 FEET

PLACE RIP RAP AT OUTLET AS PER PLATE 1-28A

10' AQUATIC BENCH

MIN. RAD. 3 FEET

NORMAL WATER LEVEL

10' DRAINAGE AND UTILITY EASEMENT, TYPICAL

15' WIDE MAINTENANCE ACCESS TO POND AT MAXIMUM SLOPE OF 10:1

15' WIDE MAINTENANCE BENCH AROUND POND

AQUATIC MAINT. BENCH

20' EASEMENT OR 20' OUTLOT

CURVED SWALE BOTTOM

SOD RESTORATION A MINIMUM 20' IN WIDTH

NORMAL WATER LEVEL

10' DRAINAGE AND UTILITY EASEMENT, TYPICAL

15' WIDE MAINTENANCE ACCESS TO POND AT MAXIMUM SLOPE OF 10:1

NORMAL WATER LEVEL

POND BOTTOM ELEVATION

ELEVATION HWL

SURFACE AREA NWL IN ACRES

WET VOLUME IN AC.-FT.

STORAGE VOLUME IN AC.-FT.

POND DRAWING AT 1"=20'

EXISTING AND DESIGN POND CONTOURS AT 1' INTERVAL

3:1 MAX

3:1 MAX

WITH NO MAINTENANCE BENCH

NORMAL WATER LEVEL

TYPICAL NURP POND DESIGN

LAST REVISION:
August 2018

PLATE NO.
STO-35
SONI-TUBE
GALVANIZED STEEL PLATE AT 1' BELOW NWL

STAINLESS STEEL STUDS
WELD H-CHANNELS

8' SPAN TREATED 2x6 WIER BOARDS

CONCRETE SONI-TUBE EXTEND 6-8' BELOW POND BOTTOM

H-CHANNELS

LENGTH VARIES DEPENDING ON BANK GRADES AND DESIGN CAPACITY OF OUTLET STRUCTURE. 3'-6' SPANS FOR STO-23 STRUCTURE AND UP TO 36" PIPE. ADDITIONAL SPANS MAY BE NECESSARY FOR LARGER STRUCTURES.

OUTLET STRUCTURE STO-25 TYPICAL

10' MAINTENANCE BENCH

10' NWL

GALVANIZED 90° ANGLE TO ATTACH CATWALK TO H-CHANNELS

10' MAINTENANCE BENCH

OUTLET PIPE

EXTEND TO 5 YEAR HWL, 4' MAX

EXTEND BOARDS 1' BELOW NWL, 1.5' MIN. BELOW SKIMMER

POND BOTTOM

WOODBURY
SKIMMER STRUCTURE

LAST REVISION: April 2007

PLATE NO. STO-36
SECONDARY OVERFLOW STRUCTURE ST0-39 OR ST0-40
RIM ELEVATION VARIES.
TYPICALLY +/- 1 FOOT FROM 100 YEAR HWL

PRIMARY OUTLET STRUCTURE ST0-25
INVERT @ NWL

TYPICAL SECTION AT POND OUTLET / DRAIN

OVERFLOW STRUCTURE

PLATE NO. STO-37

LAST REVISION: February 2012
GROUT BOTTOM OF MANHOLE TO 1/2 DIAMETER AT PIPE AND SLOPE GROUT 2" TOWARD INVERT.

PIPE SHALL BE CUT TO EXTEND INSIDE MANHOLE WALL.

TOP VIEW

GRATE FRAME

PLAN-INVERT

RIM ELEVATION.

CONCRETE STOOL GRATE FRAME AND ADJUSTMENT RINGS (IF REQUIRED).

FINISH GRADE

TOP OF BARREL SECTION BELOW TOP SLAB TO HAVE FLAT TOP EDGE SEALED WITH 2 BEADS OF RAMNEK OR EQUAL.

MANHOLE STEPS.

MORTARED INVERT

VARIES

VARIES

PLATE NO.

STO-38

OFF STREET CATCH BASIN WITH CONCRETE STOOL GRATE FRAME

LAST REVISION:

November 2019
NOTE:
PLACE VALVES 2' FROM STRUCTURE

TOP OF VALVE BOX (1' NWL)

OUTLET STRUCTURE WITH POND DRAW DOWN PIPE AND GATE VALVE

PLACE 2 BEADS OF RAMNEK OR EQUAL, BETWEEN BOTTOM SLAB AND BARREL SECTION.

MORTARED INVERT SECTION

HOT-DIPPED GALVANIZED GRATE IN 2 SECTIONS WITH HEAVY DUTY HINGES ABLE TO SUPPORT 250 LBS/SF AND BE ABLE TO REMOVE ONE SECTION FOR ACCESS TO STEPS BY REMOVING NUTS FROM TWO ANCHOR BOLTS. SUBMIT SHOP DRAWINGS TO ENGINEER FOR REVIEW PRIOR TO FABRICATION.

MANHOLE STEPS SHALL BE PLACED SO THAT LOCATION IS PERPENDICULAR TO THE BARS.

GRATE DETAIL

NOTE:
PLACE VALVES 2' FROM STRUCTURE

MORTARED INVERT SECTION

FLAT STEEL BARS @ 4" O.C.
NO PERPENDICULAR SUPPORT BARS ALLOWED FOR STRUCTURES LESS THAN 84" DIA.

HIGH SIDE

LOW SIDE

OUTER RING

PROVIDE 4 - 1/2" SS ANCHOR BOLTS

HOT-DIPPED GALVANIZED GRATE IN 2 SECTIONS WITH HEAVY DUTY HINGES ABLE TO SUPPORT 250 LBS/SF AND BE ABLE TO REMOVE ONE SECTION FOR ACCESS TO STEPS BY REMOVING NUTS FROM TWO ANCHOR BOLTS. SUBMIT SHOP DRAWINGS TO ENGINEER FOR REVIEW PRIOR TO FABRICATION.

MANHOLE STEPS SHALL BE PLACED SO THAT LOCATION IS PERPENDICULAR TO THE BARS.

GRATE DETAIL

NOTE:
PLACE VALVES 2' FROM STRUCTURE

HOT-DIPPED GALVANIZED GRATE IN 2 SECTIONS WITH HEAVY DUTY HINGES ABLE TO SUPPORT 250 LBS/SF AND BE ABLE TO REMOVE ONE SECTION FOR ACCESS TO STEPS BY REMOVING NUTS FROM TWO ANCHOR BOLTS. SUBMIT SHOP DRAWINGS TO ENGINEER FOR REVIEW PRIOR TO FABRICATION.

MANHOLE STEPS SHALL BE PLACED SO THAT LOCATION IS PERPENDICULAR TO THE BARS.

GRATE DETAIL

NOTE:
PLACE VALVES 2' FROM STRUCTURE

MORTARED INVERT SECTION

FLAT STEEL BARS @ 4" O.C.
NO PERPENDICULAR SUPPORT BARS ALLOWED FOR STRUCTURES LESS THAN 84" DIA.

HIGH SIDE

LOW SIDE

OUTER RING

PROVIDE 4 - 1/2" SS ANCHOR BOLTS

HOT-DIPPED GALVANIZED GRATE IN 2 SECTIONS WITH HEAVY DUTY HINGES ABLE TO SUPPORT 250 LBS/SF AND BE ABLE TO REMOVE ONE SECTION FOR ACCESS TO STEPS BY REMOVING NUTS FROM TWO ANCHOR BOLTS. SUBMIT SHOP DRAWINGS TO ENGINEER FOR REVIEW PRIOR TO FABRICATION.

MANHOLE STEPS SHALL BE PLACED SO THAT LOCATION IS PERPENDICULAR TO THE BARS.

GRATE DETAIL

NOTE:
PLACE VALVES 2' FROM STRUCTURE

MORTARED INVERT SECTION

FLAT STEEL BARS @ 4" O.C.
NO PERPENDICULAR SUPPORT BARS ALLOWED FOR STRUCTURES LESS THAN 84" DIA.

HIGH SIDE

LOW SIDE

OUTER RING

PROVIDE 4 - 1/2" SS ANCHOR BOLTS

HOT-DIPPED GALVANIZED GRATE IN 2 SECTIONS WITH HEAVY DUTY HINGES ABLE TO SUPPORT 250 LBS/SF AND BE ABLE TO REMOVE ONE SECTION FOR ACCESS TO STEPS BY REMOVING NUTS FROM TWO ANCHOR BOLTS. SUBMIT SHOP DRAWINGS TO ENGINEER FOR REVIEW PRIOR TO FABRICATION.

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GRATE DETAIL

NOTE:
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MORTARED INVERT SECTION

FLAT STEEL BARS @ 4" O.C.
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HIGH SIDE

LOW SIDE

OUTER RING

PROVIDE 4 - 1/2" SS ANCHOR BOLTS

HOT-DIPPED GALVANIZED GRATE IN 2 SECTIONS WITH HEAVY DUTY HINGES ABLE TO SUPPORT 250 LBS/SF AND BE ABLE TO REMOVE ONE SECTION FOR ACCESS TO STEPS BY REMOVING NUTS FROM TWO ANCHOR BOLTS. SUBMIT SHOP DRAWINGS TO ENGINEER FOR REVIEW PRIOR TO FABRICATION.

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HIGH SIDE

LOW SIDE

OUTER RING

PROVIDE 4 - 1/2" SS ANCHOR BOLTS

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GRATE DETAIL

NOTE:
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MORTARED INVERT SECTION

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HIGH SIDE

LOW SIDE

OUTER RING

PROVIDE 4 - 1/2" SS ANCHOR BOLTS

HOT-DIPPED GALVANIZED GRATE IN 2 SECTIONS WITH HEAVY DUTY HINGES ABLE TO SUPPORT 250 LBS/SF AND BE ABLE TO REMOVE ONE SECTION FOR ACCESS TO STEPS BY REMOVING NUTS FROM TWO ANCHOR BOLTS. SUBMIT SHOP DRAWINGS TO ENGINEER FOR REVIEW PRIOR TO FABRICATION.

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GRATE DETAIL

NOTE:
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MORTARED INVERT SECTION

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HIGH SIDE

LOW SIDE

OUTER RING

PROVIDE 4 - 1/2" SS ANCHOR BOLTS

HOT-DIPPED GALVANIZED GRATE IN 2 SECTIONS WITH HEAVY DUTY HINGES ABLE TO SUPPORT 250 LBS/SF AND BE ABLE TO REMOVE ONE SECTION FOR ACCESS TO STEPS BY REMOVING NUTS FROM TWO ANCHOR BOLTS. SUBMIT SHOP DRAWINGS TO ENGINEER FOR REVIEW PRIOR TO FABRICATION.

MANHOLE STEPS SHALL BE PLACED SO THAT LOCATION IS PERPENDICULAR TO THE BARS.

GRATE DETAIL

NOTE:
PLACE VALVES 2' FROM STRUCTURE

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NO PERPENDICULAR SUPPORT BARS ALLOWED FOR STRUCTURES LESS THAN 84" DIA.

HIGH SIDE

LOW SIDE

OUTER RING

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GRATE DETAIL

NOTE:
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OUTER RING

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MANHOLE STEPS SHALL BE PLACED SO THAT LOCATION IS PERPENDICULAR TO THE BARS.
MORTARED INVERT
OUTER RING

PROVIDE 4 - 1/2" SS ANCHOR BOLTS

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MANHOLE STEPS SHALL BE PLACED SO THAT LOCATION IS PERPENDICULAR TO THE BARS.

GRATE DETAIL

DIAMETER | TOP OF STRUCTURE SLOPE (D)
---|---
48" DIA. | 9", 12", OR 18"
>48" DIA. | 12" OR 24"

SEE STORM SEWER SCHEDULE FOR SPECIFIC STRUCTURE.

OVERFLOW STRUCTURE
WITH TRASH GUARD

PLACE 2 BEADS OF RAMNEK OR EQUAL, BETWEEN BOTTOM SLAB AND BARREL SECTION.

DOGHOUSES MUST BE MORTARED BOTH INSIDE AND OUTSIDE.

ALL JOINTS IN MANHOLE TO HAVE RUBBER GASKETS.

PIPE SHALL BE CUT TO EXTEND INSIDE MANHOLE WALL.

VARIABLE 12"-24"

3" MINIMUM

3" MINIMUM

4'-0" (MIN.)

5"

D

3"
TYPICAL POND AND INFILTRATION BASIN LAYOUT

SECTION A-A

100-YEAR HWL
TOP OF BERM @ 10-YEAR HWL

1000.0' BLOCK UNTIL INFILTRATION BASIN VEGETATION IS ESTABLISHED

EQUALIZER PIPE ELEVATION

3:1 SLOPE (TYP)

INфиTRATION BASIN BOTTOM ELEV. 1000.0'
(BOTTOM ELEVATION BASED ON DEPTH TO MEET 48 HR DRAWDOWN)
(INФИTRATION VOLUME = STORAGE FROM BASIN BOTTOM TO NWL)

15' WIDE TOP OF BERM @ 10 yr HWL EL. 1001.0

PROVIDE LANDSCAPING AS DESCRIBED IN DESIGN GUIDE

INфИTRATION BASIN EL. 1000.0

EQUALIZER PIPE EL. 1000

POND/PRETREATMENT (STO-35)

100-YEAR HWL

1000.0'
** = BEDDING DIA/3 WIDE. LOOSELY PLACED / UNCOMPACTED MATERIAL.

DIA = OUTSIDE DIAMETER OF PIPE

PVC AND POLYPROPYLENE PIPE FOUNDATION & BEDDING
GOOD SOILS
Installation Type 1:

- ** = Bedding Dia/3 wide.
- Loosely placed / uncompacted material.
- Dia = Outside diameter of pipe.

Installation Type 2:

- ** = Bedding Dia/3 wide.
- Loosely placed / uncompacted material.
- Dia = Outside diameter of pipe.

Installation Type 3:

- ** = Bedding Dia/3 wide.
- Loosely placed / uncompacted native trench material.
- Dia = Outside diameter of pipe.

Dia/24 but not less than 3”

Dia+24” Min.

Compacted backfill

Granular material

MNDOT Spec. 3149.2.B.1

Pipe Foundation & Bedding Methods for RCP & DIP

Last Revision: January 2018

Plate No. BED-2
**IMPROVED PIPE FOUNDATION FOR RCP, DIP, PVC & POLYPROPYLENE PIPE TRENCH**

**RCP & DIP PIPE**

**DIA = OUTSIDE DIAMETER OF PIPE**

**PVC & POLYPROPYLENE PIPE**

**DIA = OUTSIDE DIAMETER OF PIPE**
*USE GRANULAR BORROW WHEN TOP OF PIPE IS WITHIN 3 FEET OF SUBGRADE. IF GREATER THAN 3 FEET, USE SUITABLE EXISTING ONSITE BACKFILL.

PIPE BEDDING IN ROCK FOR PVC, POLYPROPYLENE, RCP & DIP PIPE

LAST REVISION: January 2020
PLATE NO. BED-4

SUBGRADE

GRANULAR MATERIAL
MNDOT SPEC. 3149.2.B.1*

VARIEST

GRANULAR MATERIAL
MNDOT SPEC. 3149.2.B.1 MOD.

PIPE

ROCK

12" MIN
NOTE: IF INSTALLING HDPE SERVICE INSTALL MAGNESIUM GROUNDING ANODE ROD, LOCATING WIRE, WIRE CONNECTORS, AND TAPE OR TIES PER SPECIFICATIONS.

WATER MAIN

GROUND ROD (SEE NOTE)

SANITARY SEWER SERVICE MIN. SLOPE = 2.00%

SANITARY SEWER

SUPPORT FOR CORPORATION & GOOSENECK, AND CURB STOP SHALL EACH CONSIST OF A MINIMUM 0.5 C.Y. OF AGGREGATE EQUAL TO MN/DOT SPEC. 3149.2H THOROUGHLY COMPACTED

WATER SERVICE PIPE

WIRE CONNECTOR

CURVED SEGMENTAL MANHOLE BLOCK

6" LONG PIECE OF COPPER WITH CRIMPED END OR HDPE WITH CAPPED END

WOOD 2"X2" MARKER TO BE CONTINUOUS

NOTE: IF INSTALLING HDPE SERVICE INSTALL MAGNESIUM GROUNDING ANODE ROD, LOCATING WIRE, WIRE CONNECTORS, AND TAPE OR TIES PER SPECIFICATIONS.
SEWER AND WATER SERVICE CONNECTIONS
(CURB BOX BY OTHERS)

NOTES:
- IF INSTALLING HDPE SERVICE INSTALL MAGNESIUM GROUNDING ANODE ROD, LOCATING WIRE, WIRE CONNECTORS, AND TAPE OR TIES PER SPECIFICATIONS.
- 6" TAIL FROM CURB BOX SHALL BE TERMINATED WITH CRIMPED END IF COPPER OR CAPPED END WITH HDPE SERVICE PIPE

- 4"X4"X8' WOOD FENCE POST 4' ABOVE GRADE ADJACENT FUTURE CURB BOX
- 6" LONG SERVICE PIPE SEGMENT (SEE NOTES)
- WATER MAIN GROUND ROD (SEE NOTE)
- SANITARY SEWER SERVICE MIN. SLOPE = 2.00%
- SANITARY SEWER
- SUPPORT FOR CORPORATION & GOOSENECK, AND CURB STOP SHALL EACH CONSIST OF A MINIMUM 0.5 C.Y. OF AGGREGATE EQUAL TO MN/DOT SPEC. 3149.2H THOROUGHLY COMPACTED
- WOOD 2"X2" MARKER TO BE CONTINUOUS

- 45° BEND CURVED SEGMENTAL MANHOLE BLOCK
- 3' RISER
- 6" DIA. PERFORATED FLEXIBLE POLYETHYLENE SLEEVE, 3' LONG (INCIDENTAL)
- WATER SERVICE PIPE TRACER WIRE AND TAPE OR TIES (SEE NOTE)
- CORPORATION STOP CURB STOP
- CURB BOX INSTALLED BY OTHERS.
- MARKER BALL
- VARIABLE (SEE PLAN)
- VARIABLE (SEE PLAN)
- VARIABLE (SEE PLAN)
- VARIABLE (SEE PLAN)
- 10' UTILITY ESMT.
- 10'
- 6" LONG SERVICE PIPE SEGMENT (SEE NOTES)
MARKER BALL

REMOVE 6" DIA. PERFORATED FLEXIBLE POLYETHYLENE SLEEVE, 3' LONG RISER, AND 45° BEND.

REMOVE 4"X4"X8' WOOD POST

TRACER WIRE ACCESS BOX TO BE INSTALLED A MAXIMUM OF 1.5' TO NORTH OR EAST OF CURB BOX (SEE NOTES)

REMOVE 6" LONG WATER SERVICE PIPE, CONNECT TO EXISTING CURB STOP

WATER SERVICE PIPE

TRACER WIRE AND TAPE OR TIES (SEE NOTES)

TERMINATE TRACER WIRE AND GROUND WIRE AT ACCESS BOX IN HOUSE (SEE NOTES)

MAGNESIUM GROUNDING ANODE ROD WITH 20' GROUNDING WIRE (SEE NOTE)

SANITARY SEWER SERVICE PIPE MIN. GRADE=2.00%

NOTE:
IF INSTALLING HDPE SERVICE INSTALL MAGNESIUM GROUNDING ANODE ROD, LOCATING WIRE, WIRE CONNECTORS, ACCESS BOX, AND TAPE OR TIES PER REQUIREMENTS.

MARKER BALL

VARIABLE (SEE PLAN)

10' UTILIT ESMT.

CURB STOP

UNCOIL TRACER WIRE, CONNECT TO EXISTING WIRE WITH CONNECTOR (SEE NOTE)

WATER MAIN

SANEITARY SEWER

REMOVE 2"X2" WOOD MARKER

45° BEND

TRACER WIRE ACCESS BOX TO BE INSTALLED A MAXIMUM OF 1.5' TO NORTH OR EAST OF CURB BOX (SEE NOTES)

REMOVE 6" LONG WATER SERVICE PIPE, CONNECT TO EXISTING CURB STOP

WATER SERVICE PIPE

TERMINATE TRACER WIRE AND GROUND WIRE AT ACCESS BOX IN HOUSE (SEE NOTES)

MAGNESIUM GROUNDING ANODE ROD WITH 20' GROUNDING WIRE (SEE NOTE)

SANITARY SEWER SERVICE PIPE MIN. GRADE=2.00%

NOTE:
IF INSTALLING HDPE SERVICE INSTALL MAGNESIUM GROUNDING ANODE ROD, LOCATING WIRE, WIRE CONNECTORS, ACCESS BOX, AND TAPE OR TIES PER REQUIREMENTS.
SERVICE RISER
4" OR 6" PVC SCH.40

MINIMUM 4" THICK CONCRETE ENCASEMENT

SEWER MAIN

PAYMENT

SERVICE RISER

PLATE NO. SER-2

LAST REVISION:
April 2004
NOTE:
6" HUB WITH THREADED PVC PLUG - DO NOT GLUE

NOTE:
ENCLOSE LONG SWEEP BEND OR COMBINATION WYE IN CONCRETE AS SHOWN.

END OF LINE CLEANOUT

IN LINE CLEANOUT

ONE PIECE 6" PVC SCH. 40 CLEANOUT RISER

PVC LONG SWEEP BEND SCH. 40

ENCASE PVC BEND IN CONCRETE MIN. 1/3 CU. YDS.

ENCASE PVC WYE IN CONCRETE MIN. 1/3 CU. YDS.

LONG TURN T-Y SCH. 40

PLEVISA SERVICE LINE CLEANOUTS

LAST REVISION:
April 2000

PLATE NO.
SER-3
NOTE:
SERVICE CONNECTIONS TO BE AT 2:00 OR 10:00

SANITARY SEWER SERVICE RISER SUPPORTED ON TRENCH SLOPE

KOR-N-TEE SERVICE CONNECTION OR APPROVED EQUAL

ELEV. ON PLAN

COMPACTED BACKFILL

POURED IN PLACE CONCRETE SUPPORT FOR SERVICE CONNECTION AND RISER (1 CUBIC YARD)

BEDDING PER SPECIFICATIONS

RCP PIPE

SERVICE CONNECTION TO RCP
2" HDPE PIPE & 2" CORPORATION STOP W/SADDLE ALLOWED IN LIEU OF 4" DIP & 4" TEE. IF INSTALLING HDPE SERVICE INSTALL MAGNESIUM GROUNDING ANODE ROD, LOCATING WIRE, WIRE CONNECTORS, TAPE OR TIES, 2" CURB STOP PER SPECIFICATIONS.
WORK BY CITY

WORK BY PRIVATE CONTRACTOR

FULL FLOW BALL VALVE (PREFERRED)
(RISING STEM GV ACCEPTABLE)

PRESSURE REDUCING VALVE REQ'D WHEN PRESSURE EXCEEDS 80 PSI

REDUCED PRESSURE ZONE BACKFLOW PREVENTER (RPZ) INCL. FULL FLOW BALL VALVES

NOTE:
CITY INSTALLED SERVICE MAY INCLUDE 2" CORPORATION STOP WITH COMPRESSION FITTING FOR 2" HDPE PIPE.
IF INSTALLING HDPE PIPE CONNECTING TO EXISTING CORPORATION STOP INSTALLED BY CITY - INSTALL MAGNESIUM GROUNDING ANODE ROD, LOCATING WIRE, WIRE CONNECTORS, TAPE OR TIES, 2" CURB STOP, AND ACCESS POINT PER REQUIREMENTS.
4" DIAMETER CORED OPENING WITH KOR-N-TEE INSERT

4" MEGA-LUG RESTRAINT SUPPORTED ON 6" DIP

6"DIP, CLASS 52, WITH RESTRAINED JOINTS RISER PIPE

4"DIP, CLASS 52
18" LONG CENTERED ON 4" DIP

UNDISTURBED TRENCH SLOPE

SPECIFIED BEDDING

18" DIAMETER SONO-TUBE FORM FILLED WITH CONCRETE

SPECIFIED BEDDING

RCP PIPE

DIP RISER CONNECTION TO RCP

LAST REVISION:
April 2000

PLATE NO.
SER-6
CONCRETE SANITARY OR STORM SEWER

NOTE:
SERVICE CONNECTIONS TO BE AT 2 O’CLOCK OR 10 O’CLOCK POSITION.

WATER AND PVC SANITARY SEWER

PRIVATE CONNECTIONS TO EXISTING PUBLIC UTILITIES

LAST REVISION: February 2020
PLATE NO. SER-7
FINISH GRADE

ONE PIECE PVC SCH. 40 CLEANOUT RISER

VARIABLES

LONG TURN T-Y SCH. 40

NOTE: ENCLOSE LONG SWEEP BEND OR COMBINATION WYE IN CONCRETE AS SHOWN.

ENCASE PVC WYE IN CONCRETE MIN. 1/3 CU. YDS.

EXISTING BITUMINOUS/CONCRETE DRIVEWAY/SIDEWALK

CURB STOP AND BOX

WATER SERVICE PIPE

FORD TYPE A1 SINGLE LOCKING LID CASTING AS SPECIFIED.

CURP BOX AND CLEANOUT PROTECTION IN DRIVEWAY

LAST REVISION: February 2020

PLATE NO. SER-8
4" WATER AND 6" SEWER SERVICE FOR MULTI-UNIT BUILDINGS
CONTRACTOR TO PROVIDE THE FOLLOWING DIMENSIONS:

1. CURB STOP TO SANITARY SEWER PLUG (PERPENDICULAR TO COPPER)

2. SANITARY SEWER PIPE TO COPPER WATER LINE (PERPENDICULAR TO COPPER ALONG SANITARY SEWER MAIN) OR CORPORATION STOP TO SANITARY SEWER SERVICE LINE (PERPENDICULAR TO COPPER WATER LINE)

*IF HDPE WATER SERVICE PIPE IS INSTALLED TRACER WIRE MUST ALSO BE INSTALLED WITH WATER SERVICE LINE FROM MAIN TO HOUSE.
CONTRACTOR TO PROVIDE THE FOLLOWING DIMENSIONS:

1. WATER LINE PLUG TO SANITARY SEWER PLUG (PERPENDICULAR TO WATER LINE)
2. SANITARY SEWER PIPE TO WATER LINE (PERPENDICULAR TO WATER LINE ALONG SANITARY SEWER MAIN) OR WATER LINE TEE TO SANITARY SEWER LINE (PERPENDICULAR TO WATER LINE)

4" DIP TO 15' (TYP) FROM CURB (BUT NOT LESS THAN 10' FROM BUILDING) & 4" PLUG PERMANENTLY TAPPED W/ SPECIFIED SIZE CORPORATION STOP. EXTEND COPPER TO SURFACE FOR TESTING PURPOSES ONLY.

1.5" OR 2" COPPER INTO BUILDING (BY OTHERS)

6" PVC, SCH. 40 SANITARY SERVICE TO BUILDING (BY OTHERS)

6" PVC TO 15' (TYP) FROM CURB, (BUT NOT LESS THAN 10' FROM BUILDING) & 6" PVC PLUG

LOCATING REQUIREMENTS FOR MULTI-UNIT BUILDINGS

LAST REVISION: January 2018
PLATE NO. SER-9B
2" POLYETHYLENE PIPE IRRIGATION SERVICE
NOTES:
1. CITY WATER SERVICE & PLUMBING PERMITS REQUIRED FOR WORK BY PRIVATE CONTRACTORS.
2. ANNUAL TESTING OF RPZ REQUIRED
3. REQUIRED EQUIPMENT MUST BE ENCLOSED AND SUPPORTED.
4. 2" DIAMETER SIZE IS STANDARD. OTHER SIZES ALLOWED ONLY BY APPROVAL OF CITY.
5. SLEEVES FOR PIPES IN CONCRETE SLABS SHALL BE 4" DIAMETER PVC OR SIMILAR.
6. ATTACH TRACER WIRE TO FITTINGS INSIDE METER BOX.
NOTE:
SURMOUNTABLE CURB & GUTTER TO BE FORMED INTO A B618 TYPE AT CATCH BASIN.

CATCHBASIN FRAME & COVER

FLOW

10' MIN. TRANSITION

3' - 0"

FLOW

EXPANSION JOINT

CONCRETE CURB & GUTTER

2 - #4 REBARS EACH WAY

10' MIN. TRANSITION

10' MIN. TRANSITION

EXPANSION JOINT

TOP OF CURB

1"

DESIGN GUTTER LINE GRADE

2 - #4 REBARS EACH WAY

FRAME & CASTING

NOTE:
CATCHBASIN TO BE DEPRESSED A MAXIMUM OF 1" BELOW DESIGN GUTTER LINE GRADE.

4" MAXIMUM CURB INLET OPENING

ISOMETRIC
NO SCALE

SECTION A-A
NO SCALE

SURMOUNTABLE CURB & GUTTER CONSTRUCTION AT CATCH BASIN

LAST REVISION: December 2020

PLATE NO. STR-3
CATCHBASIN FRAME & COVER

EXPANSION JOINT

10' MIN. TRANSITION

3' - 0"

10' MIN. TRANSITION

EXPANSION JOINT

NOTES:
CATCHBASIN TO BE DEPRESSED A MAXIMUM OF 1" BELOW DESIGN GUTTER LINE GRADE
4" MAXIMUM CURB INLET OPENING

ISOMETRIC
NO SCALE

B618 CONC. CURB & GUTTER

2 - #4 REBARS EACH WAY

SECTION A-A
NO SCALE

TOP OF CURB

1"

FRAME & CASTING

2 - #4 REBARS EACH WAY

DESIGN GUTTER LINE GRADE

B618 CURB & GUTTER
CONSTRUCTION AT CATCH BASIN

LAST REVISION: December 2020
PLATE NO. STR-4
3/4" PER FOOT

VARIABLE
10' OR R.O.W. LINE, WHICH EVER IS GREATER

6' MINIMUM

VARIABLE GRADE

7" CONCRETE PAVEMENT

6" CLASS 5 BASE INCIDENTAL TO APRON

TOOLED CONTRACTION JOINT

SECTION A-A
NO SCALE

POUR CURB INTEGRAL WITH CONCRETE SLAB

PAYMENT AREA AS SPECIFIED

TOOLED JOINT

EXPANSION JOINT (TYP)

PLAN
NO SCALE

CONCRETE DRIVEWAY APRON
COMMERCIAL

LAST REVISION: December 2019
PLATE NO. STR-8
CONCRETE CURB AND GUTTER
(SEE PLATE STR-1)

EXPANSION JOINT

PROPERTY LINE, SIDEWALK OR EXIST. DRIVEWAY

SECTION
NO SCALE

6" CONCRETE PAVEMENT

4" CLASS 5

PROPERTY LINE, SIDEWALK OR EXISTING DRIVEWAY

EXISTING DRIVEWAY

CONTROL JOINT

CONTROL JOINT

5'

3'

12'MIN.

3'

5'

NOTE:
CONTROL JOINTS IN CONCRETE CURB NOT TO EXCEED 10' SPACING THROUGH DRIVEWAY SECTION.

CONCRETE PAVEMENT TO MATCH BACK OF CONCRETE CURB AT THIS POINT

VARIES

VARIES

Cl OF DRIVEWAY

VOL OF DRIVEWAY

ISOMETRIC
NO SCALE

CONCRETE DRIVEWAY APRON - RESIDENTIAL

LAST REVISION:
March 2008

PLATE NO.
STR-9
MEASUREMENT FOR PAYMENT
METHOD OF PAYMENT BY SQUARE YARD

INTEGRAL CAST
EXPANSION JOINT

VARIES
36"

SECTION A-A THRU
B618 C & G

36" 36"

1/2" PER FT.

4" MIN. AGGREGATE BASE

NO. 4 REBAR (TYP)

SECTION B-B
THRU CONCRETE GUTTER

CONCRETE VALLEY GUTTER

LAST REVISION:
November 2019

PLATE NO.
STR-10
NOTES:
1. THE PLACEMENT OF THE BARRICADE SHALL BE 10'-0" FROM THE END OF THE BITUMINOUS ROAD WITH THE BARRICADE CENTERED ON THE ROADWAY FACING THE FLOW OF TRAFFIC. BARRICADES SHALL BE PLACED WITH MAXIMUM 6' SPACING AND SHALL SPAN ENTIRE ROADWAY WIDTH.
2. ONLY ONE "END OF ROAD MARKER" REQUIRED PER STREET.
(NOTE: ALL UTILITIES IN SAME TRENCH)
TRENCH WIDTH VARIES, MAXIMUM OF 5'

1' R/W TO EDGE OF TRENCH

TRENCH CROSS SECTION
TYPICAL MULTI-CONDUIT CROSSING

VARIABLE

RIGHT-OF-WAY LINE

STREET CENTERLINE

CURB & GUTTER (TYPICAL)

TYPICAL PRIVATE UTILITY PLACEMENT

PLANE VIEW

TYPICAL CITY CONDUIT

TYPICAL SINGLE CONDUIT CROSSING

5' STEEL FENCE POST

TYPICAL 4" PVC SCHEDULE 40

PVC END CAPS

CROSS SECTION

EXISTING FINISH GRADE

TYP. 4" OR 6" PVC SCHEDULE 40 CONDUIT

LOCATION CITY CONDUIT (FUTURE USE)

VARIABLE MINIMUM 4' DEPTH

TYPICAL 12" SEPARATION PER EACH CONDUIT

PRIVATE UTILITY CONDUIT CROSSING

LAST REVISION: Sept. 2002

PLATE NO. STR-12
NOTE: IRRIGATION CONDUIT TRENCH SEPARATE FROM ALL PRIVATE UTILITIES

PLAN VIEW

TYPICAL IRRIGATION CONDUIT CROSSING

CROSS SECTION

VARIABLE 5’ STEEL FENCE POST

TYPICAL DIP

EXISTING FINISH GRADE

VARIABLE MINIMUM 4’ DEPTH

TYP. DIP CONDUIT

DIP IRRIGATION CONDUIT CROSSING
TYPICAL PRIVATE UTILITY PLACEMENT

当初グループ Hassan @ 2019

- **TRENCH WIDTH VARIES, MAXIMUM OF 5’**
  - 1' R/W TO EDGE OF TRENCH

**RIGHT-OF-WAY LINE**

**STREET CENTERLINE**

**EDGE OF BITUMINOUS (TYPICAL)**

**TYPICAL PRIVATE UTILITY PLACEMENT**

**TYPICAL MULTIPLE CONDUIT CROSSING**

**TYPICAL CITY CONDUIT**

**TYPICAL SINGLE CONDUIT CROSSING**

**PLAN VIEW**

**CROSS SECTION**

**TRENCH CROSS SECTION AT CONDUIT CROSSING**

**PRIVATE UTILITY CONDUIT CROSSING**

**RURAL SECTION**

**LAST REVISION:**

January 2019

**PLATE NO.**

STR-12B
NOTES:
DIMENSIONS AS PER U.S. POSTAL SERVICE

ADDRESS MUST BE ON SIDE OF BOX FROM WHICH CARRIER APPROACHES IN LETTERS ABOUT ONE INCH HIGH (OR ON FRONT WHERE BOXES ARE GROUPED).
NOTES:
A. TYPICAL SECTION SHOWN IS MINIMUM RESIDENTIAL STREET REQUIREMENT. SEE SPECIFICATIONS FOR PROJECT SPECIFIC DETAILS.
B. ALL INTERSECTION RADII ARE 15' TO FACE OF CURB UNLESS NOTED OTHERWISE.
TYPICAL PRIVATE STREET SECTION

NOTE: 1. TYPICAL SECTION SHOWN IS MINIMUM RESIDENTIAL STREET REQUIREMENT. SEE SPECIFICATIONS FOR PROJECT SPECIFIC DETAILS.
1. SEE STANDARD CITY DETAIL PLATE FOR STREET TYPICAL SECTIONS.
2. 7 TON ROAD DESIGN
3. DRIVEWAY CULVERTS SHALL BE MINIMUM 18", 30' LENGTH WITH APRONS
   (HOMEOWNER RESPONSIBLE FOR CULVERT MAINTAINANCE, UNLESS PART OF CITY'S DRAINAGE SYSTEM).

NOTES/RECOMMENDATIONS

1. SEE STANDARD CITY DETAIL PLATE FOR STREET TYPICAL SECTIONS.
2. 7 TON ROAD DESIGN
3. DRIVEWAY CULVERTS SHALL BE MINIMUM 18", 30' LENGTH WITH APRONS
   (HOMEOWNER RESPONSIBLE FOR CULVERT MAINTAINANCE, UNLESS PART OF CITY'S DRAINAGE SYSTEM).

PLACE 1" TOPSOIL AND TURF ON GRAVEL SHOULDER 1/2" BELOW BITUMINOUS WEAR COURSE
2' MIN. FROM TOP OF PAVEMENT

1 1/2"-TYPE SP 9.5 WEARING COURSE MIXTURE (3,C) (SPWEA330C)
2 1/2"-TYPE SP 12.5 WEARING COURSE MIXTURE (3,C) (SPWEB330C)
8" CLASS 5 GRAVEL BASE
SUBGRADE EXCAVATION AND AGGREGATE BACKFILL
   AS DIRECTED BY THE ENGINEER
   (IF NECESSARY, 12" MIN. THICKNESS REQUIRED)
TYPICAL JOINT SECTION

BOND BREAKER TAPE
SEALANT MATERIAL

1/3 TOTAL THICKNESS OF BITUMINOUS (2 1/2" MIN.)

1/8" MAXIMUM

1/2"

5/8"

1/8"

1/8"

TYPICAL JOINT SECTION

BITUMINOUS JOINT SAW AND SEAL

LAST REVISION: March 2008
PLATE NO. STR-16
TYPICAL JOINT SECTION

1/3 TOTAL THICKNESS OF BITUMINOUS (2 1/2" MIN.)

BOND BREAKER TAPE

SEALANT MATERIAL

1/8"

1/2"

1"

5/8"

1"

1/8"

BITUMINOUS JOINT SAW AND SEAL WITH OVER BAND

LAST REVISION: June 2011

PLATE NO. STR-16A
TYPICAL BITUMINOUS TRAIL INTERSECTION

R/W VARIES

DRAINAGE AND UTILITY EASEMENT

10' RAD. (TYP)*

10' WIDE BITUMINOUS TRAIL (TYP)

10' RAD. (TYP)*

10' RAD. (TYP)*

* UNLESS DIRECTED BY ENGINEER
NEENAH R-3067-VB CATCH BASIN FRAME AND GRATE AT LOW POINTS. R-3067-V CATCH BASIN FRAME AND GRATE AT ALL OTHER LOCATIONS. SHALL BE FURNISHED WITH CURB INLET BOX AND 3" DIA. FRONT FACE AND 4" MAXIMUM OPENING.

HIGH DENSITY POLYETHYLENE (HDPE) ADJUSTMENT RINGS.

CATCH BASIN STRUCTURE WITH TOP SLAB OR 2' X 3' BOX.

WOVEN FILTER FABRIC

SANITARY SEWER NEENAH R-1642 MANHOLE FRAME AND TYPE "B" PLATEN LID WITH 2 CONCEALED PICK HOLES.

STORM SEWER NEENAH R-1642 MANHOLE FRAME, WITH OPEN HOLE (PLATEN STYLE).

HIGH DENSITY POLYETHYLENE (HDPE) ADJUSTMENT RINGS.

MANHOLE STRUCTURE WITH TOP SLAB OR CONE SECTION.

CATCH BASIN & MANHOLE ADJUSTMENT (HIGH DENSITY POLYETHYLENE RINGS)

LAST REVISION: February 2012

PLATE NO. STR-18
SECTION A-A

TOP OF CASTING OR VALVE BOX BELOW WEAR COURSE AS SPECIFIED

BITUMINOUS PAVEMENT

GRAVEL BASE

MANHOLE

GATE VALVE

SAW CUT LIMITS

EDGE OF GUTTER

BACK OF CURB

3' MIN.

2' MIN.

MORE THAN 2'

LESS THAN 2'

REMOVE & REPLACE PAVEMENT

MANHOLE AND GATE VALVE ADJUSTMENT IN PAVEMENT

LAST REVISION: December 2019

PLATE NO. STR-18A
STANDARD CONSTRUCTION NOTES FOR STREET NAME SIGNS

1. ALL STREET SIGNS SHALL BE SINGLE-FACED FLAT BLADES.
2. ADDRESS NUMBERS FOR STREET NAME BLADES WILL BE PROVIDED AT A LATER DATE.
3. ALL PUBLIC STREET NAME BLADES SHALL BE "GREEN" IN COLOR. LETTERING ON ALL STREET NAME BLADES SHALL BE "WHITE" IN COLOR.
4. ALL STREET NAME BLADE SIGNS NEED TO BE SECURED USING 5/16-18 BY 3 INCH GALVANIZED CARRAGE BOLTS WITH NYLON WASHER TO POST, AND #34 CHERRYMATE RIVETS WITH 1-3/4 INCH PVC SPACER ON ENDS.
STANDARD CONSTRUCTION NOTES FOR STREET NAME SIGNS

1. ALL STREET SIGNS SHALL BE SINGLE-FACED FLAT BLADES
2. ADDRESS NUMBERS FOR STREET NAME BLADES WILL BE PROVIDED AT A LATER DATE.
3. ALL PRIVATE STREET NAME BLADES SHALL BE "BLUE" IN COLOR. LETTERING ON ALL STREET NAME BLADES SHALL BE "WHITE" IN COLOR.
4. ALL STREET NAME BLADE SIGNS NEED TO BE SECURED USING 5/16-18 BY 3 INCH GALVANIZED CARRIAGE BOLTS WITH NYLON WASHER TO POST, AND #34 CHERRYMATE RIVETS WITH 1-3/4 INCH PVC SPACER ON ENDS.
FACE OF CURB TO BE 8' FROM EDGE OF TRAVELED ROAD OR AT THE EDGE OF THE TURN LANE.

SHOULDER

FLOW

CONSTRUCT 10' TRANSITION FROM FLAT SECTION TO B618 CURB. PLACE X4-5 MARKER.

CONSTRUCT 10' TRANSITION FROM B618 CURB TO SPILLWAY. CONSTRUCT BITUMINOUS SPILLWAY TO FLARED END SECTION. PLACE X4-5 MARKER.
FACE OF CURB TO BE 8' FROM EDGE OF TRAVELED ROAD OR AT THE EDGE OF THE TURN LANE.

SHOULDER

FLOW

CONSTRUCT 10' TRANSITION FROM FLAT SECTION TO B618 CURB. PLACE X4-5 MARKER (BOTH SIDES).

FLOW

50' RAD. (TYP.)
NOTES:

1. LETTERS ON SIGN VARY DEPENDING ON UTILITY SIGN IS INSTALLED ADJACENT TO (SEE SPECIFICATIONS).
NOTES:
1. SIGN SIZE SHALL BE 24"x30".
2. LETTERS TO BE BLACK ON A WHITE BACKGROUND.
3. THE LEAF PORTION OF THE LOGO FOR THE CITY OF WOODBURY SHALL BE GREEN.
4. THE SIGN IS TO BE MOUNTED ON THE PERMANENT BARRICADE, TOP INSIDE POST.
INTEGRAL MACHINE LAID BITUMINOUS CURB (PER DETAIL PLATE STR-1)

2"-TYPE SP 12.5 NON-WEARING COURSE MIXTURE (2,B)(SPNWB230B)
CLASS 5 GRAVEL BASE (6" AVE. DEPTH)
SUBGRADE EXCAVATION AND AGGREGATE BACKFILL AS DIRECTED BY ENGINEER

FUTURE 1-1/2" BITUMINOUS WEARING COURSE
FUTURE 2-1/2" BITUMINOUS WEARING COURSE
FUTURE SURMOUNTABLE CONCRETE CURB & GUTTER (PER DETAIL PLATE STR-1)
INTERIM BITUMINOUS NON-WEARING COURSE

NOTE:
ULTIMATE STREET SECTION REFER TO DETAIL PLATE STR-14

TYPICAL INTERIM RESIDENTIAL STREET SECTION

LAST REVISION: February 2015
PLATE NO. STR-25
3" WEARING COURSE MIXTURE
6" AGGREGATE BASE, CLASS 5
EXCAVATION AND ADDITIONAL AGGREGATE BACKFILL (AS DIRECTED BY THE ENGINEER)

BITUMINOUS TRAIL

6" CONCRETE
4" AGGREGATE BASE, CLASS 5
EXCAVATION AND ADDITIONAL AGGREGATE BACKFILL (AS DIRECTED BY THE ENGINEER)

CONCRETE SIDEWALK

TYPICAL SECTION FOR BITUMINOUS TRAIL AND CONCRETE SIDEWALK
SIGN PANELS AS SPECIFIED OR AS SHOWN ON THE PLANS OR SIGN LEGEND.

2 INCH TELESPAR SIGN POST

STREET SIGNS
1. BREAK OFF TO BE SET AT FINISH GRADE.

2. ANCHOR SLEEVE TO BE SET WITH TWO BOLT HOLES EXPOSED AND ACCESSIBLE ABOVE FINISH GRADE.

2-1/2 INCH, 4 FOOT LONG OMNI SLEEVE

3/8X3 INCH LONG STAINLESS STEEL BOLT WITH ZINC COATED STEEL NYLON INSERT LOCK NUT AND 3/8 INCH STAINLESS STEEL WASHER INSERTED IN 7TH HOLE FROM THE TOP OF ANCHOR (APPROXIMATELY 6-1/2 INCH)

TELESPAR ANCHOR ASSEMBLY
2-1/4 INCH SQUARE, 4 FEET LONG, 12 GA
SIGN PANELS AS SPECIFIED OR AS SHOWN ON THE PLANS OR SIGN LEGEND.

#34 CHERRYMATE RIVETS WITH 1-3/4 INCH PVC SPACERS (TYP)

5/16-18 BY 3 INCH GALVANIZED CARRIAGE BOLTS WITH (2) NYLON WASHERS - SIGN TO POST (TYP)

TELESPAR SIGN POST
2 INCH 12 GA

STREET SIGNS
1. BREAK OFF TO BE SET AT FINISH GRADE.
2. ANCHOR SLEEVE TO BE SET WITH TWO BOLT HOLES EXPOSED AND ACCESSIBLE ABOVE FINISH GRADE.

5/16" - 90° CORNER BOLT (SIGN POST TO ANCHOR POST)

3/8X3 INCH LONG STAINLESS STEEL BOLT WITH ZINC COATED STEEL NYLON INSERT LOCK NUT AND 3/8 INCH STAINLESS STEEL WASHER INSERTED IN THE 7TH HOLE FROM TOP OF ANCHOR (APPROXIMATELY 6-1/2 INCH)

2-1/2 INCH, 4 FOOT LONG OMNI SLEEVE

TELESPAR ANCHOR ASSEMBLY
2-1/4 INCH SQUARE, 4 FEET LONG, 12 GA

TYPICAL TRAFFIC SIGN INSTALLATION
STREET NAME BLADE SIGN

LAST REVISION: February 2014
PLATE NO. STR-27A
SIGN PANELS AS SPECIFIED OR AS SHOWN ON THE PLANS OR SIGN LEGEND.

STREET SIGNS

2" x 2" x 12 ga. TELESPAR GALVANIZED SIGN POST

1 ¾" x 3' x 12 ga. INTERIOR SLEEVE

SURFACE MOUNT ANCHOR BASE

TYPICAL TRAFFIC SIGN INSTALLATION MEDIAN

CONCRETE
REMOVE EXISTING CURB DAMAGE (MINIMUM ONE PANEL)

EXISTING DRIVEWAY

REMOVE EXISTING BITUMINOUS DRIVEWAY SURFACE

CONTRACTION JOINT (TYP.)

EXISTING CONCRETE CURB & GUTTER

EXISTING NON-WEAR BITUMINOUS SURFACE

EXISTING ROADWAY

REMOVE AND REPLACE EXISTING NON-WEARING COURSE

SECTION

2" TYPE SP 9.5 WEARING COURSE MIXTURE (2,C) SPWEA240C

4" CLASS 5 GRAVEL BASE

CONCRETE CURB REPLACEMENT

DRIVE LOCATION

(Bituminous D/W Apron)

LAST REVISION:
February 2014

PLATE NO.
STR-29
CONCRETE CURB REPLACEMENT
DRIVE LOCATION
(CONCRETE D/W APRON)
EXISTING YARD

CONTRACTION JOINT (TYP.)

GUTTER LINE

EXISTING ROADWAY

EXISTING CONTRACTION JOINT (TYP.)

EXISTING INITIAL LIFT WEAR BITUMINOUS SURFACE

SECTION

CONCRETE CURB REPLACEMENT
NON DRIVEWAY LOCATION

REMOVE & REPLACE EXISTING SOD WITH 4" TOPSOIL

EXISTING CONCRETE CURB & GUTTER

2.00% MIN.

4" TOPSOIL AND SOD

REMOVE AND REPLACE EXISTING INITIAL LIFT WEARING COURSE

SAWCUT
PEDESTRIAN CROSSING - SIGN LOCATION

W11-2 (30 x30)
W16-7P (18 x 24)

SCHOOL CROSSING - SIGN LOCATION

S1-1 (30 x30)
W16-7P (18 x 24)

CITY OF WOODBURY STREET

12" SOLID CROSSWALK MARKINGS

6' (8' PATHWAY)
8' (10' PATHWAY)

ALL STRIPING TO END AT CROSSWALK MARKINGS

NOTES:
1) STREET SIGN, POST, AND ANCHOR SYSTEM INFORMATION CAN BE FOUND IN THE CURRENT CITY OF WOODBURY STANDARD PROJECT MANUAL FOR UTILITY AND STREET CONSTRUCTION.

2) SIGNS W11-2, S1-1, W16-7P SHALL BE FLUORESCENT YELLOW-GREEN REFLECTIVE SHEETING.

EXISTING CONCRETE CURB AND GUTTER

CITY APPROVED CONCRETE CURB BARRIER DEVICE - SILT FENCE, CURB PROTECTION (SEE DETAIL BELOW)

LOT 1

3'

1 3/4" CLEAR ROCK (3149.G.2) COURSE
AGGREGATE BEDDING (6" TO 8" DEPTH)
(INSTALLED BY BUILDER/DEVELOPER AT THE TIME OF HOME CONSTRUCTION)

LOT 2

20' MAXIMUM DRIVEWAY OPENING *

LOT 3

* LOCATION OF TEMPORARY DRIVEWAY OPENING FOR GRAVEL APRON IS THE RESPONSIBILITY OF THE BUILDER/DEVELOPER.

** 15' OR 5' BEYOND SIDEWALK.

STEEL FENCE POST

CITY APPROVED CONCRETE CURB BARRIER DEVICE - SILT FENCE, CURB PROTECTION
(SEE DETAIL PLATE ERO-1B, MODIFIED AS SHOWN HERE)

EXISTING CONCRETE CURB AND GUTTER

8' MIN., 10' MAX.

BITUMINOUS WEDGE,
TO BE INSTALLED 3/4" ABOVE TOP OF CURB

EXISTING INITIAL LIFT WEARING COURSE

SEED AND MULCH

CONCRETE CURB PROTECTION

LAST REVISION:
January 2019

PLATE NO.
STR-33
CONCRETE CURB AND GUTTER

2.40%

1 1/2" TYPE SP 9.5 WEARING COURSE MIXTURE (3,C) (SPWEA330C)
2 1/2" TYPE SP 12.5 WEARING COURSE MIXTURE (3,C) (SPWEB330C)
8" CLASS 5, GRAVEL BASE
SUBGRADE EXCAVATION AND AGGREGATE BACKFILL
AS DIRECTED BY THE ENGINEER
(IF NECESSARY, 12" MIN. THICKNESS REQUIRED)

STREET TYPICAL SECTION-RESIDENTAL
4" SOLID WHITE STRIPING

4" SOLID YELLOW STRIPING

4" BROKEN WHITE STRIPING

4" SOLID WHITE STRIPING

BEGIN AND END 4" SOLID YELLOW STRIPING AT CONCRETE MEDIAN NOSE

SHOULDER WIDTH MAY VARY BY PROJECT TO CONFORM TO CITY, STATE, AND FEDERAL REGULATIONS

ALL STRIPING TO BEGIN AND END AT RADIUS POINT, AT ANY STOP BAR, OR CROSSWALK MARKING.

TURN LANE ARROW (TYP.)

BEGIN AND END 4" SOLID YELLOW STRIPING AT CONCRETE MEDIAN NOSE

SHOULDER WIDTH MAY VARY BY PROJECT TO CONFORM TO CITY, STATE, AND FEDERAL REGULATIONS

4" SOLID WHITE STRIPING

4" SOLID YELLOW STRIPING

4" BROKEN WHITE STRIPING

4" SOLID WHITE STRIPING

TURN LANE ARROW (TYP.)

BEGIN AND END 4" SOLID YELLOW STRIPING AT CONCRETE MEDIAN NOSE

SHOULDER WIDTH MAY VARY BY PROJECT TO CONFORM TO CITY, STATE, AND FEDERAL REGULATIONS

ALL STRIPING TO BEGIN AND END AT RADIUS POINT, AT ANY STOP BAR, OR CROSSWALK MARKING.

TURN LANE ARROW (TYP.)

BEGIN AND END 4" SOLID YELLOW STRIPING AT CONCRETE MEDIAN NOSE

SHOULDER WIDTH MAY VARY BY PROJECT TO CONFORM TO CITY, STATE, AND FEDERAL REGULATIONS

ALL STRIPING TO BEGIN AND END AT RADIUS POINT, AT ANY STOP BAR, OR CROSSWALK MARKING.
4" SOLID DOUBLE YELLOW STRIPING

4" SOLID YELLOW STRIPING

4" BROKEN YELLOW STRIPING

4" SOLID WHITE STRIPING

TURN LANE ARROW (TYP).

TWO WAY LEFT TURN LANE PAVEMENT MARKINGS TO BE PLACED AT 50' FROM ENDS OF TWO WAY LEFT TURN LANE AND AT A MINIMUM OF 400' SPACING THROUGH TWO WAY LEFT TURN LANE

ALL STRIPING TO BEGIN AND END AT RADIUS POINT, AT ANY STOP BAR, OR CROSSWALK MARKING.

400'

50'

50'

20'

WILLIAMSBURG

PlATE NO.

Last Revision: January 2010

WOODBURY

STRIPING DETAIL WITH TWO WAY LEFT TURN Lanes

PLATE NO.

STR-36
TURN LANE ARROW (TYP).

ALL STRIPING TO BEGIN AND END AT RADIUS POINT, AT ANY STOP BAR, OR CROSSWALK MARKING.

4" SOLID WHITE STRIPING

20'

50'

4" SOLID DOUBLE YELLOW STRIPING

PAINTED MEDIAN WITHOUT STRIPED HATCHING

STRIPING DETAIL WITH STRIPED MEDIAN

PLATE NO. STR-37

LAST REVISION: January 2010
PLAN

SECTION A-A

CONCRETE CURB & GUTTER

RAISED MEDIAN

VARIABLE

CONCRETE CURB & GUTTER

DESIGN STREET
GRADE

TOP OF MEDIAN
GRADE

6"

6"

5'-0" (6" CURB)

3'-4" (4" CURB)

10:1

6"

6"

CONCRETE APPROACH
NOSE DETAIL

LAST REVISION:
May 2011

PLATE NO.
STR-38
PLAN

SECTION A-A

5'-0" MIN.  1'-0"  2'-0"  5'-0" MIN.

FULL CURB HEIGHT

ANGLE POINT OF CURB

CONCRETE CURB & GUTTER

6" CONCRETE MEDIAN

3' RAD. TO BACK (TYP)

VARIES (SEE PLAN)

5'-0"

2'-0"

1'-0"

ANGLE POINT OF CURB

CONCRETE CURB GUTTER LINE

6" CONCRETE MEDIAN

5'-0"

PLAN

SECTION A-A

PARKING BAY NOSE DETAIL

LAST REVISION: February 2012

PLATE NO. STR-39
PLAN

SECTION A-A

CHOKER DETAIL

LAST REVISION: December 2018
PLATE NO. STR-39A

4' WIDE, 8" THICK CONCRETE MEDIAN

ANGLE POINT OF CURB

3' RAD. TO BACK (TYP)

CONCRETE CURB & GUTTER

VARIIES (SEE PLAN)

MIN.

MIN.

MIN.

FULL CURB HEIGHT

ANGLE POINT OF CURB

CONCRETE CURB GUTTER LINE

5'-0"

1'-0"

2'-0"

5'-0"

CONCRETE CURB & GUTTER
CASTING AND ADJUSTMENT RINGS AS SPECIFIED

SURMOUNTABLE CURB & GUTTER

TAPER TO B6 CURB

CONCRETE CURB & GUTTER & CONCRETE APRON

TAPER TO B6 CURB

NOTE:
APRON PAYMENT IS FOR SHADED AREA ONLY.

HIGH CAPACITY CONCRETE APRON
(SURMOUNTABLE CURB)

LAST REVISION:
November 2019

PLATE NO.
STR-40
CASTING AND ADJUSTMENT RINGS AS SPECIFIED

B618 CURB & GUTTER

CONCRETE CURB & GUTTER & CONCRETE APRON

THIS POINT 6" BELOW NORMAL GUTTER GRADE

NOTE:
APRON PAYMENT IS FOR SHADED AREA ONLY.
SPECIFICATIONS:

1. MONUMENT
   • CONSISTS OF A POST SET 2' BEHIND PROPERTY LINE
   • POST TO HAVE THREE 1/4" WIDE LINES ROUTED INTO TOP 0.5' OF POST, 0.12' SPACING

2. LETTERING
   • "CITY PROPERTY" ENGRAVED INTO POST, 1/4" DEPTH
   • LETTERS TO BE AERIAL FONT, 0.15' TALL, 0.10' SPACING BETWEEN LETTERS, 0.30' SPACING BETWEEN WORDS
   • START 0.5' FROM TOP OF POST

2. POST MATERIALS
   • 4"x4" SQUARE COMPOSITE POST WITH ROUNDED EDGES AND CORNERS
   • 8' LONG
   • DARK BROWN

3. POST INSTALLATION
   • MOUNTED TO A HEIGHT OF 4.5 FEET ABOVE GRADE
   • SET 3.5 FEET IN THE GROUND
   • PLACED WITH LETTERING FACING PRIVATE PROPERTY
   • INSTALLED AS DIRECTED BY CITY ENGINEER
SHOULDER

FLOW

RIGHT OF WAY

15' RAD (TYP)

12' MIN

DRAINAGE AND
UTILITY EASMENT

GRADE COMPLETED AS PART OF
MASS SITE GRADING (BY OTHERS)

2' BUMP OUT PAVE WITH STREET

VARIES

VARIES

2' BUMP OUT PAVE WITH STREET

15" OR LARGER RCP (SEE STORM SEWER SHEETS FOR SIZE AND ELEVATIONS)

4:1

VARES

1.5' MINIMUM

DRIVEWAY SECTION
(BY OTHERS)

RURAL ROADWAY

DRIVEWAY CULVERT

PLATE NO.
STR-43

LAST REVISION:
January 2019
**NOTE:**
The MACHINE SLICED METHOD (THIS DETAIL) IS THE STANDARD SILT FENCE INSTALLATION METHOD. CURB PROTECTION (ERO-1B) OR STANDARD (ERO-1C) SILT FENCE INSTALLATION METHODS SHOULD ONLY BE USED WHEN APPROVED OR DIRECTED BY THE CITY.

**COMPACCIÓN:**
AFTER "SLICING" IN THE FABRIC AND BEFORE INSTALLATION OF STEEL POSTS, DRIVE INSTALLATION EQUIPMENT OVER THE "SLICE" WHILE FABRIC IS LAYING ON THE GROUND. THEN INSTALL STEEL POSTS AND PULL UP FABRIC TO ATTACH AT A UNIFORM HEIGHT.
STEEL FENCE POST (T-POST), MINIMUM 5’ LONG, 6’ MAXIMUM SPACING, ALTERNATE POSTS FROM FRONT TO BACK OF FENCE.

POST NOTCHES TO FACE AWAY FROM FABRIC.

LAYER FABRIC IN THE TRENCH, BACKFILL WITH NATURAL SOIL, AND COMPACT WITH LIGHT EQUIPMENT PRIOR TO PLACEMENT OF THE POSTS.

GEOTEXTILE FABRIC PER MNDOT 3886-1 MS.

ATTACH FABRIC TO POST WITH MINIMUM 4 ZIP TIES (50 LB. TENSILE) PER POST IN TOP 8” OF FABRIC.

DIRECTION OF SURFACE FLOW

SILT FENCE CURB PROTECTION

LAST REVISION: January 2019

PLATE NO. ERO-1B
STEEL FENCE POST (T-POST),
MINIMUM 5' LONG,
6' MAXIMUM SPACING.

LAY FABRIC IN THE TRENCH,
BACKFILL WITH NATURAL
SOIL, AND COMPACT WITH
LIGHT EQUIPMENT PRIOR TO
PLACEMENT OF THE POSTS.

MONOFILAMENT GEOTEXTILE
FABRIC PER MNDOT TABLE
3886-1.

ATTACH FABRIC TO POST WITH
MINIMUM 3 ZIP TIES (50 LB.
TENSILE) PER POST IN TOP 8"
OF FABRIC.

POST NOTCHES
TO FACE AWAY
FROM FABRIC.

DIRECTION OF
SURFACE FLOW

24" MINIMUM
POST EMBEDMENT

SILT FENCE
STANDARD

plate no.
ero-1c

last revision:
mar. 2004
I. SPACING REQUIREMENTS

**NOTE:** SPACING DISTANCES WILL VARY, BUT ARE NOT TO EXCEED 100 FEET.

II. SIZING REQUIREMENTS: J15, J25

**UP-GRADE SILT FENCE AND J-HOOK ARE ONE CONTINUOUS LINE**

**START DOWN-GRADE SILT FENCE LINE AS CLOSE AS POSSIBLE TO THE UP-GRADE J-HOOK**

J15 - FOR CATCHMENT AREA <0.25 ACRES

J25 - FOR CATCHMENT AREA ≥0.25 ACRES

**NOTE:** J-HOOKS SHALL BE USED WHEN THE SILT FENCE IS INSTALLED AT AN ANGLE OF 30 DEGREES OR GREATER FROM PARALLEL TO THE CONTOURS.
OVERLAP LONGITUDINAL JOINTS MINIMUM OF 6"

OVERLAP END JOINTS MINIMUM OF 6" AND STAPLE OVERLAP AT 1.5' INTERVALS.

STAPLE DENSITY SHALL BE A MINIMUM OF 3 U-SHAPED 8", 11 GAUGE METAL STAPLES PER SQUARE YARD (THIS MAY VARY AS DIRECTED BY THE CITY).

ANCHOR TRENCH
1. DIG 6" X 6" TRENCH
2. LAY BLANKET IN TRENCH
3. STAPLE AT 1.5' INTERVALS
4. BACKFILL WITH NATURAL SOIL AND COMPACT
5. BLANKET LENGTH SHALL NOT EXCEED 100' WITHOUT AN ANCHOR TRENCH

EROSION CONTROL BLANKET INSTALLATION
NOTES:
- DOUBLE SILT CURTAINS SHOULD BE SPACED 10' APART.
- CURTAIN LENGTH TO MATCH BOTTOM PROFILE AS CLOSELY AS POSSIBLE.

CURTAIN WEIGHT - 1.1 LBS PER FOOT OF CURTAIN HEIGHT

VARIABLE HEIGHT IN 2' INCREMENTS PER 50' LENGTH OF SILT CURTAIN
(SEE SPECIFICATIONS)

ANCHOR - 1-24LB ANCHOR PER 100' OF CURTAIN

MAXIMUM INTERVAL FOR SPACING OF WEIGHT IS 15'

FLOATATION CARRIER

STEEL CABLE

WATER SURFACE

ANCHOR CABLE OR CHAIN

CURTAIN FABRIC

BOTTOM

WOODBURY

FLOATING SILT CURTAIN

PLATE NO.
ERO-3

LAST REVISION:
Jan. 2005
NOTES:
CONTRACTOR SHALL CONSTRUCT SILT BOX TO FIT AROUND THE INLET STRUCTURE WITH 6" MINIMUM CLEARANCE TO EDGES OF STRUCTURE. SILT BOX TO BE PLACED ON AN EVEN SURFACE 6" BELOW STRUCTURE OPENING. TOP OF SILT BOX TO EXTEND 18" MINIMUM ABOVE EXISTING GRADE.

WOODEN LATH SHALL BE NAILED SECURELY TO THE POST MEMBER TO SECURE FILTER FABRIC.

2" X 4" X 2.5' LONG WOOD POSTS, 8 REQ'D.

2" X 4" HORIZONTAL MEMBERS CONTINUOUS AROUND TOP AND BOTTOM. FASTENED TO EACH POST USING 2-20D COMMON NAILS

MONOFILAMENT GEOTEXTILE FABRIC AS PER MNDOT TABLE 3886-1 (MACHINE SLICED). ADDITIONAL 8-10" OF FABRIC FLAP AT BOTTOM OF BOX

8-10" FABRIC FLAP EXTENDING BEYOND BOTTOM 2"x4" - BURY UNDER ROCK TO PREVENT UNDERWASHING

1 1/2" WASHED ROCK 1' DEEP X 1' WIDE

INLET PROTECTION
SILT BOX FOR CATCH BASIN
BEFORE ROAD CONSTRUCTION
PROPOSED CURB = DIRECTION OF SURFACE FLOW

8-12" MINIMUM DEPTH

1 1/2" WASHED GRAVEL FILTER

AGGREGATE BASE

STEEL PLATE

AGGREGATE BACKFILL

IN PLACE CATCHBASIN

INLET PROTECTION
ROCK FILTER FOR CATCH BASIN DURING ROAD CONSTRUCTION

LAST REVISION: Mar. 2004
PLATE NO. ERO-4B
OVERFLOW IS ½ OF THE CURB BOX HEIGHT

PLAN

WIMCO ROAD DRAIN CG-23* HIGH FLOW INLET PROTECTION CURB AND GUTTER MODEL OR CITY APPROVED EQUAL.

DEFLECTOR PLATE

OVERFLOW IS ½ OF THE CURB BOX HEIGHT

OVERFLOW AT TOP OF FILTER ASSEMBLY

CURB

FILTER ASSEMBLY DIAMETER, 6" ON-GRADE 10" AT LOW POINT

HIGH-FLOW FABRIC

* FOR THE NEW R-3290-VB STANDARD CASTING, INSTALL WIMCO ROAD DRAIN CG-3290 OR CITY APPROVED EQUAL.

INLET PROTECTION CATCH BASIN INSERT AFTER PAVING

LAST REVISION: Jan. 2005

PLATE NO. ERO-4C
NOTES:
CONTRACTOR SHALL CONSTRUCT SILT BOX TO FIT AROUND THE INLET STRUCTURE WITH 6" MINIMUM CLEARANCE TO EDGES OF STRUCTURE. SILT BOX TO BE PLACED ON AN EVEN SURFACE 6" BELOW STRUCTURE OPENING. TOP OF SILT BOX TO EXTEND 18" MINIMUM ABOVE EXISTING GRADE.

WOODEN LATH SHALL BE NAILED SECURELY TO THE POST MEMBER TO SECURE FILTER FABRIC.

2" X 4" X 2.5' LONG WOOD POSTS, 8 REQ'D.

2" X 4" HORIZONTAL MEMBERS CONTINUOUS AROUND TOP AND BOTTOM. FASTENED TO EACH POST USING 2-20D COMMON NAILS

MONOFILAMENT GEOTEXTILE FABRIC AS PER MNDOT TABLE 3886-1 (MACHINE SLICED). ADDITIONAL 8-10" OF FABRIC FLAP AT BOTTOM OF BOX

8-10" FABRIC FLAP EXTENDING BEYOND BOTTOM 2"x4" - BURY UNDER ROCK TO PREVENT UNDERWASHING

1 1/2" WASHED ROCK 1' DEEP X 1' WIDE

INLET PROTECTION SILT BOX FOR BEEHIVE CASTING

LAST REVISION: Jan. 2005
PLATE NO. ERO-4D
**ANCHOR TRENCH**

1. DIG 6" X 6" TRENCH
2. LAY BLANKET IN TRENCH
3. STAPLE AT 1.5' INTERVALS
4. BACKFILL WITH NATURAL SOIL AND COMPACT

**DIRECTION OF SURFACE FLOW**

**TYPE IV GEOTEXTILE FABRIC ANCHORED IN 6" X 6" TRENCH WITH 6", 11 GAUGE METAL STAPLES AT 1' INTERVALS**

**MATERIALS (SEE TABLE)**

**6" X 6" TRENCH WITH LEADING EDGE OF TYPE IV GEOTEXTILE FABRIC STAPLED AT 1' INTERVALS AND BACKFILLED WITH NATURAL SOIL**

**NOTE:**

POINT 1 MUST BE A MINIMUM OF 6" HIGHER THAN POINT 2 TO ENSURE THAT WATER FLOWS OVER THE DITCH CHECK AND NOT AROUND THE ENDS.

**HEIGHT (INCHES) | WIDTH (INCHES) | MATERIAL**

| SMALL CHECK | 24 | 12 - 18 | MnDOT 3601 CLASS II RIP RAP |
| LARGE CHECK | 36 | 24 - 30 | MnDOT 3601 CLASS III RIP RAP |
| ROCK WEEPER | 18 | 6 - 12 | MnDOT 3882 TYPE 9 MULCH (1 1/2" WASHED ROCK) |

**MIN. 6" OVERLAP IF NECESSARY, STAPLE 1' O.C.**

**FLOW**

**DITCH CHECK ROCK/BIO WEEPER OR CHECK DAM**

**4" X 6" TRENCH**
ANCHOR TRENCH
1. DIG 6" X 6" TRENCH
2. LAY BLANKET IN TRENCH
3. STAPLE AT 1.5' INTERVALS
4. BACKFILL WITH NATURAL SOIL AND COMPACT

NOTE:
STAPLE DENSITY SHALL CONFORM TO MANUFACTURERS SPECIFICATIONS.

NOTE:
POINT 1 MUST BE A MINIMUM OF 6" HIGHER THAN POINT 2 TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.

10" TRIANGULAR SILT DIKE PER MNDOT 3889, TYPE 6

6" 11 GAUGE METAL STAPLES SPACED 1' O.C. AND WHERE UNITS OVERLAP

6" X 6" TRENCH WITH LEADING EDGE OF GEOTEXTILE FABRIC STAPLED AT 1' INTERVALS BACKFILLED OVER EROSION CONTROL BLANKET

DITCH CHECK
TRIANGULAR SILT DIKE

LAST REVISION:
March 2008

PLATE NO.
ERO-5D
COMPOST, STRAW OR WOOD FIBER 12" DIA. ROLL ENCLOSED IN POLYPROPYLENE NETTING OR A GEOTEXTILE BAG.

NOTE:
POINT 1 MUST BE A MINIMUM OF 6" HIGHER THAN POINT 2 TO ENSURE THAT WATER FLOWS OVER THE DITCH CHECK AND NOT AROUND THE ENDS.

2" x 2" x 16" LONG WOODEN STAKES AT 1'-0" SPACING MINIMUM. STAKES SHALL BE DRIVEN THROUGH THE BACK HALF OF THE SEDIMENT CONTROL LOG AT AN ANGLE OF 45° WITH THE TOP OF THE STAKE POINTING UPSTREAM.
SEDIMENT CONTROL LOG OR ROCK WEIR

6" OR 12" SEDIMENT CONTROL LOG INSIDE TRASH GUARD

INVERT OF FES

6"-12" OF 1½" WASHED ROCK OVER MONOFILAMENT GEOTEXTILE FABRIC INSIDE TRASH GUARD

TRASH GUARD

FASTEN FABRIC TO TRASH GUARD

FABRIC
NOTES:
1. FILTER FABRIC SHALL BE PLACED UNDER ROCK OR MULCH TO STOP MUD MIGRATION THROUGH MATERIAL.
2. ENTRANCE MUST BE MAINTAINED REGULARLY TO PREVENT SEDIMENTATION ON PUBLIC ROADWAYS. FUGITIVE ROCK OR MULCH WILL BE REMOVED FROM ADJACENT ROADWAYS DAILY OR MORE FREQUENTLY AS NECESSARY.
I. PLAN VIEW

II. SECTION A-A

III. BASIN EMERGENCY OVERFLOW

NOTES:
BASIN USED FOR 10 ACRES DRAINAGE AREA OR MORE.
DESIGN RUNOFF VOLUME IS FROM A 2-YR, 24-HR STORM
PER ACRE DRAINED TO THE BASIN. BASIN VOLUME MUST
BE A MIN. OF 1800 CUBIC FEET/ACRE.
SEE PLANS/SPECIFICATIONS FOR BASIN DIMENSIONS AND
PIPE SIZE AND SLOPE.
I. PLAN VIEW

NOTES:
BASIN USED FOR 10 ACRES DRAINAGE AREA OR MORE. DESIGN RUNOFF VOLUME IS FROM A 2-YR, 24-HR STORM PER ACRE DRAINED TO THE BASIN. BASIN VOLUME MUST BE A MIN. OF 1800 CUBIC FEET/ACRE. SEE PLANS/SPECIFICATIONS FOR BASIN DIMENSIONS AND PIPE SIZE AND SLOPE.

II. SECTION A-A

III. BASIN STANDPIPE AND EMERGENCY OVERFLOW

NOTE:
PIPE MATERIAL SHOULD BE RIGID
I. PLAN VIEW

GEOTEXTILE FABRIC
PIPE, MIN. 8" DIA.

DRAINAGE WAY

A

W + 2'

W

W(FT.) = 10 X DRAINAGE AREA (AC.)

GEOTEXTILE FABRIC

II. SECTION A-A

NOTE:
D=2' MIN, 4' MAX
W=10' MIN, 25' MAX
W(FT.) = 10 X DRAINAGE AREA (AC.)

1% MIN. REVERSE GRADIENT

TEMPORARY SEDIMENT TRAP/BASIN

LAST REVISION:
December 2016

PLATE NO.
ERO-8C
I. PLAN VIEW

CLASS II RIP RAP

PIPE, MAX. 6" DIA.

DRAINAGE WAY

W (FT.) = 10 \times \text{DRAINAGE AREA (AC.)}

W + 2'

DRAINAGE WAY

L = 2W

6' MIN.

II. SECTION A-A

DIRECTION OF SURFACE FLOW

NOTE:

D = 3' MIN, 5' MAX
W = 10' MIN, 25' MAX
W(FT.) = 10 \times \text{DRAINAGE AREA (AC.)}

6' MIN.

GEOTEXTILE FABRIC

D/3

D/2

1% MIN. REVERSE GRADIENT

TEMPORARY SEDIMENT TRAP / BASIN

WITH RIP RAP

PLATE NO.

ER0-8D
TEMPORARY SEDIMENT TRAP/BASIN (30'x30'x2' BELOW OUTLET PIPE)

FLOW

8" PVC PIPE, 2' ABOVE BOTTOM

10' FROM END OF STREET CONSTRUCTION

EXISTING CURB AND PAVEMENT

TYPE III BARRICADES

EXISTING STORM SEWER STRUCTURE OR PIPE BULKHEAD

STREET PAVEMENT

PROFILE VIEW

FLOW

FUTURE STREET SUBGRADE

1'

2'
NOTE:
PIPE SHALL BE ANCHORED SECURELY WITH HOLD-DOWN GROMMETS SPACED 8' ON CENTER

10" MIN. DIAM. PIPE PER ENGINEER'S APPROVAL

22 1/2° BEND

NOTE:
PIPE SHALL BE ANCHORED SECURELY WITH HOLD-DOWN GROMMETS SPACED 8' ON CENTER

1.5' MIN.

SLOPE 3% OR STEEPER

WATERTIGHT CONNECTING BAND

NOTE:
PIPE SHALL BE ANCHORED SECURELY WITH HOLD-DOWN GROMMETS SPACED 8' ON CENTER

RIPRAP APRON

4' MIN. @ LESS THAN 1% SLOPE

D= PIPE DIAMETER

6D

3D

RIPRAP APRON PLAN

PLAN VIEW

FLOW

ENSURE FLOW INTO PIPE

D = PIPE DIAMETER

DIVERSION MOUND

PIPE

RIP RAP APRON
TRACKED EQUIPMENT TREADS CREATE GROOVES PERPENDICULAR TO SLOPE DIRECTION.

NOTE:
ALL SLOPES WITH A GRADE EQUAL TO OR STEEPER THAN 3:1 REQUIRE SLOPE TRACKING. SLOPES WITH A GRADE MORE GRADUAL THAN 3:1 REQUIRE SLOPE TRACKING IF THE STABILIZATION METHOD IS EROSION CONTROL BLANKET OR HYDROMULCH.
PROFILE VIEW-UPLAND PERIMETER CONTROL

SECURE WITH TWO METAL STAKES PER BALE

HAY BALES SUBCUT 3"

DIRECTION OF SURFACE FLOW

PROFILE VIEW-PERIMETER CONTROL
IN SHALLOW STANDING WATER

ADD SECOND TIER IF NWL EXCEEDS 2/3 HEIGHT OF FIRST TIER. SECOND TIER TO HAVE 1-1" WOODEN STAKE PER BALE.

PROPOSED FILL AREA

NWL NOT TO EXCEED 2/3 HEIGHT OF BALE

MAX. 12" FROM TOE OF PROPOSED FILL AREA

HAY BALES MUST BE OFFSET TO PREVENT GAPS BETWEEN BALES.

PLAN VIEW

PERIMETER / SEDIMENT CONTROL
HAY BALES

LAST REVISION:
Jan. 2005

PLATE NO.
ERO-12C
1.) VERIFY THAT ALL PORTIONS OF THE PROPERTY NOT ENCORPORATED WITHIN A DRAINAGE AND UTILITY EASEMENT MUST BE ONE FOOT (1') ABOVE THE 100 YR. HWL OF ADJACENT PONDS, LAKES, STREAMS, ETC.

2.) SEPARATION OF GARAGE SLAB ELEVATION MUST RANGE FROM 1 FOOT (12") TO 4 FEET (48") ABOVE THE TOP OF CURB.

3.) SEPARATION OF TOP OF BLOCK ELEVATION MUST RANGE FROM 1.5 FEET (18") TO 4.5 FEET (54") ABOVE THE TOP OF CURB.

4.) ALL SPOT ELEVATIONS REPRESENT FINAL GRADES.

5.) ALL SIDE AND REAR LOT SWALES MUST HAVE A MINIMUM SLOPE OF 2%.
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4.) ALL SPOT ELEVATIONS REPRESENT FINAL GRADATES.

5.) ALL SIDE AND REAR LOT SWALES MUST HAVE A MINIMUM SLOPE OF 2%.
1.) Verify that all portions of the property not incorporated within a drainage and utility easement must be one foot (1') above the 100 yr. HWL of adjacent ponds, lakes, streams, etc.

2.) Separation of garage slab elevation must range from 1 foot (12") to 4 feet (48") above the top of curb.

3.) Separation of top of block elevation must range from 1.5 feet (18") to 4.5 feet (54") above the top of curb.

4.) All spot elevations represent final grades.

5.) All side and rear lot swales must have a minimum slope of 2%.
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4.) All spot elevations represent final grades.

5.) All side and rear lot swales must have a minimum slope of 2%.
12' TO 15' POST SPACING

4 FT. ORANGE CONSTRUCTION SAFETY FENCE

6 FT. STEEL "T" OR "U" POST DRIVEN IN GROUND 2 FT.

WIRE OR PLASTIC TIES (4 PER POST)

15 : 1 MAINTENENCE BENCH

FENCING ON "UP" SIDE OF POST, AND TIGHT TO THE GROUND

4' FENCE HEIGHT

24" MINIMUM POST EMBEDMENT

ORANGE CONSTRUCTION SAFETY FENCE
FENCE LOCATED A MINIMUM OF 5 FEET BEYOND DRIP LINE OF PROTECTED TREES

SEE DETAIL GRND-6 FOR FENCE DETAILS