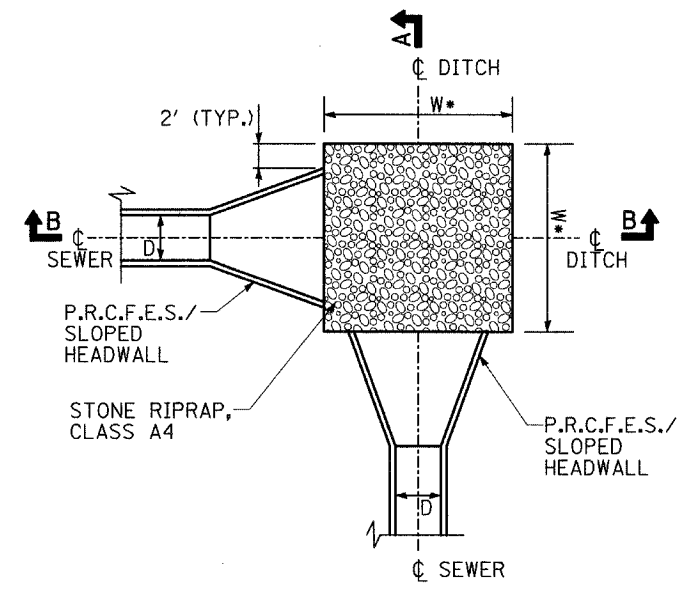


**TYPICAL DITCH CROSS SECTION WITH RIPRAP**

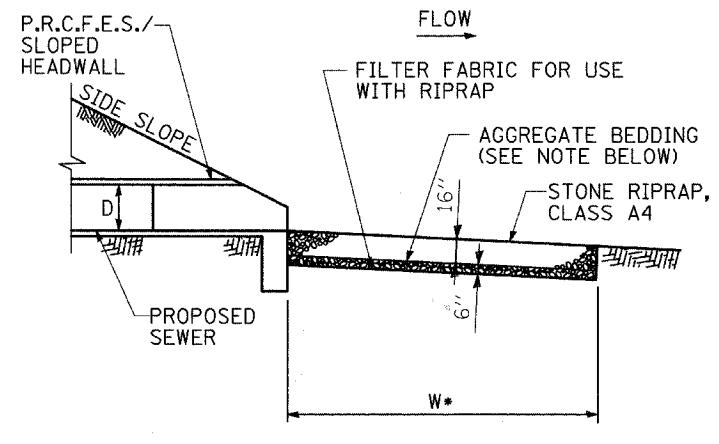
**NOTES:**

1. STONE RIPRAP, CLASS A3 SHALL HAVE A THICKNESS OF 8". STONE RIPRAP, CLASS A5 SHALL HAVE A THICKNESS OF 22".
2. FILTER FABRIC TO BE USED WITH STONE RIPRAP, CLASS A5.
3. AGGREGATE BEDDING SHALL BE USED WITH STONE RIPRAP, CLASS A5 AT A THICKNESS OF 8". BEDDING SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF "STONE RIPRAP, CLASS A5".



**PLAN**  
\*W-SEE BELOW FOR DIMENSIONS, SEE DRAINAGE SCHEDULE FOR PIPE DIAMETERS.

| PIPE DIAM. (IN) | *RIPRAP DIMENSION (FT) | AREA (SY) |
|-----------------|------------------------|-----------|
| 12"             | 7 X 7                  | 5.5       |
| 15"             | 7 X 7                  | 5.5       |
| 18"             | 7 X 7                  | 5.5       |
| 36"             | 11 X 11                | 13.5      |
| 48"             | 7 X 50                 | 39.0      |

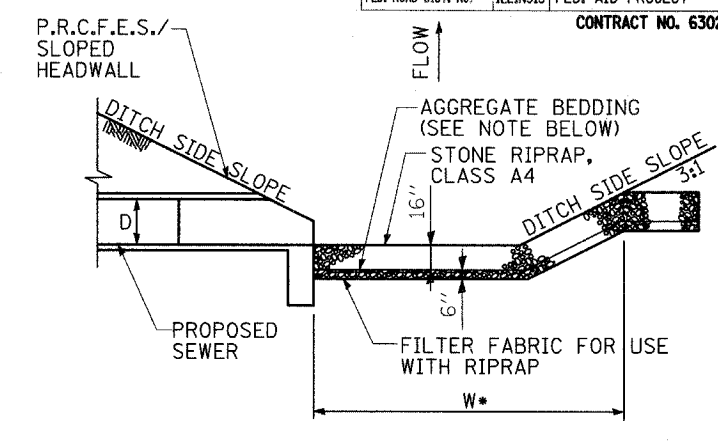


\*W-SEE BELOW FOR DIMENSIONS, SEE DRAINAGE SCHEDULE FOR PIPE DIAMETERS.

**SECTION A-A**

**OUTLET IN LINE WITH FLOW**

**RIPRAP DETAILS**



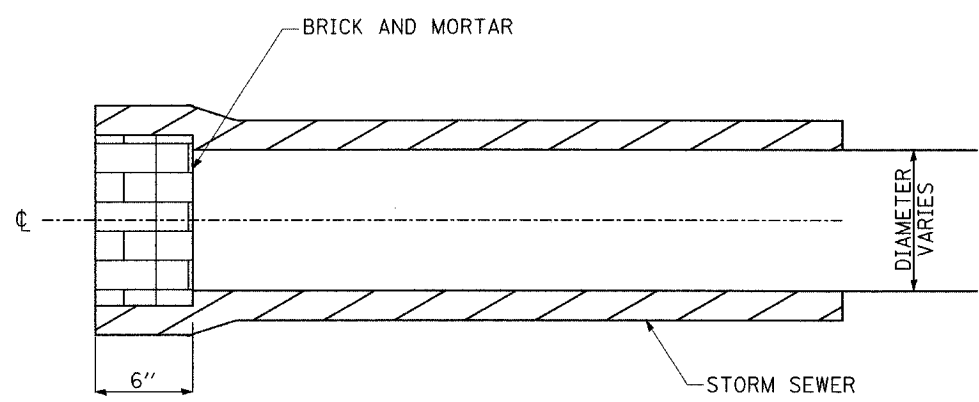
\*W-SEE BELOW FOR DIMENSIONS, SEE DRAINAGE SCHEDULE FOR PIPE DIAMETERS.

**SECTION B-B**

**OUTLET PERPENDICULAR TO FLOW**

**NOTES:**

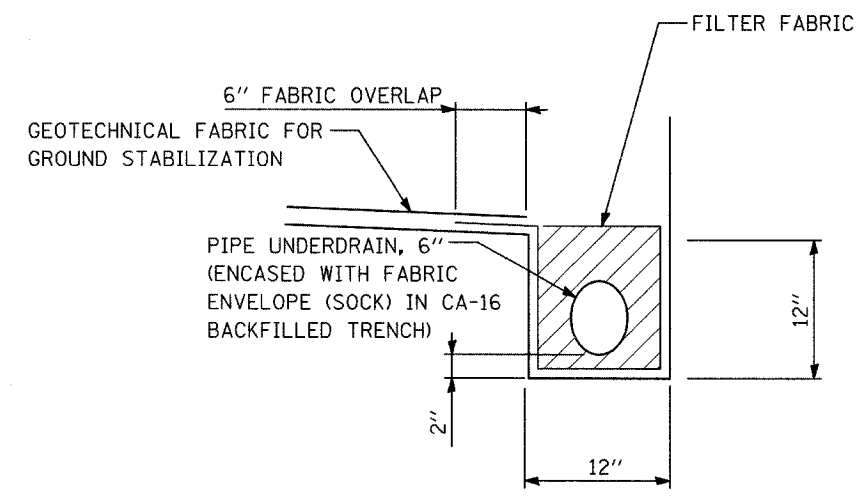
AGGREGATE BEDDING SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF "STONE RIPRAP, CLASS A4"



**STORM SEWER PLUG**

**NOTES:**

1. THIS WORK CONSISTS OF FURNISHING BRICKS AND MORTAR AS SHOWN AND AS DIRECTED BY THE ENGINEER AT LOCATIONS SHOWN IN THE PLANS TO PLUG THE EXISTING AND/OR PROPOSED STORM SEWER LATERAL STUBS.
2. THIS WORK SHALL NOT BE PAID FOR SEPARATELY, BUT INCLUDED IN COST OF SEWER REMOVAL/INSTALLATION AS PER ARTICLE 550.05 OF THE STANDARD SPECIFICATIONS.
3. ALL ABANDONED SEWER WITHIN THE RIGHT-OF-WAY AND AS INDICATED ON PLANS SHALL BE FILLED WITH CONTROLLED LOW STRENGTH MATERIAL (CLSM) AS PER SPECIFICATIONS WITH BOTH ENDS PLUGGED. THE COST SHALL BE PAID FOR IN CU. YD. OF CLSM AND AS SHOWN IN SCHEDULE.



**PIPE UNDERDRAIN DETAIL**


**NOTES:**

- (1) GEOTECHNICAL FABRIC FOR GROUND STABILIZATION SHALL BE PLACED SUCH THAT IT EXTENDS TO THE EDGE OF THE TRENCH AND OVERLAPS THE FILTER FABRIC BY A MINIMUM OF 6". AT NO TIME SHALL THE GEOTECHNICAL FABRIC FOR GROUND STABILIZATION BE OVER OR COVER THE UNDERDRAIN TRENCH.
- (2) NO CONSTRUCTION TRAFFIC SHALL BE ALLOWED ON THE TRENCH UNTIL THE COMPACTED SUB-BASE GRANULAR MATERIAL, TYPE B 12" IS PROVIDED.
- (3) FILTER FABRIC, FABRIC ENVELOPE, AND CA-16 AGGREGATE ARE INCLUDED IN THE UNIT COST OF PIPE UNDERDRAINS 6".
- (4) CONTRACTOR SHALL FLUSH PIPE UNDERDRAIN WITH WATER TO INSURE UNDERDRAIN IS FUNCTIONING PROPERLY PRIOR TO THE PLACEMENT OF THE SUB-BASE GRANULAR MATERIAL, TYPE B 12". PRIOR TO COMMENCING THIS WORK, THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH HIS APPROACH AND METHODS FOR COMPLETING THIS WORK, FOR THE ENGINEER'S REVIEW AND APPROVAL. THE COST OF FLUSHING THE PIPE IS INCLUDED IN THE UNIT COST OF PIPE UNDERDRAINS 6".

| REVISIONS |      |
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| NAME      | DATE |
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INTERSECTION IMPROVEMENT  
WASHINGTON STREET - 75th STREET  
DRAINAGE DETAILS -  
RIPRAP, SEWER PLUG,  
AND PIPE UNDERDRAINS 6"

CONSULTANT  
**TYLIN INTERNATIONAL**

City of  **Naperville**

DRAWN: \_\_\_\_\_ SHEET NO. \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 APPROVED: \_\_\_\_\_  
 DATE: APRIL 11, 2008  
 SCALE: NONE  
 JOB NO.: P-91-494-00 PROJECT NO.: M-CMM-7003 (985)