

GENERAL NOTES:

USE 4000 PSI MINIMUM COMPRESSIVE STRENGTH CONCRETE.

USE ASTM A615 GRADE 60 REINFORCING STEEL. USE ASTM A1024 MELDED MILD FABRIC (MWF).

FABRICATE, ASSEMBLE AND PRECAST MANHOLE COMPONENTS ACCORDANCE WITH AASHTO M195.

ASSEMBLE RISER AND GRADE RINGS WITH THE SPACES SPACED 12" FROM THE TOP TO THE BOTTOM OF THE MANHOLE.

WHERE THE MANHOLE IS EXPOSED TO ROAD TRAFFIC, CONTRACT THE TOP OF THE MANHOLE FLUSH WITH THE GROUND AND A MINIMUM 4" ABOVE THE GROUND AT OTHER LOCATIONS.

LIMIT DEPTH OF FILL TO 30'-0" FROM FINISH GRADE TO TOP OF BOTTOM SLAB.

THE MIN. SLAB THICKNESS "T" IS THE DIMENSION OF THE THINNEST PORTION OF THE TOP/BOTTOM SLAB.

* TOP MAT OF REINFORCEMENT MAY BE NEGLECTED IF TOP SLAB HAS A DISTINGUISHABLE TOP AND BOTTOM.

CONCENTRIC CONE SECTION

| D | W | T | A _S |
|---|---|---|----------------|
| 4 | 4 | 8 | 0.12 |
| 5 | 5 | 8 | 0.15 |
| 6 | 6 | 8 | 0.18 |

ALTERNATE CONE SECTION

GRATED INLET OPTION

MANHOLE OPTION

TYPICAL MANHOLE SECTION

ROADWAY STANDARD DRAWING FOR

PRECAST MANHOLE 4', 5' AND 6' DIAMETER

12" THRU 48" PIPE

SHED 1 OF 1

840.52

TWO-LANE, TWO-WAY ROADWAY

TWO-LANE, TWO-WAY ROADWAY WITH TWO-WAY LEFT TURN LANE

UNDIVIDED MULTI-LANE ROADWAY

DIVIDED MULTI-LANE ROADWAY WITH TURN BAY

REFER TO STD. 1205.65
FOR TURN LANE MARKING GUIDANCE

DIVIDED MULTI-LANE ROADWAY WITH WIDE MEDIAN CROSSOVER

USE DOUBLE YELLOW CENTER LINE AND ARROW SYMBOLS
IN MEDIAN CROSSOVER WHEN WIDTH OF MEDIAN EXCEEDS 30 FT.
OTHERWISE THEY ARE NOT REQUIRED.

GENERAL NOTES:

1. PLACEMENT OF STOP BARS AT NON-SIGNALIZED INTERSECTIONS IS OPTIONAL AND USED WHERE IT IS IMPORTANT TO INDICATE THE POINT WHICH VEHICLES ARE REQUIRED TO STOP. PLACE STOP BARS NO LESS THAN 4 FEET AND NO MORE THAN 20 FEET FROM THE NEAREST EDGE OF THE INTERSECTING ROADWAY. USE 10' FEET AS THE TYPICAL SETBACK DISTANCE ON A DIRECTED BY THE ENGINEER.
2. MINI-SKIP LANE LINE EXTENSIONS SHOULD BE USED AT INTERSECTIONS THAT HAVE REDUCED VISIBILITY CONDITIONS SUCH AS OFFSET, SKENE, OR CURVED ROADWAYS.
3. MINI-SKIP EDGE LINE EXTENSIONS MAY BE PLACED THROUGH INTERSECTIONS AND MAJOR DRIVEWAYS.
4. REFER TO ROADWAY STANDARD DRAWINGS 1205.01, 1205.02, 1205.05, 1205.08, 1205.09 AND 1205.09 FOR ADDITIONAL PAVEMENT MARKING GUIDANCE.

LEGEND

○ STOP SIGN

➔ DIRECTION OF TRAFFIC FLOW

★ OPTIONAL

— STATIONARY SIGN

▬ PAVEMENT MARKING SYMBOLS

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

ROADWAY STANDARD DRAWING FOR
PAVEMENT MARKINGS
INTERSECTIONS

SHEET 2 OF 2
1205.0

ELEVATION

SIDE

PLAN

ENDWALL DIMENSIONS

| FT. | MINIMUM | MIN./MAX. | MIN./MAX. | MIN./MAX. | MIN./MAX. | MIN./MAX. |
|-----------|----------|-----------|-----------|-----------|-----------|-------------|
| PIPE DIA. | BAR SIZE | H1(FT.) | H2(FT.) | D (FT.) | W1 | W2 |
| 1.0 | #5 @ 8" | 1.25/2.00 | 2.00/3.75 | 1.25/1.75 | 3.00/3.75 | 5.50/6.00 |
| 1.25 | #5 @ 8" | 1.25/2.00 | 3.00/3.75 | 1.25/2.00 | 3.00/3.75 | 6.50/6.75 |
| 1.50 | #5 @ 8" | 1.25/2.00 | 3.00/4.25 | 1.50/2.50 | 3.50/3.75 | 6.50/6.75 |
| 2.0 | #5 @ 8" | 1.50/2.50 | 4.00/4.75 | 1.75/2.50 | 4.00/4.25 | 7.50/8.25 |
| 2.5 | #5 @ 8" | 2.50/3.50 | 5.00/6.00 | 2.00/3.00 | 4.50/5.50 | 10.00/11.50 |
| 3.0 | #5 @ 8" | 3.00/3.50 | 6.00/6.00 | 2.75/3.50 | 5.25/5.75 | 11.50/11.75 |
| 3.5 | #5 @ 8" | 3.25/4.50 | 6.00/6.75 | 3.25/3.50 | 6.00/6.75 | 12.00/13.25 |
| 4.0 | #5 @ 8" | 3.50/4.50 | 6.50/7.75 | 3.25/3.50 | 6.50/6.75 | 13.00/13.25 |
| 4.5 | #5 @ 8" | 4.00/5.00 | 6.50/8.50 | 3.25/4.00 | 7.00/8.25 | 13.50/15.75 |
| 5.0 | #5 @ 8" | 4.50/5.00 | 7.00/8.50 | 3.25/4.00 | 7.25/8.25 | 13.75/15.75 |
| 5.5 | #5 @ 8" | 4.50/5.00 | 7.50/8.50 | 3.25/4.00 | 7.25/8.25 | 14.00/15.75 |
| 6.0 | #5 @ 8" | 4.50/5.00 | 7.50/8.50 | 3.25/4.00 | 7.75/8.25 | 14.75/15.75 |

Technical drawing of a manhole frame and cover, showing plan and section views.

PLAN OF FRAME

Dimensions: 60° TYP, 1/2", 1/2" R.

PLAN OF COVER

Dimensions: TOP OF COVER, BOTTOM OF COVER, 1/2", 1" R.

SECTION A-A

Dimensions: 2'-11 1/4", 1'-11 3/4", 1'-10 7/8", 3/4", 1", 7/16", 1/2", 4 3/8", 2'-0 1/2", 2'-9 1/4".

SECTION B-B

Dimensions: 1'-11 1/2", 2 3/8", 3/8", 1/2", 3/4", 1/2", 4 3/8", 1'-10 5/8".

MINIMUM WEIGHTS - LBS.

- FRAME - 180
- COVER - 120
- TOTAL - 300

MANHOLE FRAME AND COVER

TYPE #2

ALTERNATE

SECTION B-B

MINIMUM WEIGHTS - LBS.

- FRAME - 180
- COVER - 120
- TOTAL - 300

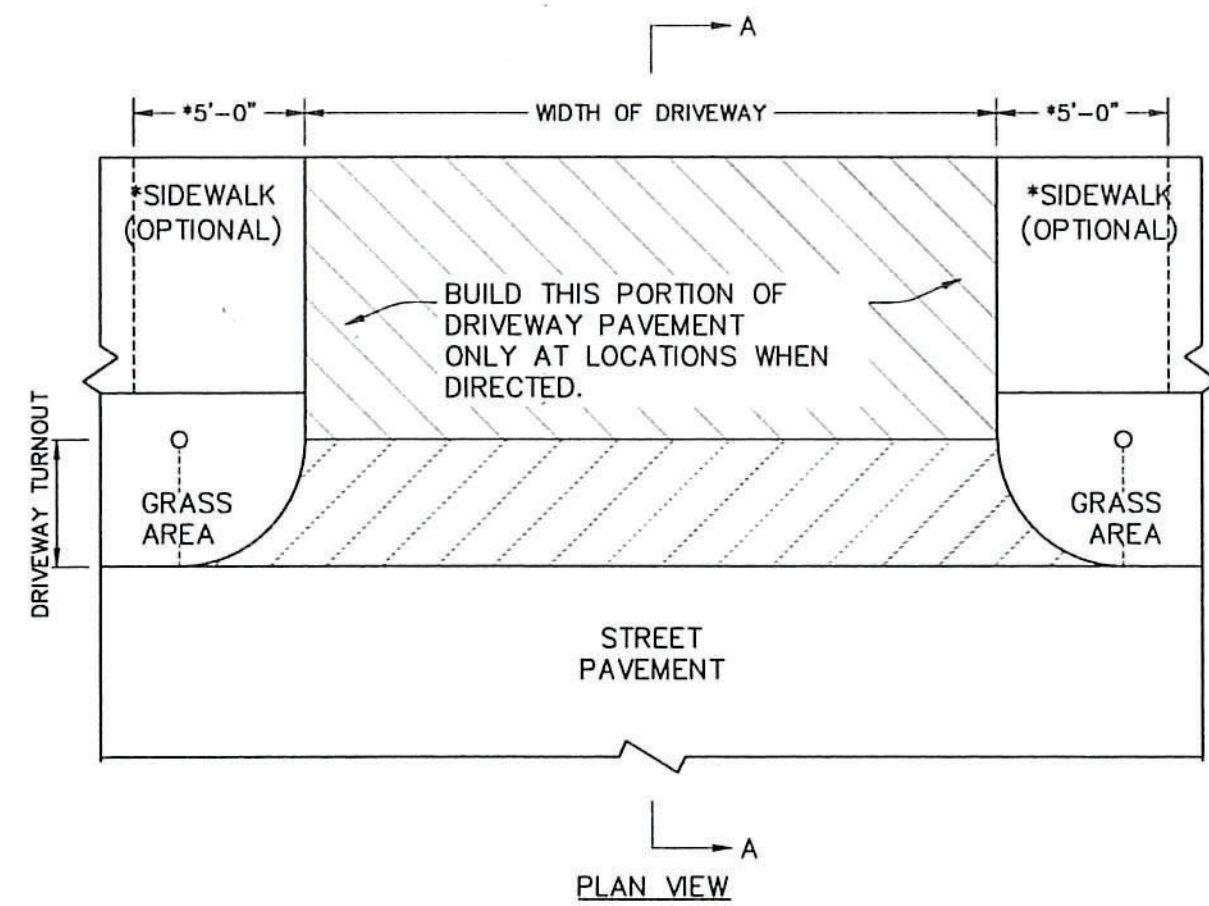
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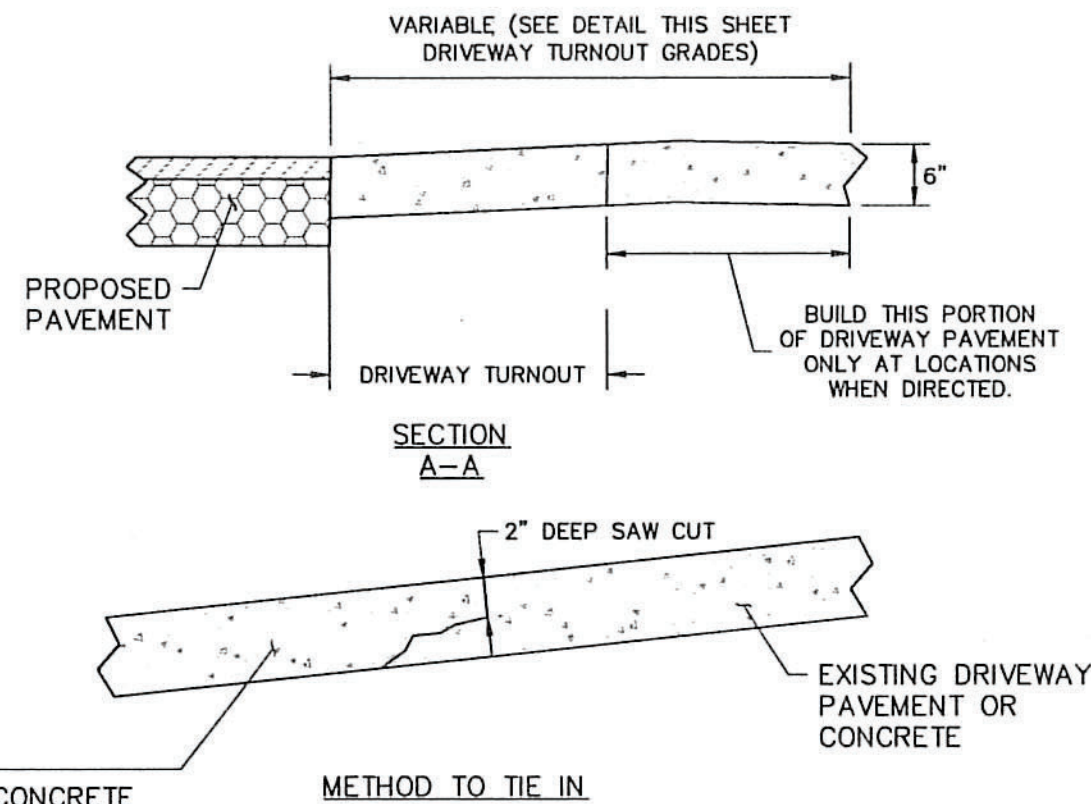
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DWI# SRP-SW-ARP-0007
AUTRYVILLE STORMWATER IMPROVEMENTS
TOWN OF AUTRYVILLE
SAMPSON COUNTY, NORTH CAROLINA

| | | | | | |
|------------------------------|------------------------|------------------------------|-----------------------|------------------|-------------------|
| NOT TO SCALE | | MISCELLANEOUS DETAILS 3 OF 4 | | | SHEET C-52 |
| OFFICE MANAGER M. HANSON | DESIGNER K. BEESLEY | | | | |
| PROJECT MANAGER M. HANSON | REVIEWER M. HANSON | DATE JANUARY 2025 | PROJECT # 20.03019 | FUNDING # N/A | |



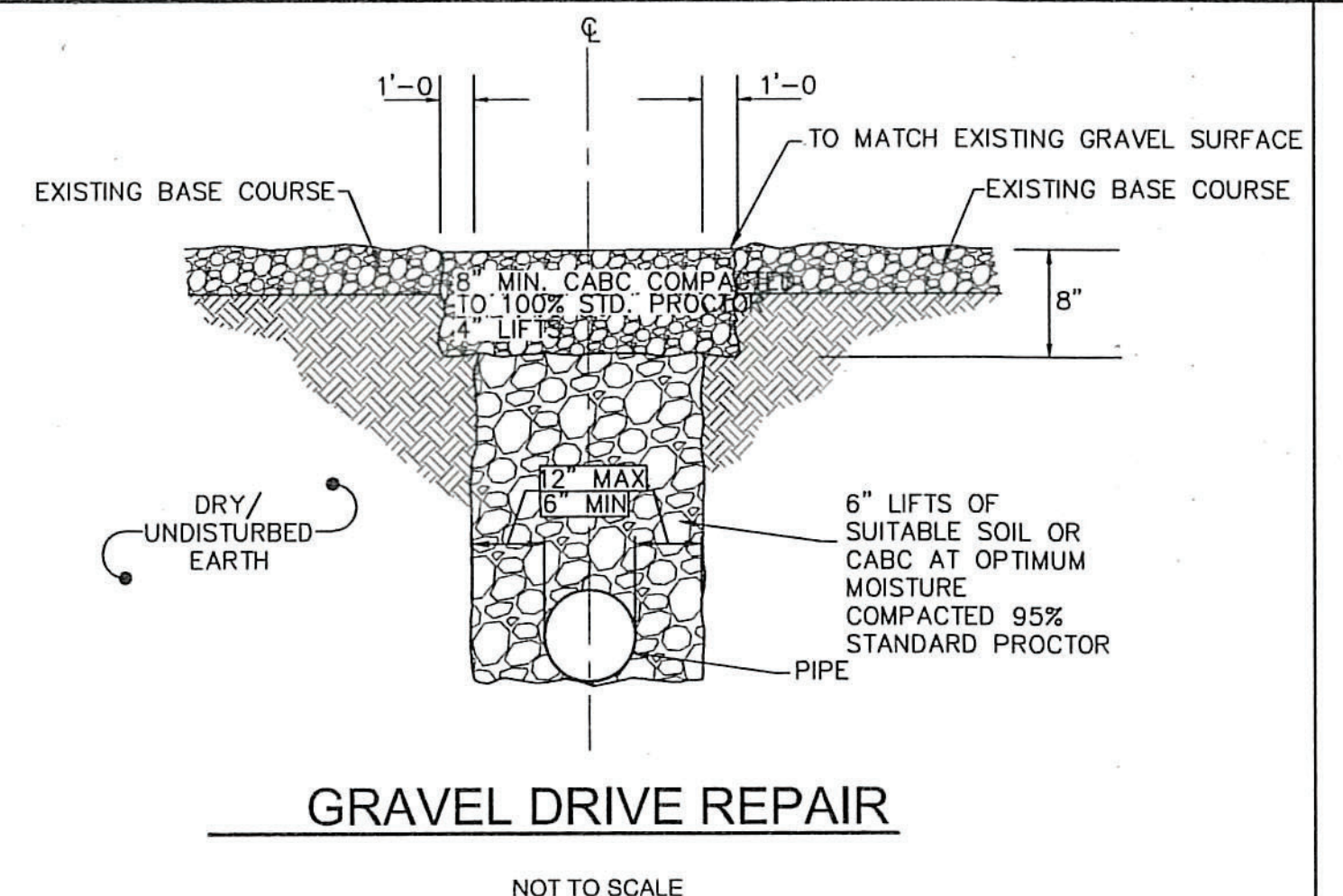
DRIVEWAY TURNOUT - RADIUS TYPE
NOT TO SCALE



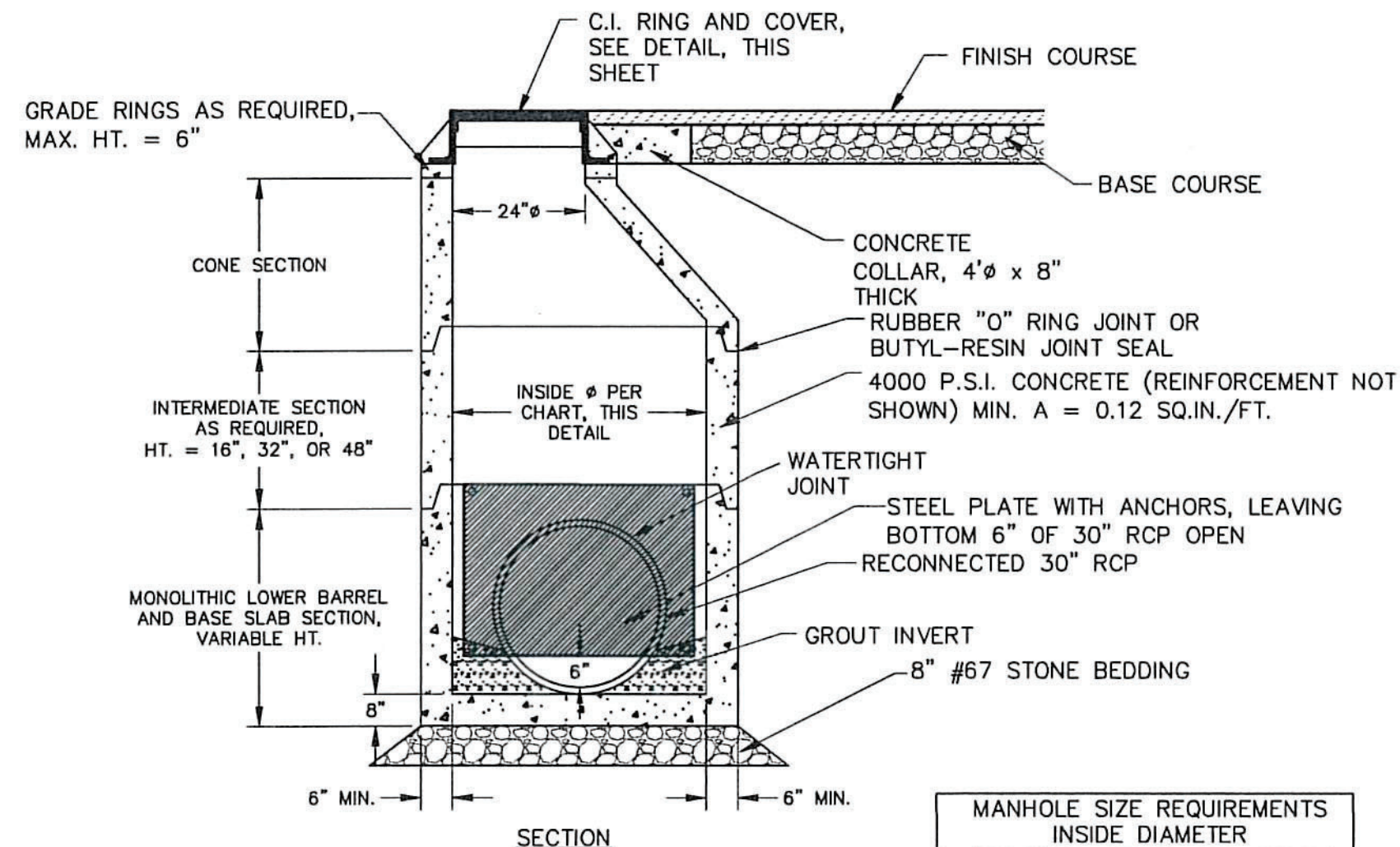
PROPOSED DRIVEWAY
ASPHALT PAVEMENT OR CONCRETE
(SEE G-02 GENERAL CONSTRUCTION
NOTES, #16 FOR CONCRETE
REQUIREMENTS)

WHEN EXISTING DRIVEWAY PAVEMENT IS CONCRETE,
SAW CUT 2" DEEP JOINT AT THE POINT OF TIE-IN.
SAW JOINT PERPENDICULAR TO EDGE OF EXISTING
DRIVEWAY PAVEMENT.

BID SET



GRAVEL DRIVE REPAIR
NOT TO SCALE

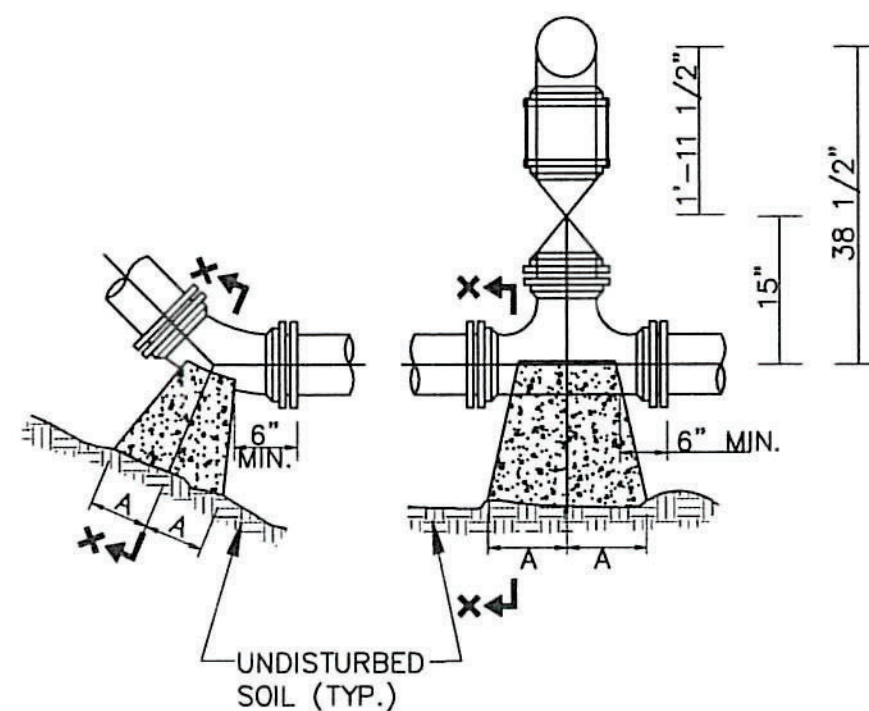


| MANHOLE SIZE REQUIREMENTS INSIDE DIAMETER (SANITARY SEWER AND STORM SEWER) | |
|---|-------------------------------|
| DEPTH RANGE | OUTLET PIPE SIZE 15" - 48" |
| 0'-12' | 6" |
| 12'-18' | 6" |
| >18' | 7" |

NOTES:

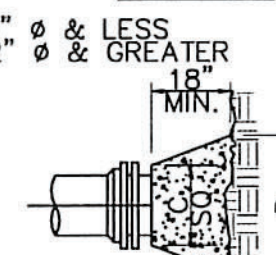
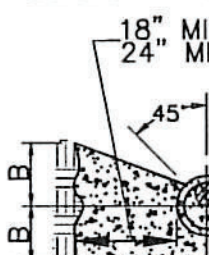
- CONTRACTOR SHALL USE PRECAST CONCRETE MANHOLES
WITH EXTENDED BASE WHEN SPECIFICALLY CALLED FOR ON
THE CONTRACT DRAWINGS OR IN THE CONTRACT PROPOSAL.
- MANHOLE TOPS SHALL BE NO LESS THAN 1' ABOVE
FINISH GRADE WHEN LOCATED OUTSIDE OF STREET RIGHT OF
WAY. FLAT TOPS SHALL BE USED WHERE THE TOP
ELEVATION IS GREATER THAN 3' ABOVE FINISH GRADE IN A
FLOOD PLANE.

**PRECAST MANHOLE WITH
PLATE DETAIL**
NOT TO SCALE



PLAN BENDS

PLAN TEES



SECTION X-X
BENDS & TEES

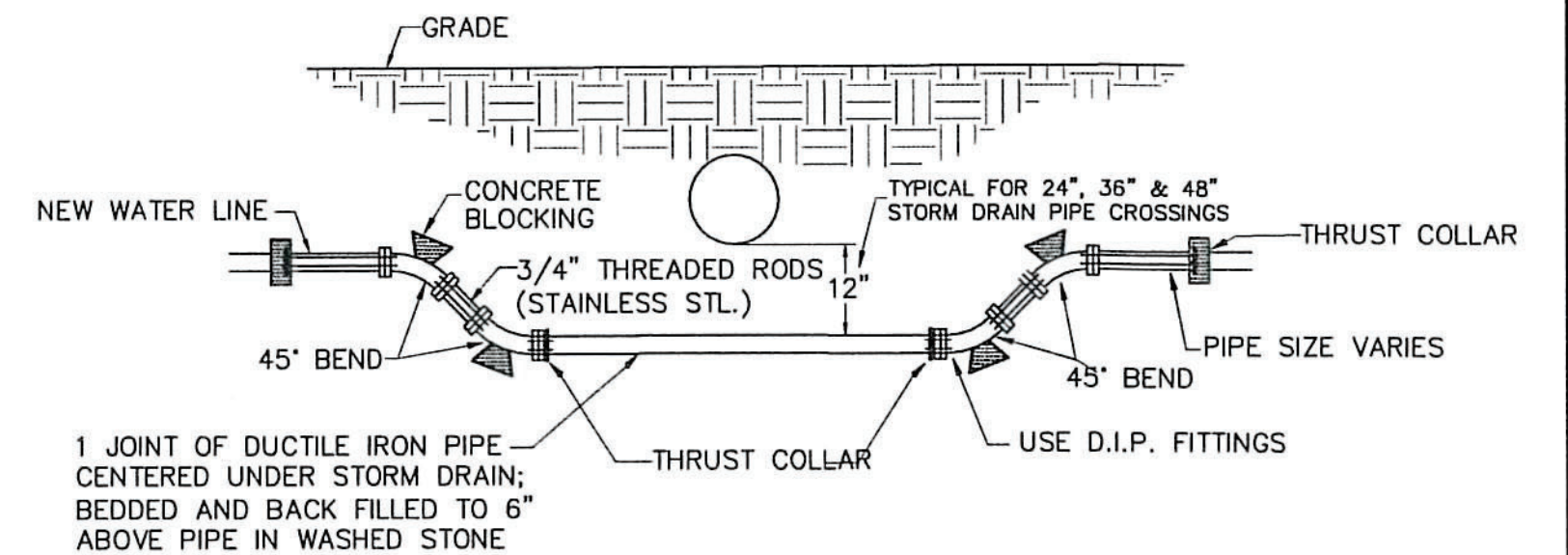
PLAN & ELEV.
PLUGS

| PIPE SIZE | 90° BEND | 45° BEND | 22 1/2° BEND | 11 1/4° BEND | TEE | PLUG |
|--------------|----------|----------|--------------|--------------|-----|------|
| 4" | 8" | 8" | 8" | 8" | 8" | 8" |
| 6" | 10" | 10" | 10" | 10" | 10" | 10" |
| 8" | 12" | 12" | 12" | 12" | 12" | 12" |
| 10" | 14" | 14" | 14" | 14" | 14" | 14" |
| 12" | 16" | 16" | 16" | 16" | 16" | 16" |
| 14" | 18" | 18" | 18" | 18" | 18" | 18" |
| 16" | 20" | 20" | 20" | 20" | 20" | 20" |
| 18" | 22" | 22" | 22" | 22" | 22" | 22" |
| 20" | 24" | 24" | 24" | 24" | 24" | 24" |
| 22" | 26" | 26" | 26" | 26" | 26" | 26" |
| 24" | 28" | 28" | 28" | 28" | 28" | 28" |

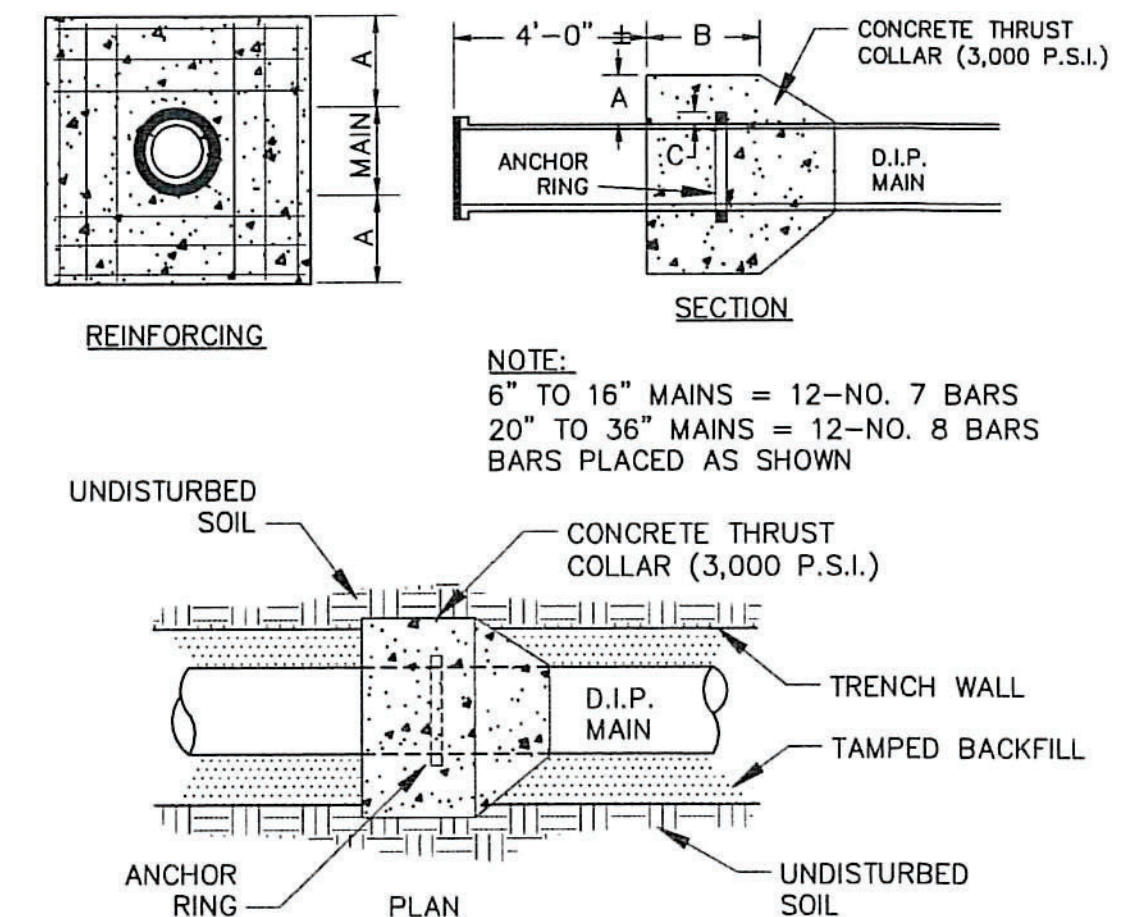
NOTES:

- CONCRETE SHALL BE 3,000 PSI MIN.
- CONCRETE FOR THRUST BLOCKING SHALL BE KEPT FAIRLY DRY, THUS
MAKING THE CONCRETE WEDGE SHAPE MORE EASILY FORMED WITH THE
WIDEST PART (BLOCKING AREA) AGAINST UNDISTURBED SOIL.
- NO CONCRETE SHALL COVER ANY BOLTS OR GLANDS.
- ALL FITTING AND ACCESSORIES TO BE WRAPPED WITH 10 MIL
POLYETHYLENE PRIOR TO POURING BLOCKING.
- VOLUME OF THRUST BLOCKING SHALL BE AS SHOWN ON THE THRUST
BLOCKING SCHEDULE.

THRUST BLOCK DETAIL
NOT TO SCALE



STORM DRAIN PIPE CROSSING DETAIL
NOT TO SCALE



NOTE:

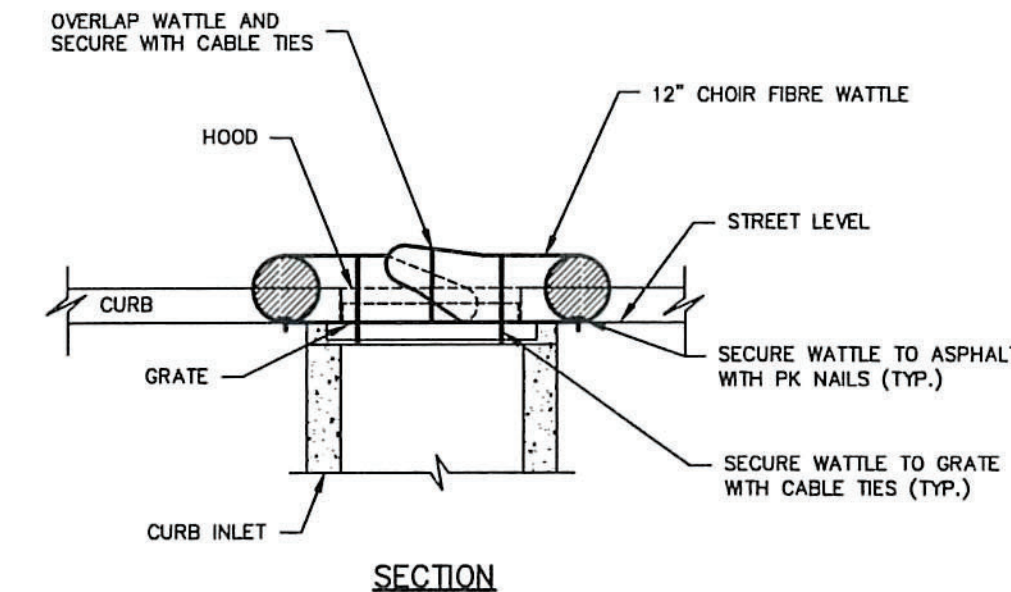
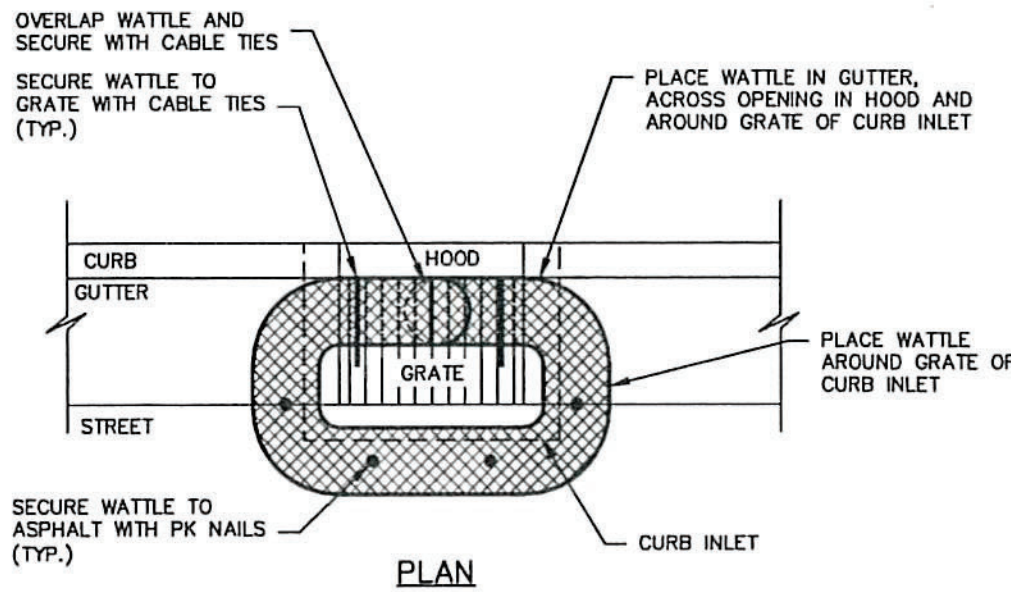
- 6" TO 16" MAINS = 12-NO. 7 BARS
20" TO 36" MAINS = 12-NO. 8 BARS
BARS PLACED AS SHOWN

| SCHEDULE | | | | |
|------------------|---------------------------|------------------|-------------------|-----|
| PIPE DIAMETER | CONCRETE THRUST COLLAR | ANCHOR COLLAR | RINGS REQUIRED | |
| 6", 8", 12" | 1'-0" | 1'-0" | C | ONE |
| 16" | 1'-4" | 1'-0" | 2" | ONE |
| 20" | 1'-4" | 1'-0" | 3" | ONE |
| 24" | 1'-4" | 1'-0" | 3" | TWO |
| 30" | 1'-4" | 1'-2" | 4" | TWO |
| 36" | 1'-4" | 1'-4" | 4" | TWO |

CONCRET THRUST COLLAR
NOT TO SCALE

INSTALLATION NOTES

1. PRIOR TO INSTALLATION, CLEAR ALL OBSTRUCTIONS INCLUDING ROCKS, CLODS, AND OTHER DEBRIS GREATER THAN ONE INCH THAT MAY INTERFERE WITH PROPER FUNCTION OF THE WATTLE.
2. WATTLES SHOULD BE INSTALLED PARALLEL TO THE TOE OF A GRADED SLOPE. A MINIMUM OF 10 FEET BEYOND THE TOE OF THE SLOPE. SOCKS LOCATED BELOW FLAT AREAS SHOULD BE LOCATED AT THE EDGE OF THE LAND-DISTURBANCE. THE ENDS OF THE SOCKS SHOULD BE TURNED SLIGHTLY UP SLOPE TO PREVENT RUNOFF FROM GOING AROUND THE END OF THE SOCKS.
3. FILL SOCK NETTING UNIFORMLY WITH COMPOST TO THE DESIRED LENGTH SUCH THAT LOGS DO NOT DEFORM.
4. OAK OR OTHER DURABLE HARDWOOD STAKES 2"X 2" IN CROSS SECTION SHOULD BE DRIVEN VERTICALLY PLUMB, THROUGH THE CENTER OF THE COMPOST SOCK. STAKES SHOULD BE PLACED AT A MAXIMUM INTERVAL OF 4 FEET, OR A MAXIMUM INTERVAL OF 10 FEET IF THE SOCK IS PLACED IN A 4 INCH TRENCH. THE STAKES SHOULD BE DRIVEN TO A MINIMUM DEPTH OF 12 INCHES, WITH A MINIMUM OF 3 INCHES PROTRUDING ABOVE THE COMPOST SOCK.
5. IN THE EVENT STAKING IS NOT POSSIBLE (I.E., WHEN SOCKS ARE USED ON PAVEMENT) HEAVY CONCRETE BLOCKS SHALL BE USED BEHIND THE SOCK TO HOLD IT IN PLACE DURING RUNOFF EVENTS.

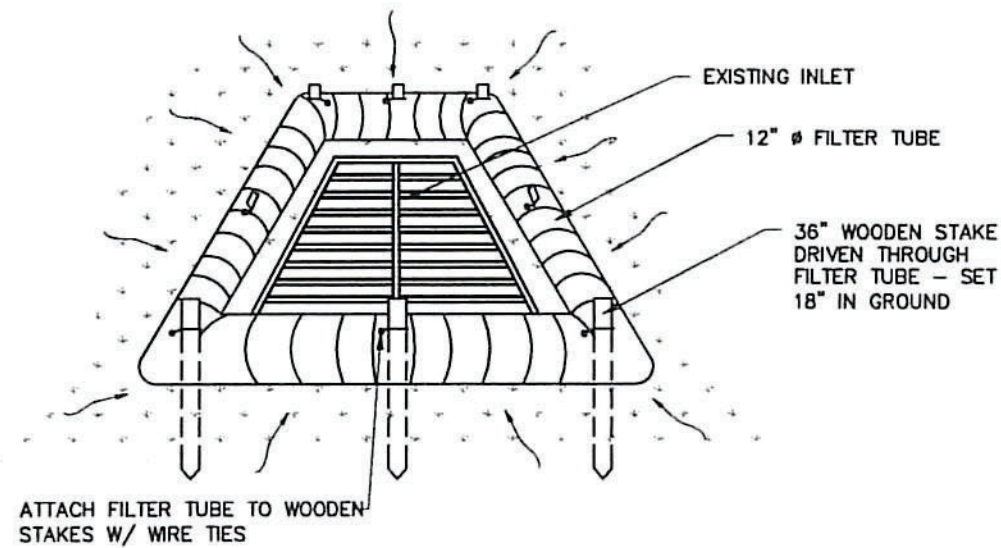


NOTES:

1. WATTLES MUST BE SECURED AS SHOWN, OR PER MANUFACTURER'S RECOMMENDATIONS.
2. ALL MATERIALS INSTALLED WITHIN NCDOT RIGHT-OF-WAY MUST MEET NCDOT STANDARDS.

WATTLE- INLET PROTECTION
PAVED CONDITION

NOT TO SCALE



WATTLE- INLET PROTECTION
UNPAVED CONDITION

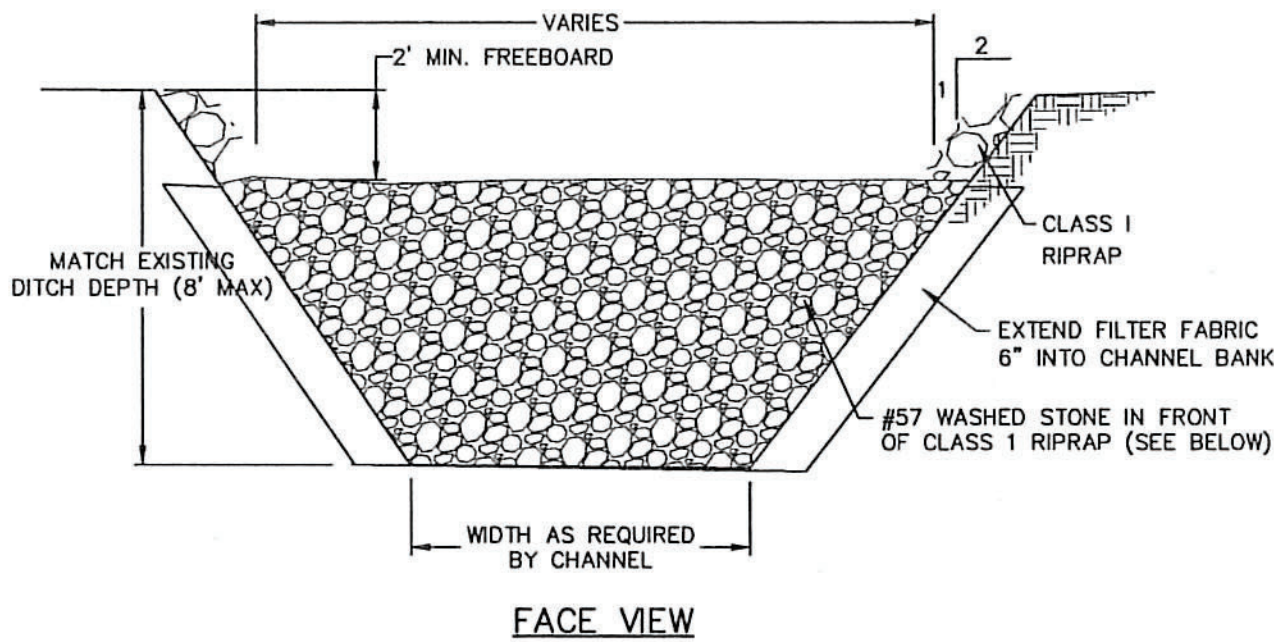
NOT TO SCALE

TEMPORARY INLET PROTECTION - WATTLE

NOT TO SCALE

MAINTENANCE NOTE

INSPECT SEDIMENT WATTLES WEEKLY AND AFTER EACH SIGNIFICANT RAINFALL EVENT (1/2 INCH OR GREATER). REMOVE ACCUMULATED SEDIMENT AND ANY DEBRIS. THE SEDIMENT WATTLE MUST BE REPLACED IF CLOGGED OR TORN. IF PONDING BECOMES EXCESSIVE, THE WATTLE NEEDS TO BE REINSTALLED IF UNDERMINED OR DISLOADED. THE SEDIMENT WATTLE SHALL BE INSPECTED UNTIL LAND DISTURBANCE IS COMPLETE AND THE AREA ABOVE THE MEASURE HAS BEEN PERMANENTLY STABILIZED.



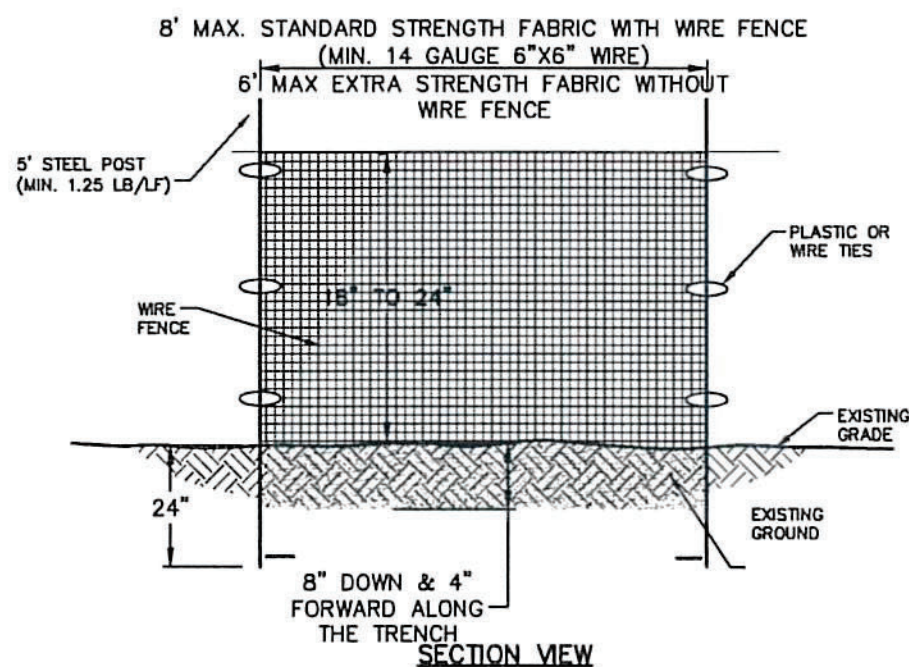
CONSTRUCTION NOTES

1. CLEAR THE AREAS UNDER THE EMBANKMENT AND STRIP OF ROOTS AND OTHER OBJECTIONABLE MATERIAL. DELAY CLEANING THE RESERVOIR AREA UNTIL THE DAM IS IN PLACE.
2. COVER THE FOUNDATION AREA INCLUDING THE ABUTMENTS WITH EXTRA-STRENGTH FILTER FABRIC BEFORE BACKFILLING WITH ROCK. IF A CUTOFF TRENCH IS REQUIRED, EXCAVATE AT CENTER LINE OF DAM, EXTENDING ALL THE WAY UP TO THE EARTH ABUTMENTS. APPLY FILTER FABRIC UNDER THE ROCKFILL EMBANKMENT FROM THE UPSTREAM EDGE OF THE DAM TO THE DOWNSTREAM EDGE OF THE APRON. OVERLAP FILL MATERIAL A MINIMUM OF 1 FOOT AT ALL JOINTS, WITH THE UPSTREAM STRIP LAID OVER THE DOWNSTREAM STRIP.
3. CONSTRUCT THE EMBANKMENT WITH WELL-GRADED ROCK AND GRAVEL TO THE SIZE AND DIMENSIONS ON THE DRAWING. IT IS IMPORTANT THAT ROCK ABUTMENTS BE AT LEAST 2 FEET HIGHER THAN THE SPILLWAY CREST AND AT LEAST 1 FOOT HIGHER THAN THE DAM, ALL THE WAY TO THE DOWNSTREAM TOE, TO PREVENT SCOUR AND EROSION AT THE ABUTMENTS.
4. SEDIMENT-LADEN WATER FROM THE CONSTRUCTION SITE SHOULD BE DIVERTED INTO THE BASIN RESERVOIR AT THE FURTHEST AREA FROM THE DAM.
5. CONSTRUCT THE ROCK CHECK DAM BEFORE THE BASIN AREA IS CLEARED TO MINIMIZE SEDIMENT YIELD FROM CONSTRUCTION OF THE BASIN. IMMEDIATELY STABILIZE ALL AREAS DISTURBED DURING THE CONSTRUCTION OF THE DAM EXCEPT THE SEDIMENT POOL.

TEMPORARY ROCK CHECK DAM

NOT TO SCALE

PLAN SYMBOL



CONSTRUCTION NOTES

1. ENSURE THAT THE HEIGHT OF THE SEDIMENT FENCE DOES NOT EXCEED 24 INCHES ABOVE THE GROUND SURFACE.
2. CONSTRUCT THE FILTER FABRIC FROM A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID JOINTS. WHEN JOINTS ARE NECESSARY, SECURELY FASTEN THE FILTER CLOTH ONLY AT A SUPPORT POST WITH 4 FEET MINIMUM OVERLAP TO THE NEXT POST.
3. SUPPORT STANDARD STRENGTH FILTER FABRIC BY WIRE MESH FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS. EXTEND THE WIRE MESH SUPPORT THE TO BOTTOM OF THE TRENCH.
4. WHEN A WIRE MESH SUPPORT IS USED, SPACE POSTS A MAXIMUM OF 8 FEET APART. SUPPORT POSTS SHOULD BE DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 24 INCHES.
5. EXTRA STRENGTH FILTER FABRIC WITH 6 FEET POST SPACING DOES NOT REQUIRE WIRE MESH SUPPORT.
6. EXCAVATE A TRENCH APPROXIMATELY 4 INCHES WIDE AND 8 INCHES DEEP ALONG THE PROPOSED LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
7. PLACE 12 INCHES OF THE FABRIC ALONG THE BOTTOM AND SIDE OF THE TRENCH.
8. BACKFILL THE TRENCH WITH SOIL PLACED OVER THE FILTER FABRIC AND COMPACT.
9. DO NOT ATTACH FABRIC TO EXISTING TREES.

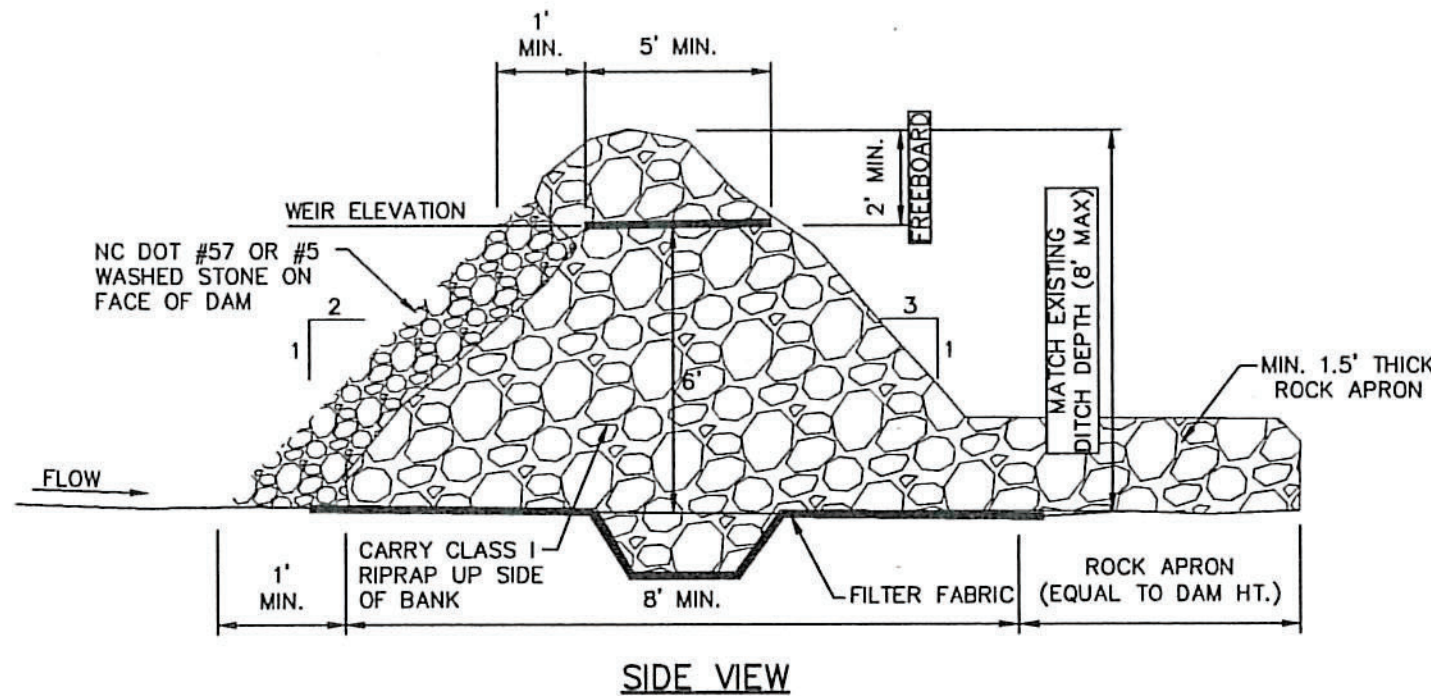
| SLOPE | SLOPE LENGTH(FT) | MAXIMUM AREA(SQFT) |
|-----------|------------------|--------------------|
| <2% | 100 | 10,000 |
| 2 TO 5% | 75 | 7,500 |
| 5 TO 10% | 50 | 5,000 |
| 10 TO 20% | 25 | 2,500 |
| >20% | 15 | 1,500 |

REFERENCE NCDOT LAND QUALITY SECTION DESIGN MANUAL: 6.62.

SILT FENCE

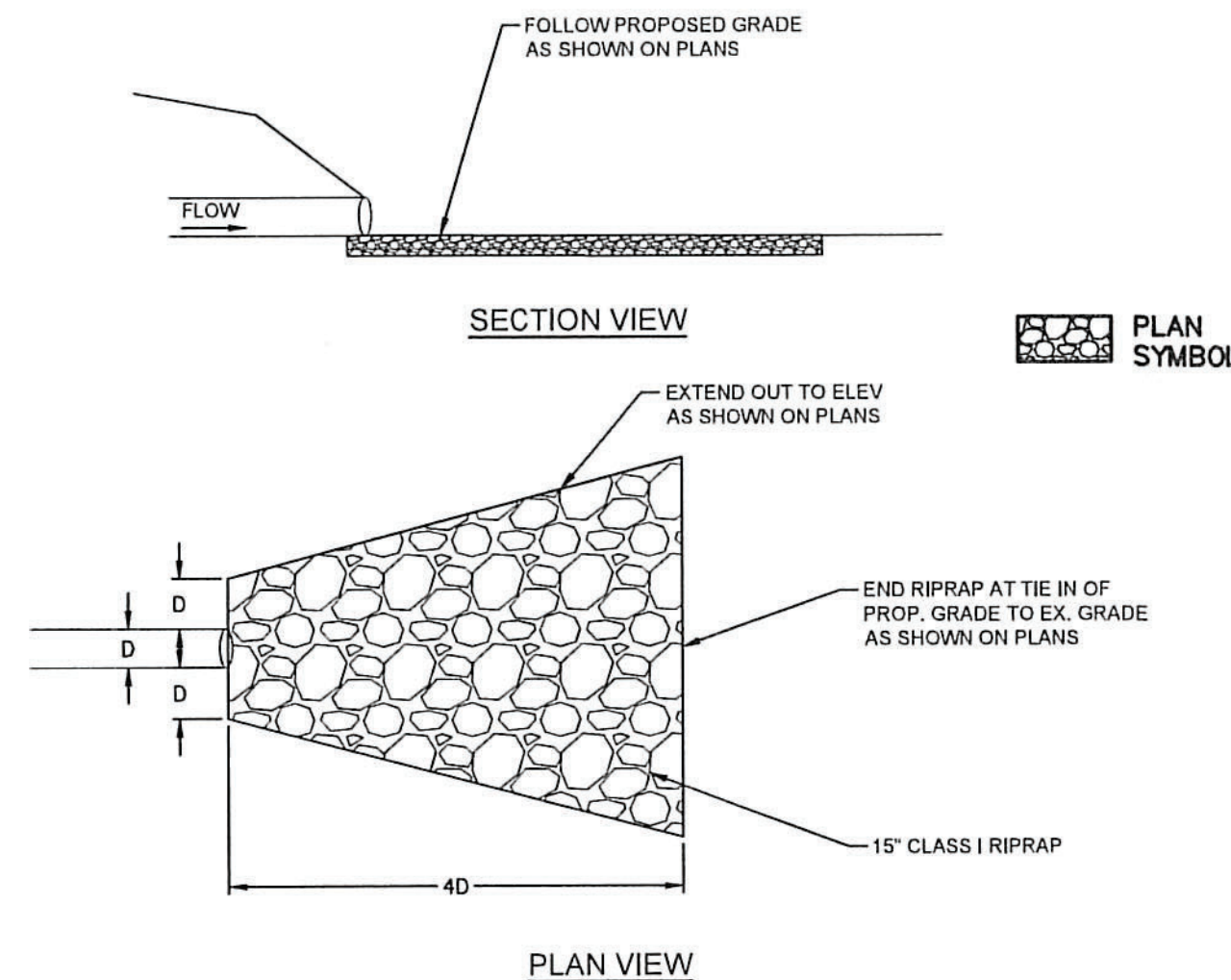
NOT TO SCALE

PLAN SYMBOL



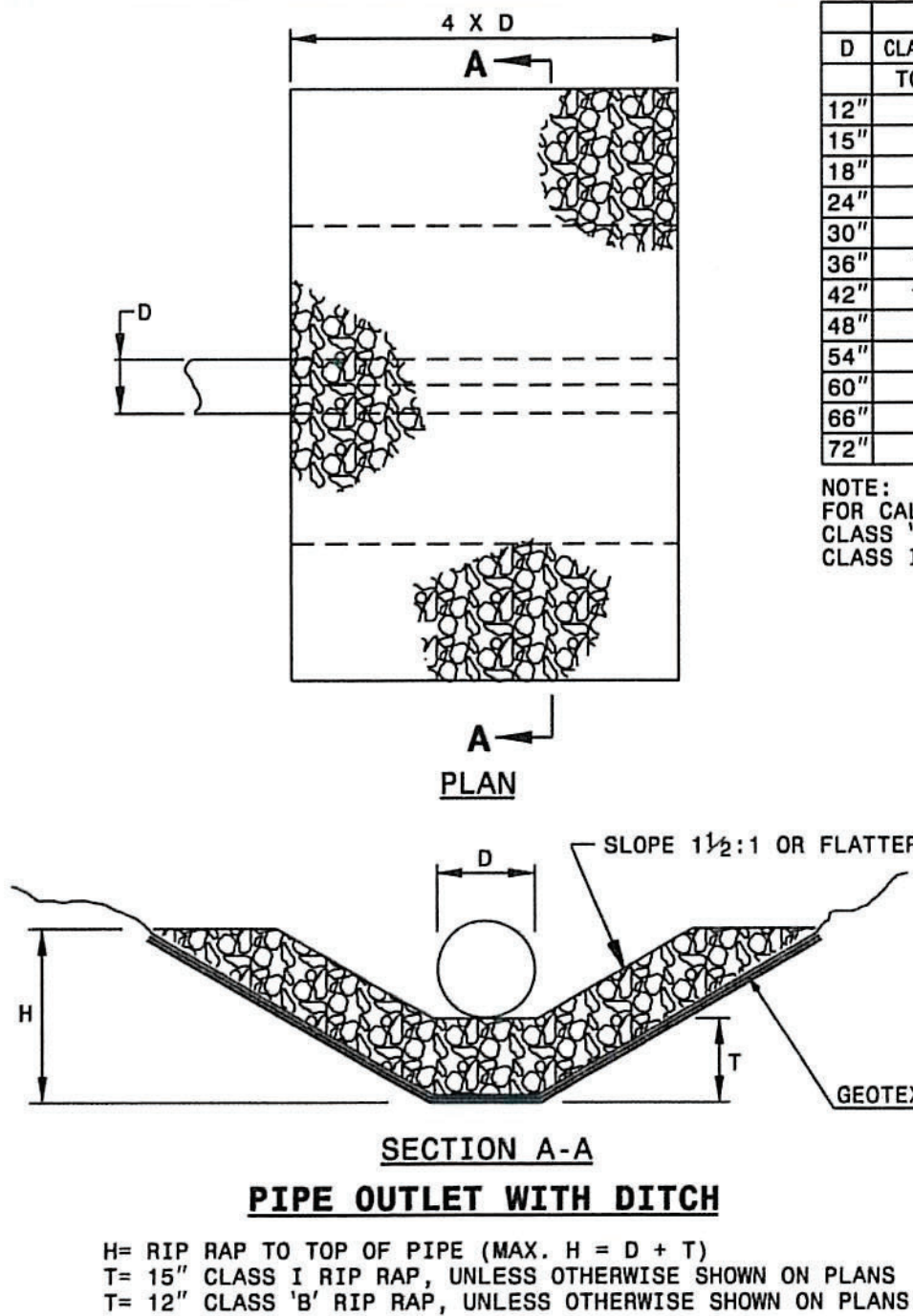
MAINTENANCE NOTES

1. CHECK SEDIMENT BASINS AFTER EACH RAINFALL EVENT. REMOVE SEDIMENT AND RESTORE ORIGINAL VOLUME WHEN SEDIMENT ACCUMULATED TO ABOUT ONE-HALF THE DESIGN VOLUME. SEDIMENT SHOULD BE PLACED ABOVE THE BASIN AND ADEQUATELY STABILIZED.
2. CHECK THE STRUCTURE FOR EROSION, PIPING, AND ROCK DISPLACEMENT WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINSTORM AND REPAIR IMMEDIATELY.
3. REMOVE THE STRUCTURE AND ANY UNSTABLE SEDIMENT IMMEDIATELY AFTER THE CONSTRUCTION SITE HAS BEEN PERMANENTLY STABILIZED. SMOOTH THE BASIN SITE TO BLEND WITH THE SURROUNDING AREA AND STABILIZE. ALL WATER AND SEDIMENT SHOULD BE REMOVED FROM THE BASIN PRIOR TO DAM REMOVAL. SEDIMENT SHOULD BE PLACED IN DESIGNATED DISPOSAL AREAS AND NOT ALLOWED TO FLOW INTO STREAMS OR DRAINAGE WAYS DURING STRUCTURE REMOVAL.



PERMANENT RIPRAP OUTLET PROTECTION

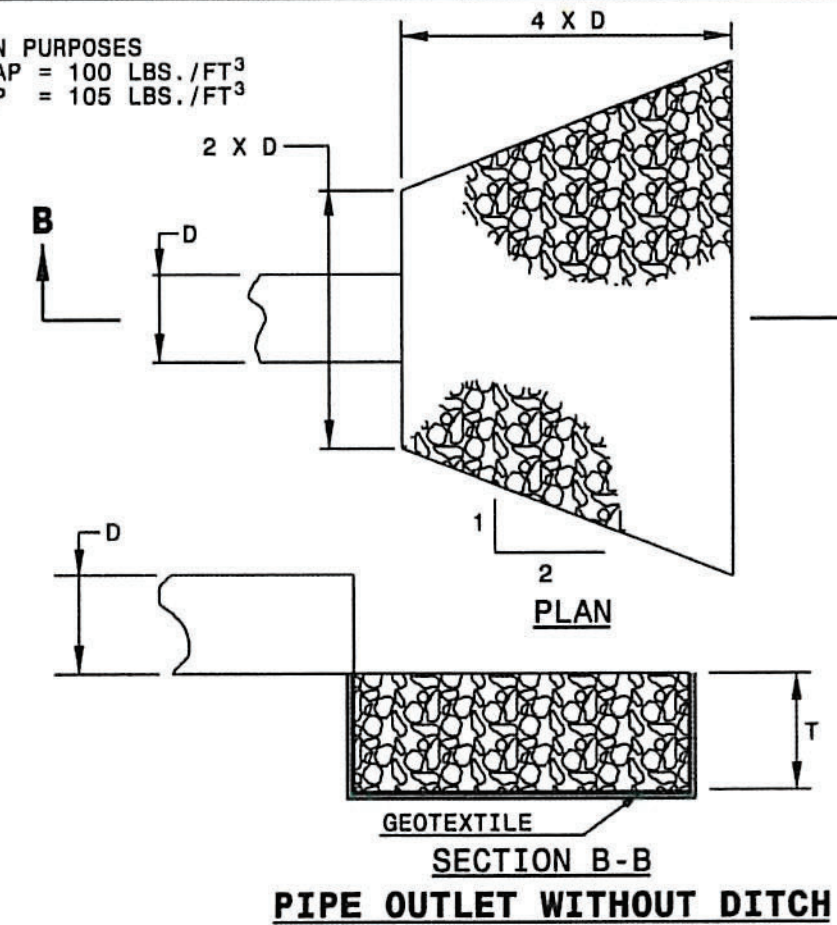
NOT TO SCALE



H= RIP RAP TO TOP OF PIPE (MAX. H = D + T)
T= 15" CLASS I RIP RAP, UNLESS OTHERWISE SHOWN ON PLANS
T= 12" CLASS 'B' RIP RAP, UNLESS OTHERWISE SHOWN ON PLANS

| D | OUTLET W/DITCH | | | | OUTLET W/O DITCH | | | |
|-----|-------------------|-----------------|-------------------|-----------------|-------------------|-----------------|-------------------|-----------------|
| | CLASS 'B' RIP RAP | CLASS I RIP RAP | CLASS 'B' RIP RAP | CLASS I RIP RAP | CLASS 'B' RIP RAP | CLASS I RIP RAP | CLASS 'B' RIP RAP | CLASS I RIP RAP |
| 12" | 2 | 5 | 5 | 2 | 1 | 4 | 2 | 1 |
| 15" | 3 | 7 | 7 | 3 | 1 | 5 | 3 | 2 |
| 18" | 3 | 10 | 9 | 4 | 10 | 2 | 7 | 4 |
| 24" | 5 | 14 | 15 | 7 | 15 | 3 | 11 | 7 |
| 30" | 8 | 21 | 21 | 11 | 22 | 5 | 16 | 11 |
| 36" | 11 | 28 | 29 | 15 | 30 | 7 | 22 | 16 |
| 42" | 15 | 37 | 39 | 20 | 39 | 10 | 28 | 22 |
| 48" | - | - | 49 | 26 | 50 | - | - | 28 |
| 54" | - | - | 60 | 33 | 62 | - | - | 36 |
| 60" | - | - | 73 | 40 | 75 | - | - | 44 |
| 66" | - | - | 87 | 48 | 89 | - | - | 54 |
| 72" | - | - | 102 | 57 | 104 | - | - | 64 |

NOTE:
FOR CALCULATION PURPOSES
CLASS 'B' RIP RAP = 100 LBS./FT³
CLASS I RIP RAP = 105 LBS./FT³



STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
GUIDE FOR RIP RAP AT PIPE OUTLETS

SHEET 1 OF 1
876.02

BID SET

