

Porter County, IN  
Construction Standards/Specifications

**Section 8.18: Standard Drawings**

# **STANDARD DRAWINGS**

Porter County, IN  
Construction Standards/Specifications

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# **STANDARD DRAWINGS**

**CONSTRUCTION SEQUENCE AND COMMON PRACTICES  
FOR EROSION AND SEDIMENT CONTROL**

**1. EVALUATE THE SITE**

BEFORE CONSTRUCTION, CONTRACTOR SHALL EVALUATE THE SITE AND MARK VEGETATIVE AREAS AND TREES TO BE PROTECTED, UNIQUE AREAS TO PRESERVE, ON-SITE SEPTIC SYSTEM ABSORPTION FIELDS, AND VEGETATION SUITABLE FOR FILTER STRIPS, ESPECIALLY IN PERIMETER AREAS.

**2. PROTECT TREES AND SENSITIVE AREAS**

- TO PREVENT ROOT DAMAGE, DO NOT GRADE, BURN, PLACE SOIL PILES, OR PARK VEHICLES NEAR TREES OR IN AREAS MARKED FOR PRESERVATION. PLACE PLASTIC MESH OR SNOW FENCE BARRIERS AROUND THE TREES' DRIFLINES TO PROTECT THE AREA BELOW THEIR BRANCHES.
- PLACE A PHYSICAL BARRIER, SUCH AS PLASTIC FENCING, AROUND THE AREA DESIGNATED FOR A SEPTIC SYSTEM ABSORPTION FIELD (IF APPLICABLE).

**3. INSTALL PERIMETER EROSION AND SEDIMENT CONTROLS**

IDENTIFY THE AREAS WHERE SEDIMENT LADEN RUNOFF COULD LEAVE THE CONSTRUCTION SITE, AND INSTALL PERIMETER CONTROLS TO MAXIMIZE THE POTENTIAL FOR OFF-SITE SEDIMENTATION. IT'S IMPORTANT THAT PERIMETER CONTROLS ARE IN PLACE BEFORE ANY EARTHMOVING ACTIVITIES BEGIN.

**4. PROTECT DOWN-SLOPE AREAS WITH VEGETATIVE FILTER STRIPS**

- ON SLOPES OF LESS THAN SIX PERCENT, PRESERVE A 20-TO 30-FOOT WIDE (MINIMUM) VEGETATIVE BUFFER STRIP AROUND THE PERIMETER OF THE PROPERTY, AND USE IT AS A FILTER STRIP FOR TRAPPING SEDIMENT.
- DO NOT MOW FILTER STRIP VEGETATION SHORTER THAN FOUR INCHES.

**5. PROTECT DOWN-SLOPE AREAS WITH SILT FENCES AND OTHER APPROPRIATE PRACTICES**

- USE SILT FENCING ALONG THE PERIMETER OF THE LOT'S DOWNSLOPE SIDE(S) TO TRAP SEDIMENT. REFER TO SILT FENCES PRACTICES.

**6. INSTALL GRAVEL DRIVE**

RESTRICT ALL LOT ACCESS TO THIS DRIVE TO PREVENT VEHICLES FROM TRACKING MUD ONTO ROADWAYS. REFER TO GRAVEL CONSTRUCTION ENTRANCES.

**7. PROTECT STORM SEWER INLETS**

- CURB INLET PROTECTION DEVICES ARE NOT EFFICIENT IN REMOVING SEDIMENT FROM STORM WATER RUNOFF. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES MUST BE INCORPORATED INTO THE PLAN AND THE DAY-TO-DAY CONSTRUCTION OPERATIONS TO MINIMIZE THE AMOUNT OF SEDIMENT ENTERING A STREET. THE BEST DEFENSE IN CONTROLLING SEDIMENTATION IS THE INSTALLATION OF PERIMETER PROTECTION DOWNSLOPE OF THE CONSTRUCTION ACTIVITY USING GRAVEL CONSTRUCTION ENTRANCES AND DAILY CLEANING AND REMOVAL OF SEDIMENT FROM STREETS. EVEN WITH THESE MEASURES IMPLEMENTED, SEDIMENT AND TRACKED SOIL WILL FIND THEIR WAY INTO THE STREET. CURB INLET PROTECTION DEVICES ARE DESIGNED TO CAPTURE SEDIMENT. HOWEVER, THESE PRACTICES ARE NOT DESIGNED TO TRAP LARGE AMOUNTS OF SEDIMENT AND REQUIRE FREQUENT MAINTENANCE IF THEY ARE TO REMAIN EFFECTIVE. WHEN SELECTING A CURB INLET PROTECTION MEASURE, IT IS IMPORTANT TO SELECT A DEVICE THAT DOES NOT BLOCK THE INLET ENTIRELY. TOTAL OBSTRUCTION OF THE INLET WILL CAUSE EXCESSIVE PONDING AND IN SOME SITUATIONS BYPASS FLOW THAT MAY RESULT IN EROSION.
- PROTECT ON-SITE STORM SEWER DROP INLETS WITH SILT FENCE MATERIAL, OR EQUIVALENT MEASURES. REFER TO DROP INLET PROTECTION DRAWINGS.

**8. PREPARE THE SITE FOR CONSTRUCTION**

PREPARE THE SITE FOR CONSTRUCTION AND FOR INSTALLATION OF UTILITIES. MAKE SURE ALL CONTRACTORS (ESPECIALLY THE EXCAVATING CONTRACTOR) ARE AWARE OF AREAS TO BE PROTECTED.

**9. SALVAGE AND STOCKPILE TOPSOIL OR SUBSOIL**

- REMOVE TOPSOIL (TYPICALLY THE UPPER FOUR TO SIX INCHES OF THE SOIL MATERIAL) AND STOCKPILE.
- REMOVE SUBSOIL, INCLUDING ANY EXCAVATED MATERIAL ASSOCIATED WITH BASEMENT CONSTRUCTION, AND STOCKPILE SEPARATELY FROM THE TOPSOIL.
- ON SMALL BUILDING SITES, IT MAY NOT BE FEASIBLE TO STOCKPILE SOIL MATERIAL ON EACH INDIVIDUAL LOT DUE TO SPACE LIMITATIONS. IN THESE SITUATIONS, SOIL MATERIAL SHOULD BE TRANSPORTED TO PROTECTED AREAS DESIGNATED ON THE OVERALL CONSTRUCTION PLAN OR THOSE AREAS DESIGNATED BY THE DEVELOPER.
- LOCATE THE STOCKPILES AWAY FROM ANY DOWNSLOPE STREET, DRIVEWAY, STREAM, LAKE, WETLAND, DITCH OR DRAINAGE WAY.
- IMMEDIATELY AFTER STOCKPILING, TEMPORARILY SEED THE STOCKPILES WITH ANNUAL RYE OR WINTER WHEAT AND/OR INSTALL SEDIMENT BARRIERS AROUND THE PERIMETER OF THE PILES.
- DO NOT PLACE STOCKPILES IN A DRAINAGE EASEMENT.

**10. BUILD STRUCTURE(S) AND INSTALL UTILITIES**

CONSTRUCT THE HOME AND INSTALL THE UTILITIES; ALSO INSTALL THE SEWAGE DISPOSAL SYSTEM AND DRILL WATER WELL (IF APPLICABLE); THEN CONSIDER THE FOLLOWING:

**A. INSTALL DOWNSPOUT EXTENDERS**

- ALTHOUGH NOT REQUIRED, DOWNSPOUT EXTENDERS ARE HIGHLY RECOMMENDED AS A MEANS OF PREVENTING LOT EROSION FROM ROOF RUNOFF.
- ADD THE EXTENDERS AS SOON AS THE GUTTERS AND DOWNSPOUTS ARE INSTALLED.
- BE SURE THE EXTENDERS HAVE A STABLE OUTLET, SUCH AS A PAVED AREA, OR A WELL VEGETATED AREA. DO NOT ROUTE RUNOFF DIRECTLY TO A STREET IN WINTER DUE TO THE FORMATION OF ICE.

**B. MAINTAIN CONTROL PRACTICES**

- MAINTAIN ALL EROSION AND SEDIMENT CONTROL PRACTICES UNTIL CONSTRUCTION IS COMPLETED AND THE LOT IS STABILIZED.
- INSPECT THE CONTROL PRACTICES A MINIMUM OF TWICE A WEEK AND AFTER EACH STORM EVENT, MAKING ANY NEEDED REPAIRS IMMEDIATELY.
- AT THE END OF THE EACH WORK DAY, SWEEP OR SCRAPE UP ANY SOIL TRACKED ONTO ROADWAY(S). DO NOT FLUSH AREAS WITH WATER.

**C. REVEGETATE BUILDING SITE IMMEDIATELY AFTER ALL OUTSIDE CONSTRUCTION ACTIVITIES ARE COMPLETED, STABILIZE THE LOT WITH SOD, SEED, AND/OR MULCH.**

- STOCKPILE SUBSOIL AND TOPSOIL.
- SPREAD THE STOCKPILED SUBSOIL TO ROUGH GRADE.
- SPREAD THE STOCKPILED TOPSOIL TO A DEPTH OF FOUR TO SIX INCHES OVER ROUGH GRADED AREAS.
- FERTILIZE AND LIME ACCORDING TO SOIL TEST RESULTS OR RECOMMENDATIONS OF A SEED SUPPLIER OR A PROFESSIONAL LANDSCAPING CONTRACTOR.
- SEED OR SOD BARE AREAS.
- CONTACT LOCAL SEED SUPPLIERS OR PROFESSIONAL LANDSCAPING CONTRACTORS FOR RECOMMENDED SEEDING MIXTURES AND RATES.
- FOLLOW RECOMMENDATIONS OF A PROFESSIONAL LANDSCAPING CONTRACTOR FOR INSTALLATION OF SOD.
- WATER NEWLY SEEDED OR SODDED AREAS EVERY DAY OR TWO TO KEEP THE SOIL MOIST, LESS WATERING IS NEEDED ONCE GRASS IS TWO INCHES TALL.
- MULCH NEWLY SEEDED AREAS.
- SPREAD STRAW MULCH ON NEWLY SEEDED AREAS, USING ONE AND ONE HALF TO TWO BALES OF STRAW PER 1,000 SQUARE FEET.
- ON FLAT OR GENTLY SLOPING LAND, ANCHOR THE MULCH BY CRIMPING IT TWO TO FOUR INCHES INTO THE SOIL. ON STEEP SLOPES, ANCHOR THE MULCH WITH NETTING OR TACKIFIERS. AN ALTERNATIVE TO ANCHORED MULCH WOULD BE THE USE OF EROSION CONTROL BLANKETS.

**11. REMOVE REMAINING TEMPORARY CONTROL MEASURES**

- ONCE THE SOD AND/OR VEGETATION IS WELL ESTABLISHED, REMOVE ANY REMAINING TEMPORARY EROSION AND SEDIMENT CONTROL PRACTICES, SUCH AS:
- REMOVE DOWNSPOUT EXTENDERS, OR, SHORTEN TO OUTLET ON AN ESTABLISHED VEGETATED AREA, ALLOWING FOR MAXIMUM FILTRATION.
- REMOVE STORM SEWER INLET PROTECTION MEASURES.

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|------|----------|---------------|---|--|
|      |          |               | PORTER COUNTY, INDIANA                    |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS                         |  |
|      |          |               | EROSION CONTROL-<br>CONSTRUCTION SEQUENCE |  |
|      |          |               | SHT. NO.<br>II-1                          |  |

# EXAMPLE EROSION CONTROL REQUIREMENTS (LIGHT LAND DISTURBING ACTIVITY)

**CONSTRUCTION MATERIALS**  
MANAGE HAZARDOUS CHEMICALS, MATERIALS, AND OTHER COMPOUNDS TO AVOID CONTAMINATION OF RUNOFF.

DISPOSE OF CONCRETE WASH WATER IN AN AREA OF SOIL AWAY FROM SURFACE WATERS WHERE SOIL CAN ACT AS A FILTER OR EVAPORATE THE WATER. DISPOSE OF REMAINING CEMENT. BE AWARE THAT THIS WATER CAN KILL VEGETATION.

PREVENT THE DISCHARGE OF SEDIMENT FROM DE-WATERING OPERATIONS INTO STORM SEWERS AND SURFACE WATERS.

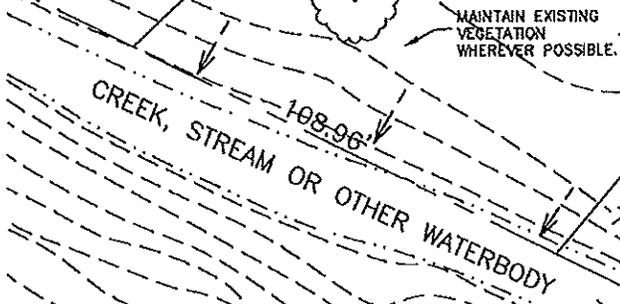
**SILT FENCE / COCONUT WATTLE**  
INSTALL PARALLEL TO CONTOUR OF LAND, EXTEND ENDS UP-SLOPE ENOUGH TO ALLOW WATER TO POND BEHIND FENCE, AND EMBED PER PORTER COUNTY DETAIL II-8. (PERIMETER PROTECTION)

PROTECT ON-SITE SEWER INLETS WITH SILT FENCE OR OTHER APPROVED INLET PROTECTION.

PROTECT PUBLIC RIGHT-OF-WAY AND NEIGHBORING PROPERTIES FROM EROSION AND SEDIMENT DEPOSITS.

PROTECT TREES AND OTHER SENSITIVE AREAS

**CONSTRUCTION ACCESS**  
IDENTIFY EXISTING PAVEMENT FOR ACCESS OR INSTALL A STABILIZED AGGREGATE ACCESS DRIVE OR MAT, 12' MIN. WIDTH TO MINIMIZE TRACKING OF MUD ONTO THE ROAD BY ALL VEHICLES. MAINTAIN THROUGHOUT CONSTRUCTION. SWEEP STREETS DAILY TO REMOVE ANY SEDIMENT THAT LEAVES THE SITE.



**LEGEND**

- PROPERTY LINE
- - - - - LIMITS OF EXCAVATION
- - - - - EXISTING CONTOUR
- EXISTING DRAINAGE
- - - - - PROPOSED DRAINAGE
- - - - - ● SILT FENCE/STRAW WATTLES (PER DETAILS II-12 AND II-13)
- TREE PRESERVATION
- ▨ SOIL STOCKPILE
- ⊙ VG STABILIZE DISTURBED AREAS WITH SEED, SOD, OR OTHER ACCEPTABLE VEGETATION

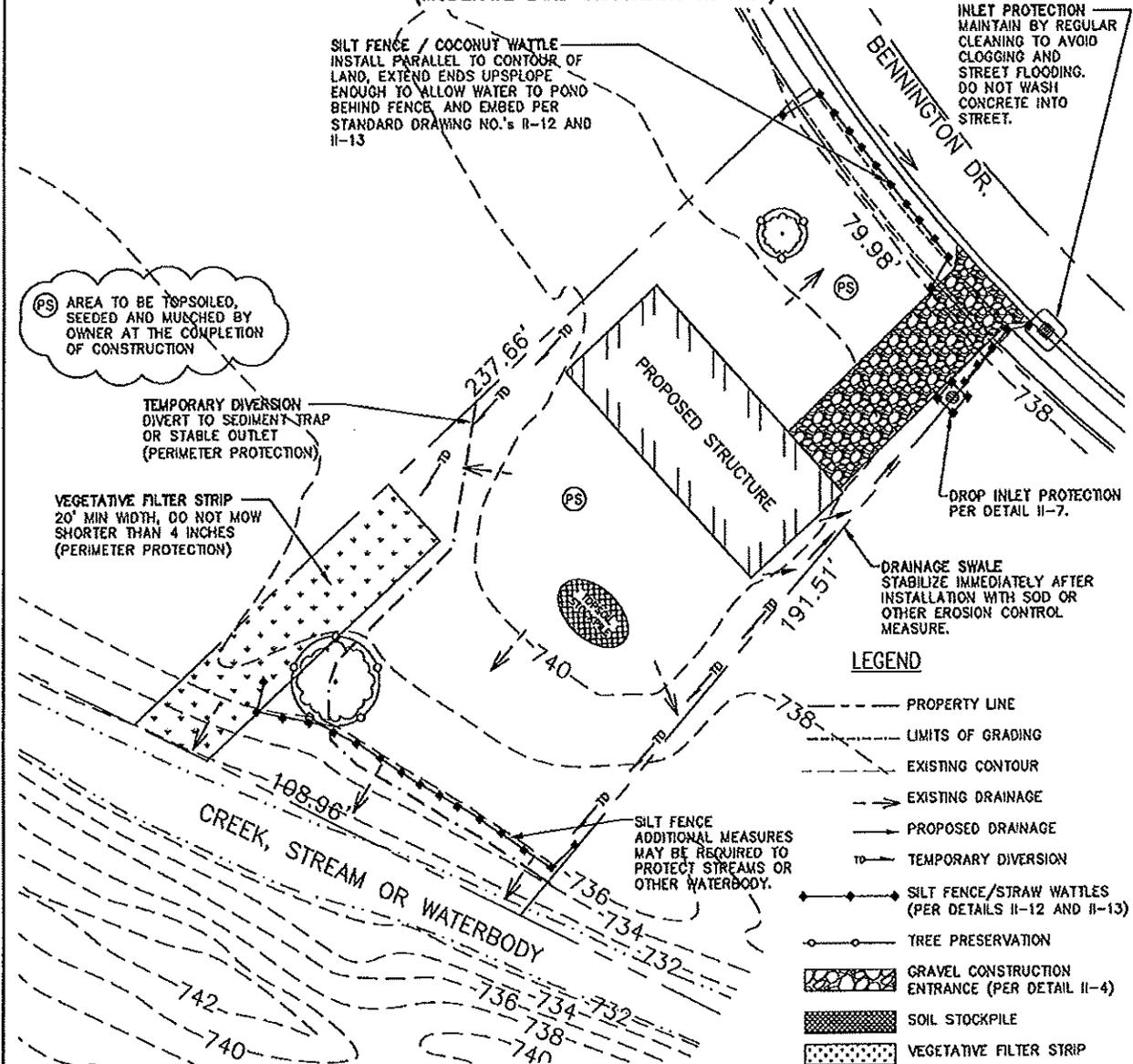
**GENERAL PRINCIPLES OF EROSION & SEDIMENT CONTROL**

1. EVALUATE THE SITE BEFORE LAND DISTURBING ACTIVITIES BEGIN.
  - DEVELOP PLAN AND FOLLOW IT
2. RETAIN EXISTING VEGETATION WHEREVER POSSIBLE.
  - IDENTIFY VEGETATION TO BE SAVED
  - PROTECT TREES & SENSITIVE AREAS
3. MINIMIZE THE EXTENT AND DURATION THAT BARE SOIL IS EXPOSED TO EROSION.
  - USE STAGED CONSTRUCTION WHEN POSSIBLE
  - STABILIZE SOIL AFTER EACH STAGE (SEE NO. 6)
4. KEEP SEDIMENT ON THE CONSTRUCTION SITE.
  - USE SILT FENCE, STRAW WATTLES, SEDIMENT BASINS, ETC TO FILTER RUNOFF.
5. IF POSSIBLE, DIVERT OFF-SITE RUNOFF AWAY FROM DISTURBED AREAS.
  - USE DIVERSIONS TO REDUCE THE POTENTIAL FOR EROSION.
6. STABILIZE DISTURBED AREAS AS SOON AS POSSIBLE.
  - USE STABILIZING MEASURES, SUCH AS SEEDING, TEMPORARY AND PERMANENT VEGETATION, SODDING, MULCHING, EROSION CONTROL BLANKETS, OR OTHER PROTECTIVE PRACTICES.
7. INSPECT AND REPAIR EROSION CONTROL MEASURES REGULARLY AND AFTER EACH STORM EVENT.
8. MAINTAIN EROSION CONTROL MEASURES IN PLACE UNTIL GROUND COVER IS ESTABLISHED (WHICH COULD BE THE NEXT GROWING SEASON).

ADDITIONAL MEASURES SHOULD BE CONSIDERED TO PROTECT STREAMS OR OTHER WATER BODY.

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| PORTER COUNTY, INDIANA                            |          |                         |
| ITEM  | REVISION | APPROVED DATE           |
|   |          |                         |
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|   |          |                         |
| <b>EROSION CONTROL-<br/>LIGHT LAND DISTURBING</b> |          | SHT. NO.<br><b>II-2</b> |

# EXAMPLE EROSION CONTROL PLAN (MODERATE LAND DISTURBING ACTIVITY)



### LEGEND

- PROPERTY LINE
- - - LIMITS OF GRADING
- - - EXISTING CONTOUR
- > EXISTING DRAINAGE
- > PROPOSED DRAINAGE
- > TEMPORARY DIVERSION
- > SILT FENCE/STRAW WATTLES (PER DETAILS II-12 AND II-13)
- TREE PRESERVATION
- ▨ GRAVEL CONSTRUCTION ENTRANCE (PER DETAIL II-4)
- ▩ SOIL STOCKPILE
- ▤ VEGETATIVE FILTER STRIP
- Ⓟ VEGETATION SPECIFICATION

**PROPERTY INFORMATION**  
 OWNER: PROPERTY OWNER  
 ADDRESS  
 PHONE NUMBER

**CONTRACTOR:** CONTRACTOR NAME  
 ADDRESS  
 PHONE NUMBER

**PROJECT INFORMATION**  
 ADDRESS:  
 SITE SIZE (ACRES);  
 TAX LOT NO.:  
 SECTION:  
 TOWNSHIP:  
 SITE RUNOFF DRAINS TO:

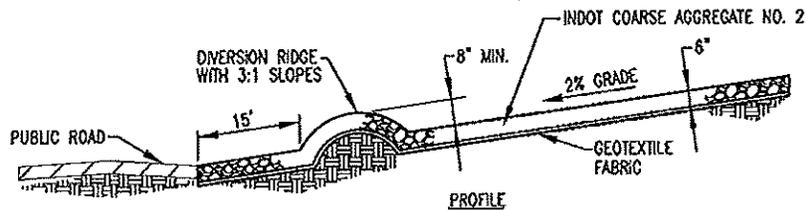
### CONSTRUCTION SEQUENCE FOR EROSION CONTROL

1. EVALUATE THE SITE
2. INSTALL PERIMETER EROSION & SEDIMENT CONTROLS  
 ANTICIPATED START OF EXCAVATION DATE: \_\_\_\_\_
3. PREPARE THE SITE FOR CONSTRUCTION
4. BUILD STRUCTURE(S) & INSTALL UTILITIES  
 CONSTRUCTION COMPLETE (SOIL NOT STABILIZED) DATE: \_\_\_\_\_
5. MAINTAIN CONTROL PRACTICES
6. REVEGETATE SITE
7. REMOVE REMAINING TEMPORARY CONTROL MEASURES  
 ANTICIPATED COMPLETION (GROUND COVER ESTABLISHED) DATE: \_\_\_\_\_

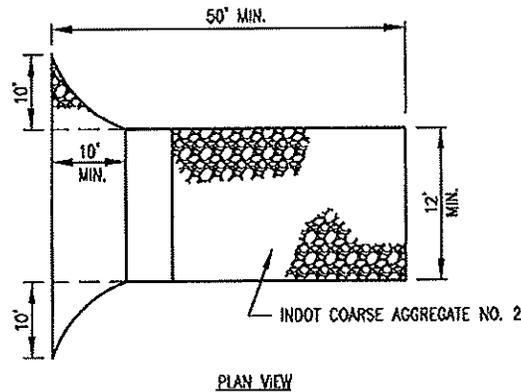
| PORTER COUNTY, INDIANA |  |                  |
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| STANDARD DRAWINGS      |  |                  |
|                        | EROSION CONTROL—<br>MODERATE LAND DISTURBING | SHT. NO.<br>II-3 |
| ITEM                   | REVISION                                     | APPROVED DATE    |
|                        |  |                  |
|                        |  |                  |
|                        |  |                  |

**REQUIREMENTS:** MATERIAL: 1-2.5 IN. WASHED STONE (INDOT CA NO. 2) OVER A STABLE FOUNDATION.  
 THICKNESS: 6 IN. MINIMUM.  
 WIDTH: 12 FT. MINIMUM OR FULL WIDTH OF ENTRANCE/EXIT ROADWAY, WHICHEVER IS GREATER.  
 LENGTH: 50 FT. MINIMUM. THE LENGTH CAN BE SHORTER FOR SMALL SITES SUCH AS FOR AN INDIVIDUAL HOME, BUT SHALL BE OF SUFFICIENT LENGTH TO PREVENT TRACKING.  
 WASHING FACILITY (OPTIONAL): LEVEL AREA WITH 3 IN. WASHED STONE MINIMUM OR A COMMERCIAL RACK, AND WASTE WATER DIVERTED TO A SEDIMENT TRAP OR BASIN.  
 GEOTEXTILE FABRIC UNDERLINER: REQUIRED TO PROVIDE GREATER BEARING STRENGTH.

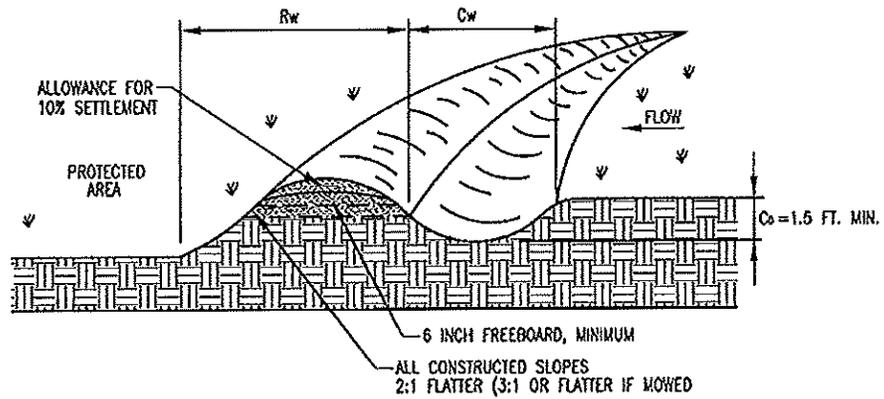
- INSTALLATION:**
1. AVOID LOCATING ON STEEP SLOPES OR AT CURVES IN PUBLIC ROADS.
  2. REMOVE ALL VEGETATION AND OTHER OBJECTIONABLE MATERIAL FROM THE FOUNDATION AREA, AND GRADE AND CROWN FOR POSITIVE DRAINAGE.
  3. IF SLOPE TOWARDS THE ROAD EXCEEDS 2%, CONSTRUCT A 6-8 IN.-HIGH WATER BAR (RIDGE) WITH 3:1 SIDE SLOPES ACROSS THE FOUNDATION AREA ABOUT 15 FT. FROM THE ENTRANCE TO DIVERT RUNOFF AWAY FROM THE ROAD (SEE PROFILE).
  4. INSTALL PIPE UNDER THE PAD IF NEEDED TO MAINTAIN PROPER PUBLIC ROAD DRAINAGE.
  5. PLACE STONE TO DIMENSIONS AND GRADE SHOWN IN THE EROSION/SEDIMENT CONTROL PLAN, LEAVING THE SURFACE SMOOTH AND SLOPED FOR DRAINAGE.
  6. DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE STONE PAD TO A SEDIMENT TRAP OR BASIN.



- MAINTENANCE**
- INSPECT ENTRANCE PAD, SEDIMENT DISPOSAL AREA, AND ALL OTHER EROSION CONTROL MEASURES WEEKLY AND AFTER STORM EVENTS OR HEAVY USE. REQUIRED REPAIRS SHOULD BE COMPLETED IMMEDIATELY.
  - RESHAPE PAD AS NEEDED FOR DRAINAGE AND RUNOFF CONTROL.
  - TOPDRESS WITH CLEAN STONE AS NEEDED.
  - IMMEDIATELY REMOVE MUD AND SEDIMENT TRACKED OR WASHED ONTO PUBLIC ROADS BY BRUSHING OR SWEEPING. FLUSHING SHOULD ONLY BE USED IF THE WATER IS CONVEYED INTO A SEDIMENT TRAP OR BASIN.
  - REPAIR ANY BROKEN ROAD PAVEMENT IMMEDIATELY.



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|      |          |               | PORTER COUNTY, INDIANA                |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS                     |  |
|      |          |               | TEMPORARY STONE CONSTRUCTION ENTRANCE |  |
|      |          |               | SHT. NO. II-4                         |  |



$C_d$  = CHANNEL DEPTH  
 $C_w$  = CHANNEL WIDTH  
 $R_w$  = RIDGE WIDTH

**INSTALLATION:**

1. RIDGE WIDTH, CHANNEL WIDTH AND CHANNEL DEPTH SHALL BE AS SPECIFIED BY THE ENGINEER/SURVEYOR. THE CHANNEL CROSS-SECTION AND LONGITUDINAL SLOPE SHOULD CONVEY THE PEAK RUNOFF FROM A 2-YEAR, 24 HOUR DURATION STORM EVENT.
2. TOP WIDTH OF RIDGE SHALL BE TWO FEET MINIMUM.
3. EXCAVATED CHANNEL AND RIDGE SHALL BE STABILIZED IF IN PLACE MORE THAN 15 WORKING DAYS.
4. MAINTAIN A STABLE, POSITIVE CHANNEL GRADE TOWARDS THE OUTLET.
5. REMOVE AND PROPERLY DISPOSE OF BRUSH, TREES, AND OTHER DEBRIS AS REQUIRED.
6. CONSTRUCT THE DIVERSION RIDGE IN 6"-8" LIFTS. COMPACT EACH LIFT BY DRIVING WHEELS OF CONSTRUCTION EQUIPMENT ALONG THE RIDGE. OVERFILL AND COMPACT THE RIDGE TO DESIGN HEIGHT + 10% TO ALLOW FOR SETTLEMENT. THE COMPACTED RIDGE MUST BE AT OR ABOVE DESIGN GRADE AT ALL POINTS, WHILE THE CHANNEL MUST BE AT DESIGN GRADE. LEAVE SUFFICIENT AREA ALONG THE DIVERSION TO PERMIT CLEANOUT AND REGRADING.
7. STABILIZE OUTLETS PRIOR TO OR DURING CONSTRUCTION. SEDIMENT-LADEN STORMWATER SHOULD BE DIVERTED TO A TEMPORARY SEDIMENT TRAP OR A TEMPORARY DRY SEDIMENT BASIN.

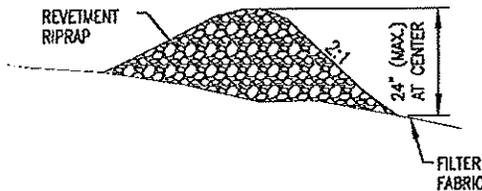
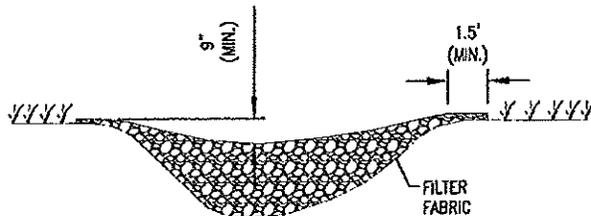
**MAINTENANCE:**

1. INSPECT DIVERSION WEEKLY AND WITHIN 24-HOURS OF EACH RAIN EVENT.
2. REMOVE SEDIMENT FROM CHANNEL TO MAINTAIN POSITIVE GRADE.
3. CHECK OUTLETS AND MAKE NECESSARY REPAIRS IMMEDIATELY.
4. ADJUST RIDGE HEIGHT TO PREVENT OVERTOPPING.

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|      |          |               | PORTER COUNTY, INDIANA      |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS           |  |
|      |          |               | TEMPORARY DIVERSION CHANNEL |  |
|      |          |               | SHT. NO. II-5               |  |



NOTE:  
SPACE CHECK DAMS IN THE CHANNEL SO THE UPSTREAM DAM  
TOE ELEVATION (A) AND THE DOWNSTREAM DAM TOP  
ELEVATION (B) ARE THE SAME.



**LIMITATIONS:**

1. MAXIMUM 2 ACRES DRAINAGE AREA.
2. CHANNEL GEOMETRY MUST BE LINEAR TO CREATE CONTINUOUS CONTACT BETWEEN THE SOIL SURFACE AND THE BOTTOM OF THE BERM. THERE MUST BE NO GAPS BETWEEN THE SOIL SURFACE AND THE BERM.
3. EROSION CONTROL BLANKET MUST BE USED IN CONJUNCTION WITH THE BERM.
4. MAXIMUM CHANNEL SLOPE=38%.

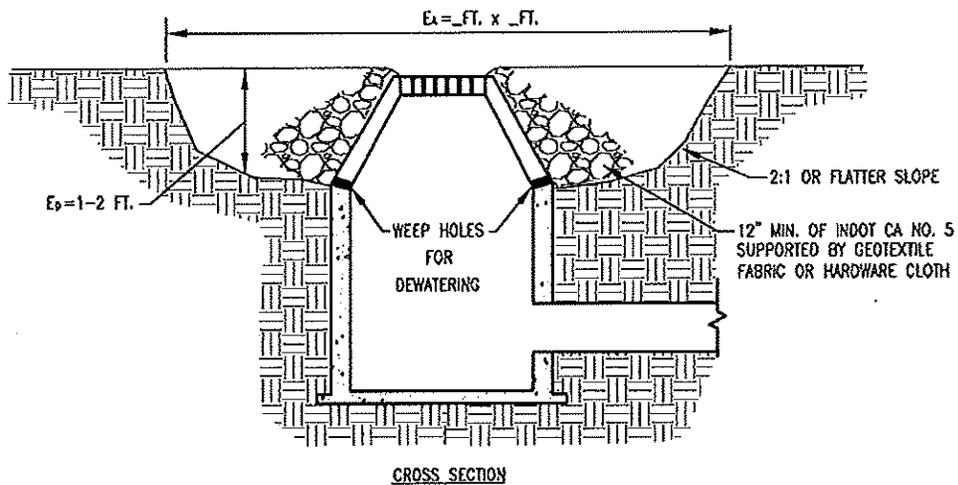
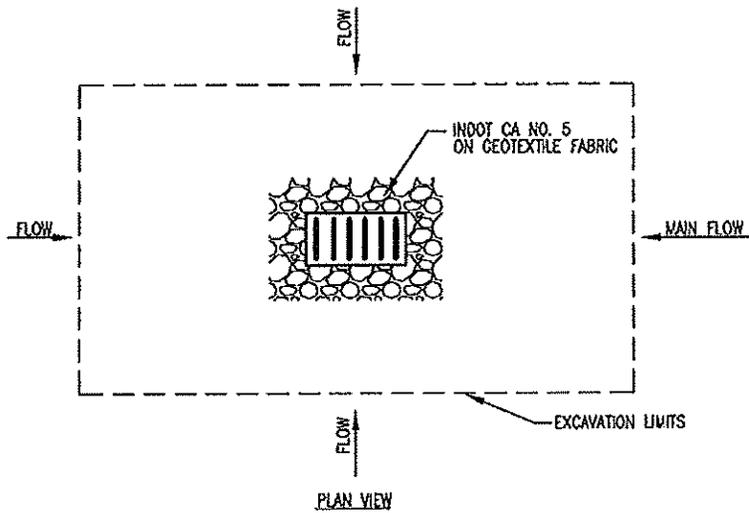
**INSTALLATION:**

1. LAYOUT THE LOCATION OF THE DAM.
2. EXCAVATE A CUTOFF TRENCH INTO THE CHANNEL BOTTOM AND DITCH BANKS, EXTENDING IT A MINIMUM OF 18 INCHES BEYOND THE TOP OF THE DITCH BANK.
3. INSTALL AND ANCHOR FILTER FABRIC IN THE CHANNEL AND CUTOFF TRENCH.
4. PLACE RIPRAP IN THE CUTOFF TRENCH AND CHANNEL TO THE LINES AND DIMENSIONS SHOWN IN THE CONSTRUCTION PLANS. THE CENTER OF EACH DAM MUST BE AT LEAST NINE INCHES LOWER THAN THE UPPERMOST POINTS OF CONTACT BETWEEN THE RIPRAP DAM AND CHANNEL BANKS.
5. EXTEND RIPRAP AT LEAST 18 INCHES BEYOND THE TOP OF CHANNEL BANKS TO KEEP OVERFLOW WATER FROM ERODING AREAS ADJACENT TO THE CHANNEL BANKS BEFORE IT RE-ENTERS THE CHANNEL.
6. PLACE FILTER MEDIUM (INDOT CA NO. 5 AGGREGATE) ON THE UP-SLOPE SIDE OF THE DAM. PLACE FILTER MEDIUM OVER THE ENTIRE FACE OF THE DAM UP TO THE BASE OF THE OVERFLOW WEIR NOTCH.
7. STABILIZE THE CHANNEL ABOVE THE UPPERMOST DAM.
8. INSTALL AN EROSION-RESISTANT LINING IN THE CHANNEL BELOW THE LOWERMOST DAM. THE LINING SHOULD EXTEND A MINIMUM DISTANCE OF SIX FEET BELOW THE DAM.
9. ADDITIONAL SEDIMENT STORAGE CAN BE PROVIDED BY EXCAVATING A SMALL SEDIMENT TRAP ON THE UPSTREAM SIDE OF THE CHECK DAM.
10. SEE SPECIFIC PRODUCT INFORMATION FOR INSTALLATION OF MANUFACTURED CHECK DAM.

**MAINTENANCE:**

1. INSPECT WITHIN 24 HOURS EACH RAIN EVENT AND AT LEAST ONCE EVERY SEVEN CALENDAR DAYS.
2. IF SIGNIFICANT EROSION OCCURS BETWEEN DAMS, INSTALL AN EROSION-RESISTANT LINER IN THAT PORTION OF THE CHANNEL.
3. REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES ONE-HALF THE HEIGHT OF THE DAM TO MAINTAIN CHANNEL CAPACITY, ALLOW DRAINAGE THROUGH THE DAM, AND PREVENT LARGE FLOW FROM DISPLACING SEDIMENT.
4. ADD RIPRAP AND AGGREGATE AS NEEDED TO MAINTAIN DESIGN HEIGHT AND CROSS SECTION OF THE DAMS.
5. WHEN DAMS ARE NO LONGER NEEDED, REMOVE THE RIPRAP AND AGGREGATE AND STABILIZE THE CHANNEL, USING AN EROSION-RESISTANT LINING IF NECESSARY. (RIPRAP AND AGGREGATE FROM THE DAM MAY BE REMOVED OR UTILIZED TO STABILIZE THE CHANNEL).
6. PERFORM NECESSARY MAINTENANCE TO PREVENT FREEZING OF DAM DURING WINTER MONTHS.

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|------|----------|---------------|------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS      |  |
|      |          |               | ROCK CHECK DAM         |  |
|      |          |               | SHT. NO.<br>II-6       |  |



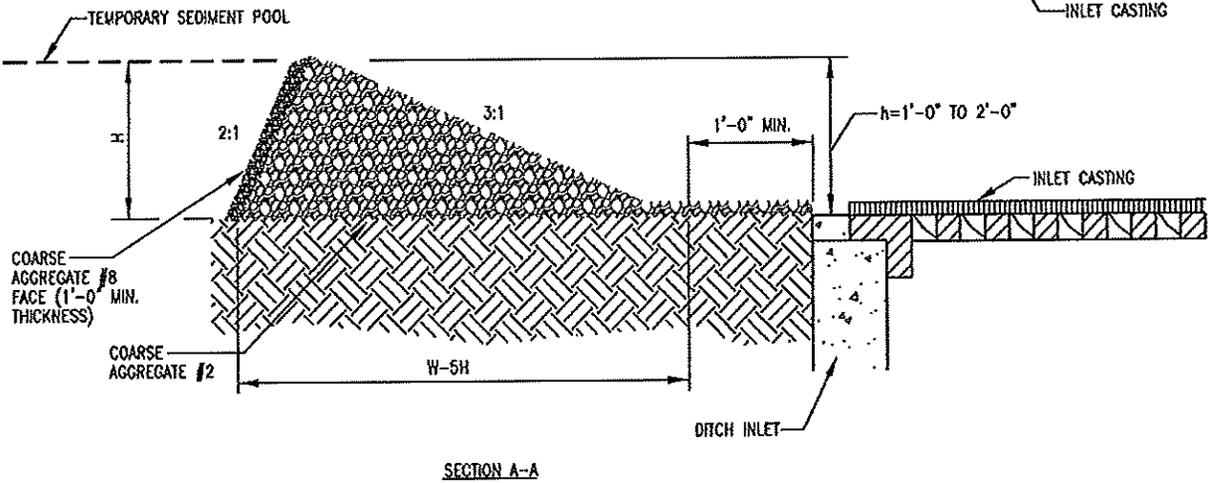
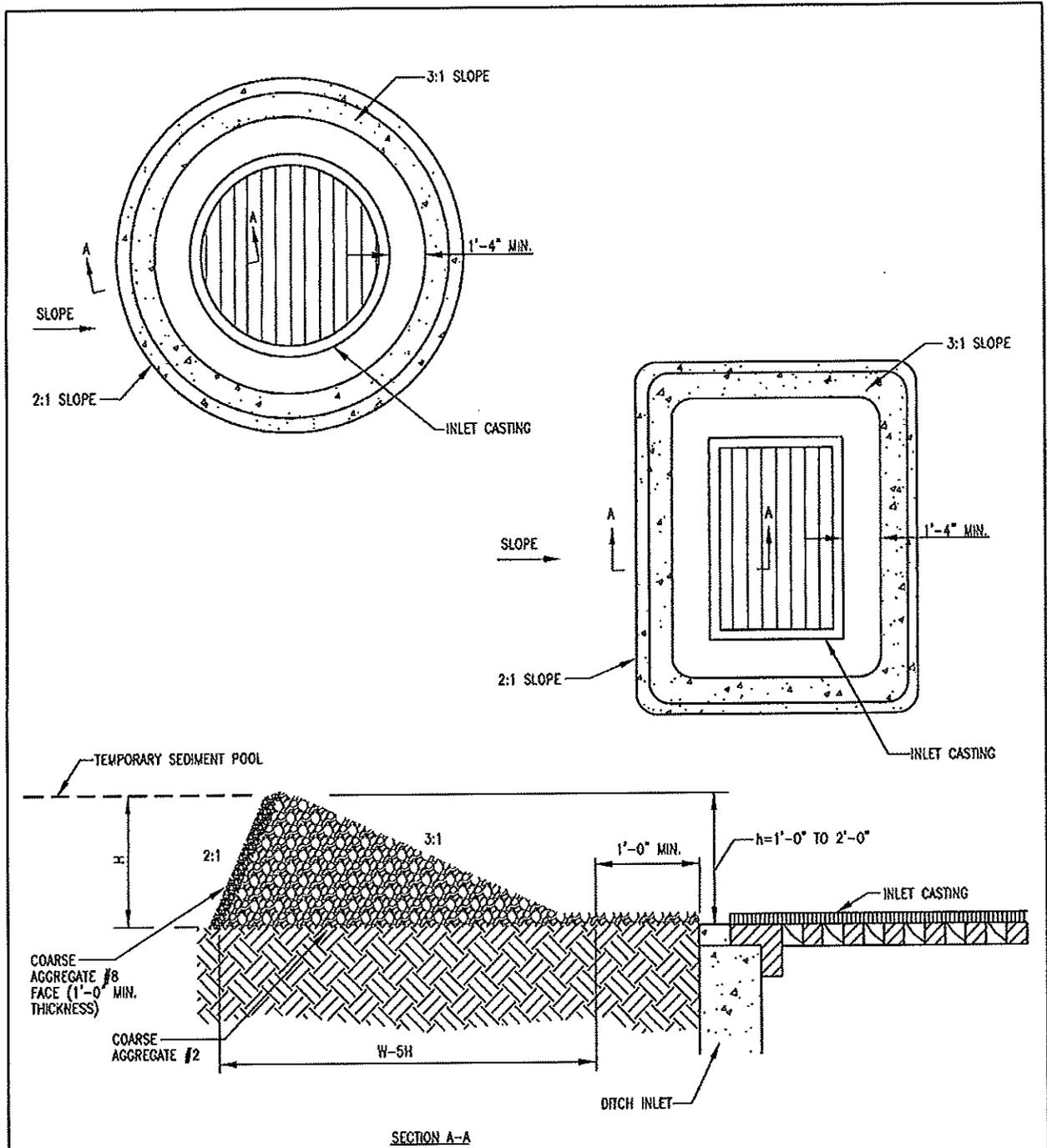
**INSTALLATION:**

1. THE MINIMUM EXCAVATED VOLUME PER STORM WATER/SEDIMENT STORAGE SHALL BE 950 CUBIC FT. (1 ACRE MAXIMUM DRAINAGE AREA).
2. CLEAR THE AREA OF ALL DEBRIS. ORIENT THE LONGEST DIMENSION OF THE EXCAVATED POOL AREA TOWARDS THE LARGEST INFLOW, SEE PLAN VIEW.
3. STOCKPILE OR SPREAD EXCAVATED SOIL SO IT WILL NOT BLOCK STORM WATER FLOW OR WASH BACK INTO THE EXCAVATION. IF NECESSARY, SPOIL MAY BE PLACED TO FORM A DIKE ON THE DOWN-SLOPE SIDE OF THE EXCAVATION TO PREVENT BY-PASS FLOW. THE DIKE SHOULD BE AT LEAST SIX INCHES HIGHER THAN THE TOP ELEVATION OF THE STORM DRAIN INLET GRATE.
4. PROVIDE WEEP HOLES IN DROP INLET AS SHOWN SO THAT POOL DRAINS SLOWLY. COVER THE WEEP HOLES WITH GEOTEXTILE FABRICS AND AT LEAST 12" OF INDOT CA NO. 5.
5. INDOT CA NO. 8 IS ACCEPTABLE IF CA NO. 5 STONE IS NOT AVAILABLE. THE USE OF NO. 8 STONE MAY RESULT IN MORE FREQUENT OVERTOPPING OF THE STRUCTURE AND INCREASE THE FREQUENT OF STRUCTURE MAINTENANCE.

**MAINTENANCE**

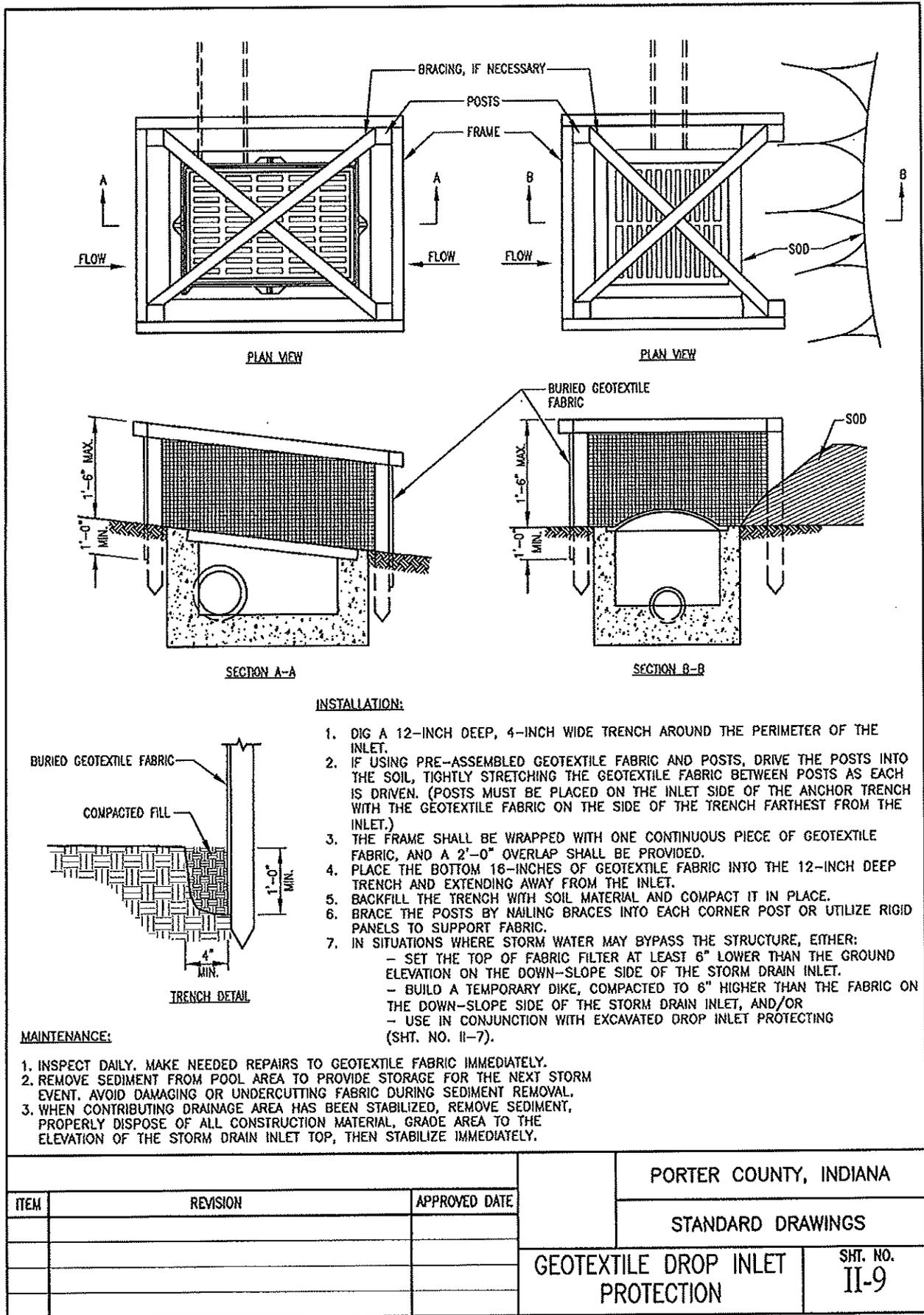
1. INSPECT DAILY.
2. REMOVE SEDIMENT WHEN POOL AREA IS APPROXIMATELY ONE-HALF FULL OF SEDIMENT.
3. REMOVE AND REPLACE AGGREGATE IF SEDIMENT HINDERS DRAINAGE.
4. ONCE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, REMOVE SEDIMENT, SEAL WEEP HOLES, FILL BASIN WITH SOIL, COMPACT AND GRADE TO FINISHED EXCAVATION, AND STABILIZE.

|  |          |                         |
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| PORTER COUNTY, INDIANA                 |          |                         |
| STANDARD DRAWINGS                      |          |                         |
| ITEM                                   | REVISION | APPROVED DATE           |
|  |          |                         |
|  |          |                         |
| <b>EXCAVATED DROP INLET PROTECTION</b> |          | SHT. NO.<br><b>II-7</b> |



NOTES:  
 1.  $H = h + 0.25$  FT.

|      |          |               |                                      |  |
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|      |          |               | PORTER COUNTY, INDIANA               |  |
|      |          |               | STANDARD DRAWINGS                    |  |
| ITEM | REVISION | APPROVED DATE | GRAVEL RING<br>DROP INLET PROTECTION |  |
|      |          |               |                                      |  |
|      |          |               | SHT. NO.<br>II-8                     |  |



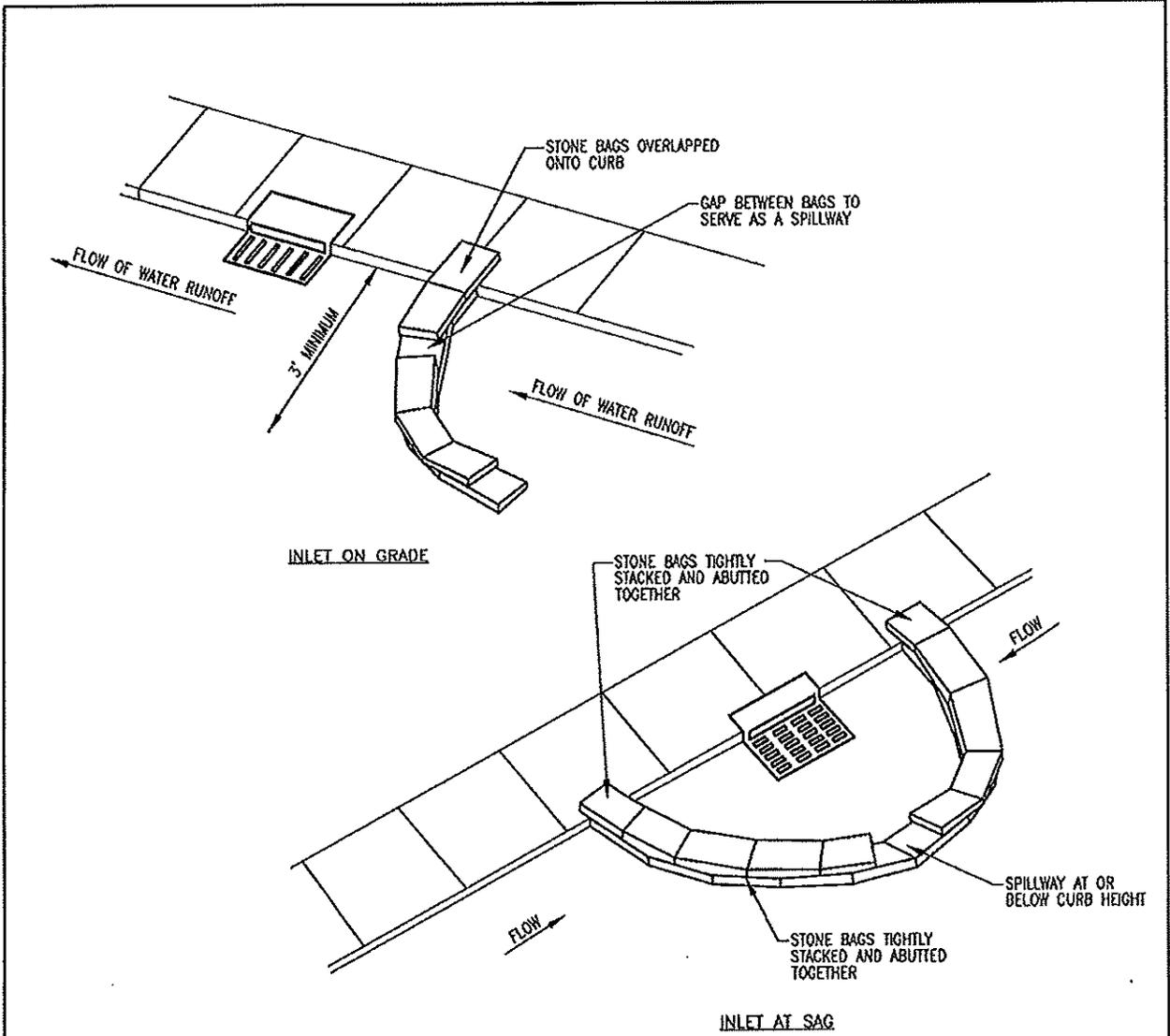
**INSTALLATION:**

1. DIG A 12-INCH DEEP, 4-INCH WIDE TRENCH AROUND THE PERIMETER OF THE INLET.
2. IF USING PRE-ASSEMBLED GEOTEXTILE FABRIC AND POSTS, DRIVE THE POSTS INTO THE SOIL, TIGHTLY STRETCHING THE GEOTEXTILE FABRIC BETWEEN POSTS AS EACH IS DRIVEN. (POSTS MUST BE PLACED ON THE INLET SIDE OF THE ANCHOR TRENCH WITH THE GEOTEXTILE FABRIC ON THE SIDE OF THE TRENCH FARTHEST FROM THE INLET.)
3. THE FRAME SHALL BE WRAPPED WITH ONE CONTINUOUS PIECE OF GEOTEXTILE FABRIC, AND A 2'-0" OVERLAP SHALL BE PROVIDED.
4. PLACE THE BOTTOM 16-INCHES OF GEOTEXTILE FABRIC INTO THE 12-INCH DEEP TRENCH AND EXTENDING AWAY FROM THE INLET.
5. BACKFILL THE TRENCH WITH SOIL MATERIAL AND COMPACT IT IN PLACE.
6. BRACE THE POSTS BY NAILING BRACES INTO EACH CORNER POST OR UTILIZE RIGID PANELS TO SUPPORT FABRIC.
7. IN SITUATIONS WHERE STORM WATER MAY BYPASS THE STRUCTURE, EITHER:
  - SET THE TOP OF FABRIC FILTER AT LEAST 6" LOWER THAN THE GROUND ELEVATION ON THE DOWN-SLOPE SIDE OF THE STORM DRAIN INLET.
  - BUILD A TEMPORARY DIKE, COMPACTED TO 6" HIGHER THAN THE FABRIC ON THE DOWN-SLOPE SIDE OF THE STORM DRAIN INLET, AND/OR
  - USE IN CONJUNCTION WITH EXCAVATED DROP INLET PROTECTING (SHT. NO. II-7).

**MAINTENANCE:**

1. INSPECT DAILY. MAKE NEEDED REPAIRS TO GEOTEXTILE FABRIC IMMEDIATELY.
2. REMOVE SEDIMENT FROM POOL AREA TO PROVIDE STORAGE FOR THE NEXT STORM EVENT. AVOID DAMAGING OR UNDERCUTTING FABRIC DURING SEDIMENT REMOVAL.
3. WHEN CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, REMOVE SEDIMENT, PROPERLY DISPOSE OF ALL CONSTRUCTION MATERIAL, GRADE AREA TO THE ELEVATION OF THE STORM DRAIN INLET TOP, THEN STABILIZE IMMEDIATELY.

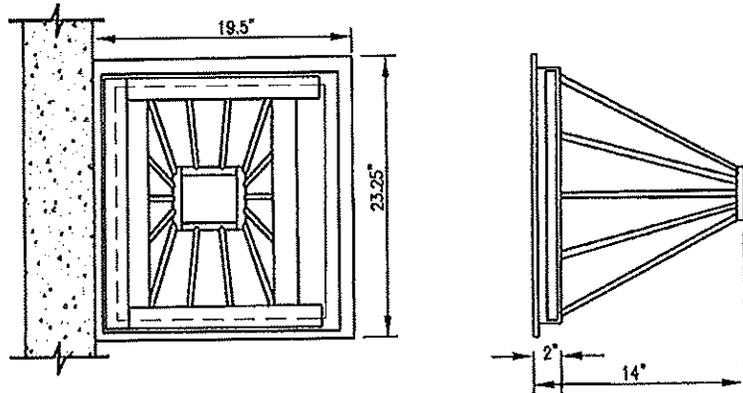
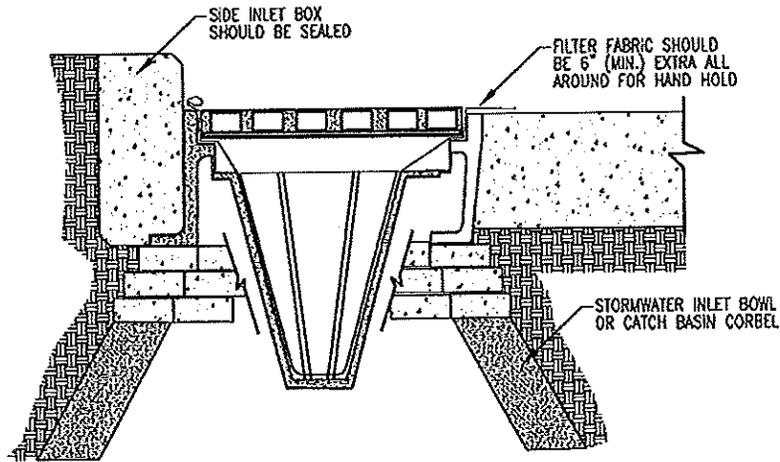
| PORTER COUNTY, INDIANA |          |                                     |
|------------------------|----------|-------------------------------------|
| STANDARD DRAWINGS      |          |                                     |
|                        |          | GEOTEXTILE DROP INLET<br>PROTECTION |
|                        |          | SHT. NO.<br>II-9                    |
| ITEM                   | REVISION | APPROVED DATE                       |
|                        |          |                                     |
|                        |          |                                     |
|                        |          |                                     |



- INSTALLATION:**
1. FILL UV-STABILIZED GEOTEXTILE FABRIC BAGS 1/2 FULL WITH GRAVEL OR INDOT CA NO. 5.
  2. GRAVEL OR AGGREGATE MUST BE LARGER THAN STORM SEWER GRATE OPENINGS TO PREVENT STONE FROM FALLING INTO SEWER IN THE EVENT THE BAGS BREAK. PLACE A TRAFFIC BARRICADE AT EACH INSTALLED MEASURE.

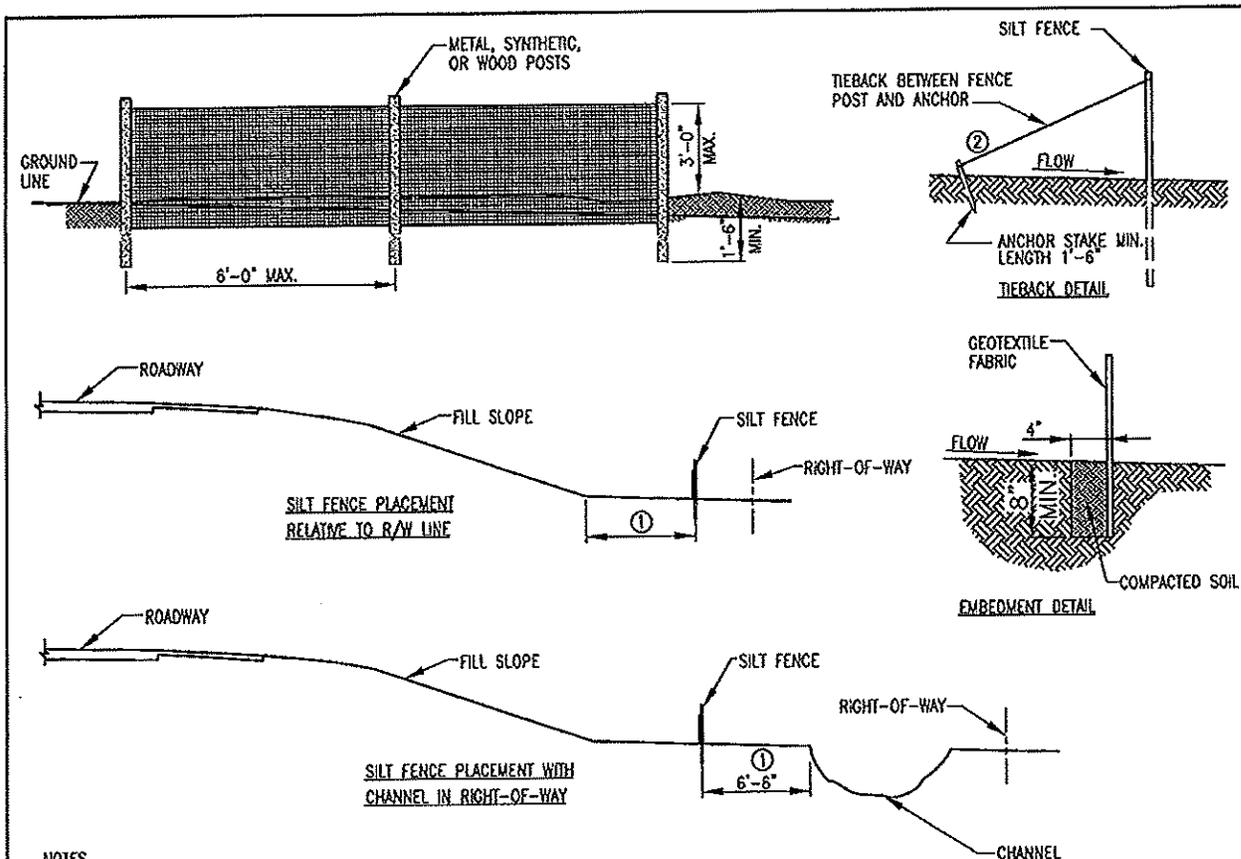
- MAINTENANCE:**
1. INSPECT DAILY. REPAIR IF BAGS HAVE BEEN DAMAGED BY VEHICULAR TRAFFIC OR OTHER MEANS.
  2. REMOVE ACCUMULATED SEDIMENT FROM PAVED AREA (DO NOT FLUSH WITH WATER) AFTER EACH STORM EVENT. DEPOSIT SEDIMENT IN AN AREA WHERE IT WILL NOT RE-ENTER THE PAVED AREA STORM DRAINS.
  3. WHEN CONTRIBUTING DRAINAGE AREAS HAVE BEEN STABILIZED, REMOVE INLET PROTECTION.

|      |          |               |                                 |  |
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|      |          |               | PORTER COUNTY, INDIANA          |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS               |  |
|      |          |               | STONE BAG CURB INLET PROTECTION |  |
|      |          |               | SHT. NO. II-10                  |  |



- PURPOSE:** 1. TO PREVENT EXCESSIVE SEDIMENT FROM ENTERING STORM SEWERS AT CURB INLETS, ALLOWING FULL USE OF THE STORM DRAIN SYSTEM DURING THE CONSTRUCTION PERIOD.
- REQUIREMENTS:** 1. BASKET: FABRICATED METAL WITH TOP WIDTH-LENGTH DIMENSIONS SUCH THAT THE BASKET FITS INTO THE INLET WITHOUT CAPS, AND LINE IT WITH GEOTEXTILE FABRIC FOR FILTRATION.
- INSTALLATION:** 1. INSTALL BASKET CURB INLET PROTECTIONS AS SOON AS INLET BOXES ARE INSTALLED IN A NEW DEVELOPMENT OR BEFORE LAND DISTURBING ACTIVITIES BEGIN IN A STABILIZED AREA.  
 2. REMOVE THE GRATE AND PLACE THE BASKET IN THE INLET.  
 3. CUT AND INSTALL A PIECE OF FILTER FABRIC LARGE ENOUGH TO LINE THE INSIDE OF THE BASKET AND EXTEND AT LEAST 6" BEYOND THE FRAME.  
 4. REPLACE THE INLET GRATE WHICH ALSO SERVES TO ANCHOR THE FABRIC.  
 5. FOLLOW INSTRUCTIONS AS PROVIDED BY MANUFACTURER.
- MAINTENANCE:** 1. INSPECT WITHIN 24 HOURS AFTER EACH STORM EVENT.  
 2. REMOVE BUILT-UP SEDIMENT AND REPLACE THE GEOTEXTILE FABRIC AFTER EACH STORM EVENT.  
 3. REPLACE BASKET EVERY SIX (6) MONTHS.  
 4. REPLACE BASKET AFTER ANY OIL, GASOLINE OR SOLVENT SPILL, OR IF THERE IS A HOLE IN THE FABRIC.

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|      |          |               | PORTER COUNTY, INDIANA                 |  |
|      |          |               | STANDARD DRAWINGS                      |  |
| ITEM | REVISION | APPROVED DATE | CATCH BASIN INSERT<br>INLET PROTECTION |  |
|      |          |               |  |  |
|      |          |               |  |  |
|      |          |               |  |  |
|      |          |               | SHT. NO.<br>II-11                      |  |



**NOTES**

- ① DIMENSIONS WILL VARY BASED ON RIGHT-OF-WAY AVAILABILITY. SILT FENCE SHALL BE PLACED AS CLOSE AS POSSIBLE TO EDGE OF CONSTRUCTION LIMITS.
- ② THE SPACING OF THE TIEBACKS SHALL EQUAL THE SPACING OF THE POSTS. ADDITIONAL POST DEPTH OR TIEBACKS MAY BE REQUIRED IN UNSTABLE SOILS.

**INSTALLATION**

1. THE SILT FENCE SHALL BE ATTACHED TO HARDWOOD STAKES WITH HARDWOOD LATHS AND SECURED WITH FIVE 1-1/2" STAPLES. HARDWOOD STAKES SHALL BE 6" ON CENTER. THE BOTTOM 12" OF FABRIC SHALL BE LEFT UNSECURED TO ALLOW FOR ENTRENCHMENT.
2. A 6" DEEP TRENCH ALONG PROPOSED FENCE LINE SHALL BE CREATED. DRIVE THE STAKES INTO THE TRENCH 8-12" OR UNTIL SECURE. BE SURE TO STRETCH FABRIC TIGHT WHEN DRIVING STAKES. STAKES MUST BE INSTALLED ON THE DOWNHILL OR DOWNSTREAM SIDE OF FENCE. DRAPE LOOSE END OF GEOTEXTILE INTO TRENCH, THEN BACKFILL AND COMPACT ON BOTH SIDES.

3. LIMITED TO 1/4 ACRE PER 100 LINEAR FEET OF FENCE.

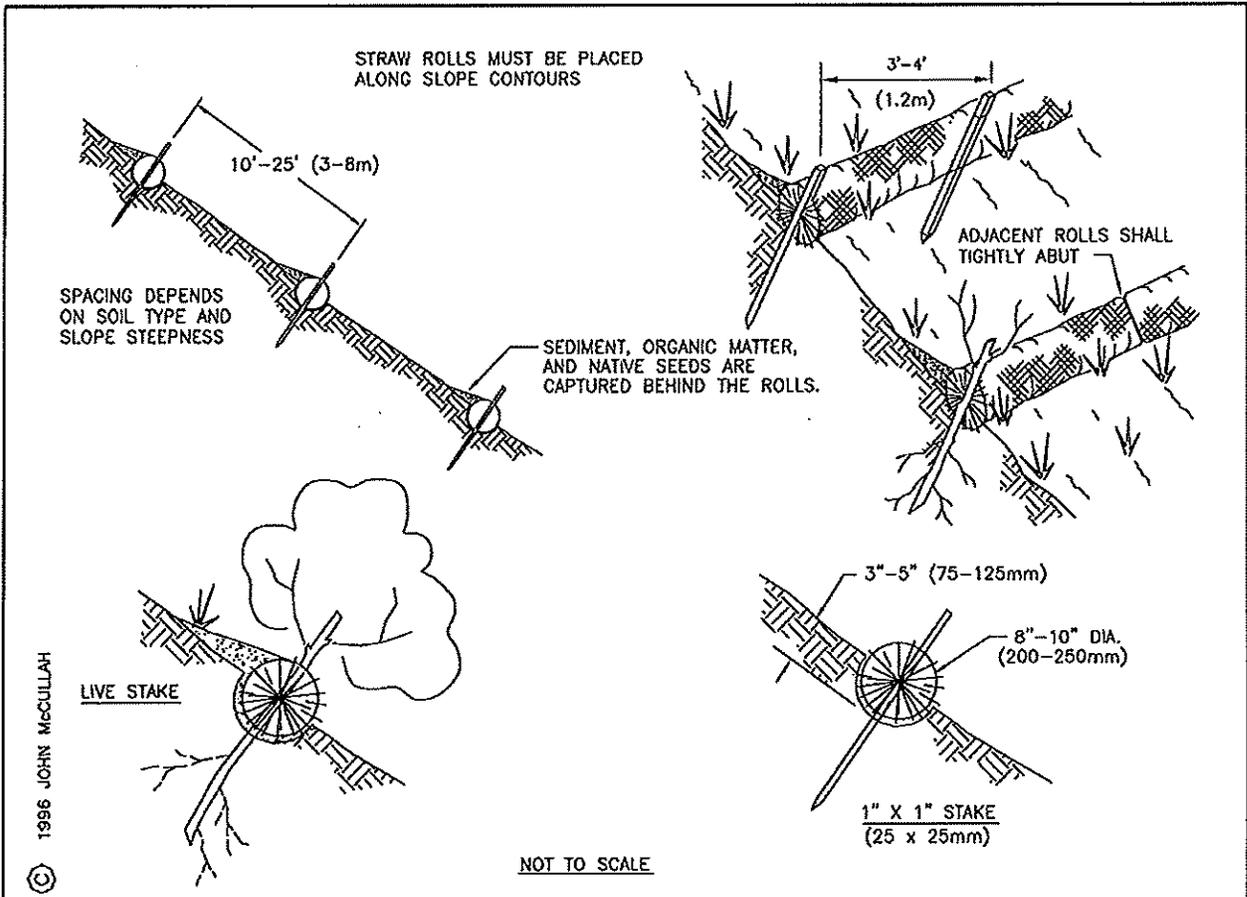
| % SLOPE      | MAX DISTANCE                  |
|--------------|-------------------------------|
| < 50:1       | 100 FEET                      |
| 50:1 TO 20:1 | 75 FEET                       |
| >20:1        | PROVIDE SURFACE STABILIZATION |

5. INSTALL PARALLEL TO THE SLOPE CONTOUR.
6. DO NOT USE FOR SHALLOW CONCENTRATED OR CHANNEL FLOW.

**MAINTENANCE**

1. INSPECT WITHIN 24 HOURS OF A RAIN EVENT AND AT LEAST ONCE EVERY 7 CALENDAR DAYS.
2. IF FENCE FABRIC TEARS, STARTS TO DECOMPOSE, OR IN ANY WAY BECOMES INEFFECTIVE, REPLACE THE AFFECTED PORTION IMMEDIATELY. NOTE: ALL REPAIRS SHOULD MEET SPECIFICATIONS AS OUTLINED BY THE MANUFACTURER.
3. REMOVE DEPOSITED SEDIMENT WHEN IT IS CAUSING THE FILTER FABRIC TO BULGE OR WHEN IT REACHES ONE-HALF THE HEIGHT OF THE FENCE AT ITS LOWEST POINT. WHEN CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, REMOVE THE FENCE AND SEDIMENT DEPOSITS, GRADE THE SITE TO BLEND WITH THE SURROUNDING AREA, AND STABILIZE.

|          |          |               |   |  |          |       |
|----------|----------|---------------|---|--|----------|-------|
|          |          |               | PORTER COUNTY, INDIANA  |  |          |       |
|          |          |               | STANDARD DRAWINGS   |  |          |       |
| ITEM     | REVISION | APPROVED DATE | TEMPORARY SILT FENCE <table style="float: right; border: none;"> <tr> <td style="border: none;">SHT. NO.</td> <td style="border: none;">II-12</td> </tr> </table> |  | SHT. NO. | II-12 |
| SHT. NO. | II-12    |               |   |  |          |       |
|          |          |               |   |  |          |       |
|          |          |               |   |  |          |       |
|          |          |               |   |  |          |       |



1996 JOHN McCULLAH



**DESCRIPTION:**

STRAW WATTLES ARE ALSO KNOWN AS STRAW WORMS, BIO-LOGS, STRAW NOODLES, OR STRAW TUBES. THEY ARE A SEDIMENT VELOCITY CONTROL DEVICE MADE OF TUBES OF STRAW, RICE, OR COCONUT HUSK ENGAGED IN AN ULTRAVIOLET DEGRADABLE PLASTIC NETTING OR 100% BURLAP MATERIAL.

WATTLES MAY BE SUITABLE ALONG THE TOE, TOP, FACE, AND AT GRADE BREAKS OF EXPOSED ERODIBLE SLOPES TO SHORTEN SLOPE LENGTH AND SPREAD RUNOFF AS SHEET FLOW; AT THE END OF A DOWNWARD SLOPE WHERE IT TRANSITIONS TO A STEEPER SLOPE; ALONG SIDEWALKS AND CURBS TO PREVENT SEDIMENT FROM WASHING INTO GUTTERS; AROUND STORM DRAINS AND DROP INLETS; DOWN-SLOPE OF EXPOSED SOIL AREAS; AROUND TEMPORARY MATERIAL SPOIL AND STOCKPILES, SUCH AS TOPSOIL AND FOR STREAM BANK PROTECTION.

**MATERIALS:**

WATTLES CAN BE FROM STRAW, RICE STRAW, COCONUT HUSKS OR OTHER APPROVED MATERIAL. THE NETTING CONSISTS OF BIODEGRADABLE BURLAP, OR HIGH DENSITY POLYETHYLENE AND ETHYL VINYL ACETATE CONTAINING ULTRAVIOLET INHIBITORS. STRAW SHOULD BE CERTIFIED WEED FREE FORAGE, BY A MANUFACTURER WHOSE PRINCIPLE BUSINESS IS WATTLE MANUFACTURING. COIR (COCONUT FIBER) CAN BE IN BRISTLE AND MATTRESS FORM AND SHOULD BE OBTAINED FROM FRESHWATER CURED COCONUT HUSK.

**INSTALLATION:**

- LAYOUT A CONTOUR LINE ON THE SLOPE.
- DIG A SHALLOW DEPRESSION (ABOUT 3 TO 5 INCHES DEEP), REMOVE ALL DEBRIS, AND LAY THE WATTLE INTO IT.
- SECURE WATTLE WITH WOODEN STAKES.
- TERMINATING ENDS SHOULD BE TURNED UPHILL (MIN 6") TO PREVENT RUNOFF FROM FLOWING AROUND THE ENDS.
- SEAT THE WATTLE WITH FOOT TAMPED BACKFILL ON THE UPSTREAM SIDE SUCH THAT WATER WILL NOT RUN UNDER IT.

**WATTLE SPACING BY SLOPE:**

| SLOPE          | 9" DIA | 12" DIA |
|----------------|--------|---------|
| LESS THAN 4:1  | 20 FT  | 40 FT   |
| 2:1 TO 4:1     | 15 FT  | 30 FT   |
| 2:1 OR GREATER | 10 FT  | 20 FT   |

**MAINTENANCE:**

SEDIMENT SHOULD BE REMOVED ON A ROUTINE BASIS WHEN THE LEVEL OF THE SEDIMENT REACHES ONE HALF THE HEIGHT OF THE EXPOSED WATTLE. DAMAGED AREAS SHOULD BE REPAIRED IMMEDIATELY UNTIL VEGETATION IS ESTABLISHED AND GROWING THROUGH THE MATERIAL.

|      |          |               |                        |  |
|------|----------|---------------|------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS      |  |
|      |          |               | CONTOUR WATTLE         |  |
|      |          |               | SHT. NO.<br>II-13      |  |

TABLE 1 - TEMPORARY SEEDING SPECIFICATIONS

| SEED SPECIES     | RATE PER ACRE | PLANTING DEPTH | OPTIMUM DATES                     |
|------------------|---------------|----------------|-----------------------------------|
| WHEAT OR RYE     | 150 LBS       | 1 TO 1½ INCHES | SEPT 15 - OCT 30                  |
| SPRING OATS      | 100 LBS       | 1 INCH         | MARCH 1 - APRIL 15                |
| ANNUAL RYEGRASS  | 40 LBS        | ¼ INCH         | MARCH 1 - MAY 1<br>AUG 1 - SEPT 1 |
| GERMAN MILLET    | 40 LBS        | 1 TO 2 INCHES  | MAY 1 - JUNE 1                    |
| SUDANGRASS       | 35 LBS        | 1 TO 2 INCHES  | MAY 1 - JULY 30                   |
| BUCKWHEAT        | 60 LBS        | 1 TO 2 INCHES  | APRIL 15 - JUNE 1                 |
| CORN (BROADCAST) | 300 LBS       | 1 TO 2 INCHES  | MAY 11 - AUG 10                   |
| SORGHUM          | 35 LBS        | 1 TO 2 INCHES  | MAY 1 - JULY 15                   |

**INSTALLATION**

**SEEDBED PREPARATION:**

1. TEST SOIL TO DETERMINE PH AND NUTRIENT LEVELS.
2. APPLY SOIL AMENDMENTS AS RECOMMENDED BY THE SOIL TEST. IF TESTING IS NOT DONE, APPLY 400 TO 600 POUNDS PER ACRE OF 12-12-12 ANALYSIS FERTILIZER, OR EQUIVALENT.
3. WORK THE SOIL AMENDMENTS INTO THE UPPER TWO TO FOUR INCHES OF THE SOIL WITH A DISK OR RAKE OPERATED ACROSS THE SLOPE.

**SEEDING:**

1. SELECT A SEED SPECIES OR AN APPROPRIATE SEED MIXTURE AND APPLICATION RATE FROM TABLE 1.
2. APPLY SEED UNIFORMLY WITH A DRILL OR CULTIPACKER SEEDER OR BY BROADCASTING. PLANT OR COVER SEED TO THE DEPTH SHOWN IN TABLE 1.
  - IF DRILLING OR BROADCASTING THE SEED, ENSURE GOOD SEED-TO-SOIL CONTACT BY FIRING THE SEEDBED WITH A ROLLER OR CULTIPACKER AFTER COMPLETING SEEDING OPERATIONS.
  - DAILY SEEDING WHEN THE SOIL IS MOIST IS USUALLY MOST EFFECTIVE.
  - IF SEEDING IS DONE WITH A HYDROSEEDER, FERTILIZER AND MULCH CAN BE APPLIED WITH THE SEED IN A SLURRY MIXTURE.
  - APPLY MULCH AND ANCHOR IT IN PLACE.

**MAINTENANCE**

1. INSPECT WITHIN 24 HOURS OF EACH RAIN EVENT AND AT LEAST ONCE EVERY SEVEN CALENDAR DAYS.
2. CHECK FOR EROSION OR MOVEMENT OF MULCH AND REPAIR IMMEDIATELY.
3. MONITOR FOR EROSION DAMAGE AND ADEQUATE COVER (80 PERCENT DENSITY); RESEED, FERTILIZE, AND APPLY MULCH WHERE NECESSARY.
4. IF NITROGEN DEFICIENCY IS APPARENT, TOP-DRESS FALL SEEDED WHEAT OR RYE SEEDING WITH 50 POUNDS PER ACRE OF NITROGEN IN FEBRUARY OR MARCH.

**LIMITATIONS**

1. HIGH SLOPES AND AREAS OF CONCENTRATED RUNOFF FLOW SHOULD BE ADDRESSED WITH MORE RIGOROUS SURFACE STABILIZATION PRACTICES SUCH AS EROSION CONTROL BLANKETS AND TURF REINFORCEMENT MATS.

|      |          |               |                                     |                        |  |
|------|----------|---------------|-------------------------------------|------------------------|--|
|      |          |               |                                     | PORTER COUNTY, INDIANA |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS                   |                        |  |
|      |          |               | SEEDING TABLES<br>TEMPORARY SEEDING |                        |  |
|      |          |               |                                     |                        |  |
|      |          |               | SHT. NO.<br>II-14                   |                        |  |

**TABLE 1 - OPEN LOW MAINTENANCE AREAS (REMARKING IDLE > 6 MONTHS)**

| SEED MIXTURES  | RATE PER ACRE PURE LIVE SEED | OPTIMUM SOIL PH |
|--|------------------------------|-----------------|
| 1. PERENNIAL RYEGRASS<br>- WHITE CLOVER <sup>1</sup> | 70 LBS<br>2 LBS              | 5.6 TO 7.0      |
| 2. PERENNIAL RYEGRASS<br>- TALL FESCUE <sup>2</sup>  | 70 LBS<br>50 LBS             | 5.6 TO 7.0      |
| 3. TALL FESCUE<br>- WHITE CLOVER <sup>1</sup>        | 70 LBS<br>2 LBS              | 5.5 TO 7.5      |

**TABLE 2 - STEEP BANKS AND CUTS, LOW MAINTENANCE AREAS (NOT MOWED)**

| SEED MIXTURES  | RATE PER ACRE PURE LIVE SEED | OPTIMUM SOIL PH |
|--|------------------------------|-----------------|
| 1. SMOOTH BROME GRASS<br>- RED CLOVER <sup>1</sup>                           | 35 LBS<br>20 LBS             | 5.5 TO 7.0      |
| 2. TALL FESCUE <sup>2</sup><br>- WHITE CLOVER <sup>1</sup>                   | 50 LBS<br>2 LBS              | 5.5 TO 7.5      |
| 3. TALL FESCUE <sup>2</sup><br>- RED CLOVER <sup>1</sup>                     | 50 LBS<br>20 LBS             | 5.5 TO 7.5      |
| 4. ORCHARD GRASS<br>- RED CLOVER <sup>1</sup><br>- WHITE CLOVER <sup>1</sup> | 30 LBS<br>20 LBS<br>2 LBS    | 5.6 TO 7.0      |
| 5. CROWN VETCH <sup>3</sup><br>- TALL FESCUE <sup>2</sup>                    | 12 LBS<br>30 LBS             | 5.6 TO 7.0      |

**TABLE 3 - LAWNS AND HIGH MAINTENANCE AREAS**

| SEED MIXTURES  | RATE PER ACRE PURE LIVE SEED | OPTIMUM SOIL PH |
|--|------------------------------|-----------------|
| 1. BLUEGRASS   | 140 LBS                      | 5.5 TO 7.0      |
| 2. PERENNIAL RYEGRASS<br>(TURF TYPE)                     | 60 LBS<br>60 LBS             | 5.6 TO 7.0      |
| 3. TALL FESCUE - (TURF<br>TYPE) <sup>1</sup> - BLUEGRASS | 170 LBS<br>30 LBS            | 5.6 TO 7.5      |

**TABLE 4 - CHANNELS AND AREAS OF CONCENTRATED FLOW**

| SEED MIXTURES   | RATE PER ACRE PURE LIVE SEED                          | OPTIMUM SOIL PH |
|---|---|-----------------|
| 1. PERENNIAL RYEGRASS<br>- WHITE <sup>1</sup>   | 150 LBS<br>2 LBS                                      | 5.5 TO 7.0      |
| 2. KENTUCKY BLUEGRASS<br>- SMOOTH BROMEGRASS<br>- SWITCHGRASS<br>- TIMOTHY<br>- PERENNIAL RYEGRASS<br>- WHITE CLOVER <sup>1</sup> | 20 LBS<br>10 LBS<br>3 LBS<br>4 LBS<br>10 LBS<br>2 LBS | 5.5 TO 7.5      |
| 3. TALL FESCUE -<br>WHITE CLOVER <sup>1</sup>   | 150 LBS<br>2 LBS                                      | 5.5 TO 7.5      |
| 4. TALL FESCUE <sup>1</sup><br>- PERENNIAL RYEGRASS<br>- KENTUCKY BLUEGRASS   | 150 LBS<br>20 LBS<br>20 LBS                           | 5.5 TO 7.5      |

- FOR BEST RESULTS: (A) LEGUME SEED SHOULD BE INOCULATED; (B) SEEDING MIXTURES CONTAINING LEGUMES SHOULD PREFERABLY BE SPRING-SEEDED, ALTHOUGH THE GRASS MAY BE FALL-SEEDED AND THE LEGUME FROST-SEEDED (SEE DORMANT SEEDING AND FROST SEEDING ON PAGE 41); AND (C) IF LEGUMES ARE FALL-SEEDED, DO SO IN EARLY FALL.
- TALL FESCUE PROVIDES LITTLE COVER FOR, AND MAY BE TOXIC TO SOME SPECIES OF WILDLIFE. THE INDIANA DEPARTMENT OF NATURAL RESOURCES RECOGNIZES THE NEED FOR ADDITIONAL RESEARCH ON ALTERNATIVES SUCH AS BUFFALOGRASS, ORCHARDGRASS, SMOOTH BROMEGRASS, AND SWITCHGRASS. THIS RESEARCH, IN CONJUNCTION WITH DEMONSTRATION AREAS, SHOULD FOCUS ON EROSION CONTROL CHARACTERISTICS, WILDLIFE TOXICITY, TURF DURABILITY, AND DROUGHT RESISTANCE.

**NOTES:**

- AN OAT OR WHEAT COMPANION OR NURSE CROP MAY BE USED WITH ANY OF THE ABOVE PERMANENT SEEDING MIXTURES, AT THE FOLLOWING RATES: (A) SPRING OATS - ONE-FOURTH TO THREE-FOURTHS BUSHEL PER ACRE (B) WHEAT - NO MORE THAN ONE-HALF BUSHEL PER ACRE
- A HIGH POTENTIAL FOR FERTILIZER, SEED, AND MULCH TO WASH OUT EXISTS ON STEEP BANKS, CUTS, AND IN CHANNELS AND AREAS OF CONCENTRATED FLOW.

**INSTALLATION**

**SITE PREPARATION:**

- GRADE THE SITE TO ACHIEVE POSITIVE DRAINAGE.
- ADD TOPSOIL OR COMPOST MULCH (SEE COMPOST MULCHING) TO ACHIEVE NEEDED DEPTH FOR ESTABLISHMENT OF VEGETATION. (COMPOST MATERIAL MAY BE ADDED TO IMPROVE SOIL MOISTURE HOLDING CAPACITY, SOIL FRIABILITY, AND NUTRIENT AVAILABILITY.)

**SEEDBED PREPARATION:**

- TEST SOIL TO DETERMINE PH AND NUTRIENT LEVELS.
- APPLY SOIL AMENDMENTS AS RECOMMENDED BY THE SOIL TEST AND WORK INTO THE UPPER TWO TO FOUR INCHES OF SOIL. IF TESTING IS NOT DONE, APPLY 400 TO 600 POUNDS PER ACRE OF 12-12-12 ANALYSIS FERTILIZER, OR EQUIVALENT.
- TILL THE SOIL TO OBTAIN A UNIFORM SEEDBED. USE A DISK OR RAKE, OPERATED ACROSS THE SLOPE, TO WORK THE SOIL AMENDMENTS INTO THE UPPER TWO TO FOUR INCHES OF THE SOIL.

**SEEDING:**

OPTIMUM SEEDING DATES ARE MARCH 1 TO MAY 10 AND AUGUST 10 TO SEPTEMBER 30. PERMANENT SEEDING DONE BETWEEN MAY 10 AND AUGUST 10 MAY NEED TO BE IRRIGATED. SEEDING OUTSIDE OR BEYOND OPTIMUM SEEDING DATES IS STILL POSSIBLE WITH THE UNDERSTANDING THAT RESEEDING OR OVERSEEDING MAY BE REQUIRED IF ADEQUATE SURFACE THE SOIL SURFACE REMAINS WELL PROTECTED WITH MULCH.

- SELECT A SEEDING MIXTURE AND RATE FROM TABLE 1 THROUGH TABLE 4. SELECT SEED MIXTURE BASED ON SITE CONDITIONS, SOIL PH, INTENDED LAND USE, AND EXPECTED LEVEL OF MAINTENANCE.
- APPLY SEED UNIFORMLY WITH A DRILL OR CULTIPACKER SEEDER OR BY BROADCASTING. PLANT OR COVER THE SEED TO A DEPTH OF ONE-FOURTH TO ONE-HALF INCH. IF DRILLING OR BROADCASTING THE SEED, ENSURE GOOD SEED-TO-SOIL CONTACT BY FIRING THE SEEDBED WITH A ROLLER OR CULTIPACKER AFTER COMPLETING SEEDING OPERATIONS. (IF SEEDING IS DONE WITH A HYDROSEEDER, FERTILIZER AND MULCH CAN BE APPLIED WITH THE SEED IN A SLURRY MIXTURE.)
- MULCH ALL SEEDED AREAS (SEE MULCHING AND COMPOST MULCHING) AND USE APPROPRIATE METHODS TO ANCHOR THE MULCH IN PLACE. CONSIDER USING EROSION CONTROL BLANKETS ON SLOPING AREAS AND CONVEYANCE CHANNELS (SEE EROSION CONTROL BLANKET).

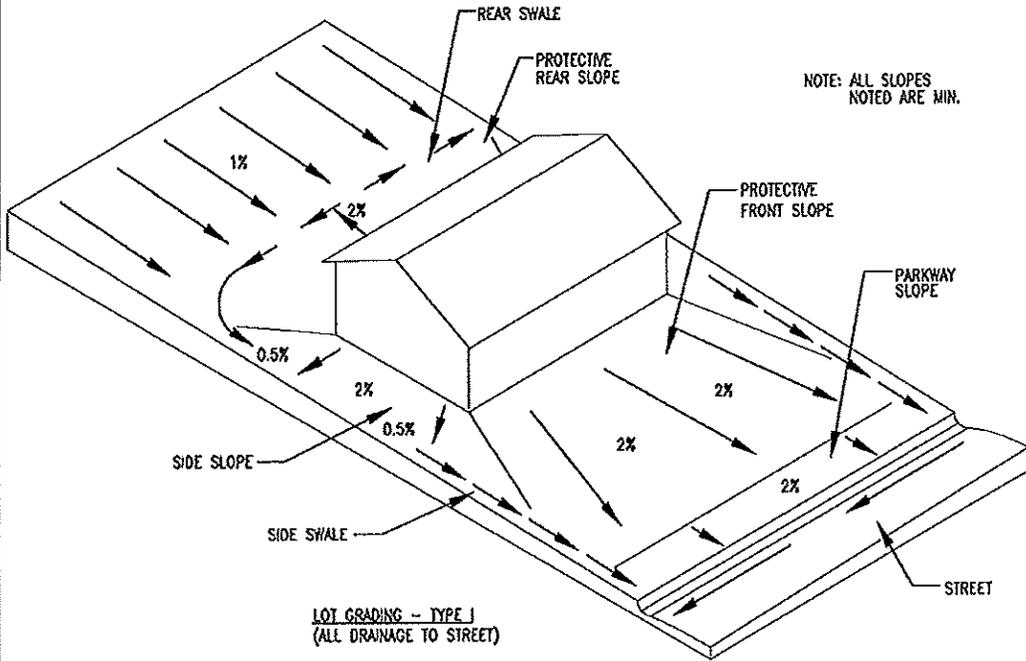
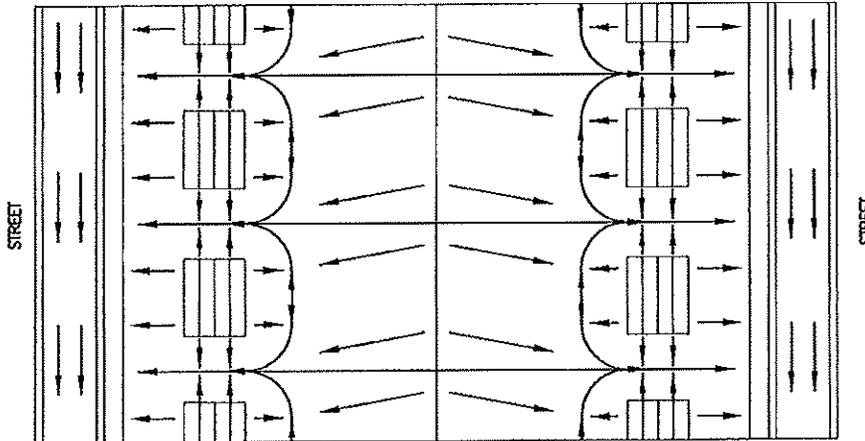
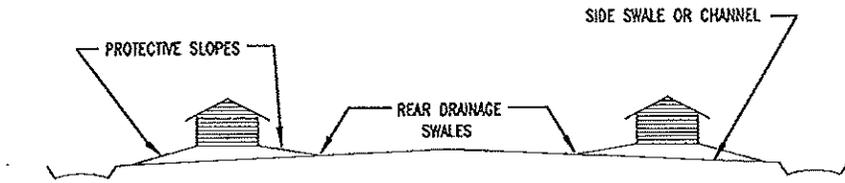
**MAINTENANCE**

- INSPECT WITHIN 24 HOURS OF EACH RAIN EVENT AND AT LEAST ONCE EVERY SEVEN CALENDAR DAYS UNTIL THE VEGETATION IS SUCCESSFULLY ESTABLISHED.
- CHARACTERISTICS OF A SUCCESSFUL STAND INCLUDE VIGOROUS DARK GREEN OR BLuish GREEN SEEDLINGS WITH A UNIFORM VEGETATIVE COVER DENSITY OF 80 PERCENT OR MORE.
- CHECK FOR EROSION OR MOVEMENT OF MULCH.
- REPAIR DAMAGED, BARE, GULLED OR SPARSELY VEGETATED AREAS AND THEN FERTILIZE, RESEED, AND APPLY AND ANCHOR MULCH.
- IF PLANT COVER IS SPARSE OR PATCHY, EVALUATE THE PLANT MATERIALS CHOSEN, SOIL FERTILITY, MOISTURE CONDITION, AND MULCH APPLICATION; REPAIR AFFECTED AREAS EITHER BY OVERSEEDING OR PREPARING A NEW SEEDBED AND RESEEDING. APPLY AND ANCHOR MULCH ON THE NEWLY SEEDED AREAS.
- IF VEGETATION FAILS TO GROW, CONSIDER SOIL TESTING TO DETERMINE SOIL PH OR NUTRIENT DEFICIENCY PROBLEMS. (CONTACT YOUR SOIL AND WATER CONSERVATION DISTRICT OR COOPERATIVE EXTENSION OFFICE FOR ASSISTANCE.)
- IF ADDITIONAL FERTILIZATION IS NEEDED TO GET A SATISFACTORY STAND, DO SO ACCORDING TO SOIL TEST RECOMMENDATIONS.
- ADD FERTILIZER THE FOLLOWING GROWING SEASON. FERTILIZE ACCORDING TO SOIL TEST RECOMMENDATIONS.
- FERTILIZE TURF AREAS ANNUALLY. APPLY FERTILIZER IN A SPLIT APPLICATION. FOR COOL-SEASON GRASSES, APPLY ONE-HALF OF THE FERTILIZER IN LATE SPRING AND ONE HALF IN EARLY FALL. FOR WARM-SEASON GRASSES, APPLY ONE-THIRD IN EARLY SPRING, ONE-THIRD IN LATE SPRING, AND THE REMAINING ONE-THIRD IN MIDDLE SUMMER.

**LIMITATIONS**

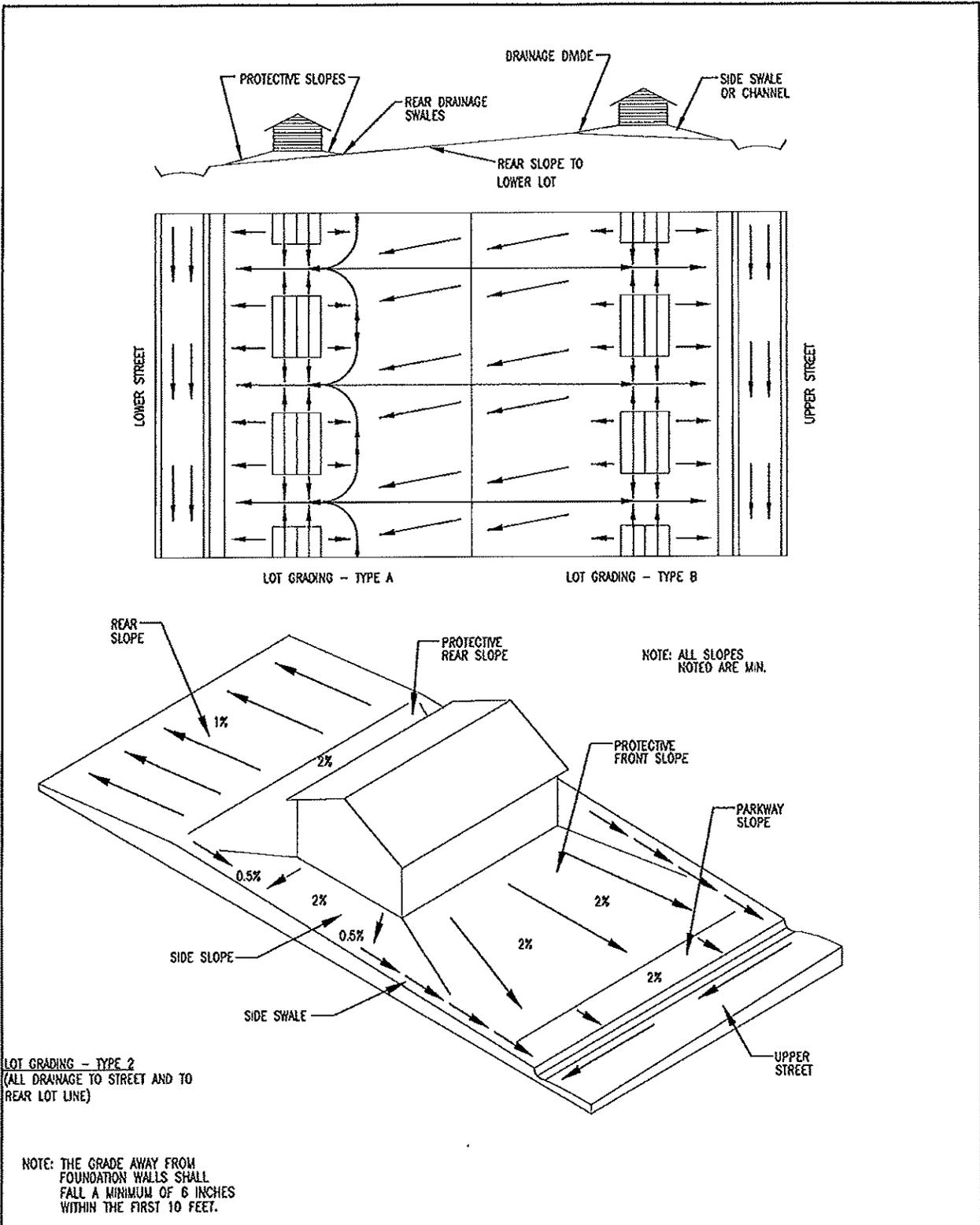
SEEDED SURFACES MUST NOT BE SUBJECT TO EROSION FLOWS.

|      |          |               |                                       |  |
|------|----------|---------------|---------------------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA                |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS                     |  |
|      |          |               | SEEDING TABLES -<br>PERMANENT SEEDING |  |
|      |          |               | SHT. NO.<br>II-15                     |  |

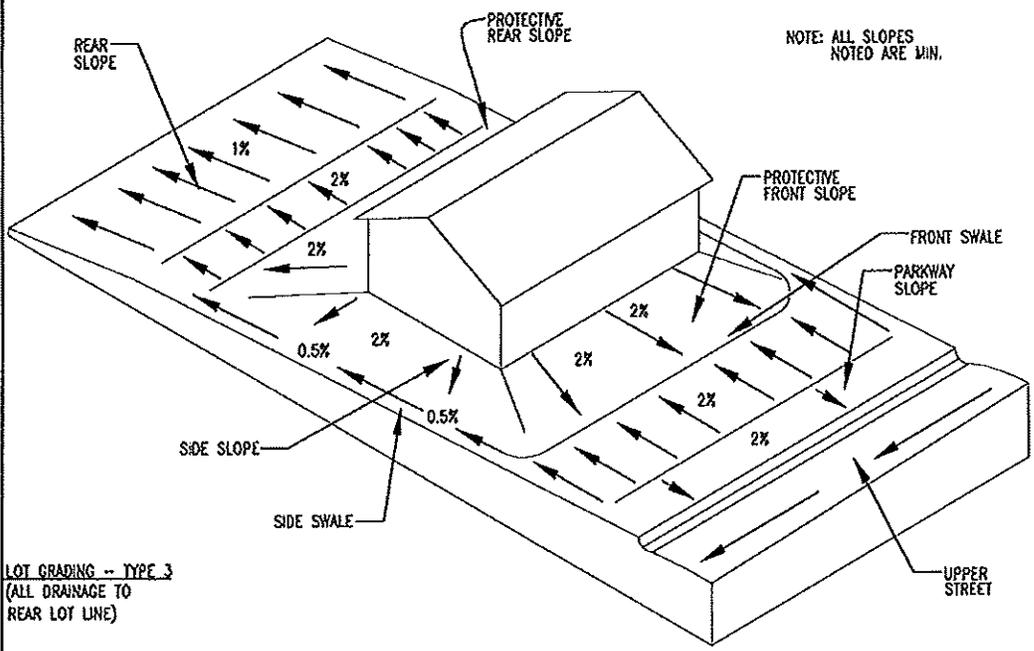
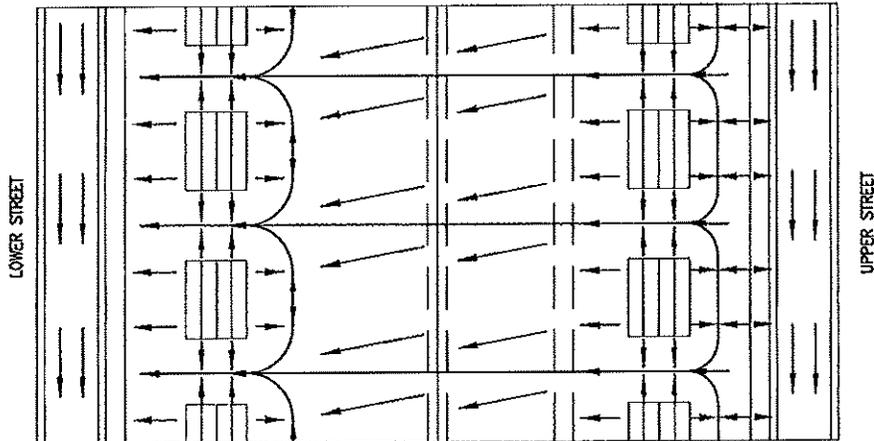
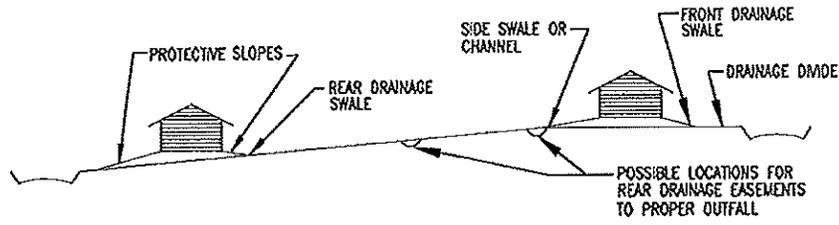


NOTE: THE GRADE AWAY FROM FOUNDATION WALLS SHALL FALL A MINIMUM OF 6 INCHES WITHIN THE FIRST 10 FEET.

|      |          |               |   |  |
|------|----------|---------------|---|--|
|      |          |               | PORTER COUNTY, INDIANA                            |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS                                 |  |
|      |          |               | GENERAL LOT GRADING<br>RIDGE ALONG REAR LOT LINES |  |
|      |          |               | SHT. NO.<br>III-1                                 |  |



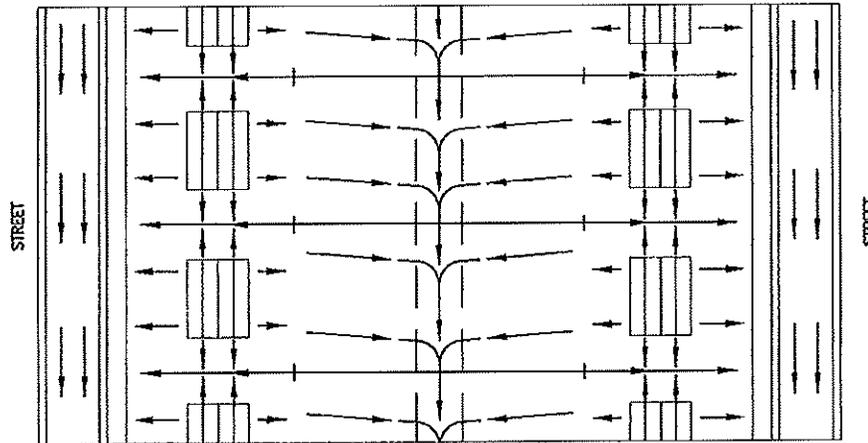
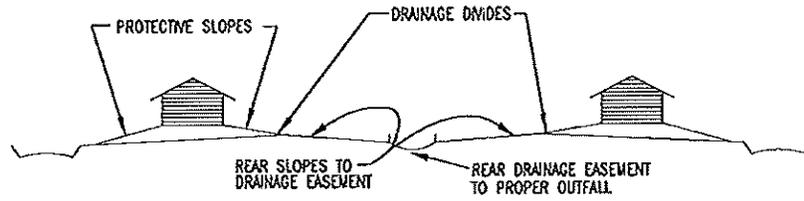
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|------|----------|---------------|---|--|
|      |          |               | PORTER COUNTY, INDIANA                    |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS                         |  |
|      |          |               | GENERAL LOT GRADING<br>GENTLE CROSS SLOPE |  |
|      |          |               | SHT. NO.<br>III-2                         |  |



LOT GRADING -- TYPE 3  
(ALL DRAINAGE TO REAR LOT LINE)

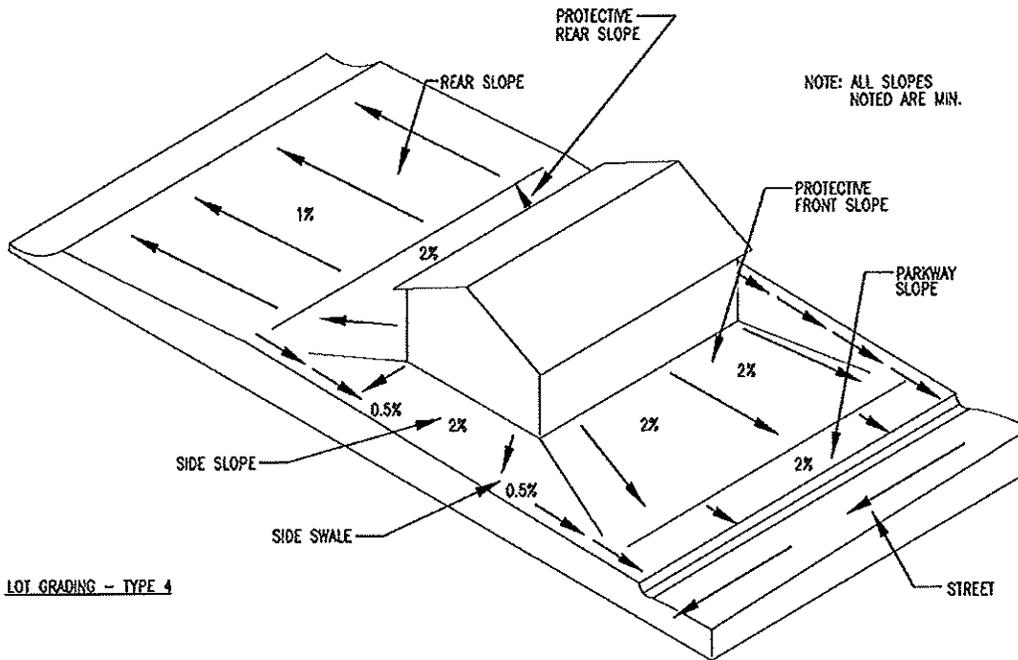
NOTE: THE GRADE AWAY FROM FOUNDATION WALLS SHALL FALL A MINIMUM OF 6 INCHES WITHIN THE FIRST 10 FEET.

|      |          |               |  |  |
|------|----------|---------------|--|--|
|      |          |               | PORTER COUNTY, INDIANA                     |  |
|      |          |               | STANDARD DRAWINGS                          |  |
| ITEM | REVISION | APPROVED DATE | GENERAL LOT GRADING<br>STEEP CROSS - SLOPE |  |
|      |          |               | SHT. NO.<br>III-3                          |  |



LOT GRADING - TYPE B

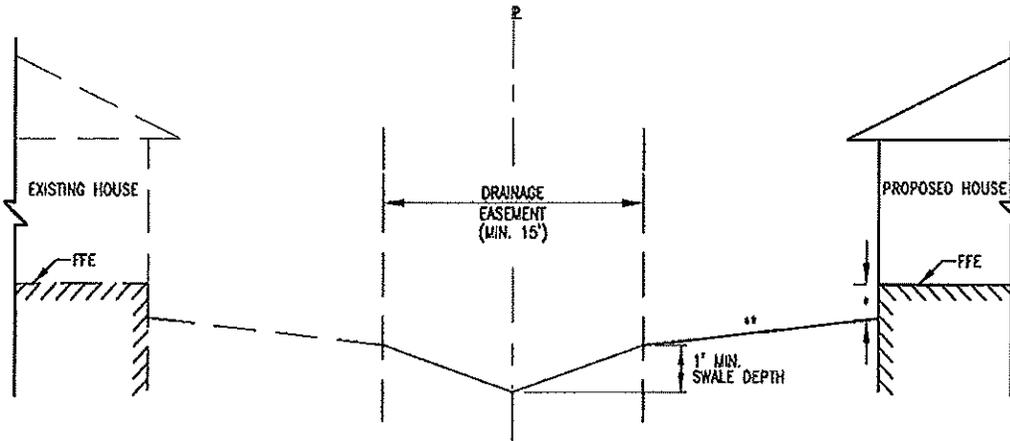
LOT GRADING - TYPE B



LOT GRADING - TYPE 4

NOTE: THE GRADE AWAY FROM FOUNDATION WALLS SHALL FALL A MINIMUM OF 6 INCHES WITHIN THE FIRST 10 FEET.

|      |          |               |  |  |
|------|----------|---------------|--|--|
|      |          |               | PORTER COUNTY, INDIANA                             |  |
|      |          |               | STANDARD DRAWINGS                                  |  |
| ITEM | REVISION | APPROVED DATE | GENERAL LOT GRADING<br>VALLEY ALONG REAR LOT LINES |  |
|      |          |               |  |  |
|      |          |               |  |  |
|      |          |               |  |  |
|      |          |               | SHT. NO.<br>III-4                                  |  |

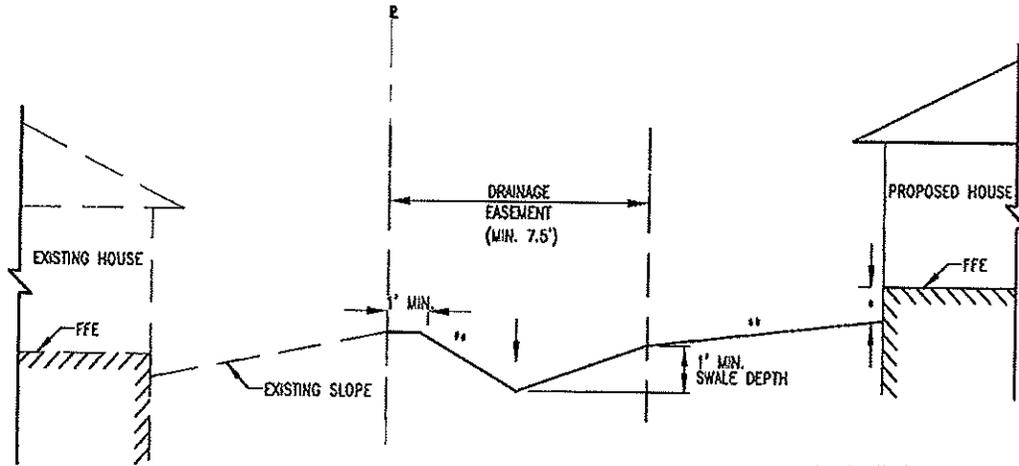


- \* PER BUILDING CODE
- \*\* 3:1 MAX; MIN. SLOPE PER BUILDING CODE

NOTES:

1. THE DRAINAGE EASEMENT WIDTH MAY BE REQUIRED TO BE GREATER AND IS DEPENDENT UPON STORM WATER MANAGEMENT REQUIREMENTS.
2. FFE = FINISHED FLOOR ELEVATION

|      |          |               |                                       |  |
|------|----------|---------------|---------------------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA                |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS                     |  |
|      |          |               | SIDE YARD LOT GRADING<br>(SCENARIO 1) |  |
|      |          |               | SHT. NO.<br>III-5                     |  |

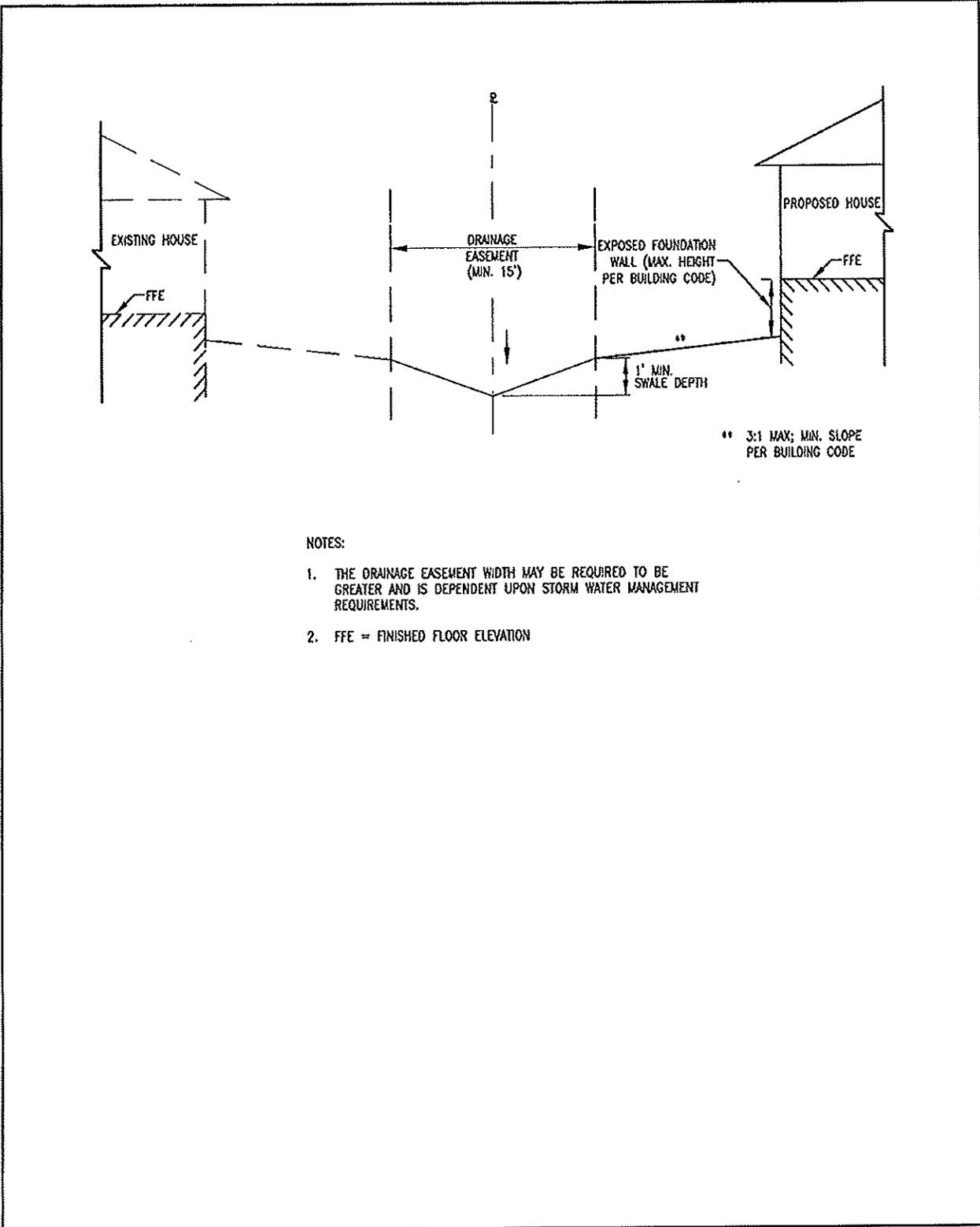


- \* PER BUILDING CODE
- \*\* 3:1 MAX; MIN. SLOPE PER BUILDING CODE

NOTES:

1. THE DRAINAGE EASEMENT WIDTH MAY BE REQUIRED TO BE GREATER AND IS DEPENDENT UPON STORM WATER MANAGEMENT REQUIREMENTS.
2. FFE = FINISHED FLOOR ELEVATION

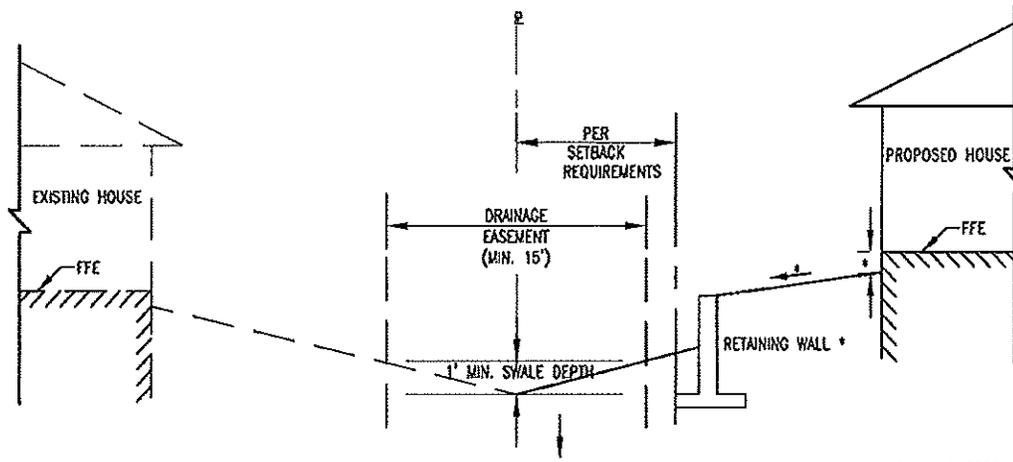
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|------|----------|---------------|---------------------------------------|-------|
|      |          |               | PORTER COUNTY, INDIANA                |       |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS                     |       |
|      |          |               | SIDE YARD LOT GRADING<br>(SCENARIO 2) |       |
|      |          |               |                                       |       |
|      |          |               |                                       |       |
|      |          |               | SHT. NO.                              | III-6 |



NOTES:

1. THE DRAINAGE EASEMENT WIDTH MAY BE REQUIRED TO BE GREATER AND IS DEPENDENT UPON STORM WATER MANAGEMENT REQUIREMENTS.
2. FFE = FINISHED FLOOR ELEVATION

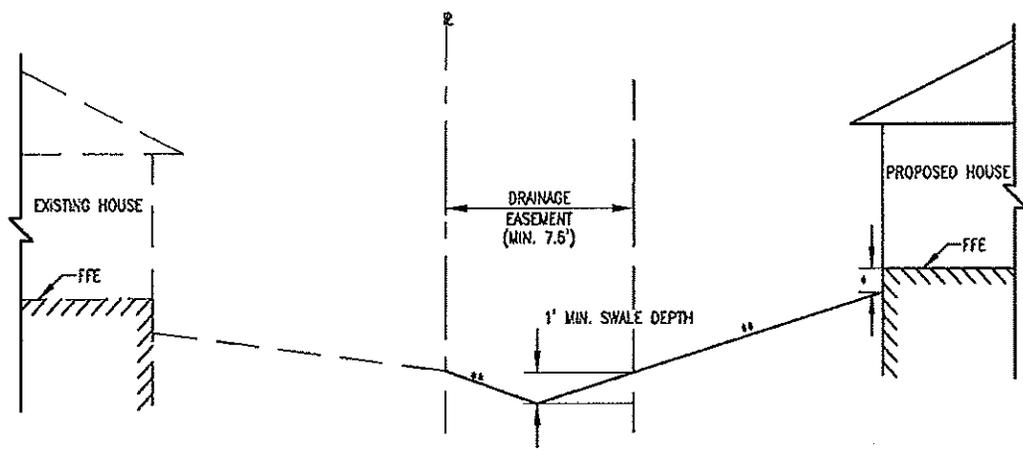
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|------|----------|---------------|---------------------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA                |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS                     |  |
|      |          |               | SIDE YARD LOT GRADING<br>(SCENARIO 3) |  |
|      |          |               | SHT. NO.<br>III-7                     |  |



NOTES:

1. THIS SCENARIO MAY BE USED ONLY UPON APPROVAL BY THE PORTER COUNTY BUILDING DEPARTMENT.
2. THE DRAINAGE EASEMENT WIDTH MAY BE REQUIRED TO BE GREATER AND IS DEPENDENT UPON STORM WATER MANAGEMENT REQUIREMENTS.
3. FFE = FINISHED FLOOR ELEVATION

|      |          |               |                                       |  |
|------|----------|---------------|---------------------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA                |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS                     |  |
|      |          |               | SIDE YARD LOT GRADING<br>(SCENARIO 4) |  |
|      |          |               |                                       |  |
|      |          |               |                                       |  |
|      |          |               | SHT. NO.<br><b>III-8</b>              |  |

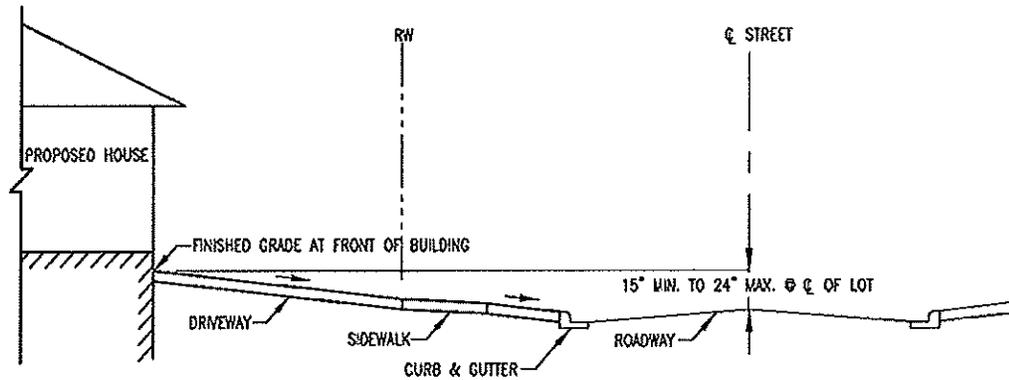


\* PER BUILDING CODE  
 \*\* 3:1 MAX; MIN. SLOPE PER BUILDING CODE

NOTES:

1. THE DRAINAGE EASEMENT WIDTH MAY BE REQUIRED TO BE GREATER AND IS DEPENDENT UPON STORM WATER MANAGEMENT REQUIREMENTS.
2. FFE = FINISHED FLOOR ELEVATION

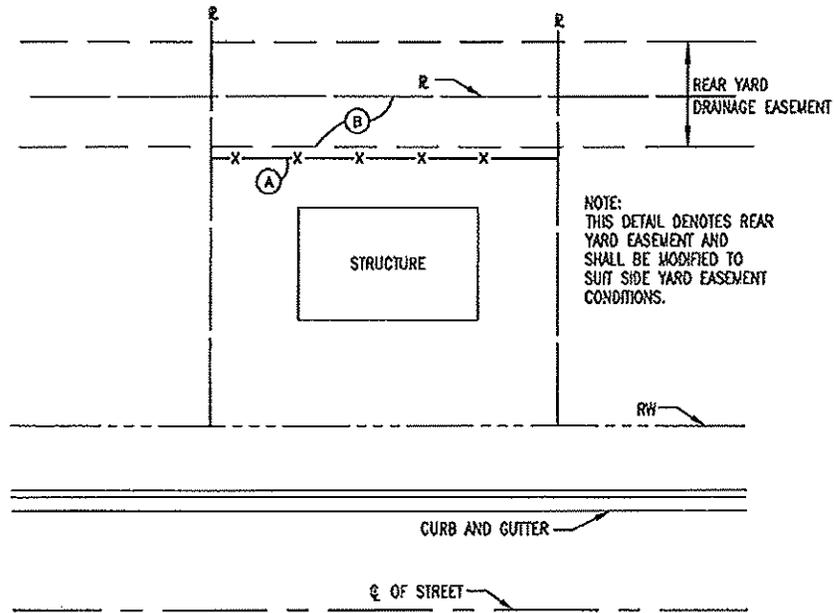
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|------|----------|---------------|---------------------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA                |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS                     |  |
|      |          |               | SIDE YARD LOT GRADING<br>(SCENARIO 5) |  |
|      |          |               |                                       |  |
|      |          |               |                                       |  |
|      |          |               |                                       |  |
|      |          |               | SHT. NO.<br>III-9                     |  |



NOTES:

1. ALL DEVIATIONS TO THIS DETAIL SHALL REQUIRE APPROVAL FROM THE ENGINEERING REVIEW OR THE PORTER COUNTY BUILDING DEPARTMENT.
2. THIS DETAIL APPLIES TO TYPICAL SUBDMISIONS WITH CURB AND GUTTER.

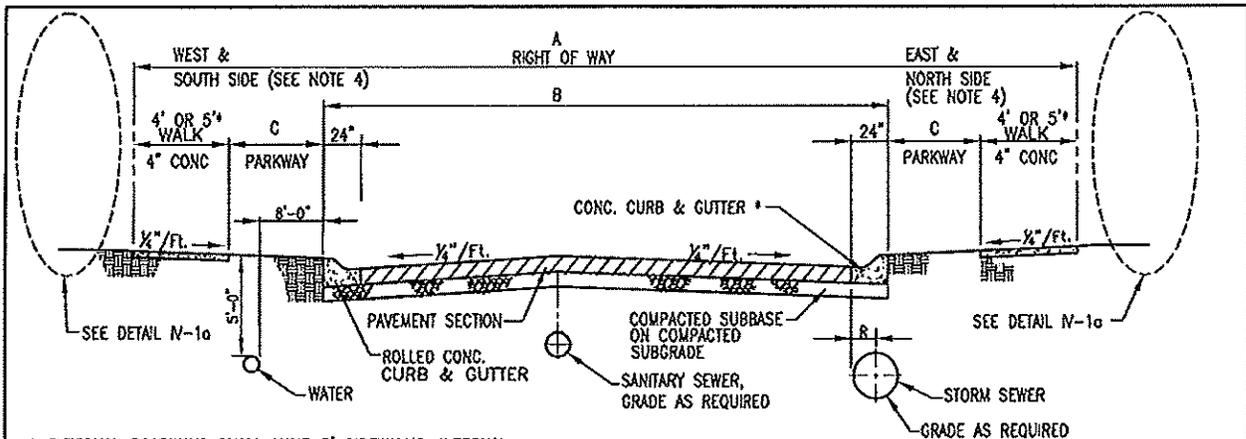
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|------|----------|---------------|---|--|
|      |          |               | PORTER COUNTY, INDIANA                  |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS                       |  |
|      |          |               | LOT GRADING FINISHED<br>FLOOR ELEVATION |  |
|      |          |               |   |  |
|      |          |               |   |  |
|      |          |               | SHT. NO.<br>III-10                      |  |



NOTE:  
THIS DETAIL DENOTES REAR  
YARD EASEMENT AND  
SHALL BE MODIFIED TO  
SUIT SIDE YARD EASEMENT  
CONDITIONS.

- (A) PROVIDE ORANGE SNOW FENCE (IN ADDITION TO OTHER EROSION CONTROL MEASURES) TO PROTECT GRADE OF EASEMENT DURING GRADING ACTIVITIES AND STRUCTURE CONSTRUCTION.
- (B) SEED WITH EROSION CONTROL BLANKET OR SOD REAR YARD DRAINAGE EASEMENT, WATER AND MAINTAIN UNTIL ESTABLISHED AND UNTIL BUILDING ACTIVITY IS COMPLETED. (WHICHEVER IS GREATER)

|      |          |               |                                  |  |
|------|----------|---------------|----------------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA           |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS                |  |
|      |          |               | PROTECTION OF DRAINAGE EASEMENTS |  |
|      |          |               | SHT. NO.<br>III-11               |  |



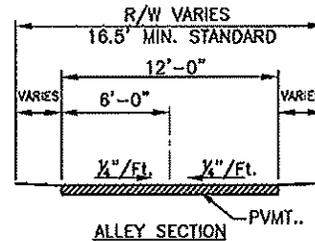
\* EXTERNAL ROADWAYS SHALL HAVE 5' SIDEWALKS. INTERNAL ROADWAYS SHALL HAVE 4' SIDEWALKS UNLESS IT IS PART OF A MAJOR PATHWAY OR PEDESTRIAN NETWORK.

| CLASSIFICATION          | MIN. GRADE | MAX. GRADE | MAX. SIGHT DISTANCE* |
|-------------------------|------------|------------|----------------------|
| ARTERIAL                | 0.5%       | 6.0%       | 500'                 |
| COLLECTOR STREET        | 0.5%       | 6.0%       | 300'                 |
| LOCAL STREET, BOULEVARD | 0.5%       | 8.0%       | 150'                 |
| ALLEY                   | 0.5%       | 8.0%       | -                    |

\* OR CALCULATED STOPPING SIGHT DISTANCE PER AASHTO IF GREATER

| MINIMUM PAVEMENT THICKNESS |             |            |                     |              |
|----------------------------|-------------|------------|---------------------|--------------|
| CLASSIFICATION             | HMA SURFACE | HMA BINDER | AGG. BASE (SUBBASE) | GEORGD REQ'D |
| ARTERIAL                   | 1 1/2"      | 3"         | 20"                 | YES          |
| COLLECTOR STREET           | 1 1/2"      | 3"         | 12"                 | YES          |
| LOCAL STREET, BOULEVARD    | 1 1/2"      | 2 1/2"     | 10"                 | YES          |
| ALLEY **                   | 1 1/2"      | 2 1/2"     | 8"                  | YES          |

\*\* NEW OR RECONSTRUCTED.



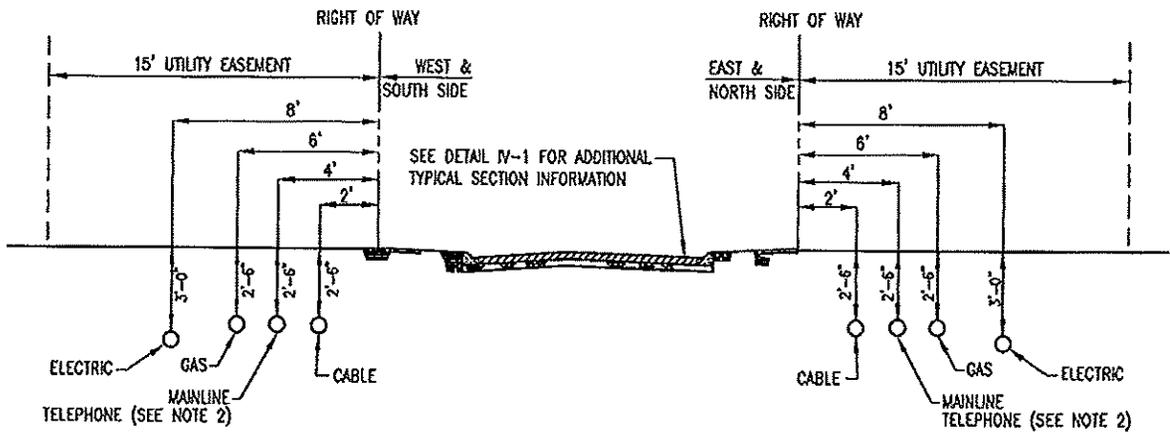
| CLASSIFICATION      | A     | B   | C     | MIN. CURVE RADIUS | MIN. TANGENT | NOTES                                    |
|---------------------|-------|-----|-------|-------------------|--------------|--|
| ARTERIAL            | 80'   | *   | *     | 500**             | 100'         | NO SIDEWALK                              |
| COLLECTOR           | 80'   | *   | 17.5' | 300**             | 60'          | SIDEWALKS REQUIRED                       |
| BOULEVARD (ONE WAY) | *     | 20' | 0-11' | 200**             | 40'          | SIDEWALKS REQUIRED                       |
| LOCAL (RESIDENTIAL) | 60'   | 30' | 0-11' | 100**             | 40'          | SIDEWALKS REQUIRED                       |
| ALLEY               | 16.5' | 12' | N/A   | N/A               | N/A          | NO SIDEWALK                              |
| FRONTAGE            | 40'   | 24' | *     | 100**             | 40'          | NO SIDEWALK, 4' SHLDR., NO PARKING       |
| FRONTAGE            | 40'   | 28' | *     | 100**             | 40'          | NO SIDEWALK, 4' SHLDR., ONE-SIDE PARKING |

\* PORTER COUNTY ENGINEERING DEPARTMENT DETERMINATION  
 \*\* MINIMUM TANGENT OF 100' SHALL SEPARATE ALL REVERSE CURVES.

**NOTES:**

- UNDERDRAINS SHALL BE PROVIDED AT LOW POINTS.
- INDUSTRIAL STREETS SHALL HAVE MINIMUM ROADWAY DIMENSIONS AS LOCAL STREETS. MINIMUM PAVEMENT SECTION SHALL BE SAME AS LOCAL STREETS, BUT A THICKER SECTION SHALL BE USED IF TRAFFIC NEEDS AND SOIL CONDITIONS WARRANT. DESIGN AND CALCULATIONS SHALL BE PROVIDED BY REGISTERED PROFESSIONAL ENGINEER.
- FRONTAGE ROADS SHALL HAVE MINIMUM R/W WIDTH OF 40'.
- VARIATIONS TO THE EAST, WEST, NORTH, SOUTH RULE MAY BE APPROVED ON CASE-BY-CASE BASIS.
- HOUSE TELEPHONE DROPS SHALL BE 24" DEEP.

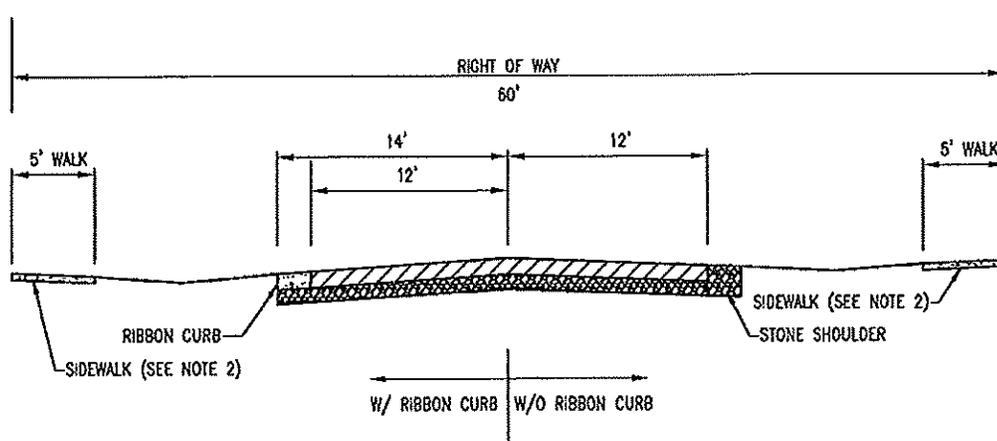
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|      |          |               | PORTER COUNTY, INDIANA                |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS                     |  |
|      |          |               | TYPICAL SECTIONS -<br>NEW SUBDIVISION |  |
|      |          |               | SHT. NO.<br>IV-1                      |  |



**NOTES:**

1. VARIATIONS TO THE EAST, WEST, NORTH, SOUTH RULE MAY BE APPROVED ON CASE-BY-CASE BASIS.
2. HOUSE TELEPHONE DROPS SHALL BE 24" DEEP.

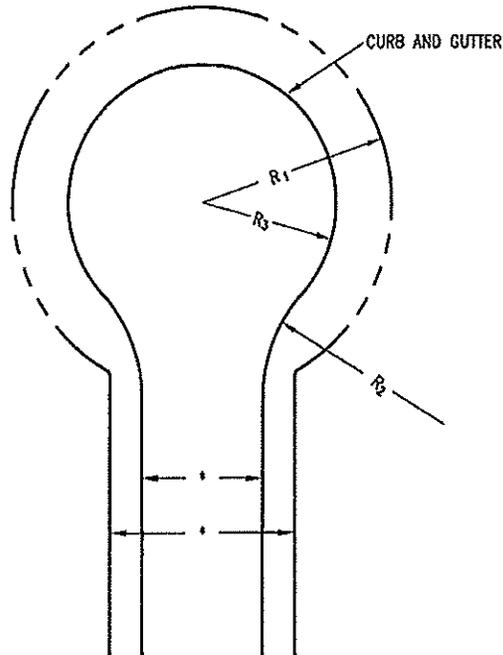
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|      |          |               | PORTER COUNTY, INDIANA  |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS       |  |
|      |          |               | TYPICAL SECTIONS -      |  |
|      |          |               | NEW SUBDIVISION (CONT.) |  |
|      |          |               | SHT. NO.<br>IV-1a       |  |



**NOTES:**

1. UTILITIES AND PAVEMENT SECTIONS PER STANDARD DRAWING NO. IV-1.
2. FOR LOCATION AND SIDE OF STREET FOR SIDEWALKS, SEE CONSERVATION SUBDIVISION SECTION IN PORTER COUNTY UNIFIED DEVELOPMENT ORDINANCE.

|      |          |               |  |  |
|------|----------|---------------|--|--|
|      |          |               | PORTER COUNTY, INDIANA                             |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS                                  |  |
|      |          |               | TYPICAL SECTION -<br>CONSERVATION SUBDIVISION ONLY |  |
|      |          |               |  |  |
|      |          |               |  |  |
|      |          |               | SHT. NO.<br><b>IV-1b</b>                           |  |



R<sub>1</sub> = 65' MINIMUM RIGHT-OF-WAY RADIUS.

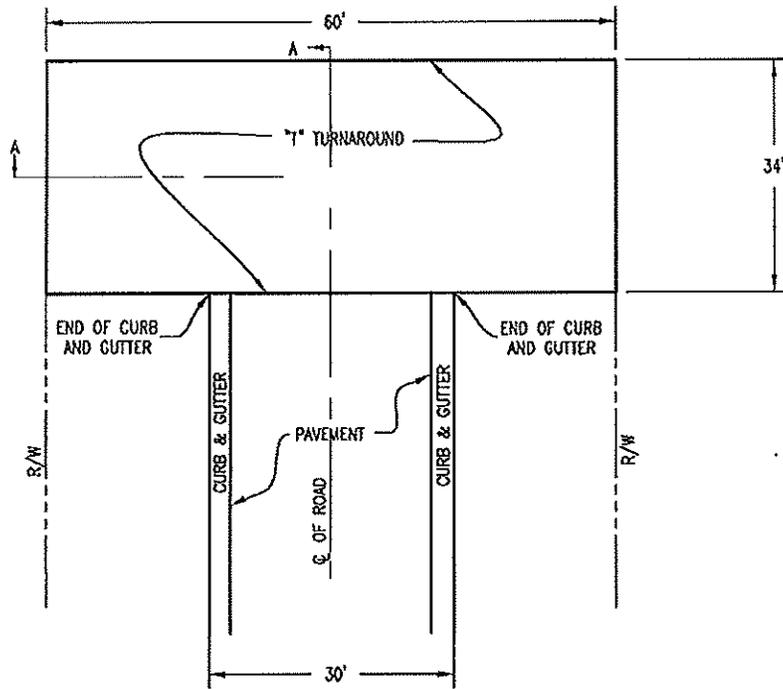
R<sub>2</sub> = 28' MINIMUM (BACK OF CURB).

R<sub>3</sub> = 50' MINIMUM CUL-DE-SAC RADIUS. (EDGE OF PAVEMENT)

\* = VARIES ACCORDING TO DESIGN CRITERIA, REFER TO STANDARD DRAWING IV-1.

NOTE: CUL-DE-SACS WITH CENTER ISLANDS MAY BE ALLOWED ON A CASE-BY CASE BASIS WITH APPROVED DESIGN.

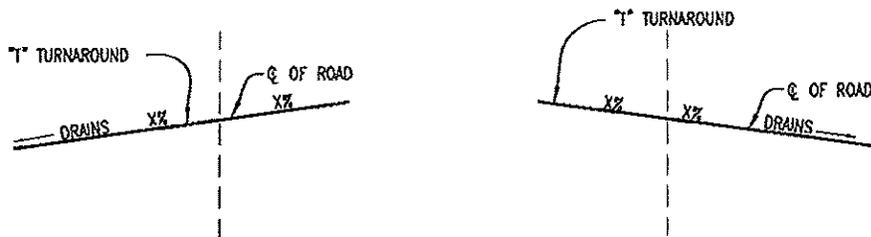
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|------|----------|---------------|------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS      |  |
|      |          |               | TYPICAL CUL-DE-SAC     |  |
|      |          |               | SHT. NO.<br>IV-2       |  |



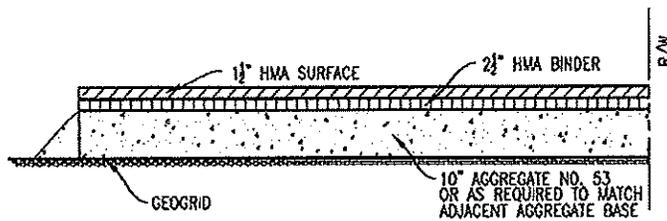
PLAN

NOTE

1. T TURNAROUND PAVEMENT THICKNESS IS TO BE IDENTICAL TO ADJACENT PAVEMENT.
2. T TURNAROUNDS ARE TO BE PROVIDED FOR TEMPORARY USE ONLY AND MUST BE APPROVED BY THE PORTER COUNTY ENGINEER.
3. NO INLETS SHALL BE PROVIDED IN THE "HAMMER HEAD" AREA.
4. PROFILE GRADE SHALL MATCH ROADWAY PROFILE AS SHOWN BELOW.

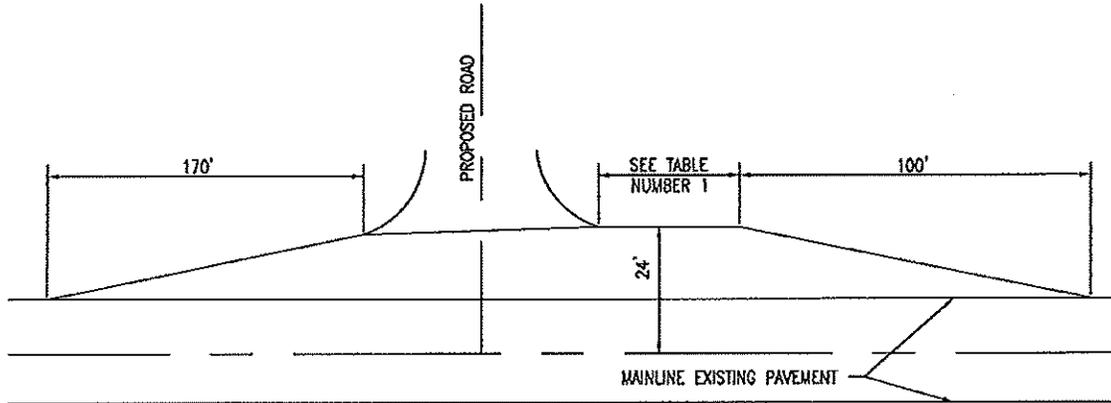


PROFILE



TYPICAL SECTION A-A

|      |          |               |                          |  |
|------|----------|---------------|--------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA   |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS        |  |
|      |          |               | TEMPORARY "T" TURNAROUND |  |
|      |          |               | SHT. NO. IV-3            |  |



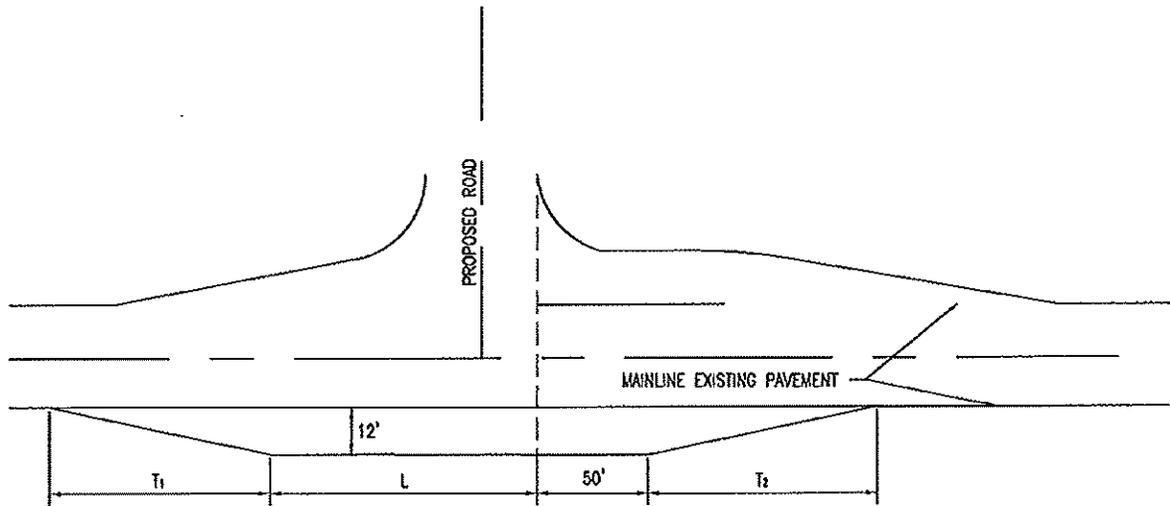
NOTE: THIS DETAIL REPRESENTS THE MINIMUM REQUIREMENTS. MORE RESTRICTIVE REQUIREMENTS, BASED ON A DETAILED TRAFFIC STUDY, SHALL APPLY.

TABLE NUMBER 1

| DESIGN SPEED<br>(M.P.H.) | LENGTH OF TURNING LANES (EXCLUDING TAPER) |                     |                  |              |                     |                     |        |
|--------------------------|---|---------------------|------------------|--------------|---------------------|---------------------|--------|
|                          | -6.01%                                    | -6.00% TO<br>-4.01% | -4.00% TO -2.01% | ±2.00% TO 0% | +2.01% TO<br>+4.00% | +4.01% TO<br>+6.00% | +6.01% |
|                          | (FT.)                                     | (FT.)               | (FT.)            | (FT.)        | (FT.)               | (FT.)               | (FT.)  |
| 40                       | 315                                       | 300                 | 260              | 200          | 170                 | 140                 | 135    |
| 50                       | 455                                       | 440                 | 380              | 300          | 260                 | 220                 | 210    |
| 60                       | 595                                       | 570                 | 500              | 400          | 350                 | 300                 | 285    |
| 65                       | 650                                       | 630                 | 560              | 450          | 390                 | 335                 | 315    |
| 70                       | 700                                       | 670                 | 590              | 475          | 415                 | 355                 | 330    |

NOTE: EXIT SPEED ASSUMED AT 15 MPH., IF STOP CONDITIONS EXIST, ADD 25 FT. TO LENGTH OF TURNING LANES.

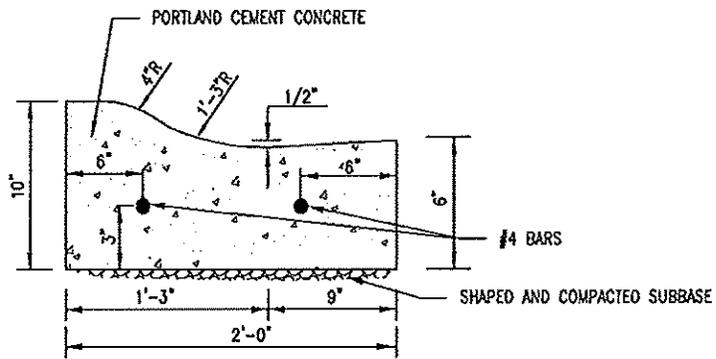
|      |          |               |                                    |  |
|------|----------|---------------|------------------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA             |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS                  |  |
|      |          |               | ACCELERATION/<br>DECELERATION LANE |  |
|      |          |               | SHT. NO.<br>IV-4                   |  |



| MINIMUM DIMENSIONS FOR PASSING BLISTERS |                |      |                |
|---|----------------|------|----------------|
| DESIGN SPEED                            | T <sub>1</sub> | L    | T <sub>2</sub> |
| MPH                                     | FEET           | FEET | FEET           |
| 31                                      | 148            | 148  | 148            |
| >31 - <48                               | 197            | 148  | 197            |
| >48                                     | 296            | 197  | 296            |

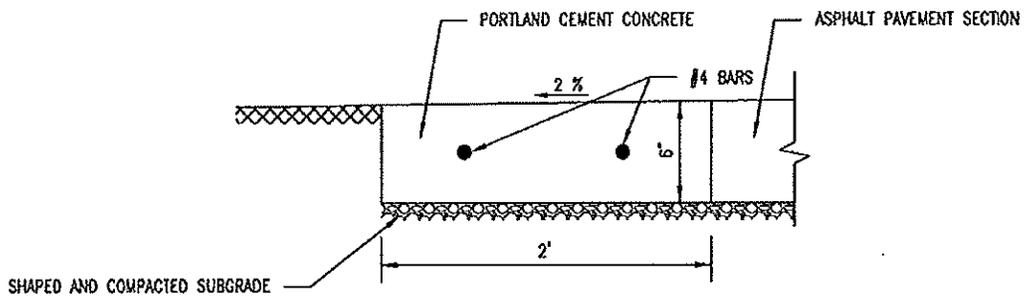
NOTE: THIS DETAIL REPRESENTS THE MINIMUM REQUIREMENTS. MORE RESTRICTIVE REQUIREMENTS, BASED ON A DETAILED TRAFFIC STUDY, SHALL APPLY.

|      |          |                        |                   |
|------|----------|------------------------|-------------------|
|      |          | PORTER COUNTY, INDIANA |                   |
| ITEM | REVISION | APPROVED DATE          | STANDARD DRAWINGS |
|      |          |                        |                   |
|      |          |                        | PASSING BLISTER   |
|      |          |                        | SHT. NO.<br>IV-5  |

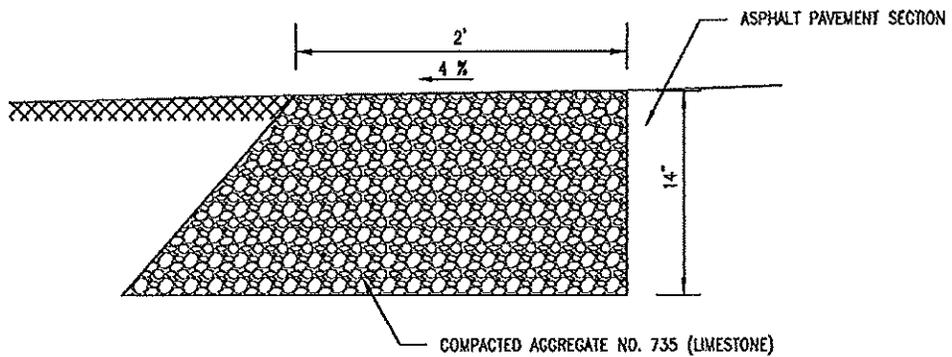


NOTE: TRANSVERSE INTERMEDIATE AND EXPANSION JOINTS SHALL BE PER STANDARD SPECIFICATIONS.

|      |          |               |                        |  |
|------|----------|---------------|------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS      |  |
|      |          |               | ROLLED CURB AND GUTTER |  |
|      |          |               | SHT. NO.<br>IV-6       |  |

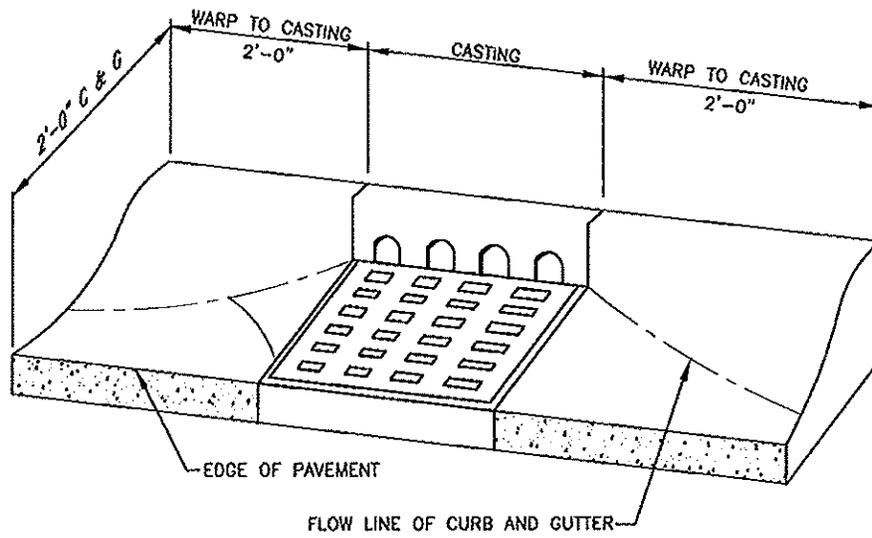


RIBBON CURB  
(CONSERVATION SUBDIVISIONS ONLY)



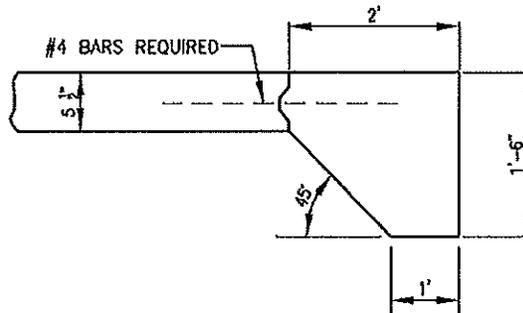
STONE SHOULDER  
(CONSERVATION SUBDIVISIONS ONLY)

|      |          |               |                             |  |
|------|----------|---------------|-----------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA      |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS           |  |
|      |          |               | EDGE OF PAVEMENT TREATMENTS |  |
|      |          |               | SHT. NO. IV-6b              |  |

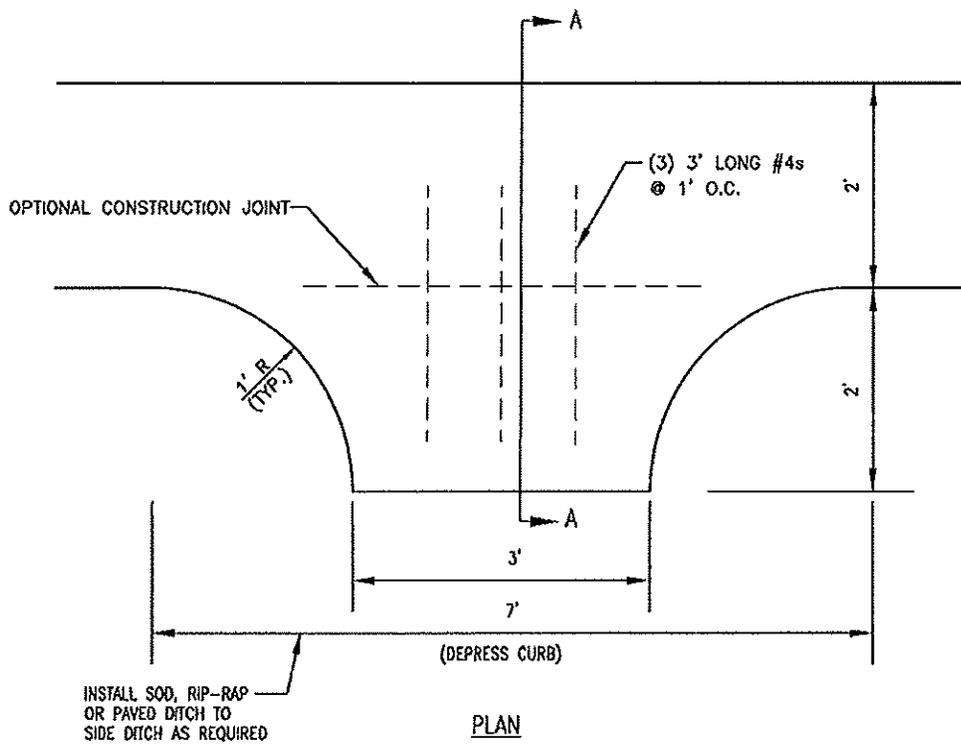


NOTE:  
 ALL CASTING GRATE SURFACES TO BE DEPRESSED 1" TO 1 1/2" BELOW  
 STREET SURFACE WITH SMOOTH TRANSITION OF PAVING TO GRATE  
 SURFACE.

|      |          |               |  |  |
|------|----------|---------------|--|--|
|      |          |               | PORTER COUNTY, INDIANA                       |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS                            |  |
|      |          |               | WARP PATTERN CURB AND<br>GUTTER INTO CASTING |  |
|      |          |               |  |  |
|      |          |               |  |  |
|      |          |               | SHT. NO.<br>IV-7                             |  |



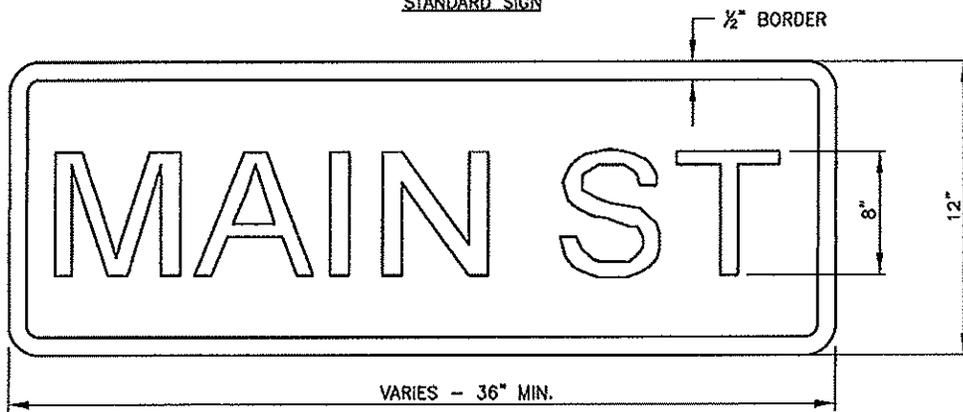
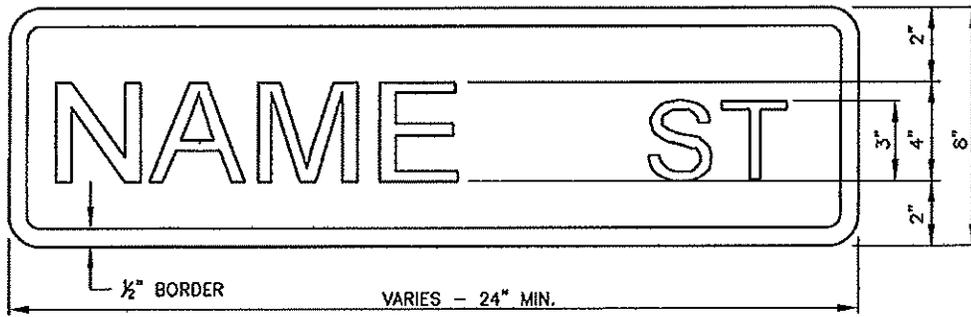
SECTION A-A



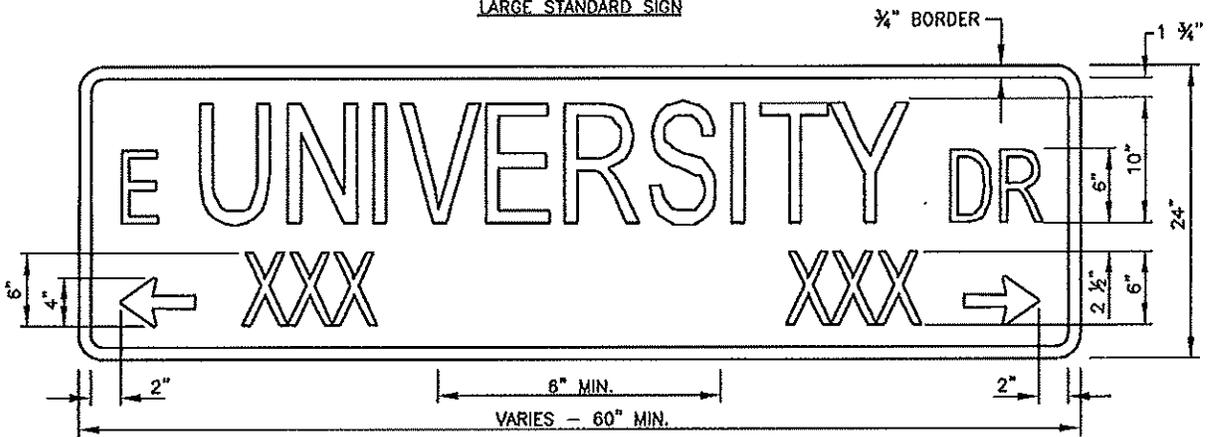
PLAN

NOTE:  
 1. CURB TURNOUTS WILL BE ALLOWED AT SPECIAL LOCATIONS APPROVED BY THE COUNTY ENGINEER.

|      |          |               |                        |  |
|------|----------|---------------|------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS      |  |
|      |          |               | CURB TURNOUT           |  |
|      |          |               | SHT. NO. IV-8          |  |

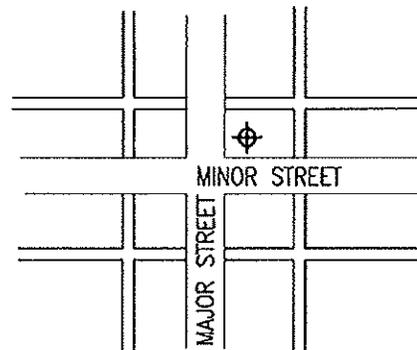
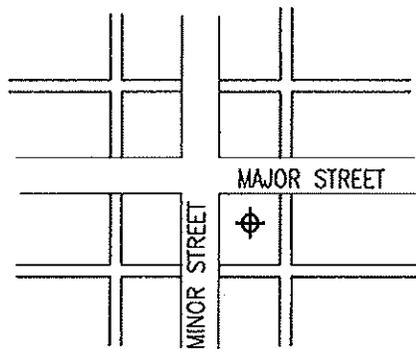
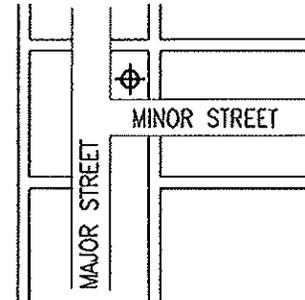
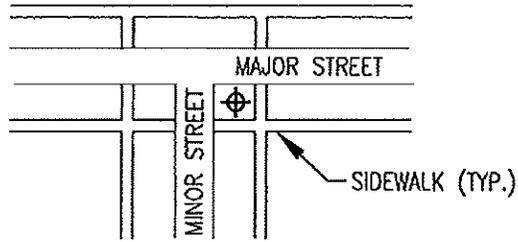


\* LARGE STANDARD SIGN SHALL BE PLACED ON ALL NEW TRAFFIC SIGNALS.



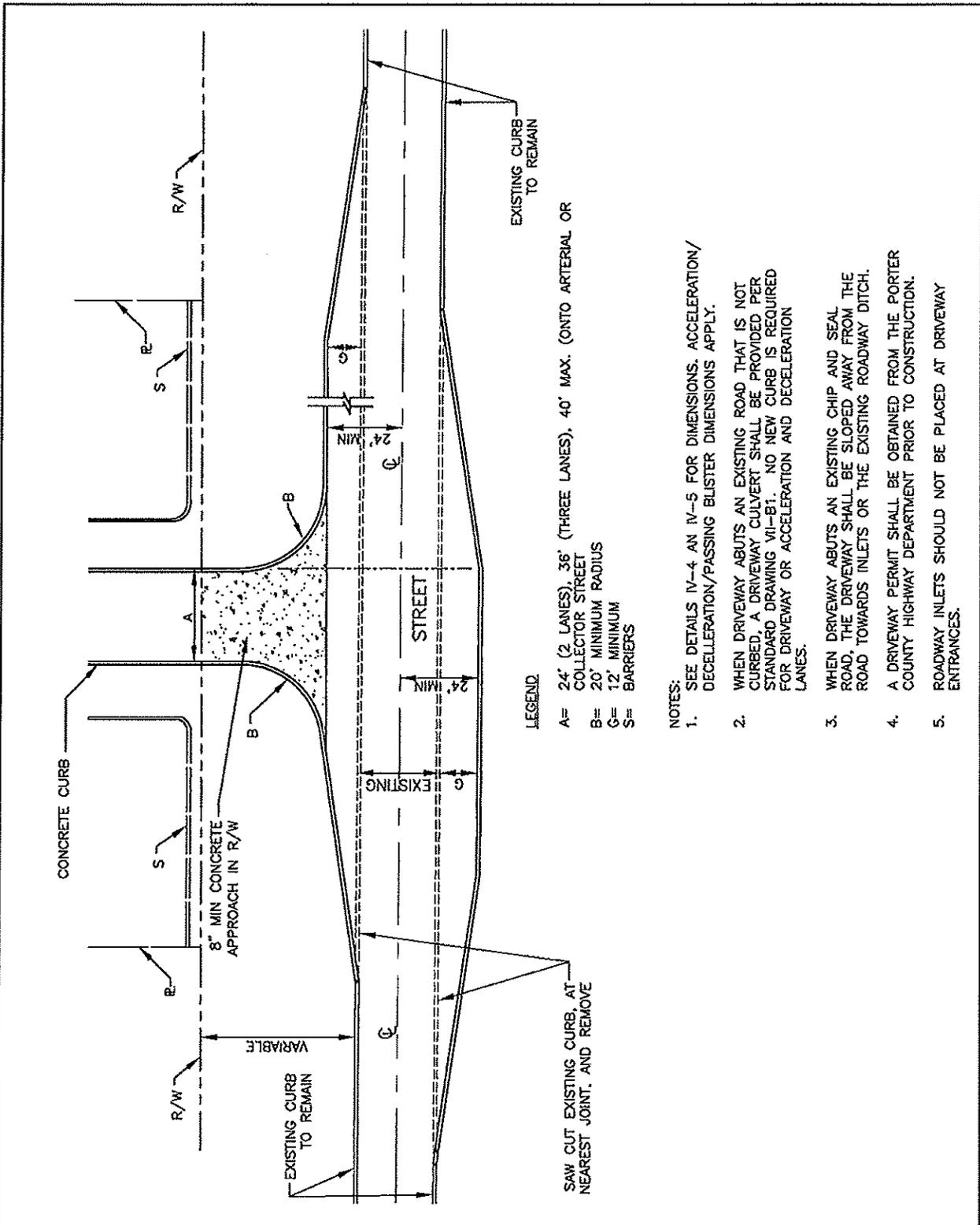
MATERIALS:  
 LETTERS = WHITE REFLECTORIZED  
 BACKGROUND = GREEN  
 REFLECTORIZED BORDER = WHITE  
 REFLECTORIZED BLANK = ALUMINUM  
 LETTERING = FHWA SERIES 'C' FONT

|      |          |               |                        |  |
|------|----------|---------------|------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS      |  |
|      |          |               |                        |  |
|      |          |               |                        |  |
|      |          |               |                        |  |
|      |          |               | STREET NAME SIGNS      |  |
|      |          |               | SHT. NO.<br>IV-9       |  |



NOTE:  
 AT LEAST ONE STREET NAME SIGN SHOULD BE PLACED ON THE MOST VISIBLE CORNER OF THE INTERSECTION APPROXIMATELY 6" FROM THE INTERSECTIONS OF THE SIDEWALK ON THE STREET SIDE. IF THE VISIBILITY AT ALL CORNERS IS APPROXIMATELY THE SAME, PLACE STREET NAME SIGN AS SHOWN ABOVE.

|      |          |               |                            |  |
|------|----------|---------------|----------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA     |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS          |  |
|      |          |               | STREET NAME SIGN PLACEMENT |  |
|      |          |               | SHT. NO. IV-10             |  |



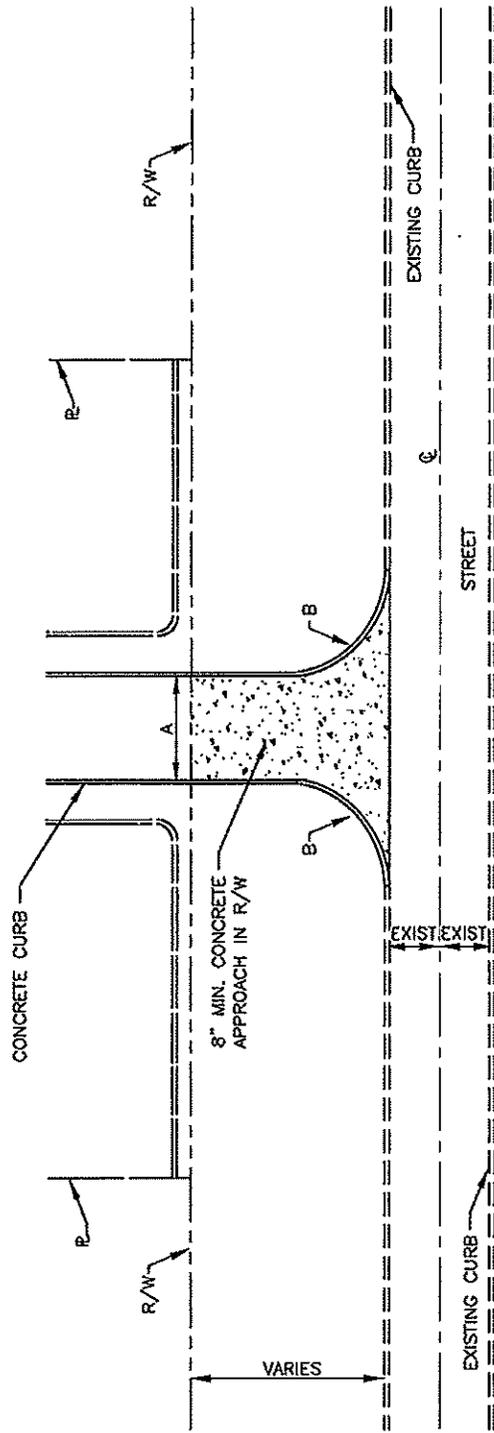
**LEGEND**

- A= 24' (2 LANES), 36' (THREE LANES), 40' MAX. (ONTO ARTERIAL OR COLLECTOR STREET)
- B= 20' MINIMUM RADIUS
- C= 12' MINIMUM
- S= BARRIERS

**NOTES:**

1. SEE DETAILS IV-4 AN IV-5 FOR DIMENSIONS. ACCELERATION/ DECELERATION/PASSING BLISTER DIMENSIONS APPLY.
2. WHEN DRIVEWAY ABUTS AN EXISTING ROAD THAT IS NOT CURBED, A DRIVEWAY CULVERT SHALL BE PROVIDED PER STANDARD DRAWING VI-B1. NO NEW CURB IS REQUIRED FOR DRIVEWAY OR ACCELERATION AND DECELERATION LANES.
3. WHEN DRIVEWAY ABUTS AN EXISTING CHIP AND SEAL ROAD, THE DRIVEWAY SHALL BE SLOPED AWAY FROM THE ROAD TOWARDS INLETS OR THE EXISTING ROADWAY DITCH.
4. A DRIVEWAY PERMIT SHALL BE OBTAINED FROM THE PORTER COUNTY HIGHWAY DEPARTMENT PRIOR TO CONSTRUCTION.
5. ROADWAY INLETS SHOULD NOT BE PLACED AT DRIVEWAY ENTRANCES.

|                                     |          |                 |
|-------------------------------------|----------|-----------------|
| PORTER COUNTY, INDIANA              |          |                 |
| STANDARD DRAWINGS                   |          |                 |
| COMMERCIAL DRIVE<br>APPROACH TYPE I |          | SHT. NO.<br>V-1 |
| ITEM                                | REVISION | APPROVED DATE   |
|                                     |          |                 |
|                                     |          |                 |
|                                     |          |                 |



**LEGEND:**

A = 24' MIN., 40' MAX. (ONTO ARTERIAL OR COLLECTOR STREET) OR 24' MIN., 26' MAX. (ONTO NEIGHBORHOOD STREET)  
 B = 20' MINIMUM RADIUS

**NOTES:**

1. THIS DRIVE APPROACH TYPE MAY BE USED ONLY UPON APPROVAL BY THE PORTER COUNTY ENGINEER.
2. WHEN DRIVEWAY ABUTS AN EXISTING ROAD THAT IS NOT CURBED, A DRIVEWAY CULVERT SHALL BE PROVIDED PER STANDARD DRAWING VII-B1. NO NEW CURB IS REQUIRED FOR DRIVEWAY OR ACCELERATION AND ACCELERATION LANES.
3. WHEN DRIVEWAY ABUTS AN EXISTING CHIP AND SEAL ROAD, THE DRIVEWAY SHALL BE SLOPED AWAY FROM THE ROAD TOWARDS INLETS OR THE EXISTING ROADWAY DITCH.
4. A DRIVEWAY PERMIT SHALL BE OBTAINED FROM THE PORTER COUNTY HIGHWAY DEPARTMENT PRIOR TO CONSTRUCTION.
5. ROADWAY INLETS SHOULD NOT BE PLACED AT DRIVEWAY ENTRANCES.

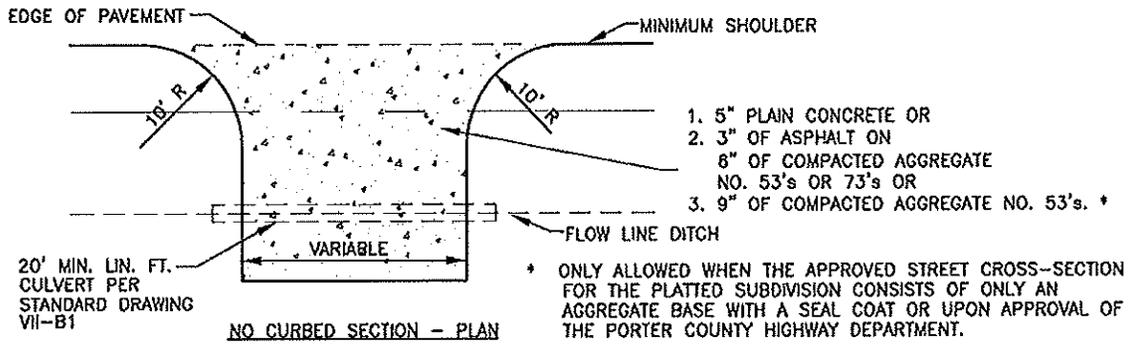
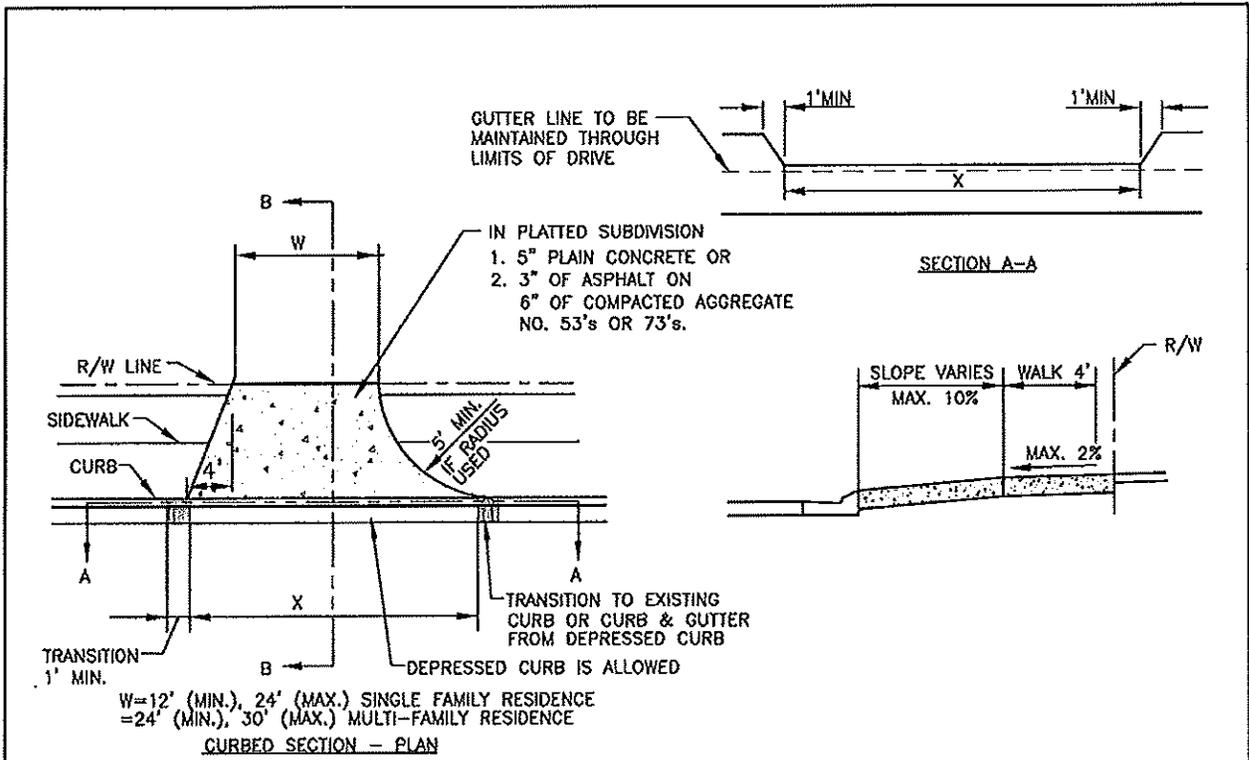
| ITEM | REVISION | APPROVED DATE |
|------|----------|---------------|
|      |          |               |
|      |          |               |
|      |          |               |

PORTER COUNTY, INDIANA

STANDARD DRAWINGS

COMMERCIAL DRIVE  
 APPROACH TYPE II

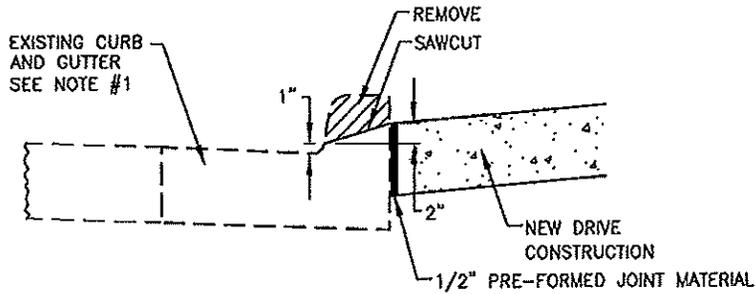
SHT. NO.  
 V-2



**NOTE:**

1. WHEN A NEW DRIVE IS CONSTRUCTED ON A STREET WITH EXISTING VERTICAL CURB, THE EXISTING CURB SHALL BE DEPRESSED IN ACCORDANCE WITH THE STANDARD DETAIL FOR EXISTING CURB ON SHEET V-4. EXISTING ROLLED CURB MAY REMAIN IN PLACE.
2. WHEN A DRIVE IS CONSTRUCTED WITHIN THE LIMITS OF NEW ROAD CONSTRUCTION, THE CURB SHALL BE ROLLED CURB & GUTTER. ROLLED CURB & GUTTER DOES NOT REQUIRE DEPRESSION.
3. WHEN DRIVEWAY ABUTS AN EXISTING ROAD THAT IS NOT CURBED, A DRIVEWAY CULVERT SHALL BE PROVIDED PER STANDARD DRAWING VII-B1. NO NEW CURB IS REQUIRED FOR DRIVEWAY OR ACCELERATION AND DECELERATION LANES.
4. WHEN DRIVEWAY ABUTS AN EXISTING CHIP AND SEAL ROAD, THE DRIVEWAY SHALL BE SLOPED AWAY FROM THE ROAD TOWARDS INLETS OR THE EXISTING ROADWAY DITCH.
5. A DRIVEWAY PERMIT SHALL BE OBTAINED FROM THE PORTER COUNTY HIGHWAY DEPARTMENT PRIOR TO CONSTRUCTION.
6. ROADWAY INLETS SHOULD NOT BE PLACED AT DRIVEWAY ENTRANCES.
7. THE EDGE OF THE DRIVEWAY SHALL MATCH THE EDGE OF PAVEMENT GRADE.

|      |          |               |                               |  |
|------|----------|---------------|-------------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA        |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS             |  |
|      |          |               | RESIDENTIAL DRIVEWAY APPROACH |  |
|      |          |               | SHT. NO. V-3                  |  |

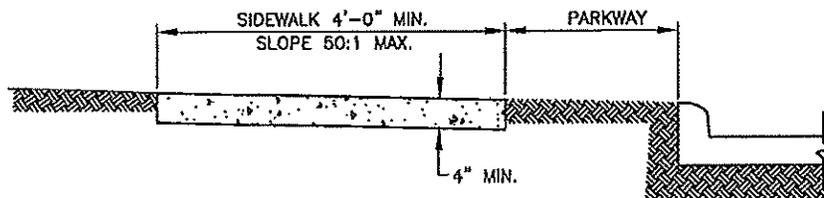


EXISTING VERTICAL CURB DEPRESSED  
FOR NEW DRIVE CONSTRUCTION

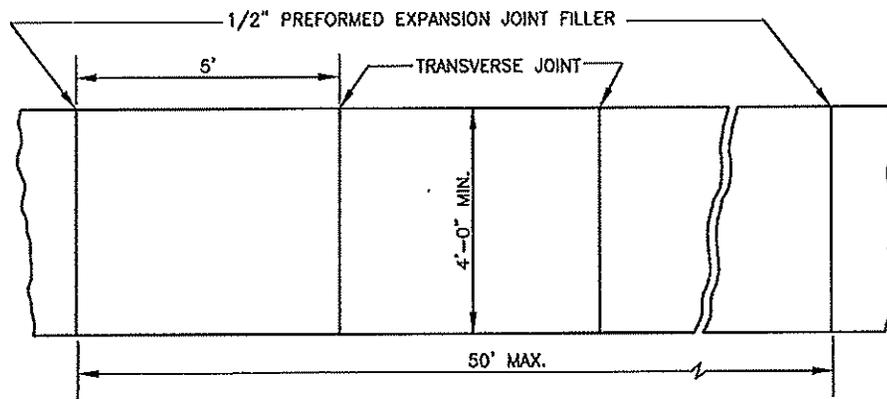
NOTES:

1. WHEN DEPRESSING EXISTING VERTICAL CURB, THE GUTTER PAN SHALL NOT BE REMOVED.

|      |          |               |   |  |
|------|----------|---------------|---|--|
|      |          |               | PORTER COUNTY, INDIANA                    |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS                         |  |
|      |          |               | DRIVE CONSTRUCTION<br>WITH DEPRESSED CURB |  |
|      |          |               |   |  |
|      |          |               |   |  |
|      |          |               | SHT. NO.<br><b>V-4</b>                    |  |



SECTION THROUGH SIDEWALK  
WITH UTILITY STRIP

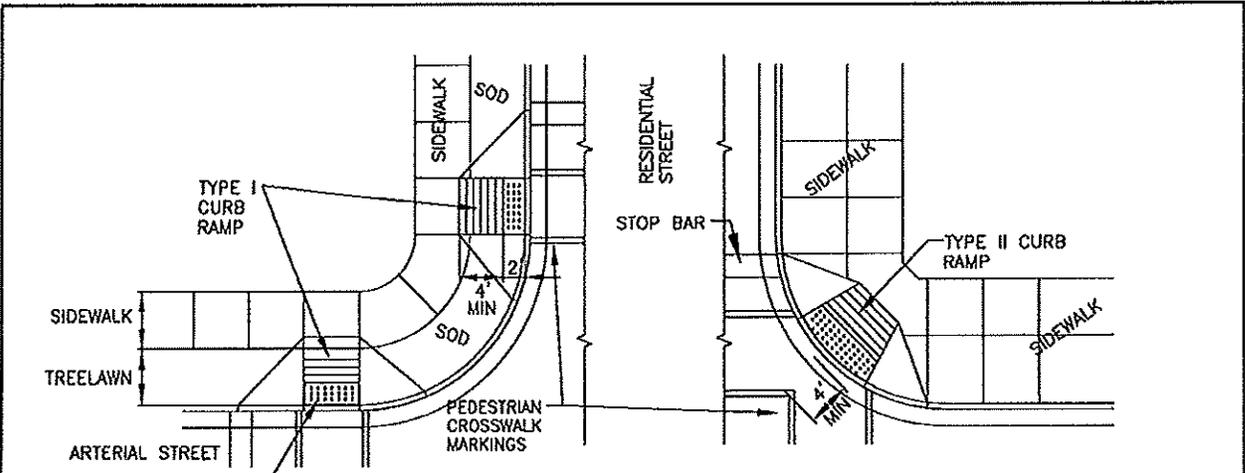


CONCRETE SIDEWALK

NOTES:

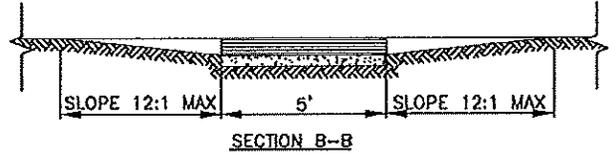
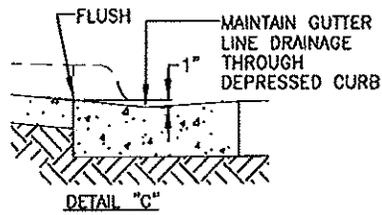
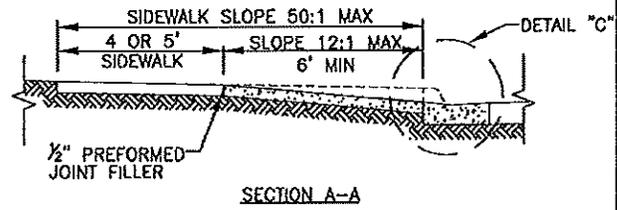
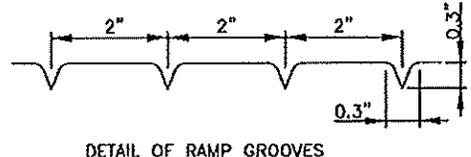
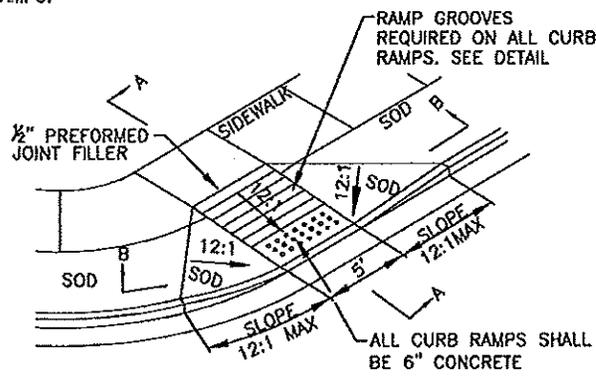
1. SIDEWALK THICKNESS THROUGH DRIVEWAYS SHALL MATCH DRIVEWAY THICKNESS OR BE 6" THICK, WHICHEVER IS GREATER. (REFER TO DRIVEWAY APPROACH DETAILS.)
2. TRANSVERSE JOINTS SHALL BE CUT WITH A JOINTER HAVING A RADIUS OF  $\frac{1}{4}$ " AT SPACING AS INDICATED OR DIRECTED BY THE ENGINEER.
3. IF LATEST AMERICAN WITH DISABILITIES ACT REQUIREMENTS EXCEED THESE REQUIREMENTS, THE AMERICAN WITH DISABILITIES ACT STANDARDS SHALL SUPERCEDE PORTER COUNTY REQUIREMENTS.

|      |          |               |                        |  |
|------|----------|---------------|------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS      |  |
|      |          |               |                        |  |
|      |          |               |                        |  |
|      |          |               |                        |  |
|      |          |               |                        |  |
|      |          |               |                        |  |
|      |          |               |                        |  |
|      |          |               | SHT. NO.<br>VI-1       |  |
|      |          |               | SIDEWALK DETAIL        |  |



ARMOR TILE PANEL COLOR TO BE APPROVED BY PORTER COUNTY ENGINEER. DETECTABLE WARNINGS WITH TRUNCATED DOMES REQUIRED ON ALL CURB RAMP.

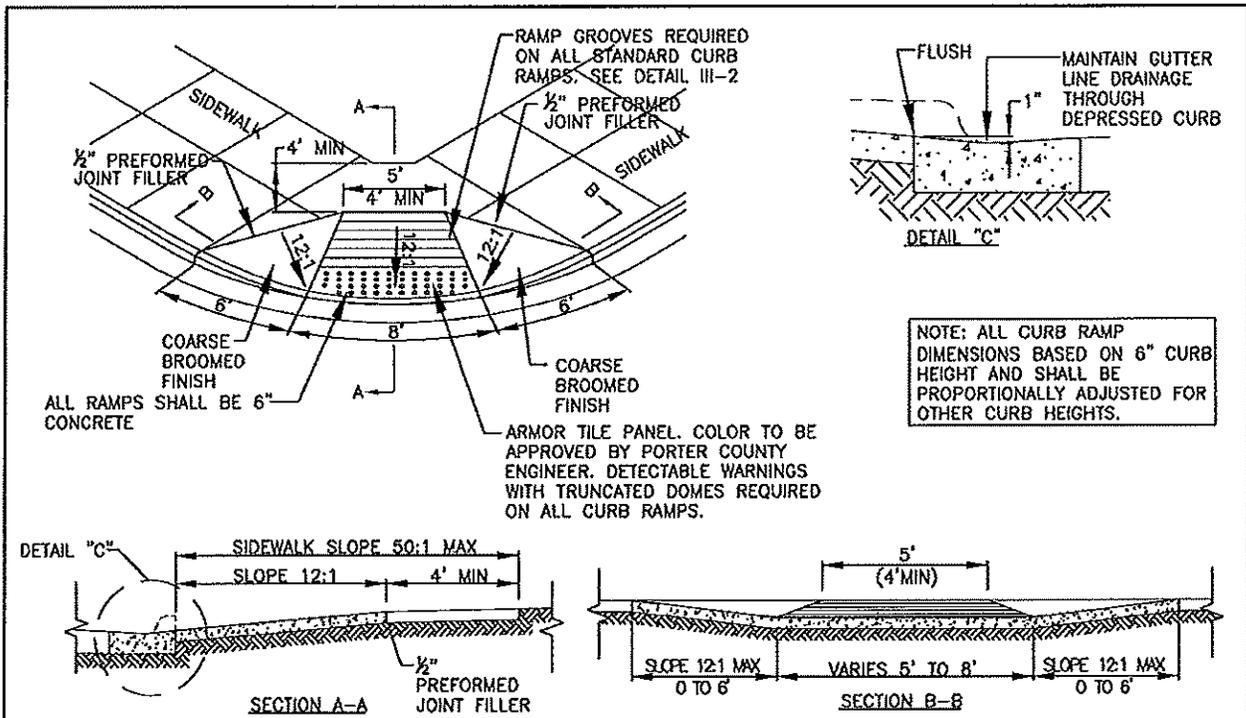
**SIDEWALK CURB RAMP LOCATION PLAN**



**SIDEWALK CURB RAMP - TYPE I**

NOTE:  
 1.) FOR GENERAL NOTES SEE STANDARD DRAWING VI-3.  
 2.) ALL CURB RAMP DIMENSIONS BASED ON 6" CURB HEIGHT AND SHALL BE PROPORTIONALLY ADJUSTED FOR OTHER CURB HEIGHTS.

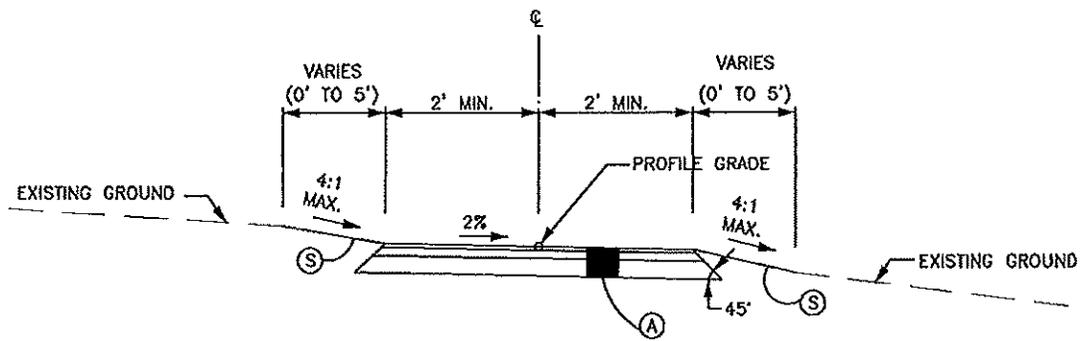
|      |          |               |                           |  |
|------|----------|---------------|---------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA    |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS         |  |
|      |          |               | SIDEWALK CURB RAMP TYPE I |  |
|      |          |               | SHT. NO. VI-2             |  |



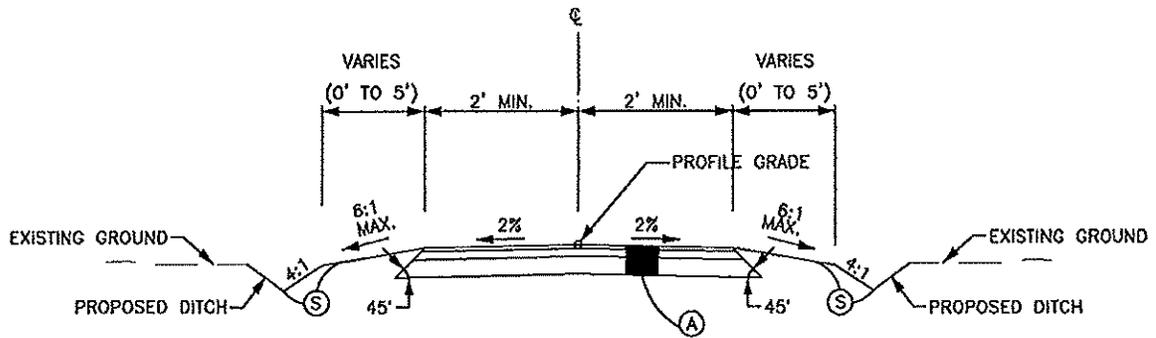
**GENERAL NOTES:**

1. CURB RAMPS ARE TO BE LOCATED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE CITY ENGINEER.
2. SURFACE TEXTURE OF THE RAMP SHALL BE THAT OBTAINED BY A COARSE BROOMING, TRANSVERSE TO THE SLOPE OF THE RAMP, AND GROOVES SHALL BE CONSTRUCTED BEHIND DETECTABLE WARNING PANEL.
3. EXPANSION JOINTS FOR THE RAMP SHALL BE A MAX. 1/2" WIDE. THE TOP OF THE JOINT FILLER FOR ALL RAMP TYPES SHALL BE FLUSH WITH ADJACENT CONCRETE.
4. THE ACCEPTED QUANTITIES OF SIDEWALK RAMPS WILL BE PAID FOR AT THE CONTRACT PRICE PER SYD. FOR CLASS "A" CONCRETE FOR SIDEWALK.
5. SIDEWALKS SHALL BE RAMPED WHERE THE DRIVEWAY CURB IS EXTENDED ACROSS THE WALK, BUT NO DETECTABLE WARNINGS ARE REQUIRED AT DRIVE RAMPS.
6. CARE SHALL BE TAKEN TO ASSURE A UNIFORM GRADE ON ALL RAMPS, WITH NO BREAKS IN GRADE.
7. DRAINAGE STRUCTURES SHALL NOT BE PLACED IN LINE WITH RAMPS. LOCATION OF THE RAMP SHOULD TAKE PRECEDENCE OVER LOCATION OF DRAINAGE STRUCTURE, EXCEPT WHERE EXISTING DRAINAGE STRUCTURES ARE BEING UTILIZED IN THE NEW CONSTRUCTION.
8. THE NORMAL GUTTER LINE PROFILE SHALL BE MAINTAINED THROUGH THE AREA OF THE RAMP.
9. CROSSWALK AND STOP LINE MARKINGS, IF USED, SHALL BE SO LOCATED AS TO STOP TRAFFIC 4 FEET SHORT OF RAMP CROSSINGS, IN ACCORDANCE WITH MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES.
10. RAMPS SHALL BE PROVIDED AT ALL CORNERS OF STREET INTERSECTIONS WHERE THERE IS EXISTING OR PROPOSED SIDEWALK AND CURB. RAMPS SHALL ALSO BE PROVIDED AT MID-BLOCK WALK LOCATIONS IN THE VICINITIES OF HOSPITALS, MEDICAL CENTERS, AND ATHLETIC STADIUMS.
11. WHEN THE INTERSECTION IS NOT SIGNALIZED, SIDEWALK RAMPS SHALL BE PLACED ON THE RESIDENTIAL STREETS ONLY. WHEN INTERSECTION IS SIGNALIZED, SIDEWALK RAMPS SHALL BE PLACED ON BOTH RESIDENTIAL STREET AND ARTERIAL STREET SIDE.
12. IF THE AMERICAN WITH DISABILITIES ACT REQUIREMENTS (AND ANY CURRENT SUPPLEMENTS THERETO) EXCEED PORTER COUNTY STANDARDS, THE AMERICAN WITH DISABILITIES ACT STANDARDS SHALL SUPERCEDE PORTER COUNTY STANDARDS.

|      |          |               |                               |  |
|------|----------|---------------|-------------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA        |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS             |  |
|      |          |               | SIDEWALK CURB RAMP<br>TYPE II |  |
|      |          |               | SHT. NO.<br>VI-3              |  |



SCALE: N.T.S.



SCALE: N.T.S.

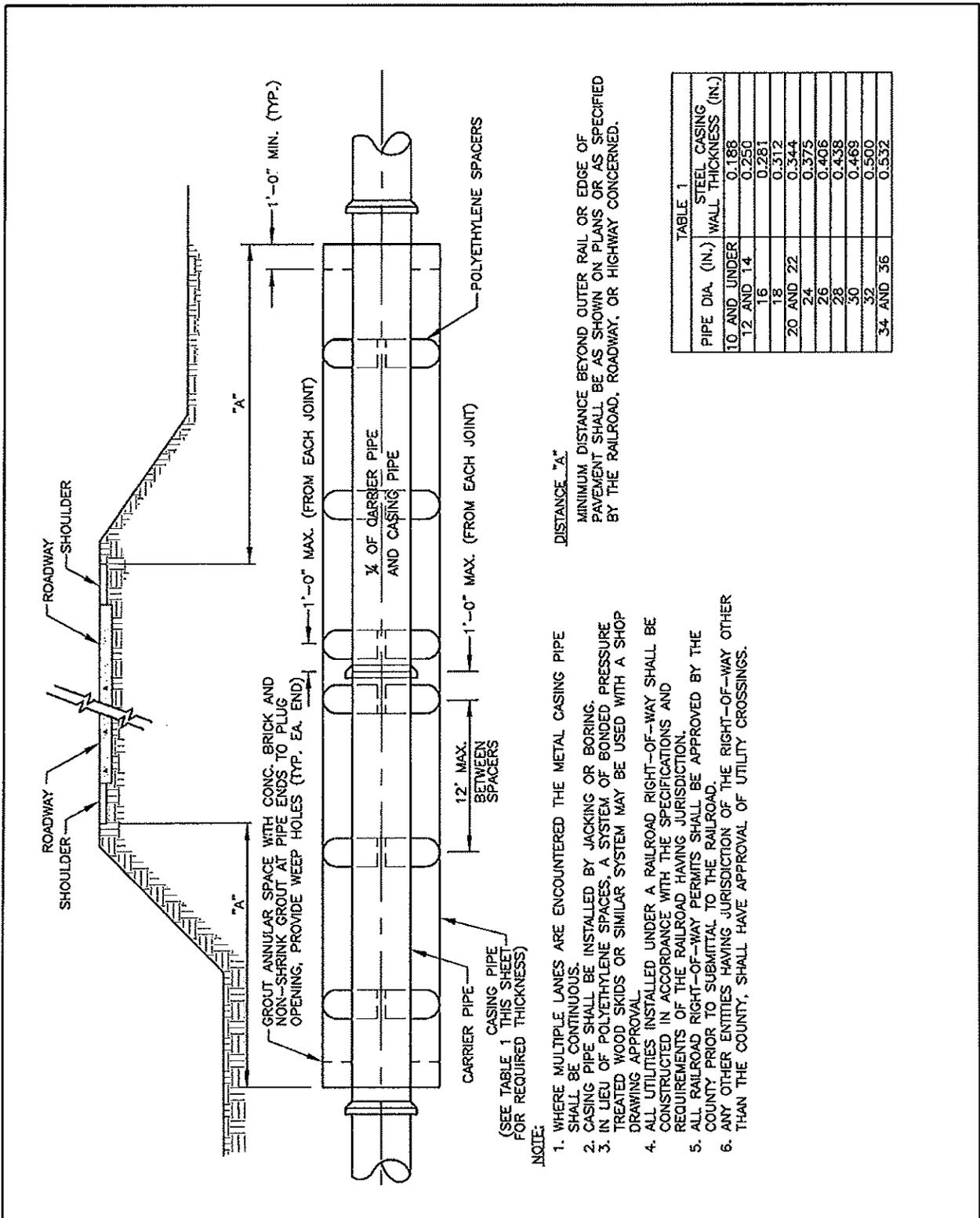
**LEGEND**

- (A) 5" OF MULCH, COMPACTED SAND, OR COMPACTED AGGREGATE NO. 53 OR 165#/SYD HMA SURFACE ON TACK COAT ON 275#/SYD HMA BASE ON 6" COMPACTED AGGREGATE NO. 53
- (S) SEEDING OR SODDING

**NOTES**

1. TRAIL SURFACE SHALL BE CONSTRUCTED AT LEAST 1 INCH ABOVE ADJACENT GRADE.
2. CONCRETE SURFACES ARE NOT PERMITTED.
3. THE SECTIONS PROVIDED ABOVE ARE MINIMUM THICKNESSES. SECTION TYPE IS DEPENDENT UPON PORTER COUNTY ENGINEERING DEPARTMENT AND APPROPRIATE COUNTY DEPARTMENT APPROVAL ON A CASE BY CASE BASIS.
4. MINIMUM WIDTHS OF TRAILS PER PORTER COUNTY.

|      |          |               |                        |  |
|------|----------|---------------|------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS      |  |
|      |          |               | TYPICAL TRAIL SECTIONS |  |
|      |          |               | SHT. NO.<br>VI-4       |  |



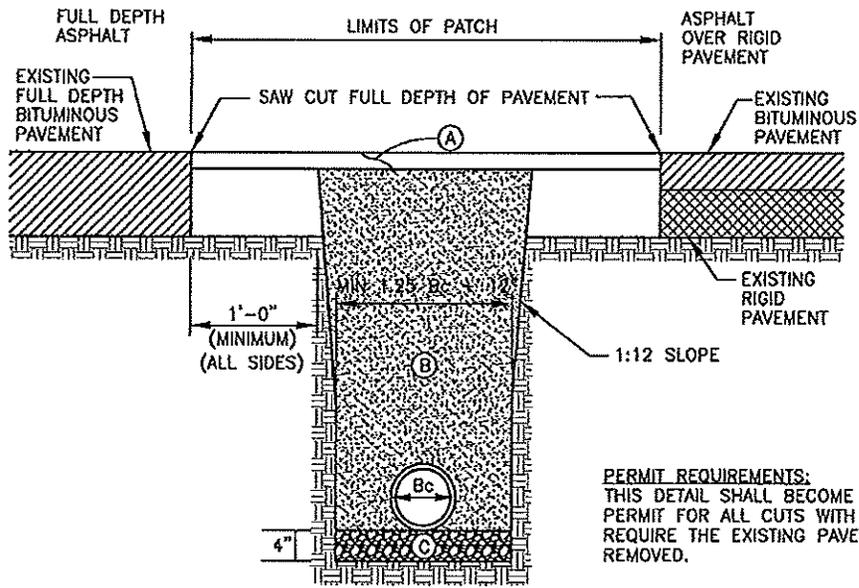
MINIMUM DISTANCE BEYOND OUTER RAIL OR EDGE OF PAVEMENT SHALL BE AS SHOWN ON PLANS OR AS SPECIFIED BY THE RAILROAD, ROADWAY, OR HIGHWAY CONCERNED.

TABLE 1

| PIPE DIA. (IN.) | STEEL CASING WALL THICKNESS (IN.) |
|-----------------|-----------------------------------|
| 10 AND UNDER    | 0.188                             |
| 12 AND 14       | 0.250                             |
| 16              | 0.281                             |
| 18              | 0.312                             |
| 20 AND 22       | 0.344                             |
| 24              | 0.375                             |
| 26              | 0.406                             |
| 28              | 0.438                             |
| 30              | 0.469                             |
| 32              | 0.500                             |
| 34 AND 36       | 0.532                             |

- NOTE:
1. WHERE MULTIPLE LANES ARE ENCOUNTERED THE METAL CASING PIPE SHALL BE CONTINUOUS.
  2. CASING PIPE SHALL BE INSTALLED BY JACKING OR BORING.
  3. IN LIEU OF POLYETHYLENE SPACERS, A SYSTEM OF BONDED PRESSURE TREATED WOOD SKIDS OR SIMILAR SYSTEM MAY BE USED WITH A SHOP DRAWING APPROVAL.
  4. ALL UTILITIES INSTALLED UNDER A RAILROAD RIGHT-OF-WAY SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE SPECIFICATIONS AND REQUIREMENTS OF THE RAILROAD HAVING JURISDICTION.
  5. ALL RAILROAD RIGHT-OF-WAY PERMITS SHALL BE APPROVED BY THE COUNTY PRIOR TO SUBMITTAL TO THE RAILROAD.
  6. ANY OTHER ENTITIES HAVING JURISDICTION OF THE RIGHT-OF-WAY OTHER THAN THE COUNTY, SHALL HAVE APPROVAL OF UTILITY CROSSINGS.

|                        |                 |
|------------------------|-----------------|
| PORTER COUNTY, INDIANA |                 |
| STANDARD DRAWINGS      |                 |
| PIPE IN CASING DETAIL  | SHT. NO. VII-A1 |
| REVISION               | APPROVED DATE   |
| ITEM                   |                 |



**PERMIT REQUIREMENTS:**  
 THIS DETAIL SHALL BECOME PART OF THE PERMIT FOR ALL CUTS WITH ROADS THAT REQUIRE THE EXISTING PAVEMENT TO BE REMOVED.

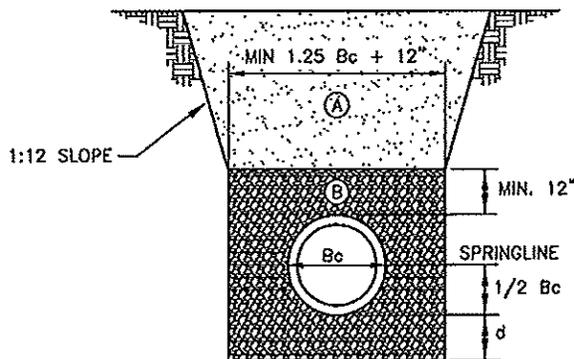
**LEGEND**

- (A) 3' HMA SURFACE OR D+2" OF CONCRETE PAVEMENT WHERE THE TOP PORTION OF ADJACENT PAVEMENT IS A CONCRETE SECTION D" THICK
- (B) FLOWABLE FILL UNLESS THE PORTER COUNTY ENGINEER APPROVES OTHERWISE.
- (C) CRUSHED STONE OR GRAVEL INDOT NO. 8, 9, OR 73 WITH A 50% MECHANICAL CRUSH COUNT

**NOTES**

1. INSTALLATION BY THIS METHOD IS ONLY ON A CASE BY CASE BASIS APPROVED BY PORTER COUNTY HIGHWAY DEPARTMENT.
2. THIS DETAIL SHALL APPLY TO ANY PIPE INSTALLED UNDER PAVEMENT, SHOULDERS, ALLEYS, SIDEWALKS, OR DRIVING AREAS WITHIN PORTER COUNTY RIGHT-OF-WAY.
3. EXISTING PAVEMENT IS TO BE SAW CUT FOR A CLEAN BREAK.
4. TRENCH SPOIL IS TO BE IMMEDIATELY REMOVED FROM THE WORK SITE.
5. FLOWABLE BACKFILL:
  - DO NOT PLACE ON FROZEN GROUND.
  - PROTECT FROM FREEZING UNTIL MATERIAL HAS SET.
  - DO NOT PLACE INTO OR THROUGH STANDING WATER, UNLESS APPROVED BY ENGINEER.
  - PROPERLY ATTACH OR ANCHOR ALL PARTS AND MATERIALS THAT ARE TO REMAIN IN THE EXCAVATION TO PREVENT OBJECTS FROM FLOATING.
6. NEW SURFACE IS TO BE SLOPED AT THE SAME RATE AS THE EXISTING SURFACE.
7. ALL JOINTS BETWEEN EXISTING PAVEMENT AND NEW PAVEMENT SHALL BE SMOOTH AND STRAIGHT.
8. PAVEMENT PATCH SHALL BE SMOOTH AND LEVEL. NO MORE THAN 1/4" VARIATION FROM A STRAIGHT EDGE 5'-0" IN LENGTH SHALL BE ALLOWED. SMOOTH RIDEABILITY MUST BE MAINTAINED.

|      |          |               |   |  |
|------|----------|---------------|---|--|
|      |          |               | PORTER COUNTY, INDIANA                            |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS                                 |  |
|      |          |               | PIPE BEDDING AND BACKFILL UNDER EXISTING PAVEMENT |  |
|      |          |               | SHT. NO. VII-A2                                   |  |



| DEPTH OF BEDDING MATERIAL BELOW PIPE |              |
|--------------------------------------|--------------|
| Bc                                   | d (MIN. IN.) |
| 27" & SMALLER                        | 3"           |
| 30" TO 60"                           | 4"           |
| 66" & LARGER                         | 6"           |

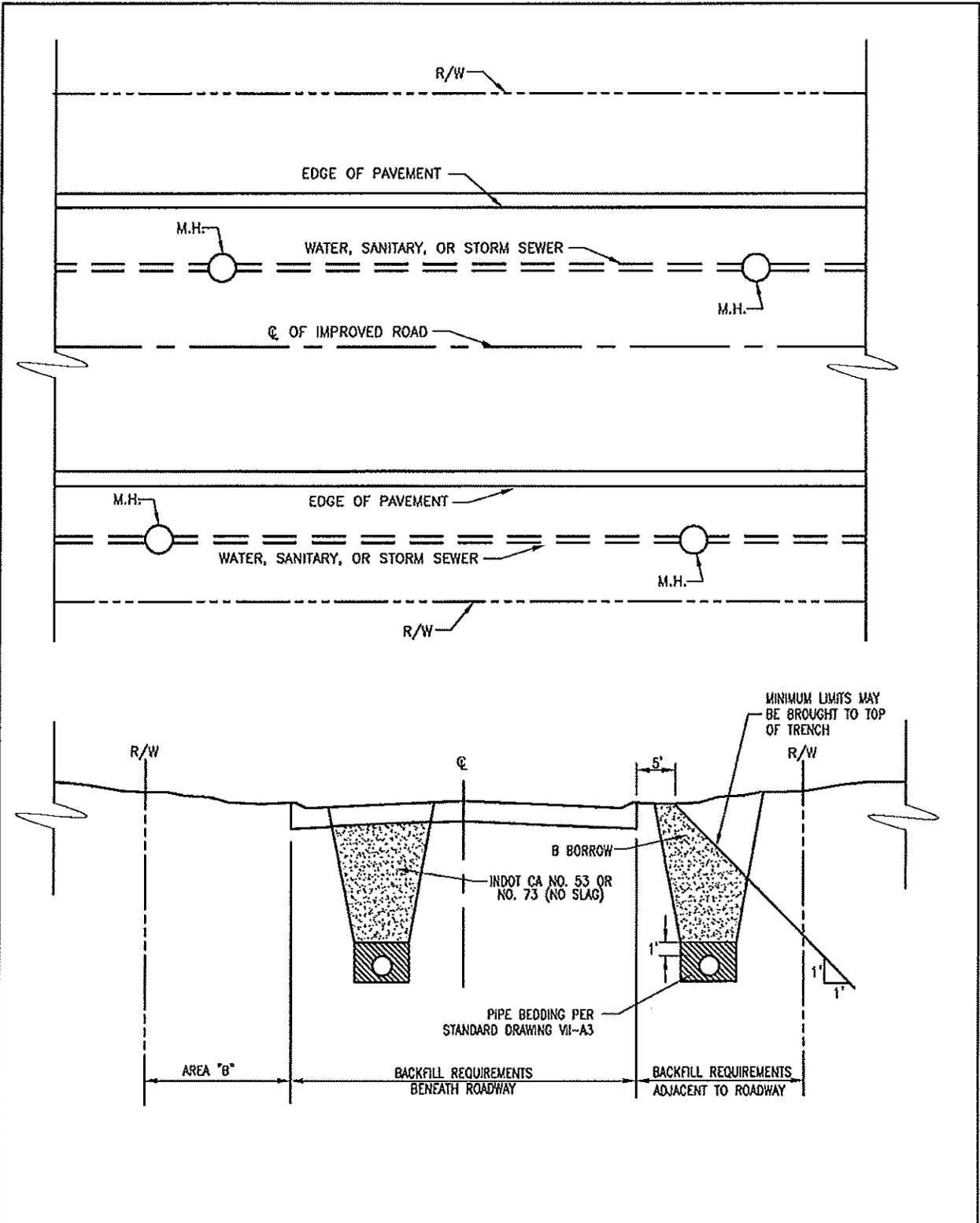
**LEGEND**

- Ⓐ FOR BACKFILL IN EASEMENTS OR OPEN AREAS, NATIVE MATERIAL WILL BE ACCEPTABLE. BACKFILL IN 12" LAYERS SOLIDLY TAMPED FOR AREAS UNDER PROPOSED OR NEAR PROPOSED OR EXISTING PAVEMENT USE INDOT NO. 53 OR NO. 73 COMPACTED AGGREGATE (NO SLAG).
- Ⓑ CRUSHED STONE OR GRAVEL INDOT NO. 8, NO. 9 OR NO. 73 COMPACTED AGGREGATE WITH A 50% MECHANICAL CRUSH COUNT.

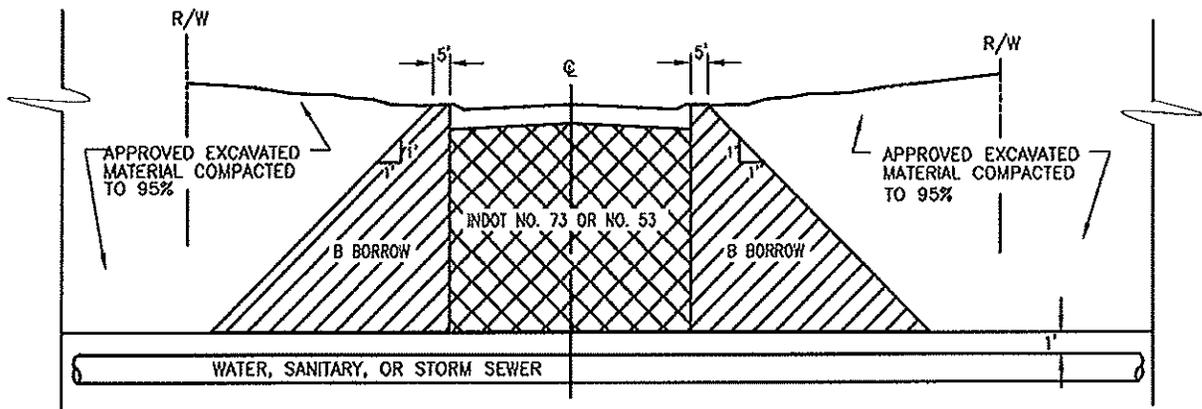
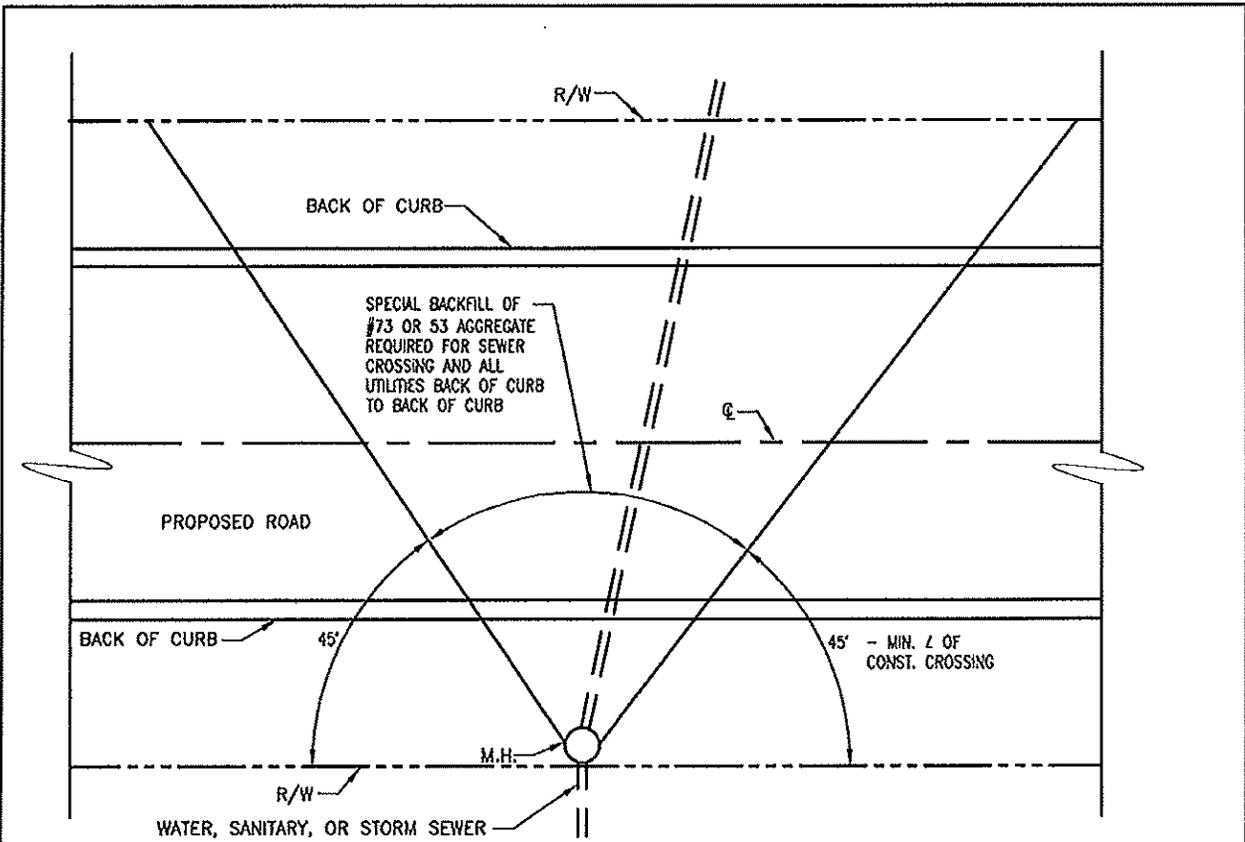
**NOTES:**

1. ALL BEDDING AND INITIAL BACKFILL SHALL BE INSTALLED IN 4" TO 6" BALANCED LIFTS AND MECHANICALLY TAMPED. BEDDING MATERIAL SHALL BE HAND PLACED AROUND THE HAUNCH AND SIDES OF THE PIPE TO ENSURE PROPER COMPACTION AND COMPLETE FILLING OF ALL VOIDS.
2. SEE STANDARD DRAWINGS VII-A4 AND VII-A5 FOR ADDITIONAL REQUIREMENTS WHEN PIPE IS INSTALLED UNDER PROPOSED PAVEMENT OR NEAR PROPOSED OR EXISTING PAVEMENT.

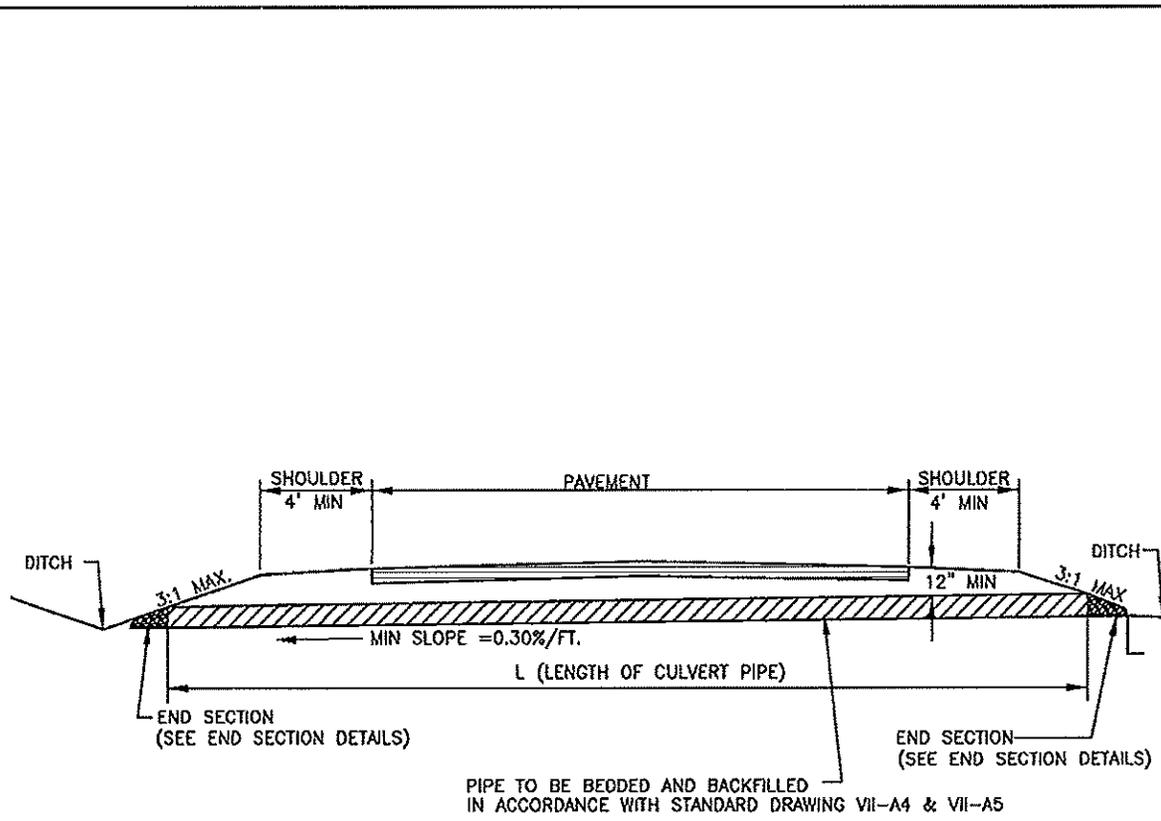
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|------|----------|---------------|---------------------------|--------------------|
|      |          |               | PORTER COUNTY, INDIANA    |                    |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS         |                    |
|      |          |               |                           |                    |
|      |          |               |                           |                    |
|      |          |               |                           |                    |
|      |          |               | PIPE BEDDING AND BACKFILL | SHT. NO.<br>V11-A3 |



|      |          |               |                        |  |
|------|----------|---------------|------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS      |  |
|      |          |               | BACKFILL REQUIREMENTS  |  |
|      |          |               | SHT. NO. VII-A4        |  |



|      |          |               |                                      |                    |
|------|----------|---------------|--------------------------------------|--------------------|
|      |          |               | PORTER COUNTY, INDIANA               |                    |
|      |          |               | STANDARD DRAWINGS                    |                    |
|      |          |               | BACKFILL REQUIREMENTS<br>(CONTINUED) | SHT. NO.<br>VII-A5 |
| ITEM | REVISION | APPROVED DATE |                                      |                    |
|      |          |               |                                      |                    |
|      |          |               |                                      |                    |
|      |          |               |                                      |                    |

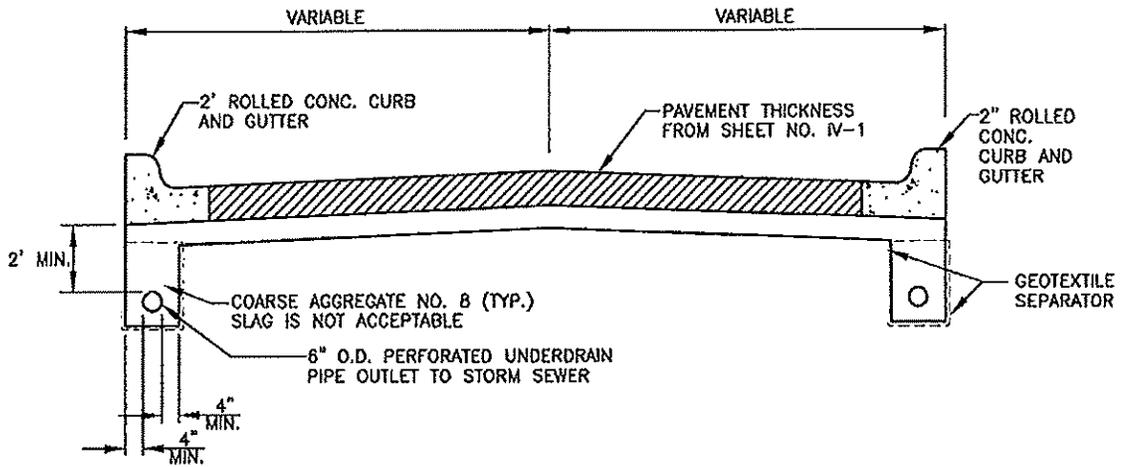


TYPICAL CULVERT INSTALLATION

NOTES

1. INSTALL MIN 12" DIAMETER OR NECESSARY SIZE.
2. LOCATIONS UPON PORTER COUNTY HIGHWAY DEPARTMENT'S APPROVAL ON NON-CURBED PAVEMENT SECTIONS.
3. GAUGE OF CORRUGATED METAL PIPE TO BE APPROVED BY PORTER COUNTY HIGHWAY DEPARTMENT.
4. MINIMUM LENGTH OF DRIVEWAY CULVERTS IS 20'.

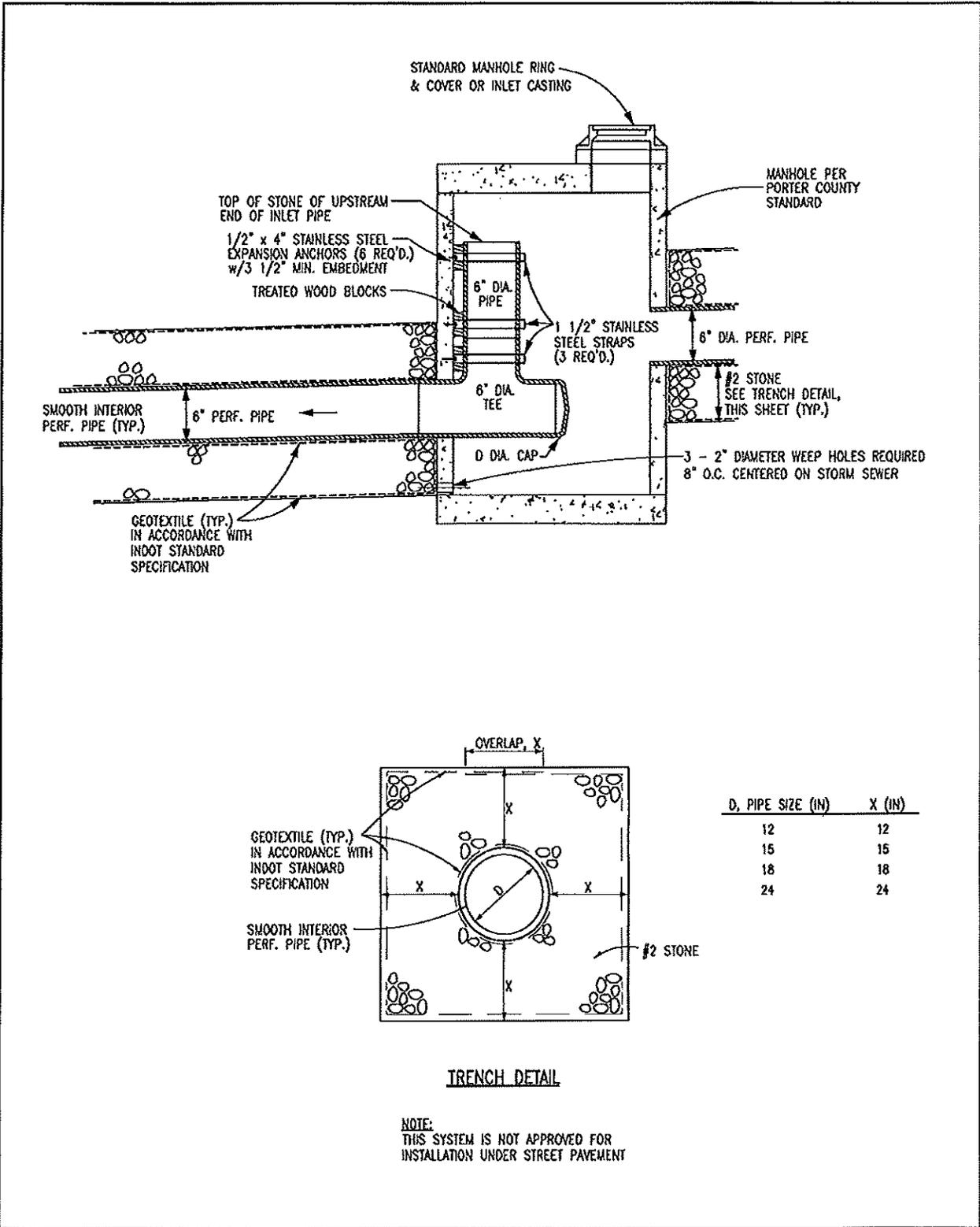
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|---------------------------------|----------|---------------------------|
| PORTER COUNTY, INDIANA          |          |                           |
| ITEM                            | REVISION | APPROVED DATE             |
|                                 |          |                           |
|                                 |          |                           |
| TYPICAL CULVERT<br>INSTALLATION |          | SHT. NO.<br><b>VII-B1</b> |



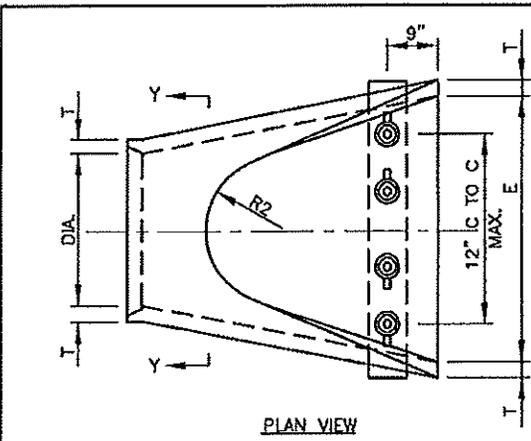
**NOTES:**

1. PRIOR TO PLACING ANY CURBING, PAVEMENT OR UNDERDRAINS IN THE BELOW SOIL CLASSIFICATIONS, THE COMPACTED SUBGRADE SHALL BE PROOF-ROLLED BY A LOADED SINGLE AXLE OR TANDEM AXLE DUMP TRUCK IN THE PRESENCE OF A REPRESENTATIVE OF THE HIGHWAY ENGINEER. ANY SOFT OR YIELDING SUBGRADE SHALL BE UNDERCUT, BACKFILLED WITH GRANULAR BORROW MATERIAL, COMPACTED AND REPROOF-ROLLED IN THE PRESENCE OF A REPRESENTATIVE OF THE COUNTY ENGINEER.
2. ANY UTILITY ENCOUNTERING AN AGGREGATE UNDERDRAIN SYSTEM WILL BE RESPONSIBLE TO REPAIR THE SYSTEM.

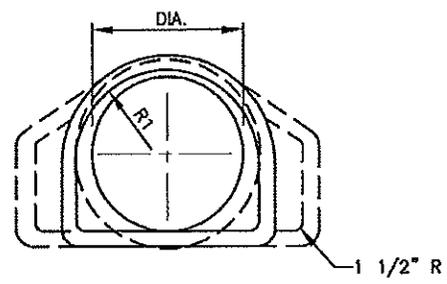
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|------|----------|---------------|-------------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA        |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS             |  |
|      |          |               | UNDERDRAIN<br>TYPICAL SECTION |  |
|      |          |               | SHT. NO.<br>VII-B2            |  |



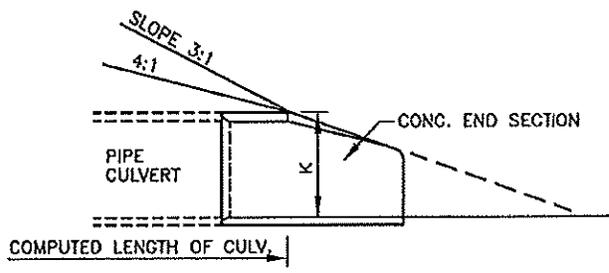
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|------|----------|---------------|----------------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA           |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS                |  |
|      |          |               | REAR YARD PERFORATED PIPE DETAIL |  |
|      |          |               | SHT. NO. VII-B3                  |  |



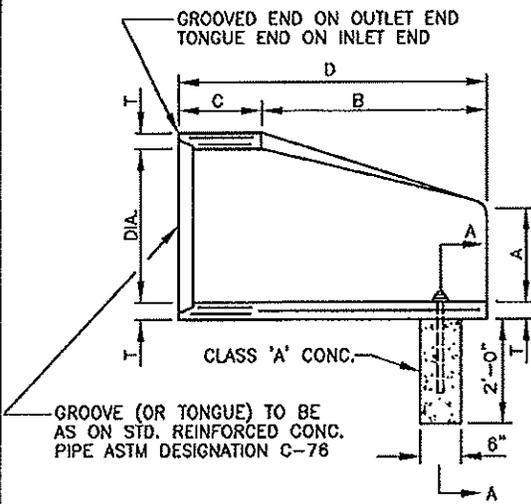
PLAN VIEW



SECTION Y-Y

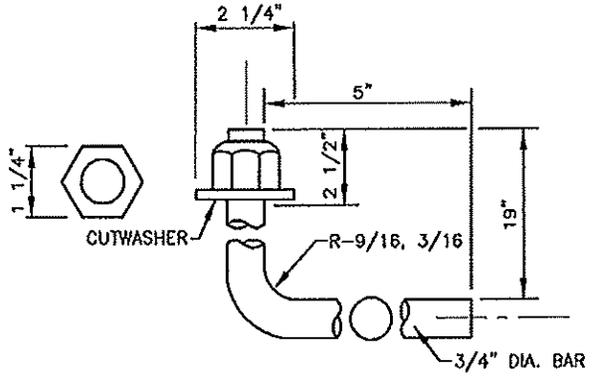


SLOPE DETAIL

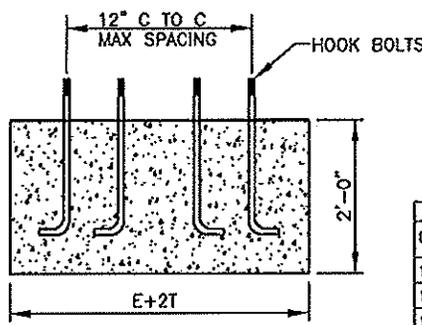


LONGITUDINAL SECTION

GROOVE (OR TONGUE) TO BE AS ON STD. REINFORCED CONC. PIPE ASTM DESIGNATION C-78



HOOK BOLT & NUT



SECTION A-A

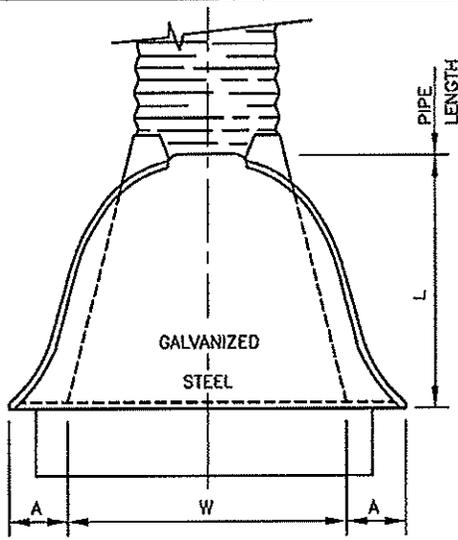
CONCRETE END SECTION

TABLE OF DIMENSIONS

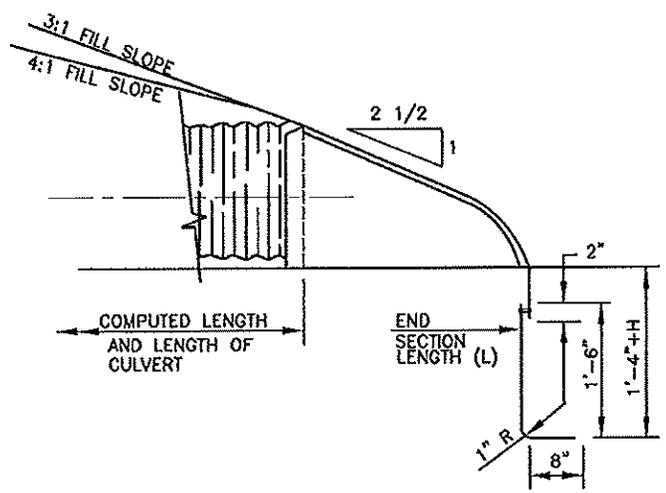
| DIA. | T (MIN.) | A (±1") | C (±1") | D (±1") | E (±1") | K   | R1       | R2      | APPROX. WEIGHT lb. |
|------|----------|---------|---------|---------|---------|-----|----------|---------|--------------------|
| 12"  | 2"       | 5"      | 4'-3"   | 6'-2"   | 2'-0"   | 1.3 | 10 1/8"  | 9"      | 800                |
| 15"  | 2 1/4"   | 7"      | 4'-0"   | 6'-3"   | 2'-6"   | 1.6 | 12 1/2"  | 11"     | 1100               |
| 18"  | 2 1/2"   | 11"     | 4'-1"   | 6'-2"   | 3'-0"   | 1.8 | 15 1/2"  | 12"     | 1300               |
| 21"  | 2 3/4"   | 11"     | 3'-6"   | 6'-3"   | 3'-6"   | 2.1 | 16 1/8"  | 13"     | 1500               |
| 24"  | 3"       | 1'-0"   | 2'-8"   | 6'-3"   | 4'-0"   | 2.3 | 18 3/16" | 14"     | 1800               |
| 27"  | 3 1/4"   | 1'-1"   | 2'-5"   | 6'-3"   | 4'-6"   | 2.6 | 18 9/16" | 14 1/2" | 2100               |
| 30"  | 3 1/2"   | 1'-2"   | 1'-10"  | 6'-3"   | 5'-0"   | 2.9 | 18 1/2"  | 15"     | 2400               |
| 33"  | 3 3/4"   | 1'-3"   | 3'-6"   | 6'-3"   | 5'-6"   | 3.1 | 23 3/4"  | 17 1/2" | 4100               |
| 36"  | 4"       | 1'-5"   | 3'-1"   | 8'-3"   | 6'-0"   | 3.4 | 24 5/16" | 20"     | 4200               |

WHEN DIA. > 36", APPROVED DESIGN BY PORTER COUNTY ENGINEER IS REQUIRED.

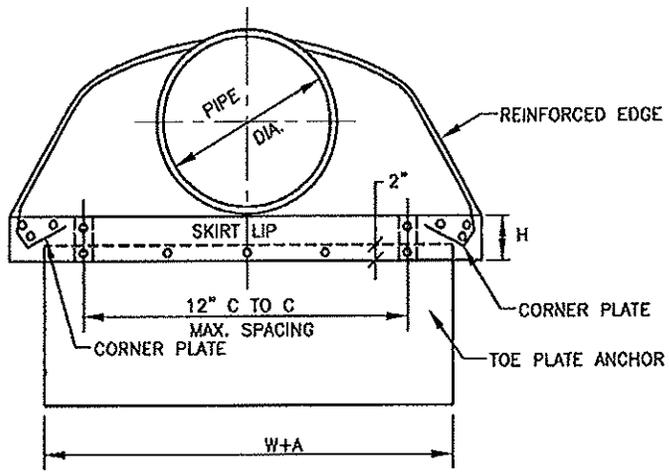
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|------|----------|---------------|------------------------|--|--|
|      |          |               | PORTER COUNTY, INDIANA |  |  |
|      |          |               | STANDARD DRAWINGS      |  |  |
|      |          |               | CONCRETE END SECTIONS  |  |  |
|      |          |               | SHT. NO. VII-B4        |  |  |
| ITEM | REVISION | APPROVED DATE |                        |  |  |
|      |          |               |                        |  |  |
|      |          |               |                        |  |  |
|      |          |               |                        |  |  |



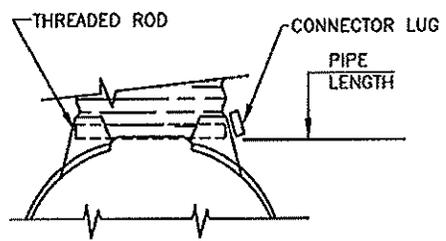
PLAN VIEW



SIDE VIEW



END VIEW



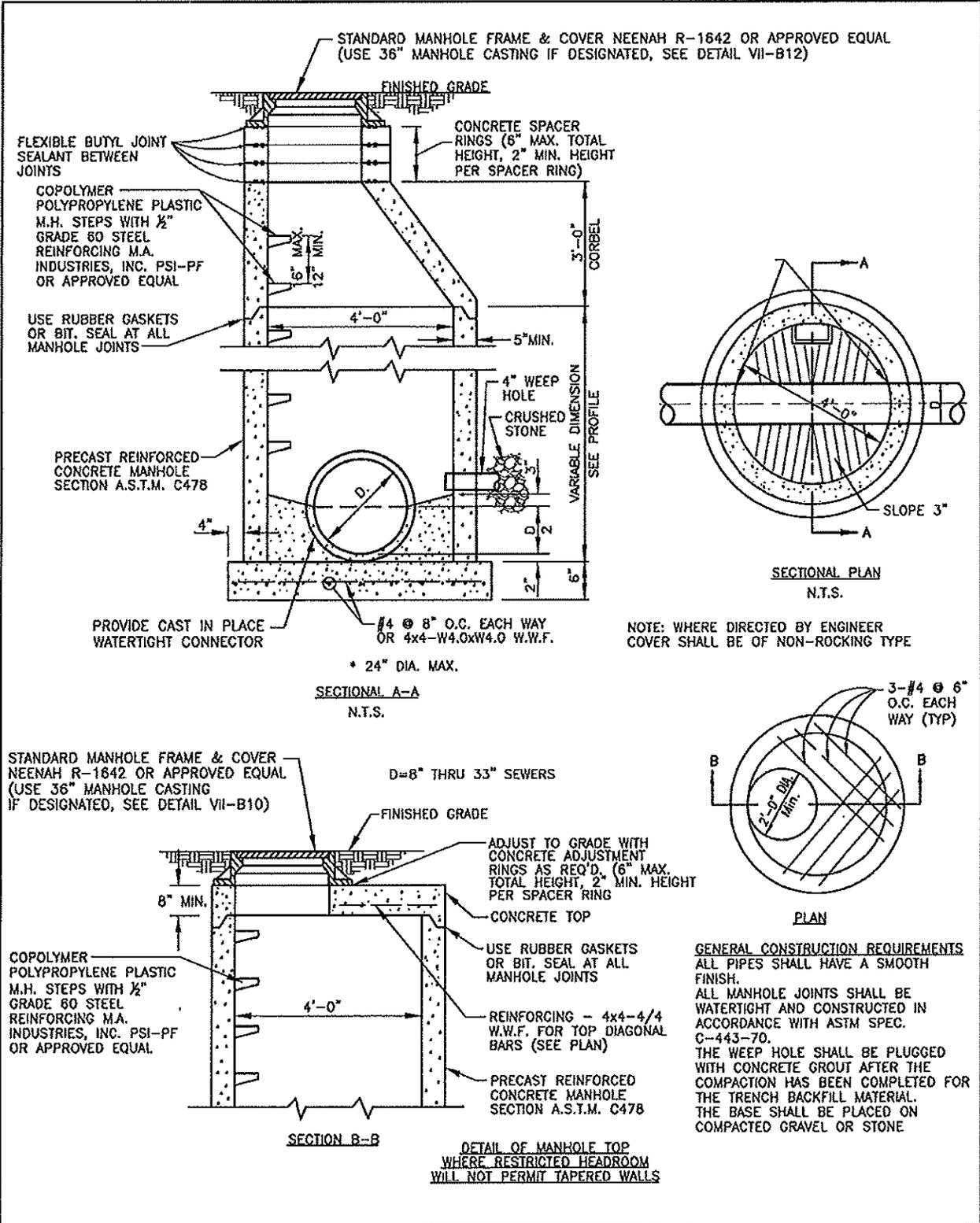
TYPE #3  
FOR 12" THRU 24"

METAL END SECTION

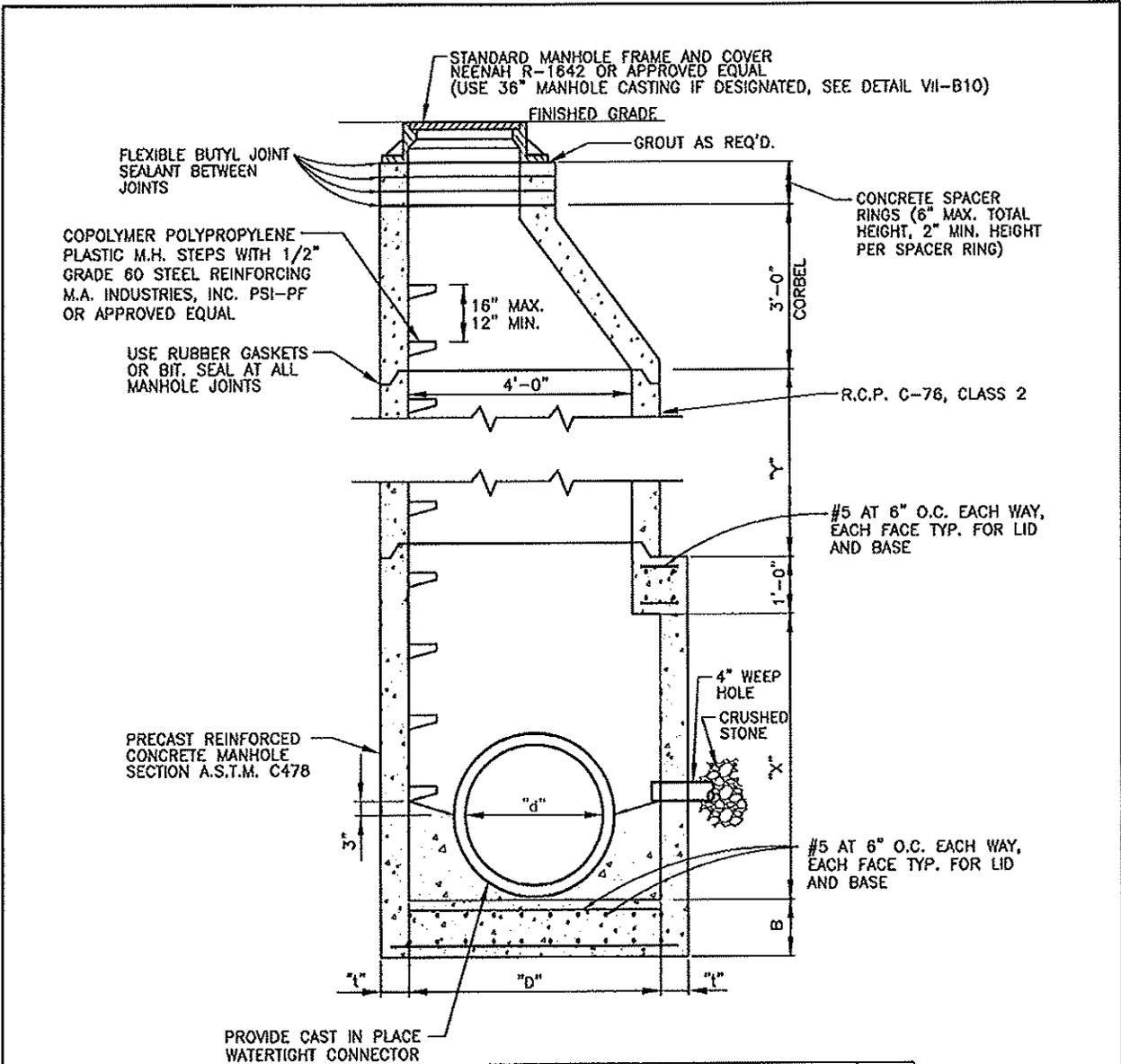
| PIPE DIA. | END SECTION THICK. (IN.) | A (±1") | B (MAX.) (±1") | H (±1") | L (±1 1/2") | W (±2") | APPROX. SLOPE | BODY  |
|-----------|--------------------------|---------|----------------|---------|-------------|---------|---------------|-------|
| 12"       | .064                     | 6"      | 6"             | 6"      | 21"         | 24"     | 2 1/2":1      | 1 PC. |
| 15"       | .064                     | 7"      | 8"             | 6"      | 26"         | 30"     | 2 1/2":1      | 1 PC. |
| 18"       | .064                     | 8"      | 10"            | 6"      | 31"         | 36"     | 2 1/2":1      | 1 PC. |
| 21"       | .064                     | 9"      | 12"            | 6"      | 36"         | 42"     | 2 1/2":1      | 1 PC. |
| 24"       | .064                     | 10"     | 13"            | 6"      | 41"         | 48"     | 2 1/2":1      | 1 PC. |
| 30"       | .079                     | 12"     | 16"            | 8"      | 51"         | 60"     | 2 1/2":1      | 1 PC. |
| 36"       | .079                     | 14"     | 18"            | 9"      | 60"         | 72"     | 2 1/2":1      | 2 PC. |

WHEN DIA. >36", APPROVED DESIGN BY PORTER COUNTY ENGINEER IS REQUIRED.

|      |          |               |                        |  |
|------|----------|---------------|------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS      |  |
|      |          |               | METAL END SECTIONS     |  |
|      |          |               | SHT. NO. VII-B5        |  |



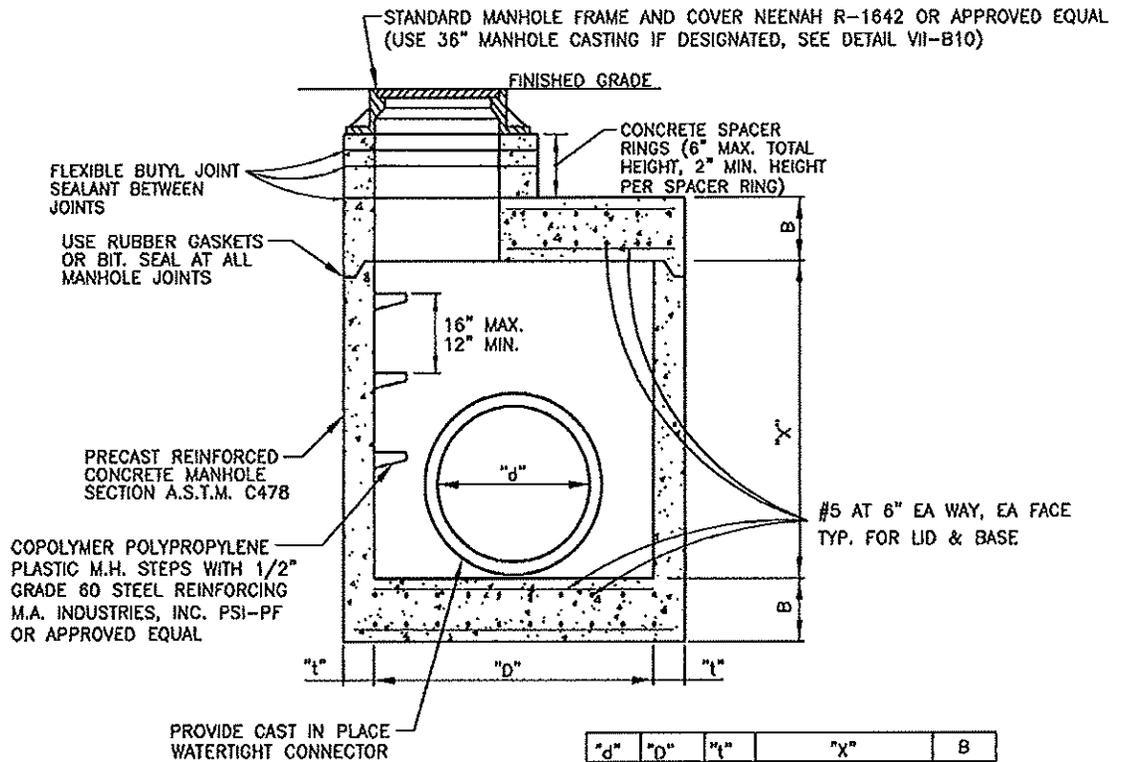
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|      |          |               | PORTER COUNTY, INDIANA |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS      |  |
|      |          |               | SHT. NO. VII-B6        |  |
|      |          |               | STORM MANHOLE TYPE 1   |  |



NOTE:  
THE WEEP HOLE SHALL BE PLUGGED WITH CONCRETE GROUT AFTER THE COMPACTION FOR THE TRENCH BACKFILL MATERIAL HAS BEEN COMPLETED.  
ALL PIPES SHALL HAVE A SMOOTH FINISH.  
GENERAL CONSTRUCTION REQUIREMENTS SAME AS TYPE 1 MANHOLE.

| "d" | "D"  | "t" | "x"  | "y"         | B   |
|-----|------|-----|------|-------------|-----|
| 36" | 60"  | 6"  | 60"  | AS REQUIRED | 8"  |
| 42" | 72"  | 7"  | 72"  | "           | 8"  |
| 48" | 72"  | 7"  | 72"  | "           | 8"  |
| 54" | 84"  | 8"  | 84"  | "           | 10" |
| 60" | 84"  | 8"  | 84"  | "           | 10" |
| 66" | 96"  | 9"  | 96"  | "           | 12" |
| 72" | 96"  | 9"  | 96"  | "           | 12" |
| 78" | 108" | 10" | 108" | "           | 12" |
| 84" | 108" | 10" | 108" | AS REQUIRED | 12" |

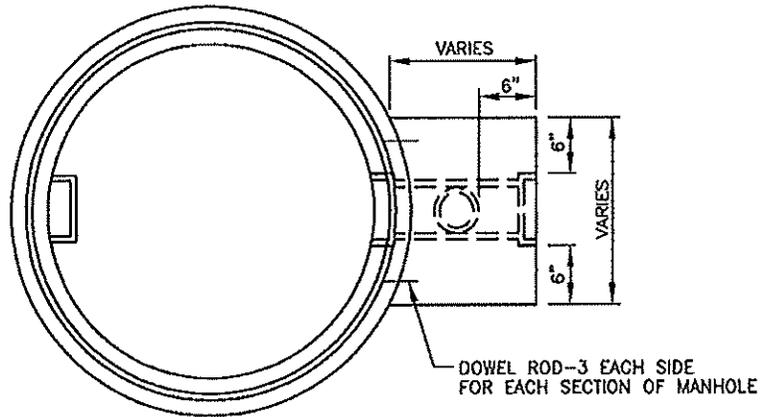
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|      |          |               | PORTER COUNTY, INDIANA |  |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS      |  |  |
|      |          |               | STORM MANHOLE TYPE 2   |  |  |
|      |          |               | SHT. NO.<br>VII-B7     |  |  |



| "d" | "D"  | "t" | "x"         | B   |
|-----|------|-----|-------------|-----|
| 36" | 60"  | 6"  | AS REQUIRED | 8"  |
| 42" | 72"  | 7"  | AS REQUIRED | 8"  |
| 48" | 72"  | 7"  | AS REQUIRED | 8"  |
| 54" | 84"  | 8"  | AS REQUIRED | 10" |
| 60" | 84"  | 8"  | AS REQUIRED | 10" |
| 66" | 96"  | 9"  | AS REQUIRED | 12" |
| 72" | 96"  | 9"  | AS REQUIRED | 12" |
| 78" | 108" | 10" | AS REQUIRED | 12" |
| 84" | 108" | 10" | AS REQUIRED | 12" |

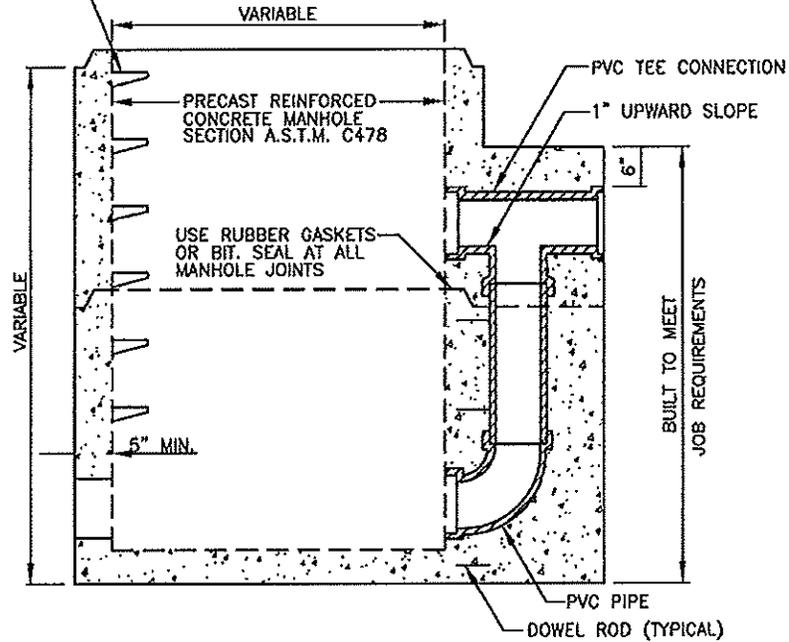
STANDARD MANHOLE TYPE 2  
36" SEWER & LARGER  
(RESTRICTED HEADROOM)

|      |          |               |   |  |
|------|----------|---------------|---|--|
|      |          |               | PORTER COUNTY, INDIANA                        |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS                             |  |
|      |          |               | STORM MANHOLE TYPE 2<br>(RESTRICTED HEADROOM) |  |
|      |          |               | SHT. NO.<br>VII-B8                            |  |



PLAN VIEW

COPOLYMER POLYPROPYLENE  
PLASTIC M.H. STEPS WITH  
GRADE 60 STEEL REINFORCING.



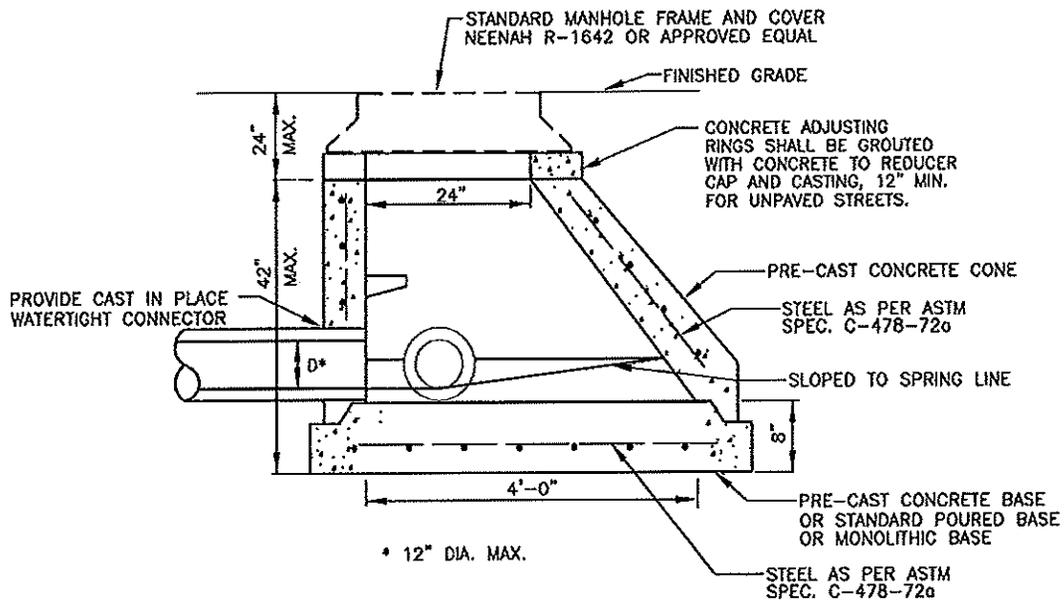
CROSS SECTION

NOTES:

1. MANHOLE CONFORMS TO ASTM C-478.
2. MULTIPLE SECTION DROP-PVC PIPE SEALS WITH BELL AND SPIGOT CONNECTION.
3. ONLY PRECAST MANHOLES PERMITTED.

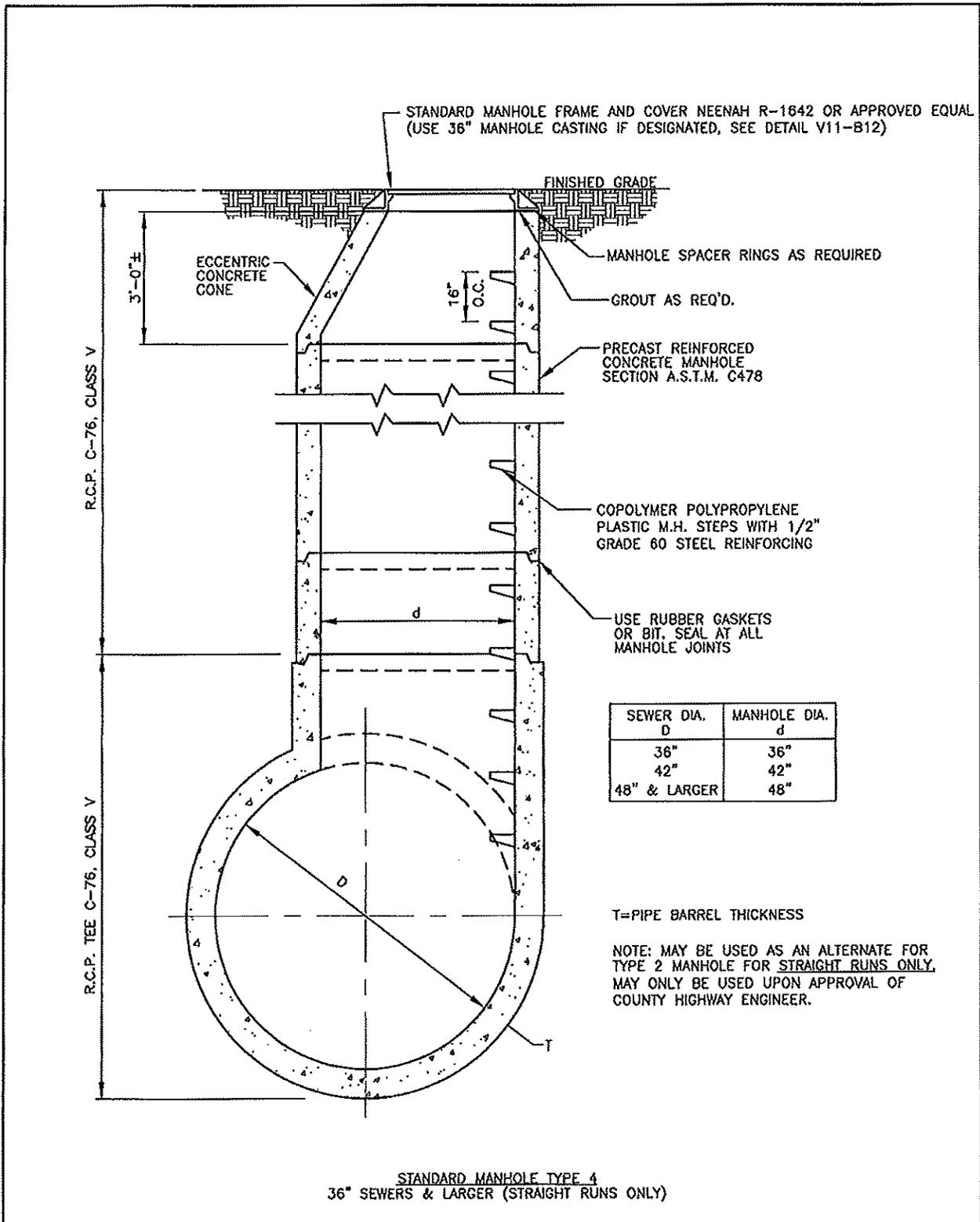
PRECAST 48" DIA. DROP MANHOLE

|      |          |               |                            |  |
|------|----------|---------------|----------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA     |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS          |  |
|      |          |               | PRECAST STORM DROP MANHOLE |  |
|      |          |               | SHT. NO. VII-B9            |  |

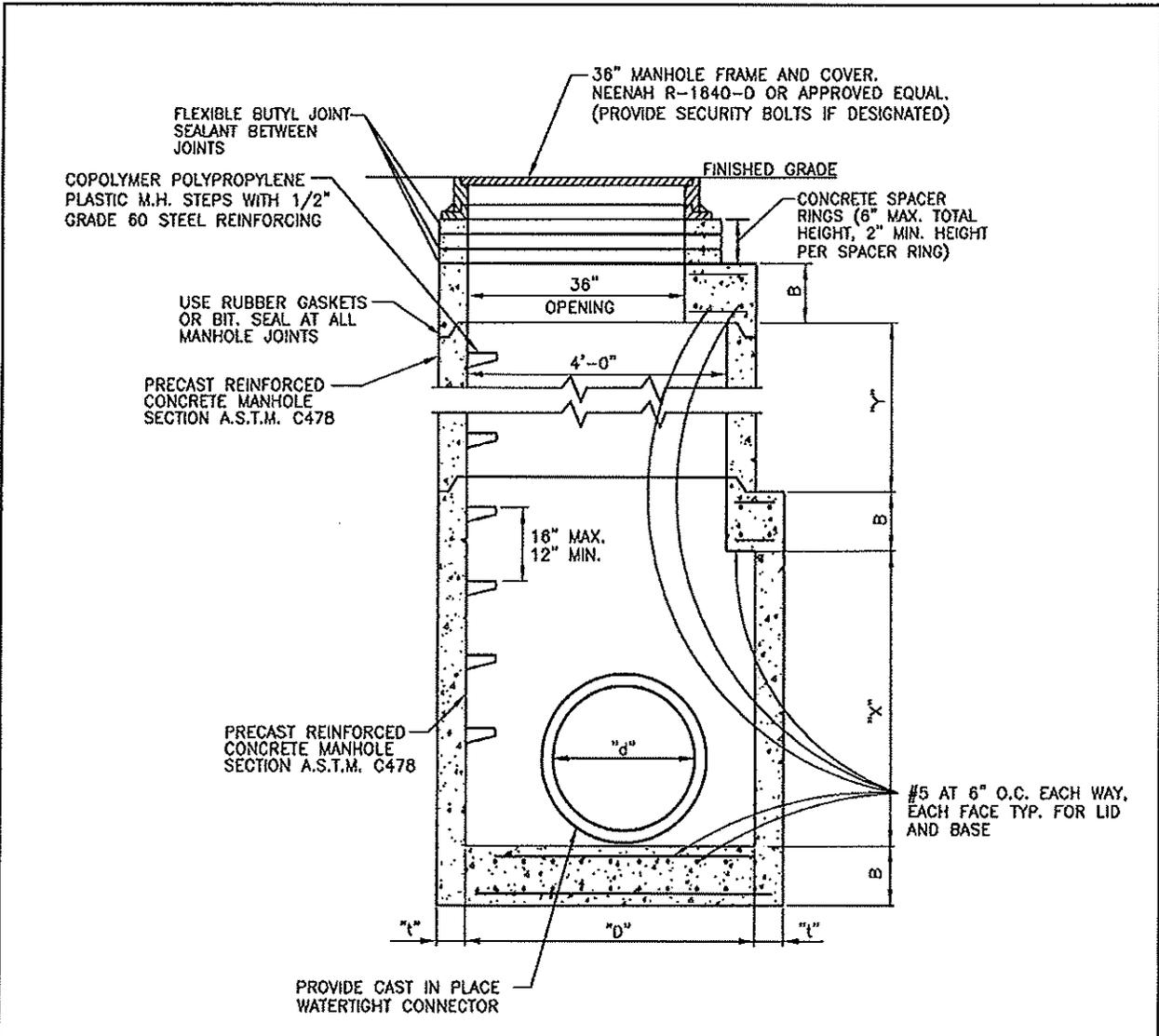


**NOTE:**  
 ALL PIPES SHALL HAVE A SMOOTH FINISH.  
 THE BASE SHALL BE PLACED ON COMPACTED GRAVEL OR STONE - 4" MINIMUM.

|      |          |               |                        |  |
|------|----------|---------------|------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS      |  |
|      |          |               | STORM MANHOLE TYPE 3   |  |
|      |          |               | SHT. NO. VII-B10       |  |

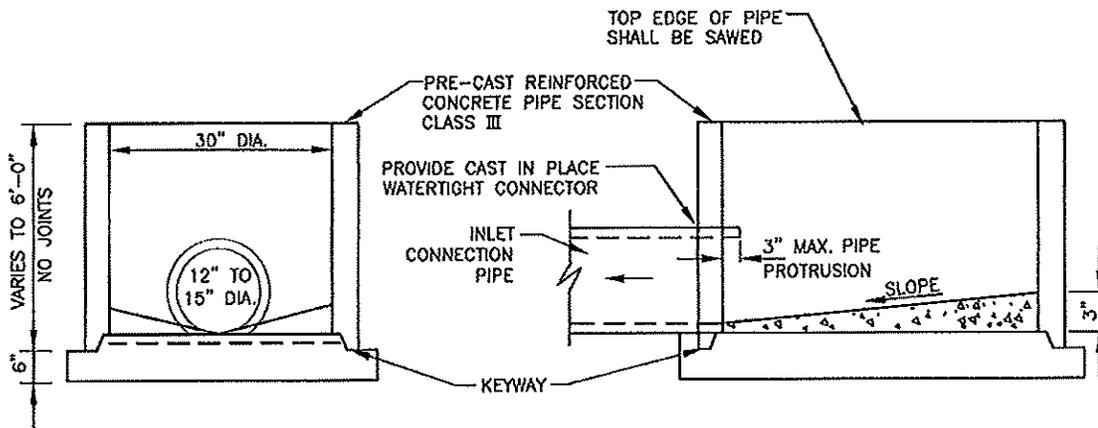
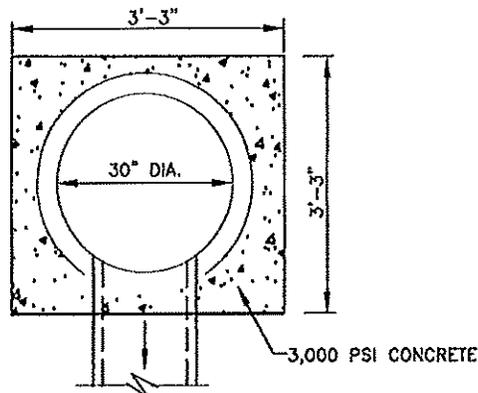


|      |          |               |                        |  |
|------|----------|---------------|------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS      |  |
|      |          |               | STORM MANHOLE TYPE 4   |  |
|      |          |               | SHT. NO. VII-B11       |  |



| "d" | "D"  | "t" | "x"  | "y"         | B   |
|-----|------|-----|------|-------------|-----|
| 8"  | 48"  | 8"  | 36"  | AS REQUIRED | 8"  |
| 12" | 48"  | 8"  | 36"  | AS REQUIRED | 8"  |
| 15" | 48"  | 8"  | 36"  | AS REQUIRED | 8"  |
| 18" | 48"  | 8"  | 36"  | AS REQUIRED | 8"  |
| 24" | 48"  | 8"  | 60"  | AS REQUIRED | 8"  |
| 30" | 60"  | 8"  | 60"  | AS REQUIRED | 8"  |
| 36" | 60"  | 8"  | 60"  | AS REQUIRED | 8"  |
| 42" | 72"  | 8"  | 72"  | AS REQUIRED | 8"  |
| 48" | 72"  | 8"  | 72"  | AS REQUIRED | 8"  |
| 54" | 84"  | 8"  | 84"  | AS REQUIRED | 10" |
| 60" | 84"  | 8"  | 84"  | AS REQUIRED | 10" |
| 66" | 96"  | 9"  | 96"  | AS REQUIRED | 12" |
| 72" | 96"  | 9"  | 96"  | AS REQUIRED | 12" |
| 78" | 108" | 10" | 108" | AS REQUIRED | 12" |
| 84" | 108" | 10" | 108" | AS REQUIRED | 12" |

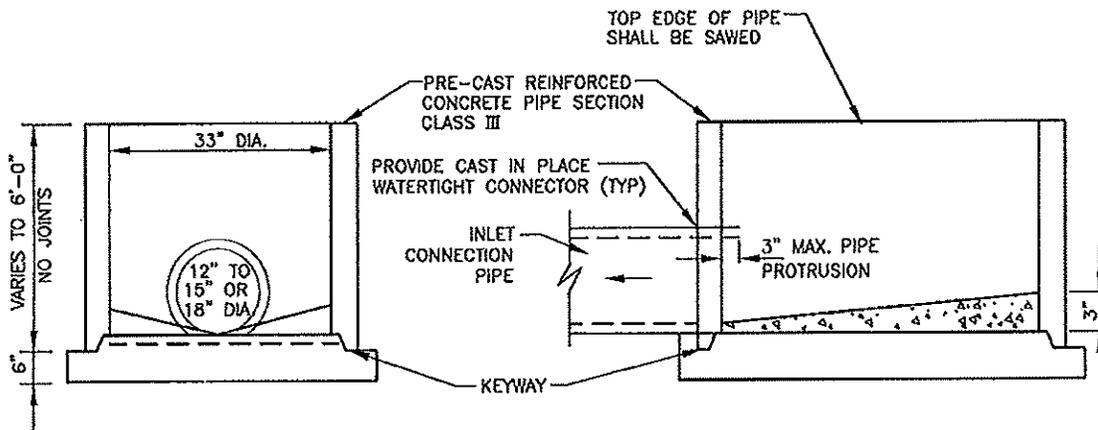
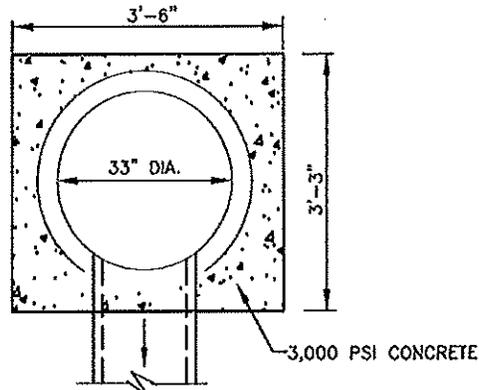
|      |          |               |                              |  |  |
|------|----------|---------------|------------------------------|--|--|
|      |          |               | PORTER COUNTY, INDIANA       |  |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS            |  |  |
|      |          |               | 36" STORM<br>MANHOLE CASTING |  |  |
|      |          |               | SHT. NO.<br>VII-B12          |  |  |



**NOTE:**

1. POURED CONCRETE BASE WITH #5 BARS BOTH WAYS 12" C. TO C.
2. CASTING SHALL BE NEENAH R-3274, EAST JORDAN IRONWORKS 7020, OR APPROVED EQUAL. "DUMP NO WASTE! DRAINS TO WATERWAYS!" MESSAGE WITH FISH IMAGE REQUIRED ON ALL CASTINGS.

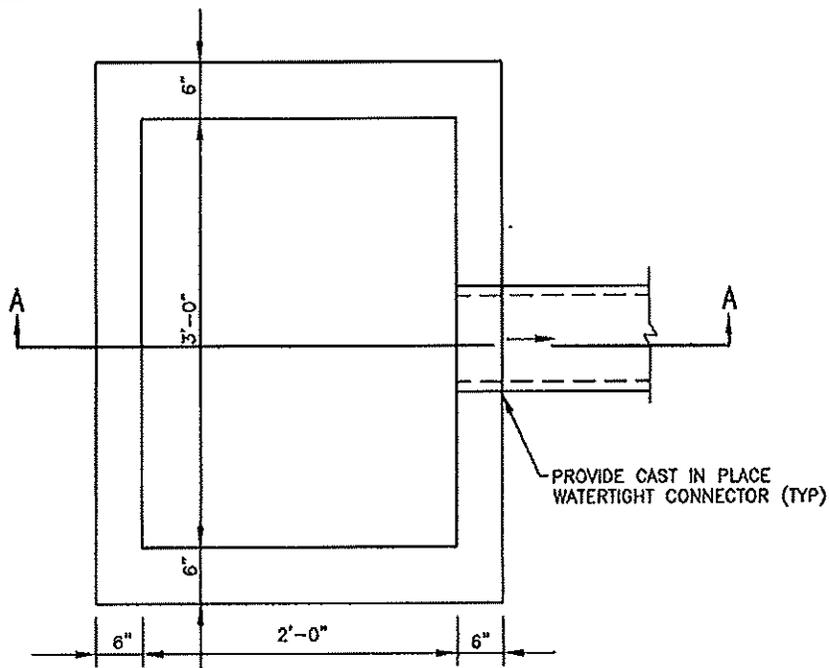
|      |          |               |                        |  |
|------|----------|---------------|------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS      |  |
|      |          |               | INLET TYPE 1           |  |
|      |          |               | SHT. NO.<br>VII-B13    |  |



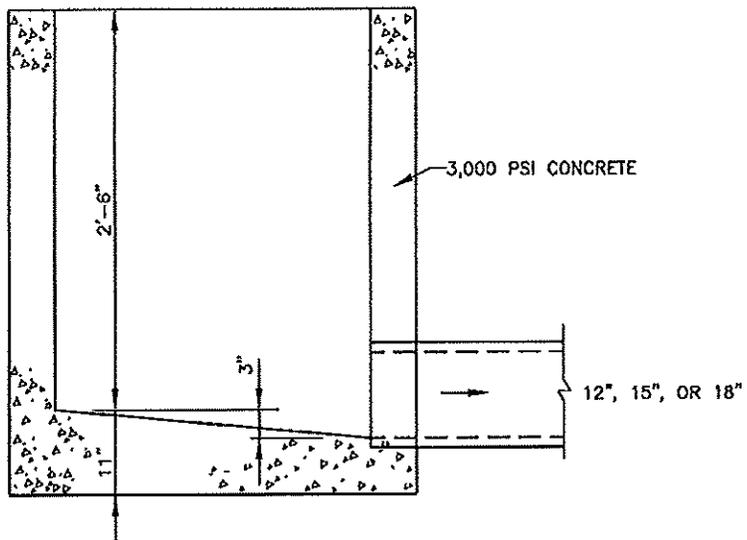
**NOTE:**

1. POURED CONCRETE BASE WITH #5 BARS BOTH WAYS 12" C. TO C.
2. CASTING SHALL BE NEENAH R-3274, EAST JORDAN IRONWORKS 7020, OR APPROVED EQUAL. "DUMP NO WASTE! DRAINS TO WATERWAYS!" MESSAGE WITH FISH IMAGE REQUIRED ON ALL CASTINGS.

|      |          |               |                        |  |
|------|----------|---------------|------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS      |  |
|      |          |               |                        |  |
|      |          |               |                        |  |
|      |          |               |                        |  |
|      |          |               | SHT. NO.               |  |
|      |          |               | VII-B14                |  |
|      |          |               | INLET TYPE 2           |  |



PLAN VIEW



SECTION A-A

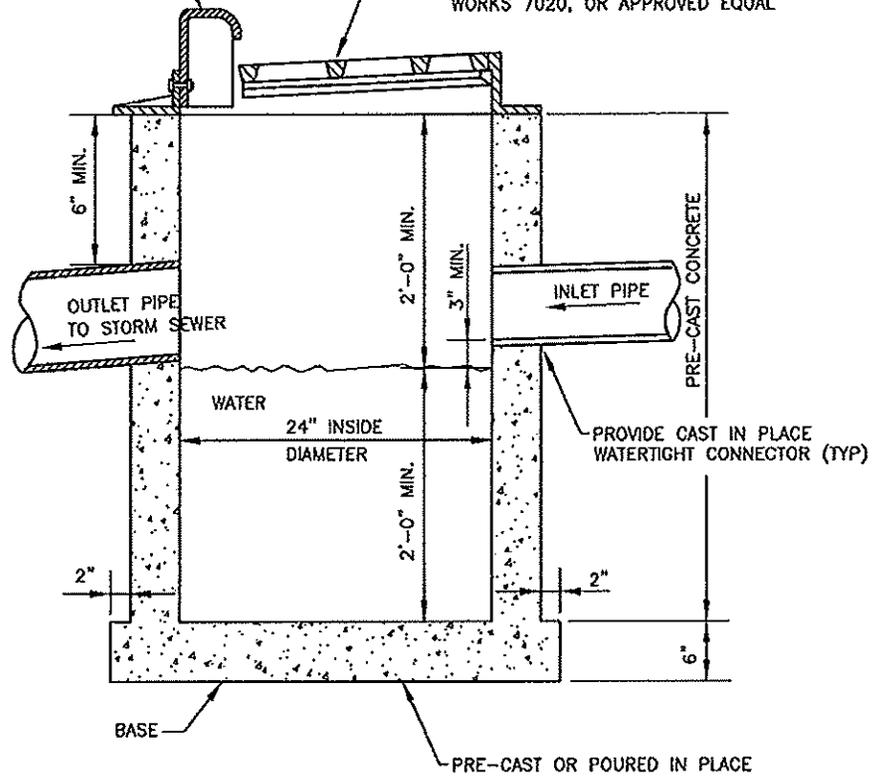
NOTE:

1. ALL PIPE SHALL HAVE A SMOOTH FINISH. REINFORCING STEEL PER ASTM SPEC. C-478-72a.
2. CASTING SHALL BE NEENAH R-3246, EAST JORDAN IRONWORKS 7030, OR APPROVED EQUAL. "DUMP NO WASTE! DRAINS TO WATERWAYS!" MESSAGE WITH FISH IMAGE REQUIRED ON ALL CASTINGS.

|      |          |               |                        |         |
|------|----------|---------------|------------------------|---------|
|      |          |               | PORTER COUNTY, INDIANA |         |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS      |         |
|      |          |               | INLET TYPE 3           |         |
|      |          |               |                        |         |
|      |          |               | SHT. NO.               | VII-B15 |

"DUMP NO WASTE! DRAINS TO WATERWAYS!" MESSAGE WITH FISH IMAGE REQUIRED ON ALL CASTINGS

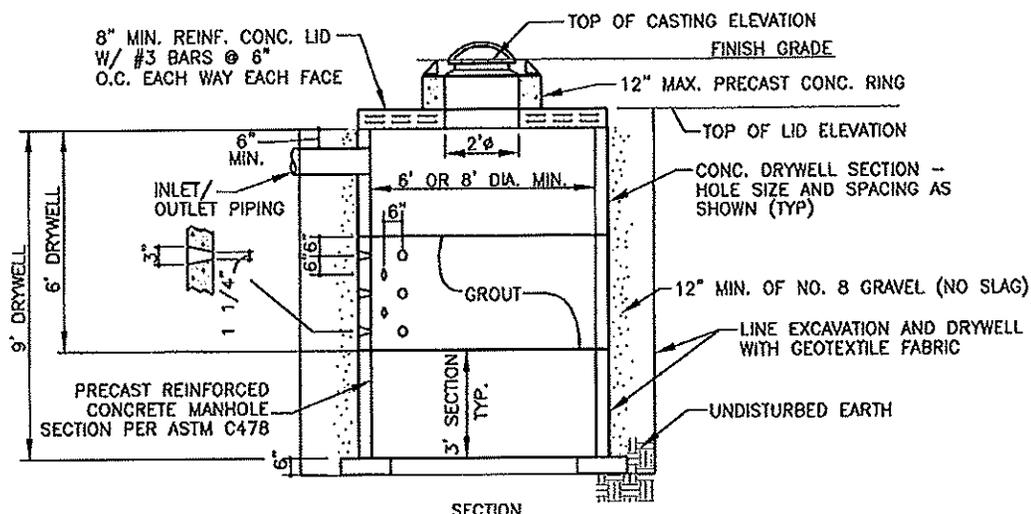
NEENAH R-3274, EAST JORDAN IRON WORKS 7020, OR APPROVED EQUAL



CATCH BASIN

NOTE:  
MINIMUM OF 1/2" CEMENT MORTAR SHALL BE UTILIZE TO SEAL EACH JOINT BETWEEN FRAME AND MANHOLE CASTING OR RISERS. (TYPICAL ON ALL MANHOLES AND INLETS).

|      |          |               |                        |                     |
|------|----------|---------------|------------------------|---------------------|
|      |          |               | PORTER COUNTY, INDIANA |                     |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS      |                     |
|      |          |               |                        |                     |
|      |          |               |                        |                     |
|      |          |               |                        |                     |
|      |          |               | CATCH BASIN            | SHT. NO.<br>VII-B16 |

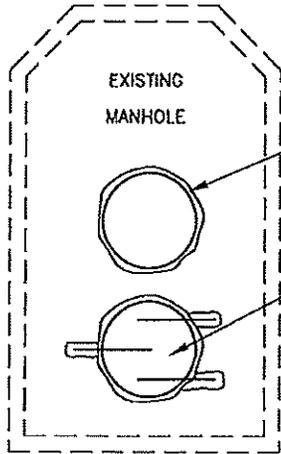


SECTION

**NOTE:**

1. A LAYER OF GEOTEXTILE FABRIC, PER INDOT SPECIFICATIONS SHALL BE PLACED BETWEEN THE DRYWELL AND THE NO. 9 AGGREGATE AND SHALL LINE THE EXCAVATION. ANY FABRIC JOINTS SHALL HAVE AN OVERLAP OF 18"
2. AFTER INSTALLATION OF THE DRYWELLS AND BACKFILLING WITH THE NO. 8 AGGREGATE, THE CONTRACTOR WILL SURCHARGE EACH DRYWELL WITH A MINIMUM OF 3,000 GALLONS OF WATER PRIOR TO ANY PAVEMENT PLACEMENT. SURCHARGE WATER SHALL BE APPLIED AT A RATE THAT WILL COMPLETELY FILL THE DRYWELL.

|                            |          |                            |
|----------------------------|----------|----------------------------|
| PORTER COUNTY, INDIANA     |          |                            |
| ITEM                       | REVISION | APPROVED DATE              |
|                            |          |                            |
|                            |          |                            |
|                            |          |                            |
| PRECAST PERFORATED DRYWELL |          | SHT. NO.<br><b>VII-B17</b> |

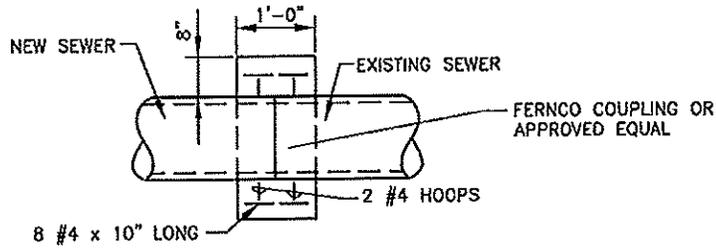


EXISTING  
MANHOLE

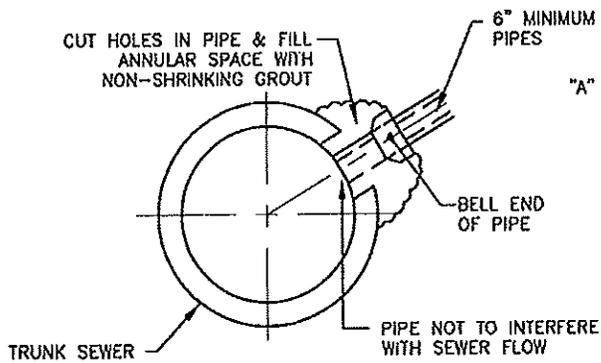
CORE DRILL OPENING IN EXISTING MANHOLE FOR PLACEMENT OF NEW PIPE.  
GROUT ANNULAR SPACE FULL WITH NON-SHRINK GROUT.

EXISTING PIPE REMOVED. EPOXY GROUT #3 DOWELS INTO  
EXISTING CONCRETE. REPAIR HOLE WITH NON-SHRINK GROUT

|      |          |               |                                     |  |
|------|----------|---------------|-------------------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA              |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS                   |  |
|      |          |               | STORM MANHOLE WALL<br>REPAIR DETAIL |  |
|      |          |               | SHT. NO.<br>VII-B18                 |  |



**CONCRETE COLLAR  
FOR JOINING OLD & NEW PIPE**  
-NOT TO SCALE-



**TYPICAL  
BLIND TAP**  
-NOT TO SCALE-

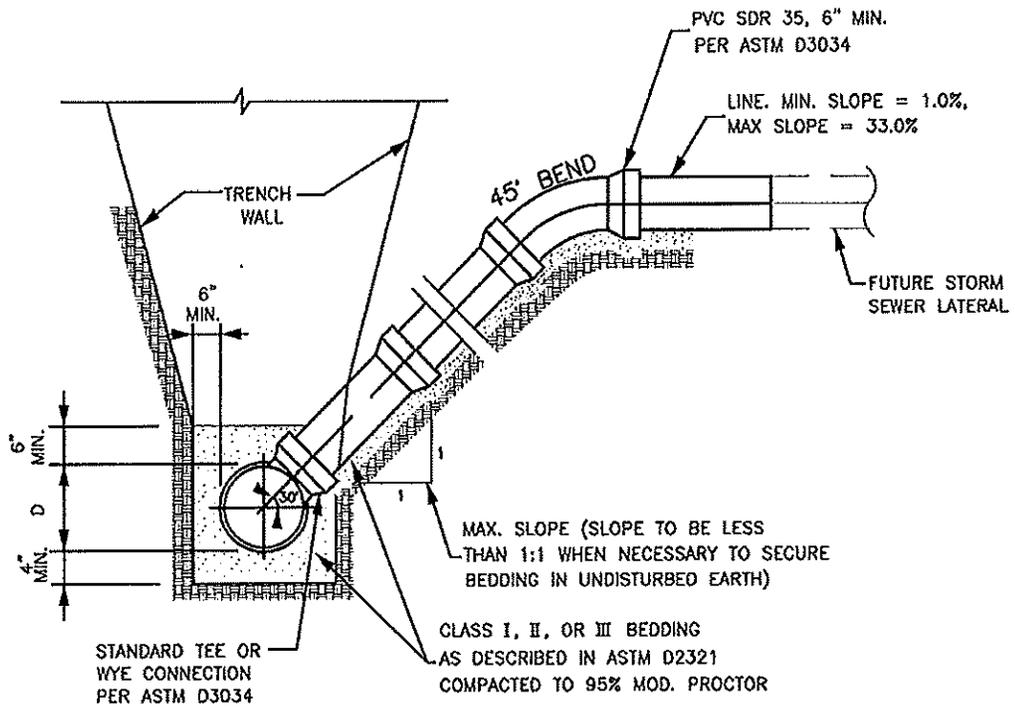
$$"A" = \frac{R}{0.7071}$$

FORMULA TO DETERMINE MAXIMUM SECTION OF PIPE THAT CAN BE CUT OUT OF TRUNK SEWER.  
 "A" = CUTTING DIMENSION (CHORD LENGTH)  
 R = RADIUS INSIDE TRUNK SEWER IN INCHES  
 0.7071 = CONSTANT

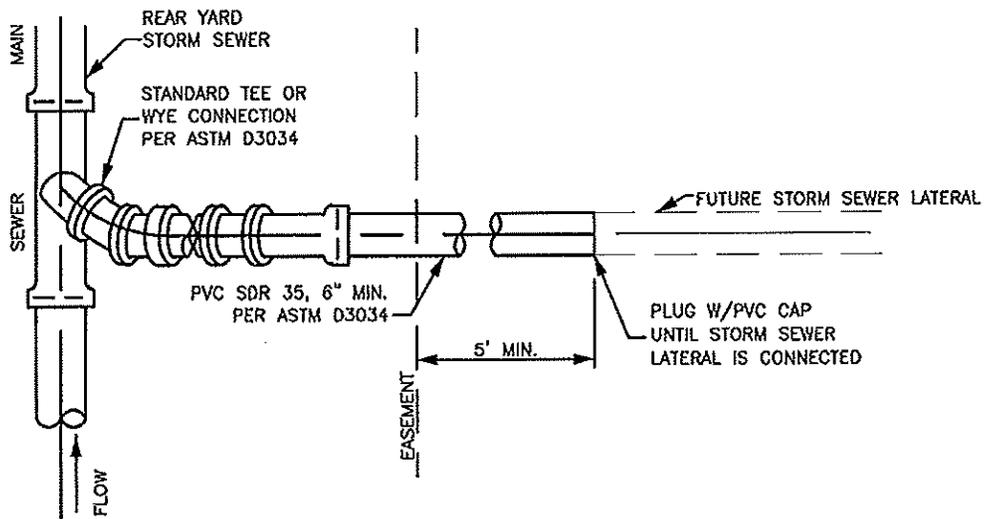
**NOTE:**  
IF OUTSIDE DIAMETER OF TAP PIPE IS GREATER THAN DIMENSION "A" INSTALL APPLICABLE FITTING AS APPROVED AND DIRECTED BY THE PORTER COUNTY ENGINEER.

**NOTE:** BLIND TAP ALLOWED ONLY IN SEWER MAINS LARGER THAN 12" IN DIAMETER AND AS APPROVED BY THE PORTER COUNTY ENGINEER.

|      |          |               |                               |  |
|------|----------|---------------|-------------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA        |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS             |  |
|      |          |               | MISCELLANEOUS PIPE<br>DETAILS |  |
|      |          |               | SHT. NO.<br>VII-B19           |  |

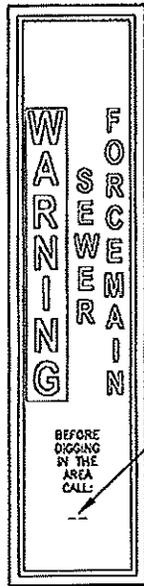


### SLANT STACK

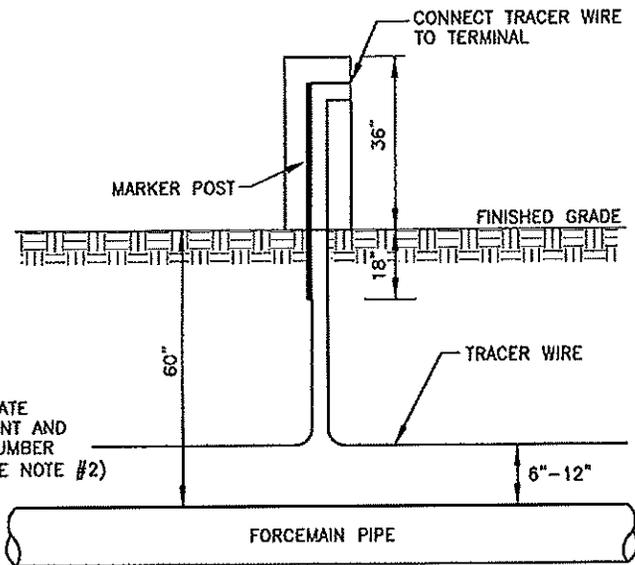


### PLAN

|      |          |               |                                |  |
|------|----------|---------------|--------------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA         |  |
|      |          |               | STANDARD DRAWINGS              |  |
| ITEM | REVISION | APPROVED DATE | STORM SEWER LATERAL CONNECTION |  |
|      |          |               | SHT. NO. VII-B20               |  |
|      |          |               |                                |  |
|      |          |               |                                |  |



DECAL DETAIL  
-NOT TO SCALE-

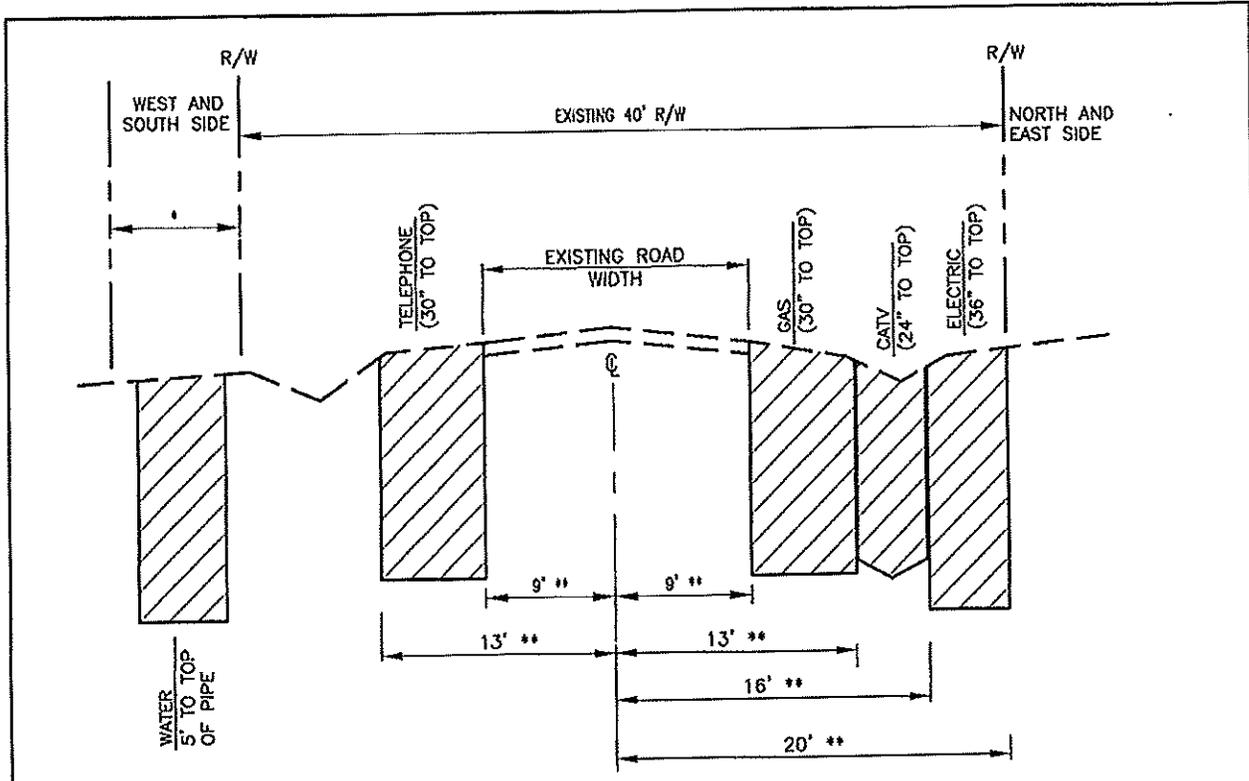


FORCEMAIN MARKER DETAIL  
-NOT TO SCALE-

**\*NOTE:**

1. ALL HDPE FORCEMAIN PIPE SHALL BE INSTALLED WITH AN ELECTRONICALLY CONTINUOUS TYPE TW INSULATED #12 TRACING WIRE.
2. MARKERS SHALL BE PLACED AT 400 FEET INTERVALS AND ALL CHANGES IN DIRECTION. MARKERS SHALL BE RHINO 2 TERMINAL TRIVIEW TEST STATIONS PRODUCT #TVT15YGB2 OR EQUAL WITH DECALS ON EACH SIDE. THE DECALS SHALL BE GREEN WITH WHITE LETTERING AND READ: "WARNING SEWER FORCEMAIN" AND SHALL HAVE THE PHONE NUMBER OF THE APPROPRIATE DEPARTMENT THAT MAINTAINS THE FORCEMAIN. THE TRACER WIRE SHALL BE CONNECTED TO THE TERMINAL IN EACH MARKER.

|      |          |               |                         |  |
|------|----------|---------------|-------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA  |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS       |  |
|      |          |               | FORCEMAIN MARKER DETAIL |  |
|      |          |               | SHT. NO. VII-C1         |  |

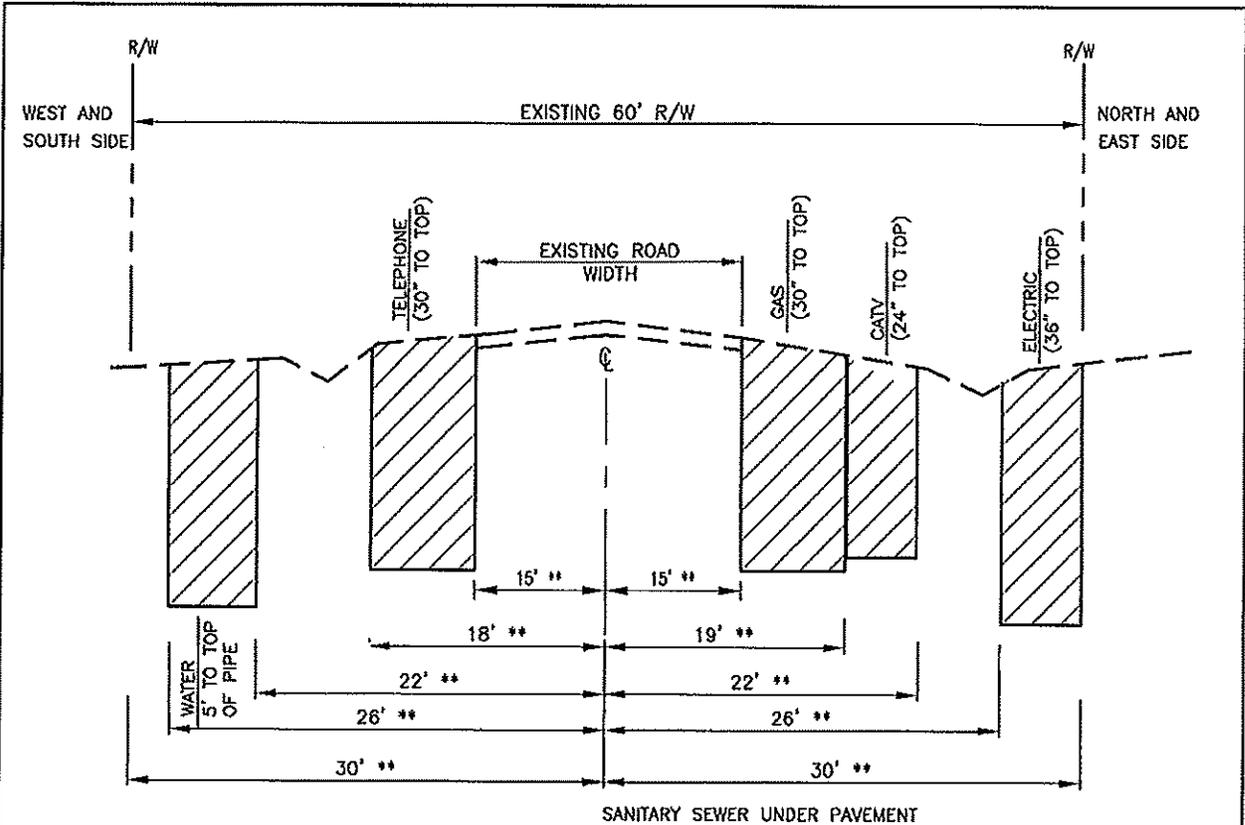


SANITARY SEWER UNDER PAVEMENT

- \* PROPOSED EASEMENT FOR WATER. WIDTH PER WATER COMPANY REQUIREMENTS.
- \*\* IF ANY UTILITY FALLS WITHIN 3 FEET OF THE DITCH BOTTOM (TOE OF SLOPE) THE UTILITY SHALL BE REQUIRED TO PLACE THE NEW LINE IN A NEW EASEMENT OUTSIDE THE RIGHT-OF-WAY OR INSTALL THE UTILITY BY DIRECTIONAL BORING METHODS. VARIATIONS TO THIS REQUIREMENT MAY BE APPROVED ON A CASE BY CASE BASIS.

- NOTE:
1. VARIATIONS TO THE EAST, WEST, SOUTH, NORTH RULE MAY BE APPROVED ON A CASE BY CASE BASIS.
  2. IN NO CASE SHALL A UTILITY BE PLACED AT A DEPTH LESS SHALLOW THAN 24".

|      |          |               |   |  |
|------|----------|---------------|---|--|
|      |          |               | PORTER COUNTY, INDIANA                        |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS                             |  |
|      |          |               | TYPICAL UTILITY LOCATIONS<br>EXISTING 40' R/W |  |
|      |          |               | SHT. NO.<br><b>VII-D1</b>                     |  |



- \* PROPOSED EASEMENT FOR WATER. WIDTH PER WATER COMPANY REQUIREMENTS.
- \*\* IF ANY UTILITY FALLS WITHIN 3 FEET OF THE DITCH BOTTOM (TOE OF SLOPE) THE UTILITY SHALL BE REQUIRED TO PLACE THE NEW LINE IN A NEW EASEMENT OUTSIDE THE RIGHT-OF-WAY OR INSTALL THE UTILITY BY DIRECTIONAL BORING METHODS. VARIATIONS TO THIS REQUIREMENT MAY BE APPROVED ON A CASE BY CASE BASIS.

NOTE:  
 1. VARIATIONS TO THE EAST, WEST, SOUTH, NORTH RULE MAY BE APPROVED ON A CASE BY CASE BASIS.  
 2. IN NO CASE SHALL A UTILITY BE PLACED AT A DEPTH LESS SHALLOW THAN 24".

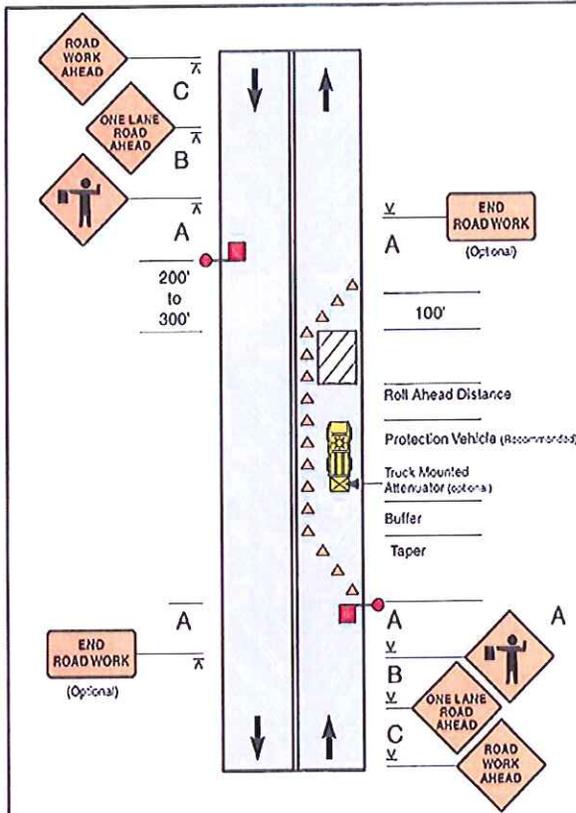
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|------|----------|---------------|---|--|
|      |          |               | PORTER COUNTY, INDIANA                        |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS                             |  |
|      |          |               | TYPICAL UTILITY LOCATIONS<br>EXISTING 60' R/W |  |
|      |          |               |   |  |
|      |          |               |   |  |
|      |          |               | SHT. NO.<br><b>VII-D2</b>                     |  |

## LANE CLOSURE ON A TWO-LANE ROAD (TWO FLAGGER OPERATION)

SHORT TERM STATIONARY - 1 TO 12 HOURS

**NOTES:**

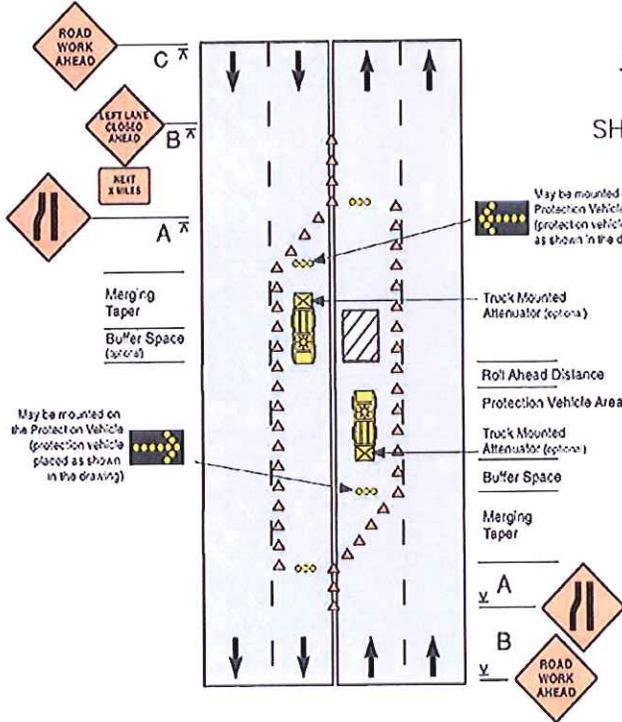
1. THE FLAGGER OR FLAGGERS SHALL USE APPROVED FLAGGING PROCEDURES ACCORDING TO THE MUTCD. IF THERE IS A SIDE ROAD INTERSECTION WITHIN THE WORK AREA, ADDITIONAL TRAFFIC CONTROL, SUCH AS FLAGGERS AND APPROPRIATE SIGNAGE, MAY BE NEEDED ON THE SIDE ROAD APPROACHES.



| Speed Limit (mph) | Sign Spacing A (ft) | Sign Spacing B (ft) | Sign Spacing C (ft) | Buffer |
|-------------------|---------------------|---------------------|---------------------|--------|
| 25                | 200                 | 200                 | 200                 | 55     |
| 30                | 200                 | 200                 | 200                 | 85     |
| 35                | 350                 | 350                 | 350                 | 120    |
| 40                | 350                 | 350                 | 350                 | 170    |
| 45                | 500                 | 500                 | 500                 | 220    |
| 50                | 500                 | 500                 | 500                 | 280    |
| 55                | 500                 | 500                 | 500                 | 335    |

## LANE CLOSURE ON A FOUR-LANE UNDIVIDED ROAD

SHORT TERM STATIONARY - 1 TO 12 HOURS



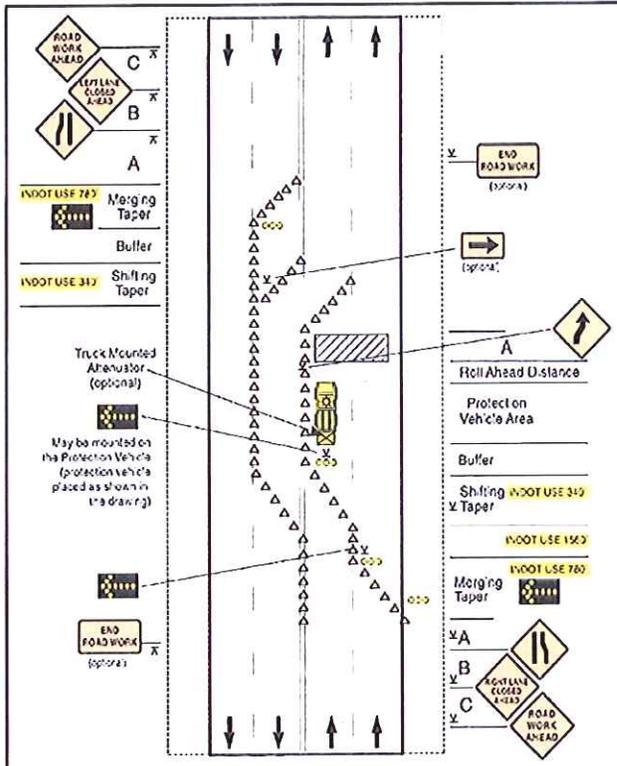
**TAPER LENGTH FORMULA:**

| SPEED LIMIT    | TAPER LENGTH (FT) |
|----------------|-------------------|
| 40 MPH OR LESS | $L = (WS^2) / 60$ |
| 45 MPH OR MORE | $L = WS$          |

WHERE: L=TAPER LENGTH (FT.)  
 W=WIDTH OF OFFSET (FT.)  
 S=POSTED SPEED LIMIT OR ANTICIPATED OPERATING SPEED (MPH)

**NOTE:**  
 MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT

|      |          |               |   |  |
|------|----------|---------------|---|--|
|      |          |               | PORTER COUNTY, INDIANA  |  |
|      |          |               | STANDARD DRAWINGS   |  |
| ITEM | REVISION | APPROVED DATE | MAINTENANCE OF TRAFFIC <span style="float: right;">SHT. NO.<br/>VIII-1</span> |  |
|      |          |               |   |  |
|      |          |               |   |  |
|      |          |               |   |  |



### HALF ROAD CLOSURE ON MULTILANE ROADWAY

SHORT TERM STATIONARY - 1 TO 12 HOURS

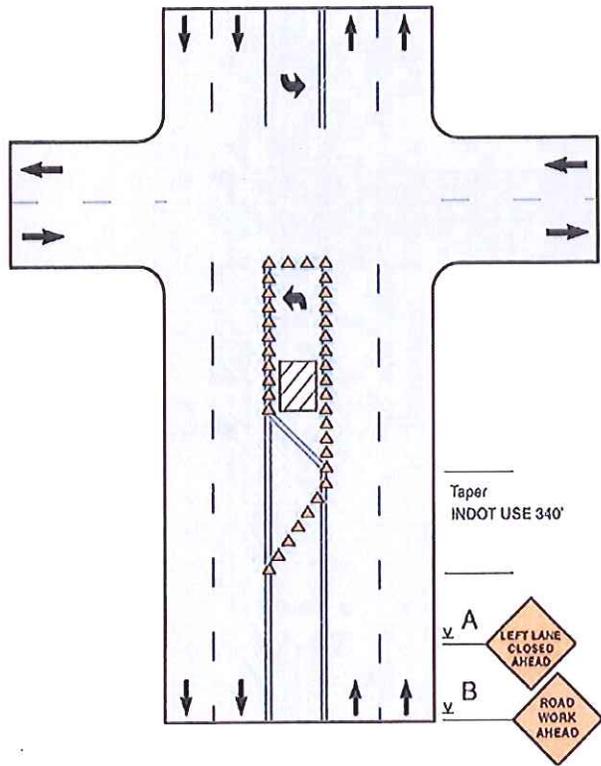
| Speed Limit (mph) | Sign Spacing A (ft) | Sign Spacing B (ft) | Sign Spacing C (ft) | Buffer |
|-------------------|---------------------|---------------------|---------------------|--------|
| 25                | 200                 | 200                 | 200                 | 55     |
| 30                | 200                 | 200                 | 200                 | 85     |
| 35                | 350                 | 350                 | 350                 | 120    |
| 40                | 350                 | 350                 | 350                 | 170    |
| 45                | 500                 | 500                 | 500                 | 220    |
| 50                | 500                 | 500                 | 500                 | 280    |
| 55                | 500                 | 500                 | 500                 | 335    |

TAPER LENGTH FORMULA:

| SPEED LIMIT    | TAPER LENGTH (FT) |
|----------------|-------------------|
| 40 MPH OR LESS | $L = (WS^2) / 60$ |
| 45 MPH OR MORE | $L = WS$          |

WHERE: L=TAPER LENGTH (FT.)  
 W=WIDTH OF OFFSET (FT.)  
 S=POSTED SPEED LIMIT OR ANTICIPATED OPERATING SPEED (MPH)

NOTE:  
 MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT



### TURN LANE CLOSURE AT A SIGNALIZED INTERSECTION

SHORT TERM STATIONARY - 1 TO 12 HOURS

- NOTES:
1. LANE MAY BE OPENED BEYOND WORK AREA.
  2. THE LENGTH OF THE TAPERS MAY BE ADJUSTED WHEN USED IN CLOSE PROXIMITY TO CROSSROADS, CURVES, OR OTHER INFLUENCING FACTORS.

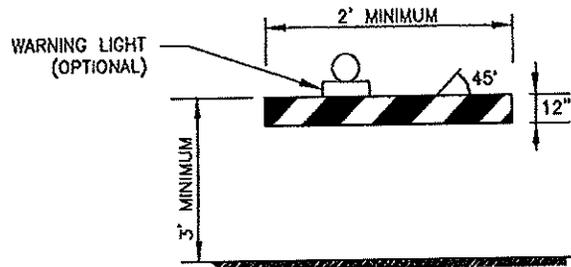
| ITEM | REVISION | APPROVED DATE |
|------|----------|---------------|
|      |          |               |
|      |          |               |
|      |          |               |

PORTER COUNTY, INDIANA

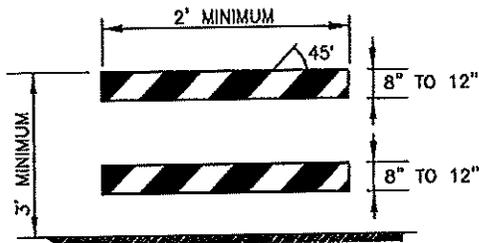
STANDARD DRAWINGS

MAINTENANCE OF TRAFFIC (CONTINUED)

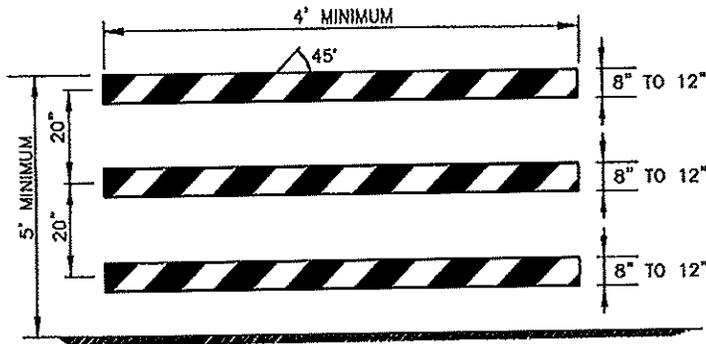
SHT. NO. VIII-2



TYPE I - BARRICADE



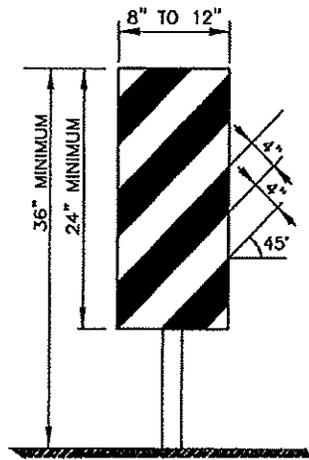
TYPE II - BARRICADE



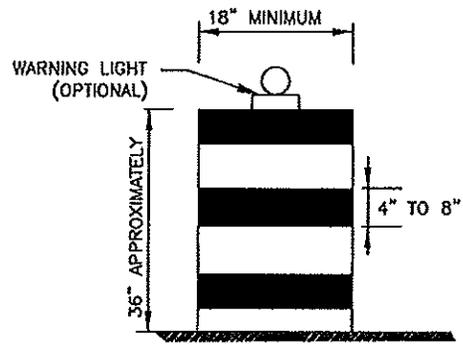
TYPE III - BARRICADE

**NOTE:**  
FLASHING OR STEADY BURN WARNING LIGHTS SHALL BE  
USED ON BARRICADES, PANELS, AND DRUMS AS NEEDED.

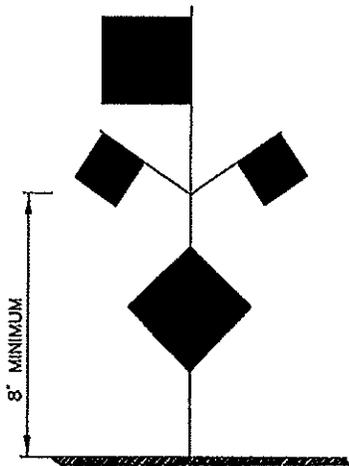
|      |          |               |                        |  |
|------|----------|---------------|------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS      |  |
|      |          |               | STANDARD BARRICADES    |  |
|      |          |               | SHT. NO.<br>VIII-3     |  |



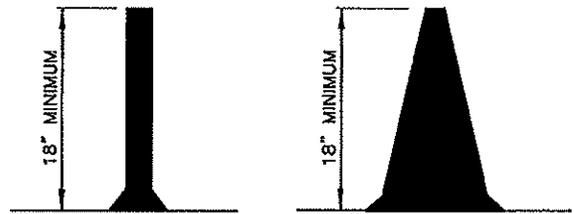
VERTICAL PANEL



DRUM



HIGH LEVEL WARNING DEVICE

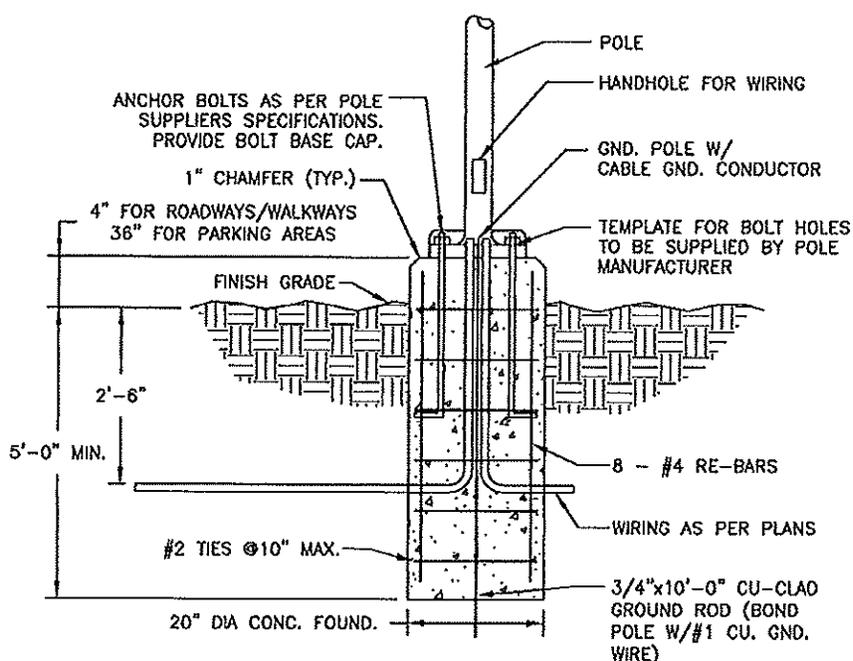


BASE VARIES

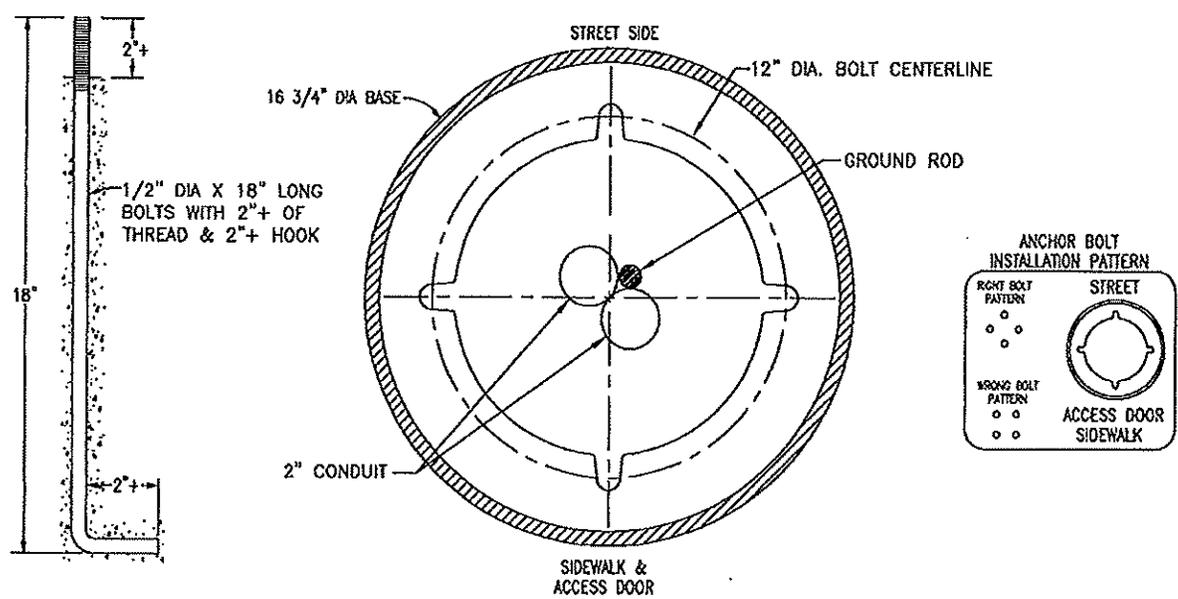
CONES

**NOTE:**  
FLASHING OR STEADY BURN WARNING LIGHTS SHALL BE  
USED ON BARRICADES, PANELS, AND DRUMS AS NEEDED.

|      |          |               |                        |  |
|------|----------|---------------|------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS      |  |
|      |          |               | STANDARD BARRICADES    |  |
|      |          |               | SHT. NO.<br>VIII-4     |  |



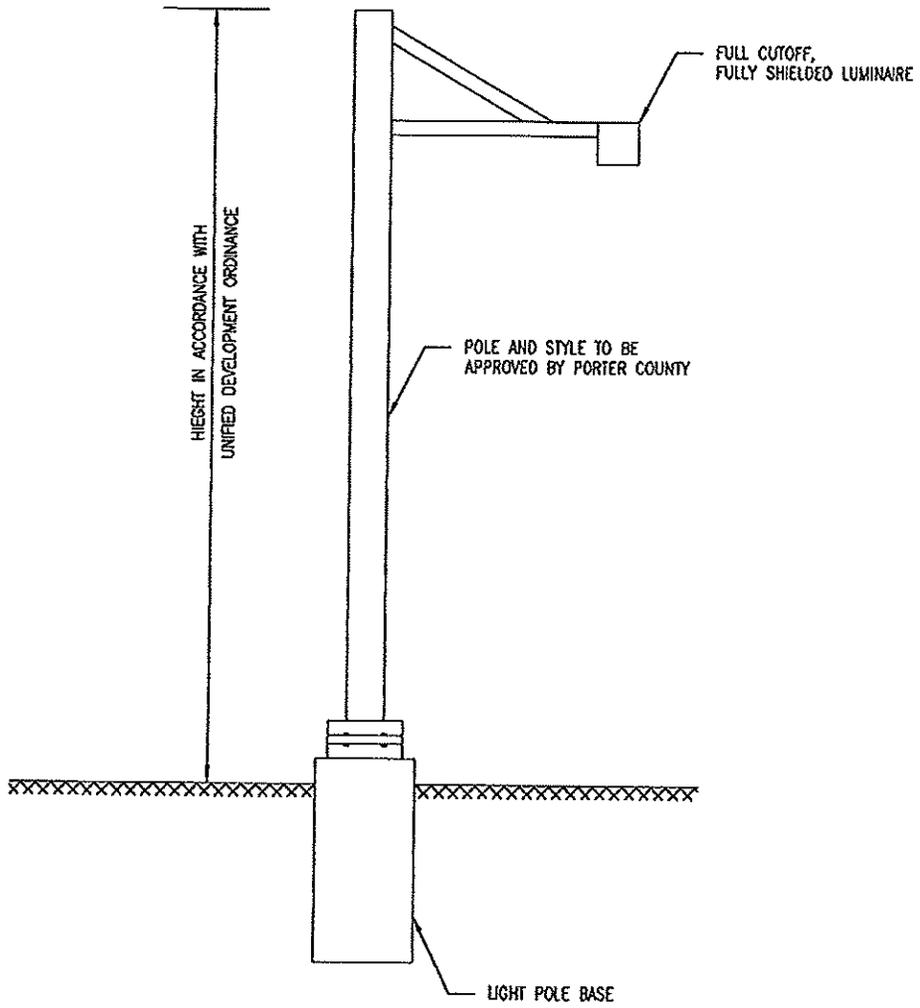
**20" LIGHT POLE FOUNDATION  
FOR MAXIMUM 14 FT. POLE HEIGHT**



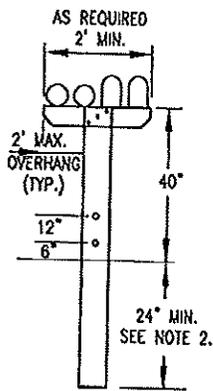
**NOTE:**  
IT IS BEST TO CONSULT  
THE FACTORY FOR A FULL  
SIZE TEMPLATE AND FOR  
EXACT SPECIFICATIONS ON  
THE JOB.

**LIGHT POLE BASE**

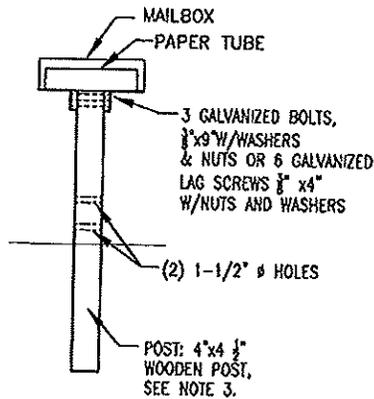
|      |          |               |                                       |  |
|------|----------|---------------|---------------------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA                |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS                     |  |
|      |          |               | STREET LIGHTING<br>FOUNDATION DETAILS |  |
|      |          |               | SHT. NO.<br><b>X-1</b>                |  |



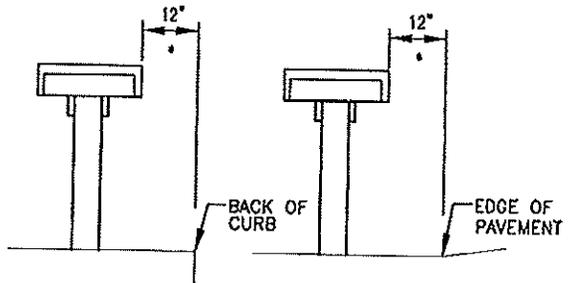
|      |          |               |                         |  |
|------|----------|---------------|-------------------------|--|
|      |          |               | PORTER COUNTY, INDIANA  |  |
| ITEM | REVISION | APPROVED DATE | STANDARD DRAWINGS       |  |
|      |          |               | GENERAL LIGHTING DETAIL |  |
|      |          |               | SHT. NO.<br>X-2         |  |



FRONT



SIDE



CURBED SECTION

NON-CURBED SECTION

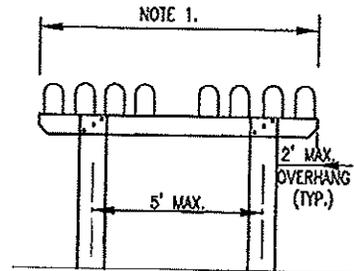
\* MAY BE REDUCED TO 0" IF TURNOUT IS PROVIDED.

LATERAL PLACEMENT

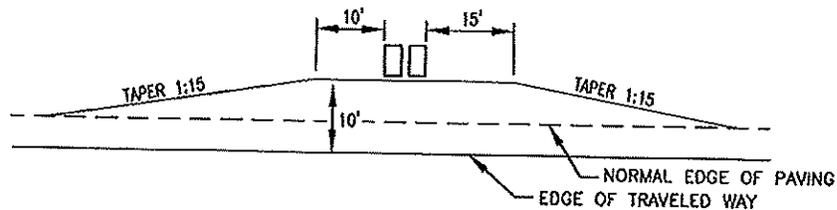
SINGLE WOODEN SUPPORT

NOTE:

1. 1 TO 4 MAILBOXES - 1 POST REQUIRED.  
5 TO 8 MAILBOXES - 2 POSTS REQUIRED.
2. POST SHALL BE EMBEDDED NO LESS THAN 24" INTO NATIVE SOIL OR CRUSHED AGGREGATE AS REQUIRED. SUPPORTS SHALL NOT BE PLACED IN CONCRETE UNLESS NECESSARY FOR SUPPORT. SUPPORTS SET IN CONCRETE SHALL BE PLACED AT A DEPTH NO GREATER THAN 12".
3. A METAL POST WITH A STRENGTH NO GREATER THAN 2" Ø STANDARD STRENGTH STEEL PIPE MAY BE USED ALTERNATELY. THE METAL POST SHALL NOT BE FIXED WITH AN ANCHOR PLATE, BUT IT MAY HAVE AN ANTI-TWIST DEVICE THAT EXTENDS NO GREATER THAN 10" BELOW THE GROUND.
4. IF POST IS TO BE PLACED IN EXISTING SIDEWALK, SAWCUT OPENING TO BACK OF CURB, MINIMUM 12" SQUARE. PROVIDE 1" EXPANSION FELT AROUND POST IN CONCRETE SIDEWALK. REPLACE SIDEWALK PER STANDARD DRAWING VI-1.

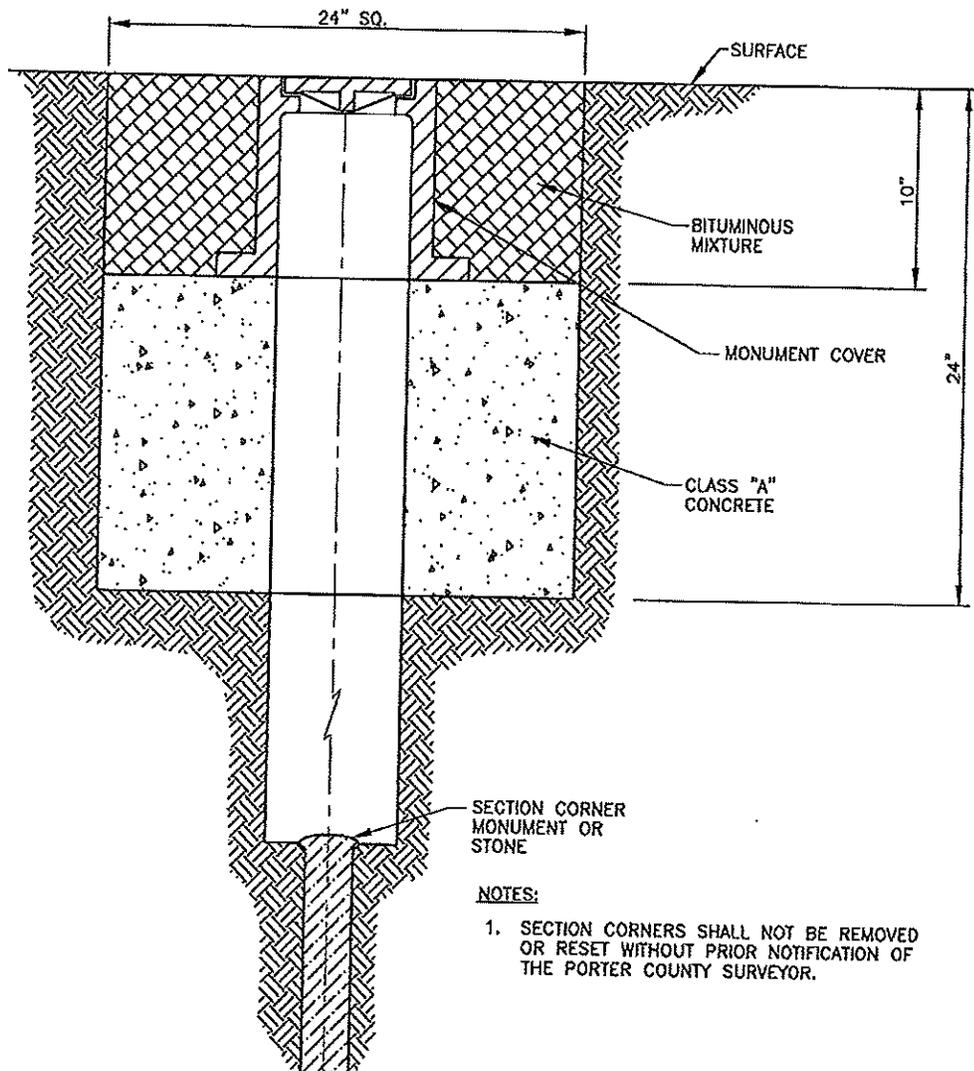


MULTIPLE WOODEN SUPPORTS

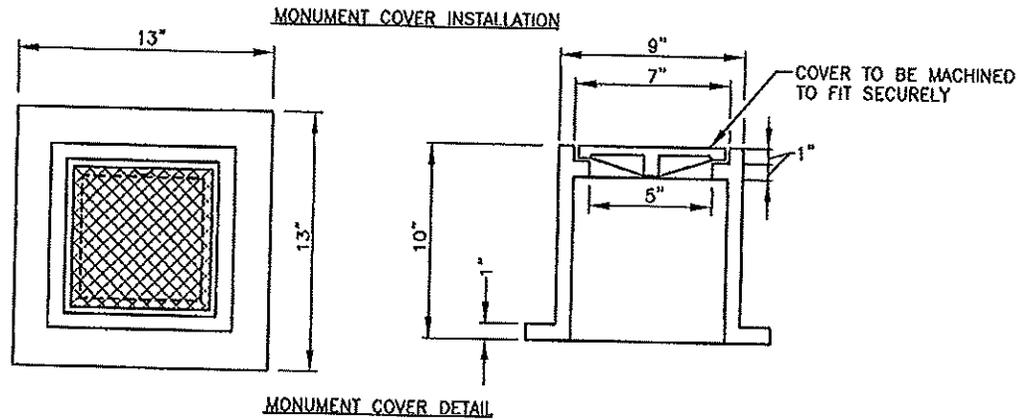


MAILBOX SERVICE TURNOUT

|      |          |               | PORTER COUNTY, INDIANA |                    |
|------|----------|---------------|------------------------|--------------------|
|      |          |               | STANDARD DRAWINGS      |                    |
|      |          |               | MAILBOX PLACEMENT      | SHT. NO.<br>XIII-1 |
| ITEM | REVISION | APPROVED DATE |                        |                    |
|      |          |               |                        |                    |
|      |          |               |                        |                    |
|      |          |               |                        |                    |



- NOTES:**
1. SECTION CORNERS SHALL NOT BE REMOVED OR RESET WITHOUT PRIOR NOTIFICATION OF THE PORTER COUNTY SURVEYOR.



|      |          |               | PORTER COUNTY, INDIANA |  |  |
|------|----------|---------------|------------------------|--|--|
|      |          |               | STANDARD DRAWINGS      |  |  |
|      |          |               | SURVEY LINE MONUMENT   |  |  |
|      |          |               | SHT. NO. XIII-2        |  |  |
| ITEM | REVISION | APPROVED DATE |                        |  |  |
|      |          |               |                        |  |  |
|      |          |               |                        |  |  |
|      |          |               |                        |  |  |