

**GENERAL NOTES:**

- THESE PLANS HAVE BEEN PREPARED FOR SANITARY SEWER RELOCATION FOR THE FUTURE FLOOD WALL CONSTRUCTED BY THE U.S. ARMY CORP OF ENGINEERS.
- ALL SANITARY WORK SHALL CONFORM TO THE LATEST WESTERN VIRGINIA WATER AUTHORITY (WVWA) SPECIFICATIONS AND STANDARDS.
- THE LOCATION AND ELEVATION OF EXISTING STRUCTURES, PIPING, AND UTILITIES SHOWN ARE BASED ON THE BEST AVAILABLE DATA. THE CONTRACTOR SHALL VERIFY ALL DATA IN THE FIELD. THE DIAMETERS OF THE EXISTING PIPING ARE APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY DEMOLITION TO ENSURE PROPER MATERIALS ARE AVAILABLE ON SITE.
- CONTRACTOR SHALL UTILIZE INLET SHAPING ON ALL NEW MANHOLE STRUCTURES.
- CONTRACTOR SHALL PROVIDE WATERTIGHT BOLTED MANHOLE FRAME AND COVERS FOR ALL NEW MANHOLES.
- CONTRACTOR SHALL CONTACT WVVA INSPECTOR, MARK SINK (537-3460), AND CITY INSPECTOR, ROBERT EAKIN (537-8309), FORTY-EIGHT (48) HOURS BEFORE STARTING THE PROJECT.
- ALL LENGTHS OF NEW PIPE HAVE BEEN GIVEN HORIZONTALLY.
- CONTACT MISS UTILITY 1-800-552-7001 FORTY-EIGHT (48) HOURS PRIOR TO ANY GRADING OR DIGGING TO HAVE UNDERGROUND UTILITIES MARKED.
- CONTRACTOR SHALL RESTORE DISTURBED PORTION OF GRAVEL PARKING AND TRAIL TO ORIGINAL CONDITION.
- CONTRACTOR SHALL RELOCATE EXISTING TIMBER FENCE AS SHOWN ON PLANS.
- CONTRACTOR SHALL PERMANENT SEED WITH "SOUTHERN LAWN". SEE PERMANENT SEED SPECIFICATION.
- CONTRACTOR SHALL PROVIDE ALL EQUIPMENT AND LABOR TO BYPASS PUMP WHERE REQUIRED.
- CONTRACTOR SHALL PROVIDE BARRICADES ON PEDESTRIAN BRIDGE WHEN REQUIRED.
- CONTRACTOR SHALL MAINTAIN SITE IN ACCORDANCE WITH THE VIRGINIA WORK AREA PROTECTION MANUAL.
- CONTRACTOR SHALL CORE DRILL EXISTING MANHOLES FOR NEW CONNECTIONS. CARE SHALL BE TAKEN TO ENSURE DEBRIS DOES NOT ENTER SANITARY SEWER SYSTEM. ALL NEW MANHOLE CONNECTIONS SHALL BE CONSTRUCTED WITH A FLEXIBLE BOOT AND STAINLESS STEEL BAND AS SHOWN IN DETAIL S-01.
- CONTRACTOR SHALL PATCH EXISTING MANHOLES WHERE SANITARY LINES ARE DEMOLISHED / REMOVED.
- ALL NEW MANHOLES AND MANHOLE ADJUSTMENTS SHALL BE STEEL STRAPPED IN ACCORDANCE WITH MANHOLE ADJUSTMENT DETAIL (MD-1).

**PERMANENT SEEDING SPECIFICATION**

**SEEDING APPLICATION:** ALL PERMANENT SEEDING SHALL BE APPLIED BETWEEN SEPTEMBER 1ST AND OCTOBER 20TH, OR BETWEEN FEBRUARY 15TH AND APRIL 15TH. ALL SEEDING DONE OUTSIDE OF THESE PERIODS SHALL BE TEMPORARY, FOR EROSION ONLY. AREAS RECEIVING TEMPORARY SEEDING SHALL BE RESEED WITH THE SPECIFIED PERMANENT SEEDING MIX, WITHIN THE APPLICATION TIMES LISTED ABOVE.

**TEMPORARY SEEDING:** BETWEEN APRIL 16TH AND AUGUST 31ST, TEMPORARY SEEDING SHALL CONSIST OF GERMAN FOXTAIL MILLET, APPLIED AT A RATE OF 30 LBS/ACRE. BETWEEN OCTOBER 21ST, AND FEBRUARY 14TH, TEMPORARY SEEDING SHALL CONSIST OF WINTER RYE (CEREAL RYE), APPLIED AT A RATE OF 120 LBS/ACRE. TEMPORARY SEED MAY BE BROADCAST, AND SHALL BE FERTILIZED WITH AN ORGANIC BASED FERTILIZER (14-2-6) AT A RATE OF 1 1/2 LBS OF NITROGEN PER 1000 SQUARE FEET, AND MULCHED WITH CONTINUOUS STRAW BALE COVERAGE AT A RATE OF 80 BALES/ACRE.

**GENERAL PROCEDURES FOR PERMANENT SEEDING:**

- STEP #1: GRADING PROCESS
- STEP #2: DURING THE FINE GRADING PROCESS (SEED BED PREPARATION), ADD LIME AT A RATE OF 2000 LBS/ACRE TO ALL AREAS TO BE SEED.
- STEP #3: HYROSEED FIRST SHOT: GRASS SEED AND FERTILIZER
  - SEED AT RECOMMENDED RATES LISTED BELOW.
  - FERTILIZER: USE AN ORGANIC BASED FERTILIZER SUCH AS HARMONY 14-3-6 AT A RATE OF 1.5 LB OF NITROGEN PER 1000 SF.
- STEP #4: MULCH THE PLANTING BED.
- STEP #5: \*SECOND SHOT FOR HYDROMULCH ONLY:
  - SHOOT HYDROMULCH OVER PLANTING BED @ 750 LBS/ACRE
- STEP #6: IRRIGATION
  - UNLESS NATURAL RAINFALL OCCURS ON A WEEKLY BASIS DURING THE INITIAL THREE MONTHS FOLLOWING PLANTING, IRRIGATION SHALL BE APPLIED AT THE RATE OF 1 1/2 INCHES OF WATER PER WEEK ON ALL NEWLY PLANTED AREAS OF PERMANENT SEEDING.

**PERMANENT SEEDING VARIETIES (ALL SEED RATES ARE CONSIDERED. PLS... "PURE LIVE SEED")**

TALL TURF FESCUE MIX (I.E. SOUTHERN LAWN): CONSISTS OF A 50/50 BLEND OF WYATT AND DYNASTY TALL FESCUES. USE BLUE-TAG CERTIFIED SEED WITH A DELIVERY DATE NOT GREATER THAN 30 DAYS OLD FROM SITE OF ORIGIN. APPLY AT A RATE OF 10 LBS PER 1000 SF.

**NOTES:**

- ALL MANHOLE FRAMES AND COVERS SHALL BE EAST JORDAN IRON WORKS, INC. WATERTIGHT MANHOLE FRAME MODEL #1045Z. WATERTIGHT COVER MODEL #1040AGS AND BOLT-DOWN MANHOLE COVER MODEL #1040CLGS, OR APPROVED EQUAL. BOLT-DOWN MODEL TO BE USED IN AREAS SUBJECT TO FLOODING OR AS DIRECTED BY THE AUTHORITY.
- STEPS TO BE VERTICALLY ALIGNED.
- THE FRAME AND COVER SHALL BE PROPERLY ALIGNED WITH THE 2 FOOT OPENING OF THE MANHOLE STRUCTURE AND BOLTED IN PLACE.
- FLAT TOP MANHOLES MAY ONLY BE SUBSTITUTED WITH THE PERMISSION OF THE UTILITY DIRECTOR. WHEN USED, THE ECCENTRIC OPENING MUST LINE UP WITH THE STEPS.
- SAMPLING MANHOLES IN TRAFFIC AREAS SHALL BE CONSTRUCTED AS PER MANHOLE DETAILS.
- FLEXIBLE JOINT MANHOLE CONNECTION SHALL BE AS MANUFACTURED BY PRES-SEAL GASKET CORPORATION OR EQUAL.
- GROUT ANNUAL SPACE BETWEEN PIPE AND PRECAST MANHOLE ON INSIDE OF MANHOLE.

**WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS**

REVISION DATE	DESCRIPTION	BY
07/01/04		
03/01/06		

**4' STANDARD MANHOLE FOR PIPE 15" OR SMALLER**

**S-01**

**NOTES:**

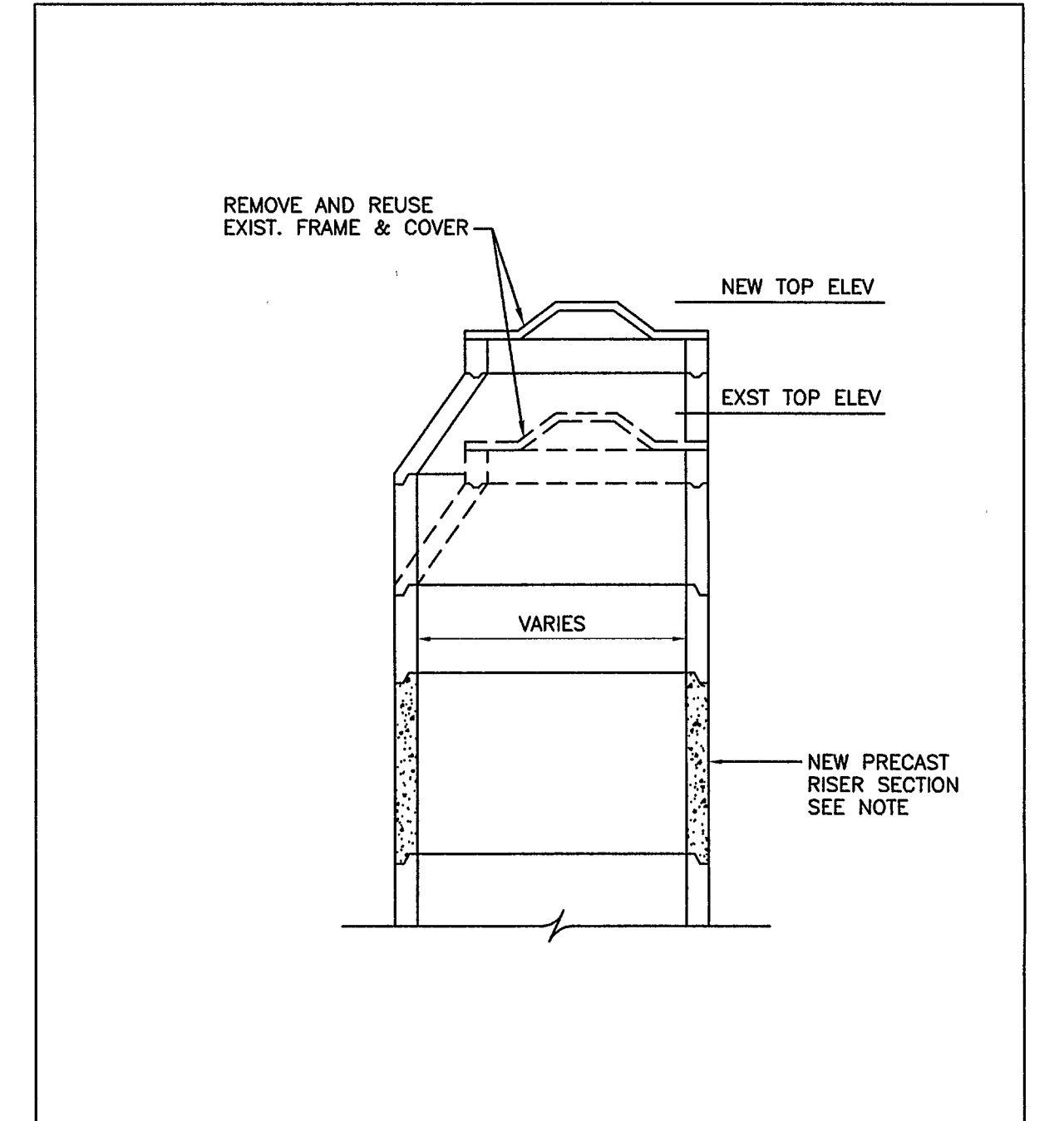
- BEDDING, HAUNCHING AND INITIAL BACKFILL CONSTRUCTION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION.
- ALL PVC PIPE SHALL BE BEDDED IN COMPACTED VDOT #57 OR #68 STONE.
- IN AREAS NOT SUBJECT TO VEHICULAR TRAFFIC, BEDDING STONE AND FILL SHALL BE PLACED IN 6" LIFTS FROM BOTTOM OF TRENCH TO 1' ABOVE THE PIPE AND THE REMAINING SHALL BE PLACED IN 8" LIFTS AND SHALL BE COMPACTED TO AT LEAST 95% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D 698.
- ALL SEWER LINE PIPE SHALL BE BEDDED IN COMPACTED GRANULAR MATERIAL. BEDDING REQUIREMENTS FOR DUCTILE SEWER LINE ARE DEPENDENT ON MANUFACTURER'S BEDDING CRITERIA.
- ALL EXCAVATIONS SHALL COMPLY WITH OSHA TECHNICAL MANUAL, CHAPTER 2, TITLED "EXCAVATIONS: HAZARD RECOGNITION IN TRENCHING AND SHORING."

**WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS**

REVISION DATE	DESCRIPTION	BY
07/01/04		
03/01/06		

**BEDDING AND BACKFILL OUTSIDE OF PAVED AREAS**

**S-30**



**MANHOLE ADJUSTMENT (RAISE) (MD-1)**  
NO SCALE

- NOTES:**
- SEAL EXTERIOR SURFACE OF MH WITH A MINIMUM 14-MIL THICK COAL TAR COATING. COAT MH TO A MAXIMUM OF 2'-0" BELOW GRADE.
  - CONNECTIONS BETWEEN RISER SECTIONS AND BETWEEN RISER SECTION AND MANHOLE TOP SLAB SHALL BE STRAPPED AND BOLTED TOGETHER WITH EXTERNAL TYPE 316 STAINLESS STEEL JOINT HARNESS. A MINIMUM OF 3 JOINT HARNESSES, EQUALLY SPACED AROUND MANHOLE, SHALL BE USED AT EACH JOINT. BOLTS SHALL NOT EXTEND INTO INSIDE OF MANHOLE. HARNESS TO MATCH EXISTING.

**NOTES:**

SHAPING OF MANHOLE AND INLET INVERTS IN ACCORDANCE WITH THIS DRAWING IS TO APPLY TO THOSE STRUCTURES SPECIFIED ON PLANS OR WHERE INVERT OF PIPE IS ABOVE INVERT OF STRUCTURE.

MANHOLE OR DROP INLET IS TO BE FORMED AND CONSTRUCTED IN ACCORDANCE WITH APPLICABLE STANDARD OR SPECIAL DRAWING. THE INVERT SHAPING AS DETAIL HEREIN IS TO CONSIST OF A PORTLAND CEMENT CONCRETE MIX CONFORMING TO CLASS AS OR CLASS C1 EXCEPT THAT THE SURFACE OF CONCRETE AGGREGATE MAY BE UP TO 4" IN DIAMETER AND CONSIST OF STONE, BROKEN BRICK, BROKEN CONCRETE OR BROKEN CONCRETE BLOCK. THE SURFACE SHALL BE LEFT SMOOTH BY MEANS OF HAND TROWELLING. NONE OF THE CONCRETE AGGREGATE SHALL REMAIN EXPOSED.

DETAILS OF INVERT SHAPING AS SHOWN HEREON ARE FOR EXAMPLE PURPOSES ONLY. EACH MANHOLE OR DROP INLET IS TO BE SHAPED INDIVIDUALLY TO BEST FIT THE PARTICULAR INLET AND OUTLET CONFIGURATION AND FLOW LINES.

**STANDARD METHOD OF SHAPING MANHOLE & INLET INVERTS**

**302**

**VIRGINIA DEPARTMENT OF TRANSPORTATION**

**106.08**