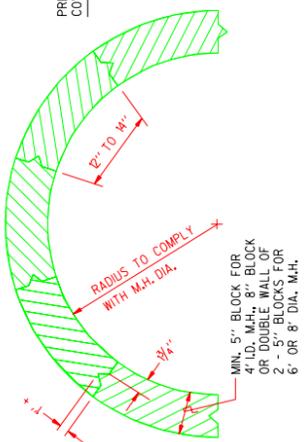
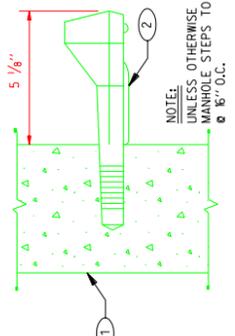


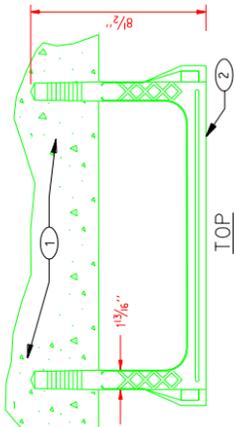
PLAN - DETAIL  
NO SCALE



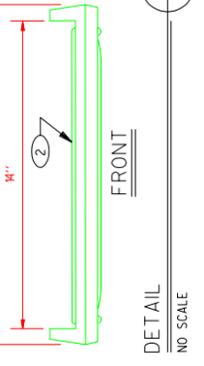
TYPICAL CONCRETE BLOCK DETAIL  
NO SCALE



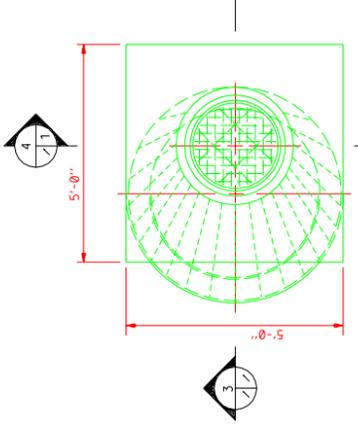
DETAIL  
NO SCALE



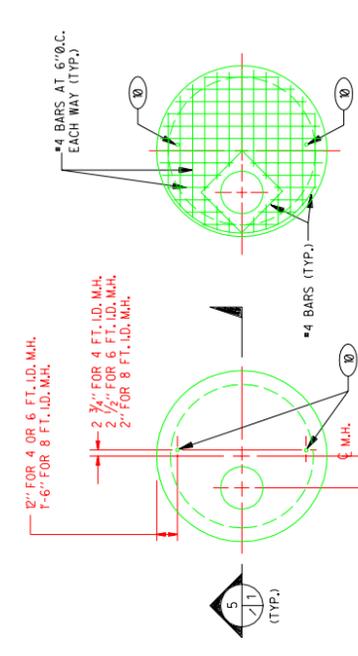
DETAIL  
NO SCALE



FRONT  
NO SCALE



TYPE "C" MANHOLE TOP VIEW

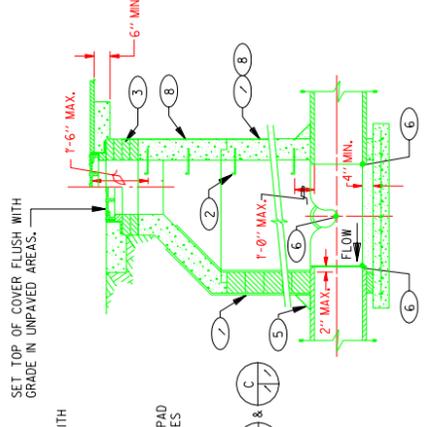


PLAN-M.H. COVERS FOR TYPE "C"

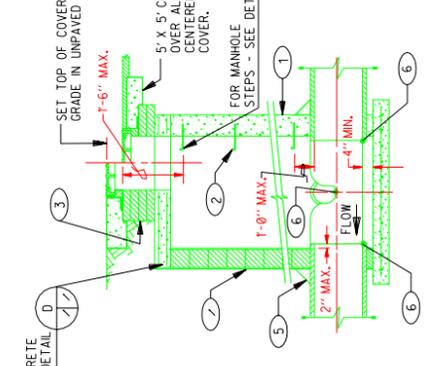
TOP MAT SECTION

BOTTOM MAT SECTION

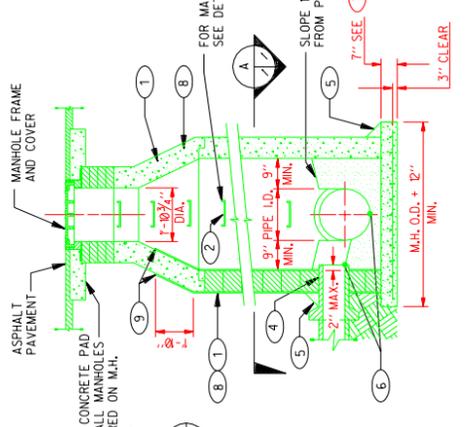
TYPE "E" MANHOLE - TOP VIEW



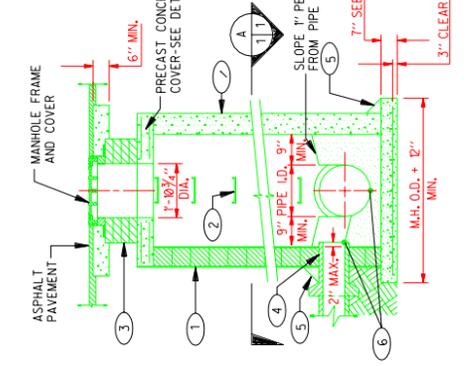
CROSS SECTION



CROSS SECTION



CROSS SECTION



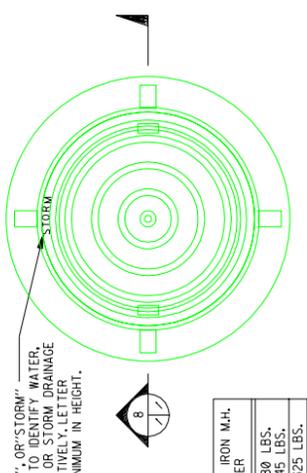
CROSS SECTION

CROSS SECTION

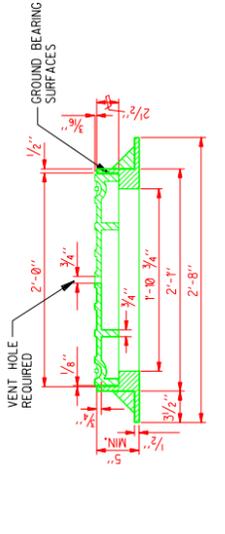
- GENERAL NOTES**
1. USE TYPE "C" M.H. FOR DEPTHS OF LESS THAN 6 FT. MEASURED FROM LOWEST INVERT TO RIM. CONTRACTOR HAS OPTION TO CONSTRUCT TYPE "C" M.H. OR TYPE "E" M.H. FOR DEPTHS OF 6 FT. OR MORE. MANHOLES GREATER THAN 8 FT. IN DEPTH SHALL BE OF PRECAST CONCRETE SECTIONS ONLY. MANHOLE DESIGNS SHOWN APPLY TO 4, 6, OR 8 FT. I.D. ONLY.
  2. MANHOLE OPENINGS TO BE POSITIONED OVER THE UPSTREAM SIDE OF MAIN LINE.
  3. USE NON-SHRINK GROUT FOR ALL JOINTS, FILLETS AND PENETRATIONS.
  4. ALL BACKFILL AROUND M.H. AND EARTH SUBGRADE UPON WHICH CONCRETE IS SET SHALL BE FIRM AND SHALL BE COMPACTED TO 95 PERCENT OF MAXIMUM DENSITY. SEE SANDIA STANDARD SPECIFICATION SECTIONS 2B AND 02222.
  5. ALL BAR REINFORCEMENT SHALL BE DEFORMED AND CONFORM TO ASTM A 65. GRADE 40. BENDING OF STEEL WILL CONFORM TO REQUIREMENTS OF AISC 308. THE MINIMUM STRENGTH OF CAST-IN-PLACE CONCRETE SHALL BE 3000 PSI AT 28 DAYS AND THE TOP SURFACES SHALL BE FLOATED WITH A WOOD FLOAT TO A TRUE AND UNIFORM PLANE WITH NO COURSE AGGREGATE VISIBLE. CAST-IN-PLACE CONCRETE TO COMPLY WITH SANDIA STANDARD SPECIFICATION SECTION 03300. ALL PRECAST CONCRETE SHALL BE A MINIMUM OF 4000 PSI COMPRESSIVE STRENGTH.
  6. CONCRETE MASONRY UNITS FOR CONSTRUCTION OF MANHOLES TO BE IN ACCORDANCE WITH SANDIA STANDARD SPECIFICATION SECTION 03300. ALL MASONRY SHALL BE TYPE I OR II. MORTAR AND DEVELOP A COMPRESSIVE STRENGTH OF NOT LESS THAN 2000 PSI AT 28 DAYS AS APPLICABLE TO SANDIA STANDARD SPECIFICATION 4A.
  7. MANHOLE COVERS SHALL BE OF CAST IRON CONSTRUCTION CONFORMING TO ASTM A 48-64; SEE SANDIA STANDARD SPECIFICATION BE.

**KEYED NOTES**

1. MANHOLE MAY BE CONSTRUCTED OF CONCRETE BLOCK, OR PRECAST REINFORCED CONCRETE. IF CONCRETE BLOCK IS USED, PLASTER INSIDE AND OUT WITH 1/2" MORTAR.
2. MANHOLE STEPS TO BE THE "PRESS-FIT" TYPE AND INSTALLED INSIDE THE STRUCTURE INTO SITE DRILLED HOLES. STEP TO BE DRIVEN TO ITS FULL DEPTH OF INSERTION SO AS TO RESIST PULLOUT FORCES OF UP TO 5000 LBS. MINIMUM. STEP TO BE OF #4-GRADE 60 REBAR EMBEDDED WITH INJECTION MOLDED COPOLYMER POLYPROPYLENE PLASTIC PER ASTM D 246, TYPE II, GRADE 6906. MANHOLE STEP TO CONFORM WITH ASTM C 478 AS MANUFACTURED BY "M.A. INDUSTRIES, INC." OR APPROVED EQUAL.
3. USE MAXIMUM OF 4 COURSES GRADE "MS" BRICK ON UNPAVED STREET FOR FUTURE ADJUSTMENT OF MANHOLE FRAME TO PAVEMENT GRADE. PLASTER INSIDE WITH 1/2" MORTAR.
4. 1" DIA. ELASTOMERIC RING FOR P.V.C. PIPE ONLY.
5. 6" GROUT FILLET ON UPPER HALF OF PIPE AND AROUND BASE.
6. INVERT ELEVATIONS OF STUBS OR LATERALS AS SHOWN ON PLANS.
7. MANHOLE BASE TO BE POURED IN PLACE USING #4 REBARS AT 6" O.C. EACH WAY FOR MANHOLE DEPTHS OF 6 FT. OR GREATER. USE #4 REBARS AT 2" O.C. EACH WAY FOR MANHOLE DEPTHS OF LESS THAN 6 FT. COMPACT NATIVE MATERIAL TO 95% MODIFIED PROCTOR-SEE GENERAL NOTE 4.
8. PRECAST REINFORCED CONCRETE ECCENTRIC CONE AND/OR BARREL SECTION IF REQUIRED FOR TOP OF MANHOLE SHALL BE CONSTRUCTED PER APPROVED FORM TO THE SANDIA PLANT ENGINEERING CHECKING TEAM. SEE DESCRIPTIVE SUBMITTAL LIST FORM SA 630-AD LATEST REVISION.
9. END OF PLASTER FOR CONCRETE BLOCK OR BRICK MANHOLE WITH PRECAST REINFORCED CONCRETE CONE.
10. 1" DIA. PIPE SLEEVE PRE-SET VERTICALLY THROUGH COVER.



PLAN-MANHOLE FRAME AND COVER



SECTION

"WATER," "SEWER," OR "STORM" CAST ON COVER TO IDENTIFY WATER, SANITARY SEWER OR STORM DRAINAGE SYSTEMS RESPECTIVELY. LETTER SIZE TO BE 1" MINIMUM IN HEIGHT.

STANDARD CAST IRON M.H. FRAME AND COVER
COVER WEIGHT 80 LBS.
FRAME WEIGHT 85 LBS.
TOTAL WEIGHT 325 LBS.

00 FILE NAME: 083391/A01

MICROSTATION FILE  
FILE NAME: WR5001STD.dgn

REFERENCE FILES: 8000R3.dgn

CIVIL WORKS

STANDARD NO  
D+ WR5001STD

DATE 10/23/05

083391/A01

U.S. DEPARTMENT OF ENERGY  
KIRTLAND AREA OFFICE  
ALBUQUERQUE, NEW MEXICO

SANDIA NATIONAL LABORATORIES  
PROJECT NO.  
DRAWN BY  
CHECKED BY  
SNL ENGR

10/23/05

SEC.

WR5001STD

Property of Sandia National Laboratories. Facilities Management and Operation Center (FMOC). No application or alteration allowed without the expressed permission of Sandia National Laboratories.