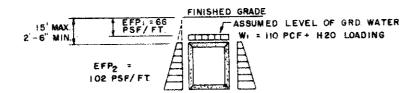


## NOTES:

- I. ALL ELECTRIC DUCT SYSTEM MANHOLES SHALL BE PRECAST CONCRETE IN ACCORDANCE WITH TEXAS POWER & LIGHT CO. SPECIFICATIONS AS FURNISHED BY HEFNER PRECAST CONCRETE PRODUCTS, CLEBURNE, TX. OR EQUAL AS APPROVED BY TEXAS POWER & LIGHT CO.
- 2. THIS MANHOLE SHALL BE DESIGNED TO CARRY THE LOADING SHOWN IN THE LOADING DIAGRAM INCLUDING THE CONCRETE MANHOLE NECK SPECIFIED HEREIN AND 5101b. MANHOLE FRAME AND COVER.



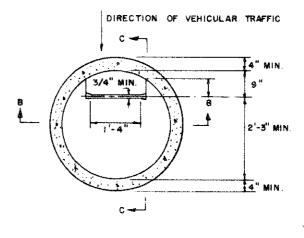
WHEN INSTALLATION REQUIRES LOADINGS GREATER THAN SPECIFIED ABOVE THE MANHOLE DESIGN SHALL BE SUBMITTED TO TEXAS POWER & LIGHT CO. FOR APPROVAL.

- JOINTS BETWEEN MANHOLE SECTIONS AND JOINT BETWEEN MANHOLE ROOF SECTION AND MANHOLE NECK SHALL BE PRIMED BY MANHOLE SUPPLIER WITH "RAM-NEK" PRIMER AS MANUFACTURED BY K.T. SNYDER CO. OR AN APPROVED EQUAL. JOINTS SHALL BE MADE WATERTIGHT WITH FLEXIBLE, PLASTIC, PERMANENTLY ADHESIVE COMPOUND SEALANT SUCH AS "RAM-NEK" AS MANUFACTURED BY K.T. SNYDER CO. OR APPROVED EQUAL. PRIMER AND JOINT SEALANT SHALL BE APPLIED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
- 4. SEE SPECIFICATION FOR MANHOLE NECK INSTALLATION.
- 5. DUCT TERMINATORS SHALL BE TWO-WAY TERMINATORS AS MANUFACTURED
  BY FORMEX MANUFACTURING, INC. AND SHALL HAVE WATERTIGHT MEMBRANE
  AND SHALL HAVE LOCKING DEVICE FOR EACH OPENING ON OUTSIDE FACE OF
  TERMINATOR
  FORMEX CAT. NO. (4"CONDUIT) T442-3030-65W-LDC
  FORMEX CAT. NO. (6"CONDUIT) T642-3030-65W-LDC
- 6. DUCT TERMINATORS SHALL ACCEPT 4" PVC, TYPE E8 WITH O.D. OF 4.500" OR 6" TYPE E8 OR SCHEDULE 40 CONDUIT WITH O.D. OF 6.625" AS REQ.
- ON ALL DUCT TERMINATOR OPENINGS RECEIVING CONDUITS (USED), THE DUCT TERMINATOR MEMBRANE IS TO BE REMOVED, THE TERMINATOR DEBURRED, AND AN EXPANDABLE DUCT STOPPER (INSTALLED IN THE TERMINATOR OPENING. ON ALL DUCT TERMINATOR OPENINGS NOT RECEIVING CONDUITS (UNUSED), THE DUCT TERMINATOR MEMBRANE IS TO REMAIN INTACT AND A TERMINATOR LOCKING CAP IS TO BE INSTALLED ON THE OUTSIDE TERMINATOR FACE. AN EXPANDABLE DUCT PLUG IS NOT NECESSARY IN DUCT TERMINATOR OPENINGS WHEN MEMBRANE SEAL IS IN PLACE.
- 8. SEE SPECIFICATION FOR INTERFACE BETWEEN DUCT LINE, MANHOLE PULLING IRON AND DUCT TERMINATOR POSITION IN MANHOLE WALL.
- 9. THIS MANHOLE SUPPLIED WITH 3 UNISTRUT P3200 SERIES CHANNEL WITH CONCRETE INSERTS OR EQUAL IN EACH WALL. CHANNEL IS 1-5/8" WIDE 1-3/8" DEEP, AND 5'-4" LONG. HOT DIP GALVANIZED BEFORE FABRICATION WITH ENDS CAPPED. CHANNEL EMBEDDED FLUSH WITH INSIDE OF MANHOLE WITH OPENING IN CHANNEL FACING OUTWARD.
- 10. MANHOLES SHALL CONTAIN 4 GROUNDRODS 5/8" x 8' COPPERWELD INSTALLED SO AS TO PROVIDE A RESISTANCE OF LESS THAN 10 OHMS PER ROD.
- II. MANHOLES SUPPLIED BY HEFNER PRODUCTS REQUIRE 1-1/4"x 6" SQUARE HEAD COLL BOLT (4 EACH) AND 1-1/4" SWIVEL LIFT PLATE (4 EACH) FOR

MANHOLE

LARGE FOUR WAY

PRECAST REINFORCED CONCRETE



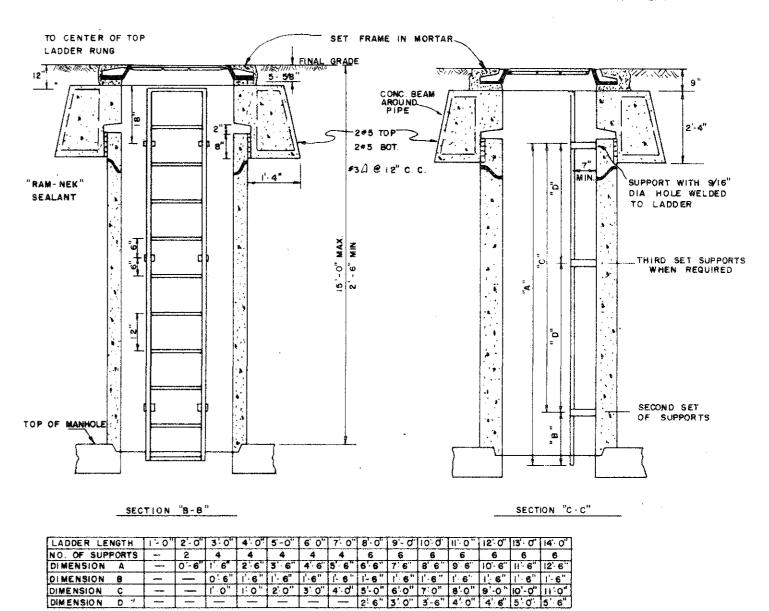
SECTION "A - A"

NOTES: LADDER INSTALLATION IN MANHOLE NECK

- STACKS SHALL CONSIST OF PRECAST REINFORCED CONCRETE PIPE SECTIONS CONFORMING TO THE REQUIREMENTS OF ASTM DESIGNATIONS: C76, HAVING A MINIMUM WALL THICKNESS OF 4".

  CLASS OF PIPE SHALL BE AS REQUIRED FOR LATERAL PRESSURES, RESULTING FROM EARTH LOADS IN COMBINATION WITH HZO HIGHWAY LOADING (MIN. CLASS II). JOINTS SHALL CONSIST OF A MATCHING TONGUE AND GROOVE ARRANGEMENT WITH SEALANT AS SPECIFIED ABOVE. WHERE THE DISTANCE FROM THE BOTTOM OF THE MANHOLE ROOF SLAB TO FINISHED GRADES EXCEEDS 24", MANHOLE LADDER AS SPECIFIED SHALL BE PROVIDED AS REQUIRED.
- JOINT SEALANT SHALL BE A FLEXIBLE PLASTIC, PERMANENTLY ADHESIVE COMPOUND EQUAL TO "RAM NEK" AS MANUFACTURED BY K.T. SYNDER CO., APPLIED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- 3. MANHOLE NECK CAN BE MADE TO TEXAS POWER & LIGHT CO. SPECIFICATIONS BY BROOKS PRODUCTS, INC., 2001 W MAYFIELD ROAD, ARLINGTON, TEXAS 76013. BROOKS PRODUCTS, INC., PHONE NUMBER IS (817) 261-2783.
- LADDER SHALL BE DESIGNED TO THE SPECIFICATIONS IN THE LATEST REVISION OF AMERICAN NATIONAL STANDARDS INSTITUTE PUBLICATION A!4.3 "SAFETY REQUIREMENTS FOR FIXED LADDERS."
  LADDER CAN BE MADE TO TEXAS POWER & LIGHT COMPANY SPECIFICATIONS BY UNISTRUT TEXAS, INC., 625 GREAT SOUTHWEST PARKWAY, ARLINGTON, TEXAS 76011. UNISTRUT TEXAS, INC., PHONE NUMBER IS (2!4) 261-3691.
- LADDER TO BE FURNISHED WITH SUPPORTS. THE NUMBER AND SPACING OF SUPPORTS TO BE IN ACCORDANCE WITH TABLE ON PAGE C 5 OF THE SPECIFICATIONS.
- 6. LADDER SHALL BE ATTACHED TO MANHOLE NECK BY THE USE OF STAINLESS STEEL KWIK-BOLT CONCRETE ANCHORS. THE BOLT SHALL BE 1/2" IN DIAMETER AND 3-"3 1/2" IN LENGTH.

  (KWIK-BOLT CATALOG NUMBER 12-334).
- 7. LADDER TO HAVE ALL OPEN ENDS CAPPED AND ENTIRE LADDER ASSEMBLY INCLUDING SUPPORTS TO BE HOT DIP GALVANIZED AFTER FABRICATION BY MANUFACTURER.



LADDER INSTALLATION IN MANHOLE NECK

BELTLINE RD. - BELTWOOD PUMP - ADDISON RD.

UNDERGROUND DISTRIBUTION

DETAIL SHEET