

SANITARY SEWER DETAILS

H.C.M.U.D. No. 191
 UTILITY EXTENSION TO SOUTHLAND CORP.

No.	Date	Description

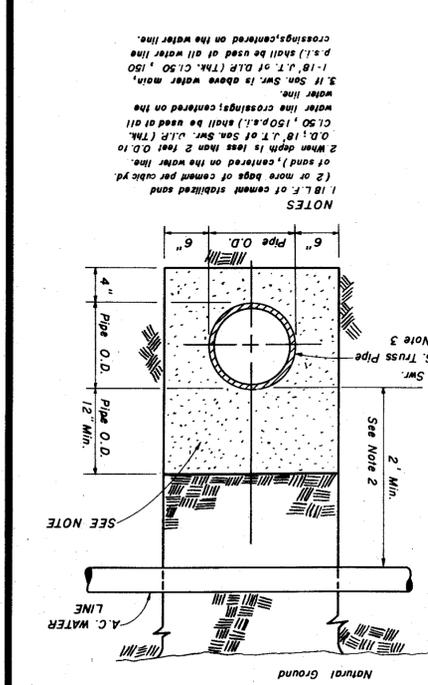
APPROVED FOR CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS:

WATER DESIGN: *W. S. Williams* 12-8-83
 WATER QUALITY: *W. S. Williams*
 SANITATION DESIGNER - WATER DIV: *W. S. Williams*
 REGION DIVISION: *W. S. Williams*
 ASSISTANT DIRECTOR: *W. S. Williams*
 DIRECTOR: *W. S. Williams*

OTHER DEPT'S: _____
 CITY Planning Dept. _____

SPECIAL BACKFILL FOR WATER LINES

Note:
 Necessary for use of this section will be determined by the Engineer as the construction progresses, and the details hereon may be modified by him to suit conditions encountered. Ungraded washed shall dimensions shown here are typical but one to be varied as ordered by the Engineer.
 All points shall be installed and trench pumped dry prior to excavation and kept dry during construction and until at least 3 of earth backfill has been placed.



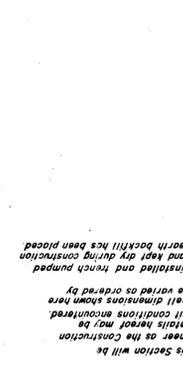
Notes:
 1. 18 L.F. of cement stabilized sand (2 or more bags of cement per cubic yd. of sand), centered on the water line.
 2. When depth is less than 2 feet O.D. to O.D. 18" at San. SWR, use 17M.
 3. If San. SWR is above water main, water line crossings; centered on the water line.
 4. CL 50, 150 p.a.; shall be used at all crossings, centered on the water line.

M.D. Jones
 11/14/87

SANITARY SEWER MANHOLE
 TYPE 5
 FOR 15" TO 30" SEWERS



Notes:
 1. See Manhole Type 4 for Standard Precast Concrete Sections, Details and Schedule of Dimensions.
 2. No Manhole Steps Required.
 3. Lifting eyes 2" shall be used to tie Standard Pipe to Manhole.
 4. Joints shall be sealed with "RAM-NEK" or approved equal.
 5. Depth of Manhole determines Sections Required.



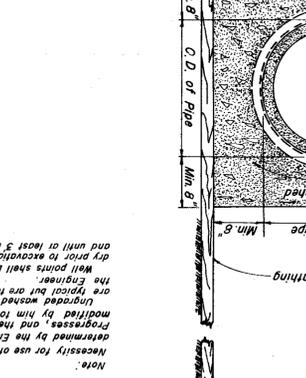
Notes:
 1. All Precast sections to be ASTM C-478.
 2. Lifting eyes 2" to be set off groove as shown in above detail. (4 Required per Section and shall fit inside form.)
 3. Joints shall be sealed with "RAM-NEK" or approved equal.
 4. No Steps Required in Manhole.
 5. Depth of Manhole determines Sections Required.

Notes:
 1. 18 L.F. of cement stabilized sand (2 or more bags of cement per cubic yd. of sand), centered on the water line.
 2. When depth is less than 2 feet O.D. to O.D. 18" at San. SWR, use 17M.
 3. If San. SWR is above water main, water line crossings; centered on the water line.
 4. CL 50, 150 p.a.; shall be used at all crossings, centered on the water line.

SANITARY SEWER MANHOLE
 TYPE 4
 FOR 6" TO 12" SEWERS



Notes:
 1. See Manhole Type 4 for Standard Precast Concrete Sections, Details and Schedule of Dimensions.
 2. No Manhole Steps Required.
 3. Lifting eyes 2" shall be used to tie Standard Pipe to Manhole.
 4. Joints shall be sealed with "RAM-NEK" or approved equal.
 5. Depth of Manhole determines Sections Required.



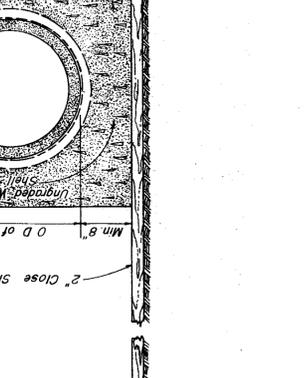
Notes:
 1. All Precast sections to be ASTM C-478.
 2. Lifting eyes 2" to be set off groove as shown in above detail. (4 Required per Section and shall fit inside form.)
 3. Joints shall be sealed with "RAM-NEK" or approved equal.
 4. No Steps Required in Manhole.
 5. Depth of Manhole determines Sections Required.

Notes:
 1. 18 L.F. of cement stabilized sand (2 or more bags of cement per cubic yd. of sand), centered on the water line.
 2. When depth is less than 2 feet O.D. to O.D. 18" at San. SWR, use 17M.
 3. If San. SWR is above water main, water line crossings; centered on the water line.
 4. CL 50, 150 p.a.; shall be used at all crossings, centered on the water line.

SANITARY SEWER MANHOLE
 TYPE 5
 FOR 15" TO 30" SEWERS



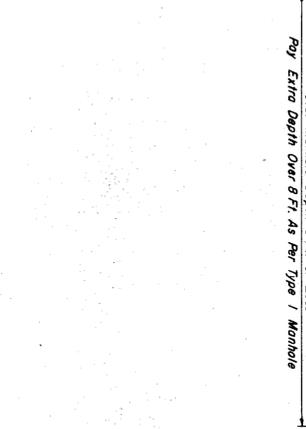
Notes:
 1. See Manhole Type 4 for Standard Precast Concrete Sections, Details and Schedule of Dimensions.
 2. No Manhole Steps Required.
 3. Lifting eyes 2" shall be used to tie Standard Pipe to Manhole.
 4. Joints shall be sealed with "RAM-NEK" or approved equal.
 5. Depth of Manhole determines Sections Required.



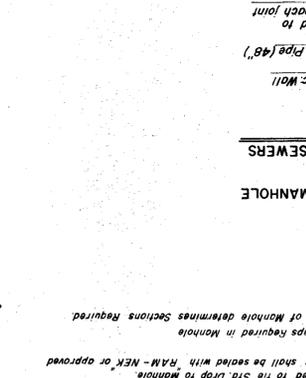
Notes:
 1. All Precast sections to be ASTM C-478.
 2. Lifting eyes 2" to be set off groove as shown in above detail. (4 Required per Section and shall fit inside form.)
 3. Joints shall be sealed with "RAM-NEK" or approved equal.
 4. No Steps Required in Manhole.
 5. Depth of Manhole determines Sections Required.

Notes:
 1. 18 L.F. of cement stabilized sand (2 or more bags of cement per cubic yd. of sand), centered on the water line.
 2. When depth is less than 2 feet O.D. to O.D. 18" at San. SWR, use 17M.
 3. If San. SWR is above water main, water line crossings; centered on the water line.
 4. CL 50, 150 p.a.; shall be used at all crossings, centered on the water line.

SANITARY SEWER MANHOLE
 TYPE 4
 FOR 6" TO 12" SEWERS



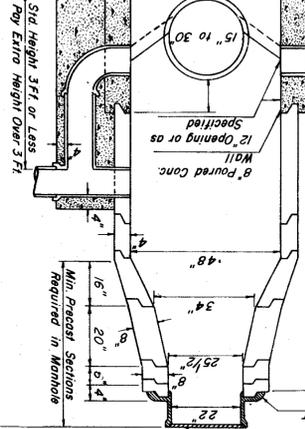
Notes:
 1. See Manhole Type 4 for Standard Precast Concrete Sections, Details and Schedule of Dimensions.
 2. No Manhole Steps Required.
 3. Lifting eyes 2" shall be used to tie Standard Pipe to Manhole.
 4. Joints shall be sealed with "RAM-NEK" or approved equal.
 5. Depth of Manhole determines Sections Required.



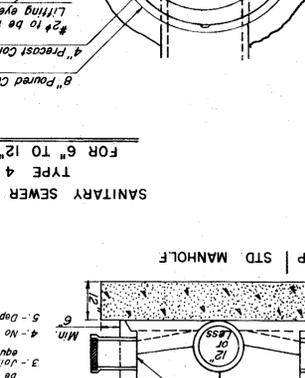
Notes:
 1. All Precast sections to be ASTM C-478.
 2. Lifting eyes 2" to be set off groove as shown in above detail. (4 Required per Section and shall fit inside form.)
 3. Joints shall be sealed with "RAM-NEK" or approved equal.
 4. No Steps Required in Manhole.
 5. Depth of Manhole determines Sections Required.

Notes:
 1. 18 L.F. of cement stabilized sand (2 or more bags of cement per cubic yd. of sand), centered on the water line.
 2. When depth is less than 2 feet O.D. to O.D. 18" at San. SWR, use 17M.
 3. If San. SWR is above water main, water line crossings; centered on the water line.
 4. CL 50, 150 p.a.; shall be used at all crossings, centered on the water line.

SANITARY SEWER MANHOLE
 TYPE 5
 FOR 15" TO 30" SEWERS



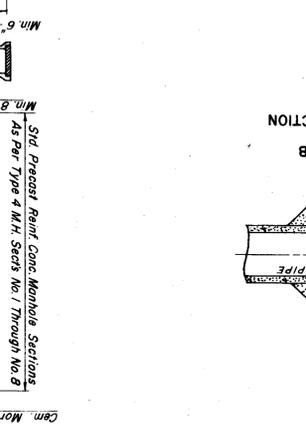
Notes:
 1. See Manhole Type 4 for Standard Precast Concrete Sections, Details and Schedule of Dimensions.
 2. No Manhole Steps Required.
 3. Lifting eyes 2" shall be used to tie Standard Pipe to Manhole.
 4. Joints shall be sealed with "RAM-NEK" or approved equal.
 5. Depth of Manhole determines Sections Required.



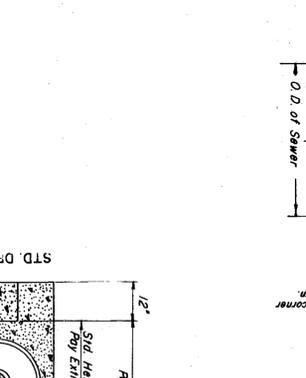
Notes:
 1. All Precast sections to be ASTM C-478.
 2. Lifting eyes 2" to be set off groove as shown in above detail. (4 Required per Section and shall fit inside form.)
 3. Joints shall be sealed with "RAM-NEK" or approved equal.
 4. No Steps Required in Manhole.
 5. Depth of Manhole determines Sections Required.

Notes:
 1. 18 L.F. of cement stabilized sand (2 or more bags of cement per cubic yd. of sand), centered on the water line.
 2. When depth is less than 2 feet O.D. to O.D. 18" at San. SWR, use 17M.
 3. If San. SWR is above water main, water line crossings; centered on the water line.
 4. CL 50, 150 p.a.; shall be used at all crossings, centered on the water line.

SANITARY SEWER MANHOLE
 TYPE 4
 FOR 6" TO 12" SEWERS



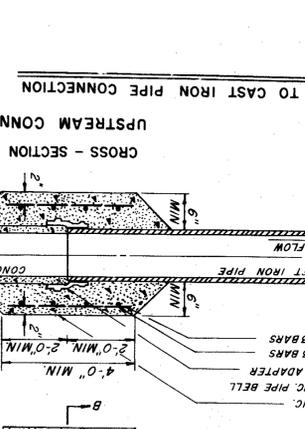
Notes:
 1. See Manhole Type 4 for Standard Precast Concrete Sections, Details and Schedule of Dimensions.
 2. No Manhole Steps Required.
 3. Lifting eyes 2" shall be used to tie Standard Pipe to Manhole.
 4. Joints shall be sealed with "RAM-NEK" or approved equal.
 5. Depth of Manhole determines Sections Required.



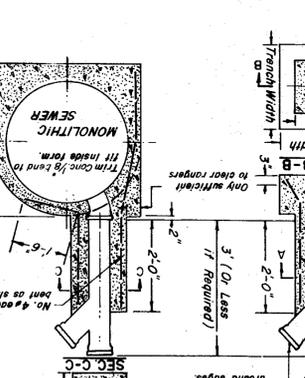
Notes:
 1. All Precast sections to be ASTM C-478.
 2. Lifting eyes 2" to be set off groove as shown in above detail. (4 Required per Section and shall fit inside form.)
 3. Joints shall be sealed with "RAM-NEK" or approved equal.
 4. No Steps Required in Manhole.
 5. Depth of Manhole determines Sections Required.

Notes:
 1. 18 L.F. of cement stabilized sand (2 or more bags of cement per cubic yd. of sand), centered on the water line.
 2. When depth is less than 2 feet O.D. to O.D. 18" at San. SWR, use 17M.
 3. If San. SWR is above water main, water line crossings; centered on the water line.
 4. CL 50, 150 p.a.; shall be used at all crossings, centered on the water line.

SANITARY SEWER MANHOLE
 TYPE 5
 FOR 15" TO 30" SEWERS



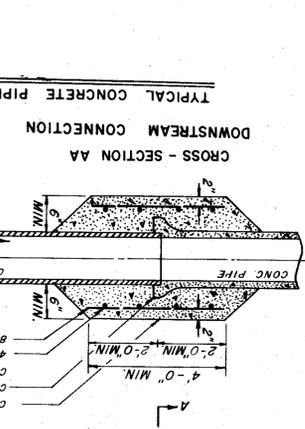
Notes:
 1. See Manhole Type 4 for Standard Precast Concrete Sections, Details and Schedule of Dimensions.
 2. No Manhole Steps Required.
 3. Lifting eyes 2" shall be used to tie Standard Pipe to Manhole.
 4. Joints shall be sealed with "RAM-NEK" or approved equal.
 5. Depth of Manhole determines Sections Required.



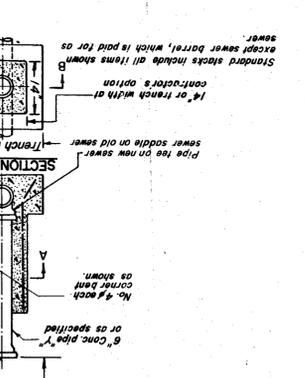
Notes:
 1. All Precast sections to be ASTM C-478.
 2. Lifting eyes 2" to be set off groove as shown in above detail. (4 Required per Section and shall fit inside form.)
 3. Joints shall be sealed with "RAM-NEK" or approved equal.
 4. No Steps Required in Manhole.
 5. Depth of Manhole determines Sections Required.

Notes:
 1. 18 L.F. of cement stabilized sand (2 or more bags of cement per cubic yd. of sand), centered on the water line.
 2. When depth is less than 2 feet O.D. to O.D. 18" at San. SWR, use 17M.
 3. If San. SWR is above water main, water line crossings; centered on the water line.
 4. CL 50, 150 p.a.; shall be used at all crossings, centered on the water line.

SANITARY SEWER MANHOLE
 TYPE 4
 FOR 6" TO 12" SEWERS



Notes:
 1. See Manhole Type 4 for Standard Precast Concrete Sections, Details and Schedule of Dimensions.
 2. No Manhole Steps Required.
 3. Lifting eyes 2" shall be used to tie Standard Pipe to Manhole.
 4. Joints shall be sealed with "RAM-NEK" or approved equal.
 5. Depth of Manhole determines Sections Required.



Notes:
 1. All Precast sections to be ASTM C-478.
 2. Lifting eyes 2" to be set off groove as shown in above detail. (4 Required per Section and shall fit inside form.)
 3. Joints shall be sealed with "RAM-NEK" or approved equal.
 4. No Steps Required in Manhole.
 5. Depth of Manhole determines Sections Required.

Notes:
 1. 18 L.F. of cement stabilized sand (2 or more bags of cement per cubic yd. of sand), centered on the water line.
 2. When depth is less than 2 feet O.D. to O.D. 18" at San. SWR, use 17M.
 3. If San. SWR is above water main, water line crossings; centered on the water line.
 4. CL 50, 150 p.a.; shall be used at all crossings, centered on the water line.

NO.	L	W	D	DESCRIPTION
1	4"	8"	8"	12" CONC. SLOD
2	6"	8"	8"	48" R.C.P.
3	20"	8"	8"	ASTM C-478
4	16"	8"	8"	"
5	4"	8"	8"	"
6	12"	8"	8"	"
7	24"	8"	8"	"
8	36"	8"	8"	"
9	48"	8"	8"	"
10	60"	8"	8"	"
11	72"	8"	8"	"
12	84"	8"	8"	"
13	96"	8"	8"	"
14	108"	8"	8"	"
15	120"	8"	8"	"
16	132"	8"	8"	"
17	144"	8"	8"	"
18	156"	8"	8"	"
19	168"	8"	8"	"
20	180"	8"	8"	"
21	192"	8"	8"	"
22	204"	8"	8"	"
23	216"	8"	8"	"
24	228"	8"	8"	"
25	240"	8"	8"	"
26	252"	8"	8"	"
27	264"	8"	8"	"
28	276"	8"	8"	"
29	288"	8"	8"	"
30	300"	8"	8"	"