

SANITARY SEWER NOTES:

1. WATER LINES, WASTEWATER COLLECTION SYSTEMS, AND DRAINAGE SYSTEMS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF HOUSTON, DEPARTMENT OF PUBLIC WORKS AND ENGINEERING'S "STANDARD CONSTRUCTION SPECIFICATIONS" DATED SEPTEMBER 1997, AND "STANDARD CONSTRUCTION DETAILS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE AND STREET PAVING" DATED JULY 1997 UNLESS OTHERWISE NOTED AND APPROVED ON THESE PLANS. THE DESIGN IS CONSISTENT WITH THE MINIMUM STANDARDS ESTABLISHED IN THE "DESIGN MANUAL FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE AND STREET PAVING", DATED SEPTEMBER 1996. CONTRACTOR SHALL OBTAIN COPY OF SAME AND USE IT. OBTAIN FROM 611 WALKER FILE ROOM.
2. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE TO THE EXISTING PUBLIC OR PRIVATE UTILITY LINES, INCLUDING BUT NOT LIMITED TO WATER LINES, WASTEWATER COLLECTION SYSTEMS AND STORM SEWERS, DURING CONSTRUCTION. ALL DAMAGES SHALL BE REPAIRED IN ACCORDANCE WITH CITY OF HOUSTON, DEPARTMENT OF PUBLIC WORKS AND ENGINEERING "STANDARD CONSTRUCTION SPECIFICATIONS" WITH LATEST ADDENDA AND AMENDMENTS THERETO, WITH NO COST TO THE CITY OF HOUSTON.
3. ALL SANITARY SEWERS SHALL BE INSTALLED BEDDED AND BACKFILLED IN ACCORDANCE WITH CITY OF HOUSTON DRAWINGS 02601-02C, 02227-01C, AND 02227-08B AS APPLICABLE.

GENERAL NOTES - STORM SEWERS

1. STORM SEWERS SHALL BE IN ACCORDANCE WITH THE CITY OF HOUSTON DESIGN MANUAL (SEPT. 1996) AND CONSTRUCTION STANDARD SPECIFICATIONS AND DETAILS (SEPTEMBER, 1997) AS CURRENTLY AMENDED.
2. REINFORCED CONCRETE PIPE (C-76 CLASS III) STORM SEWER SHALL BE INSTALLED BEDDED AND BACKFILLED IN ACCORDANCE WITH CITY OF HOUSTON DRAWINGS 02317-04, 02317-05 AND 02317-09 AS APPLICABLE.
3. ALL SEWERS CONSTRUCTED INSIDE LOT EASEMENTS SHALL BE R.C.P. TWENTY (20) FOOT WIDE EASEMENTS SHALL BE PROVIDED.
4. ALTERNATIVE TO CEMENT-STABILIZED SAND BACKFILL FOR PIPES 54-INCH AND LARGER, FROM 1-FOOT ABOVE THE TOP OF THE PIPE TO THE BOTTOM OF THE SUBGRADE. CONTRACTOR MAY BACKFILL WITH SUITABLE MATERIAL, PROVIDED THE BACKFILL MATERIAL IS PLACED IN 8-INCH LIFTS AND MECHANICALLY COMPACTED TO 95% STANDARD PROCTOR DENSITY. TESTS SHALL BE TAKEN AT 100-FOOT INTERVALS ON EACH LIFT. BEDDING AND BACKFILL TO 1-FOOT ABOVE THE TOP OF THE PIPE SHALL BE CEMENT-STABILIZED SAND.
5. ALL PROPOSED PIPE STUB-OUTS FROM MANHOLES OR INLETS ARE TO BE PLUGGED WITH 8" BRICK WALLS UNLESS OTHERWISE NOTED.
6. THE CONTRACTOR SHALL NOTIFY HARRIS COUNTY ENGINEERING DEPARTMENT 24 HOURS IN ADVANCE OF COMMENCING CONSTRUCTION, (713-956-3071), AND WRITTEN NOTIFICATION 48 HOURS IN ADVANCE.
7. CONTRACTOR TO OBTAIN ALL CONSTRUCTION PERMITS REQUIRED BY THE "REGULATIONS OF HARRIS COUNTY, TEXAS FOR FLOOD PLAIN MANAGEMENT."
8. ALL STORM SEWER MANHOLE RIMS LOCATED OUTSIDE THE PROPOSED PAVING SHALL BE SET TO PROPOSED FINISH GRADE ELEVATION.
9. BEFORE UTILITY CONSTRUCTION BEGINS, ADEQUATE DRAINAGE MUST BE PROVIDED SO THAT NO SHEET FLOW FLOODING OF ROADWAY OR ADJOINING PROPERTIES OCCURS.
10. THE CONTRACTOR MAY USE A BACKHOE FOR TRENCH EXCAVATION IN LIEU OF A TRENCHING MACHINE.
11. ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION AND ANY DRAINAGE DITCH OR STRUCTURE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO THE SATISFACTION OF THE OWNING AUTHORITY. ALL CONSTRUCTION STORM RUNOFF SHALL COMPLY WITH THE FINAL DRAFT OF STORMWATER MANAGEMENT HANDBOOK FOR CONSTRUCTION ACTIVITIES AS PREPARED BY HARRIS COUNTY/HCFCD, AND THE CITY OF HOUSTON ALL IN COMPLIANCE WITH THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) REQUIREMENTS.
12. CONDITION OF THE ROAD AND/OR RIGHT-OF-WAY, UPON COMPLETION OF JOB, SHALL BE AS GOOD AS OR BETTER THAN THE CONDITION PRIOR TO STARTING WORK.

GENERAL NOTES - WATER

1. ALL WATER LINES TO HAVE A MINIMUM OF FOUR (4) FEET OF COVER TO TOP OF CURB.
2. WATER MAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF HOUSTON, DEPARTMENT OF PUBLIC WORKS AND ENGINEERING "STANDARD SPECIFICATIONS AND STANDARD CONSTRUCTION DETAILS FOR WASTE WATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE AND STREET PAVING" SEPTEMBER 1997.
3. ALL A.C. WATER MAINS USED IN THIS PROJECT RANGING IN SIZE FROM 6 INCHES THRU 16 INCHES SHALL BE AWWA C-400-80 CLASS 200 OR LATEST REVISION WITH MAXIMUM PIPE LENGTH OF 6 FEET 6 INCHES.
4. ALL WATER MAINS UNDER STREET PAVEMENT - 4 INCHES THRU 12 INCHES IN DIAMETER, IF NOT SPECIFIED OTHERWISE, SHALL BE AWWA C-900 PVC PIPE.
3. ALL FLUSHING VALVES SHALL BE SET THREE (3) FEET BEHIND BACK OF CURB.
6. STEEL WATER LINE SECTION TO EXTEND A OF FIVE (5) FEET MINIMUM BEYOND 45' BENDS.
7. THE CONTRACTOR MAY USE A BACKHOE FOR TRENCH EXCAVATION IN LIEU OF A TRENCHING MACHINE.
8. WHENEVER SANITARY SEWERS CROSS UNDER WATER MAINS, A 6" MINIMUM CLEARANCE IS REQUIRED. WHENEVER SANITARY SEWERS CROSS OVER WATER MAINS, A 2' MINIMUM CLEARANCE IS REQUIRED. ONE 18' JOINT OF DUCTILE PIPE SHALL BE INSTALLED IN THE SEWER LINE AND CENTERED AT THE WATER LINE CROSSING.
9. DUCTILE IRON PIPE SHALL BE MINIMUM THICKNESS CLASS 50. THE PRESSURE RATING FOR BOTH THE PIPE AND THE JOINTS SHALL BE 150 PSI OR GREATER.
10. WHENEVER SANITARY SEWERS CROSS OVER WATER MAINS, AND THE OUT-TO-OUT PIPE CLEARANCE IS LESS THAN 24", A CENTERED 18' JOINT OF DUCTILE IRON PIPE SHALL BE USED.
11. WHENEVER WATER MAINS CROSS UNDER SANITARY SEWERS, AND THE MINIMUM PIPE CLEARANCE IS 2' OR GREATER, BUT LESS THAN 9', A CENTERED 20' OF CEMENT STABILIZED SAND BACKFILL (2 SACKS OF CEMENT PER CUBIC YARD OF SAND) STARTING AT A POINT 1/4 OF THE PIPE DIAMETER ABOVE THE BOTTOM OF SANITARY SEWER TO 1-FOOT ABOVE THE TOP OF SANITARY SEWER, OR ONE SANITARY DIAMETER, WHICHEVER IS LARGER. CENTER ONE JOINT OF SANITARY SEWER PIPE ABOUT THE WATER MAIN.
12. ALL P.V.C. WATER MAINS SHALL BE F C-900, DR 18, CLASS 150.
13. ALL WATER METERS MUST HAVE INDIVIDUAL SERVICE LEADS AS PER CITY OF HOUSTON STANDARDS.

STANDARD HCFCD NOTES

1. Harris County Flood Control District, Watershed Management Department, shall be notified at least 48 hours prior to construction (713-956-3075).
2. Engineer shall submit letter to Harris County Flood Control District, Watershed Management Department, requesting inspection and acceptance of items constructed in Harris County Flood Control District Right-of-Way. Prior to requesting inspection, the drainage right-of-way and/or easements shall be staked and flagged.
3. Contractor shall be responsible for protecting, maintaining and restoring backslope drainage systems.
4. All disturbed areas within the Harris County Flood Control District right-of-way, except the changed bottom, shall be hydro-mulch seeded as per Harris County Flood Control specification entitled "Hydro-Mulch Seeding" or approved equal.
5. Backfill to be compacted in no greater than 1 foot lifts to the density of the undisturbed adjacent soil.
6. Contractor shall be responsible for excavating channel flowline to design elevation as shown on plans and downstream as necessary to insure no water in storm sewer during "dry" conditions.
7. Contractor shall be responsible for maintaining flow in channel during construction and restoring channel to original condition.
8. All excavated material is to be removed from the HCFCD right-of-way. No fill is to be placed within a designated flood plain areas without first obtaining a fill permit.
9. Contractor, with the assistance of the Engineer if necessary, shall be responsible for obtaining all applicable City, County, State, and Federal permits.

GENERAL NOTES - PAVING

1. PAVING SHALL BE IN ACCORDANCE WITH HARRIS COUNTY "RULES, REGULATIONS AND REQUIREMENTS RELATING TO THE APPROVAL AND ACCEPTANCE OF IMPROVEMENTS IN SUBDIVISIONS OR RE-SUBDIVISIONS" AND THE LATEST REVISIONS AND/OR AMENDMENTS OF SAME.
2. GUIDELINES SET FORTH IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES SHALL BE OBSERVED.
3. ALL RADII AT CURB RETURNS TO BE 25.0' TO BACK OF CURB UNLESS OTHERWISE NOTED.
4. THE CONTRACTOR SHALL NOTIFY HARRIS COUNTY ENGINEERING DEPARTMENT 24 HOURS IN ADVANCE OF COMMENCING CONSTRUCTION, (713-956-3071). AND WRITTEN NOTIFICATION 48 HOURS IN ADVANCE.
5. STOP SIGN (R1 - 1A) TO BE PLACED AT INTERSECTIONS.
6. OWNER TO OBTAIN ALL PERMITS REQUIRED BY HARRIS COUNTY FOR CONSTRUCTION OF UTILITIES AND/OR CULVERTS WITHIN COUNTY ROAD R.O.W.
7. CONTRACTOR TO OBTAIN ALL PERMITS REQUIRED BY REGULATION OF HARRIS COUNTY, TEXAS FOR FLOOD PLAIN MANAGEMENT. PRIOR TO STARTING CONSTRUCTION.
8. OWNER TO OBTAIN ALL PERMITS REQUIRED BY HARRIS COUNTY, TEXAS PRIOR TO STARTING CONSTRUCTION OF UTILITY AND/OR CULVERTS WITHIN COUNTY ROAD RIGHTS OF WAY.

NOTE:

FORMAL "NOTIFICATION" APPROVED BY COMMISSIONERS COURT REQUIRED PRIOR TO CONSTRUCTION OF UTILITIES WITHIN HARRIS COUNTY R.O.W. CONTACT HARRIS COUNTY PERMIT OFFICE AT 956-3000. CONSTRUCTION TO BE IN ACCORDANCE WITH SPECIFICATIONS DETAILED IN THE APPLICABLE HARRIS COUNTY COMMISSIONERS COURT ORDER.

Rev.	Date	Description	App.

PRIVATE UTILITY LINES SHOWN	
<i>R. Yonny</i>	7/27/99
RELIANT ENERGIES, INC./ENTEX	
<i>Nike Balin</i>	7/27/99
SOUTHWESTERN BELL TELEPHONE CO.	
Valid for One Year Only	
<i>R. Yonny</i>	7/27/99
RELIANT ENERGIES, INC./H.L.&P. CO.	
Approval Only for Crossing Underground Ductlines Unless Noted. Valid at Time of Review Only.	

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

REVIEWED BY	
PRIVATELY FUNDED PUBLIC WORKS	CITY FUNDED PUBLIC WORKS
<i>Victor Salinas</i>	
WATER	
<i>Mark ...</i>	
WASTEWATER	
<i>...</i>	
STORM WATER	
	PROJECT MANAGER
	CONSTRUCTION
	CHIEF ENGINEER

OTHER APPROVAL

TRAFFIC AND TRANSPORTATION	SPONSOR DEPARTMENT

CITY ENGINEER	DATE
<i>M. ...</i>	8-24-99
DIRECTOR OF PUBLIC WORKS AND ENGINEERING	DATE

SUBMITTED BY:	DESIGNED BY: BOBBY WILSON
SCALE: NA	DRAWN BY: BILL DORRIS
DATE: JUNE 1999	SHEET NO. 2 OF 9 SHEETS
SURVEY BY:	CITY DWG. NO. NOTE.DWG
F B NO: 466	

GENERAL NOTES

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HOUSTON, TEXAS 77008
(713)802-1019

