

**REVIEW BY FORT BEND COUNTY
COMMISSIONERS COURT**

**Fort Bend County
Engineering Department**
301 Jackson Suite 401
Richmond, Texas 77469
281.633.7500
Permits@fortbendcountytx.gov

☒ Right of Way Permit
☐ Commercial Driveway Permit
Permit No: 2016-10770

Applicant: Clearwater Utilities, Inc/Cactus Commercial, Inc.

Job Location Site: 21807 Beechnut Street, Richmond, TX 77407

Bond No. **Date of Bond:** 1/10/2017 **Amount:** \$50,000.00

The above applicant came to make use of certain Fort Bend County property subject to, "The Order Regulating the Laying, Construction, Maintenance, and Repair of Buried Cables, Conduits, and Pole Lines, In, Under, Across or Along Roads, Streets, Highways, and Drainage Ditches in Fort Bend County, Texas, Under the Jurisdiction of the Commissioners Court of Fort Bend County, Texas," as passed by the Commissioners Court of Fort Bend County, Texas, of the Minutes of the Commissioners Court of Fort Bend County, Texas, to the extent that such order is not inconsistent with Chapter 181, Vernon's Texas Statutes and Codes Annotated.

Notes:

1. Evidence of review by the Commissioners Court must be kept on the job site and failure to do so constitutes grounds for job shutdown.
2. Written notices are required:
 - a. 48 hours in advance of construction start up, and
 - b. When construction is completed and ready for final inspection, submit notification to Permit Administrator thru MyGovernmentOnline.org portal.
3. This permit expires one (1) year from date of permit if construction has not commenced.

On this 24th day of January, 2017, Upon Motion of Commissioner Meyers, seconded by Commissioner Morales, duly put and carried, it is ORDERED, ADJUDGED AND DECREED that said notice of said above purpose is hereby acknowledged by the Commissioners Court of Fort Bend County, Texas, and that said notice be placed on record according to the regulation order thereof.

Signature

By: Charles O. Ay
for County Engineer

N/A

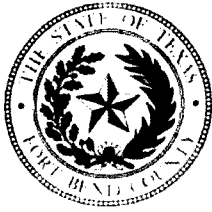
By: _____
Drainage District Engineer/Manager

Presented to Commissioners Court and approved.

Date Recorded 2-1-17 Comm. Court No. 15L

Clerk of Commissioners Court

By: Jonella Willes
Deputy



**PERMIT APPLICATION REVIEW FORM FOR
CABLE, CONDUIT, AND POLE LINE ACTIVITY
IN FORT BEND COUNTY**

**Fort Bend County
Engineering Department**
301 Jackson Suite 401
Richmond, Texas 77469
281.633.7500
Permits@fortbendcountytx.gov

- ☒ Right of Way Permit
☐ Commercial Driveway Permit

Permit No: 2016-10770

The following "Notice of Proposed Cable, Conduit, and/or Pole Line activity in Fort Bend County" and accompanying attachments have been reviewed and the notice conforms to appropriate regulations set by Commissioner's Court of Fort Bend County, Texas.

(1) COMPLETE APPLICATION FORM:

- ☒ a. Name of road, street, and/or drainage ditch affected.
☒ b. Vicinity map showing course of directions
☒ c. Plans and specifications

(2) BOND:

- ☐ County Attorney, approval when applicable.
- ☒ Perpetual bond currently posted. Bond No: [REDACTED] Amount: \$50,000.00
- ☐ Performance bond submitted. Bond No: _____ Amount: _____
- ☐ Cashier's Check Check No: _____ Amount: _____

(3) DRAINAGE DISTRICT APPROVAL (WHEN APPLICABLE):

Drainage District Approval

Date

We have reviewed this project and agree it meets minimum requirements.

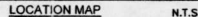
Charles O. Ay

Permit Administrator

1/17/17

Date

2 ACRE COMMERCIAL TRACT - 4027





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LOG NO: 16-0461
ILMS NO: 16037243

| | | | |
|--|---|--|--|
|  | | 14/16 | |
| SURVED BY: Miller Survey Group -- | | FB NO.: | |
| NOTE: CITY SHANTHONES VALID FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES | | | |
| <h2 style="text-align: center;">CITY OF HOUSTON</h2> <h3 style="text-align: center;">DEPARTMENT OF PUBLIC WORKS AND ENGINEERING</h3> | | | |
| DATE: 10-16-1977 DRAWN BY: J. H. Stacy CHECKED BY: J. H. Stacy 10/17/1977 | DATE & TIME OF SIGNATURE SIGNATURE OFFICIAL | | |
| FIELD & HOME | CITY OF HOUSTON USE ONLY CITY ENG. NO. 10-17-1977  | | |
| CITY ENGINEER | | DIRECTOR OF PUBLIC WORKS AND ENGINEERING | |
| SHEET: 1 OF 171 | | 56785 | |

GENERAL CONSTRUCTION NOTES - OUTSIDE CITY LIMITS (FORT BEND COUNTY)

- CONSTRUCT WASTEWATER COLLECTION SYSTEMS, WATER LINES AND STORM DRAINAGE IN ACCORDANCE WITH THE LATEST EDITION OF THE PUBLICATIONS STANDARD CONSTRUCTION SPECIFICATIONS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE AND STREET PAVING AND STANDARD CONSTRUCTION DETAILS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE AND STREET PAVING PUBLISHED BY THE CITY OF HOUSTON, DEPARTMENT OF PUBLIC WORKS AND ENGINEERING.
- UTILITIES PRESENTED ON THESE DRAWINGS ARE SHOWN BASED ON THE BEST AVAILABLE INFORMATION. CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS IN THE FIELD PRIOR TO COMMENCING CONSTRUCTION. CONTRACTOR SHALL NOTIFY TEXAS ONE CALL AT 711-223-5567/800-245-4545 AND "LOVE STAR ONE CALL" AT 800-869-8344 AT LEAST 48 HOURS BEFORE PROCEEDING WITH ANY EXCAVATION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO EXISTING WATER, WASTEWATER AND STORM DRAINAGE LINES. DAMAGES SHALL BE REPAIRED IN ACCORDANCE WITH THE CITY OF HOUSTON, DEPARTMENT OF PUBLIC WORKS AND ENGINEERING'S STANDARD CONSTRUCTION SPECIFICATIONS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE AND STREET PAVING AND STANDARD CONSTRUCTION DETAILS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE AND STREET PAVING, REFERENCED ABOVE, AT NO ADDITIONAL COST.
- CONTRACTOR SHALL NOTIFY THE OFFICE OF THE CITY ENGINEER, DEPARTMENT OF PUBLIC WORKS AND ENGINEERING IN WRITING PRIOR TO COMMENCING CONSTRUCTION.
- ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION AND ANY DRAINAGE DITCH OR STRUCTURE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO EXISTING CONDITIONS OR BETTER.
- CONTRACTOR SHALL COMPLY WITH THE LATEST EDITION OF OSHA REGULATIONS AND THE STATE OF TEXAS LAWS CONCERNING EXCAVATION.
- CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT ROOT SYSTEMS OF SHRUBS, PLANTS AND TREES ALONG THE AREA OF EXCAVATION.
- IF THE CONSTRUCTION DOES NOT BEGIN WITHIN A YEAR AFTER THE PLANS HAVE BEEN SIGNED, NEW SIGNATURES MUST BE OBTAINED AND LETTERS OF AVAILABILITY MUST BE UPDATED.
- CONTRACTOR SHALL MAINTAIN A SET OF REDLINE DRAWINGS RECORDING AS-BUILT CONDITIONS DURING CONSTRUCTION. THESE REDLINE MARKED DRAWINGS WILL BE SUBMITTED TO THE DESIGN CONSULTANT, WHO WILL MAKE THE CHANGES ON THE ORIGINAL TRACINGS.
- THE OWNER SHALL OBTAIN THE NECESSARY PERMITS FOR INSTALLATION OF UTILITY PIPELINES WITHIN THE 100 YEAR FLOOD PLAIN.
- THE CONTRACTOR SHALL NOTIFY FORT BEND COUNTY ENGINEER AT LEAST 24 HOURS IN ADVANCE OF COMMENCING CONSTRUCTION. PHONE: (281) 633-7500 OR (281) 633-7514 (STEVE EVANS) AND WRITING NOTICE 48 HOURS IN ADVANCE.
- PAVING SHALL BE IN ACCORDANCE WITH FORT BEND COUNTY REQUIREMENTS.
- ALL INTERSECTIONS SHALL BE PROVIDED WITH STOP SIGNS AND STREET SIGNS AS INDICATED ON THE PLANS. ALL STOP SIGNS SHALL BE 30"X30" WITH DIAMOND GRADE SHEETING. ALL STREET NAME SIGNS SHALL BE 9" IN WIDTH.
- ALL CONCRETE USED IN THIS PROJECT SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS.
- GUIDELINES SET FORTH IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" SHALL BE OBSERVED.
- ALL ROADWAY FILL SHALL BE PLACED IN 8" LIFTS AND COMPACTED TO 95% OF STANDARD PROCTOR DENSITY PRIOR TO CONSTRUCTION OF UNDERGROUND UTILITIES.
- ALL CURB RETURN RADIUS ARE 25' UNLESS SHOWN OTHERWISE. ALL TURNOUT RADIUS AT INTERSECTIONS SHALL HAVE A MINIMUM OF 1,000' FILL, WHERE X OF GRADE IS NOT SHOWN, TOP OF CURB SHALL BE BUILT ON GRADE BETWEEN TOP OF CURB ELEVATIONS SHOWN. ALL RADIUS SHALL BE 30' ON MAJOR THROUGHFARES.
- ALIGNMENT, CENTER LINE CURVE DATA AND STATIONING FOR ALL CONSTRUCTION TO BE DETERMINED FROM SUBDIVISION PLAT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRENCH LINES (E.G. STORM SEWER, SANITARY SEWER AND WATER LINES) TO INDICATE MAXIMUM SETTLEMENT OF BACKFILL MATERIAL.
- EXISTING PAVEMENTS, CURBS, SIDEWALKS, AND DRIVEWAYS DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE REPLACED TO CITY OF HOUSTON STANDARDS.
- 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.
- CONTRACTOR SHALL LOCATE WHEELCHAIR RAMPS OUT OF MANHOLE RIM LOCATIONS, BACK MANHOLE TOPS OR RELOCATE WHEELCHAIR RAMPS TO AVOID BICYCLE ACCIDENTS AND LAWSUITS.
- A BLUE REFLECTORIZED BUTTON SHALL BE PLACED AT EACH FLUSH VALVE LOCATION 6" FROM CENTERLINE.

STANDARD F.B.C.D.D. NOTES

- ALL DISTURBED AREAS WITHIN THE FORT BEND COUNTY DRAINAGE DISTRICT RIGHT-OF-WAY, EXCEPT THE CHANNEL BOTTOM, SHALL BE HYDRO-SEEDDED AS PER FORT BEND COUNTY DRAINAGE DISTRICT SPECIFICATION ENTITLED "HYDRO-MIX SEEDING" OR APPROVED EQUAL.
- BACKFILL TO BE COMPACTED IN NO GREATER THAN 1 FOOT LIFTS TO THE DENSITY OF THE UNDISTURBED ADJACENT SOIL.
- CONTRACTOR SHALL BE RESPONSIBLE FOR EXCAVATING CHANNEL FLOW LINE TO DESIGN ELEVATION AS SHOWN ON PLANS AND DOWNSTREAM AS NECESSARY TO INSURE NO WATER IN STORM SEWER DURING "DRY" CONDITIONS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING FLOW IN CHANNEL DURING CONSTRUCTION AND RESTORING CHANNEL TO ORIGINAL CONDITION.
- ALL EXCAVATED MATERIAL IS TO BE REMOVED FROM THE F.B.C.D.D. RIGHT-OF-WAY. NO FILL IS TO BE PLACED WITHIN A DESIGNATED FLOOD PLAIN AREA WITHOUT FIRST OBTAINING A FILL PERMIT.
- CONTRACTOR, WITH THE ASSISTANCE OF THE ENGINEER IF NECESSARY, SHALL BE RESPONSIBLE FOR OBTAINING ALL APPLICABLE CITY, COUNTY, STATE, AND FEDERAL PERMITS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING AND RESTORING BACKSLOPE DRAINAGE SYSTEM ALONG F.B.C.D.D. RIGHT-OF-WAYS AND EASEMENTS.

OPEN SYSTEM - HAVE FIRE HYDRANTS, OR SURGE TANK, OR FIRE CABINET, ETC.

THE OPEN SYSTEM WILL REQUIRE ONE HALF FILLER WITH 10" X 20" WATER METER EASEMENT FOR 6" WATER METER; 15" X 20" WATER METER EASEMENT FOR 8" AND ABOVE WATER METER.

CLOSED SYSTEM - DO NOT HAVE FIRE HYDRANTS, SURGE TANK, FIRE CABINET, ETC. (SPRINKLER ONLY)

- THE CLOSED SYSTEM WILL REQUIRE A DOUBLE CHECK DETECTOR BACKFLOW PREVENTION ASSEMBLY WITH A REQUIRED BY-PASS LOCATED ON PRIVATE PROPERTY IN A LOCATION OUTSIDE OR THAT MAY BE INSIDE THE STRUCTURE AND C-102 AND MAINTAINED BY THE OWNER PROVIDED THAT THE BY-PASS METER WILL BE OWNED AND MAINTAINED BY THE CITY.

- WHEN USING CLOSED SYSTEM, PLEASE COPY ENTIRE SENTENCE ON THE DRAWING.

SANITARY SEWERS NOTES

- ALL SEWERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF HOUSTON STANDARD CONSTRUCTION SPECIFICATIONS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE, STREET PAVING, AND TRAFFIC AND ALL CURRENT AMENDMENTS THEREIN AND BE SUBJECT TO A STANDARD EXCAVATION TEST. TESTS ARE TO BE PERFORMED ON THE TOTAL FOOTAGE OF SEWER LINE INCLUDED IN THE PROJECT. REQUIREMENTS OF TEXAS ADMINISTRATIVE CODE, TITLE 30 CHAPTER 37, "DESIGN CRITERIA FOR SEWERAGE SYSTEMS" SHALL GOVERN WHERE CONFLICTS EXIST EXCEPT WHERE CITY REQUIREMENTS ARE MORE STRINGENT.
 - ALL MANHOLES ARE TO BE PER CITY OF HOUSTON STANDARD DETAILS DRAWING NUMBERS 02082-01, 02082-02, 02082-03, 02082-04, AND 02082-05 UNLESS OTHERWISE NOTED. USE 2010 VERSION AS APPLICABLE.
 - SANITARY SEWER MANHOLES WILL HAVE BEDDING AND BACKFILL PER CITY OF HOUSTON STANDARD DETAILS DRAWING NO. 02317-08 UNLESS OTHERWISE NOTED.
 - SANITARY SEWER PIPE 6" AND SMALLER SHALL BE SCHEDULE 40 P.V.C. SANITARY SEWER PIPE 8" AND LARGER SHALL BE SDR-26 P.V.C.
 - ALL SDR-26 P.V.C. PIPE SHALL MEET ASTM SPECIFICATION C3034 AND USE "FULL BODIED" SDR-26 P.V.C. FITTINGS WITH APPROPRIATE ADAPTERS AND SHALL HAVE A CELL CLASSIFICATION OF 12364-B AS DEFINED IN ASTM D-1784 AND SHALL HAVE DIP SIZE 00 OR RUBBER GASKET BELL-AND-SPIGOT TYPE JOINT UNLESS OTHERWISE NOTED.
 - AWWA C-900 DR-18 P.V.C. PIPE USES EITHER AWWA C900 DR-18 P.V.C. FITTINGS OR DIP FITTINGS.
 - ALL SANITARY SEWER LINES UNDER PROPOSED OR FUTURE PAVEMENT AND TO A POINT ONE (1) FOOT BACK OF ALL PROPOSED OR FUTURE CURBS SHALL HAVE BEDDING PER CITY OF HOUSTON STANDARD DETAILS DRAWING NUMBERS 02317-01, 02317-02, OR 02317-03 AS APPLICABLE, WITH 1" SACK CEMENT/CLAY STABILIZED SAND BACKFILL UP TO THE BOTTOM OF THE PAVEMENT SUBGRADE. 100 PSI PERFORMANCE RESULTS ARE BEST REQUIRED.
 - ALL SANITARY SEWERS CROSSING WATER LINES WITH A CLEARANCE BETWEEN 12 INCHES AND 9 FEET SHALL HAVE A MINIMUM OF ONE (1) INCH OF 150 PSI DUCTILE IRON OR (GREEN) C900 P.V.C. PIPE MEETING ASTM SPECIFICATION 24241 EMBEDDED IN WATER LINE. WHEN WATER LINE IS BELOW SANITARY SEWER PROVIDE MINIMUM 2" SEPARATION.
 - CONTRACTOR SHALL PROVIDE A MINIMUM HORIZONTAL CLEARANCE OF 9' FEET BETWEEN WATER LINES AND SANITARY SEWER MANHOLES AND LINES.
 - SANITARY SEWER MANHOLE RIMS OUTSIDE OF PROPOSED PAVING WILL BE SET 3" - 6" ABOVE THE SURROUNDING LEVEL FINISHED GRADE AFTER PAVING WITH SLOPED BACKFILL ADDED FOR STORM WATER TO DRAIN AWAY FROM MANHOLE RIM.
 - IN WET STABLE TRENCH AREAS USE BEDDING PER CITY OF HOUSTON STANDARD DETAILS DRAWING NUMBER 02317-02 (2002).
 - DEFLECTION TEST: DEFLECTION TESTS SHALL BE PERFORMED ON ALL FLEXIBLE AND SEMI-RIGID SEWER PIPE. THE TEST SHALL BE CONDUCTED AFTER BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS. NO PIPE SHALL EXCEED A DEFLECTION OF 5% IF THE DEFLECTION TEST IS TO BE RUN USING A RIGID MANHOLE. IT SHALL HAVE A DIAMETER EQUAL TO 50% OF THE INSIDE DIAMETER OF THE PIPE. THE TEST SHALL BE PERFORMED AS PER 30 TAC 317.2 LATEST AMENDMENT AND WITHOUT MECHANICAL PULLING DEVICES. NO BALL-TYPE MANHOLE IS ALLOWED.
 - INFILTRATION, EXFILTRATION OR LOW-PRESSURE AIR TEST: EITHER OF THE FOLLOWING TESTS SHALL BE PERFORMED AS PER FAC. TITLE 30 317.2 WITHIN THE SPECIFIED TOLERANCES ON ALL GRAVITY SEWERS.
 - INFILTRATION OR EXFILTRATION TEST: TOTAL LEAKAGE AS DETERMINED BY A HYDROSTATIC HEAD TEST SHALL NOT EXCEED 50 GALLONS PER INCH DIAMETER PER MILE OF PIPE PER 24 HOURS AT A MINIMUM TEST HEAD OF TWO (2) FEET.
 - LOW-PRESSURE AIR TEST: PERFORM TEST ACCORDING TO UNH-8-B-90 OR OTHER APPROPRIATE PROCEDURES. FOR SECTIONS OF PIPE LESS THAN 36" (NCH) AVERAGE INSIDE DIAMETER, THE MINIMUM ALLOWABLE TIME FOR PRESSURE DROP FROM 3.5 P.S.I.G. TO 2.5 P.S.I.G. SHALL BE AS FOLLOWS:

| | |
|---------------------------|------------------------------------|
| 6" 340 SECONDS OR 0.8550 | FOR TEST LENGTHS GREATER THAN 398' |
| 8" 454 SECONDS OR 1.5920 | FOR TEST LENGTHS GREATER THAN 298' |
| 10" 567 SECONDS OR 2.374 | FOR TEST LENGTHS GREATER THAN 239' |
| 12" 850 SECONDS OR 5.342 | FOR TEST LENGTHS GREATER THAN 190' |
| 16" 1020 SECONDS OR 7.693 | FOR TEST LENGTHS GREATER THAN 139' |

 WHERE L = LENGTH OF LINE OF SAME PIPE SIZE IN FEET.
- "SAN. S." INDICATES "SANITARY SEWER EASEMENT"
- FOR SANITARY MANHOLE (MH) RIMS SET ABOVE OF CURB & GUTTER PAVEMENT AND/OR BELOW T.Y. MH RIMS WILL BE SET FLUSH WITH AN ADJUTING PAVED SURFACE (THE VALCUL, NEENAM OR EQUAL) HEAVY DUTY BOLTED SOLID MH COVER SHALL BE PROPERLY (AND SECURELY) ATTACHED AND SEALED TO ITS COMPATIBLE GASKETED FRAME BY USING BOTH A NEOPRENE GASKET AND (AT LEAST) A COUNTER-SUNK HEX-HEAD COARSE THREADED 5/16-18 UNF STAINLESS STEEL BOLTS. THE HEAVY DUTY FRAME MH COVER SHALL BE SOLID (NO AIR HOLES). SAID FRAME SHALL BE BOTH ANCHORED INTO THE MH'S TOP ALSO SECURELY ANCHORED TO THE UNDERLYING MH STRUCTURE WITH EITHER SECURELY ATTACHED EMBEDDED ANCHOR BOLTS OR THE CONCRETE MH'S EXPOSED REBARS WELDED TO THE FRAME OR OTHER EQUIVALENT SECURED METHODS.

WATER LINES

- WATER LINES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST CITY OF HOUSTON INFRASTRUCTURE DESIGN MANUAL, STANDARD SPECIFICATION, AND CONSTRUCTION DETAILS.
- 4" THRU 12" WATER LINES SHALL BE P.V.C. CLASS 150, DR-18, AWWA C-900 AND 1" THRU 3" WATER LINES SHALL BE P.V.C. SCHEDULE 40. 4" THRU 54" D.I.P. WATER LINES SHALL BE AWWA C151 (ANSI A21.51) AND DOUBLE WRAPPED IN 6-MIL POLYETHYLENE PIPE SHALL BE USED IN ACCORDANCE WITH AWWA C104 (ANSI A21.4).
- CONCRETE THRUST BLOCKS SHALL BE PROVIDED AS NECESSARY TO PREVENT PIPE MOVEMENT. USE RESTRAINED JOINTS WHERE PREVENTING MOVEMENT OF 16" OR GREATER PIPE IS NECESSARY DUE TO THREATS.
- ALL WATER LINES UNDER PROPOSED OR FUTURE PAVING AND TO A POINT ONE (1) FOOT BACK OF ALL PROPOSED OR FUTURE CURBS SHALL BE ENCASED IN BANK SAND TO 12" OVER PIPE AND BACKFILLED WITH CEMENT STABILIZED SAND TO WITHIN ONE (1) FOOT OF SUBGRADE.
- ALL WATER LINE AND SEWER LINE CROSSINGS SHALL BE CONSTRUCTED PER CITY OF HOUSTON AND TCOE REGULATIONS.
- ALL WATER VALVES SHALL BE SUPPLIED AND SHIP TAILED IN ACCORDANCE WITH THE LATEST EDITION OF AWWA C-500 AND SHALL BE OF THE RESILIENT SEAT TYPE.
- ALL WATER LINES TO BE DISINFECTED IN CONFORMANCE WITH AWWA C-651 AND THE TEXAS STATE DEPARTMENT OF HEALTH. AT LEAST ONE BACTERIOLOGICAL SAMPLE SHALL BE COLLECTED FOR EVERY 1000 LINEAR FEET OF WATER LINE AND SHALL BE REPORTED IF CONTAMINATION PERSISTS.
- ALL BELOW GRADE VALVES SHALL BE GASKETED, HUB-END GATE VALVES WITH A CAST IRON BOX, EXCEPT WHERE FLANGES ARE CALLED OUT ON THE PLANS.
- 4" THRU 12" FITTINGS SHALL BE CEMENT MORTAR LINED COMPACT DUCTILE IRON PRESSURE FITTINGS PER ANSI A21.53, OR PUSH ON FITTINGS PER ANSI A21.10 PRESSURE RATED AT 250 PSIG.
- HYDROSTATIC TESTING: ALL WATER PIPE SHALL BE TESTED FOR LEAKAGE IN ACCORDANCE WITH THE LATEST CITY OF HOUSTON STANDARD CONSTRUCTION SPECIFICATIONS. TESTS ARE TO BE PERFORMED ON THE ENTIRE FOOTAGE OF WATER PIPE LINE INCLUDED IN THE PROJECT.
- ALL WATER LINES TO HAVE 4' MINIMUM COVER TO FINISHED GRADE AND MINIMUM 12" CLEARANCE TO OTHER UTILITIES AT CROSSING UNLESS OTHERWISE NOTED ON PLANS. ALL WATER LINE INSTALLED OVER 9' DEEP SHALL UTILIZE RESTRAINED JOINT FITTINGS.
- CONTRACTOR SHALL KEEP WATER PIPE CLEAN AND CAPPED (OR OTHERWISE EFFECTIVELY COVERED) OPEN PIPE ENDS TO EXCLUDE INSECTS, ANIMALS OR OTHER SOURCES OF CONTAMINATION FROM UNFINISHED PIPE LINES AT TIMES WHEN CONSTRUCTION IS NOT IN PROGRESS.

SANITARY SEWER FORCE MAIN CONSTRUCTION NOTES

- UNLESS OTHERWISE NOTED, ALL FORCE MAINS SHALL HAVE A MINIMUM OF 4'-FEET OF COVER AND CONSTRUCTED IN ACCORDANCE WITH C.O.H. SPECIFICATIONS.
- PIPE MATERIAL (IF NOT A STEEL OR D.I.P. SECTION) SHALL BE POLY-VINYL CHLORIDE (P.V.C.) CONFORMING TO AWWA SPECIFICATION C-900, WITH BELL AND SPIGOT PUSH ON JOINTS.
- ALL SDR/OR P.V.C. PIPES ARE TO HAVE RUBBER GASKETED PUSH ON BELL-AND-SPIGOT TYPE JOINT ENDS. CHEMICALLY WELDED SANITARY SEWER JOINTS ARE NOT ACCEPTABLE. ALL OR P.V.C. PIPE USED IS TO HAVE C.I.P. SIZE O.D.'S REGARDLESS OF ANY OTHER WASTEWATER CONSTRUCTION NOTE TO THE CONTRARY. ALL P.V.C. PIPE AND FITTINGS TO PIPE (JOINTS) MUST BE 50 MARKED (STAMPED).
- SANITARY SEWER FORCE MAIN, WHEN NOT CONSTRUCTED UNDER FUTURE PAVEMENT, WILL BE BEDDED AND BACKFILLED WITH COMPACTED BANK SAND.
- SANITARY SEWER FORCE MAIN CONSTRUCTED UNDER FUTURE PAVEMENT AND TO A POINT ONE (1) FOOT BACK FROM ALL PROPOSED FUTURE CURBS SHALL BE BEDDED AND BACKFILLED WITH 1-1/2" SACK CEMENT/CLAY STABILIZED SAND TO WITHIN ONE (1) FOOT OF SUBGRADE. THE REMAINING DEPTH OF TRENCH SHALL BE BACKFILLED WITH SUITABLE EARTH MATERIAL.
- ALL CEMENT STABILIZED SAND (USED FOR SEWER BEDDING AND/OR PAVING BACKFILL) MUST MEET OR EXCEED CURRENT CITY OF HOUSTON PERFORMANCE SPECIFICATION (100 PSI COMPRESSION TEST) REGARDLESS OF ANY OTHER MINIMUM CEMENT CONTENT RATIO REQUIREMENTS STATED IN OTHER APPLICABLE NOTES.
- SANITARY SEWER FORCE MAINS PARALLEL TO WATER LINES SHALL BE INSTALLED WITH AT LEAST 9'-FEET OF CLEARANCE FROM OUTSIDE TO OUTSIDE OF PIPE AND SHALL BE INSTALLED IN SEPARATE TRENCHES.
- FORCE MAINS SHALL BE CONSTRUCTED SO THAT FITTINGS WILL NOT BE LOCATED UNDER PROPOSED OR FUTURE PAVEMENT.
- AIR RELEASE MANHOLES, WHEN CALLED FOR, WILL BE PRECAST AND CONSTRUCTED IN ACCORDANCE WITH C.O.H. SPECIFICATIONS.
- THIS PROJECT SHALL BE BUILT BY MEANS OF OPEN CUT EXCEPT AS NOTED ON THE DRAWINGS. CONTRACTOR TO DETERMINE THE LOCATIONS OF BORE PITS IN FIELD SUBJECT TO THE CITY ENGINEER'S APPROVAL.
- SANITARY SEWER FORCE MAIN TESTING WILL BE IN ACCORDANCE WITH CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING STANDARD CONSTRUCTION SPECIFICATION AND STANDARD CONSTRUCTION DETAILS. CONTRACTOR IS TO FURNISH ALL NECESSARY TEST PUMPS AND RISERS. IF SEWER (INCLUDING M.H.'S) IS TO BE AIR TESTED, OBTAIN APPROVAL LETTER FROM CITY'S WASTEWATER DESIGN SECTION.
- MAINTAIN 12-INCH MINIMUM VERTICAL CLEARANCE AT CROSSINGS BETWEEN SANITARY SEWER FORCE MAINS AND OTHER UTILITIES, UNLESS OTHERWISE NOTED.
- PRIOR TO SANITARY SEWER CONSTRUCTION, CONTRACTOR SHALL CONTACT THE DEPARTMENT OF PUBLIC WORKS AND ENGINEERING AND COMPLY WITH REQUIREMENTS FOR ISSUANCE OF NECESSARY PERMITS/WORK ORDERS.

STORM CONSTRUCTION NOTES

- STORM SEWER SHALL BE REINFORCED CONCRETE PIPE (C-76, CLASS II), AND SHALL BE INSTALLED, BEDDED, AND BACK FILLED IN ACCORDANCE WITH THE CITY OF HOUSTON STANDARD DETAILS DRAWING NOS. 02317-02, 02317-3, 02317-05, 02317-06, AND 02317-07 (OCT. 2002) AS APPLICABLE UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
- ALL STORM SEWER CONSTRUCTED IN SIDE LOT EASEMENT SHALL BE R.C.P. (C-76, CLASS II) AND SHALL BE EMBEDDED IN ACCORDANCE WITH THE CITY OF HOUSTON STANDARD DETAILS DRAWING NOS. 02317-02, 02317-03, 02317-05, 02317-06, AND 02317-07 AS APPLICABLE.
- ALL SEWER UNDER PROPOSED OR FUTURE PAVEMENT AND TO A POINT ONE (1) FOOT BACK OF ALL PROPOSED OR FUTURE CURBS SHALL BE BACKFILLED WITH 1-1/2" SACK CEMENT/CLAY STABILIZED SAND TO WITHIN ONE (1) FOOT OF SUBGRADE. THE REMAINING DEPTH OF TRENCH SHALL BE BACKFILLED WITH SUITABLE EARTH MATERIAL.
- ALL TRENCH BACKFILL SHALL BE IN 8" LIFTS, WITH TESTS TAKEN AT 100 FOOT INTERVALS IN EACH LIFT, AND MECHANICALLY COMPACTED TO A DENSITY OF NOT LESS THAN 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR COMPACTION TEST (ASTM D-698/ASTM 159).
- CIRCULAR AND ELLIPTICAL REINFORCED CONCRETE PIPE SHALL BE INSTALLED USING RUBBER GASKET JOINT CONFORMING TO ASTM C443 AND ASTM C877 RESPECTIVELY.
- ALL STORM SEWER PIPES AND INLET LEADS SHALL BE 24" AND LARGER R.C.P. (C-76, CLASS II).
- ALL PROPOSED PIPE STUB-OUTS FROM MANHOLES AND INLET LEADS ARE TO BE PLUGGED WITH 8" BRICK WALLS UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL PROVIDE 12" MINIMUM VEHICLE CLEARANCE AT STORM SEWER AND WATER LINE CROSSINGS.
- ADJUST MANHOLE COVERS TO GRADE CONFORMING TO REQUIREMENTS OF SECTION 02086-ADJUSTING MANHOLES, INLETS, AND VALVE BOXES TO GRADE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING, MAINTAINING, AND RESTORING ANY BACK SLOPE DRAINAGE SYSTEM DISTURBED AS A RESULT OF THIS WORK.
- ALL DITCHES SHALL BE GRADED TO PROPOSED ELEVATIONS TO ENSURE PROPER DRAINAGE. ALL OUTFALLS SHALL BE PROPERLY BACKFILLED AND COMPACTED. ALL DISTURBED AREA SHALL BE REGRADED, SEEDDED, AND FERTILIZED.
- ALL DRIVEWAYS SHALL BE LOCATED TO AVOID EXISTING CURB INLET STRUCTURE.

ABBREVIATIONS

| | | | |
|----------|--------------------------------|----------|-----------------------------|
| A.B. | ALL BELL | H.M.A.C. | HOT MIX ASPHALTIC COATING |
| A.E. | AERIAL EASEMENT | H.P. | HIGH PRESSURE |
| B-B | BACK TO BACK | I.P. | INTERMEDIATE PRESSURE |
| B.C. | BACK OF CURB | L.E.B. | LARGE END BELL |
| B.L. | BUILDING LINE | M.H. | MANHOLE |
| B.O.V. | BLOW OFF VALVE | M.U.D. | MUNICIPAL UTILITY DISTRICT |
| C.C.M.P. | CENTER TO CENTER | N/A | NOT APPLICABLE |
| C.C. | CORRODED GALVANIZED METAL PIPE | N.C. | NATURAL GROUND |
| C.D. | CENTER LINE | O.C. | ON CENTER |
| C.H. | CITY OF HOUSTON | P.A.A. | PERMANENT ACCESS EASEMENT |
| C.M. | CONCRETE | P.C. | POINT OF CURVATURE |
| C.P. | CENTER | P.C.C. | POINT OF COMPOUND CURVATURE |
| C.R. | CURB | P.I. | POINT OF INTERSECTION |
| D.B. | DRAINAGE EASEMENT | P. | PROPERTY LINE |
| D.E. | DUCTILE IRON PIPE | P.A. | PLASTIC |
| E.L. | ELEVATION | P.P. | POWER POLE |
| E.P. | EDGE OF PAVEMENT | P.R.C. | POINT OF REVERSE CURVATURE |
| E.R. | END OF RADIUS | P.T. | POINT OF TANGENCY |
| E.S.M.T. | EASEMENT | P.U.D. | PUBLIC UTILITY DISTRICT |
| E.S.T. | EXISTING | P.U.B. | PUBLIC UTILITY EASEMENT |
| F.H. | FIRE HYDRANT | P.V. | PLUG VALVE |
| F.L. | FLOW LINE | P.V.C. | POLY-VINYL CHLORIDE |
| G. | GUTTER | P.V.T. | PRIVATE |
| G.V. | GATE VALVE | P.W.M.T. | PAVEMENT |
| H.B. | HIGH BELL | R. | RADIUS |
| H.G.L. | HYDRAULIC GRADE LINE | R.C.B. | REINFORCED CONCRETE BOX |
| | | R.C.P. | REINFORCED CONCRETE PIPE |
| | | R.P.D. | RIGHT-OF-WAY |
| | | SAN.SWR. | SANITARY SEWER |
| | | S.E. | SANITARY SEWER EASEMENT |
| | | STM.SWR. | STORM SEWER |
| | | STM.S.E. | STORM SEWER EASEMENT |
| | | S.E.B. | SMALL END BELL |
| | | S.L. | SINGLE |
| | | S.T. | STEEL |
| | | T.S.A.V. | TOP OF CURB |
| | | T.S.A.V. | TAPPING SLAVE AND VALVE |
| | | U.E. | UTILITY EASEMENT |
| | | VOL. | VOLUME |
| | | W.L.E. | WATER LINE EASEMENT |
| | | W.S.E. | WATER SURFACE ELEVATION |

NOTICE:

AT LEAST 48 HOURS BEFORE EXCAVATING IN STREET R.O.W. OR DRIVEWAYS CALL THE ONE STOP NOTIFICATION

PRIVATE UTILITY LINES SHOWN

CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS IN THE FIELD PRIOR TO COMMENCING CONSTRUCTION. CONTRACTOR SHALL NOTIFY TEXAS ONE CALL AT 711-223-5567/800-245-4545 AND "LOVE STAR ONE CALL" AT 800-869-8344 AT LEAST 48 HOURS BEFORE PROCEEDING WITH ANY EXCAVATION.

CONTRACTOR SHALL COMPLY WITH THE LATEST EDITION OF OSHA REGULATIONS AND THE STATE OF TEXAS LAWS CONCERNING EXCAVATION.

CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT ROOT SYSTEMS OF SHRUBS, PLANTS AND TREES ALONG THE AREA OF EXCAVATION.

IF THE CONSTRUCTION DOES NOT BEGIN WITHIN A YEAR AFTER THE PLANS HAVE BEEN SIGNED, NEW SIGNATURES MUST BE OBTAINED AND LETTERS OF AVAILABILITY MUST BE UPDATED.

CONTRACTOR SHALL MAINTAIN A SET OF REDLINE DRAWINGS RECORDING AS-BUILT CONDITIONS DURING CONSTRUCTION. THESE REDLINE MARKED DRAWINGS WILL BE SUBMITTED TO THE DESIGN CONSULTANT, WHO WILL MAKE THE CHANGES ON THE ORIGINAL TRACINGS.

THE OWNER SHALL OBTAIN THE NECESSARY PERMITS FOR INSTALLATION OF UTILITY PIPELINES WITHIN THE 100 YEAR FLOOD PLAIN.

THE CONTRACTOR SHALL NOTIFY FORT BEND COUNTY ENGINEER AT LEAST 24 HOURS IN ADVANCE OF COMMENCING CONSTRUCTION. PHONE: (281) 633-7500 OR (281) 633-7514 (STEVE EVANS) AND WRITING NOTICE 48 HOURS IN ADVANCE.

PAVING SHALL BE IN ACCORDANCE WITH FORT BEND COUNTY REQUIREMENTS.

ALL INTERSECTIONS SHALL BE PROVIDED WITH STOP SIGNS AND STREET SIGNS AS INDICATED ON THE PLANS. ALL STOP SIGNS SHALL BE 30"X30" WITH DIAMOND GRADE SHEETING. ALL STREET NAME SIGNS SHALL BE 9" IN WIDTH.

ALL CONCRETE USED IN THIS PROJECT SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS.

GUIDELINES SET FORTH IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" SHALL BE OBSERVED.

ALL ROADWAY FILL SHALL BE PLACED IN 8" LIFTS AND COMPACTED TO 95% OF STANDARD PROCTOR DENSITY PRIOR TO CONSTRUCTION OF UNDERGROUND UTILITIES.

ALL CURB RETURN RADIUS ARE 25' UNLESS SHOWN OTHERWISE. ALL TURNOUT RADIUS AT INTERSECTIONS SHALL HAVE A MINIMUM OF 1,000' FILL, WHERE X OF GRADE IS NOT SHOWN, TOP OF CURB SHALL BE BUILT ON GRADE BETWEEN TOP OF CURB ELEVATIONS SHOWN. ALL RADIUS SHALL BE 30' ON MAJOR THROUGHFARES.

ALIGNMENT, CENTER LINE CURVE DATA AND STATIONING FOR ALL CONSTRUCTION TO BE DETERMINED FROM SUBDIVISION PLAT.

CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRENCH LINES (E.G. STORM SEWER, SANITARY SEWER AND WATER LINES) TO INDICATE MAXIMUM SETTLEMENT OF BACKFILL MATERIAL.

EXISTING PAVEMENTS, CURBS, SIDEWALKS, AND DRIVEWAYS DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE REPLACED TO CITY OF HOUSTON STANDARDS.

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.

CONTRACTOR SHALL LOCATE WHEELCHAIR RAMPS OUT OF MANHOLE RIM LOCATIONS, BACK MANHOLE TOPS OR RELOCATE WHEELCHAIR RAMPS TO AVOID BICYCLE ACCIDENTS AND LAWSUITS.

A BLUE REFLECTORIZED BUTTON SHALL BE PLACED AT EACH FLUSH VALVE LOCATION 6" FROM CENTERLINE.

THE CONTRACTOR SHALL NOTIFY FORT BEND COUNTY ENGINEER AT LEAST 24 HOURS IN ADVANCE OF COMMENCING CONSTRUCTION. PHONE: (281) 633-7500 OR (281) 633-7514 (STEVE EVANS) AND WRITING NOTICE 48 HOURS IN ADVANCE.

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PAVING SHALL BE IN ACCORDANCE WITH FORT BEND COUNTY REQUIREMENTS.

SHEET 1 of 11

CONSPICUOUS ENERGY/PLACING FACILITIES
(APPROVED ONLY FOR OCEANIAN UNDERGROUND FACILITIES, UNLESS OTHERWISE NOTED)
VALD AT TIME OF REVIEW ONLY

AT&T TEXAS/SBC UTILITY LINES SHOWN

DATE: _____

APPROVED FOR AT&T TEXAS/SBC UNDERGROUND CONDUIT FACILITIES ONLY
SIGNATURE VALID FOR ONE YEAR

DATE: _____

CONSPICUOUS ENERGY/PLAC FACILITIES

PROJECT BENCHMARK: H0390 87 (AW5408) BEING A STABLE STEEL ROD WITH PUNCH MARK ENCASED IN A 3 INCH PVC SLEEVE STAMPED "H0390 87 1088" LOCATED ON THE NORTH SIDE OF THE NORTH FEEDER OF WESTPARK TOLLWAY, APPROXIMATELY 2,100 FEET EAST OF THE INTERSECTION OF WESTPARK TOLLWAY AND PEEK ROAD.
ELEVATION=99.10 FEET NAVD 88 (GEOD 90)

RM 180332: BEING A BRASS DISK IN CONCRETE STAMPED "180332" ON THE EAST (NORTHBOUND) BRIDGE AT FISH RIVER AND UPPER BUFFALO BAYOU ON THE DOWNSTREAM CONCRETE WALK, ON THE SOUTHEAST CORNER OF BRIDGE, IN KEYMAP IN THE BARNER WATERSHED NEAR STREAM T700-06-00. ELEVATION = 108.07 FEET MVD 88 (GEOD 99, 2001 ADJ.) ELEVATION = 108.23 FEET MVD 88 (GEOD 99) (CONVERSION NECESSARY, SEE NOTE f)

TEMPORARY BENCHMARK: T.B.M. "T-1"-R.R. SPIKE IN 2ND F.
SOUTH OF LEROP DRIVE ON THE WEST SIDE OF PEEK ROAD.
ELEVATION = 101.23 FEET

SITE TEMPORARY BENCHMARK: T.B.M. "T-2"-CUT ** AT E.
INLET EAST SIDE OF PEEK ROAD AT THE SOUTH END OF
CONCRETE PAVING. ELEVATION = 97.85 FEET


TEMPORARY BENCHMARK: T.B.M. 71-J- A RAIL ROAD SPIKE
IN POWER POLE AT THE SOUTHEAST CORNER OF THE
INTERSECTION OF CANAL ROAD AND SPINNER ROAD. ELEVATION
103.21'



**r.g.miller
engineers**
since 1966

16340 Park Ten Place
Suite 350
Houston, Texas 77084
(713) 461-9600

TEXAS FIRM REGISTRATION NO. F-487



APPROVAL IS IMPLIED FOR IMPROVEMENTS
WITHIN FORT BEND COUNTY RIGHT OF WAY
ONLY. UTILITY LINES APPROVED AS TO
LOCATION ONLY. AUTHORIZATION IS VALID
FOR 1 YEAR.

APPROVED: C. S. Anderson
ASSISTANT COUNTY ENGINEER
DATE: 11/18/16
For Development Coord.

F.B.C.M.U.D. NO. 50
BEECHNUT STREET
2 ACRE COMMERCIAL

TRACT
PROPOSED 8" SAN. SEWER LINE
12" WATER LINE AND
24" STORM SEWER LINE

PLAN AND PROFILE
BEECHNUT ROAD
STA. 6+00 TO END

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY
AFTER DATE OF SIGNATURES

CITY OF HOUSTO
DEPARTMENT OF PUBLIC WORKS AND ENGINEER

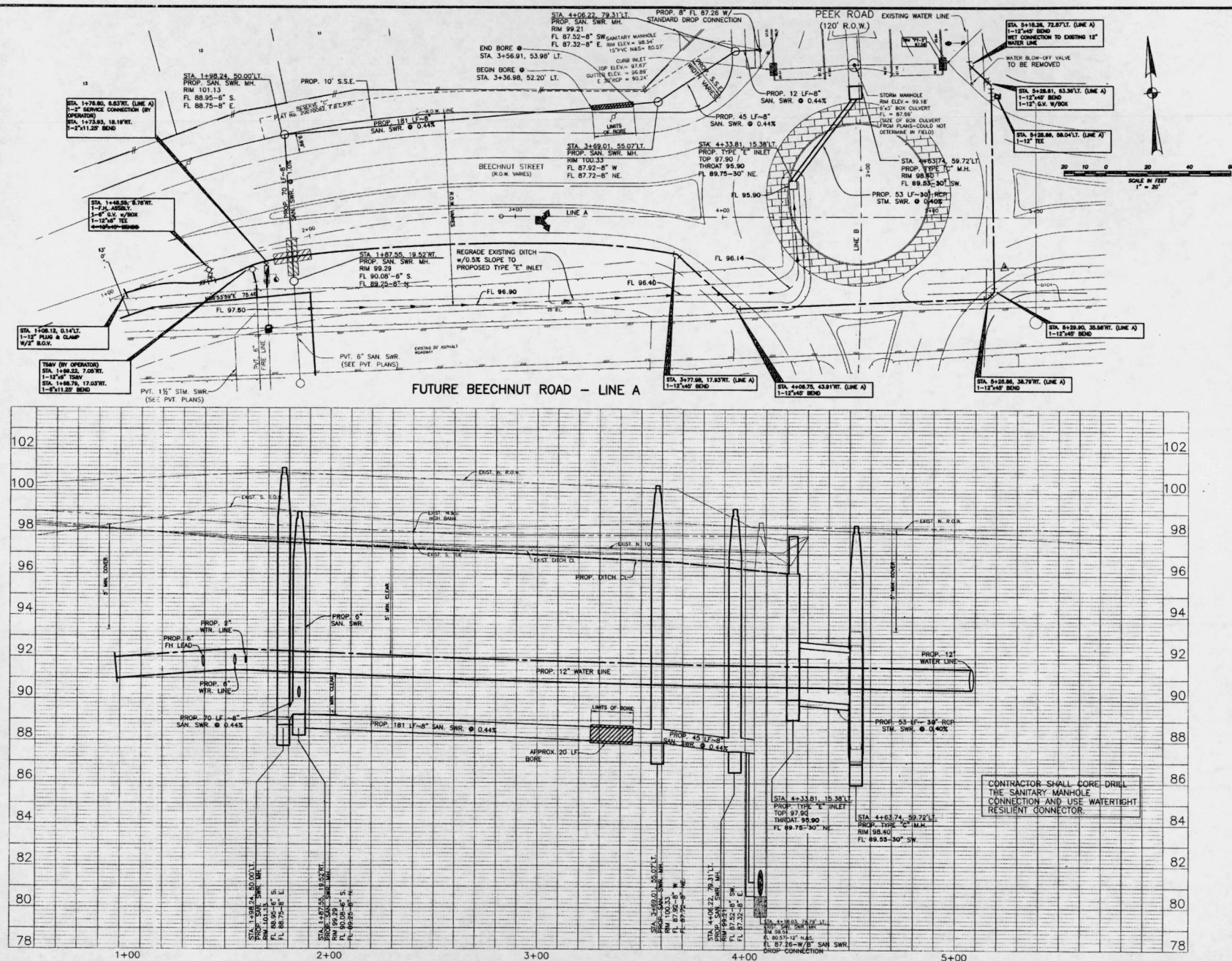
WATER 10-6-78 TRAFFIC & TRANSPORTATION

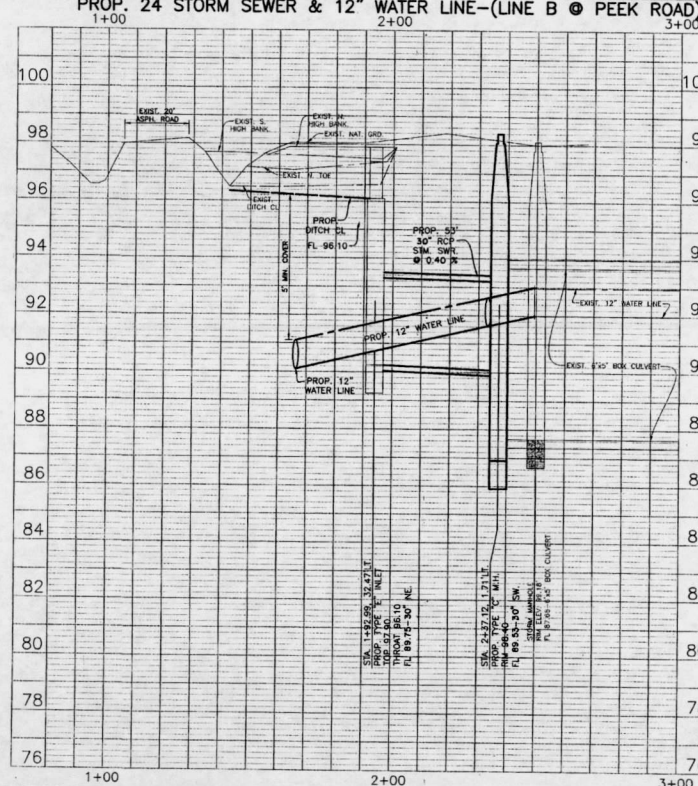
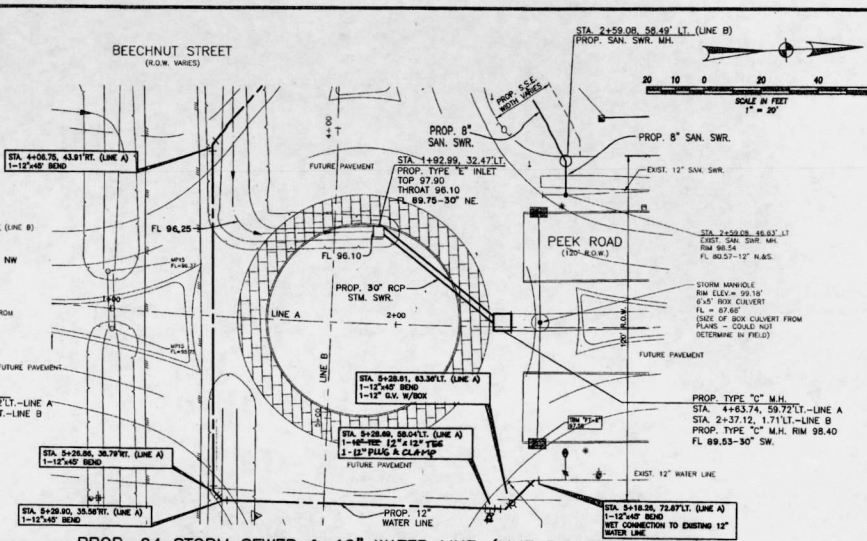
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|----------------|------------------------------|
| STORM | STORM WATER QUALITY |
| STREET & BROOK | FACILITIES |
| FILE NO: | FOR CITY OF HOUSTON USE ONLY |

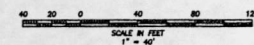
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| | |
| DRAWING SCALE | |
| 1"=20' HORZ | 56725 |

1"=2' VERT

SHEET No: 5 of 11



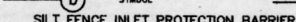
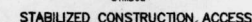
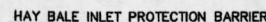
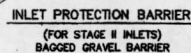
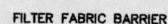
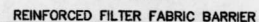
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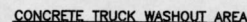
SHEET No: 7 OF 11

SEE SHEET 8
FOR DETAILS

No: 8 OF 11



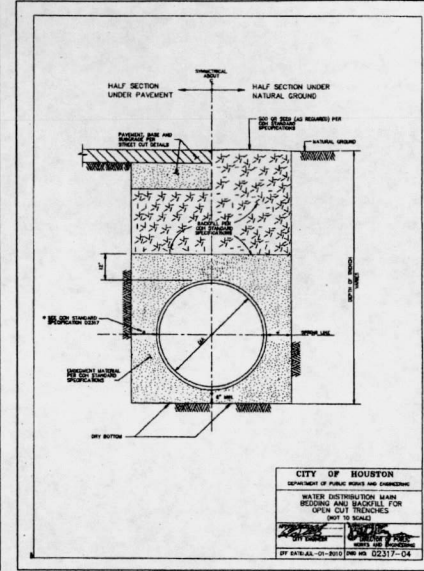
| | |
|---|---|
| APPROVED:  | APPROVED:  |
| CITY ENGINEER | DIRECTOR OF PUBLIC WORKS AND ENGINEERING |
| EXP. DATE: JULY-01-2010 | DWG. NO: 01571-01 |



1. POST A SIGN READING "CONCRETE WASH OUT PIT" NEXT TO THE PIT.
2. VERBALLY INSTRUCT THE CONCRETE TRUCK DRIVERS WHERE THE PIT IS AND TO WASH OUT THEIR TRUCKS IN THE PIT AND NO WHERE ELSE.
3. UNFOLD THE CONCRETE SETTING UP (CURING, DRYING OUT) OF THE CONCRETE SETTING SIGN AND PLACE IT FROM THE PROJECT SITE AND DISPOSED OF PROPERLY BY THE CONTRACTOR. AFTER REMOVAL OF THE CONCRETE WASTE, THE WASH OUT PIT SHALL BE FILLED WITH CLEAN FILL MATERIAL AND COMPACTED TO IN-SITU CONDITIONS, OR AS DIRECTED BY THE PROJECT SPECIFICATIONS.
4. CONCRETE WASH OUT PIT SHALL NOT BE LOCATED DIRECTLY ADJACENT TO, NOR AT ANY POINT DRAIN INTO THE STORM SEWER SYSTEM OR ANY OTHER WATER BODY, OR HIGHWAY.
5. CONTRACTOR ENTRY ROAD AND BOTTOM OF WASH-OUT AREA TO SUPPORT EXISTING LOADING AND UNLOADING EQUIPMENT.

SHEET 8 OF 11

[illegible]



The diagram consists of two parts: a plan view for in-line sanitary sewer cleanouts and an elevation view for cleanouts in paved areas.

PLAN - IN-LINE SANITARY SEWER CLEANOUT:

- Shows a 45° WYE BRANCH connecting a SEWER LINE (12" DIA.) to a TO BUILDING line and a TO SEWER MAIN (PROPERTY OWNER MAINTAINED) line.
- Labels include: SCREW TYPE STOPPER (BRASS), BRASS OR PVC, TOP-UP, CUP CLEANOUT PLUG (ALL PIPE TYPES), BANDOED RUBBER COUPLING, TRANSITION SECTION IF NEEDED, and 45° WYE BRANCH.
- Notes specify: C/SIP OR V/SIP (FOR SIZE SEE SITE PLANS), STOPPER (SEE ELEV. VIEWS), and OR DOUBLE BRANCH.

ELEVATION - CLEANOUT IN EARTH AREAS:

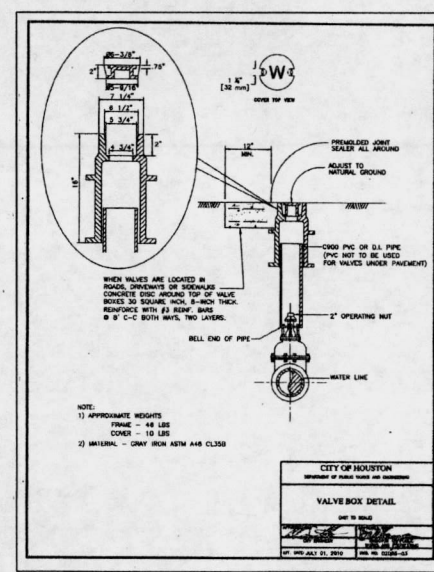
- Shows a cross-section of the cleanout assembly in the ground.
- Labels include: FIN. GRADE (EARTH), SCREW TYPE STOPPER (BRASS), CONC. PAD (1'-0" x 1'-0" x 8"), CLEANOUT 6" C/SIP TO SURFACE, C/SIP OR V/SIP (SEE PLANS), and 8" W/ BRNG.
- Dimensions shown: 1'-0" for the concrete pad, 8" for the pipe diameter, and 1'-0" for the depth of the cleanout.

ELEVATION - CLEANOUT IN PAVED AREAS:

- Shows a cross-section of the cleanout assembly through a paved surface.
- Labels include: FIN. GRADE (PAVED), SCREW TYPE STOPPER (BRASS), CONC. PAD (2'-0" x 2'-0" x 8"), C/SIP (FOR SIZE SEE PLANS), CLEANOUT 6" C/SIP TO SURFACE, INV. (SEE PLANS), and 8" W/ BRNG.
- Dimensions shown: 2'-0" for the concrete pad, 8" for the pipe diameter, and 1'-0" for the depth of the cleanout.

TYPICAL CLEANOUT

N.T.S.



APPROVAL IS IMPLIED FOR IMPROVEMENTS
WHICH PART BEARS COST OF ANY
UTILITY LINES APPROVED AS TO
LOCATION ONLY. AUTHORIZATION IS VALID
FOR 1 YEAR.

DATE: Caswell & Co
IRISANT COUNTY OFFICE

DRAWN BY: 11-18-16

IN CHARGE: Coordinating

F.B.C.M.U.D. NO. 50

BEECHNUT STREET
2 ACER COMMERCIAL
TRACT

PROPOSED 8" SAN. SEWER LINE
12" WATER LINE AND
24" STORM SEWER LINE

SANITARY SEWER AND
WATER LINE DETAILS

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY
AFTER DATE OF SIGNATURES

| | |
|---|------------------------------|
| CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING | |
| PURPOSE OF SUBMITTAL: <u>REDESIGNATION</u> | |
| DATE: <u>11-18-16</u> | SHOW WORK QUALITY |
| BY: <u>[Signature]</u> | PAGES: |
| SCALE: <u>As Shown</u> | |
| SHEET # <u>1</u> OF <u>1</u> | |
| FILE NO. _____ | FOR CITY OF HOUSTON USE ONLY |
| DRAWING SCALE _____ | |
| AS NOTED _____ | |
| SHEET # _____ OF _____ | |

