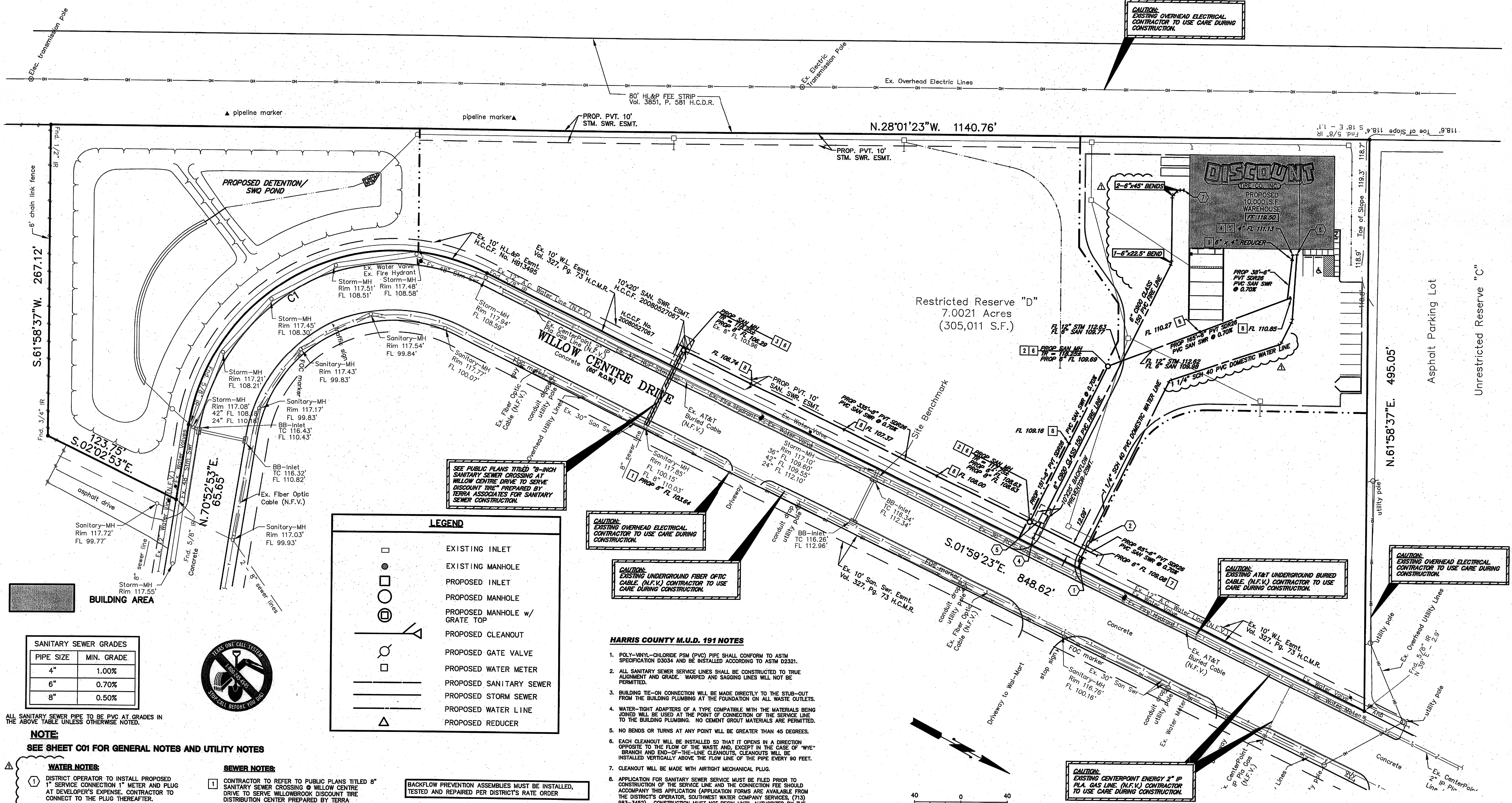


F:\Clients\0280 Discount Tire\Drawings\CS-UTILITY.dwg Dec 16, 2008-9:11am Terra Associates Inc., damb



CAUTION: EXISTING OVERHEAD ELECTRICAL. CONTRACTOR TO USE CARE DURING CONSTRUCTION.

CAUTION: EXISTING UNDERGROUND FIBER OPTIC CABLE (N.F.V.) CONTRACTOR TO USE CARE DURING CONSTRUCTION.

CAUTION: EXISTING AT&T UNDERGROUND BURIED CABLE (N.F.V.) CONTRACTOR TO USE CARE DURING CONSTRUCTION.

CAUTION: EXISTING OVERHEAD ELECTRICAL. CONTRACTOR TO USE CARE DURING CONSTRUCTION.

CAUTION: EXISTING CENTERPOINT ENERGY 2" IP PLUG GAS LINE (N.F.V.) CONTRACTOR TO USE CARE DURING CONSTRUCTION.

**LEGEND**

- EXISTING INLET
- EXISTING MANHOLE
- PROPOSED INLET
- PROPOSED MANHOLE
- PROPOSED MANHOLE w/ GRATE TOP
- PROPOSED CLEANOUT
- PROPOSED GATE VALVE
- PROPOSED WATER METER
- PROPOSED SANITARY SEWER
- PROPOSED STORM SEWER
- PROPOSED WATER LINE
- PROPOSED REDUCER

**HARRIS COUNTY M.U.D. 191 NOTES**

- POLY-VINYL-CHLORIDE (PVC) PIPE SHALL CONFORM TO ASTM SPECIFICATION D3034 AND BE INSTALLED ACCORDING TO ASTM D2321.
- ALL SANITARY SEWER SERVICE LINES SHALL BE CONSTRUCTED TO TRUE ALIGNMENT AND GRADE. WARPED AND SAGGING LINES WILL NOT BE PERMITTED.
- BUILDING TIE-ON CONNECTION WILL BE MADE DIRECTLY TO THE STUB-OUT FROM THE BUILDING PLUMBING AT THE FOUNDATION ON ALL WASTE OUTLETS.
- WATER-TIGHT ADAPTERS OF A TYPE COMPATIBLE WITH THE MATERIALS BEING JOINED WILL BE USED AT THE POINT OF CONNECTION OF THE SERVICE LINE TO THE BUILDING PLUMBING. NO CEMENT GROUT MATERIALS ARE PERMITTED.
- NO BENDS OR TURNS AT ANY POINT WILL BE GREATER THAN 45 DEGREES.
- EACH CLEANOUT WILL BE INSTALLED SO THAT IT OPENS IN A DIRECTION OPPOSITE TO THE FLOW OF THE WASTE AND, EXCEPT IN THE CASE OF "WYE" BRANCH AND END-OF-THE-LINE CLEANOUTS, CLEANOUTS WILL BE INSTALLED VERTICALLY ABOVE THE FLOW LINE OF THE PIPE EVERY 90 FEET.
- CLEANOUT WILL BE MADE WITH AIRTIGHT MECHANICAL PLUG.
- APPLICATION FOR SANITARY SEWER SERVICE MUST BE FILED PRIOR TO CONSTRUCTION OF THE SERVICE LINE AND THE CONNECTION FEE SHOULD ACCOMPANY THIS APPLICATION (APPLICATION FORMS ARE AVAILABLE FROM THE DISTRICT'S OPERATOR, SOUTHWEST WATER COMPANY SERVICES, (713) 983-3452). CONSTRUCTION MUST NOT BEGIN UNTIL AUTHORIZED BY THE DISTRICT.
- WHEN THE SERVICE LINE IS COMPLETE, AND PRIOR TO BACKFILLING THE PIPE TRENCH, THE APPLICANT FOR SEWER SERVICE SHALL REQUEST AN INSPECTION OF THE INSTALLATION. REQUESTS FOR INSPECTIONS SHALL BE MADE TO THE DISTRICT'S OPERATOR (SOUTHWEST WATER COMPANY SERVICES, (713) 983-3452) TWENTY-FOUR HOURS IN ADVANCE OF THE INSPECTION.
- THE PHYSICAL CONNECTION TO THE DISTRICT'S SEWER MAIN WILL BE MADE BY USE OF AN ADAPTER OF A TYPE COMPATIBLE WITH MATERIALS BEING JOINED. THE CONNECTION SHALL BE WATERTIGHT. NO CEMENT GROUT MATERIALS ARE PERMITTED.
- BACKFILLING OF SERVICE LINES TRENCH MUST BE ACCOMPLISHED WITHIN TWENTY-FOUR (24) HOURS OF INSPECTION AND APPROVAL. NO DEBRIS WILL BE PERMITTED IN THE TRENCH.
- A CONNECTION PERMIT WILL BE GRANTED AFTER INSPECTION CONFIRMS THAT ALL REQUIREMENTS OF THE DISTRICT'S RULES AND REGULATIONS HAVE BEEN MET.
- THE DISTRICT OPERATOR, SOUTHWEST WATER COMPANY SERVICES, IS TO INSTALL AND CONSTRUCT ALL WATER TAPS, WATER METERS AND FLUSH VALVE LOCATIONS.
- THE DISTRICT OPERATOR IS TO INSPECT ALL SANITARY SEWER CONSTRUCTION AND ITS CONNECTION TO ANY DISTRICT FACILITIES.
- HARRIS COUNTY MUNICIPAL UTILITY DISTRICT NO. 191 IS NOT RESPONSIBLE FOR MAINTAINING THE DETENTION PONDS.
- THE USE OF PIPE OR PIPE FITTINGS THAT CONTAIN MORE THAN 8.0 PERCENT LEAD OR SOLDERS AND FLUX THAT CONTAIN MORE THAN 0.2 PERCENT LEAD ARE PROHIBITED FOR INSTALLATION OR REPAIR OF ANY PLUMBING IN ANY RESIDENTIAL OR COMMERCIAL FACILITY PROVIDING WATER FOR HUMAN CONSUMPTION AND CONNECTED TO THE DISTRICT'S WATER SUPPLY SYSTEM.
- CONTRACTOR MUST NOTIFY THE DISTRICT OPERATOR (H.C.M.U.D. NO. 91; SOUTHWEST WATER COMPANY), MR. GUS GUSTAFSON, AT 832-209-5073 AND THE DISTRICT ENGINEER (JONES & CARTER; MR. JASON OZUNA) AT 281-383-4039 AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO ANY CONNECTIONS TO THE DISTRICT FACILITIES.

BACKFLOW PREVENTION ASSEMBLIES MUST BE INSTALLED, TESTED AND REPAIRED PER DISTRICT'S RATE ORDER

THE DISTRICT'S OPERATOR MUST BE NOTIFIED PRIOR TO BACKFILL OF ALL SEWER LINE FOR INSPECTION PRIOR TO THE DISTRICT'S COMMENCEMENT OF SANITARY SEWER SERVICE.

ALL WATER METERS AND WATER TAPS IN RIGHT OF WAY SHALL BE CONSTRUCTED BY MUD DISTRICT OPERATOR. CONTRACTOR SHALL COORDINATE WITH DISTRICT. THE CONTRACTOR SHALL NOTIFY THE DISTRICT'S OPERATOR MR. GUS GUSTAFSON OF SOUTHWEST WATER COMPANY, AT 832-209-5073 AT LEAST 48 HOURS PRIOR TO COMMENCING CONSTRUCTION.

THE CONTRACTOR SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL EXISTING PUBLIC AND PRIVATE UTILITIES THAT HAVE OR MAY HAVE ANY EFFECT ON THE PROPOSED IMPROVEMENTS BEFORE ANY WORK COMMENCES. THE INSTALLATION OF ALL GRAVITY FLOW PIPES SHALL BEGIN AT THE OUTFALL OR CONNECTION TO THE EXISTING SYSTEM AND PROCEED UPSTREAM. IF ANY DISCREPANCY FROM THE PLAN IS FOUND, THE CONTRACTOR IS TO NOTIFY TERRA ASSOCIATES, INC. BEFORE PROCEEDING FURTHER.

ALL MATERIALS AND METHODS SHALL MEET HARRIS COUNTY AND HARRIS COUNTY MUNICIPAL UTILITY DISTRICT NO. 191 STANDARDS.

**SANITARY SEWER GRADES**

PIPE SIZE	MIN. GRADE
4"	1.00%
6"	0.70%
8"	0.50%



ALL SANITARY SEWER PIPE TO BE PVC AT GRADES IN THE ABOVE TABLE UNLESS OTHERWISE NOTED.

**NOTE: SEE SHEET C01 FOR GENERAL NOTES AND UTILITY NOTES**

- WATER NOTES:**
- DISTRICT OPERATOR TO INSTALL PROPOSED 1" SERVICE CONNECTION 1" METER AND PLUG AT DEVELOPER'S EXPENSE. CONTRACTOR TO CONNECT TO THE PLUG THEREAFTER.
  - CONTRACTOR TO INSTALL 1" R.P.Z. BACKFLOW PREVENTION DEVICE, AND 1 1/4" SCH 40 PVC DOMESTIC WATERLINE TO BUILDING. BACKFLOW PREVENTION DEVICE TO BE IN FREEZE PROOF ENCLOSURE, OUTSIDE OF SAN. SWR. ESMT.
  - CONTRACTOR TO INSTALL 1 1/2" RPZ BACKFLOW PREVENTION DEVICE, AND 2" SCH 40 PVC IRRIGATION LINE AND PLUG FOR IRRIGATION PURPOSES. BACKFLOW PREVENTION DEVICE TO BE IN FREEZE PROOF ENCLOSURE. (NOT USED)
  - DISTRICT OPERATOR TO CONNECT TO EXISTING 12" WATERLINE WITH 6" C900 PVC FIRE LINE AND PLUG AT DEVELOPER'S EXPENSE.
  - CONTRACTOR TO CONNECT AFTER PLUG AND INSTALL 6" DOUBLE DETECTOR BACKFLOW PREVENTION DEVICE (CITY OF HOUSTON DETAIL 0523-01) ABOVE THE GROUND AND OUTSIDE THE 10' PVT. ESMT., AND CONTINUE WITH 6" C900 PVC FIRE LINE AND PLUG 5' FROM BUILDING. SEE CITY OF HOUSTON DETAIL ON SHEET C14.
  - STUB 5' FROM BUILDING WITH 1 1/4"-INCH SCHEDULE 40 WATERLINE. SEE MEP PLANS FOR CONTINUATION, VERIFY EXACT LOCATION.
  - SEE FIRE PROTECTION/MEP PLANS FOR EXACT LOCATION AND CONTINUATION OF FIRE LINE INSIDE BUILDING.

- SEWER NOTES:**
- CONTRACTOR TO REFER TO PUBLIC PLANS TITLED "8" SANITARY SEWER CROSSING @ WILLOW CENTRE DRIVE TO SERVE WILLOWBROOK DISCOUNT TIRE DISTRIBUTION CENTER PREPARED BY TERRA ASSOCIATES, INC. DATED JULY 2008 FOR CONSTRUCTION WITHIN R.O.W.
  - CONTRACTOR TO INSTALL 4" DIAMETER PRECAST CONCRETE MANHOLE PER DETAILS ON SHEET C14.
  - CONTRACTOR TO CONNECT TO 4" DIAMETER PRECAST CONCRETE MANHOLE EXISTING IN THE PUBLIC PLANS. CONTRACTOR TO INSTALL AN 8" EXTERNAL DROP CONNECTION.
  - STUB 5' FROM BUILDING WITH 4" LINE AND 4" PLUG.
  - SEE PLUMBING PLANS FOR CONTINUATION. VERIFY EXACT LOCATION.
  - CONTRACTOR TO SET TOP OF RIM 3" TO 6" ABOVE FINISHED GRADE IN LANDSCAPE AREAS.
  - CONTRACTOR TO PLUG & MARK STUB LOCATION WITH PVC PIPE ABOVE GROUND FOR FUTURE CONNECTION.
  - INSTALL 4" CLEANOUT TO GRADE. SEE DETAIL ON SHEET C14 FOR CLEANOUT. ALL CLEANOUTS IN PAVEMENT AREA TO BE TRAFFIC DUTY.
  - CONTRACTOR TO INSTALL A 6" X 4" REDUCER AT THE BUILDING.

REVNO.	MUD COMMENTS	DESCRIPTION	DATE	APP.
			12/16/08	

**DISCOUNT TIRE (DISTRIBUTION) HOUSTON - WILLOWBROOK**

**PRIVATE WATER AND SANITARY SEWER PLAN**

**TERRA ASSOCIATES, INC.** 3000 WILCREST - SUITE 200  
HOUSTON, TEXAS ZIP 77042  
PHONE: 713-993-0333  
FAX: 713-993-0743

DRAWN BY: DAB	SCALE: 1" = 40'	CONTRACT: 1
CHECKED BY: KBP	DATE: NOVEMBER 2008	PROJECT No. 0280-0706
FILE NAME: CS-UTILITY.DWG	PLOT SCALE: 1:1	SHEET C5 OF 15

