

HARRIS COUNTY M.U.D. NO. 191

PUBLIC CONSTRUCTION PLANS FOR

8" SANITARY SEWER CROSSING

AT WILLOW CENTRE DRIVE

TO SERVE



HARRIS COUNTY, TEXAS
AUGUST 2008

INDEX OF DRAWINGS

SHEET	TITLE
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5	CONSTRUCTION DETAILS
6	EXPRESS REVIEW SHEET

OWNER

DISCOUNT TIRE COMPANY, INC.
20225 N. SCOTTSDALE ROAD
SCOTTSDALE, AZ 85255
TEL: (480) 606-5931
FAX: (480) 606-4370

ENGINEER

TERRA ASSOCIATES, INC.
CONSULTING ENGINEERS
3000 WILCREST - SUITE 200
HOUSTON, TEXAS 77042
Tel 713.993.0333 Fax 713.993.0743

FLOODPLAIN INFORMATION

ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP No. 48201C0435L, LAST REVISED JUNE 18, 2007, THE SUBJECT TRACT LIES WITHIN AN AREA DESIGNATED AS ZONE X (UNSHADED); DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOOD PLAIN AND AN AREA DESIGNATED AS ZONE X (SHADED); DEFINED AS AREAS DETERMINED OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD.

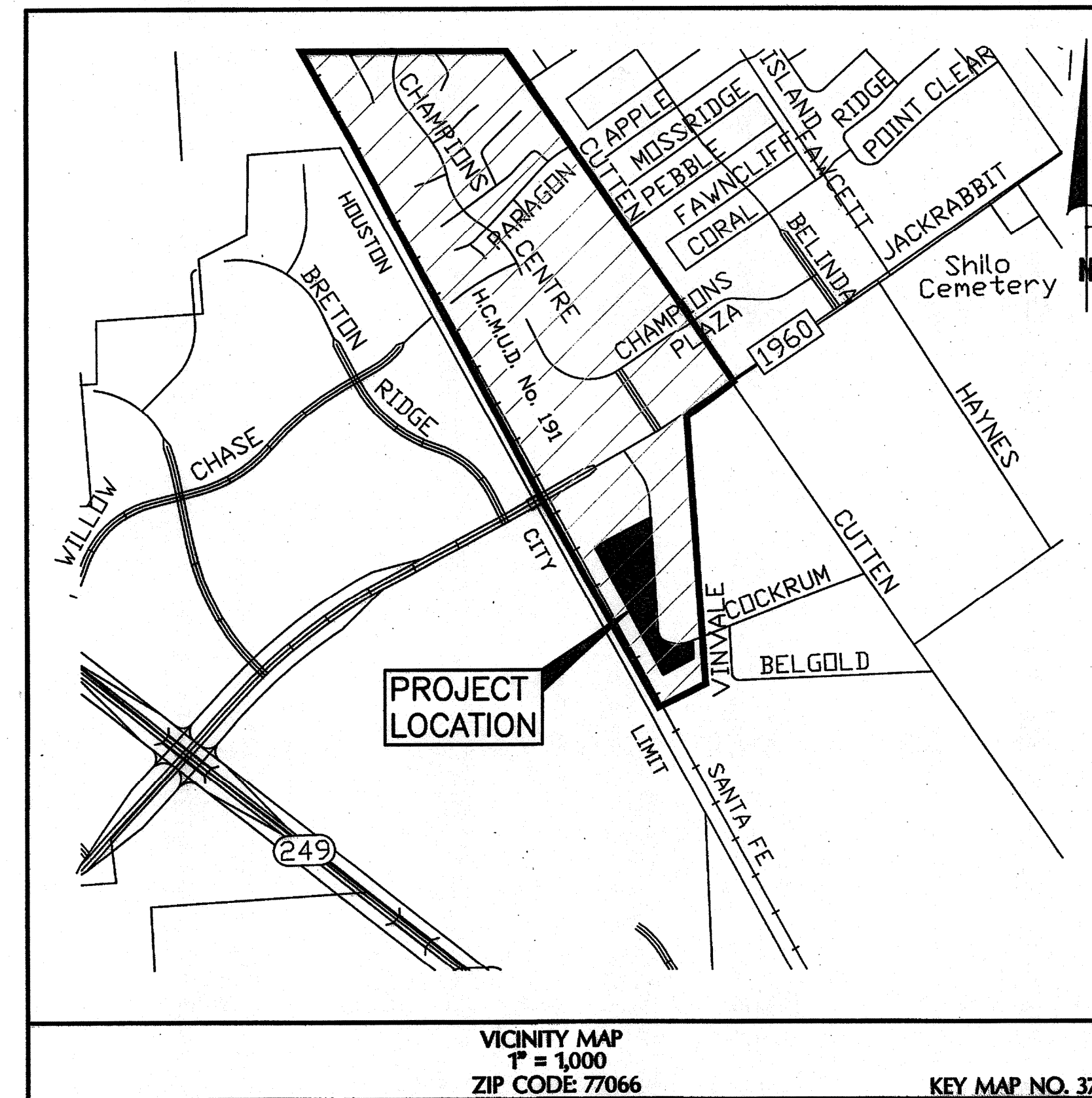
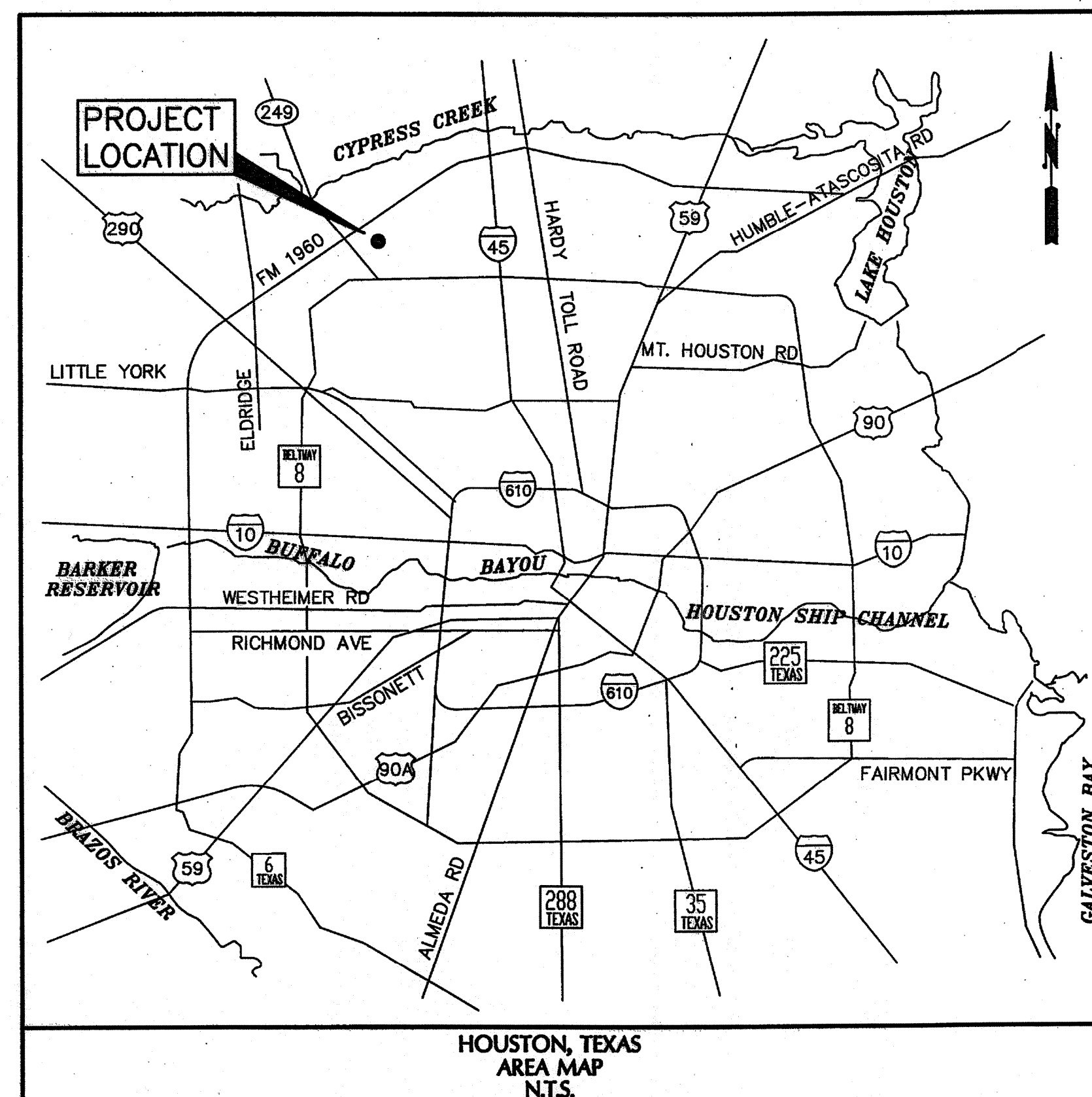
LEGAL DESCRIPTION

A SUBDIVISION CONTAINING 7.0021 ACRES (305,011 S.F.) BEING ALL OF RESTRICTED RESERVE "D", OUT OF WILLOW CENTRE SUBDIVISION RESTRICTED RESERVE "D", SECTION ONE REPLAT, AS RECORDED IN FILM CODE NO. 380084 OF THE H.C.M.R., LOCATED IN THE G.W. CHILDRESS SURVEY, ABSTRACT NO. 217, IN HARRIS COUNTY, TEXAS.

BENCHMARK INFORMATION

PROJECT BENCHMARK:
TSARP RM 150770 LOCATED ON BRETON RIDGE DRIVE 100'± NORTH OF FM 1960. (NAVD 88, 2001 ADJ.)
ELEV. 120.92'

SITE BENCHMARK:
A "+" ON TOP OF BB-INLET ON WEST SIDE OF WILLOW CENTRE DR. 875'± SOUTH OF FM 1960.
ELEV. 116.37'



CONTRACTOR SHALL NOTIFY THE CITY OF HOUSTON, DEPARTMENT OF PUBLIC WORKS AND ENGINEERING, ENGINEERING CONSTRUCTION DIVISION (TELEPHONE NO. 713-863-1450) 48 HOURS BEFORE STARTING WORK ON THIS PROJECT.

THIS APPROVAL IS FOR CONSTRUCTION UTILIZING AUGER/BORE AND JACK METHOD ONLY. FOR ANY REASONS, IF OPEN CUT METHOD IS REQUIRED, APPROPRIATE PAVEMENT RESTORATION TYPICAL SHEETS SHALL BE SUBMITTED FOR REVIEW AT LEAST 48 HOURS IN ADVANCE BEFORE STARTING CONSTRUCTION. THESE RESTORATIONS TYPICAL SHALL BE DRAWN ON MYLAR, SEALED, SIGNED, AND DATED BY A PROFESSIONAL ENGINEER IN THE STATE OF TEXAS.

I, KEVIN POLASEK, P.E. HEREBY ACKNOWLEDGE THAT I HAVE REVIEWED THE NEW FLOOD HAZARD RECOVERY DATA AND USED THE MOST RESTRICTIVE INFORMATION FOR THE DESIGN OF THIS PROJECT.
NO WATER WORKS INVOLVED

NOTICE:
AT LEAST 48 HOURS BEFORE EXCAVATING IN STREET R.O.W. OR EASEMENTS CALL THE LONE STAR NOTIFICATION 713-223-4567.

PRIVATE UTILITY LINES SHOWN
Hammer Date: 10/7/08
CenterPoint Energy/Electric Facilities
(Approved only for crossing underground ductlines, unless otherwise noted.)
Valid at time of review only.

SBC UTILITY LINES SHOWN
J.C. Miller Date: 10/7/08
Approved for SBC underground conduit facilities only.
Signature valid for one year.

Hammer Date: 10/7/08
CenterPoint Energy/Gas Facilities
(Gas service lines are not shown)

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

TERRA ASSOCIATES, INC. CONSULTING ENGINEERS 3000 WILCREST - SUITE 200 HOUSTON, TEXAS 77042 Tel 713.993.0333 Fax 713.993.0743		<p>THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY KEVIN POLASEK, P.E. #96632 ON 9-10-2008</p>
SURVEYED BY: FB NO.: <i>David A. ... 9/11/08</i> <i>ST 10/23/08</i>		
CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING		
WATER	STREET & BRIDGE	
WASTEWATER	TRAFFIC & TRANSPORTATION	
STORM	STORM WATER QUALITY	
FACILITIES		
CITY ENGINEER	FOR CITY OF HOUSTON USE ONLY CITY DWG NO.:	
DIRECTOR OF PUBLIC WORKS AND ENGINEERING <i>Sam ... 10/23/08</i>		
SHEET No. 1	OF 6	

TAI 0280-0706

ILMS NO.: 08068834
COH LOG NO: 08-0805

GENERAL CONSTRUCTION NOTES:

- 1. WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE AND STREET PAVING ARE DESIGNED IN ACCORDANCE WITH THE LATEST EDITION OF THE DOCUMENTS-"STANDARD CONSTRUCTION SPECIFICATIONS FOR WASTEWATER COLLECTION SYSTEM, WATER LINES, STORM DRAINAGE, AND STREET PAVING"...

PRIVATE UTILITY NOTES

NOTICE: THE CONTRACTOR SHALL CONTACT THE UTILITY COORDINATING COMMITTEE AT 713-223-4567 OR TOLL FREE 1-800-344-8377 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE UNDERGROUND LINES FIELD LOCATED.

WASTE WATER CONSTRUCTION NOTES

1. WASTEWATER COLLECTION SYSTEMS SHALL BE CONSTRUCTED AND TESTED IN ACCORDANCE WITH THE CITY OF HOUSTON, DEPARTMENT OF PUBLIC WORKS AND ENGINEERING'S "STANDARD CONSTRUCTION SPECIFICATIONS" DATED OCT. 2002, AND "STANDARD CONSTRUCTION DETAILS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE AND STREET PAVING" DATED OCT. 2002...

TABLE 7.4 PROTECTION REQUIREMENTS AT WATERLINE - SANITARY SEWER CROSSINGS

Table with 5 columns: PRIMARY CONDITION, PROPOSED WATER EXISTING SANITARY, PROPOSED WATER EXISTING WATER, PROPOSED WATER EXISTING SANITARY, PROPOSED WATER EXISTING WATER. Rows include Secondary, Protection, and Protection Requirements.

PROTECTION REQUIREMENTS FOR SANITARY SEWER CROSSINGS (UNLESS VARIANCE IS GRANTED BY THE TCEQ) (ALL CLEARANCES SHALL BE MEASURED FROM OUTSIDE WALL TO OUTSIDE WALL)

- 1. PLACE ONE FULL SECTION OF APPROVED RESTRAINED JOINT WATER LINE CENTERED AT SANITARY SEWER. NOT APPLICABLE FOR EXISTING WATER.
- 2. IF NO EVIDENCE OF SANITARY SEWER LEAKAGE, PLACE ONE FULL SECTION OF WATER LINE CENTERED OVER SANITARY SEWER; IF THERE IS EVIDENCE OF LEAKAGE, USE NOTE 4 BELOW.

HARRIS COUNTY M.U.D. 191 NOTES

- 1. POLY-VINYL-CHLORIDE (PVC) PIPE SHALL CONFORM TO ASTM SPECIFICATION D3034 AND BE INSTALLED ACCORDING TO ASTM D2321.
- 2. ALL SANITARY SEWER SERVICE LINES SHALL BE CONSTRUCTED TO TRUE ALIGNMENT AND GRADE. WARPED AND SAGGING LINES WILL NOT BE PERMITTED.

STORM WATER QUALITY PRE-CONSTRUCTION INSPECTION REQUIREMENTS

THE PROPERTY OWNER OR THE CONTRACTOR SHALL CONTACT THE HARRIS COUNTY STORM WATER QUALITY PERMITTING SECTION AT 713-956-3000 FOR A PRE-CONSTRUCTION INSPECTION PRIOR TO COMMENCING ANY CLEARING OR CONSTRUCTION ACTIVITIES ON THE SITE.

HARRIS COUNTY NOTES

- 1. CONTRACTOR TO OBTAIN ALL PERMITS REQUIRED BY THE "REGULATIONS OF HARRIS COUNTY, TEXAS FOR FLOOD PLAIN MANAGEMENT" PRIOR TO STARTING CONSTRUCTION.
- 2. OWNER TO OBTAIN ALL PERMITS REQUIRED BY HARRIS COUNTY, TEXAS PRIOR TO STARTING CONSTRUCTION OF UTILITIES AND/OR CULVERTS WITHIN HARRIS COUNTY FLOOD CONTROL DISTRICT AND HARRIS COUNTY RIGHTS-OF-WAY.

NOTICE: AT LEAST 48 HOURS BEFORE EXCAVATING IN STREET R.O.W. OR EASEMENTS CALL THE ONE STOP NOTIFICATION 713-223-4567. PRIVATE UTILITY LINES SHOWN. Includes signatures and dates.

Table with columns: REVNO., DESCRIPTION, DATE, APP. Includes a circular seal for Kevin Polasek, P.E. and a signature for Kevin Black, P.E.

TERRA ASSOCIATES, INC. CONSULTING ENGINEERS. 3000 WILCREST - SUITE 200 HOUSTON, TEXAS 2IP 77042. PHONE: 713-993-0333 FAX: 713-993-0743

8" SANITARY SEWER CROSSING AT WILLOW CENTRE DRIVE & COCKRUM ROAD TO SERVE DISCOUNT TIRE DISTRIBUTION CENTER

CONSTRUCTION NOTES

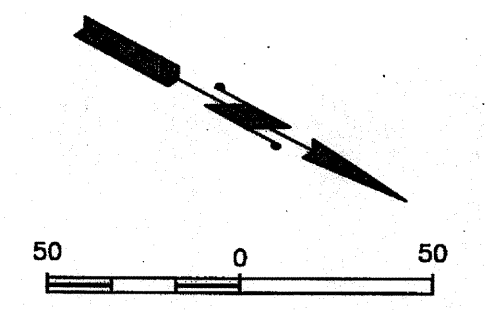
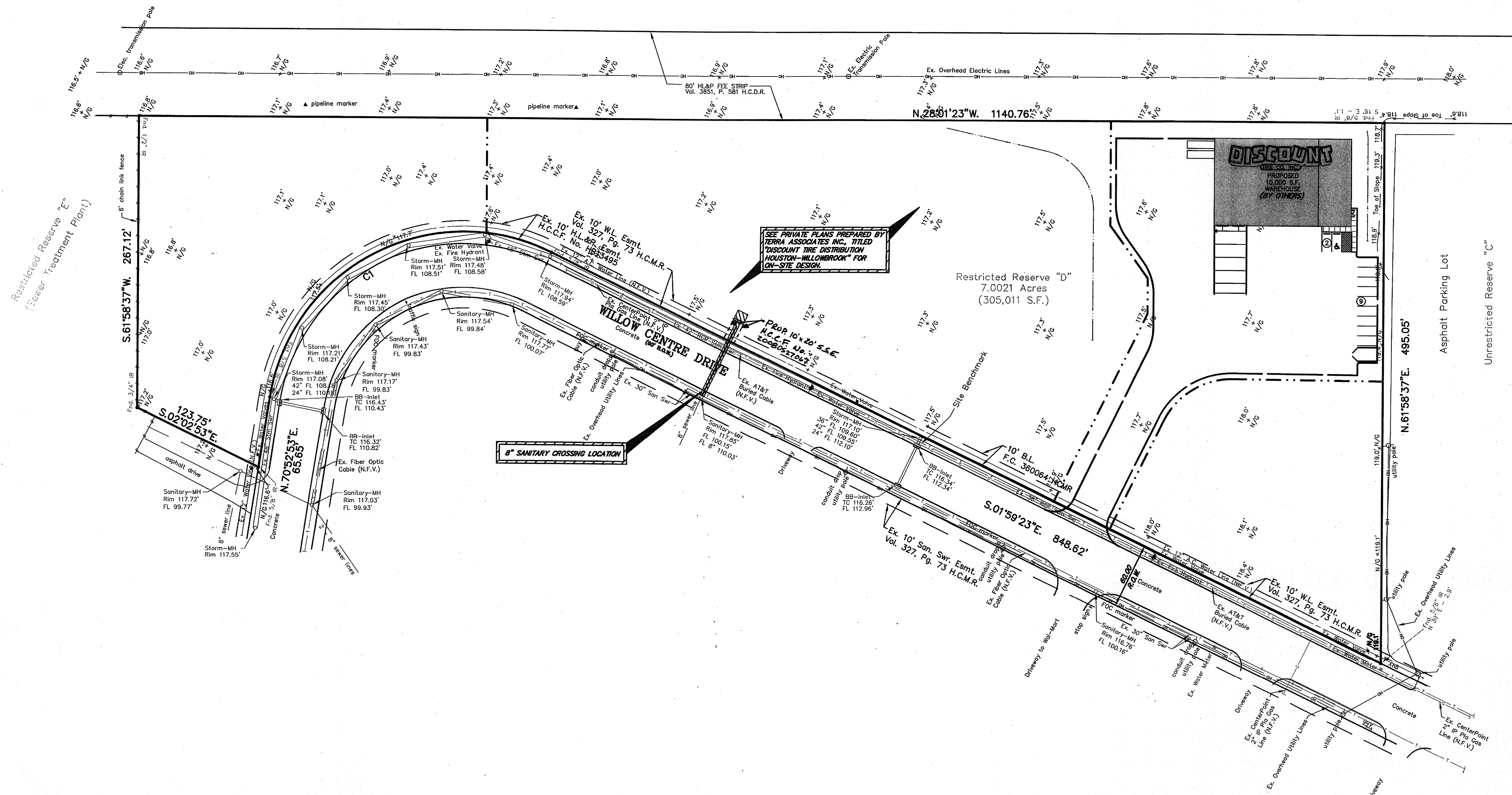
DRAWN BY: DAB PROJECT No. 0280-0706 CHECKED BY: KBP FILE NAME: 02-NOTES.DWG DATE: AUGUST, 2008 PLOT SCALE: 1:1

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

Table with columns: WATER, WASTEWATER, STORM, FACILITIES. Includes handwritten notes and dates.

FILE NO: DRAWING SCALE: HORIZ: N/A VERT: N/A SHEET No: 2 of 6. Includes a circular seal for Kevin Polasek, P.E. and a signature for Kevin Black, P.E.

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FLOODPLAIN INFORMATION:
 ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP No. 4820100435 L, LAST REVISED JUNE 18, 2007, THE SUBJECT TRACT LIES WITHIN AN AREA DESIGNATED AS ZONE X (UNSHADED); DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, AND ZONE X (SHADED); DEFINED AS AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN ONE FOOT OR WITH DRAINAGE AREAS LESS THAN ONE SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD.

BENCHMARK NOTE:
 PROJECT BENCHMARK:
 FEMA RM 150770 LOCATED ON BRETON RIDGE DRIVE +/- 100' NORTH OF FM 1960.
 ELEV.=120.92' (NAVD88, 2001 ADJ.)

TBM Δ:
 A "Δ" ON TOP OF BB-INLET ON WEST SIDE OF WILLOW CENTRE DR. +/- 875' SOUTH OF FM 1960.
 ELEV.=116.37' ELEVATIONS BASED ON TSARP RM 150770 (NAVD88, 2001 ADJ.)

LEGAL DESCRIPTION
 A SUBDIVISION CONTAINING 7.0021 ACRES (305,011 S.F.) BEING ALL OF RESTRICTED RESERVE "D", OUT OF WILLOW CENTRE SUBDIVISION RESTRICTED RESERVE "D", SECTION ONE REPLAT, AS RECORDED IN FILM CODE NO. 380064 OF THE H.C.M.R., LOCATED IN THE G.W. CHILDRESS SURVEY, ABSTRACT NO. 217, IN HARRIS COUNTY, TEXAS.

NOTICE:
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PRIVATE UTILITY LINES SHOWN

CenterPoint Energy/Electric Facilities
 Approved only for creating underground ductlines, unless otherwise noted.
 Valid at time of review only.

SBC UTILITY LINES SHOWN
 Approved for SBC underground conduit facilities only.
 Signature good for one year.

CenterPoint Energy/Gas Facilities
 (Gas service lines are not shown)

REVNO.	DESCRIPTION	DATE	APP.

TERRA ASSOCIATES, INC.
 3000 WILCREST - SUITE 200
 HOUSTON, TEXAS 28177042
 PHONE: 713-993-0333
 FAX: 713-993-0743

8" SANITARY SEWER CROSSING AT WILLOW CENTRE DRIVE & COCKRUM ROAD TO SERVE DISCOUNT TIRE DISTRIBUTION CENTER

OVERALL LAYOUT

DRAWN BY: DAB PROJECT No. 0280-0706
 CHECKED BY: KBP FILE NAME: 03-OVERALLDWG
 DATE: AUGUST, 2008 PLOT SCALE: 1:1

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

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
WATER	STREET & BRIDGE
WASTEWATER	TRAFFIC AND TRANSPORTATION
STORM	STORM WATER QUALITY
FACILITIES	

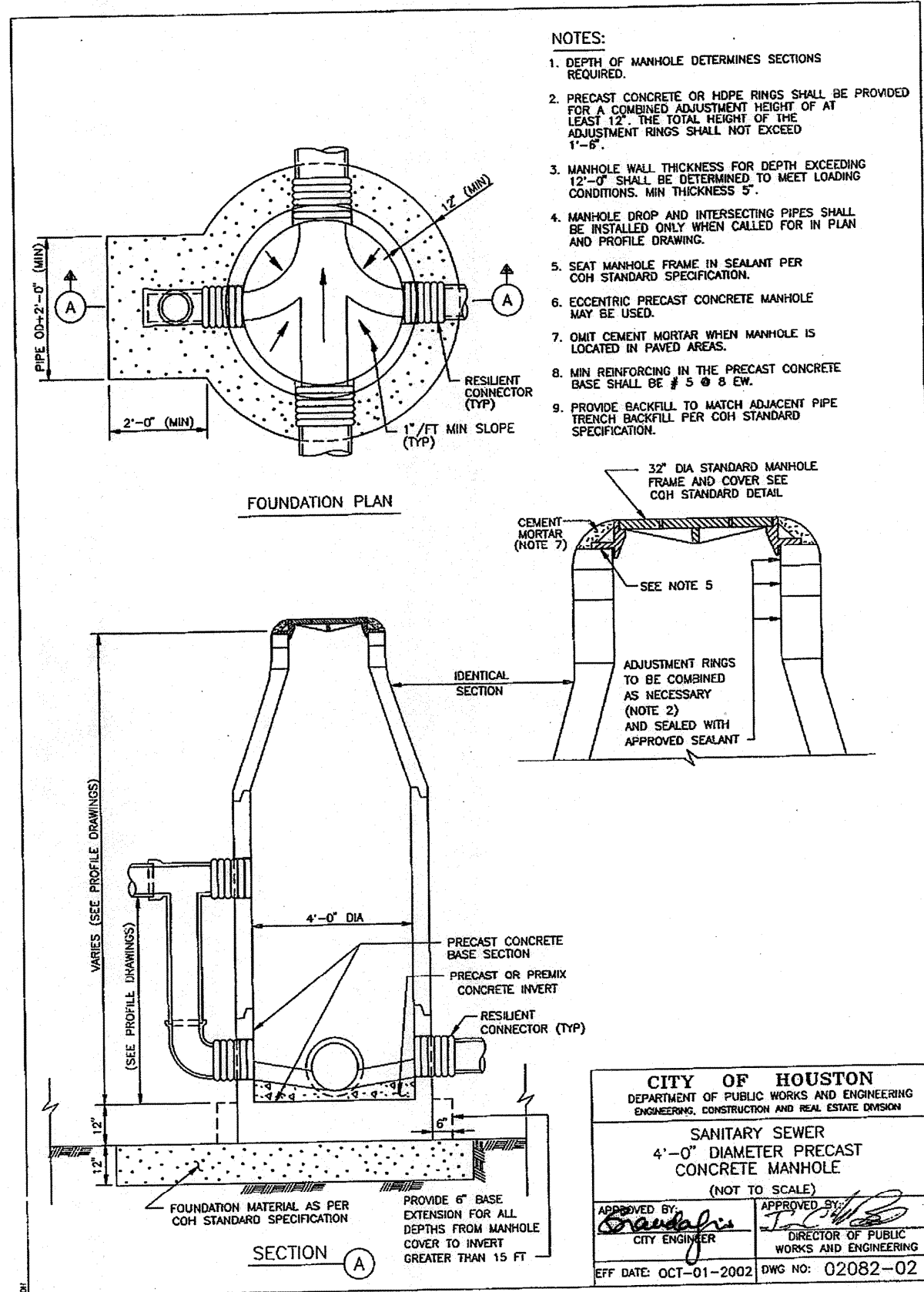
FILE NO: FOR CITY OF HOUSTON USE ONLY

DRAWING SCALE
 HORZ : 1"=50'
 VERT : 1"=50'

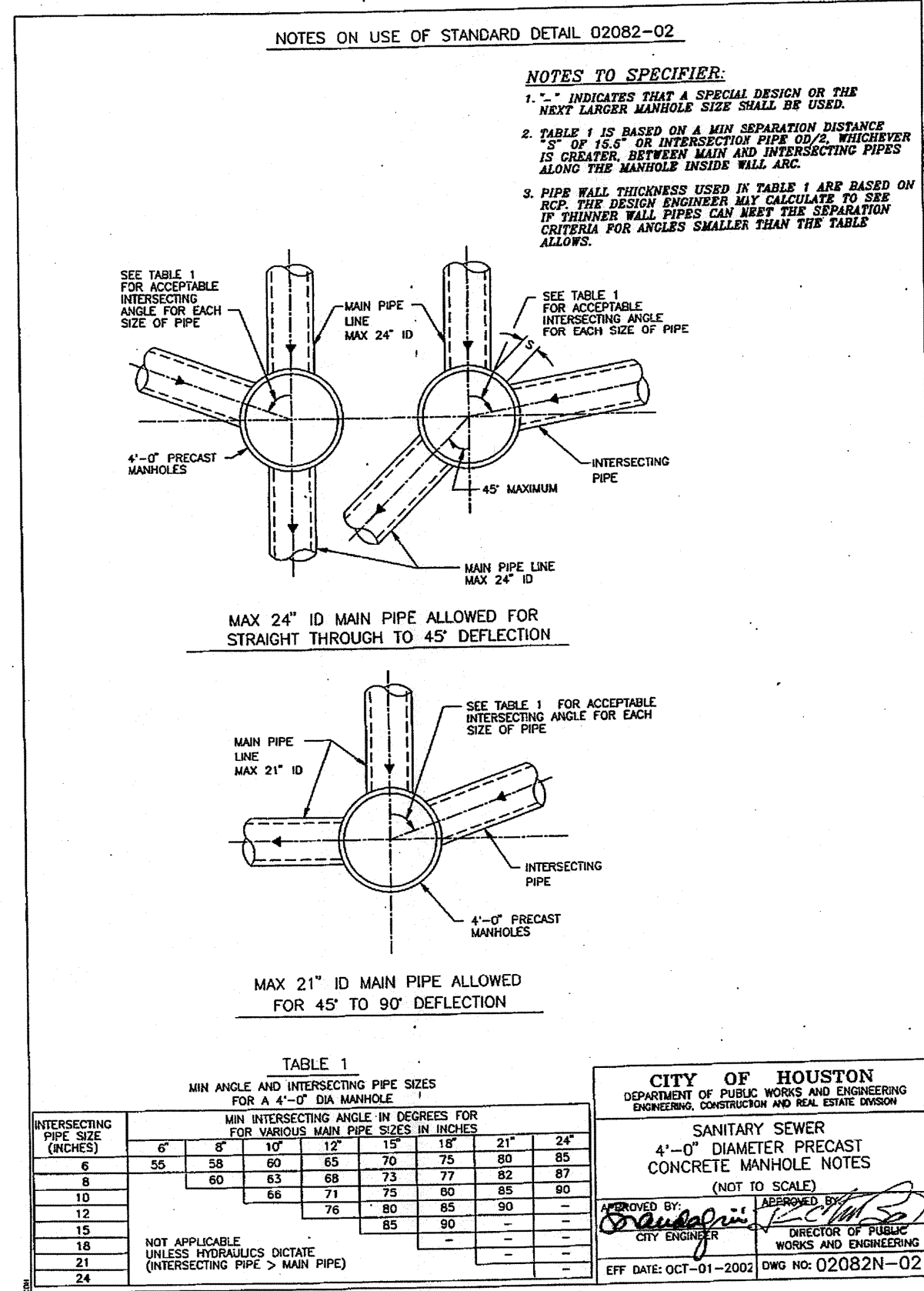
SHEET No: 3 of 6

45295
 CITY OF HOUSTON, TEXAS

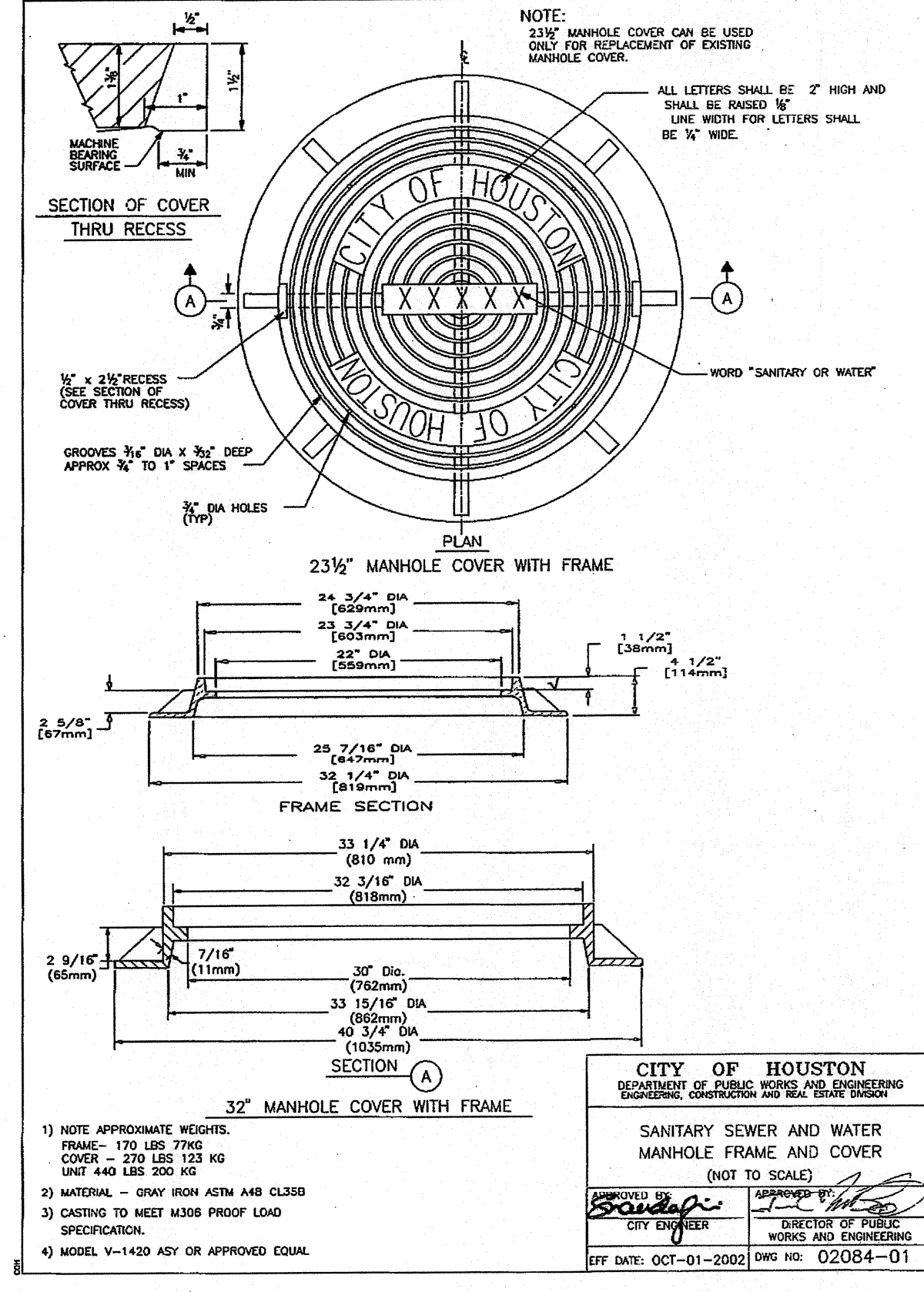
F:\Clients\0280 Discount Tire\Drawings\Public Drawings\05-DETAILS.dwg Sep 10, 2008 - 8:28am Terra Associates Inc., dba



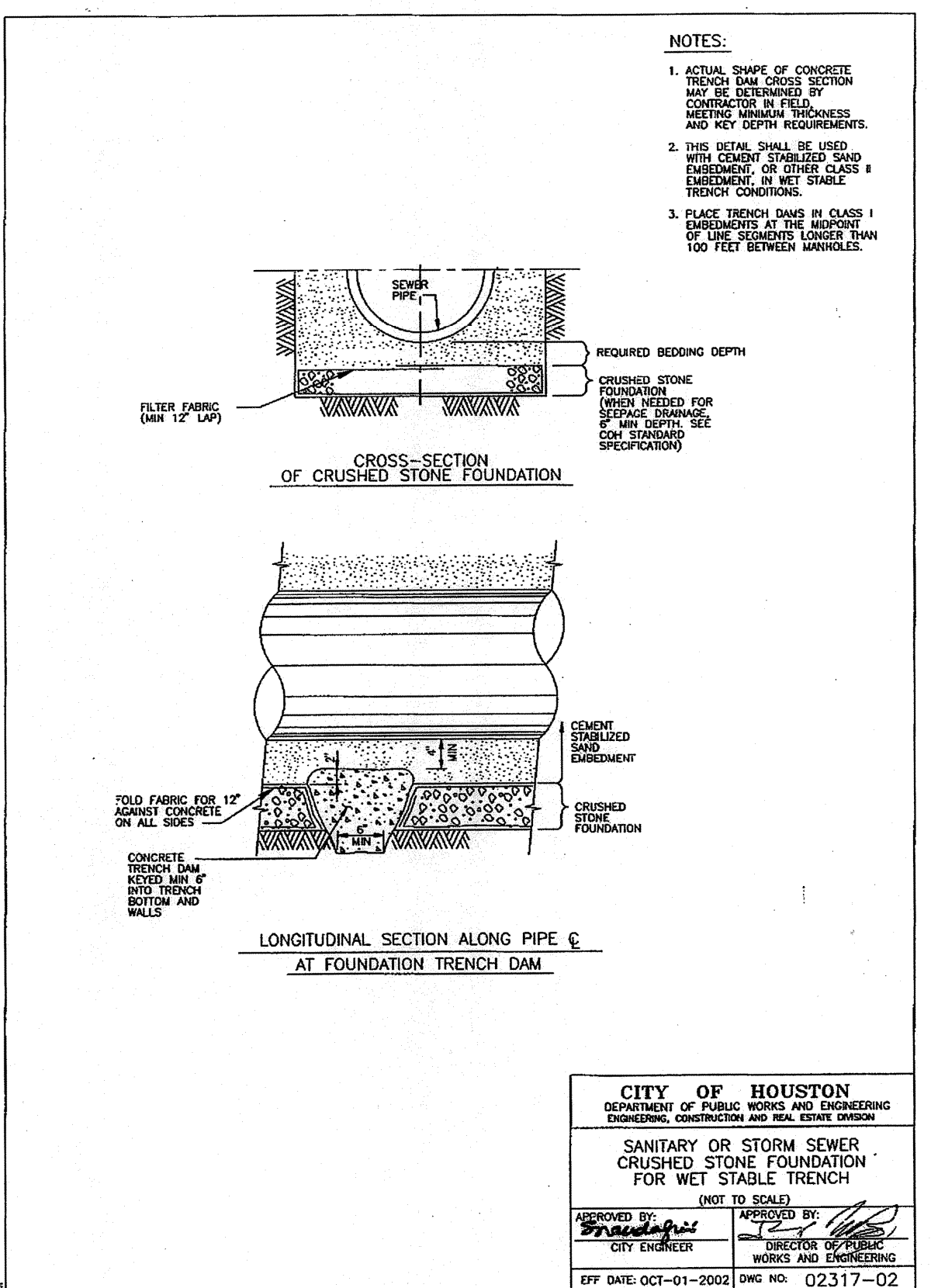
SANITARY SEWER 4'-0" DIAMETER PRECAST CONCRETE MANHOLE
SCALE: N.T.S. COH # 02082-02



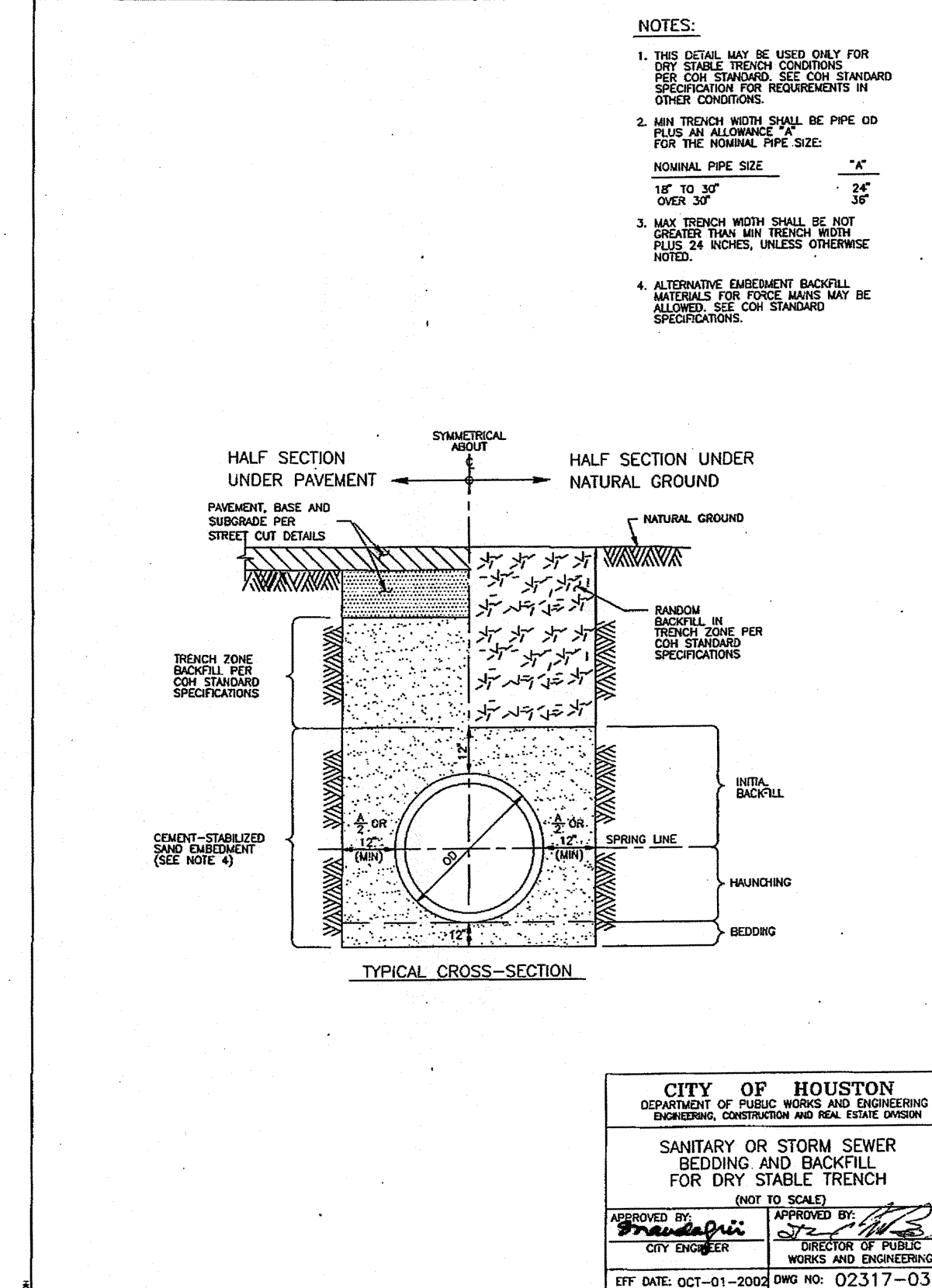
SANITARY SEWER 4'-0" DIAMETER PRECAST CONCRETE MANHOLE NOTES
SCALE: N.T.S. COH # 02082N-02



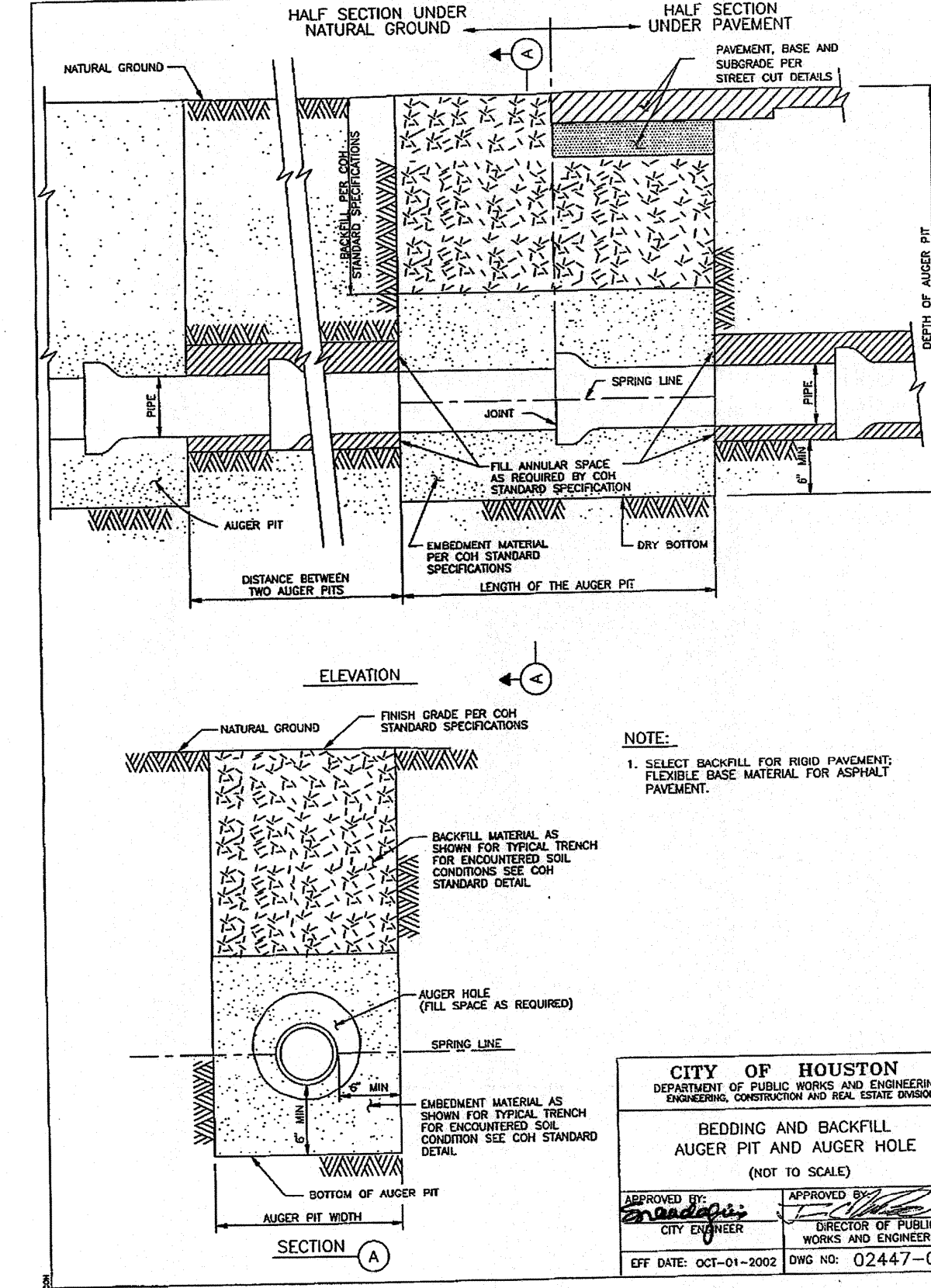
SANITARY SEWER AND WATER MANHOLE FRAME AND COVER
SCALE: N.T.S. COH # 02084-01



SANITARY SEWER CRUSHED STONE FOUNDATION FOR WET STABLE TRENCH
SCALE: N.T.S. COH # 02317-02



SANITARY SEWER BEDDING AND BACKFILL FOR DRY STABLE TRENCH
SCALE: N.T.S. COH # 02317-03



BEDDING AND BACKFILL AUGER PIT AND AUGER HOLE
SCALE: N.T.S. COH # 02447-01

REV. NO.	DESCRIPTION	DATE	APP.

Kevin Polasek, P.E.

STATE OF TEXAS
KEVIN POLASEK
96632
LICENSED PROFESSIONAL ENGINEER

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY KEVIN POLASEK, P.E. 96632 ON 9-10-2008

TERRA ASSOCIATES, INC.
3000 WILCREST - SUITE 200
HOUSTON, TEXAS 220 77042
PHONE: 713-983-0333
FAX: 713-983-0743

8" SANITARY SEWER CROSSING AT WILLOW CENTRE DRIVE & COCKRUM ROAD TO SERVE DISCOUNT TIRE DISTRIBUTION CENTER

CONSTRUCTION DETAILS

DRAWN BY: DAB
CHECKED BY: KBP
DATE: AUGUST, 2008

PROJECT No. 0280-0706
FILE NAME: 05-DETAILS
PLOT SCALE: 1:1

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

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER: *[Signature]* 9/11/08 STREET & BRIDGE
WASTEWATER: *[Signature]* 10/23/08 TRAFFIC AND TRANSPORTATION
STORM: *[Signature]* 10/23/08 STORM WATER QUALITY
FACILITIES: *[Signature]*

FILE NO: *[Blank]* FOR CITY OF HOUSTON USE ONLY

DRAWING SCALE: *[Blank]*

HORIZ : N.T.S.
VERT : N.T.S.

SHEET No: 5 of 6

45295
CITY OF HOUSTON, TEXAS

1. PAVING

I. DESIGN THICKNESS OF PAVING _____ psi
 II. STABILIZED SUBGRADE TO A DEPTH OF _____
 III. DESIGN STRENGTH OF CONCRETE _____
 IV. TYPE AND PLACEMENT OF STEEL: _____

NOTES:
 I - IV TO BE COMPLETED ONLY IF PAVING IS TO BE ACCEPTED BY HARRIS COUNTY

DRIVEWAYS

I. NUMBER OF DRIVEWAY APPROACHES PROPOSED: _____
 II. HARRIS COUNTY STANDARD DRIVEWAY DETAIL APPEARS ON SHEET _____

NOTES:
 I - II TO BE COMPLETED ONLY IF PROJECT ENTAILS CONSTRUCTION OF DRIVEWAYS AT TIME OF DEVELOPMENT

FIRE APPARATUS ACCESS ROAD

REQUIRED AND SHOWN ON SHEET(S) _____
 NOT REQUIRED DUE TO _____

CURBING

I. ISLANDS AND MEDIANS REQUIRE STANDARD 6" CURBING
 II. STANDARD 6" CURBING PROPOSED
 4" x 12" CURBING PROPOSED
 6" OR 4" x 12" ALLOWED EXCEPT AT MEDIANS AND ISLANDS

TRAFFIC CONSIDERATIONS

I. MEDIAN CUTS
 NO MEDIAN CUT OR RELOCATION IS PROPOSED
 MEDIAN MODIFICATIONS ARE SHOWN ON SHEET _____

II. LEFT HAND TURN
 NO LEFT TURN LANE IS PROPOSED
 LEFT TURN LANE IS SHOWN ON SHEET _____

III. TRAFFIC CONTROL PLAN
 NO WORK IN THE RIGHT OF WAY IS PROPOSED THAT WOULD INTERFERE WITH TRAFFIC FLOW
 TRAFFIC CONTROL IS SHOWN ON SHEET _____

IV. EXISTING TRAFFIC CONTROL
 DEVICES SHOWN ON PLANS (T.C. BOXES AND LOOPS)

NOTES:
 I - III TO BE COMPLETED FOR ALL PROJECTS

2. SUBDIVISION DRAINAGE

I. DRAINAGE SYSTEM TYPE
 STORM SEWER
 ROADSIDE DITCH

II. DESIGN METHOD USED
 CITY OF HOUSTON _____ FREQUENCY _____
 OTHER _____

III. DRAINAGE SYSTEM OUTFALL
 TO DETENTION POND
 DETENTION POND MAINTAINED BY _____
 TO HCFCD DRAINAGE DITCH UNIT NO. _____
 TO HARRIS COUNTY ROADSIDE DITCH
 ROAD NAME: _____
 STATIC W.S.E. @ OUTFALL IS _____
 PROPOSED STORM SEWER IS SUBMERGED.

IV. STORM WATER OUTFALL
 CAPACITY ALLOCATED TO TRACT FROM D. A. MAP: _____ (CFS)
 FROM DRAINAGE AREA MAP DATED: _____
 PREPARED BY: _____
 ACTUAL OUTFALL RATE: _____ (CFS)

V. DRAINAGE SYSTEM FLOW RATE
 FLOW PRIOR TO DETENTION: _____ CFS
 FLOW AFTER DETENTION (IF REQUIRED): _____ CFS

NOTES:
 I - IV REQUIRED ON ALL SUBDIVISION TYPE PROJECTS INCLUDING MANUFACTURED HOME PARKS.

3. SITE DRAINAGE
 (OTHER THAN SUBDIVISION TYPE PROJECTS)

I. PROPOSED DRAINAGE AREA
 NEW DEVELOPMENT AREA: _____
 RE-DEVELOPMENT AREA (AMOUNT INCREASED IMPERVIOUS AREA): _____

II. DETENTION VOLUME (DRY BASIN)
 NEW AREA _____ X 0.65 = _____ ACRE-FEET
 DETENTION REQUIRED _____
 PROPOSED VOLUME = _____ ACRE FEET

III. OUTFALL
 OUTFALL TO ROADSIDE DITCH
 STORM SEWER
 OTHER _____
 STATIC W.S.E. @ OUTFALL IS _____
 ROADSIDE DITCH OUTFALL:
 ROAD FRONTAGE _____ X 0.0095 = _____ (CFS) ALLOWABLE OUTFALL
 PROPOSED OUTFALL RATE: _____
 STORM SEWER OUTFALL
 CAPACITY ALLOCATED TO TRACT FROM D. A. MAP: _____ (CFS)
 FROM DRAINAGE AREA MAP DATED: _____
 PREPARED BY: _____
 ACTUAL OUTFALL RATE: _____ (CFS)

IV. PUMPED DETENTION FACILITIES
 VOLUME THAT GRAVITY FLOWS: _____ ACRE FEET
 VOLUME THAT IS PUMPED: _____ ACRE FEET
 ENTRANCE VELOCITY INTO ROADSIDE DITCH OR STORM SEWER: _____
 PUMP SPECIFICATIONS AND OPERATING PLAN APPEAR ON SHEET _____

V. FLOW RESTRICTOR SIZE
 OUTFALL PIPE SIZE: _____
 RESTRICTOR PIPE SIZE: _____

VI. PROPOSED STORM SEWER IS SUBMERGED.

NOTES:
 I - V. REQUIRED FOR ALL PROJECTS OTHER THAN SUBDIVISION TYPE PROJECTS. DEVELOPMENT AREA INCLUDES ALL AREA WHERE BUILDING, PAVING OR GRADING WILL OCCUR. AREAS NOT INCLUDED BUT WITHIN THE PROPERTY'S BOUNDARIES MUST BE DELINEATED AS A "NO WORK" AREA ON THE DRAWINGS.
 VI. - V. REQUIRED WHEN PROPOSED FACILITY WILL INCREASE THE AMOUNT OF RUNOFF INTO A COUNTY DRAINAGE DITCH, ROADSIDE DITCH OR STORM SEWER. IF ANALYZED AND THE RECEIVING DRAINAGE STRUCTURE HAS CAPACITY IN THE FULLY DEVELOPED CONDITION OF THE AREA IT SERVES, NO DETENTION IS REQUIRED.

4. WATER AND WASTEWATER

I. TYPE OF SERVICE PROPOSED
 MUNICIPALITY: _____
 MUNICIPAL UTILITY DISTRICT: H.C.M.U.D. NO. 191
 OTHER DISTRICT: _____
 PRIVATE WATER AND WASTEWATER SYSTEMS
 PRIVATE WATER SYSTEM AND INDIVIDUAL OSSF
 INDIVIDUAL WATER WELL AND OSSF
 OTHER: _____
 NO UTILITIES ARE PROPOSED

II. PROOF OF CAPACITY
 LETTER FROM DISTRICT AUTHORIZING SERVICE AND CONNECTION
 TCEQ APPROVAL FOR WATER SYSTEM AND PERMIT FOR WASTEWATER SYSTEM.
 TCEQ APPROVAL FOR WATER SYSTEM AND OSSF FEASIBILITY REPORT
 OSSF FEASIBILITY REPORT WHICH CONSIDERS INDIVIDUAL WELLS

III. AMOUNT OF FLOW
 RESIDENTIAL: _____ LOTS OR UNITS
 COMMERCIAL: _____ AVERAGE DAILY FLOW
 OTHER: _____

NOTES:
 I, III, IV. COMPLETE FOR ALL PROJECTS
 II. COMPLETE FOR ALL PROJECTS.
 III. COMPLETE ONLY IF TCEQ DISCHARGE PERMIT IS PROPOSED

5. DESCRIPTION OF PROPERTY

I. LEGAL DESCRIPTION / PLAT NAME (PROPOSED OR RECORDED):
 A SUBDIVISION CONTAINING 7.0021 ACRES (305,011 S.F.) BEING ALL OF RESTRICTED RESERVE "D", OUT OF WILLOW CENTRE SUBDIVISION RESTRICTED RESERVE "D", SECTION ONE REPLAT AS RECORDED IN FILM CODE NO. 360064 OF THE H.C.M.R., LOCATED IN THE G.W. CHILDRESS SURVEY, ABSTRACT NO. 217, IN HARRIS COUNTY, TEXAS.

NEW PLAT LOCATED IN THESE SURVEYS: _____

REPLAT OF RECORDED SUBDIVISION OR RESERVE KNOWN AS WILLOW CENTRE SUBDIVISION RESTRICTED RESERVE "D" SECTION ONE REPLAT

II. ADJACENT ROADS WILLOW CENTRE DR. & COCKRUM RD.

III. JURISDICTIONS
 CITY OF HOUSTON
 CITY OF _____
 ETJ, CITY OF HOUSTON
 UTILITY DISTRICT: H.C.M.U.D. NO. 191
 OTHER: _____

IV. HCAD ACCOUNT NOS. (ALL)
 116-192-000-0004

NOTES:
 I, III, IV. COMPLETE FOR ALL PROJECTS
 II. COMPLETE ONLY IF PROJECT IS LOCATED ADJACENT TO A PUBLIC OR PRIVATE ROAD.

6. STORM WATER QUALITY

I. CONSTRUCTION PROTECTIVE MEASURES.
 SWPPP SITE PLAN AND DETAILS ON SHEET(S) N/A

II. APPLICABILITY FOR PERMANENT FEATURES.
 EXEMPT NEW DEVELOPMENT OF LESS THAN 5 ACRE PARCEL.
 EXEMPT REDEVELOPMENT OF A 5 ACRE OR LARGER PARCEL WHERE TOTAL IMPERVIOUS SURFACE (EXISTING PLUS PROPOSED) IS LESS THAN 1 ACRE.
 EXEMPT "GRAND FATHERED" BY AN EXISTING STORM SEWER LINE.
 "STORM WATER QUALITY MANAGEMENT PLAN" HAS BEEN/WILL BE INCLUDED IN A SEPARATE SUBMITTAL ENTITLED _____
 "STORM WATER QUALITY MANAGEMENT PLAN" INCLUDED. SWQMP SITE PLAN ON SHEET(S) _____

III. STORM WATER QUALITY FEATURES.
 VEGETATIVE CONTROLS USED: (FILTER STRIP, GRASSY SWALE, URBAN FORESTRY) DETAILS AND CALCULATIONS APPEAR ON SHEET(S) _____
 POND STRUCTURE USED (WET, DRY, WETLANDS) DETAILS AND CALCULATIONS APPEAR ON SHEET(S) _____
 HYDRODYNAMIC TYPE SEPERATOR MODEL: _____
 OTHER(S): _____

NOTES:
 I - IV REQUIRED ON ALL PROJECTS, III IF NOT EXEMPT OR "GRANDFATHERED"

7. FLOOD CONTROL DISTRICT CRITERIA

I. DETENTION SUMMARY

STORMWATER DETENTION BASIN ROUTING TABLE

RAINFALL EVENT PROBABILITY	PRE-DEVELOPED PEAK RUNOFF (CFS)	POST-DEVELOPED PEAK RUNOFF (CFS)	DETENTION BASIN PEAK OUTFLOW (CFS)	MAXIMUM WATER SURFACE ELEVATION	PEAK STORAGE VOLUME (AC-FT)	STORAGE RATE (AC-FT PER AC)
10% EXCEEDANCE (10-YEAR)						
1% EXCEEDANCE (100-YEAR)						

ADDITIONAL CRITERIA FOR PUMPED DETENTION BASINS:
 VOLUME OF PUMPED 1% EXCEEDANCE STORAGE VOLUME = _____ AC-FT _____ % OF TOTAL VOLUME
 MAXIMUM DESIGN OUTFLOW VELOCITY INTO HCFCD CHANNEL = _____ CFS
 DRAIN TIME FOR BASIN = _____ HOURS BASED ON _____ HEAD CONDITIONS.

STORMWATER DRAINAGE DESIGN REPORT

REPORT TITLE _____
 REPORT DATE _____ ENGINEERING FIRM _____
 DATE OF ACKNOWLEDGEMENT BY HCFCD OR FLOODPLAIN ADMINISTRATOR _____

STORMWATER DETENTION FOR THE PROPOSED WORK CONTAINED IN THESE PLANS IS PROVIDED BY OTHER PLANS:
 PLAN TITLE _____
 ENGINEERING FIRM _____ DATE SIGNED BY HCFCD _____

II. HCFCD STANDARD NOTES: SEE SHEET _____ OF THESE PLANS.
III. HCFCD STANDARD DETAILS: SEE SHEET _____ OF THESE PLANS.
IV. REFER TO PLAN SHEETS _____ FOR EXISTING AND PROPOSED RIGHT OF WAY DELINEATION AND COMPLETE RECORDING INFORMATION TO INCLUDE CLERK'S FILE NUMBERS, TYPE OF ESTATE (E.G., DRAINAGE EASEMENT, FEE STRIP, ETC.) AND GRANTEE (E.G., COH, HCFCD, PUBLIC, TXDOT, ETC.)

NOTES:
 I. COMPLETE ONLY IF HCFCD OR HARRIS COUNTY IS REQUESTING DETENTION.
 II. COMPLETE ONLY IF PROJECT HAS WITHIN IT OR IS IMMEDIATELY ADJACENT TO AN EXISTING OR PROPOSED HCFCD MAINTAINED CHANNEL OR DETENTION BASIN.
 III. COMPLETE ONLY IF PROJECT INCLUDES NEW OUTFALL, BACKSLOPE INTERCEPTOR OR OTHER RELATED WORK WITHIN AN EXISTING OR PROPOSED HCFCD MAINTAINED CHANNEL OR DETENTION BASIN.
 IV. COMPLETE ONLY IF PROJECT HAS WITHIN OR IMMEDIATELY ADJACENT TO AN EXISTING OR PROPOSED PUBLIC DRAINAGE CHANNEL OR DETENTION BASIN.

8. FLOOD PLAIN STATUS

I. GENERAL INFORMATION
 FIRM PANEL(S) FOR PROPERTY: 48201C0435L
 FIRM PANEL(S) DATE: JUNE 18, 2007
 STATUS OF PROPERTY ON MAP
 LOCATED IN UNSHADED ZONE "X"
 ENTIRELY LOCATED IN SHADED AND UNSHADED ZONE "X"
 LOCATED PARTIALLY IN ZONE "X" DELINEATED ON CONSTRUCTION DRAWINGS (DRAINAGE LAYOUT)
 LOCATED ENTIRELY IN ZONE "AE" (INDICATE BASE FLOOD LEVEL ON CONSTRUCTION DRAWINGS)
 OTHER _____
 SITE REMOVED FROM FLOODPLAIN BY LOMA OR LOMR-F CASE NO. _____

FLOOD HAZARD RECOVERY DATA
 FLOOD HAZARD RECOVERY DATA AVAILABLE AND UTILIZED (PROVIDED INFORMATION BASED ON 1973 AND 2001 ADJUSTMENTS).
 FLOOD HAZARD RECOVERY DATA NOT AVAILABLE.

ELEVATION INFORMATION
 BENCHMARK USED
 FEMA RM benchmark
 HARRIS-GALVESTON COASTAL SUBSIDENCE DISTRICT BENCHMARK (FOR COASTAL AREAS)
 OTHER _____
 DESCRIPTION OF BENCHMARK INCLUDING ELEVATION, DATUM AND YEAR OF ADJUSTMENT: FEMA RM 150770 LOCATED ON BRETON RIDGE DRIVE 100'± NORTH OF FM 1960. ELEV. 120.92' BASED ON NAVD88, 2001 ADJ.

II. FLOOD PLAIN DETERMINATION BASED ON GROUND ELEVATION
 PROPERTY LIES ENTIRELY ABOVE THE BASE FLOOD LEVEL AND IN ZONE "X" (SHADED OR UNSHADED)
 PROPERTY LIES PARTIALLY BELOW THE BASE FLOOD LEVEL (MUST BE DELINEATED ON TOPOGRAPHIC SURVEY)

III. FLOODPLAIN STORAGE SUMMARY (APPLIES ONLY TO PORTION OF LAND LOCATED WITHIN FLOODPLAIN AS DETERMINED BY FIRM PANEL).
 A. TOTAL VOLUME OF MATERIAL PROPOSED TO BE PLACED WITHIN THE FIRM DELINEATED FLOODPLAIN (FILL, BASE, CONCRETE, ASPHALT, ETC.):
 i.e., BELOW ELEVATION _____ (19 _____ ADJ.) _____ CUBIC YARDS
 B. TOTAL VOLUME OF MATERIAL PROPOSED TO BE REMOVED FROM THE FIRM DELINEATED FLOODPLAIN:
 i.e., BELOW ELEVATION _____ (19 _____ ADJ.) _____ CUBIC YARDS

NOTES:
 I. COMPLETE FOR ALL PROJECTS
 II. COMPLETE ONLY IF PROJECT IS ADJACENT TO 100-YEAR FLOOD PLAN

IV. LOMR REQUIRED
 VERIFIED BY: Samuel Gind 10/31/14

HCFCD SIGNATURE BLOCK

PROJECT KNOWN AS:
 8" SANITARY SEWER CROSSING AT WILLOW CENTRE DRIVE & COCKRUM RD. TO SERVE DISCOUNT TIRE DISTRIBUTION CENTER

WAS ACCEPTED BY THE FOLLOWING GROUPS FOR THE PURPOSES LISTED BELOW:

ENGINEERING DIVISION

BY _____ INTERPOSE NO OBJECTION DATE _____
 BY _____ AS TO PAVING AND/OR DRAINAGE ONLY DATE _____
 BY _____ AS TO LOCATION OF ITEMS IN COUNTY RIGHT OF WAY DATE _____
 BY _____ AS TO STORM WATER QUALITY DATE _____

HARRIS COUNTY FLOOD CONTROL DISTRICT

INTERPOSE NO OBJECTION
 BY: No Review Required Date 10-30-08
 FOR ITEMS LOCATED OUTSIDE OF HCFCD RIGHT-OF-WAY

APPROVED: _____ DATE _____
 BY: _____ FOR ITEMS LOCATED WITHIN EXISTING HCFCD RIGHT-OF-WAY DATE _____
 APPROVED: _____ DATE _____
 BY: _____ FOR ITEMS LOCATED WITHIN PROPOSED HCFCD RIGHT-OF-WAY DATE _____

ADDITIONAL COMMENTS:

THE PROJECT WAS REVIEWED, HOWEVER, THIS DOES NOT MEAN THE ENTIRE PROJECT, INCLUDING ALL SUPPORTING DATA AND CALCULATIONS HAVE BEEN COMPLETELY CHECKED AND VERIFIED. THESE DRAWINGS ARE SIGNED, DATED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF TEXAS, WHICH THEREFORE CONVEYS THE ENGINEER'S RESPONSIBILITY AND ACCOUNTABILITY. THIS DOES NOT RELIEVE ANY PARTY FROM COMPLYING WITH ANY OTHER LEGALLY ADOPTED REGULATION OR ORDINANCE RELATED TO LAND DEVELOPMENT. IF THE CITY SIGNATURES ARE REQUIRED BY ORDINANCE, COUNTY PERMITS WILL NOT BE ISSUED UNTIL SUCH SIGNATURES ARE OBTAINED. THESE SIGNATURES ARE VALID FOR A MAXIMUM OF TWO YEARS.

ENGINEER'S CERTIFICATION

I, KEVIN POLASEK, _____, A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF TEXAS DO HEREBY CERTIFY THAT THE INFORMATION PRESENTED ON THIS SHEET IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.

THE COMPLETED PROJECT CONSISTS OF DRAWING SHEETS C01 THRU C06.

Signature: Kevin Polasek, P.E. DATE: 9-10-08

REVISIONS

DATE	SHEET NO.	DESCRIPTION	ACKNOWLEDGMENT

PROJECT NO. 2000573 APPLICANT NO. XXXXXX

SHEET NUMBER **C06** OF **6**

**HARRIS COUNTY
 PUBLIC INFRASTRUCTURE DEPARTMENT
 EXPRESS REVIEW SHEET**

