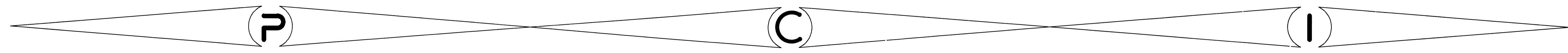
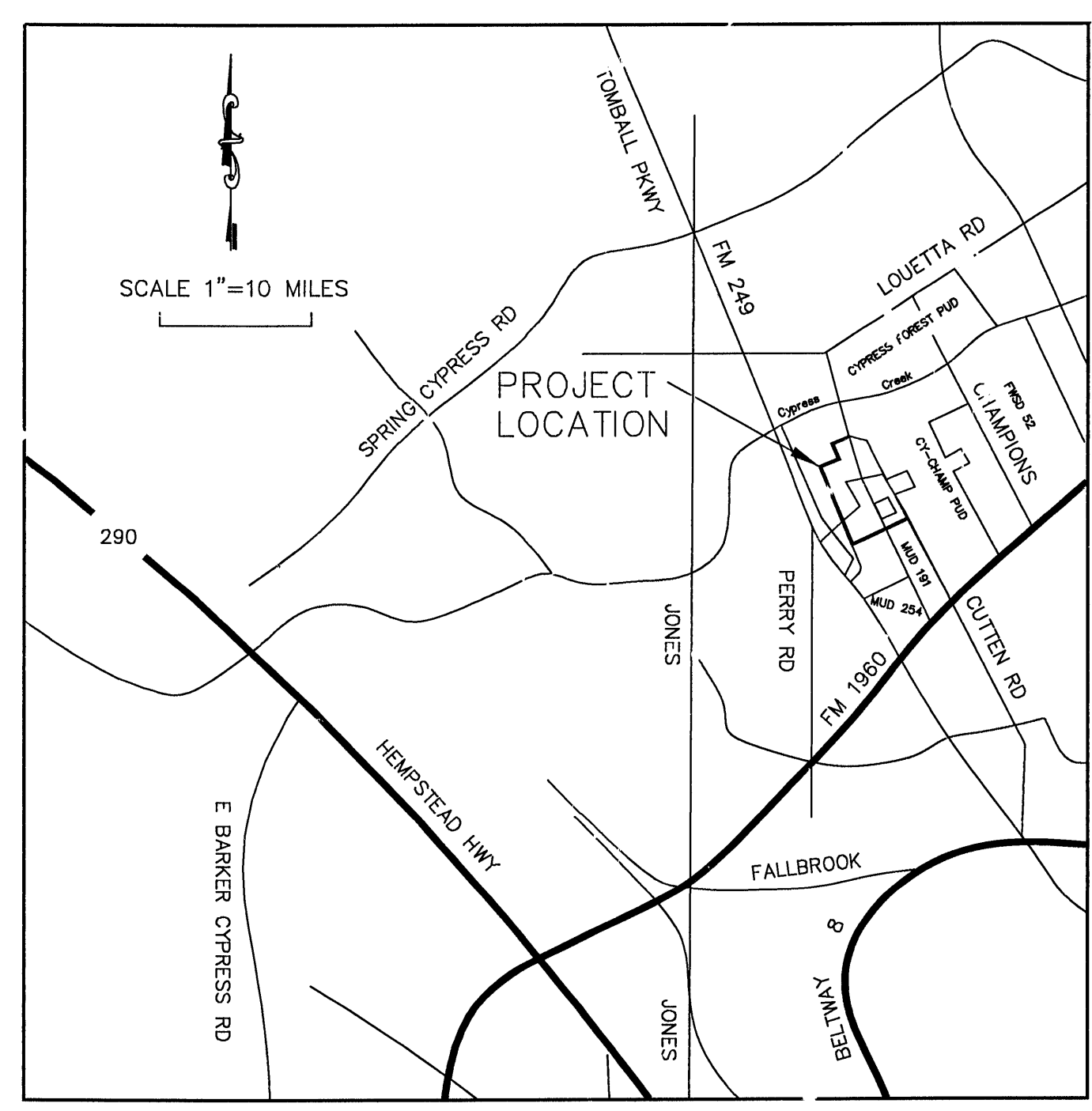


HARRIS COUNTY, TEXAS
MUNICIPAL UTILITY DISTRICT NO. 191
OFFSITE WATER LINE
to serve
HIGHLAND TIMBERS SECTIONS 1 & 2
CHAMPIONS ARBOR
&
PRESTONWOOD FOREST PARK



TITLE	DRAWING INDEX	SHEET NO.
COVER SHEET		1
NOTES		2
OVERALL LAYOUT OFFSITE WATER LINE AND FORCE MAIN		3
OVERALL LAYOUT OFFSITE WATER LINE AND FORCE MAIN		4
HARGRAVE ROAD STA. 00+00 TO STA. 20+00		5
HARGRAVE ROAD STA. 20+00 TO STA. 27+00		6
HARGRAVE ROAD STA. 27+00 TO STA. 34+00		7
HARGRAVE ROAD STA. 40+00 TO STA. 50+00		8
HARGRAVE ROAD STA. 60+00 TO STA. 69+00		9
HARGRAVE ROAD STA. 70+00 TO STA. 79+56.29		10
HARGRAVE ROAD STA. 79+56.29 TO STA. 85+67.32		11
WATER LINE DETAILS		12
STORM WATER POLLUTION PREVENTION DETAILS		13
TRENCH SAFETY DETAILS		14



LOCATION MAP
HARRIS COUNTY, TEXAS
M.A.P. REFERENCY
KEY M.A.P. NO. 370A-B
LAMBERT M.P. NO. 4966(639)-B-1

APPROVED
CITY OF HOUSTON

[Signature]
CITY ENGINEER
HERBERT LUM, P.E. 3-8-2000
DATE

[Signature]
DIRECTOR OF PUBLIC WORKS AND ENGINEERING
JERRY E. KING, P.E. 3-8-2000
DATE

CITY DWG. NO:
SHEET NO. 1 OF 14 SHEETS

"PRIOR TO THE CONSTRUCTION OF THESE FACILITIES WITHIN OR BY THE DISTRICT, THE DISTRICT OR ITS ENGINEER WILL GIVE WRITTEN NOTICE BY REGISTERED OR CERTIFIED MAIL TO THE DIRECTOR OF PUBLIC WORKS AND ENGINEERING STATING THE DATE SUCH CONSTRUCTION WILL BE COMMENCED."

"CONTRACTOR SHALL NOTIFY THE CITY OF HOUSTON, DEPARTMENT OF PUBLIC WORKS AND ENGINEERING, ENGINEERING CONSTRUCTION AND REAL ESTATES GROUP (TELEPHONE (713)837-7000) 48 HOURS BEFORE STARTING WORK ON THIS PROJECT."

NO REVIEW REQUIRED
[Signature]
Harris County Development Project Section
Date 12 May 00

[Signature]
PROVIDENT CONSULTING, INC.
03-02-00

PCI PROVIDENT CONSULTING, INC.
1200 WEST 11TH ST.
HOUSTON, TEXAS 77008
(713)802-1019

JOB NO. 462U
DATE: MARCH 2000

COH LOG. NO. 99-0123

HCMUD 191 OFFSITE WATER LINE #462U

COVER.DWG

R# 99570

SANITARY SEWER NOTES:

1. 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. 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.
2. ALL SEWERS CONSTRUCTED INSIDE LOT EASEMENTS SHALL BE R.C.P. TWENTY (20) FOOT WIDE EASEMENTS SHALL BE PROVIDED.
3. 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.
4. ALL PROPOSED PIPE STUB-OUTS FROM MANHOLES OR INLETS ARE TO BE PLUGGED WITH 8" BRICK WALLS UNLESS OTHERWISE NOTED.
5. 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.
6. CONTRACTOR TO OBTAIN ALL CONSTRUCTION PERMITS REQUIRED BY THE "REGULATIONS OF HARRIS COUNTY, TEXAS FOR FLOOD PLAIN MANAGEMENT."
7. ALL STORM SEWER MANHOLE RIMS LOCATED OUTSIDE THE PROPOSED PAVING SHALL BE SET TO PROPOSED FINISH GRADE ELEVATION.
8. BEFORE UTILITY CONSTRUCTION BEGINS, ADEQUATE DRAINAGE MUST BE PROVIDED SO THAT NO SHEET FLOW FLOODING OF ROADWAY OR ADJOINING PROPERTIES OCCURS.
9. THE CONTRACTOR MAY USE A BACKHOE FOR TRENCH EXCAVATION IN LIEU OF A TRENCHING MACHINE.
10. 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.
11. 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 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.
2. 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.
4. STEEL WATER LINE SECTION TO EXTEND A OF FIVE (5) FEET MINIMUM BEYOND 45° BENDS.
5. THE CONTRACTOR MAY USE A BACKHOE FOR TRENCH EXCAVATION IN LIEU OF A TRENCHING MACHINE.
6. 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.
7. 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.
8. 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.
9. 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.
10. ALL P.V.C. WATER MAINS SHALL BE F C-900, DR 18, CLASS 150.
11. ALL WATER METERS MUST HAVE INDIVIDUAL SERVICE LEADS AS PER CITY OF HOUSTON STANDARDS.

PRIVATE UTILITY COMPANY NOTES

Houston Lighting and Power Company

Overhead lines may exist on the property. We have not attempted to mark those lines since they are clearly visible, but you should locate them prior to beginning any construction. Texas Law, Section 752, Health & Safety Code, forbids all activities in which persons or things MAY come within six (6) feet of live overhead high voltage lines. Contractors and owners are legally responsible for safety of construction workers under this law. This law carries both criminal and civil liability. To arrange for lines to be turned off or moved, call HL&P at 228-7400.

Entex

Location of Entex main lines (to include United Gas Transmission, and/or Industrial Gas Supply Corporation where applicable) are shown in an approximate location only. Service lines are usually not shown. The contractor shall contact the Utility Coordinating Committee at 223-4567 or 1-800-669-8344 a minimum of 48 hours prior to construction to have main and service lines field located. The contractor shall determine the exact location before commencing work and agree to be fully responsible for any damages caused by his failure to exactly locate and preserve these underground facilities.

Southwestern Bell Telephone Company

The locations of Southwestern Bell Telephone Co. utilities are shown in an approximate way only. The contractor shall determine the exact location before commencing work. He agrees to be fully responsible for any and all damages which might be occasioned by his failure to exactly locate and preserve these underground utilities.

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.

HARRIS COUNTY PUBLIC INFRASTRUCTURE DEPT. DEVELOPMENT PROJECTS CONSTRUCTION NOTES

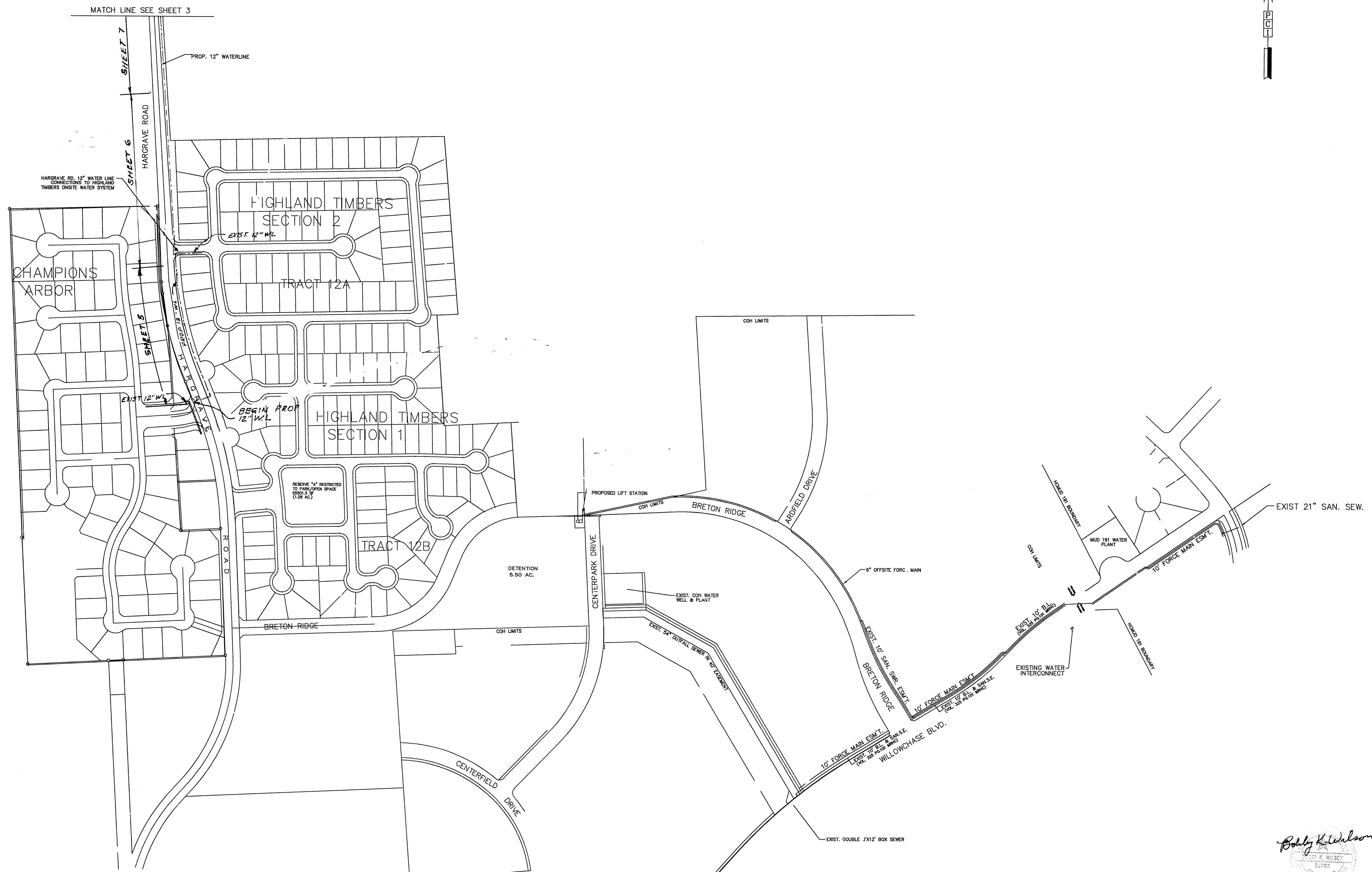
1. ALL SEWERS UNDER OR WITHIN ONE (1) FOOT OF PROPOSED OR FUTURE PAVEMENT SHALL BE BACKFILLED WITH 1-1/2 SACK CEMENT STABILIZED SAND TO WITHIN ONE (1) FOOT OF SUBGRADE.
2. THE CONTRACTOR SHALL NOTIFY THE HARRIS COUNTY PUBLIC INFRASTRUCTURE DEPARTMENT, DEVELOPMENT PROJECTS SECTION, TWENTY-FOUR (24) HOURS IN ADVANCE OF COMMENCING CONSTRUCTION (713) - (956-3071) AND WRITTEN NOTIFICATION FORTY-EIGHT HOURS IN ADVANCE OF COMMENCING CONSTRUCTION.
3. ALL STORM SEWER MANHOLE RIMS LOCATED OUTSIDE THE PROPOSED PAVING SHALL BE SET TO PROPOSED FINISH GRADE ELEVATION.

GENERAL UTILITY NOTES - PAVING

WATER LINES, WASTEWATER COLLECTION SYSTEMS, AND DRAINAGE SYSTEMS SHALL BE CONSTRUCTED AND TESTED 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 OCTOBER 1999.

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.

△			
△			
△			
Rev.	Date	Description	App.
PRIVATE UTILITY LINES SHOWN			
		<i>Paul Long</i> 3/1/2000	
		<i>Nube Balin</i> 3/7/00	
		<i>Paul Long</i> 3/1/2000	
CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING			
REVIEWED BY		DATE	
PRIVATELY FUNDED PUBLIC WORKS	CITY FUNDED PUBLIC WORKS		
<i>Victor Saldivar</i> 3-1-00			
PROJECT MANAGER			
<i>Mal</i> 3-2-00			
CONSTRUCTION			
<i>Samantha</i> 3/2/00			
CHIEF ENGINEER			
STREET AND BRIDGE			
OTHER APPROVAL			
TRAFFIC AND TRANSPORTATION		SPONSOR DEPARTMENT	
CITY ENGINEER		DATE	
<i>Bob Wilson</i>		3-8-2000	
SUBMITTED: _____ DESIGNED BY: BOBBY WILSON			
SCALE: _____/N/A DRAWN BY: BILL DORRIS			
DATE: MARCH 2000 SHEET NO. 2 OF 14 SHEETS			
SURVEY BY: _____ DWG. NO. NOTE.DWG			
F B NO: 462U			
GENERAL NOTES			



HARGRAVE RD. 12" WATER LINE CONNECTIONS TO HIGHLAND TIMBERS ONSITE WATER SYSTEM

MATCH LINE SEE SHEET 3

SHEET 6
SHEET 7

PROP. 12" WATERLINE

HIGHLAND TIMBERS SECTION 2

EXIST. 12" WL

TRACT 12A

HIGHLAND TIMBERS SECTION 1

TRACT 12B

BRETON RIDGE

COH LIMITS

CENTERFIELD DRIVE

PROPOSED LIFT STATION

BRETON RIDGE

ARDFIELD DRIVE

6" OFFSITE FORC. MAIN

EXIST. COH WATER WELL & PLANT

EXIST. 54" GUTTER SERV. W/ 48" EXISTENT

10" FORCE MAIN ESM/T
L=200' @ 1% SLOPE
ELEV. 102.50 @ S.W. END
ELEV. 102.50 @ N.E. END

10" FORCE MAIN ESM/T
L=200' @ 1% SLOPE
ELEV. 102.50 @ S.W. END
ELEV. 102.50 @ N.E. END

WILLOWCHASE BLVD.

EXIST. DOUBLE J'X12" BOX SEWER

EXIST. 10" SAN. SEW.

EXISTING WATER INTERCONNECT

COH LIMITS

MUD 191 WATER PLANT

10" FORCE MAIN ESM/T

EXIST. 21" SAN. SEW.

Bobby Kleinhorn
03-02-00

BENCH MARK

BENCH MARK: NATIONAL GEODETIC SURVEY MARKER
 Y1216, 1973 ADJ., ELEV. = 129.984
 Y1216, 1978 ADJ., ELEV. = 125.406
 Y1216, 1988 ADJ., ELEV. = 133.94 (THIS ADJUSTMENT WAS USED FOR CUTTEN ROAD)
 ELEVATIONS SHOWN HEREON ARE BASED ON 1973 ADJUSTMENT
 TBM #1: SET RAILROAD SPIKE ON SOUTH SIDE OF 14" TALLOW APPROXIMATELY 31 FEET NORTH OF THE END OF CENTERFIELD DRIVE ELEVATION = 128.60
 TBM #2: SET RAILROAD SPIKE ON SOUTH SIDE OF POWER POLE WITH TRANSFORMER ON WEST SIDE OF PRIVATE ROAD AND 200 FEET NORTH OF PRIVATE ROAD ELEVATION = 130.62
 TBM #3: SET RAILROAD SPIKE ON EAST SIDE OF POWER POLE ON WEST SIDE OF HARGRAVE ROAD AND NORTH OF THE INTERSECTION OF DOTSON ROAD & HARGRAVE ROAD ELEVATION = 128.04
 TBM #4: RAILROAD SPIKE ON EAST SIDE OF POWER POLE #13629 ON THE WEST SIDE OF HARGRAVE ROAD APPROXIMATELY 30 FEET NORTH OF 18 INCH R.C.P. AT GRAVEL DRIVE FROM 13627 HARGRAVE ROAD ELEVATION = 130.56

100 YEAR FLOOD PLAIN NOTE
 As per FIRM Panel No 4820120-435J dated Nov. 6, 1996 This tract is not within the 100 year flood plain. The applicable 100 year flood plain elevation is 117.6 (NAD 1927 projection)

Rev.	Date	Description	App.

PRIVATE UTILITY LINES SHOWN

Jan M. Luft 3/1/2000
 RELIANT ENERGIES, INC./ENTEX
Mike Bolin 3/7/00
 SOUTHWESTERN BELL TELEPHONE CO.
 Valid for One Year Only
Jan M. Luft 3/1/2000
 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 Sullivan</i> 3-7-00 WATER	
<i>Mike Bolin</i> 3-7-00 WASTEWATER	PROJECT MANAGER
<i>Samuel Johnson</i> 3/2/00 STORM WATER	CONSTRUCTION
	CHIEF ENGINEER

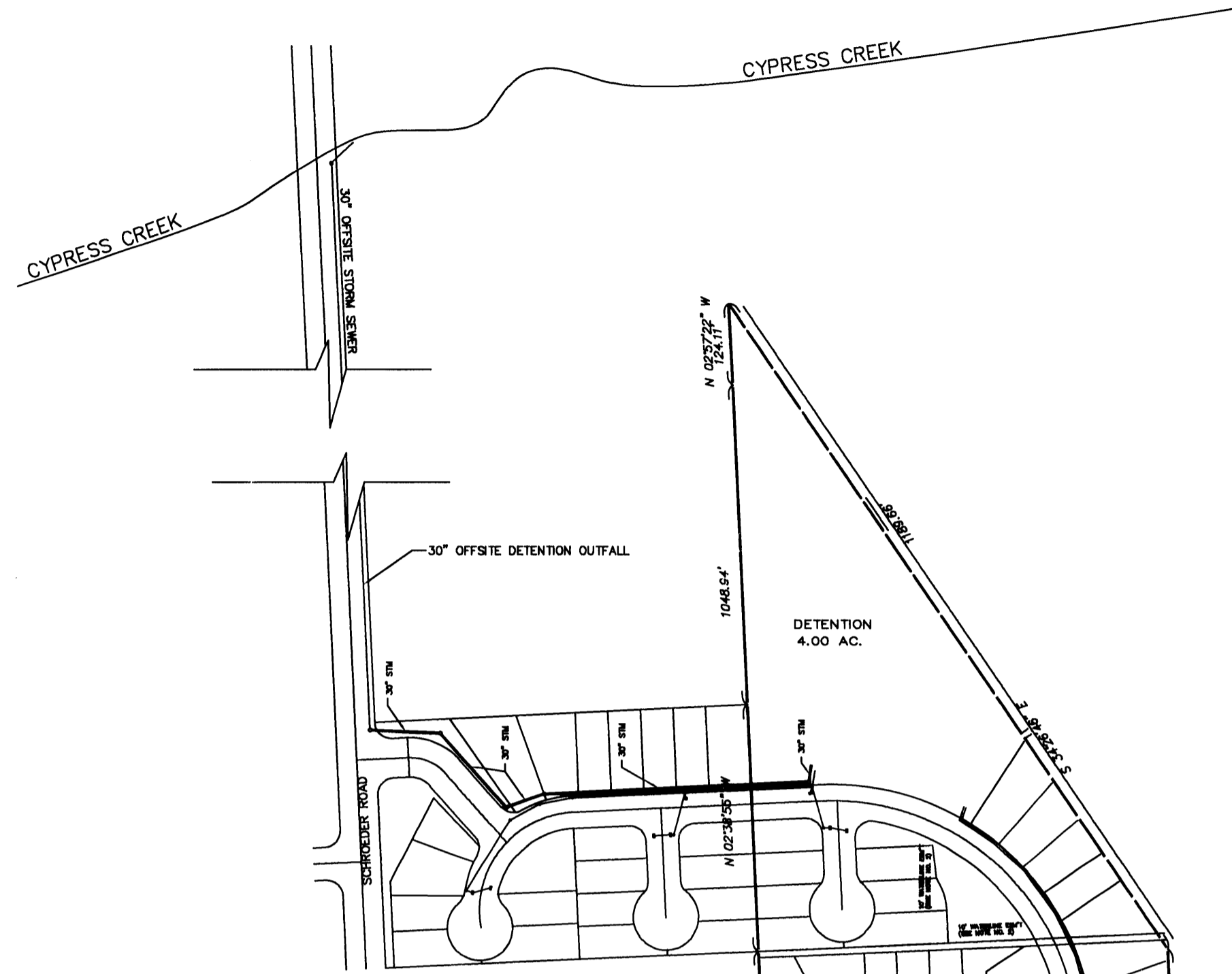
OTHER APPROVAL
 TRAFFIC AND TRANSPORTATION SPONSOR DEPARTMENT

CITY ENGINEER DATE
Mike Bolin 3-8-2000
 DIRECTOR OF PUBLIC WORKS AND ENGINEERING DATE

SUBMITTED: _____ DESIGNED BY: B K WILSON
 SCALE: 1" = 200' DRAWN BY: BILL DORRIS
 DATE: MARCH 2000 SHEET NO. 3 OF 14 SHEETS
 SURVEY BY: _____ CITY DWG. NO. OVRAL1.DWG
 F B NO: 462U

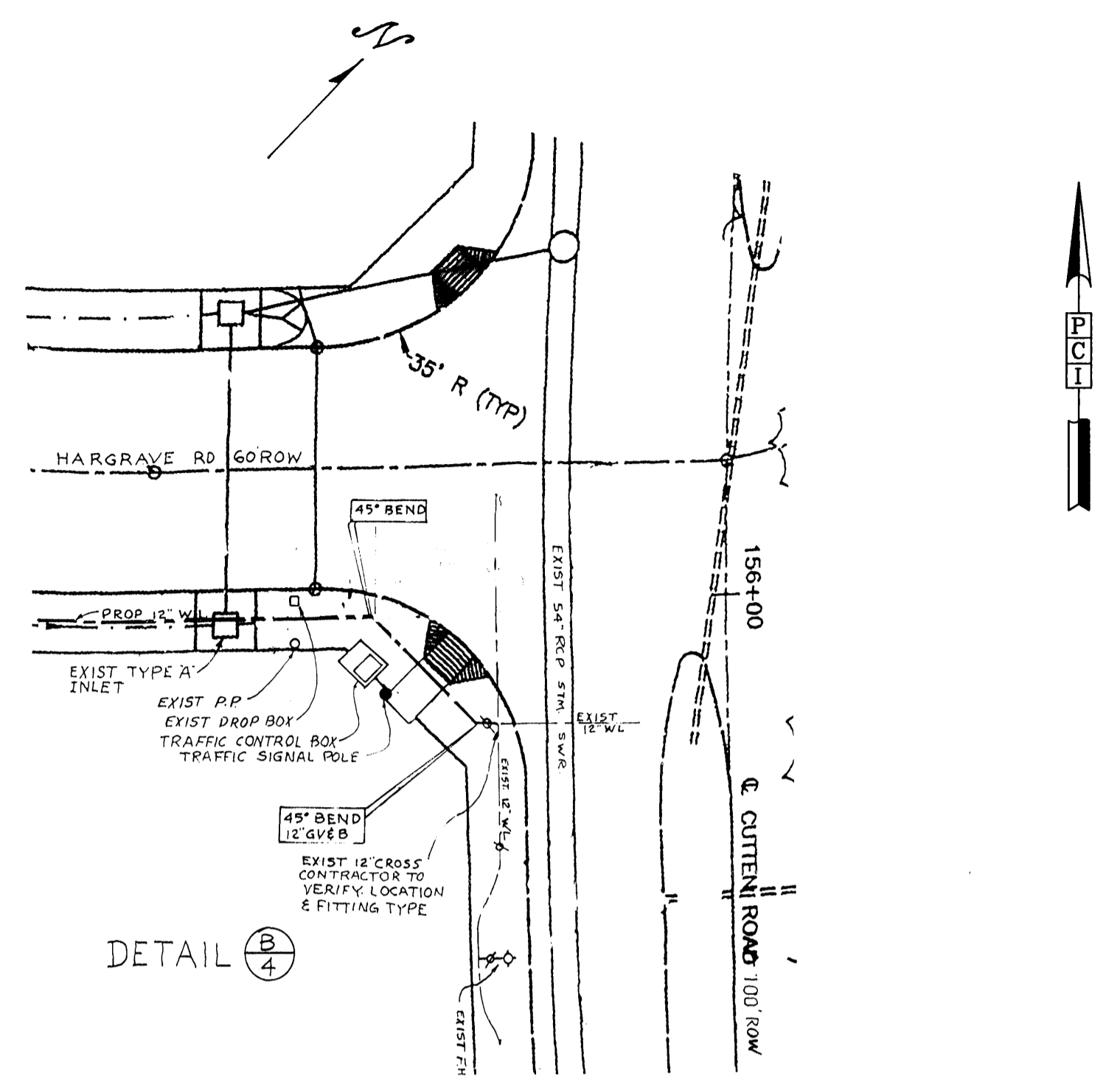
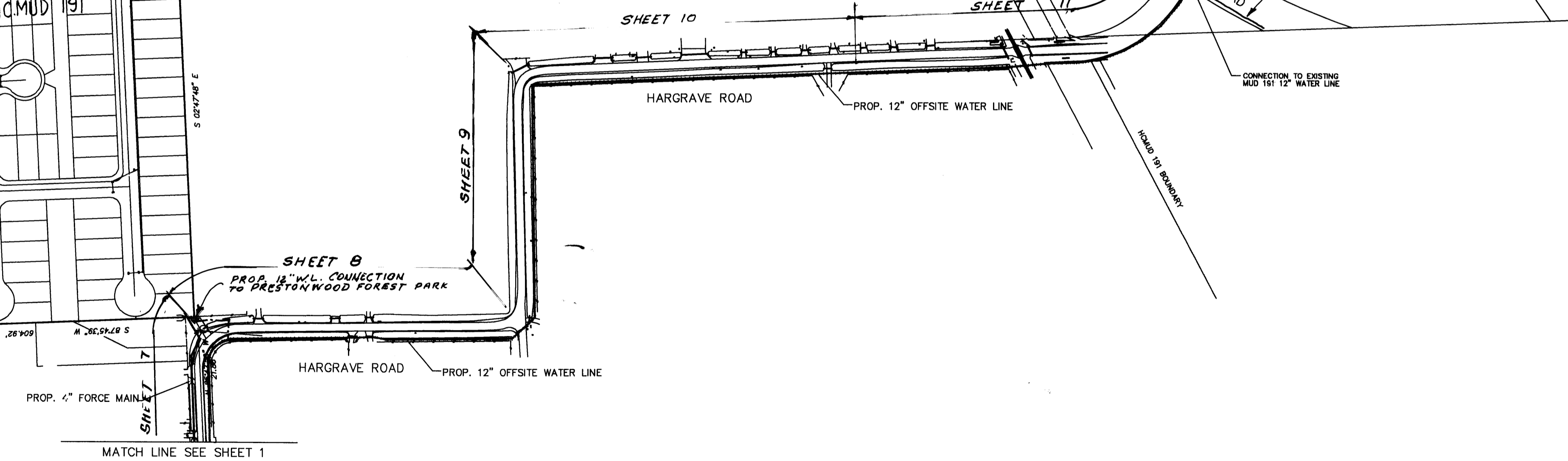
HARRIS COUNTY MUD 191
 OVERALL LAYOUT
 HIGHLAND TIMBERS
 & CHAMPIONS ARBOR &
 PRESTONWOOD FOREST PARK
 OFFSITE WATER LINE

PCI PROVIDENT CONSULTING, INC.
 1200 WEST 11TH ST.
 HOUSTON, TEXAS 77008
 (713)802-1019



PRESTONWOOD FOREST PARK
H.C.MUD 191

NOTE: PRESTONWOOD FOREST PARK SERVED BY OFFSITE WATER LINE.



BENCH MARK

BENCH MARK: NATIONAL GEODETIC SURVEY MARKER
 Y1216, 1973 ADJ., ELEV. = 125.994
 Y1216, 1978 ADJ., ELEV. = 125.406
 Y1216, 1988 ADJ., ELEV. = 123.94 (THIS ADJUSTMENT WAS USED FOR CUTTEN ROAD)
 ELEVATIONS SHOWN HEREON ARE BASED ON 1973 ADJUSTMENT

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 ELEVATION = 128.60

TBM #2: SET RAILROAD SPIKE ON SOUTH SIDE OF POWER POLE WITH TRANSFORMER ON WEST SIDE OF PRIVATE ROAD AND 200 FEET NORTH OF PRIVATE ROAD
 ELEVATION = 130.62

TBM #3: SET RAILROAD SPIKE ON EAST SIDE OF POWER POLE ON WEST SIDE OF HARGRAVE ROAD AND NORTH OF THE INTERSECTION OF DOTSON ROAD & HARGRAVE ROAD
 ELEVATION = 128.04

TBM #4: RAILROAD SPIKE ON EAST SIDE OF POWER POLE #13629 ON THE WEST SIDE OF HARGRAVE ROAD APPROXIMATELY 30 FEET NORTH OF 18 INCH R.C.P. AT GRAVEL DRIVE FROM 13627 HARGRAVE ROAD
 ELEVATION = 130.56

Rev.	Date	Description	App.

PRIVATE UTILITY LINES SHOWN

John G. ... 3/1/2000
 RELIANT ENERGIES, INC./ENTEX

Mike Bolin 3/7/00
 SOUTHWESTERN BELL TELEPHONE CO.
 Valid for One Year Only

John G. ... 3/1/2000
 RELIANT ENERGIES, INC./H&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>Water</i> 3-2-00	
WATER	PROJECT MANAGER
<i>Waste</i> 3-2-00	
WASTEWATER	CONSTRUCTION
<i>Storm</i> 1-8-2-00	
STORM WATER	CHIEF ENGINEER
STREET AND BRIDGE	

OTHER APPROVAL

TRAFFIC AND TRANSPORTATION SPONSOR DEPARTMENT

CITY ENGINEER DATE
W. L. ... 3-8-2000

DIRECTOR OF PUBLIC WORKS AND ENGINEERING DATE

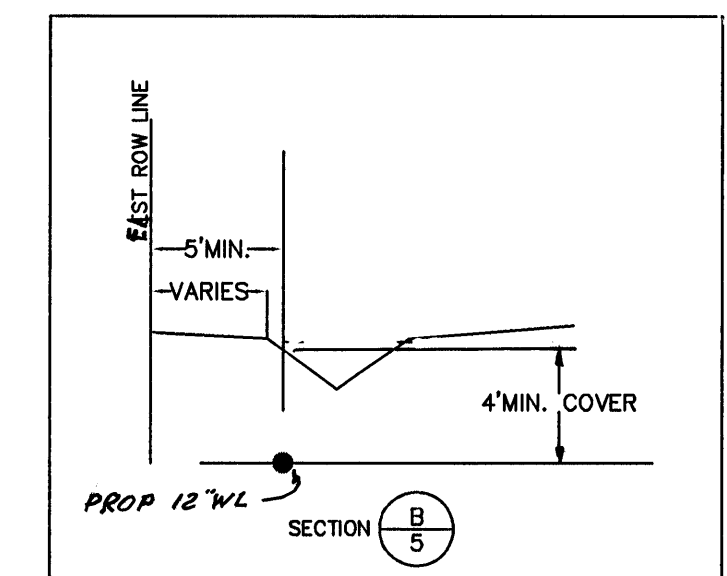
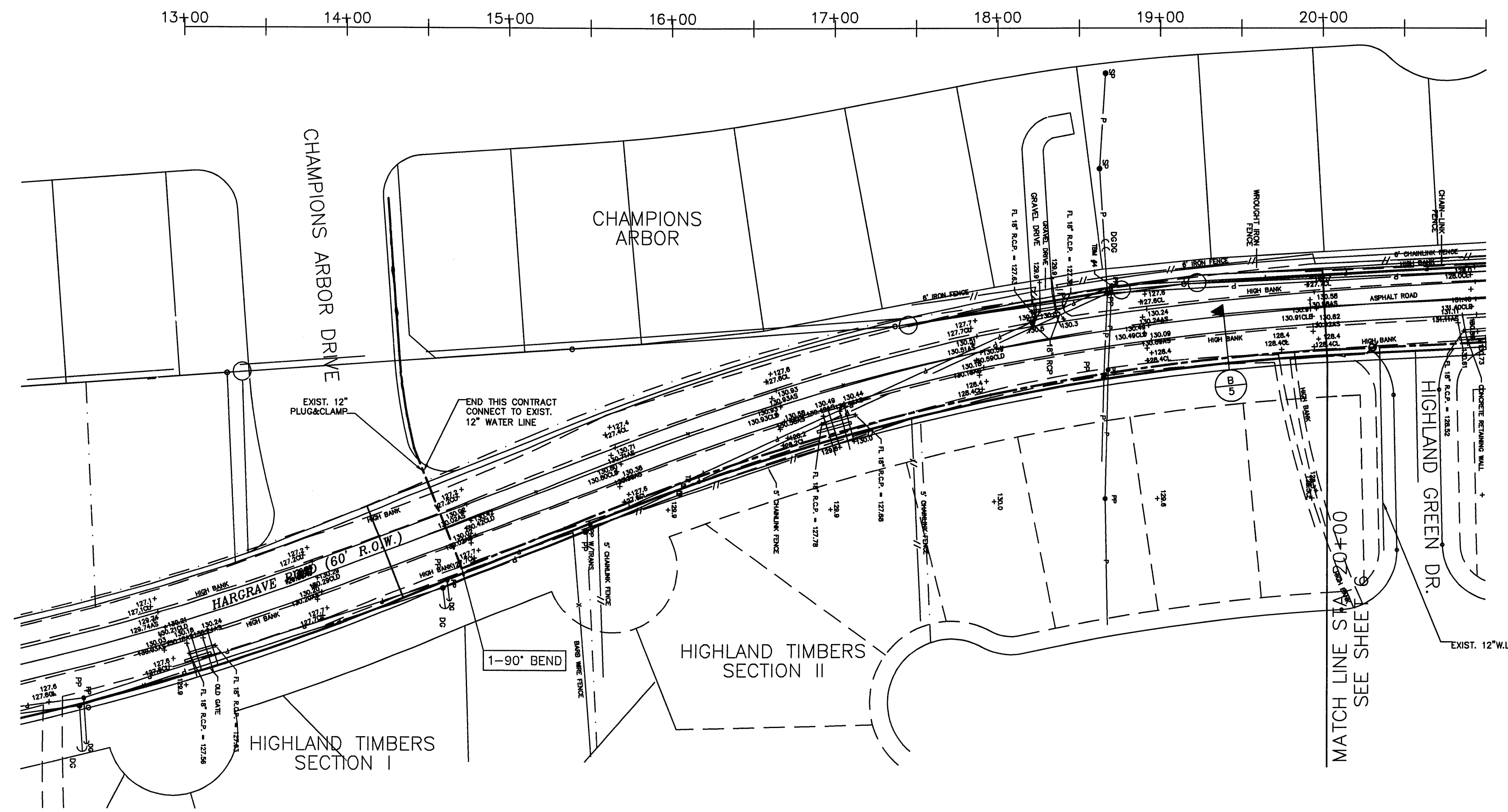
SUBMITTED: _____ DESIGNED BY: B K WILSON
 SCALE: 1" = 200' DRAWN BY: BILL DORRIS
 DATE: MARCH 2000 SHEET NO. 4 OF 14 SHEETS
 SURVEY BY: _____ CITY DWG. NO. OVRAL2.DWG
 F B NO: 482U

Bobby K. Wilson
 03-02-00

HARRIS COUNTY MUD 191
 OVERALL LAYOUT
 HIGHLAND TIMBERS SECTIONS 1 & 2
 & CHAMPIONS ARBOR &
 PRESTONWOOD FOREST PARK
 OFFSITE WATER LINE

PCI PROVIDENT CONSULTING, INC.
 1200 WEST 11TH ST.
 HOUSTON, TEXAS 77008
 (713)802-1019

- LEGEND
 C CONCRETE
 CLR CENTERLINE OF ROAD
 DG DOWN GUY
 G GUTTER
 GB GRADE BREAK
 GP GATE POST
 LP LIGHT POLE
 NG NATURAL GROUND
 PP POWER POLE
 TC TOP OF CURB
 SN SIGN
 WV WATER VALVE



HARGRAVE ROAD (EAST PROFILE)

BENCH MARK
 BENCH MARK: NATIONAL GEODETIC SURVEY MARKER
 Y1216, 1973 ADJ. ELEV. = 125.994
 Y1216, 1978 ADJ. ELEV. = 125.406
 Y1216, 1988 ADJ. ELEV. = 123.94 (THIS ADJUSTMENT WAS USED FOR CUTTEN ROAD)
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APPROVED: _____
 for Assistant County Engineer
 Date _____

Approval implied for paving and drainage facilities within Harris County R.O.W. and/or Jurisdiction. All other improvements in H.C.R.O.W. and/or Jurisdiction are approved as to location only. The above authorization is valid for one (1) year only.

Rev.	Date	Description	App.

PRIVATE UTILITY LINES SHOWN

Jaellist 3/1/2000
 RELIANT ENERGIES, INC./ENTRAX
 Mike Balin 3/7/00
 SOUTHWESTERN BELL TELEPHONE CO.
 Valid for One Year Only
Jaellist 3/1/2000
 RELIANT ENERGIES, INC./HPL&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	DATE	PROJECT
<i>Victor Saldivar</i>	3-7-00	WATER
<i>Matt</i>	3-2-00	WASTEWATER
<i>Louisa Guyer</i>	3/2/00	STORM WATER

PROJECT MANAGER
 CONSTRUCTION
 CHIEF ENGINEER

OTHER APPROVAL

TRAFFIC AND TRANSPORTATION SPONSOR DEPARTMENT

CITY ENGINEER DATE
Bill Dorris 3-8-2000
 DIRECTOR OF PUBLIC WORKS AND ENGINEERING DATE

SUBMITTED: _____ DESIGNED BY: B K WILSON
 SCALE: H: 1"=50' DRAWN BY: BILL DORRIS
 V: 1"=5'
 DATE: MARCH 2000 SHEET NO. 5 OF 14 SHEETS
 SURVEY BY: _____ CITY DWG. NO. HARDTCO.DWG
 F B NO: 462U

HARRIS COUNTY MUD 191

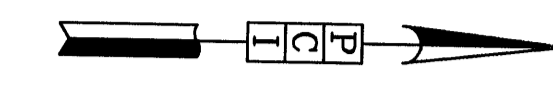
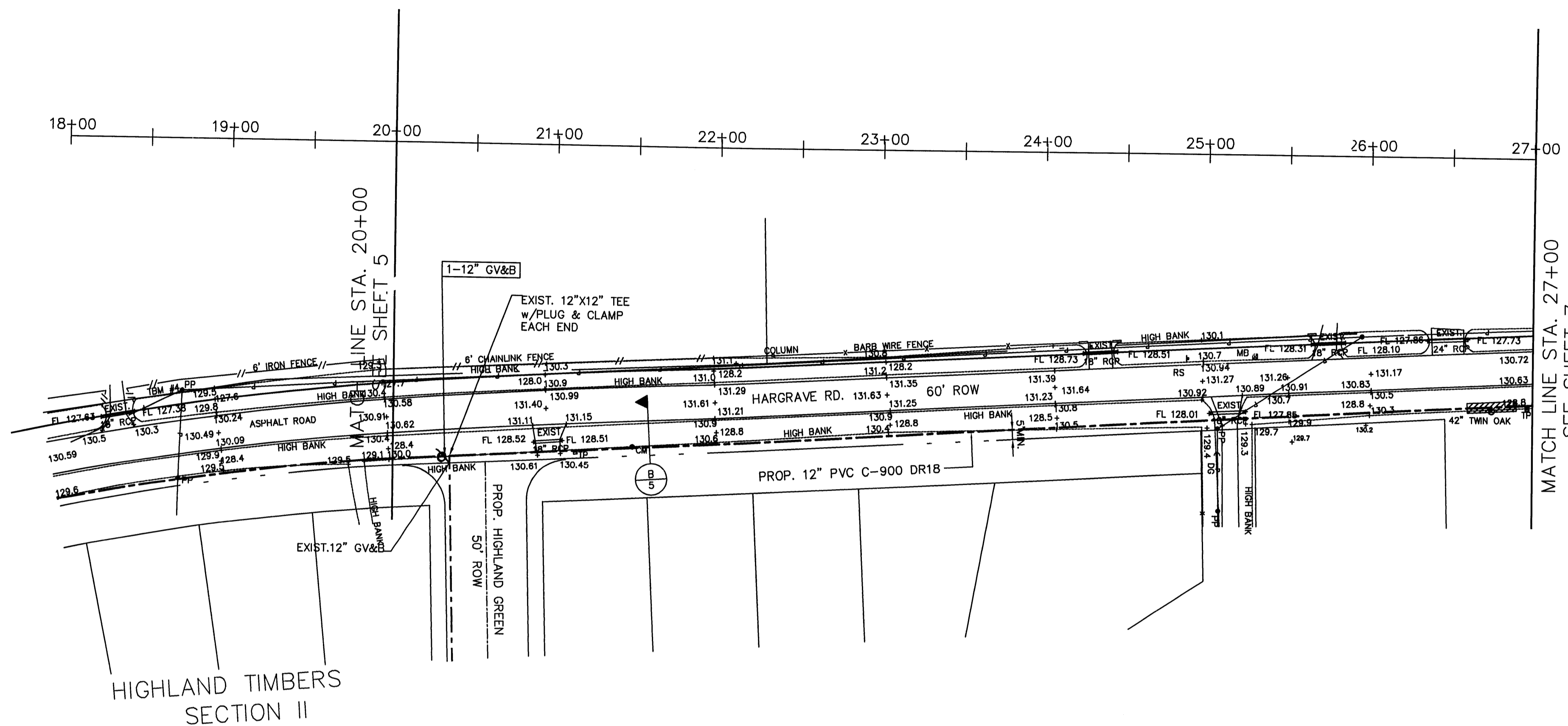
WATER LINE ALONG
 HARGRAVE ROAD
 (EAST PROFILE)
 STA. 14+00 TO STA. 20+00

PCI PROVEDENT CONSULTING, INC.
 1200 WEST 11TH ST.
 HOUSTON, TEXAS 77008
 (713)802-1019

Station	13+00	14+00	15+00	16+00	17+00	18+00	19+00	20+00	21+00	
130		EXIST. EAST P.W.T. 130.09 EXIST. EAST DITCH FL 128.4	EXIST. EAST P.W.T. 130.62 EXIST. EAST DITCH FL 128.4	EXIST. EAST P.W.T. 131.11 EXIST. EAST DITCH FL 128.52	EXIST. EAST P.W.T. 131.15 EXIST. EAST DITCH FL 128.51	EXIST. EAST P.W.T. 131.21 EXIST. EAST DITCH FL 128.80	EXIST. EAST P.W.T. 131.25 EXIST. EAST DITCH FL 128.80	EXIST. EAST P.W.T. 131.95 EXIST. EAST DITCH FL 127.57	EXIST. EAST P.W.T. 130.92 EXIST. EAST DITCH FL 127.63 EXIST. EAST P.W.T. 130.91 EXIST. EAST DITCH FL 127.38	EXIST. EAST P.W.T. 130.05 EXIST. EAST DITCH FL 128.31
125		EXIST. EAST N.G.	EXIST. EAST N.G.	FL 128.52 EXIST. FL 128.51 18" RCP	1/4" MIN.	PROP. 12"W.L. PVC C-900 DR18	FL 127.63 EXIST. FL 127.38 18" RCP	4" MIN.	EXIST. EAST N.G.	
120										
115										
110										
105										

Bobby K. Wilson
 03-02-00

- LEGEND**
 C CONCRETE
 CLR CENTERLINE OF ROAD
 DG DOWN GUY
 G GUTTER
 GB GRADE BREAK
 GP GATE POST
 LP LIGHT POLE
 NG NATURAL GROUND
 PP POWER POLE
 TC TOP OF CURB
 SN SIGN
 WV WATER VALVE



MATCH LINE STA. 27+00 SEE SHEET 7

- TREE PRESERVATION NOTES:**
1. NO OPEN CUT WITHIN 10' OF A TREE.
 2. BORE AND JACK FORCE MAIN FROM DRIP LINE TO DRIP LINE OR A MAXIMUM OF 20' AT EACH TREE UNLESS OTHERWISE SHOWN.
 3. OFFSET BORE 5' MINIMUM FROM ANY PINE TREE TRUNK TO AVOID BREAKING TAPROOT.

BENCH MARK

BENCH MARK: NATIONAL GEODETIC SURVEY MARKER
 Y1216, 1973 ADJ. ELEV. = 125.994
 Y1216, 1978 ADJ. ELEV. = 125.406
 Y1216, 1988 ADJ. ELEV. = 123.94 (THIS ADJUSTMENT WAS USED FOR CUTTEN ROAD)

ELEVATIONS SHOWN HEREON ARE BASED ON 1973 ADJUSTMENT

TBM #1: SET RAILROAD SPIKE ON SOUTH SIDE OF 14" TALLOW APPROXIMATELY 31 FEET NORTH OF THE END OF CENTERFIELD DRIVE ELEVATION = 128.80

TBM #2: SET RAILROAD SPIKE ON SOUTH SIDE OF POWER POLE WITH TRANSFORMER ON WEST SIDE OF PRIVATE ROAD AND 200 FEET NORTH OF PRIVATE ROAD ELEVATION = 130.62

TBM #3: SET RAILROAD SPIKE ON EAST SIDE OF POWER POLE ON WEST SIDE OF HARGRAVE ROAD AND NORTH OF THE INTERSECTION OF DOTSON ROAD & HARGRAVE ROAD ELEVATION = 128.04

TBM #4: RAILROAD SPIKE ON EAST SIDE OF POWER POLE #13629 ON THE WEST SIDE OF HARGRAVE ROAD APPROXIMATELY 30 FEET NORTH OF 18 INCH R.C.P. AT GRAVEL DRIVE FROM 13627 HARGRAVE ROAD ELEVATION = 130.56

APPROVED: _____
 for Assistant County Engineer

Date _____

Approval implied for paving and drainage facilities within Harris County R.O.W. and/or jurisdiction. All other improvements in H.C.R.O.W. and/or jurisdiction are approved as to location only. The above authorization is valid for one (1) year only.

Rev.	Date	Description	App.

PRIVATE UTILITY LINES SHOWN

Reliant 3/1/2000
 RELIANT ENERGIES, INC./ENTEX
 Mike Balim 3/1/00
 SOUTHWESTERN BELL TELEPHONE CO.
 Valid for One Year Only

Reliant 3/1/2000
 RELIANT ENERGIES, INC./ENTEX
 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
WATER	PROJECT MANAGER
WASTEWATER	CONSTRUCTION
STORM WATER	CHIEF ENGINEER

OTHER APPROVAL

TRAFFIC AND TRANSPORTATION SPONSOR DEPARTMENT

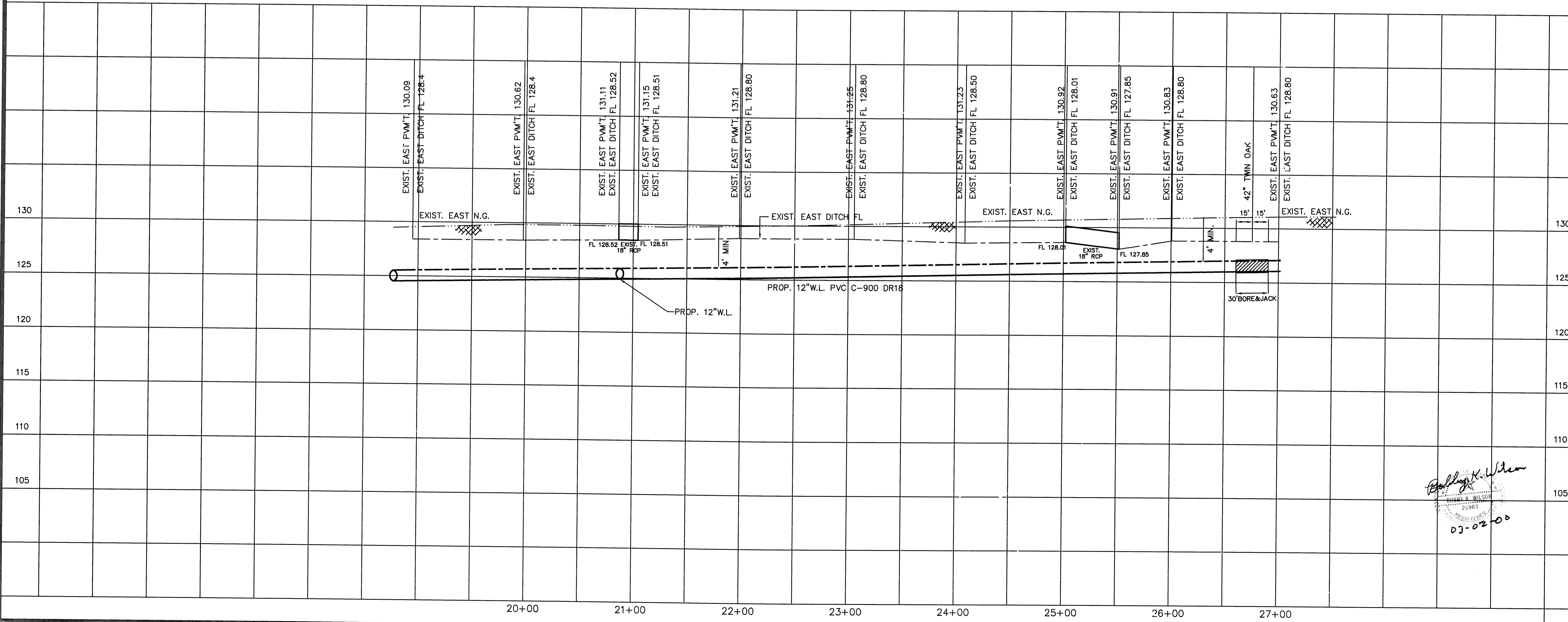
CITY ENGINEER DATE
 3/2/00 3/2/00

DIRECTOR OF PUBLIC WORKS AND ENGINEERING DATE

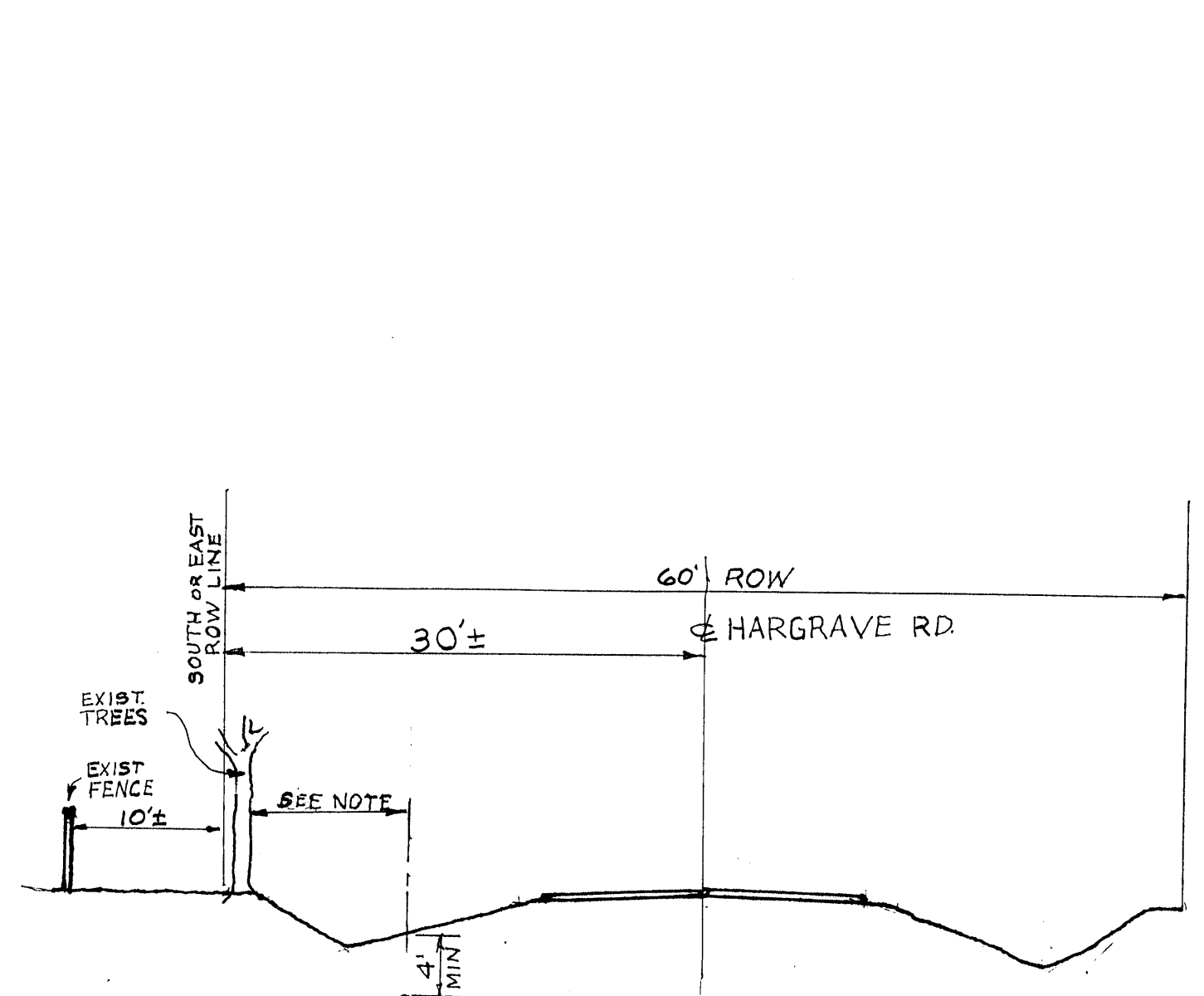
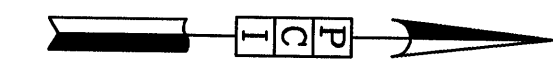
DESIGNED BY: B K WILSON
 DRAWN BY: BILL DORRIS
 SHEET NO. 6 OF 14 SHEETS
 CITY DWG. NO. HARDTC1.DWG

HARRIS COUNTY MUD 191
 WATER LINE ALONG
 HARGRAVE ROAD
 (EAST PROFILE)
 STA. 20+00 TO STA. 27+00

PCI PROVIDENT CONSULTING, INC.
 1200 WEST 11TH ST.
 HOUSTON, TEXAS 77008
 (713)802-1019

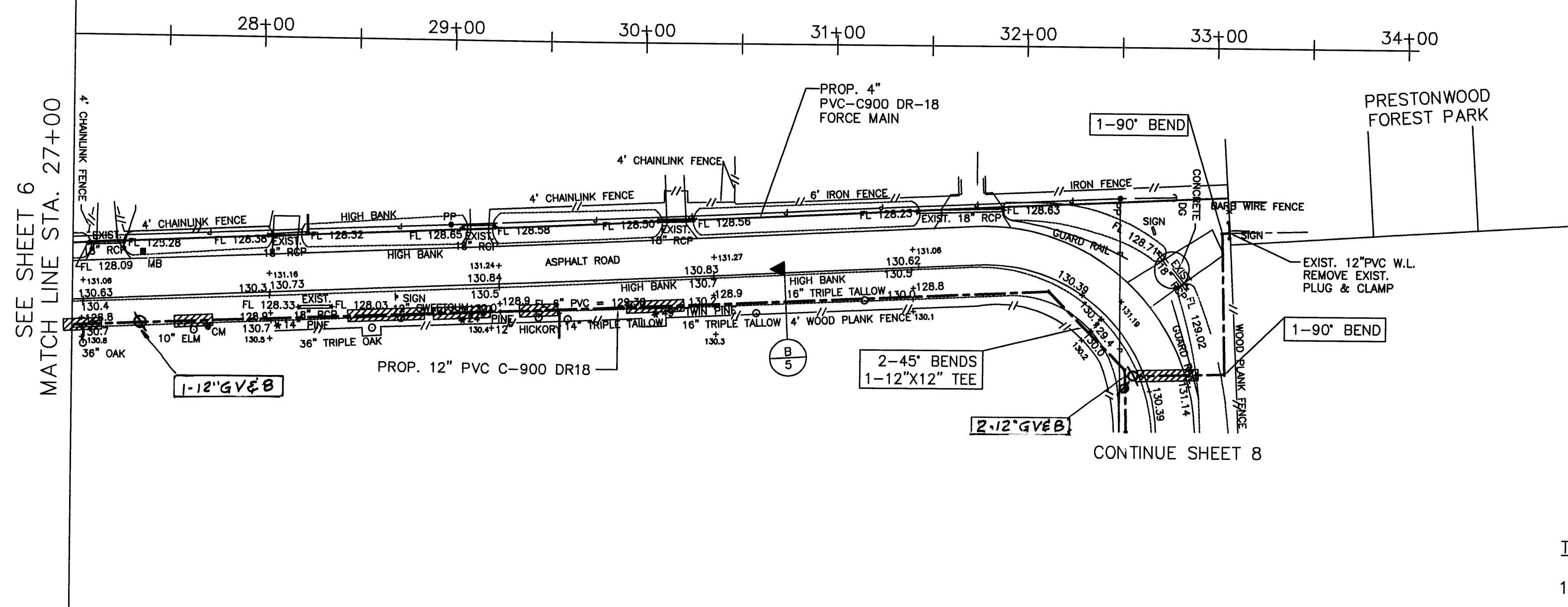


- LEGEND
 C CONCRETE
 CLR CENTERLINE OF ROAD
 DG DOWN GUY
 G GUTTER
 GB GRADE BREAK
 GP GATE POST
 LP LIGHT POLE
 NG NATURAL GROUND
 PP POWER POLE
 TC TOP OF CURB
 SN SIGN
 WV WATER VALVE



NOTE:
 IF DISTANCE FROM TREE TO WATER LINE IS MIN. 10', OPEN CUT IS ALLOWED. IF LESS THAN 10', BORE & JACK

SECTION **R/7**
 Scale 1"=10'



HARGRAVE ROAD (EAST PROFILE)

TREE PRESERVATION NOTES:

1. NO OPEN CUT WITHIN 10' OF A TREE.
2. BORE AND JACK FORCE MAIN FROM DRIP LINE TO DRIP LINE OR A MAXIMUM OF 20' AT EACH TREE UNLESS OTHERWISE SHOWN.
3. OFFSET BORE 5' MINIMUM FROM ANY PINE TREE TRUNK TO AVOID BREAKING TAPROOT.

BENCH MARK
 NATIONAL GEODETIC SURVEY MARKER
 Y1216, 1973 ADJ., ELEV. = 125.994
 Y1216, 1978 ADJ., ELEV. = 125.406
 Y1216, 1988 ADJ., ELEV. = 123.94 (THIS ADJUSTMENT WAS USED FOR CUTTEN ROAD)
 ELEVATIONS SHOWN HEREON ARE BASED ON 1973 ADJUSTMENT

TBM #1: SET RAILROAD SPIKE ON SOUTH SIDE OF 14" TALLOW APPROXIMATELY 31 FEET NORTH OF THE END OF CENTERFIELD DRIVE ELEVATION = 128.60
 TBM #2: SET RAILROAD SPIKE ON SOUTH SIDE OF POWER POLE WITH TRANSFORMER ON WEST SIDE OF PRIVATE ROAD AND 200 FEET NORTH OF PRIVATE ROAD ELEVATION = 130.82
 TBM #3: SET RAILROAD SPIKE ON EAST SIDE OF POWER POLE ON WEST SIDE OF HARGRAVE ROAD AND NORTH OF THE INTERSECTION OF DOTSON ROAD & HARGRAVE ROAD ELEVATION = 128.04
 TBM #4: RAILROAD SPIKE ON EAST SIDE OF POWER POLE #13629 ON THE WEST SIDE OF HARGRAVE ROAD APPROXIMATELY 30 FEET NORTH OF 18 INCH R.C.P. AT GRAVEL DRIVE FROM 13627 HARGRAVE ROAD ELEVATION = 130.56

APPROVED: _____
 for Assistant County Engineer
 Date _____

Approval implied for paving and drainage facilities within Harris County R.O.W. and/or jurisdiction. All other improvements in H.C.R.O.W. and/or jurisdiction are approved as to location only.
 The above authorization is valid for one (1) year only.

Rev.	Date	Description	App.

PRIVATE UTILITY LINES SHOWN

John Lutz 3/1/2000
 REGALANT ENERGIES, INC./VETEX

Mike Balin 3/7/00
 SOUTHWESTERN BELL TELEPHONE CO.
 Valid for One Year Only

John Lutz 3/1/2000
 REGALANT ENERGIES, INC./VETEX
 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 Saldivar</i> 3-7-00 WATER	
<i>Mike Balin</i> 3/7/00 WASTEWATER	PROJECT MANAGER
<i>Samuel Givens</i> 3/2/00 STORM WATER	CONSTRUCTION
	CHIEF ENGINEER

OTHER APPROVAL

TRAFFIC AND TRANSPORTATION SPONSOR DEPARTMENT

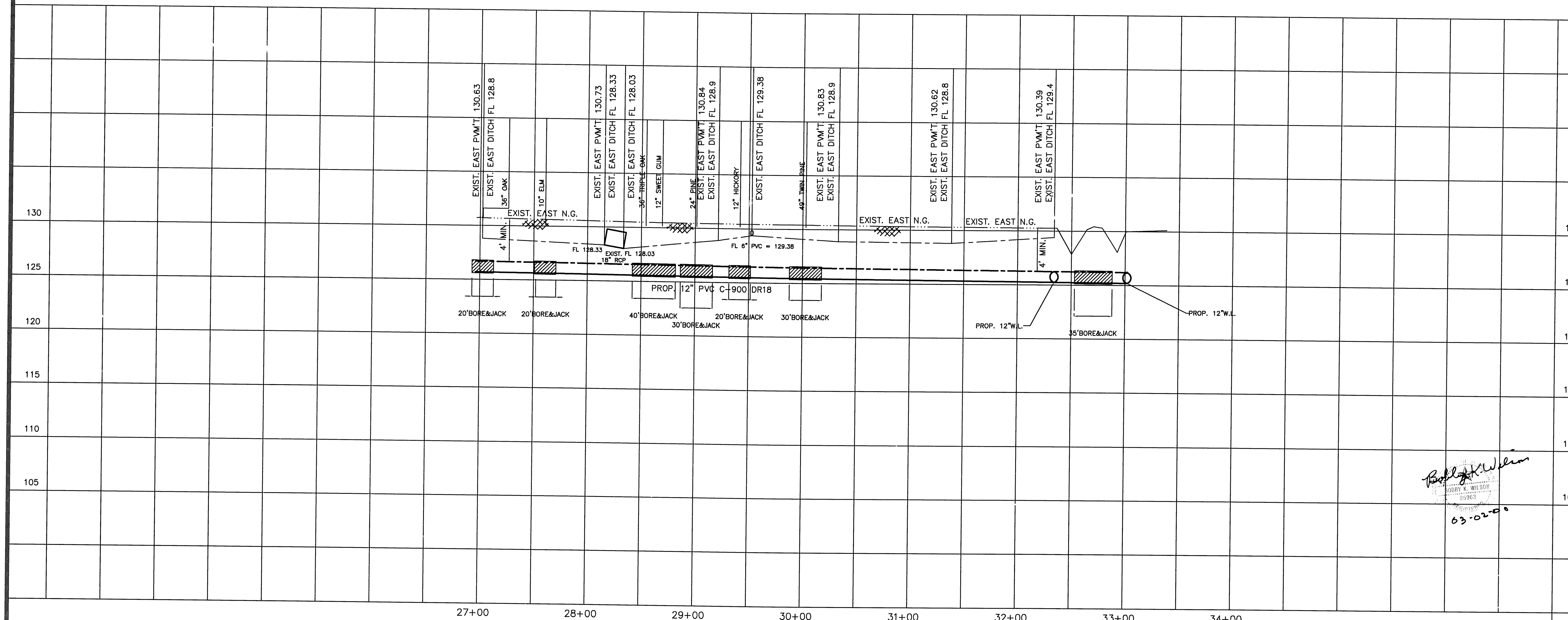
CITY ENGINEER DATE
Robert K. Wilson 3-8-2000

DIRECTOR OF PUBLIC WORKS AND ENGINEERING DATE

SUBMITTED: _____ H: 1"=50' V: 1"=5'
 SCALE: _____
 DATE: MARCH 2000 DESIGNED BY: B K WILSON
 SURVEY BY: _____ DRAWN BY: BILL DORRIS
 F B NO: 462U SHEET NO. 7 OF 14 SHEETS
 CITY DWG. NO. HARDT2.DWG

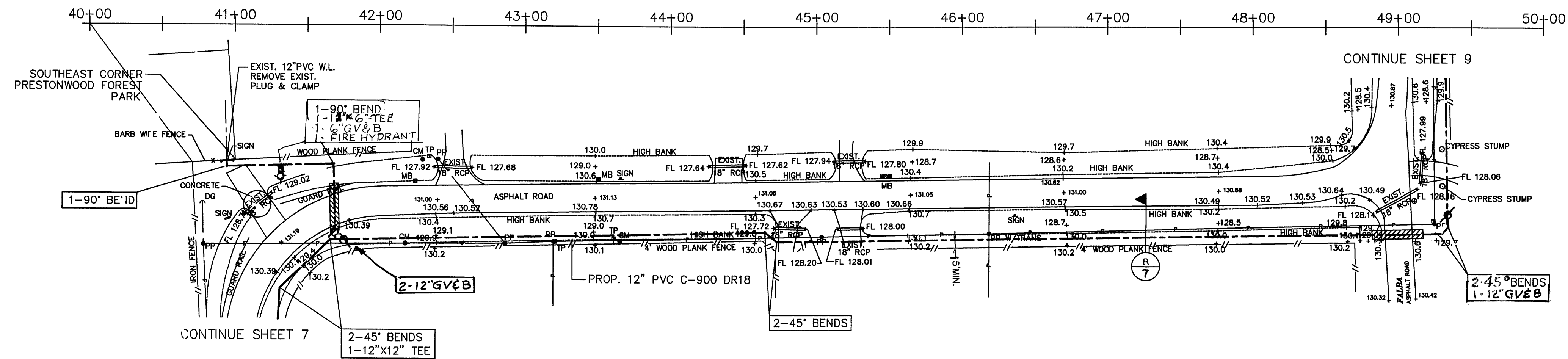
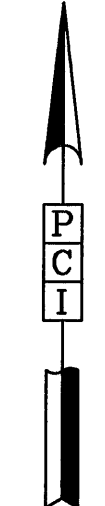
HARRIS COUNTY MUD 191
 WATER LINE ALONG
 HARGRAVE ROAD
 (EAST PROFILE)
 STA. 27+00 TO STA. 34+00

PCI PROVIDENT CONSULTING, INC.
 1200 WEST 11TH ST.
 HOUSTON, TEXAS 77008
 (713)802-1019

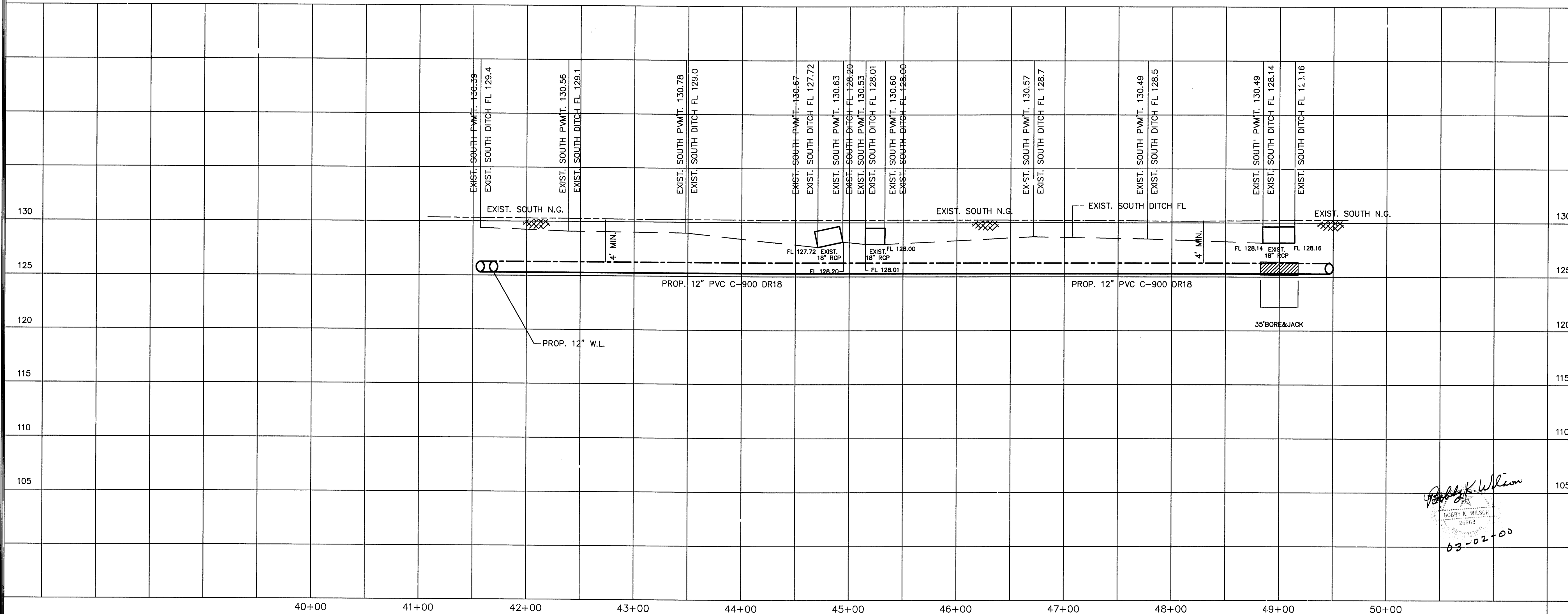


- LEGEND
 C CONCRETE
 CLR CENTERLINE OF ROAD
 DG DOWN GUY
 G GUTTER
 GB GRADE BREAK
 GP GATE POST
 LP LIGHT POLE
 NG NATURAL GROUND
 PP POWER POLE
 TC TOP OF CURB
 SN SIGN
 WV WATER VALVE

BENCH MARK
 BENCH MARK: NATIONAL GEODETIC SURVEY MARKER
 Y1216, 1973 ADJ., ELEV. = 125.994
 Y1216, 1973 ADJ., ELEV. = 125.408
 Y1216, 1988 ADJ., ELEV. = 123.94 (THIS ADJUSTMENT WAS USED FOR CUTTEN ROAD)
 ELEVATIONS SHOWN HEREON ARE BASED ON 1973 ADJUSTMENT
 TBM #1: SET RAILROAD SPIKE ON SOUTH SIDE OF 14" TALLOW APPROXIMATELY 31 FEET NORTH OF THE END OF CENTERFIELD DRIVE ELEVATION = 128.60
 TBM #2: SET RAILROAD SPIKE ON SOUTH SIDE OF POWER POLE WITH TRANSFORMER ON WEST SIDE OF PRIVATE ROAD AND 200 FEET NORTH OF PRIVATE ROAD ELEVATION = 130.62
 TBM #3: SET RAILROAD SPIKE ON EAST SIDE OF POWER POLE ON WEST SIDE OF HARGRAVE ROAD AND NORTH OF THE INTERSECTION OF DOTSON ROAD & HARGRAVE ROAD ELEVATION = 128.04
 TBM #4: RAILROAD SPIKE ON EAST SIDE OF POWER POLE #13629 ON THE WEST SIDE OF HARGRAVE ROAD APPROXIMATELY 30 FEET NORTH OF 18 INCH R.C.P. AT GRAVEL DRIVE FROM 13627 HARGRAVE ROAD ELEVATION = 130.56



HARGRAVE ROAD (SOUTH PROFILE)



APPROVED: _____
 for Assistant County Engineer
 Date _____

Approval implied for paving and drainage facilities within Harris County R.O.W. and/or Jurisdiction. All other improvements in H.C.R.O.W. and/or Jurisdiction are approved as to location only. The above authorization is valid for one (1) year only.

Rev.	Date	Description	App.

PRIVATE UTILITY LINES SHOWN

John Lee - 3/1/2000
 RELIANT ENERGIES, INC./ENTER
 Mike Balen 3/1/00
 SOUTHWESTERN BELL TELEPHONE CO.
 Valid for One Year Only
John Lee - 3/1/2000
 RELIANT ENERGIES, INC./H.L.A. 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
Victor Labadie 3-1-00
Will
 3-2-00
 PROJECT MANAGER
 WASTEWATER
 STORM WATER
Samuel
 CONSTRUCTION
 STREET AND BRIDGE
 CHIEF ENGINEER

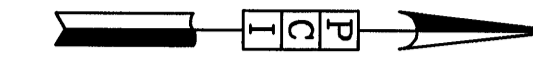
OTHER APPROVAL
 TRAFFIC AND TRANSPORTATION SPONSOR DEPARTMENT

CITY ENGINEER DATE
Michael 3-8-2000
 DIRECTOR OF PUBLIC WORKS AND ENGINEERING DATE

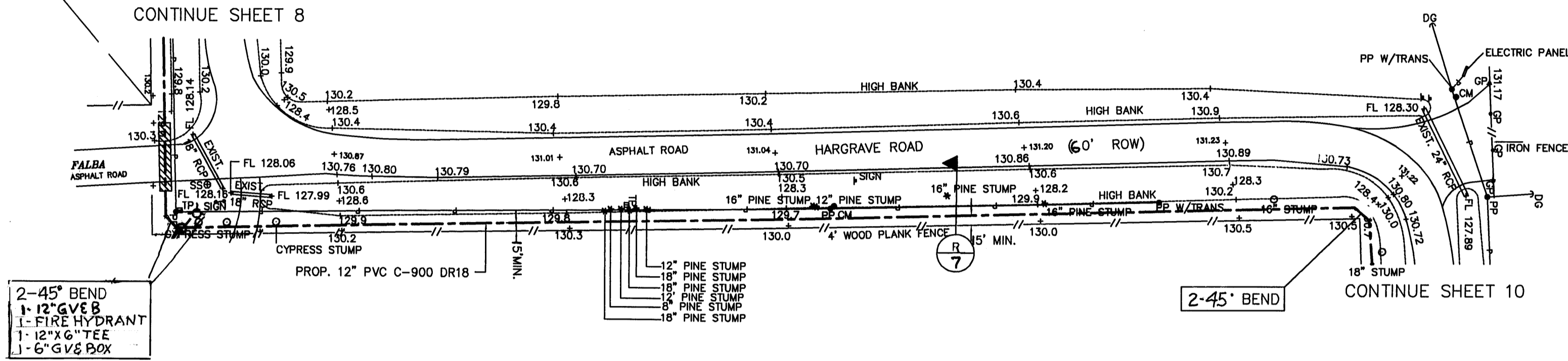
SUBMITTED: H: 1"=50'
 SCALE: V: 1"=5'
 DATE: MARCH 2000
 SURVEY BY: 482U
 DESIGNED BY: B K WILSON
 DRAWN BY: BILL DORRIS
 SHEET NO. 8 OF 14 SHEETS
 CITY DWG. NO. HARDITC3.DWG

HARRIS COUNTY MUD 191
 WATER LINE ALONG
 HARGRAVE ROAD
 (SOUTH PROFILE)
 STA. 40+00 TO STA. 50+00

- LEGEND
 C CONCRETE
 CLR CENTERLINE OF ROAD
 DG DOWN GUY
 G GUTTER
 GB GRADE BREAK
 GP GATE POST
 LP LIGHT POLE
 NG NATURAL GROUND
 PP POWER POLE
 TC TOP OF CURB
 SN SIGN
 WV WATER VALVE



60+00 61+00 62+00 63+00 64+00 65+00 66+00 67+00 68+00 69+00



HARGRAVE ROAD (EAST PROFILE)

TREE PRESERVATION NOTES:

1. NO OPEN CUT WITHIN 10' OF A TREE.
2. BORE AND JACK FORCE MAIN FROM DRIP LINE TO DRIP LINE OR A MAXIMUM OF 20' AT EACH TREE UNLESS OTHERWISE SHOWN.
3. OFFSET BORE 5' MINIMUM FROM ANY PINE TREE TRUNK TO AVOID BREAKING TAPROOT.

BENCH MARK
 BENCH MARK: NATIONAL GEODETIC SURVEY MARKER
 Y1216, 1973 ADJ. ELEV. = 125.994
 Y1216, 1978 ADJ. ELEV. = 125.406
 Y1216, 1988 ADJ. ELEV. = 123.94 (THIS ADJUSTMENT WAS USED FOR CUTTEN ROAD)
 ELEVATIONS SHOWN HEREON ARE BASED ON 1973 ADJUSTMENT
 TBM #1: SET RAILROAD SPIKE ON SOUTH SIDE OF 14" TALLOW APPROXIMATELY 31 FEET NORTH OF THE END OF CENTERFIELD DRIVE ELEVATION = 128.6
 TBM #2: SET RAILROAD SPIKE ON SOUTH SIDE OF POWER POLE WITH TRANSFORMER ON WEST SIDE OF PRIVATE ROAD AND 200 FEET NORTH OF PRIVATE ROAD ELEVATION = 130.62
 TBM #3: SET RAILROAD SPIKE ON EAST SIDE OF POWER POLE ON WEST SIDE OF HARGRAVE ROAD AND NORTH OF THE INTERSECTION OF DOTSON ROAD & HARGRAVE ROAD ELEVATION = 128.04
 TBM #4: RAILROAD SPIKE ON EAST SIDE OF POWER POLE #13629 ON THE WEST SIDE OF HARGRAVE ROAD APPROXIMATELY 30 FEET NORTH OF 18 INCH R.C.P. AT GRAVEL DRIVE FROM 13627 HARGRAVE ROAD ELEVATION = 130.56

APPROVED: _____
 for Assistant County Engineer
 Date _____

Approval implied for paving and drainage facilities within Harris County R.O.W. and/or Jurisdiction. All other improvements in H.C.R.O.W. and/or Jurisdiction are approved as to location only. The above authorization is valid for one (1) year only.

Rev.	Date	Description	App.

PRIVATE UTILITY LINES SHOWN

[Signature] 3/1/2000
 RELIANT ENERGIES, INC. TEX
 Mike Balwin 3/1/00
 SOUTHWESTERN BELL TELEPHONE CO.
 Valid for One Year Only
[Signature] 3/1/2000
 RELIANT ENERGIES, INC. TEX
 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
Victor Saldivar 3-7-00 WATER
Mark 3-3-00 WASTE WATER PROJECT MANAGER
Louanna 3/2/00 STORM WATER CONSTRUCTION
 STREET AND BRIDGE CHIEF ENGINEER

OTHER APPROVAL
 TRAFFIC AND TRANSPORTATION SPONSOR DEPARTMENT

CITY ENGINEER DATE
[Signature] 3-8-2000
 DIRECTOR OF PUBLIC WORKS AND ENGINEERING DATE

SUBMITTED: _____ H: 1"=50'
 SCALE: _____ V: 1"=5'
 DATE: MARCH 2000
 SURVEY BY: _____ DESIGNED BY: B K WILSON
 F B NO: 482U CITY DWG. NO. HARDTC4.DWG DRAWN BY: BILL DORRIS

HARRIS COUNTY MUD 191
 WATER LINE ALONG
 HARGRAVE ROAD
 (EAST PROFILE)
 STA. 60+00 TO STA. 69+00

PCI PROVIDENT CONSULTING, INC.
 1200 WEST 11TH ST.
 HOUSTON, TEXAS 77008
 (713)802-1019

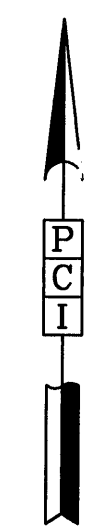
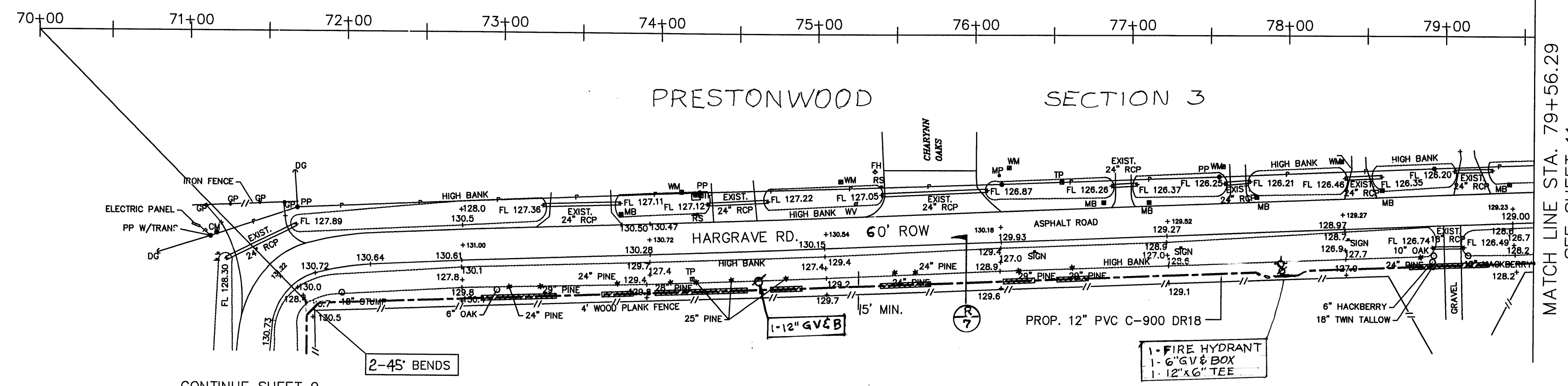
130	EXIST. EAST DITCH FL 128.14	EXIST. EAST DITCH FL 128.16	EXIST. EAST DITCH FL 128.06	EXIST. EAST DITCH FL 127.99	EXIST. EAST P.W.T. 130.76	EXIST. EAST DITCH FL 128.6	EXIST. EAST P.W.T. 130.70	EXIST. EAST DITCH FL 128.3	EXIST. EAST P.W.T. 130.70	EXIST. EAST DITCH FL 128.3	EXIST. EAST P.W.T. 130.86	EXIST. EAST DITCH FL 128.2	EXIST. EAST P.W.T. 130.89	EXIST. EAST DITCH FL 128.3	EXIST. EAST P.W.T. 130.73	EXIST. EAST DITCH FL 128.4	130
125	FL 128.14 EXIST. 18" RCP	EXIST. FL 127.99 18" RCP	EXIST. EAST N.G.	EXIST. EAST DITCH FL	EXIST. EAST N.G.	EXIST. EAST DITCH FL	EXIST. EAST N.G.	EXIST. EAST DITCH FL	EXIST. EAST N.G.	EXIST. EAST DITCH FL	EXIST. EAST N.G.	EXIST. EAST DITCH FL	EXIST. EAST N.G.	EXIST. EAST DITCH FL	EXIST. EAST N.G.	EXIST. EAST DITCH FL	125
120	FL 128.16	FL 128.06	PROP. 12" PVC C-900 DR18														120
115																	115
110																	110
105																	105
	60+00	61+00	62+00	63+00	64+00	65+00	66+00	67+00	68+00	69+00							

[Signature]
 03-07-00

- LEGEND
 C CONCRETE
 CLR CENTERLINE OF ROAD
 DG DOWN GUY
 G GUTTER
 GB GRADE BREAK
 GP GATE POST
 LP LIGHT POLE
 NG NATURAL GROUND
 PP POWER POLE
 TC TOP OF CURB
 SN SIGN
 WV WATER VALVE

BENCH MARK

BENCH MARK: NATIONAL GEODETIC SURVEY MARKER
 Y1216, 1973 ADJ. ELEV. = 125.944
 Y1216, 1978 ADJ. ELEV. = 125.406
 Y1216, 1988 ADJ. ELEV. = 123.94 (THIS ADJUSTMENT WAS USED FOR CUTTEN ROAD)
 ELEVATIONS SHOWN HEREON ARE BASED ON 1973 ADJUSTMENT
 TBM #1: SET RAILROAD SPIKE ON SOUTH SIDE OF 14" TALLOW APPROXIMATELY 31 FEET NORTH OF THE END OF CENTERFIELD DRIVE ELEVATION = 128.60
 TBM #2: SET RAILROAD SPIKE ON SOUTH SIDE OF POWER POLE WITH TRANSFORMER ON WEST SIDE OF PRIVATE ROAD AND 200 FEET NORTH OF PRIVATE ROAD ELEVATION = 130.62
 TBM #3: SET RAILROAD SPIKE ON EAST SIDE OF POWER POLE ON WEST SIDE OF HARGRAVE ROAD AND NORTH OF THE INTERSECTION OF DOTSON ROAD & HARGRAVE ROAD ELEVATION = 128.04
 TBM #4: RAILROAD SPIKE ON EAST SIDE OF POWER POLE #13629 ON THE WEST SIDE OF HARGRAVE ROAD APPROXIMATELY 30 FEET NORTH OF 18 INCH R.C.P. AT GRAVEL DRIVE FROM 13627 HARGRAVE ROAD ELEVATION = 130.56



MATCH LINE STA. 79+56.29
 SEE SHEET 11

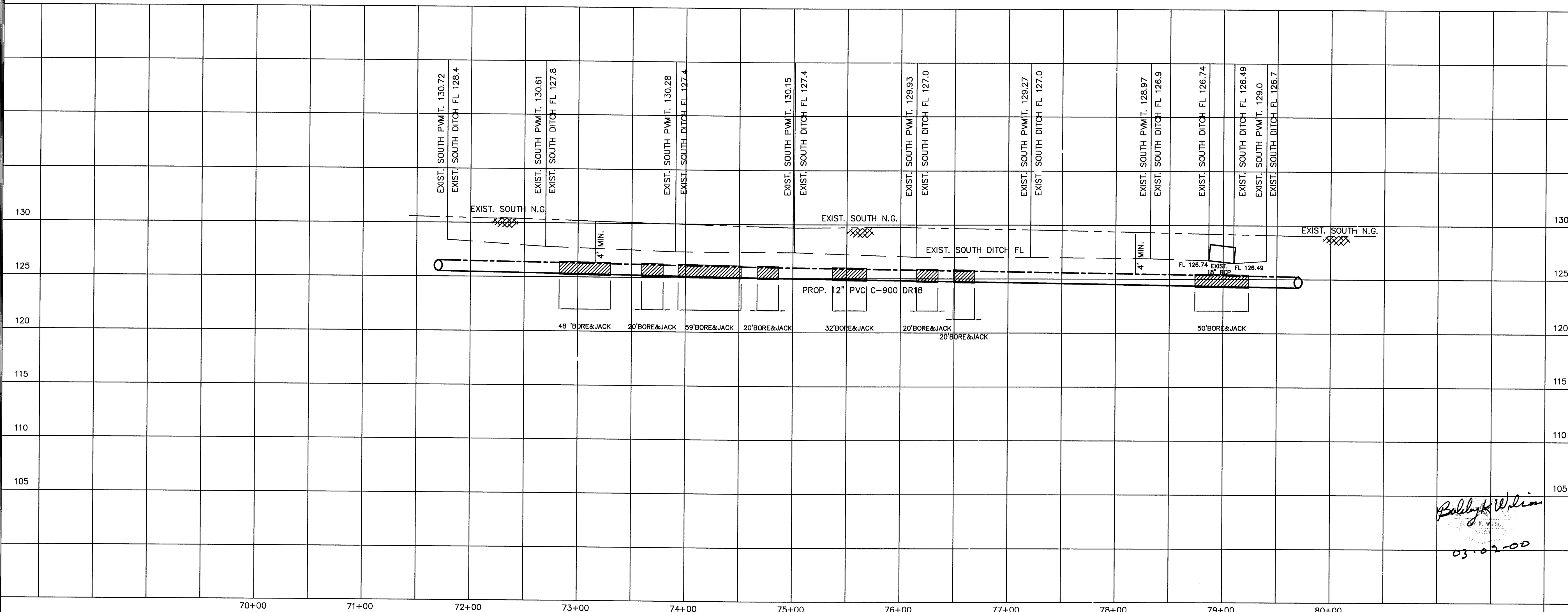
APPROVED: _____
 for Assistant County Engineer
 Date _____

Approval Implied for paving and drainage facilities within Harris County R.O.W. and/or jurisdiction. All other improvements in H.C.R.O.W. and/or jurisdiction are approved as to location only. The above authorization is valid for one (1) year only.

TREE PRESERVATION NOTES:

- NO OPEN CUT WITHIN 10' OF A TREE.
- BORE AND JACK FORCE MAIN FROM DRIP LINE TO DRIP LINE OR A MAXIMUM OF 20' AT EACH TREE UNLESS OTHERWISE SHOWN.
- OFFSET BORE 5' MINIMUM FROM ANY PINE TREE TRUNK TO AVOID BREAKING TAPROOT.

HARGRAVE ROAD (SOUTH PROFILE)



Rev.	Date	Description	App.

PRIVATE UTILITY LINES SHOWN

John H. List 3/1/2000
 REGANT ENERGIES, INC./EMERX
Kibe Balin 3/7/00
 SOUTHWESTERN BELL TELEPHONE CO.
 Valid for One Year Only
John H. List - 3/1/2000
 REGANT ENERGIES, INC./MILBOP, 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
Victor Saldivar 3-7-00
 WATER
Med 3-2-00
 WASTEWATER
Southern 3-2-00
 STORM WATER
 STREET AND BRIDGE
 PROJECT MANAGER
 CONSTRUCTION
 CHIEF ENGINEER

OTHER APPROVAL
 TRAFFIC AND TRANSPORTATION
 SPONSOR DEPARTMENT

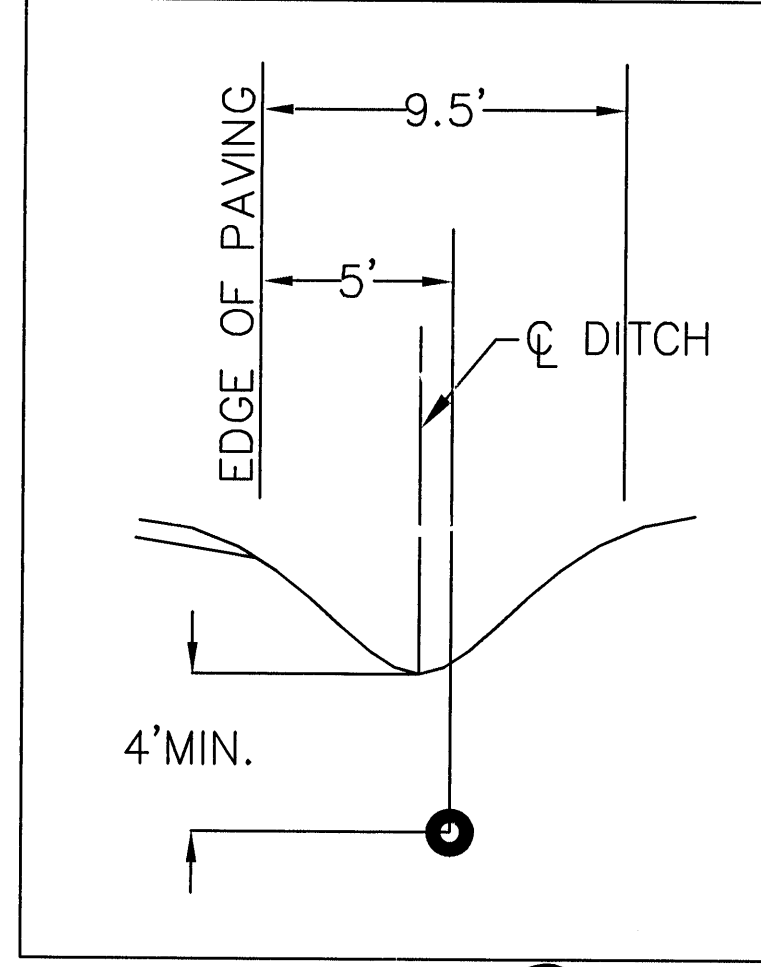
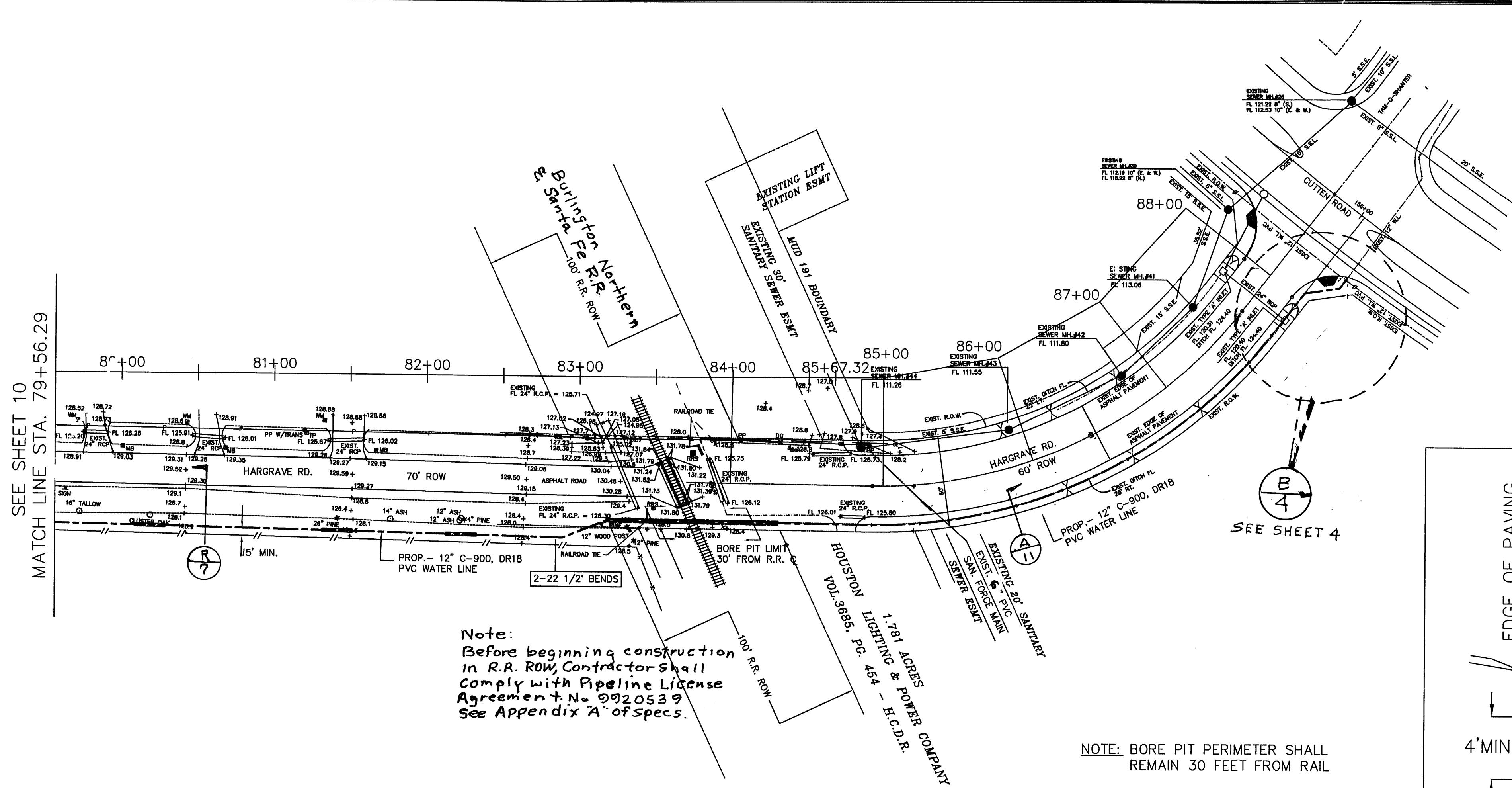
CITY ENGINEER
 DATE
Michael 3-8-2000
 DIRECTOR OF PUBLIC WORKS AND ENGINEERING
 DATE

SUBMITTED: _____
 SCALE: H: 1"=50'
 V: 1"=5'
 DATE: MARCH 2000
 SURVEY BY: _____
 F B NO: 462U
 DESIGNED BY: B K WILSON
 DRAWN BY: BILL DORRIS
 SHEET NO. 10 OF 14 SHEETS
 CITY DWG. NO. HARDITC5.DWG

HARRIS COUNTY MUD 191
 WATER LINE ALONG
 HARGRAVE ROAD
 (SOUTH PROFILE)
 STA. 70+00 TO STA. 79+56.29

- LEGEND**
 C CONCRETE
 CLR CENTERLINE OF ROAD
 DG DOWN GUY
 G GUTTER
 GB GRADE BREAK
 GP GATE POST
 LP LIGHT POLE
 NG NATURAL GROUND
 PP POWER POLE
 TC TOP OF CURB
 SN SIGN
 WV WATER VALVE

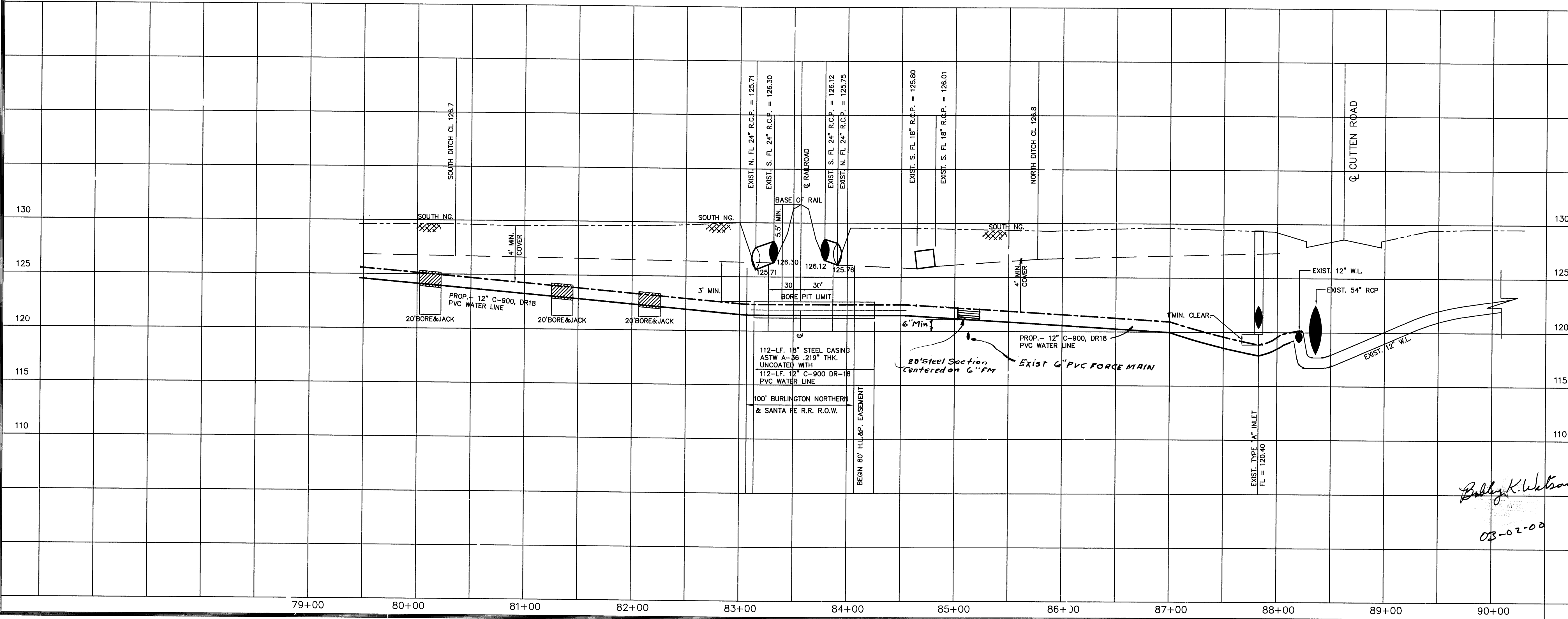
SEE SHEET 10
 MATCH LINE STA. 79+56.29



NOTE: BORE PIT PERIMETER SHALL REMAIN 30 FEET FROM RAIL

- TREE PRESERVATION NOTES:**
- NO OPEN CUT WITHIN 10' OF A TREE.
 - BORE AND JACK FORCE MAIN FROM DRIP LINE TO DRIP LINE OR A MAXIMUM OF 20' AT EACH TREE UNLESS OTHERWISE SHOWN.
 - OFFSET BORE 5' MINIMUM FROM ANY PINE TREE TRUNK TO AVOID BREAKING TAPROOT.

HARGRAVE ROAD (SOUTH PROFILE)



BENCH MARK

BENCH MARK: NATIONAL GEODETIC SURVEY MARKER
 Y1216, 1973 ADJ., ELEV. = 125.994
 Y1216, 1978 ADJ., ELEV. = 125.406
 Y1216, 1988 ADJ., ELEV. = 123.94 (THIS ADJUSTMENT WAS USED FOR CUTTEN ROAD)
 ELEVATIONS SHOWN HEREON ARE BASED ON 1973 ADJUSTMENT

TBM #1: SET RAILROAD SPIKE ON SOUTH SIDE OF 14" TALLOW APPROXIMATELY 71 FEET NORTH OF THE END OF CENTERFIELD DRIVE ELEVATION = 130.60
 TBM #2: SET RAILROAD SPIKE ON SOUTH SIDE OF POWER POLE WITH TRANSFORMER ON WEST SIDE OF PRIVATE ROAD AND 200 FEET NORTH OF PRIVATE ROAD ELEVATION = 130.62
 TBM #3: SET RAILROAD SPIKE ON EAST SIDE OF POWER POLE ON WEST SIDE OF HARGRAVE ROAD AND NORTH OF THE INTERSECTION OF DOTSON ROAD & HARGRAVE ROAD ELEVATION = 128.04
 TBM #4: RAILROAD SPIKE ON EAST SIDE OF POWER POLE #13629 ON THE WEST SIDE OF HARGRAVE ROAD APPROXIMATELY 30 FEET NORTH OF 18 INCH R.C.P. AT GRAVEL DRIVE FROM 13627 HARGRAVE ROAD ELEVATION = 130.56

APPROVED: _____
 for Assistant County Engineer
 Date _____

Approval Implied for paving and drainage facilities within Harris County R.O.W. and/or jurisdiction. All other improvements in H.C.R.O.W. and/or jurisdiction are approved as to location only. The above authorization is valid for one (1) year only.

Rev.	Date	Description	App.

PRIVATE UTILITY LINES SHOWN

John M. Goff 3/1/2000
 RELIANT ENERGIES, INC./ENERG
Nide Balin 3/7/00
 SOUTHWESTERN BELL TELEPHONE CO.
 Valid for One Year Only
John M. Goff 3/1/2000
 RELIANT ENERGIES, INC./H.L.V.P. CO.
 Approval Only for Crossing Underground
 Ductlines Unless Noted. Valid at Time of Review Only.

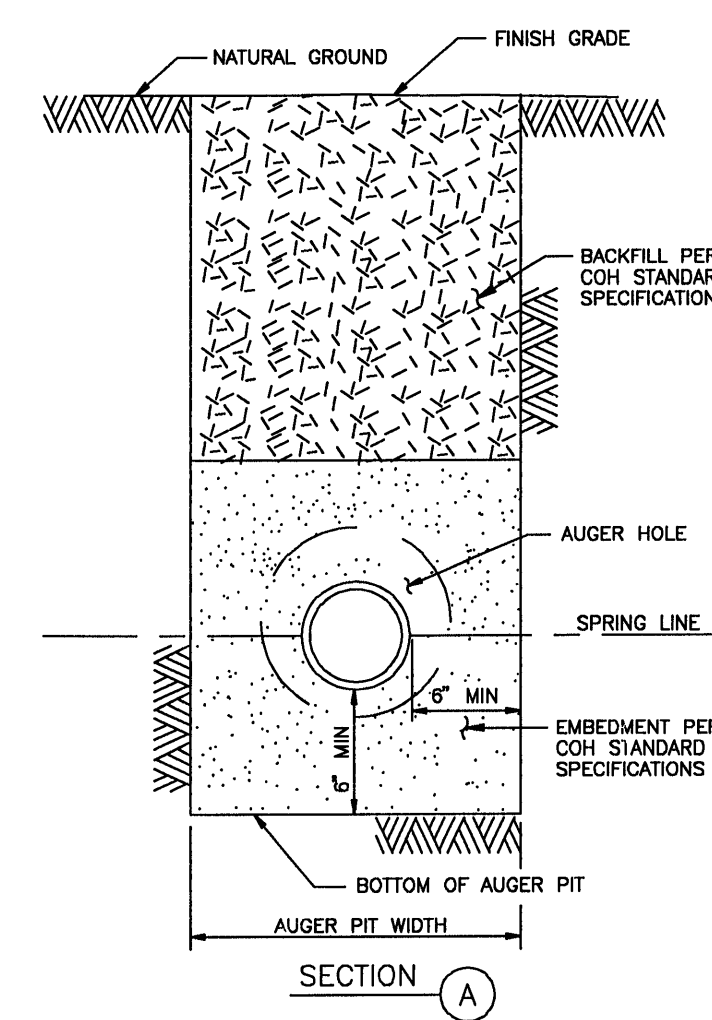
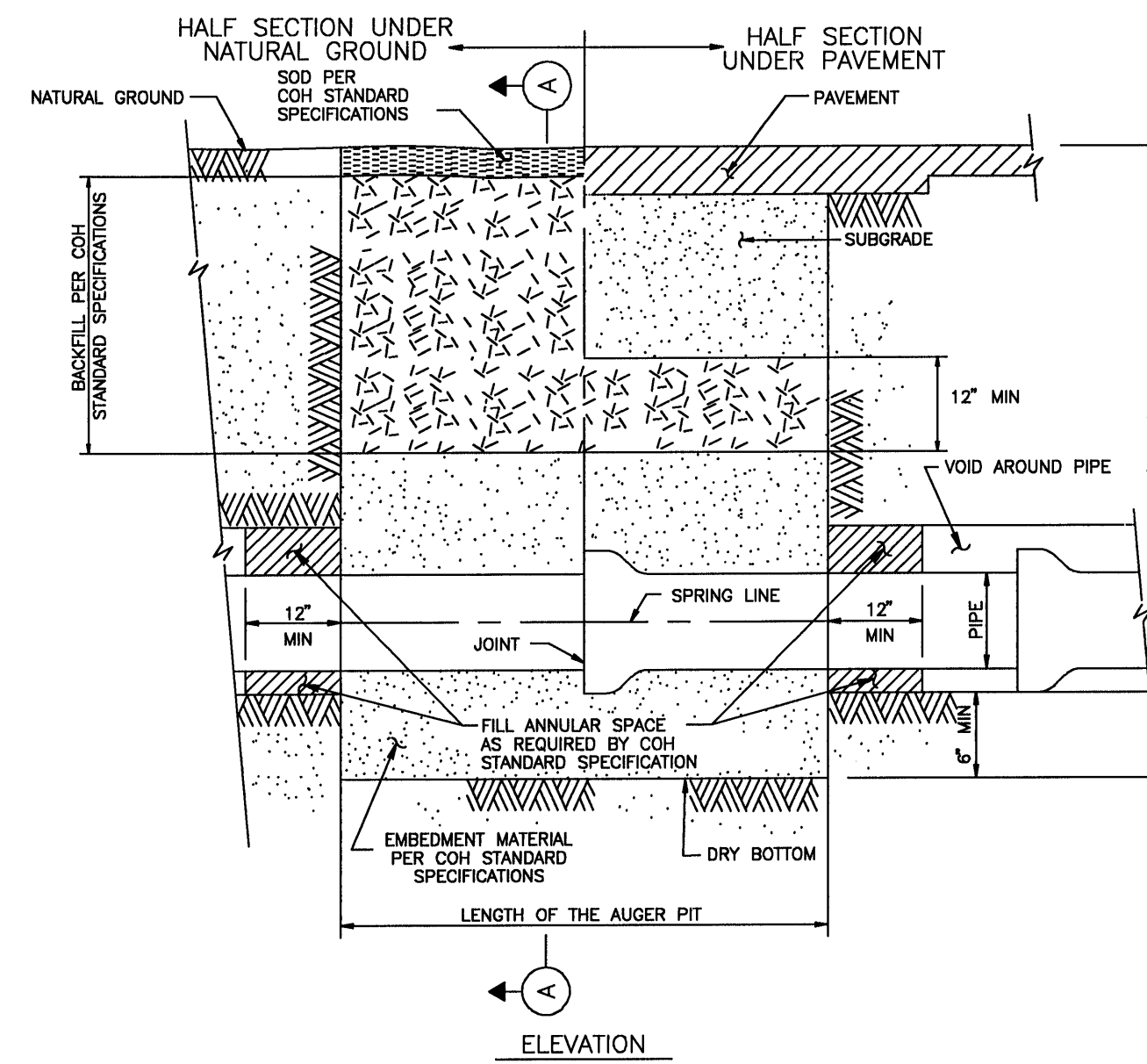
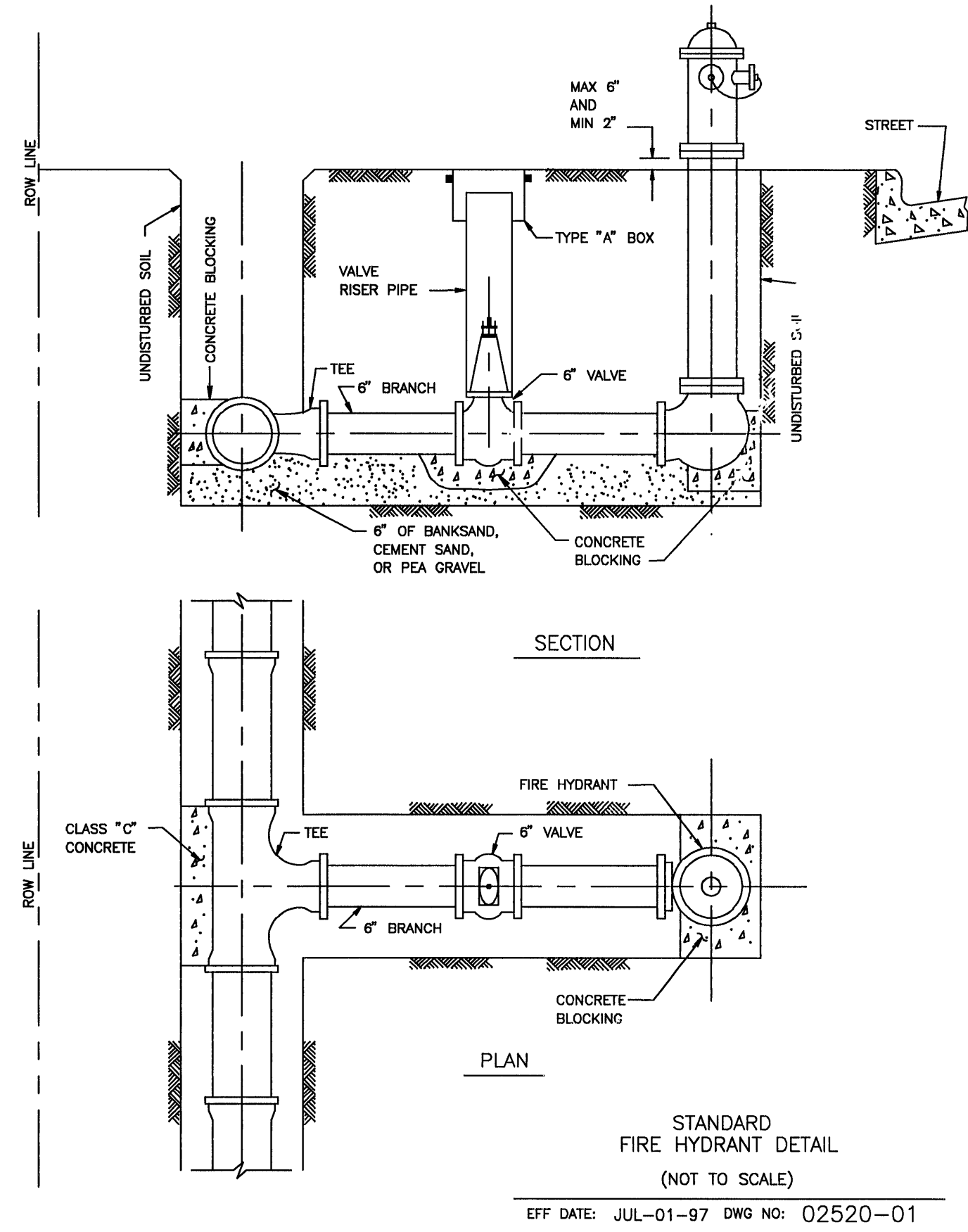
CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

REVIEWED BY	
PRIVATELY FUNDED PUBLIC WORKS	CITY FUNDED PUBLIC WORKS
<i>Water Subdiv 3-7-00</i> WATER	
<i>Water Subdiv 3-7-00</i> WASTEWATER	PROJECT MANAGER
<i>Water Subdiv 3-7-00</i> STORM WATER	CONSTRUCTION
	CHIEF ENGINEER
OTHER APPROVAL	
TRAFFIC AND TRANSPORTATION	SPONSOR DEPARTMENT
CITY ENGINEER	DATE
<i>Michael A. ...</i>	3-8-2000
DIRECTOR OF PUBLIC WORKS AND ENGINEERING	DATE
SUBMITTED: _____	DESIGNED BY: B K WILSON
SCALE: H: 1"=50' V: 1"=5'	DRAWN BY: BILL DORRIS
DATE: MARCH 2000	SHEET NO. 11 OF 14 SHEETS
SURVEY BY: _____	CITY DWG. NO. HARDTC6.DWG
F B NO: 462U	

HARRIS COUNTY MUD 191
 WATER LINE ALONG
 HARGRAVE ROAD
 (SOUTH PROFILE)
 STA. 79+56.29 TO 88+27.53

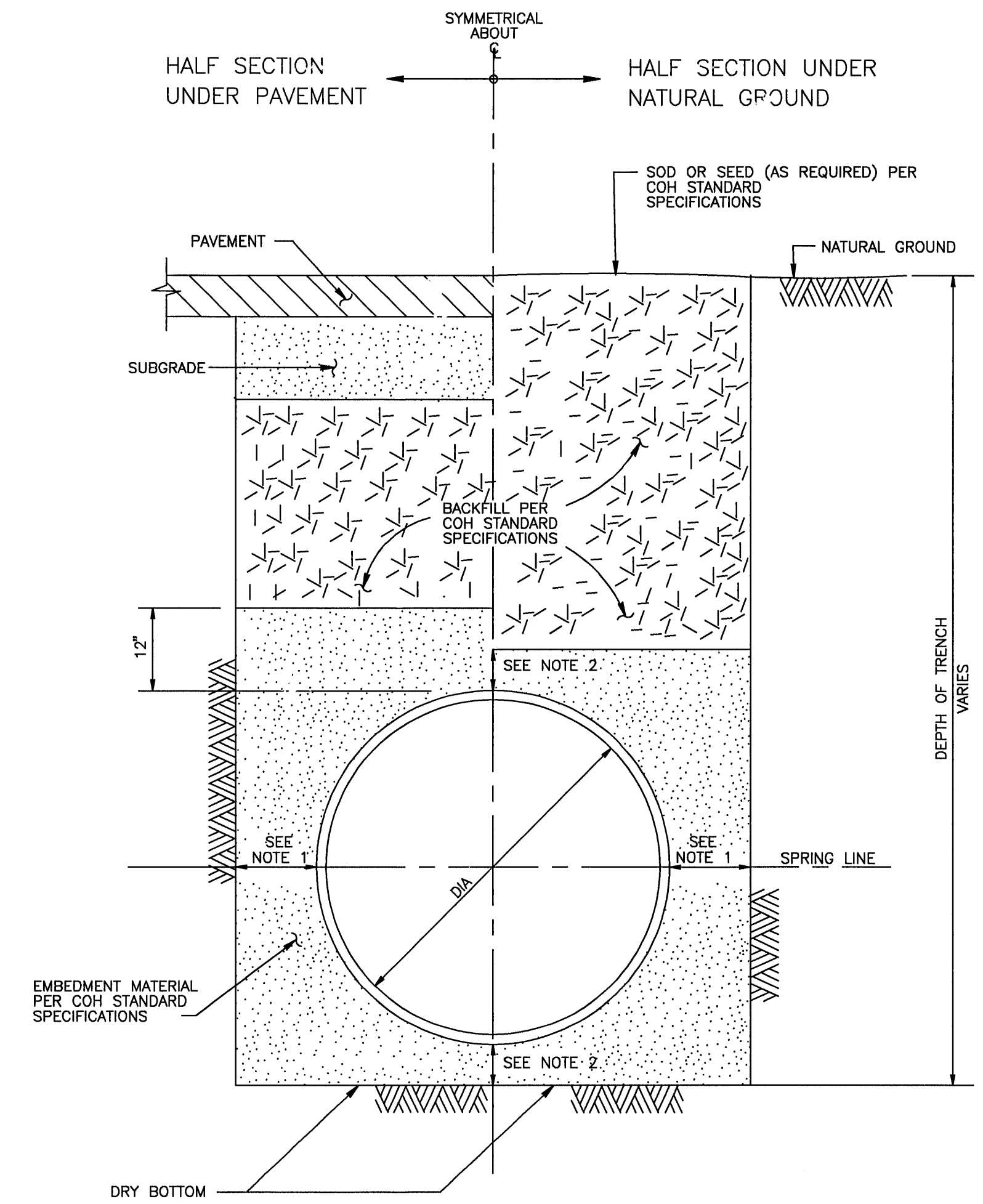
PCI PROVIDENT CONSULTING, INC.
 1200 WEST 11TH ST.
 HOUSTON, TEXAS 77008
 (713)802-1019

- NOTES:**
1. LOCATE FIRE HYDRANTS AT PC'S OF THE INTERSECTION CURB RADIUS, 3 FEET BEHIND CURB OR PROJECTED FUTURE CURB.
 2. ON OPEN-DITCH ROADWAYS, SET THE FIRE HYDRANTS WITHIN 3 FEET OF RIGHTS-OF-WAY LINES.
 3. THE FIRE HYDRANT STEAMER NOZZLE SHALL FACE THE STREET.



WATER DISTRIBUTION MAIN BEDDING AND BACKFILL AUGER PIT AND AUGER HOLE (NOT TO SCALE)

EFF DATE: JUL-28-98 DWG NO: 02447-01

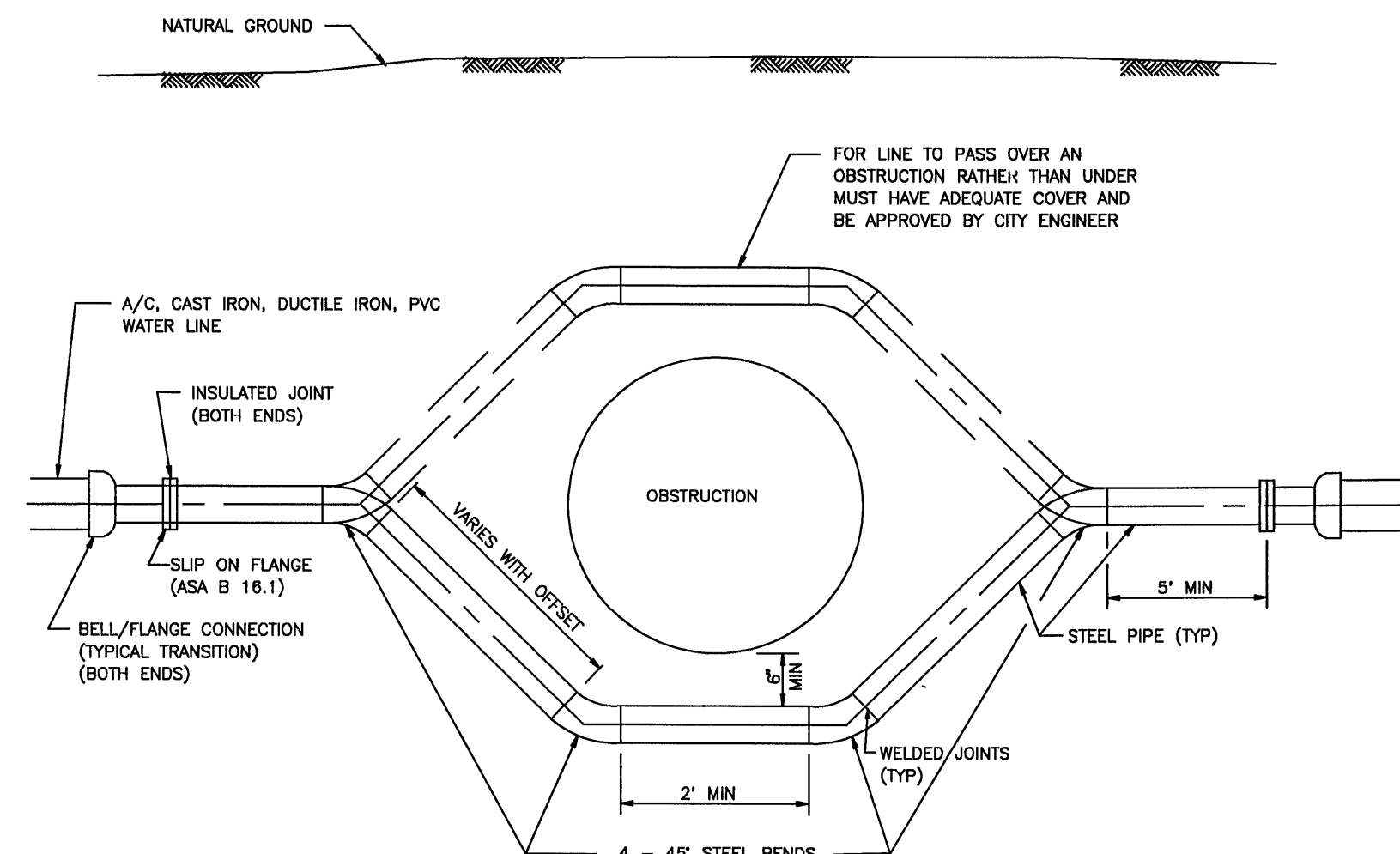


- NOTE:**
1. SEE COH STANDARD DETAIL
 2. 6" MIN. FOR MAIN DIAMETER ≤ 20"
 - 12" MIN. FOR MAIN DIAMETER > 20"

WATER DISTRIBUTION MAIN BEDDING AND BACKFILL FOR OPEN CUT TRENCHES (NOT TO SCALE)

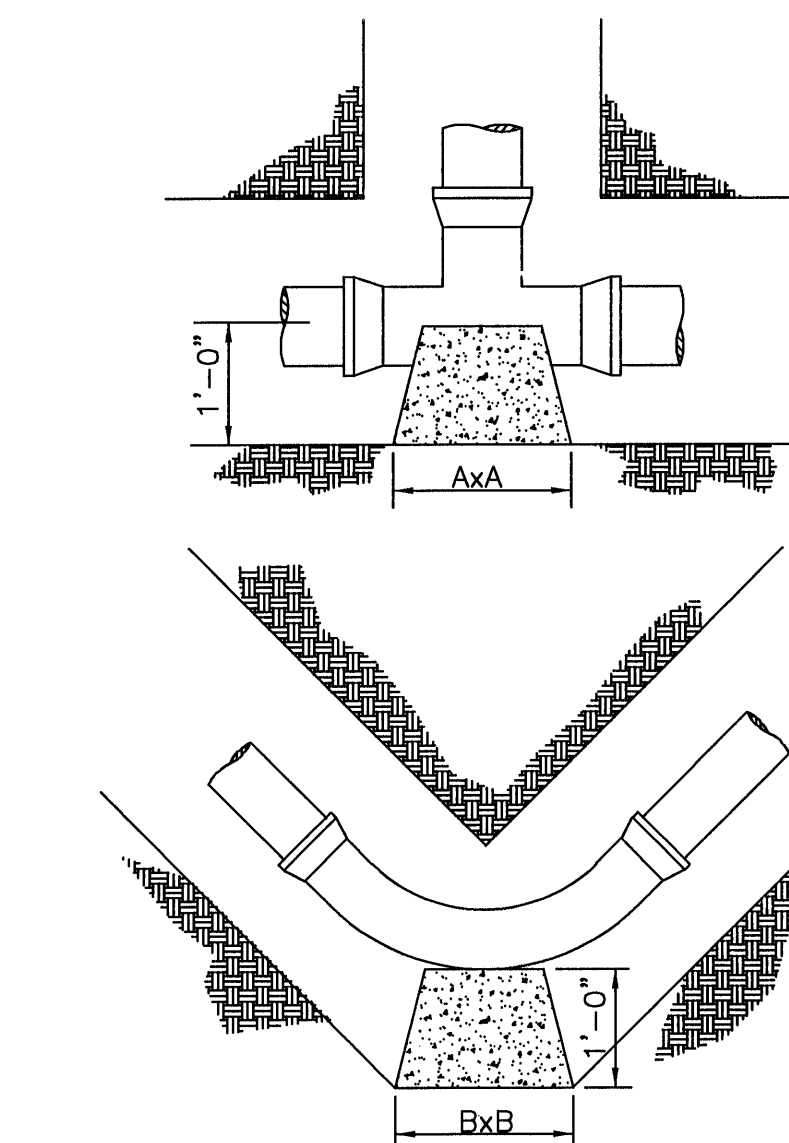
EFF DATE: JUL-28-98 DWG NO: 02511-01

- NOTE:**
1. MATERIALS AND COATINGS TO BE IN ACCORDANCE WITH WATER MAIN STANDARD SPECIFICATIONS.
 2. RESTRAIN EXISTING PIPING BEYOND STEEL SECTION AS REQUIRED TO PREVENT MOVEMENT.

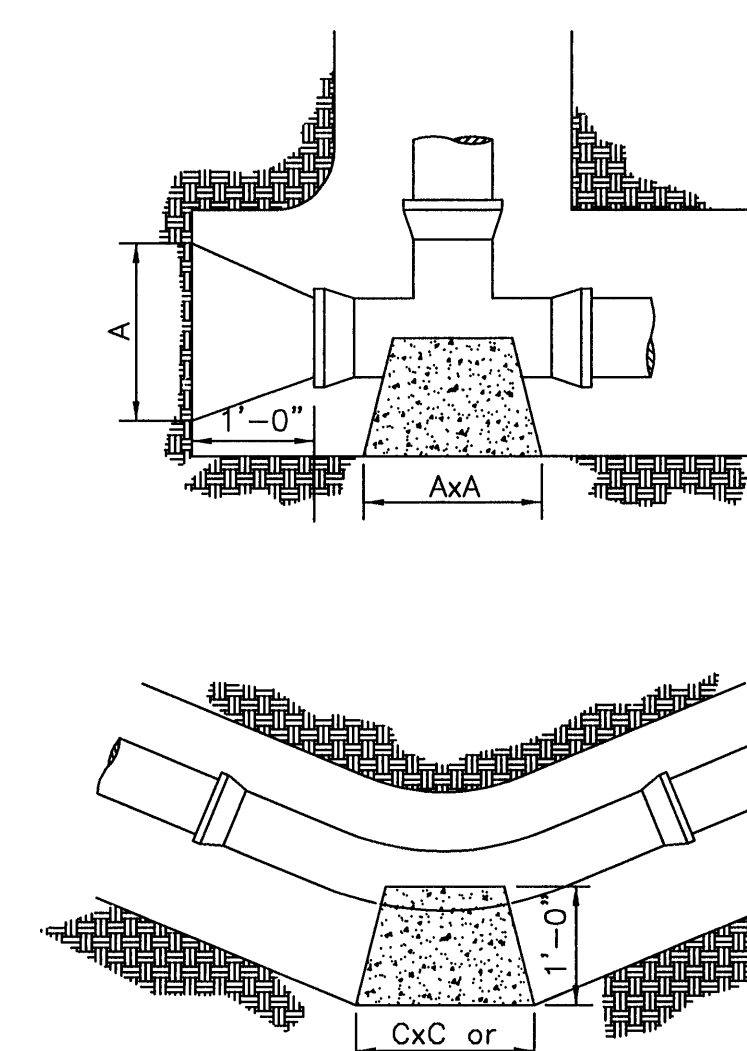


- TYPICAL STEEL SECTION FITTINGS**
- 4 - 6" X 45° STEEL BENDS
 - 2 - 6" BELL-FLANGE ADAPTERS
 - 2 - 6" SLIP-ON FLANGES 150 #
 - 2 - 6" INSULATED JOINT KITS

TYPICAL STEEL PIPE OFFSET SECTION FOR WATER MAINS (NOT TO SCALE)

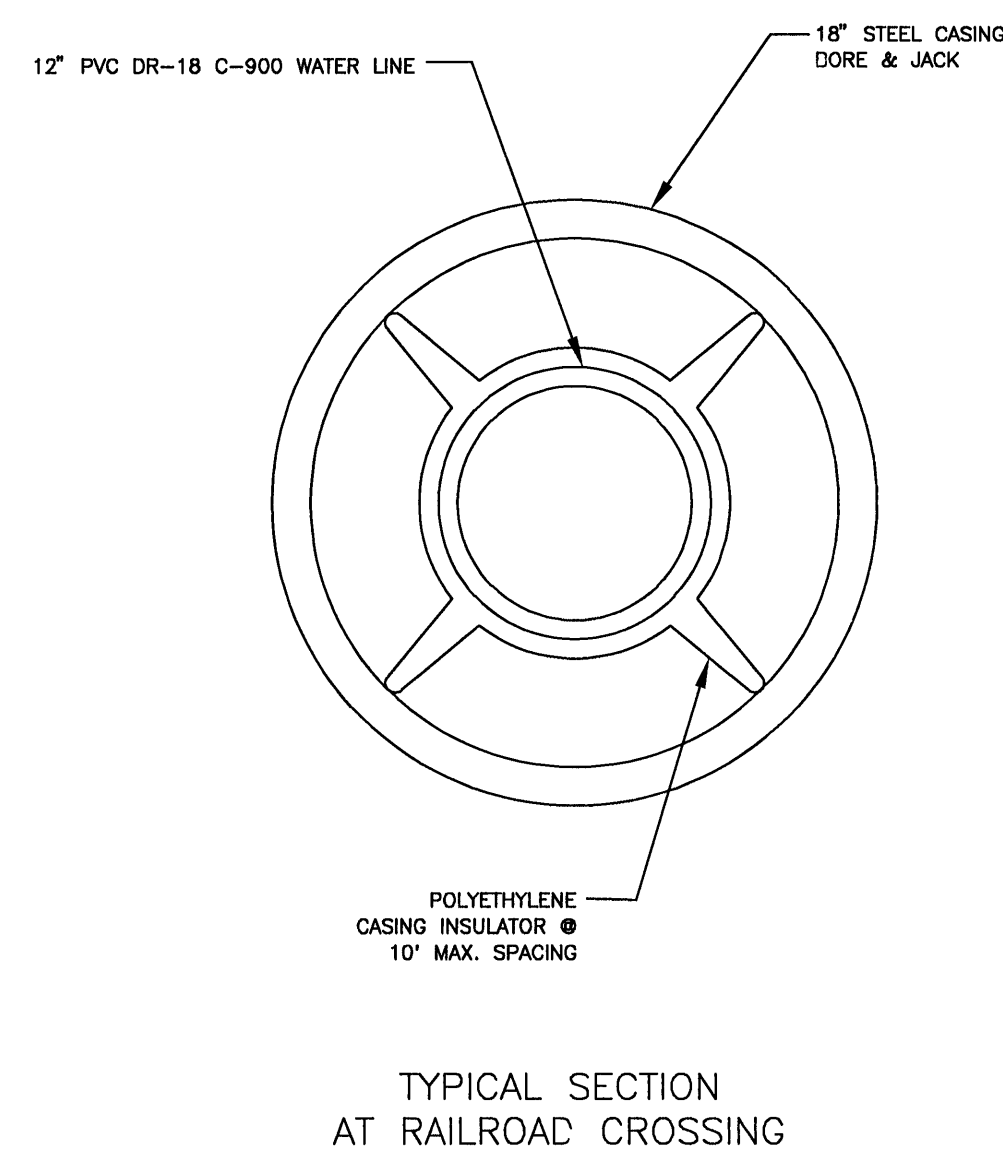


PIPE SIZE	"A" Plugs, Wyes, Tees	"B" 90° Bend	"C" 45° Bend	"D" 22'30" Bend
6"	1'-0"	1'-2"	1'-2"	1'-2"
8"	1'-3"	1'-6"	1'-6"	1'-6"
12"	2'-8"	3'-0"	2'-3"	2'-3"



NOTE: Heights of all blocks shall be equal to the A, B, C, or D dimension called for. All concrete to be poured against firm undisturbed soil.

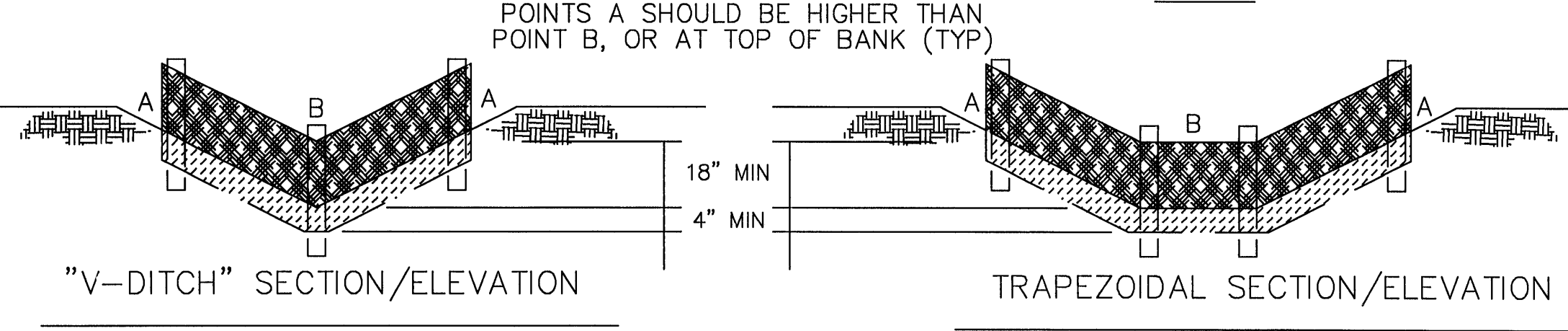
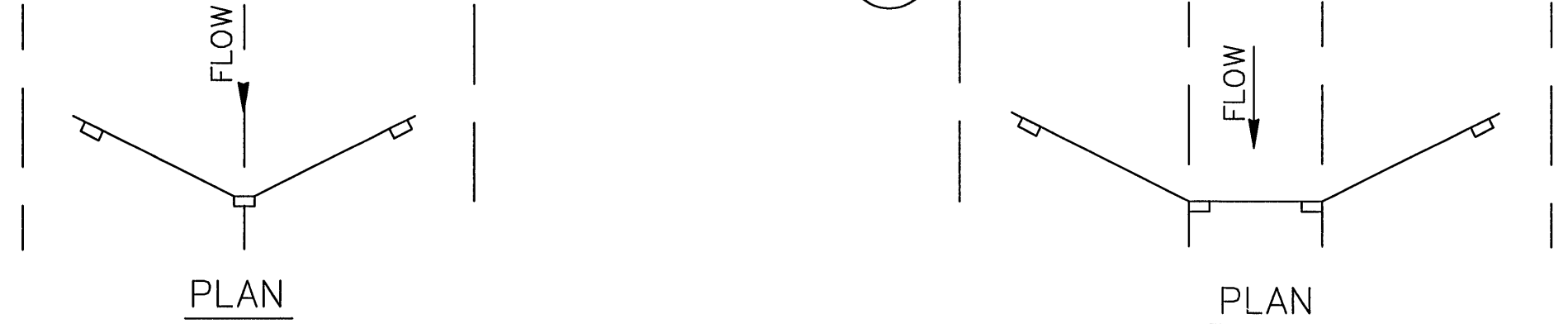
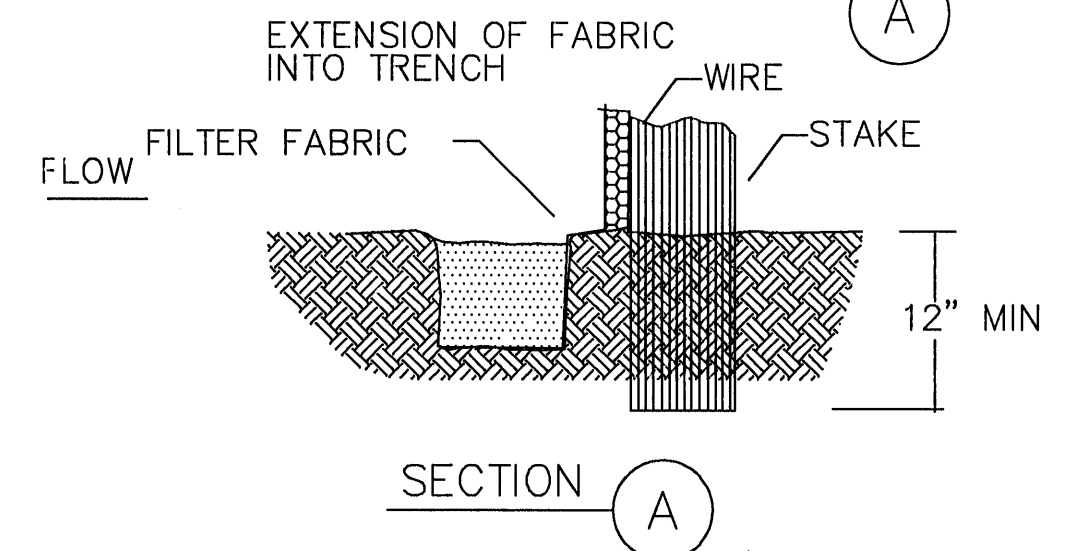
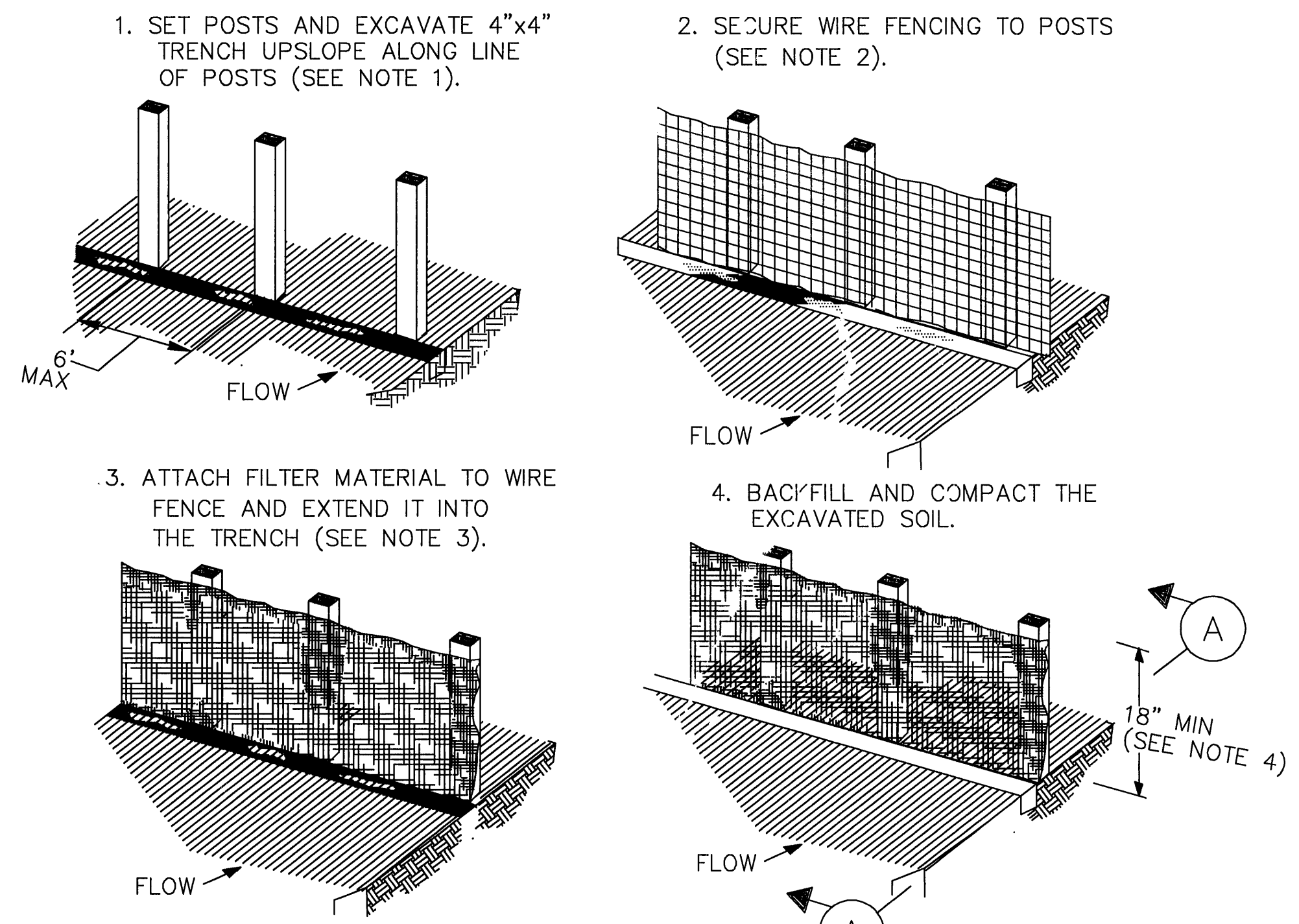
Concrete to be min. 3000 P.S.I. @ 28 days.



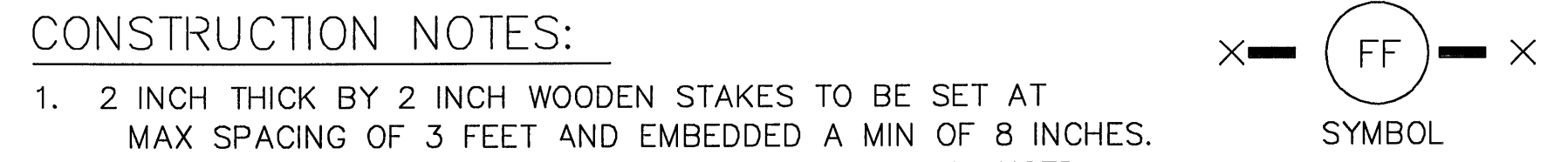
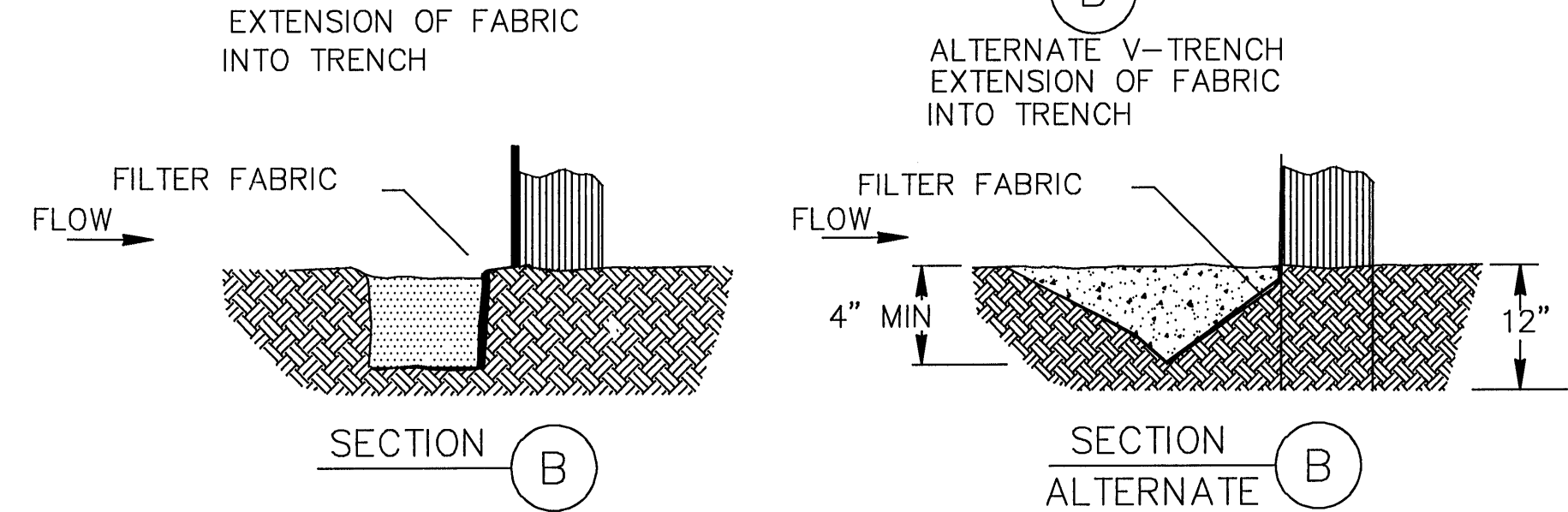
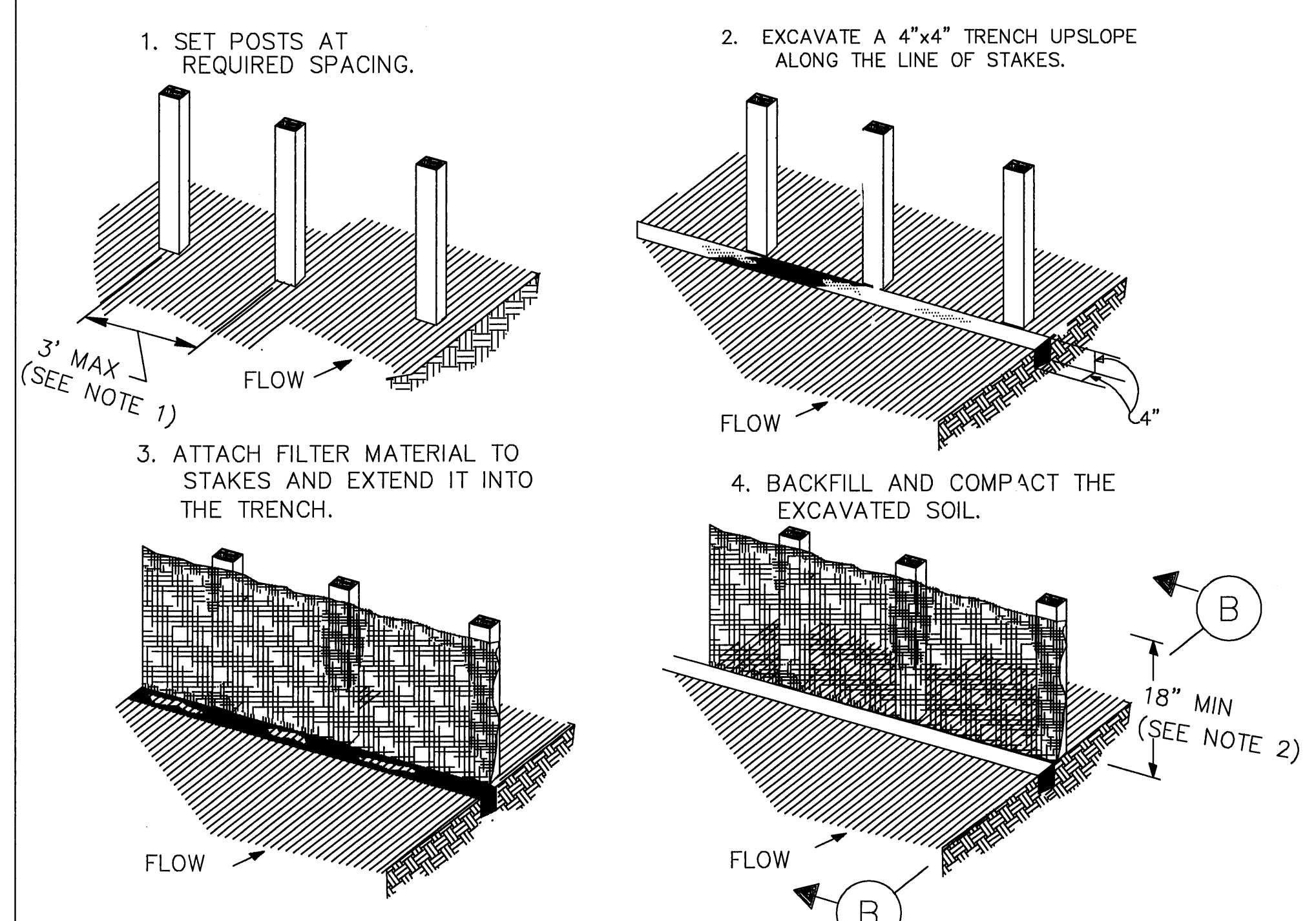
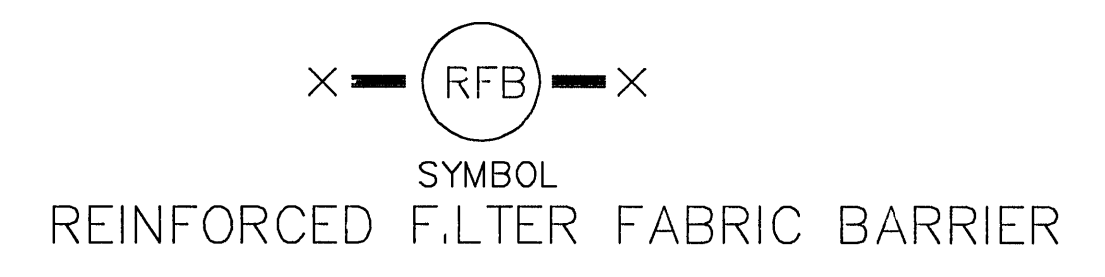
Billy K. Wilson

03-02-00

SUBMITTED: _____	DESIGNED BY: B K WILSON
SCALE: N/A	DRAWN BY: BILL DORRIS
DATE: MARCH 2000	SHEET NO. 12 OF 14 SHEETS
SURVEY BY: _____	CITY DWG. NO: WATERD.DWG
F B NO: 462U	

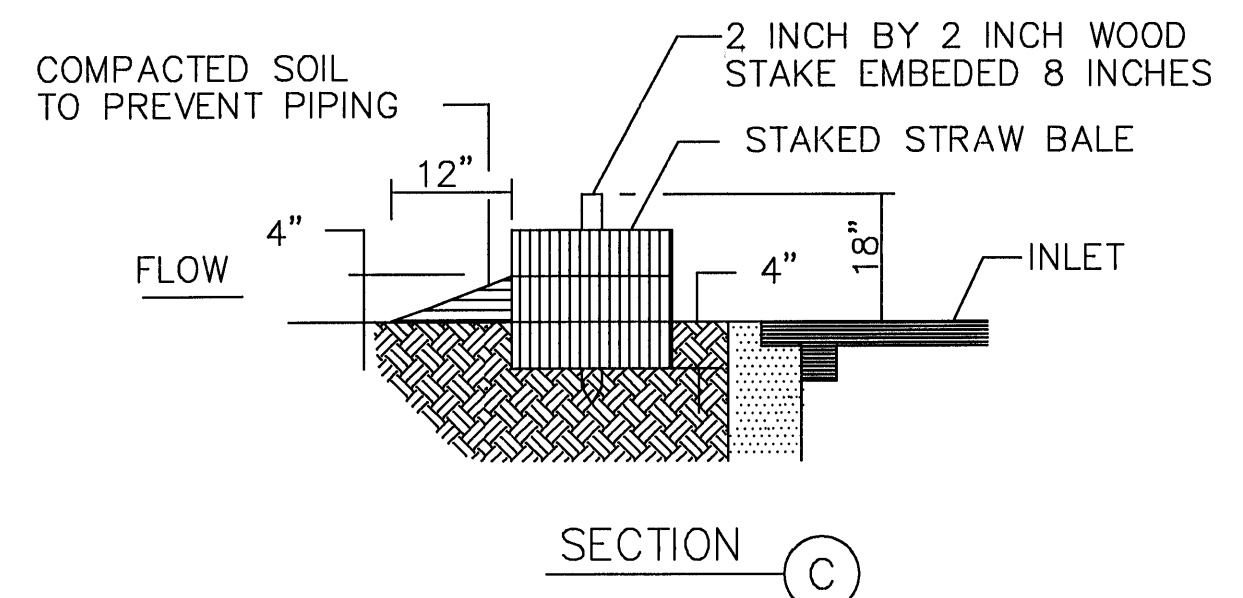
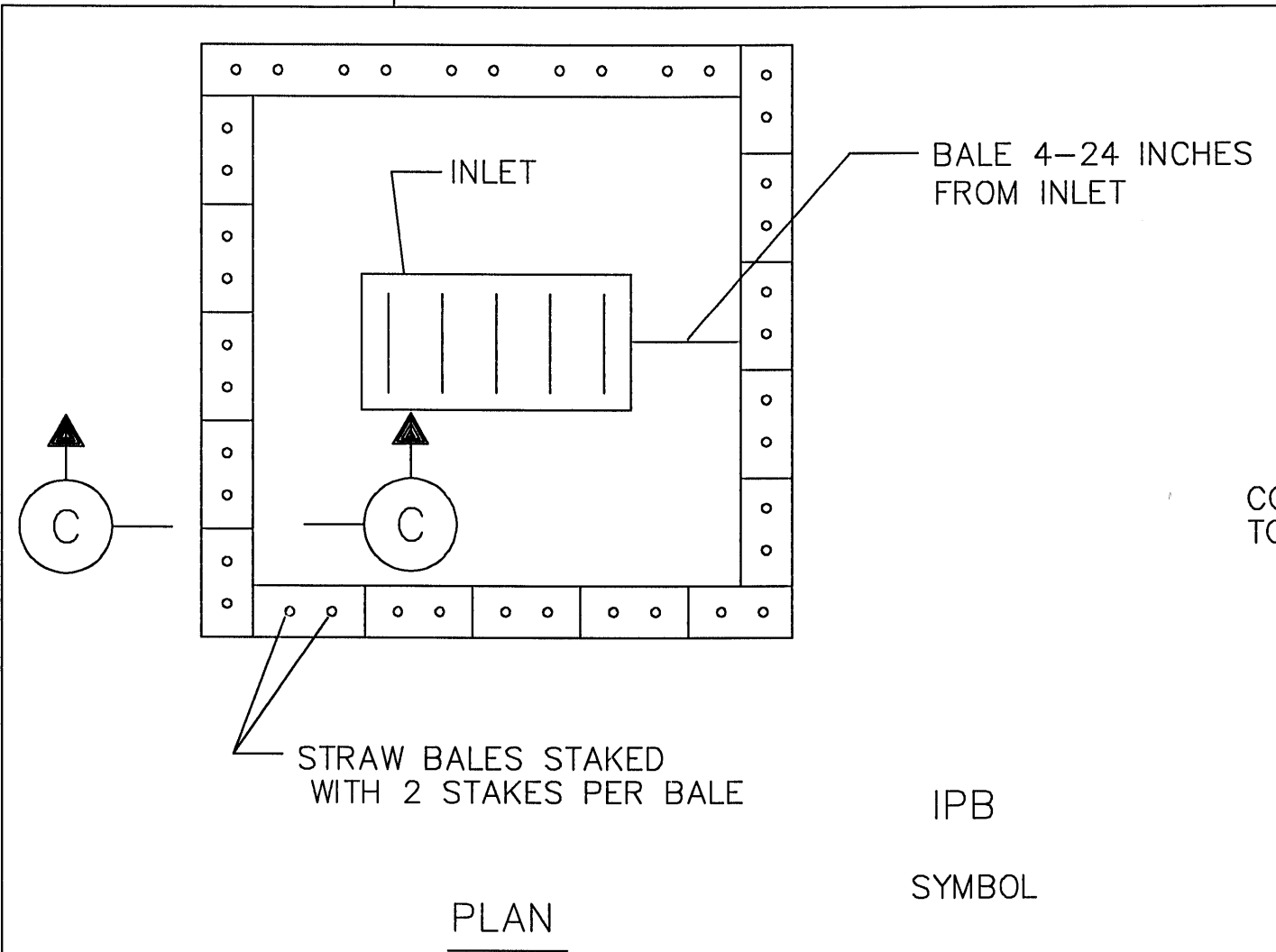


- CONSTRUCTION NOTES:**
1. SET 2 INCH BY 2 INCH WOODEN STAKES SPACED A MAX OF 6 FEET APART AND EMBEDDED A MIN OF 12 INCHES.
 2. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH STAPLES.
 3. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE, WITH TIES SPACED EVERY 24 INCHES AT TOP AND MIDSECTION.
 4. MINIMUM HEIGHT OF FILTER SHOULD BE 18 INCHES AND A MAXIMUM OF 36 INCHES ABOVE NATURAL GROUND.
 5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED 6 INCHES AT THE POSTS, AND FOLDED.
 6. SEE COH STANDARD SPECIFICATION FOR FILTER FABRIC BARRIER.

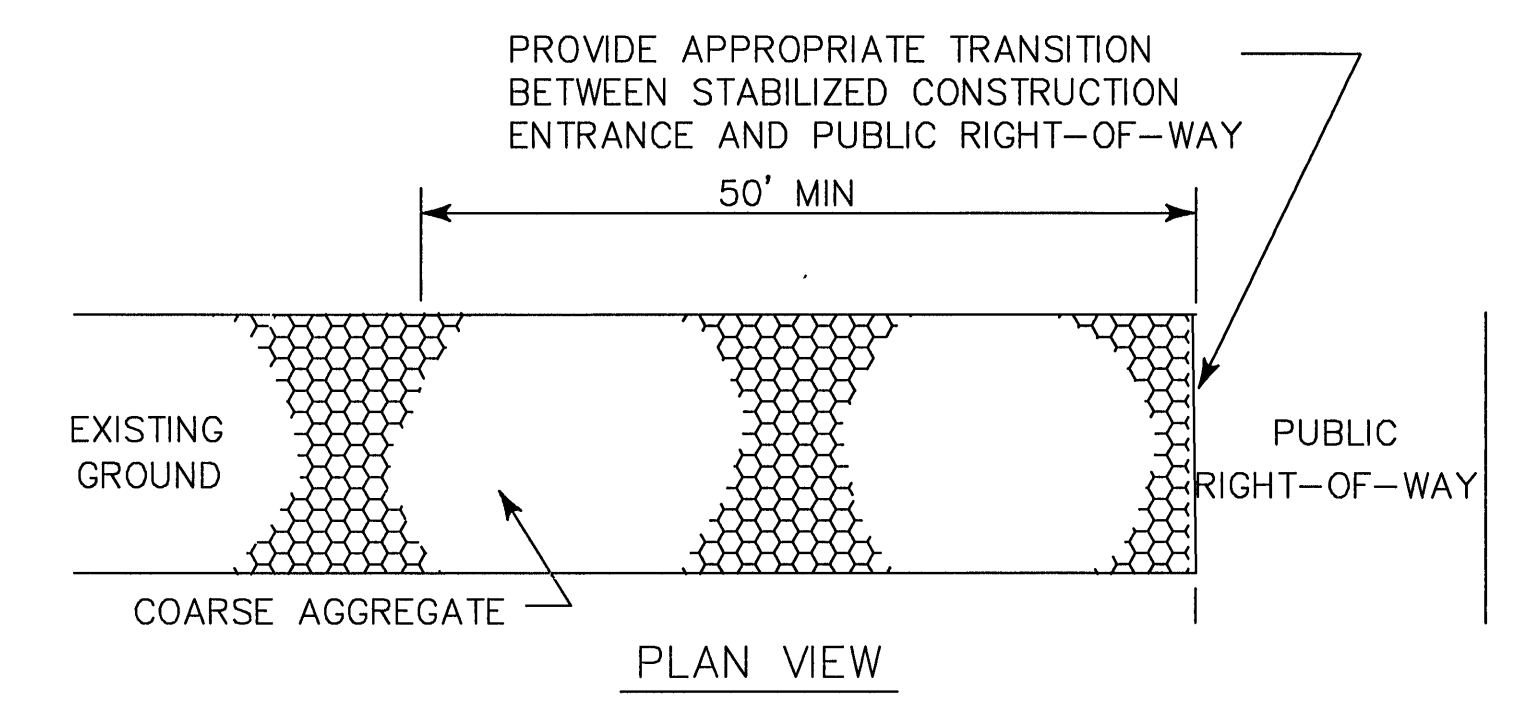
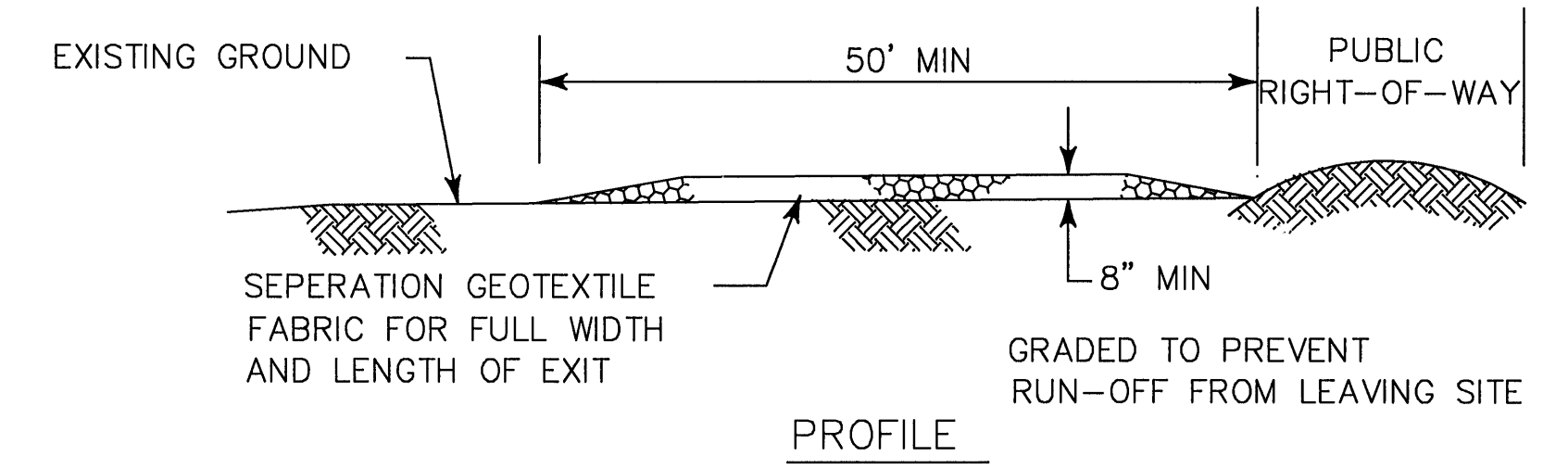


- CONSTRUCTION NOTES:**
1. 2 INCH THICK BY 2 INCH WOODEN STAKES TO BE SET AT MAX SPACING OF 3 FEET AND EMBEDDED A MIN OF 8 INCHES. IF PREASSEMBLED FENCE WITH SUPPORT NETTING IS USED, SPACING OF POST MAY BE INCREASED TO 8 FEET MAX.
 2. ATTACH FILTER FABRIC TO WOODEN STAKES. FILTER FABRIC FENCE SHALL HAVE A MIN HEIGHT OF 18 INCHES AND MAX HEIGHT OF 36 INCHES ABOVE NATURAL GROUND.
 3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHOULD BE OVERLAPPED 6 INCHES AT THE POSTS, AND FOLDED.
 4. SEE COH STANDARD SPECIFICATION FOR FILTER FABRIC FENCE.

FILTER FABRIC FENCE

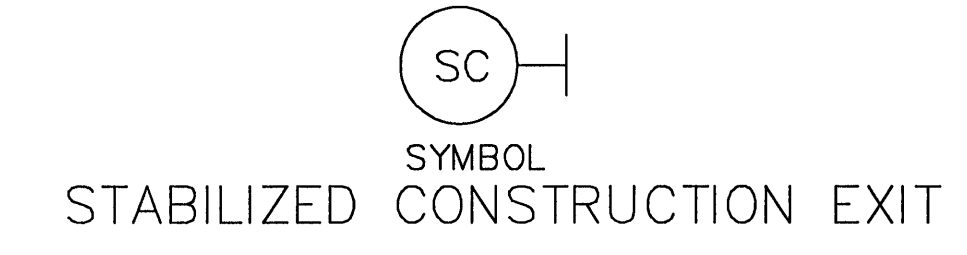


STRAW BALE DROP INLET PROTECTION BARRIER

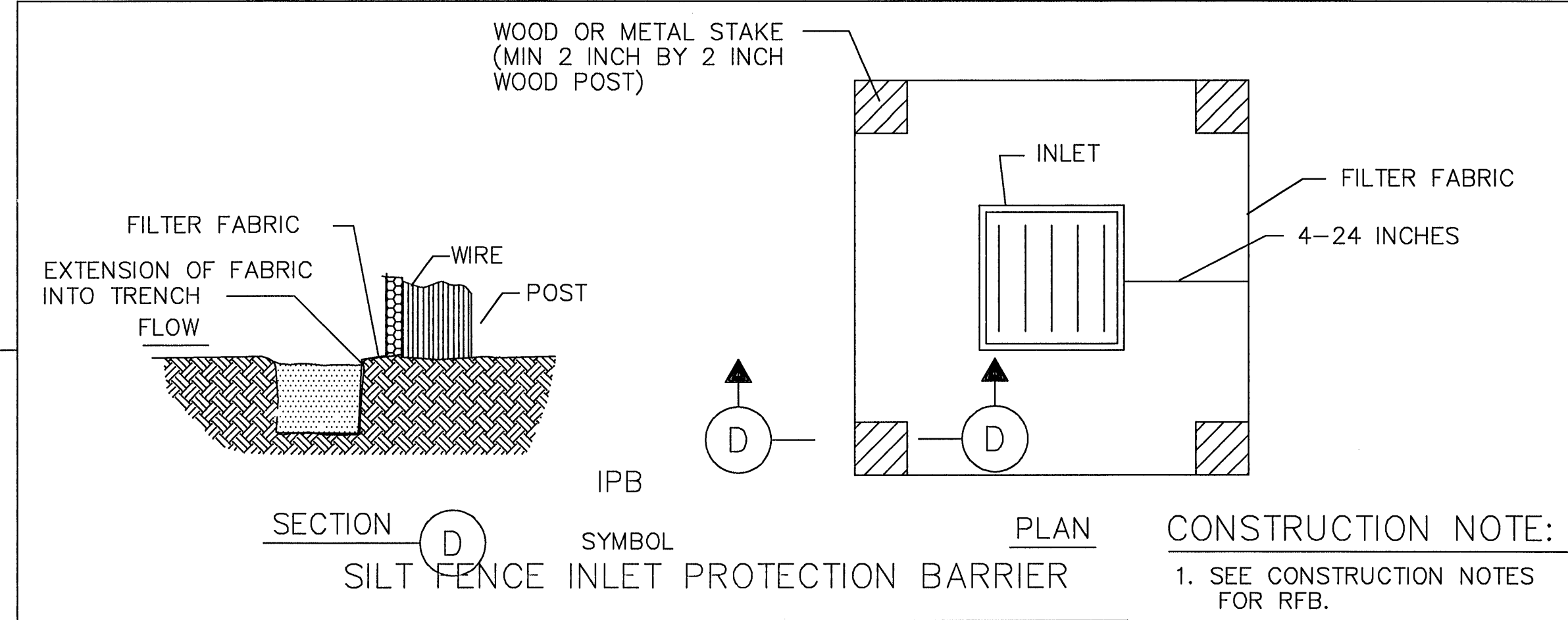


CONSTRUCTION NOTES:

1. LENGTH SHALL BE AS SHOWN ON THE CONSTRUCTION DRAWINGS, BUT NOT LESS THAN 50 FEET.
2. THICKNESS SHALL BE NOT LESS THAN 8 INCHES.
3. WIDTH SHALL BE NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
4. STABILIZATION FOR OTHER AREAS SHALL HAVE THE SAME AGGREGATE THICKNESS AND WIDTH REQUIREMENTS AS THE STABILIZED CONSTRUCTION EXIT, UNLESS OTHERWISE SHOWN ON THE CONSTRUCTION DRAWINGS.
5. STABILIZED AREA MAY BE WIDENED OR LENGTHENED TO ACCOMMODATE A TRUCK WASHING AREA. AN OUTLET SEDIMENT TRAP MUST BE PROVIDED FOR THE TRUCK WASHING AREA.
6. SEE COH STANDARD FOR STABILIZED CONSTRUCTION EXIT.
7. STABILIZED CONSTRUCTION EXIT SHALL BE MAINTAINED FREE OF SEDIMENT FOR THE DURATION OF THE PROJECT.



STABILIZED CONSTRUCTION EXIT



SILT FENCE INLET PROTECTION BARRIER

- CONSTRUCTION NOTE:**
1. SEE CONSTRUCTION NOTES FOR RFB.

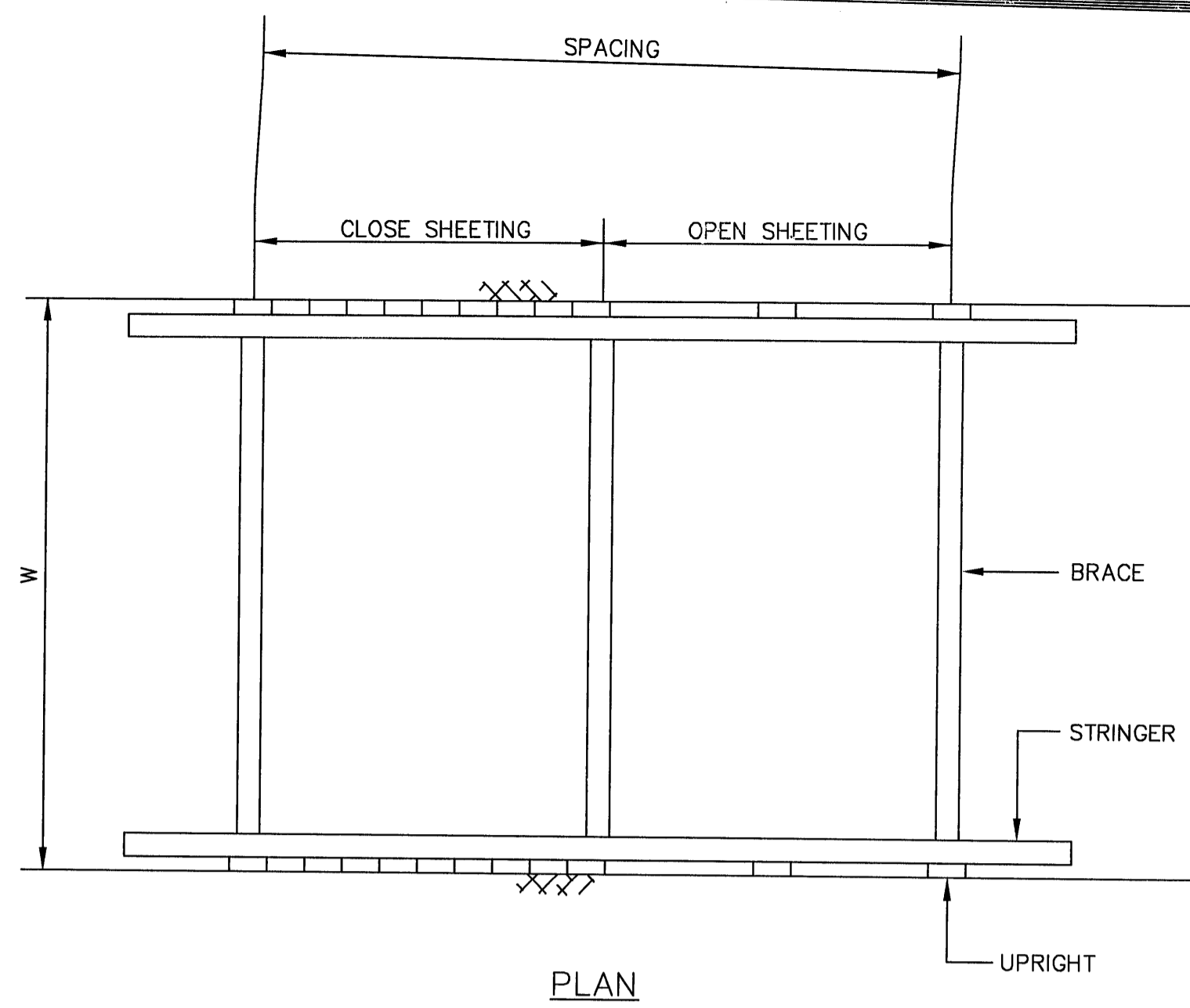
CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
ENGINEERING, CONSTRUCTION AND REAL ESTATE GROUP

STORM WATER POLLUTION
PREVENTION PLAN DETAILS
(NOT TO SCALE) 13 OF 14

APPROVED BY:	APPROVED BY:
CITY ENGINEER	DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: OCT-01-99	DWG NO: 01571-01

Bobby K. Wilson
03-02-00

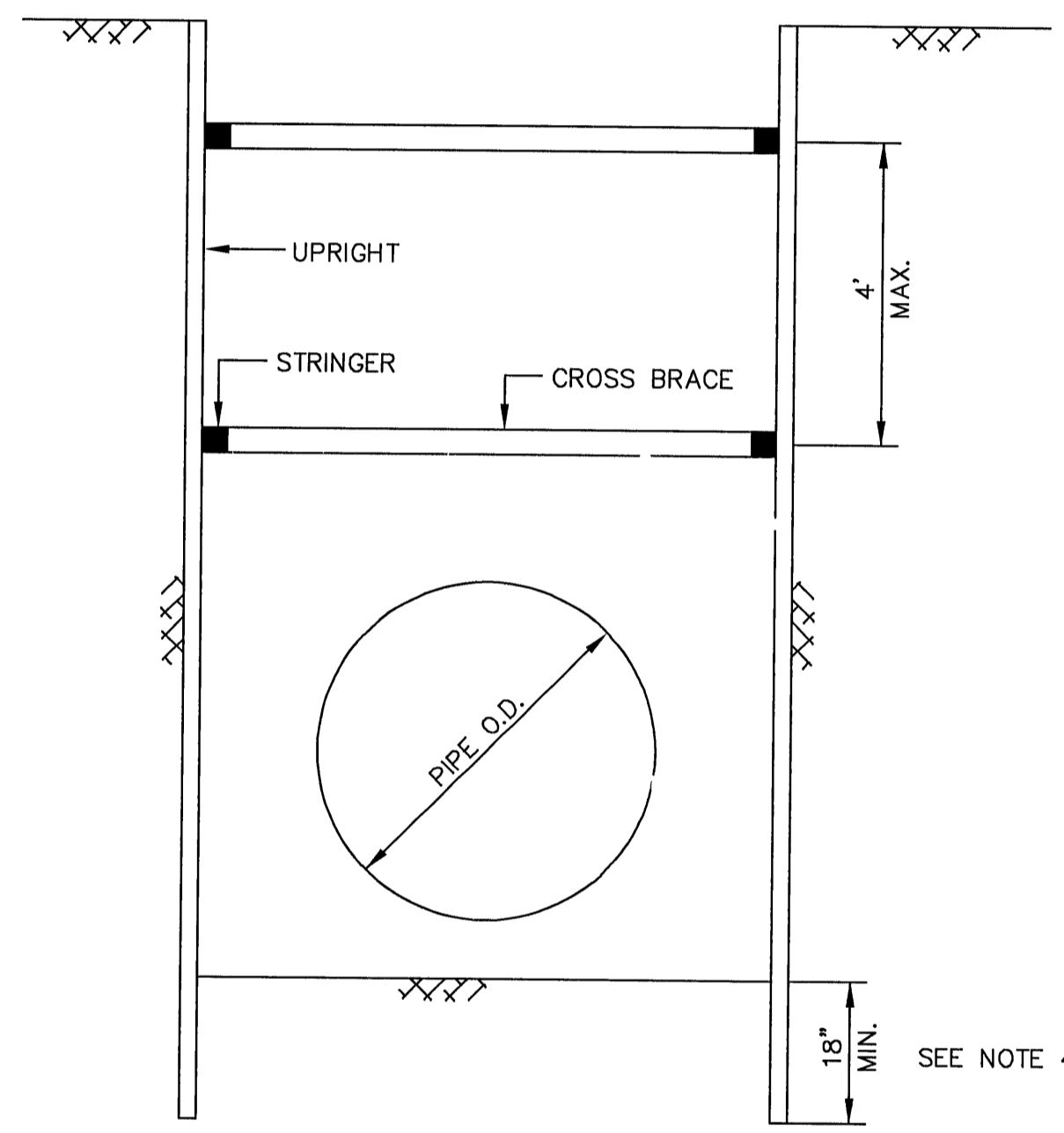
TRENCH SHORING - MINIMUM REQUIREMENTS (**)



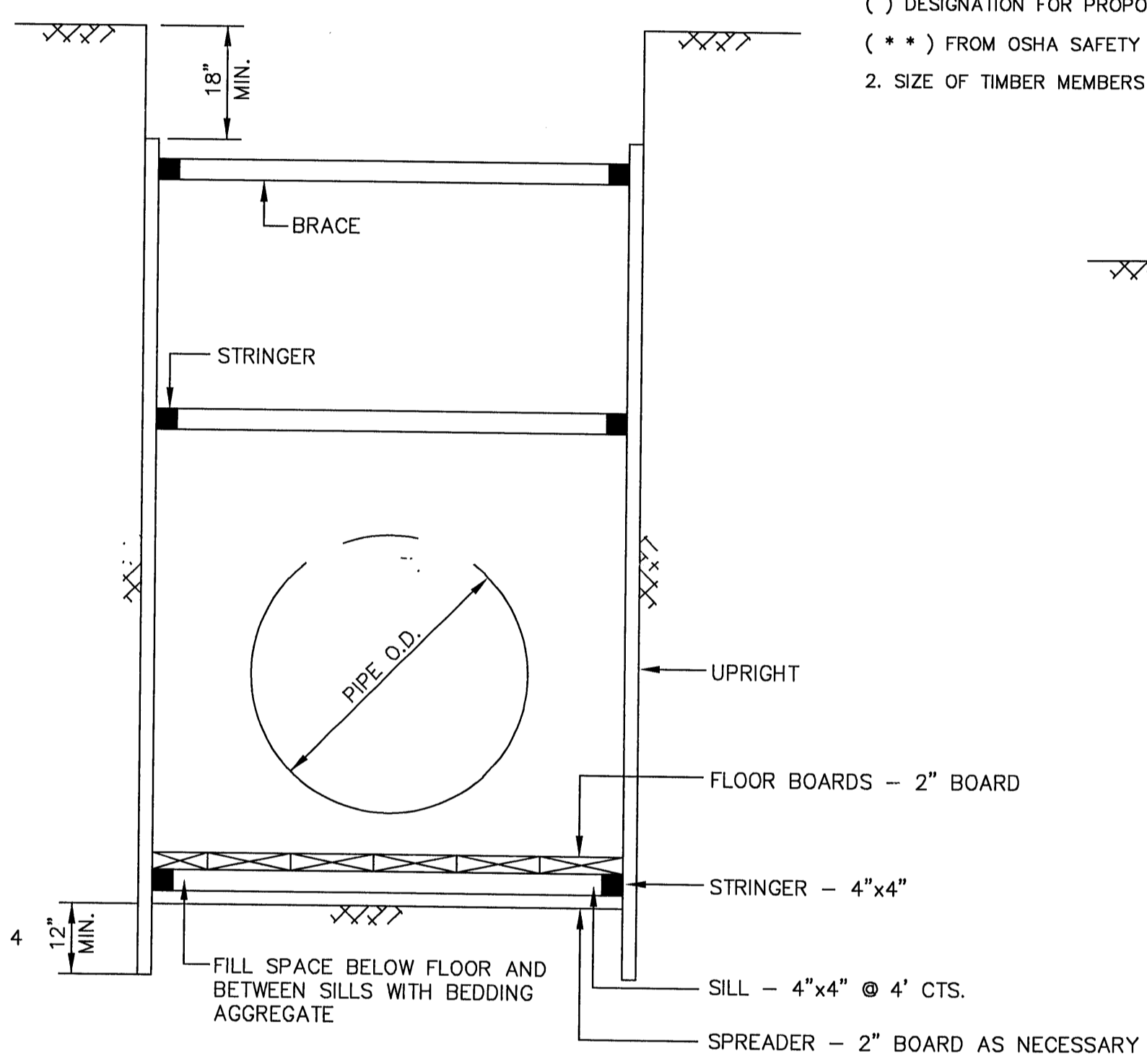
DEPTH OF TRENCH FEET	KIND OF CONDITION OF EARTH TYPE	SIZE AND SPACING OF MEMBERS										
		UPRIGHTS		S' TRINGERS		CROSS BRACES ¹					MAXIMUM SPACING	
		MINIMUM DIMENSION	MAXIMUM SPACING	MINIMUM DIMENSION	MAXIMUM SPACING	WIDTH OF TRENCH					VERTICAL	HORIZONTAL
		INCHES	FEET	INCHES	FEET	UP TO 3 FEET	3 TO 6 FEET	6 TO 9 FEET	9 TO 12 FEET	12 TO 15 FEET	FEET	FEET
5 TO 10	(A) HARD, COMPACT	3x4 OR 2x6	6	4	4	2x6	4x4	4x6	6x6	6x8	4	6
	(B) LIKELY TO CRACK	3x4 OR 2x6	3	4x6	4	2x6	4x4	4x6	6x6	6x8	4	6
	(C) SOFT, SANDY, OR FILLED	3x4 OR 2x6	CLOSE SHEETING	4x6	4	4x4	4x6	6x6	6x8	8x8	4	6
	(D) HYDROSTATIC PRESSURE	3x4 OR 2x6	CLOSE SHEETING	6x8	4	4x4	4x6	6x6	6x8	8x8	4	6
10 TO 15	(A) HARD, COMPACT	3x4 OR 2x6	4	4x6	4	4x4	4x6	6x6	6x8	8x8	4	6
	(B) LIKELY TO CRACK	3x4 OR 2x6	2	4x6	4	4x4	4x6	6x6	6x8	8x8	4	6
	(C) SOFT, SANDY, OR FILLED	3x4 OR 2x6	CLOSE SHEETING	4x6	4	4x6	6x6	6x8	8x8	8x10	4	6
	(D) HYDROSTATIC PRESSURE	3x6	CLOSE SHEETING	8x10	4	4x6	6x6	6x8	8x8	8x10	4	6
15 TO 20	(E) ALL KINDS OR CONDITIONS	3x6	CLOSE SHEETING	4x12	4	4x12	6x8	8x8	8x10	10x10	4	6
OVER 20	(E) ALL KINDS OR CONDITIONS	3x6	CLOSE SHEETING	6x8	4	4x12	8x8	8x10	10x10	10x12	4	6

¹ TRENCH JACKS MAY BE USED IN LIEU OF, OR IN COMBINATION WITH, CROSS BRACES. SHORING IS NOT REQUIRED IN SOLID ROCK, HARD SHALE, OR HARD SLAG. WHERE DESIRABLE, STEEL SHEET PILING AND BRACING OF EQUAL STRENGTH MAY BE SUBSTITUTED FOR WOOD.
() DESIGNATION FOR PROPOSAL (BID) PURPOSES
(**) FROM OSHA SAFETY AND HEALTH REGULATIONS PART 1926, SUBPART P
2. SIZE OF TIMBER MEMBERS ARE ROUGH CUT DIMENSIONS (FULL SIZE)

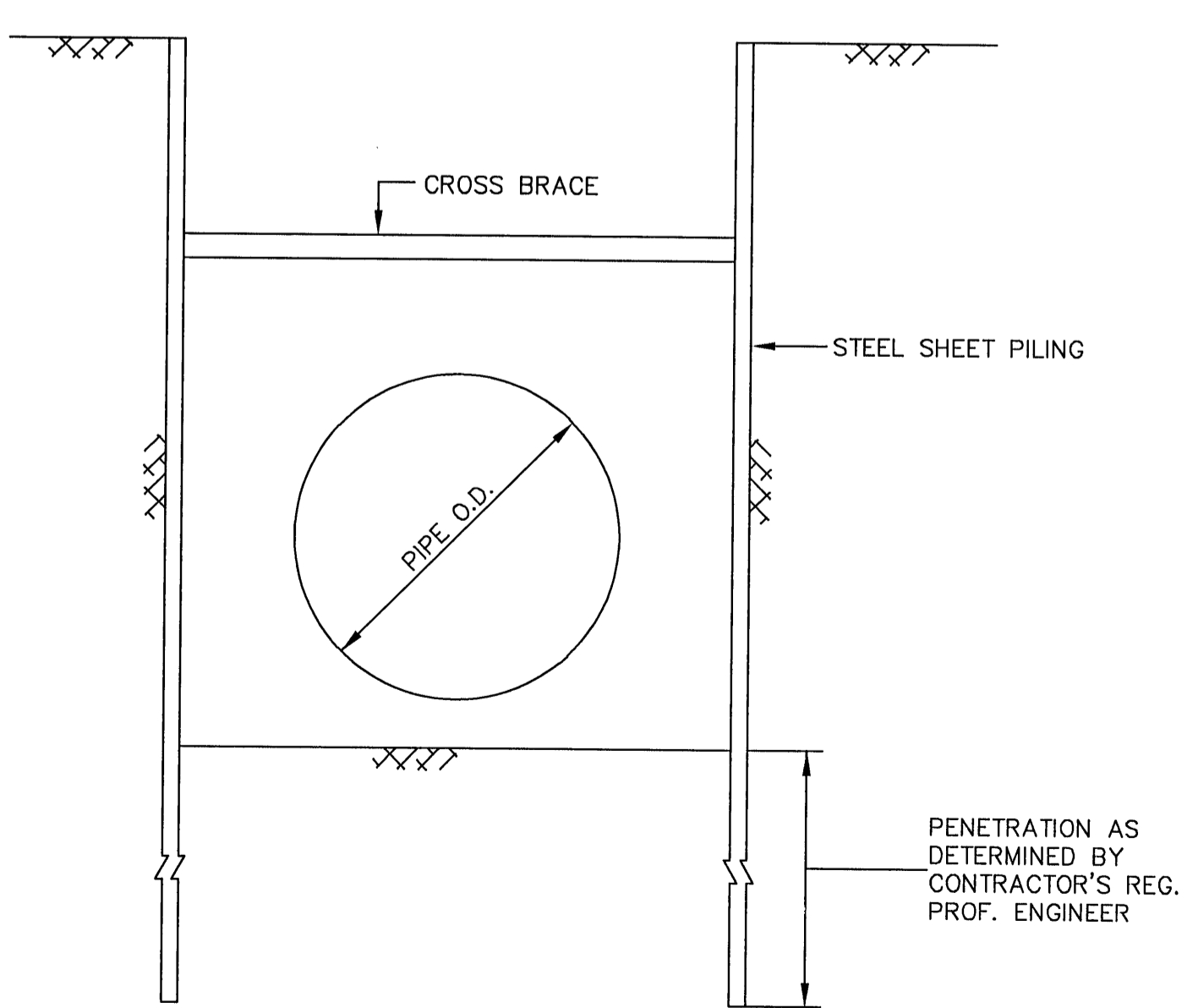
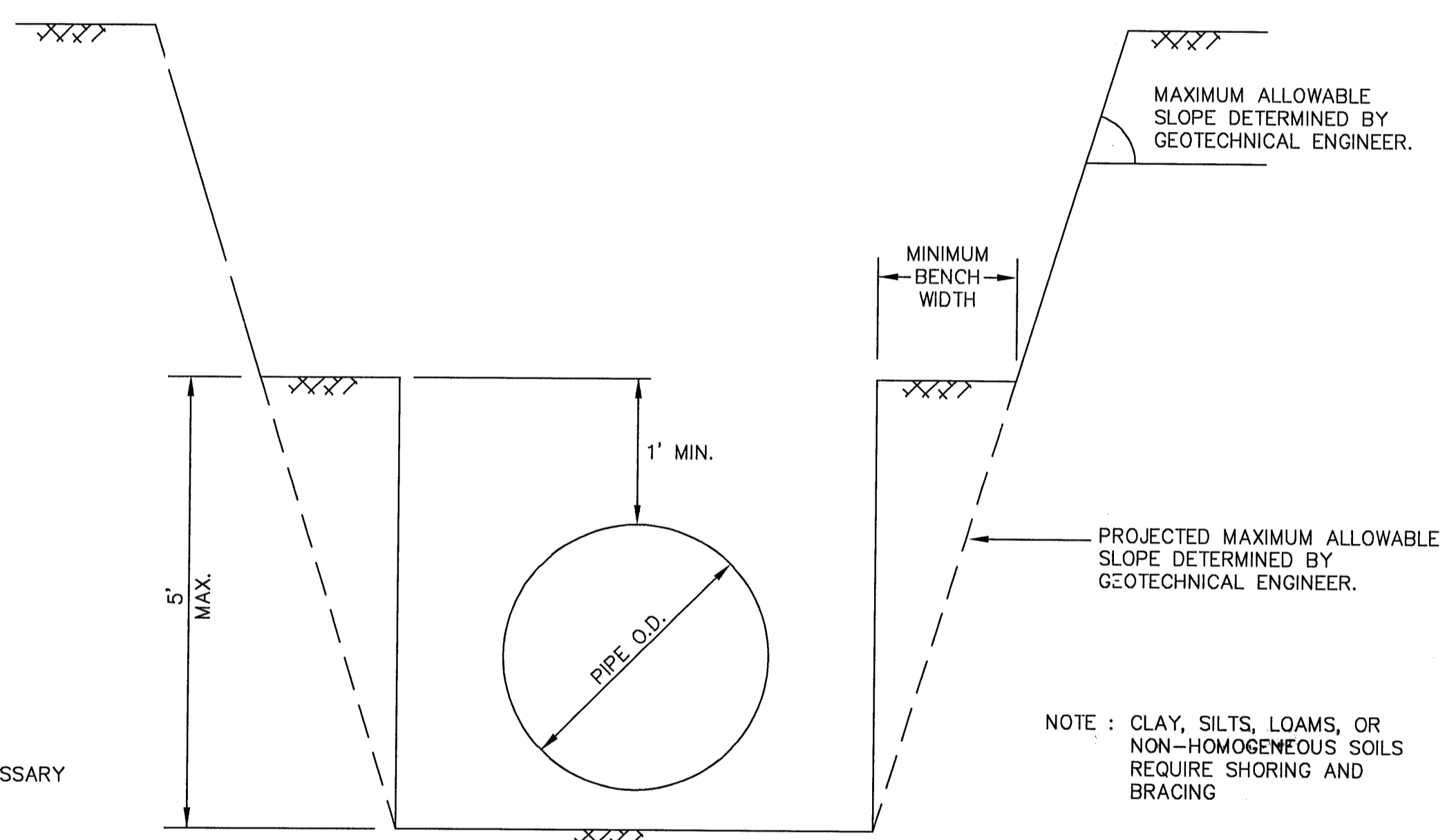
- TRENCH SAFETY SYSTEM TO MEET, AS A MINIMUM, THE REQUIREMENTS OF OSHA SAFETY AND HEALTH REGULATIONS PART 1926, SUBPART P.
- THE CONTRACTOR MAY ELECT TO USE AN ALTERNATE SYSTEM TO THE TIMBER TRENCH SHORING SHOWN IN THE TABLE. THE ALTERNATE SYSTEM, BE IT A TRENCH BOX, STEEL SHEET PILING, TRENCH JACKS OR A COMBINATION OF THE ABOVE, MUST BE CERTIFIED BY THE CONTRACTOR'S REGISTERED PROFESSIONAL ENGINEER THAT IT PROVIDES EQUAL OR GREATER PROTECTION THAN THE TIMBER TRENCH SHORING SHOWN ON THIS DETAIL SHEET.
- CONTRACTOR SHALL PERFORM DAILY TRENCH SAFETY SYSTEM INSPECTIONS TO INSURE THAT THE SYSTEM MEETS OSHA REQUIREMENTS AND IS APPROPRIATE FOR SPECIFIC SITE CONDITIONS OF THE OPEN TRENCH. INSPECTIONS ARE REQUIRED AFTER RAINSTORMS OR ANY CHANGE IN CONDITIONS THAT MAY INCREASE THE POSSIBILITY OF A CAVE-IN OR SLIDE.
- IN THE EVENT THAT TRENCH UPRIGHTS CAN NOT BE PLACED BELOW TRENCH BOTTOM AS SHOWN ON DETAIL, CONTRACTOR MUST PROVIDE ENGINEER WITH PLANS THAT DEMONSTRATE THAT THE UPRIGHTS WILL BE BRACED AND MAINTAINED IN A VERTICAL POSITION.
- WHERE THE TRENCH SAFETY SYSTEM CROSSES A UTILITY, THE UTILITY LINE MUST BE ADEQUATELY SUPPORTED TO PREVENT ANY DAMAGE. IN ADDITION, IN TRENCHES WITH CLOSED SHEETING, THE UPRIGHTS MUST SURROUND THE UTILITY. OPEN TRENCH SHEETING SPACING MUST BE ADJUSTED AS TO NOT EXCEED THE MAXIMUM ALLOWED SPACING. (NO SEPARATE PAY)
- TRENCH SHALL BE DRAINED AS REQUIRED SO WORK MAY BE ACCOMPLISHED SAFELY AND EFFICIENTLY. IF NECESSARY, INSTALL DEWATERING SYSTEM TO PROVIDE A DRY TRENCH BOTTOM. DELIVER DISCHARGE FROM SYSTEM TO NATURAL DRAINAGE CHANNEL OR TO STORM DRAINS.
- IN TRENCHES FOUR FOOT DEEP OR MORE, CONTRACTOR TO PROVIDE ADEQUATE MEANS OF TRENCH EXIT SUCH AS LADDER OR STEPS AND THEY MUST BE LOCATED SO AS TO REQUIRE NO MORE THAN 25 FEET OF LATERAL TRAVEL.
- MEASURE "PERMANENT TIMBER TRENCH SHORING" BY LINEAR FOOT OF TRENCH PROTECTED. PAYMENT IS BY STATED DEPTH OF TRENCH AND EARTH CONDITIONS NOTED IN THE PROPOSAL (BID).
- MEASURE "TRENCH SAFETY SYSTEM" BY LINEAR FOOT OF TRENCH PROTECTED. PAYMENT IS BY STATED DEPTH OF TRENCH AND EARTH CONDITIONS NOTED IN THE PROPOSAL (BID).
- STINGERS AND BRACES TO BE SECURELY FASTENED.
- ANY PART OF "TRENCH SAFETY SYSTEM" LEFT IN PLACE TO BE REMOVED A MINIMUM OF 18 INCHES BELOW FINISHED GRADE OR NATURAL GROUND, WHICHEVER IS LOWER.
- TRENCH SHORING SYSTEM HAS BEEN DESIGNED WITH NO ALLOWANCE FOR LIVE LOAD SURCHARGE. IF LIVE LOAD SURCHARGE IS ANTICIPATED IT SHALL NOT BE PLACED WITHIN 2 FEET OF EDGE OF TRENCH AND CONTRACTOR'S REGISTERED PROFESSIONAL ENGINEER SHALL DESIGN TRENCH SHORING SYSTEM TO ACCOMMODATE THE ANTICIPATED LIVE LOAD SURCHARGE.
- TIMBER SIZES ARE BASED ON STRESSES OF 1650 PSI FOR EXTREME FIBER IN BENDING AND 1450 PSI FOR COMPRESSION PARALLEL WITH GRAIN.
- EARTH TRENCH CONDITIONS FOR THIS PROJECT ARE ANTICIPATED TO BE AS SHOWN IN THE GEOTECHNICAL REPORT.



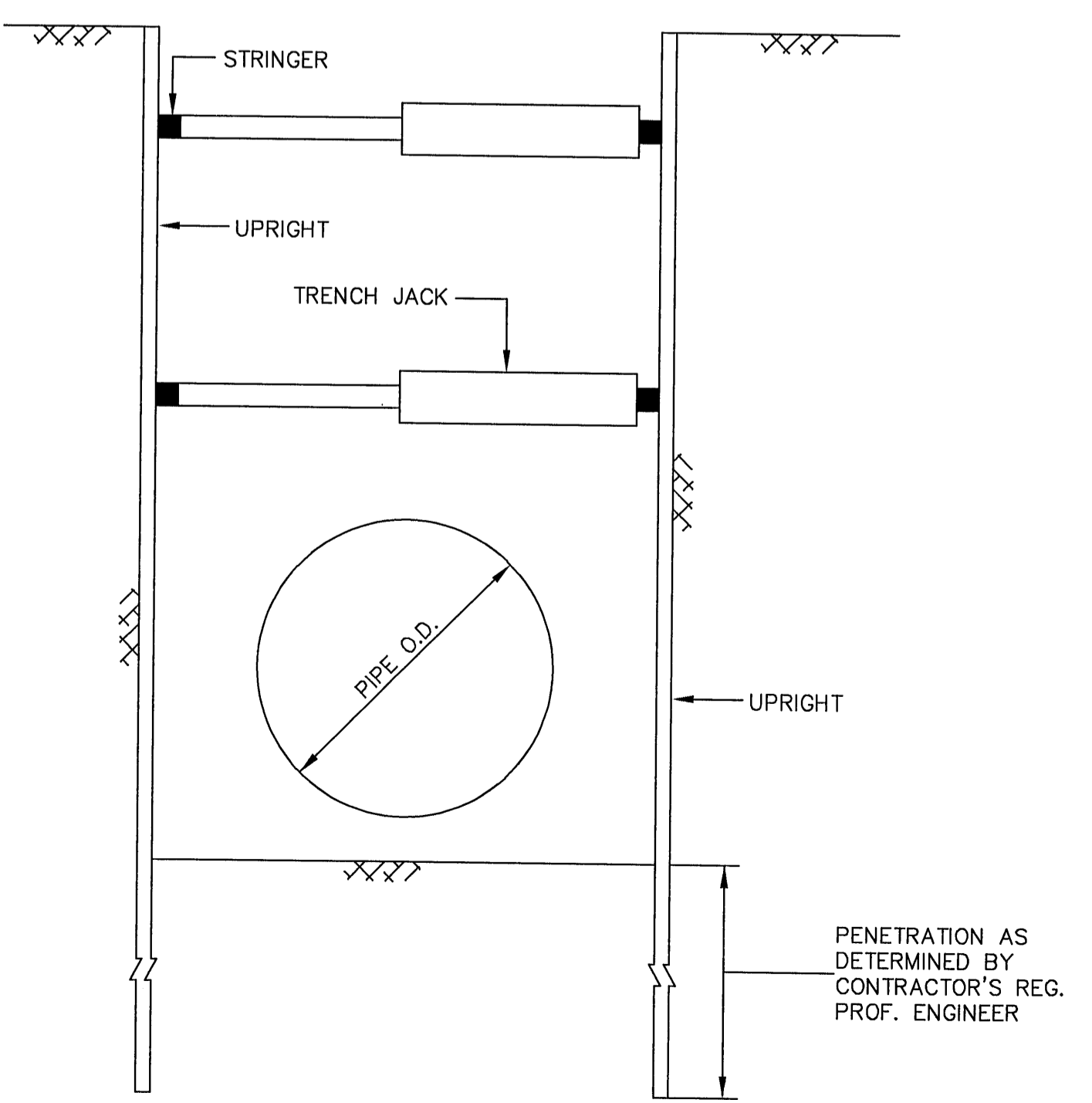
TIMBER TRENCH SHORING



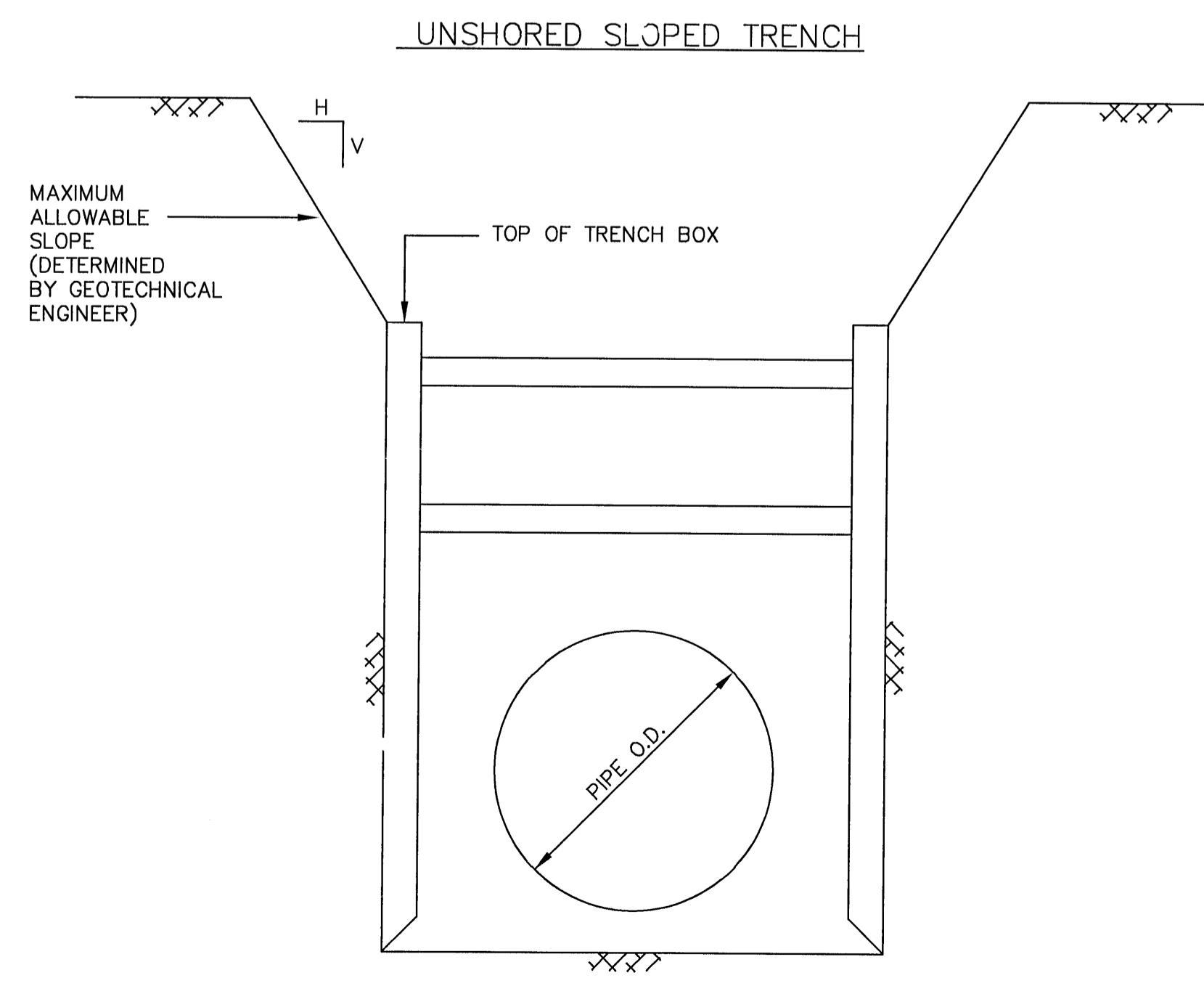
PERMANENT TIMBER TRENCH SHORING



STEEL PILING *



TRENCH JACK AND STRINGER *



TRENCH BOX *

Billy Kleblson
03.02.00

SUBMITTED:	DESIGNED BY: B K WILSON
SCALE: N/A	DRAWN BY: BILL DORRIS
DATE: MARCH 2000	SHEET NO. 14 OF 14 SHEETS
SURVEY BY:	CITY DWG. NO: TRENCH.DWG
F B NO: 462U	

TRENCH SAFETY

PCI PROVIDENT CONSULTING, INC.
1200 WEST 11TH ST.
HOUSTON, TEXAS 77008
(713)802-1019