

HARRIS COUNTY, TEXAS

MUNICIPAL UTILITY DISTRICT NO. 191

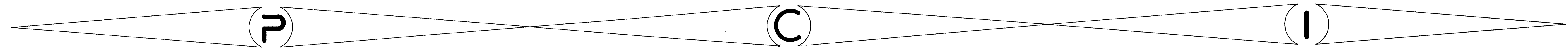
CHAMPIONS ARBOR

plans of proposed

WATER SANITARY STORM SEWER

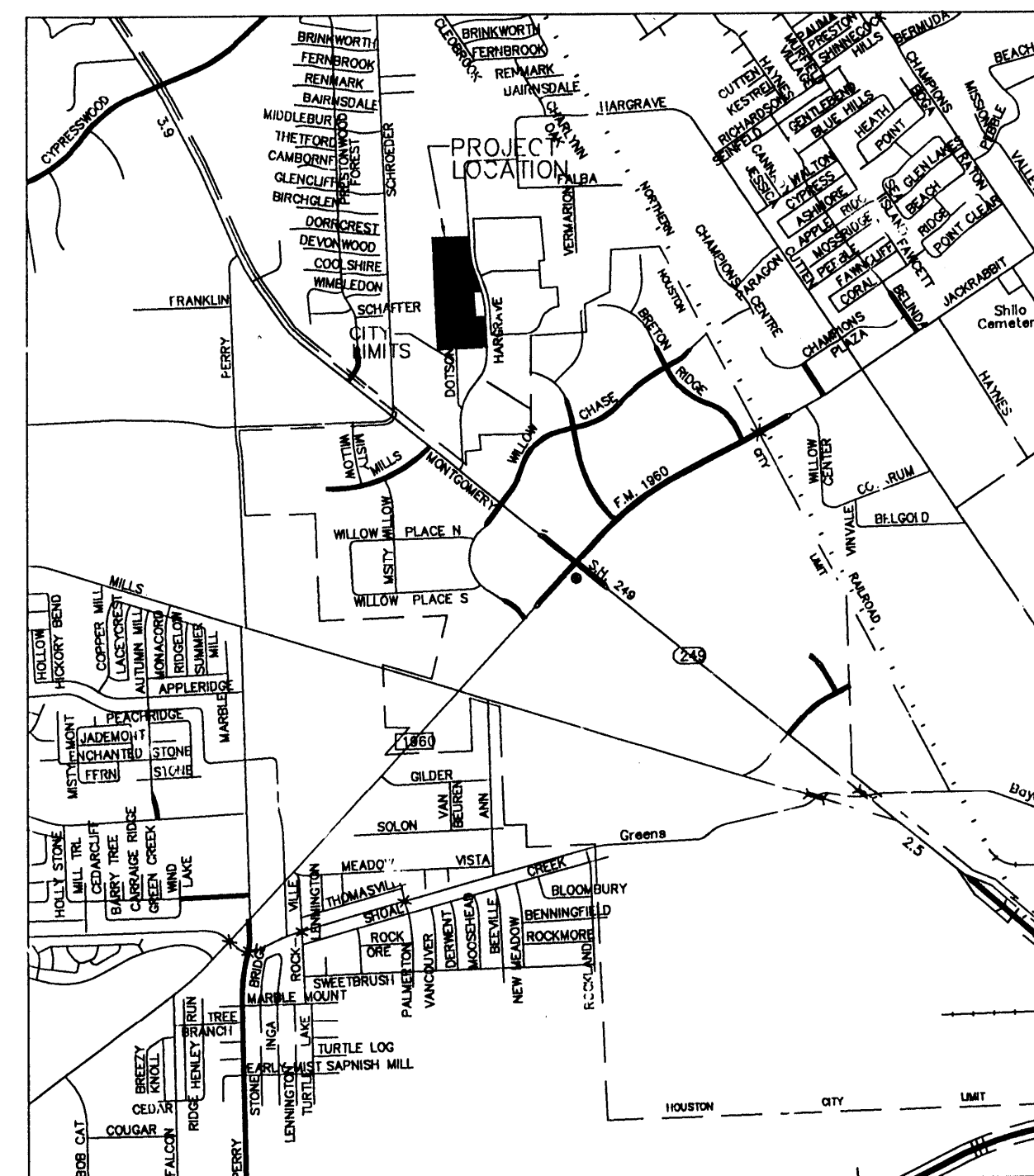
and

PAVING IMPROVEMENTS



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

APPROVED
CITY OF HOUSTON

Herbert Lum
CITY ENGINEER
HERBERT LUM, P.E. 1-11-2000
DATE

Jerry King
DIRECTOR OF PUBLIC WORKS AND ENGINEERING
JERRY KING, P.E. 1-11-2000
DATE

CITY DWG. NO:
SHEET NO. 1 OF 21 SHEETS

"CONTRACTOR SHALL NOTIFY THE CITY OF HOUSTON, DEPARTMENT OF PUBLIC WORKS AND ENGINEERING, ENGINEERING CONSTRUCTION AND REAL ESTATES GROUP (TELEPHONE NO. 713 837-7000) 48 HOURS BEFORE STARTING WORK ON THIS PROJECT."

Bobby K. Wilson
12-27-99

DEVELOPER:
SEDONA WOODS, LTD.

JOB NO. 480U & 480P
DATE: OCTOBER 1999

COH LOG. NO. 99-1254
PCI PROVIDENT CONSULTING, INC.
1200 WEST 11TH ST.
HOUSTON, TEXAS 77008
(713)802-1019

COVER2AA.DWG

CHAMPIONS ARBOR UTILITIES #480U & 480P R# 112219

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.

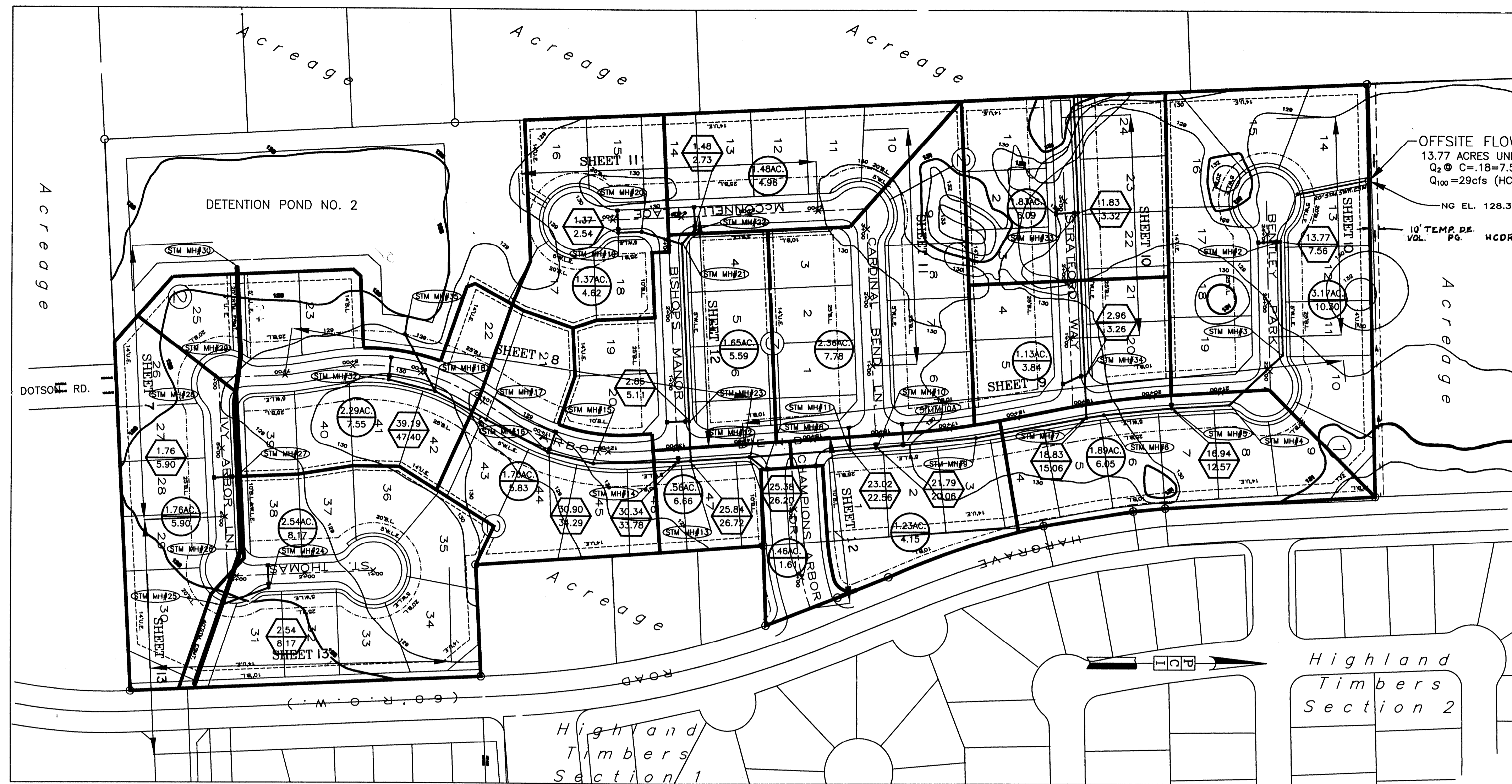
GENERAL UTILITY NOTES - PAVING

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.

Bobby K. Wilson
12-27-99

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△			
△			
Rev.	Date	Description	App.
PRIVATE UTILITY LINES SHOWN			
		<i>Ca Waterwall</i>	12/29/99
		<i>Nibe Balim</i>	12/29/99
		<i>Ca Waterwall</i>	12/29/99
CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING			
REVIEWED BY		CITY ENGINEER	
PRIVATELY FUNDED PUBLIC WORKS		CITY FUNDED PUBLIC WORKS	
<i>Waterwall 12-29-99</i>			
WATER		PROJECT MANAGER	
<i>Waterwall 12-29-99</i>			
WASTEWATER		CONSTRUCTION	
<i>Waterwall 12-29-99</i>			
STORM WATER		CHIEF ENGINEER	
STREET AND BRIDGE			
OTHER APPROVAL			
TRAFFIC AND TRANSPORTATION		SPONSOR DEPARTMENT	
CITY ENGINEER		DATE	
<i>Waterwall</i>		1-11-2000	
SUBMITTED: DESIGNED BY: BOBBY WILSON			
SCALE: 1" = 1'		DRAWN BY: BILL DORRIS	
DATE: OCTOBER 1999		SHEET NO. 2 OF 21 SHEETS	
SURVEY BY:		DWG. NO. NOTE.DWG	
F B NO: 480J & 480P			
GENERAL NOTES			
PCI PROVIDENT CONSULTING, INC. 1200 WEST 11TH ST. HOUSTON, TEXAS 77008 (713)802-1019			



LEGEND

- STM MH#33 PROPOSED STORM SEWER MANHOLE NUMBER
- AC FLOW EXISTING DRAINAGE SUB-AREA FLOW BASED ON C.O.H. 2YR. CRITERIA
- DRAINAGE BOUNDARY
- AC FLOW ACCUMULATIVE AREA AND FLOW AT THIS MANHOLE
- PROP. STORM SEWER LINE & MANHOLE
- PROP. INLET

RUNOFF COEFFICIENTS

C = 0.18 Undeveloped Woodlands
 C = 0.55 Single Family Residential
 Other C's used herein weighed average between 0.55 and 0.18 based on acreage.

**CITY OF HOUSTON STORM SEWER CALCULATION FORM
 CHAMPIONS ARBOR**

MH From	M.H. To	Area (acres)	Runoff Coefficient C	Sum of C/A	Intensity I (in/hr)	Sum of Flows (cfs)	Time of Conc. (minutes)	Reach Length (feet)	Diameter or Rise (inches)	Span (inches)	Slope %	Manning's "n"	Design Capacity (cfs)	Design Velocity (ft/s)	Fall (feet)	Manhole Drop (feet)	Flowline Elevation Upstream (feet)	Flowline Elevation Downstream (feet)	Actual Velocity (ft/s)	Hydraulic Gradient (ft/s)	Change in Head (feet)	Elevation of Hyd. Grad. Upstream (feet)	Elevation of Hyd. Grad. Downstream (feet)	Natural Ground Upstream (feet)	Natural Ground Downstream (feet)
Offsite	2	13.77	0.18	2.47	3.05	7.56	30.80	170	24	24	0.15	0.013	9.45	3.0	0.25		122.41	122.15	2.41	0.11	0.19	124.57	124.38	128.5	129.1
2	5	16.94	0.25	4.16	3.02	12.57	31.50	340	30	30	0.13	0.013	15.80	3.2	0.44	0.50	121.65	121.21	2.56	0.09	0.32	124.36	124.04	129.1	129.1
5	7	18.83	0.28	5.02	3.00	15.06	31.80	154	30	30	0.13	0.013	15.80	3.2	0.20		121.21	121.01	3.07	0.14	0.21	124.02	123.81	129.1	130.9
33	34	1.83	0.55	1.01	3.32	3.34	25.14	290	24	24	0.15	0.013	9.45	3.0	0.44		123.24	122.80	2.37	0.07	0.21	124.16	123.95	128.9	131.0
34	7	2.96	0.55	1.63	3.26	5.31	25.20	60	24	24	0.15	0.013	9.45	3.0	0.09		122.80	122.71	2.91	0.15	0.09	123.93	123.84	131.0	130.9
7	10	21.79	0.31	6.75	2.97	20.06	32.20	310	30	30	0.22	0.013	20.60	4.2	0.68		121.01	120.33	4.09	0.24	0.74	123.77	123.03	130.9	129.6
10	11	23.02	0.33	7.60	2.97	22.56	32.40	40	30	30	0.27	0.013	22.50	4.7	0.11		120.33	120.22	4.60	0.30	0.12	122.98	122.86	129.6	128.7
11	12	25.38	0.35	8.88	2.95	26.20	32.61	140	36	36	0.15	0.013	27.20	3.9	0.21	0.50	120.22	119.51	4.02	0.11	0.16	122.82	122.66	128.7	129.8
12	13	25.84	0.35	9.06	2.95	26.72	32.75	73	36	36	0.15	0.013	27.20	3.9	0.11		119.51	119.40	3.78	0.15	0.11	122.62	122.51	129.8	129.3
19	21	1.37	0.55	0.75	3.37	2.54	25.67	100	24	24	0.15	0.013	9.45	3.0	0.15		123.21	123.06	1.33	0.02	0.02	124.38	124.36	129.2	129.5
22	21	1.48	0.55	0.81	3.35	2.73	25.77	25	24	24	0.15	0.013	9.45	3.0	0.04		123.06	123.02	1.27	0.00	0.00	124.35	124.35	129.8	129.5
21	23	2.85	0.55	1.57	3.26	5.11	27.01	264	24	24	0.15	0.013	9.45	3.0	0.38		123.02	122.64	2.34	0.06	0.16	124.33	124.17	129.5	129.3
23	13	4.50	0.55	2.48	3.20	7.92	27.95	60	24	24	0.15	0.013	9.45	3.0	0.09		122.64	122.55	3.13	0.15	0.09	124.14	124.05	129.3	129.8
13	14	30.34	0.38	11.53	2.93	33.78	33.18	20	36	36	0.24	0.013	34.70	5.0	0.05		119.40	119.35	4.78	0.25	0.05	122.45	122.40	129.8	129.4
14	16	30.90	0.38	11.74	2.92	34.29	33.25	194	36	36	0.24	0.013	34.70	5.0	0.47		119.35	118.88	4.85	0.24	0.46	122.35	121.89	129.4	128.9
16	18	32.60	0.39	12.71	2.91	37.00	33.45	206	36	36	0.28	0.013	38.00	5.4	0.58		118.88	118.30	5.26	0.28	0.57	121.82	121.25	128.9	130.4
32	18	2.29	0.55	1.26	3.29	4.14	26.78	46	24	24	0.15	0.013	9.45	3.0	0.07		122.65	122.58	2.72	0.15	0.07	123.63	123.56	128.8	130.4
18	35	39.19	0.42	16.46	2.88	47.40	34.10	40	42	42	0.22	0.013	50.00	5.2	0.10	0.50	118.30	117.70	5.60	0.13	0.05	121.25	121.20	130.4	121.2

BENCH MARK
 BENCH MARK NATIONAL GEODETIC SURVEY MARKER
 1216, 1973 ADJ. ELEV. = 123.994
 1216, 1978 ADJ. ELEV. = 123.906
 1216, 1998 ADJ. ELEV. = 123.94 (THIS ADJUSTMENT WAS USED FOR CUTTEN ROAD)
 ELEVATIONS SHOWN HEREIN ARE BASED ON 1973 ADJUSTMENT
 TBM #1: SET RAILROAD SPIKE ON SOUTH SIDE OF 14" TALL LOW APPROXIMATELY 31 FEET NORTH OF THE END OF CENTERFIELD DRIVE ELEVATION = 128.60
 TBM #2: SET RAILROAD SPIKE ON SOUTH SIDE OF POWER POLE 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

NOTE:
 THIS TRACT IS IN ZONE "X" AS PER FEMA FLOOD INSURANCE RATE MAP PANEL NO. 48201C0245 J, HARRIS COUNTY, TX, REVISED NOV. 6, 1998. ZONE "X" IS DESCRIBED AS BEING OUTSIDE THE 500 YEAR FLOODPLAIN.

APPROVED:

 for Assistant County Engineer
 Date _____

Approved Implies 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

R. Young 1/5/00
 RELIANT ENERGIES, INC./ENTEX
 Mike Balin 1/5/00
 SOUTHWESTERN BELL TELEPHONE CO.
 Valid for One Year Only
 R. Young 1/5/00
 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
Water Services 1-1-2000 WATER PROJECT MANAGER	
WASTEWATER CONSTRUCTION	
STORM WATER CONSTRUCTION	
STREET AND BRIDGE	CHIEF ENGINEER

OTHER APPROVAL

TRAFFIC AND TRANSPORTATION SPONSOR DEPARTMENT

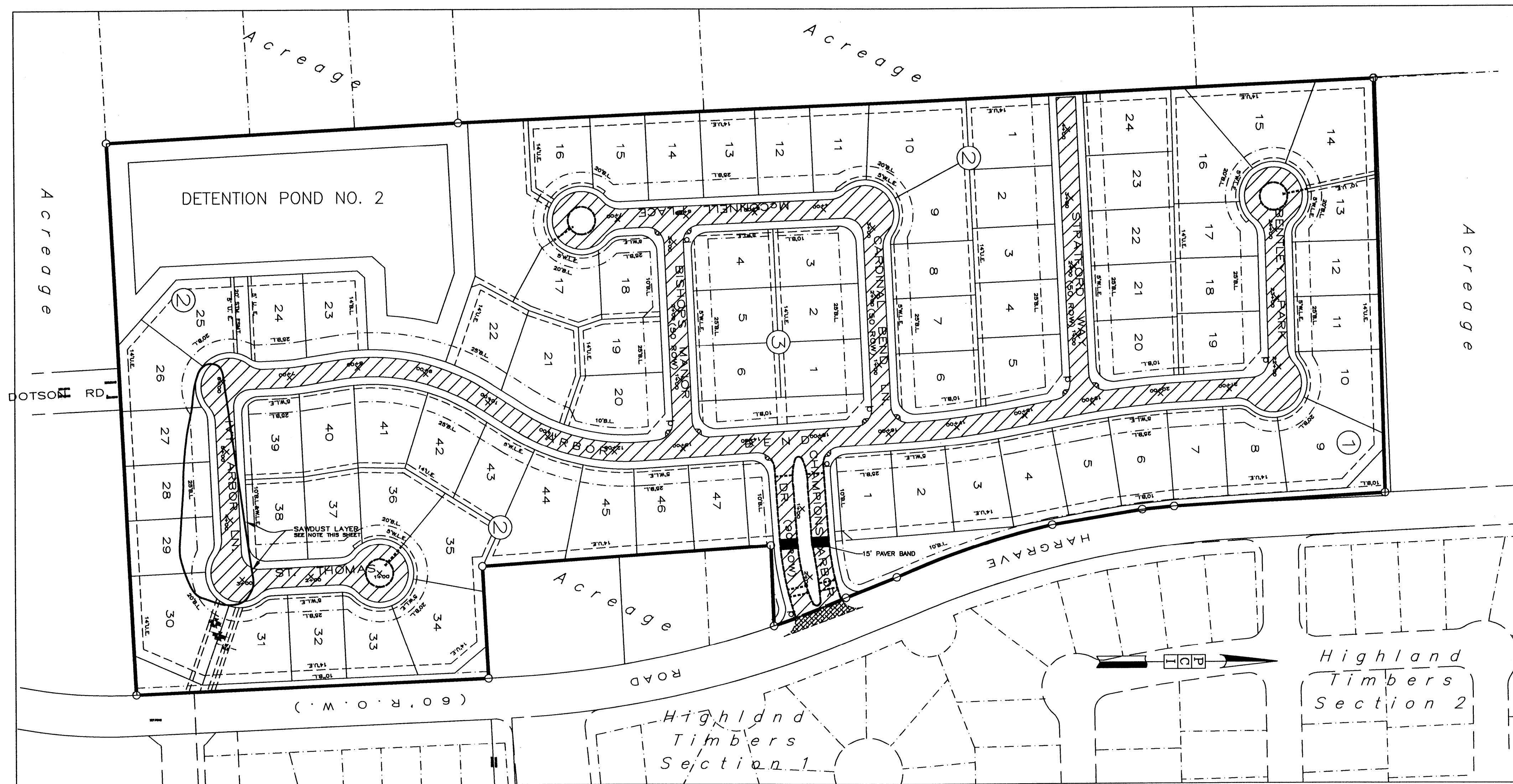
CITY ENGINEER DATE
 DIRECTOR OF PUBLIC WORKS AND ENGINEERING DATE

SUBMITTED: _____ DESIGNED BY: BOBBY WILSON
 SCALE: 1" = 100' DRAWN BY: BILL DORRIS
 DATE: OCTOBER 1999 SHEET NO. 5 OF 21 SHEETS
 SURVEY BY: _____
 F B NO: 380U&380P CITY DWG. NO. ODP.DWG

HARRIS COUNTY MUD 191
 CHAMPIONS ARBOR
 OVERALL DRAINAGE PLAN &
 STORM SEWER CALCULATIONS

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



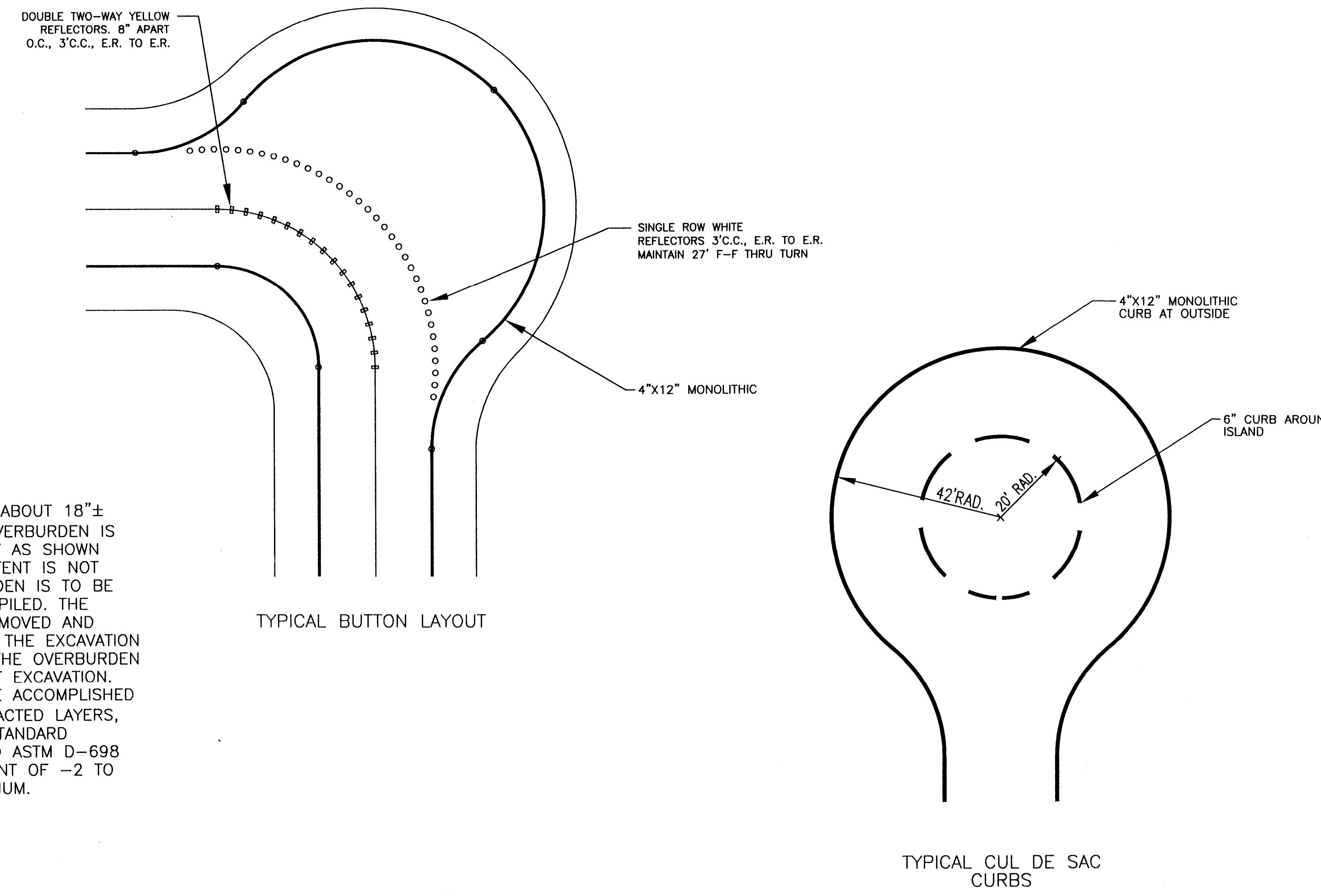
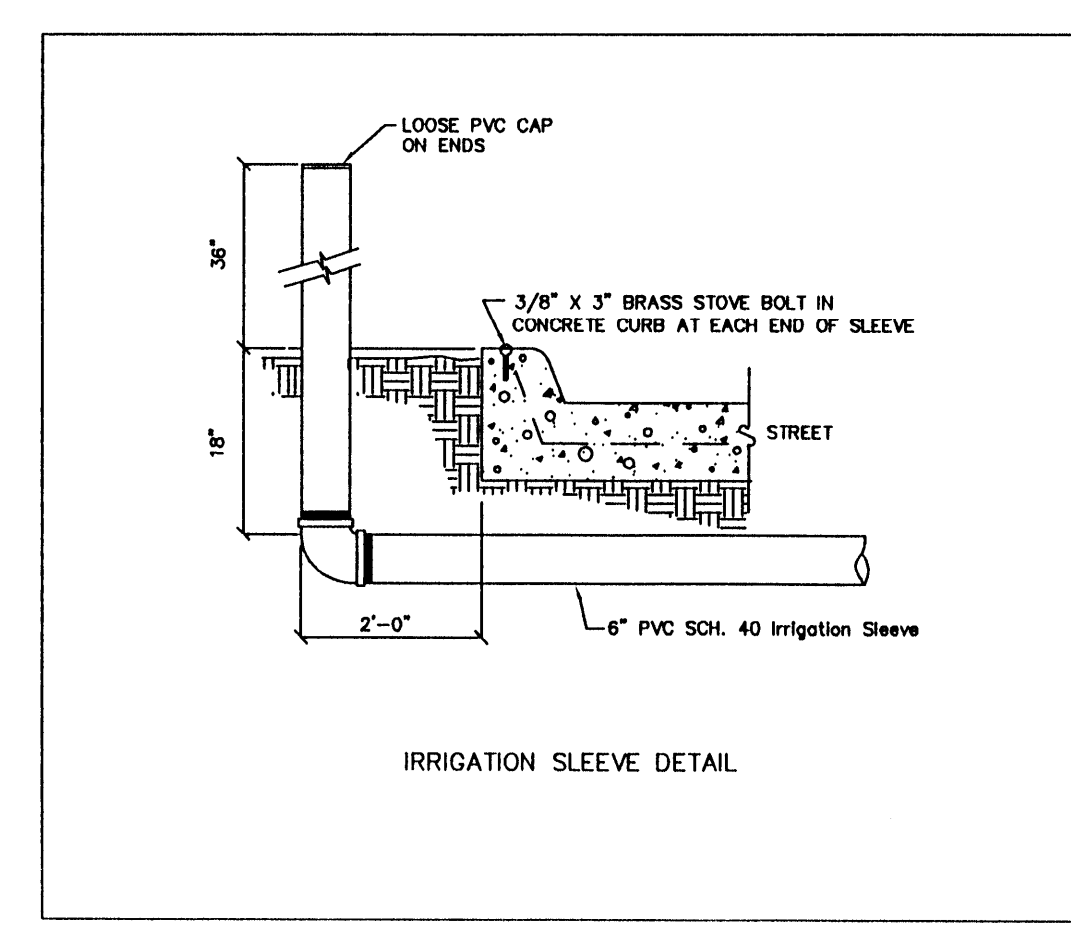


LEGEND

- PROPOSED 6" REINFORCED CONCRETE PAVING
- 2" ASPHALT PAVING WITH 10" LIMESTONE BASE
- PROPOSED WHEEL CHAIR RAMP
- STREET/STOP SIGN (R1-1/R1-1A)
- STANDARD 6" CURB
- 15' PAVER BAND @ ENTRY, CENTER ON REAR LOT LINE
- 6" PVC SCH. 40 IRRIGATION SLEEVES (ALIGN W/ LOT LINES AT CUL-DE-SAC AS SHOWN)

NOTE:
INDICATES STANDARD 6" DOWELED-ON CURB. 4"x12" MONOLITHIC CURBS TO BE USED EXCEPT WHERE 6" CURB IS SHOWN. T.C.'S ARE SHOWN FOR 6" CURB, WHERE 4"x12" MONOLITHIC CURB IS PRESENT SUBTRACT 1.5".

THIS AREA TO BE BLOCKED OUT BY PAVING CONTRACTOR WITH PREPARED SUBGRADE AND REINFORCING IN PLACE. PATTERNED CONCRETE CONTRACTOR WILL POUR THIS AREA AND LEAVE CURB BARS. THIS AREA IS NOT INCLUDED IN THE PAVING SQUARE YARD QUANTITIES.



SAWDUST AREA NOTE:
A LAYER OF SAWDUST ABOUT 18"± THICK AND A 2'-6" OVERBURDEN IS LOCATED APPROXIMATELY AS SHOWN ABOVE. THE EXACT EXTENT IS NOT KNOWN. THE OVERBURDEN IS TO BE EXCAVATED AND STOCKPILED. THE SAWDUST IS TO BE REMOVED AND DISPOSED OF OFFSITE. THE EXCAVATION WILL BE FILLED WITH THE OVERBURDEN STOCKPILE AND STREET EXCAVATION. THE REFILLING WILL BE ACCOMPLISHED USING 6" THICK COMPACTED LAYERS, COMPACTED TO 95% STANDARD DENSITY ACCORDING TO ASTM D-698 AT A MOISTURE CONTENT OF -2 TO +3 PERCENT OF OPTIMUM.

BENCH MARK
BENCH MARK NATIONAL GEODETIC SURVEY MARKER
V1216, 1973 ADJ. ELEV. = 125.994
V1216, 1978 ADJ. ELEV. = 125.486
V1216, 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" TALL LOW APPROXIMATELY 31 FEET NORTH OF THE END OF CENTERFIELD DRIVE ELEVATION = 128.66
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 #13659 ON THE WEST SIDE OF HARGRAVE ROAD APPROXIMATELY 50 FEET NORTH OF 18 INCH R.C.P. AT GRAVEL DRIVE FROM 13627 HARGRAVE ROAD ELEVATION = 130.56

NOTE:
THIS TRACT IS IN ZONE "X" AS PER FEMA FLOOD INSURANCE RATE MAP PANEL NO. 48201C0245 HARRIS COUNTY, TX, REVISED NOV. 8, 1998. ZONE "X" IS DESCRIBED AS BEING OUTSIDE THE 500 YEAR FLOODPLAIN.

Rev.	Date	Description	App.

PRIVATE UTILITY LINES SHOWN

R. Young 12/22/98
RELIANT ENERGIES, INC./ENTEX

Mike Bolin 5/25/99
SOUTHWESTERN BELL TELEPHONE CO.
Valid for One Year Only

R. Young 12/22/98
RELIANT ENERGIES, INC./HLL&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>Walter Saldivar</i> 5-27-99 WATER	
<i>Walter Saldivar</i> 5-27-99 WASTEWATER	PROJECT MANAGER
<i>Walter Saldivar</i> 5-27-99 STORM WATER	CONSTRUCTION
<i>Walter Saldivar</i> 5-27-99 STREET AND BRIDGE	CHIEF ENGINEER

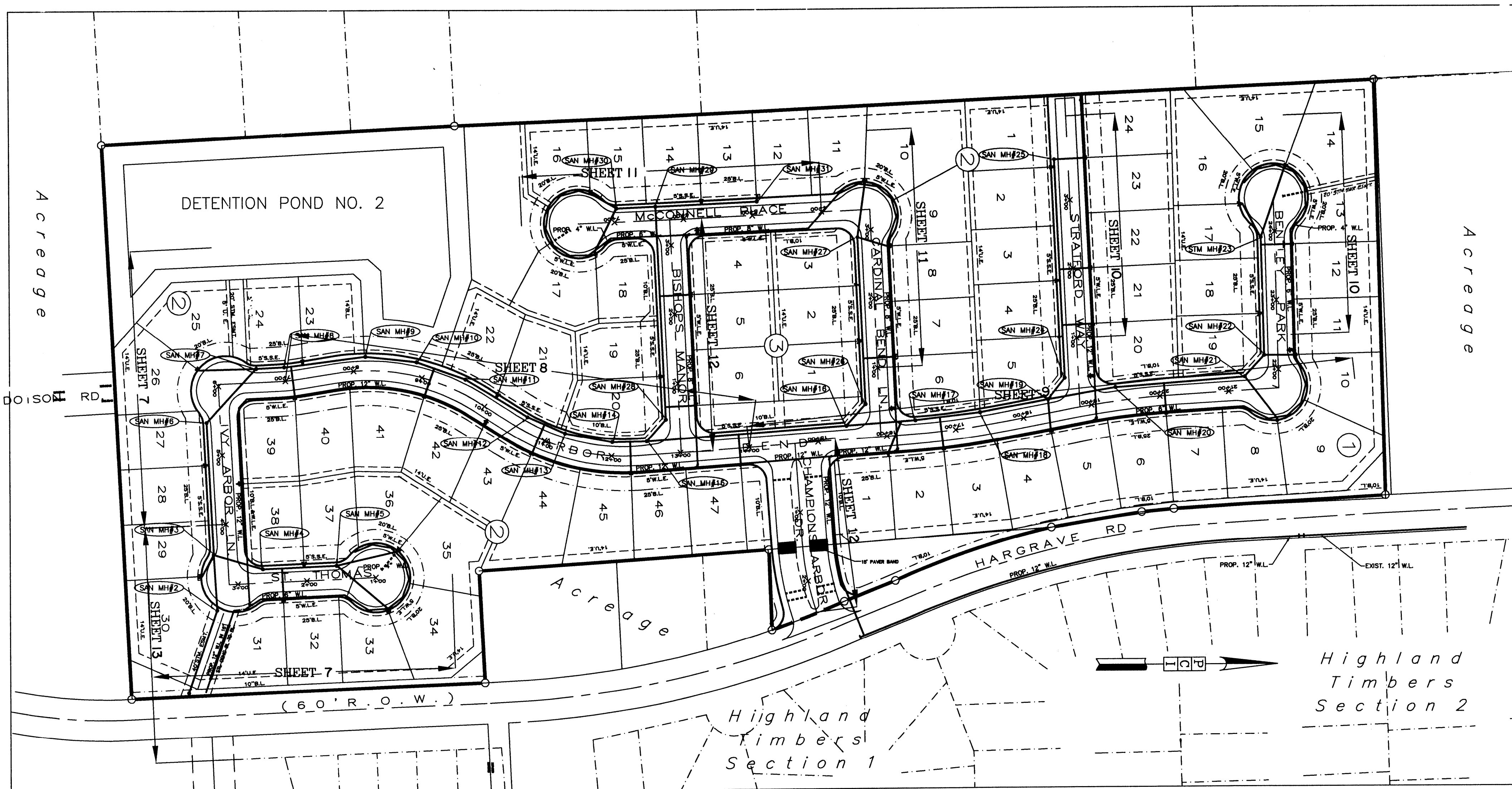
OTHER APPROVAL
5-27-99
Naam Brown
TRAFFIC AND TRANSPORTATION SPONSOR DEPARTMENT

Walter Saldivar 5-30-99
CITY ENGINEER DATE

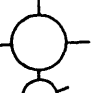




Walter Saldivar 5-30-99
DIRECTOR OF PUBLIC WORKS AND ENGINEERING DATE

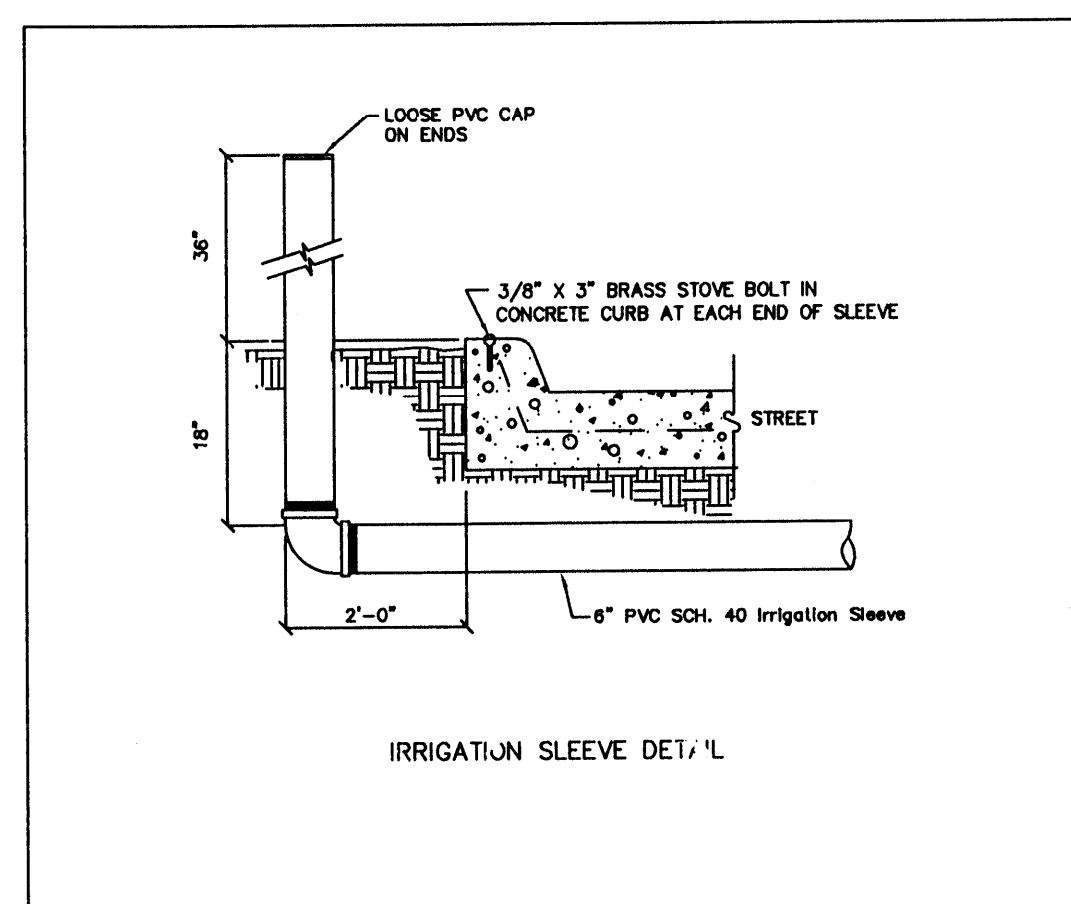
SUBMITTED: _____ DESIGNED BY: BOBBY WILSON
SCALE: 1" = 100' DRAWN BY: BILL DORRIS
DATE: OCTOBER 1999 SHEET NO. 3 OF 21 SHEETS
SURVEY BY: _____ CITY DWG. NO. _____
F B NO: 380U&380P OPP.DWG

HARRIS COUNTY MUD 191
CHAMPIONS ARBOR
OVERALL PAVING PLAN



LEGEND

-  FIRE HYDRANT
-  WATER VALVE
-  SANITARY SEWER MANHOLE NUMBER
-  6" PVC SCH. 40 IRRIGATION SLEEVES (ALIGN W/ LOT LINES AT CUL-DE-SAC AS SHOWN)
-  15' PAVER BAND @ ENTRY, CENTER ON REAR LOT LINE



BENCH MARK

BENCH MARK NATIONAL GEODETIC SURVEY MARK
 TBM 1973 ADJ. ELEV. = 128.994
 TBM 1978 ADJ. ELEV. = 128.496
 TBM 1988 ADJ. ELEV. = 128.944 (THIS ADJUSTMENT WAS USED FOR CUTTER ROAD)
 ELEVATIONS SHOWN HEREIN ARE BASED ON 1973 ADJUSTMENT

TBM 81: SET RAILROAD SPIKE ON SOUTH SIDE OF 14" TALL V-P WITH TRANSFORMER ON WEST SIDE OF PRIVATE ROAD AND 250 FEET NORTH OF PRIVATE ROAD
 ELEVATION = 128.660

TBM 82: SET RAILROAD SPIKE ON SOUTH SIDE OF POWER POLE ON WEST SIDE OF HARGRAVE ROAD AND NORTH OF THE INTERSECTION OF HUTTON ROAD & HARGRAVE ROAD
 ELEVATION = 128.04

TBM 84: RAILROAD SPIKE ON EAST SIDE OF POWER POLE #13629 ON THE WEST SIDE OF HARGRAVE ROAD APPROXIMATELY 50 FEET NORTH OF 18 INCH R.C.P. AT GRAVEL DRIVE FROM 13627 HARGRAVE ROAD
 ELEVATION = 129.56

Rev.	Date	Description	App.

PRIVATE UTILITY LINES SHOWN

Reliance	1/5/00
Reliance Energies, Inc./ENTEX	1/5/00
Mike Balin	1/5/00
SOUTHWESTERN BELL TELEPHONE CO.	Valid for One Year Only
Reliance	1/5/00
Reliance Energies, Inc./LL&P, CO.	Approved 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 Williams</i>	<i>Bill Dorris</i>
WATER	PROJECT MANAGER
WASTEWATER	CONSTRUCTION
STORM WATER	CHIEF ENGINEER
STREET AND BRIDGE	OTHER APPROVAL
TRAFFIC AND TRANSPORTATION	SPONSOR DEPARTMENT

CITY ENGINEER: *Bill Dorris* DATE: 1-11-2000
 DIRECTOR OF PUBLIC WORKS AND ENGINEERING: _____ DATE: _____

SUBMITTED: _____ DESIGNED BY: BOBBY WILSON
 SCALE: 1" = 100' DRAWN BY: BILL DORRIS
 DATE: OCTOBER 1999 SHEET NO. 6 OF 21 SHEETS
 SURVEY BY: _____ CITY DWG. NO. OWSP.DWG
 F B NO: 380U&380P

HARRIS COUNTY MUD 191
 CHAMPIONS ARBOR
 OVERALL WATER & SANITARY PLAN

Bobby Wilson
 01-05-00

BENCH MARK

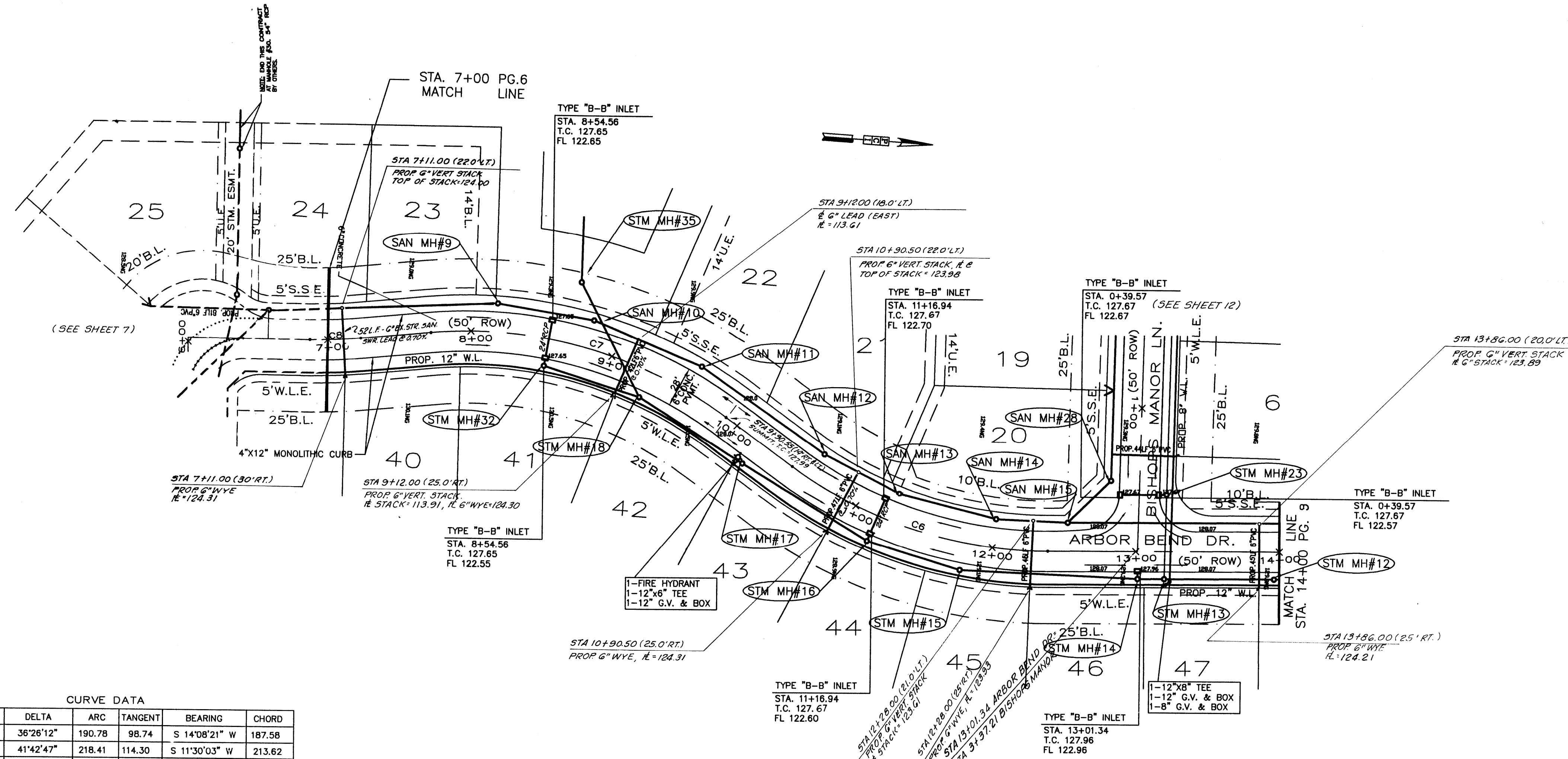
BENCH MARK NATIONAL GEODETIC SURVEY MARKER
 Y216, 1973 ADJ. ELEV. = 125.994
 Y216, 1978 ADJ. ELEV. = 125.406
 Y216, 1988 ADJ. ELEV. = 123.94 (THIS ADJUSTMENT WAS USED FOR GUTTER ROAD)
 ELEVATIONS SHOWN HEREIN ARE BASED ON 1973 ADJUSTMENT

TM #1: SET RAILROAD SPIKE ON SOUTH SIDE OF 14" TALL IV APPROXIMATELY 31 FEET NORTH OF THE END OF CENTERFIELD DRIVE ELEVATION = 128.60

TM #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

TM #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

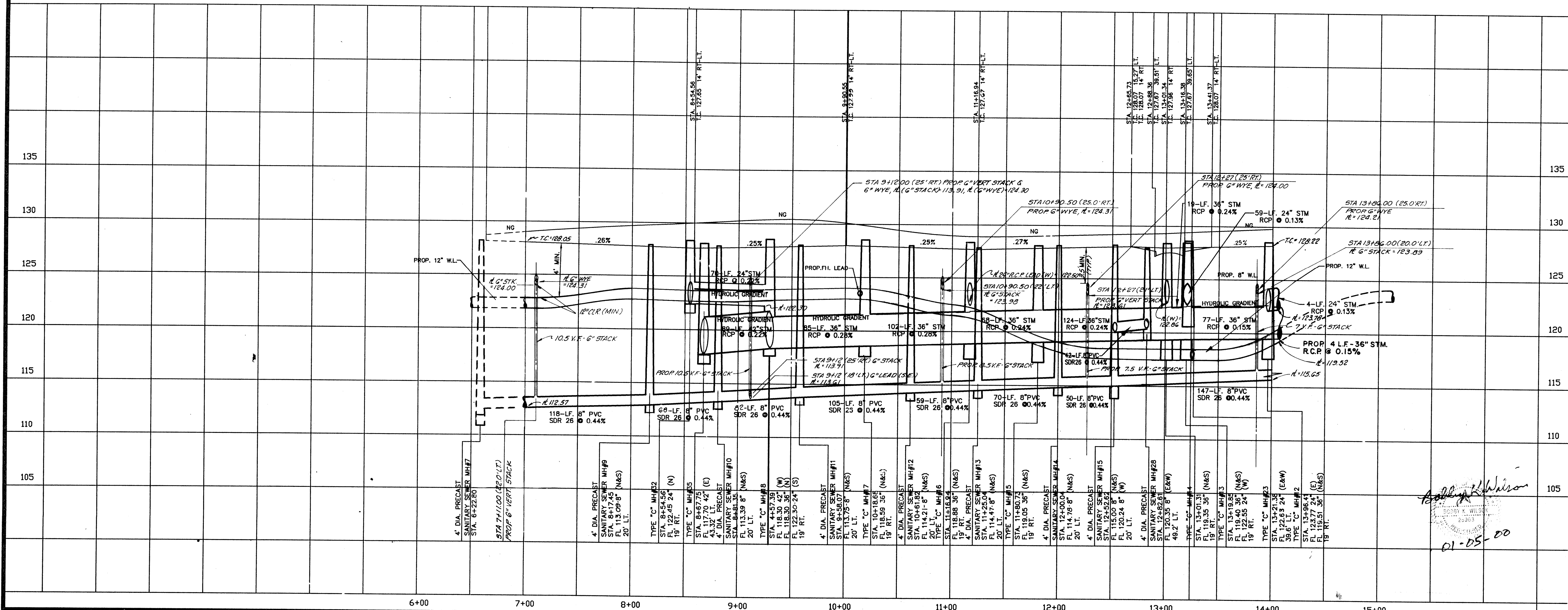
TM #4: RAILROAD SPIKE ON EAST SIDE OF POWER POLE #13659 ON WEST SIDE OF HARGRAVE ROAD APPROXIMATELY 30 FEET NORTH OF 18 INCH R.C.P. AT GRAVEL DRIVE FROM 13627 HARGRAVE ROAD ELEVATION = 130.56



CURVE DATA

CURVE	RADIUS	DELTA	ARC	TANGENT	BEARING	CHORD
C6	300.00	36°26'12"	190.78	98.74	S 14°08'21" W	187.58
C7	300.00	41°42'47"	218.41	114.30	S 11°30'03" W	213.62
C8	300.00	06°47'15"	35.54	17.79	S 05°57'42" E	35.52

ARBOR BEND DR.



APPROVED: *[Signature]*
 Assistant County Engineer
 11 April 2000

Approved 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

Ryerson 1/5/00
 RELIANT ENERGIES/INC./ENTEX

Mike Balin 1/5/00
 SOUTHWESTERN BELL TELEPHONE CO.
 Valid for One Year Only

Ryerson 1/5/00
 RELIANT ENERGIES, INC./H.L.&P. CO.
 Approved 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>	<i>Water</i>
<i>Wastewater</i>	<i>Wastewater</i>
<i>Storm</i>	<i>Storm</i>

PROJECT MANAGER: *[Signature]*
 CONSTRUCTION: *[Signature]*
 CHIEF ENGINEER: *[Signature]*

OTHER APPROVAL

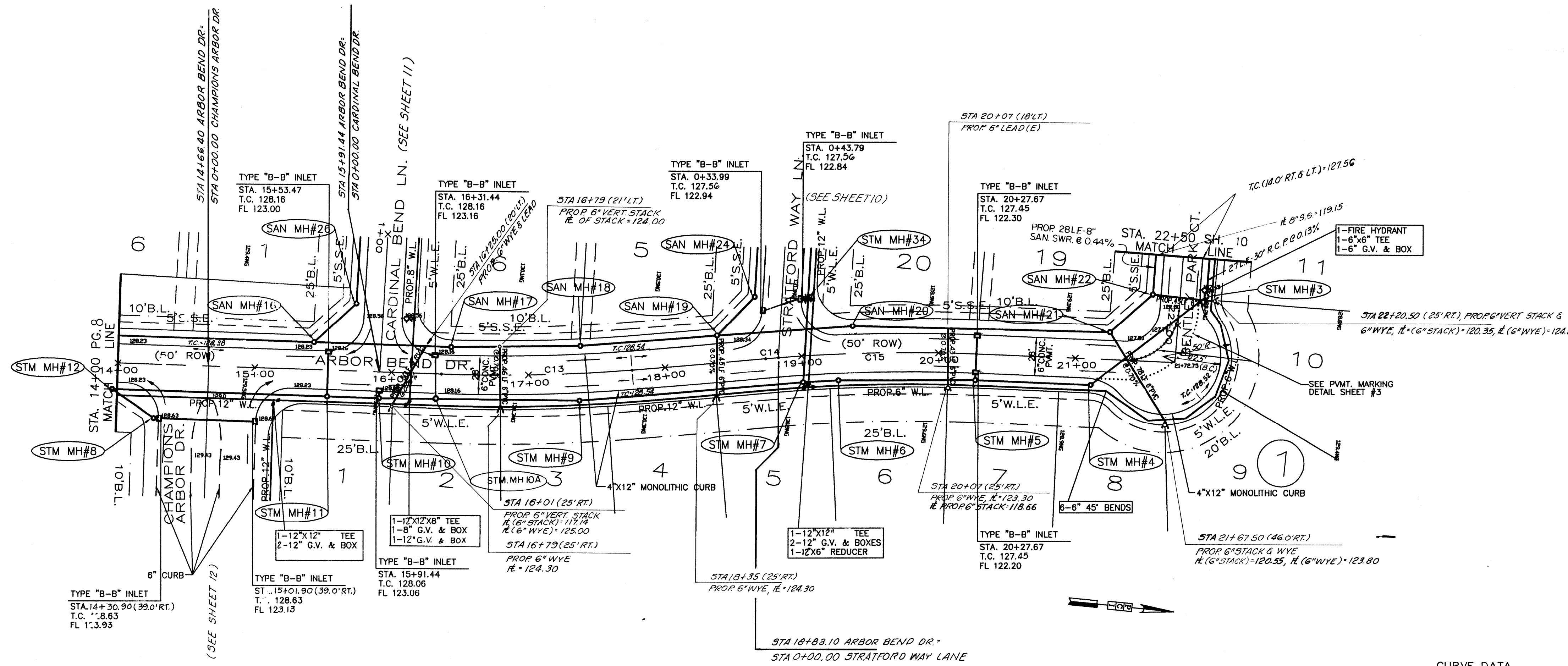
TRAFFIC AND TRANSPORTATION SPONSOR DEPARTMENT

CITY ENGINEER: *[Signature]* DATE: 11-2000
 DIRECTOR OF PUBLIC WORKS AND ENGINEERING: *[Signature]* DATE: 11-2000

SUBMITTED: _____ DESIGNED BY: BOBBY WILSON
 SCALE: 1" = 50' DRAWN BY: BILL DORRIS
 DATE: SEPTEMBER 1999 SHEET NO. 8 OF 21 SHEETS
 SURVEY BY: _____ CITY DWG. NO. ARBOR1.DWG
 F B NO: 480U & 480P

HARRIS COUNTY MUD 191
 CHAMPIONS ARBOR
 PLAN & PROFILE
 ARBOR BEND DR.
 STA. 7+00 TO STA. 14+00

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



BENCH MARK

BENCH MARK NATIONAL GEODETIC SURVEY MARKER
 1216, 1973 ADJ. ELEV. = 129.94
 1216, 1978 ADJ. ELEV. = 129.406
 1216, 1988 ADJ. ELEV. = 129.394 (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" TALL OIL 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 = 128.84

TBM #4: RAILROAD SPIKE ON EAST SIDE OF POWER POLE #1269 ON THE WEST SIDE OF HARGRAVE ROAD APPROXIMATELY 30 FEET NORTH OF 18 INCH RCP AT GRAVEL DRIVE FROM 13627 HARGRAVE ROAD ELEVATION = 130.56

APPROVED: *[Signature]*
 For Assistant County Engineer
 11 April 2000
 Date

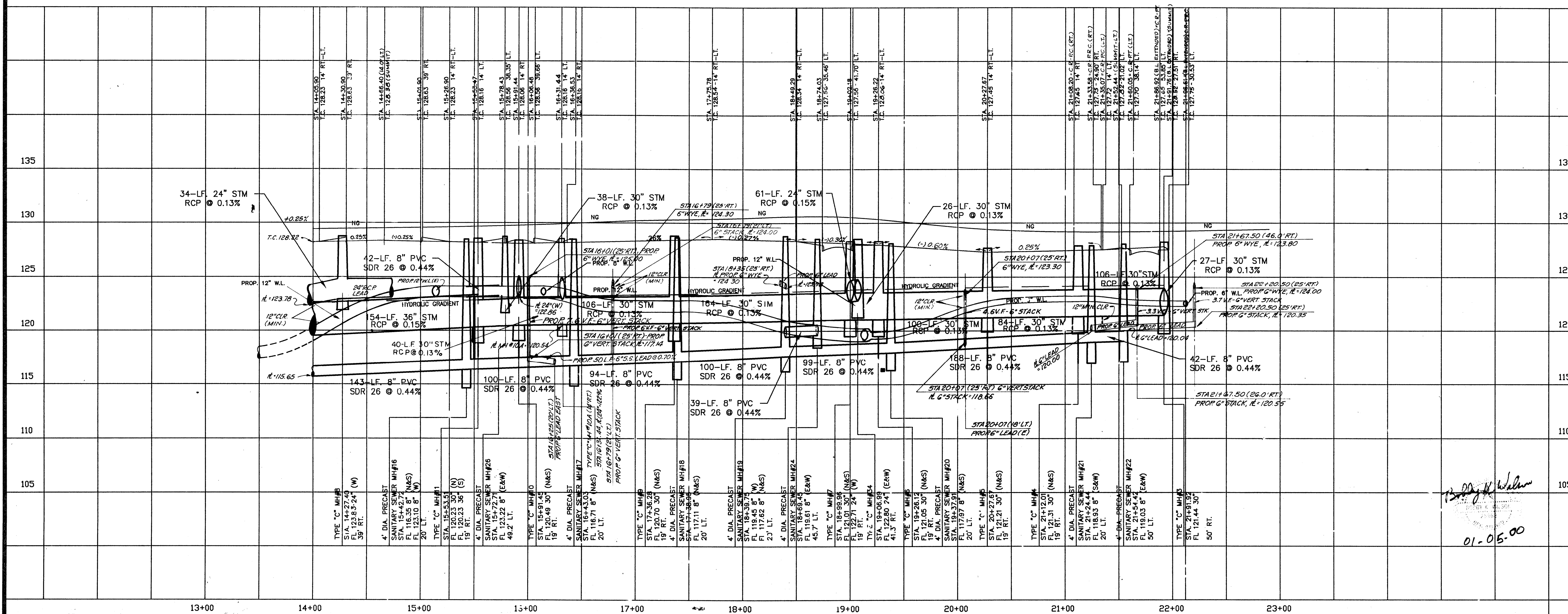
Approved Implied for paving and drainage facilities within Harris County R.O.W. and/or Jurisdiction. All other improvements in H.C.R.O.W. and/or Jurisdiction are approved as to location only. The above authorization is valid for one (1) year only.

Rev.	Date	Description	App.

CURVE DATA

CURVE	RADIUS	DELTA	ARC TANGENT	BEARING	CHORD	
C13	1200.00	06°38'56"	139.25	69.70	N 07°24'13" W	139.17
C14	1200.00	00°26'42"	9.32	4.66	N 10°30'19" W	9.32
C15	1200.00	06°54'09"	144.57	72.37	N 06°49'54" W	144.48

ARBOR BEND DR.



PRIVATE UTILITY LINES SHOWN

<i>[Signature]</i>	1/5/00
RELIANT ENERGIES, INC./ENTEX	
<i>[Signature]</i>	1/5/00
SOUTHWESTERN BELL TELEPHONE CO. Valid for One Year Only	
<i>[Signature]</i>	1/5/00
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>[Signature]</i>	<i>[Signature]</i>
WATER	
<i>[Signature]</i>	
WASTEWATER	PROJECT MANAGER
<i>[Signature]</i>	
STORM WATER	CONSTRUCTION
STREET AND BRIDGE	CHIEF ENGINEER
	OTHER APPROVAL
TRAFFIC AND TRANSPORTATION	SPONSOR DEPARTMENT
CITY ENGINEER	DATE
<i>[Signature]</i>	1/1-2000
DIRECTOR OF PUBLIC WORKS AND ENGINEERING	DATE

SUBMITTED: _____

SCALE: 1" = 50'

DATE: SEPTEMBER 1999

SURVEY BY: _____

F B NO: 480U & 480P

DESIGNED BY: BOBBY WILSON

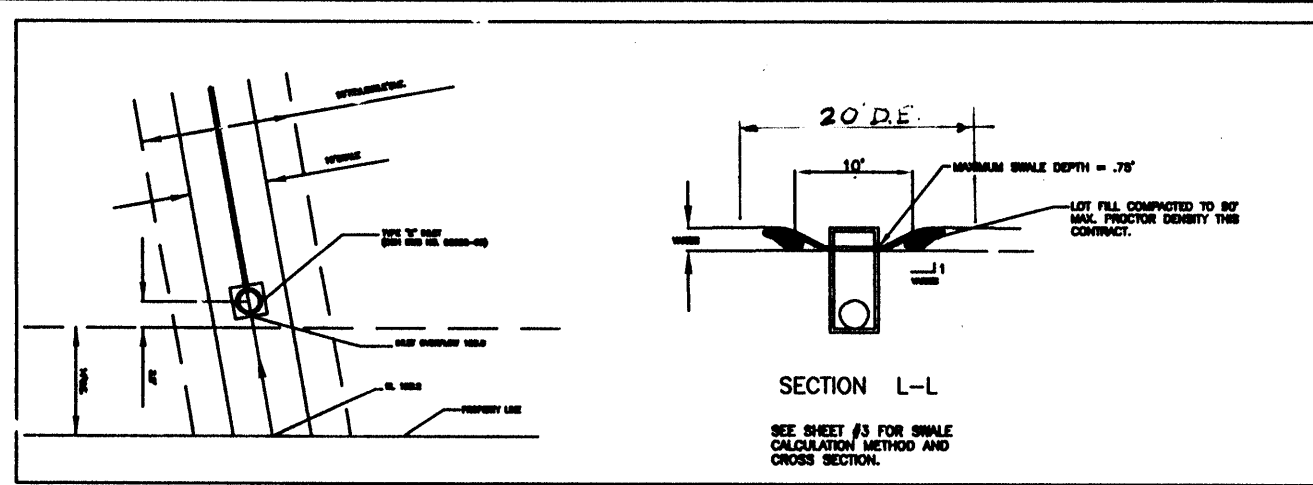
DRAWN BY: BILL DORRIS

SHEET NO. 9 OF 21 SHEETS

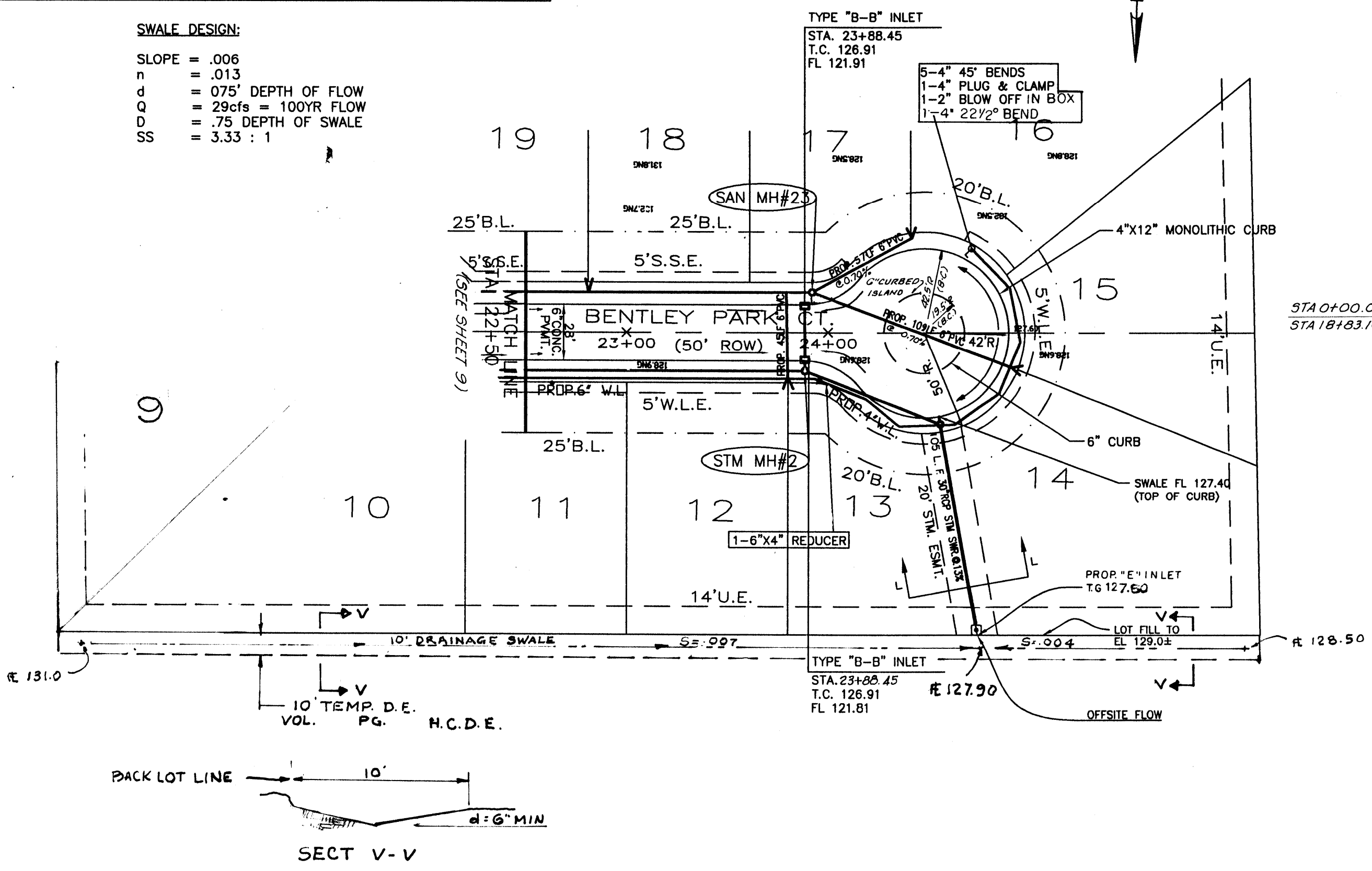
CITY DWG. NO. ARBOR2.DWG

HARRIS COUNTY MUD 191
 CHAMPIONS ARBOR
 PLAN & PROFILE
 ARBOR BEND DR.
 STA. 14+00 TO STA. 21+72.75

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

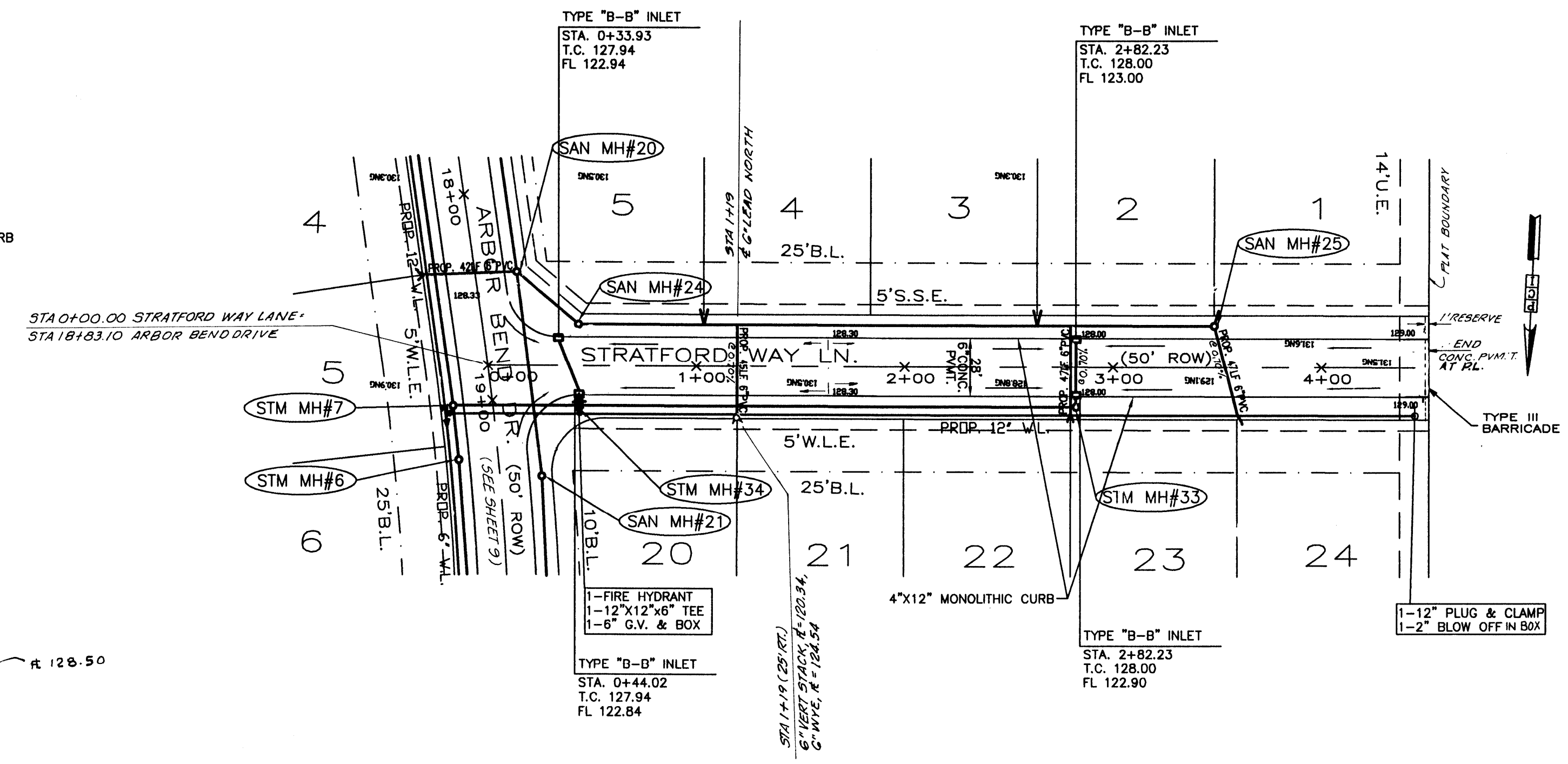


SWALE DESIGN:
 SLOPE = .006
 n = .013
 d = 0.75' DEPTH OF FLOW
 Q = 29cfs = 100YR FLOW
 D = .75' DEPTH OF SWALE
 SS = 3.33 : 1



SECT V-V

BENTLEY PARK CT.



STRATFORD WAY LN.

BENCH MARK
 BENCH MARK: NATIONAL GEODETIC SURVEY MARKER
 11216, 1973 ADJ. ELEV. = 123.94
 11216, 1988 ADJ. ELEV. = 123.46
 11216, 1988 ADJ. ELEV. = 123.94 (THIS ADJUSTMENT WAS USED FOR CUTTER ROAD)
 ELEVATIONS SHOWN HEREON ARE BASED ON 1973 ADJUSTMENT
 TBM #1: SET RAILROAD SPIKE ON SOUTH SIDE OF 14' TALL WALL 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

APPROVED: *[Signature]*
 Assistant County Engineer
 11 Apr. 2000
 Date

Approved 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

<i>R. Young</i>	1/5/00
RELIANT ENERGIES, INC./ENTEX	
<i>Mike Bolin</i>	1/5/00
SOUTHWESTERN BELL TELEPHONE CO. Valid for One Year Only	
<i>Systems</i>	1/5/00
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 Solberg</i>	1/2/00
WATER	
<i>Mike Bolin</i>	1/5/00
WASTEWATER	PROJECT MANAGER
<i>R. Young</i>	1/5/00
STORM WATER	CONSTRUCTION
STREET AND BRIDGE	CHIEF ENGINEER

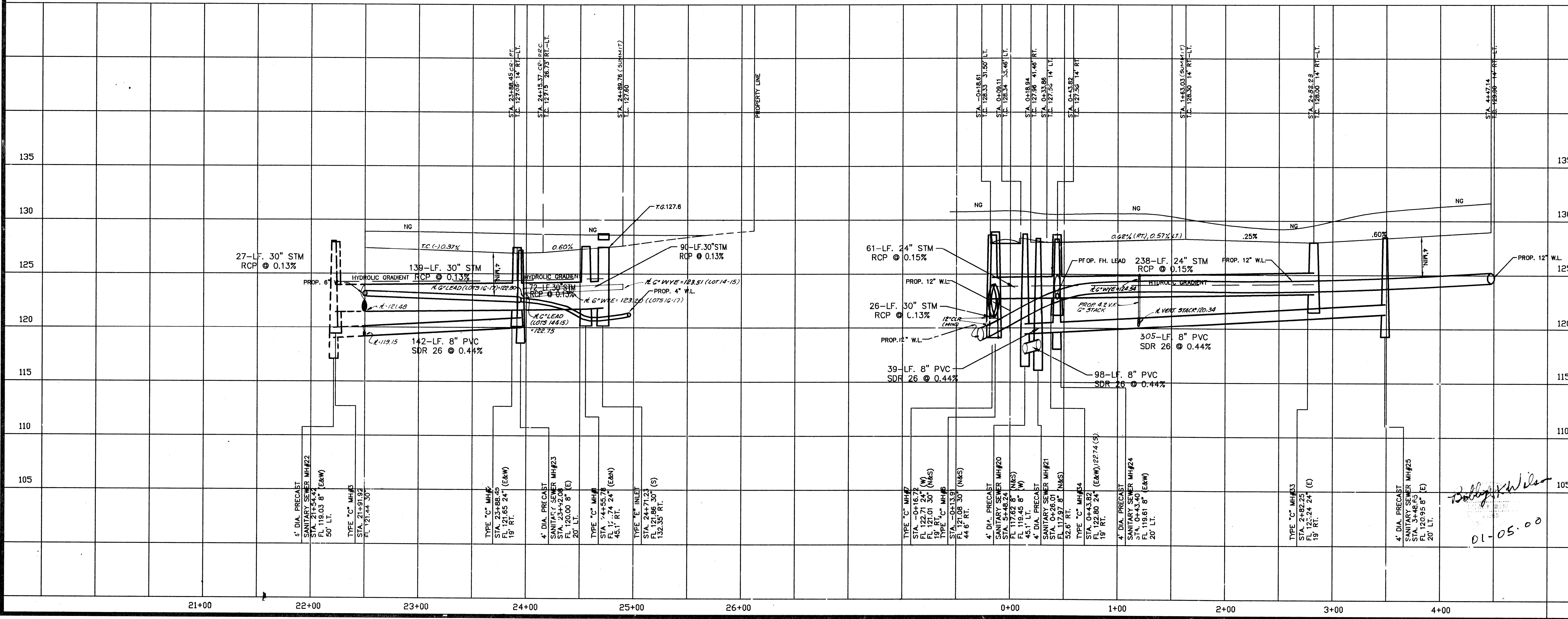
OTHER APPROVAL

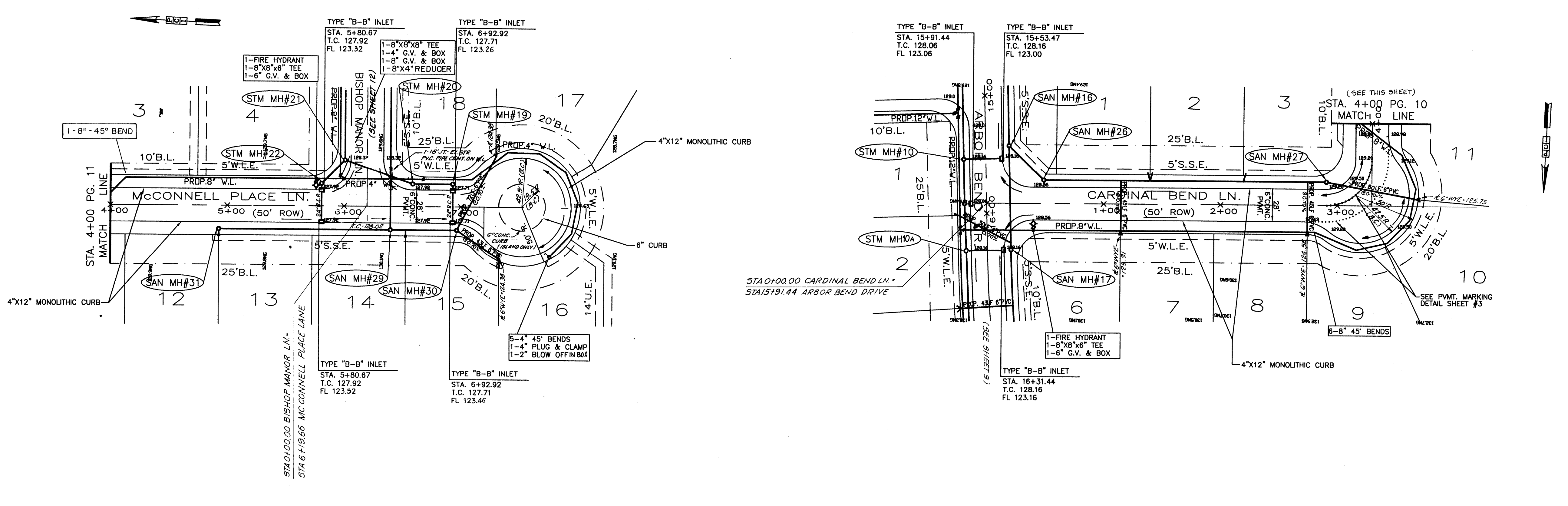
TRAFFIC AND TRANSPORTATION	SPONSOR DEPARTMENT
----------------------------	--------------------

CITY ENGINEER	DATE
<i>[Signature]</i>	1-11-2000
DIRECTOR OF PUBLIC WORKS AND ENGINEERING	DATE

SUBMITTED:	DESIGNED BY: BOBBY WILSON
SCALE: 1" = 50'	DRAWN BY: BILL DORRIS
DATE: SEPTEMBER 1999	SHEET NO. 10 OF 21 SHEETS
SURVEY BY:	CITY DWG. NO. BENTLEY.DWG
F B NO: 480U & 480P	

HARRIS COUNTY MUD 191
 CHAMPIONS ARBOR
 PLAN & PROFILE
 BENTLEY PARK CT. &
 STRATFORD WAY CT.





BENCH MARK

BENCH MARK NATIONAL GEODETIC SURVEY MARKER
 Y1216, 1973 ADJ. ELEV. = 123.994
 Y1216, 1978 ADJ. ELEV. = 123.406
 Y1216, 1988 ADJ. ELEV. = 123.394 (THIS ADJUSTMENT WAS USED FOR CUTTEN ROAD)
 ELEVATIONS SHOWN HEREIN ARE BASED ON 1973 ADJUSTMENT

TBM #1: SET RAILROAD SPIKE ON SOUTH SIDE OF 14" TALL DOW APPROXIMATELY 31 FEET NORTH OF THE END OF CENTERFIELD DRIVE. ELEVATION = 128.60

TBM #2: SET RAILROAD SPIKE ON SOUTH SIDE OF POWER POLE ON WEST SIDE OF HARGRAVE ROAD AND NORTH OF THE INTERSECTION OF DOTSON ROAD & HARGRAVE ROAD. ELEVATION = 128.04

TBM #3: SET RAILROAD SPIKE ON EAST SIDE OF POWER POLE ON WEST SIDE OF HARGRAVE ROAD APPROXIMATELY 30 FEET NORTH OF PRIVATE ROAD. ELEVATION = 130.62

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 RCP AT GRAVEL DRIVE FROM 13627 HARGRAVE ROAD. ELEVATION = 130.56

APPROVED: *[Signature]*
 Assistant County Engineer
 Date: 4 April 2009

Approved 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

<i>R. Young</i>	1/5/00
RELIANT ENERGIES, INC. ENTENX	
<i>Nike Balin</i>	1/5/00
SOUTHWESTERN BELL TELEPHONE CO. Valid for One Year Only	
<i>R. Young</i>	1/5/00
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>Water/Sewer</i> 1-6-2000	
<i>Water</i> 1-6-2000	PROJECT MANAGER
<i>WASTEWATER</i>	
<i>Storm</i> 1-6-2000	CONSTRUCTION
STORM WATER	
STREET AND BRIDGE	CHIEF ENGINEER

OTHER APPROVAL

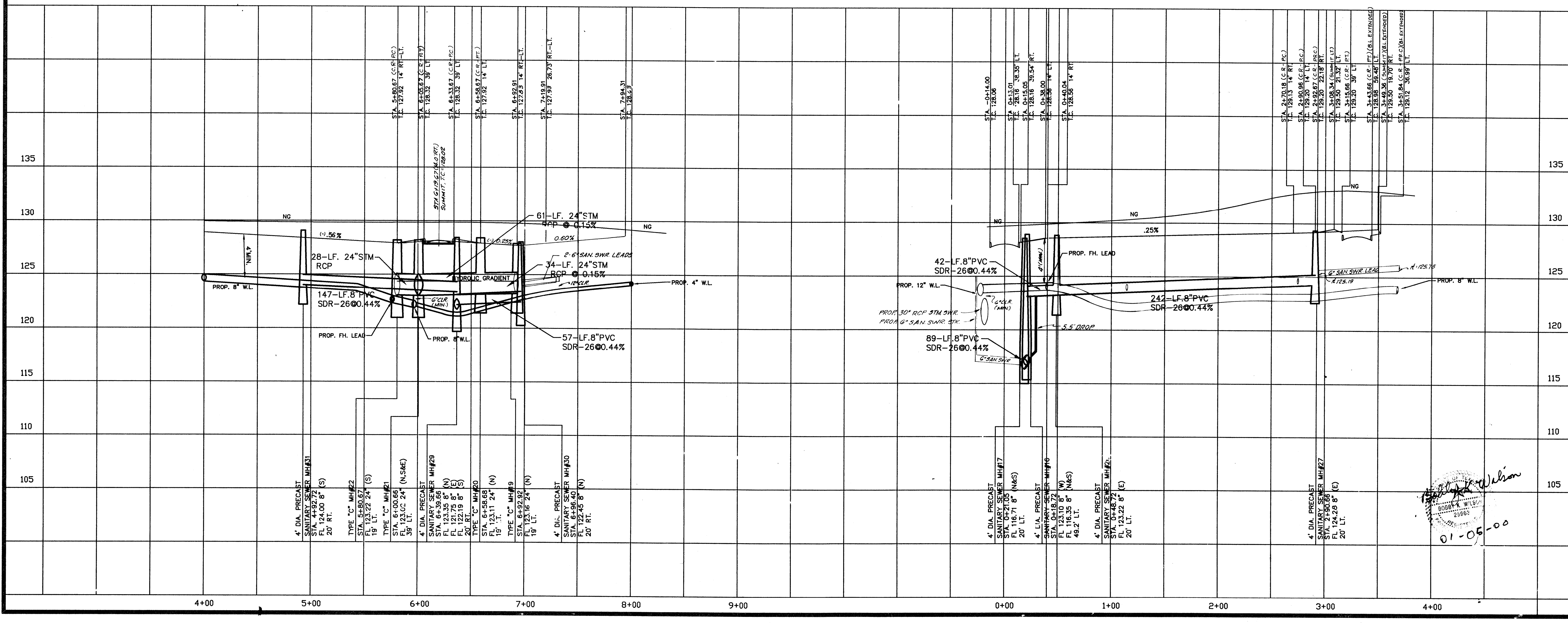
TRAFFIC AND TRANSPORTATION	SPONSOR DEPARTMENT

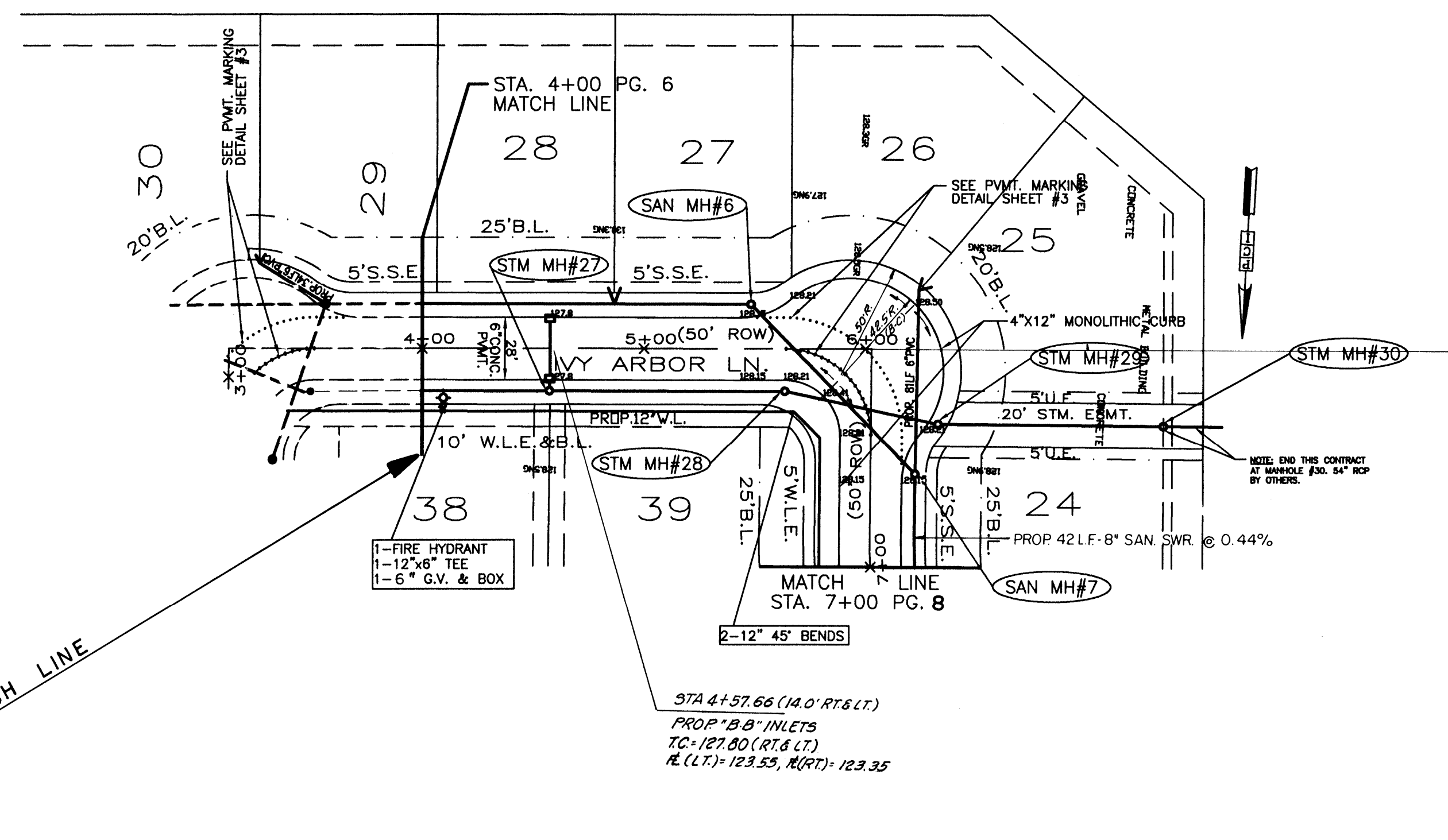
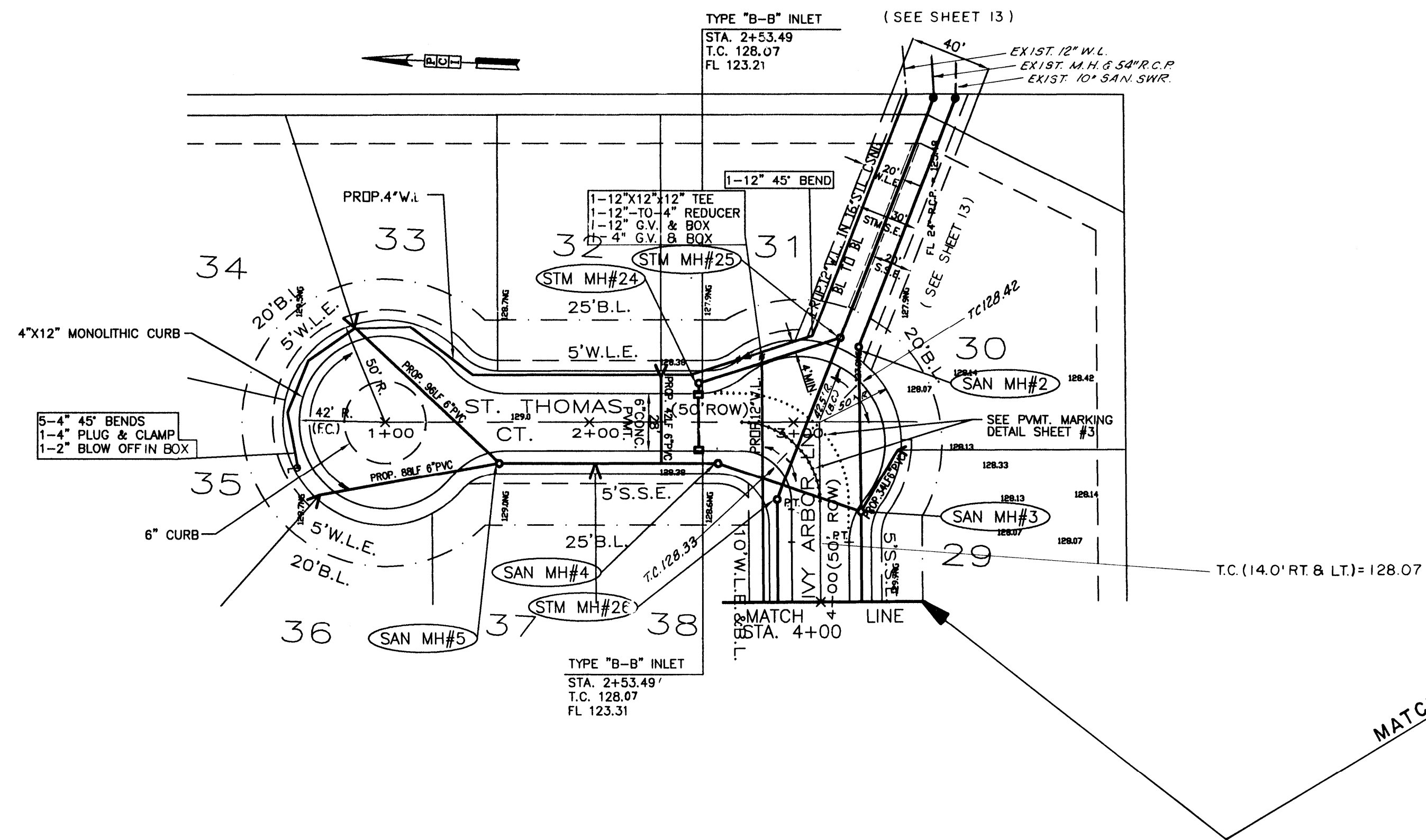
CITY ENGINEER	DATE
<i>[Signature]</i>	1/2/00
DIRECTOR OF PUBLIC WORKS AND ENGINEERING	DATE

DESIGNED BY: BOBBY WILSON
 SCALE: 1" = 50'
 DRAWN BY: BILL DORRIS
 DATE: SEPTEMBER 1999
 SHEET NO. 11 OF 21 SHEETS
 F B NO: 480U & 480P
 CITY DWG. NO. McCONNELLDWG

HARRIS COUNTY MUD 191
 CHAMPIONS ARBOR
 PLAN & PROFILE
 McCONNELL PLACE LN. &
 CARDINAL BEND LN.

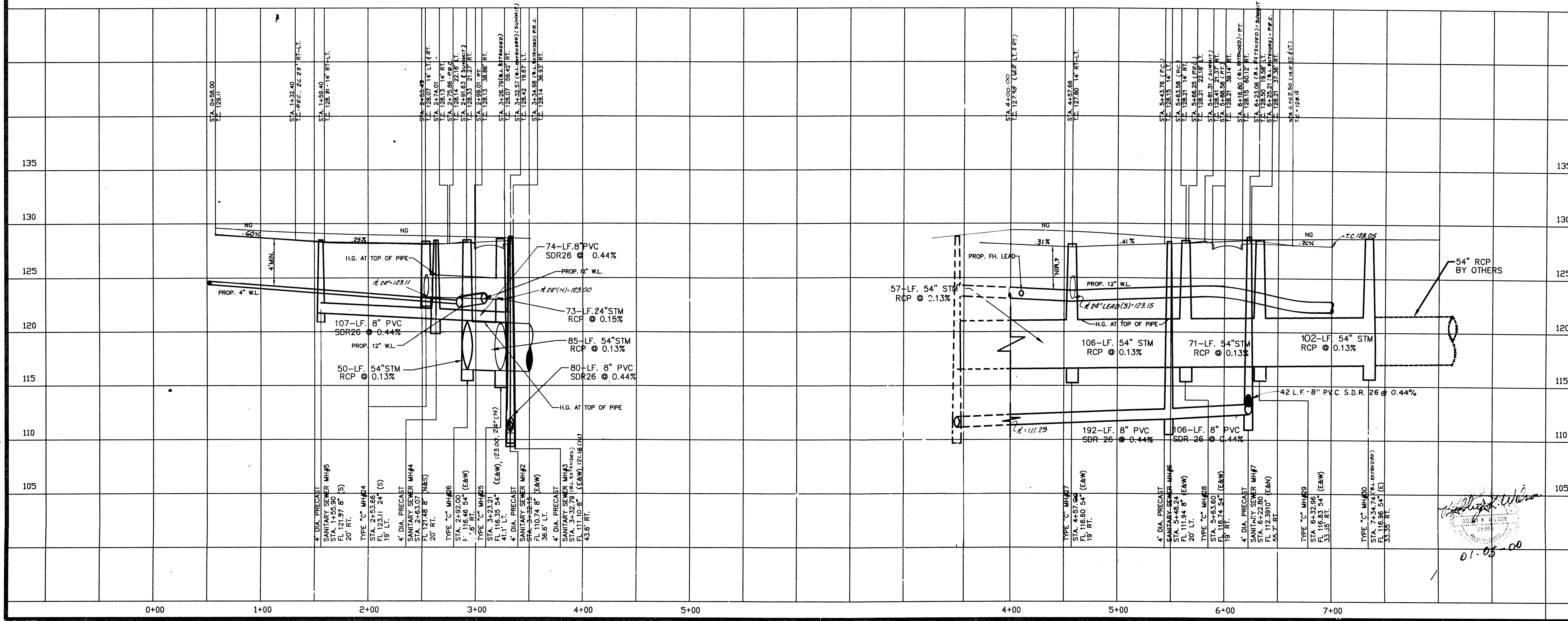
PCI PROVIDENT CONSULTING, INC.
 1200 WEST 11TH ST.
 HOUSTON, TEXAS 77008
 (713)802-1019





ST. THOMAS CT.

IVY ARBOR LN.



BENCH MARK

BENCH MARK NATIONAL GEODETIC SURVEY MARKER
 1216, 1973 ADJ. ELEV. = 125.994
 1216, 1978 ADJ. ELEV. = 125.946
 1216, 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" TALL DV APPROXIMATELY 31 FEET NORTH OF THE END OF CENTERFIELD 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 DITSEN 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: *[Signature]*
 Assistant County Engineer
 11 April 2000

Approved 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 1/5/00
 RELIANT ENERGIES, INC./ENTEX

Mike Balim 1/5/00
 SOUTHWESTERN BELL TELEPHONE CO.
 Valid for One Year Only

Reliant 1/5/00
 RELIANT ENERGIES, INC./HILLTOP 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

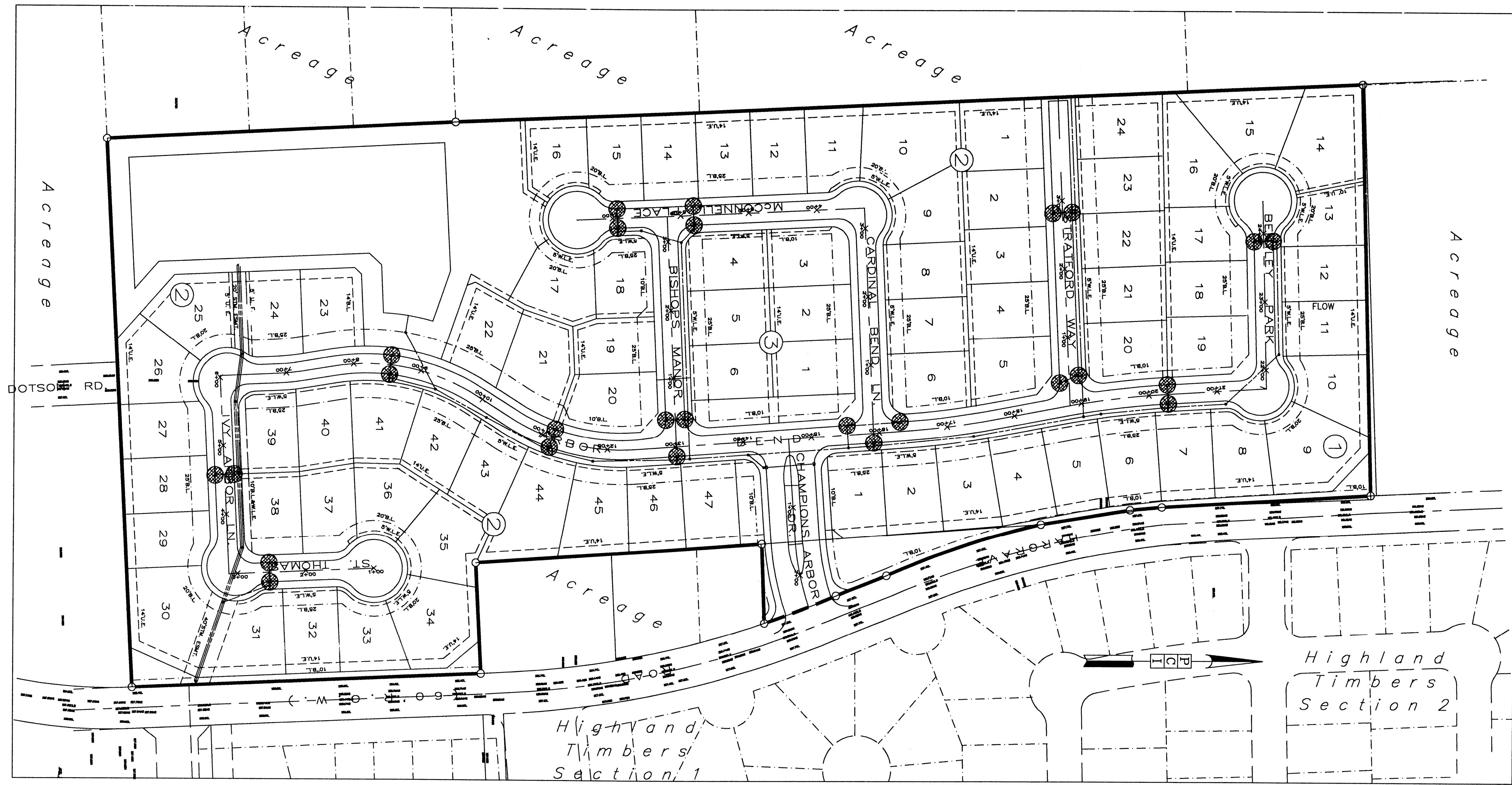
PRIVATELY FUNDED PUBLIC WORKS	CITY FUNDED PUBLIC WORKS
<i>Water</i> 1-6-2000 WATER	
<i>Wastewater</i> 1-6-2000 WASTEWATER	PROJECT MANAGER
<i>Storm Water</i> 1-6-2000 STORM WATER	CONSTRUCTION
STREET AND BRIDGE	CHIEF ENGINEER
OTHER APPROVAL	
TRAFFIC AND TRANSPORTATION	SPONSOR DEPARTMENT

CITY ENGINEER: *[Signature]* DATE: 1-11-2000
 DIRECTOR OF PUBLIC WORKS AND ENGINEERING

SUBMITTED: _____ DESIGNED BY: BOBBY WILSON
 SCALE: 1" = 50' DRAWN BY: BILL DORRIS
 DATE: SEPTEMBER 1999 SHEET NO. 7 OF 21 SHEETS
 SURVEY BY: _____ CITY DWG. NO. STHOMAS.DWG
 F B NO.: 480U & 480P

HARRIS COUNTY MUD 191
 CHAMPIONS ARBOR
 PLAN & PROFILE
 ST. THOMAS CT. &
 IVY ARBOR LN.

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



LEGEND
 ● INLET PROTECTION LOCATION

BENCH MARK
 BENCH MARK NATIONAL GEODETIC SURVEY MARKER
 Y1216, 1973 ADJ. ELEV. = 125.994
 Y1216, 1978 ADJ. ELEV. = 125.406
 Y1216, 1988 ADJ. ELEV. = 125.94 (THIS ADJUSTMENT WAS USED FOR CUTTEN ROAD)
 ELEVATIONS SHOWN HEREIN 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 DUTSON 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 RCP AT GRAVEL DRIVE FROM 13627 HARGRAVE ROAD ELEVATION = 130.56

NOTE:
 THIS TRACT IS IN ZONE "X" AS PER FEMA FLOOD INSURANCE RATE MAP PANEL NO. 48201C0245 J, HARRIS COUNTY, TX, REVISED NOV. 6, 1996. ZONE "X" IS DESCRIBED AS BEING OUTSIDE THE 500 YEAR FLOODPLAIN.

APPROVED: _____
 for Assistant County Engineer

 Date

Approved 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

A. Watmough 12/29/99
 RELIANT ENERGIES, INC./ENTEX
Mike Bolim 12/29/99
 SOUTHWESTERN BELL TELEPHONE CO.
 Valid for One Year Only
A. Watmough 12/29/99
 RELIANT ENERGIES, INC./F.L.B.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>	
<i>Wastewater</i>	PROJECT MANAGER
<i>Storm Water</i>	CONSTRUCTION
STREET AND BRIDGE	CHIEF ENGINEER

OTHER APPROVAL

TRAFFIC AND TRANSPORTATION SPONSOR DEPARTMENT

CITY ENGINEER DATE
Walter 1/12/2000
 DIRECTOR OF PUBLIC WORKS AND ENGINEERING DATE

SUBMITTED: _____ DESIGNED BY: BOBBY WILSON
 SCALE: 1" = 100' DRAWN BY: BILL DORRIS
 DATE: OCTOBER 1999 SHEET NO. 14 OF 21 SHEETS
 SURVEY BY: _____ CITY DWG. NO. POLLUTE.DWG
 F B NO: 480J&480P

HARRIS COUNTY MUD 191
 CHAMPIONS ARBOR
 POLLUTION PREVENTION LAYOUT

Bobby Wilson
 12-27-99



- LEGEND**
- PROPOSED 6" REINFORCED CONCRETE PAVING
 - 2" ASPHALT PAVING WITH 10" LIMESTONE BASE
 - PROPOSED WHEEL CHAIR RAMP
 - STREET/STOP SIGN (R1-1/R1-1A)
 - STANDARD 6" CURB
 - 6" PVC SCH. 40 IRRIGATION SLEEVES (ALIGN W/ LOT LINES AT CUL-DE-SAC AS SHOWN)
 - 15' PAVEMENT BAND @ ENTRY, CENTER ON REAR LOT LINE

NOTE:
INDICATES STANDARD 6" DOWELED-ON CURB. 4"x12" MONOLITHIC CURBS TO BE USED EXCEPT WHERE 6" CURB IS SHOWN.

BENCH MARK

BENCH MARK NATIONAL GEODETIC SURVEY MARKER
 1216, 1973 ADJ. ELEV. = 125.994
 1216, 1978 ADJ. ELEV. = 125.406
 1216, 1988 ADJ. ELEV. = 123.94 (THIS ADJUSTMENT WAS USED FOR CUTTEN ROAD)
 ELEVATIONS SHOWN HEREIN ARE BASED ON 1973 ADJUSTMENT

TM #1: SET RAILROAD SPIKE ON SOUTH SIDE OF 14" TALL DV APPROXIMATELY 31 FEET NORTH OF THE END OF CENTERFIELD DRIVE ELEVATION = 128.60
 TM #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 = 130.52
 TM #3: SET RAILROAD SPIKE ON EAST SIDE OF POWER POLE ON WEST SIDE OF HARGRAVE ROAD AND NORTH OF THE INTERSECTION OF BISON ROAD & HARGRAVE ROAD ELEVATION = 129.04
 TM #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

NOTE:
THIS TRACT IS IN ZONE "X" AS PER FEMA FLOOD INSURANCE RATE MAP PANEL NO. 48201C0245 J, HARRIS COUNTY, TX, REVISED NOV. 6, 1996. ZONE "X" IS DESCRIBED AS BEING OUTSIDE THE 500 YEAR FLOODPLAIN.

Rev.	Date	Description	App.

PRIVATE UTILITY LINES SHOWN

<i>Ca Waterwall</i>	12/29/99
RELIANT ENERGIES, INC./ENTEX	
<i>Mike Balin</i>	12/28/99
SOUTHWESTERN BELL TELEPHONE CO.	
Valid for One Year Only	
<i>Ca Waterwall</i>	12/29/99
RELIANT ENERGIES, INC./H.L.P. CO.	
Approval Only for Crossing Underground	
Ductlines Unless Noted. Valid at Time of Review Only.	

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

REVIEWED BY

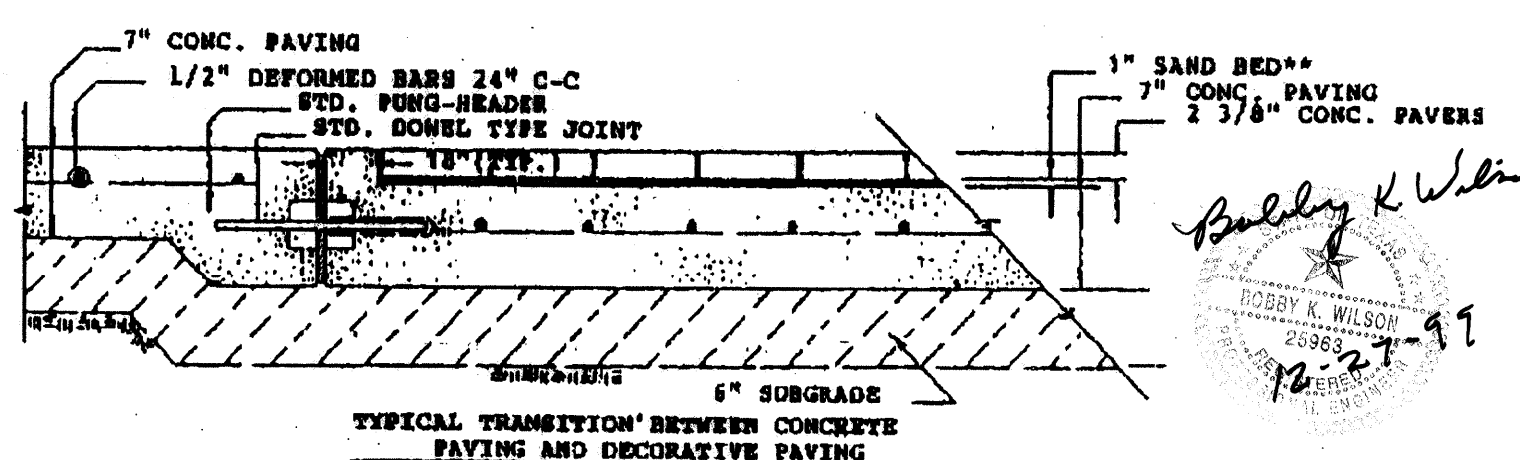
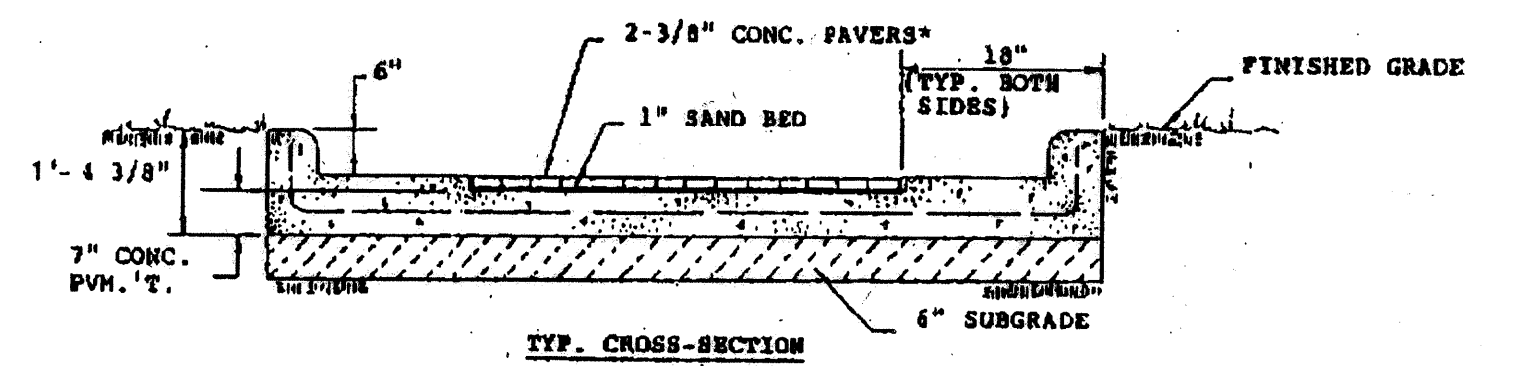
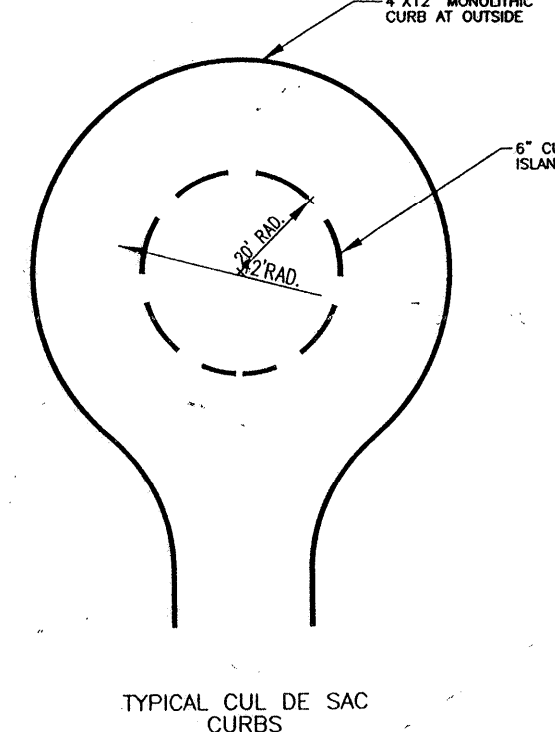
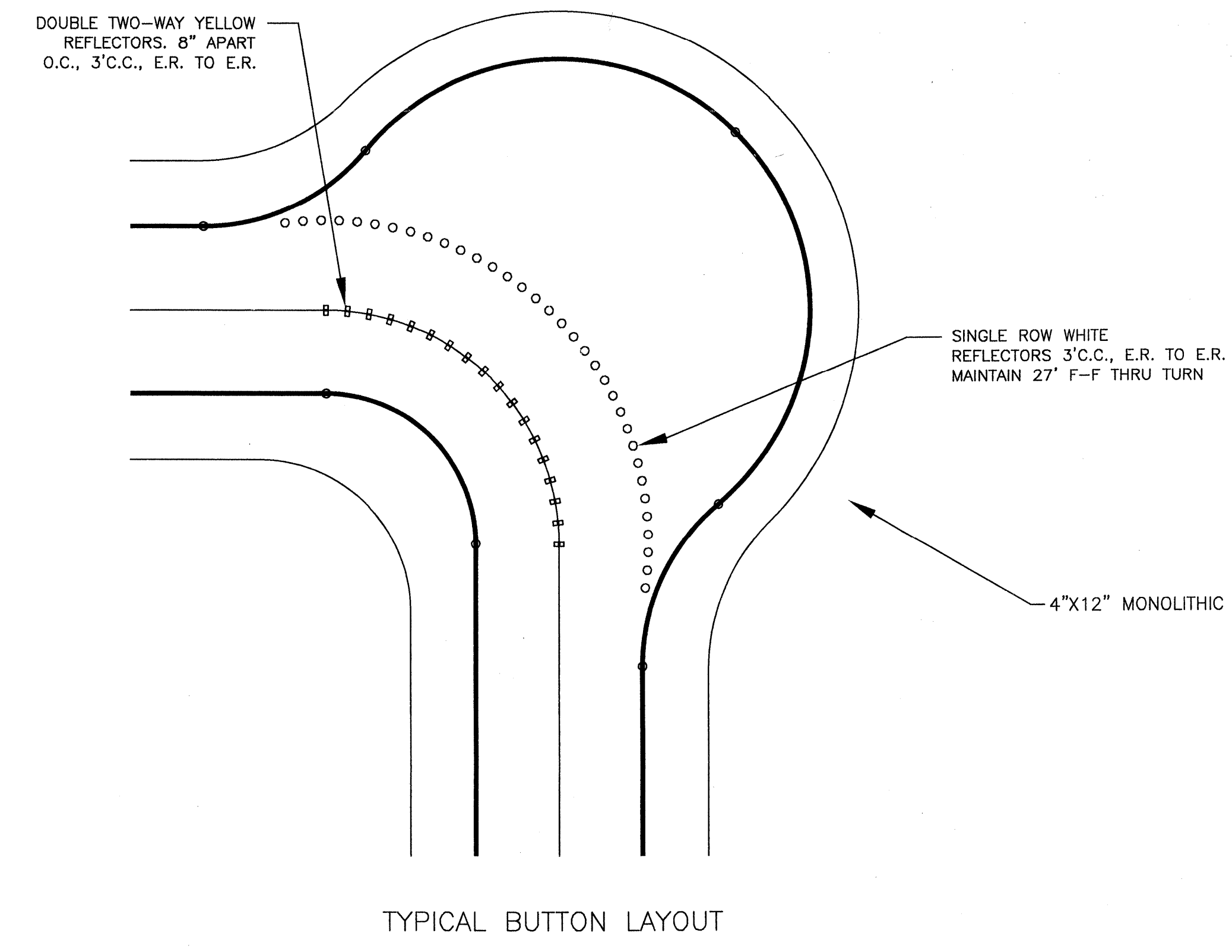
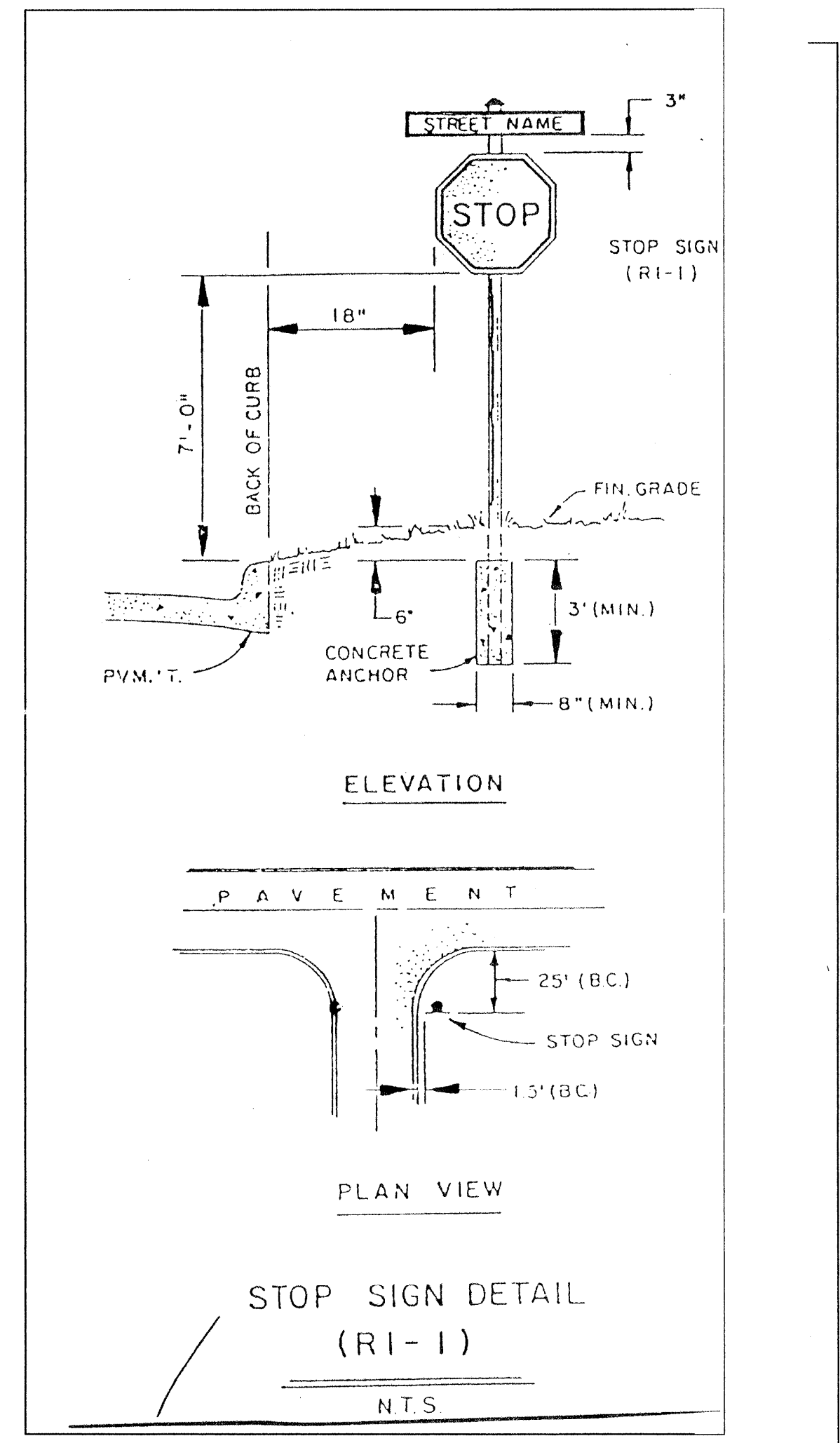
PRIVATELY FUNDED PUBLIC WORKS	CITY FUNDED PUBLIC WORKS
<i>Victor Salinas</i>	<i>Mark</i>
PROJECT MANAGER	
<i>D. G. ...</i>	
CONSTRUCTION	
<i>...</i>	
CHIEF ENGINEER	

OTHER APPROVAL

TRAFFIC AND TRANSPORTATION	SPONSOR DEPARTMENT
CITY ENGINEER	DATE
<i>Mark</i>	1-11-2000
DIRECTOR OF PUBLIC WORKS AND ENGINEERING	DATE
SUBMITTED BY:	DESIGNED BY: BOBBY WILSON
SCALE: 1" = 100'	DRAWN BY: BILL DORRIS
DATE: OCTOBER 1999	SHEET NO. 3 OF 21 SHEETS
SURVEY BY:	CITY DWG. NO. OPP.DWG
F B NO: 380U&380P	

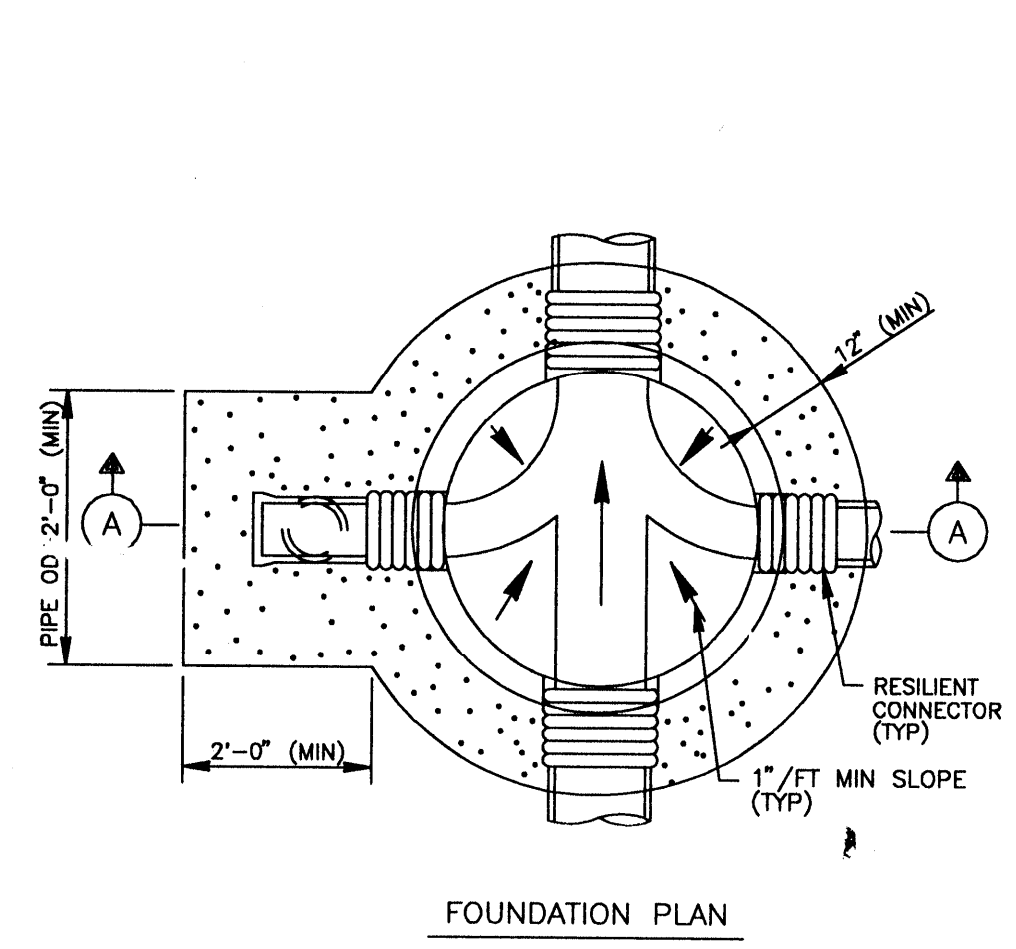
HARRIS COUNTY MUD 191
CHAMPIONS ARBOR
OVERALL PAVING PLAN

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

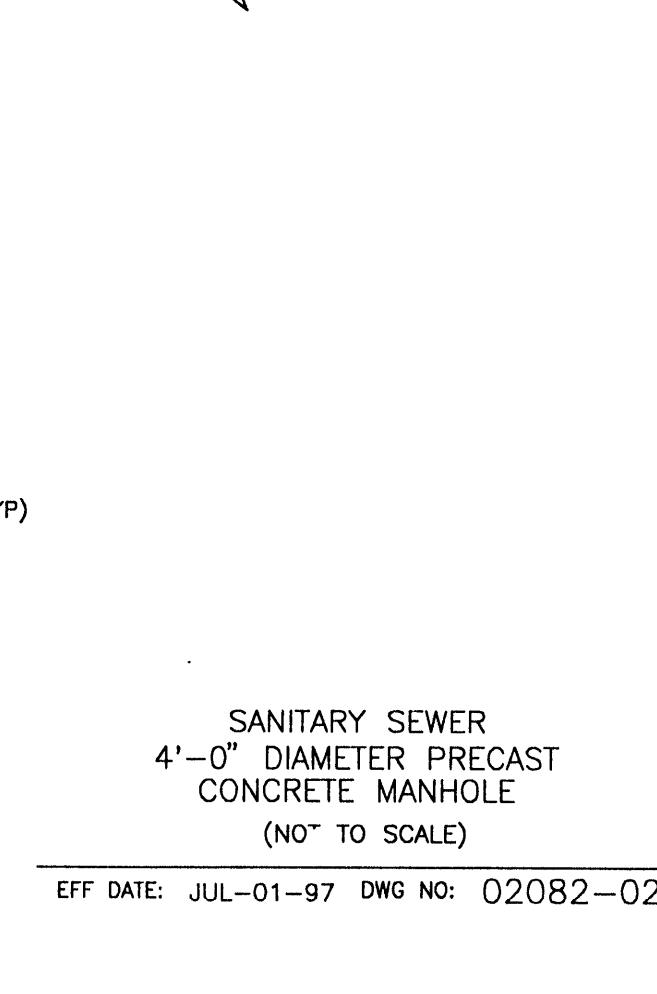
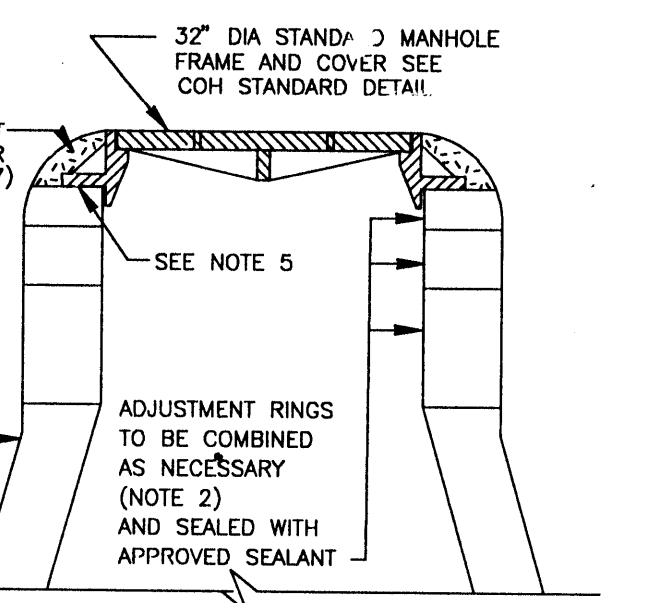
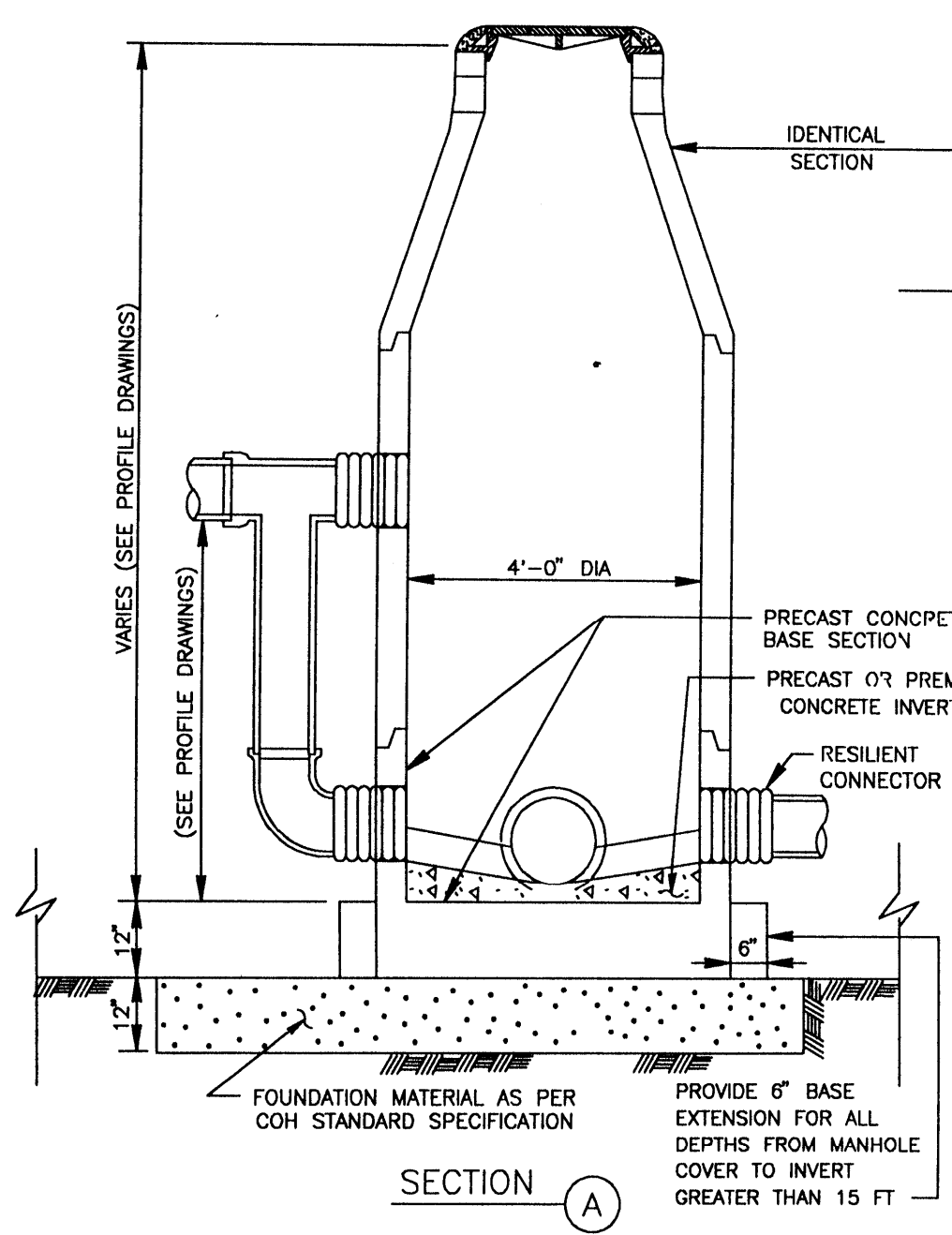


* Concrete Pavers shall conform to requirements of compressive strength & absorption per A.S.T.M. C-936, as manufactured by PAVESTONE CO. or approved equal.
 ** Bedding Sand shall be as hard and coarse (sharp sand) as practically available and shall conform to grading requirements of A.S.T.M. D-33.

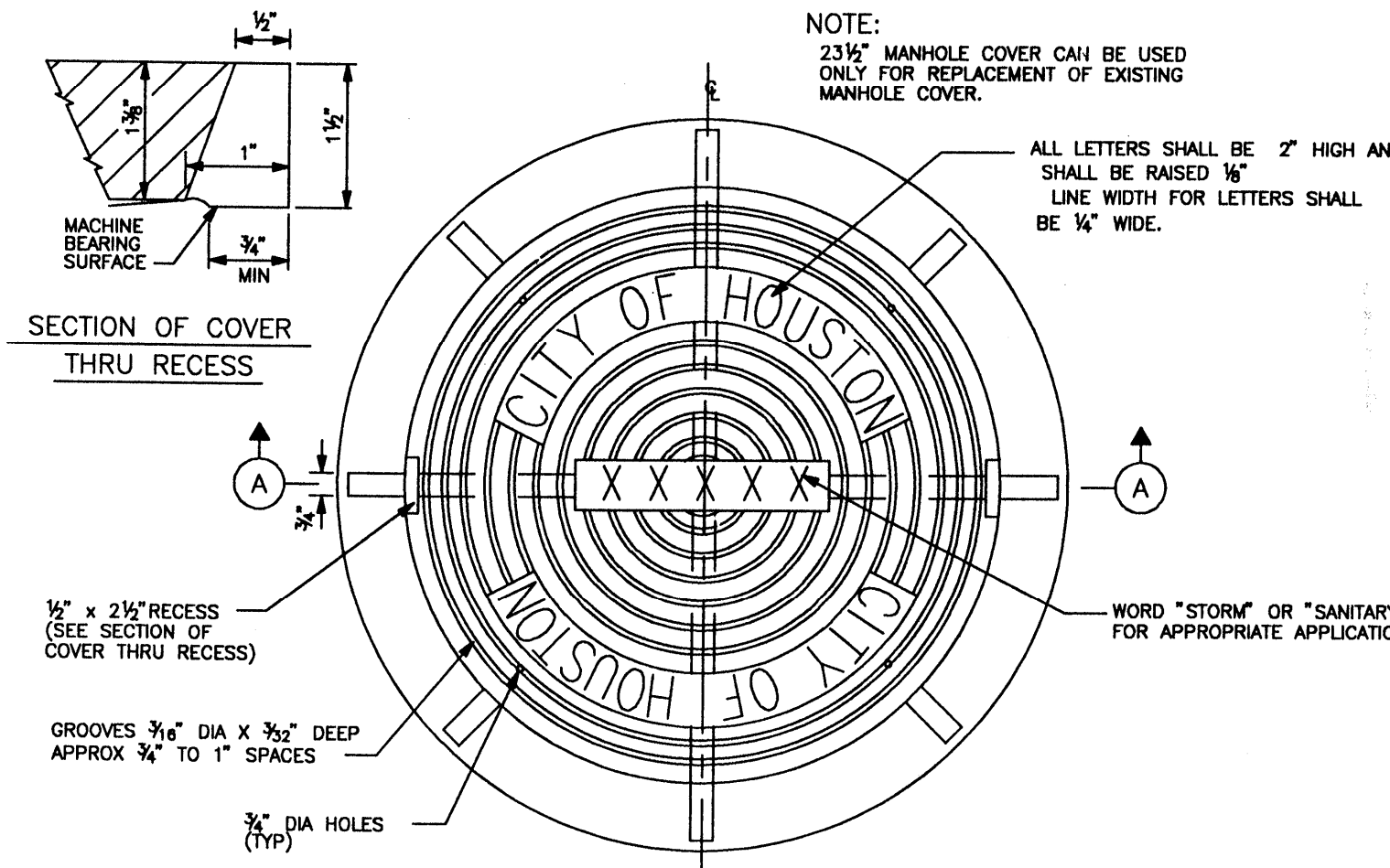
DECORATIVE PAVING SECTION DETAIL
N.T.S.



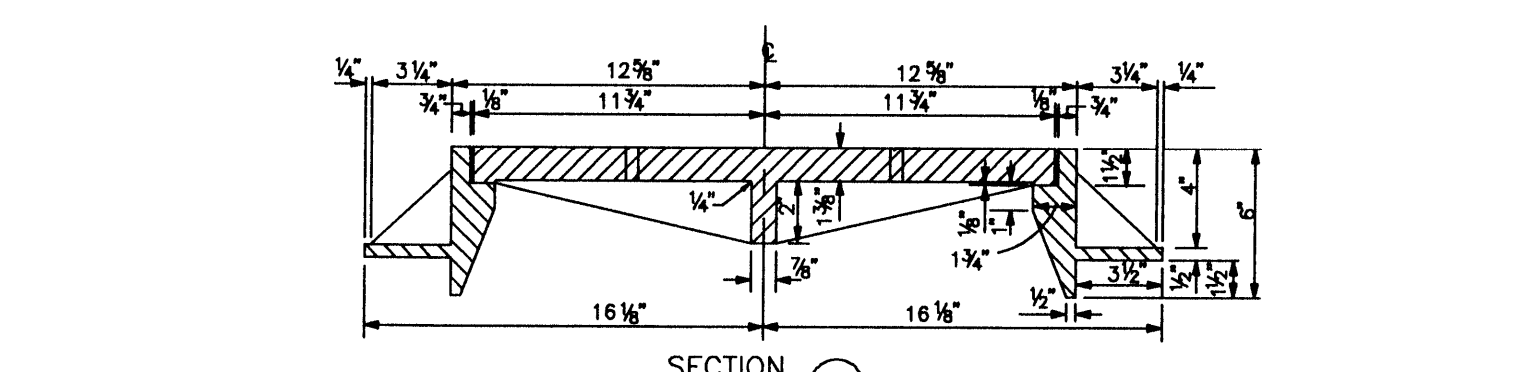
- NOTES:**
1. DEPTH OF MANHOLE DETERMINES SECTIONS REQUIRED.
 2. PRECAST CONCRETE RINGS SHALL BE PROVIDED FOR A COMBINED ADJUSTMENT HEIGHT OF AT LEAST 12". THE TOTAL HEIGHT OF THE ADJUSTMENT RINGS SHALL NOT EXCEED 1'-6".
 3. MANHOLE WALL THICKNESS FOR DEPTH EXCEEDING 12'-0" SHALL BE DETERMINED TO MEET LOADING CONDITIONS. MIN THICKNESS 5".
 4. MANHOLE DROP AND INTERSECTION PIPES SHALL BE INSTALLED ONLY WHEN CALLED FOR IN PLAN AND PROFILE DRAWING.
 5. SEAT MANHOLE FRAME IN SEALANT PER COH STANDARD SPECIFICATION.
 6. ECCENTRIC PRECAST CONCRETE MANHOLE MAY BE USED.
 7. OMIT CEMENT MORTAR WHEN MANHOLE IS LOCATED IN PAVED AREAS.
 8. MIN REINFORCING IN THE PRECAST CONCRETE BASE SHALL BE # 5 @ 8 EW.
 9. PROVIDE BACKFILL TO MATCH ADJACENT PIPE TRENCH BACKFILL PER COH STANDARD SPECIFICATION.



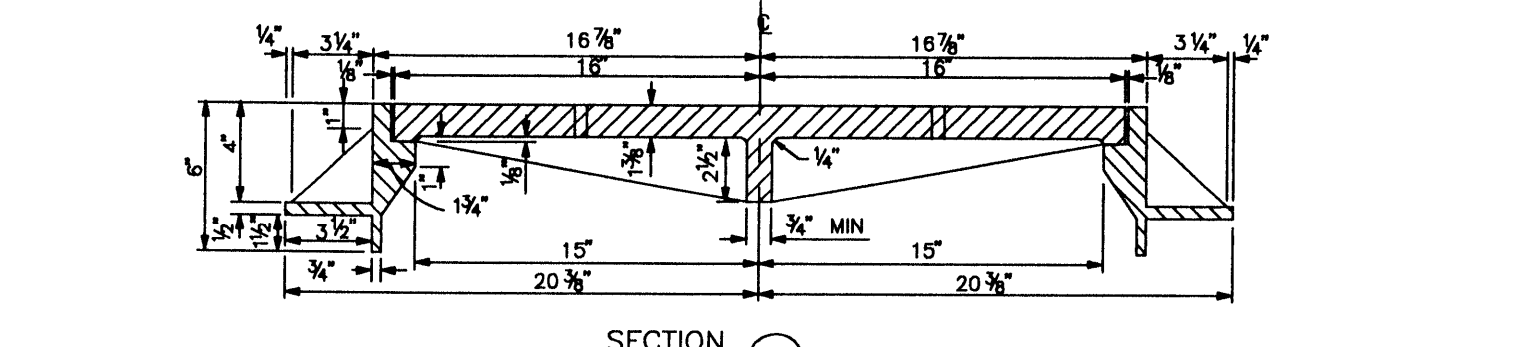
**SANITARY SEWER
4'-0" DIAMETER PRECAST
CONCRETE MANHOLE
(NOT TO SCALE)**
EFF DATE: JUL-01-97 DWG NO: 02082-02



23 1/2" AND 32" MANHOLE COVER WITH FRAME

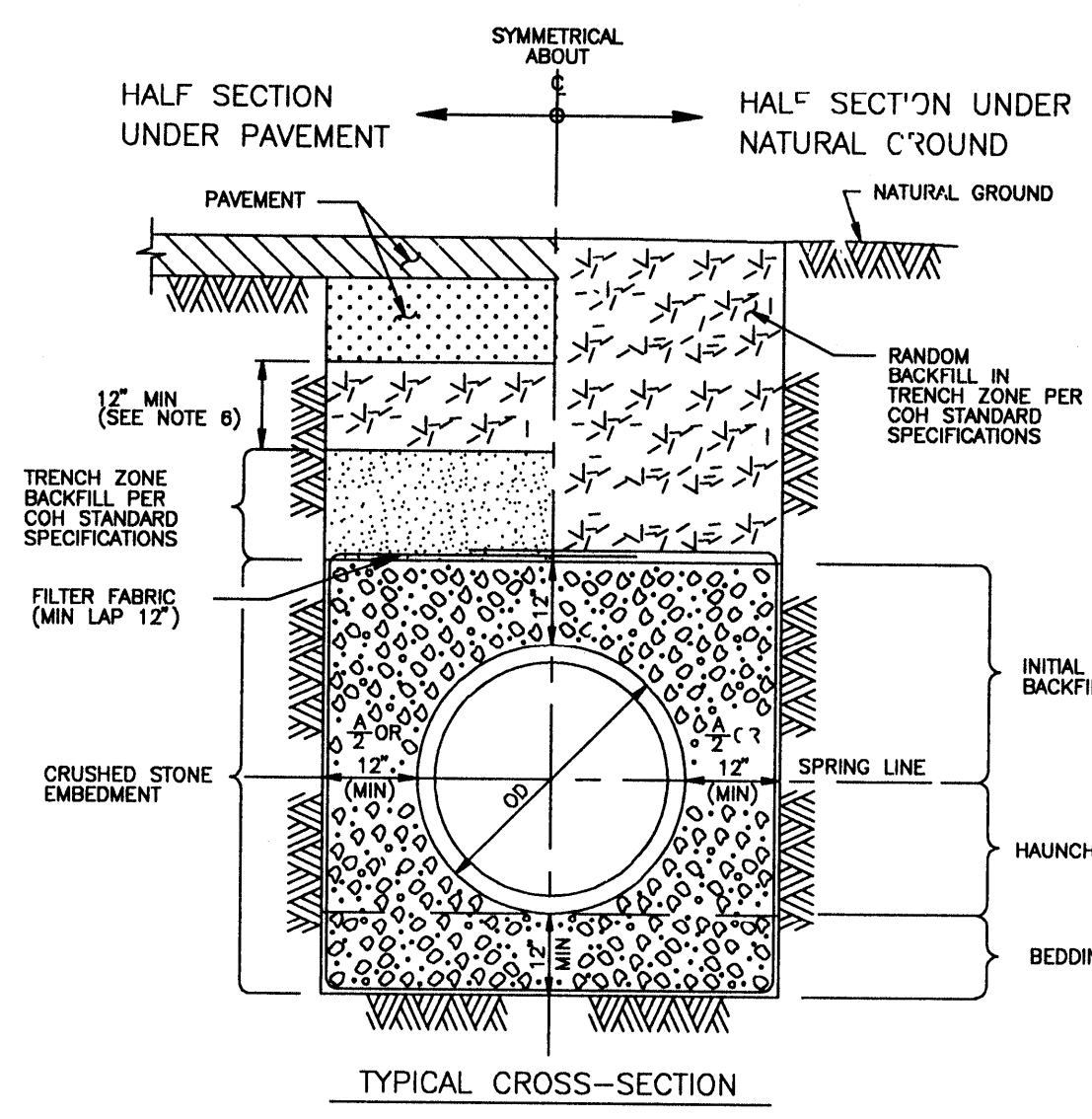


23 1/2" MANHOLE COVER WITH FRAME

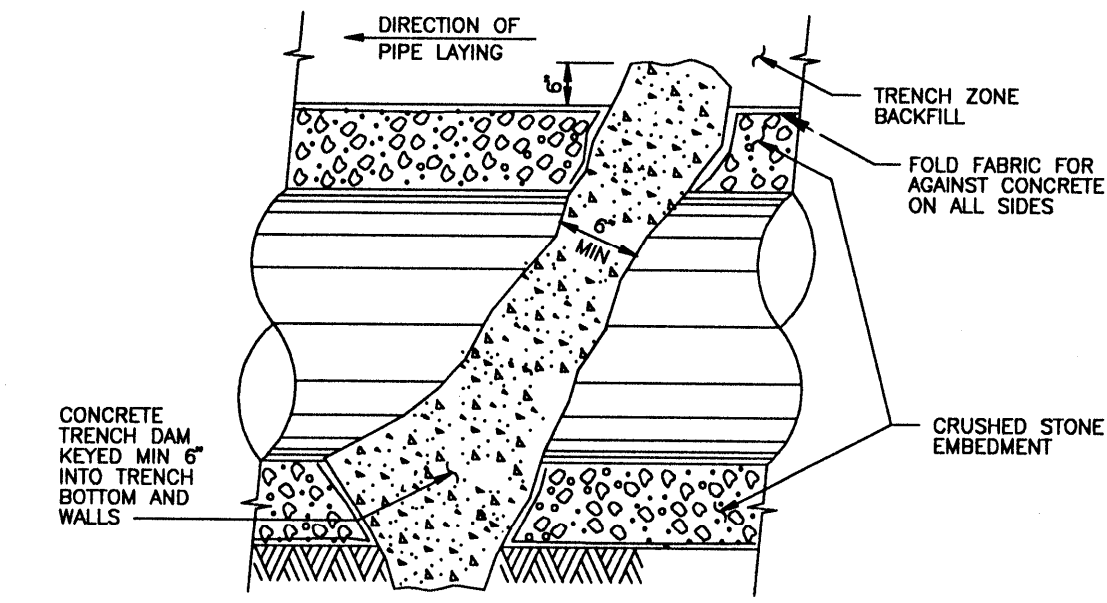


32" MANHOLE COVER WITH FRAME

**MANHOLE
FRAME AND COVER
(NOT TO SCALE)**
EFF DATE: JUL-01-97 DWG NO: 02084-01



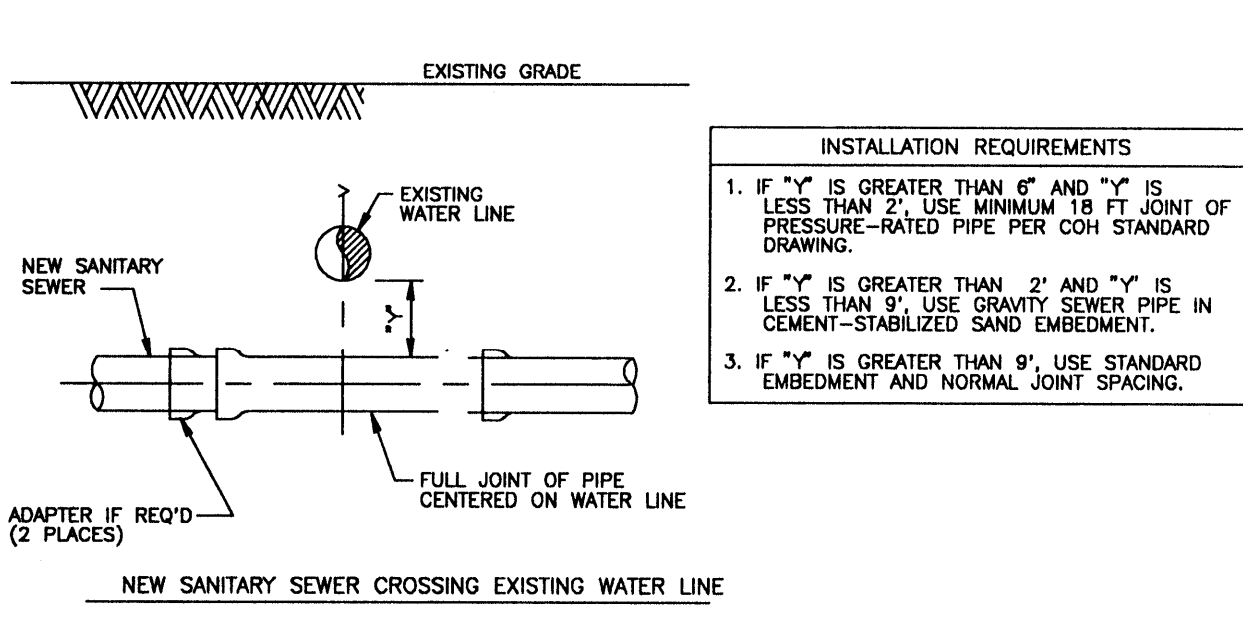
TYPICAL CROSS-SECTION



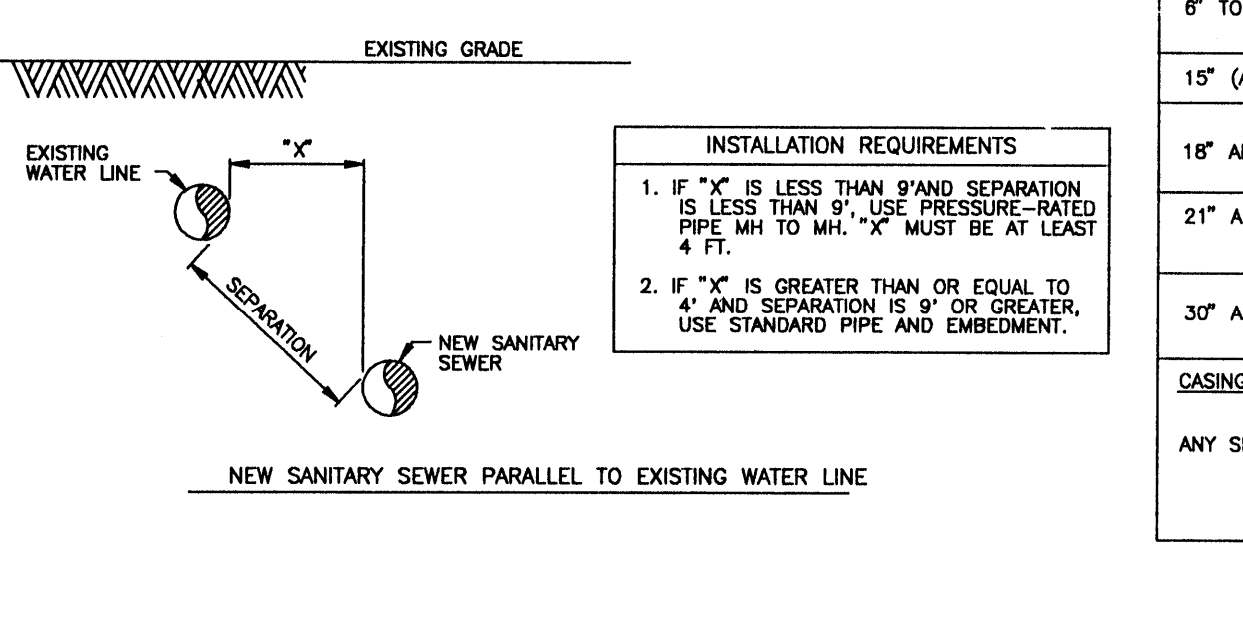
**LONGITUDINAL SECTION ALONG PIPE C
AT EMBEDMENT TRENCH DAM**

**SANITARY SEWER EMBEDMENT
AND TRENCH ZONE BACKFILL
FOR DRY OR WET STABLE TRENCH
(NOT TO SCALE)**
EFF DATE: JUL-01-97 DWG NO: 02317-01

- NOTES:**
1. MIN TRENCH WIDTH SHALL BE PIPE OD PLUS AN ALLOWANCE 7/8" FOR THE NOMINAL PIPE SIZE:
NOMINAL PIPE SIZE "A"
18" TO 30" 2"
OVER 30" 3"
 2. MAX TRENCH WIDTH SHALL BE NOT GREATER THAN MIN TRENCH WIDTH PLUS 24 INCHES, UNLESS OTHERWISE NOTED.
 3. TRENCH DAM MAY BE FORMED OR UNIFORM ACTUAL SHAPE OF CONCRETE TRENCH DAM CROSS SECTION MAY BE DETERMINED BY CONTRACTOR IN FIELD, MEETING MINIMUM THICKNESS AND KEY DEPTH REQUIREMENTS.
 4. TRENCH DAM SHALL BE PLACED AT LEAST 5 FT AWAY FROM ANY PIPELINE STRUCTURE. SEE SPECIFICATIONS FOR OTHER REQUIREMENTS.
 5. PLACE TRENCH DAMS IN CLASS I EMBEDMENTS AT THE MIDPOINT OF LINE SEGMENTS LONGER THAN 100 FEET BETWEEN MANHOLES.
 6. SELECT BACKFILL FOR RIGID PAVEMENT; FLEXIBLE BASE MATERIAL FOR ASPHALT PAVEMENT.



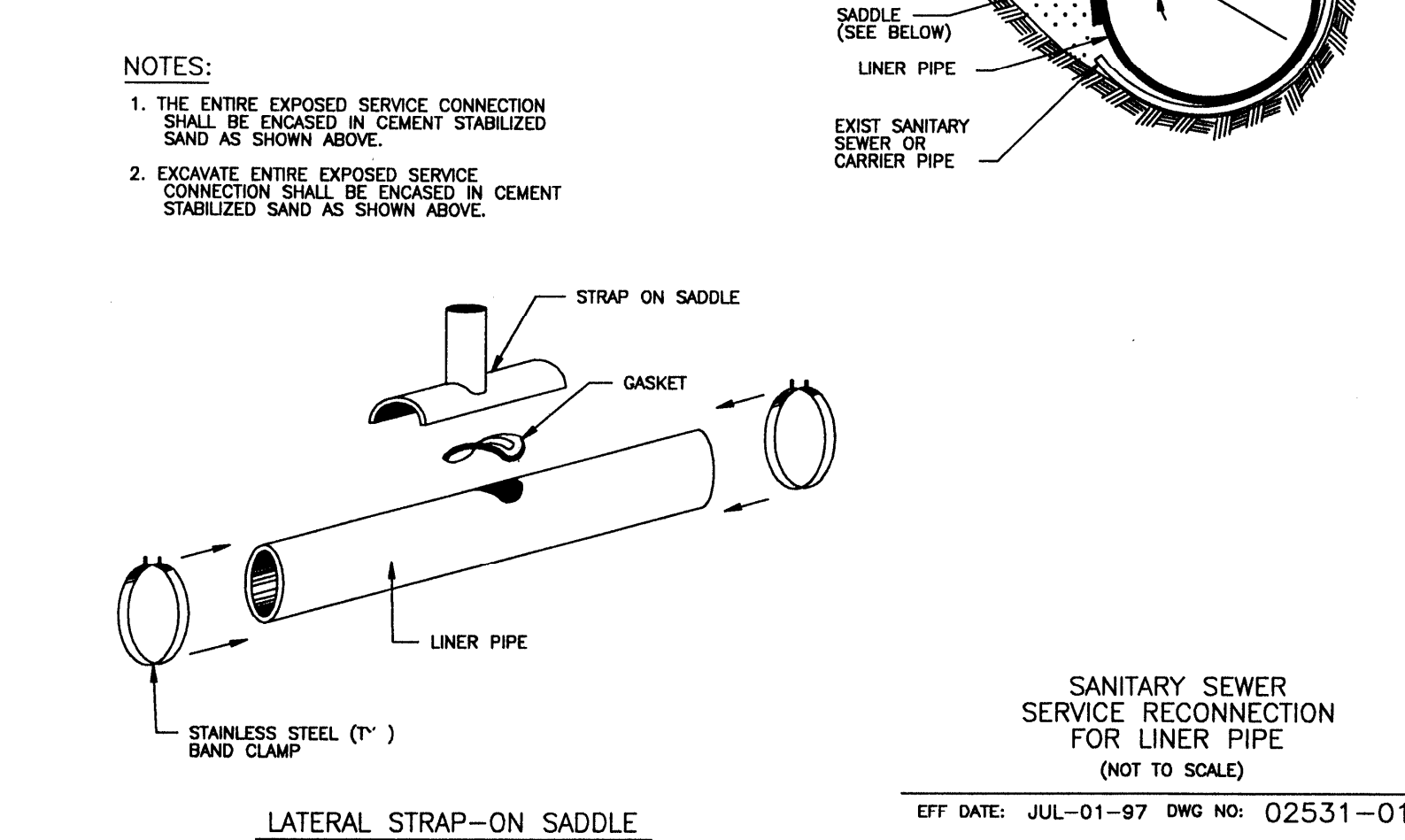
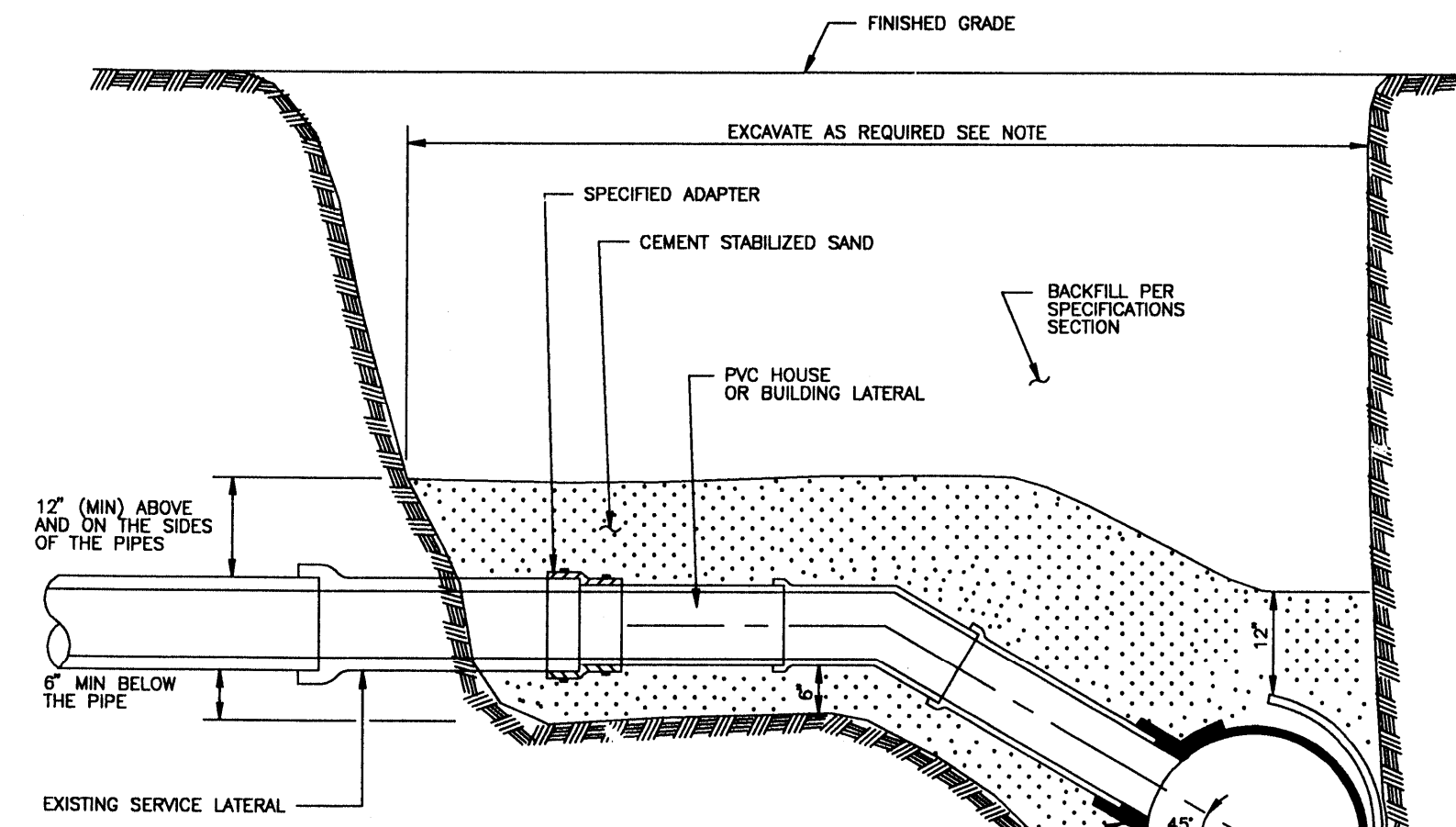
- NOTES:**
1. SANITARY SEWER MUST BE BELOW WATER LINE WHEREVER POSSIBLE. WHEN WATERLINE IS BELOW THE SANITARY SEWER PROVIDE MINIMUM 2 FT SEPARATION AND INSTALL PIPE SAME AS FOR SEWER BELOW WATER.
 2. WHEN PRESSURE-RATED PIPE IS REQUIRED PROVIDE PIPE WITH MINIMUM 150 PSI PRESSURE RATING.
 3. ADAPTERS MUST BE FACTORY MOLDED OR FABRICATED, WITH RING STIFFENERS AT LEAST 2" FROM THE ADJOINING SANITARY SEWER PIPES. RESILIENT GASKET OR SEAL MATERIAL, FLEXIBLE RUBBER BOOT TYPE ADAPTERS WILL NOT BE ACCEPTED.
 4. INSTALL FORCE MAINS SAME AS FOR GRAVITY SEWER, USING SPECIFIED PRESSURE PIPE.
 5. "Y" MUST ALWAYS BE GREATER THAN OR EQUAL "Q".
 6. "X" MUST BE GREATER THAN OR EQUAL TO 4 FT.
 7. ALTERNATIVES MAY BE SHOWN ON THE DRAWINGS OR DESCRIBED IN THE SPECIFICATIONS.
 8. SEPARATION REQUIREMENTS SHOWN HERE DO NOT APPLY TO SERVICE CONNECTIONS. REFER TO PLUMBING CODE FOR APPLICABLE REQUIREMENTS.



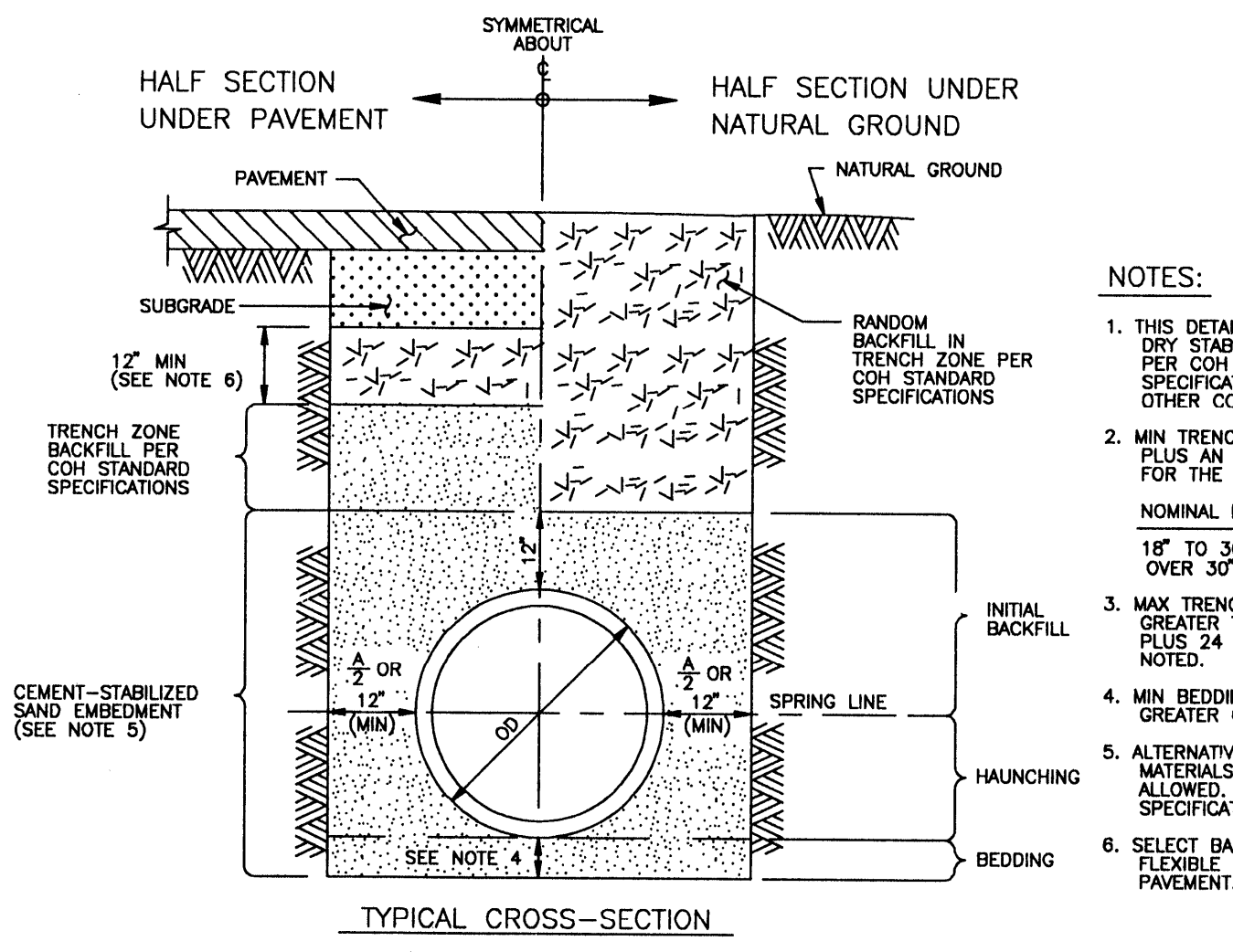
**TABLE 02730-04
SEWER LINE CROSSING BELOW WATER LINE WITHIN 2 FT SEPARATION**

GRAVITY SANITARY SEWER PIPE SIZE	PRESSURE-RATED PIPE SIZE & TYPE (NOTE 2)	ADAPTERS REQUIRED
6" TO 12" (ASTM D3034)	SAME SIZE ASTM D2241, SDR 26	ASTM D3034 TO D2665 (SEWER TO D.W.V.) ADAPTER COUPLING
15" (ASTM D3034)	14" LINED DUCTILE IRON OR ANWA C905, DR25	NONE REQUIRED
18" AND 24"	SAME SIZE ANWA C905, PRESSURE-RATED FRP OR LINED DUCTILE IRON, MANHOLE TO MANHOLE	NONE REQUIRED
21" AND 27"	PRESSURE PIPE NOT AVAILABLE. SEE CASING ALTERNATIVE.	NOT APPLICABLE
30" AND LARGER	SAME SIZE PRESSURE-RATED FRP OR LINED DUCTILE IRON MANHOLE TO MANHOLE	NOT APPLICABLE
CASING ALTERNATIVE:	INSTALL AS CASING PIPE MIN 18 FT JOINT OF PRESSURE PIPE AT LEAST 2 NOMINAL SIZES LARGER THAN SAN. SEWER CARRIER PIPE. GROUT ANNULAR SPACE WITH TUNNEL GROUT	NOT APPLICABLE
ANY SIZE AND TYPE		

INSTALLING SANITARY SEWERS CROSSING OR PARALLEL TO WATER LINES
(NOT TO SCALE)
EFF DATE: JUL-01-97 DWG NO: 02531-07



LATERAL STRAP-ON SADDLE
(NOT TO SCALE)
EFF DATE: JUL-01-97 DWG NO: 02531-01



TYPICAL CROSS-SECTION

**SANITARY SEWER
BEDDING AND BACKFILL
FOR DRY STABLE TRENCH
(NOT TO SCALE)**
EFF DATE: JUL-01-97 DWG NO: 02317-08

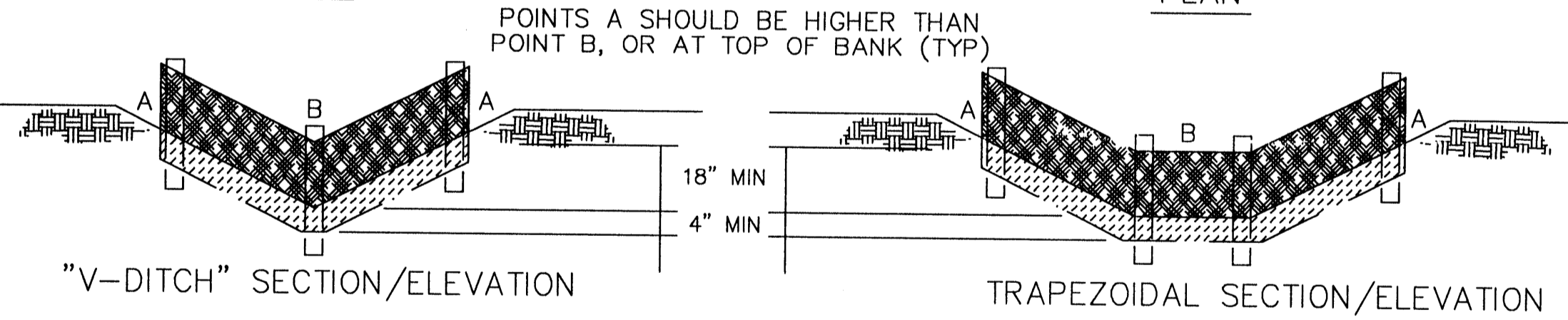
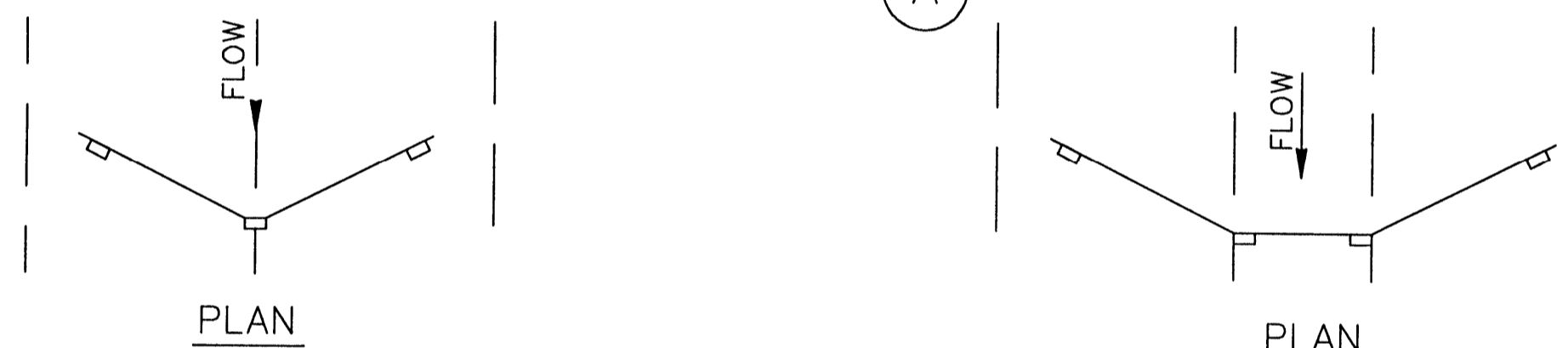
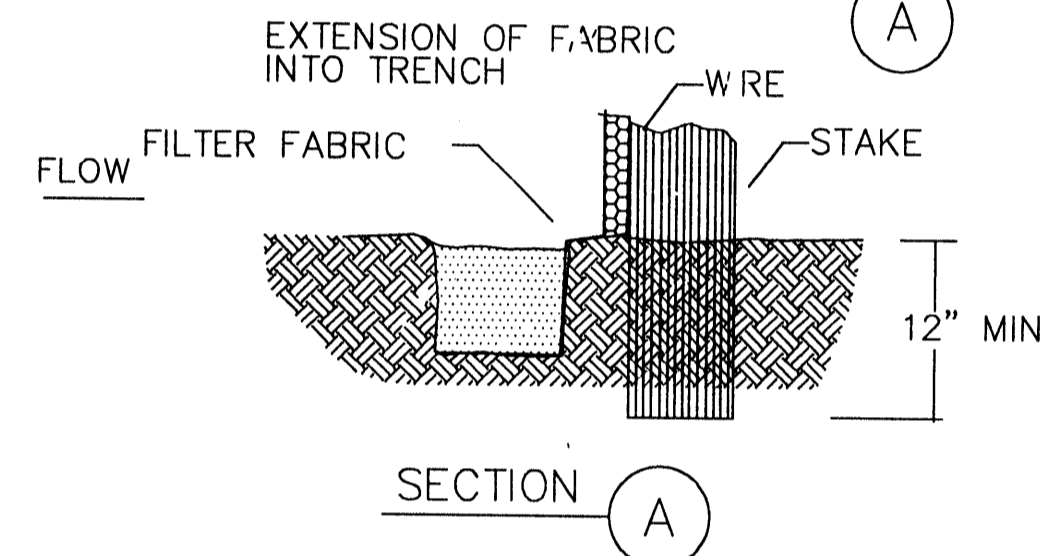
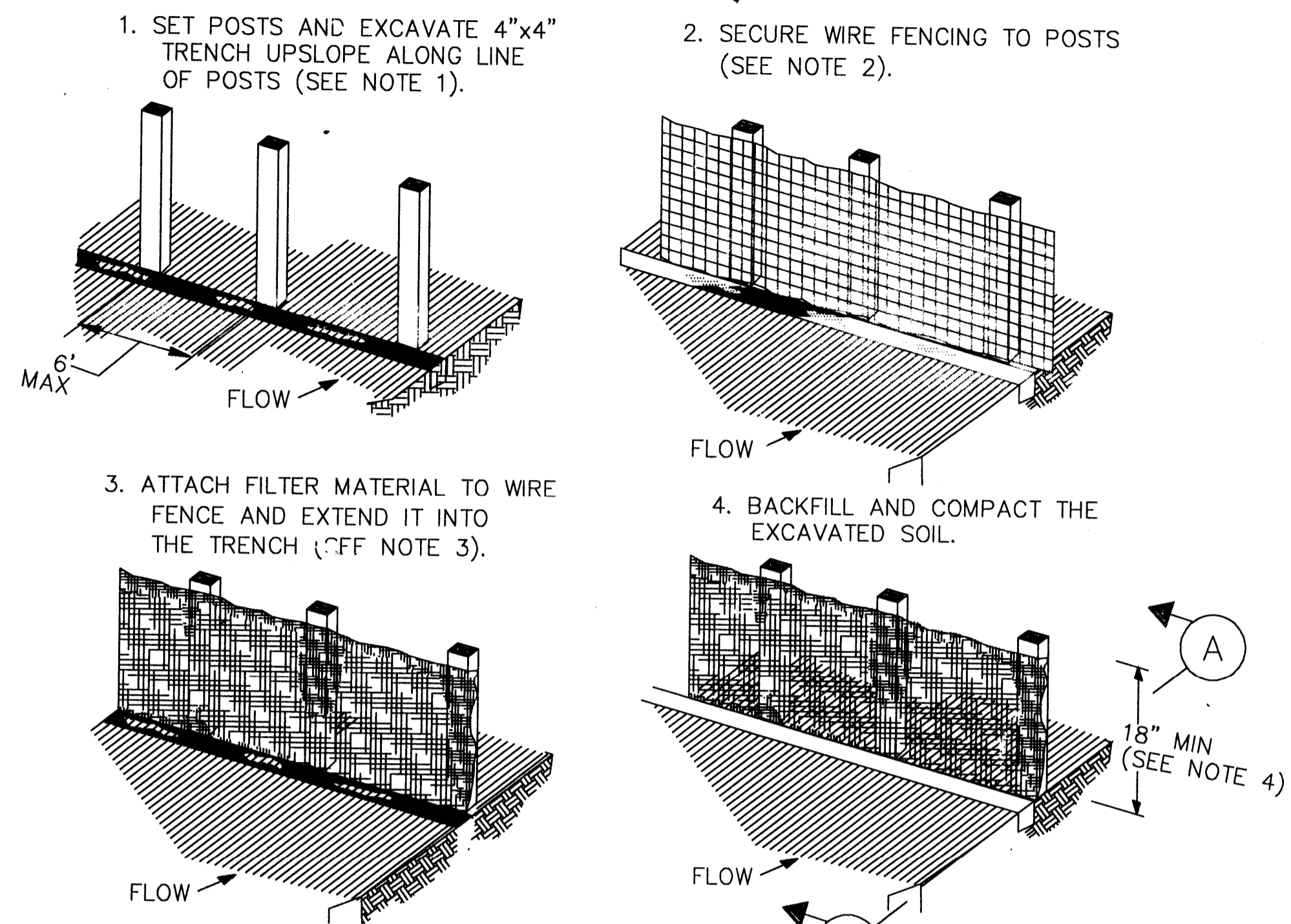
- NOTES:**
1. THIS DETAIL MAY BE USED ONLY FOR DRY STABLE TRENCH CONDITIONS. PER COH STANDARD. SEE COH STANDARD SPECIFICATION FOR REQUIREMENTS IN OTHER CONDITIONS.
 2. MIN TRENCH WIDTH SHALL BE PIPE OD PLUS AN ALLOWANCE 7/8" FOR THE NOMINAL PIPE SIZE:
NOMINAL PIPE SIZE "A"
18" TO 30" 2"
OVER 30" 3"
 3. MAX TRENCH WIDTH SHALL BE NOT GREATER THAN MIN TRENCH WIDTH PLUS 24 INCHES, UNLESS OTHERWISE NOTED.
 4. MIN BEDDING DEPTH SHALL BE THE GREATER OF 1/4 OD OR 8 INCHES.
 5. ALTERNATIVE EMBEDMENT BACKFILL MATERIALS FOR FORCE MAINS MAY BE ALLOWED. SEE COH STANDARD SPECIFICATIONS.
 6. SELECT BACKFILL FOR RIGID PAVEMENT; FLEXIBLE BASE MATERIAL FOR ASPHALT PAVEMENT.

**CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING**

REVIEWED BY	CITY FUNDED PUBLIC WORKS
WATER	WATER
WASTEWATER	WASTEWATER
STORM WATER	STORM WATER
STREET AND BRIDGE	STREET AND BRIDGE
TRAFFIC AND TRANSPORTATION	TRAFFIC AND TRANSPORTATION
OTHER APPROVAL	OTHER APPROVAL

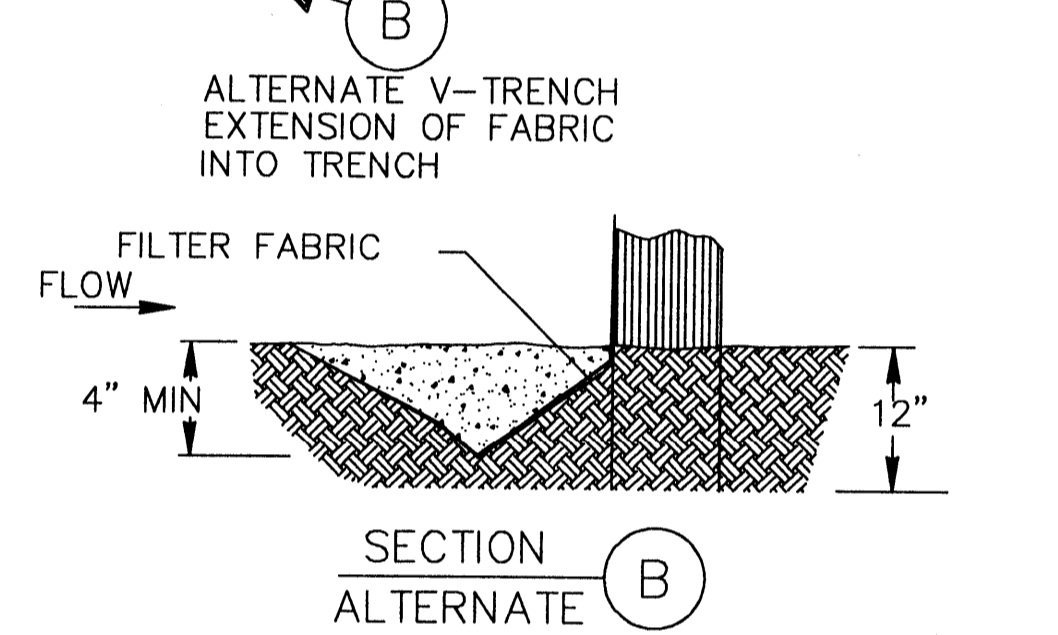
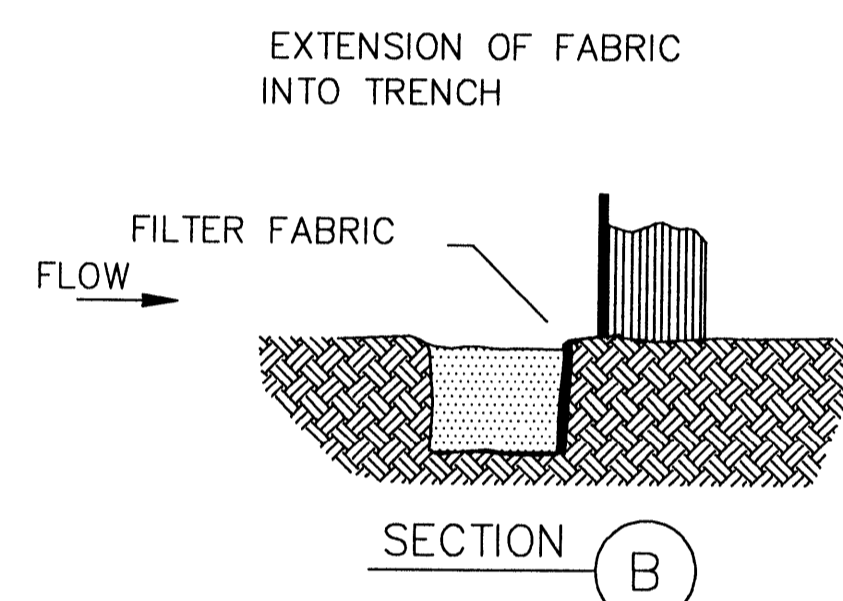
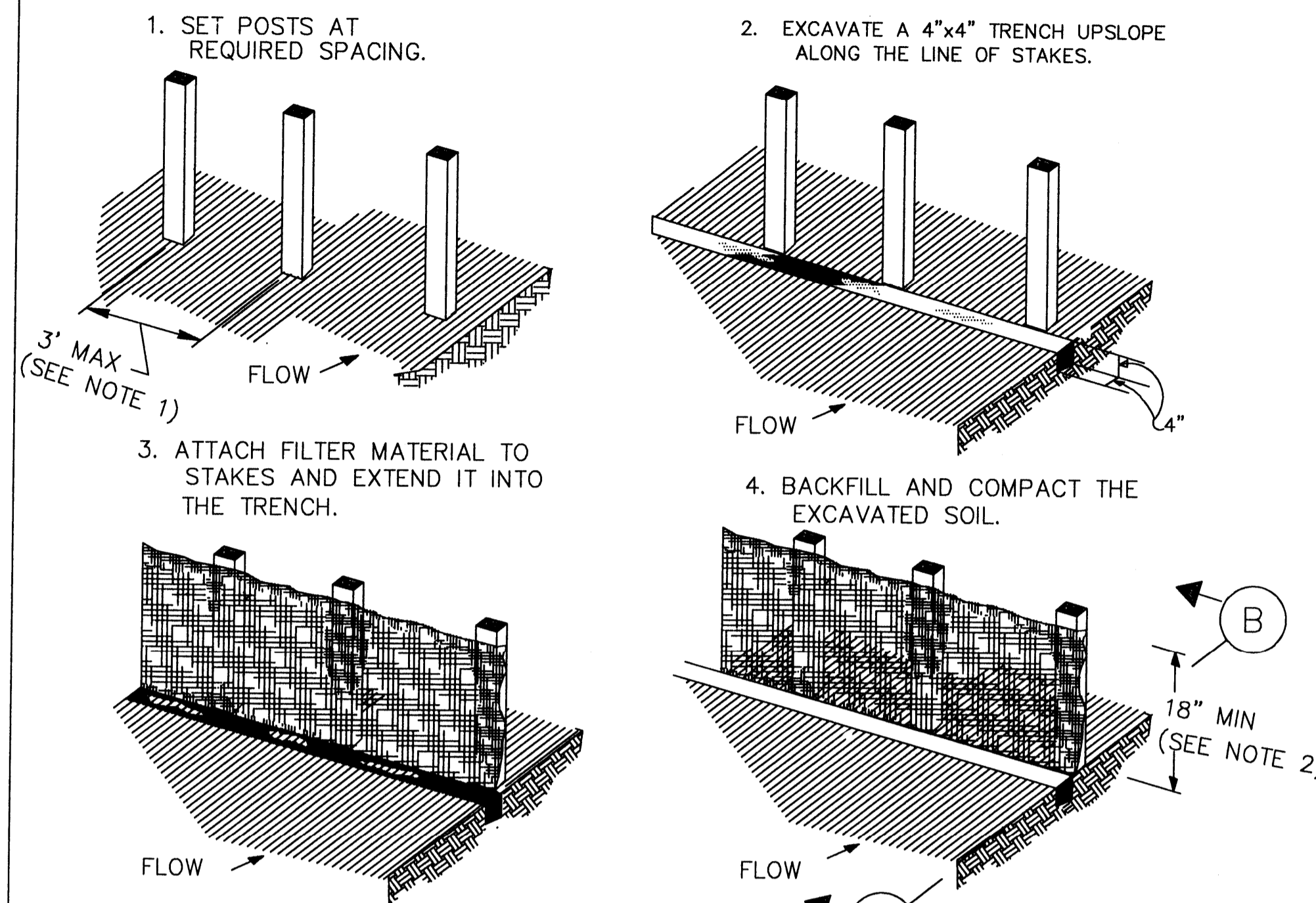
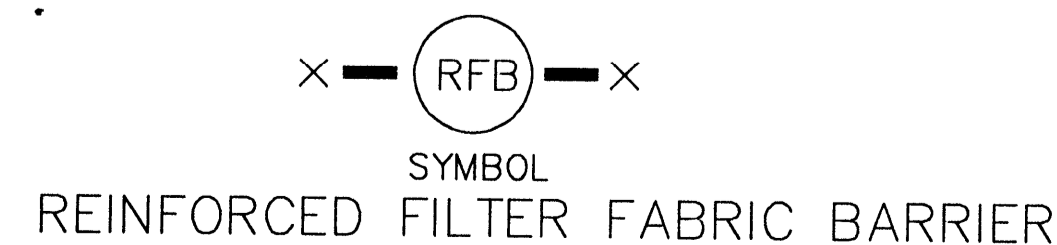
PROJECT MANAGER	CONSTRUCTION	CHIEF ENGINEER	SPONSOR DEPARTMENT
BOBBY WILSON	BOBBY WILSON	BOBBY WILSON	BOBBY WILSON
DATE	DATE	DATE	DATE
12-27-97	12-27-97	12-27-97	12-27-97

DESIGNED BY	DRAWN BY	SHEET NO.	TOTAL SHEETS
BOBBY WILSON	BILL DORRIS	16	21
DATE	DATE		
OCTOBER 1999	OCTOBER 1999		



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.

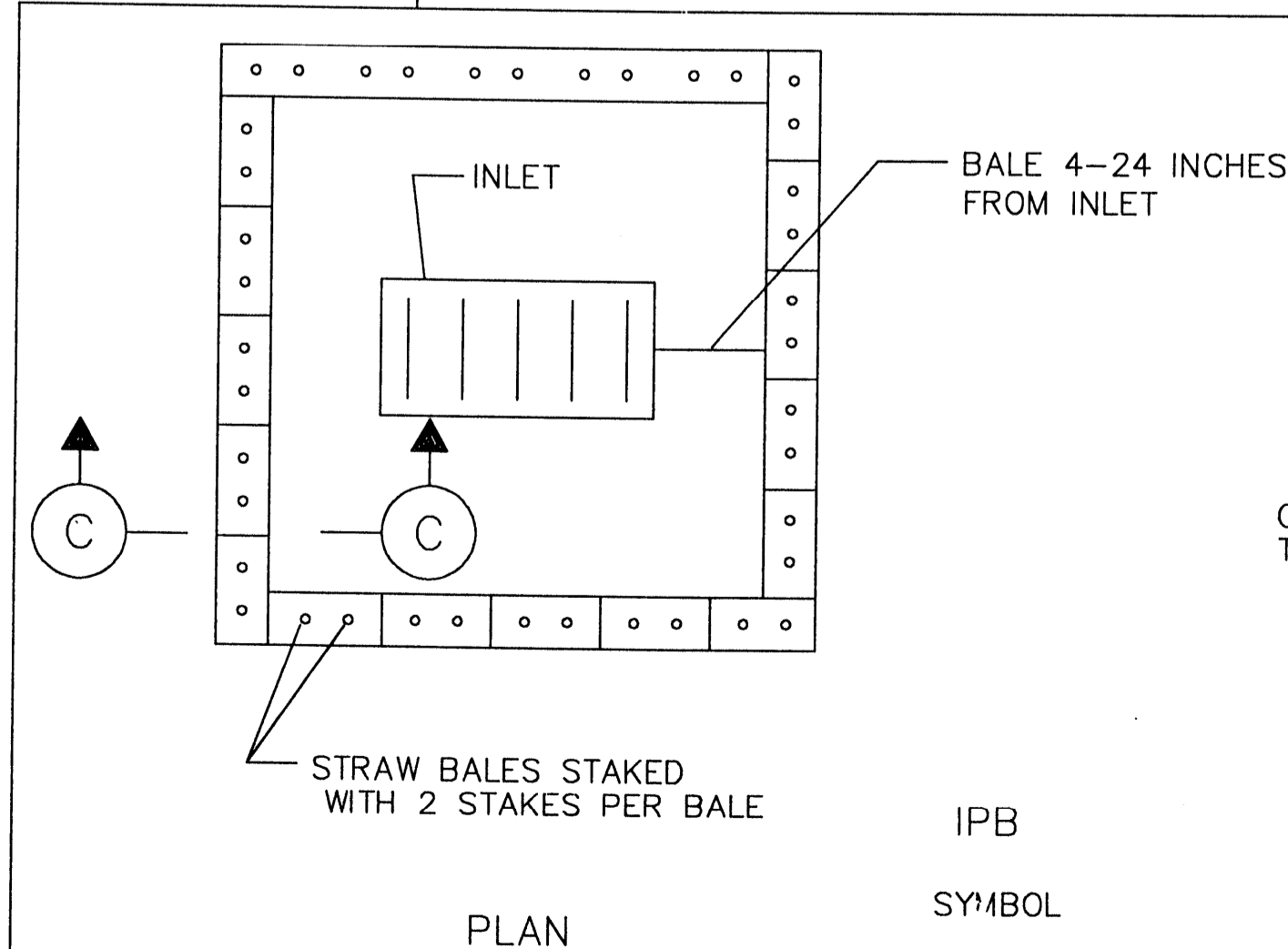


CONSTRUCTION NOTES:

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.

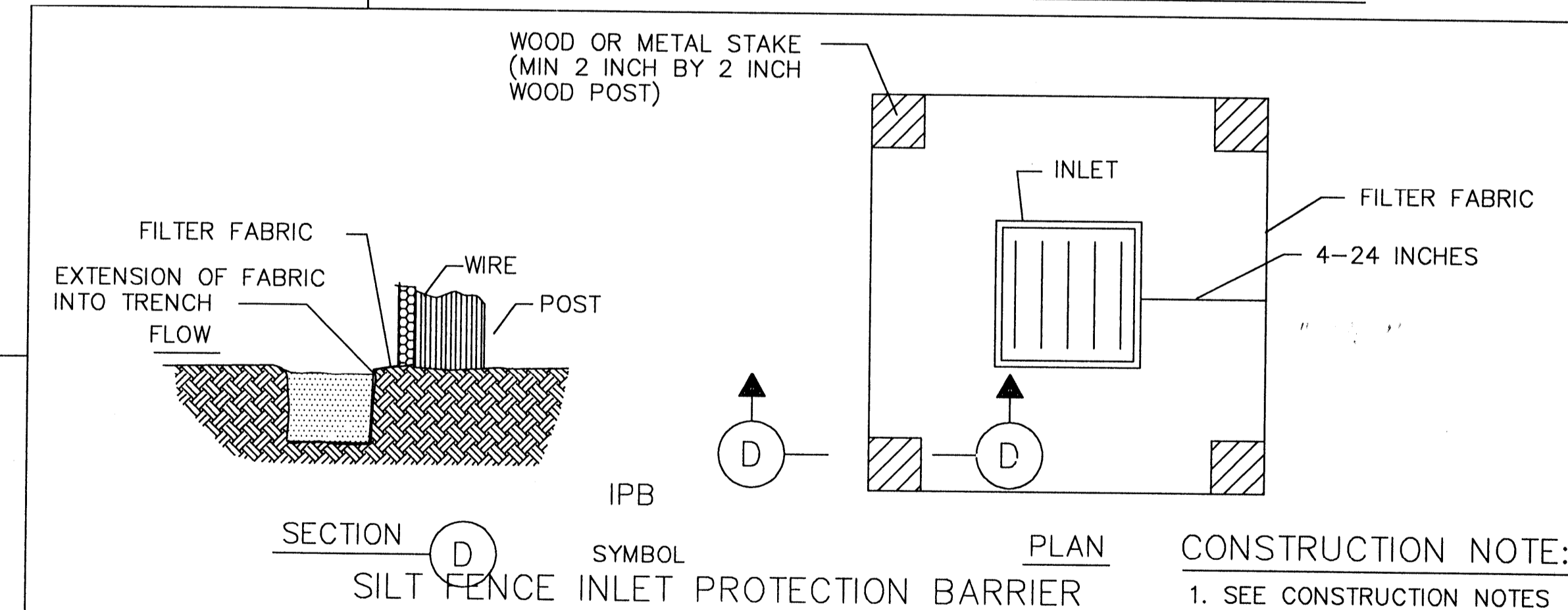
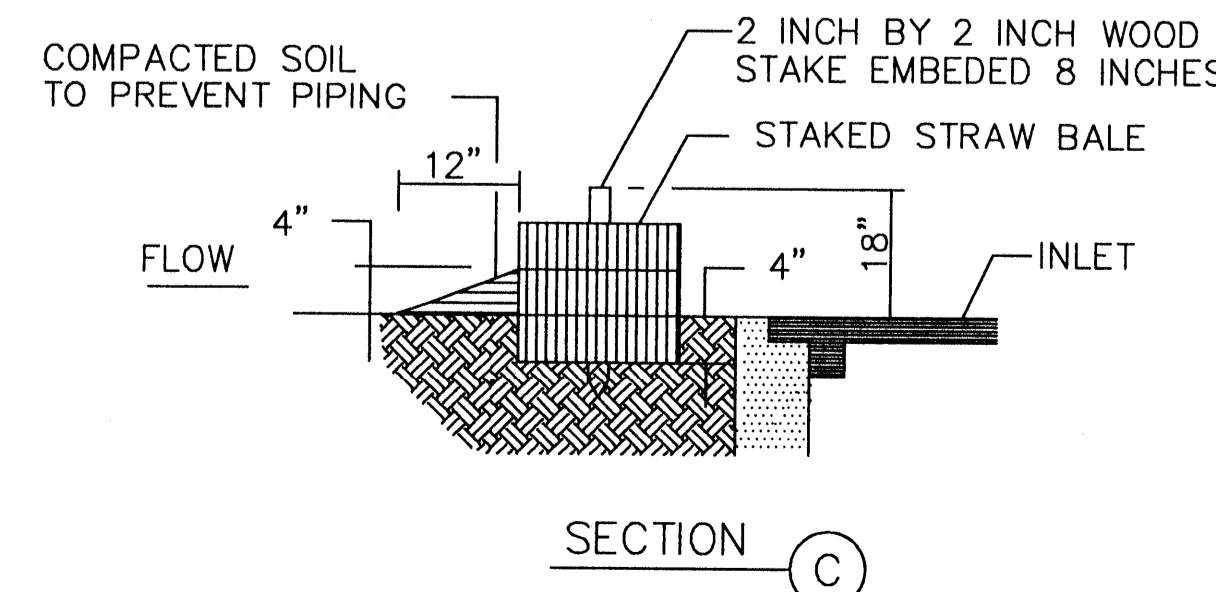
CONSTRUCTION NOTES:

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.

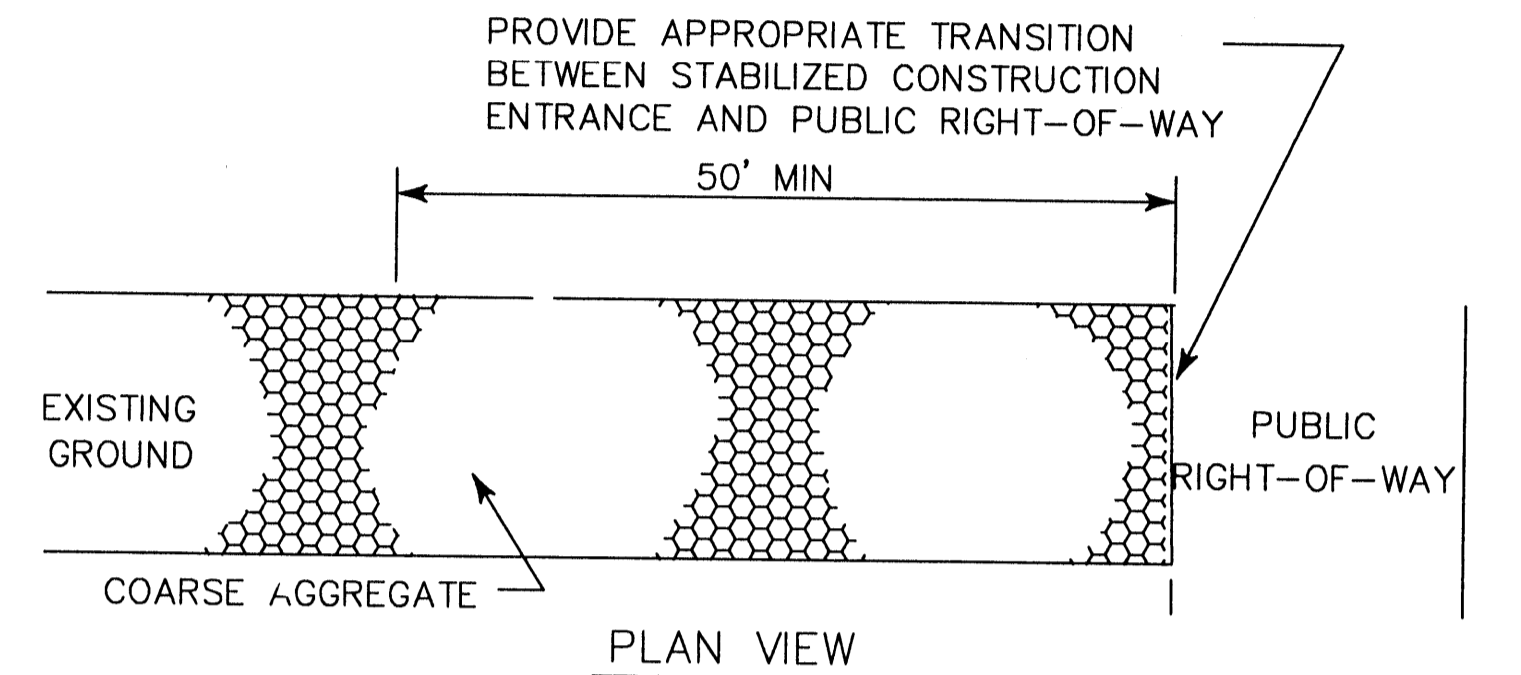
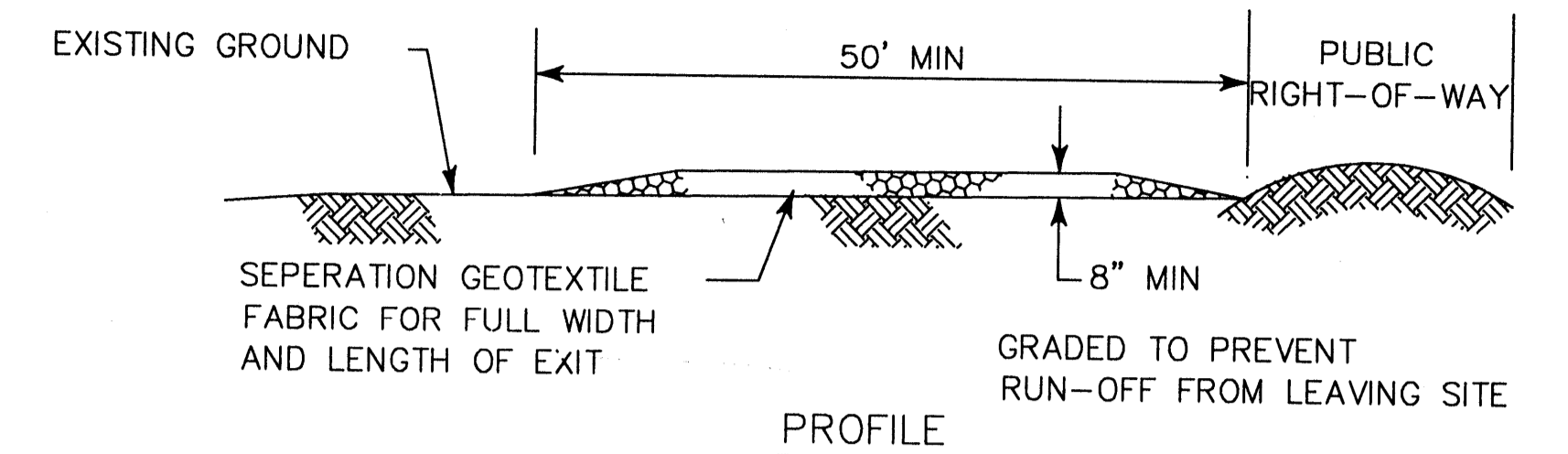


CONSTRUCTION NOTES:

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.

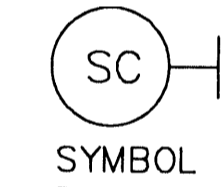


- CONSTRUCTION NOTE:**
1. SEE CONSTRUCTION NOTES FOR RFB.



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.



CONSTRUCTION NOTES:

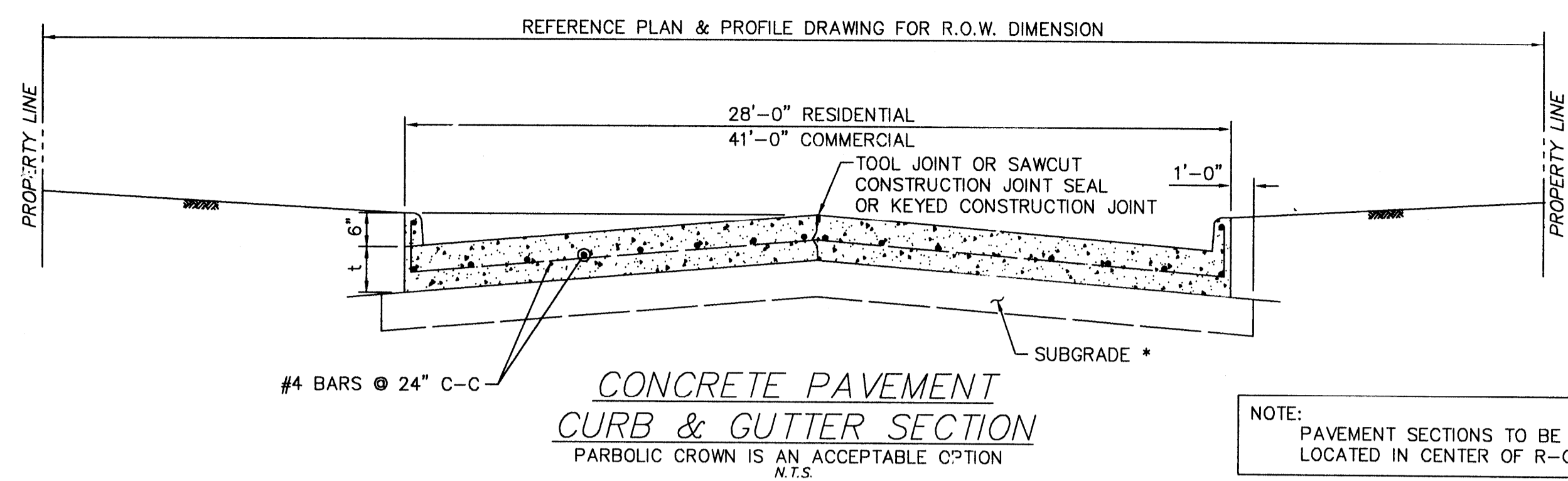
1. SEE CONSTRUCTION NOTES FOR RFB.

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

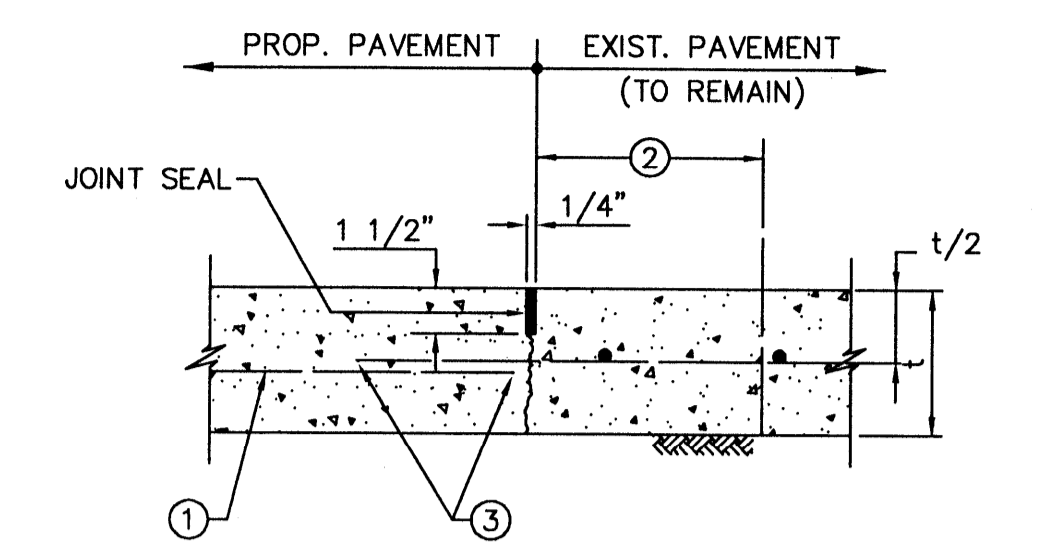
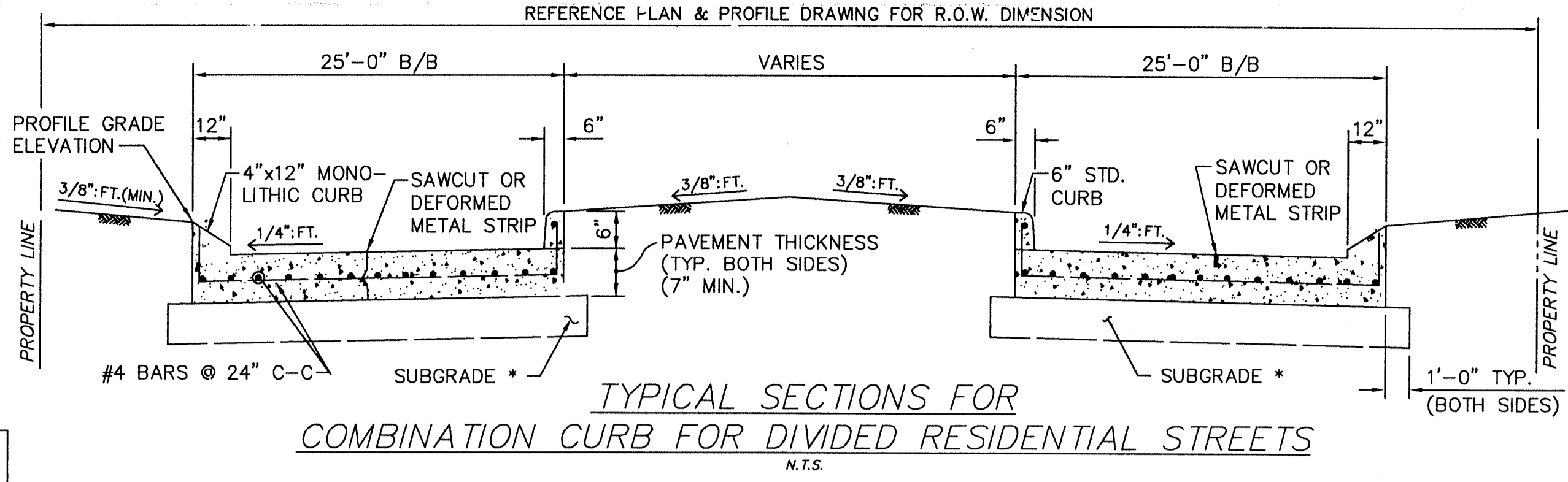
STORM WATER POLLUTION PREVENTION PLAN DETAILS
(NOT TO SCALE)

APPROVED BY:	APPROVED BY:
CITY ENGINEER	DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JUL-01-97	DWG NO: 01571-01

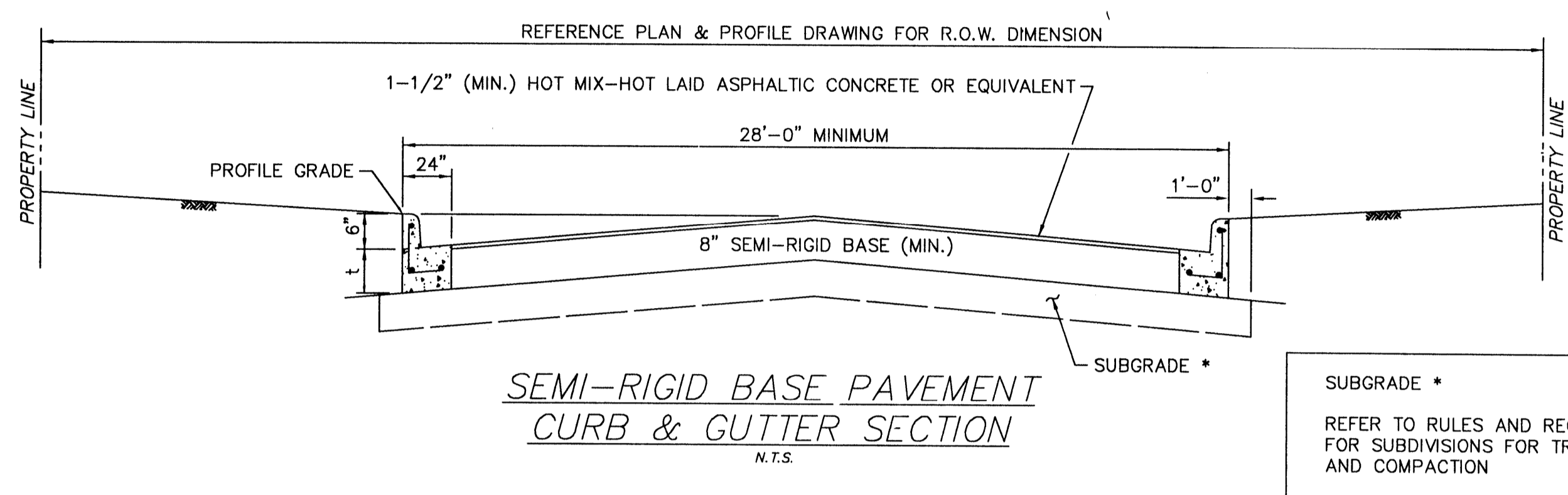
Bobby K. Wilson
12-27-99



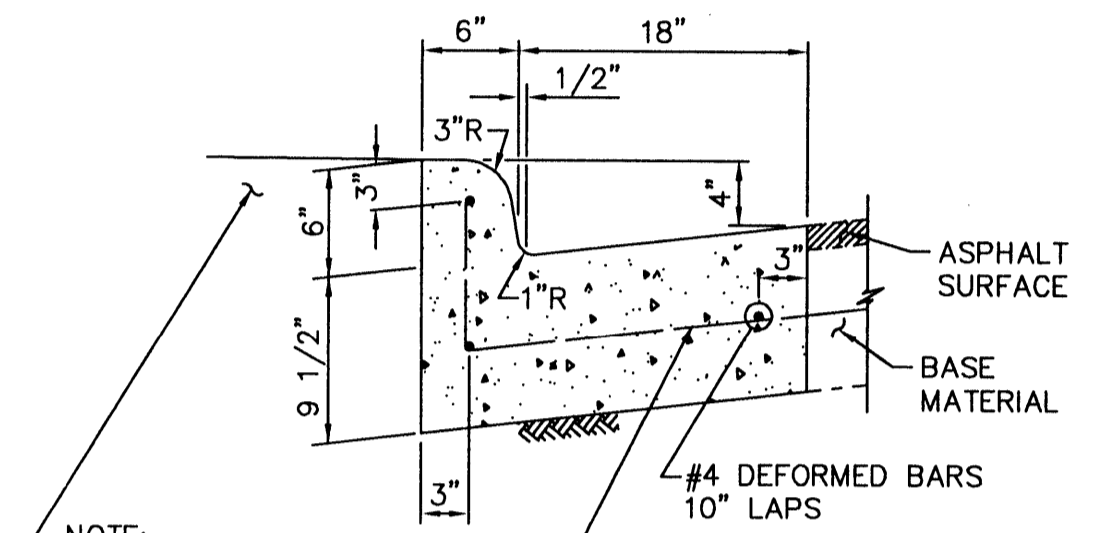
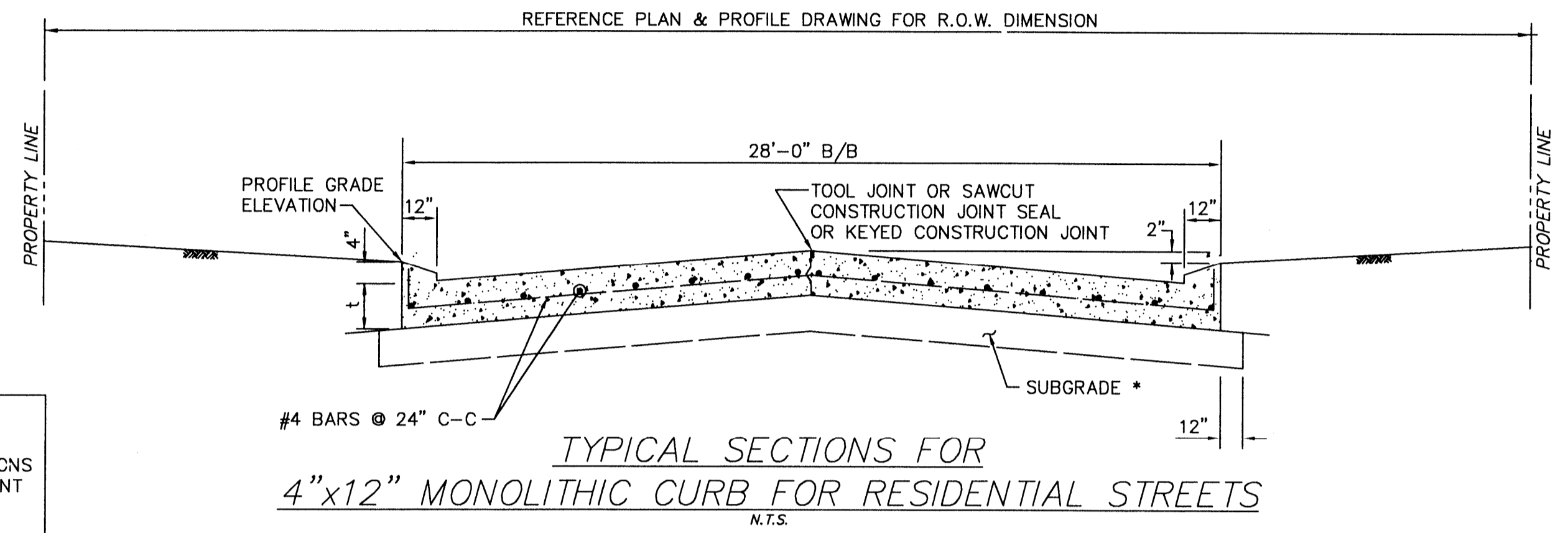
NOTE: PAVEMENT SECTIONS TO BE LOCATED IN CENTER OF R-O-W



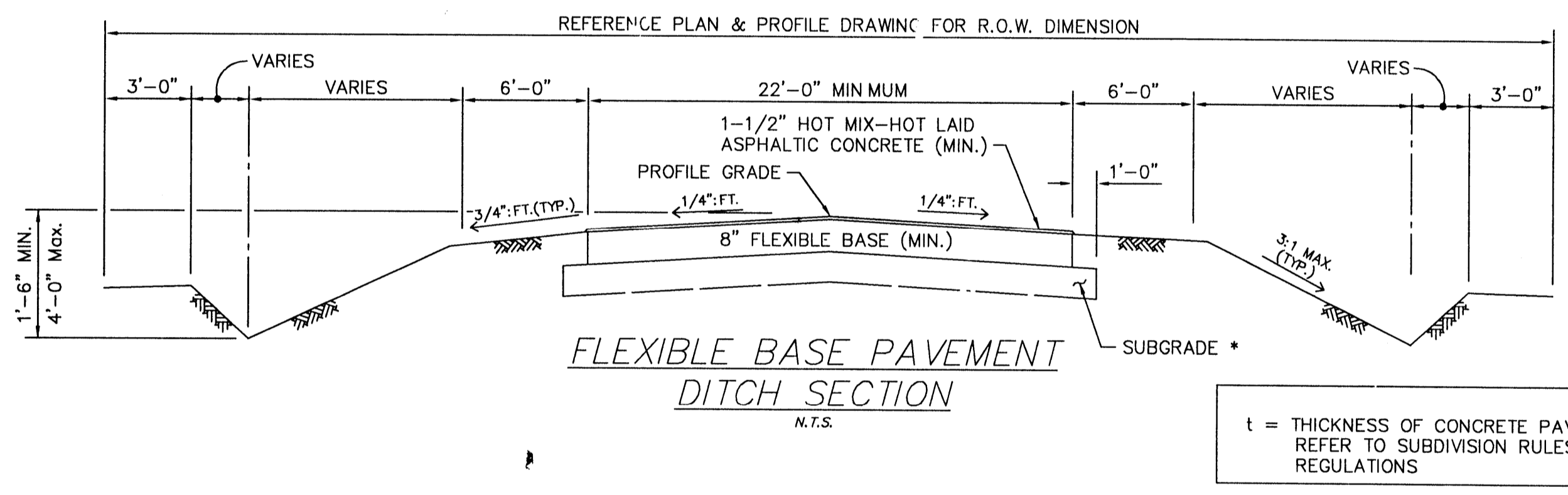
① Reinforcing centered in proposed pavement, 3" clear at edges.
② Saw-cut & remove 2' existing pavement or pavement with curb. Expose and clean existing reinforcing.
③ 24 bar diameter lap or weld, if directed.



SUBGRADE * REFER TO RULES AND REGULATIONS FOR SUBDIVISIONS FOR TREATMENT AND COMPACTION



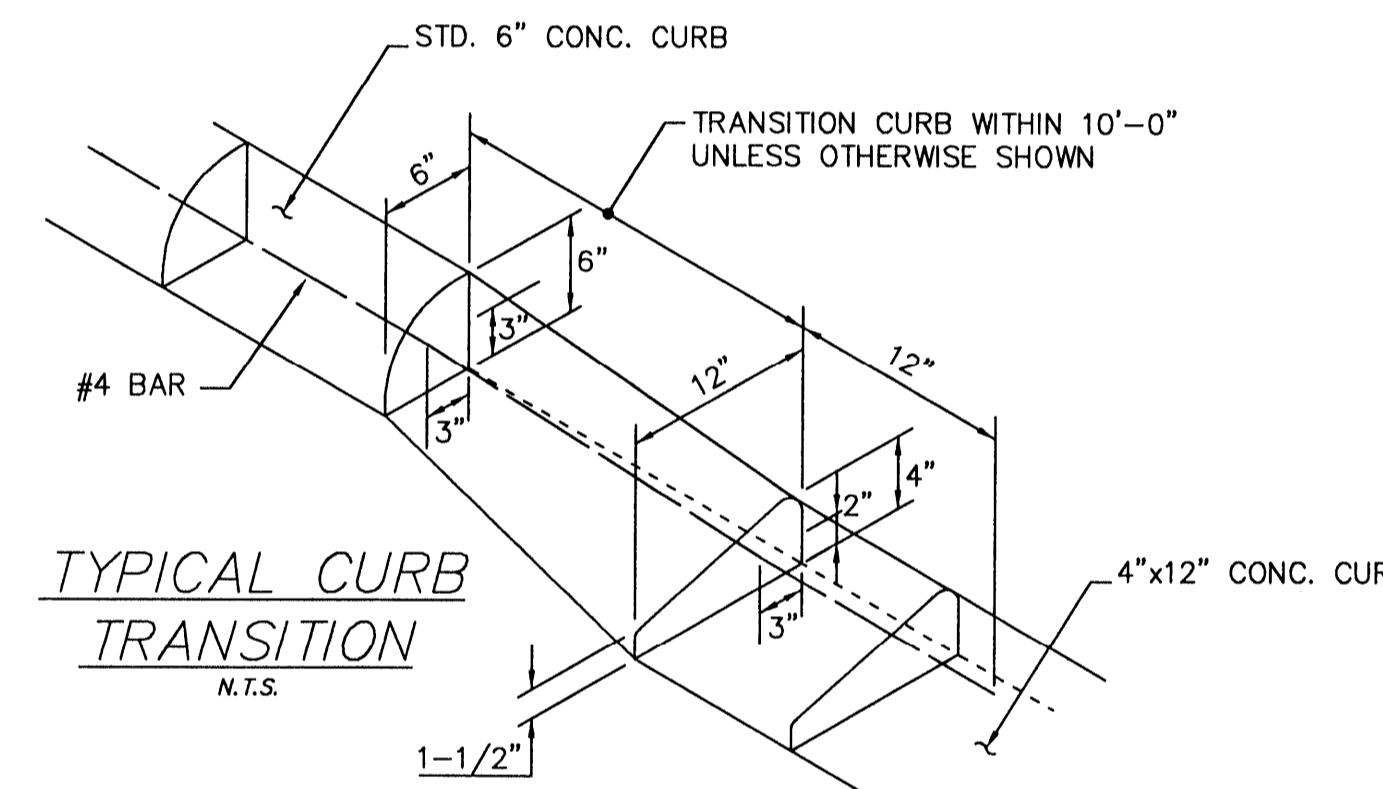
NOTE: SOIL SHALL BE COMPACTED IN ACCORDANCE WITH SPECIFICATIONS PRIOR TO FURTHER ROADWAY CONSTRUCTION.



t = THICKNESS OF CONCRETE PAVEMENT REFER TO SUBDIVISION RULES AND REGULATIONS

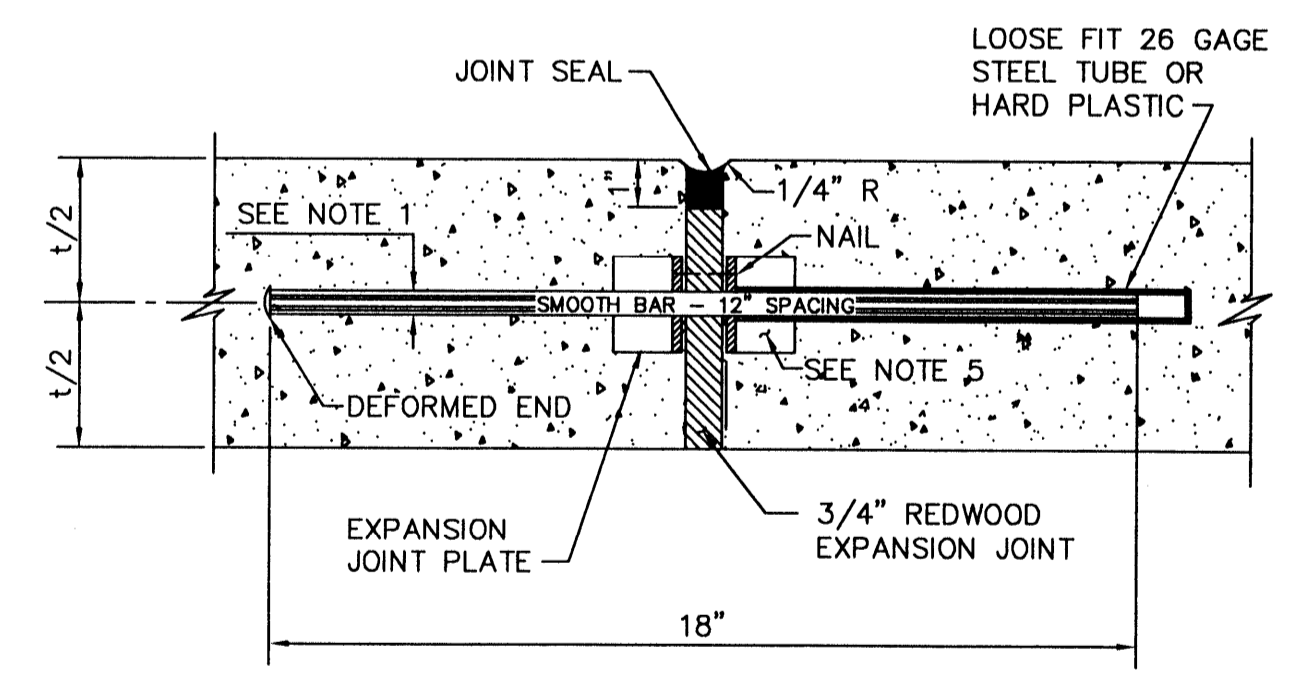
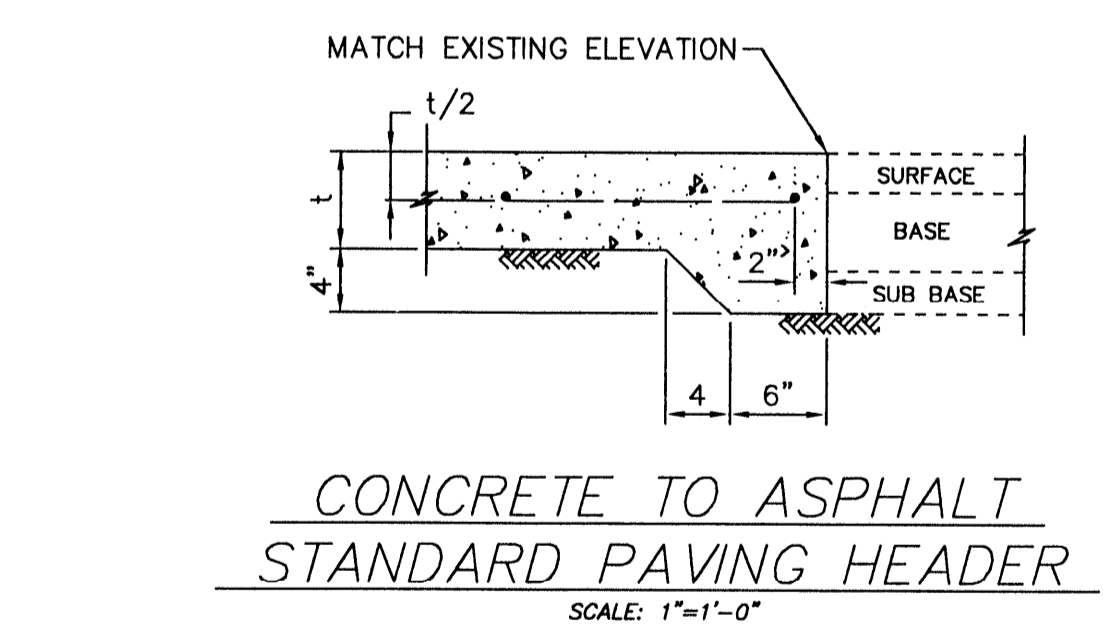
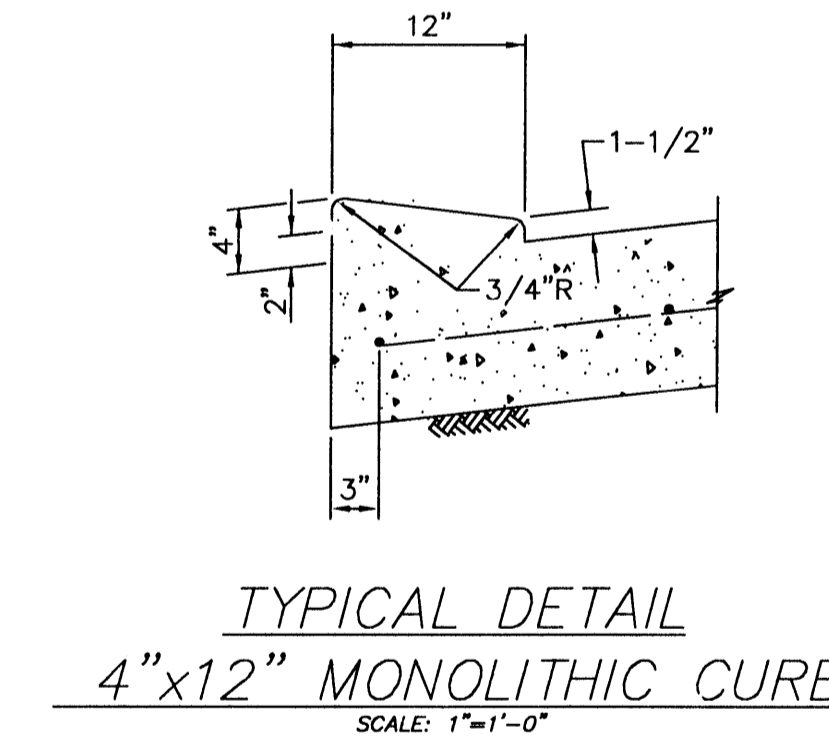
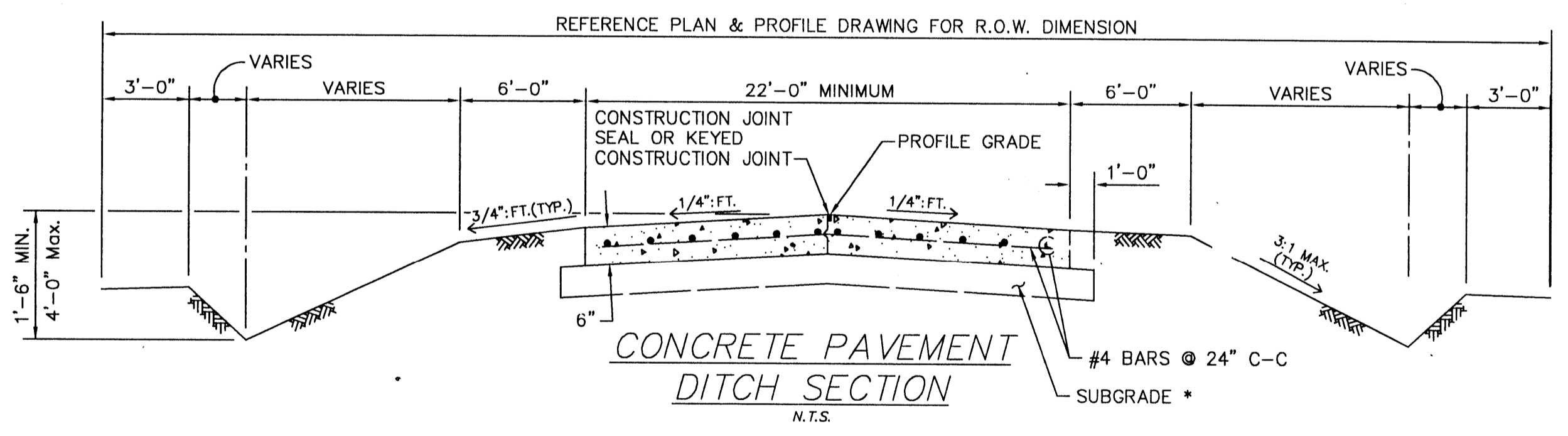
4" x 12" MONOLITHIC AND TRANSITION CURB NOTES:

- 6-inch concrete curb to be constructed on all esplanades, islands and non-residential streets. Residential streets may be constructed with either 6-inch concrete curb or 4-inch x 12-inch concrete curb as noted on plans.
- All 4-inch x 12-inch concrete curbs to be poured monolithically with proposed concrete pavement.
- Transitions from 6-inch concrete curb to 4-inch x 12-inch concrete curb to be accomplished within 10 feet, unless otherwise shown. If this 10-foot transition curb is not poured monolithically with the pavement, then reinforcing steel as shown above in typical detail 4-inch x 12-inch transition curb is to be installed.



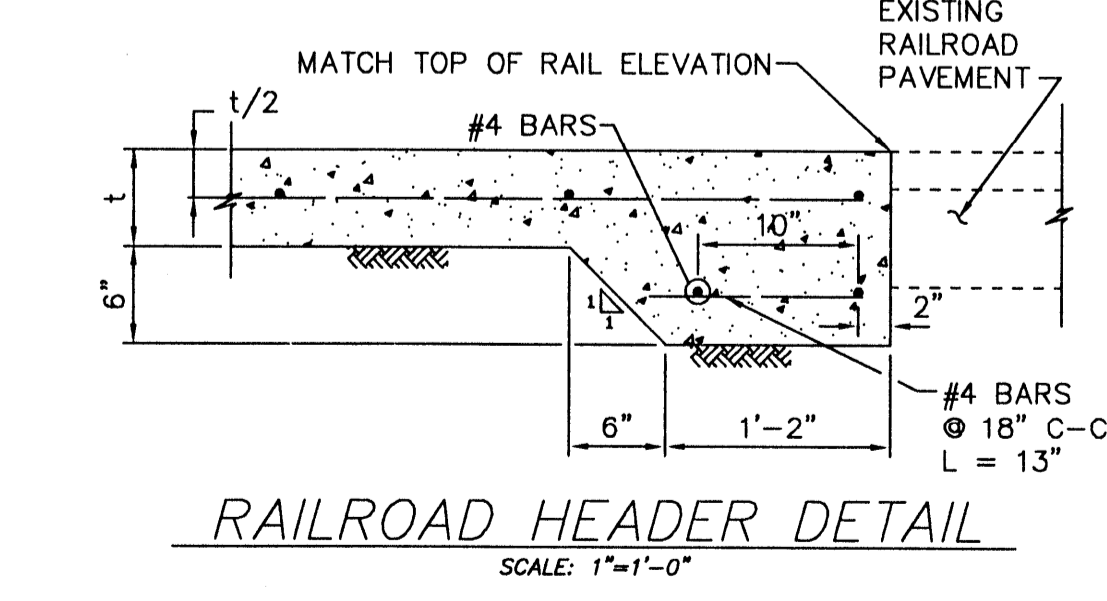
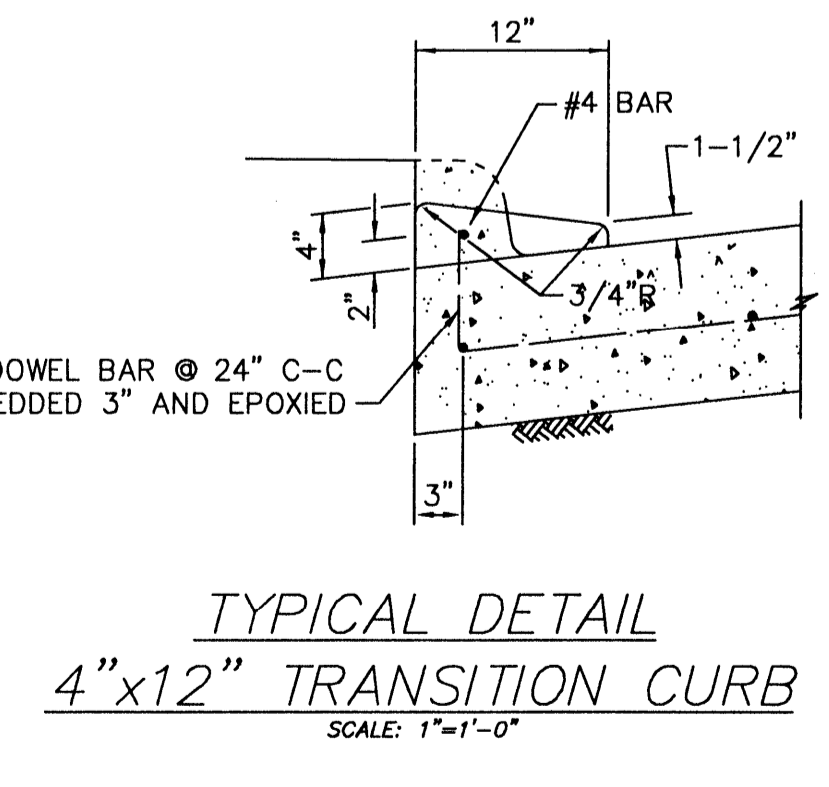
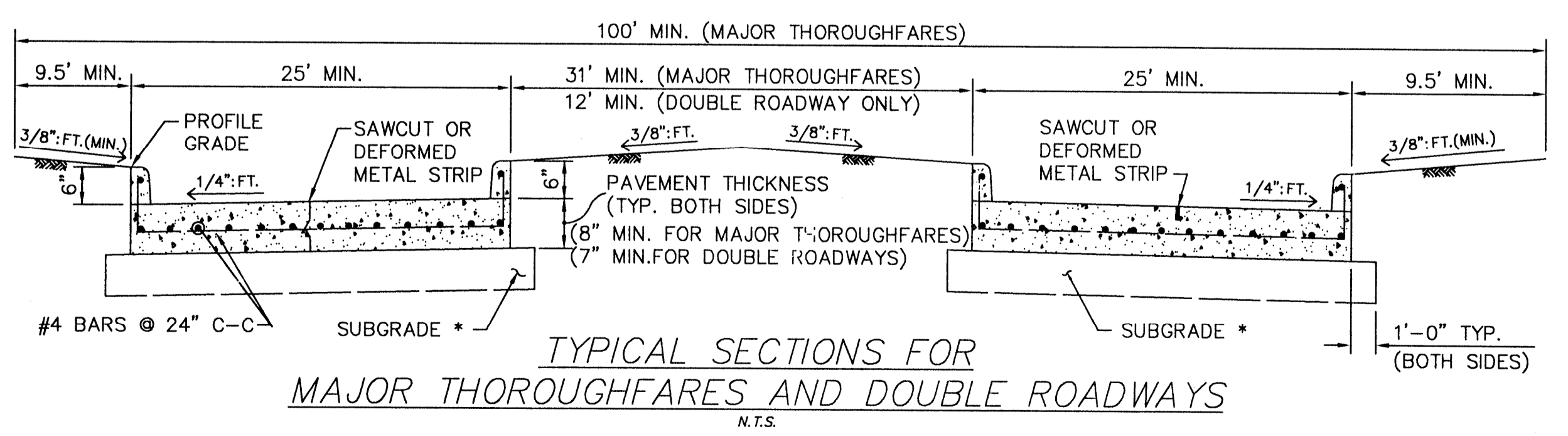
CONSTRUCTION JOINT DETAIL

SCALE: 1 1/2"=1'-0"



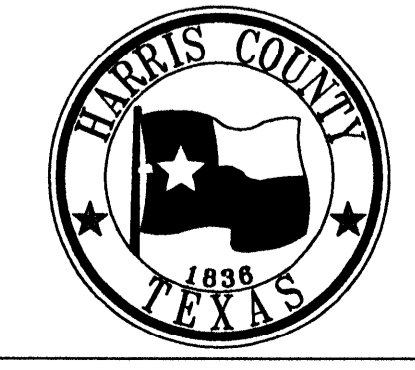
NOTES:

- Dowels for pavement expansion joints shall be 3/4" # for 6" to less than 7" pavement thickness, 1" # for 7" to less than 9" pavement thickness and 1 1/4" # for 9" or greater pavement thickness.
- Expansion joint shall be placed at the end of each curb return and at maximum 80' spacing (See plans).
- All joint seal material shall be asphalt rubber in accordance with ASTM designation D3405.
- If deformed metal strips are allowed, they shall be staked in place with #3 bars.
- Pre-manufactured joint plate.



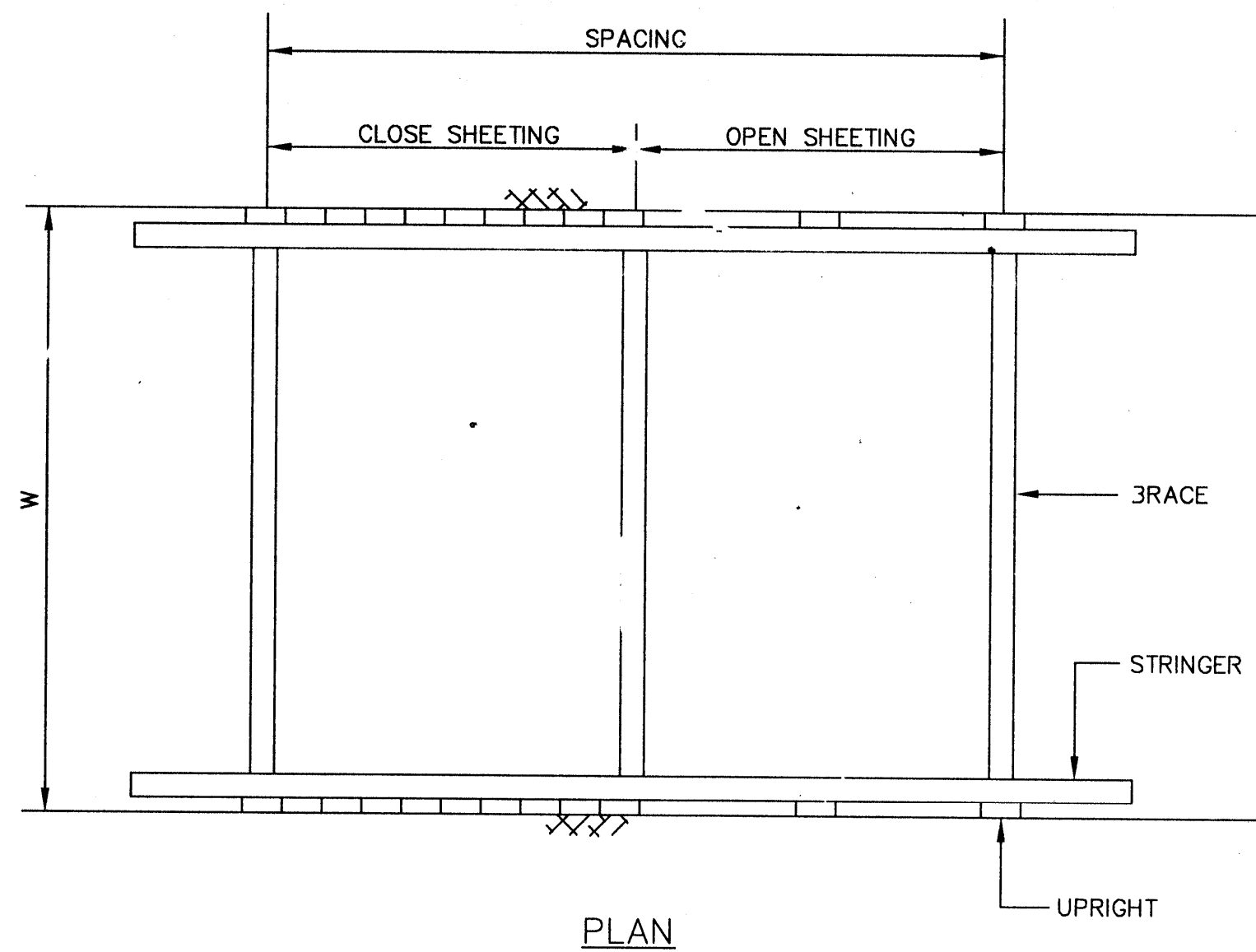
NO.	REVISIONS	DATE	NAME

HARRIS COUNTY ENGINEERING DEPARTMENT



Bohling Kullman
12-27-99

PROJECT TITLE	CHAMPIONS ARBOR	JOB NO.
DESIGN BY	L.M.J.	480U&480P
SCALE	AS NOTED	PAVING1
DATE	09/03/93	18 OF 21
APPROVED BY		S/D-1

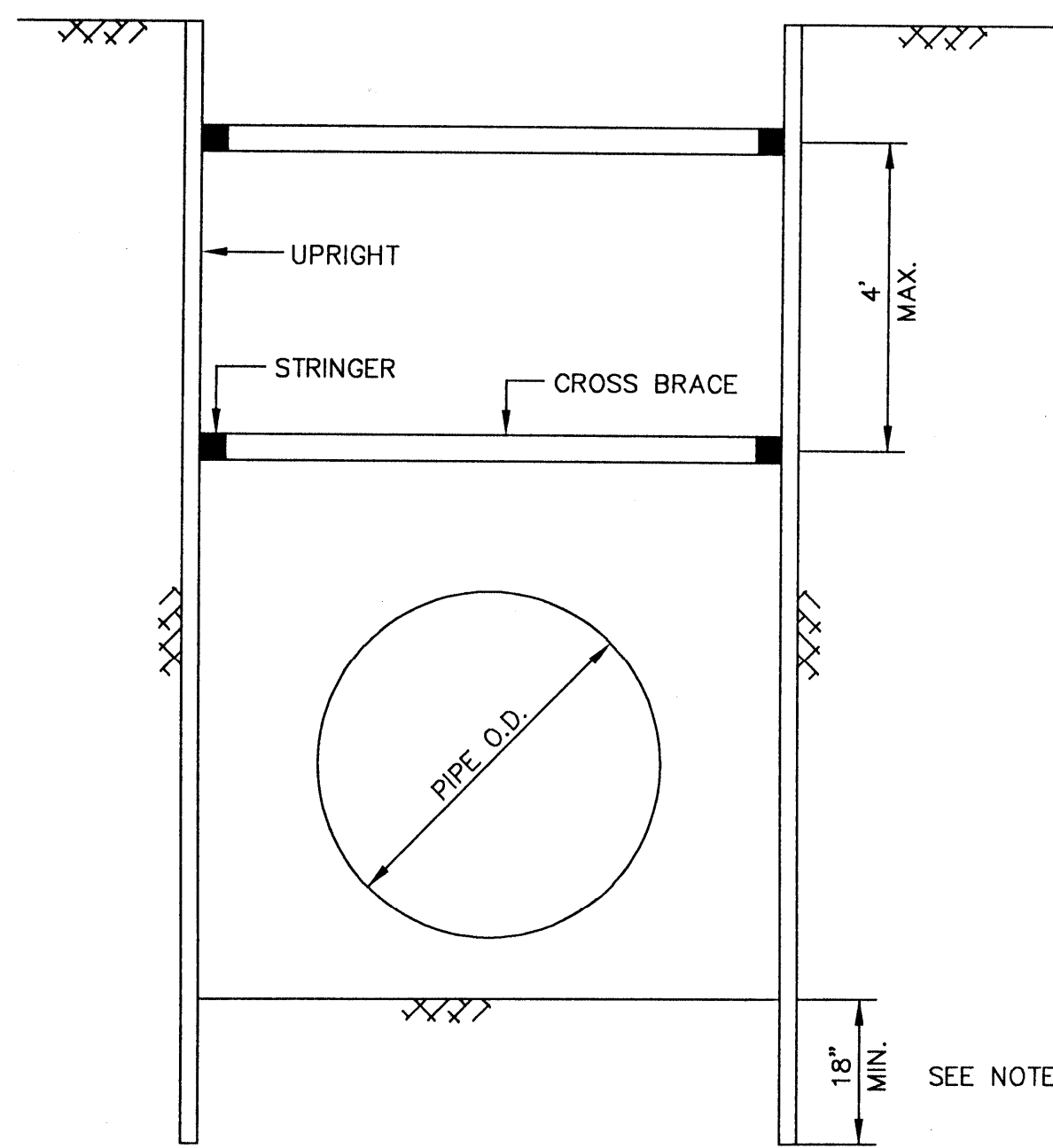


TRENCH SHORING - MINIMUM REQUIREMENTS (**)

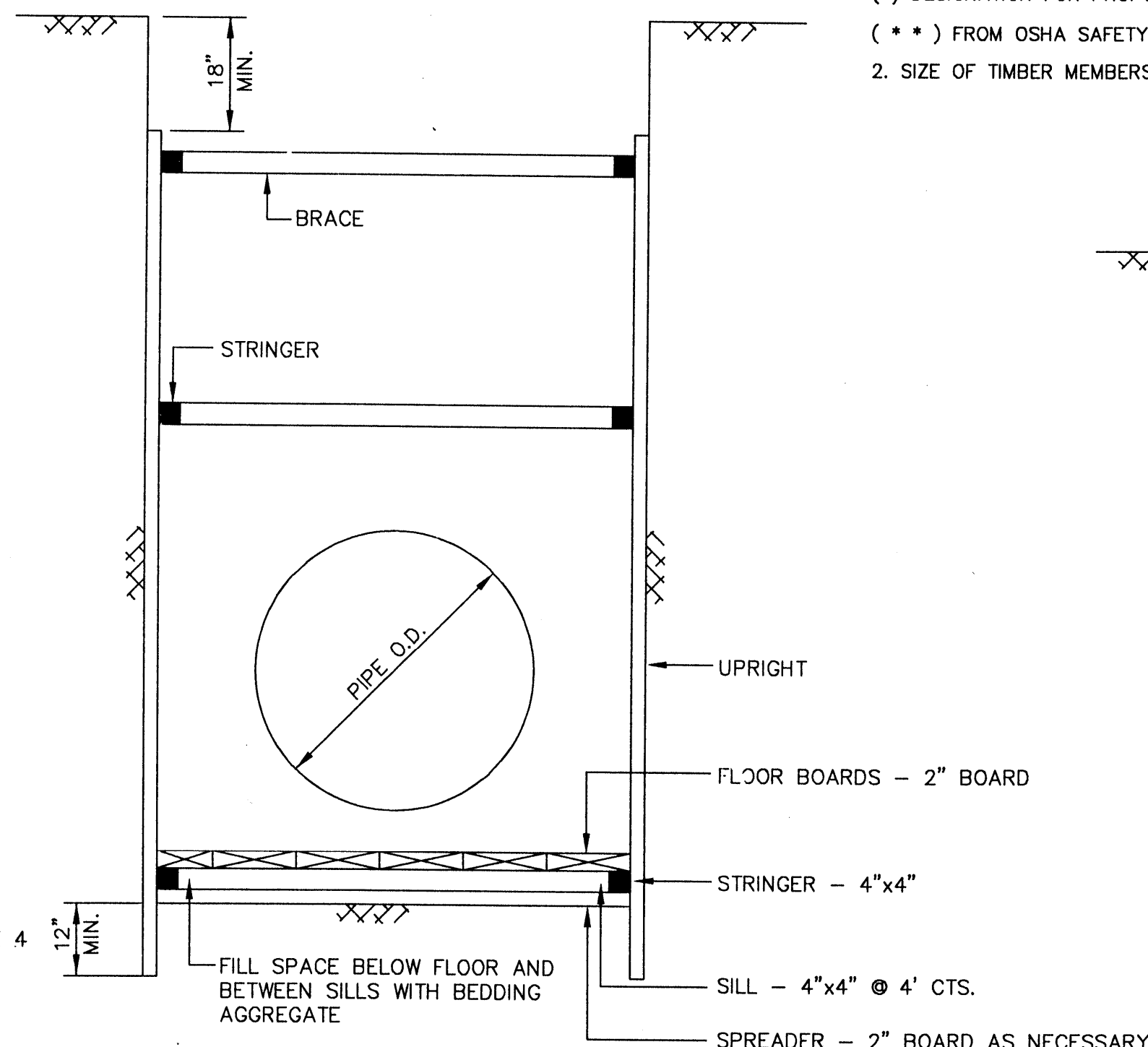
DEPTH OF TRENCH FEET	KIND OF CONDITION OF EARTH TYPE	SIZE AND SPACING OF MEMBERS										
		UPRIGHTS		STRINGERS		CROSS BRACES ¹						
		MINIMUM DIMENSION	MAXIMUM SPACING	MINIMUM DIMENSION	MAXIMUM SPACING	WIDTH OF TRENCH				MAXIMUM SPACING		
						UP TO 3 FEET	3 TO 6 FEET	6 TO 9 FEET	9 TO 12 FEET	12 TO 15 FEET	VERTICAL	HORIZONTAL
		INCHES	FEET	INCHES	FEET	INCHES	INCHES	INCHES	INCHES	INCHES	FEET	FEET
5 TO 10	(A) HARD, COMPACT	3x4 OR 2x6	6		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		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)

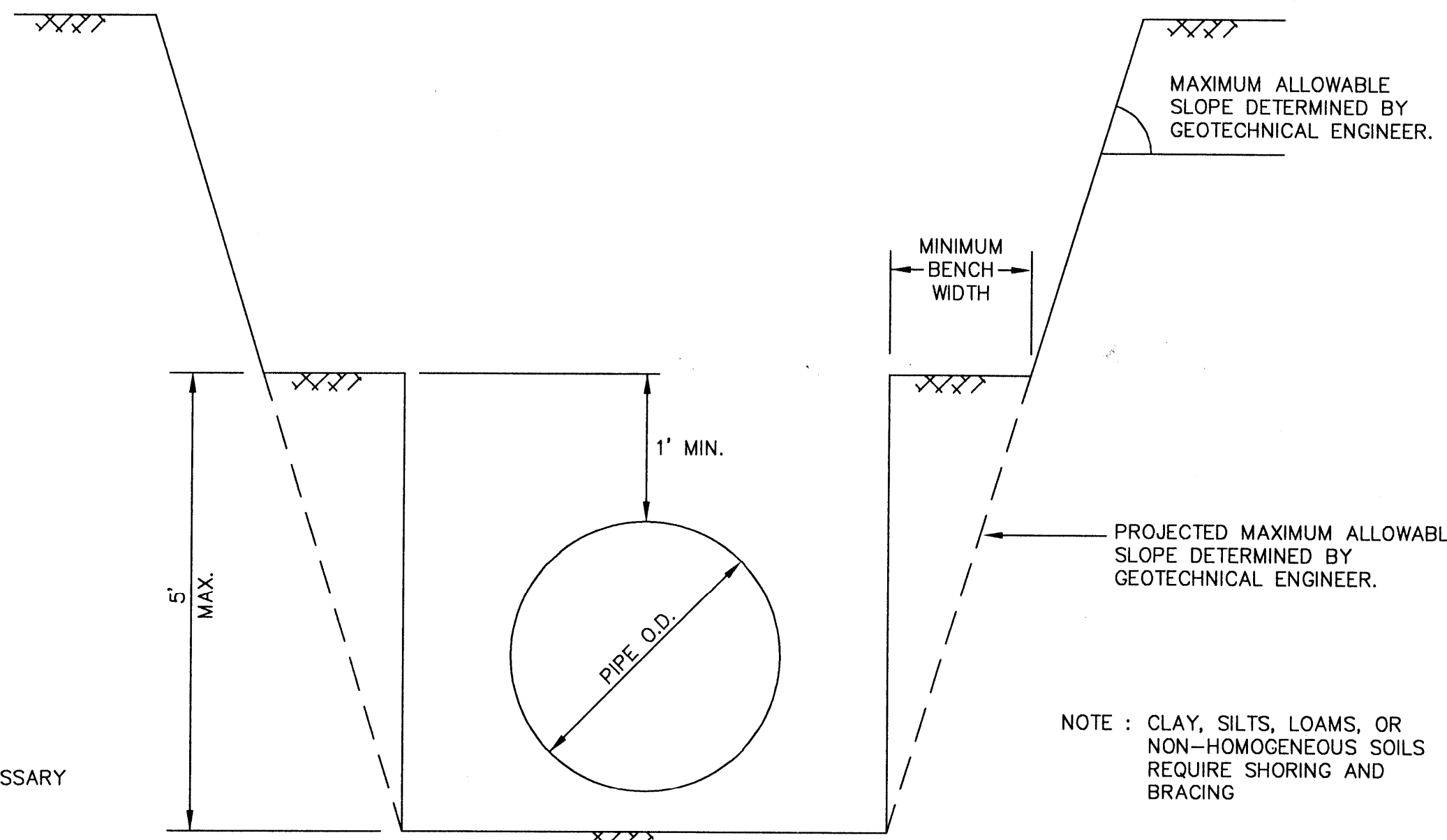
- TRENCH SAFETY SYSTEM TO MEET, AS A MINIMUM, THE REQUIREMENTS OF OSHA SAFETY AND HEALTH REGULATIONS PART 1926, SUBPART P.
- THE CONTRACTOR MAY ELECT TO USE AN ALTERNATE SYSTEM TO THE TIMBER TRENCH SHORING SHOWN IN THE TABLE. THE ALTERNATE SYSTEM, BE IT A TRENCH BOX, STEEL SHEET PILING, TRENCH JACKS 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.
- IF 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.



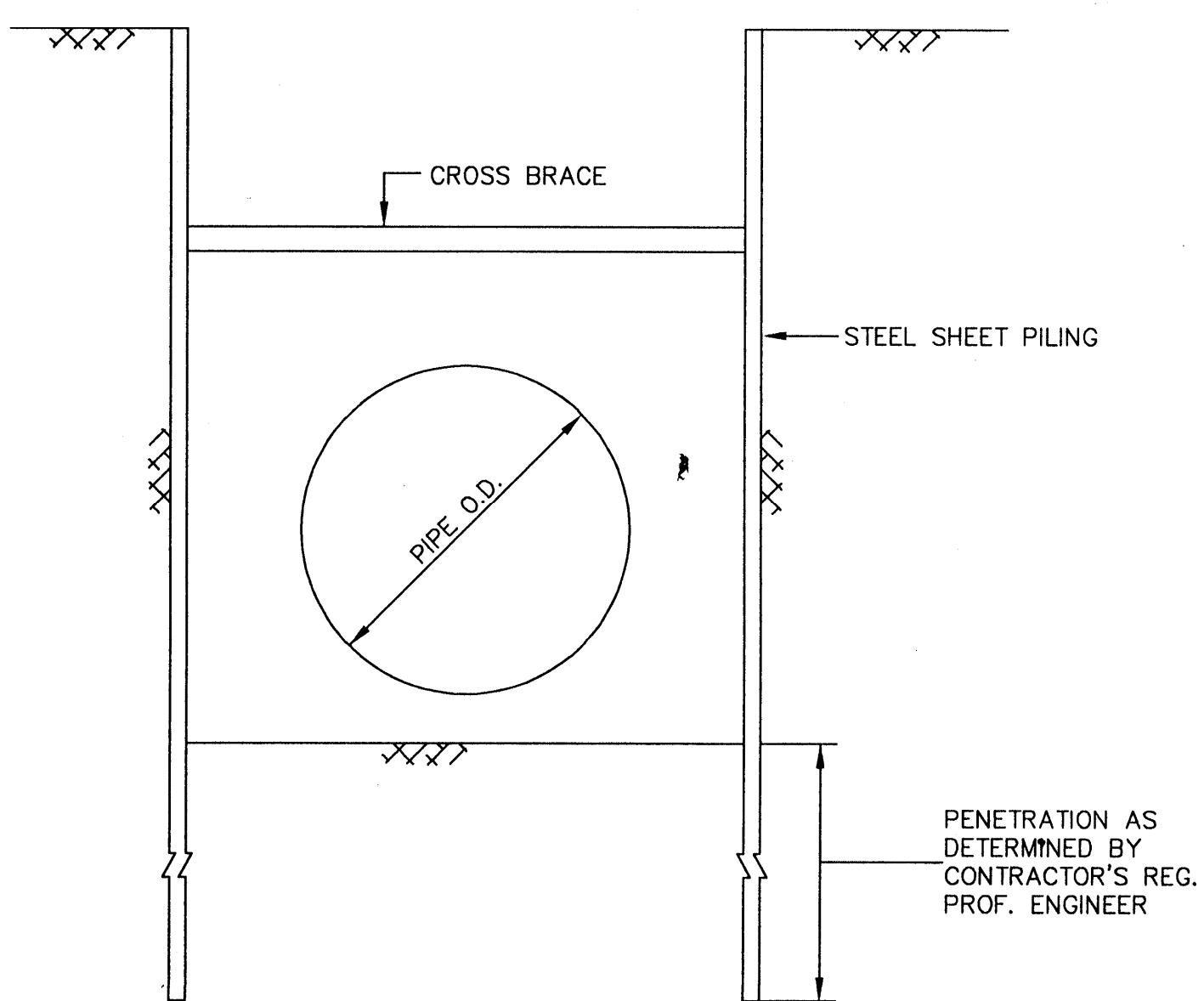
TIMBER TRENCH SHORING



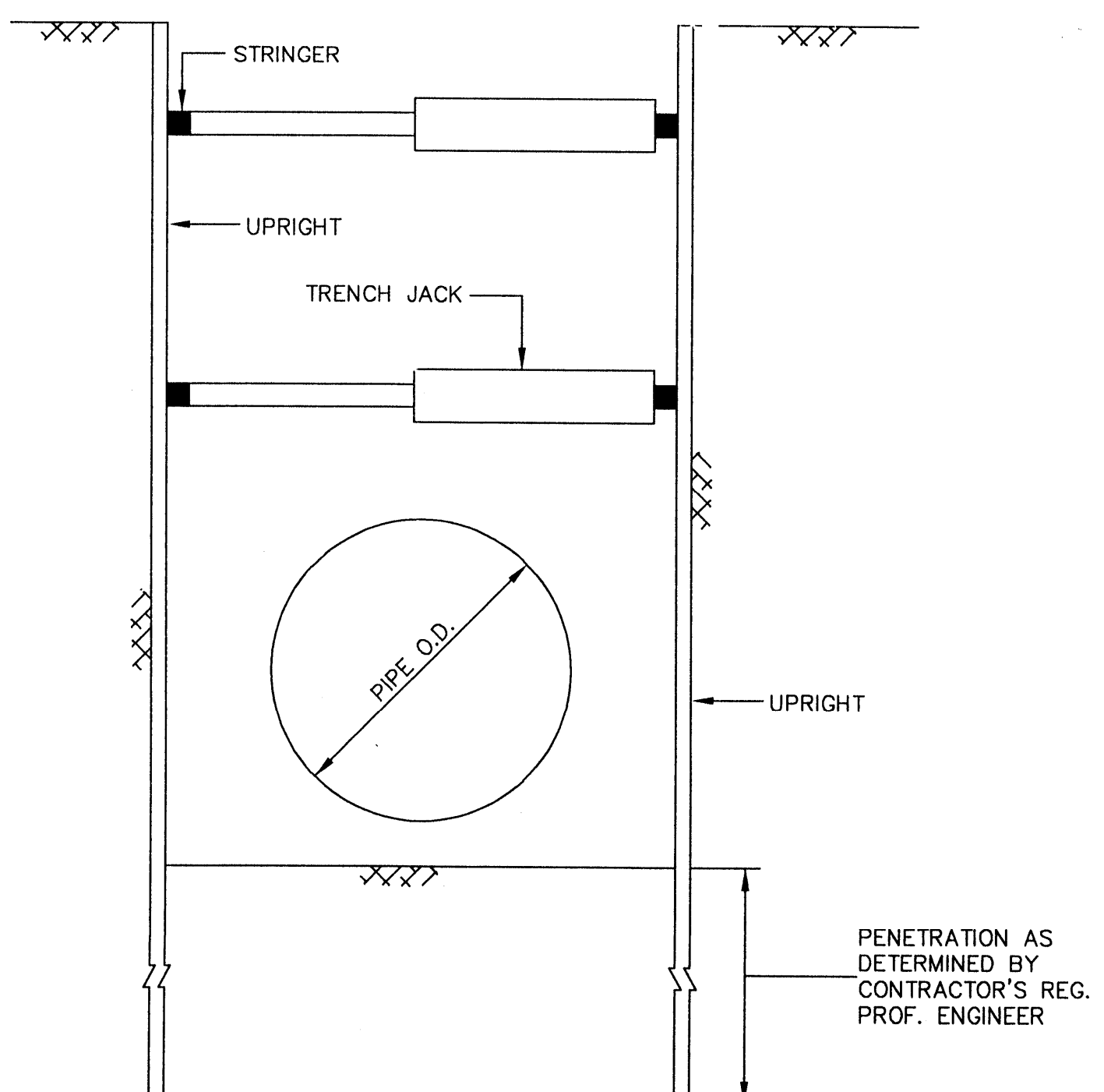
PERMANENT TIMBER TRENCH SHORING



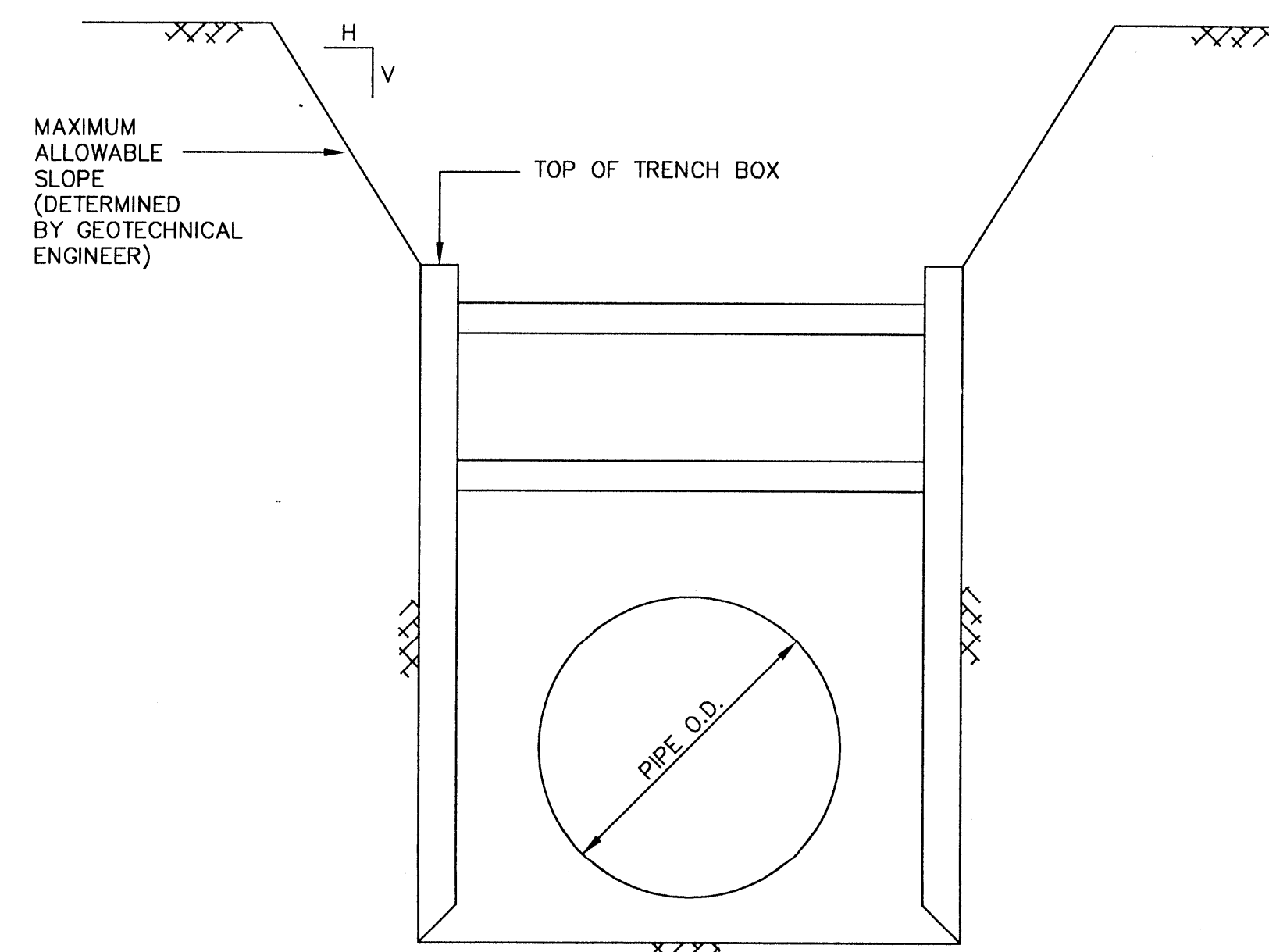
UNSHORED SLOPED TRENCH



STEEL PILING *



TRENCH JACK AND STRINGER *



TRENCH BOX *

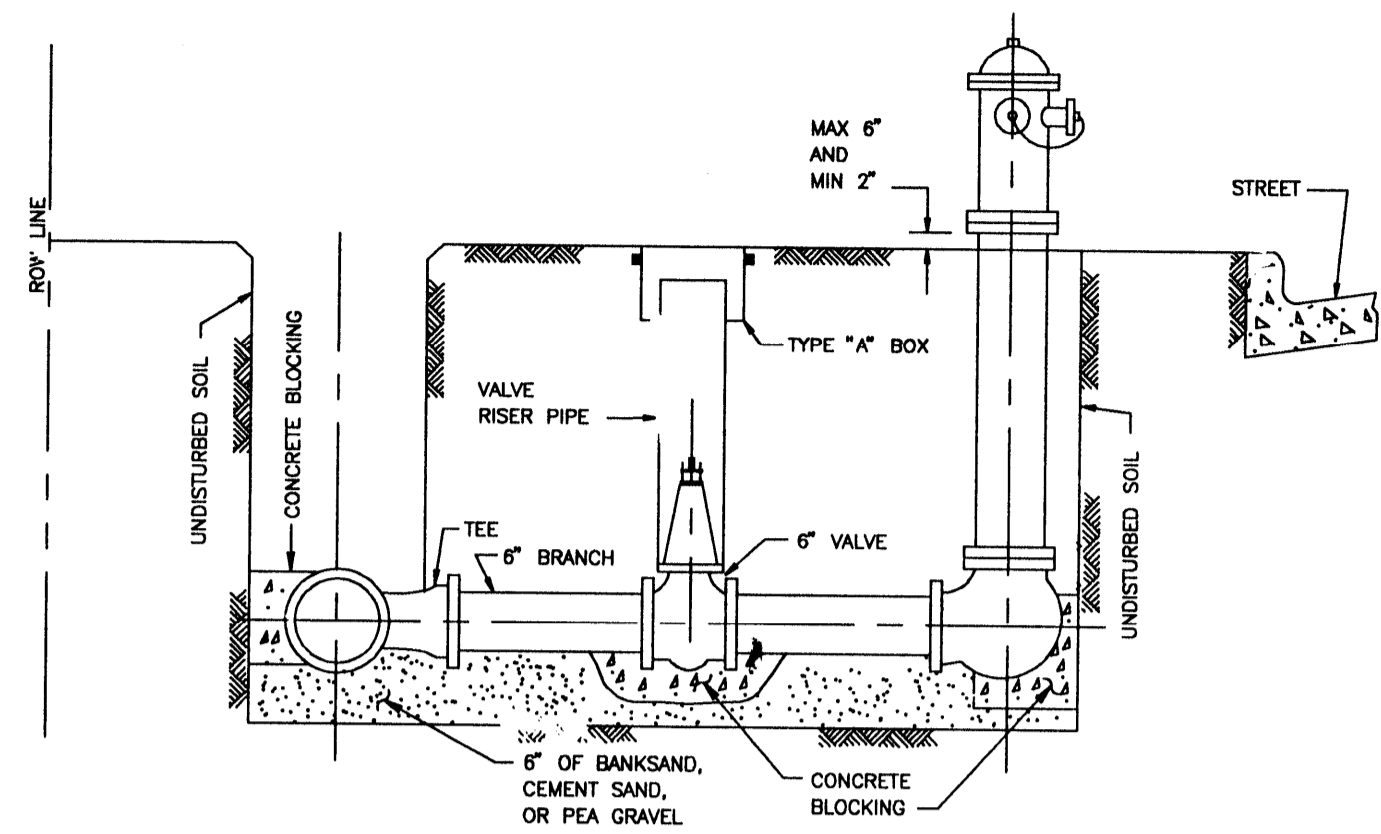
SUBMITTED:	DESIGNED BY: BOBBY WILSON
SCALE: N/A	DRAWN BY: BILL DORRIS
DATE: OCTOBER 1999	SHEET NO. 21 OF 21 SHEETS
SURVEY BY:	CITY DWG. NO: TRENCH.DWG
F B NO: 480J&480P	

Bobby K. Wilson
12-27-99

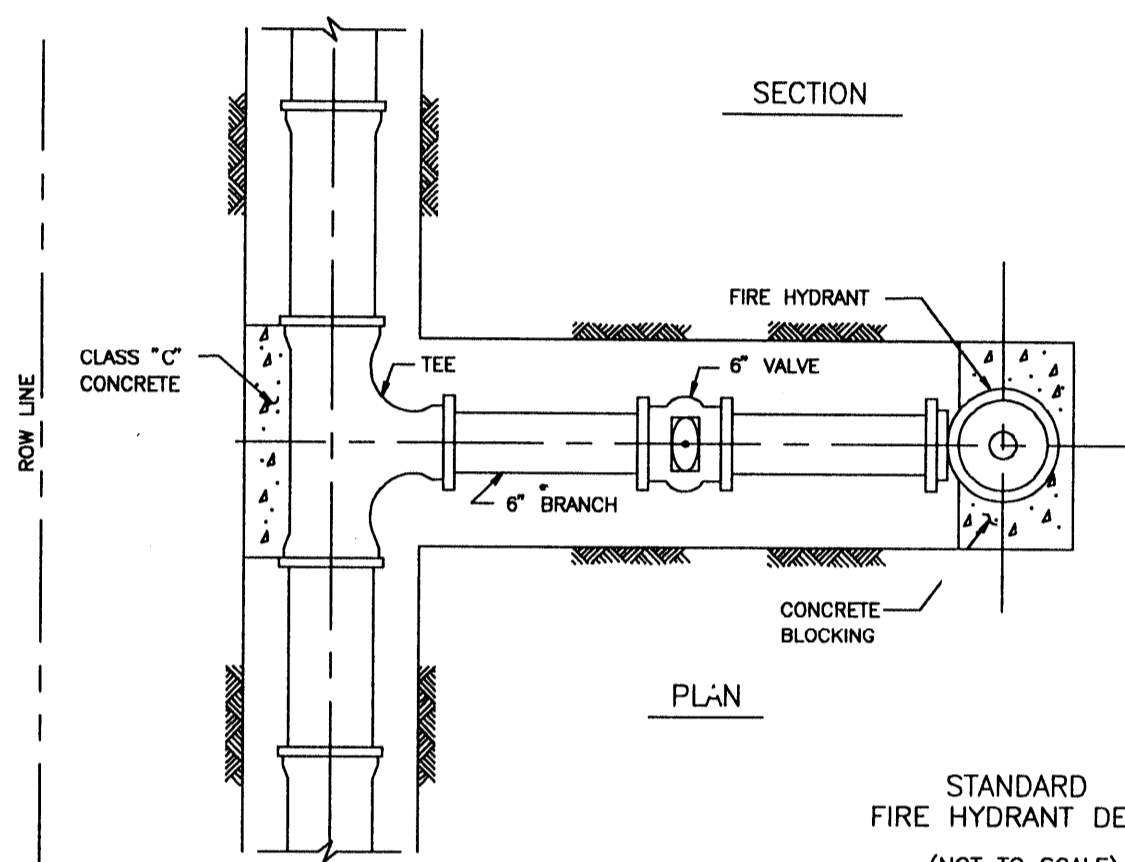
TRENCH SAFETY

NOTES:

1. LOCATE FIRE HYDRANTS AT P_{0.5} OF THE INTERSECTION CURB RADIUS, 3 FEET BEHIND CURB OR PROJECTED FUTURE CURB.
2. IN 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.



SECTION

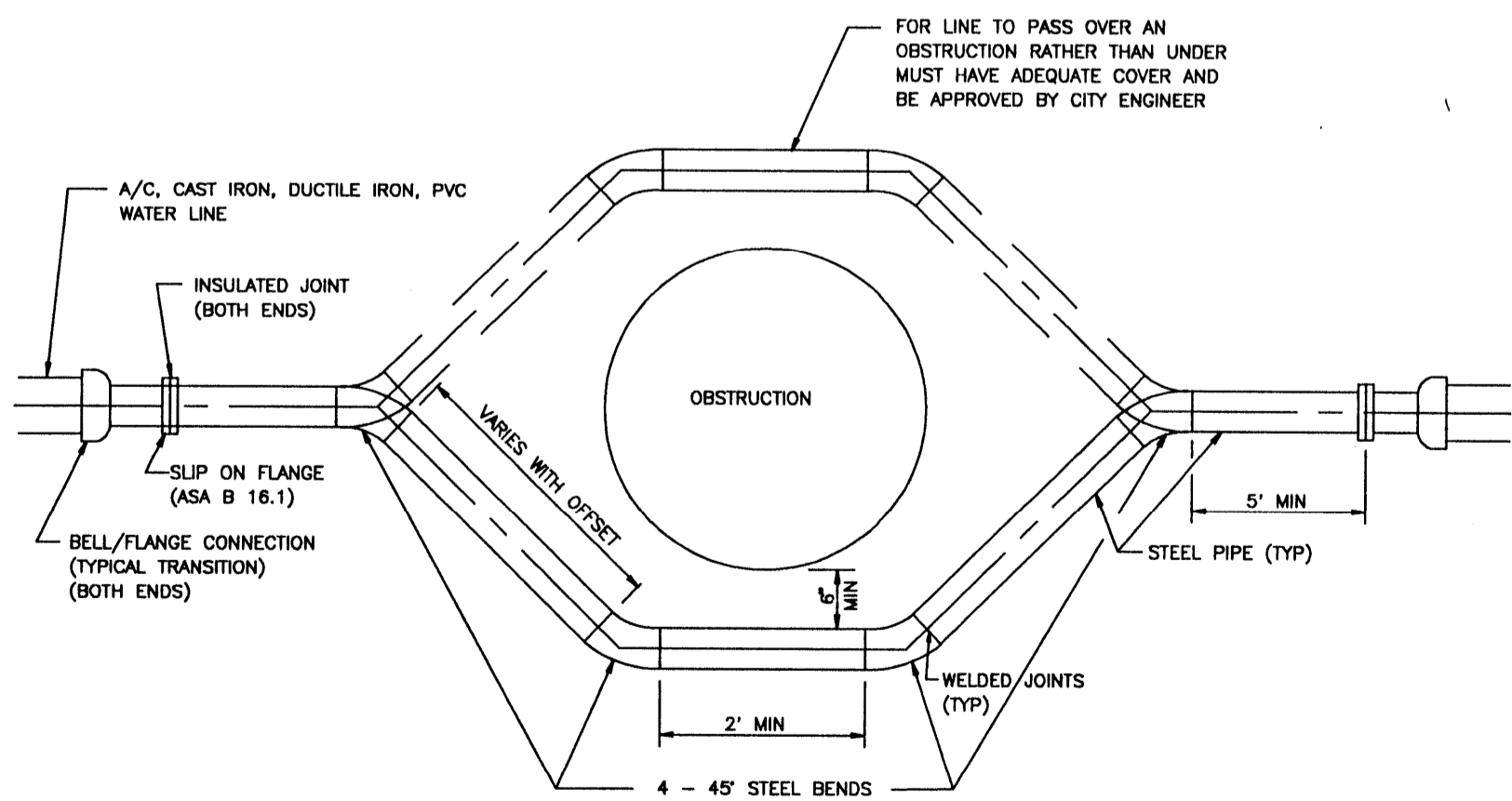
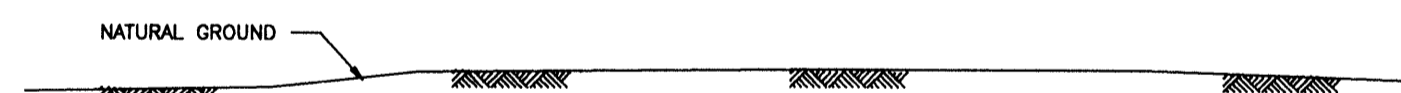


STANDARD FIRE HYDRANT DETAIL (NOT TO SCALE)

EFF DATE: JUL-01-97 DWG NO: 02520-01

NOTE:

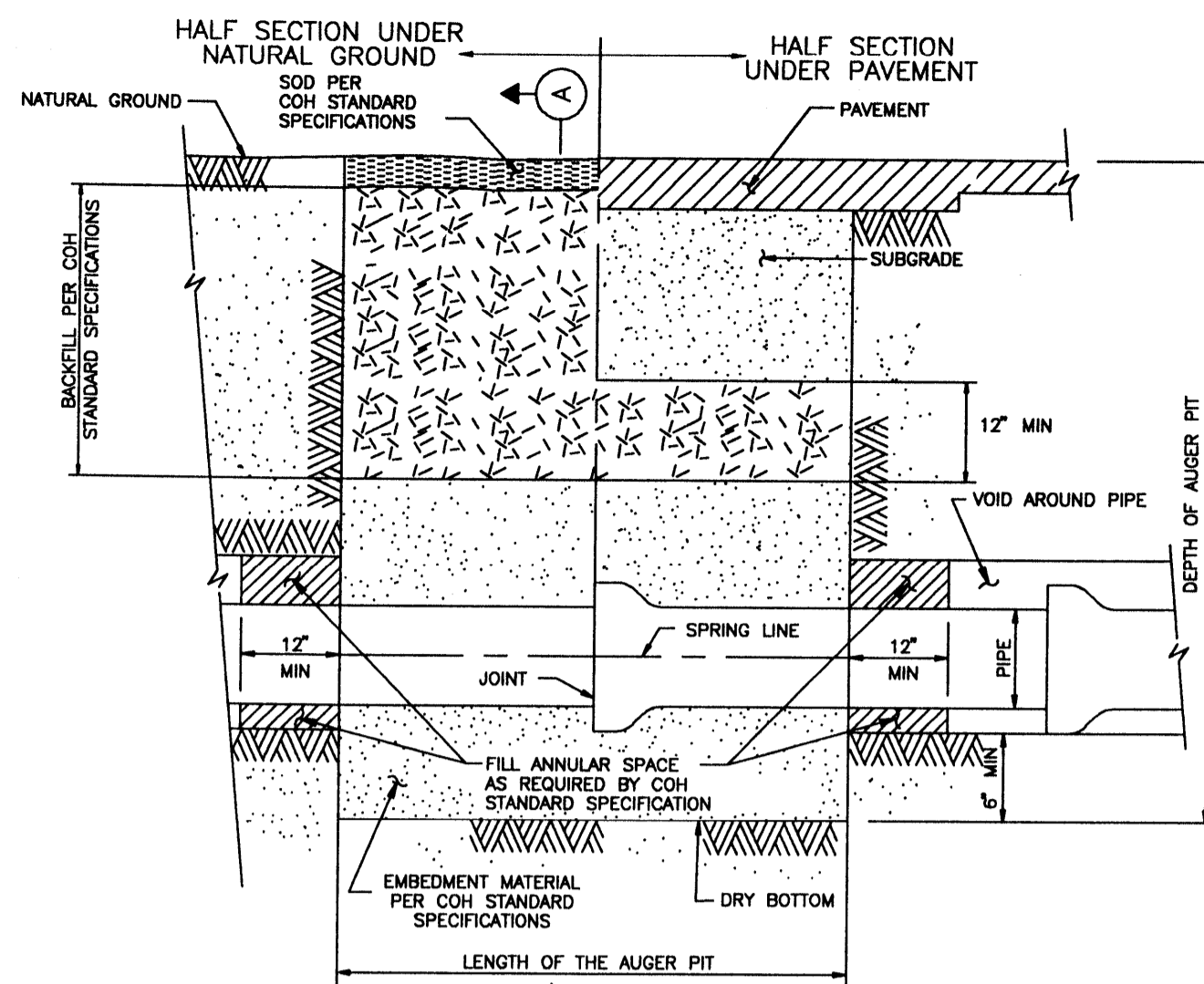
1. MATERIALS AND COATINGS TO BE IN ACCORDANCE WITH WATER MAIN STANDARD SPECIFICATIONS.
2. RESTRAIN EXISTING PIPING BEYOND STEEL SECTION AS REQUIRED TO PREVENT MOVEMENT.



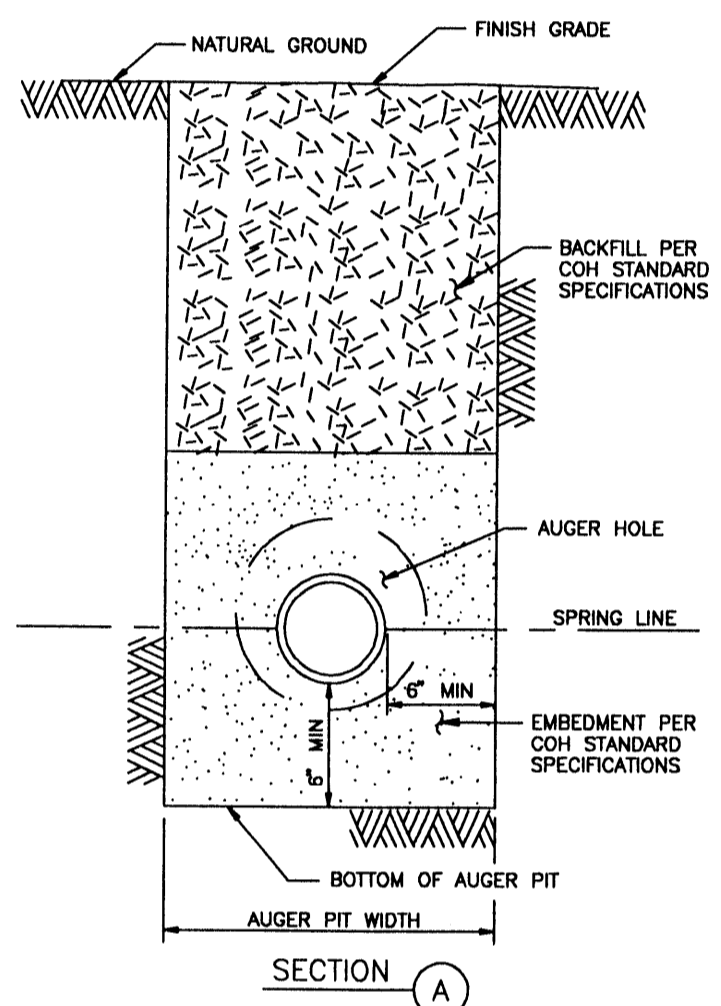
TYPICAL STEEL SECTION FITTINGS	
4 -	45° STEEL BENDS
2 -	BELL-FLANGE ADAPTERS
2 -	SLIP-ON FLANGES 150 #
2 -	INSULATED JOINT KITS

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

EFF DATE: JUL-28-98 DWG NO: 02502-02



ELEVATION



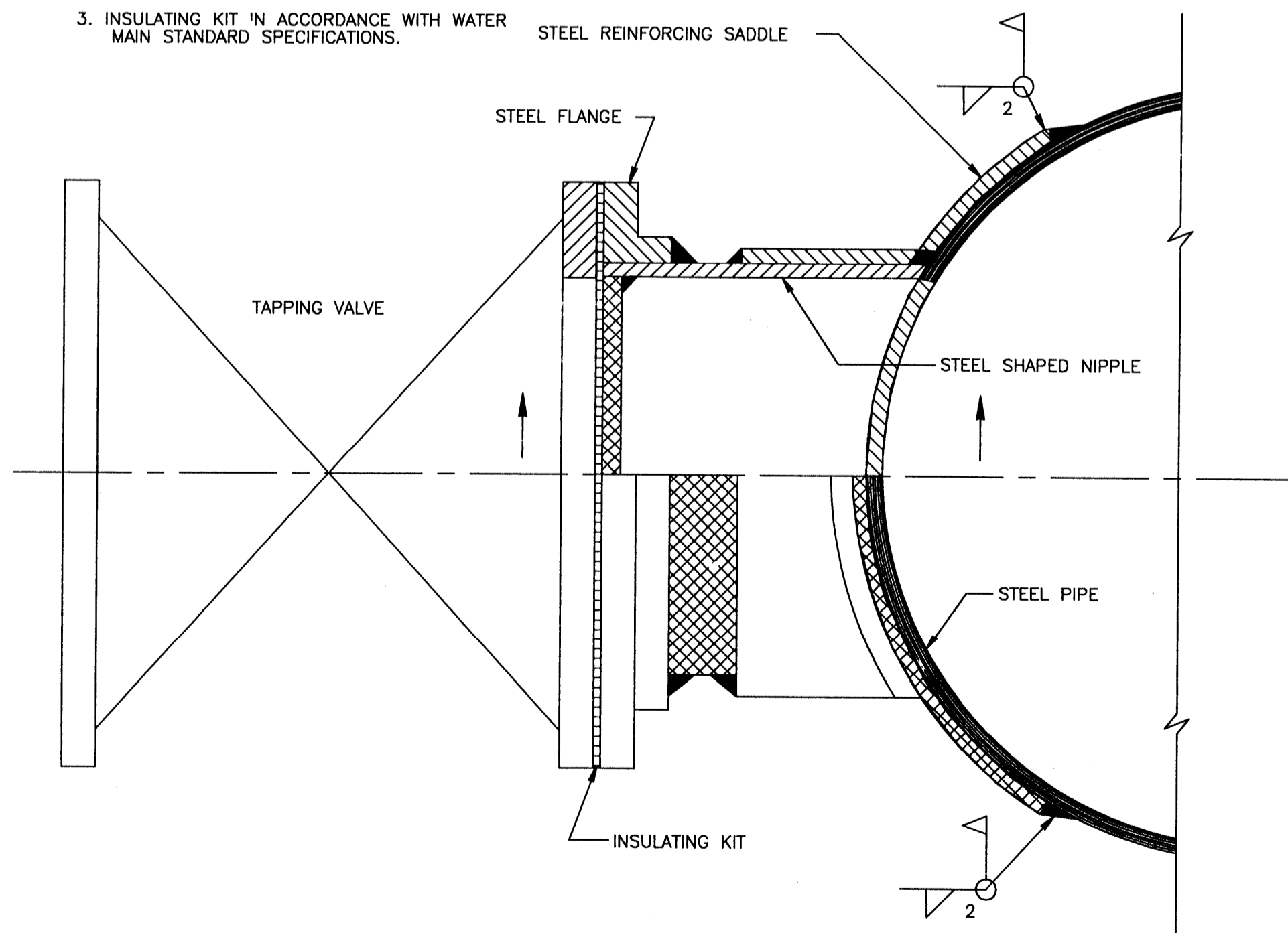
SECTION A

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

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

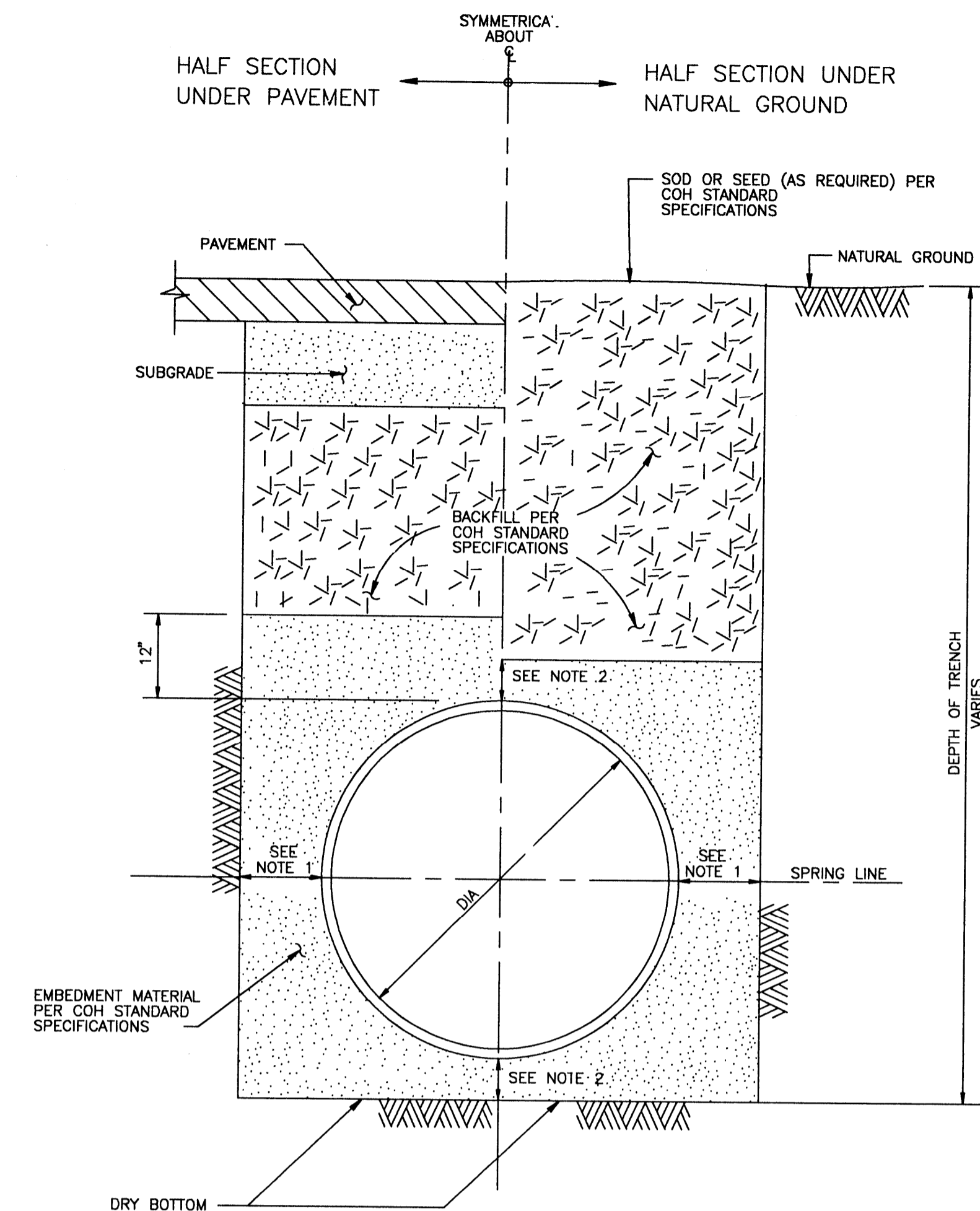
GENERAL NOTES:

1. PROVIDE STEEL TAPPING SLEEVE AS PER WATER MAIN SPECIFICATIONS.
2. WELD SHALL BE AS NOTED IN WELD SYMBOLS.
3. INSULATING KIT IN ACCORDANCE WITH WATER MAIN STANDARD SPECIFICATIONS.



STANDARD TAP TO STEEL MAIN (NOT TO SCALE)

EFF DATE: JUL-28-98 DWG NO: 02512-04

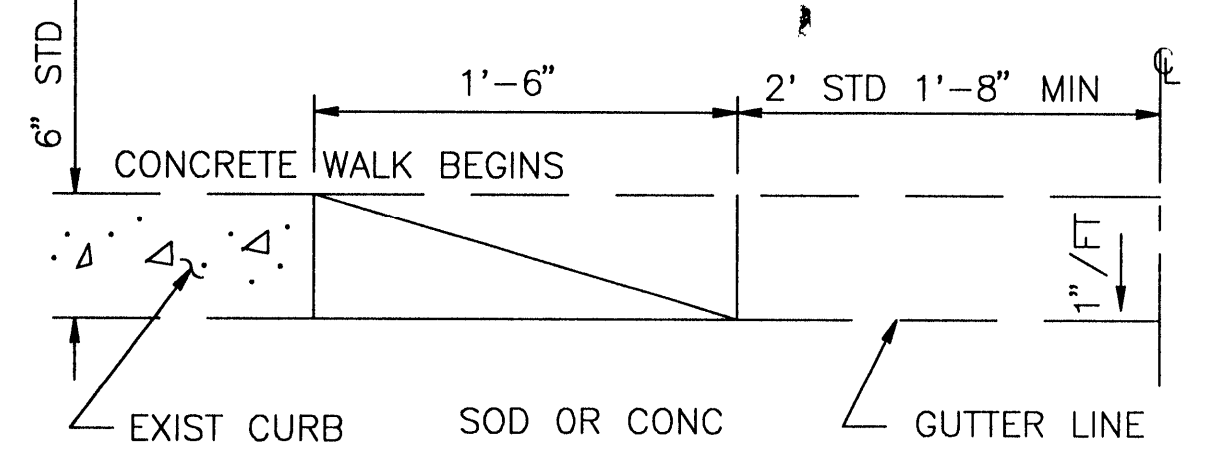
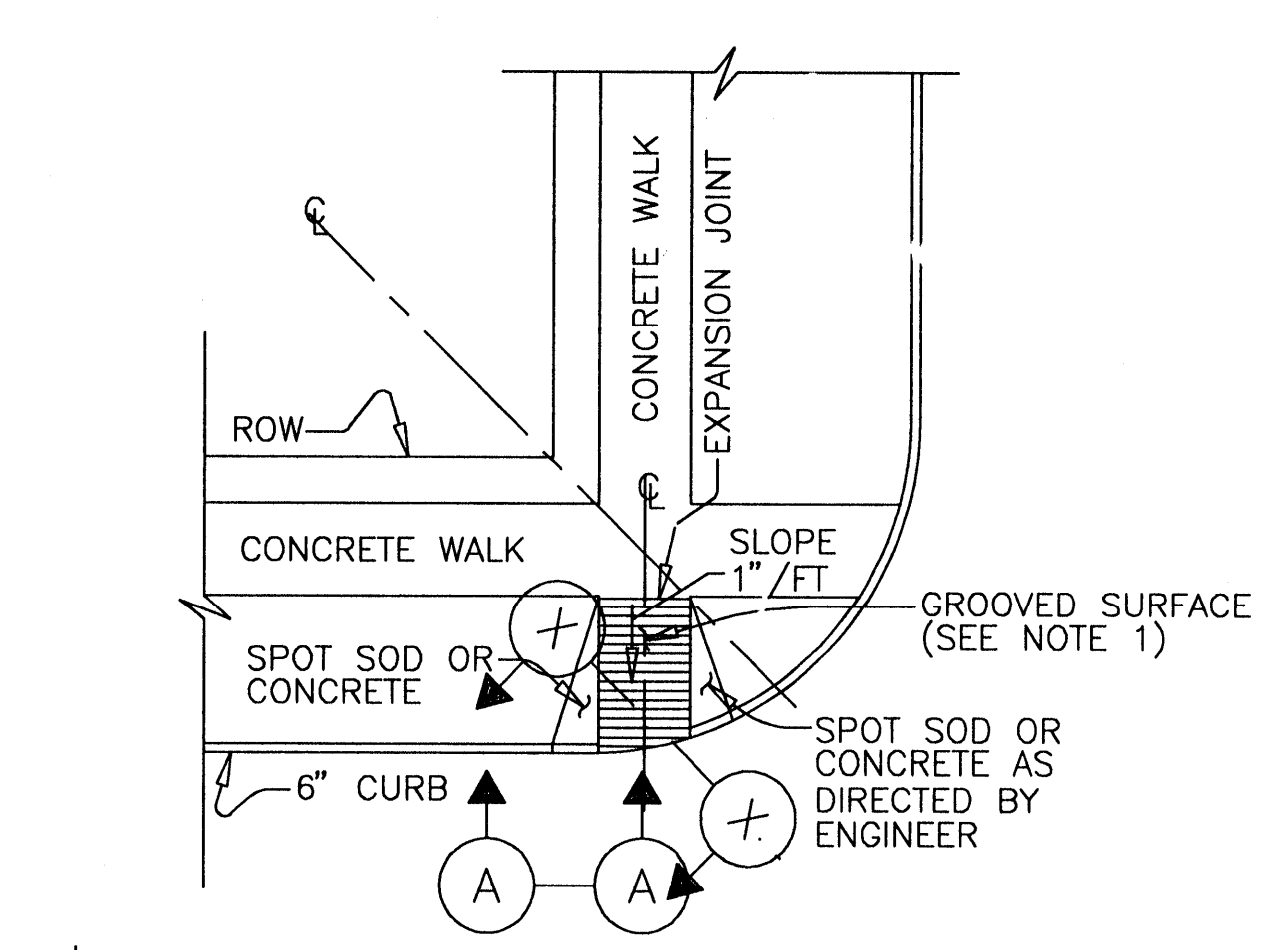


- NOTE:**
1. SEE COH STANDARD DETAIL
 2. 6" MIN. FOR MAIN DIAMETER ≤ 20"
 - 12" MIN. FOR MAIN DIAMETER > 20"

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

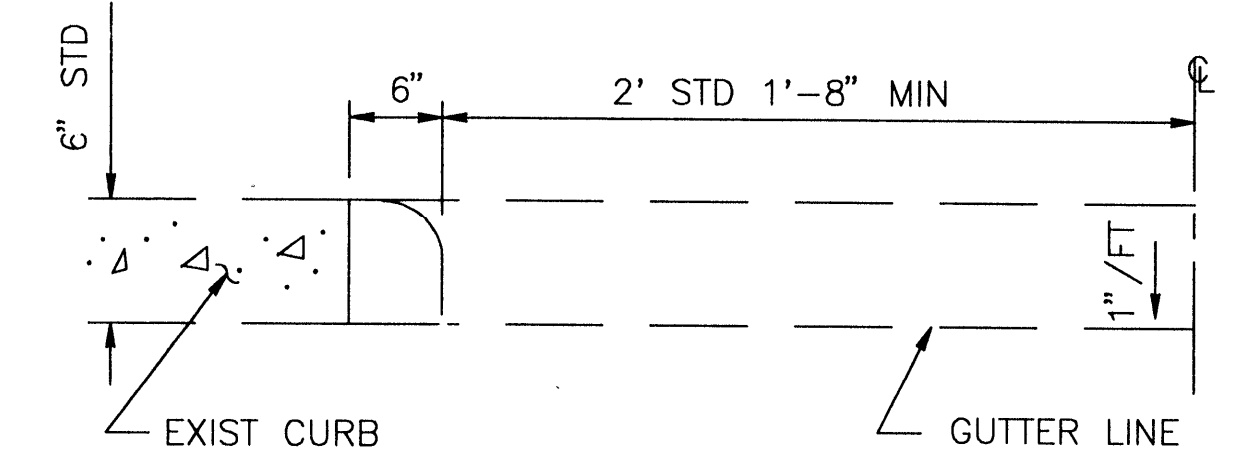
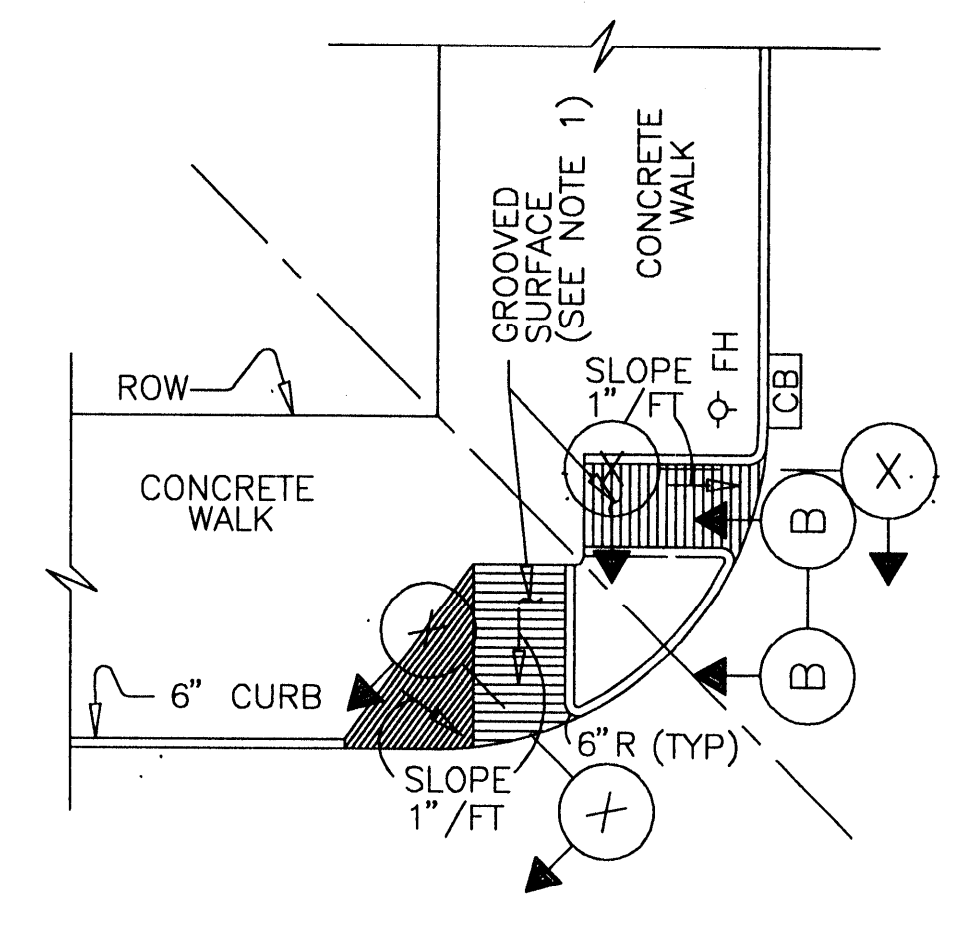
EFF DATE: JUL-28-98 DWG NO: 02511-01

CITY OF HOUSTON	
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
REVIEWED BY PRIVATELY FUNDED PUBLIC WORKS <i>Walter Wilson</i>	CITY FUNDED PUBLIC WORKS
PROJECT MANAGER WATER <i>Walter Wilson</i>	
CONSTRUCTION WASTEWATER <i>Walter Wilson</i>	
CHEF ENGINEER STORM WATER <i>Walter Wilson</i>	
OTHER APPROVAL	
TRAFFIC AND TRANSPORTATION	SPONSOR DEPARTMENT
CITY ENGINEER <i>Walter Wilson</i>	DATE 1/1/2000
DIRECTOR OF PUBLIC WORKS AND ENGINEERING	DATE
SUBMITTED:	DESIGNED BY: BOBBY WILSON
SCALE: N/A	DRAWN BY: BILL DORRIS
DATE: OCTOBER 1999	SHEET NO. 17 OF 21 SHEETS
SURVEY BY:	CITY DWG. NO: WATERD.DWG
F B NO: 480U&480P	
WATER DETAILS	
PROVIDENT CONSULTING, INC. 1200 WEST 11TH ST. HOUSTON, TEXAS 77008 (713)802-1019	



SECTION A

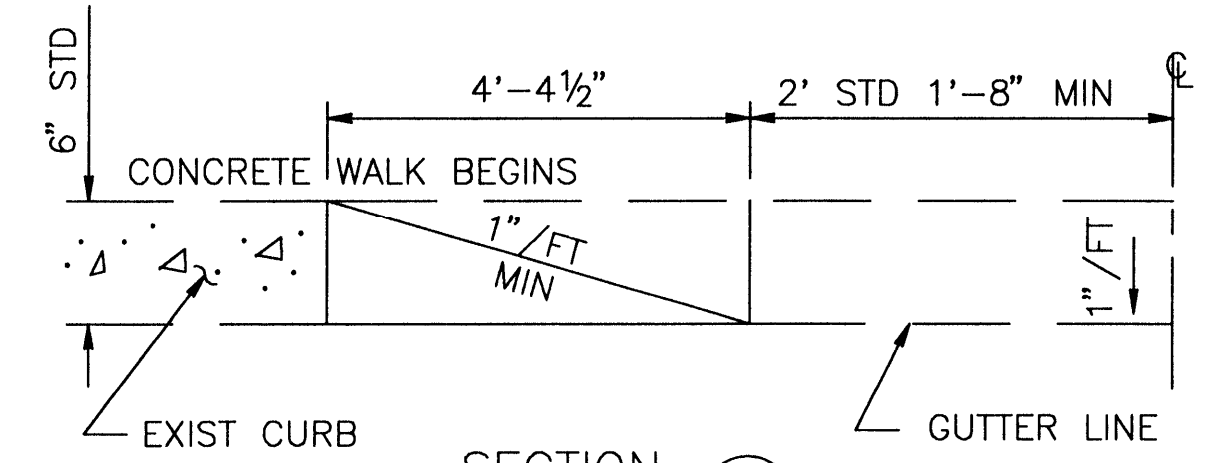
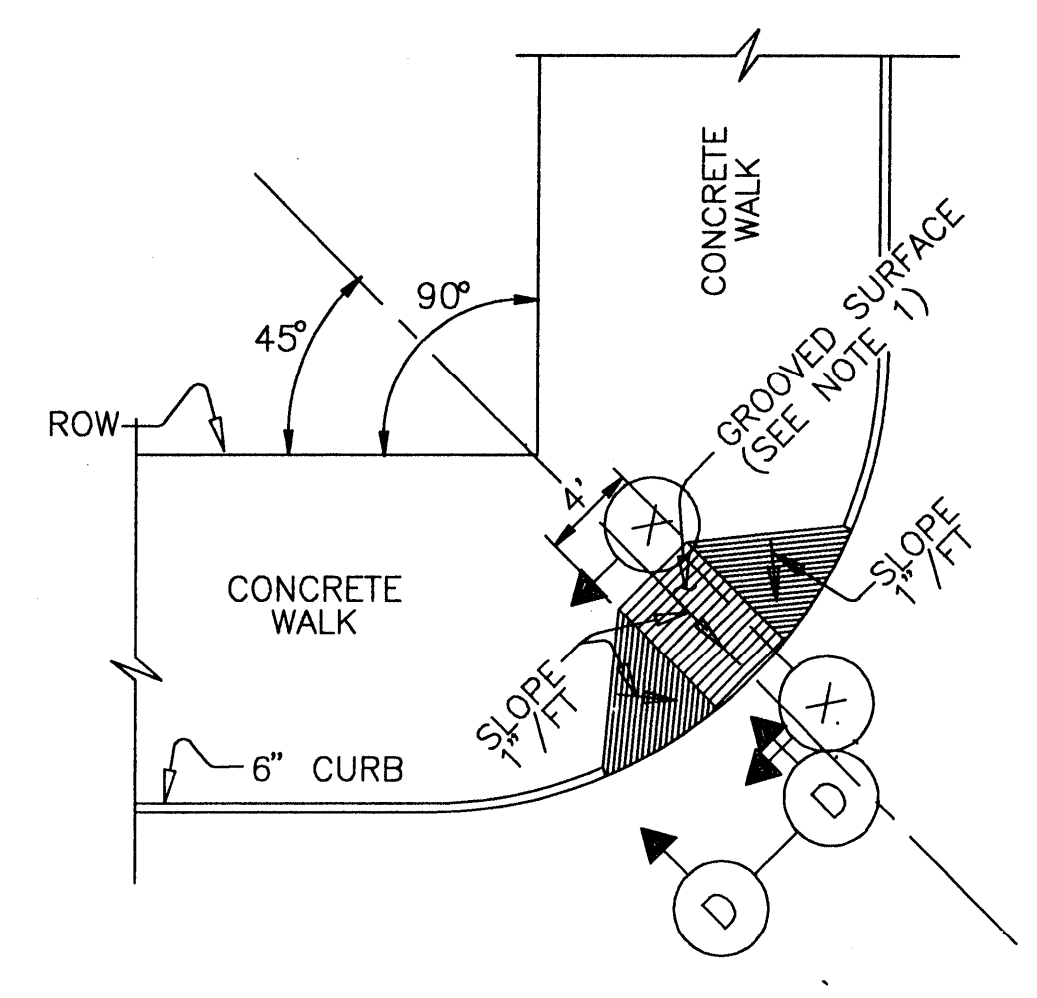
(A) RESIDENTIAL & RURAL CONDITIONS



SECTION B

(B) URBAN AREAS RESTRICTED BY SMALL RADII, FH, ETC

(C) COMBINATION OF (B) & (D)

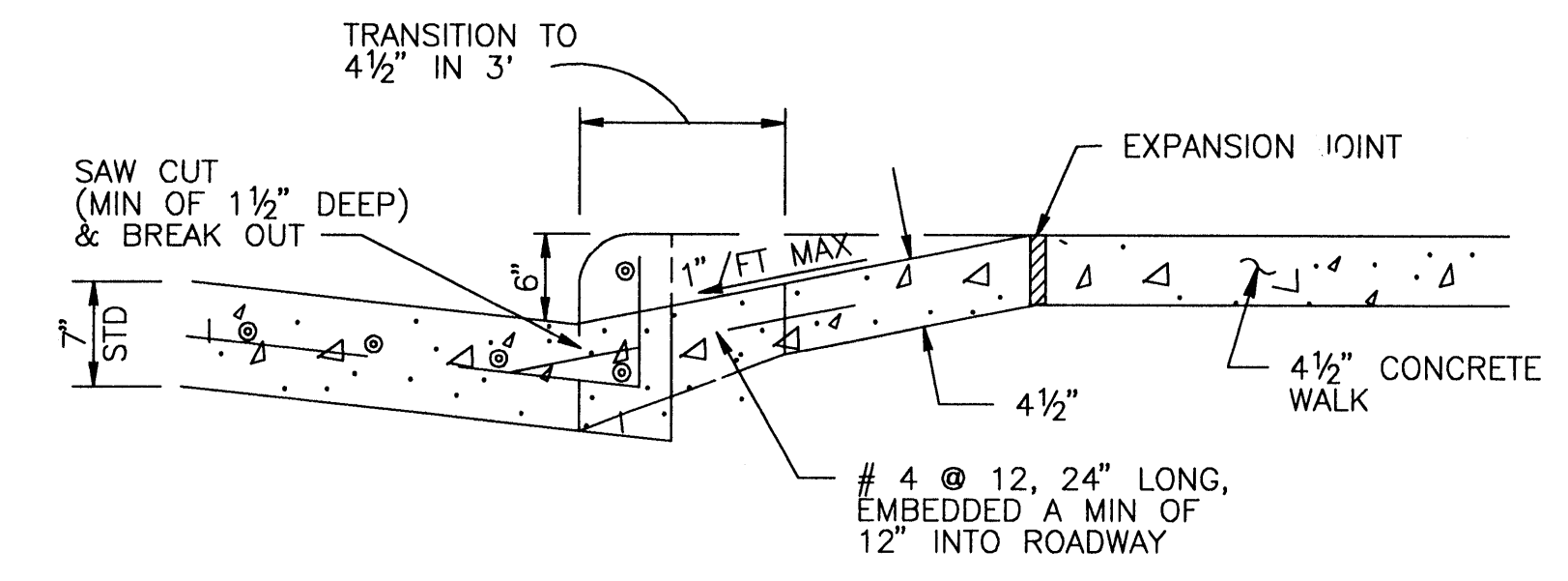


SECTION D

(D) URBAN & METROPOLITAN AREAS WITH LARGE RADII & NO RESTRICTIONS

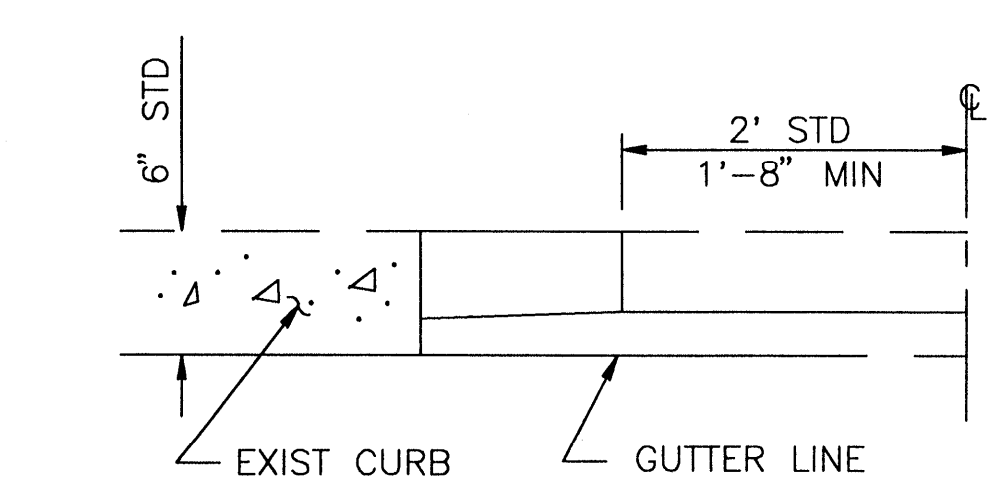
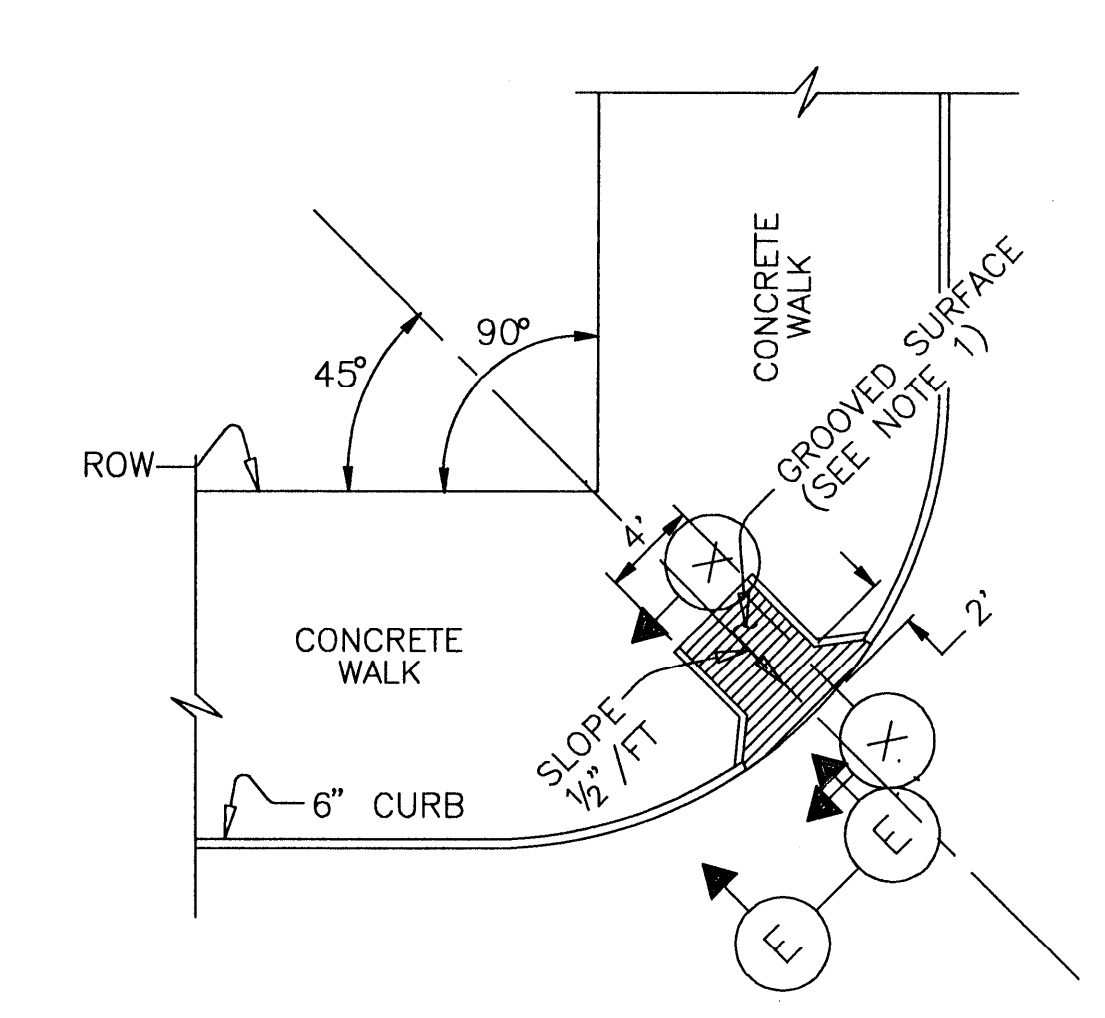
NOTES:

1. THE FINISHED SURFACE OF A WHEELCHAIR RAMP IS TO BE GROOVED LATERALLY WITH 1/4" WIDE BY 1/4" DEEP GROOVES, SPACED 2 1/4", AND ROUGHENED WITH NO LESS THAN A BROOM FINISH TO PREVENT SLIPPING, AND TO DIFFERENTIATE ITS TEXTURE FROM THAT OF STANDARD SIDEWALK.
2. THE LOCATION OF A WHEELCHAIR RAMP MAY BE SHIFTED FROM THE PROPOSED LOCATION ON THE PLANS, BECAUSE OF UNFORSEEN EXISTING CONDITIONS AT THE TIME OF CONSTRUCTION, A CHANGE IN LOCATION WILL BE AS DIRECTED BY THE ENGINEER.
3. THE LOCATIONS AND AREAS OF USES OF THE VARIOUS TYPES OF WHEEL CHAIR RAMPs SHOWN ARE FOR ILLUSTRATIVE AND SUGGESTIVE PURPOSES ONLY. ANY ONE OF THE TYPES SHOWN (A, B, C, OR D) MAY BE LOCATED IN ANY AREA, IE URBAN, RESIDENTIAL, ETC OR AT ANY POINT ON OR OFF THE RADIUS, ACCORDING TO TYPE AND LOCATION AS SHOWN ON PLANS OR AS DIRECTED BY ENGINEER.
4. ALL REINFORCING STEEL SHALL BE NEW BILLET STEEL AND MEET THE REQUIREMENTS OF ASTM DESIGNATION A-615, GRADE 60 DEFORMED BARS, FOR CONCRETE REINFORCEMENT.
5. MIN CLEAR WIDTH OF WHEEL CHAIR RAMP IS 4'-0".



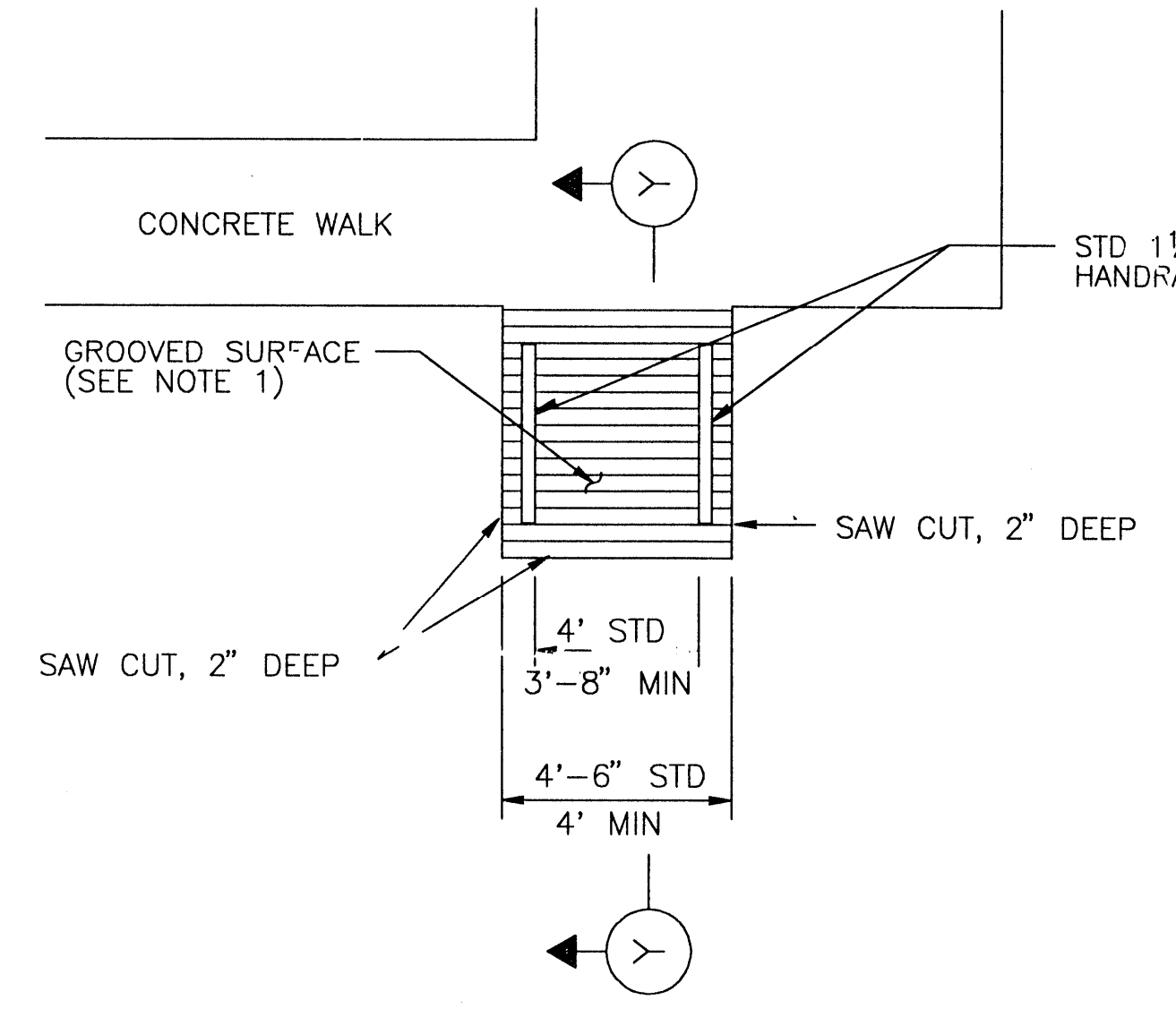
SECTION X

EXISTING CONCRETE PAVEMENT CONSTRUCTION

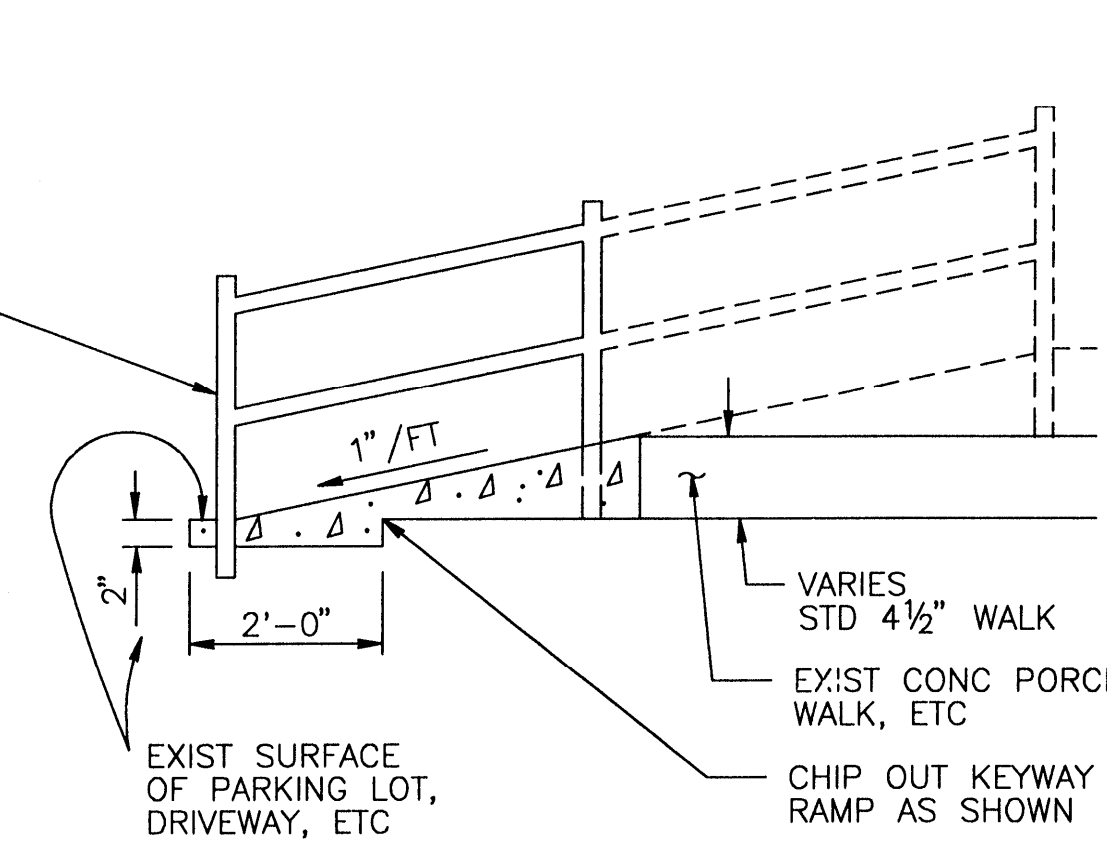


SECTION E

(E) MODIFICATION OF TYPE

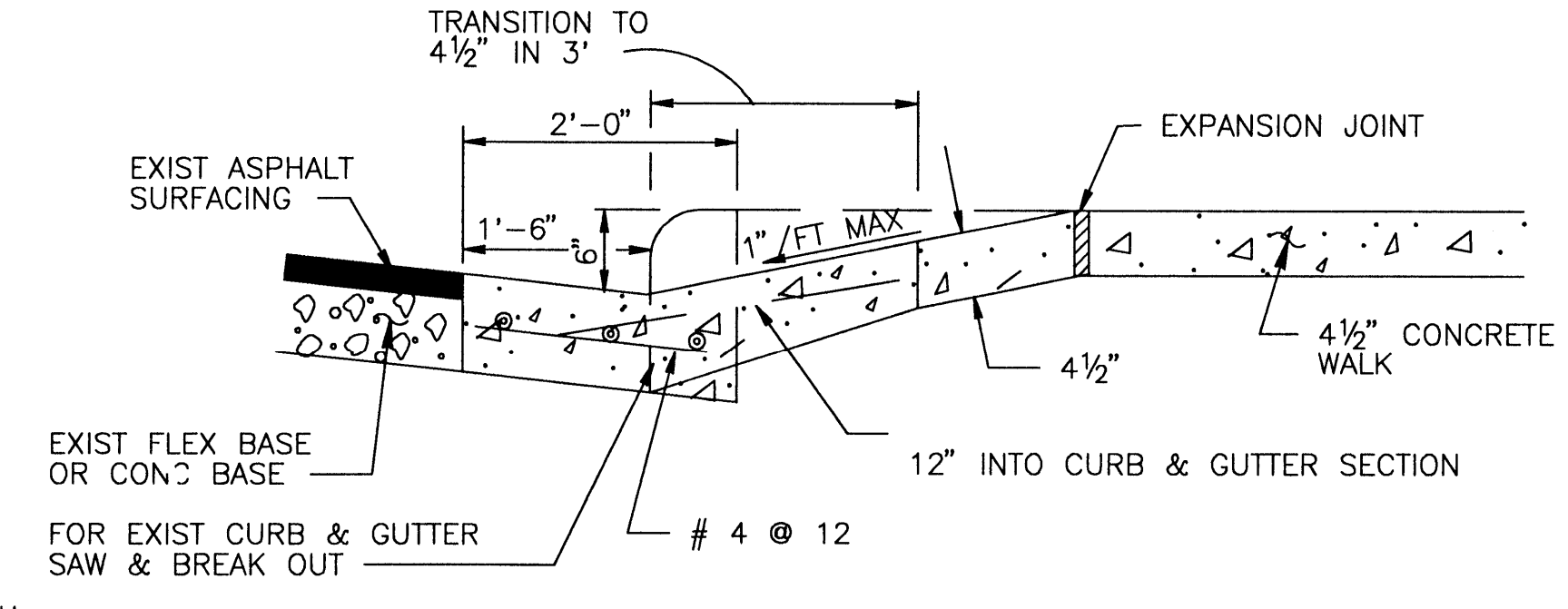


(F) ACCESS TO AREAS WHERE CUT IS NOT REQUIRED



SECTION Y

NEW CONCRETE PAVEMENT CONSTRUCTION



SECTION X

NEW & EXISTING * CURB & GUTTER CONSTRUCTION

* AS DETERMINED BY ENGINEER, A SECTION OF CURB & GUTTER IS TO BE SAW CUT, REMOVED & REPLACED AS SHOWN

WHEELCHAIR RAMP DETAILS
DWG. NO: 02530-03

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
REVIEWED BY PRIVATELY FUNDED PUBLIC WORKS WATER WASTEWATER STORM WATER STREET AND BRIDGE	CITY FUNDED PUBLIC WORKS PROJECT MANAGER CONSTRUCTION CHIEF ENGINEER
OTHER APPROVAL	
TRAFFIC AND TRANSPORTATION	SPONSOR DEPARTMENT
CITY ENGINEER DIRECTOR OF PUBLIC WORKS AND ENGINEERING	DATE 11-2000
SUBMITTED: SCALE: N/A DATE: OCTOBER 1999 SURVEY BY: F B NO: 480U&480P	DESIGNED BY: BOBBY WILSON DRAWN BY: BILL DORRIS SHEET NO. 20 OF 21 SHEETS CITY DWG. NO: WHEELDWG
WHEELCHAIR RAMP DETAILS	
PCI PROVIDENT CONSULTING, INC. 1200 WEST 111TH ST. HOUSTON, TEXAS 77008 (713)802-1019	

Bobby K. Wilson
12-27-99