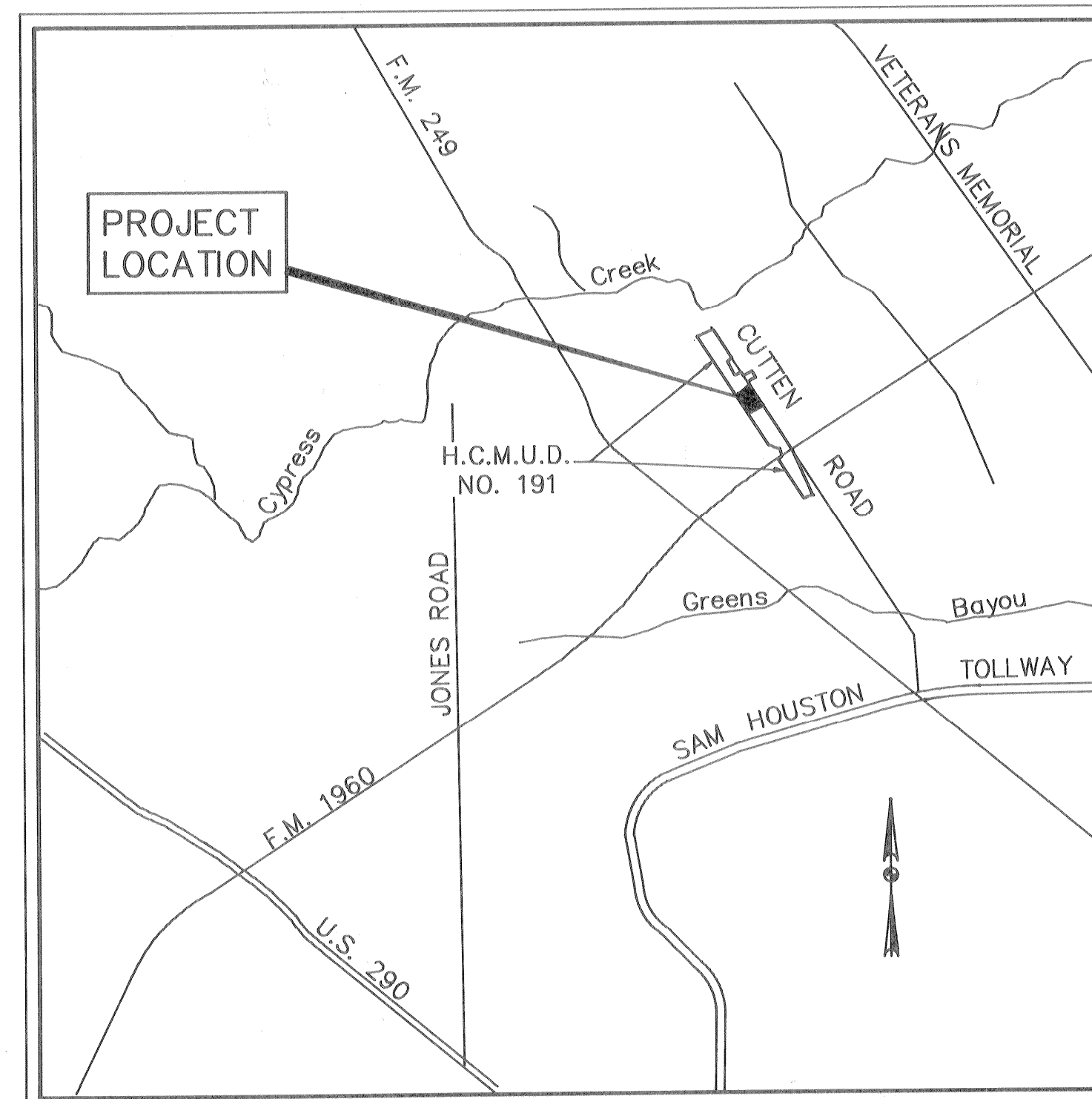


HARRIS COUNTY MUNICIPAL UTILITY DISTRICT 191 CONSTRUCTION DRAWINGS FOR CHAMPIONS CENTRE ESTATES SUBDIVISION SECTION ONE

PAVING, DRAINAGE, SANITARY SEWERS AND WATER DISTRIBUTION
HARRIS COUNTY, TEXAS

INDEX OF SHEETS



VICINITY MAP N.T.S.

MAP REF: KEY MAP 370-A,B,E & F
L-4966(639)-B & D

JANUARY, 1991

CENTURY ENGINEERING, INC.
9060 WESTPARK, SUITE 200, HOUSTON, TEXAS 77063 (713) 780-8871

SHEET NO.	DESCRIPTION
1 OF 18	COVER SHEET
2 OF 18	PAVING AND DRAINAGE LAYOUT
3 OF 18	SANITARY AND WATER LAYOUT
4 OF 18	CHAMPIONS CENTRE DRIVE - STA. 15+00 TO STA. 25+75
5 OF 18	CHAMPIONS CENTRE DRIVE - STA. 25+75 TO STA. 29+00
6 OF 18	CENTRE GROVE COURT - STA. 0+00 TO END
7 OF 18	PARAGON COURT - STA. 1+00 TO END
8 OF 18	PARK CENTRE CIRCLE - STA. 1+00 TO END PARK CENTRE COURT - STA. 1+00 TO STA. 4+15.88 PARAGON DRIVE - STA. 4+15.88 TO STA. 9+00 PARAGON DRIVE - STA. 9+00 TO END
9 OF 18	CENTRE OAKS COURT - STA. 1+00 TO STA. 3+33.30
10 OF 18	CENTRE OAKS DRIVE - STA. 3+33.30 TO STA. 5+00
11 OF 18	CENTRE OAKS DRIVE - STA. 5+00 TO END
12 OF 18	CENTRE GROVE DRIVE - STA. 0+00 TO END
13 OF 13	SANITARY SEWER LATERALS "A", "C", "D" & "D-1"
14 OF 18	SANITARY SEWER LATERALS "E", "E-1" & "E-2"
15 OF 18	SANITARY SEWER LATERALS "F" & "F-1"
16 OF 18	WATER LINE LATERALS "A", "B" & "C"
17 OF 18	SUBDIVISION PAVEMENT STANDARDS
18 OF 18	STANDARD BUTTON LAYOUT STANDARD TRENCH SAFETY SYSTEM STANDARD TRENCH SAFETY SYSTEM

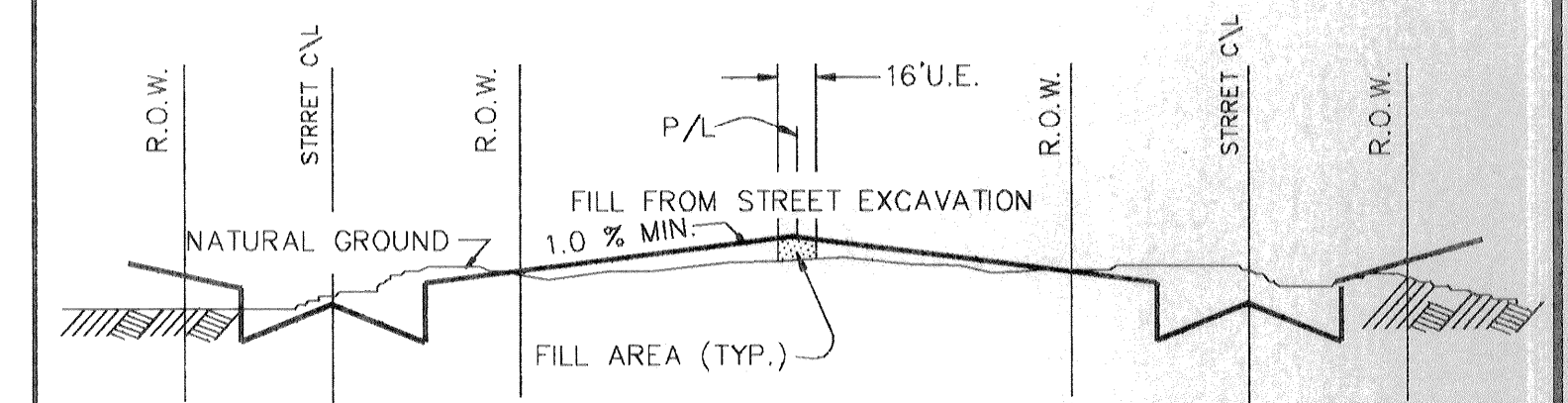
NOTE:
NOT IN THE 100 YEAR FLOOD PLAIN

NOTE:
LOCATION OF H.L. & P. CO. FACILITIES ARE APPROXIMATE AND HAVE NOT BEEN VERIFIED BY ACTUAL FIELD CHECK.

- WARNING -

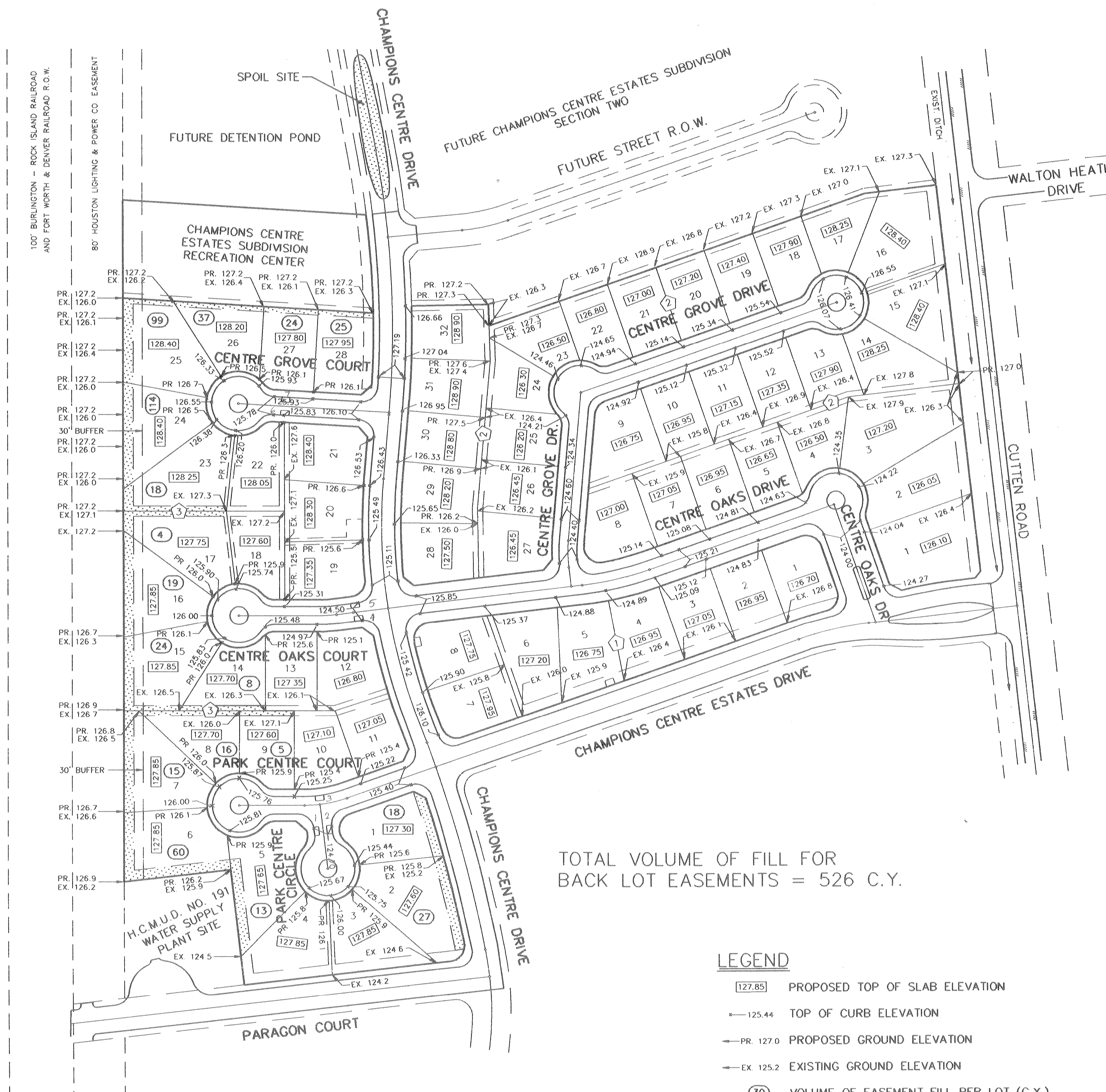
OVERHEAD LINES MAY EXIST ON THE PROPERTY. WE HAVE NOT ATTEMPTED TO MARK THOSE LINES SINCE THEY ARE CLEARLY VISIBLE, BUT YOU SHOULD LOCATE THEM PRIOR TO BEGINNING ANY CONSTRUCTION. TEXAS LAW, SECTION 752, HEALTH & SAFETY CODE, FORBIDS ALL ACTIVITIES IN WHICH PERSONS OR THINGS MAY COME WITHIN SIX (6) FEET 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 H.L. & P. AT 228-7400.

NO.	DATE	REVISION	APPRL.



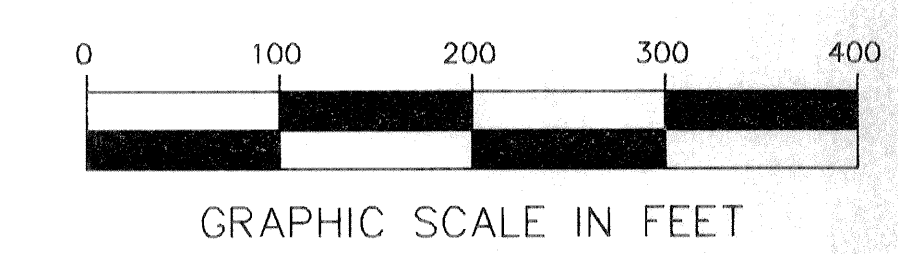
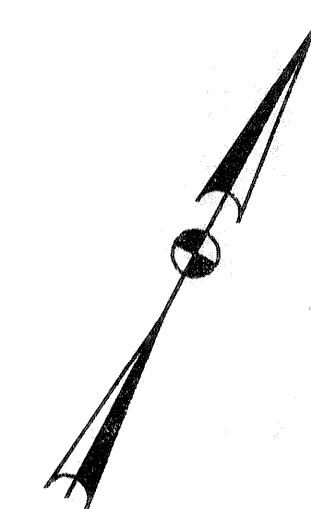
TYPICAL SECTION THROUGH STREETS & LOTS

NOT TO SCALE
NOTE: ALL EXCESS CUT FROM STREETS TO BECOME THE PROPERTY OF THE CONTRACTOR.



TOTAL VOLUME OF FILL FOR
BACK LOT EASEMENTS = 526 C.Y.

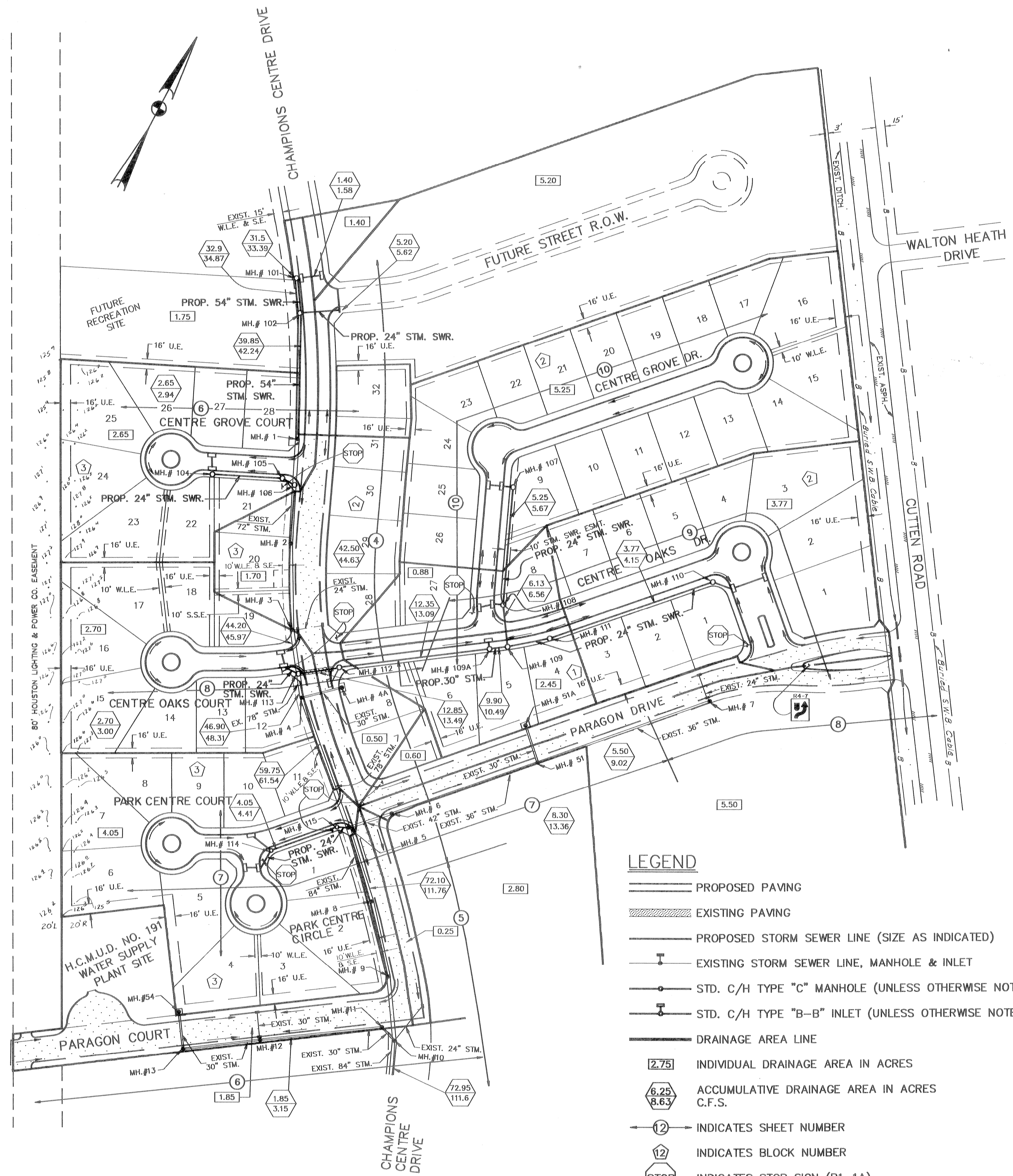
- LEGEND**
- [127.85] PROPOSED TOP OF SLAB ELEVATION
 - 125.44 TOP OF CURB ELEVATION
 - PR 127.0 PROPOSED GROUND ELEVATION
 - EX 125.2 EXISTING GROUND ELEVATION
 - (30) VOLUME OF EASEMENT FILL PER LOT (C.Y.)
 - [Hatched Box] DESIGNATED FILL AREAS
 - [Square with Inlet Symbol] INLET (7)



POLLUTION PROTECTION NOTES

1. PROVIDE SOD SILT BARRIERS UPSTREAM OF ALL STAGE I B-B INLETS.
2. FOLLOWING CONSTRUCTION OF PAVING AND PRIOR TO STAGE II INLET CONSTRUCTION, PROTECT B-B INLETS WITH SOD SILT BARRIERS ALONG PAVEMENT SURFACES AND ALONG PROPOSED BACK OF CURB.
3. FOLLOWING CONSTRUCTION OF STAGE II INLETS, PROTECT B-B INLETS WITH SOD SILT BARRIERS IN THE CURB LINE AND ALONG THE BACK OF INLETS.
4. UPON COMPLETION OF LOT GRADING, ALL R.O.W. DISTURBED AREAS ARE TO BE SEEDDED WITH A PERENNIAL VEGETATIVE COVER.

CENTURY ENGINEERING, INC. 9650 WESTPARK, SUITE 200, HOUSTON, TEXAS 77063 (713) 780-8871		
HARRIS COUNTY M.U.D. NO. 191 CHAMPIONS CENTRE ESTATES SUBDIVISION SECTION ONE—PHASE TWO HARRIS COUNTY TEXAS		
<i>POLLUTION PREVENTION PLAN AND</i> GRADING PLAN		
	File Name: GRADING2.DWG	Scale: 1" = 100'
Designed By: D.L.P.	Checked By: G.E.M.	Date: 2.22.13
Drawn By: D.L.P.	Approved By: G.E.M.	Job No. 90023-01.9
		Sheet 1 of 1



GENERAL NOTES

- CONTRACTOR SHALL NOTIFY HARRIS COUNTY ENGINEERING DEPARTMENT TWENTY-FOUR (24) HOURS IN ADVANCE OF COMMENCING CONSTRUCTION AT (221-7024) AND WRITTEN NOTIFICATION FOURTY-EIGHT (48) HOURS OF COMMENCING CONSTRUCTION.
- SECTION 317.2(a)(4)(B) OF THE TEXAS WATER COMMISSION CRITERIA REQUIRES DEFLECTION TESTING OF ALL FLEXIBLE AND SEMI-RIGID PIPE. THE TEST SHALL BE CONDUCTED AFTER THE FINAL BACKFILL HAS BEEN IN PLACE FOR AT LEAST 30 DAYS. NO PIPE SHALL EXCEED A DEFLECTION OF 50%. IF THE DEFLECTION TEST IS TO BE RUN USING A RIGID BALL OR MANDREL, IT SHALL HAVE A DIAMETER EQUAL TO 95% OF THE PIPE. THE TEST SHALL BE PERFORMED WITHOUT MECHANICAL PULLING DEVICES.
- ALL SEWERS CONSTRUCTED IN SIDE LOT EASEMENTS SHALL BE R.C.P. (C-75, CLASS III) AND SHALL BE BEDDED IN ACCORDANCE WITH CITY OF HOUSTON DRAWINGS 529-S-1, 530-S-1 AND 530-S-2 AS APPLICABLE. TWENTY (20) FOOT WIDE EASEMENTS SHALL BE PROVIDED.
- ALL UTILITIES SHOWN ON THE PLANS HAVE NOT BEEN FIELD VERIFIED. LOCATIONS SHOWN FOR EXISTING UTILITIES ARE APPROXIMATE AND OTHER UTILITIES MAY EXIST IN THE VICINITY OF THIS PROJECT WHICH ARE NOT SHOWN ON THESE PLANS. CONTRACTOR SHALL UNCOVER ALL EXISTING UTILITIES AND VERIFY EXISTING ELEVATIONS OF SAME AT ALL PROPOSED CROSSINGS AND PROPOSED CONNECTIONS BEFORE COMMENCING WORK. ALL CONFLICTS SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
- CONTRACTOR SHALL NOTIFY CITY OF HOUSTON 48 HOURS IN ADVANCE OF COMMENCING CONSTRUCTION AT 247-2037.
- CONTRACTOR SHALL NOTIFY LOCATION OF UNDERGROUND UTILITY LINES BY CONTACTING THE HOUSTON AREA UTILITY COORDINATING COMMITTEE AT 223-4567, 48 HOURS BEFORE BEGINNING WORK.
- CONTRACTOR SHALL NOTIFY HARRIS COUNTY ENGINEERING DEPARTMENT 24 HOURS IN ADVANCE OF COMMENCING CONSTRUCTION AT 221-7024.
- CONTRACTOR SHALL NOTIFY HARRIS COUNTY FLOOD CONTROL DISTRICT 48 HOURS IN ADVANCE OF COMMENCING CONSTRUCTION AT 691-8600.
- CONTRACTOR SHALL PROVIDE TRENCH SAFETY SYSTEMS MEETING OSHA STANDARDS, CHAPTER XVII, SECTION 1926.650 SUBPART P. "EXCAVATIONS, TRENCHING AND SHORING".
- CONTRACTOR TO OBTAIN ALL PERMITS REQUIRED BY REGULATION OF HARRIS COUNTY, TEXAS FOR FLOOD PLAIN MANAGEMENT PRIOR TO STARTING CONSTRUCTION.
- OWNER TO OBTAIN ALL PERMITS REQUIRED BY HARRIS COUNTY FOR CONSTRUCTION OF UTILITY PIPELINES WITHIN COUNTY ROAD RIGHT OF WAY.
- GUIDELINES SET FORTH IN PART IV OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MOST RECENT EDITION AS REVISED) SHALL BE OBSERVED. THE COST FOR ALL TRAFFIC CONTROL MEASURES SHALL BE CONSIDERED INCIDENTAL TO THE PRICES BID FOR NEW CONSTRUCTION.
- IN ALL FILL AREAS, LIFTS SHALL BE A MINIMUM OF 10" AND COMPACTED TO 95% DENSITY PER ASTM D-698 (STANDARD PROCTOR).
- ALL SEWERS UNDER OR WITHIN ONE FOOT OF PROPOSED OR FUTURE PAVEMENT SHALL BE BACKFILLED WITH 1-1/2 SACK CEMENT STABILIZED SAND TO WITHIN ONE FOOT OF SUBGRADE.
- ALL EXCESS DIRT FROM INSTALLATION OF UTILITY PIPELINES AND/OR PAVEMENT SHALL BE SPREAD AT NO COST TO THE OWNER WITHIN THE PROJECT BOUNDARIES AS DIRECTED BY THE ENGINEER.
- THIS PROJECT IS OUTSIDE THE 100 YEAR FLOOD PLAIN.

PAVING NOTES

- PAVING SHALL BE IN ACCORDANCE WITH HARRIS COUNTY "RULES, REGULATIONS AND REQUIREMENTS" RELATING TO THE APPROVAL AND ACCEPTANCE OF IMPROVEMENTS IN SUBDIVISIONS OR RESUBDIVISIONS AND/OR AMENDMENTS OF SAME.
- ALL PAVEMENT IS PROPOSED EXCEPT AS OTHERWISE NOTED.
- ALL REPAIRS TO EXISTING PAVEMENT SHALL BE IN ACCORDANCE WITH CITY OF HOUSTON DRAWING NO. 411-S-2, INCLUDING ALL REVISIONS, THERETO. NO SEPARATE PAY.
- AT THE LINE OF PROPOSED AND FUTURE PAVEMENT, REBARS SHOULD BE EXTENDED 15-INCHES, COATED WITH ASPHALT AND WRAPPED WITH BURLAP.
- ALL PAVING RETURNS TO BE 25-FOOT RADIUS UNLESS OTHERWISE NOTED.
- ALL EXCESS CUT FROM STREET R.O.W. TO BE SPREAD AT NO COST TO THE OWNER WITHIN THE PROJECT BOUNDARIES AS DIRECTED BY THE ENGINEER.
- EXISTING REINFORCED CONCRETE PAVEMENT SHOULD BE MACHINE SAW CUT 1 1/2" DEEP TO EXPOSE AT LEAST 2" OF REINFORCING AND PLACE NEW REINFORCING (1/2" DIAMETER DEFORMED BARS 24" C. TO C. BOTH WAYS) AND THE NEW REINFORCING BARS (10" LAPS) TO EXISTING REINFORCED BARS.

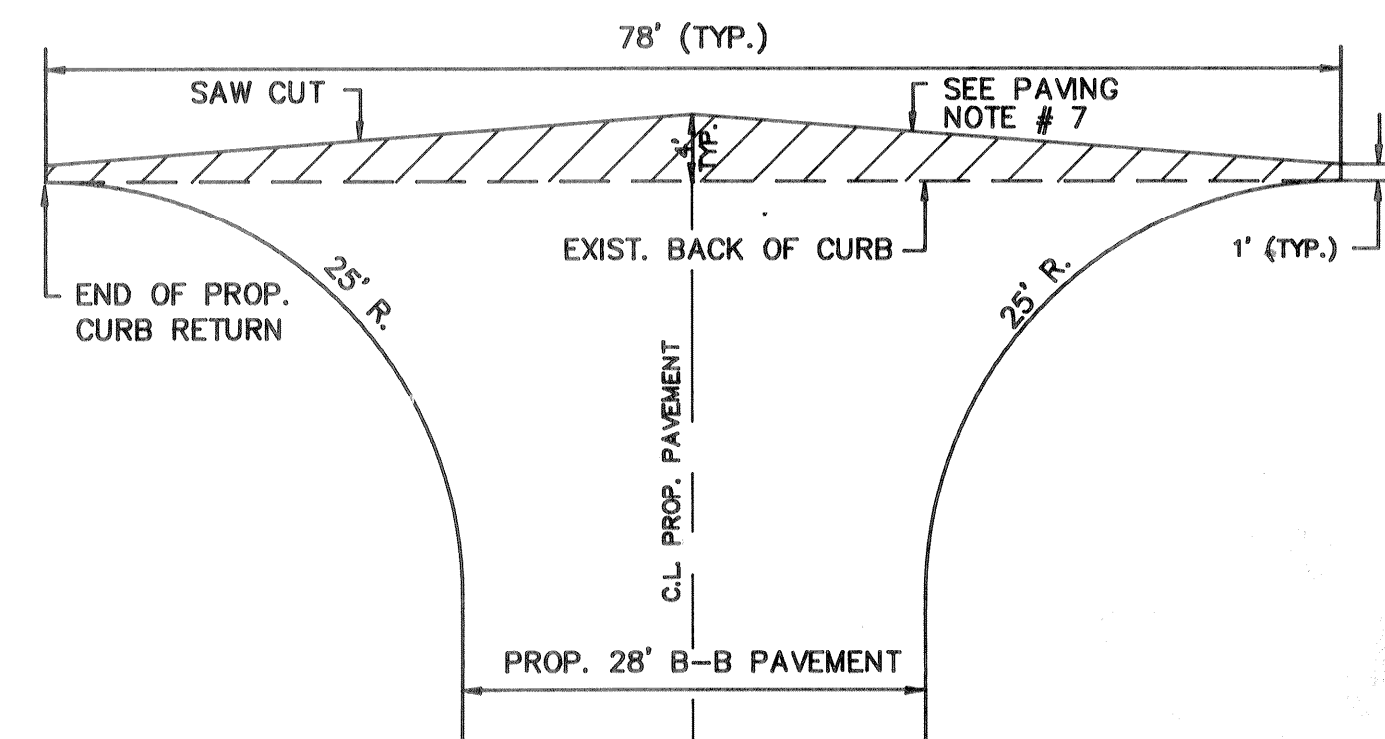
STORM SEWER NOTES

- ALL STORM SEWER MATERIALS, CONSTRUCTION PROCEDURES AND TESTING SHALL BE IN ACCORDANCE WITH CITY OF HOUSTON PUBLIC WORKS SPECIFICATIONS FORM E-14-62 AND LATEST AMENDMENTS THERETO.
- ALL REINFORCED CONCRETE PIPE STORM SEWER SHALL CONFORM TO ASTM C-76, CLASS III, EXTRA STRENGTH REQUIREMENTS.
- ALL R.C.P. STORM SEWER SHALL BE INSTALLED, BEDDED AND BACKFILLED IN CONFORMITY WITH THE REQUIREMENTS OF THE FOLLOWING CITY OF HOUSTON DRAWINGS:
36" DIA. AND SMALLER - DWG NO. 529-S-1
42" TO 108" DIA. - SATISFACTORY SOIL - DWG NO. 530-S-1
42" TO 108" DIA. - UNSATISFACTORY SOIL - DWG NO. 530-S-2
- CONTRACTOR SHALL MAINTAIN ADEQUATE DRAINAGE FOR THE PROPOSED PROJECT AND SURROUNDING AREAS AT ALL TIMES.
- ALL STORM MANHOLES SHALL BE ADJUSTED TO 1" ABOVE FINISHED GRADE AFTER FINAL LOT SITE GRADING HAS BEEN COMPLETED. COST FOR ADJUSTMENT SHALL BE INCLUDED IN COST FOR NEW MANHOLE.
- INLETS SHALL BE CONSTRUCTED AT END OF CURB RETURNS UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- ALL PROPOSED PIPE STUB-OUTS FROM MANHOLES OR INLETS ARE TO BE PLUGGED WITH 8" BRICK WALLS UNLESS OTHERWISE NOTED.

LEGEND

- PROPOSED PAVING
- EXISTING PAVING
- PROPOSED STORM SEWER LINE (SIZE AS INDICATED)
- EXISTING STORM SEWER LINE, MANHOLE & INLET
- STD. C/H TYPE "C" MANHOLE (UNLESS OTHERWISE NOTED)
- STD. C/H TYPE "B-B" INLET (UNLESS OTHERWISE NOTED)
- DRAINAGE AREA LINE
- INDIVIDUAL DRAINAGE AREA IN ACRES
- ACCUMULATIVE DRAINAGE AREA IN ACRES C.F.S.
- INDICATES SHEET NUMBER
- INDICATES BLOCK NUMBER
- INDICATES STOP SIGN (R1-1A)
- INDICATES WATER LINE EASEMENT
- INDICATES STORM SEWER EASEMENT
- INDICATES UTILITY EASEMENT

BENCH MARK
NATIONAL GEODETIC SURVEY MARKER NO. Y-1216, LOCATED IN CENTER OF HIGHLINE TOWER. (FIRST TOWER N.W. OF F.M. 1960 AND 80' EAST OF RAILROAD TRACKS) 1979 ADJ. ELEV. 125.41
100 YEAR FLOOD PLAIN ELEV. 119.54



TYPICAL CONNECTION TO EXISTING PAVEMENT
N.T.S.

PRIVATE UTILITY LINES SHOWN	
<i>EnTex, Inc.</i>	ENTEX, INC.
<i>Southwestern Bell Telephone Company</i>	SOUTHWESTERN BELL TELEPHONE COMPANY
<i>Houston Lighting & Power Co.</i>	HOUSTON LIGHTING & POWER CO.
<i>Harris County Flood Control District</i>	HARRIS COUNTY FLOOD CONTROL DISTRICT
APPROVED FOR CITY OF HOUSTON 1 CAPITAL PROJECTS DEPARTMENT:	
<i>Water Design</i>	PAVING
<i>Facilities Construction</i>	STORM SEWER
<i>Civil Construction</i>	WASTEWATER DESIGN
<i>Traffic & Transportation</i>	CITY PLANNING DEPARTMENT
<i>4/12/91</i>	DATE
OTHER DEPT'S.	
DEPARTMENT OF PUBLIC WORKS	DEPARTMENT OF UTILITY OPERATION

INTERPOSE NO OBJECTION
FINAL APPROVAL BY OTHERS
S.A. Baker
Harris County Flood Control District
4/12/91
DATE
THE ABOVE SIGNATURE VALID FOR ONE (1) YEAR ONLY

Century Engineering, Inc.
4/12/91

CENTURY ENGINEERING, INC.
9050 WESTPARK, SUITE 200, HOUSTON, TEXAS 77063 (713) 780-8871

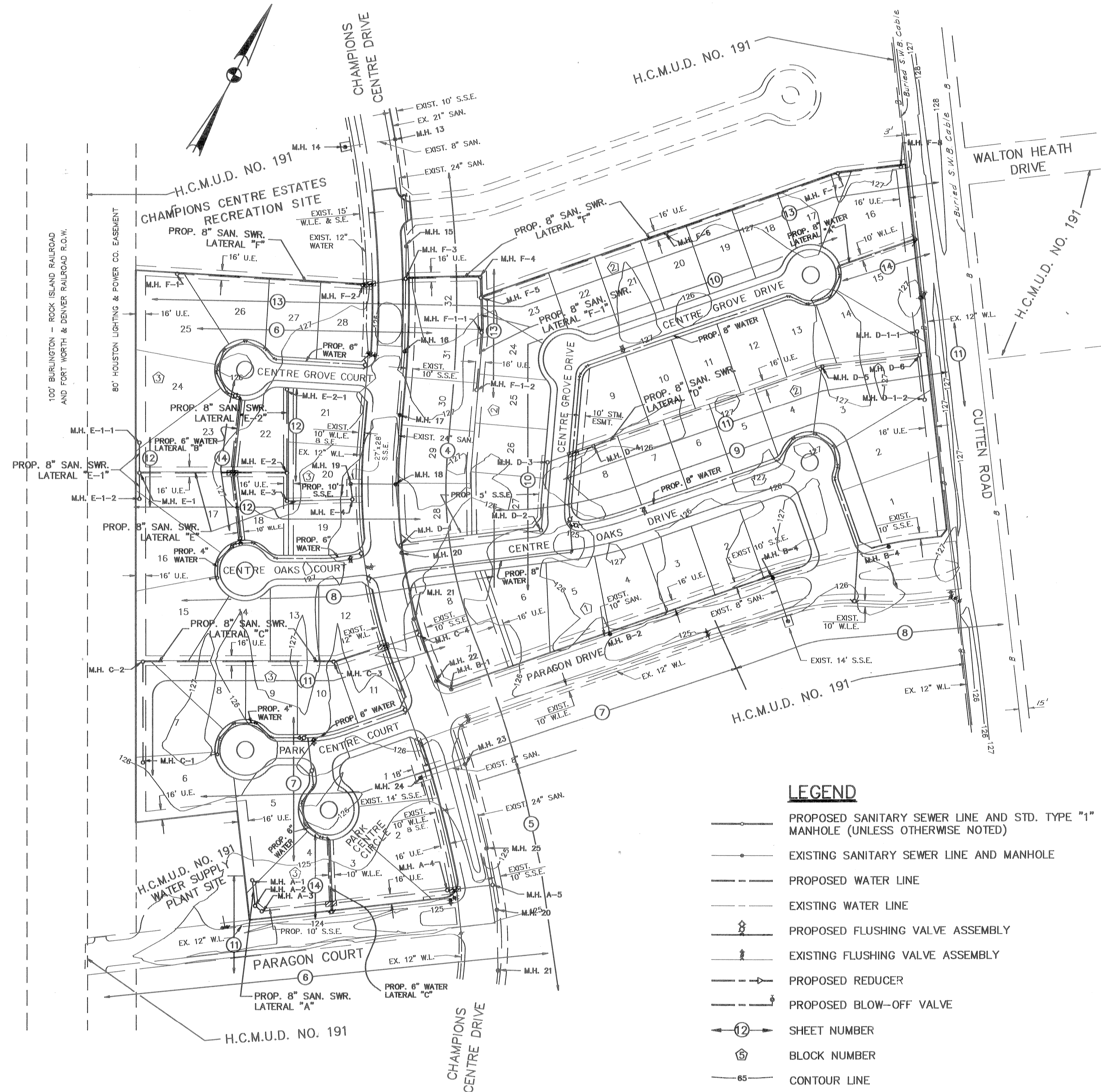
HARRIS COUNTY M.U.D. NO. 191
CHAMPIONS CENTRE ESTATES SUBDIVISION SECTION ONE
HARRIS COUNTY TEXAS

PAVING & DRAINAGE LAYOUT

File Name: PAVDRAIN.DWG	Scale: 1" = 100'	Date: JAN., 1991
Designed By: D.L.P.	Checked By: G.E.M.	Job No. 90023-01.3
Drawn By: ACAD	Approved By: G.E.M.	Sheet 2 of 18

100' BURLINGTON - ROCK ISLAND RAILROAD AND FORT WORTH & DENVER RAILROAD R.O.W.

H.C.M.U.D. NO. 191
WATER SUPPLY PLANT SITE



SANITARY SEWER NOTES

- SANITARY SEWER MATERIALS, CONSTRUCTION AND TESTING SHALL BE IN ACCORDANCE WITH CITY OF HOUSTON FORM E-14-62 AND ALL AMENDMENTS THERETO EXCEPT AS OTHERWISE SPECIFIED ON THE PLANS OR IN THE TECHNICAL SPECIFICATIONS.
 - SECTION 317.2(a)(5)(B) OF THE TEXAS WATER COMMISSION CRITERIA REQUIRES DEFLECTION TESTING OF ALL FLEXIBLE AND SEMI-RIGID PIPE. THE TEST SHALL BE CONDUCTED AFTER THE FINAL BACKFILL HAS BEEN IN PLACE FOR AT LEAST 30 DAYS. NO PIPE SHALL EXCEED A DEFLECTION OF 50%. IF THE DEFLECTION TEST IS TO BE RUN USING A RIGID BALL OR MANDREL, IT SHALL HAVE A DIAMETER EQUAL TO 95% OF THE PIPE. THE TEST SHALL BE PERFORMED WITHOUT MECHANICAL PULLING DEVICES.
 - SECTION 317.2(a)(4)(B) OF THE TEXAS WATER COMMISSION CRITERIA REQUIRES LOW-PRESSURE AIR TESTS TO CONFORM TO THE PROCEDURE DESCRIBED IN ASTM C828, ASTM C924 OR OTHER APPROPRIATE PROCEDURES. FOR SAFETY REASONS, AIR TESTING OF SECTIONS OF PIPE SHALL BE LIMITED TO LINES LESS THAN 36-INCH AVERAGE INSIDE DIAMETER. LINES 36-INCH AVERAGE INSIDE DIAMETER AND LARGER MAY BE AIR TESTED AT EACH JOINT.
 - ALL SANITARY SEWER TO BE P.V.C. AND MEET ASTM STANDARDS UNLESS OTHERWISE SPECIFIED. CLASS "AA" BEDDING TO BE USED.
 - SANITARY SEWER MANHOLE RIMS SHALL BE ADJUSTED TO 3" ABOVE FINISHED GRADE WITHIN STREET R.O.W. AND 6" ABOVE GROUND ELEVATION WITHIN EASEMENTS, AFTER FINAL LOT SITE GRADING HAS BEEN COMPLETED. CLEAN FILL SHALL BE ADDED AND SLOPE AWAY FROM MANHOLE RIM FOR STORM WATER DRAINAGE. NO EXTRA PAY.
 - SANITARY SEWER MANHOLES SHALL BE RACKED AS NEEDED TO BE BEHIND BACK OF CURB.
 - IF WET SAND IS FOUND, USE SPECIAL SECTION NO. 5 BEDDING, AS DIRECTED BY THE ENGINEER.
 - PLUGS BETWEEN THE EXISTING AND THE PROPOSED SYSTEM SHALL BE REMOVED ONLY WHEN THE PROPOSED SANITARY SEWERS HAVE BEEN COMPLETED, TESTED AND ACCEPTED. NO PLUG SHALL BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.
 - WHENEVER SANITARY SEWER CROSSES WITHIN 9 FEET ABOVE OR BELOW A WATER LINE, THE SANITARY SEWER SHALL BE CONSTRUCTED OF P.V.C., AWWA C900, CLASS 150DR 18 PRESSURE RATED PIPE FOR A MINIMUM DISTANCE OF 9 FEET ON EITHER SIDE OF THE WATER LINE.
 - ALL SERVICE LEADS SHALL BE 6 INCHES P.V.C., SDR 26 AT STANDARD 0.70% SLOPE.
 - P.V.C. SANITARY SEWER SIZES 8" THRU 15" SHALL BE SDR 35 IN CONFORMANCE WITH ASTM D3034. P.V.C. SANITARY SEWER SIZES 18" THRU 48" SHALL BE IN CONFORMANCE WITH A.S.T.M. F749.
 - P.V.C. AND TRUSS PIPE SHALL HAVE BELL AND SPIGOT JOINTS. NO CHEMICALLY WELDED JOINTS SHALL BE PERMITTED.
- * FOR PAVING, DRAINAGE SANITARY SEWER AND WATER LINES ONLY. CITY ENGINEERING APPROVALS VALID UP TO ONE YEAR ONLY AFTER DATES OF SAID APPROVALS. ALL P.V.C. PIPES (ALL TYPES AND SDR/DR WALL THICKNESSES TO BE USED) REQUIRE APPROVAL LETTER(S) FROM THE CITY OF HOUSTON WASTEWATER DESIGN SECTION PRIOR TO CONSTRUCTION.

BENCH MARK
 NATIONAL GEODETIC SURVEY MARKER NO. Y-1216,
 LOCATED IN CENTER OF HIGHLINE TOWER, (FIRST
 TOWER N.W. OF F.M. 1960 AND 80' EAST OF RAIL-
 ROAD TRACKS) 1979 ADJ. ELEV. 125.41
 100 YEAR FLOOD PLAIN ELEV. 119.54

LEGEND

- PROPOSED SANITARY SEWER LINE AND STD. TYPE "1" MANHOLE (UNLESS OTHERWISE NOTED)
- - - EXISTING SANITARY SEWER LINE AND MANHOLE
- PROPOSED WATER LINE
- - - EXISTING WATER LINE
- PROPOSED FLUSHING VALVE ASSEMBLY
- - - EXISTING FLUSHING VALVE ASSEMBLY
- PROPOSED REDUCER
- - - PROPOSED BLOW-OFF VALVE
- ⑫ SHEET NUMBER
- ⑤ BLOCK NUMBER
- 65— CONTOUR LINE
- W.L.E. INDICATES WATER LINE EASEMENT
- S.S.E. INDICATES SANITARY SEWER EASEMENT
- S.E. INDICATES STORM SEWER EASEMENT

WATER LINE NOTES

- WATER MAIN CONSTRUCTION PROCEDURES AND TESTING SHALL BE IN ACCORDANCE WITH THE CITY OF HOUSTON SPECIFICATIONS FOR WATER MAIN CONSTRUCTION AND MATERIALS AND SPECIFICATIONS FOR WATER TAPS AND SERVICE LINES WITH LATEST ADDENDA AND AMENDMENTS THERETO.
- DISINFECTION OF NEW AND REPAIRED WATER MAINS SHALL BE IN CONFORMANCE WITH AWWA C601. ALL NEW WATER MAINS SHALL BE DISINFECTED BEFORE THEY ARE PLACED IN SERVICE. ALL WATER MAINS TAKEN OUT OF SERVICE FOR INSPECTING, REPAIRING OR OTHER ACTIVITY WHICH MIGHT LEAD TO CONTAMINATION OF WATER SHALL BE DISINFECTED BEFORE THEY ARE RETURNED TO SERVICE.
- ALL P.V.C. WATER LINE PIPE FURNISHED SHALL MEET THE REQUIREMENTS OF AWWA C900, LATEST REVISION AND SHALL BE CLASS 150 DR-18 FOR SIZES 4" THRU 12".
- CAST LINE PIPE FITTINGS AND MAIN LINE VALVE STANDARDIZED PUSH-ON JOINTS SHALL BE USED.
- CONTRACTOR SHALL PROVIDE ADEQUATE THRUST BLOCKING TO WITHSTAND TEST PRESSURE SPECIFIED IN SPECIFICATION FOR WATER MAIN CONSTRUCTION AND MATERIALS WITH LATEST ADDENDA AND AMENDMENTS THERETO. NO SEPARATE PAY.
- WATER LINE TRENCHES UNDER PAVEMENT OR WITHIN ONE FOOT BACK OF ALL CURBS SHALL BE BACKFILLED WITH BANK SAND TO ONE FOOT BELOW BOTTOM OF PAVEMENT. THE COST OF BACKFILL SHALL BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF PIPE.
- ALL FLUSHING VALVES TO BE LOCATED 3' BEHIND BACK OF CURB AND SHALL HAVE MINIMUM OF 4' BURY. DEFLECT WATER LINES AS REQUIRED AS SHOWN ON PLANS.
- MAINTAIN A MINIMUM OF 6 INCHES VERTICAL CLEARANCE BETWEEN WATER LINES AND ALL OTHER UTILITIES.
- ALL WATER MAINS WITHIN STREET R.O.W. TO HAVE MINIMUM 4 FOOT COVER BELOW TOP OF CURB. WATER MAINS IN EASEMENTS TO HAVE MINIMUM 5 FOOT COVER BELOW NATURAL GROUND.
- ALL 4 INCH WATER LINES ARE TO BE P.V.C.

GENERAL NOTES FOR E.T.J. WATER MAIN CONSTRUCTION

- ALL A.C. WATER MAINS USED IN THIS PROJECT RANGING IN SIZE FROM 6 INCHES THRU 16 INCHES SHALL BE AWWA C400-80 CLASS 200 OR LATEST REVISION WITH MAXIMUM PIPE LENGTH OF 6 FEET 6 INCHES.
- ALL WATER MAINS UNDER STREET PAVEMENT, IF NOT STEEL SECTION, SHALL BE P.V.C. PIPE. SIZES 4 INCHES THRU 12 INCHES SHALL BE AWWA C900 CLASS 150 DR-18.

PRIVATE UTILITY LINES SHOWN	
<i>Autism Power 05-20-91</i>	ENTEX, INC.
<i>SP 5-3-91</i>	SOUTHWESTERN BELL TELEPHONE COMPANY VALID FOR ONE YEAR ONLY
<i>B. J. ...</i>	HOUSTON LIGHTING & POWER CO. APPROVAL ONLY FOR CROSSING UNDERGROUND UTILITIES UNLESS NOTED. VALID FOR ONE YEAR ONLY
APPROVED FOR CITY OF HOUSTON 1 CAPITAL PROJECTS DEPARTMENT:	
<i>...</i>	WATER DESIGN
<i>...</i>	FACILITIES CONSTRUCTION
<i>...</i>	CIVIL CONSTRUCTION
<i>...</i>	TRAFFIC & TRANSPORTATION
<i>...</i>	DATE: 4/4/91
OTHER DEPT'S.	
DEPARTMENT OF PUBLIC WORKS	DEPARTMENT OF UTILITY OPERATION

CENTURY ENGINEERING, INC.
 8060 WESTPARK, SUITE 200, HOUSTON, TEXAS 77063 (713) 780-8871

HARRIS COUNTY M.U.D. NO. 191
CHAMPION CENTRE ESTATES SUBDIVISION
 SECTION ONE

HARRIS COUNTY TEXAS

SANITARY & WATER LAYOUT

File Name: SANWATER.DWG	Scale: 1" = 100'	Date: JAN., 1991
Designed By: D.L.P.	Checked By: G.E.M.	Job No.: 90023-01.3
Drawn By: ACAD	Approved By: G.E.M.	Sheet 3 of 18

BENCH MARK
 NATIONAL GEODETIC SURVEY MARKER NO. Y-1216,
 LOCATED IN CENTER OF HIGHLINE TOWER. (FIRST
 TOWER N.W. OF F.M. 1960 AND 80' EAST OF RAIL-
 ROAD TRACKS) 1979 ADJ. ELEV. 125.41
 100 YEAR FLOOD PLAIN ELEV. 119.54

APPROVED *John Wood*
 updated signature 3-19-93
 only
 The City of Houston
 is your only utility.

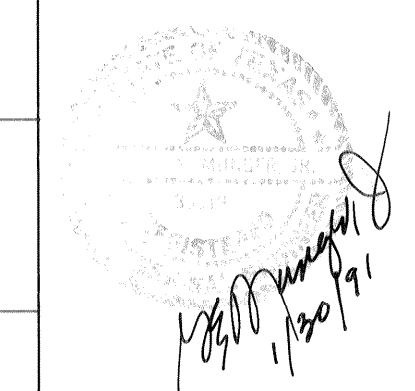
APPROVED *John Wood*
 only
 The City of Houston
 is your only utility.

Water & Sanitary Sewer Lines Approved as
 Located Only.
 The Above Authorization is Valid for 1 Year
 Only.

NOTICE:
 AT LEAST 48 HOURS BEFORE EXCAVATING
 IN STREET R.O.W. OR EASEMENTS CALL
 THE UTILITY COORDINATING COMMITTEE
 223-4567

PRIVATE UTILITY LINES SHOWN

<i>Archer</i>	ENTEX, INC.
<i>Southern Bell</i>	SOUTHWESTERN BELL TELEPHONE COMPANY
<i>Houston Lighting & Power</i>	HOUSTON LIGHTING & POWER CO.
APPROVED FOR CITY OF HOUSTON 1 CAPITAL PROJECTS DEPARTMENT:	
<i>Water Design</i>	WATER DESIGN
<i>Facilities Construction</i>	FACILITIES CONSTRUCTION
<i>Civil Construction</i>	CIVIL CONSTRUCTION
<i>Traffic & Transportation</i>	TRAFFIC & TRANSPORTATION
<i>Other Dept's</i>	OTHER DEPT'S.
DEPARTMENT OF PUBLIC WORKS DEPARTMENT OF UTILITY OPERATION	

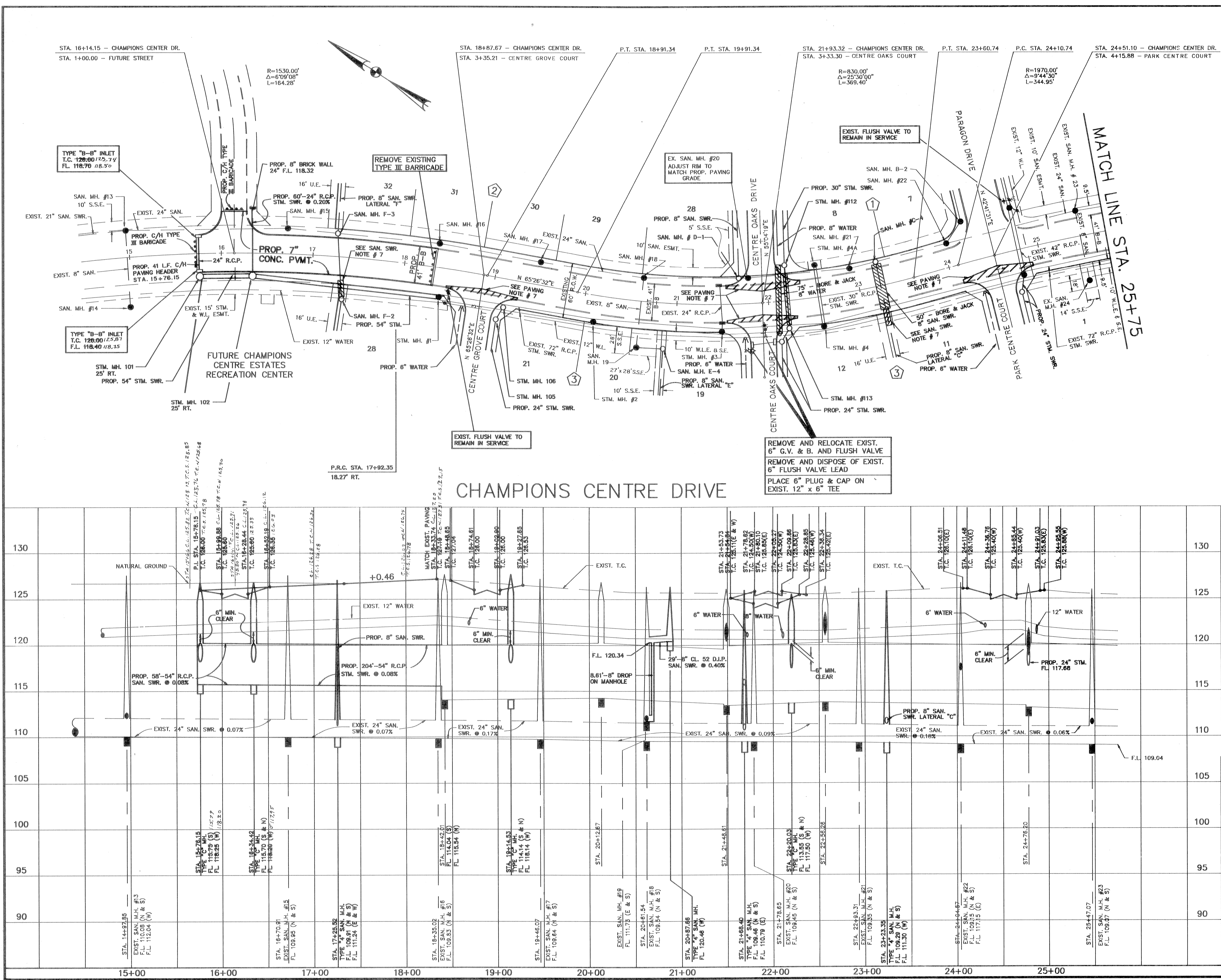


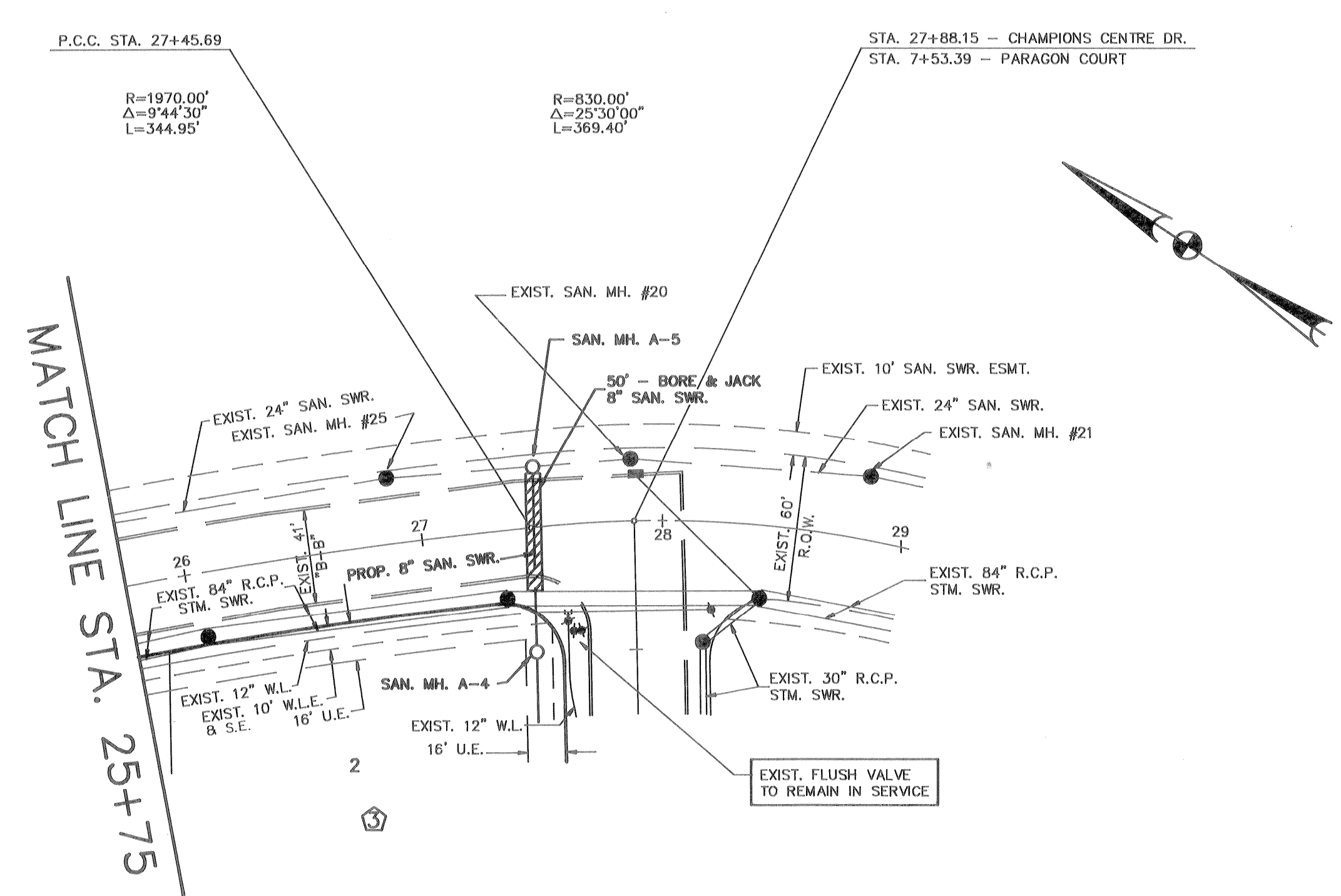
CENTURY ENGINEERING, INC.
 9850 WESTPARK, SUITE 200, HOUSTON, TEXAS 77063 (713) 780-8871

HARRIS COUNTY M.U.D. NO. 191
CHAMPIONS CENTRE ESTATES SUBDIVISION
 SECTION ONE
 HARRIS COUNTY TEXAS

PLAN AND PROFILE
CHAMPIONS CENTRE DRIVE
 STA. 15+00 TO STA. 25+77

File Name: CHAMP1.DWG	Scale: HORIZ : 1"=50'	Date: JAN., 1991
Designed By: D.L.P.	Checked By: G.E.M.	Job No. 90023-01.0
Drawn By: ACAD	Approved By: G.E.M.	Sheet 4 of 18





BENCH MARK
 NATIONAL GEODETIC SURVEY MARKER NO. Y-1216,
 LOCATED IN CENTER OF HIGHLINE TOWER. (FIRST
 TOWER N.W. OF F.M. 1960 AND 80' EAST OF RAIL-
 ROAD TRACKS) 1979 ADJ. ELEV. 125.41
 100 YEAR FLOOD PLAIN ELEV. 119.54

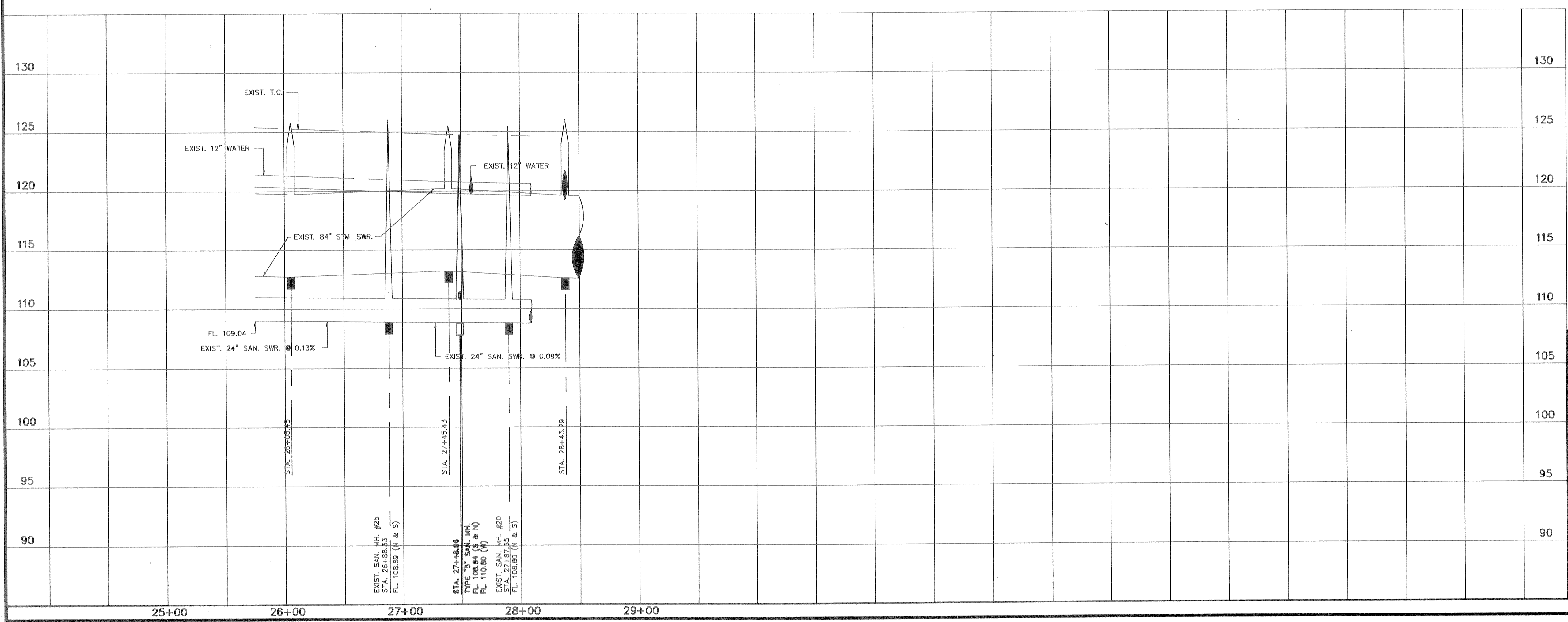
updated
 signature 3-19-93
 only

APPROVED *Jack Wood*
 County Engineer
 Date

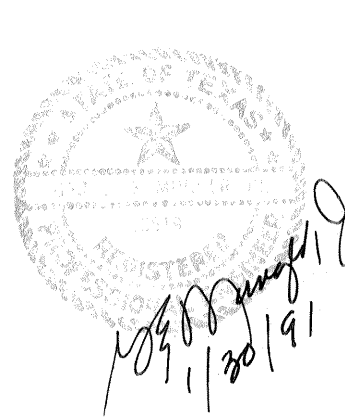
Water & Sewer Sewer Lines Approved
 Location Only
 The Above Authorization is Valid for 1 Year
 Only

NOTICE:
 AT LEAST 48 HOURS BEFORE EXCAVATING
 IN STREET R.O.W. OR EASEMENTS CALL
 THE UTILITY COORDINATING COMMITTEE
 223-4567

CHAMPIONS CENTRE DRIVE



PRIVATE UTILITY LINES SHOWN	
<i>Amgen</i>	ENTEX, INC.
<i>Southwestern Bell</i>	SOUTHWESTERN BELL TELEPHONE COMPANY VALID FOR ONE YEAR ONLY
<i>Houston Lighting & Power Co.</i>	HOUSTON LIGHTING & POWER CO. APPROVAL ONLY FOR CROSSING UNDERGROUND DUCTLINES UNLESS NOTED. VALID FOR ONE YEAR ONLY
APPROVED FOR CITY OF HOUSTON 1 CAPITAL PROJECTS DEPARTMENT:	
<i>Water Design</i>	WATER DESIGN
<i>Facilities Construction</i>	FACILITIES CONSTRUCTION
<i>Civil Construction</i>	CIVIL CONSTRUCTION
<i>Traffic & Transportation</i>	TRAFFIC & TRANSPORTATION
<i>1/9/91</i>	DATE
OTHER DEPT'S.	
DEPARTMENT OF PUBLIC WORKS	DEPARTMENT OF UTILITY OPERATION



CENTURY ENGINEERING, INC.
 9950 WESTPARK, SUITE 200, HOUSTON, TEXAS 77063 (713) 780-8871

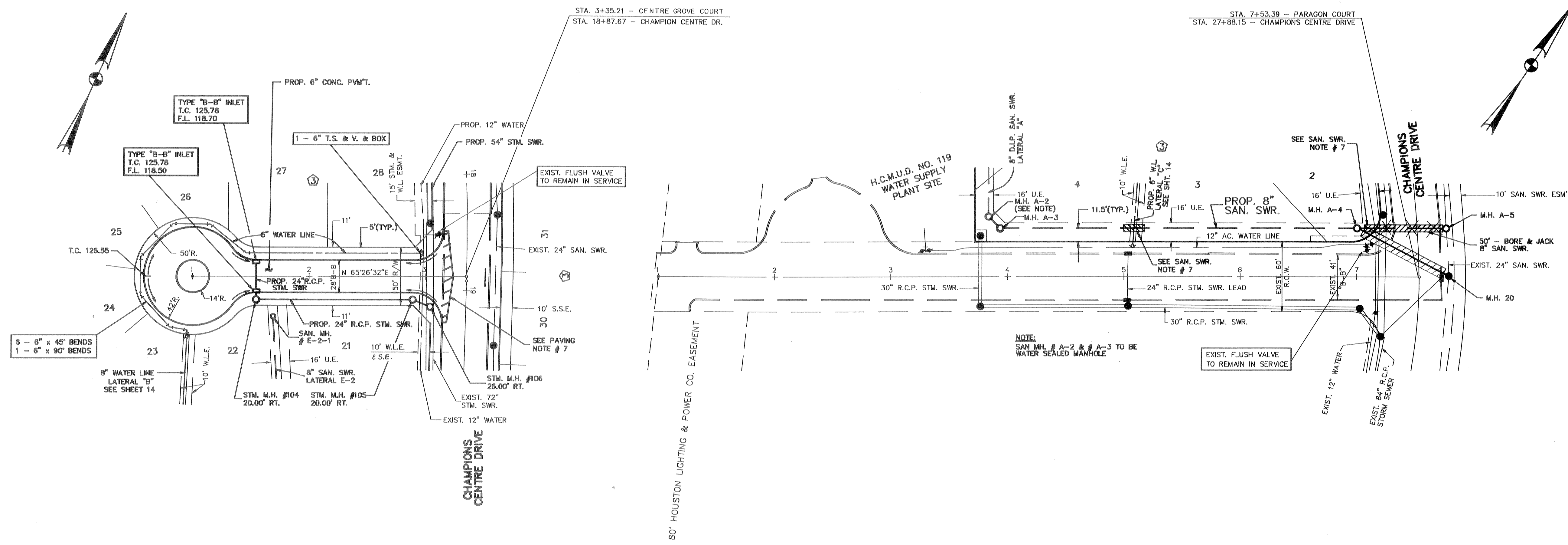
HARRIS COUNTY M.U.D. NO. 191
CHAMPIONS CENTRE ESTATES SUBDIVISION
 SECTION ONE

HARRIS COUNTY TEXAS
 PLAN AND PROFILE

CHAMPIONS CENTRE DRIVE
 STA. 25+75 TO STA. 29+00

File Name: CHAMP2.DWG	Scale: HORIZ : 1"=50' VERT : 1"=5'	Date: JAN., 1991
Designed By: D.L.P.	Checked By: G.E.M.	Job No. 90023-01.0
Drawn By: ACAD	Approved By: G.E.M.	Sheet 5 of 18

BENCH MARK
 NATIONAL GEODETIC SURVEY MARKER NO. Y-1216,
 LOCATED IN CENTER OF HIGHLINE TOWER. (FIRST
 TOWER N.W. OF F.M. 1960 AND 80' EAST OF RAIL-
 ROAD TRACKS) 1979 ADJ. ELEV. 125.41
 100 YEAR FLOOD PLAIN ELEV. 119.54

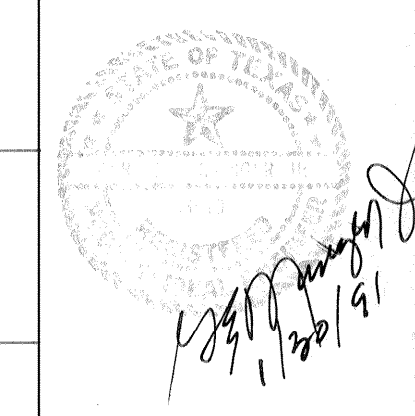
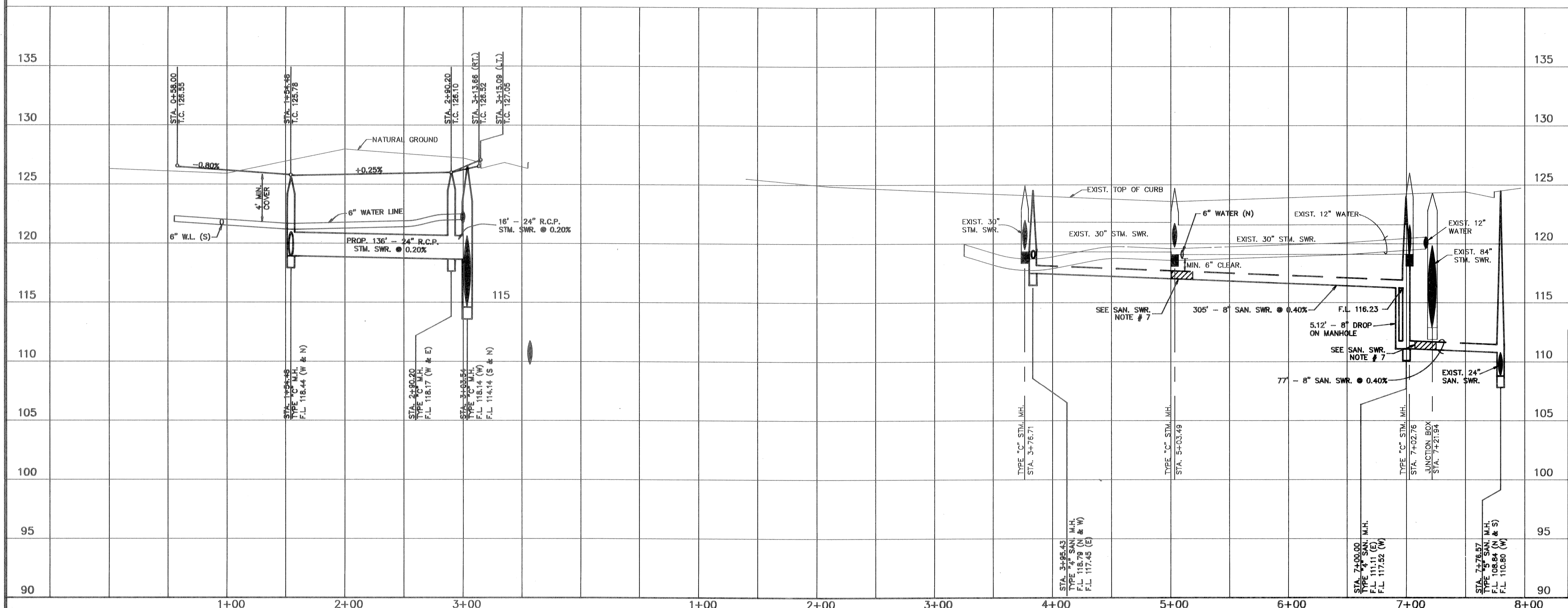


CENTRE GROVE COURT

PARAGON COURT

NOTICE:
 AT LEAST 48 HOURS BEFORE EXCAVATING
 IN STREET R.O.W. OR EASEMENTS CALL
 THE UTILITY COORDINATING COMMITTEE
 223-4567

PRIVATE UTILITY LINES SHOWN	
<i>Anderson Perry 05-20-91</i>	ENTEX, INC.
<i>Southwestern Bell 6-2-91</i>	SOUTHWESTERN BELL TELEPHONE COMPANY VALID FOR ONE YEAR ONLY
<i>Houston Lighting & Power Co.</i>	HOUSTON LIGHTING & POWER CO. APPROVAL ONLY FOR CROSSING UNDERGROUND FACILITIES UNLESS NOTED. VALID FOR ONE YEAR ONLY
APPROVED FOR CITY OF HOUSTON 1 CAPITAL PROJECTS DEPARTMENT:	
<i>Water Design</i>	<i>Paving</i>
<i>Facilities Construction</i>	<i>Storm Sewer</i>
<i>Civil Construction</i>	<i>Wastewater Design</i>
<i>Traffic & Transportation</i>	<i>City Planning Department</i>
<i>4/3/91</i>	DATE
OTHER DEPT'S.	
DEPARTMENT OF PUBLIC WORKS	DEPARTMENT OF UTILITY OPERATION



CENTURY ENGINEERING, INC.
 9950 WESTPARK, SUITE 200, HOUSTON, TEXAS 77063 (713) 780-8871

HARRIS COUNTY M.U.D. NO. 191
CHAMPIONS CENTRE ESTATES SUBDIVISION
 SECTION ONE
 HARRIS COUNTY TEXAS

PLAN AND PROFILE
 CENTRE GROVE CT. - STA. 0+00 TO END
 PARAGON COURT - STA. 1+00 TO END

File Name: MOLLY.DWG	Scale: HORIZ : 1"=50'	Date: JAN., 1991
Designed By: D.L.P.	Checked By: G.E.M.	Job No. 90023-01.0
Drawn By: ACAD	Approved By: G.E.M.	Sheet 6 of 18

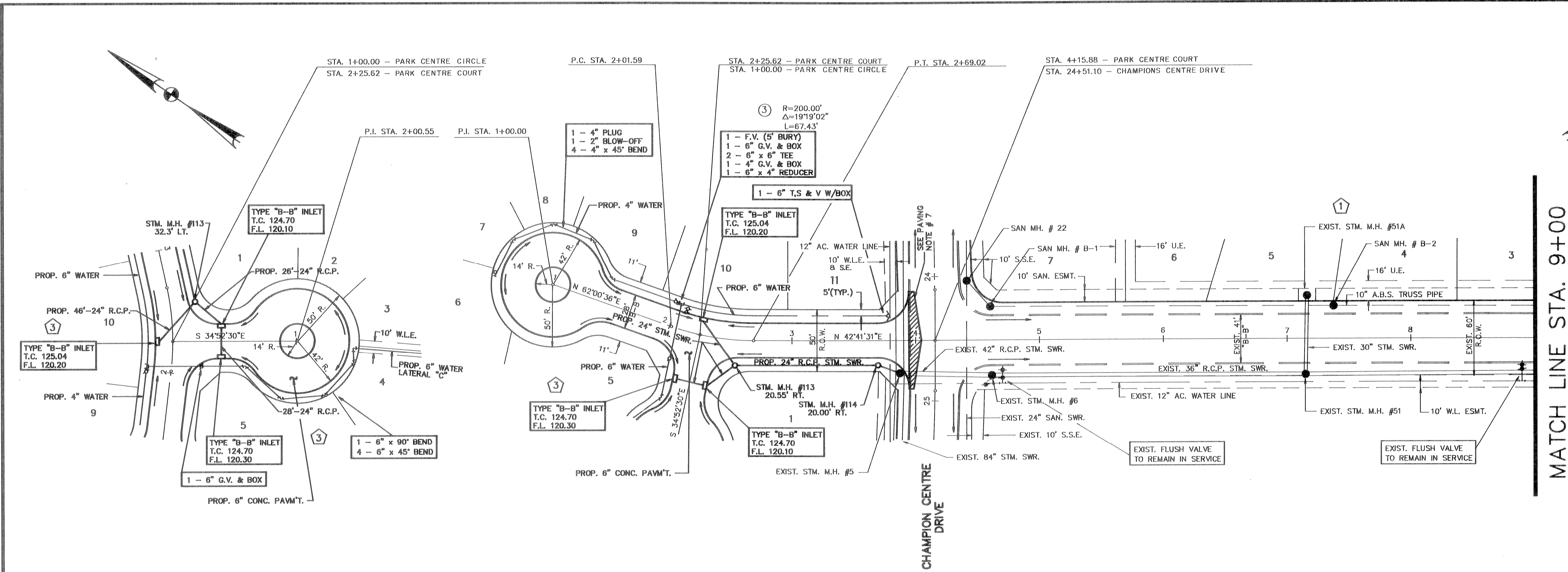
BENCH MARK
 NATIONAL GEODETIC SURVEY MARKER NO. Y-1216,
 LOCATED IN CENTER OF HIGHLINE TOWER. (FIRST
 TOWER N.W. OF F.M. 1960 AND 80' EAST OF RAIL-
 ROAD TRACKS) 1979 ADJ. ELEV. 125.41
 100 YEAR FLOOD PLAIN ELEV. 119.54

APPROVED *Paul West*
 updated
 signature 3-19-93
 only
 1 Year only

APPROVED *Paul West*
 County Engineer
 Date

Water & Sanitary Sewer Lines: Approved as to
 Location Only.
 The Above Authorization is Valid for 1 Year
 Only.

NOTICE:
 AT LEAST 48 HOURS BEFORE EXCAVATING
 IN STREET R.O.W. OR EASEMENTS CALL
 THE UTILITY COORDINATING COMMITTEE
 223-4567

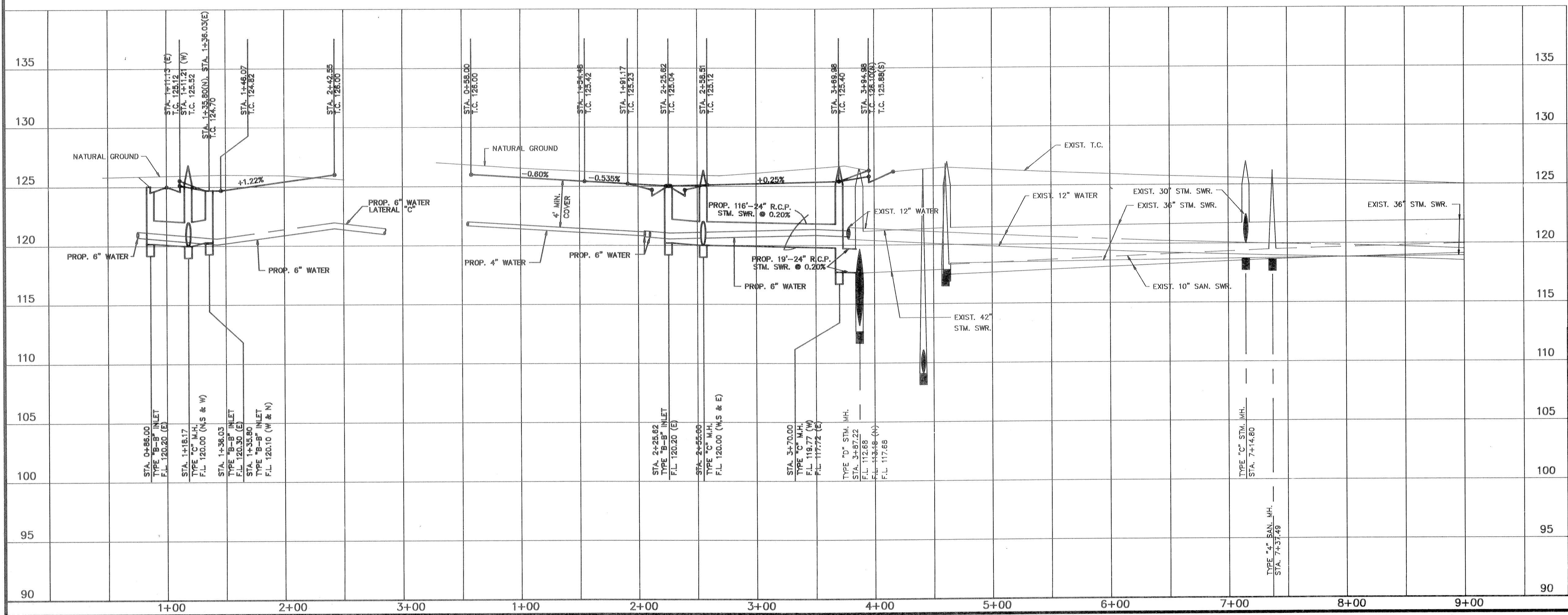


MATCH LINE STA. 9+00

PARK CENTRE CIRCLE

PARK CENTRE COURT

PARAGON DRIVE



PRIVATE UTILITY LINES SHOWN	
<i>Arjun P... 05-22-91</i>	ENTEX, INC.
<i>...</i>	SOUTHWESTERN BELL TELEPHONE COMPANY VALID FOR ONE YEAR ONLY
<i>...</i>	HOUSTON LIGHTING & POWER CO. VALID FOR ONE YEAR ONLY
APPROVED FOR CITY OF HOUSTON 1 CAPITAL PROJECTS DEPARTMENT:	
<i>...</i>	PAVING
<i>...</i>	STORM SEWER
<i>...</i>	WASTEWATER DESIGN
<i>...</i>	CITY PLANNING DEPARTMENT
<i>...</i>	DIRECTOR
<i>1/2/91</i>	DATE
OTHER DEPT'S.	
DEPARTMENT OF PUBLIC WORKS	DEPARTMENT OF UTILITY OPERATION

Paul West
 1/2/91

CENTURY ENGINEERING, INC.
 9850 WESTPARK, SUITE 200, HOUSTON, TEXAS 77063 (713) 780-8871

HARRIS COUNTY M.U.D. NO. 191

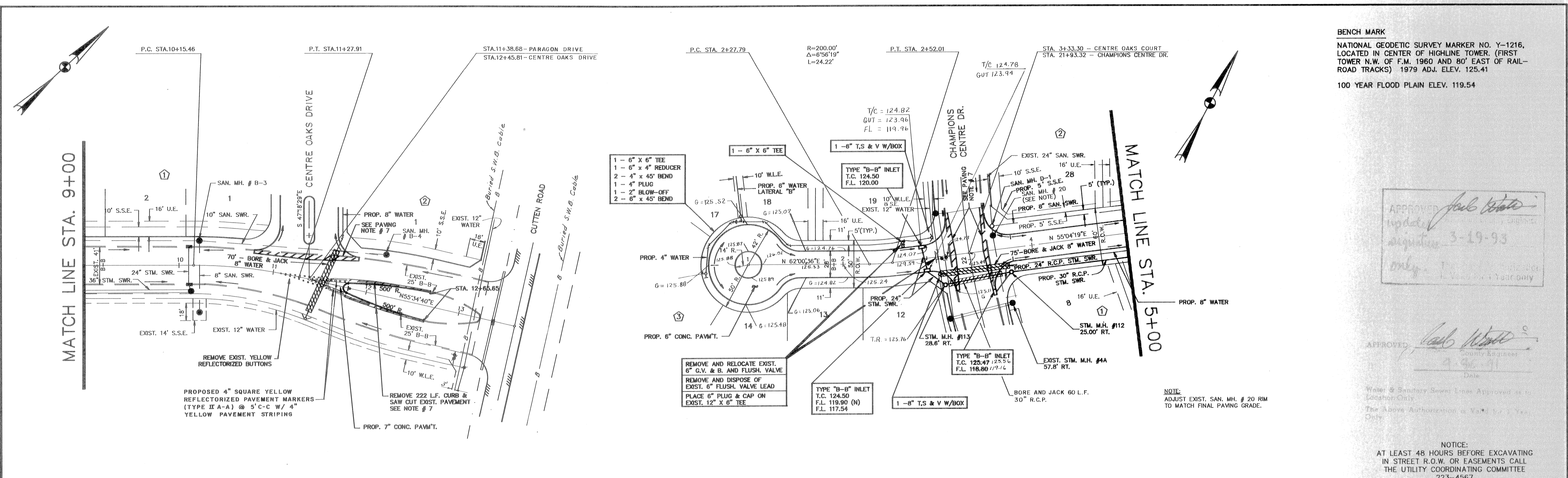
CHAMPION CENTRE ESTATES SUBDIVISION
 SECTION ONE

HARRIS COUNTY TEXAS

PLAN AND PROFILE

PARK CENTRE CIRCLE - STA. 1+00 TO END
 PARK CENTRE CT. - STA. 1+00 TO 4+15.88
 PARAGON DR. - STA. 4+15.88 TO 9+00

File Name: CHASE.DWG	Scale: HORIZ: 1"=50' VERT: 1"=5'	Date: JAN., 1991
Designed By: D.L.P.	Checked By: G.E.M.	Job No. 90023-01.0
Drawn By: ACAD	Approved By: G.E.M.	Sheet 7 of 18



BENCH MARK
 NATIONAL GEODETIC SURVEY MARKER NO. Y-1216,
 LOCATED IN CENTER OF HIGHLINE TOWER. (FIRST
 TOWER N.W. OF F.M. 1960 AND 80' EAST OF RAIL-
 ROAD TRACKS) 1979 ADJ. ELEV. 125.41
 100 YEAR FLOOD PLAIN ELEV. 119.54

APPROVED *[Signature]*
 3-29-93

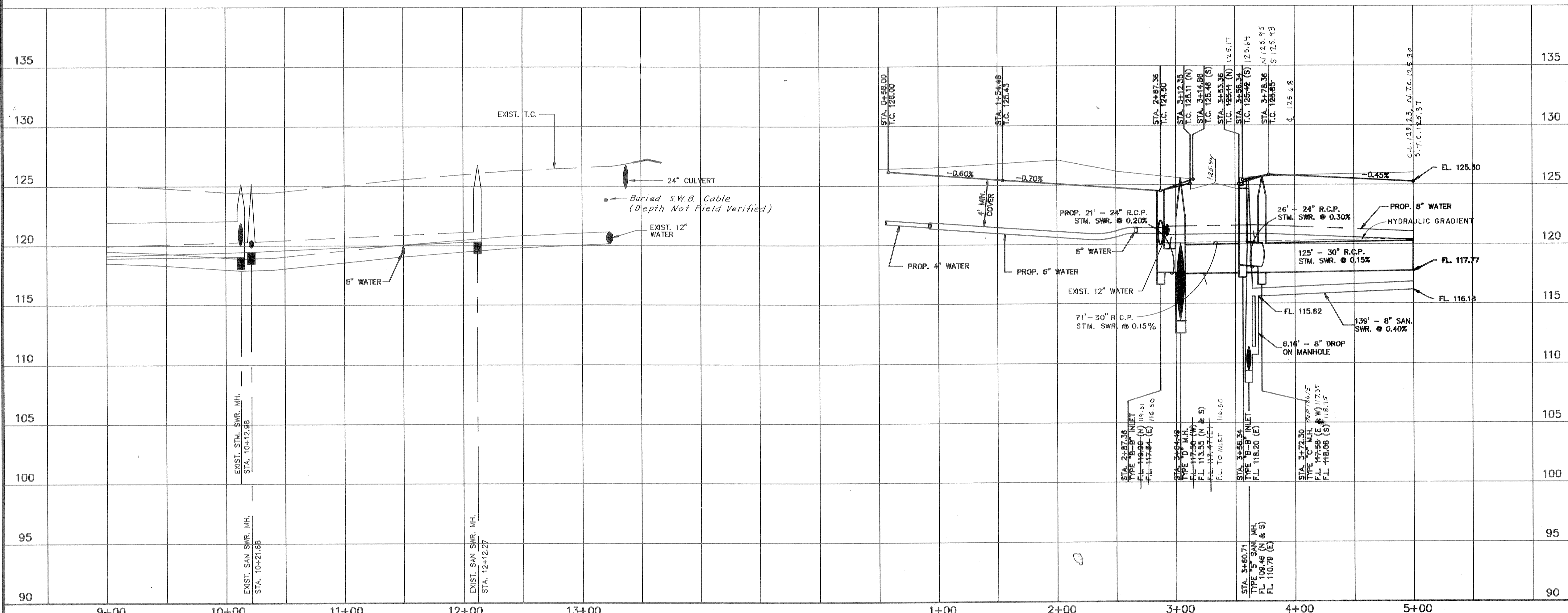
APPROVED *[Signature]*
 Date: _____
 Water & Sewer Lines Approval is
 Location Only
 The Above Authorization is Valid for One
 Year Only

NOTICE:
 AT LEAST 48 HOURS BEFORE EXCAVATING
 IN STREET R.O.W. OR EASEMENTS CALL
 THE UTILITY COORDINATING COMMITTEE
 223-4567

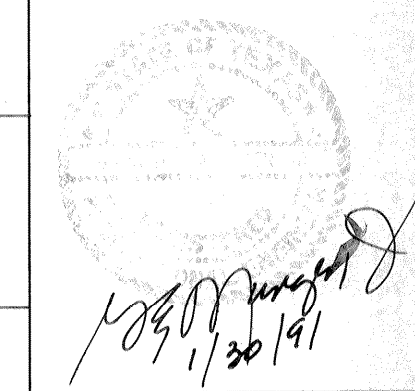
PARAGON DRIVE

CENTRE OAKS COURT

CENTRE OAKS DRIVE



PRIVATE UTILITY LINES SHOWN	
<i>[Signature]</i>	ENTEX, INC.
<i>[Signature]</i>	CENTEL TELEPHONE COMPANY
<i>[Signature]</i>	HOUSTON LIGHTING & POWER CO.
APPROVAL ONLY FOR CROSSING UNDERGROUND UTILITIES UNLESS NOTED. VALID FOR ONE YEAR ONLY	
APPROVED FOR CITY OF HOUSTON 1 CAPITAL PROJECTS DEPARTMENT:	
WATER DESIGN	DATE: 3/1/91
FACILITIES CONSTRUCTION	DRAWING: 210-91
CIVIL CONSTRUCTION	STORM SEWER
TRAFFIC & TRANSPORTATION	WASTEWATER DESIGN
	CITY PLANNING DEPARTMENT
	DIRECTOR
OTHER DEPT'S.	
DEPARTMENT OF PUBLIC WORKS	DEPARTMENT OF UTILITY OPERATION



CENTURY ENGINEERING, INC.
 9950 WESTPARK, SUITE 200, HOUSTON, TEXAS 77063 (713) 780-8871

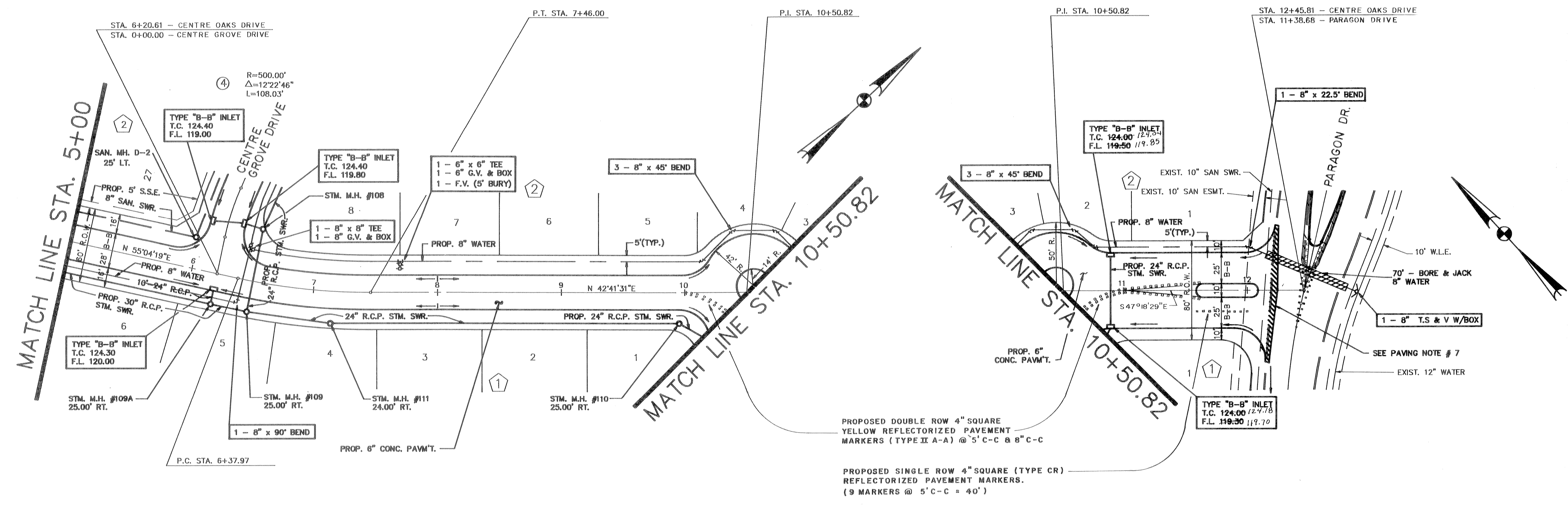
HARRIS COUNTY M.U.D. NO. 191
CHAMPIONS CENTRE ESTATES SUBDIVISION
 SECTION ONE

HARRIS COUNTY TEXAS

PLAN AND PROFILE
 PARAGON DRIVE - STA. 9+00 TO END
 CENTRE OAKS CT. - STA. 1+00 TO 3+33.30
 CENTRE OAKS DR. - STA. 3+33.30 TO 5+00

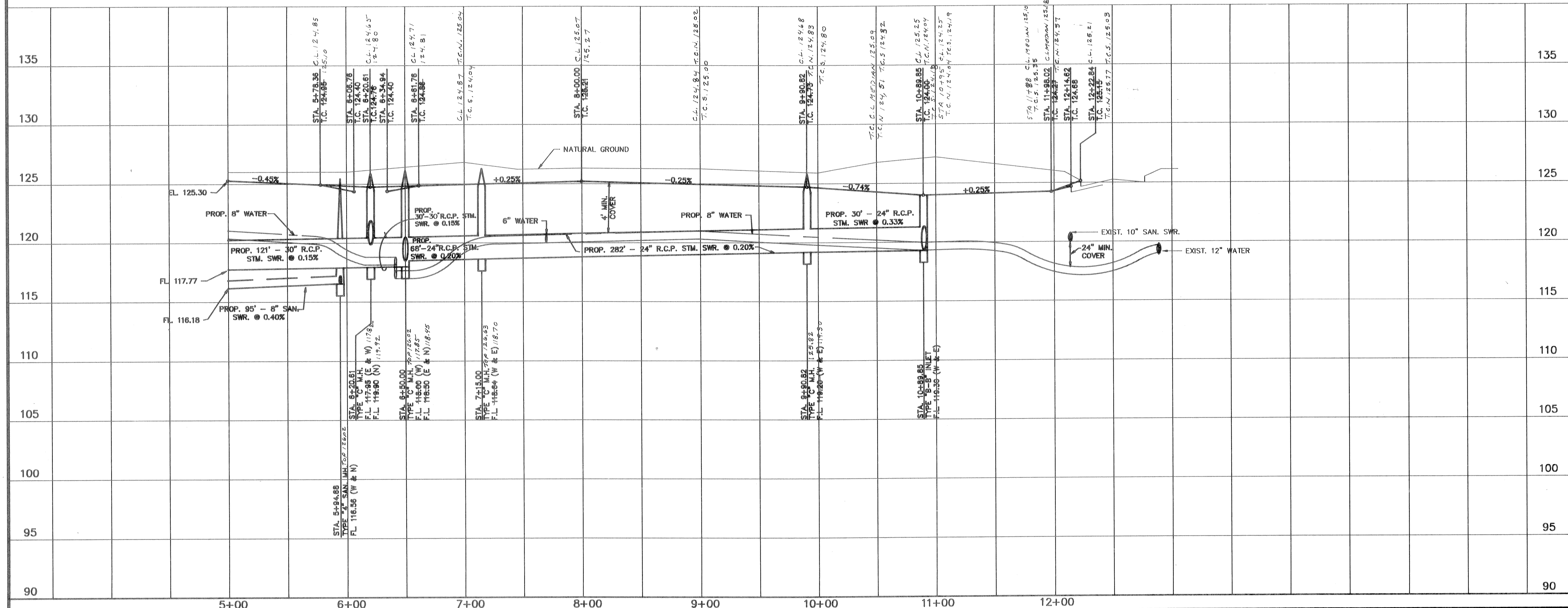
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Designed By: D.L.P.	Checked By: C.E.M.	Job No. 90023-01.0
Drawn By: ACAD	Approved By: C.E.M.	Sheet 8 of 18

BENCH MARK
 NATIONAL GEODETIC SURVEY MARKER NO. Y-1216,
 LOCATED IN CENTER OF HIGHLINE TOWER. (FIRST
 TOWER N.W. OF F.M. 1960 AND 80' EAST OF RAIL-
 ROAD TRACKS) 1979 ADJ. ELEV. 125.41
 100 YEAR FLOOD PLAIN ELEV. 119.54



CENTRE OAKS DRIVE

CENTRE OAKS DRIVE



NOTICE:
 AT LEAST 48 HOURS BEFORE EXCAVATING
 IN STREET R.O.W. OR EASEMENTS CALL
 THE UTILITY COORDINATING COMMITTEE
 223-4567

PRIVATE UTILITY LINES SHOWN	
ENTEX, INC.	
CENTEL TELEPHONE COMPANY	
HOUSTON LIGHTING & POWER CO.	
APPROVAL ONLY FOR CROSSING UNDERGROUND DUCTLINES UNLESS NOTED. VALID FOR ONE YEAR ONLY	
APPROVED FOR CITY OF HOUSTON 1 CAPITAL PROJECTS DEPARTMENT:	
WATER DESIGN	HAZARD
FACILITIES CONSTRUCTION	STORM SEWER
CIVIL CONSTRUCTION	WASTEWATER DESIGN
TRAFFIC & TRANSPORTATION	CITY PLANNING DEPARTMENT
DATE: 1/13/91	
OTHER DEPT'S.	
DEPARTMENT OF PUBLIC WORKS	DEPARTMENT OF UTILITY OPERATION

Handwritten signature and date: 1/13/91

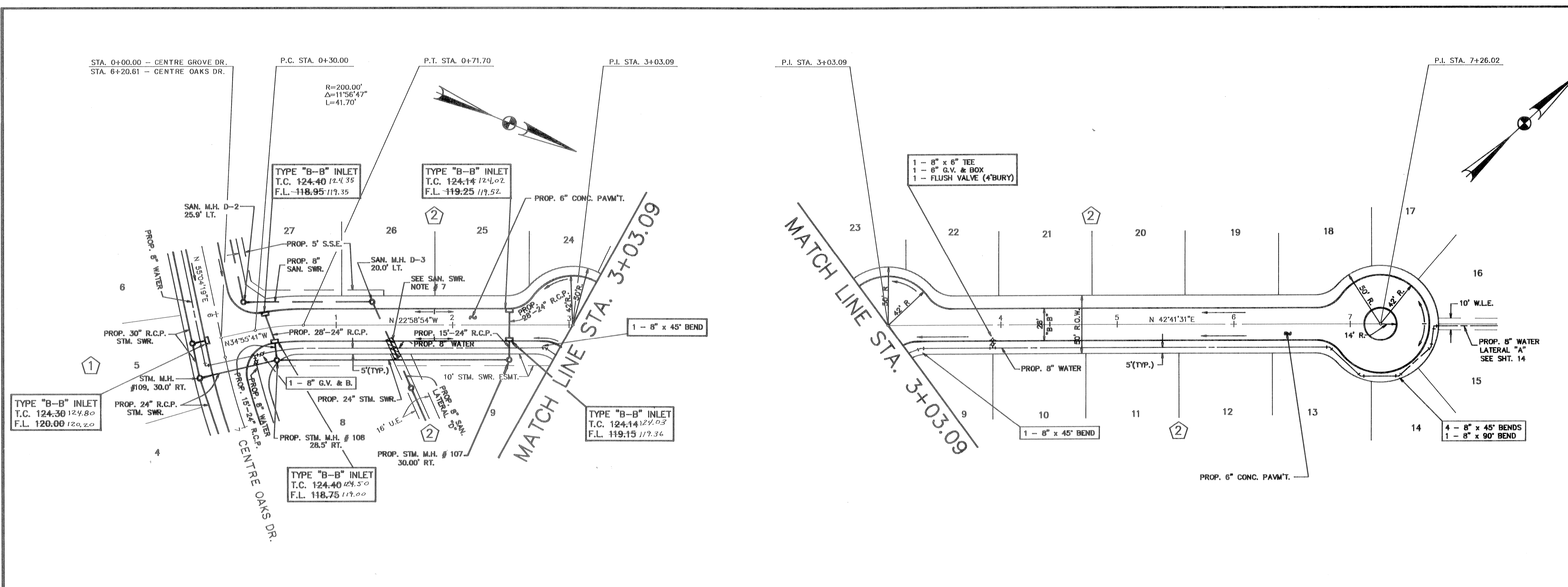
CENTURY ENGINEERING, INC.
 9650 WESTPARK, SUITE 200, HOUSTON, TEXAS 77063 (713) 780-8871

HARRIS COUNTY M.U.D. NO. 191
CHAMPION CENTRE ESTATES SUBDIVISION
 SECTION ONE
 HARRIS COUNTY TEXAS

PLAN AND PROFILE
CENTRE OAKS DRIVE
 STA. 5+00 TO END

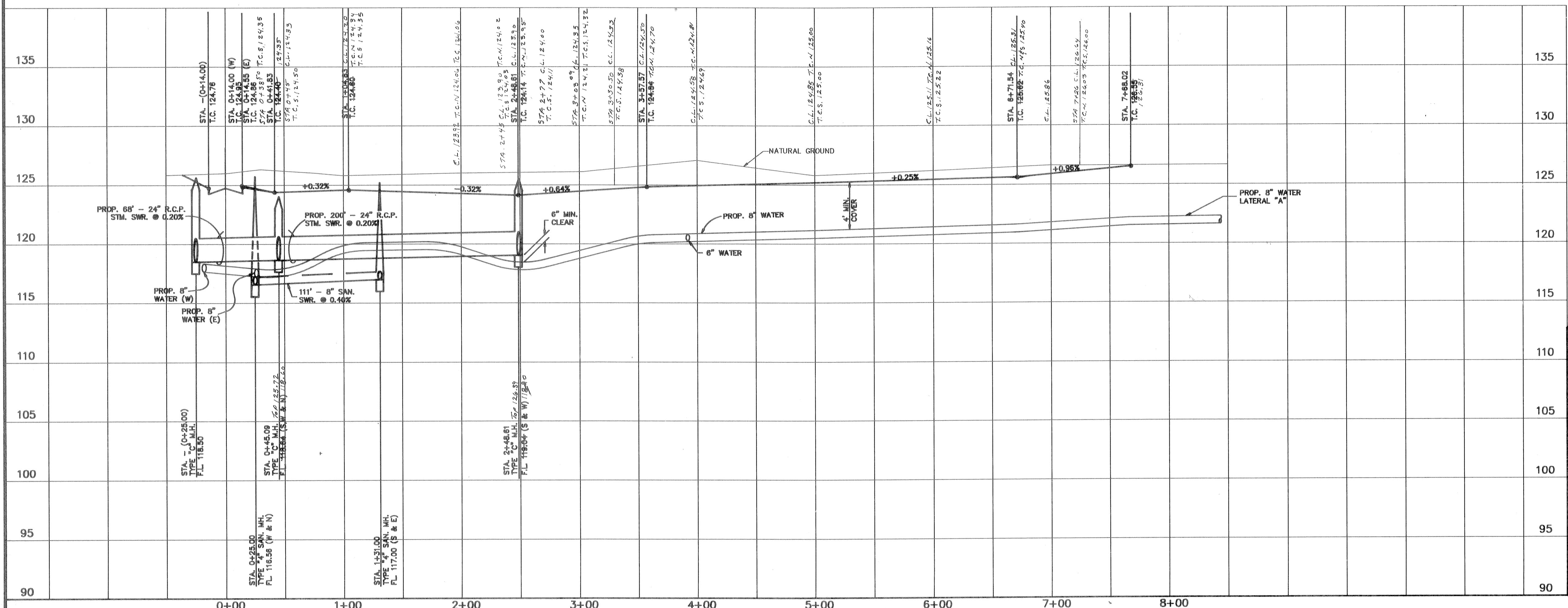
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Designed By: D.L.P.	Checked By: G.E.M.	Job No.: 90023-01.0
Drawn By: ACAD	Approved By: G.E.M.	Sheet 9 of 18

BENCH MARK
 NATIONAL GEODETIC SURVEY MARKER NO. Y-1216,
 LOCATED IN CENTER OF HIGHLINE TOWER, (FIRST
 TOWER N.W. OF F.M. 1960 AND 80' EAST OF RAIL-
 ROAD TRACKS) 1979 ADJ. ELEV. 125.41
 100 YEAR FLOOD PLAIN ELEV. 119.54



CENTRE GROVE DRIVE

CENTRE GROVE DRIVE



NOTICE:
 AT LEAST 48 HOURS BEFORE EXCAVATING
 IN STREET R.O.W. OR EASEMENTS CALL
 THE UTILITY COORDINATING COMMITTEE
 223-4567

PRIVATE UTILITY LINES SHOWN	
<i>Enxent</i>	ENXENT, INC.
<i>SBC</i>	SOUTHWESTERN BELL TELEPHONE COMPANY VALID FOR ONE YEAR ONLY
<i>HLP</i>	HOUSTON LIGHTING & POWER CO. APPROVAL ONLY FOR CROSSING UNDERGROUND UTILITIES UNLESS NOTED. VALID FOR ONE YEAR ONLY
APPROVED FOR CITY OF HOUSTON 1 CAPITAL PROJECTS DEPARTMENT:	
WATER DESIGN	PAVING
FACILITIES CONSTRUCTION	STORM/SEWER
CIVIL CONSTRUCTION	WASTEWATER DESIGN
TRAFFIC & TRANSPORTATION	CITY PLANNING DEPARTMENT
DATE	DIRECTOR
1/2/91	
OTHER DEPT'S.	
DEPARTMENT OF PUBLIC WORKS	DEPARTMENT OF UTILITY OPERATION

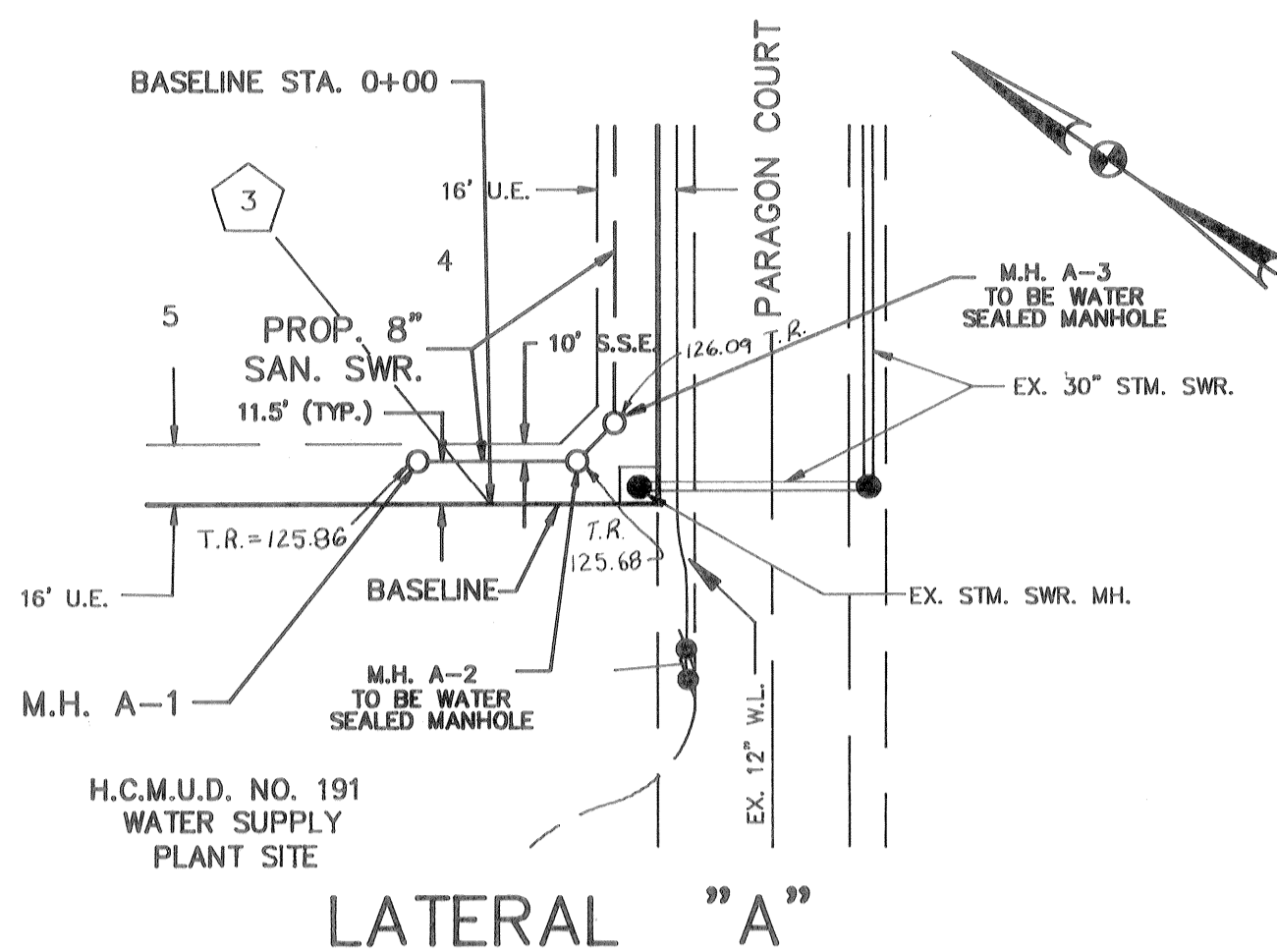
1/2/91
1/20/91

CENTURY ENGINEERING, INC.
 9850 WESTPARK, SUITE 200, HOUSTON, TEXAS 77063 (713) 780-8871

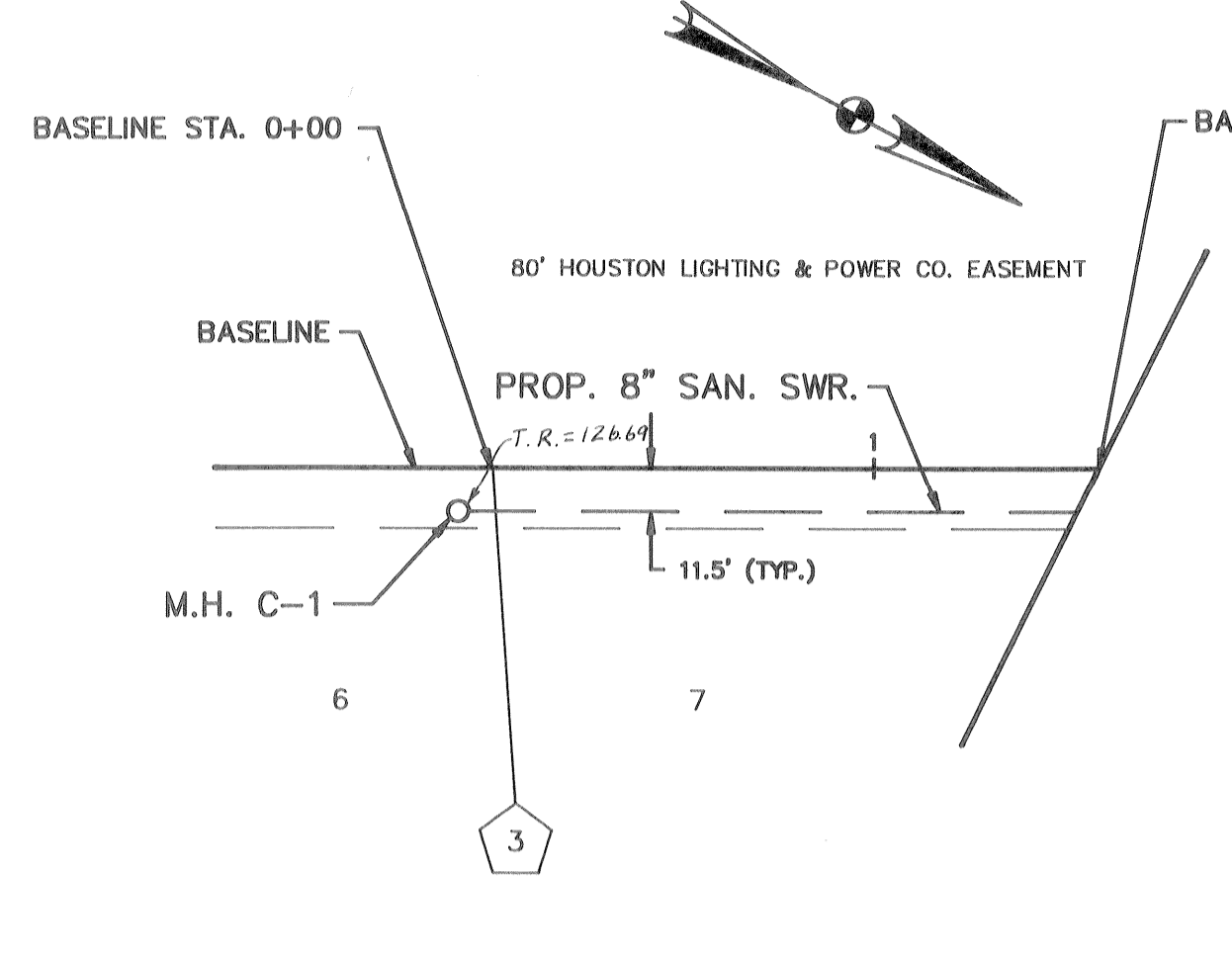
HARRIS COUNTY M.U.D. NO. 191
CHAMPIONS CENTRE ESTATES SUBDIVISION
 SECTION ONE
 HARRIS COUNTY TEXAS

PLAN AND PROFILE
CENTRE GROVE DRIVE
 STA. 0+00 TO END

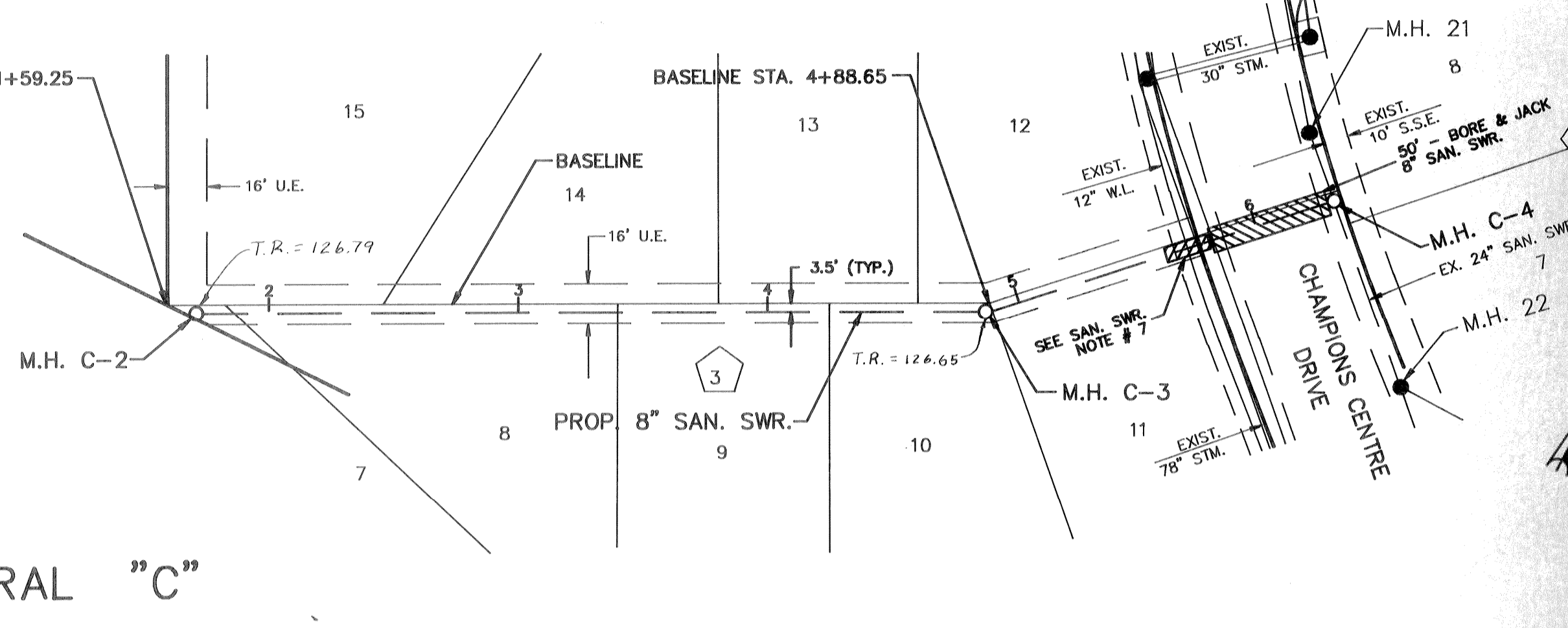
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Designed By: D.L.P.	Checked By: G.E.M.	Job No. 90023-01.0
Drawn By: ACAD	Approved By: G.E.M.	Sheet 10 of 18



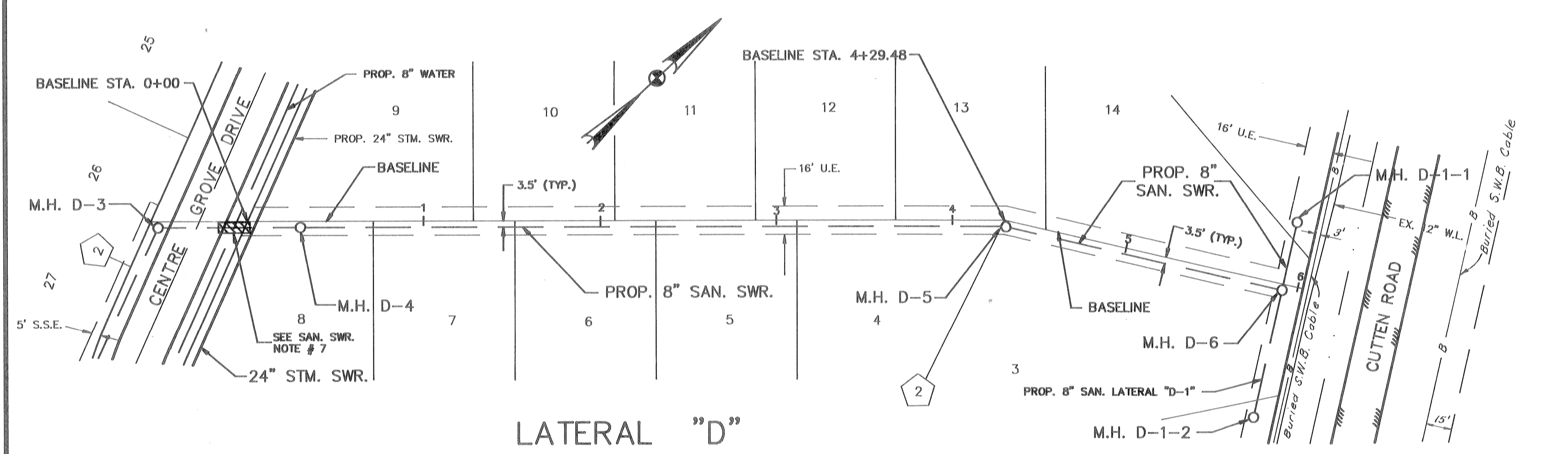
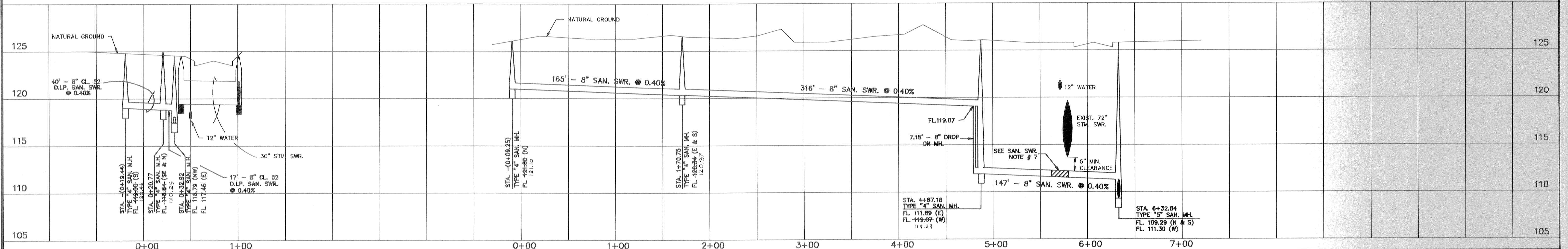
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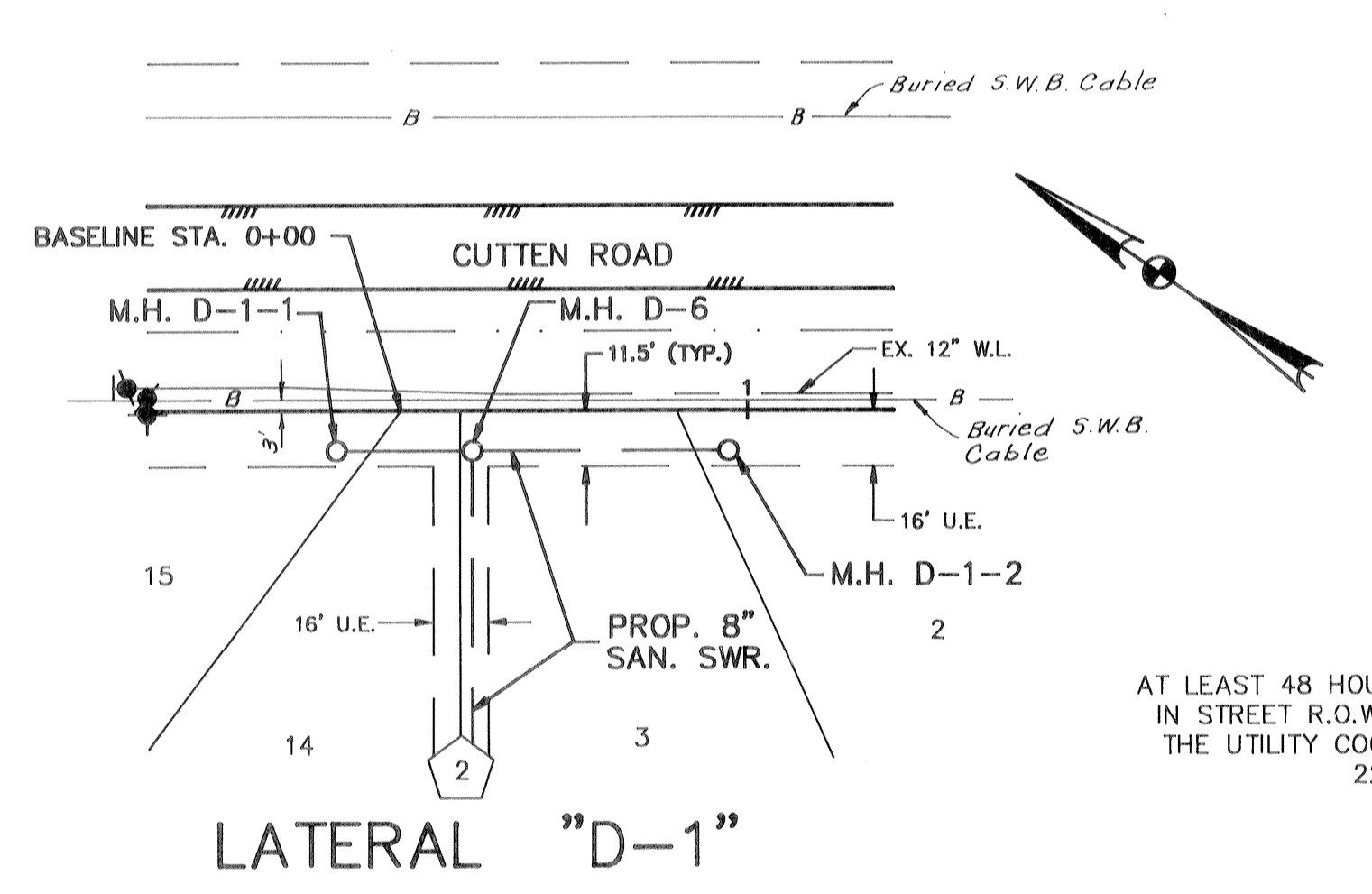
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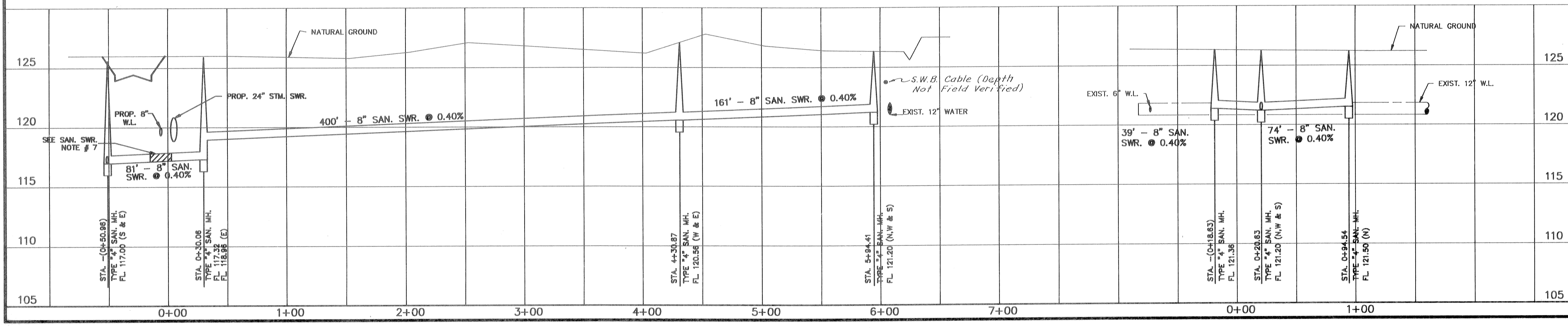
BENCH MARK
NATIONAL GEODETIC SURVEY MARKER NO. Y-1216,
LOCATED IN CENTER OF HIGHLINE TOWER. (FIRST
LOWER N.W. OF F.M. 1960 AND 80' EAST OF RAIL-
ROAD TRACKS) 1979 ADJ. ELEV. 125.41
100 YEAR FLOOD PLAIN ELEV. 119.54



LATERAL "D"



LATERAL "D-1"



PRIVATE UTILITY LINES SHOWN

ENTEX, INC.

SOUTHWESTERN BELL TELEPHONE COMPANY
VALID FOR ONE YEAR ONLY

HOUSTON LIGHTING & POWER CO.
APPROVAL ONLY FOR CROSSING UNDERGROUND DUCTILES UNLESS NOTED.
VALID FOR ONE YEAR ONLY

APPROVED FOR CITY OF HOUSTON 1
CAPITAL PROJECTS DEPARTMENT:

WATER DESIGN

FACILITIES CONSTRUCTION

CIVIL CONSTRUCTION

TRAFFIC & TRANSPORTATION

DATE: 1/14/91

OTHER DEPT'S.

DEPARTMENT OF PUBLIC WORKS

DEPARTMENT OF UTILITY OPERATION

CENTURY ENGINEERING, INC.
9650 WESTPARK, SUITE 200, HOUSTON, TEXAS 77063 (713) 780-8871

HARRIS COUNTY M.U.D. NO. 191

CHAMPIONS CENTRE ESTATES SUBDIVISION
SECTION ONE

HARRIS COUNTY TEXAS

PLAN AND PROFILE SANITARY LATERALS

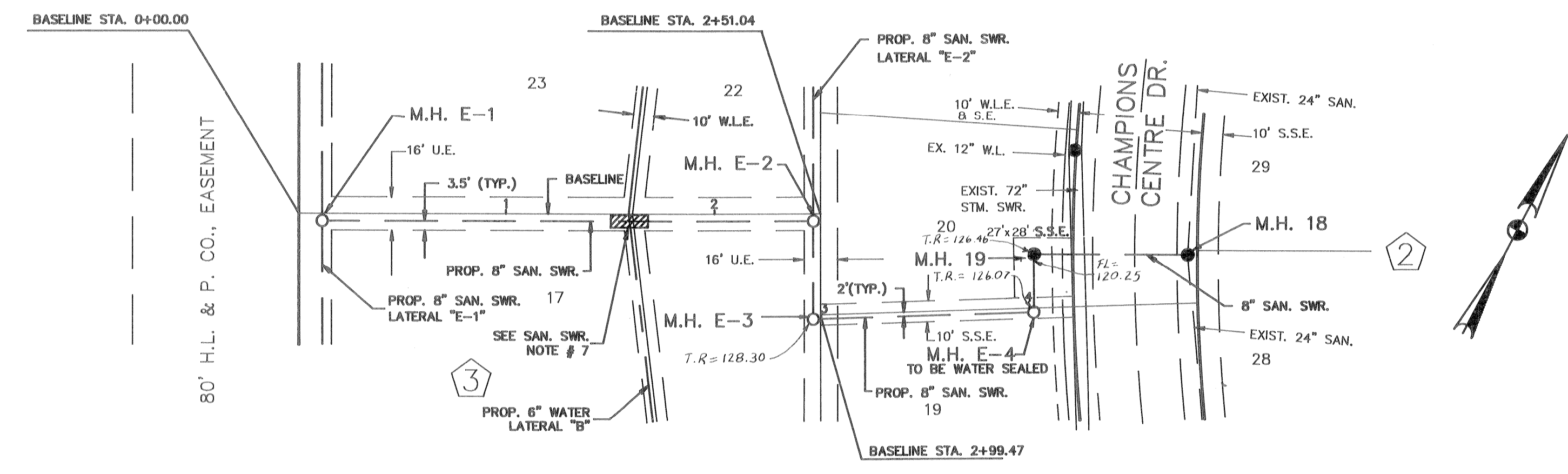
LATERALS "A", "C", "D" & "D-1"

File Name: LATERAL1.DWG Scale: HORIZ: 1"=50'
VERT: 1"=5'

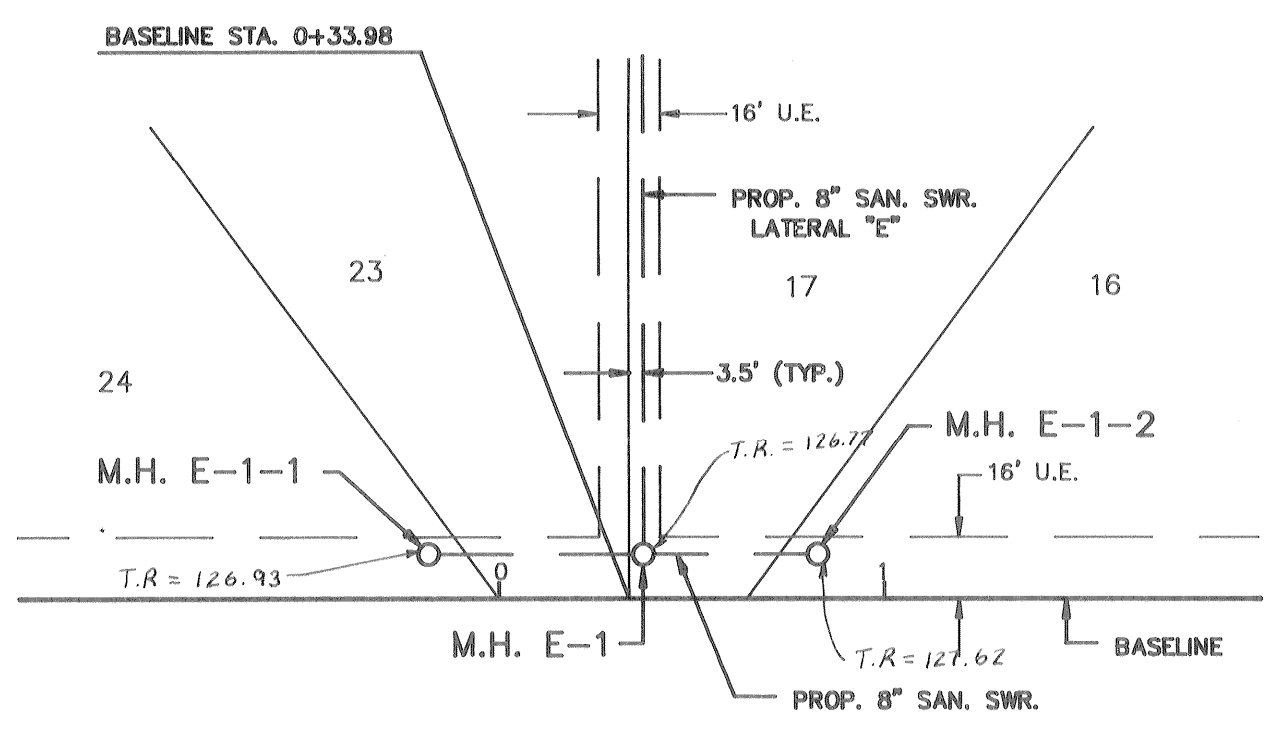
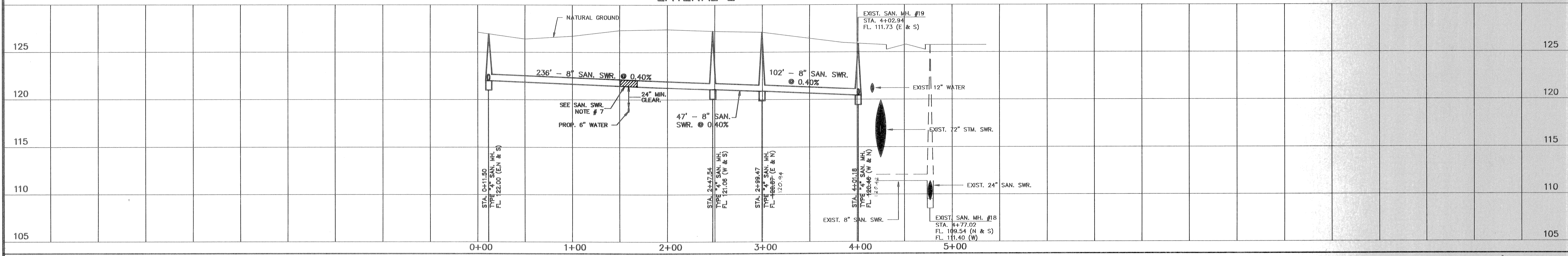
Designed By: D.L.P. Checked By: G.E.M. Date: JAN, 1991
Job No. 90023-01.0

Drawn By: ACAD Approved By: G.E.M. Sheet 11 of 18

BENCH MARK
 NATIONAL GEODETIC SURVEY MARKER NO. Y-1216,
 LOCATED IN CENTER OF HIGHLINE TOWER. (FIRST
 TOWER N.W. OF F.M. 1960 AND 80' EAST OF RAIL-
 ROAD TRACKS) 1979 ADJ. ELEV. 125.41
 100 YEAR FLOOD PLAIN ELEV. 119.54

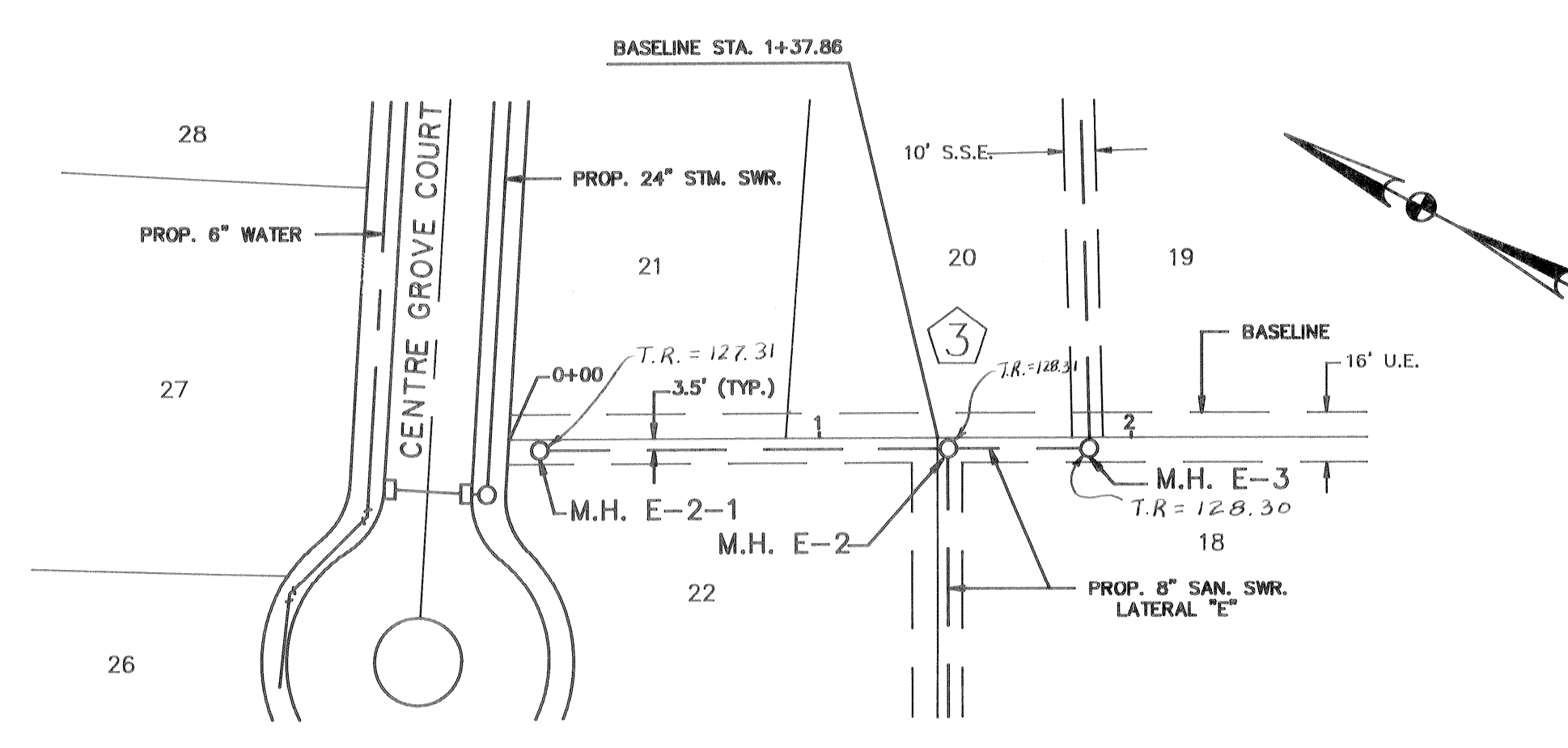


" LATERAL E "

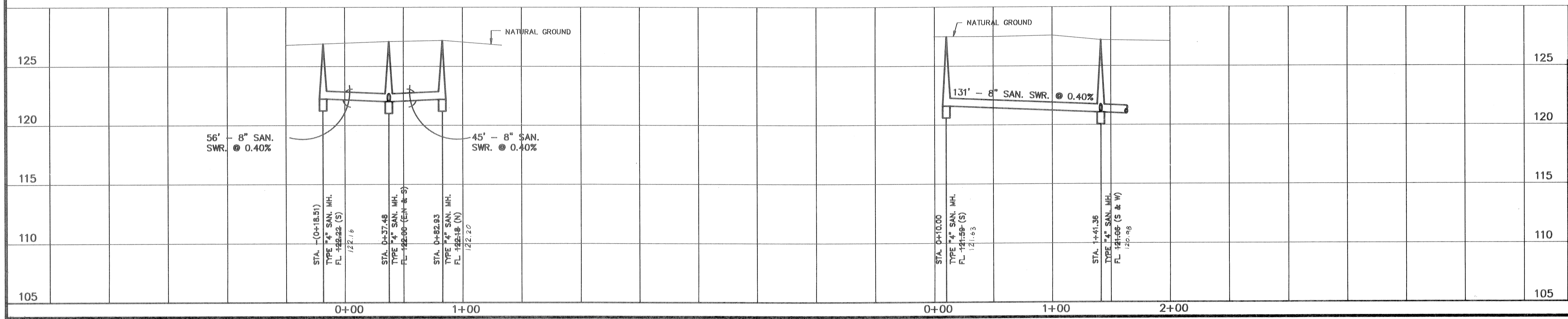


80' H.L. & P. EASEMENT

" LATERAL E-1 "



" LATERAL E-2 "



NOTICE:
 AT LEAST 48 HOURS BEFORE EXCAVATING
 IN STREET R.O.W. OR EASEMENTS CALL
 THE UTILITY COORDINATING COMMITTEE
 223-4567

PRIVATE UTILITY LINES SHOWN

ENTEX, INC.
 SOUTHWESTERN BELL TELEPHONE COMPANY
 HOUSTON LIGHTING & POWER CO.

APPROVED FOR CITY OF HOUSTON 1
 CAPITAL PROJECTS DEPARTMENT:

WATER DESIGN
 FACILITIES CONSTRUCTION
 CIVIL CONSTRUCTION
 TRAFFIC & TRANSPORTATION

DATE: 1/30/91

OTHER DEPT'S.
 DEPARTMENT OF PUBLIC WORKS
 DEPARTMENT OF UTILITY OPERATION

CENTURY ENGINEERING, INC.
 9660 WESTPARK, SUITE 200, HOUSTON, TEXAS 77063 (713) 780-8871

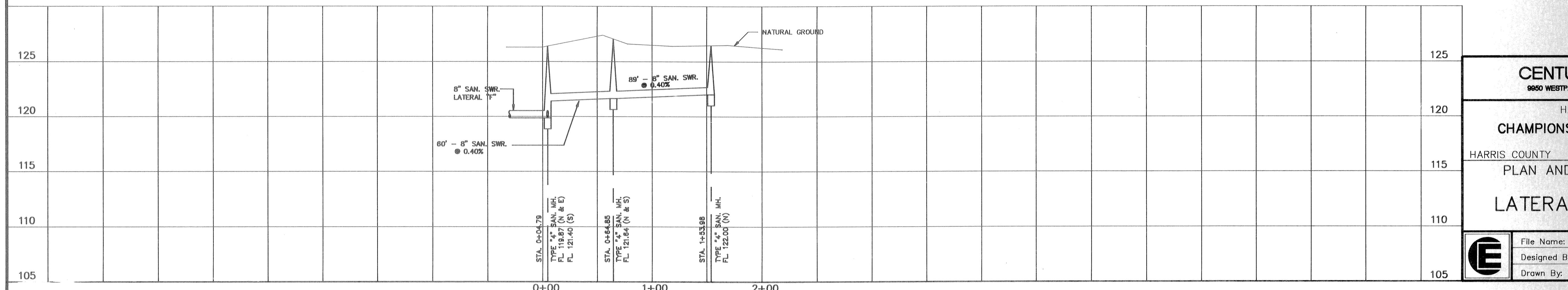
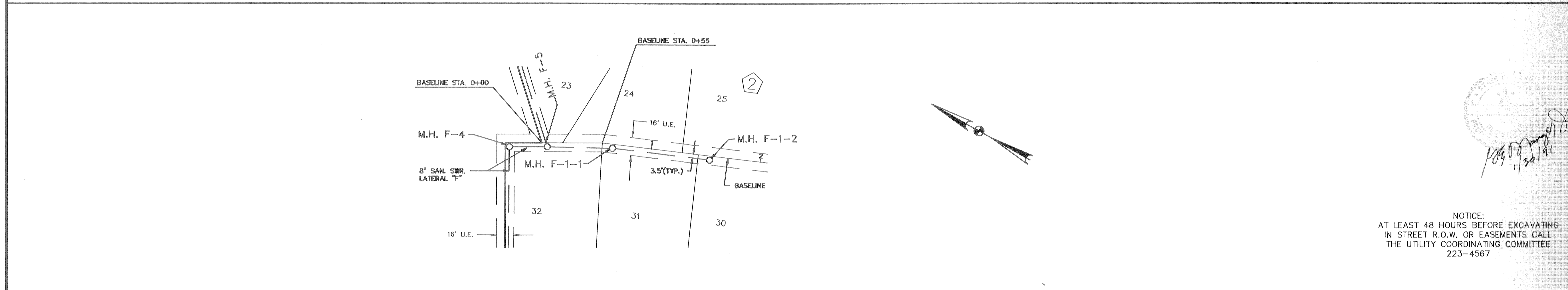
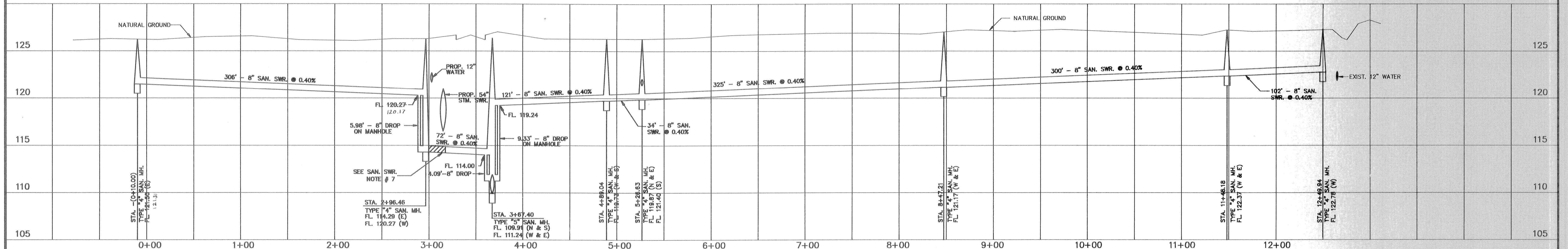
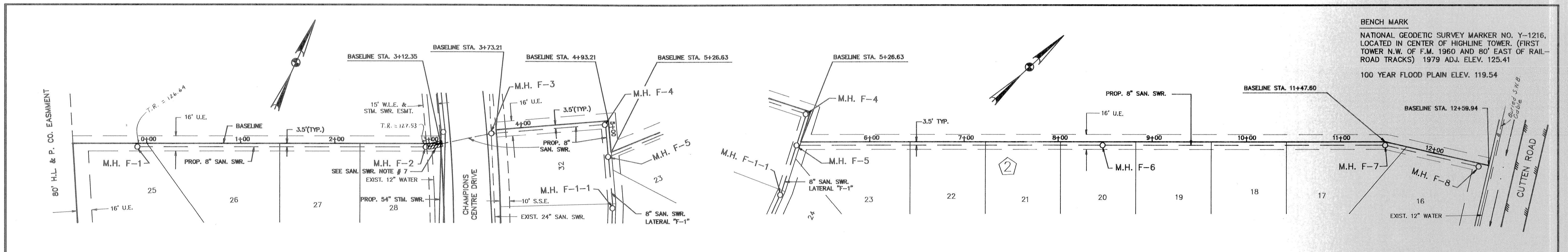
HARRIS COUNTY M.U.D. NO. 191
CHAMPIONS CENTRE ESTATES SUBDIVISION
 SECTION ONE
 HARRIS COUNTY TEXAS
 PLAN AND PROFILE SANITARY LATERALS
LATERALS "E", "E-1" & "E-2"

File Name: LATERAL2.DWG
 Designed By: D.L.P.
 Drawn By: ACAD

Scale: HORIZ : 1"=50'
 VERT : 1"=5'

Date: JAN., 1991
 Job No.: 90023-01.0
 Checked By: G.E.M.
 Approved By: G.E.M.

Sheet 12 of 18



PRIVATE UTILITY LINES SHOWN

EnTex 05-20-91
 ENTEX, INC.

Southwestern Bell 02-03-91
 SOUTHWESTERN BELL TELEPHONE COMPANY
 VALID FOR ONE YEAR ONLY

Houston Lighting & Power Co.
 HOUSTON LIGHTING & POWER CO.
 APPROVAL ONLY FOR CROSSING UNDERGROUND LINES UNLESS NOTED.
 VALID FOR ONE YEAR ONLY

APPROVED FOR CITY OF HOUSTON 1
 CAPITAL PROJECTS DEPARTMENT:

Steve Smith
 WATER DESIGN

St. John 02/18/91
 FACILITIES CONSTRUCTION

William 02/11/91
 CIVIL CONSTRUCTION

John
 TRAFFIC & TRANSPORTATION

DATE: 1/26/91

OTHER DEPT'S.

DEPARTMENT OF PUBLIC WORKS

DEPARTMENT OF UTILITY OPERATION

NOTICE:
 AT LEAST 48 HOURS BEFORE EXCAVATING
 IN STREET R.O.W. OR EASEMENTS CALL
 THE UTILITY COORDINATING COMMITTEE
 223-4567

CENTURY ENGINEERING, INC.
 9650 WESTPARK, SUITE 200, HOUSTON, TEXAS 77063 (713) 780-8871

HARRIS COUNTY M.U.D. NO. 191

CHAMPIONS CENTRE ESTATES SUBDIVISION
 SECTION ONE

HARRIS COUNTY TEXAS

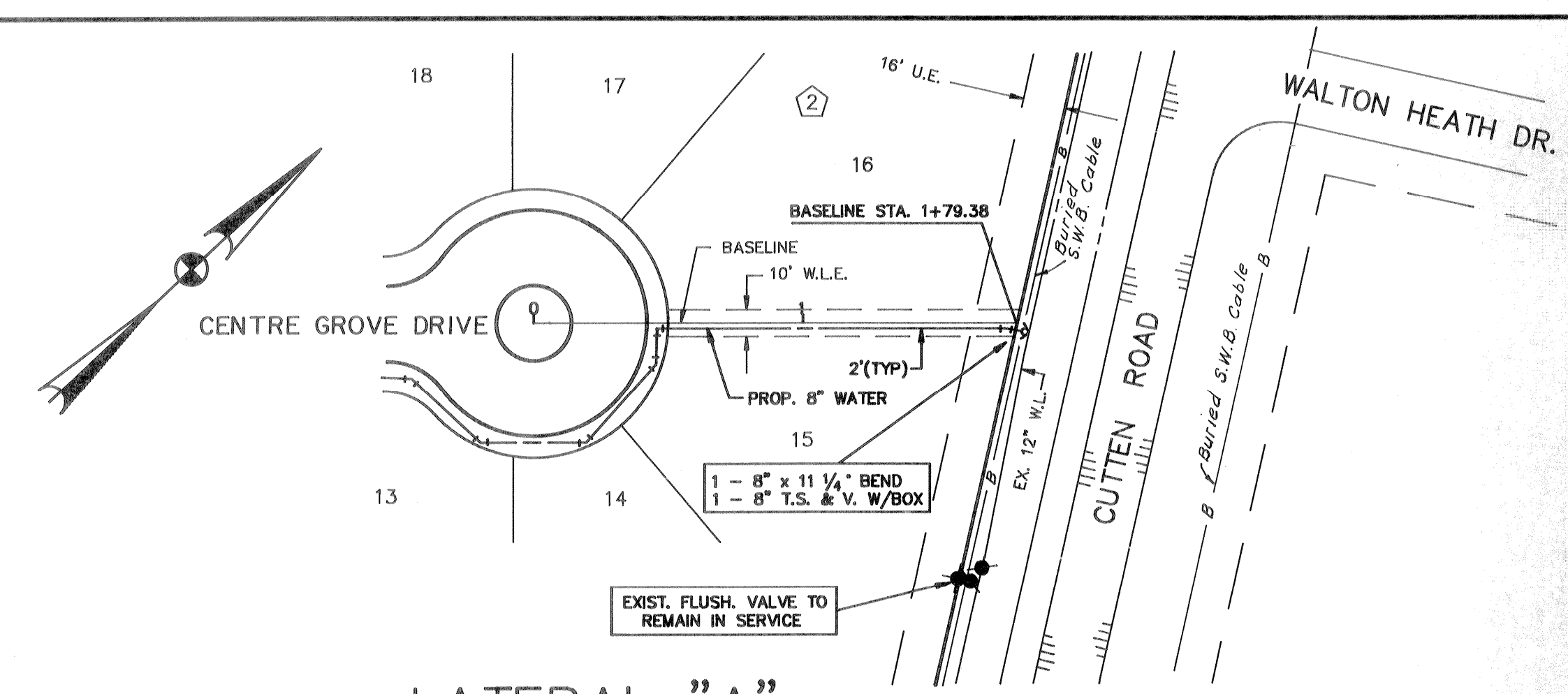
PLAN AND PROFILE SANITARY LATERALS

LATERAL " F " & " F - 1 "

File Name: LATERAL3.DWG Scale: HORIZ : 1"=50'
 VERT : 1"=5'

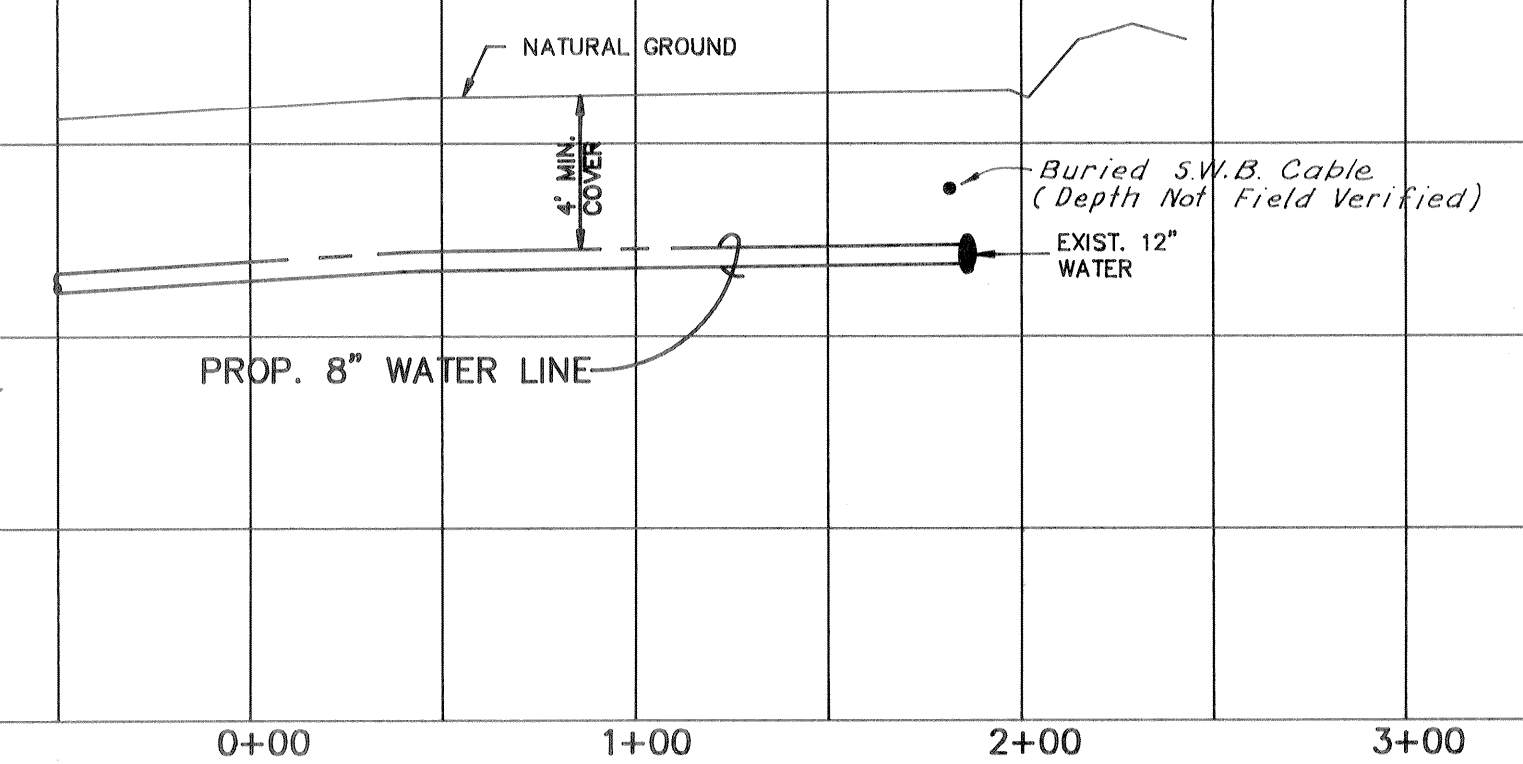
Designed By: D.L.P. Checked By: G.E.M. Date: JAN., 1991
 Job No. 90023-01.0

Drawn By: ACAD Approved By: G.E.M. Sheet 13 of 18

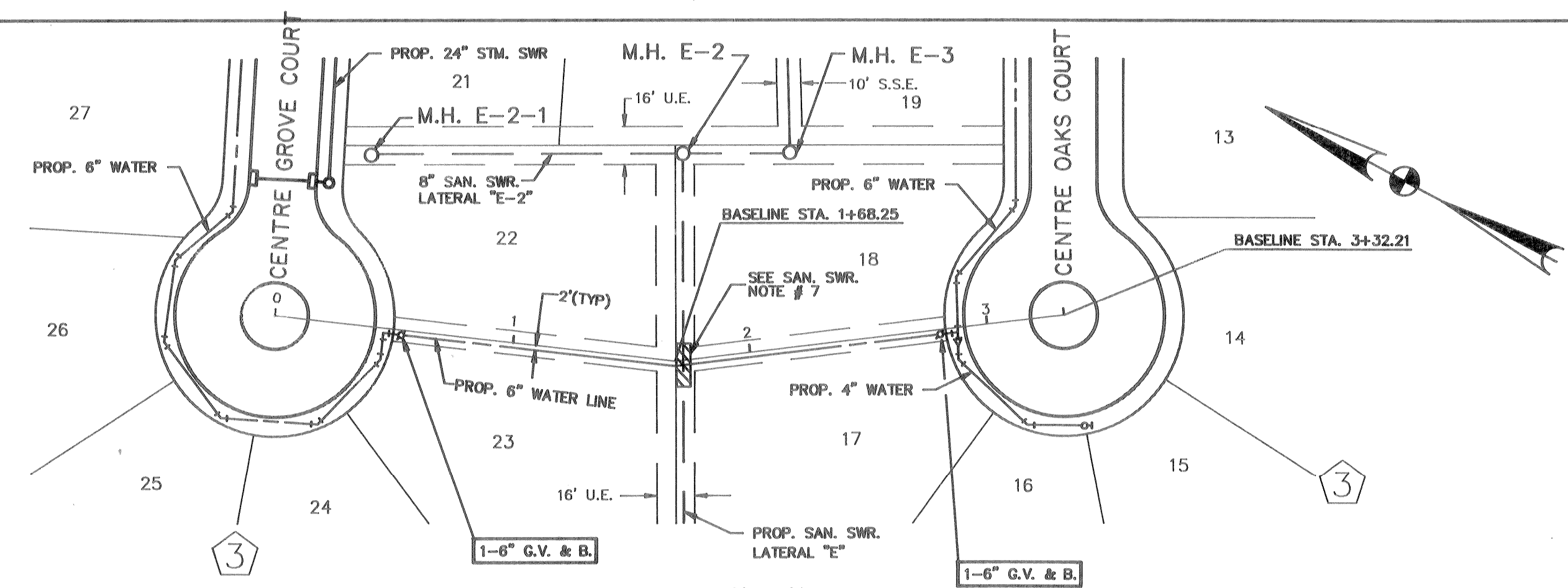


BENCH MARK
 NATIONAL GEODETIC SURVEY MARKER NO. Y-1216,
 LOCATED IN CENTER OF HIGHLINE TOWER. (FIRST
 TOWER N.W. OF F.M. 1960 AND 80' EAST OF RAIL-
 ROAD TRACKS) 1979 ADJ. ELEV. 125.41
 100 YEAR FLOOD PLAIN ELEV. 119.54

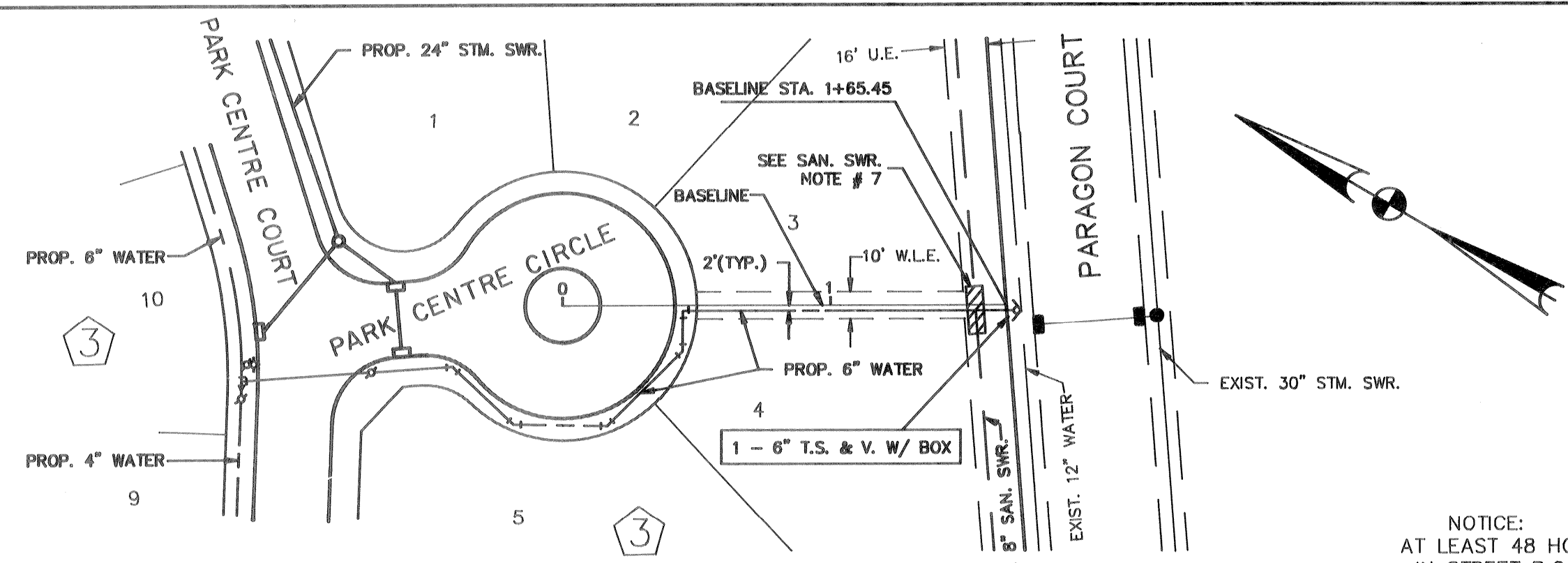
LATERAL "A"



130
 125
 120
 115

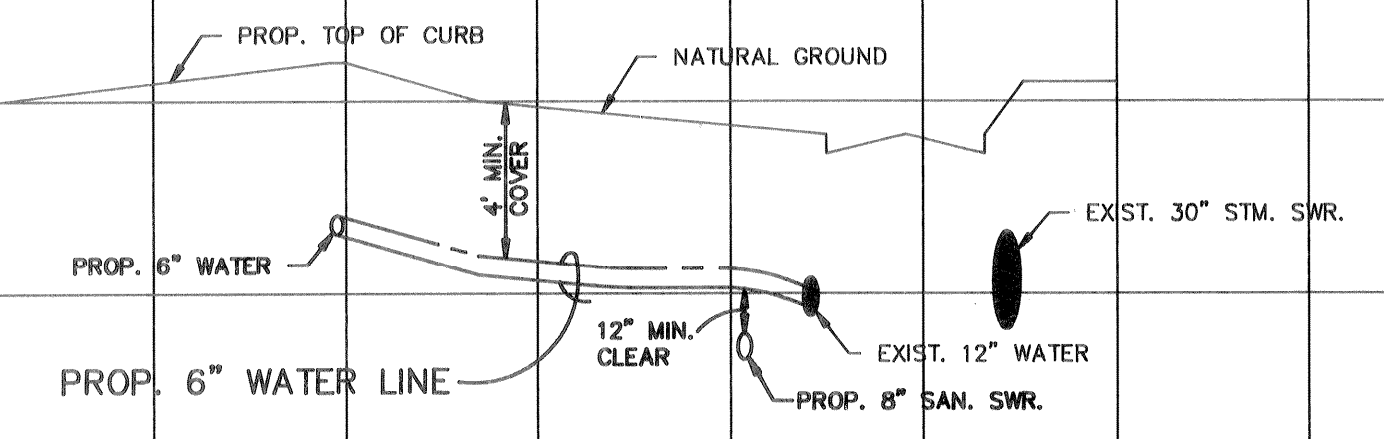
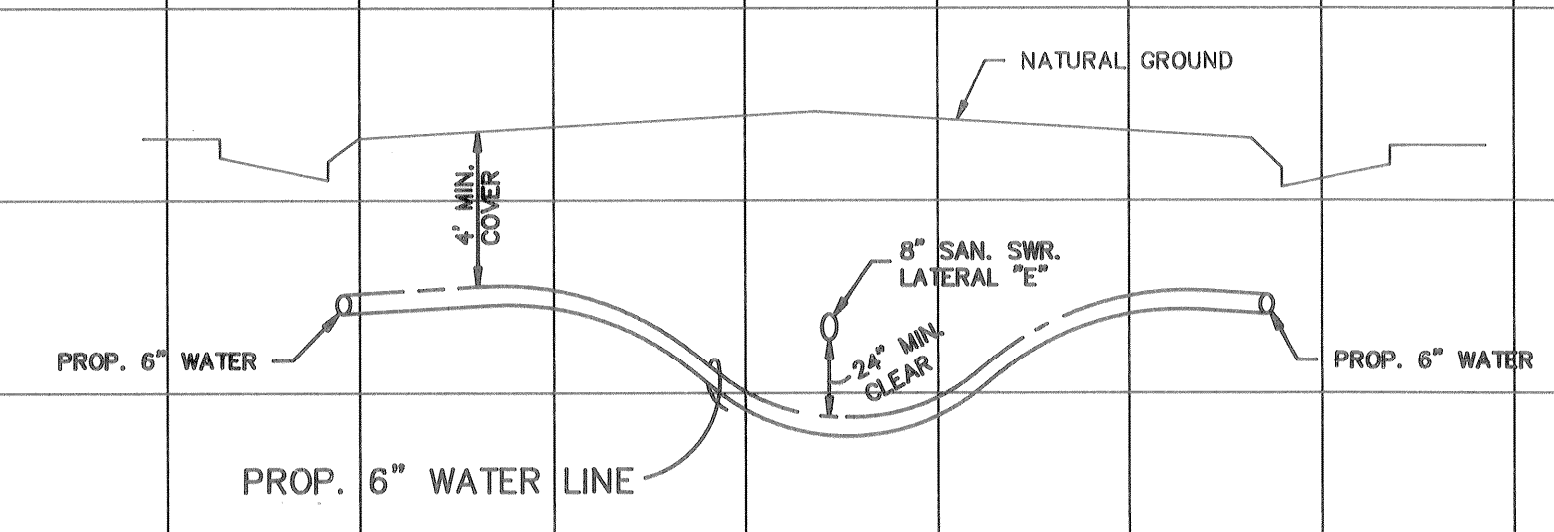


LATERAL "B"



LATERAL "C"

NOTICE:
 AT LEAST 48 HOURS BEFORE EXCAVATING
 IN STREET R.O.W. OR EASEMENTS CALL
 THE UTILITY COORDINATING COMMITTEE
 223-4567



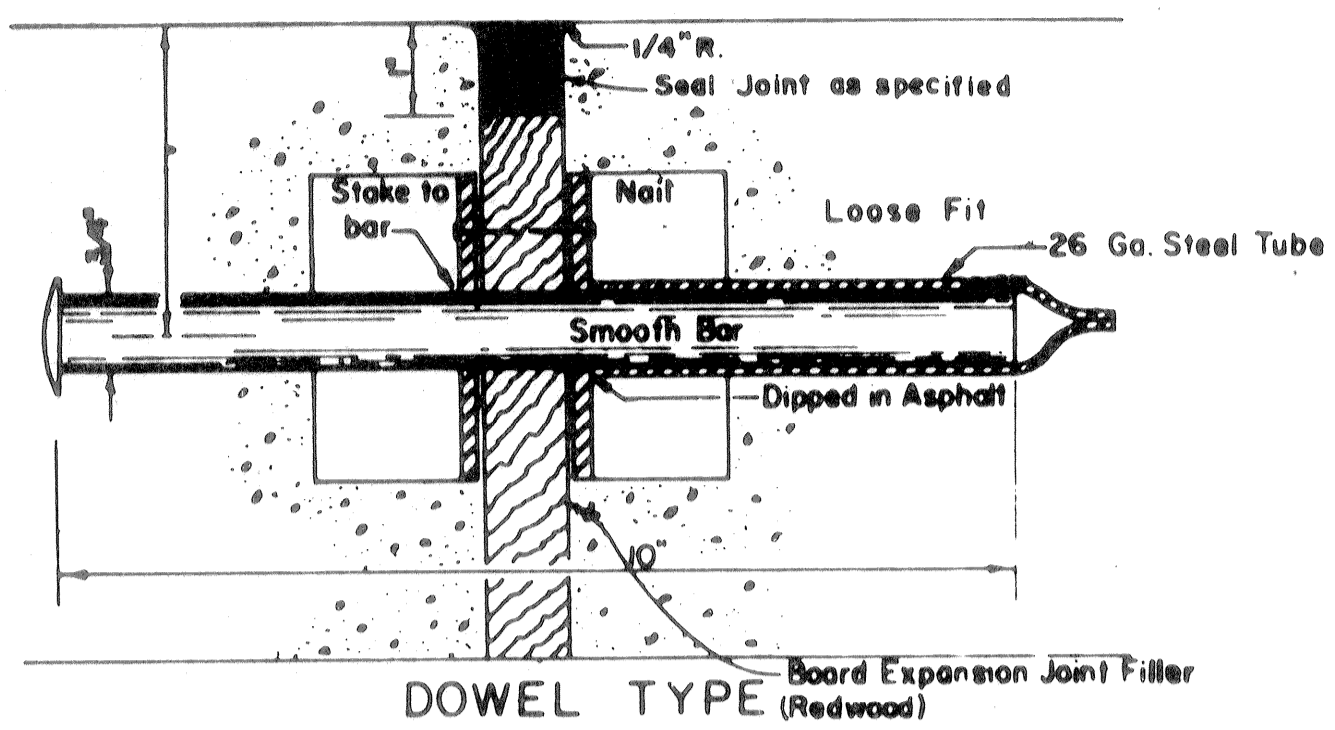
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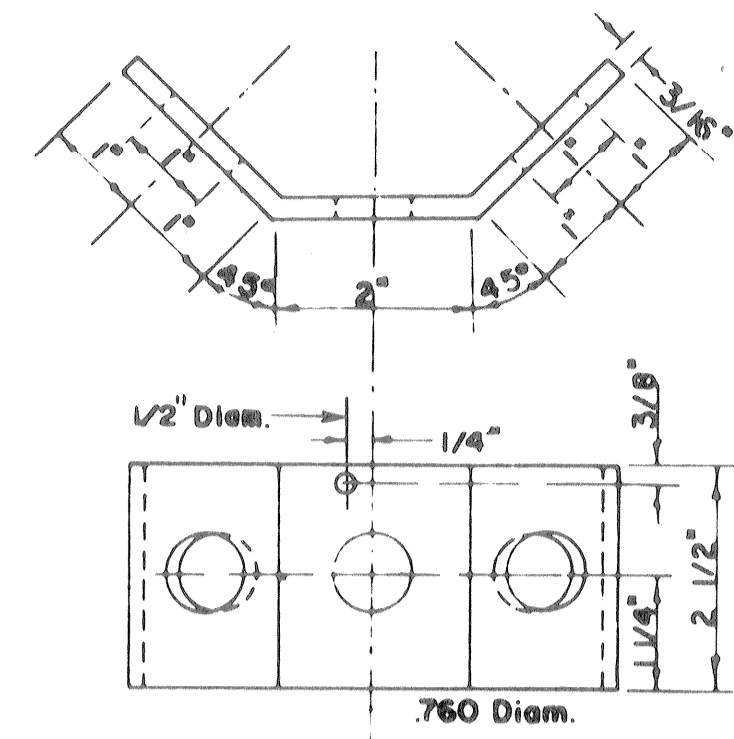
PRIVATE UTILITY LINES SHOWN	
<i>[Signature]</i>	ENTEX, INC.
<i>[Signature]</i>	SOUTHWESTERN BELL TELEPHONE COMPANY VALID FOR ONE YEAR ONLY
<i>[Signature]</i>	HOUSTON LIGHTING & POWER CO. APPROVAL ONLY FOR CROSSING UNDERGROUND DUCTILES UNLESS NOTED. VALID FOR ONE YEAR ONLY
APPROVED FOR CITY OF HOUSTON 1 CAPITAL PROJECTS DEPARTMENT:	
<i>[Signature]</i>	DATE: 1/17/91
<i>[Signature]</i>	DIRECTOR
OTHER DEPT'S.	
DEPARTMENT OF PUBLIC WORKS	DEPARTMENT OF UTILITY OPERATION

CENTURY ENGINEERING, INC.
 9950 WESTPARK, SUITE 200, HOUSTON, TEXAS 77063 (713) 780-8871
 HARRIS COUNTY M.U.D. NO. 191
CHAMPIONS CENTRE ESTATES SUBDIVISION
 SECTION ONE
 HARRIS COUNTY TEXAS
 PLAN AND PROFILE WATERLINE
LATERALS "A", "B" & "C"

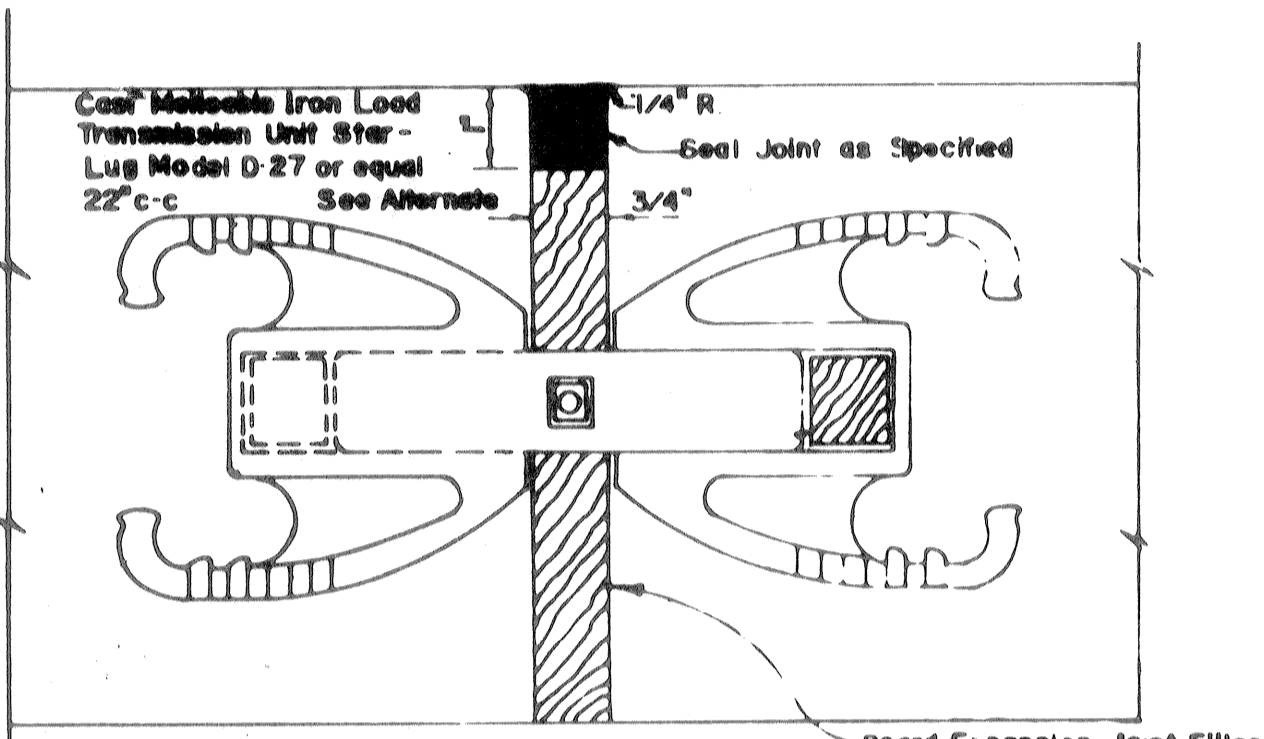
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	Designed By: D.L.P.	Checked By: G.E.M.	Job No. 90023-01.0
	Drawn By: ACAD	Approved By: G.E.M.	Sheet 14 of 18



DOWEL TYPE Board Expansion Joint Filler (Redwood)

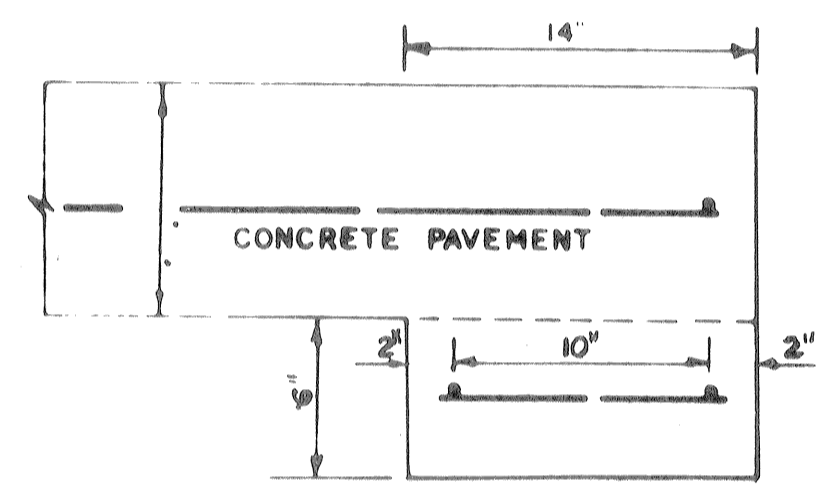


EXPANSION JOINT TO BE PLACED AT THE END OF EACH CURB RADIUS AND SPACED APPROX. 80' APART.

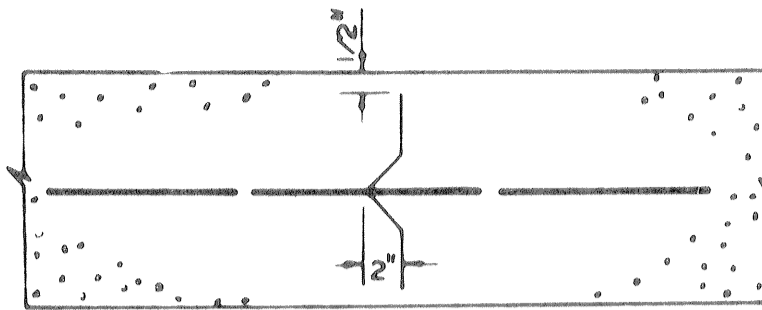


CANTILEVER TYPE Board Expansion Joint Filler (Redwood)

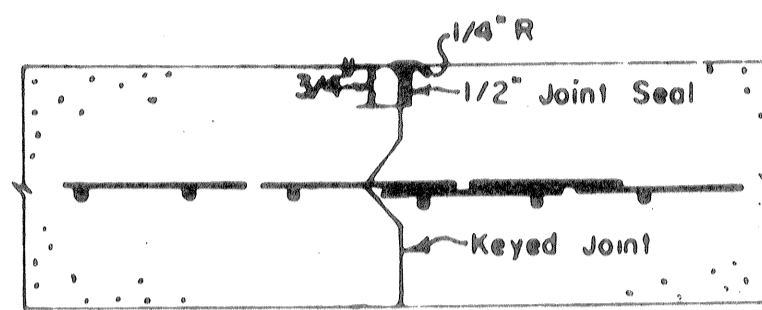
EXPANSION JOINT DETAILS



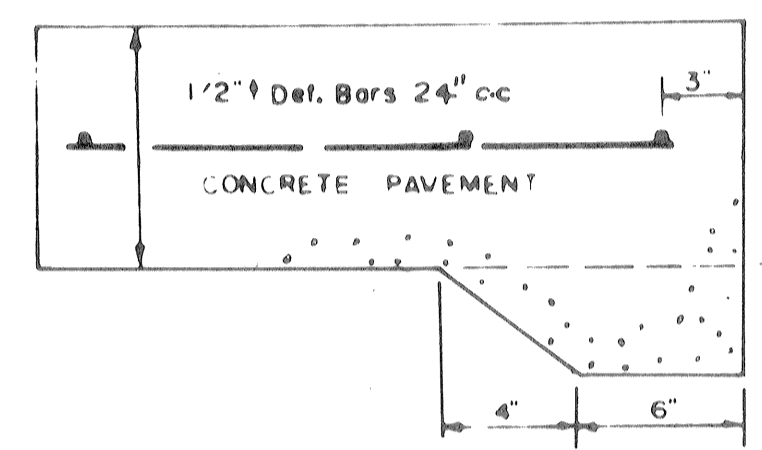
STANDARD RAILROAD HEADER
NOTE: Railroad header to be poured monolithically with concrete base



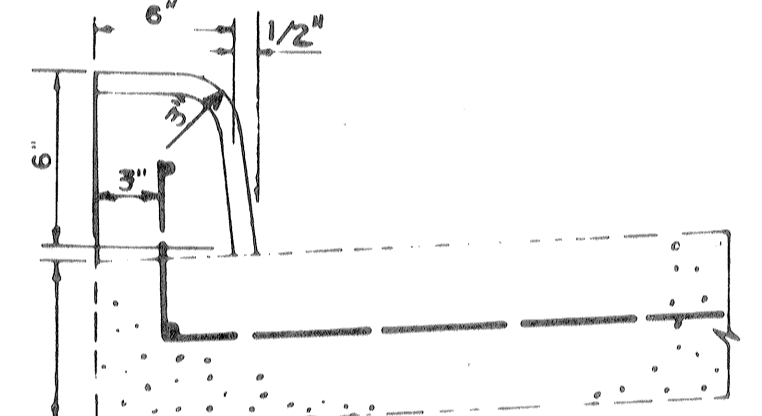
DEFORMED METAL STRIP



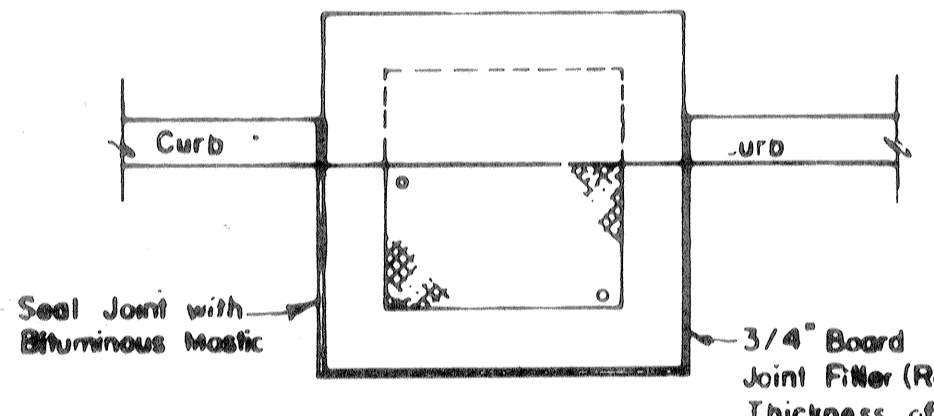
CONSTRUCTION JOINT SEAL



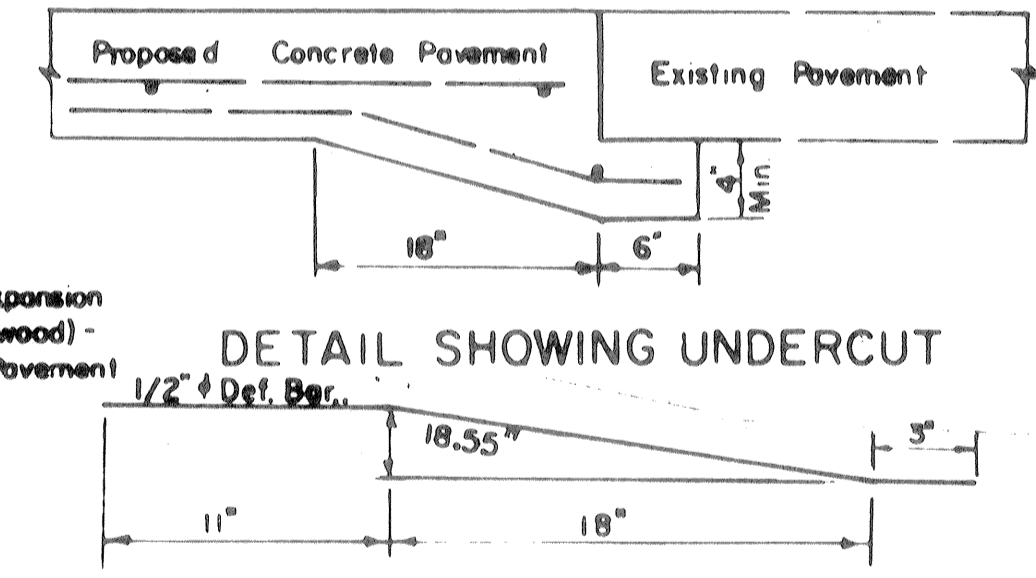
STANDARD PAVING HEADER



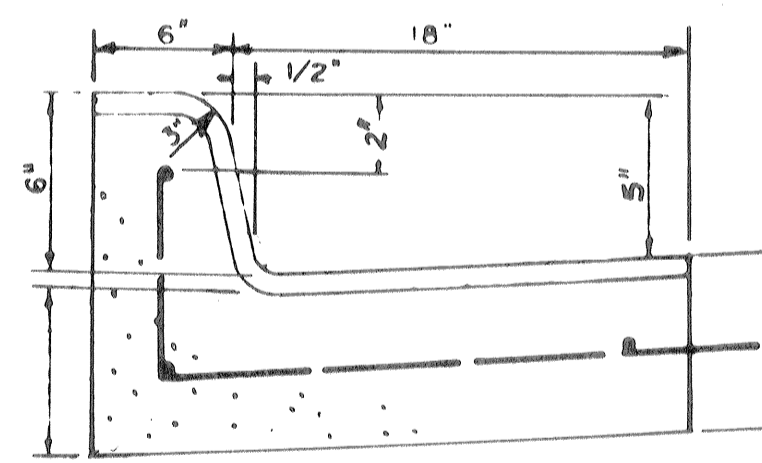
CONCRETE CURB



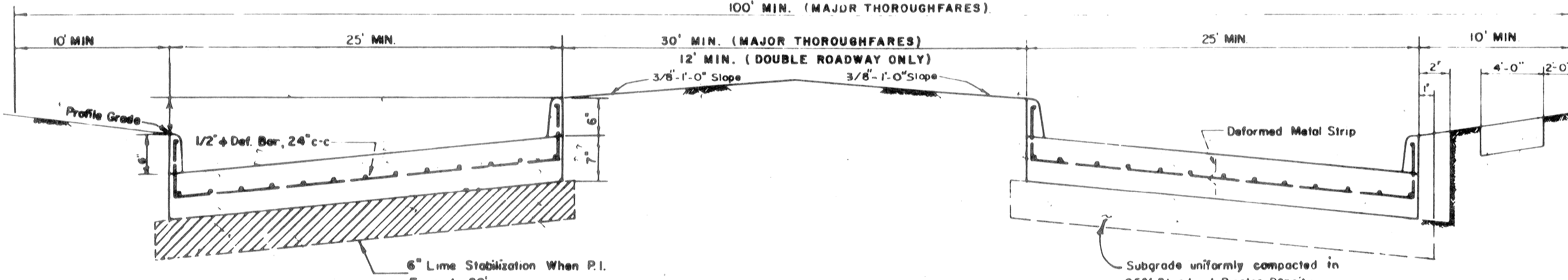
INLET INSTALLATION



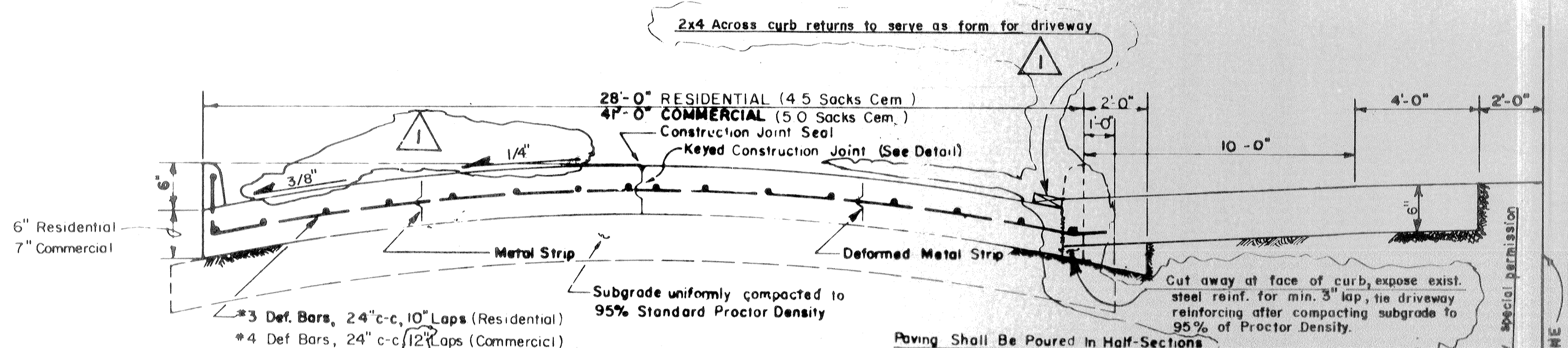
UNDERCUT BAR



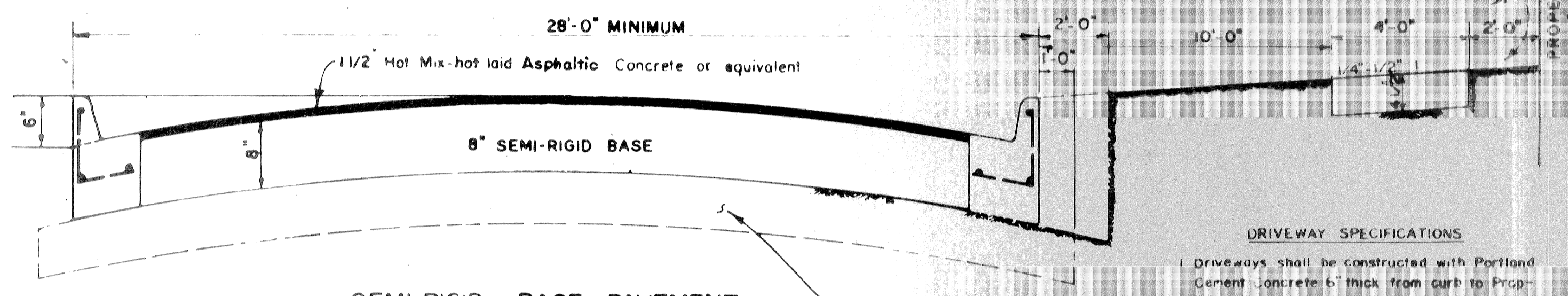
MONOLITHIC CURB AND GUTTER (VERTICAL STEEL OPTIONAL)
100' MIN. (MAJOR THOROUGHFARES)



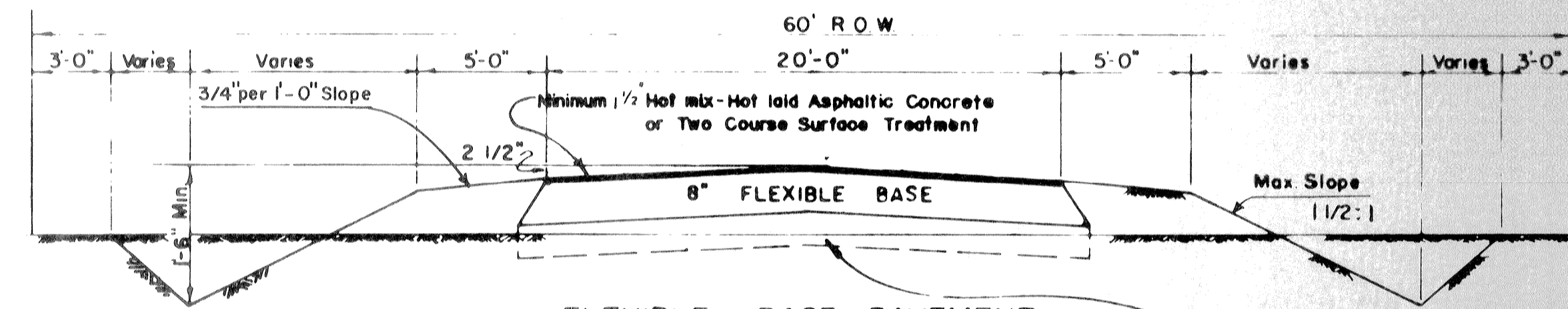
TYPICAL SECTIONS FOR MAJOR THOROUGHFARES AND DOUBLE ROADWAYS



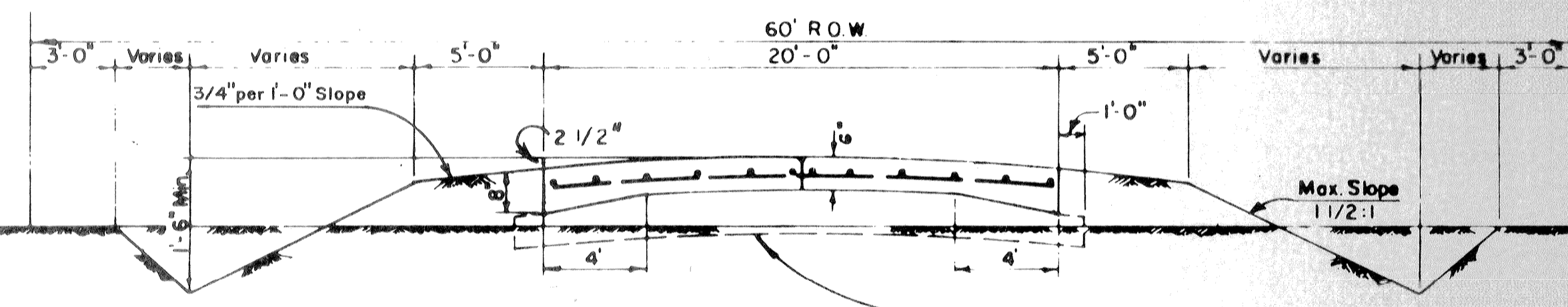
CONCRETE PAVEMENT CURB & GUTTER SECTION



SEMI-RIGID BASE PAVEMENT CURB & GUTTER SECTION



FLEXIBLE BASE PAVEMENT OPEN DITCH SECTION



CONCRETE PAVEMENT OPEN DITCH SECTION

- DRIVEWAY SPECIFICATIONS**
1. Driveways shall be constructed with Portland Cement Concrete 6" thick from curb to Property line.
 2. If more than one driveway is constructed on the same property such driveways shall be separated by a minimum distance of at least 20 feet.
 3. Driveway turn-out radius shall be a minimum of 2 feet or a maximum of 5 feet from face of curb.
 4. Driveway profile shall meet existing pavement 1/2" above curb gutter line.
 5. Driveway reinforcing shall be tied to roadway reinforcing after existing roadway concrete is broken out.
 6. Subgrade shall be compacted to 95% of Proctor Density prior to placement of concrete for driveway. Subgrade to be stabilized if necessary to meet compaction requirement.
 7. Driveway reinforcing steel shall be a minimum of 3/8" ϕ deformed steel bars C24" c-c each way from face of curb to property line.

- SIDEWALK SPECIFICATIONS**
1. Sidewalk shall be constructed with Portland Cement Concrete 4 1/2" thick, 4' min. width.
 2. One half inch expansion joint at intervals of 20' (maximum) throughout entire length of sidewalk and where new walk meets old walk.
 3. One inch expansion joint where sidewalk meets curb around fire hydrants and utility poles.

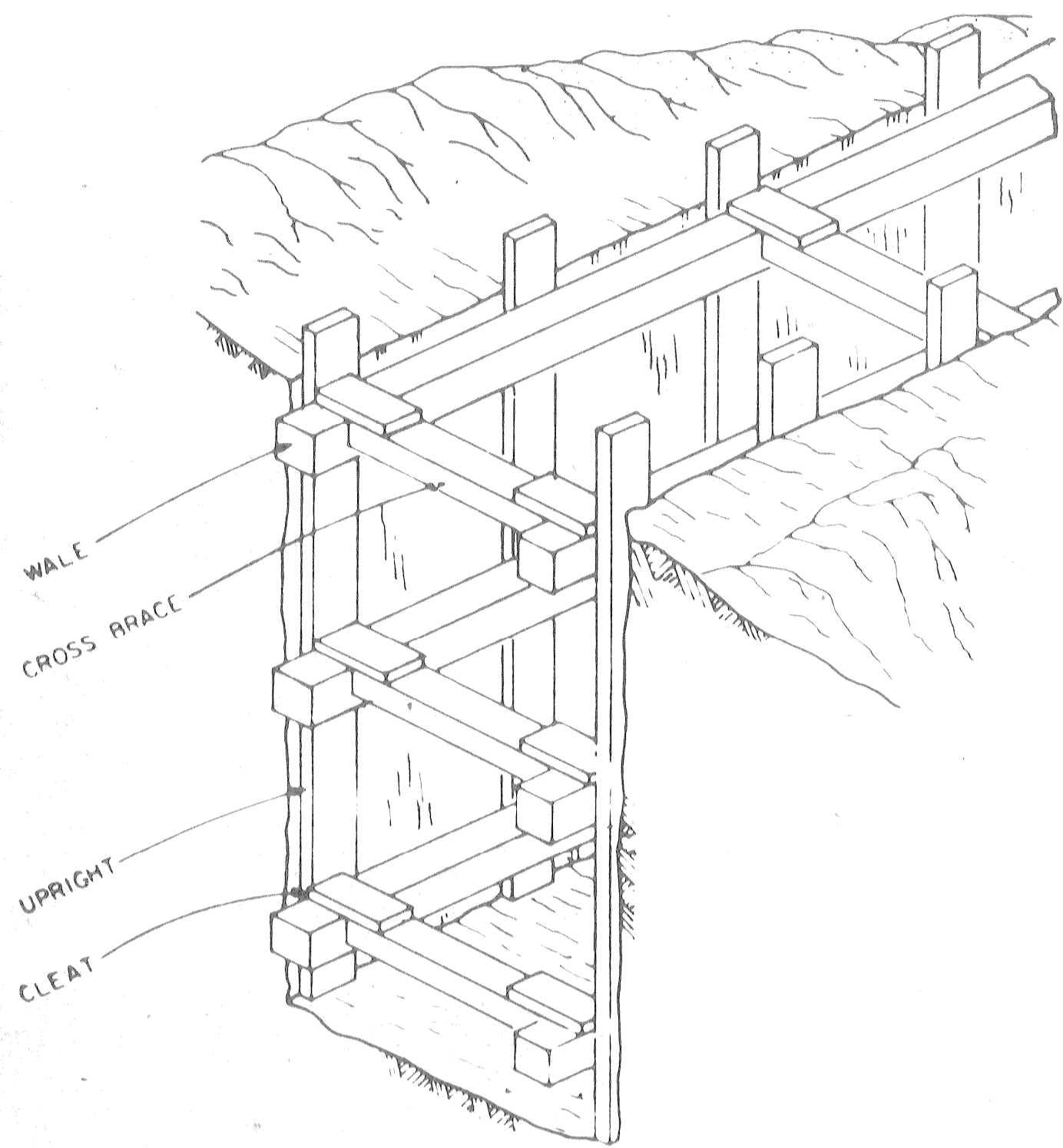
SUBDIVISION PAVEMENT STANDARDS

Approved by: Richard P. Doss
County Engineer

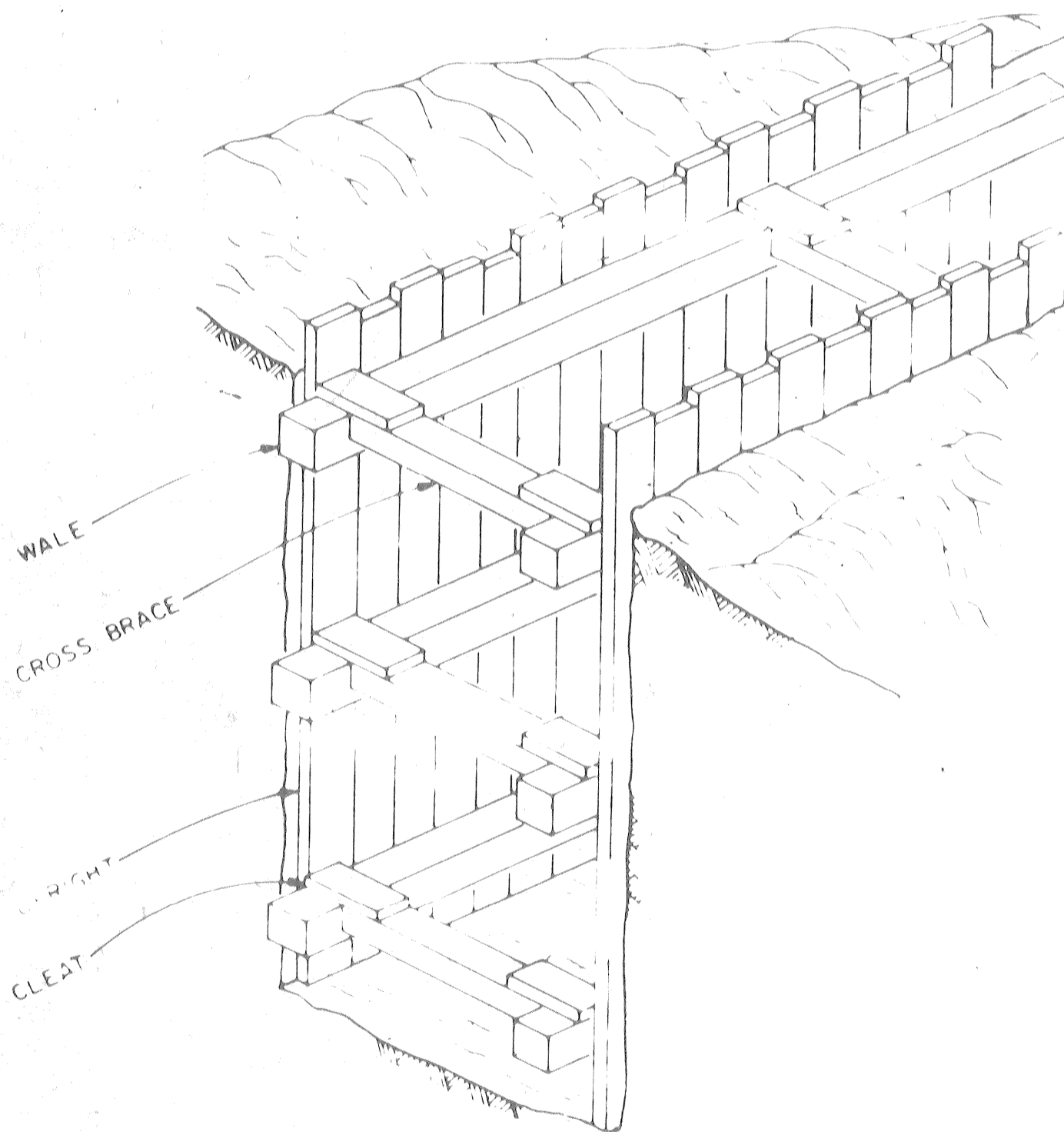
NO.	REVISION	Date	Name
1	Revd. Conc. Pavement, Curb & Gutter Sect. B Open Ditch Sect. Plus Driveway Spec's. Added Sidewalk Specifications		
		11-8-94	NT

COUNTY OF HARRIS
ENGINEERING DEPARTMENT

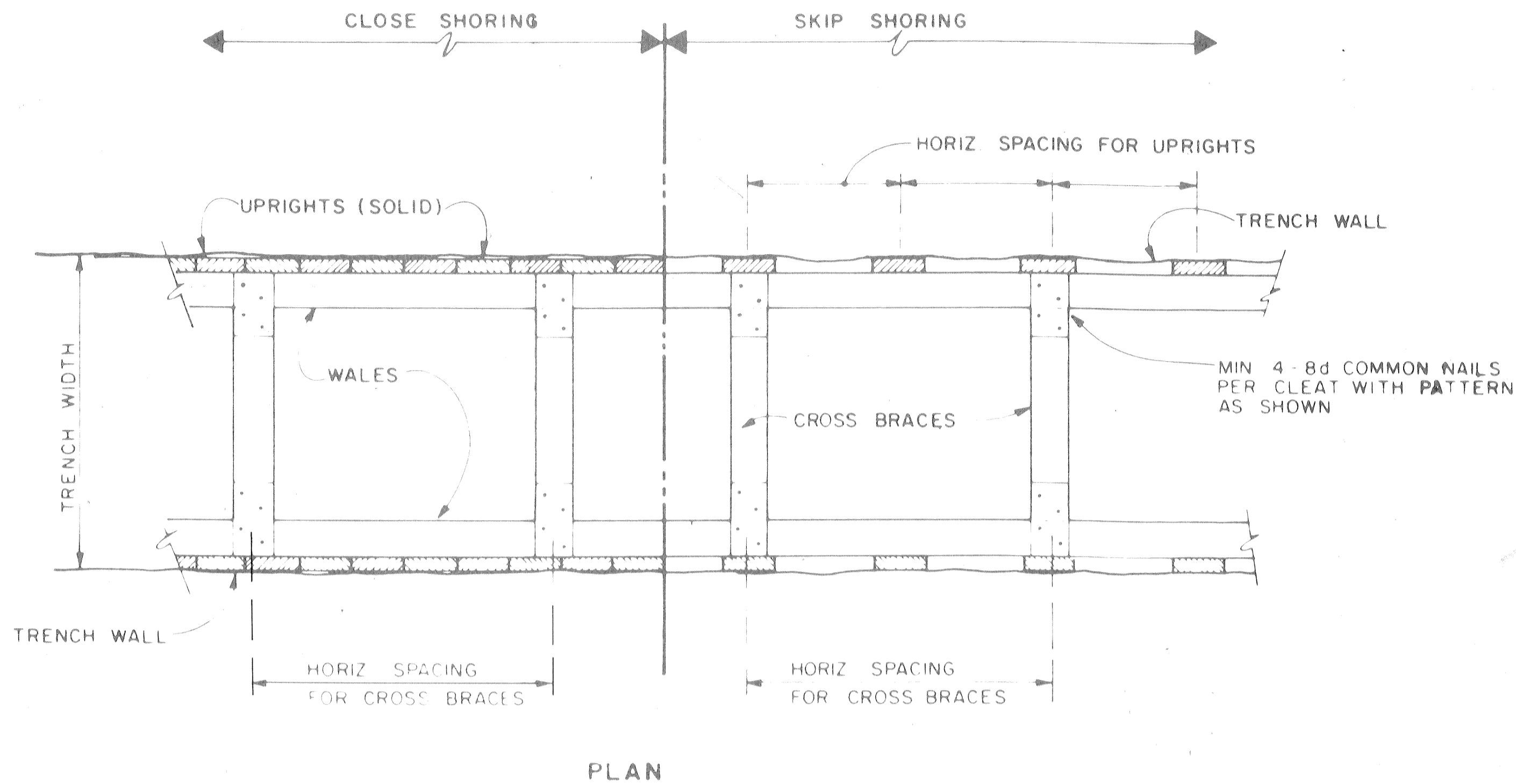
Drawn by: g. c. morano Date: October 1969
Checked by: m. j. morak SHEET No. 15 OF 18
Revised: Nov. 8, 1984 Drawing No. S/D-1



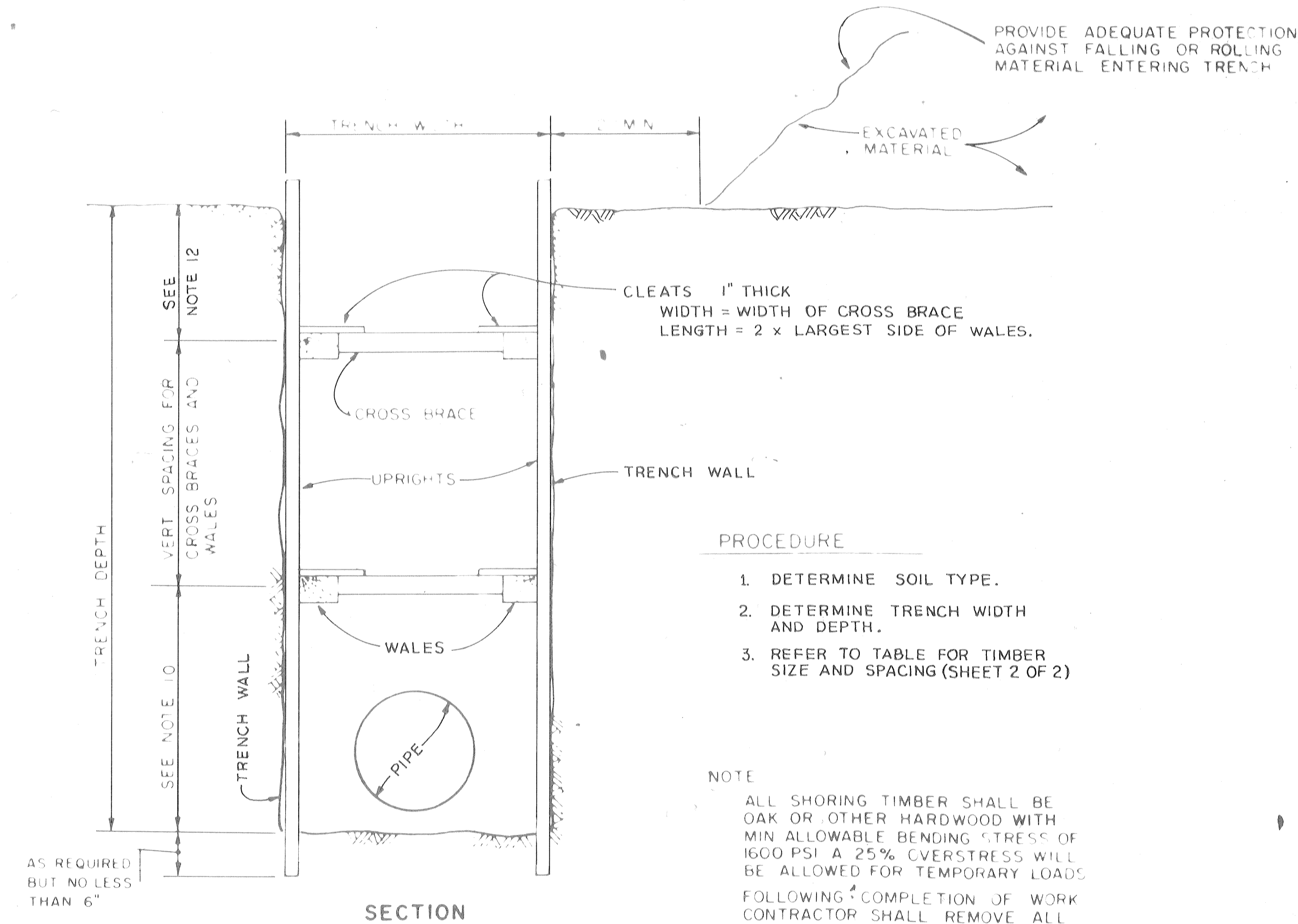
A TYPICAL REQUIREMENT FOR SKIP SHORING



B TYPICAL REQUIREMENT FOR CLOSE SHORING



PLAN



C TIMBER TRENCH SHORING DETAIL

GENERAL NOTES

1. TRENCH SAFETY SYSTEM TO MEET, AS A MINIMUM, THE PROPOSED REQUIREMENTS OF OSHA SAFETY AND HEALTH REGULATIONS PART 1926, SUBPART P AS PUBLISHED IN FEDERAL REGISTER VOL. 52 NO. 72, DATED APRIL 15, 1987.
2. 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.
3. 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.
4. 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.
5. IN TRENCHES 4 FT. DEEP OR MORE, CONTRACTOR SHALL PROVIDE ADEQUATE MEANS OF TRENCH EXIT SUCH AS LADDER OR STEPS AND THEY MUST BE LOCATED SO AS TO REQUIRE NO MORE THAN 25 FT. OF LATERAL TRAVEL.
6. MEMBER SIZES AT SPACINGS OTHER THAN INDICATED ARE TO BE DETERMINED AS SPECIFIED IN 1926.652(b), "DESIGN OF PROTECTIVE SYSTEM."
7. WHEN CONDITIONS ARE SATURATED OR SUBMERGED USE TIGHT SHEETING. TIGHT SHEETING REFERS TO THE USE OF SPECIALLY-EDGED TIMBER PLANKS AT LEAST THREE INCHES THICK, STEEL SHEET PILING, OR SIMILAR CONSTRUCTION THAT WHEN DRIVEN OR PLACED IN POSITION PROVIDE A TIGHT WALL TO RESIST THE LATERAL PRESSURE OF WATER. CLOSE SHEETING REFERS TO THE PLACEMENT OF PLANKS SIDE-BY-SIDE ALLOWING AS LITTLE SPACE AS POSSIBLE BETWEEN THEM.
8. ALL SPACING INDICATED IS MEASURED CENTER TO CENTER.
9. GREATER DIMENSION OF WALES TO BE HORIZONTAL.
10. IF THE VERTICAL DISTANCE FROM THE CENTER OF THE LOWEST CROSSBRACE TO THE BOTTOM OF THE TRENCH EXCEEDS TWO AND ONE-HALF FEET, UPRIGHTS SHALL BE FIRMLY EMBEDDED OR A MUDSILL SHALL BE USED. WHEN UPRIGHTS ARE EMBEDDED, THE VERTICAL DISTANCE FROM THE CENTER OF THE LOWEST CROSSBRACE TO THE BOTTOM OF THE TRENCH SHALL NOT EXCEED 36 INCHES. WHEN MUDSILLS ARE USED, THE VERTICAL DISTANCE SHALL NOT EXCEED 42 INCHES (NOTE: MUDSILLS ARE WALES THAT ARE INSTALLED AT THE TOE OF THE TRENCH SIDE.)
11. TRENCH JACKS MAY BE USED IN LIEU OF OR IN COMBINATION WITH TIMBER CROSSBRACES.
12. PLACEMENT OF CROSSBRACES: WHEN THE VERTICAL SPACING OF CROSSBRACES IS FOUR FEET, PLACE THE TOP CROSSBRACE NO MORE THAN TWO FEET BELOW THE TOP OF THE TRENCH. WHEN THE VERTICAL SPACING OF CROSSBRACE IS FIVE FEET, PLACE THE TOP CROSSBRACE NO MORE THAN 2.5 FEET BELOW THE TOP OF THE TRENCH.

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS

STANDARD TRENCH SAFETY SYSTEM

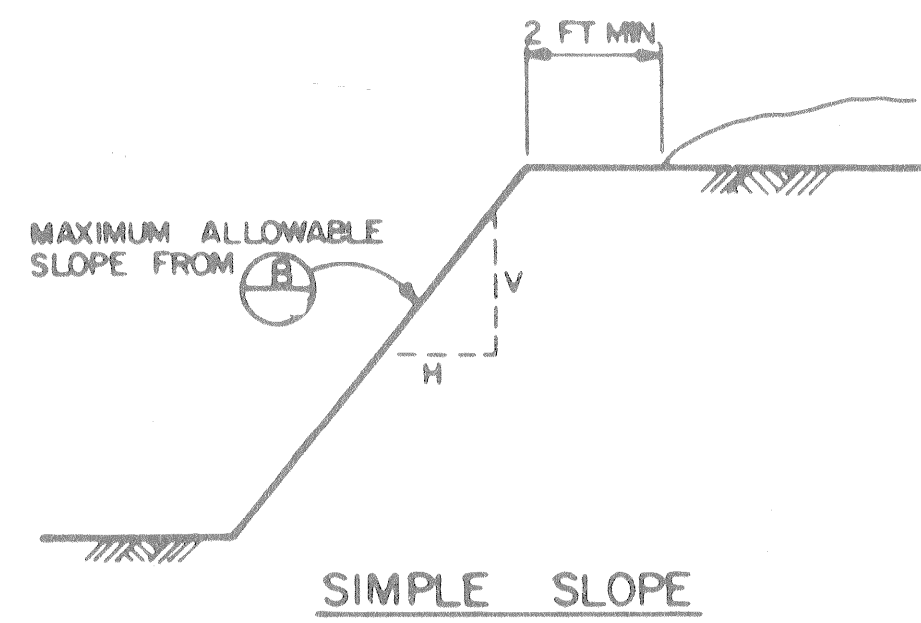
Shelley McLean
ASST. DIR. OF PUBLIC WORKS

Dir. [Signature]
DIR. OF PUBLIC WORKS

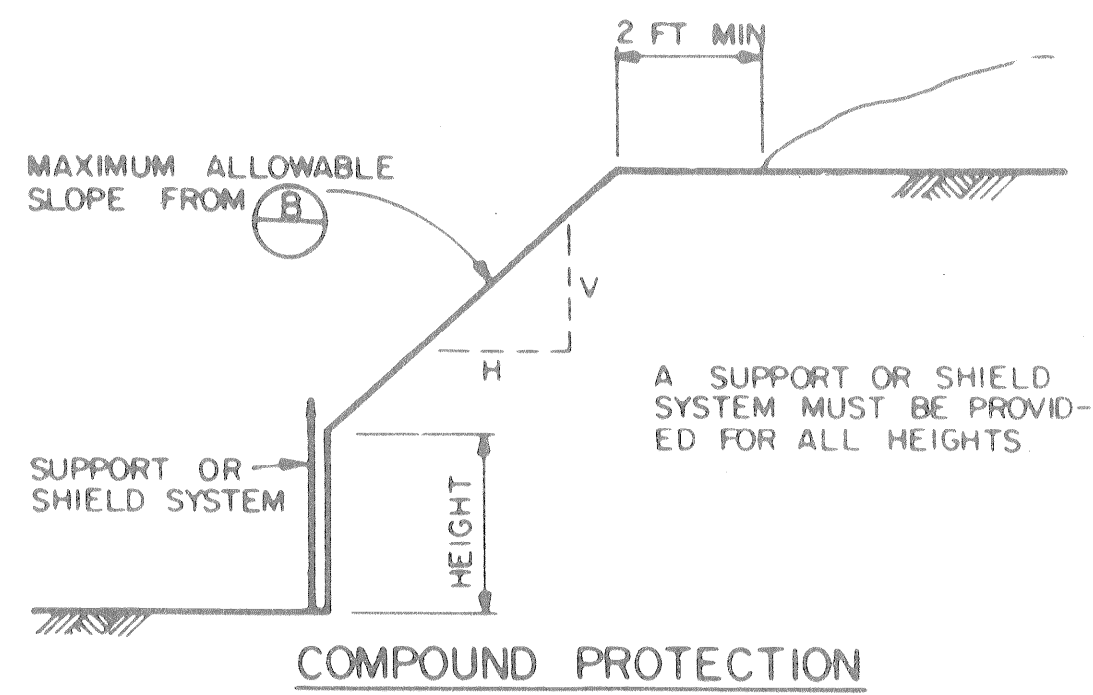
NOT TO SCALE

SHEET NO. 1 OF 2 552-S

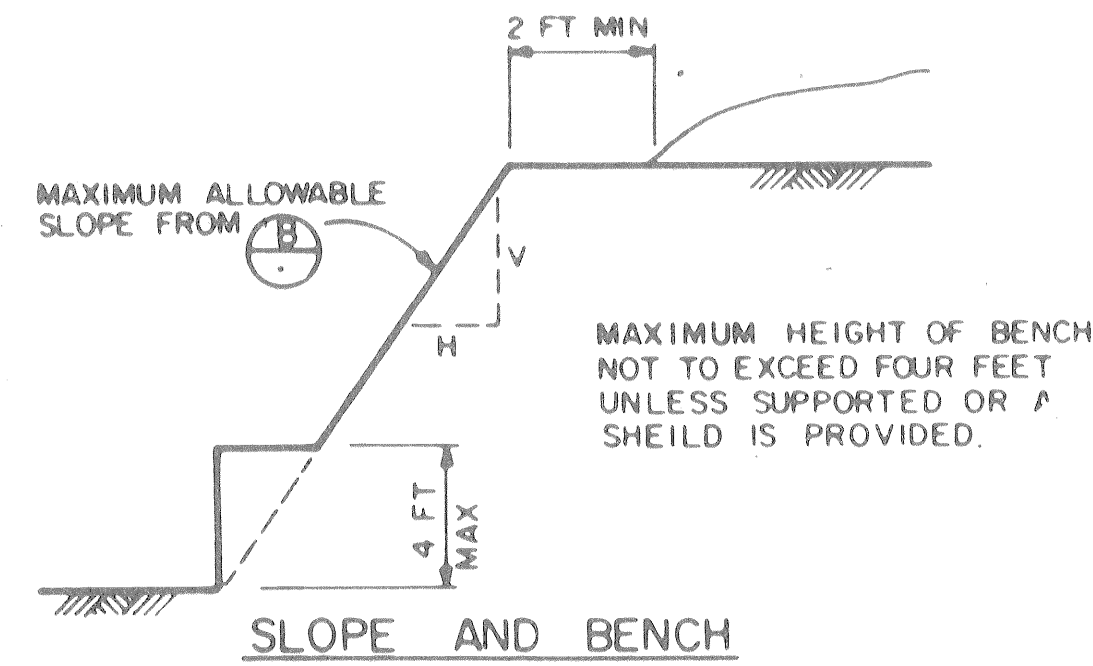
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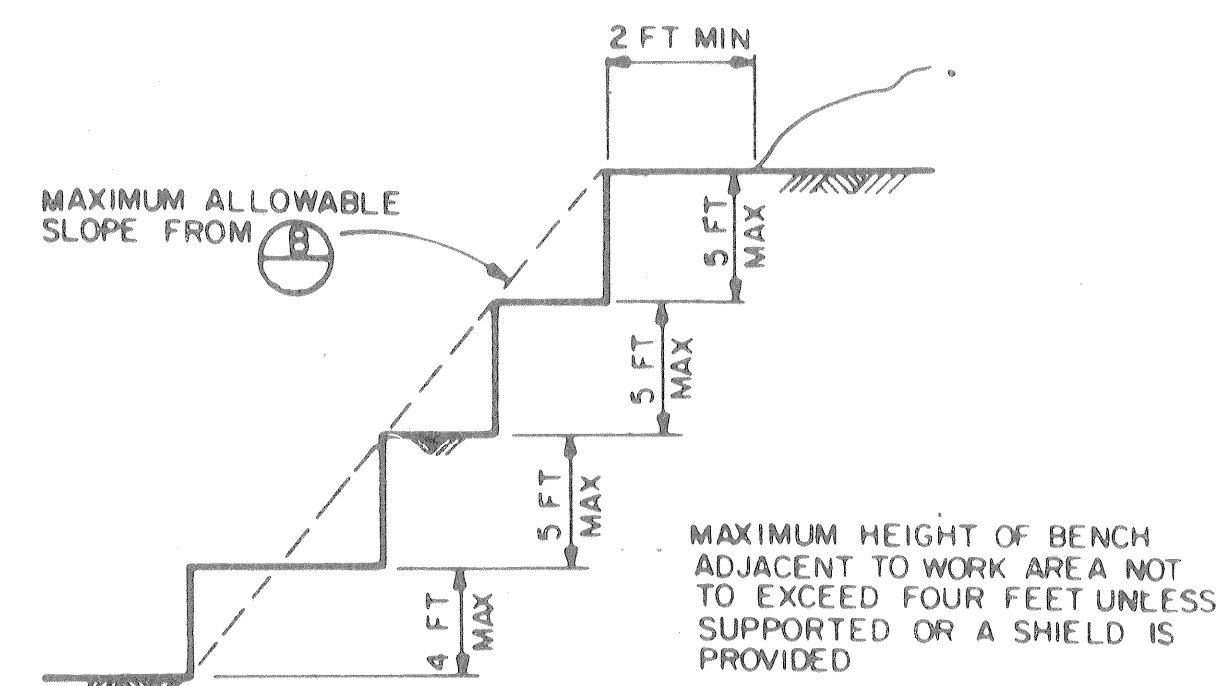
SIMPLE SLOPE



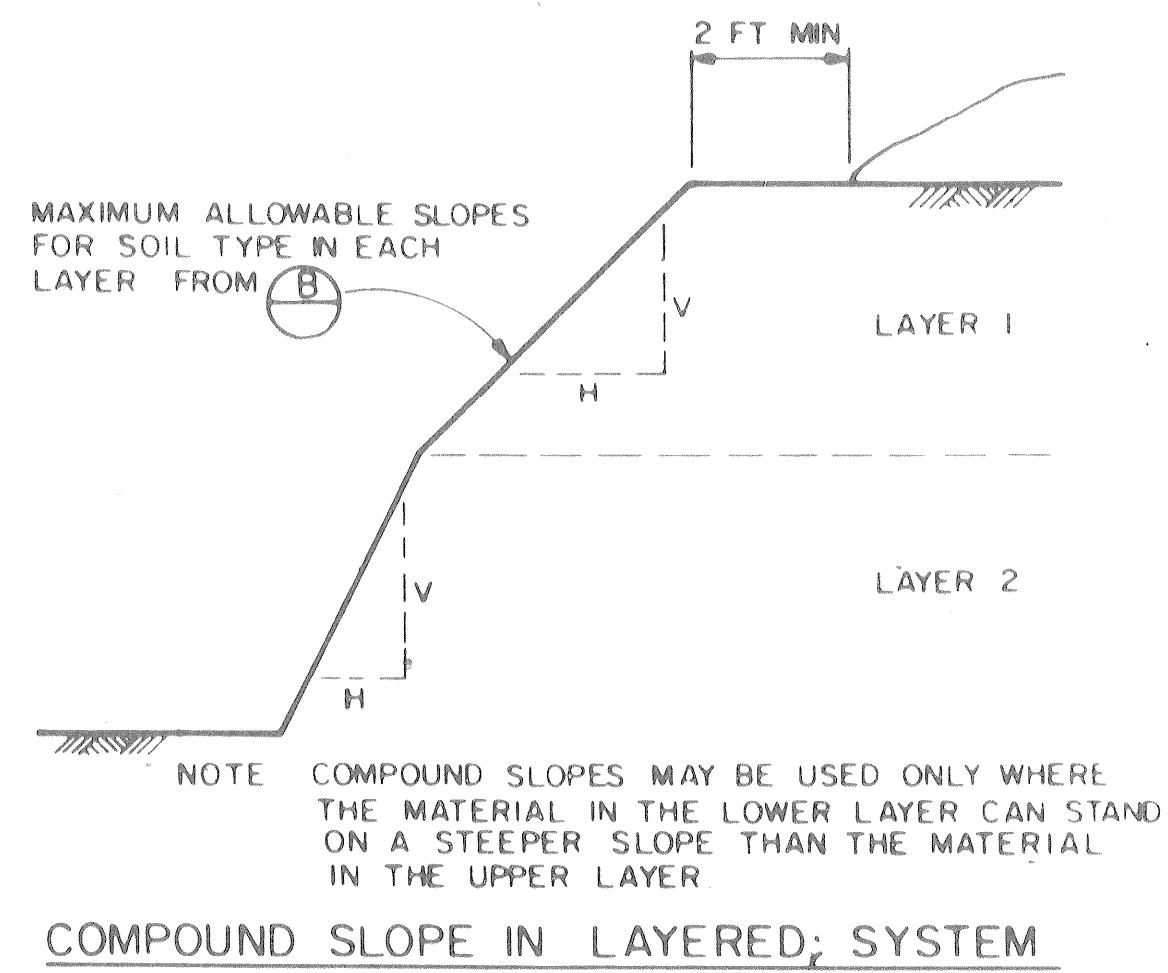
COMPOUND PROTECTION



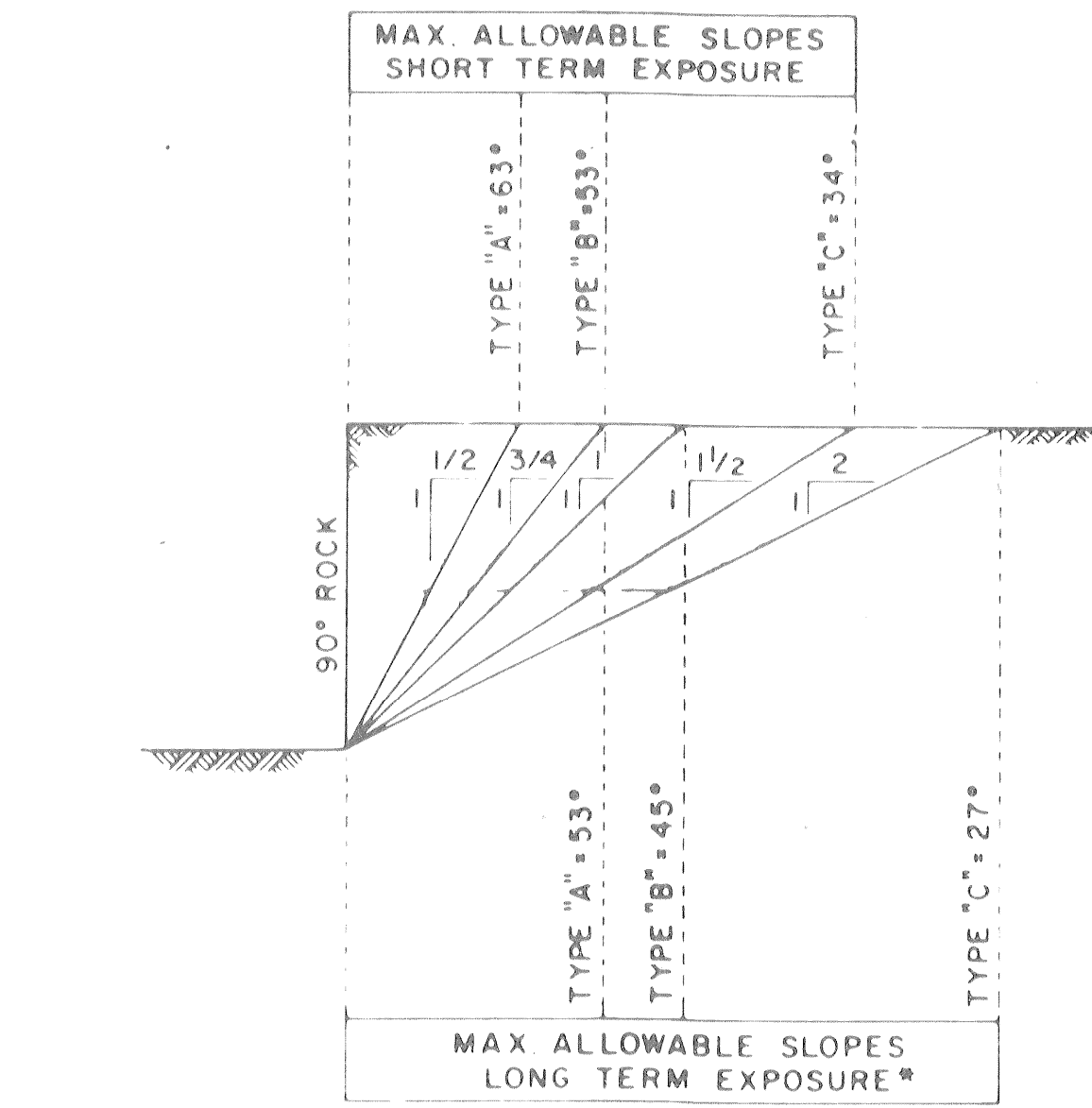
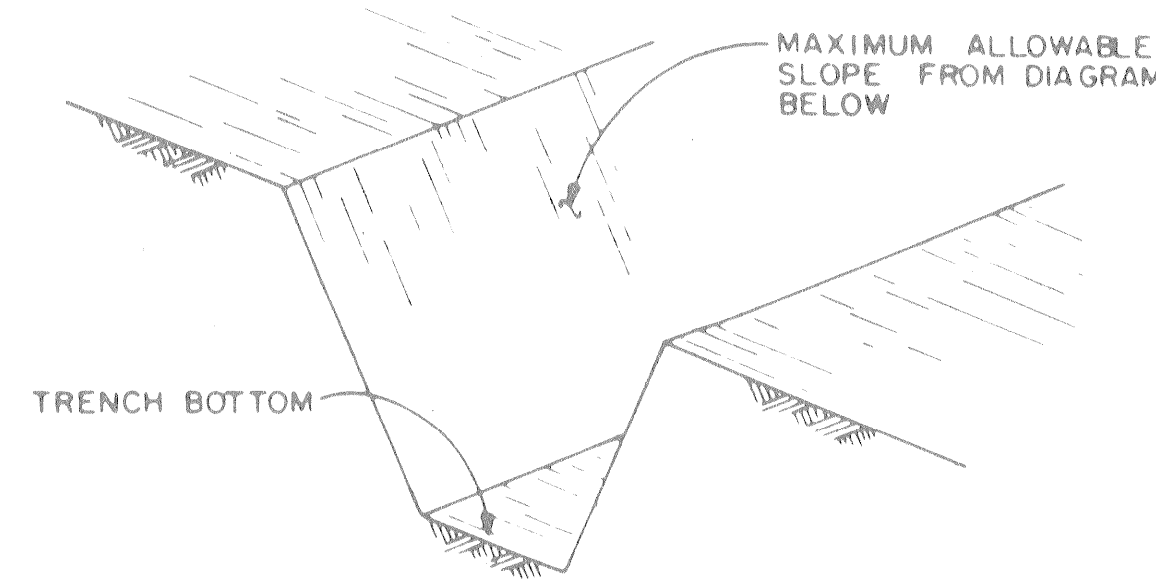
SLOPE AND BENCH



MULTIPLE BENCHES



COMPOUND SLOPE IN LAYERED SYSTEM



* EXCAVATION OPEN LONGER THAN 72 HOURS

FIGURE B-1
A ALLOWABLE SLOPING AND BENCHING CONFIGURATIONS

FIGURE B-2
B MAXIMUM ALLOWABLE SLOPE

TABLE C-11
SOIL TYPE "A"

(UNCONFINED COMPRESSIVE STRENGTH OF 1.5 TON/FT² OR GREATER)

DEPTH OF TRENCH (FEET)	SIZE AND SPACING OF MEMBERS												
	CROSS BRACES					WALES		UPRIGHTS					
	HORIZ SPACING (FEET)	WIDTH OF TRENCH (FEET)				VERT SPACING (FEET)	SIZE (IN.)	VERT SPACING (FEET)	MAXIMUM ALLOWABLE HORIZ SPACING (FEET)				
	UP TO 4	UP TO 6	UP TO 9	UP TO 12	UP TO 15				CLOSE	4	5	6	8
OVER 5 UP TO 10	UP TO 6	4x4	4x4	4x6	6x6	6x6	4	NOT REQ	-				2x6
	UP TO 8	4x4	4x4	4x6	6x6	6x6	4	NOT REQ	-				2x8
	UP TO 10	4x6	4x6	6x6	6x6	6x6	4	8x8	4			2x6	
	UP TO 12	4x6	4x6	6x6	6x6	6x6	4	8x8	4			2x6	
OVER 10 UP TO 15	UP TO 6	4x4	4x4	4x6	6x6	6x6	4	NOT REQ	-				3x8
	UP TO 8	4x6	4x6	6x6	6x6	6x6	4	8x8	4		2x6		
	UP TO 10	6x6	6x6	6x6	6x8	6x8	4	8x10	4			2x6	
	UP TO 12	6x6	6x6	6x6	6x8	6x8	4	10x10	4			3x8	
OVER 15 UP TO 20	UP TO 6	6x6	6x6	6x6	6x8	6x8	4	6x8	4	3x6			
	UP TO 8	6x6	6x6	6x6	6x8	6x8	4	8x8	4	3x6			
	UP TO 10	8x8	8x8	8x8	8x8	8x10	4	8x10	4	3x6			
	UP TO 12	8x8	8x8	8x8	8x8	8x10	4	10x10	4	3x6			
OVER 20	SEE NOTE 6												

TABLE C-12
SOIL TYPE "B"

(UNCONFINED COMPRESSIVE STRENGTH GREATER THAN 0.5 TON/FT² BUT LESS THAN 1.5 TON/FT²)

DEPTH OF TRENCH (FEET)	SIZE AND SPACING OF MEMBERS												
	CROSS BRACES					WALES		UPRIGHTS					
	HORIZ SPACING (FEET)	WIDTH OF TRENCH (FEET)				VERT SPACING (FEET)	SIZE (IN.)	VERT SPACING (FEET)	MAXIMUM ALLOWABLE HORIZ SPACING (FEET)				
	UP TO 4	UP TO 6	UP TO 9	UP TO 12	UP TO 15				CLOSE	2	3		
OVER 5 UP TO 10	UP TO 6	4x6	4x6	6x6	6x6	6x6	5	6x8	5			2x6	
	UP TO 8	6x6	6x6	6x6	6x8	6x8	5	8x10	5			2x6	
	UP TO 10	6x6	6x6	6x6	6x8	6x8	5	10x10	5			2x6	
		SEE NOTE 6											
OVER 10 UP TO 15	UP TO 6	6x6	6x6	6x6	6x8	6x8	5	8x8	5			2x6	
	UP TO 8	6x8	6x8	6x8	8x8	8x8	5	10x10	5			2x6	
	UP TO 10	8x8	8x8	8x8	8x8	8x10	5	10x12	5			2x6	
		SEE NOTE 6											
OVER 15 UP TO 20	UP TO 6	6x8	6x8	6x8	8x8	8x8	5	8x10	5	3x6			
	UP TO 8	8x8	8x8	8x8	8x8	8x10	5	10x12	5	3x6			
	UP TO 10	8x10	8x10	8x10	8x10	10x10	5	12x12	5	3x6			
		SEE NOTE 6											
OVER 20	SEE NOTE 6												

NOTE: ALL TIMBER SIZES SHOWN ARE ACTUAL, NOT NOMINAL.

TABLE C-13
SOIL TYPE "C"

(UNCONFINED COMPRESSIVE STRENGTH OF 0.5 TON/FT² OR LESS)

DEPTH OF TRENCH (FEET)	SIZE AND SPACING OF MEMBERS												
	CROSS BRACES					WALES		UPRIGHTS					
	HORIZ SPACING (FEET)	WIDTH OF TRENCH (FEET)				VERT SPACING (FEET)	SIZE (IN.)	VERT SPACING (FEET)	* MAXIMUM ALLOWABLE HORIZ SPACING (FEET)				
	UP TO 4	UP TO 6	UP TO 9	UP TO 12	UP TO 15				CLOSE				
OVER 5 UP TO 10	UP TO 6	6x8	6x8	6x8	8x8	8x8	5	8x10	5	2x6			
	UP TO 8	8x8	8x8	8x8	8x8	8x10	5	10x12	5	2x6			
	UP TO 10	8x10	8x10	8x10	8x10	10x10	5	12x12	5	2x6			
		SEE NOTE 6											
OVER 10 UP TO 15	UP TO 6	8x8	8x8	8x8	8x8	8x10	5	10x12	5	2x6			
	UP TO 8	8x10	8x10	8x10	8x10	10x10	5	12x12	5	2x6			
	UP TO 10												
		SEE NOTE 6											
OVER 15 UP TO 20	UP TO 6	8x10	8x10	8x10	8x10	10x10	5	12x12	5	3x6			
	UP TO 8												
	UP TO 10												
		SEE NOTE 6											
OVER 20	SEE NOTE 6												

* SEE NOTE 7

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS

STANDARD TRENCH SAFETY SYSTEM

Dexter Williams
ASST. DIR. OF PUBLIC WORKS

[Signature]
DIR. OF PUBLIC WORKS

NOT TO SCALE

SHEET NO. 2 OF 2
DWG. NO. 28928