

NOTES:

1. DESIGN PROCEDURES ARE IN COMPLIANCE WITH THE CITY OF KILLEEN SUBDIVISION ORDINANCE EXCEPT AS APPROVED BY THE COMMUNITY UNIT PLAN FOR THE WILLOWS AS PRESENTED TO THE CITY OF KILLEEN.
2. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF KILLEEN STANDARD SPECIFICATIONS.
3. BENCH MARKS:  
TBM "W-3" : 1" IRON PIPE IN GROUND 10 FEET EAST AND 25 FEET SOUTH OF THE SOUTHWEST CORNER OF THE WILLOWS: ELEVATION = 825.40  
TBM "W-5" : 1" STEEL ROD IN GROUND 25 FEET NORTHWEST OF NORTHWEST CORNER OF THE WILLOWS: ELEVATION = 806.80
4. THE CONTRACTOR SHALL GIVE THE CITY OF KILLEEN 24 HOURS NOTICE BEFORE BEGINNING EACH PHASE OF CONSTRUCTION.
5. THE FINAL PAVING SECTION WILL BE DETERMINED BY AN INDEPENDENT GEOTECHNICAL ENGINEER IN ACCORDANCE WITH THE KILLEEN SUBDIVISION ORDINANCE AFTER THE STREETS HAVE BEEN CUT TO SUBGRADE.
6. AN EXISTING IRRIGATION SYSTEM EXISTS IN THE GOLF COURSE; THE CONTRACTOR IS RESPONSIBLE TO PROTECT THE SYSTEM DURING CONSTRUCTION. IF THE SYSTEM IS DAMAGED, THE CONTRACTOR SHALL REPAIR IT TO THE SATISFACTION OF THE CITY OF KILLEEN DIRECTOR OF PARKS AND RECREATION.
7. THE CONTRACTOR SHALL COORDINATE WITH THE PARKS AND RECREATION DIRECTOR PRIOR TO WORKING ON THE CITY OF KILLEEN MUNICIPAL GOLF COURSE.
8. THERE ARE NO TREES WITH A DIAMETER OF 6" OR GREATER WITHIN THE LIMITS OF CONSTRUCTION ON THE CITY GOLF COURSE PROPERTY.

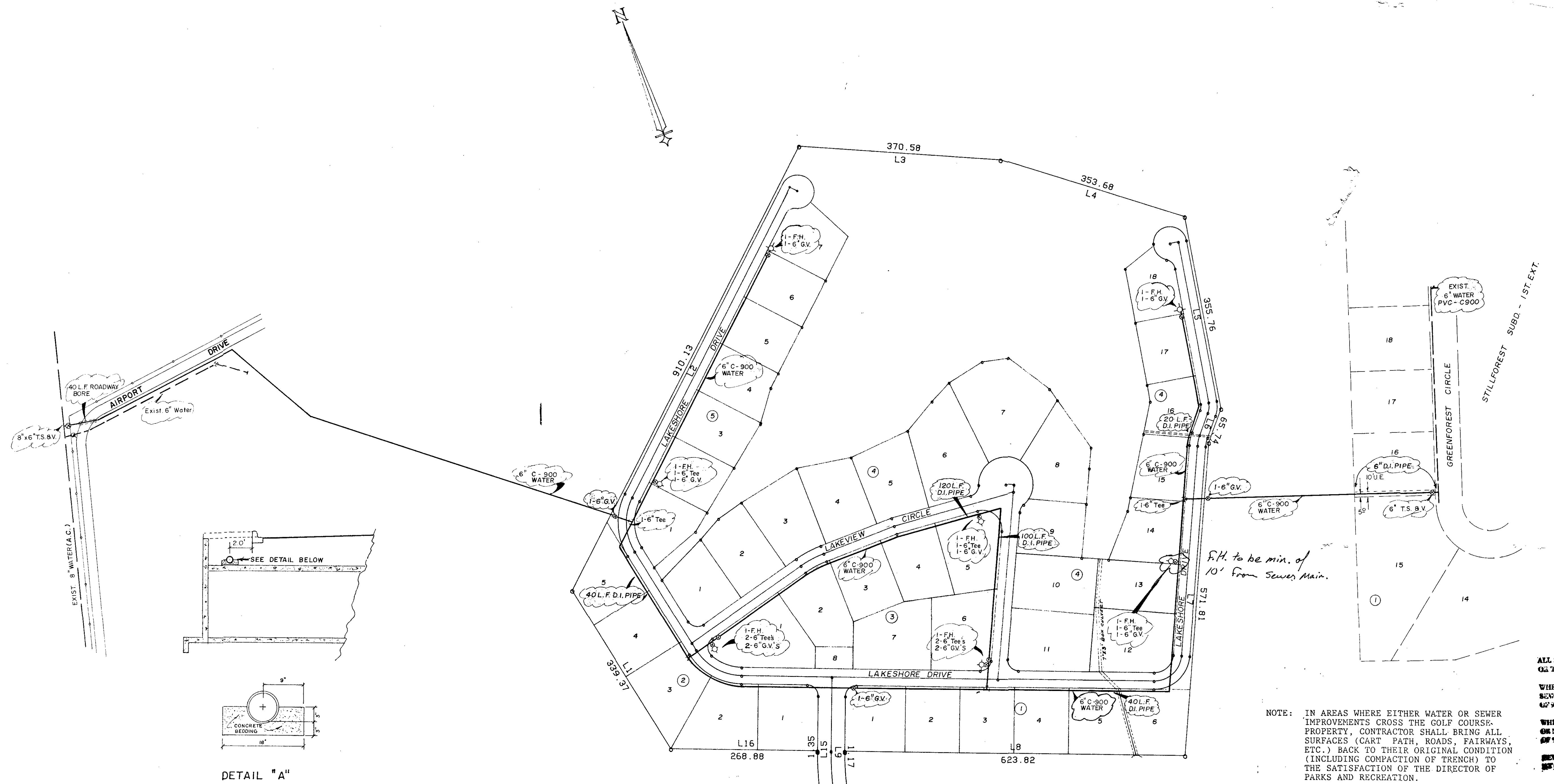
# THE WILLOWS

A COMMUNITY UNIT DEVELOPMENT

MITCHELL & ASSOCIATES, INC.  
ENGINEERING SURVEYING

Killeen, Texas





NOTES:

1. NORMAL WATER LINE LOCATION IS 2.0 FEET BEHIND THE CURB.
2. AT THE 7' X 3' CULVERT LOCATION WATER LINE TO BE PLACED 2 FEET BELOW THE 7' X 3' BOX CULVERT.
3. AT THE 8' X 6' CULVERT LOCATION WATER LINE TO BE PLACED ABOVE THE BOX AS SHOWN ON DETAIL "A".
4. AT THE 27" CULVERT LOCATION WATER LINE TO BE PLACED 2 FEET BELOW THE CULVERT.

The existing septic tank, drainfield and contaminated material must be removed and replaced with uncontaminated material prior to the installation of the water lines.

**NOTE**  
ALL WORK TO BE PERFORMED IN ACCORDANCE WITH CITY OF KILLEEN STANDARD WATER AND/OR SANITARY SEWER SPECIFICATIONS AND DETAILS. CONTACT CITY OF KILLEEN WATER AND SEWER SUPERINTENDENT PRIOR TO BEGINNING CONSTRUCTION.

**NOTE**  
The Contractor will not be allowed to operate any water valves in the distribution system unless an authorized representative of the City of Killeen Water Department is present.

NOTE

ALL SEWER LINES TO BE MINIMUM 4 FEET LONG OR TO PROPERTY LINE WHICHEVER IS THE GREATEST.

WHERE SANITARY SEWER MAIN CROSSES WATER MAINS, SEWERS SHALL BE DUCTILE IRON PIPE FOR A MINIMUM OF 9 FEET ON EACH SIDE OF WATER MAIN AT CROSSINGS.

WHERE WATER LINES AND SEWER LINES ARE PARALLEL OR NEARLY, THERE SHALL BE A MINIMUM SEPARATION OF 9 FEET BETWEEN WATER AND SEWER LINES.

SEWER SERVICES TO BE MAXIMUM 5 FEET DEPTH

*Mark Tamm* 7-31-90  
Date  
Fire Marshall

*Don Land* 7-30-90  
Water & Sewer Sup't Date

Approved for Construction  
for a period of 12 months  
from the date below.

*John R. Baumgardner* 7-30-90  
City Engineer Date  
See attached notes  
applicable to all sheets.  
water & sewer only

WATER LAYOUT

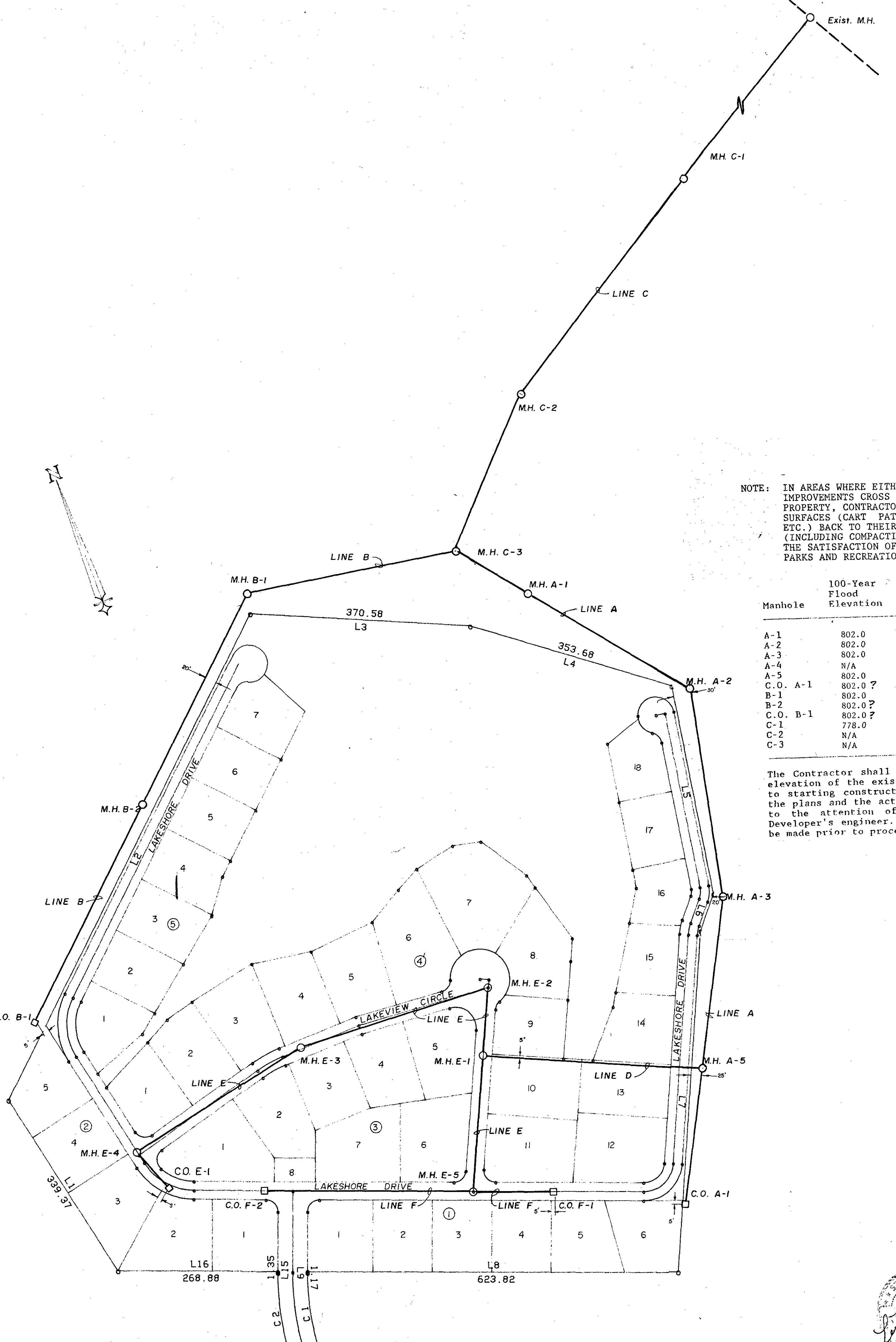
THE WILLOWS

KILLEEN, BELL COUNTY, TEXAS

**MITCHELL & ASSOCIATES, INC.**  
Killeen ENGINEERING & SURVEYING Temple

REVISIONS	
No.	Date

DATE: JUNE 90 SCALE: 1" = 100' DRAWN BY: LDP REF. NO. DWG. NO. 4172-D



NOTE: IN AREAS WHERE EITHER WATER OR SEWER IMPROVEMENTS CROSS THE GOLF COURSE PROPERTY, CONTRACTOR SHALL BRING ALL SURFACES (CART PATH, ROADS, FAIRWAYS, ETC.) BACK TO THEIR ORIGINAL CONDITION (INCLUDING COMPACTION OF TRENCH) TO THE SATISFACTION OF THE DIRECTOR OF PARKS AND RECREATION.

Manhole	100-Year Flood Elevation	Natural Ground Elevation	Minimum Rim Elevation
A-1	802.0	808.2	809.2
A-2	802.0	804.8	805.8
A-3	802.0	807.1	808.1
A-4	N/A	N/A	N/A
A-5	802.0	811.8	812.8
C.O. A-1	802.0?	815.6	816.6?
B-1	802.0	804.7	805.7
B-2	802.0?	805.1	806.1?
C.O. B-1	802.0?	805.5	806.5?
C-1	778.0	776.5	778.5
C-2	N/A	783.2	784.2
C-3	N/A	785.3	786.3

The Contractor shall field-verify the location and elevation of the existing manhole and streams prior to starting construction. Any discrepancy between the plans and the actual elevation shall be brought to the attention of the City Engineer and the Developer's engineer. Revisions to the plans shall be made prior to proceeding with construction.

NOTE  
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OR TO PROPERTY LINE WHICHEVER IS THE GREATEST.

WHERE SANITARY SEWER MAIN GROSSES WATER MAINS,  
SEWER SHALL BE DUCTILE IRON PIPE FOR A MINIMUM  
OF 9 FEET ON EACH SIDE OF WATER MAIN AT CROSSINGS.

WHERE WATER LINES AND SEWER LINES ARE PARALLEL  
OR NEARLY, THERE SHALL BE A MINIMUM SEPARATION  
OF 9 FEET BETWEEN WATER AND SEWER LINES.

SEWER SERVICES TO BE MAXIMUM 5 FEET DEPTH  
AT CURB LINE.

Water & Sewer Sup't Date

Approved for Construction  
for a period of 12 months  
from the date below.

*John R. Baumgardner 7-30-80*  
City Engineer Date

NOTE  
ALL WORK TO BE PERFORMED IN ACCORDANCE  
WITH CITY OF KILLEEN STANDARD WATER  
AND/OR SANITARY SEWER SPECIFICATIONS  
AND DETAILS. CONTACT CITY OF KILLEEN  
WATER AND SEWER SUPERINTENDENT PRIOR  
TO BEGINNING CONSTRUCTION.

REVISIONS	
No.	Date

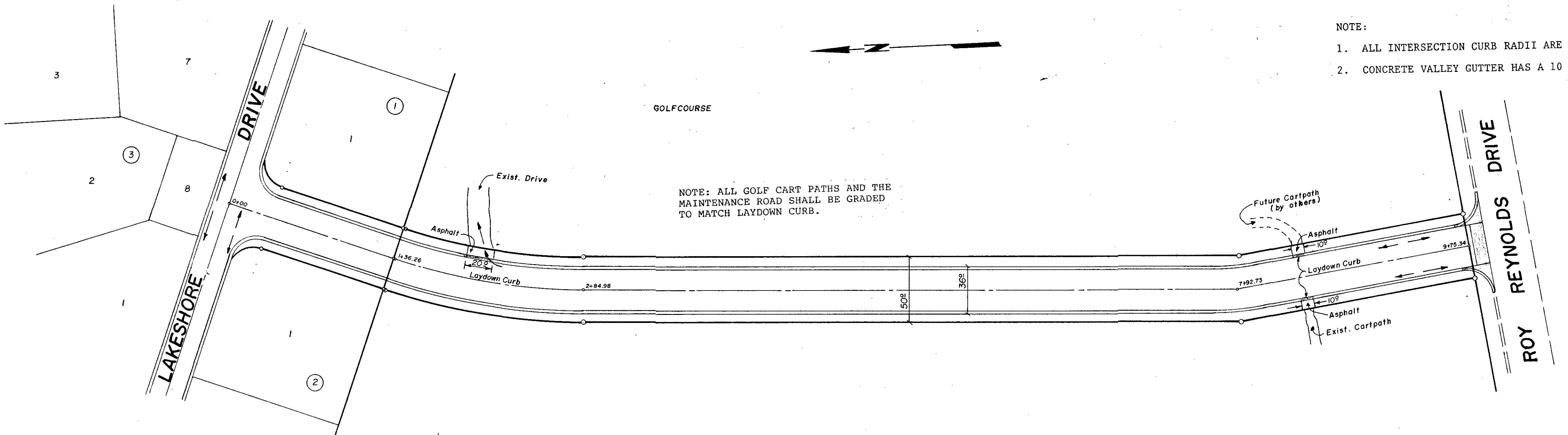
THE WILLOWS  
SEWER LAYOUT

KILLEEN BELL COUNTY TEXAS

**MITCHELL & ASSOCIATES, INC.**  
Killeen ENGINEERING & SURVEYING Temple

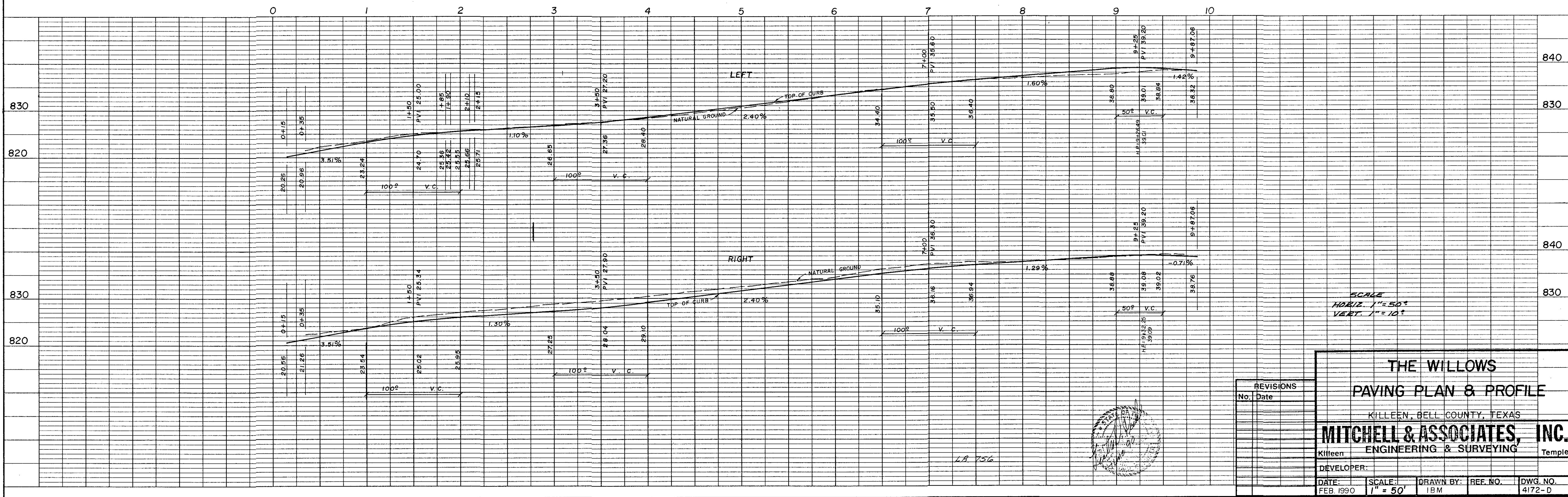
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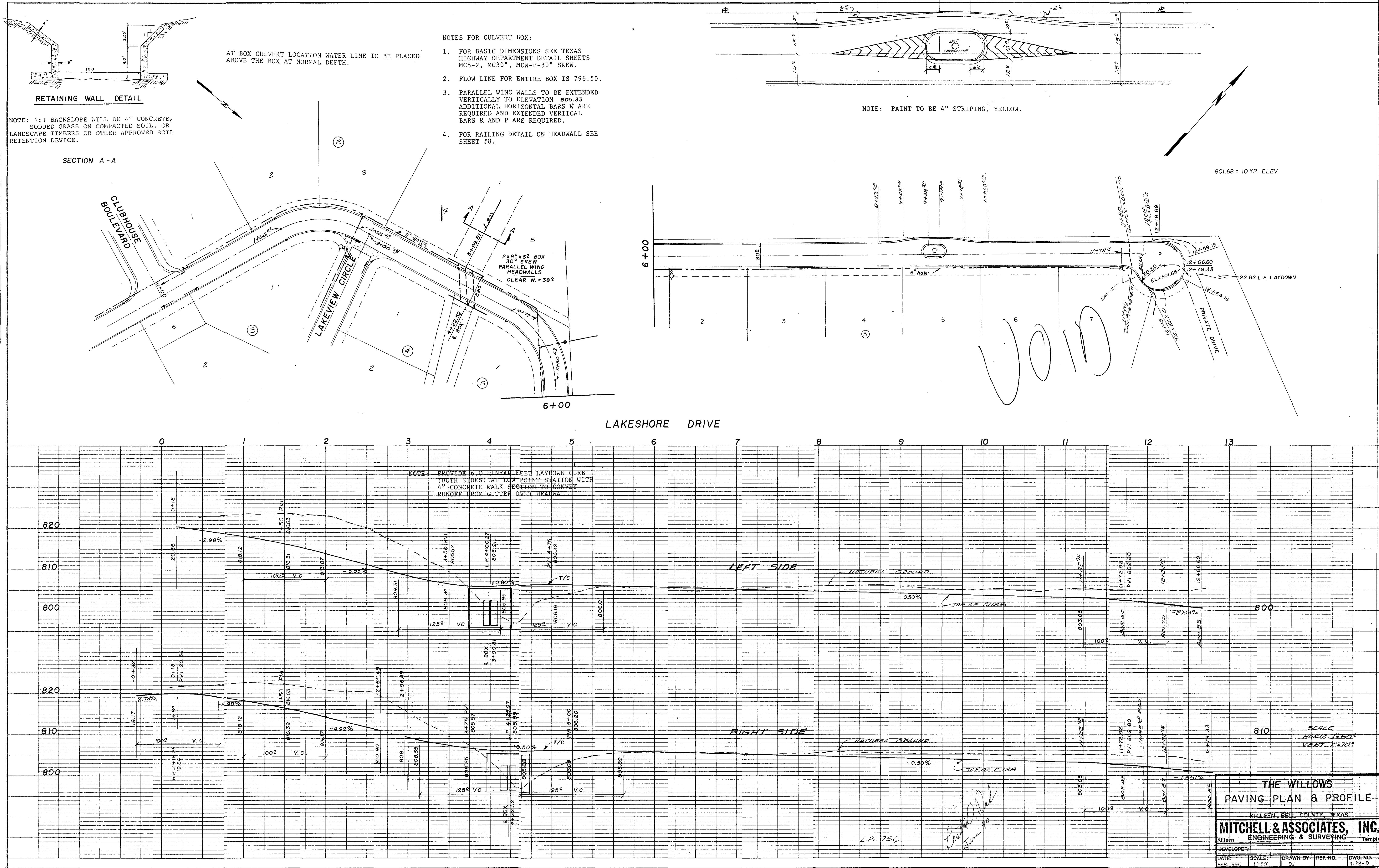
DATE: JUNE 90	SCALE: 1" = 100'	DRAWN BY: LDP	REF. NO. 4172-D
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NOTE:  
1. ALL INTERSECTION CURB RADII ARE 20 FEET.  
2. CONCRETE VALLEY CUTTER HAS A 10 FOOT APRON.

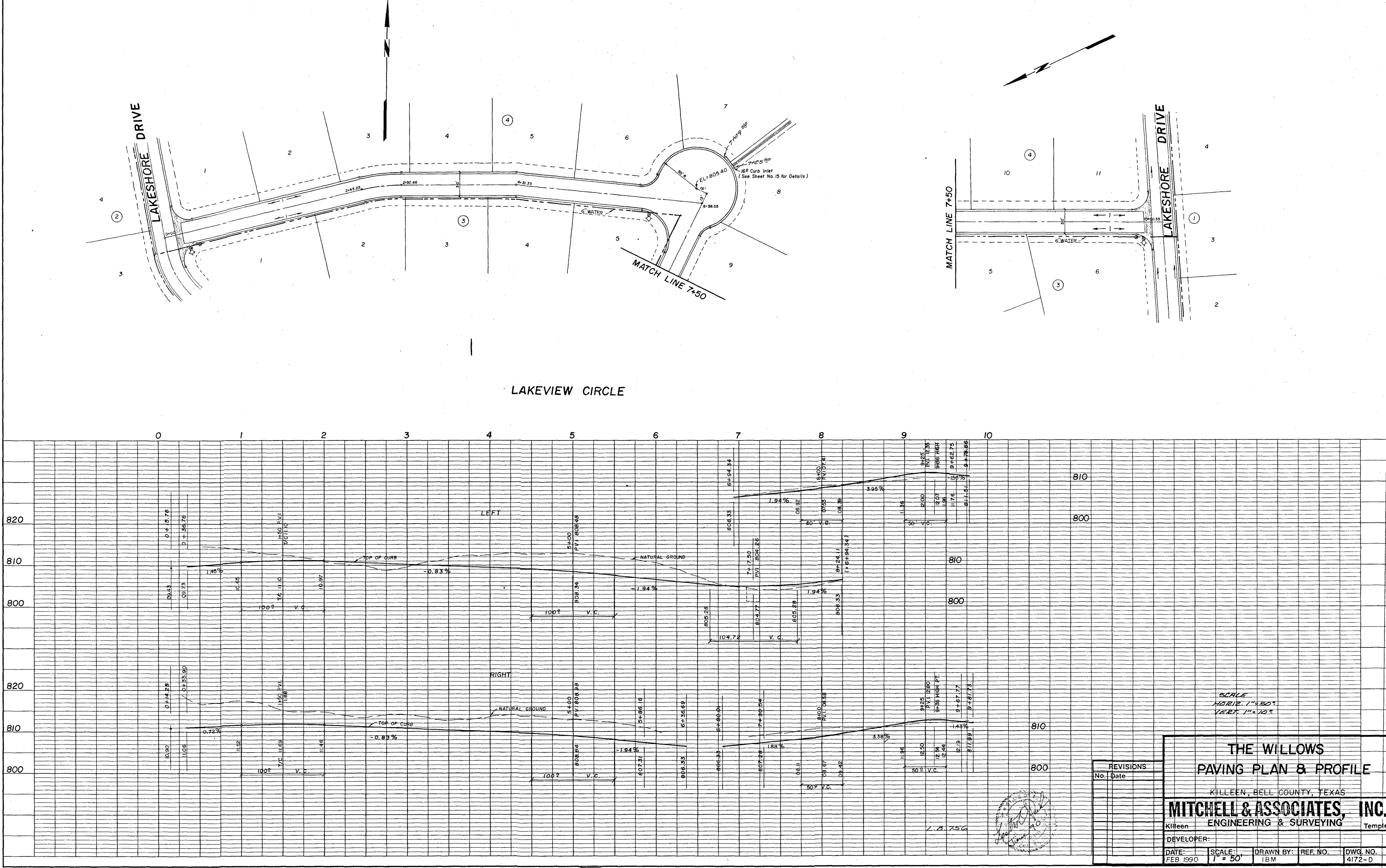
### CLUBHOUSE BOULEVARD



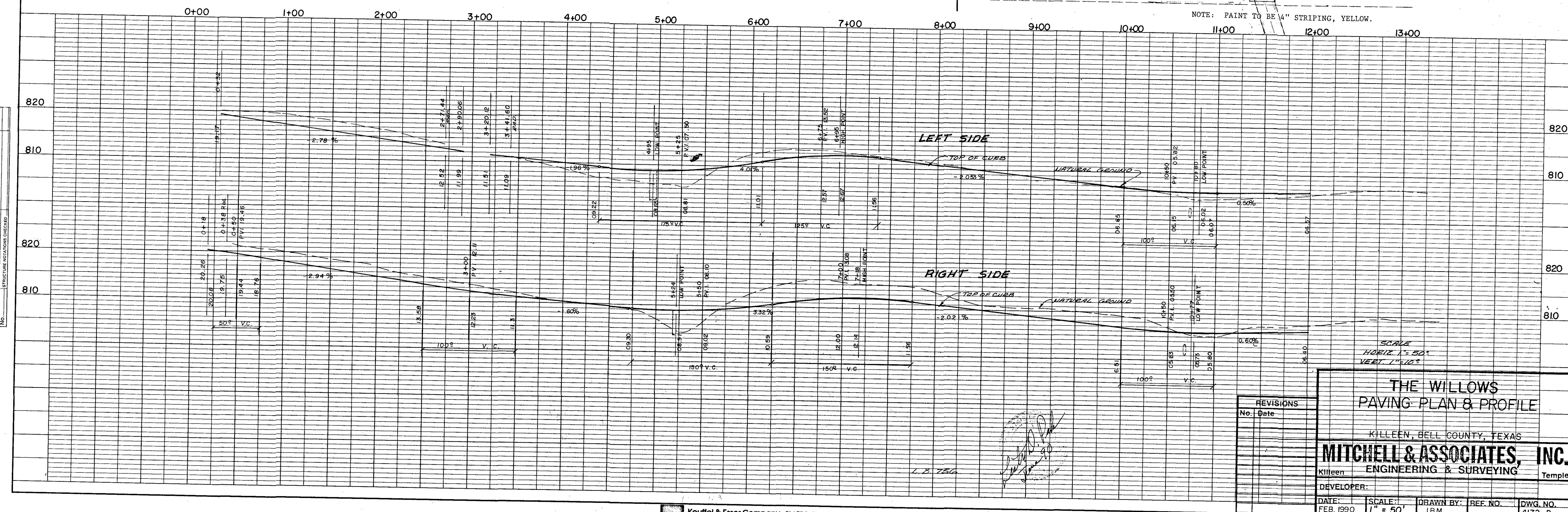
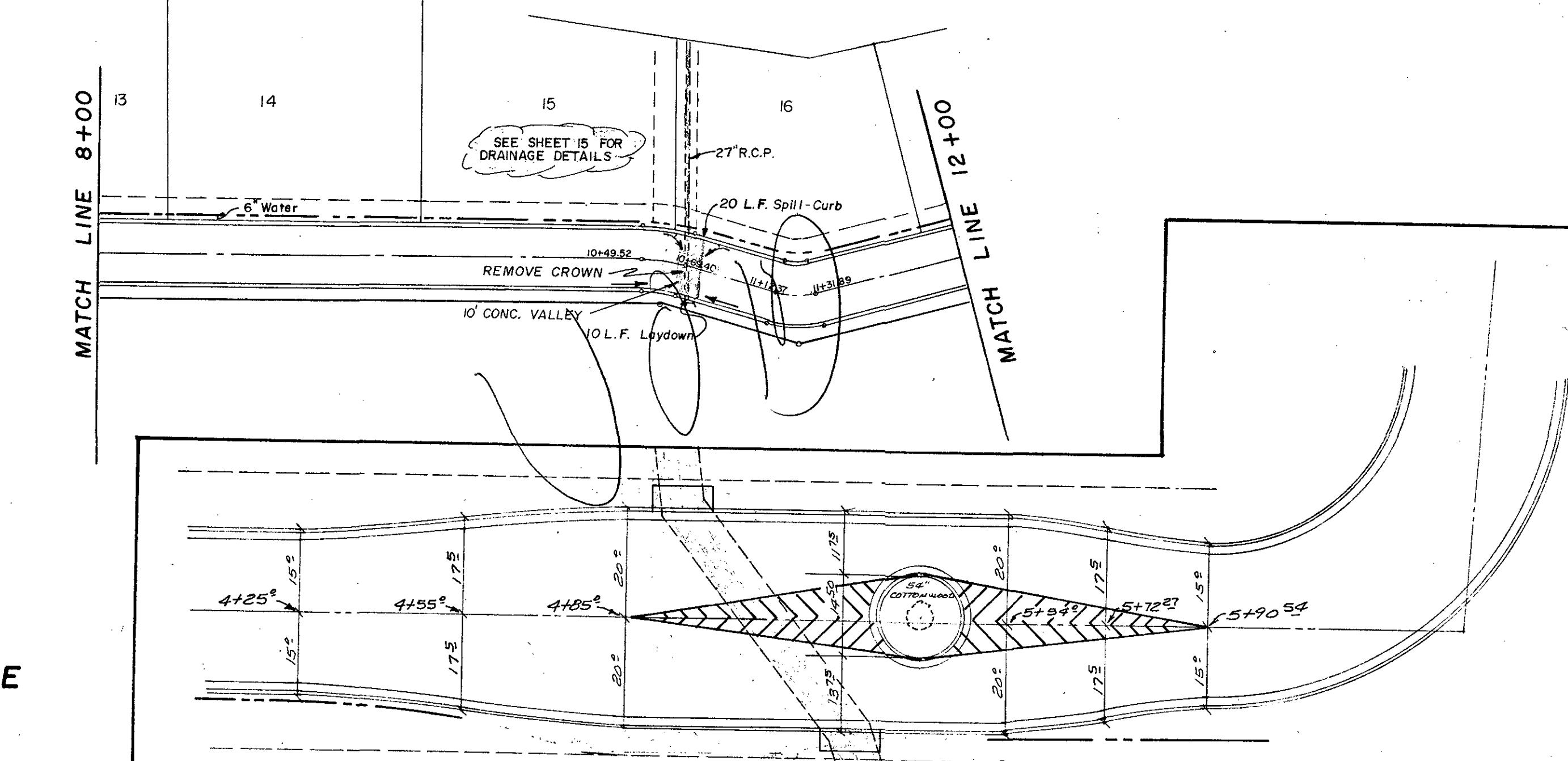
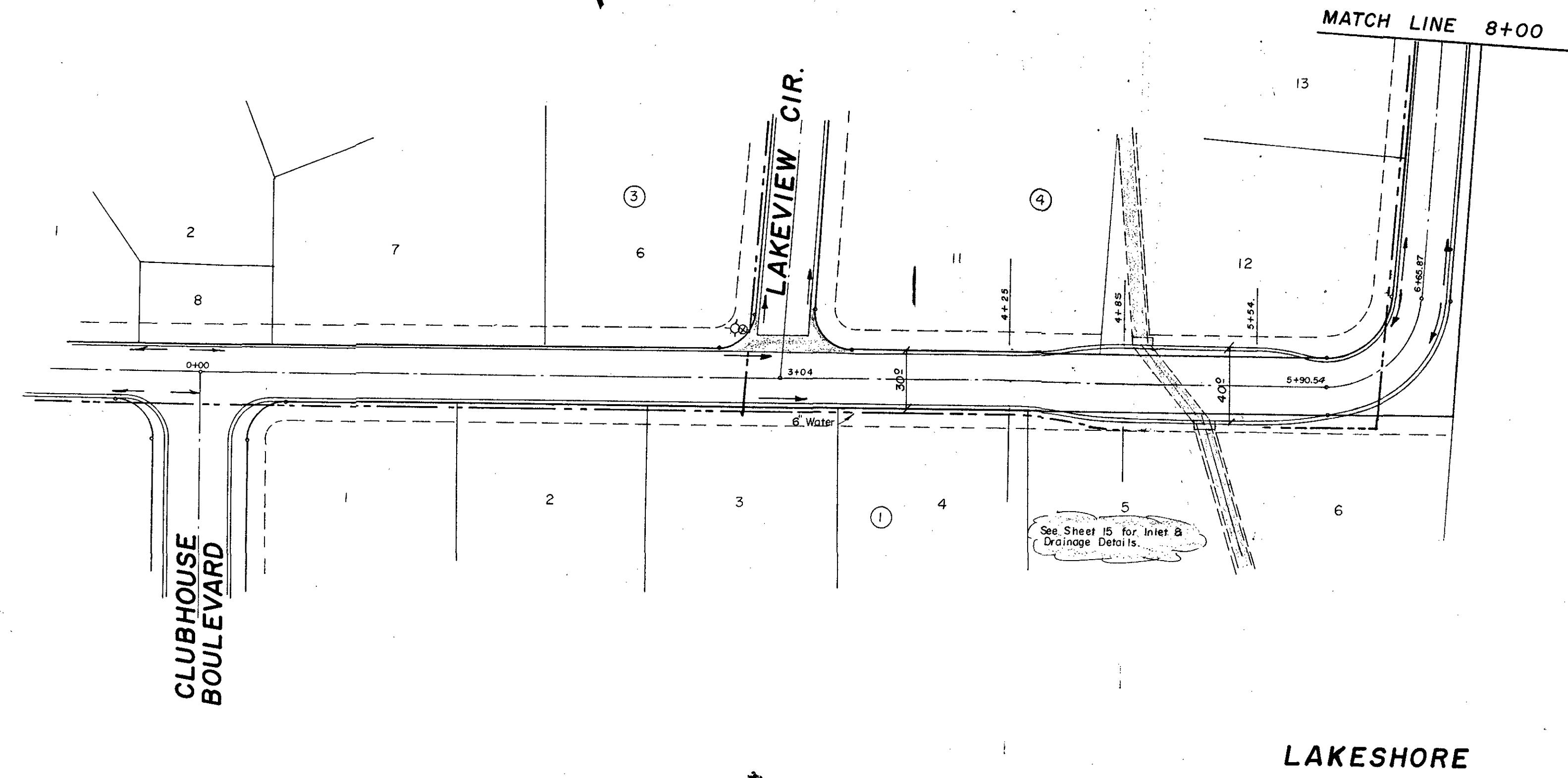


PLAN	SURVEYED
	BY
	NOTE BOOK
	PLOTTED
	ALREADY CHECKED
	AT OFFICE CHECKED
	No.

PROFILE	SURVEYED
	BY
	NOTE BOOK
	PLOTTED
	GROUPS CHECKED
	STRUCTURE ROTATIONS CHECKED
	No.



PLAN	SURVEYED BY _____	DATE _____
NOTE BOOK	PLOTTED ALIGNMENT CHECKED	RT. OF WAY CHECKED



**Keuffel & Esser Company** PLATE 1, PLAN-PROFILE  
48 7008 Made in U.S.A.\*

# THE WILLOWS

## PAVING PLAN & PROFILE

KILLEEN BELL COUNTY TEXAS

# MICHAEL MITCHELL & ASSOCIATES, INC.

Engineering & Surveying

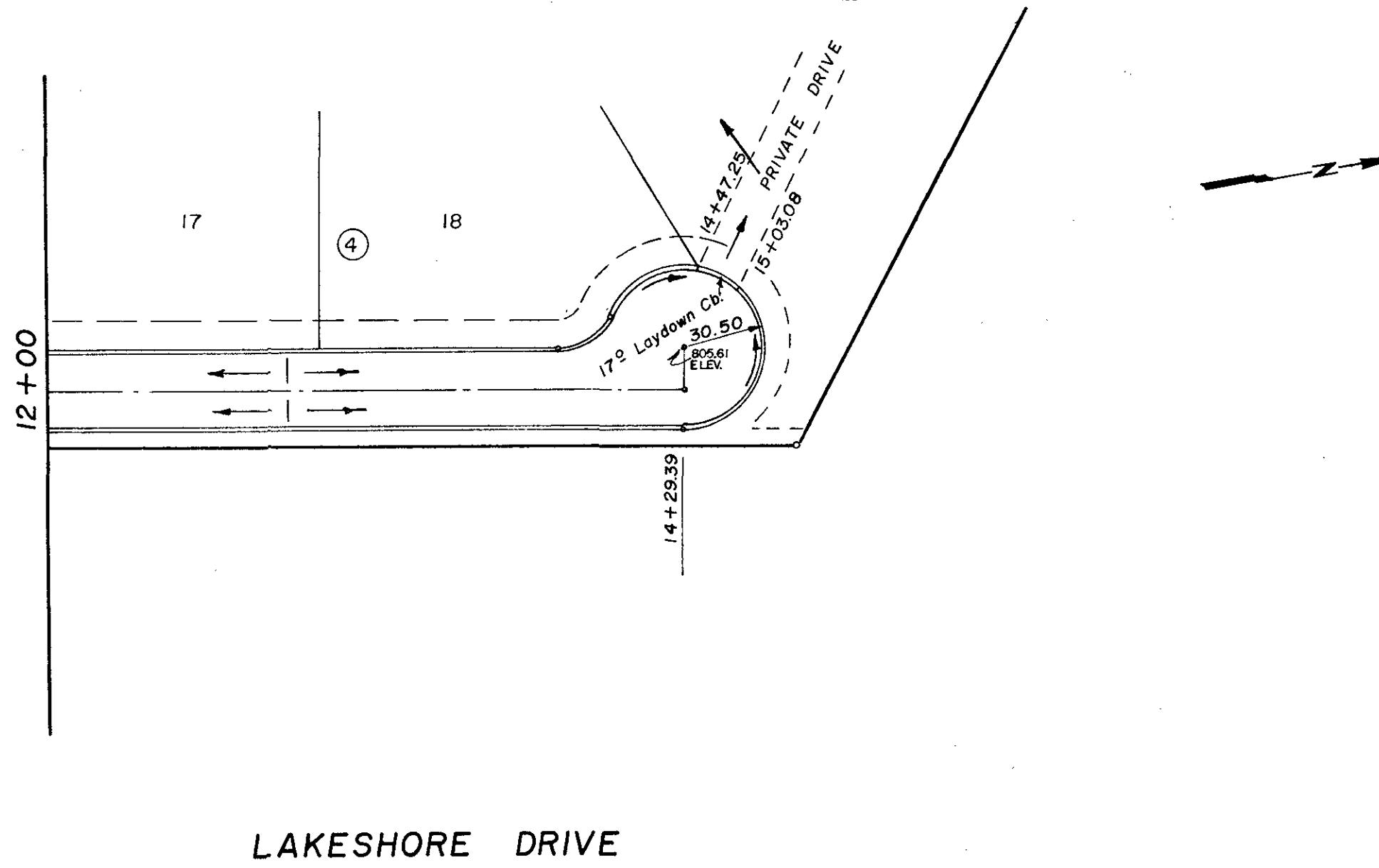
**DEVELOPER:** \_\_\_\_\_

DATE:	SCALE:	DRAWN BY:	REF. NO.	DWG. NO.
3.1990	1" = 50'	IBM		4172-D

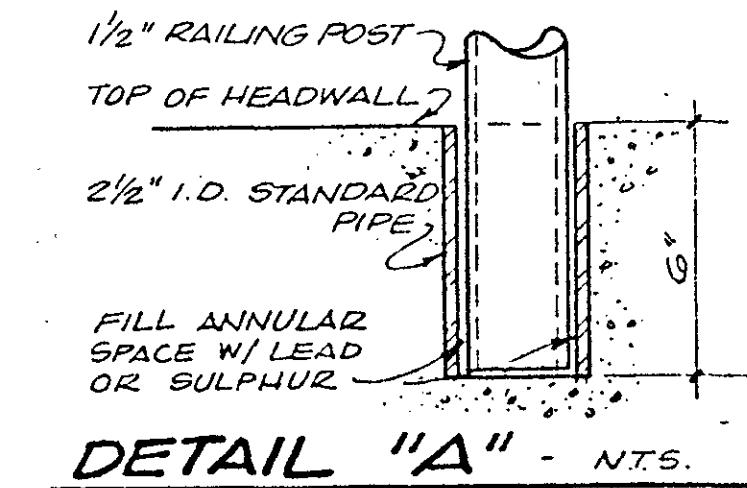
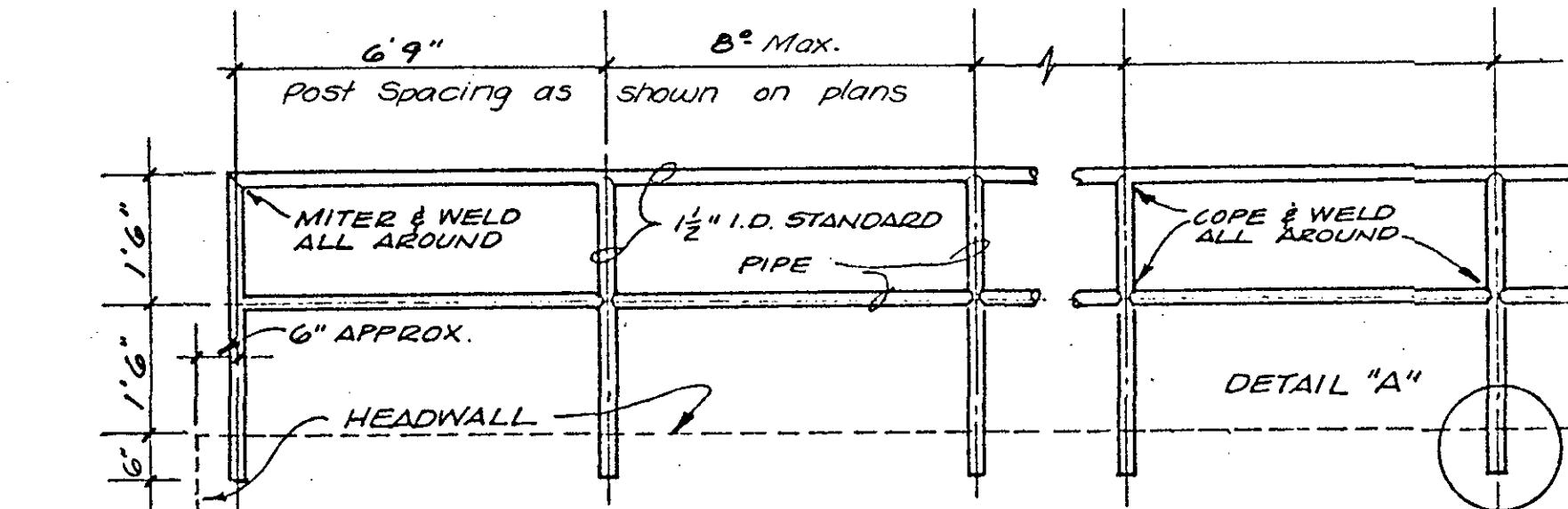
PLAN	DATE
SURVEYED	
NOTE BOOK	NUMBER CHECKED
B.M.'S NOTED	STRUCTURE NOTHS CHECKED
No.	

PROFILE	DATE
SURVEYED	
NOTE BOOK	NUMBER CHECKED
B.M.'S NOTED	STRUCTURE NOTHS CHECKED
No.	

NOTE: DRAINAGE FROM CUL-DE-SAC TO BE  
ROUTED TO PRIVATE DRIVE AND RELEASED  
ON THE LAKE SIDE OF DAM

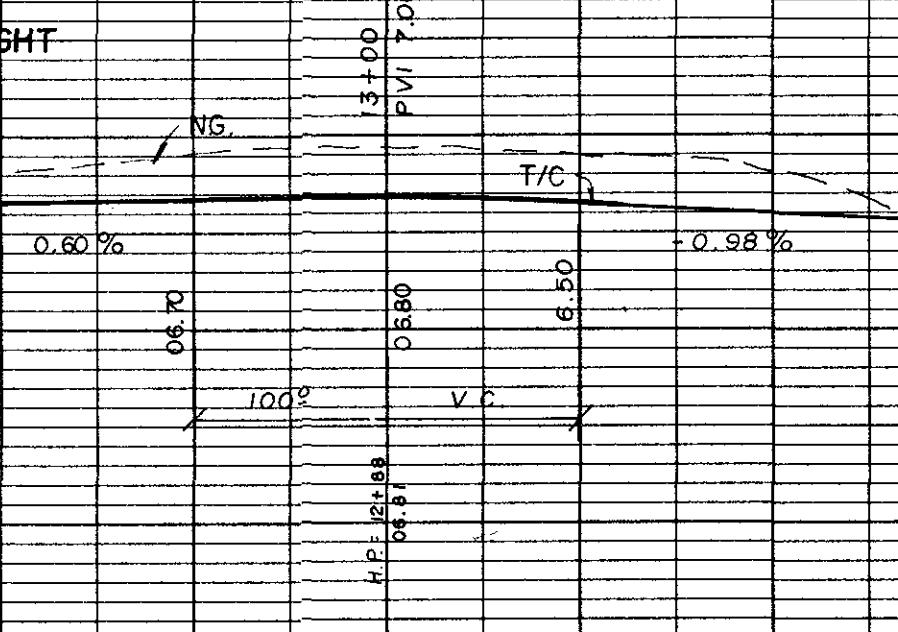
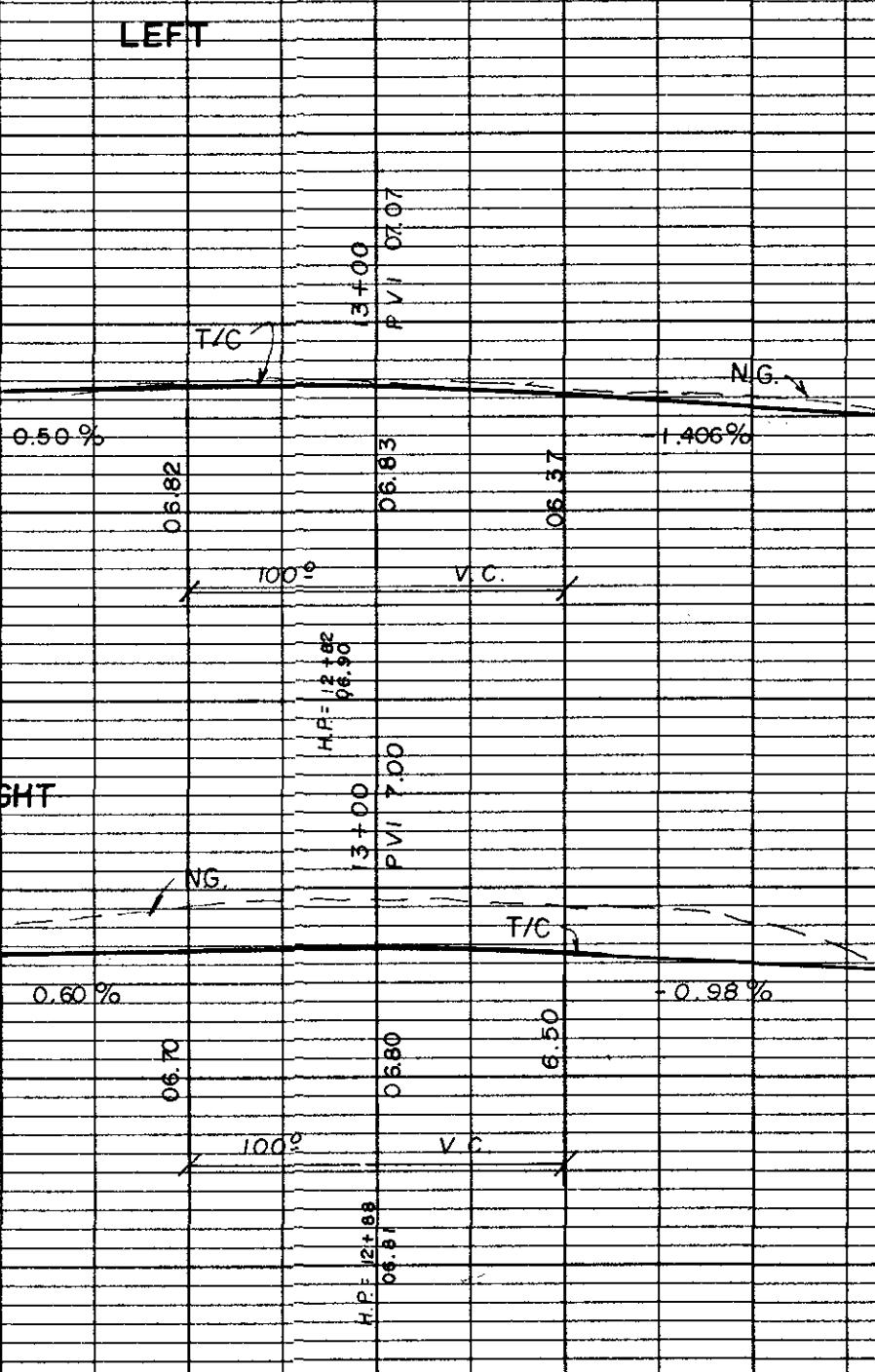


LAKESHORE DRIVE



RAILING DETAIL

12+00 13+00 14+00



SCALE  
HORZ 1:50'  
VERT 1":10'

**THE WILLOWS**  
**PAVING PLAN & PROFILE**

KILLEEN, BELL COUNTY, TEXAS

**MITCHELL & ASSOCIATES, INC.**

KILLEEN ENGINEERING & SURVEYING Temple

DEVELOPER:  
DATE: FEB. 1990 SCALE: 1":50' DRAWN BY: DJ REF. NO. 4172-D

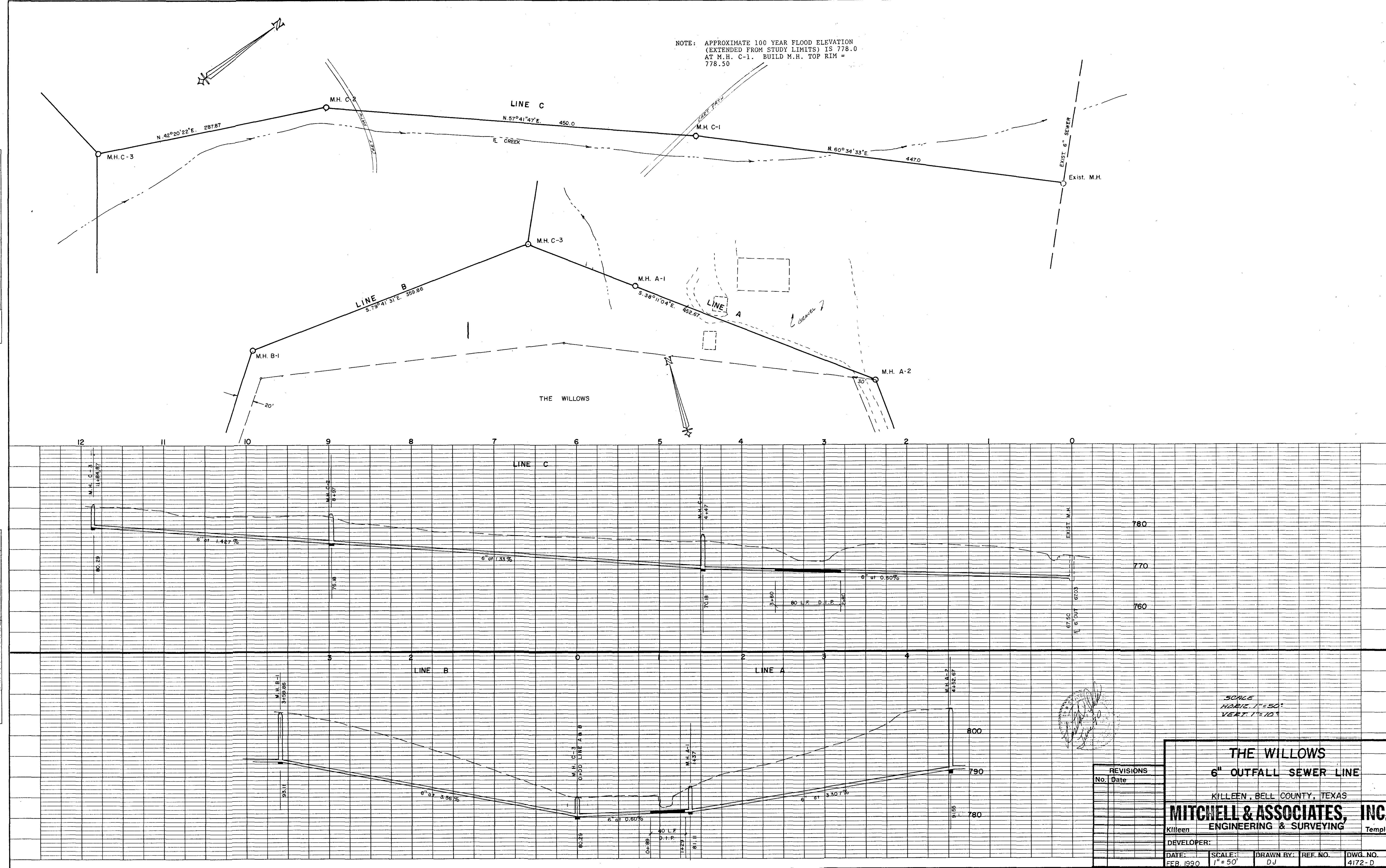
NOTE: APPROXIMATE 100 YEAR FLOOD ELEVATION  
(EXTENDED FROM STUDY LIMITS) IS 778.0  
AT M.H. C-1. BUILD M.H. TOP RIM =  
778.50

**PLAN**

SURVEYED	CONT.
NOTE BOOK	CONT.
STRUCTURE NOTED	NOT CHECKED
No.	RT OF WAY CHECKED

**PROFILE**

SURVEYED	CONT.
NOTE BOOK	CONT.
B.M. NOTED	NOT CHECKED
No.	STRUCTURE NOTATION CHECKED



SCALE  
HORIZ. 1" = 50'  
VERT. 1" = 10'

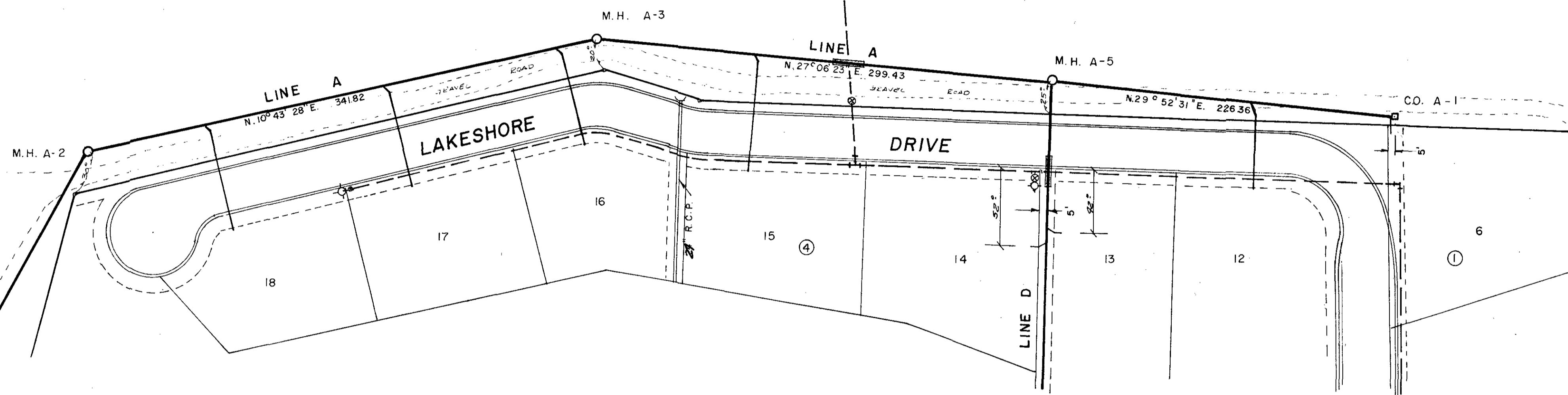
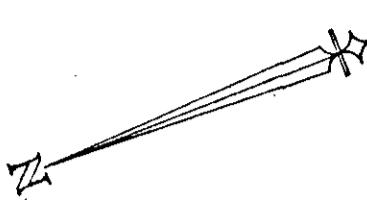
**THE WILLOWS**  
**6" OUTFALL SEWER LINE**

KILLEEN, BELL COUNTY, TEXAS

**MITCHELL & ASSOCIATES, INC.**  
Killeen ENGINEERING & SURVEYING Temple

REVISIONS	Date

DEVELOPER:  
DATE: FEB. 1990 SCALE: 1" = 50' DRAWN BY: TREC. NO. DWG. NO.  
FEB. 1990 DJ 4172-D


**NOTE**

ALL SEWER LINES TO BE MINIMUM 4 FEET LONG  
OR TO PROPERTY LINE WHICHEVER IS THE GREATEST.  
WHERE SANITARY SEWER MAIN CROSSES WATER MAIN IS,  
SEWER CROSSED BY IRON PIPE, IRON PIPE  
OF PLATE ON EAST SIDE OF WATER MAIN AT CROSSINGS.  
WHERE WATER LINES AND SEWER LINES ARE PARALLEL  
OR NEARLY SO, THE SEWER SHALL HAVE A MINIMUM SEPARATION  
OF 9 FEET BETWEEN WATER AND SEWER LINES.  
SEWER SERVICES TO BE MAXIMUM 5 FEET DEPTH  
AT CURB LINE.

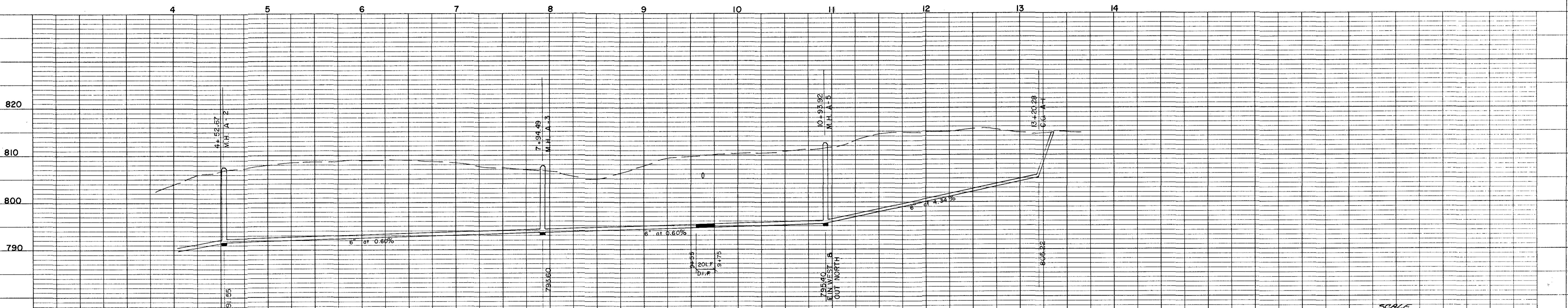
*Don Sanderson*  
Water & Sewer Sup't  
Date

**NOTE**  
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AND/OR SANITARY SEWER SPECIFICATIONS  
AND DETAILS. CONTACT CITY OF KILLEEN  
WATER AND SEWER SUPERINTENDENT PRIOR  
TO BEGINNING CONSTRUCTION.

Approved for Construction  
for a period of 12 months  
from the date below.

*John R. Bangastan 7-30-90*  
City Engineer  
Date

PROFILE  
Surveyed To  
Note Book  
Plotted  
Structure Notes Checked  
No.



SCALE  
HORIZ. 1" = 50'  
VERT. 1" = 10'

### THE WILLOWS SEWER PLAN & PROFILE

KILLEEN, BELL COUNTY, TEXAS

**MITCHELL & ASSOCIATES, INC.**  
ENGINEERING & SURVEYING

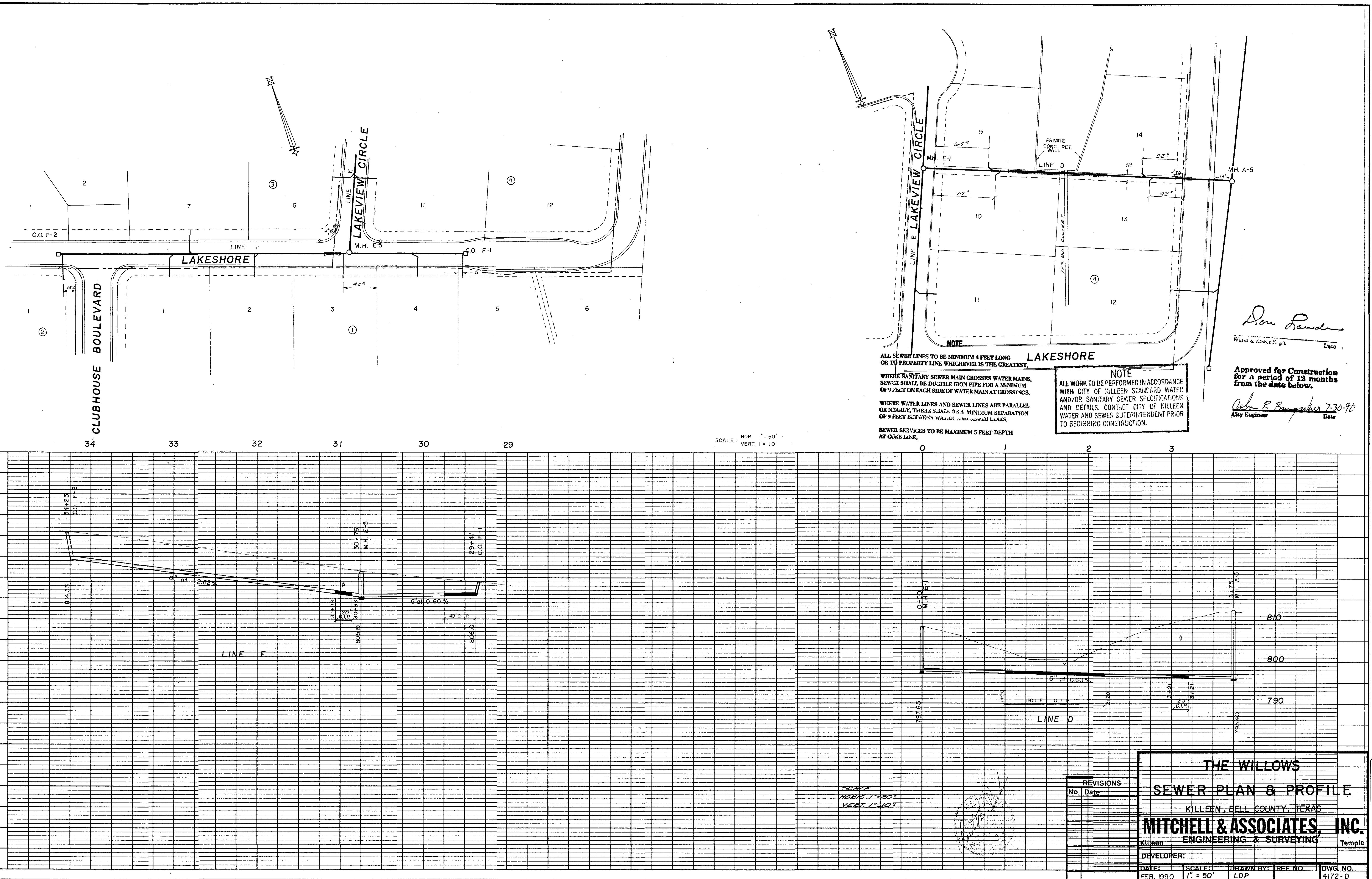
Killeen Temple

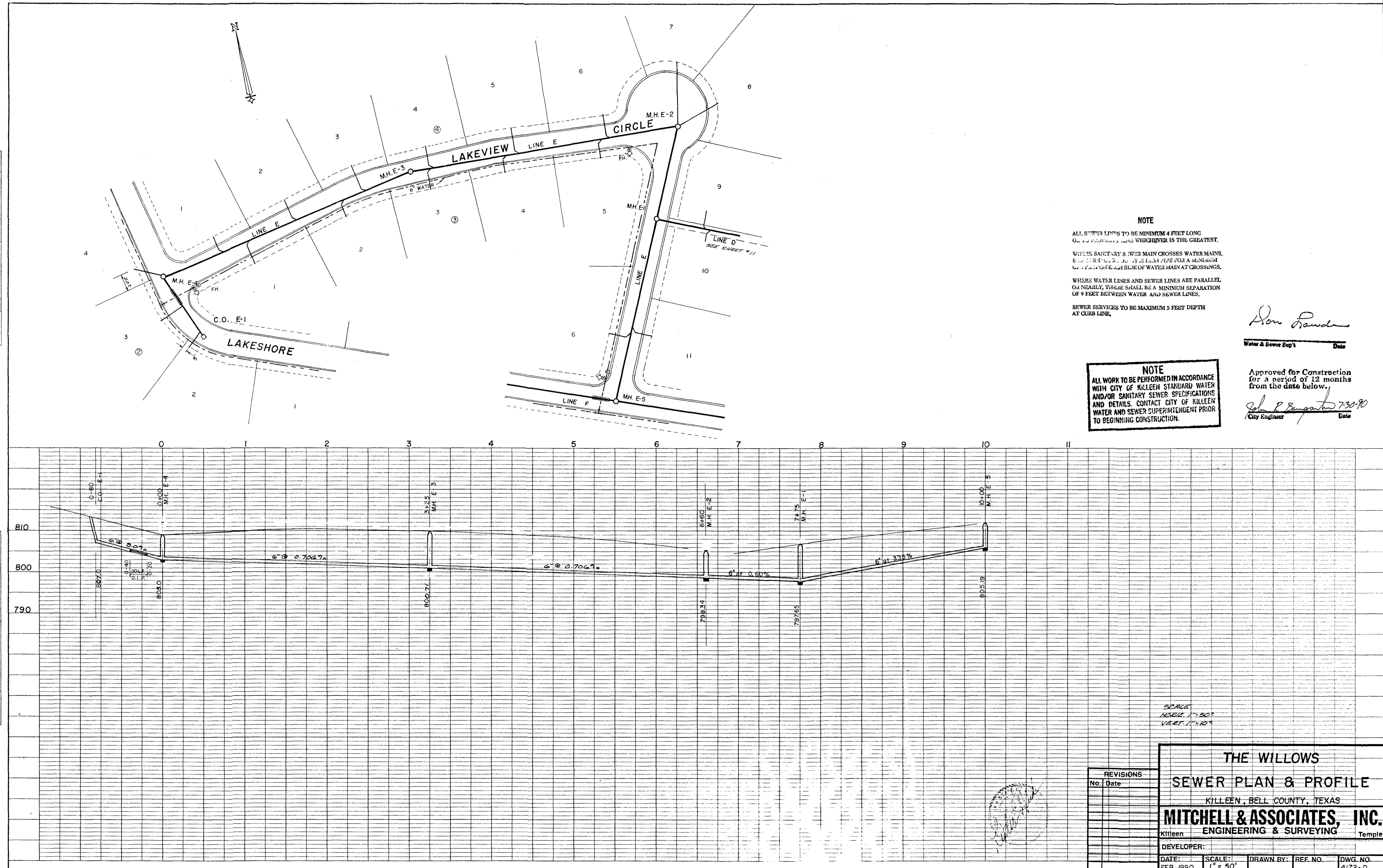
REVISIONS	
No.	Date

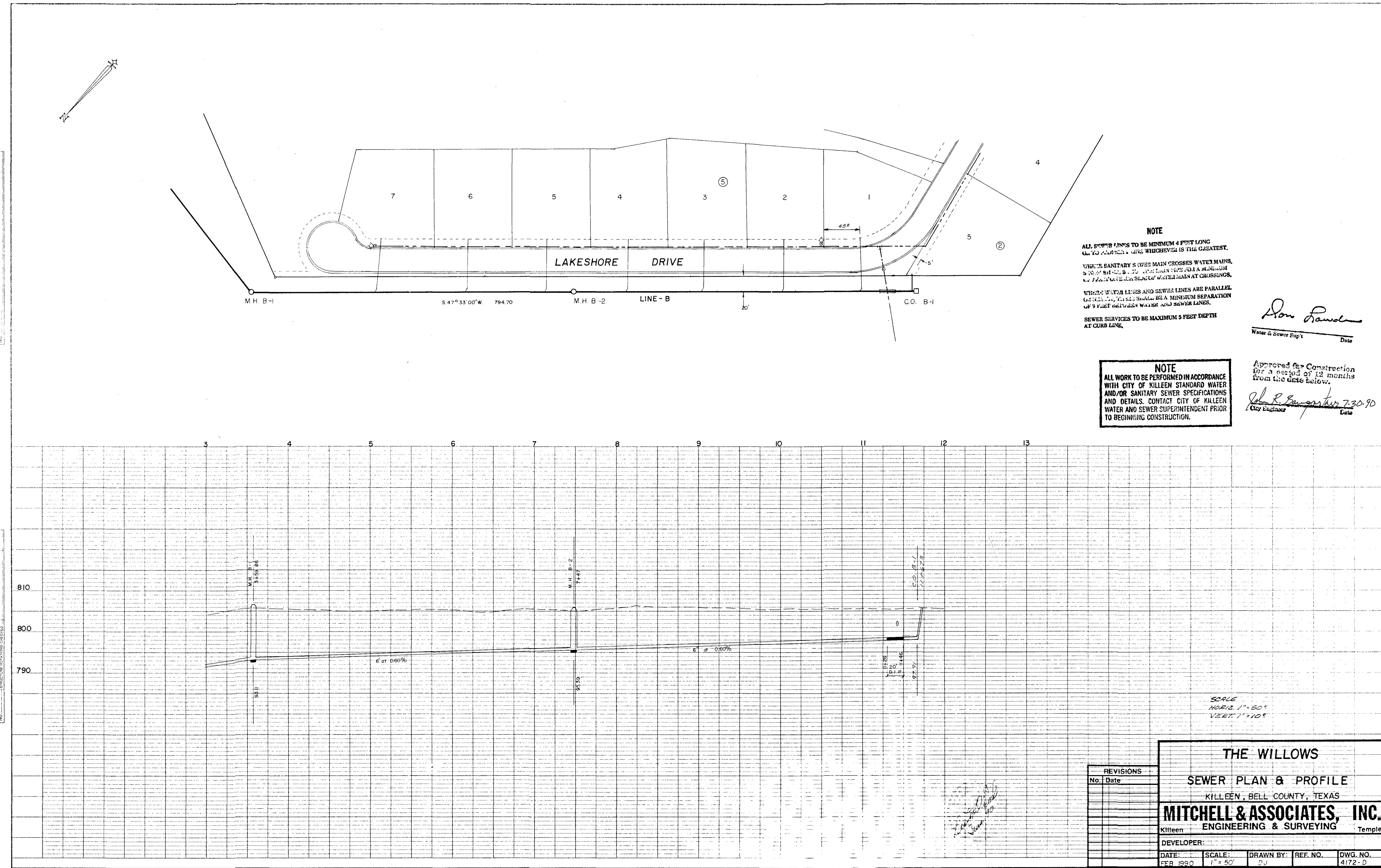
DEVELOPER:  
DATE: FEB. 1990 SCALF: 1" = 50' DRAWN BY: D.J. REF. NO. DWG. NO. 4172-D

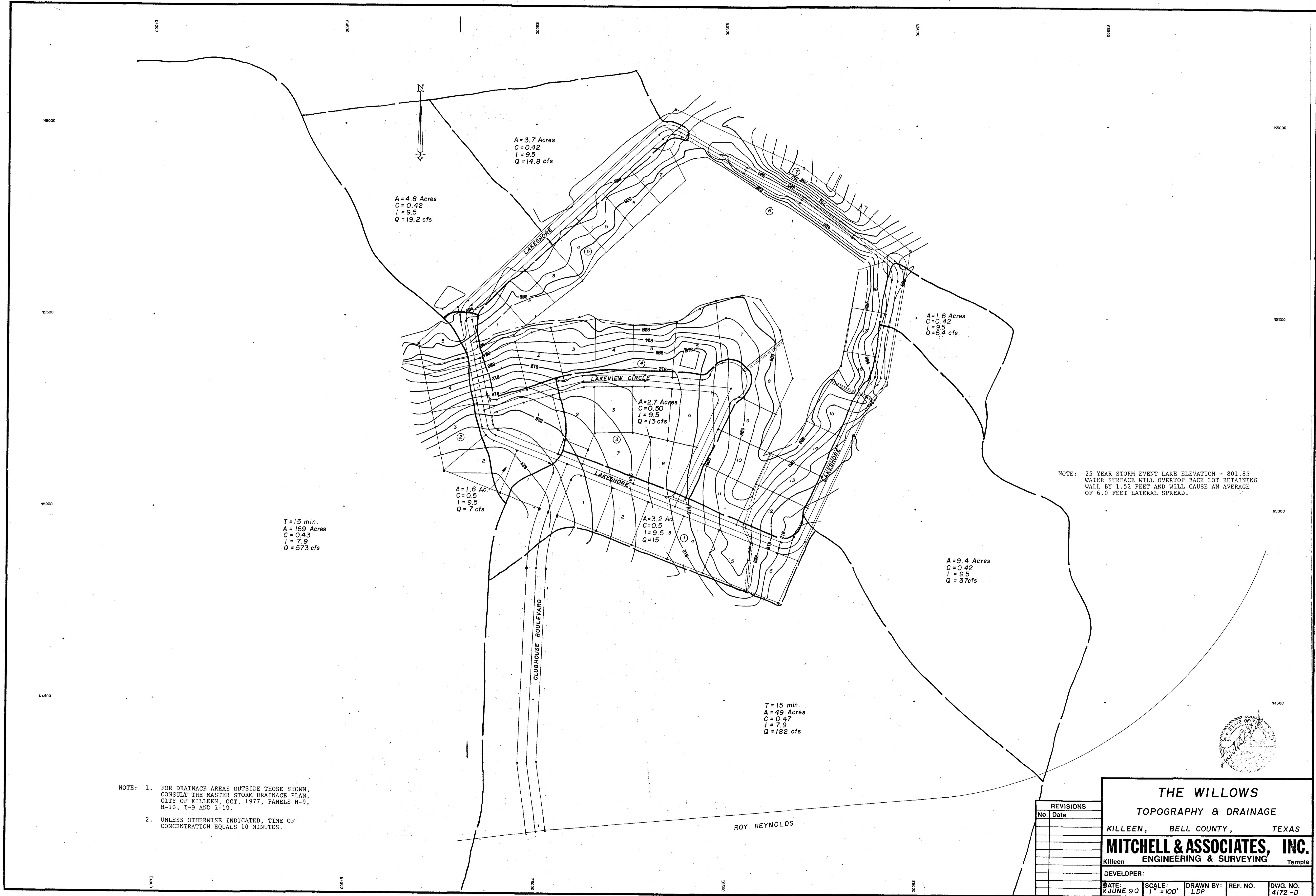
		DATE
		BY
PLAN	SURVEYED _____	
	PLOTTED _____	
	ALIGNMENT CHECKED _____	
	RT. OF WAY CHECKED _____	
NOTE BOOK		
		NO. _____

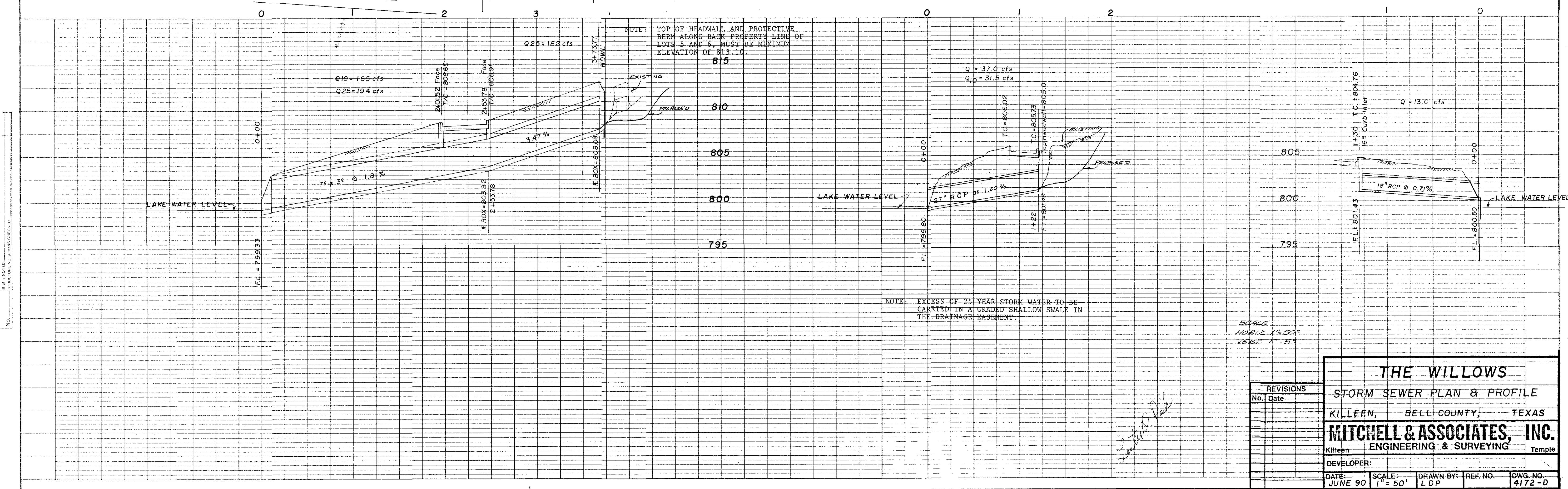
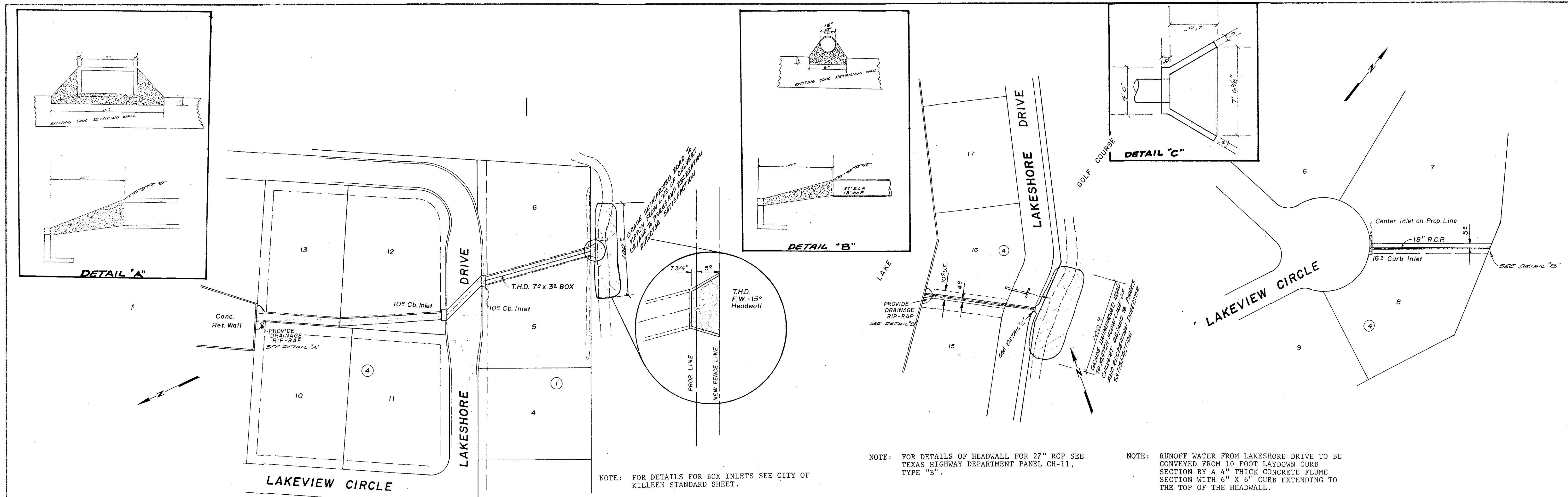
<b>PROFILE</b>	DATE BY
SURVEYED _____	PLOTTED _____
NOTE BOOK	GRADES CHECKED _____
NO. _____	B.M.'S NOTED _____
NO. _____	STRUCTURE NOTATIONS CHECKED _____

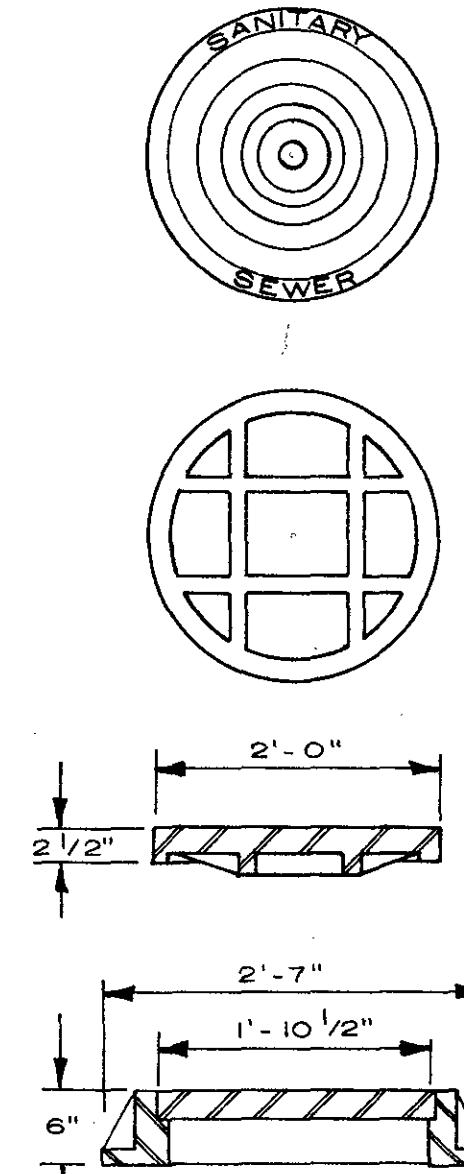








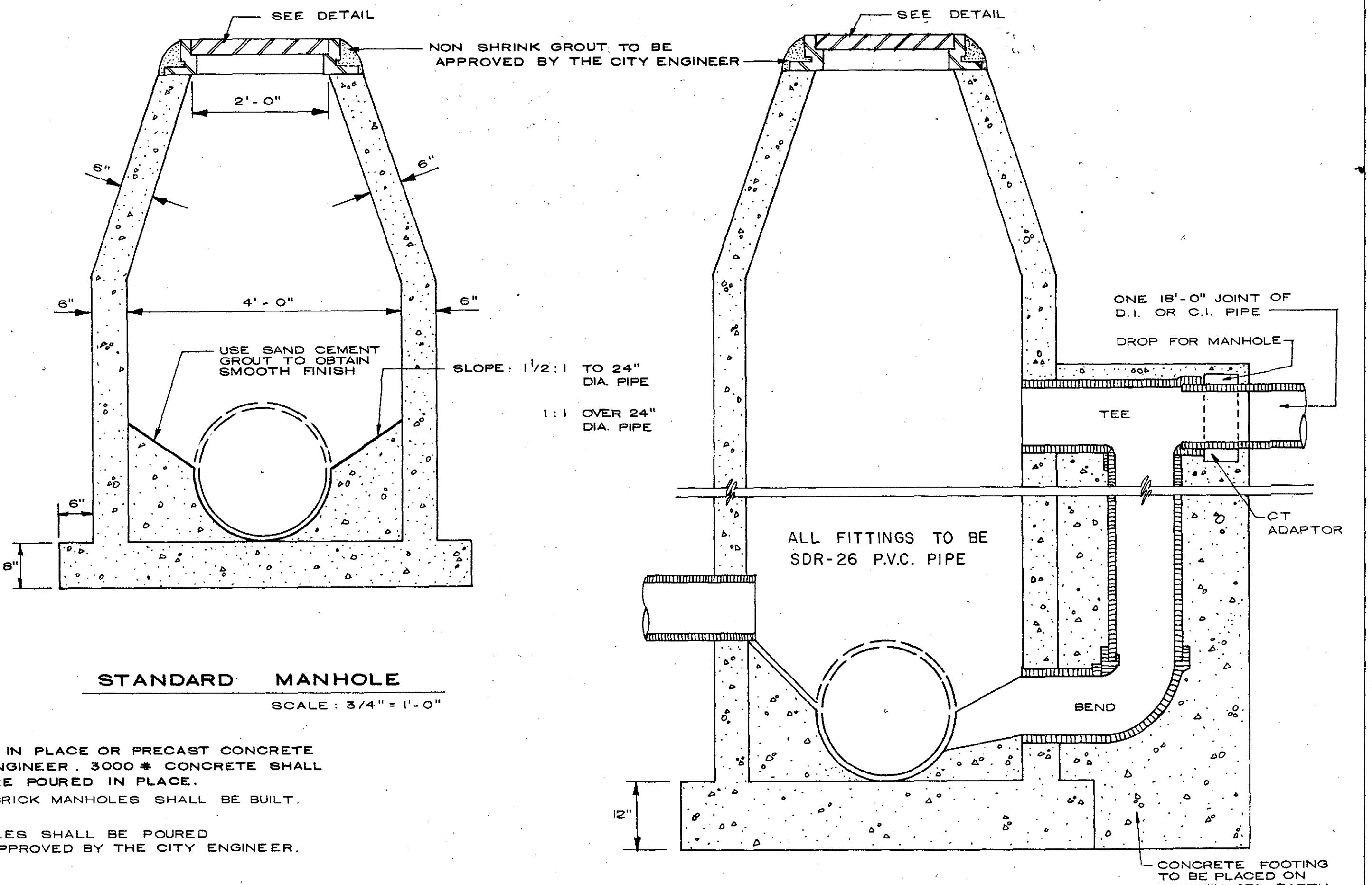




**STANDARD MANHOLE RING AND COVER**

SCALE : 3/4" = 1'-0"

NOTE: 1. MANHOLES SHALL BE POURED IN PLACE OR PRECAST CONCRETE AS APPROVED BY THE CITY ENGINEER. 3000# CONCRETE SHALL BE USED IF THE MANHOLES ARE POURED IN PLACE. NO FIBERGLASS, PLASTIC OR BRICK MANHOLES SHALL BE BUILT.  
2. ALL POURED IN PLACE MANHOLES SHALL BE POURED MONOLITHICALLY EXCEPT AS APPROVED BY THE CITY ENGINEER.  
3. WEIGHT OF MANHOLE RING AND COVER SHALL BE 350 LBS., RING AND COVER SHALL BE MACHINE FIT.



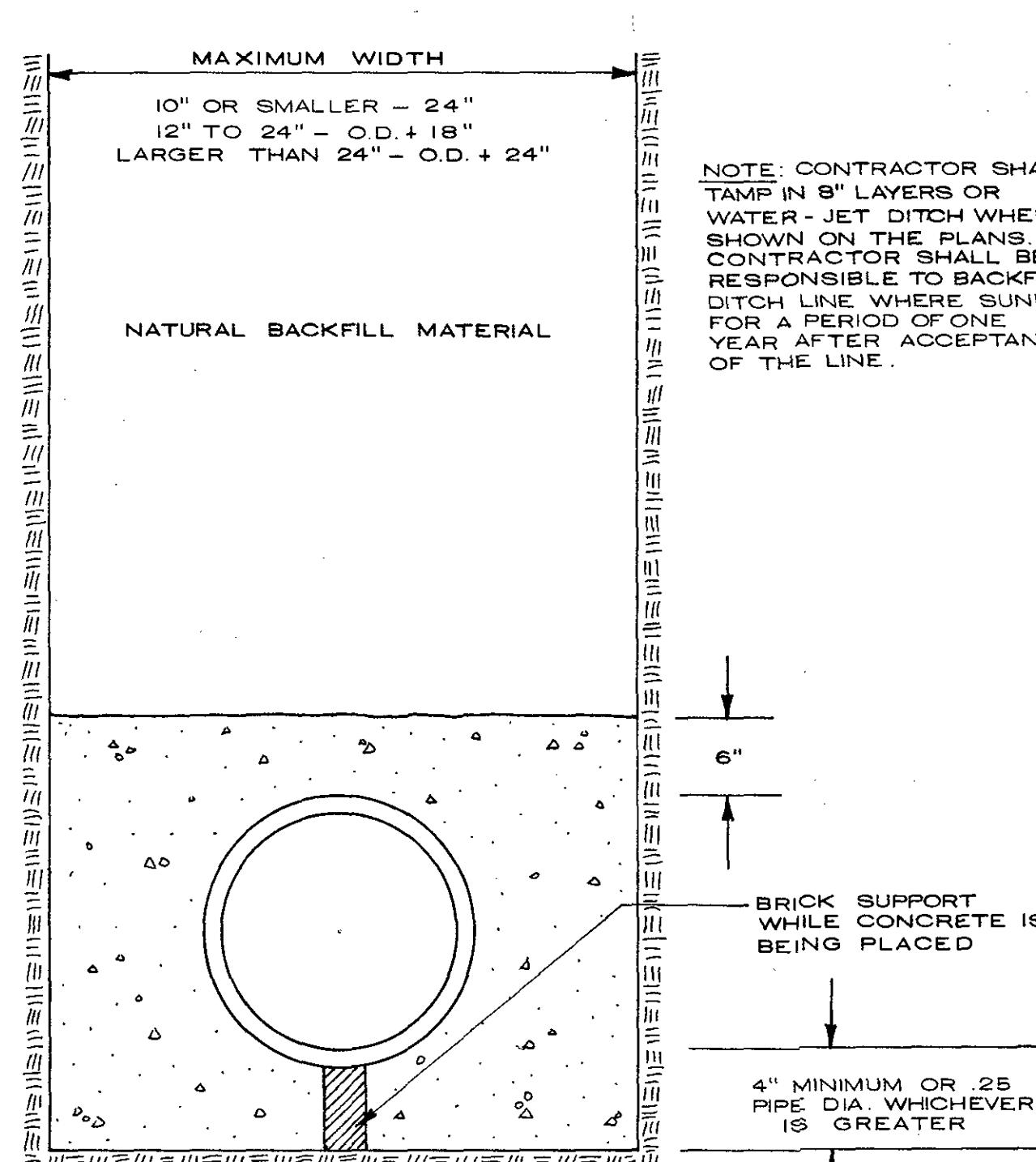
**STANDARD MANHOLE**

SCALE : 3/4" = 1'-0"

**MANHOLE WITH DROP CONNECTION**

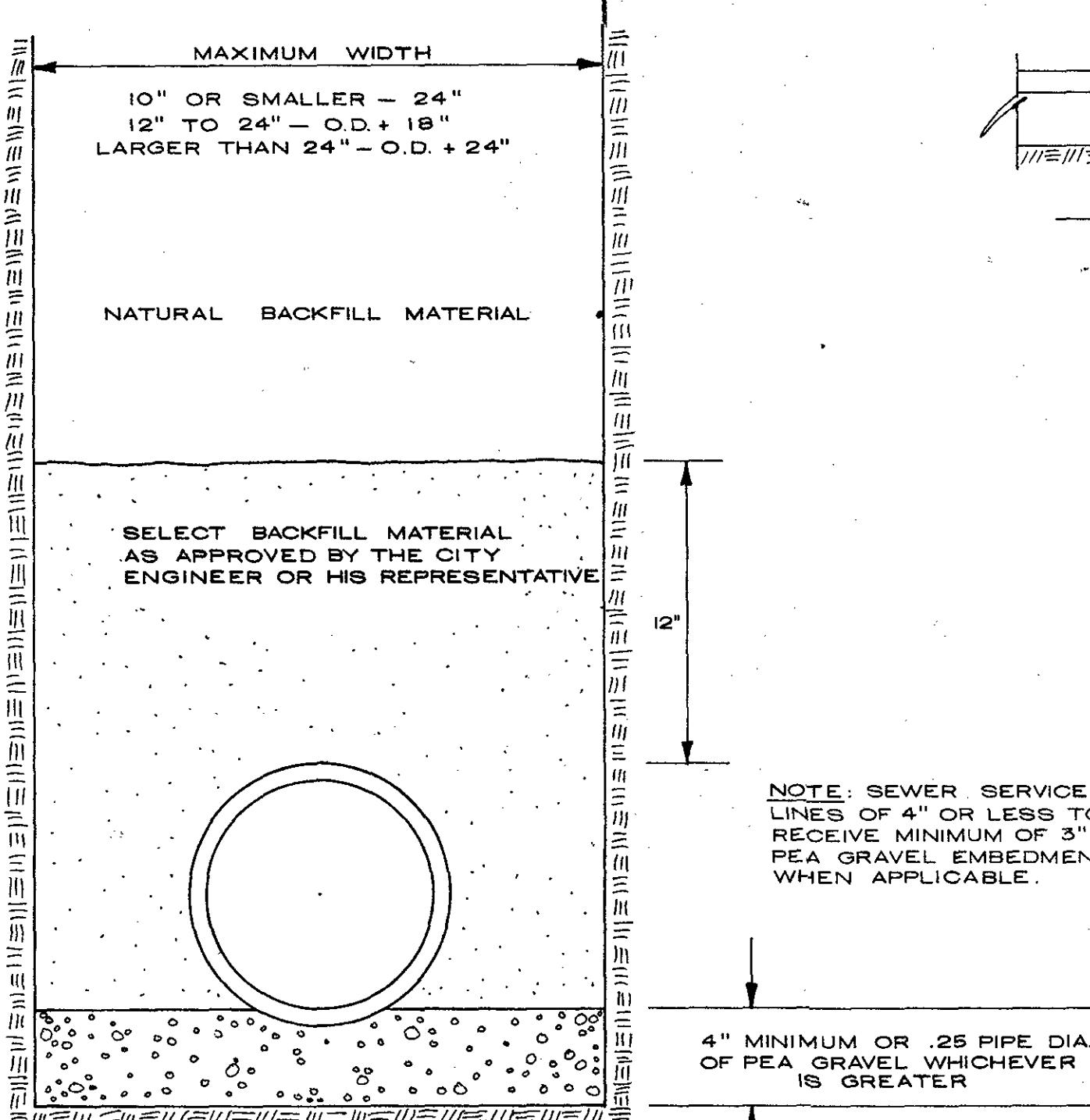
SCALE : 3/4" = 1'-0"

## SEWER MANHOLE DETAILS



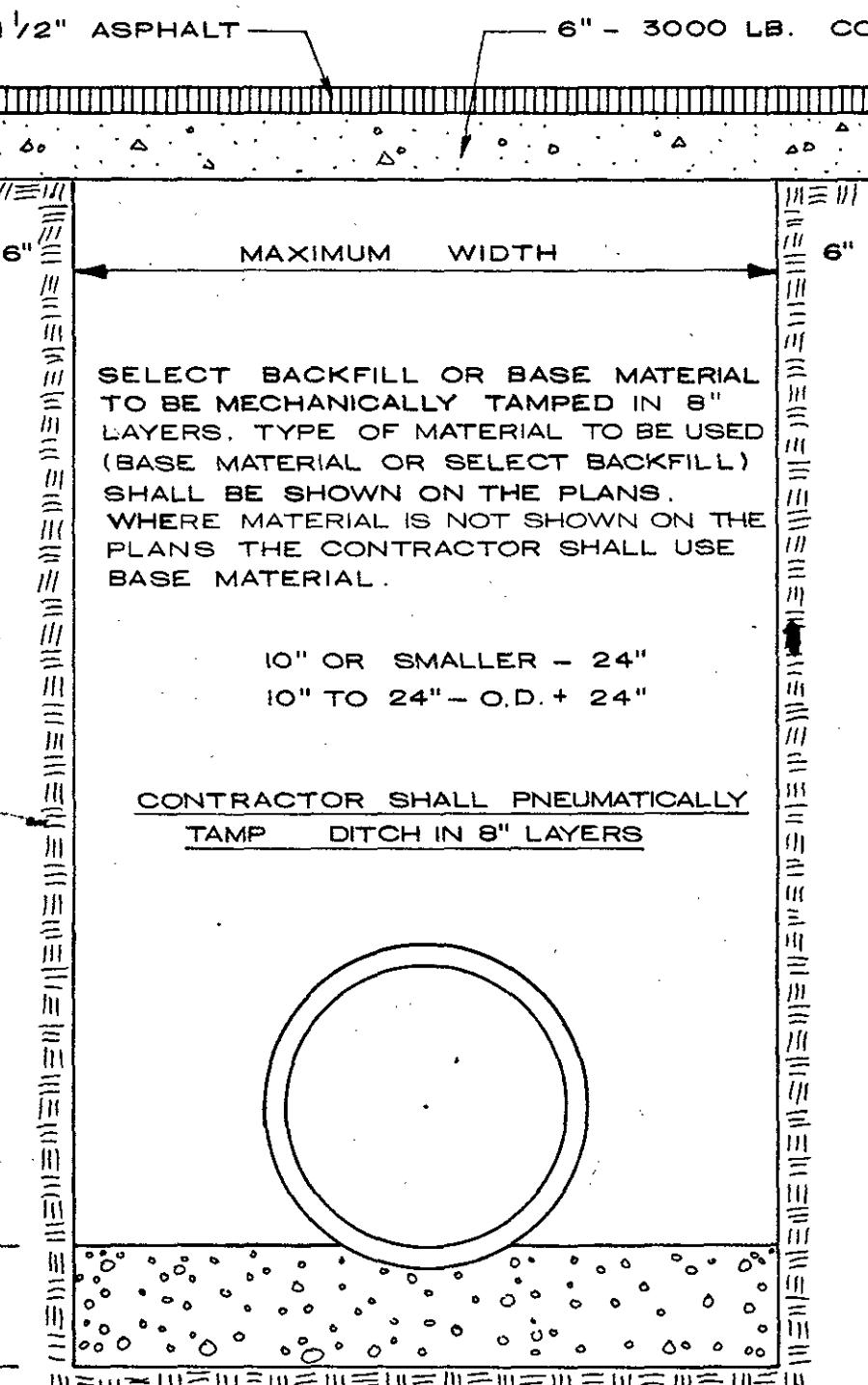
**CONCRETE ENCASEMENT**

N.T.S.



**GRAVEL EMBEDMENT**

N.T.S.

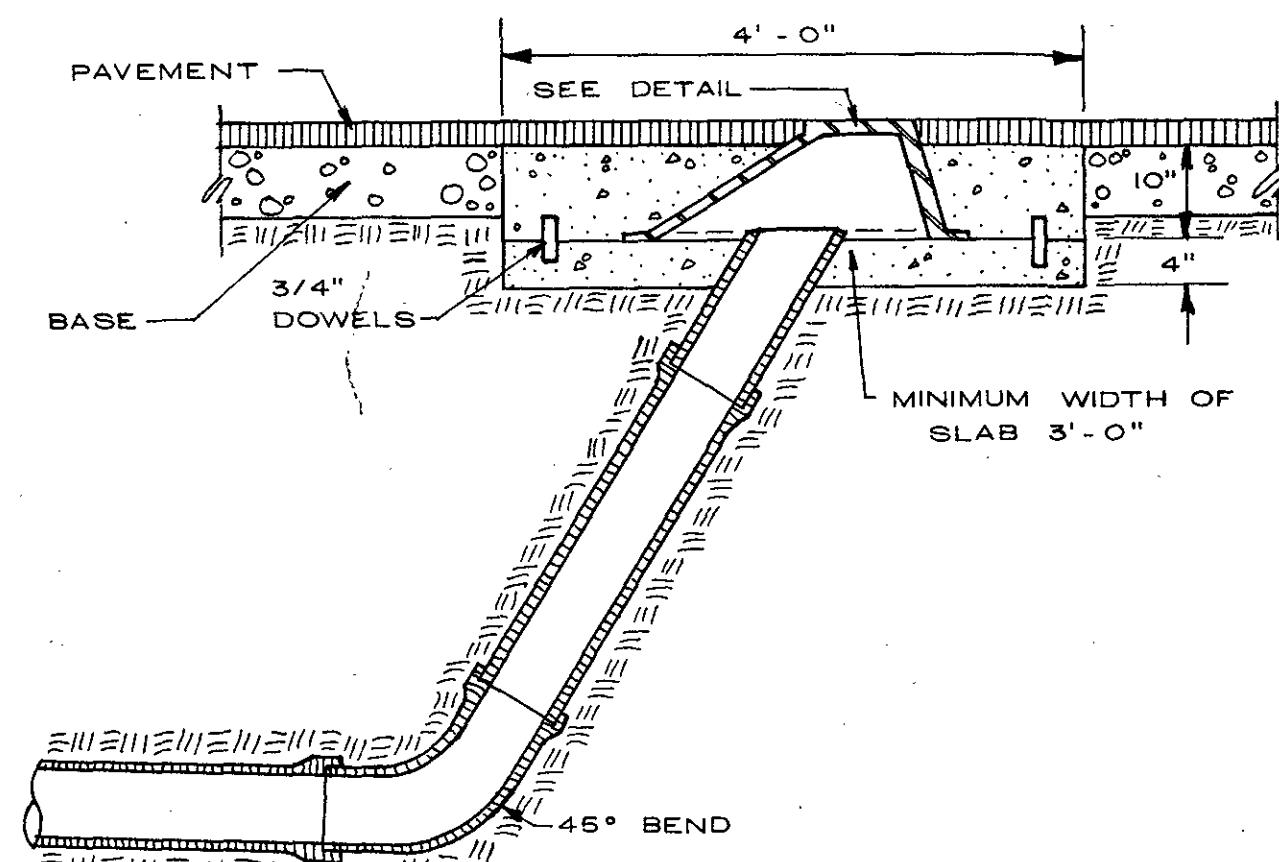


**PAVEMENT REPLACEMENT**

N.T.S.

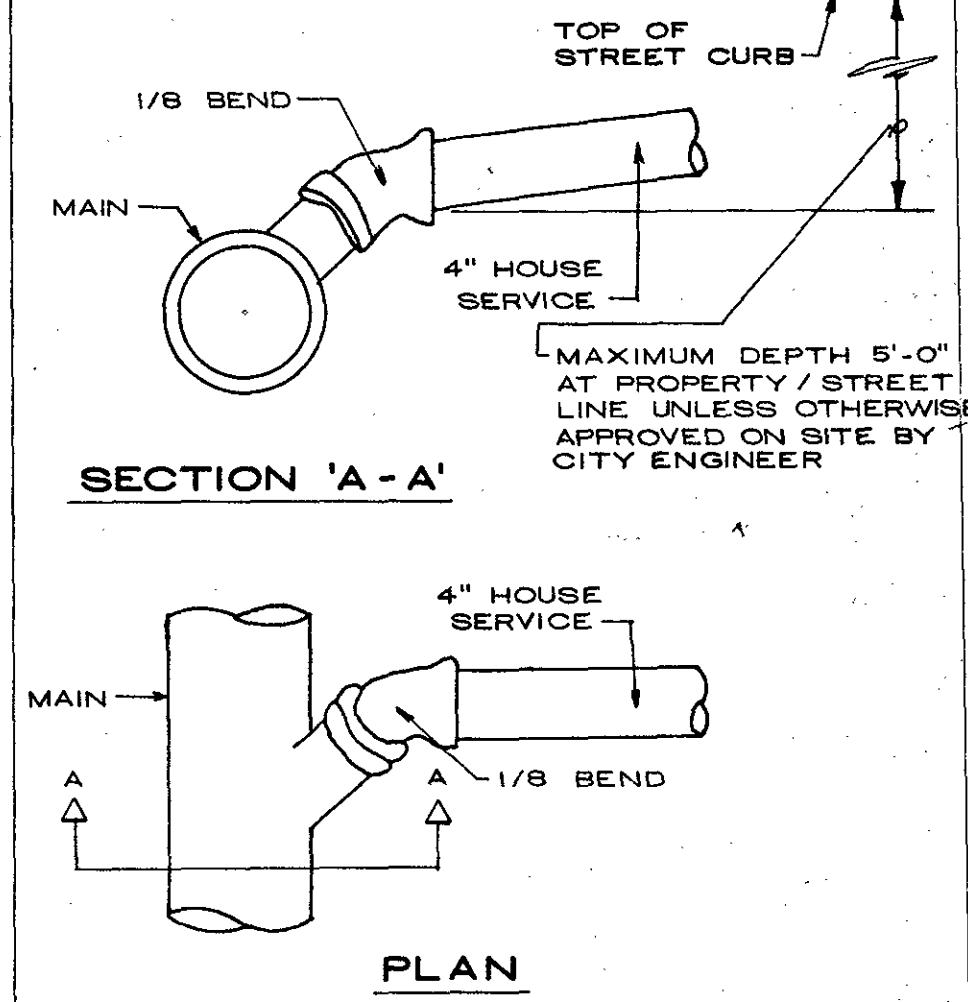
**TRENCHING AND**

**BACKFILLING DETAILS**

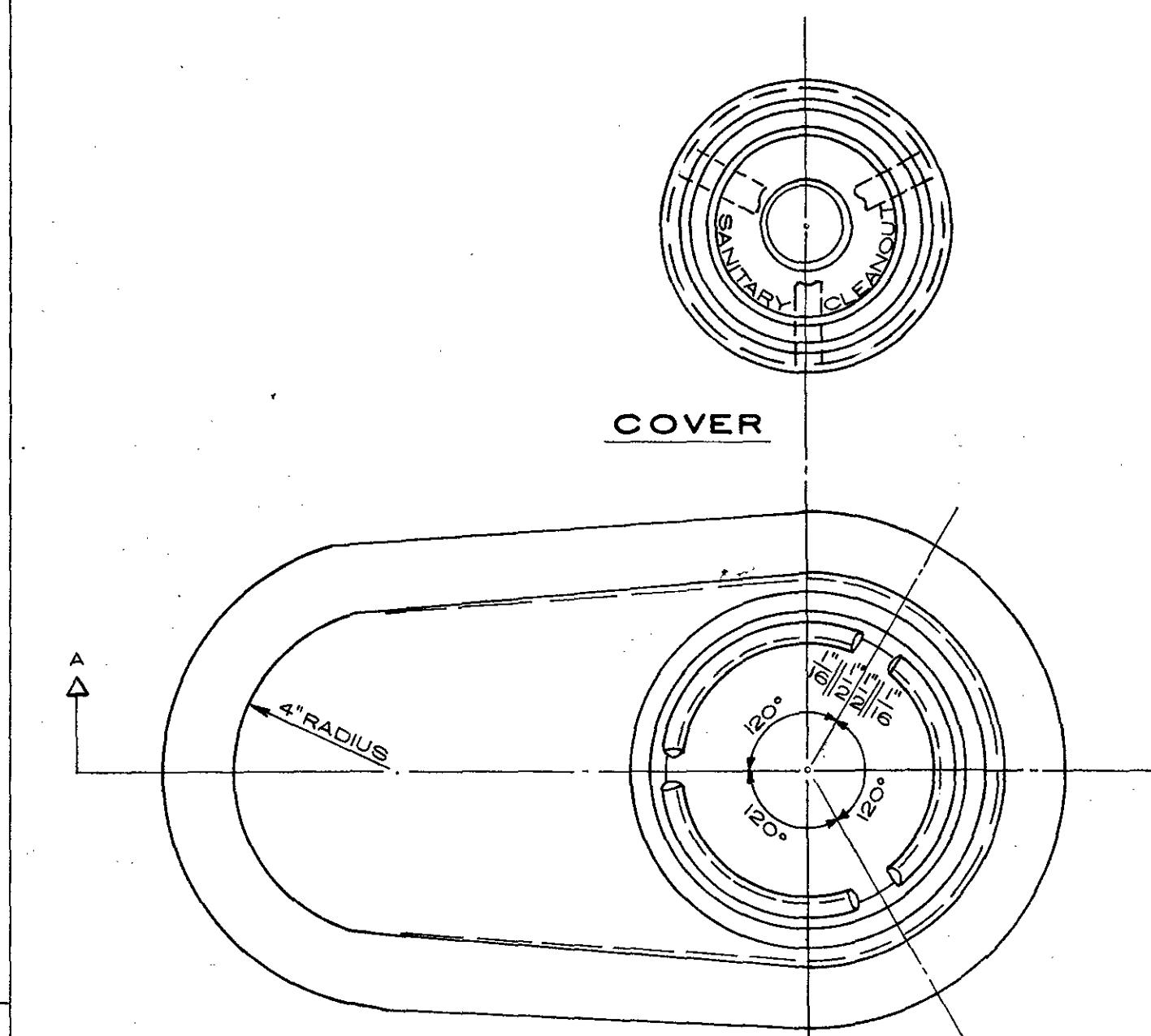


**TYPICAL SECTION OF CLEANOUT**

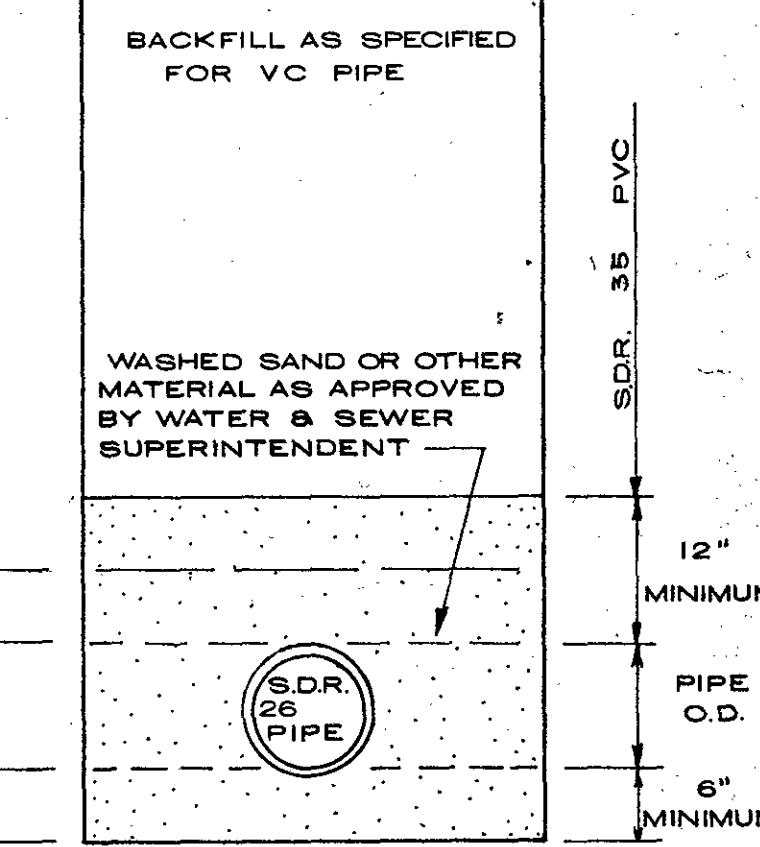
SCALE : 3/4" = 1'-0"



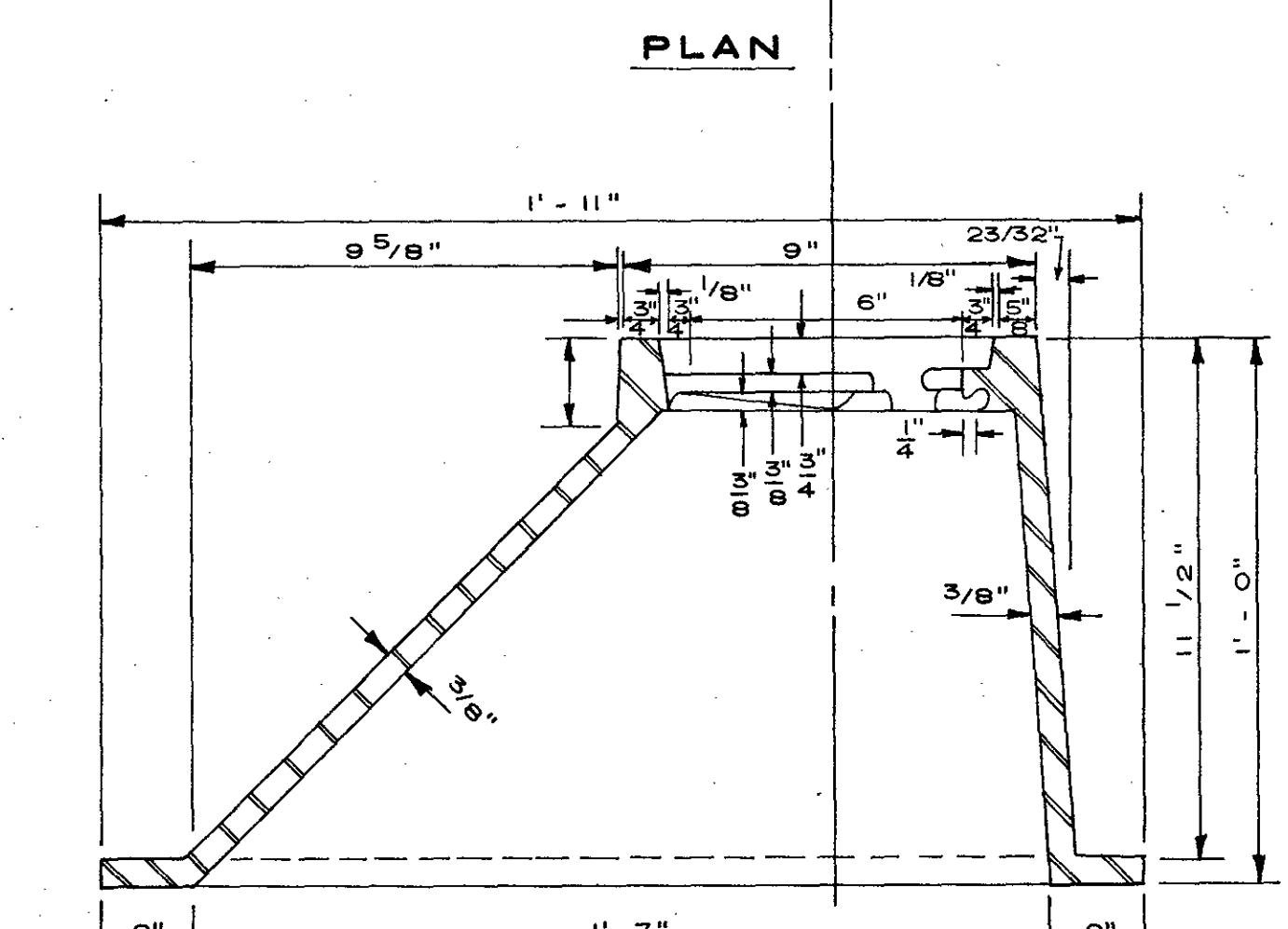
**SEWER SERVICE LINE CONNECTION**



**COVER**

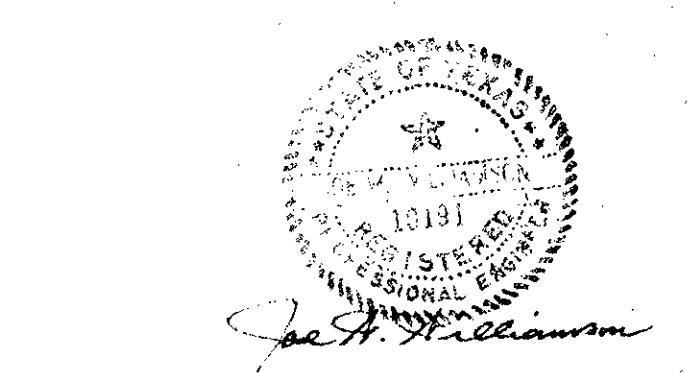


**BEDDING DETAIL FOR S.D.R. 26 SEWER PIPE\***



**SECTION 'A-A'  
FRAME AND COVER**

NOTE: 1. CLEANOUT AND FITTINGS SHALL BE 6"  
2. USE 8" X 6" REDUCER WHERE SEWER IS 8" IN SIZE  
3. BACKFILL AROUND AND OVER CLEANOUT PIPE SHALL BE TAMPED AT OPTIMUM MOISTURE OF SOIL.  
4. SEE DETAIL OF FRAME AND COVER



NOTE:  
1. THIS DRAWING IS INTENDED TO APPLY TO SANITARY SEWER CONSTRUCTION IN THE CITY OF KILLEEN, TEXAS ONLY. ANY OTHER USE IS NOT AUTHORIZED.  
2. ALL WORK TO BE PERFORMED IN ACCORDANCE WITH CITY OF KILLEEN, STANDARD SANITARY SEWER SPECIFICATIONS. CONTACT CITY OF KILLEEN WATER AND SEWER SUPERINTENDENT PRIOR TO BEGINNING OF CONSTRUCTION.

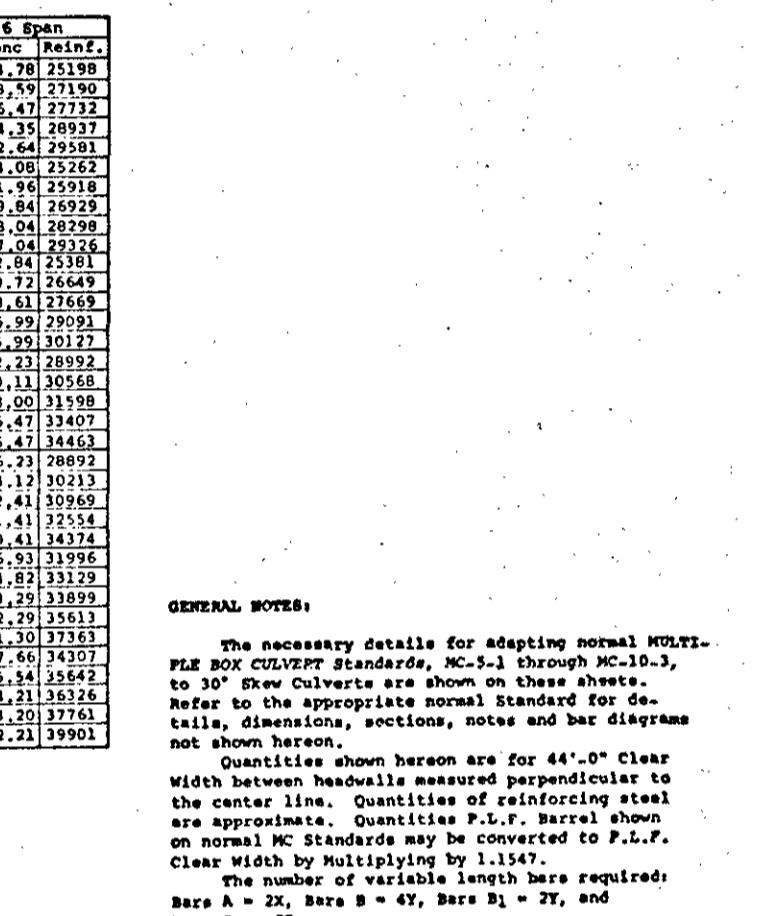
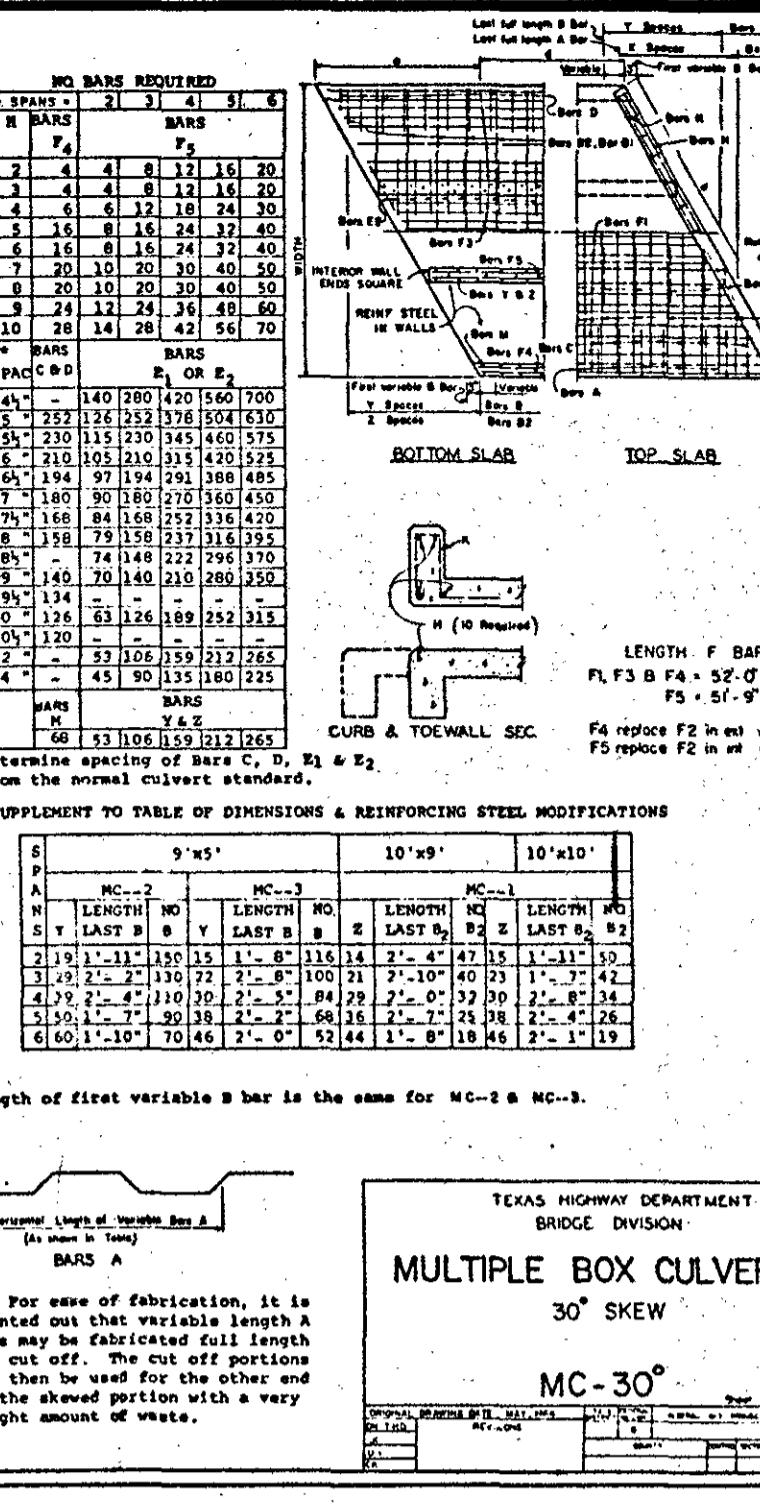
\* REV. MAY '84 ADDED BEDDING DETAIL FOR S.D.R. 26 PVC  
\* REV. MAY '83 ADDED BEDDING DETAIL FOR S.D.R. 35 PVC

**CITY OF KILLEEN, TEXAS  
ENGINEERING DEPARTMENT**

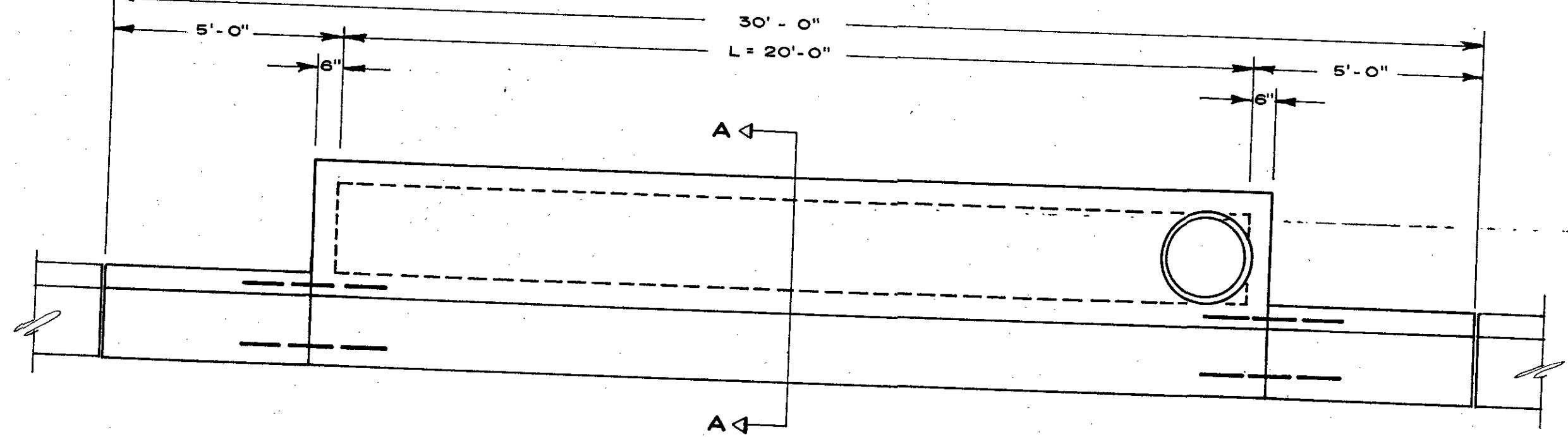
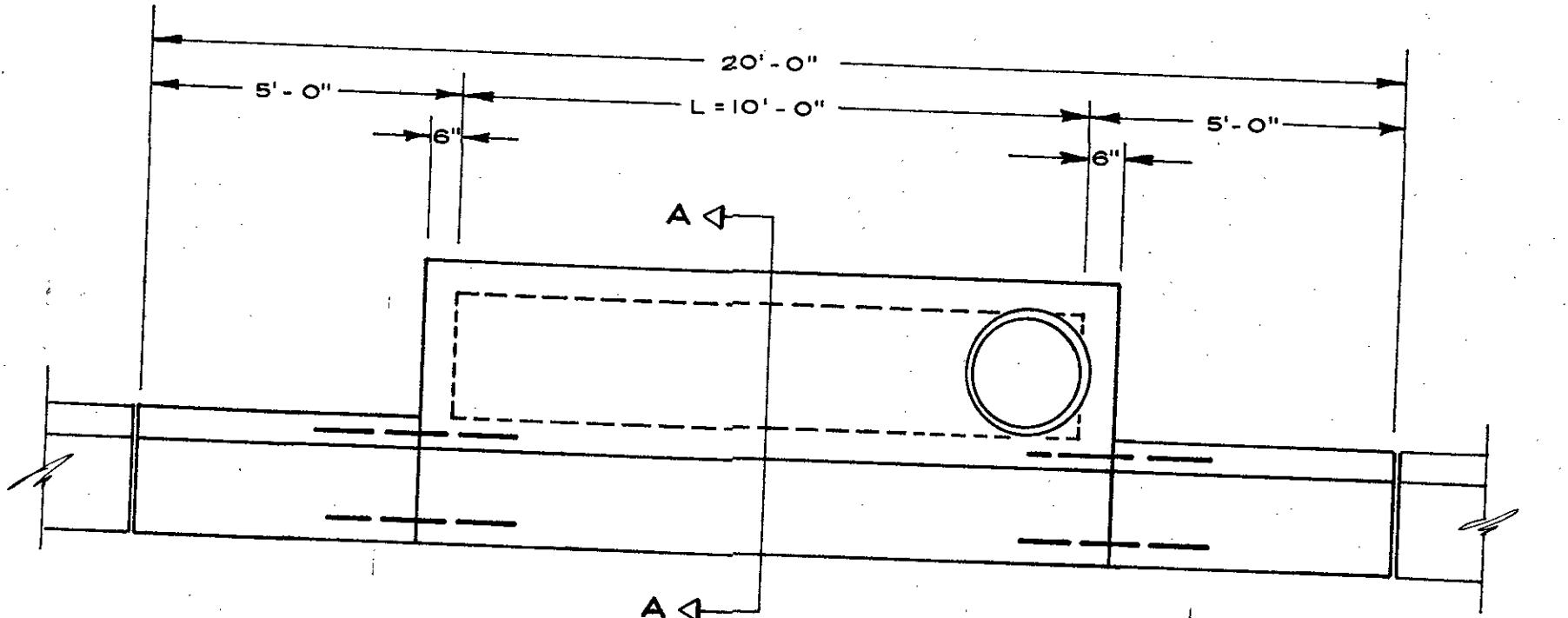
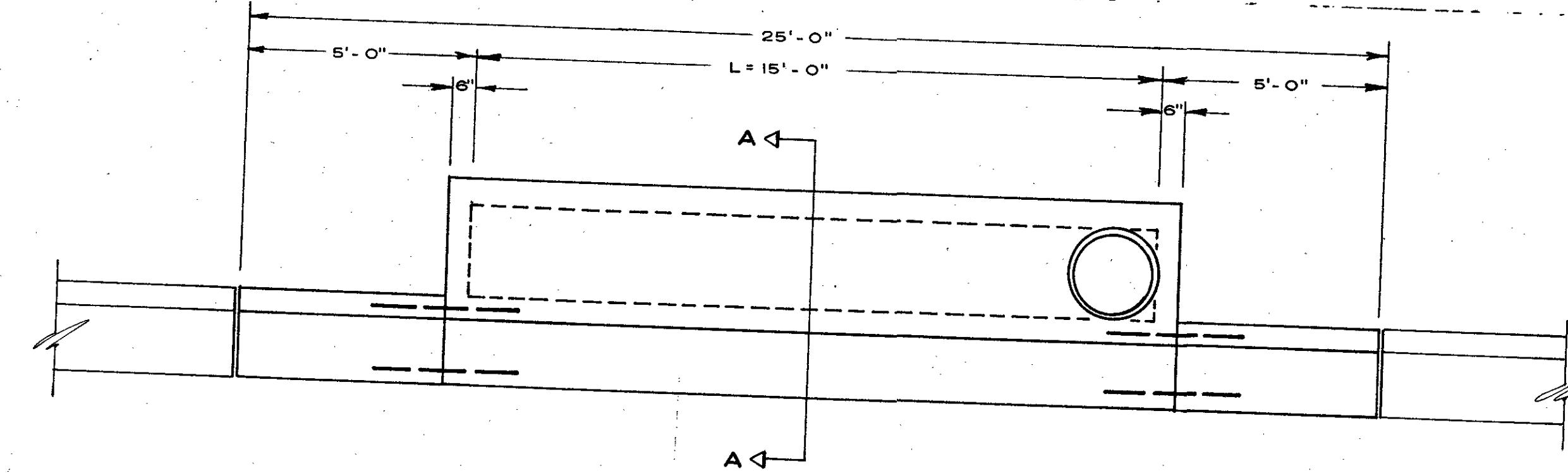
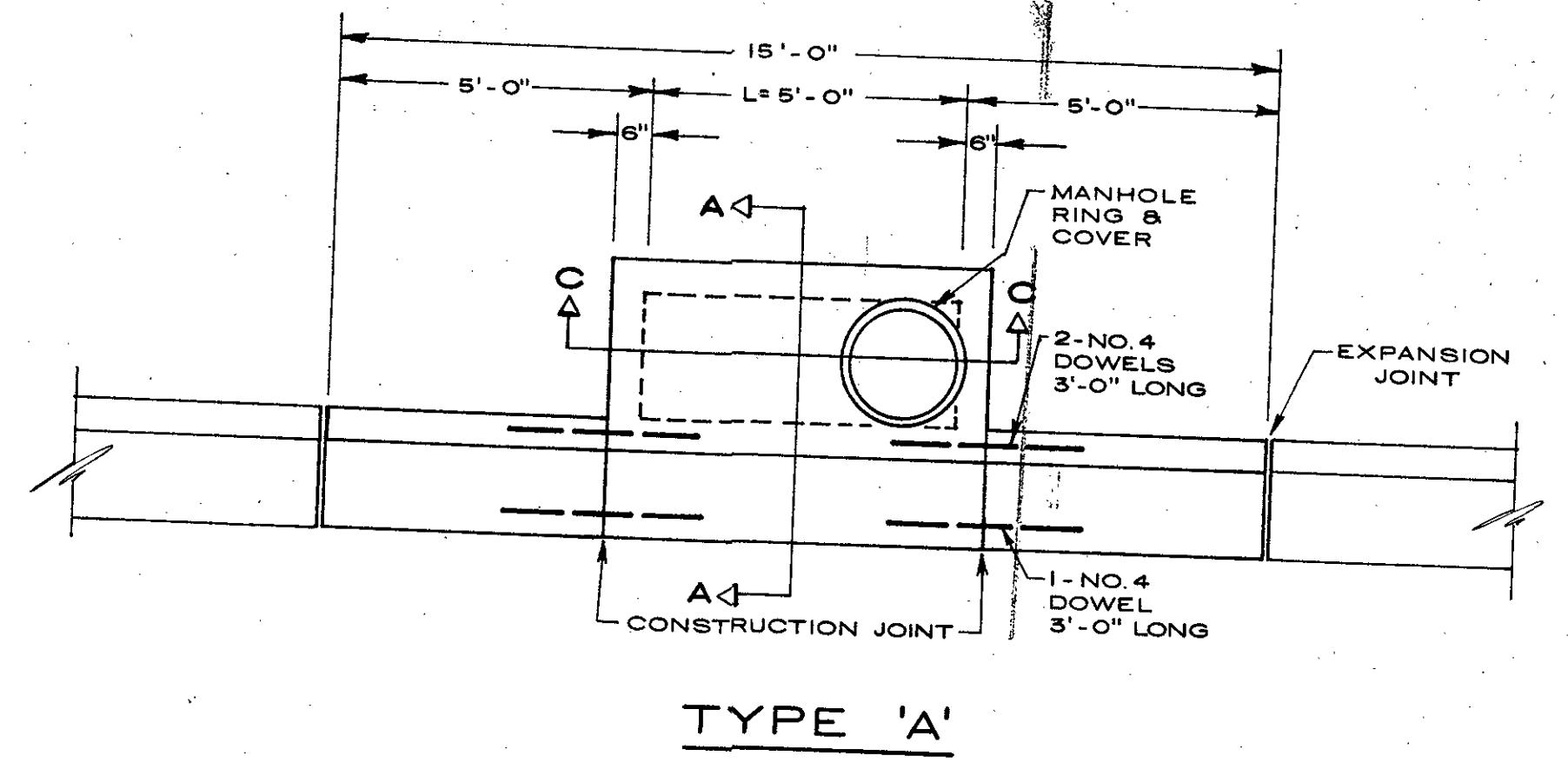
**SANITARY  
SEWER  
DETAILS**

SCALE AS SHOWN	DATE SEPTEMBER 1982	DRAWING NO.
DWG. BY J.T.G.	CKD. J.W.W.	
ENGINEER J. W. WILLIAMSON, P.E.		

**SANITARY SEWER CLEANOUT DETAILS**



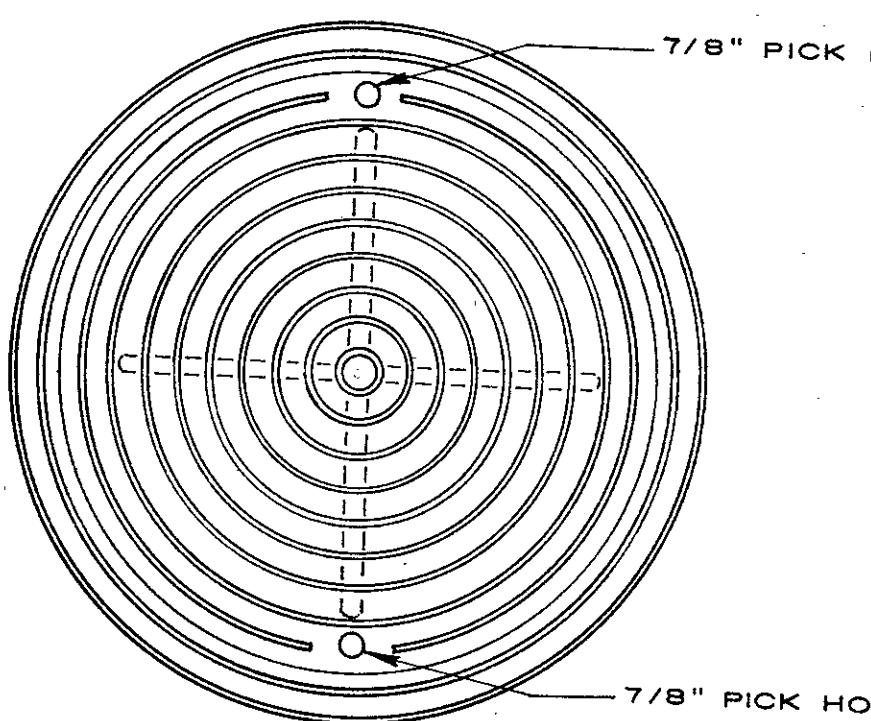
REVISIONS				
Date				
<b>Mitchell &amp; Associates, Inc.</b> Killeen      ENGINEERING & SURVEYING      Temple				
DEVELOPER:				
DATE:	SCALE:	DRAWN BY:	REF. NO.	DWG. NO.



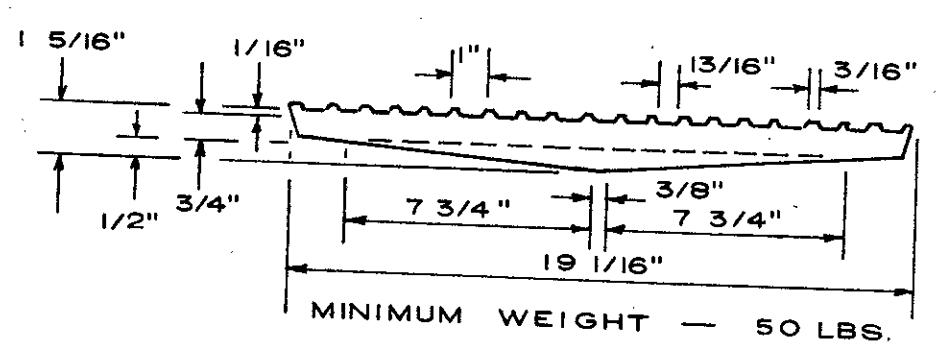
### STANDARD CURB INLET

PLAN VIEW

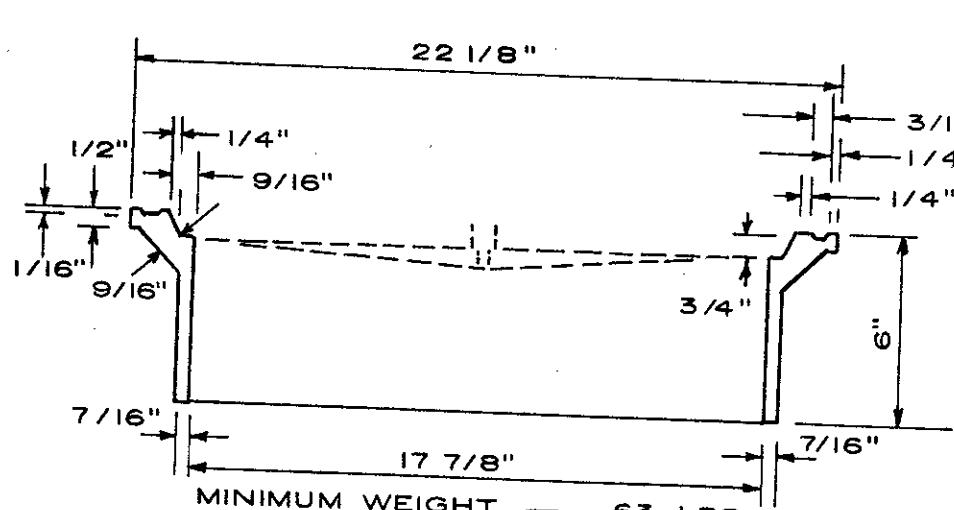
SCALE : 3/8" = 1'-0"



PLAN OF COVER



SECTION OF COVER



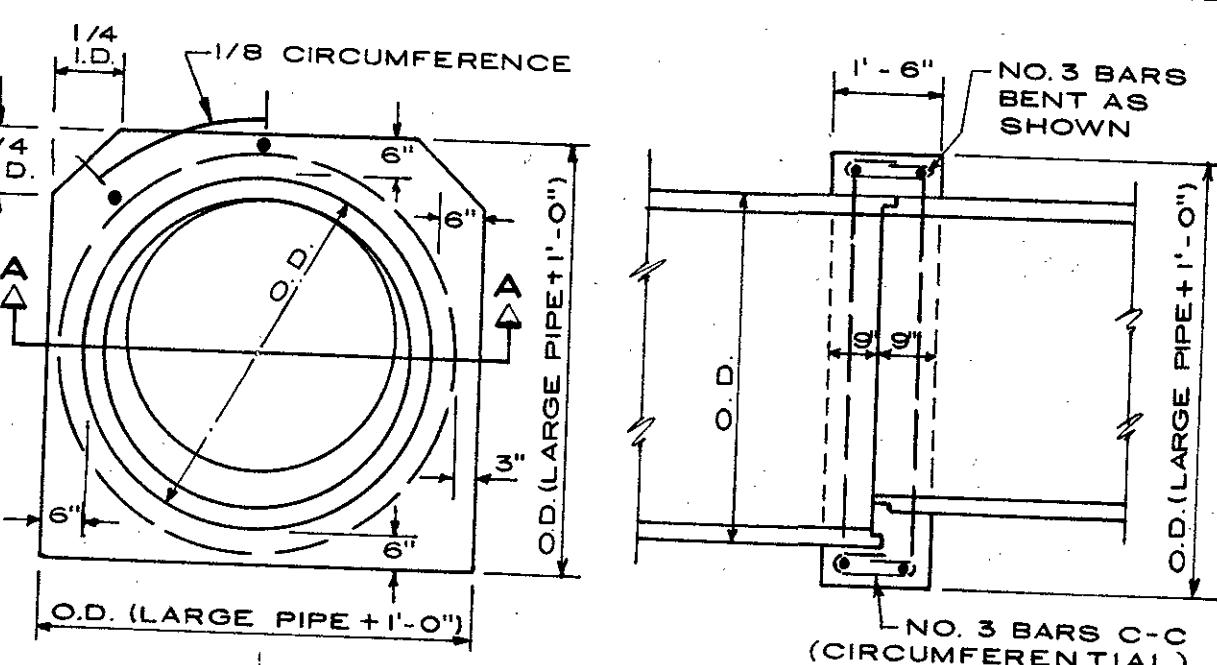
SECTION OF FRAME

### STANDARD MANHOLE FRAME AND COVER

SCALE : 2" = 1'-0"

### DETAIL AT INLET THROAT OPENING

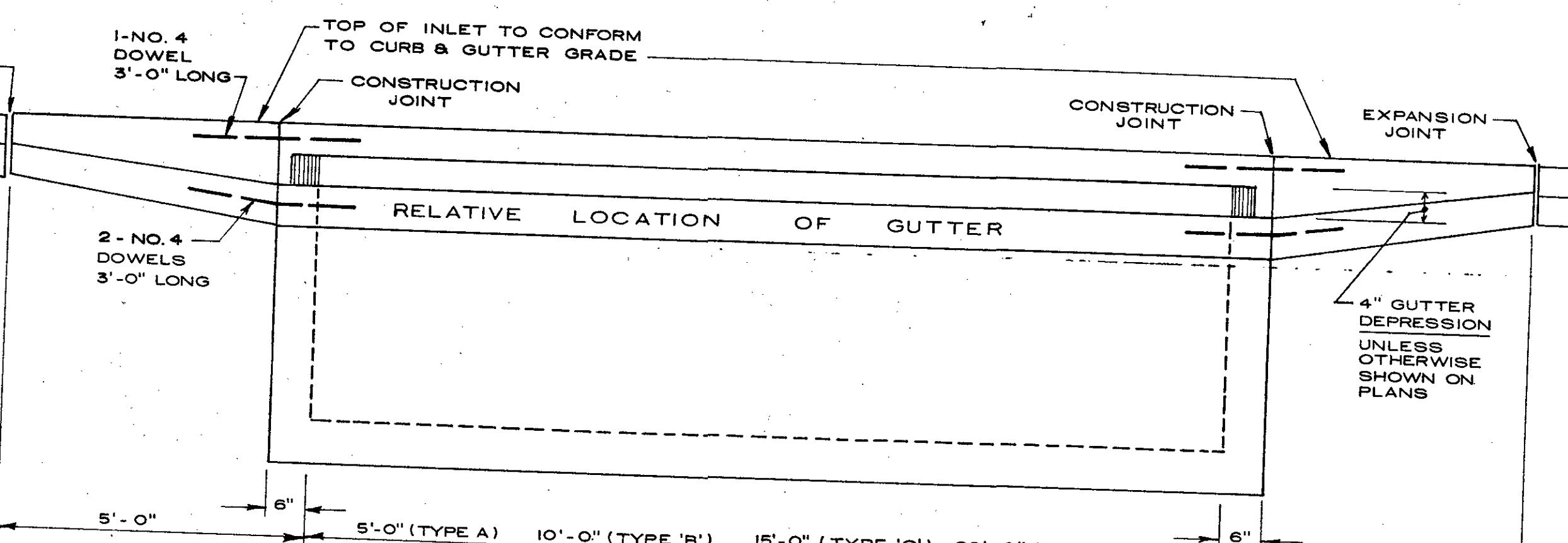
SCALE : 1 1/2" = 1'-0"



SECTION A-A

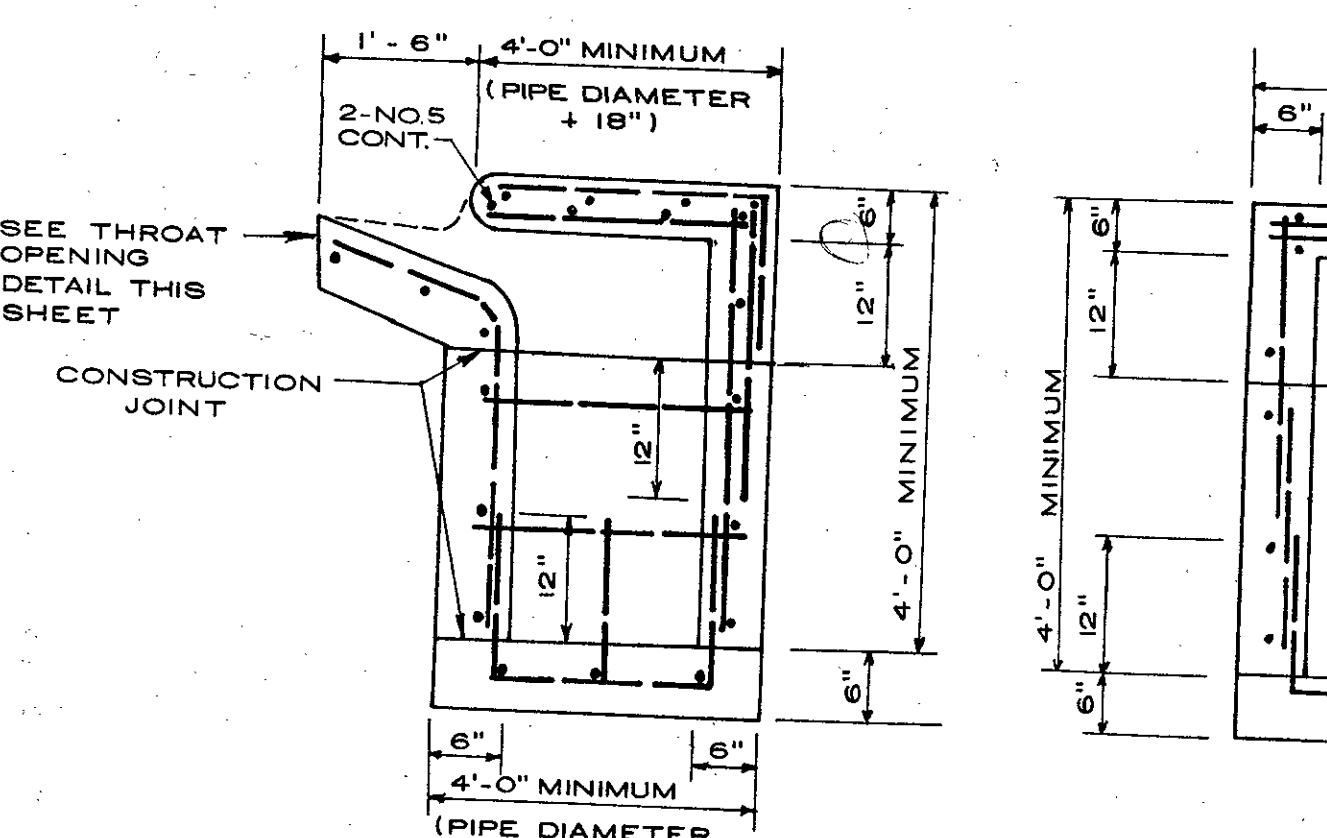
### REINFORCED CONCRETE COLLAR DETAIL

SCALE : 3/8" = 1'-0"

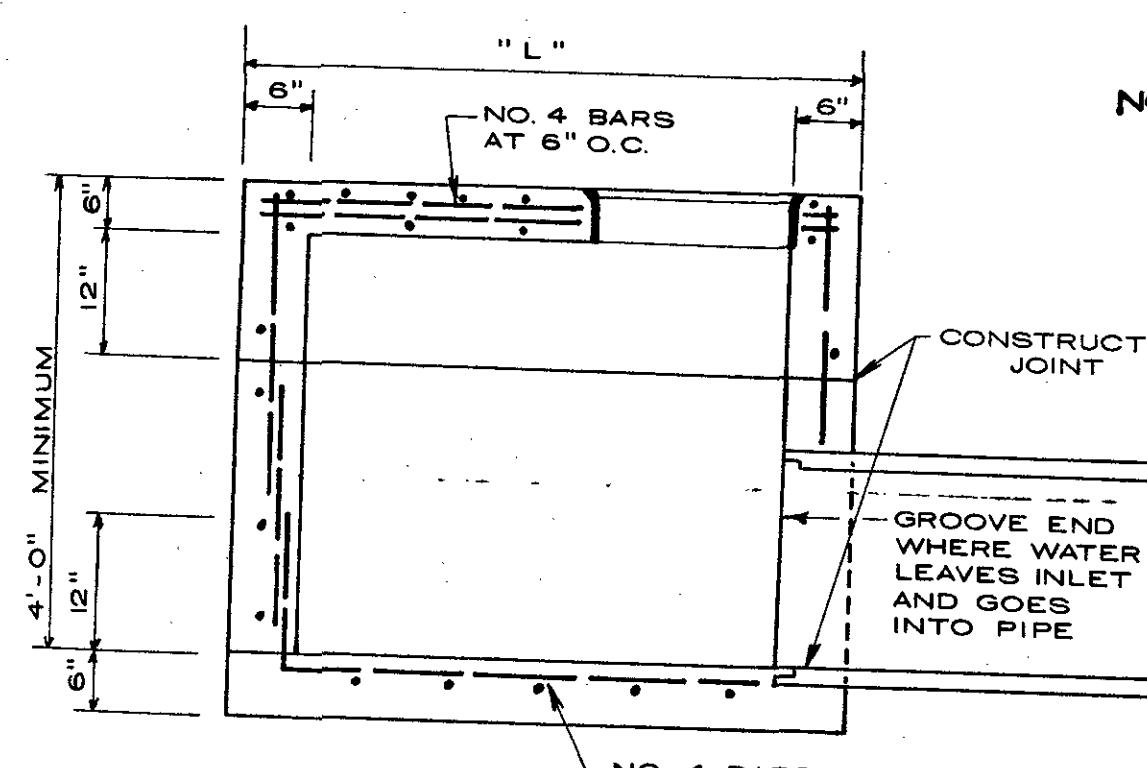


ELEVATION SHOWING RELATIVE ELEVATION OF GUTTER

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



NOTE: ALL REINFORCING TO BE NO. 4 BARS AT 12" O.C., UNLESS OTHERWISE SHOWN.



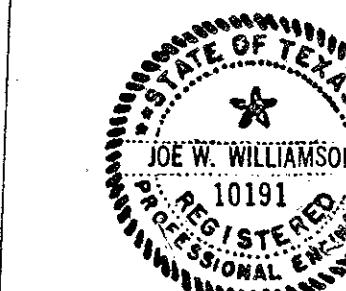
SECTION A-A TYPICAL FOR ALL TYPES

### STANDARD CURB INLET SECTIONS

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

### CONSTRUCTION NOTES

- SEE PLAN - Profile sheets for TYPE, LOCATION, & ELEVATIONS of Curb Inlet.
- ALL construction materials shall conform to the STANDARD SPECIFICATIONS of the City of Killeen.
- Concrete cover of reinforcing steel shall be as shown on the plans & shall be from the center of the outside layer of steel to the face of concrete.
- Dimensions relating to the bending of reinforcing steel shall be to the center of bars.
- ALL REINFORCING BARS SHALL HAVE A MINIMUM 1 1/2" CLEARANCE FROM ALL FORMS OR 3" FROM EARTH.
- Construction joints will be permitted at locations shown on the plans.
- Exposed corners of concrete shall be toolled to 3/8" inch radius unless otherwise specified. All slab surfaces shall be steel trowed and finished with a light brushed surface. All exposed wall surfaces shall be rubbed to a uniformly smooth surface.
- Wherever possible and upon written approval of the City Engineer, the Contractor may form only the inside walls of the inlet boxes and use the natural ground as the outside form. However the top portion of the inlet from the upper construction joint shall be formed on both sides.
- The width, depth and length of the inlet boxes are standard designs and are subject to change where it is practical to conform with pipe sizes coming in and out of the boxes. However any deviation from the standard dimensions shall be approved by the City Engineer prior to construction. Minimum depth shown hereon is 4'-0". See construction layout plans and profiles for actual elevations on tops and flow lines.
- NOTE: ALL REINFORCING TO BE NO. 4 BARS AT 12" O.C., UNLESS OTHERWISE SHOWN.



CITY OF KILLEEN, TEXAS  
ENGINEERING DEPARTMENT

### STANDARD CURB INLET

DWN. BY

J.T.G.

CKD.

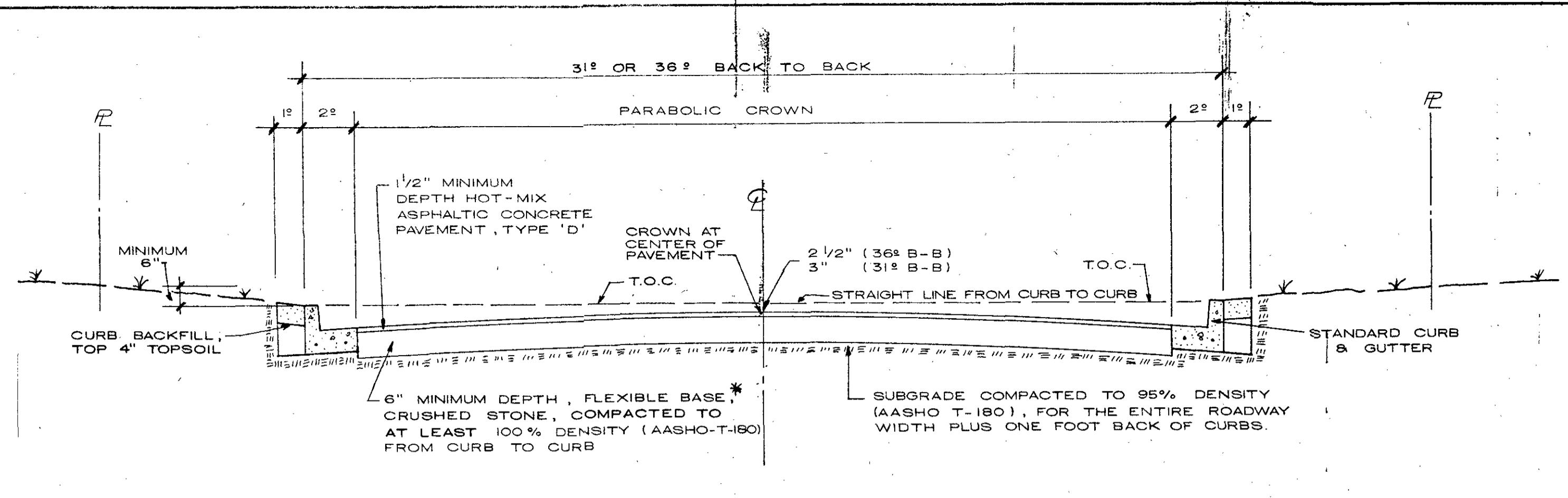
J.W.W.

SCALE

AS SHOWN

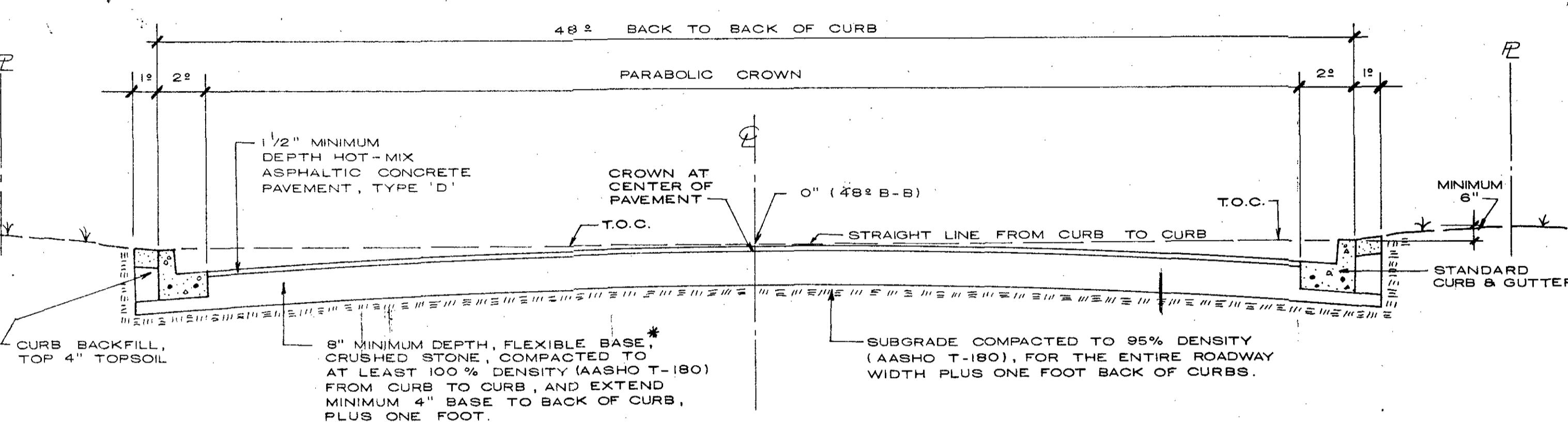
DATE

AUG 1984

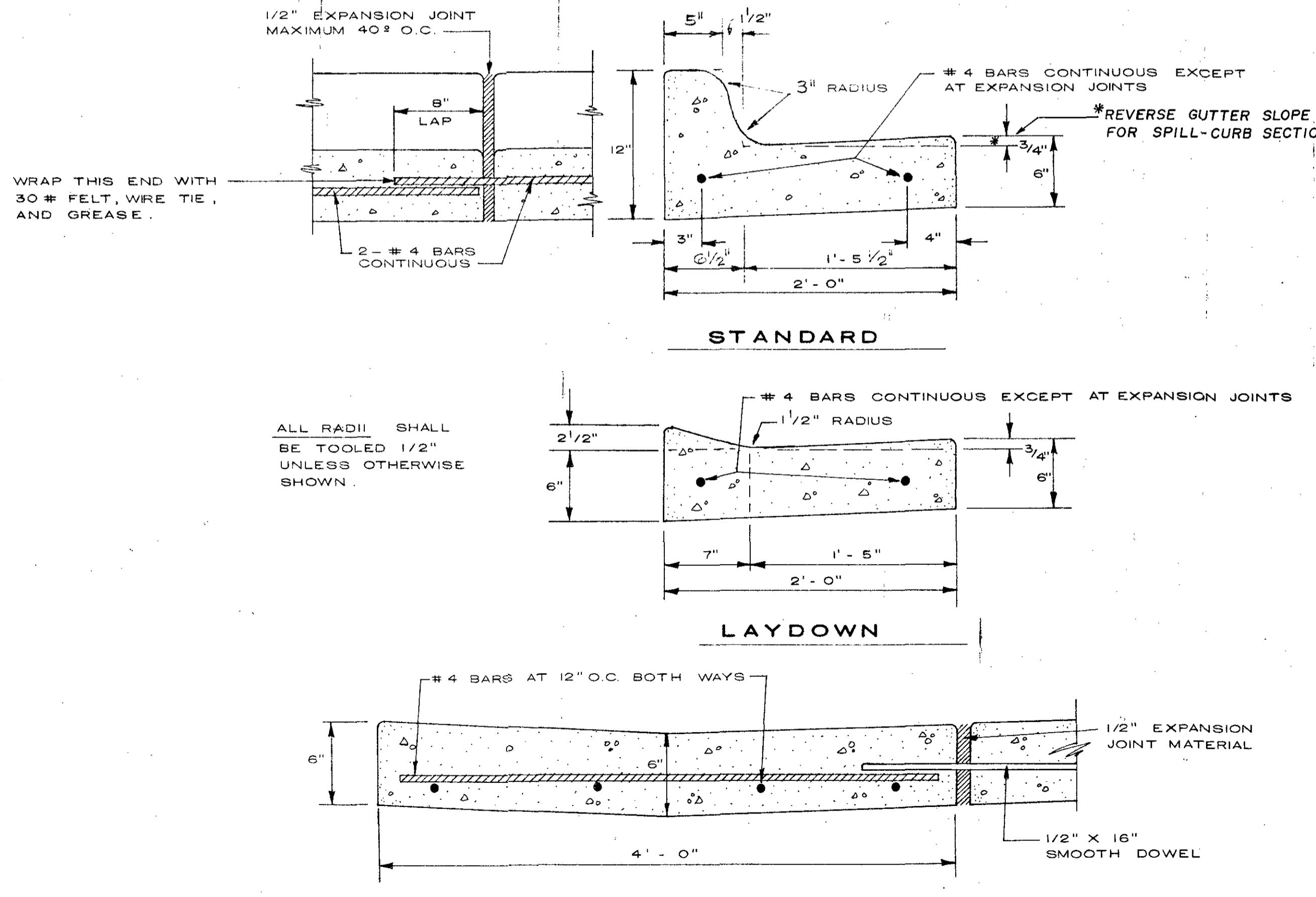
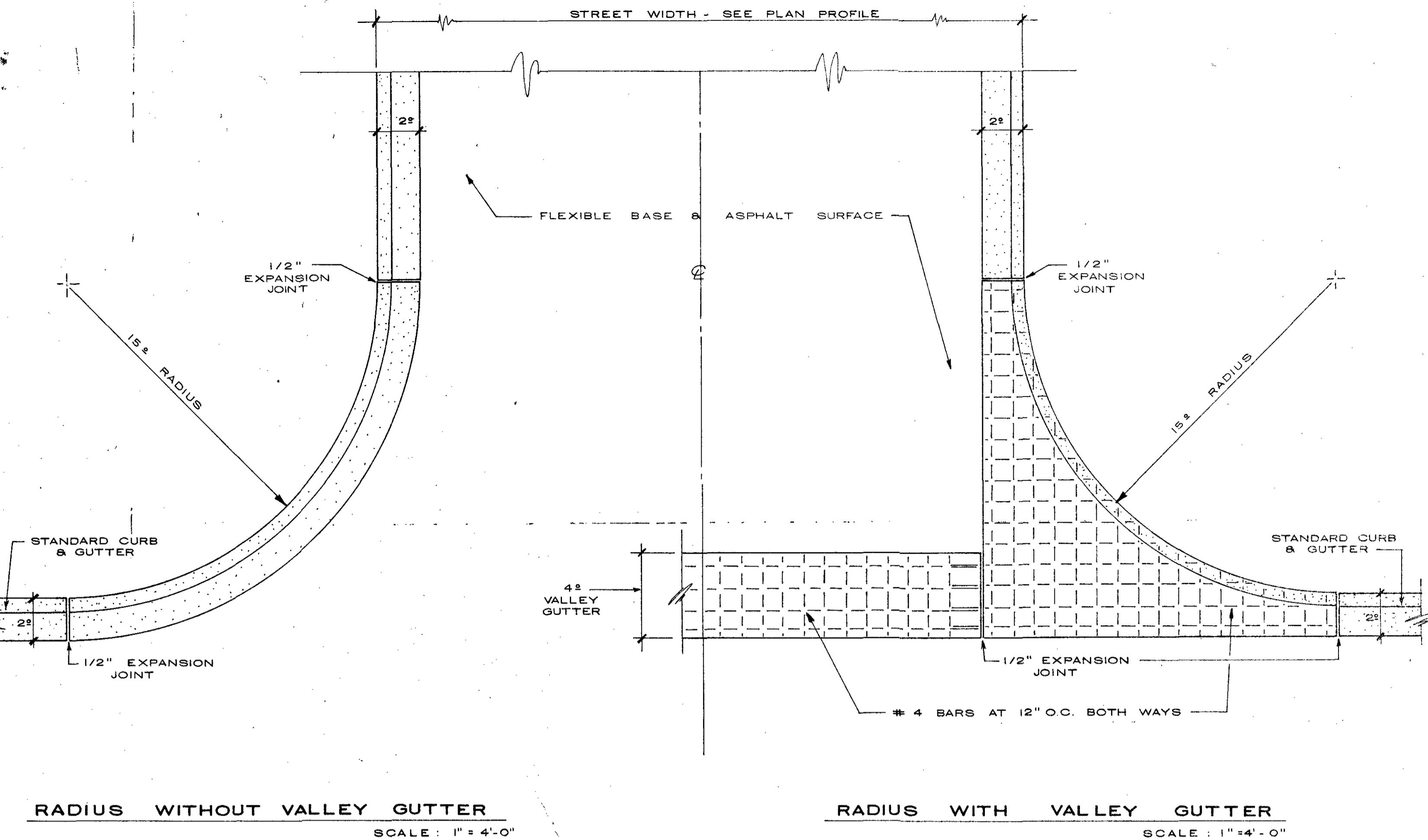


TYPICAL SECTION - CITY STREET, 31° OR 36° B-B

\* FLEXIBLE BASE MATERIAL TO BE FROM ONE SOURCE ONLY UNLESS PRIOR APPROVAL IS OBTAINED FROM CITY ENGINEER.



TYPICAL SECTION - CITY STREET, 48° B-B



- NOTE: 1. REINFORCING CONTINUOUS EXCEPT AT EXPANSION JOINTS.  
2. BARS SHALL EXTEND THROUGH EXPANSION JOINTS AT LEAST 8" AND ONE END WRAPPED, GREASED OR PROVIDED WITH ACCEPTABLE SLEEVES TO PREVENT BOND BETWEEN REINFORCING AND CONCRETE.  
3. EXPANSION JOINTS 1/2" THICK SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED 40' FEET AND AT ENDS OF ALL CURBS, DRIVEWAY RADII AND CURB INLETS.

CURB & GUTTER DETAILS

TYPICAL STREET INTERSECTION

