

GOODRICH BROTHERS DRAIN

DESCRIPTION

Main Ditch - Begins 626 feet west and 290 feet south of the NE corner of the NW¹/₄ of section 1-18N-3E and runs thence south 80° east 370 feet, thence south 49° east 315 feet, thence 90° east 103 75 feet, thence south 70° east 201 feet, thence south 37° east 98 feet, thence 5° east 84 feet, thence south 90° east 607 feet and terminating in an open drain known as the Anna Kendall Ditch at the SE corner of Lot #9 in the I.B. Anderson Addition in Westfield.

ARM #1 - Begins 10 feet south and 10 feet west of the SW corner of Lot #7 in Doan's Addition in Westfield, thence north 142 feet and terminating in Main Ditch at Sta 8+25.

ARM #2 - Begins 52 feet east of the SW corner of Lot 31 in Doan's Addition in Westfield, runs thence north 75° east 259 feet and terminating in Main Ditch at Sta 22.

Consists of:

- 1 row of 10" tile from Sta 0 to Sta 6+85
- 1 row of sewer tile 10" from Sta 6+85 to Sta 8+25
- 1 row of 12" tile from Sta 8+25 to Sta 22
- 1 row of 15" tile from Sta 22 to Sta 26+82
- 1 row of 15" sewer tile from Sta 26+82 to Sta 26+90 and an open drain 1 feet wide at the bottom from Sta 26+90 to Sta 30+54.

ARM #1 Consists of: 1 row of 10" tile from Sta 0 to Sta 1+72

ARM #2 Consists of: 1 row of 10" tile from Sta 0 to Sta 2+59

Sta 6+85 to Sta 8+25 on Main } catch basins

Sta 0 to Arm 1 & Sta 0 on Arm 2 }
Sta 26+90 = stone retaining wall

C.R. Book 15 Page 370

C.R. Book 16 Page 4

D.C. Book Page 264

May 3, 1905 - Commissioners Report On Drain

October 5, 1905 - Proof of Publication

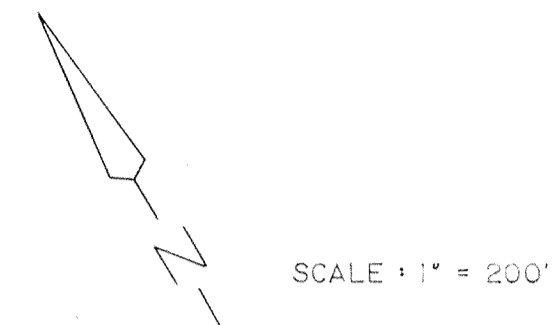
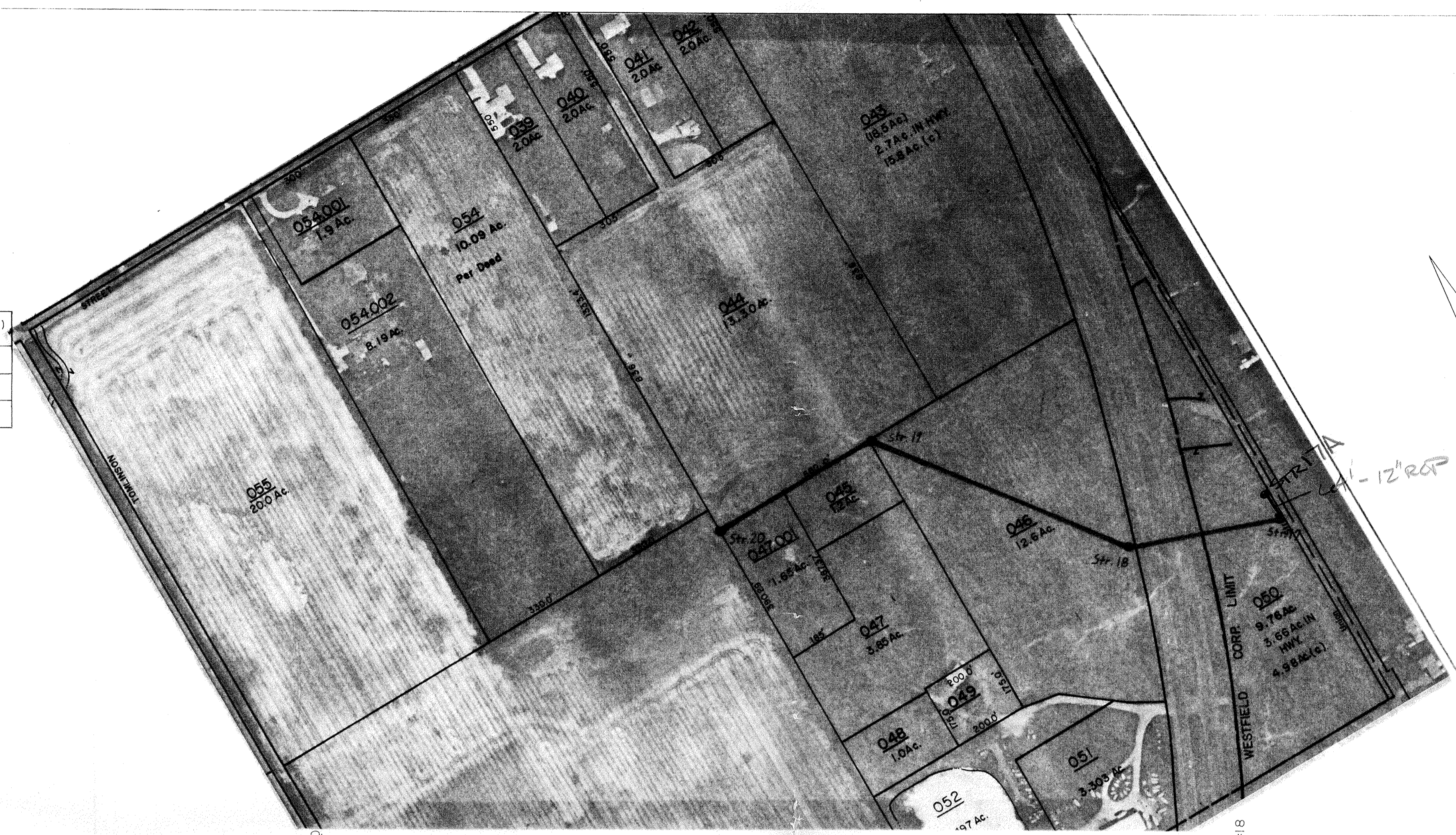
main = 3054 tile
Arm 1 = 172 tile
Arm 2 = 259 tile

3,121 tile drain
364 open drain

STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IND.				

STR #	CONTRIBUTION AREA	Q (CALC.) @ 2.4 CFS/AC	Q (ACTUAL)
18	105 Ac	25.2 cfs	25
19	90 Ac	19.2 cfs	15 *
20	50 Ac	12.0 cfs	12

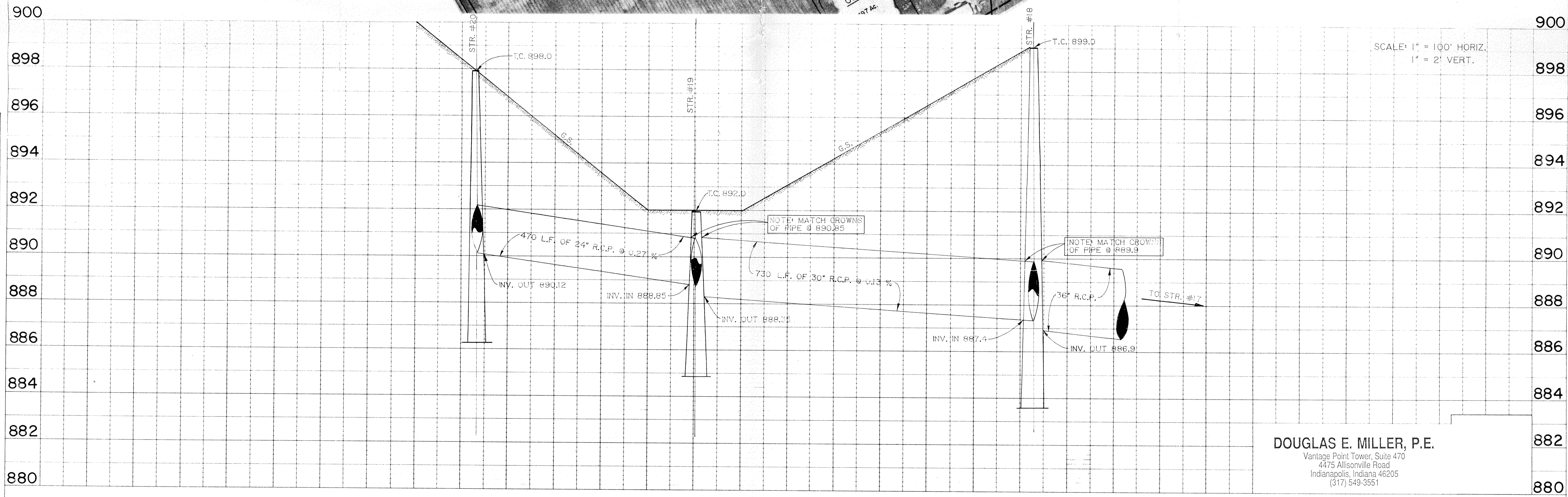
* DUE TO COVER PROBLEMS, FLAT SLOPE IS NEEDED



HAMILTON COUNTY INDIANA
 This information has been entered into the Hamilton County Information System and is considered an official record of GIS.
 Entry Date: 9-23-08
 Entered by: JML

PLAN SURVEYED BY: DATE: NOTED BY: CHECKED BY: DATE: NOTE BOOK NO. FT. OF WAY CHECKED

PROFILE SURVEYED BY: DATE: NOTED BY: CHECKED BY: DATE: NOTE BOOK NO. STRUCTURE NOTATIONS CHECKED

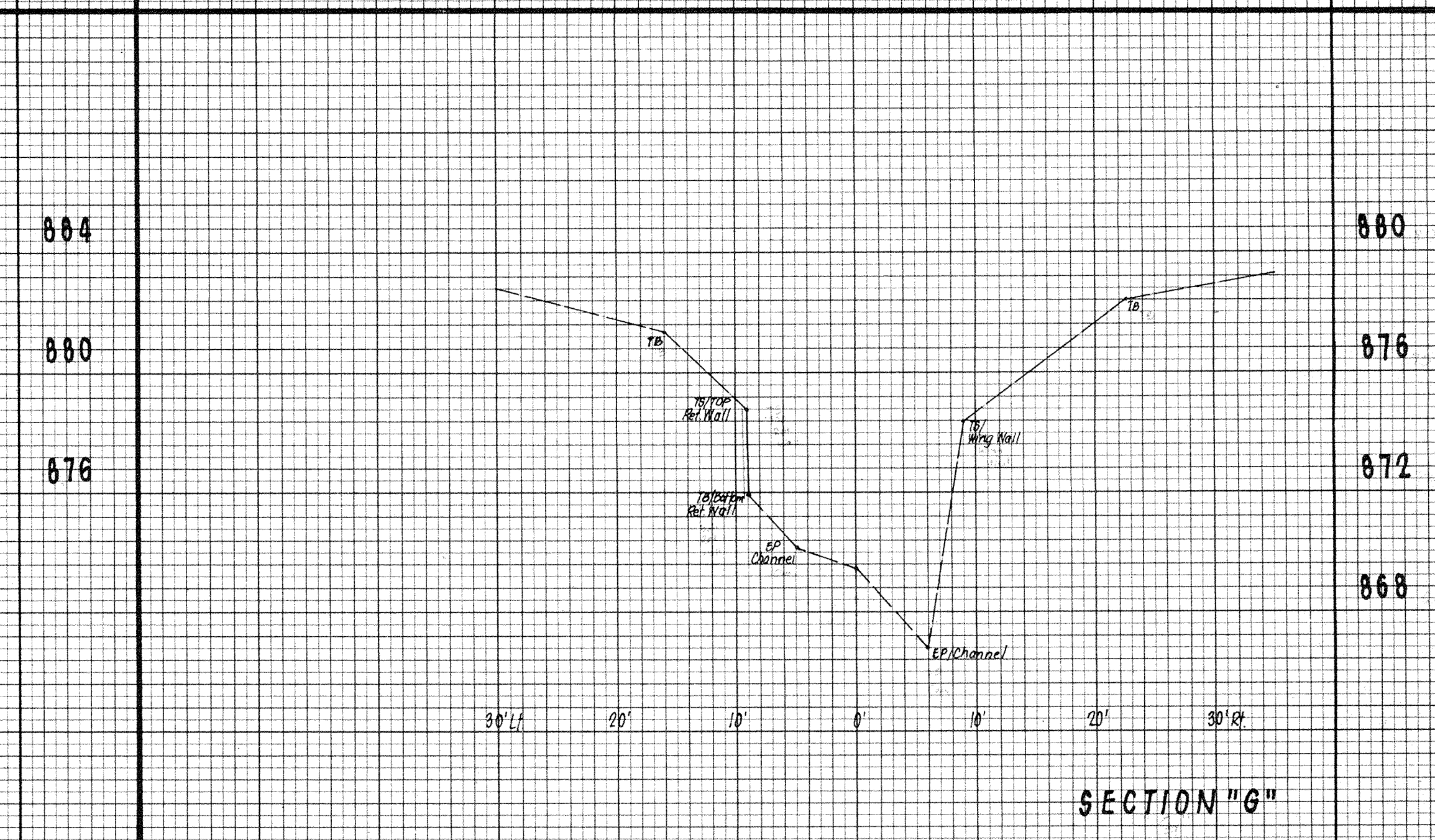
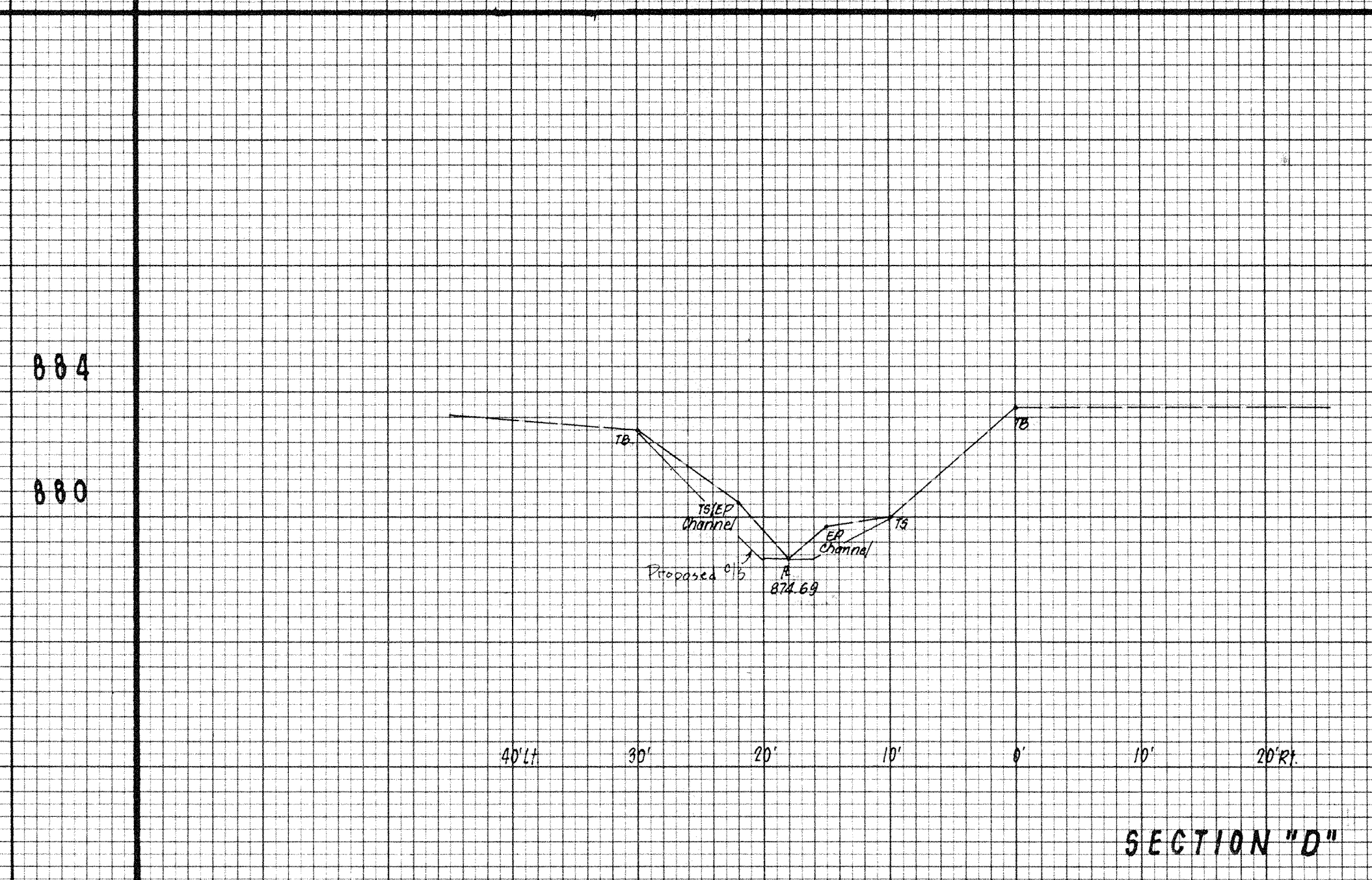
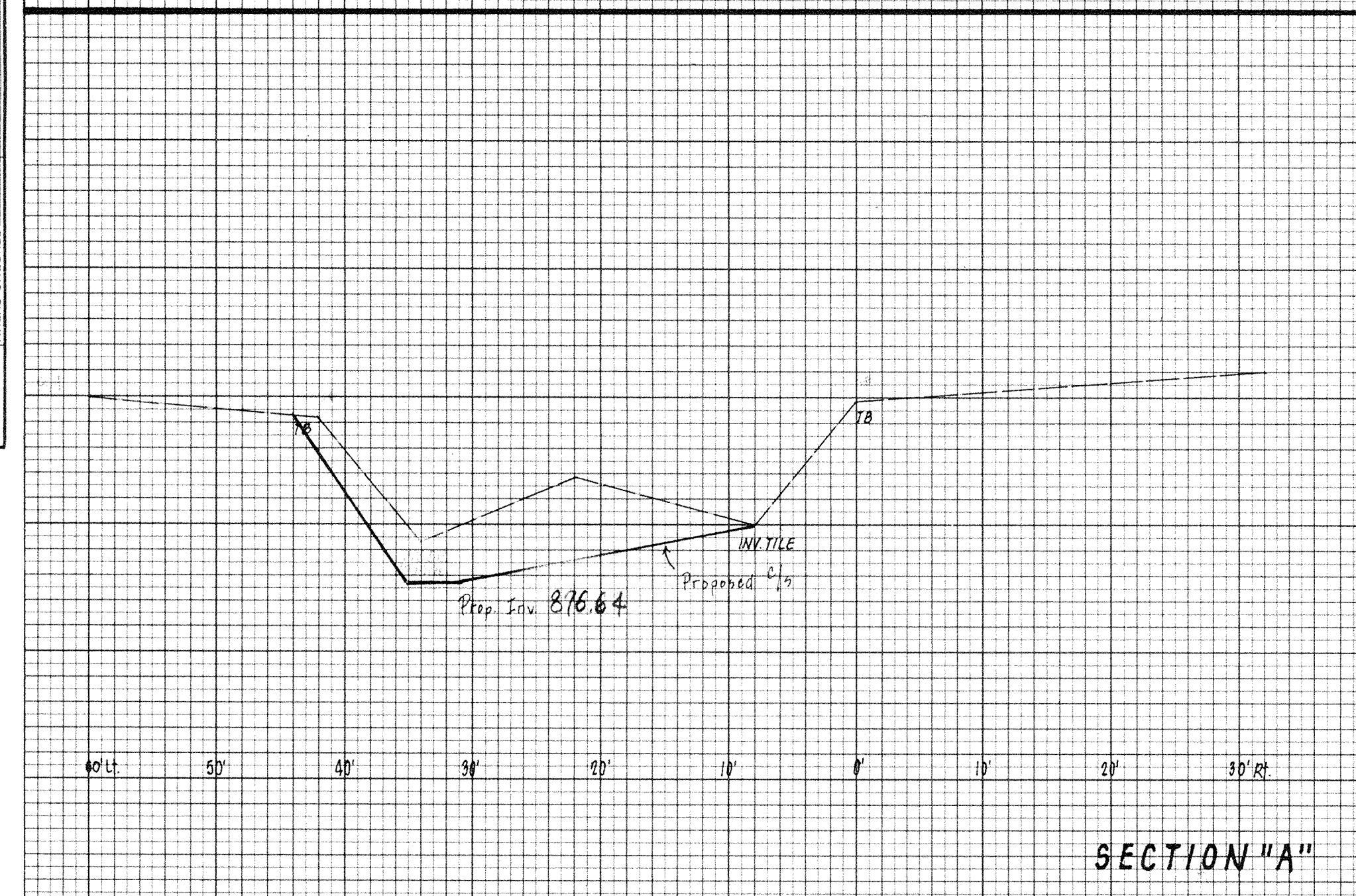
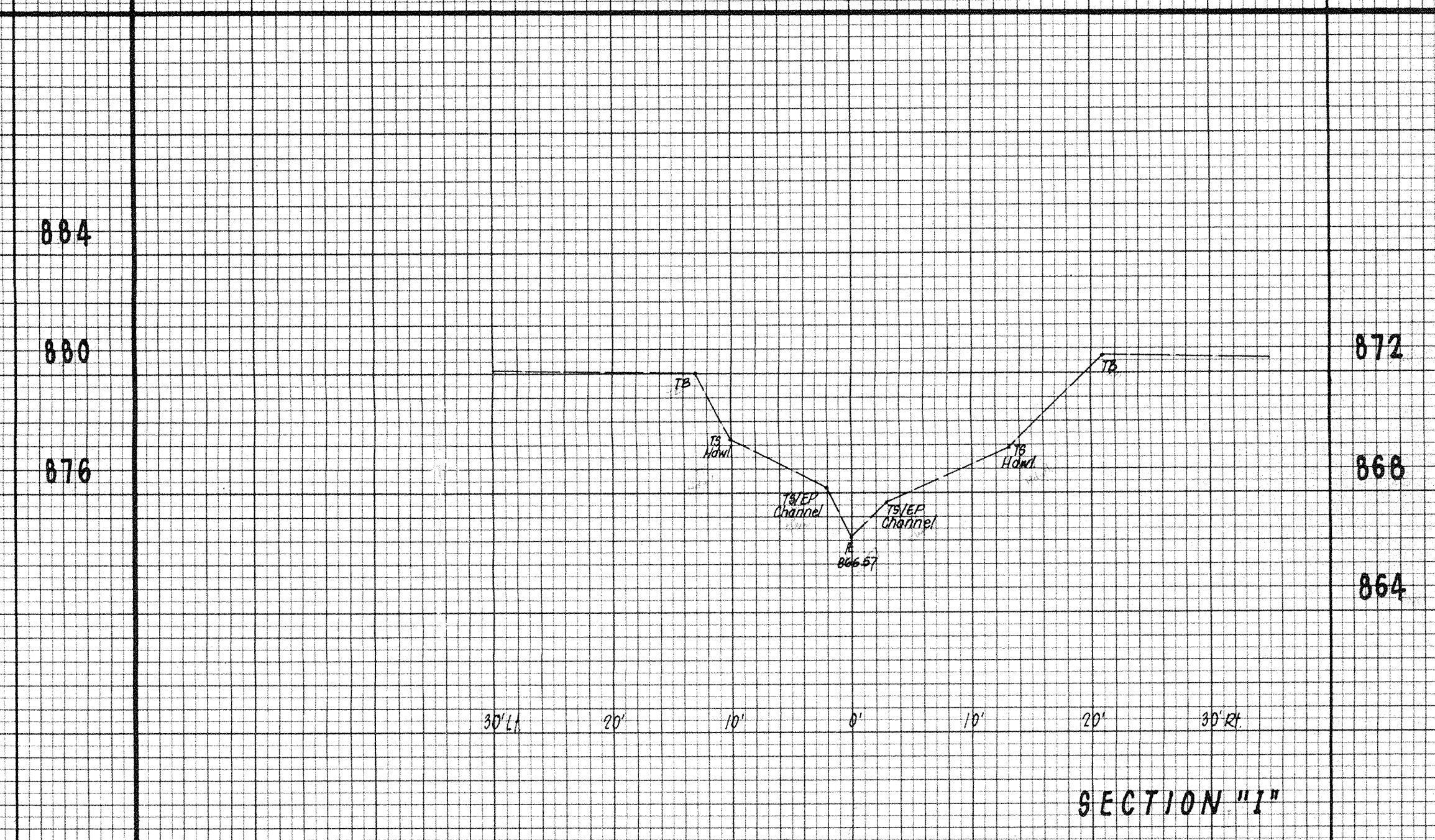
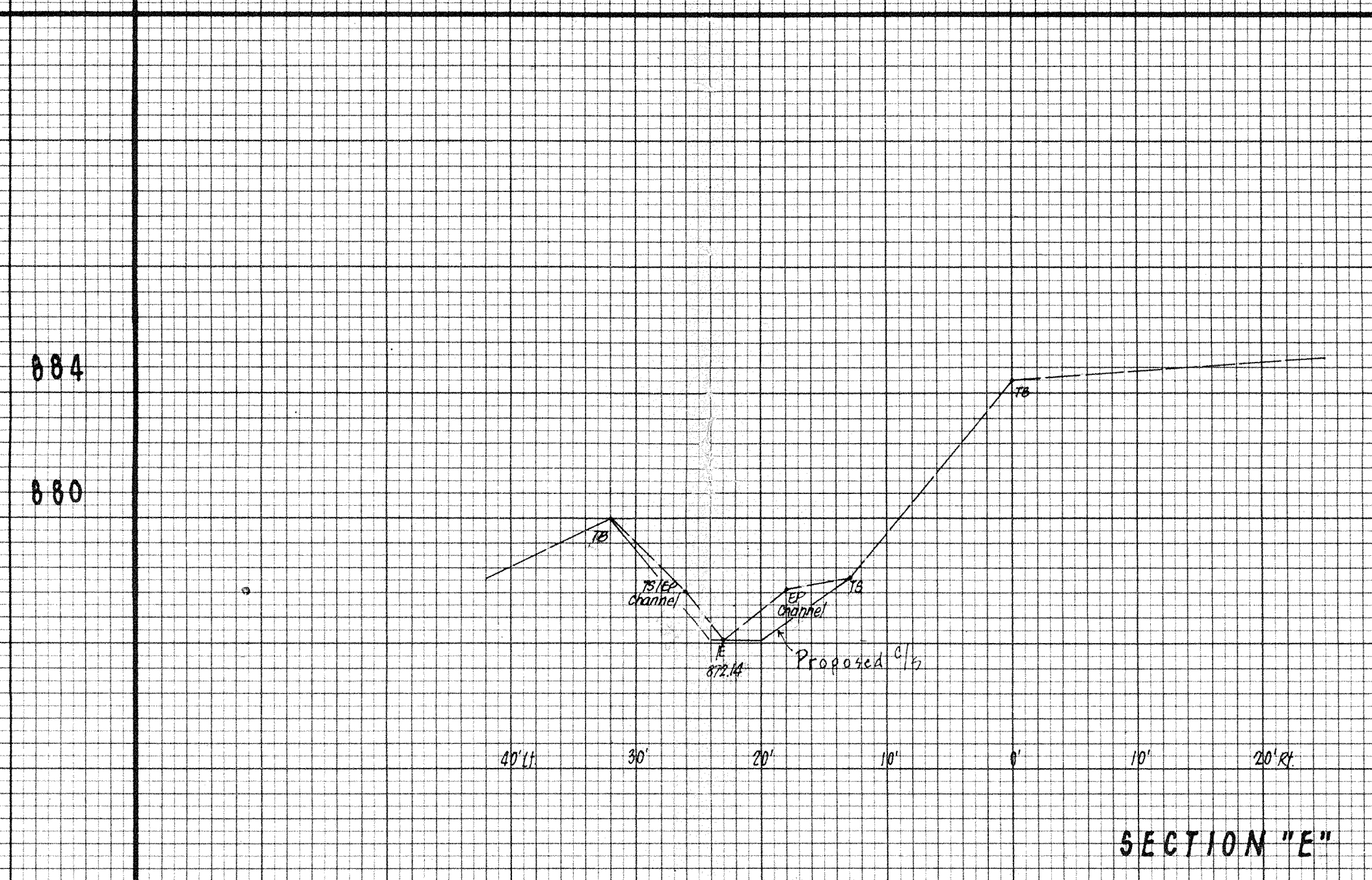
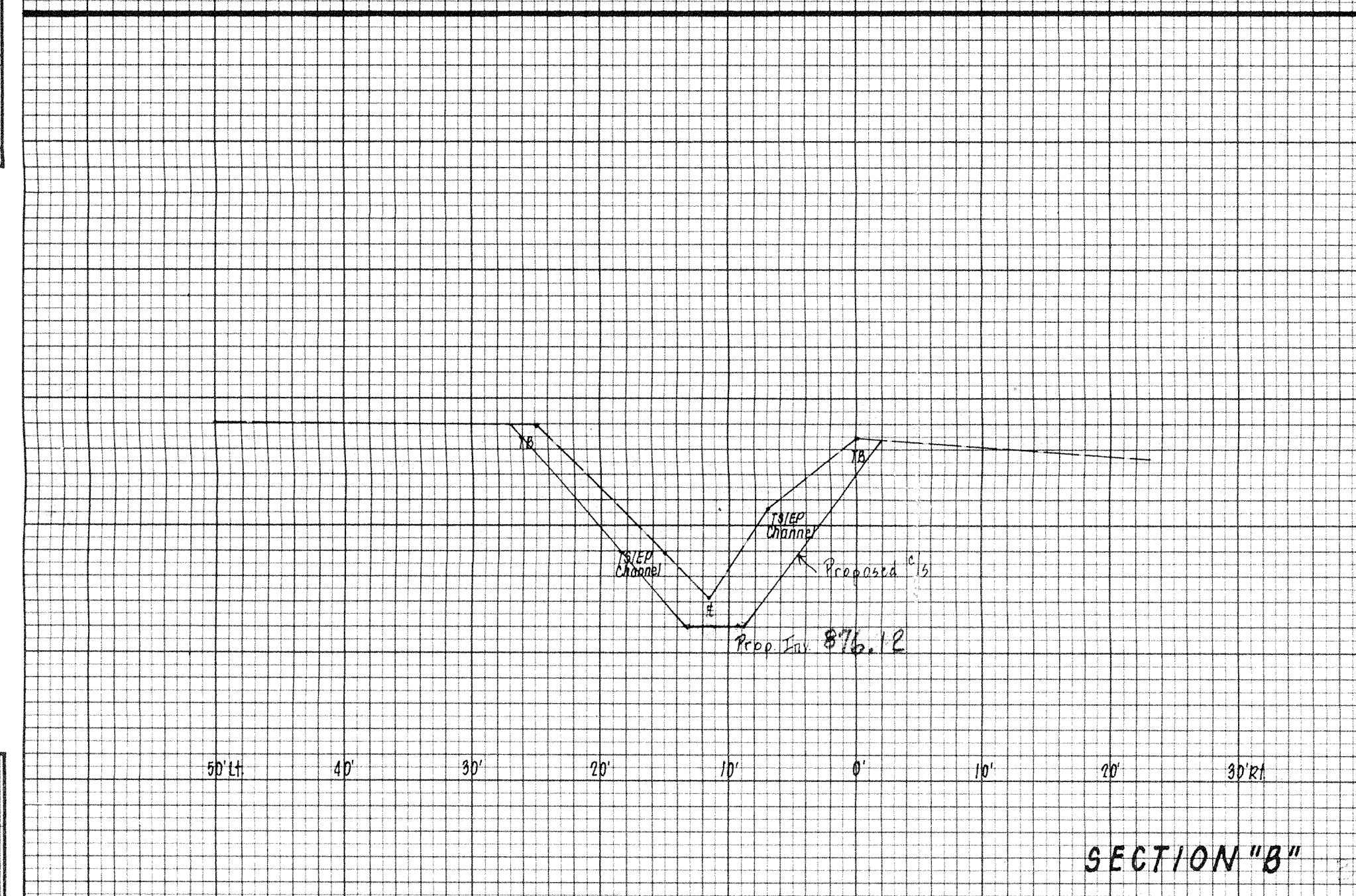
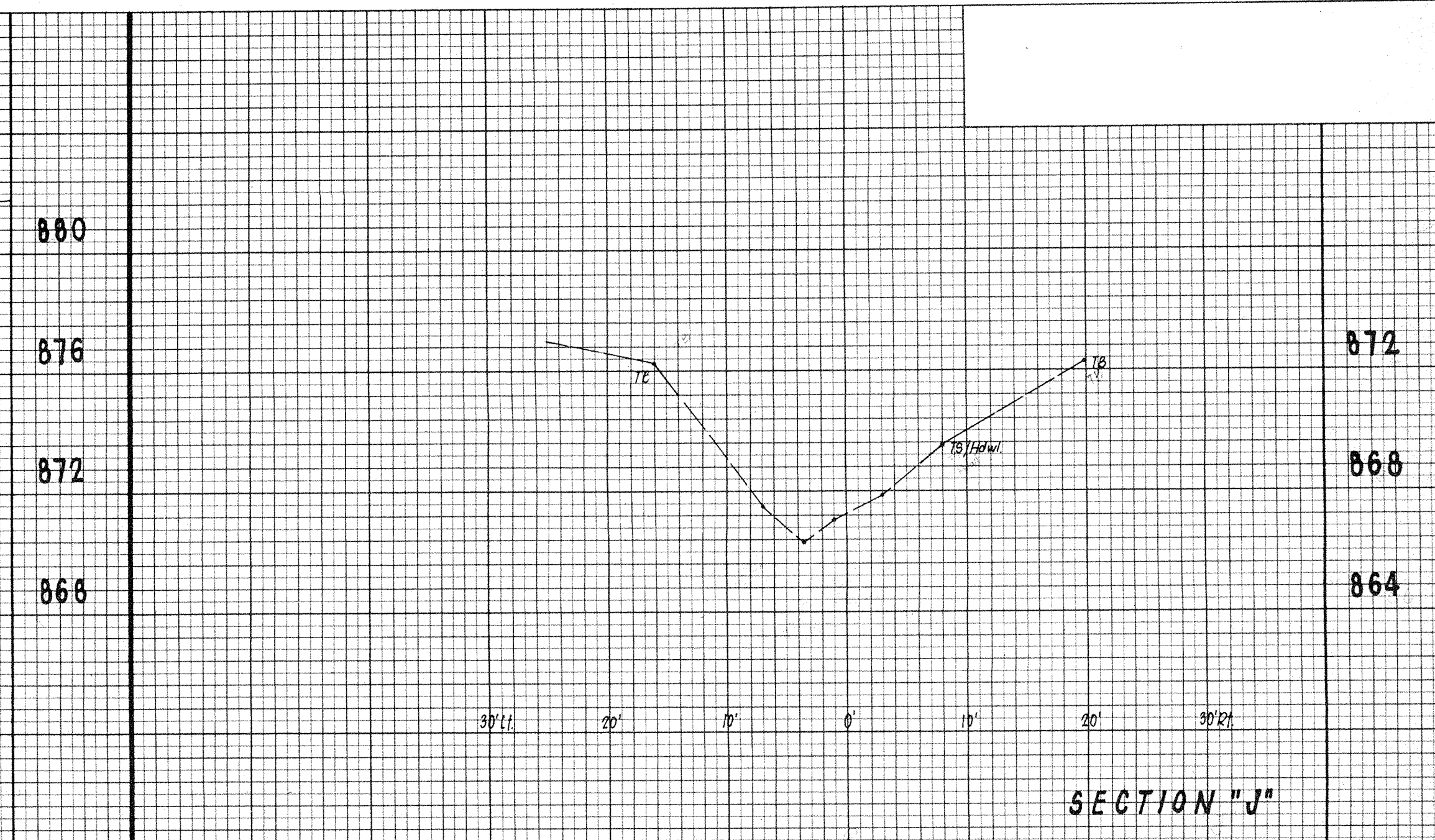
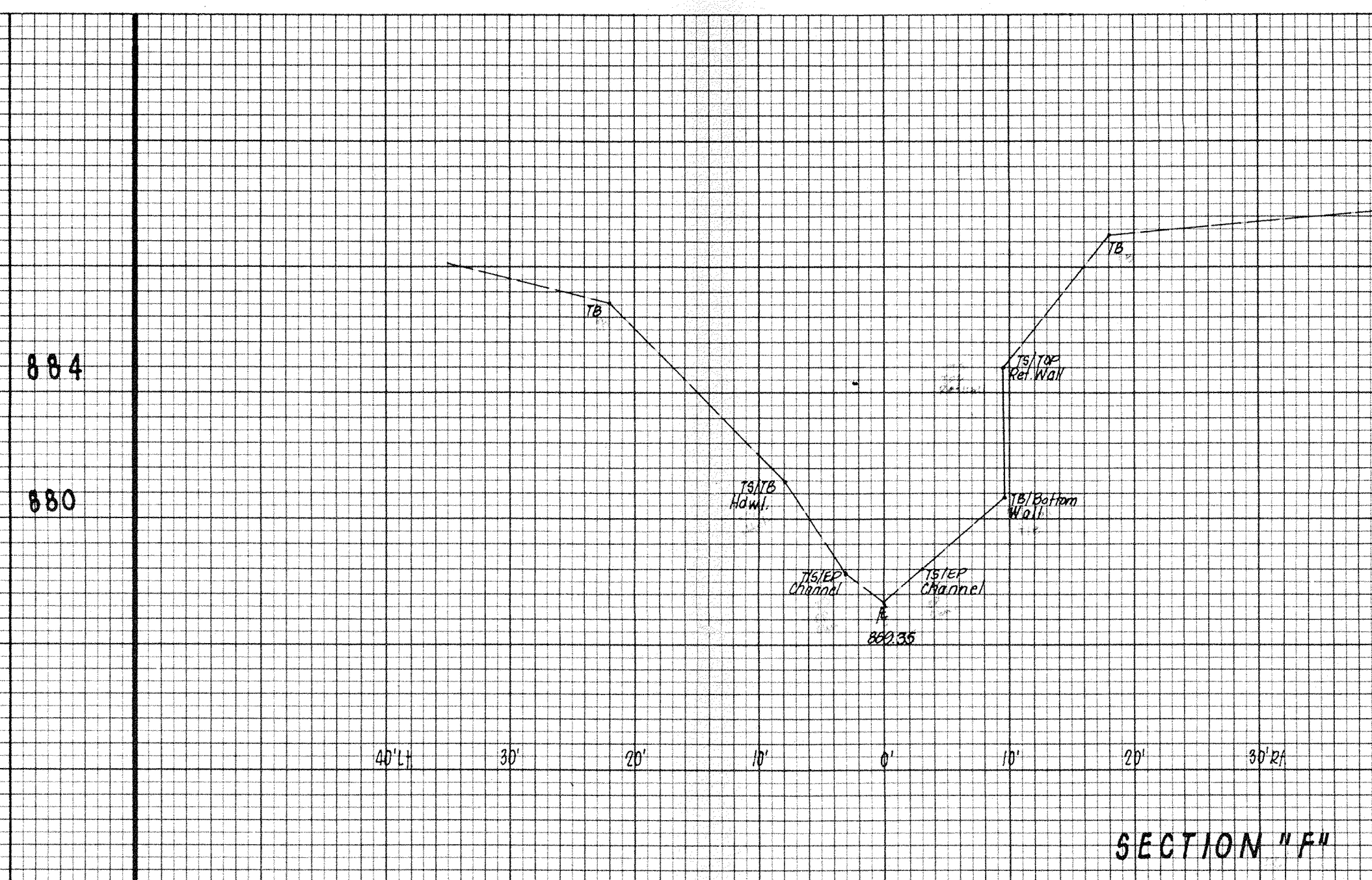
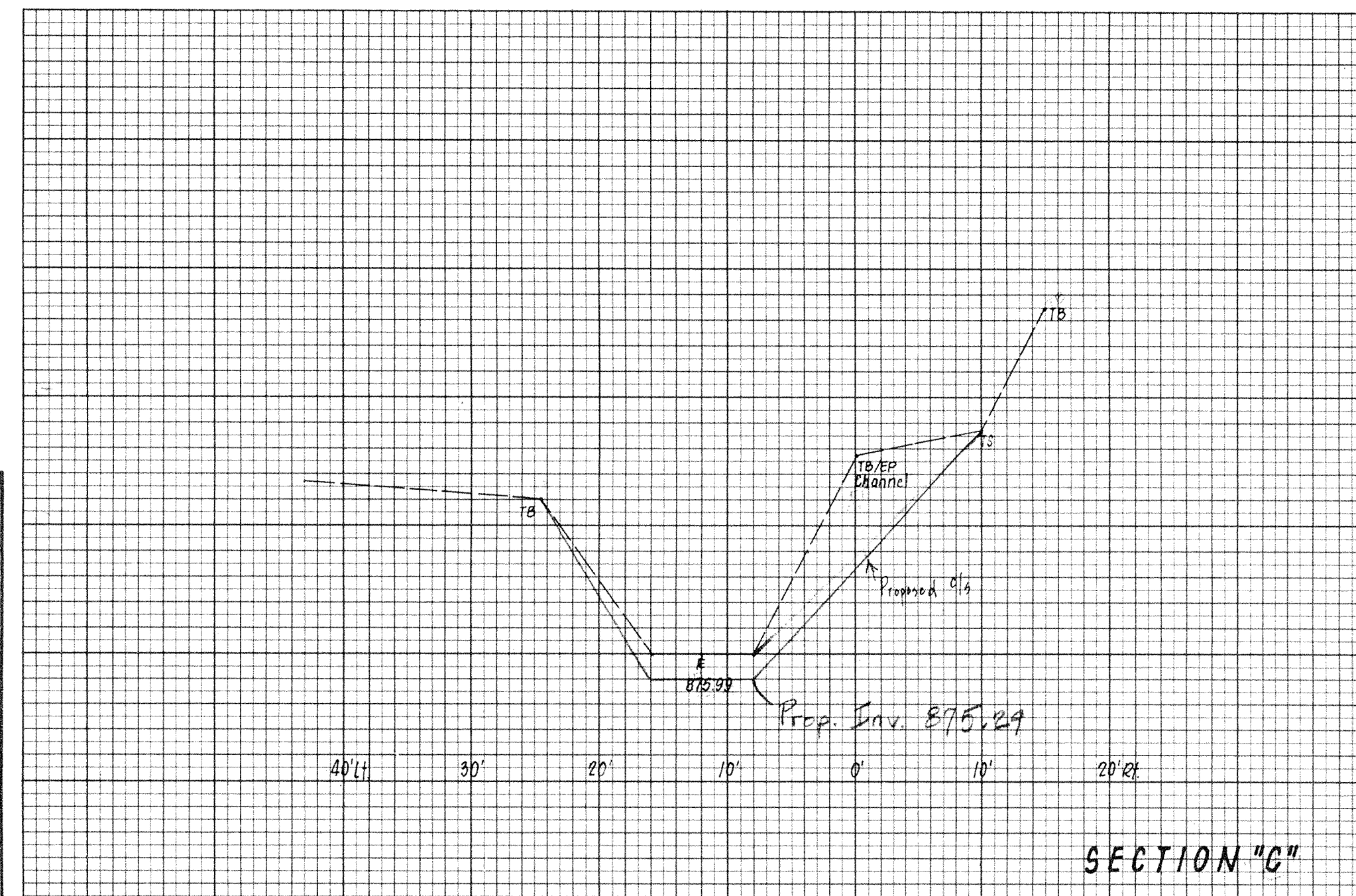


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 4475 Allisonville Road
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PROJECT NO.	LINE	SHEET NO.	TOTAL SHEETS	FILE
		5-A	9/11	

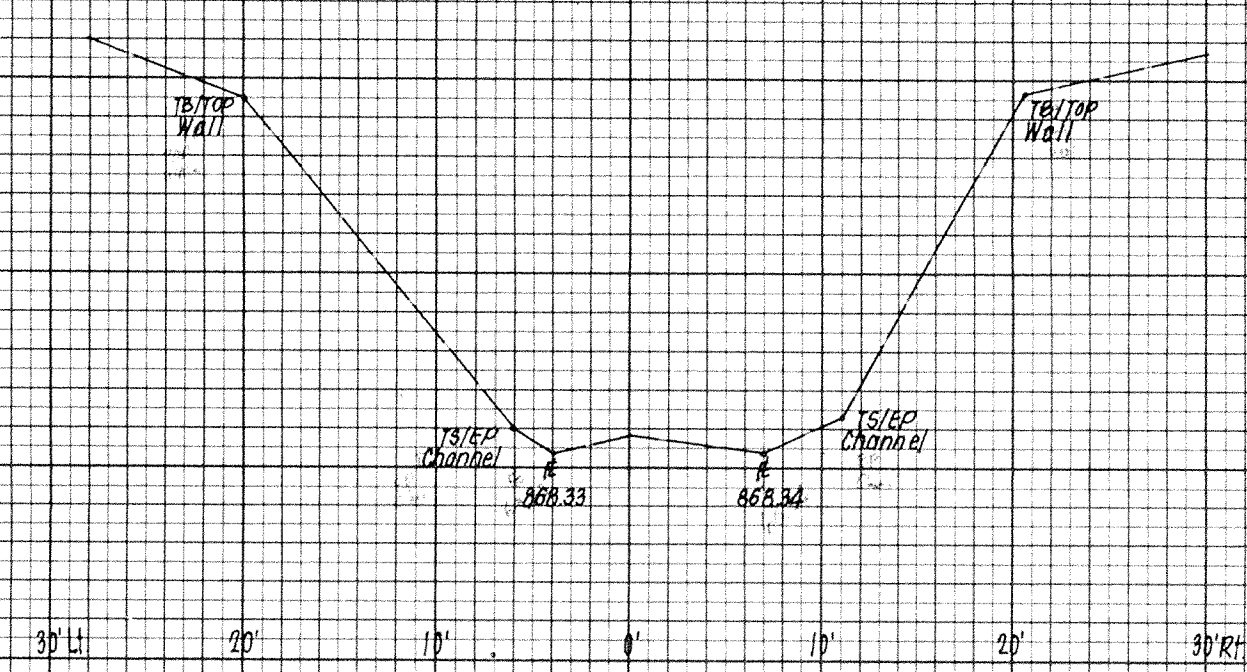
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 PLOTTED BY: _____
 NOTE BOOK NO.: _____
 TEMPLATE NO.: _____
 AREAS CHECKED: _____

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 NOTE BOOK NO.: _____
 TEMPLATE NO.: _____
 AREAS CHECKED: _____

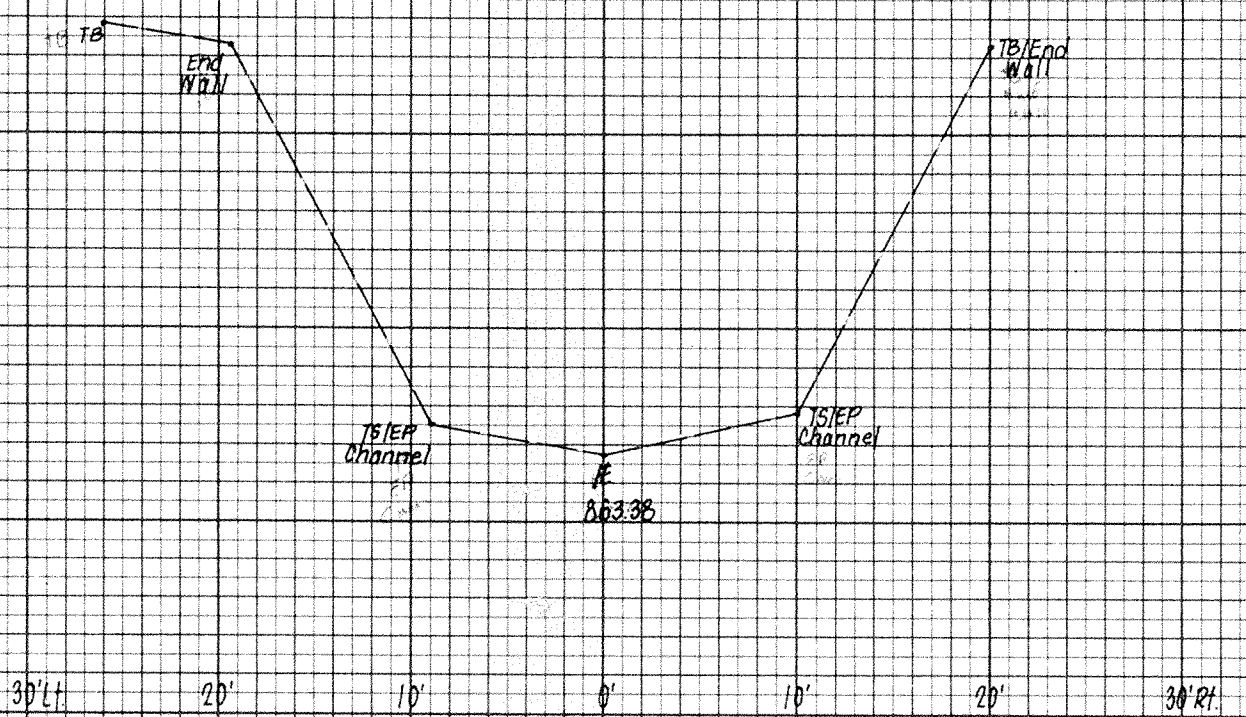


FINAL SURVEY
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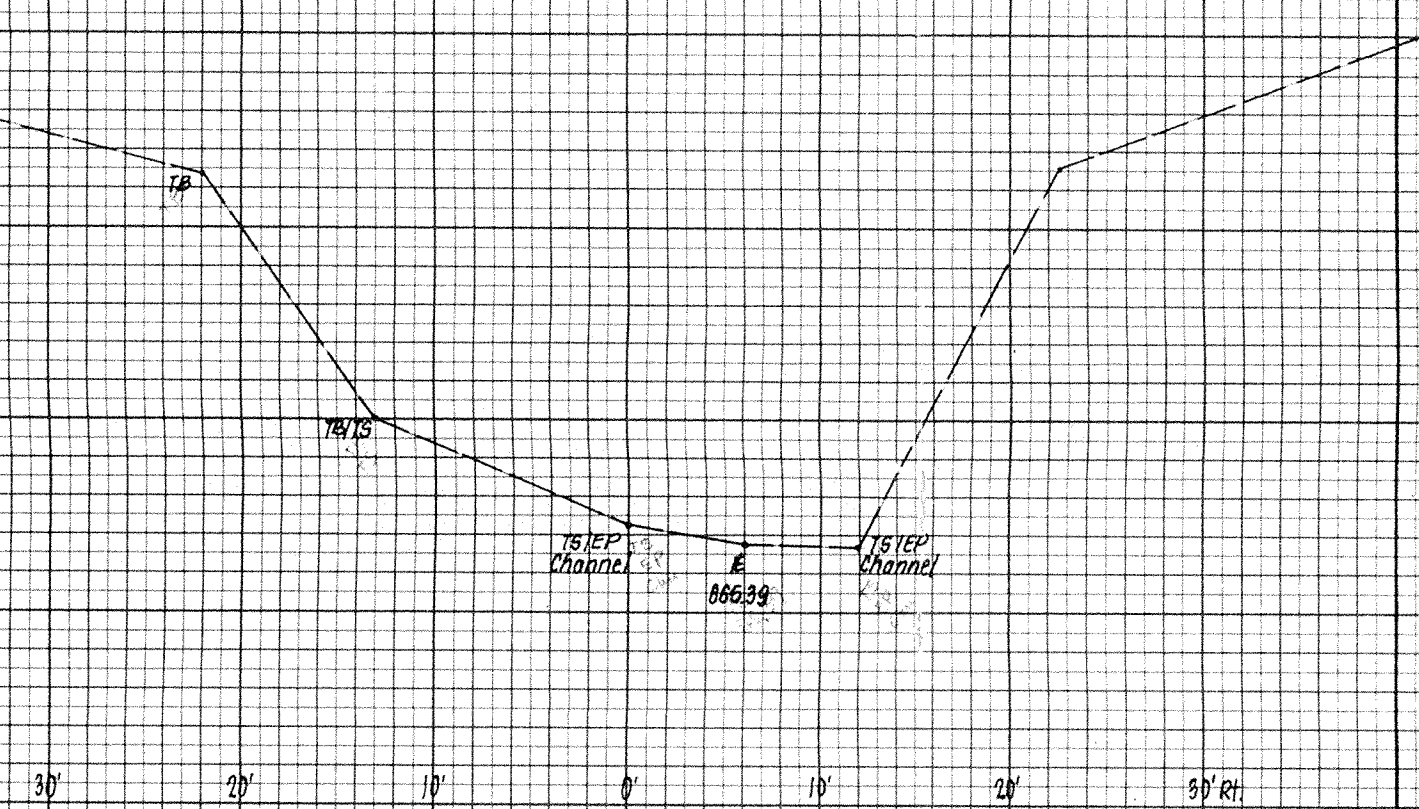
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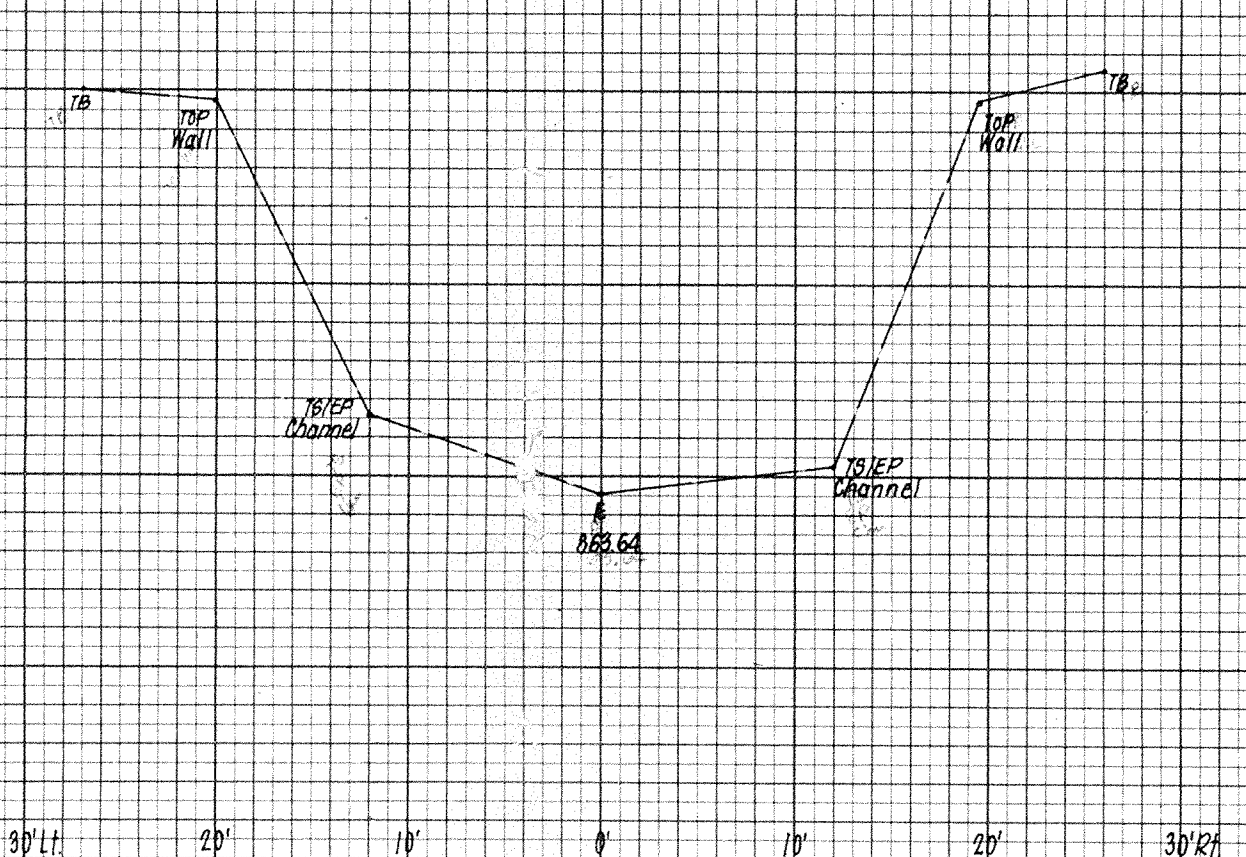
SECTION "M"



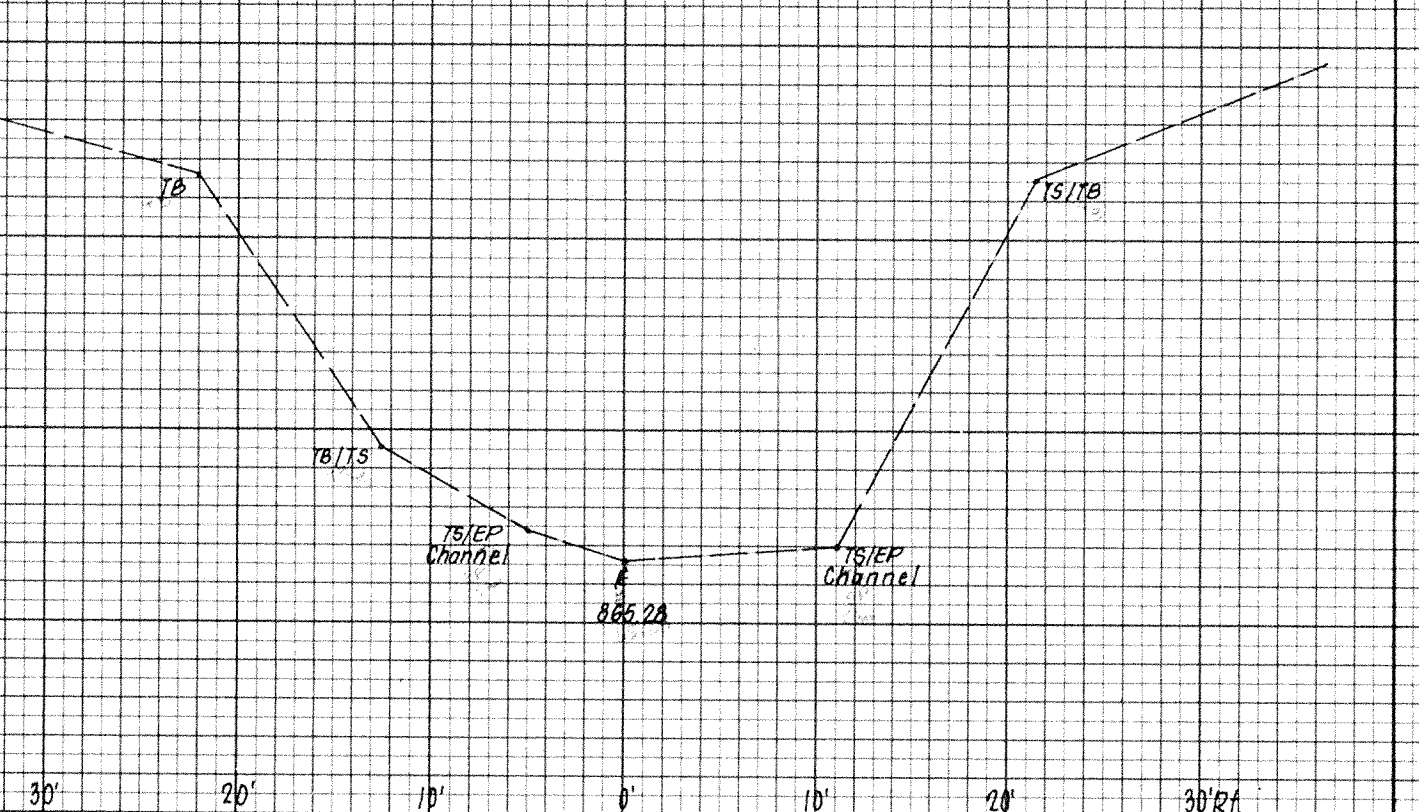
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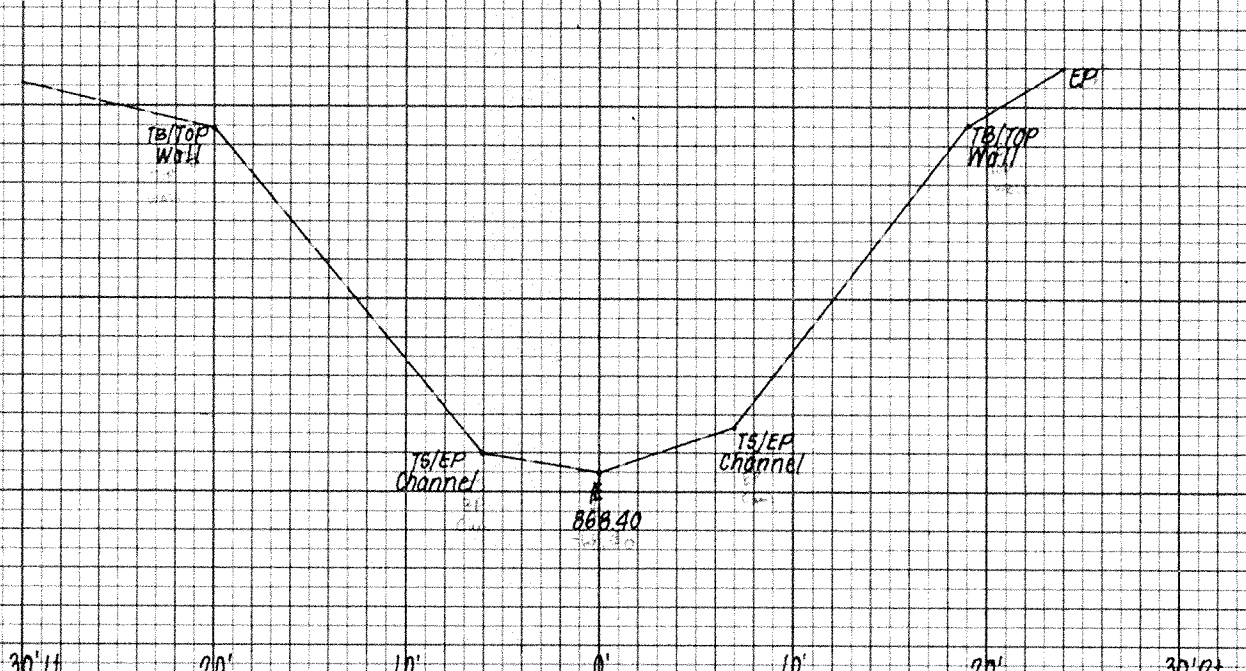
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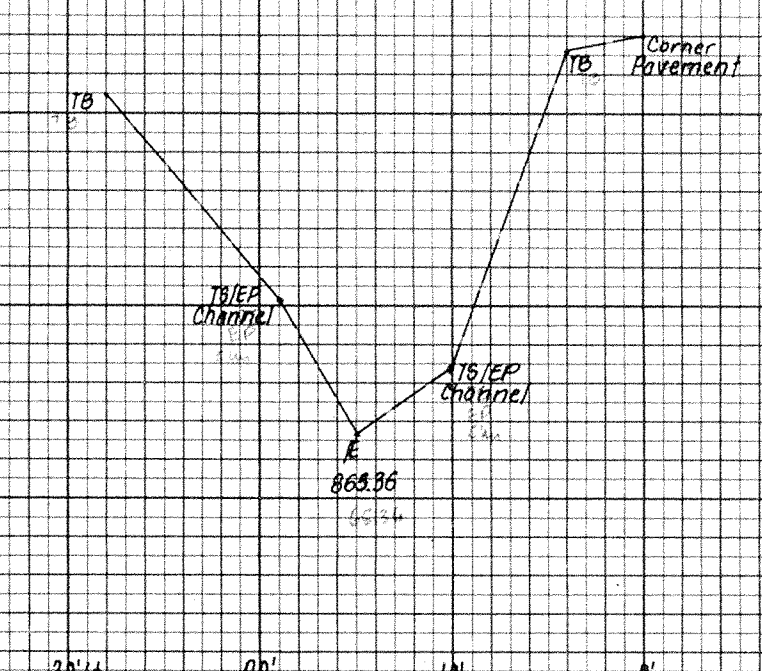
SECTION "O"



SECTION "K"



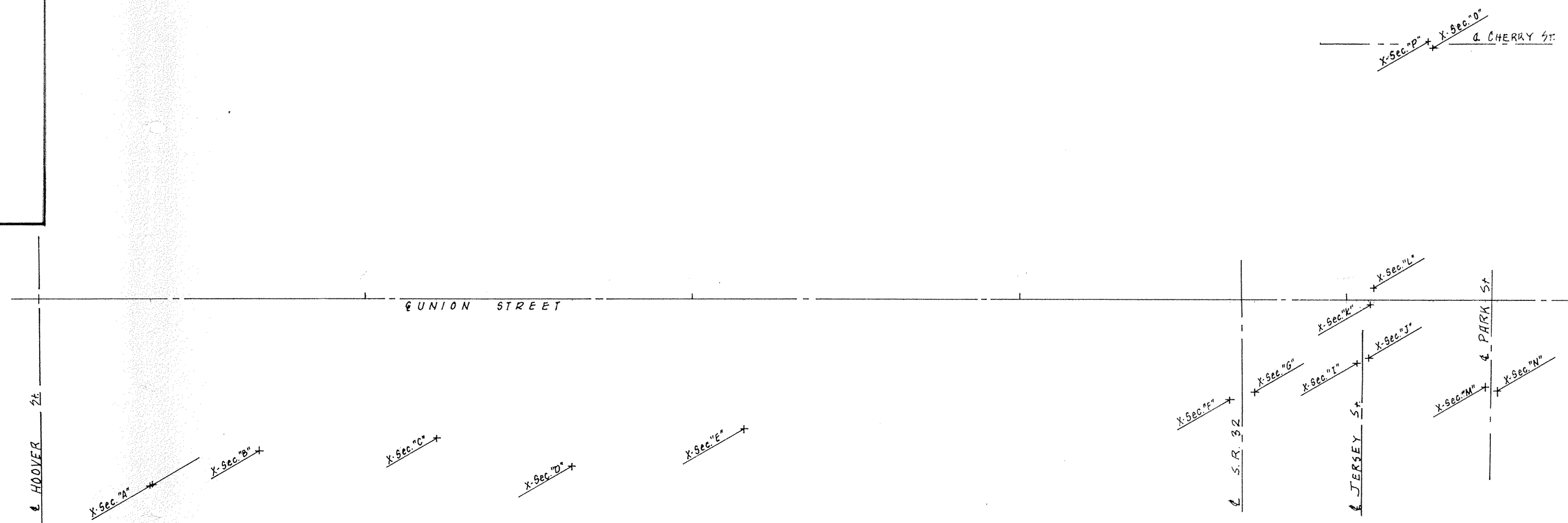
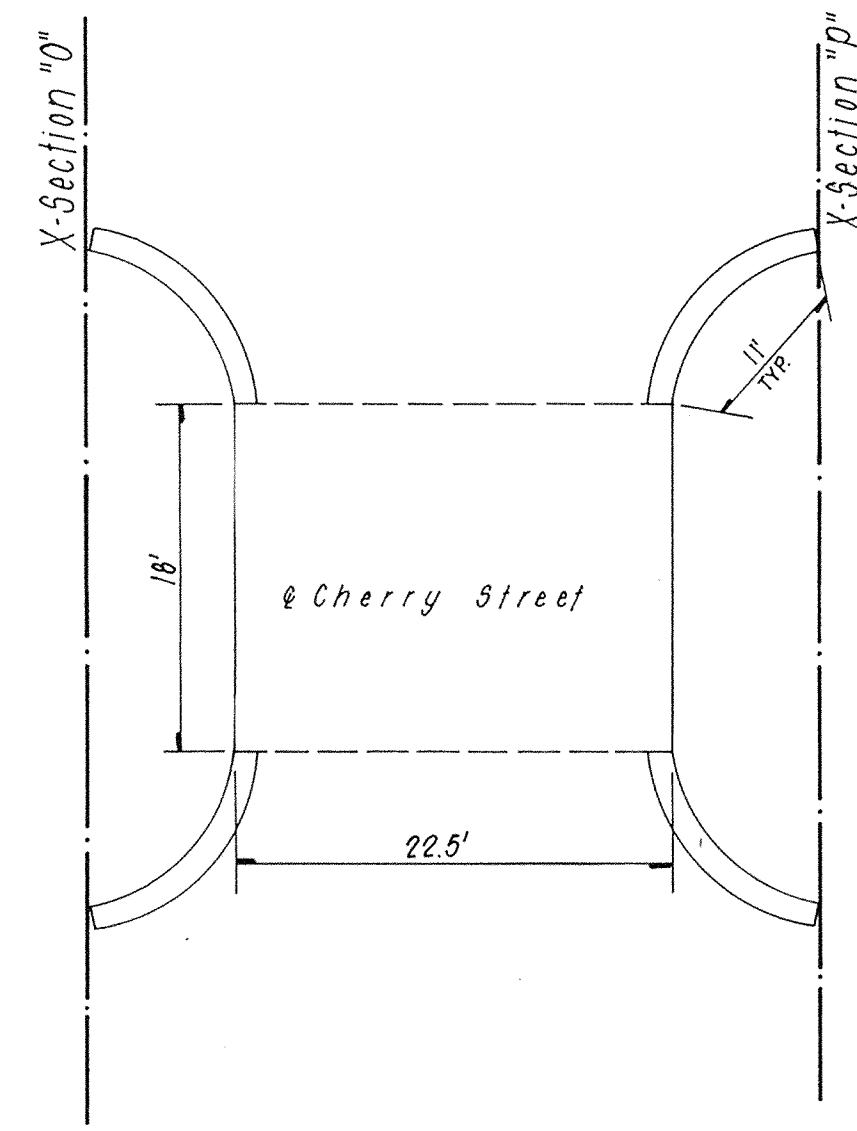
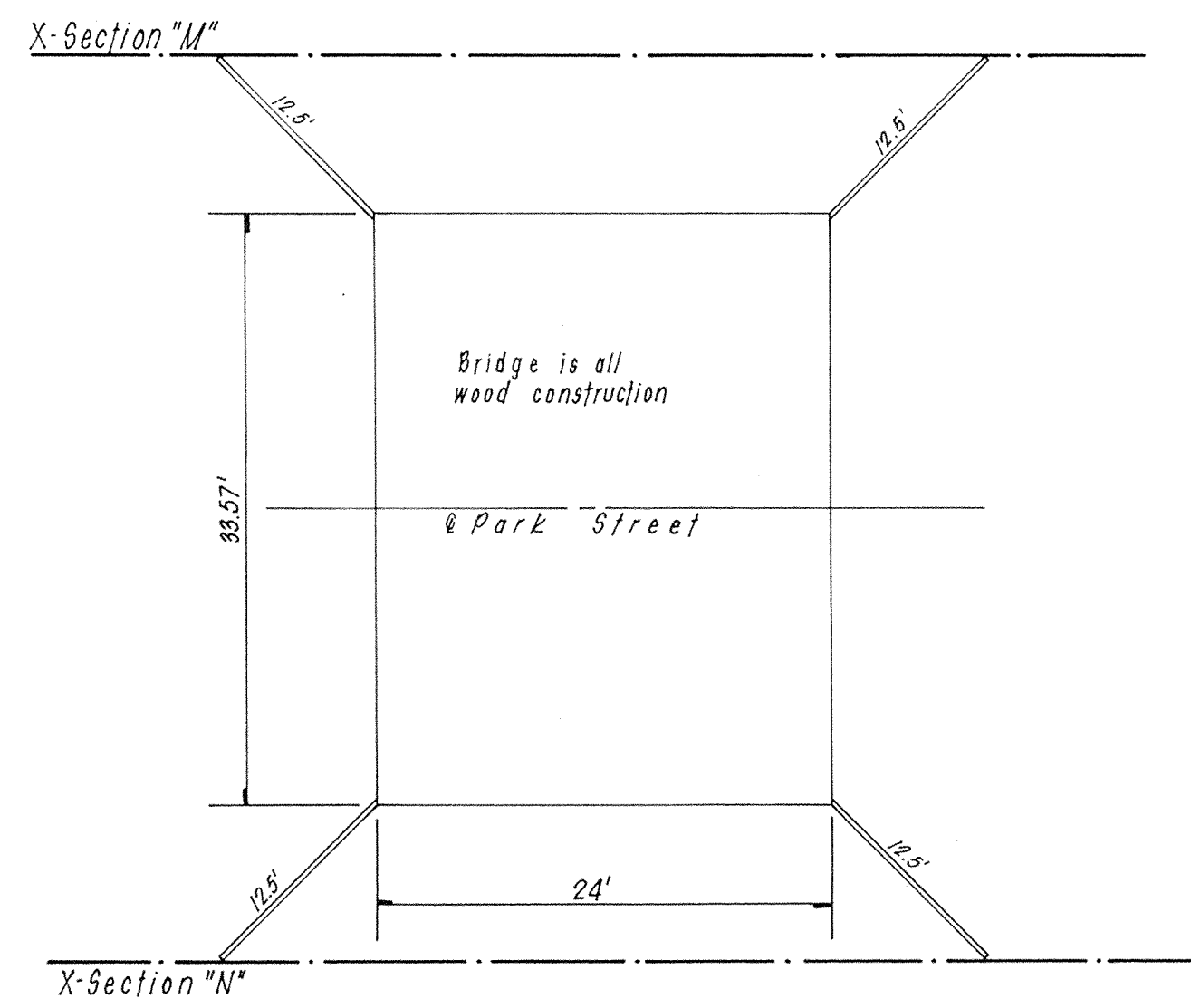
SECTION "N"



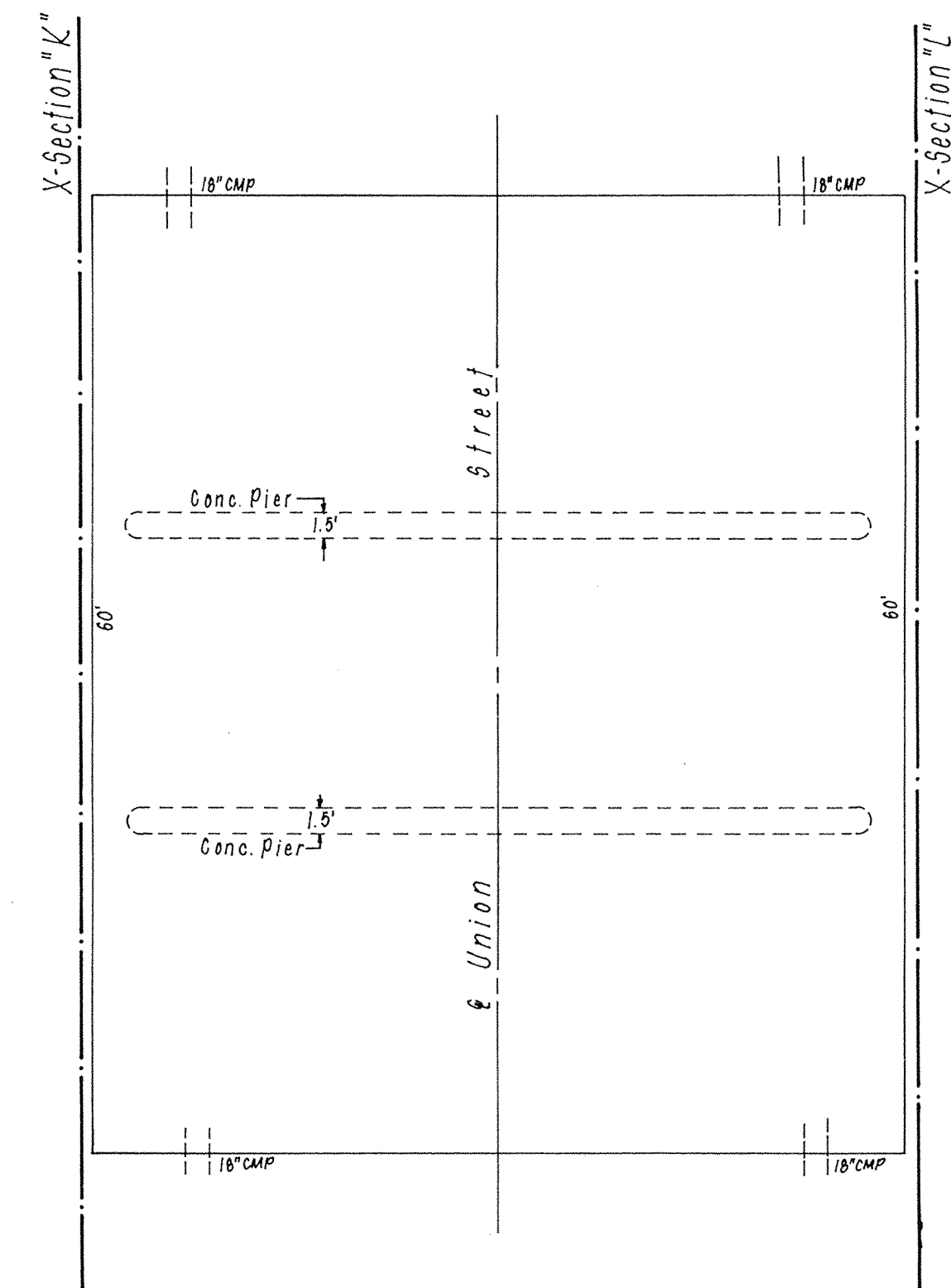
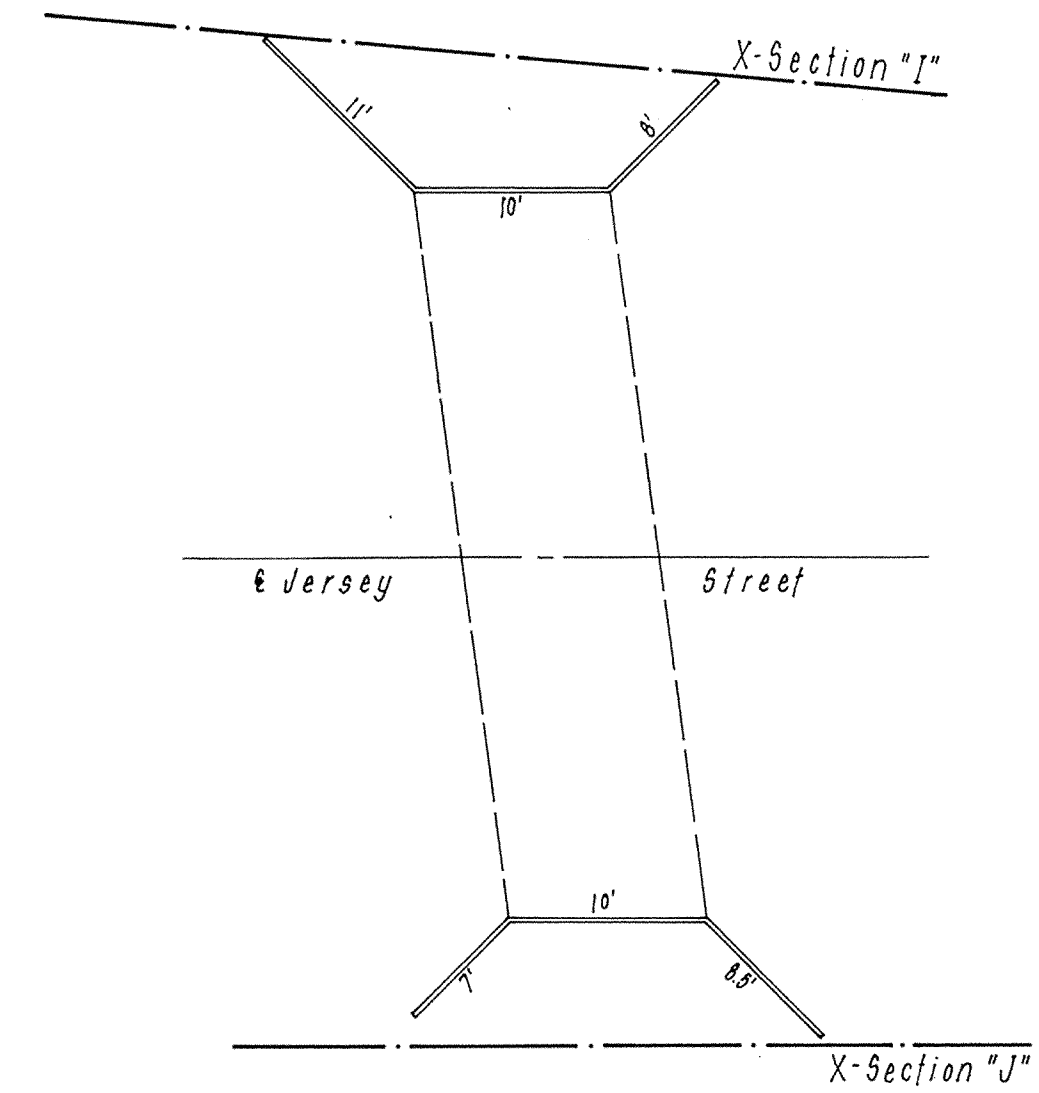
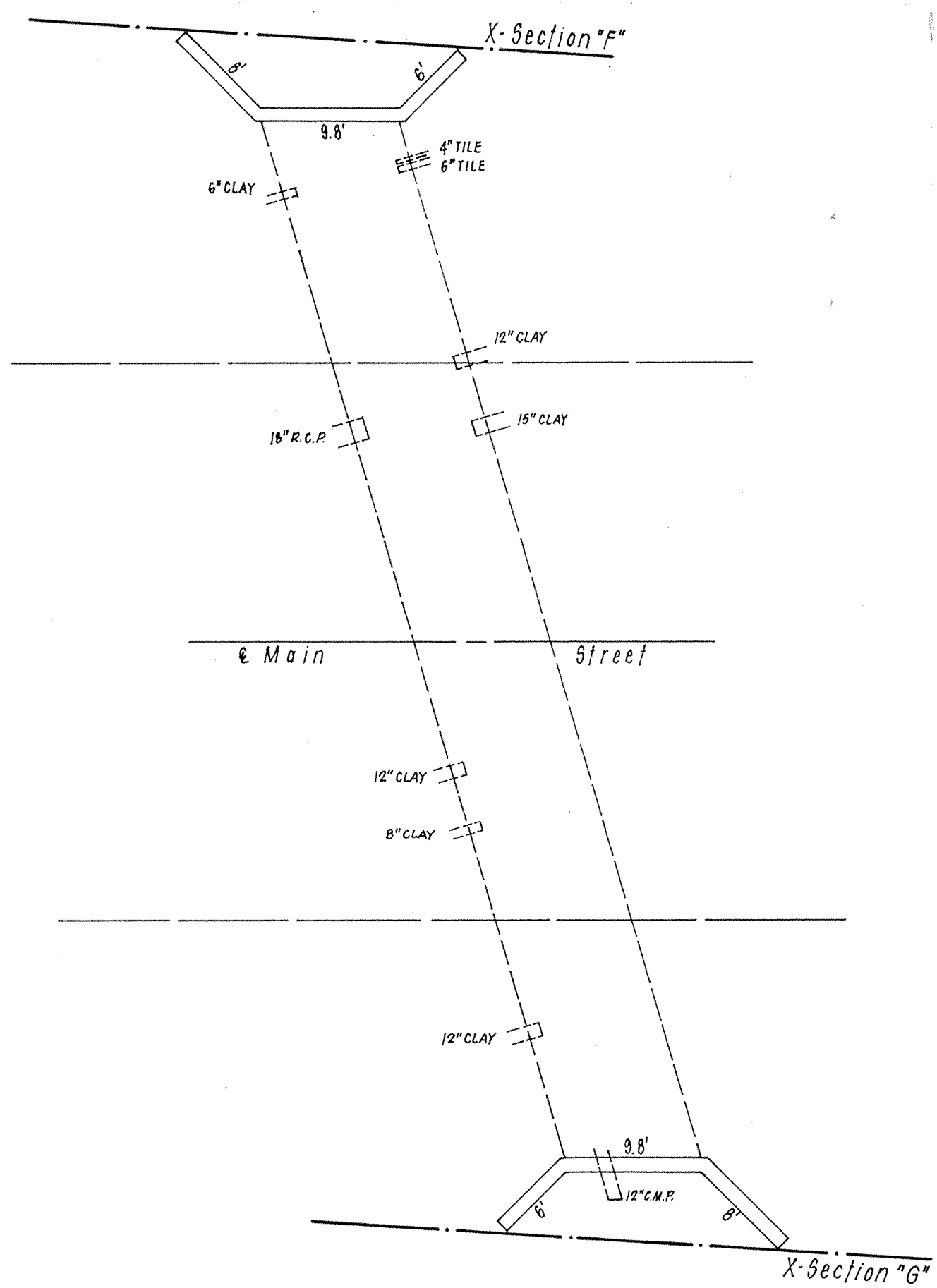
SECTION "Q"

ROADWAY FEDERAL AID SHEET
 PLATE 3-FULL CROSS SECTION-FULL LINE
 TELETYPE
 PRINTED IN U.S.A.

WESTFIELD p. 7 of 9



1/8" Guide



SPECIFICATIONS

CLEARING

Location and amount of clearing to be done by the contractor shall be set out in the Special Instructions. All stumps that interfere or that are likely to interfere with the flow of the ditch shall be removed and disposed of by the contractor, all others to be cut off flush with ground and will be treated with approved brush killer having a dye additive such as Dow Kurdon 101R.

In area adjacent to the ditch banks, stumps, brush, logs, wire, rocks, or other debris more than 1/3 cubic foot in volume shall be buried with at least 3 foot of cover or disposed of by the contractor by removing debris from site or by burning if the proper permits are obtained. Copies of the permits are to be filed with the Surveyor before burning commences. Debris which remains after burning shall be buried. In no case shall the burying or covering of any material which will interfere with normal farming operations be tolerated. Areas of burying shall be chosen by the contractor with approval of the landowner and Surveyor. The cost of clearing shall include the disposal of debris.

The right is reserved for landowners, with the approval of the Surveyor, to mark any trees to be saved. Contractor shall not remove trees from a landowners property unless a written consent is received from the landowner and copy of which is given to the Surveyor.

Any exceptions to these clearing specifications must have the approval of the surveyor, and if the Surveyor demands, the written consent of the landowner.

EXCAVATION

The excavation shall be done according to the grade, bottom width, side slope and depth as shown in the plans and specifications. The bank shall be left as nearly smooth and even as possible to secure the same in a good and workmanlike manner. To accomplish this the contractor shall use a smooth edged ditch bucket. All washes shall be filled and all open laterals entering the main ditch shall be cleared and cleaned a minimum of fifty (50) feet on uniform grade to meet the natural grade of the lateral and not extra compensation shall be allowed for such work. The contractor is expected to make all feasible alignments of the ditch bottom necessary to accomplish the best possible finished channel under the existing circumstances. Extra compensation will not be allowed the contractor for excavation made in addition to the amount shown in the specifications unless so ordered by the Surveyor. Any cutoff, widening, or change in channel not specified in the specifications will be paid for at the unit price bid or at a price per unit as agreed upon by the contractor and the Surveyor.

No open ditch shall be undercut more than 8" from grade shown on profile. Bottom width shall be measured at the elevation of the designed bottom.

The right is reserved, without impairing the contract, to order the performance of such work, or class of work not contemplated in the proposal, as may be considered necessary to complete fully and satisfactorily the work included in the contract. Such extra work shall be done by the contractor and he shall be compensated at a price per unit as agreed upon by the contractor and the Surveyor.

SPREADING

Excavated material shall be spread so that a minimum of a five (5) foot berm shall be left between the top of the ditch bank and the spread spoil. The slope of the spoil from the berm's edge to the maximum height shall be 5:1. From the maximum height the spoil will have and 8:1 back slope to field level. All spoils shall be placed on the side of the ditch designated by the Surveyor in the Special Instructions. The finished spoil shall be left in a smooth manner, so that any average row crop farm tractor can be driven over all parts of it with a reasonable degree of safety and economy. All spoil banks be leveled to the satisfaction of the Surveyor and all compensation for leveling spoil banks be included in the bid price for excavation.

It is expected that the finished spoil bank be left in a tillable manner. In no case will covering brush, logs, excavated stumps or rocks of 1/3 cubic foot or larger, that will interfere with the plow or mower, be tolerated.

Landowners concerned may authorize bucket spread or spoil piles, but the contractor is warned that written consent from the landowner shall be obtained to eliminate liability for unspread spoil or brush or stumps.

In case where the special specifications or provisions include the spreading of spoil heretofore left unspread by a former cleanout or dredging process, the same clearing and spreading specifications herein set out shall apply both to the former unspread spoil and the spoil made available by the work herein proposed.

RIP RAP

Rip Rap shall be 7" or 9" graded size or as indicated in the Special Instructions.

PAVEMENT REPLACEMENT

Pavement replacement on State Highways shall be done as provided for in the "Standard Specifications for Road Construction" of the I.S.H.C. dated 1978. Any cut made on a County Road shall be backfilled with granular fill even with the existing road surface as directed by the County Highway Engineer. Contractor shall notify County or State Highway Departments before construction in right-of-way begins.

INLETS, CATCH BASINS, BREATHERS, MANHOLES, JUNCTION BOXES

The construction and location of inlets, catch basins, breathers, manholes and junction boxes shall be set out in the Special Instructions and shall be an individual bid item.

CONCRETE

Concrete shall be of a classification as specified in the special specifications or plans. The unit price of concrete in place as shown on the plans shall include the forms and reinforcing steel of size, quantity, and designation as shown on the plans and all concrete shall be of a quality and shall be placed in a manner as provided by the "Standard Specifications for Road Construction" of the State Highway Commission of Indiana, dated 1978.

CORRUGATED METAL PIPE

Corrugated metal pipe, helcor or equal shall be or a gauge and quality that will meet the provisions of Section 907 - Metal Pipe as set forth in the "Indiana State Highway Standard Specifications or approved by the Surveyor.

The unit price shall include all materials, pipe, bands, bolts, labor and machinery to place the pipe on grade and to backfill as directed. Standard coupling bands with a minimum length of 12 inches shall be used.

TILE DRAIN EXTENSIONS

A twenty (20) foot section of corrugated metal pipe will be installed for tile drains outletting into the ditch at locations as shown in the plans, and at other locations where tile outlets are encountered during construction. The pipe should slip around the existing tile, by using a pipe size larger than the size of the existing tile. Pipe shall extend out from the ditch bank to such a position that the outlet is 1' back of the bottoms edge and no more than 3' above the ditch bottom as per profile. Payment for these items will be made based on the actual number and sizes installed at the various locations at the various bid prices per lineal foot. All outlets shall be fitted with an approved animal guard.

DRAIN TILE

Materials for use shall be or equal or superior to the quality provided in Section 906 of the "Indiana State Highway Standard Specifications, 1978," or as specified in the Special Instructions.

TILE EXCAVATING AND BACKFILL

All work related to this section shall conform to the applicable Sections of the "Indiana State Highway Standard Specification, 1978" or as specified in the Special Instructions. Cost of the excavation and backfilling shall be included in the bid price of the tile.

SEEDING AND FERTILIZING

All disturbed areas are to be seeded as set forth in the seeding recommendations which follow. Ditch slopes are to be seeded at the end of each working day while the soil still retains moisture. All disturbed areas are to be fertilized with 600# of 12-12-12 per acre. No area shall remain more than five (5) days without seeding and fertilizing. If soil has hardened the contractor shall loosen the soil at least 3" in depth before seeding. Contractor shall reseed bare areas before final acceptance by the surveyor at the contractors expense. The contractor shall seed the project twice. First seeding shall include fertilizer and second seeding shall omit fertilizer. Figure double the amount of acres shown on the bid form.

Seeding Recommendations
September 15 to March 15
30#/Ac KY 31 Fescue
2 Bu/Ac Wheat

March 15 to May 15
20#/Ac KY 31 Fescue
2 Bu/Ac Oats

May 15 to September 15
30#/Ac KY 31 Fescue
10#/Ac Annual Rye Grass

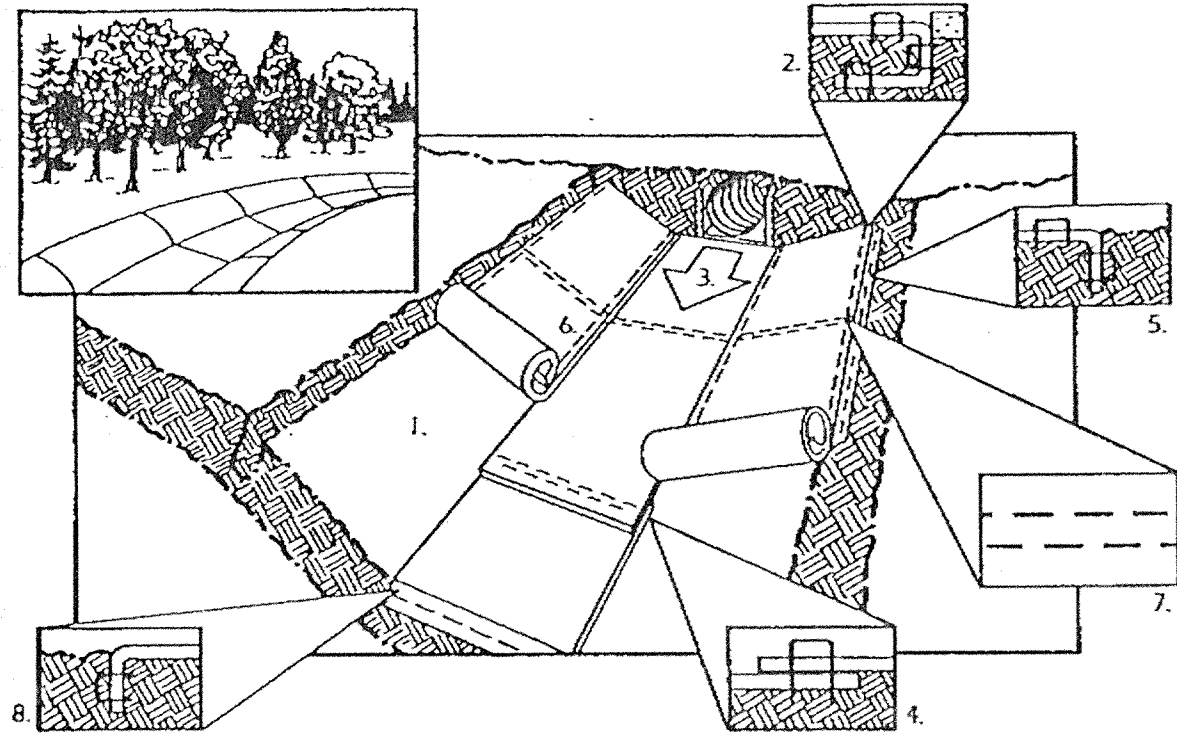
All erosion control structures, waterways or other areas indicated in the Special Instructions shall be treated with erosion mats shall be approved by the Surveyor.

CLEANING

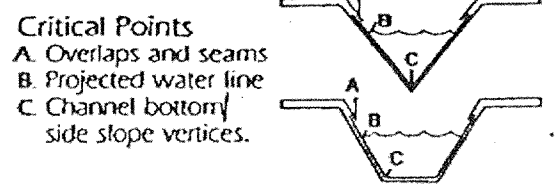
The contractor shall, at all times, keep the premises free from accumulations of waste material or rubbish caused by his employees or work and, at the completion of the work he shall remove all rubbish, tools, equipment and surplus materials from the premises and shall leave his work in a neat and presentable condition.

EROSION CONTROL CHANNEL APPLICATIONS

RECOMMENDED MATERIAL: NORTH AMERICAN GREEN SC-150 or EQUAL.



1. Prepare soil before installing blankets, including application of lime, fertilizer and seed.
2. Begin at the top of the channel by anchoring the blanket in a 6" deep x 6" wide trench. Backfill and compact the trench after stapling.
3. Roll center blanket in direction of water flow on bottom of channel.
4. Place blankets end over end (single style) with a 6" overlap. Use a double row of staggered staples 4" apart to secure blankets.
5. Full length edge of blankets at top of side slopes must be anchored in 6" deep x 6" wide trench. Backfill and compact the trench after stapling.
6. Blankets on side slopes must be overlapped 4" over the center blanket and stapled.
7. In medium/high flow channel applications, a staple check slot is recommended at 30 to 40 foot intervals. Use a row of staples 4" apart over the entire width of the channel. Place a second row 4" below the first row in a staggered pattern.
8. The terminal end of the blankets must be anchored in a 6" deep x 6" wide trench. Backfill and compact the trench after stapling.

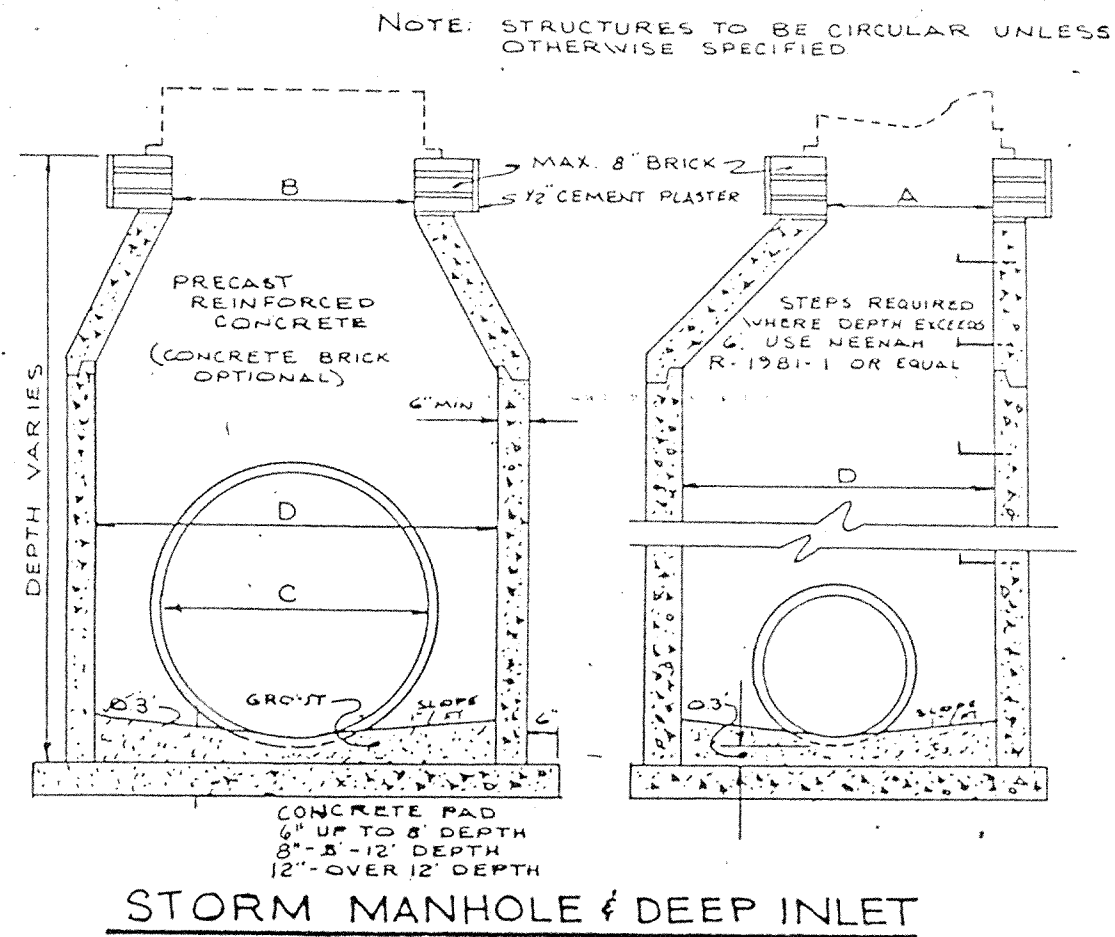


Critical Points
A. Overlaps and seams
B. Projected water line
C. Channel bottom side slope vertices.

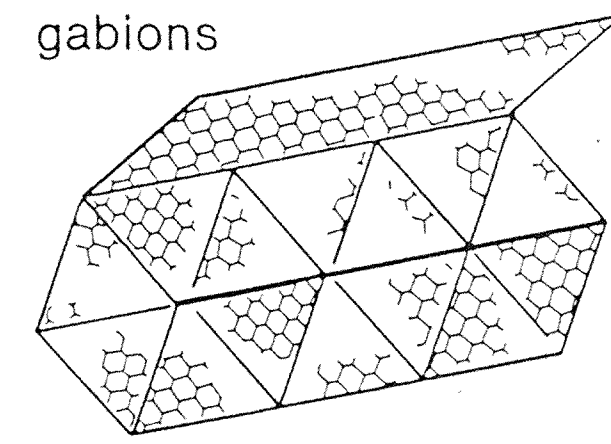
NOTE: Horizontal staple spacing can be altered if necessary to allow staples to secure the critical points along the channel surface.

REFER TO GENERAL STAPLE PATTERN GUIDE FOR CORRECT STAPLE PATTERN RECOMMENDATIONS FOR CHANNELS.

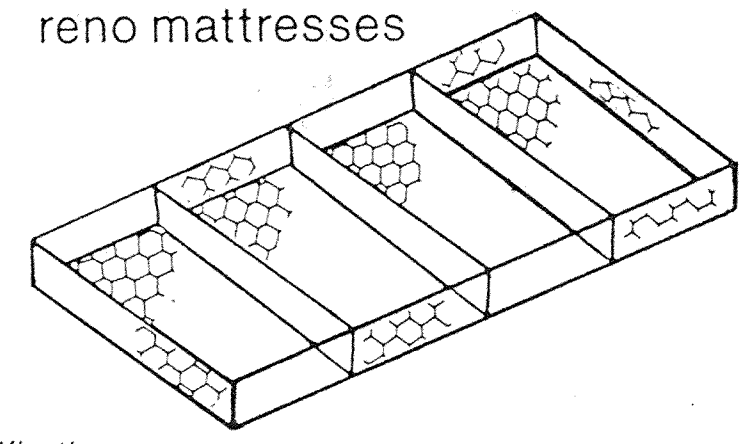
CASTING	A	B	C	D
R-1772-A	25" DIAMETER		21" 4'-0"	24" 4'-0"
R-4342	24" DIAMETER		21" 4'-0"	30" 4'-4"
R-3800 (TICKET)	25" 21"		36" 5'-0"	42" 5'-4"
			48" 6'-0"	54" 6'-6"



gabions



reno mattresses



specifications

Detailed product specifications for the full range of Maccaferri Gabions and the Reno Mattress in both zinc coated and PVC mesh are available on request from any Maccaferri office. Maccaferri reserves the right to alter specifications without notice. Maccaferri products are made in Williamsport, Md. and Sacramento, California.

assembly & erection

Separate leaflets are available describing recommended methods of assembly. Field notes for use by construction crews and typical contract specifications and bills of quantities are also available.

technical publications & video tapes

Maccaferri Gabions, Inc. publishes technical handbooks on Gabions and on the Reno Mattress as well as on Rockfall Netting. We also issue a series of books on such topics as Retaining Walls, Channel Linings, Weirs and Railroad Structures. Video tapes on selected topics, including assembly instructions, are also available. Please inquire for further information and to request copies.

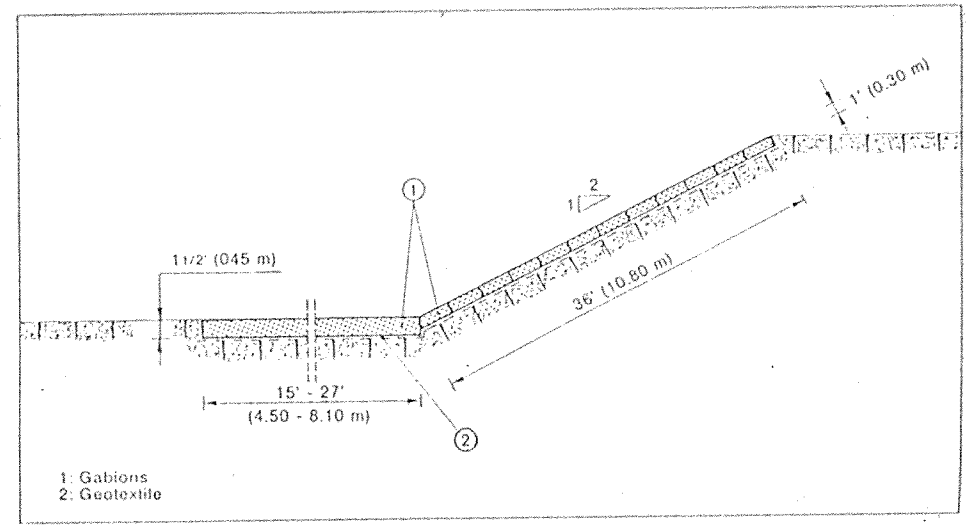
standard sizes

SUPPLY AND DELIVERY Gabions are supplied folded flat and stacked in bundles for convenient shipping and handling. Sufficient lacing wire is supplied with the gabions in coils for normal uses. Additional wire available at normal cost.

GABIONS-NOMINAL SIZES						
Letter Code	Length	Width	Height	No. of Cells	Cap. Cu. Yds.	Color Code
A	6'	3'	3'	2	2.0	Blue
B	9'	3'	3'	3	3.0	White
C	12'	3'	3'	4	4.0	Black
D	6'	3'	1.6'	2	1.0	Red
E	9'	3'	1.6'	3	1.5	Green
F	12'	3'	1.6'	4	2.0	Yellow
G	6'	3'	1'	2	0.66	Blue/Red
H	9'	3'	1'	3	1.0	Blue/Yel
I	12'	3'	1'	4	1.33	Blue/Gn
SP	4'-6"	3'	3'	1	1.5	—

SUPPLY AND DELIVERY Reno Mattresses and ties are supplied folded flat and stacked together in bundles for convenient shipping and handling. Sufficient lacing wire is supplied with the mattresses in coils for normal uses. Additional wire available at normal cost.

RENO MATTRESS-NOMINAL SIZES						
Letter Code	Length	Width	Thickness	No. of Cells	Area Sq. Yds.	Capacity Cu. Yds.
G	9'	6'	6"	3	6	1.00
R	12'	6'	6"	4	8	1.33
T	9'	6'	9"	3	6	1.5
U	12'	6'	9"	4	8	2



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Indianapolis, Indiana 46205
(317) 549-3557

DRAWN: _____
CHECKED: _____
DATE: _____

REVISIONS:

TITLE:

PROJECT:

SHEET _____ OF _____

"FIELD COPY"

- STR. 15 CONSTRUCT FL - BW ADD 1 STEP
- STR. 16 " " " " " " STEPS REGRADE
- AREA EAST OF STR. SEED (CULVERT PIPE)
- STR. 17 CONSTRUCT FL - BW STEP CUT OFF PIPE WS
- FORM FL
- CUT SWALE FROM WOODS TO STR. 17 S 80 ACROSS SWALE
- STR. 18 GROUT STR. FL BW CASING
- STR. 19 " " " " " " REGRADE AROUND STR.
- REPAIR FENCE S OF STR. 19
- DOZE SOIL BETWEEN 19 - 20
- STR. 19A ANIMAL GUARD RED FENCE POST
- STR. 20 STRAW Bales around Beehive
- GROUT FL/BW
- * LETTER ABOUT TILE ACROSS JESSUP PROPERTY
- STR. 13A CONSTRUCT FL GROUT STR.

- * DEBRIS FROM FL
- * STUMPS FLUSH W/GROUND

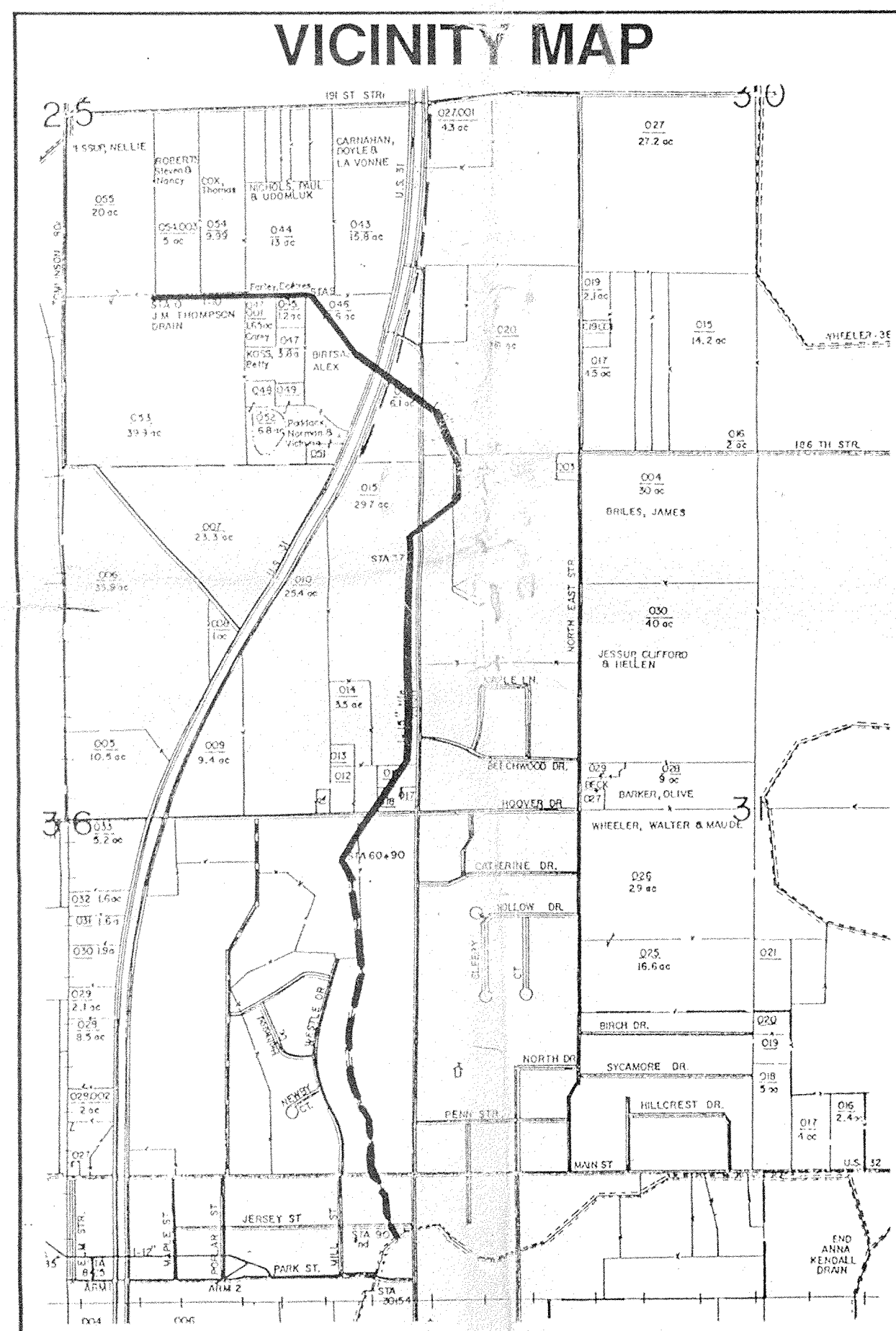
WESTFIELD, INDIANA

J. M. THOMPSON LEGAL DRAIN

"Drainage Study"

Prepared for:
Hamilton County Drainage Board
- Peg Goldberg
- Steven Dillinger
- Steven Holt

Prepared by:
Douglas E. Miller Consulting Engineering
Vantage Point Office Tower, Suite 470
4475 Allisonville Road
Indianapolis, Indiana 46205



- 1 Debris @ Mouth @ Annalsdall
- 2 Remove FILL @ Joint #12 (Fire Dept Responsibility)
- 3 Remove Remains of Bridge @ Fire Station
- 4 Cut Stump & Paint, & Trim Branch
- 5 Remove Logs & Debris
- 6 Add Stone @ Big Concrete Slab, to smooth Out Flowline
- 7 Remove Branch & Scrub Tree, North of SR 32
- 8 Rip Rap Behind fixed End Section(s)
- 9 Cut off Stumps Flush w/Ground
- 10 Add Animal Guard to Pipe Extension
- 11 Add Animal Guard to Pipe Extension (Bus Barn)
- 12 Rip Rap in Flowline @ Bus Garage
- 13 Prune off Growth @ Stumps
- 14 Animal Guard @ Park Pipe
- 15 Replace Rip Rap @ 72" pipe
- 16 Remove Minor Debris in Pipe
- 17 Remove Straw @ Str #1
- 18 Add Wheat to Str #1, then Straw Bales ± 6' Upstream

INDEX

Page No.	Description
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2,3,4,5	Plan & Profile
6,7	Stream Cross-Sections
8	Bridge & Culvert Dimensions
9	Details and Specifications

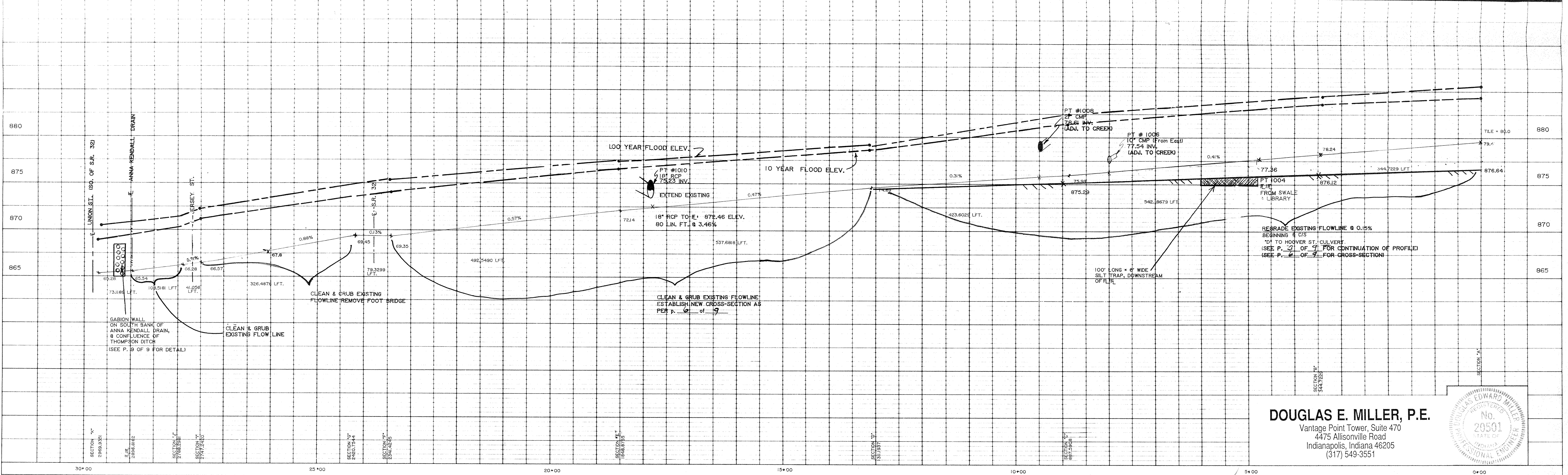
STR 14 REPAIR FL
GROUT TILE 10 NORTH OF STR 14
15 & 17 ± JOINTS NORTH OF STR 14 NEED GROUT
STR 8 @ STR #13 OK
GROUT AROUND TILE 10 IN @ JOINT 7
7 JOINTS SOUTH OF STR #13 NEEDS GROUT TO FILL
STR 12 OK
STR 11 OK ADD 1 STEP (M.S.)
678 JOINTS GROUT FL SOUTH STR. 11
STR 10 ADD STEPS (C.S.)
1 JOINT SOUTH STR 10 GROUT JOINT SIZE OF PIPE @ TOP OF PIPE (W.S.)
10 JOINTS SOUTH STR 10 GROUT FL (BRIDGE W/P) WEST
STR 9 ADD STEPS WESTSIDE CUT OFF REGR
STR 8 ADD STEPS DESS UP FLOWLINE REMOVE EXCESS CONC
CUT TILE OFF FLUSH AND GROUT BETWEEN 7 & 8
STR 7 OK
STR 6 GROUT SMOOTH REMOVE DEBRIS FROM FL
* 13 JOINTS SOUTH OF STR 6 GROUT TILE
* 11 JOINT - GROUT TILE
* 9 JOINTS - SMOOTH W/STE W/ TILE
#5 ADD STEPS
REPAIR PIPE @ WHERE LINE CROSSES BETWEEN
#4 ADD STEPS CUT OFF METAL STRIPS 1 JOINT UPSTREAM OF STR #4 GROUT JOINT

STR 0
#3 OK
#2 Needs concrete flowline & beachballs & 1 more step
#1 OK

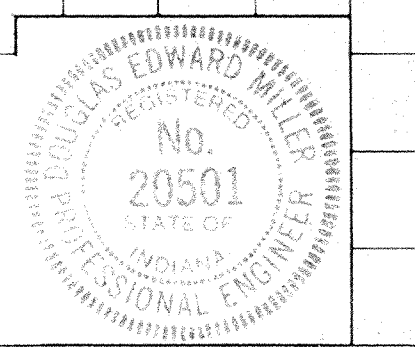
DOUGLAS E. MILLER P.E.
10 JAN 1990

PLAN
 SURVEYED
 PLOTTED
 NOTE BOOK
 GRADES CHECKED
 STRUCTURE NOTATIONS CHECKED

PROFILE
 SURVEYED
 PLOTTED
 NOTE BOOK
 GRADES CHECKED
 STRUCTURE NOTATIONS CHECKED



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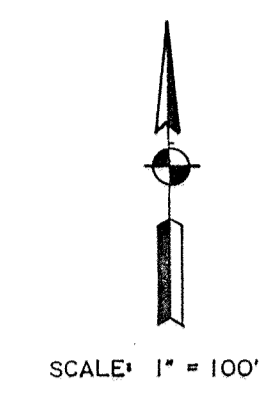
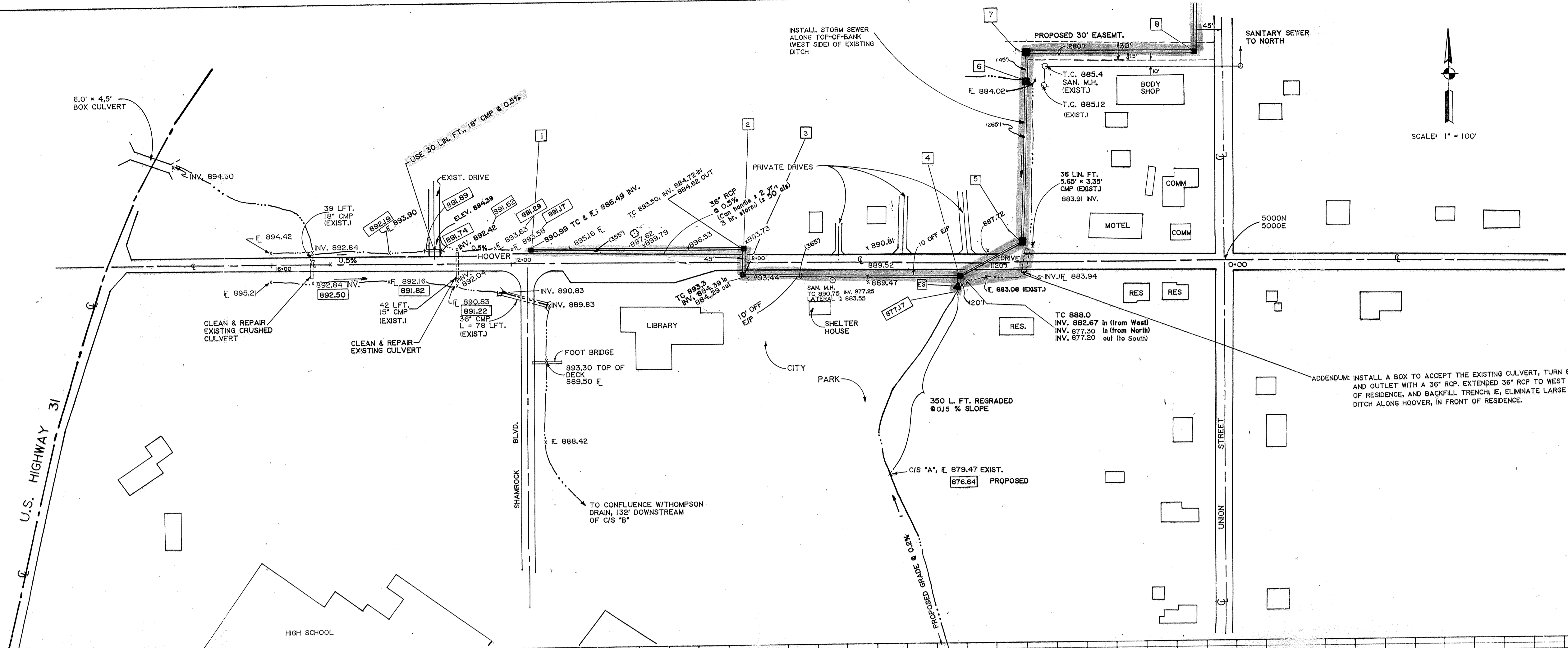


PROJECT NO.	LINE	SHEET NO.	TOTAL SHEETS	FILE
		2	9	

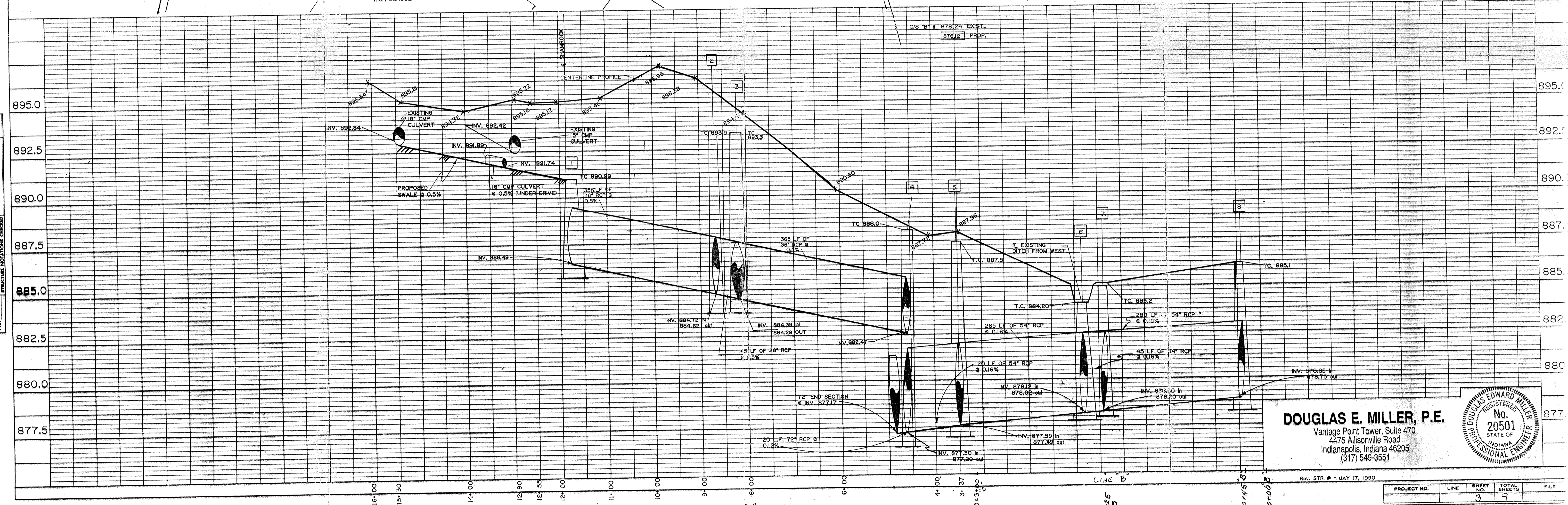
STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IND.				

PLAN	DATE	BY
REVISION		
NOTED		
ADJUSTMENT CHECKED		
ET. OF WAY CHECKED		
NOTE BOOK		
No.		

PROFILE	DATE	BY
REVISION		
NOTED		
GRADES CHECKED		
STRUCTURE INDICATIONS CHECKED		
NOTE BOOK		
No.		



ADDENDUM: INSTALL A BOX TO ACCEPT THE EXISTING CULVERT, TURN 90° AND OUTLET WITH A 36" RCP. EXTENDED 36" RCP TO WEST E. OF RESIDENCE, AND BACKFILL TRENCH IE, ELIMINATE LARGE DITCH ALONG HOOVER, IN FRONT OF RESIDENCE.



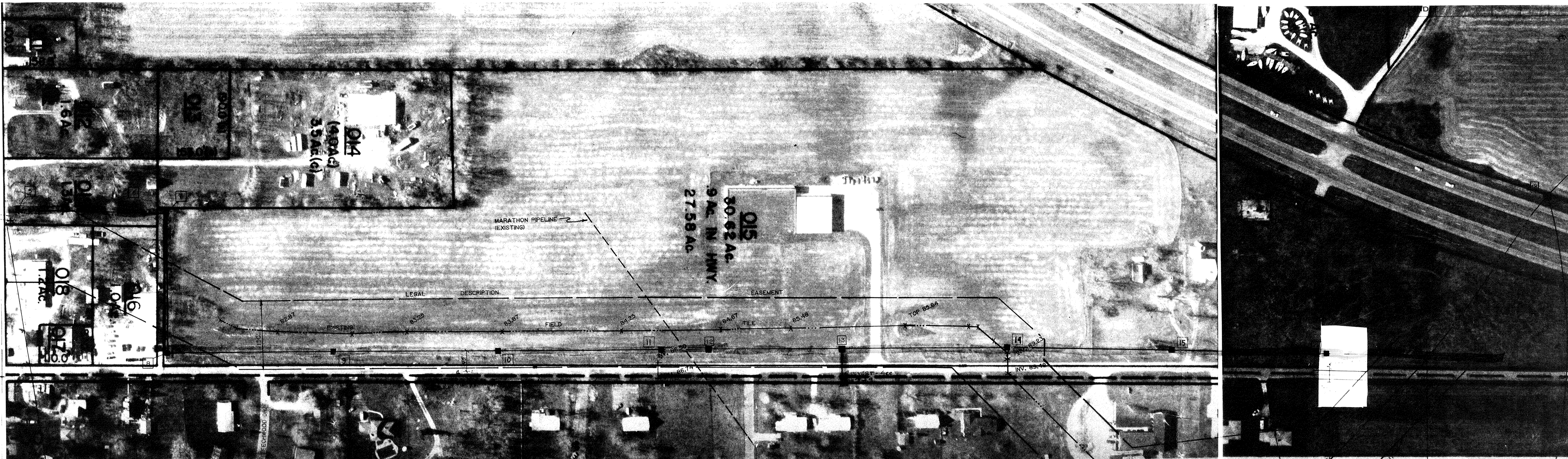
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Rev. STR # - MAY 17, 1990

PROJECT NO.	LINE	SHEET NO.	TOTAL SHEETS	FILE
		3	9	

PLAN



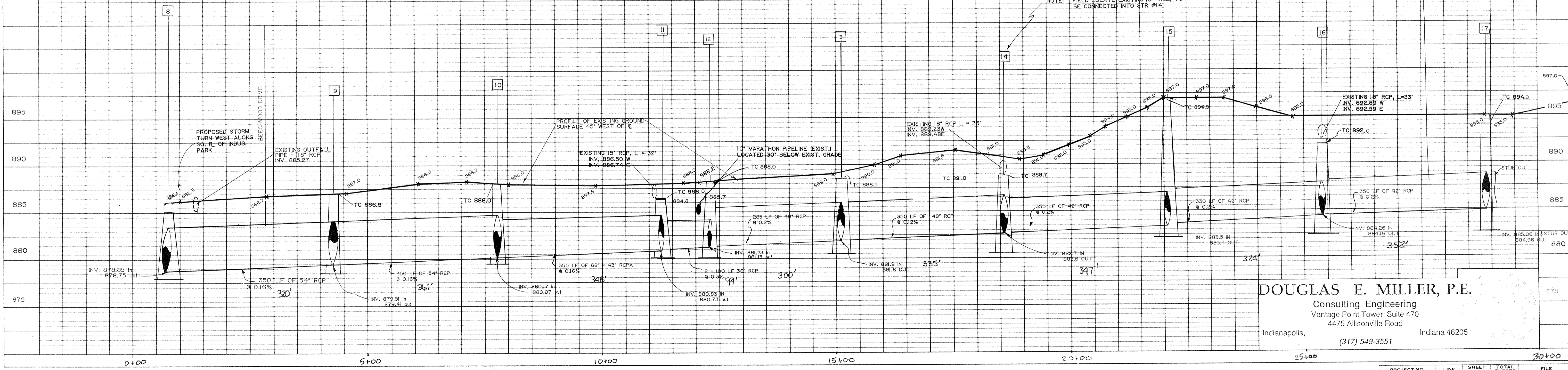
EXISTING 5.66' x 3.33' CMP R/CV. TO 34' CMP, L=36', 330' W OF UNION ST.
 NORTH INV. = 883.91, SOUTH INV. = 883.64

INTERSECT TILE WITH NEW SYSTEM AT THIS POINT - TO BE LOCATED AT TIME OF CONSTRUCTION (ADJ. TO UNION)
 NOTE - INSTALL A CATCH BASIN FOR THE EXISTING 6" CLAY TILE LOCATED APPROX. 6FT. SOUTH OF THE EXISTING INLET ON THE WEST SIDE OF US #1 (FIELD VERIFY)

DATE: _____
 BY: _____
 SURVEYED: _____
 PROFILE
 NOTE BOOK: _____
 GRADE CHECKED: _____
 STRUCTURE INDICATIONS CHECKED: _____

NOTE - STR #12 SHALL BE CONSTRUCTED ON SITE, TO ACCOMMODATE THE TWIN 36" RCP AND THE CASTING CLEARANCE FOR #11.

NOTE - FIELD LOCATE EXISTING 10" TILE, TO BE CONNECTED INTO STR #14.



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PROJECT NO.	LINE	SHEET NO.	TOTAL SHEETS	FILE
		4	9	