

PLANS SYMBOLS

STATE LINE
COUNTY LINE
TOWNSHIP OR RANGE LINE
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
RIGHT-OF-WAY LINE
PRESENT RIGHT-OF-WAY LINE
CONTROL OF ACCESS LINE
PROPERTY LINE (Except Land Lines)
VACATED PLATTED PROPERTY
CORPORATE OR CITY LIMITS
TRUNK HIGHWAY CENTER LINE
RETAINING WALL
RAILROAD
RAILROAD RIGHT-OF-WAY LINE
RIVER OR CREEK
DRY RUN
DRAINAGE DITCH
DRAIN TILE
CULVERT
DROP INLET
GUARD RAIL
BARBED WIRE FENCE
WOVEN WIRE FENCE
CHAIN LINK FENCE
RAILROAD SNOW FENCE
STONE WALL OR FENCE
HEDGE
RAILROAD CROSSING SIGN
RAILROAD CROSSING BELL
ELECTRIC WARNING SIGN
CROSSING GATE
MEANDER CORNER

SPRINGS
MARSH
TIMBER
ORCHARD
BRUSH
NURSERY
CATCH BASIN
FIRE HYDRANT
CATTLE GUARD
OVERPASS (Highway Over)
UNDERPASS (Highway Under)
BRIDGE
BUILDING (One Story Frame)
F-FRAME C-CONCRETE
S-STONE T-TILE
B-BRICK ST-STUCCO
IRON PIPE OR ROD
MONUMENT (STONE, CONCRETE, OR METAL)
WOODEN HUB
GRAVEL PIT
SAND PIT
BORROW PIT
ROCK QUARRY

GROSS LENGTH 4,712 FEET = 0.892 MILES
BRIDGES LENGTH FEET = MILES
EXCEPTIONS-LENGTH FEET = MILES
NET LENGTH 4,712 FEET = 0.892 MILES

UTILITIES SYMBOLS

POWER POLE LINE
TELEPHONE OR TELEGRAPH
POLE LINE
JOINT TELEPHONE AND POWER
ON POWER POLES
ON TELEPHONE POLES
ANCHOR
STEEL TOWER
STREET LIGHT
PEDESTAL TELEPHONE CABLE
TERMINAL
GAS MAIN
WATER MAIN

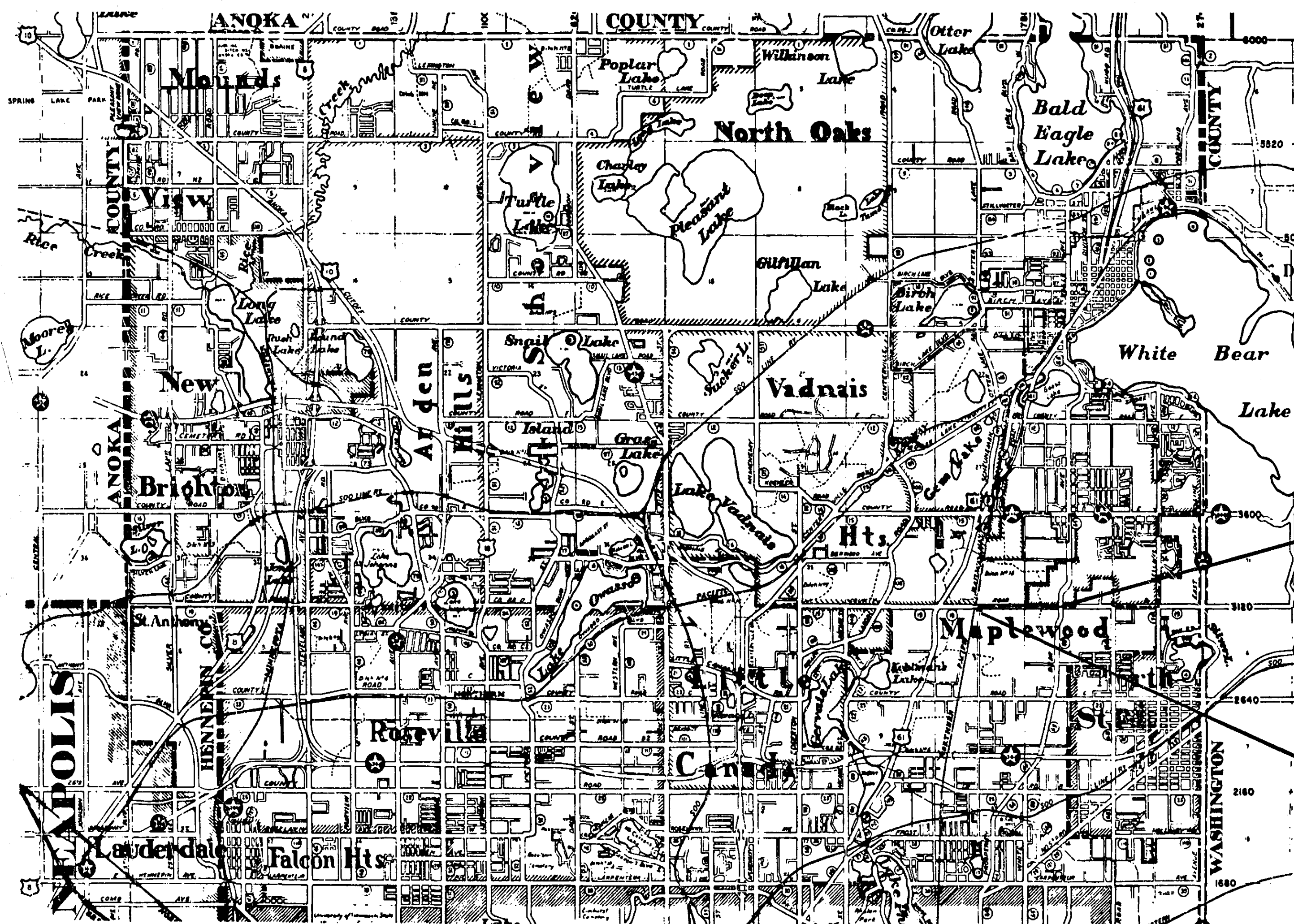
CONDUIT
TELEPHONE CABLE IN CONDUIT
ELECTRIC CABLE IN CONDUIT
TELEPHONE-MANHOLE
ELECTRIC MANHOLE
BURIED TELEPHONE CABLE
BURIED ELECTRIC CABLE
AERIAL TELEPHONE CABLE
SANITARY SEWER
STORM SEWER (INR)
STORM SEWER (PROR)
SEWER MANHOLE



NOTE: SECTION NUMBERS READ FROM THE SOUTH

PIT DATA

PIT NO. Located in Dead Haul
PIT NO. Located in Dead Haul



CITY OF ST. PAUL

DESIGN DESIGNATION - # 140

ADT 1973 = 2000
ADT 1996 = 13,400
Σ NIB 20 YR. = 370,000
STABILOMETER "R" VALUE = 16
DESIGN LOAD = 9 TON

DESIGN SPEED
STA. 3+44 to 5+75 = 15 M.P.H.
STA. 5+75 to 50+56 = 45 M.P.H.

THE "MINNESOTA HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION" DATED JANUARY 1, 1972 AS AMENDED BY "SUPPLEMENTAL SPECIFICATIONS" DATED APRIL 1, 1976 SHALL GOVERN.

OFFICE OF COUNTY ENGINEER RAMSEY COUNTY

CONSTRUCTION PLAN
FOR STORM SEWER, CONCRETE CURB AND GUTTER AND
BITUMINOUS SURFACING

COUNTY STATE AID HIGHWAY NO. 19

FROM: AT A POINT 100 FEET SOUTH OF THE NORTH 1/4 CORNER OF SECTION 3, TOWNSHIP 29, RANGE 22.

TO: A POINT 631 FEET WEST OF THE NORTH 1/4 CORNER OF SECTION 2, TOWNSHIP 29, RANGE 22.

BETWEEN: HAZELWOOD AVENUE AND WHITE BEAR AVENUE

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	ESTIMATED QUANTITIES & STANDARD PLATES
3	TYPICAL SECTIONS & MISC. DETAILS
4-7	PLAN & PROFILE STREETS
8-11	PLAN & PROFILE STORM SEWER
12-13	DRAINAGE CHART & MISC. DETAILS

END PROJECT
STA. 50+56.00

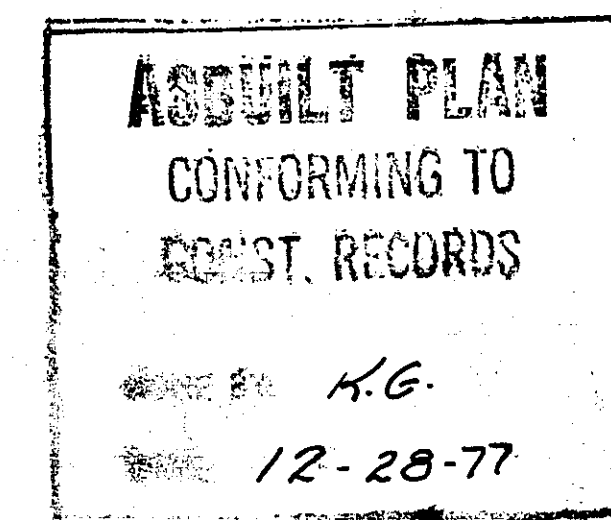
BEGIN PROJECT
STA. 3+44.52

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

William L. Jensen
SUBURBAN ENGINEERING, INC.
DATE 3-22-76 REG. NO. 5830

RECOMMENDED FOR APPROVAL Dean R. Goshen DATE 5/12/76
COUNTY ENGINEER
APPROVED T. F. F. DATE 5/12/76
CHAIRMAN OF THE RAMSEY COUNTY BOARD
APPROVED Robert V. Braton DATE 4/29/76
CITY OF MAPLEWOOD
APPROVED DATE

MINNESOTA STATE HIGHWAY DEPARTMENT
RECOMMENDED FOR APPROVAL Robert V. Braton DATE 6-11-76
DISTRICT STATE AID ENGINEER
RECOMMENDED FOR APPROVAL R. M. Ladd DATE 5-20-76
DISTRICT STATE AID ENGINEER
APPROVAL DATE 5/14/76
STATE AID ENGINEER

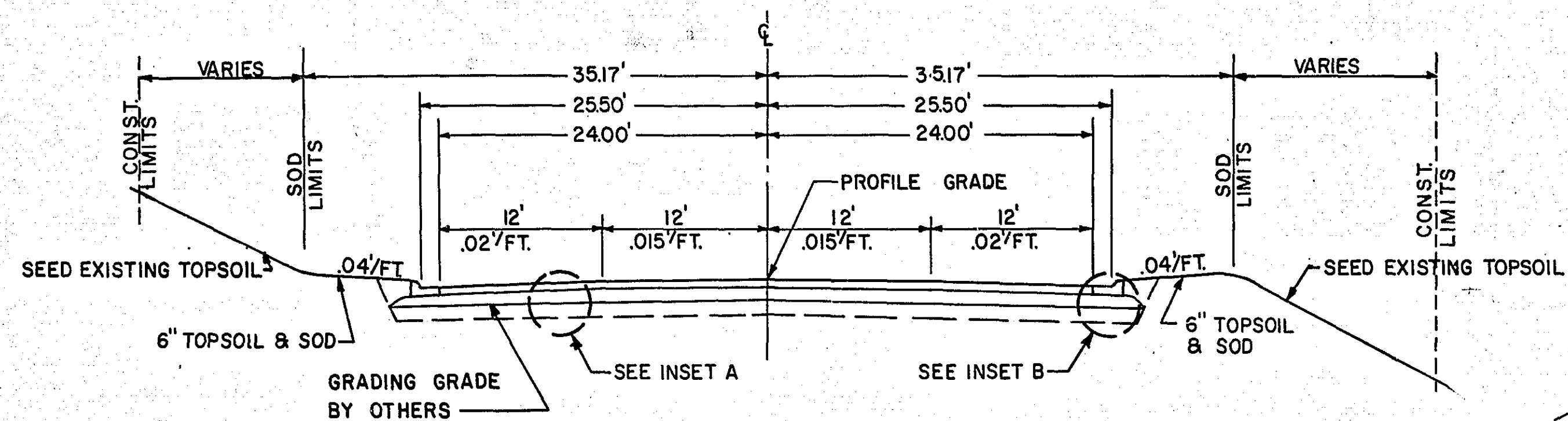


SET NO.

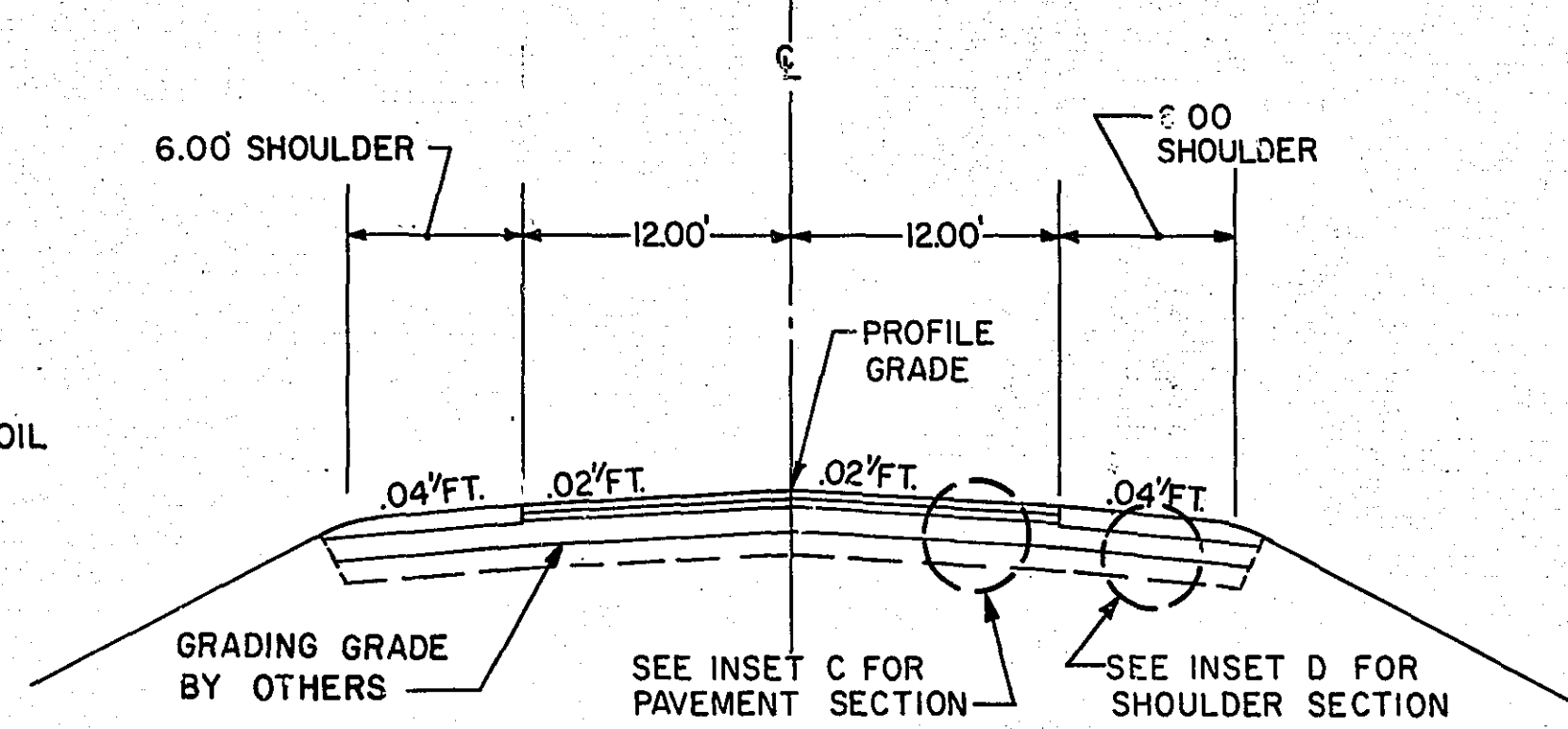
S.A.P. 62-619-02

MICROFILMED Sheet No. 1 of 13 Sheets
RAMSEY CO. ENGR.

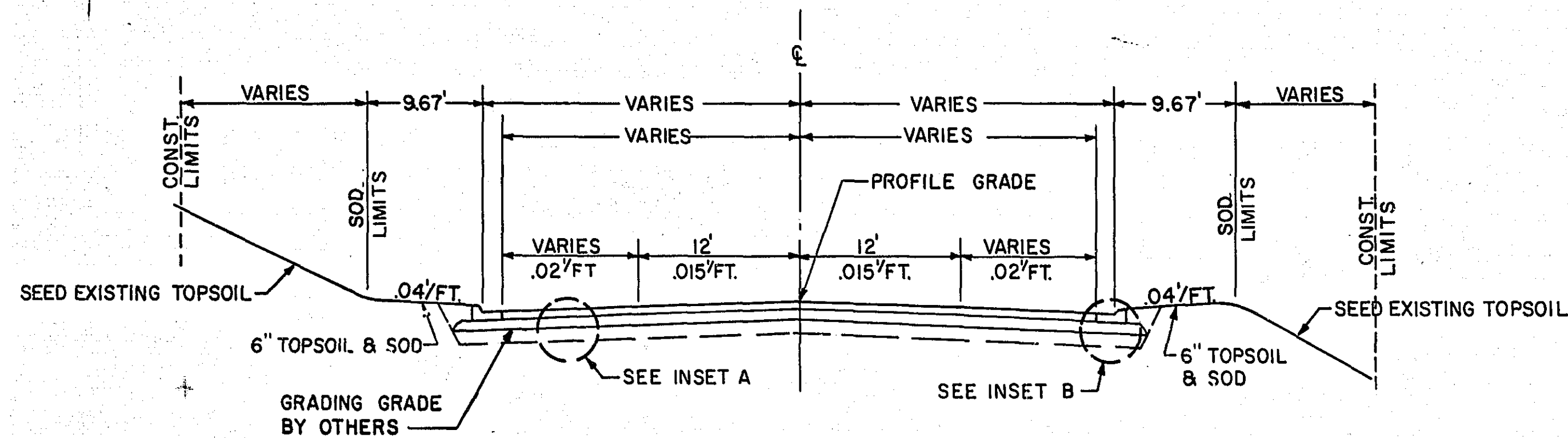
20-111



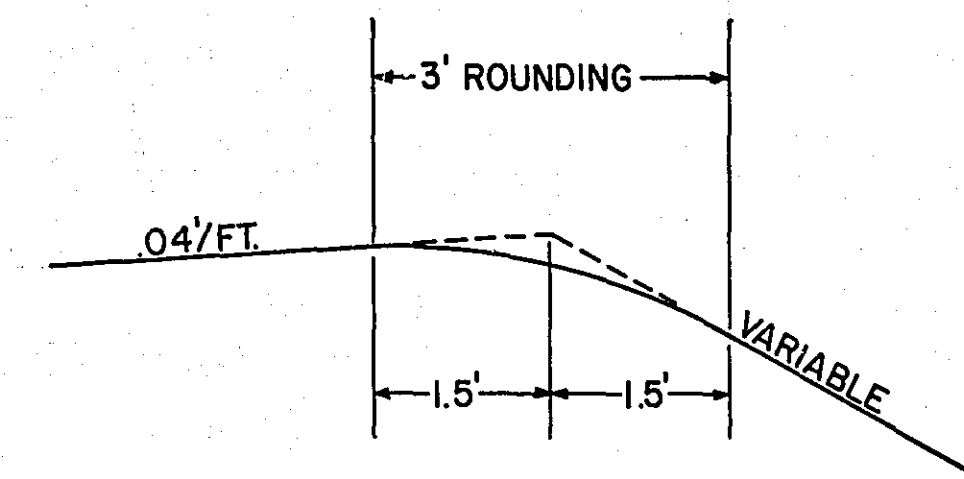
TYPICAL STREET SECTION
STA. 16+25 TO STA. 50+56
Δ STA 32+00 TO STA 37+00
SEE INTERIM SECTION, Sheet 6



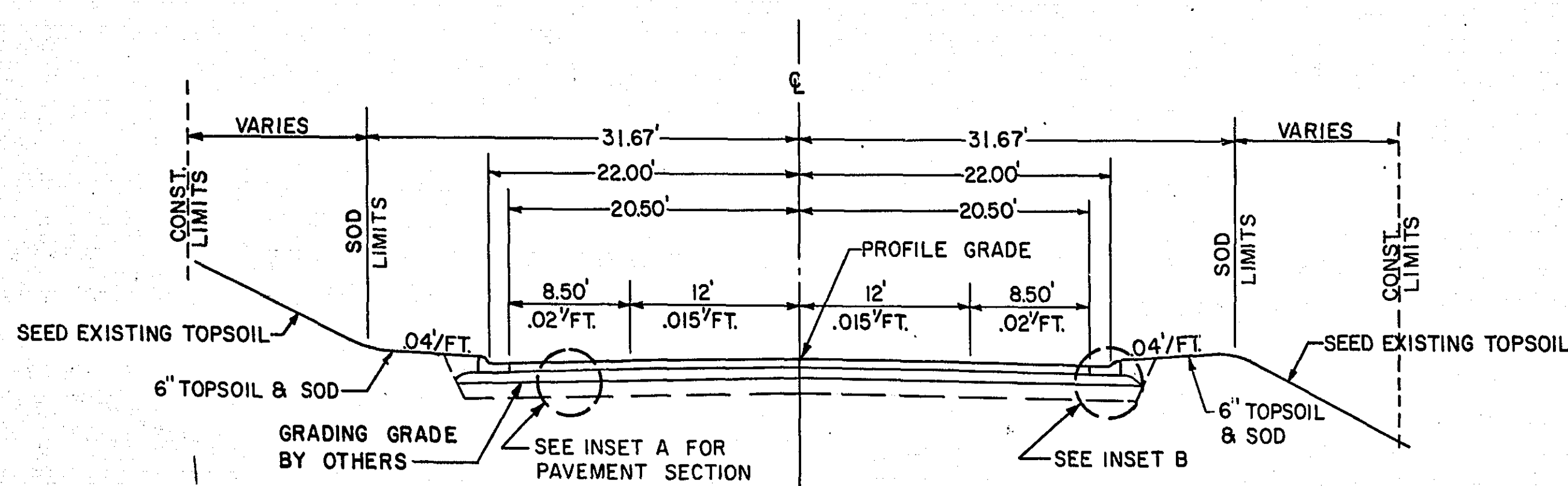
TYPICAL STREET SECTION
STA. 0+00 TO STA. 1+12.96
(CONNECTION TO EXISTING CO. RD. D)



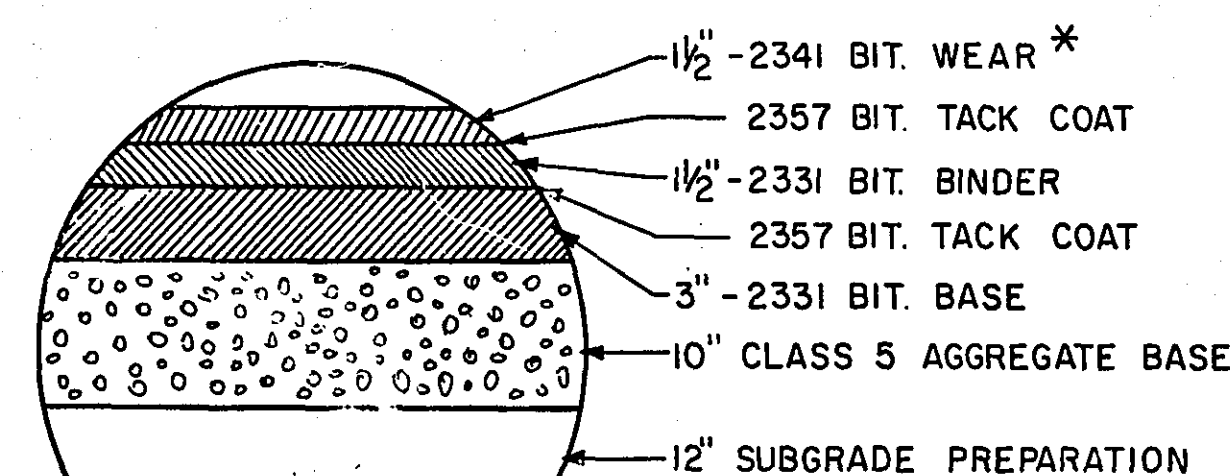
TYPICAL STREET SECTION
STA. 14+50 TO STA. 16+25



SLOPE ROUNDING DETAIL

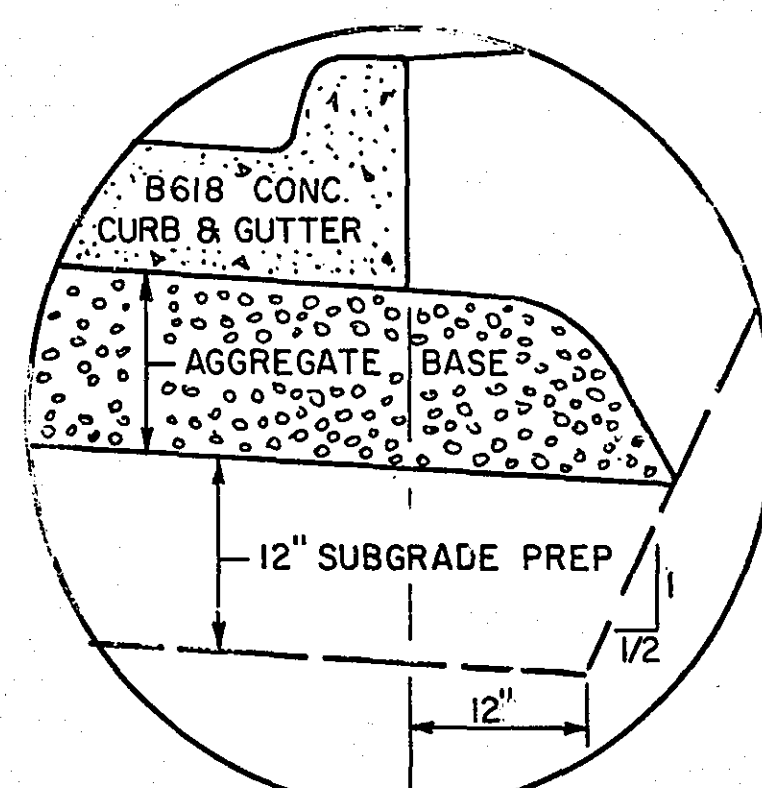


TYPICAL STREET SECTION
STA. 3+44.52 TO STA. 14+50

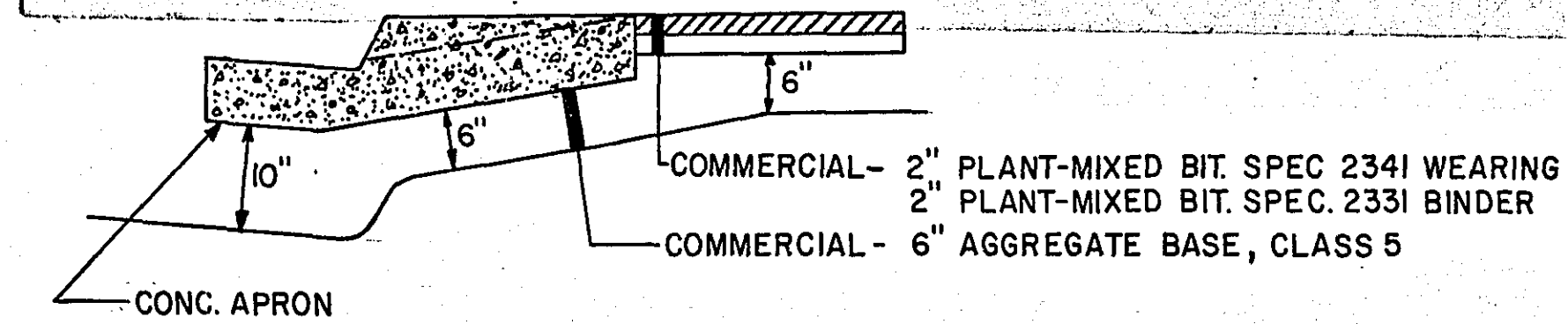
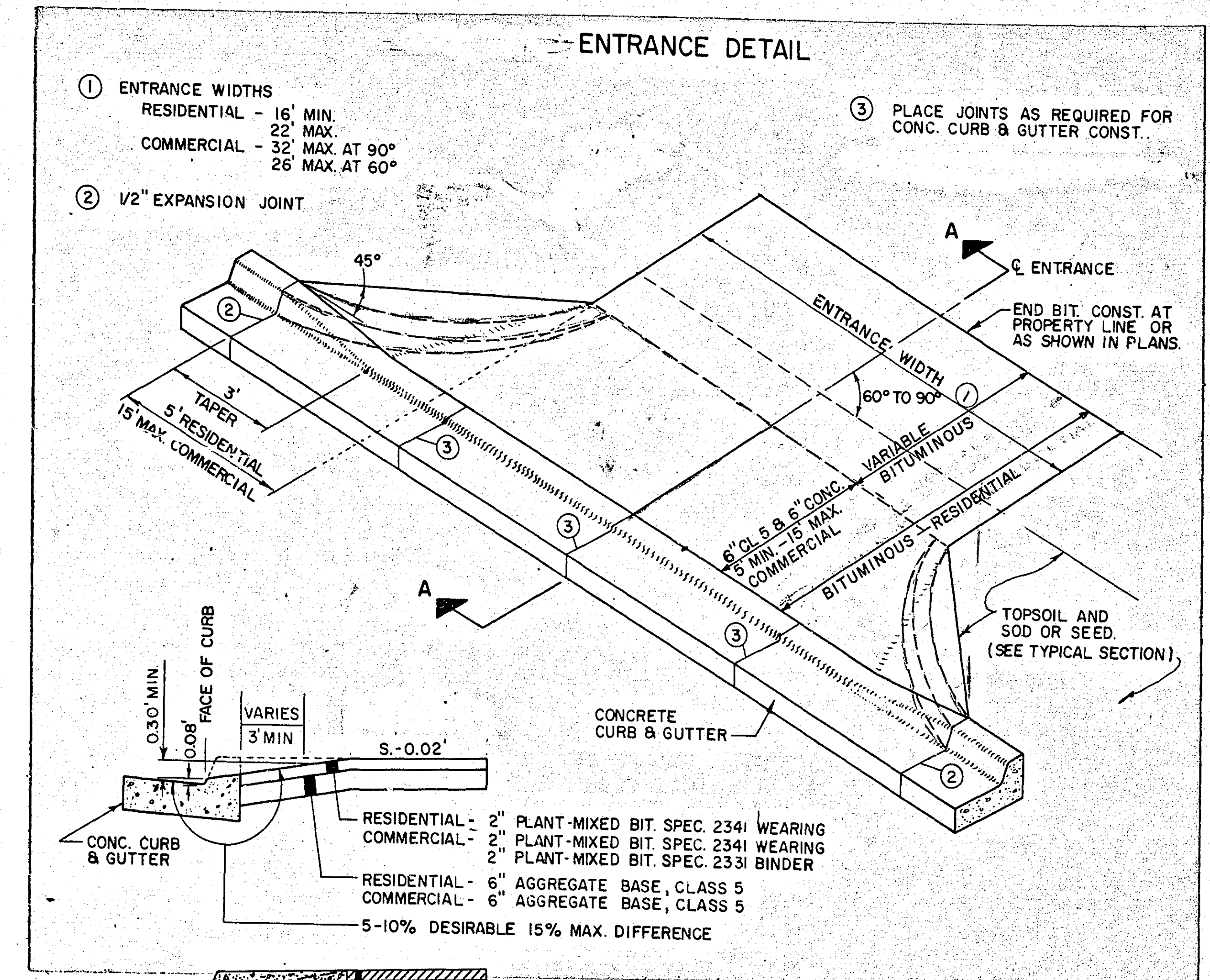


INSET A

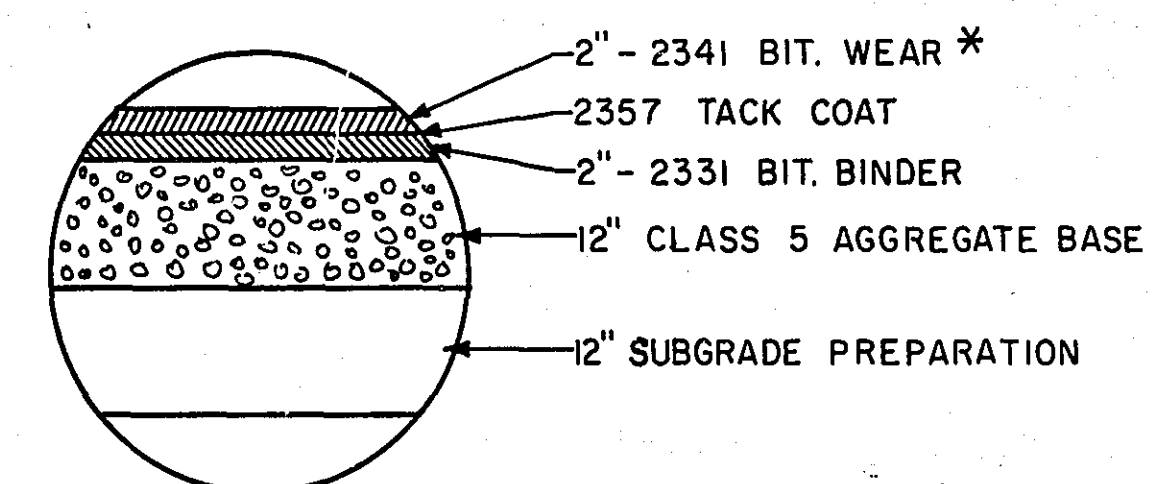
* NOTE: 1-1/2" - 2341 BIT. WEAR
TO BE PLACED DURING
THE 1977 CONSTRUCTION
SEASON. Δ



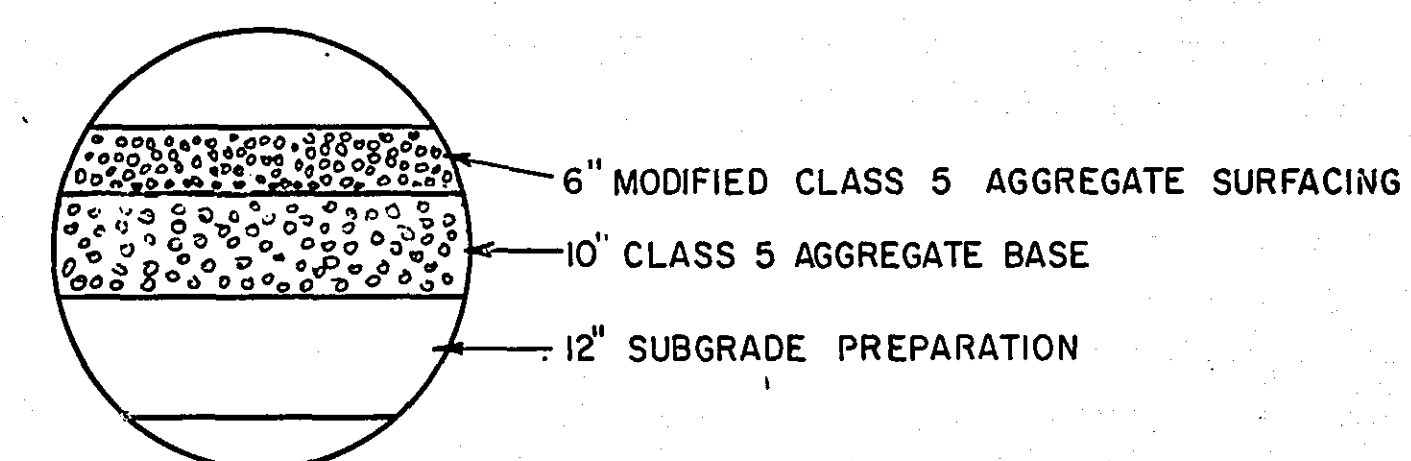
INSET B



SECTIONS A-A



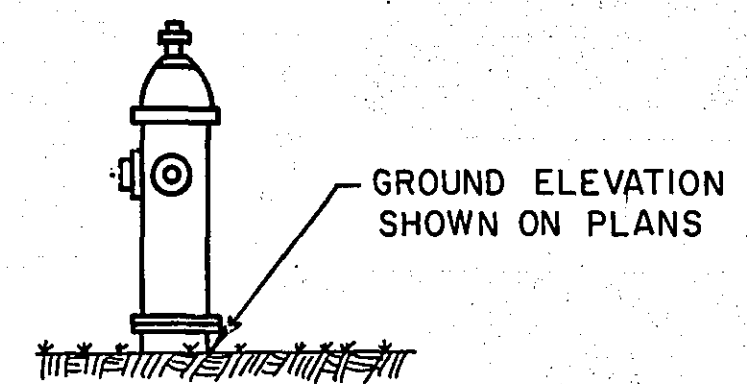
INSET C



INSET D

20' CONCRETE SWALE DETAIL

PAYMENT SHALL BE INCIDENTAL
TO ITEM NO. 2531.501, CONCRETE
CURB & GUTTER - DESIGN B618



HYDRANT ELEVATION
DETAIL

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS

DONE BY:
DATE: 12-28-77

I HEREBY CERTIFY THAT THIS PLAN SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

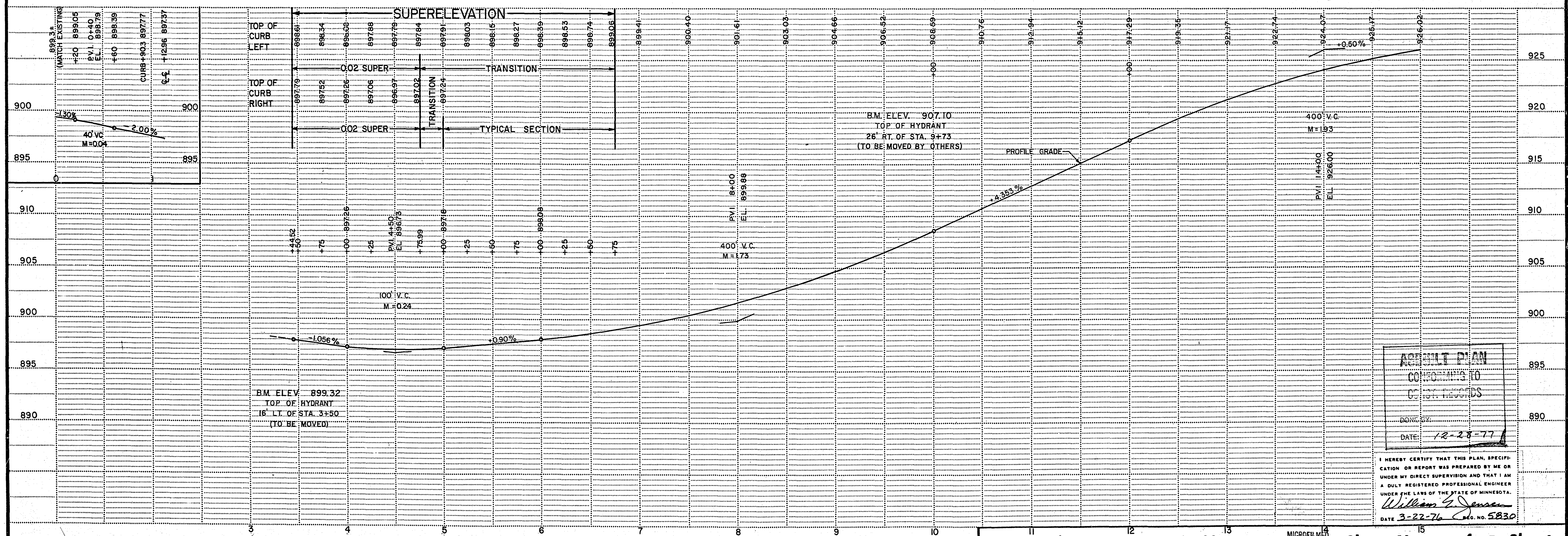
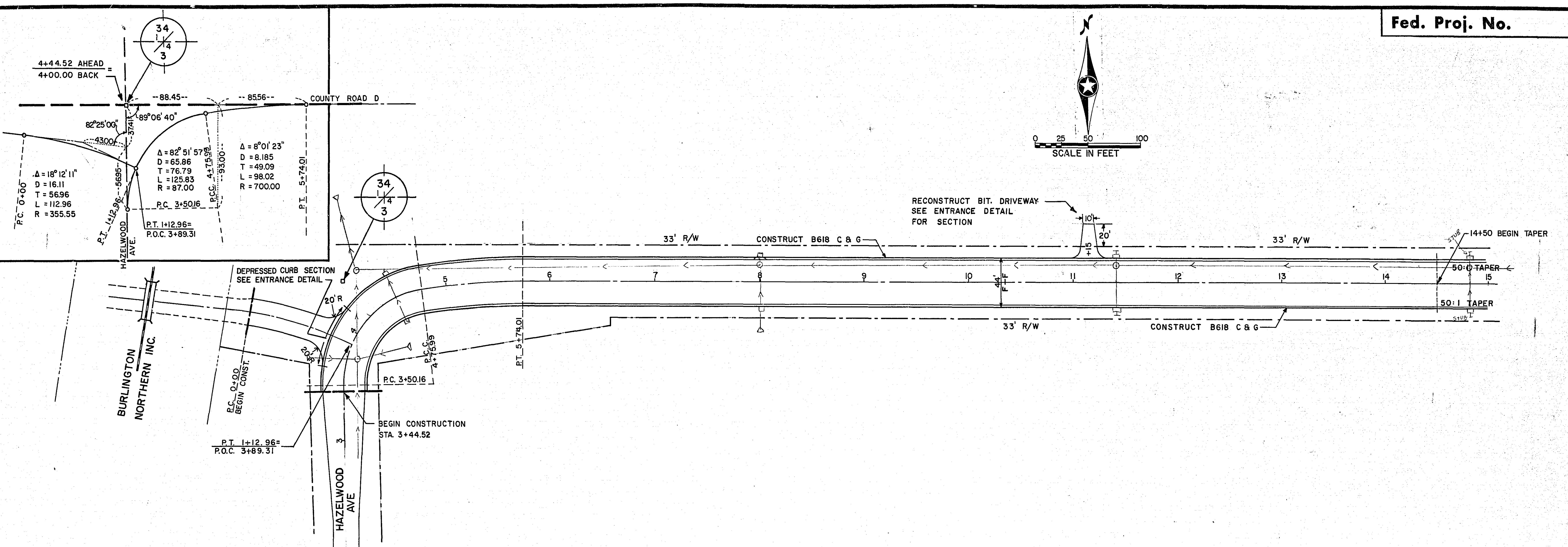
William E. Jensen
DATE 3-22-76 REG. NO. 5830

Δ REVISED BY RAMSEY COUNTY, JUNE 28, 1976

S.A.P. 62-619-02

Sheet No. 3 of 13 Sheets

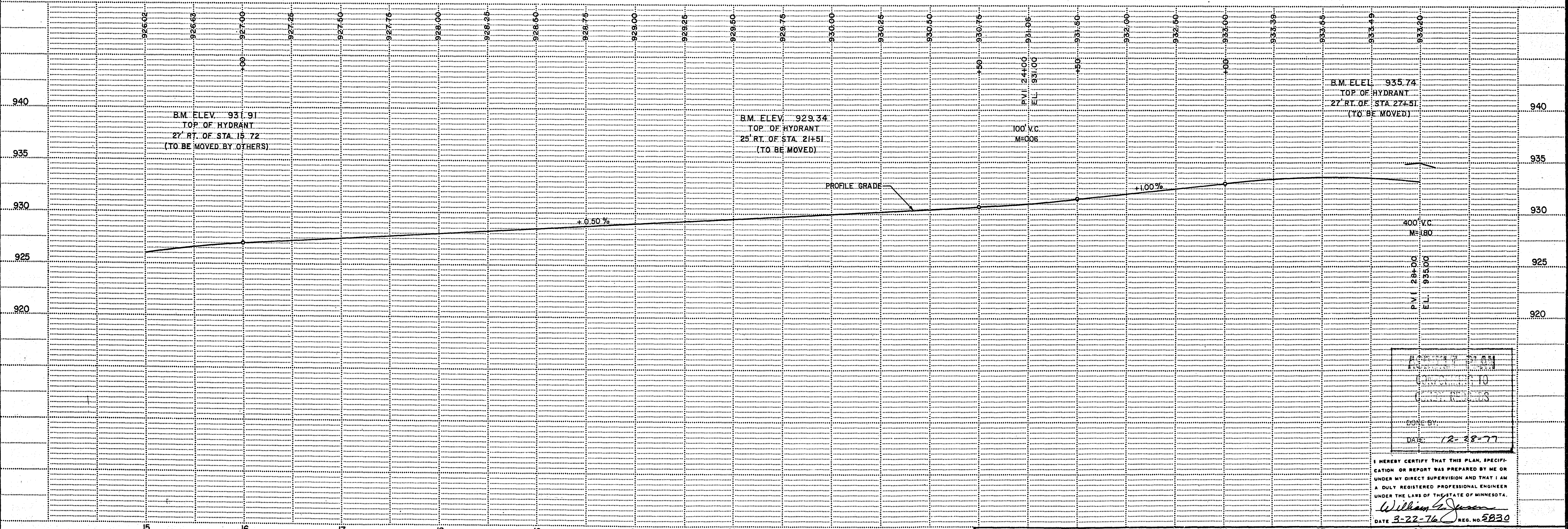
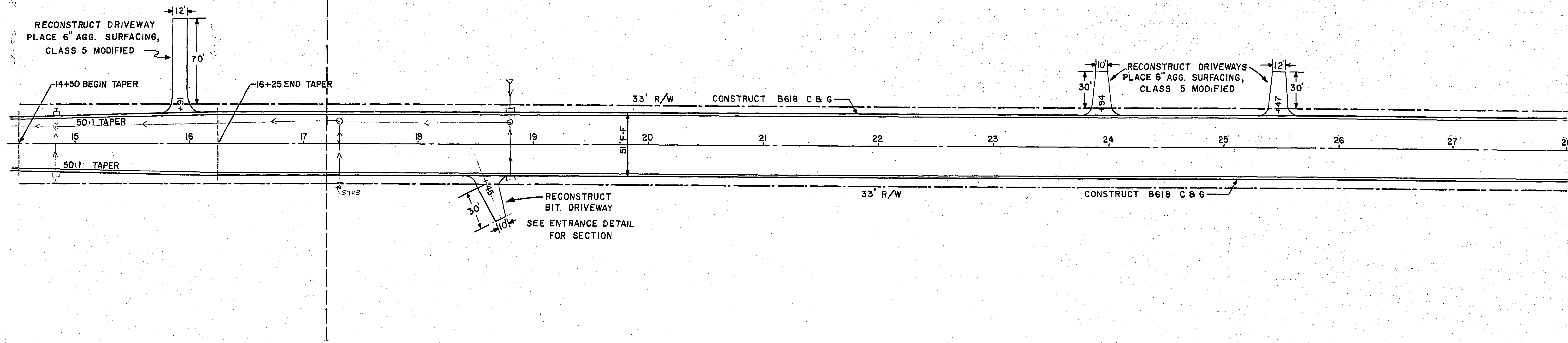
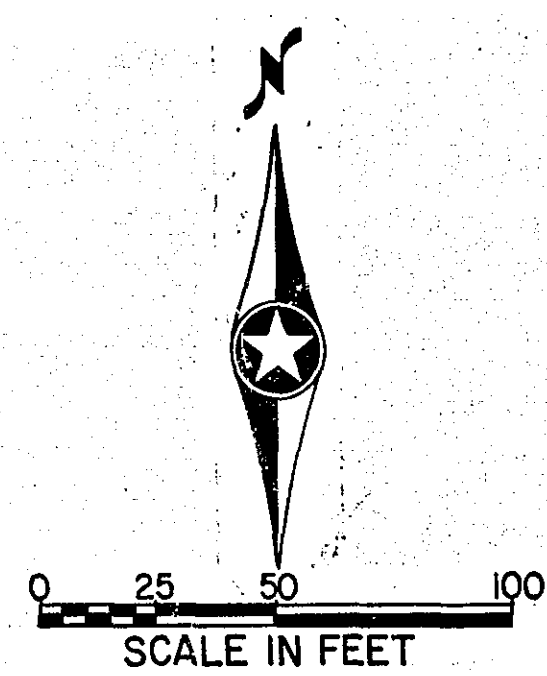
20-111



ASSESSMENT PLAN
 CONFORMING TO
 CITY RECORDS
 DATE: 12-28-77

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 William G. Jensen
 DATE 3-22-76 REG. NO. 5830

SINGLE PLAN, DOTTED
 F. A. ROGERS CO., MINNEAPOLIS, ST. PAUL

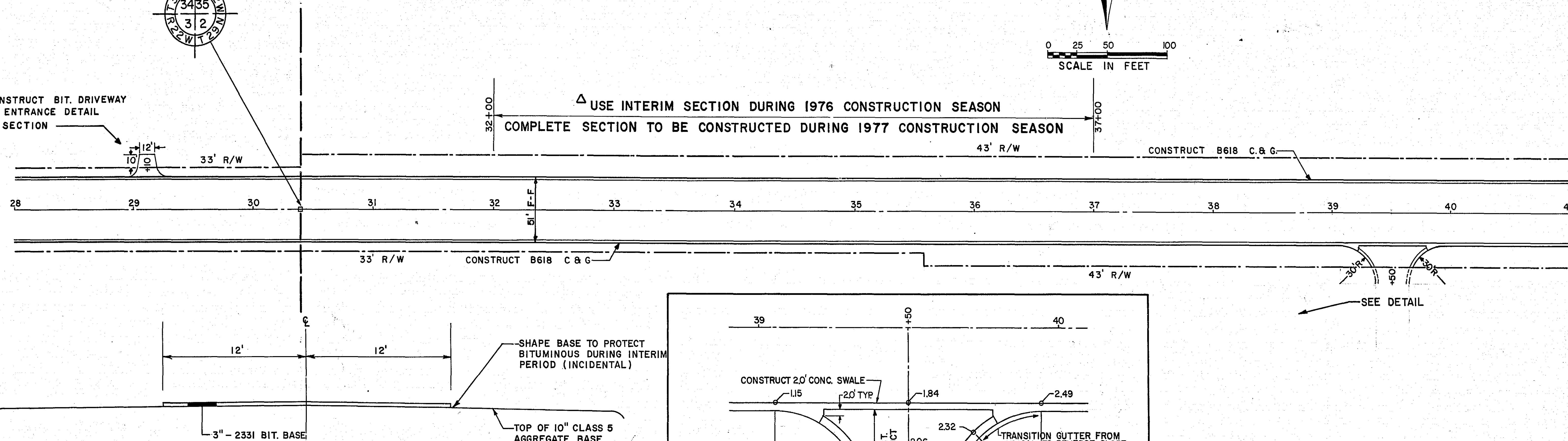


DESIGNED BY	DATE
CHECKED BY	DATE
APPROVED BY	DATE

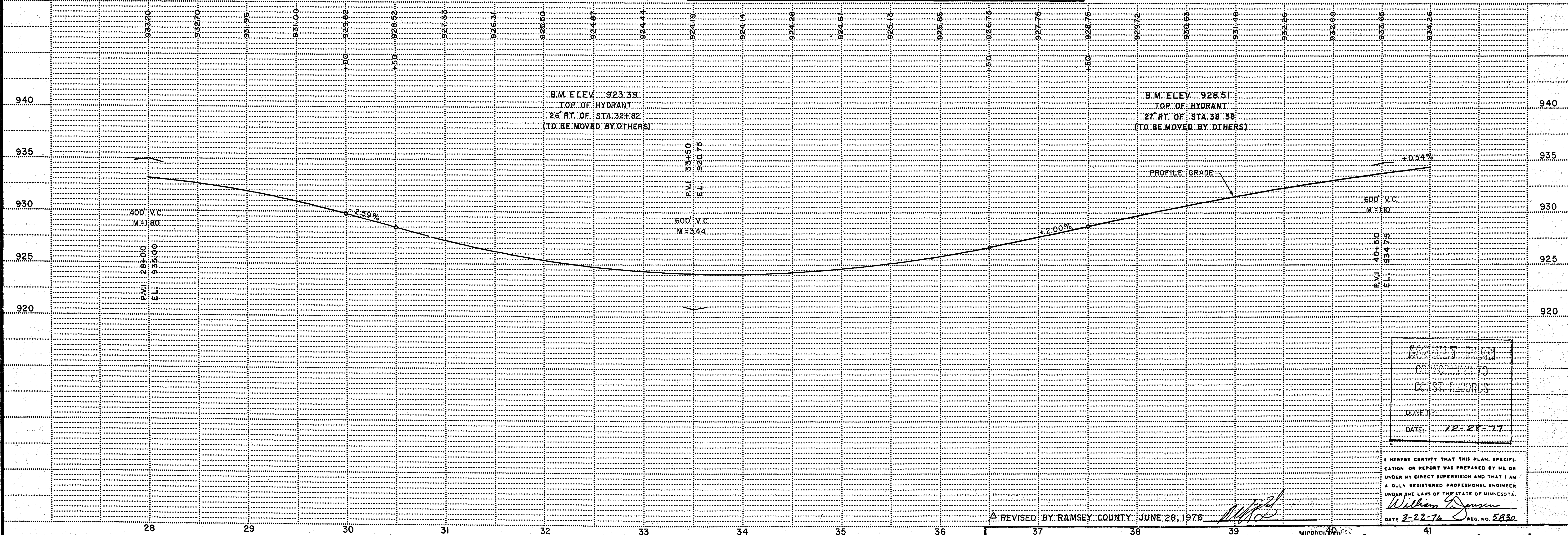
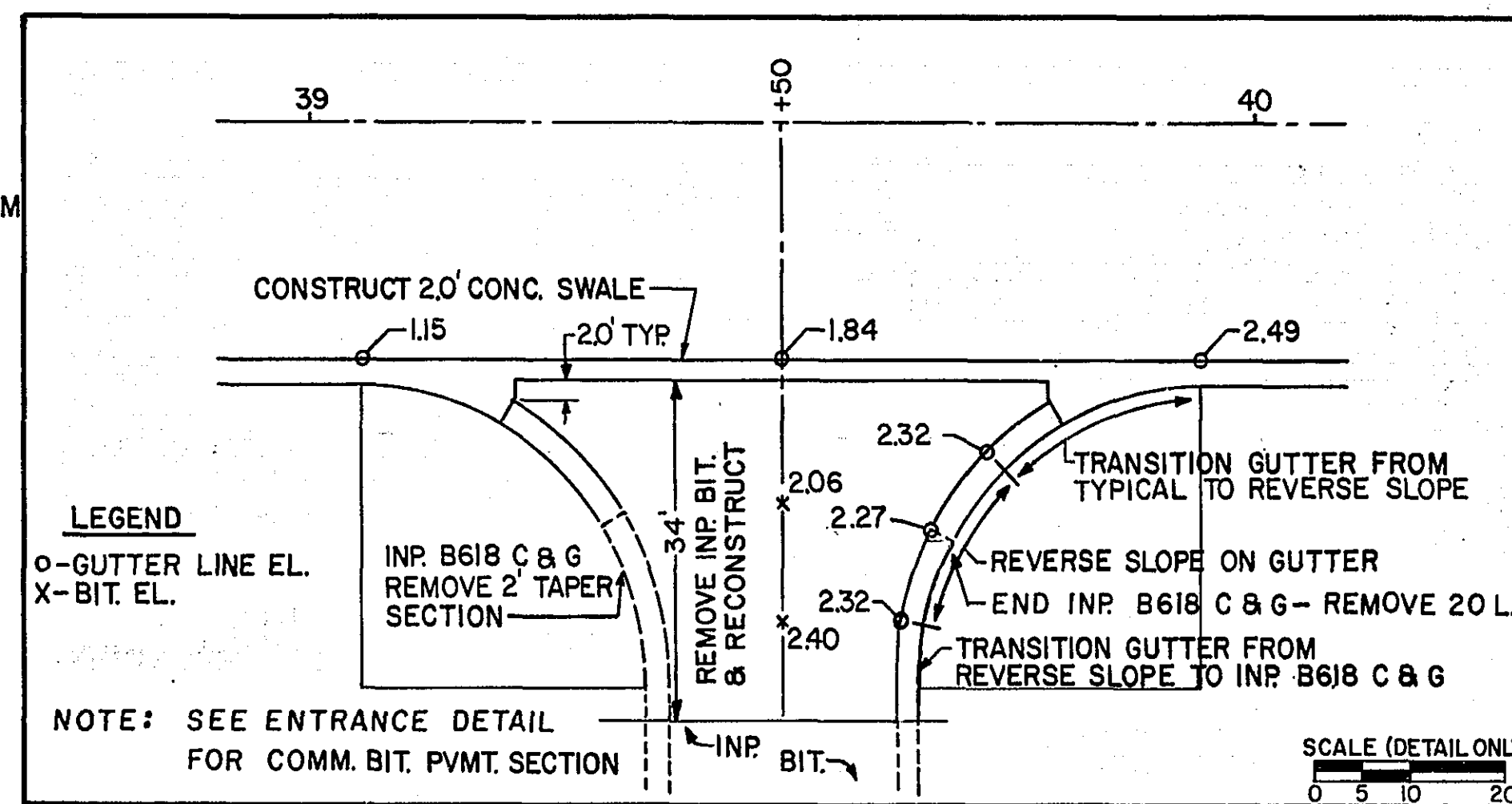
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William J. Jensen
 DATE 3-22-76 REG. NO. 5830

RECONSTRUCT BIT. DRIVEWAY
SEE ENTRANCE DETAIL
FOR SECTION



INTERIM SECTION^Δ
STA. 32+00 TO 37+00

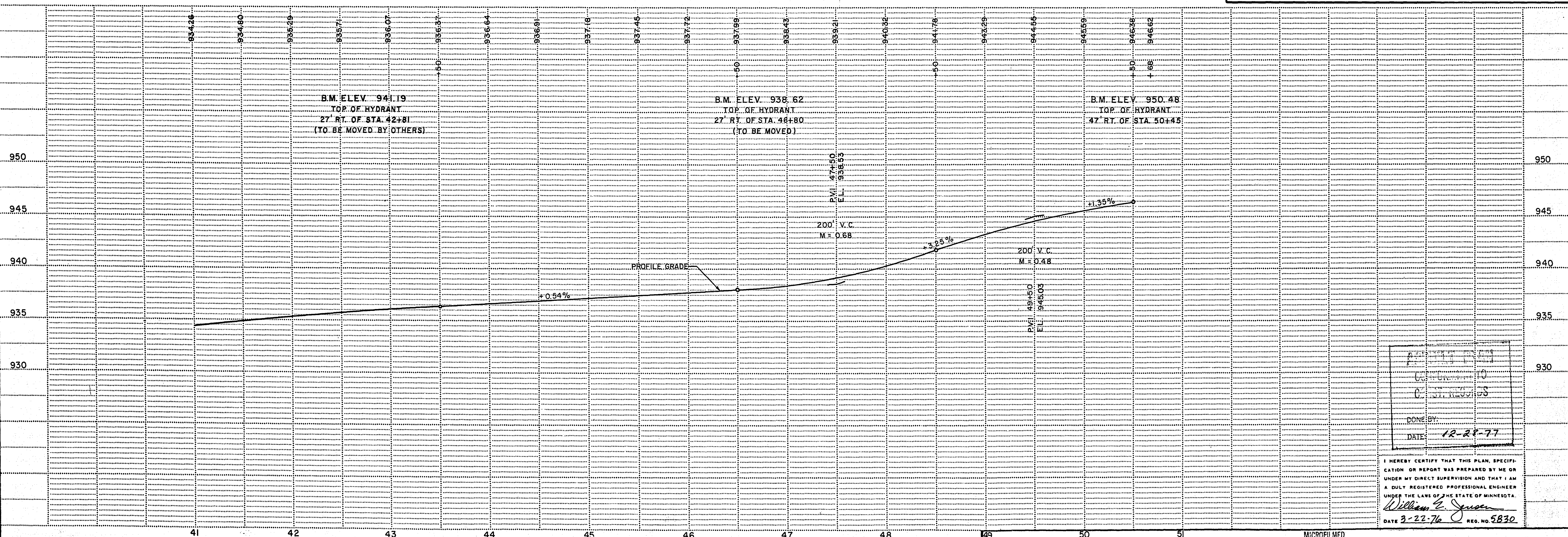
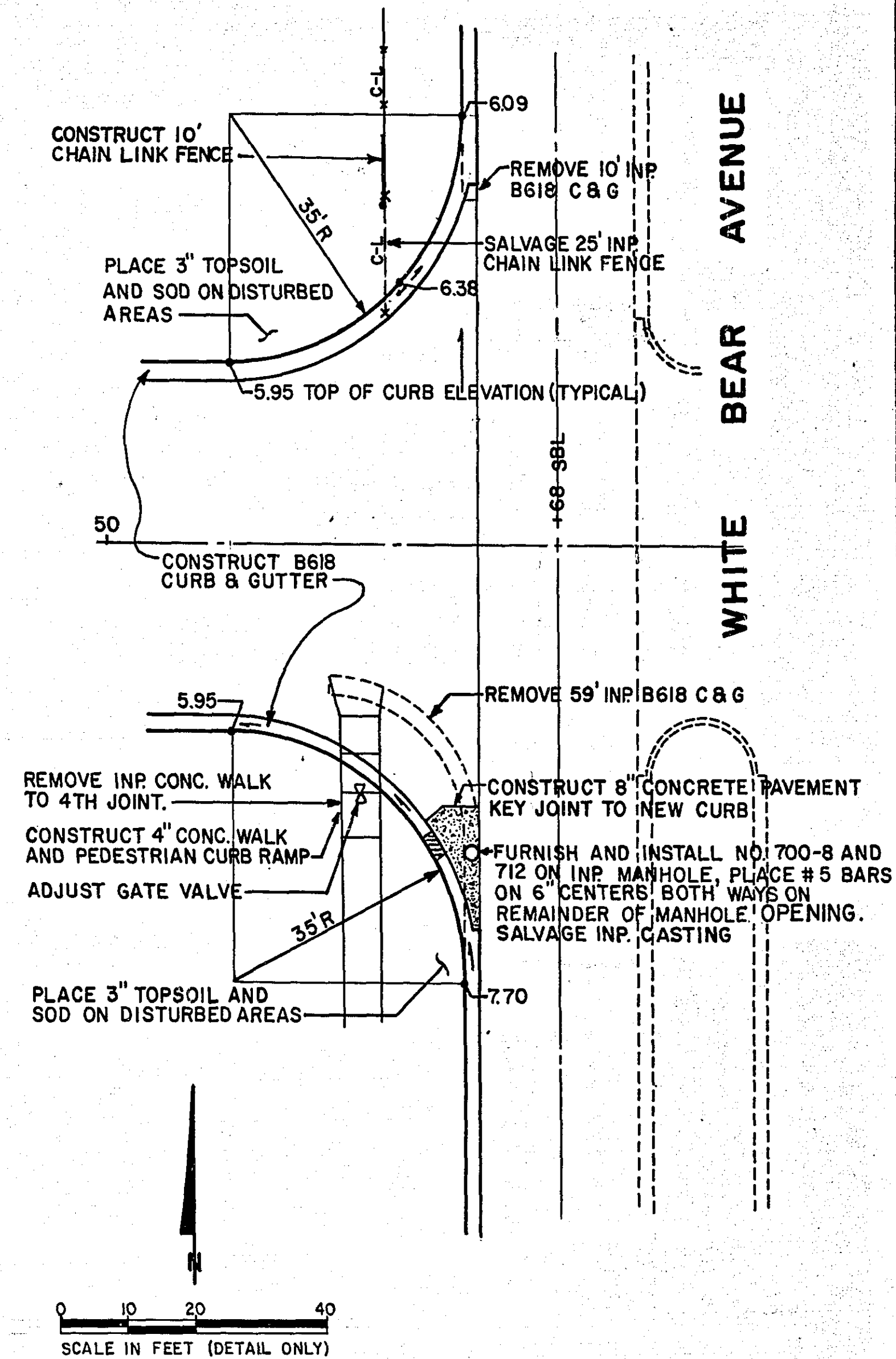
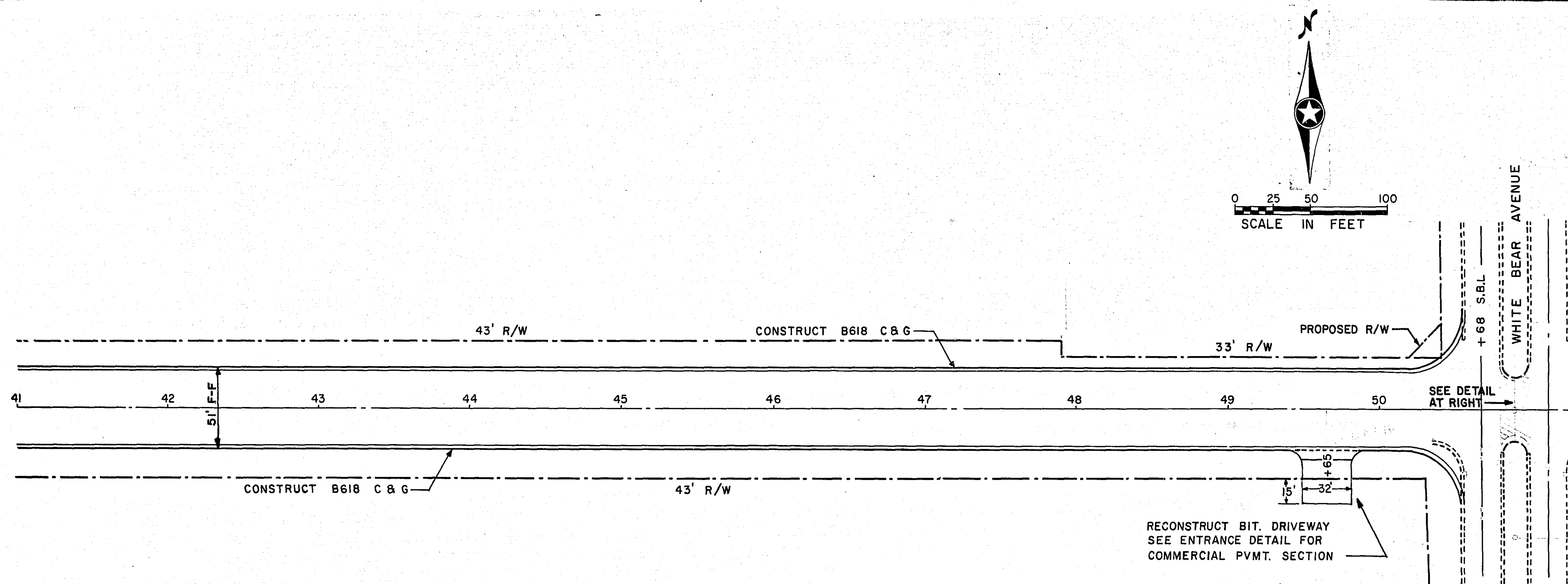


DESIGNED BY	W. J. JENSEN
CHECKED BY	W. J. JENSEN
DATE	12-28-77

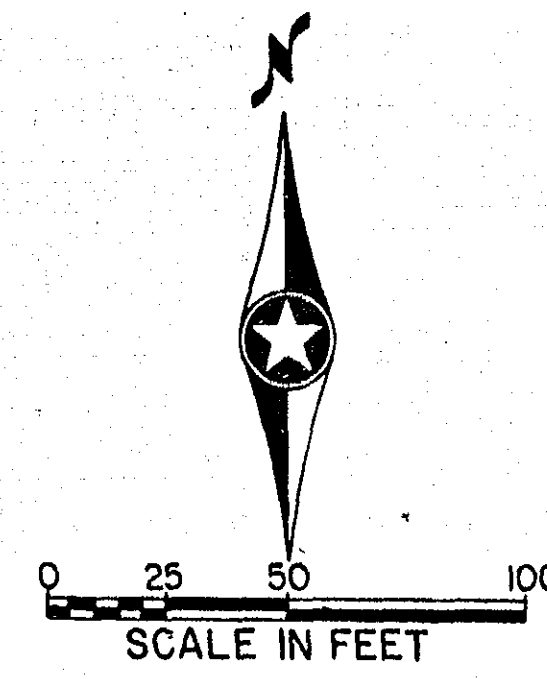
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William J. Jensen
DATE 3-22-76 REG. NO. 5830

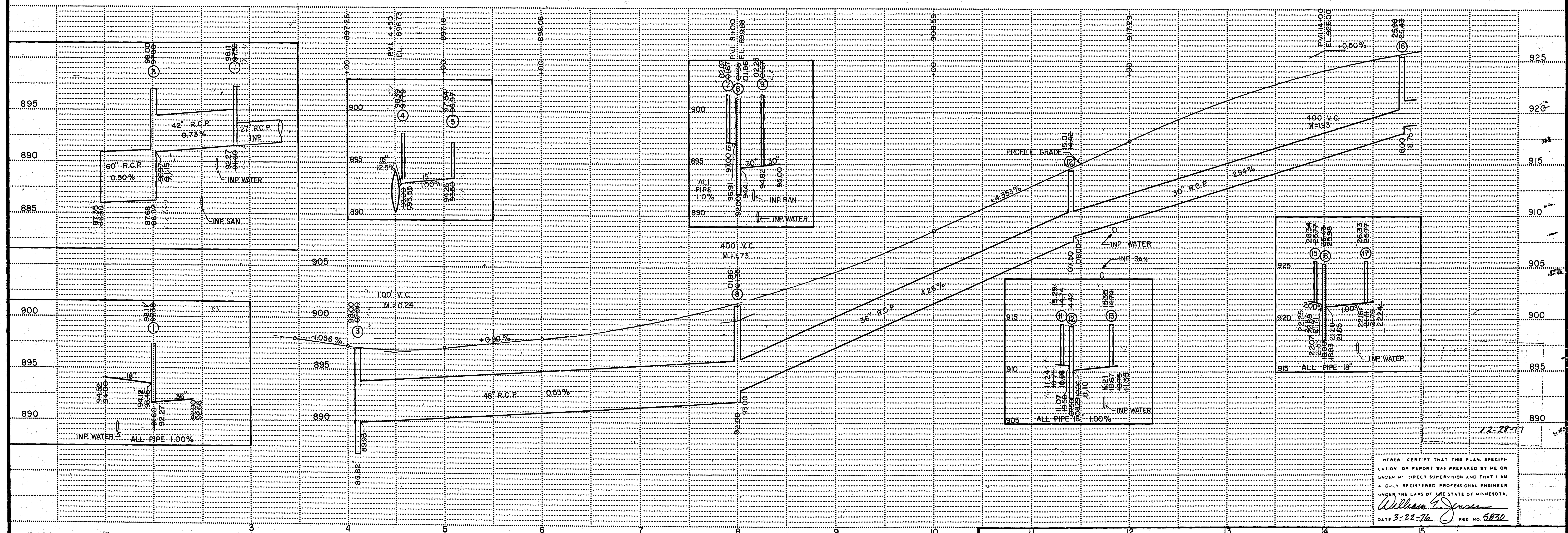
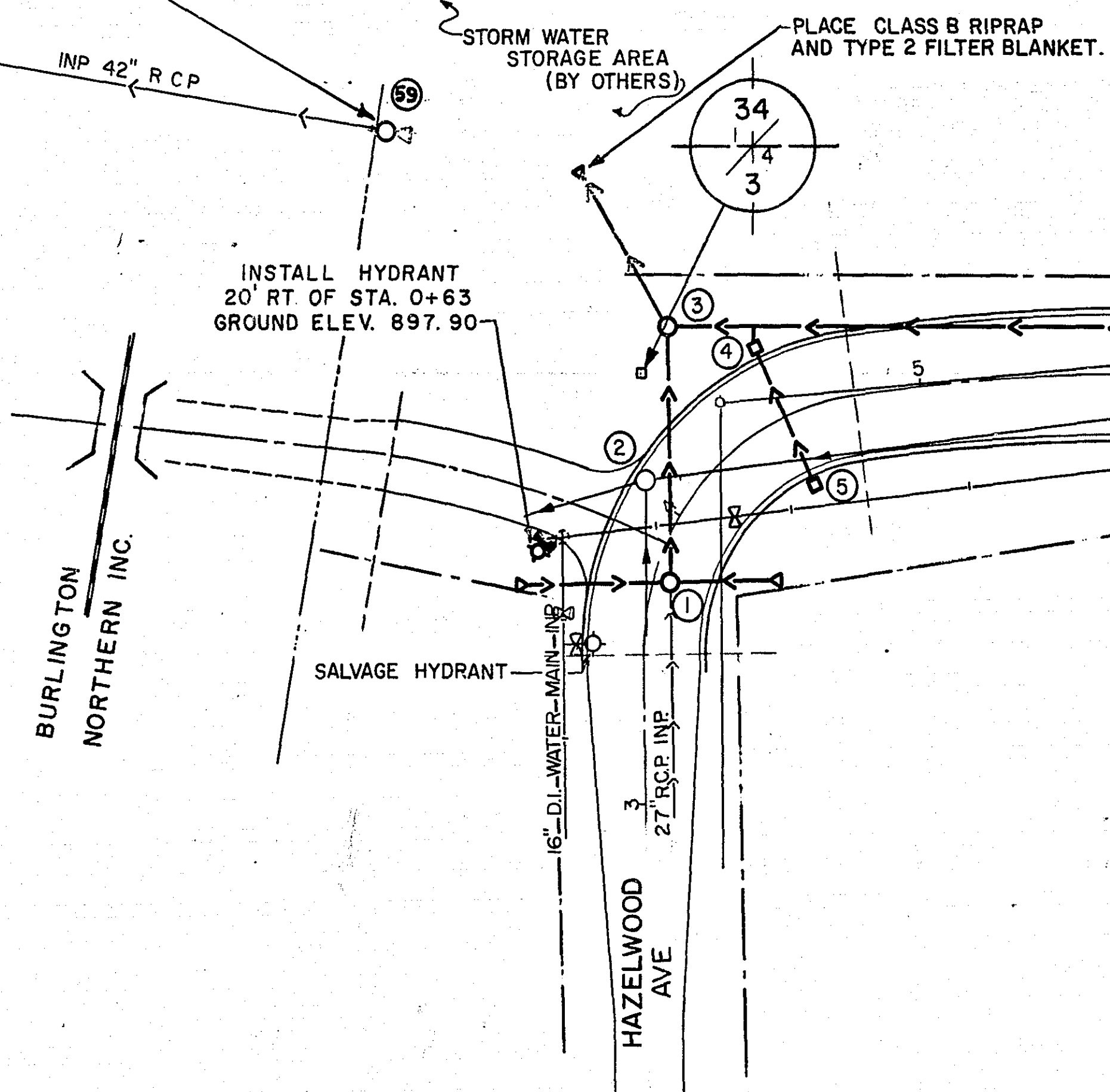
Δ REVISED BY RAMSEY COUNTY JUNE 28, 1976



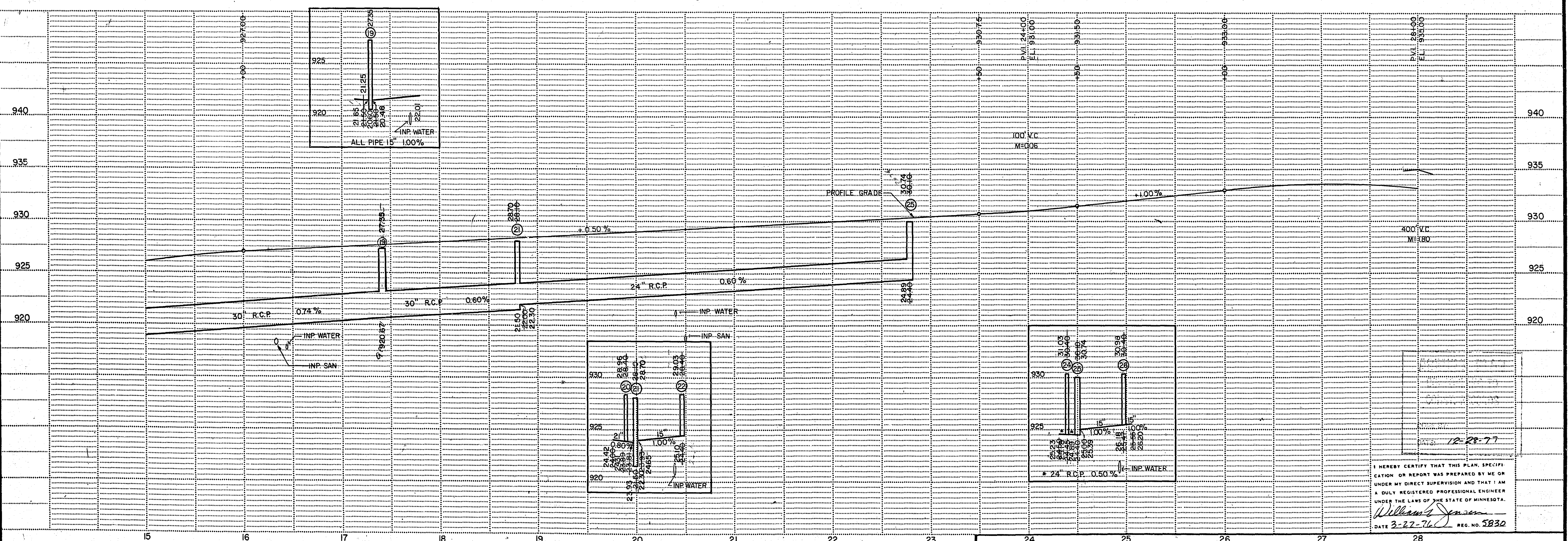
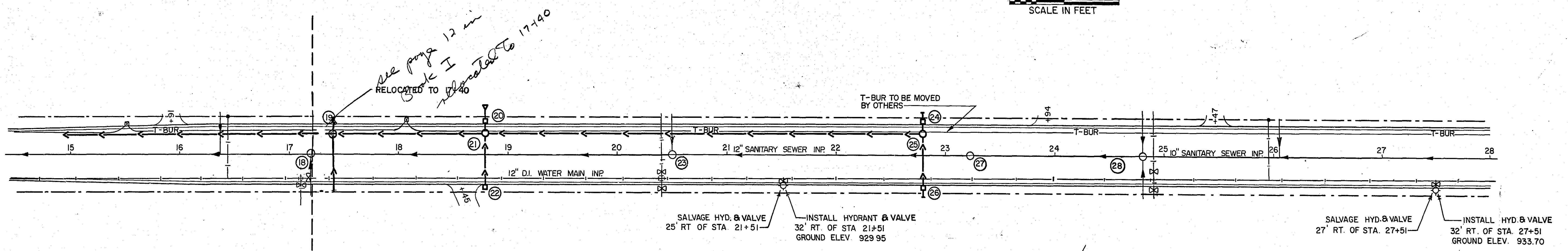
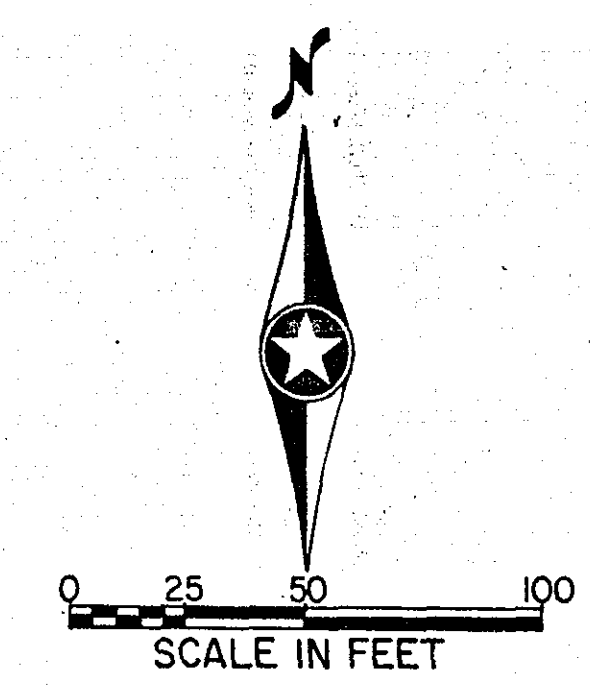
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 William E. Jensen
 DATE 3-22-76 REG. NO. 5830



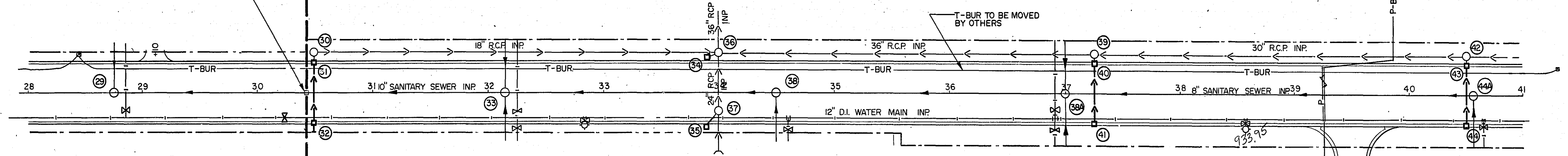
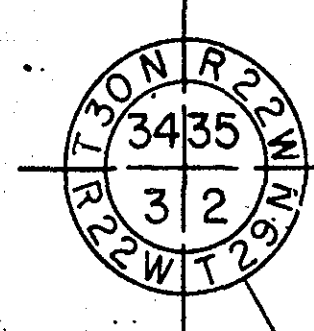
STRUCTURE 59 NOT INCLUDED IN THIS CONTRACT



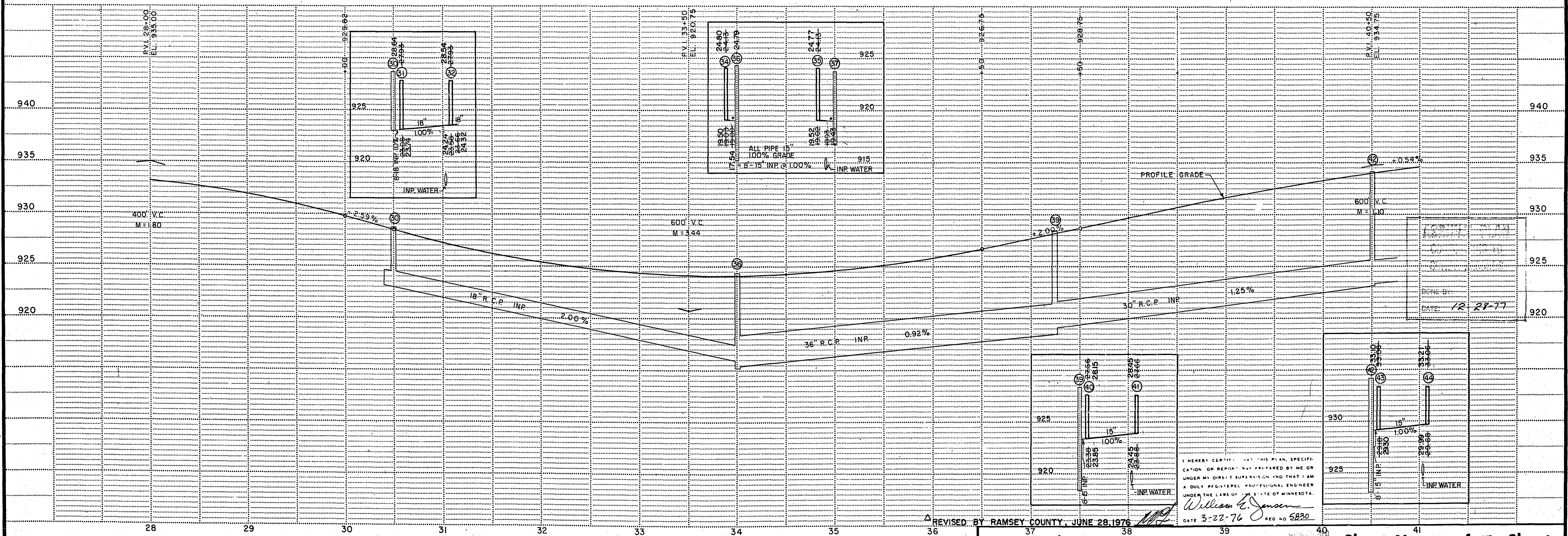
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William E. Jensen
 DATE 3-22-76 REG NO 5830

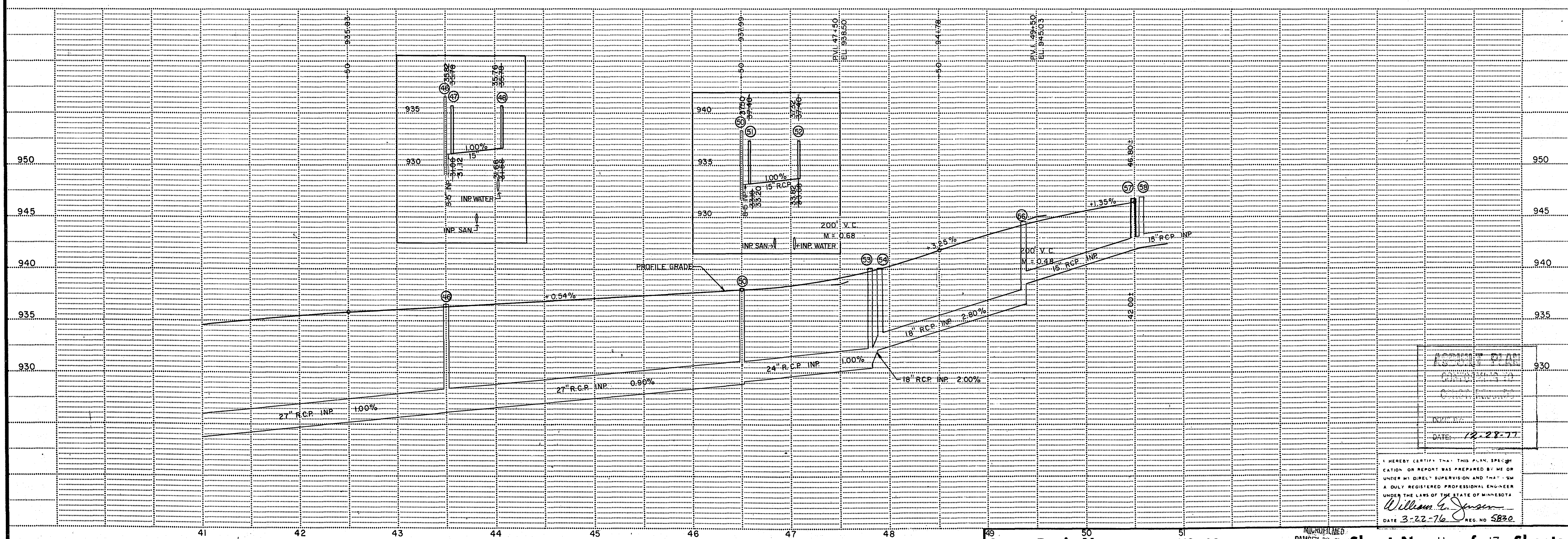
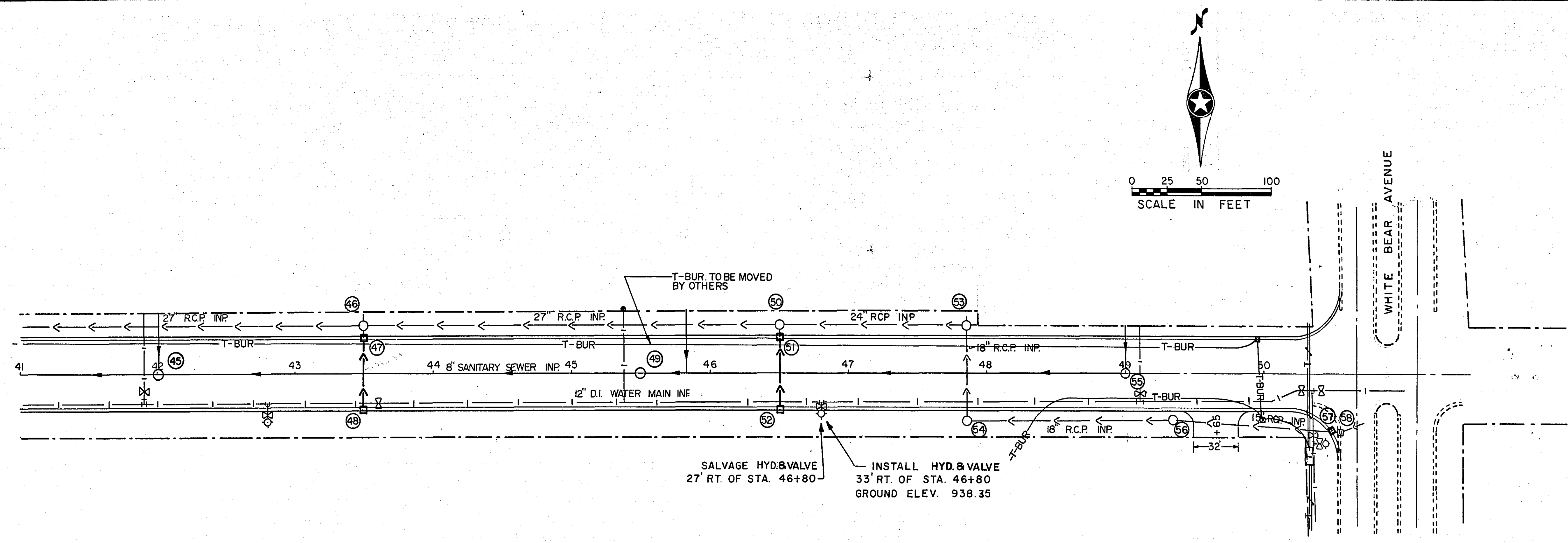


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William J. Jensen
DATE 3-22-76 REG. NO. 5830



Δ 34 35 TEMPORARY PROVISIONS SHALL BE MADE FOR DRAINAGE UNTIL 8618 CURB & GUTTER IS INSTALLED DURING THE 1977 CONSTRUCTION SEASON.



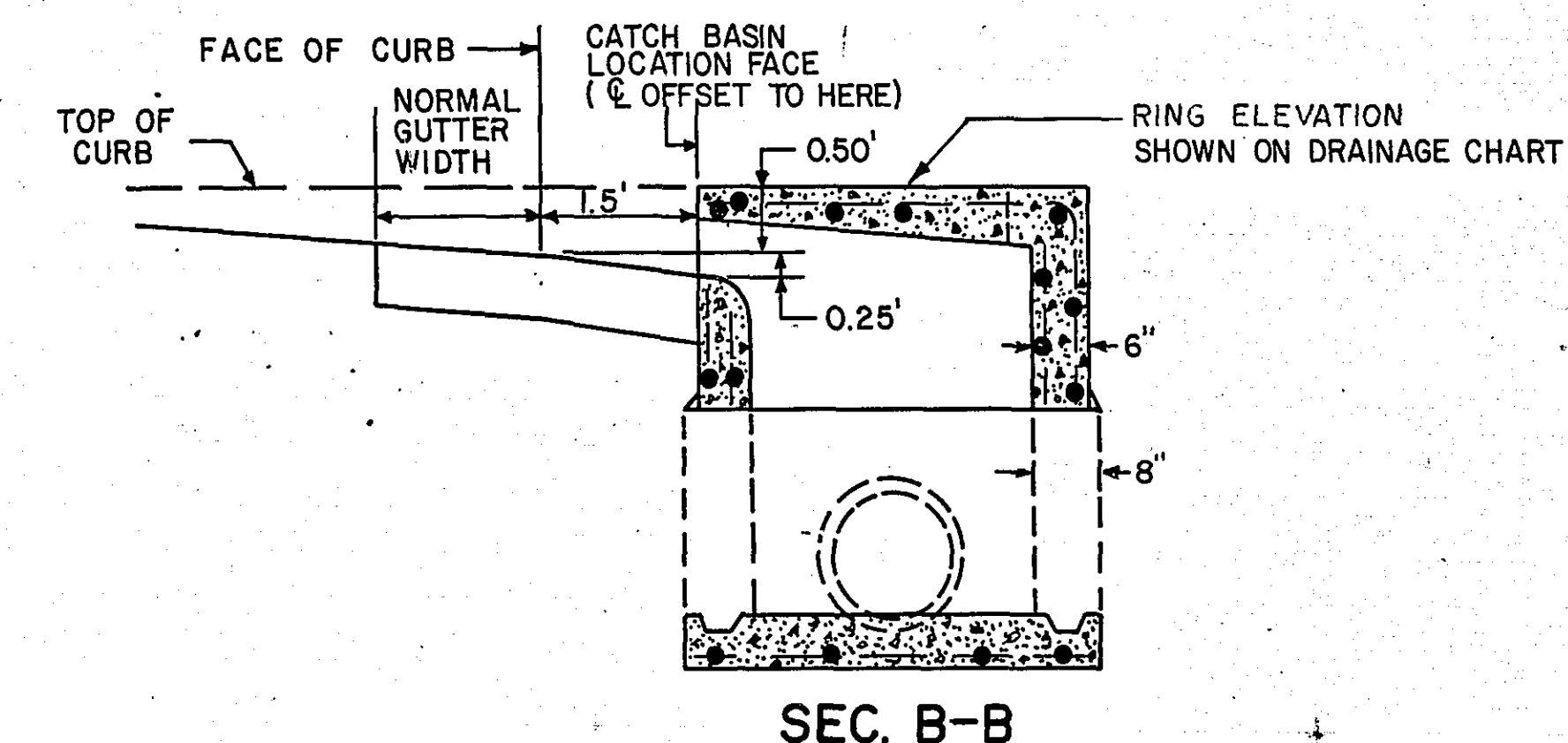
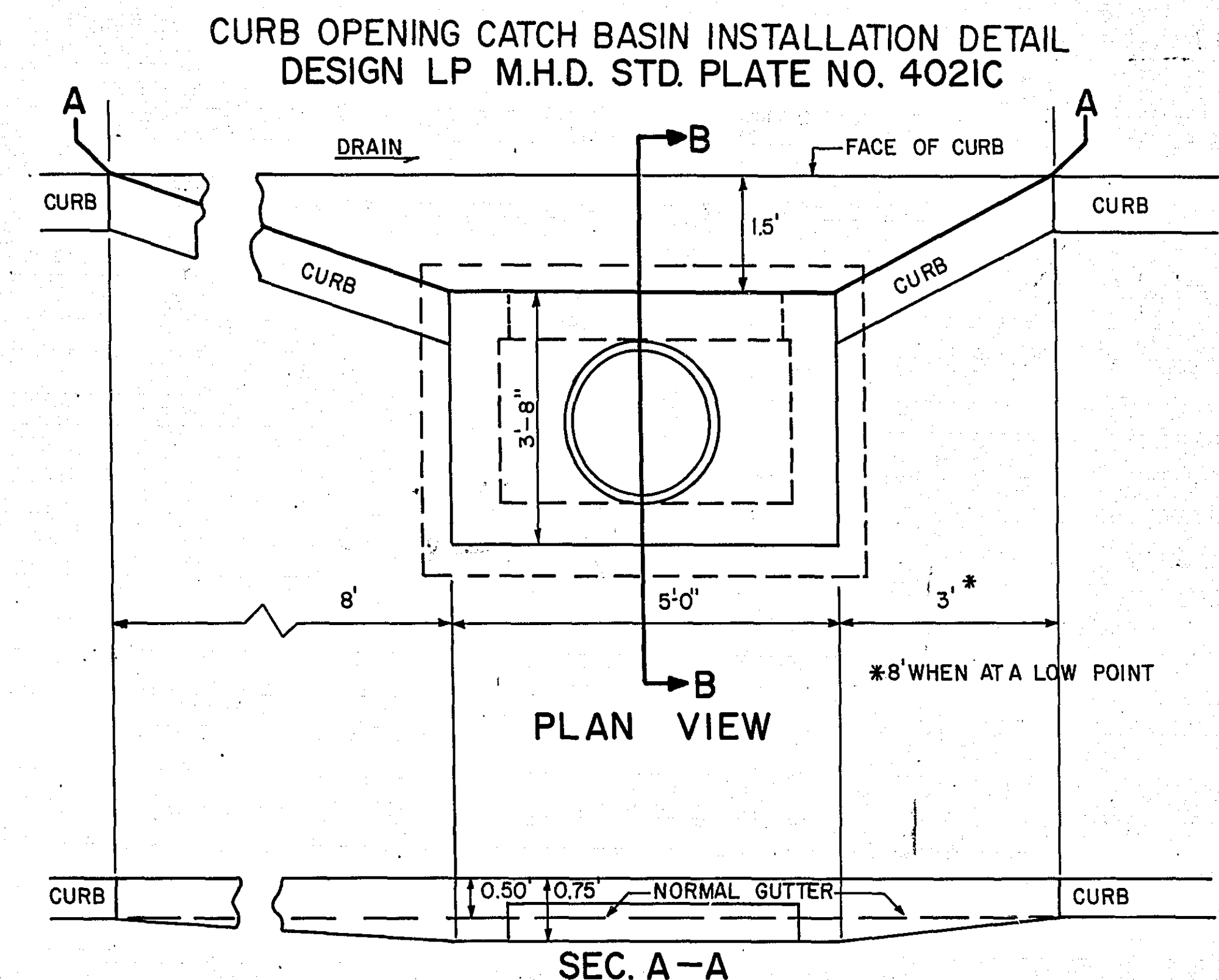


ASBEST PLAN
DATE: 12-28-77

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
WILLIAM G. JENSEN
DATE: 3-22-76 REG. NO. 5830

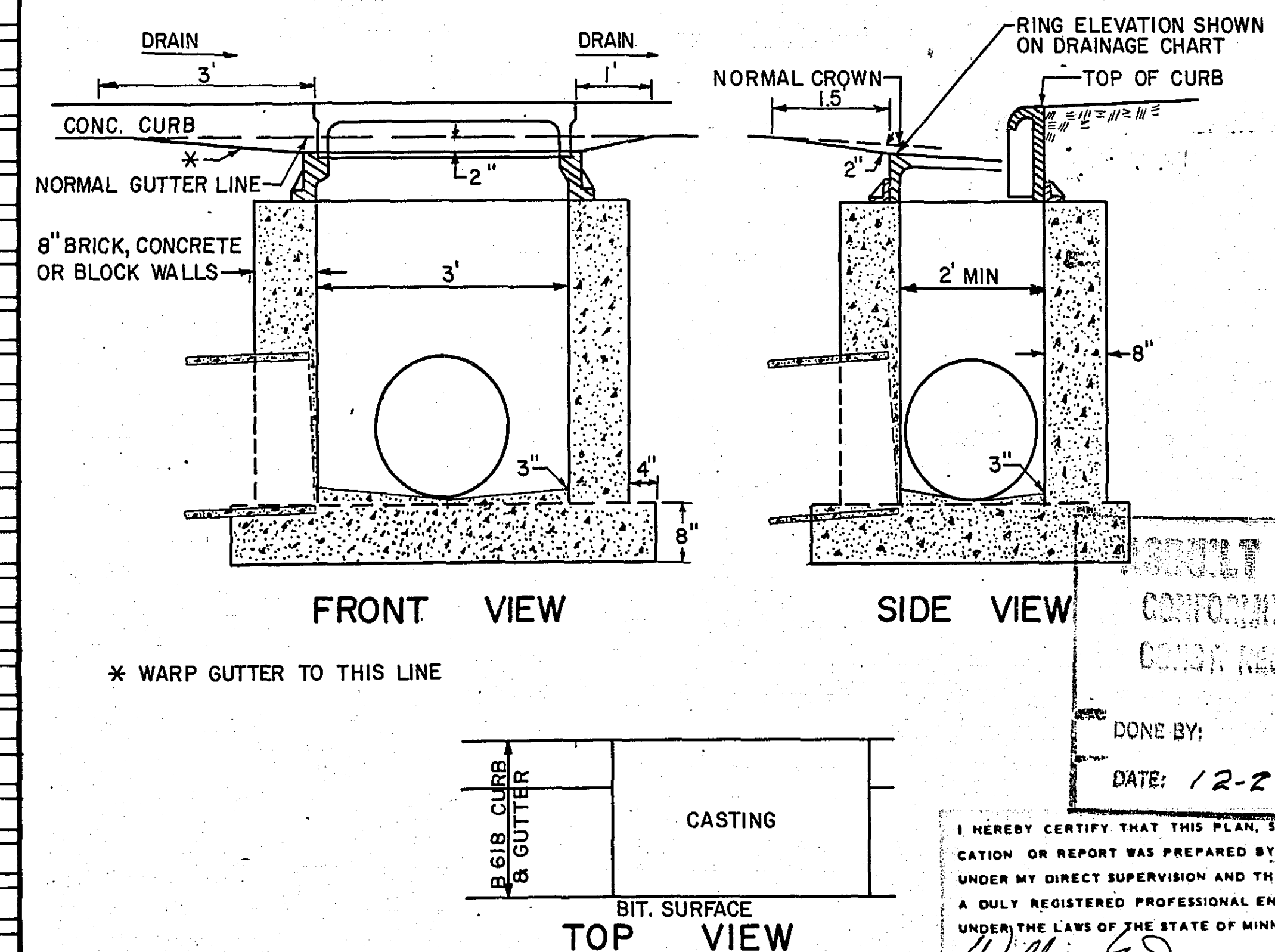
DRAINAGE CHART

STATION	LOCATION	NO.	TYPE	DESIGN	CONST. HEIGHT LIN. FT.	CASTING ASSEMBLY	ELEVATION		CB/MH/STUB OR APRON INVERT	ADJUST CASTING ASSEMBLY	RECONSTRUCT CATCH BASIN OR MAN HOLE LIN. FT.	FURNISH & INSTALL CASTING ASSEMBLY	REINFORCED CONCRETE PIPE														APRON	CLASS	DRAINS TO		REMARKS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
							ORIGINAL GRADE OR RING	NEW GRADE OR RING					12"	15"	18"	21"	24"	27"	30"	36"	42"	48"	54"	60"	STRUCTURE NO.	INLET EL.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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NOTE: UNITS TO BE PRECAST ONLY ON THE PROJECT UNDER PROJECT INSPECTION.

CATCH BASIN DESIGN NO. R.C.-2



CASTINGS—A= RING CASTING M.H.D. NO. 700-8, COVER CASTING NO. 712 (INCLUDE WITH STRUCTURE, NOT SEPARATE PAY ITEM)
B= NEENAH INLET FRAME, GRATE & CURB BOX NO. R-3067 OR EQUAL (INCLUDE WITH STRUCTURE, NOT SEPARATE PAY ITEM)
C= RING CASTING NO. 790-2, COVER CASTING NO. 712 (INCLUDE WITH STRUCTURE NOT SEPARATE PAY ITEM)
D= RING CASTING NO. 700-8, COVER CASTING NO. 712

MANHOLES &
CATCH BASINS

A OR F, MHD STD. PLATE 4000G OR 4005J
60", 72", 84"—4019 MHD STD. PLATE 4019B
LP-4 DETAIL ON SHEET NO. 12, MHD STD. PLATE 4021C
RC-2 DETAIL ON SHEET NO. 12

S.A.P. NO. 62-619-02

Sheet No. 12 of 13 Sheets

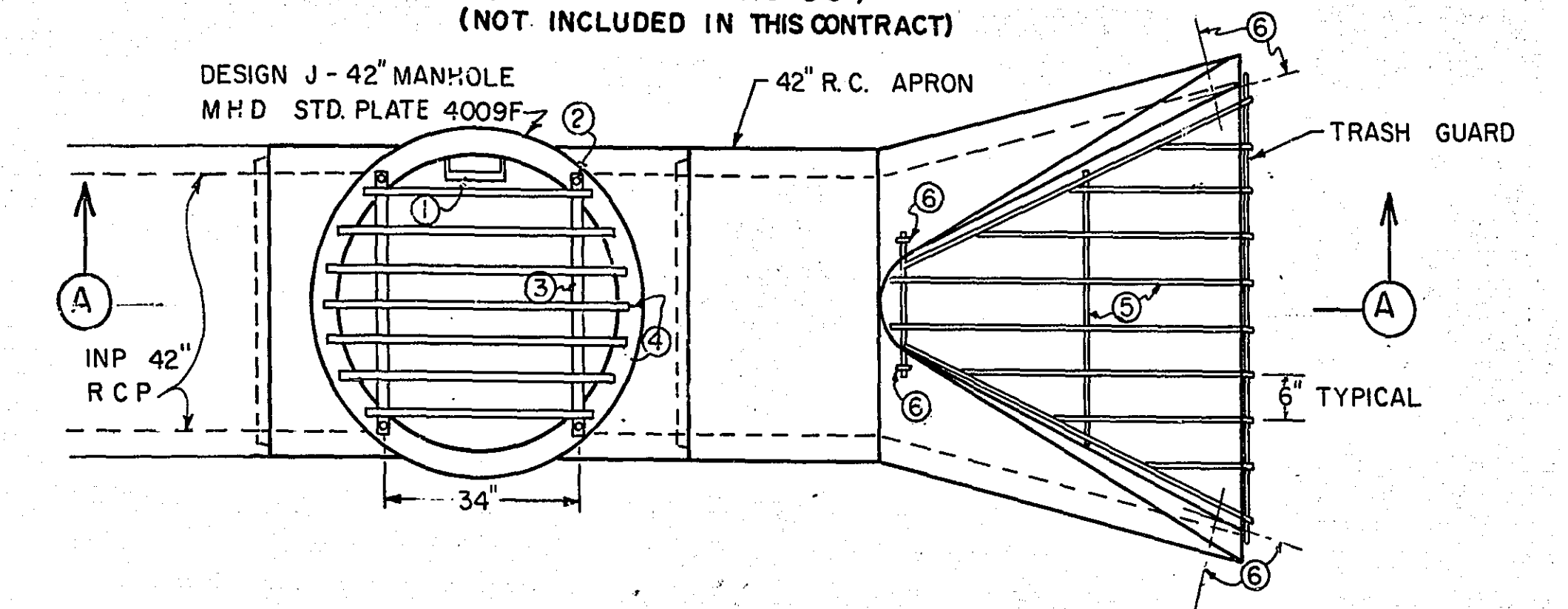
DRAINAGE

[illegible]

100-34220
DANIEL C. ENO, Sheet No. 13 of 13 Sheets

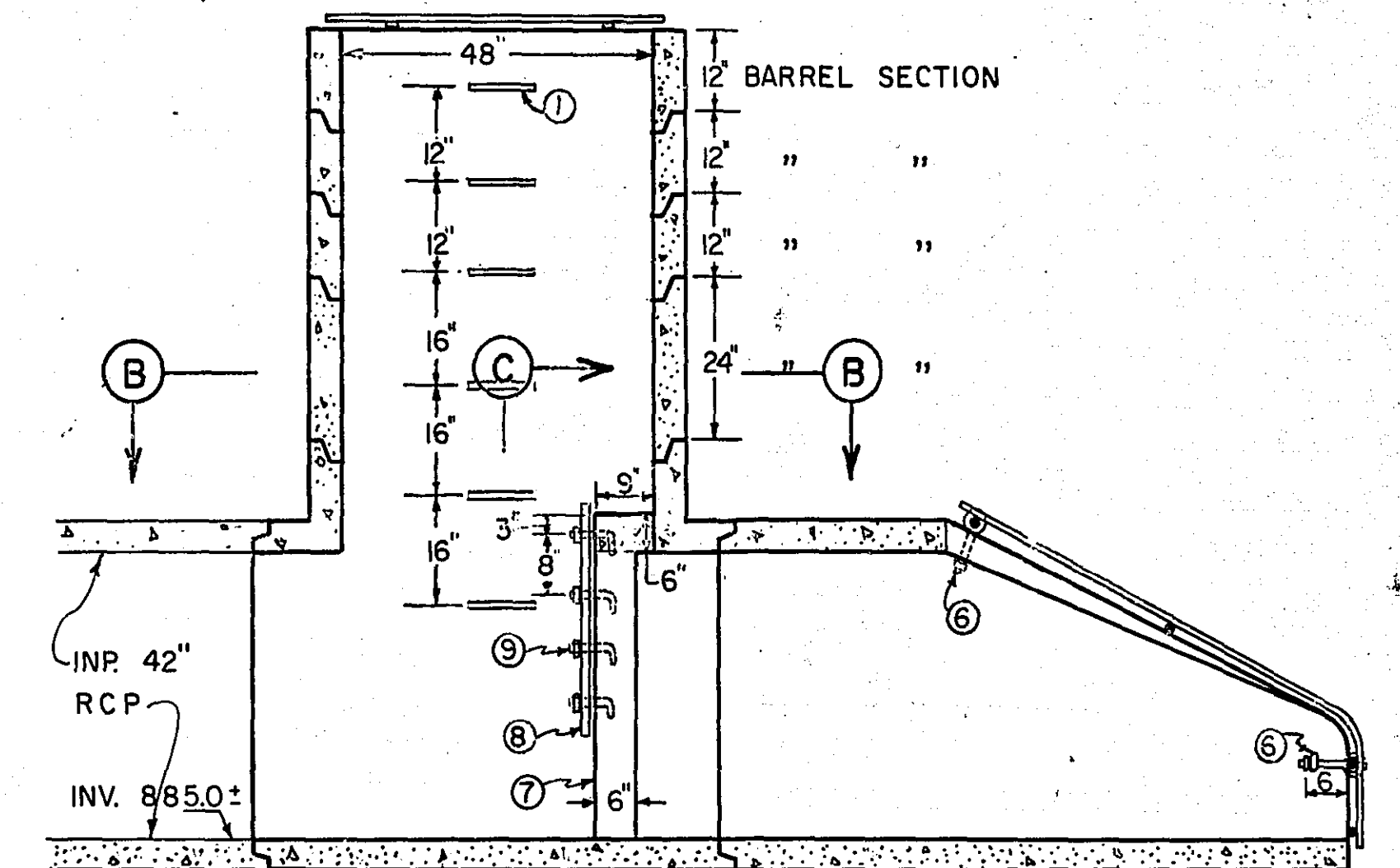
~~INLET CONTROL STRUCTURE DETAIL~~

~~(STRUCTURE NO. 59)~~
(NOT INCLUDED IN THIS CONTRACT)



TOP VIEW

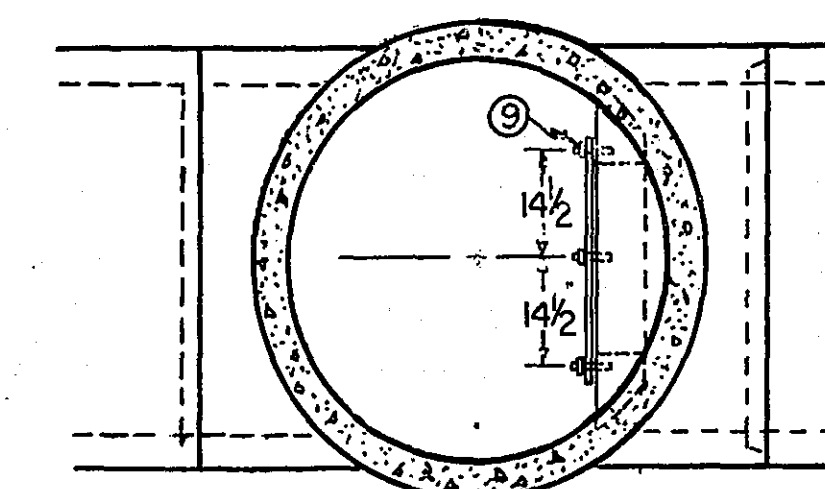
- ① MANHOLE STEP CASTING NO.047, SPACE AS SHOWN IN SECTION A-A
- ② 1/2" ϕ GALVANIZED BOLTS TO SECURE TOP GRATE, EMBED ANCHORS IN BARREL SECTION DURING FABRICATION.
- ③ 2" X 1/2" ALUMINUM BAR, FIELD DRILL 9/16" HOLES TO FIT ANCHORS.
- ④ 1" X 1" ALUMINUM BARS ON 6" CENTERS, WELD TO 2" X 1/2" AL. BARS.
- ⑤ 1/2" ϕ STEEL BARS, WELD AT EACH INTERSECTION, GALVANIZE AFTER FABRICATION.
- ⑥ 3/4" ϕ EYE BOLTS WITH WASHER AND NUT (6 REQUIRED).
- ⑦ ORIFICE BULKHEAD, KEY INTO TEE SECTION, REINFORCEMENT 2-#3, POUR ON PROJECT UNDER PROJECT INSPECTION.
- ⑧ ORIFICE ADJUSTMENT, 3/8" X 35" X 34" ALUMINUM PLATE, SEE DETAIL FOR ADJUSTMENT SLOTS.
- ⑨ 3/4" ϕ ALUMINUM ANCHOR STUDS, WASHERS AND NUTS, CAST INTO ORIFICE BULKHEAD ON 8" CENTERS, SEE DETAILS.



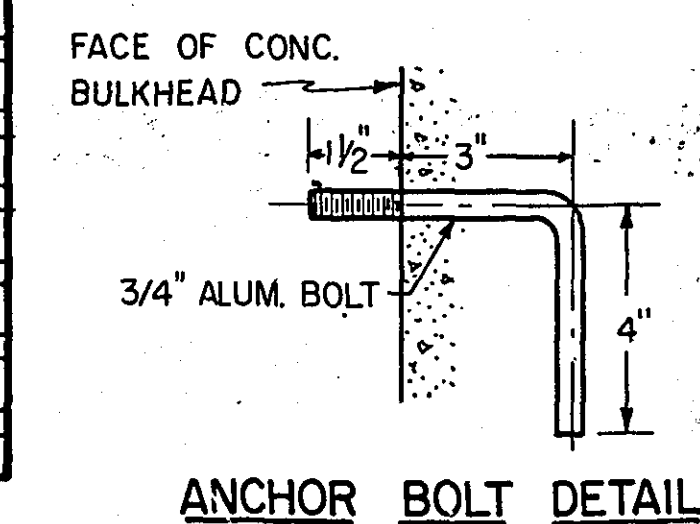
SECTION A-A

NOTE: TRASH GUARD TO BE INCIDENTAL
TO 42" R.C. APRON.

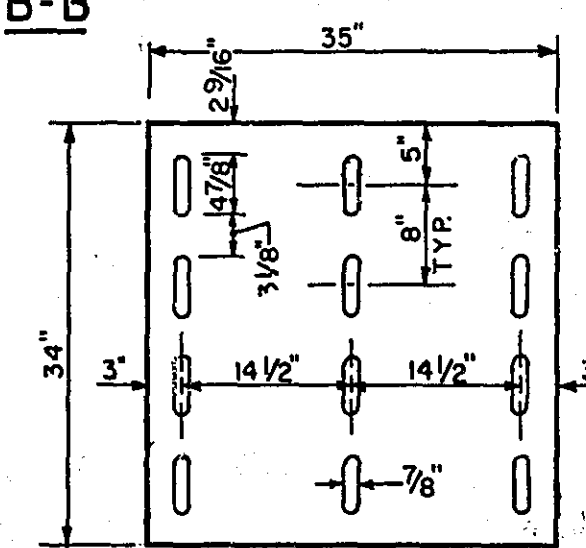
NOTE: ALL ITEMS AND MATERIALS SHOWN
TO BE INCLUDED WITH STRUCTURE
(NO SEPARATE PAY ITEMS).



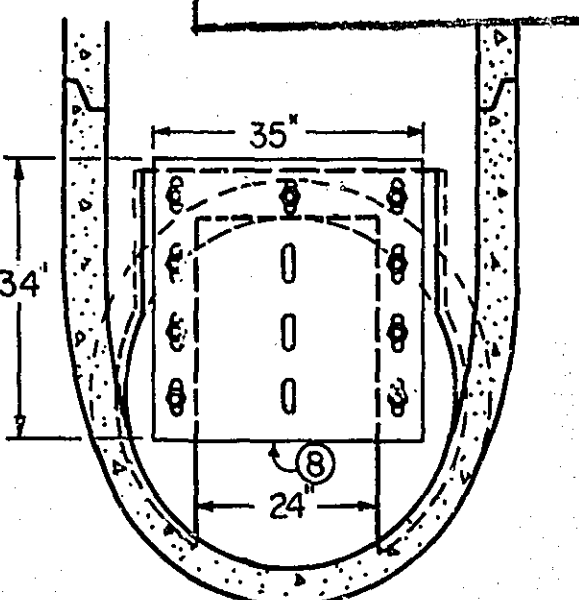
SECTION B-B



ANCHOR BOLT DETAIL



<u>PLATE</u>	<u>DETAIL</u>
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
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SECTION C-C

Note:
ALL ALUMINUM PARTS
FOR THIS STRUCTURE
TO BE ALLOY 6061-T6

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

William E. Jensen

DATE 3-22-76 REG. NO. 5830