

PLANS SYMBOLS

STATE LINE	SPRINGS
COUNTY LINE	MARSH
TOWNSHIP OR RANGE LINE	TIMBER
SECTION LINE	ORCHARD
QUARTER LINE	BRUSH
SIXTEENTH LINE	NURSERY
RIGHT OF WAY LINE	CATCH BASIN
PRESENT RIGHT OF WAY LINE	FIRE HYDRANT
CONTROL OF ACCESS LINE	CATTLE GUARD
PROPERTY LINE (Except Land Lines)	OVERPASS (Highway Over)
VACATED PLATTED PROPERTY	UNDERPASS (Highway Under)
CORPORATE OR CITY LIMITS	BRIDGE
TRUNK HIGHWAY CENTER LINE	BUILDING (One Story Frame)
RETAINING WALL	F FRAME C CONCRETE
RAILROAD	S STONE T TILE
RAILROAD RIGHT OF WAY LINE	B BRICK ST STUCCO
RIVER OR CREEK	IRON PIPE OR ROD
DRY RUN	MONUMENT (STONE, CONCRETE, OR METAL)
DRAINAGE DITCH	WOODEN HUB
DRAIN TILE	GRAVEL PIT
CULVERT	SAND PIT
DOOR INLET	BORROW PIT
GUARD RAIL	ROCK QUARRY
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	

UTILITIES SYMBOLS

PIEZOMETER	CONDUIT
POWER POLE LINE	TELEPHONE CABLE IN CONDUIT
TELEPHONE OR TELEGRAPH	ELECTRIC CABLE IN CONDUIT
POLE LINE	TELEPHONE MANHOLE
JOINT TELEPHONE AND POWER	ELECTRIC MANHOLE
ON POWER POLES	BURIED TELEPHONE CABLE
ON TELEPHONE POLES	BURIED ELECTRIC CABLE
ANCHOR	AERIAL TELEPHONE CABLE
STEEL TOWER	SEWER (SANITARY OR STORM)
STREET LIGHT	SEWER MANHOLE
PEDESTAL (TELEPHONE CABLE	
TERMINAL)	
GAS MAIN	
WATER MAIN	

S.A.P. 62-622-03
KELLER PARKWAY

GROSS LENGTH	800.00 FEET	0.151 MILES
BRIDGE LENGTH	75.34 FEET	0.014 MILES
EXCEPTION LENGTH	75.34 FEET	0.014 MILES
NET LENGTH	724.66 FEET	0.137 MILES

PLAN	0 25 50 75 100
PROFILE, HORIZ.	0 25 50 75 100
PROFILE, VERT.	0 5 10 15 20
CROSS SECTIONS, HORIZ.	0 5 10 15 20
CROSS SECTIONS, VERT.	0 5 10 15 20

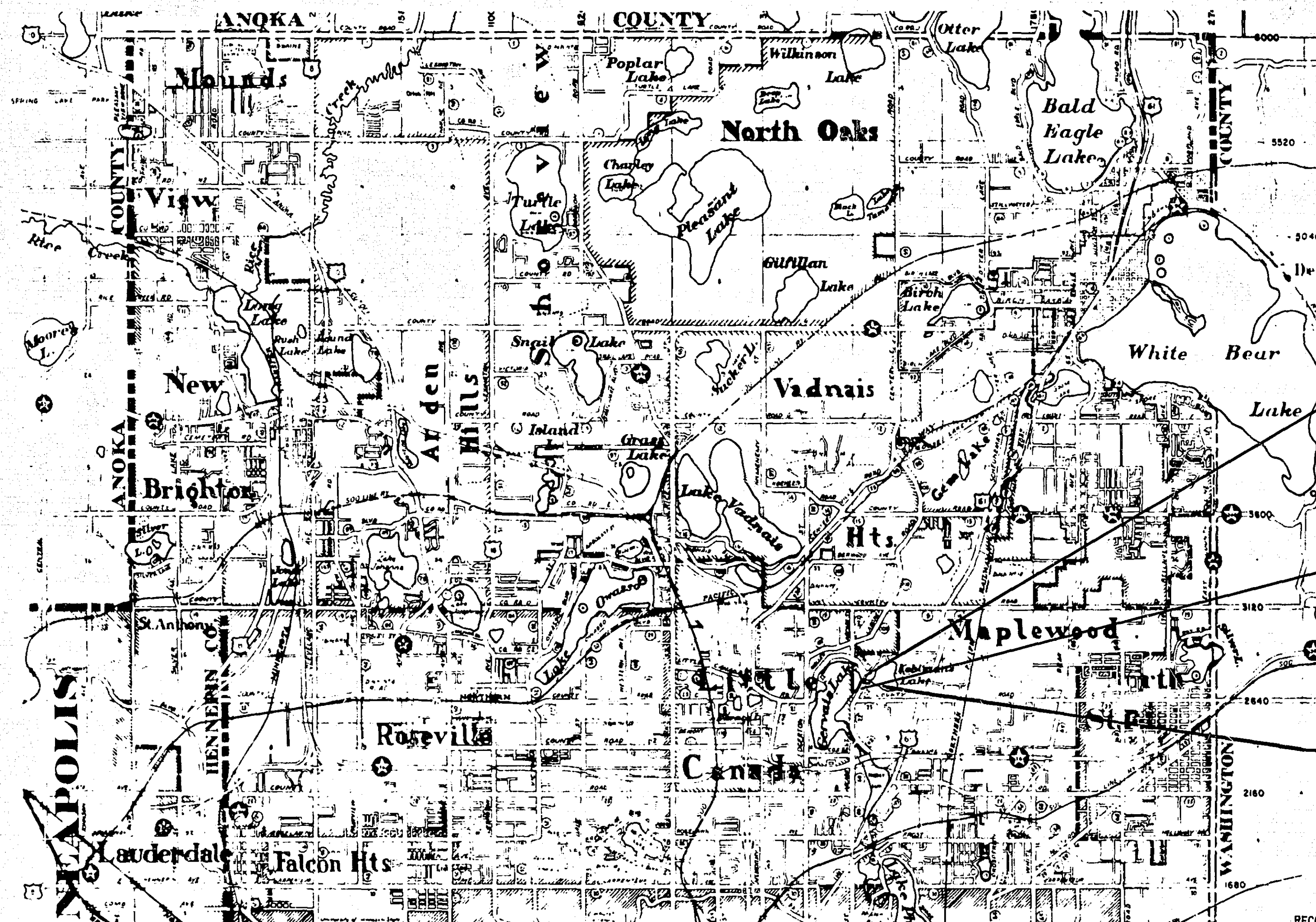
S.P. 62-622-02
BRIDGE NO. 62537

GROSS LENGTH	75.34 FT.	0.014 MILES
BRIDGE LENGTH	75.34 FT.	0.014 MILES
EXCEPT. LENGTH	0.00 FT.	0.00 MILES
NET LENGTH	75.34 FT.	0.014 MILES

RAMSEY COUNTY
KELLER PARKWAY
(C.S.A.H. 22)

S.P. 62-622-02 BRIDGE 62537
S.A.P. 62-622-03
CONSTRUCTION PLAN FOR:
BRIDGE NO. 62537, 6" FORCEMAIN AND
BITUMINOUS ROADWAY SURFACING AND WIDENING

BETWEEN: COUNTY ROAD "C" AND KOHLMAN LANE
FROM: A POINT 457.00 FEET NORTH AND 329.5 FEET EAST OF
THE SOUTHWEST CORNER OF SECTION 4, TOWNSHIP 29, RANGE 22
TO: A POINT 1139 FEET NORTH AND 644 FEET EAST OF THE
SOUTHWEST CORNER OF SECTION 4, TOWNSHIP 29, RANGE 22



CITY OF ST. PAUL

DESIGN DESIGNATION

ADT (CURRENT YEAR) 1978	1000
ADT (FUTURE YEAR) 1998	2000
HCAAT	144
DESIGN LOAD	9 TON
DESIGN SPEED	30 M.P.H.
SOIL FACTOR	100%

END PROJECT
STA. 93+00
S.A.P. 62-622-03

BEGIN PROJECT
STA. 85+00
S.A.P. 62-622-03

BRIDGE NO. 62537
STA. 87+78.33 TO
STA. 88+53.67
S.P. 62-622-02

RECOMMENDED FOR APPROVAL	DATE
TRAFFIC ENGR.	8-21-78
ENV. ENGR.	8-21-78
MAINT. ENGR.	8-25-78
CONST. ENGR.	8-25-78
DESIGN ENGR.	8-21-78
APPROVED	DATE
COORDINATING ENGR.	8-25-78
APPROVED	DATE
COORDINATING ENGR.	11-15-78

INDEX

SHEET NO.	DESCRIPTION
1.	TITLE SHEET
2.	QUANTITY & TYPICAL SECTION
3.	DETAIL SHEET
4.	PLAN & PROFILE SHEET
5.	CROSS SECTIONS
6.	CROSS SECTIONS
7.	CROSS SECTIONS
1 to 14	BRIDGE PLANS

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.

David H. Beckwith DATE: MAR. 10, 1978 REG. NO. 7982

RECOMMENDED FOR APPROVAL COUNTY ENGINEER DATE 12-7-78

APPROVED CHAIRMAN OF THE RAMSEY COUNTY BOARD DATE

APPROVED MAYOR, CITY OF MAPLEWOOD DATE

APPROVED DATE

MINNESOTA DEPARTMENT OF TRANSPORTATION

RECOMMENDED FOR APPROVAL DATE 2-16-82

RECOMMENDED FOR APPROVAL DATE 8-20-80

APPROVAL DATE 2/16/82

REVISED	DATE	DESIGNED BY	DRAWN BY	CHECKED BY
RSD	8-15-82			
REL	1-26-83			
DHB	2-2-82			

ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND ORDINANCES SHALL BE COMPLIED WITH, IN CONSTRUCTION OF THIS PROJECT.

SPECIFICATION REFERENCE

THE 1978 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION" SHALL GOVERN.

TOLTZ, KING, DUVAL, ANDERSON
& associates, inc.
engineers & architects **st. paul, minnesota**

STATEMENT OF ESTIMATED QUANTITIES

ITEM NO.	ITEM	UNIT	TOTAL	NON PARTICIPATING	PARTICIPATING
2442.501	REMOVE OLD BRIDGE	LUMP SUM	1		1
0554.607	TWISTED END TREATMENT	EACH	4		4
2101.502	CLEARING	TREE	32		32
2101.507	GRUBBING	TREE	32		32
2104.501	REMOVE PIPE CULVERTS	L.F.	20		20
2104.501	REMOVE GUARDRAIL - CABLE	L.F.	8		8
2104.505	REMOVE DRIVEWAY PAVEMENT	S.Y.	22		22
2105.511	COMMON CHANNEL EXCAVATION	C.Y.	580		580
2105.507	SUBGRADE EXCAVATION	C.Y.	4220		4220
2105.521	GRANULAR BORROW (L.V.)	C.Y.	2527		2527
2105.523	COMMON BORROW (L.V.)	C.Y.	1360		1360
2105.525	TOPSOIL BORROW (L.V.)	C.Y.	350		350
2211.501	AGGREGATE BASE, CLASS 5	TON	1700		1700
2211.501	AGGREGATE BASE, CLASS 3	TON	2188		2188
2221.501	AGGREGATE SHOULDERING, CLASS 1	TON	21		21
2331.510	BINDER COURSE MIXTURE	TON	270		270
2341.508	WEARING COURSE MIXTURE	TON	273		273
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	147		147
2501.511	18" C.S. PIPE CULVERT	L.F.	30		30
2501.515	18" C.S. PIPE APRONS	EA.	2		2
2501.515	12" R.C. PIPE APRONS	EA.	1		1
2503.541	12" R.C. PIPE SEWER, DESIGN 3006, CLASS III	L.F.	76		76
2506.507	CONSTRUCT CATCH BASINS DESIGN C OR G	L.F.	5		5
2506.522	ADJUST FRAME & RING CASTINGS	EA.	2		2
2521.501	4" CONCRETE WALK	SQ. FT.	260		260
2521.511	4" BITUMINOUS WALK	SQ. FT.	2428		2428
2531.507	7" CONCRETE DRIVEWAY PAVEMENT	S.Y.	21		21
2554.501	TRAFFIC BARRIER, DESIGN B 8307	L.F.	300		300
2575.505	SODDING	S.Y.	3610		3610
2575.531	COMMERCIAL FERTILIZER ANALYSIS 8-10-30	TON	075		075
2331.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	14		14
2341.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	18		18
2506.516	CASTING ASSEMBLIES	EACH	2		2
2535.501	BITUMINOUS CURB	L.F.	658		658
0503.603	6" DUCTILE IRON PIPE SEWER CL. 50	L.F.	195		195
0503.603	6" DUCTILE IRON PIPE SEWER CL. 54	L.F.	250		250
2571.502	SUGAR MAPLE 2-2 1/2" CAL. B & B	TREE	3	3	
2571.501	COLORADO BLUE SPRUCE 6'-8' HIGH B & B	TREE	3	3	
2571.541	TRANSPLANT TREE (2-2 1/2" CALIPER)	TREE	12	12	
0412.602	CONSTRUCT TREEWELL	EACH	3	3	

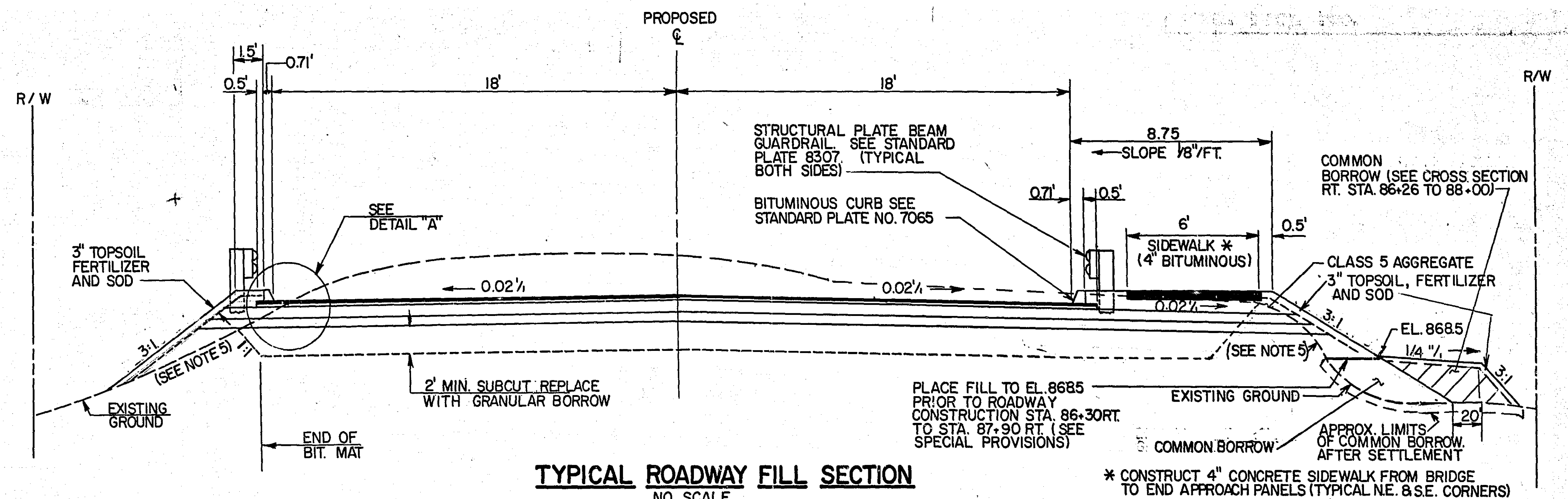
STANDARD PLATES

PLATE NO.	DESCRIPTION
0003A	SPECIFICATION REFERENCE TO STANDARD PLATES
1140R	LONGITUDINAL JOINTS
3000I	REINFORCED CONCRETE PIPE
3040F	CORRUGATED METAL PIPE CULVERT
3123H	METAL APRON FOR C.M. PIPE
3134A	RIPRAP AT C.M.P. OUTLETS
3145A	CONCRETE PIPE JOINT TIES
4002D	MANHOLE OR CATCH BASIN
4006K	MANHOLE OR CATCH BASIN
4010E	CONCRETE SHORT CONE & ADJUSTING RING
4011D	PRECAST CONCRETE BASE
4126E	CATCH BASIN FRAME CASTING
4149C	GRATE CASTING FOR CATCH BASIN
4161E	CURB BOX CASTING FOR CATCH BASIN
7000E	INTEGRANT CURBS
7035J	CONCRETE WALK AND CURB RETURNS AT ENTRANCES
7065C	BITUMINOUS CURB
7100E	CONCRETE CURB AND GUTTERS
7111E	CATCH BASIN INSTALLATION
8000H	STANDARD BARRICADES
8307L	STRUCTURAL PLATE BEAM GUARDRAIL
8318A	GUARDRAIL ANCHORAGE PLATE FOR BRIDGES
9102C	SODDING AT PIPE CULVERT ENDS
9500A	WELL POINT TYPE PIEZOMETER
3006C	GASKET JOINT FOR R.C. PIPE
3100F	CONCRETE APRON FOR R.C.P.
7036C	PEDESTRIAN CURB RAMP

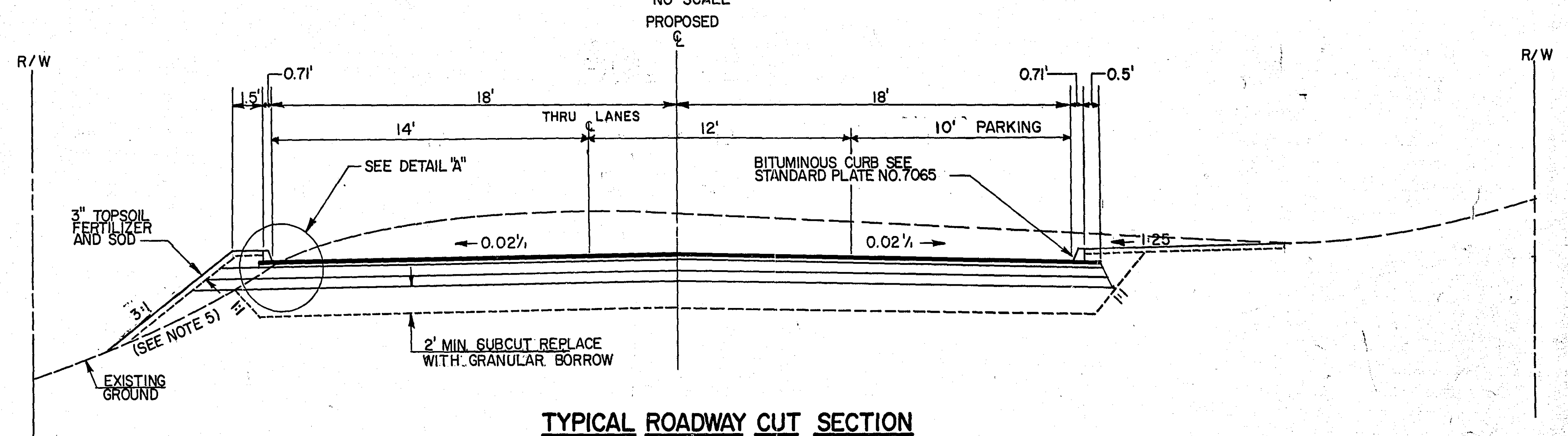
REVISED	DATE	DESIGNED BY	DRAWN BY	CHECKED BY
RVO	8-15-80			
DHB	2-2-82			

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.

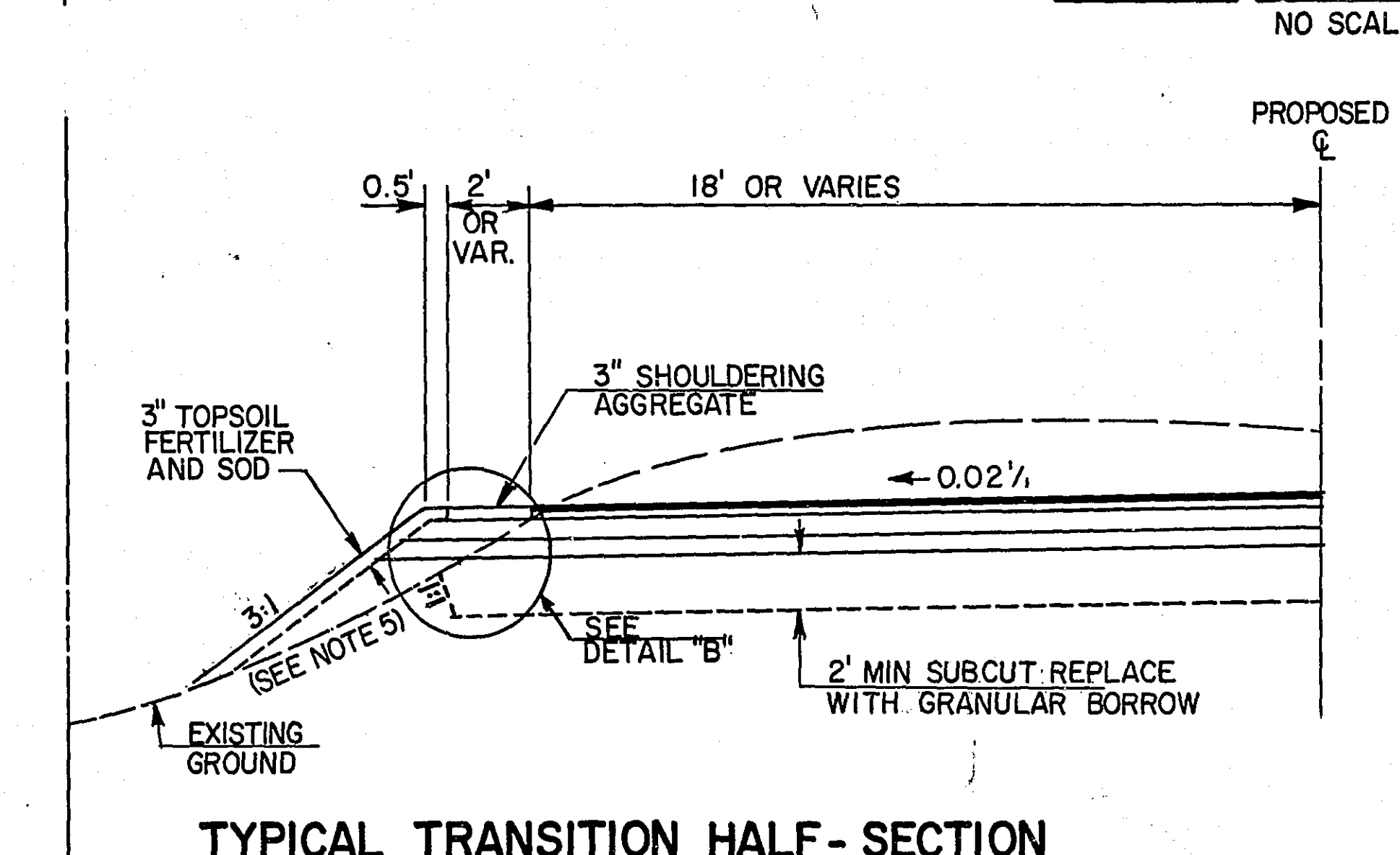
David H. Burkett
Date 3/10/82 Reg. # 7982



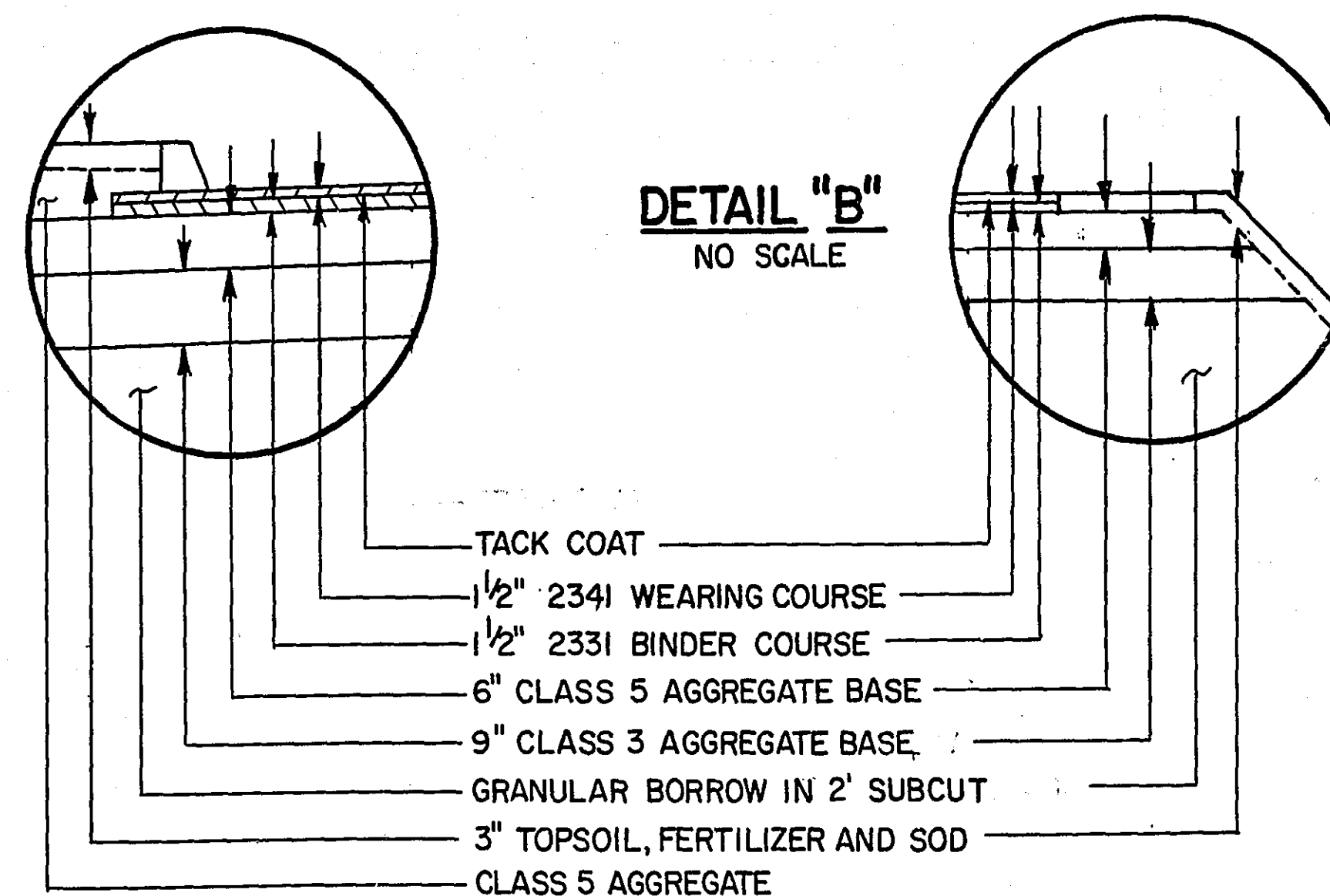
TYPICAL ROADWAY FILL SECTION



TYPICAL ROADWAY CUT SECTION



TYPICAL TRANSITION HALF-SECTION

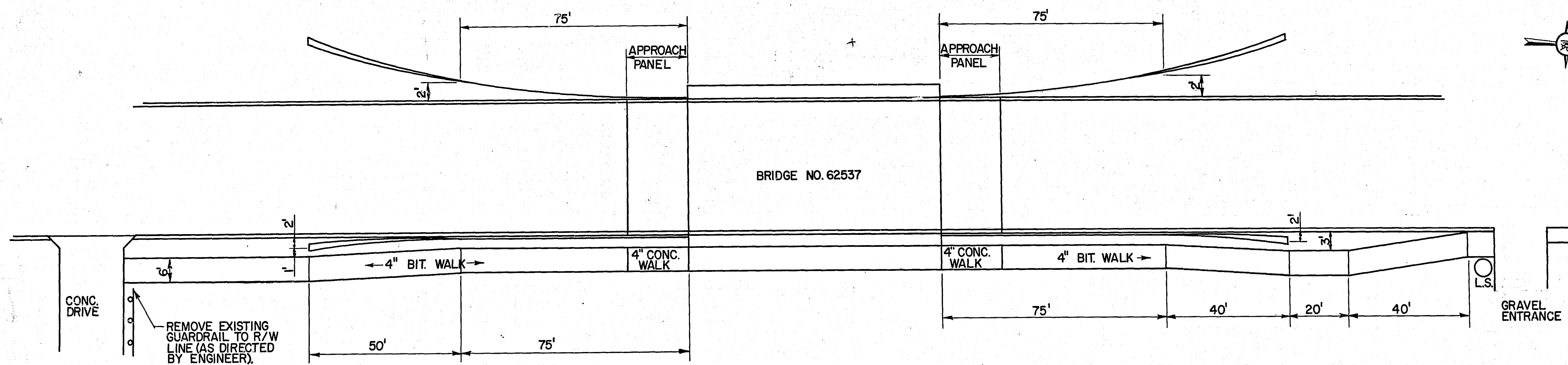
DETAIL "A"
NO SCALEDETAIL "B"
NO SCALE

GENERAL NOTES

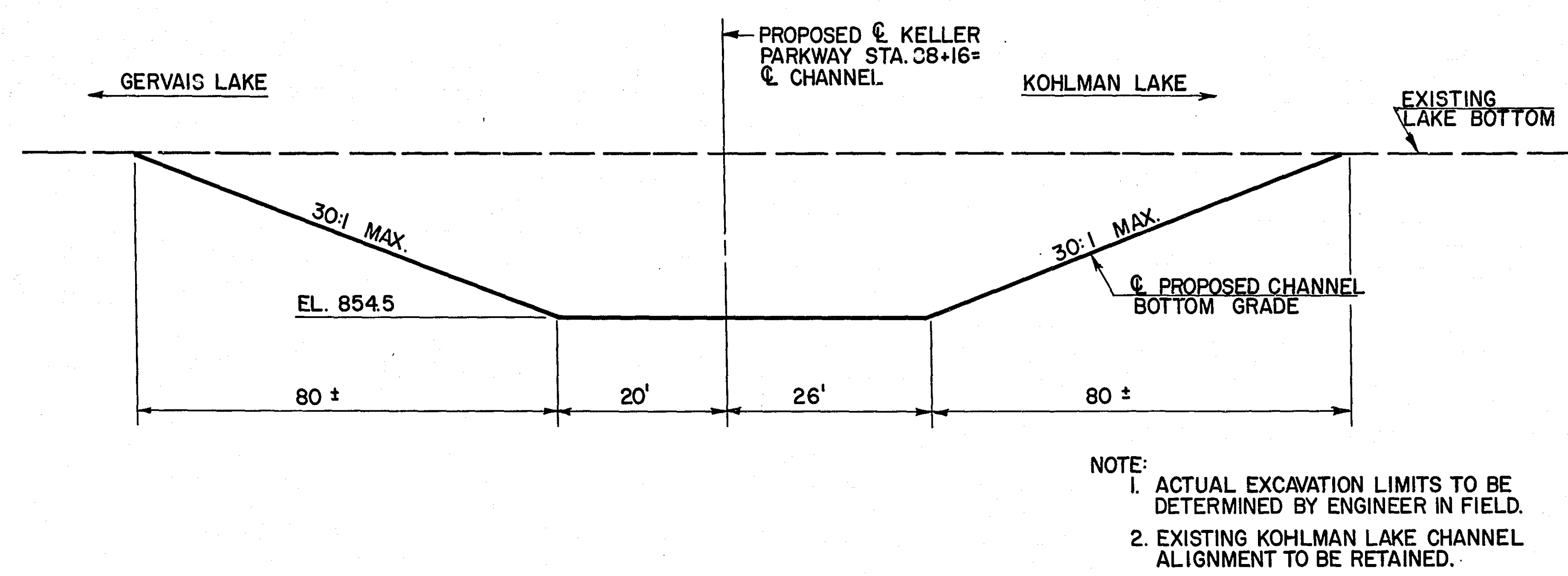
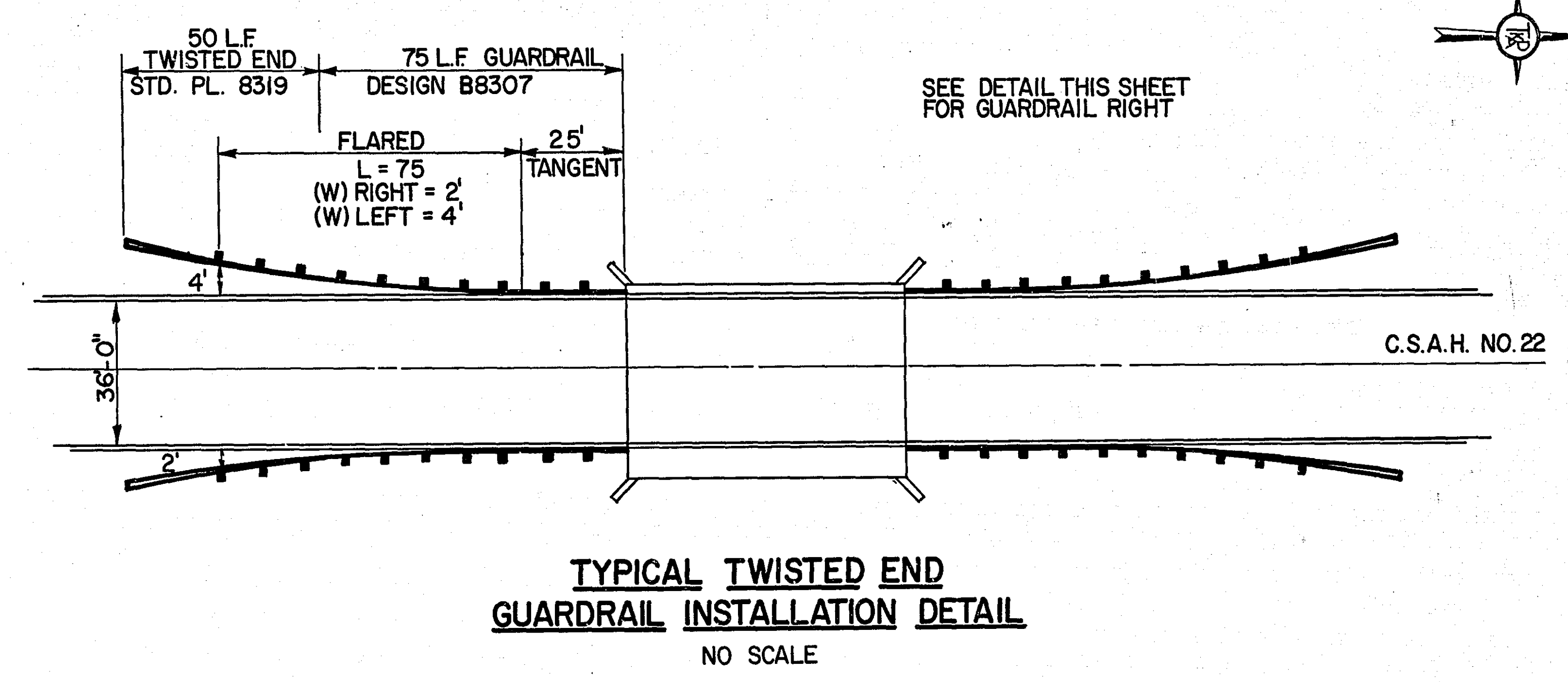
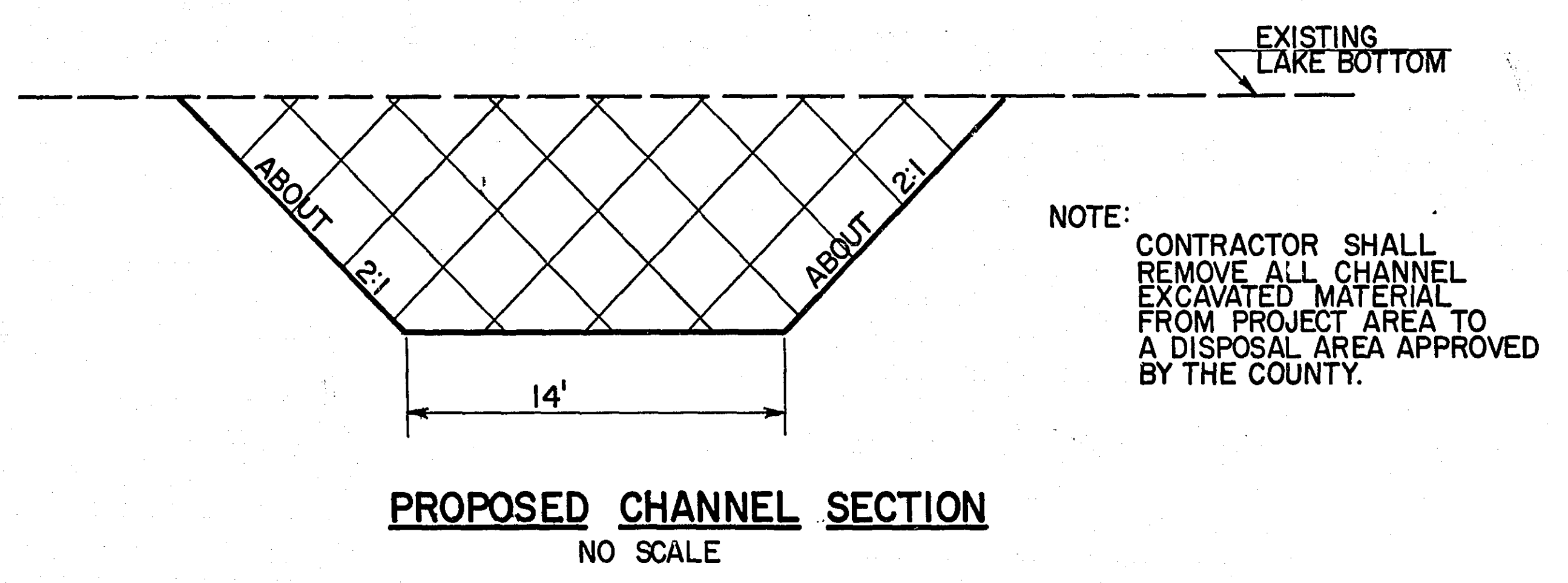
- ALL EXISTING DRAINS DAMAGED DURING CONSTRUCTION SHALL BE REPLACED TO THE SATISFACTION OF THE ENGINEER AND SHALL BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS.
- ALL DRIVEWAY LIMITS, BITUMINOUS CURB EXCEPTIONS AND TREE REMOVALS SHALL BE STAKED BY THE ENGINEER IN THE FIELD PRIOR TO CONSTRUCTION.
- ALL SLOPES ADJACENT TO CHANNEL SHALL BE 2:1 OR FLATTER.
- THAT POINT IDENTIFIED AS PROPOSED C ON THE TYPICAL SECTIONS REPRESENTS THE PROFILE GRADE ON THE PLAN/PROFILE AND CROSS SECTION SHEETS.
- TOPSOIL REMOVAL BENEATH EMBANKMENTS SHALL BE INCIDENTAL.
- THE CONTRACTOR SHALL REMOVE ANY UNSUITABLE MATERIALS AS DIRECTED BY THE ENGINEER.
- SUBSURFACE INFORMATION IS INCLUDED IN THE BRIDGE PLANS. LOCATIONS OF SOIL BORINGS ARE INDICATED WITH A SYMBOL (B) ON THE BRIDGE PLANS. THE ACCURACY OF THE SUBSURFACE INFORMATION IS NOT GUARANTEED AND IT IS NOT TO BE CONSTRUED AS PART OF THE PLANS GOVERNING CONSTRUCTION OF THIS PROJECT.
- INSLOPES SHALL BE 3:1 EXCEPT AS SHOWN OR NOTED ON CROSS SECTIONS.
- THE BID PRICE FOR "6" DUCTILE IRON PIPE SEWER" SHALL BE COMPENSATION IN FULL FOR CAST IRON CONNECTIONS AND BENDS, DEWATERING, BEDDING AND BACKFILLING NECESSARY FOR FORCEMAIN CONSTRUCTION.
- ALL BARRICADES SHALL BE TYPE I
- TIE END THREE R.C. PIPE SEWER JOINTS, INCLUDING APRON.

BASIS OF ESTIMATED QUANTITIES

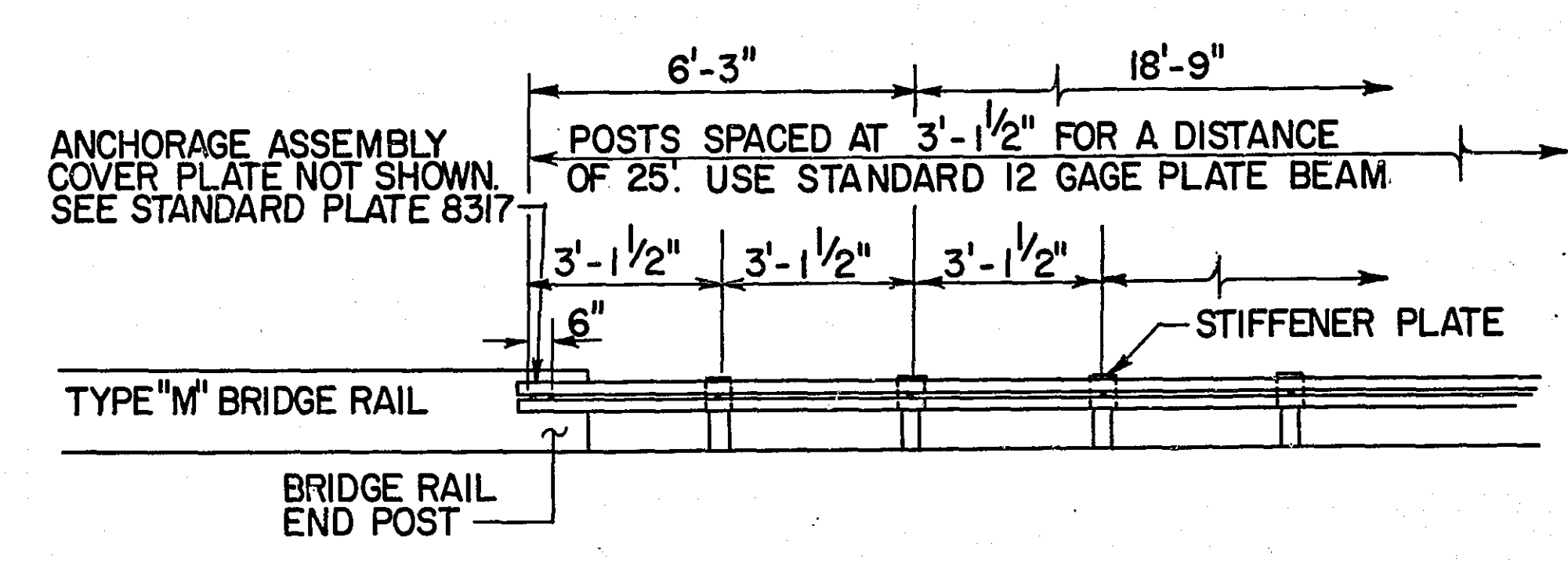
2211.501	AGGREGATE BASE, CLASS 5 @ 110 LBS./S.Y./INCH THICKNESS.
2211.501	AGGREGATE BASE, CLASS 3 @ 110 LBS./S.Y./INCH THICKNESS.
2221.501	AGGREGATE SHOULDERING, CLASS 1 @ 110 LBS./S.Y./INCH THICKNESS.
2331.504	BITUMINOUS MATERIAL FOR MIXTURE @ 6% OF MIXTURE.
2331.510	BINDER COURSE MIXTURE @ 110 LBS./S.Y./INCH THICKNESS.
2341.504	BITUMINOUS MATERIAL FOR MIXTURE @ 6% OF MIXTURE.
2341.510	WEARING COURSE MIXTURE @ 110 LBS./S.Y./INCH THICKNESS.
2357.502	BITUMINOUS MATERIAL FOR TACK COAT @ 0.05 GALLONS/S.Y.
2358.501	BITUMINOUS MATERIAL FOR PRIME COAT @ 0.20 GALLONS/S.Y.
2575.531	COMMERCIAL FERTILIZER ANALYSIS 8-10-30 @ 500 LBS./ACRE



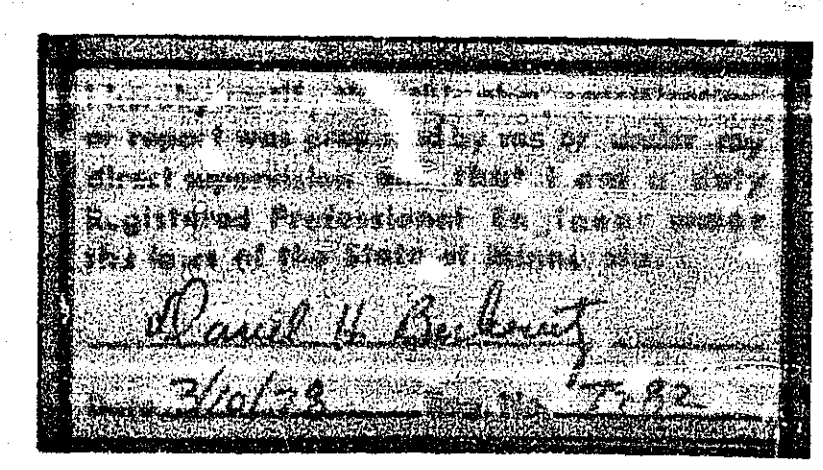
SIDEWALK & GUARDRAIL DETAIL
NO SCALE



- NOTE:
1. ACTUAL EXCAVATION LIMITS TO BE DETERMINED BY ENGINEER IN FIELD.
 2. EXISTING KOHLMAN LAKE CHANNEL ALIGNMENT TO BE RETAINED.



REVISED	DATE	DESIGNED BY	DRAWN BY	CHECKED BY



HORIZONTAL CURVE #1

PC = STA. 81+62.86
D = 8°-00'
Δ = 12°-58'
T = 81.45'
L = 162.08'
R = 716.78'
PT = STA. 83.24.94

HORIZONTAL CURVE #2

PC = STA. 84+00
D = 6°-00'
Δ = 12°-00'
T = 100.36'
L = 200'
R = 954.93'
PT = STA. 86+00

REVISED	DATE	DESIGNED BY
DHB	2-2-82	
		DRAWN BY
		CHECKED BY

HORIZONTAL CURVE #3

PC = STA. 86+28.60
D = 7°-00'
Δ = 9°-15'
T = 66.21'
L = 132.14'
R = 818.51'
PT = STA. 87+60.74

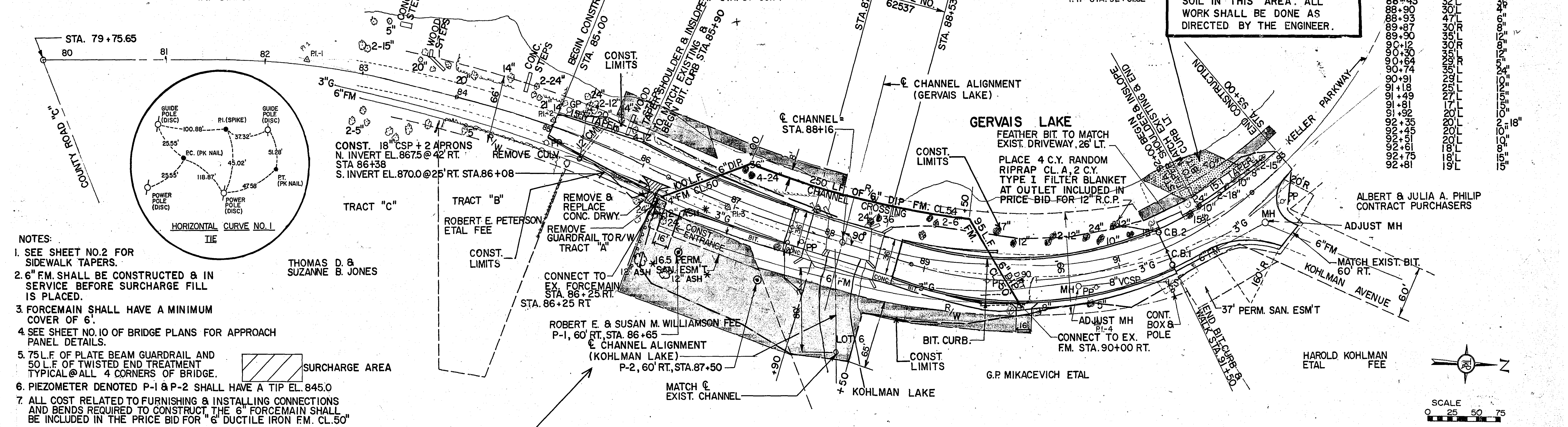
HORIZONTAL CURVE #4

PC = 88+86.84
D = 15°-00'
Δ = 54°-44'-49"
T = 197.77'
L = 364.98'
R = 381.97'
PT = STA. 92+51.82

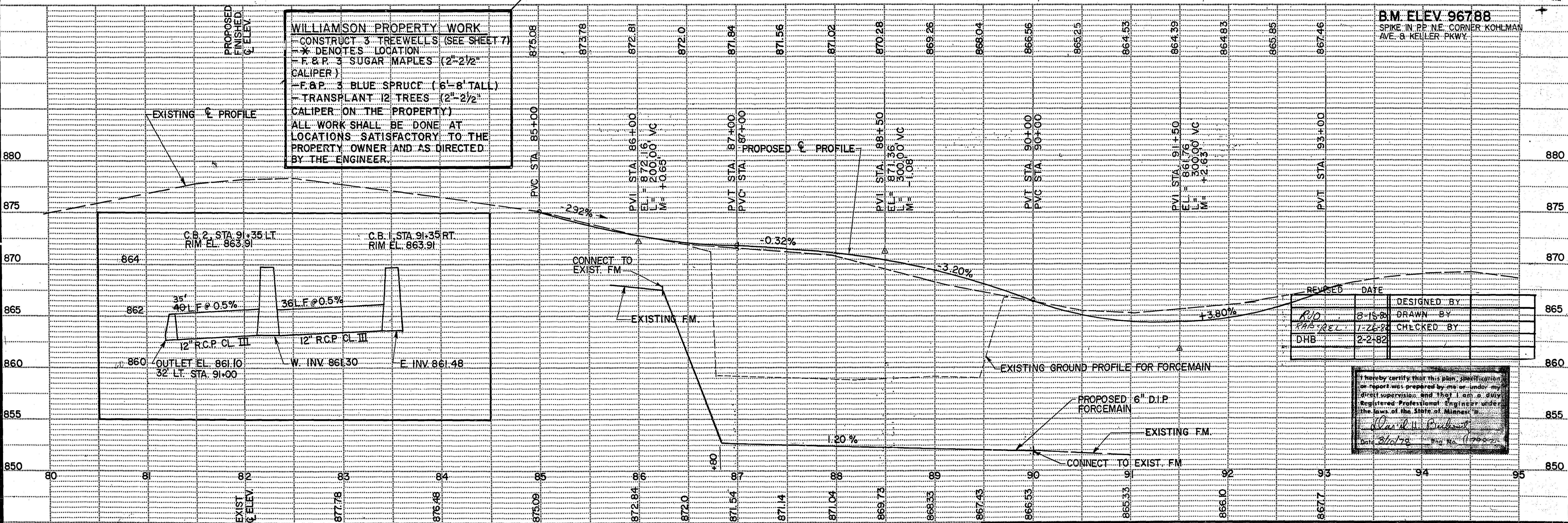
CLEAR & GRUB

STATION	LOCATION	SIZE
86+27	38' R	12" B.E.
86+30	27' R	12" B.E.
86+38	41' R	12" B.E.
87+00	35' L	24" B.E.
87+10	35' L	24" B.E.
87+56	21' R	24" B.E.
87+83	24' L	24" B.E.
88+37	26' L	24" B.E.
88+43	30' L	24" B.E.
88+90	30' R	24" B.E.
88+93	47' L	24" B.E.
89+87	30' R	24" B.E.
89+90	30' R	24" B.E.
90+12	30' R	24" B.E.
90+30	30' R	24" B.E.
90+64	29' R	24" B.E.
90+74	29' R	24" B.E.
90+91	29' R	24" B.E.
91+18	25' R	24" B.E.
91+49	27' L	24" B.E.
91+81	20' L	24" B.E.
92+15	20' L	24" B.E.
92+35	20' L	24" B.E.
92+45	20' L	24" B.E.
92+51	20' L	24" B.E.
92+75	18' L	24" B.E.
92+81	19' L	15" B.E.

FISCHBACH PROPERTY WORK
PLACE 62 C.Y. ± GRANULAR BORROW IN THIS AREA, SEE X-SEC. SHEET NO. 7. DO NOT PLACE TOP SOIL IN THIS AREA. ALL WORK SHALL BE DONE AS DIRECTED BY THE ENGINEER.



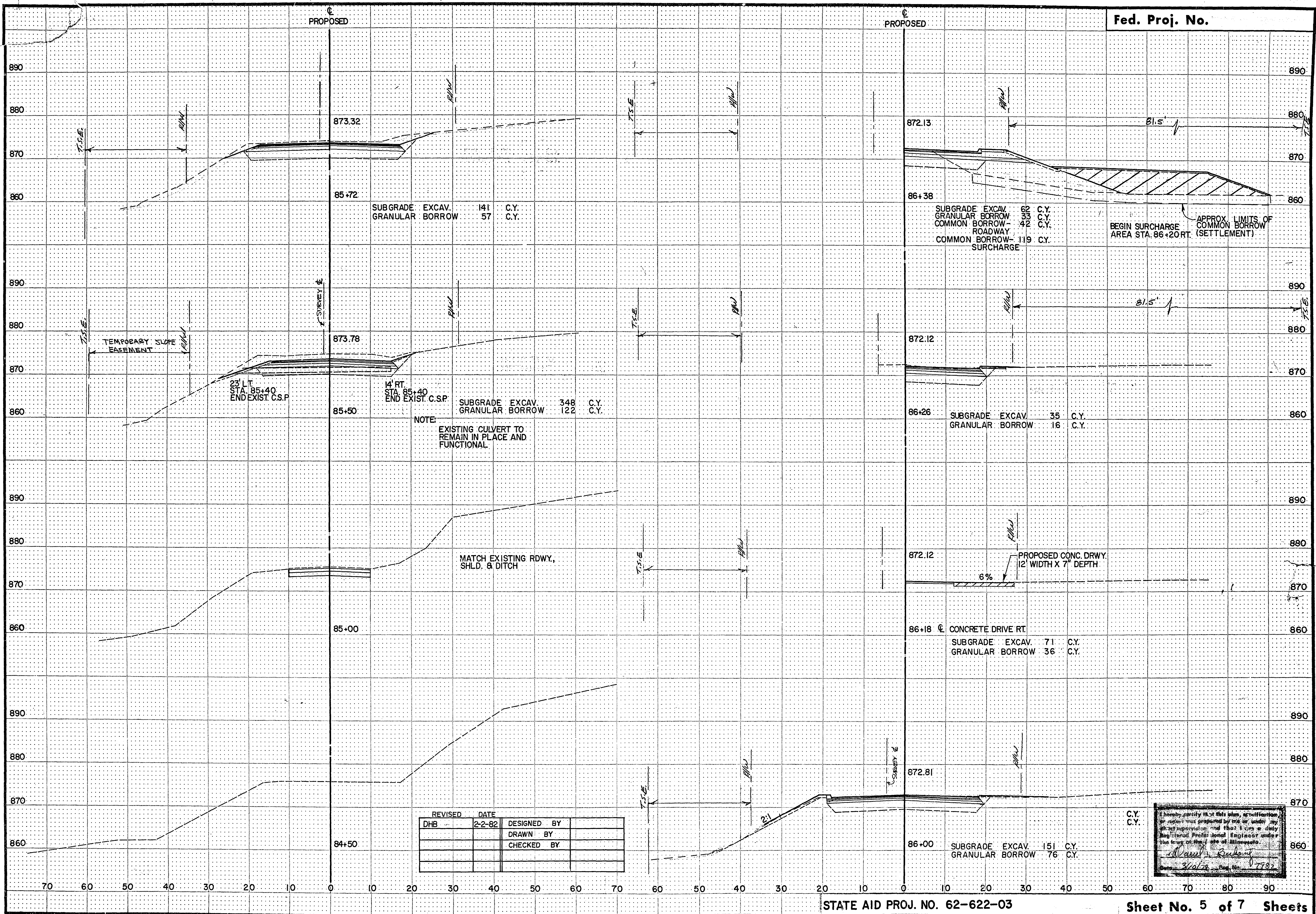
- NOTES:
- SEE SHEET NO. 2 FOR SIDEWALK TAPERS.
 - 6" FM SHALL BE CONSTRUCTED & IN SERVICE BEFORE SURCHARGE FILL IS PLACED.
 - FORCEMAIN SHALL HAVE A MINIMUM COVER OF 6'.
 - SEE SHEET NO. 10 OF BRIDGE PLANS FOR APPROACH PANEL DETAILS.
 - 75 L.F. OF PLATE BEAM GUARDRAIL AND 50 L.F. OF TWISTED END TREATMENT TYPICAL @ ALL 4 CORNERS OF BRIDGE.
 - PIEZOMETER DENOTED P-1 & P-2 SHALL HAVE A TIP EL. 845.0
 - ALL COST RELATED TO FURNISHING & INSTALLING CONNECTIONS AND BENDS REQUIRED TO CONSTRUCT THE 6" FORCEMAIN SHALL BE INCLUDED IN THE PRICE BID FOR 6" DUCTILE IRON FM. CL. 50"



WILLIAMSON PROPERTY WORK
CONSTRUCT 3 TREEWELLS (SEE SHEET 7)
* DENOTES LOCATION
- F & P 3 "SUGAR MAPLES" (2'-2 1/2" CALIPER)
- F & P 3 BLUE SPRUCE (6'-8" TALL)
- TRANSPLANT 12 TREES (2'-2 1/2" CALIPER ON THE PROPERTY)
ALL WORK SHALL BE DONE AT LOCATIONS SATISFACTORY TO THE PROPERTY OWNER AND AS DIRECTED BY THE ENGINEER.

REVISED	DATE	DESIGNED BY
R/D	8-15-81	
PAB/REL	7-26-82	
DHB	2-2-82	
		DRAWN BY
		CHECKED BY

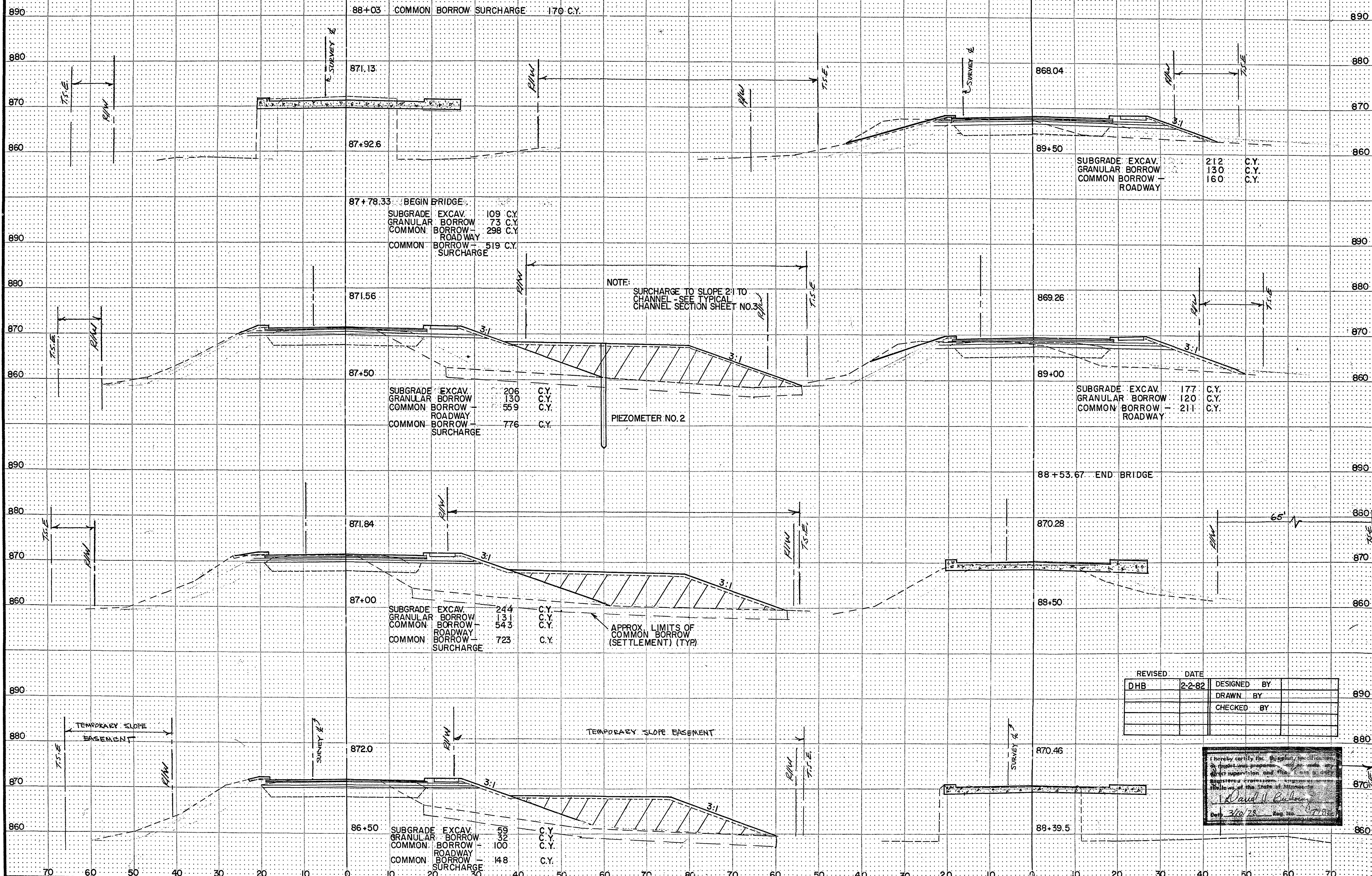
I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.
David W. Pabst
3/10/82



PROPOSED

PROPOSED

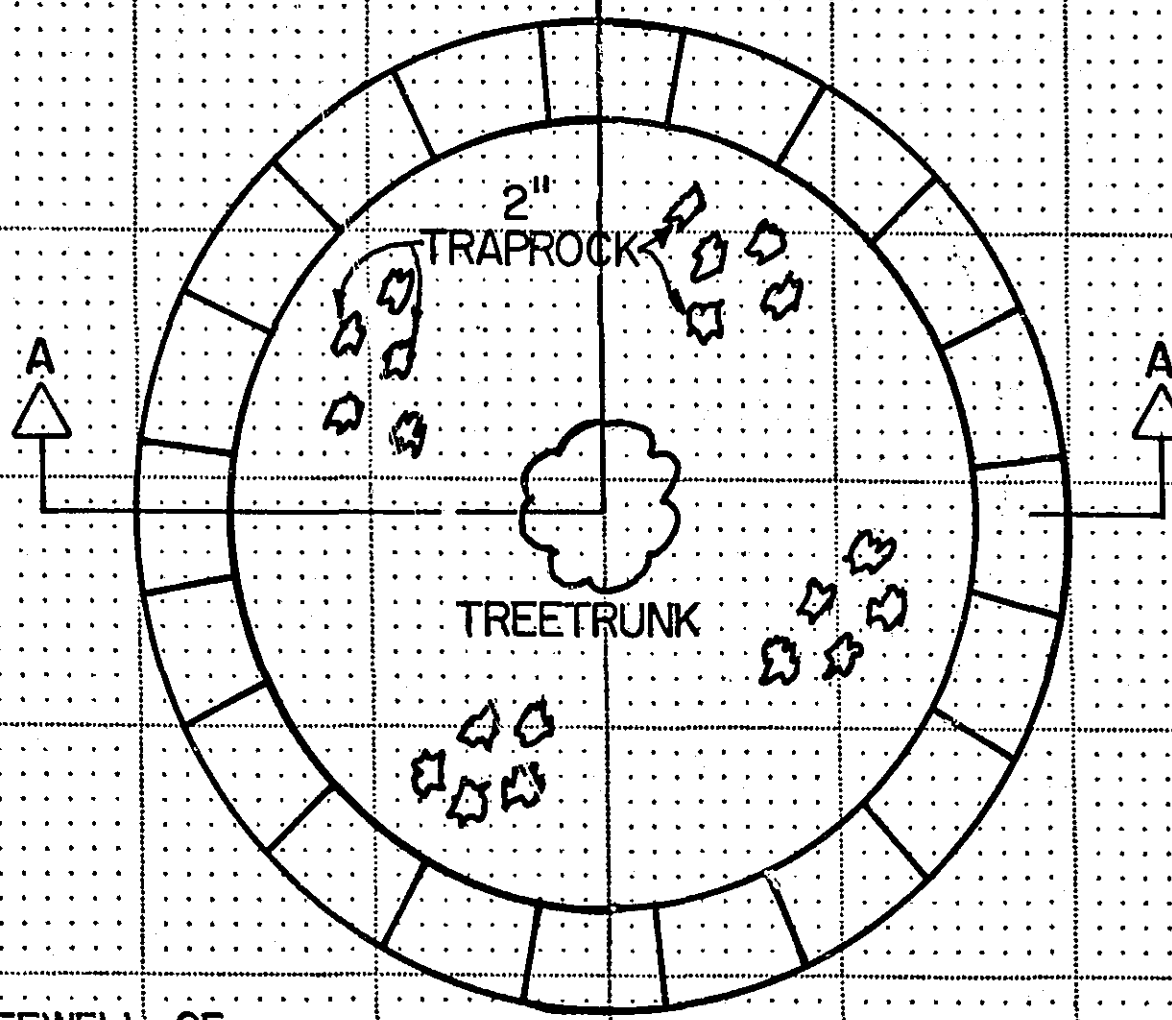
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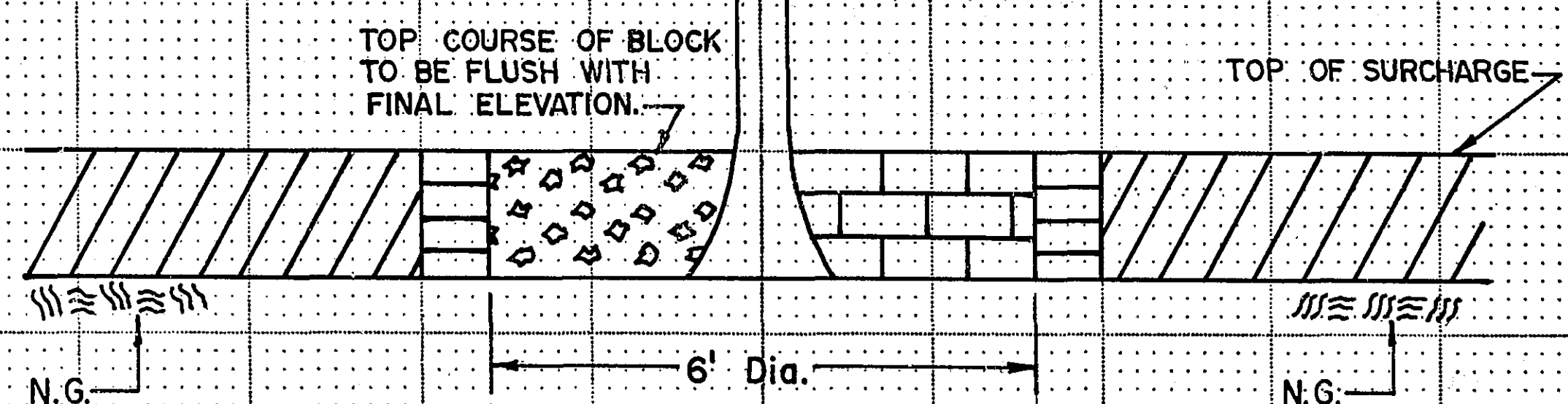
S.A.P. NO. 62-622-03

Sheet No. 6 of 7 Sheets

RAMSEY COUNTY TREEWELL DETAIL
TO BE CONSTRUCTED ON WILLIAMSON PROPERTY



CONSTRUCT TREETWELL OF
8" SOLID MANHOLE BLOCK,
MORTAR JOINTS. FILL TREETWELL
WITH 2" TRAPROCK TO FINAL
ELEVATION.



SECTION A-A

SUBGRADE EXCAVATION	GRANULAR BORROW	COMMON BORROW	
		ROADWAY	SURCHARGE
4445 C.Y.	1944 C.Y. x 1.3	2025 C.Y. x 1.3	2456 C.Y. x 1.2
	2527 C.Y.	2633 C.Y.	2947 C.Y.

4445 C.Y. - 225 C.Y. * = 4220 C.Y.
5580 C.Y. COMMON BORROW REQ'D.
- 4220 C.Y. SUBGRADE EXCAVATION
= 1360 C.Y. COMMON BORROW

* APPROX. VOLUME OF 4" THICK BITUMINOUS REMOVAL.

MATCH EXISTING RDWY., SHLD. & DITCH			
SUBGRADE EXCAV.	GRANULAR BORROW	348 C.Y.	
		133 C.Y.	
COMMON BORROW - ROADWAY		19 C.Y.	

SUBGRADE EXCAV.	GRANULAR BORROW	350 C.Y.	
		195 C.Y.	
COMMON BORROW - ROADWAY		19 C.Y.	

NOTE: INCLUDES 62 C.Y.
GRANULAR BORROW
FOR FISCHBACH PROP.

REVISED	DATE	DESIGNED BY	DRAWN BY	CHECKED BY
DHB	2-2-82			