

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

PLAN AND PROFILE OF PROPOSED

LEONARD STREET  
VILLAGE OF WEST SALEM  
C.T.H. "B"  
LA CROSSE COUNTY

JEFFERSON STREET  
VILLAGE OF WEST SALEM  
C.T.H. "B"  
LA CROSSE COUNTY

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PROJECT IDENTIFICATION NUMBER	FEDERAL PROJECT DESIGNATION
7342-2-71	S 0123(20)

PROJECT IDENTIFICATION NUMBER	FEDERAL PROJECT DESIGNATION
7342-3-71	S 0123(22)

Scales: Plan 1 in. = 20 ft.  
Profile Hor. 1 in. = 20 ft. Vert. 1 in. = 2 ft.  
Cross Sections Hor. 1 in. = 5 ft. Vert. 1 in. = 2 ft.

Design Designation

	S 0123 (20)	S 0123 (22)
A. D. T. 1971	1840	1080
A. D. T. 1991	2760	1800
D. H. V. (TWO-WAY)	414	270
D.	67%	67%
T.	10%	10%
V.	25 MPH	25 MPH

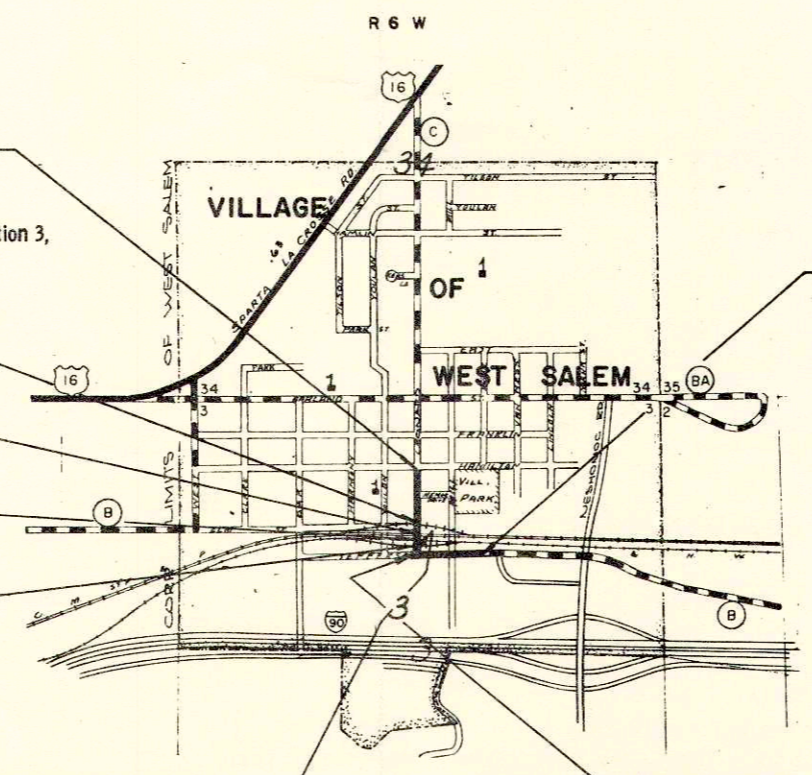
SCHEDULE OF LANDS AND INTERESTS REQUIRED

PARCEL NUMBER	OWNER	INTERESTS REQUIRED	ACRES
1	LEONARD HEMKER	L.H.E.	0.02
2	KENNETH W. ANDERSON	L.H.E.	0.02
3	ARTHER C. HERMAN	L.H.E.	0.06

END PROJECT S 0123 (20) / 7342-2-71  
STA. 19 + 78.5 = PROJECT S 0123 (18) STA. 19 + 78.5  
N = 693,220 (± 200')  
E = 1,715,020 (± 200')  
775.4 Feet South of the North One-Quarter Corner of Section 3,  
T 16 N, R 6 W.

END PROJECT S 0123 (22) / 7342-3-71  
STA. 18"A" + 11  
N = 692,300 (± 200')  
E = 1,715,790 (± 200')  
758.8 Feet East and 968.4 Feet North of the Center of  
Section 3, T 16 N, R 6 W.

- STA. 13 + 11.04 to STA. 13 + 25.46  
EXCEPTION TO NET LENGTH OF CENTERLINE
- STA. 12 + 50.14 to STA. 12 + 75.86  
EXCEPTION TO NET LENGTH OF CENTERLINE
- STA. 11 + 94.24 to STA. 12 + 06.96  
EXCEPTION TO NET LENGTH OF CENTERLINE
- STA. 11 + 47.59 to STA. 11 + 60.31  
EXCEPTION TO NET LENGTH OF CENTERLINE



Conventional Signs

State Line	-----	Culverts in Place	-----
County Line	-----	Culverts Required	-----
Township or Range Line	-----	Drop Inlet	-----
Section Line	-----	Power Pole	-----
New Right of Way Line	-----	Telephone or Telegraph Pole	-----
Present Right of Way Line	-----	Right of Way Markers	-----
Wire Fence { Woven	-----	Reference Stake for Hubs Only	-----
{ Barbed	-----	Marsh	-----
Lot Line	-----	Hedge	-----
Corporate or City Limits	-----	Trees	-----
Property Line	-----	Ground Elevation	Datum Line
Traveled Way or P.E.	-----	Grade Elevation	Datum Line
Railroads	-----		
Base or Survey Line	-----		

BEGIN PROJECT S 0123 (20) / 7342-2-71  
STA. 10 + 82.3  
N = 692,320 (± 200')  
E = 1,715,020 (± 200')  
968.4 Feet North of the Center of Section 3, T 16 N, R 6 W

BEGIN PROJECT S 0123(22) / 7342-3-71  
STA. 10"A" + 00  
N = 692,300 (± 200')  
E = 1,714,980 (± 200')  
42.2 Feet West and 926.4 Feet North of the Center of  
Section 3, T 16 N, R 6 W.

Layout  
Scale 0 1000 FT.  
Total Net Length of Centerline • 0.157 MI. S 0123(20)  
0.154 MI. S 0123(22)

NOTE:  
COORDINATES SHOWN ARE WISCONSIN COORDINATE SYSTEM  
SOUTH ZONE COORDINATES AND ARE SCALED FROM U. S. G. S.  
TOPOGRAPHIC MAP, LA CROSSE, WISCONSIN, QUADRANGLE  
FOR IDENTIFICATION ONLY

APPROVED FOR  
LA CROSSE COUNTY  
BY

1-19-71  
County Highway Commissioner

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

Surveyor R.R.S. District Checker G.W.P.  
Designer J.H.L. C.O. Checker I.L.J.

Correct:

Date 1/25/71 District Engineer  
Recommended for Approval:  
Date 2/9/71 Chief Design Engineer  
Approved:  
Date 2/10/71 State Highway Engineer

U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
BUREAU OF PUBLIC ROADS  
REGION 4 WISCONSIN DIVISION

Approved:  
Date  
Division Engineer

S0123(20)(22)

STANDARD ABBREVIATIONS

ADT	AVERAGE DAILY TRAFFIC	MIN.	MINIMUM
AH.	AHEAD	N	NORTH
ET. AL.	AND OTHERS	PAV'T.	PAVEMENT
BK	BACK	P.C.	POINT OF CURVATURE
B	BARN	P.I.	POINT OF INTERSECTION
B.M.	BENCH MARK	P.T.	POINT OF TANGENCY
BIT.	BITUMINOUS	P.C.C.	PORTLAND CEMENT CONCRETE
C.B.	CATCH BASIN	P.E.	PRIVATE ENTRANCE
CL.	CENTERLINE	P.L.	PROPERTY LINE
Δ	CENTRAL ANGLE OR DELTA	P.P.	POWER POLE
CH. CH.	CHANNEL CHANGE	PROJ.	PROJECT
CL.	CLASS	R	RADIUS
C.M.C.P.	CORRUGATED METAL CULVERT PIPE	R.C.C.P.	REINFORCED CONCRETE CULVERT PIPE
CONC.	CONCRETE	R.C.P.S.S.	REINFORCED CONCRETE PIPE, STORM SEWER
CONST.	CONSTRUCTION	REQ'D.	REQUIRED
C.P.	CULVERT PIPE	RT.	RIGHT
C.T.H.	COUNTY TRUNK HIGHWAY	R.H.F.	RIGHT HAND FORWARD
CWT.	HUNDRED WEIGHT	R/W	RIGHT OF WAY
C.Y.	CUBIC YARD	RD	ROAD
D	DEGREE OF CURVE	SAN	SANITARY
D	DIRECTIONAL DISTRIBUTION	S	SOUTH
D.H.V.	DESIGN HOUR VOLUME	S.W.	SIDEWALK
DIS.	DISCHARGE	STD	STANDARD
E	EAST	S.T.H.	STATE TRUNK HIGHWAY
ELEV.	ELEVATION	STA.	STATION
EXC.	EXCAVATION	S.S.	STORM SEWER
F.F.	FACE TO FACE	S.E.	SUPERELEVATION
F.E.	FIELD ENTRANCE	S.Y.	SQUARE YARD
F.L.	FLOW LINE	SHR	SHRINKAGE
FT.	FOOT (FEET)	SURF	SURFACE
G	GARAGE	T	TRUCK PERCENTAGE
GAL.	GALLON	T	TANGENT LENGTH OF CURVE
H	HOUSE	TAV.	TAVERN
HOR.	HORIZONTAL	T.P.	TELEPHONE POLE
IN.	INCHES	L	TRANSIT LINE
Δ or I	INTERSECTION ANGLE	UNCL.	UNCLASSIFIED EXCAVATION
I.P.	IRON PIN	V	DESIGN SPEED
L.F.	LINEAL FEET	VAR.	VARIABLE
LT.	LEFT	V.C.	VERTICAL CURVE
L.H.F.	LEFT HAND FORWARD	VERT	VERTICAL
L	LENGTH OF CURVE	W	WEST
L.S.	LUMP SUM	CR.	CRUSHED
L.H.E.	LIMITED HIGHWAY EASEMENT	H.P.	HIGH POINT
M.H.	MANHOLE		
MAX.	MAXIMUM		
MI.	MILE		

GENERAL NOTES

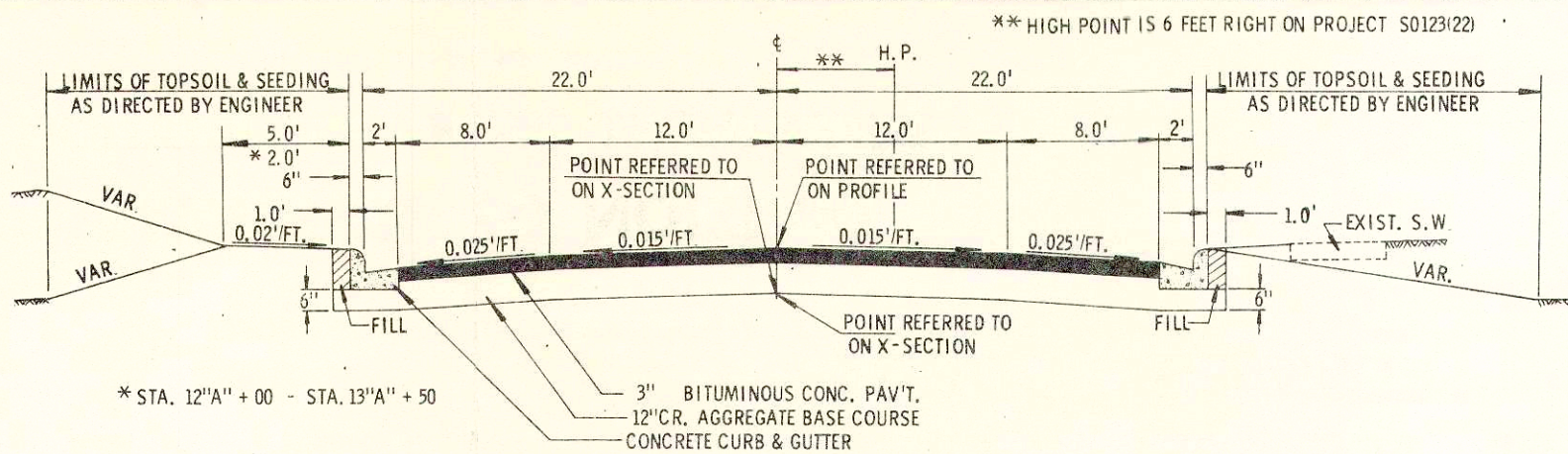
1. WHEN THE QUANTITY OF THE ITEMS OF BASE OR SURFACE COURSE IS MEASURED FOR PAVEMENT BY THE TON OR CUBIC YARD THE DEPTH OR THICKNESS OF THE COURSE SHOWN ON THE PLAN IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.
2. TOPSOIL TO BE PLACED ON ALL CUT SLOPES AND ALL FILL SLOPES TO AN APPROXIMATE DEPTH OF 4" AT TIME OF PLACING
3. EXACT LOCATION OF ENTRANCES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.
4. CONTRACTION JOINTS SHALL BE INSTALLED AT 20 FOOT (± 2') SPACING.
5. NO TREES OR SHRUBS SHALL BE REMOVED UNLESS SUCH TREES OR SHRUBS HAVE BEEN DESIGNATED FOR REMOVAL BY THE ENGINEER.

UTILITIES

N.S.P. CO.	LA CROSSE, WIS.
LA CROSSE TEL. CO.	LA CROSSE, WIS.
WIS. GAS CO.	SPARTA, WIS.

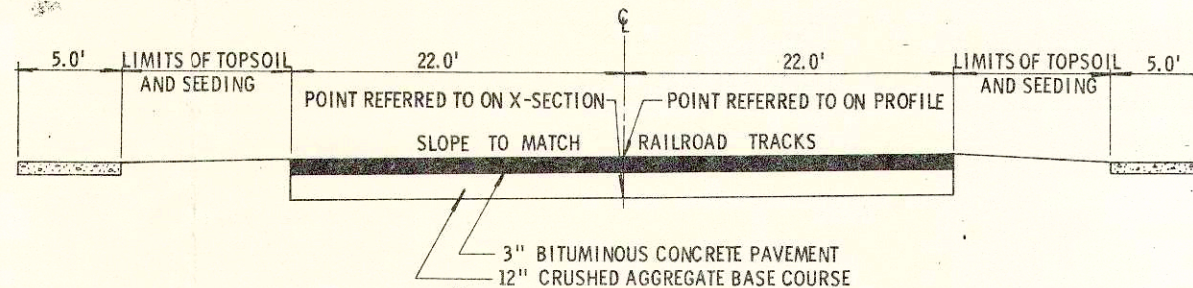
STANDARD DETAIL DRAWINGS

- 2 - 2.1.12 PAVEMENT DETAILS FOR RAILROAD APPROACH
- 3 - 1.1.7 CONCRETE CURB, GUTTER, COMBINATION CURB AND GUTTER, SURFACE DRAIN
- 4 - 4.4.9 LONGITUDINAL JOINTS - CONCRETE PAVEMENT
- 5 - 6.1.1 MANHOLES, TYPE 1 AND MANHOLE COVERS
- 5 - 7.1.2 INLETS TYPE 1 AND 2 AND INLET COVERS
- 5 - 7.2.1 INLETS TYPE 3 AND INLET COVERS
- 6 - 2.6.8 APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCH
- 7 - 4.1.5 CONSTRUCTION BARRICADE
- 6 - 5.3.2 STRUCTURAL PLATE PIPE ARCH & CORRUGATED METAL PIPE ARCH



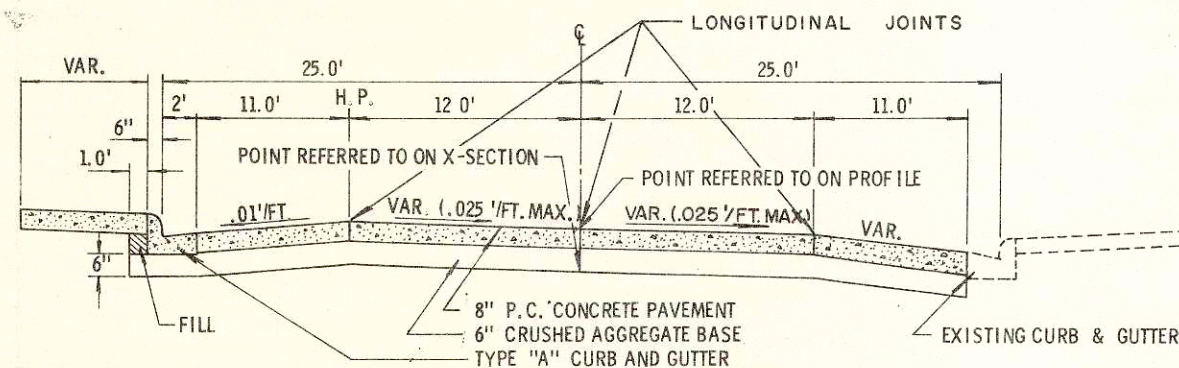
TYPICAL FINISHED SECTION

PROJ. S 0123(20)  
 STA. 10 + 82.3 to STA. 11 + 47.59  
 PROJ. S 0123(22)  
 STA. 10 "A" + 00 to STA. 18 "A" + 11



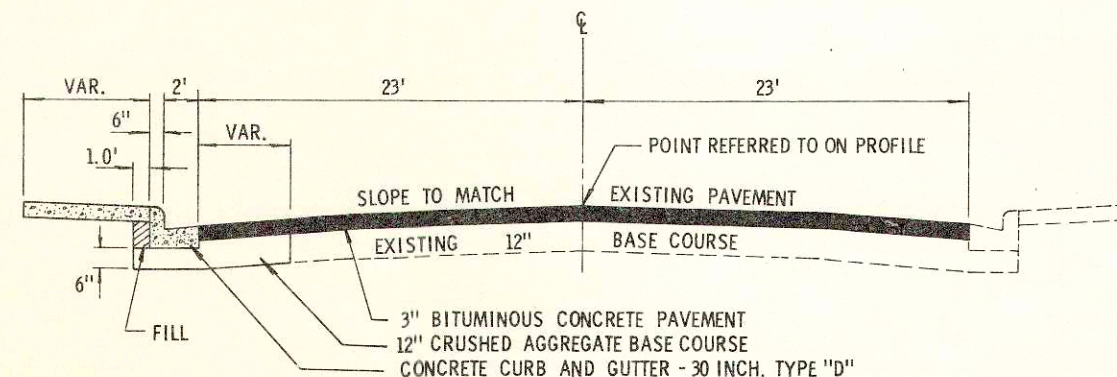
TYPICAL FINISHED SECTION

PROJECT S 0123(20)  
 STA. 11 + 47.59 - STA. 13 + 11.04



TYPICAL FINISHED SECTION

PROJ. S 0123(20)  
 STA. 13 + 25.46 - STA. 19 + 61.5



TYPICAL FINISHED SECTION

PROJECT S 0123(20)  
 STA. 19 + 61.5 - STA. 19 + 78.5

PROJECT NO. 7342 - 2 - 71 7342	SHEET NUMBER 2	TOTAL SHEETS 25
FEDERAL PROJECT DESIGNATION S 0123 (20) S 0123 (22)		
TYPICAL FINISHED SECTIONS		

**GENERAL NOTES**

Details of construction not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications and the applicable Special Provisions.

**ALTERNATE DESIGNS**

Alternate designs for load transfer dowels at expansion joints and appurtenances other than shown hereon may be used upon written approval of the Engineer.

**CONTRACTION JOINTS**

Contraction joints shall be installed at 20' (±2') spacing from adjacent contraction or expansion joints.

**CONSTRUCTION JOINTS**

Construction joints shall be installed as necessary, except that a construction joint shall not be less than 10 feet from the nearest contraction or expansion joint.

Deformed bars shall be spaced at 12" C:C and 6" from edge of pavement.

Deformed bars may be inserted after the concrete has been poured.

**EXPANSION JOINTS**

Expansion joints are required only at structure approaches and/or where shown on the Plans. The locations may be shifted to avoid stationary fixtures in the pavement.

Expansion joint filler shall be secured with sufficient number of steel pins to preclude any horizontal movement during the placing of concrete.

One end of each dowel bar shall be sawed and free of all burrs or protruding edges.

Metal dowel socket (CAP), 1-1/16" or 1-5/16" Dia., 24 Gauge, closed on one end, shall be placed on the sawed end of each dowel bar as required for proper pavement expansion.

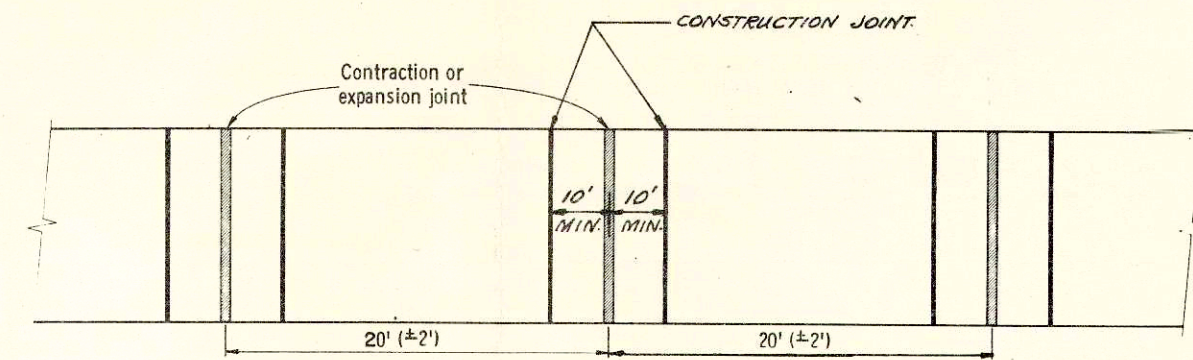
Dowel bars shall be painted with a rust inhibitive paint and coated for at least 2/3 their length with liquid asphalt MC 70 or MC 250, or other approved lubricant, to prevent bonding with concrete. The asphalt coating shall be applied to the sawed and capped end of the dowel bar and shall be sufficiently dry so that it will not be removed by the handling and placing of the dowel assembly.

Dowel bars shall be spaced at 12" C:C and 6" from edge of pavement.

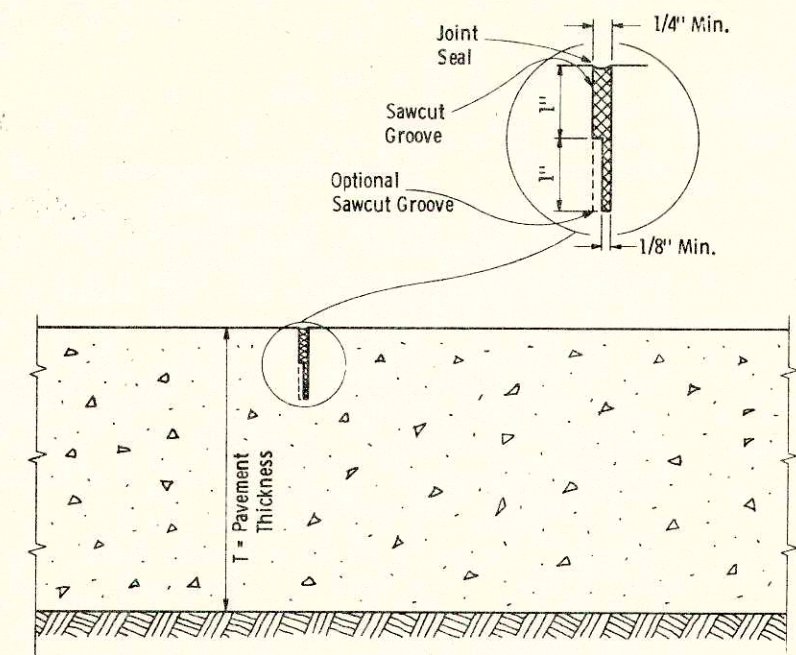
- Dowel bar dimensions:
- For 7-Inch P.C. Pavement = 1" Ø x 18"
  - For 8-Inch P.C. Pavement = 1" Ø x 18"
  - For 9-Inch P.C. Pavement = 1 1/4" Ø x 18"

**SEALING JOINTS**

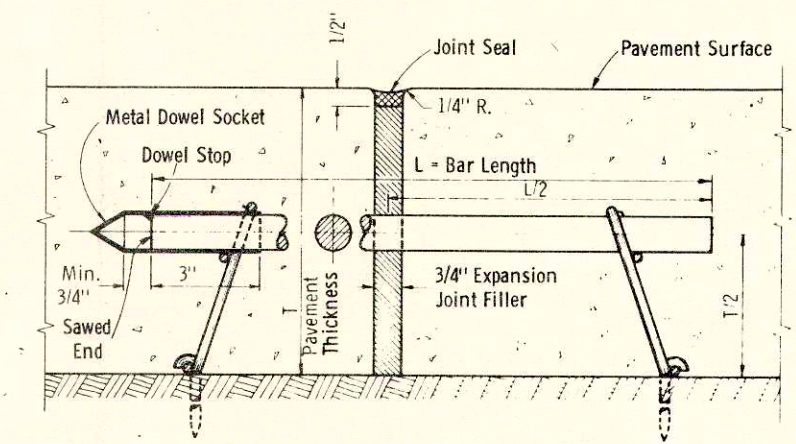
Joints shall be sealed as shown.



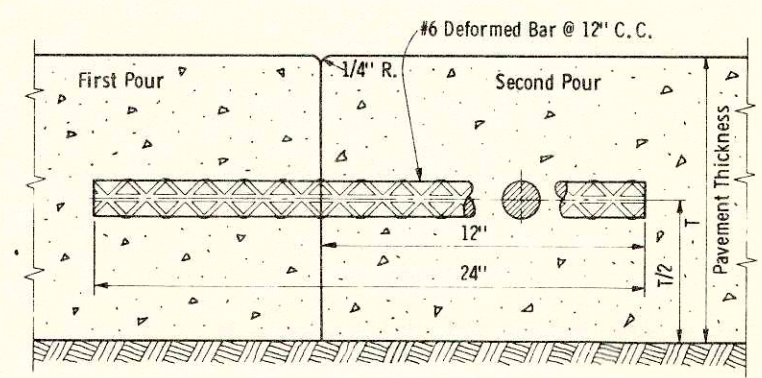
**SCHMATIC SHOWING JOINT LOCATIONS**



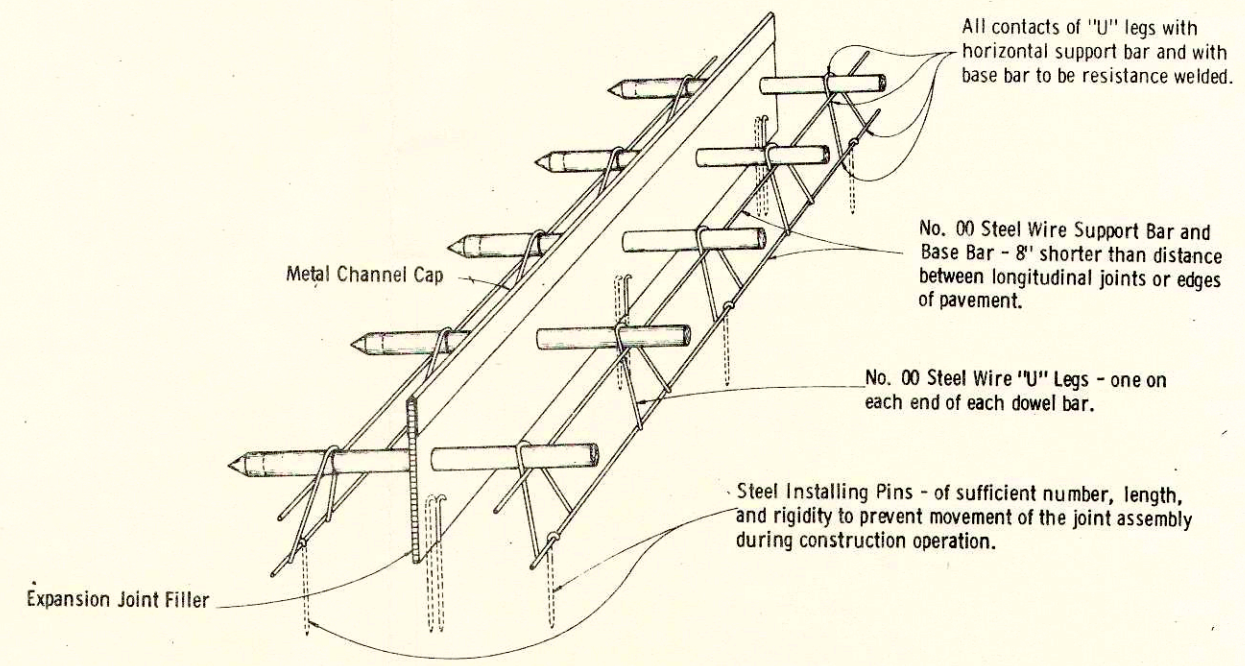
**CONTRACTION JOINT**



**EXPANSION JOINT**



**CONSTRUCTION JOINT**



**INSTALLING DEVICE FOR LOAD TRANSFER DOWELS AND EXPANSION JOINT ASSEMBLY**

DETAILS FOR TRANSVERSE JOINTS IN NON-REINFORCED CONCRETE PAVEMENT

# ESTIMATE OF QUANTITIES

THIS PROJECT IS TO BE EXECUTED UNDER THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION OF THE WISCONSIN DIVISION OF HIGHWAYS - EDITION 1969, APPROVED MARCH 3, 1969; FEDERAL AID REQUIRED CONTRACT PROVISIONS APPROVED NOV. 15, 1968, AND SPECIAL PROVISIONS AS ATTACHED TO PROPOSALS.

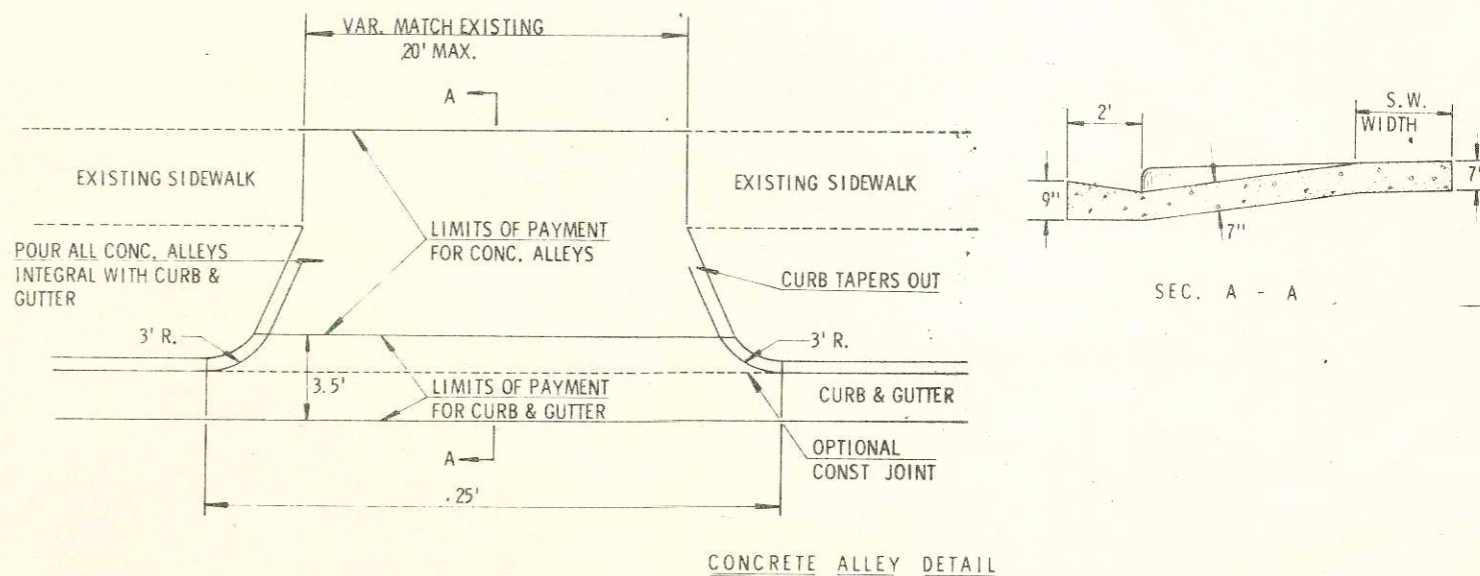
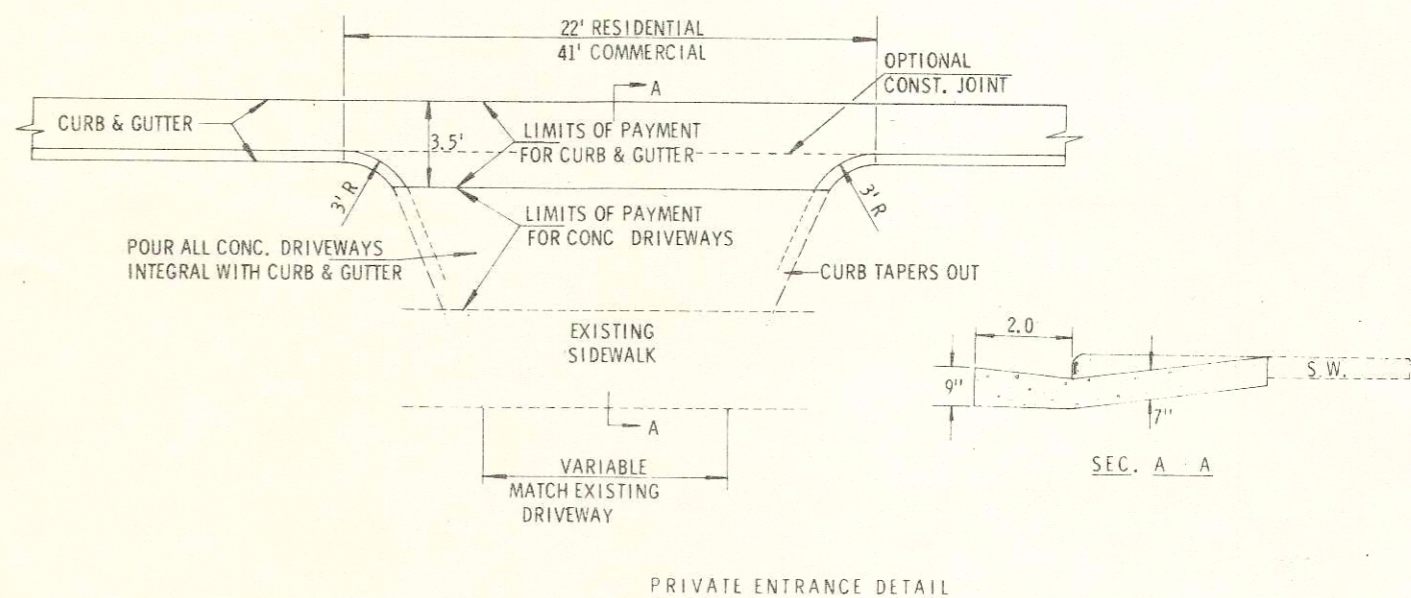
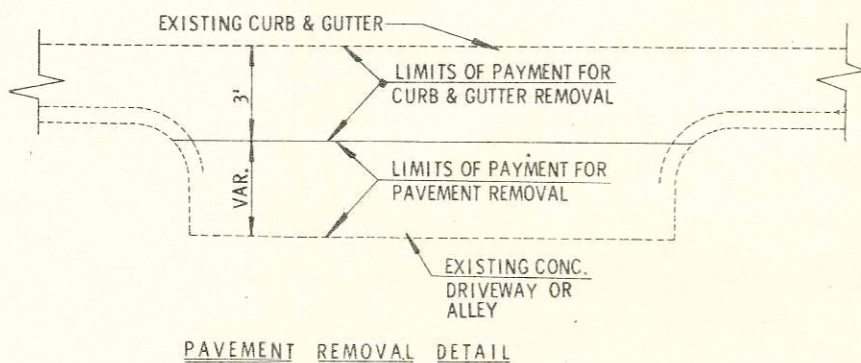
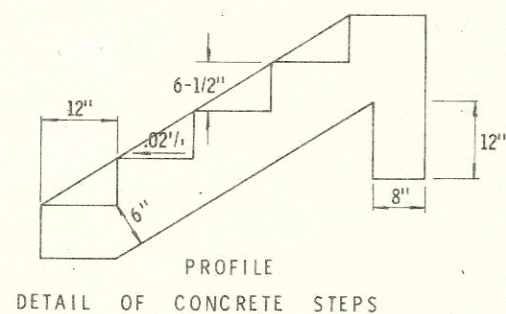
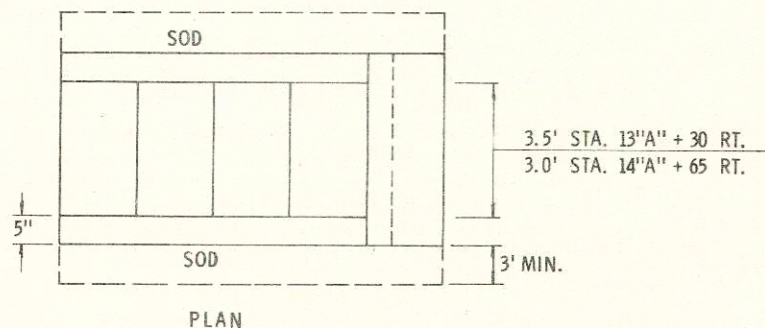
CONTRACT NO. 1  
 GRADING, BASE COURSE, CURB AND GUTTER, BITUMINOUS AND CONCRETE SURFACING

PROJECT ID 7342-2-71 7342-3-71	SHEET NUMBER <b>3</b>	TOTAL SHEETS <b>25</b>
FEDERAL PROJECT DESIGNATION S 0123 (20) S 0123 (22)		

SEC. NO.	STATION TO STATION	NET LENGTH OF CENTER LINE	REMOVING OLD CULVERT STA. 14 + 71	REMOVING PAVEMENT	REMOVING CURB AND GUTTER	REMOVING CONCRETE SIDEWALK	REMOVING INLETS	UNCLASSIFIED EXCAVATION	FINISHING ROADWAY		CRUSHED AGGREGATE BASE COURSE	BITUMINOUS CONCRETE PAVEMENT	BITUMINOUS MATERIAL FOR SURFACE COURSE	CONCRETE PAVEMENT 8 INCH	CONCRETE DRIVEWAY	CONCRETE ALLEY	CORRUGATED METAL PIPE ARCH 29 x 18 INCH	METAL APRON ENDWALLS FOR PIPE ARCH 29 x 18 INCH	CONCRETE CURB AND GUTTER 30-INCH TYPE "A"	CONCRETE CURB AND GUTTER 30-INCH TYPE "D"	CONCRETE SIDEWALK 5-INCH	CONCRETE STEPS	REINFORCED CONCRETE PIPE CLASS III STORM SEWER		REINFORCED CONCRETE PIPE CLASS V STORM SEWER		MAN-HOLES TYPE 1
									PROJECT S 0123 (20)	PROJECT S 0123 (22)													12 INCH	15 INCH	15 INCH	15 INCH	
									UNIT	LIN. FT.													L.S.	S.Y.	L.F.	S.Y.	
<b>PROJECT S0123(20)</b>																											
I	STA. 10 + 82.3 - 19 + 78.5	830.62	1	188	546	882	4	1953	1		4200	190	11.4	3315		21	76	2	614	159	7630		109	59	89	3	
<b>PROJECT S0123(22)</b>																											
II	STA. 10"A" + 00 - 18"A" + 11	811.00		340	1544	158		1722	1		2900	710	42.6		6					1584	1183	41	157	401		2	
<b>CONTRACT TOTAL</b>																											
		1641.62	1	528	2090	1040	4	3675	1	1	7100	900	54	3315	6 *	21	76	2	614	1743	8813 *	41 *	266	460 *	89 *	5 *	

SEC. NO.	STATION TO STATION	NET LENGTH OF CENTER LINE	INLETS		MANHOLE COVERS	INLET COVERS		ADJUSTING MANHOLE COVERS	TOPSOIL	FERTILIZER	SEEDING	SODDING	FIELD OFFICE TYPE "A"	FIELD LABORATORY
			TYPE 1	TYPE 3	TYPE "J"	TYPE "A"	TYPE "H"	EACH	S.Y.	CWT.	S.Y.	S.Y.	L.S.	L.S.
			UNIT	LIN. FT.	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
<b>PROJECT S0123(20)</b>														
I	STA. 10 + 82.3 - 19 + 78.5		4		3	4		5	240	1	240	15	1	1
<b>PROJECT S0123(22)</b>														
II	STA. 10"A" + 00 - 18"A" + 11		2	2	2	2	2	8	1140	1	1420	10		
<b>CONTRACT TOTAL</b>														
			6	2	5 *	6	2	13	1380	2	1660	25	1	1

\* NON-FEDERAL PARTICIPATION



# DETAIL SUMMARY OF MISCELLANEOUS QUANTITIES

## CONCRETE CURB & GUTTER 30 INCH

Sta. - Sta.	Location	Type "A" L.F.	Type "D" L.F.
10+82.3-11+49.7	Lt. & Rt.		135
Elm St.	N.W. Rad.	23.5	
13+71-19+61.5	Lt.	590.5	
Hamilton St.	S.W. Rad.		24
Project S 0123(22)			
9"A"+97-13A+78.1	Rt.		381.0
Leonard St.	N.W. Rad.		28.6
Leonard St.	N.E. Rad.		31.4
10A+82.3-13A+78.1	Lt.		296.0
Mill St.	N.W.		23.6
Mill St.	S.W.		23.6
Mill St.	N.E.		23.6
Mill St.	S.E.		23.6
14"A"+34.7-18"A"+11	Lt.		376.3
14A+34.7-18A+11	Rt.		376.3

## CONCRETE SIDEWALK 5"

Sta. - Sta.	Location	S.F.
Project S 0123(20)		
11+16.5-11+47.5	Lt.	31.0
11+56.6-11+95.5	Rt.	194.5
11+59.7-11+97.5	Lt.	189.0
12+03.5-12+51.0	Rt.	237.5
12+06.0-12+53	Lt.	235.0
12+73.3-13+16	Rt.	213.5
12+75.5-13+09	Lt.	167.5
13+56.5-19+76	Lt.	6362.0

## Project S 0123(22)

10"A"+10	Lt.	20.0
10"A"+10	Rt.	32.5
10"A"+71	Lt.	22.5
10"A"+75	Rt.	18.0
10"A"+93-11"A"+13	Rt.	80.0
11"A"+98-12"A"+20	Rt.	88.0
13"A"+10-13"A"+88	Rt.	312.0
13"A"+30	Rt.	10.0
14"A"+25-15"A"+25	Rt.	600.0

## STORM SEWER

### Project S 0123(20)

Sta.	Loc.	Inlet Type	M.H. Type	Grate Elev.	Disc. Elev.	Depth	R.C.P. Class III Length	Class V Length
11+43	16'Lt.	1-J	1-J	743.93	739.62	3'-7"	59'	15"
11+41	22'Rt.	1-A		743.54	740.60	2'-6"	35'	12"
11+43	22'Lt.	1-A		743.54	740.60	2'-6"	3'	12"
12+35	16'Lt.		1-J	742.07	739.35	2'-0"		15"
14+71	20'Lt.		1-J	739.65	732.40	6'-6"		
14+84	25'Lt.	1-A		739.40	736.90	2'-0"	11'	12"
17+84	25'Lt.	1-A		738.79	736.30	2'-0"	60'	12"
Project S 0123(22)								
10A+24	22'Rt.	3-H		745.80	743.40	2'-0"	32'	12"
10A+24	14'Lt.		1-J	745.80	742.00	3'-0"	27'	15"
13A+77	22'Rt.	1-A		749.60	747.70	1'-6"	38'	12"
13A+98	14'Lt.		1-J	749.80	746.50	2'-6"	374'	15"
14A+36	22'Rt.	3-H		749.75	747.80	1'-6"	50'	12"
14A+36	22'Lt.	1-A		749.50	747.60	1'-6"	37'	12"

## ADJUSTING MANHOLE COVERS

Sta.	Location
Project S 0123(20)	
13+38.5	C/L
14+65.5	13.8'Rt.
14+70.2	21' Rt.
14+85.5	8.7' Rt.
16+70.2	1' Rt.

## Project S 0123(22)

10"A"+40.4	19' Rt.
10"A"+52.4	31.2 Lt.
13"A"+90.7	11.2 Rt.
13"A"+95.7	7.4 Rt.
13"A"+96.7	14.1 Rt.
14"A"+05.5	1.2 Rt.
14"A"+89.4	20.5 Lt.
16"A"+34.5	1.1 Rt.

I.D. NO.	PROJECT	SHEET NO.	TOTAL SHEET
7342 - 2 - 71	S 0123 (20)	3 - A	25
7342 - 3 - 71	S 0123 (22)		

# DETAIL SUMMARY OF MISCELLANEOUS QUANTITIES

## REMOVING PAVEMENT

Sta. - Sta.	Location	S.Y.	Remarks	Project S 0123(20)	Ton
11+59.0-11+97.2	Lt.	11	Gutter	10+82.3-11+49.7	205.0
11+57.5-11+95.5	Rt.	11	Gutter	11+58.2-11+96.3	117.0
12+08.0-12+47.5	Rt.	11	Gutter	12+04.86-12+52.24	145.5
12+06.5-12+53.0	Lt.	13	Gutter	12+60.75-12+65.25	13.8
12+42.8-12+53.0	Lt.	5	Driveway	12+73.76-13+13.14	121.0
12+85.5-13+08.5	Rt.	6	Gutter	13+23.6-19+61.5	3191.0
12+89.5-13+10.0	Lt.	6	Gutter	19+61.5-19+78.5	1.7
14+63.7-14+79.2	Lt.	21	Alley	Undistributed	405.0
14+87.7-17+62.5	Lt.	91	Apron		
19+44.4-19+78.5	Lt.	13	Apron		

## Project S 0123(22)

11"A"+03	Rt.	24	Driveway	10A+00-10A+82.3	305
11"A"+98-12A+70	Lt.	316	Driveway	10A+82.3-14A+06.3	980
				Mill St.	77
				14A+06.3-18A+11	1225
				Undistributed	313

## REMOVING CURB & GUTTER

Sta. - Sta.	Location	Lin. Ft.
10+82.3-11+51.5	Lt.	69.2
10+82.3-11+50.0	Rt.	67.7
13+57.8-17+62.5	Lt.	404.7
19+76.5	Lt.	4.4

## Project S 0123(22)

N.W. Cor. Leonard St.	Lt.	40
N.E. Cor. Leonard St.	Lt.	47
9"A"+97-13"A"+78.1	Rt.	383
10"A"+82.3-13A+78.1	Lt.	296
N.W. Cor. Mill St.	Lt.	34
S.W. Cor. Mill St.	Rt.	32
N.E. Cor. Mill St.	Lt.	34
S.E. Cor. Mill St.	Rt.	32
14"A"+34.7-17"A"+39.5	Lt.	305
14"A"+34.7-17A+75.2	Rt.	341

## REMOVING CONCRETE SIDEWALK

Sta. - Sta.	Location	S.Y.
11+16.5-11+47.5	Lt.	9.3
11+56.6-11+95.5	Rt.	21.6
11+59.2-11+97.5	Lt.	21.3
12+03.5-12+51.3	Rt.	31.9
12+06-12+53	Lt.	31.3
12+75.5-13+09	Lt.	22.3
12+85.5-13+16	Rt.	16.9
13+20-13+23.2	Lt.	2.1
13+57.8-19+76.5	Lt.	<b>725.3</b>

## Project S 0123(22)

10A+10	Lt.	3.3
10A+10	Rt.	7.2
10A+71	Lt.	8.9
10A+75	Rt.	7.2
10A+93-11A+13	Rt.	8.9
11A+98-12A+20	Rt.	9.8
13A+10-13A+75	Rt.	28.8
13A+30	Rt.	3.3
13A+75-13A+92.7	Rt.	9.9
14A+20.5-15A+25	Rt.	69.5
14A+66	Rt.	1.2

## REMOVING INLETS

Sta.	Location	Each
11+47.8	Rt.	1
11+49.3	Lt.	1
12+34.5	Rt.	1
12+35.0	Lt.	1

## CONCRETE ALLEY

14+71	Location	S.Y.
	Project S 0123(20)	21
	Lt.	

## CONCRETE DRIVEWAY

11"A"+03	Location	S.Y.
	Project S 0123(22)	6.0
	Rt.	

## CRUSHED AGGREGATE BASE COURSE

### Project S 0123(20)

Sta. - Sta.	Location	Ton
10+82.3-11+49.7	C/L	205.0
11+58.2-11+96.3	C/L	117.0
12+04.86-12+52.24	C/L	145.5
12+60.75-12+65.25	C/L	13.8
12+73.76-13+13.14	C/L	121.0
13+23.6-19+61.5	C/L	3191.0
19+61.5-19+78.5	Lt.	1.7
Undistributed		405.0

### Project S 0123(22)

10A+00-10A+82.3	C/L	305
10A+82.3-14A+06.3	C/L	980
Mill St.	Rt. & Lt.	77
14A+06.3-18A+11	C/L	1225
Undistributed		313

## CONCRETE PAVEMENT 8 INCH

Project S 0123(20)	Location	S.Y.
13+23.6-13+71	C/L	297
13+71-19+61.5	C/L	3018

## BITUMINOUS CONCRETE PAVEMENT

### Project S 0123(20)

Loc.	Bit. Conc.	Ton	Bit. Mat'l. for Surf. Crse. Ton
10+82.3-11+49.7	C/L	51	3.1
11+58.2-11+96.3	C/L	32	1.9
12+04.86-12+52.24	C/L	39.3	2.4
12+60.75-12+65.25	C/L	3.7	.2
12+73.76-13+13.14	C/L	32.6	2.0
19+61.5-19+78.5	C/L	16.0	1.0
Undistributed		15.4	.8

### Project S 0123(22)

10"A"+00-10"A"+82.3	C/L	77	4.7
10"A"+82.3-14"A"+06.3	C/L	244	14.6
Mill St. Int.	Lt. & Rt.	19	1.1
14"A"+06.3-18"A"+11	C/L	305	18.3
Undistributed		65	3.9

## CONCRETE STEPS

### Project S 0123(22)

13"A"+30	Rt.	S.F.
14"A"+65	Rt.	26.0
		15.0

## SODDING

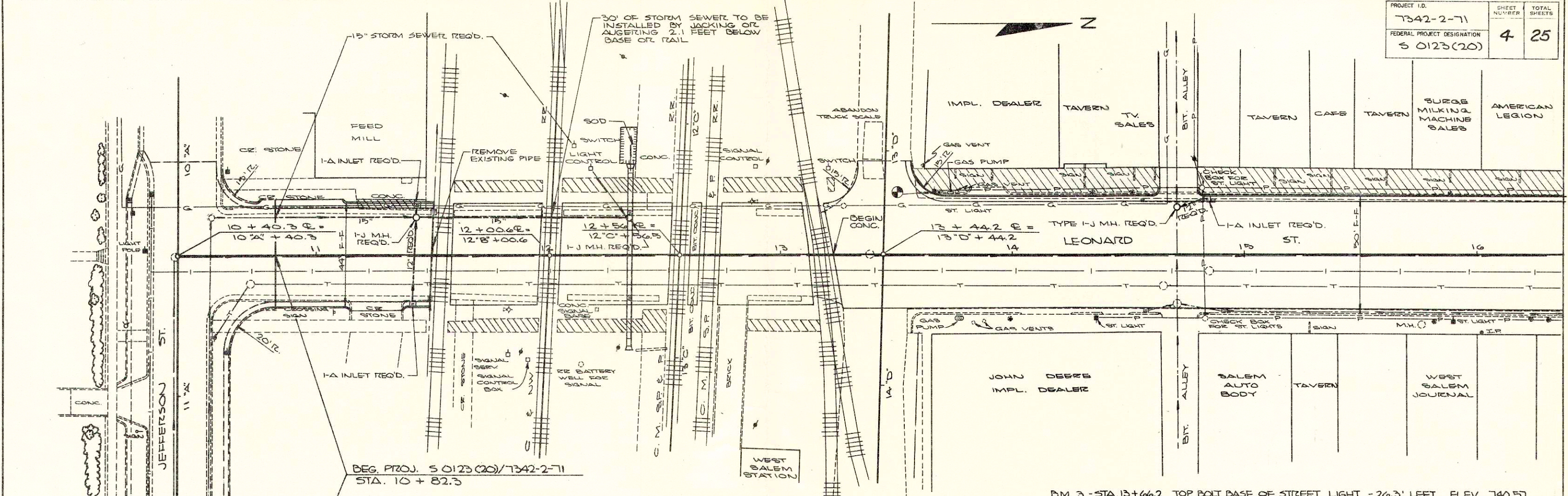
### Project S 0123(20)

12+35	Lt.	S.Y.
Undistributed		10
		5

### Project S 0123(22)

13A+30	Rt.	4
14A+65	Rt.	3
Undistributed		3

I.D. NO.	PROJECT	SHEET NO.	TOTAL SHEETS
7342 - 2 - 71	S 0123 (20)	3 - B	25
7342 - 3 - 71	S 0123 (22)		



NOTE BOOK ALIGNMENT CHECKED  
RT. OF WAY CHECKED  
NO.

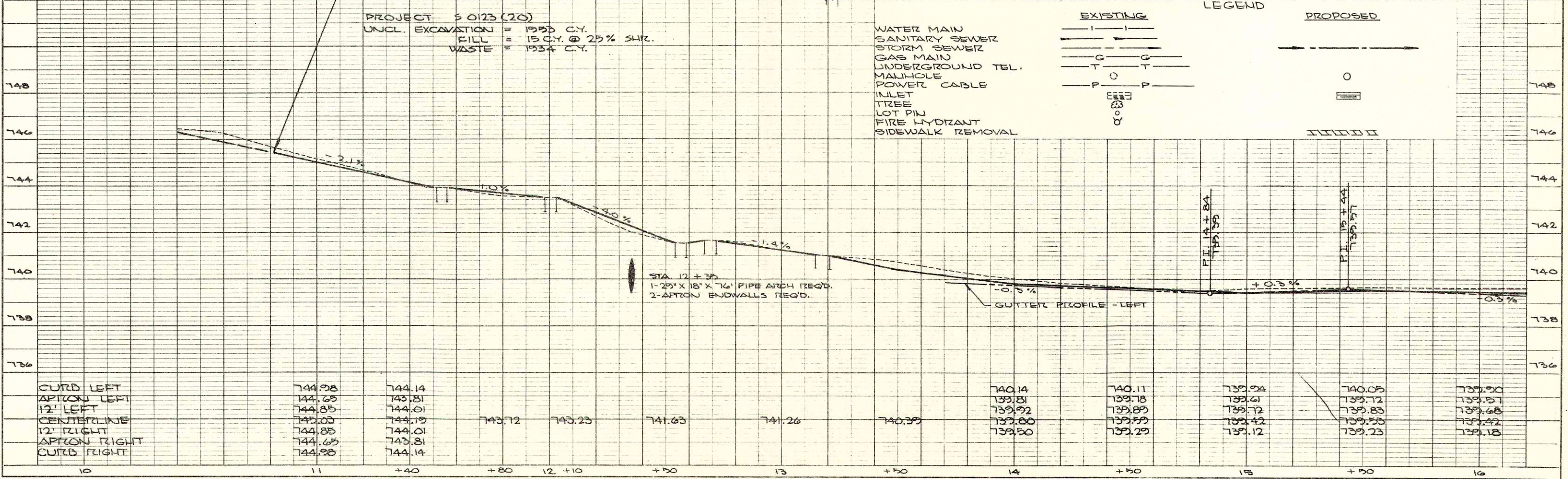
NOTE BOOK GRUBS CHECKED  
STRUCTURE NOTATION CHECKED  
NO.

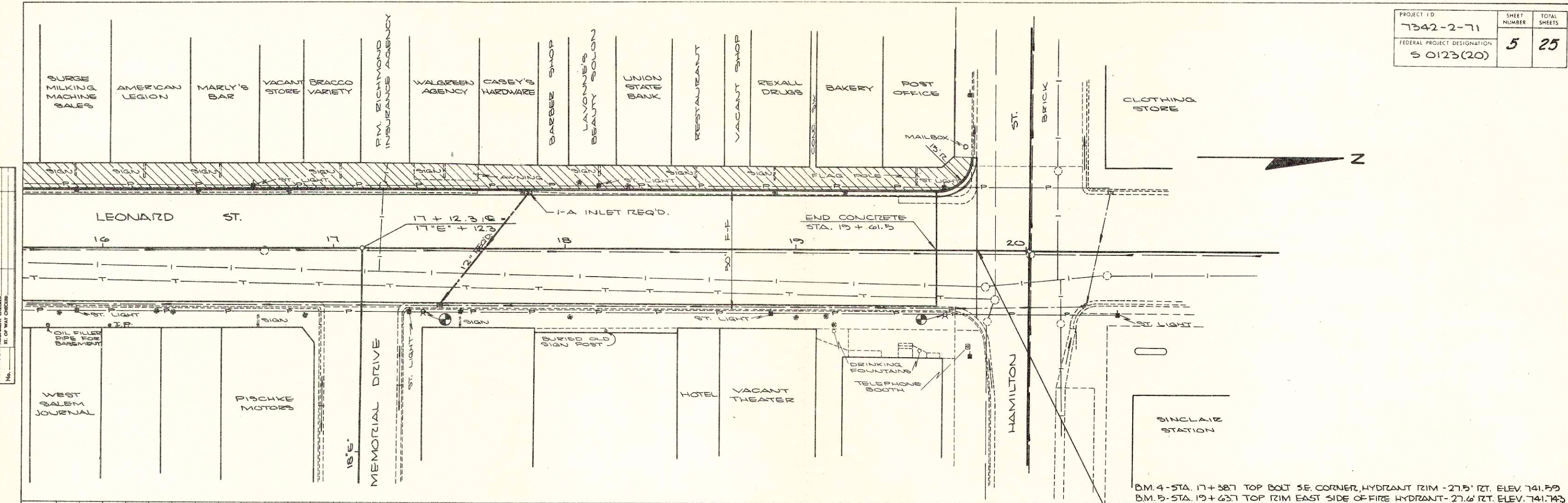
BEG. PROJ. S 0123(20)/7342-2-71  
STA. 10 + 82.3

PROJECT S 0123(20)  
UNCL. EXCAVATION = 1933 C.Y.  
FILL = 13 C.Y. @ 25% SHR.  
WASTE = 1934 C.Y.

LEGEND

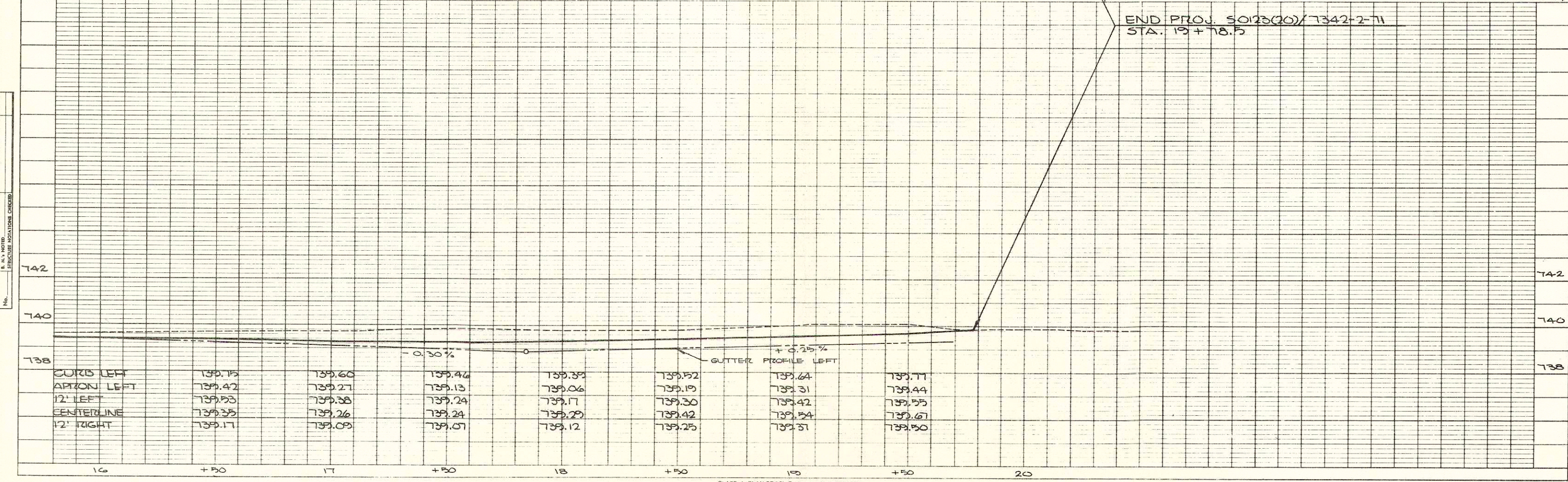
EXISTING	PROPOSED
— I — I	— I — I
— S — S	— S — S
— G — G	— G — G
— T — T	— T — T
— P — P	— P — P
○	○
□	□
○	○
□	□
□	□
□	□



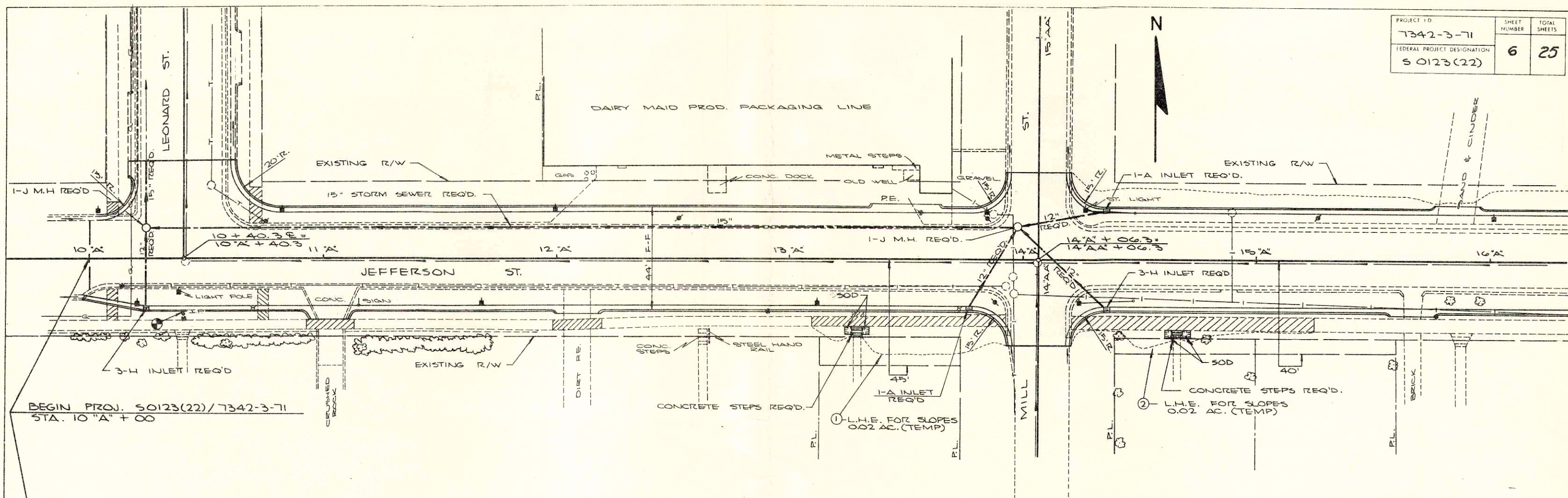


BM. 4 - STA. 17 + 38.7 TOP BOLT SE CORNER HYDRANT RIM - 27.5' RT. ELEV. 741.59  
 BM. 5 - STA. 19 + 63.7 TOP RIM EAST SIDE OF FIRE HYDRANT - 27.6' RT. ELEV. 741.743

END PROJ. S0123(20)/7342-2-71  
 STA. 19 + 78.5



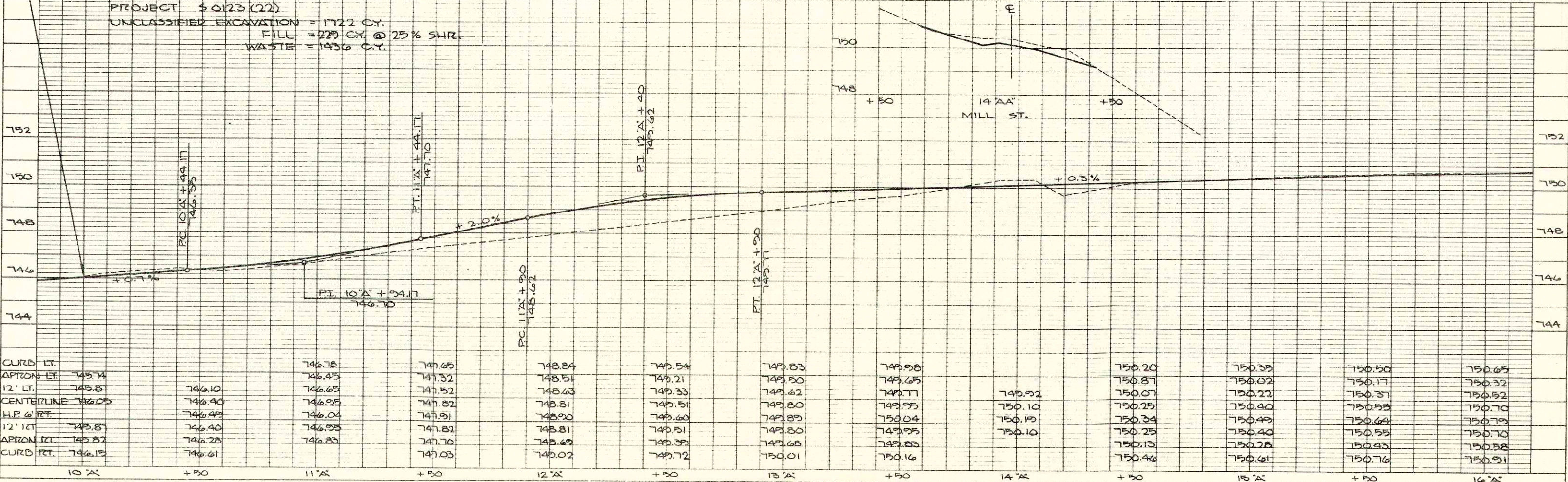




BEGIN PROJ. S0123(22)/7342-3-71  
STA. 10 "A" + 00

BM. 2 STA. 10 "A" + 40 TOP CONC. BLOCK MARKETZ - 23' FT. ELEV. 746.760

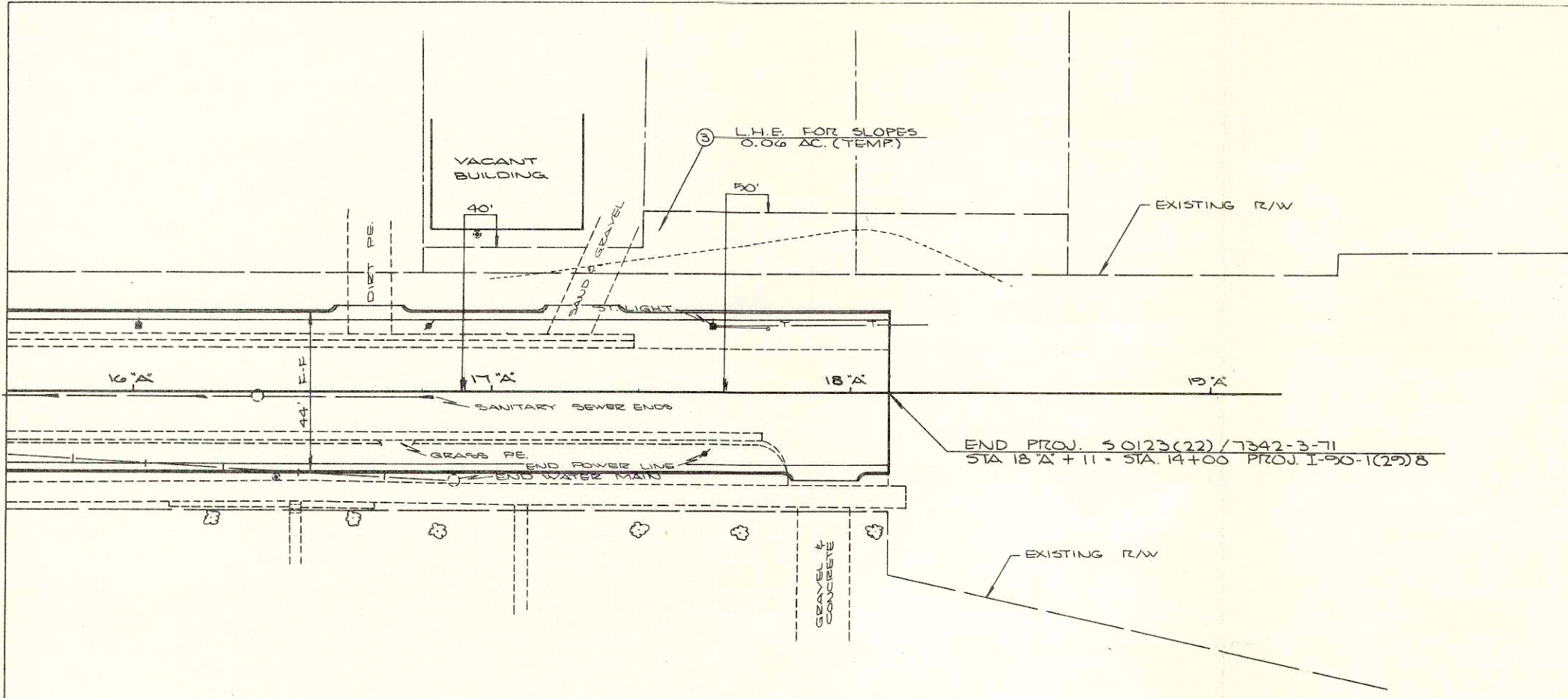
PROJECT S 0123(22)  
UNCLASSIFIED EXCAVATION = 1722 CY.  
FILL = 229 CY. @ 25% SHR.  
WASTE = 1436 CY.



CURB LT.		746.70	747.65	748.84	749.54	749.83	749.98	750.20	750.35	750.50	750.65
APRON LT.	745.74	746.45	747.32	748.51	749.21	749.50	749.65	750.07	750.22	750.37	750.52
12' LT.	745.85	746.10	746.65	747.52	748.63	749.33	749.77	750.01	750.25	750.53	750.70
CENTERLINE	746.05	746.40	746.95	747.82	748.81	749.51	749.95	750.10	750.25	750.40	750.55
H.P. 6' RT.		746.48	746.04	747.91	748.90	749.60	749.89	750.04	750.19	750.34	750.49
12' RT.	745.85	746.40	746.95	747.82	748.81	749.51	749.80	750.10	750.25	750.40	750.55
APRON RT.	745.82	746.28	746.83	747.70	748.69	749.39	749.68	750.10	750.25	750.40	750.55
CURB RT.	746.15	746.61	747.03	748.02	749.72	750.01	749.16	750.46	750.61	750.76	750.91

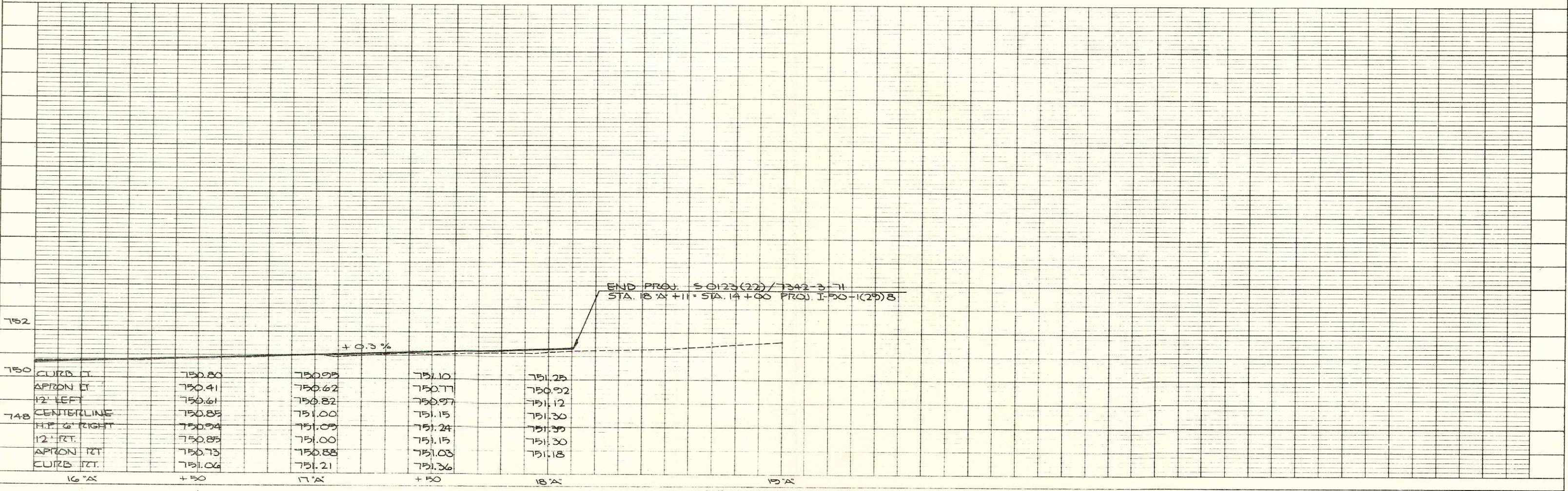
No. 11. FT. OF WAY CHECKED

No. 12. V. & H. NOTED STRUCTURE NOTATIONS CHECKED

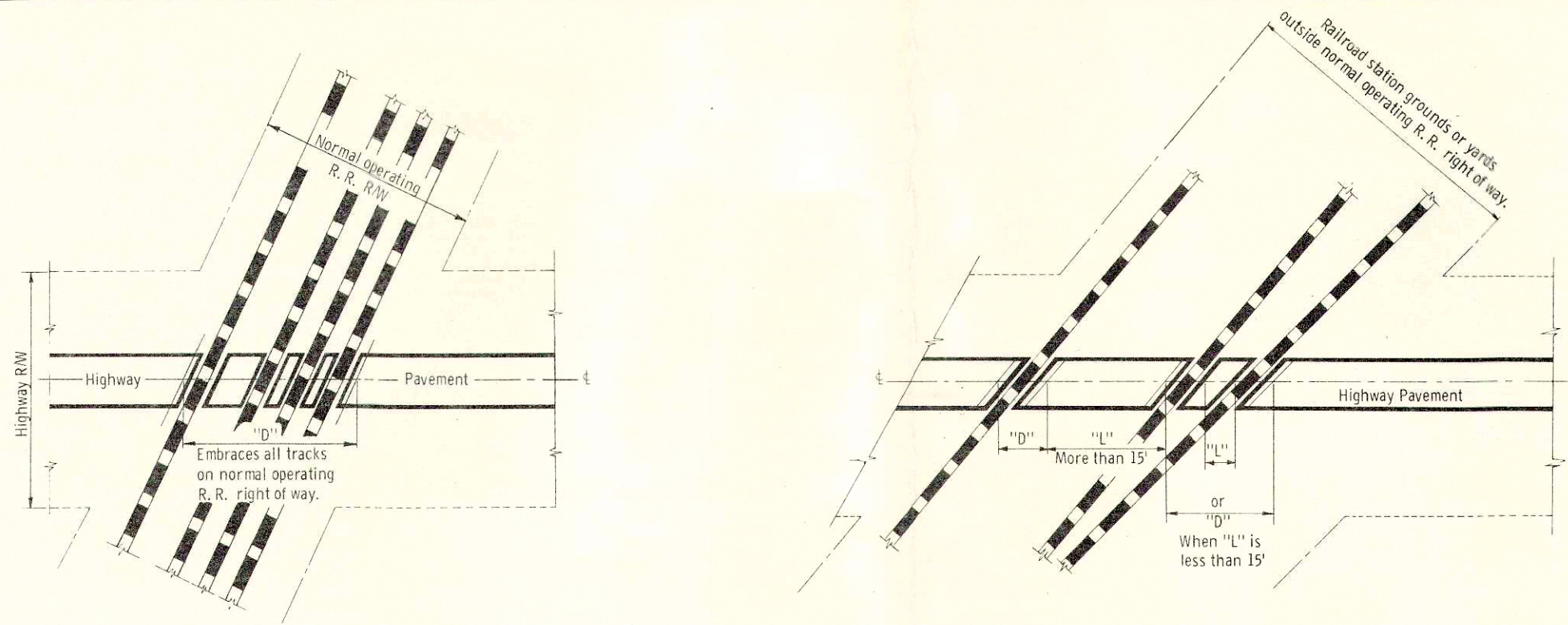


END PROJ. 50123(22)/7342-3-71  
STA. 18'+ + 11 = STA. 14+00 PROJ. I-90-1(29)B

END PROJ. 50123(22)/7342-3-71  
STA. 18'+ + 11 = STA. 14+00 PROJ. I-90-1(29)B



8-25

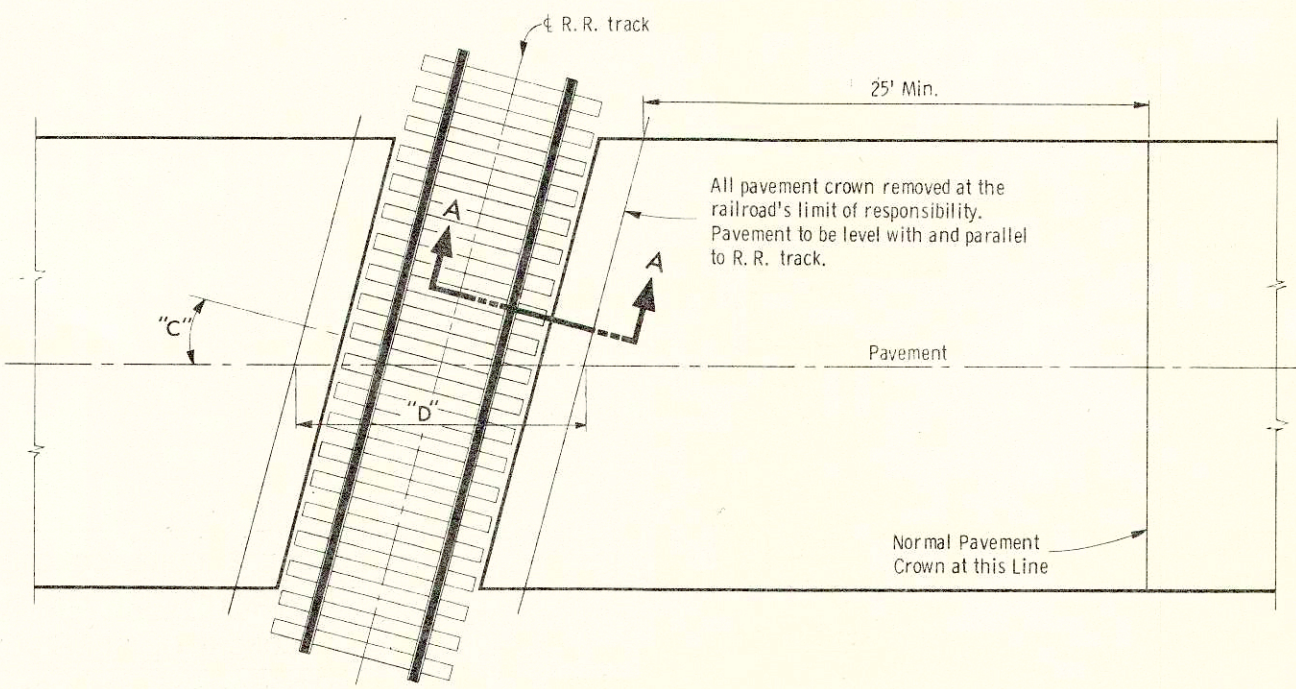


**TYPICAL TYPES OF RAILROAD GRADE CROSSINGS  
SHOWING THE RAILROAD'S LIMIT OF RESPONSIBILITY  
AND MEASUREMENT DETAILS**

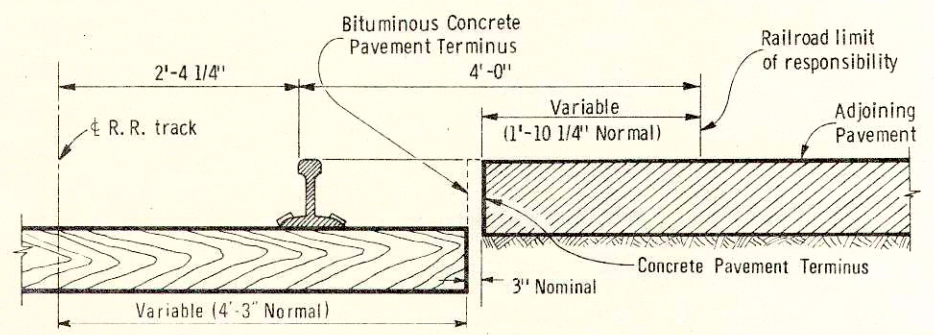
**GENERAL NOTES**

Details of construction, materials, and workmanship not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications and the applicable Special Provisions.

"D" = Exception to net length of  $\phi$ . Paving or surfacing and shoulder material within limits designated by "D" to be at expense of railroad company. Trackage to industrial sites to be treated same as for trackage to R.R. station grounds or yards outside of normal operating R/W.



NOTE:  $D = \frac{12.71}{\cos. "C"}$



SECTION "A-A"

**RAILROAD APPROACH  
CONSTRUCTION DETAILS**

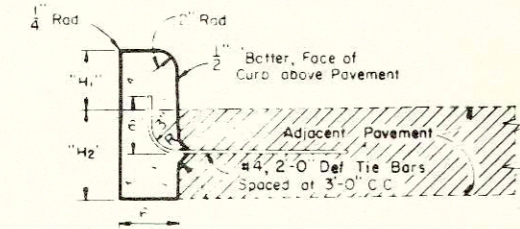
**PAVEMENT DETAILS  
FOR RAILROAD APPROACH**

State of Wisconsin  
Department of Transportation  
Division of Highways

RECOMMENDED FOR APPROVAL:  
DATE: 3/13/69  
DATE: 3/27/69  
E. J. [Signature] CHIEF DESIGN ENGINEER  
[Signature] STATE HIGHWAY ENGINEER

Plate No. 2-21.12

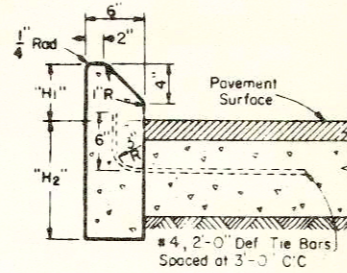
Plate No. 2-2112



Tie Bar recess positioned in reverse when Concrete Curb is constructed first.  
 "H1" = 9" max and 3 1/2" min and shall be 6" unless otherwise shown on the plans.  
 "H2" = Same as adjacent pavement thickness for rigid pavement  
 "H2" = 12" For other than rigid pavement (Tie Bars Omitted).

**TYPE "A"** **TYPE "D"**  
 (Including Tie Bars) (Excluding Tie Bars)

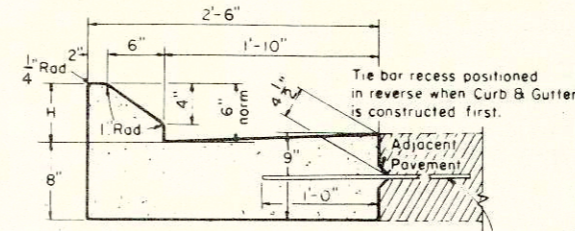
**CONCRETE CURB**



"H1" = 9" Max and 4" min and shall be 6" unless otherwise shown on plans.  
 "H2" = Same as adjacent pavement thickness for rigid pavement and 12" for other than rigid pavement (Tie Bars Omitted).

**TYPE "G"** **TYPE "J"**  
 (Including Tie Bars) (Excluding Tie Bars)

**CONCRETE CURB**  
 (Mountable Type)



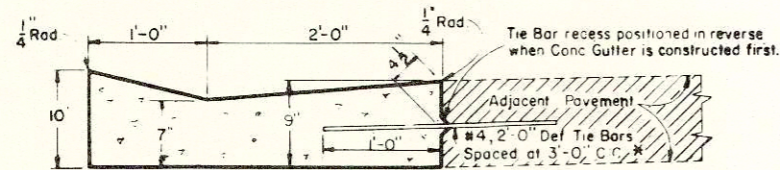
"H1" = 9" max and 4" min & shall be 6" unless otherwise shown on the plans.  
 #4, 2'-0" Def Tie Bars or alternate Bolt Type instal. may be used, spaced at 3'-0" C.C.

**TYPE "G"** **TYPE "J"**  
 (Including Tie Bars) (Excluding Tie Bars)

**CONCRETE CURB AND GUTTER**  
 (Mountable Type)

**GENERAL NOTES**

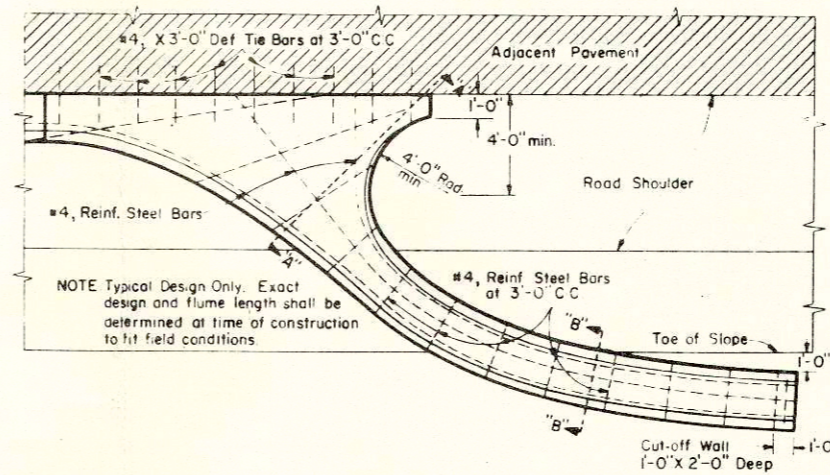
Details of construction and materials not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications and the applicable Special Provisions.  
**JOINTS** -  
 Joints shall not be sealed in concrete curb, concrete gutter, concrete curb and gutter, or concrete surface drains.



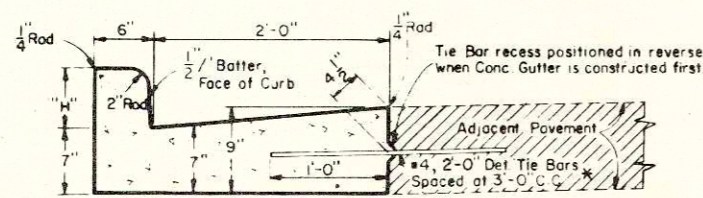
\* Alternate Tie Bars or Bolt Type installations may be used as shown for Longitudinal Joints.

**TYPE "A"** **TYPE "D"**  
 (Including Tie Bars) (Excluding Tie Bars)

**CONCRETE GUTTER**



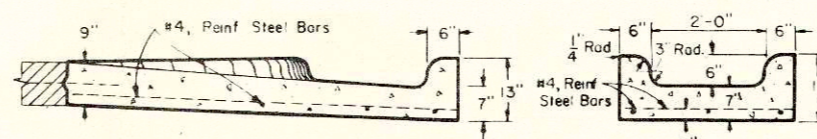
NOTE Typical Design Only. Exact design and flume length shall be determined at time of construction to fit field conditions.



"H1" = 9" Max., 3 1/2" Min., and shall be 6" unless otherwise shown on the plans.  
 \* Alternate Tie Bars or Bolt Type installations may be used as shown for Longitudinal Joints.

**TYPE "A"** **TYPE "D"**  
 (Including Tie Bars) (Excluding Tie Bars)

**CONCRETE CURB AND GUTTER**  
 (Barrier Type)



**SECTION "A-A"**

**SECTION "B-B"**

**CONCRETE INLET OR DISCHARGE FOR CURB AND GUTTER SURFACE DRAIN**

**CONCRETE CURB, CONCRETE GUTTER  
 CONCRETE CURB AND GUTTER AND  
 CONCRETE SURFACE DRAINS**

STATE HIGHWAY COMMISSION OF WISCONSIN

RECOMMENDED FOR APPROVAL

DATE 2-5-63

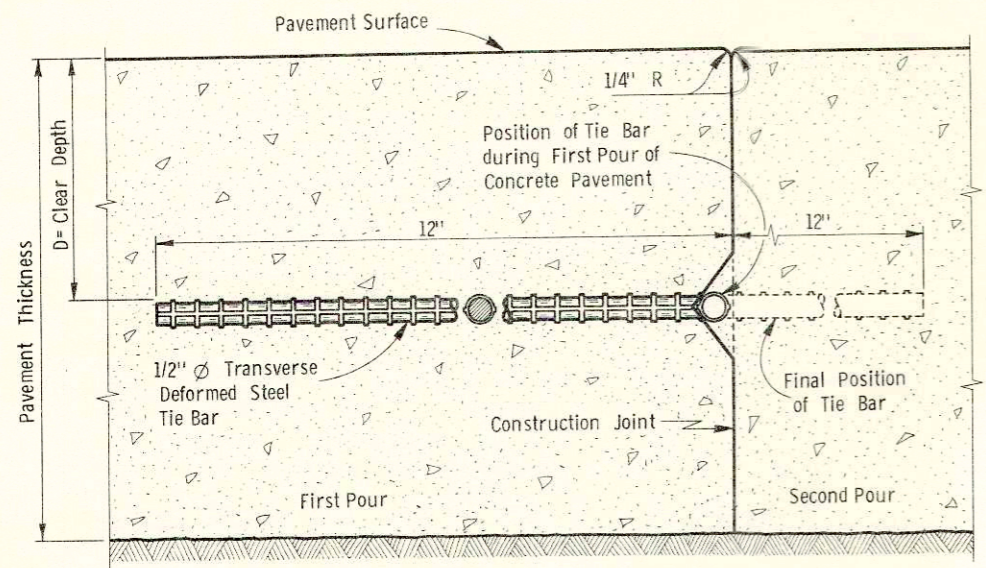
APPROVED:

DATE 2/6/63

*J. S. Pelt*  
 ENGINEER OF DESIGN

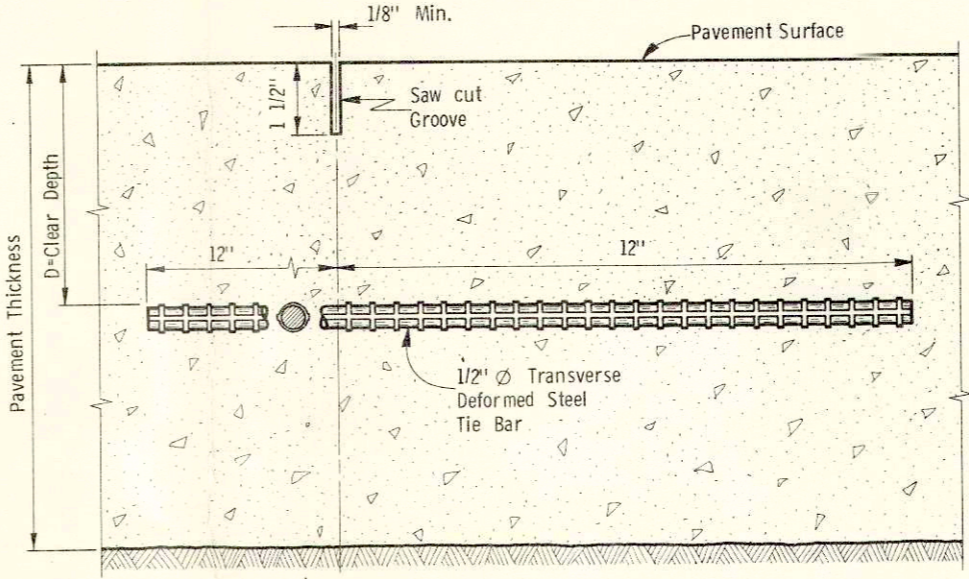
*E. C. Rattigan*  
 STATE HIGHWAY ENGINEER

8.2-05



SECTION

**CONSTRUCTION JOINT**  
(TIE BAR)



SECTION

**SAWED JOINT**  
(TIE BAR)

Pavement Thickness	"D"	
	Tie Bar	Hook Bolt
8'	2 - 4 3/4"	4 - 4 3/4"
9'	2 - 5 1/2"	4 - 5 1/2"
10'	2 - 5 3/4"	4 - 5 3/4"

**GENERAL NOTES**

Details of construction, materials and workmanship not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications and the applicable Special Provisions.

Hook Bolts shall be used only when specified in the contract plans. The 5/8 inch dia. Hook Bolts shall conform to ASTM specification A 307.

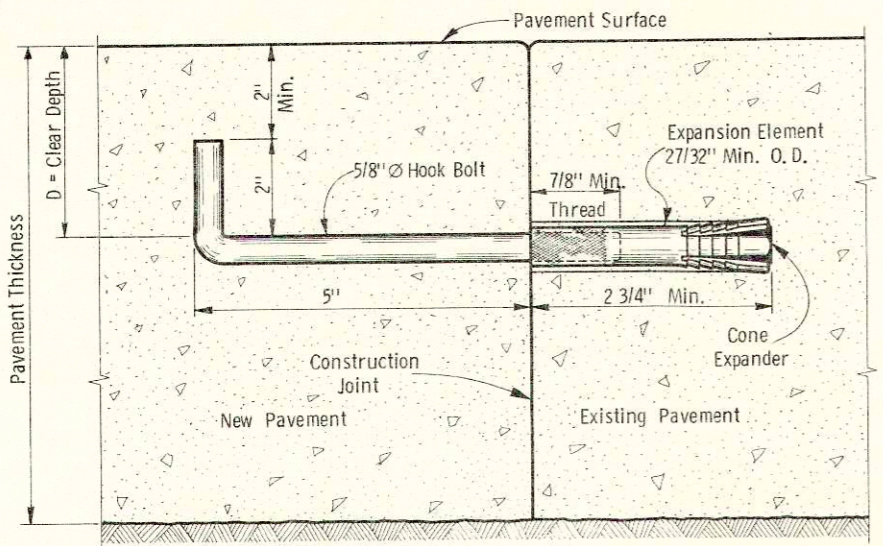
The Expansion Anchor shall be an internally threaded anchor which consists of an externally slit Expansion Element and a single Cone Expander. The Expansion Element shall contain a minimum of three grips. The Expansion Element shall be threaded in such a manner as to prevent the machine bolt from coming in contact with the Cone Expander at any time.

The Expansion Anchor shall be set in existing pavement according to manufacturer's instructions. The holes shall be of the recommended diameter and depth and shall be drilled by methods recommended by the manufacturer of the particular anchor. The drilled holes shall be left rough, not reamed, and free from any drill dust.

Alternate designs of construction joint installations may be used upon written approval of the Engineer.

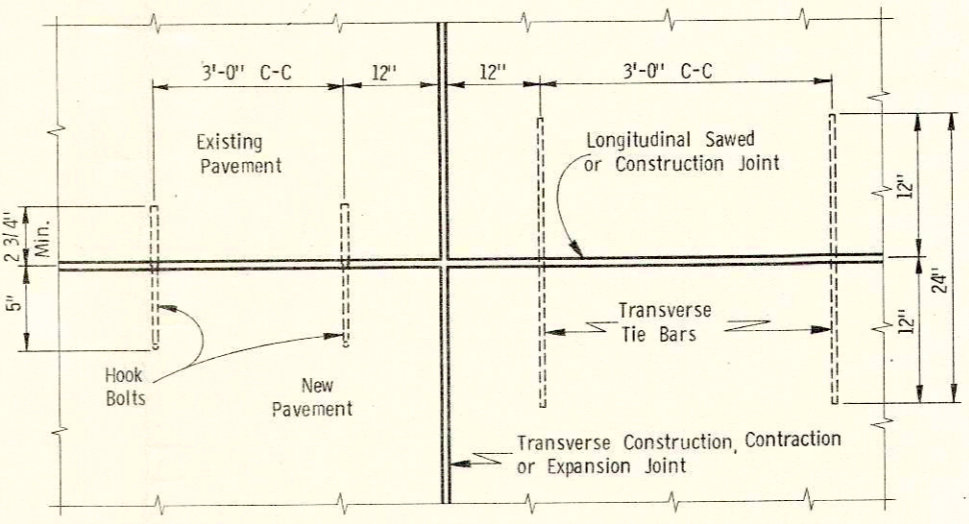
Longitudinal Joints shall not be sealed.

Tie Bars shall be placed at the required location by devices or methods approved by the Engineer.



SECTION

**CONSTRUCTION JOINT**  
(HOOK-BOLT)



PLAN VIEW

Showing Location Details for Hook Bolts and Tie Bars

**LONGITUDINAL JOINTS**  
**CONCRETE PAVEMENT**

State of Wisconsin  
Department of Transportation  
Division of Highways

RECOMMENDED FOR APPROVAL:  
DATE 3/27/70

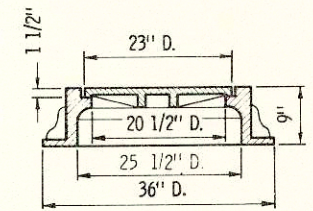
*E. J. Byrkit*  
CHIEF DESIGN ENGINEER

APPROVED:  
DATE 3/27/70

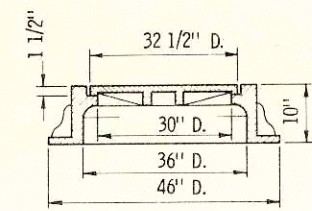
*H. J. Samicster*  
STATE HIGHWAY ENGINEER

Plate No. 4-4.4.9

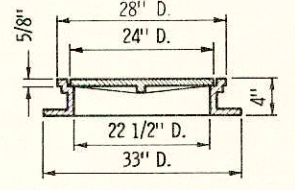
Plate No. 4-4.4.9



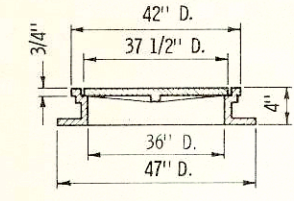
TYPE "J" - (Approximate Weight 400 Lbs.)



TYPE "K" - (Approximate Weight 750 Lbs.)



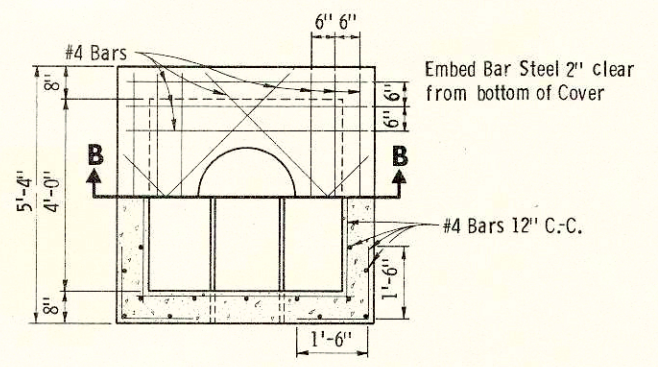
TYPE "L" - (Approximate Weight 210 Lbs.)



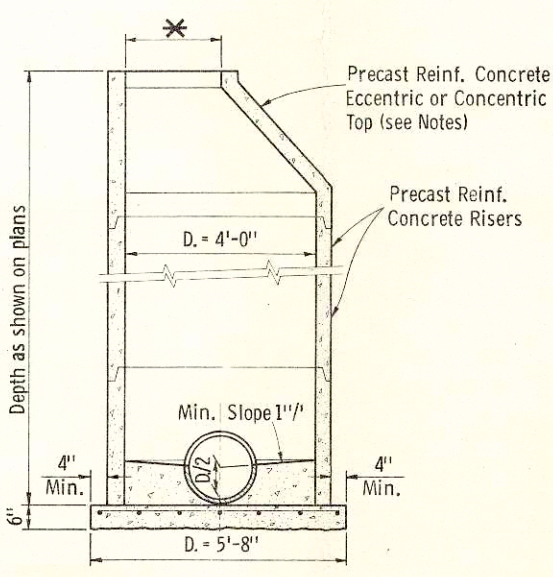
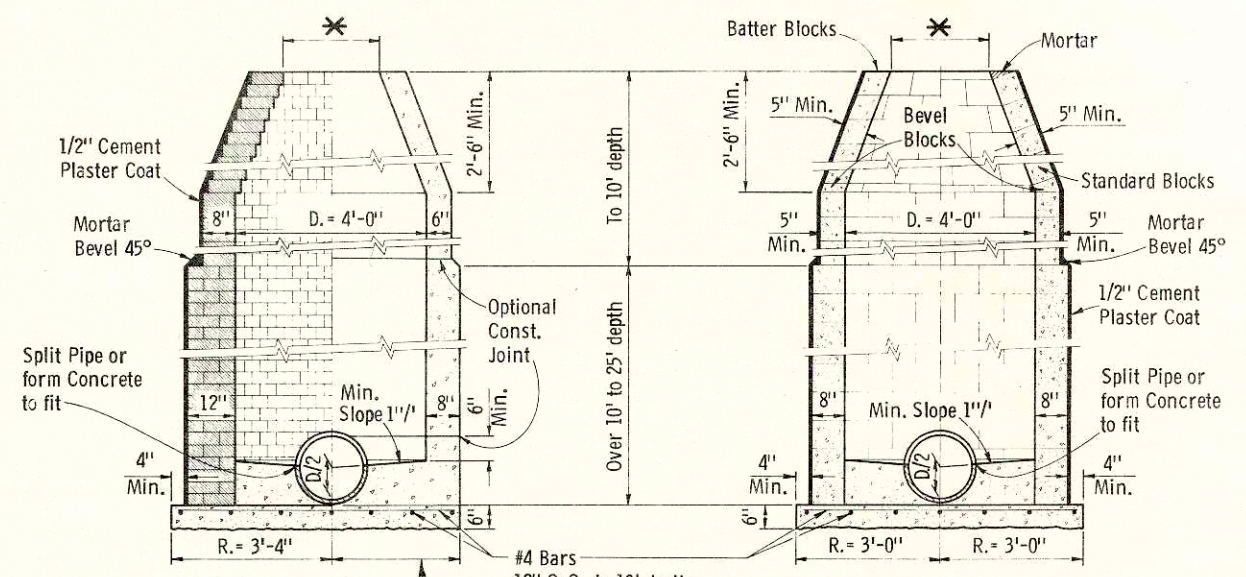
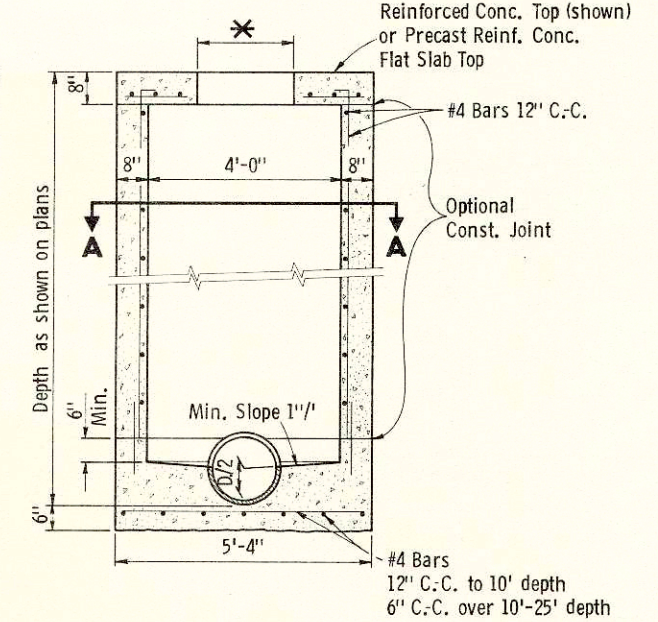
TYPE "M" - (Approximate Weight 475 Lbs.)

**MANHOLE COVERS**

**HALF PLAN VIEW**



**HALF SECTION A-A**



PRECAST REINFORCED CONCRETE

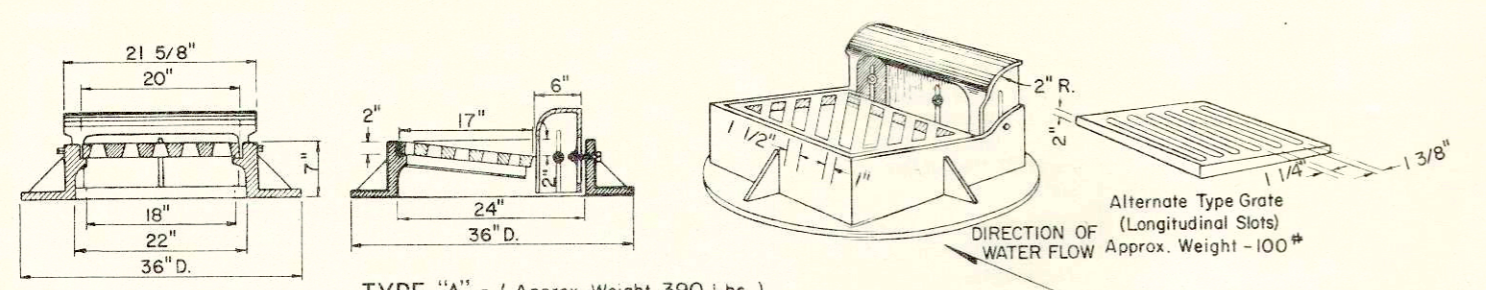
SECTION B-B REINFORCED CONCRETE

**MANHOLES TYPE 1**

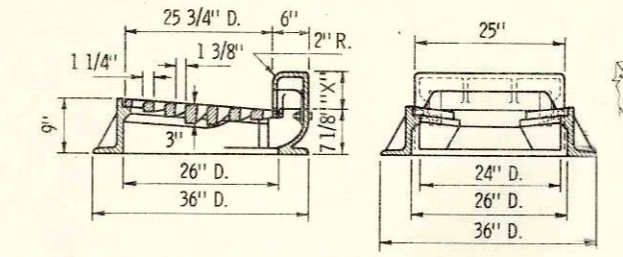
**GENERAL NOTES**

1. Details of construction, materials and workmanship not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications and the applicable Special Provisions.
  2. Detailed drawings for proposed alternate designs for Manholes and Manhole Covers shall be submitted to the Engineer for approval providing that such alternate designs make provision for equivalent capacity and strength.
  3. All Manholes are designated on the Plans As "Manholes, 1-J", 1-L, etc. This designation is interpreted to mean that the number, or first digit, designates the masonry portion of the structure, and the following letter, designates the type of cover or iron casting to be used therewith to comprise the complete unit "Manhole" in place.
  4. All bar steel reinforcement shall be embedded 2 inches clear unless otherwise shown or noted.
  5. Precast Reinforced Bases may be used in lieu of cast-in-place bases. When Precast Bases are used, they shall be placed on a bed of material at least 6 inches in depth, which meets the requirements for Granular Backfill. This bedding material shall be compacted and provide uniform support for the entire area of the base.
  6. All Precast Reinforced Concrete Risers, Grade Rings, and Flat Slab Tops shall conform to AASHTO Designation M 199. Precast Reinforced Concrete Bases shall conform to the Flat Slab Top requirements of AASHTO Designation M 199.
  7. Adjustment of the cover to grade may be accomplished by the use of mortar and brick or by a Precast Reinforced Concrete Grade Ring. Maximum adjustment shall be 8 inches.
  8. Alternate Precast Reinforced Concrete Cone Tops (Eccentric or Concentric) may be used on brick, concrete, or concrete block Manholes. Attachment of the Precast Reinforced Concrete Cone Top shall be made on a bed of mortar.
  9. Eccentric Cone Tops may be used on all Manholes, and Concentric Cone Tops shall be used only on Manholes 5 feet or less in depth, unless otherwise directed by the Engineer.
  10. Precast Reinforced Concrete Risers may be placed with tongue or "D" joint ends either up or down.
  11. Steps shall be installed in all Manholes over 5 feet in depth. Steps shall be installed 5 inches clear from the wall at the center of the step. Steps used in the work shall conform to the requirements of the Standard Specifications for Gray Iron Castings, ASTM Designation A48. Steps shall have a minimum width of 9 inches out to out of casting.
  12. All Manhole Covers which are placed in vehicular traffic areas shall be "Non-Rocking" type so as to prevent all cover noise under traffic.
  13. Strike all joints for brick or block construction.
- \* Use 2'-0" diameter opening with Type "J" and "L" Manhole Covers, or 3'-0" diameter opening with Type "K" and "M" Manhole Covers.

MANHOLES TYPE 1 & MANHOLE COVERS	
State of Wisconsin Department of Transportation Division of Highways	
RECOMMENDED FOR APPROVAL: DATE: 4/25/69	E.J. Byrkit CHIEF DESIGN ENGINEER
APPROVED: DATE: 4/25/69	H. Baunert STATE HIGHWAY ENGINEER

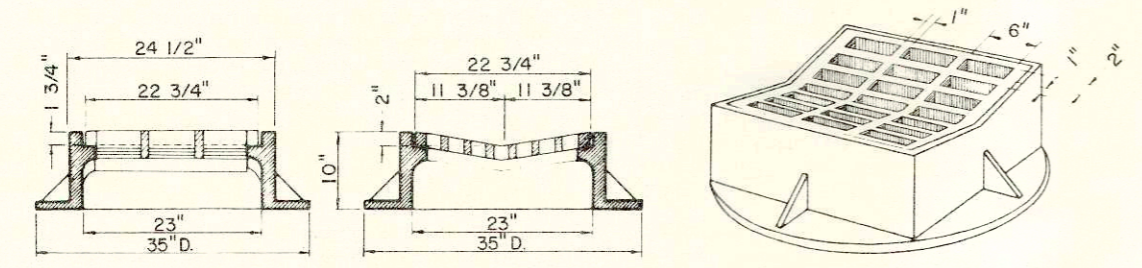
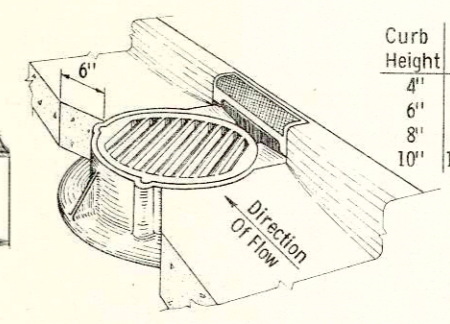


**TYPE "A"** - (Approx. Weight 390 Lbs.)  
 Frame Weight - 250 #  
 Grate " - 90 #  
 Box " - 50 #

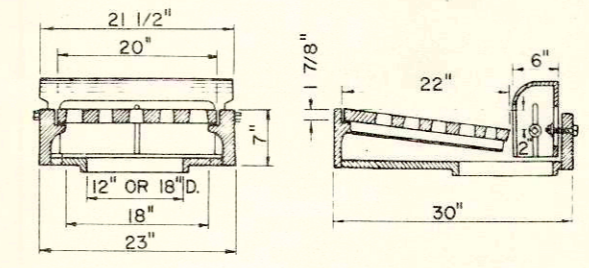


**TYPE "G"** (Approx. Weight 425 - 465 Lbs.)  
 Frame Weight - 235 #  
 Grate " - 130 #  
 Box - See Table

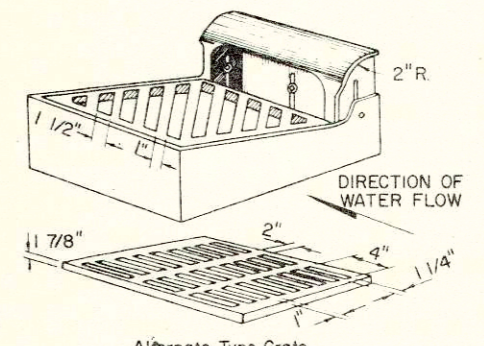
Curb Height	(X)	Weight
4"	4 1/4"	60 #
6"	6 1/4"	70 #
8"	8 1/4"	90 #
10"	10 1/4"	100 #



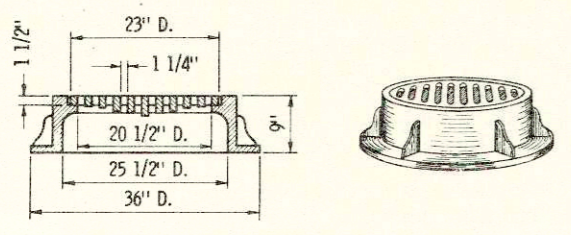
**TYPE "B"** - (Approx. Weight 414 Lbs.)  
 Frame Weight - 275 #  
 Grate " - 139 #



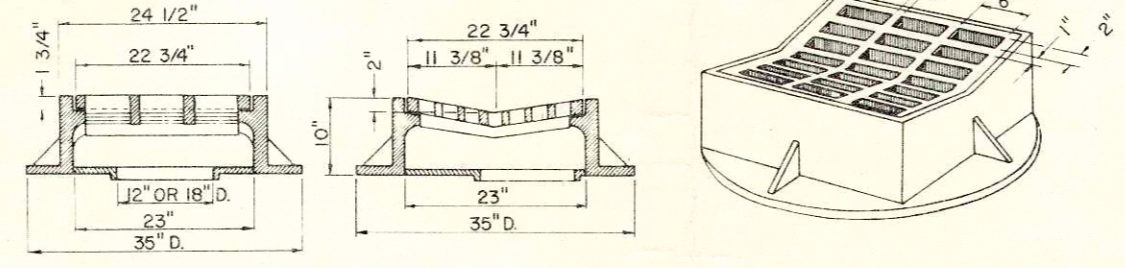
**TYPE "R"** - (Approx. Weight 450 Lbs.)



**SPECIAL NOTE**  
 Diagonal Slots shall be oriented to the direction of flow as shown hereon. Hence RIGHT and LEFT Grates shall be furnished depending on direction of flow. (See Sketch Below)  
 Longitudinal slot type grates may be used ONLY where bicycles are prohibited.



**TYPE "C"** (Approx. Weight 370 Lbs.)  
 Frame Weight Type "C" & Type "D" - 255 #  
 Slotted Grate Weight - 115 #  
 Solid Cover Weight - 150 #  
 (Note: Frame for Type "C" same as for Type "D")

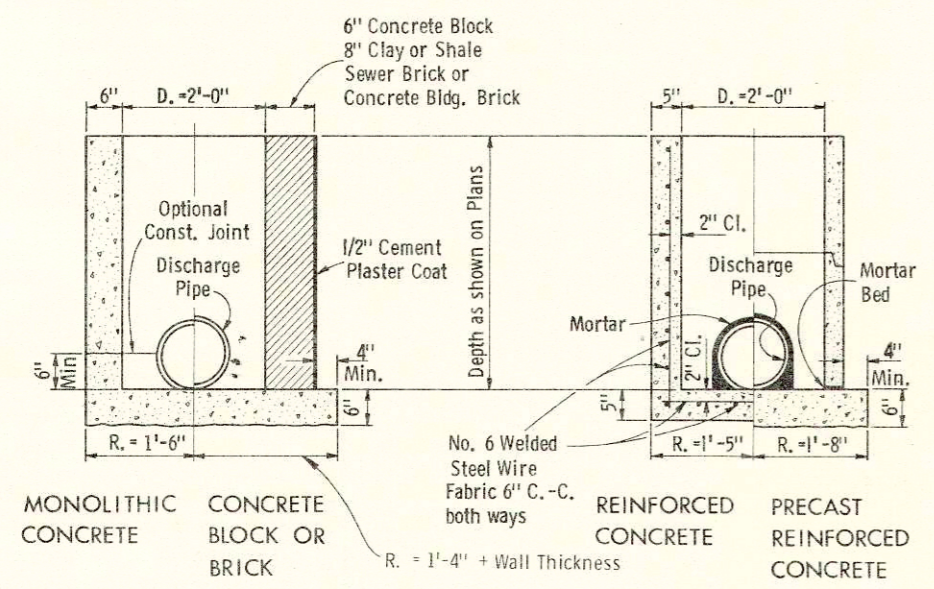


**TYPE "S"** - (Approx. Weight 450 Lbs.)

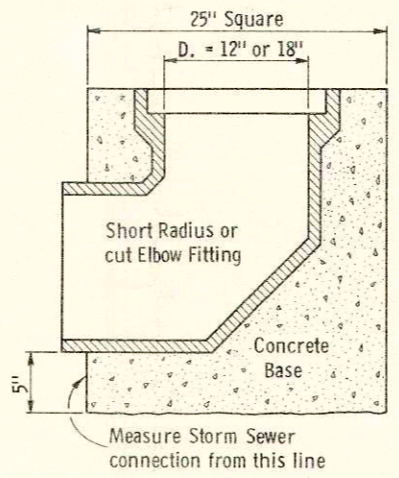
**GENERAL NOTES**

1. Details of construction, materials and workmanship not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications and the applicable Special Provisions.
2. Detailed drawings for proposed alternate designs for Inlets shall be submitted to the Engineer for approval providing that such alternate designs make provision for equivalent capacity and strength.
3. All Inlets are designated on the Plans as "Inlets, 1-A", 2-R, etc. This designation is interpreted to mean that the number, or first digit, designates the masonry portion of the structure, and the following letter, designates the type of cover or iron casting to be used therewith to comprise the complete unit "Inlet" in place.
4. All bar steel reinforcement shall be embedded 2 inches clear unless otherwise shown or noted.
5. Precast Reinforced Bases may be used in lieu of cast-in-place bases. When Precast Bases are used, they shall be placed on a bed of material at least 6 inches in depth, which meets the requirements for Granular Backfill. This bedding material shall be compacted and provide uniform support for the entire area of the base.
6. All Precast Reinforced Concrete Risers, Grade Rings, and Flat Slab Tops shall conform to AASHO Designation M 199. Precast Reinforced Concrete Bases shall conform to the Flat Slab Top requirements of AASHO Designation M 199.
7. Adjustment of the cover to grade may be accomplished by the use of mortar and brick. Maximum adjustment shall be 8 inches.
8. Precast Reinforced Concrete Risers may be placed with tongue or "D" joint ends either up or down.
9. Strike all joints for brick or block construction.

**INLET COVERS**



**INLET TYPE 1**



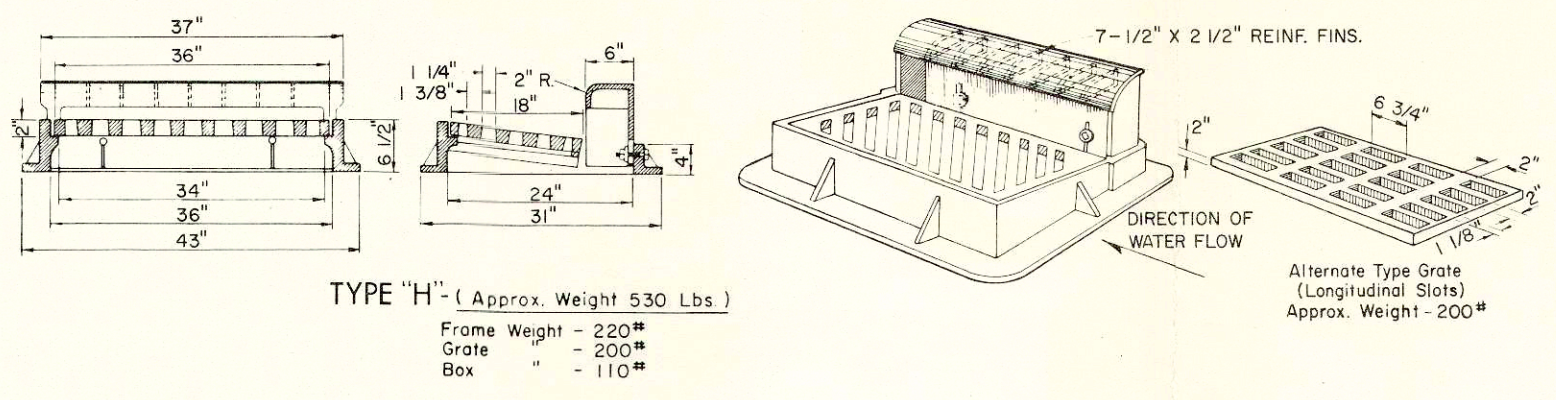
**INLET TYPE 2**

**INLETS TYPE 1 & 2 AND INLET COVERS**

State of Wisconsin  
 Department of Transportation  
 Division of Highways

RECOMMENDED FOR APPROVAL:  
 DATE 5/7/69  
 E. J. Byrd  
 CHIEF DESIGN ENGINEER

APPROVED:  
 DATE 5/12/69  
 H. J. Dammister  
 STATE HIGHWAY ENGINEER



**TYPE "H"** (Approx. Weight 530 Lbs.)  
 Frame Weight - 220#  
 Grate - 200#  
 Box - 110#

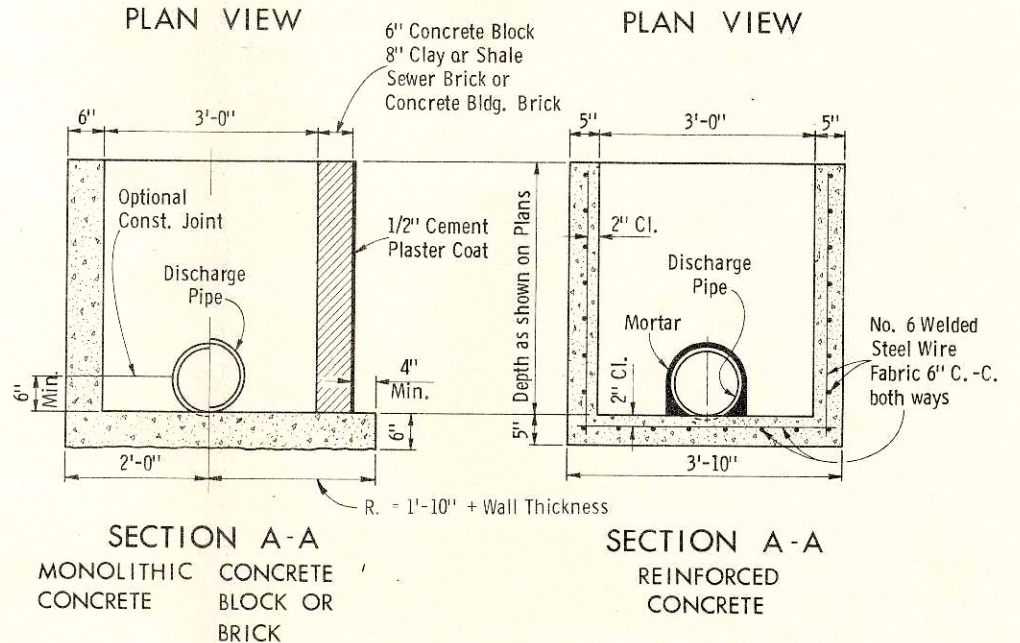
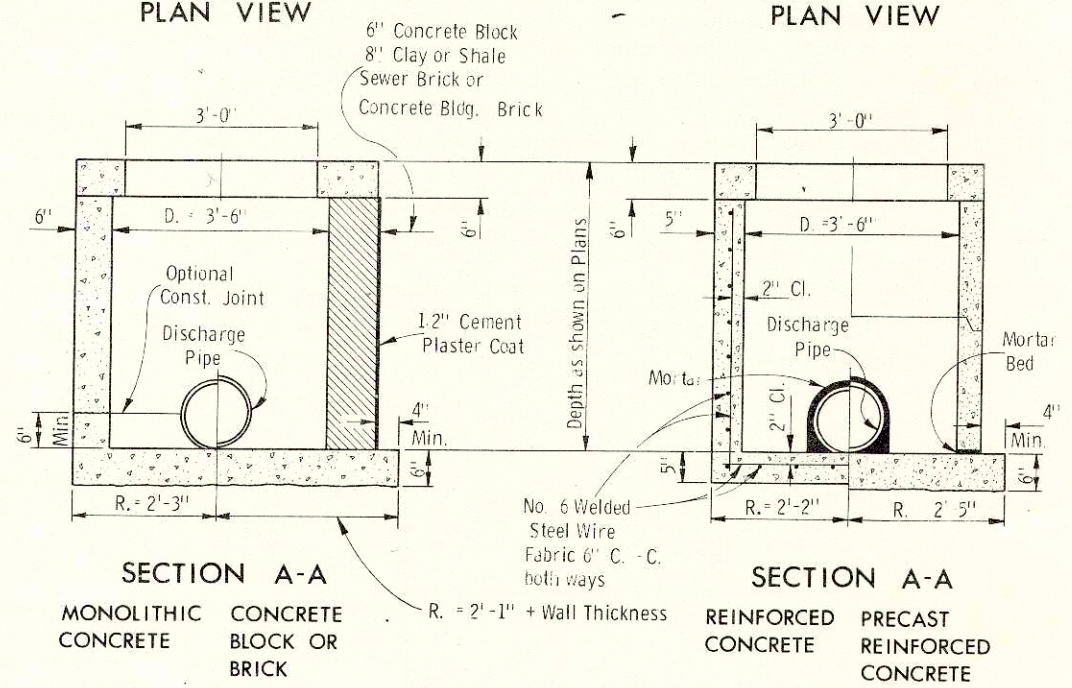
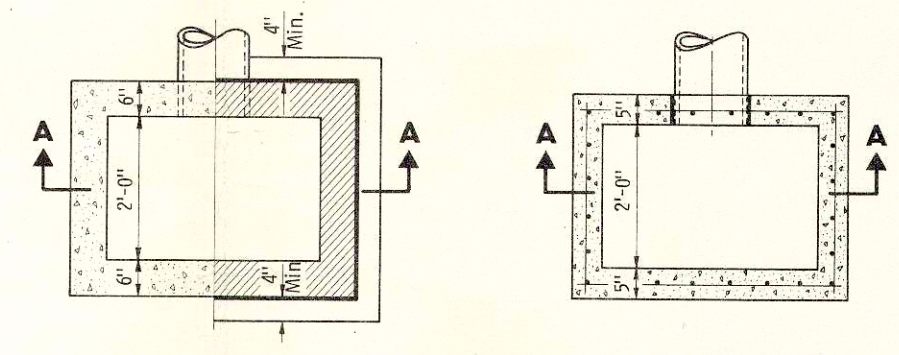
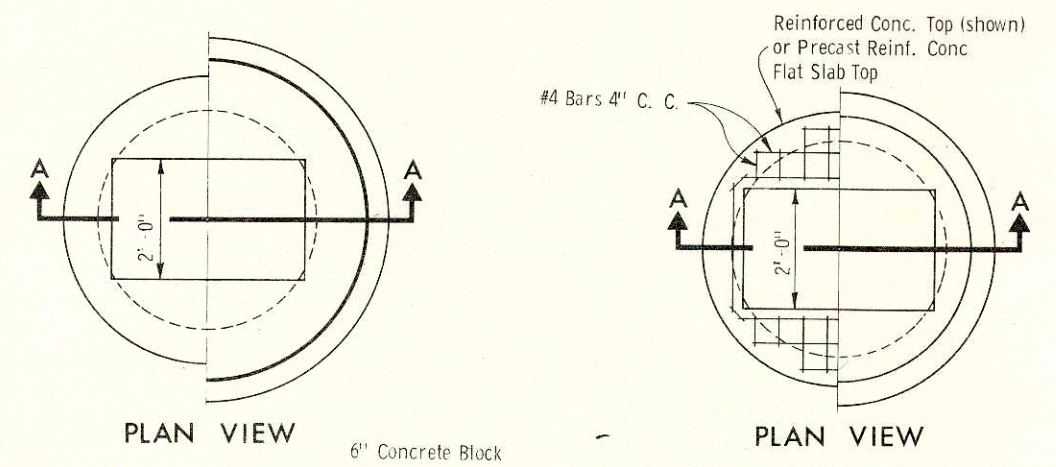
**INLET COVER**

**SPECIAL NOTE**  
 Diagonal Slots shall be oriented to the direction of flow as shown hereon. Hence **RIGHT** and **LEFT** Grates shall be furnished depending on direction of flow. (See Sketch Below)

Longitudinal slot type grates may be used **ONLY** where bicycles are prohibited.

**GENERAL NOTES**

1. Details of construction, materials and workmanship not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications and the applicable Special Provisions.
2. Detailed drawings for proposed alternate designs for Inlets shall be submitted to the Engineer for approval providing that such alternate designs make provision for equivalent capacity and strength.
3. All Inlets are designated on the Plans as "Inlets, 3-H", etc. This designation is interpreted to mean that the number, or first digit, designates the masonry portion of the structure, and the following letter, designates the type of cover or iron casting to be used therewith to comprise the complete unit "Inlet" in place.
4. All bar steel reinforcement shall be embedded 2 inches clear unless otherwise shown or noted.
5. Precast Reinforced Bases may be used in lieu of cast-in-place bases. When Precast Bases are used, they shall be placed on a bed of material at least 6 inches in depth, which meets the requirements for Granular Backfill. This bedding material shall be compacted and provide uniform support for the entire area of the base.
6. All Precast Reinforced Concrete Risers, Grade Rings, and Flat Slab Tops shall conform to AASHO Designation M 199. Precast Reinforced Concrete Bases shall conform to the Flat Slab Top requirements of AASHO Designation M 199.
7. Adjustment of the cover to grade may be accomplished by the use of mortar and brick. Maximum adjustment shall be 8 inches.
8. Precast Reinforced Concrete Risers may be placed with tongue or "D" joint ends either up or down.
9. Strike all joints for brick or block construction.



**INLETS TYPE 3**

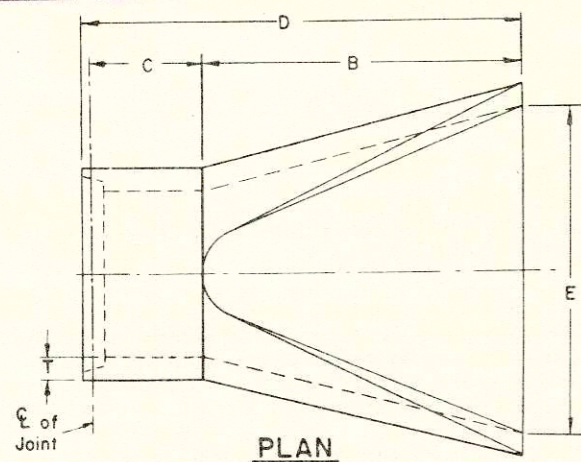
**INLETS TYPE 3 AND INLET COVER**

State of Wisconsin  
 Department of Transportation  
 Division of Highways

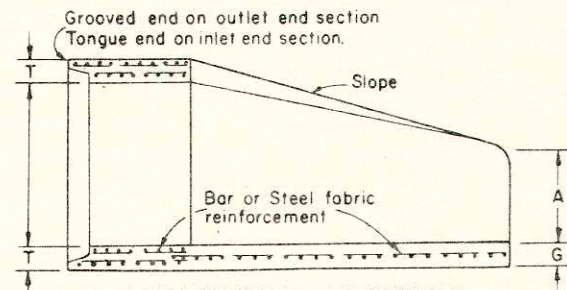
RECOMMENDED FOR APPROVAL  
 DATE 4/25/69  
 E. J. Byrnes  
 CHIEF DESIGN ENGINEER

APPROVED  
 DATE 4/25/69  
 W. J. Lamminta  
 STATE HIGHWAY ENGINEER

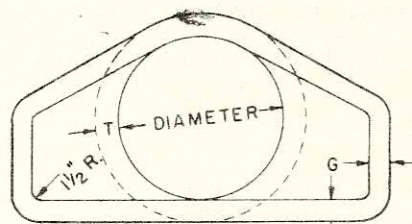




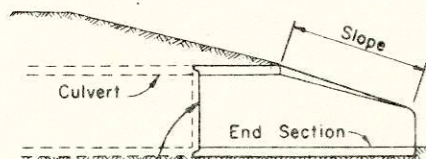
PLAN



LONGITUDINAL SECTION



END VIEW

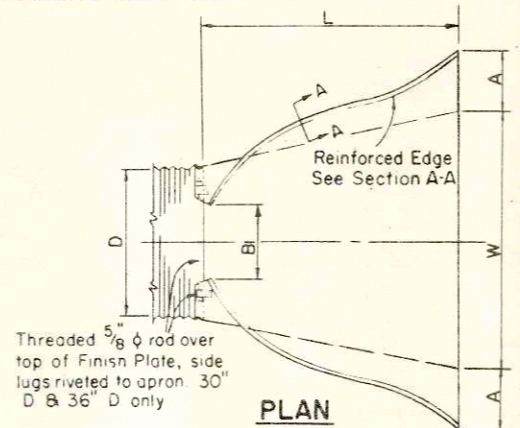


Measure length of Culvert (to nearest foot)

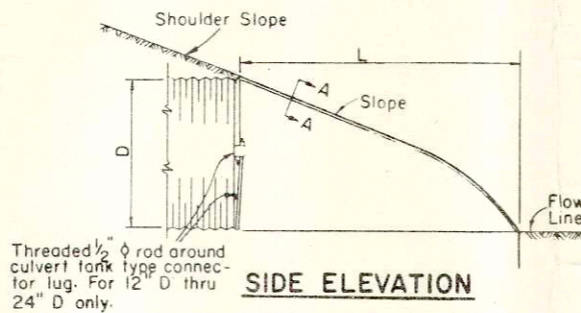
SLOPE DETAIL

DIA	APPROX WEIGHT/SECTION	APPROX SLOPE	T	A	B	C	D	E	G
12"	530	3 to 1	2"	4"	24"	48 7/8"	72 7/8"	24"	2"
15"	740	3 to 1	2 1/4"	6"	27"	46"	73"	30"	2 1/4"
18"	990	3 to 1	2 1/2"	9"	27"	46"	73"	36"	2 1/2"
21"	1280	3 to 1	2 3/4"	9"	36"	37 1/2"	73 1/2"	42"	2 3/4"
24"	1520	3 to 1	3"	9 1/2"	43 1/2"	30"	73 1/2"	48"	3"
27"	1930	3 to 1	3 1/4"	10 1/2"	49 1/2"	24"	73 1/2"	54"	3 1/4"
30"	2190	3 to 1	3 1/2"	12"	54"	19 3/4"	73 3/4"	60"	3 1/2"
36"	4100	3 to 1	4"	15"	63"	34 3/4"	97 3/4"	72"	4"
42"	5380	3 to 1	4 1/2"	21"	63"	35"	98"	78"	4 1/2"
48"	6550	3 to 1	5"	24"	72"	26"	98"	84"	5"
54"	8040	2 1/2 to 1	5 1/2"	27"	65"	33 1/4 min 35 max	98 1/4 min 100 max	90"	5"
60"	8730	2 to 1	6"	30"	60"	39"	99"	96"	5"
66"	10,630	2 to 1	6 1/2"	36"	72 min 78 max	21 min 27 max	99"	102"	5 1/2"
72"	12,520	2 to 1	7"	36"	78"	21"	99"	108"	6"
78"	14,430	2 to 1	7 1/2"	36"	78"	21"	99"	114"	6 1/2"
84"	18,160	1 1/2 to 1	8"	36"	90 1/2"	21"	111 1/2"	120"	6 1/2"

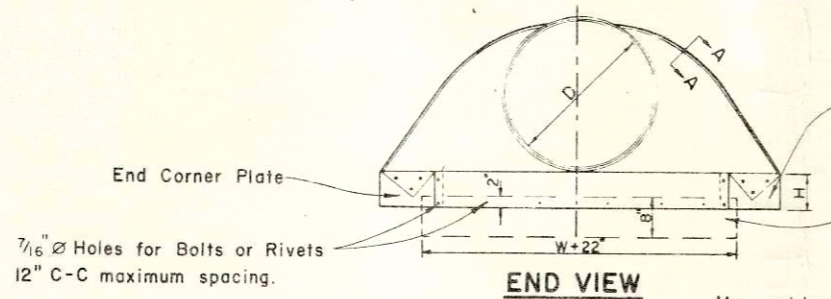
REINFORCED CONCRETE APRON ENDWALLS



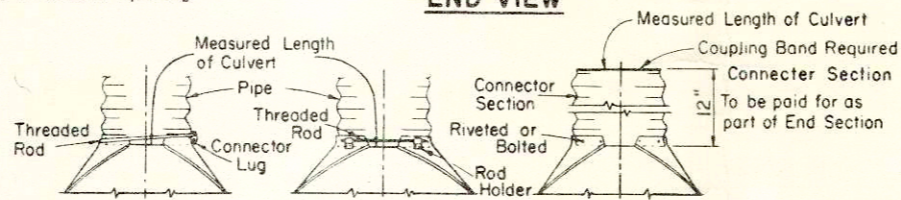
PLAN



SIDE ELEVATION



END VIEW

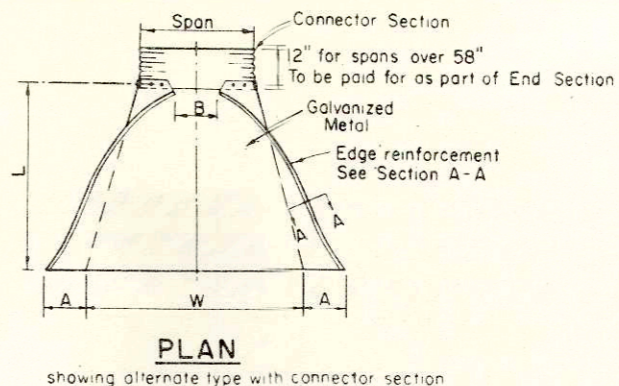


CONNECTION DETAILS

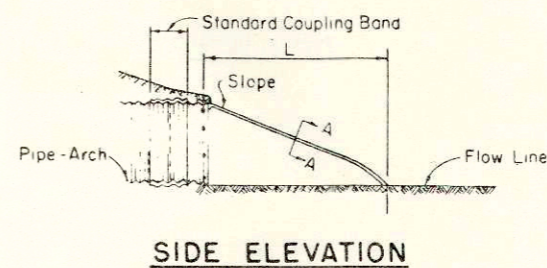
D Pipe Diam	Gage Min	Dimensions						Approx. Slope
		A ± 1"	B Max	H ± 1"	L ± 1 1/2"	W ± 2"		
12"	16	6"	6"	6"	21"	24"	2 1/2 to 1	
15"	16	7"	8"	6"	26"	30"	"	
18"	16	8"	10"	6"	31"	36"	"	
21"	16	9"	12"	6"	36"	42"	"	
24"	16	10"	13"	6"	41"	48"	"	
30"	14	12"	16"	8"	51"	60"	"	
36"	14	14"	19"	9"	60"	72"	"	
42"	12	16"	22"	11"	69"	84"	"	
48"	12	18"	27"	12"	78"	90"	2 1/4 to 1	
54"	12	18"	30"	12"	84"	102"	2 to 1	
60"	12	18"	33"	12"	87"	114"	1 3/4 to 1	
66"	12	18"	36"	12"	87"	120"	1 1/2 to 1	
72"	12	18"	39"	12"	87"	126"	1 1/3 to 1	
78"	12	18"	42"	12"	87"	132"	1 1/4 to 1	
84"	12	18"	45"	12"	87"	138"	1 1/8 to 1	

Note: All splices to be lap riveted or bolted.

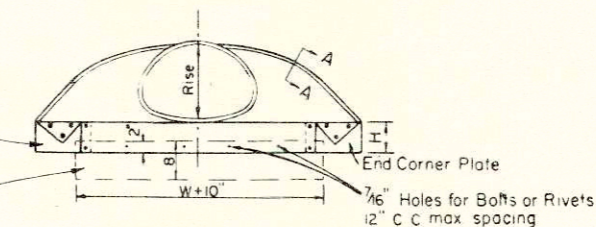
METAL APRON ENDWALLS



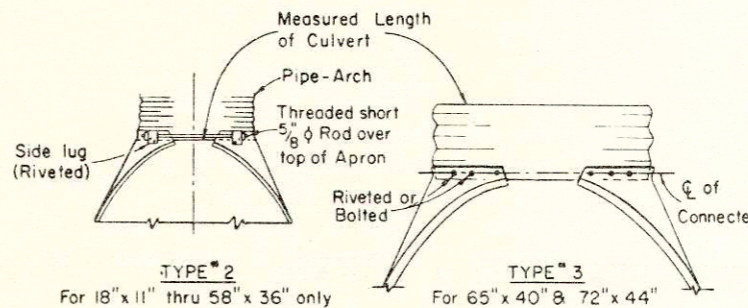
PLAN



SIDE ELEVATION



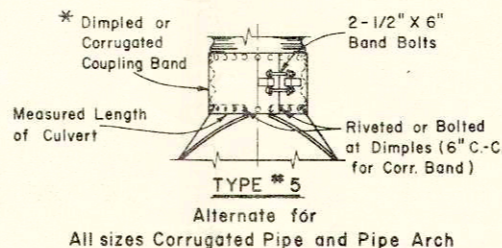
END VIEW



CONNECTION DETAILS

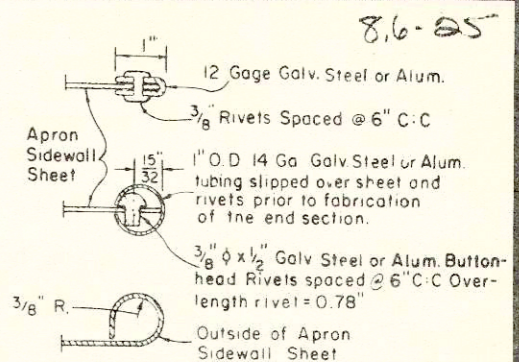
Pipe - Arch Dimensions	Gage Min	Dimensions						Approx. Slope
		A ± 1"	B Max	H ± 1"	L ± 1 1/2"	W ± 2"		
18" Span 11" Rise	16	7"	9"	6"	19"	30"	2 1/2 to 1	
22" Span 13" Rise	16	7"	10"	6"	23"	36"	"	
25" Span 16" Rise	16	8"	12"	6"	28"	42"	"	
29" Span 18" Rise	16	9"	14"	6"	32"	48"	"	
36" Span 22" Rise	14	10"	16"	6"	39"	60"	"	
43" Span 27" Rise	14	12"	18"	8"	46"	75"	"	
50" Span 31" Rise	12	13"	21"	9"	53"	85"	"	
58" Span 36" Rise	12	18"	26"	12"	63"	90"	"	
65" Span 40" Rise	12	18"	30"	12"	70"	102"	2 1/4 to 1	
72" Span 44" Rise	12	18"	33"	12"	77"	114"	"	

Note: All splices to be lap riveted or bolted

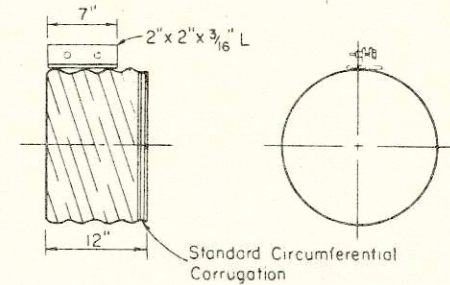


TYPE #5 Alternate for All sizes Corrugated Pipe and Pipe Arch

\* NOTE: Dimpled Band fits over Outside of Endwall, and Corr. Band fits inside Endwall. Dimpled Band may be used with Helically Corrugated Pipe.



SECTION A-A



END SECTION CONNECTION

For 12" thru 21" Diameter Helically Corrugated Metal Pipe

GENERAL NOTES

Details of construction not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications and the applicable Special Provisions.

NOTE

Variations of the dimensions and designs shown hereon will be permitted providing equivalent capacity and structural integrity are attained, and prior approval of the Engineer is obtained.

Reinforced concrete apron endwalls shall be used with concrete pipe culvert installations, steel apron endwalls shall be used with corrugated steel pipe culvert installations, and aluminum apron endwalls shall be used with corrugated aluminum pipe culvert installations, except that steel apron endwalls may be used on corrugated aluminum pipe culverts when a non-metallic insulation material is placed between the steel and aluminum. The non-metallic insulation material shall be so placed between the two metals so as to prohibit galvanic action from occurring.

When two or more pipes or pipe arches with apron endwalls are to be laid adjacent to each other, they shall be separated by the following amount:

Pipes: Total width of apron endwall less the diameter of pipe plus 6 inches.

Pipe Arches: Total width of apron endwall less the span dimension of the pipe arch plus 6 inches.

APRON ENDWALLS FOR CULVERT PIPE & PIPE ARCH

State of Wisconsin  
Department of Transportation  
Division of Highways

RECOMMENDED FOR APPROVAL:

12/19/69

DATE

APPROVED:

12/30/69

DATE

E. J. Bykitt  
CHIEF DESIGN ENGINEER  
H. J. Summister  
STATE HIGHWAY ENGINEER

APRON ENDWALLS FOR CULVERT PIPE

APRON ENDWALLS FOR PIPE ARCH

8-7-67

**GENERAL NOTES**

The contractor shall construct, place and maintain barricades as shown on the drawing and as required by the Standard Specifications or applicable Special Provisions.

**CLASS I BARRICADE:**

Class I Barricades shall be of variable length as indicated, and long barricades shall be assembled from these units. The Class I Barricade is the type normally required for major operations, where the barricade will remain in place for extended periods. Class I Barricades shall be used at points where the road is closed to traffic. Gates or movable sections of a barricade shall be provided when necessary, for access of equipment or other authorized vehicles. Wing Barricades are Class I Barricades erected on the shoulder on one or both sides of the pavement to give Traffic the perceptive effect of a narrowing or restricted roadway. The ends closest to traffic of all three members of a wing barricade shall be in a vertical line. If used in a series, they should start at the outer edge of the shoulder and be brought progressively closer to the pavement. Wing Barricades may be used as a mounting for the advance warning or guide signs or for flashers. When used on two-way roadways, the back of the wing barricade shall be painted reflectorized white.

**CLASS II BARRICADE:**

Class II Barricades may be used only where the hazard to traffic is relatively small, and for the more or less continuous delimiting of a restricted roadway, or for temporary daytime use.

**MATERIAL & FABRICATION:**

Lumber shall be of a grade structurally sound and sufficiently rigid to satisfactorily support and maintain the purpose and intent of a barricade facility. Metal shall be sufficiently rigid to satisfactorily support and maintain the purpose and intent of a barricade facility. The fabrication of the barricade shall be in accord with good pertinent woodworking and metalworking practices. All lumber or timber dimensions stated are nominal.

**PAINTING:**

All barricades shall be painted in alternate 4" or 6" black and white stripes at a 45° angle. The width of stripe shall be consistent for each complete barricade installation. Black stripes shall be painted with weather resistant and durable black paint. White stripes shall be primed, followed by two coats of white reflectorized paint or reflective wide angle sheeting.

**DIRECTION OF DIAGONAL STRIPES:**

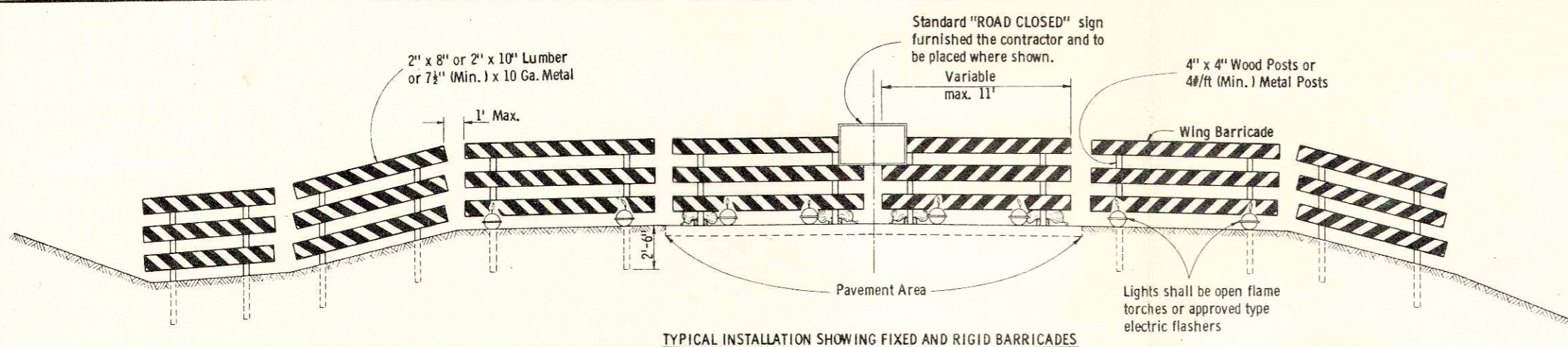
Where a barricade extends entirely across the roadway with no vehicle access provision, the stripes shall slope downward toward the highway centerline. Where vehicle access is permitted, the stripes shall slope downward in the direction toward which vehicles must turn in detouring. Where both right and left turns are provided for, the stripes shall slope downward in both directions from the center. The stripes on wing barricades shall point downward toward the roadway.

**LIGHTING:**

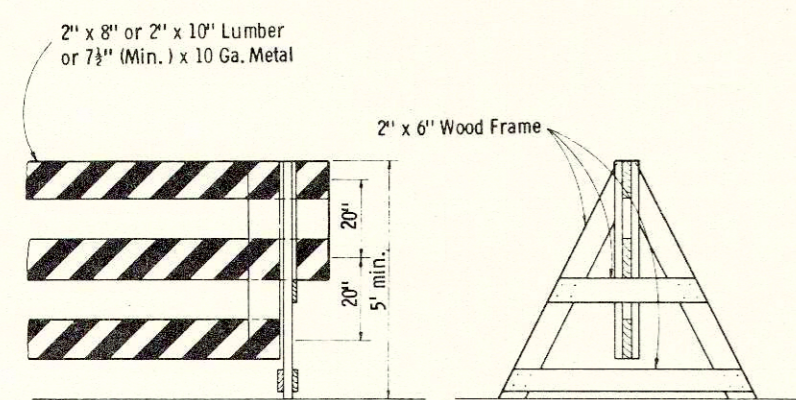
Lighting devices for barricades shall conform to the requirements of the Standard Specifications.

**MEASUREMENT & PAYMENT:**

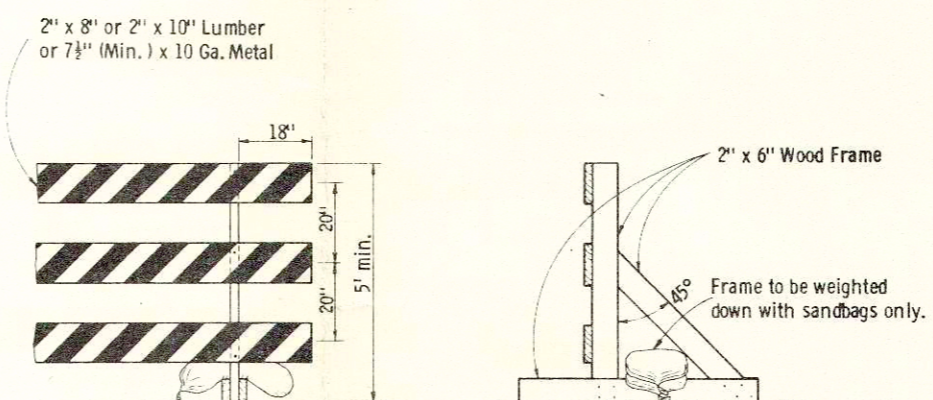
All barricades, unless otherwise provided in the plans and/or special provisions shall be furnished, placed, and maintained as noted above, and no additional compensation will be allowed but shall be construed to be included in the price bid for other items.



**TYPICAL INSTALLATION SHOWING FIXED AND RIGID BARRICADES**

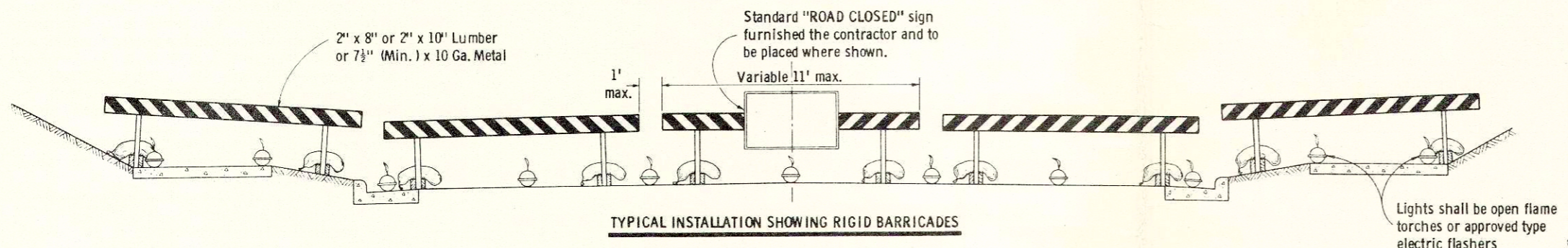


**ALTERNATE TYPE INSTALLATION (DEMOUNTABLE)**

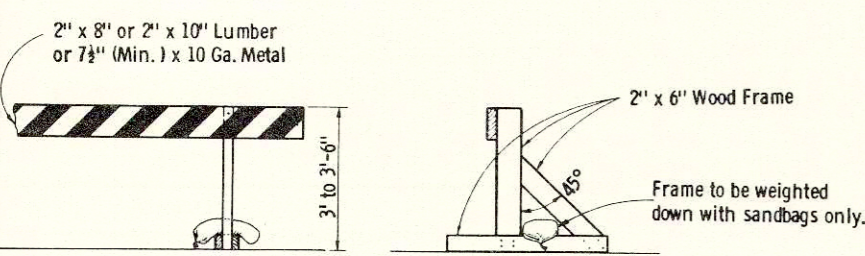


**ALTERNATE TYPE INSTALLATION (RIGID)**

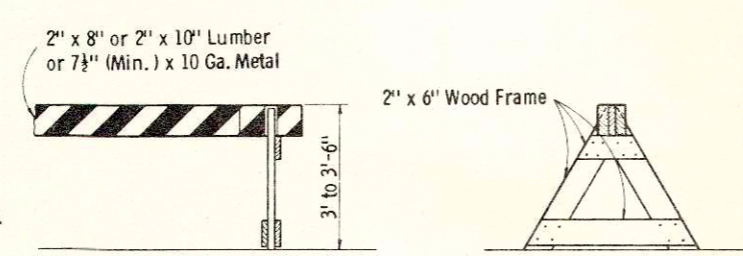
**CLASS I BARRICADES**



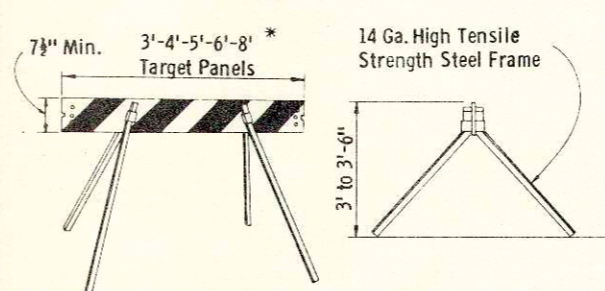
**TYPICAL INSTALLATION SHOWING RIGID BARRICADES**



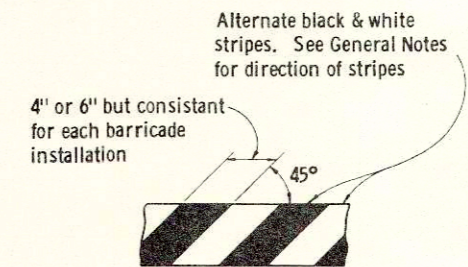
**ALTERNATE TYPE INSTALLATION (RIGID)**



**ALTERNATE TYPE INSTALLATION (DEMOUNTABLE)**



**ALTERNATE TYPE INSTALLATION (DEMOUNTABLE)**



**TYPICAL DIAGONAL STRIPES**  
Applies to all Classes & Types of Barricades

**CLASS II BARRICADES**

**CONSTRUCTION BARRICADE**

State Highway Commission of Wisconsin

RECOMMENDED FOR APPROVAL  
DATE 1/11/67  
APPROVED: [Signature] CHIEF DESIGN ENGINEER  
DATE 1/13/67  
[Signature] STATE HIGHWAY ENGINEER

Data No. 7-4.1.5

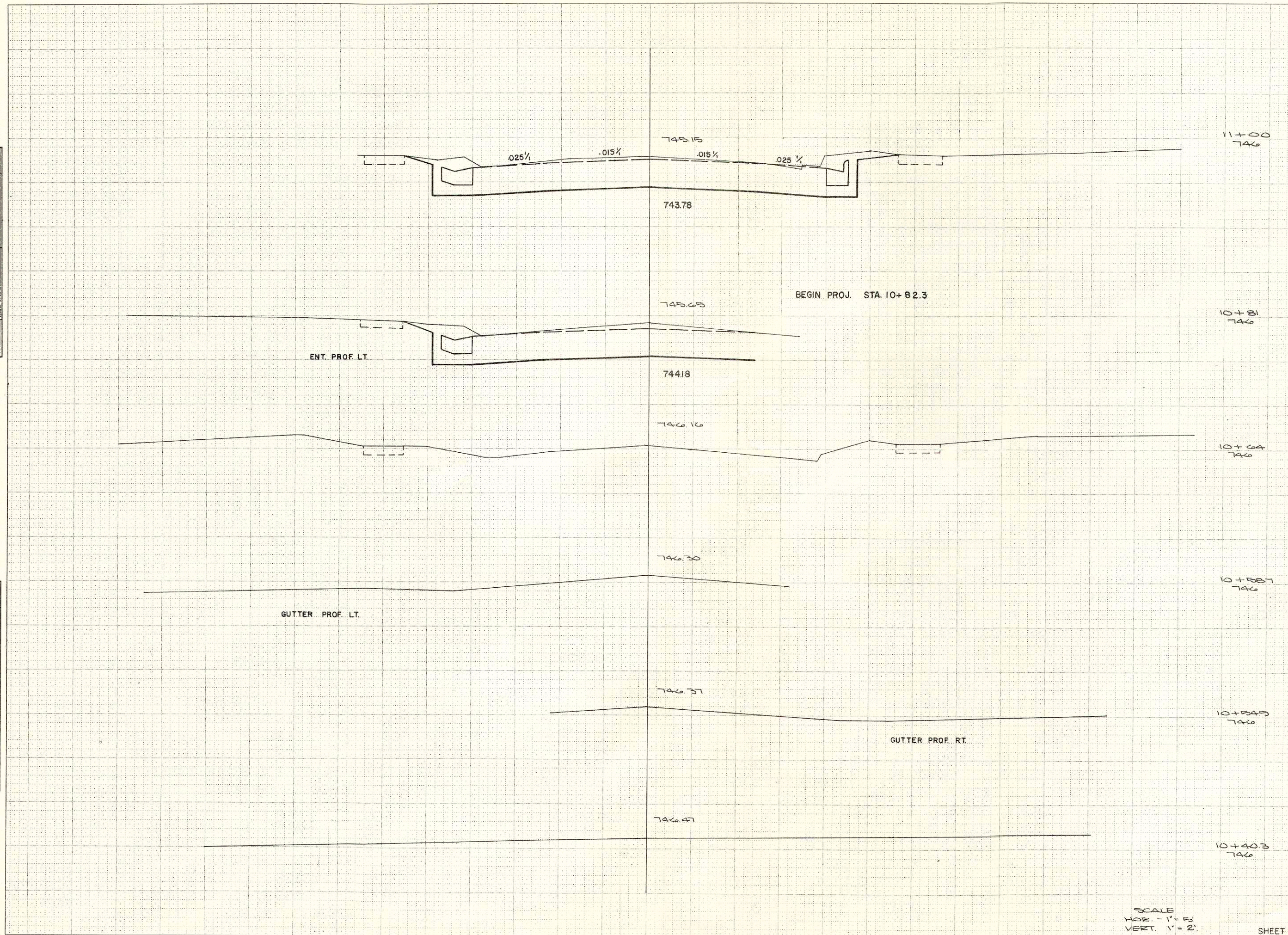


B.P.R. REGION DIVISION	PROJECT	SHEET NUMBER	TOTAL SHEETS
4 WIS.	50123(20)	9	25

NOTE BOOK TABULATE AREAS CHECKED NO.

NOTE BOOK TABULATE AREAS CHECKED NO.

STATION	DISTANCE	YARDAGE				
		UNCL	EXCAVATION		FILL	
10+82.3						
11	44					
SHEET TOTAL		44				



BEGIN PROJ. STA. 10+82.3

ENT. PROF. LT.

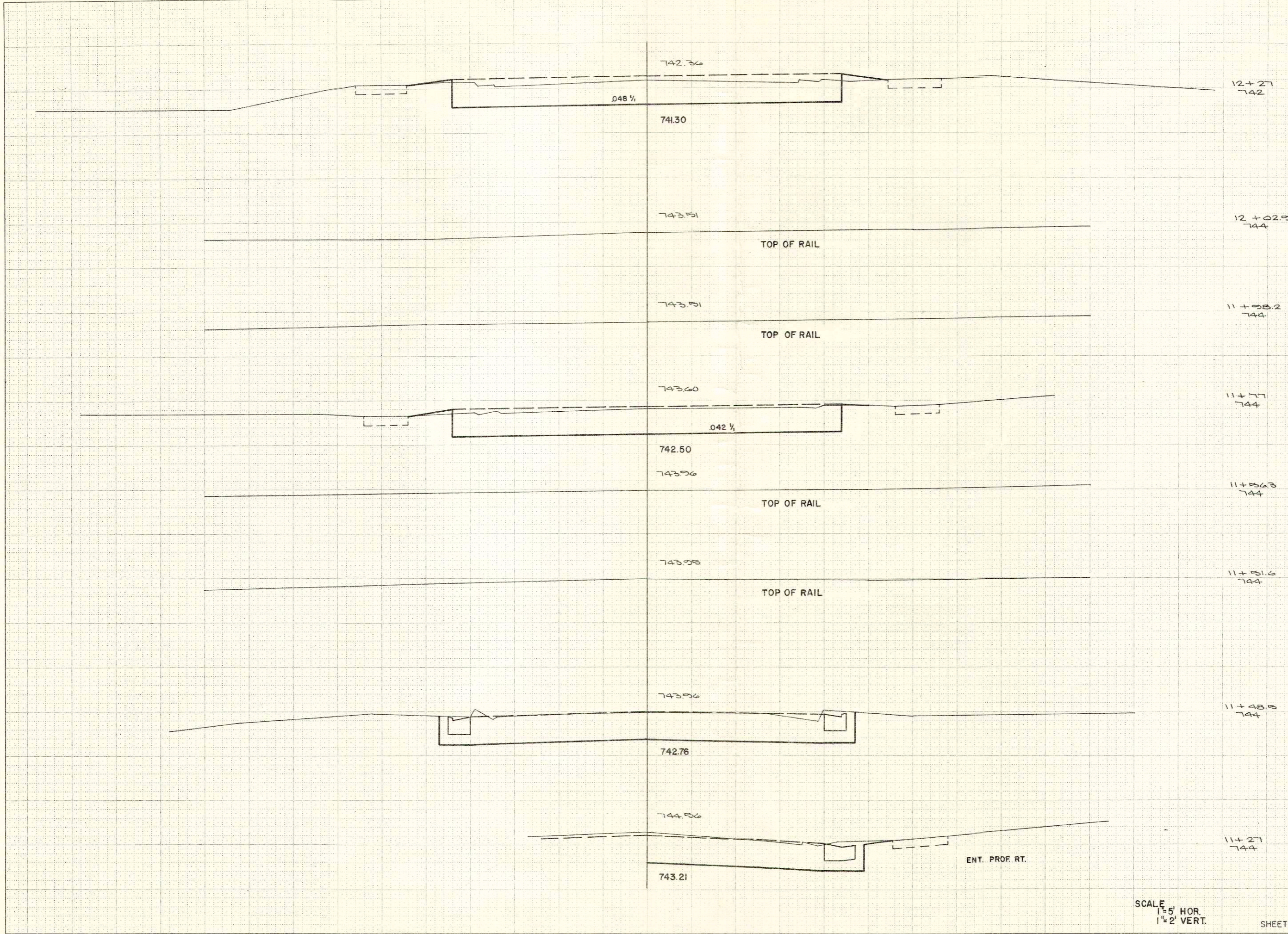
GUTTER PROF. LT.

GUTTER PROF. RT.

SCALE  
 HOR. - 1" = 20'  
 VERT. - 1" = 2'

SURVEY PLOTTED  
 NOTE BOOK TEMPLATE  
 AREA  
 AREA CHECKED  
 NO.

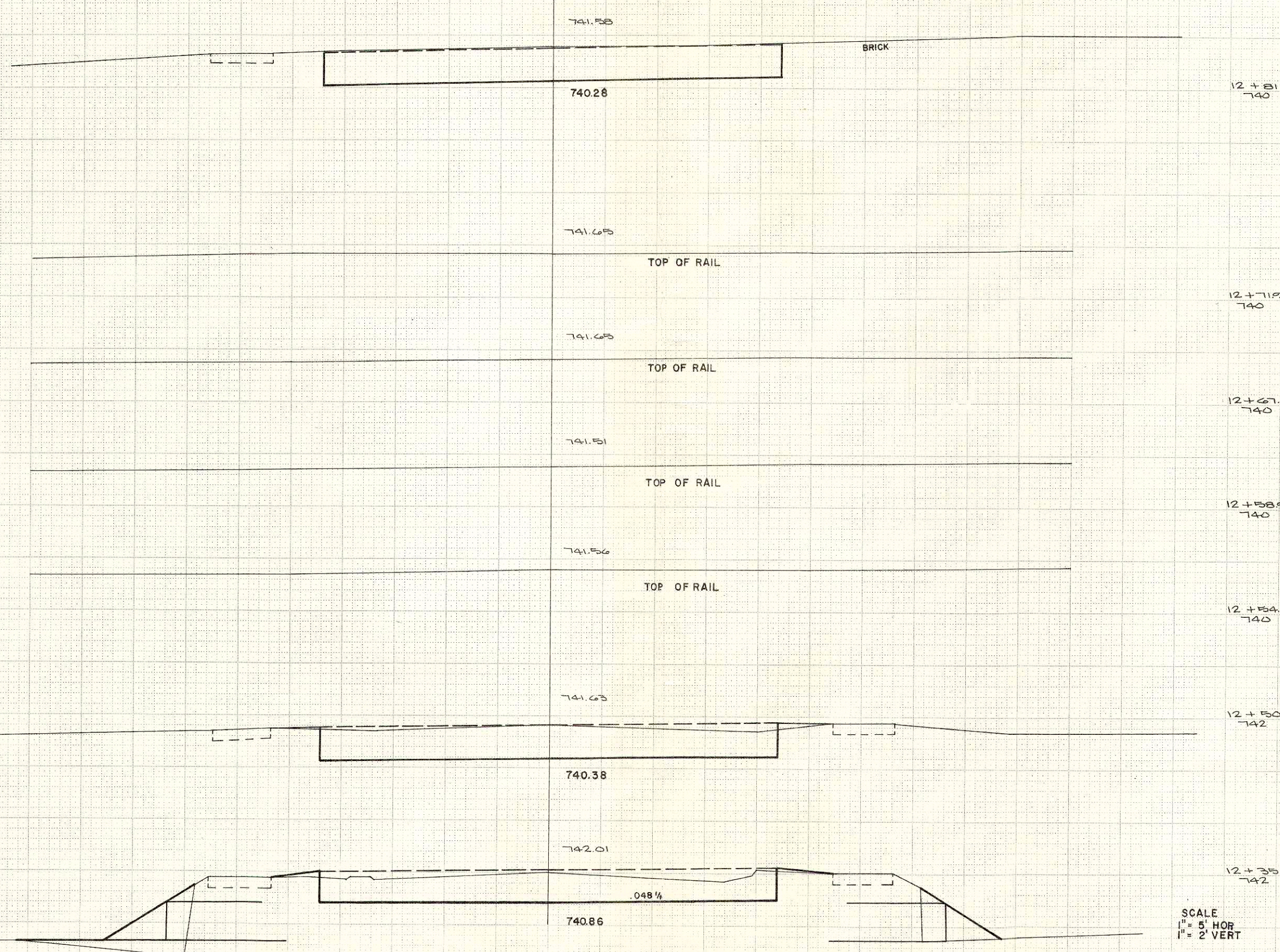
SURVEY PLOTTED  
 NOTE BOOK TEMPLATE  
 AREA  
 AREA CHECKED  
 NO.



STATION	DISTANCE	YARDAGE	
		EXCAVATION	FILL
		UNCL.	
12+27 742			
11	117		
11+49.7			
11+58.2	69		2
11+96.3			
12+04.9	35		2
12+27.0			
11+77 744			
11+56.3 744			
11+51.6 744			
11+48.5 744			
11+27 744			
SHEET TOTAL		221	4

SCALE  
 1" = 5' HOR.  
 1" = 2' VERT.

BPR REGION DIVISION	PROJECT	SHEET NUMBER	TOTAL SHEETS
4 WIS.	S 0123(20)	11	25



STATION	DISTANCE	YARDAGE	
		EXCAVATION	
		UNCL.	FILL
12 + 27.0	13		4
12 + 35.0	31		7
12 + 52.2			
12 + 60.8	9		
12 + 65.0			
12 + 73.8	17		
12 + 81.0			
12 + 71.9			
12 + 67.1			
12 + 58.9			
12 + 54.1			
12 + 50			
12 + 35			

SCALE  
 1" = 5' HOR  
 1" = 2' VERT

SHEET TOTAL 70 11

NOTE BOOK TEMPLATE NO. AREAS CHECKED

NOTE BOOK TEMPLATE NO. AREAS CHECKED

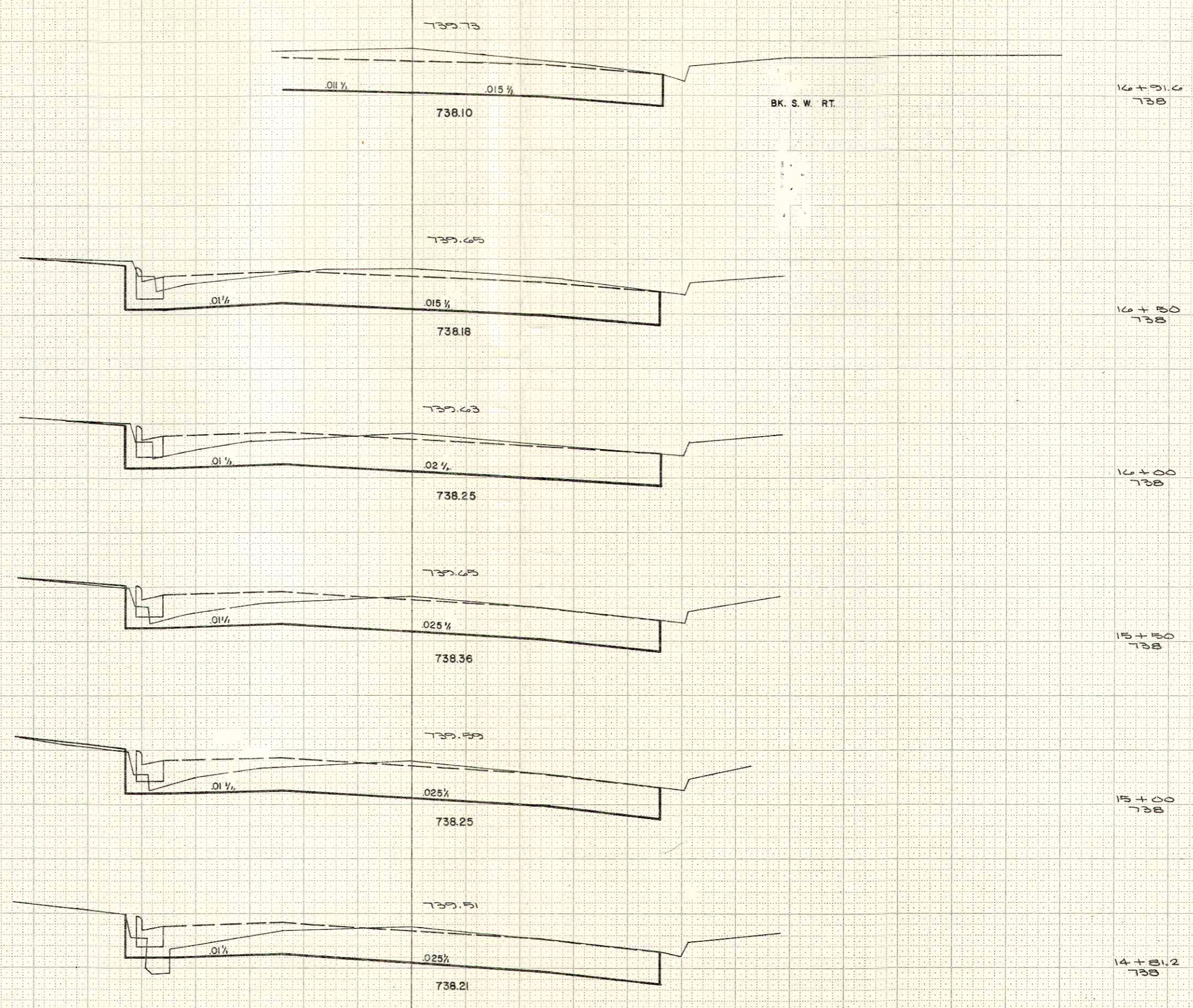






SURVEIL | DATE: \_\_\_\_\_  
 NOTE BOOK | TIME: \_\_\_\_\_  
 AREA | \_\_\_\_\_  
 MADE CHECKED | \_\_\_\_\_  
 NO. | \_\_\_\_\_

SURVEIL | DATE: \_\_\_\_\_  
 NOTE BOOK | TIME: \_\_\_\_\_  
 AREA | \_\_\_\_\_  
 MADE CHECKED | \_\_\_\_\_  
 NO. | \_\_\_\_\_



STATION	DISTANCE	YARDAGE			
		EXCAVATION			
		JUNCL.			FILL
14+71.7		19			
14+81.2		35			
15		94			
15+50		96			
16		109			
16+50					
16+00					
15+50					
15+00					
14+81.2					

SCALE  
 1" = 5' HOR.  
 1" = 2' VERT.

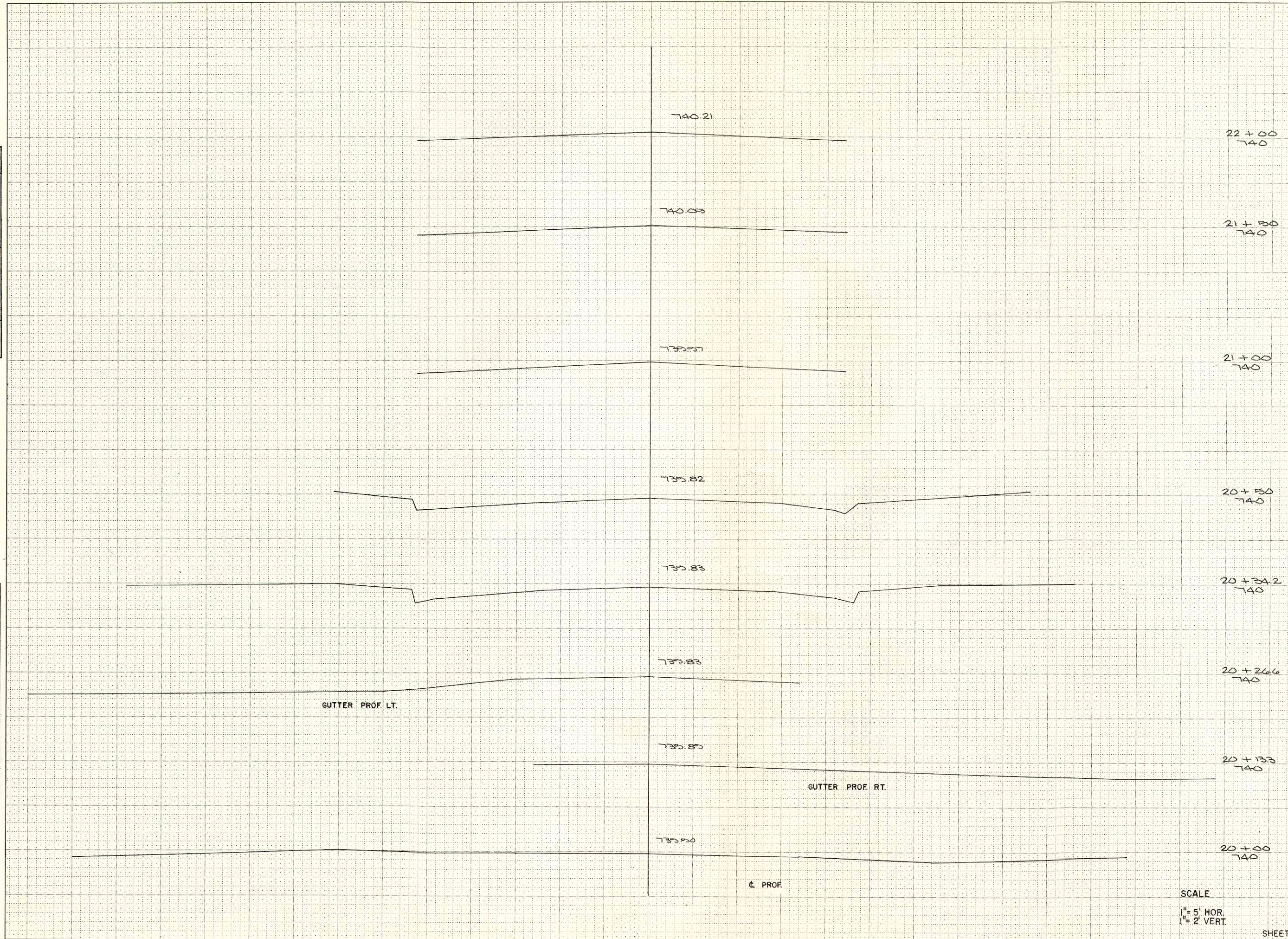
SHEET TOTAL 353





B.P.R. REGION	PROJECT	SHEET NUMBER	TOTAL SHEETS
4 WIS.	2023(20)	17	25

STATION	DISTANCE	YARDAGE	
		EXCAVATION	FILL
22+00	740		
21+80	740		
21+00	740		
20+50	740		
20+34.2	740		
20+26.6	740		
20+133	740		
20+00	740		



DATE: \_\_\_\_\_  
 DRAWN BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 NO. \_\_\_\_\_

DATE: \_\_\_\_\_  
 DRAWN BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 NO. \_\_\_\_\_

SCALE  
 1" = 5' HOR.  
 1" = 2' VERT.

SHEET TOTAL







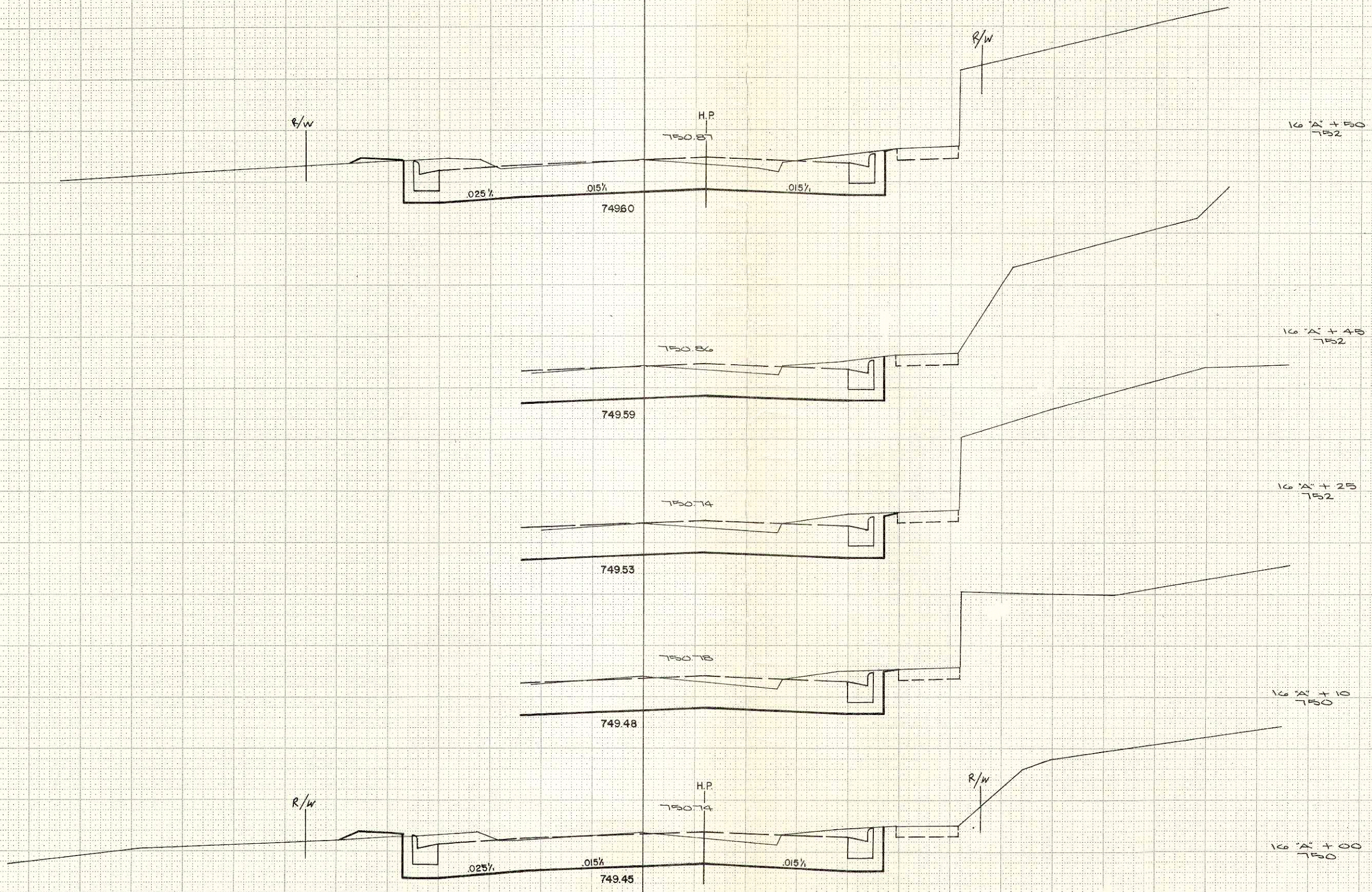






B.P.R. REGION	PROJECT	SHEET NUMBER	TOTAL SHEETS
4	50123(22)	23	25
WIS.			

STATION	DISTANCE	YARDAGE	
		EXCAVATION	
		UNCL.	FILL
15'A" + 85		33	2
16'A" + 50	111		
16'A" + 45			
16'A" + 25			
16'A" + 10			
16'A" + 00			



NOTE BOOK TEMPLATE AREAS CHECKED

NOTE BOOK TEMPLATE AREAS CHECKED

"A" LINE

SCALE  
1" = 5' HOR.  
1" = 2' VERT.

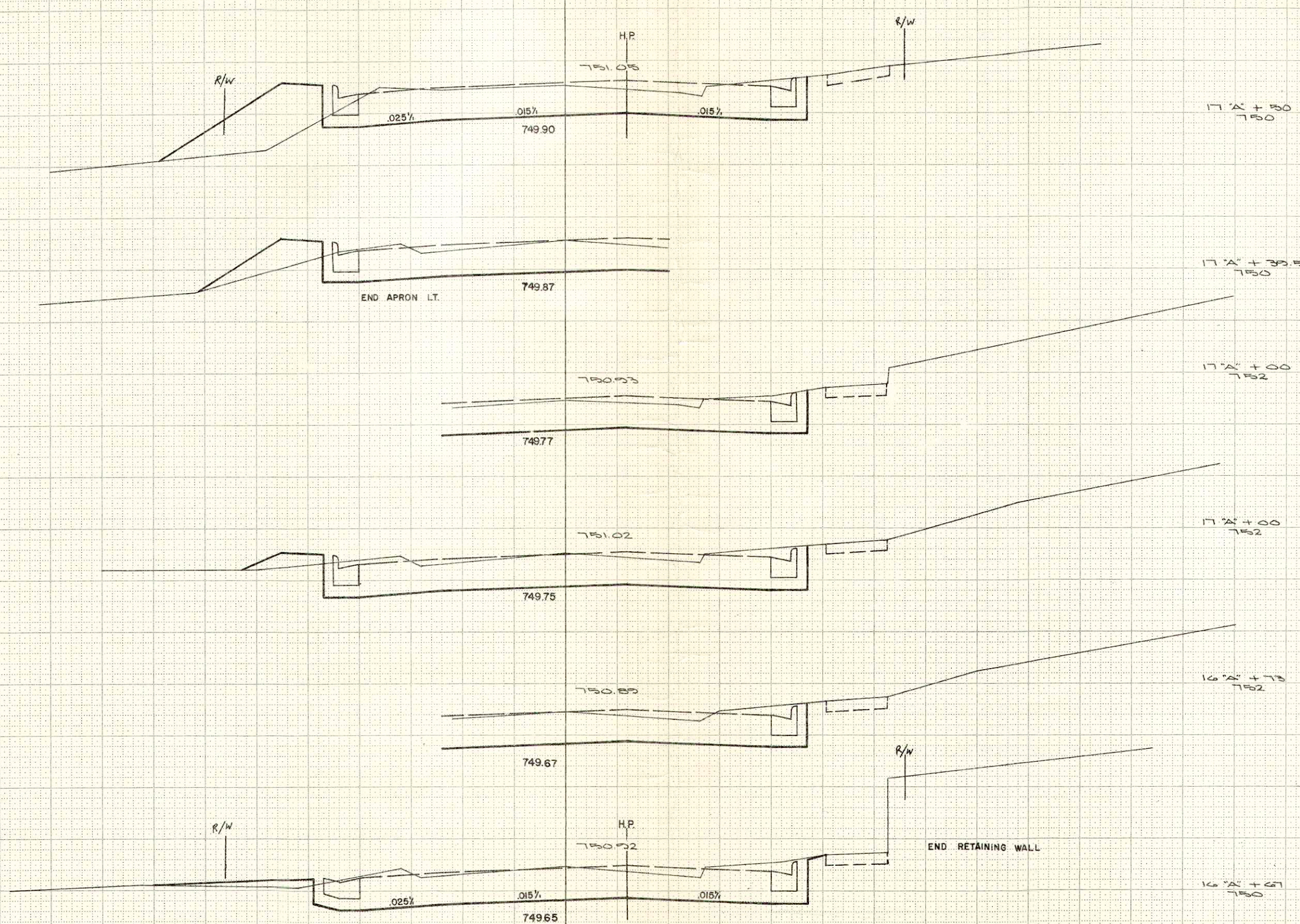
SHEET TOTAL

144

2

B.P.W. REGION	PROJECT	SHEET NUMBER	TOTAL SHEETS
4	50123(22)	24	25

STATION	DISTANCE	YARDAGE	
		EXCAVATION	
		UNCL.	FILL
16"A" + 50			
16"A" + 67		37	2
17"A" + 50		72	4
17"A" + 67		102	22
17"A" + 50			
17"A" + 39.5			
17"A" + 50			
17"A" + 00			
17"A" + 00			
17"A" + 00			
16"A" + 73			
16"A" + 67			
SHEET TOTAL		211	28



"A" LINE  
SCALE  
1" = 5' HOR.  
1" = 2' VERT.

SURVEY  
NOTE BOOK  
NO.

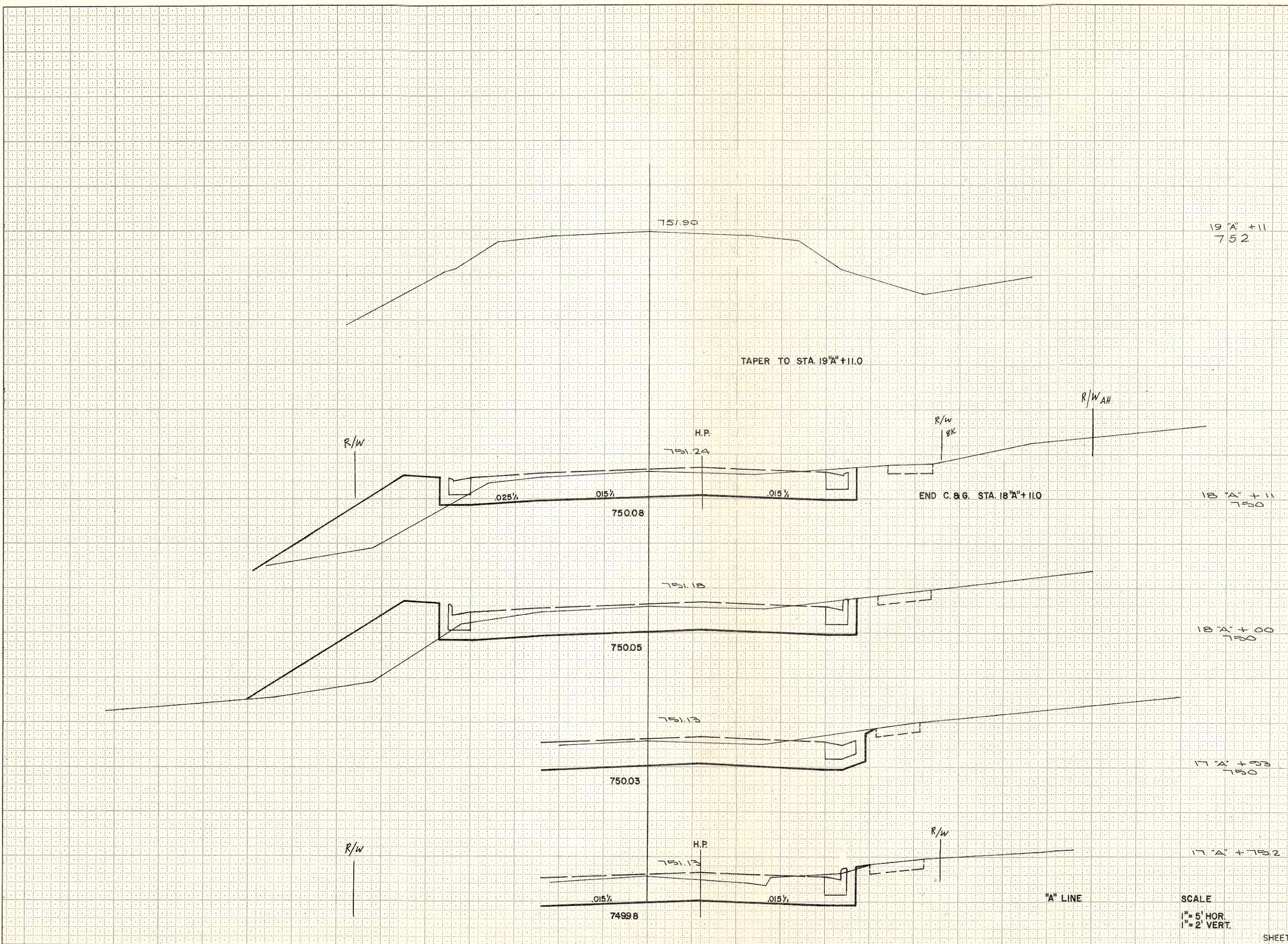
SURVEY  
NOTE BOOK  
NO.

B.P.R. REGION DIVISION	PROJECT	SHEET NUMBER	TOTAL SHEETS
4 WIS.	2012202	25	25

STATION	DISTANCE	YARDAGE	
		EXCAVATION	FILL
UNCL.			
17 <sup>"A"</sup> + 50		93	51
18 <sup>"A"</sup>		20	13
18 <sup>"A"</sup> + 11			111
19 <sup>"A"</sup> + 11			

REVISIONS  
 NO. DATE DESCRIPTION  
 1 10/1/22 AREA CHECKED  
 2 10/1/22 AREA CHECKED

PRINTED  
 NO. DATE DESCRIPTION  
 1 10/1/22 AREA CHECKED



SCALE  
 1" = 5' HOR.  
 1" = 2' VERT.

SHEET TOTAL

113

175