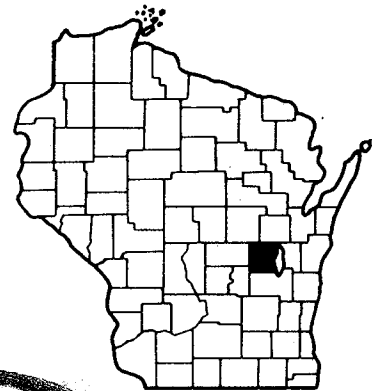


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Index of Sheets

Sheet No. 1	Title
Sheet No. 2 - 2.4	Typical Sections and Details
Sheet No. 3 - 3.1	Estimate of Quantities
Sheet No. 3A	Miscellaneous Quantities
Sheet No. 4	Right of Way Plat
Sheet No. 5 - 5.9	Plan and Profile
Sheet No. 6 - 6.11	Standard Detail Drawings
Sheet No. -	Standard Sign Plates
Sheet No. -	Structure Plans
Sheet No. -	Computer Earthwork Data
Sheet No. 9 - 9.20	Cross Sections

TOTAL SHEETS = 53



# STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

## PLAN OF PROPOSED IMPROVEMENT MIDWAY ROAD, TOWN OF MENASHA

S. T. H. "47" — U.S.H. "10"

C.T.H. "AP"

WINNEBAGO COUNTY

STATE PROJECT		FEDERAL PROJECT	
4629-01-71		PROJECT	CONTRACT
		M 1202 (4)	1

STATE PROJECT NUMBER  
**4629-01-71**

**BEGIN PROJECT**  
STA. 68+10  
\* Y 816,600 (± 200)  
\* X 2,413,200 (± 200)

**CONSTRUCTION LIMITS**  
STA. 66+00

**END PROJECT**  
STA. 119+76

Design Designation

A.D.T. 1986	=	4800
A.D.T. 2006	=	7300
D.H.V. 1986	=	425
D.	=	55/45
T.	=	4.6% A.D.T.
V.	=	35 M.P.H.

Conventional Signs

County Line	-----	Caution Symbol (Combustible fluids under pressure)	
Township or Range Line	-----	Railroads	-----
Section Line	-----	Fence	-----
Corporate or City Limits	-----	Culverts in Place	-----
Property line	-----	Culverts Required	-----
Lot Line	-----	Power Pole	-----
Existing Right of Way Line	-----	Telephone or Telegraph Pole	-----
New Right of Way Line	-----	Right of Way Markers	-----
Base or Survey Line	-----	Marsh	-----
Slope Intercept	-----	Wooded Area	-----
Existing Roadway or Private Entrance	-----	Grade Elevation	-----
		BENCH MARK	-----

Layout  
Scale 0' 500' 1000'

Total Net Length of Centerline = 0.978 Mi. URBAN

\* COORDINATES SCALED FROM USGS TOPOGRAPHIC MAP, NEENAH, WISCONSIN, QUADRANGLE FOR IDENTIFICATION ONLY.

APPROVED FOR WINNEBAGO COUNTY

DATE: Feb 4, 1985  
COMMISSIONER: *Ray Morgan*

ORIGINAL PLANS PREPARED BY  
Mc MAHON ASSOCIATES INC.

DATE: Feb 6, 1985  
SIGNATURE: *Benjamin J. Coopman, Jr.*

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

Surveyor \_\_\_\_\_ District Checker \_\_\_\_\_  
Designer \_\_\_\_\_ C. O. Checker *TCB*  
District Supervisor \_\_\_\_\_ C. O. Coordinator *TCB*

Approved: \_\_\_\_\_  
Date: 11/7/85  
District Transportation Director: *C.R. Ryan*

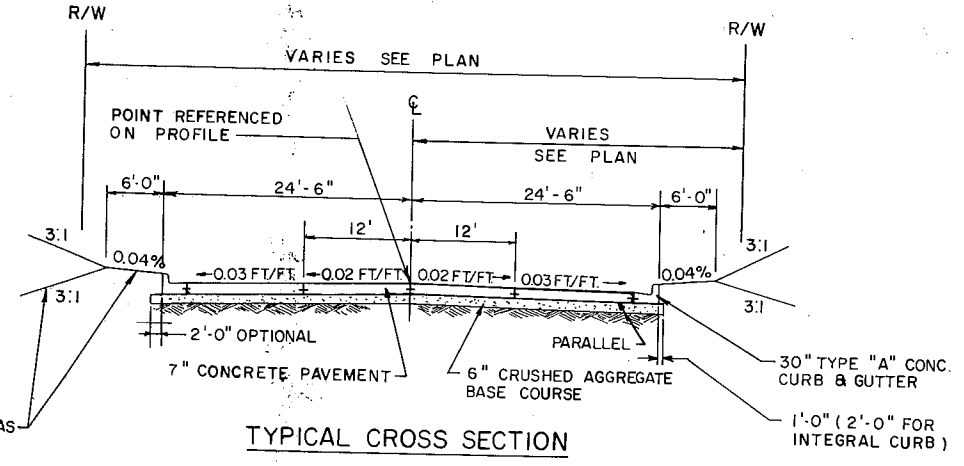
Approved: \_\_\_\_\_  
Date: 11-25-85  
Chief Design Engineer: *D.J. Strand*

Approved: \_\_\_\_\_  
Date: 11/26/85  
Chief Traffic Engineer: *E.J. Byski*  
Director of Development: \_\_\_\_\_

U. S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
REGION 5 WISCONSIN DIVISION

Approved: \_\_\_\_\_  
Date: \_\_\_\_\_  
Division Administrator: \_\_\_\_\_

4629-01-71  
157



**UTILITIES**

- |  |  |
|--|--|
| WISCONSIN BELL<br>R. PAGEL<br>221 W. WASHINGTON STREET<br>APPLETON, WI 54913                   | DIGGERS HOTLINE<br>1-800-242-8511<br>(TOLL FREE)<br>414-735-3241 |
| WISCONSIN ELECTRIC POWER CO.<br>NORBERT SCHEMM<br>100 W. LAWRENCE STREET<br>APPLETON, WI 54911 | 414-735-8445   |
| WARNER AMEX CABLE COMMUNICATIONS INC.<br>RICHARD ZASKE<br>304 HIGH AVENUE<br>OSHKOSH, WI 54901 | 414-725-4883   |
| SANITARY DISTRICT #4<br>JERRY QUARFORD, CURT WEIBEL<br>2340 AMERICAN DRIVE<br>NEENAH, WI 54955 | 414-739-5128   |
| WISCONSIN NATURAL GAS CO.<br>JIM GUNDERSON<br>800 SOUTH LYNDALE DRIVE<br>APPLETON, WI 54914    | DIGGERS HOTLINE<br>1-800-242-8511<br>(TOLL FREE)<br>414-735-1246 |
| MENASHA UTILITIES<br>ROBERT HOGAN<br>182 MAIN STREET<br>MENASHA, WI 54952                      | 414-729-5180   |
| APPLETON WATER DEPARTMENT<br>DON BAUER<br>125 N. WALNUT STREET<br>APPLETON, WI 54911           | 414-733-2311   |

**GENERAL NOTES**

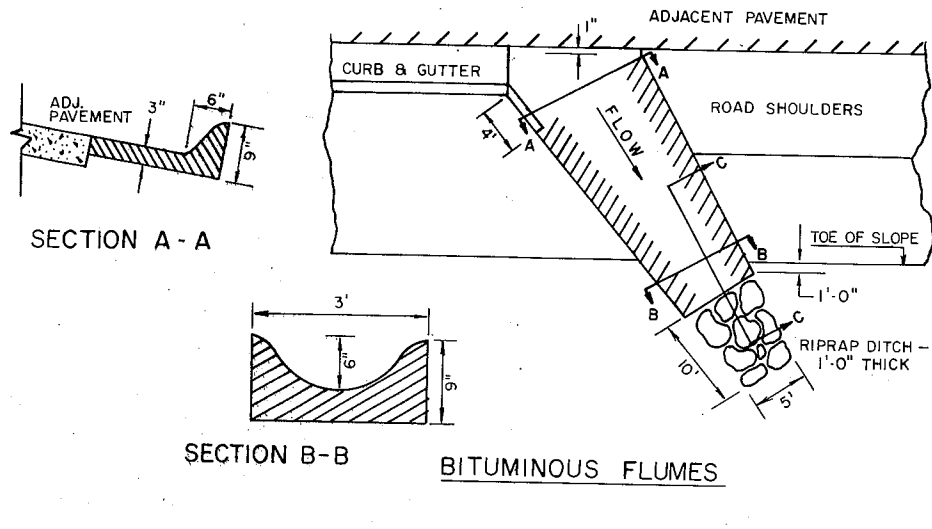
PRIVATE UTILITY COMPANIES SHALL ADJUST OR MOVE ALL PRIVATELY OWNED FACILITIES TO FIT NEW CONSTRUCTION. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

ALL DISTURBED AREAS EXCLUSIVE OF THE ROADBED ARE TO BE TOPSOILED, FERTILIZED AND SEEDDED. NO TREES AND/OR SHRUBS SHALL BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER. VERTICAL DATUM IS BASED ON USGS DATUM OF 1929. CONCRETE DRIVEWAYS SHALL BE 6" THICK. DISTURBED DRIVEWAYS SHALL BE REPLACED IN KIND. BEARINGS AS SHOWN IN THE PLANS ARE GRID BEARINGS. THE EXACT LOCATION AND LIMITS OF PRIVATE ENTRANCES AND FIELD ENTRANCES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

ALL CURB AND GUTTER RADII ARE TO THE FRONT FACE OF CURB. INLET AND DISCHARGE ELEVATIONS FOR DRAINAGE STRUCTURES ARE APPROXIMATE AND SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD. CURB HEIGHTS AT ENDS OF CURB AND GUTTER SHALL BE TAPERED FROM 0 TO 6 INCHES IN 2 FEET. THE EXACT ELEVATIONS FOR CURB AND GUTTER RETURNS AT SIDE STREETS SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD. INLET APRONS SHALL BE CONSTRUCTED WITH AN IRON GRATE AS SHOWN ON DETAIL SHEET.

RIGHTS-OF-ENTRY FOR P.E. CONSTRUCTION AND SLOPING HAVE BEEN OBTAINED. SAID RIGHTS SHALL BE EXTENDED TO THE CONTRACTORS. TEMPORARY ROADS WILL BE CONSTRUCTED OF 4" C.A.B.C.

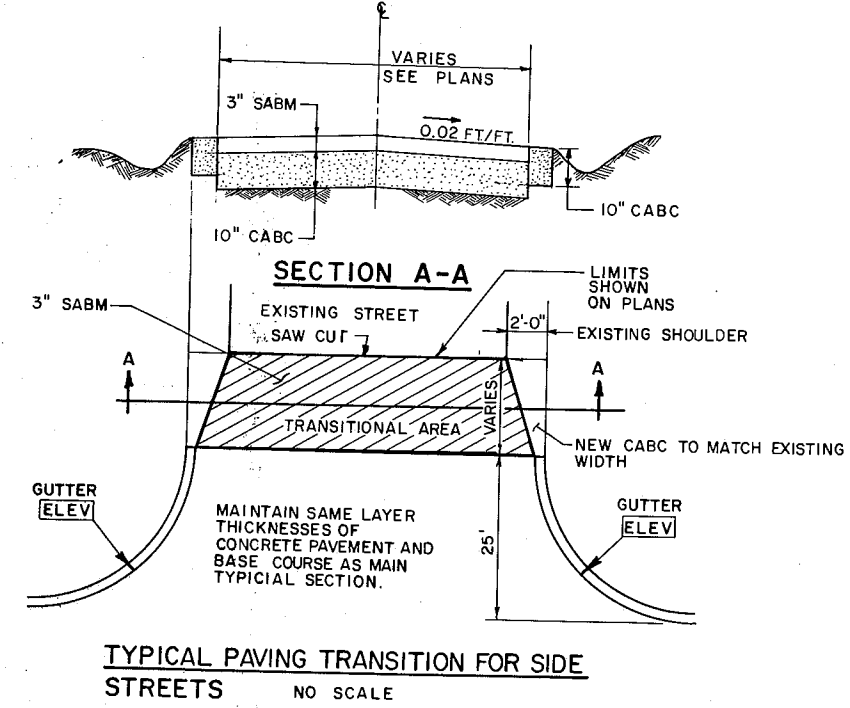
TOPSOIL, FERTILIZE & SEED ALL DISTURBED AREAS



NOTE: TYPICAL SECTION ONLY. EXACT DESIGN & FLUME LENGTH SHALL BE DETERMINED AT TIME OF CONSTRUCTION TO FIT FIELD CONDITIONS.

BITUMINOUS DISCHARGE FLUME AT CURB & GUTTER. (PAYMENT TO BE MADE UNDER THE ITEM OF BITUMINOUS FLUMES)

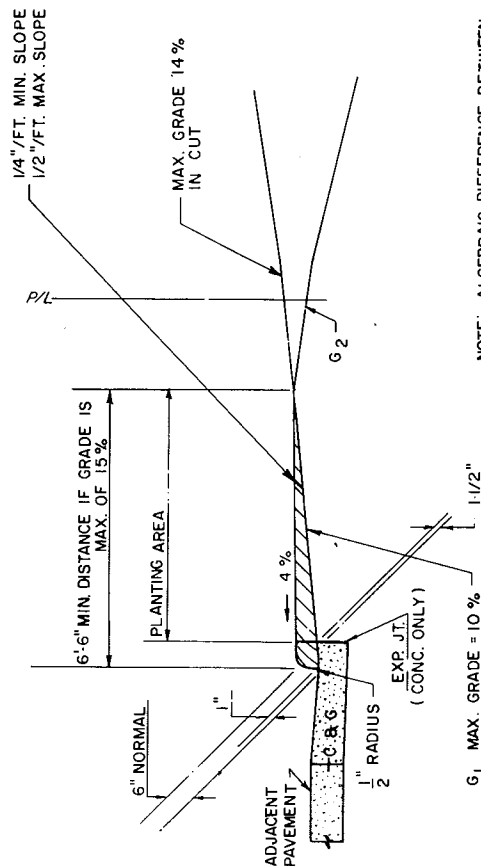
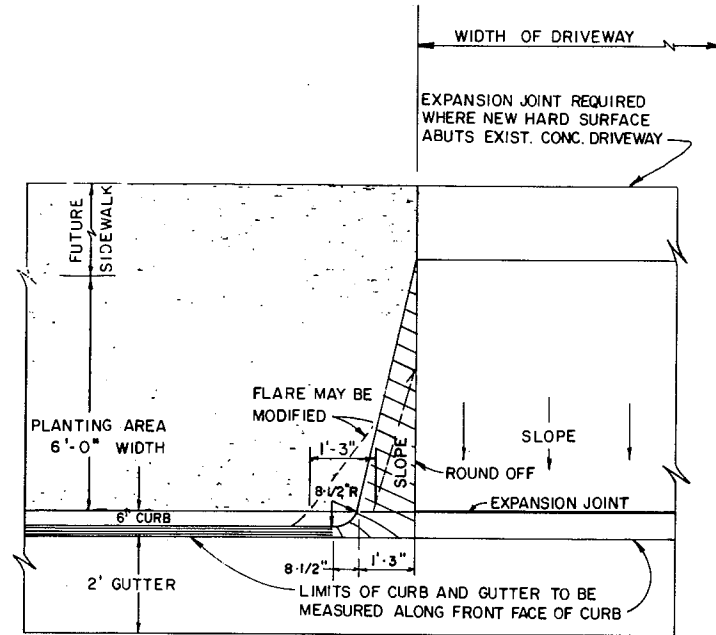
**STANDARD DETAIL DRAWINGS**



TITLE	SDD NUMBER
CATCH BASIN, MANHOLE, AND INLET COVERS	8A5-3A
MANHOLES, TYPE 1	8B6-3
INLETS, TYPES 1, 2, AND 3	8C1-4
CONCRETE CURB, CONCRETE CURB AND GUTTER AND PAVEMENT TIES	8D1-10
APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCHES	8F1-9
METAL, FIBER, AND PVC CONDUIT	9B2-2
DETAILS FOR THE INSTALLATION OF TRAFFIC SIGNAL AND TRAFFIC COUNTER DETECTOR LOOP WIRES IN PAVEMENT IN PLACE	9B4-4
PAVEMENT MARKING	13B-5-4
CONCRETE PAVEMENT LONGITUDINAL JOINTS	13C1-6
NON-REINFORCED CONCRETE PAVEMENT (20' NORMAL TRANSVERSE JOINT WITH POURED TYPE SEALER)	13C4-8
CONSTRUCTION BARRICADES AND STANDARD SIGNS	15C1-7
LANDMARK REFERENCE MONUMENTS	16A1-4

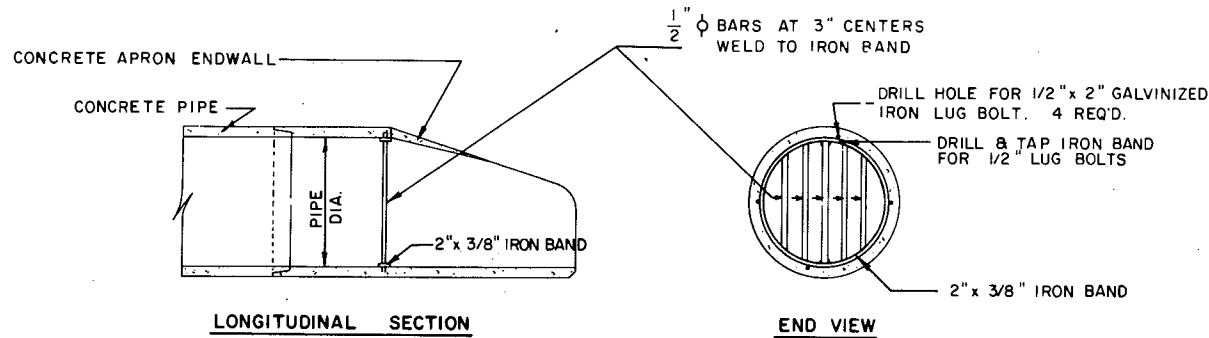
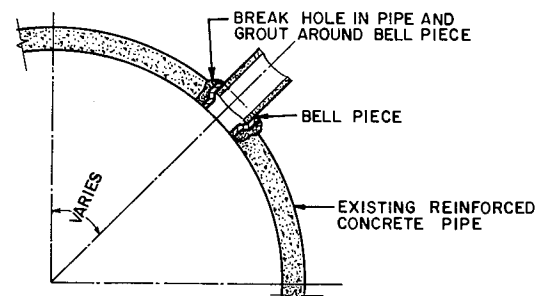
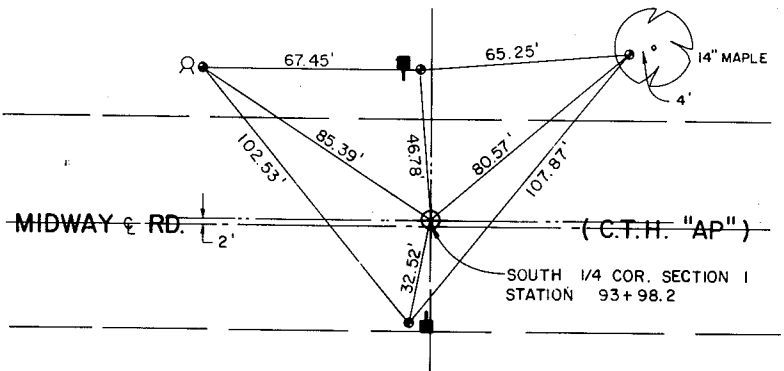
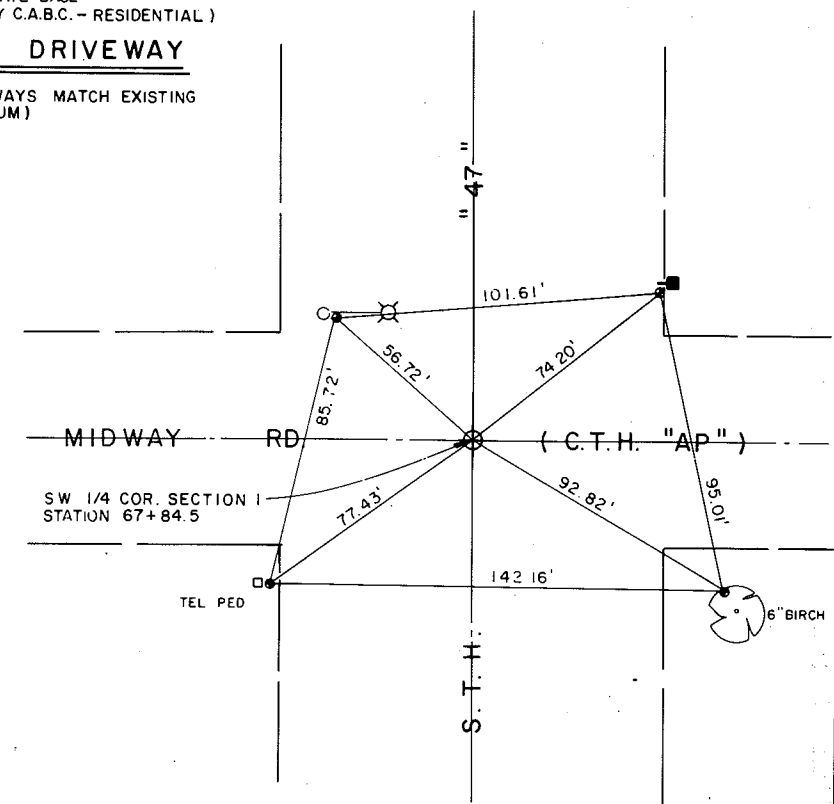
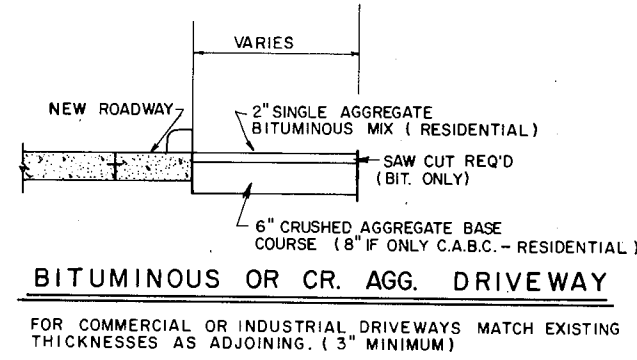
**STANDARD ABBREVIATIONS**

∠	ANGLE	N	NORTH
℄	CENTERLINE	P.E.	PRIVATE ENTRANCE
C.A.B.C.	CRUSHED AGGREGATE BASE COURSE	P.I.	POINT OF INTERSECTION
C.M.P.A.	CORRUGATED METAL PIPE ARCH	P.V.C.	POINT OF VERTICAL CURVATURE
C.M.C.P.	CORRUGATED METAL CULVERT PIPE	P.V.I.	POINT OF VERTICAL INTERSECTION
C.T.H.	COUNTY TRUNK HIGHWAY	P.V.T.	POINT OF VERTICAL TANGENCY
CU.YD.	CUBIC YARD	P/L	PROPERTY LINE
Δ	DELTA	PAV'T	PAVEMENT
DB	DIRECT BURIAL	PED.	PEDESTAL
E	EAST	R	RADIUS
EL	ELEVATION	R.C.C.P.	REINFORCED CONCRETE CULVERT PIPE
F	FACTORY	R/W	RIGHT OF WAY
FL	FLOWLINE	RD.	ROAD
FT./FT.	FOOT PER FOOT	REQ'D	REQUIRED
G.V.	GAS VALVE	RT.	RIGHT
GRAVEL	GVL	S	SOUTH
H	HOUSE	S.A.B.M.	SINGLE AGGREGATE BITUMINOUS MIX
HYD.	FIRE HYDRANT	S.T.H.	STATE TRUCK HIGHWAY
INL.	INLET	SQ.FT.	SQUARE FEET
L.S.	LUMP SUM	STA.	STATION
LN.FT.	LINEAL FEET	TEL	TELEPHONE
LT.	LEFT	VC	VERTICAL CURVE
M.H.	MANHOLE	W	WEST
MAX	MAXIMUM	W.V.	WATER VALVE/SHUT OFF



NOTE: ALGEBRAIC DIFFERENCE BETWEEN TANGENT GRADES G<sub>1</sub> AND G<sub>2</sub> EXTENDED IN FILLS MAX. 14%

PROFILE PARALLEL TO C. OF DRIVEWAY



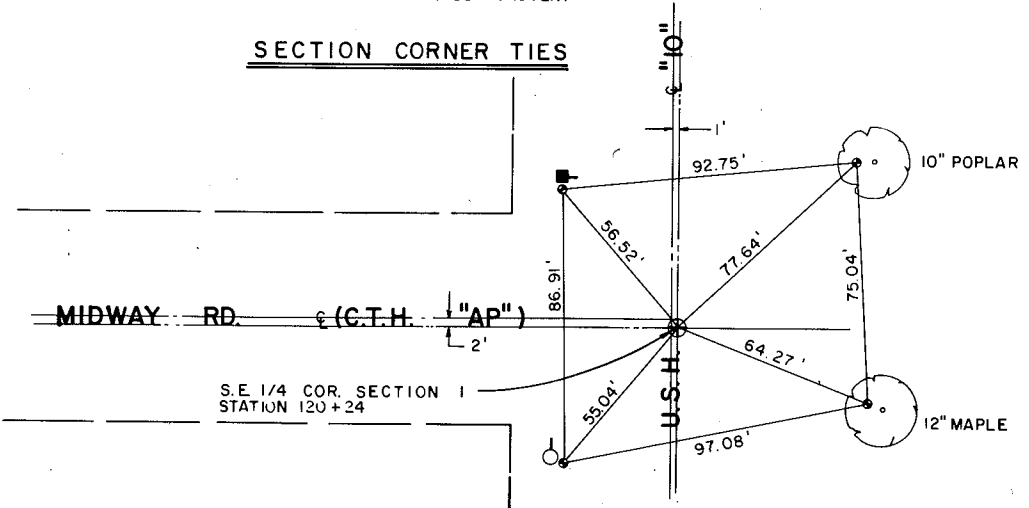
THE COST FOR GRATE AND INSTALLATION SHALL BE BY EACH

DETAIL FOR END OF PIPE GRATE

LEGEND

● = WITNESS MONUMENT

SECTION CORNER TIES



QUANTITY REQUIREMENTS	CONCRETE BASE TYPE	
	1	2
APPROX. CUBIC YARDS OF CONCRETE	.28	.57
LBS. OF HOOP BAR STEEL	X	23
LBS. OF VERTICAL BAR STEEL	X	60

### 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.

CONCRETE BASES SHALL BE TROWEL FINISHED AND LEVEL.

MINIMUM BENDING RADIUS OF CONDUIT = 6 X THE DIAMETER.

CONDUIT HEIGHT ABOVE THE CONCRETE BASE SHALL BE 2 INCHES.

ALL METALLIC CONDUIT ENDS SHALL BE REAMED, THREADED AND CAPPED OR BUSHED. ALL METALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED SHALL BE CAPPED.

ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED OR PLUGGED IMMEDIATELY AFTER INSTALLATION AND BEFORE CONCRETE IS POURED. AFTER CONCRETE HAS BEEN POURED, ALL NONMETALLIC CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE FITTED WITH U.L. APPROVED END BELLS BEFORE INSTALLATION OF ANY WIRE OR CABLE. CONDUITS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED SHALL BE CAPPED OR PLUGGED.

RACEWAY ENDS BELOW GRADE WHICH ARE INSTALLED FOR FUTURE USE SHALL BE PLUGGED OR CAPPED.

GROUND RODS ARE REQUIRED AT ALL LOCATIONS OF TYPE 2 CONCRETE BASES.

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY U.L. APPROVED ADAPTER FITTINGS SHALL BE USED.

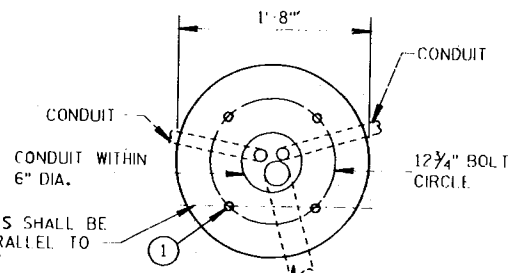
DEPTH OF CONDUIT INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES MINIMUM AND 36 INCHES MAXIMUM.

DEPTH OF CONDUIT INSTALLED THAT IS NOT BELOW THE TRAVELED WAY SHALL BE 18" MINIMUM AND 36 INCHES MAXIMUM.

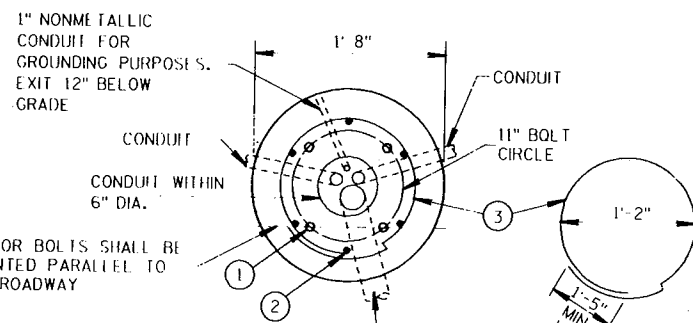
ANY EXCEPTION TO THE MAXIMUM DEPTH SHALL BE WITH THE APPROVAL OF THE ENGINEER.

- ① (4) 1" DIA. X 5' 0" ANCHOR BOLTS
- ② (6) NO. 6 X 6' 8" BAR STEEL REINFORCEMENT
- ③ (7) NO. 4 X 5' 1" BAR STEEL REINFORCEMENT @ 1' 0" C.C.

① FOUR (4) ANCHOR BOLTS, 1" DIA. X 3' 6"



ANCHOR BOLTS SHALL BE ORIENTED PARALLEL TO THE ROADWAY



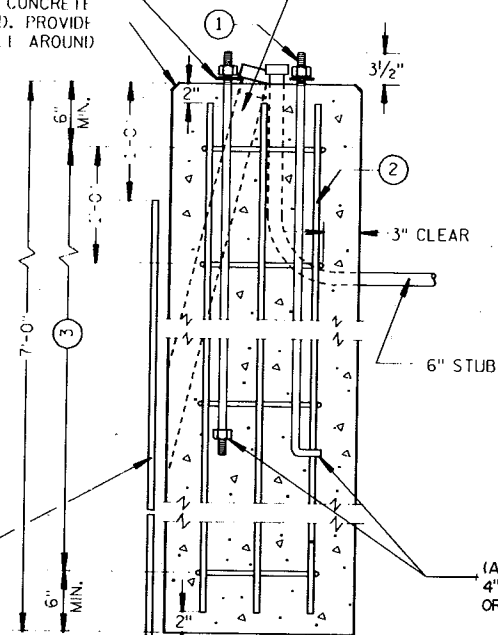
1" NONMETALLIC CONDUIT FOR GROUNDING PURPOSES. EXIT 12" BELOW GRADE

ANCHOR BOLTS SHALL BE ORIENTED PARALLEL TO THE ROADWAY

LOCK WASHER (TYPICAL)

SINGLE 4" CONDUIT REQUIRED WHEN USED IN LIEU OF TWO CONDUITS

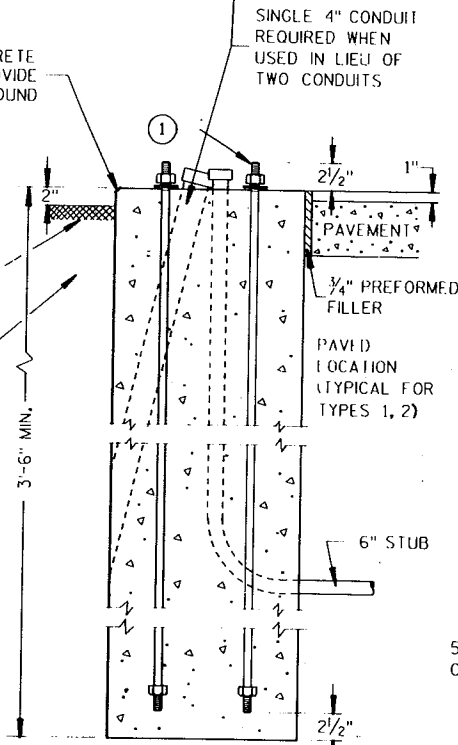
ALL EXPOSED CONCRETE TO BE FORMED. PROVIDE 1" CHAMFER ALL AROUND



TYPE 2

(ALTERNATE) 4" L BEND OR HEX NUT

### CONCRETE BASES



TYPE 1

5/8" DIA. X 8 FT. COPPERCLAD GROUND ROD

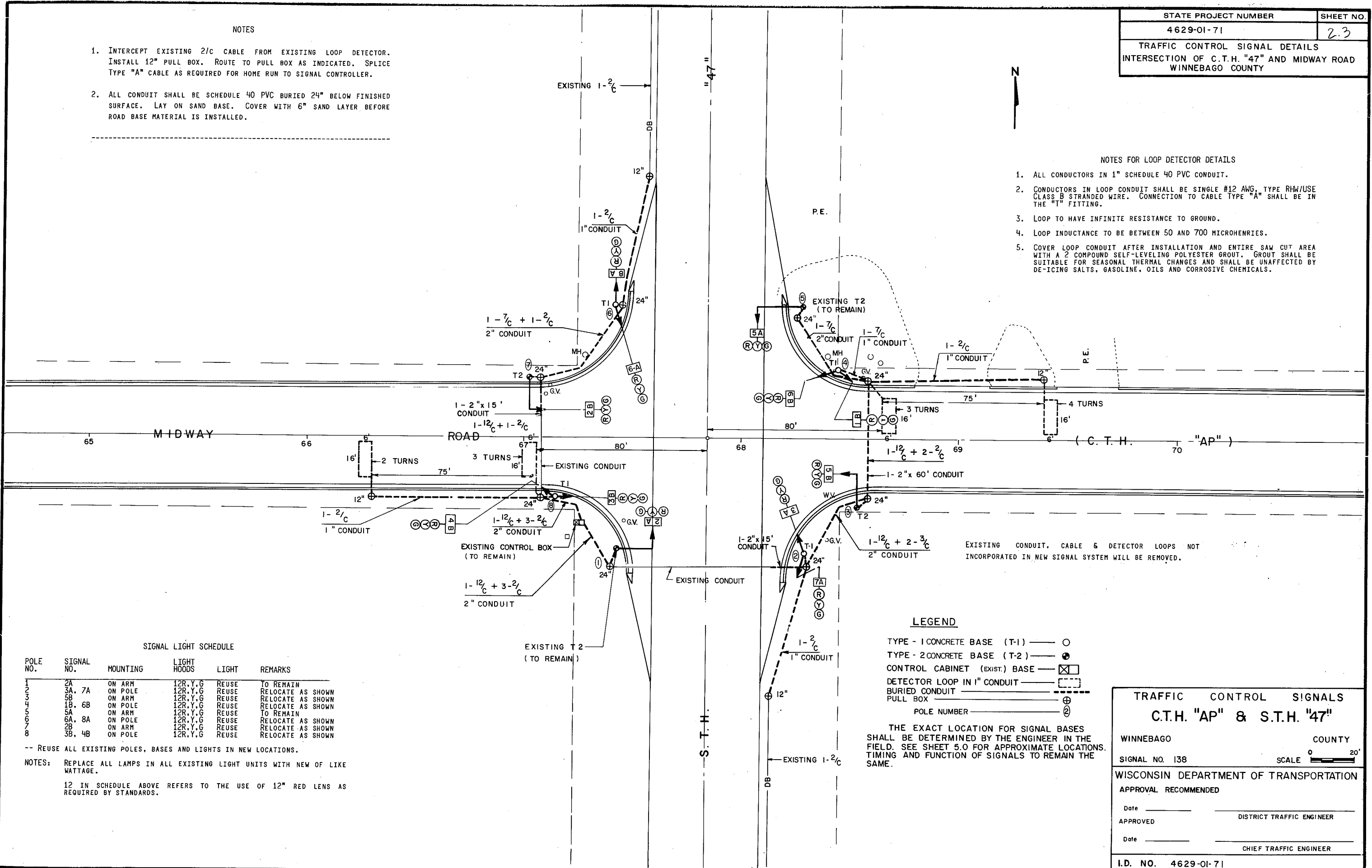
LEVELS ON: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63

NOTES

1. INTERCEPT EXISTING 2/C CABLE FROM EXISTING LOOP DETECTOR. INSTALL 12" PULL BOX. ROUTE TO PULL BOX AS INDICATED. SPLICE TYPE "A" CABLE AS REQUIRED FOR HOME RUN TO SIGNAL CONTROLLER.
2. ALL CONDUIT SHALL BE SCHEDULE 40 PVC BURIED 24" BELOW FINISHED SURFACE. LAY ON SAND BASE. COVER WITH 6" SAND LAYER BEFORE ROAD BASE MATERIAL IS INSTALLED.

NOTES FOR LOOP DETECTOR DETAILS

1. ALL CONDUCTORS IN 1" SCHEDULE 40 PVC CONDUIT.
2. CONDUCTORS IN LOOP CONDUIT SHALL BE SINGLE #12 AWG, TYPE RHW/USE CLASS B STRANDED WIRE. CONNECTION TO CABLE TYPE "A" SHALL BE IN THE "T" FITTING.
3. LOOP TO HAVE INFINITE RESISTANCE TO GROUND.
4. LOOP INDUCTANCE TO BE BETWEEN 50 AND 700 MICROHENRIES.
5. COVER LOOP CONDUIT AFTER INSTALLATION AND ENTIRE SAW CUT AREA WITH A 2" COMPOUND SELF-LEVELING POLYESTER GROUT. GROUT SHALL BE SUITABLE FOR SEASONAL THERMAL CHANGES AND SHALL BE UNAFFECTED BY DE-ICING SALTS, GASOLINE, OILS AND CORROSIVE CHEMICALS.



SIGNAL LIGHT SCHEDULE

POLE NO.	SIGNAL NO.	MOUNTING	LIGHT HOODS	LIGHT	REMARKS
1	2A	ON ARM	12R.Y.G	REUSE	TO REMAIN
2	3A, 7A	ON POLE	12R.Y.G	REUSE	RELOCATE AS SHOWN
3	5B	ON ARM	12R.Y.G	REUSE	RELOCATE AS SHOWN
4	1B, 6B	ON POLE	12R.Y.G	REUSE	RELOCATE AS SHOWN
5	5A	ON ARM	12R.Y.G	REUSE	TO REMAIN
6	6A, 8A	ON POLE	12R.Y.G	REUSE	RELOCATE AS SHOWN
7	2B	ON ARM	12R.Y.G	REUSE	RELOCATE AS SHOWN
8	3B, 4B	ON POLE	12R.Y.G	REUSE	RELOCATE AS SHOWN

-- REUSE ALL EXISTING POLES, BASES AND LIGHTS IN NEW LOCATIONS.  
 NOTES: REPLACE ALL LAMPS IN ALL EXISTING LIGHT UNITS WITH NEW OF LIKE WATTAGE.  
 12 IN SCHEDULE ABOVE REFERS TO THE USE OF 12" RED LENS AS REQUIRED BY STANDARDS.

LEGEND

- TYPE - 1 CONCRETE BASE (T-1) — ○
- TYPE - 2 CONCRETE BASE (T-2) — ⊙
- CONTROL CABINET (EXIST.) BASE — ⊠
- DETECTOR LOOP IN 1" CONDUIT — [---]
- BURIED CONDUIT — [---]
- PULL BOX — ⊕
- POLE NUMBER — ⊙

THE EXACT LOCATION FOR SIGNAL BASES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD. SEE SHEET 5.0 FOR APPROXIMATE LOCATIONS. TIMING AND FUNCTION OF SIGNALS TO REMAIN THE SAME.

**TRAFFIC CONTROL SIGNALS**  
**C.T.H. "AP" & S.T.H. "47"**

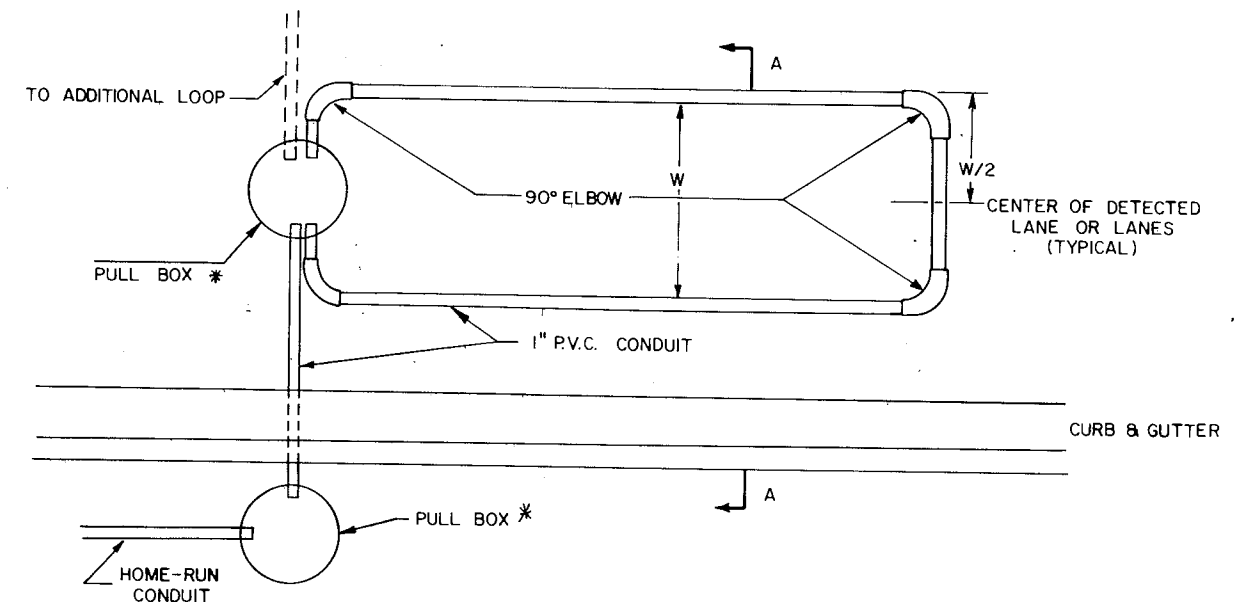
WINNEBAGO COUNTY  
 SIGNAL NO. 138 SCALE 0" = 20'

WISCONSIN DEPARTMENT OF TRANSPORTATION  
 APPROVAL RECOMMENDED

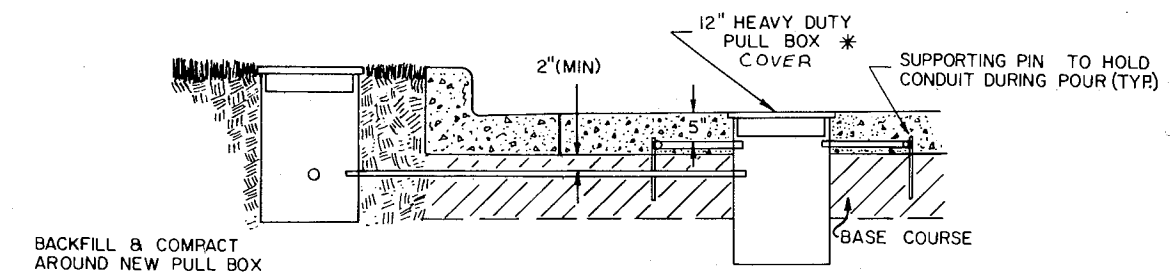
Date \_\_\_\_\_ DISTRICT TRAFFIC ENGINEER  
 APPROVED \_\_\_\_\_  
 Date \_\_\_\_\_ CHIEF TRAFFIC ENGINEER

I.D. NO. 4629-01-71

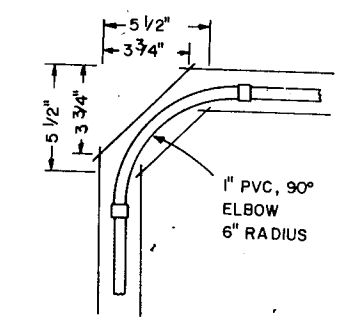
TYPICAL PLAN OF DETECTOR LOOP INSTALLED PRIOR TO PAVING P.C.C.



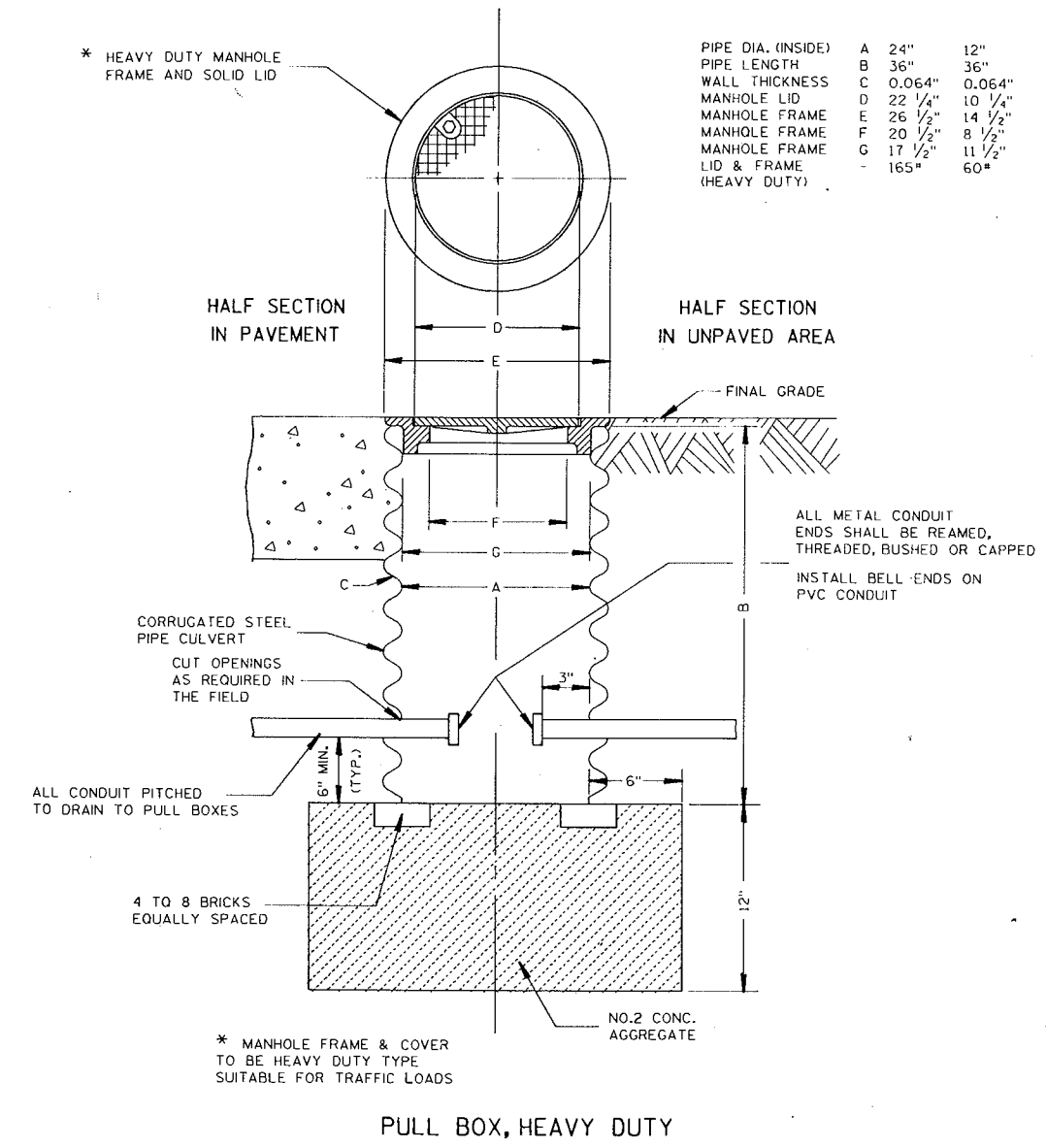
SECTION A-A



\* 12" Manhole Frame & Cover to be Heavy Duty Type For Vehicular Traffic Loads



CORNER SAW SLOT DETAIL (TOP VIEW)



ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW, OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING, PLUS NO MORE THAN 1/4".

GROUNDING LUGS (MECHANICAL CONNECTORS) SHALL BE APPROVED FOR USE WITH COPPER WIRE AND BE U.L. LISTED.  
THE MECHANICAL CONNECTION (INSIDE AND OUTSIDE) TO THE PULL BOX, SHALL BE TOTALLY AND PERMANENTLY SEALED WITH A SILICONE OR RUBBERIZED CAULKING COMPOUND AS APPROVED BY THE ENGINEER.

E S T I M A T E O F Q U A N T I T I E S

DATE 12/13/85

PROJECT ID: 4629-01-71  
 WINNEBAGO COUNTY  
 MIDWAY ROAD, TOWN OF MENASHA  
 STH 47 - USH 10 SECTION  
 CTH "AP"

ITEM	ITEM DESCRIPTION	UNIT	TOTAL	4629-01-71 QUANTITY
20503	UNCLASSIFIED EXCAVATION	C.Y.	27,940.00	27,940.00
21301	FINISHING ROADWAY	L.S.	1.00	1.00
30404	CRUSHED AGGREGATE BASE COURSE	TON	12,000.00	12,000.00
40907	CONCRETE PAVEMENT, 7-INCH	S.Y.	26,160.00	26,160.00
40931	CONCRETE DRIVEWAY	S.Y.	9.00	9.00
<hr/>				
52260	REINFORCED CONCRETE APRON ENDWALLS FOR CULVERT PIPE, 12-INCH	EACH	2.00	2.00
60120	CONCRETE CURB AND GUTTER, 18-INCH, TYPE D	L.F.	80.00	80.00
60123	CONCRETE CURB AND GUTTER, 30-INCH, TYPE A	L.F.	10,810.00	10,810.00
60825	REINFORCED CONCRETE PIPE, CLASS III, STORM SEWER, 12-INCH	L.F.	54.00	54.00
60826	REINFORCED CONCRETE PIPE, CLASS III, STORM SEWER, 15-INCH	L.F.	1,116.00	1,116.00
<hr/>				
60827	REINFORCED CONCRETE PIPE, CLASS III, STORM SEWER, 18-INCH	L.F.	465.00	465.00
60828	REINFORCED CONCRETE PIPE, CLASS III, STORM SEWER, 21-INCH	L.F.	404.00	404.00
60829	REINFORCED CONCRETE PIPE, CLASS III, STORM SEWER, 24-INCH	L.F.	867.00	867.00
61110	MANHOLES, TYPE 1	EACH	7.00	7.00
61121	INLETS, TYPE 1	EACH	6.00	6.00
<hr/>				
61122	INLETS, TYPE 3	EACH	24.00	24.00
61128	RECONSTRUCTING MANHOLES	EACH	16.00	16.00
61129	RECONSTRUCTING INLETS	EACH	1.00	1.00
61151	MANHOLE COVERS, TYPE J	EACH	4.00	4.00
61161	INLET COVERS, TYPE A	EACH	9.00	9.00
<hr/>				
61167	INLET COVERS, TYPE H	EACH	24.00	24.00
61182	ADJUSTING MANHOLE COVERS	EACH	5.00	5.00

SHEET 3

DATE 12/13/85

ITEM	ITEM DESCRIPTION	UNIT	TOTAL	4629-01-71 QUANTITY
61331	NONMETALLIC CONDUIT, 1-INCH	L.F.	440.00	440.00
61334	NONMETALLIC CONDUIT, 2-INCH	L.F.	320.00	320.00
61910	MOBILIZATION	L.S.	1.00	1.00
62110	LANDMARK REFERENCE MONUMENTS AND COVERS	EACH	1.00	1.00
62401	WATER	MGAL	120.00	120.00
62501	TOPSOIL	S.Y.	10,750.00	10,750.00
62702	MULCHING	S.Y.	10,750.00	10,750.00
62905	FERTILIZER, TYPE B	CWT.	7.00	7.00
63002	SEEDING	LB.	195.00	195.00
64202	FIELD OFFICE, TYPE B	L.S.	1.00	1.00
64210	FIELD LABORATORY	L.S.	1.00	1.00
64301	TRAFFIC CONTROL	L.S.	1.00	1.00
64401	PAVEMENT MARKING, HOT PAINT	L.F.	1,300.00	1,300.00
90001	RELOCATING TRAFFIC SIGNALS	EACH	6.00	6.00
90002	BITUMINOUS FLUMES	S.Y.	10.00	10.00
90003	PIPE GRATES	EACH	2.00	2.00
90004	LOOP DETECTOR CONDUIT, 1-INCH	L.F.	400.00	400.00
90005	CONCRETE BASES, TYPE 1	EACH	4.00	4.00
90006	CONCRETE BASES, TYPE 2	EACH	2.00	2.00
90007	LOOP DETECTOR LEAD-IN CABLE	L.F.	970.00	970.00
90008	DETECTOR LOOP WIRE	L.F.	1,038.00	1,038.00
90009	PULL BOXES, 12-INCH BY 24-INCH	EACH	12.00	12.00
90010	PULL BOXES, 24-INCH BY 36-INCH	EACH	8.00	8.00
90051	SAWING EXISTING PAVEMENT	L.F.	990.00	990.00
90052	PAVEMENT TIES	EACH	83.00	83.00
90089	SINGLE AGGREGATE BITUMINOUS MIX	TON	430.00	430.00

SHEET 3.1



STATE PROJECT NUMBER	SHEET NO.
4629-01-71	3A
MIDWAY ROAD	

**STORM SEWER STRUCTURE DATA**

STRUCTURE NUMBER	STATION	LOCATION	STRUCTURE	GRATE TYPE- COVER	GUTTER F.L.	F.L.	DEPTH
40	68+62	24R	INL	3-H	776.79	772.02	3.76
41	68+58	24L	INL	3-H	776.78	771.78	4.00
42	68+40	38L	MH	EXIST	771.55		
43	72+00	24R	INL	3-H	778.26	774.00	3.26
44	72+00	24L	INL	3-H	778.26	773.76	3.50
45	72+00	40L	PIPE		773.60		
46	75+50	24R	INL	3-H	783.07	778.31	3.76
47	75+50	24L	INL	3-H	783.07	778.07	4.00
48	75+50	40L	MH	EXIST	777.90		
49	78+60	24R	INL	3-H	785.73	780.97	3.76
50	78+60	24L	INL	3-H	785.73	780.73	4.00
51	78+60	40L	PIPE		780.56		
52	81+50	31.5L	INL	3-H	787.20	782.15	3.75
53	81+00	31.5L	INL	1-A	786.90	781.90	4.00
54	81+00	40L	MH	EXIST	781.81		
55	82+65	24R	INL	3-H	788.55	783.09	4.46
56	82+40	49R	INL	1-A	788.00	782.91	4.09
57	82+00	31.5R	INL	1-A	787.70	782.70	4.00
58	82+00	40L	PIPE		782.33		
59	85+50	24R	INL	3-H	789.97	785.21	3.76
60	85+50	24L	INL	3-H	789.97	784.97	4.00
61	85+50	40L	PIPE		784.80		
62	90+86.5	24R	INL	3-H	790.27	785.51	3.76
63	90+86.5	24L	INL	3-H	790.27	785.27	4.00
64	90+86.5	40L	MH	EXIST	785.10		
65	94+00	24R	INL	3-H	792.61	787.85	3.76
66	94+00	24L	INL	3-H	792.61	787.61	4.00
67	94+00	40L	PIPE		786.50		
68	95+50	31.5R	INL	1-A	793.60	789.72	2.88
69	96+20	24R	INL	3-H	794.36	789.36	4.00
70	96+10	24L	INL	3-H	794.30	789.11	4.19
71	96+10	40L	PIPE		787.20		
72	102+28	24R	INL	3-H	794.78	790.02	3.76
73	102+28	24L	INL	3-H	794.78	789.16	4.62
75	105+58	31R	INL	3-H	796.06	790.19	4.87
76	105+10	31R	INL	1-A	795.80	789.95	4.85
77	105+66	31L	MH	1-A	796.00	788.74	6.26
78	105+18	31L	MH	1-A	795.75	788.63	6.02
79	108+00	32L	MH	1-J	798.25	789.23	8.02
80	110+45	31.5R	INL	3-H	795.45	791.01	3.44
81	111+03	31.5R	INL	3-H	795.40	790.81	3.59
82	110+81	24L	INL	3-H	795.59	790.60	3.99
83	110+81	29L	MH	1-J	796.10	789.99	5.11
84	112+83	29L	MH	1-J	797.10	790.44	5.66
85	114+85	31.5L	MH	1-A	797.21	790.90	5.31
85A	114+83	58L	* APRON ENDWALL REQ'D.		795.75		
86	115+33	31.5L	INL	1-A	797.20	791.11	5.09
86A	115+35	58L	* APRON ENDWALL REQ'D.		795.75		
87	119+50	29L	MH	1-J	796.51	792.04	3.37

\* END OF PIPE GRATE REQUIRED

**RECONSTRUCTING INLET**

STRUCTURE No.	STATION	LOCATION	ADJUSTMENT
74	102+12	36L	+2.30

**PAVEMENT MARKINGS**

4"  $\epsilon$  (DASHED) 1300 L.F.

**STORM SEWER SUMMARY**

LOCATION	DIAMETER	ELEVATION
FROM TO	INCHES	INLET DISCHARGE
40 41	15	49 RCP, CLASS III 772.02 771.78
41 42	15	23 RCP, CLASS III 771.78 771.55
43 44	15	48 RCP, CLASS III 774.00 773.76
44 45	15	17 RCP, CLASS III 773.76 773.60
46 47	15	48 RCP, CLASS III 778.31 778.07
47 48	15	17 RCP, CLASS III 778.07 777.90
49 50	15	48 RCP, CLASS III 780.97 780.73
50 51	15	17 RCP, CLASS III 780.73 780.56
52 53	15	50 RCP, CLASS III 782.15 781.90
53 54	15	9 RCP, CLASS III 781.90 781.81
55 56	15	35 RCP, CLASS III 783.09 782.91
56 57	15	42 RCP, CLASS III 782.91 782.70
57 58	15	73 RCP, CLASS III 782.70 782.33
59 60	15	48 RCP, CLASS III 785.21 784.97
60 61	15	17 RCP, CLASS III 784.97 784.80
62 63	15	48 RCP, CLASS III 785.51 785.27
63 64	15	17 RCP, CLASS III 785.27 785.10
65 66	15	48 RCP, CLASS III 787.85 787.61
66 67	15	17 RCP, CLASS III 787.61 786.50
68 69	15	72 RCP, CLASS III 789.72 789.36
69 70	15	50 RCP, CLASS III 789.36 789.11
70 71	15	17 RCP, CLASS III 789.11 787.20
72 73	15	48 RCP, CLASS III 789.40 789.16
73 74	15	22 RCP, CLASS III 789.16 788.94
78 74	24	306 RCP, CLASS III 788.63 787.94
75 76	15	49 RCP, CLASS III 790.19 789.95
76 78	15	63 RCP, CLASS III 789.95 789.63
77 78	24	49 RCP, CLASS III 788.74 788.63
79 77	24	232 RCP, CLASS III 789.23 788.74
83 79	24	280 RCP, CLASS III 789.89 789.23
80 81	15	58 RCP, CLASS III 791.01 790.81
81 82	15	60 RCP, CLASS III 790.81 790.60
82 83	15	6 RCP, CLASS III 790.60 790.50
84 83	21	202 RCP, CLASS III 790.44 789.99
85 84	21	202 RCP, CLASS III 790.90 790.44
85A 85	12	27 RCP, CLASS III 795.75 791.50
86 85	18	49 RCP, CLASS III 791.11 791.00
86A 86	12	27 RCP, CLASS III 795.75 791.65
87 86	18	416 RCP, CLASS III 792.04 791.11

**RECONSTRUCTING AND ADJUSTING MANHOLES**

STATION	LOCATION	RECONSTRUCT	ADJUST
68+32	20 R		+0.34*
71+60	23 R		
73+91	22 R	-1.79*	
76+80	21 R	-2.03*	
79+60	21 R		-0.15*
81+00	40 L	-1.21*	
81+07	21 R	BY ENGINEER*	
82+25	22 R	-2.00*	
85+56	22 R	-1.79*	
88+80	21 R	-1.41*	
90+87	40 L	-0.99*	
92+17	22 R	BY ENGINEER*	
93+82	22 R	-2.17*	
95+59	18 R	-0.82*	
100+85	19 R	-1.72*	
105+17	21 R		-0.28*
108+65	21 R		-0.26*
110+62	21 R	-1.24*	
112+20	21 R	-2.29*	
115+10	21 R	-0.71*	
117+64	20 R		+0.53*

\* NON PARTICIPATING

**CONCRETE CURB & GUTTER, 30" TYPE A**

LOCATION	QUANTITY (L.F.)
S.T.H. "47"	260
67+08 TO 80+83 L&R	2,750
CHAIN DRIVE	160
80+83 TO 81+80 R	100
81+69 TO 82+66 L	100
82+66 TO 95+33 L&R	2,530
HOME AVENUE	80
95+33 TO 96+19 L	90
96+19 TO 98+39 L&R	440
STEAD DRIVE	80
98+39 TO 99+25 L	90
99+25 TO 104+92 L&R	1,130
LINDA AVENUE	170
105+85 TO 110+25 L&R	880
ESTATE DRIVE	140
110+25 TO 111+20 L	100
111+20 TO 114+69 L&R	700
MALOA STREET	80
114+69 TO 115+55 R	90
115+55 TO 119+76 L&R	840
TOTAL	10,810

**CONCRETE PAVEMENT (7")**

LOCATION	QUANTITY (S.Y.)
68 + 10 TO 119 + 76	25,260
CHAIN DRIVE	130
HOME AVENUE	130
STEAD DRIVE	130
LINDA AVENUE	250
ESTATE DRIVE	130
MALOA STREET	130
TOTAL	26,160

**LANDMARK REFERENCE MONUMENTS AND COVERS**

LOCATION	EACH
93 + 98.2 $\epsilon$	1

**PAVEMENT TIES**

LOCATION	QUANTITY EACH
STH 47	67
USH 10	16
	83

**CONCRETE DRIVEWAY**

LOCATION	QUANTITY (S.Y.)
101+50R	9.0
TOTAL	9.0

**EARTHWORK SUMMARY**

*UNCLASSIFIED EXCAVATION	27,940 C.Y.
FILL (IN PLACE)	1,850 C.Y.
WASTE	25,600 C.Y.
* SIDE ROADS INCL. IN MAINLINE YARDAGE	

**SINGLE AGGREGATE BITUMINOUS MIX**

LOCATION	QUANTITY (TON)
69+00L	12
69+60L	11
69+65R	6
70+00R	4
70+40L	8
75+20L	9
77+10L	7
77+45R	7
78+20L	6
78+30R	3
CHAIN DR.	66
86+90R	6
88+10R	6
88+30L	12
91+00R	13
93+60L	10
95+05L	6
HOME AVE.	23
96+30L	4
97+55L	14
STEAD DR.	23
100+10R	9
101+35L	11
LINDA AVE.	54
106+90R	2
107+55L	4
ESTATE DR.	23
112+35L	11
MALOA ST.	37
117+80L	9
119+00R	14
TOTAL	430

**CRUSHED AGGREGATE BASE COURSE**

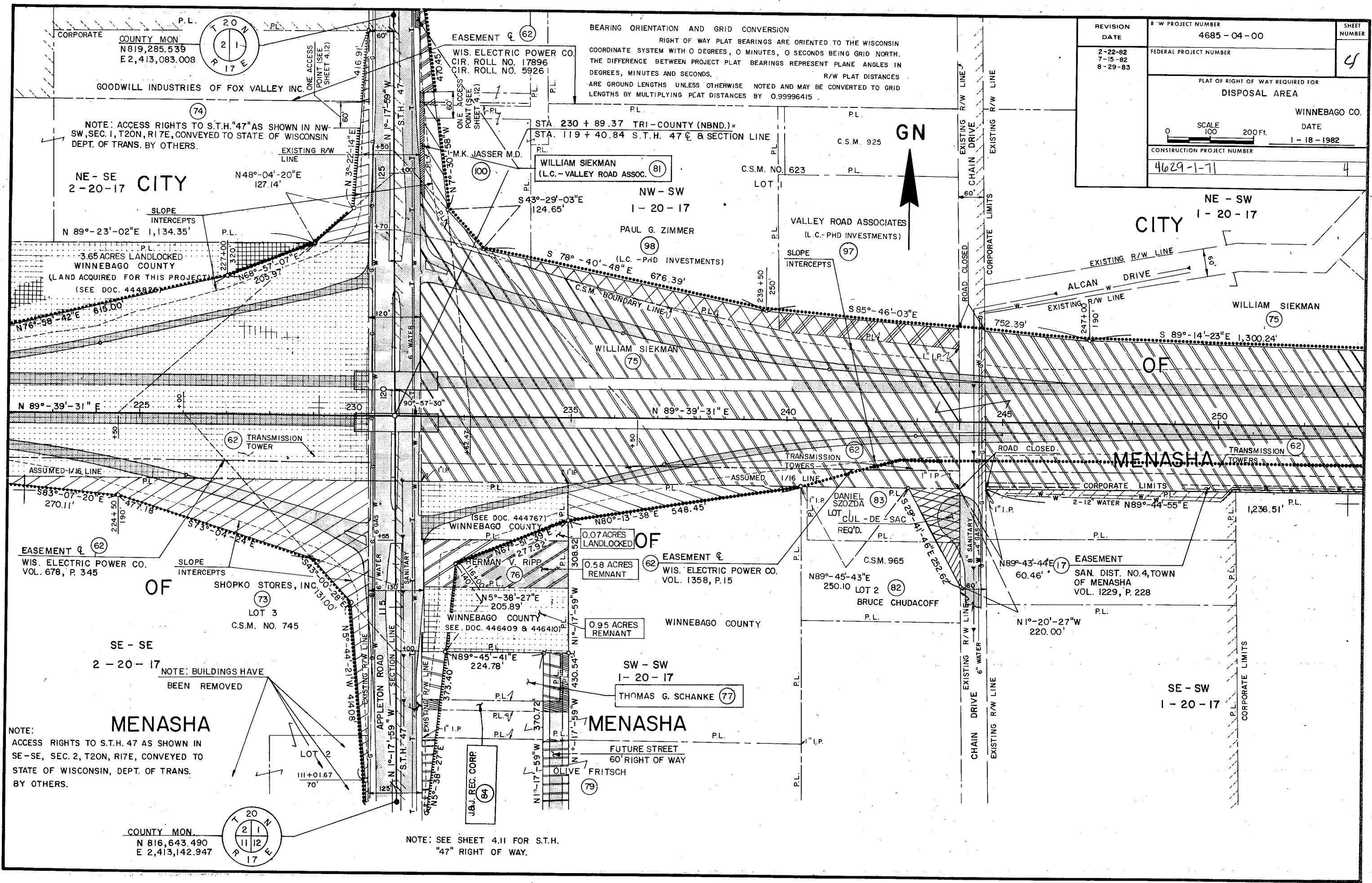
LOCATION	QUANTITY (TON)
S.T.H. "47"	55
68+10 TO 119+76	10,140
CHAIN DRIVE	270
HOME AVENUE	105
STEAD DRIVE	105
LINDA AVENUE	225
ESTATE DRIVE	180
MALOA STREET	140
TEMPORARY ROADS	780
TOTAL	12,000

**WASTE DISPOSAL SITE**

TOPSOIL	1000 S.Y.
MULCHING	1000 S.Y.
SEEDING	15 LB.
FERTILIZER, TYPE B	1 CWT.

REVISION DATE	R/W PROJECT NUMBER	SHEET NUMBER
2-22-82 7-15-82 8-29-83	4685-04-00	4
FEDERAL PROJECT NUMBER		
PLAT OF RIGHT OF WAY REQUIRED FOR DISPOSAL AREA		
WINNEBAGO CO.		
SCALE 1" = 100'		DATE
0 100 200 Ft.		1-18-1982
CONSTRUCTION PROJECT NUMBER		
4629-1-71		

BEARING ORIENTATION AND GRID CONVERSION  
 RIGHT OF WAY PLAT BEARINGS ARE ORIENTED TO THE WISCONSIN COORDINATE SYSTEM WITH 0 DEGREES, 0 MINUTES, 0 SECONDS BEING GRID NORTH. THE DIFFERENCE BETWEEN PROJECT PLAT BEARINGS REPRESENT PLANE ANGLES IN DEGREES, MINUTES AND SECONDS. R/W PLAT DISTANCES ARE GROUND LENGTHS UNLESS OTHERWISE NOTED AND MAY BE CONVERTED TO GRID LENGTHS BY MULTIPLYING PLAT DISTANCES BY 0.99996415.



NOTE: ACCESS RIGHTS TO S.T.H. 47 AS SHOWN IN NW-SW, SEC. 1, T20N, R17E, CONVEYED TO STATE OF WISCONSIN DEPT. OF TRANS. BY OTHERS.

NE - SE  
2-20-17 CITY

NE - SW  
1-20-17 CITY

MENASHA

MENASHA

SE - SW  
1-20-17

NOTE: ACCESS RIGHTS TO S.T.H. 47 AS SHOWN IN SE-SE, SEC. 2, T20N, R17E, CONVEYED TO STATE OF WISCONSIN, DEPT. OF TRANS. BY OTHERS.

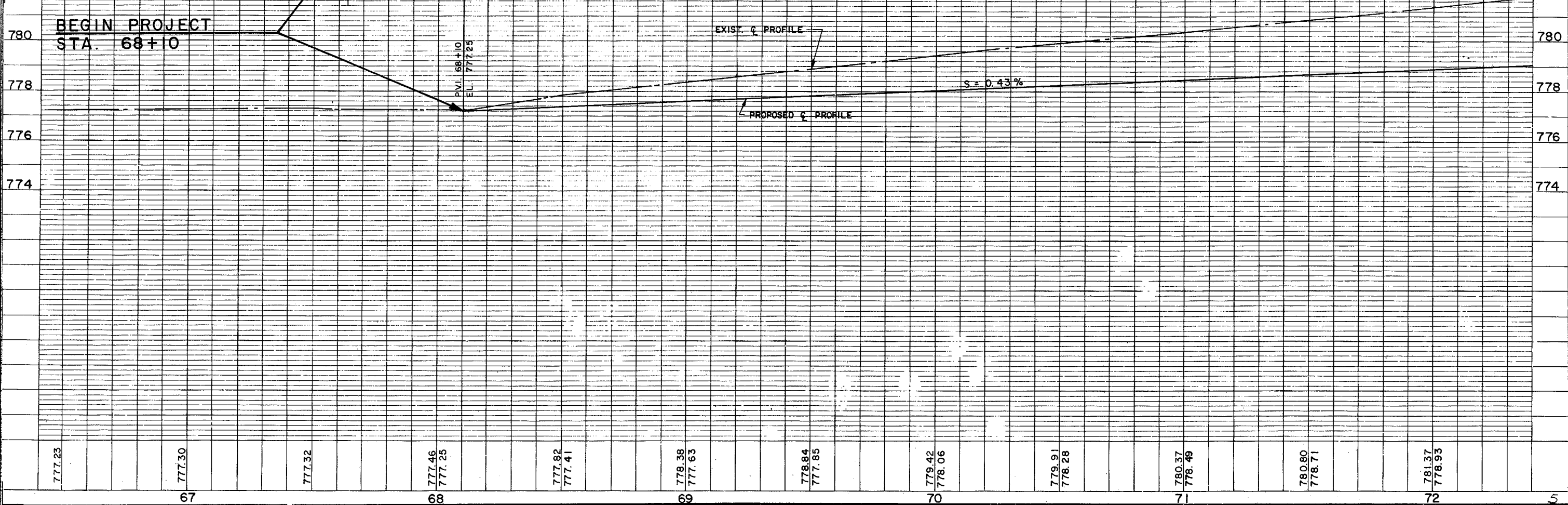
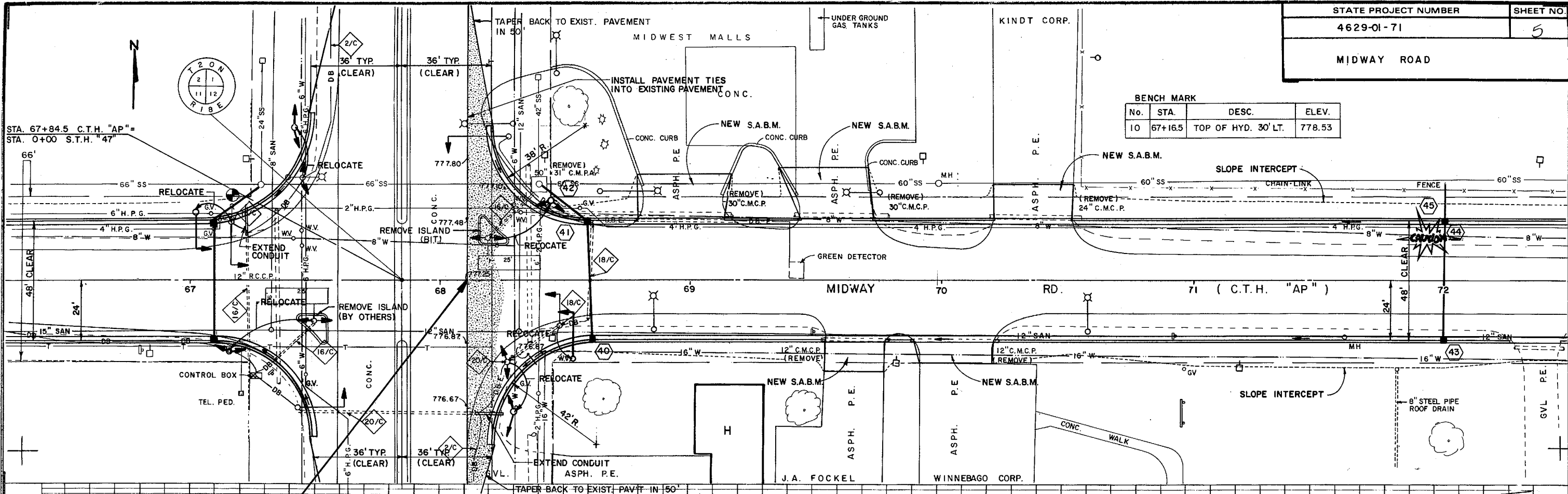
NOTE: BUILDINGS HAVE BEEN REMOVED

NOTE: SEE SHEET 4.11 FOR S.T.H. 47 RIGHT OF WAY.

COUNTY MON.  
N 816,643.490  
E 2,413,142.947

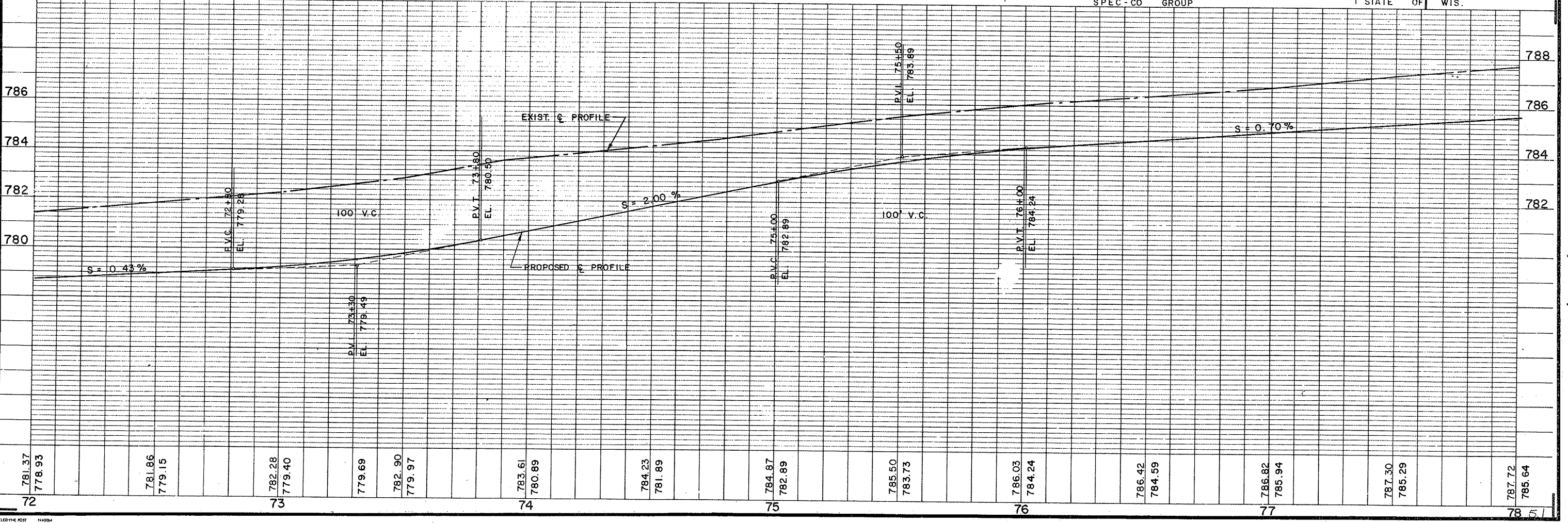
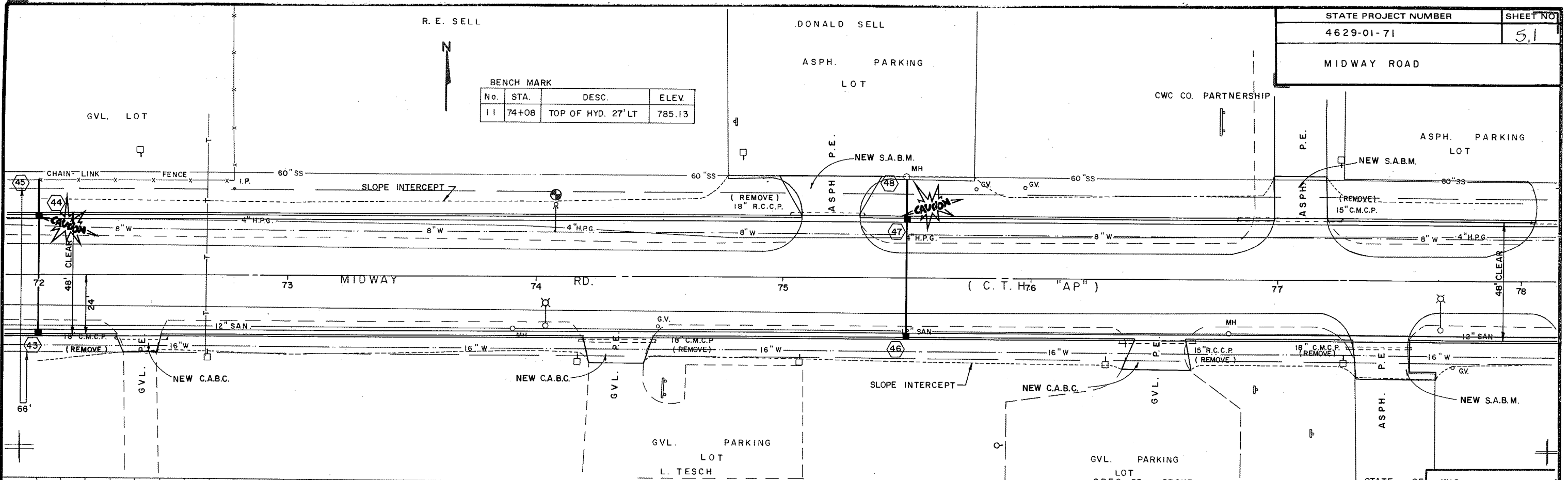
STATE PROJECT NUMBER	SHEET NO.
4629-01-71	5
MIDWAY ROAD	

BENCH MARK			
No.	STA.	DESC.	ELEV.
10	67+16.5	TOP OF HYD. 30' LT.	778.53



STATE PROJECT NUMBER	SHEET NO.
4629-01-71	5.1
MIDWAY ROAD	

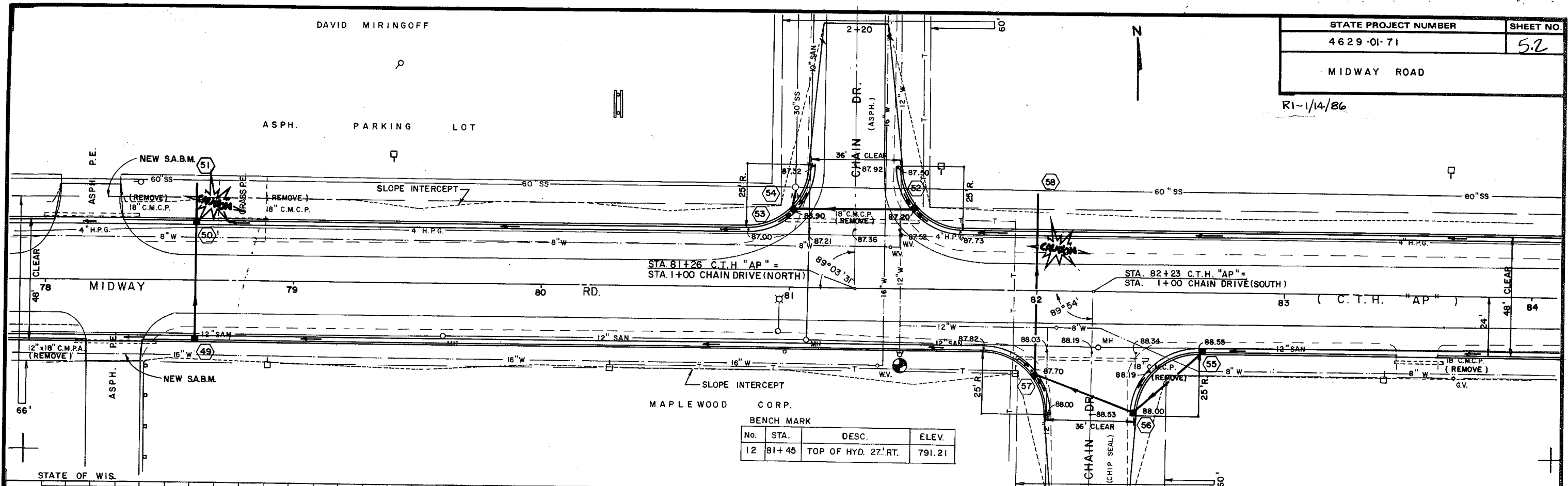
BENCH MARK			
No.	STA.	DESC.	ELEV.
11	74+08	TOP OF HYD. 27' LT	785.13



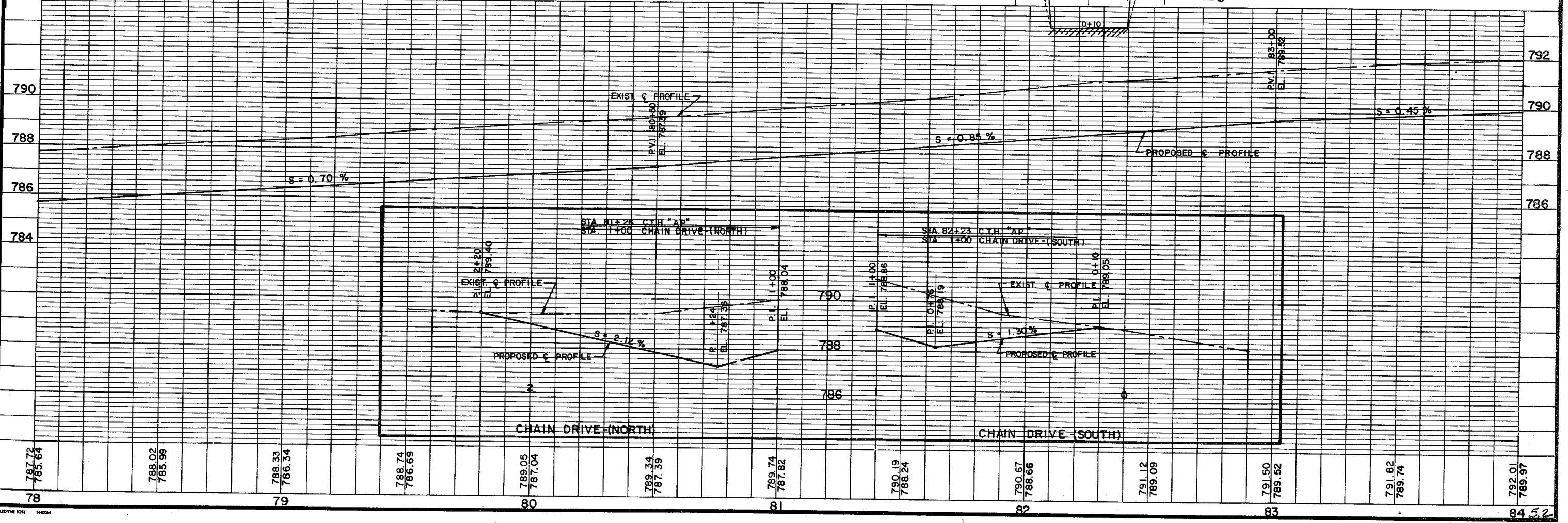
DAVID MIRINGOFF

STATE PROJECT NUMBER	SHEET NO.
4629-01-71	52
MIDWAY ROAD	

R1-1/14/86



No.	STA.	DESC.	ELEV.
12	81+45	TOP OF HYD. 27' RT.	791.21



OUTAGAMIE CO. & WINNEBAGO CO.

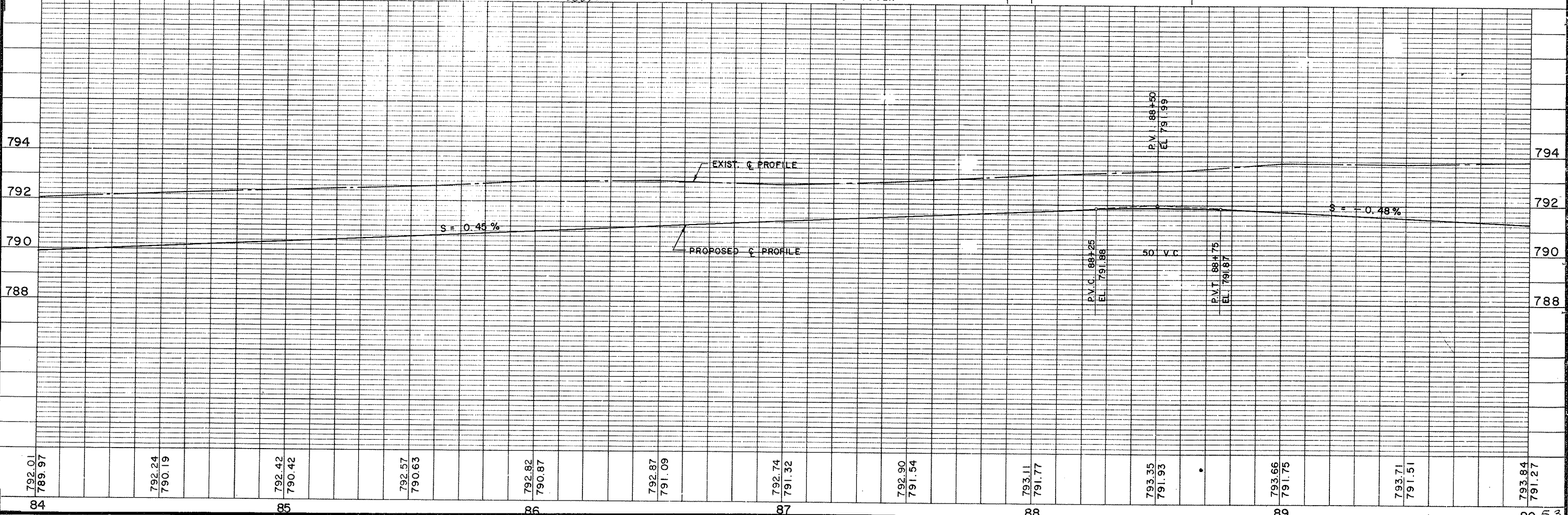
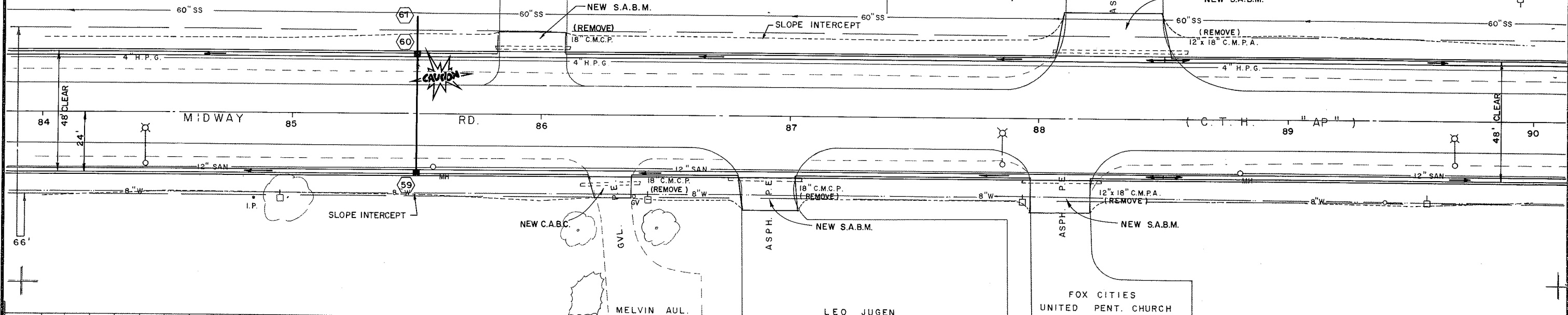
S & M INVESTMENTS

OUTAGAMIE CO. & WINNEBAGO CO.

STATE PROJECT NUMBER	SHEET NO.
4629-01-71	53

MIDWAY ROAD

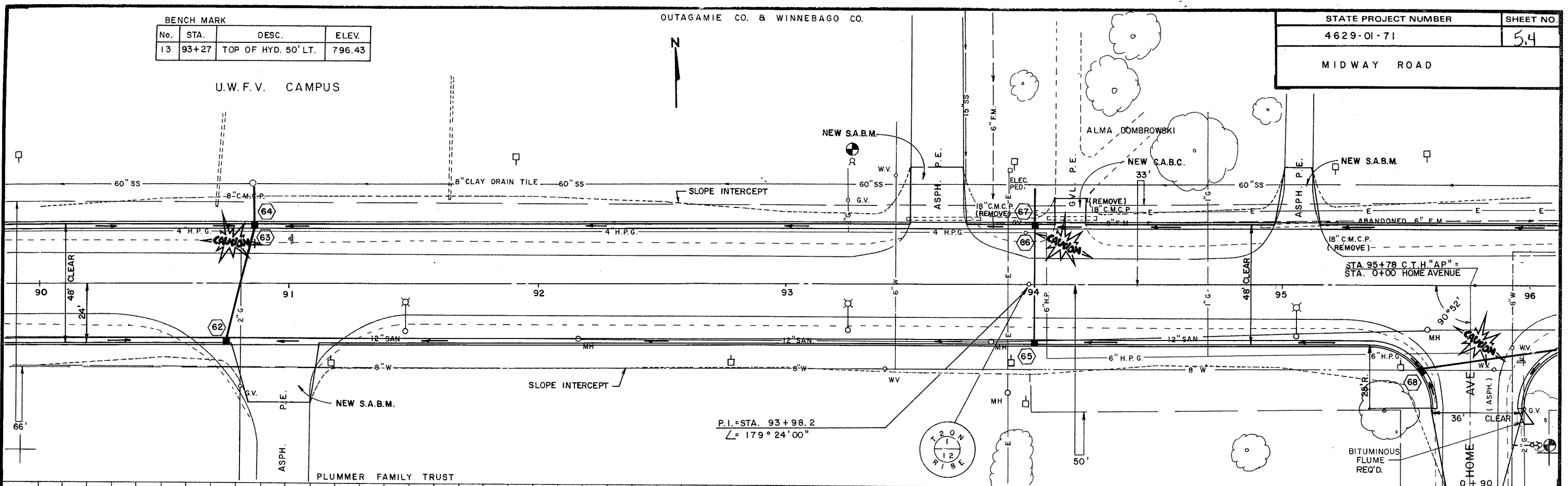
U.W.F.V. CAMPUS



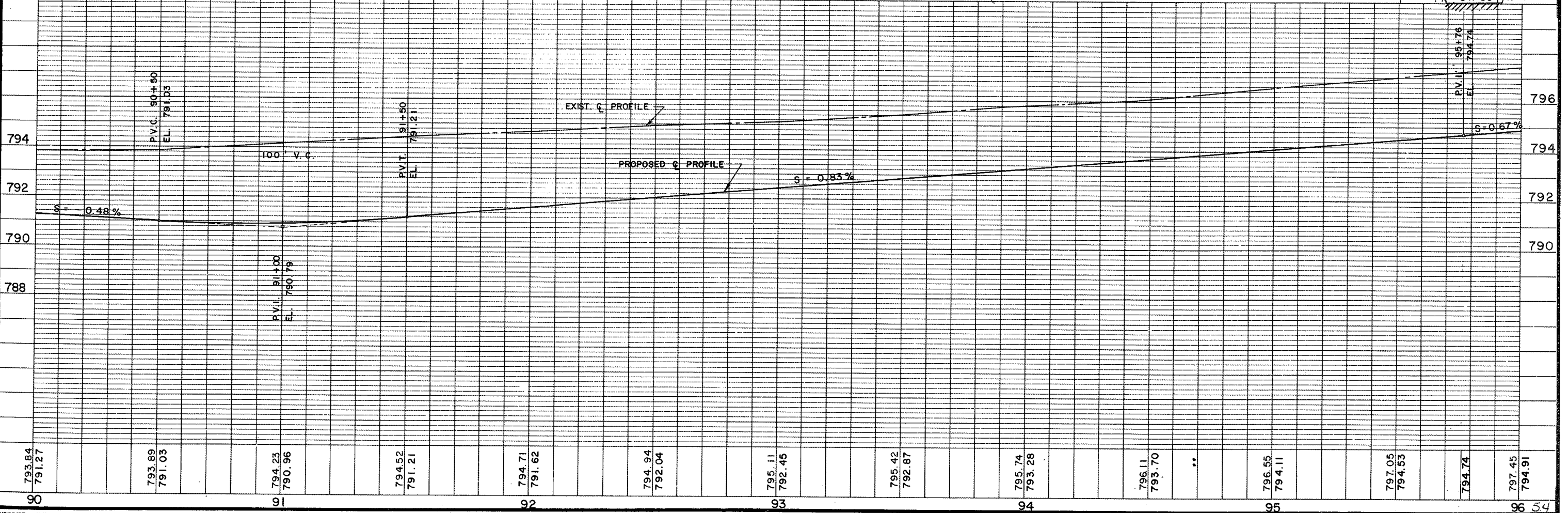
BENCH MARK			
No.	STA.	DESC.	ELEV.
13	93+27	TOP OF HYD. 50' LT.	796.43

OUTAGAMIE CO. & WINNEBAGO CO.

STATE PROJECT NUMBER	SHEET NO.
4629-01-71	5.4
MIDWAY ROAD	



P.I. = STA. 93+98.2  
 $\angle = 179^{\circ} 24' 00''$



OUTAGAMIE & WINNEBAGO CO.

BARBARA ZELESKE

MENASHA SCHOOL DIST.

STATE PROJECT NUMBER

4 6 2 9 - 0 1 - 7 1

SHEET NO.

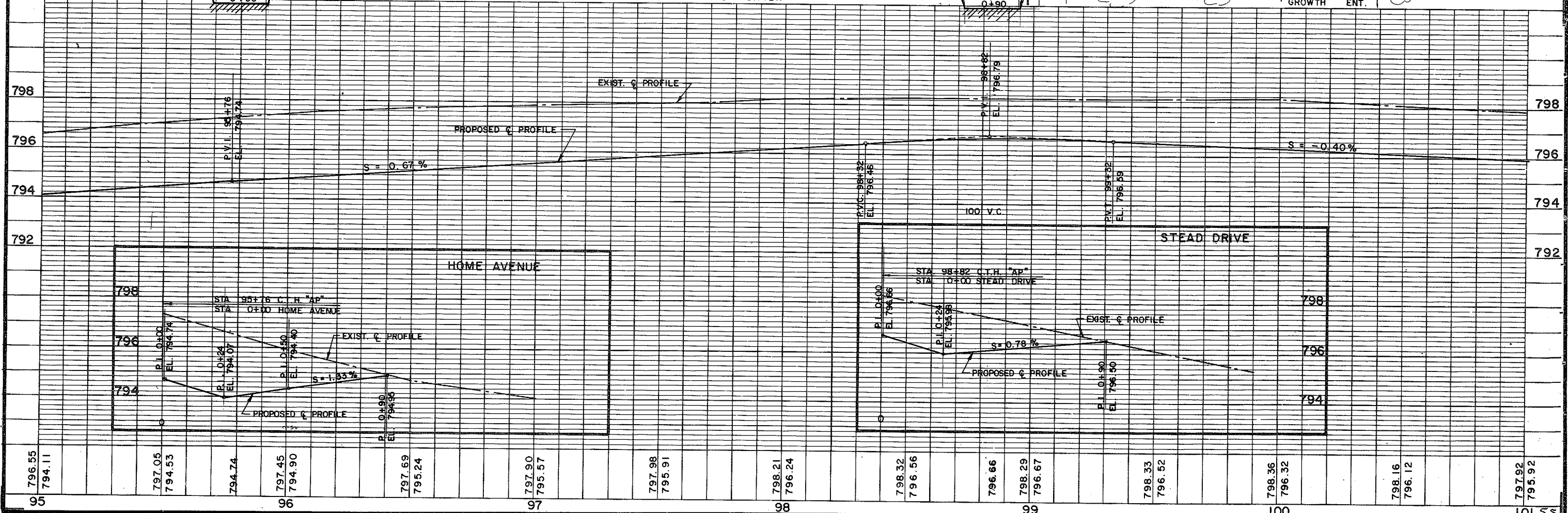
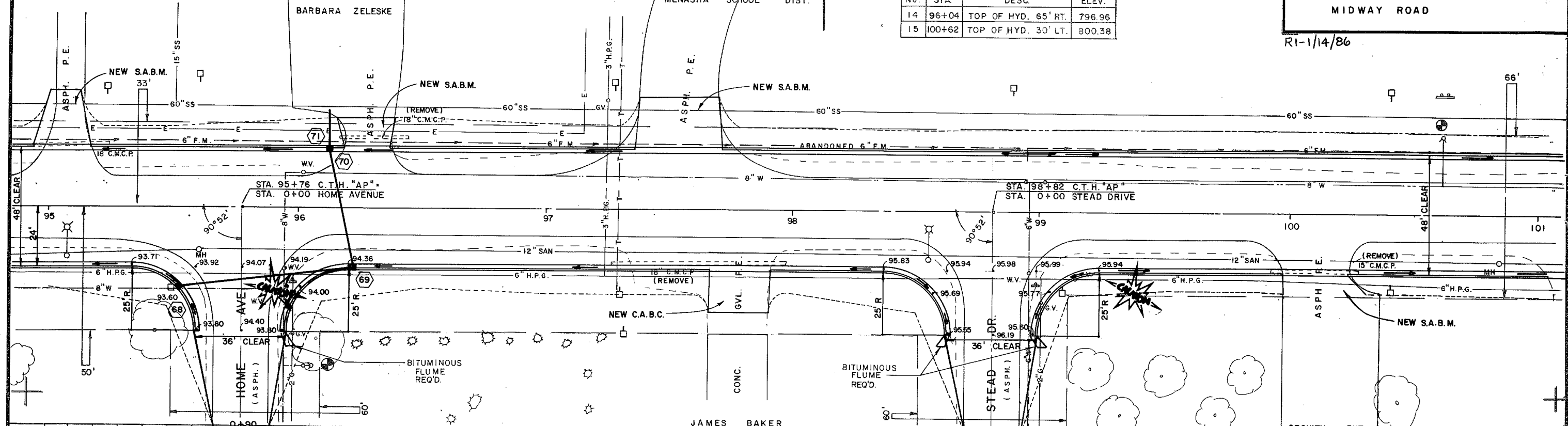
55

MIDWAY ROAD

RI-1/14/86

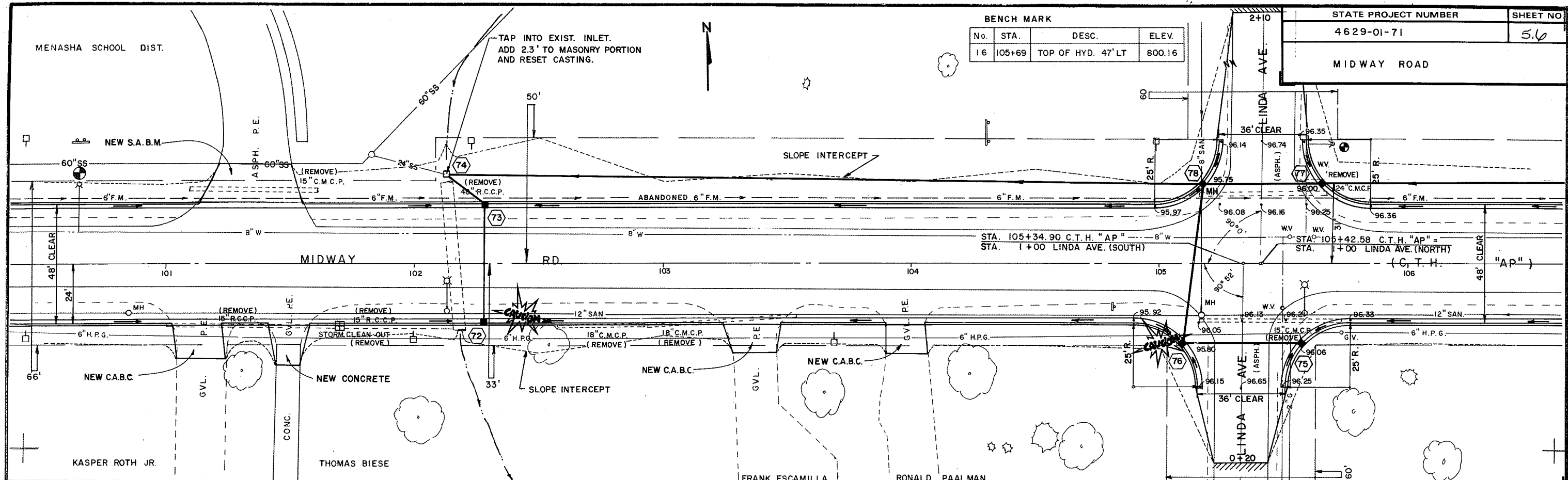
BENCH MARK

No.	STA.	DESC.	ELEV.
14	96+04	TOP OF HYD. 65' RT.	796.96
15	100+62	TOP OF HYD. 30' LT.	800.38



796.55	794.11	797.05	794.53	794.74	797.45	794.90	797.69	795.24	797.90	795.57	797.98	795.91	798.21	796.24	798.32	796.56	796.66	796.29	796.67	798.33	796.52	798.36	796.32	798.16	796.12	797.92	795.92	
95					96				97				98									100					101	55

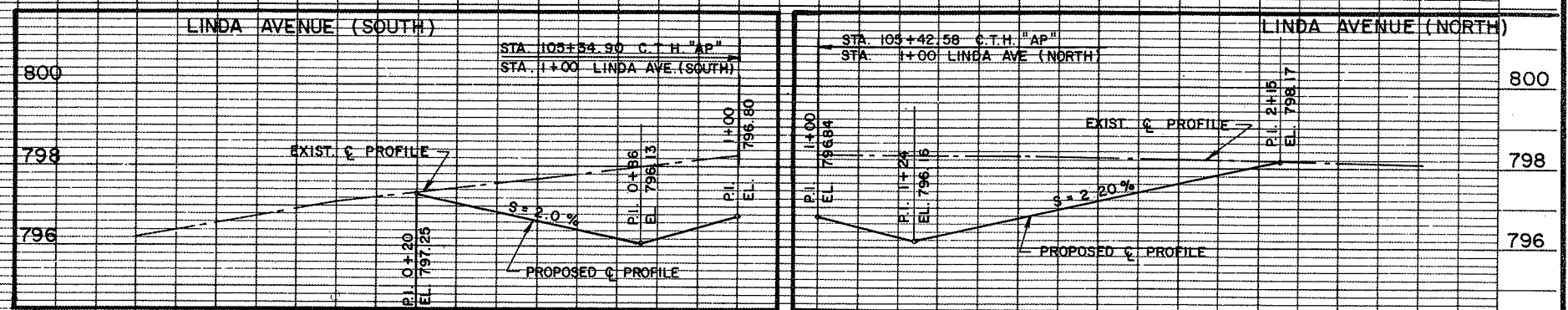
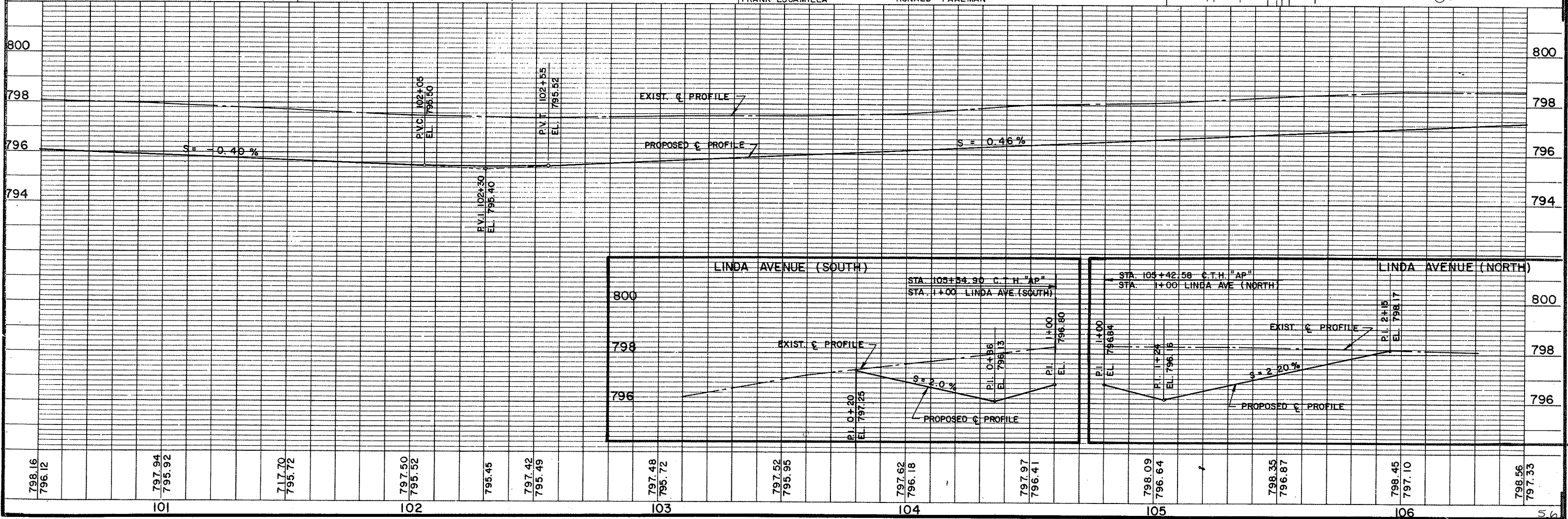




BENCH MARK

No.	STA.	DESC.	ELEV.
16	105+69	TOP OF HYD. 47' LT	800.16

STATE PROJECT NUMBER	SHEET NO.
4629-01-71	56
MIDWAY ROAD	



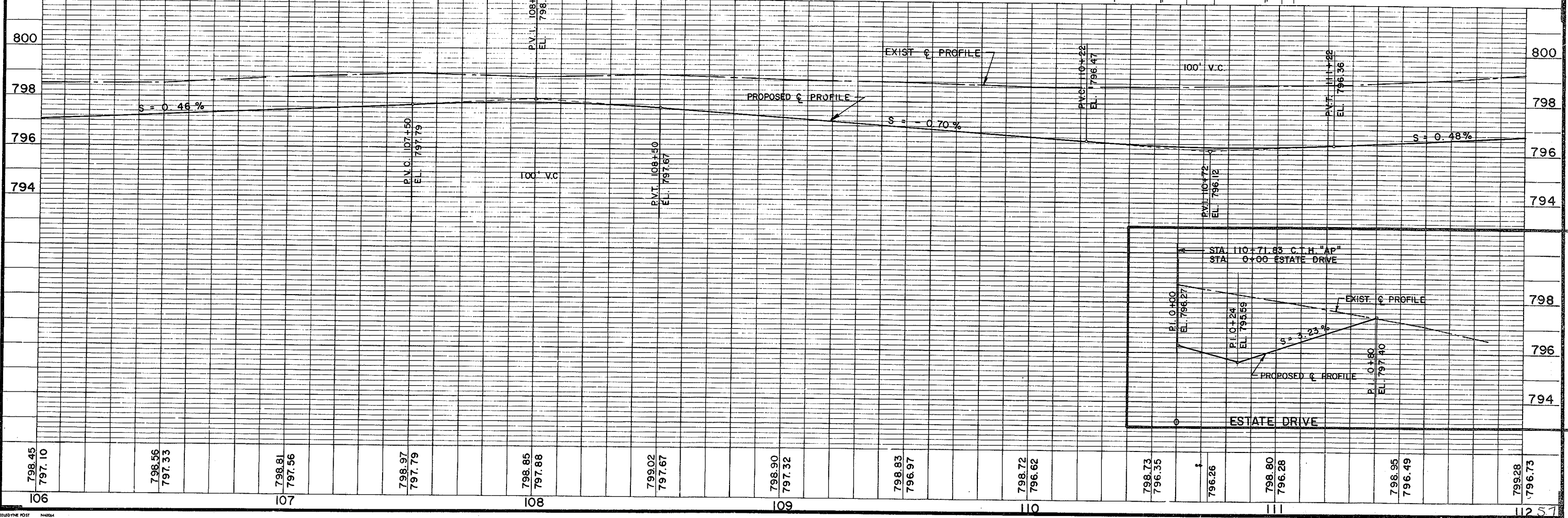
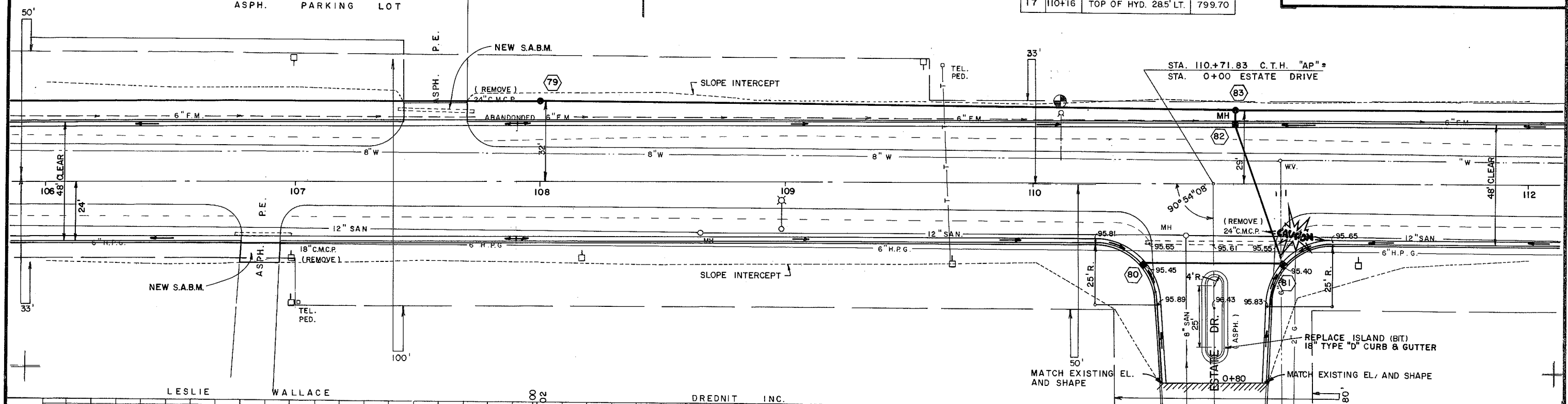
RICHARD ROSE

ASPH. PARKING LOT

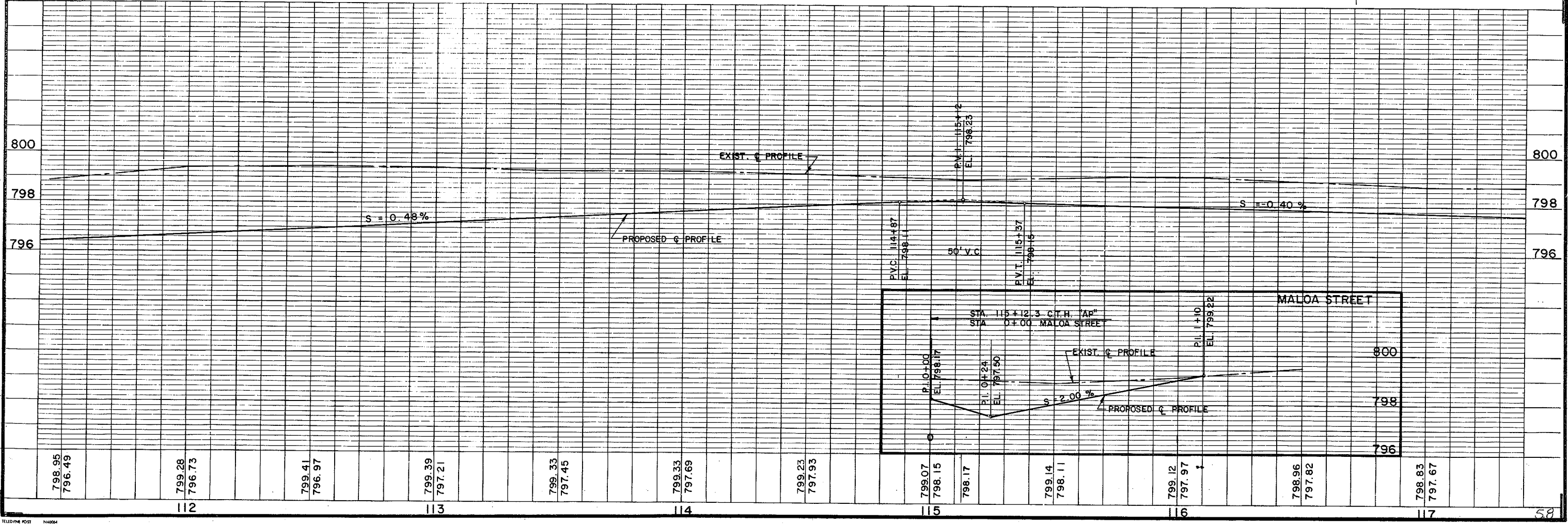
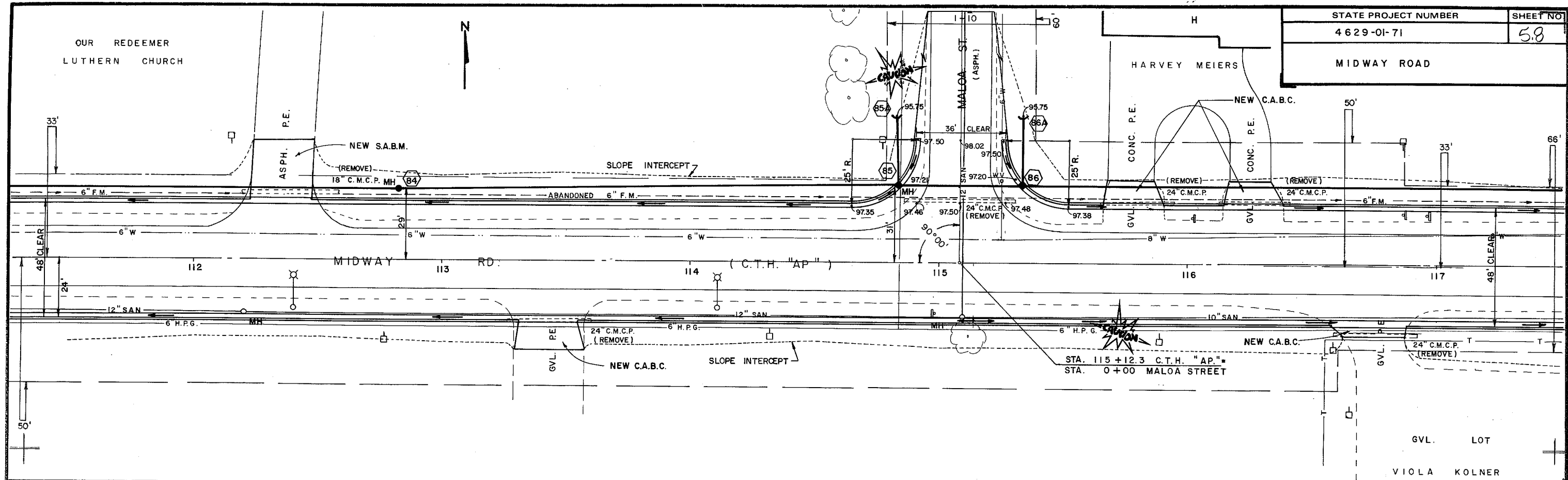


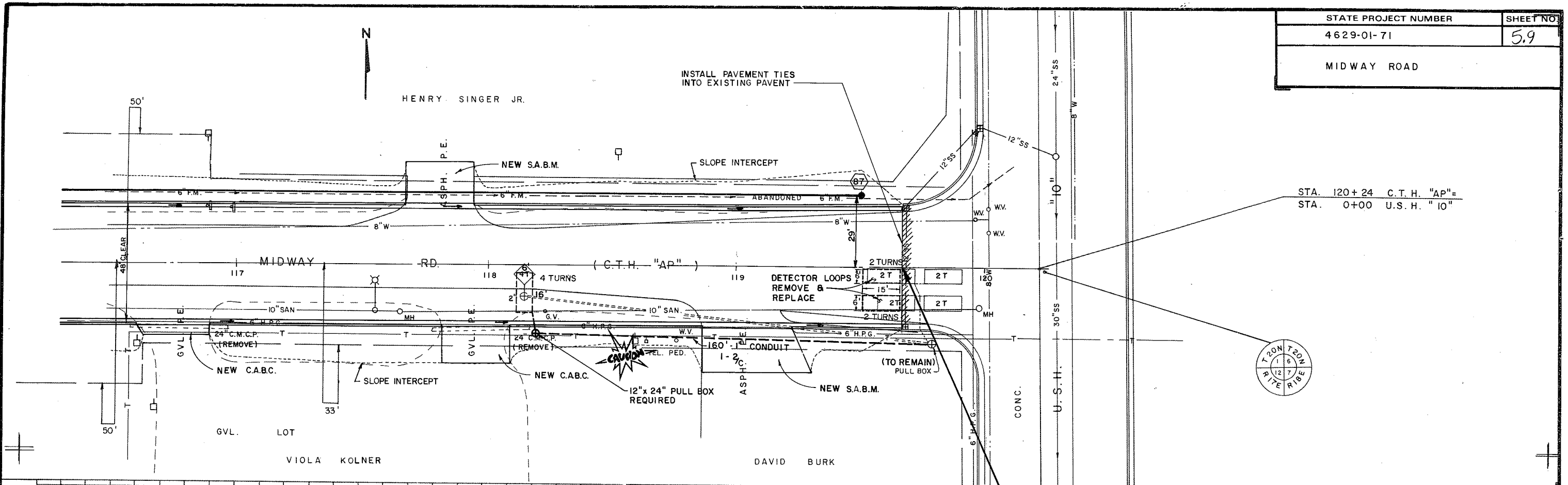
STATE PROJECT NUMBER	SHEET NO.
4 6 2 9 - 0 1 - 7 1	5 1
MIDWAY ROAD	

BENCH MARK			
No.	STA.	DESC.	ELEV.
17	110+16	TOP OF HYD. 285' LT.	799.70

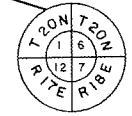


STATE PROJECT NUMBER	SHEET NO.
4 6 2 9 - 0 1 - 7 1	5.8
MIDWAY ROAD	

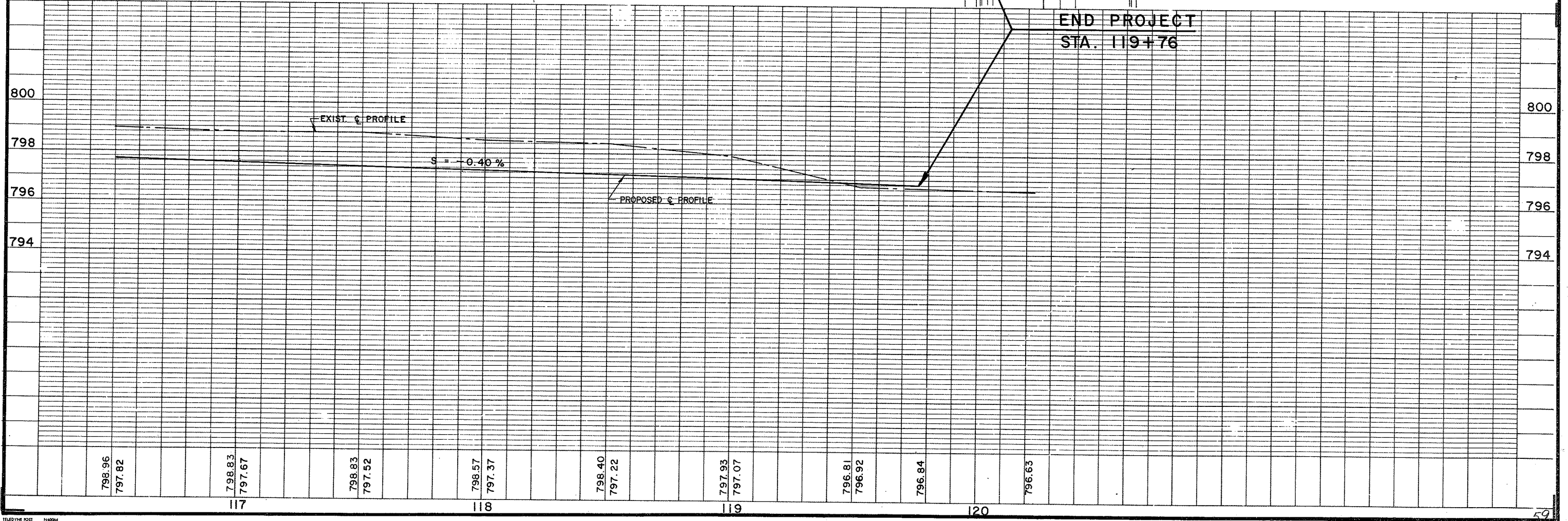




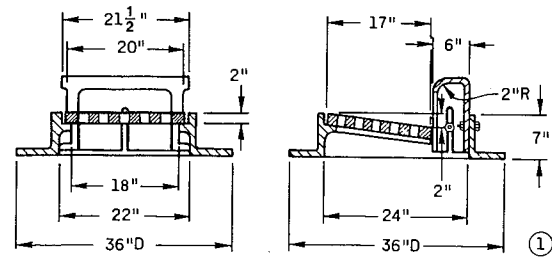
STA. 120+24 C.T.H. "AP"=  
 STA. 0+00 U.S.H. "10"



END PROJECT  
 STA. 119+76



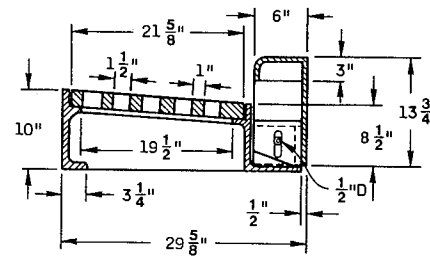
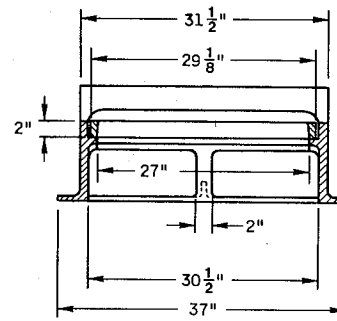
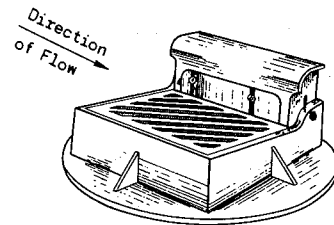
798.96		798.83		798.57		798.40		797.93		796.81		796.63
797.82		797.67		797.37		797.22		797.07		796.92		
	117		118		119		120					



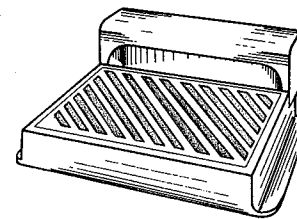
1" Diagonal Bars with 1/2" Openings

**TYPE "A"**

(Approximate Weight 405 lbs.)  
 Frame Weight 250 lbs.  
 Grate Weight 85 lbs.  
 Box Weight 70 lbs.



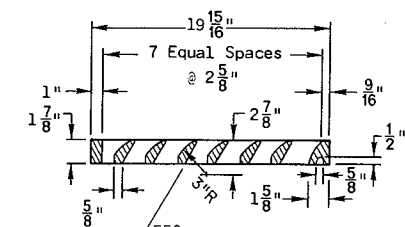
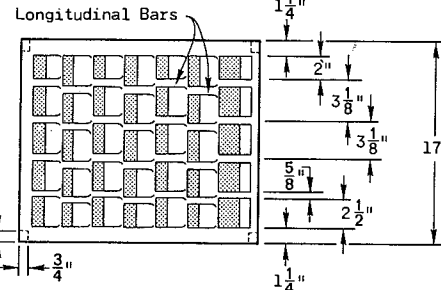
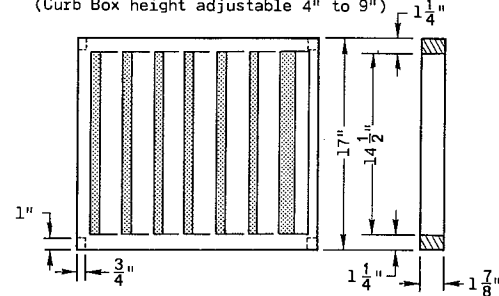
NOTE: Curb Box height adjustable 6" to 9"



**TYPE "WM"**

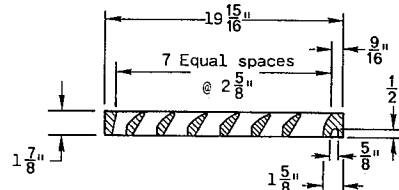
(Approximate Weight 670 lbs.)  
 Frame Weight 350 lbs.  
 Grate Weight 185 lbs.  
 Box Weight 135 lbs.

Details of Curb Box, Frame and Diagonally Slotted Grate (Curb Box height adjustable 4" to 9")



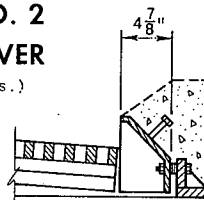
**SPECIAL GRATE NO. 1 FOR TYPE "A" COVER**

(Approximate Weight 70 lbs.)



**SPECIAL GRATE NO. 2 FOR TYPE "A" COVER**

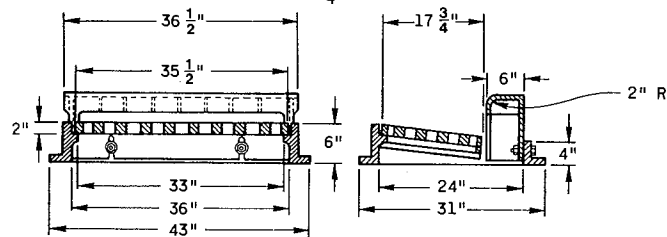
(Approximate Weight 84 lbs.)



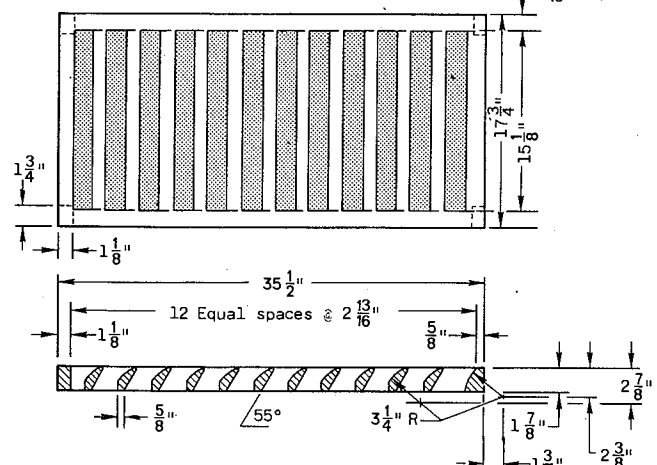
**MOUNTABLE CURB BOX FOR TYPES "A" & "H" COVERS**

TYPES "A" AND "H" COVERS SHALL BE FURNISHED WITH DIAGONALLY SLOTTED GRATES UNLESS OTHERWISE SPECIFIED IN THE CONTRACT

1 3/8" Diagonal Bars with 1 1/4" Openings

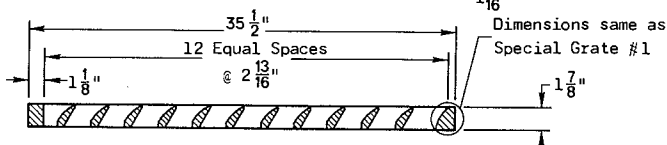
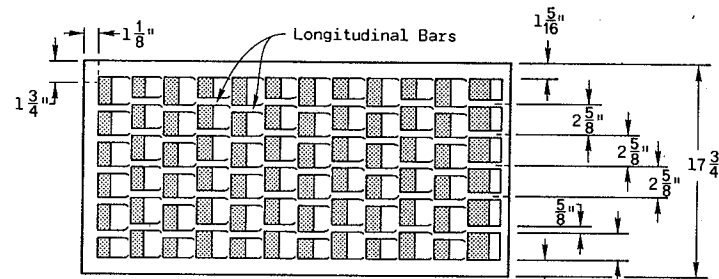


Details of Curb Box, Frame and Diagonally Slotted Grate (Curb Box height adjustable 6" to 9")



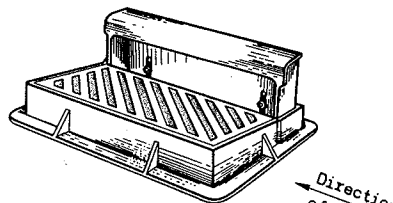
**SPECIAL GRATE NO. 1 FOR TYPE "H" COVER**

(Approximate Weight 140 lbs.)



**SPECIAL GRATE NO. 2 FOR TYPE "H" COVER**

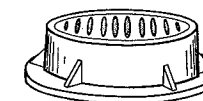
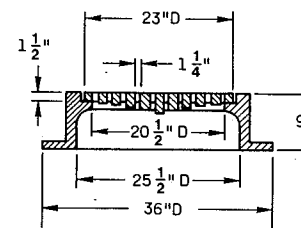
(Approximate Weight 165 lbs.)



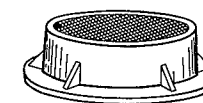
**TYPE "H"**

(Approximate Weight 510 lbs.)  
 Frame Weight 220 lbs.  
 Grate Weight 175 lbs.  
 Box Weight 115 lbs.

CAUTION: DO NOT USE GRATES WITH LONGITUDINAL SLOTS WHERE BICYCLE TRAFFIC IS PERMITTED.



**TYPE "C"**  
Slotted Grate

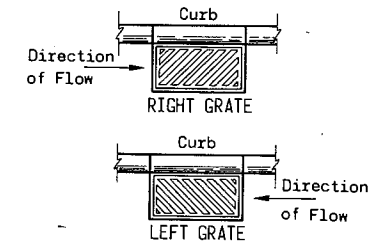


**TYPE "J"**  
Solid Cover

**TYPE "C" - TYPE "J"**

Frame Weight 250 lbs.  
 Slotted Grate Weight 125 lbs.  
 Solid Cover Weight 150 lbs.

Diagonal Slots shall be oriented to the direction of flow. RIGHT and LEFT grates or grates that are manufactured to be reversible and can be used as either RIGHT or LEFT grates shall be furnished depending on direction of flow (See sketch below)



**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.

Detail drawings for proposed alternate designs for Catch Basin, Manhole and Inlet Covers shall be submitted to the Engineer for approval providing that such alternate designs make provision for equivalent capacity and strength.

All Catch Basin, Manhole and Inlet Covers which are placed in vehicular traffic areas shall be "Non-Rocking" type.

Adjustment of the cover to grade may be accomplished by the use of mortar and brick, or by precast concrete grade rings. Precast concrete grade rings shall conform to the specifications for Precast Reinforced Concrete Manhole Sections, AASHTO Designation M199, except that when such units are wet cast, they shall be made with air-entraining portland cement. Maximum adjustment shall be 8 inches.

The actual weight of covers may vary within 5 percent, plus or minus, of the approximate weight.

**CATCH BASIN MANHOLE AND INLET COVERS**

State of Wisconsin  
 Department of Transportation  
 Division of Highways

APPROVED  
 11-23-77

DATE

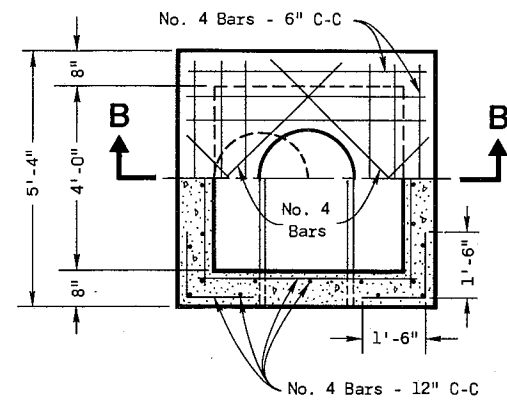
APPROVED  
 11-25-77

DATE

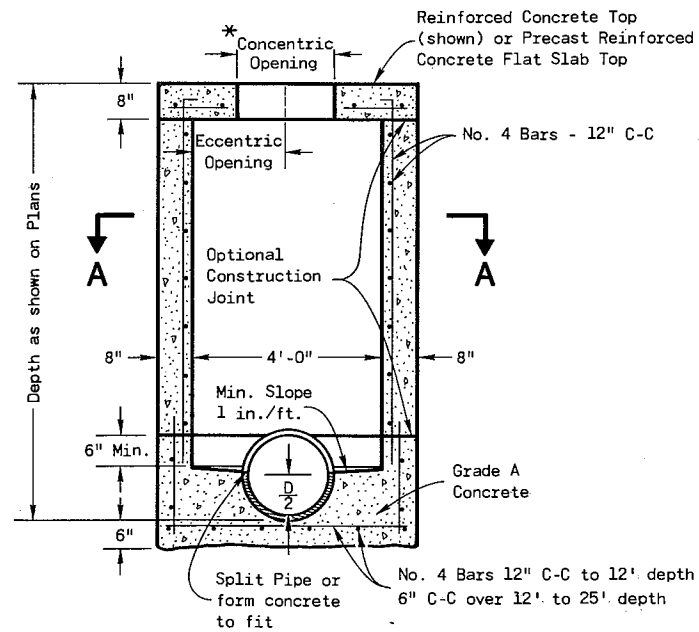
FHWA

*[Signature]*  
 SUPERVISING DEVELOPMENT ENGINEER

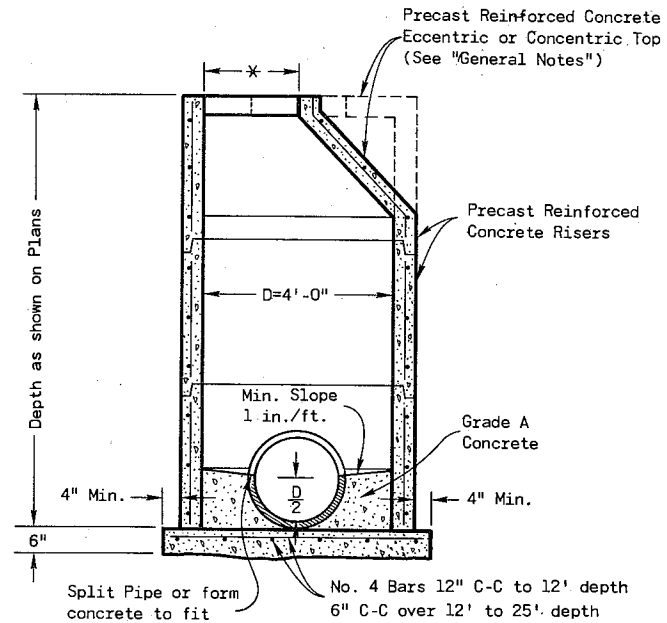
*[Signature]*  
 CHIEF OF FACILITIES DEVELOPMENT



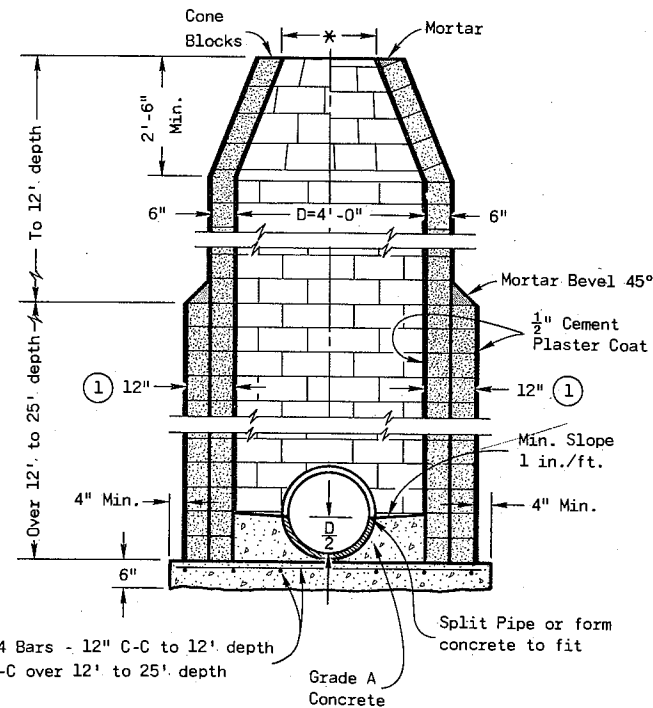
HALF SECTION A-A



SECTION B-B  
REINFORCED CONCRETE



PRECAST REINFORCED CONCRETE



CONCRETE BLOCK

**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.

Detailed drawings for proposed alternate designs for underground drainage structures shall be submitted to the Engineer for approval providing that such alternate designs make provision for equivalent capacity and strength.

All drainage structures are designated on the plans as "Manholes 1-C", "Catch Basins 1-B", "Inlets 3-H", etc. The first digit designates the masonry portion of the structure, and the following letter designates the type of cover to be used to comprise the complete unit.

Precast Reinforced Bases shall be placed on a bed of material at least 6 inches in depth, which meets the requirements for Granular Backfill. This bedding shall be compacted and provide uniform support for the entire area of the base.

Precast Reinforced Concrete Cone Tops (Eccentric or Concentric) may be used on concrete block structures. The Cone Tops shall be installed on a bed of mortar. Eccentric Cone Tops may be used on all structures, and Concentric Cone Tops shall be used only on structures 5 feet or less in depth, unless otherwise directed by the Engineer.

Steps meeting the following requirements shall be installed in all structures over 5 feet in depth: 16 inch C-C maximum spacing; project a minimum clear distance of 4 inches from the wall at the point of embedment; minimum length of 10 inches; minimum wall embedment of 3 inches; and be capable of supporting a concentrated load of 300 lbs. Ferrous metal steps not painted or treated to resist corrosion shall have a minimum cross sectional dimension of 1 inch.

Solid Aluminum steps shall have a minimum cross sectional dimension of 0.75 inch. Aluminum surfaces to be embedded in concrete shall be given one coat of suitable quality paint, such as zinc chromate primer conforming to Federal Specification TT-P-645 or equivalent. Steps of approved Polypropylene plastic coated reinforcement bar will be acceptable.

All bar steel reinforcement shall be embedded 2 inches clear unless otherwise shown or noted.

Precast Reinforced Concrete Risers may be placed with tongue up or down.

All Precast Inlet Units shall conform to the pertinent requirements of AASHTO Designation M 199.

\* Use 2'-0" diameter opening with Type "C", "L" and "J" covers, or 3'-0" diameter with Type "K" and "M" covers.

① 2 courses 6" block.

**MANHOLES TYPE 1**

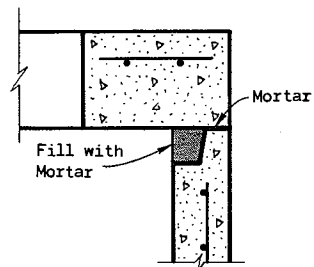
MANHOLES TYPE 1

State of Wisconsin  
Department of Transportation

APPROVED  
4-13-82  
DATE

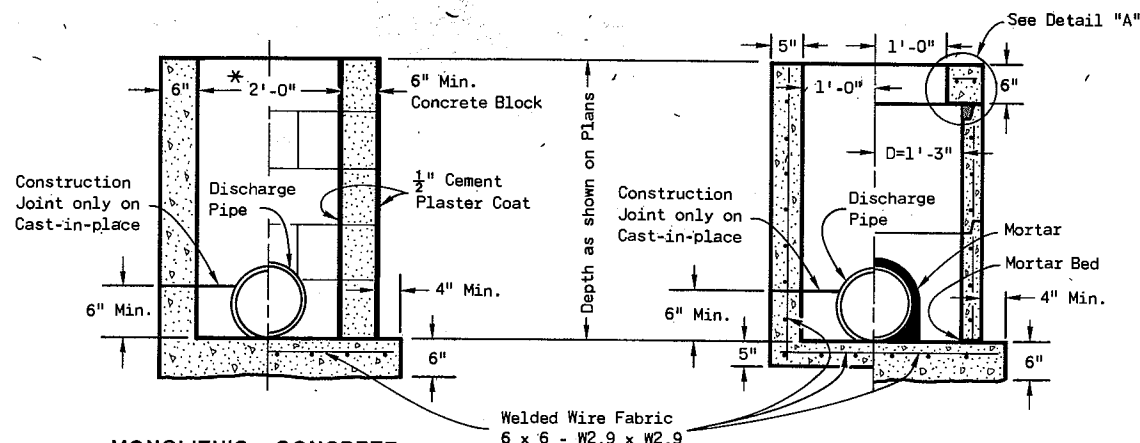
*D. J. Strand*  
CHIEF DESIGN ENGINEER

FHWA



DETAIL "A"

\* Selection of square or circular design will be based on the pipe sizes and the Inlet Cover being utilized.



MONOLITHIC CONCRETE BLOCK

REINFORCED PRECAST CONCRETE REINFORCED CONCRETE

INLETS TYPE 1

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.

Detailed drawings for proposed alternate designs for underground drainage structures shall be submitted to the Engineer for approval providing that such alternate designs make provision for equivalent capacity and strength.

All Precast Inlet units shall conform to the pertinent requirements of AASHTO Designation M 199.

All drainage structures are designated on the plans as "Manholes 1-C", "Catch Basins 1-B", "Inlets 3-H", etc. The first digit designates the masonry portion of the structure, and the following letter designates the type of cover to be used to comprise the complete unit.

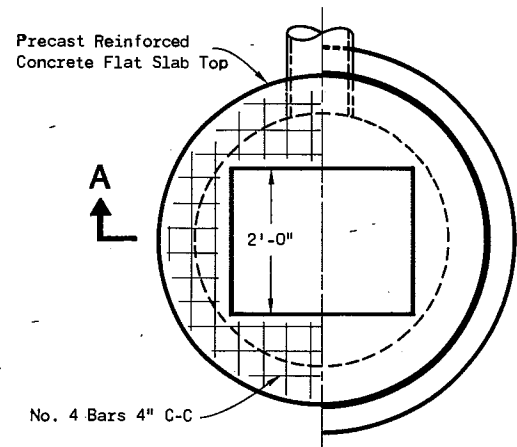
Precast Reinforced Bases shall be placed on a bed of material at least 6 inches in depth, which meets the requirements for Granular Backfill. This bedding shall be compacted and provide uniform support for the entire area of the base.

Precast Reinforced Concrete Flat Slab Tops may be used on the structures. The Tops shall be installed on a bed of mortar.

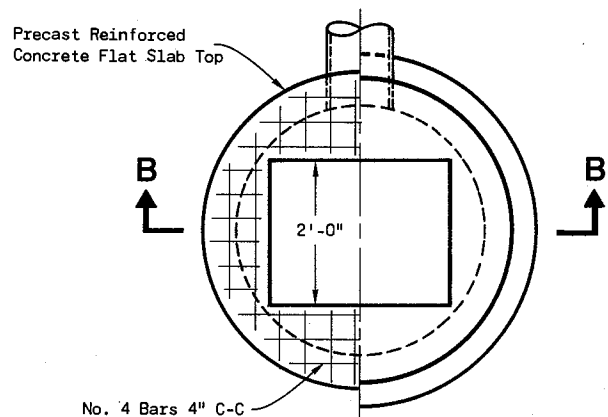
All Bar Steel reinforcement shall be embedded 2 inches clear unless otherwise shown or noted.

Precast Reinforced Concrete Risers shall be placed with tongue down.

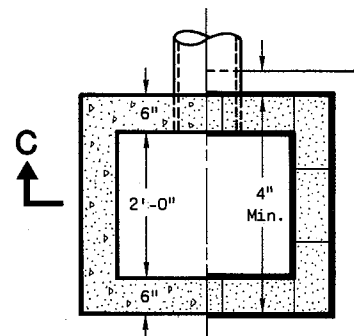
- ① Use 2'-6" opening for Type 2 Inlets and 3'-0" opening for Type 3 Inlets.



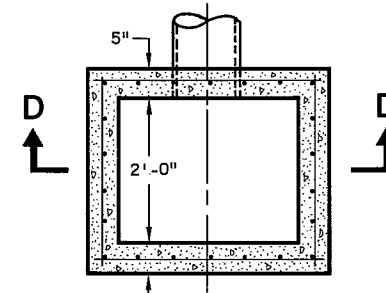
PLAN VIEW



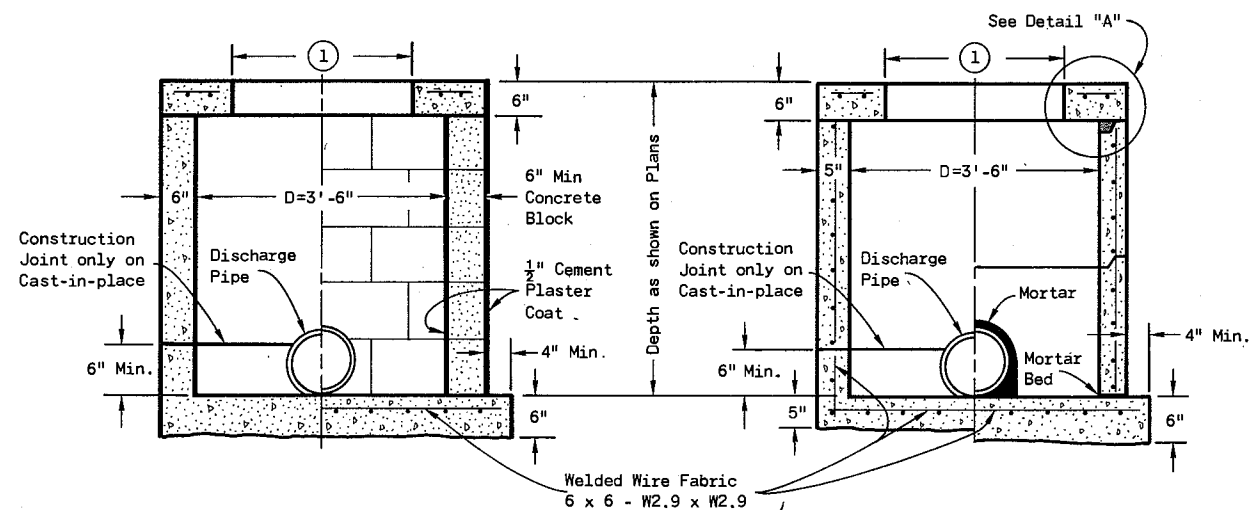
PLAN VIEW



PLAN VIEW



PLAN VIEW

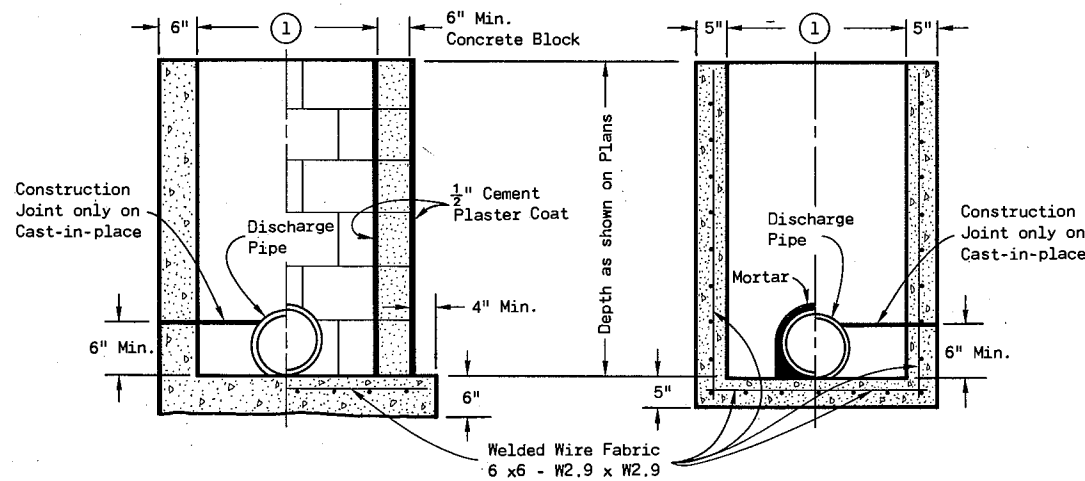


MONOLITHIC CONCRETE BLOCK

REINFORCED PRECAST CONCRETE REINFORCED CONCRETE

SECTION A-A

SECTION B-B



MONOLITHIC CONCRETE BLOCK

REINFORCED PRECAST CONCRETE REINFORCED CONCRETE

SECTION C-C

SECTION D-D

INLETS TYPE 2 & 3

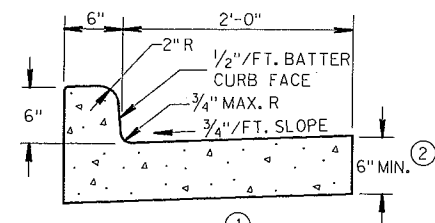
INLETS TYPE 1, 2 & 3

State of Wisconsin  
Department of Transportation

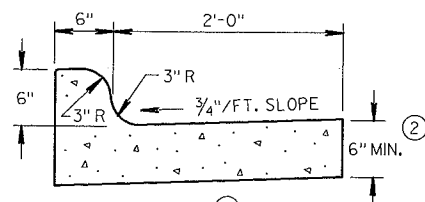
APPROVED  
4-13-82  
DATE

*D. J. Strand*  
CHIEF DESIGN ENGINEER

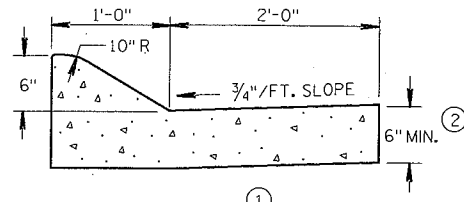
FHWA



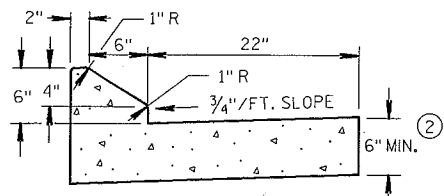
TYPES A & D



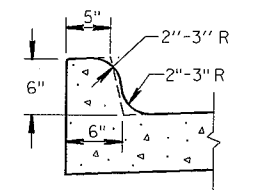
TYPES K & L



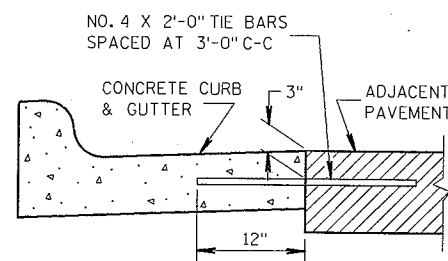
TYPES A & D  
CONCRETE CURB & GUTTER 36"



TYPES G & J

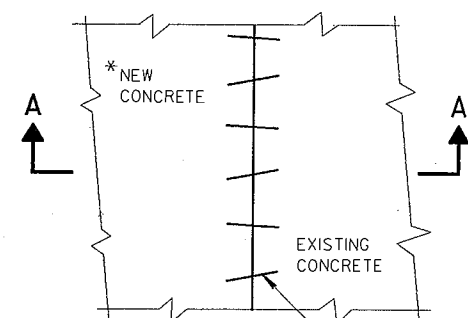


OPTIONAL CURB SHAPE  
FOR TYPES K & L



TYPICAL TIE BAR LOCATION

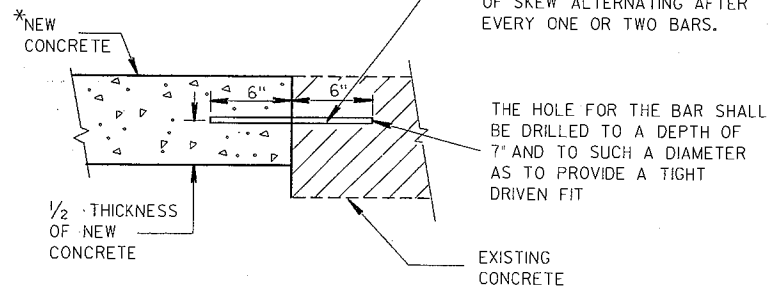
CONCRETE CURB & GUTTER 30"



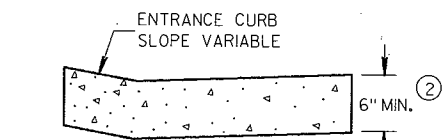
PLAN VIEW

\* NEW CURB & GUTTER,  
SURFACE DRAINS,  
CONCRETE PAVEMENT  
OR OTHER NEW CONCRETE.

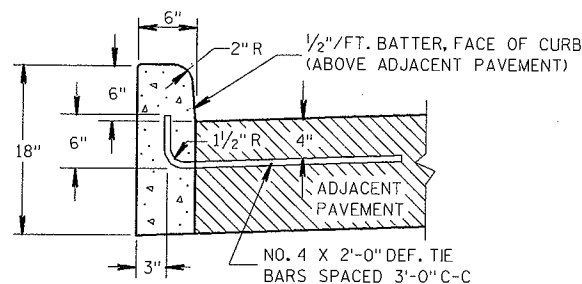
NO. 6 X 12" DEF. BARS  
SPACED 3'-0" C-C,  
INSTALLED ON 6:1 SKEW  
HORIZONTALLY. DIRECTION  
OF SKEW ALTERNATING AFTER  
EVERY ONE OR TWO BARS.



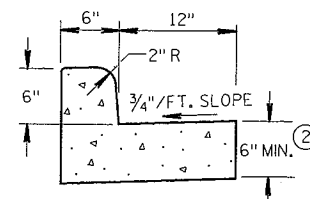
SECTION A-A  
PAVEMENT TIES



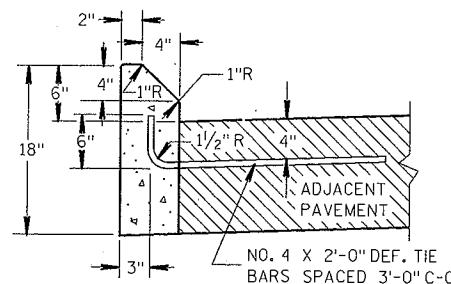
DRIVEWAY ENTRANCE CURB  
(WHEN DIRECTED BY THE ENGINEER)



TYPES A & D



TYPES A & D  
CONCRETE CURB & GUTTER 18"



TYPES G & J

CONCRETE CURB

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

SEALANT IS NOT REQUIRED IN THE JOINTS OF CONCRETE CURB OR CONCRETE CURB & GUTTER EXCEPT AS REQUIRED FOR INTEGRAL GUTTER.

PAVEMENT TIES ARE REQUIRED, WHEN INCLUDED IN THE CONTRACT, WHERE CONCRETE CURB, CONCRETE CURB AND GUTTER OR CONCRETE PAVEMENT IS PLACED ADJACENT TO EXISTING CONCRETE.

PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.4 OF THE STANDARD SPECIFICATIONS.

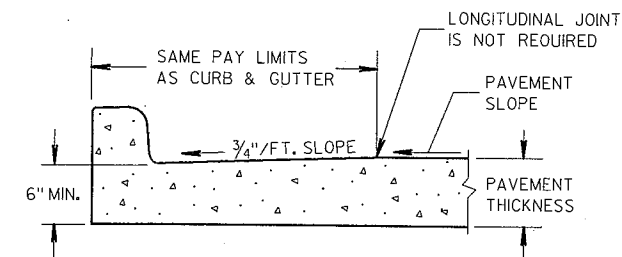
INTEGRAL CURB & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE. TIE BARS AND A LONGITUDINAL CONSTRUCTION JOINT ARE NOT REQUIRED WITH THIS ALTERNATE.

PAVEMENT JOINTS SHALL BE EXTENDED THROUGH INTEGRAL CURB & GUTTER. JOINTS IN INTEGRAL GUTTER SHALL HAVE THE SAME DIMENSIONS AS THE JOINTS IN THE ADJACENT PAVEMENT. JOINTS IN INTEGRAL CURB SHALL BE 1/8" WIDE.

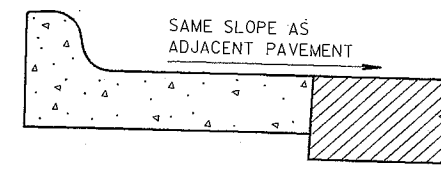
JOINTS IN INTEGRAL CURB & GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME SEALANT SPECIFIED FOR THE PAVEMENT JOINT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB & GUTTER.

THE LIMITS OF BASE COURSE, IF USED, ARE SHOWN ON THE TYPICAL CROSS SECTIONS ELSEWHERE IN THE PLAN. ANY ADDITIONAL WIDTH OF BASE COURSE NECESSARY TO ACCOMMODATE PAVING EQUIPMENT SHALL BE AT THE CONTRACTORS EXPENSE.

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G AND K.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE COURSE PROVIDED A 6" MINIMUM THICKNESS IS MAINTAINED.
- ③ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATIONS WILL BE SHOWN ELSEWHERE IN THE PLAN.



PARTIAL SECTION OF PAVEMENT  
WITH INTEGRAL CURB & GUTTER



REVERSE SLOPE GUTTER  
(TYPICAL FOR ALL CURB & GUTTER TYPES)

CONCRETE CURB, CONCRETE  
CURB & GUTTER AND  
PAVEMENT TIES

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

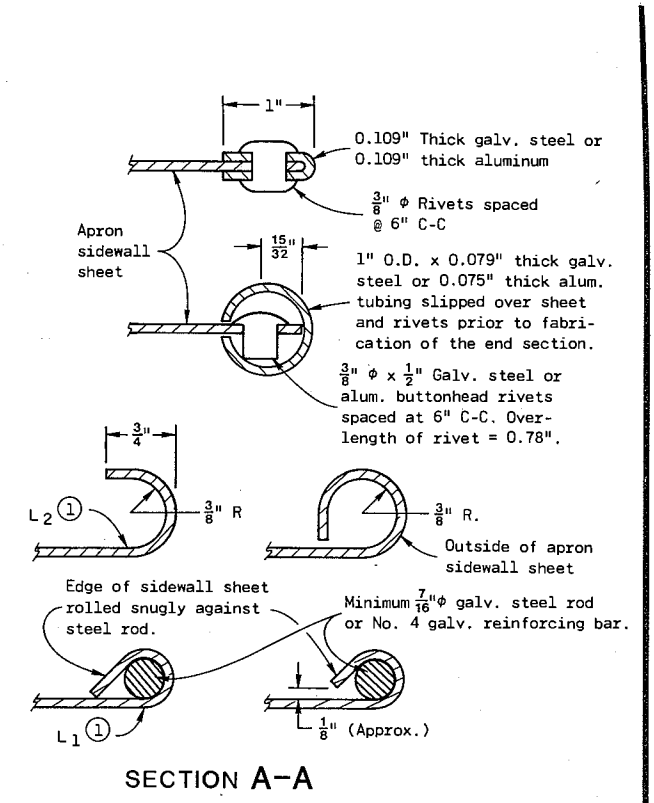
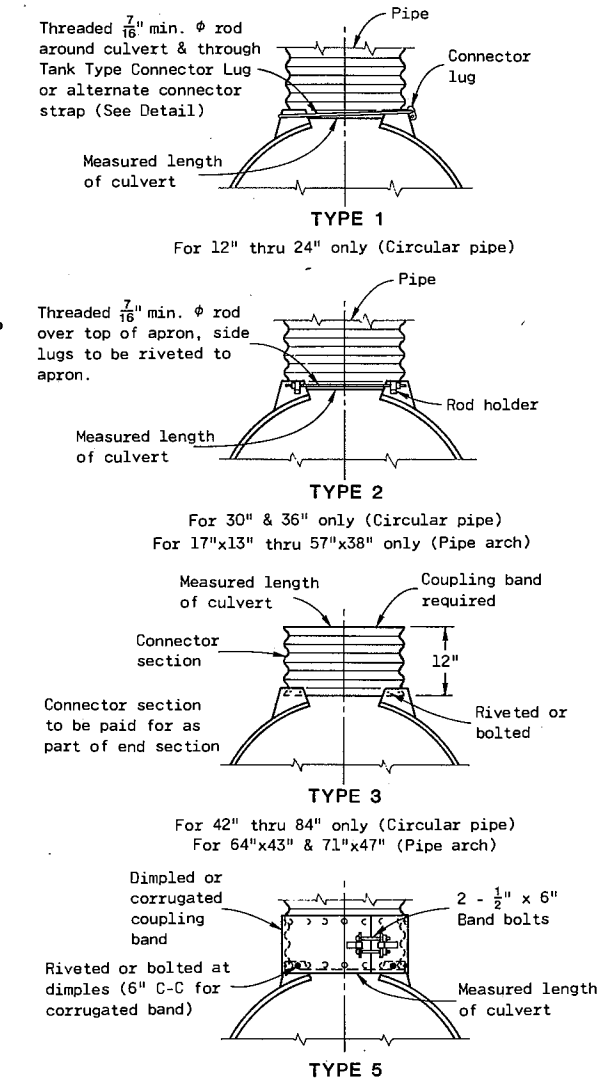
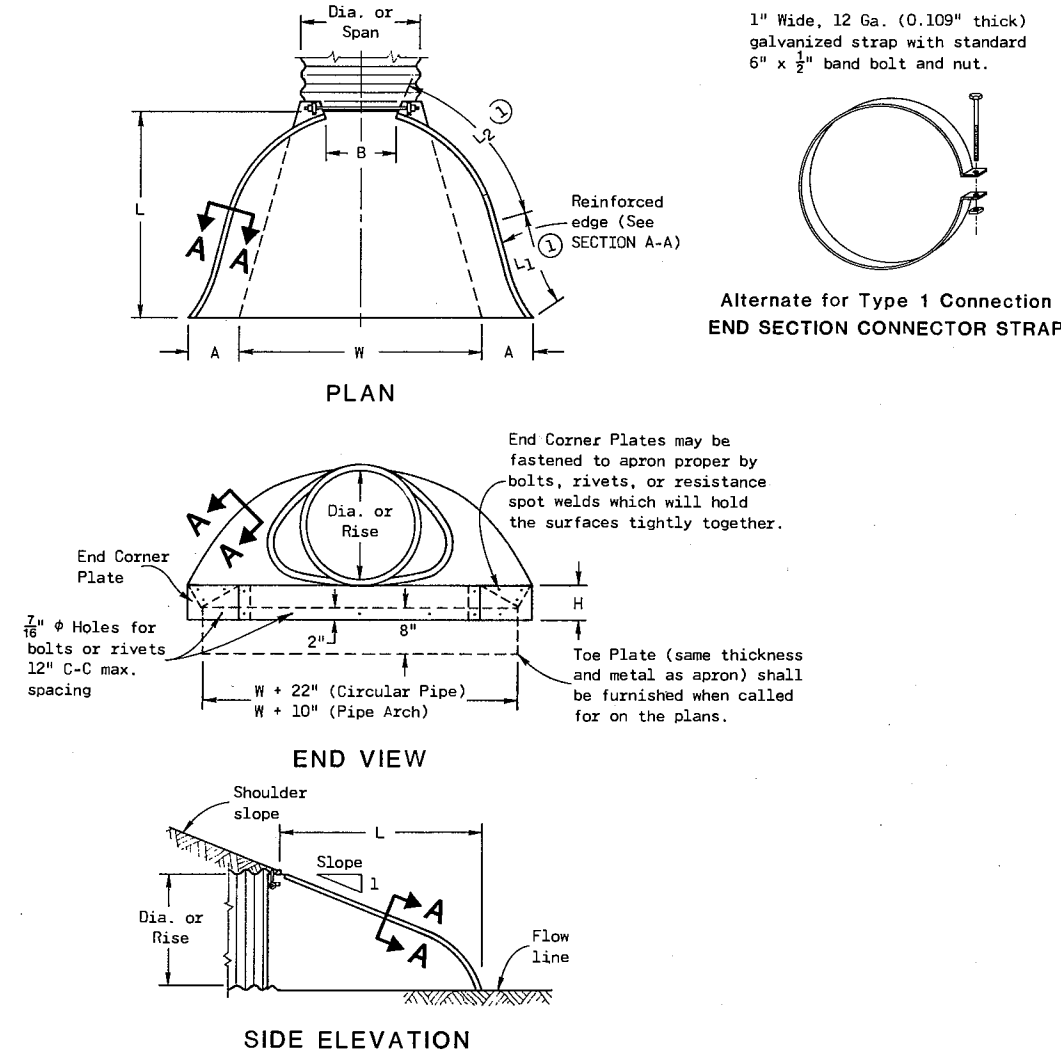
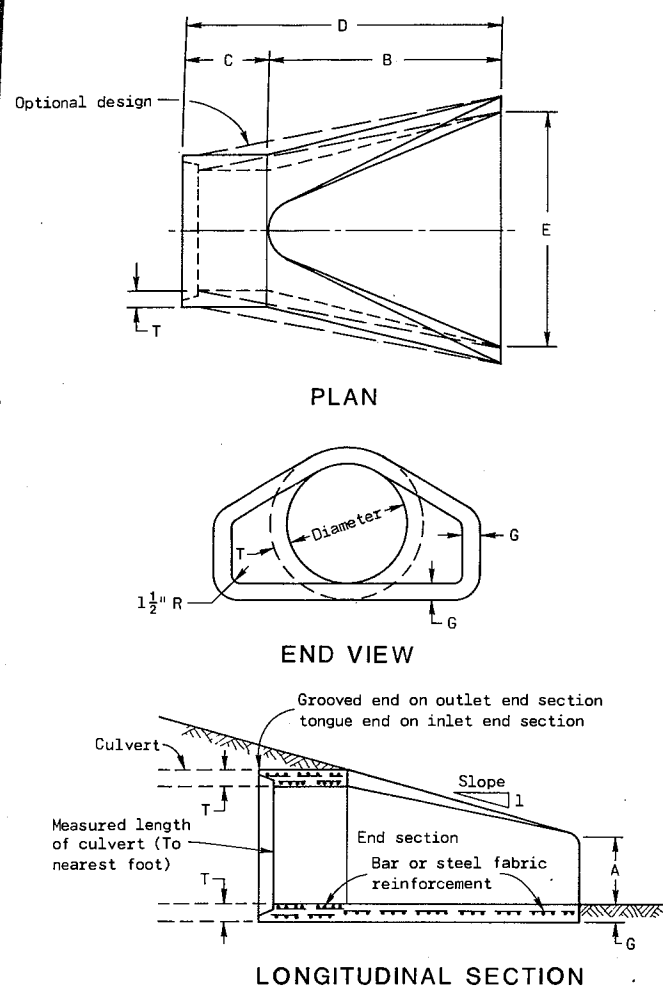
9-11-85

DATE

FHWA

*E. J. Atwood*  
STATE DESIGN ENGINEER FOR HWYS





**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.  
 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.  
 Concrete culvert endwalls may not be used with galvanized steel or aluminum culvert pipe or vice versa.  
 Galvanized steel or aluminum endwalls shall normally be installed on culvert pipe of the same metal. The use of galvanized steel endwalls on aluminum pipes is permitted, provided the two metals at the joint interface are kept separated by a suitable insulating material approximately 1/16" thick or greater. Such material would be an asphalt impregnated fabric, a sheet plastic, a rubber gasket or other non-degradable material of substantial strength.

When two or more 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.

① A combination of steel rod rolled into edge sidewall (L<sub>1</sub>), and 180° roll on edge of sidewall (L<sub>2</sub>), is permitted for metal apron endwalls up to 60" diameter for circular pipe, and 77" x 52" for pipe arches.

PIPE DIA. (In.)	APPROX. WEIGHT PER SECTION	DIMENSIONS (Inches)							APPROX. SLOPE
		T	A	B	C	D	E	G	
12	530	2	4	24	48 7/8	72 7/8	24	2	3 to 1
15	740	2 1/4	6	27	46	73	30	2 1/4	↑
18	990	2 1/2	9	27	46	73	36	2 1/2	↑
21	1,280	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	↑
24	1,520	3	9 1/2	43 1/2	30	73 1/2	48	3	↑
27	1,930	3 1/4	10 1/2	49 1/2	24	73 1/2	54	3 1/4	↑
30	2,190	3 1/2	12	54	19 3/4	73 3/4	60	3 1/2	↑
36	4,100	4	15	63	34 3/4	97 3/4	72	4	↑
42	5,380	4 1/2	21	63	35	98	78	4 1/2	↑
48	6,550	5	24	72	26	98	84	5	3 to 1
54	8,040	5 1/2	27	65	* 33 1/4 - 35	* 98 1/4 - 100	90	5	2 1/2 to 1
60	8,730	6	* 30 - 35	60	39	99	96	5	2 to 1
66	10,630	6 1/2	* 24 - 30	* 72 - 78	* 21 - 27	↑	102	5 1/2	↑
72	12,520	7	* 24 - 36	78	21	↑	108	6	↑
78	14,430	7 1/2	* 24 - 36	78	21	99	114	6 1/2	2 to 1
84	18,160	8	36	90 1/2	21	111 1/2	120	6 1/2	1 1/2 to 1

\* Minimum \*\* Maximum  
**REINFORCED CONCRETE APRON ENDWALLS**

PIPE DIA. (In.)	MIN. THICKNESS (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE
	STEEL	ALUM.	A	B	H	L	L <sub>1</sub>	L <sub>2</sub>	W	
12	0.064	0.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1
15	↑	↑	7	8	↑	26	14	21 3/4	30	↑
18	↑	↑	8	10	↑	31	15	28 1/2	36	↑
21	↑	0.060	9	12	↑	36	18	29 5/8	42	↑
24	0.064	0.075	10	13	6	41	18	37 1/4	48	↑
30	0.079	0.075	12	16	8	51	18	52 1/4	60	↑
36	0.079	0.105	14	19	9	60	24	59 3/4	72	↑
42	0.109	0.105	16	22	11	69	24	76 5/8	84	2 1/2 to 1
48	↑	0.135	18	27	12	78	24	81	90	2 1/4 to 1
54	↑	0.135	30	↑	84	30	85 1/2	102	2 to 1	↑
60	↑	0.164	33	↑	87	↑	114	1 3/4 to 1	↑	↑
66	↑	↑	36	↑	87	↑	120	1 1/2 to 1	↑	↑
72	↑	↑	39	↑	87	↑	126	1 1/2 to 1	↑	↑
78	↑	↑	42	↑	87	↑	132	1 1/4 to 1	↑	↑
84	0.109	0.164	18	45	12	87	↑	138	1 1/4 to 1	↑

NOTE: All splices to be lap riveted or bolted.  
**METAL APRON ENDWALLS FOR CIRCULAR PIPE**

PIPE-ARCH DIMENSIONS (Inches)	MIN. THICK. (Inches)	DIMENSIONS (Inches)							APPROX. SLOPE		
		SPAN	RISE	STEEL	ALUM.	A	B	H		L	L <sub>1</sub>
17	13	0.064	0.060	7	9	6	19	14	16	30	2 1/2 to 1
21	15	↑	0.060	7	10	↑	23	14	19 3/8	36	↑
24	18	↑	0.060	8	12	↑	28	18	21 3/4	42	↑
28	20	0.064	0.075	9	14	↑	32	18	27 1/2	48	↑
35	24	0.079	0.075	10	16	6	39	18	37 5/8	60	↑
42	29	0.079	0.105	12	18	8	46	24	45 3/8	75	↑
49	33	0.109	0.105	13	21	9	53	↑	54 3/4	85	↑
57	38	↑	0.135	18	26	12	63	↑	68	90	2 1/2 to 1
64	43	↑	0.135	↑	30	↑	70	24	72 3/4	102	2 1/4 to 1
71	47	↑	0.164	↑	33	↑	77	30	82 1/4	114	2 1/4 to 1
77	52	↑	0.164	↑	36	↑	77	↑	↑	126	2 to 1
83	57	0.109	0.164	18	39	12	77	↑	↑	138	2 to 1

NOTE: All splices to be lap riveted or bolted.  
**METAL APRON ENDWALLS FOR PIPE ARCHES**

**CONNECTION DETAILS**  
**CIRCULAR PIPE**  
 For circumferentially corrugated pipe use Endwall Connection Details 1, 2, 3 or 5 as applicable.  
 For helically corrugated pipe use Endwall Connection Details 1, 2 or 5.  
 For helically corrugated pipes with two circumferential corrugations at each end use Endwall Connection Details 1, 2 or 3.  
**PIPE ARCH**  
 Use Endwall Connection Details 2, 3 or 5 as applicable.

**APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCHES**

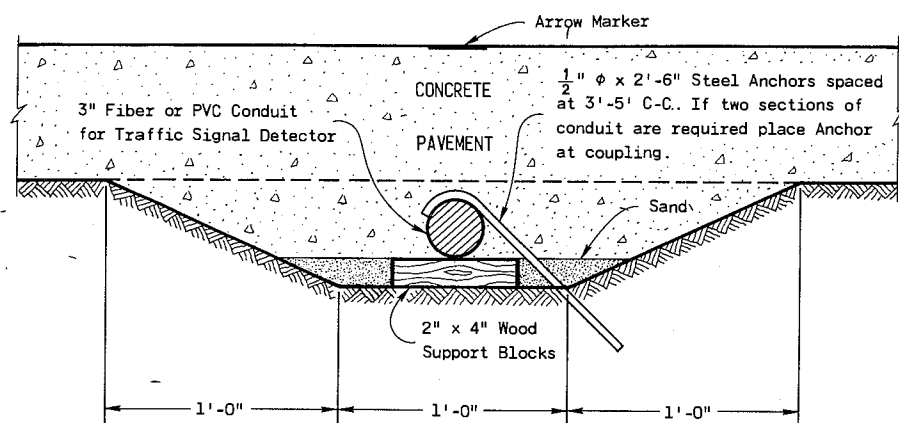
State of Wisconsin  
 Department of Transportation

APPROVED  
 2-15-82  
 DATE

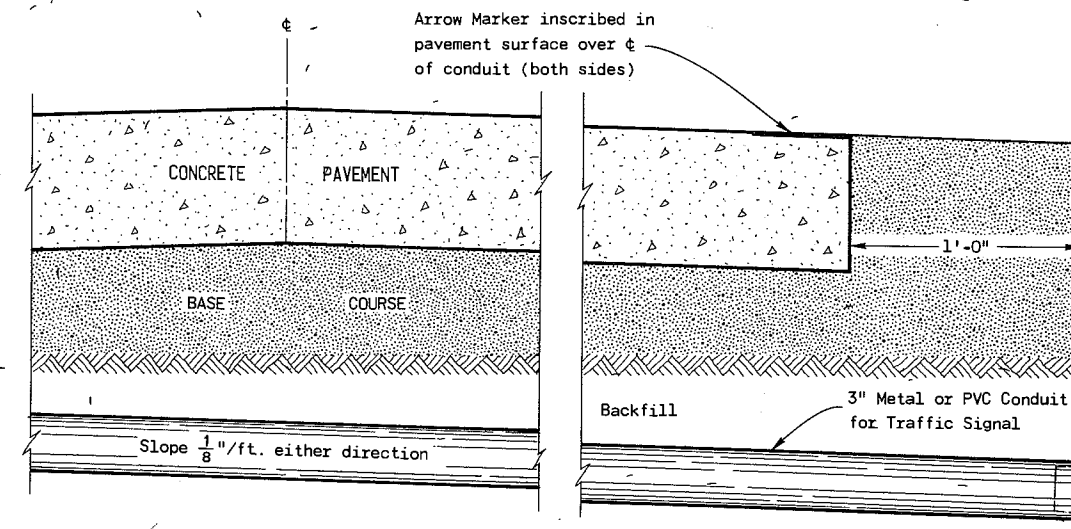
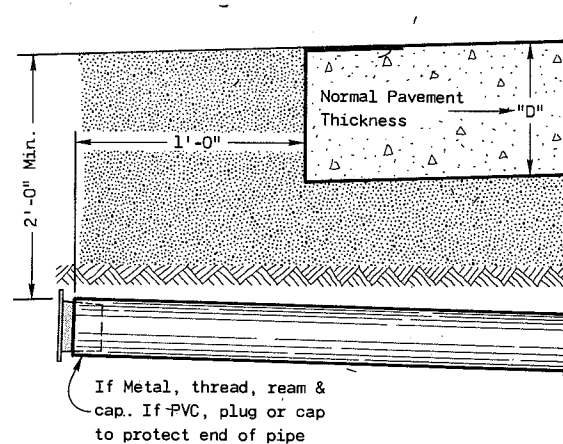
*D. J. Alford*  
 CHIEF DESIGN ENGINEER

FHWA

S.D.D. 8 F 1-9

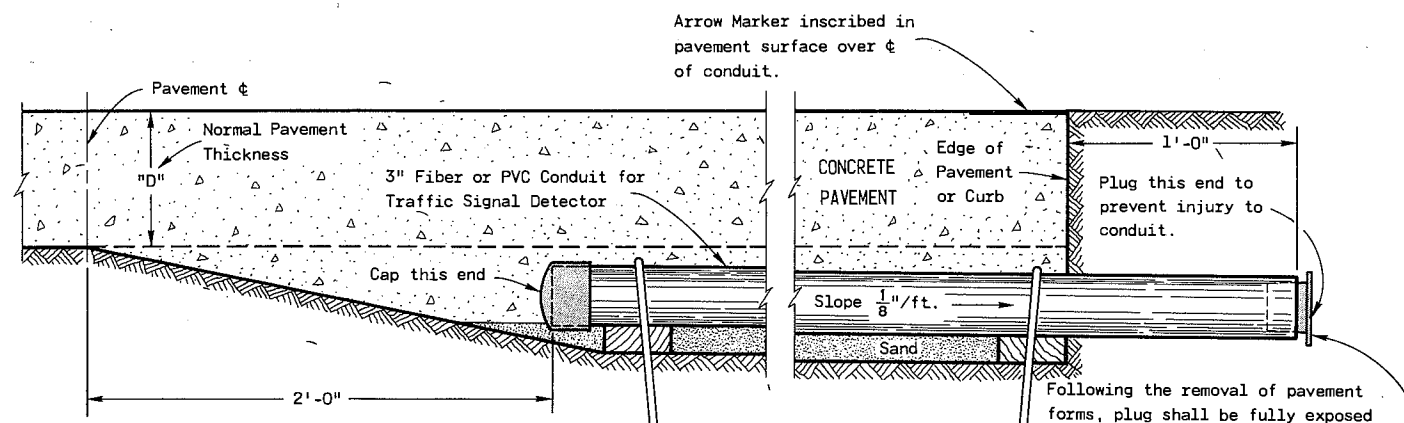


END ELEVATION  
TRAFFIC SIGNAL DETECTOR CONDUIT

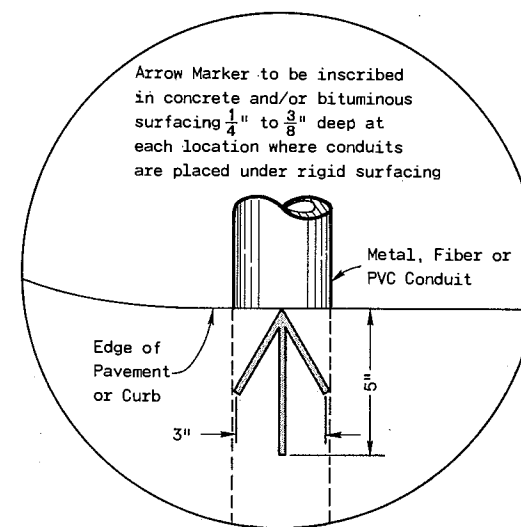


SIDE ELEVATION

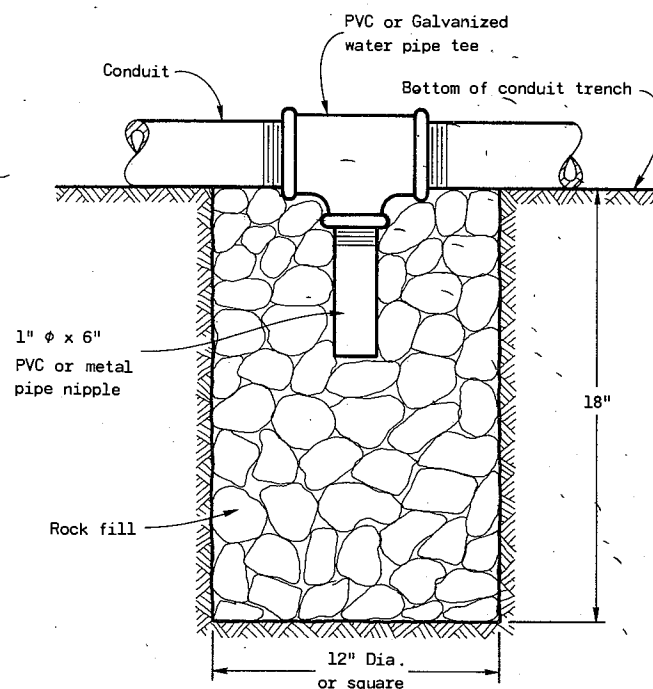
DETAIL FOR TRAFFIC SIGNAL CONDUIT FOR DIVIDED OR UNDIVIDED HIGHWAYS



SIDE ELEVATION  
DETAIL FOR TRAFFIC SIGNAL DETECTOR CONDUIT FOR UNDIVIDED HIGHWAYS

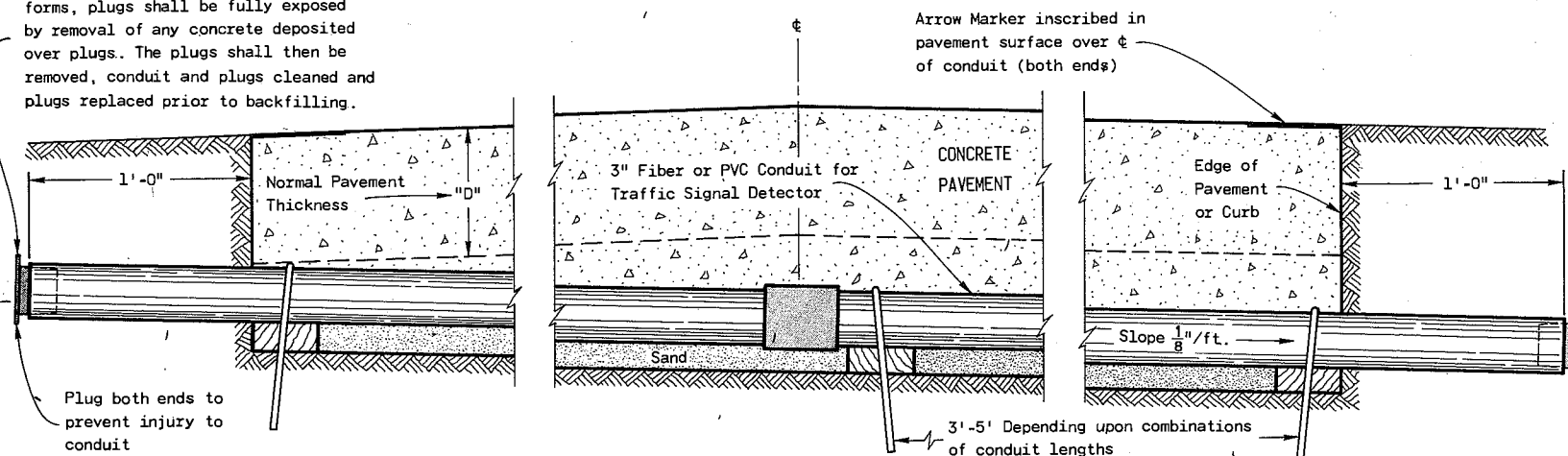


PLAN VIEW  
ARROW MARKER



NOTE: Install at locations where conduits cannot be pitched to drain  
DRAIN SUMP FOR CONDUIT

Following the removal of pavement forms, plugs shall be fully exposed by removal of any concrete deposited over plugs. The plugs shall then be removed, conduit and plugs cleaned and plugs replaced prior to backfilling.

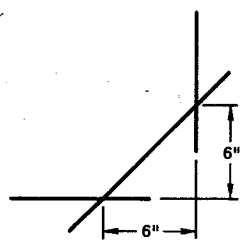


SIDE ELEVATION  
DETAIL FOR TRAFFIC SIGNAL DETECTOR CONDUIT FOR DIVIDED HIGHWAYS

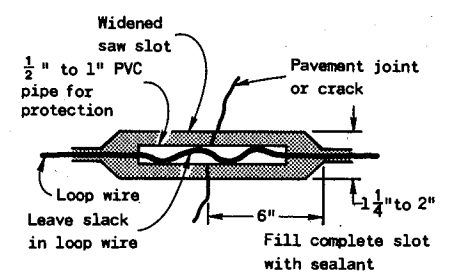
GENERAL NOTES

Details of Construction not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications and Special Provisions.  
Metal, Fiber or PVC Conduit shall be furnished and placed as shown hereon and in accord with the Standard Specifications.  
For station location of conduit see Construction Plans.

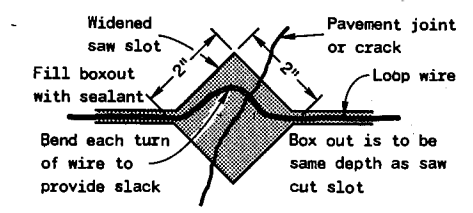
<b>METAL, FIBER &amp; PVC CONDUIT</b>	
State of Wisconsin Department of Transportation Division of Transportation Facilities	
APPROVED 10-17-79 DATE	<i>R. J. Starn</i> CHIEF DESIGN ENGINEER
FHWA	



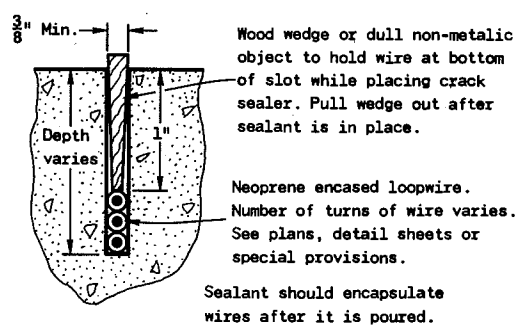
**(ALTERNATE)  
SAW CUT CORNERS**  
(Chiseling corners is not necessary, if corners are cut to full slot depth)



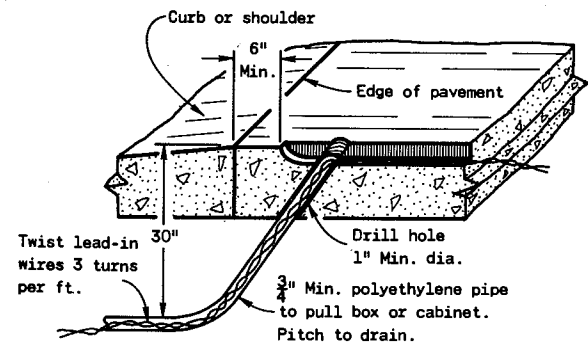
**LOOP WIRE INSTALLATION  
ACROSS PAVEMENT  
JOINT OR CRACK**



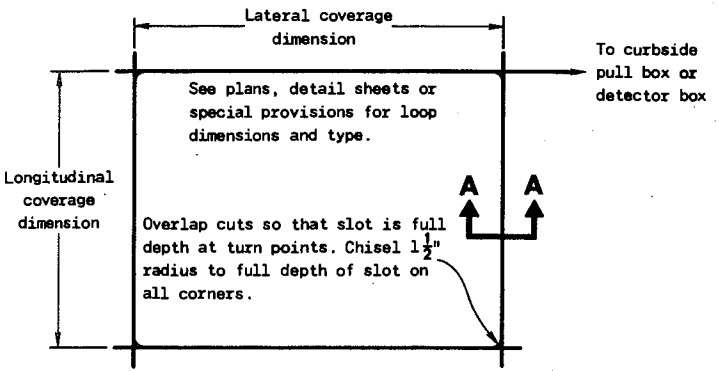
**LOOP WIRE INSTALLATION  
ACROSS PAVEMENT  
JOINT OR CRACK**



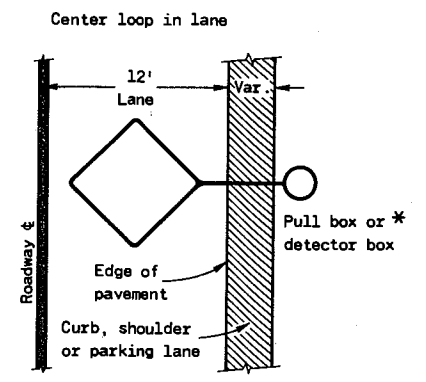
**SECTION A-A  
LOOP AND LEAD-IN  
WIRES IN PAVEMENT**



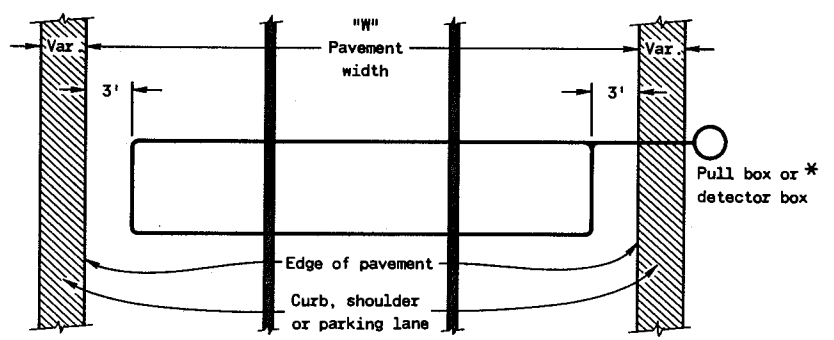
**LOOP LEAD-IN WIRES  
THROUGH PAVEMENT**



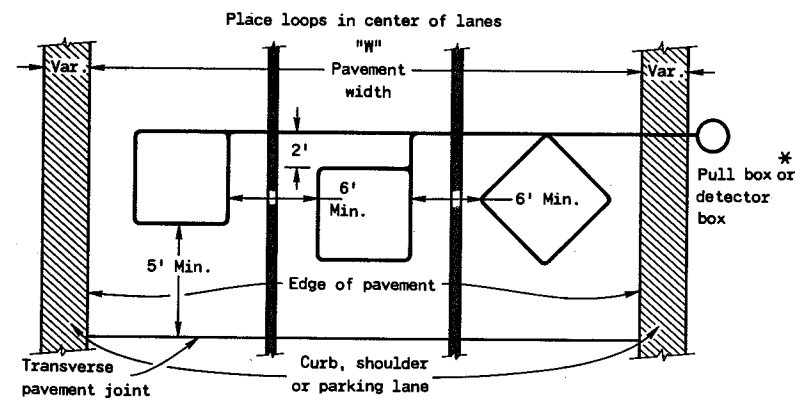
**LOOP SLOT CONSTRUCTION**



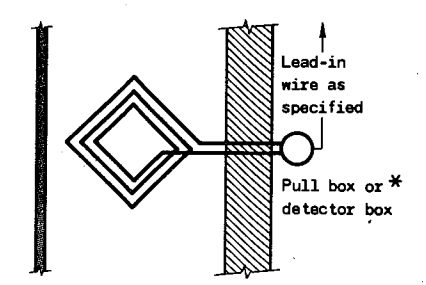
**LOOP SLOT PLAN**



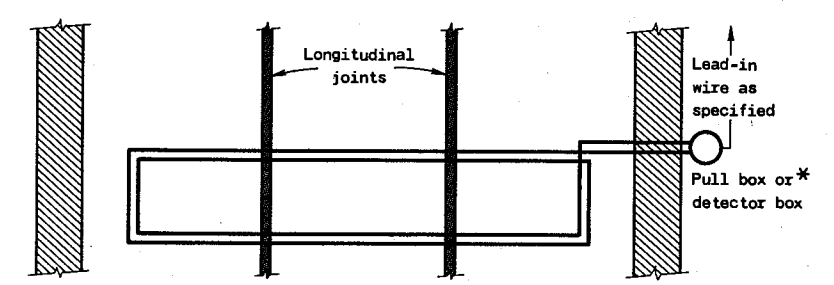
**LOOP SLOT PLAN**



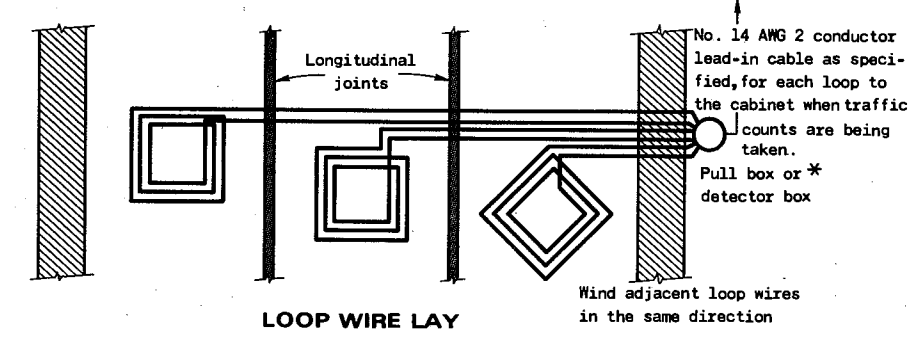
**LOOP SLOT PLAN**



**LOOP WIRE LAY  
CONSTRUCTION DETAILS  
SINGLE LANE  
DETECTION LOOP**



**LOOP WIRE LAY  
CONSTRUCTION DETAILS  
MULTIPLE LANE  
MASS DETECTION LOOP**



**LOOP WIRE LAY  
CONSTRUCTION DETAILS  
MULTIPLE LANE DETECTION  
BY INDIVIDUAL LANES  
TYPICAL TYPE LOOPS**

**GENERAL NOTES**

The slots in the pavement shall be cut to dimension with a saw. The slots shall be cleaned free of dirt, dust, moisture and debris prior to installation of the wire.

Loop wire shall be No. 12 AWG, Type USE, RHM, RHM with XLP insulation, stranded copper, single conductor.

Prior to installing loop wire in the slots, it shall be encased in a tubing of neoprene, conforming to the following specification: Coiled, black, smooth, durometer reading of 80±5, 300% elongation, 1200-1400 pounds tensile strength, 1.5 specific gravity, 57% swell in No. 3 oil after 70 hours at 212 degrees F., 1/4 inch inside diameter, as measured with a 1/4 inch mandrill at 3 inch depth at each end of the coils, 1/8 inch wall thickness as tested at each end of the coils with a micrometer.

To prevent damage to wire insulation during installation, use a dull object (preferably wood) to push the wire down into the slot.

After placing the wire in the slot, fill the slot with an asphaltic material. Refer to Section 409.2.5 of the State of Wisconsin Standard Specifications for Road and Bridge Construction, Edition of 1975. A flexible epoxy type sealant may be used if approved by the Engineer, only when asphaltic material is unavailable.

Each loop circuit shall be continuous to the pavement edge, with out splices and free from grounds. The resistance to ground and between adjacent loops shall be infinity as determined with a megger.

If a pull box or detector box is not provided outside of the curb or edge of pavement at a point where wires from the loop extend through the pavement, the wires should then be brought through the pavement to a point just under the back face of curb or edge of pavement. A small hole should be dug under the curb at this point and a splice kit (epoxy type) shall be used to waterproof the splice that connects wires from the loop to the lead wires which eventually terminate in the control cabinet. A splice kit shall also be used when the splice is made in a pullbox. A splice for a two conductor cable consists of two soldered joints enclosed in a single splice kit. Each wire shall be soldered and insulated from one another.

Two conductor, No. 14 AWG, shielded cable shall be used from the splice connection near the loop to the control cabinet except as noted in the next paragraph.

The two single conductor loop wires shall be twisted together at a rate of three twists per foot from the pavement edge to the splice connection with the loop lead-in cable. At counter stations, if the distance from the pavement edge to the control cabinet is less than 75 feet, the loop lead wires may be brought directly to the cabinet without a splice. However, the single conductor wires shall be twisted at least three turns per foot from the pavement to the cabinet.

Twisted single conductor pairs shall be installed in well drained, non-metallic duct or metal conduit. Lead-in wires and cables along curbs shall be buried 30 inches deep or tucked under the curb for protection from driven objects.

To avoid improper operation of detector amplifiers, lead-in cables and loop lead-in wires shall be cut to the shortest possible length to eliminate additional loops in cabinets or pull boxes caused by folding or "Looping" of the excess wire.

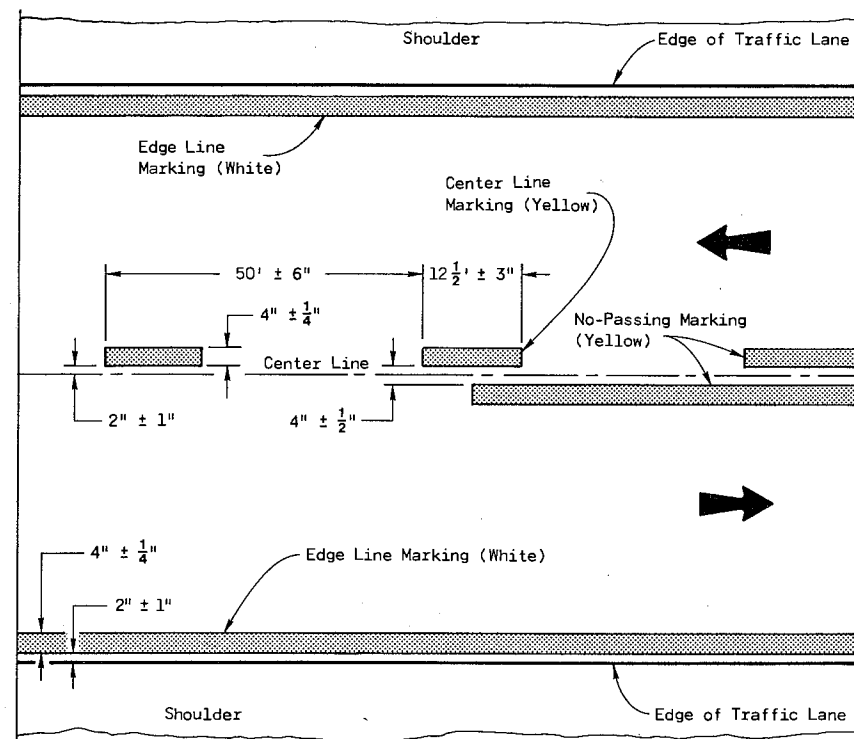
The lead-in cable shall be 2/C - No. 14 (19x27), 0.032 polyethylene, black and clear color codes, cabled with 1 x No. 16 AWG stranded tinned copper drain wire, aluminum polyester shield, 0.035 chrome vinyl jacket as manufactured by Belden (No. 8720), or 2/C - No. 14 - 7x bare copper, 0.047 XLP, printed color code, cabled with 1 x No. 16 - 7x tinned copper drain wire, aluminum mylar tape, 0.047 PVC jacket as manufactured by Okonite, or approved equal. The conductors shall be polyethylene insulated.

Belden 8720 is direct burial cable. It shall be placed in well drained non-metallic duct or metal conduit. Okonite cable is direct burial and it is not necessary to place this direct burial cable in duct or conduit.

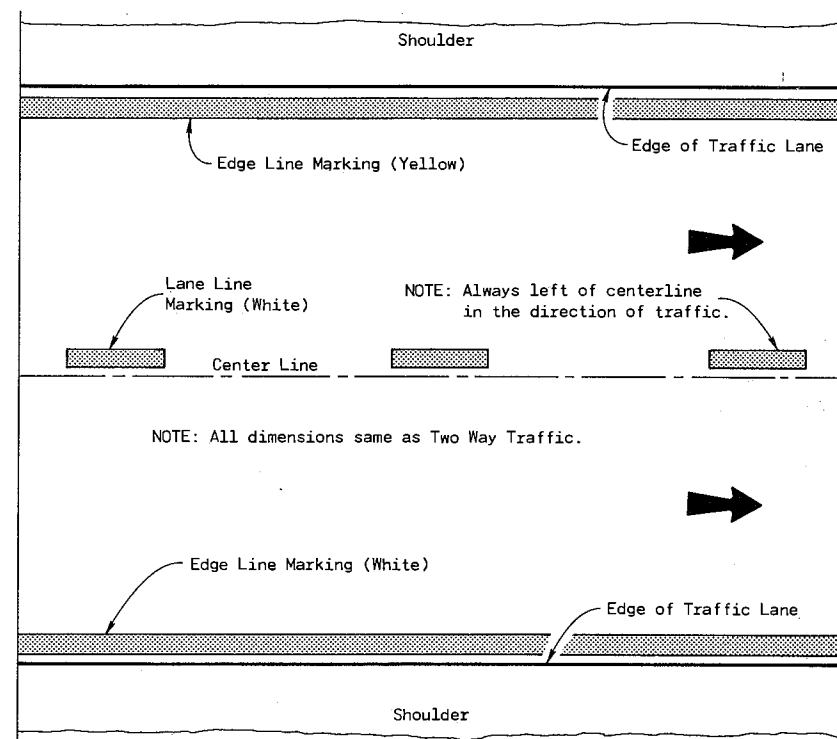
\* See Standard Detail Drawing entitled "TRAFFIC SIGNAL, COUNTER AND PULL BOX DETAILS".

<b>DETAILS FOR THE INSTALLATION OF TRAFFIC SIGNAL AND TRAFFIC COUNTER DETECTOR LOOP WIRES IN PAVEMENT IN PLACE</b>	
State of Wisconsin Department of Transportation	
APPROVED 5-5-80 DATE	<i>D. J. Strand</i> CHIEF DESIGN ENGINEER
FHWA	

S.D.D. 9 B 4-4

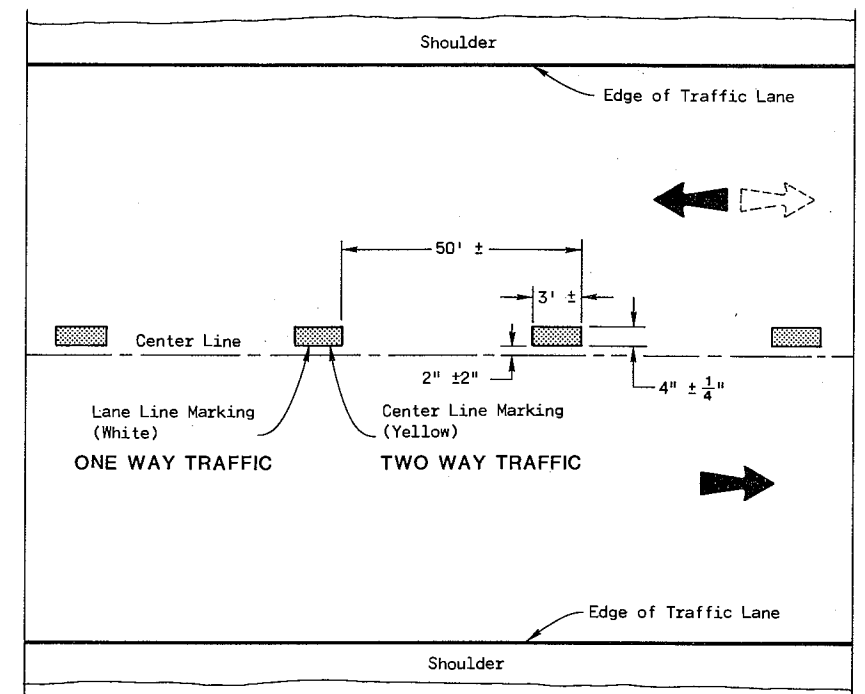


TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TEMPORARY PAVEMENT MARKING

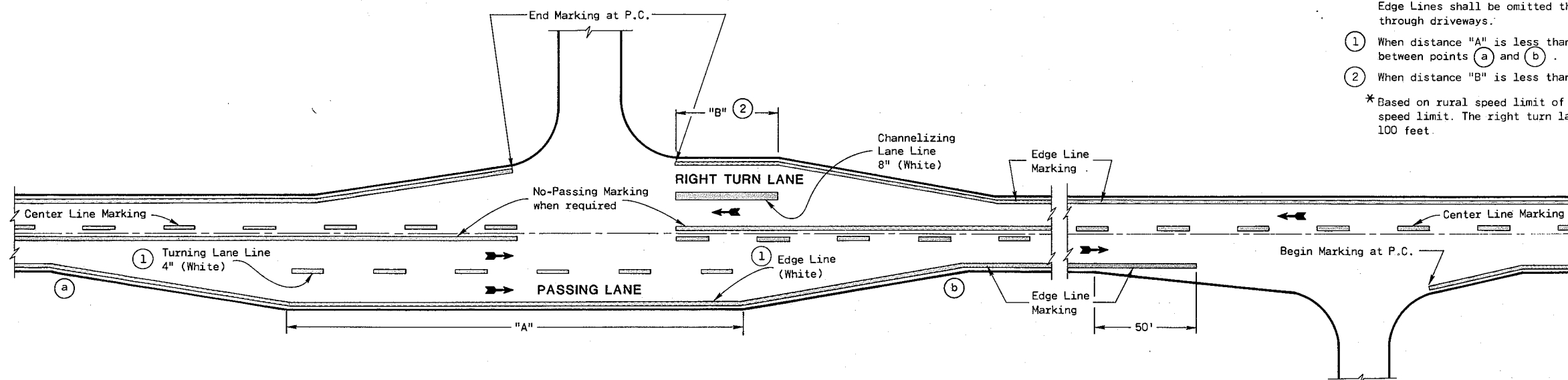
GENERAL NOTES

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

Edge Lines shall be omitted through intersections. Edge Lines shall be continued through driveways.

- ① When distance "A" is less than 250 feet, omit Turning Lane Marking and Edge Line between points (a) and (b).
- ② When distance "B" is less than 150 feet, omit Channelizing Lane Line.

\* Based on rural speed limit of 55 MPH. Reduce values in proportion to posted speed limit. The right turn lane should have a desirable minimum length of 100 feet.



MAJOR INTERSECTION

MINOR INTERSECTION

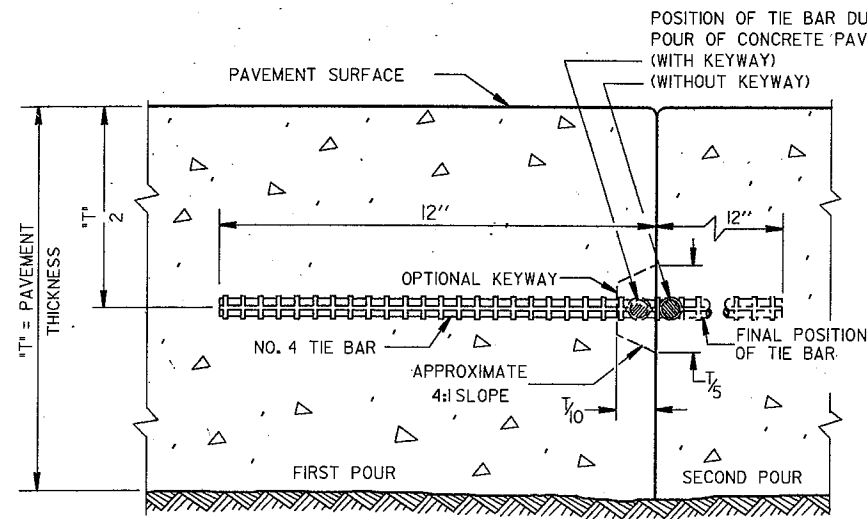
TYPICAL PAVEMENT MARKING FOR RURAL INTERSECTIONS

PAVEMENT MARKING

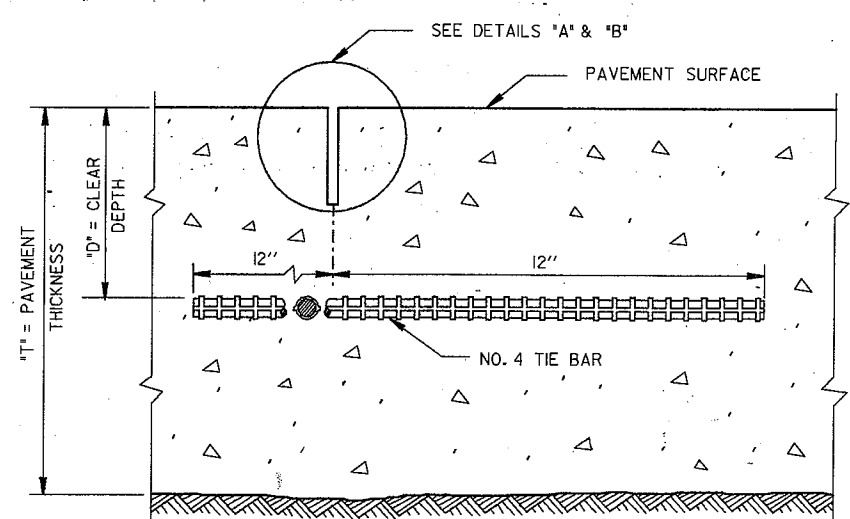
State of Wisconsin  
Department of Transportation

APPROVED  
DATE 1-25-85

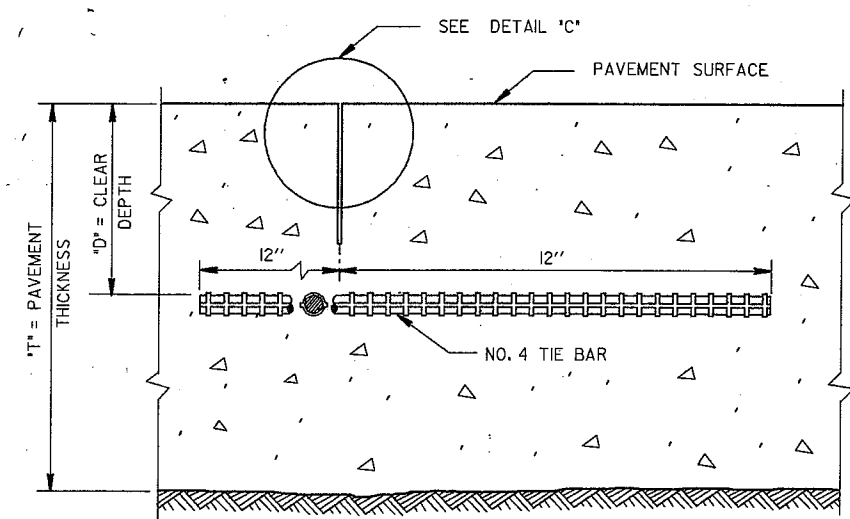
CHIEF TRAFFIC ENGINEER



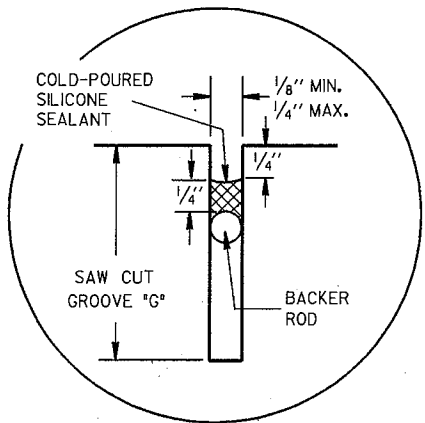
CONSTRUCTION JOINT



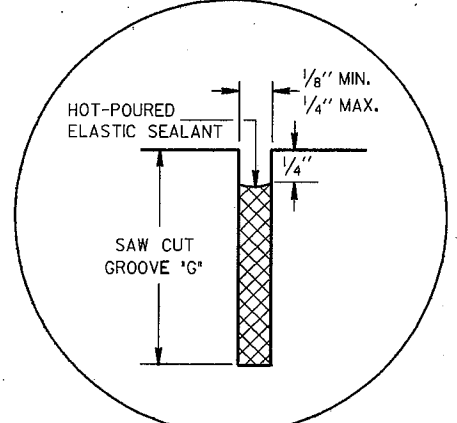
SAWED JOINT



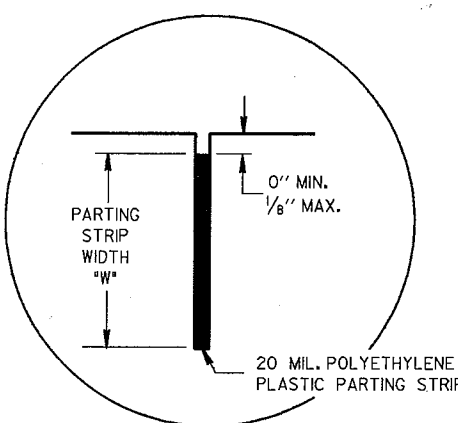
RIBBON JOINT



DETAIL 'A'



DETAIL 'B'



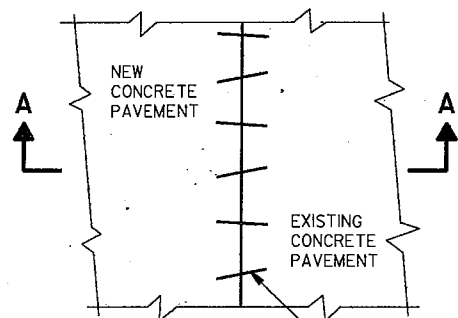
DETAIL 'C'

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.

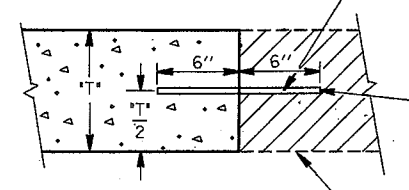
DETAILS 'A' AND 'B' ARE EQUAL ALTERNATES. RIBBON JOINTS (DETAIL 'C') ARE NOT PERMITTED EXCEPT WHEN SPECIFIED ELSEWHERE IN THE CONTRACT.

TIE BARS AND PAVEMENT TIES SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.4 OF THE STANDARD SPECIFICATIONS.



PLAN VIEW

NO. 6 TIE BARS SPACED 3'-0" C-C, INSTALLED ON 6:1 SKEW HORIZONTALLY. DIRECTION OF SKEW ALTERNATING AFTER EVERY ONE OR TWO BARS.

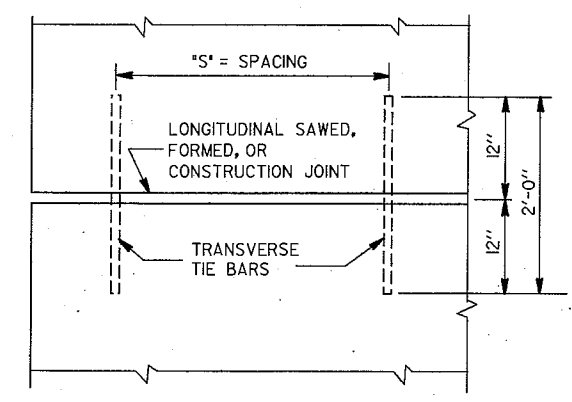


SECTION A-A PAVEMENT TIES

THE HOLE FOR THE BAR SHALL BE DRILLED TO A DEPTH OF 7" AND TO SUCH A DIAMETER AS TO PROVIDE A TIGHT DRIVEN FIT.

EXIST. CONC. PAVEMENT

PAVEMENT THICKNESS "T"	CLEAR DEPTH "D"	SAW CUT GROOVE "G"	MAXIMUM TIE BAR SPACING "S"	PARTING STRIP WIDTH "W"
6"	3" ± 1/2"	1 1/2"	30"	2"
7"	3 3/4" ± 1"	1 3/4"	30"	2 1/4"
8"	3 3/4" ± 1"	2"	30"	2 1/2"
9"	4 1/4" ± 1"	2 1/4"	30"	3"
10"	4 3/4" ± 1"	2 1/2"	30"	3 1/4"
11"	5 1/4" ± 1"	2 3/4"	24"	3 3/4"
12"	5 3/4" ± 1"	3"	24"	4"



PLAN VIEW SHOWING LOCATION OF TIE BARS

**CONCRETE PAVEMENT  
LONGITUDINAL JOINTS  
AND PAVEMENT TIES**

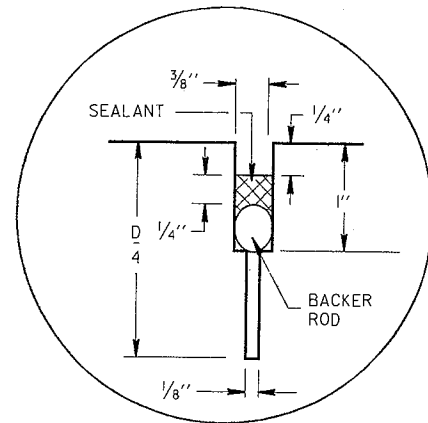
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
9-21-84  
DATE

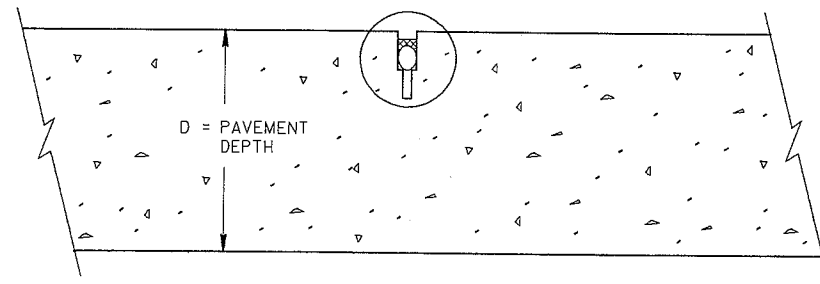
*D. J. Blund*  
CHIEF DESIGN ENGINEER

FHWA

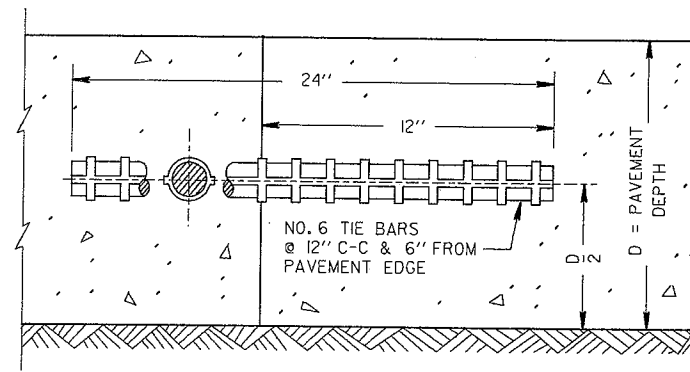
S.D.D. 13 C 1-6



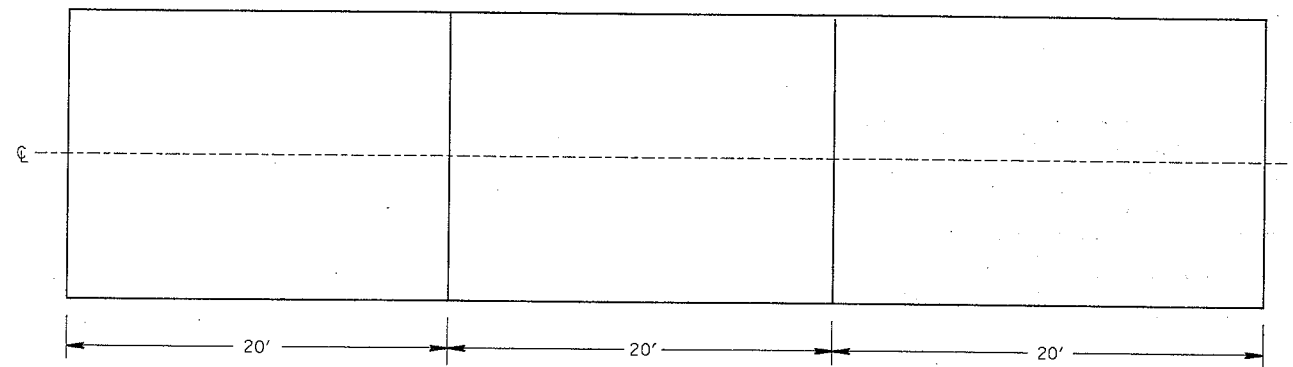
JOINT DETAIL



CONTRACTION JOINT



CONSTRUCTION JOINT



CONTRACTION JOINT LOCATIONS

GENERAL NOTES

DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

CONTRACTION JOINTS

CONTRACTION JOINTS SHALL BE LOCATED AT A UNIFORM SPACING OF 20' ( $\pm 1'$ ). EXCEPTIONS SHALL BE AS DIRECTED BY THE ENGINEER.

CONTRACTION JOINTS SHALL BE SEALED WITH A COLD POURED, SILICONE TYPE SEALANT.

THE FIRST SAWCUT SHALL BE TO A DEPTH OF D/4 AND THE WIDTH OF 1/8 INCH.

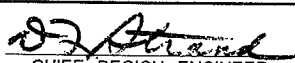
CONSTRUCTION JOINTS

CONSTRUCTION JOINTS SHALL BE LOCATED A MINIMUM OF 4 FEET FROM THE NEAREST CONTRACTION JOINT.

TIE BARS MAY BE INSERTED THROUGH THE HEADER BOARD AFTER THE CONCRETE HAS BEEN POURED.

TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.4 OF THE STANDARD SPECIFICATIONS.

S.D.D. 13 C 4-8

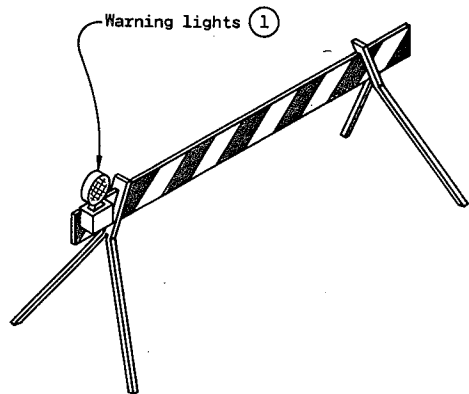
TRANSVERSE JOINTS IN NON-REINFORCED CONCRETE PAVEMENT (20' NORMAL TRANSVERSE JOINTS WITH POURED TYPE SEALER)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 3/25/85 DATE	 CHIEF DESIGN ENGINEER
FHWA	

S.D.D. 13 C 4-8

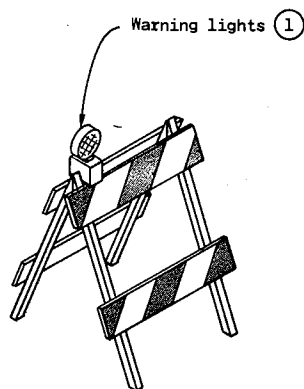
TABLE OF BARRICADE CHARACTERISTICS

BARRICADE TYPE	I	II	III
Height	3' Minimum		5' Minimum
*Rail Width	8" Minimum to 12" Maximum		
Rail Length	2' Minimum		4' Minimum
**Stripe Width	6" at 45° Angle		
Stripe Colors	Reflectorized Orange & White		

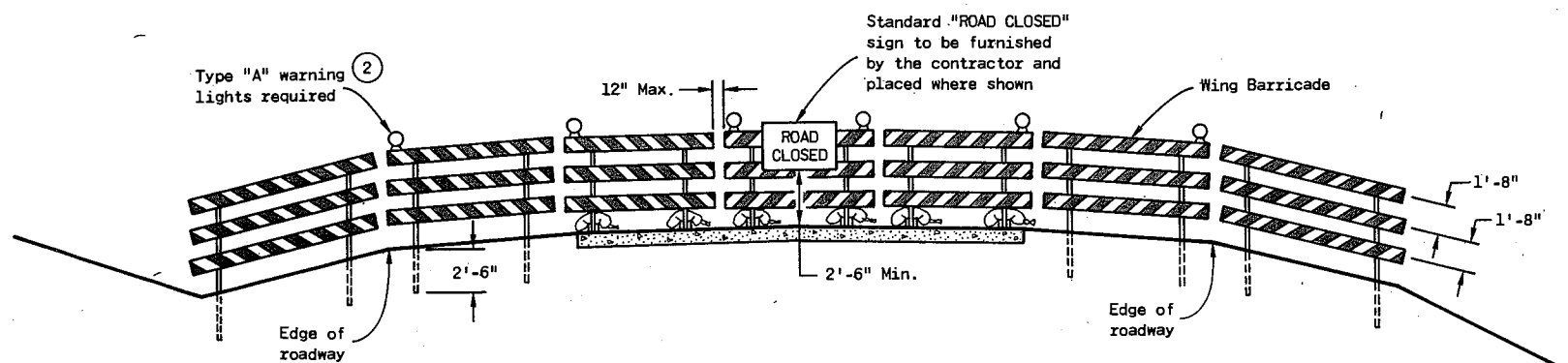
\* Nominal dimensions when barricade is constructed of lumber.  
 \*\* Shall be 4" for rail lengths less than 3'.



TYPICAL TYPE I BARRICADE

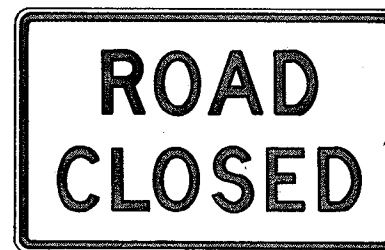


TYPICAL TYPE II BARRICADE



TYPICAL INSTALLATION SHOWING TYPE III BARRICADE.

CONSTRUCTION BARRICADES



R11-2  
48" x 30"

Black Lettering on Reflective  
White Background  
Letter Series "D"  
Letter height 8"



W20-3  
48" x 48"

Black Lettering on Reflective  
Orange Background  
Letter Series "D"  
Letter height 7"

STANDARD SIGNS - TYPE II

GENERAL NOTES

The contractor shall furnish, erect and maintain barricades and signs. Details regarding location, spacing, dimensions, fabrication, material, sign lettering, lighting devices and color of barricades and signs shall conform to this drawing, the Manual On Uniform Traffic Control Devices, the Standard Specifications, Special Provisions and/or plans.

Type III Barricades and Signs shall be erected at the termini of projects and at other road or street locations where it is necessary to control or eliminate public access to the construction area.

Type I and II Barricades shall be used on projects when traffic is to be maintained through the construction area.

The actual field location of barricade installations and advance signs shall be as directed by the Engineer.

Each barricade shall have the name and telephone number of a person responsible for 24 hour emergency service printed in letters at least 3/4 inch in height on the barricade rails. Prior to May 1, 1983, such information may be shown on either front or back faces of the barricade rails. After May 1, 1983, all printed information or identification markings shall be shown only on the back side of barricade rails.

Type I Barricades may include other unstriped horizontal panels necessary to provide stability.

On high speed expressways or in other situations where barricades may be susceptible to overturning in the wind, sandbags should be used for ballasting. Sandbags may be placed on lower parts of the frame or stays to provide the required ballast but shall not be placed on top of any striped rail.

① Unless otherwise provided elsewhere in the contract, warning lights are required on all barricades which will be located near traffic operations during periods of inclement weather or hours of darkness. Barricades used to shield isolated hazards shall be equipped with Type "A" (low intensity - flashing) lights unless Type "B" (high intensity) - flashing lights are specified elsewhere in the contract documents. Barricades used for channelization or delineation of the travel path shall be equipped with Type "C" (steady burn) lights except for the initial barricade(s) in sequence, which shall be equipped with Type "A" or "B" lights as previously noted.

② Two warning lights shall be provided on the center barricade and at least one warning light shall be provided on each of the other barricades within the roadway limits. Spacing of the warning lights shall be uniform to the edge of roadway as shown.

S.D.D. 15 C 1-7

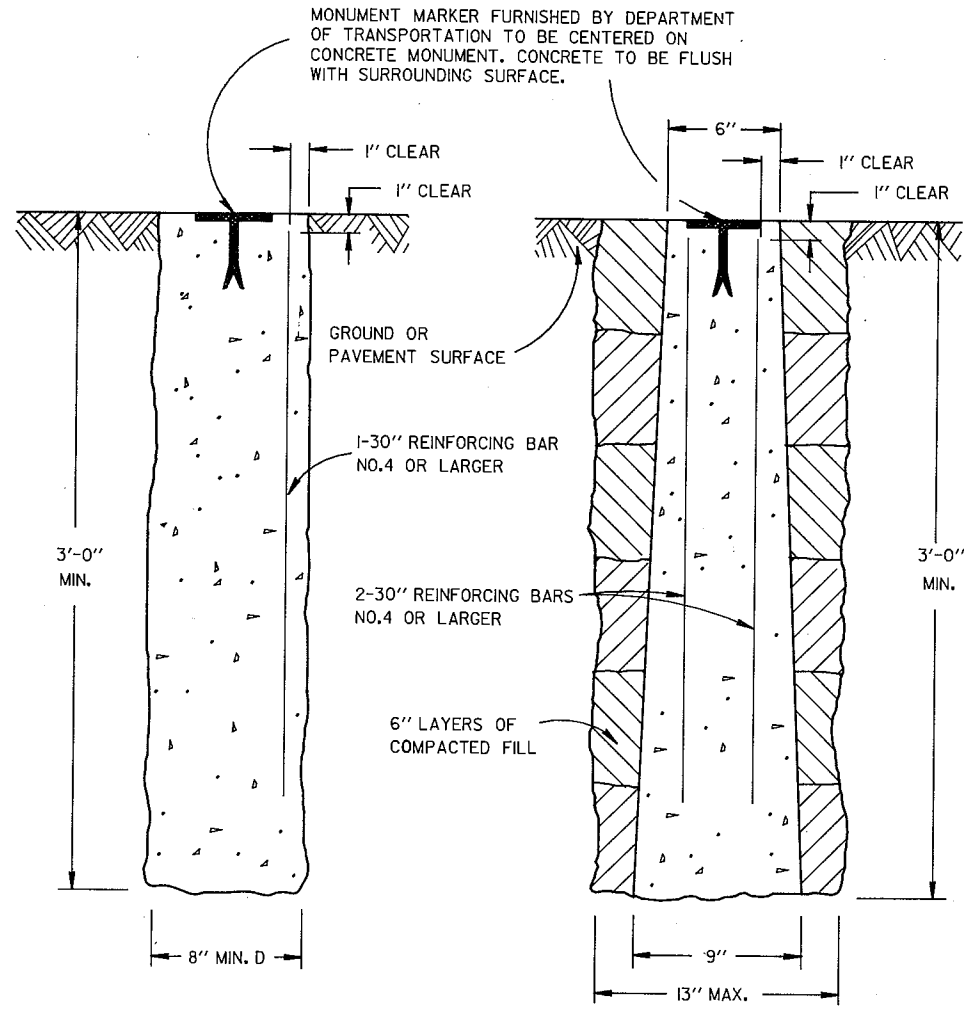
CONSTRUCTION BARRICADES  
& STANDARD SIGNS

State of Wisconsin  
Department of Transportation

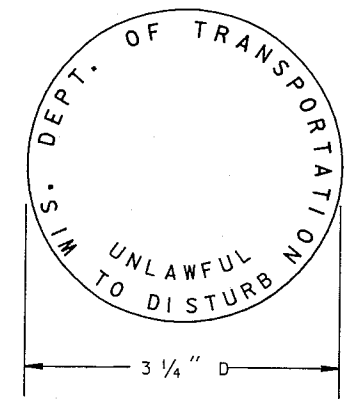
APPROVED  
9-14-81  
DATE

*D. J. Alford*  
CHIEF DESIGN ENGINEER

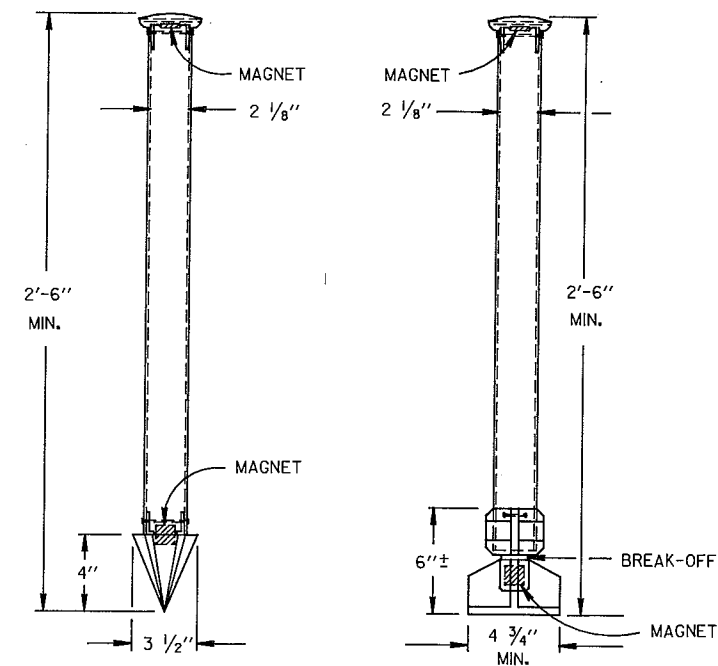
FHWA



CAST-IN-PLACE  
PRECAST  
CONCRETE MONUMENTS  
TYPE A



MONUMENT MARKER LOGO  
FOR TYPES "A", "C" & "D"



TYPE C  
DRIVE-IN MONUMENT  
TYPE D  
BREAK-OFF MONUMENT  
ALUMINUM MONUMENTS  
(INCLUDES MARKER)

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.

DETAILED DRAWINGS OF PROPOSED ALTERNATE DESIGNS FOR METAL MONUMENTS OR MONUMENT COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

THE INSTALLED METAL MONUMENT MUST BE EASILY DETECTED WITH A DIP NEEDLE. INERT PERMANENT MAGNETS SHALL BE ATTACHED NEAR THE TOP AND BOTTOM OF THOSE MONUMENTS CONSTRUCTED OF A METAL ALLOY WHICH IS NOT ATTRACTIVE TO A DIP NEEDLE.

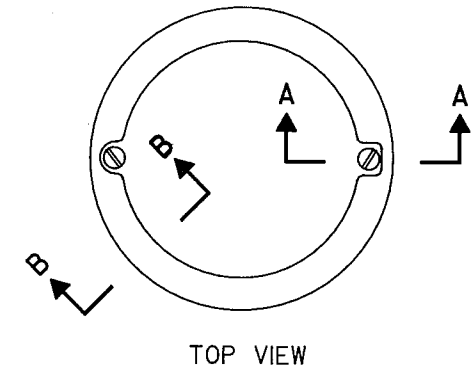
TYPE A AND TYPE D MONUMENTS ARE EQUAL ALTERNATES UNLESS OTHERWISE SPECIFIED.

THE CAST IRON MONUMENT COVER SHALL BE A "NON-ROCKING" TYPE. ADJUSTMENT OF THE COVER TO GRADE MAY BE ACCOMPLISHED BY THE USE OF MORTAR AND BRICK, OR BY EITHER PRECAST OR CAST-IN-PLACE REINFORCED CONCRETE GRADE RINGS.

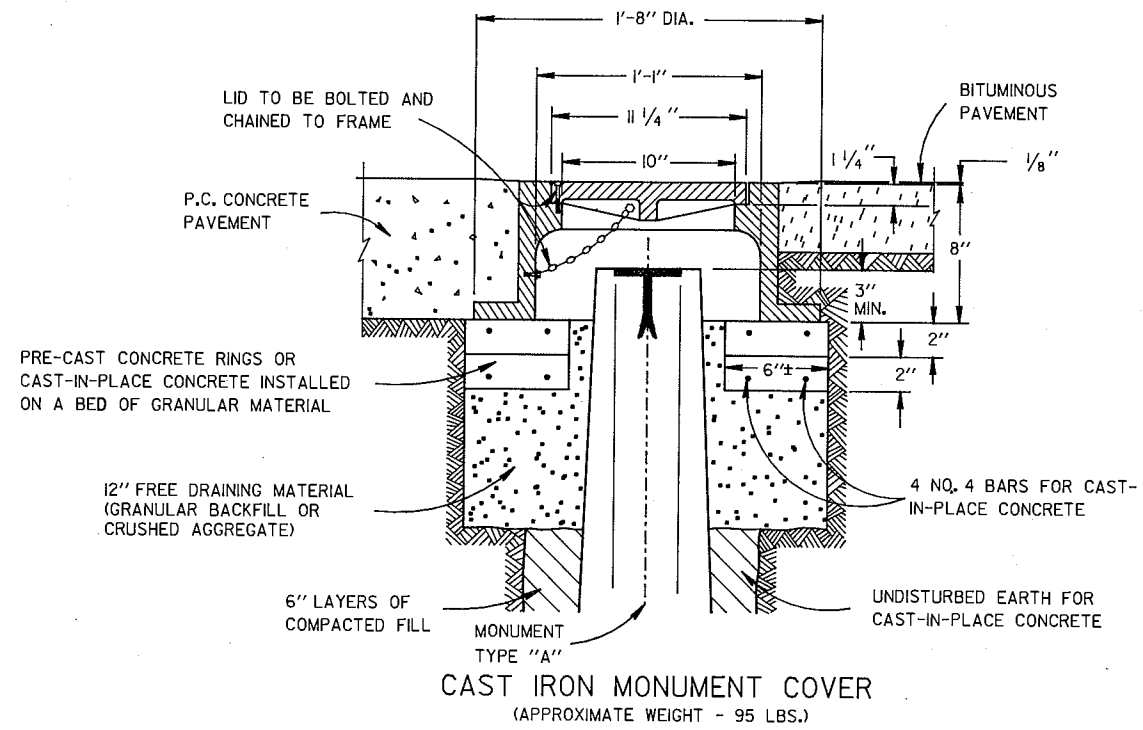
MONUMENTS SHALL BE LOCATED AND PLACED AT THE DIRECTION OF THE ENGINEER.

ALUMINUM MONUMENTS AND MONUMENT COVERS SHALL BE MADE FROM AN ALUMINUM AND MAGNESIUM ALLOY AS DETERMINED BY THE MANUFACTURER.

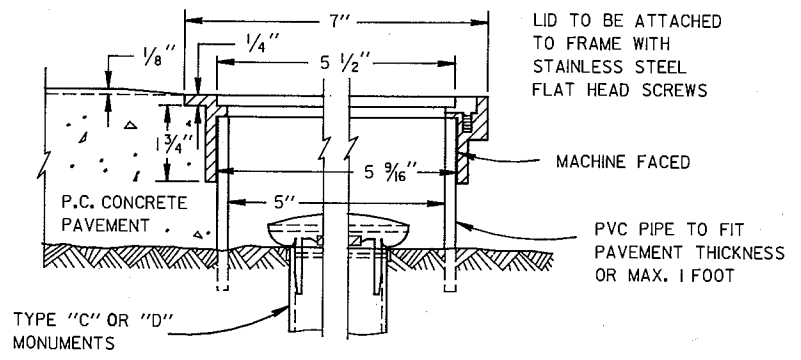
THE MONUMENT COVERS DETAILED ON THIS DRAWING ARE NOT EQUAL ALTERNATES. MONUMENT COVERS SHALL BE CAST IRON UNLESS ALUMINUM IS SPECIFIED ELSEWHERE IN THE CONTRACT.



TOP VIEW



CAST IRON MONUMENT COVER  
(APPROXIMATE WEIGHT - 95 LBS.)



SECTION B-B SECTION A-A  
ALUMINUM MONUMENT COVER  
(APPROXIMATE WEIGHT 2 LBS)  
(FOR CONCRETE PAVEMENT ONLY)

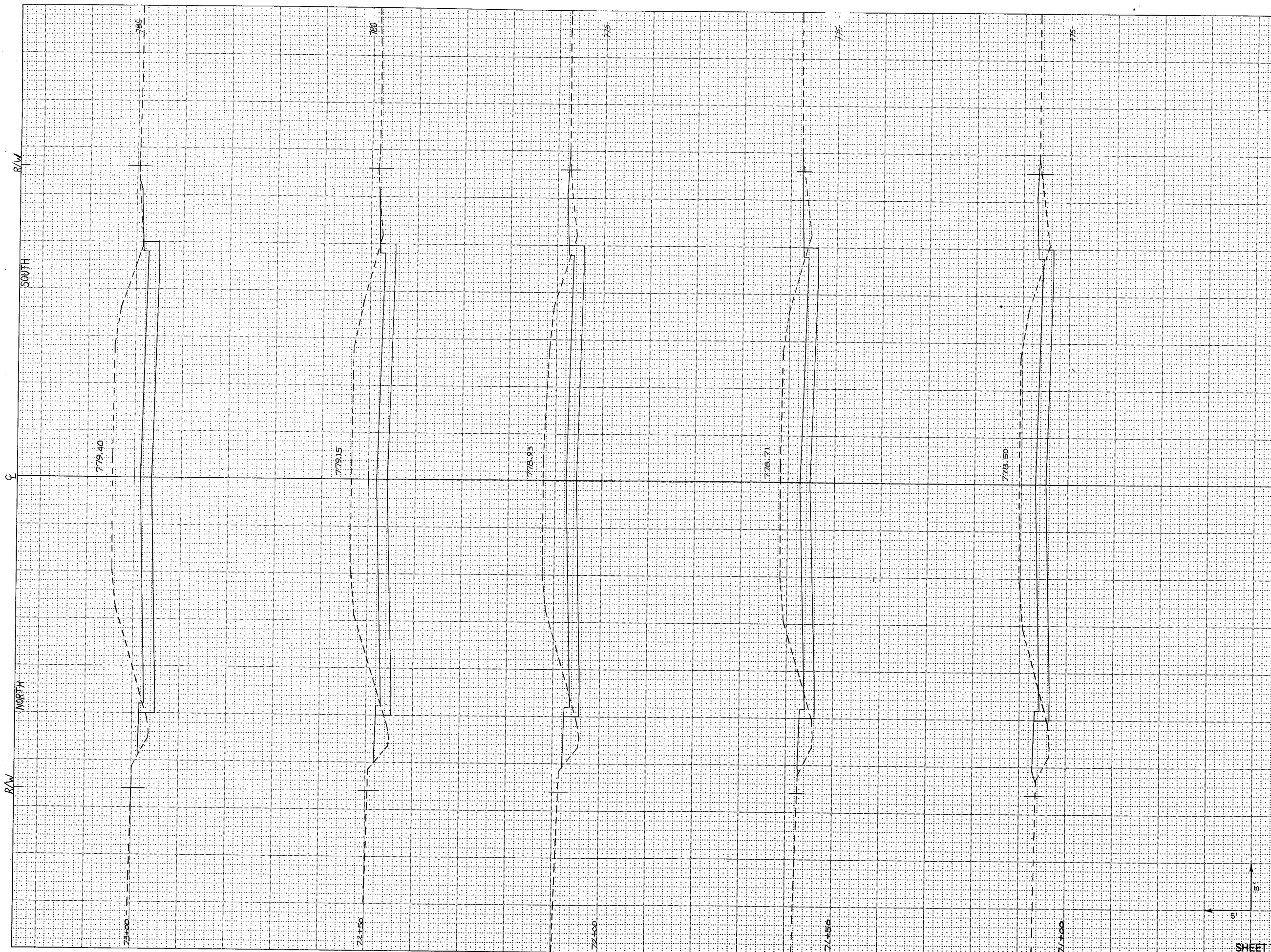
LANDMARK REFERENCE MONUMENTS AND COVERS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 6-18-84 DATE	<i>D. J. Strand</i> CHIEF DESIGN ENGINEER
FHWA	

S.D.D. 16 A 1-4

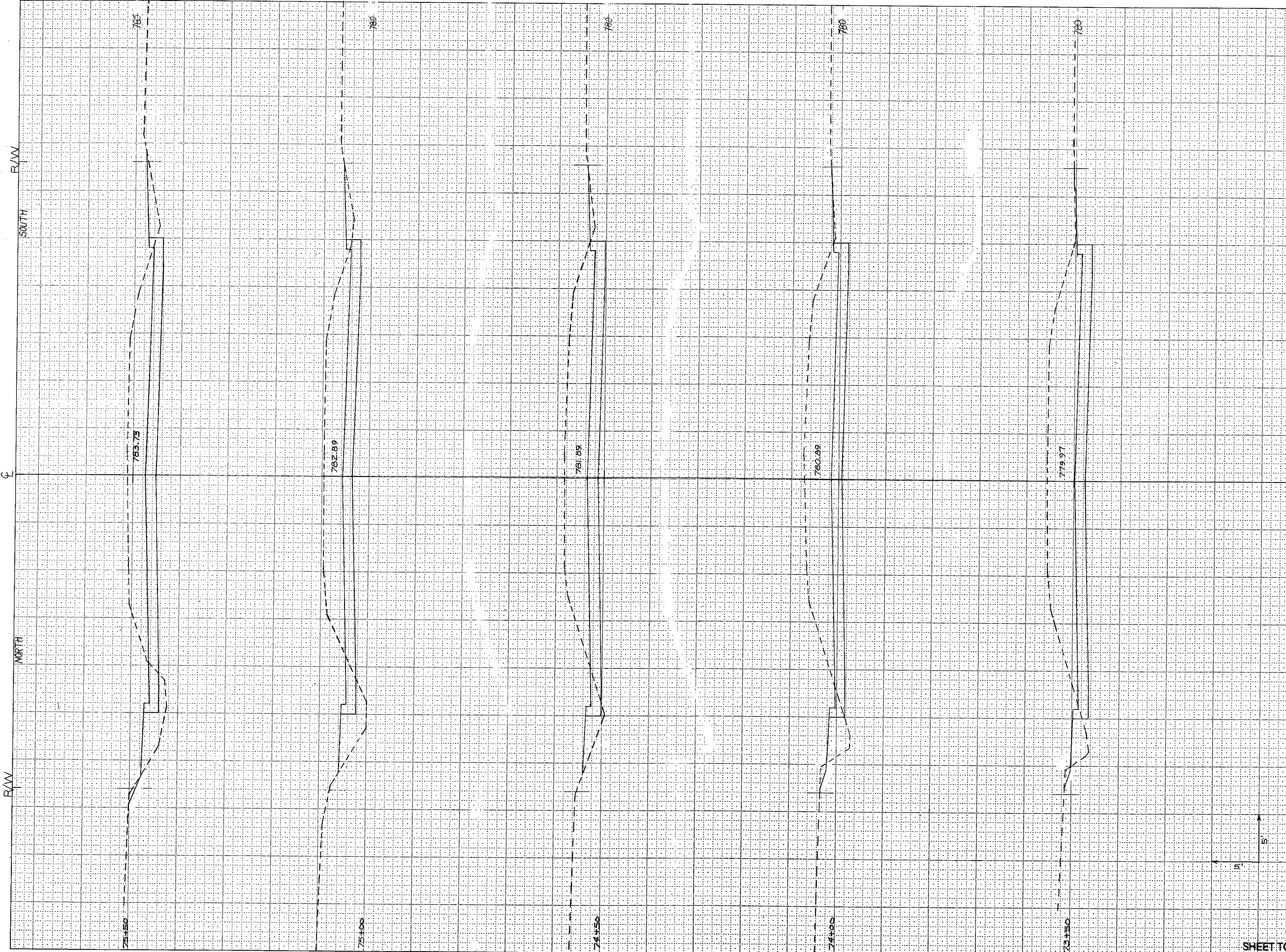
S.D.D. 16 A 1-4



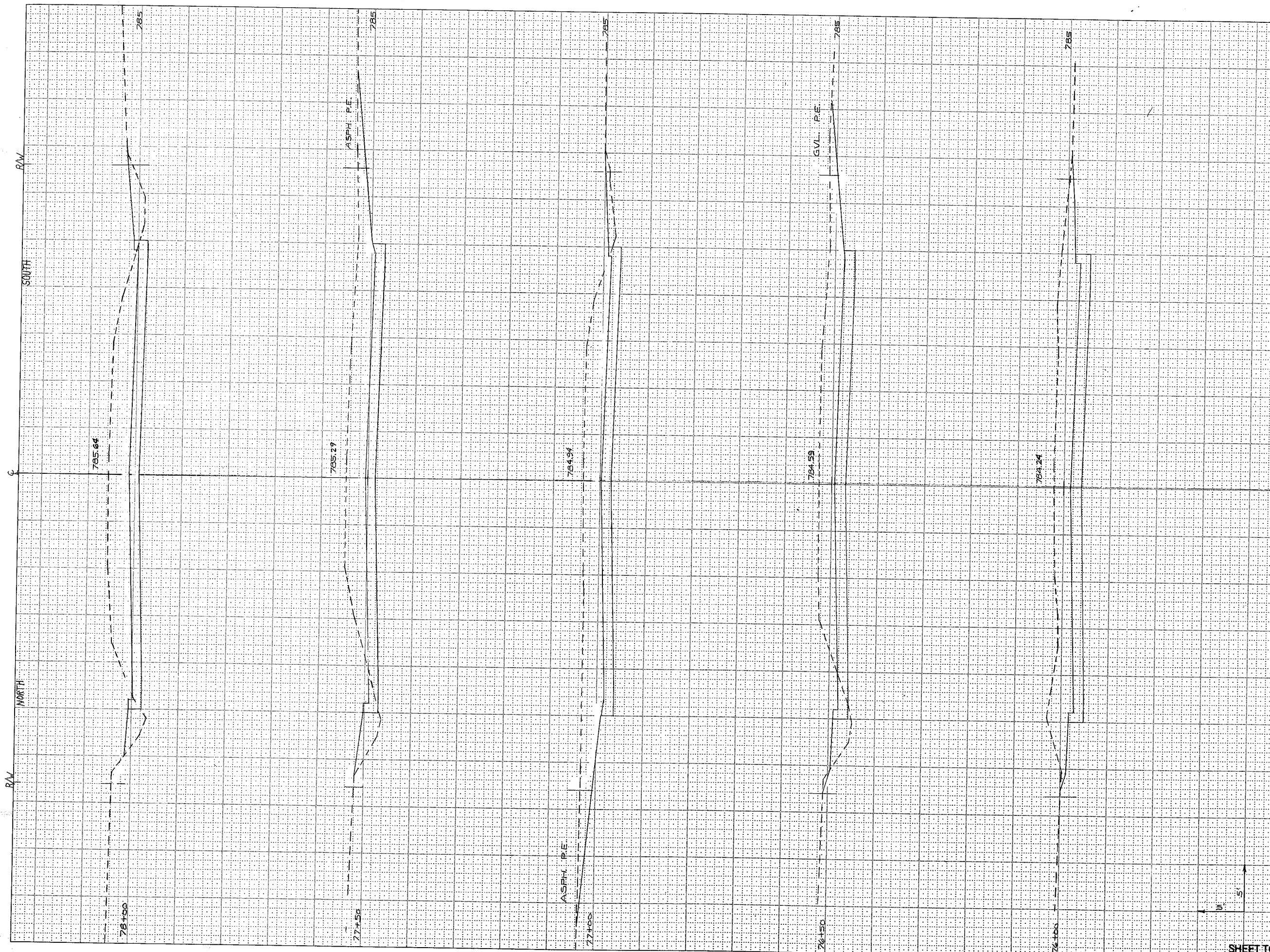




STATE PROJECT NUMBER		SHEET NUMBER	
4629-01-71		91	
STATION	DISTANCE	YARDAGE	
		EXCAVATION	FILL
70+50			
	50	225	17
71+00			
	50	247	22
71+50			
	50	271	19
72+00			
	50	297	17
72+50			
	50	309	9
73+00			
SHEET TOTAL		350	90



STATE PROJECT NUMBER		SHEET NUMBER	
4629-01-71		9.2	
STATION	DISTANCE	YARDAGE	
		EXCAVATION	FILL
UNCL.			
73+00			
50	336		10
73+50			
50	317		15
74+00			
50	287		17
74+50			
50	251		26
75+00			
50	229		35
75+50			
SHEET TOTAL		250	1420
			100



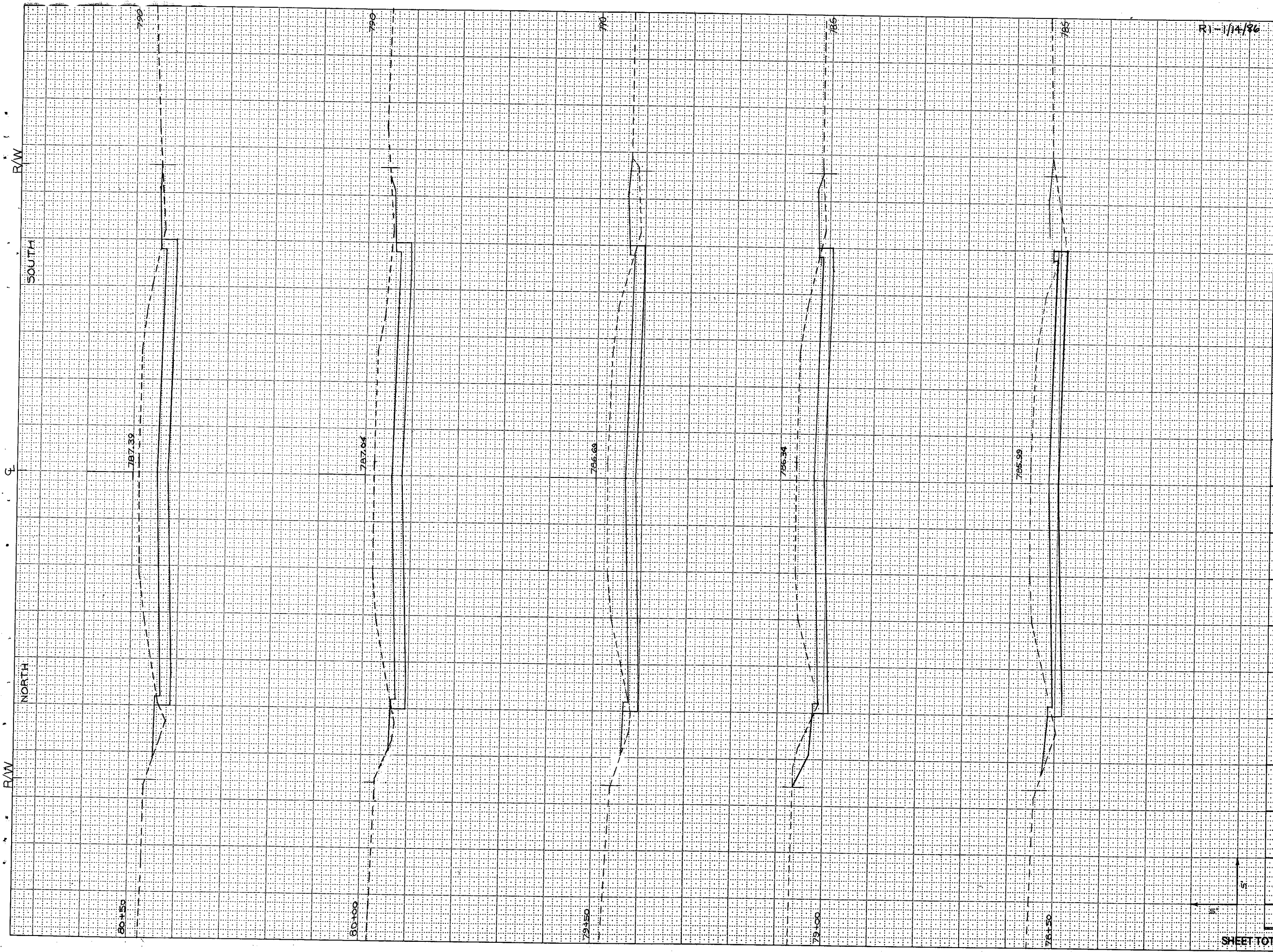
STATE PROJECT NUMBER	SHEET NUMBER
4629-01-71	9.3

STATION	DISTANCE	YARDAGE	
		EXCAVATION	FILL
	UNCL.		
75+50			
50	270		18
76+00			
50	294		7
76+50			
50	286		16
77+00			
50	286		18
77+50			
50	261		25
78+00			

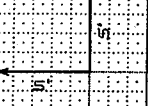
SHEET TOTAL	250	1400	80
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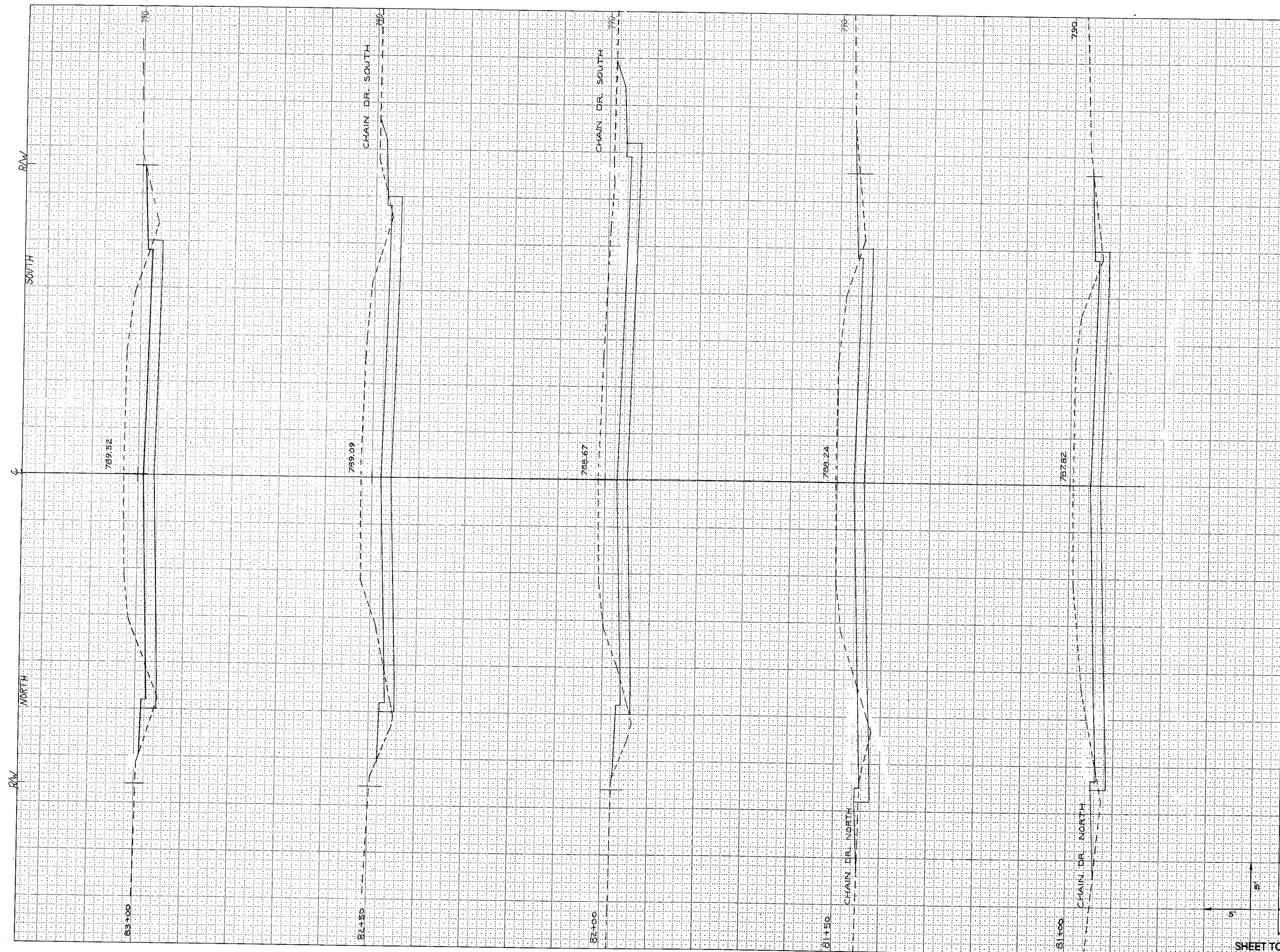
R1-1/14/86

STATE PROJECT NUMBER:	SHEET NUMBER:
4029-01-71	9.4



STATION	DISTANCE	YARDAGE	
		UNCL.	FILL
78+00	50	241	30
78+50	50	240	30
79+00	50	246	16
79+50	50	255	12
80+00	50	264	8
80+50			
SHEET TOTAL		250	90

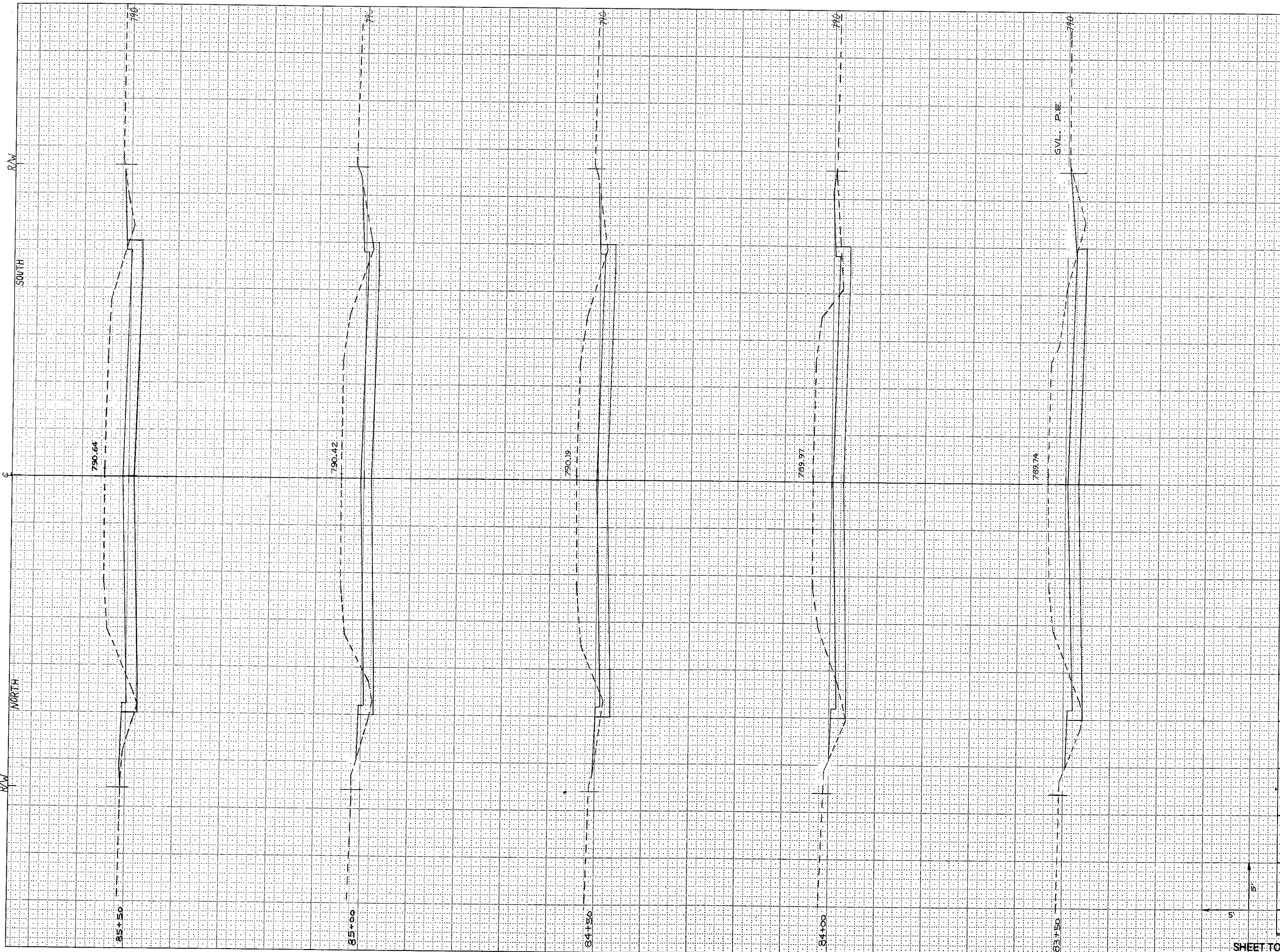




STATE PROJECT NUMBER	SHEET NUMBER
4629-01-71	9.5

STATION	DISTANCE	YARDAGE	
		EXCAVATION	FILL
CHAIN			
80+50			
	50	269	15
81+00			
	50	268	17
81+50			
	50	296	15
82+00			
	50	306	11
82+50			
	50	264	10
83+00			

SHEET TOTAL: 250 17400 70



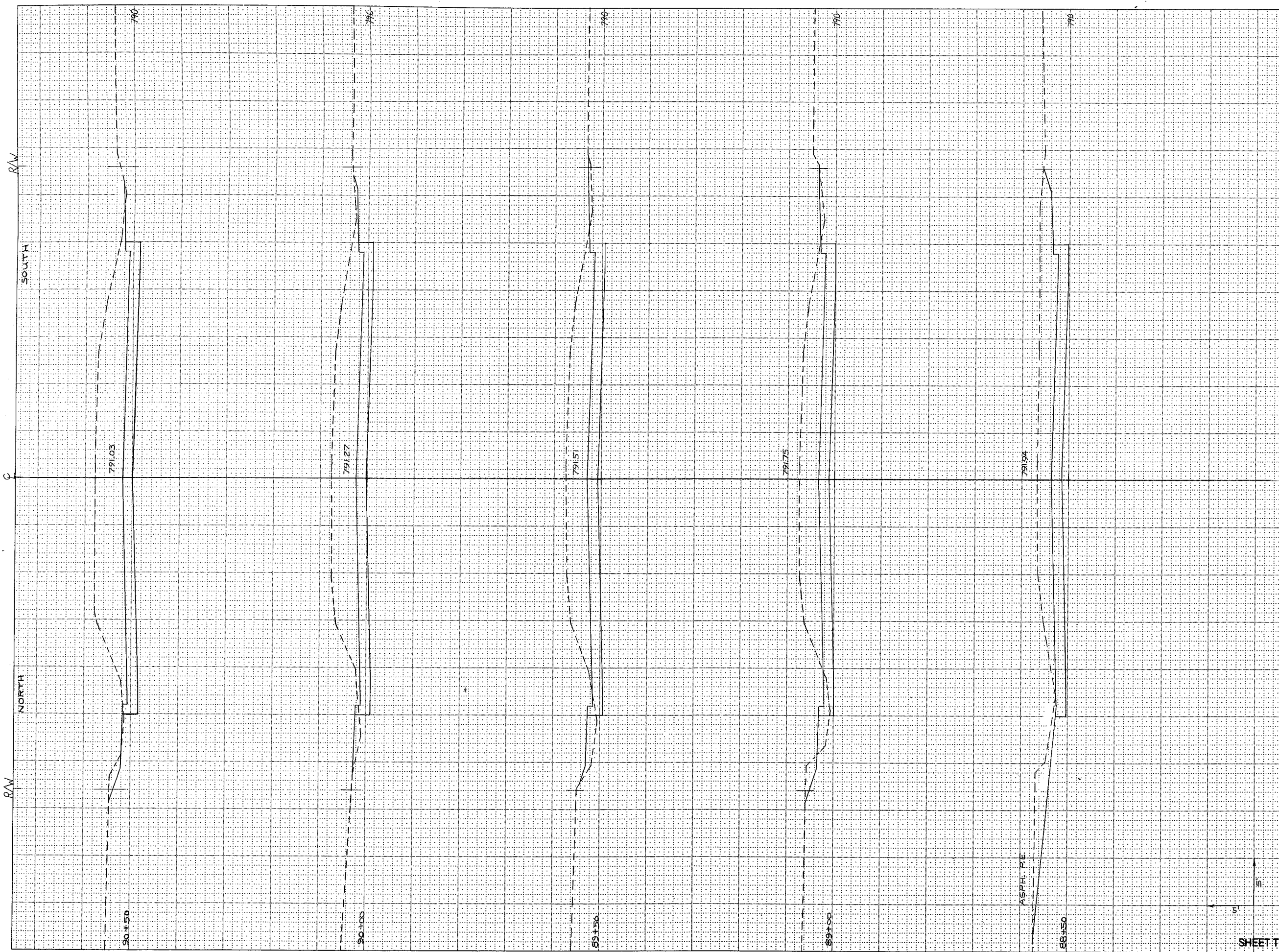
STATE PROJECT NUMBER	SHEET NUMBER
4629-01-71	9.6

STATION	DISTANCE	YARDAGE	
		EXCAVATION	FILL
		UNCL.	
83+00			
	50	247	16
83+50			
	50	243	18
84+00			
	50	251	12
84+50			
	50	255	10
85+00			
	50	254	12
85+50			

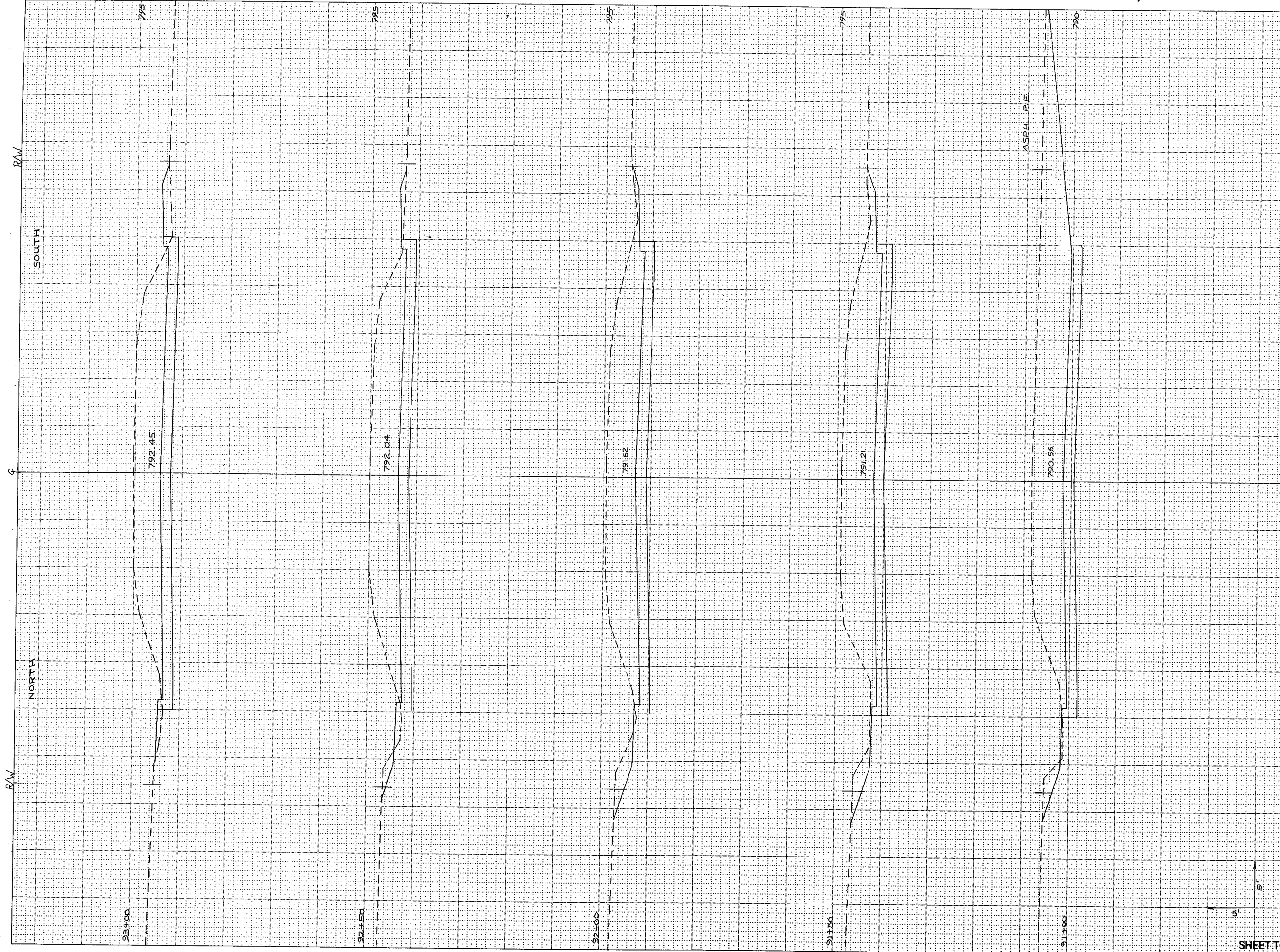
SHEET TOTAL: 250 1238 70





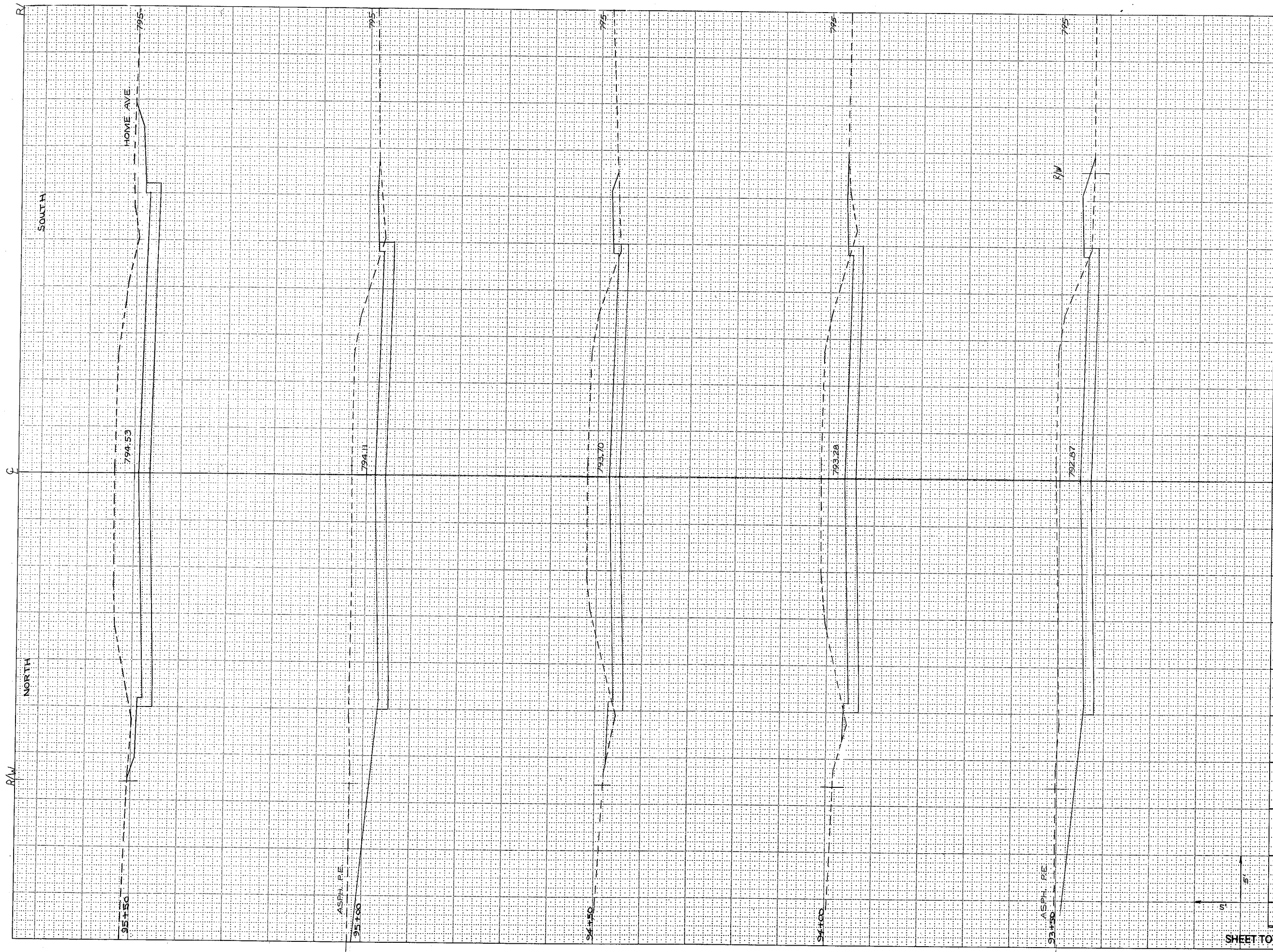


STATE PROJECT NUMBER		SHEET NUMBER	
4629-01-71		9, 8	
STATION	DISTANCE	YARDAGE	
		EXCAVATION	FILL
		UNCL.	
88+00			
	50	274	0
88+50			
	50	270	6
89+00			
	50	264	13
89+50			
	50	293	10
90+00			
	50	325	4
90+50			
SHEET TOTAL		250	30



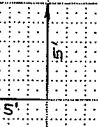
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4629-01-71	9.9

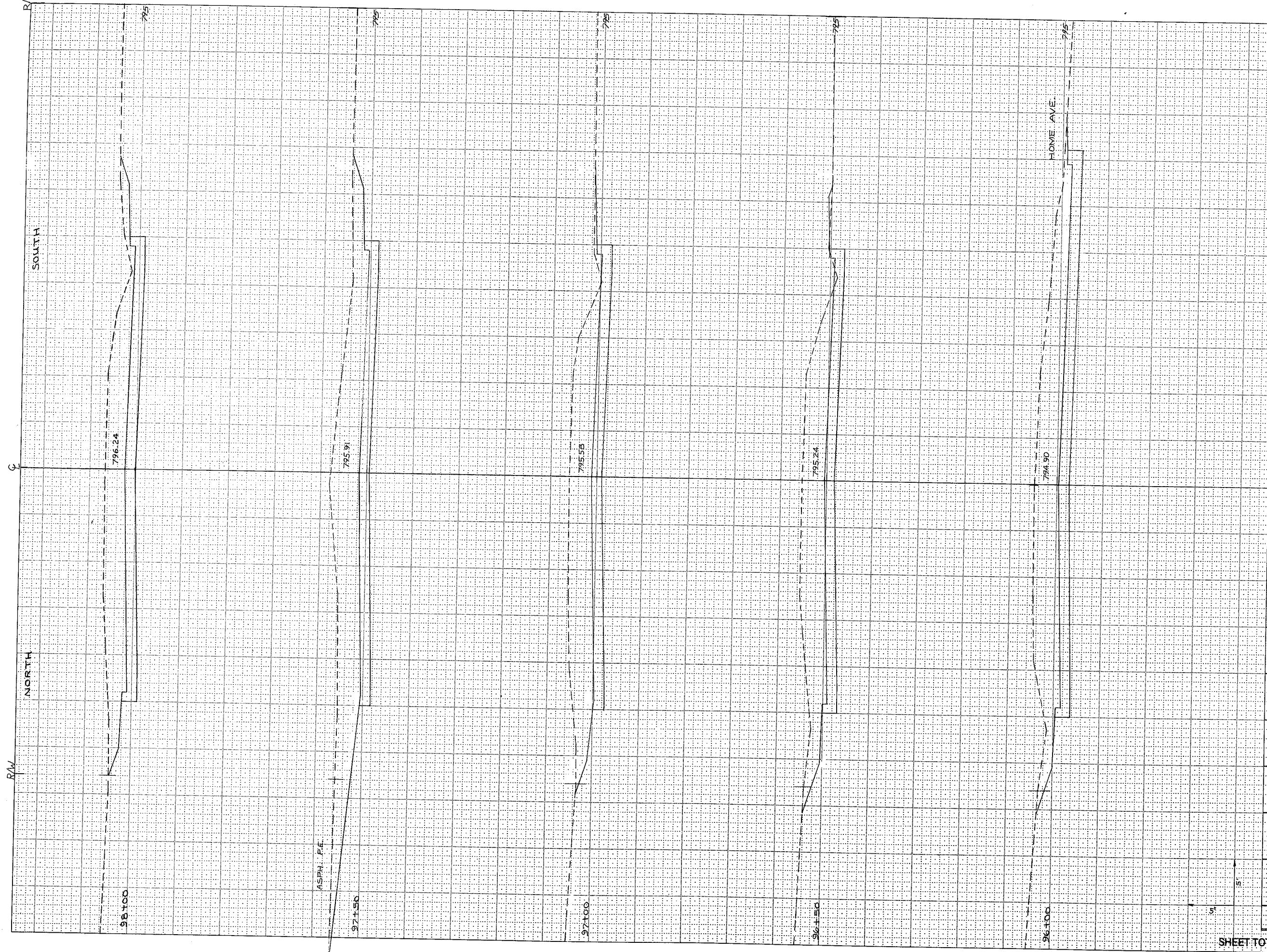
STATION	DISTANCE	YARDAGE	
		EXCAVATION	FILL
90+50	50	409	2
91+00	50	438	3
91+50	50	384	0
92+00	50	352	5
92+50	50	321	12
93+00			
<b>SHEET TOTAL</b>		<b>250</b>	<b>20</b>



STATE PROJECT NUMBER:	SHEET NUMBER:
4629-01-71	9.10

STATION	DISTANCE	YARDAGE	
		EXCAVATION	FILL
93+00	50	356	16
93+50	50	354	14
94+00	50	291	12
94+50	50	346	10
95+00	50	400	4
95+50			
<b>SHEET TOTAL</b>			
		250	60

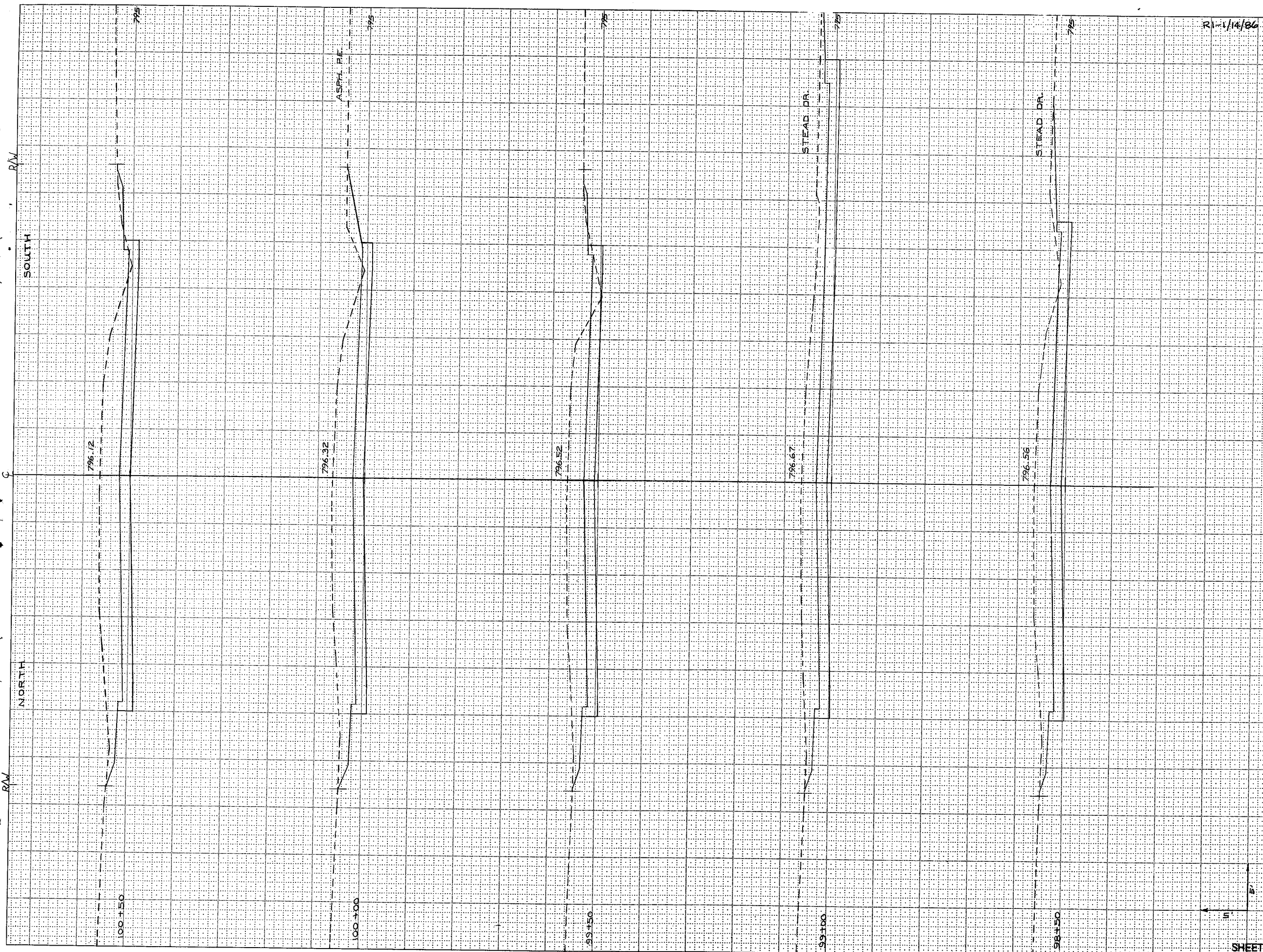




STATE PROJECT NUMBER: 4629-01-71  
 SHEET NUMBER: 7.11

STATION	DISTANCE	YARDAGE	
		UNCL.	FILL
95+50	50	392	0
96+00	50	354	0
96+50	50	317	0
97+00	50	364	0
97+50	50	358	0
98+00			
<b>SHEET TOTAL</b>		<b>1790</b>	<b>0</b>

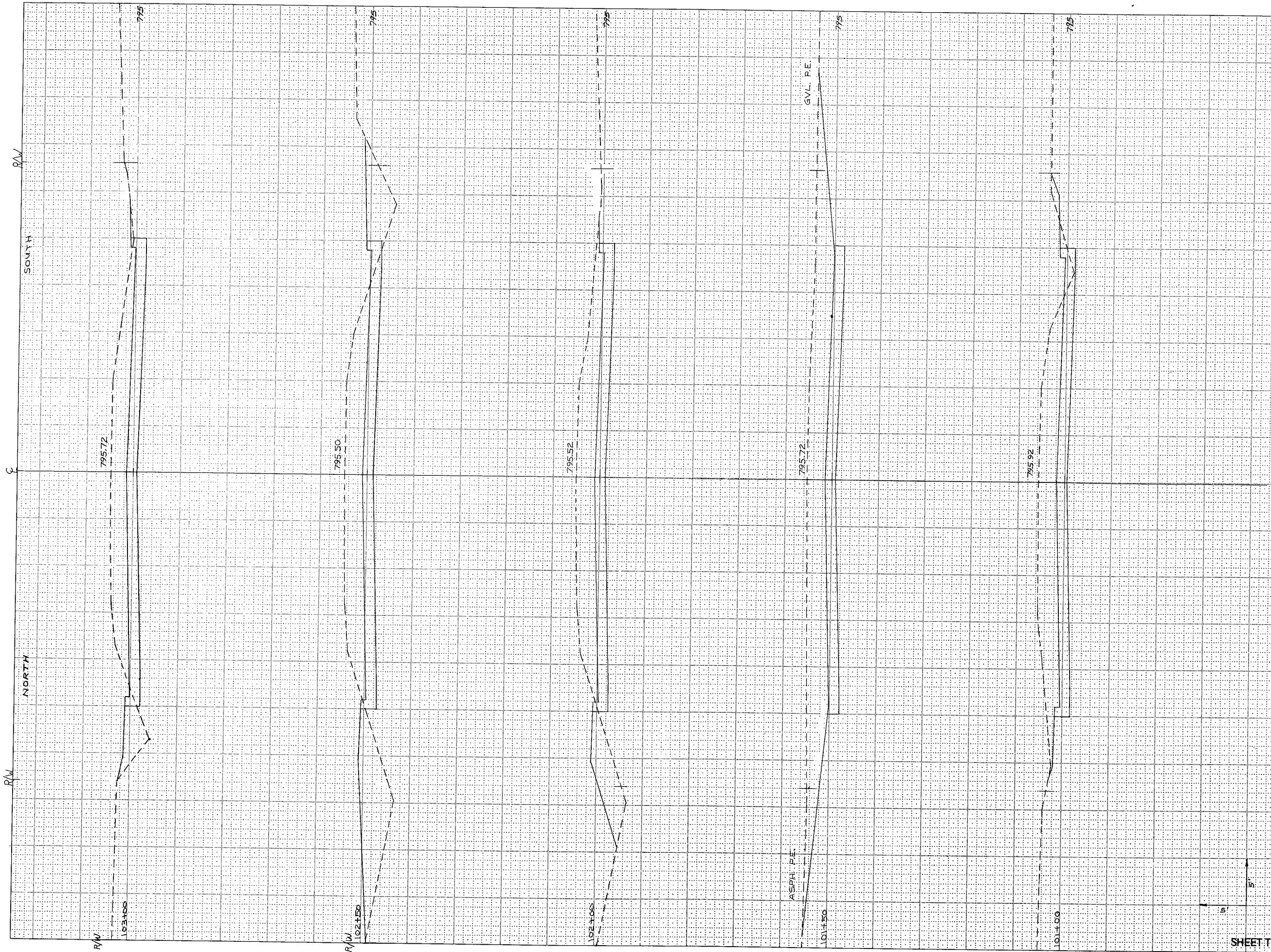
5'  
5'



R1-1/14/86

STATE PROJECT NUMBER	SHEET NUMBER
4629-01-71	9/12

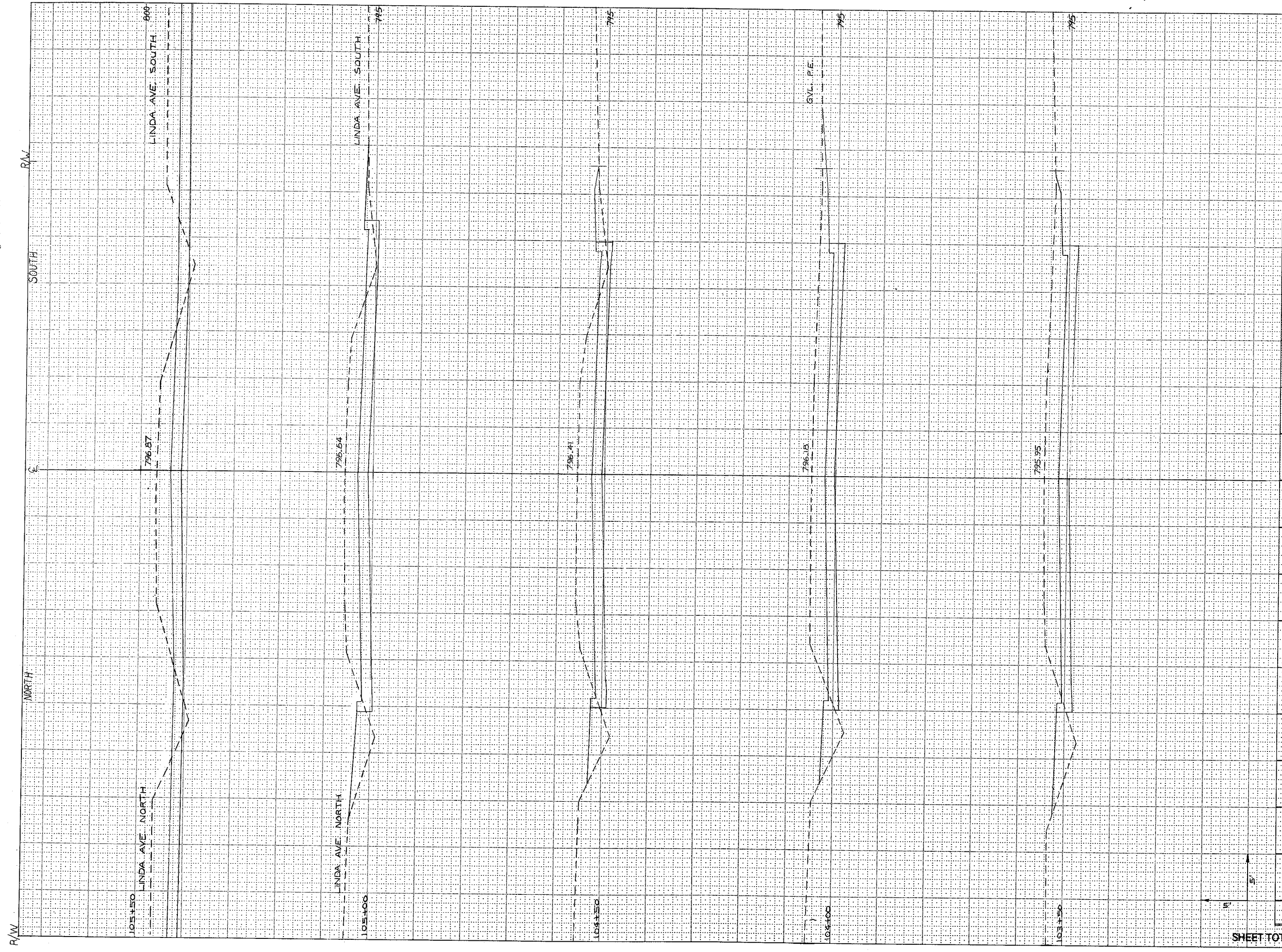
STATION	DISTANCE	YARDAGE	
		EXCAVATION	FILL
98+00	50	289	0
98+50	50	300	0
99+00	50	293	1
99+50	50	281	1
100+00	50	294	1
100+50			
<b>SHEET TOTAL</b>		250	1760



STATE PROJECT NUMBER: 4429-01-71

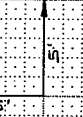
SHEET NUMBER: 9/13

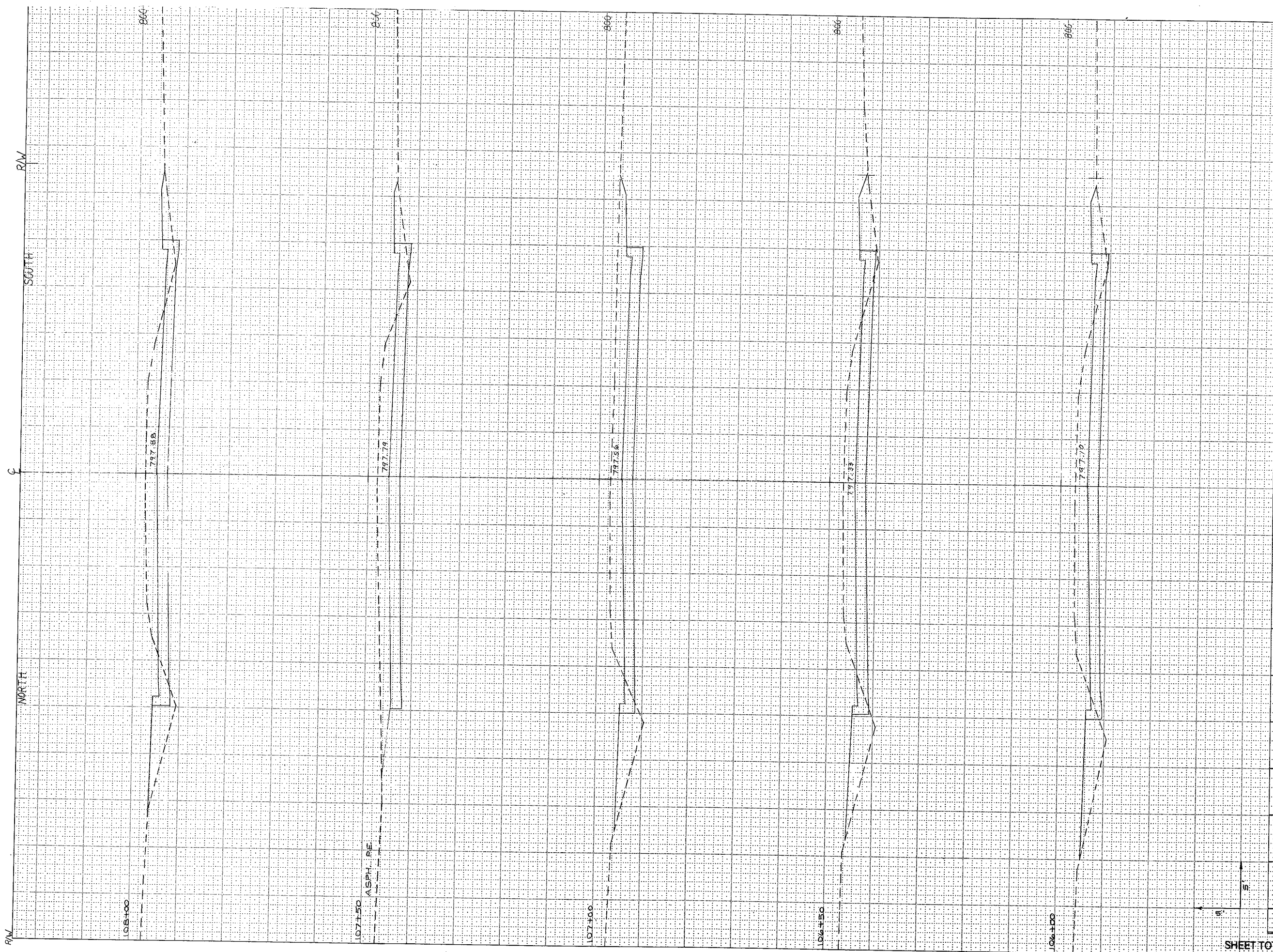
STATION	DISTANCE	YARDAGE	
		EXCAVATION	FILL
100+50	50	269	4
101+00	50	320	3
101+50	50	314	23
102+00	50	252	90
102+50	50	240	80
103+00			
<b>SHEET TOTAL</b>		2358	200



STATE PROJECT NUMBER	SHEET NUMBER
4629-01-71	9.14

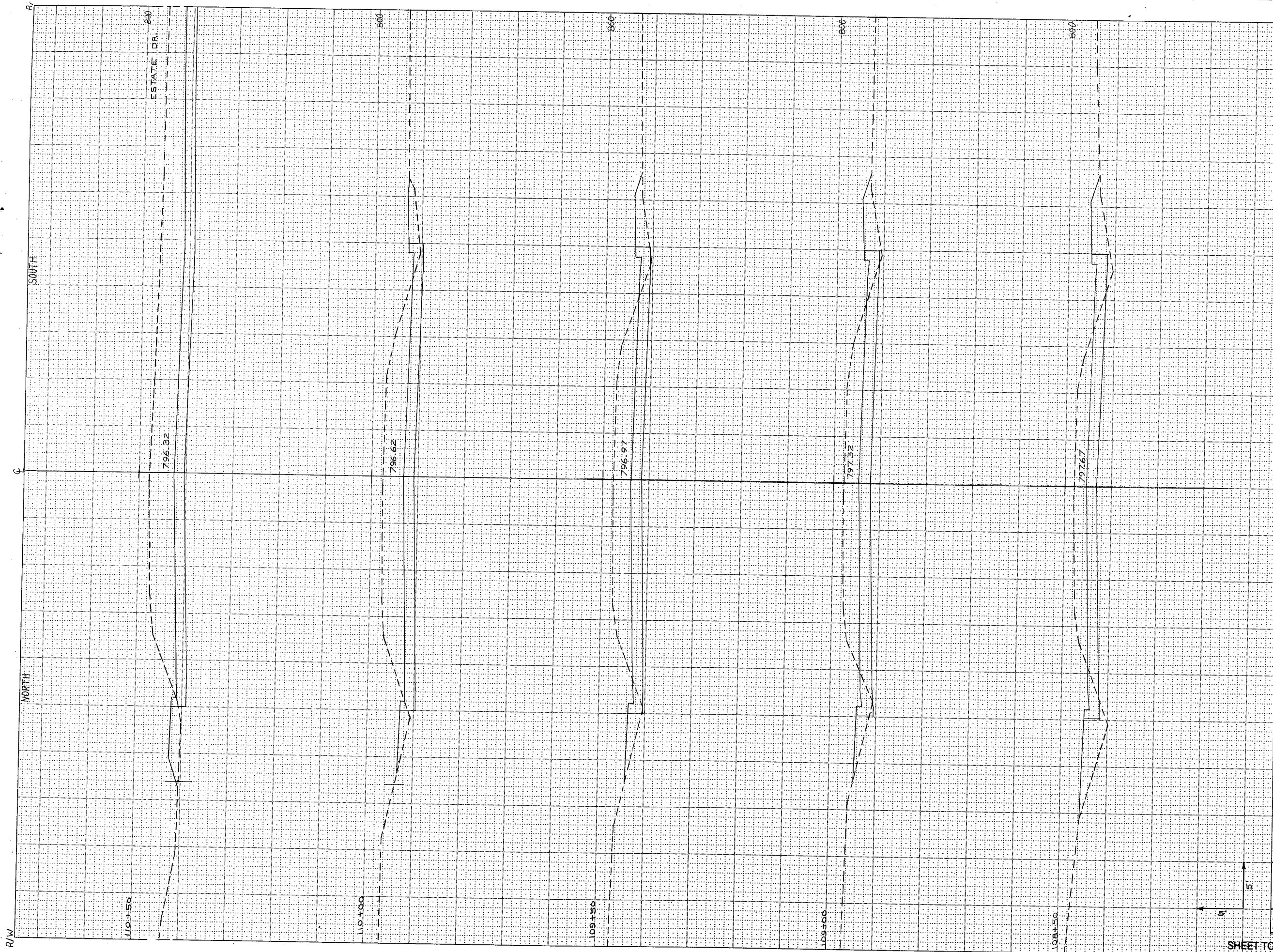
STATION	DISTANCE	YARDAGE	
		EXCAVATION	
		UNCL	FILL
103+00			
50	243		29
103+50			
50	248		25
104+00			
50	229		24
104+50			
50	211		30
105+00			
50	296		18
105+50			
SHEET TOTAL		250	130





STATE PROJECT NUMBER		SHEET NUMBER	
429-01-71		9.15	
STATION	DISTANCE	YARDAGE	
		EXCAVATION	FILL
		LANCL.	
105+50			
	50	281	28
106+00			
	50	175	54
106+50			
	50	194	45
107+00			
	50	206	21
107+50			
	50	175	23
108+00			
SHEET TOTAL		250	170



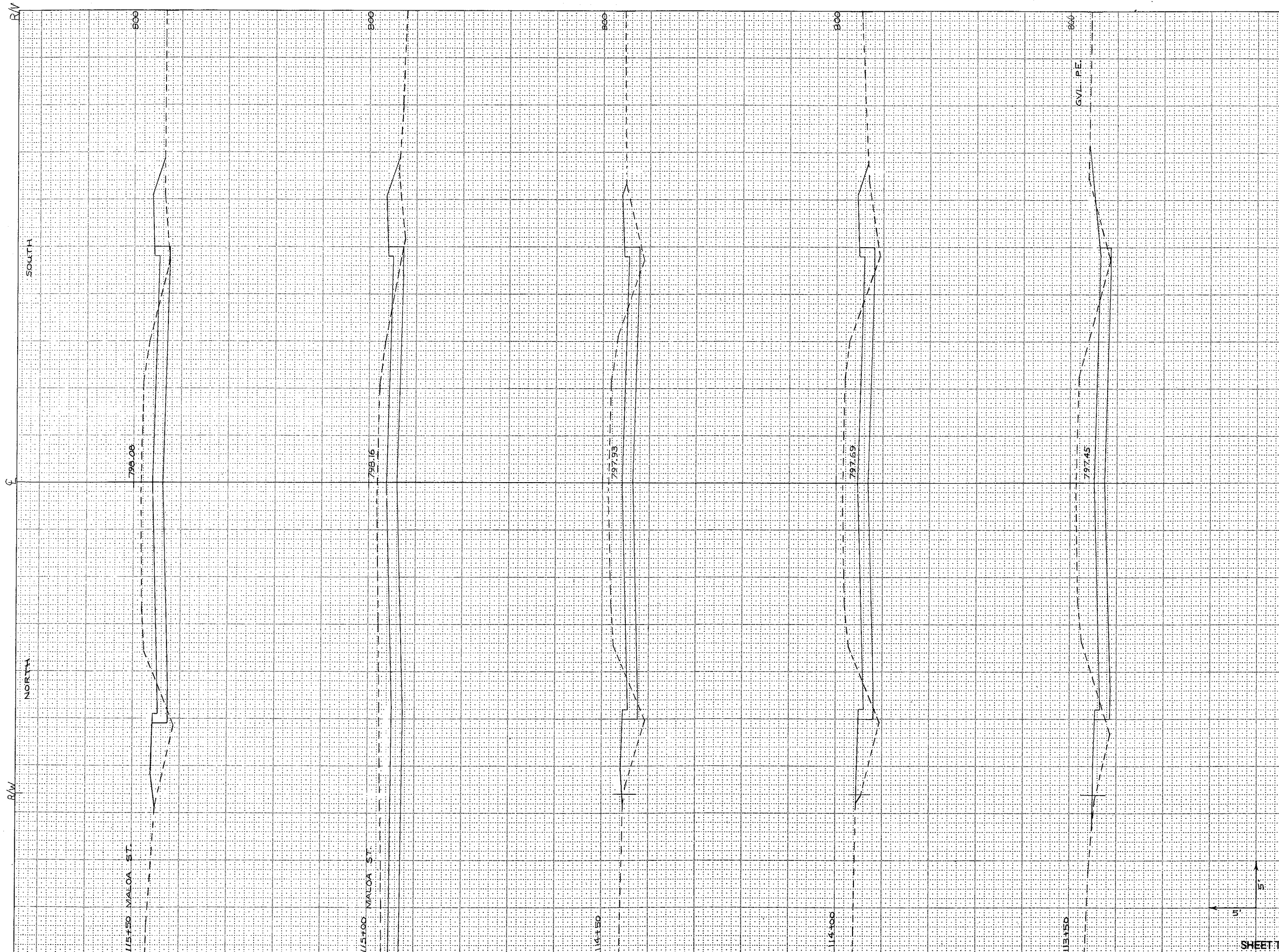


STATE PROJECT NUMBER:	SHEET NUMBER:
4629-01-71	9.16

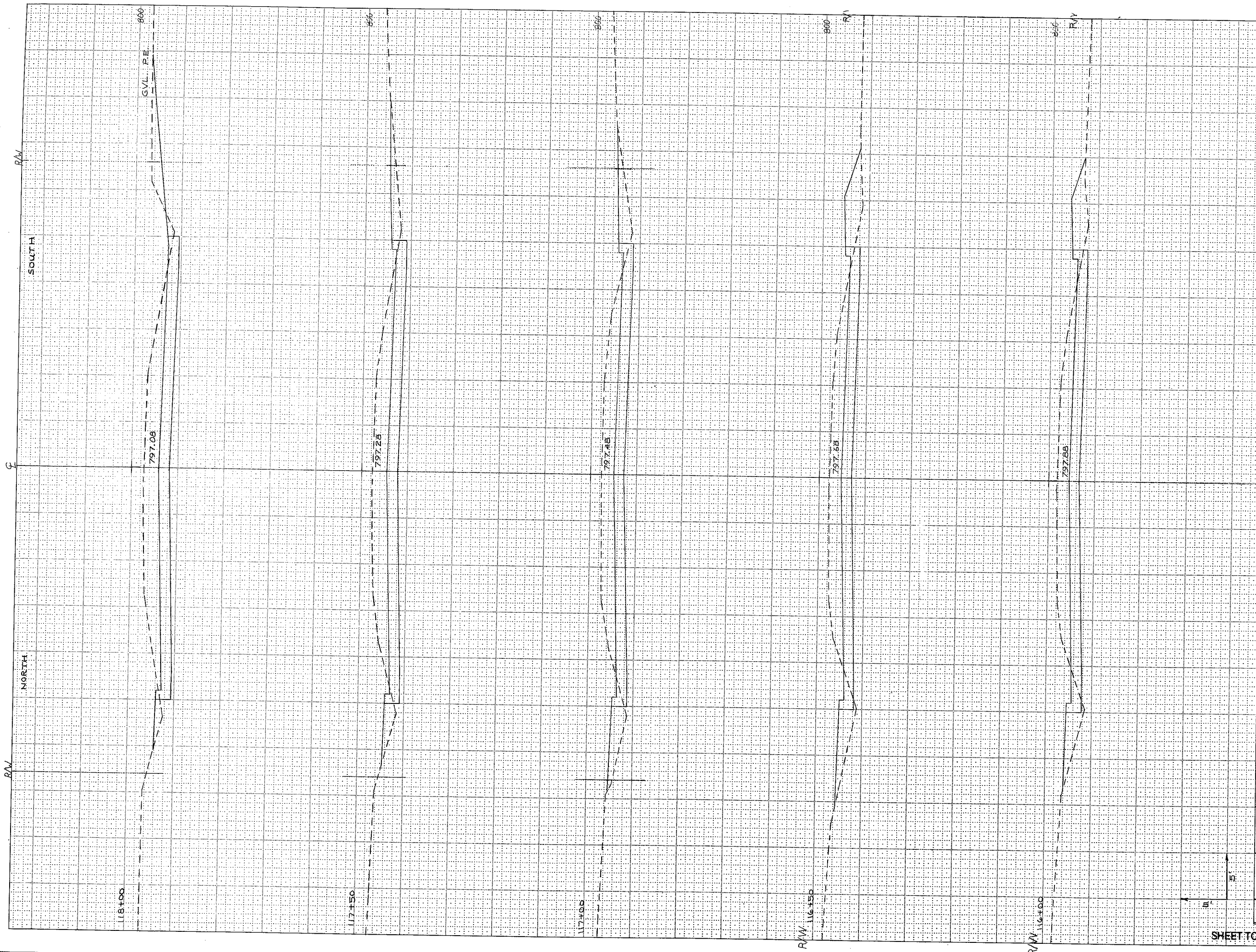
STATION	DISTANCE	YARDAGE	
		EXCAVATION	FILL
108+50	50	161	44
108+50	50	370	39
109+00	50	215	27
109+50	50	241	22
110+00	50	366	18

SHEET TOTAL: 250 1350 150





STATE PROJECT NUMBER		SHEET NUMBER	
4628-01-71		9/8	
STATION	DISTANCE	YARDAGE	
		EXCAVATION	FILL
		UNCL.	
113+00			
	50	244	27
113+50			
	50	211	31
114+00			
	50	190	40
114+50			
	50	232	29
115+00			
	50	227	32
115+50			
SHEET TOTAL		250	160



STATE PROJECT NUMBER		SHEET NUMBER	
4429-01-71		9.19	
STATION	DISTANCE	YARDAGE	
		EXCAVATION	FILL
		UNCL	
115+50	50	177	38
116+00	50	187	38
116+50	50	195	40
117+00	50	206	31
117+50	50	219	15
118+00			
<b>SHEET TOTAL</b>		250	160



