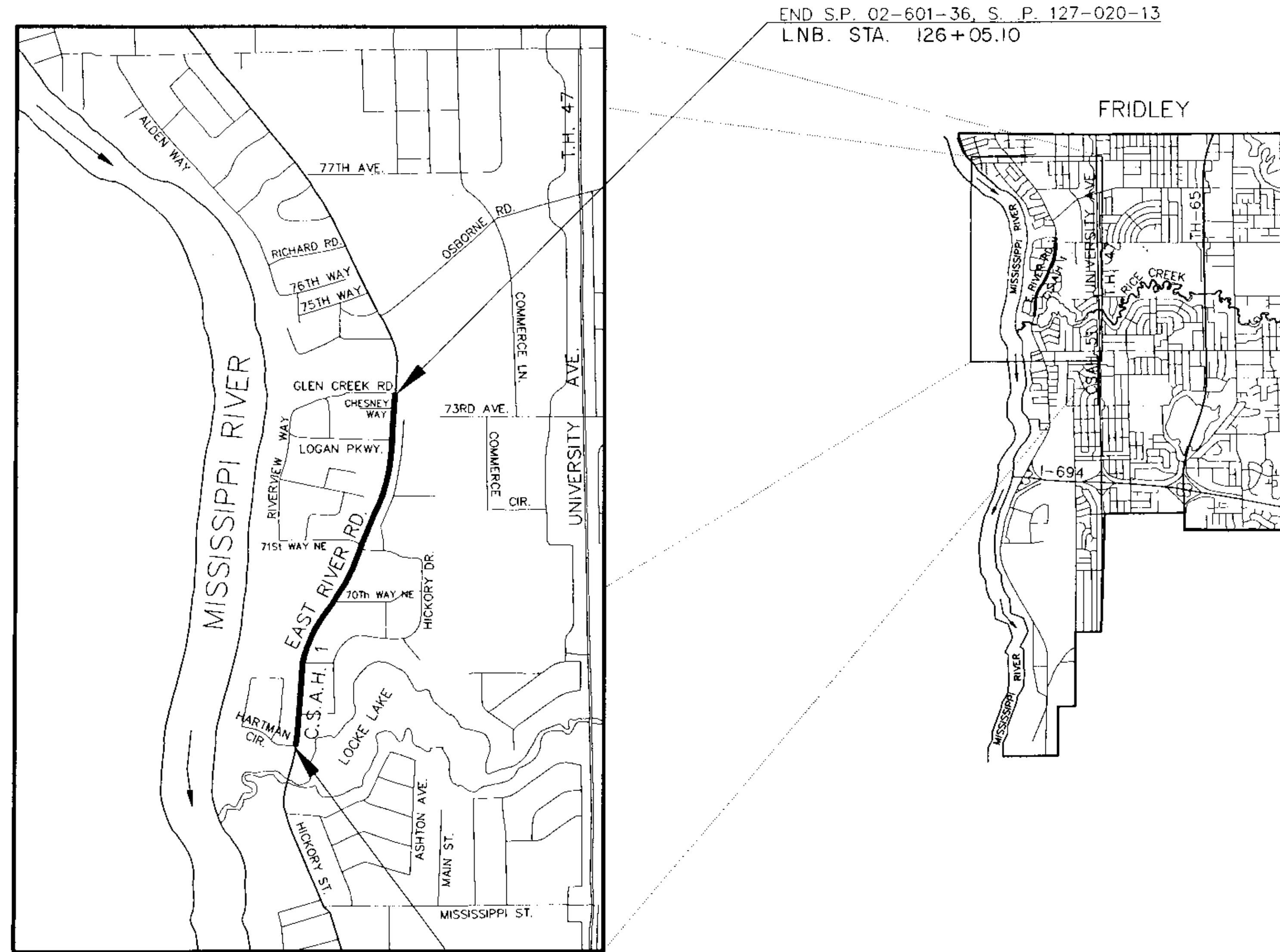


MINNESOTA DEPARTMENT OF TRANSPORTATION

ANOKA COUNTY

CONSTRUCTION PLAN FOR GRADING, DRAINAGE, AGGREGATE BASE, BITUMINOUS SURFACING, CURB & GUTTER AND SIGNAL SYSTEM.
 LOCATED ON C.S.A.H. 1 BETWEEN HARTMAN CIRCLE AND GLEN CREEK RD. (Geographic Description)

STATE PROJ. NO. 02-601-36 STATE PROJ. NO. 127-020-13
 GROSS LENGTH 4000.94 FEET 0.758 MILES GROSS LENGTH 4000.94 FEET 0.758 MILES
 BRIDGES-LENGTH FEET MILES BRIDGES-LENGTH FEET MILES
 EXCEPTIONS-LENGTH FEET MILES EXCEPTIONS-LENGTH FEET MILES
 NET LENGTH 4000.94 FEET 0.758 MILES NET LENGTH 4000.94 FEET 0.758 MILES
 NOTE: PROJECT LENGTH IS BASED ON LNB. NOTE: PROJECT LENGTH IS BASED ON LNB.



END S.P. 02-601-36, S. P. 127-020-13
 LNB. STA. 126+05.10
 BEGIN S.P. 02-601-36, S. P. 127-020-13
 LNB. STA. 86+04.16

MINN. PROJ. NO. STP 5007 (012)

MINN. PROJ. NO.

GOVERNING SPECIFICATIONS

THE 1988 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" AS AMENDED BY THE JANUARY 2, 1991 SUPPLEMENTAL SPECIFICATIONS SHALL GOVERN.

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2 - 3	STATEMENT OF ESTIMATED QUANTITIES
4 - 6	TABULATION CHARTS
7	EARTHWORK SUMMARY & CONSTRUCTION NOTES
8	STANDARD DETAILS
9 - 13	RETAINING WALL DETAILS
14 - 15	EROSION CONTROL DETAILS
16 - 17	TYPICAL SECTIONS
18 - 19	ALIGNMENT PLAN AND TABULATION
20 - 21	EXISTING CONDITIONS AND REMOVAL PLAN
22 - 23	SUPERELEVATION CHARTS
24 - 26	PLAN AND PROFILE SHEETS
27 - 31	DRAINAGE PLAN AND TABULATION
32 - 35	TRAFFIC SIGNAL SYSTEM
36 - 39	SIGNING & STRIPING PLAN AND TAB
40 - 52	CROSS-SECTION
53 - 54	DETOUR LAYOUT
55 - 70	TRAFFIC CONTROL PLANS

THIS PLAN CONTAINS 70 SHEETS

DESIGN DESIGNATION

EN18 ₂₀	3,518,500
R VALUE	65
ADT (1994)=	19,746
Proj. ADT (2014)=	33,568
Proj. HCADT (2014)=	1,571
Soil Factor	N/A
10 TON DESIGN	
Shoulder Width	8 FT.

Functional Classification ARTERIAL-HIGH DENSITY
 No. of Traffic Lanes 4 No. of Parking Lanes 0
 Design Speed 50 MPH
 Based on Stopping Sight Distance
 Height of eye 3.5 Height of object 0.5
 Design Speed not achieved at: N/A
 STA. TO STA. MPH
 STA. TO STA. MPH
 STA. TO STA. MPH

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

DATE 2/2/94 REG. NO. 20235 ENGR. *Douglas W. Jensen*
 DESIGN SQUAD K. JOHNSON

Recommended for Approval *Michael R. Kelly* 7/23, 1994
 Recommended for Approval *James P. Kelly* 2/23, 1994
 Recommended for Approval *Steve P. Jensen* 2/24, 1994
 Recommended for Approval *Jan A. Olson* 2/23, 1994
 Approved 2/24, 1994 *Paul R. Kuntz*
 Approved 2/23, 1994 *William J. Jensen*
 Recommended for Approval *Maury Beerlinger* 3/25, 1994
 Recommended for Approval *Michael R. Kelly* 8/26, 1994
 Recommended for Approval *Steven S. Embury* 9/7, 1994
 Approved 9-7, 1994 *Patricia S. Murphy*

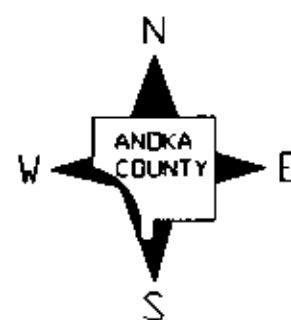
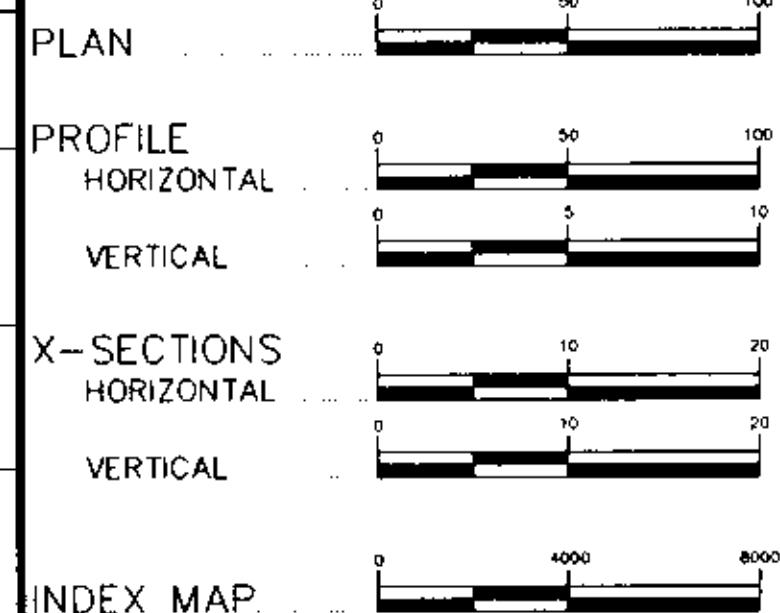
PLAN SYMBOLS

- COUNTY LINE
- TOWNSHIP OR RANGE LINE
- SECTION LINE
- QUARTER LINE
- SIXTEENTH LINE
- RIGHT OF WAY LINE
- SCOPE EASEMENT
- PRESENT RIGHT OF WAY
- PROPERTY LINE
- CORPORATE OR CITY LIMITS
- RETAINING WALL
- RAILROAD
- RAILROAD RIGHT OF WAY
- RIVER OR CREEK
- DRAINAGE DITCH
- CULVERT
- DROP INLET
- GAUDD RAIL
- BARBED WIRE FENCE
- WOVEN WIRE FENCE
- CHAIN LINK FENCE
- WOOD FENCE
- STONE WALL OR FENCE
- HEDGE
- LOWLAND
- TIMBER
- ORCHARD
- BRUSH
- NURSERY
- CATTLE GAULD
- OVERPASS (Highway Over)
- UNDERPASS (Highway Under)
- BRIDGE
- BUILDING (One Story Frame)
- F-FRAME C-CONCRETE
- S-STONE T-TILE
- B-BRICK ST-STUCCO
- RAILROAD CROSSING BELL
- RAILROAD CROSSING GATE
- MANHOLE
- CATCH BASIN
- FIRE HYDRANT
- CAST IRON MONUMENT
- IRON PIN
- GRAVEL PIT
- SAND PIT
- BORROW PIT
- ROCK QUARRY

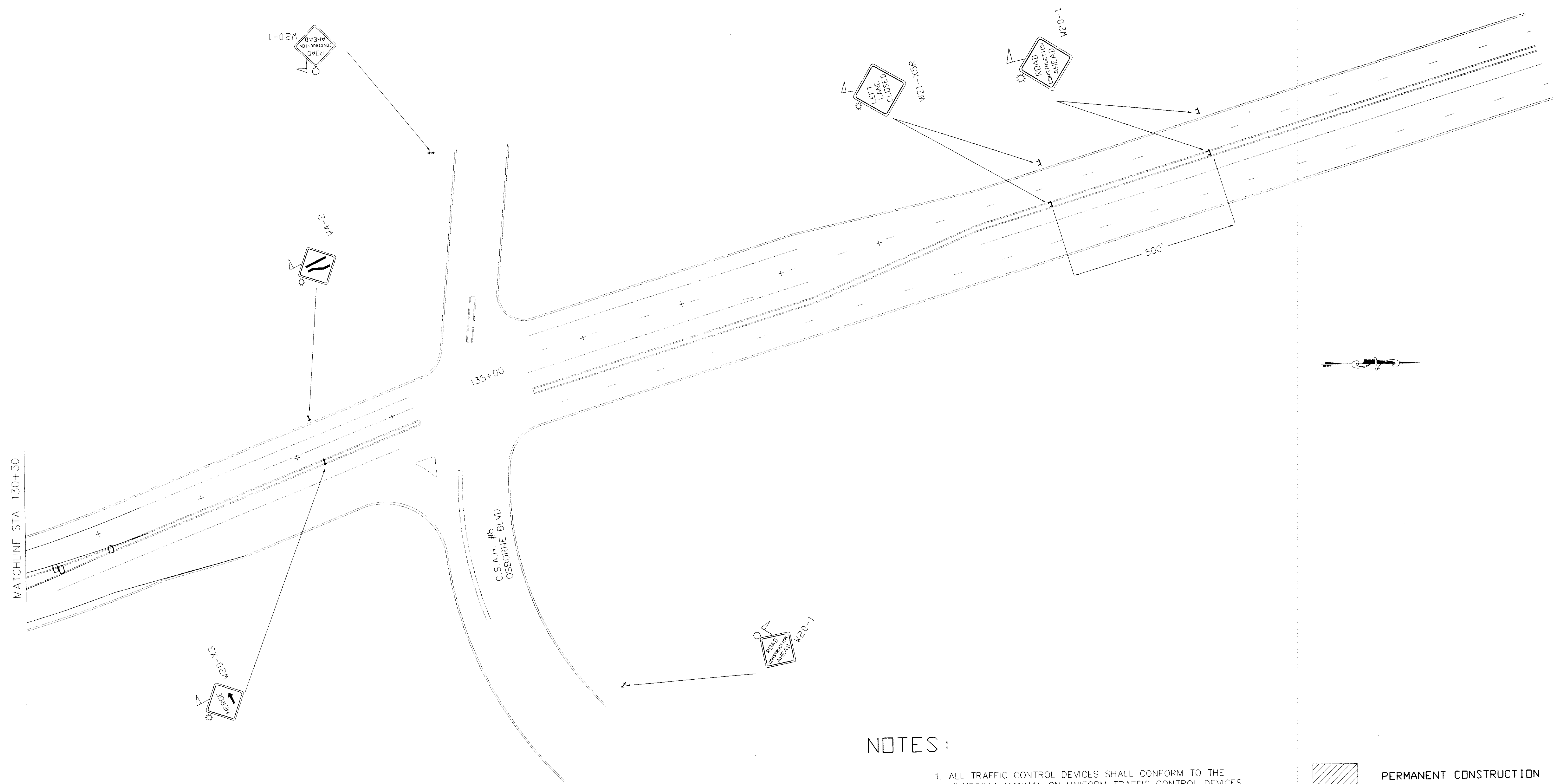
UTILITY SYMBOLS

- POWER POLE LINE
- TELEPHONE OR TELEGRAPH POLE LINE
- JOINT TELEPHONE & POWER ON POWER POLES
- ON TELEPHONE POLES
- ANCHOR
- STEEL TOWER
- STREET LIGHT
- PEDESTAL (Cable Terminal)
- GAS MAIN
- WATERMAIN
- TELEPHONE CABLE IN CONDUIT
- ELECTRIC CABLE IN CONDUIT
- TELEPHONE MANHOLE
- ELECTRIC MANHOLE
- BURIED TELEPHONE CABLE
- BURIED ELECTRIC CABLE
- AERIAL TELEPHONE CABLE
- SEWER (Sanitary or Storm)
- SEWER MANHOLE

SCALES



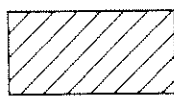
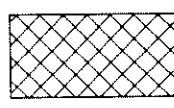

REVISIONS	DATE	BY



- TRAFFIC**
- NB AND SB TRAFFIC ON NEW ROADWAY WITH EXCEPTION OF INTERIOR LANES ALONG CENTER ISLAND MEDIANS AT PROJECT TERMINI.
- CONSTRUCTION**
- CONSTRUCT CENTER ISLAND MEDIANS AND INTERIOR LANES AT PROJECT TERMINI. MEDIAN AND INTERIOR LANES AT PROJECT TERMINI

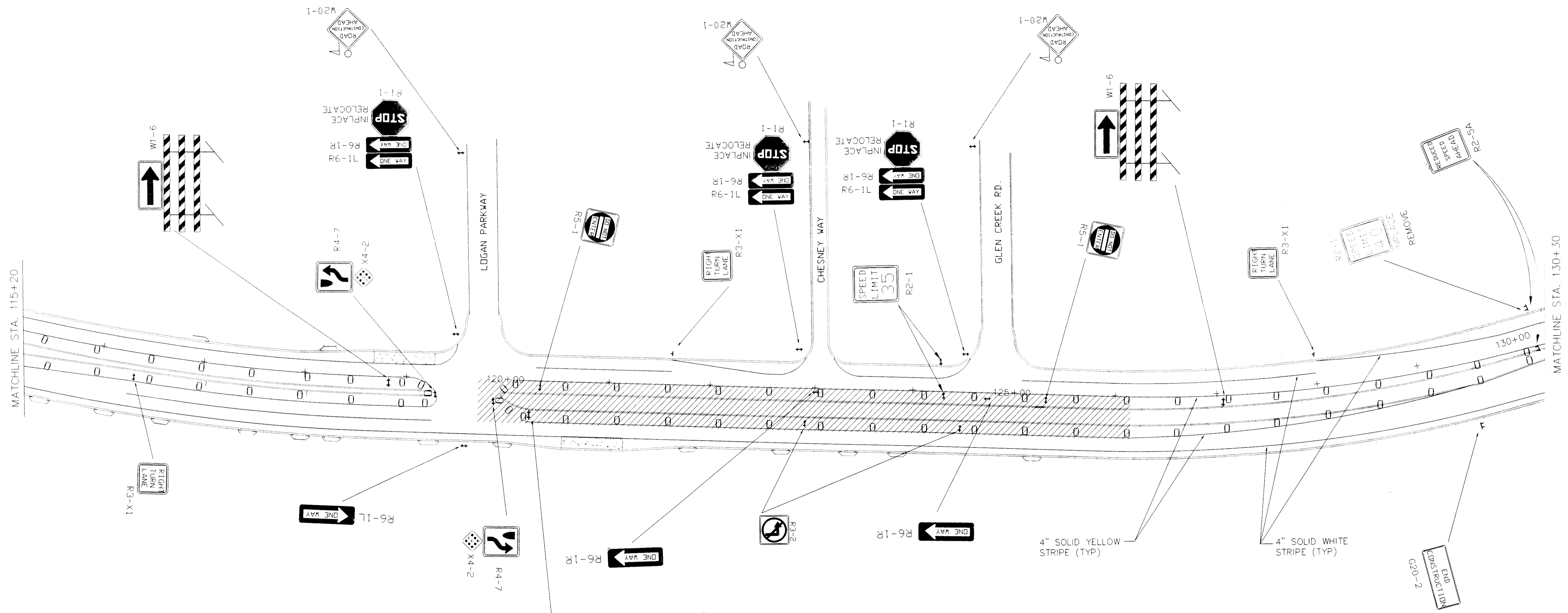
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4. PAVEMENT MARKINGS IN ALL TAPER AREAS SHALL HAVE TEMPORARY RAISED PAVEMENT MARKERS AT 10' INTERVALS. STA. 130+30 TO STA. 154+70

	PERMANENT CONSTRUCTION
	TEMP. BIT. CONSTRUCTION
	REFLECTORIZED DRUM-LIKE CHANNELIZER

**STAGE 4
TRAFFIC CONTROL**




REVISIONS		
DATE	BY	BY
8/9/94	DM	



- TRAFFIC**
- NB AND SB TRAFFIC ON NEW ROADWAY WITH EXCEPTION OF INTERIOR LANES ALONG CENTER ISLAND MEDIANS AT PROJECT TERMINI.
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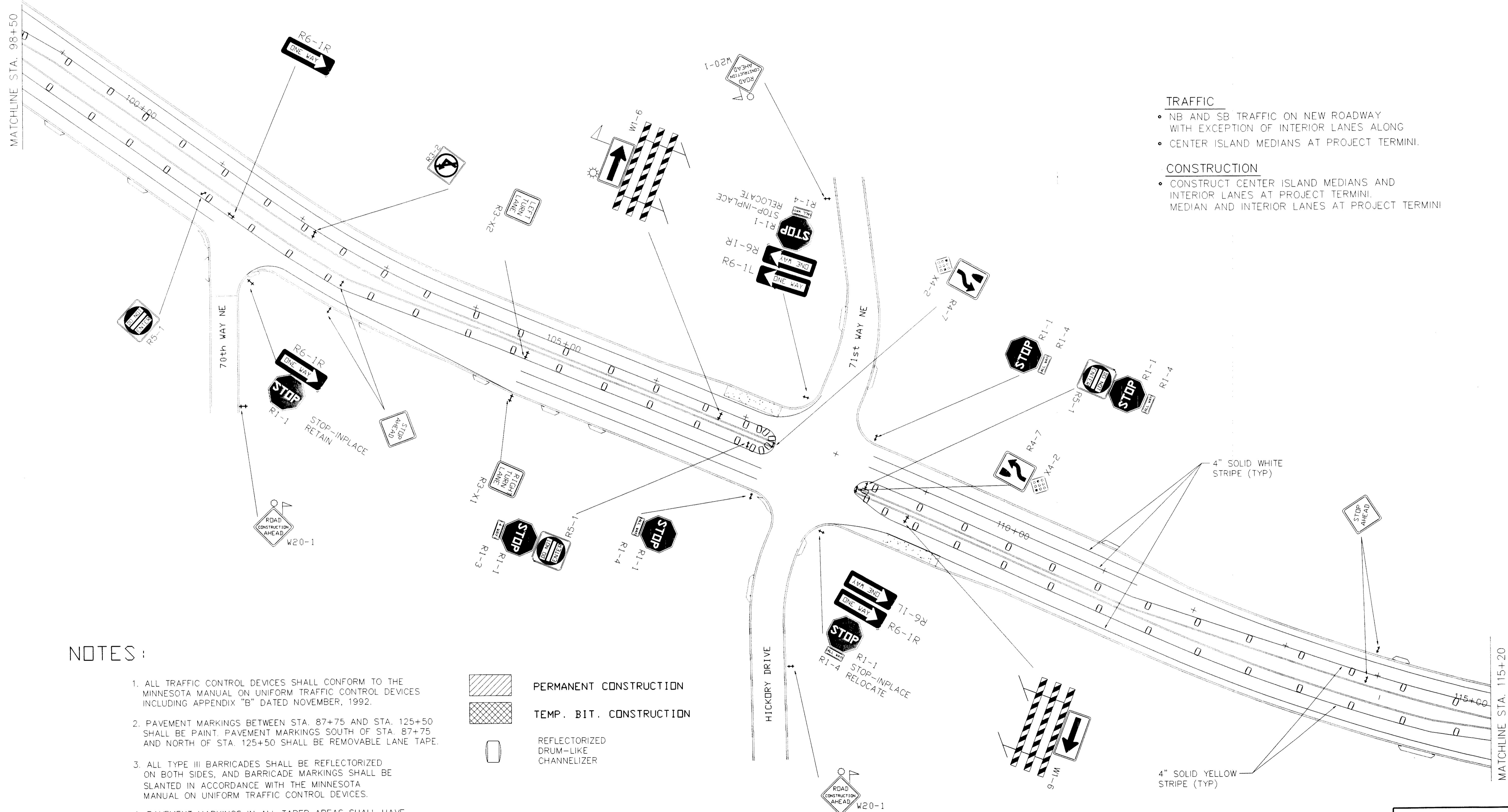
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- STA. 115+20 TO STA. 130+30

	PERMANENT CONSTRUCTION
	TEMP. BIT. CONSTRUCTION
	REFLECTORIZED DRUM-LIKE CHANNELIZER

REVISIONS	DATE	BY

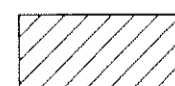


STAGE 4 TRAFFIC CONTROL



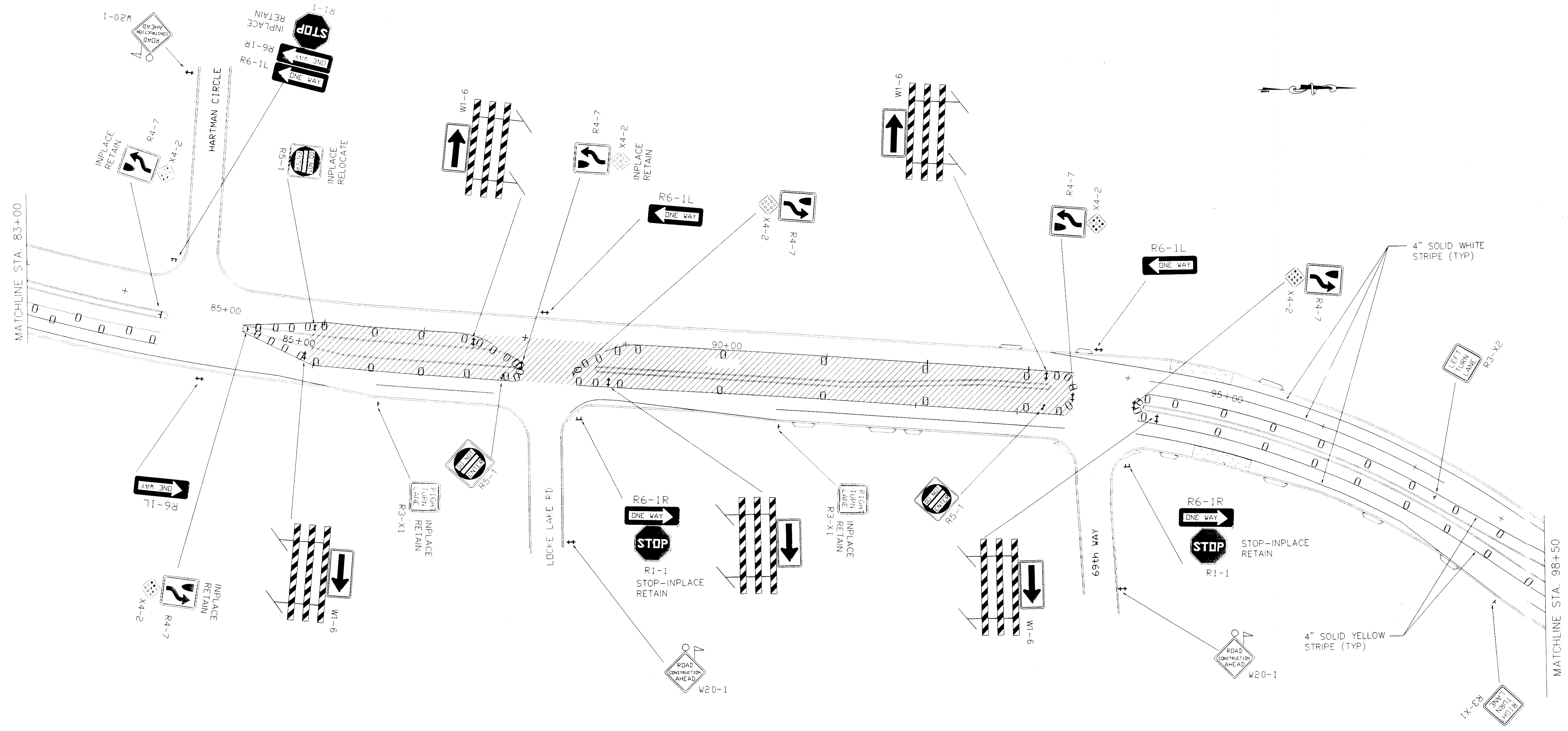
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 - CENTER ISLAND MEDIANS AT PROJECT TERMINI.
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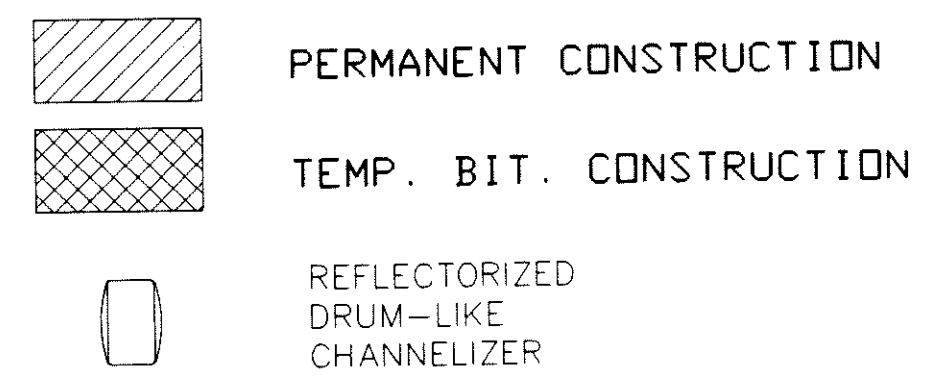
	PERMANENT CONSTRUCTION
	TEMP. BIT. CONSTRUCTION
	REFLECTORIZED DRUM-LIKE CHANNELIZER

REVISIONS	DATE	BY



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TRAFFIC

- NB AND SB TRAFFIC ON NEW ROADWAY WITH EXCEPTION OF INTERIOR LANES ALONG
- CENTER ISLAND MEDIANS AT PROJECT TERMINI.

CONSTRUCTION

- CONSTRUCT CENTER ISLAND MEDIANS AND INTERIOR LANES AT PROJECT TERMINI.
- MEDIAN AND INTERIOR LANES AT PROJECT TERMINI

REVISIONS	BY	DATE
1	DM	8/9/94

CERTIFIED BY *Douglas M. Swales*

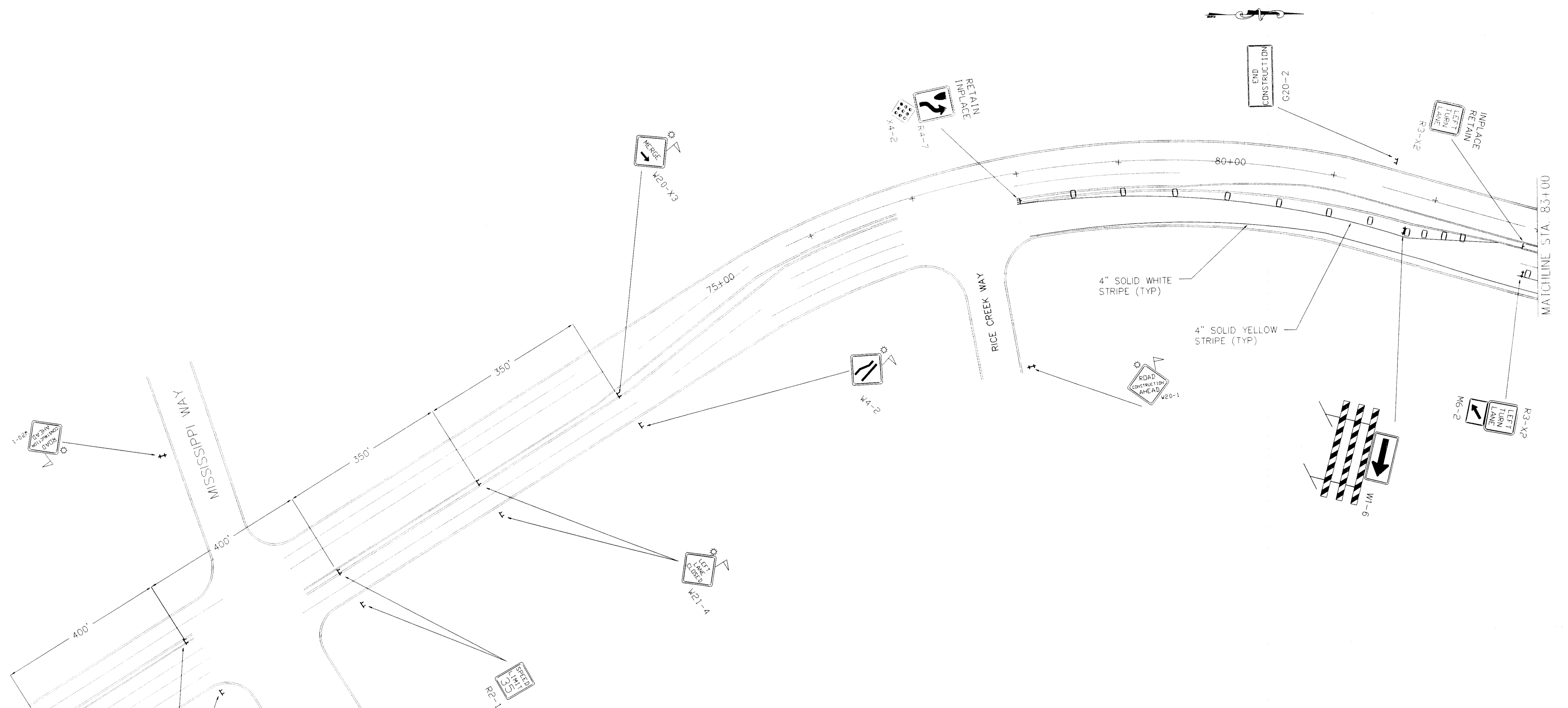
P.E. REG. NO. 20235

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S.P. 02-601-36 S. P. 127-020-13 C.P.

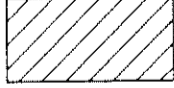


**STAGE 4
TRAFFIC CONTROL**

STA. 83+00 TO STA. 98+50



NOTES:

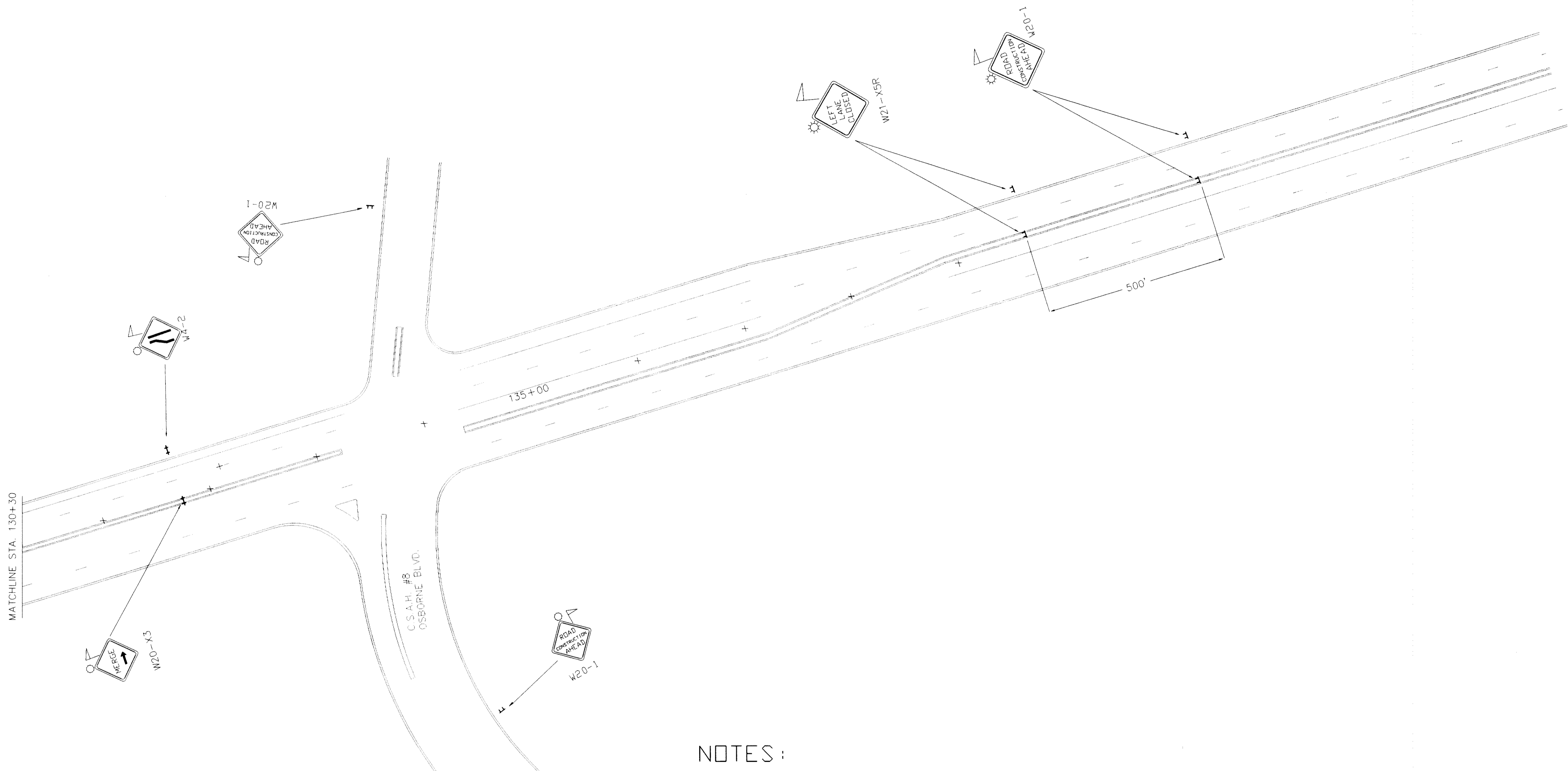
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- STA. 53+25 TO STA. 83+00**

	PERMANENT CONSTRUCTION
	TEMP. BIT. CONSTRUCTION
	REFLECTORIZED DRUM-LIKE CHANNELIZER

- TRAFFIC**
- NB AND SB TRAFFIC ON NEW ROADWAY WITH EXCEPTION OF INTERIOR LANES ALONG
 - CENTER ISLAND MEDIANS AT PROJECT TERMINI.
- CONSTRUCTION**
- CONSTRUCT CENTER ISLAND MEDIANS AND INTERIOR LANES AT PROJECT TERMINI.
 - MEDIAN AND INTERIOR LANES AT PROJECT TERMINI

REVISIONS	DATE	BY

**STAGE 4
TRAFFIC CONTROL**



TRAFFIC

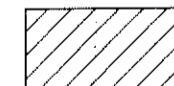

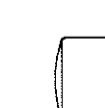
SINGLE LANE NB. / SB. ON WESTERLY 26' OF NEWLY CONSTRUCTED ROADWAY. LANE SHIFTS AT PROJECT TERMINI ON TEMPORARY BITUMINOUS PAVEMENT.

CONSTRUCTION

CONSTRUCT REMAINING STORM SEWER AND ROADWAY WITH EXCEPTION OF CENTER ISLAND MEDIAN AND INTERIOR LANES AT PROJECT TERMINI.

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	PERMANENT CONSTRUCTION
	TEMP. BIT. CONSTRUCTION
	REFLECTORIZED DRUM-LIKE CHANNELIZER

REVISIONS		
DATE	BY	BY
8/9/94	DM	

CERTIFIED BY *Douglas W. Tomala*

P.E. REG. NO. 20235

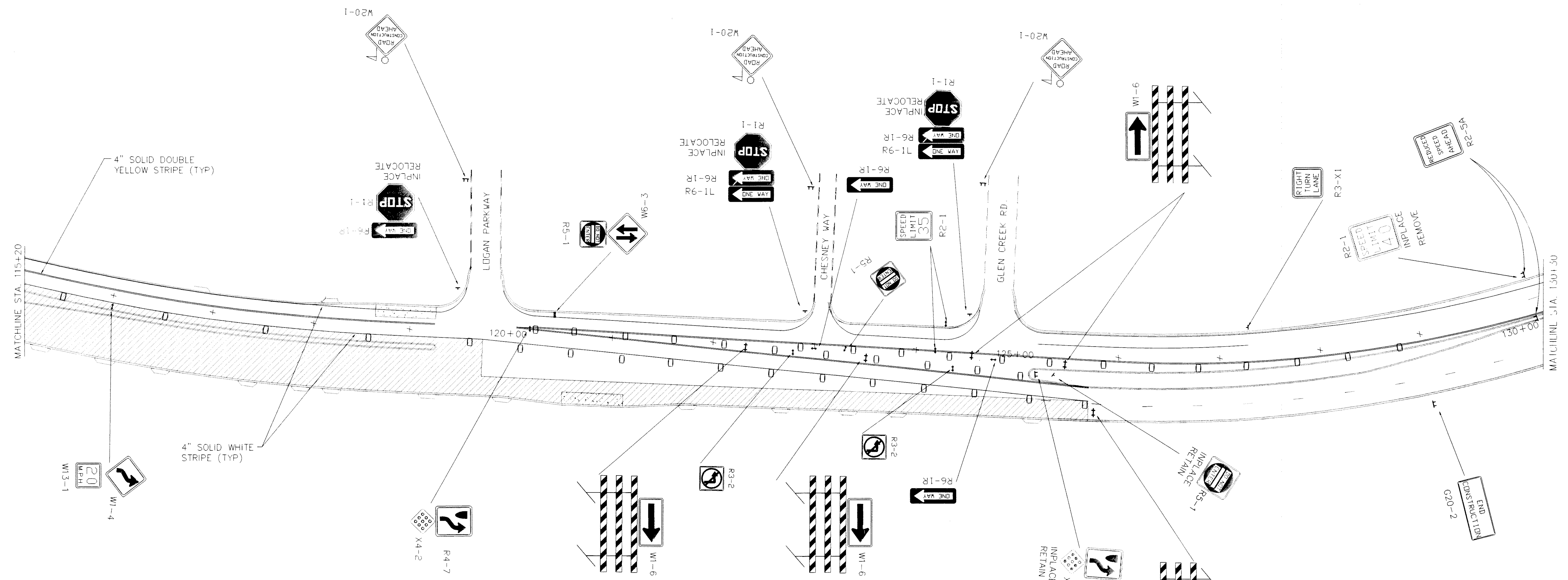
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S.P. 02-601-36 S. P. 127-020-13 C.P.

Sheet No. 64 of 70 Sheets

STAGE 3
TRAFFIC CONTROL

STA. 130+30 TO STA. 154+70



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- PERMANENT CONSTRUCTION
- TEMP. BIT. CONSTRUCTION
- REFLECTORIZED DRUM-LIKE CHANNELIZER

TRAFFIC

SINGLE LANE NB. / SB. ON WESTERLY 26' OF NEWLY CONSTRUCTED ROADWAY.
LANE SHIFTS AT PROJECT TERMINI ON TEMPORARY BITUMINOUS PAVEMENT.

CONSTRUCTION

CONSTRUCT REMAINING STROM SEWER AND ROADWAY WITH EXCEPTION OF CENTER ISLAND MEDIAN AND INTERIOR LANES AT PROJECT TERMINI.

REVISIONS	DATE	BY

CERTIFIED BY *Douglas McJimba*

P.E. REG. NO. 20235

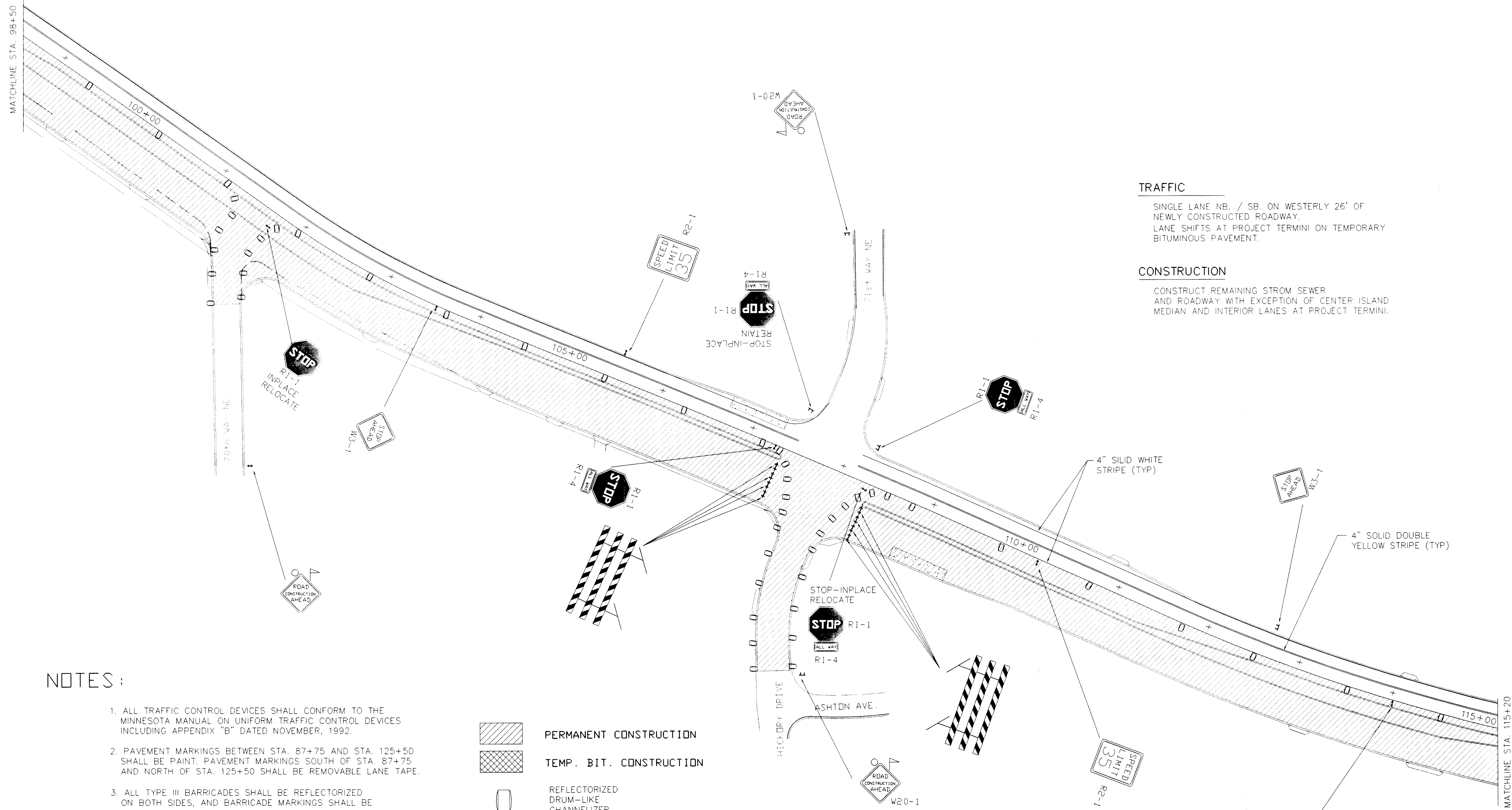
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S.P. 02-601-36 S. P. 127-020-13 C.P. _____

Sheet No. 63 of 70 Sheets

STAGE 3
TRAFFIC CONTROL

STA. 115+20 TO STA. 130+30



TRAFFIC

SINGLE LANE NB. / SB. ON WESTERLY 26' OF NEWLY CONSTRUCTED ROADWAY.
LANE SHIFTS AT PROJECT TERMINI ON TEMPORARY BITUMINOUS PAVEMENT.

CONSTRUCTION

CONSTRUCT REMAINING STORM SEWER AND ROADWAY WITH EXCEPTION OF CENTER ISLAND MEDIAN AND INTERIOR LANES AT PROJECT TERMINI.

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- PERMANENT CONSTRUCTION
- TEMP. BIT. CONSTRUCTION
- REFLECTORIZED DRUM-LIKE CHANNELIZER

REVISIONS		
DATE	BY	BY
8/9/94	DM	

CERTIFIED BY *Douglas M. ...*

P.E. REG. NO. 20235

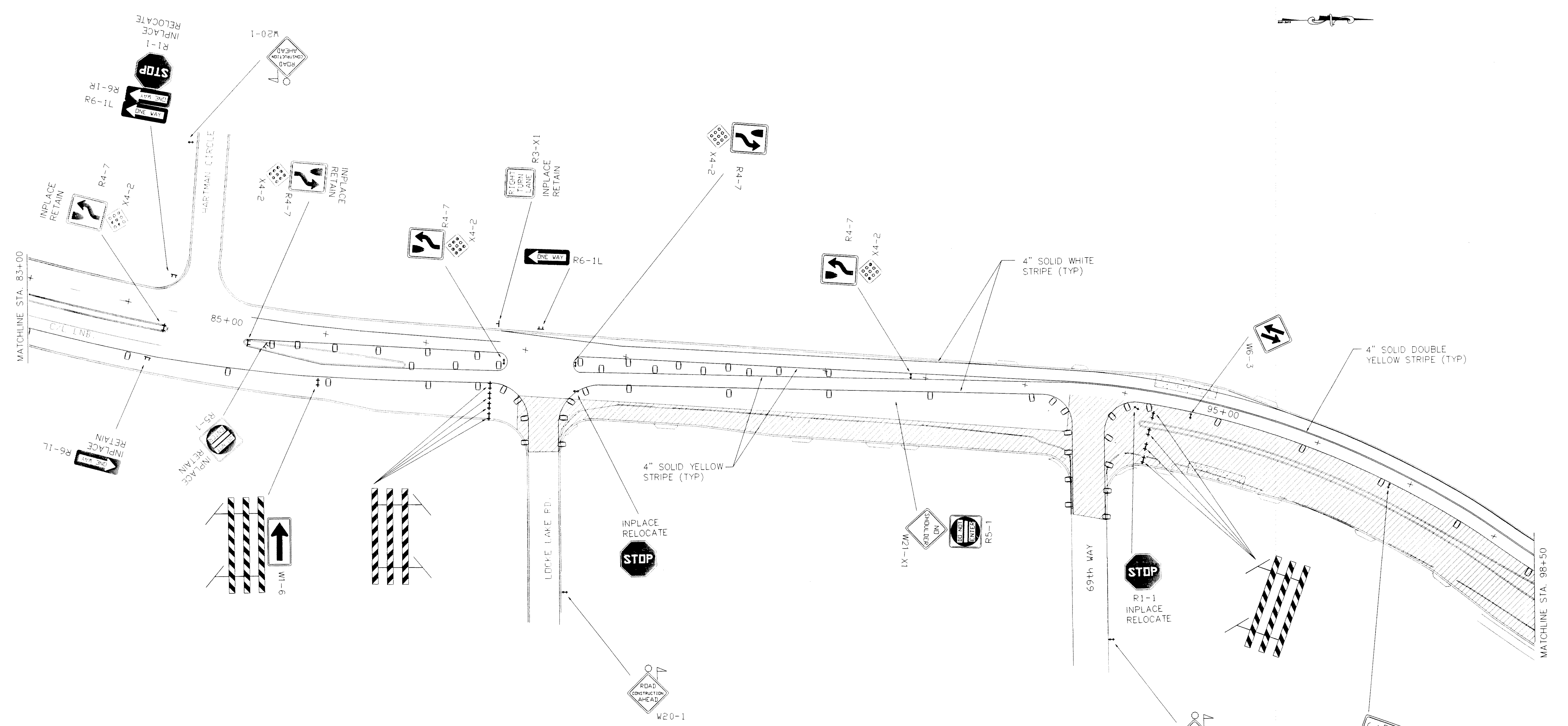
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S.P. 02-601-36 S. P. 127-020-13 C.P.

Sheet No. 62 of 70 Sheets

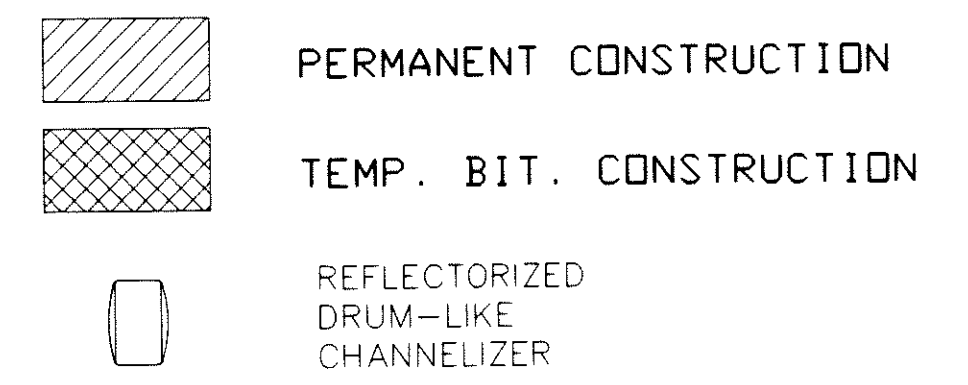
STA. 98+50 TO STA. 115+20

STAGE 3
TRAFFIC CONTROL



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CONSTRUCTION

CONSTRUCT REMAINING STROM SEWER AND ROADWAY WITH EXCEPTION OF CENTER ISLAND MEDIAN AND INTERIOR LANES AT PROJECT TERMINI.

REVISIONS	DATE	BY

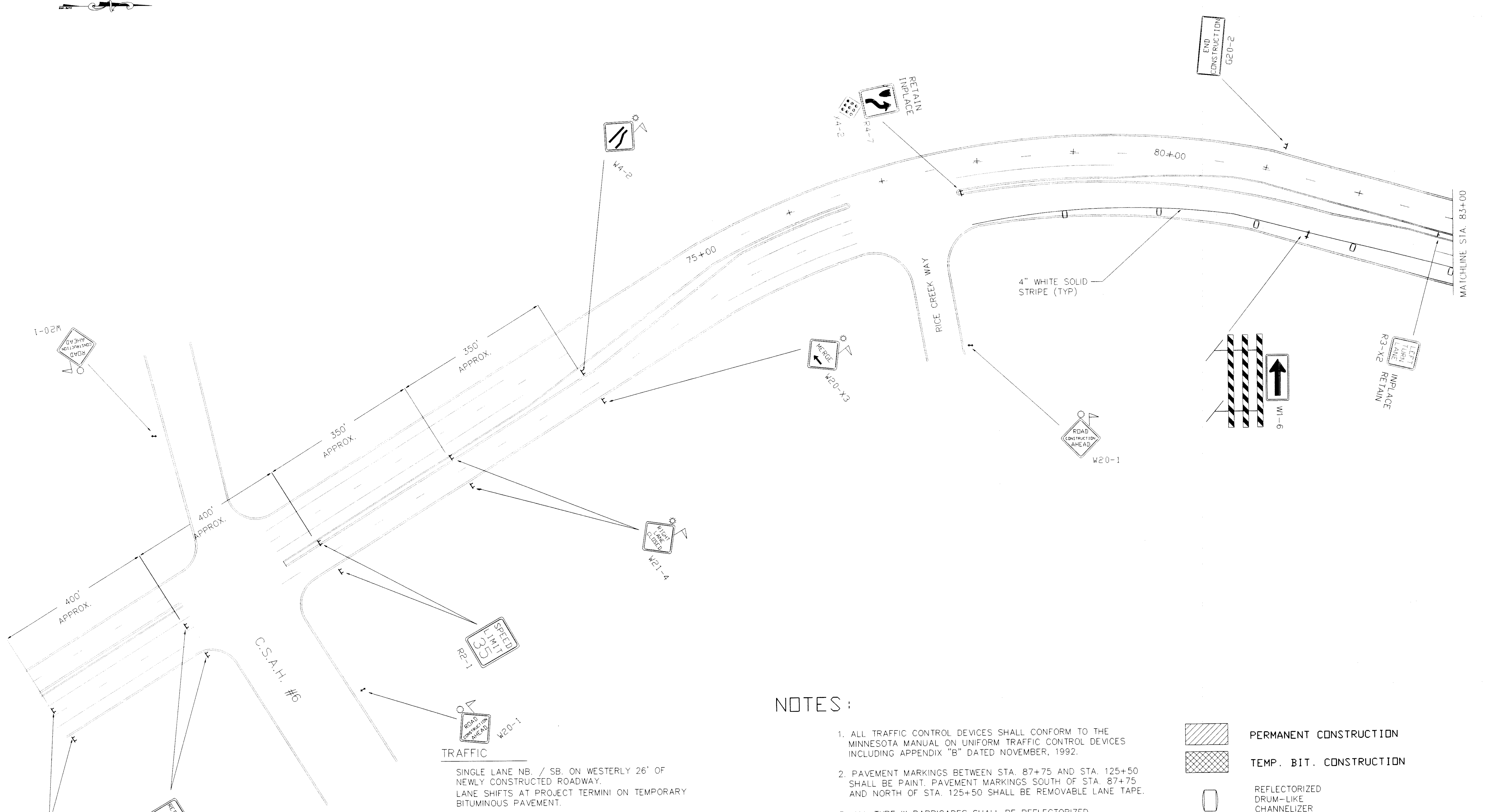
CERTIFIED BY *Douglas M. Finch*

P.E. REG. NO. 20235 8/19 19 94

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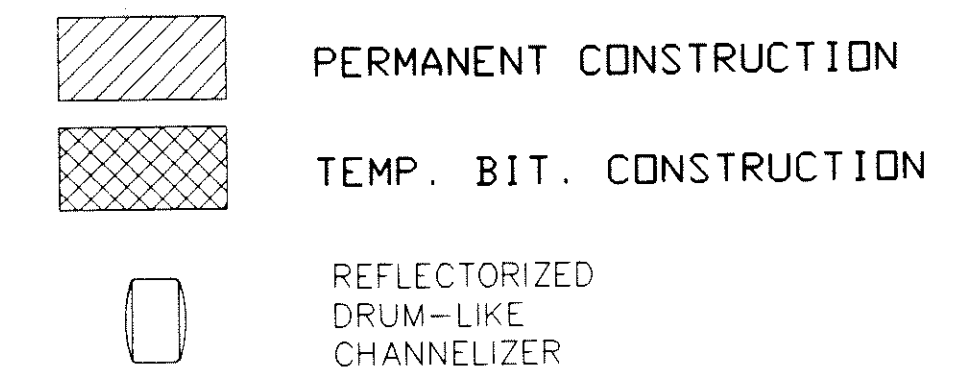
**STAGE 3
TRAFFIC CONTROL**

STA. 83+00 TO STA. 98+50



NOTES :

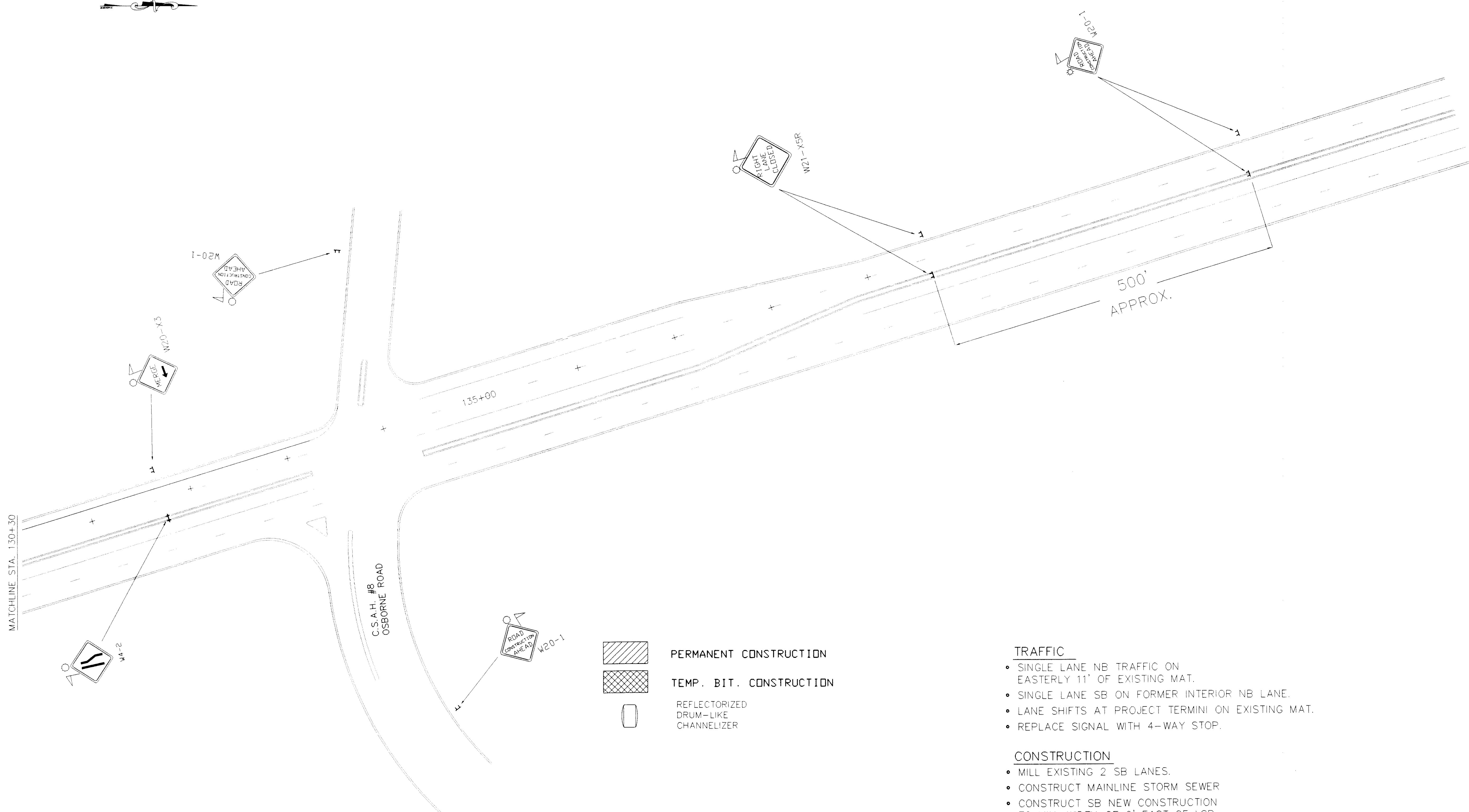
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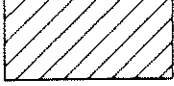


CONSTRUCTION
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4. PAVEMENT MARKINGS IN ALL TAPER AREAS SHALL HAVE TEMPORARY RAISED PAVEMENT MARKERS AT 10' INTERVALS.

	PERMANENT CONSTRUCTION
	TEMP. BIT. CONSTRUCTION
	REFLECTORIZED DRUM-LIKE CHANNELIZER

TRAFFIC

- SINGLE LANE NB TRAFFIC ON EASTERLY 11' OF EXISTING MAT.
- SINGLE LANE SB ON FORMER INTERIOR NB LANE.
- LANE SHIFTS AT PROJECT TERMINI ON EXISTING MAT.
- REPLACE SIGNAL WITH 4-WAY STOP.

CONSTRUCTION

- MILL EXISTING 2 SB LANES.
- CONSTRUCT MAINLINE STORM SEWER
- CONSTRUCT SB NEW CONSTRUCTION TO MIN. WIDTH OF 6' EAST OF LSB.
- CONSTRUCT TEMP. BIT. PAVEMENT ON PROJECT TERMINI FOR STAGE 3 TRAFFIC CROSS-OVERS.

REVISIONS	DATE	BY

CERTIFIED BY *Douglas W. ...*

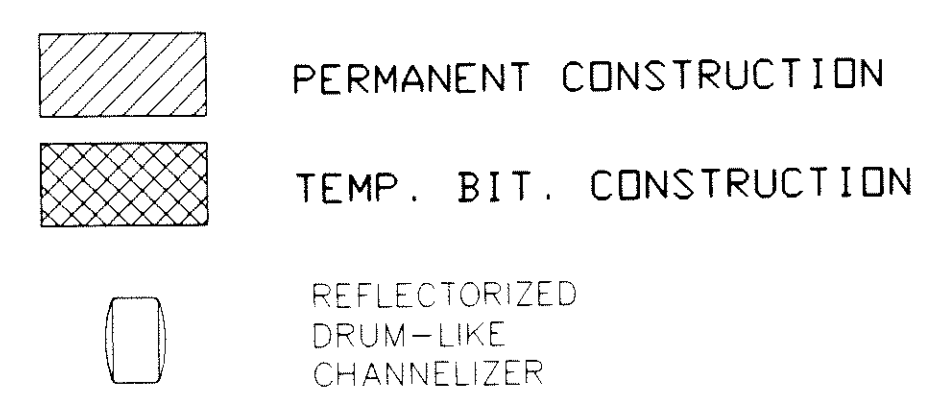
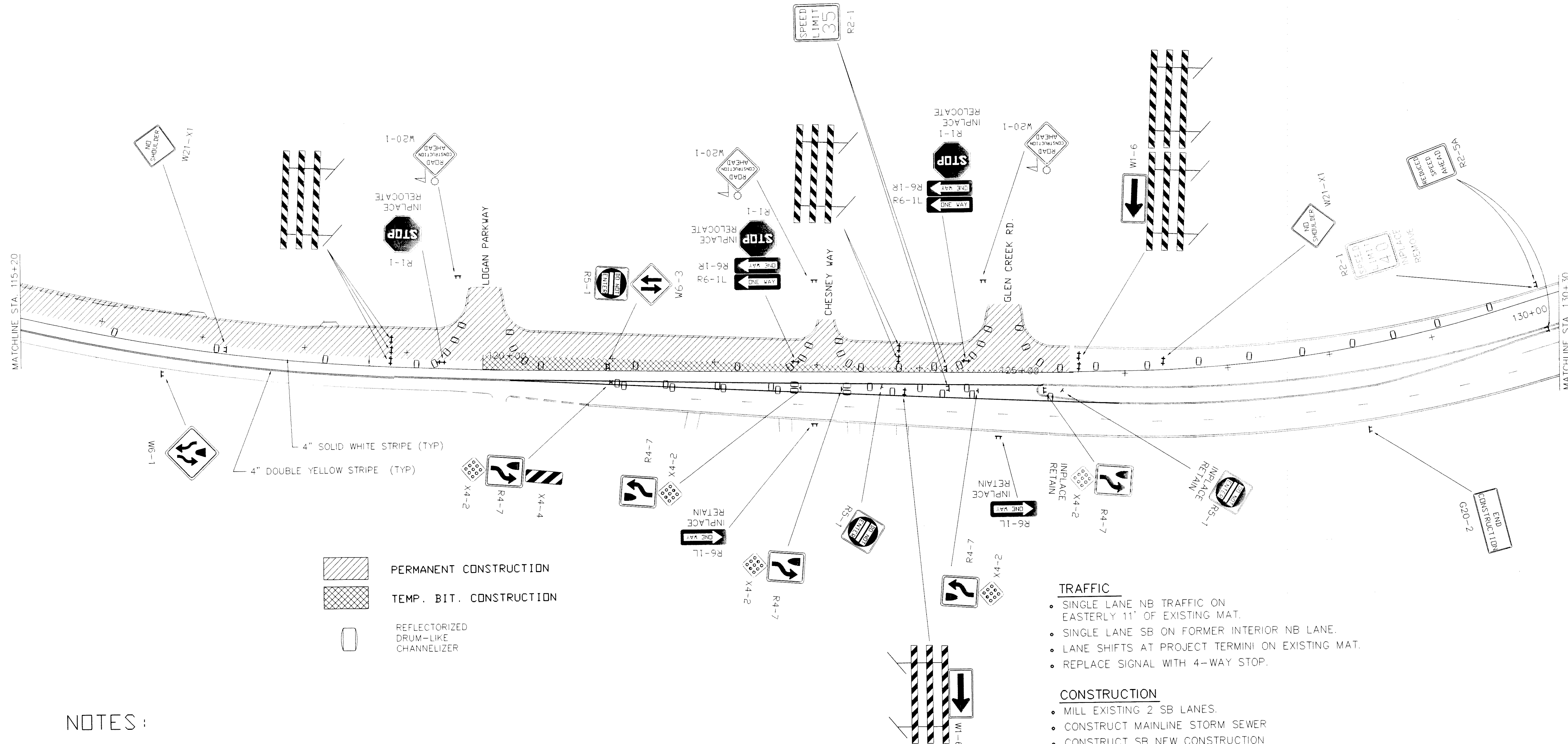
P.E. REG. NO. 20235 8/19 19 94

S.P. 02-601-36 S. P. 127-020-13 C.P. _____

STA. 130+30 TO STA. 154+70

STAGE 2
TRAFFIC CONTROL

Sheet No. 59 of 70 Sheets

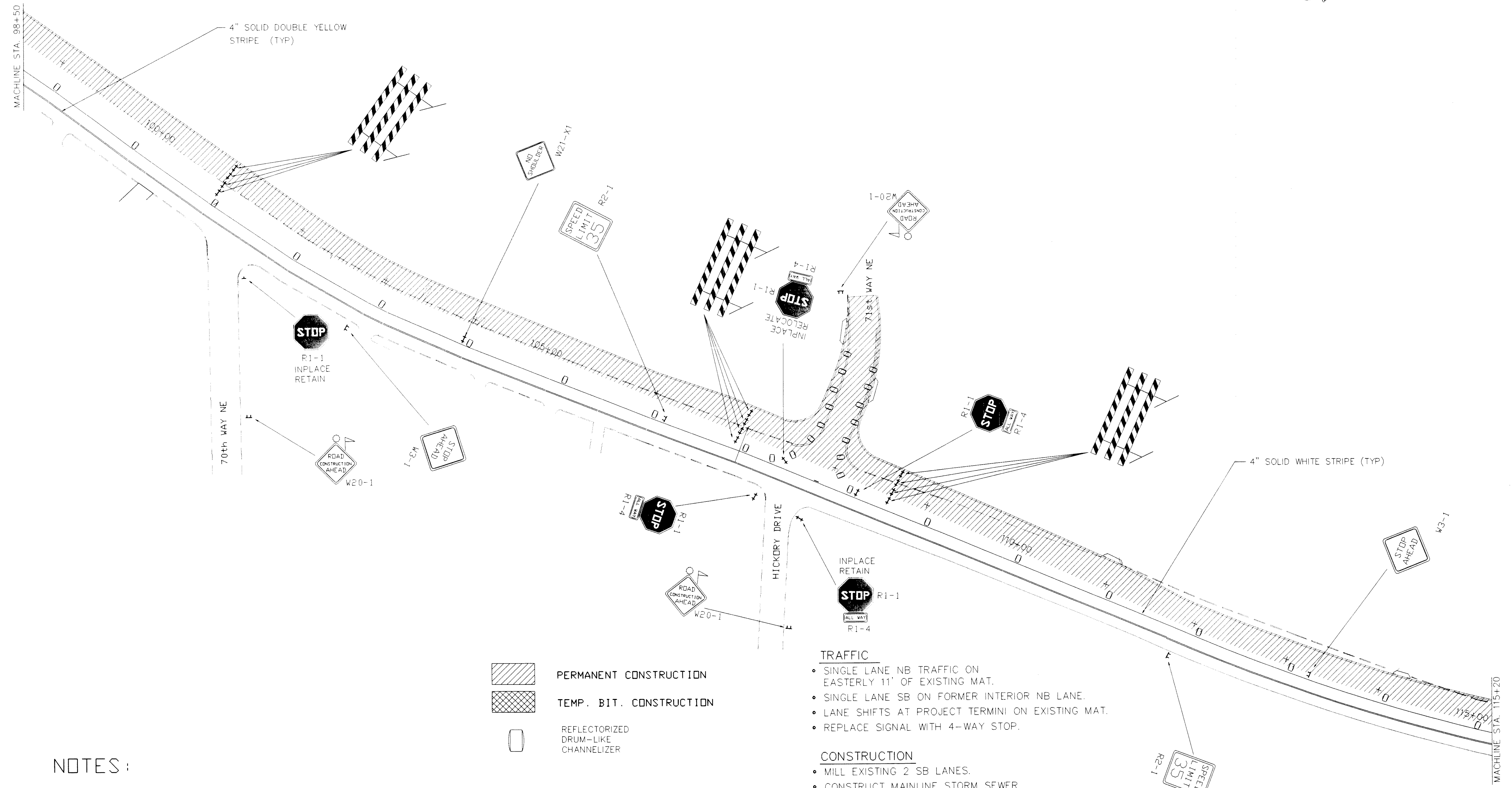


- TRAFFIC**
- SINGLE LANE NB TRAFFIC ON EASTERLY 11' OF EXISTING MAT.
 - SINGLE LANE SB ON FORMER INTERIOR NB LANE.
 - LANE SHIFTS AT PROJECT TERMINI ON EXISTING MAT.
 - REPLACE SIGNAL WITH 4-WAY STOP.
- CONSTRUCTION**
- MILL EXISTING 2 SB LANES.
 - CONSTRUCT MAINLINE STORM SEWER
 - CONSTRUCT SB NEW CONSTRUCTION TO MIN. WIDTH OF 6' EAST OF LSB.
 - CONSTRUCT TEMP. BIT. PAVEMENT ON PROJECT TERMINI FOR STAGE 3 TRAFFIC CROSS-OVERS.

NOTES:

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2. PAVEMENT MARKINGS BETWEEN STA. 87+75 AND STA. 125+50 SHALL BE PAINT. PAVEMENT MARKINGS SOUTH OF STA. 87+75 AND NORTH OF STA. 125+50 SHALL BE REMOVABLE LANE TAPE.
3. ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES, AND BARRICADE MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
4. PAVEMENT MARKINGS IN ALL TAPER AREAS SHALL HAVE TEMPORARY RAISED PAVEMENT MARKERS AT 10' INTERVALS.

REVISIONS	DATE	BY



- PERMANENT CONSTRUCTION
- TEMP. BIT. CONSTRUCTION
- REFLECTORIZED DRUM-LIKE CHANNELIZER

- TRAFFIC**
- SINGLE LANE NB TRAFFIC ON EASTERLY 11' OF EXISTING MAT.
 - SINGLE LANE SB ON FORMER INTERIOR NB LANE.
 - LANE SHIFTS AT PROJECT TERMINI ON EXISTING MAT.
 - REPLACE SIGNAL WITH 4-WAY STOP.
- CONSTRUCTION**
- MILL EXISTING 2 SB LANES.
 - CONSTRUCT MAINLINE STORM SEWER
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4. PAVEMENT MARKINGS IN ALL TAPER AREAS SHALL HAVE TEMPORARY RAISED PAVEMENT MARKERS AT 10' INTERVALS.

REVISIONS	DATE	BY

CERTIFIED BY *Douglas M. Fincher*

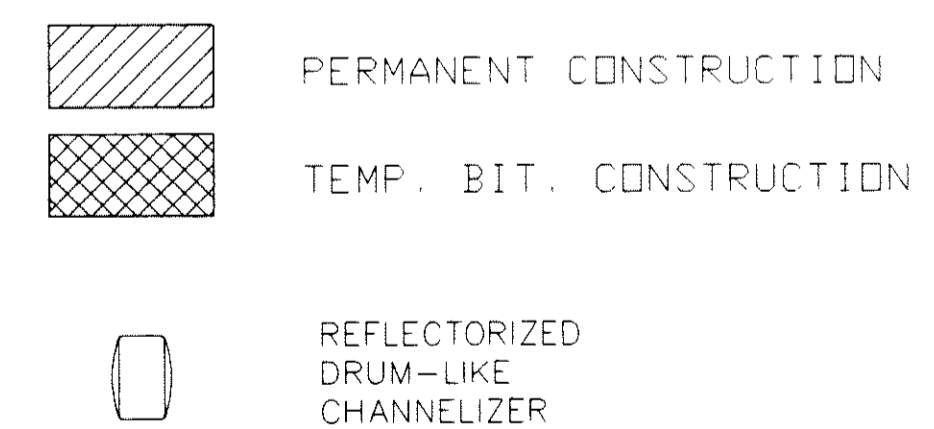
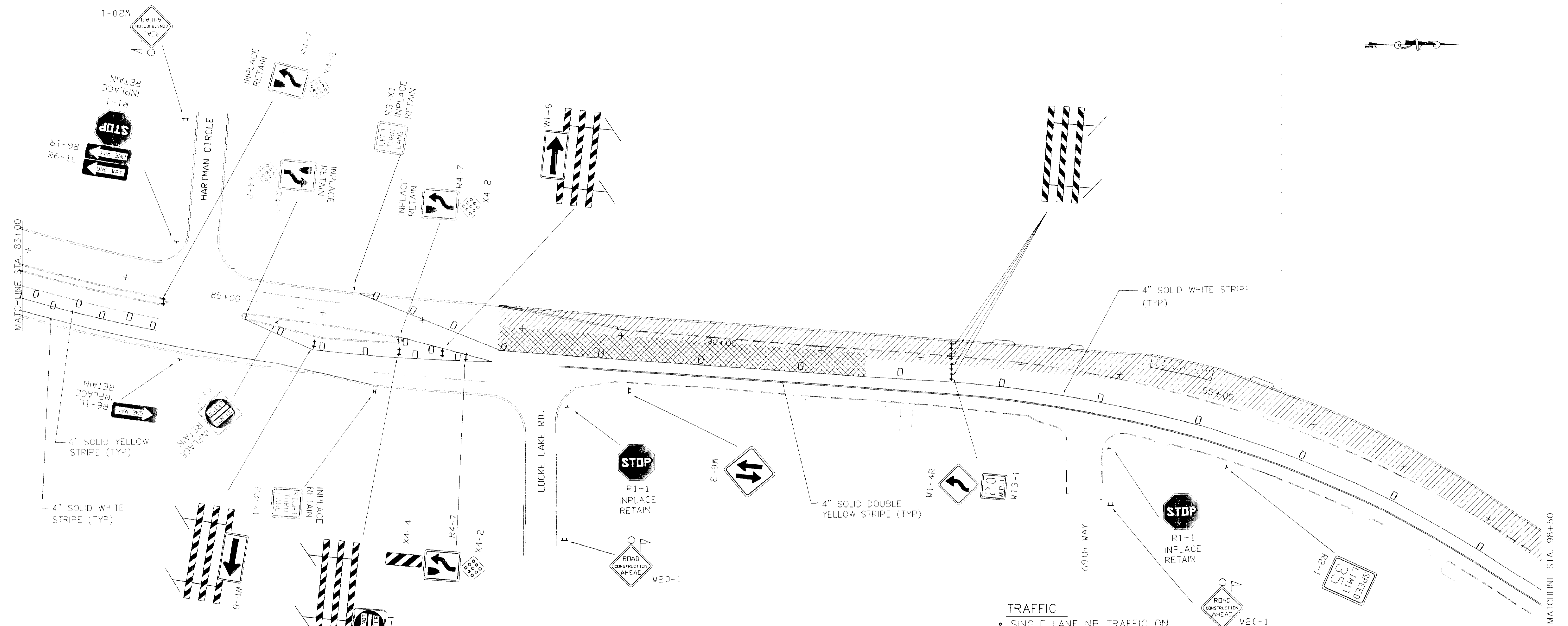
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S.P. 02-601-36 S. P. 127-020-13 C.P. _____

Sheet No. 57 of 70 Sheets

STA. 98+50 TO STA. 115+20

STAGE 2
TRAFFIC CONTROL



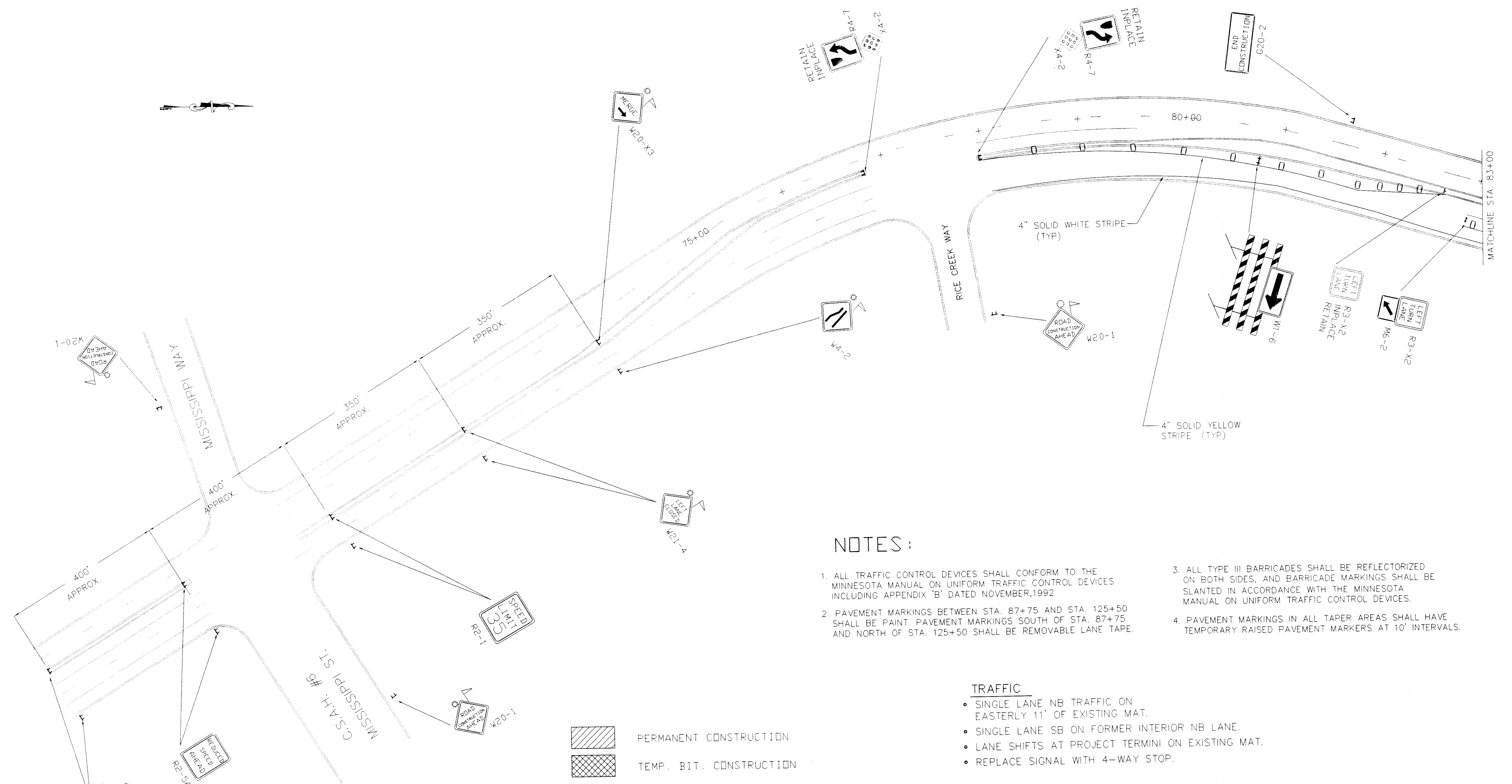
- TRAFFIC**
- SINGLE LANE NB TRAFFIC ON EASTERLY 11' OF EXISTING MAT.
 - SINGLE LANE SB ON FORMER INTERIOR NB LANE.
 - LANE SHIFTS AT PROJECT TERMINI ON EXISTING MAT.
 - REPLACE SIGNAL WITH 4-WAY STOP.

- CONSTRUCTION**
- MILL EXISTING 2 SB LANES.
 - CONSTRUCT MAINLINE STORM SEWER
 - CONSTRUCT SB NEW CONSTRUCTION TO MIN. WIDTH OF 6' EAST OF LSB.
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REVISIONS	DATE	BY



NOTES:

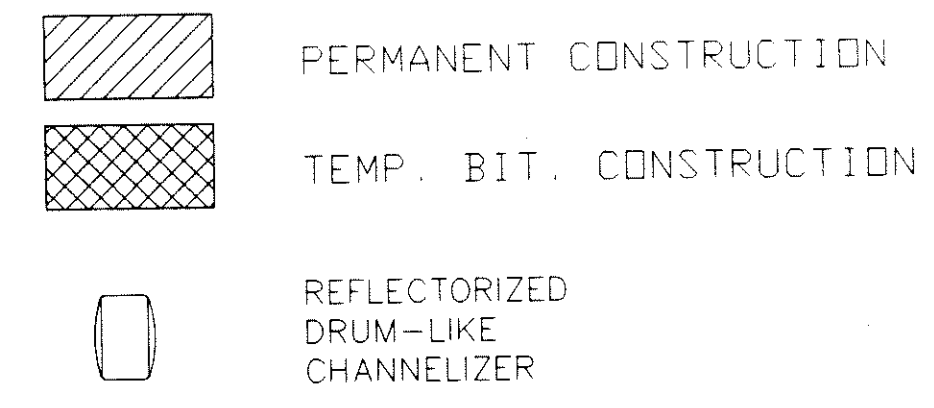
1. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING APPENDIX 'B' DATED NOVEMBER, 1992
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TRAFFIC

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- REPLACE SIGNAL WITH 4-WAY STOP.

CONSTRUCTION

- MILL EXISTING 2 SB LANES.
- CONSTRUCT MAINLINE STORM SEWER
- CONSTRUCT SB NEW CONSTRUCTION TO MIN. WIDTH OF 6' EAST OF LSB.
- CONSTRUCT TEMP. BIT. PAVEMENT ON PROJECT TERMINI FOR STAGE 3 TRAFFIC CROSS-OVERS.



REVISIONS	DATE	BY

CERTIFIED BY Douglas M. Fincher P.E. REG. NO. 20235

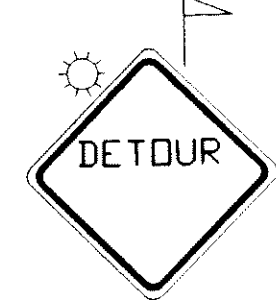
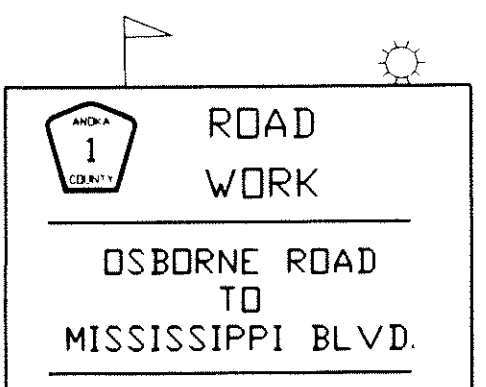
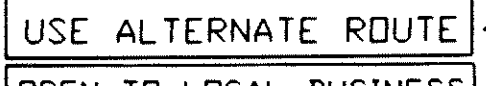
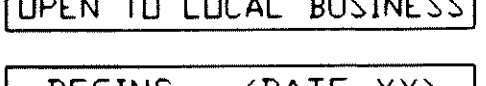
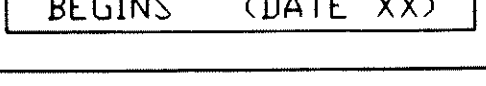
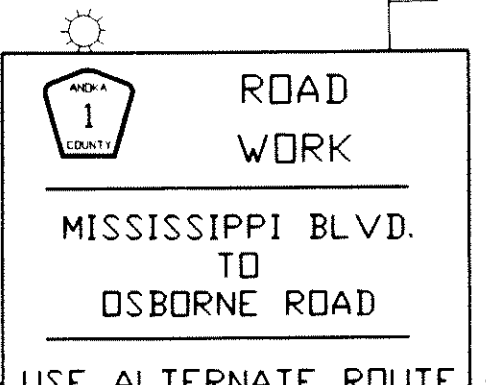
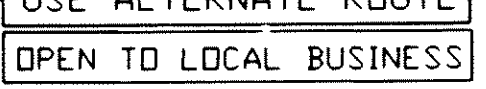
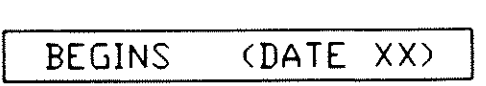

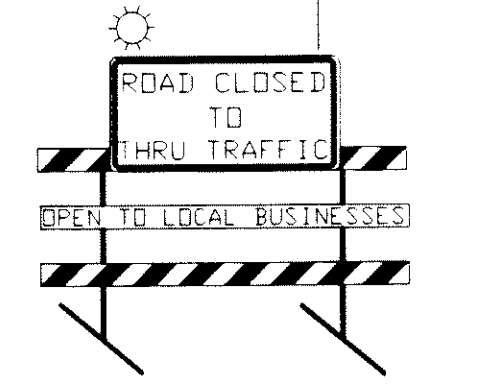
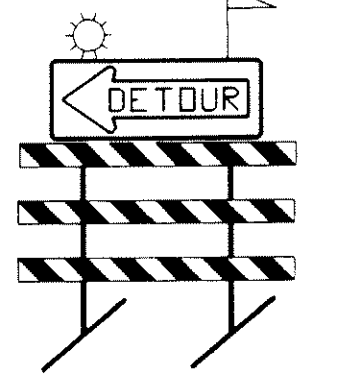
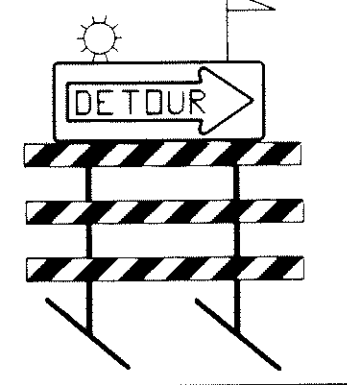
8/19 19 94

S.P. 02-601-36 S. P. 127-020-13 C.P. _____

STA. 53+25 TO STA. 83+00



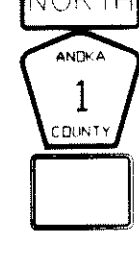




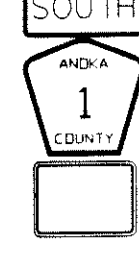





STAGE 2
TRAFFIC CONTROL

Sheet No. 55 of 70 Sheets

M.U.T.C.D. CODE	SIZE	INSERT	QUANTITY
W20-3	48' x 48'	 1000' 1500'	• 4 • 4
G20-X2	132' x 108'		• 2
	12' x 132'		
	12' x 132'		
	12' x 132'		
G20-X2	132' x 108'		• 2
	12' x 132'		
	12' x 132'		
	12' x 132'		
R11-3	60' x 30'		• 2
TYPE III	8 FOOT		
M4-10L	48' x 18'		• 1
TYPE III	4 FOOT		
M4-10R	48' x 18'		• 1
TYPE III	4 FOOT		

TO BE INSTALLED AT START OF CONSTRUCTION
TO BE REMOVED AT START OF CONSTRUCTION

TO BE INSTALLED AT START OF CONSTRUCTION
TO BE REMOVED AT START OF CONSTRUCTION

M.U.T.C.D. CODE	SIZE	INSERT	QUANTITY
M4-8	24' x 12'		• 4
M3-1	21' x 12'		• 2
M1-6	24' x 24'		• 2
	21' x 15'		• 1
			• 7
M4-8	24' x 12'		• 2
M3-3	21' x 12'		• 4
M1-6	24' x 24'		• 1
	21' x 15'		• 2
			• 6
M4-6	24' x 12'		
M4-8	24' x 12'		• 2
M1-6	24' x 24'		

STANDARD TRAFFIC CONTROL NOTES

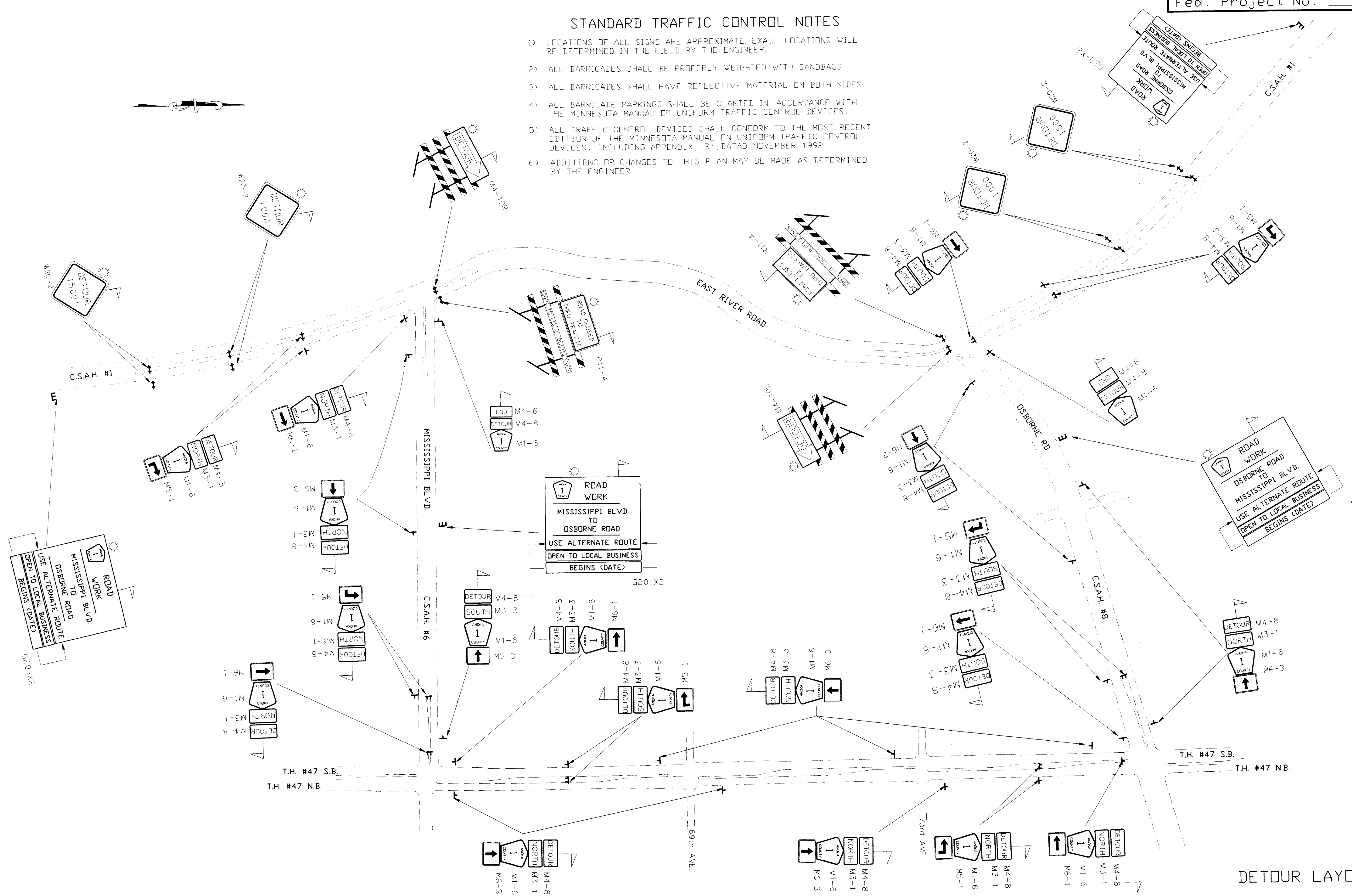
- 1) LOCATIONS OF ALL SIGNS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- 2) ALL BARRICADES SHALL BE PROPERLY WEIGHTED WITH SANDBAGS.
- 3) ALL BARRICADES SHALL HAVE REFLECTIVE MATERIAL ON BOTH SIDES.
- 4) ALL BARRICADE MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE MINNESOTA MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
- 5) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MOST RECENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING APPENDIX 'B', DATED NOVEMBER 1992.
- 6) ADDITIONS OR CHANGES TO THIS PLAN MAY BE MADE AS DETERMINED BY THE ENGINEER.

DETOUR QUANTITIES

REVISIONS	DATE	BY
8/9/94	DM	

STANDARD TRAFFIC CONTROL NOTES

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- 2) ALL BARRICADES SHALL BE PROPERLY WEIGHTED WITH SANDBAGS.
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- 6) ADDITIONS OR CHANGES TO THIS PLAN MAY BE MADE AS DETERMINED BY THE ENGINEER.



DETOUR LAYOUT

REVISIONS	DATE	BY
1	8/9/94	DM

CERTIFIED BY *Douglas W. Jensen*

P.E. REG. NO. 20235

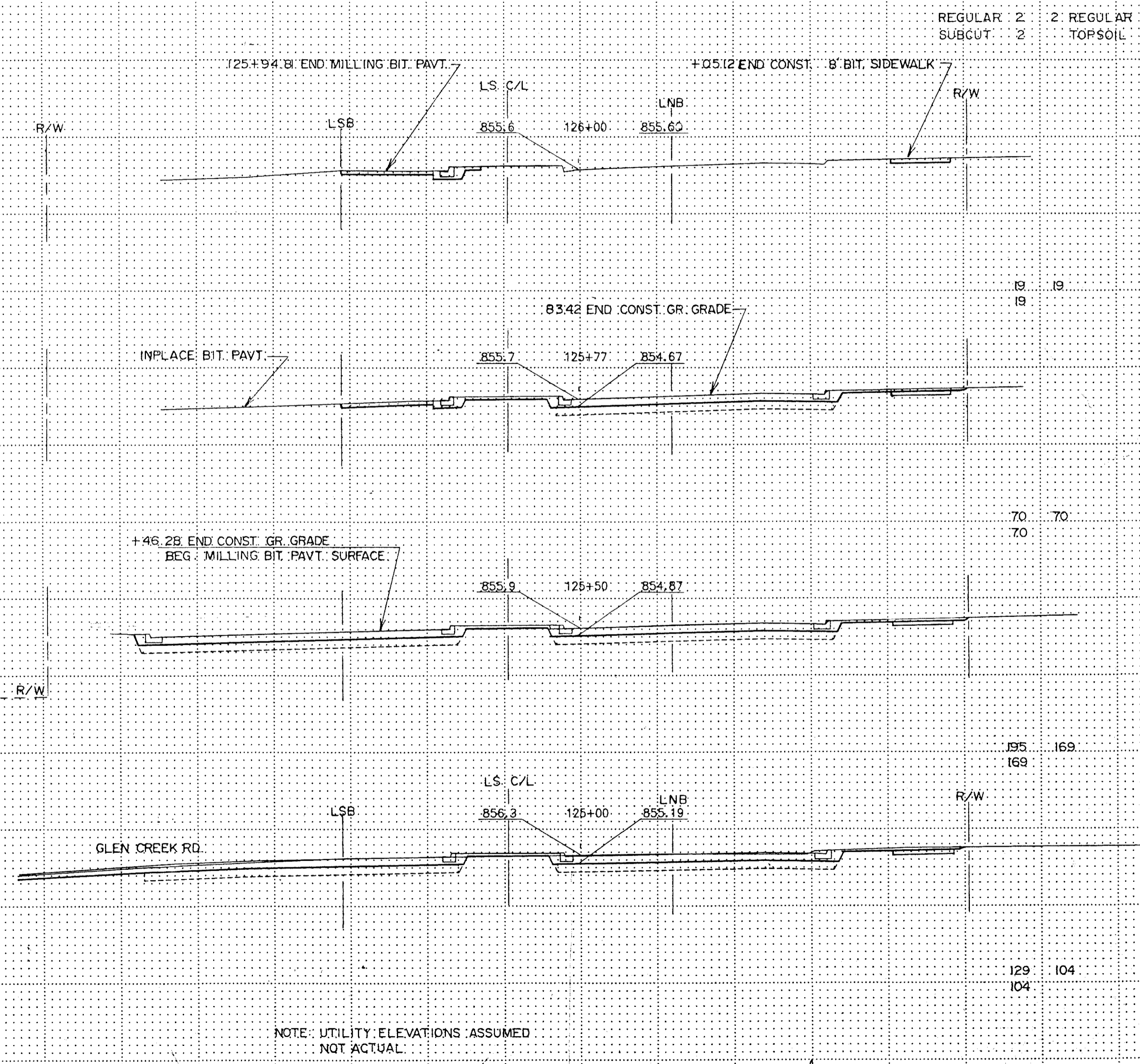
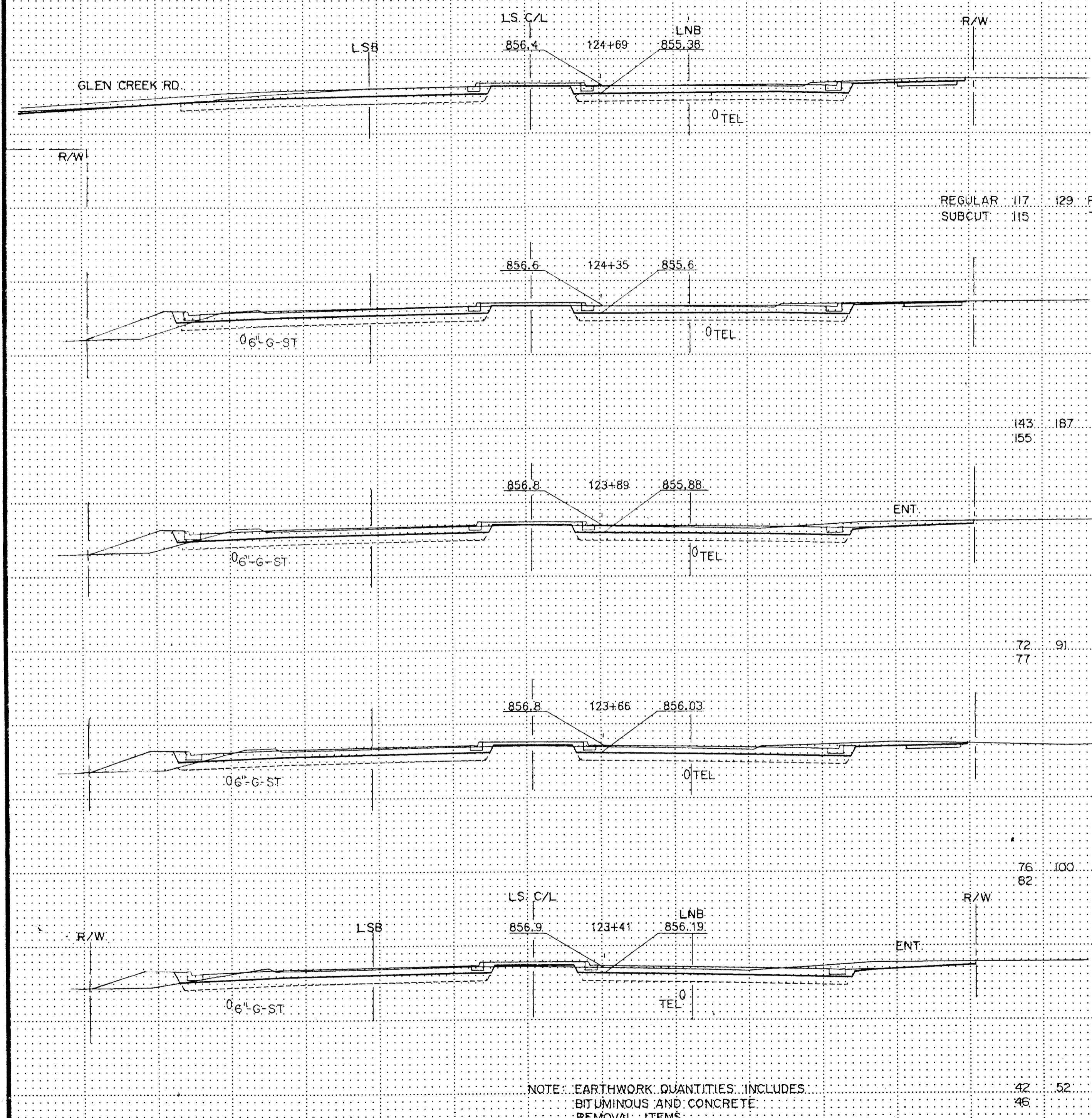
8/19 19 94

S.P. 02-601-36 S. P. 127-020-13 C.P.

Sheet No. 53 of 70 Sheets

EXCAVATION EMBANKMENT
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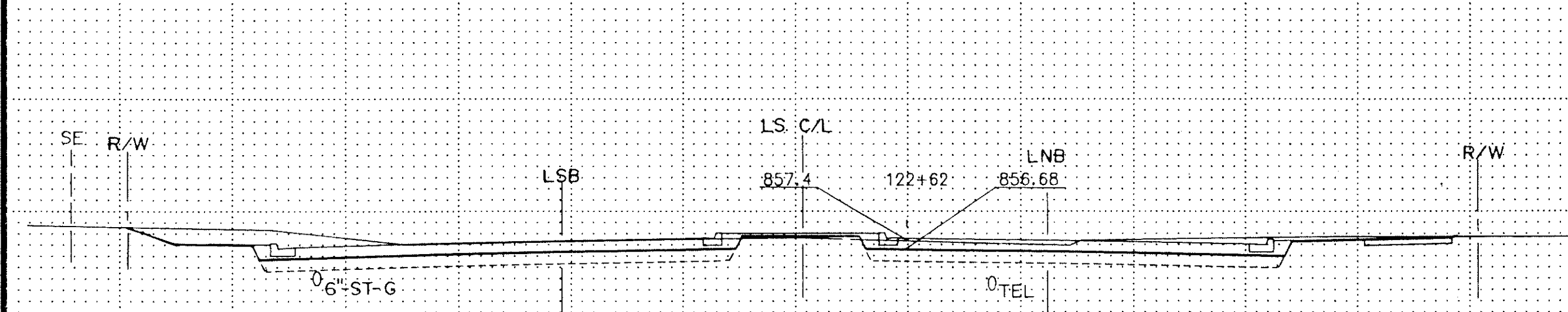
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SUB-TOTALS: CU.YDS. SUB-TOTALS: CU.YDS.



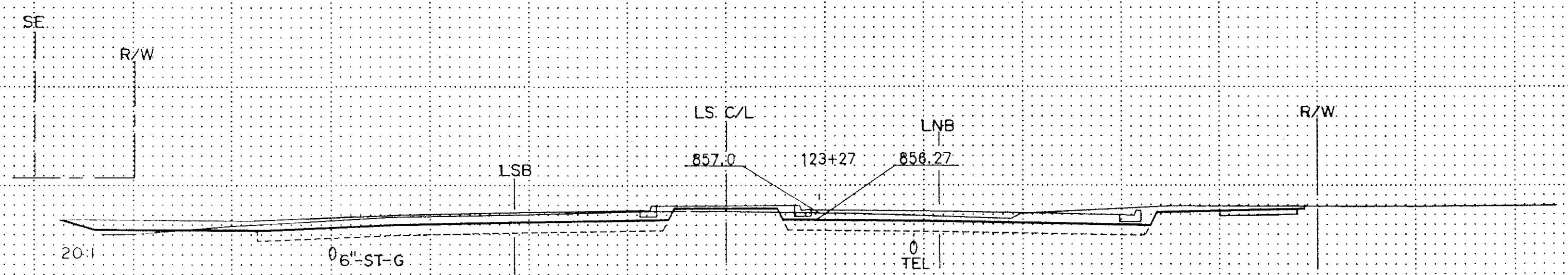
CROSS-SECTION
STA. 123+41 TO STA. 126+00

EXCAVATION EMBANKMENT
SUB-TOTALS CU.YDS. SUB-TOTALS CU.YDS.

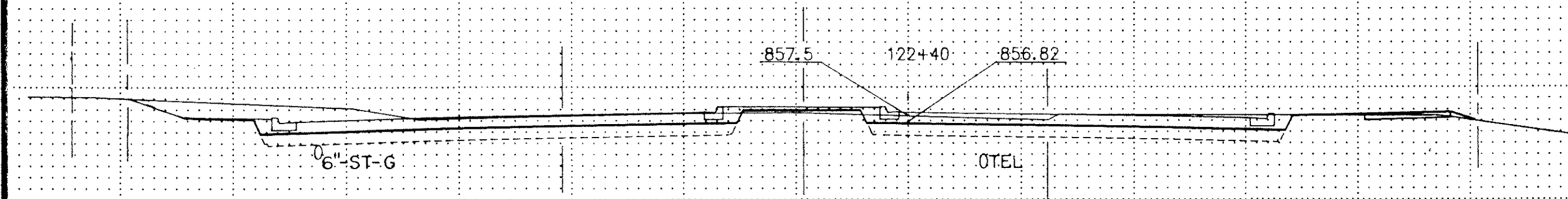
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SUB-TOTALS CU.YDS. SUB-TOTALS CU.YDS.



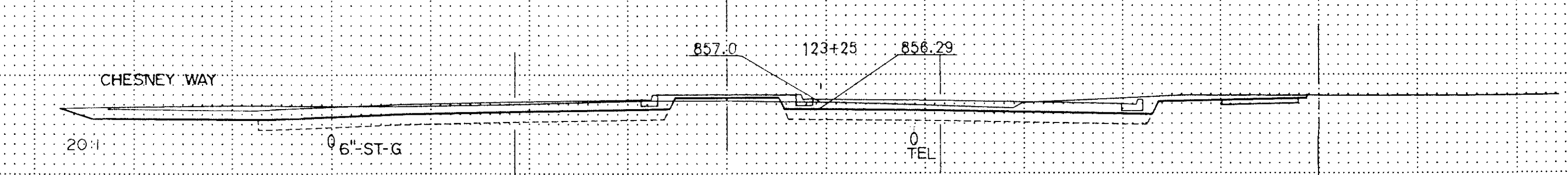
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SUBCUT 74 REGULAR
TOPSOIL



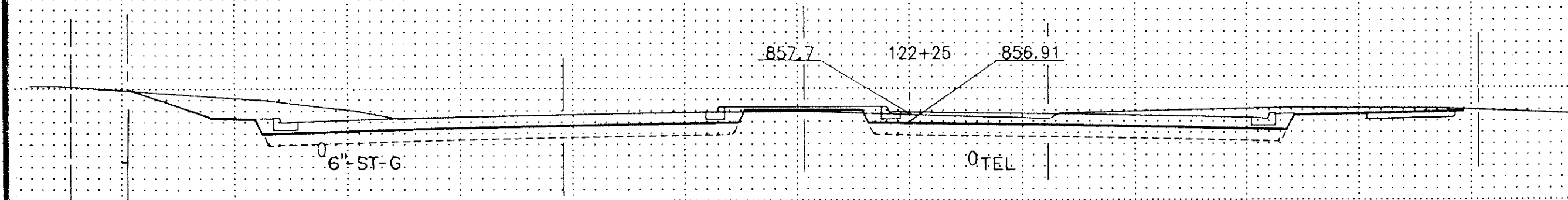
REGULAR 7 7
SUBCUT 7 REGULAR
TOPSOIL



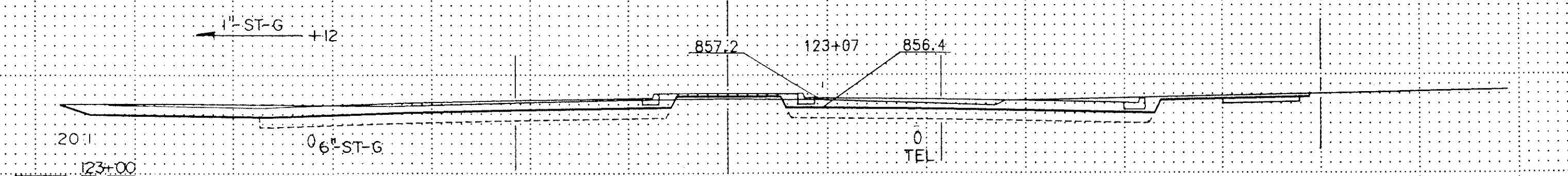
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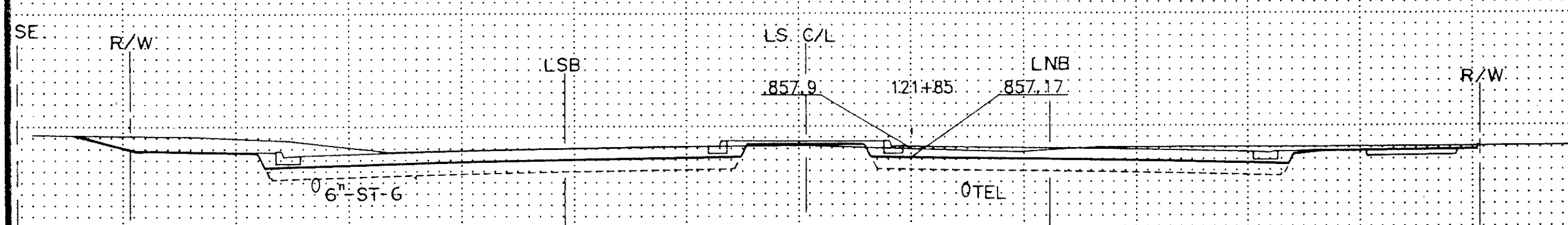
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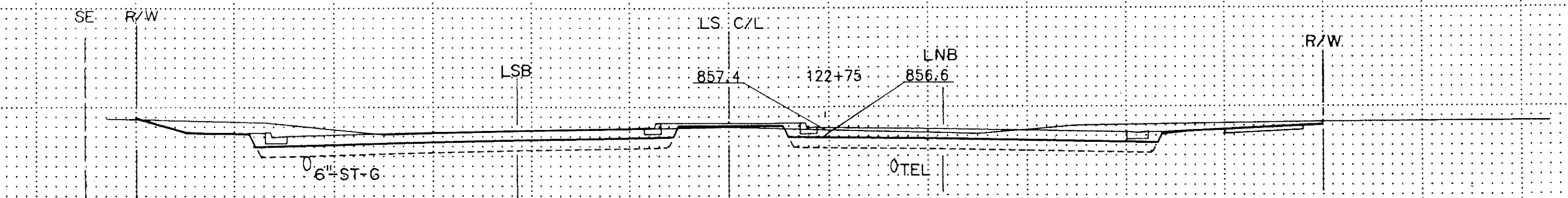
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136 108
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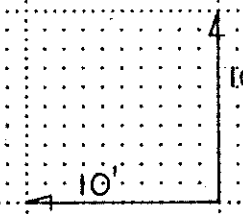
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55 44
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NOTE: EARTHWORK QUANTITIES INCLUDE
BITUMINOUS AND CONCRETE
REMOVAL ITEMS.

NOTE: UTILITY ELEVATIONS ASSUMED
NOT ACTUAL.

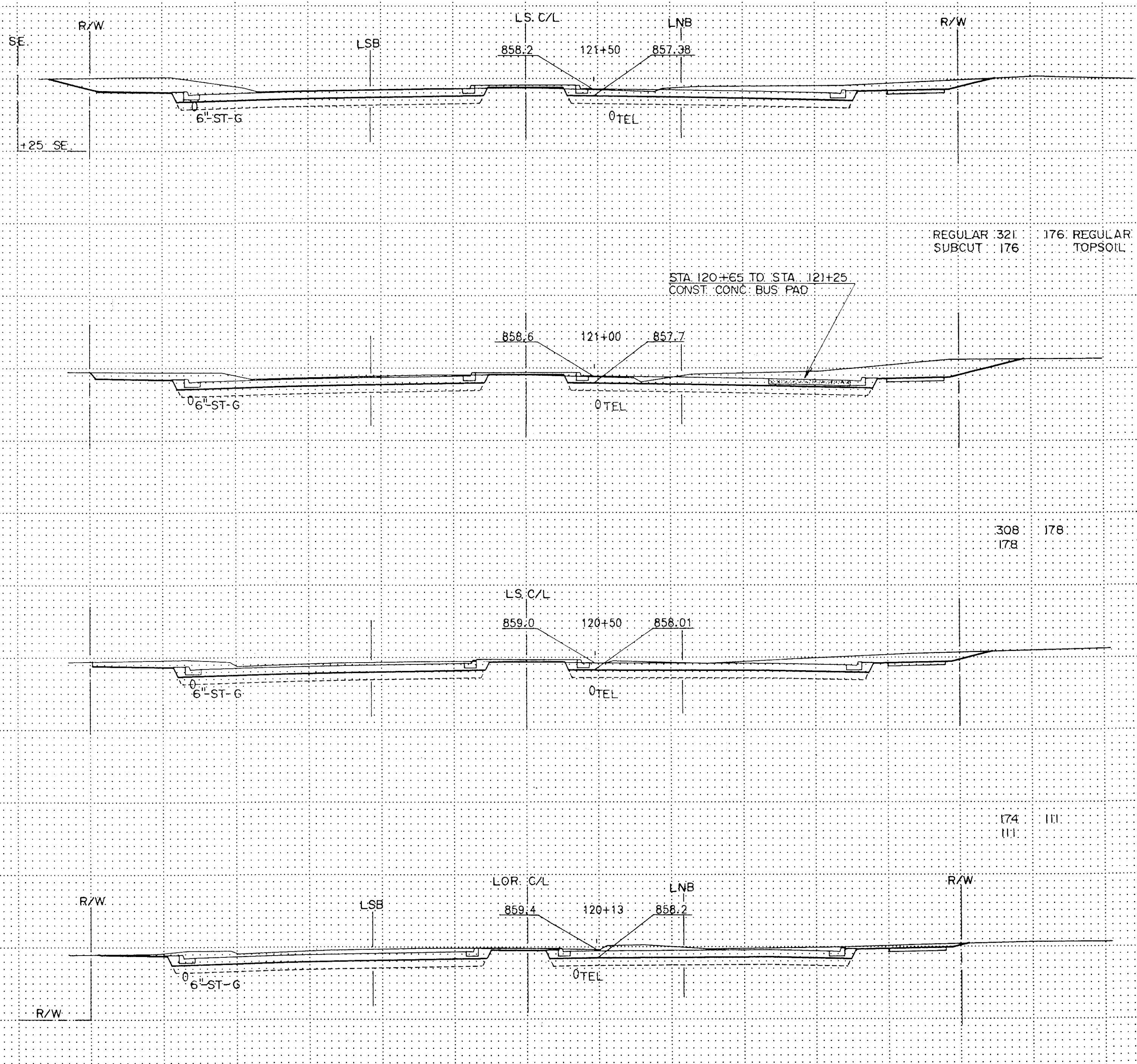
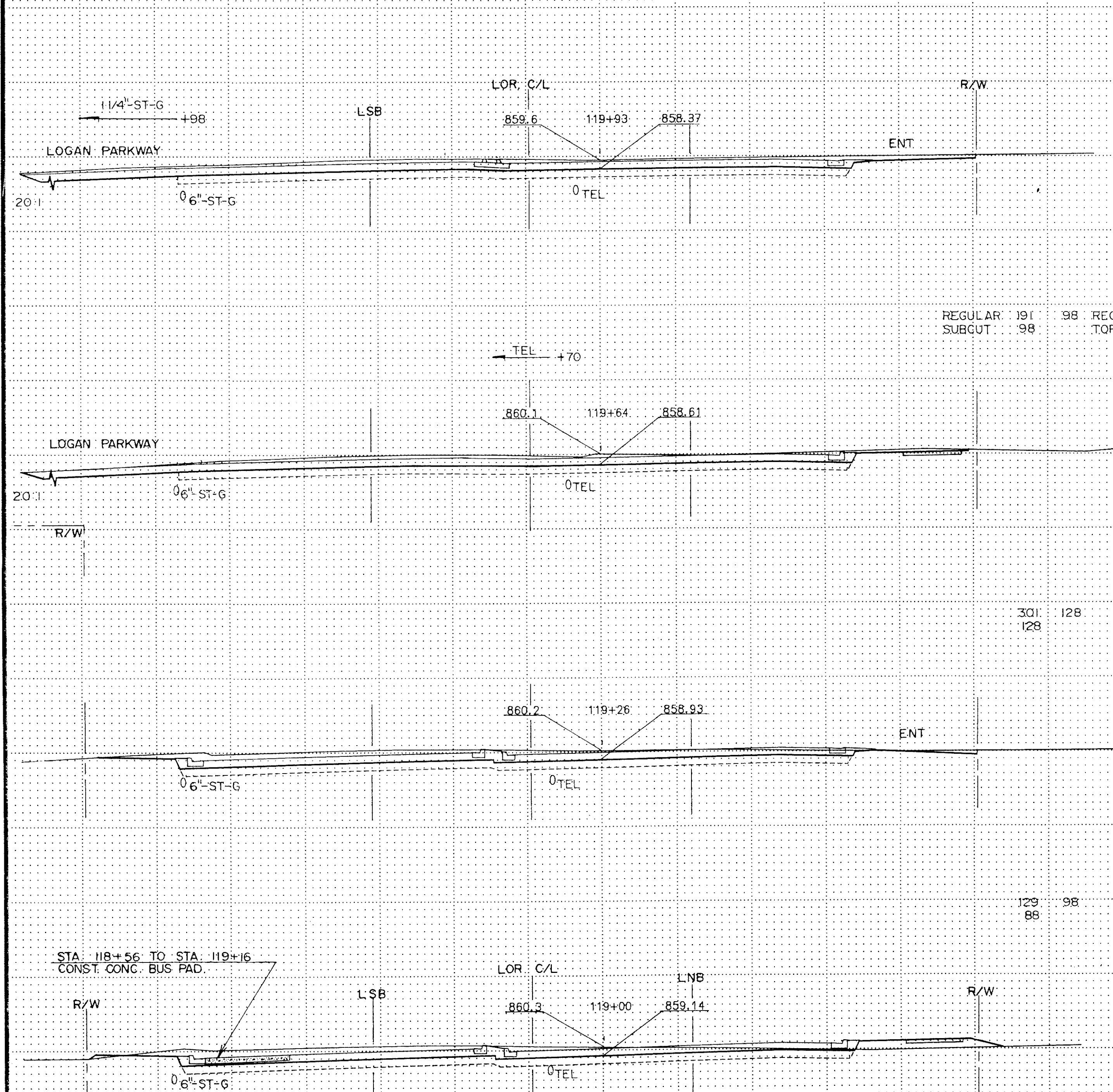


CROSS-SECTION
STA. 121+85 TO STA. 123+27

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EXCAVATION EMBANKMENT
SUB-TOTALS CU.YDS. SUB-TOTALS CU.YDS.

EXCAVATION EMBANKMENT
SUB-TOTALS CU.YDS. SUB-TOTALS CU.YDS.



REGULAR 191
SUBCUT 98
98
REGULAR
TOPSOIL

REGULAR 321
SUBCUT 176
176
REGULAR
TOPSOIL

301
128
128

308
178
178

129
88
98

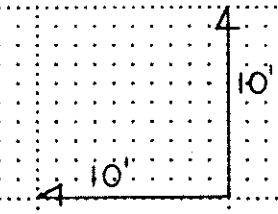
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111
111

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157
227

121
69
69

NOTE: EARTHWORK QUANTITIES INCLUDE
BITUMINOUS AND CONCRETE
REMOVAL ITEMS.

NOTE: UTILITY ELEVATIONS ASSUMED
NOT ACTUAL

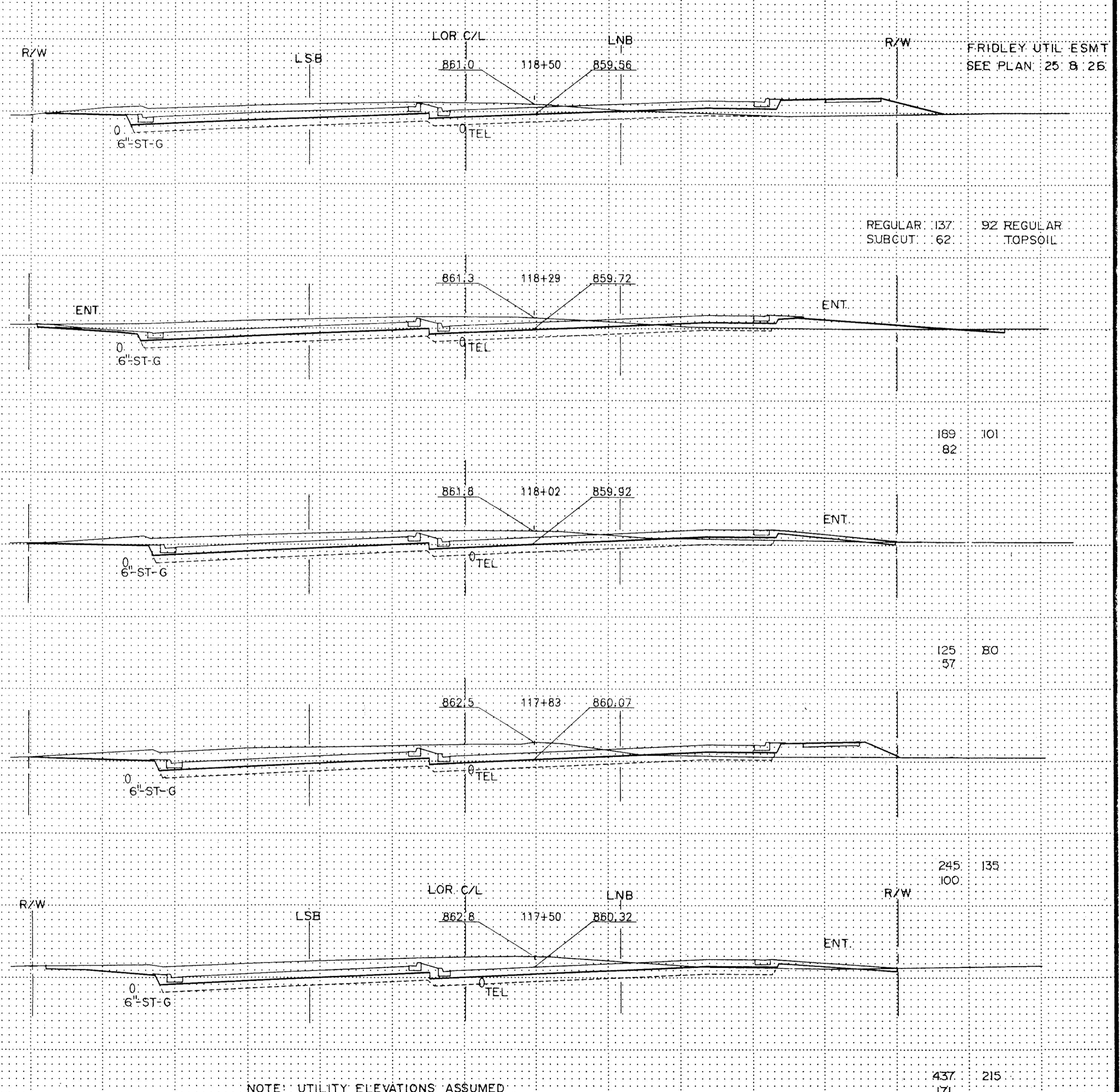
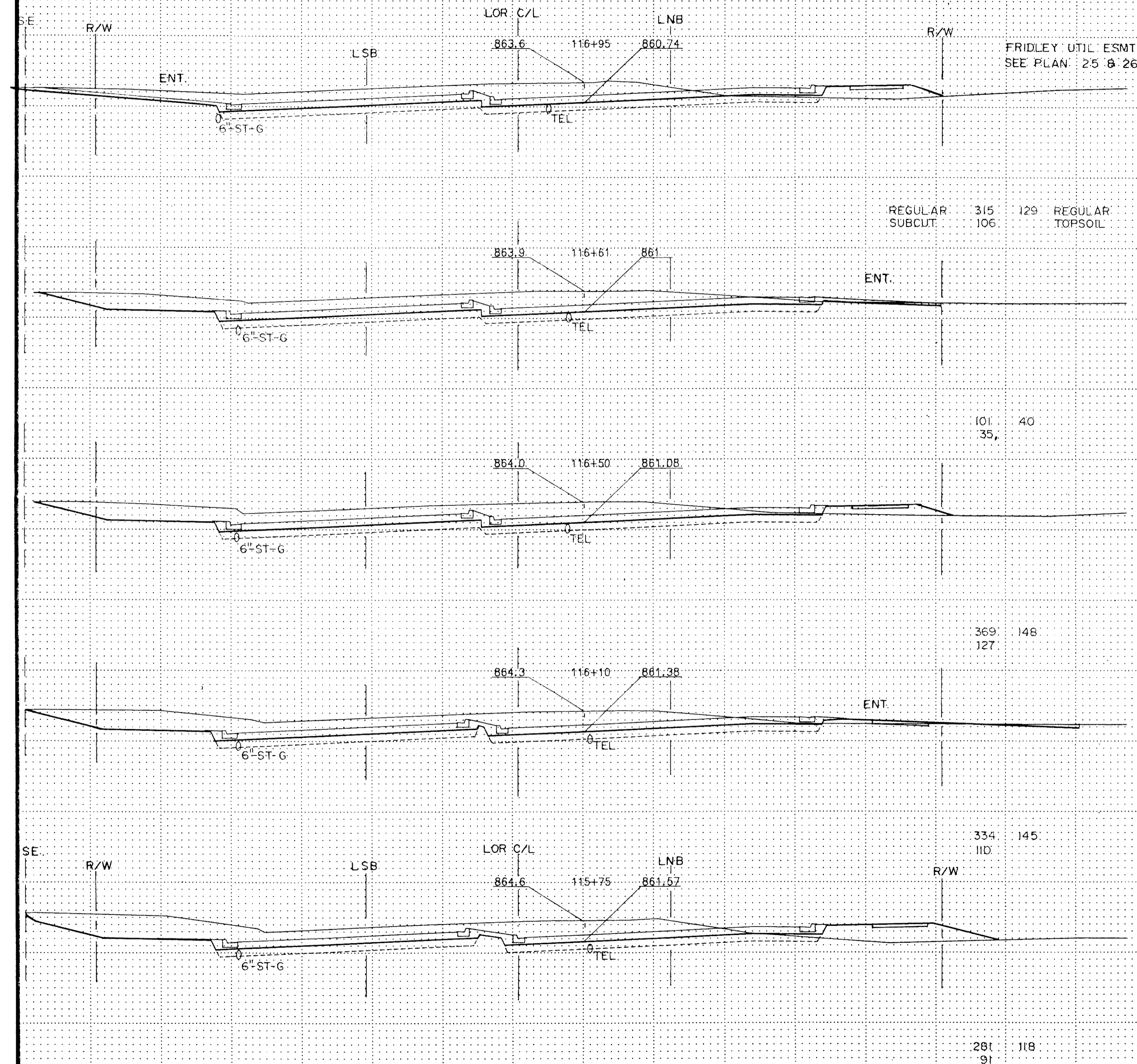


CROSS-SECTION
STA. 119+00 TO STA. 121+50

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EXCAVATION EMBANKMENT
SUB: TOTALS: CU.YDS. SUB: TOTALS: CU.YDS.

EXCAVATION EMBANKMENT
SUB: TOTALS: CU.YDS. SUB: TOTALS: CU.YDS.



REGULAR SUBCUT 315 129
106 106 REGULAR TOPSOIL

REGULAR SUBCUT 137 92
62 62 REGULAR TOPSOIL

101 40
35 40

169 101
82 82

369 148
127 148

125 80
57 80

334 145
110 145

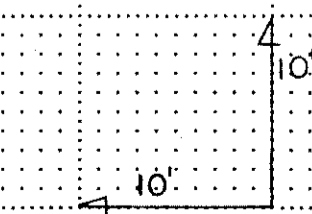
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100 135

281 118
91 118

437 215
171 215

NOTE: EARTHWORK QUANTITIES INCLUDE BITUMINOUS AND CONCRETE REMOVAL ITEMS.

NOTE: UTILITY ELEVATIONS ASSUMED NOT ACTUAL.

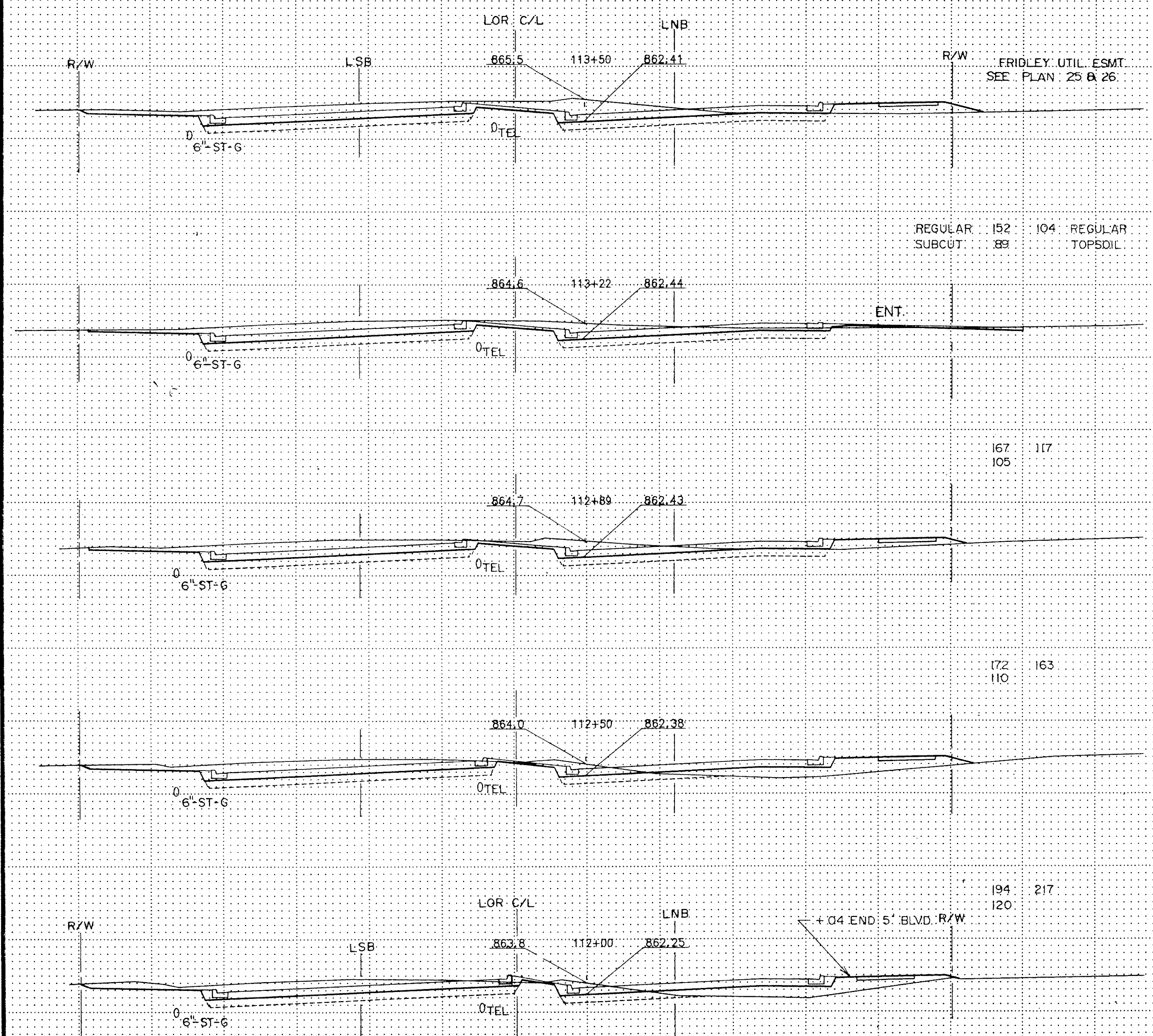


CROSS-SECTION
STA. 115+75 TO 118+50

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EXCAVATION EMBANKMENT
SUB-TOTALS CU.YDS. SUB-TOTALS CU.YDS.

EXCAVATION EMBANKMENT
SUB-TOTALS CU.YDS. SUB-TOTALS CU.YDS.



REGULAR 152 104 REGULAR
SUBCUT 89 TOPSOIL

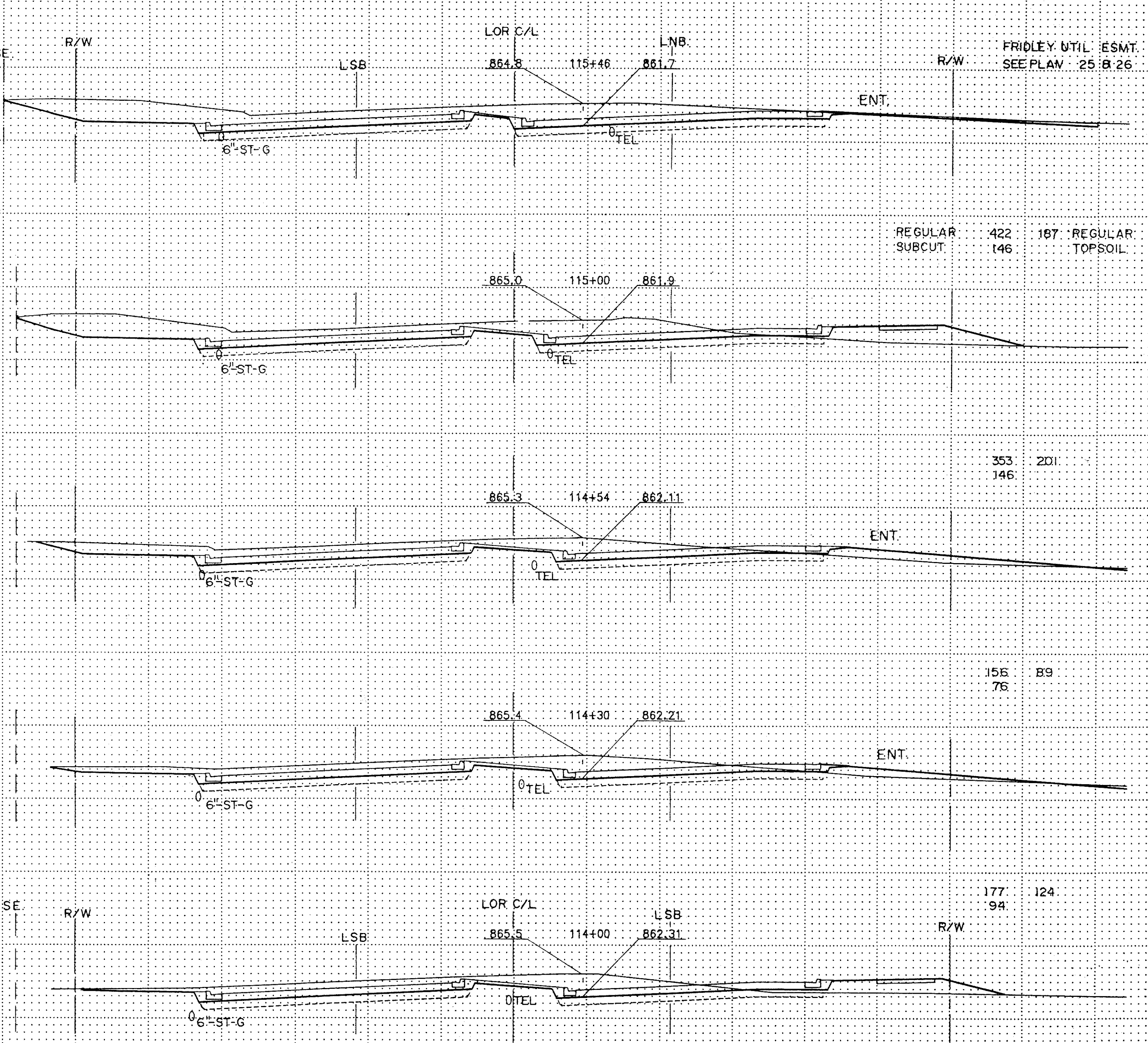
167 117
105

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110

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NOTE: EARTHWORK QUANTITIES INCLUDE
BITUMINOUS AND CONCRETE
REMOVAL ITEMS.

180 242
121



REGULAR 422 187 REGULAR
SUBCUT 146 TOPSOIL

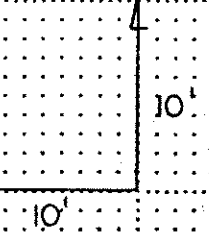
353 201
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156 89
76

177 124
94

NOTE: UTILITY ELEVATIONS ASSUMED
NOT ACTUAL.

277 218
156



CROSS-SECTION
STA. 112+00 TO 115+46

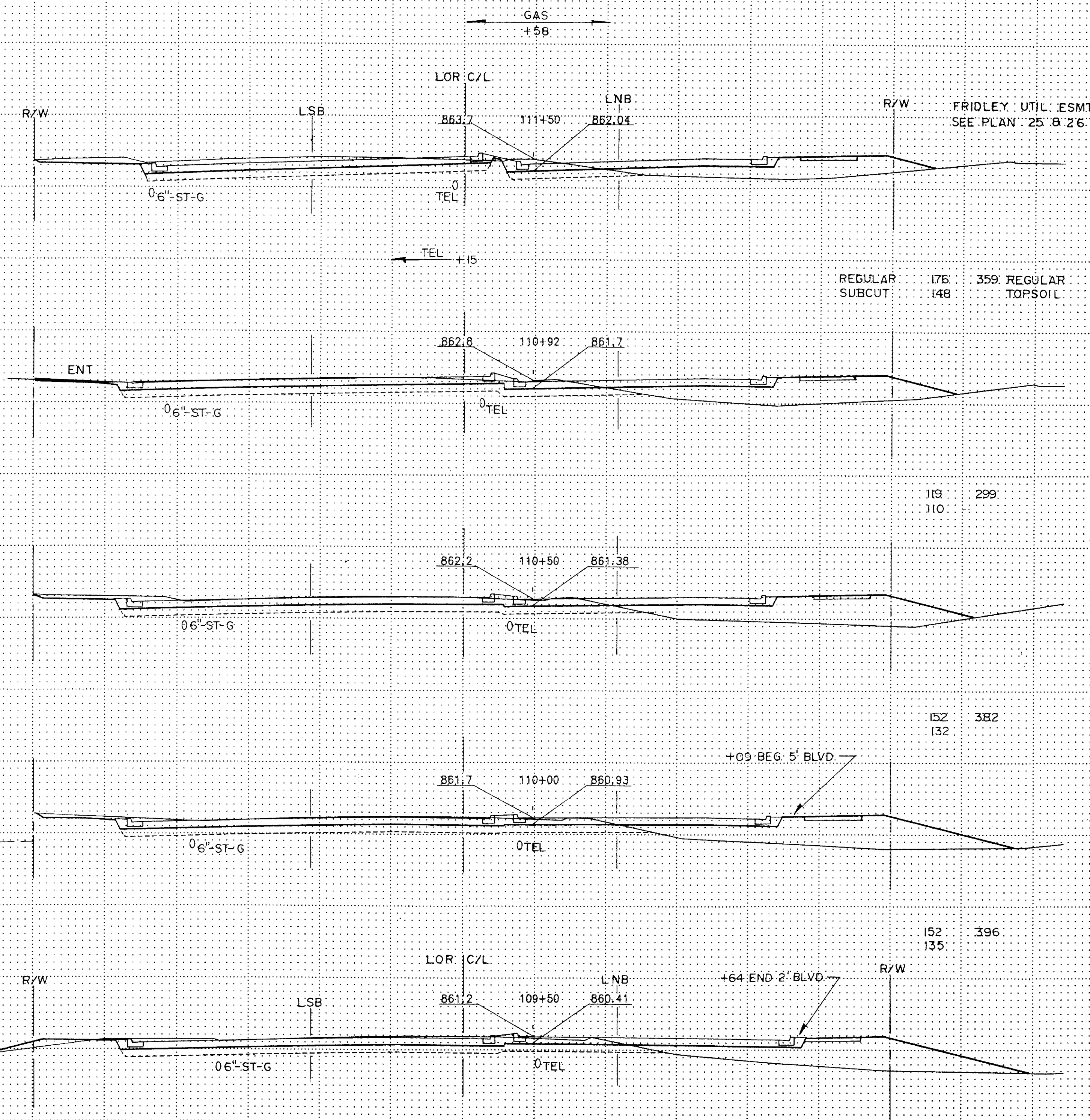
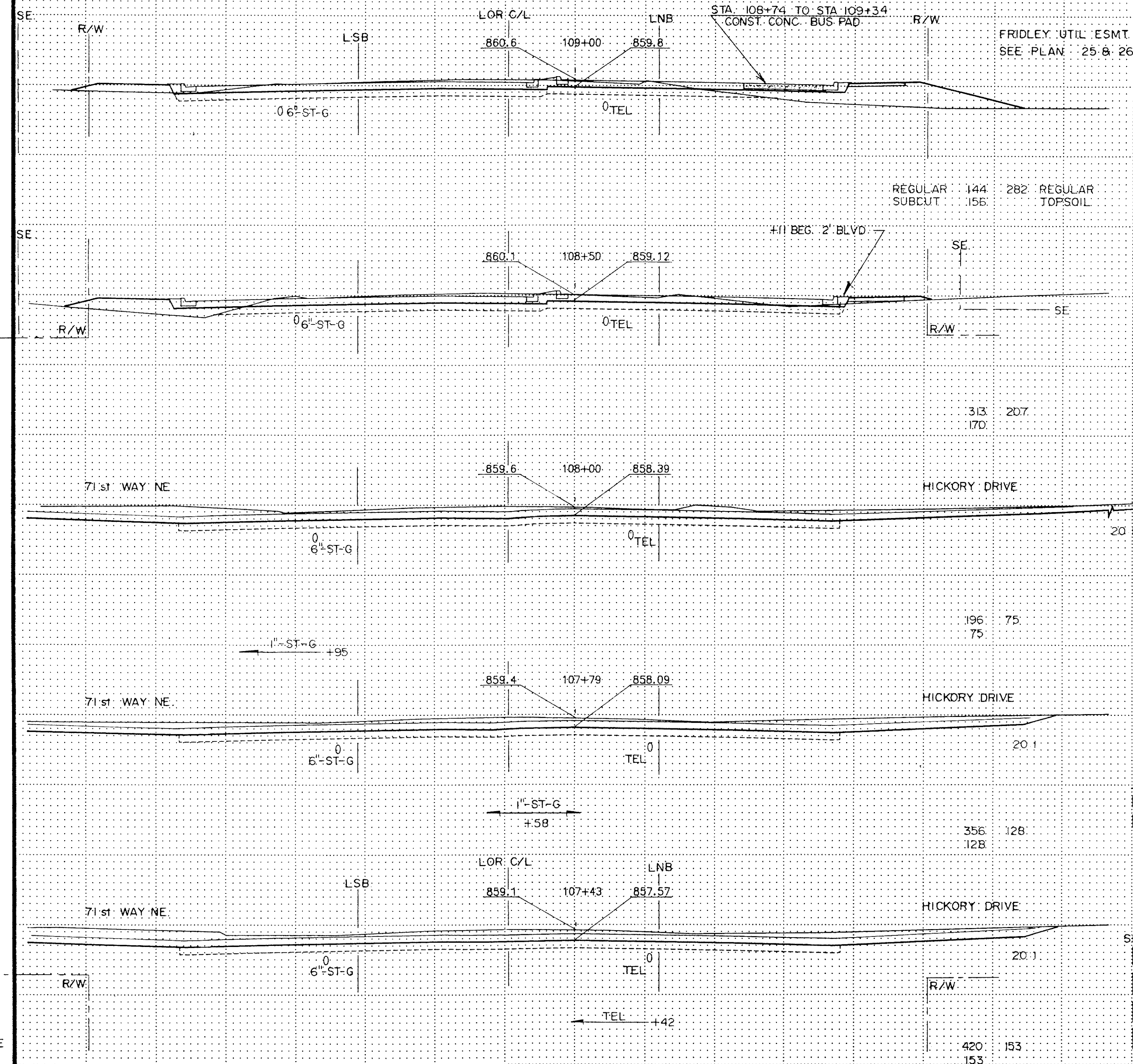
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EXCAVATION EMBANKMENT

SUB-TOTALS CU.YDS. SUB-TOTALS CU.YDS.

EXCAVATION EMBANKMENT

SUB-TOTALS CU.YDS. SUB-TOTALS CU.YDS.



NOTE: EARTHWORK QUANTITIES INCLUDE BITUMINOUS AND CONCRETE REMOVAL ITEMS.

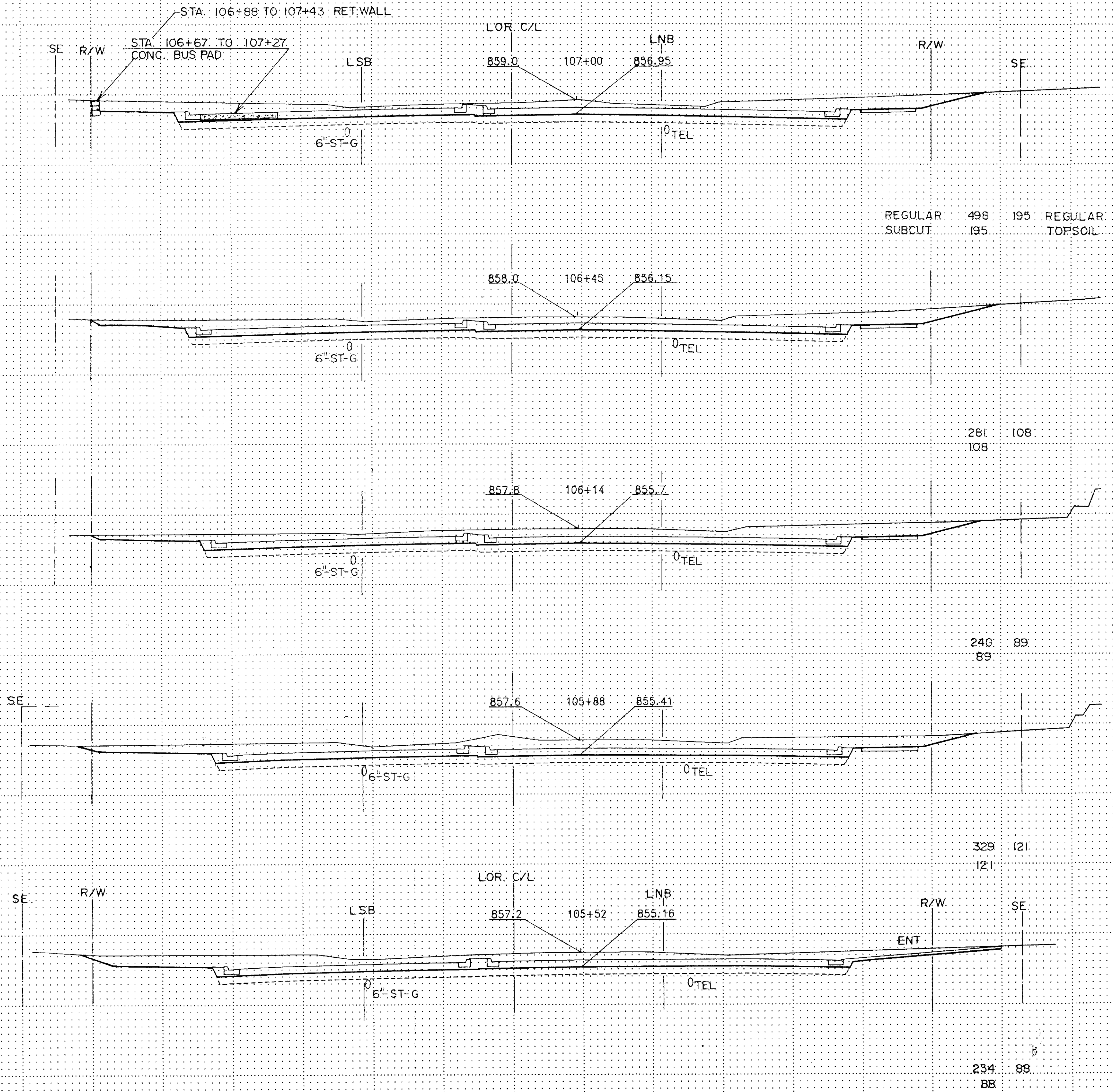
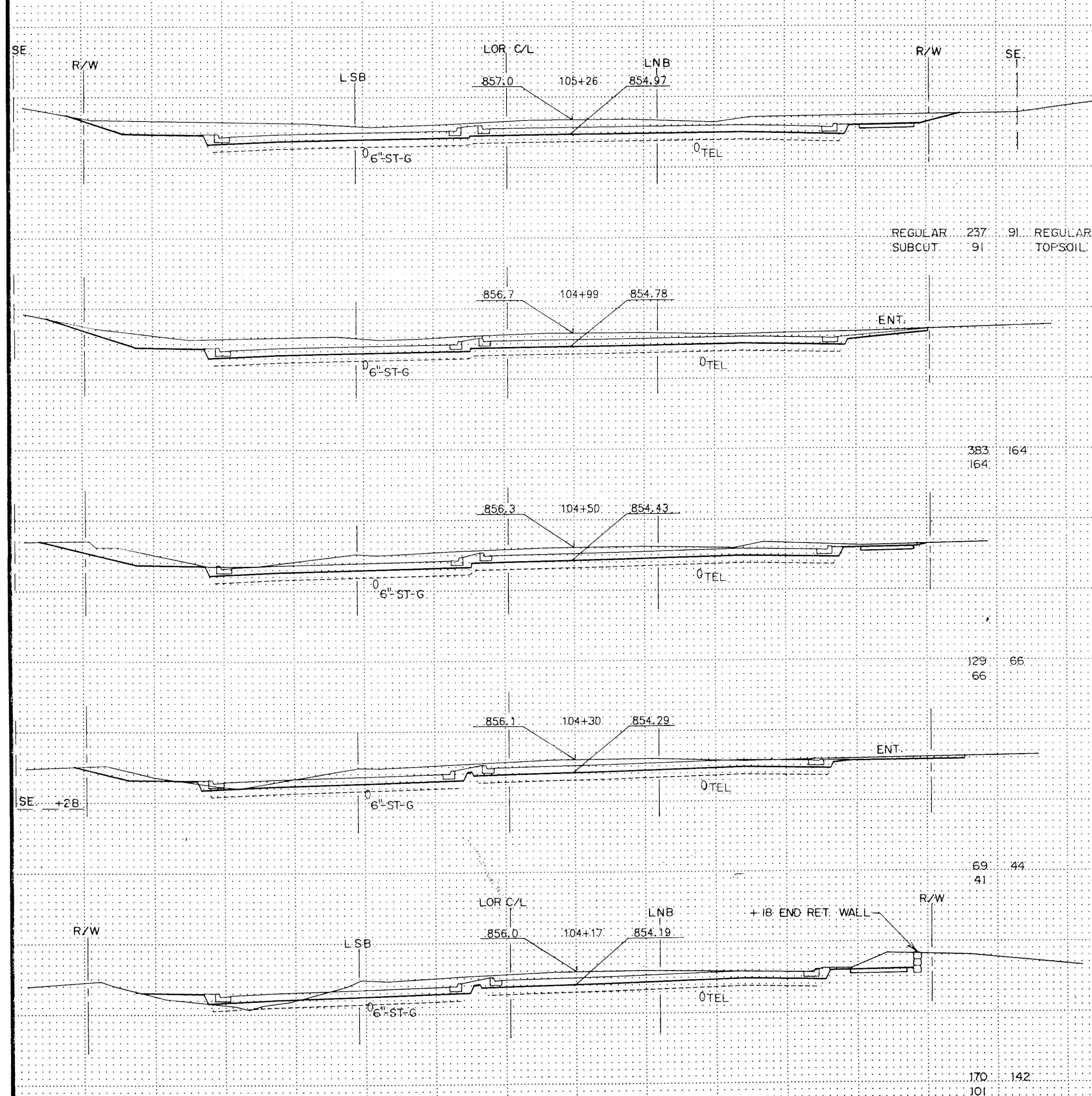
NOTE: UTILITY ELEVATIONS ASSUMED. NOT ACTUAL.

CROSS-SECTION STA. 107+43 TO STA. 111+50

Copy Equipment Form #1 M1007

EXCAVATION EMBANKMENT
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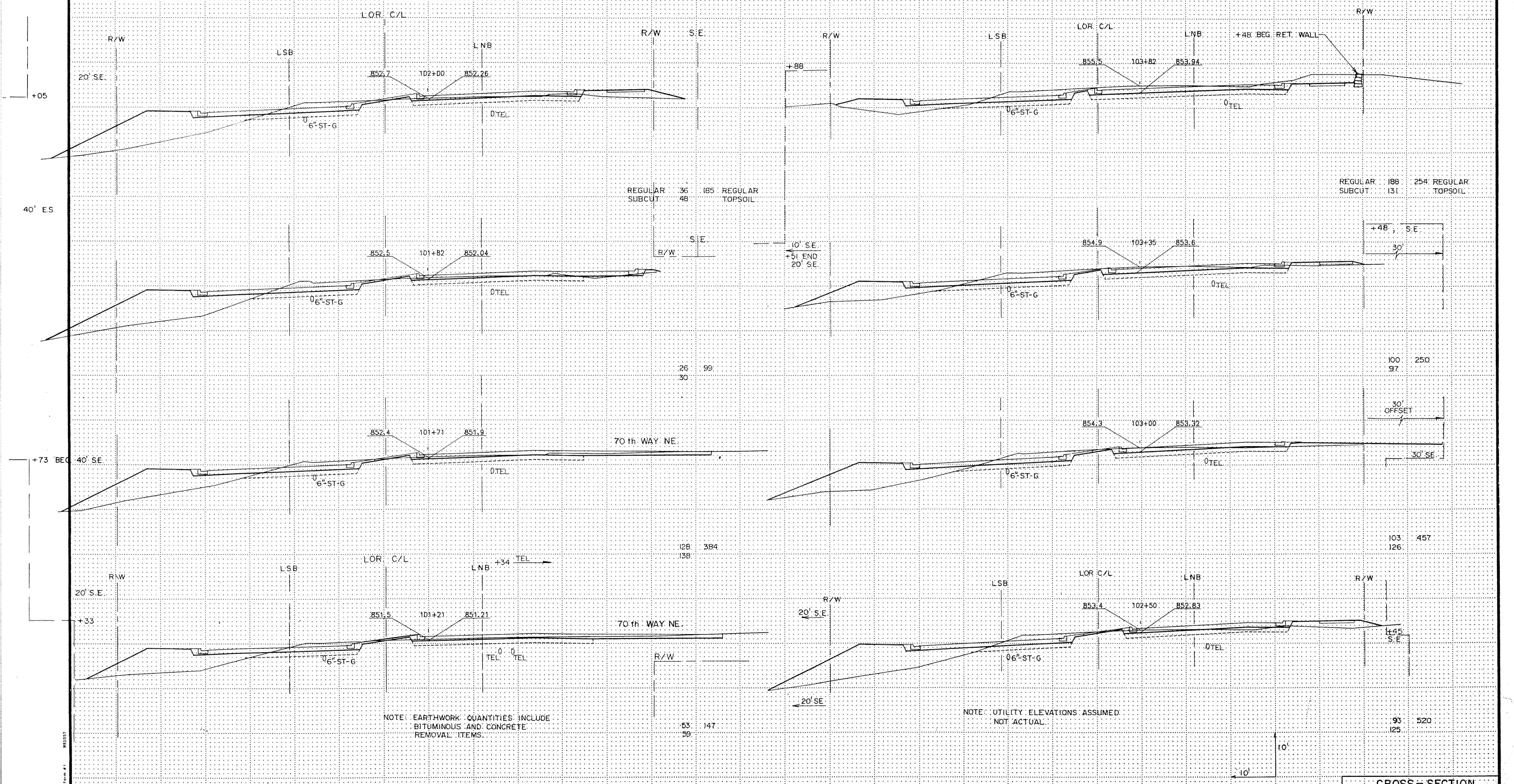
EXCAVATION EMBANKMENT
SUB: TOTALS: CU. YDS. SUB: TOTALS: CU. YDS.



Copy Equipment Form #1

EXCAVATION EMBANKMENT
SUB-TOTALS CU.YDS. SUB-TOTALS CU.YDS.

EXCAVATION EMBANKMENT
SUB-TOTALS CU.YDS. SUB-TOTALS CU.YDS.



REGULAR 36 185
SUBCUT 48 185
TOPSOIL

REGULAR 188 254
SUBCUT 131 254
TOPSOIL

26 99
30

100 250
97

128 384
138

103 457
126

53 147
59

93 520
125

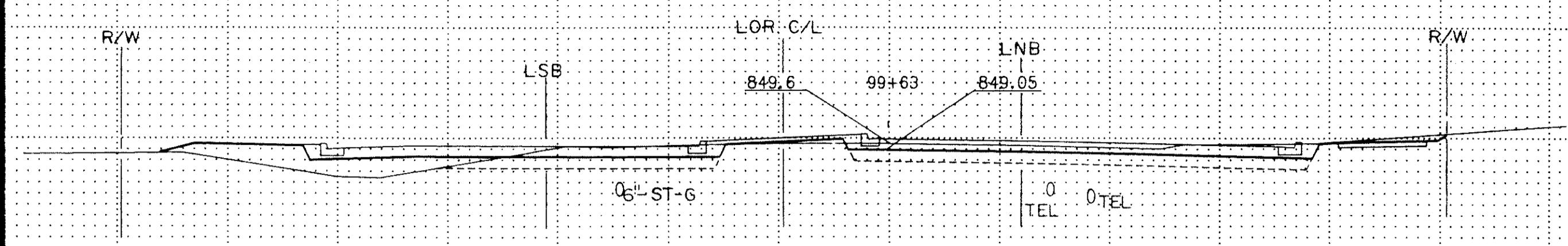
NOTE: EARTHWORK QUANTITIES INCLUDE BITUMINOUS AND CONCRETE REMOVAL ITEMS.

NOTE: UTILITY ELEVATIONS ASSUMED NOT ACTUAL.

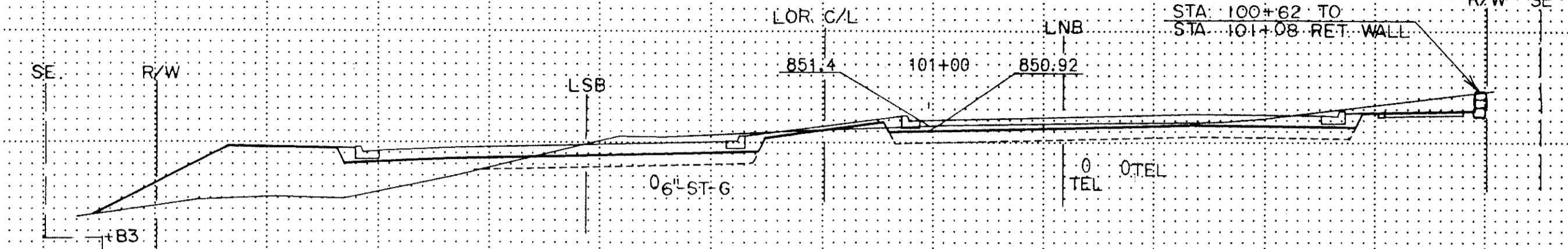
CROSS-SECTION
STA: 101+21 TO STA: 103+82

EXCAVATION EMBANKMENT
SUB-TOTALS CU.YDS. SUB-TOTALS CU.YDS.

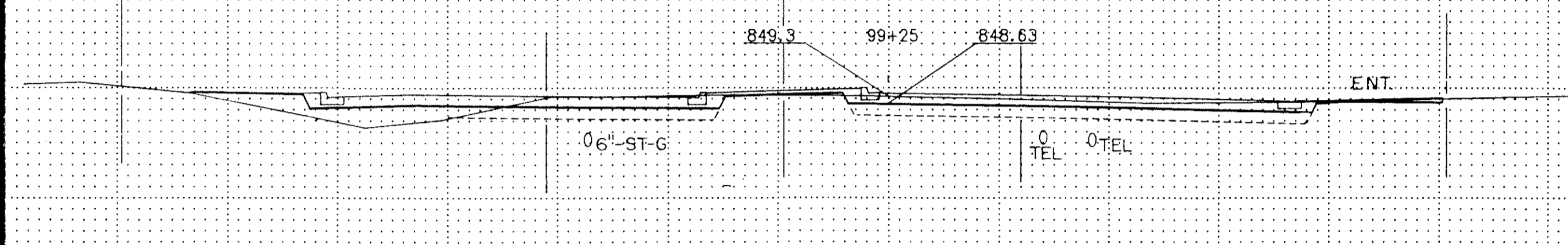
EXCAVATION EMBANKMENT
SUB-TOTALS CU.YDS. SUB-TOTALS CU.YDS.



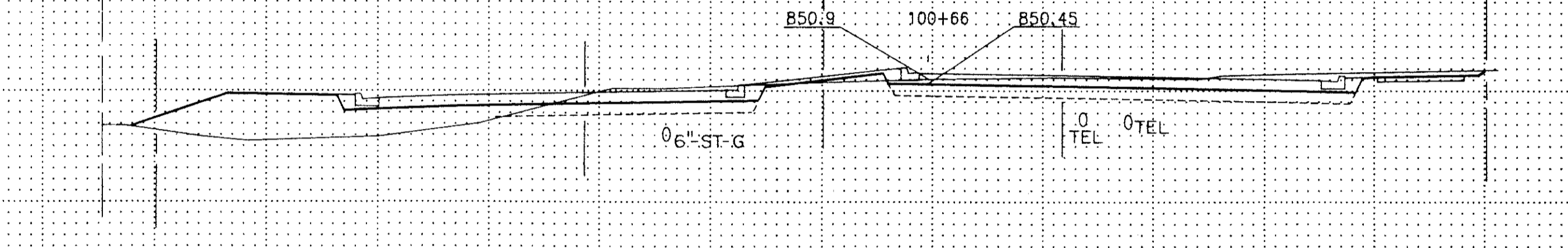
REGULAR 75 157
SUBCUT 106 REGULAR
TOPSOIL



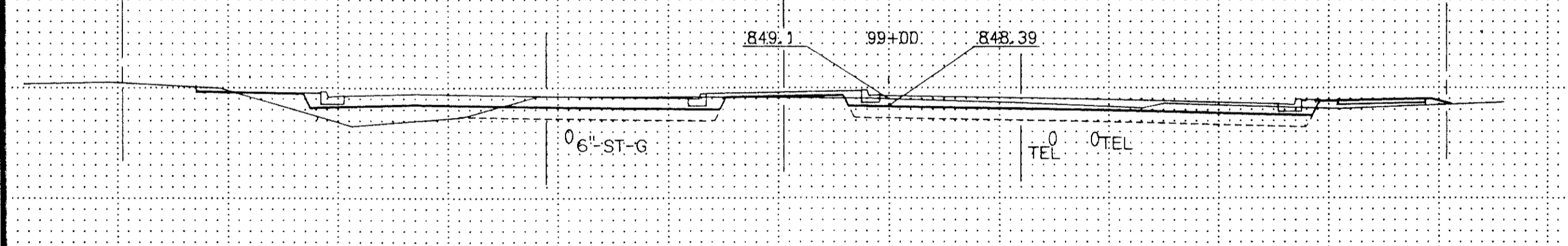
REGULAR 88 216
SUBCUT 94 REGULAR
TOPSOIL



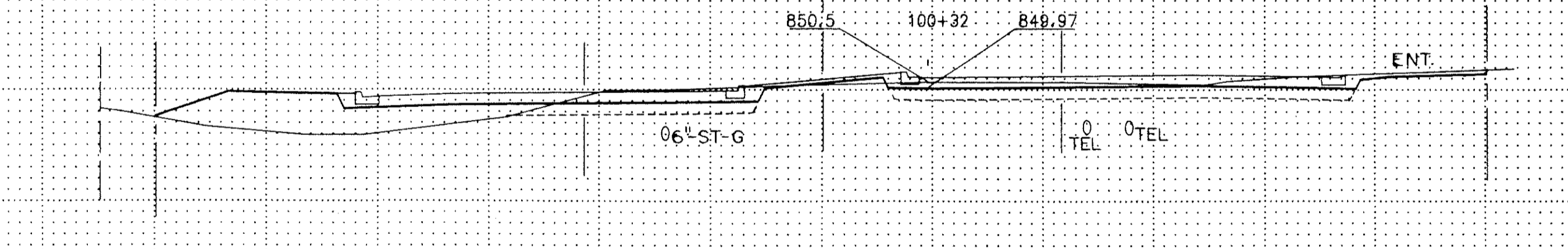
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69 91



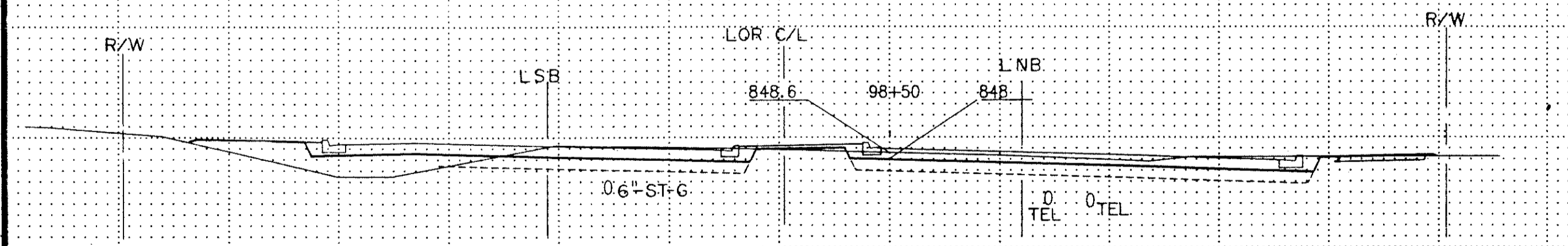
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102 209
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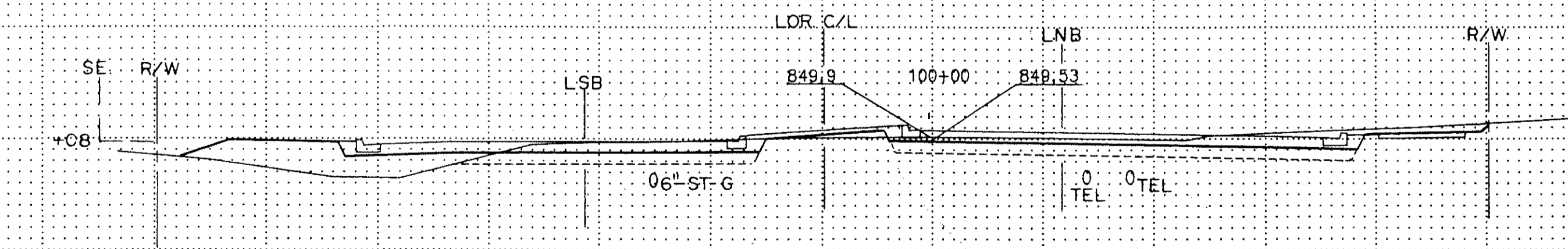


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88



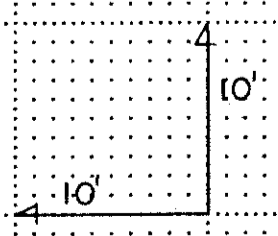
NOTE: EARTHWORK QUANTITIES INCLUDE
BITUMINOUS AND CONCRETE
REMOVAL ITEMS.

133 208
137



NOTE: UTILITY ELEVATIONS ASSUMED.
NOT ACTUAL.

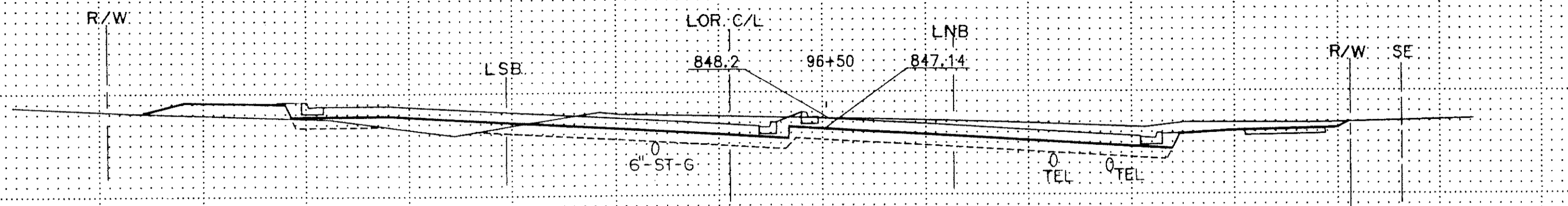
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104



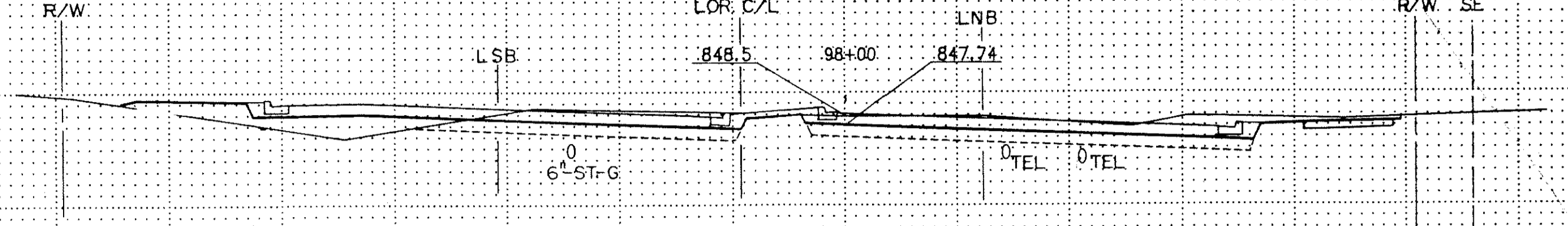
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EXCAVATION EMBANKMENT
SUB-TOTALS CU.YDS. SUB-TOTALS CU.YDS.

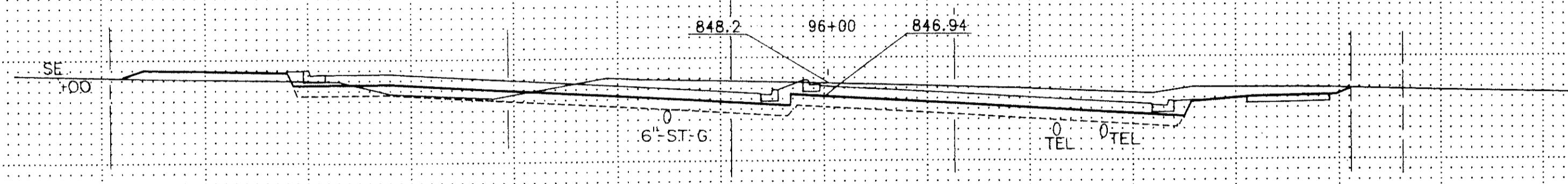
EXCAVATION EMBANKMENT
SUB-TOTALS CU.YDS. SUB-TOTALS CU.YDS.



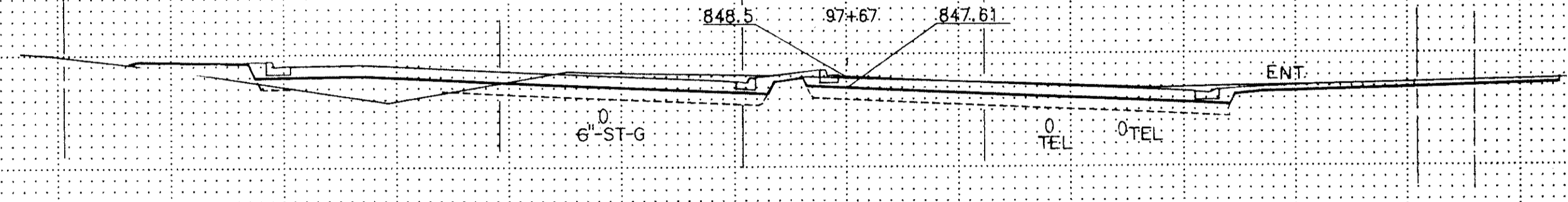
REGULAR 221 185
SUBCUT 136 TOPSOIL



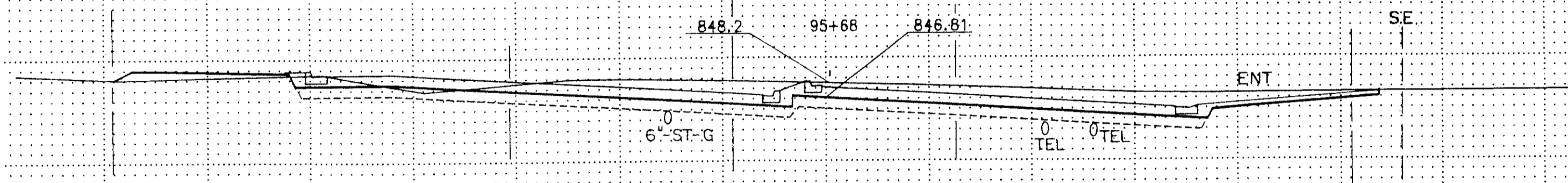
REGULAR 102 131
SUBCUT 86 TOPSOIL



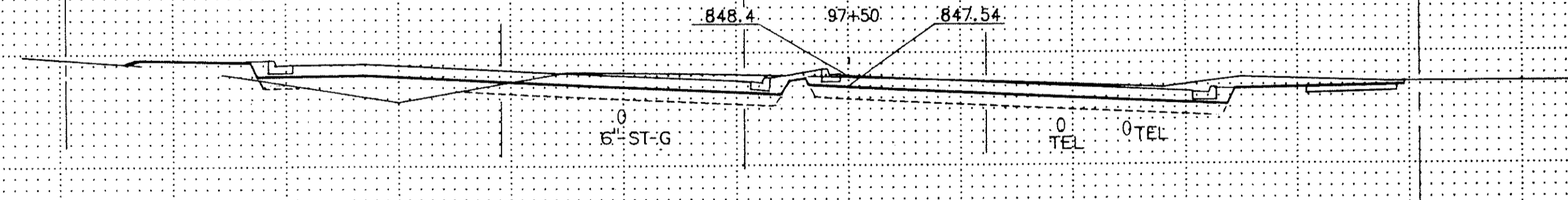
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97



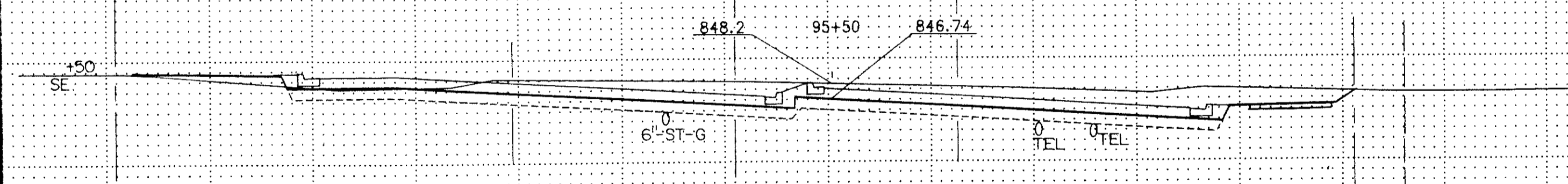
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43



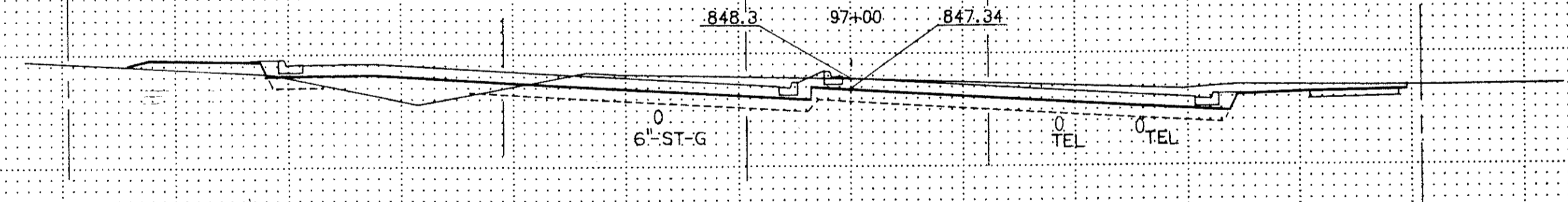
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60



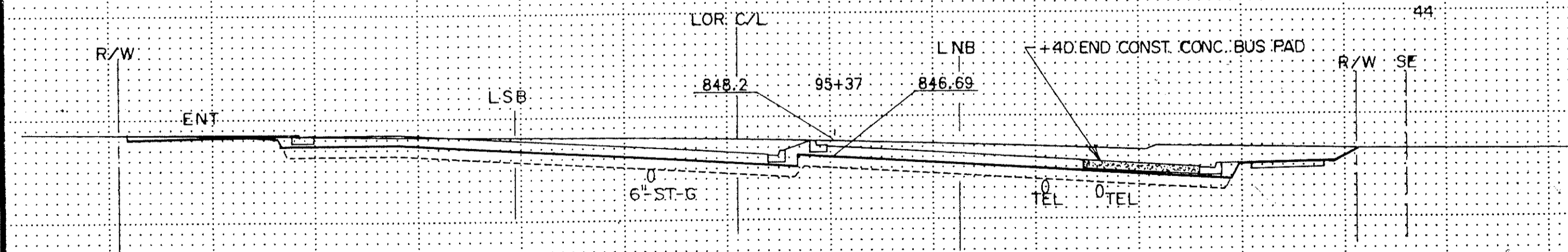
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127



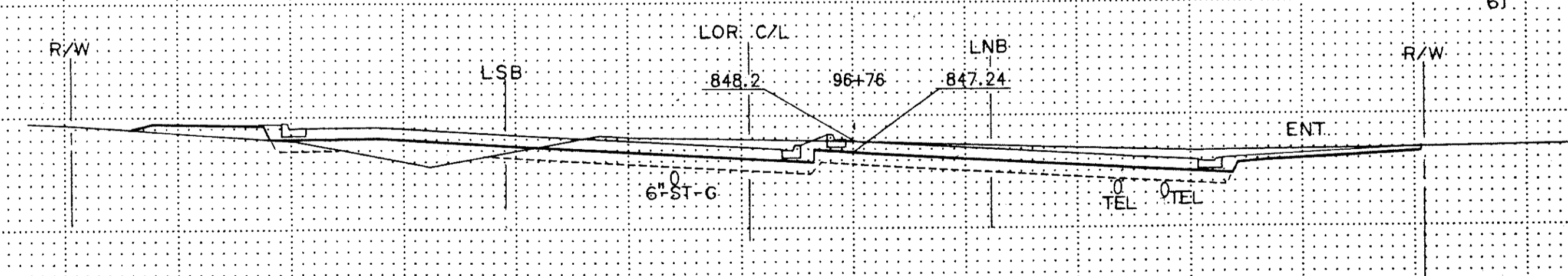
87 46
44



91 92
61



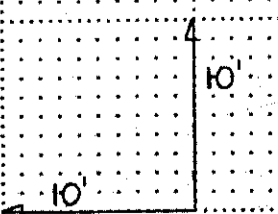
116 61
59



102 98
67

NOTE: EARTHWORK QUANTITIES INCLUDE BITUMINOUS AND CONCRETE REMOVAL ITEMS.

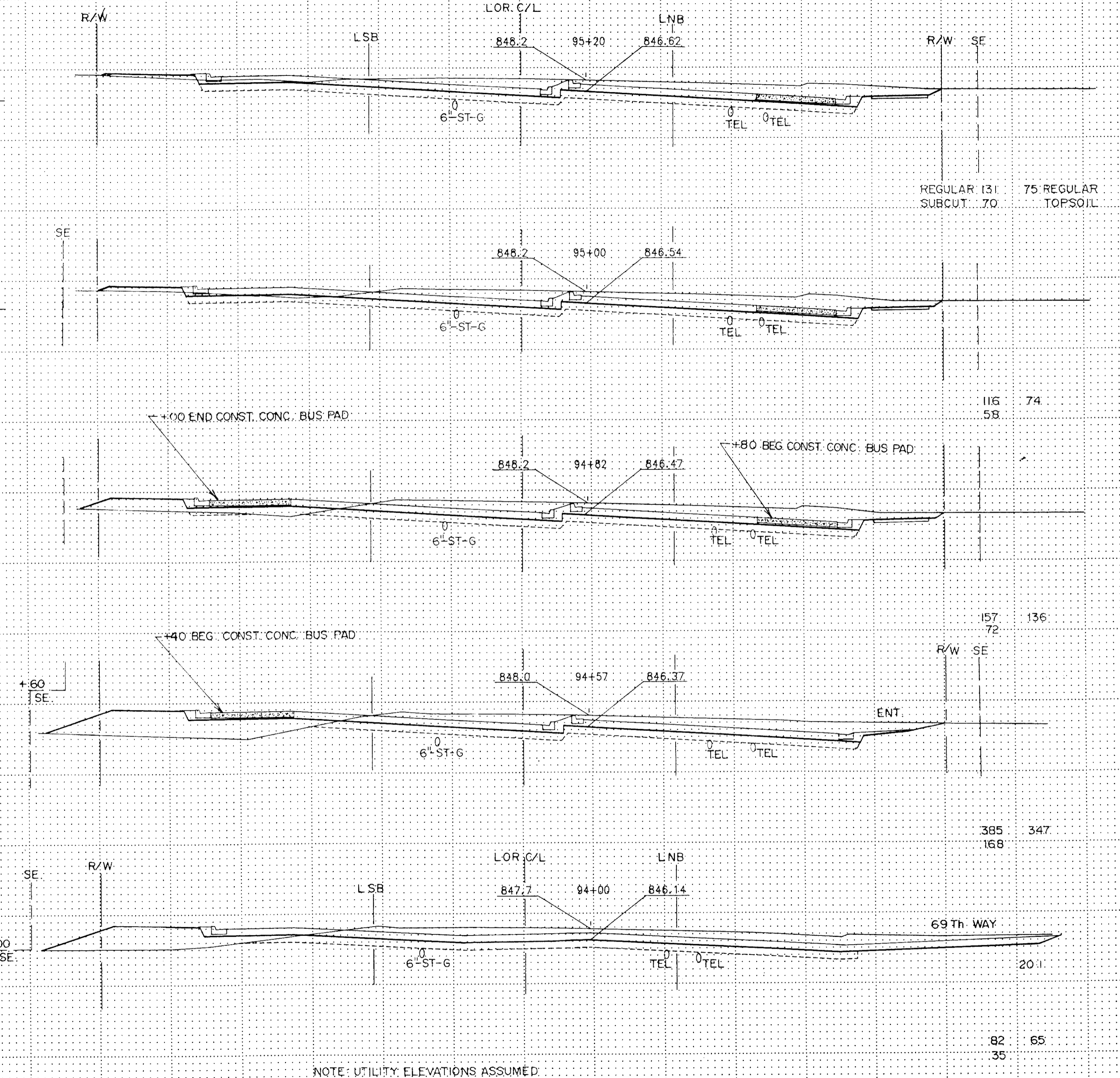
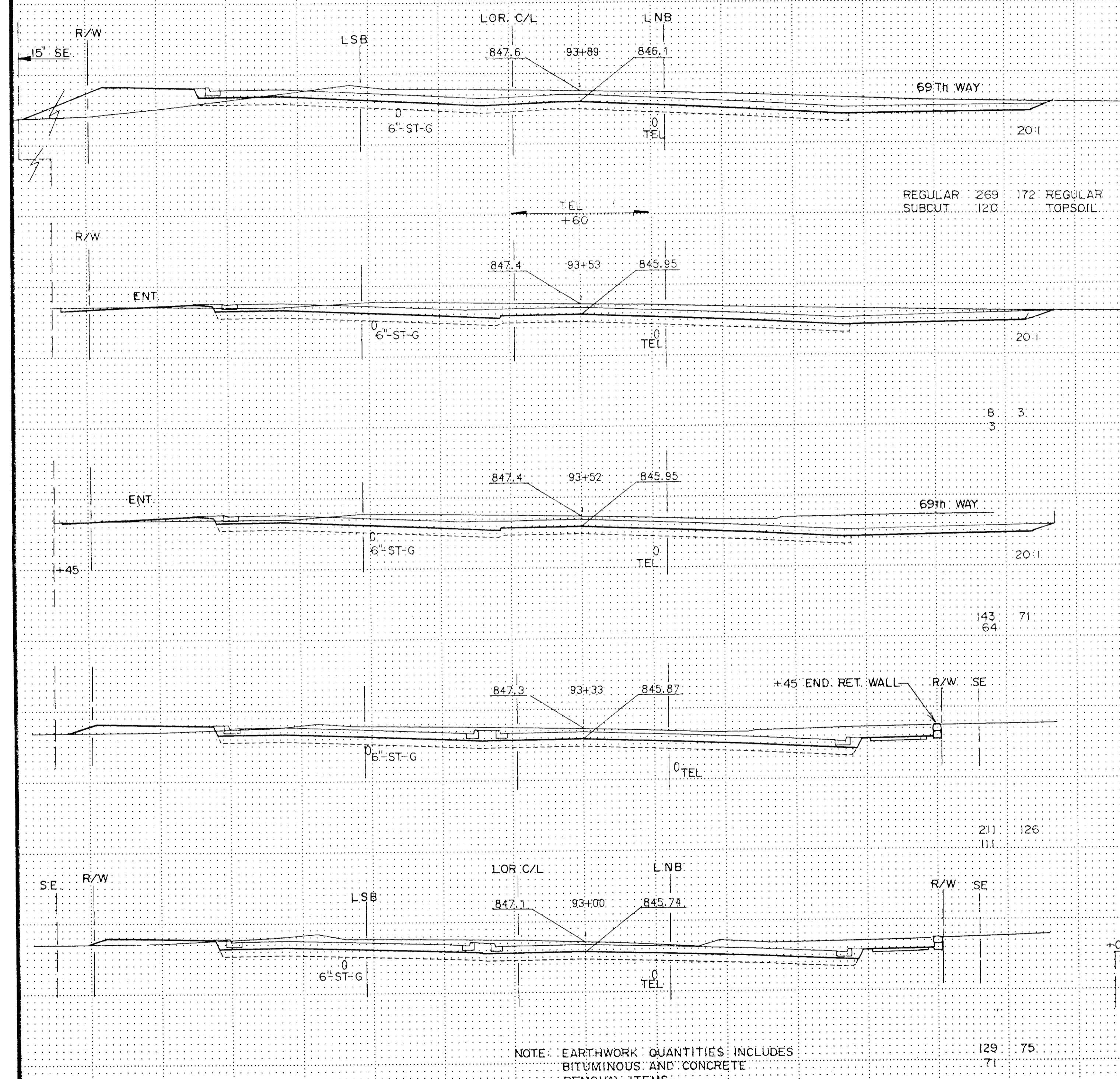
NOTE: UTILITY ELEVATIONS ASSUMED NOT ACTUAL.



CROSS-SECTION
STA. 95+37 TO 98+00

EXCAVATION EMBANKMENT
SUB-TOTALS CU.YDS. SUB-TOTALS CU.YDS.

EXCAVATION EMBANKMENT
SUB-TOTALS CU.YDS. SUB-TOTALS CU.YDS.

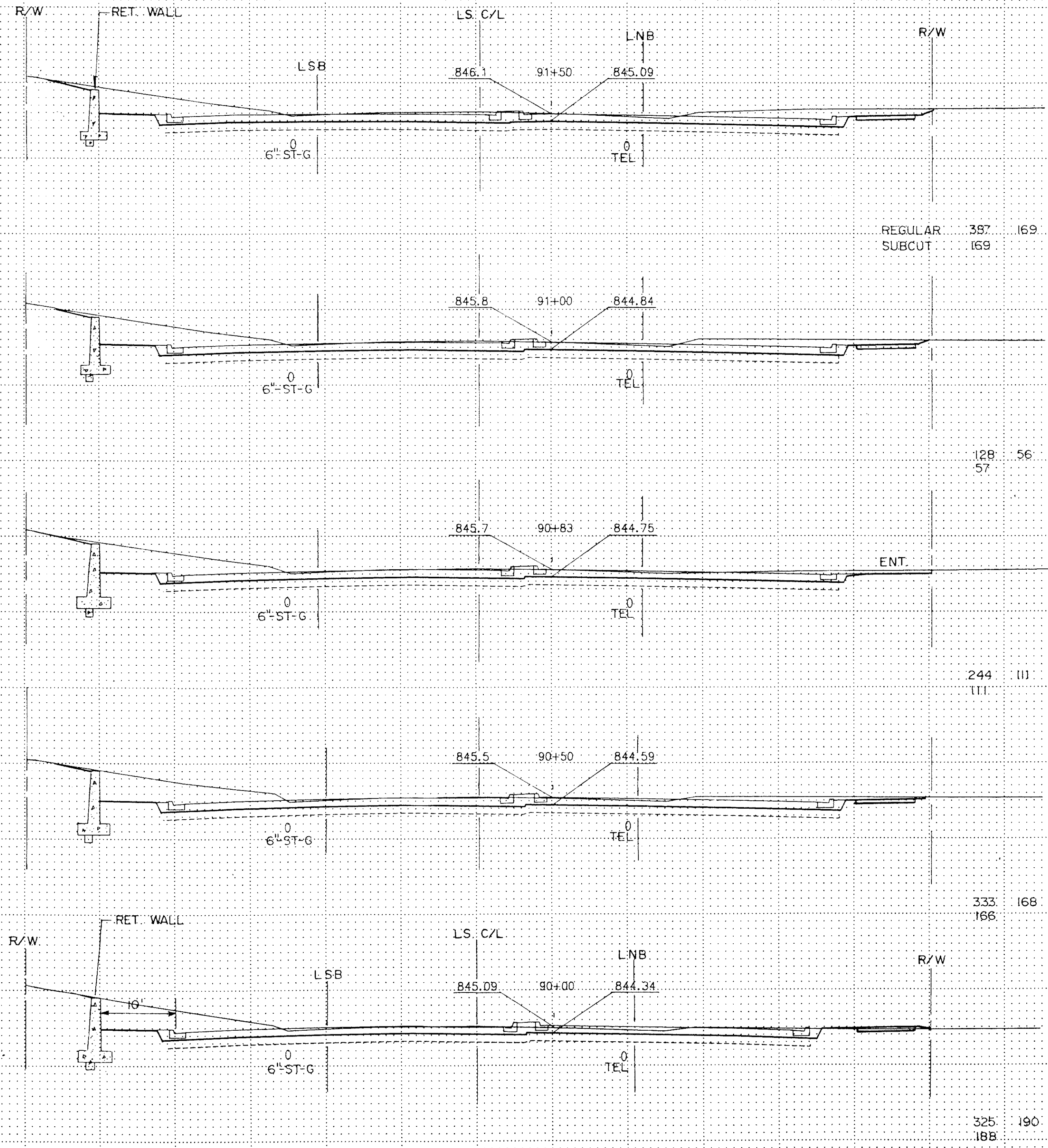


CROSS-SECTION
STA. 93+00 TO 95+20

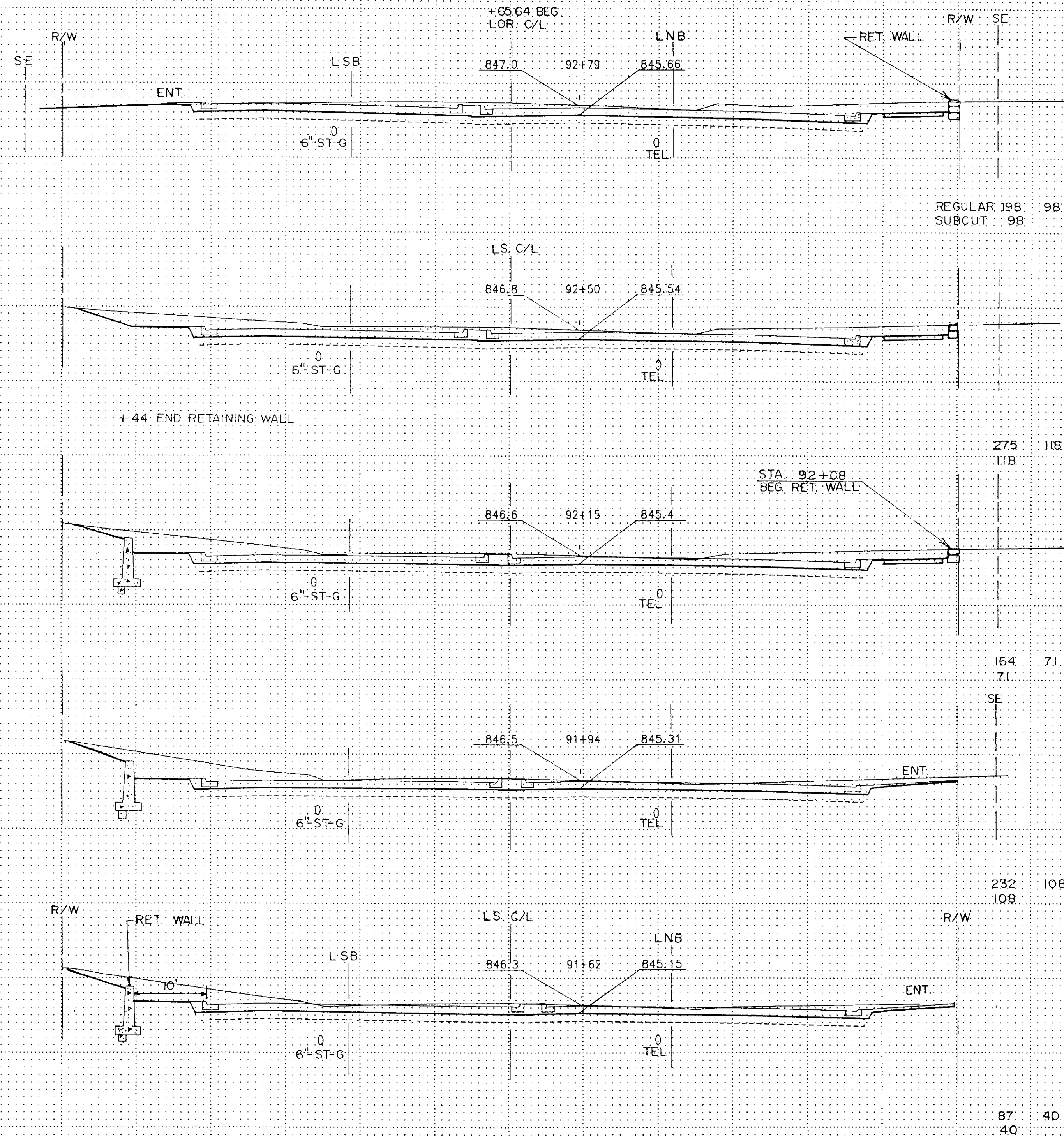
Copy Equipment Form #1 MARSZ

EXCAVATION EMBANKMENT
SUB-TOTALS CU.YDS. SUB-TOTALS CU.YDS.

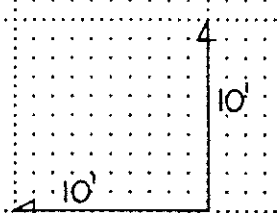
EXCAVATION EMBANKMENT
SUB-TOTALS CU.YDS. SUB-TOTALS CU.YDS.



NOTE: EARTHWORK QUANTITIES INCLUDE BITUMINOUS AND CONCRETE REMOVAL ITEMS.



NOTE: UTILITY ELEVATIONS ASSUMED NOT ACTUAL.

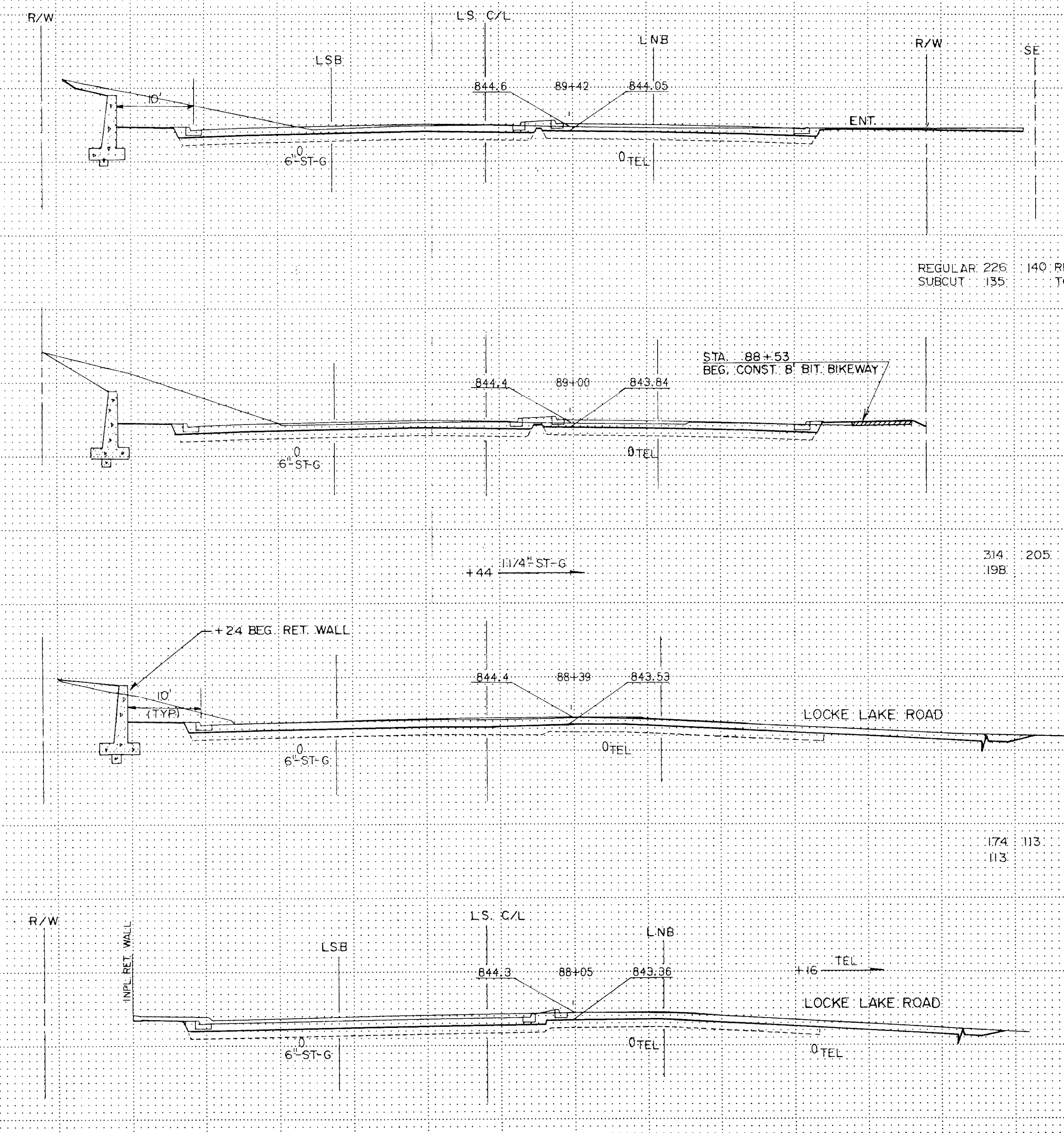
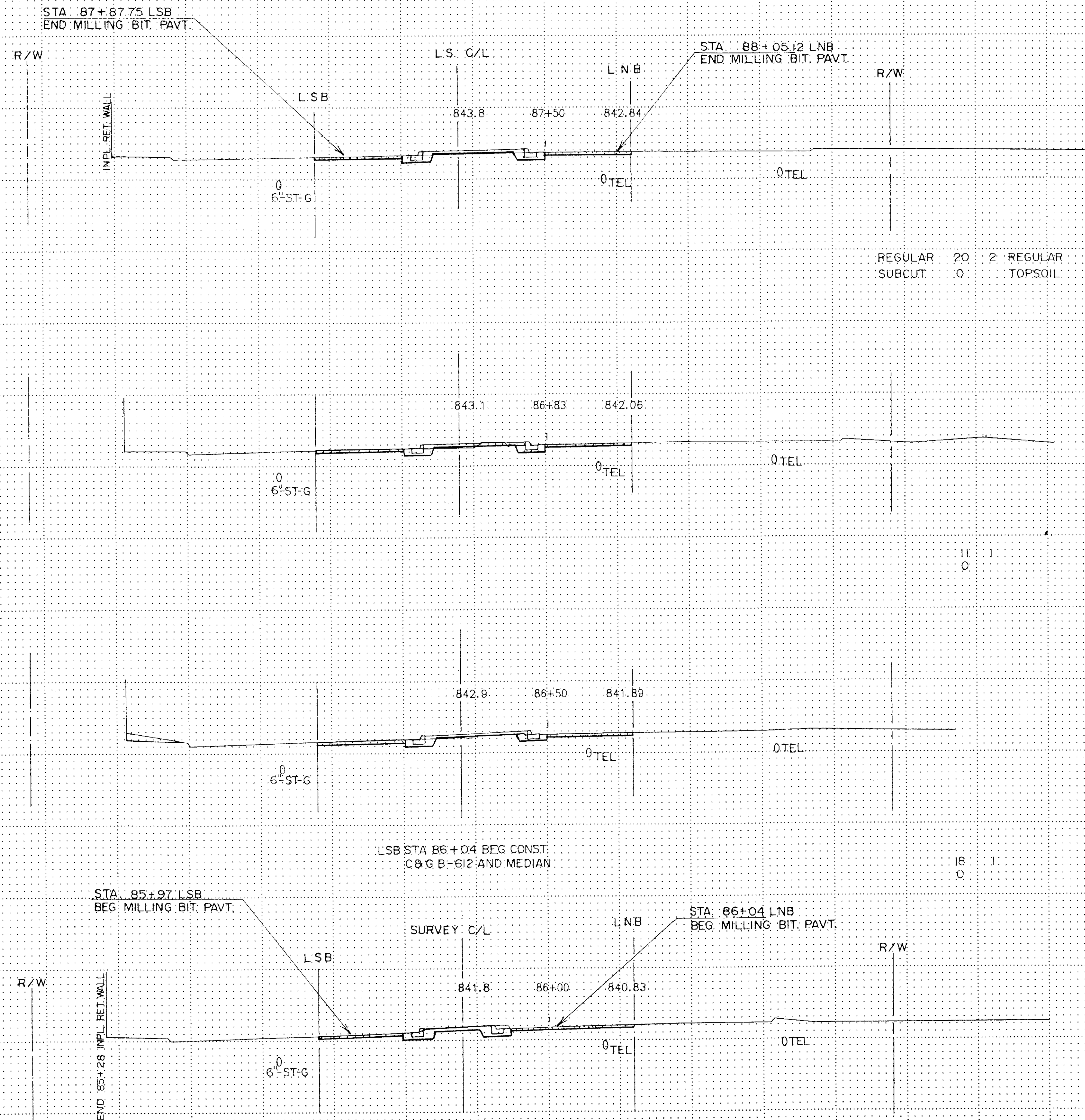


CROSS-SECTION
STA. 90+00 TO 92+79

Copy Equipment Form #1 N45157

EXCAVATION EMBANKMENT
SUB-TOTALS CU.YDS. SUB-TOTALS CU.YDS.

EXCAVATION EMBANKMENT
SUB-TOTALS CU.YDS. SUB-TOTALS CU.YDS.



REGULAR 20 2 REGULAR
SUBCUT 0 TOPSOIL

REGULAR 226 140 REGULAR
SUBCUT 135 TOPSOIL

11
0

314 205
198

18
0

174 113
113

155 94
93

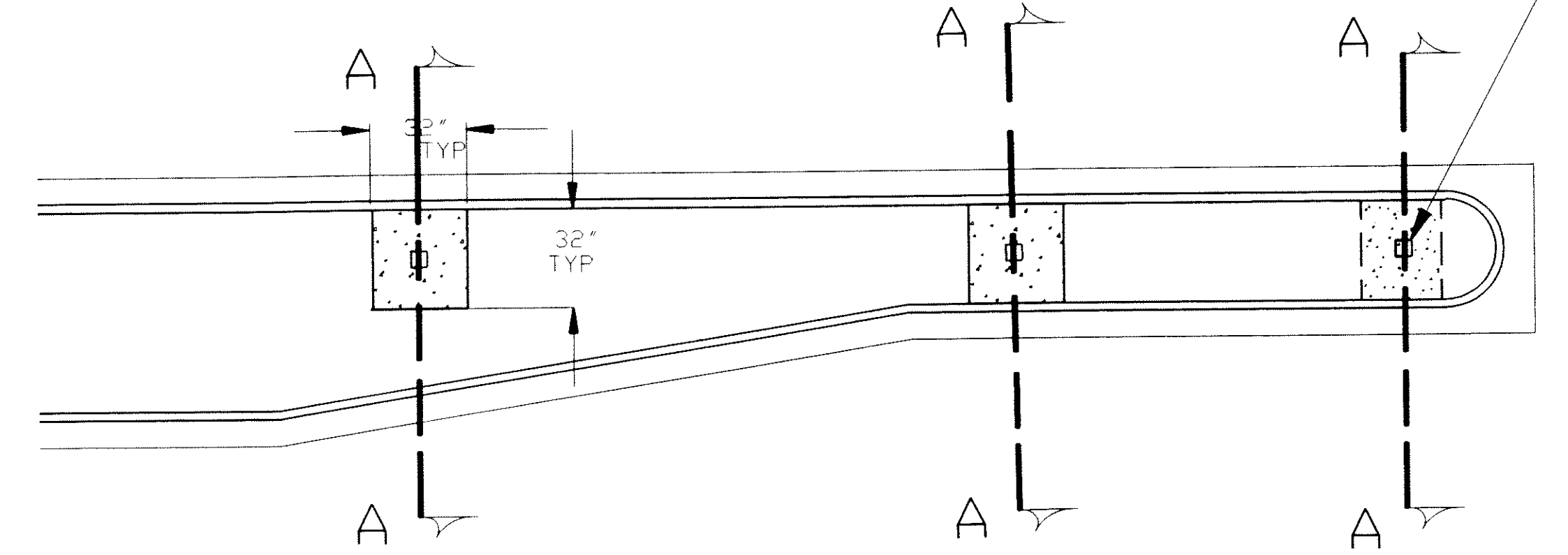
NOTE: EARTHWORK QUANTITIES INCLUDE
BITUMINOUS AND CONCRETE
REMOVAL ITEMS.

NOTE: UTILITY ELEVATIONS ASSUMED
NOT ACTUAL

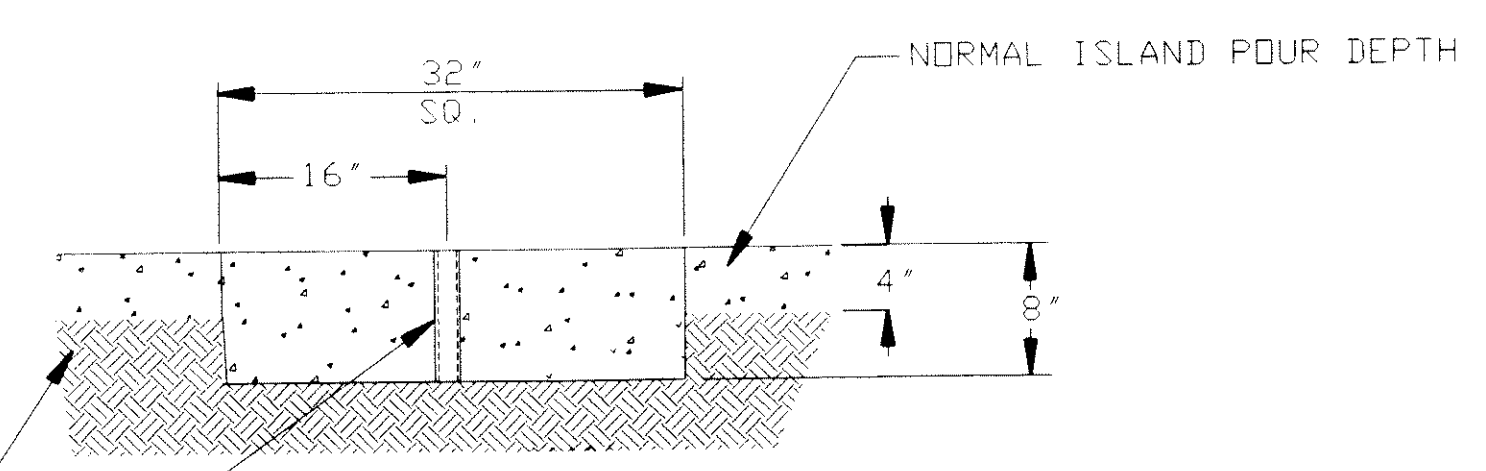
CROSS-SECTION
STA: 86+00 TO STA: 89+42

Copy Equipment Form #1

INSTALL 1 3/4" x 1 3/4" x 8" SOLID GALVANIZED SQUARE TUBING IN ISLAND NOSE DURING CONCRETE POUR, PLUMB AS REQUIRED. TAPE BOTTOM OF TUBING TO PREVENT CONCRETE FROM ENTERING TUBING.

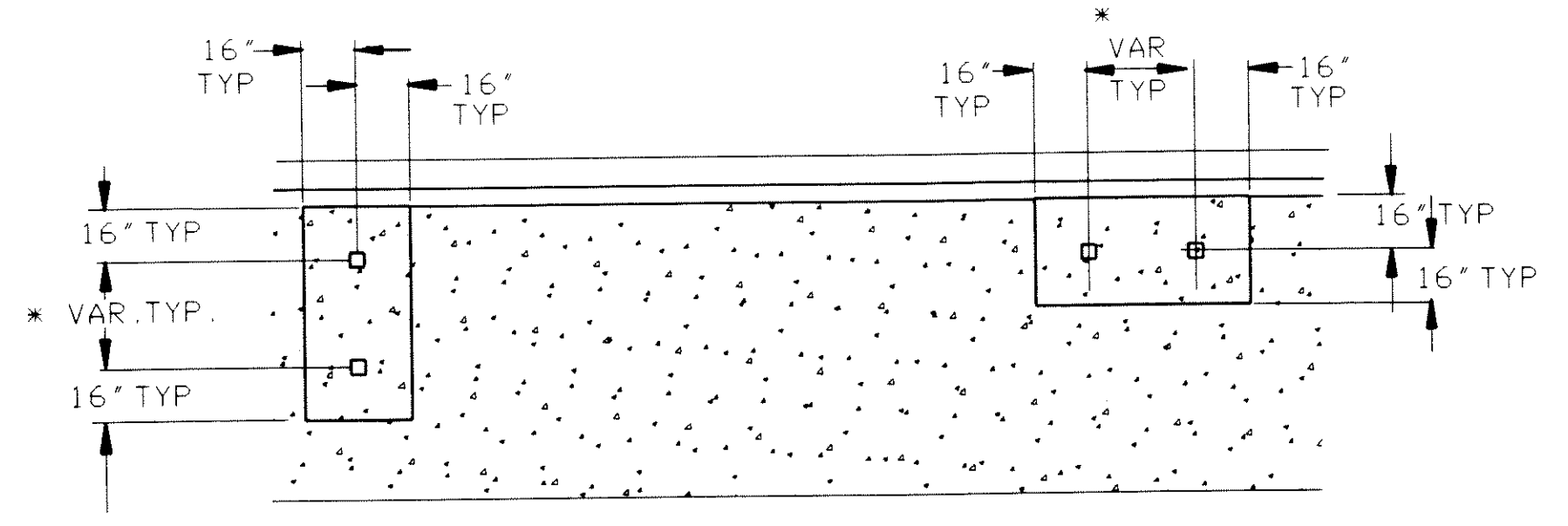


1 1/2" x 1 1/2" x 8" SOLID GALVANIZED TUBING WITH 7/16" DIA. HOLES 1" ON CENTER, ON ALL 4 SIDES. WALL THICKNESS GAUGE #12 (.105 IN.) INSERTED AT THE TIME OF SIGN INSTALLATION TYPICAL.



SECTION A-A

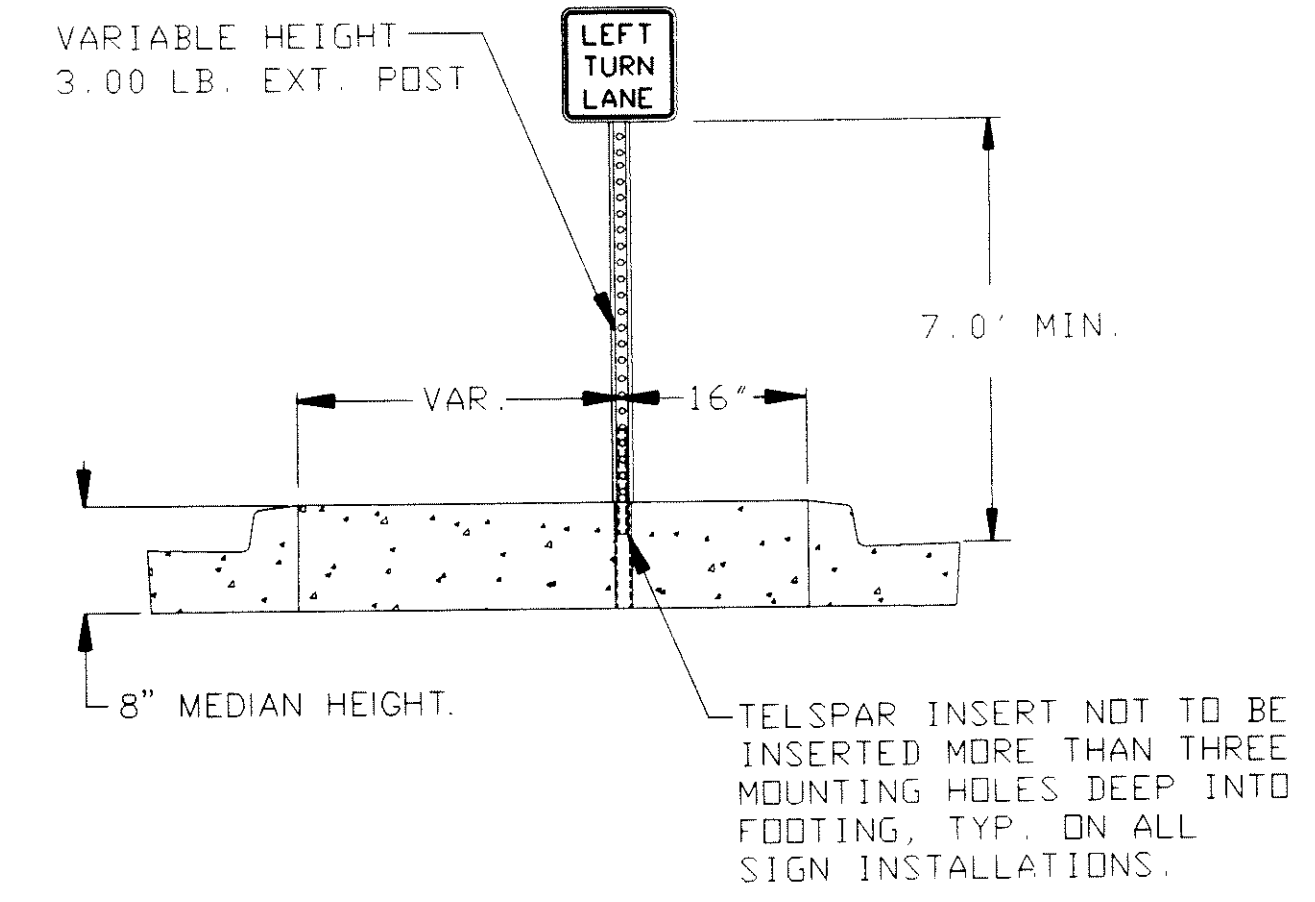
INSTALL 1 3/4" x 1 3/4" x 8" SOLID WALL GALVANIZED SQUARE TUBING TAPE BOTTOM OF TUBING TO PREVENT CONCRETE FROM ENTERING TUBE. PLUMB AND ALIGN AT TIME OF POUR AS REQUIRED. TYPICAL.



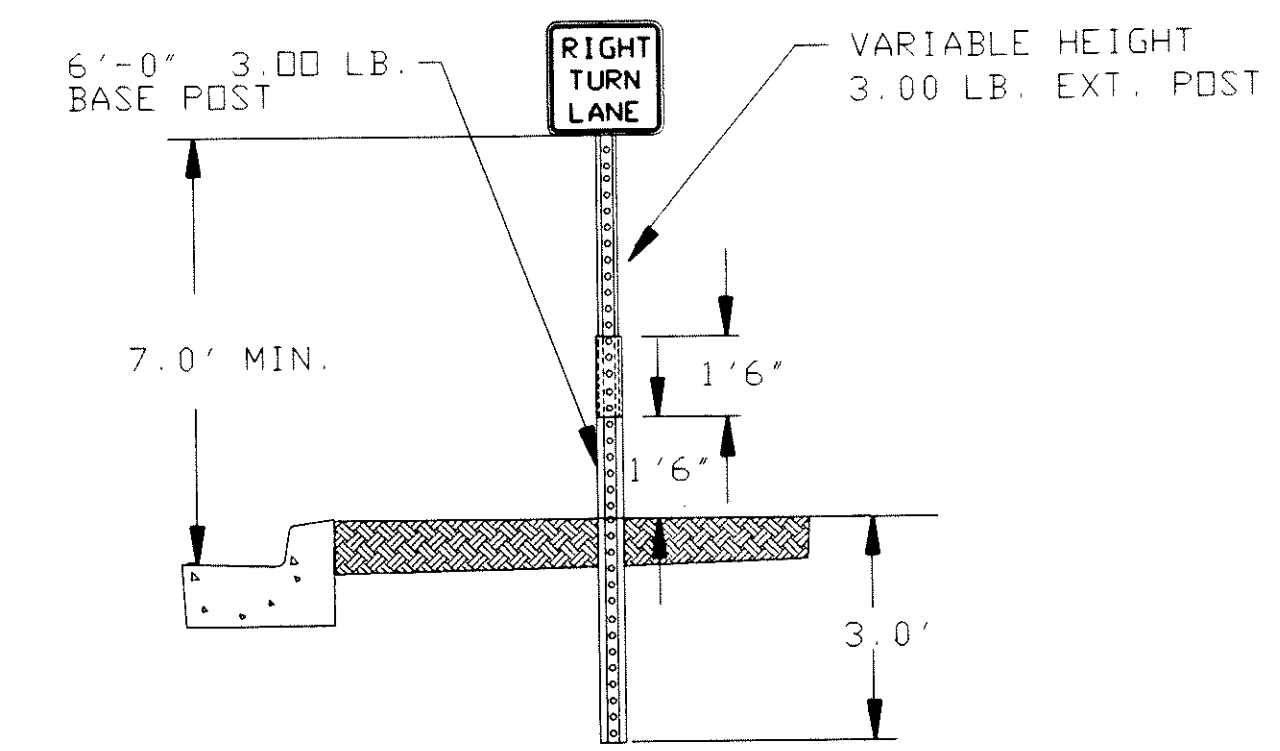
DOUBLE POST FOOTINGS

ISLAND MOUNT BREAK-AWAY SIGN POST INSTALLATIONS REQUIRING MORE THAN ONE POST

ISLAND MOUNT BREAK-AWAY SIGN POST INSTALLATION TYPICAL



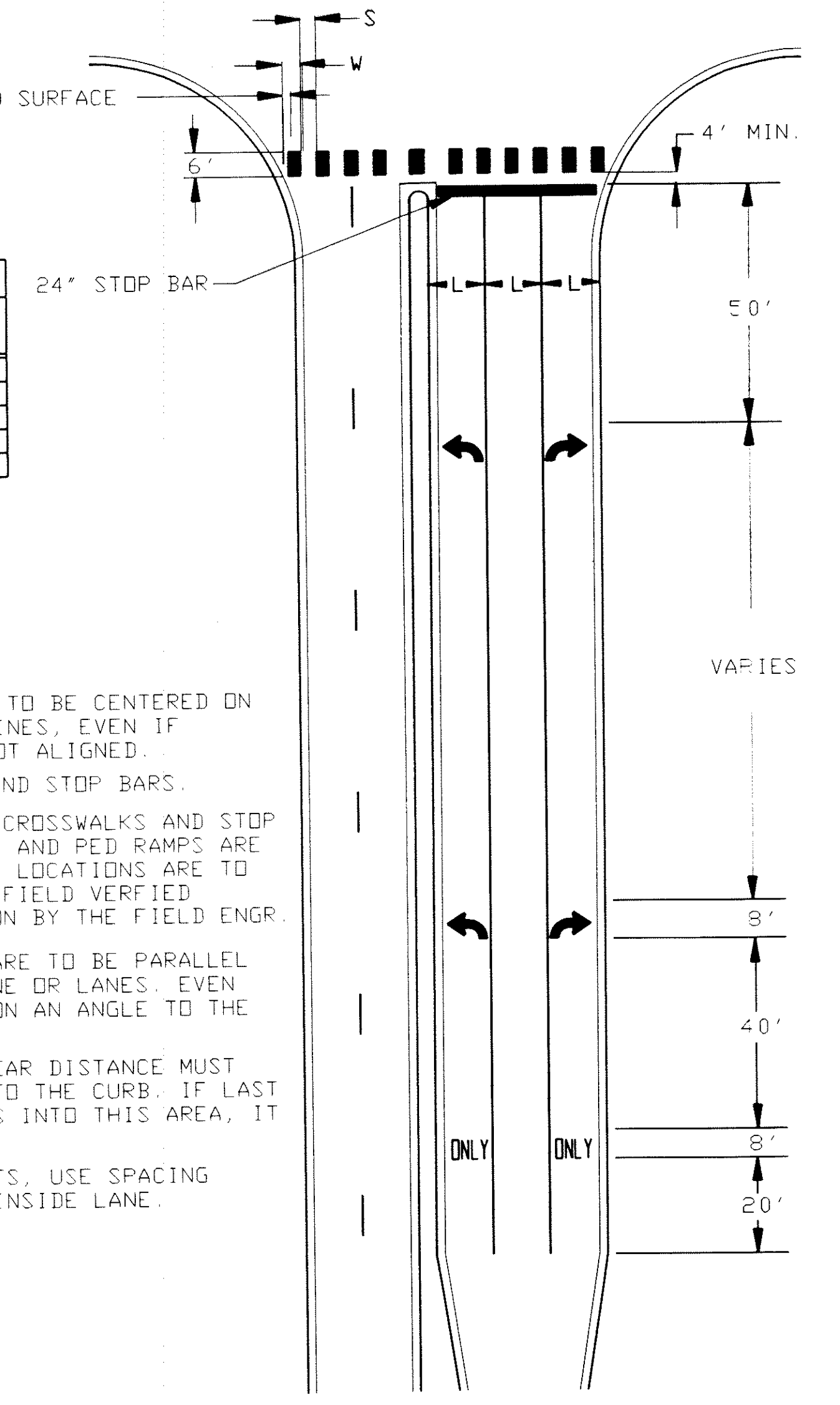
GROUND POST MOUNT SIGN INSTALLATION TYPICAL



(L)	(W)	(S)
WIDTH OF INSIDE LANE	WIDTH OF PAINTED AREAS	WIDTH OF SPACE
9'	2.0'	2.5'
10'	2.5'	2.5'
11'	2.5'	3.0'
12'	3.0'	3.0'
13'	3.0'	3.5'

NOTES: CROSSWALKS:

- 1.) PAINTED AREAS ARE TO BE CENTERED ON CENTER AND LANE LINES, EVEN IF INTERSECTION IS NOT ALIGNED.
- 2.) ZEBRA CROSSWALKS AND STOP BARS.
- 3.) LOCATION OF ZEBRA CROSSWALKS AND STOP BARS, SIGNAL LOOPS AND PED RAMPS ARE APPROXIMATE. FINAL LOCATIONS ARE TO BE DETERMINED AND FIELD VERIFIED DURING CONSTRUCTION BY THE FIELD ENGR.
- 4.) ZEBRA CROSSWALKS ARE TO BE PARALLEL TO THE DRIVING LANE OR LANES. EVEN IF THE STREET IS ON AN ANGLE TO THE INTERSECTION.
- 5.) A MIN. OF 1.5' CLEAR DISTANCE MUST BE LEFT ADJACENT TO THE CURB. IF LAST PAINTED AREA FALLS INTO THIS AREA, IT MUST BE OMITTED.
- 6.) ON TWO LANE STREETS, USE SPACING SHOWN FOR AN 11' INSIDE LANE.



M.U.T.C.D. CODE	SIZE (INCHES)	AREA (SQ. FT.)	QTY. GROUND MOUNT INSTALLATIONS	QTY. ISLAND MOUNT INSTALLATIONS	SIGN PANEL	#POST/INSTALLATION	MOUNTING HEIGHT
R1-1	30" x 30"	6.25	4	0	STOP	1	7.0'
X4-4L	12" x 36"	3.00	0	3	OBJECT MARKER	1	4.0'
M1-6	24" x 24"	4.00	2	0		1	
M3-1	24" x 12"	2.18	1	0	NORTH		
M3-3	24" x 12"	2.18	1	0	SOUTH		
R3-4	24" x 24"	4.00	0	3	NO U TURN		7.0'
R3-X1	30" x 30"	6.25	8	0	RIGHT TURN LANE	1	7.0'
R3-X2	30" x 30"	6.25	0	6	LEFT TURN LANE	1	7.0'
R4-7	24" x 30"	5.00	0	9	KEEP RIGHT	1	7.0'
X4-2	18" x 18"	2.25	0	9	HAZARD MARKER		
R5-1	30" x 30"	6.25	0	8	DO NOT ENTER	1	7.0'
R6-1R	36" x 12"	3.00	6	2	ONE WAY (RIGHT)	2	7.0'
R6-1L	36" x 12"	3.00	5	0	ONE WAY (LEFT)	2	7.0'
CHART DD							

<MOUNTED ABOVE M1-6>

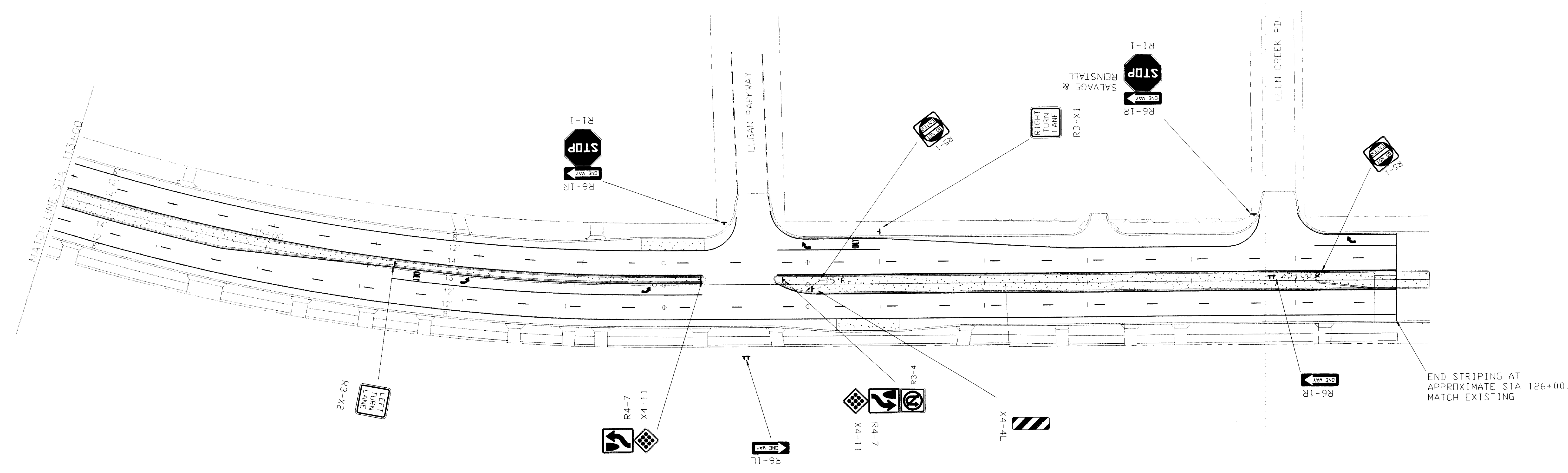
<MOUNTED ON SAME POST AS R4-7/X4-2>

< 4 R6-1R MOUNTED ABOVE R1-1 >

NOTES:

- SEE SHEET 39 FOR SIGNING SCHEDULE, SIGN POST MOUNTING AND PAVEMENT MESSAGE DETAILS.
- LOCATIONS OF ALL SIGNS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING APPENDIX "B" DATED NOVEMBER 1992.

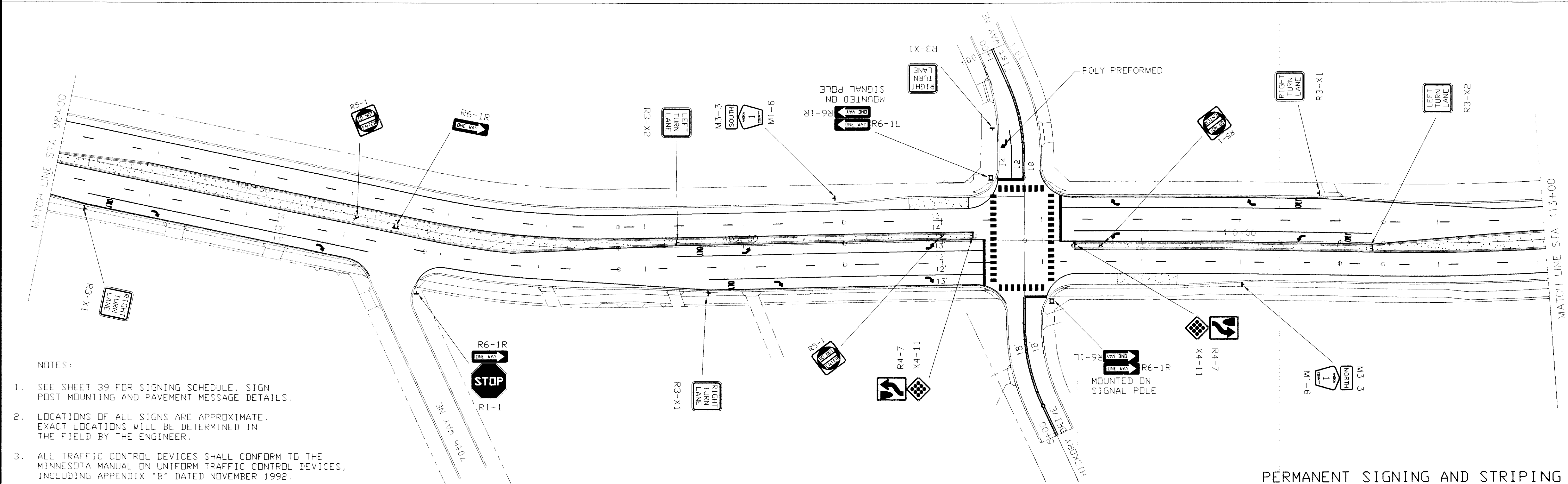
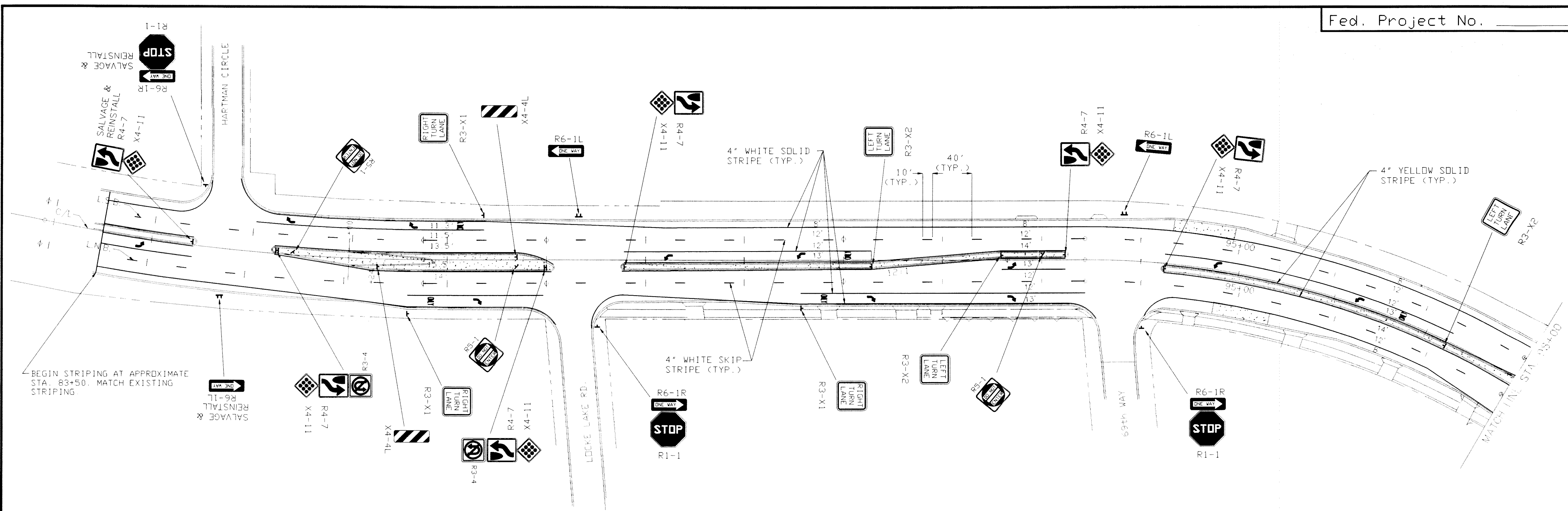
PERMANENT SIGNING QUANTITIES



NOTES:

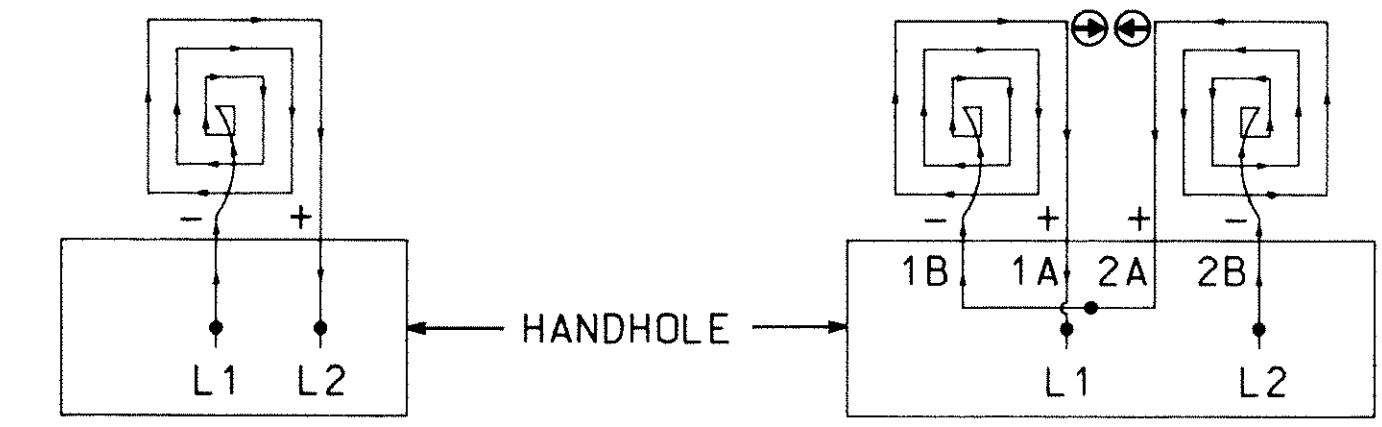
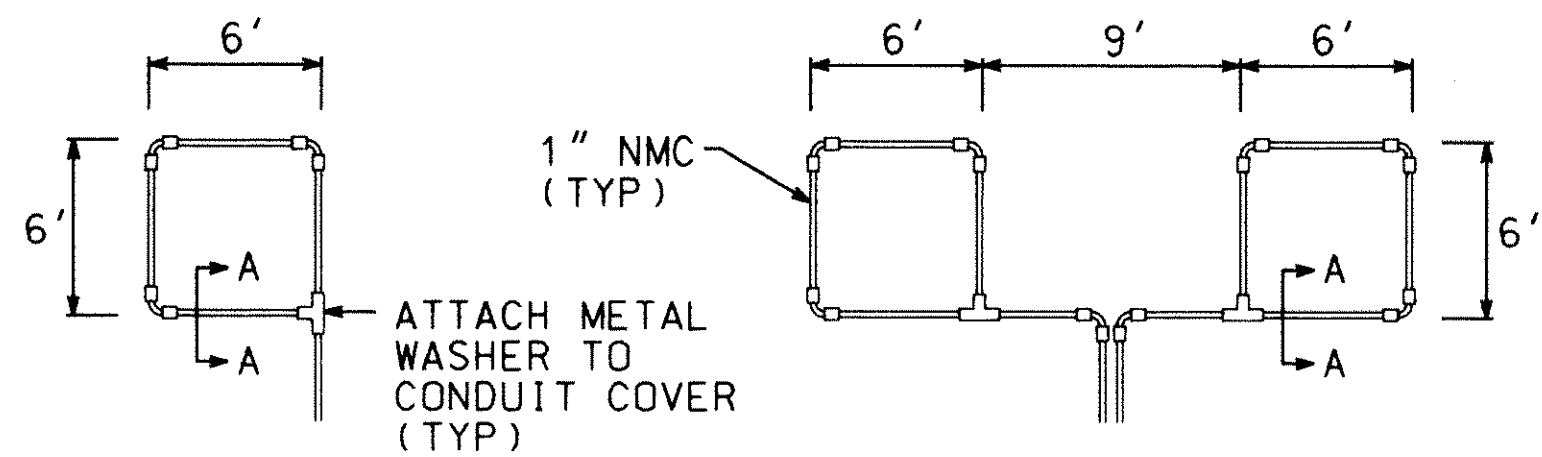
1. SEE SHEET 39 FOR SIGNING SCHEDULE, SIGN POST MOUNTING AND PAVEMENT MESSAGE DETAILS.
2. LOCATIONS OF ALL SIGNS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
3. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING APPENDIX "B" DATED NOVEMBER 1992.

PERMANENT SIGNING AND STRIPING



- NOTES:
1. SEE SHEET 39 FOR SIGNING SCHEDULE, SIGN POST MOUNTING AND PAVEMENT MESSAGE DETAILS.
 2. LOCATIONS OF ALL SIGNS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
 3. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING APPENDIX "B" DATED NOVEMBER 1992.

PERMANENT SIGNING AND STRIPING



LOOP CONNECTIONS SHALL BE LABELED AND SPLICED IN THE HANDHOLE AS FOLLOWS:

- L1 TO 1A
- 1B TO 2A
- 2B TO L2

**LOOP DETECTOR
DETAIL 'A'**
(LOOP PHASING FOR
SINGLE CONNECTION)

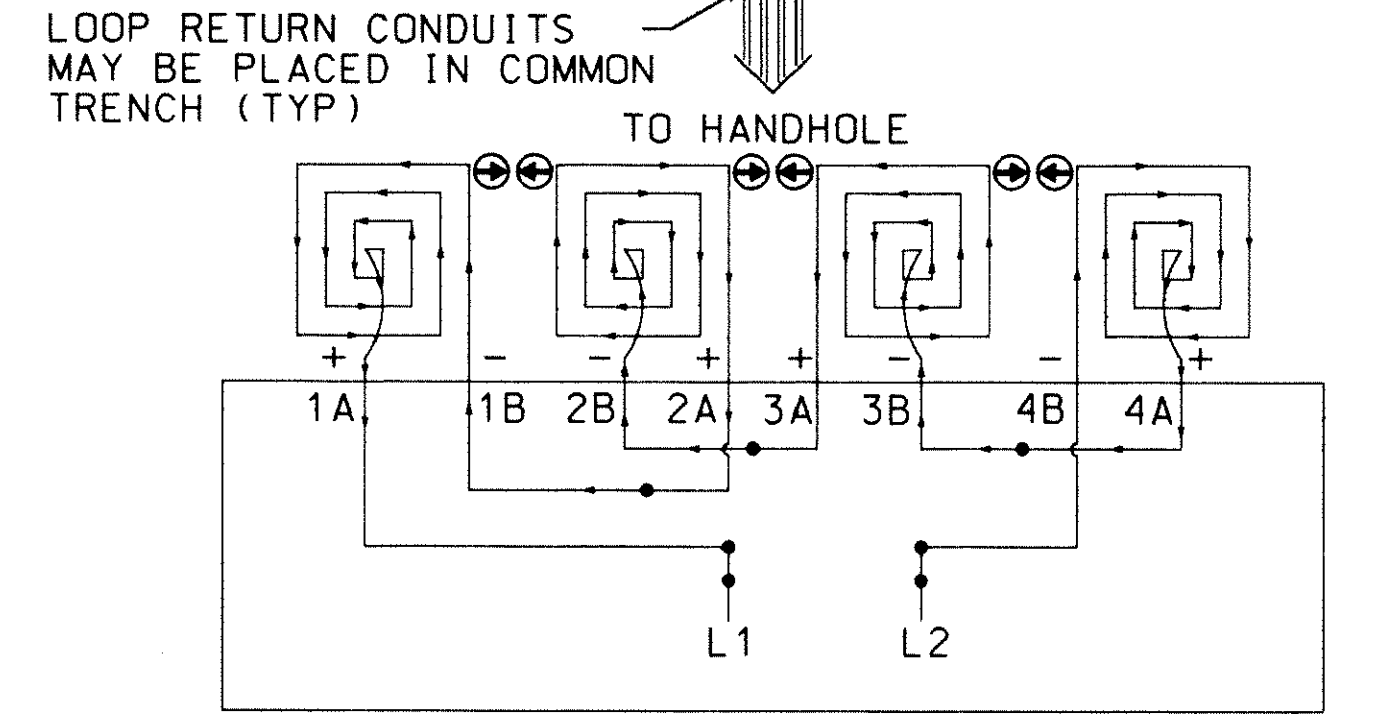
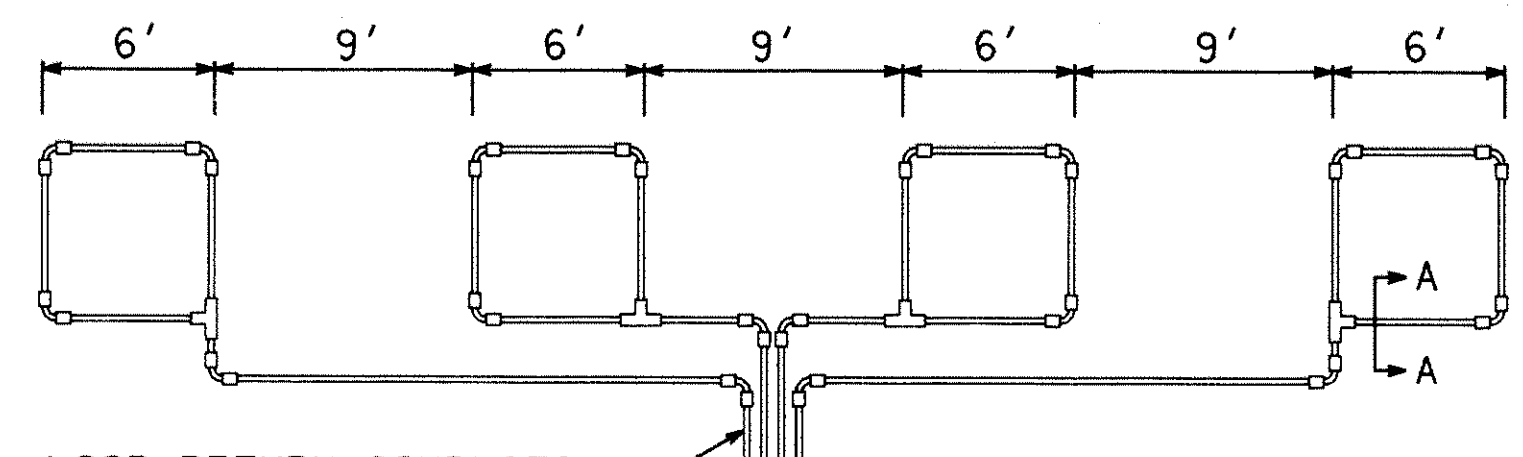
**LOOP DETECTOR
DETAIL 'B'**
(LOOP PHASING FOR
SERIES CONNECTION)

LOOP DETECTOR WIRING

- 1) ALL CORNERS SHALL BE 90° CONDUIT BENDS.
- 2) CONNECT WIRES IN HANDHOLES USING SPLICE KIT METHOD DESCRIBED IN THE SPECIAL PROVISIONS.
- 3) LOOP DETECTOR WIRES SHALL BE #12 AWG CROSSED LINKED POLYETHYLENE (XLP). SEE SPECIAL PROVISIONS.
- 4) LOOP LEAD IN WIRES SHALL BE TWISTED A MIN. OF (5) TURNS PER FOOT THROUGH THE CONDUIT TO THE HANDHOLE.
- 5) NMC DESIGNATES NON-METALLIC CONDUIT (SPEC. 3803)
- 6) LOOPS 6' x 6' THRU 6' x 14' SHALL HAVE (4) TURNS.
- 7) LOOPS 6' x 15' AND LARGER SHALL HAVE (2) TURNS.

STANDARD PLATES	
PLATE NO.	DESCRIPTION
* 8110 C	TRAFFIC SIGNAL BRACKETING - POLE MOUNTED
8111 B	TRAFFIC SIGNAL BRACKETING - PEDESTAL MOUNTED
8112 C	PEDESTAL FOUNDATION
8113 C	MAGNETIC VEHICLE DETECTOR INSTALLATION
* 8115 C	PEDESTRIAN PUSH BUTTON INSTALLATION
* 8117 F	PRECAST CONCRETE HANDHOLE
8118 C	SERVICE EQUIPMENT AND POLE
* 8119 C	GROUND MOUNTED CABINET FOUNDATION
* 8120 J	PA85 AND PA90 POLE FOUNDATION
* 8121 C	TRANSFORMER BASE WITH POLE BASE
8122 C	PEDESTAL AND PEDESTAL BASE
* 8123 C	POLE AND MAST ARM
* 8124 B	SIGNAL HEAD MOUNTS
* 8126 D	PA100 POLE FOUNDATION
0004 A	SPECIFICATION REFERENCE
3124 B	METAL APRON CONNECTION
3221 C	CORRUGATED STEEL PIPE COUPLING BAND
7035 J	CONCRETE WALK AND CURB RETURNS AT ENTRANCES
7100 F	CONCRETE CURB AND GUTTERS

* - APPLIES TO THIS PROJECT



LOOP CONNECTIONS SHALL BE LABELED AND SPLICED IN THE HANDHOLE AS FOLLOWS:

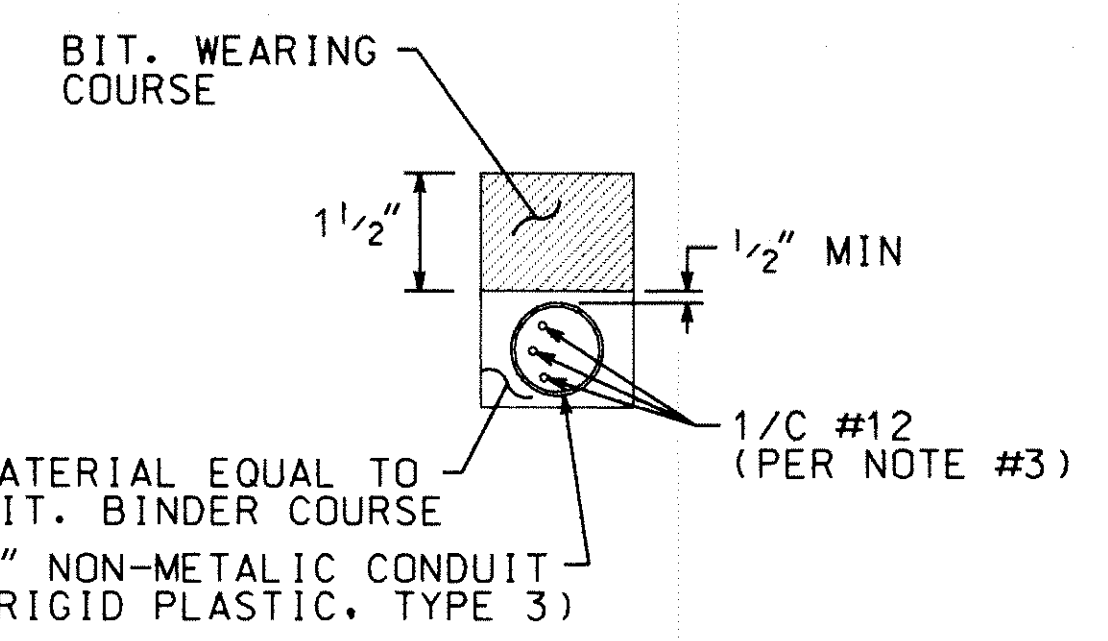
- L1 TO 1A
- 1B TO 2A
- 2B TO 3A
- 3B TO 4A
- 4B TO L2

SPLICE CONTROL CABLE TO L1 & L2 IN HANDHOLE. ALL CONDUCTORS SHALL BE TAGGED IN HANDHOLE (1A, 1B, ECT)

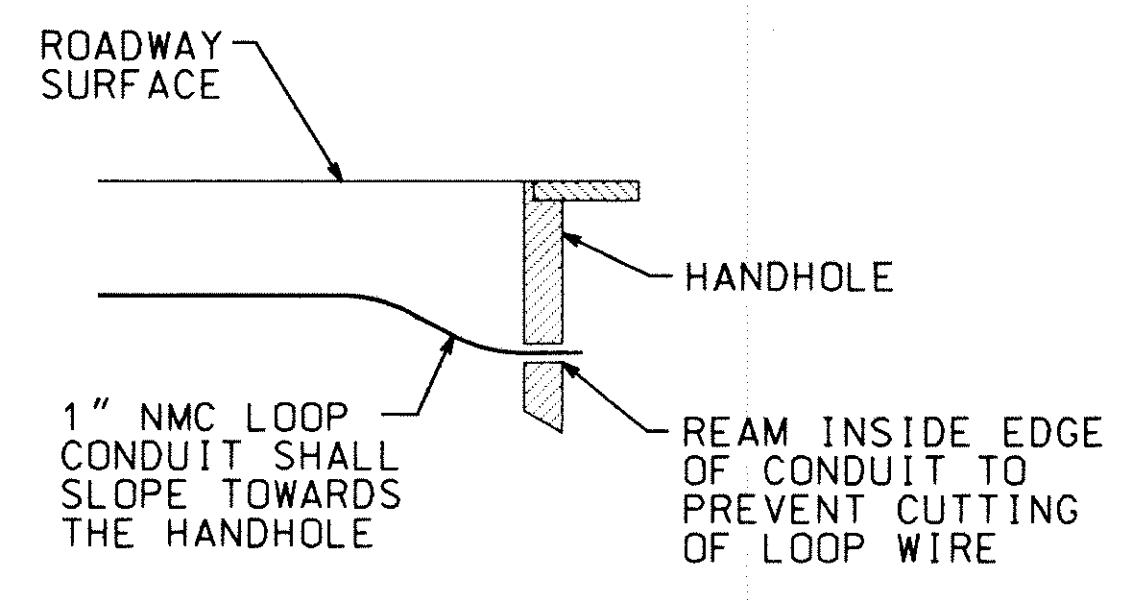
**LOOP DETECTOR
DETAIL 'C'**
(LOOP PHASING FOR
SERIES CONNECTION)

LEGEND OF SYMBOLS

CONTROLLER AND SERVICE EQUIP. NO's	(A)
SIGNAL BASE NO.	(1)
SIGNAL FACE NO.	(-)
LUMINAIRE NO.	(△)
CONTROLLER AND CABINET	(■)
CONTROLLER AND CABINET - IN PLACE	(□)
HANDHOLE	(□)
HANDHOLE - IN PLACE	(■)
RIGID STEEL CONDUIT (RSC)	(---)
RIGID STEEL CONDUIT (RSC) - IN PLACE	(---)
SIGNAL FACE WITH BACKGROUND SHIELD	(→)
SIGNAL FACE W/O BACKGROUND SHIELD	(→)
SIGNAL FACE - IN PLACE	(→)
PEDESTRIAN INDICATORS	(→)
PEDESTRIAN INDICATORS - IN PLACE	(→)
PEDESTRIAN PUSH BUTTONS ON PEDESTAL OR POLE	(○)
PEDESTRIAN PUSH-BUTTON STATION	(○)
TRAFFIC SIGNAL PEDESTAL	(■)
TRAFFIC SIGNAL PEDESTAL - INPLACE	(■)
TRAFFIC SIGNAL POLE AND MAST ARM	(○)
TRAFFIC SIGNAL POLE AND MAST ARM - IN PLACE	(○)
STREET LIGHT POLE AND LUMINAIRE	(○)
STREET LIGHT POLE AND LUMINAIRE - IN PLACE	(○)
MAST ARM AND LUMINAIRE	(○)
MAST ARM AND LUMINAIRE - INPLACE	(○)
WOOD POLE	(○)
WOOD POLE - IN PLACE	(○)
SOURCE OF POWER	(○)
RAILROAD SIGNAL - IN PLACE	(○)
RIGHT OF WAY LINE	(---)
CENTERLINE	(---)
EDGE OF ROADWAY	(---)
SHOULDERLINE	(---)
CURB LINE	(---)
STOP BAR	(---)



SECTION A-A



DRAINAGE DETAIL

ABBREVIATIONS

3-1(EG)	SIGNAL HEAD PHASE "3" - NO. "1"	O	ORANGE
BL	BLUE	O/BLK	ORANGE WITH BLACK TRACER
BL/BLK	BLUE WITH BLACK TRACER	P1-(EG)	PEDESTRIAN INDICATION PHASE "2"-NO. "1"
BLK	BLACK	PB	PUSH BUTTON
BLK/WH	BLACK WITH WHITE TRACER	PB-2(EG)	PUSH BUTTON PHASE "2"-NO. "1"
BR. GR.	BARE GROUND	PEC	PHOTOELECTRIC CELL
CH. SW.	CHECK SWITCH	PED	PEDESTRIAN
CLR	CLEAR	R	RED
D2-1(EG)	DETECTOR PHASE "2" - NO. "1"	R&S	REMOVE AND SALVAGE
DWK	DON'T WALK	R/BLK	RED WITH BLACK TRACER
EQG	EQUIPMENT GROUND	RLTA	RED LEFT TURN ARROW
EVP	EMERGENCY VEHICLE PRE-EMPTION	RRTA	RED RIGHT TURN ARROW
F&I	FURNISH AND INSTALL	RSC	RIGID STEEL CONDUIT
FL	FLASH/FLASHING	SOP	SOURCE OF POWER
G	GREEN	SPR	SPARE
G/BLK	GREEN WITH BLACK TRACER	ST. LHT.	STREET LIGHT
GLTA	GREEN LEFT TURN ARROW	STA	STATION
GRN	GREEN	SW	SWITCH
GR. R.	GROUND ROD	SWD	SWITCHED
GRTA	GREEN RIGHT TURN ARROW	TDW	TELEPHONE DROP WIRE
GTHA	GREEN THRU ARROW	WH	WHITE
HH	HANDHOLE	WH/BLK	WHITE WITH BLACK TRACER
HPS	HIGH PRESSURE SODIUM	WLK	WALK
JB	JUNCTION BOX	YEL	YELLOW
LUM	LUMINAIRE	YLTA	YELLOW LEFT TURN ARROW
NEU	NEUTRAL	YRTA	YELLOW RIGHT TURN ARROW
NMC	NONMETALLIC CONDUIT	YTHA	YELLOW THRU ARROW

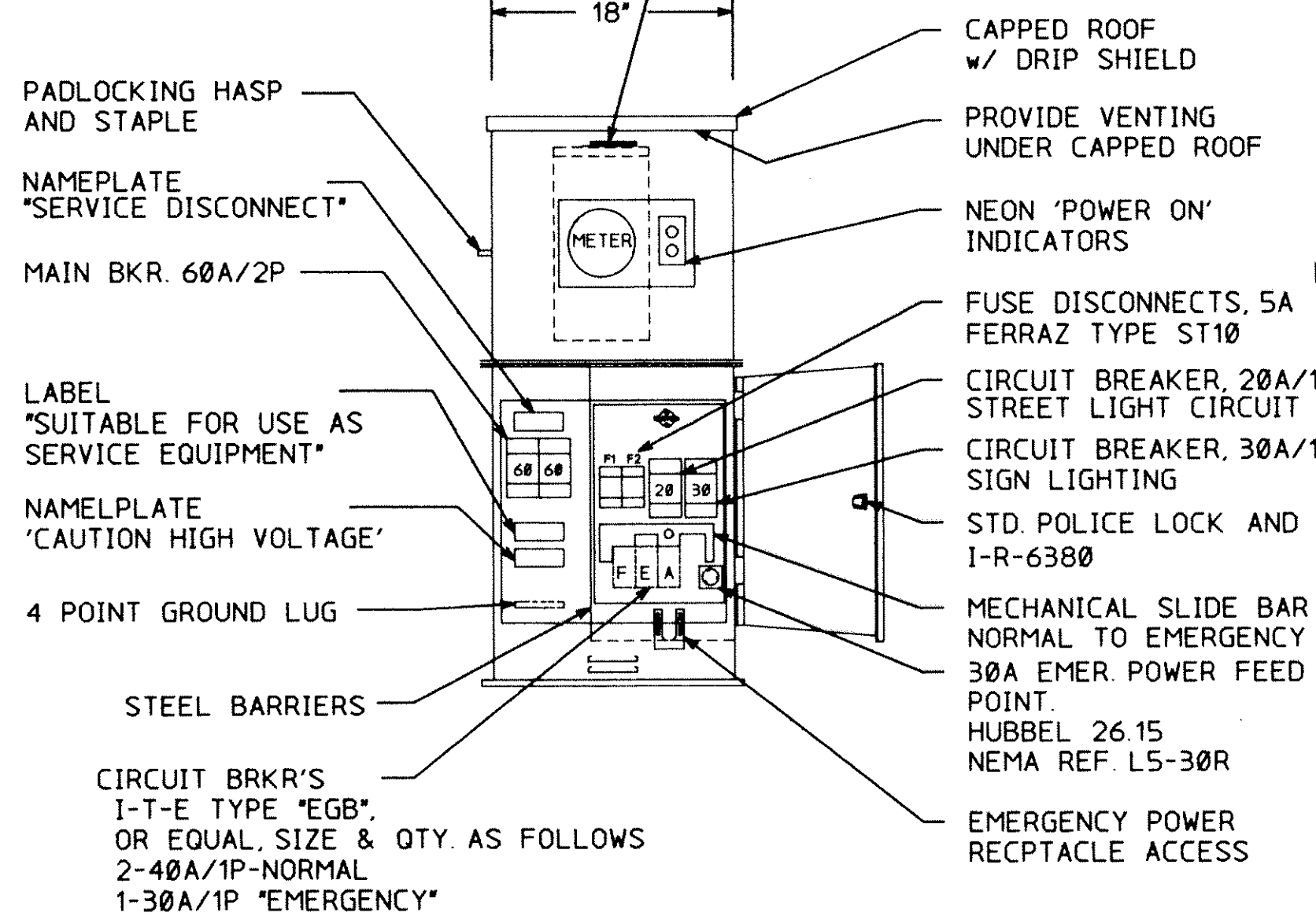
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DATE			
SCALE	AS NOTED	DESIGN BY:	CTR
PLAN BY:	CWK	CHECKED BY:	RBB
COMM. NO.:	511406	RECORD COPY BY:	DATE
I HEREBY CERTIFY THAT THIS PLAN SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND TO THE BEST OF MY KNOWLEDGE AND BELIEF IT COMPLIES WITH THE LAWS OF THE STATE OF MINNESOTA. <i>Ronald B. Bray</i> RONALD B. BRAY DATE: 12/02/93 REG. NO. 19327			

**MISC. DETAILS
CSAH 1 (EAST RIVER RD)
AND 71ST WAY / HICKORY DR
S.P. 02-601-86
FRIDLEY, MINNESOTA**

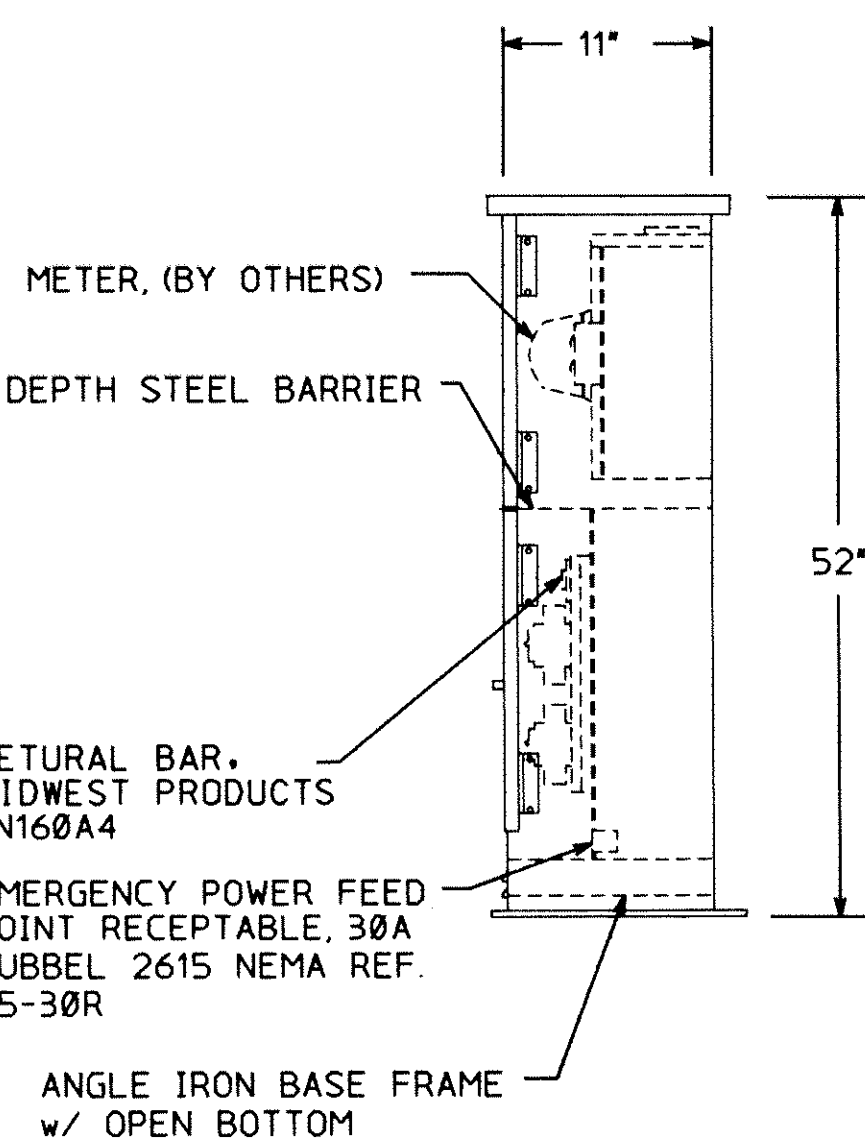
**Orr Schelen
Mayeron &
Associates, Inc.**
Engineers - Architects - Planners - Surveyors
300 Park Place Center ■ 5775 Wayzata Boulevard
Minneapolis, MN 55416-1228 ■ 612-566-5775

SIGNAL SERVICE CABINET

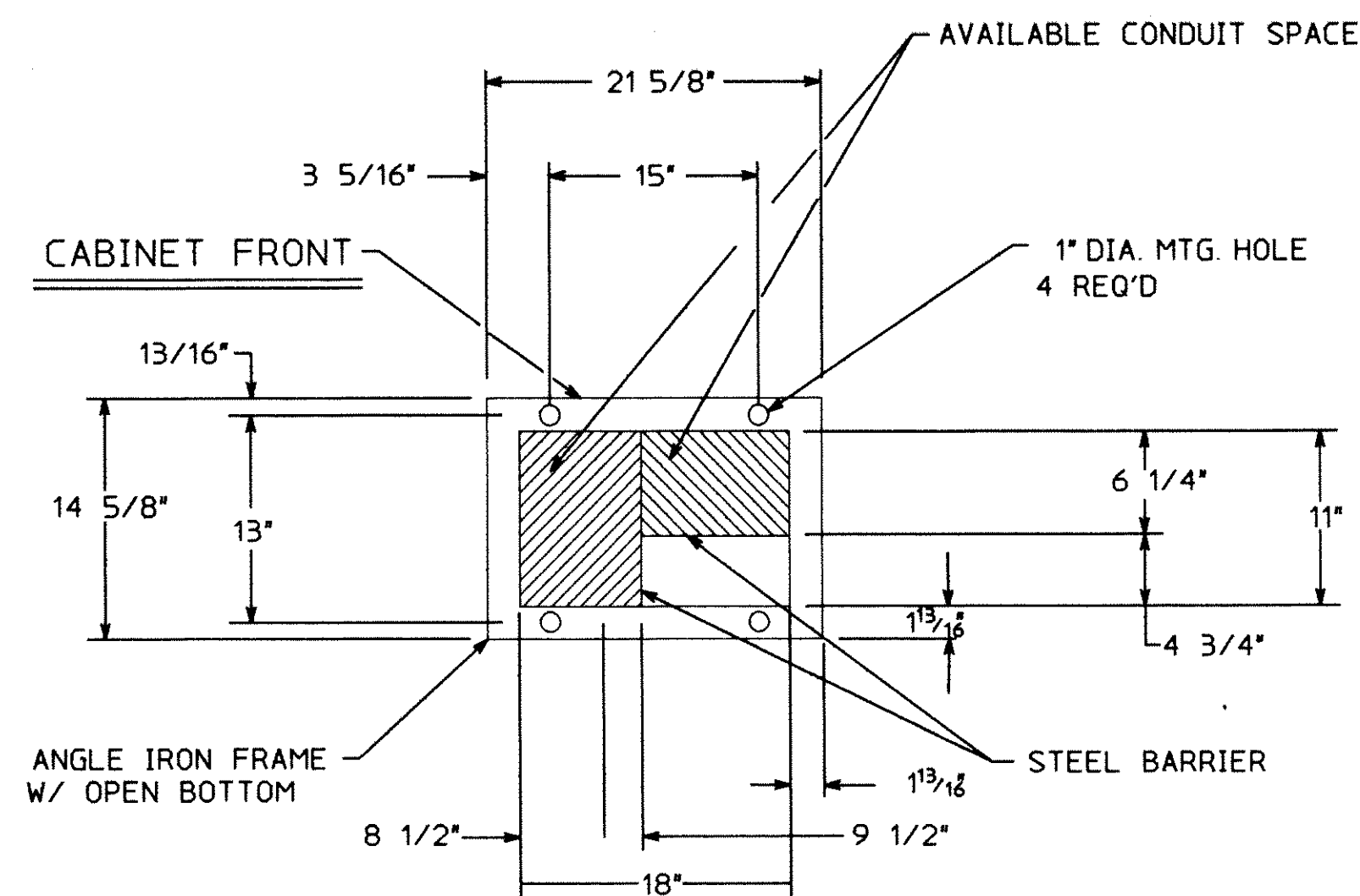
N.S.P. METER SOCKET, 5-TERMINAL
w/POSTIVE BY-PASS MECHANISM
MILBANK CAT. No. U-2272-RL.



FRONT ELEV.

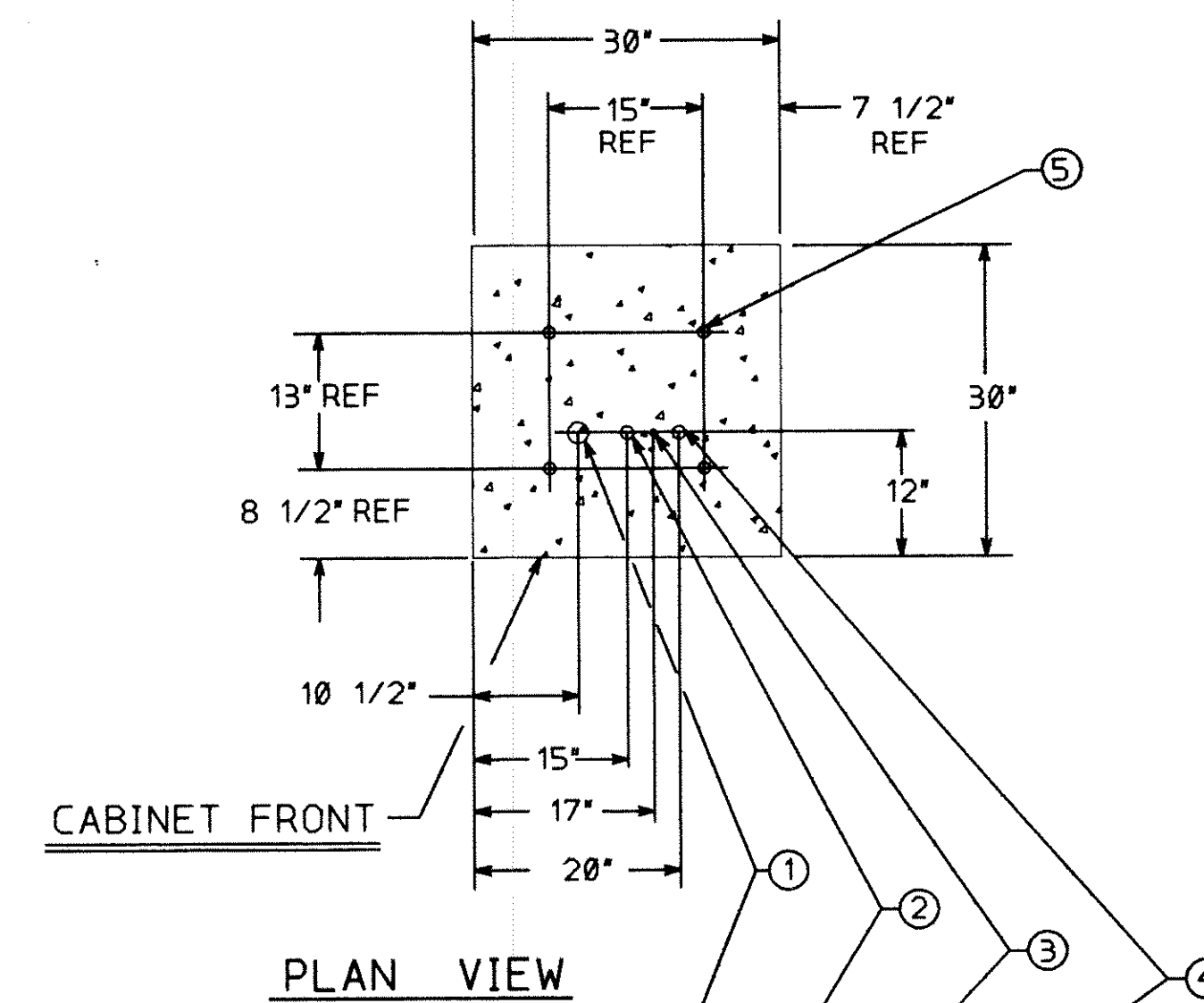


RIGHT SIDE ELEV.

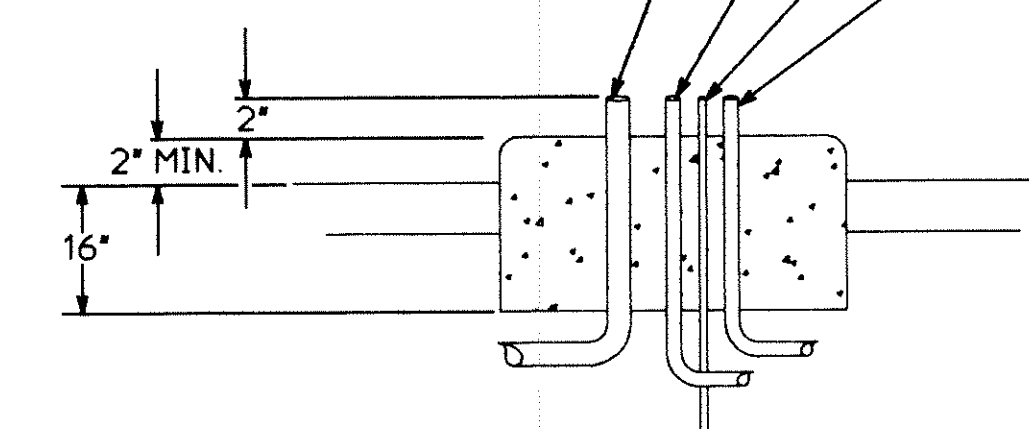


BASE VIEW

SERVICE CABINET FOUNDATION



PLAN VIEW



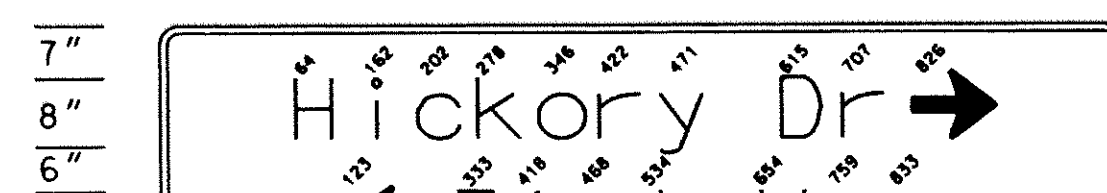
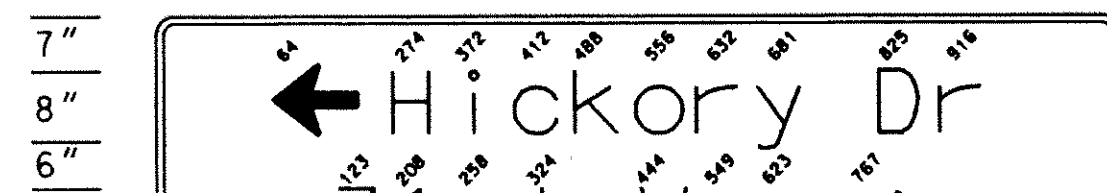
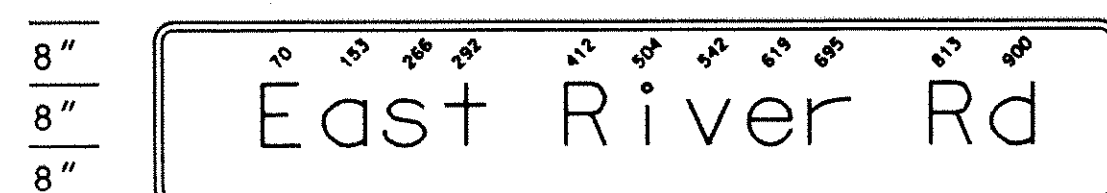
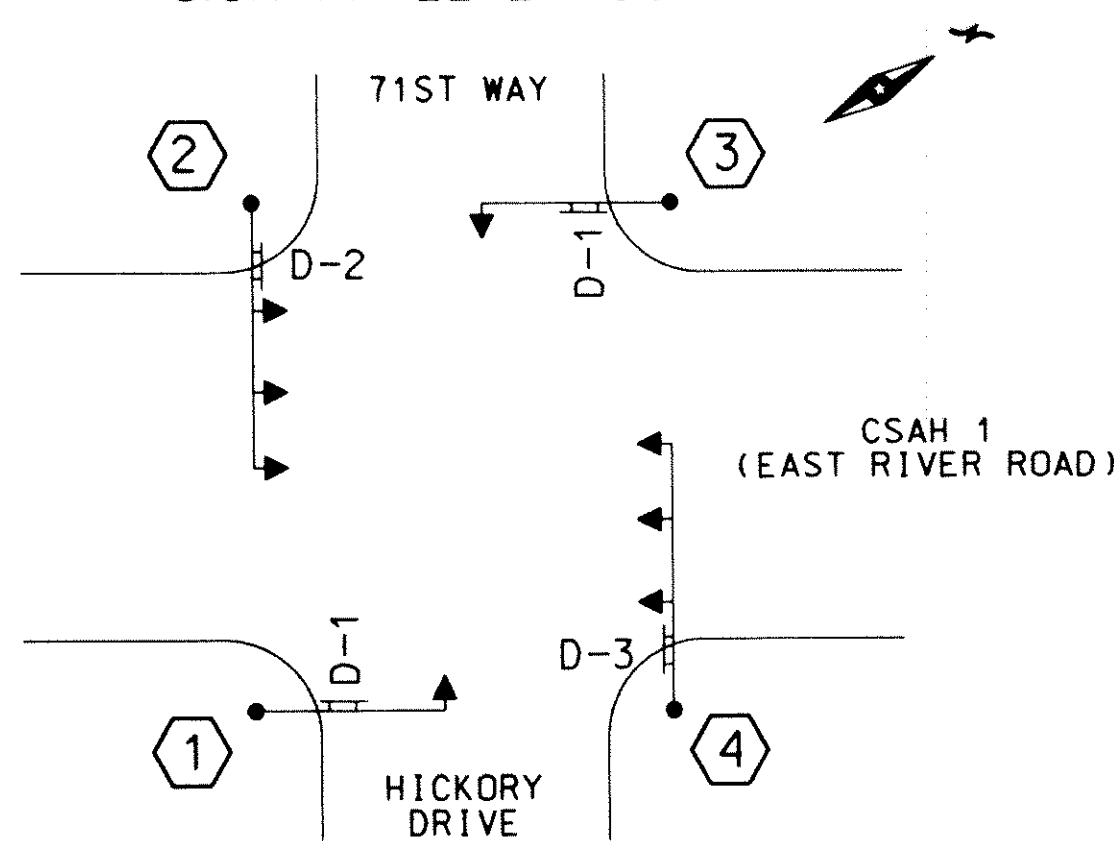
ELEV. VIEW

- ① 2" RSC FROM SOURCE OF POWER (VIA HANDHOLE 18)
- ② 1 1/4" RSC TO CONTROLLER CABINET (VIA HANDHOLE 17)
- ③ GROUNDING ROD
- ④ 2" RSC TO HANDHOLE 1 (STREET LIGHTING/SIGNS)
- ⑤ ANCHOR BOLT LOCATIONS (4 REQUIRED)

CONSTRUCTION NOTES

ENCLOSURE SHALL BE FABRICATED FROM #12 GA ALL WELDED COLD ROLLED STEEL FOR OUTDOOR WEATHER PROOF SERVICE. DOORS TO BE GASKETED, ALL HINGES, PINS AND LOCKS TO BE OF NON CORRODING CONSTRUCTION. CABINET TO BE PRIMED INSIDE AND OUT WITH RUST INHIBITTING PRIMER. FINISH PER MN/DOT #3527

SIGN PANEL LAYOUT

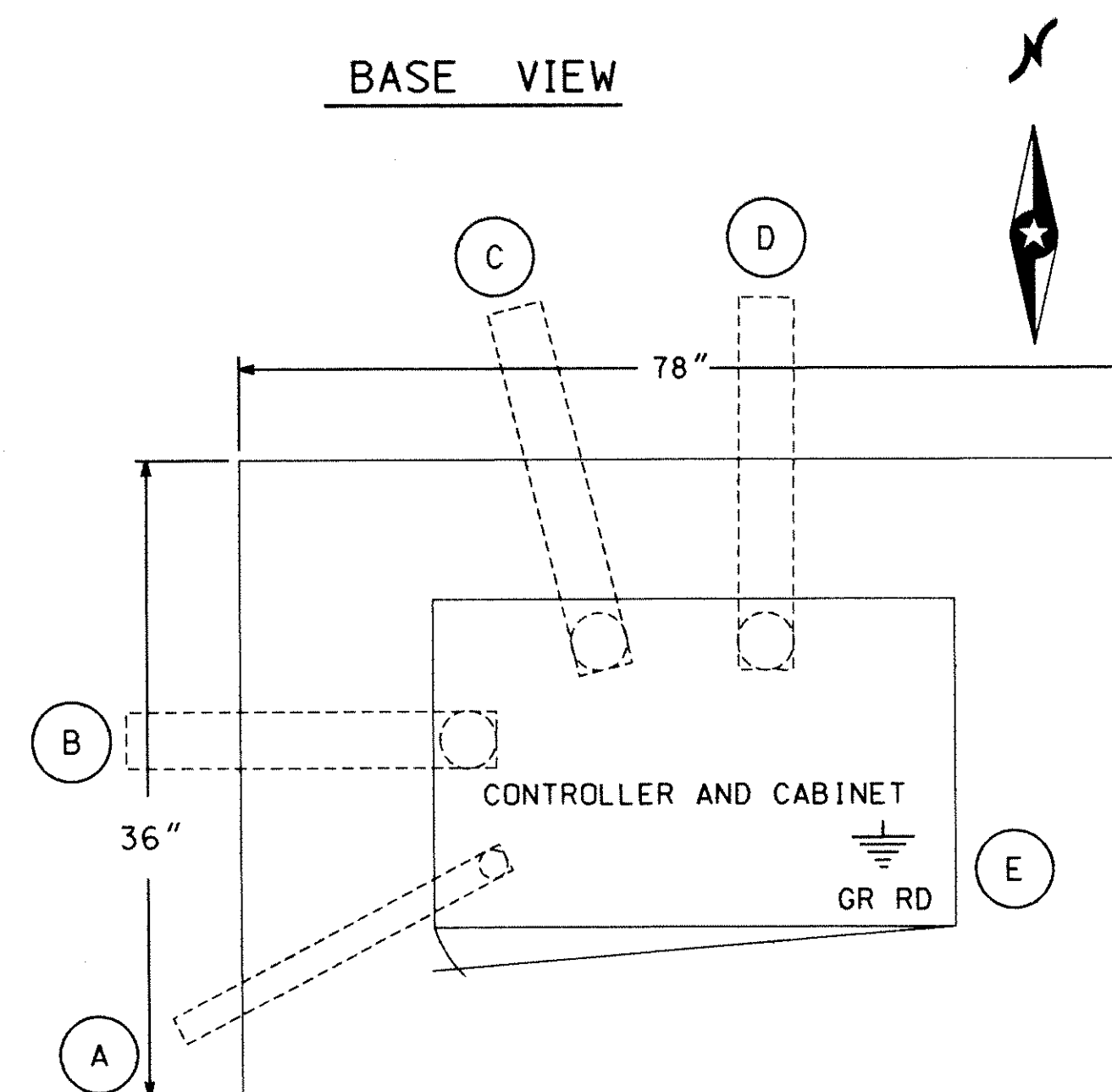


INTERNALLY ILLUMINATED SIGNS

Sign Panel	Size	No. Req.	No. Posts per Sign	Post Spacing	Sq. Ft. per Sign	Pole No.	Location on Mastarm ①
							a b
D-1	102"x24"	2	(SEE NOTE 2)	(SEE NOTE 2)	17	1	6.5
D-2	102"x36"	1	(SEE NOTE 2)	(SEE NOTE 2)	25.5	2	41.5
D-3	102"x36"	1	(SEE NOTE 2)	(SEE NOTE 2)	25.5	4	41.5

NOTES:

- 1. COLOR: D-1 SIGNS SHALL BE WHITE LEGEND AND BORDER ON BLUE BACKGROUND. D-2 SIGNS SHALL BE WHITE LEGEND AND BORDER ON GREEN BACKGROUND.
- 2. INTERNALLY LIT SIGN - SEE SPECIAL PROVISIONS FOR STRUCTURAL AND MOUNTING DETAILS, WIRING DETAILS, AND ETC.



- A 1 1/4" R.S.C. FOR SERVICE CONNECTION TO HH 17
- B 4" R.S.C. TO HH 1
- C 4" R.S.C. TO HH 16
- D 3" R.S.C. STUBOUT, THREAD & CAP BOTH ENDS (FOR FUTURE INTERCONNECT).
- E 5/8" DIA X 15' GROUND ROD

CONTROLLER CABINET PAD LAYOUT

NO SCALE

ELECTRICAL ENG. CERT.
 I HEREBY CERTIFY THAT THIS PLAN SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Paul J. Blomberg
 PAUL BLOMBERG
 DATE: 12/02/93 REG. NO.: 13719

SIGNING AND EQUIPMENT DETAIL
CSAH 1 (EAST RIVER RD)
AND 71ST WAY / HICKORY DR
S.P. 02-601-36
FRIDLEY, MINNESOTA

CSM
 Orr Schelen
 Schelen
 Mayerton &
 Associates, Inc.
 Engineers - Architects - Planners - Surveyors
 300 Park Place NW #5725 Minneapolis, MN 55416-1228 ■ 612-595-9775

S.P. 02-601-36
 S. P. 127-020-13

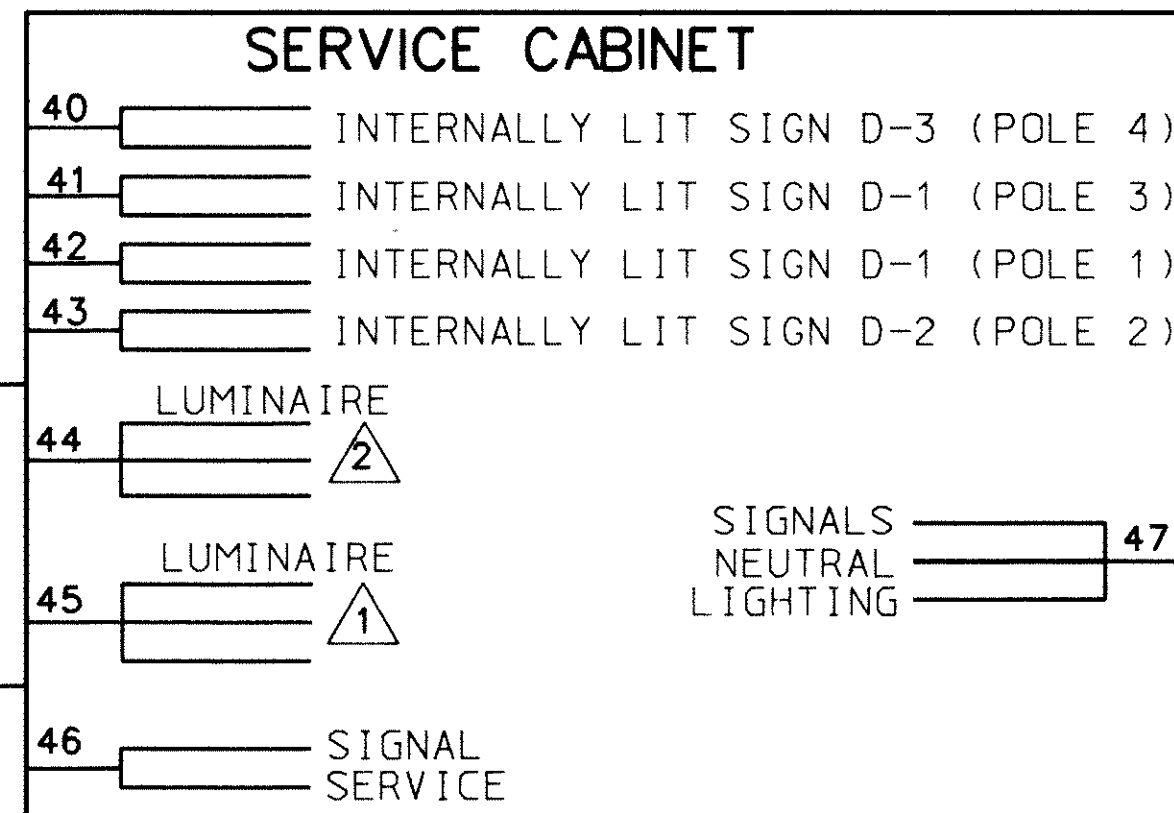
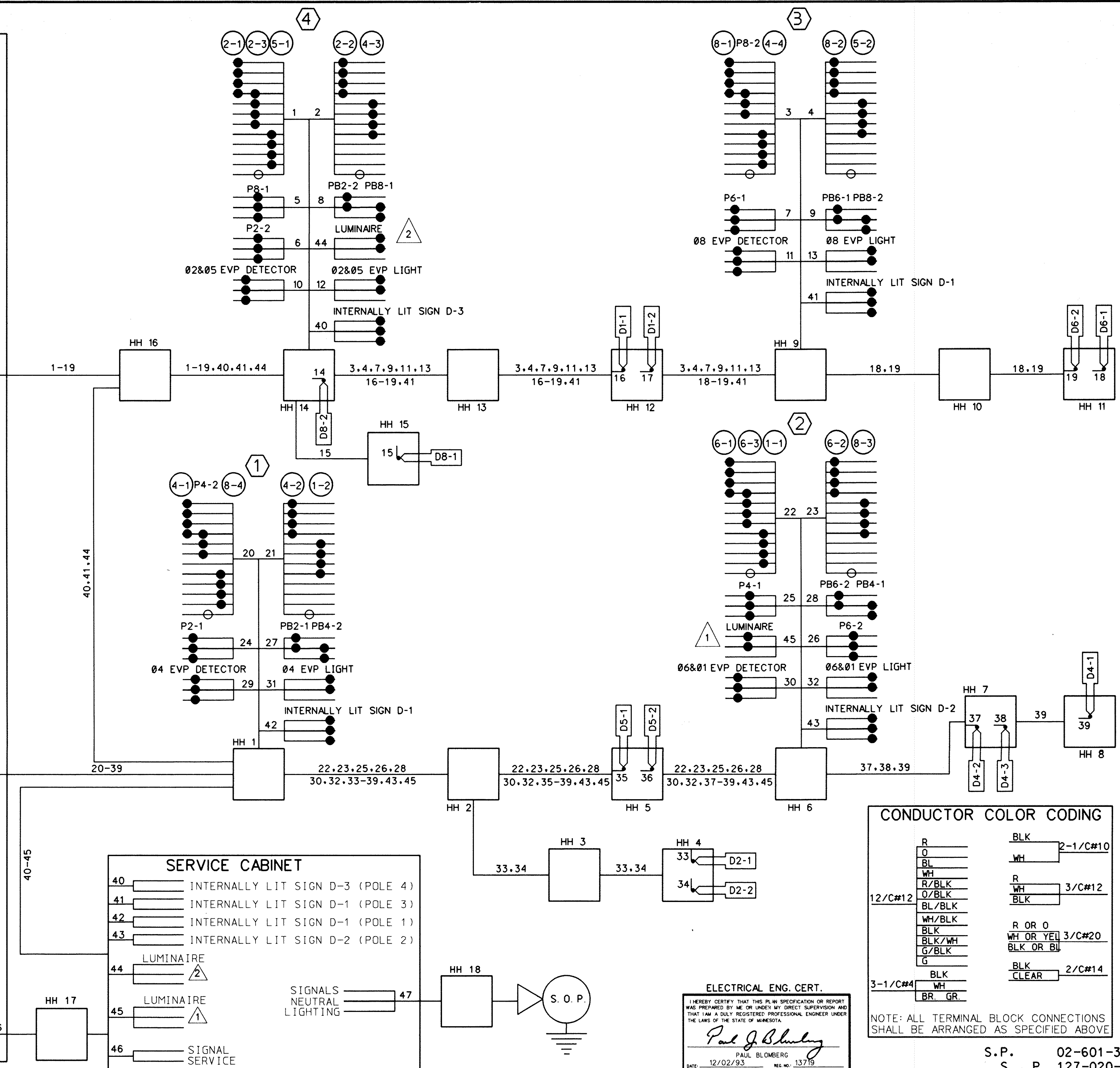
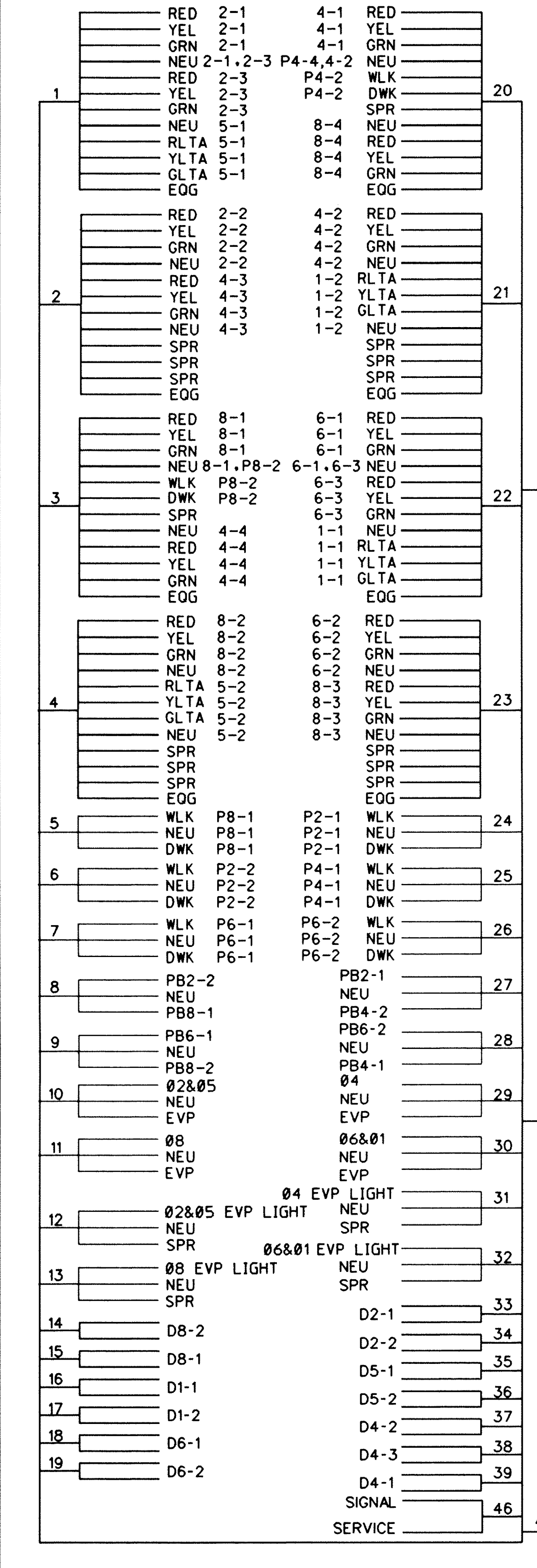
PLAN NO. 34 OF 70

REVISION NO.	DATE	EXPLANATION
02/17/94		INTERNALLY LIT SIGN WIRING

SCALE: AS NOTED
 DESIGN BY: CTR
 CHECKED BY: RBB
 RECORD COPY BY: DATE

DATE: 12/02/93 REG. NO.: 18327

CONTROLLER CABINET



CONDUCTOR COLOR CODING

R	BLK	2-1/C#10
O	WH	
BL	WH	
WH	R	3/C#12
R/BLK	WH	
O/BLK	BLK	
BL/BLK		
WH/BLK	R OR O	
BLK	WH OR YEL	3/C#20
BLK/WH	BLK OR BL	
G/BLK		
G		
BLK	BLK	2/C#14
WH	CLEAR	
BR	GR	

NOTE: ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE

ELECTRICAL ENG. CERT.
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Paul J. Blomberg
 PAUL BLOMBERG
 DATE: 12/02/93 REG. NO. 13719

REVISION NO. 02/17/94
 EXPLANATION INTERNALLY LIT SIGN WIRING

SCALE: AS NOTED
 PLAN BY: DESIGN BY:
 CHK: CTR
 CHECKED BY: COMM: 511406
 RBB
 RECORD COPY BY: DATE

DESIGNED BY: RONALD B. BIRAY
 REG. NO. 18327
 DATE: 12/02/93

WIRING DIAGRAM
 CSAH 1 (EAST RIVER RD)
 AND 71ST WY / HICKORY DR
 S.P. 02-601-86
 FRIDLEY, MINNESOTA

Ort Schelen & Mayeron Associates, Inc.
 Engineers & Architects
 300 Park Place
 Minneapolis, MN 55416-1228
 Telephone: 612-960-5775

S.P. 02-601-36
 S. P. 127-020-13

PLAN NO. 33 OF 70

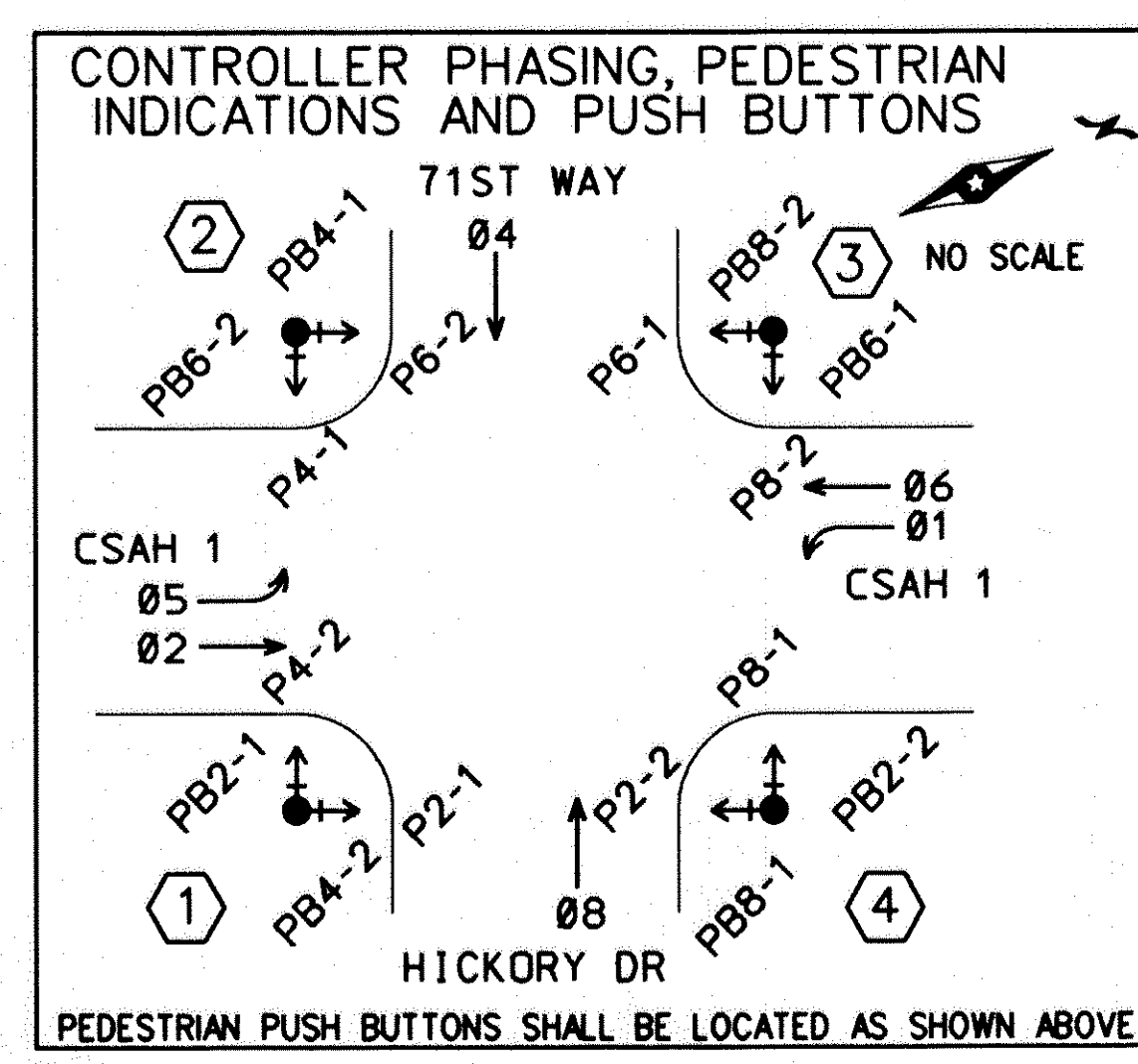
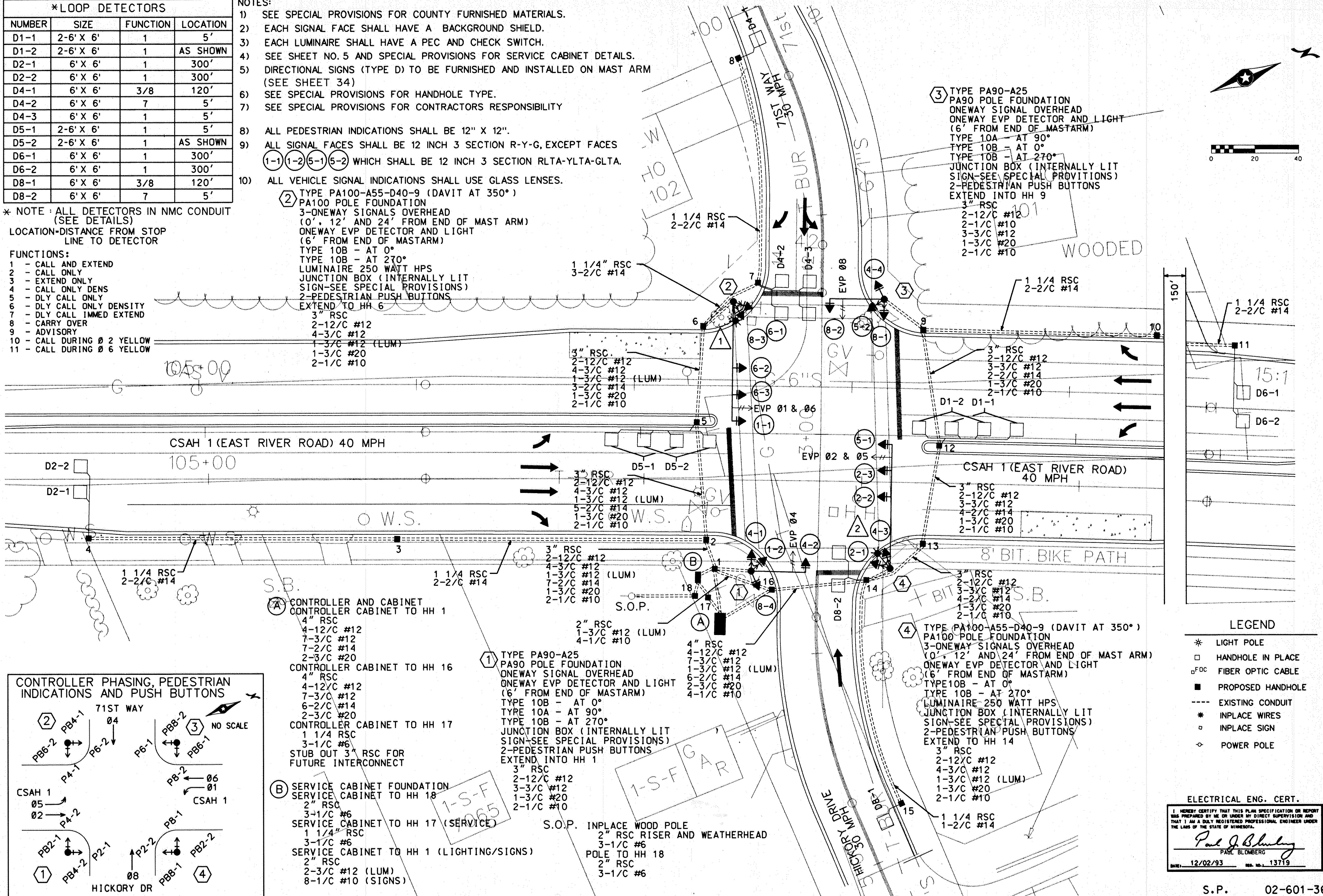
* LOOP DETECTORS			
NUMBER	SIZE	FUNCTION	LOCATION
D1-1	2-6' X 6'	1	5'
D1-2	2-6' X 6'	1	AS SHOWN
D2-1	6' X 6'	1	300'
D2-2	6' X 6'	1	300'
D4-1	6' X 6'	3/8	120'
D4-2	6' X 6'	7	5'
D4-3	6' X 6'	1	5'
D5-1	2-6' X 6'	1	5'
D5-2	2-6' X 6'	1	AS SHOWN
D6-1	6' X 6'	1	300'
D6-2	6' X 6'	1	300'
D8-1	6' X 6'	3/8	120'
D8-2	6' X 6'	7	5'

* NOTE : ALL DETECTORS IN NMC CONDUIT (SEE DETAILS)
LOCATION-DISTANCE FROM STOP LINE TO DETECTOR

- FUNCTIONS:
- 1 - CALL AND EXTEND
 - 2 - CALL ONLY
 - 3 - EXTEND ONLY
 - 4 - CALL ONLY DENS
 - 5 - DLY CALL ONLY
 - 6 - DLY CALL ONLY DENSITY
 - 7 - DLY CALL IMMED EXTEND
 - 8 - CARRY OVER
 - 9 - ADVISORY
 - 10 - CALL DURING Ø 2 YELLOW
 - 11 - CALL DURING Ø 6 YELLOW

- NOTES:
- 1) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
 - 2) EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
 - 3) EACH LUMINAIRE SHALL HAVE A PEC AND CHECK SWITCH.
 - 4) SEE SHEET NO. 5 AND SPECIAL PROVISIONS FOR SERVICE CABINET DETAILS.
 - 5) DIRECTIONAL SIGNS (TYPE D) TO BE FURNISHED AND INSTALLED ON MAST ARM (SEE SHEET 34)
 - 6) SEE SPECIAL PROVISIONS FOR HANDHOLE TYPE.
 - 7) SEE SPECIAL PROVISIONS FOR CONTRACTORS RESPONSIBILITY
 - 8) ALL PEDESTRIAN INDICATIONS SHALL BE 12" X 12".
 - 9) ALL SIGNAL FACES SHALL BE 12 INCH 3 SECTION R-Y-G, EXCEPT FACES (1-1) (1-2) (5-1) (5-2) WHICH SHALL BE 12 INCH 3 SECTION RLTA-YLTA-GLTA.
 - 10) ALL VEHICLE SIGNAL INDICATIONS SHALL USE GLASS LENSES.

- (2) TYPE PA100-A55-D40-9 (DAVIT AT 350°)
PA100 POLE FOUNDATION
3-ONEWAY SIGNALS OVERHEAD (0', 12' AND 24' FROM END OF MAST ARM)
ONEWAY EVP DETECTOR AND LIGHT (6' FROM END OF MASTARM)
TYPE 10B - AT 0°
TYPE 10B - AT 270°
LUMINAIRE 250 WATT HPS
JUNCTION BOX (INTERNALLY LIT SIGN-SEE SPECIAL PROVISIONS)
2-PEDESTRIAN PUSH BUTTONS
EXTEND TO HH 6
3" RSC
2-12/C #12
4-3/C #12
1-3/C #12 (LUM)
1-3/C #20
2-1/C #10



- (A) CONTROLLER AND CABINET
CONTROLLER CABINET TO HH 1
4" RSC
4-12/C #12
7-3/C #12
7-2/C #14
2-3/C #20
CONTROLLER CABINET TO HH 16
4" RSC
4-12/C #12
7-3/C #12
6-2/C #14
2-3/C #20
CONTROLLER CABINET TO HH 17 (SERVICE)
1 1/4" RSC
3-1/C #6
STUB OUT 3" RSC FOR FUTURE INTERCONNECT

- (B) SERVICE CABINET FOUNDATION
SERVICE CABINET TO HH 18
2" RSC
3-1/C #6
SERVICE CABINET TO HH 17 (SERVICE)
1 1/4" RSC
3-1/C #6
SERVICE CABINET TO HH 1 (LIGHTING/SIGNS)
2" RSC
2-3/C #12 (LUM)
8-1/C #10 (SIGNS)

- (1) TYPE PA90-A25
PA90 POLE FOUNDATION
ONEWAY SIGNAL OVERHEAD (0', 12' AND 24' FROM END OF MASTARM)
ONEWAY EVP DETECTOR AND LIGHT (6' FROM END OF MASTARM)
TYPE 10B - AT 0°
TYPE 10A - AT 90°
TYPE 10B - AT 270°
LUMINAIRE 250 WATT HPS
JUNCTION BOX (INTERNALLY LIT SIGN-SEE SPECIAL PROVISIONS)
2-PEDESTRIAN PUSH BUTTONS
EXTEND INTO HH 1
3" RSC
2-12/C #12
3-3/C #12
1-3/C #20
2-1/C #10

- S.O.P. INPLACE WOOD POLE
2" RSC RISER AND WEATHERHEAD
3-1/C #6
POLE TO HH 18
2" RSC
3-1/C #6

- (3) TYPE PA90-A25
PA90 POLE FOUNDATION
ONEWAY SIGNAL OVERHEAD (0', 12' AND 24' FROM END OF MASTARM)
ONEWAY EVP DETECTOR AND LIGHT (6' FROM END OF MASTARM)
TYPE 10A - AT 90°
TYPE 10B - AT 0°
TYPE 10B - AT 270°
LUMINAIRE 250 WATT HPS
JUNCTION BOX (INTERNALLY LIT SIGN-SEE SPECIAL PROVISIONS)
2-PEDESTRIAN PUSH BUTTONS
EXTEND INTO HH 9
3" RSC
2-12/C #12
2-1/C #10
3-3/C #12
1-3/C #20
2-1/C #10

- (4) TYPE PA100-A55-D40-9 (DAVIT AT 350°)
PA100 POLE FOUNDATION
3-ONEWAY SIGNALS OVERHEAD (0', 12' AND 24' FROM END OF MAST ARM)
ONEWAY EVP DETECTOR AND LIGHT (6' FROM END OF MASTARM)
TYPE 10B - AT 0°
TYPE 10B - AT 270°
LUMINAIRE 250 WATT HPS
JUNCTION BOX (INTERNALLY LIT SIGN-SEE SPECIAL PROVISIONS)
2-PEDESTRIAN PUSH BUTTONS
EXTEND TO HH 14
3" RSC
2-12/C #12
4-3/C #12
1-3/C #12 (LUM)
1-3/C #20
2-1/C #10

- LEGEND
- * LIGHT POLE
 - HANDHOLE IN PLACE
 - FIBER OPTIC CABLE
 - PROPOSED HANDHOLE
 - EXISTING CONDUIT
 - * INPLACE WIRES
 - INPLACE SIGN
 - ◇ POWER POLE

ELECTRICAL ENG. CERT.
I HEREBY CERTIFY THAT THIS PLAN SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Paul J. Blomberg
PAUL BLOMBERG
DATE: 12/02/93 REG. NO.: 13719

S.P. 02-601-36
S. P. 127-020-13

INTERSECTION LAYOUT
CSAH 1 (EAST RIVER RD)
AND 71ST WAY / HICKORY DR
S.P. 02-601-36
FRIDLEY, MINNESOTA

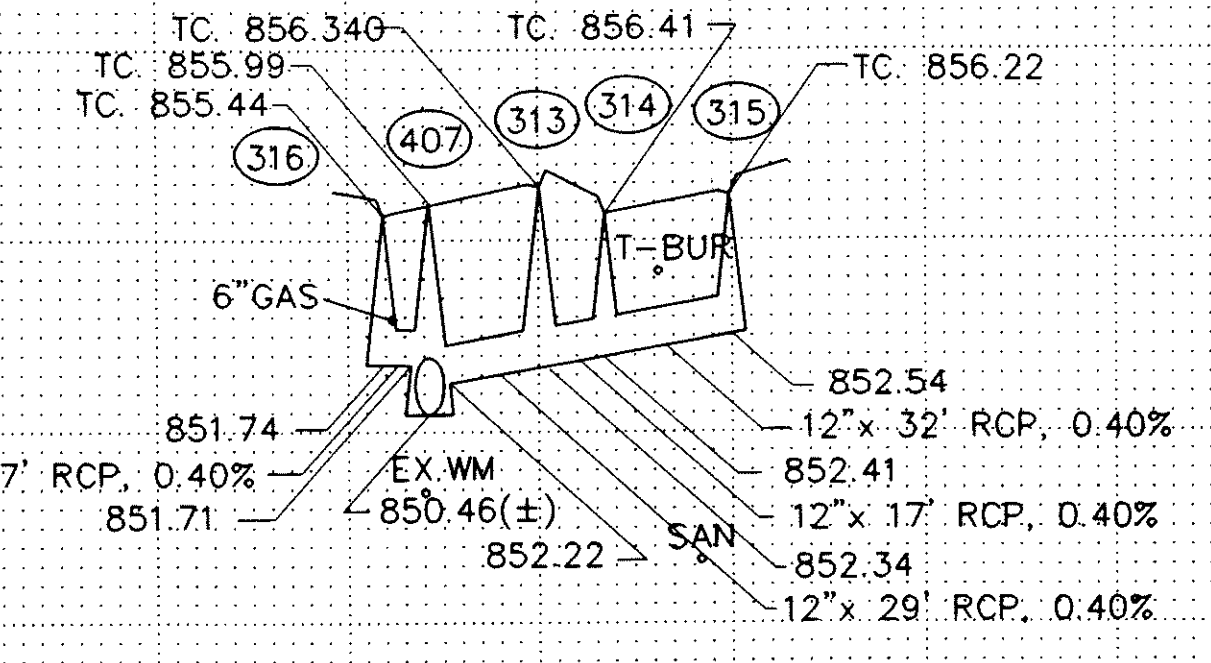
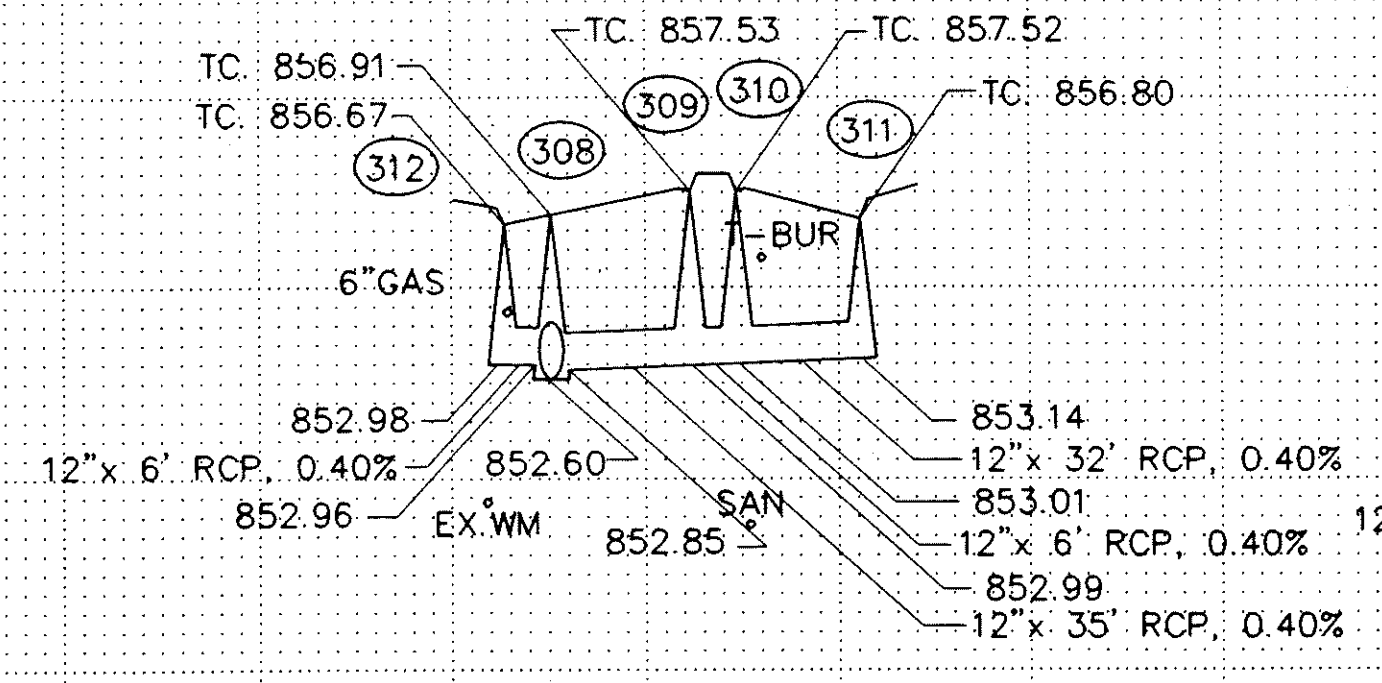
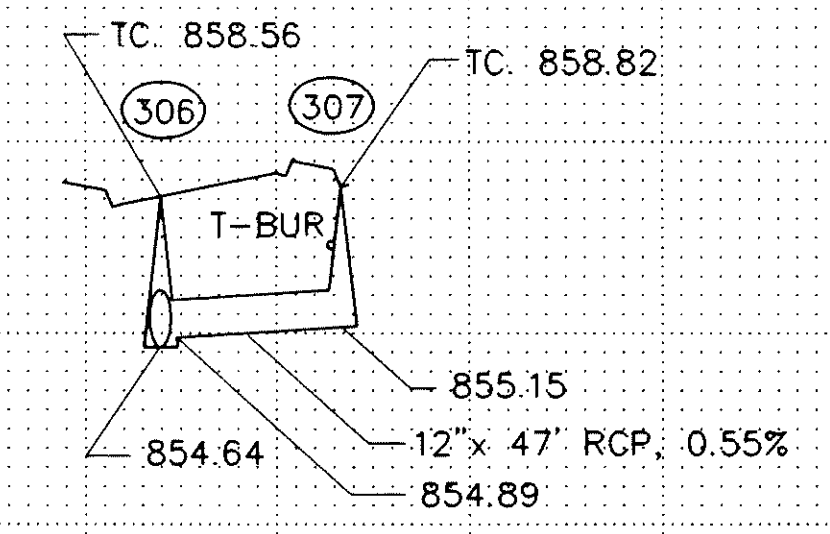
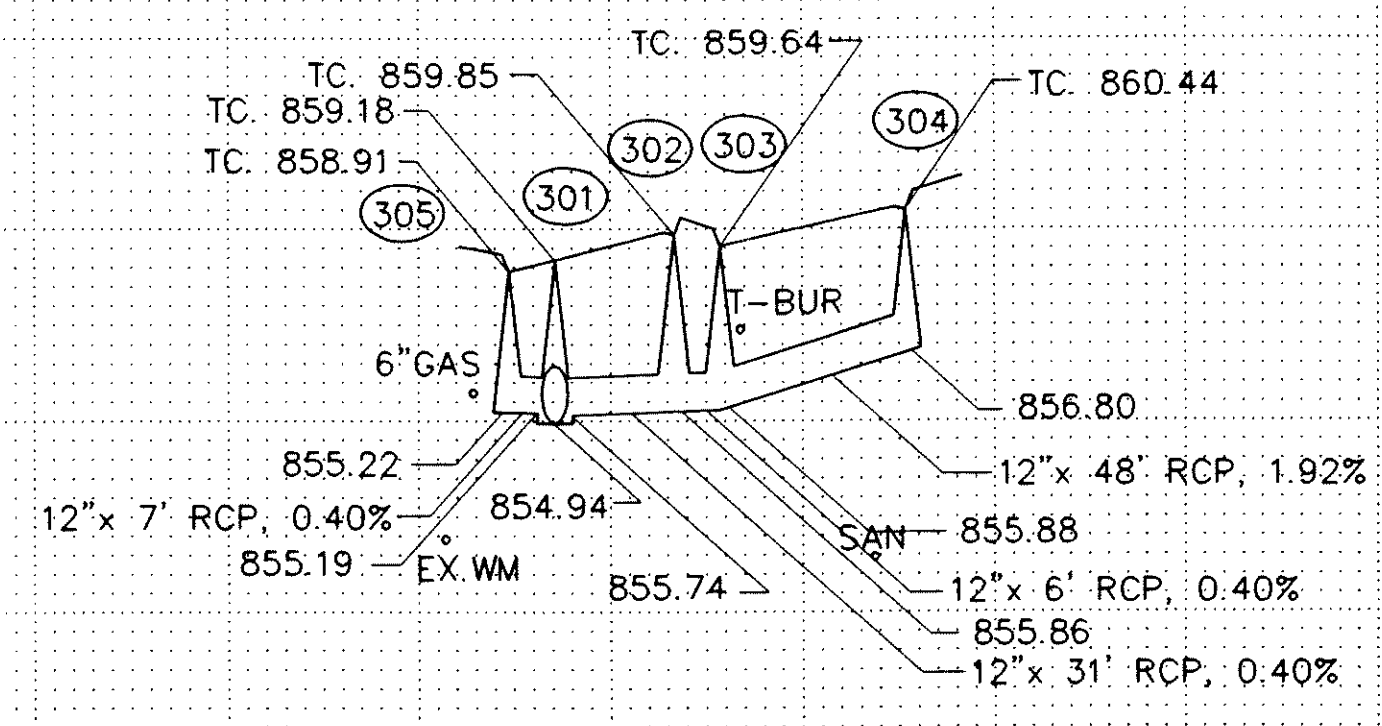
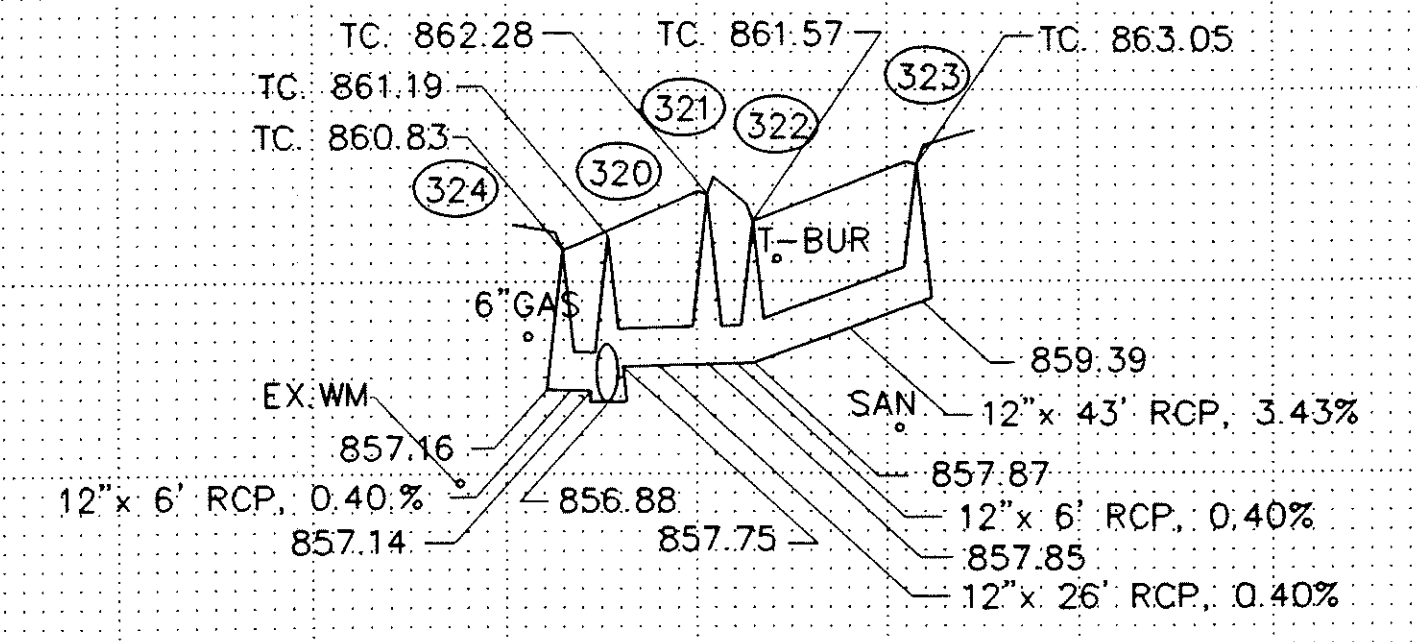
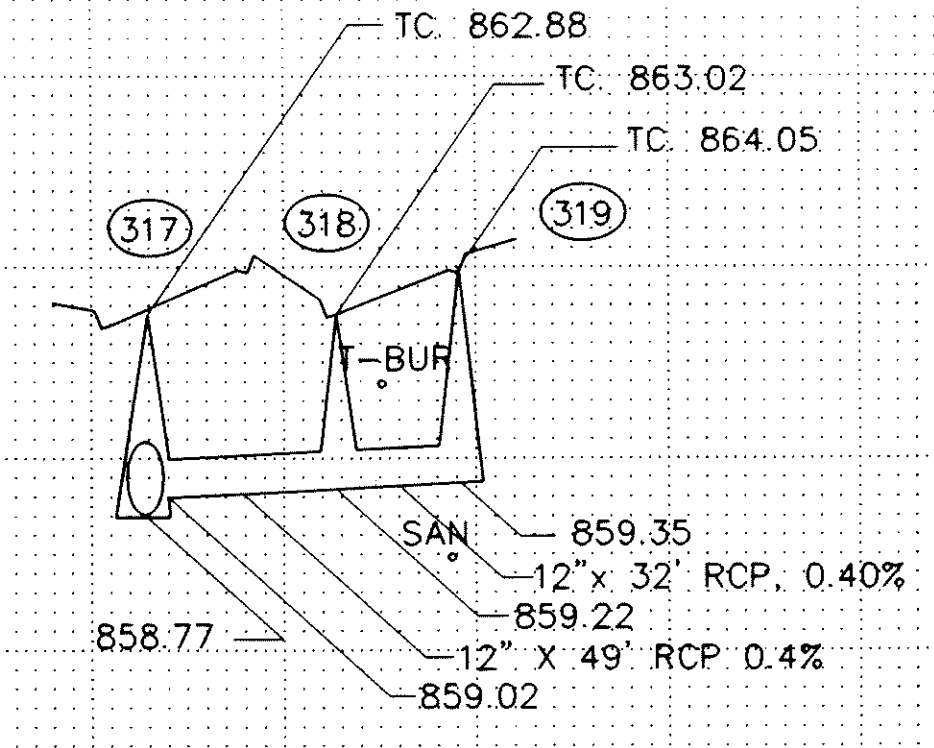
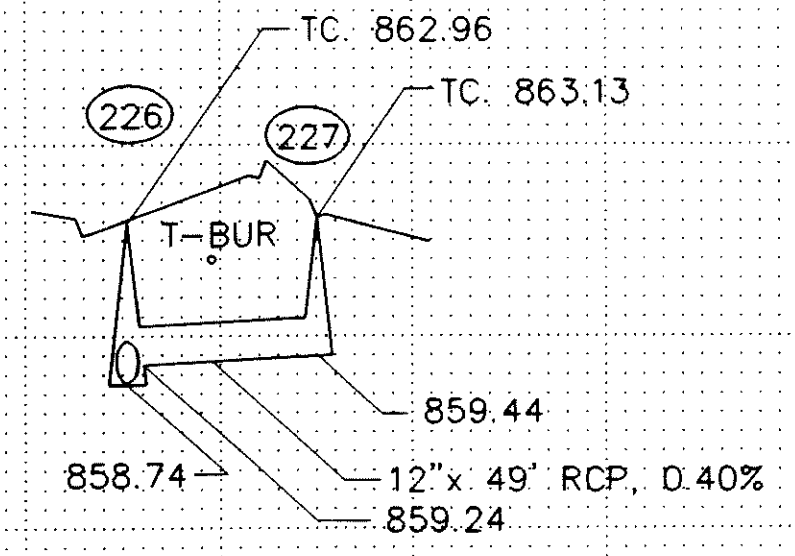
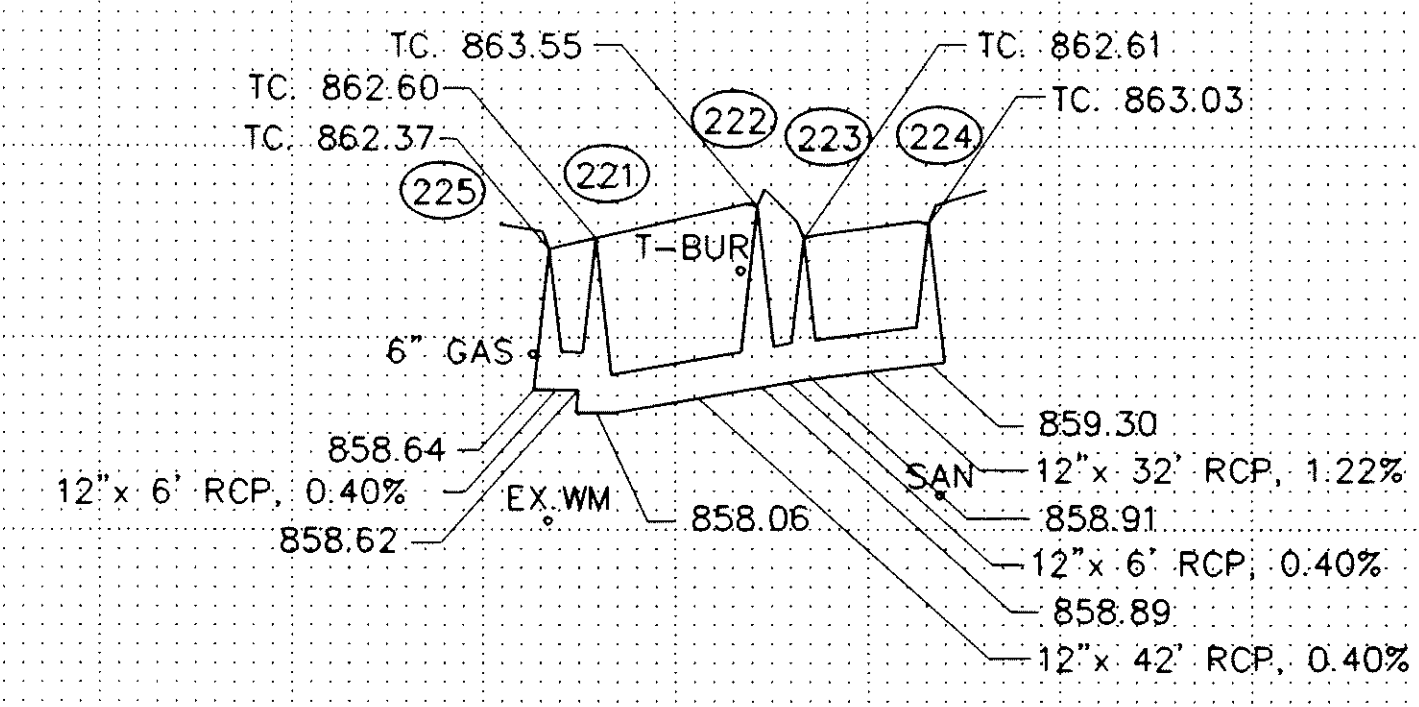
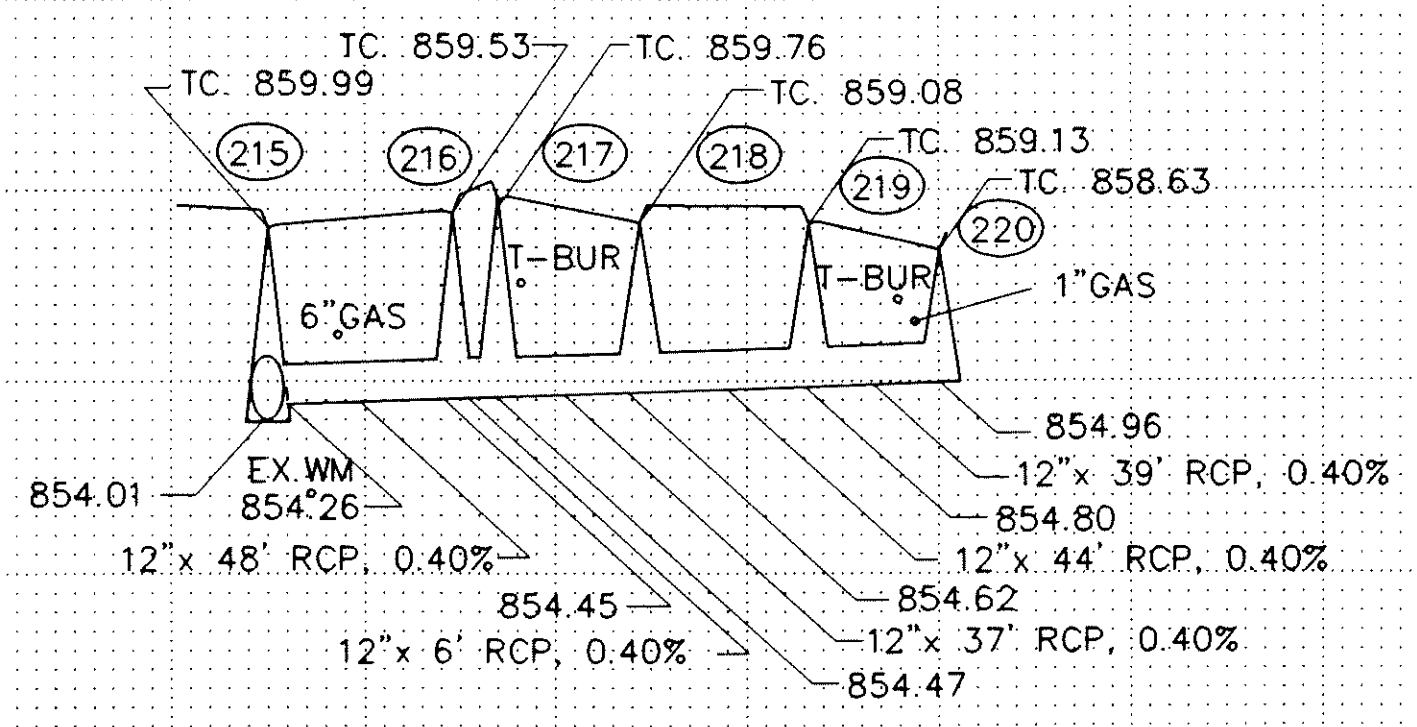
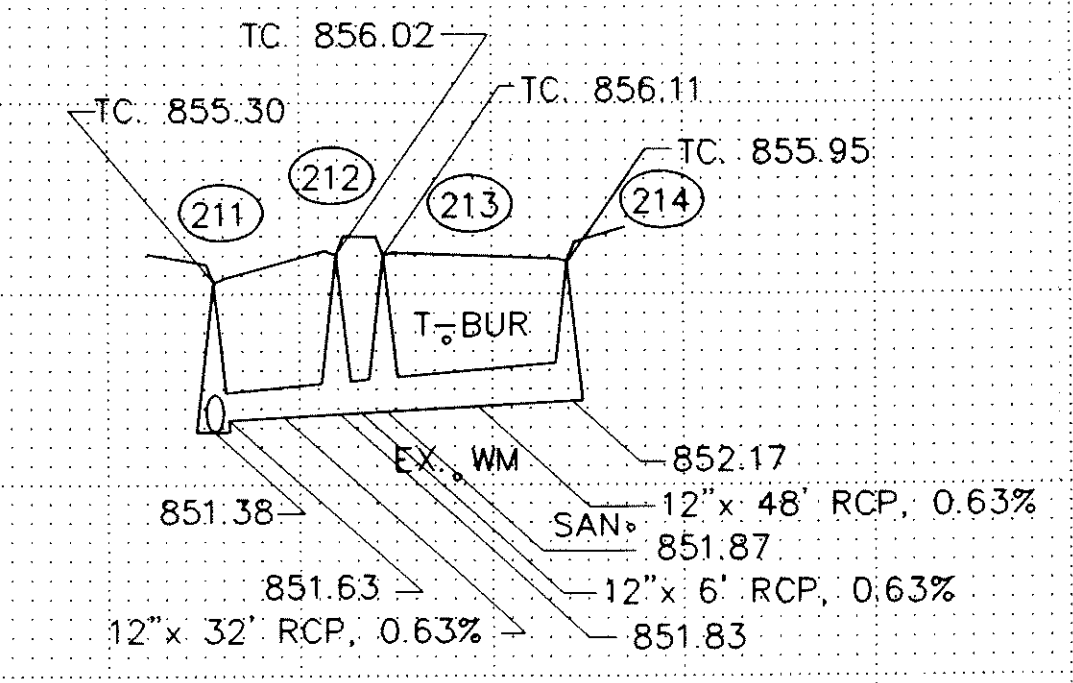
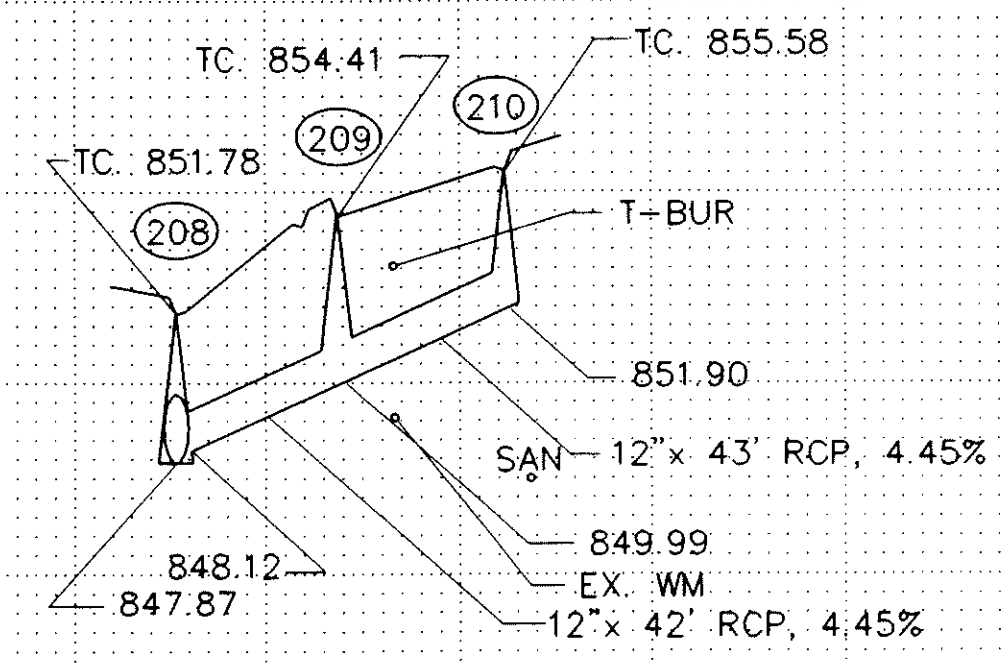
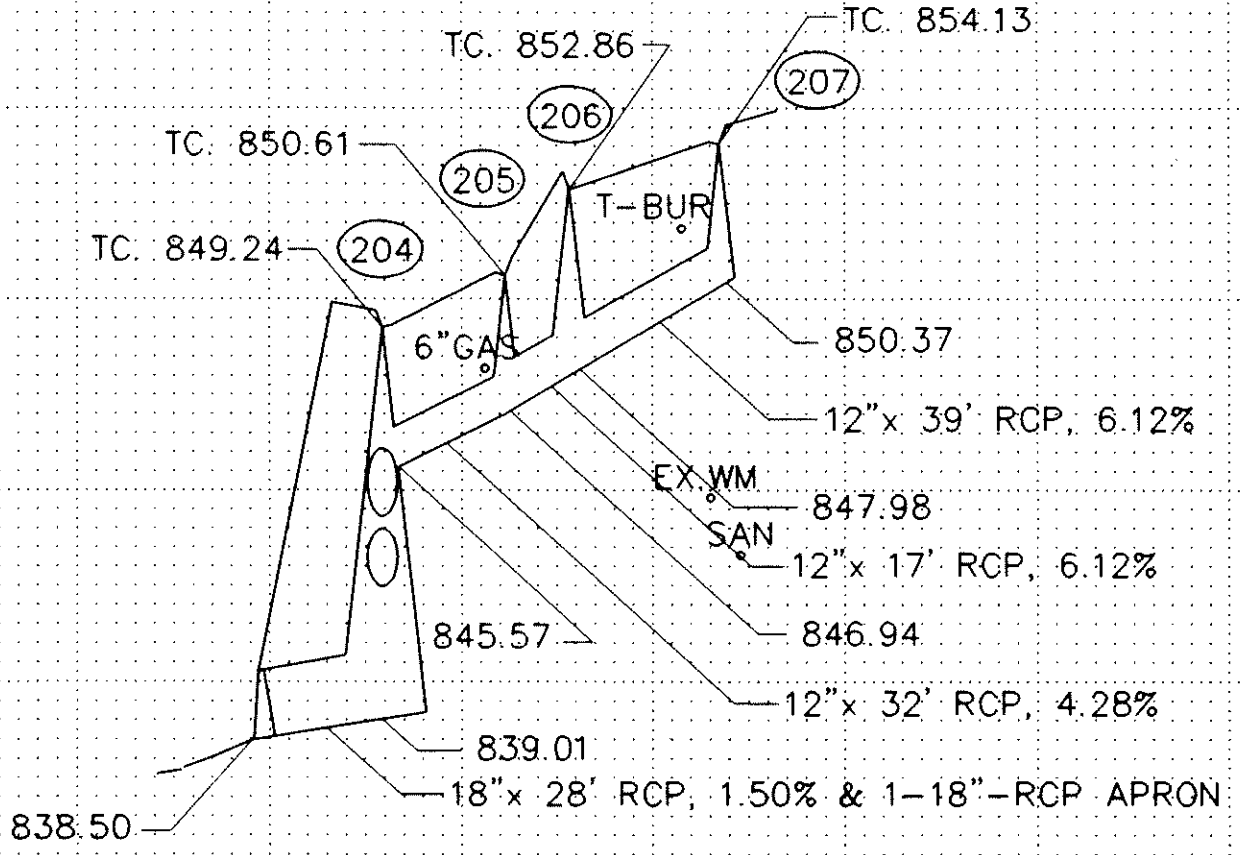
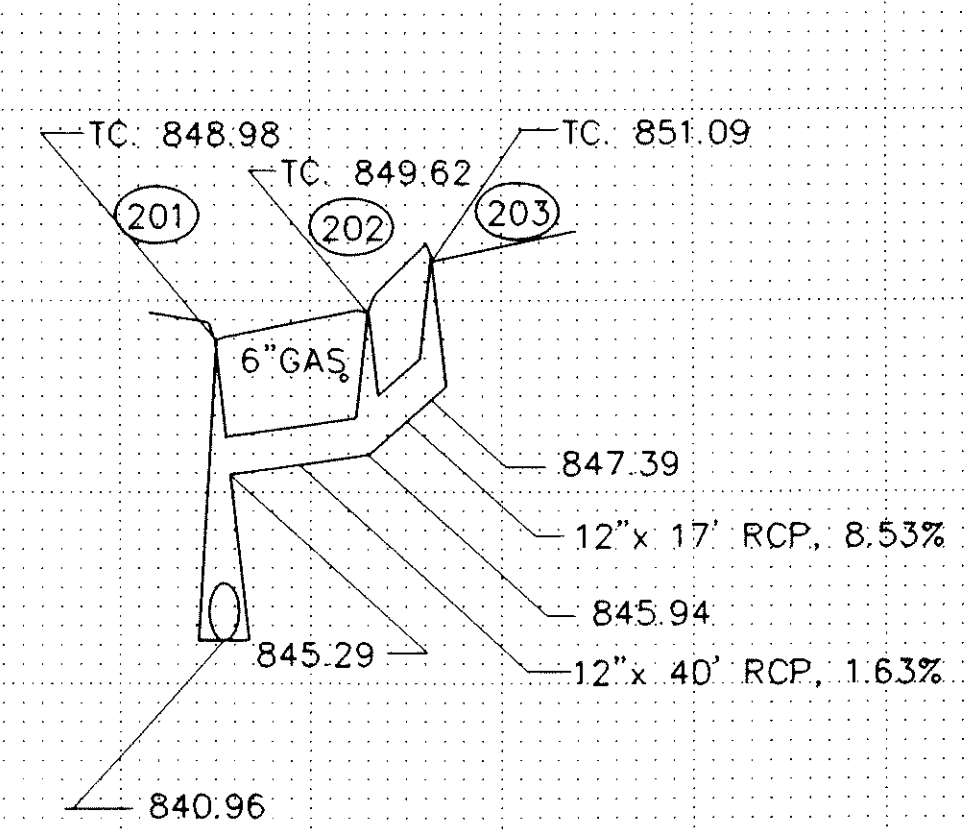
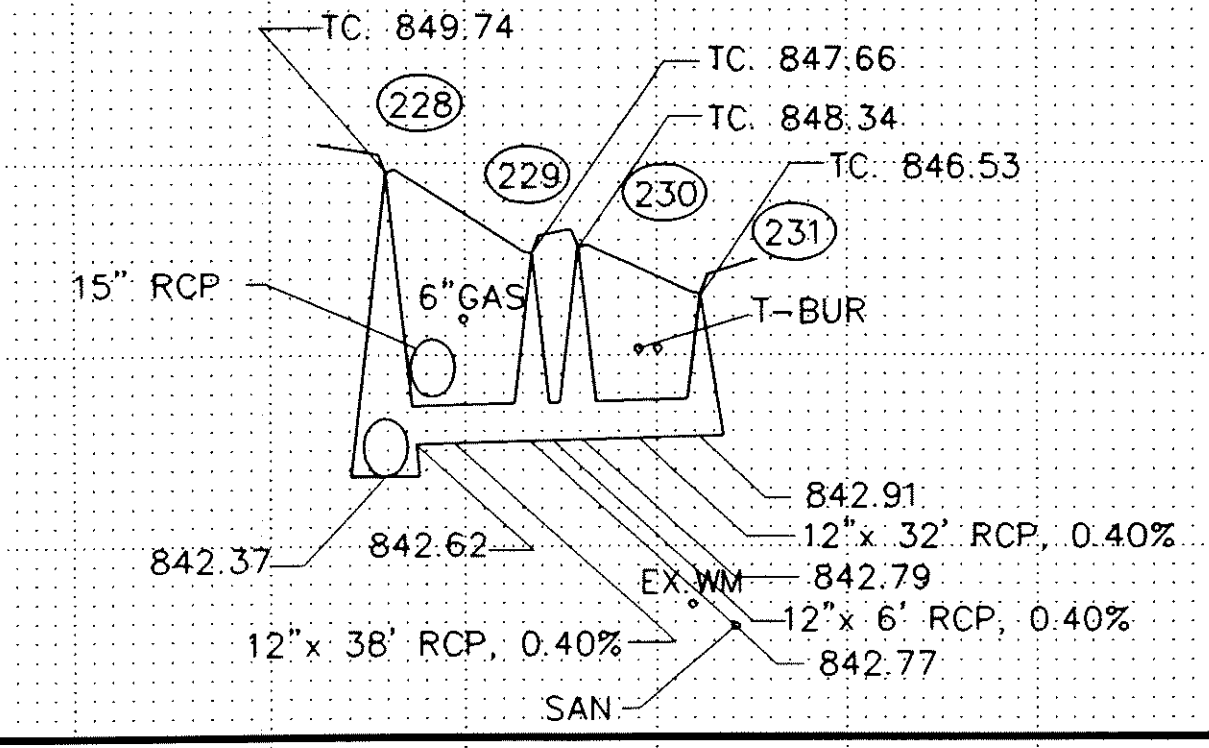
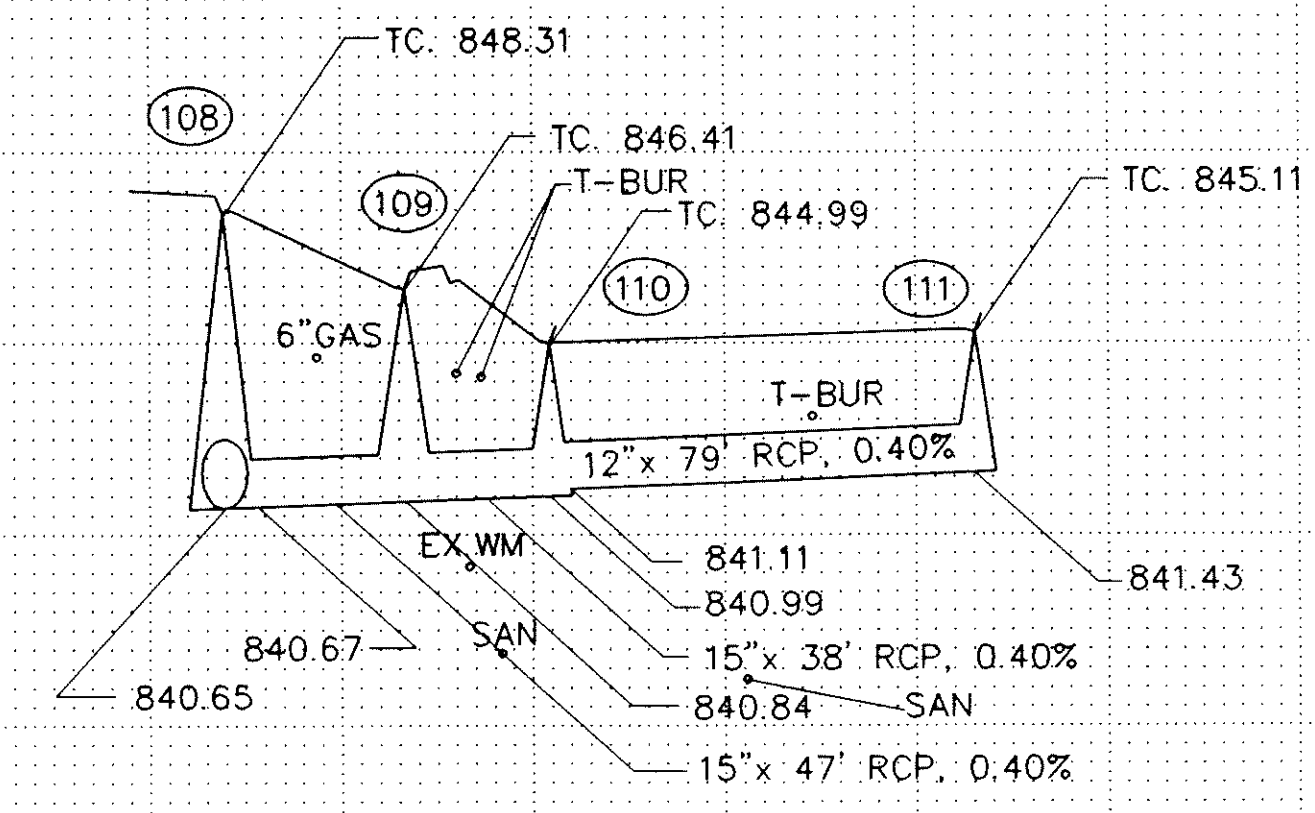
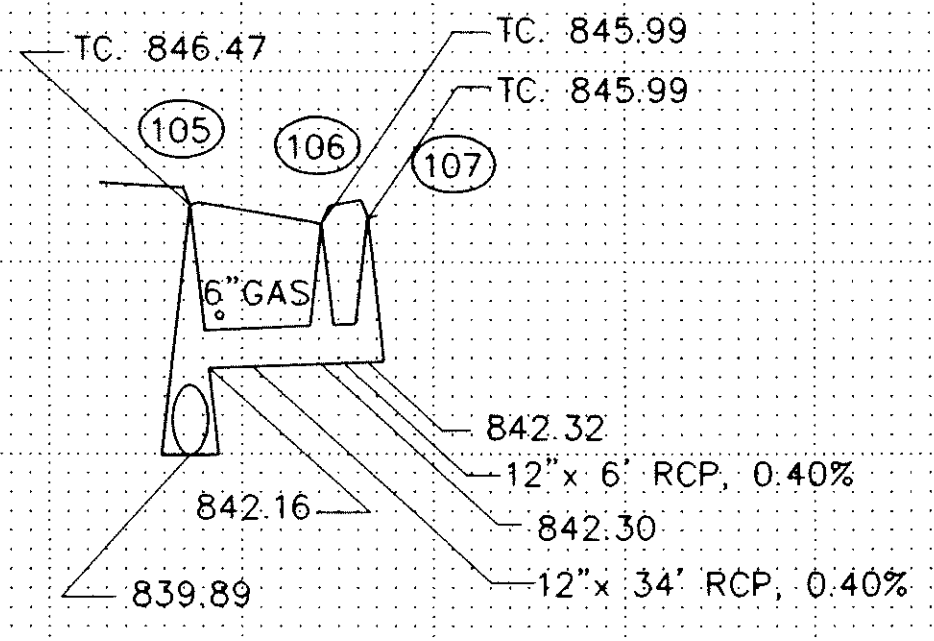
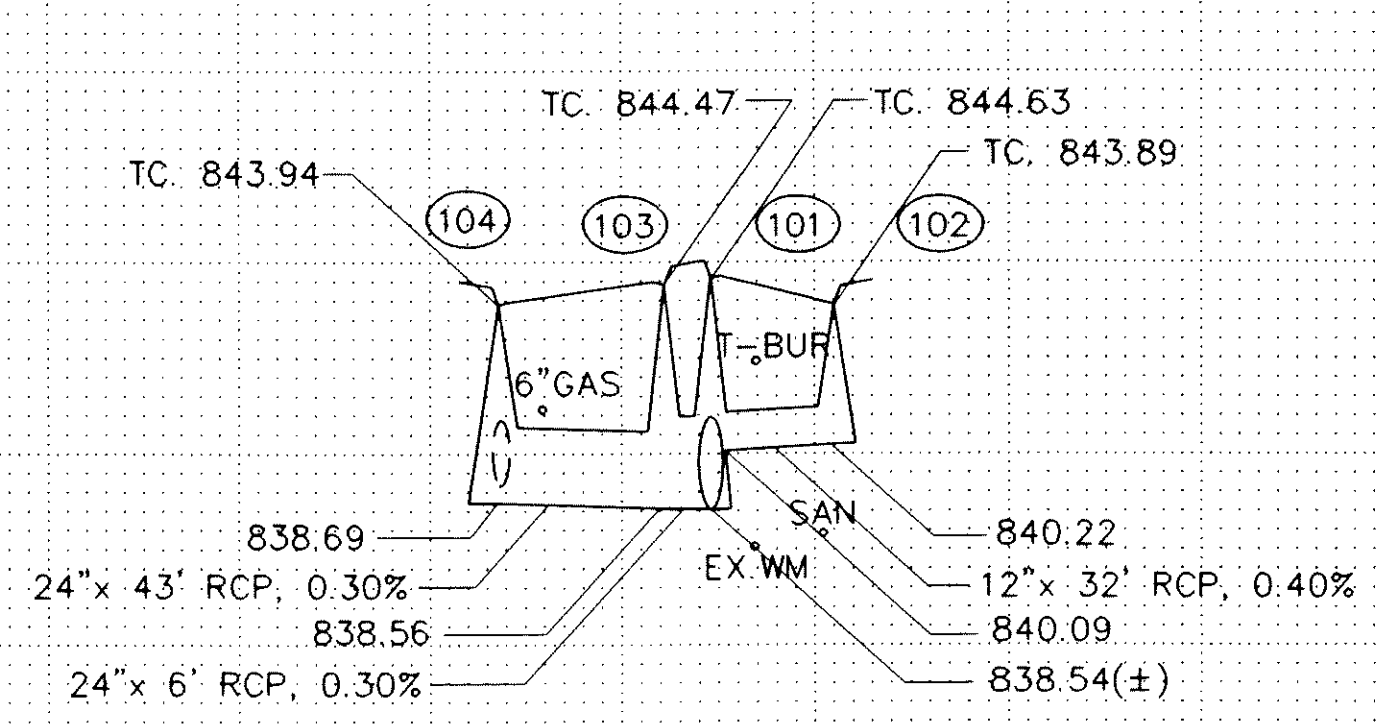
Ort Schelen & Mavoron, Inc.
Engineers - Architects - Planners - Surveyors
300 Park Place Center - 5775 Wyzata Boulevard
Minneapolis, MN 55418-1228 - 612-595-5775

REVISION NO. 02/77/94
DATE 04/28/94
MNDOT CO COMMENTS

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CHK BY: RBB
CHECKED BY: RBB
RECORD COPY BY: DATE

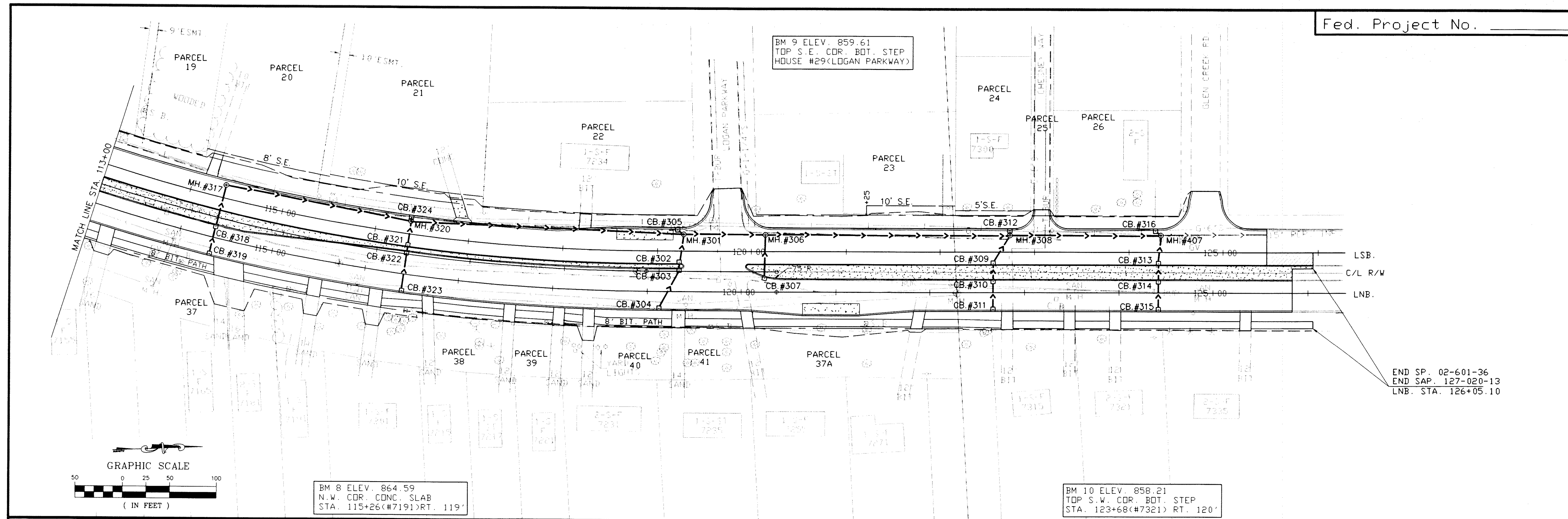
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PLAN NO. 32 OF 70

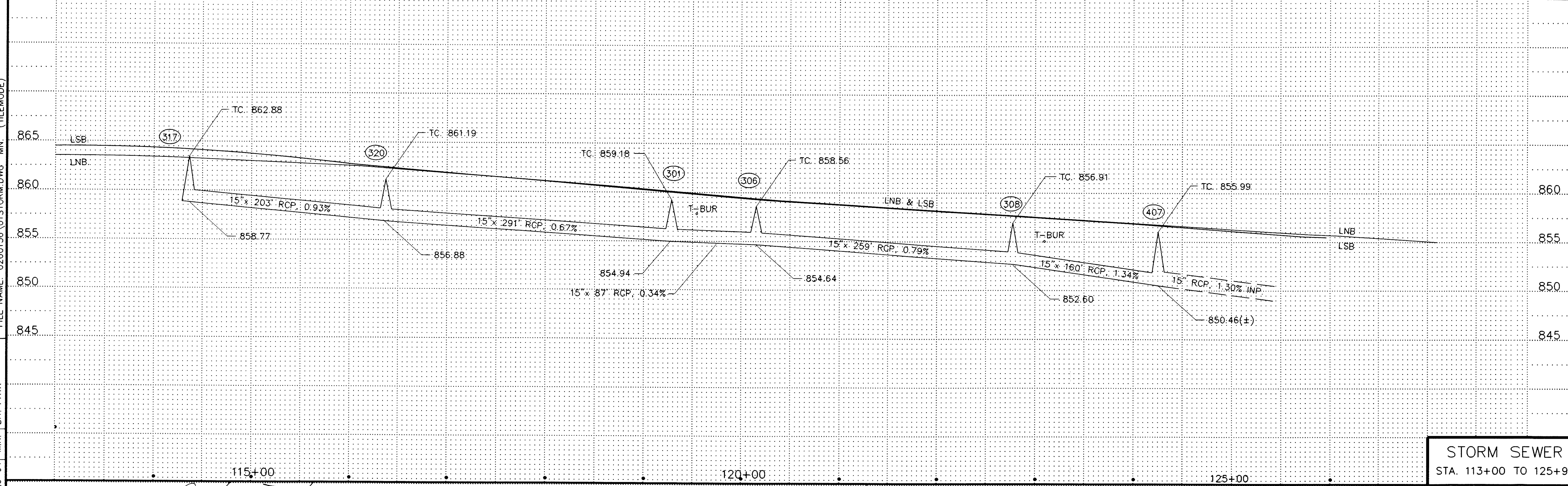


REVISIONS	DATE	BY

STORM SEWER LATERALS



END SP. 02-601-36
 END SAP. 127-020-13
 LNB. STA. 126+05.10



STORM SEWER
 STA. 113+00 TO 125+95

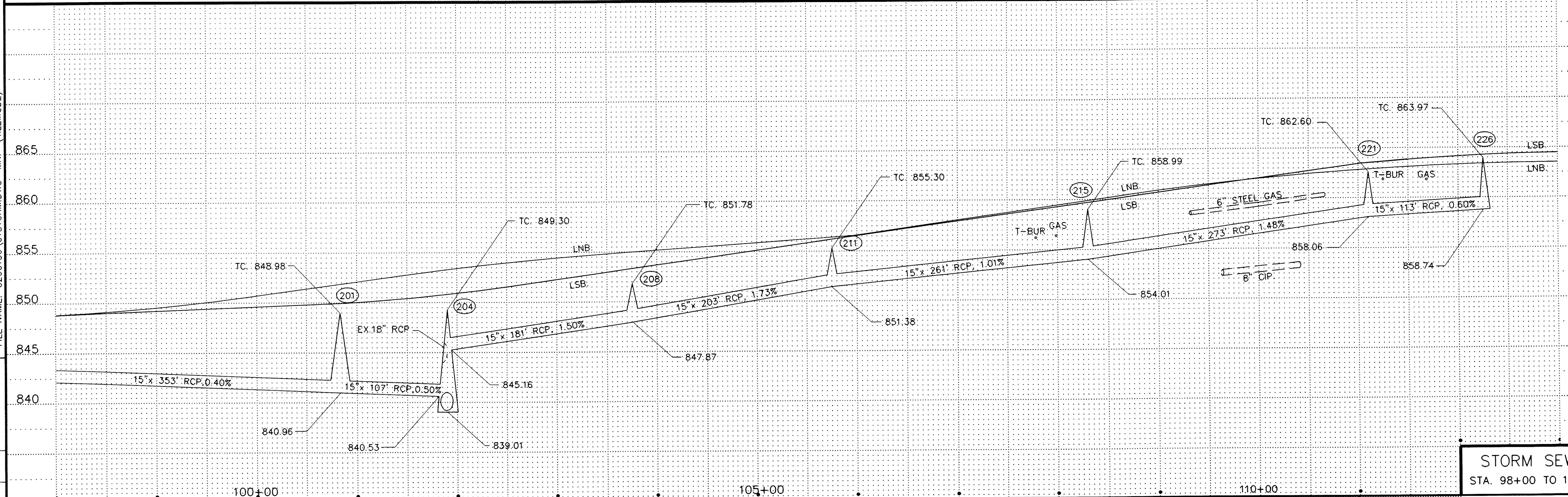
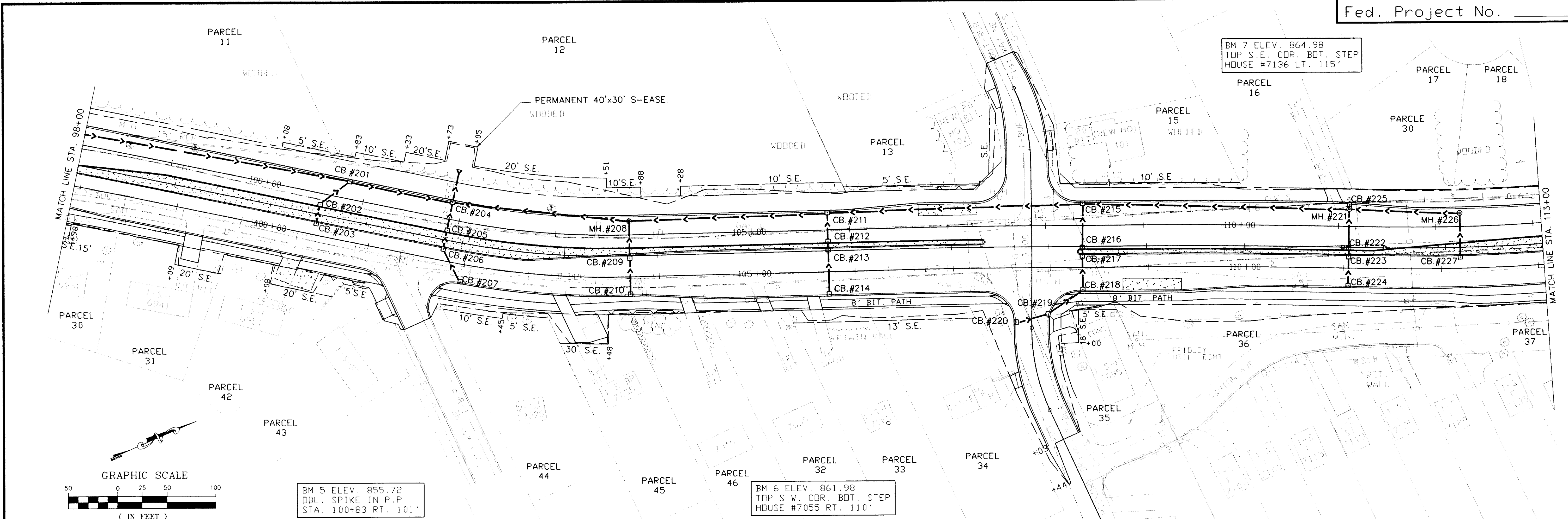
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7-20-94	M.N.	CONST. LIMITS
7-20-94	M.N.	BIT. PATH

CERTIFIED BY Douglas W. Finke P.E. REG NO. 20235 E/19 19 94

S.P. 02-601-36 S. P. 127-020-13 C.P. _____

Sheet No. 30 of 70 Sheets

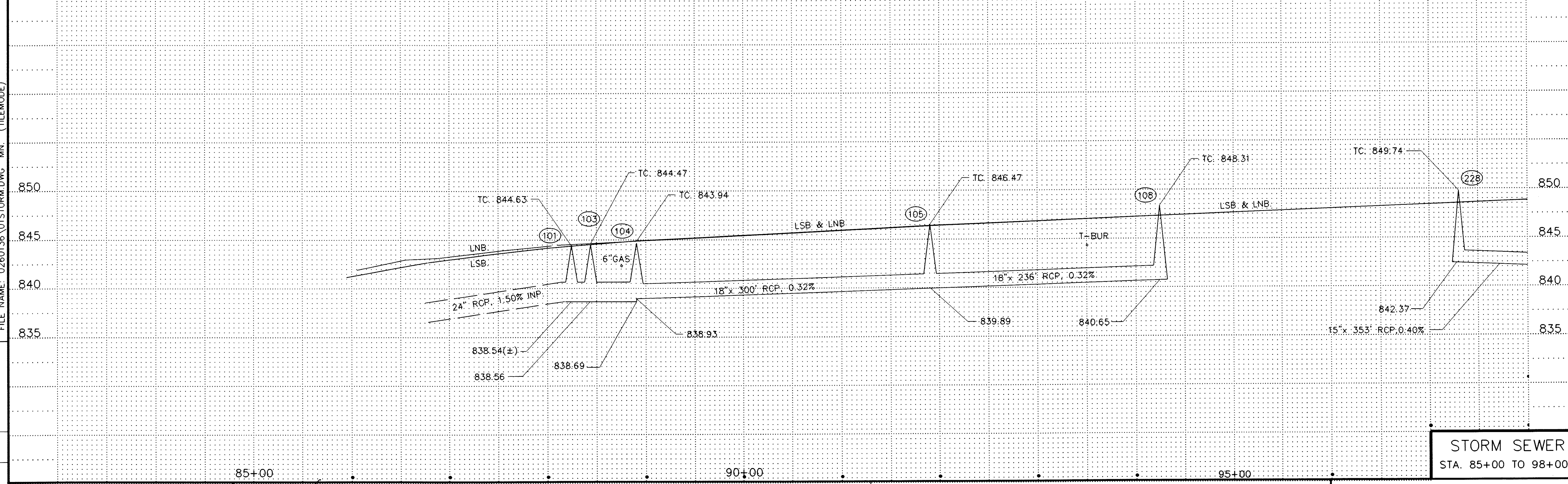
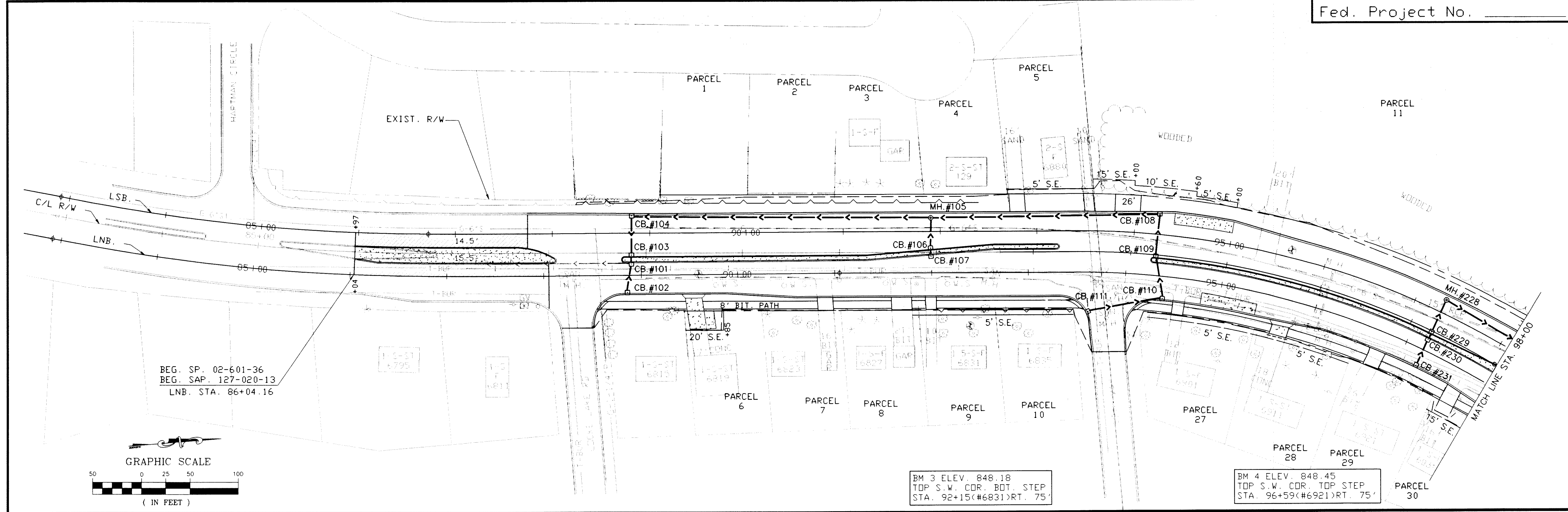
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STORM SEWER
STA. 98+00 TO 113+00

REVISIONS	DATE	DESCRIPTION
7-20-94	M.N.	CONST. LIMITS

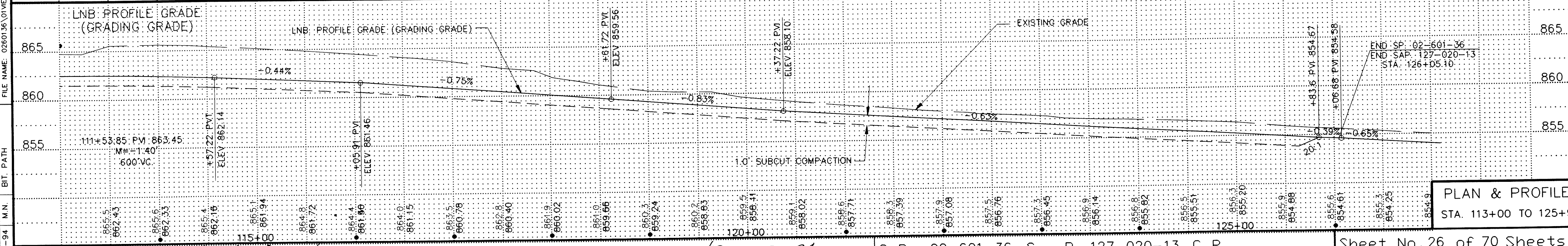
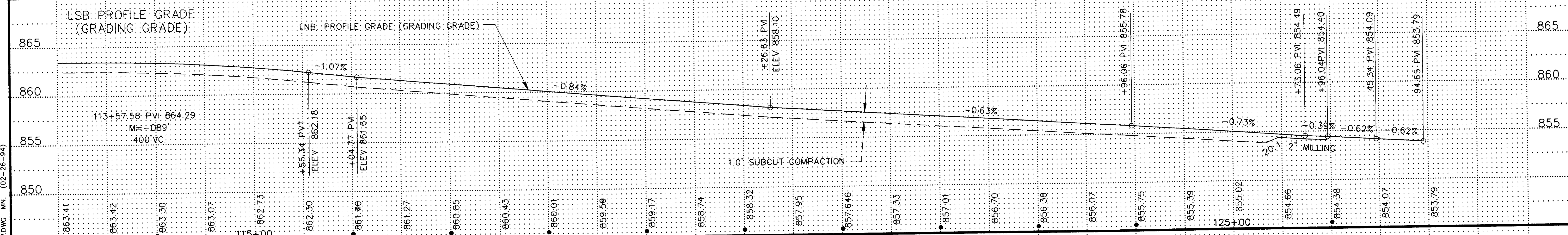
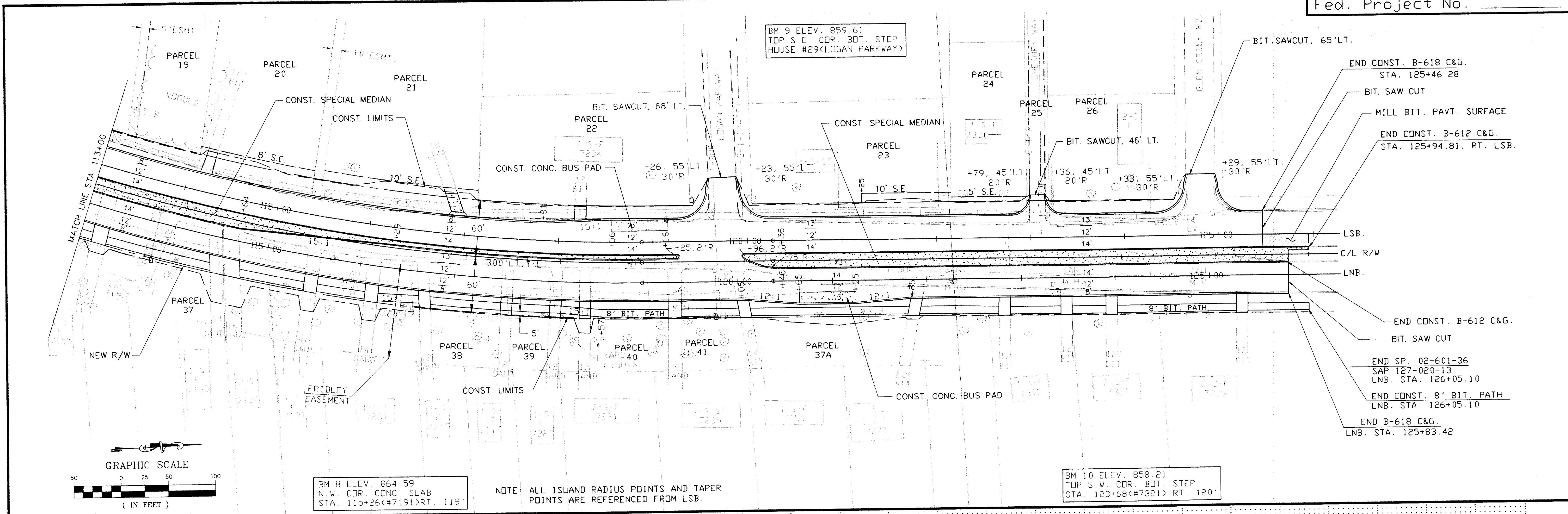
FILE NAME: 0260136\01STORM.DWG MN. (TILEMODE)



STORM SEWER
STA. 85+00 TO 98+00

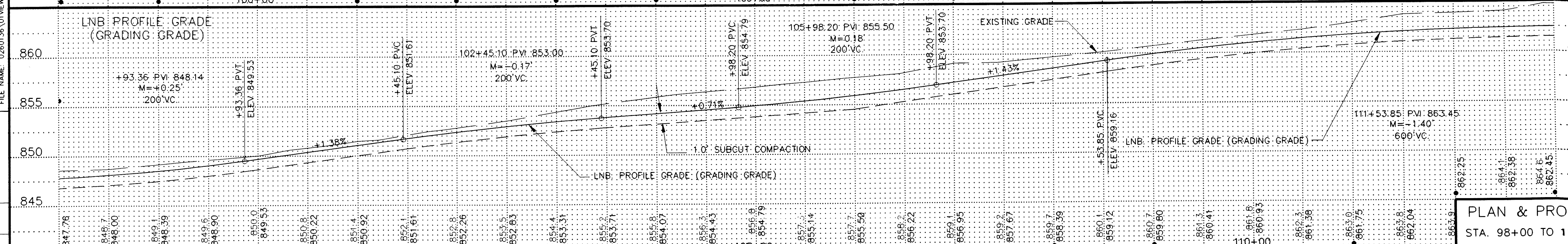
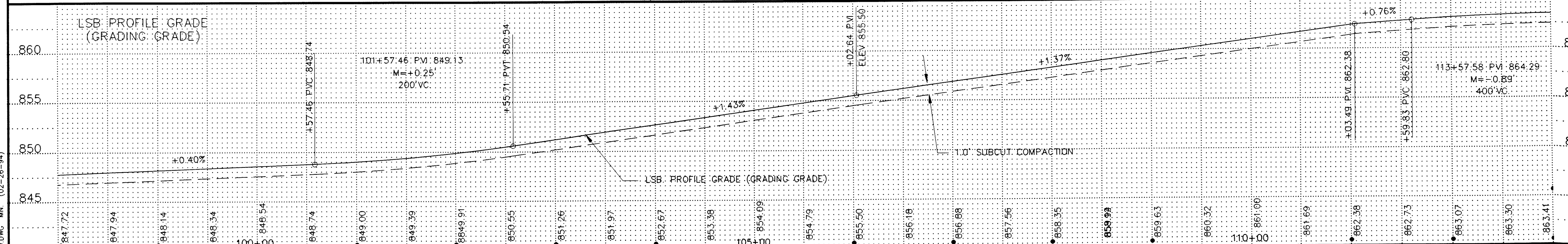
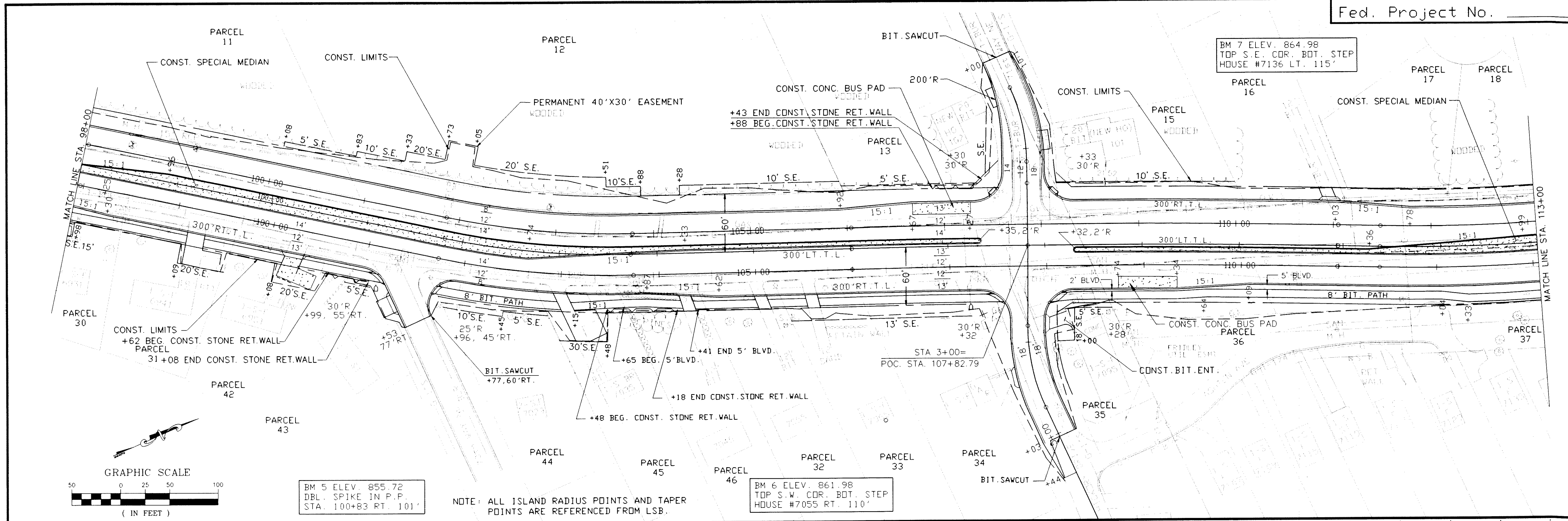
REVISIONS	DATE	BY	DESCRIPTION
	7-20-94	M.N.	CONST. LIMITS

FILE NAME: 0260136\01\STORM.DWG M.N. (TILEMODE)



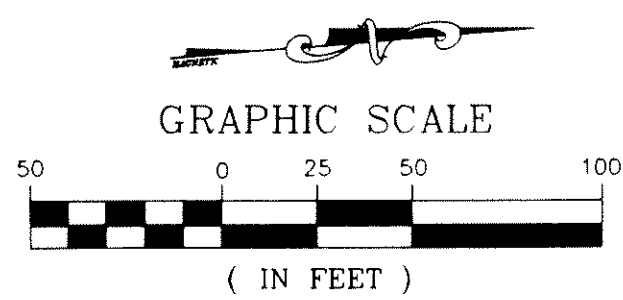
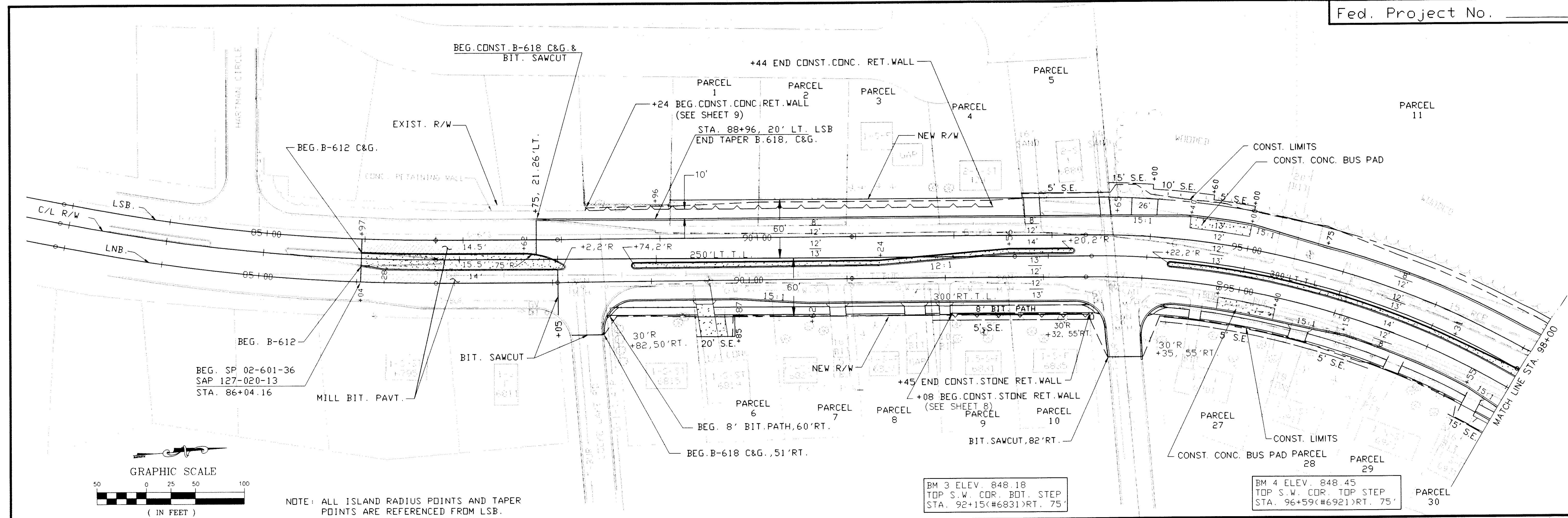
REVISIONS	DATE	BY	DESCRIPTION
7-20-94	M.N.	M.N.	CONST. LIMITS
7-20-94	M.N.	M.N.	BIT. PATH

PLAN & PROFILE
STA. 113+00 TO 125+95



PLAN & PROFILE
STA. 98+00 TO 113+00

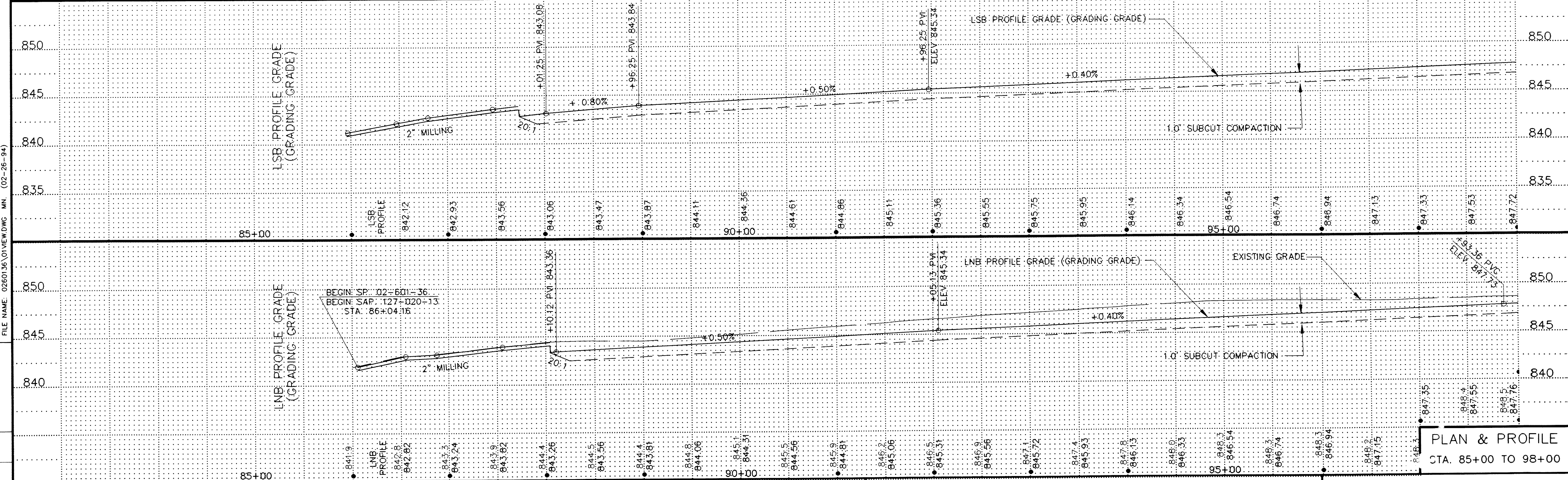
REVISIONS	DATE	DESCRIPTION	BY	CONST. LIMITS
	7-20-94		M.N.	



NOTE: ALL ISLAND RADIUS POINTS AND TAPER POINTS ARE REFERENCED FROM LSB.

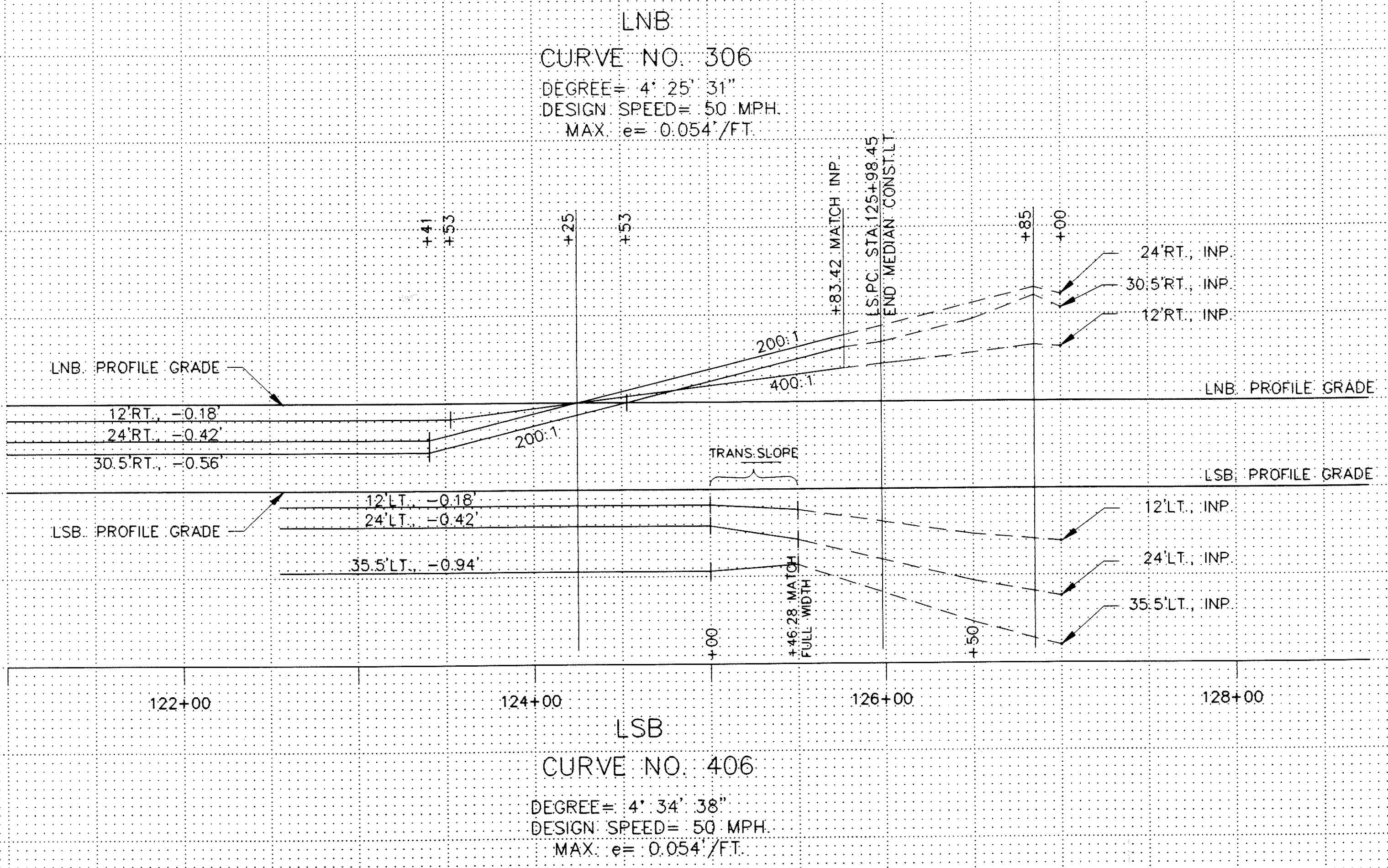
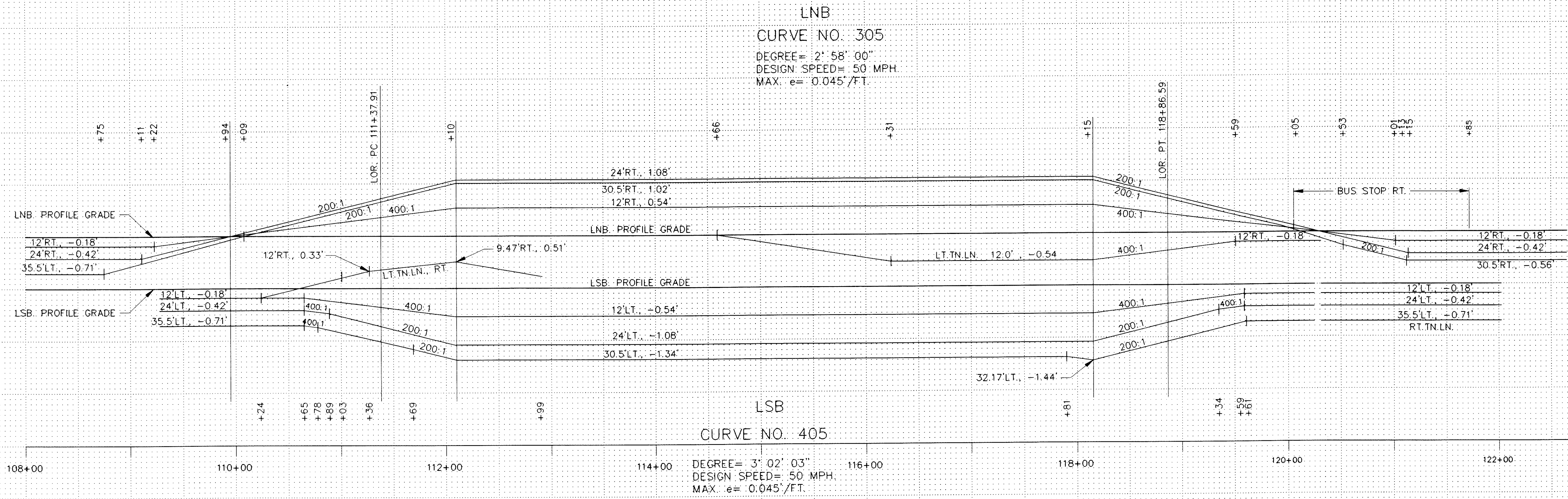
BM 3 ELEV. 848.18
TOP S.W. COR. BOT. STEP
STA. 92+15(+6831)RT. 75'

BM 4 ELEV. 848.45
TOP S.W. COR. TOP STEP
STA. 96+59(+6921)RT. 75'



PLAN & PROFILE
STA. 85+00 TO 98+00

REVISIONS	DATE	BY	DESCRIPTION
1	7-20-94	M.N.	CONST. LIMITS

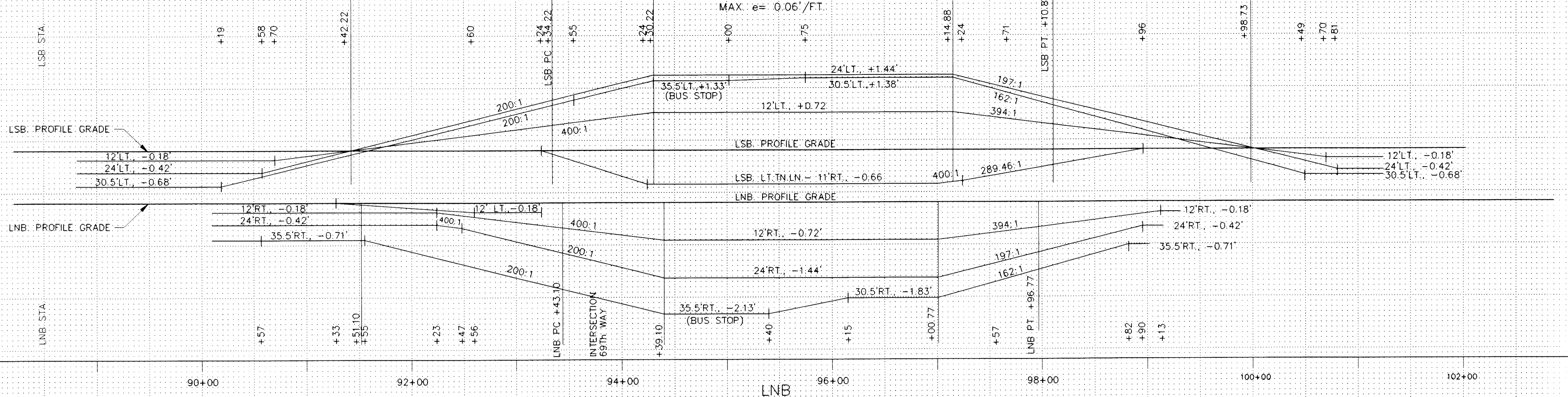


DATE	REVISIONS	BY

SUPERELEVATION CHARTS

FILE NAME: 0260136\01SUPER.DWG MN (02-26-94)

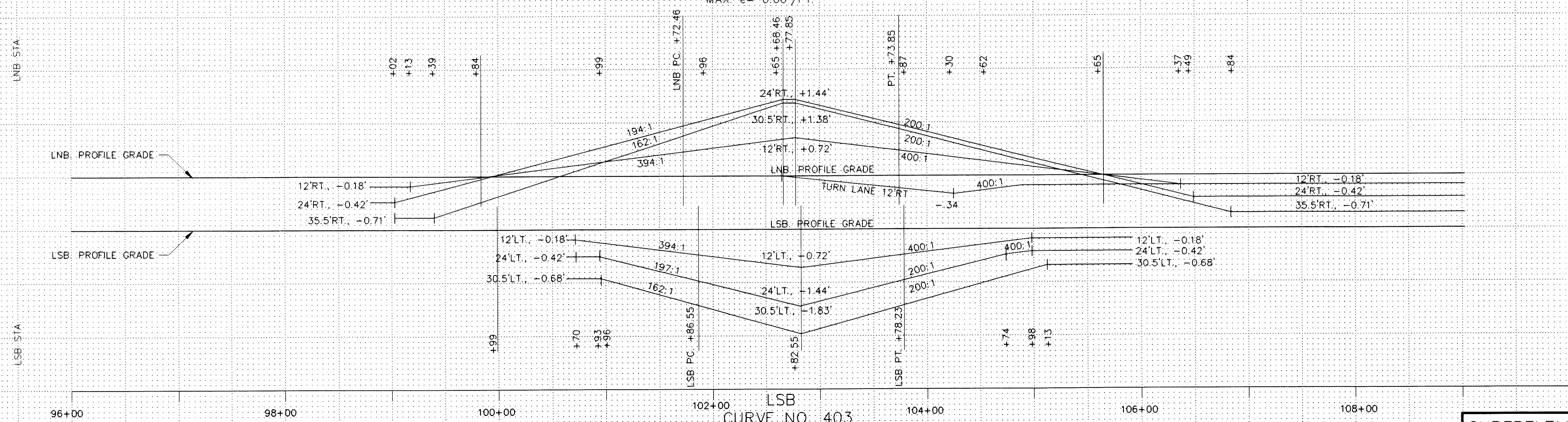
LSB
 CURVE NO. 402
 DEGREE = 6° 25' 28"
 DESIGN SPEED = 50 MPH
 MAX. e = 0.06'/FT.



NOTE: STATIONING BASED ON CONST. LNB & LSB

LNB
 CURVE NO. 302
 DEGREE = 6° 45' 00"
 DESIGN SPEED = 50 MPH
 MAX. e = 0.06'/FT.

LNB
 CURVE NO. 303
 DEGREE = 6° 25' 28"
 DESIGN SPEED = 50 MPH
 MAX. e = 0.06'/FT.

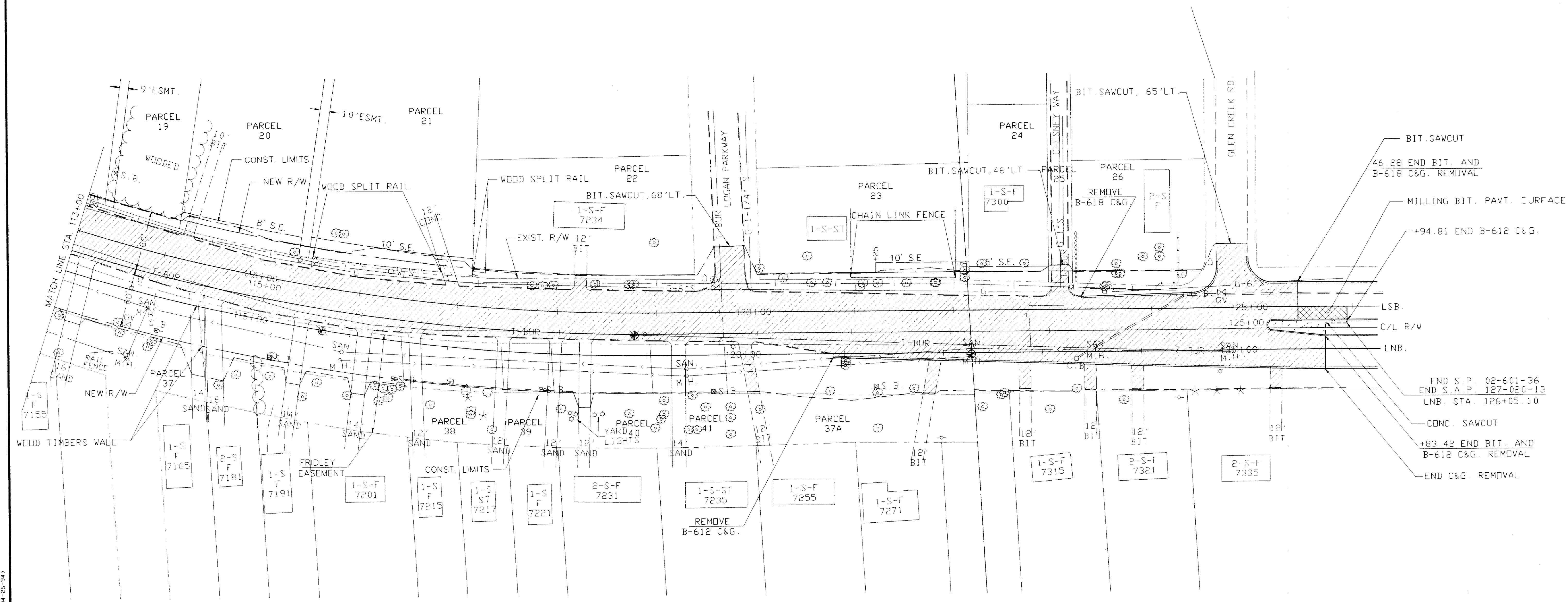


LSB
 CURVE NO. 403
 DEGREE = 6° 45' 00"
 DESIGN SPEED = 50 MPH
 MAX. e = 0.06'/FT.

SUPERELEVATION CHARTS

REVISIONS	DATE	BY

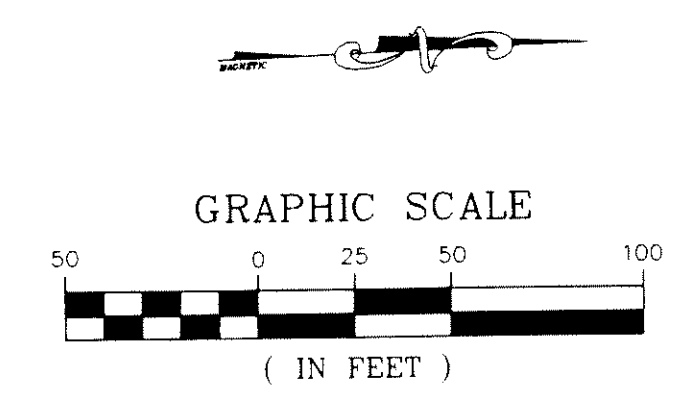
FILE NAME: 026013S\01SUPERDWS.MX (02-26-94)



BIT. SAWCUT
 46.28 END BIT. AND
 B-618 C&G. REMOVAL
 MILLING BIT. PAVT. SURFACE
 +94.81 END B-612 C&G.
 LSB.
 C/L R/W
 LNB.
 END S.P. 02-601-36
 END S.A.P. 127-020-13
 LNB. STA. 126+05.10
 CONC. SAWCUT
 +83.42 END BIT. AND
 B-612 C&G. REMOVAL
 END C&G. REMOVAL

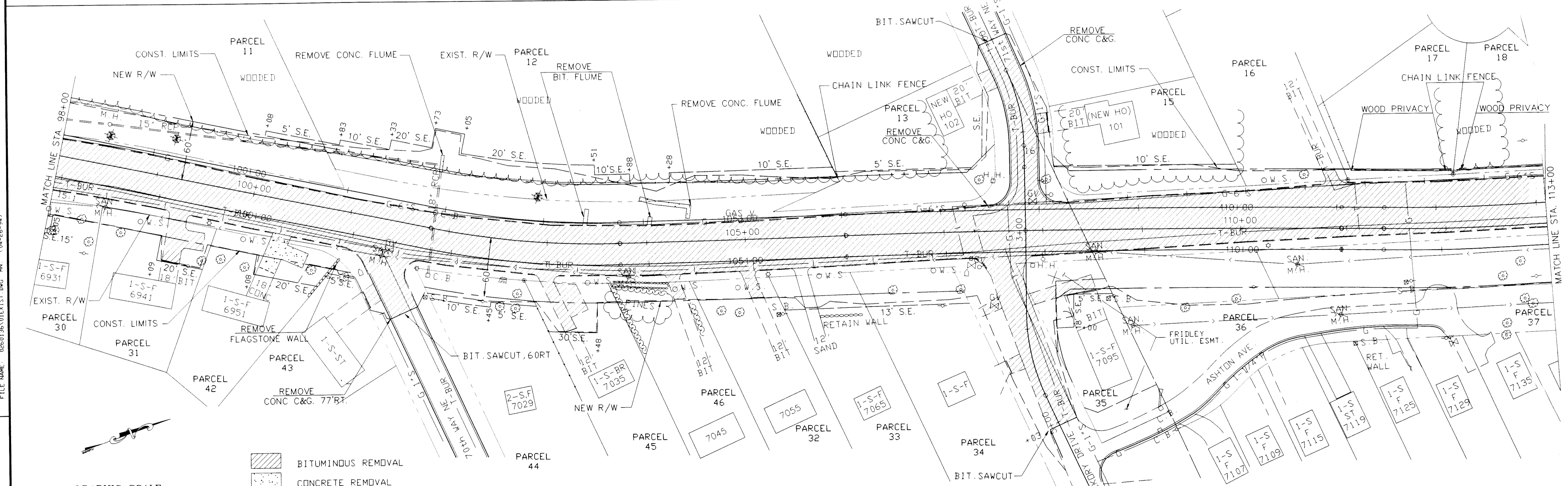
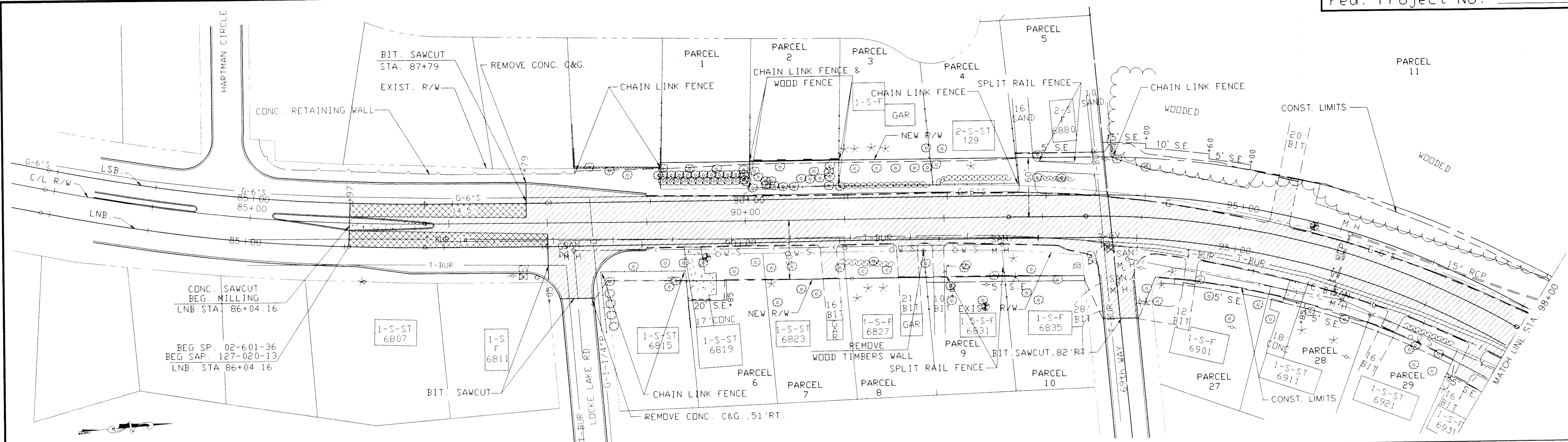
FILE NAME: 0650136\01EXIST.DWG MN. (04-26-94)

REVISIONS	DATE	BY	DESCRIPTION
	7-20-94	M.N.	CONST. LIMITS

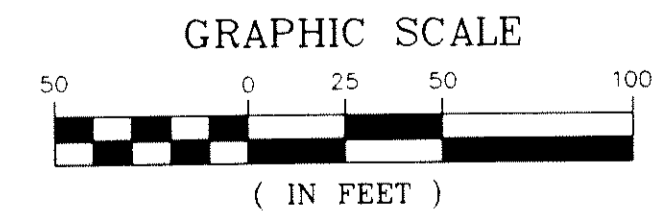


- BITUMINDOUS REMOVAL
- CONCRETE REMOVAL
- MILLING BIT. SURFACE
- BITUMINDOUS SAWCUT
- CONCRETE SAWCUT

EXISTING CONDITIONS AND REMOVAL PLAN



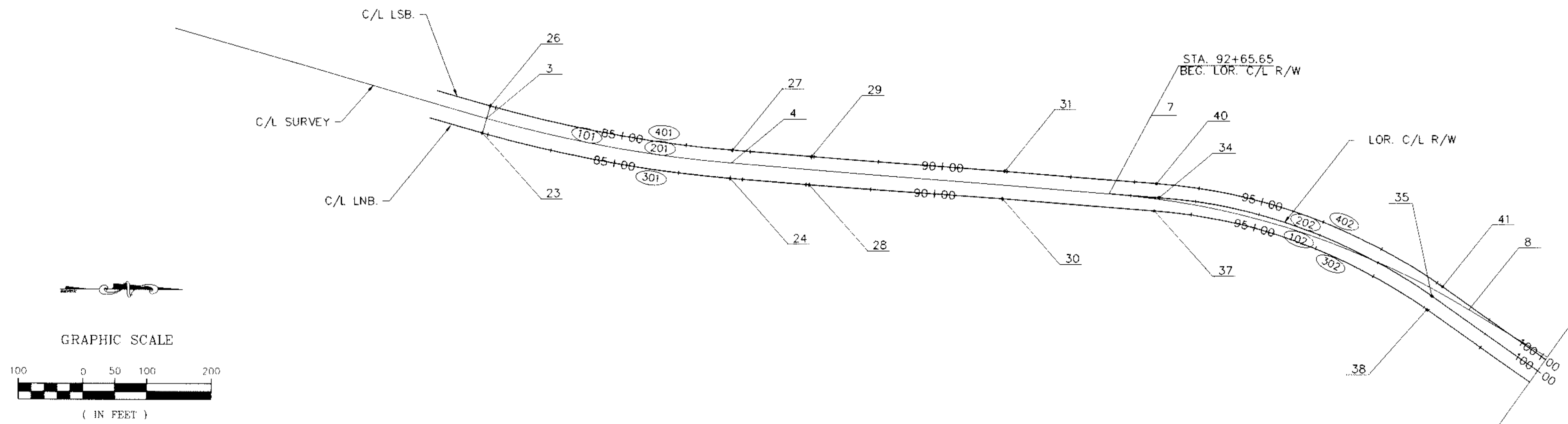
REVISIONS	DATE	DESCRIPTION
1	7-20-94	M.N. CONST. LIMITS



- BITUMINOUS REMOVAL
- CONCRETE REMOVAL
- MILLING BIT. SURFACE
- BITUMINOUS SAWCUT
- CONCRETE SAWCUT

EXISTING CONDITIONS AND REMOVAL PLAN

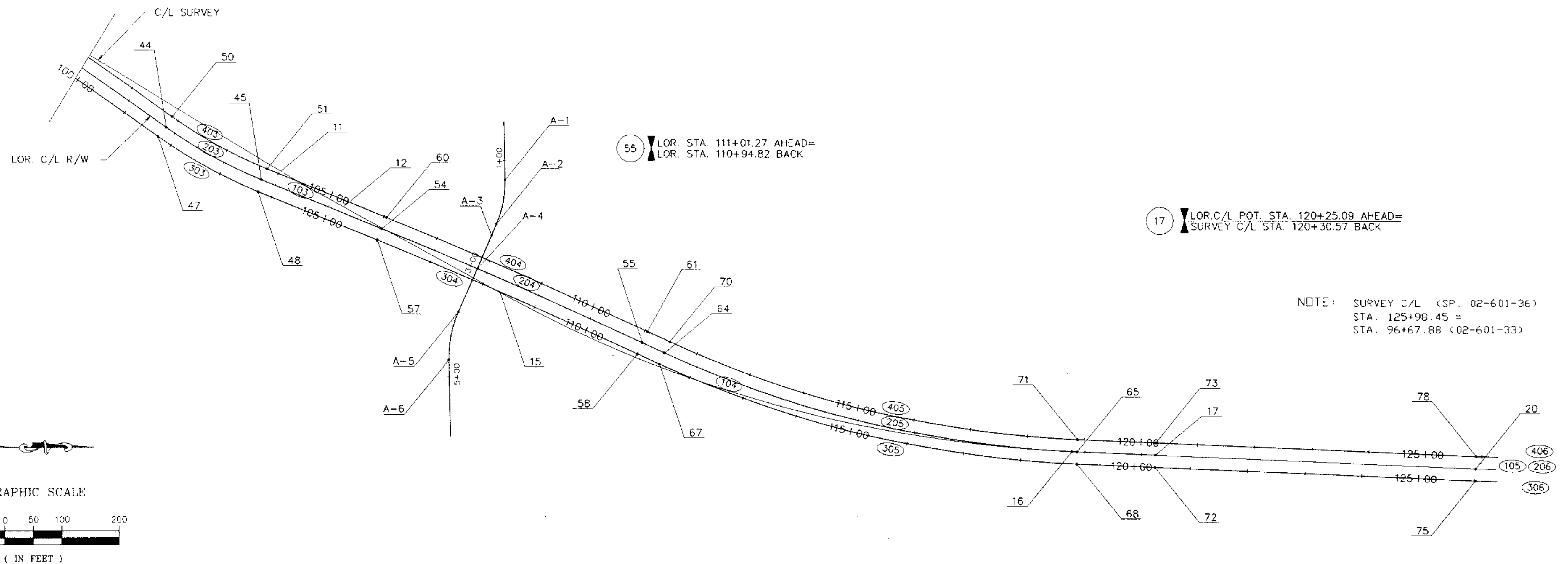
4 **LS** STA. 86+76.18 AHEAD=
LS. STA. 86+75.90 BACK



55 **LOR** STA. 111+01.27 AHEAD=
LOR. STA. 110+94.82 BACK

17 **LOR C/L POT** STA. 120+25.09 AHEAD=
SURVEY C/L STA. 120+30.57 BACK

NOTE: SURVEY C/L (SP. 02-601-36)
STA. 125+98.45 =
STA. 96+67.88 (02-601-33)

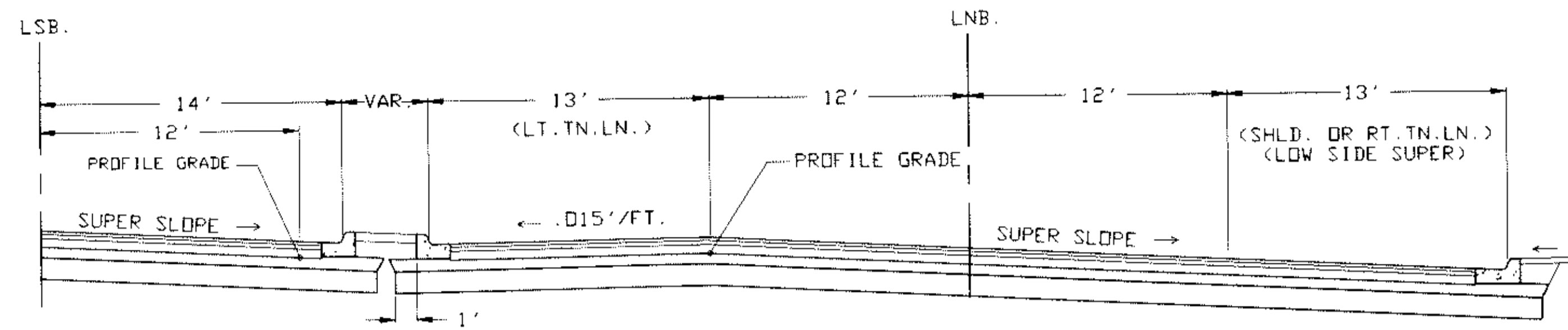


ALIGNMENT PLAN

REVISIONS	DATE	BY

FILE NAME: 0260136\01ALIGN.DWG MN. (7-22-94)

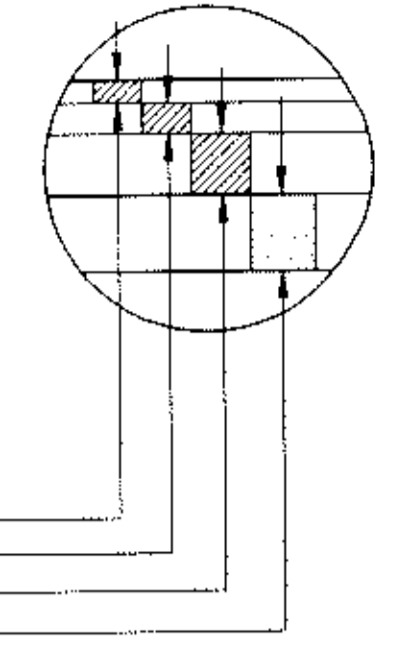
EAST RIVER ROAD (CSAH 1)
 (LT.TN. LN. HIGH SIDE SUPER, RT.TN.LN. LOW SIDE SUPER)



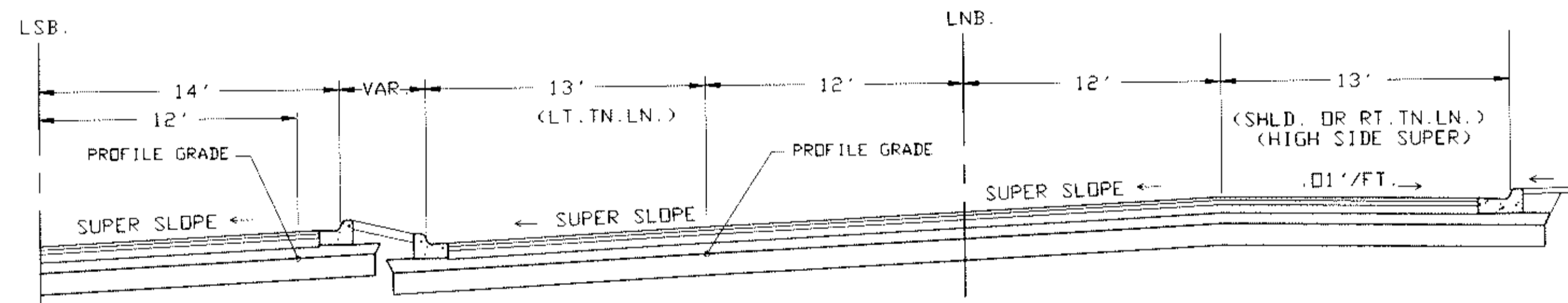
DESIGN F-1

CSAH. 1

- 1 1/2" TYPE 41 WEARING COURSE
- 2 1/2" TYPE 41 OR 42 BINDER COURSE
- 4 1/2" TYPE 31 OR 32 BASE COURSE
- 4" AGGREGATE BASE CLASS 5A



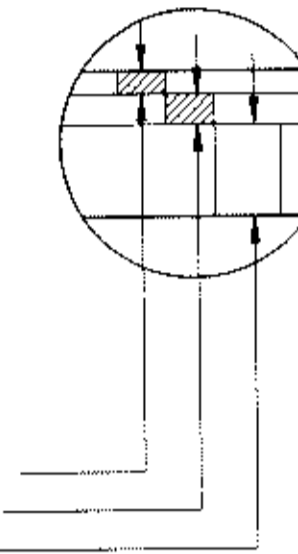
EAST RIVER ROAD (CSAH 1)
 (LT.TN.LN. LOW SIDE SUPER, RT.TN.LN. HIGH SIDE SUPER)



DESIGN F-2

(CITY STREET)

- 1 1/2" TYPE 41 WEARING COURSE
- 2" TYPE 41 OR 42 BINDER COURSE
- 6" AGGREGATE BASE CLASS 5A

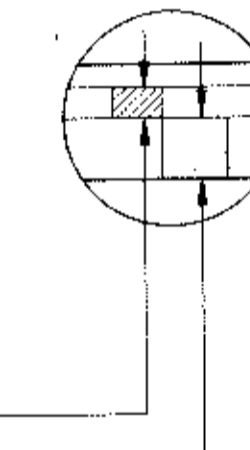


DESIGN F-3

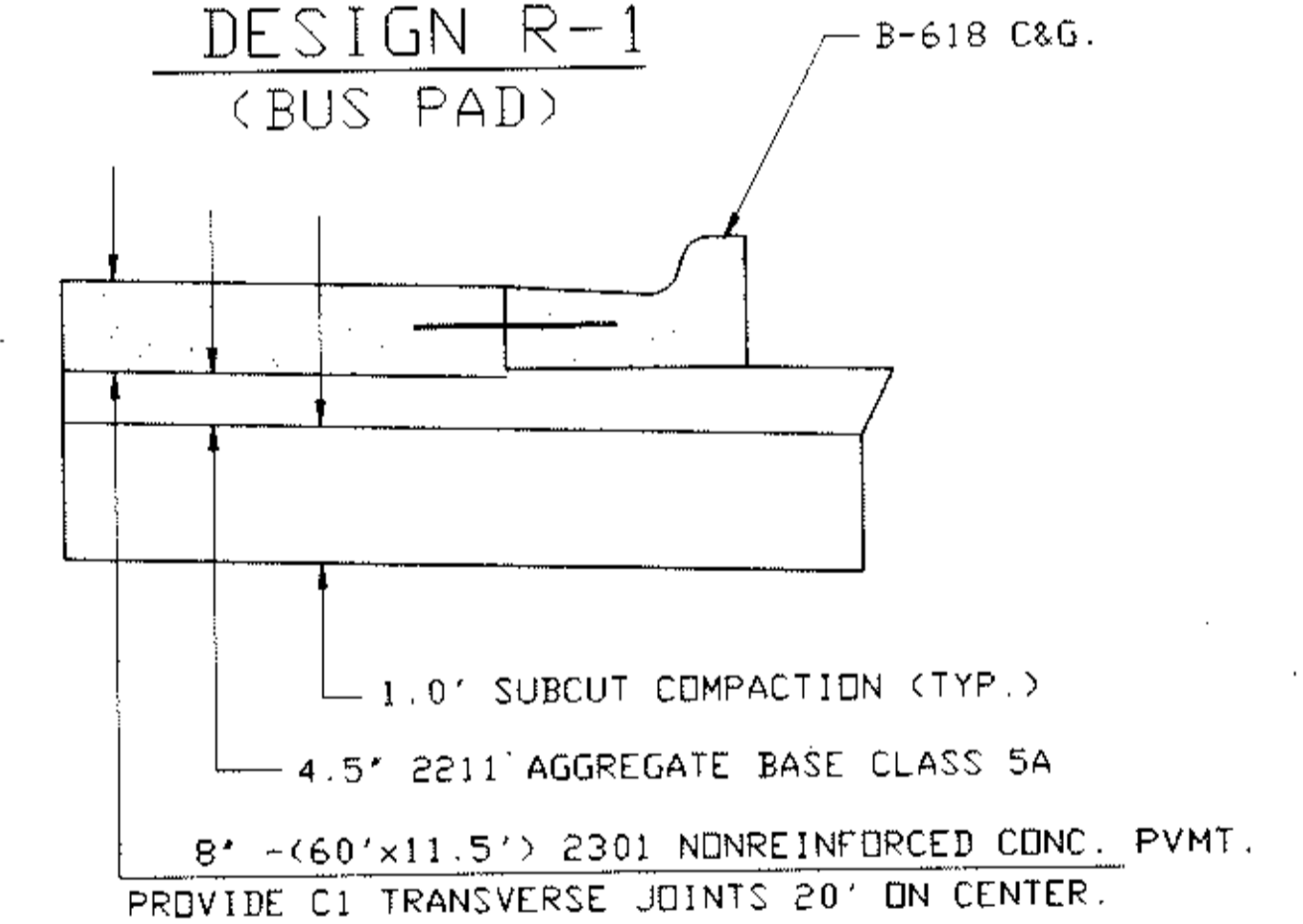
BITUMINOUS PATH

- 2" TYPE 41 OR 42 WEARING COURSE
- 3" AGGREGATE BASE CLASS 5 *

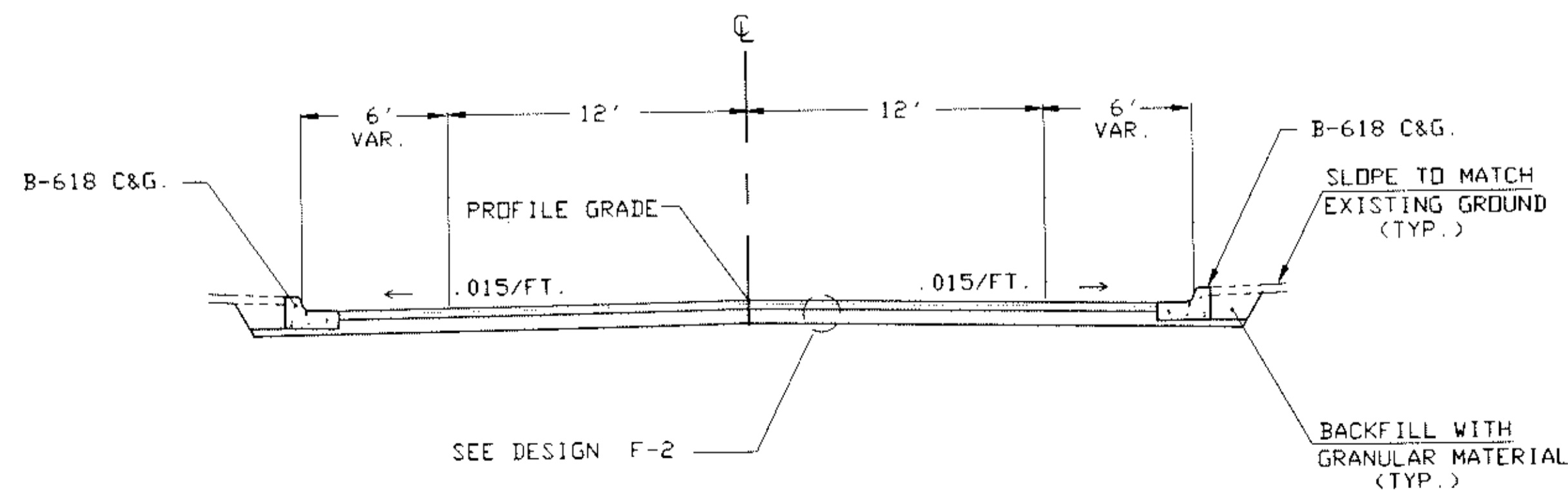
* 3" INCLUDED INPAYMENT FOR 2" BIT. WEAR COURSE.



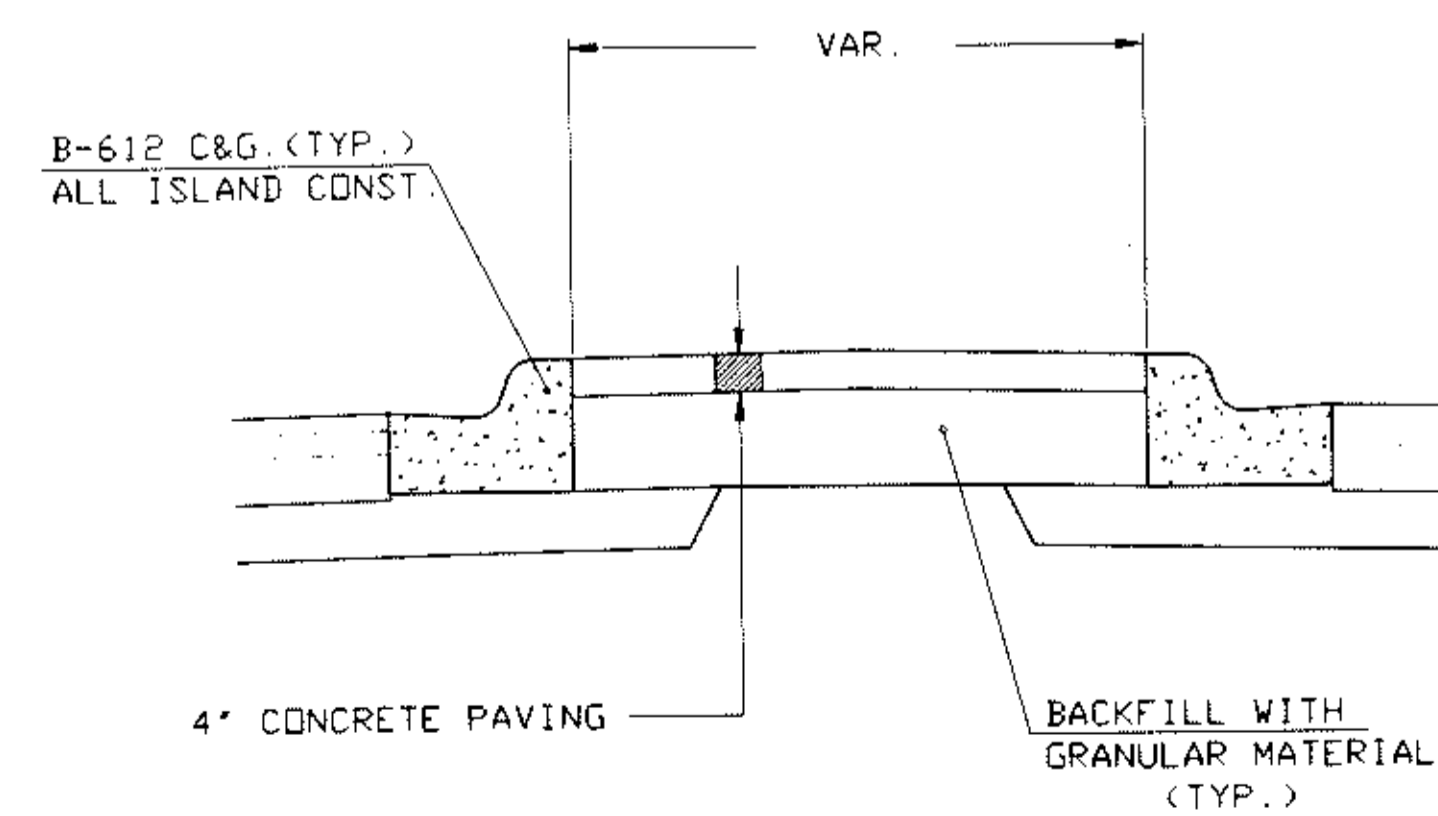
DESIGN R-1
 (BUS PAD)



CITY STREET CONSTRUCTION
 END OF RADIUS TO MATCH POINT.
 (70TH. WAY NE., 71ST. WAY & HICKORY DRIVE)



DETAIL "A"



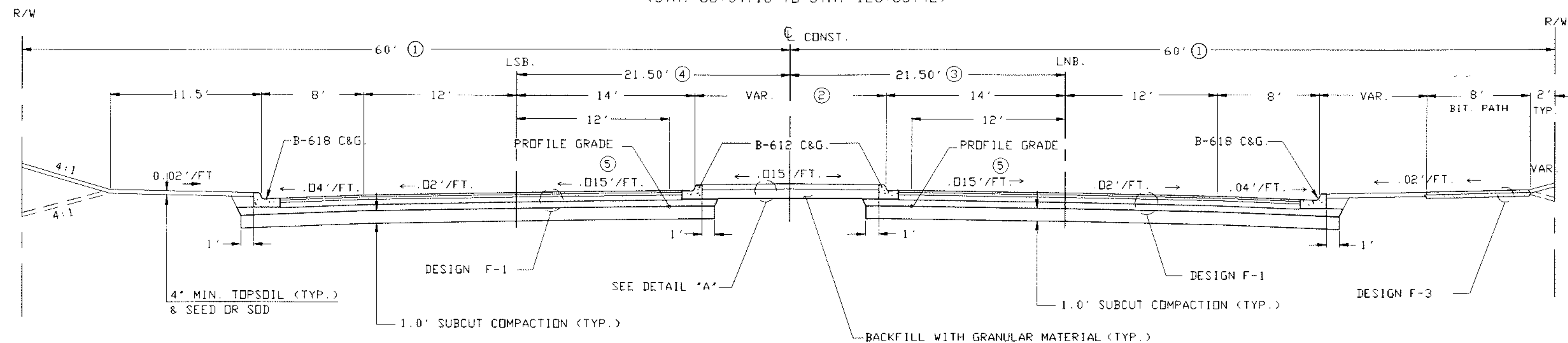
TYPICAL SECTIONS

REVISIONS	DATE	BY

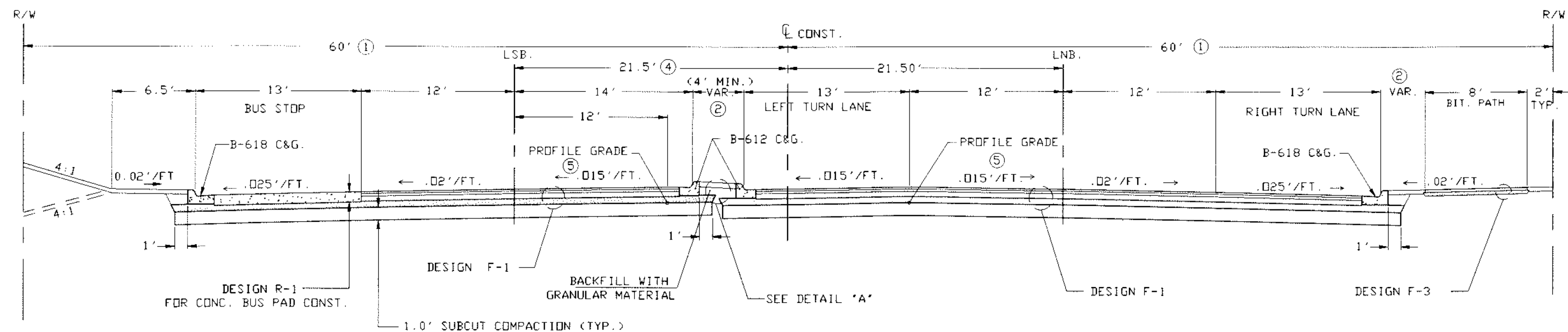
FILE NAME: 0260136A.D11.P.DWG. MN. (02-16-94)

EAST RIVER ROAD (CSAH 1)-MAINLINE

(STA. 86+04.16 TO STA. 125+83.42)



EAST RIVER ROAD (CSAH 1)-TURNBAYS OR BUS STOP



SPECIFIC NOTES

- ① SEE PLAN & PROFILE SHEETS FOR EXCEPTIONS
- ② VARIABLE FROM 4' MIN. TO 16' MAX.
- ③ 24' STA. 86+00 TO STA.88+05.13, TAPERS FROM 24' TO 21.5' STA.88+05.12 TO STA. 91+05.12 LNB
- ④ 20' STA. 86+00 TO STA.87+96.25, TAPERS FROM 20' TO 21.5' STA.87+96.25 TO STA. 90+96.25 LSB
- ⑤ PROFILE GRADE IS THE SAME AS GRADING GRADE.

GENERAL NOTES

- 1. 10' OBSTACLE FREE ZONE REQUIRED FROM EDGE OF TRAVELLED LANE.

LT. & RT. TURN LANE OR BUS STOP LOCATION

STA. TO STA.	LOCATION	DESCRIPTION
LNB. 88+83	91+33	LT. LEFT TURN LANE
LNB. 90+52	93+32	RT. RIGHT TURN LANE
LSB. 92+56	93+20	RT. LEFT TURN LANE
LSB. 94+40	95+00	LT. BUS STOP
LSB. 94+20	97+31	RT. LEFT TURN LANE
LSB. 94+80	95+40	LT. BUS STOP
LNB. 98+30	101+29	RT. RIGHT TURN LANE
LNB. 104+30	107+35	LT. LEFT TURN LANE
LNB. 104+62	107+62	RT. RIGHT TURN LANE
LSB. 106+67	107+27	LT. BUS STOP
LNB. 108+73	109+33	RT. BUS STOP
LSB. 108+03	111+03	LT. RIGHT TURN LANE
LSB. 108+30	111+36	RT. LEFT TURN LANE
LNB. 116+31	119+25	LT. LEFT TURN LANE
LSB. 118+56	119+16	LT. BUS STOP
LNB. 120+65	121+25	RT. BUS STOP
LSB. 119+93	124+63	LT. RIGHT TURN LANE

TYPICAL SECTIONS

REVISIONS	DATE	BY

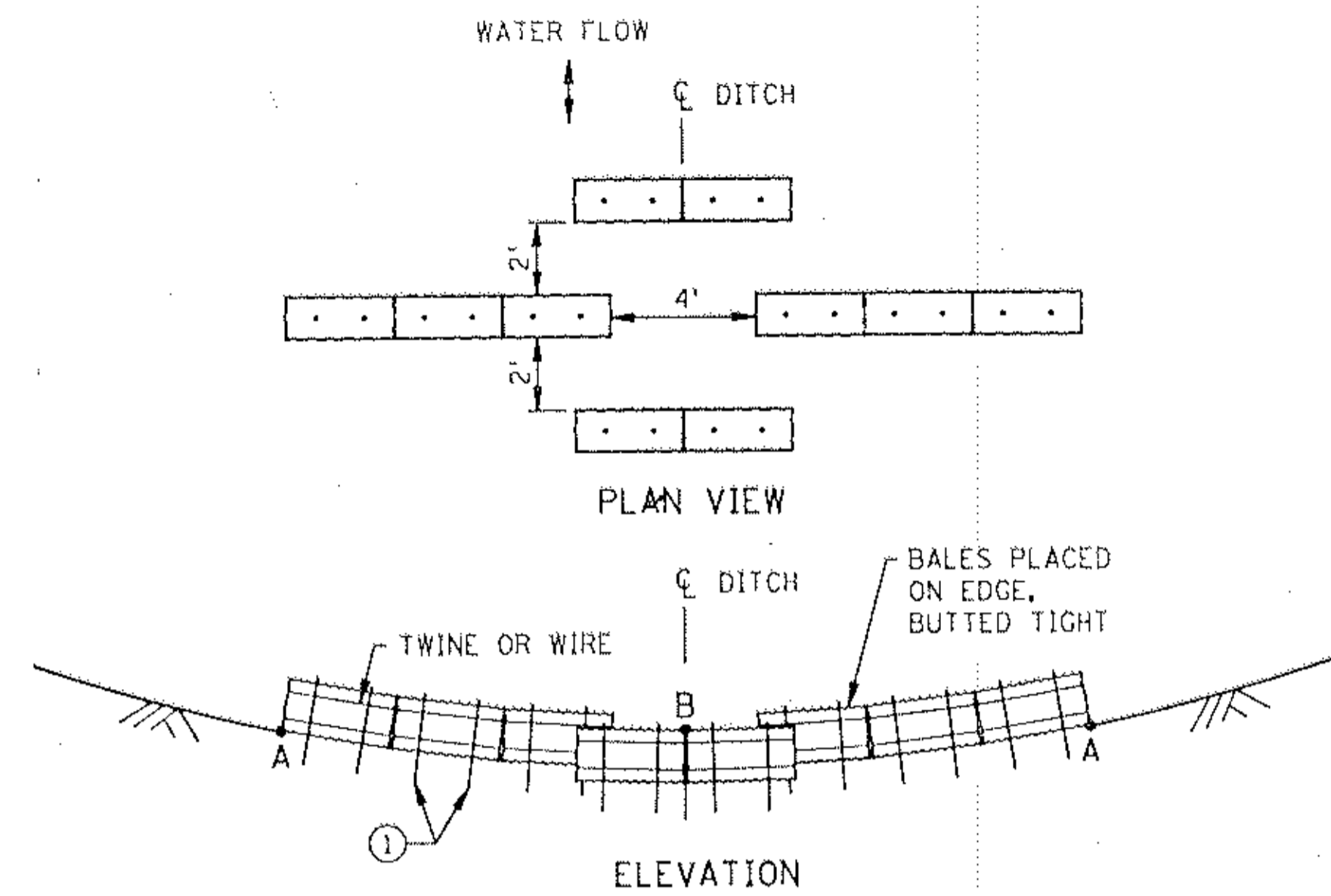
CERTIFIED BY *Douglas M. Finch*

P.E. REG NO. 20235 8/9 19 94

S.P. 02-601-36 S. P. 127-020-13 C.P.

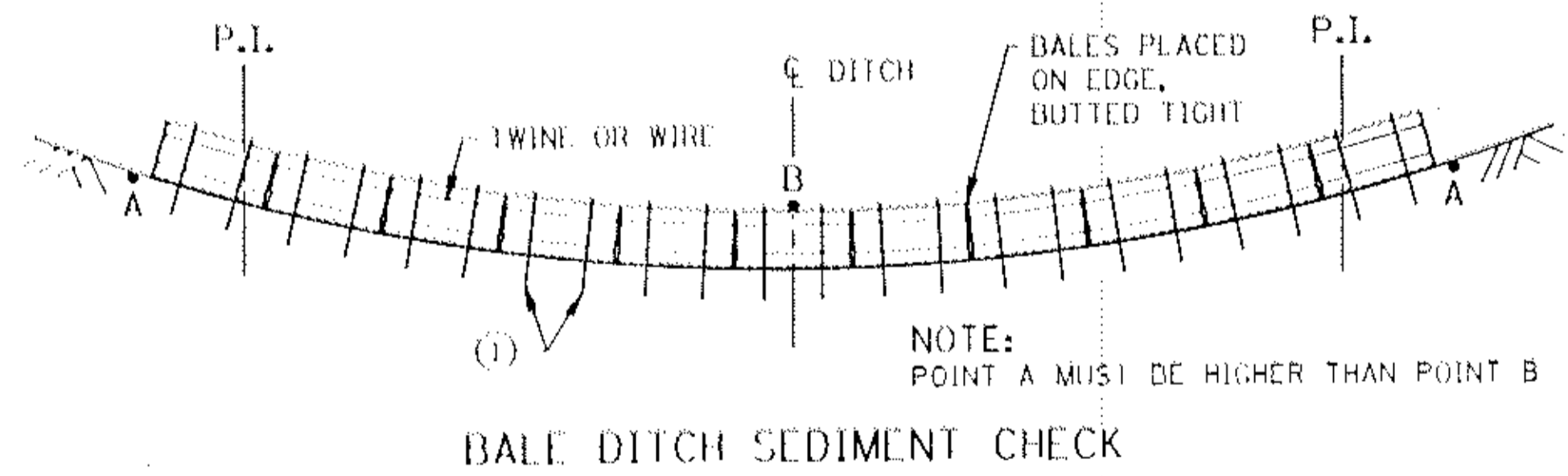
Sheet No. 16 of 70 Sheets

FILE NAME: 0260136_01TYP.DWG MN. 02-16-94



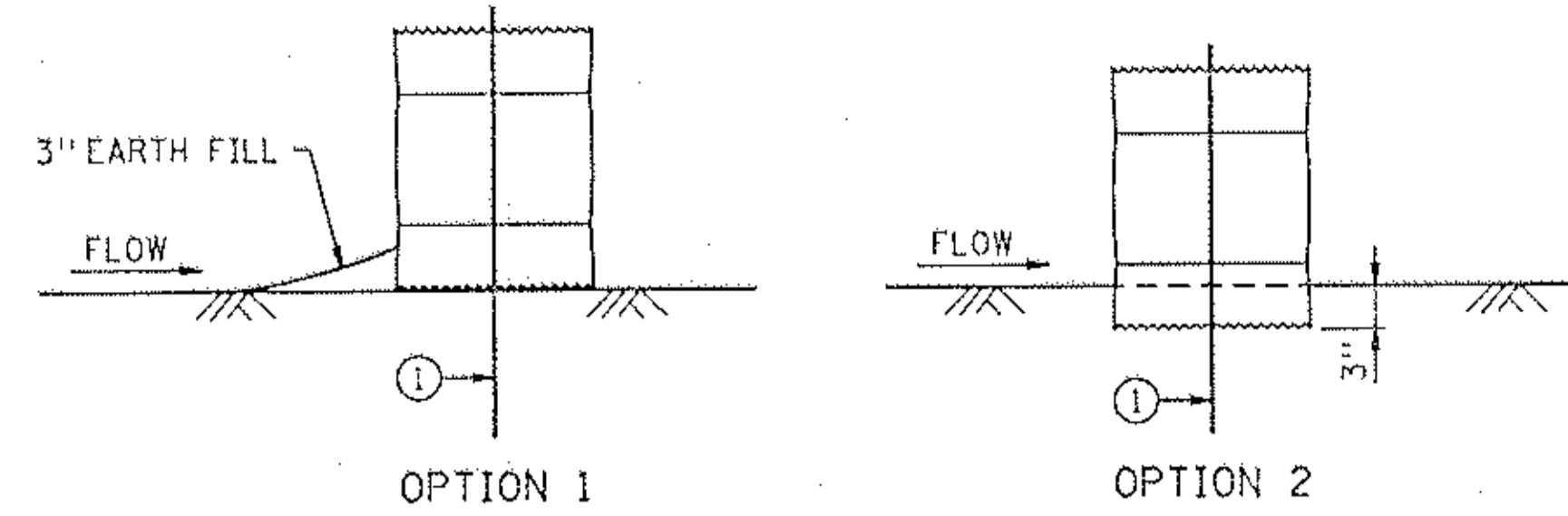
NOTE:
POINT A MUST BE HIGHER THAN POINT B

BALE DITCH VELOCITY CHECKS
(WILL REQUIRE A MINIMUM OF 10 BALES PER SITE)

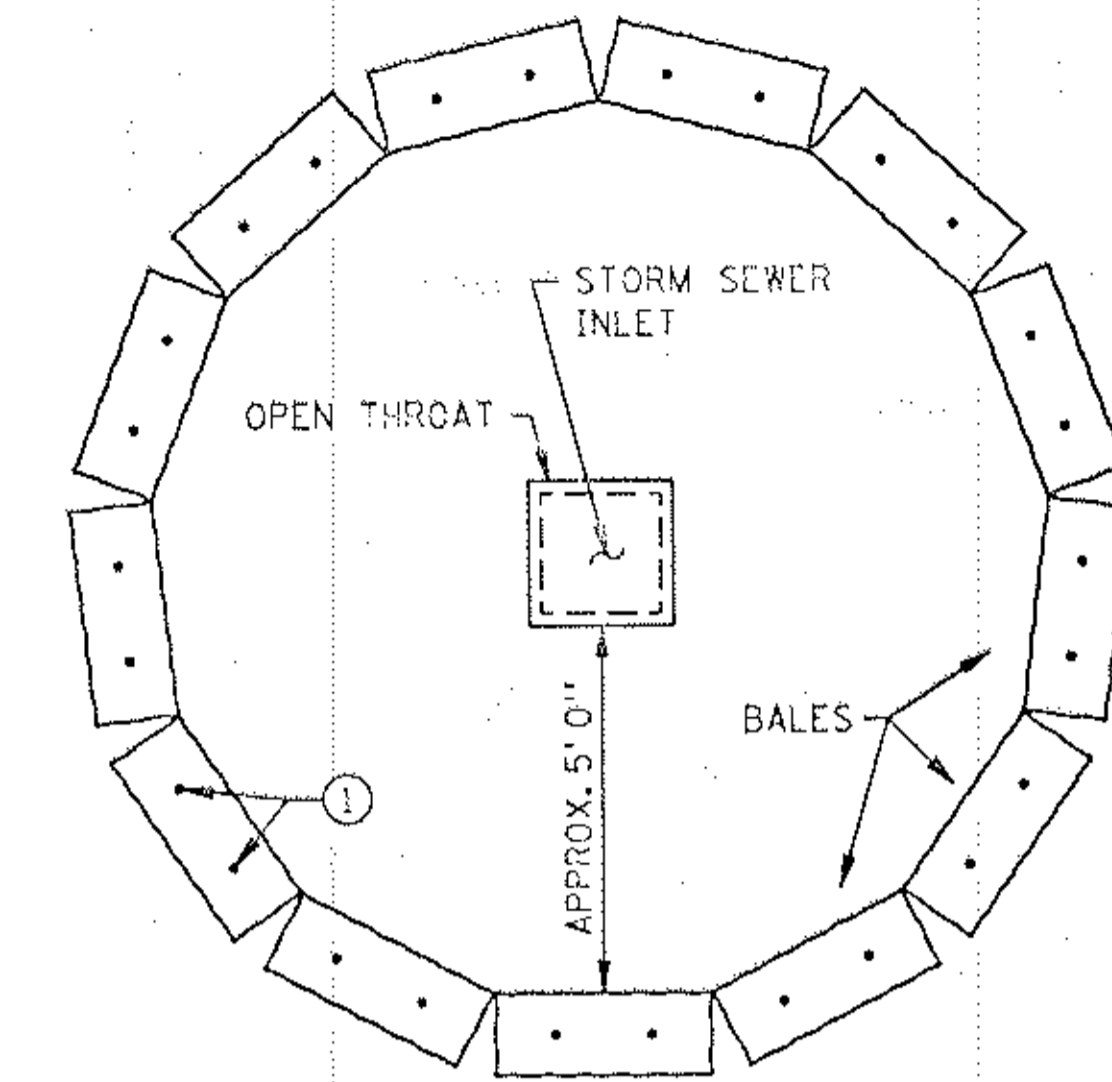


NOTE:
POINT A MUST BE HIGHER THAN POINT B

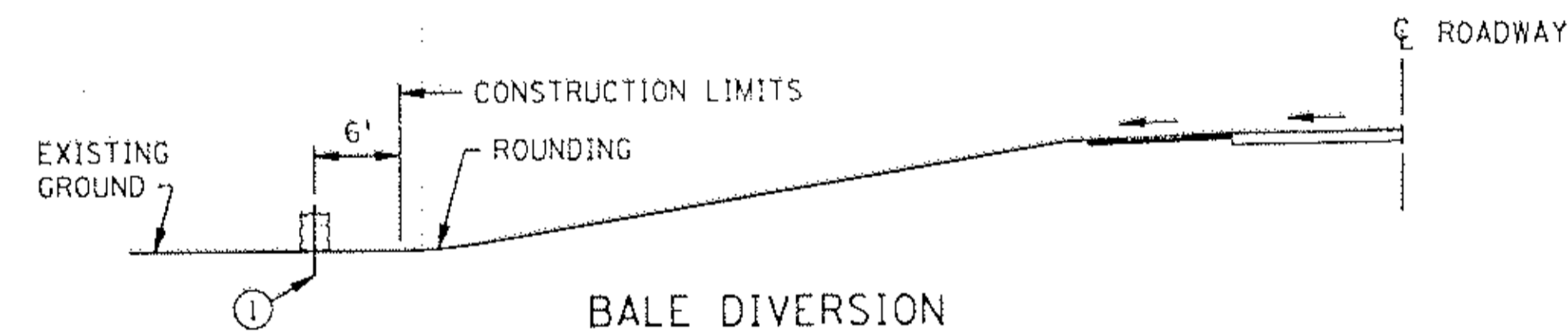
BALE DITCH SEDIMENT CHECK



BALE CHECK DETAILS



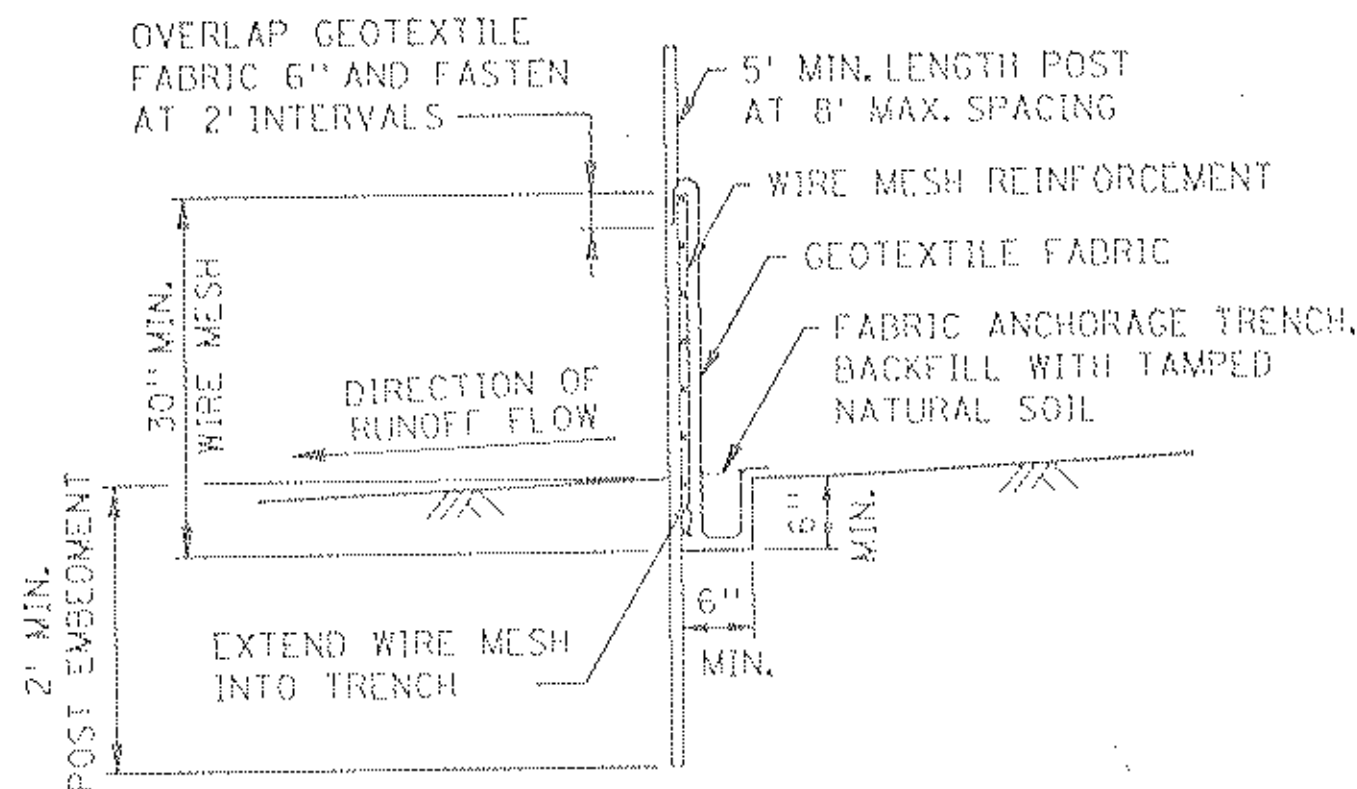
BALE CHECK TO PROTECT STORM SEWER INLETS



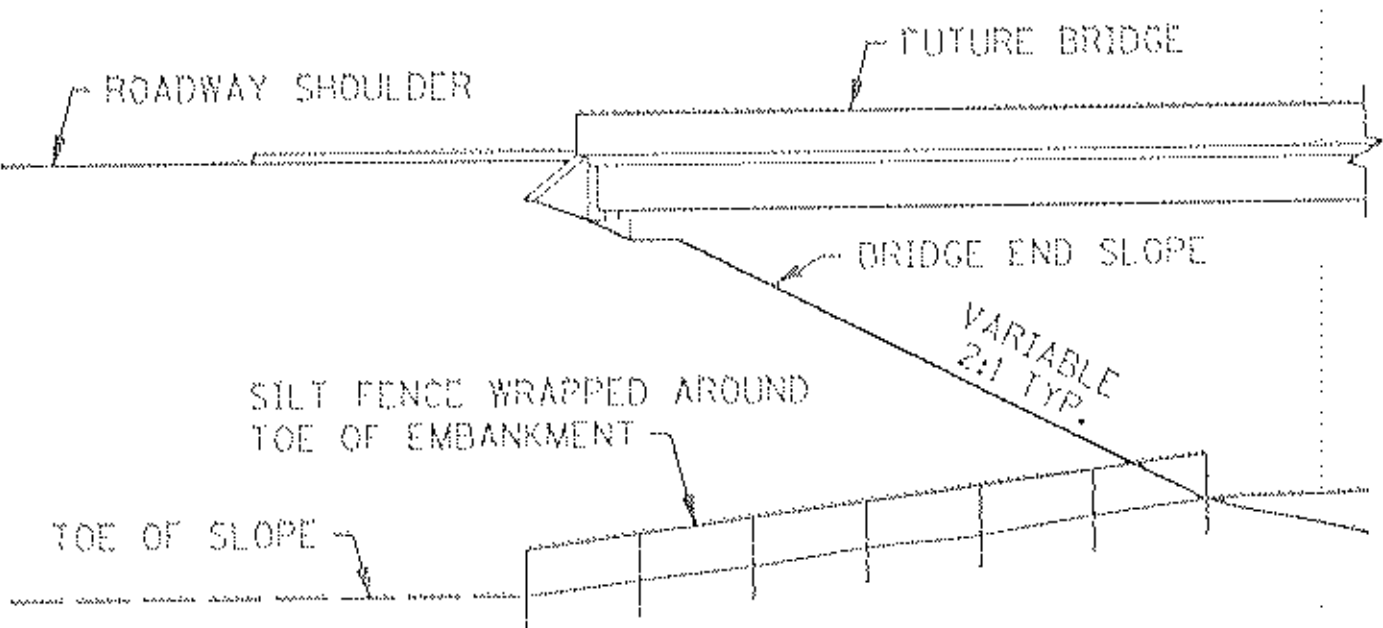
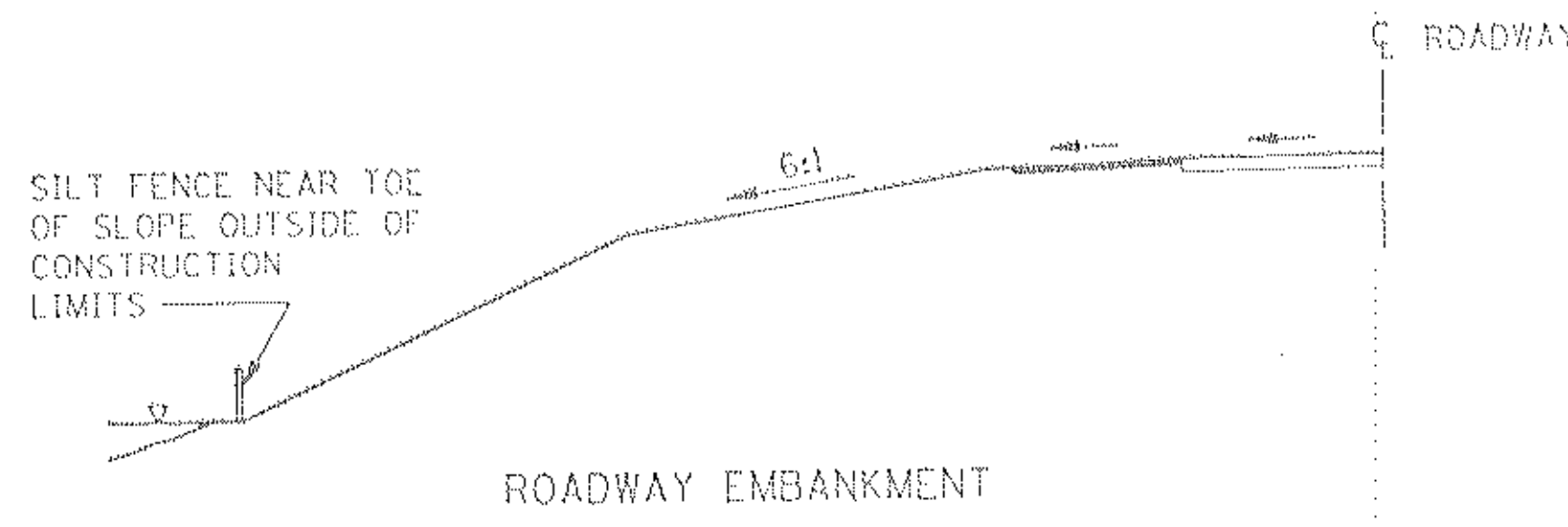
BALE DIVERSION

RECOMMENDED SPACING BETWEEN BALE DITCH CHECKS	
DITCH GRADE (%)	SPACING (FT.)
2	100
4	75
6	50
8	40
10	25

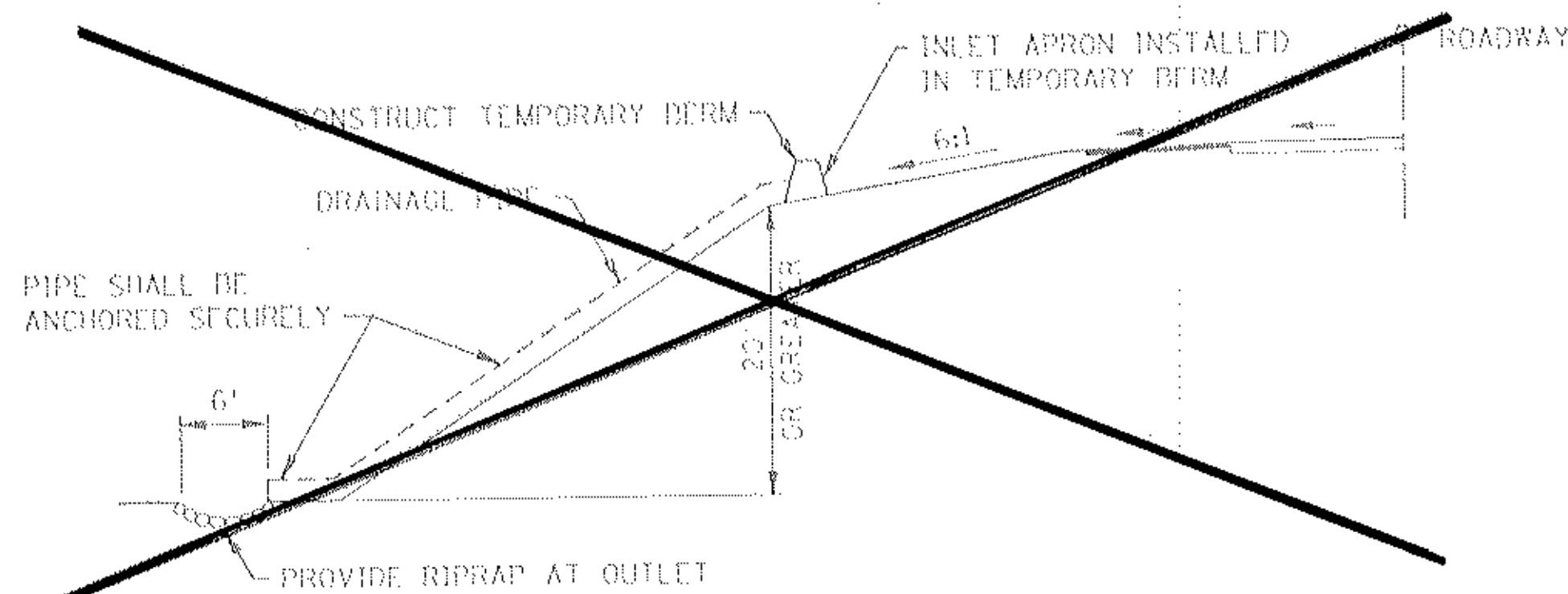
NOTE:
① TWO 2" X 2" WOOD STAKES OR REINFORCING BARS IN EACH BALE AND EMBEDDED IN THE GROUND 10" MINIMUM.



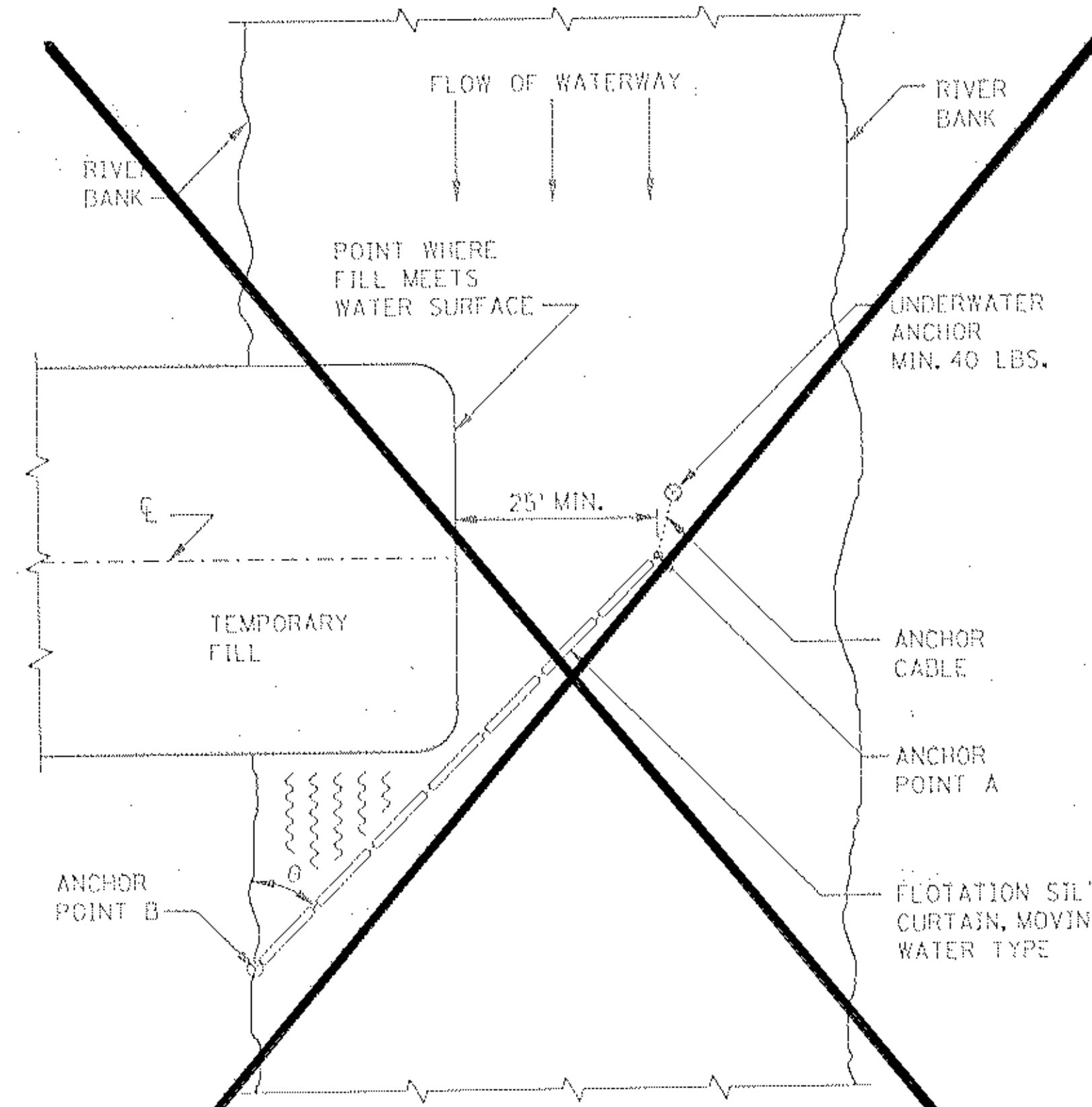
SILT FENCE DETAIL



SILT FENCE OR BALE CHECK TO PROTECT ADJACENT CRITICAL AREAS

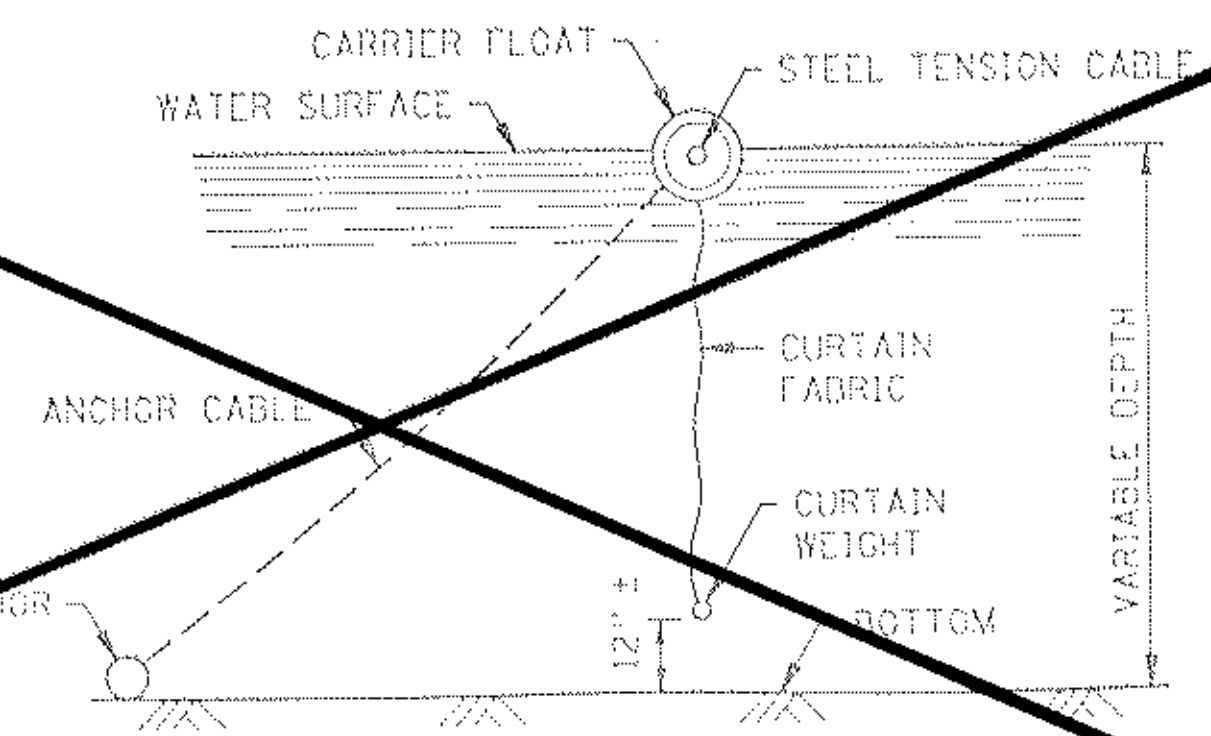


TEMPORARY DRAIN ON FILL SLOPE

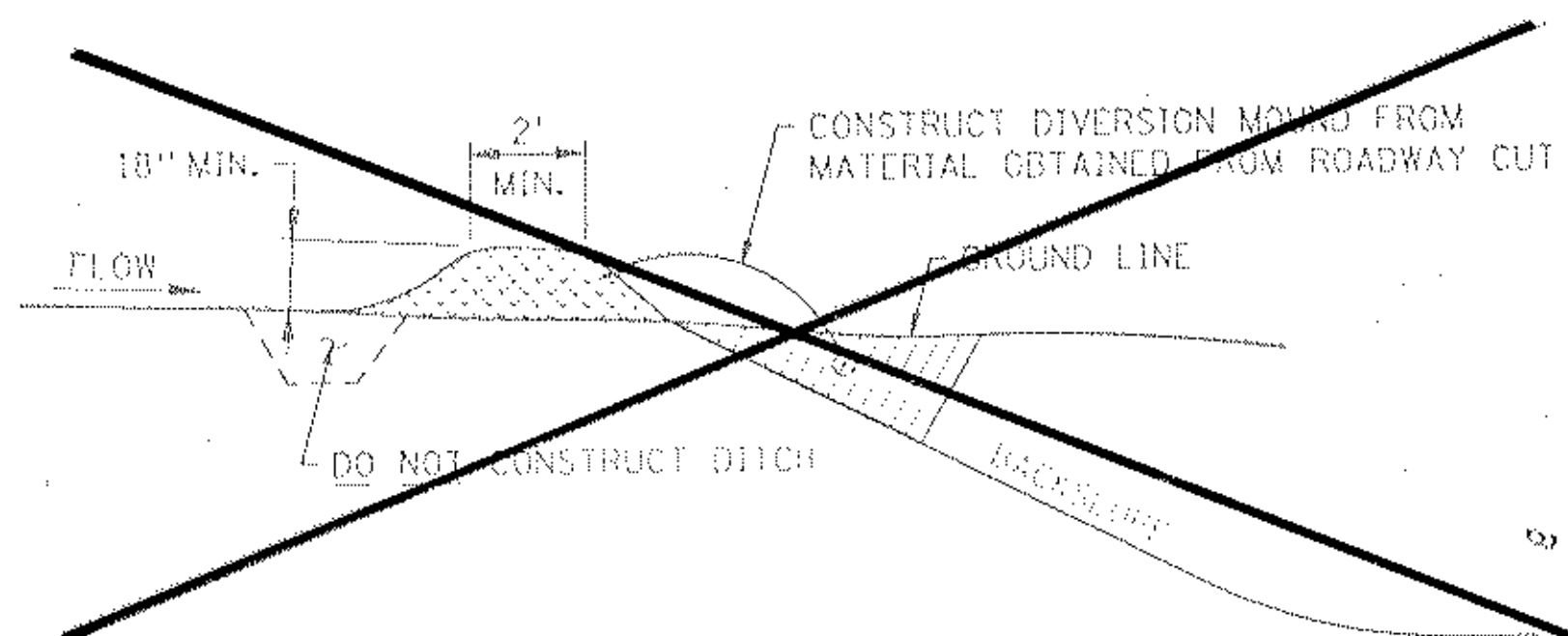


PLAN VIEW OF SILT CURTAIN - MOVING WATER

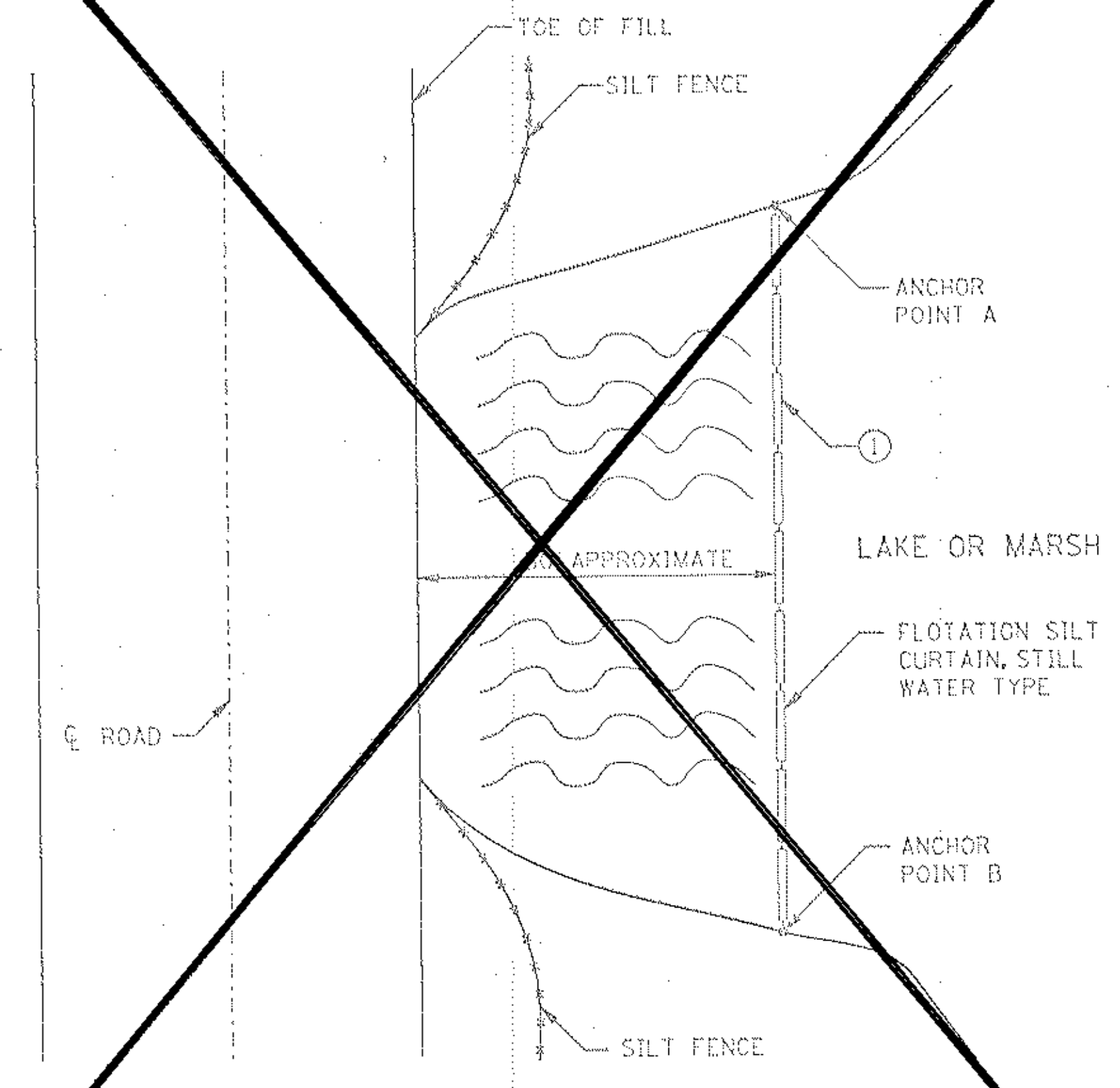
$\angle \theta$	RIVER VELOCITY
45°	SLOW, LESS THAN 5 FT./SEC.
35°	MODERATE, 5 TO 7 FT./SEC.



FLOTATION SILT CURTAIN

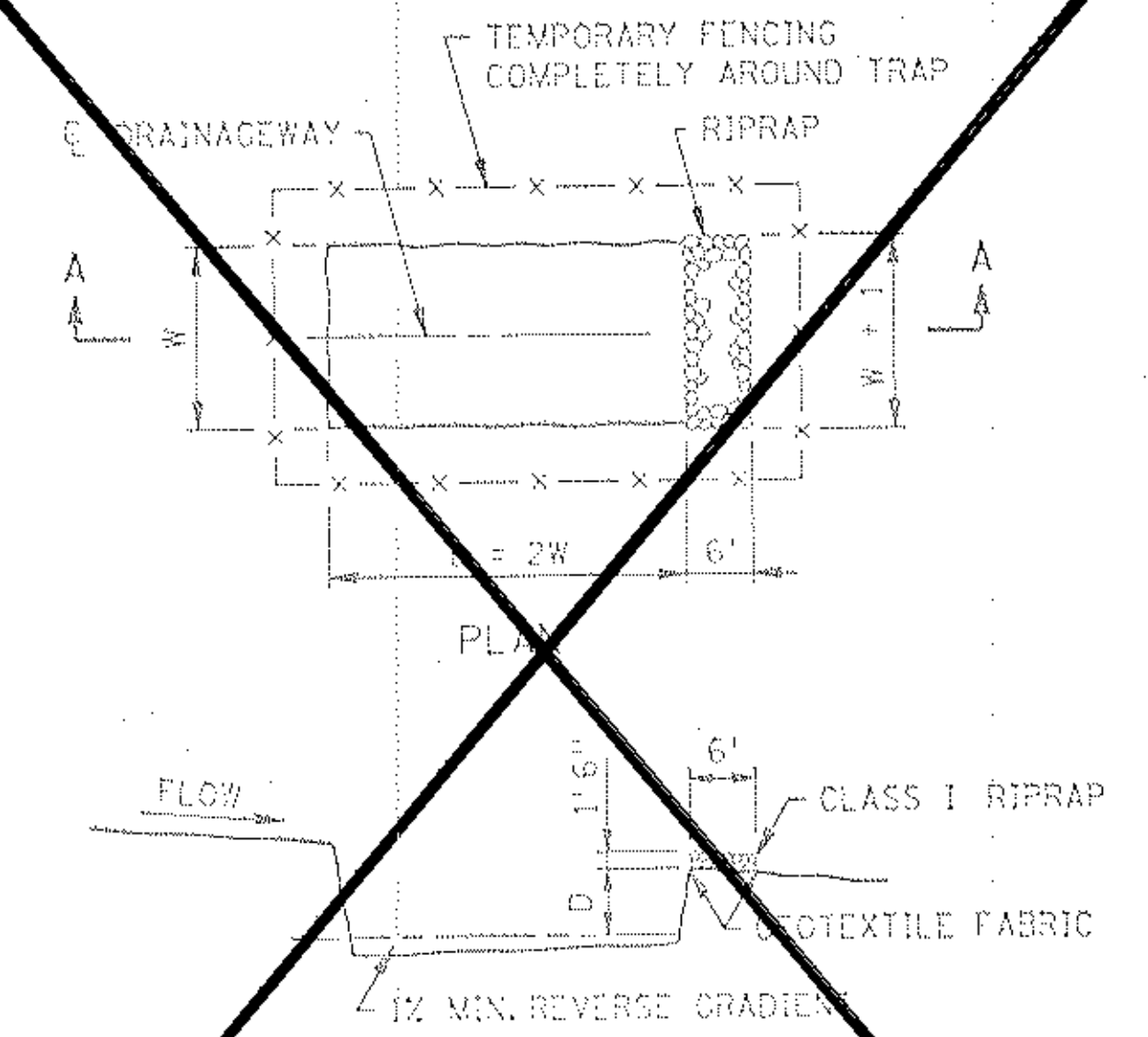


DIVERSION MOUND



PLAN VIEW OF SILT CURTAIN - STILL WATER

① CURTAIN 1 FT. FROM BOTTOM

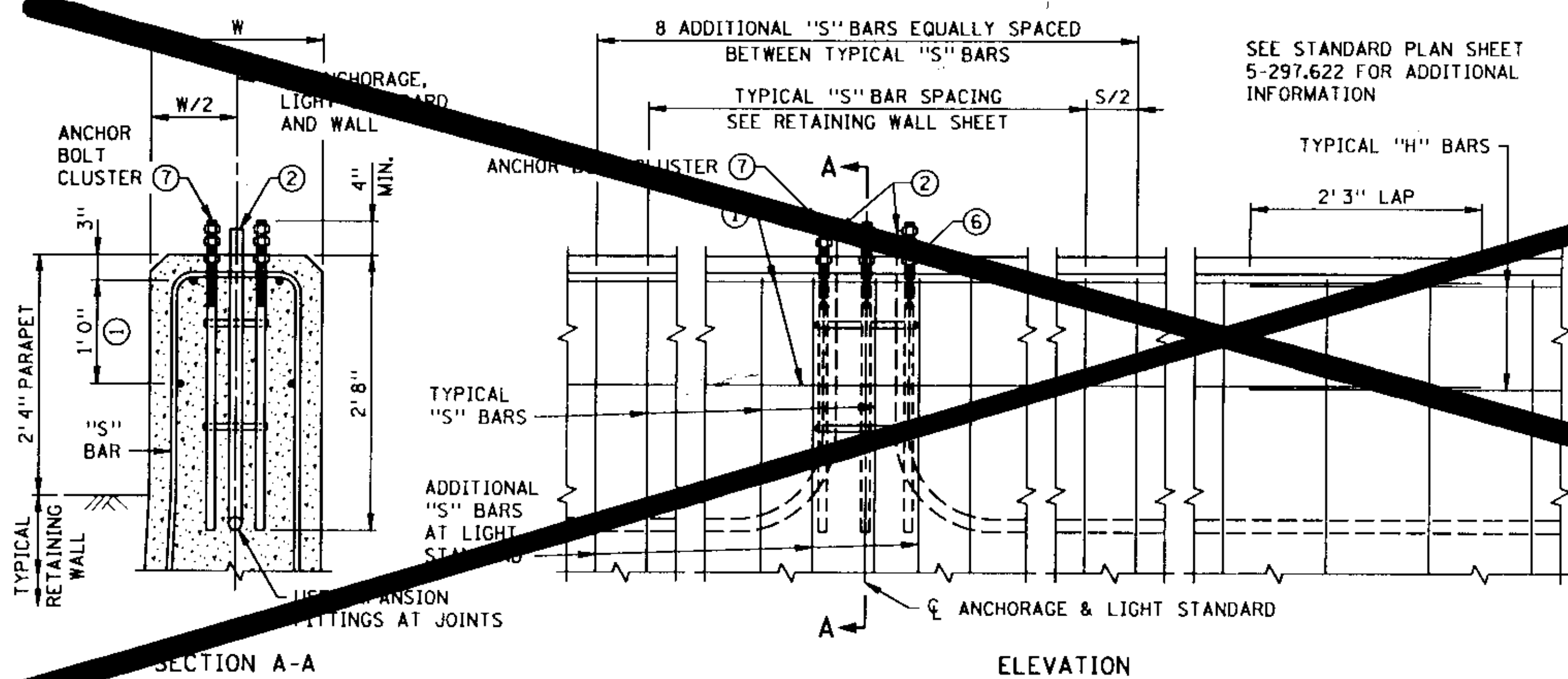


NOTE:
D = 3' MIN., 6' MAX.
W = 30' MIN., 20' MAX.

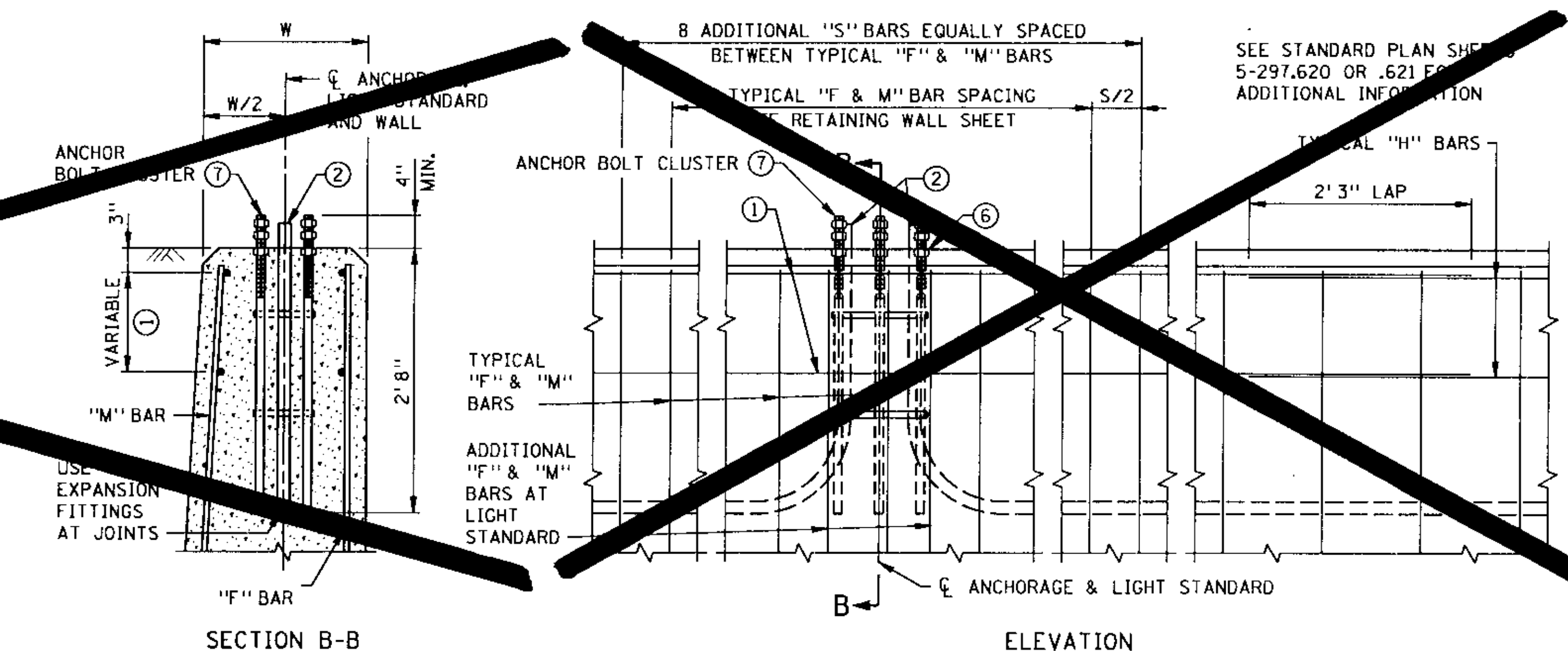
SECTION A-A
TEMPORARY SEDIMENT TRAP

SERVED C46451/USBR/STANDARDS FILE NAME: S4061H93.SFN

STANDARD SHEET No. 5-297.405 (1 OF 2)	TITLE TEMPORARY EROSION CONTROL
STANDARD APPROVED: AUGUST 2, 1993	
S.P. _02-601-36_ S.P. _127-020-13_ SHEET NO. 14 OF 20 SHEETS	



SECTION A-A ELEVATION
LIGHT STANDARD ON RETAINING WALL WITH PARAPET



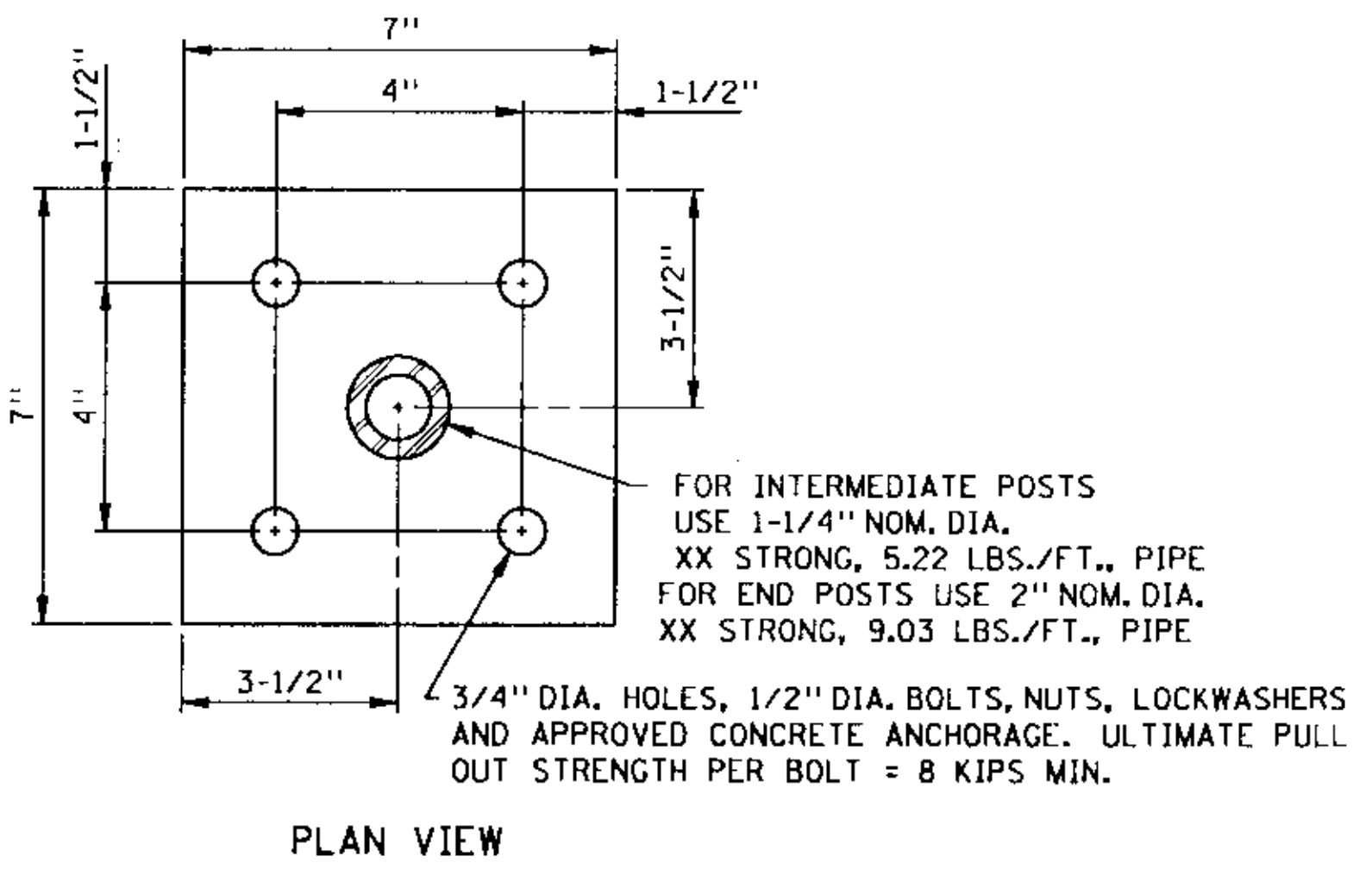
SECTION B-B ELEVATION
LIGHT STANDARD ON RETAINING WALL WITHOUT PARAPET

BILL OF REINFORCEMENT PER LIGHT BASE WITH PARAPET TYPE RETAINING WALL

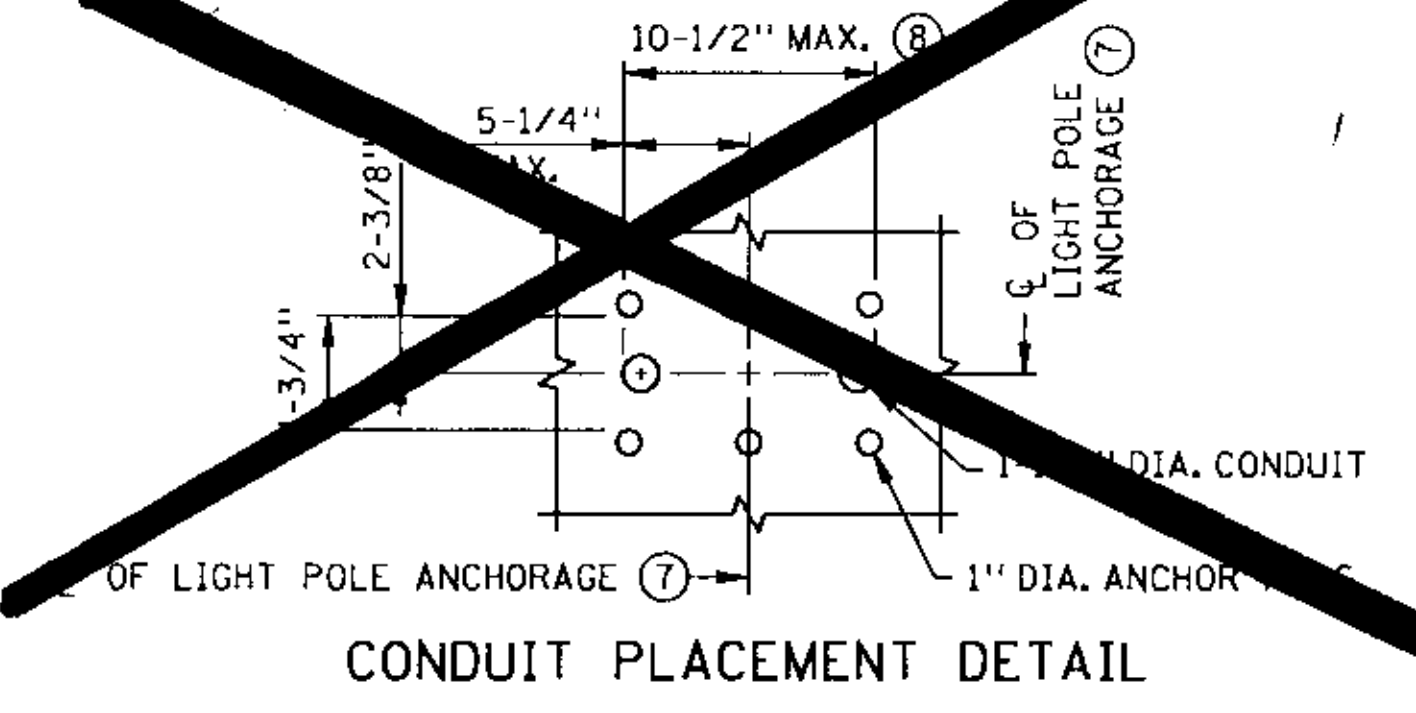
BAR	SHAPE	NUMBER	LENGTH	LOCATION
"S"	BENT	8 ADDITIONAL	9'	RETAINING WALL - VERT. AT LIGHT
NO. 6	STRAIGHT	4		PARAPET - HORIZ. AT LIGHT
ADDITIONAL REINFORCEMENT BARS 140 POUNDS				

BILL OF REINFORCEMENT PER LIGHT BASE WITHOUT PARAPET TYPE RETAINING WALL

BAR	SHAPE	NUMBER	LENGTH	LOCATION
NO. 6	STRAIGHT	8 ADDITIONAL	10'0"	RETAINING WALL - HORIZ. AT LIGHT
"F"	STRAIGHT	8 ADDITIONAL		RETAINING WALL - F.F., VERT. AT LIGHT
"M"	STRAIGHT	8 ADDITIONAL		RETAINING WALL - B.F., VERT. AT LIGHT
ADDITIONAL REINFORCEMENT BARS 60 POUNDS				

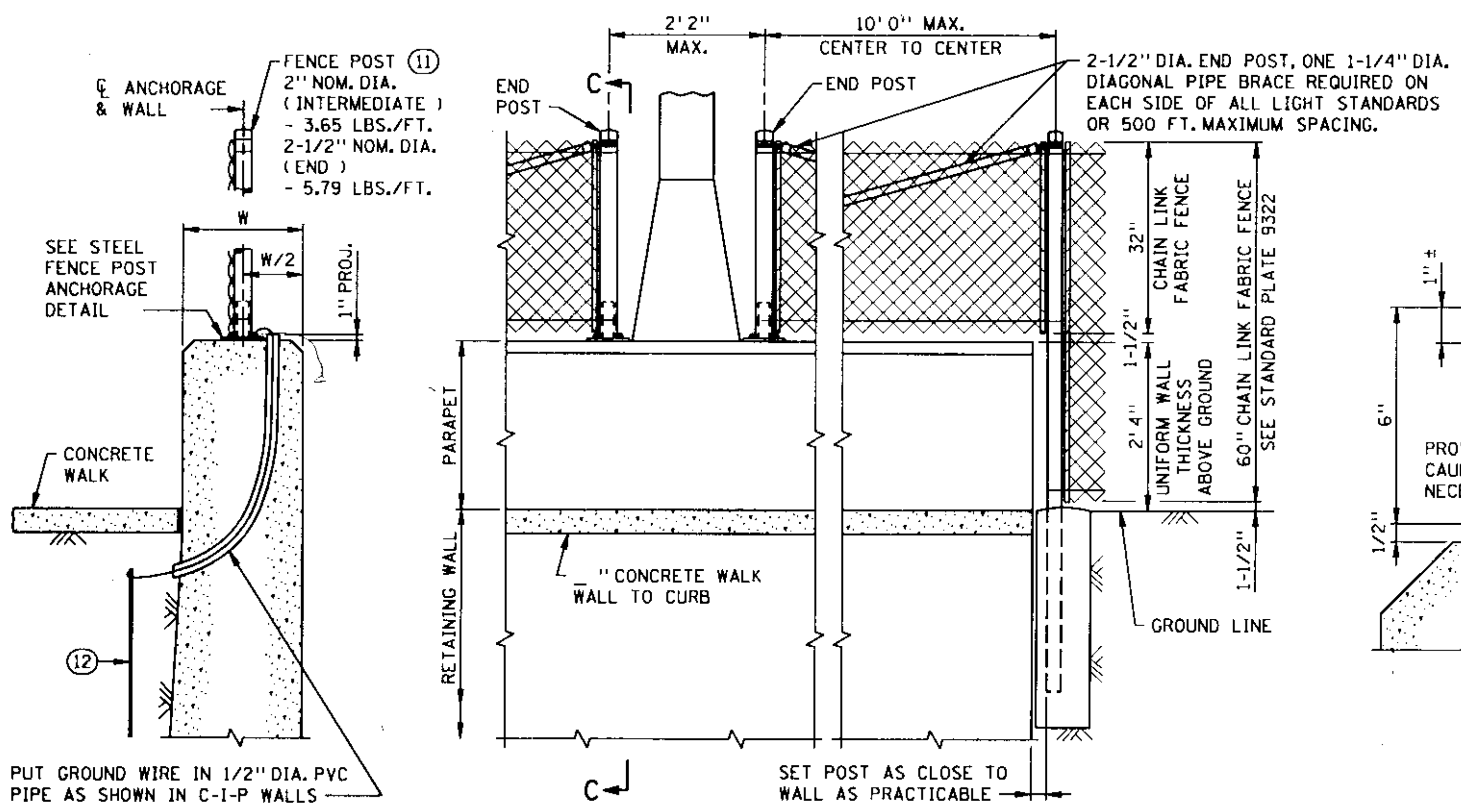


PLAN VIEW

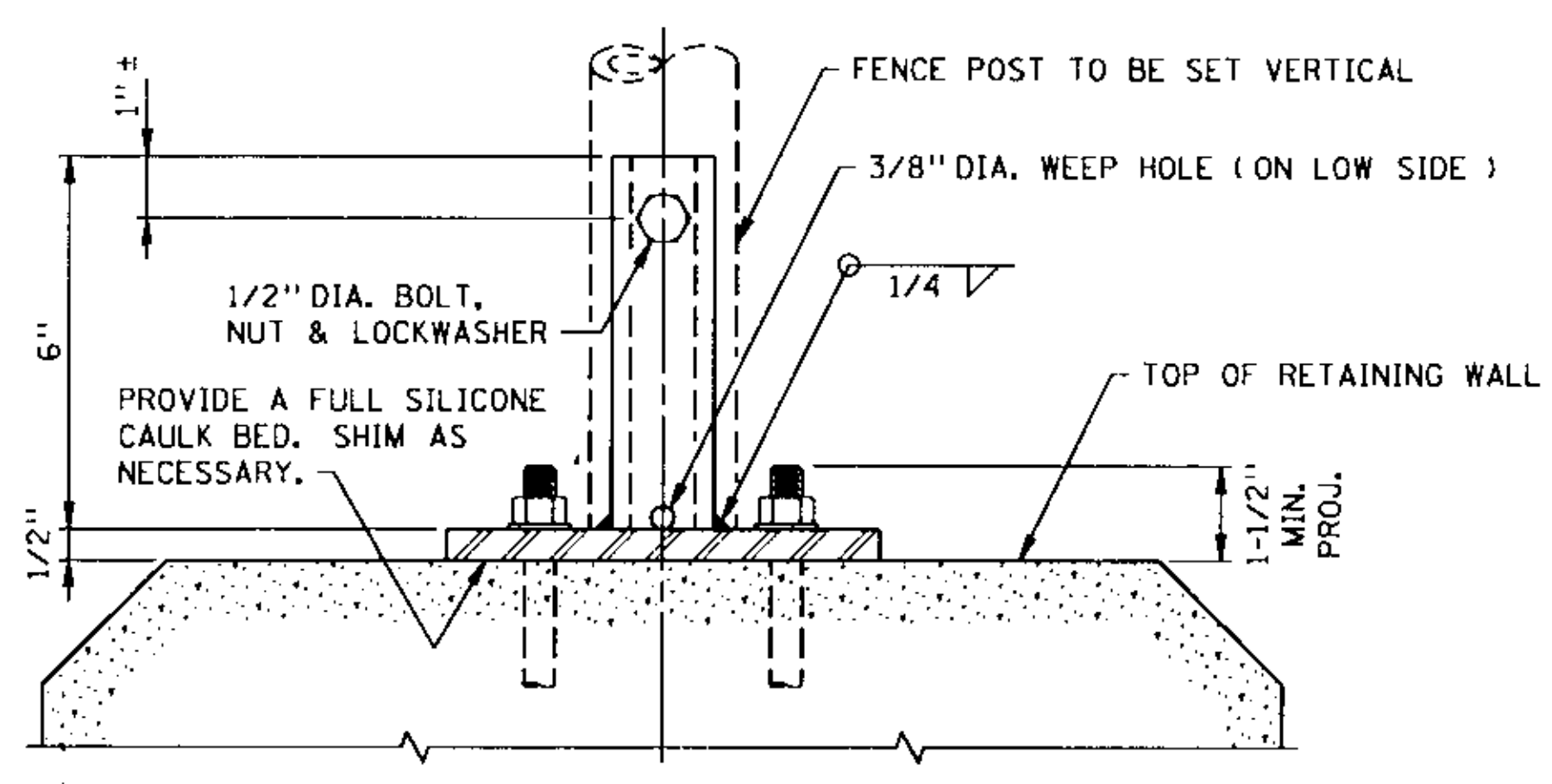


CONDUIT PLACEMENT DETAIL

- NOTES:**
- ⑨ ϕ OF ANCHORAGE SHALL BE 6" MIN. FROM DEFLECTION JOINTS.
 - ⑩ ESTIMATED WEIGHT = 10 OR 12 LBS. STRUCT. STEEL PER SPEC. 3306 - STRUCT. PIPE PER SPEC. 3362. GALVANIZE THE FENCE POST ANCHORAGE AFTER FABRICATION PER SPEC. 3394. GALVANIZE THE FASTENERS PER SPEC. 3392.
 - ⑪ INSTALL FENCE PER SPEC. 2557.
 - ⑫ PROVIDE ELECTRICAL GROUNDS FOR FENCING PER SPEC. 2557 AND AS MODIFIED BELOW:
 - a. WALLS WITHOUT SIDEWALKS ADJACENT TO WALL; INSTALL PER SPEC. 2557.
 - b. WALLS WITH SIDEWALKS ADJACENT TO WALL; PLACE GROUNDING RODS BELOW SIDEWALK ELEVATION. LOCATE CONNECTING WIRE (FROM FENCE TO GROUND ROD) DOWN THRU WALL TO BELOW SIDEWALK ELEVATION AND THEN OUT TO ROD.
 - c. GROUNDING SHALL NOT BE CONNECTED TO THE LIGHTING SYSTEM WHEN LIGHTING IS REQUIRED ON THE WALL. USE EITHER "a" OR "b" ABOVE.



SECTION C-C ELEVATION
CHAIN LINK FENCE ON RETAINING WALL WITH PARAPET



TYPICAL SECTION
STEEL FENCE POST ANCHORAGE DETAIL ⑨ ⑩

STANDARD SHEET NO. 5-297.623	TITLE: LIGHT ANCHORAGE & CHAIN LINK FENCE FOR RETAINING WALLS
STANDARD APPROVED: OCTOBER 18, 1993	
S.P. 02-601-36	S.P. 127-020-13 SHEET NO. 13 OF 70 SHEETS

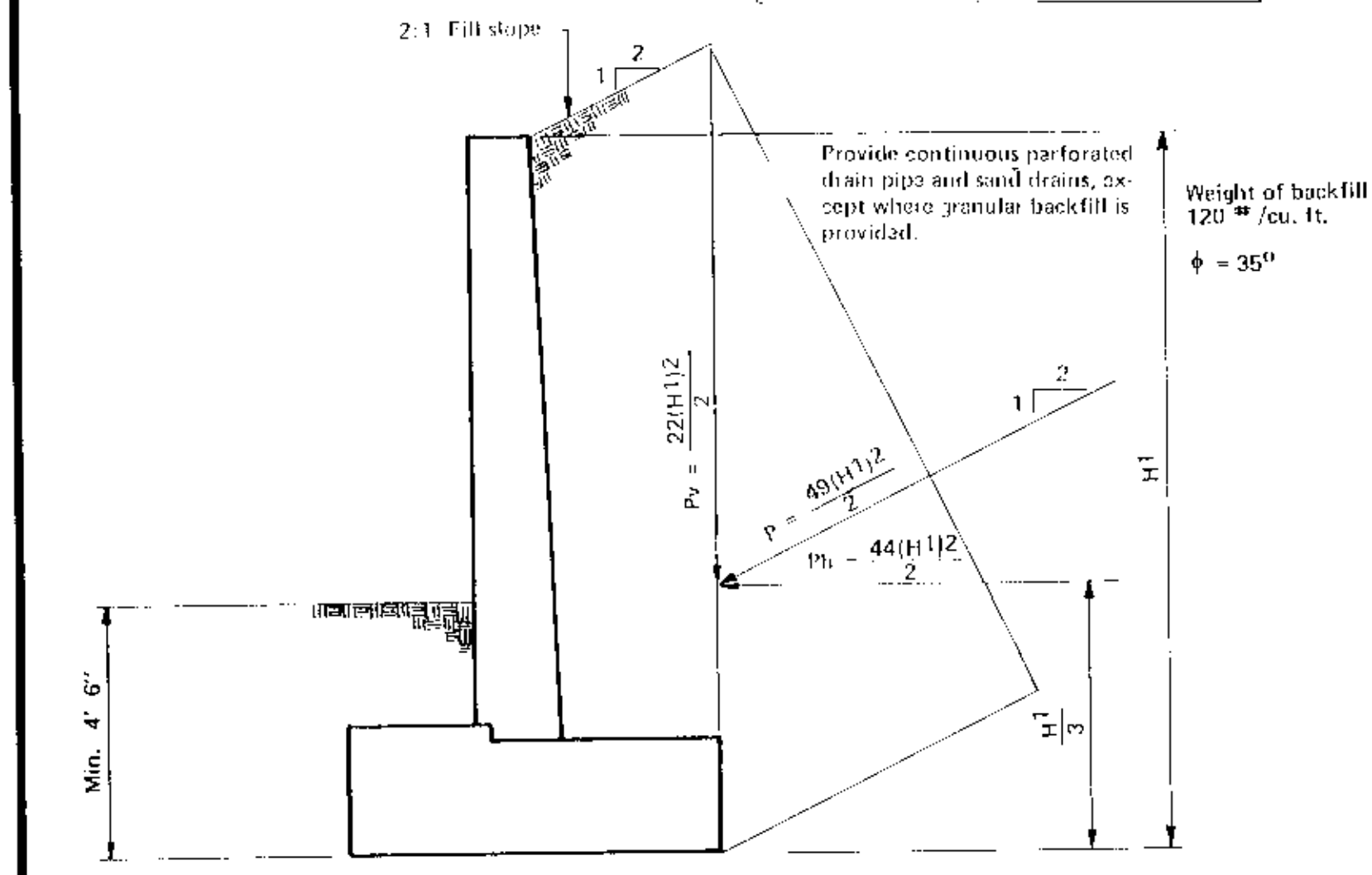
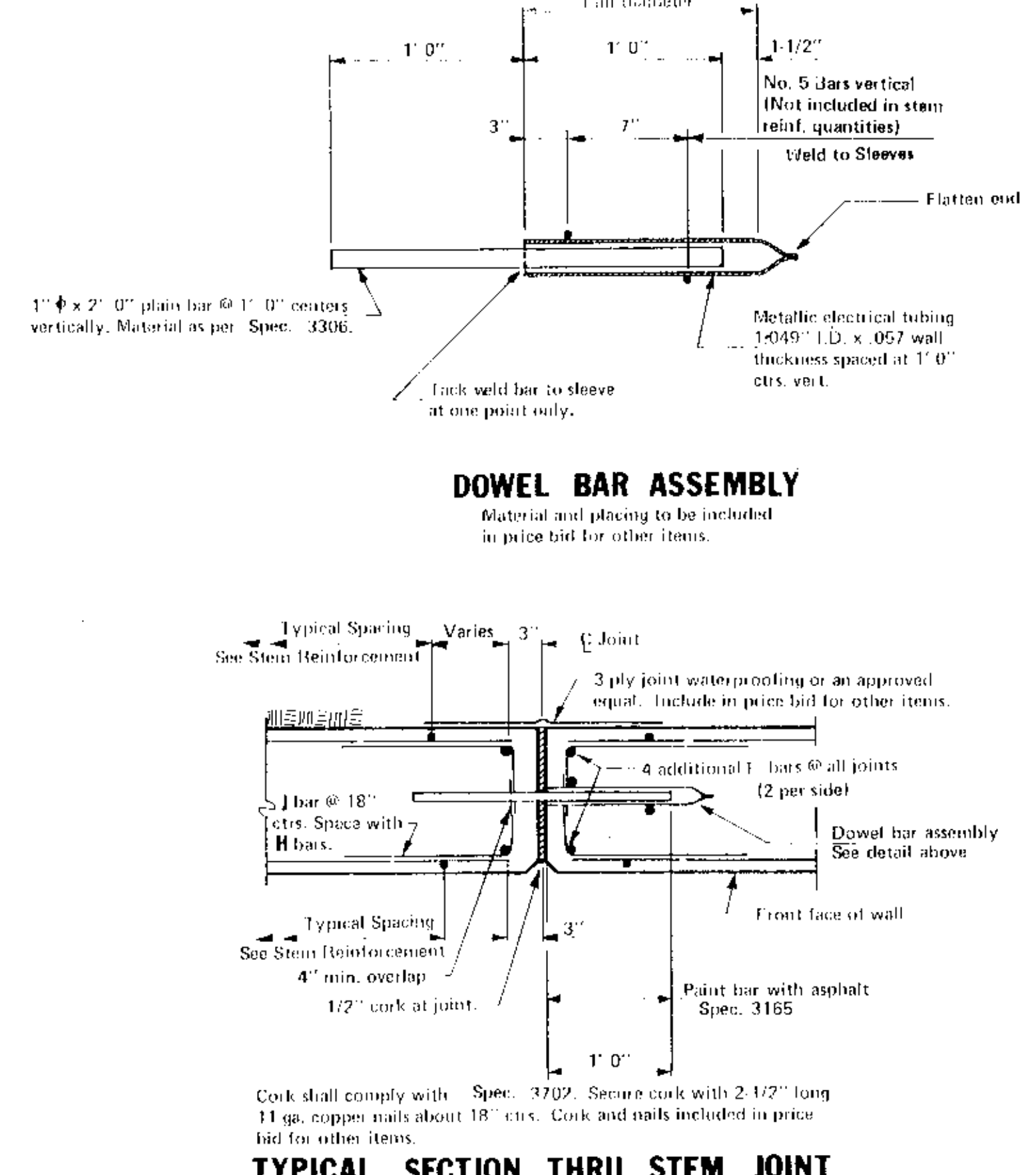
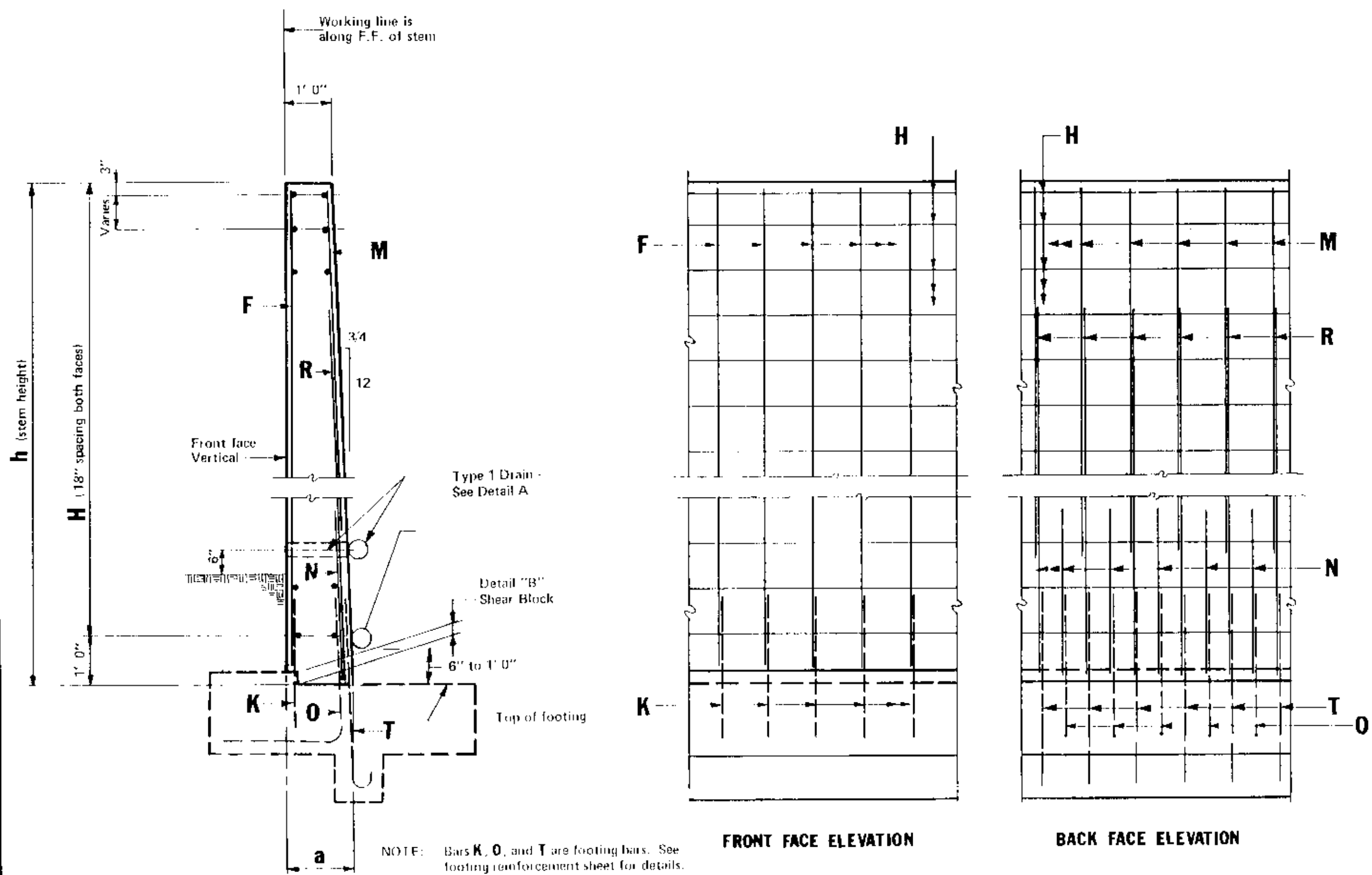
SERVER CA64517/USR/STANDARDS FILE NAME S623J93.SPN

APPROVED Feb. 27, 1930

Director
OFFICE OF ENGINEERING STANDARDS

Fed. Proj. No.

A.A.S.H.L.O. DESIGN SPECIFICATIONS
fc = 1600 p.s.i. n = 8 Concrete
fs = 24,000 p.s.i. Reinforcement



DRAINAGE: For Type II drainage provide drainage through stem every 200' ± 50' with appropriate outlet. Contact Materials Engineering Section for recommendations on the type of drainage system required.

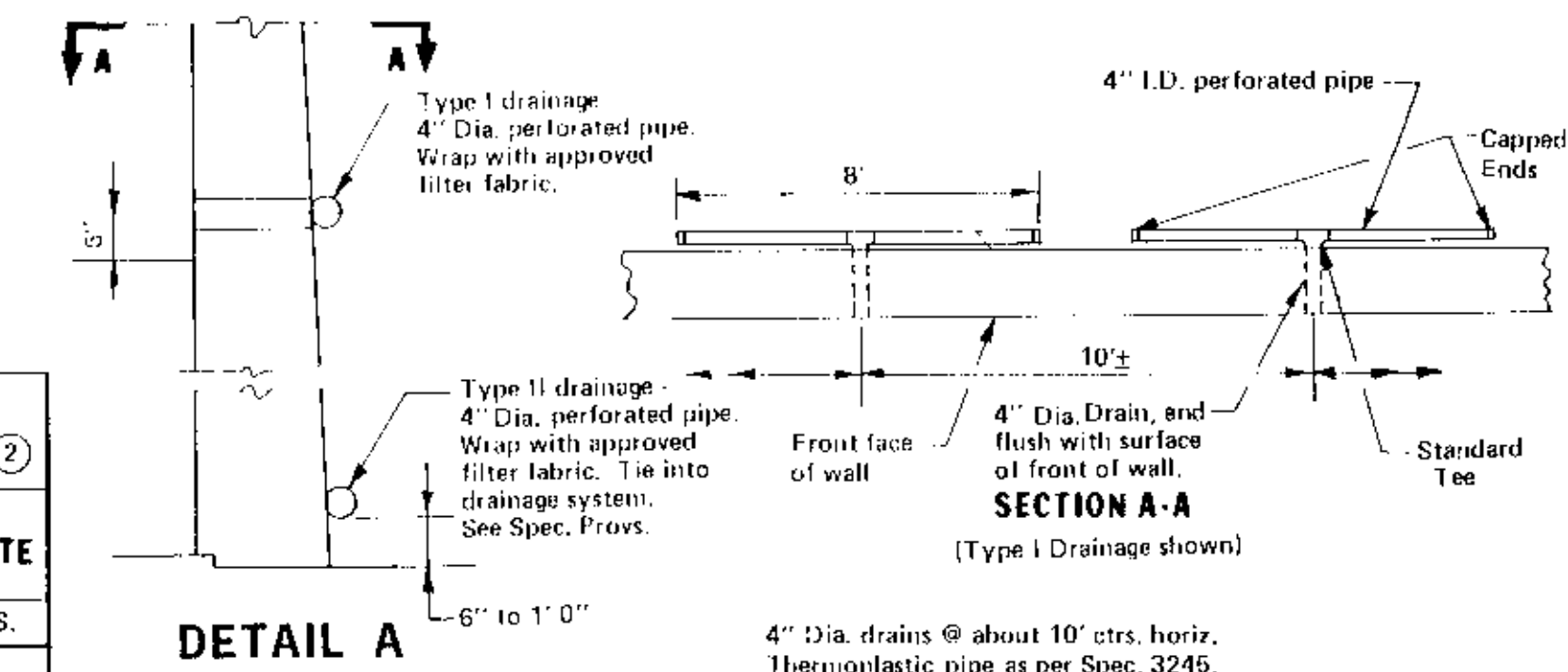
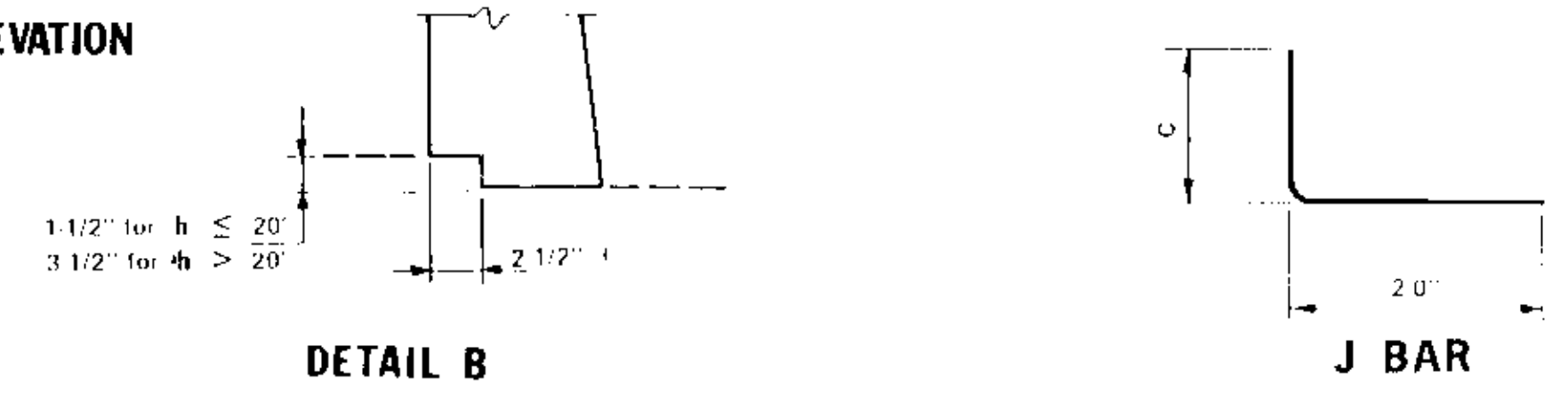
SPREAD FTGS: If soil studies indicate that the replace soils below the footing cannot support the base pressures shown this design shall not be used.

PILE FTGS: Lateral resistance is equal to horizontal component of battered piles plus bending resistance of:
6.0K per pile for timber with a vertical load of 24 tons.
7.5K per pile for timber with a vertical load of 30 tons.
9.0K per pile for cast-in place with a vertical load of 40 tons.
13.0K per pile for cast-in place with a vertical load of 60 tons.
12.0K per pile for steel with a vertical load of 95 tons.

If soil studies indicate that material in place below footing cannot offer the lateral resistance required this design shall not be used.

TYPICAL SECTION THRU STEM

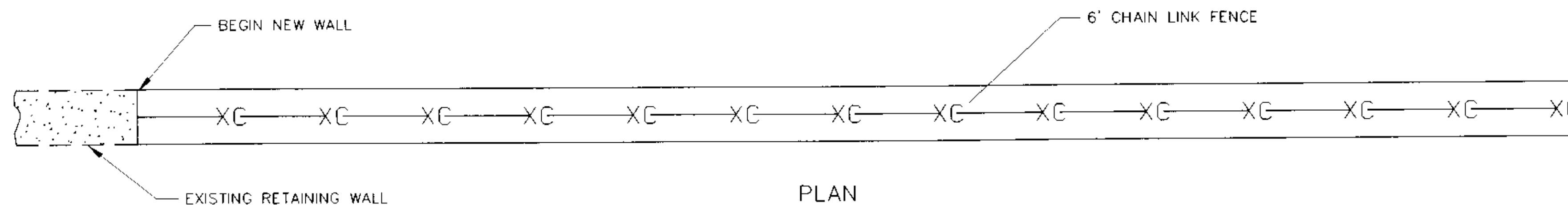
- The smallest "C" dimension bar to be placed at the top of wall and increases downward with wall depth.
- Use "J" Bars and 4 additional "F" Bars at dowel joints. These bars are not included in quantities per linear foot of stems. (See stem joint detail).
- Weight includes "J" bars and four "F" bars per stem joint.



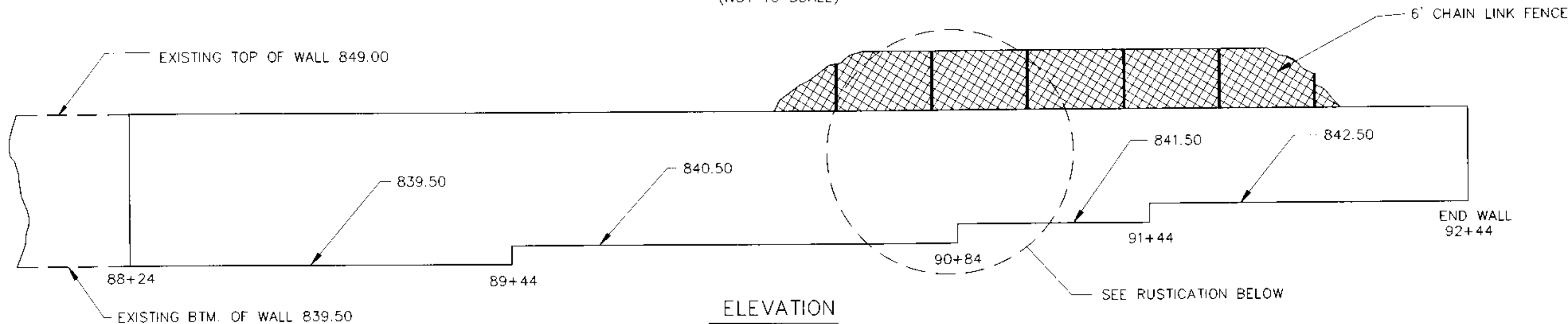
STEM GEOMETRICS		STEM REINFORCEMENT BARS															QUANTITIES / LIN. FT. OF STEM ^②						
h	a	J(BARS) ①②				TOTAL WEIGHT ③	F ^② (VERTICAL)			H (HORIZONTAL)			M (VERTICAL)			N (VERTICAL)			R (VERTICAL)			REINF. POUND	CONCRETE CU. YDS.
ft.	in.	SIZE	LENGTH	7"	10"		SIZE	LENGTH	SPAC.	SIZE	NO.	MAX. SP.	SIZE	LENGTH	SPAC.	SIZE	LENGTH	SPAC.	SIZE	LENGTH	SPAC.		
5	1' 3 3/4	6	2' 0"	16		25.5	4	4' 8"	12"	5	8	18"	4	4' 10"	14 1/2"							14.1	.213
6	1' 4 1/2	6	2' 0"	16	4	94.3	4	5' 8"	12"	5	10	18"	4	5' 10"	14 1/2"							17.4	.263
7	1' 5 1/4	6	2' 0"	16	4	106.9	4	6' 8"	12"	5	10	18"	4	6' 10"	14 1/2"							18.7	.315
8	1' 6"	6	2' 0"	16	8	116.6	4	7' 8"	12"	5	12	18"	4	7' 10"	14 1/2"							22.0	.369
9	1' 6 3/4	6	2' 0"	16	12	136.3	4	8' 8"	12"	5	14	18"	4	8' 10"	14 1/2"							25.3	.426
10	1' 7 1/2	6	2' 0"	16	12	139.0	4	9' 8"	12"	5	14	18"	4	9' 10"	14 1/2"							29.6	.485
11	1' 8 1/4	6	2' 0"	16	16	158.7	4	10' 8"	12"	5	16	18"	5	10' 10"	14 1/2"							33.2	.546
12	1' 9"	6	2' 0"	16	20	178.4	4	11' 8"	12"	5	18	18"	5	11' 10"	14 1/2"							38.0	.610
13	1' 9 3/4	6	2' 0"	16	20	181.1	4	12' 8"	12"	5	18	18"	5	12' 0"	14 1/2"				6	5' 0"	14 1/2"	43.8	.676
14	1' 10 1/2	6	2' 0"	16	20	202.2	4	13' 8"	12"	5	20	18"	5	12' 0"	14 1/2"				7	5' 0"	14 1/2"	48.8	.744
15	1' 11 1/4	6	2' 0"	16	20	223.4	4	14' 8"	12"	5	22	18"	5	12' 0"	14 1/2"				7	5' 0"	14 1/2"	51.6	.815
16	2' 0"	6	2' 0"	16	20	226.1	4	15' 8"	12"	5	22	18"	5	12' 0"	14 1/2"				8	6' 0"	14 1/2"	57.0	.888
17	2' 0 3/4	6	2' 0"	16	20	247.3	4	16' 8"	12"	5	24	18"	5	12' 0"	14 1/2"				8	7' 0"	14 1/2"	60.3	.963
18	2' 1' 1/2	6	2' 0"	16	20	268.5	4	17' 8"	12"	5	26	18"	5	12' 0"	14 1/2"				8	8' 0"	13"	69.9	1.041
19	2' 2' 1/4	6	2' 0"	16	20	271.2	4	18' 8"	12"	5	26	18"	5	12' 0"	14 1/2"				6	9' 0"	14 1/2"	70.8	1.121
20	2' 3"	6	2' 0"	16	20	292.4	4	19' 8"	12"	5	28	18"	5	12' 0"	14 1/2"				7	10' 0"	14 1/2"	80.5	1.203
21	2' 3 3/4	6	2' 0"	16	20	317.1	4	20' 0"	12"	5	30	18"	5	12' 0"	14 1/2"				7	11' 0"	14 1/2"	88.6	1.287
22	2' 4 1/2	6	2' 0"	16	20	315.8	4	21' 0"	12"	5	30	18"	5	12' 0"	14 1/2"				8	12' 0"	14 1/2"	100.2	1.373
23	2' 5 1/4	6	2' 0"	16	20	330.5	4	22' 0"	12"	5	32	18"	5	12' 0"	14 1/2"				8	12' 0"	14 1/2"	107.4	1.467
24	2' 6"	6	2' 0"	16	20	361.2	4	23' 0"	12"	5	34	18"	5	12' 0"	14 1/2"				9	14' 0"	14 1/2"	117.8	1.564
26	2' 6 3/4	6	2' 0"	16	20	364.9	4	24' 0"	12"	5	34	18"	5	12' 0"	14 1/2"				9	15' 0"	14 1/2"	129.7	1.648
27	2' 7 1/2	6	2' 0"	16	20	386.6	4	25' 0"	12"	5	36	18"	5	12' 0"	14 1/2"				9	16' 0"	14 1/2"	139.1	1.743
27	2' 8 1/4	6	2' 0"	16	20	409.3	4	26' 0"	12"	5	38	18"	5	12' 0"	13"				9	17' 0"	13"	153.6	1.817
28	2' 9"	6	2' 0"	16	20	411.9	4	27' 0"	12"	5	38	18"	5	12' 0"	12"				9	18' 0"	12"	169.1	1.932
28	2' 9 3/4	6	2' 0"	16	20	434.6	4	27' 0"	12"	5	40	18"	5	12' 0"	11"				9	11' 0"	11"	185.7	2.036
30	2' 10 1/2	6	2' 0"	16	20	457.3	4	29' 0"	12"	5	42	18"	5	12' 0"	11"				10	12' 0"	11"	207.7	2.151

- STEM NOTES:**
- Maximum spacing of stem joints (panels) is 32 feet. Use dowel assemblies at all joints. No reinf. thru joint.
 - Concrete in stems to be Concrete Mix No. 3Y43.
 - Reinforcement bars shall be deformed billet steel bars conforming to ASTM A615 Grade 60.
 - Bar lap at authorized splices: 36 diameters for No. 4 to No. 7 bars and 40 diameters for No. 8 to No. 11 bars except as noted.
 - All reinforcement bars to have a 2" minimum cover. When 1" or less rustication is used, move front face reinf. bars in to maintain 2" cover. For rustication over 1" in depth, increase stem width to depth of rustication to maintain minimum reinforcement cover.
 - Edges of concrete on all exposed joints and top of stem wall shall be formed with 1/2" vee unless otherwise noted.
 - Construction to be in accordance with Spec. 2411 except as noted.
 - When stem heights vary by less than four feet in any panel, the rebars shall be sized and spaced for the maximum height in the panel.
 - When stem heights at the ends of any panel differ by more than four feet, but less than eight feet, the panel shall be divided into two approximately equal parts (or on some other logical basis) for rebar design. The bars for each portion of the panel shall be sized and spaced for the maximum stem height in that portion.
 - When stem heights vary by more than eight feet, the panel shall be divided into 3 parts for rebar design. The maximum stem height in each portion shall be used for determining rebar sizing and spacing in that portion.
 - When stem heights are five feet or less, the rebars shall be sized and spaced as required for h = 5 feet.
 - Vertical bars F and M in stems or varying heights and transverse bars O, P, and Q in footings of varying widths shall vary in length in accordance with the dimensions of the structure.

RETAINING WALL - 2:1 FILL SLOPE (STEM DETAILS)

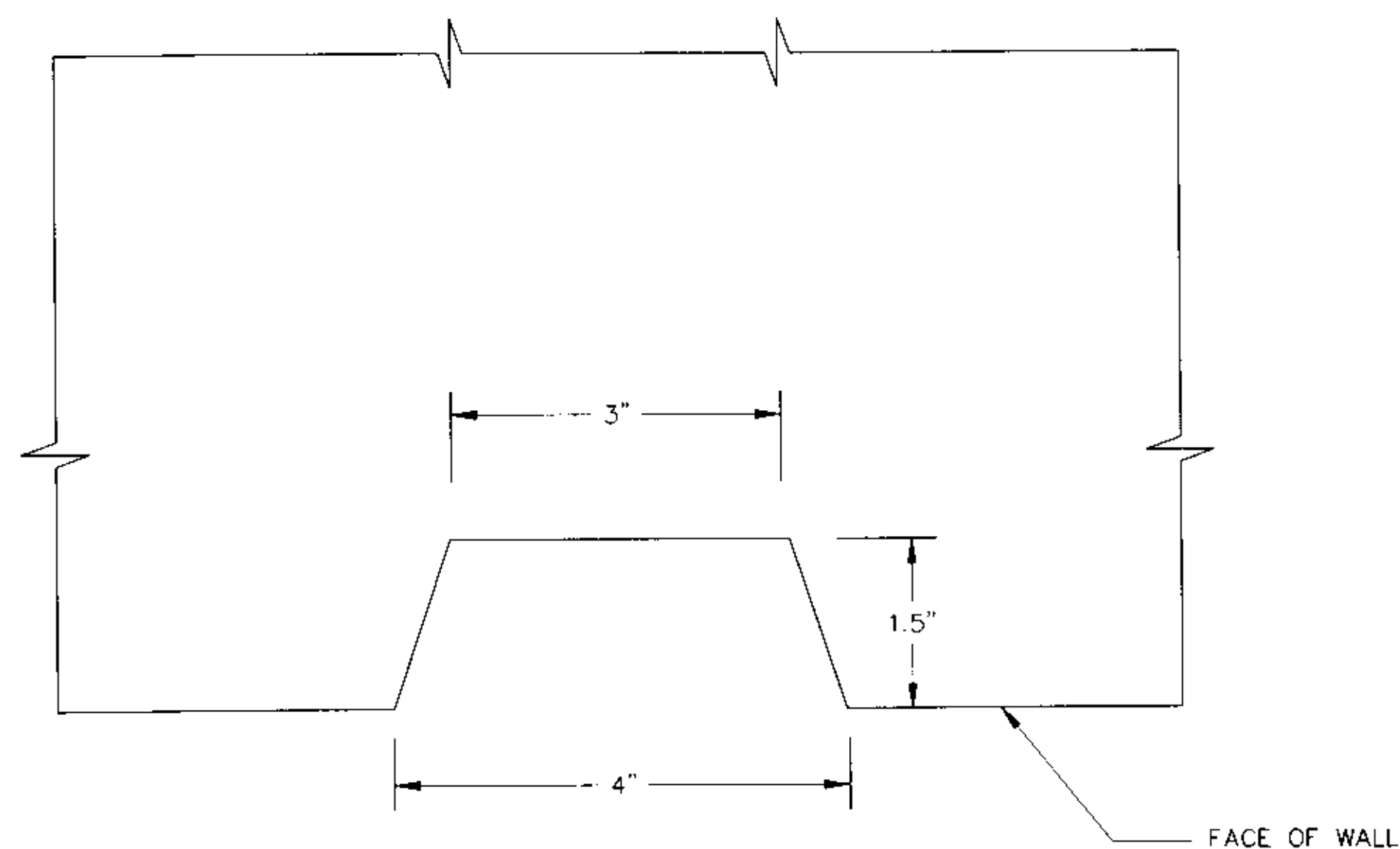
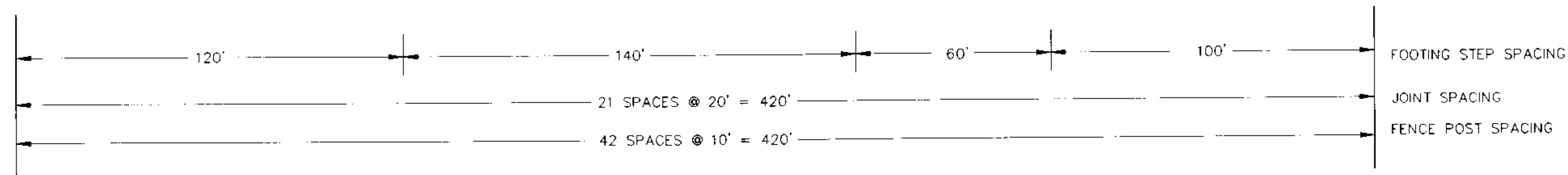


PLAN
(NOT TO SCALE)

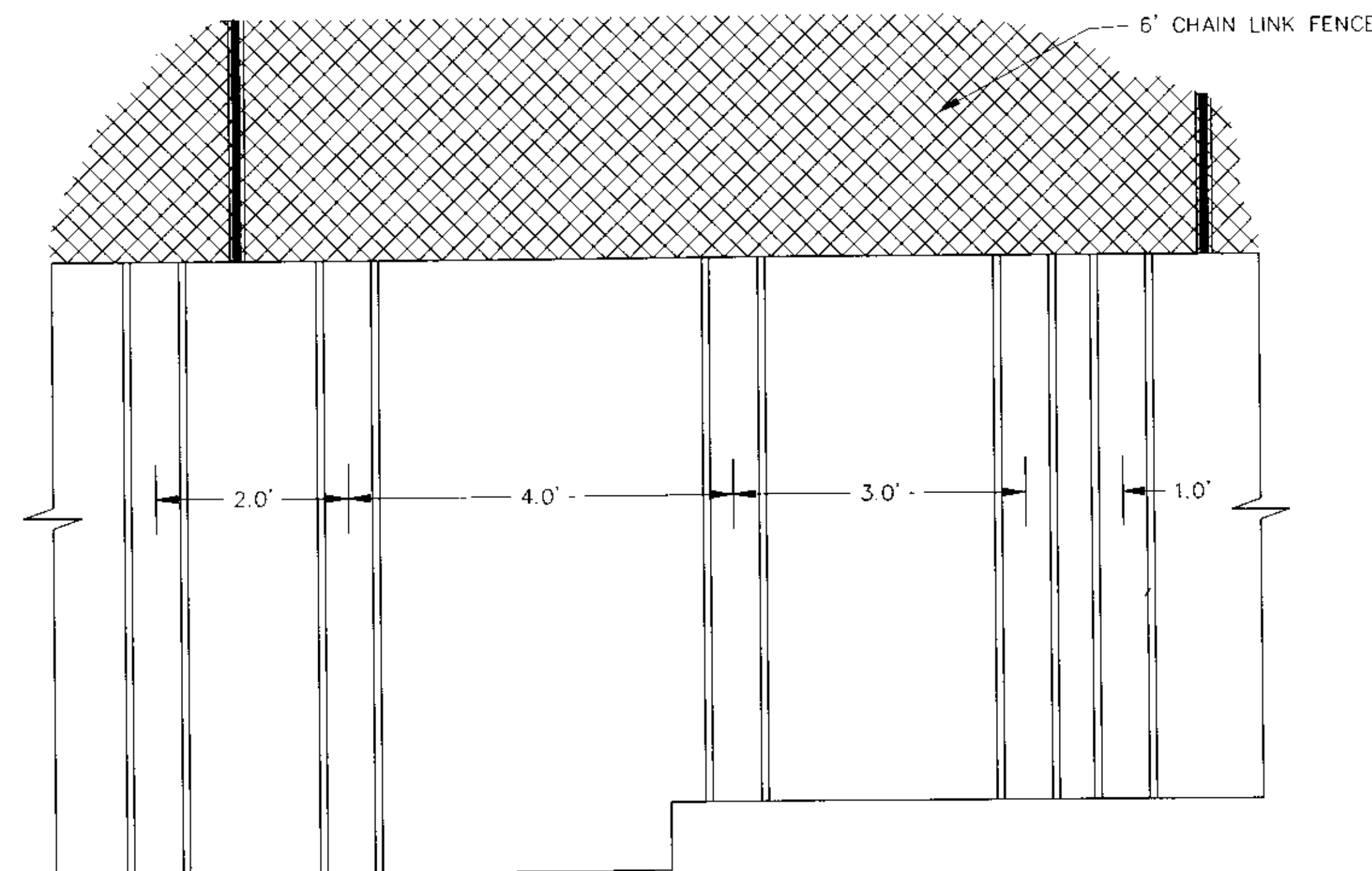


ELEVATION
(NOT TO SCALE)

NOTES:
FOR RETAINING WALL DIMENSIONS, FOOTING DETAILS AND REINFORCEMENT, SEE SHEETS 10 TO 12.
FOR FENCE DETAILS, SEE SHEET 13.



TYPICAL REVERSE BATTEN (PLAN)
(NOT TO SCALE)



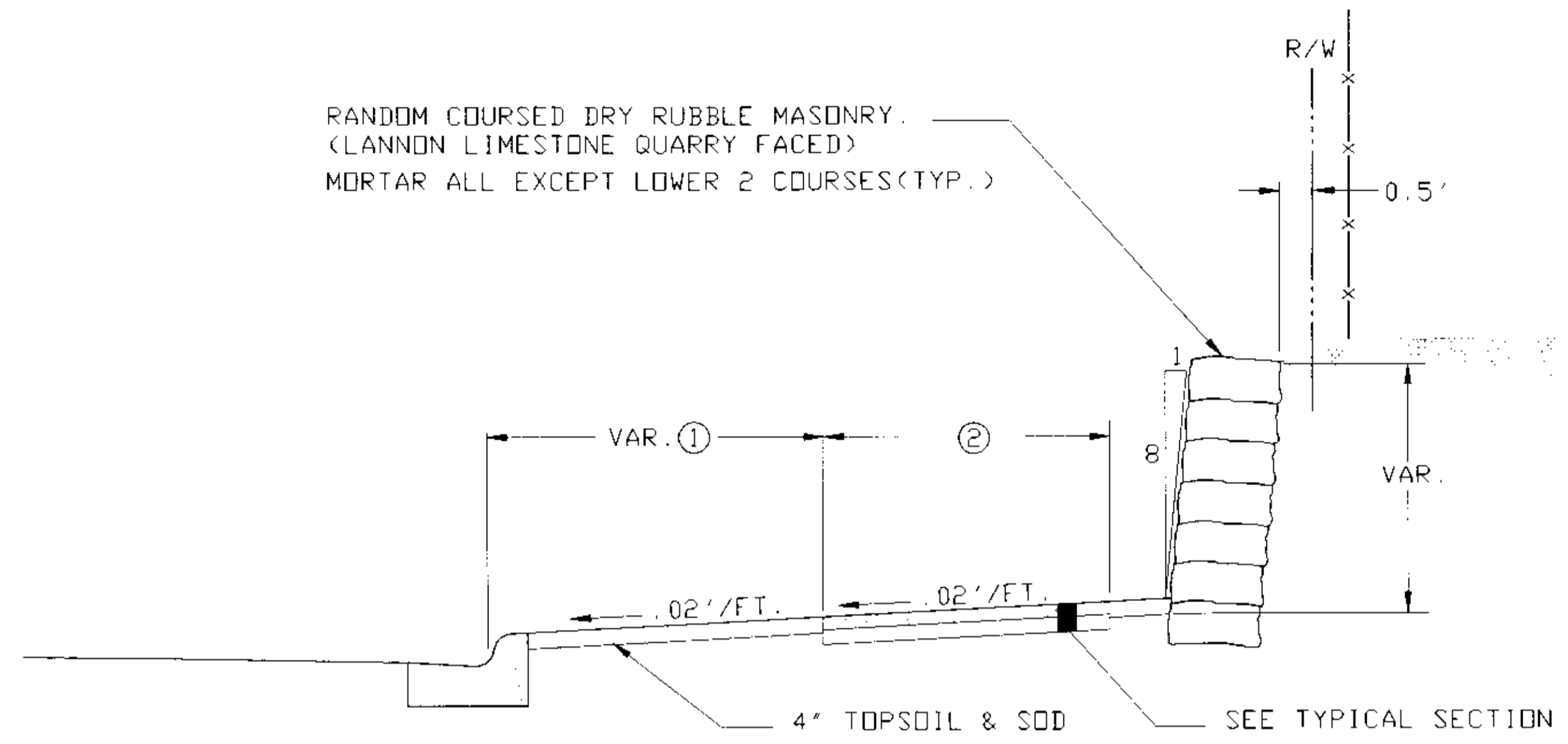
TYPICAL REVERSE BATTEN RUSTICATION PATTERN (ELEVATION)
(NOT TO SCALE)

CONCRETE RETAINING WALL DETAILS

REVISIONS	DATE	BY

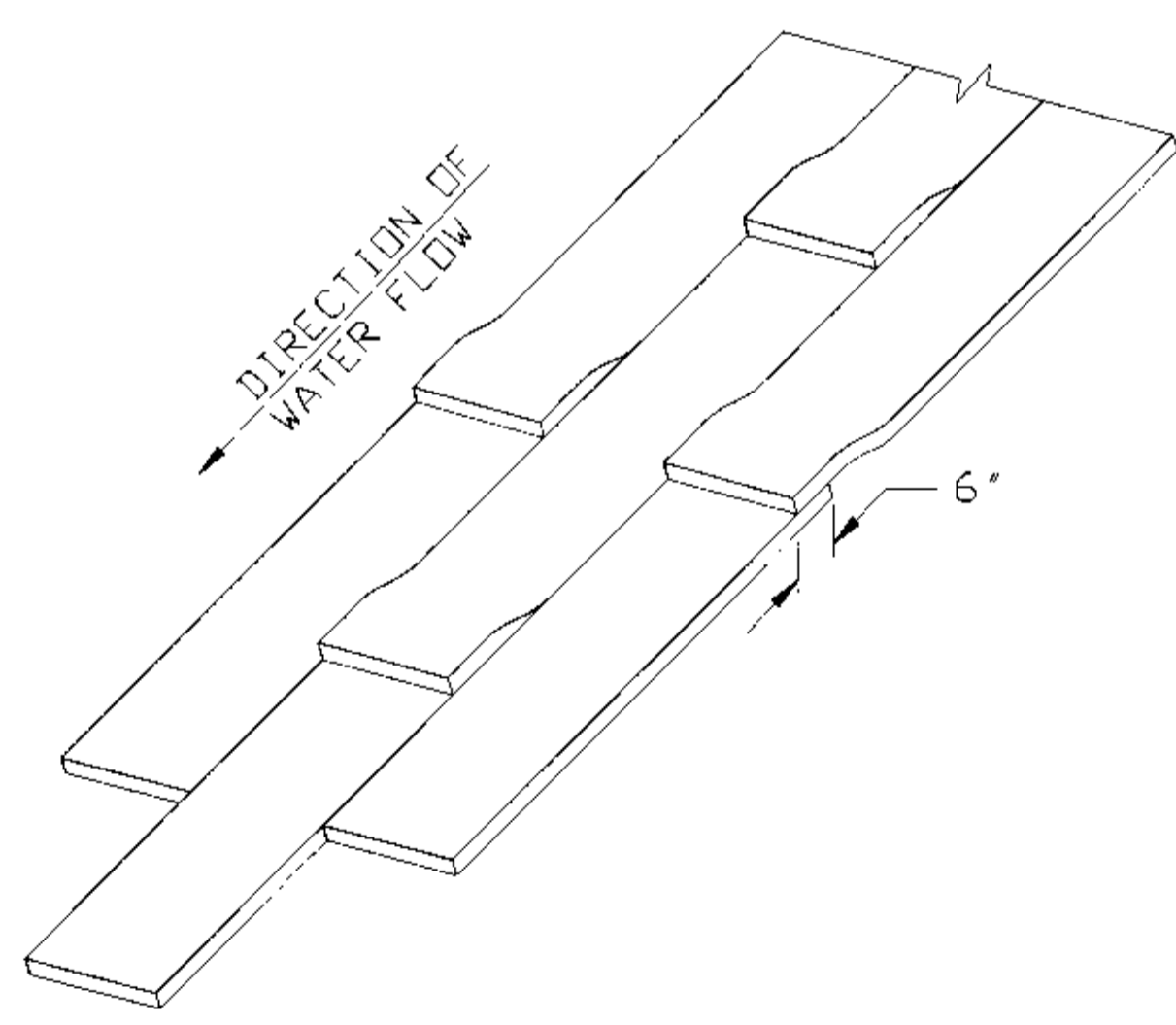
FILE NAME: 080613A_01WALL.DWG MW

STONE RETAINING WALL DETAIL®



- ① SEE PLANS AND X-SECTION FOR BOULEVARD WIDTHS.
- ② 8' BIT. PATH OR LAWN BOULEVARD
- ③ SEE TABULATION CHART ⑤ FOR LOCATION.

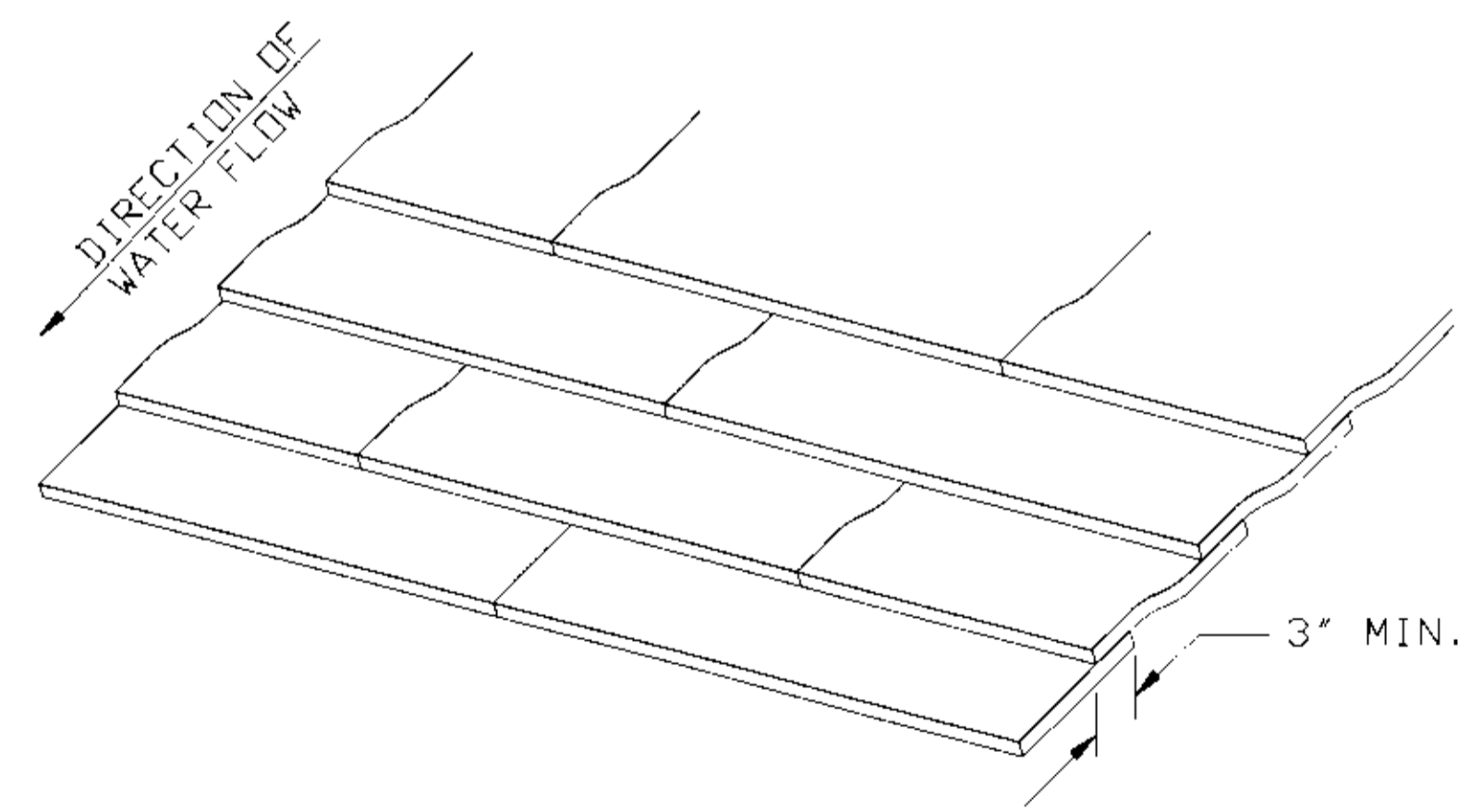
OVERLAPPING SOD



WHERE THE FLOW OF WATER IS CONCENTRATED, PLACE SOD STRIPS PARALLEL TO THE DIRECTION OF WATER FLOW.

SPECIAL SOD PLACEMENT TECHNIQUES

SHINGLING SOD



WHERE THE FLOW OF WATER IS SHEETING, PLACE SOD STRIPS PERPENDICULAR TO THE DIRECTION OF WATER FLOW.

STANDARD DETAILS

REVISIONS	DATE	BY

FILE NAME: 0260136\DTAB-CH.DWG MR. (04-25-94)

EARTHWORK SUMMARY

(Y)

SOILS AND CONSTRUCTION NOTES:

<u>EXCAVATION</u>	<u>EMBANKMENT (CV)</u>	<u>BORROW (LV)/EXCESS (EV)</u>
COMMON EXCAVATION . . . 26,324 CU.YD.	GRANULAR . . . 16,825 CU.YD.	GRANULAR EXCESS . . . 3,482 CU.YD. (EV)
REGULAR . . . 18,889 CU.YD. ① SUBCUT . . . 11,760 CU.YD. TOPSOIL . . . 1,639 CU.YD.	MAINLINE . . . 5,065 CU.YD. SUBCUT . . . 11,760 CU.YD.	TOPSOIL BORROW . . . 783 CU.YD. (LV)

1. TOP OF GRADING GRADE IS DEFINED AS THE BOTTOM OF THE AGGREGATE BASE.
2. IN FILL AREAS, THE SUBGRADE SHALL BE CONSTRUCTED WITH SELECTED GRADING MATERIAL.
3. SELECTED GRADING MATERIALS SHALL CONSIST OF GRANULAR MATERIALS.
4. GRANULAR MATERIAL, REGARDLESS OF SOURCE, SHALL MEET THE REQUIREMENTS OF SPEC. 3149.2A.
5. COMPACTION OF THE GRADING PORTION OF THIS PROJECT SHALL BE BY THE "SPECIFIED DENSITY METHOD".
6. TEST ROLLING WILL NOT BE REQUIRED.
7. BITUMINOUS OR CONCRETE ITEMS REMOVED BY CONSTRUCTION SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE EITHER RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE REQUIREMENTS OF 2104.3C3.
8. DISPOSITION OF EXCESS EXCAVATED MATERIAL SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF 2105.3D WITH NO DIRECT COMPENSATION THEREFORE.
9. WHERE MATCHING INTO THE INPLACE ROADWAY AT THE ENDS OF CONSTRUCTION, CUT VERTICALLY TO THE TOP OF THE GRADING GRADE, AND THEN AT A 20:1 TAPER TO THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION.
10. WHERE CONNECTING NEW SURFACING TO AN INPLACE PAVEMENT, THE EXCAVATION SHALL BE BACKFILLED PROMPTLY TO AVOID UNDERMINING THE INPLACE PAVEMENT.
11. USE TACK COAT BETWEEN ALL BITUMINOUS MIXTURES PRIOR TO PLACING BITUMINOUS MIXTURES AND PRIOR TO PLACING ANY BITUMINOUS MIXTURES ON EXISTING CONCRETE OR BITUMINOUS SURFACES. THE BITUMINOUS TACK COAT MATERIAL SHALL BE APPLIED AT UNIFORM RATE OF 0.03 TO 0.05 GALLONS PER SQUARE YARD BETWEEN BITUMINOUS LAYERS. THE APPLICATION RATES ARE FOR UNDILUTED EMULSION (AS SUPPLIED FROM THE REFINERY); ASPHALT EMULSION MAY BE FURTHER DILUTED IN THE FIELD IN ACCORDANCE WITH SPEC. 2357.
12. COMPACTION OF THE BITUMINOUS BASE AND BINDER SHALL BE BY THE "SPECIFIED DENSITY METHOD", COMPACTION OF THE WEAR COURSE SHALL BE BY THE "ORDINARY COMPACTION METHOD".
13. COMPACTION OF THE AGGREGATE BASE LAYERS SHALL BE BY THE "SPECIFIED DENSITY METHOD".
14. PLACE MINIMUM 4 INCHES TOPSOIL OR SLOPE DRESSING ON ALL AREAS DISTURBED BY CONSTRUCTION AND SCHEDULED FOR PERMANENT TURF ESTABLISHMENT. FERTILIZE WITH COMMERCIAL FERTILIZER, ANALYSIS 10-10-10, AT A RATE OF 500 POUND PER ACRE.
15. USE MIXTURE 600 SEED AND TYPE 1 MULCH IN AREAS TO BE SEEDDED.
16. SOD ALL PERMANENT BOULEVARD AREAS.
17. ALL SOD UTILIZED WITHIN THE PROJECT LIMITS SHALL MEET THE REQUIREMENTS OF SPEC. 3878.2A (LAWN AND BOULEVARD SOD).
18. ORGANIC AND NONGRANULAR EXCAVATED MATERIAL MAY BE USED IN EMBANKMENT CONSTRUCTION IN AREAS OUTSIDE OF A 1 1/2:1 SLOPE FROM THE BACK OF CURB, OR GRADING P.I.
19. BITUMINOUS REMOVAL QUANTITY BASED ON SQUARE YARDS REMOVED. IN PLACE SURFACE ASSUMED TO BE 8 INCHES IN DEPTH. CONTRACTOR SHALL INVESTIGATE AND MAKE OWN DETERMINATION OF ACTUAL PAVEMENT DEPTH.

NOTES:

- 140% SWELL FACTOR FOR REGULAR GRADING (CV TO EV)
- 150% SWELL FACTOR FOR TRUCK HAUL (CV TO LV)
- 120% SWELL FACTOR FOR SUBCUT COMPACTION (CV TO EV)

① INCLUDES 5,964 CU. YD. CONCRETE AND BITUMINOUS REMOVAL. CONCRETE AND BITUMINOUS PAVEMENT REMOVALS WILL BE PAID UNDER ITEM 2104.

BASE AND BITUMINOUS QUANTITIES CHART

(FF)

LOCATION	DESCRIPTION	BIT. WEARING COURSE			BIT. BINDER COURSE			BIT. BASE COURSE			AGG. BASE CLASS 5		TACK COAT				
		SO. YD.	DEPTH	TONS	SO. YD.	DEPTH	TONS	SO. YD.	DEPTH	TONS	SO. YD.	DEPTH	CU. YD.	SO. YD.	LIFTS	GALLON	
LNB. 88+05	125+83.42	18.5'	1.5"	1080.3	13095	2.5"	1800.6	13095	4.5"	3241.0	15445	4"	1814.2	13095	3	1964.3	
LSB. 87+75	125+46.28	18.5'	1.5"	1078.3	13070	2.5"	1797.1	13070	4.5"	3234.8	15393	4"	1807.2	13070	3	1960.5	
LOCKE LAKE RD		178	1.5"	14.7	178	2.5"	24.5	178	4.5"	44.1	195	4"	22.4	178	3	26.7	
LNB. 88+00	92+56	LEFT TURN LANE	555	1.5"	45.8	555	2.5"	76.3	555	4.5"	137.4	555	4"	61.7	555	3	83.3
LNB. 89+87	96+15	RIGHT TURN LANE & BUS PAD	286	1.5"	23.7	286	2.5"	39.3	286	4.5"	70.1	286	4"	31.8	286	3	42.9
69TH WAY			266	1.5"	21.9	266	2.5"	36.6	266	4.5"	65.8	322	4"	38.1	266	3	39.9
LNB. 91+24	93+71	LEFT TURN LANE	248	1.5"	20.5	248	2.5"	34.1	248	4.5"	61.4	248	4"	27.6	248	3	37.2
LSB. 93+65	95+75	BUS PAD	43	1.5"	3.5	43	2.5"	5.9	43	4.5"	10.6	43	4"	4.8	43	3	6.5
LSB. 93+71	98+96	LEFT TURN LANE	566	1.5"	46.7	566	2.5"	77.7	566	4.5"	140.1	566	4"	62.9	566	3	84.9
LNB. 97+55	103+87	RIGHT TURN LANE	198	1.5"	16.3	198	2.5"	27.2	198	4.5"	49.0	198	4"	22.0	198	3	29.7
LNB. 70TH WAY NE			242	1.5"	20.0	242	2.5"	33.3	242	4.5"	59.9	288	4"	33.9	242	3	36.3
LSB. 102+74	107+84	LEFT TURN LANE	602	1.5"	50.0	602	2.5"	82.8	602	4.5"	149.0	602	4"	66.9	602	3	90.3
LSB. 107+84	112+99	LEFT TURN LANE	534	1.5"	44.1	534	2.5"	73.4	534	4.5"	132.2	534	4"	59.3	534	3	80.2
LNB. 103+87	110+09	RIGHT TURN LANE & BUS PAD	260	1.5"	21.5	260	2.5"	35.8	260	4.5"	64.3	260	4"	28.9	260	3	39.0
HICKORY DRIVE			630	1.5"	52.0	630	2"	69.3	630			719	6"	111.3	630	1	31.5
LSB. 105+92	111+78	RIGHT TURN LANE & BUS PAD	258	1.5"	21.3	258	2.5"	35.5	258	4.5"	63.9	258	4"	28.7	258	3	38.7
71ST. WAY NE			680	1.5"	56.1	680	2"	74.7	680			766	6"	119.3	680	1	34.0
LSB. 114+64	120+46	LEFT TURN LANE	636	1.5"	52.4	636	2.5"	87.5	636	4.5"	157.4	636	4"	70.7	636	3	95.5
LOGAN PARKWAY			204	1.5"	16.8	204	2.5"	28.1	204	4.5"	50.5	246	4"	29.1	204	3	30.6
LSB. 117+81	125+46	BUS PAD	364	1.5"	30.0	364	2.5"	50.1	364	4.5"	90.1	364	4"	40.4	364	3	54.6
LNB. 120+05	121+85	BUS PAD	73	1.5"	6.0	73	2.5"	10.0	73	4.5"	18.1	73	4"	8.1	73	3	11.0
CHESNEY WAY			58	1.5"	4.8	58	2.5"	8.0	58	4.5"	14.3	58	4"	6.4	58	3	8.7
GLEN CREEK RD.			198	1.5"	16.3	198	2.5"	27.2	198	4.5"	49.0	239	4"	28.3	198	3	29.7
TOTAL					2743			4535		7903			4524			4856	

- ① TYPICAL DEPTHS ARE LISTED. ACTUAL DEPTHS VARY UNDER AND BEHIND CURB AND GUTTER.
- ② BASE COURSE TO BE PLACED IN TWO LIFTS.

EARTHWORK SUMMARY AND CONSTRUCTION NOTES
BASE AND BITUMINOUS QUANTITIES CHART

REVISIONS	BY	DATE

STATEMENT OF ESTIMATED QUANTITIES

CHART NO.	ITEM NO.	ITEM	UNIT	TOTAL QUANTITIES		ANDOKA COUNTY				CITY OF FRIDLEY				STORM SEWER (10)	
				EST.	FINAL	S.P. 02-601-36		NON-PARTICIPATING		S.P. 127-020-13		NON-PARTICIPATING		EST.	FINAL
						EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL		
7	F 2557.501	WIRE FENCE DESIGN 72-9322	LIN FT.	420		420									
	F 0557.603	INSTALL FENCE	LIN FT.	1862		1862									
	0563.601	DETOUR SIGNING	LUMP SUM	1.00		0.70				0.15		0.03		0.12	
	0563.601	TRAFFIC CONTROL STAGE 2	LUMP SUM	1.00		0.70				0.15		0.03		0.12	
	0563.601	TRAFFIC CONTROL STAGE 3	LUMP SUM	1.00		0.70				0.15		0.03		0.12	
	0563.601	TRAFFIC CONTROL STAGE 4	LUMP SUM	1.00		0.70				0.15		0.03		0.12	
	0563.603	ONE-WAY RAISED PAVT. MARKER, TEMP.	EACH	990		990									
	0563.603	REPLACEMENT ONE-WAY RAISED PAVT. MARKER, TEMP.	EACH	150		150									
	DD 2564.513	CONCRETE FOOTING	EACH	28		28									
	DD 2564.531	F&I SIGN PANEL TYPE C	EACH	507		507									
	0564.602	INSTALL SIGN TYPE C	EACH	4		4									
	0564.602	INSTALL SIGN TYPE D	EACH	4		4			4						
	0564.602	PAVEMENT MESSAGE (LEFT ARROW) PAINT	EACH	12		12									
	0564.602	PAVEMENT MESSAGE (RIGHT ARROW) PAINT	EACH	13		13									
	0564.602	PAVEMENT MESSAGE (RIGHT ARROW) POLYMER PREFORMED	EACH	1		1									
	0564.602	PAVEMENT MESSAGE (ONLY) PAINT	EACH	12		12									
	0564.603	4" SOLID LINE WHITE-PAINT	LIN FT.	11900		11900									
	0564.603	4" SOLID LINE YELLOW-PAINT	LIN FT.	7700		7700									
	0564.603	4" BROKEN LINE WHITE-PAINT	LIN FT.	1660		1660									
	0564.603	4" DOUBLE SOLID LINE YELLOW-PAINT	LIN FT.	600		600									
	0564.603	24" SOLID LINE WHITE-POLYMER PREFORMED	LIN FT.	147		147									
	0564.603	36" SOLID LINE WHITE-POLYMER PREFORMED	LIN FT.	276		276									
	2565.511	FULL-TRAF-ACT TRAFFIC CONTROL SIGNAL SYSTEM	SIG SYS	1		0.25				0.25		0.5			
	0565.601	EMERGENCY VEHICLE PRE-EMPTION SYSTEM	LUMP SUM	1						0.5		0.5			
8	2573.501	BALE CHECK	EACH	350		350									
8	2573.503	SILT FENCE, PREASSEMBLED	LIN FT.	1100		1100									
	0 2575.501	SEEDING	ACRE	0.2		0.2									
	0 2575.502	SEED, MIXTURE 600	POUND	15		15									
	0 2575.505	SODDING TYPE LAWN	SQ YD	9039		9039									
	0 2575.523	WOOD FIBER BLANKET TYPE REGULAR	SQ YD	726		726									
	0 2575.532	COMM FERT ANALYSIS 10-10-10	POUND	1034		1034									
	2580.501	TEMPORARY LANE MARKING	RD STA	80		80									
	2581.501	REMOVABLE PREFORMED PLASTIC MARKING	LIN FT.	8700		8700									

STANDARD PLATES	
THESE STANDARD PLATES AS APPROVED BY THE FHWA SHALL APPLY.	
PLATE NO.	DESCRIPTION
0005 A	SPECIFICATION REFERENCE TO STANDARD PLATES
3000 L	REINFORCED CONCRETE PIPE
3006 F	GASKET JOINT FOR R.C. PIPE
3100 G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3133 B	RIPRAP AT R.C.P. OUTLET
3145 E	CONCRETE PIPE TIES
4005 K	MANHOLE OR CATCH BASIN (DESIGN F)
4006 K	MANHOLE OR CATCH BASIN (DESIGN G OR DESIGN H)
4010 G	CONCRETE SHORT CONE & ADJUSTING RING
4101 C	RING CASTING FOR MANHOLE OR CATCH BASIN
4110 E	COVER CASTING FOR MANHOLE
4126 F	CATCH BASIN FRAME CASTING
4149 C	GRATE CASTING FOR CATCH BASIN
4161 F	CURB BOX CASTING FOR CATCH BASIN
4180 H	MANHOLE OR CATCH BASIN STEP
7035 J	CONCRETE WALK & CURB RETURNS AT ENTRANCES
7036 D	PEDESTRIAN CURB RAMP (FOR THE HANDICAPPED)
7100 B	CONCRETE CURB & GUTTER (DES. B)
7110 E	CURB & GUTTER CONSTRUCTION AT CATCH BASIN
7111 G	INSTALLATION & REINFORCEMENT OF CATCH BASIN CASTINGS
8000 I	STANDARD BARRICADES
8117 F	PRECAST CONCRETE HANDHOLE (OR PULLBOX)
9102 D	TURF ESTABLISHMENT AREAS (AT PIPE CULVERT ENDS)
9322 J	CHAIN LINK FENCE

SEE TRAFFIC SIGNAL PLAN SHEETS FOR ADDITIONAL STANDARD PLATES

NOTES

- ① FOR DUST CONTROL AS DIRECTED BY THE ENGINEER.
- ② FOR PROJECT TERMINI TO CONSTRUCT SMOOTH TRANSITION.
- ③ FOR DRIVEWAY CONSTRUCTION, SEE CHART (B). FOR BIT. PATH, SEE CHART (R)
- ④ FOR RECONSTRUCTION AND ADJUSTMENT OF SANITARY MANHOLES.
- ⑤ FOR PRIVATE ENTRANCE CONSTRUCTION INCLUDING APRONS.
- ⑥ FOR BUS PAD CONSTRUCTION
- ⑦ FOR CONCRETE RETAINING WALL
- ⑧ FOR EROSION CONTROL AT DRAINAGE STRUCTURES AND AS DIRECTED BY ENGINEERS.
- ⑨ FOR EROSION CONTROL ALONG TOE-OF-SLOPE, STA. 95+00 TO STA. 106+00, LEFT.
- ⑩ PARTICIPATION IN STORM SEWER IS AS FOLLOWS:
 S.P. 02-601-36 = 0.881
 S.P. 127-020-13 = 0.119
- ⑪ WATERMAIN INSULATION IN AREAS OF EXCESSIVE PROFILE LOWERING. ESTIMATE BASED ON 1500 FEET FROM STA. 103+00 TO STA. 118+00. ACTUAL AREAS TO BE DETERMINED IN FIELD.

FILE NAME: 0260136-01EST-001.DWG MN. (04-28-94)

DATE	REVISIONS BY	DATE	BY

CERTIFIED BY Douglas H. Fisher P.E. REG NO. 20235 8/19 19 94

S.P. 02-601-36 S. P. 127-020-13 C.P. _____ Sheet No. 3 of 70 Sheets

STATEMENT OF ESTIMATED QUANTITIES

STATEMENT OF ESTIMATED QUANTITIES

SHEET NO.	CHART	DESCRIPTION
4	A	CLEARING AND GRUBBING
4	B	DRIVEWAY REMOVAL AND CONSTRUCTION
5	C	SAWING CONCRETE PAVEMENT
5	D	SAWING BITUMINOUS PAVEMENT
5	E	BITUMINOUS PAVEMENT REMOVAL
5	F	FENCE CONSTRUCTION
5	G	RELOCATE HYDRANT AND VALVE
5	H	CONCRETE PAVEMENT REMOVAL
5	I	CURB & GUTTER REMOVAL
5	J	STONE RETAINING WALL REMOVAL
5	K	WOOD RETAINING WALL REMOVAL
5	L	FLUME REMOVAL
6	M	ADJUST VALVE BOX-WATER
6	N	RELOCATE CURB STOP AND BOX
6	O	TURF ESTABLISHMENT
6	P	CONCRETE CURB AND GUTTER
6	Q	CONCRETE PEDESTRIAN RAMPS
6	R	BITUMINOUS PATH
6	S	MEDIAN NOSE LOCATION
6	T	CONCRETE BUS PAD LOCATION
6	U	2" TEMP. BITUMINOUS WEAR COURSE
6	V	CONC. AND STONE RETAINING WALL
6	W	CONCRETE MEDIAN CONSTRUCTION
6	X	DRAINAGE CASTING SCHEDULE
7	Y	EARTHWORK SUMMARY
16	Z	LEFT AND RIGHT TURN LANE OR BUS STOP LOCATION
19	AA	ALIGNMENT TABULATION
27	BB	DRAINAGE TABULATION
27	CC	EXISTING DRAINAGE TABULATION
38	DD	PERMANENT SIGNING QUANTITIES
5	EE	SANITARY SEWER MODIFICATIONS
7	FF	BASE AND BITUMINOUS QUANTITIES CHART

BASIS OF PLANNED QUANTITIES

- 2340 TYPE 41 PLANT MIXED WEARING COURSE AND BINDER COURSE BITUMINOUS MIXTURE 110 LBS./SQ.YD. PER 1" THICKNESS
- 2340 TYPE 31 PLANT MIXED BASE BITUMINOUS MIXTURE 110 LBS./SQ.YD. PER 1" THICKNESS
- 2357 BITUMINOUS MATERIAL FOR TACK 0.05 GALLONS PER SQ.YD. PER LIFT APPLIED
- 2575 MULCH MATERIAL TYPE 1.2 TONS PER ACRE
- 2575 COMMERCIAL FERTILIZER, ANALYSIS 10-10-10 500 LBS./ACRE ON ALL SEED AND SOD AREAS
- 2575 ROADSIDE SEEDING BASED ON HORIZONTAL MEASUREMENT +10% SEED MIXTURE NO. 600, 75LBS. PER ACRE

NOTES

- (1) FOR DUST CONTROL AS DIRECTED BY THE ENGINEER.
- (2) FOR PROJECT TERMINI TO CONSTRUCT SMOOTH TRANSITION.
- (3) FOR DRIVEWAY CONSTRUCTION, SEE CHART (B). FOR BIT. PATH, SEE CHART (R) BASED ON 2".
- (4) FOR RECONSTRUCTION AND ADJUSTMENT OF SANITARY MANHOLES.
- (5) FOR PRIVATE ENTRANCE CONSTRUCTION INCLUDING APRONS.
- (6) FOR BUS PAD CONSTRUCTION
- (7) FOR CONCRETE RETAINING WALL
- (8) FOR EROSION CONTROL AT DRAINAGE STRUCTURES AND AS DIRECTED BY ENGINEERS.
- (9) FOR EROSION CONTROL ALONG TOE-OF-SLOPE, STA. 95+00 TO STA. 106+00, LEFT.
- (10) PARTICIPATION IN STORM SEWER IS AS FOLLOWS:
S.P. 02-601-36 = 0.881
S.P. 127-020-13 = 0.119
- (11) WATERMAIN INSULATION IN AREAS OF EXCESSIVE PROFILE LOWERING. ESTIMATE BASED ON 1500 FEET FROM STA. 103+00 TO STA. 118+00. ACTUAL AREAS TO BE DETERMINED IN FIELD.

STATEMENT OF ESTIMATED QUANTITIES

CHART NO.	ITEM NO.	ITEM	UNIT	TOTAL QUANTITIES		ANDKA COUNTY				CITY OF FRIDLEY				STORM SEWER (10)		
				EST.	FINAL	S.P. 02-601-36		NON-PARTICIPATING		S.P. 127-020-13		NON-PARTICIPATING		EST.	FINAL	
	0015.601	COMPUTER EQUIPMENT	LUMP SUM	1												
	0015.601	CELLULAR MOBILE TELEPHONE	LUMP SUM													
	2021.501	MOBILIZATION	LUMP SUM	1.00			0.70			0.15						0.12
	2031.501	FIELD OFFICE TYPE D	EACH	1.00			0.70			0.15						0.12
A	2101.501	CLEARING	ACRE	0.60			0.60									
A	2101.502	CLEARING	TREE	116			116									
A	2101.506	GRUBBING	ACRE	0.60			0.60									
A	2101.507	GRUBBING	TREE	94			94									
	2102.502	PAVEMENT MARKING REMOVAL	LIN FT	8100			8100									
F	2104.501	REMOVE FENCE	LIN FT	645			645									
K	2104.501	REMOVE WOOD RETAINING WALL	LIN FT	76			76									
J	2104.501	REMOVE STONE RETAINING WALL	LIN FT	16			16									
CC	2104.501	REMOVE SEWER PIPE (STORM)	LIN FT	860			860									
I	2104.501	REMOVE CURB & GUTTER	LIN FT	1742			1742									
B,E	2104.505	REMOVE BITUMINOUS PAVEMENT	SQ YD	27656			27656									
B,H	2104.505	REMOVE CONCRETE PAVEMENT	SQ YD	410			410									
L	2104.509	REMOVE CONCRETE FLUME	EACH	3			3									
L	2104.509	REMOVE BITUMINOUS FLUME	EACH	2			2									
CC	2104.509	REMOVE DRAINAGE STRUCTURE	EACH	6			6									
CC	2104.509	REMOVE CONCRETE APRON	EACH	1			1									
C	2104.511	SAWING CONCRETE PAVEMENT	LIN FT	118			118									
D	2104.513	SAWING BITUMINOUS PAVEMENT	LIN FT	758			758									
F	2104.521	SALVAGE FENCE	LIN FT	1862			1862									
CC	2104.523	SALVAGE CASTING	EACH	3			3									
	2104.523	SALVAGE SIGN TYPE C	EACH	32			32									
Y	2105.501	COMMON EXCAVATION	CU YD	26324 (P)			26324									
Y	2105.525	TOPSOIL BORROW (LV)	CU YD	783			783									
(1)	2130.501	WATER	M-GAL	30			30									
FF	2211.503	AGGREGATE BASE PLACED CLASS 5A	CU YD	4524 (P)			4524									
(2)	2232.501	MILL BITUMINOUS SURFACE (2")	SQ YD	638			638									
(6)	0301.603	CONCRETE PAVEMENT (SPLICAL)	SQ YD	462			462									
(3)	B,R	WEARING COURSE MIXTURE	SQ YD - IN	8004			1488			6516						
	U	WEARING COURSE MIXTURE (MOD)	SQ YD - IN	6694			6694									
FF	2340.508	TYPE 41 WEARING COURSE MIXTURE	TON	2743			2743									
FF	2340.510	TYPE 41 BINDER COURSE MIXTURE	TON	4535			4535									
FF	2340.514	TYPE 31 BASE COURSE MIXTURE	TON	7903			7903									
FF	2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	4856			4856									
V	0411.603	CONSTRUCT STONE RETAINING WALL	SQ FT	544			544									
V	0411.604	CONCRETE RETAINING WALL	LIN FT	420			420									
	0412.602	RELOCATE MAIL BOX	EACH	48			48									
BB	2501.515	18" RC PIPE APRON	EACH	1												1
BB	2503.541	12" RC PIPE SEWER DESIGN 3006	LIN FT	1317												1317
BB	2503.541	15" RC PIPE SEWER DESIGN 3006	LIN FT	2576												2576
BB	2503.541	18" RC PIPE SEWER DESIGN 3006	LIN FT	536												536
BB	2503.541	18" RC PIPE SEWER DESIGN 3006 CLASS III	LIN FT	28												28
BB	2503.541	24" RC PIPE SEWER DESIGN 3006	LIN FT	49												49
N	0504.602	RELOCATE CURB STOP & BOX	EACH	13						13						
M	0504.602	ADJUST VALVE BOX-WATER	EACH	14						14						
G	0504.602	RELOCATE HYDRANT & VALVE	EACH	5						5						
(11)	0504.605	2" INSULATION	SQ YD	667						667						
BB	2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN H	LIN FT	91.5												91.5
BB	2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN F	LIN FT	91.4												91.4
BB	2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN G	LIN FT	103.3												103.3
CC	2506.503	RECONSTRUCT DRAINAGE STRUCTURE	LIN FT	4.8												4.8
X, BB	2506.516	CASTING ASSEMBLY	EACH	64												64
BB, CC	2506.521	INSTALL CASTING	EACH	3												3
BB, CC	2506.522	ADJUST FRAME & RING CASTING	EACH	10												10
(4)	EE	ADJUST FRAME & RING CASTING (SPLC)	EACH	15						15						
(4)	EE	RECONSTRUCT MANHOLES	EACH	5						5						
BB	2511.507	GRouted RIPRAP	CU YD	4.4												4.4
W	2521.501	4" CONCRETE WALK	SQ FT	27219			27219									
P	2531.501	CONCRETE CURB AND GUTTER DESIGN B612	LIN FT	7345			7345									
P	2531.501	CONCRETE CURB AND GUTTER DESIGN B618	LIN FT	8147			4073.5			4073.5						
(5)	B	6" CONCRETE DRIVEWAY PAVEMENT	SQ YD	297			297									
Q	0531.602	PEDESTRIAN CURB RAMP	EACH	9			4			5						

REVISIONS BY DATE

FILE NAME: 0260136.Q1EST-00.DWG. HW: 04-28-94

M.U.T.C.D. CODE	SIZE	INSERT	STAGE II	STAGE III	STAGE IV	M.U.T.C.D. CODE	SIZE	INSERT	STAGE II	STAGE III	STAGE IV
			QTY	QTY	QTY				QTY	QTY	QTY
R1-1	48"x48"		• 2	• 2	• 4	FLAG / FLASHER					
R1-4	18"x16"		• 4	• 4	• 6	W4-2L	48"x48"		• 1	• 1	• 2
R2-1	24"x30"		• 7	• 8	• 5	W6-1	48"x48"		• 1	• 1	• 0
R2-5a	24"x30"		• 4	• 4	• 4	W6-3	48"x48"		• 2	• 2	• 0
R3-2	24"x24"		• 0	• 2	• 2	FLAG / FLASHER					
R4-7	30"x36"		• 5	• 4	• 7	W20-1	48"x48"		• 18	• 18	• 18
X4-2	18"x18"		• 5	• 4	• 7	FLAG / FLASHER					
R3-X1	30"x30"		• 1	• 1	• 5	W20-X1L	48"x48"		• 2	• 2	• 4
R3-X2	30"x30"		• 1	• 0	• 3	FLAG / FLASHER					
R5-1	30"x30"		• 3	• 3	• 7	W20-X1R	48"x48"		• 2	• 2	• 0
R6-1R	36"x12"		• 0	• 1	• 8	FLAG / FLASHER					
R6-1L	36"x12"		• 3	• 4	• 11	W20-X3L	48"x48"		• 1	• 1	• 0
W1-6L	48"x24"		• 1	• 2	• 0	FLAG / FLASHER					
TYPE III	8 FT.		• 23	• 10	• 0	W20-X3R	48"x48"		• 1	• 1	• 2
W1-6R	48"x24"		• 4	• 3	• 11	W21-X1	48"x48"		• 3	• 1	• 0
TYPE III	8 FT.		• 5	• 12	• 11	X4-4R	12"x36"		• 2	• 0	• 0
M6-2	21"x15"		• 1	• 0	• 1	G20-2	60"x24"		• 2	• 2	• 2
W1-4R	48"x48"		• 1	• 1	• 0	REBOUNDABLE DRUM REFLECTORIZED			• 130	• 154	• 220
W13-1	24"x24"		• 1	• 1	• 0						
W3-1	48"x48"		• 2	• 3	• 4						
FLAG / FLASHER											
W4-2R	48"x48"		• 1	• 1	• 0						

STANDARD TRAFFIC CONTROL NOTES

- 1) LOCATIONS OF ALL SIGNS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- 2) ALL BARRICADES AND SIGNS SHALL BE PROPERLY WEIGHTED WITH SANDBAGS.
- 3) ALL BARRICADES SHALL HAVE REFLECTIVE MATERIAL ON BOTH SIDES.
- 4) ALL BARRICADE MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE MINNESOTA MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
- 5) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MOST RECENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING APPENDIX 'B'. DATED NOVEMBER, 1992.
- 6) ADDITIONS OR CHANGES TO THIS PLAN MAY BE MADE AS DETERMINED BY THE ENGINEER.

C.S.A.H. # 1

STAGE QUANTITIES
TRAFFIC CONTROL

REVISIONS	BY	DATE
DATE	BY	DM
8/9/94		