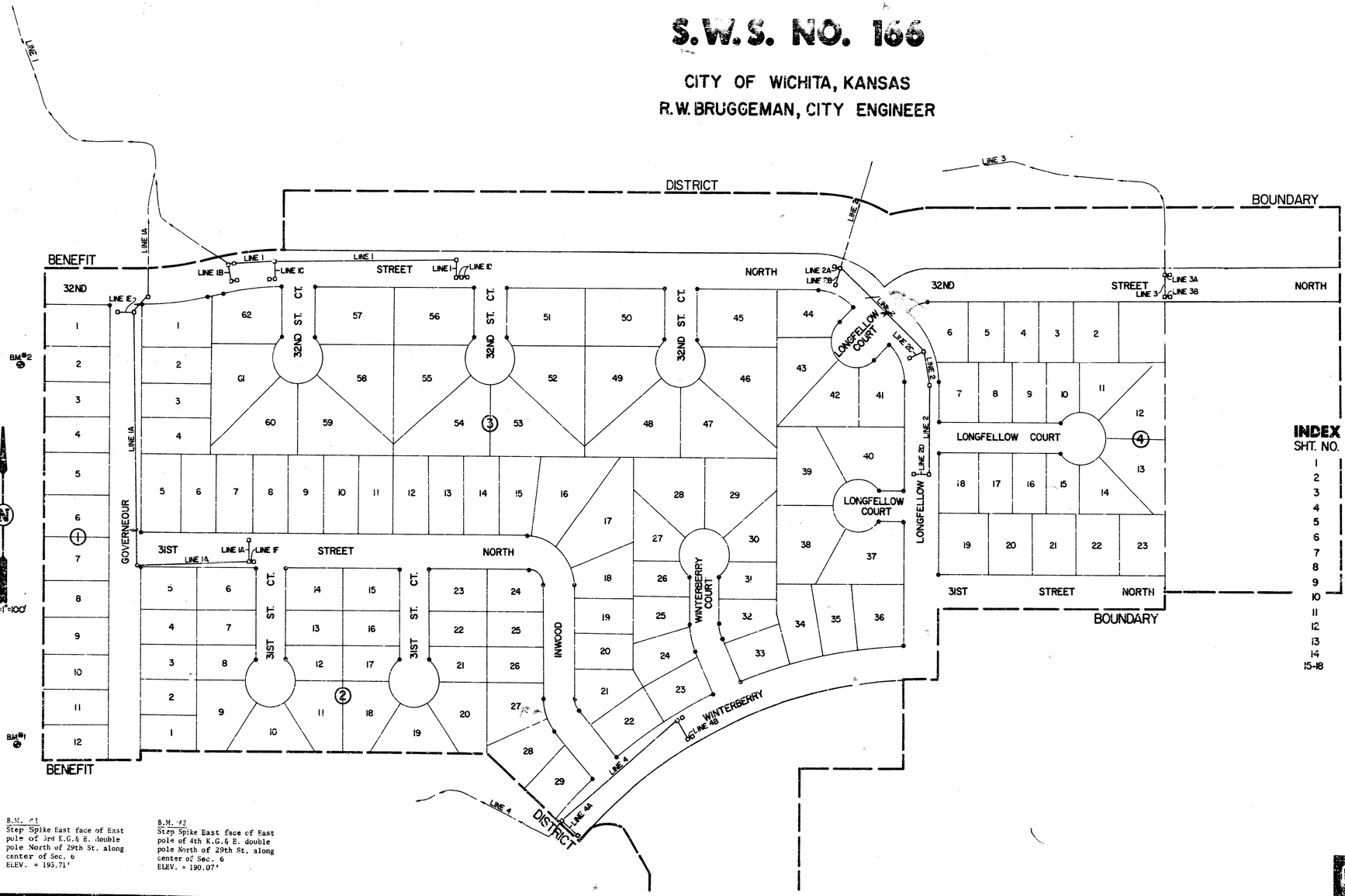
STORM SEWERS IN
COTTONWOOD VILLAGE FOURTH ADDITION
PROJECT NO. 468-76-245-80793-000-000-001
S.W.S. NO. 166

CITY OF WICHITA, KANSAS
R.W. BRUGGEMAN, CITY ENGINEER



B.M. #1
Step Spike East face of East pole of 3rd K.G.& E. double pole North of 29th St. along center of Sec. 6
ELEV. = 195.71'

B.M. #2
Step Spike East face of East pole of 4th K.G.& E. double pole North of 29th St. along center of Sec. 6
ELEV. = 190.07'

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3	GENERAL NOTES & LINE 1 & 1B
4	LINE 1, 1C, & 1D
5	LINE 1A, 1E & LINE 2
6	LINE 1A
7	LINE 1A, 1F, LINE 3, 3A & 3B
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10	LINE 3
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12	LINE 4, 4A & 4B
13	TYPE IA CURB INLET DETAIL
14	WASH CHECK
15-18	CROSS SECTIONS

Van Doren Hazard Stallings
Architects · Engineers · Planners
Topeka · Wichita · Minneapolis · Kansas City

Sheet 1 of 18

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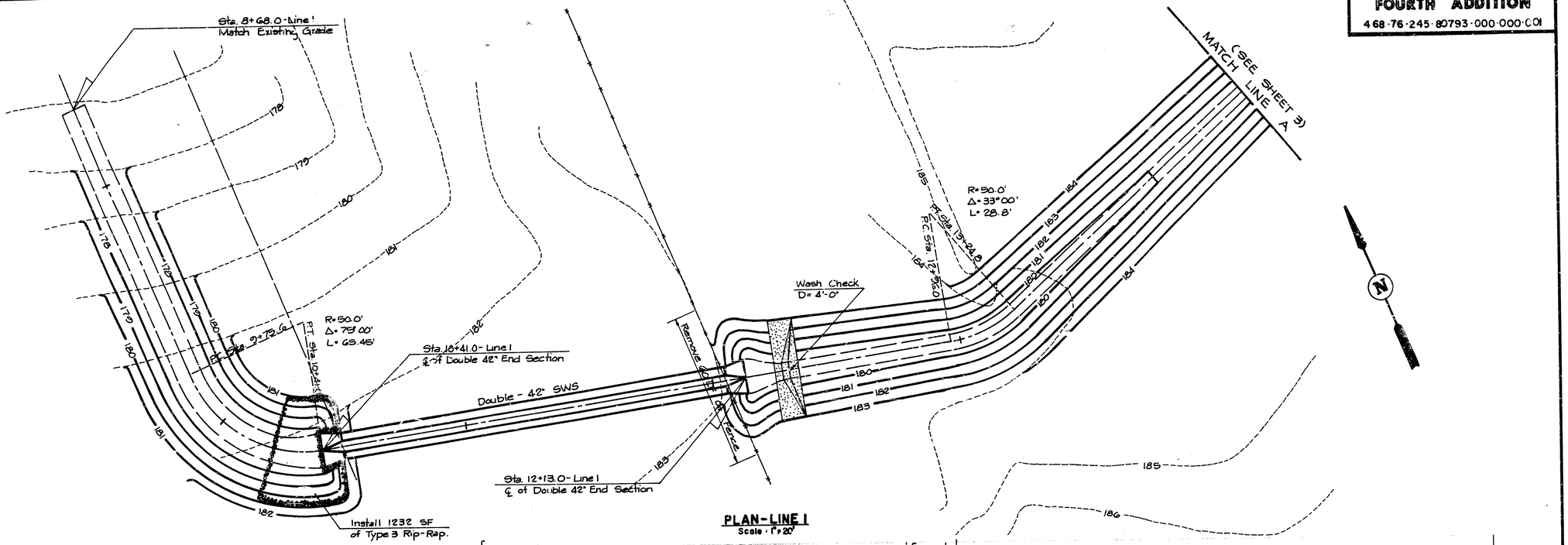
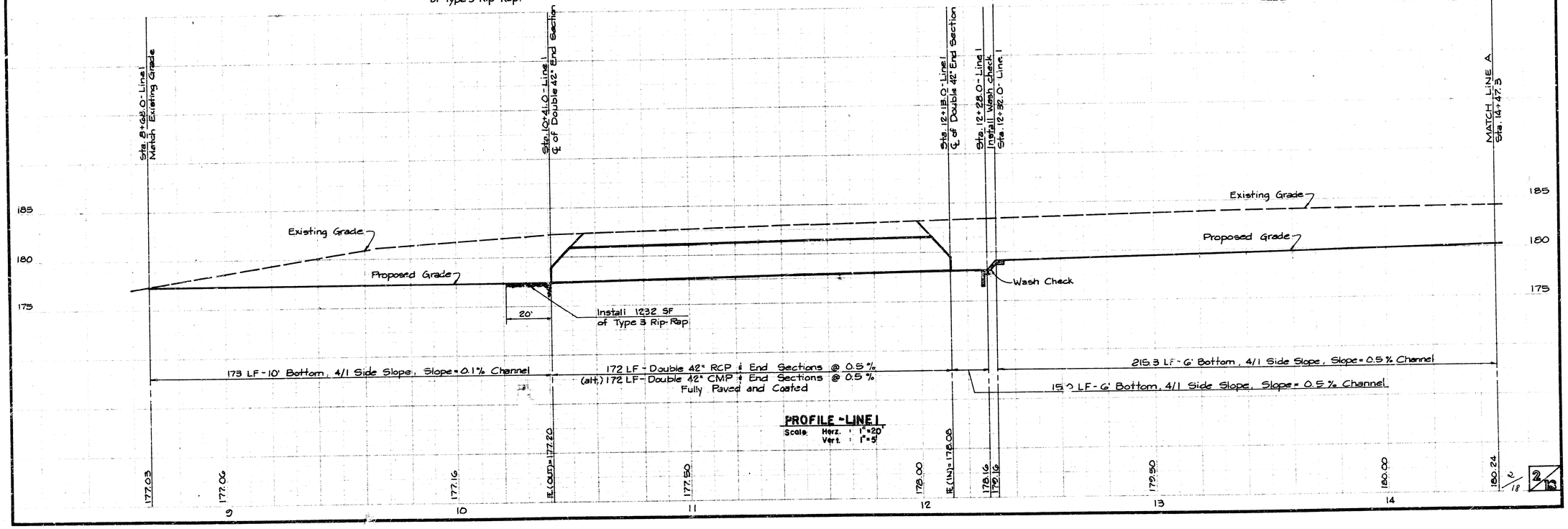
COTTONWOOD VILLAGE
FOURTH ADDITION
468-76-245-80793-000-000-C01



PLAN - LINE 1
Scale: 1" = 20'



PROFILE - LINE 1
Scale: Horz. : 1" = 20'
Vert. : 1" = 5'

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COTTONWOOD VILLAGE
FOURTH ADDITION
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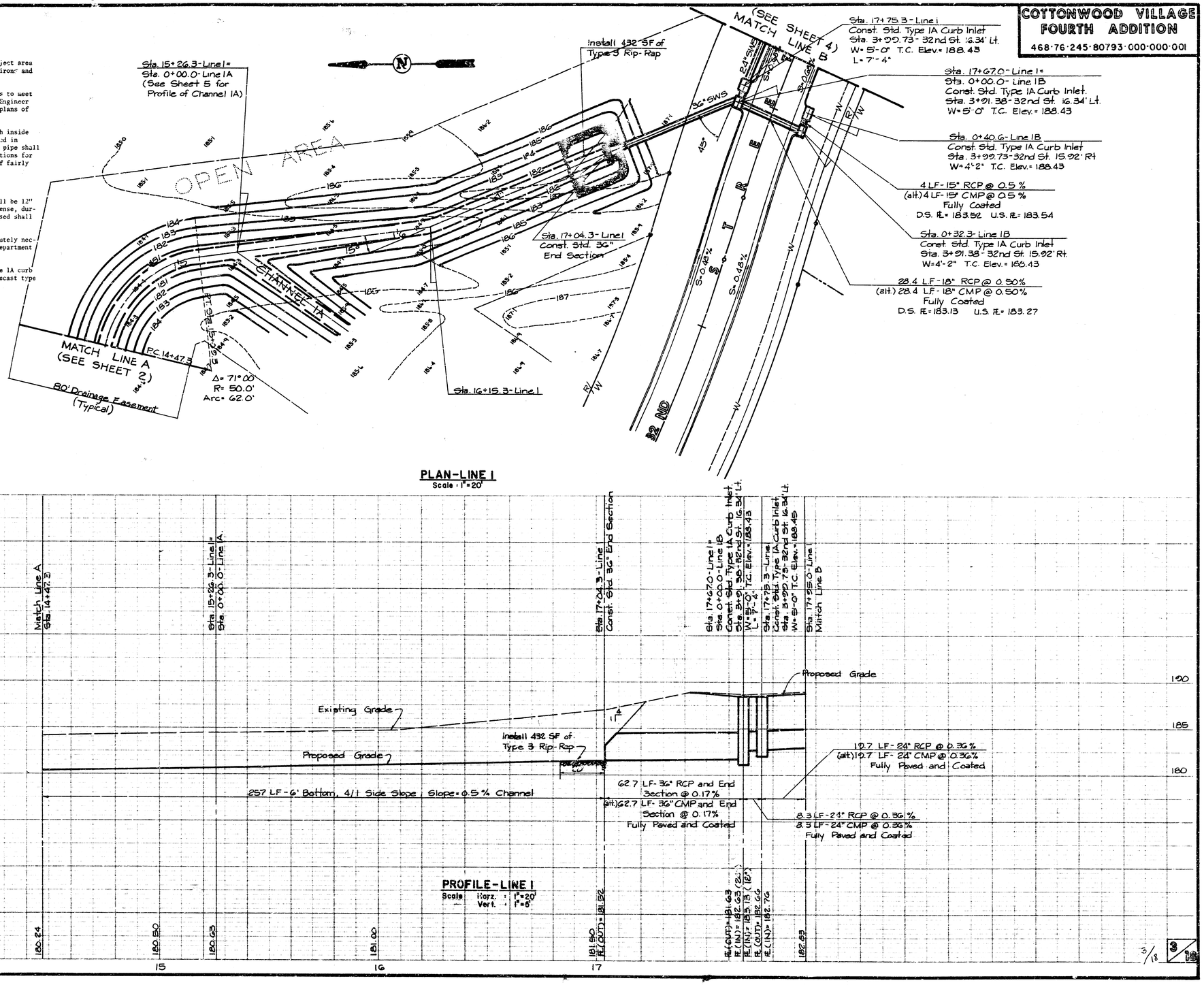
GENERAL NOTES

1. Field Engineer shall take ties to all irons and thimbles in the project area before construction begins. Field Engineer shall replace all such irons and thimbles disturbed during construction.
2. The tops of inlets and manholes as noted on the plans may vary so as to meet proposed top of curb elevations or pavement elevations. The Field Engineer shall locate inlets and manholes with reference to proposed paving plans of the pertinent streets
3. All metal pipes shall be helically corrugated pipe fully coated both inside and outside. The coating may be bituminous or polymeric as specified in AASHTO Designation: M246 - 78, Type B. All such coated corrugated pipe shall be smooth flow pipes for sizes 24" diameter and larger. All connections for these fully coated or fully paved and fully coated pipes shall be of fairly watertight construction using hugger type coupler or equal.
4. All concrete shall be Standard Paving Mix unless otherwise noted.
5. The riprap for this project shall be type 3. The type 3 riprap shall be 12" riprap. The rock for riprap and gravel protection shall be hard, dense, durable and shall be reasonably well graded. The size range of rock used shall be a maximum of one cubic foot and a minimum of 1 1/2".
6. Contractor shall avoid uncovering existing water lines unless absolutely necessary. Uncovering shall be done only in the presents of a Water Department Engineer.
7. Contractor shall have the option of installing precast concrete type 1A curb inlets in lieu of the brick type structure. See standard detail precast type 1A curb inlet, dated August, 1979.



PLAN-LINE 1
Scale : 1"=20'

PROFILE-LINE 1
Scale Horz. : 1"=20'
Vert. : 1"=5'

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3/18

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COTTONWOOD VILLAGE
FOURTH ADDITION
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Sta. 18+41.0 - Line 1 = Sta. 0+00.0 - Line 1C
Const. Std. Type 1A Curb Inlet
Sta. 4+63.75 - 32nd St. 16.34' Lt.
W= 5'-0" T.C. Elev.= 188.73

28.4 L.F. - 18" RCP @ 0.5%
(alt.) 28.4 L.F. - 18" CMP @ 0.5%
Fully Coated
D.S. IE = 183.50 U.S. IE = 183.64

Sta. 22+09.6 - Line 1
Const. Std. Type 1A Curb Inlet
Sta. 8+32.29 - 32nd St. 15.92' Lt.
W= 4'-2" T.C. Elev.= 194.29

MATCH LINE B (SEE SHEET 3)

S= 0.68%

S= 0.68%

S= 1.60%

S= 1.60%

S= 0.84%

S= 0.84%

3 2 ND S T R E E T

R/W

W

Lot 62

Lot 57

Lot 56

Lot 51

32ND ST. CT.

Sta. 0+40.6 - Line 1C
Const. Std. Type 1A Curb Inlet
Sta. 4+55.40 - 32nd St. 15.92' Rt.
W= 4'-2" T.C. Elev.= 188.67

4 L.F. - 15" RCP @ 0.5%
(alt.) 4 L.F. - 15" CMP @ 0.5%
Fully Coated
D.S. IE = 183.89 U.S. IE = 183.91

Sta. 0+32.3 - Line 1C
Const. Std. Type 1A Curb Inlet
Sta. 4+63.75 - 32nd St. 15.92' Rt.
W= 4'-2" T.C. Elev.= 188.73

Sta. 22+41.5 - Line 1 =
Sta. 0+00.0 - Line 1D
Const. Std. Type 1A Curb Inlet
Sta. 8+32.29 - 32nd St. 15.92' Rt.
W= 4'-2" T.C. Elev.= 194.29

4 L.F. - 18" RCP @ 0.5%
(alt.) 4 L.F. - 18" CMP @ 0.5%
Fully Coated
D.S. IE = 189.50 U.S. IE = 189.52

Sta. 0+08.4 - Line 1D
Const. Std. Type 1A Curb Inlet
Sta. 8+40.64 - 32nd St. 15.92' Rt.
W= 4'-2" T.C. Elev.= 194.42

Sta. 0+16.7 - Line 1D
Const. Std. Type 1A Curb Inlet
Sta. 8+48.99 - 32nd St. 15.92' Rt.
W= 4'-2" T.C. Elev.= 194.55

4 L.F. - 15" RCP @ 0.5%
(alt.) 4 L.F. - 15" CMP @ 0.5%
Fully Coated
D.S. IE = 189.77 U.S. IE = 189.79

N

PLAN - LINE 1, 1C & 1D
Scale : 1" = 20'

PROFILE - LINE 1
Scale Horiz. : 1" = 20'
Vert. : 1" = 5'

Sta. 17+95.0 - Line 1
Match Line B

Sta. 18+41.0 - Line 1A = Sta. 0+00.0 - Line 1C
Const. Std. Type 1A Curb Inlet
Sta. 4+63.75 - 32nd St. 15.92' Lt.
W= 4'-2" T.C. Elev.= 188.73

Sta. 22+09.6 - Line 1
Const. Std. Type 1A Curb Inlet
Sta. 8+32.29 - 32nd St. 15.92' Lt.
W= 4'-2" T.C. Elev.= 194.29

Sta. 22+41.5 - Line 1
Sta. 0+00.0 - Line 1D
Const. Std. Type 1A Curb Inlet
Sta. 8+32.29 - 32nd St. 15.92' Rt.
W= 4'-2" T.C. Elev.= 194.29

Existing Grade

Proposed Grade

Existing Grade

Proposed Grade

195

190

185

46.0 L.F. - 24" RCP @ 0.36%
(alt.) 46.0 L.F. - 24" CMP @ 0.36%
Fully Paved and Coated

368.6 L.F. - 21" RCP @ 1.55%
(alt.) 368.6 L.F. - 21" CMP @ 1.55%
Fully Paved and Coated

31.8 L.F. - 21" RCP @ 0.57%
(alt.) 31.8 L.F. - 21" CMP @ 0.57%
Fully Paved and Coated

IE (OUT) = 183.00
IE (IN) = 183.25 (21")
IE (IN) = 183.50 (18")

182.83
182.85

184.16

185.71

187.26

189.84

IE (OUT) = 193.82
IE (IN) = 193.97

IE (OUT) = 193.25
IE (IN) = 193.50

195

190

185

18

19

20

21

22

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COTTONWOOD VILLAGE FOURTH ADDITION

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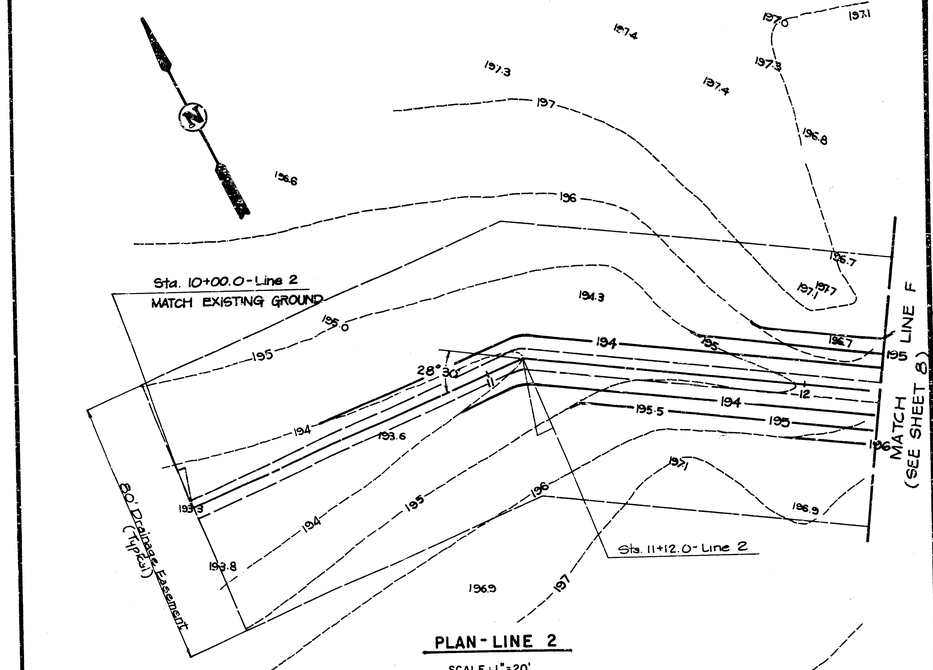
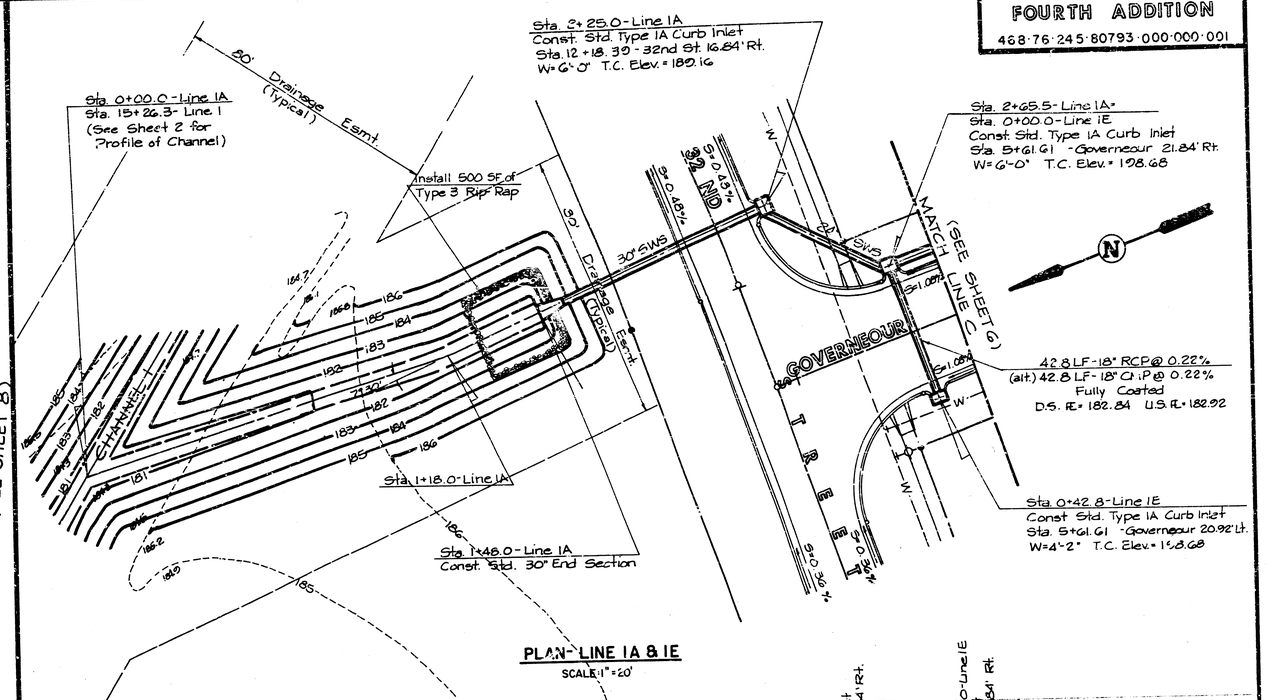


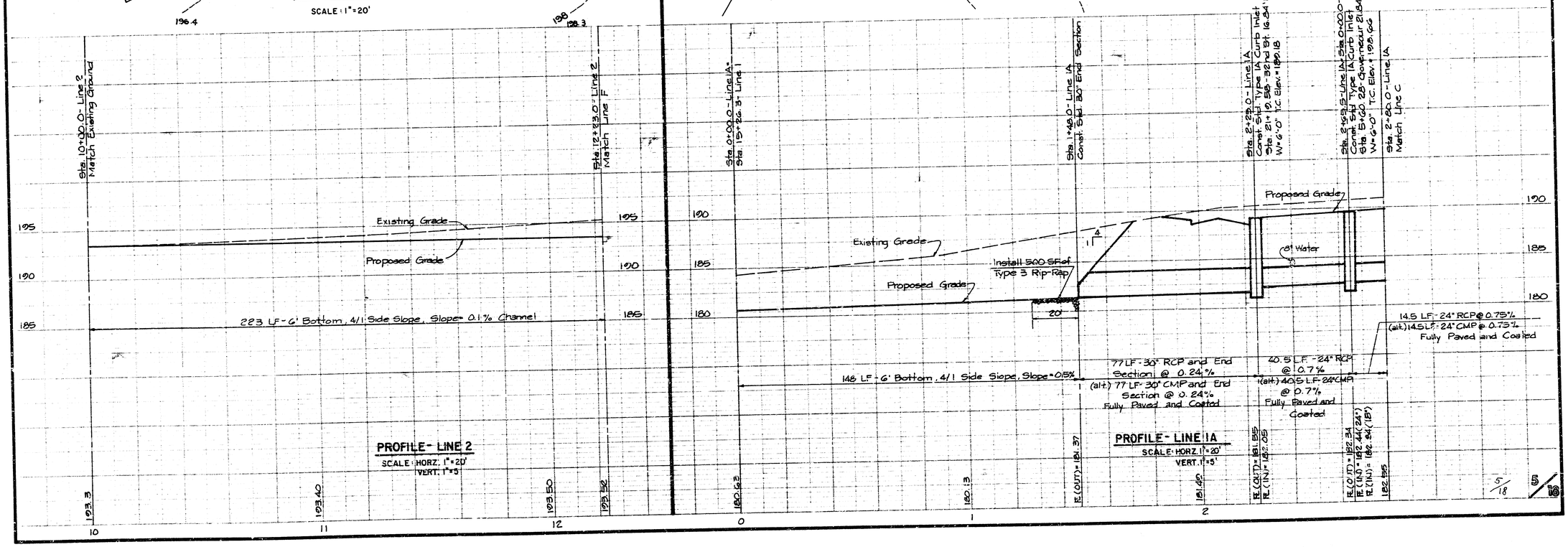
PLAN - LINE 2

SCALE: 1" = 20'



PLAN - LINE 1A & 1E

SCALE: 1" = 20'



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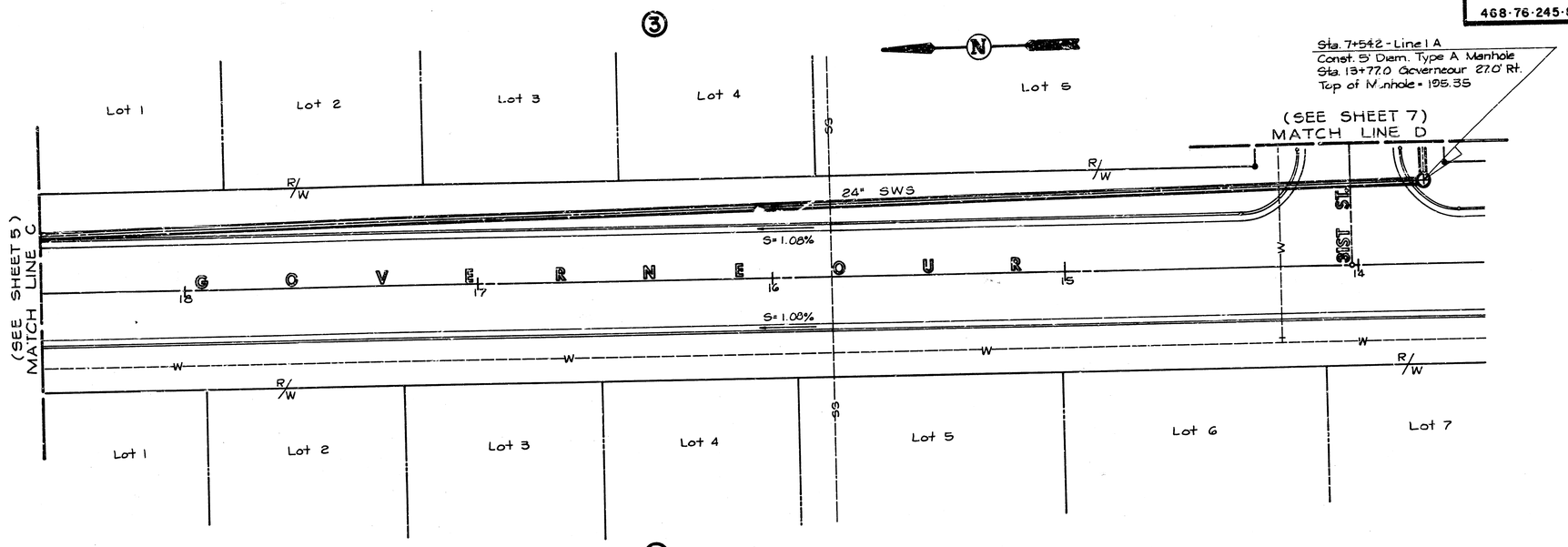
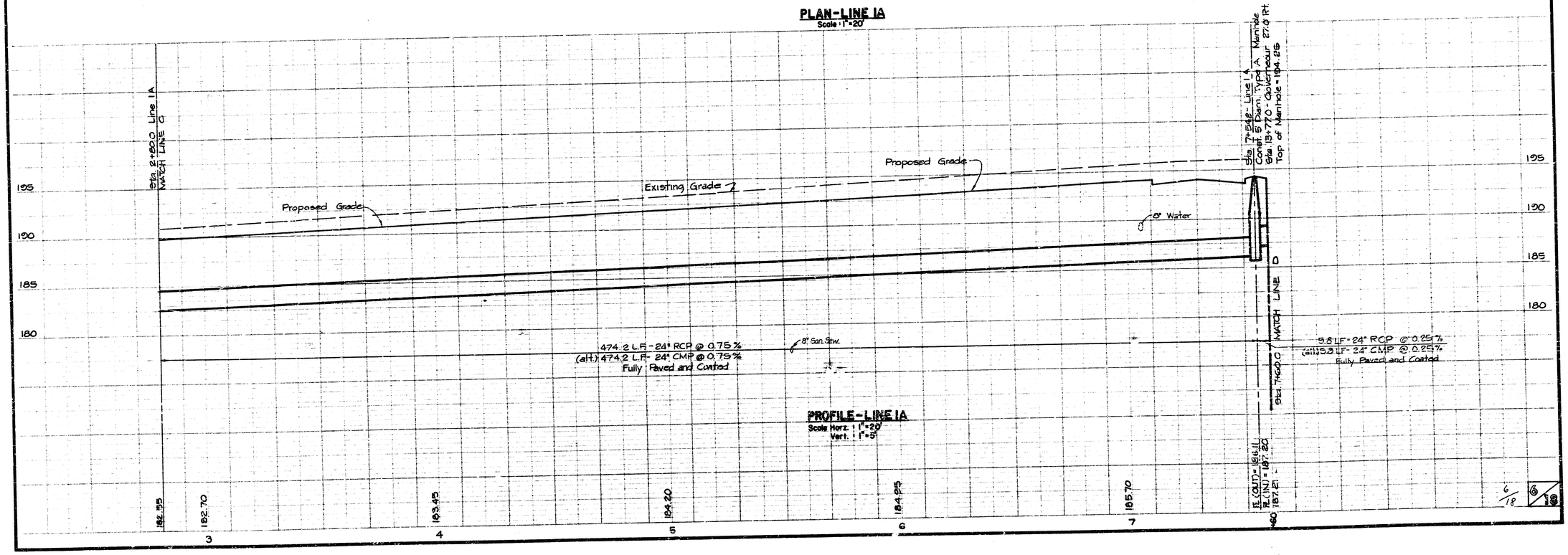
COTTONWOOD VILLAGE
FOURTH ADDITION
468-76-245-80793-000-000-001



PLAN-LINE IA
Scale 1"=20'

PROFILE - LINE IA
Scale Horz. : 1"=20'
Vert. : 1"=5'



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COTTONWOOD VILLAGE FOURTH ADDITION
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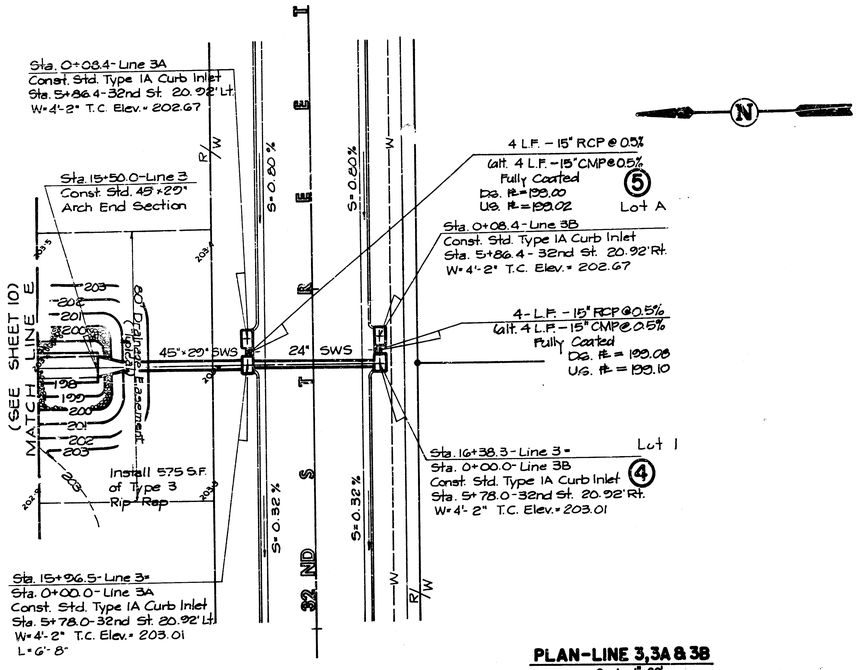
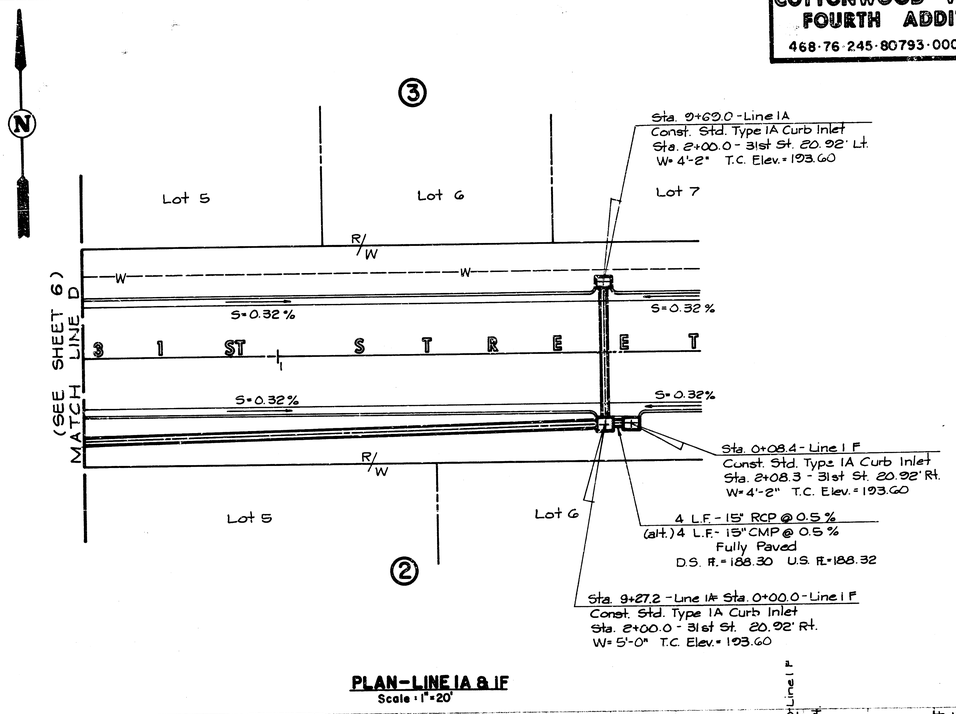
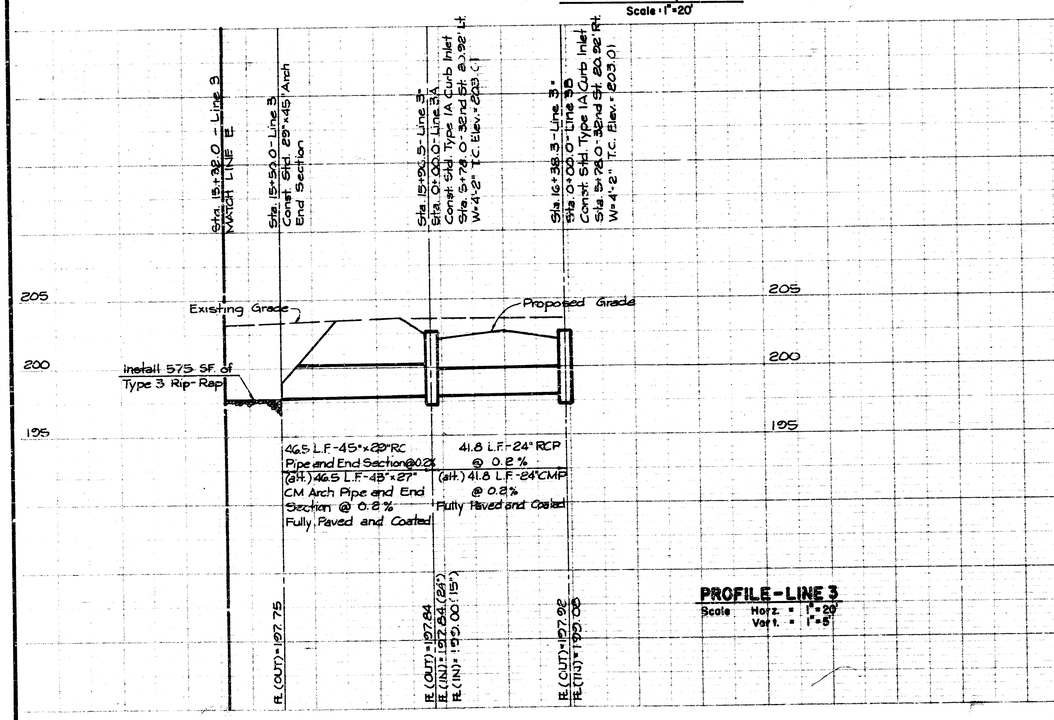


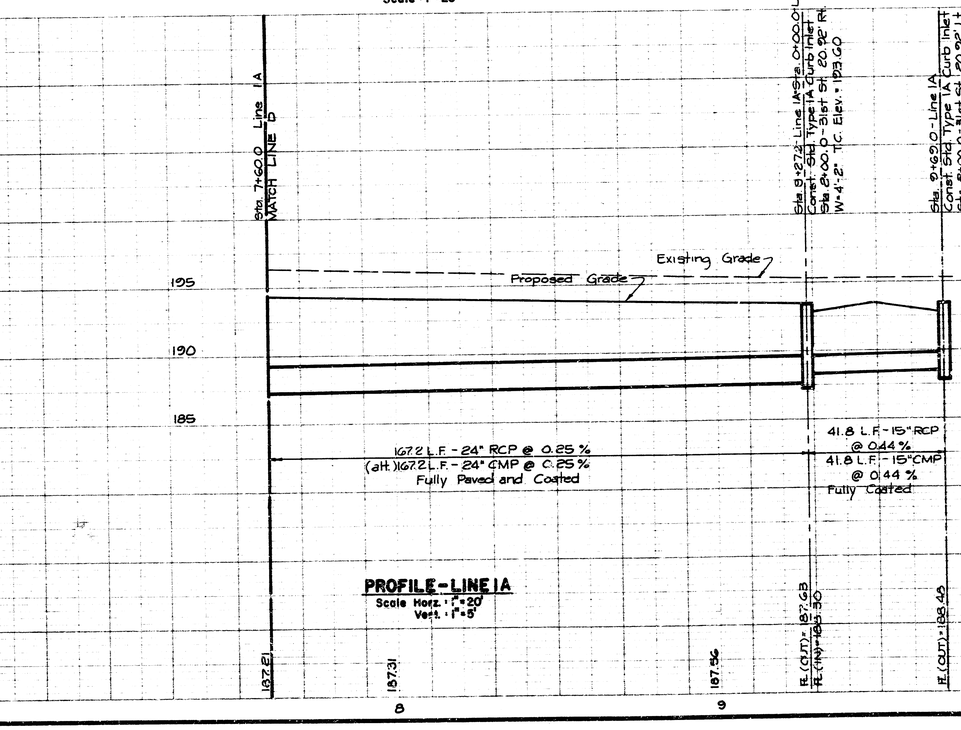
PLAN - LINE 3, 3A & 3B
Scale: 1"=20'



PLAN - LINE 1A & 1F
Scale: 1"=20'



PROFILE - LINE 3
Scale Horz. = 1"=20'
Vert. = 1"=5'



PROFILE - LINE 1A
Scale Horz. = 1"=20'
Vert. = 1"=5'

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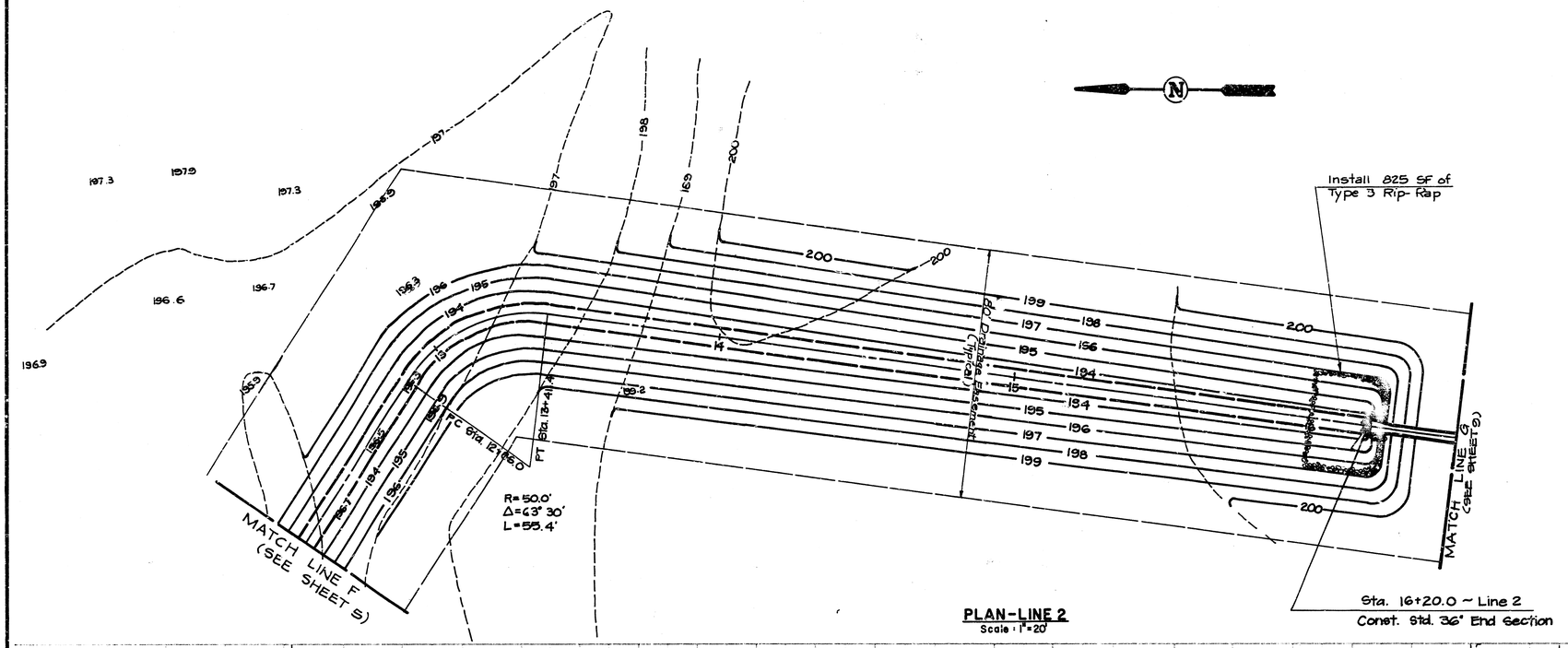
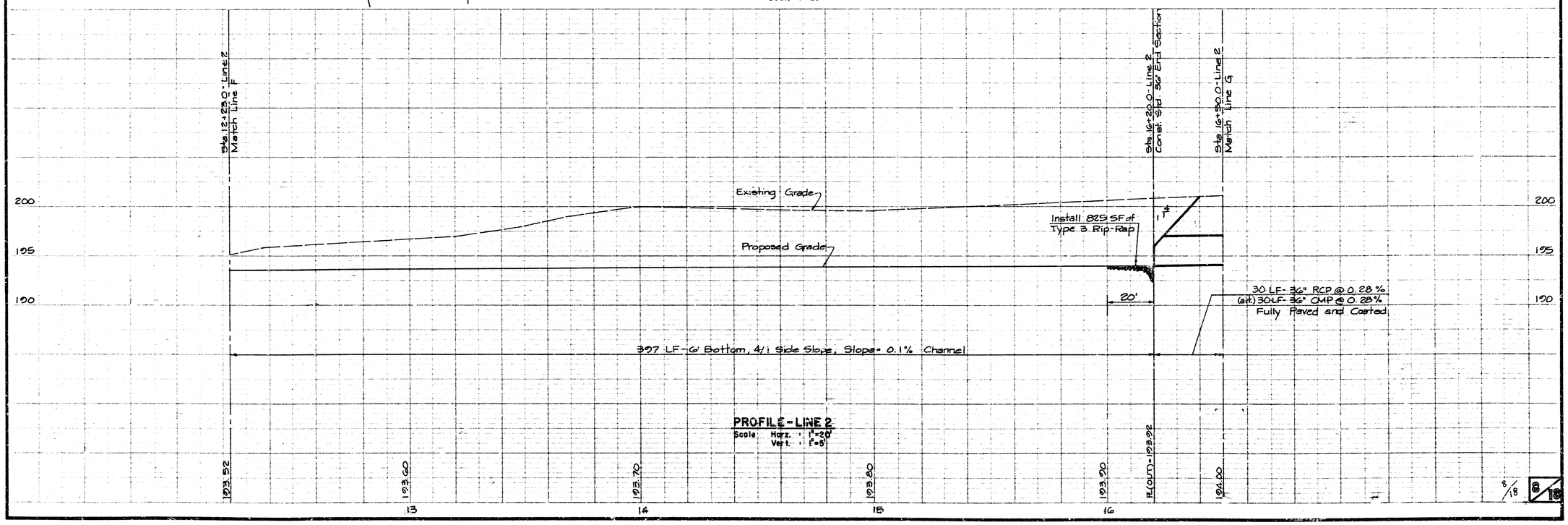


PLAN-LINE 2
Scale : 1"=20'



PROFILE-LINE 2
Scale Horz. : 1"=20'
Vert. : 1'=5'

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COTTONWOOD VILLAGE FOURTH ADDITION

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Sta. 19+08.2 - Line 2
Sta. 0+00.0 - Line 2C
Const. Std. Type 1A Curb Inlet
Sta. 18+25.0 - Longfellow 16.34' Lt.
W= 5'-0" T.C. Elev.= 200.87

28.4 LF - 15" RCP @ 0.5%
(alt.) 28.4 LF - 15" CMP @ 0.5%
Fully Coated
D.S. FE=196.64 U.S. FE=196.78

Sta. 19+64.7 - Line 2
Const. Std. Type 1A Curb Inlet
Sta. 18+76.22 - Longfellow 15.92' Lt.
W= 4'-2" T.C. Elev.= 200.91

Sta. 16+73.0 - Line 2=
Sta. 0+00.0 - Line 2A=
Sta. 0+00.0 - Line 2B
Const. Std. Type 1A Curb Inlet
Sta. 16+00.0 - 32nd St. 17.34' Lt.
W= 7'-0" T.C. Elev.= 200.53

32ND STREET

24" SWS

21" SWS

LONGFELLOW

S= 0.32%

S= 0.6%

4 LF - 15" RCP @ 0.5%
(alt.) 4 LF - 15" CMP @ 0.5%
Fully Coated
D.S. FE=195.02 U.S. FE=195.84

(SEE SHEET 8) MATCH LINE 8

Sta. 0+38.4 - Line 2A
Const. Std. Type 1A Curb Inlet
Sta. 15+91.65 - 32nd St. 15.92' Lt.
W= 4'-2" T.C. Elev.= 200.48

28.4 LF - 15" RCP @ 0.5%
(alt.) 28.4 LF - 15" CMP @ 0.5%
Fully Coated
D.S. FE=195.82 U.S. FE=195.96

Sta. 0+33.3 - Line 2B
Const. Std. Type 1A Curb Inlet
Sta. 16+00.0 - 32nd St. 15.92' Rt.
W= 4-2" T.C. Elev.= 200.53

Sta. 0+32.3 - Line 2C
Const. Std. Type 1A Curb Inlet
Sta. 18+25.0 - 32nd St. 15.92' Rt.
W= 4'-2" T.C. Elev.= 200.87

Sta. 21+38.5 - Line 2=
Sta. 0+00.0 - Line 2D
Const. Std. Type 1A Curb Inlet
Sta. 20+50.0 - Longfellow 15.92' Lt.
W= 4'-2" T.C. Elev.= 200.96

28.3 LF - 15" RCP @ 0.5%
(alt.) 28.3 LF - 15" CMP @ 0.5%
Fully Coated
D.S. FE=197.27 U.S. FE=197.41

Sta. 0+31.8 - Line 2D
Const. Std. Type 1A Curb Inlet
Sta. 20+50.0 - 32nd St. 15.92' Rt.
W= 4'-2" T.C. Elev.= 200.96

S=0.614%

S=0.32%

PLAN - LINE 2, 2A, 2B, 2C & 2D

Scale : 1" = 20'

Sta. 16+50.0 - Line 2=
Match Line 6

Sta. 16+73.0 - Line 2=
Sta. 0+00.0 - Line 2A=
Sta. 0+00.0 - Line 2B
Const. Std. Type 1A Curb Inlet
Sta. 16+00.0 - 32nd St. 16.34' Lt.
W= 7'-0" T.C. Elev.= 200.53

Sta. 19+08.2 - Line 2=
Sta. 0+00.0 - Line 2C
Const. Std. Type 1A Curb Inlet
Sta. 18+25.0 - Longfellow 16.34' Lt.
W= 5'-0" T.C. Elev.= 200.87

Sta. 19+64.7 - Line 2
Const. Std. Type 1A Curb Inlet
Sta. 18+26.8 - Longfellow 15.92' Lt.
W= 4'-2" T.C. Elev.= 201.06

Sta. 21+38.5 - Line 2
Sta. 0+00.0 - Line 2D
Const. Std. Type 1A Curb Inlet
Sta. 20+50.0 - Longfellow 15.92' Lt.
W= 4'-2" T.C. Elev.= 200.96

Existing Grade

Proposed Grade

Water

205

200

195

190

23 LF - 36" RCP @ 0.28%
(alt.) 23 LF - 36" CMP @ 0.28%
Fully Paved and Coated

235.2 L.F. - 24" RCP @ 0.35%
(alt.) 235.2 L.F. - 24" CMP @ 0.35%
Fully Paved and Coated

56 L.F. - 21" RCP @ 0.23%
(alt.) 56 L.F. - 21" CMP @ 0.23%
Fully Coated

173.8 L.F. - 21" RCP @ 0.23%
(alt.) 173.8 L.F. - 21" CMP @ 0.23%
Fully Coated

PROFILE - LINE 2

Scale Horz. : 1" = 20'
Vert. : 1" = 5'

| | | |

COTTONWOOD VILLAGE
FOURTH ADDITION
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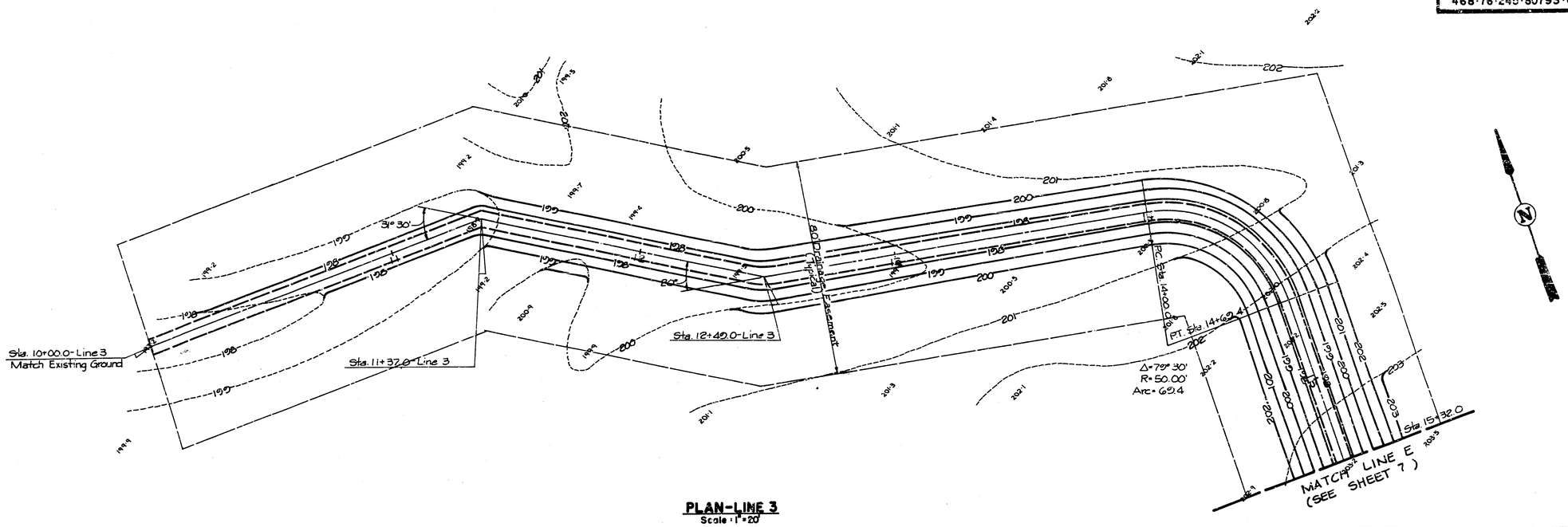
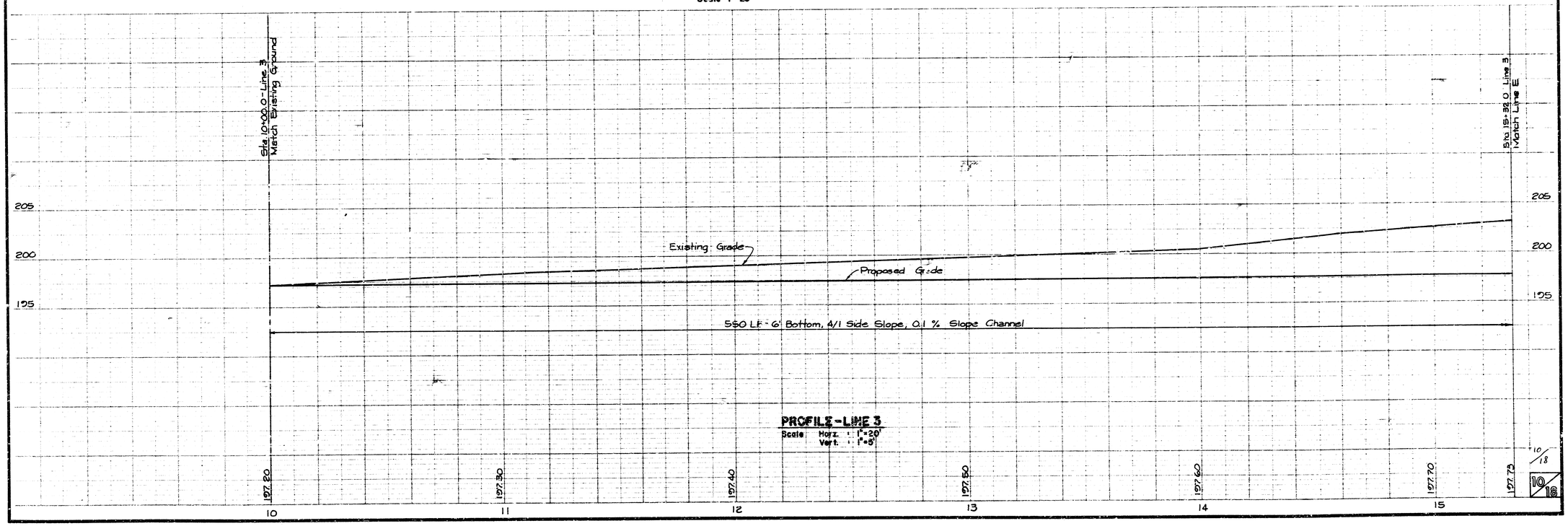


PLAN-LINE 3
Scale: 1"=20'



PROFILE-LINE 3
Scale Horz. : 1"=20'
Vert. : 1"=5'

10/18

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COTTONWOOD VILLAGE
FOURTH ADDITION
468-76-245-80793-000-000-001

Lot 28

Lot 29

②

N

8.0' Drainage Easement (Typical)

P.C. Sta. 7+42.4

P.C. Sta. 7+92.0

Sta. 6+92.0

22° 30'

Δ = 82°
R = 50'
Arc = 71.6'

Sta. 6+45.0 - Line 4
Match Existing Ground

Sta. 10+20.0

Install 625 SF of Type 3 Rip-Rap

(SEE SHEET 12) MATCH LINE H

54° 30'

Sta. 9+85.0

Sta. 10+00.0 - Line 4
Const. Std. 30" End Section

PLAN-LINE 4
Scale: 1" = 20'

Sta. 6+45.0 - Line 4
Match Existing Ground

Sta. 10+00.0 - Line 4
Const. Std. 30" End Section

Sta. 10+22.0 - Line 4
MATCH LINE H

Existing Grade

Proposed Grade

Install 625 S.F. of Type 3 Rip Rap

25'

200.0 LF - 30" RCP and End Section @ 0.2%

(alt) 200 LF - 30" CMP and End Section @ 0.2%

355 L.F. - 6' Bottom 4/1 side slope, Slope = 0.1% Channel

San. Sew.

Ft. (out) - 191.60

191.25 191.30 191.40 191.50 191.64

200 195 190

6 7 8 9 10

11/18

PROFILE-LINE 4
Scale: Horz. = 1" = 20'
Vert. = 1" = 5'

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FOURTH ADDITION
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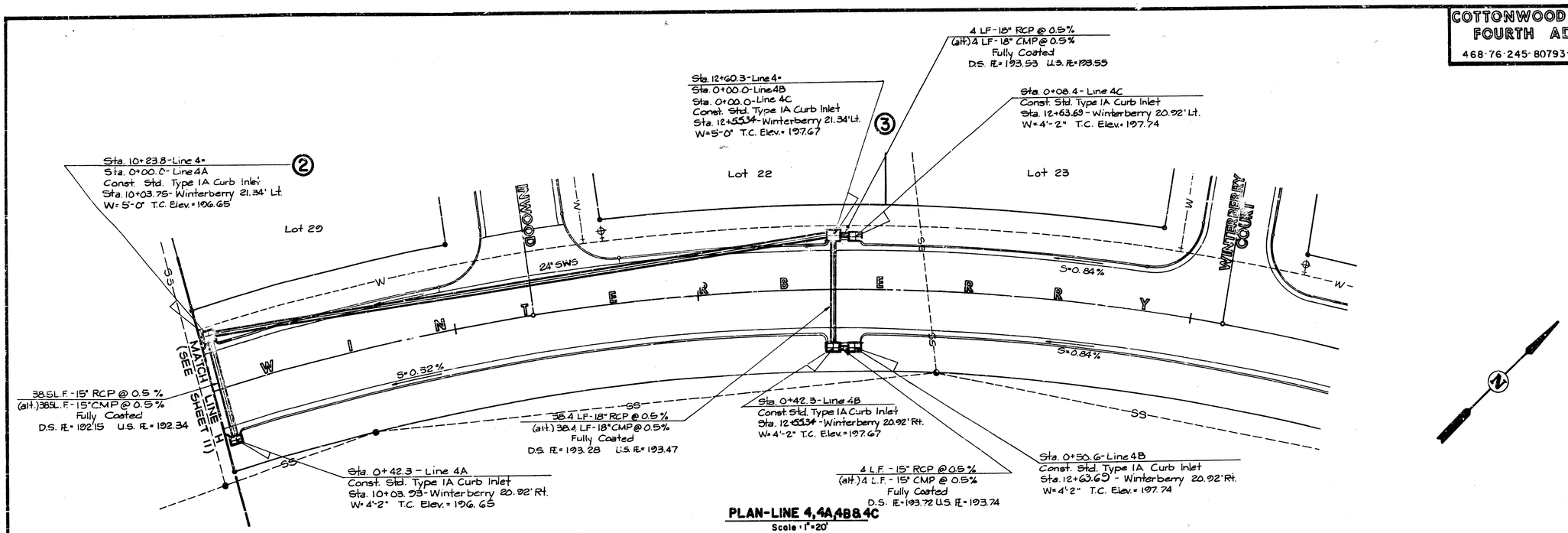
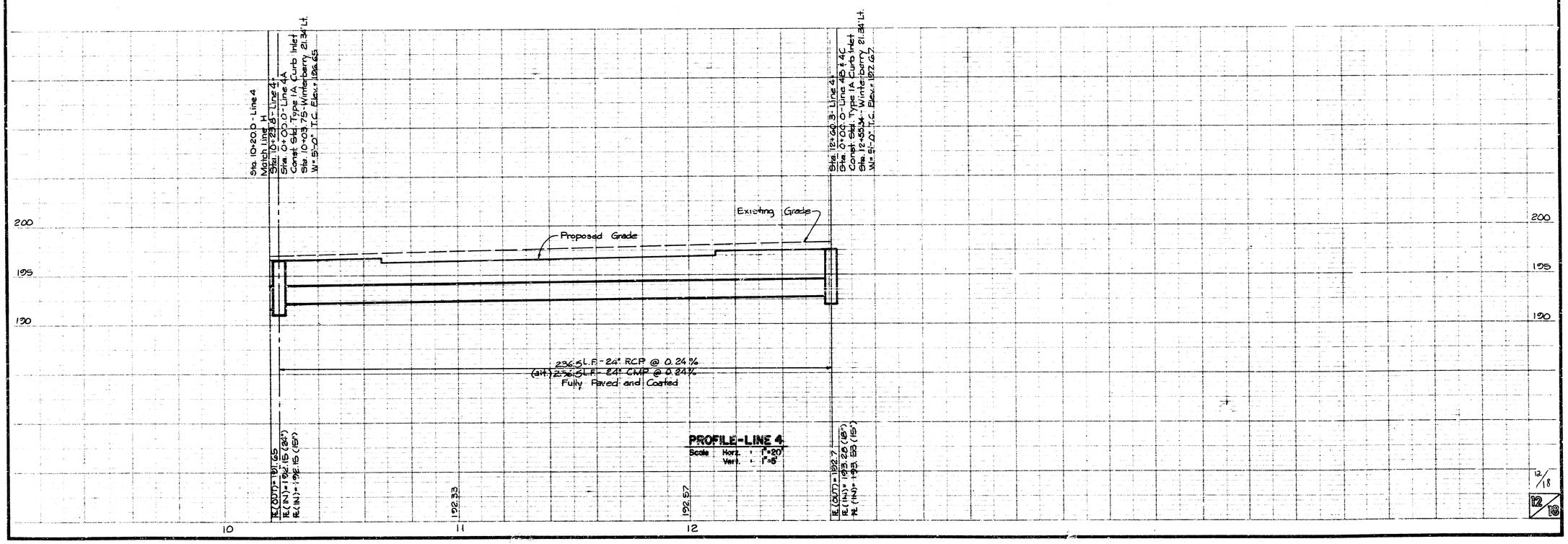


PLAN-LINE 4,4A,4B&4C
Scale: 1"=20'



PROFILE-LINE 4
Scale Horz. - 1"=20'
Vert. - 1"=5'

12/18

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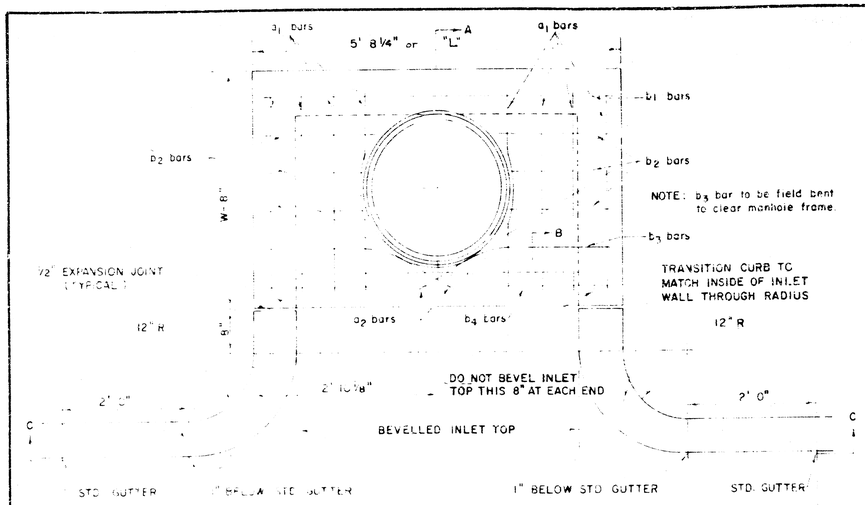
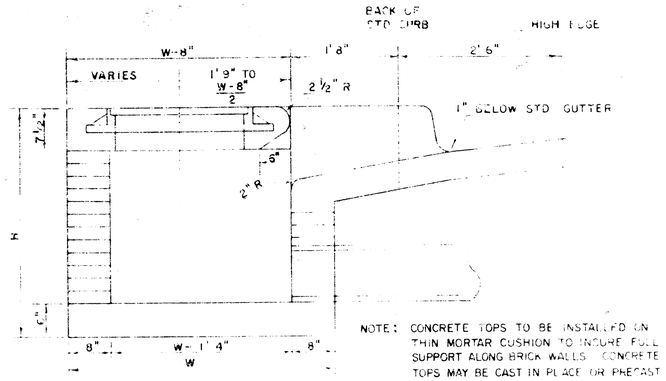
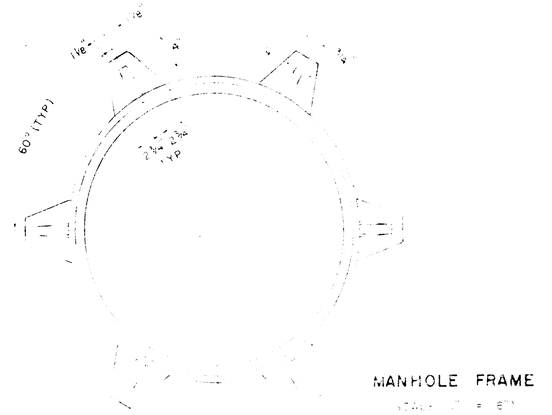


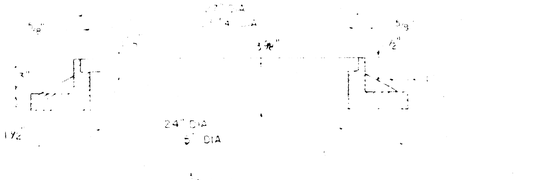


SECTION A-A
(SCALE 1" = 1'0")

NOTE: CONCRETE TOPS TO BE INSTALLED ON THIN MORTAR CUSHION TO INSURE FULL SUPPORT ALONG BRICK WALLS. CONCRETE TOPS MAY BE CAST IN PLACE OR PRECAST CONCRETE FOR INLET TOPS AND FLOORS SHALL BE 6-SACK PAVING MIX



MANHOLE FRAME
(SCALE 1" = 6")
WEIGHT = 180 LBS





PLAN (SCALE 1" = 1'0")

BENDING DIAGRAM

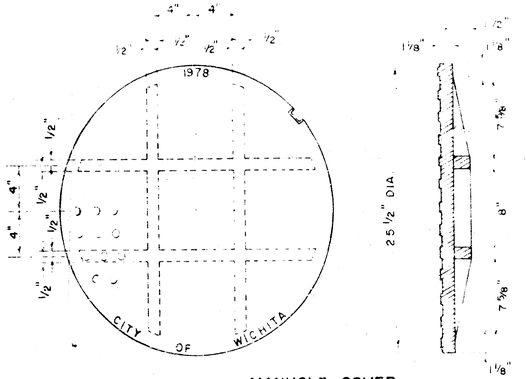
STEEL SCHEDULE

BAR NUMBER	SIZE	a1 W=4'2"	a1 W=5'0"	a1 W=6'0"	a1 W=7'0"	a1 W=8'0"	b2	b3	b4	WT. LBS.
LENGTH	#						9	6	1	
	#4	6'5"	8'1"	9'8"	11'4"	13'0"	1'5"	1'0"	5'5"	60*
	#4	6'5"	8'1"	9'8"	11'4"	13'0"	1'5"	1'0"	5'5"	77*
	#4	6'5"	8'1"	9'8"	11'4"	13'0"	1'5"	1'0"	5'5"	97*
	#4	6'5"	8'1"	9'8"	11'4"	13'0"	1'5"	1'0"	5'5"	111*
	#4	6'5"	8'1"	9'8"	11'4"	13'0"	1'5"	1'0"	5'5"	124*

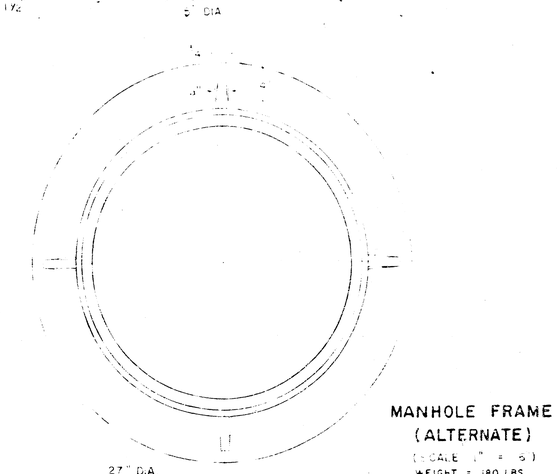
* NOTE: a2 BARS TO BE PLACED APPROX 2" BELOW TOP OF INLET COVER

STANDARD CURB INLET PRECAST TOPS			
W	PRE-CAST TOP SIZE	PIPE SIZE	CU. YD. CONC.
4' 2"	36"x5'8¼"x7½"	21" & SMALLER	0.46 *
5' 0"	44"x5'8¼"x7½"	24" & 30"	0.57 *
6' 0"	54"x5'8¼"x7½"	36" & 42"	0.71 *
7' 0"	64"x5'8¼"x7½"	48" & 54"	0.84 *
8' 0"	74"x5'8¼"x7½"	60" & 66"	0.97 *

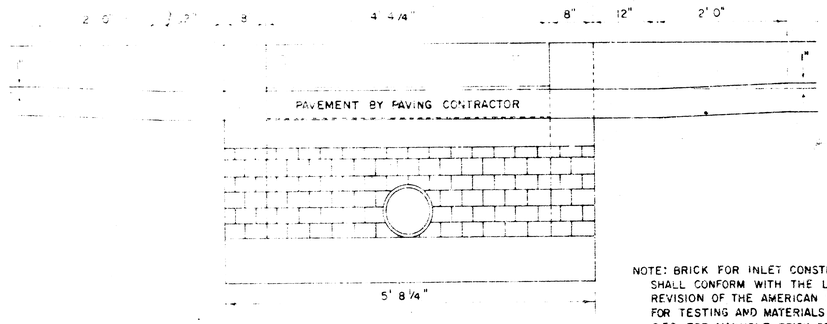
* GROSS VOLUME



MANHOLE COVER
(SCALE 1" = 6")
WEIGHT = 170 LBS

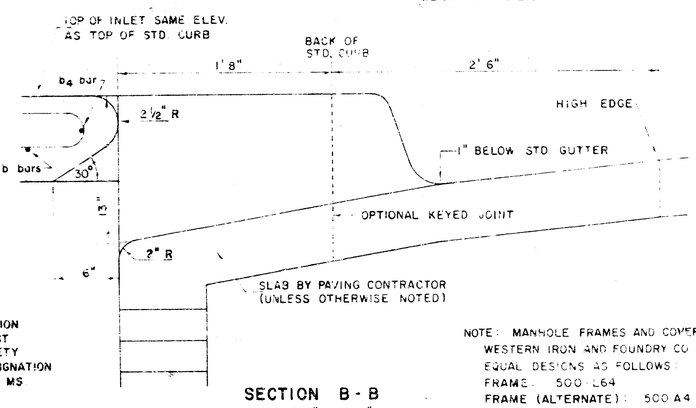


MANHOLE FRAME (ALTERNATE)
(SCALE 1" = 6")
WEIGHT = 180 LBS.



SECTION C-C
(SCALE 1" = 1'0")

NOTE: BRICK FOR INLET CONSTRUCTION SHALL CONFORM WITH THE LATEST REVISION OF THE AMERICAN SOCIETY FOR TESTING AND MATERIALS DESIGNATION C-32 FOR MANHOLE BRICK GRADE MS



SECTION B-B
(SCALE 1" = 6")

NOTE: MANHOLE FRAMES AND COVER ARE WESTERN IRON AND FOUNDRY CO. INC. OR EQUAL. DESIGNS AS FOLLOWS:
FRAME: 500 L64
FRAME (ALTERNATE): 500 A4
COVER: 222 54 "NOBBY"

DETAIL STANDARD TYPE IA CURB INLET

CITY OF WICHITA, KANSAS

R. W. LINN — CITY ENGINEER

OCTOBER 1978

13/18

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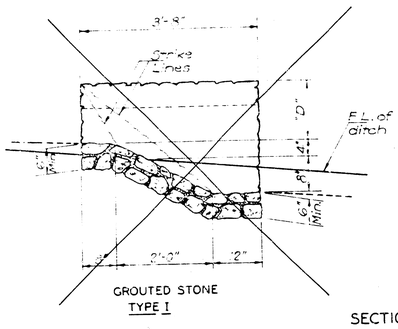
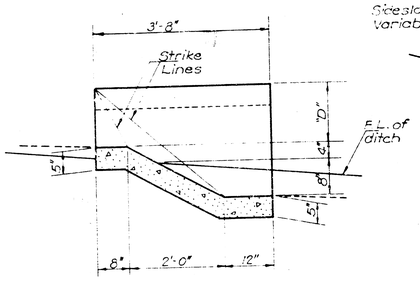
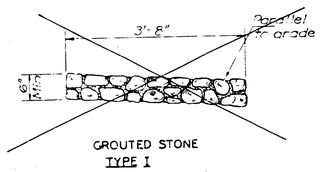


GROUTED STONE
TYPE I

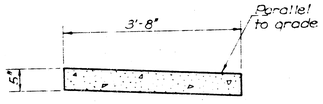


CONCRETE
TYPE 5

SECTION A-A
Without Toe Wall.



GROUTED STONE
TYPE I

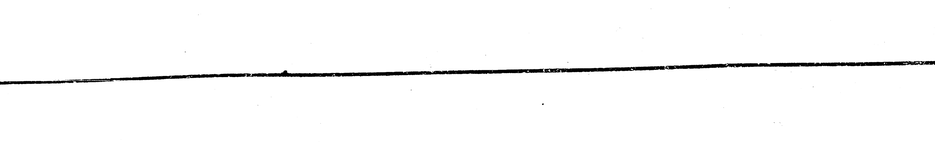


CONCRETE
TYPE 5

SECTION B-B
Same section at each end of unit.
Without Toe Wall.

Note: The stone in all stone wash checks shall be laid in a 3" mortar bed and the spaces between stones shall be filled with mortar.

Note: Use Class 'A' concrete thruout for Type 5 & 5-T Wash Checks.



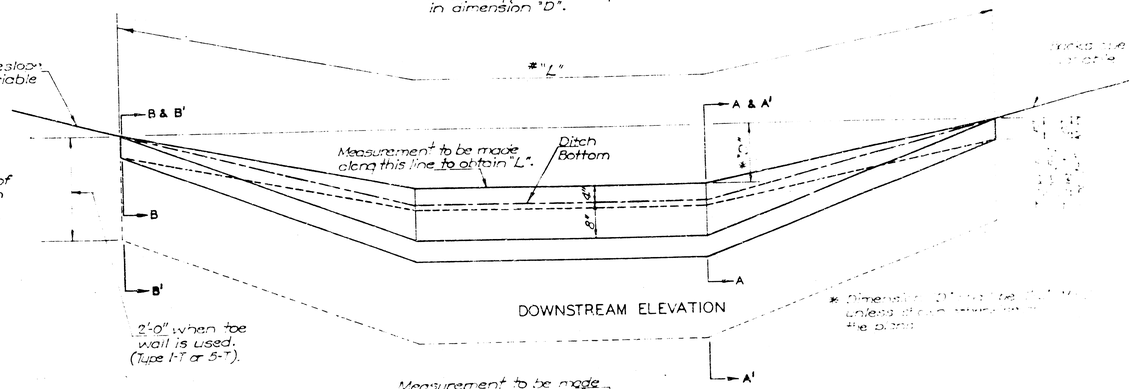
SPACING DIAGRAM
(Same for wash Type ...)

C = Spacing of wash checks in feet.
A = Flat slope in ratio of ... to 1.
B = Side slope of ditch in ratio of ... to 1.
Use same slope on both sides unless otherwise noted.
H = Height of drop in feet.

$$C = \frac{H}{A - B}$$

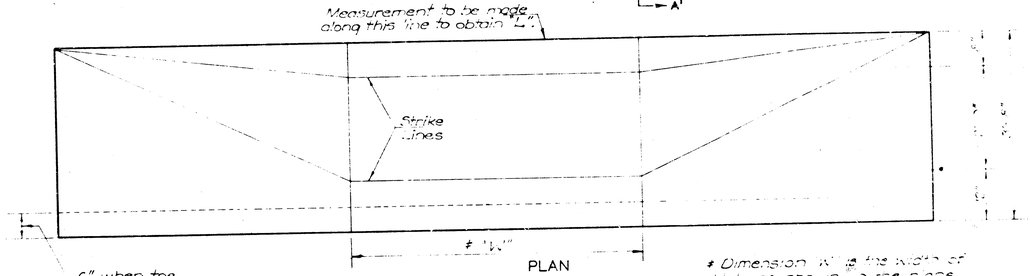
FORMULA

\# Dimension "L" may be varied if necessary, to avoid any decrease in dimension "D".



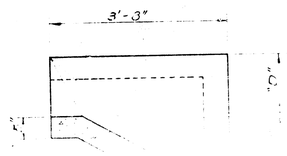
DOWNSTREAM ELEVATION

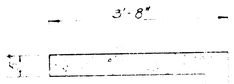
* Dimension "D" must be ... Unless ... the ditch



PLAN

* Dimension "W" is the width of ditch as shown ... the plans







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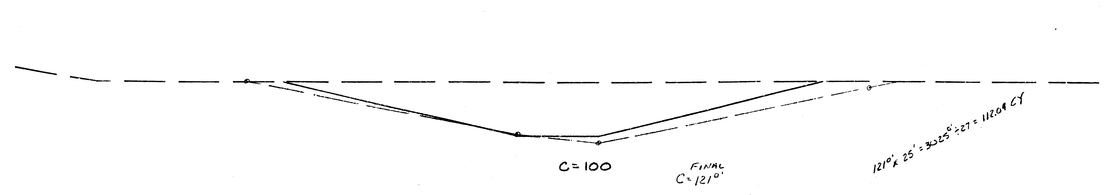
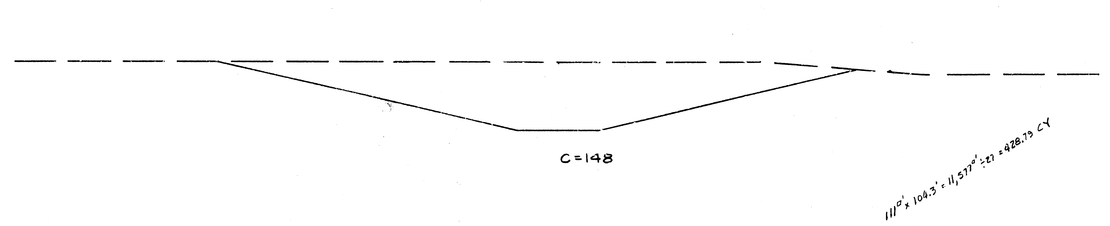
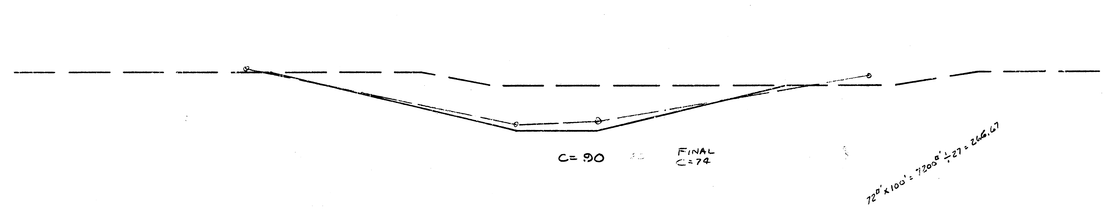
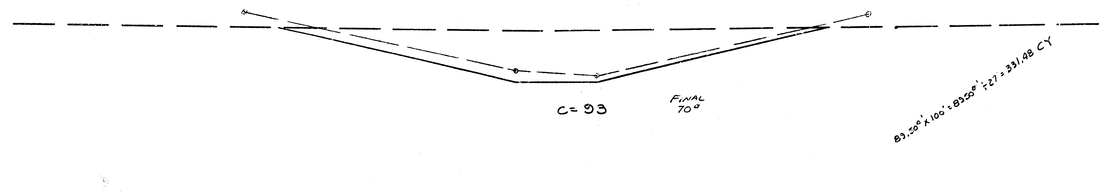
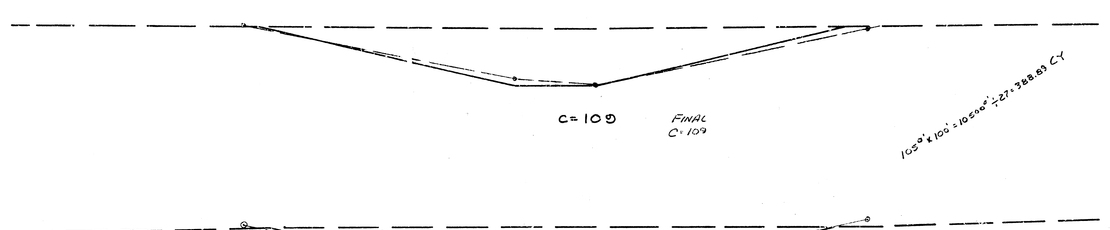
Line 1A

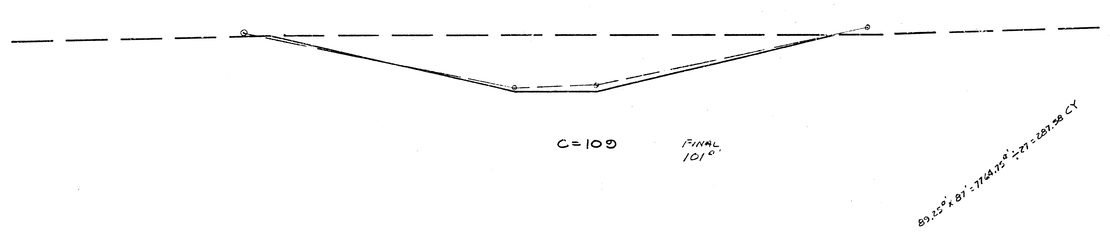


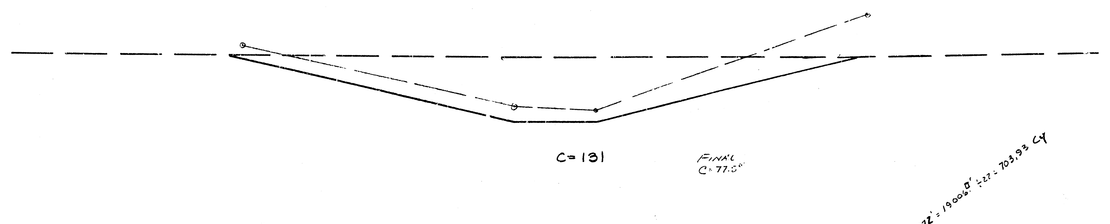


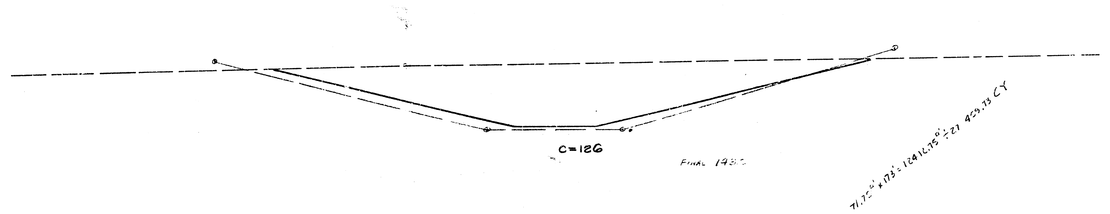












Sta 8+68

Match Existing Grade

Total This Sheet
2979.11

Total All Sheets 7896

COTTONWOOD VILLAGE
FOURTH ADDITION
468-78-245-80793-000-000-001

15/18

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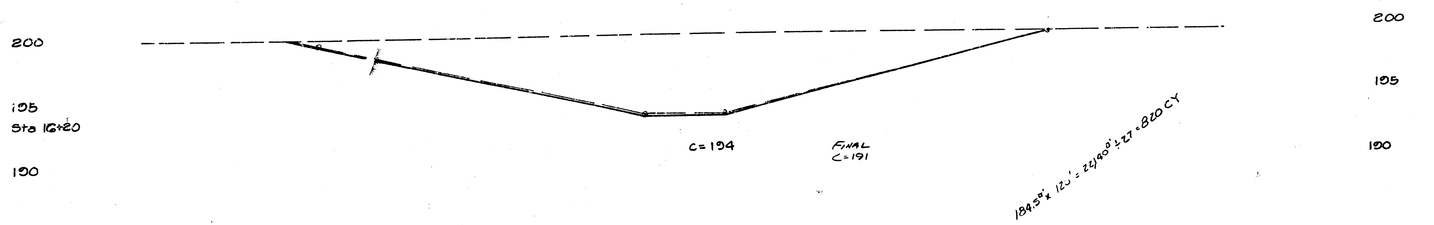
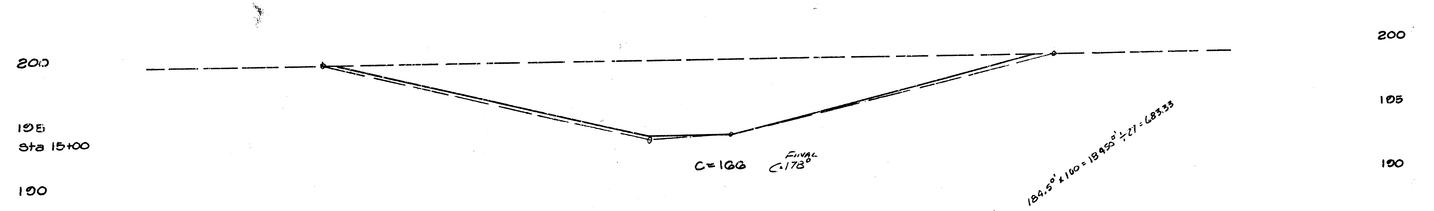
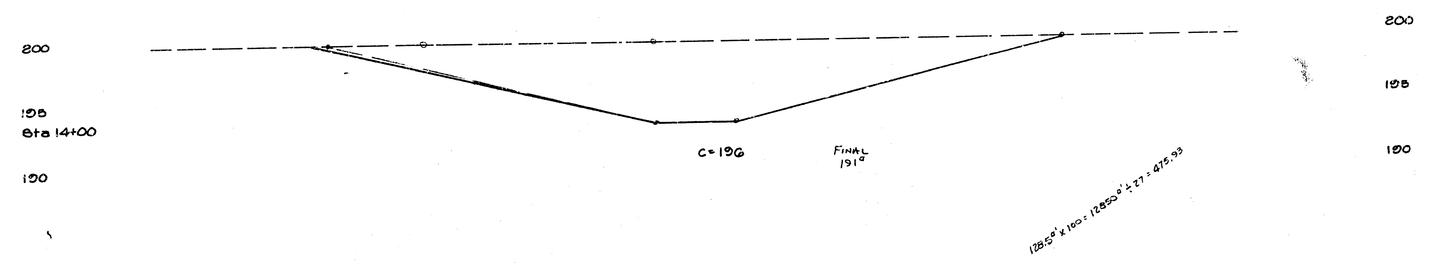
Match Existing Grade

Line 3

Sta 10+00







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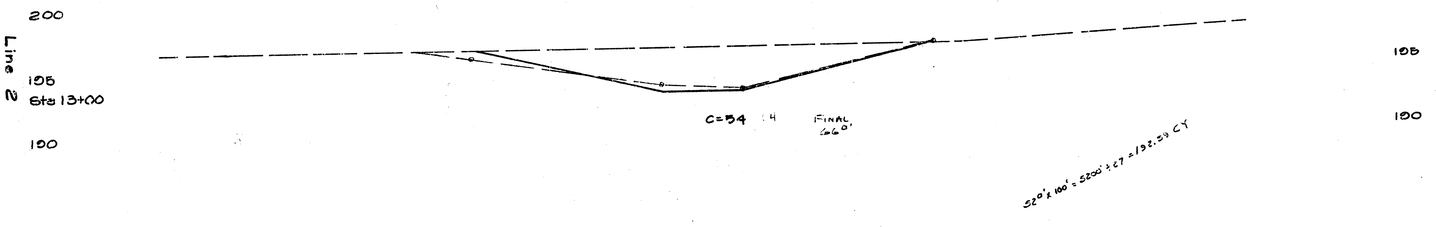
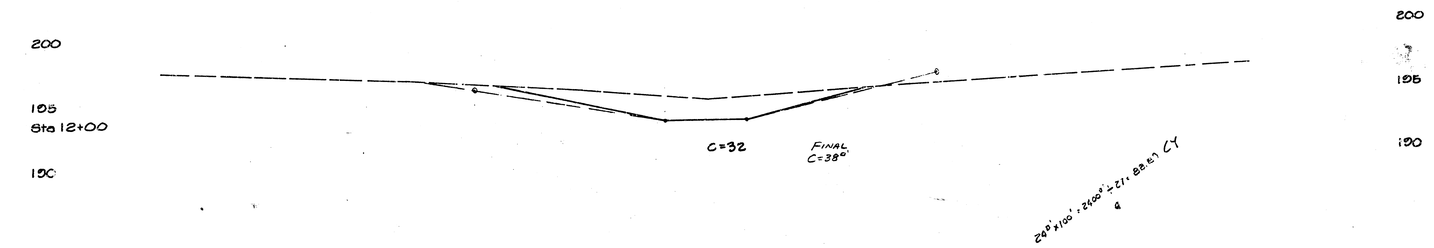
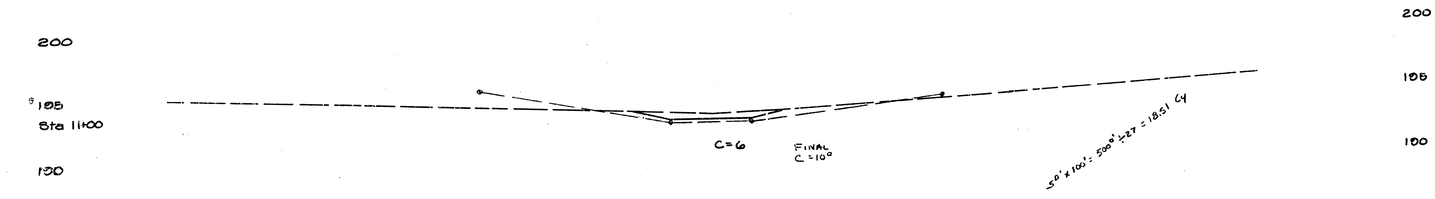


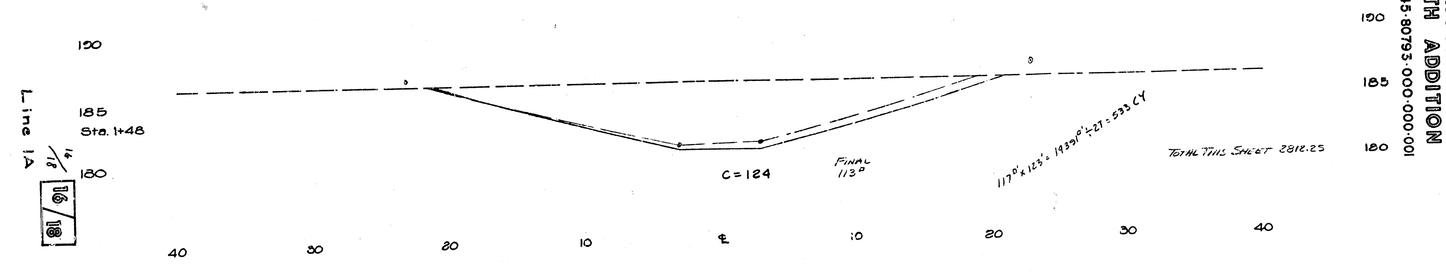




Match Existing Grade

Sta 10+00

Line 1A



COTTONWOOD VILLAGE
FOURTH ADDITION
468-76-245-80793-000-000-001

16/18

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Line 4

195
190
Sta 8+00
185

C=20 14.0'

11.8' x 100' = 1180 SF ÷ 27 = 43.7 CY

195
190
Sta 7+00
185

C=8

4.0' x 55' = 220 SF ÷ 27 = 8.15 CY

Sta 6+45

Match Existing Grade

205
200
Sta 13+50
195

C=153 FINAL 153.0'

145.0' x 50' = 7275 SF ÷ 27 = 269.44

205
200
Sta 15+00
195

C=129 FINAL C=132.0'

100.5' x 100' = 10,050 SF ÷ 27 = 372.22 CY

205
200
Sta 14+00
195

C=60 FINAL C=65.0'

74.0' x 100' = 7400.0 SF ÷ 27 = 274.07 CY

200
Sta 13+00
195

C=40 FINAL C=79.0'

121.0' x 103.12,100 ÷ 27 = 448.15 CY

200
Sta 12+00
195

C=33 FINAL C=42.7'

42.0' x 100' = 4200.0 ÷ 27 = 155.56 CY

200
Sta 11+00
195

C=20 FINAL C=42.0'

21.4' x 100' = 2100.0 ÷ 27 = 77.78

TOTAL THIS SHEET 1601.11

40 30 20 10 ℄ 10 20 30 40

COTTONWOOD VILLAGE
FOURTH ADDITION
468-76-245-80793 000-000-001

Line 3

11/21
17/18

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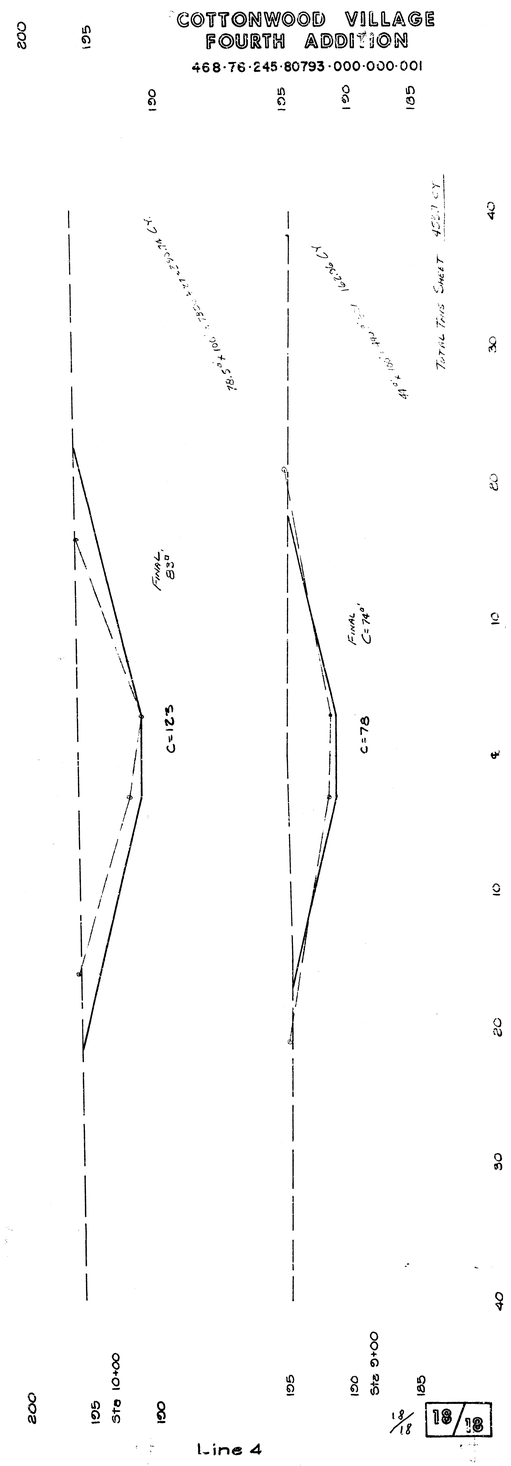
COTTONWOOD VILLAGE
FOURTH ADDITION
468-76-245-80793-000-000-001



Line 4

18/18

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