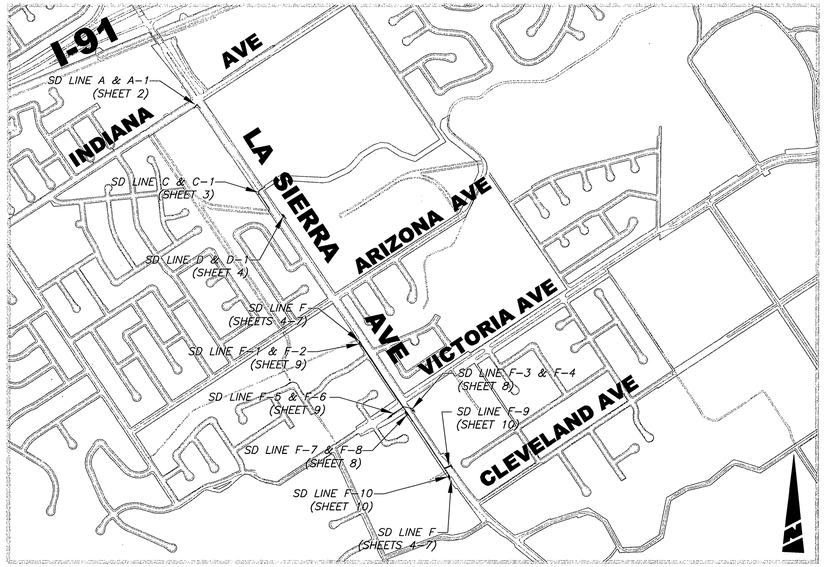
RIVERSIDE CALIFORNIA

PUBLIC WORKS DEPARTMENT

LA SIERRA AVE STORM DRAIN IMPROVEMENTS
(FROM CLEVELAND AVE TO INDIANA AVE)

CONSTRUCTION NOTE LEGEND

- (405) CITY OF RIVERSIDE STANDARD DRAWING 405 – CATCH BASIN
- (407) CITY OF RIVERSIDE STANDARD DRAWING 407 – CATCH BASIN
- (422) CITY OF RIVERSIDE STANDARD DRAWING 422 – JUNCTION STRUCTURE C
- (424) CITY OF RIVERSIDE STANDARD DRAWING 424 – CONCRETE COLLAR
- (430) CITY OF RIVERSIDE STANDARD DRAWING 430 – MANHOLE AX
- (431) CITY OF RIVERSIDE STANDARD DRAWING 431 – MANHOLE EX
- (432) CITY OF RIVERSIDE STANDARD DRAWING 432 – MANHOLE JM
- (JS 226) RCFC & WCD STANDARD DRAWING JS 226 – JUNCTION STRUCTURE NO. 1 (SIDE INLET TO BOX)
- (M 816) RCFC & WCD STANDARD DRAWING M 816 – CONCRETE BULKHEAD
- (30) INSTALL BROOKS 1818 CB TO BE USED AS A CLEANOUT. INSTALL ADEQUATE SECTIONS TO ELEVATIONS AND INVERTS SHOWN ON THE PLAN AND INSTALL STEEL COVER.



LOCATION/INDEX MAP
1"=800'

SHEET INDEX:

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	SD LINE A & SD LINE A-1
3	SD LINE C & SD LINE C-1
4	SD LINE D & SD LINE D-1 SD LINE F (STA 1+00 TO 3+00)
5	SD LINE F (STA 3+00 TO 9+00)
6	SD LINE F (STA 9+00 TO 14+80)
7	SD LINE F (STA 15+00 TO 20+00)
8	SD LINE F-3, F-4, F-7, & F-8
9	SD LINE F-1, F-2, F-5, & F-6
10	SD LINE F-9 & SD LINE F-10

DIGALERT
DIAL BEFORE YOU DIG
TWO WORKING DAYS BEFORE YOU DIG
TOLL FREE 1-800-227-2600
A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

COUNTY OF RIVERSIDE
TRANSPORTATION DEPARTMENT
APPROVED BY: _____ DATE: 9/6/05

ENGINEER IN RESPONSIBLE CHARGE
MICHAEL KATUSIAN
R.C.E. No. 36686 expires 6/30/06
DATE 8/31/05

REGISTERED PROFESSIONAL ENGINEER
MICHAEL KATUSIAN
No. 36686
Exp. 6-30-06
CIVIL
STATE OF CALIFORNIA

MARK	REVISIONS	APPR.	DATE

DESIGNED BY P.L. DRAWN BY P.L. CHECKED BY M.K.

CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT

APPROVED BY	BY	DATE
PRINCIPAL ENGINEER	DL	9/1/05
CONSTRUCTION ADMIN.	DL	9/1/05
SURVEYOR	[illegible]	9/1/05
STREET SERVICES	[illegible]	9/1/05
TRAFFIC ENGINEER		
PARK & REC. DEP.		

APPROVED BY _____
CITY ENGINEER
DATE 9/2/05

LA SIERRA AVE STORM DRAIN IMPROVEMENTS
(FROM CLEVELAND AVENUE TO INDIANA AVENUE
TITLE SHEET

HORIZ. SCALE: N/A VERT. SCALE: N/A

ACCOUNT. NO. 9576127152-440223
WORK ORDER. NO. 0602072

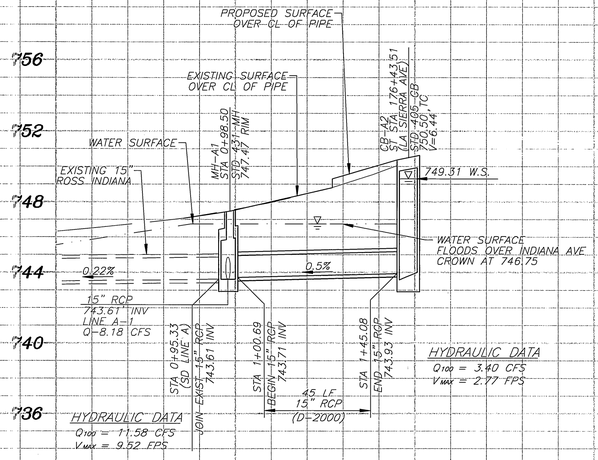
D-770

SHEET 1 OF 10

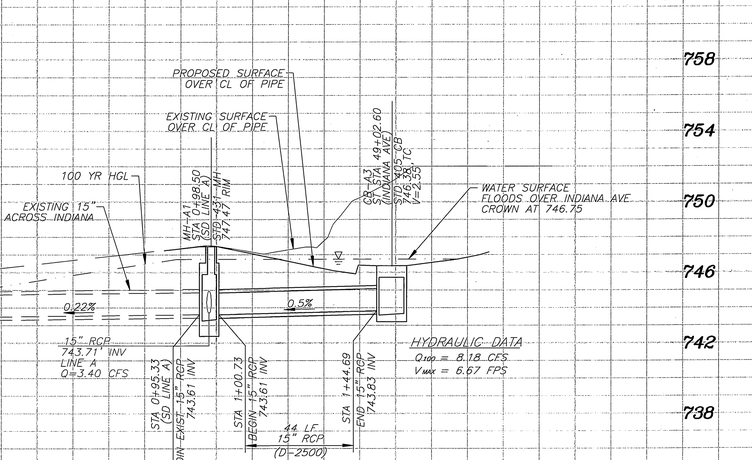
FILE NO.

INDEXED 6-12-06 MH

G:\COMMON\MIKE'S GROUP\PROJECTS\STREETS\LA SIERRA-INDIANA TO CLEVELAND\DRAWINGS\PLANS\IMPROVEMENTS\STORM\D-770-01.DWG 08/31/05 3:34 pm

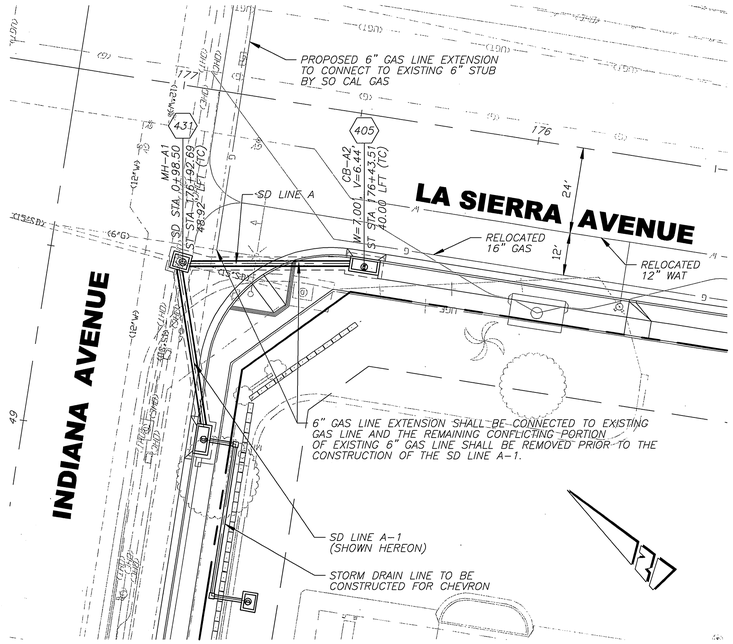


SD LINE A

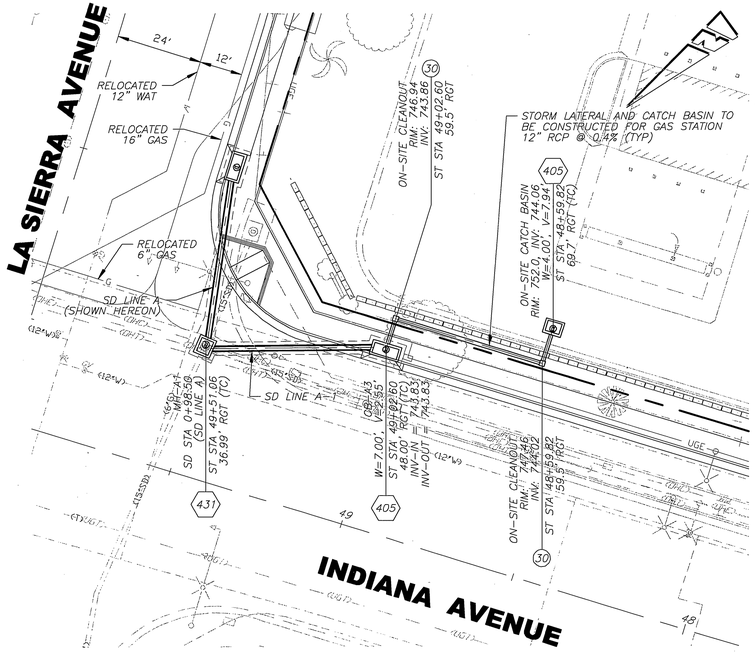


SD LINE A-1

HORZ. SCALE: 1" = 20'
VERT. SCALE: 1" = 4'



SD LINE A



SD LINE A-1

20 0 20 40 60
GRAPHIC SCALE

ENGINEER IN RESPONSIBLE CHARGE
MICHAEL KATUSIAN
R.C.E. No. 35686 expires 6/30/~~06~~
DATE 8/31/05

REGISTERED PROFESSIONAL ENGINEER MICHAEL KATUSIAN No. 35686 Exp. 6-30-06 CIVIL STATE OF CALIFORNIA

MARK	REVISIONS	APPR.	DATE

DESIGNED BY P.L. DRAWN BY P.L. CHECKED BY M.K.

CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT

APPROVED BY	BY	DATE
PRINCIPAL ENGINEER		
CONSTRUCTION ADMIN.		
SURVEYOR		
STREET SERVICES		
TRAFFIC ENGINEER		
PARK & REC. DEP.		

APPROVED BY
CITY ENGINEER
DATE 9/14/05

LA SIERRA AVE STORM DRAIN IMPROVEMENTS
(FROM CLEVELAND AVENUE TO INDIANA AVENUE
SD LINE A & SD LINE A-1

ACCOUNT NO. 9576127152-440223
WORK ORDER NO. 0602072

D-770

SHEET 2 OF 10

HORIZ. SCALE: 1"=20' VERT. SCALE: 1"=4'

FILE NO.

INDEXED 6-12-06 MK

G:\COMMON\MIKE'S GROUP\PROJECTS\STREETS\LA SIERRA-INDIANA TO CLEVELAND\DRAWINGS\PLANS\IMPROVEMENTS\STORM\D-770-02.DWG 08/31/05 3:33 pm

HORZ. SCALE: 1" = 20'
VERT. SCALE: 1" = 4'

PROJ. NO. 1-0-121
DWG NO. 1-457
SHEET 2 OF 38

PROP 16" GAS BY QUESTAR ELEV. ?

PROPOSED OVERLAY ALONG CENTERLINE OF PIPE (0.1' MIN)

EXISTING SURFACE OVER CL OF PIPE

PROPOSED SURFACE OVER CL OF PIPE

100 YR HGL

764.4 W.S.

EXISTING TRANSITION FROM BOX CULV TO TRAP CHANNEL 759.5 INV

JOIN EXIST CHANNEL (C1) STA 1+00.00 END 24" RCP 760.50 INV

0.5%

18" RCP 762.19' INV LINE C-1 Q=9.81 CFS

HYDRAULIC DATA
Q_{100} = 20.84 CFS
V_{MAX} = 6.63 FPS

STA 3+33.18 END 24" RCP 761.66' INV

234 LF, 24" RCP (D-2000)

MH-C2 STA 3+46.34 ST MH 769.33 RIM

12" WAT 766.0' TOP

LA SIERRA AVE CENTERLINE ST STA 164+00 = SD STA 3+98.24

16" GAS 766.1' TOP (TO BE RELOCATED BY QUESTAR)

4" GAS 765.1' TOP (TO BE RELOCATED BY SO CAL GAS)

TELEPHONE ELEV. ?

PROPOSED 6" GAS ELEV. ? SO CAL GAS)

CB-C3 ST STA 164+93.00 769.95' V=7.23' TC

767.76 W.S.

PROP JOINT ELEC. TEL, AND CABLE ELEV. ?

STA 3+38.51 END 18" RCP 762.19' INV

8" SEW 761.4' TOP

HYDRAULIC DATA
Q_{100} = 11.03 CFS
V_{MAX} = 3.51 FPS

111 LF, 18" RCP (D-2000)

STA 4+48.74 END 18" RCP 762.74' INV

SD LINE C

MH-C4 ST STA 1+46.34 (SD LINE B) STD 143 RIM 769.33

CB-C4 ST STA 164+64.00 LA SIERRA AVE STD 405 CB 768.36 TC V=6.36'

PROPOSED SURFACE ALONG CL OF PIPE

EXISTING SURFACE ALONG CL OF PIPE

767.62 W.S.

100 YR HGL

10.0%

24" RCP 761.66' INV LINE C Q=20.84 CFS

PROP 16" BY QUESTAR ELEV. ?

HYDRAULIC DATA
Q_{100} = 9.81 CFS
V_{MAX} = 5.55 FPS

STA 1+00.27 BEGIN 18" RCP 762.19 INV

9 LF 18" RCP (D=2000)

STA 1+09.53 END 18" RCP 763.0 INV

SD LINE C-1

1+00 2+00 3+00 4+00 5+00 1+00 1+50

776 772 768 764 760 756

SD STA 1+00.00
JOIN EXIST CHANNEL (C1)
ST STA 162+34.53
61.31' LFT
A=90°, B=24", C=9.6'
R=760.52', S=760.50
JS 226

PROPOSED 16" GAS LINE BY QUESTAR

SD LINE C

BC STA 1+28.04 ST STA 162+53.28 40.46' LFT

EC STA 1+46.91 ST STA 162+70.01 33.00' LFT

PROPOSED 8" WATER LINE BY ADJACENT DEVELOPMENT

PROJ. NO. 1-0-121
DWG NO. 1-457
SHEET 2 OF 38

MH-C2 SD STA 3+36.34 ST STA 164+59.44 33.00' LFT

BC STA 3+47.40 ST STA 164+70.50 33.00' LFT

EC STA 3+82.74 ST STA 164+93 10.50' LFT

CB-C4 W=7.00' V=6.36' ST STA 164+64 43.00 LFT (TC)

SD LINE C-1 (SHOWN HEREON)

LA SIERRA AVENUE

SD LINE D (SEE SHEET 4)

SD LINE D-1 (SEE SHEET 4)

PROPOSED UNDERGROUND ELECTRIC, CABLE, AND TELEPHONE

PROPOSED 8" WATER LINE BY ADJACENT DEVELOPMENT

PROPOSED 6" GAS LINE BY SO CAL GAS

CB-C3 W=7.00' V=7.23' ST STA 164+93 55.50 RGT (TC)

2+00 3+00 4+00

CURVE DATA					
◇	DELTA	RADIUS	LENGTH	TANGENT	REMARK
1	48°02'47"	22.50'	18.87'	10.03'	PIPE CENTERLINE
2	90°00'00"	22.50'	35.34'	22.50'	PIPE CENTERLINE

GRAPHIC SCALE 20 0 20 40 60

ENGINEER IN RESPONSIBLE CHARGE
MICHAEL KATUSIAN
R.C.E. No. 36686 expires 6/30/~~04~~06
DATE 8/31/05

REGISTERED PROFESSIONAL ENGINEER MICHAEL KATUSIAN No. 36686 Exp. 6-30-06 CIVIL STATE OF CALIFORNIA

MARK REVISIONS APPR. DATE

DESIGNED BY P.L. DRAWN BY P.L. CHECKED BY M.K.

CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT

APPROVED BY	BY	DATE
PRINCIPAL ENGINEER	DH	11/1/05
CONSTRUCTION ADMIN.	BE	11/1/05
SURVEYOR		
STREET SERVICES	DH	11/1/05
TRAFFIC ENGINEER		
PARK & REC. DEP.		

APPROVED BY CITY ENGINEER
DATE 9/2/05

LA SIERRA AVE STORM DRAIN IMPROVEMENTS
(FROM CLEVELAND AVENUE TO INDIANA AVENUE)
SD LINE C & SD LINE C-1

HORIZ. SCALE: 1"=20' VERT. SCALE: 1"=4'

ACCOUNT. NO. 9576127152-440223
WORK ORDER. NO. 0602072

D-770

SHEET 3 OF 10

FILE NO.

INDEXED 6-12-06 MK

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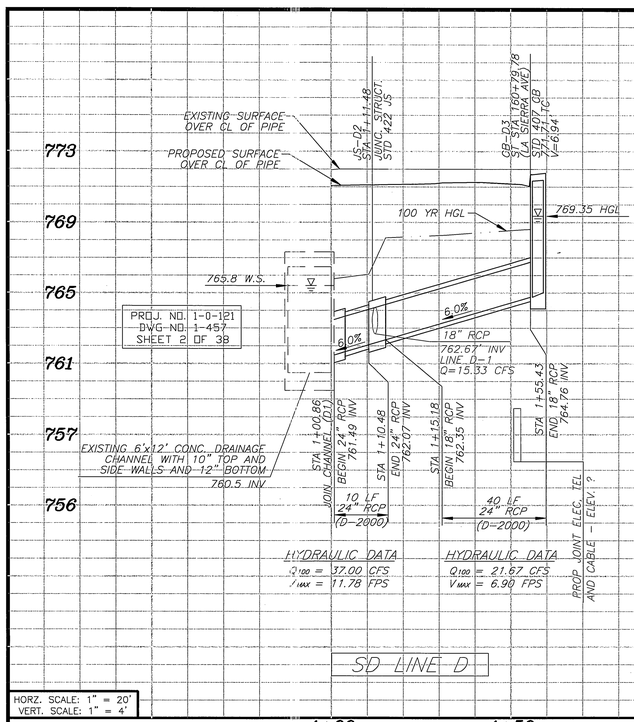
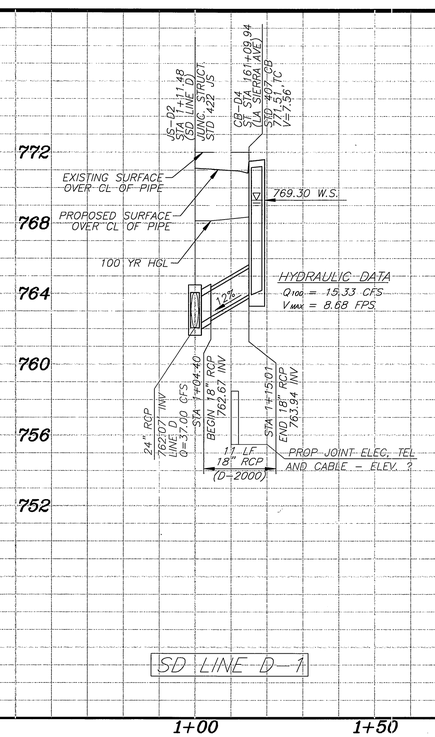
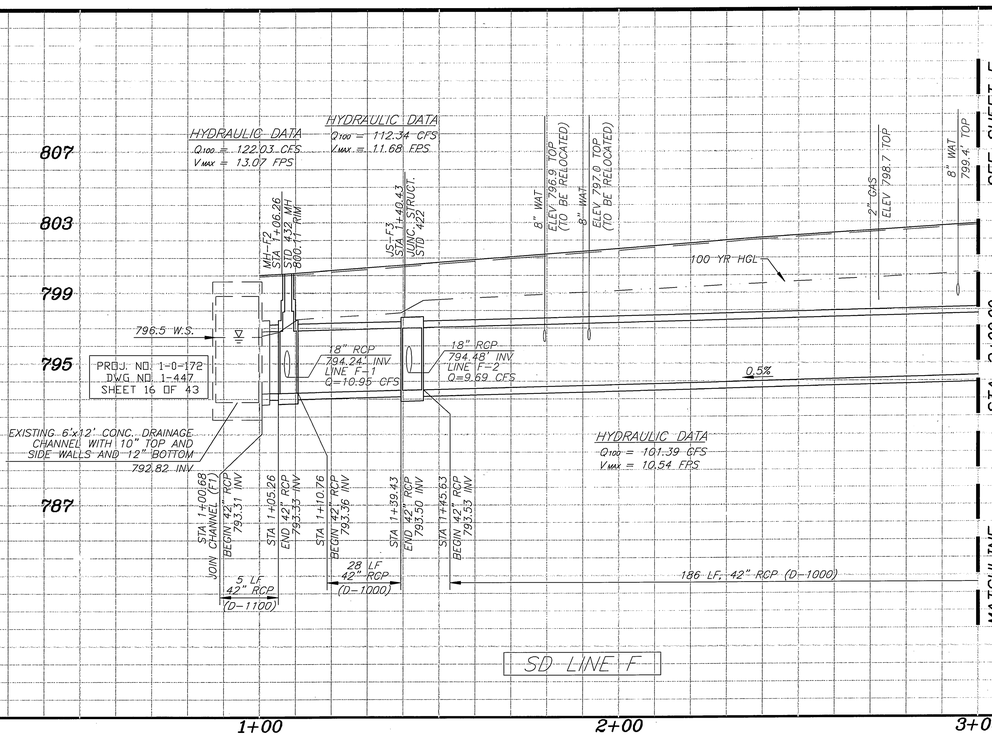




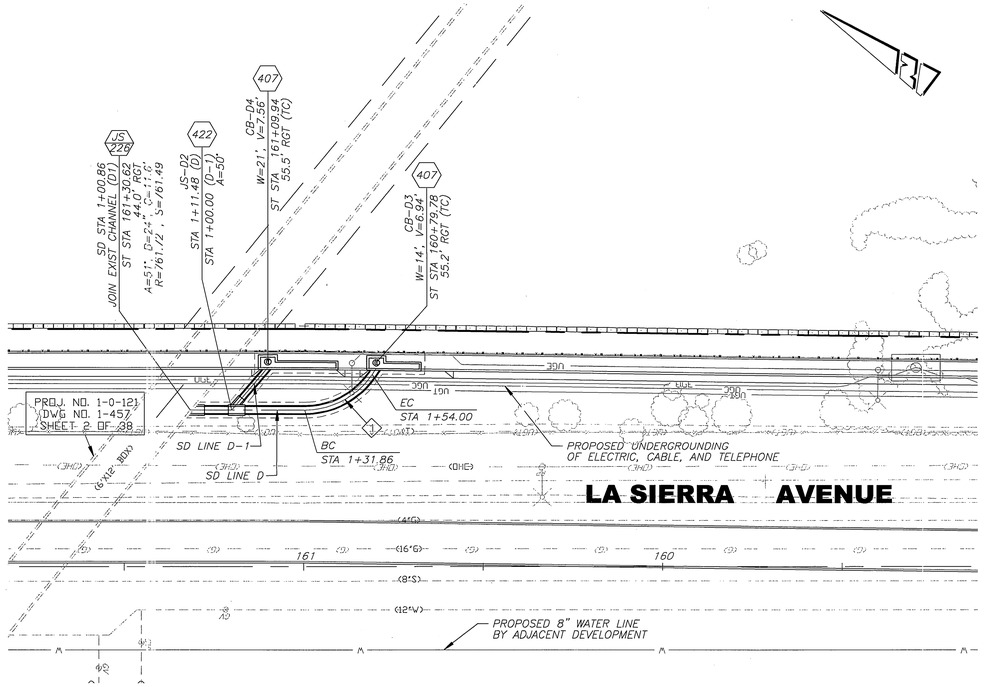


SEE SHEET 5

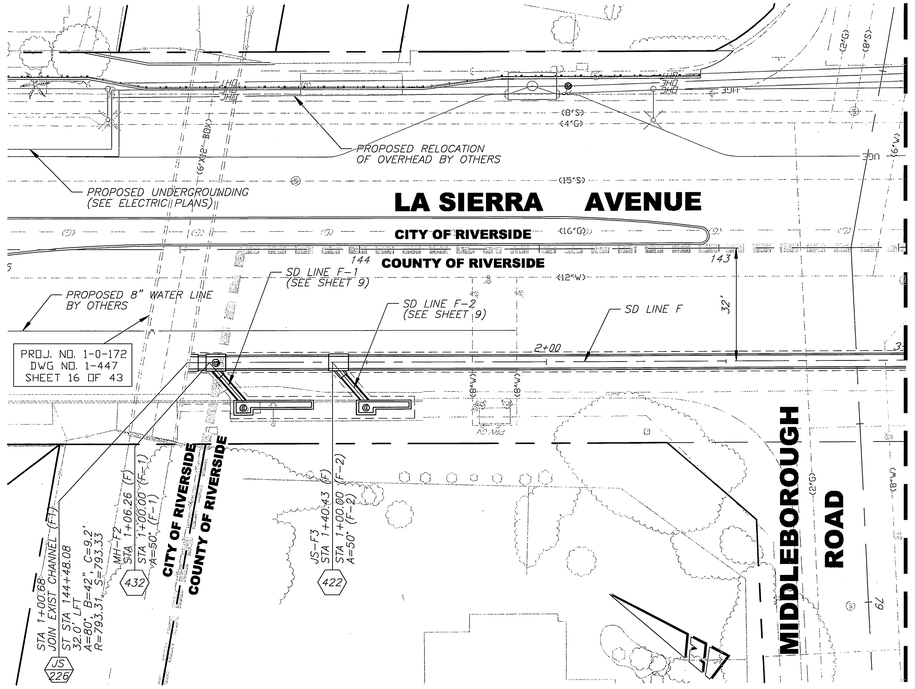
STA. 3+00.00

MATCHLINE

HORZ. SCALE: 1" = 20'
VERT. SCALE: 1" = 4'



SD LINE D | SD LINE D-1



SD LINE F

CURVE DATA					
◇	DELTA	RADIUS	LENGTH	TANGENT	REMARK
1	56°22'31"	22.50'	22.14'	12.06'	PIPE CENTERLINE

20 0 20 40 60
GRAPHIC SCALE

ENGINEER IN RESPONSIBLE CHARGE
MICHAEL KATUSIAN
R.C.E. No. 36686 expires 6/30/~~07~~ 06
DATE 8/31/05

REGISTERED PROFESSIONAL ENGINEER MICHAEL KATUSIAN No. 36686 Exp. 6-30-06 CIVIL STATE OF CALIFORNIA

MARK	REVISIONS	APPR.	DATE

DESIGNED BY FL DRAWN BY FL CHECKED BY MK

CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT

APPROVED BY	BY	DATE
PRINCIPAL ENGINEER	DE	9/16/05
CONSTRUCTION ADMIN.	DE	9/16/05
SURVEYOR	CMISM	9/16/05
STREET SERVICES	DB	9/16/05
TRAFFIC ENGINEER		
PARK & REC. DEP.		

APPROVED BY
CITY ENGINEER
DATE 9/26/05

LA SIERRA AVE STORM DRAIN IMPROVEMENTS
(FROM CLEVELAND AVENUE TO INDIANA AVENUE
SD LINE D & SD LINE D-1
SD LINE F (STA 1+00 TO 3+00)

HORIZ. SCALE: 1"=20' VERT. SCALE: 1"=4'

ACCOUNT NO. 957127152-440223
WORK ORDER NO. 0602072

D-770

SHEET 4 OF 10

FILE NO.

INDEXED 6-12-06 LH

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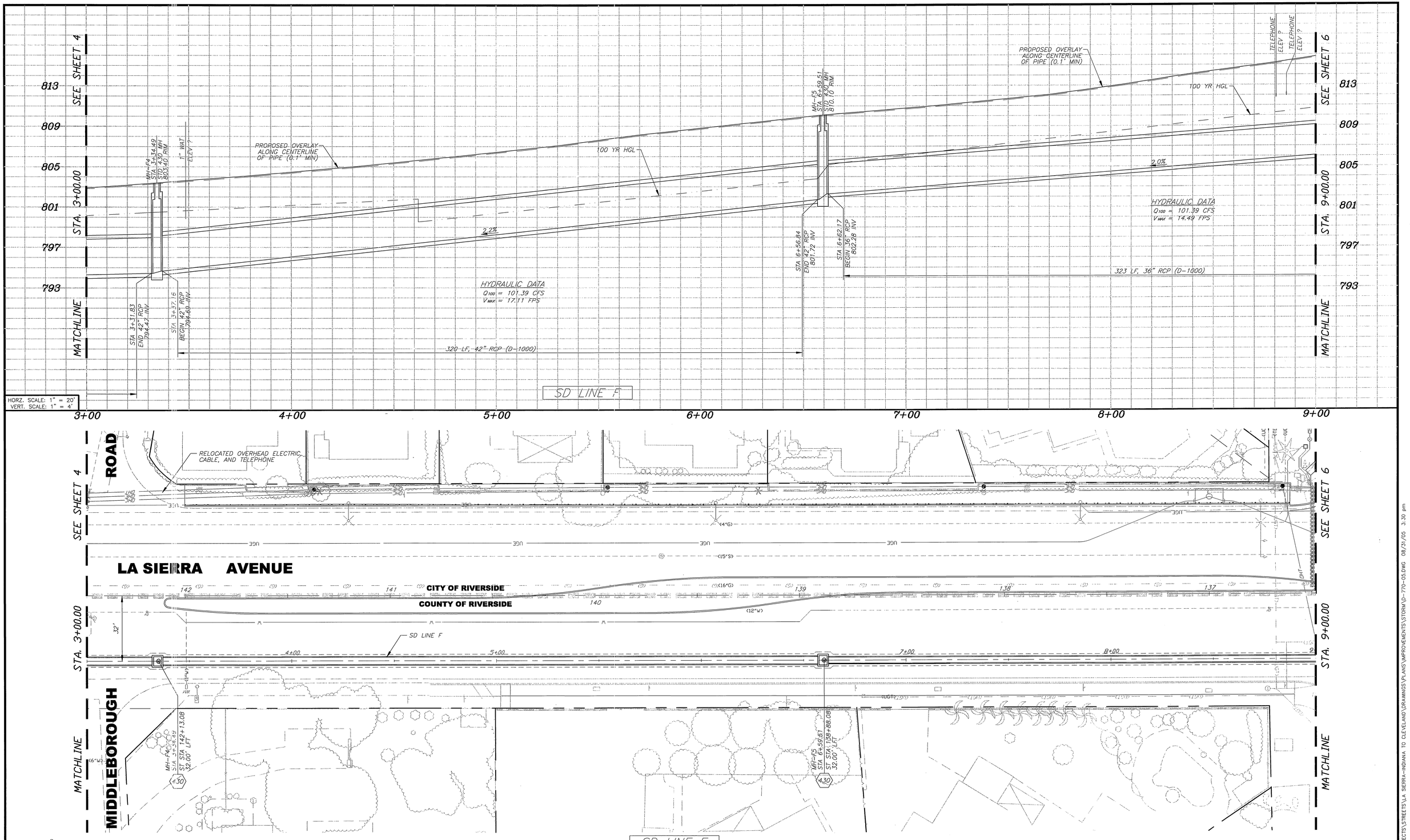


20 0 20 40 60
GRAPHIC SCALE

ENGINEER IN RESPONSIBLE CHARGE
MICHAEL KATUSIAN
R.C.E. No. 36686 expires 6/30/06
DATE 8/31/05

REGISTERED PROFESSIONAL ENGINEER
MICHAEL KATUSIAN
No. 36686
Exp. 6-30-06
CIVIL
STATE OF CALIFORNIA

MARK	REVISIONS	APPR.	DATE

DESIGNED BY P.L. DRAWN BY P.L. CHECKED BY M.K.

CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT

APPROVED BY	BY	DATE
PRINCIPAL ENGINEER	DS	9/1/05
CONSTRUCTION ADMIN.	DS	9/1/05
SURVEYOR	JASS	9/1/05
STREET SERVICES	DB	9/1/05
TRAFFIC ENGINEER		
PARK & REC. DEP.		

APPROVED BY
CITY ENGINEER
DATE 9/1/05

LA SIERRA AVE STORM DRAIN IMPROVEMENTS
(FROM CLEVELAND AVENUE TO INDIANA AVENUE)
SD LINE F (STA 3+00 TO 9+00)

HORIZ. SCALE: 1"=20' VERT. SCALE: 1"=4'

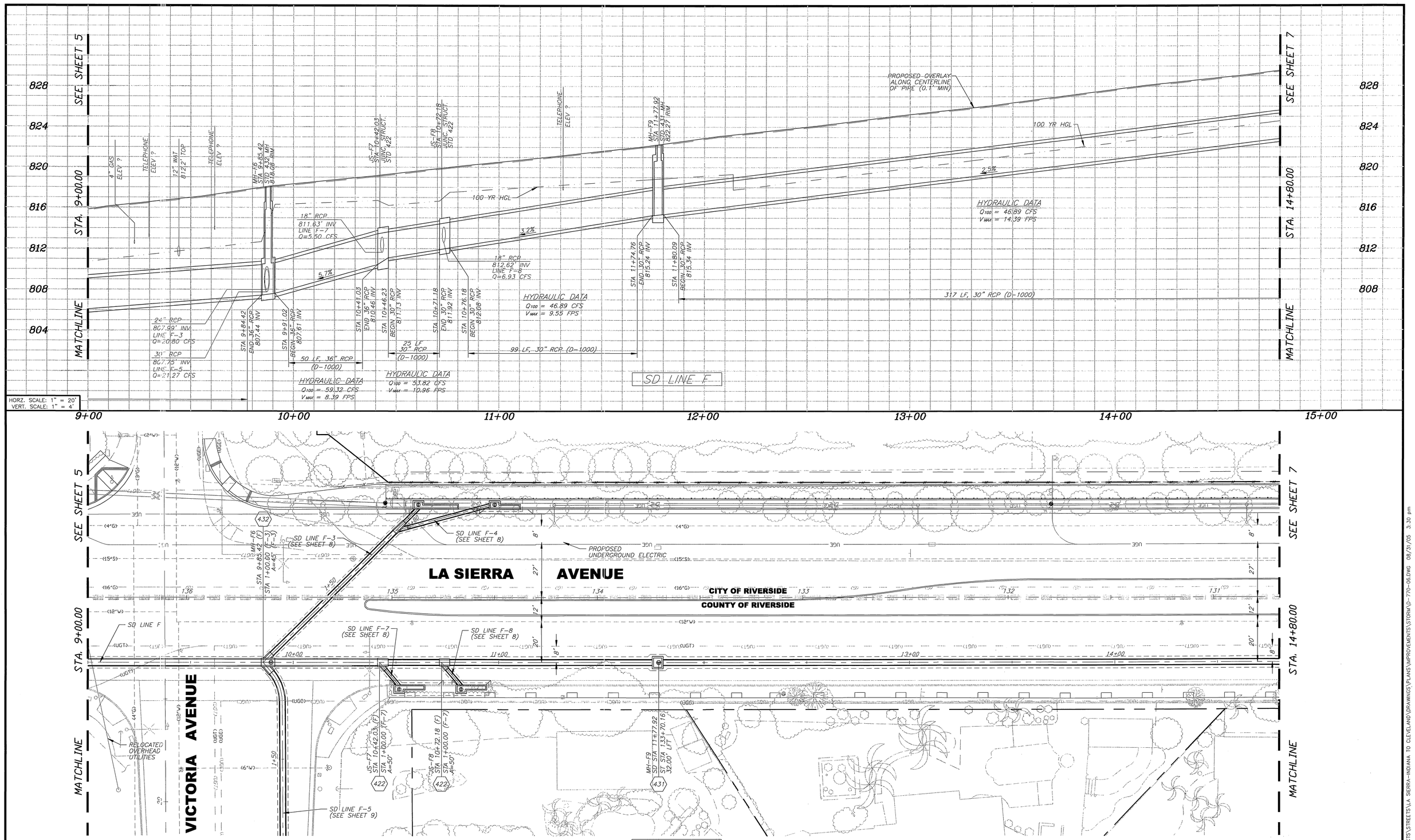
ACCOUNT. NO. 9576127152-440223
WORK ORDER. NO. 0602072

D-770
SHEET 5 OF 10

FILE NO.

INDEXED 6-12-06 LH

G:\COMMON\MIKE'S GROUP\PROJECTS\STREETS\LA SIERRA-INDIANA TO CLEVELAND\DRAWINGS\PLANS\IMPROVEMENTS\STORM\D-770-05.DWG 08/31/05 3:30 pm



20 0 20 40 60
GRAPHIC SCALE

ENGINEER IN RESPONSIBLE CHARGE
MICHAEL KATUSIAN
R.C.E. No. 36686 expires 6/30/06
DATE 8/31/05

REGISTERED PROFESSIONAL ENGINEER MICHAEL KATUSIAN No. 36686 Exp. 6-30-06 CIVIL STATE OF CALIFORNIA

MARK	REVISIONS	APPR.	DATE

DESIGNED BY P.L. DRAWN BY P.L. CHECKED BY M.K.

CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT

APPROVED BY	BY	DATE
PRINCIPAL ENGINEER	DE	9/1/05
CONSTRUCTION ADMIN.	DE	9/1/05
SURVEYOR	MARK	9/1/05
STREET SERVICES	DB	9/1/05
TRAFFIC ENGINEER		
PARK & REC. DEP.		

APPROVED BY
CITY ENGINEER
DATE 9/1/05

LA SIERRA AVE STORM DRAIN IMPROVEMENTS
(FROM CLEVELAND AVENUE TO INDIANA AVENUE)
SD LINE F (STA 9+00 TO 14+80)

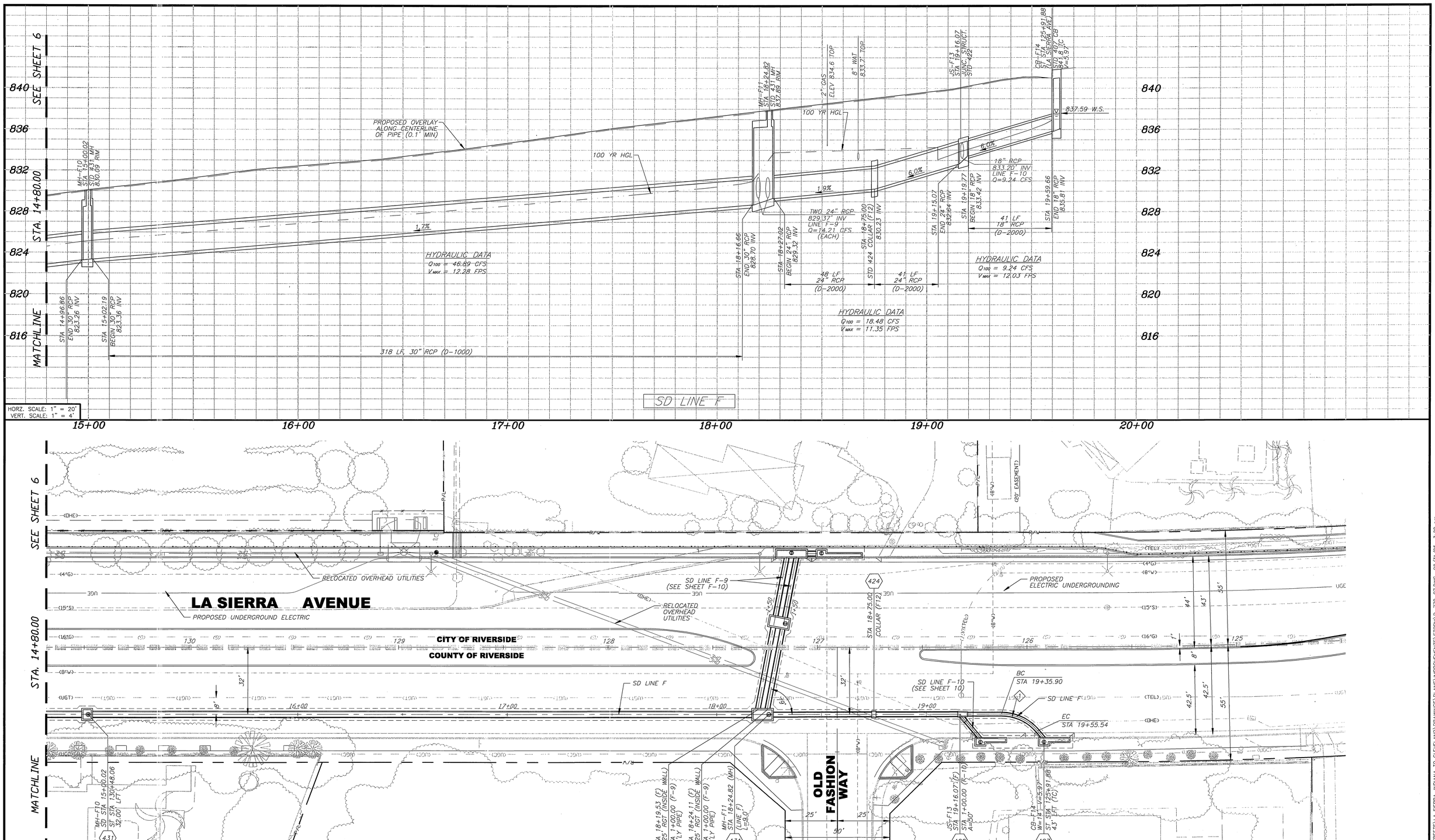
HORIZ. SCALE: 1"=20' VERT. SCALE: 1"=4'

ACCOUNT. NO. 9576127152-440223
WORK ORDER. NO. 0602072

D-770
SHEET 6 OF 10
FILE NO.

G:\COMMON\MIKE'S GROUP\PROJECTS\STREETS\LA SIERRA-INDIANA TO CLEVELAND\DRAWINGS\PLANS\IMPROVEMENTS\STORM\D-770-06.DWG 08/31/05 3:30 pm

INDEXED 6-12-06 LH



CURVE DATA					
◇	DELTA	RADIUS	LENGTH	TANGENT	REMARK
1	50°01'42"	22.50'	19.65'	10.50'	PIPE CENTERLINE

ENGINEER IN RESPONSIBLE CHARGE
MICHAEL KATUSIAN
R.C.E. No. 36686 expires 6/30/06
DATE 8/31/05

REGISTERED PROFESSIONAL ENGINEER MICHAEL KATUSIAN No. 36686 Exp. 6-30-06 CIVIL STATE OF CALIFORNIA

MARK	REVISIONS	APPR.	DATE

DESIGNED BY EL DRAWN BY EL CHECKED BY MK

CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT

APPROVED BY	BY	DATE
PRINCIPAL ENGINEER	DH	9/1/05
CONSTRUCTION ADMIN.	DC	9/1/05
SURVEYOR	MS	9/1/05
STREET SERVICES	PB	9/1/05
TRAFFIC ENGINEER		
PARK & REC. DEP.		

APPROVED BY
CITY ENGINEER
DATE 9/2/05

LA SIERRA AVE STORM DRAIN IMPROVEMENTS
(FROM CLEVELAND AVENUE TO INDIANA AVENUE
SD LINE F (STA 14+80 TO 20+00)

HORIZ. SCALE: 1"=20' VERT. SCALE: 1"=4'

ACCOUNT. NO. 9576127152-440223
WORK ORDER. NO. 0602072

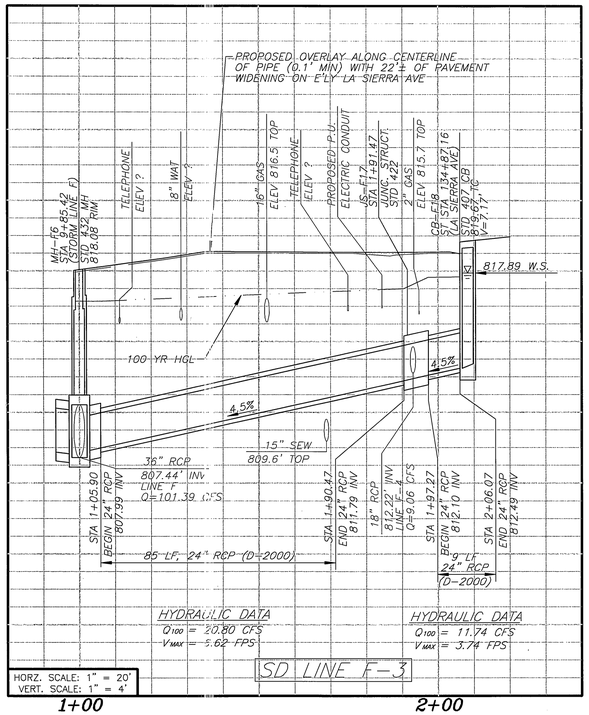
D-770

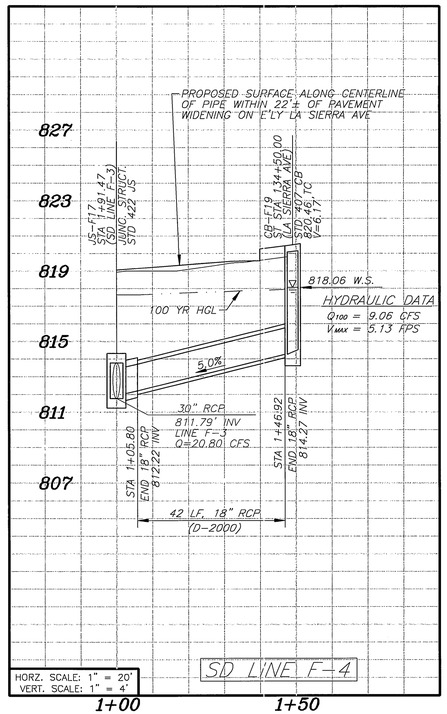
SHEET 7 OF 10

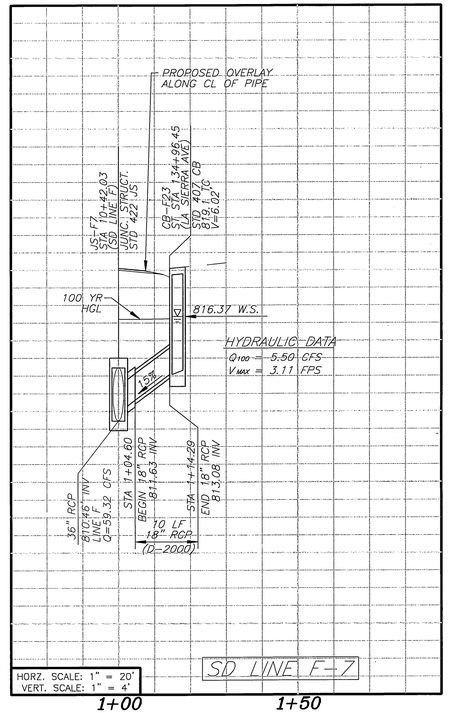
FILE NO.

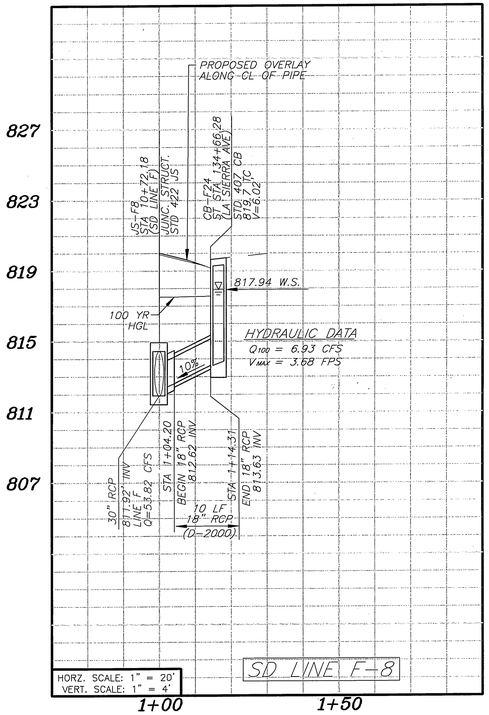
INDEXED 6-12-06 4H

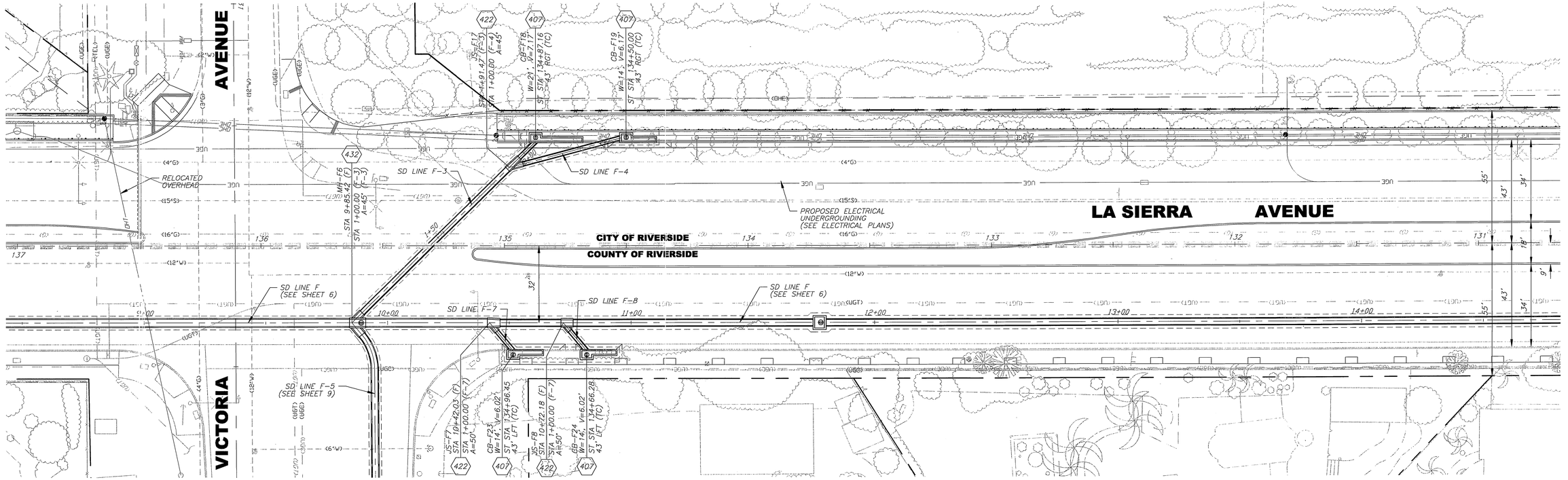
G:\COMMON\MIKE'S GROUP\PROJECTS\STREETS\LA SIERRA-INDIANA TO CLEVELAND\DRAWINGS\PLANS\IMPROVEMENTS\STORM\D-770-07.DWG 08/31/05 3:29 pm











CURVE DATA					
◇	DELTA	RADIUS	LENGTH	TANGENT	REMARK
1	50°00'00"	22.50'	19.63'	10.49'	PIPE CENTERLINE

ENGINEER IN RESPONSIBLE CHARGE
MICHAEL KATUSIAN
R.C.E. No. 36686 expires 6/30/~~06~~ 06
DATE 8/31/05

REGISTERED PROFESSIONAL ENGINEER MICHAEL KATUSIAN No. 36686 Exp. 6-30-06 CIVIL STATE OF CALIFORNIA

MARK	REVISIONS	APPR.	DATE

DESIGNED BY F.L. DRAWN BY F.L. CHECKED BY M.K.

CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT

APPROVED BY	BY	DATE
PRINCIPAL ENGINEER	DH	9/14/05
CONSTRUCTION ADMIN.	SC	9/14/05
SURVEYOR	MKM	9/14/05
STREET SERVICES	MS	9/14/05
TRAFFIC ENGINEER		
PARK & REC. DEP.		

APPROVED BY Tom Boyd CITY ENGINEER
DATE 9/14/05

LA SIERRA AVE STORM DRAIN IMPROVEMENTS
(FROM CLEVELAND AVENUE TO INDIANA AVENUE)
SD LINE F-3, F-4, F-7, & F-8

HORIZ. SCALE: 1"=20' VERT. SCALE: 1"=4'

ACCOUNT. NO. 9576127152-440223
WORK ORDER. NO. 0602072

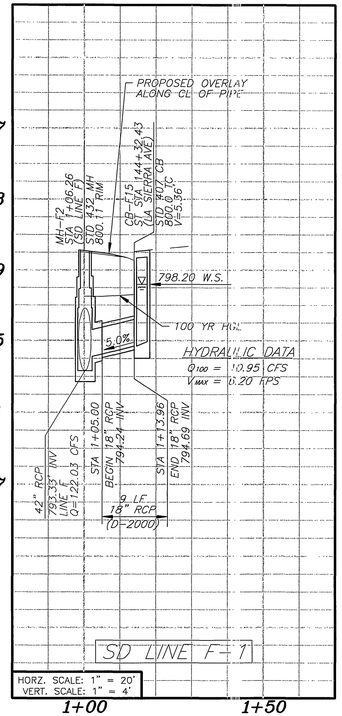
D-770

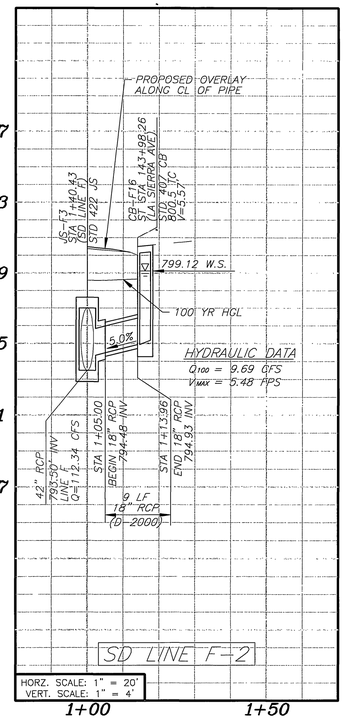
SHEET 8 OF 10

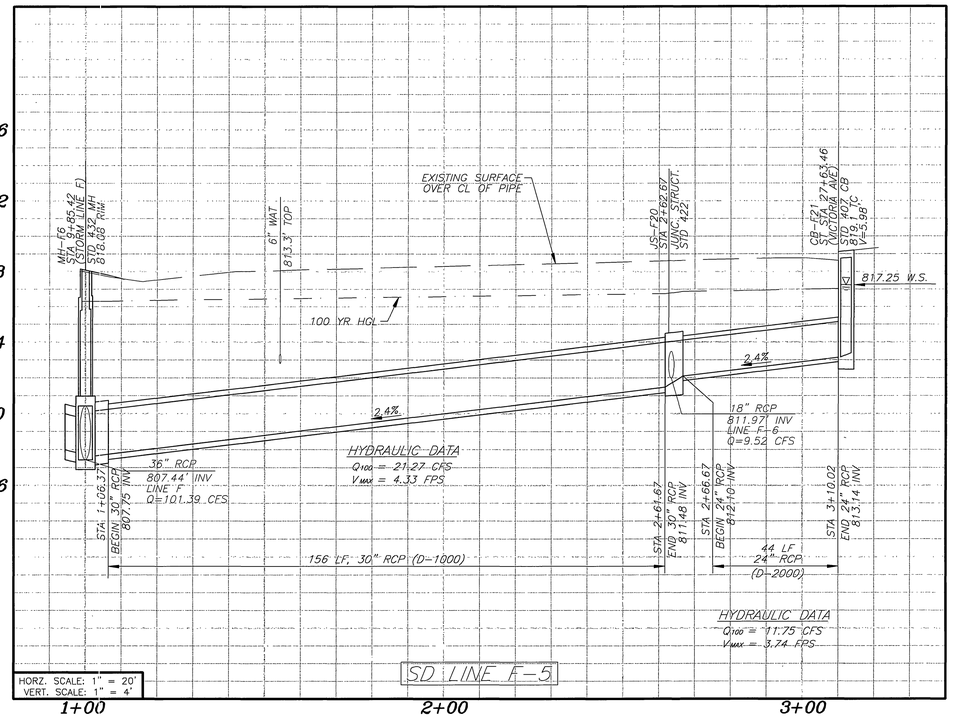
FILE NO.

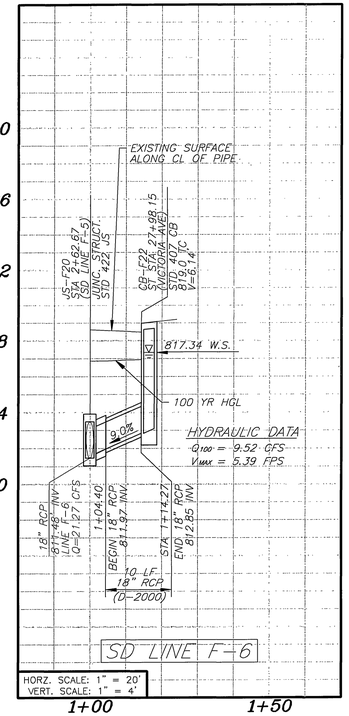
Indexed 6-12-06 GH

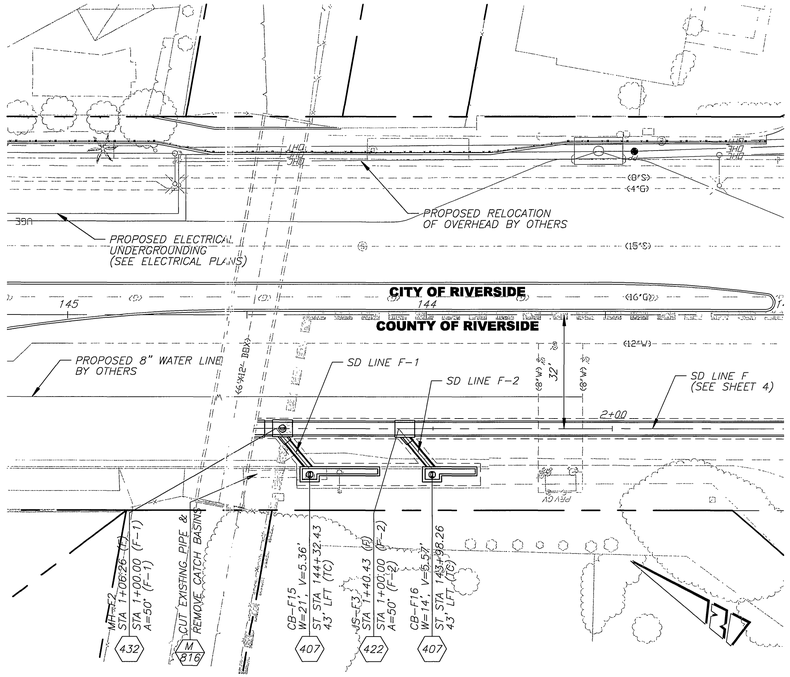
G:\COMMON\MKE'S GROUP\PROJECTS\STREETS\LA SIERRA-INDIANA TO CLEVELAND\DRAWINGS\PLANS\IMPROVEMENTS\STORM\D-770-08.DWG 08/31/05 3:29 pm

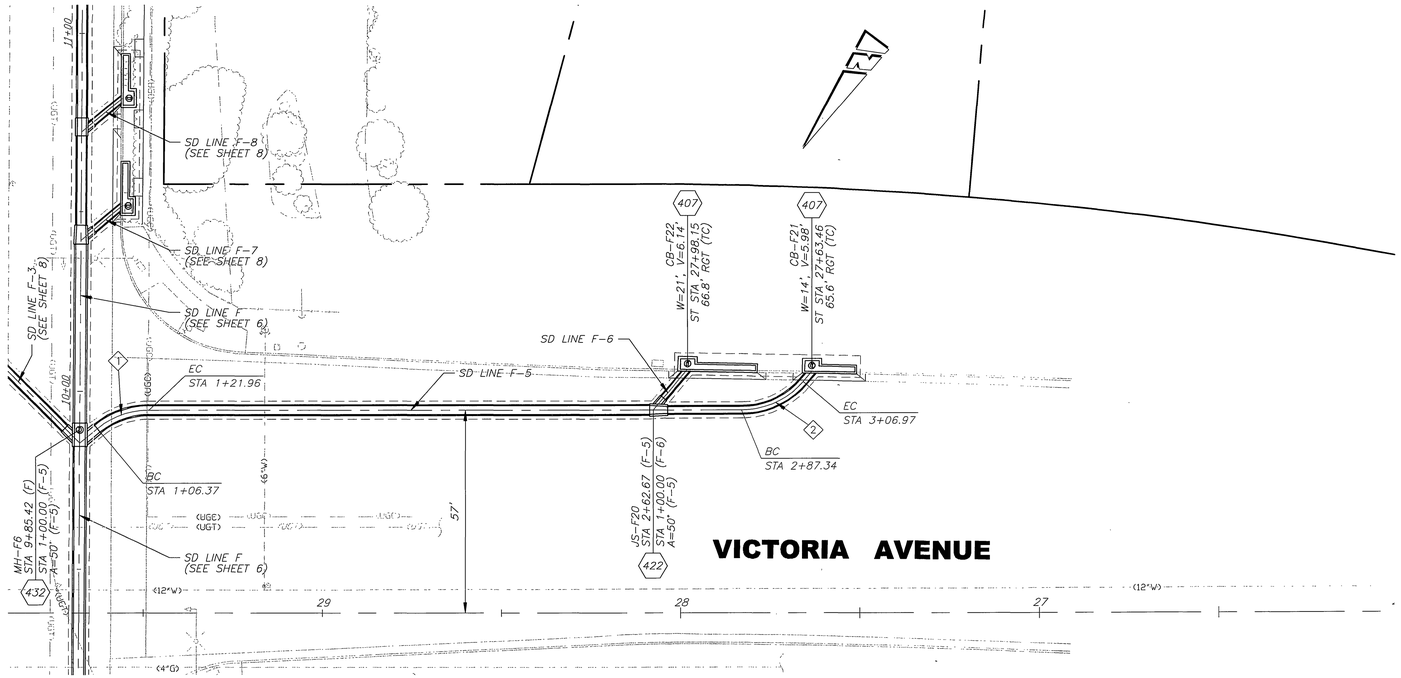












CURVE DATA					
◇	DELTA	RADIUS	LENGTH	TANGENT	REMARK
1	39°41'42"	22.50'	15.59'	8.12'	PIPE CENTERLINE
2	50°00'00"	22.50'	19.63'	10.49'	PIPE CENTERLINE

20 0 20 40 50
GRAPHIC SCALE

ENGINEER IN RESPONSIBLE CHARGE
MICHAEL KATUSIAN
R.C.E. No. 36686 expires 6/30/2006
DATE 8/31/05

REGISTERED PROFESSIONAL ENGINEER MICHAEL KATUSIAN No. 36686 Exp. 6-30-06 CIVIL STATE OF CALIFORNIA

MARK	REVISIONS	APPR.	DATE

DESIGNED BY P.L. DRAWN BY P.L. CHECKED BY M.K.

CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT

APPROVED BY	BY	DATE
PRINCIPAL ENGINEER	DH	9/1/05
CONSTRUCTION ADMIN.	RC	9/1/05
SURVEYOR	KM	9/1/05
STREET SERVICES	DM	9/1/05
TRAFFIC ENGINEER		
PARK & REC. DEP.		

APPROVED BY
CITY ENGINEER
DATE 9/2/05

LA SIERRA AVE STORM DRAIN IMPROVEMENTS
(FROM CLEVELAND AVENUE TO INDIANA AVENUE)
SD LINE F-1, F-2, F-5, & F-6

HORIZ. SCALE: 1"=20' VERT. SCALE: 1"=4'

ACCOUNT NO. 9576127152-440223
WORK ORDER NO. 0602072

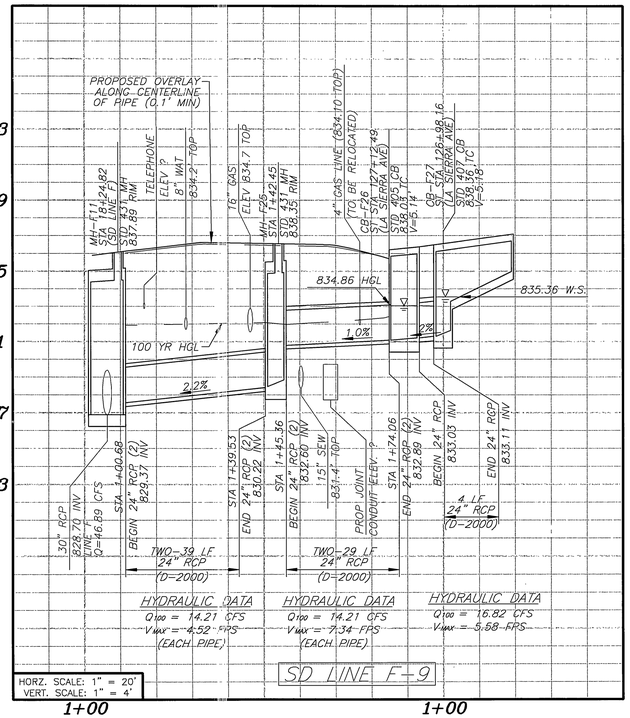
D-770

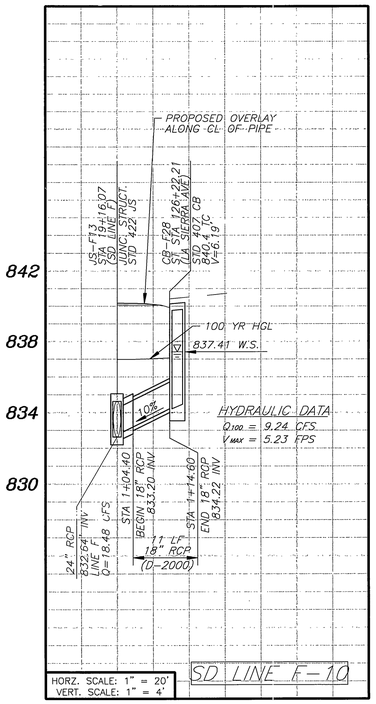
SHEET 9 OF 10

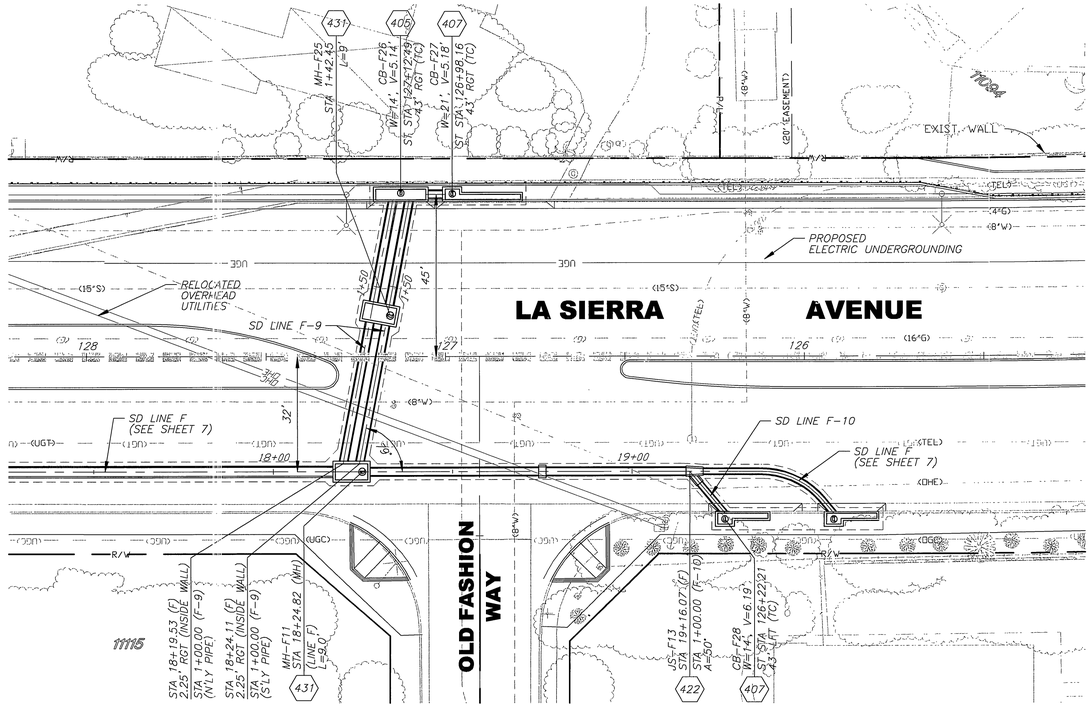
FILE NO.

INDEXED 6-12-06 LH

G:\COMMON\MIKE'S GROUP\PROJECTS\STREETS\LA SIERRA-INDIANA TO CLEVELAND\DRAWINGS\PLANS\IMPROVEMENTS\STORM\D-770-09.DWG 08/31/05 3:29 pm







ENGINEER IN RESPONSIBLE CHARGE
MICHAEL KATUSIAN
R.C.E. No. 35686 expires 6/30/~~06~~ 06
DATE 8/31/05

REGISTERED PROFESSIONAL ENGINEER MICHAEL KATUSIAN No. 35686 Exp. 6-30-06 CIVIL STATE OF CALIFORNIA

MARK	REVISIONS	APPR.	DATE

DESIGNED BY FL DRAWN BY FL CHECKED BY MK

CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT

APPROVED BY	BY	DATE
PRINCIPAL ENGINEER		9/12/05
CONSTRUCTION ADMIN.		9/12/05
SURVEYOR		9/12/05
STREET SERVICES		9/12/05
TRAFFIC ENGINEER		
PARK & REC. DEP.		

APPROVED BY _____ CITY ENGINEER
DATE 9/12/05

LA SIERRA AVE STORM DRAIN IMPROVEMENTS
(FROM CLEVELAND AVENUE TO INDIANA AVENUE
SD LINE F-9 & SD LINE F-10

HORIZ. SCALE: 1"=20' VERT. SCALE: 1"=4'

ACCOUNT. NO. 9576127152-440223
WORK ORDER. NO. 0602072

D-770

SHEET 10 OF 10

FILE NO.

INDEXED 6-12-06 GH

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