APPENDIX F
Settlement Monitoring Results

HILLWIG - GOODROW, LLC

Land Surveying • GPS Surveys • Aerial Mapping

March 15, 2005
PN 042-12

Mr. John Wiles
ELCO Contractors
1995 Nolan Street
San Bernardino, California 92405

RE: MONITOR SURVEYS FOR I-215 BORE AND JACK.

Dear John;

This notebook contains the daily reports of the surveys performed to monitor the surface of the I-215 State Highway, and the adjoining railroad, during the bore and jack period. Surveys were performed daily when work was being performed, excluding weekends and periods when weather prevented work. No settlement of the roadway surface was detected in this observation period.

The monitor period concluded on February 14, 2005. Subsequent surveys will be performed at dates of 3 months, 6 months and 1 year following the completion date. If you have any questions regarding the information provided, please contact our office.

Very Truly Yours,

HILLWIG-GOODROW, LLC

ALAN C. HILLWIG, PLS

PROFESSIONAL LAND SURVEYOR
ALAN C. HILLWIG
No. 5137
Exp. 6/30/07
STATE OF CALIFORNIA

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HILLWIG - GOODROW, LLC

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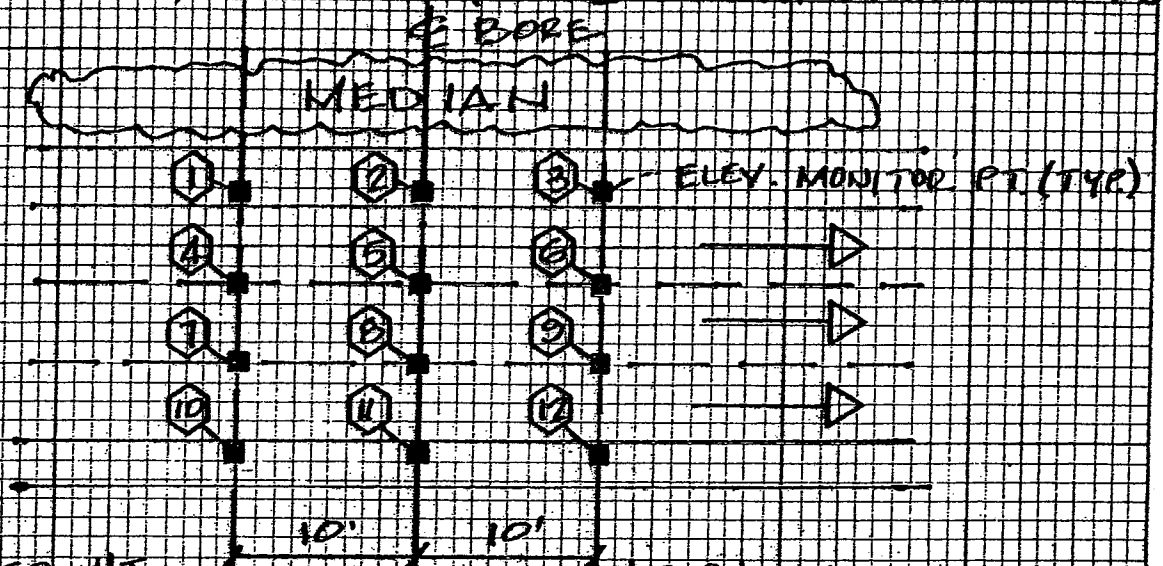
Client: ELCO Project: 10th STREET No. 042-12 Page 1 of 2

Prepared By: HILLWIG - GOODROW Date: 12/2/04

Description: HWY 215 - EAST SIDE - NORTH BOUND LANES



INSTR. HI STA CHECK

HI CHECK

℄ @ STA. 501

AZ 334-04-25

BS #0 0.00 #2 1104.985 #101 1105.01

	ORIG. ELEV.	ELEV CK.	CHANGE
1	1105.08	1105.08	0.00
2	1105.045	1105.045	0.00
3	1105.02	1105.02	0.00
4	1104.89	1104.89	0.00
5	1104.815	1104.815	0.00
6	1104.815	1104.815	0.00
7	1104.66	1104.66	0.00
8	1104.635	1104.635	0.00
9	1104.645	1104.645	0.00
10	1104.455	1104.455	0.00
11	1104.44	1104.44	0.00
12	1104.475	1104.475	0.00

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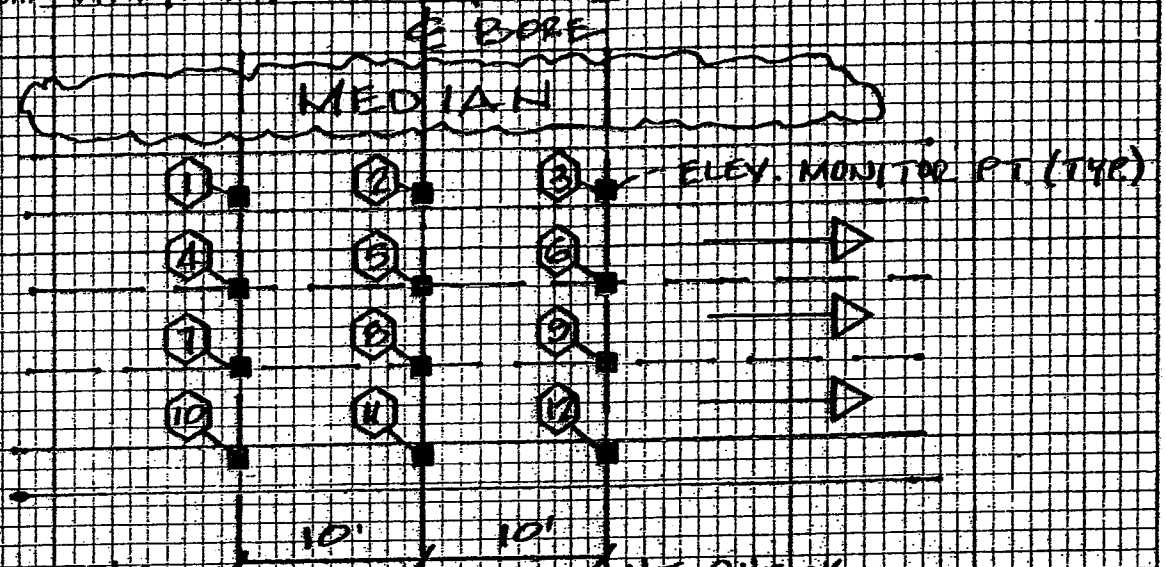
Land Surveying • GPS Surveys • Aerial Mapping

Client: ELCO Project: 10th STREET W.O. No.: 042-12 Page 1 of 2

Prepared By: HILLWIG - GOODROW Date: 12/22/04

Description: HWY 215 - EAST SIDE - NORTH BOUND LANES



INSTR. HI 5.29 HI CHECK

CHECK

⊼ @ STA. HG 501 ≠ HG 2 1104.98 ✓

BS HG 101 Az = 334° 04'25" dHD Prism 0.00 dVD = 0.00 ✓ IN D.A. dHD = 0.12 dHD = 0.02

	ORIG. ELEV.	ELEV CK.	CHANGE
1	1105.08	1105.09	+0.01
2	1105.045	1105.06	+0.015
3	1105.02	1105.03	+0.01
4	1104.89	1104.90	+0.01
5	1104.815	1104.83	+0.015
6	1104.815	1104.83	+0.015
7	1104.66	1104.675	+0.015
8	1104.635	1104.65	+0.015
9	1104.645	1104.655	+0.01
10	1104.455	1104.47	+0.015
11	1104.44	1104.455	+0.015
12	1104.475	1104.485	+0.01

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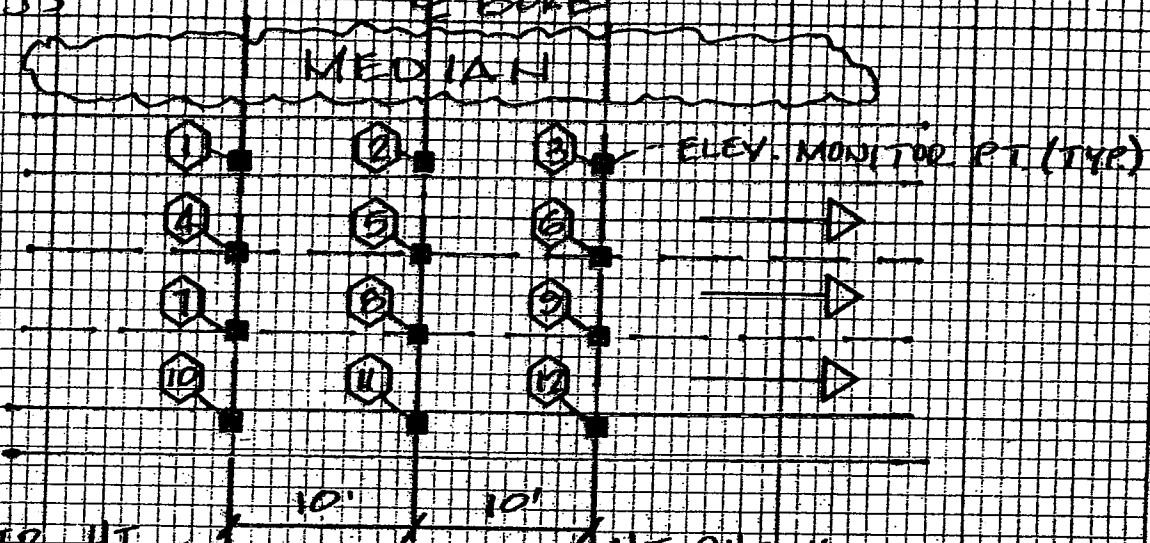
Client: ELCO Project: 10th STREET Y.O. No.: 042-12 Page 1 of 2

Prepared By: HILLWIG - GOODROW Date: 12-23-04

Description: HWY 215 - EAST SIDE - NORTH BOUND LANES

RJG, JS



INSTR. HI 5.11 HI CHECK

CHECK

⊼ @ STA. 501 (D/R)

EL 1105.175 @

BS CIC #2 1104.98 CIC 101 1105.005

HO 0.00

	ORIG. ELEV.	ELEV CK.	CHANGE
1	1105.08	1105.08	0.00
2	1105.045	1105.04	-0.005
3	1105.02	1105.015	-0.005
4	1104.89	1104.885	-0.005
5	1104.815	1104.81	-0.005
6	1104.815	1104.81	-0.005
7	1104.66	1104.66	0.00
8	1104.635	1104.63	-0.005
9	1104.645	1104.64	-0.005
10	1104.455	1104.45	-0.005
11	1104.44	1104.435	-0.005
12	1104.475	1104.47	-0.005

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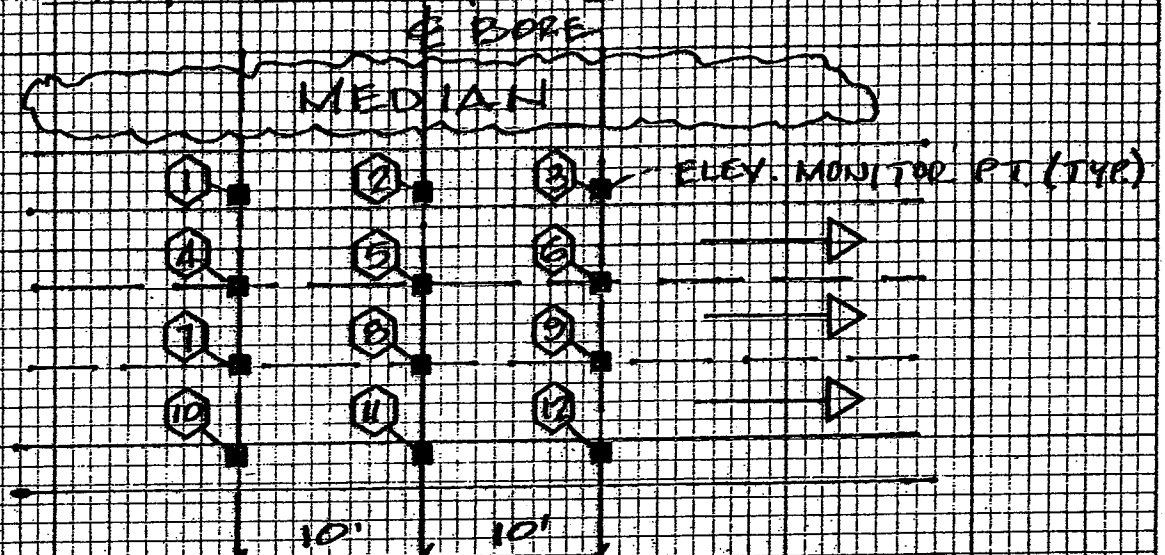
Client: ELCO Project: 10th STREET No. 042-12 Page 1 of 2

Prepared By: HILLWIG - GOODROW Date: 12/21/04

Description: HWY 215 - EAST SIDE - NORTH BOUND LANES



INSTR. HI 5.32 HI CHECK 5.32

CHECK

⊼ @ STA. 501 El = 1105.175

BS #2 El = 1104.98 CK to Pt. 101 El = 1105.005

	ORIG. ELEV.	ELEV CK.	CHANGE
1	1105.08	1105.08	0
2	1105.045	1105.04	-0.005
3	1105.02	1105.02	0
4	1104.89	1104.89	0
5	1104.815	1104.81	-0.005
6	1104.815	1104.81	-0.005
7	1104.66	1104.66	0
8	1104.685	1104.63	-0.005
9	1104.645	1104.64	-0.005
10	1104.455	1104.45	-0.005
11	1104.44	1104.44	0
12	1104.475	1104.48	+0.005

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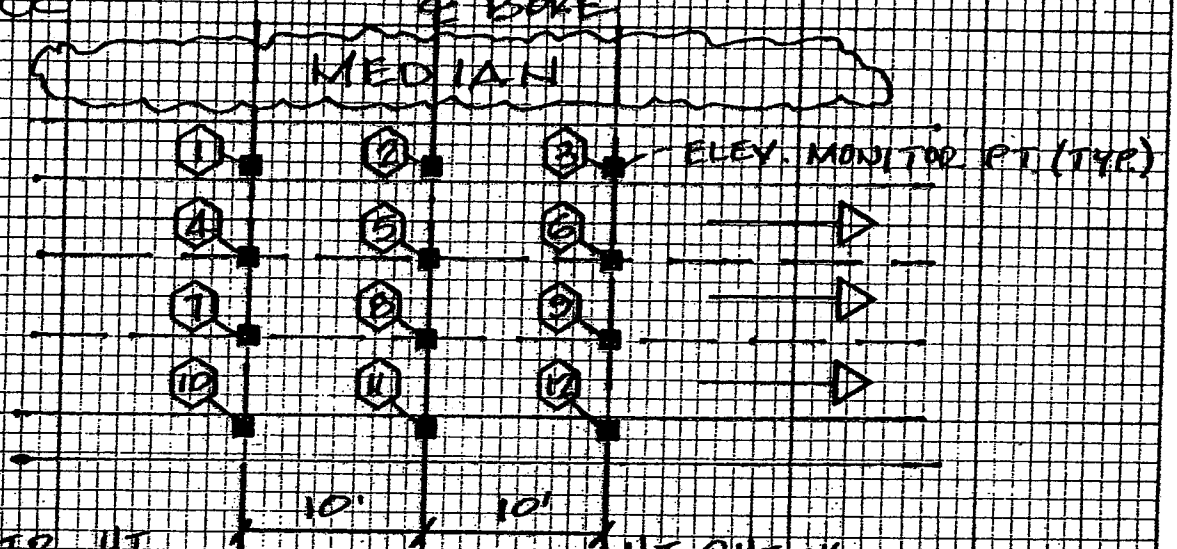
Client: ELCO Project: 10th STREET Job No.: 042-12 Page 1 of 2

Prepared By: HILLWIG - GOODROW Date: 12-28-04

Description: HWY 215 - EAST SIDE - NORTH BOUND LANES

RJG/LR



INSTR. HI 5.21
CHECK

⊼ @ STA. 501

EL = 1105.175 BS HO 0.00

BS Z = 1104.985 ✓ 101 EL 1105.005

	ORIG. ELEV.	ELEV CK.	CHANGE
1	1105.08	1105.07	-0.01
2	1105.045	1105.035	-0.01
3	1105.02	1105.01	-0.01
4	1104.89	1104.88	-0.01
5	1104.815	1104.805	-0.01
6	1104.815	1104.805	-0.01
7	1104.66	1104.65	-0.01
8	1104.635	1104.625	-0.01
9	1104.645	1104.635	-0.01
10	1104.455	1104.445	-0.01
11	1104.44	1104.43	-0.01
12	1104.475	1104.465	-0.01

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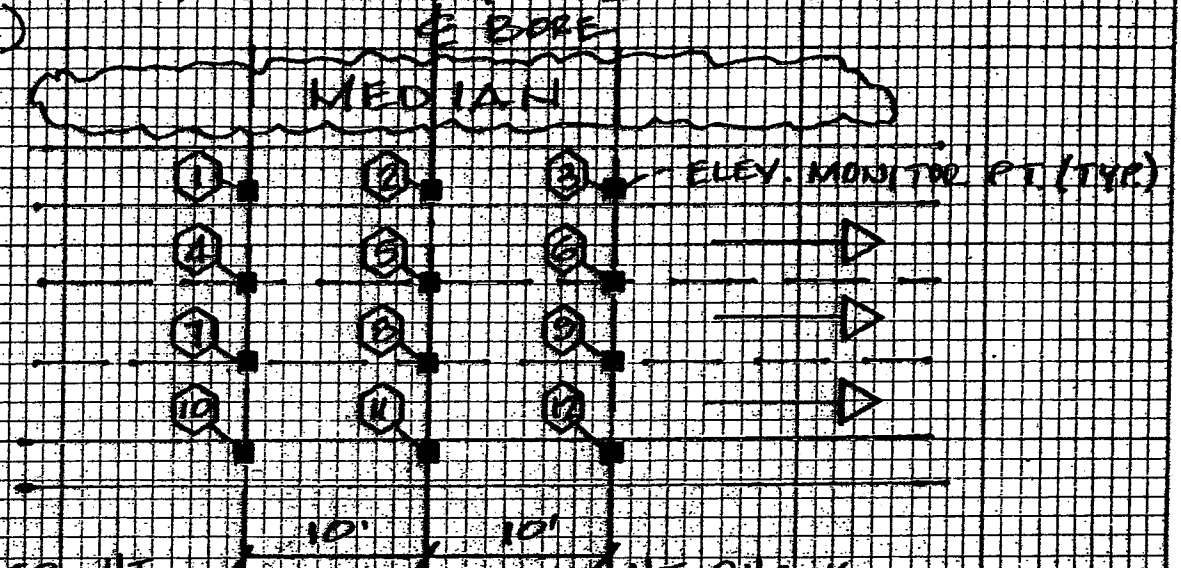
HILLWIG - GOODROW, LLC

Land Surveying • GPS Surveys • Aerial Mapping

Client: ELCO Project: 10th STREET O. No.: 042-12 Page 1 of 2

Prepared By: HILLWIG - GOODROW Date: 12-29-04

Description: HWY 215 - EAST SIDE - NORTH BOUND LANES (RJG)



INSTR. HI 5.26
CHECK
⊼ @ STA. 501

EL 1105.175 (Beg) (Ok in Rev) (Beg) Ok in Good

BS #2 1104.985 (1104.99) #101 EL = 1105.005 (1105.01)

	ORIG. ELEV.	ELEV CK.	CHANGE
1	1105.08	1105.07	-0.01
2	1105.045	1105.035	-0.01
3	1105.02	1105.01	-0.01
4	1104.89	1104.885	-0.005
5	1104.815	1104.81	-0.005
6	1104.815	1104.81	-0.005
7	1104.66	1104.655	-0.005
8	1104.635	1104.625	-0.01
9	1104.645	1104.635	-0.01
10	1104.455	1104.45	-0.005
11	1104.44	1104.435	-0.005
12	1104.475	1104.47	-0.005

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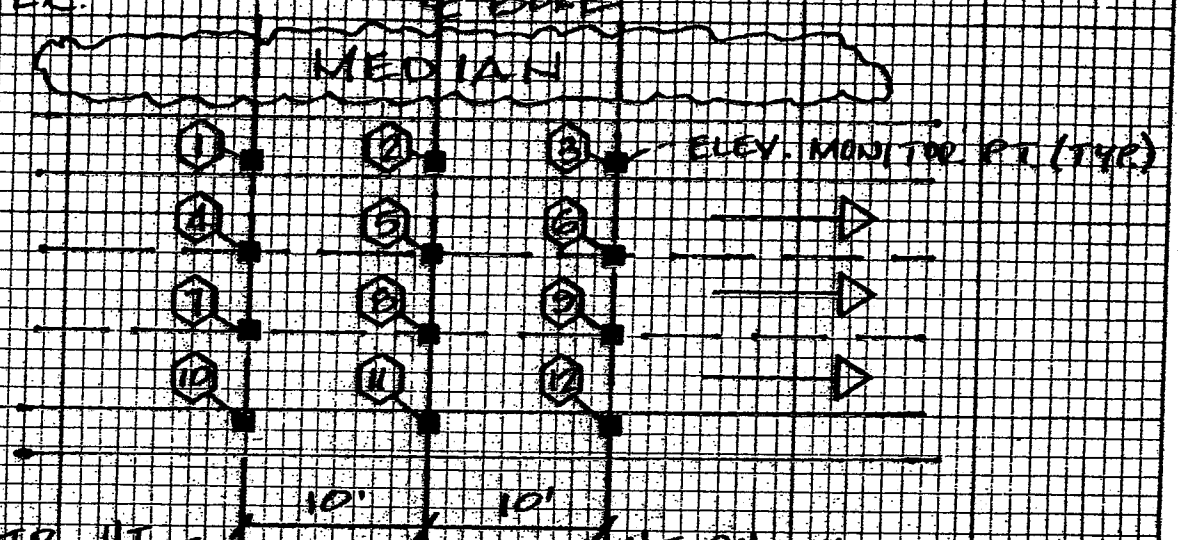
Client: ELCO Project: 10th STREET Job No.: 042-12 Page 1 of 2

Prepared By: HILLWIG - GOODROW Date: 12-30-04

Description: HWY 215 - EAST SIDE - NORTH BOUND LANES

RJG/LR



INSTR. HI 5.30
CHECK

⊼ @ STA. 501

EL = 1105.175

BS #2 EL 1104.985 ✓ #101 EL 1105.005 ✓

	ORIG. ELEV.	ELEV CK.	CHANGE
1	1105.08	1105.08	0.00
2	1105.045	1105.045	0.00
3	1105.02	1105.02	0.00
4	1104.89	1104.89	0.00
5	1104.815	1104.815	0.00
6	1104.815	1104.815	0.00
7	1104.66	1104.66	0.00
8	1104.635	1104.63	-0.005
9	1104.645	1104.64	-0.005
10	1104.455	1104.455	0.00
11	1104.44	1104.44	0.00
12	1104.475	1104.475	0.00

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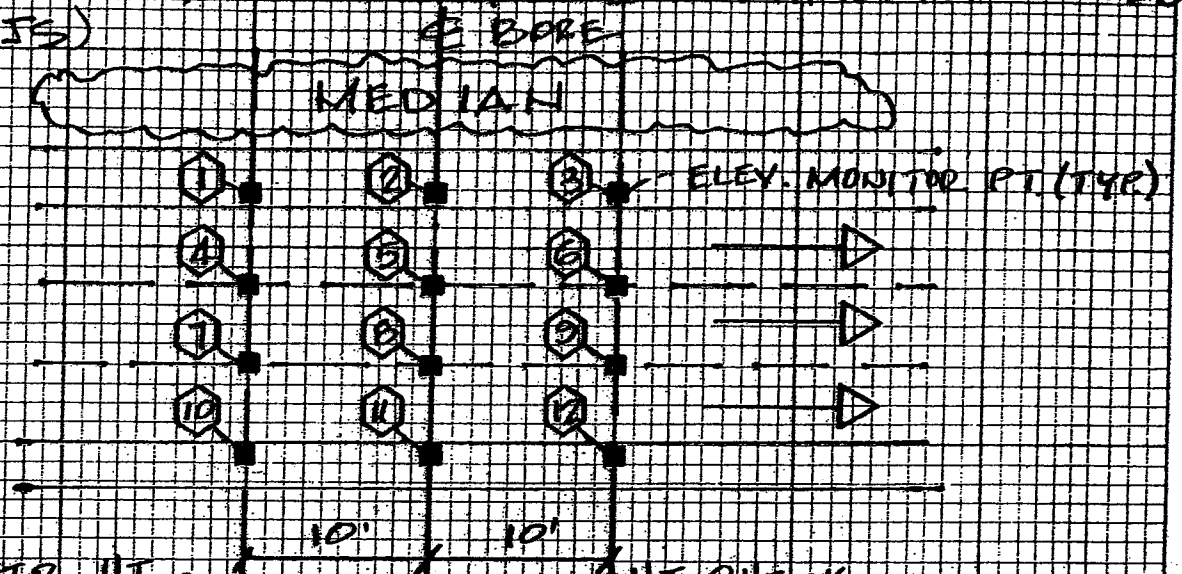
Client: ELCO Project: 10th STREET W.O. No.: 042-12 Page 1 of 2

Prepared By: HILLWIG - GOODROW Date: 1-03-05

Description: HWY 215 - EAST SIDE - NORTH BOUND LANES

(RJG, JS)



INSTR. HI 5.045
CHECK 5.045
⊼ @ STA. 501
EL = 1105.175
BS CK #2 1104.985 CK #101 1105.005

	ORIG. ELEV.	ELEV CK.	CHANGE
1	1105.08	1105.08	0.00
2	1105.045	1105.04	-0.005
3	1105.02	1105.015	-0.005
4	1104.89	1104.885	-0.005
5	1104.815	1104.81	-0.005
6	1104.815	1104.81	-0.005
7	1104.66	1104.66	0.00
8	1104.635	1104.63	-0.005
9	1104.645	1104.64	-0.005
10	1104.455	1104.45	-0.005
11	1104.44	1104.435	-0.005
12	1104.475	1104.47	-0.005

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