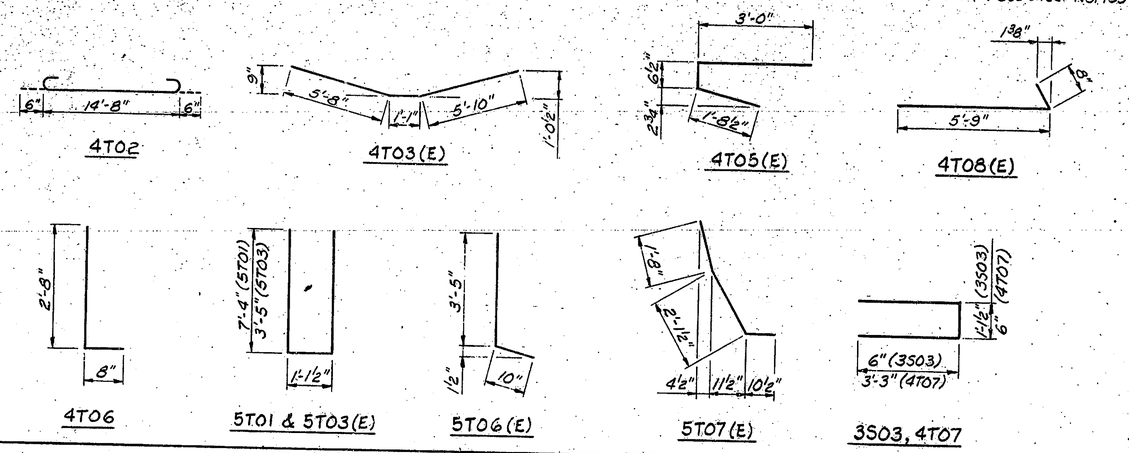
## BAR BENDING DIAGRAMS

NOTE: Number preceding letter denotes bar size.
All dimensions are out to out.
All bar bending diagrams shall be in accordance with A.C.I. Standards.

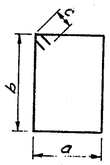
### TYPICAL SECTION REINFORCEMENT

NOTE: (*) See Sheet No. 109



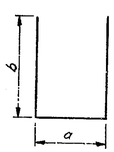

### EXPANSION JOINT REINFORCEMENT

| Bar | a | b | c |
|---|---|---|---|
| 4E03(E) | 3'-8" | 9" | 4½" |
| 4E04(E) | 1'-7" | 2'-3" | 4½" |
| 4E05(E) | 10" | 2'-9½" | 4½" |
| 4E06(E) | 3'-2½" | 2'-9½" | 4½" |
| 4E07(E) | 3'-2½" | 4'-3½" | 4½" |
| 4E08(E) | 10" | 4'-3½" | 4½" |
| 5E04 | 4'-10" | 11½" | 5½" |
| 5E06 | 8'-6" | 11½" | 5½" |
| 7E01 | 8'-6" | 11½" | 7½" |

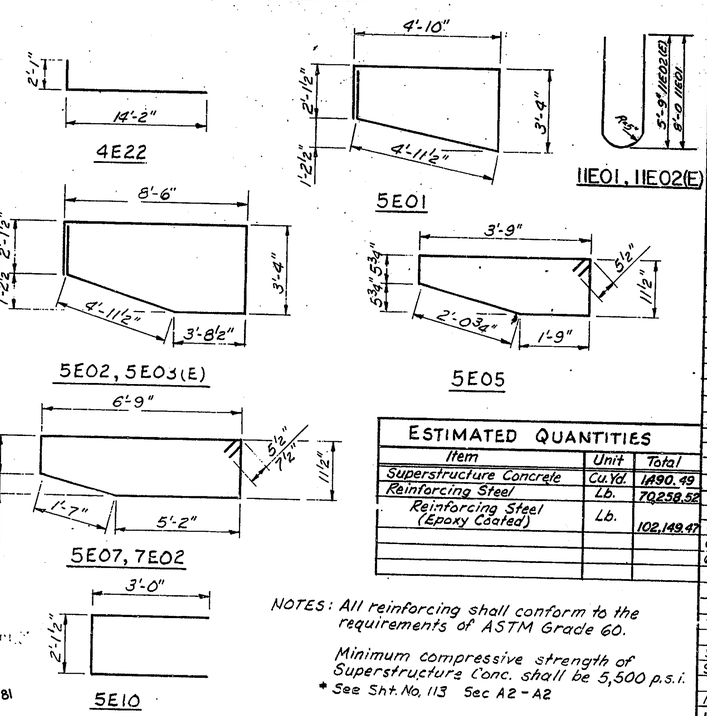



4E03(E) thru 4E08(E), 5E04, 5E06, 7E01

| Bar | a | b |
|---|---|---|
| 4E09(E) | 10" | 4'-0" |
| 4E10 | 10" | 6'-5" |
| 4E11(E) | 2'-9" | 3'-0" |
| 4E12 | 2'-9" | 7'-5½" |
| 4E13(E) | 2'-6½" | 3'-0" |
| 4E14 | 2'-6½" | 7'-5½" |
| 4E15(E) | 2'-4½" | 3'-0" |
| 4E16 | 2'-4½" | 7'-5½" |
| 4E17(E) | 2'-1½" | 3'-0" |
| 4E18 | 2'-1½" | 7'-5½" |
| 5E08(E) | 2'-1½" | 3'-6" |
| 5E09 | 2'-1½" | 6'-11½" |
| 6E01(E) | 2'-1½" | 3'-6" |
| 6E02 | 2'-1½" | 6'-11½" |
| 6C03 | 1'-10" | 1'-0" |




4E09(E) thru 4E18(E), 5E08(E), 5E09, 6E01(E), 6E02, 6C03




### ESTIMATED QUANTITIES

| Item | Unit | Total |
|---|---|---|
| Superstructure Concrete | Cu.Yd. | 1490.49 |
| Reinforcing Steel | Lb. | 70,258.52 |
| Reinforcing Steel (Epoxy Coated) | Lb. | 102,149.47 |

NOTES: All reinforcing shall conform to the requirements of ASTM Grade 60.

Minimum compressive strength of Superstructure Conc. shall be 5,500 p.s.i.

* See Sht. No. 113 Sec A2 - A2

"APPROVED FOR CONSTRUCTION"
M. B. [illegible]
11-2-81

DESIGNED M.M. C'K'D. M.M.
DRAWN RET. C'K'D. M.M.
TRACED RET C'K'D. M.M.

## BILL OF MATERIAL

| UNIT I Bar | No. | Length | Bent | Str. |
|---|---|---|---|---|
| 3S03 | 328 | 2'-2" | • | |
| 4C04(*) | 48 | 9'-0" | • | |
| 4T01 | 214 | 16'-10" | | • |
| 4T02 | 214 | 15'-8" | • | |
| 4T03(E) | 410 | 12'-8" | • | |
| 4T04(E) | 254 | 28'-2" | | • |
| 4T05(E) | 508 | 5'-3" | • | |
| 4T06 | 398 | 3'-4" | • | |
| 4T07 | 104 | 7'-0" | • | |
| 4T08(E) | 196 | 6'-5" | • | |
| 4T09(E) | 127 | 10'-8" | | • |
| 4L01(E) | 28 | 12'-6" | | • |
| 4L04 | 124 | 60'-0" | | • |
| 4L04(E) | 174 | 60'-0" | | • |
| 4L05 | 30 | 46'-9" | | • |
| 4L06 | 48 | 46'-3" | | • |
| 4L07 | 14 | 26'-0" | | • |
| 4L08 | 14 | 15'-8" | | • |
| 4L09 | 32 | 50'-8" | | • |
| 4L10(E) | 58 | 38'-0" | | • |
| 4E01(E) | 3 | 28'-2" | | • |
| 4E02 | 4 | 28'-2" | | • |
| 4E03(E) | 46 | 9'-7" | • | |
| 4E04(E) | 23 | 8'-5" | • | |
| 4E05(E) | 12 | 8'-0" | • | |
| 4E06(E) | 6 | 12'-9" | • | |
| 4E07(E) | 4 | 15'-9" | • | |
| 4E08(E) | 8 | 11'-0" | • | |
| 4E09(E) | 10 | 8'-10" | • | |
| 4E10 | 10 | 13'-3" | • | |
| 4E11(E) | 2 | 8'-9" | • | |
| 4E12 | 2 | 17'-8" | • | |
| 4E13(E) | 2 | 8'-7" | • | |
| 4E14 | 2 | 17'-6" | • | |
| 4E15(E) | 2 | 8'-5" | • | |
| 4E16 | 2 | 17'-4" | • | |
| 4E17(E) | 2 | 8'-2" | • | |
| 4E18 | 2 | 17'-1" | • | |
| 4E19(E) | 29 | 6'-6" | | • |
| 4E20(E) | 29 | 4'-8" | | • |
| 4E21 | 34 | 4'-10" | | • |
| 4E22 | 16 | 16'-3" | • | |
| 5T01 | 420 | 15'-10" | • | |
| 5T03(E) | 420 | 8'-0" | • | |
| 5T04(E) | 127 | 10'-8" | | • |
| 5T05(E) | 508 | 8'-0" | | • |
| 5T06(E) | 508 | 4'-3" | • | |
| 5T07(E) | 508 | 4'-8" | • | |
| 5E01 | 8 | 17'-5" | • | |
| 5E02 | 6 | 24'-9" | • | |
| 5E03(E) | 2 | 24'-9" | • | |
| 5E04 | 8 | 12'-5" | • | |
| 5E05 | 8 | 10'-0" | • | |
| 5E06 | 2 | 19'-10" | • | |
| 5E07 | 2 | 16'-0" | • | |
| 5E08(E) | 30 | 9'-8" | • | |
| 5E09 | 30 | 16'-1" | • | |
| 5E10 | 14 | 8'-2" | • | |
| 6E01(E) | 28 | 9'-2" | • | |
| 6E02 | 28 | 16'-1" | • | |
| 6C03(*) | 48 | 3'-10" | • | |
| 6L01 # | 12 | 17'-0" | | • |
| 7E01 | 4 | 20'-1" | • | |
| 7E02 | 4 | 16'-3" | • | |
| 7E03(E) | 4 | 28'-2" | | • |
| 7E04 | 18 | 16'-10" | | • |
| 9E01(E) | 4 | 28'-2" | | • |
| 9E02 | 8 | 10'-6" | | • |
| 11E01 | 12 | 16'-10" | • | |
| 11E02(E) | 12 | 12'-4" | • | |

| UNIT II Bar | No. | Length | Bent | Str. |
|---|---|---|---|---|
| 3S03 | 304 | 2'-2" | • | |
| 4T01 | 201 | 16'-10" | | • |
| 4T02 | 201 | 15'-8" | • | |
| 4T03(E) | 382 | 12'-8" | • | |
| 4T04(E) | 229 | 28'-2" | | • |
| 4T05(E) | 229 | 5'-3" | • | |
| 4T06 | 368 | 3'-4" | • | |
| 4T07 | 74 | 7'-0" | • | |
| 4T08(E) | 152 | 6'-5" | • | |
| 4T09(E) | 114 | 10'-8" | | • |
| 4L01(E) | 28 | 12'-6" | | • |
| 4L04 | 124 | 60'-0" | | • |
| 4L04(E) | 174 | 60'-0" | | • |
| 4L15 | 48 | 32'-7" | | • |
| 4L16 | 48 | 41'-3" | | • |
| 4L17 | 14 | 9'-0" | | • |
| 4L18 | 14 | 19'-0" | | • |
| 4L19 | 14 | 21'-0" | | • |
| 4L20 | 14 | 15'-8" | | • |
| 4L21(E) | 58 | 15'-0" | | • |
| 5T01 | 406 | 15'-10" | • | |
| 5T03(E) | 406 | 8'-0" | • | |
| 5T04(E) | 115 | 10'-8" | | • |
| 5T05(E) | 458 | 8'-0" | | • |
| 5T06(E) | 458 | 4'-3" | • | |
| 5T07(E) | 458 | 4'-8" | • | |
| 6L01 # | | 17'-0" | | • |

| UNIT III Bar | No. | Length | Bent | Str. |
|---|---|---|---|---|
| 3S03 | 250 | 2'-2" | • | |
| 4T01 | 223 | 16'-10" | | • |
| 4T02 | 223 | 15'-8" | • | |
| 4T03(E) | 464 | 12'-8" | • | |
| 4T04(E) | 249 | 28'-2" | | • |
| 4T05(E) | 498 | 5'-3" | • | |
| 4T06 | 442 | 3'-4" | • | |
| 4T07 | 90 | 7'-0" | • | |
| 4T08(E) | 68 | 6'-5" | • | |
| 4T09(E) | 124 | 10'-8" | | • |
| 4L01(E) | 28 | 12'-6" | | • |
| 4L04 | 76 | 60'-0" | | • |
| 4L04(E) | 174 | 60'-0" | | • |
| 4L30 | 48 | 50'-0" | | • |
| 4L31 | 48 | 40'-0" | | • |
| 4L32 | 48 | 32'-7" | | • |
| 4L33 | 62 | 20'-8" | | • |
| 4L34 | 14 | 19'-0" | | • |
| 4L35 | 14 | 37'-4" | | • |
| 4L36(E) | 58 | 32'-1" | | • |
| 5T01 | 460 | 15'-10" | • | |
| 5T03(E) | 460 | 8'-0" | • | |
| 5T04(E) | 125 | 10'-8" | | • |
| 5T05(E) | 498 | 8'-0" | | • |
| 5T06(E) | 498 | 4'-3" | • | |
| 5T07(E) | 498 | 4'-8" | • | |
| 6L01 # | | 17'-0" | | • |

Figg and Muller Engineers Inc.
1515 North Calhoun Street
Tallahassee, Florida 32303

BAR BENDING DIAGRAMS & BILL OF MATERIAL - UNITS I thru III

# INDIANA STATE HIGHWAY COMMISSION

LAKE COUNTY - RAMP:- D SECTION:-
SCALE:- N.T.S. DATE:- July 29, 1981
SUBMITTED FOR APPROVAL Eugene C. [illegible]
DRAWING:- OF SHEET:- 107 OF
PROJECT:- MM 220-1(8)
CONTRACT NO. B-12752
BRIDGE FILE:- 912-45-2546 REX