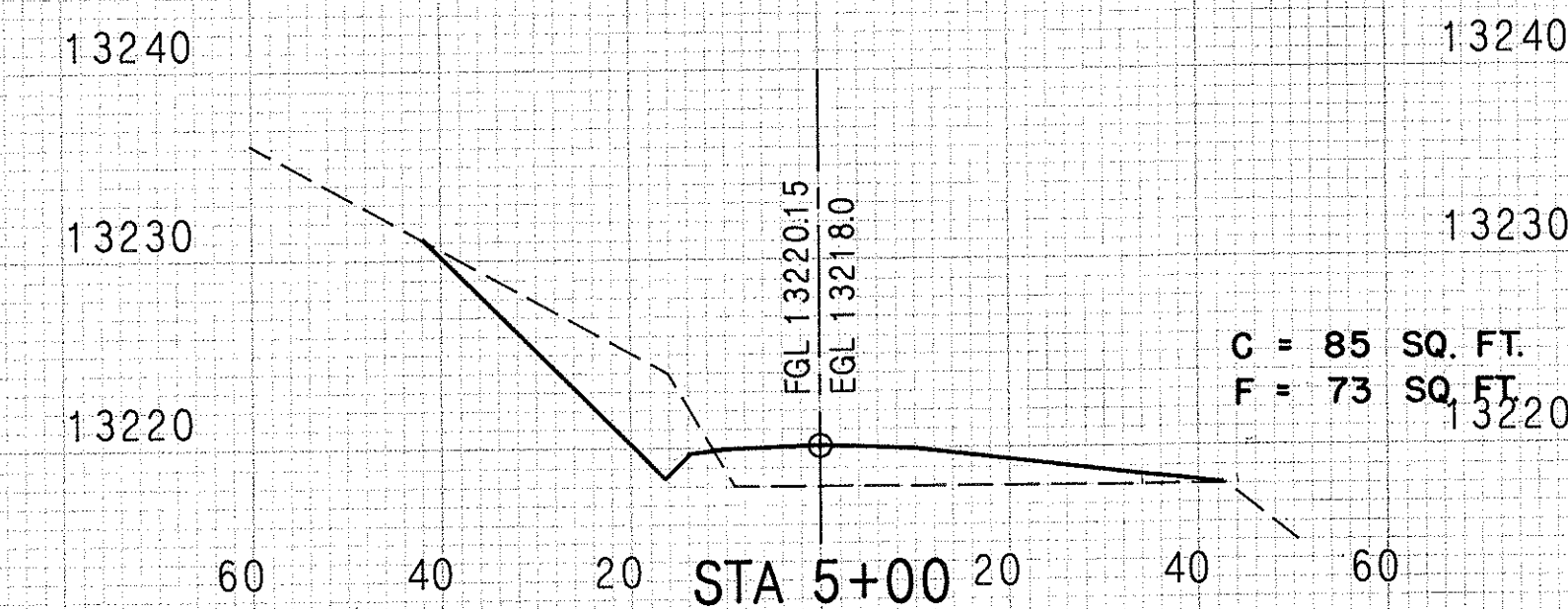
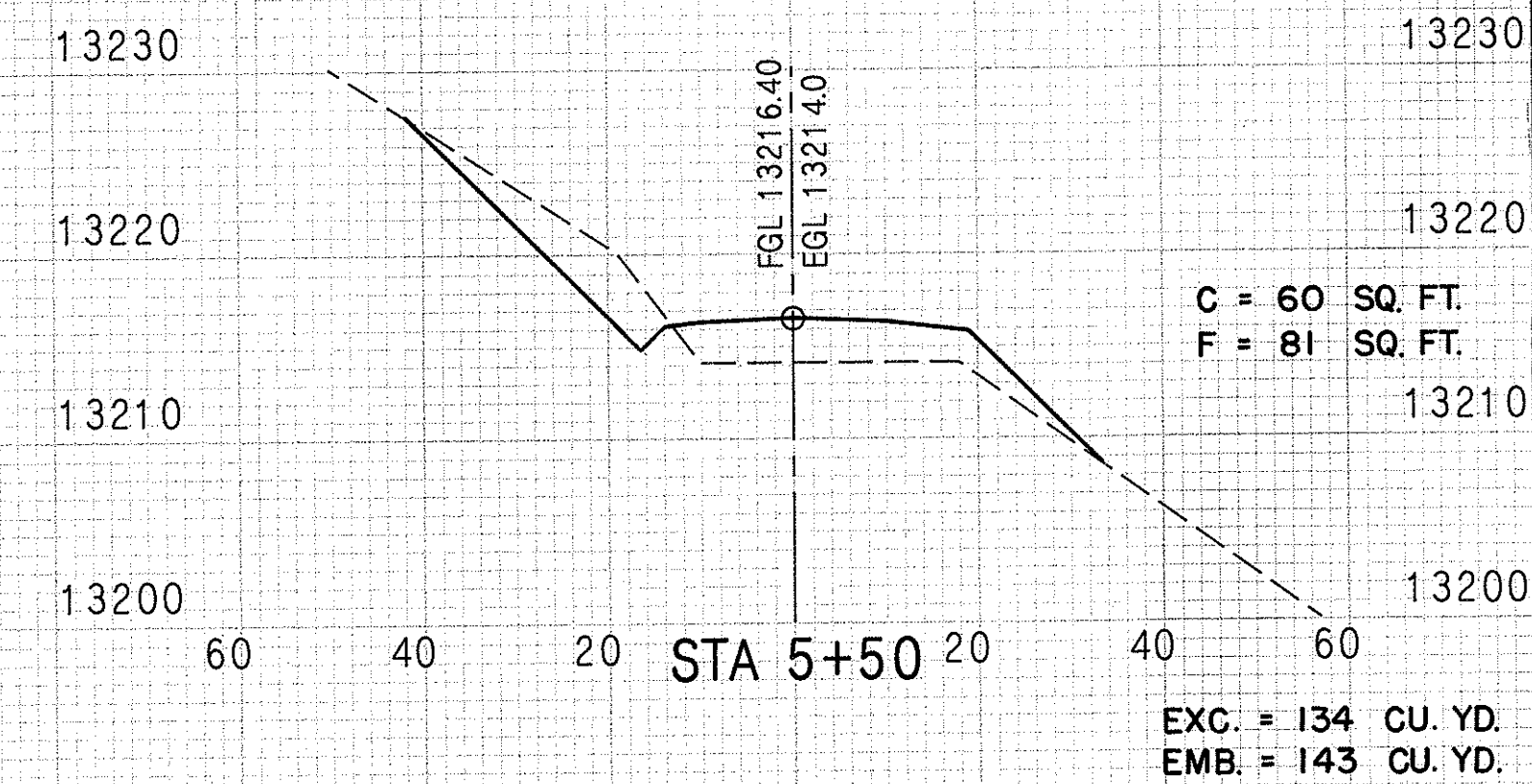
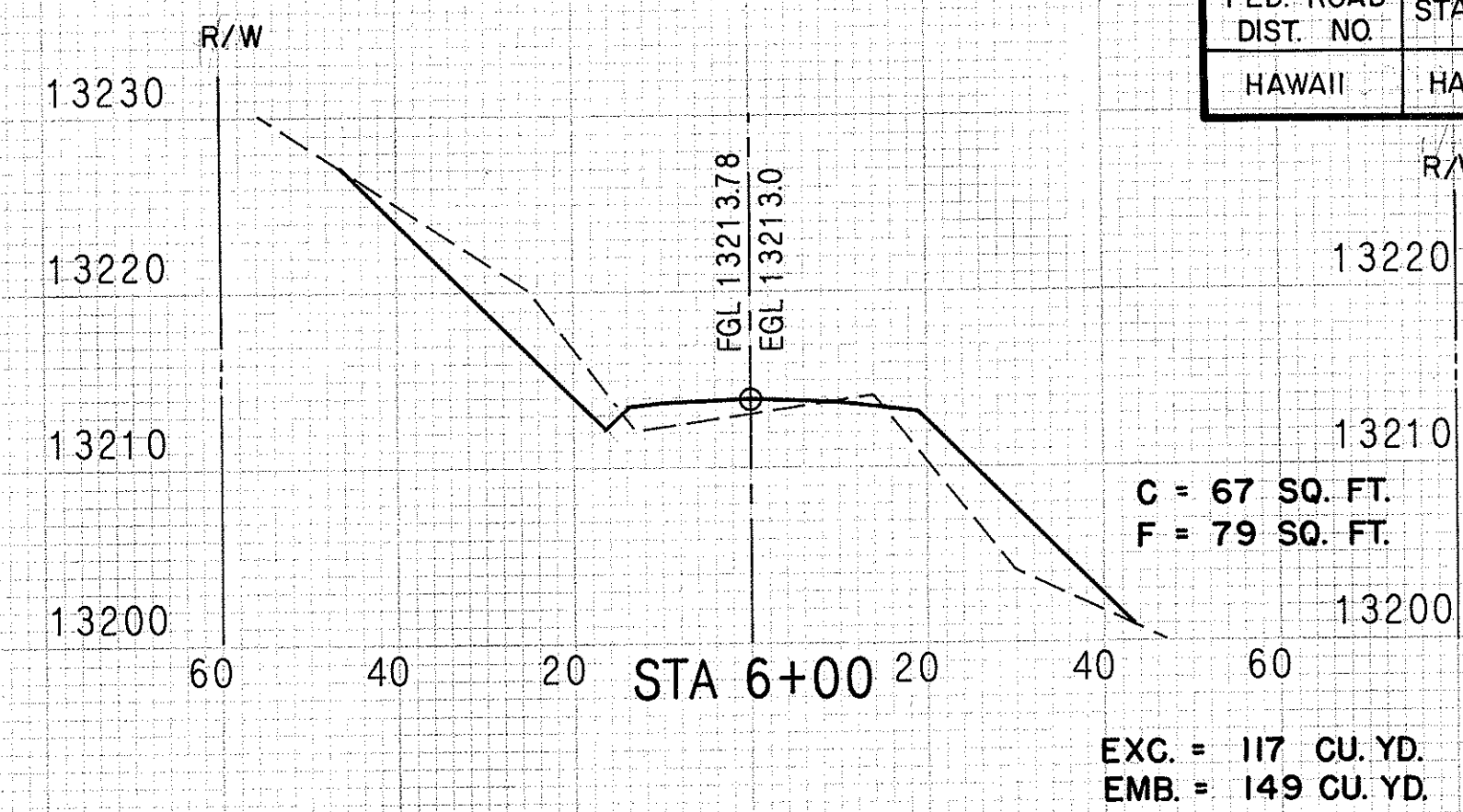
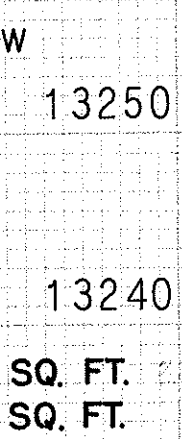
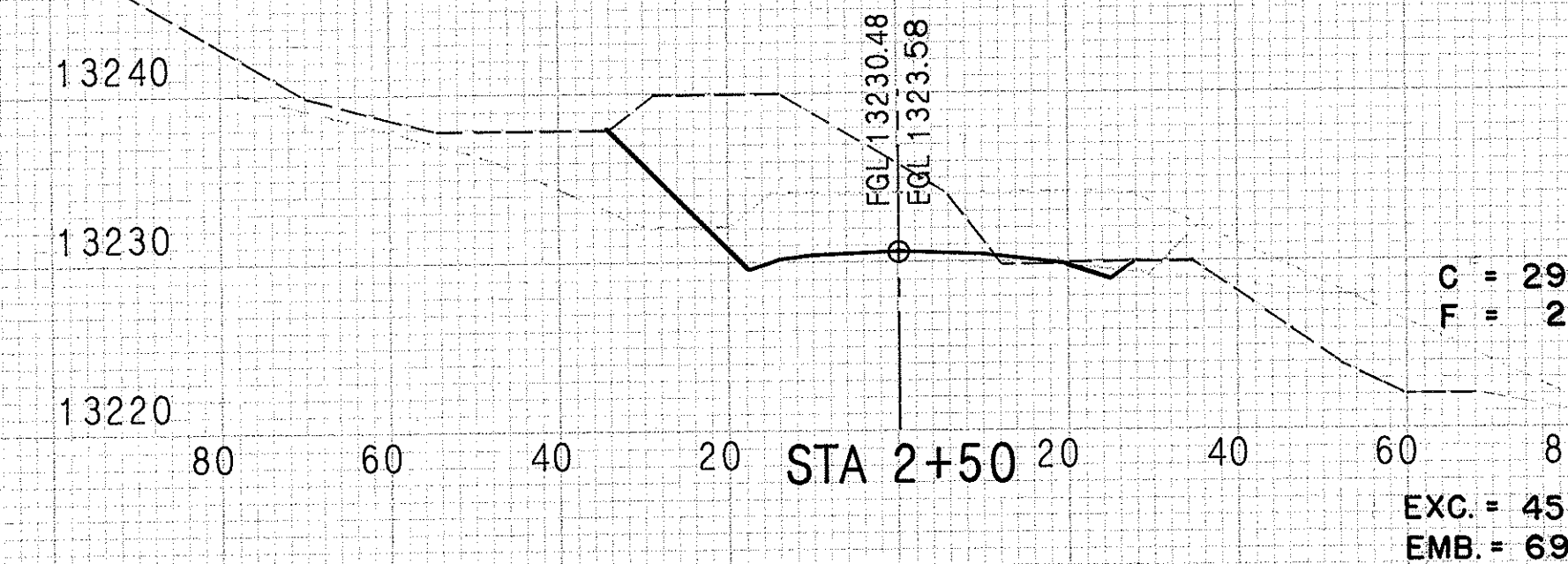
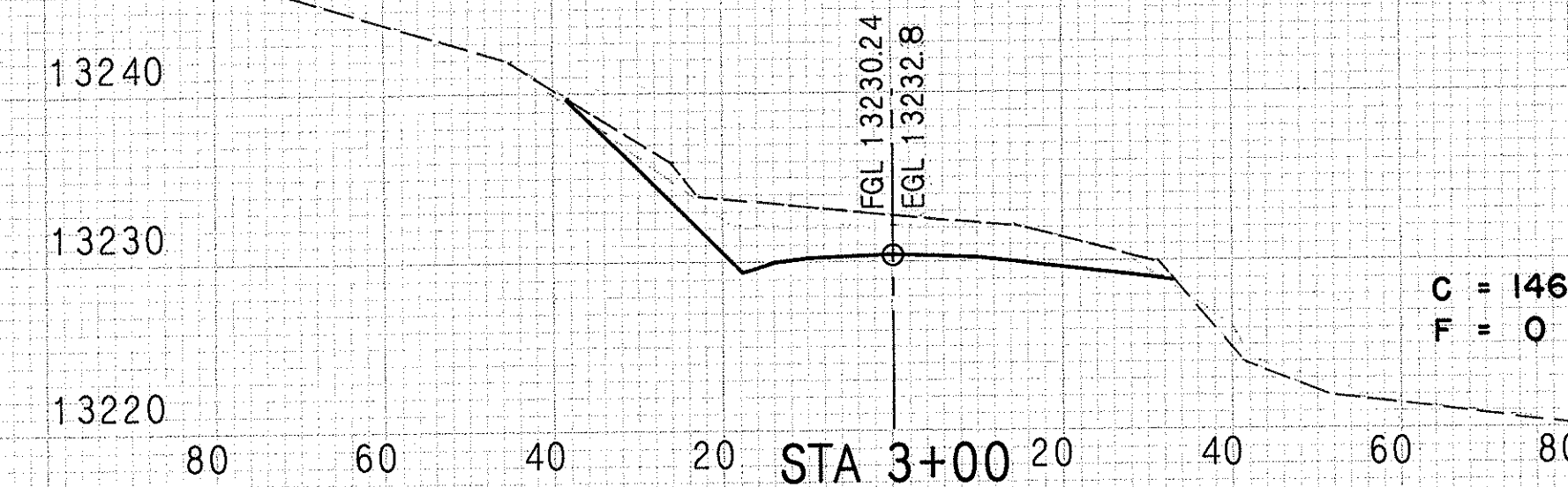
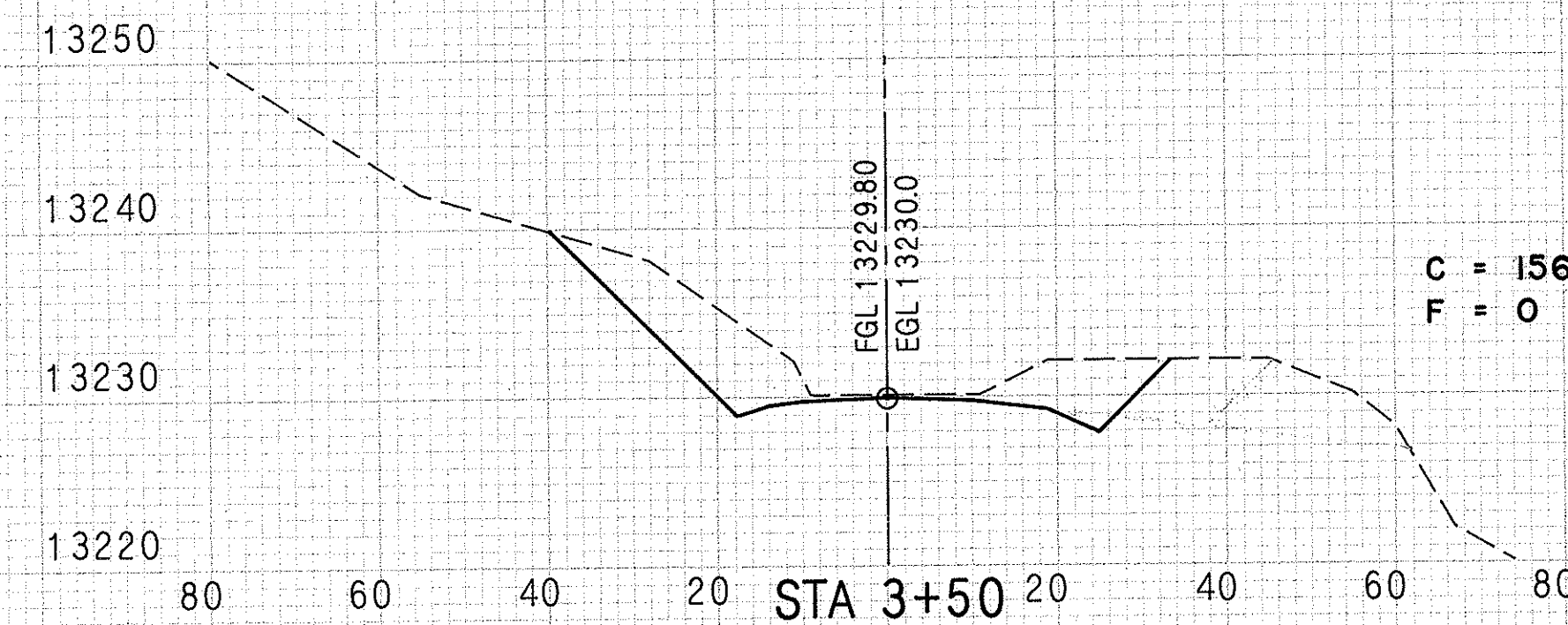
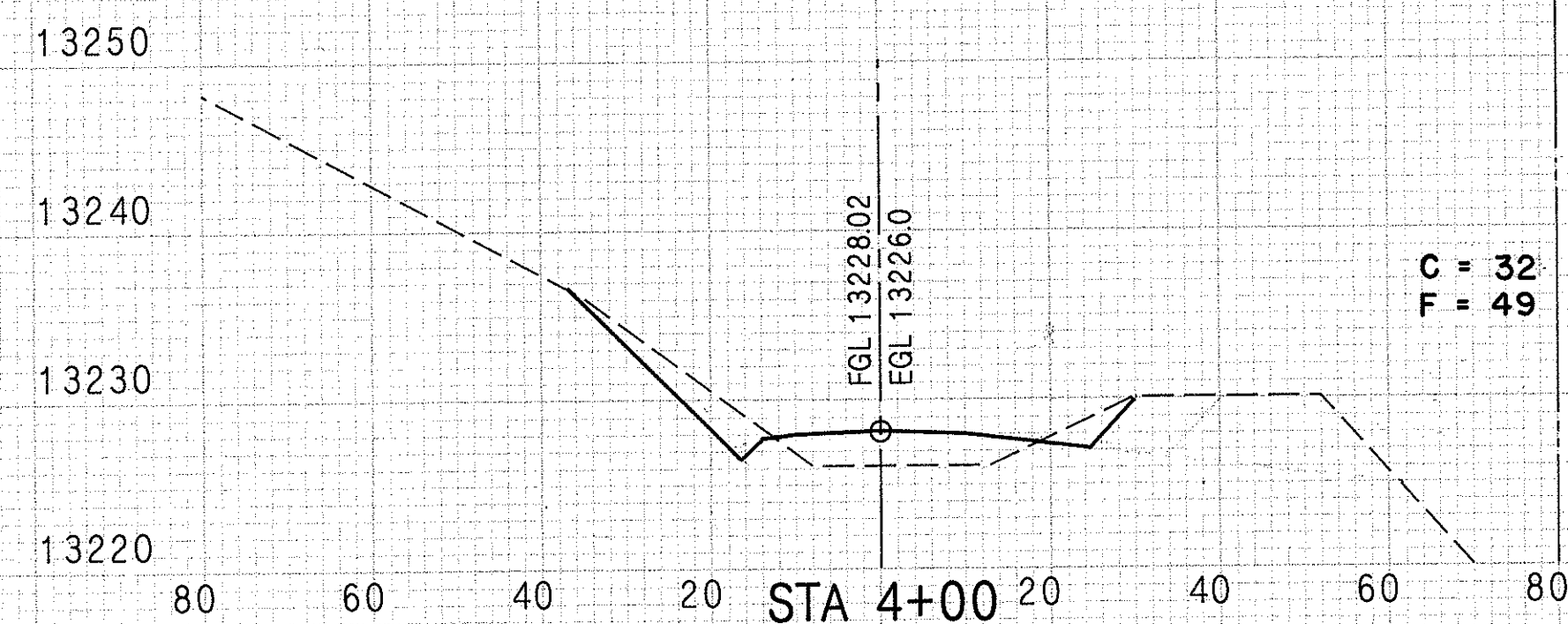
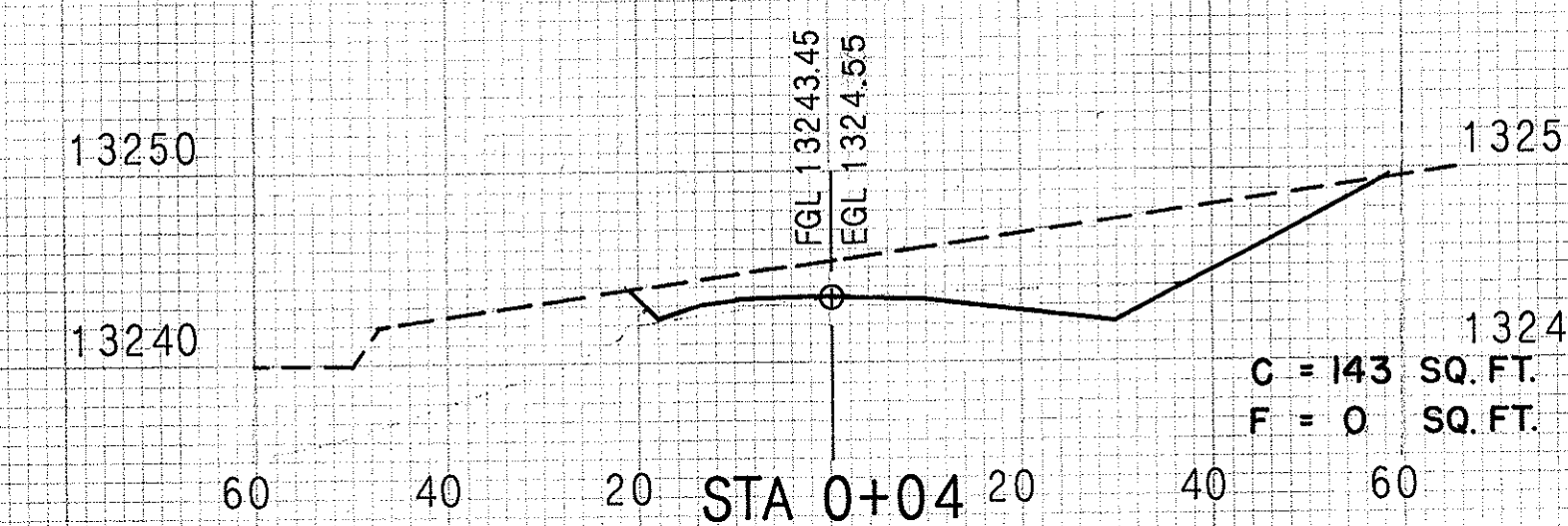
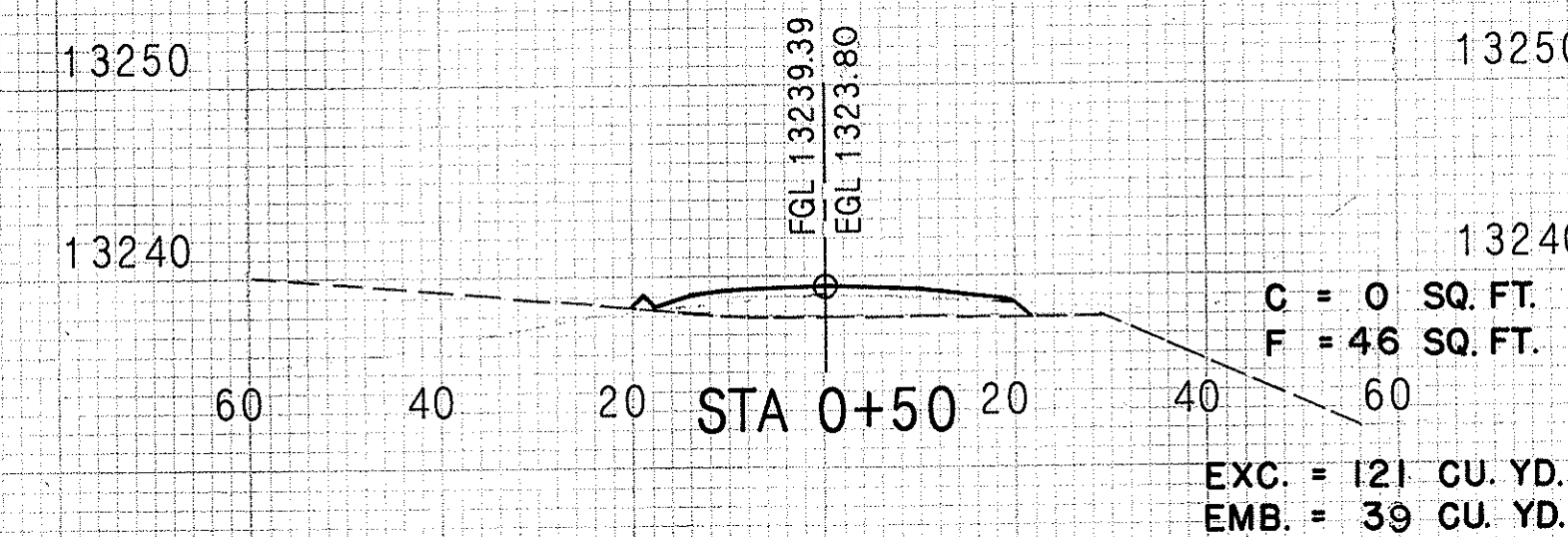
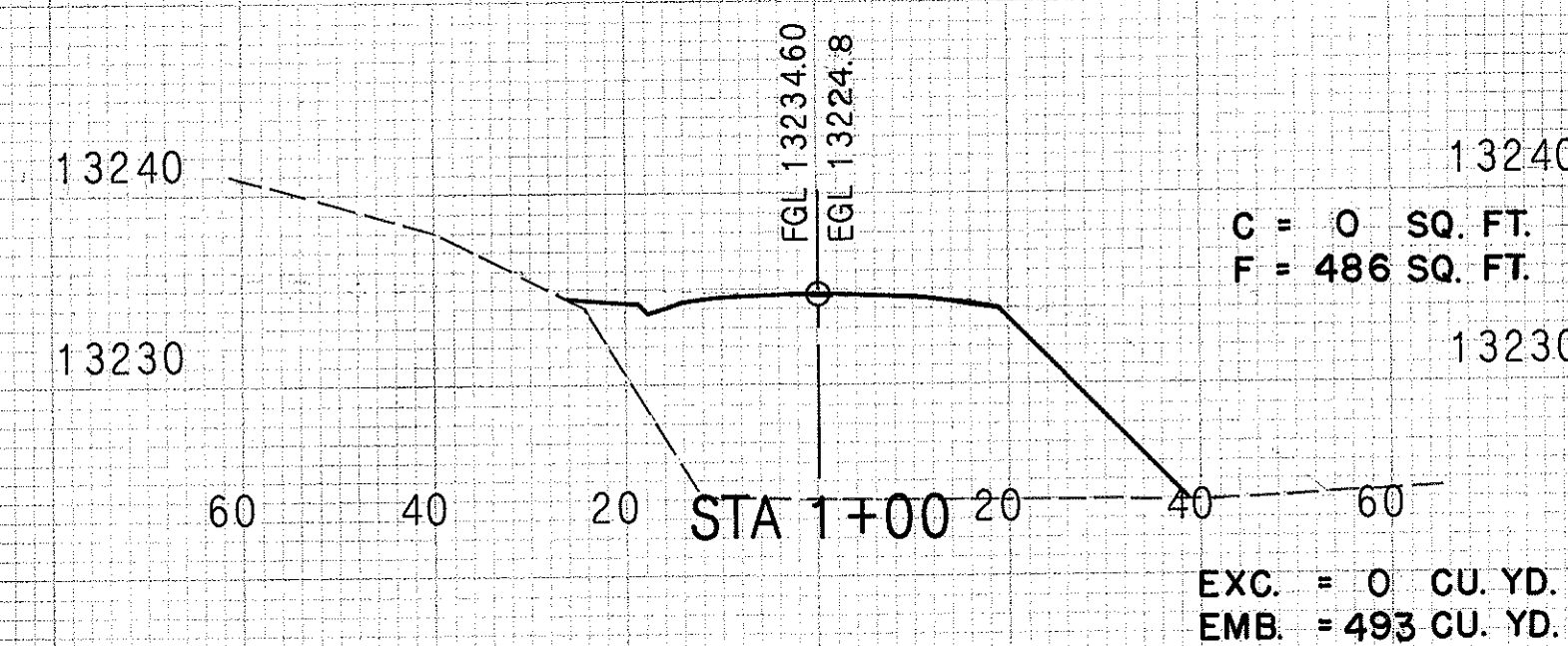
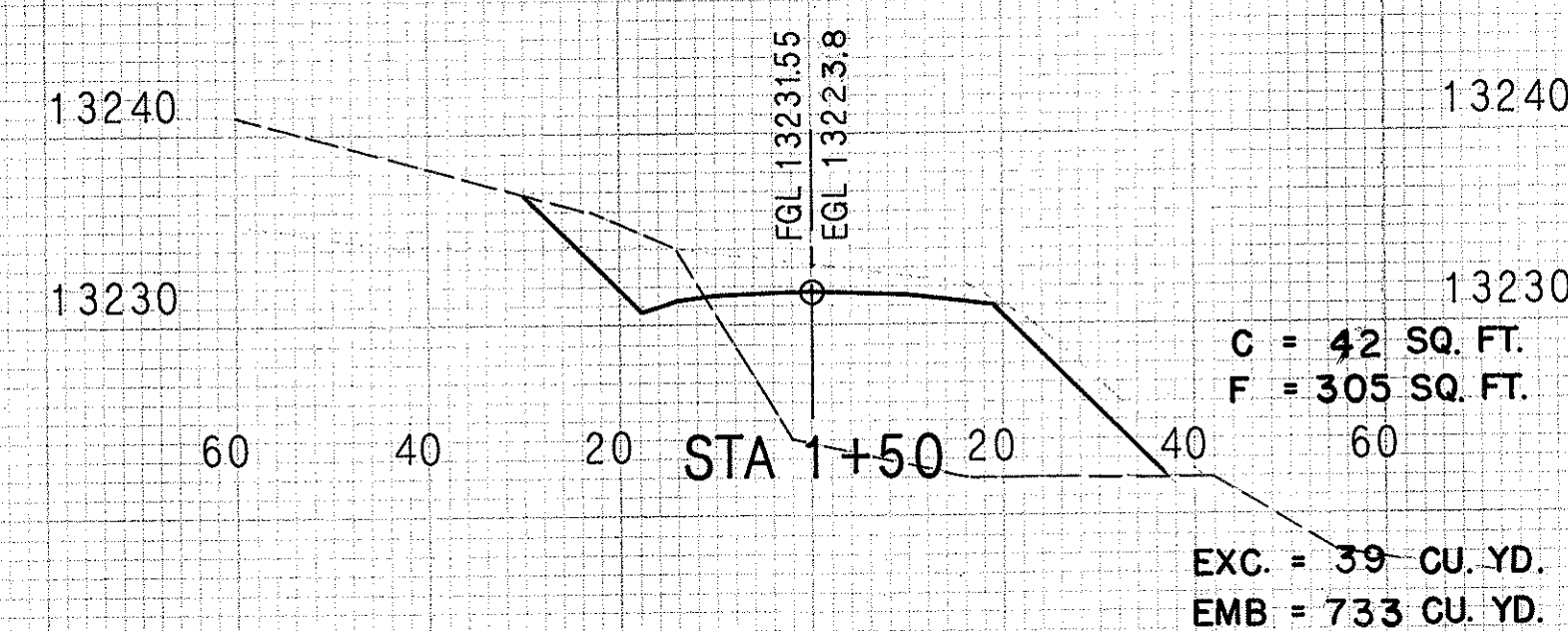
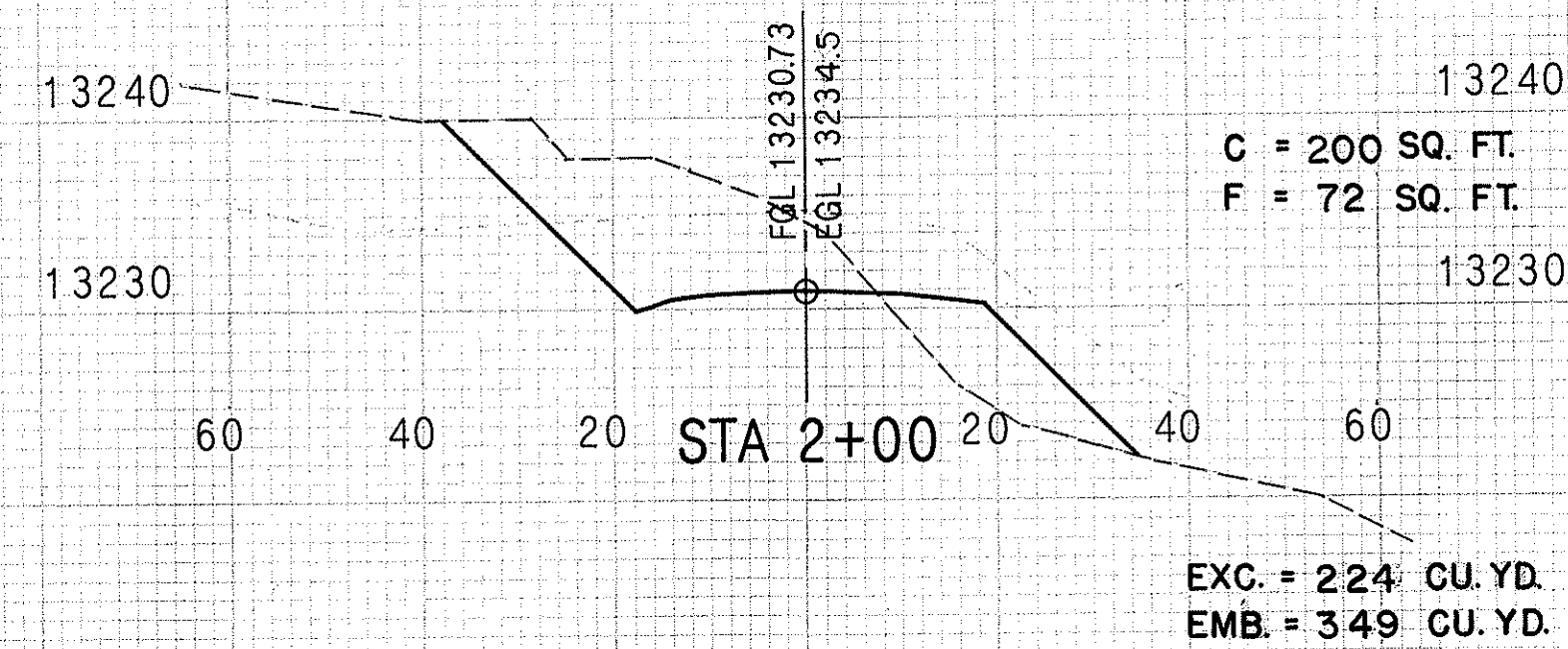


| FED. ROAD DIST. NO. | STATE | PROJECT NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-------------|-------------|-----------|--------------|
| HAWAII              | HAW   | HWY-H-01-86 | 1987        | 100       | 115          |



ROYCE S. FUKUNAGA  
REGISTERED PROFESSIONAL ENGINEER  
No. 2107-C  
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY  
OR UNDER MY SUPERVISION  
*Royce S. Fukunaga*  
FUKUNAGA & ASSOCIATES

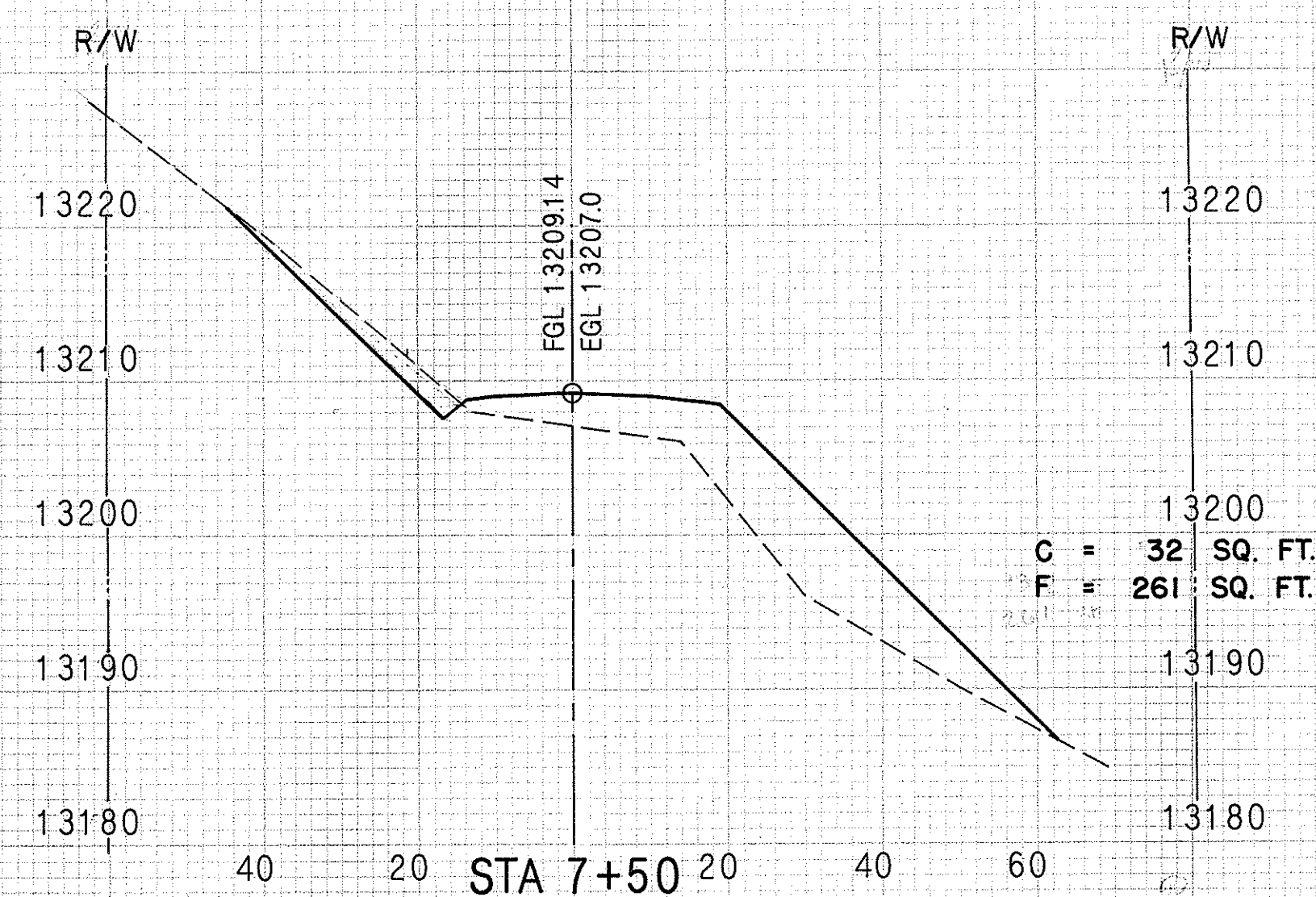
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**CROSS SECTIONS**

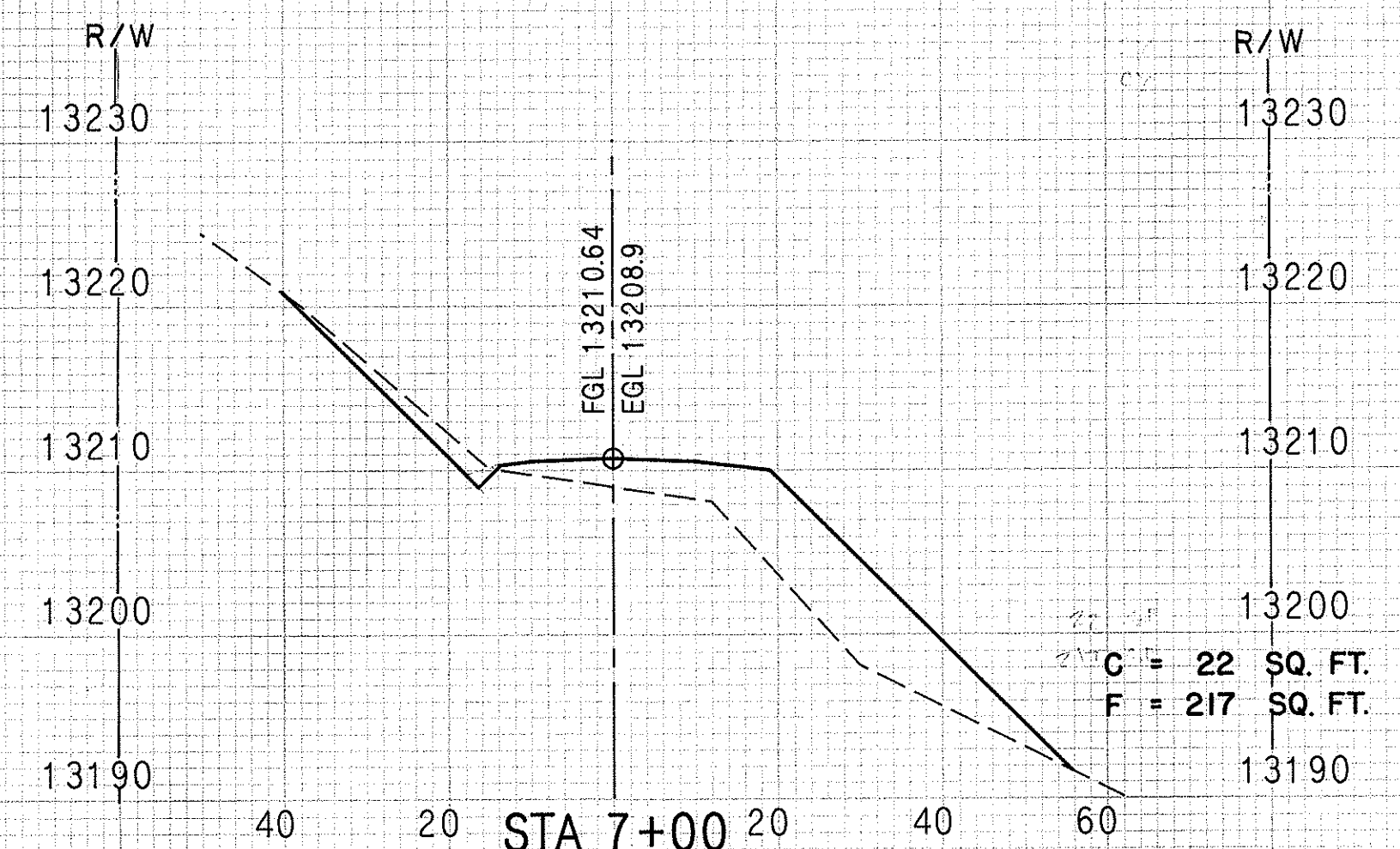
MAIN ACCESS ROAD  
STA. 0+04 TO STA. 6+00  
MAUNA KEA OBSERVATORY ACCESS ROAD  
PHASE II-A

SCALE - HORIZONTAL 1" = 20'  
VERTICAL 1" = 10'

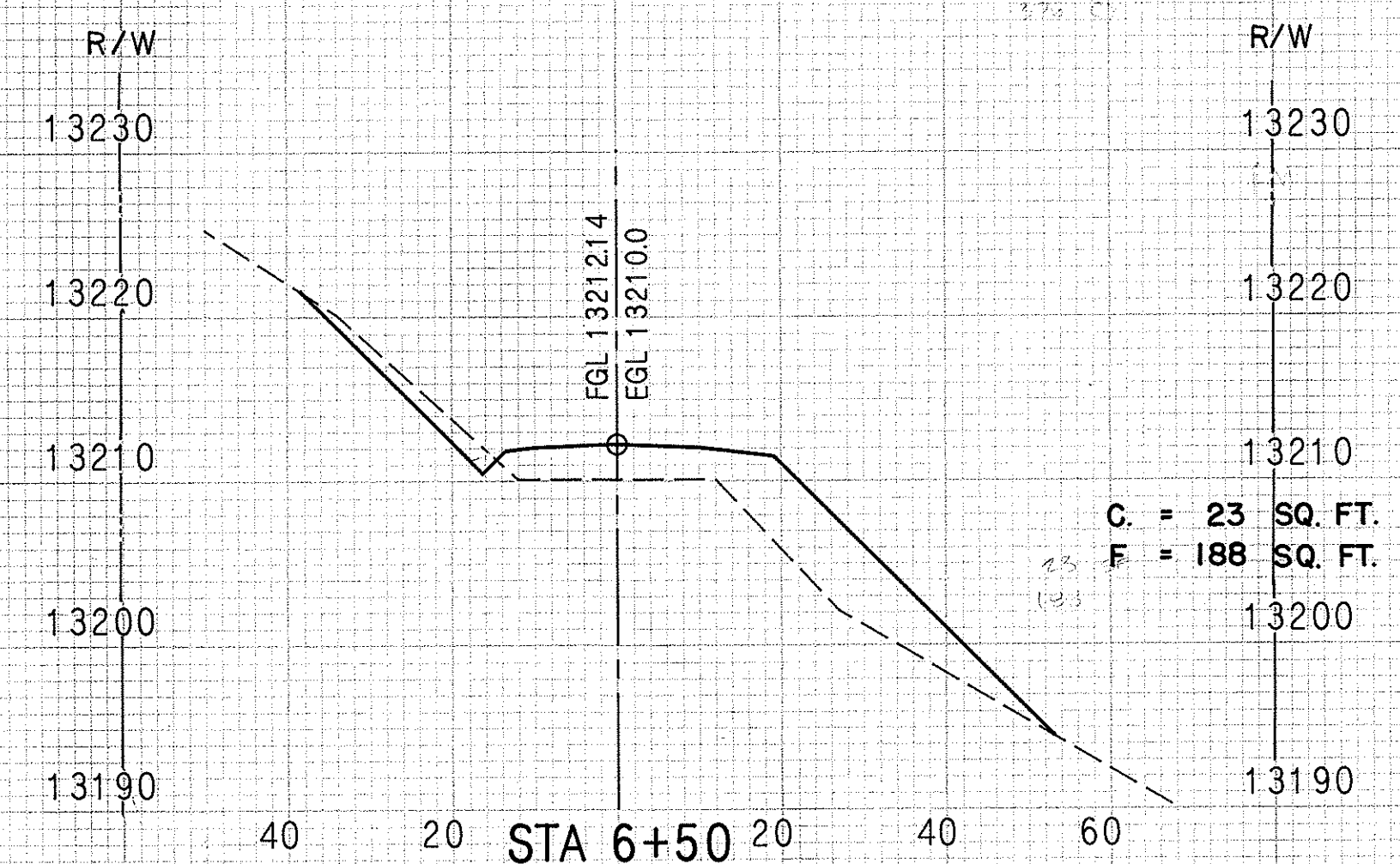
| FED. ROAD DIST. NO. | STATE | PROJECT NO  | FISCAL YEAR | SHEET NO | TOTAL SHEETS |
|---------------------|-------|-------------|-------------|----------|--------------|
| HAWAII              | HAW   | HWY-H-01-86 | 1987        | 101      | 115          |



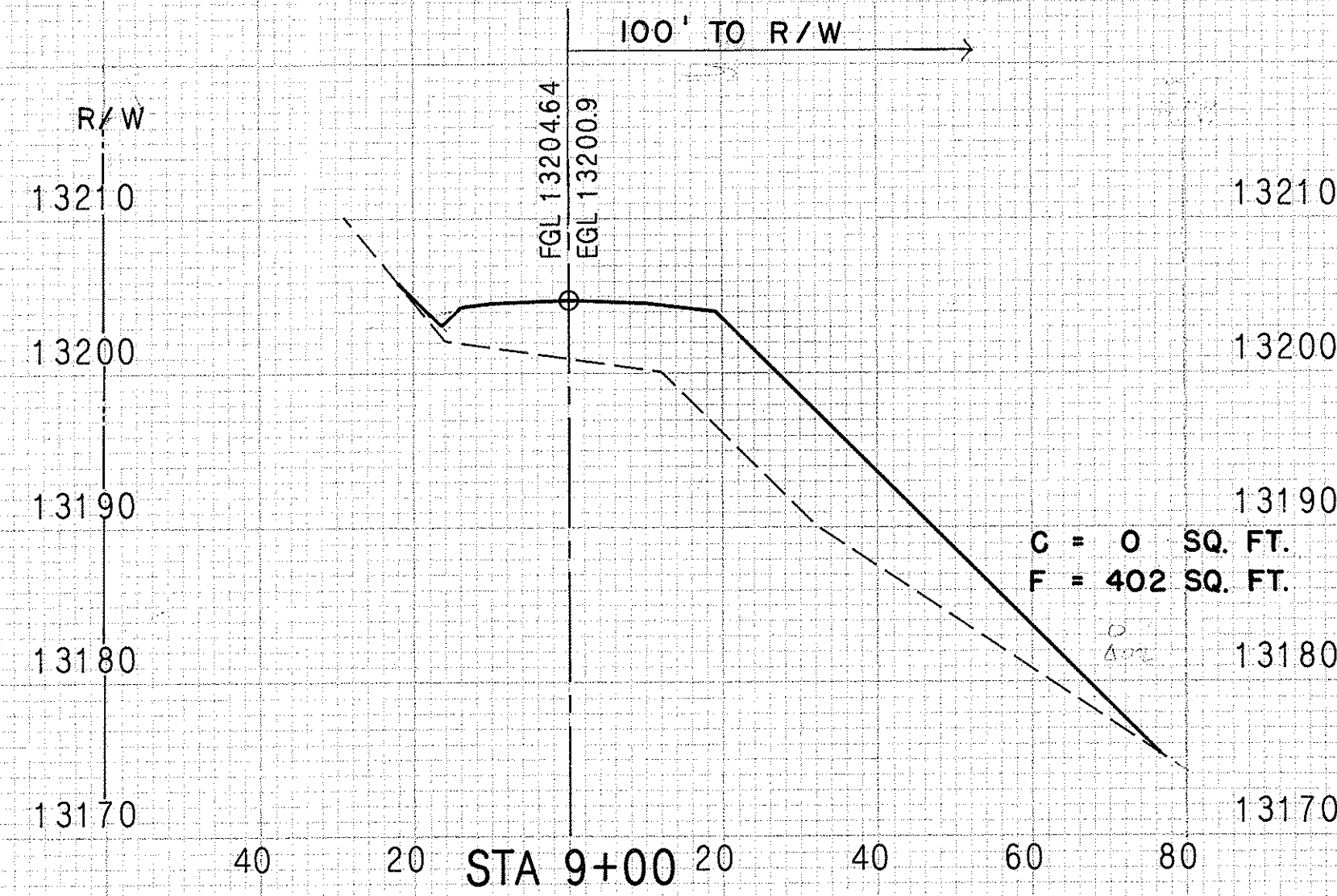
EXC. = 50 CU. YD.  
EMB. = 443 CU. YD.



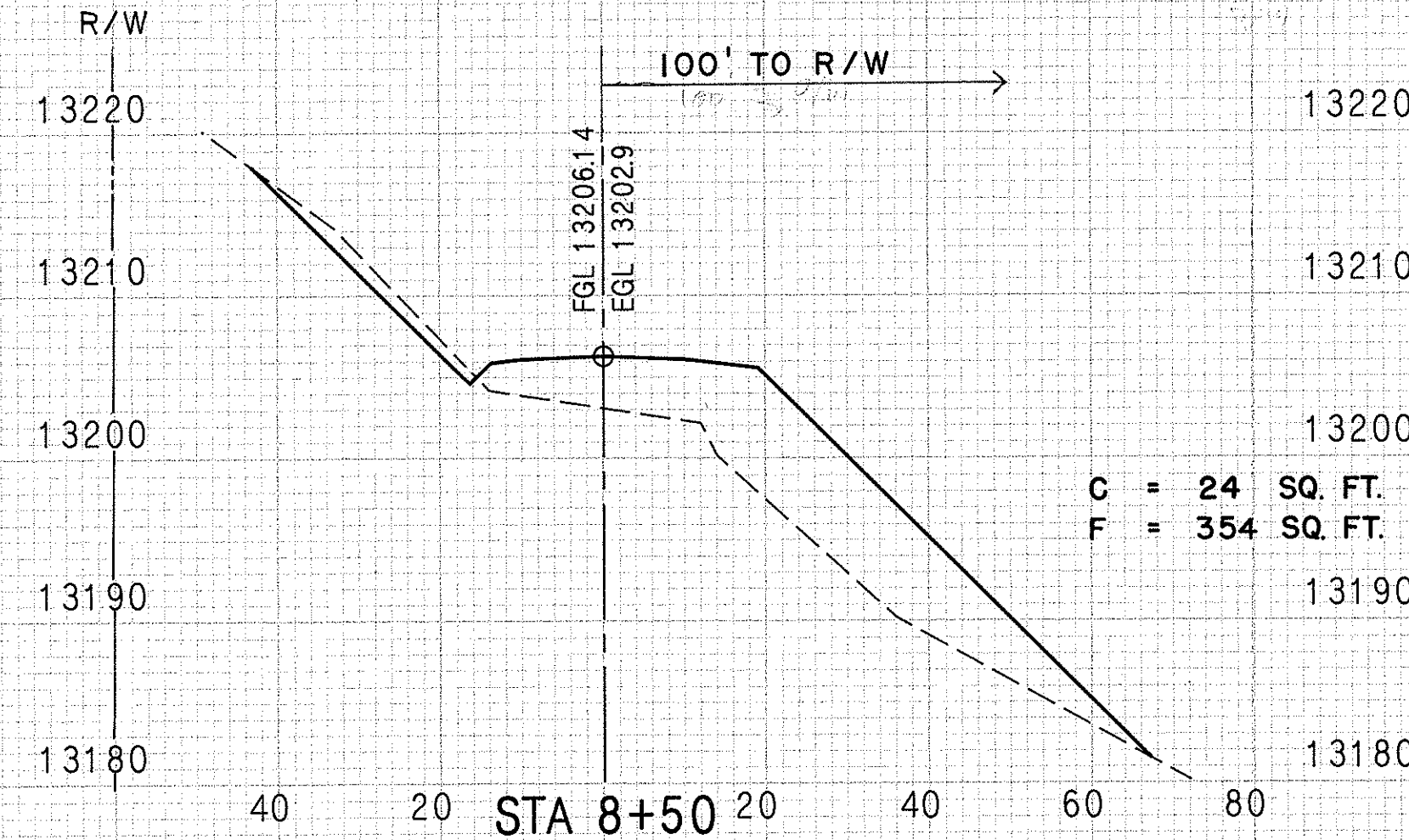
EXC. = 41 CU. YD.  
EMB. = 376 CU. YD.



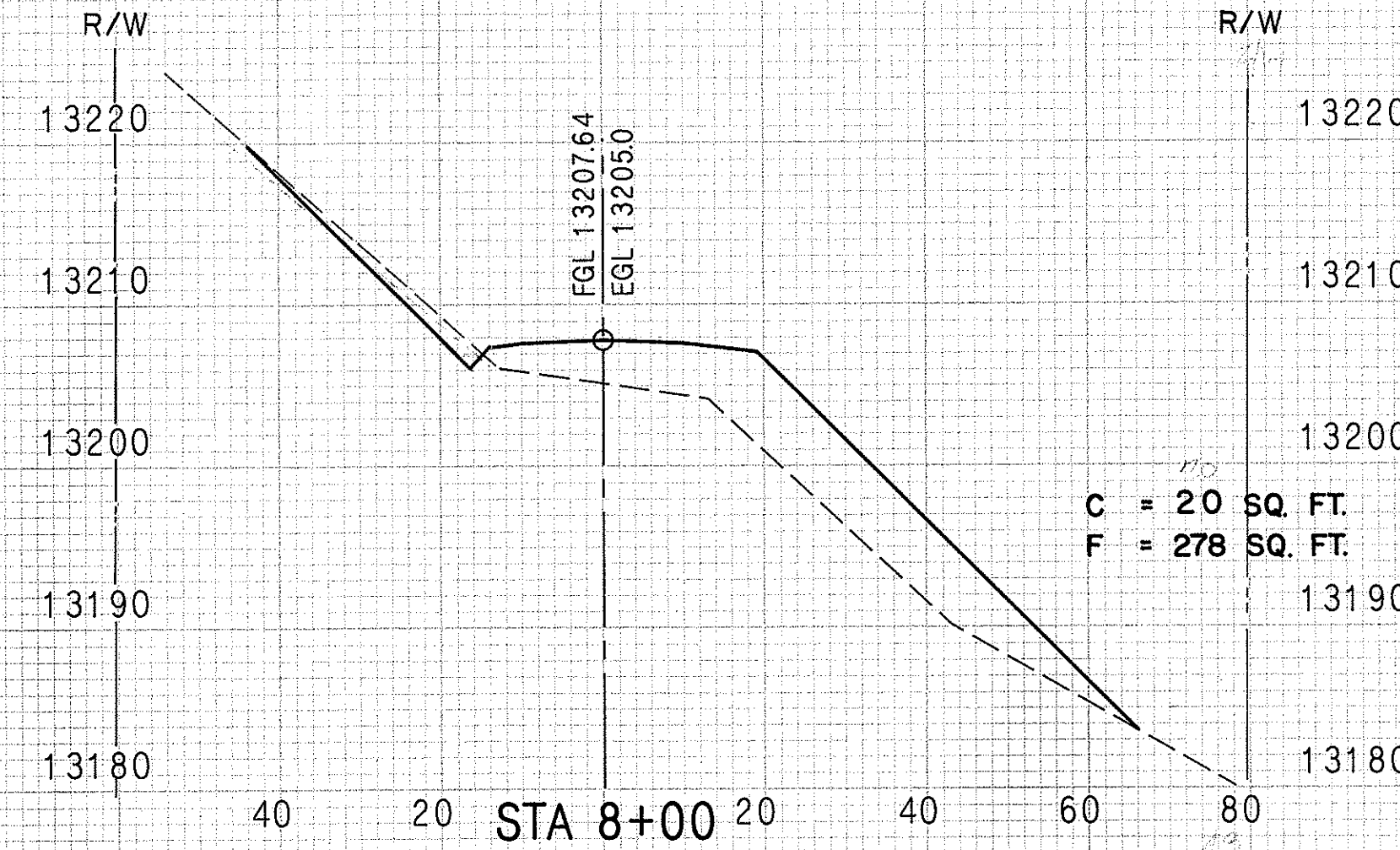
EXC. = 23 CU. YD.  
EMB. = 248 CU. YD.



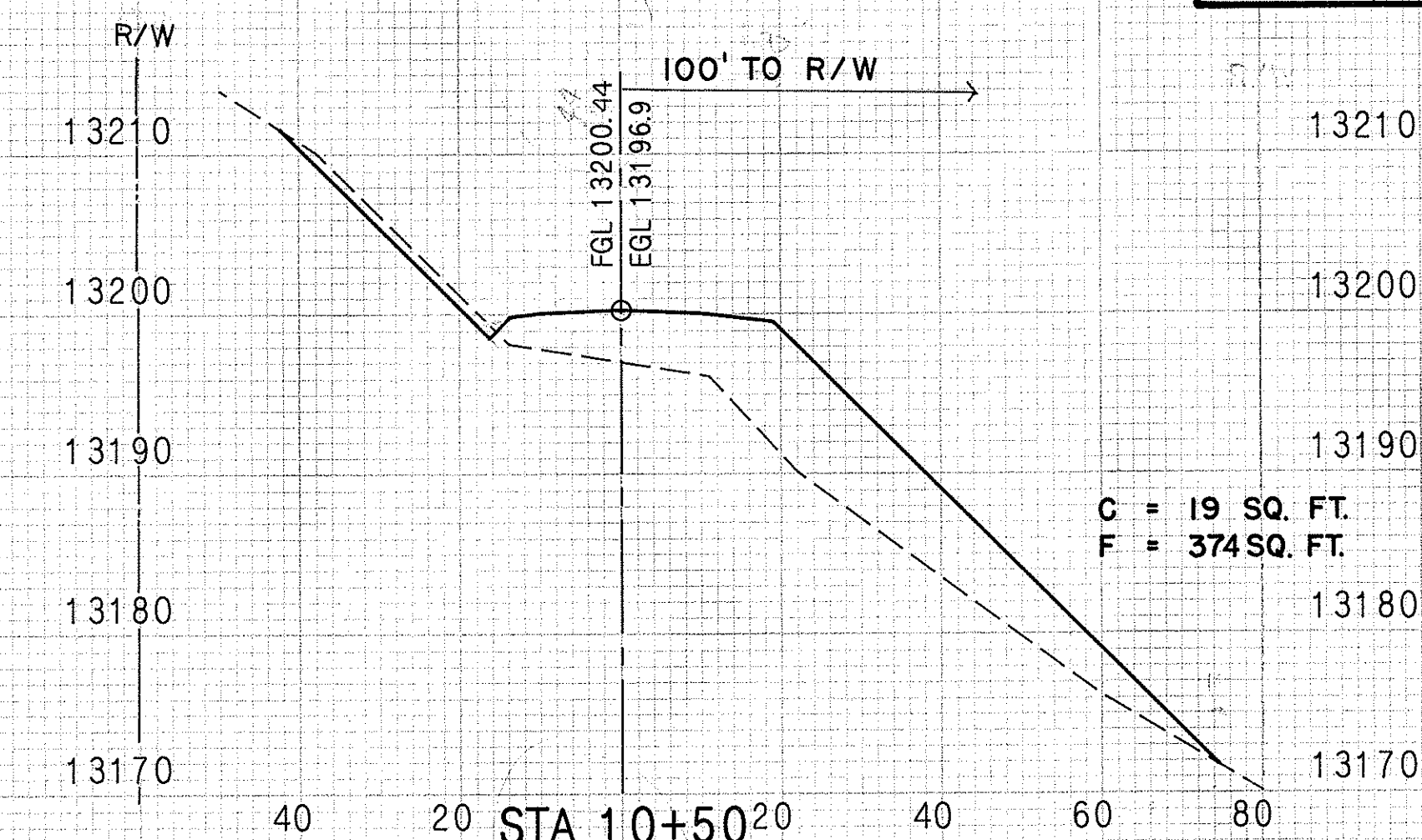
EXC. = 22 CU. YD.  
EMB. = 700 CU. YD.



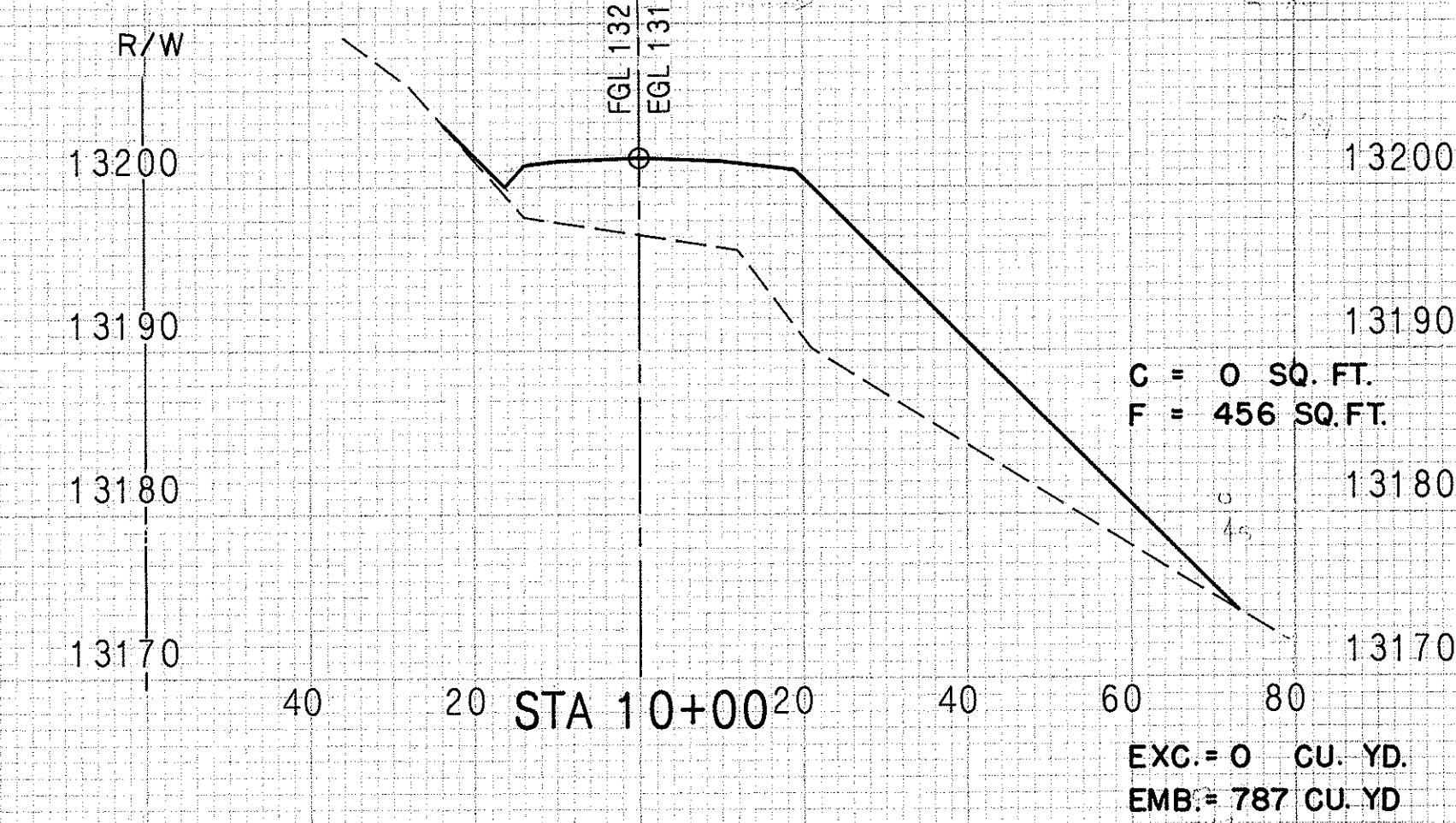
EXC. = 41 CU. YD.  
EMB. = 586 CU. YD.



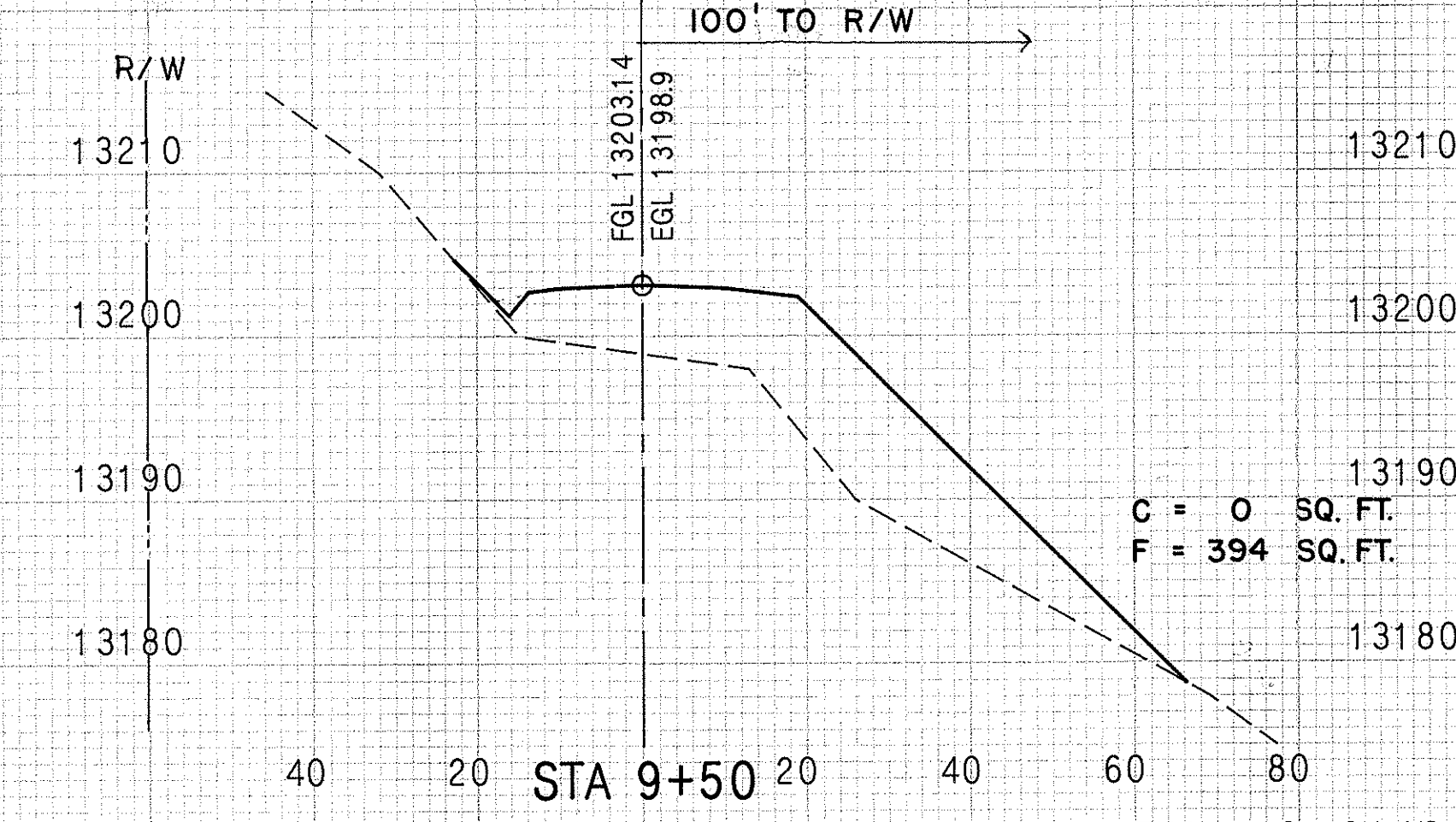
EXC. = 48 CU. YD.  
EMB. = 500 CU. YD.



EXC. = 17 CU. YD.  
EMB. = 768 CU. YD.



EXC. = 0 CU. YD.  
EMB. = 787 CU. YD.



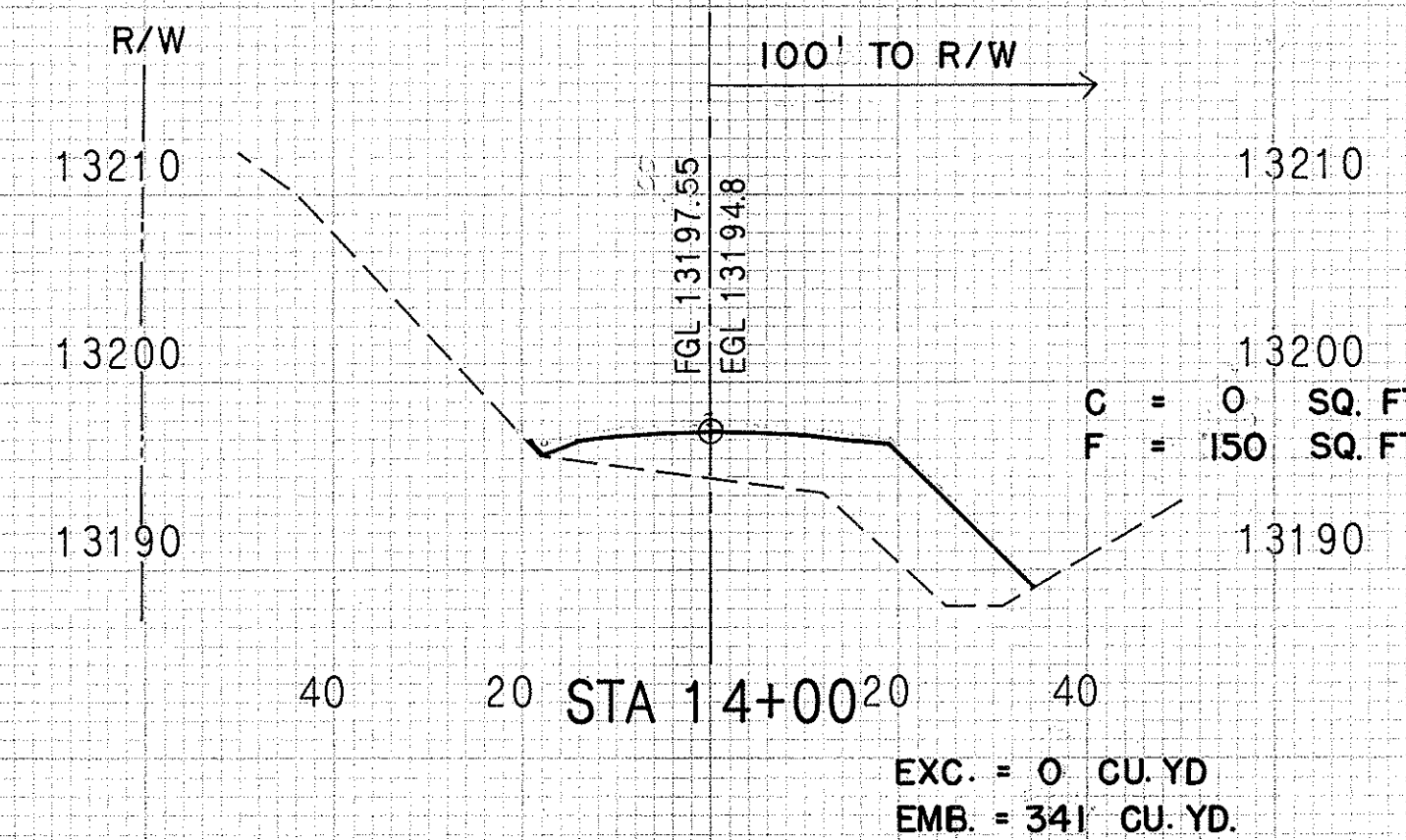
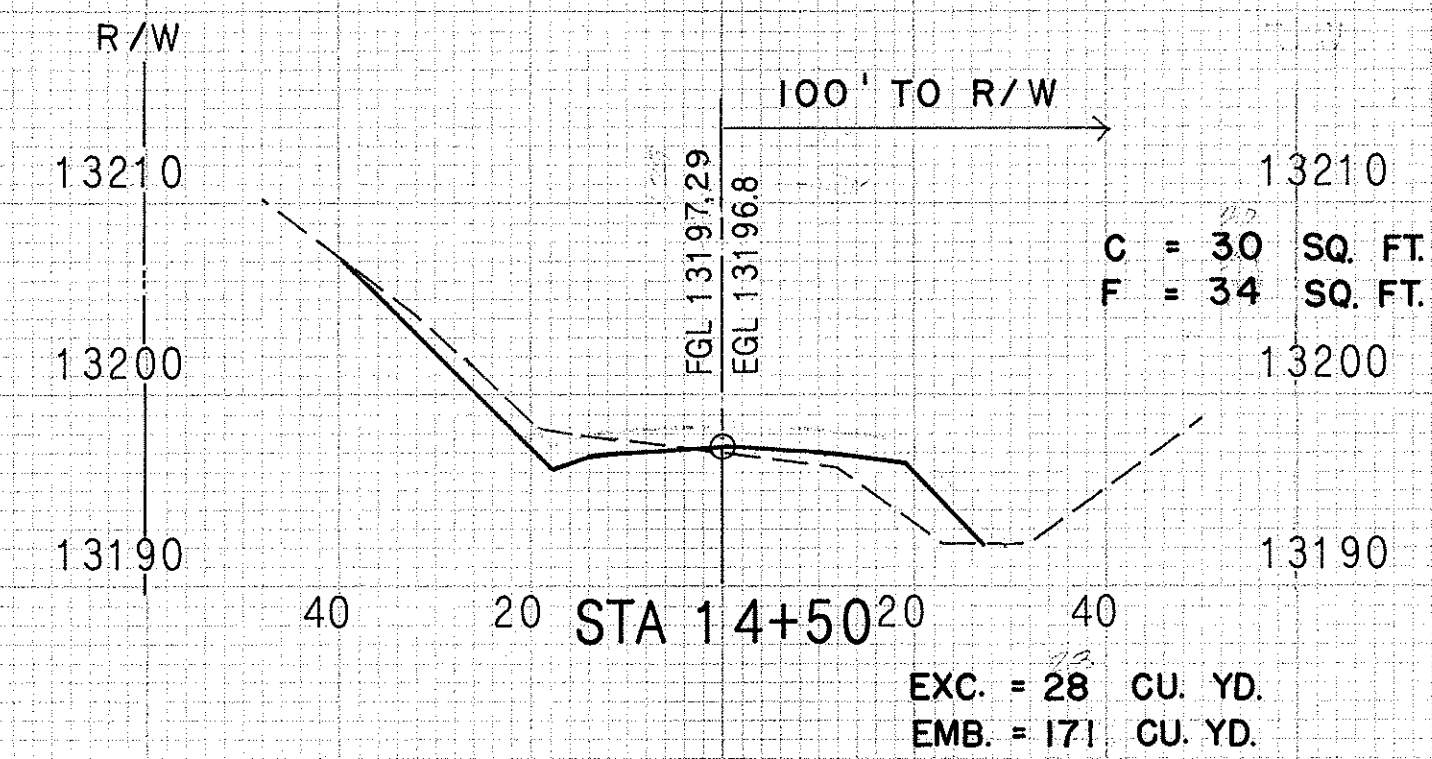
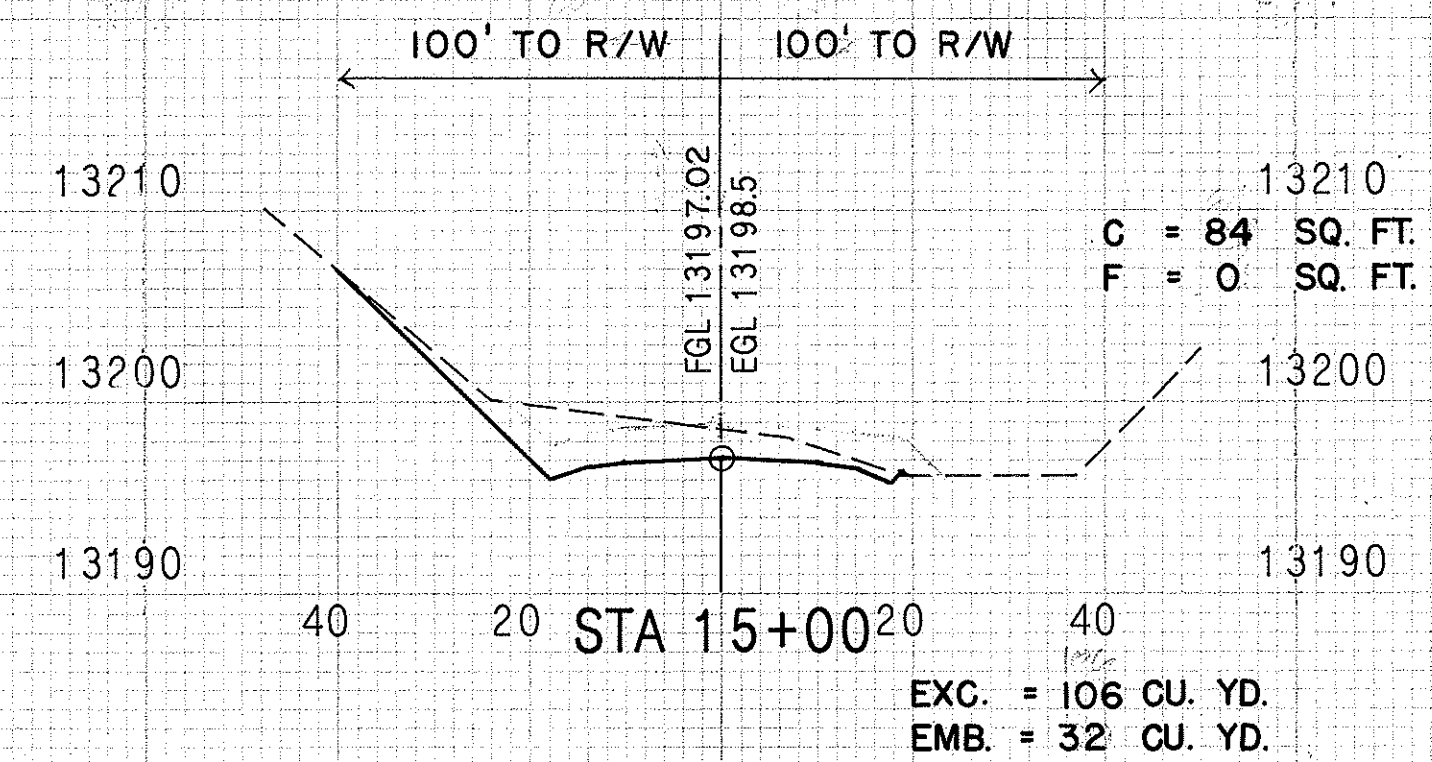
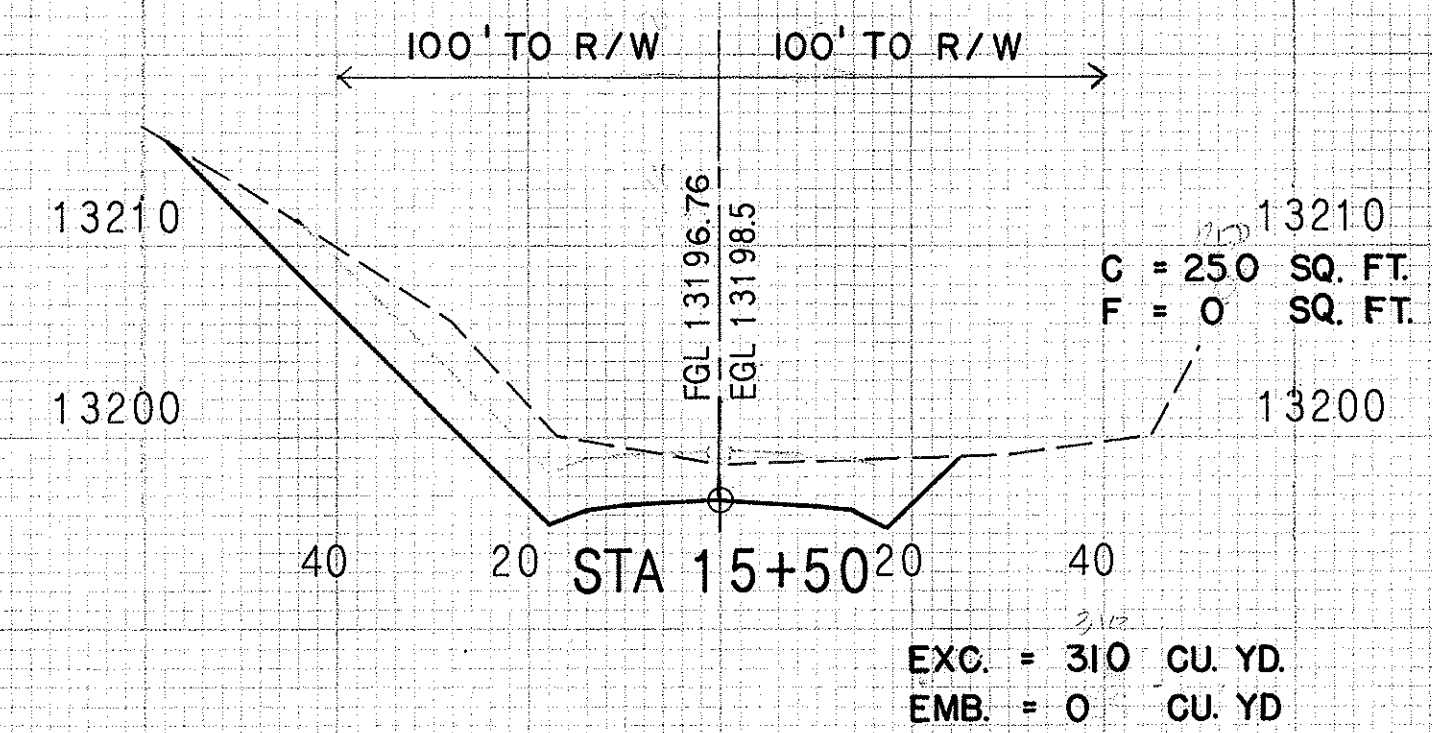
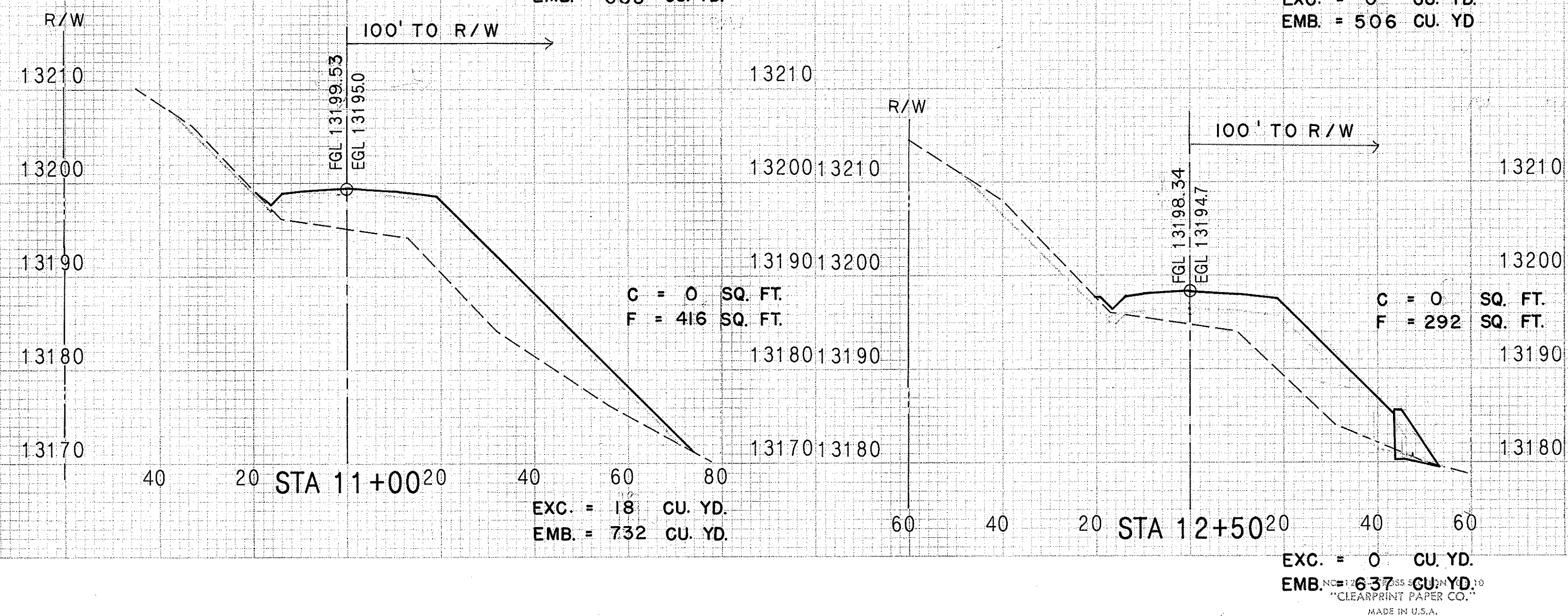
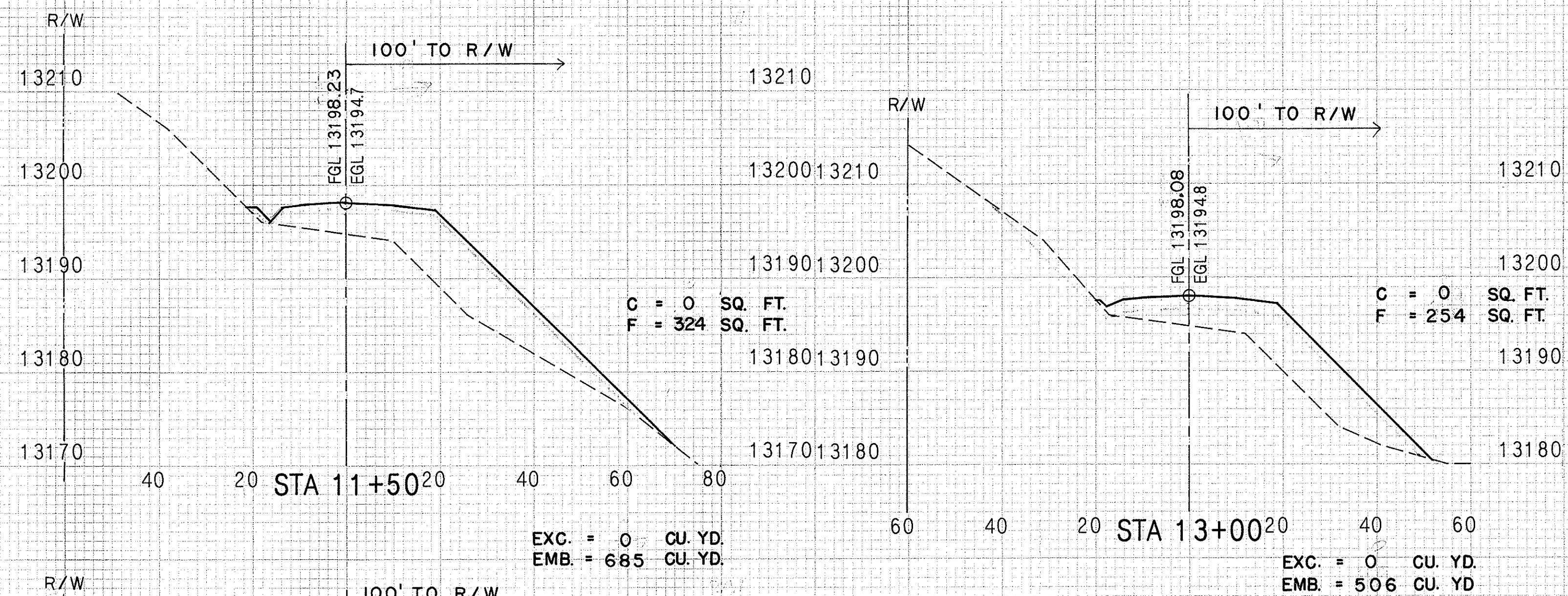
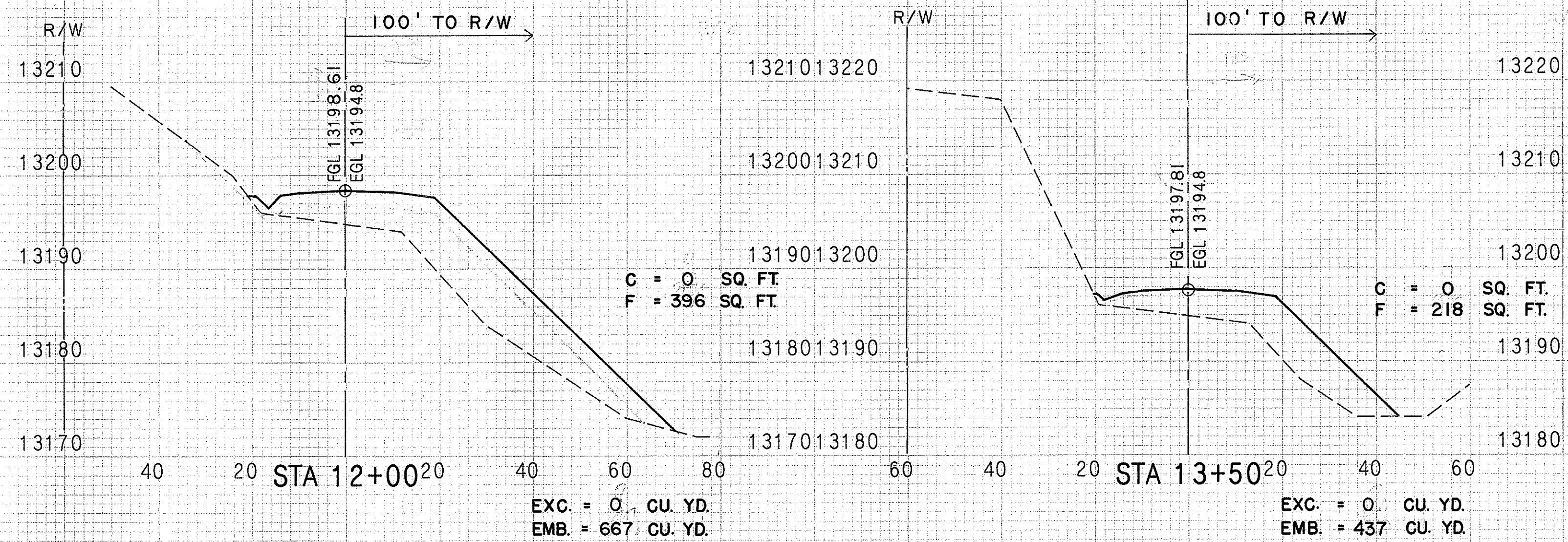
EXC. = 0 CU. YD.  
EMB. = 237 CU. YD.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**CROSS SECTIONS**  
MAIN ACCESS ROAD  
STA. 6+50 TO STA. 10+50  
MAUNA KEA OBSERVATORY ACCESS ROAD  
PHASE II-A

SCALE: HORIZONTAL 1" = 20'  
VERTICAL 1" = 10'

SHEET NO 2 OF 16 SHEETS

| FED. ROAD DIST. NO. | STATE | PROJECT NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-------------|-------------|-----------|--------------|
| HAWAII              | HAW   | HWY-H-01-86 | 1987        | 102       | 115          |

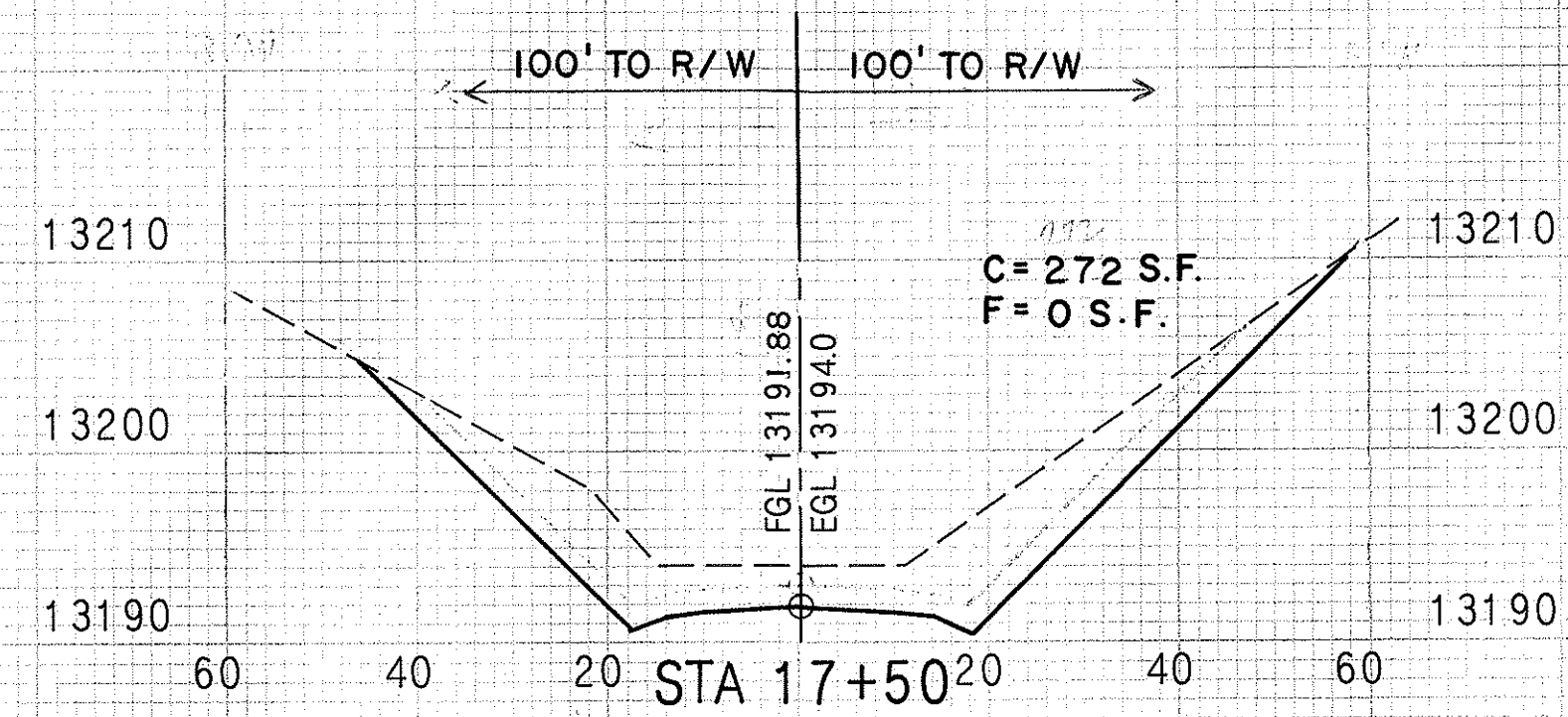


STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**CROSS SECTIONS**  
MAIN ACCESS ROAD  
STA. 11+00 TO STA. 15+50  
MAUNA KEA OBSERVATORY ACCESS ROAD  
PHASE II-A

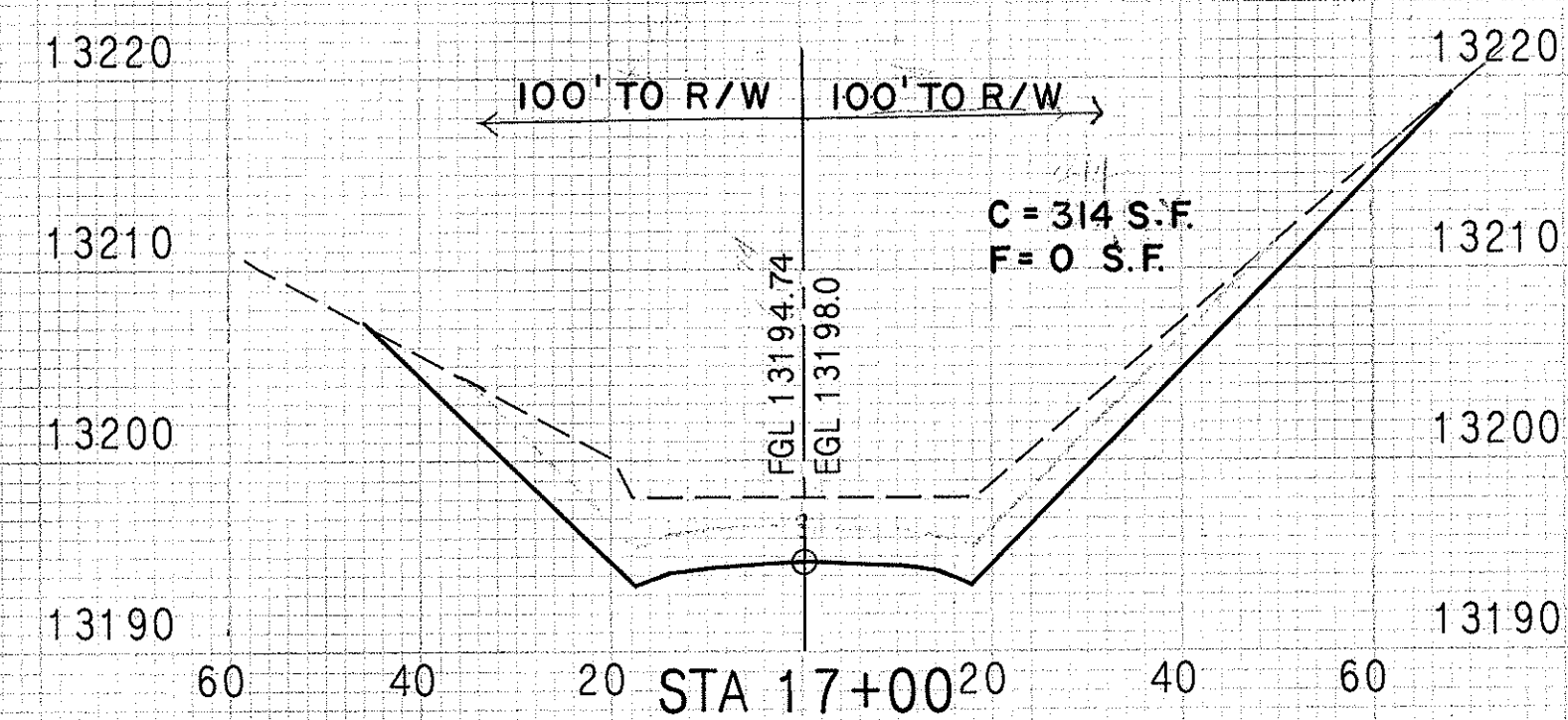
SCALE: HORIZONTAL 1" = 20'  
VERTICAL 1" = 10'

SHEET NO 3 OF 16 SHEETS

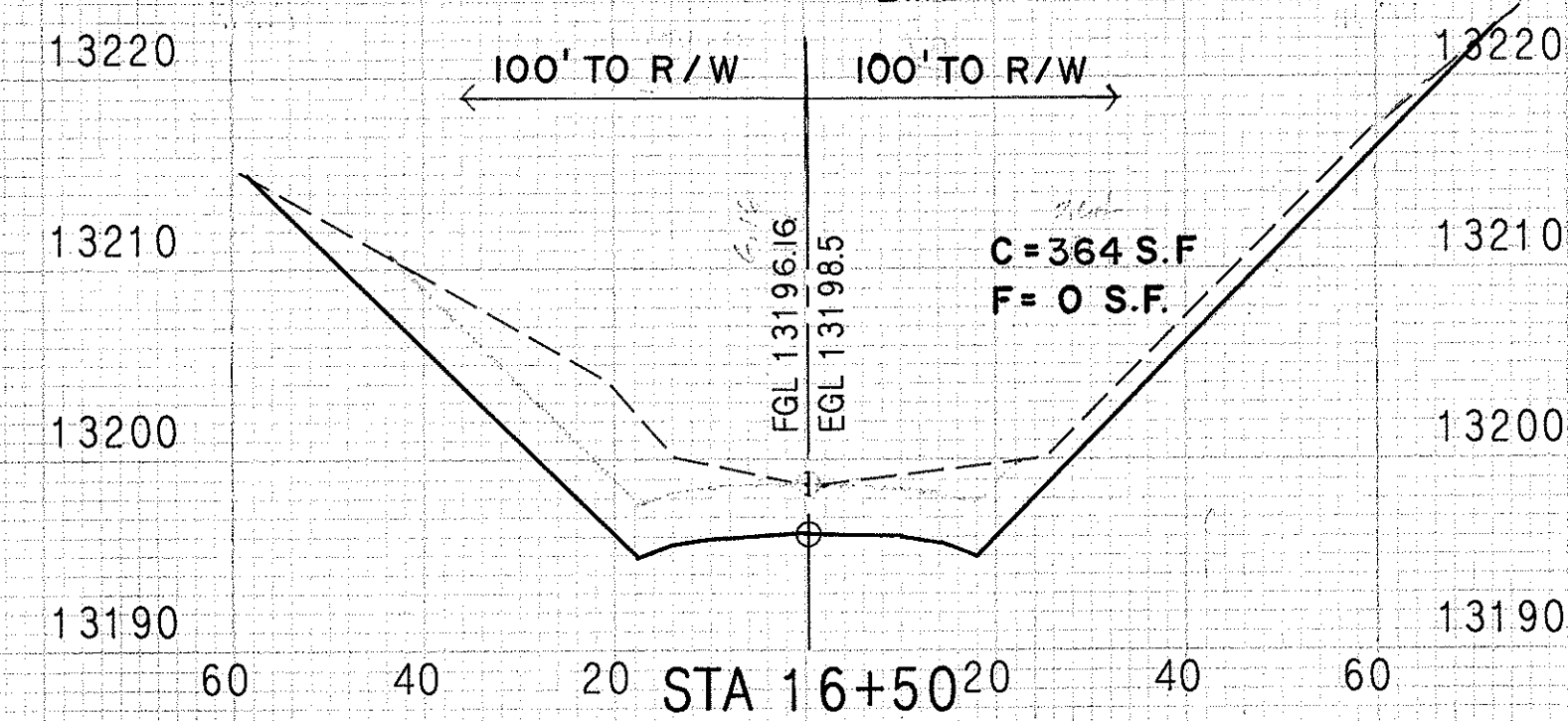
| FED. ROAD DIST. NO. | STATE | PROJECT NO.  | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | HWY.-H-01-86 | 1987        | 103       | 115          |



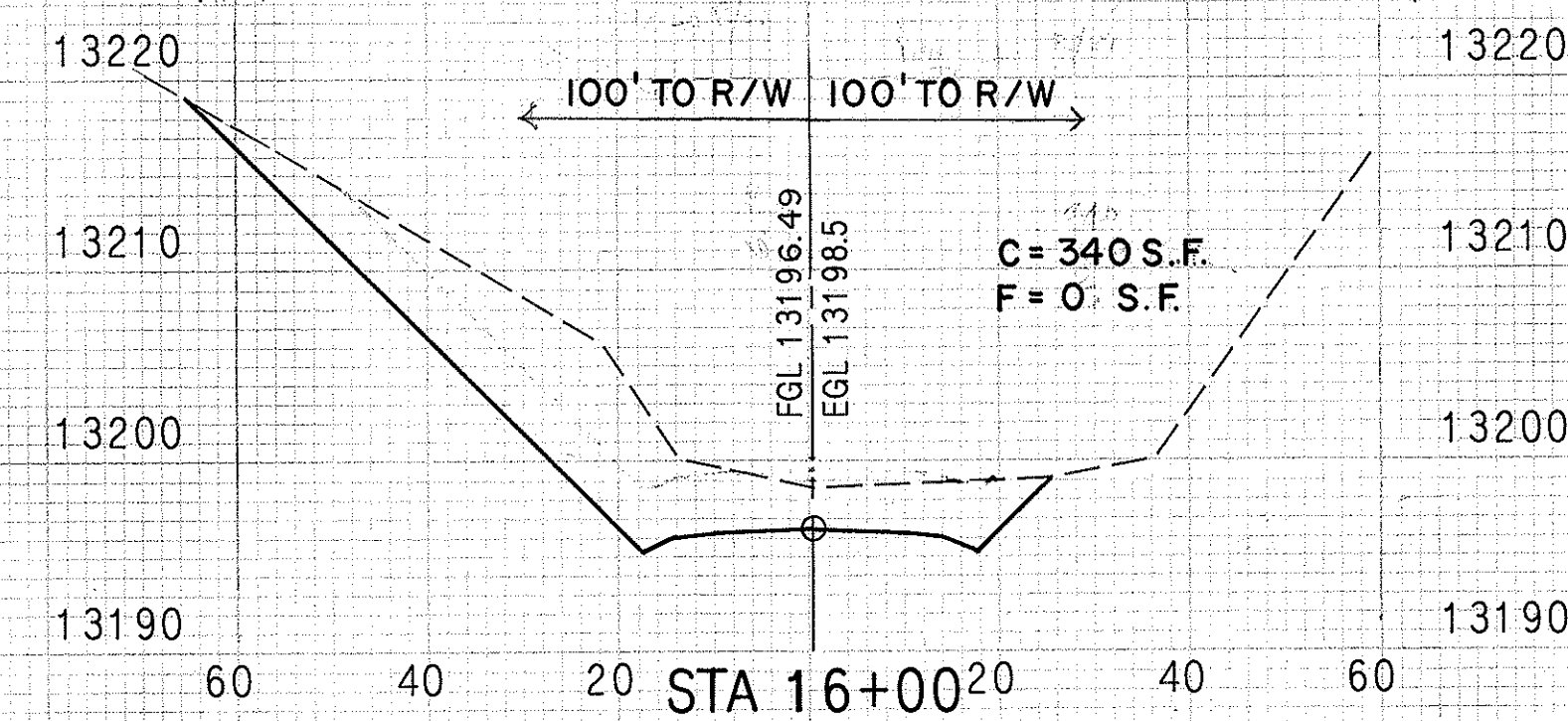
EXC. = 543 C.Y.  
EMB. = 0 C.Y.



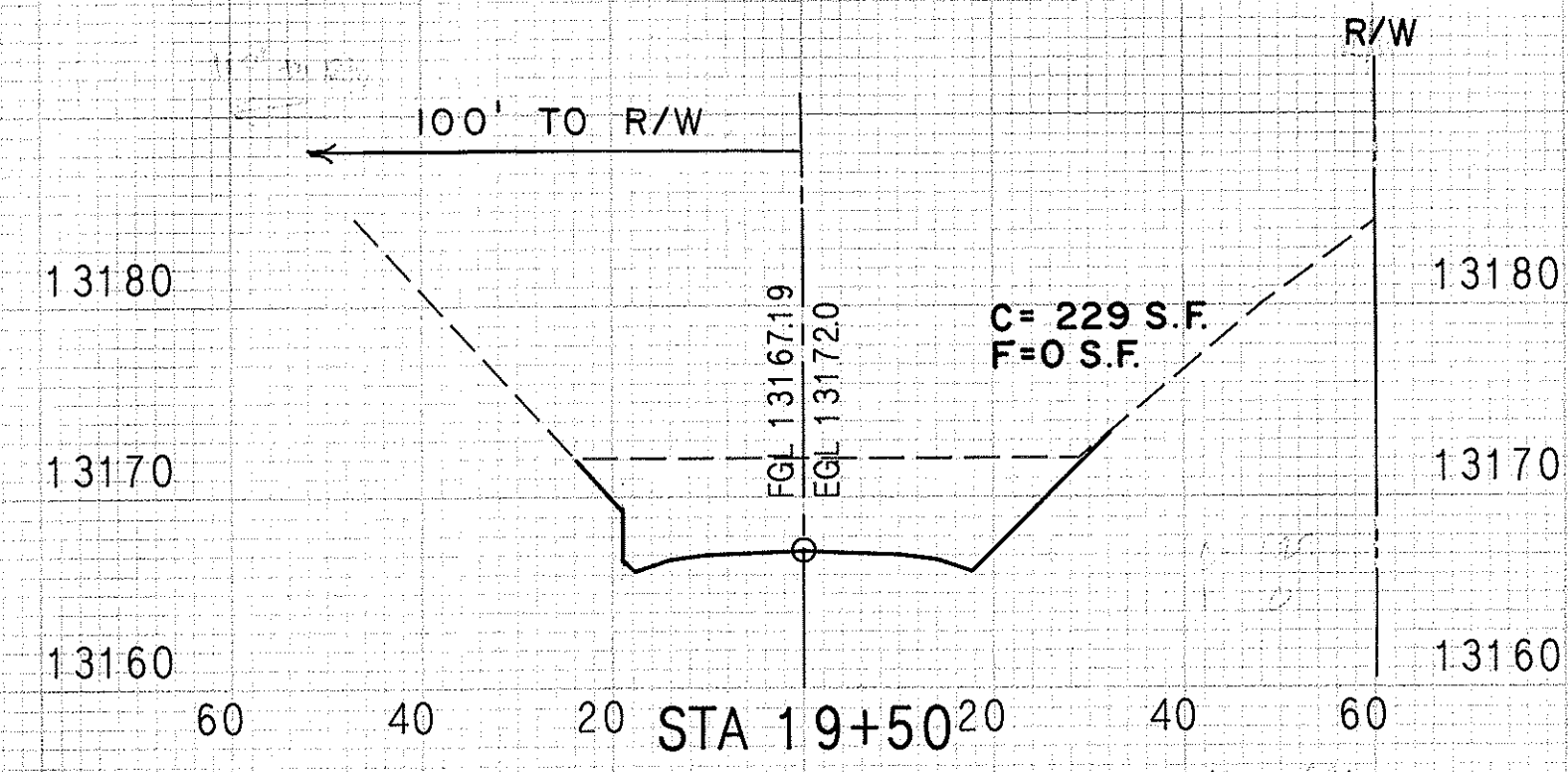
EXC. = 628 C.Y.  
EMB. = 0 C.Y.



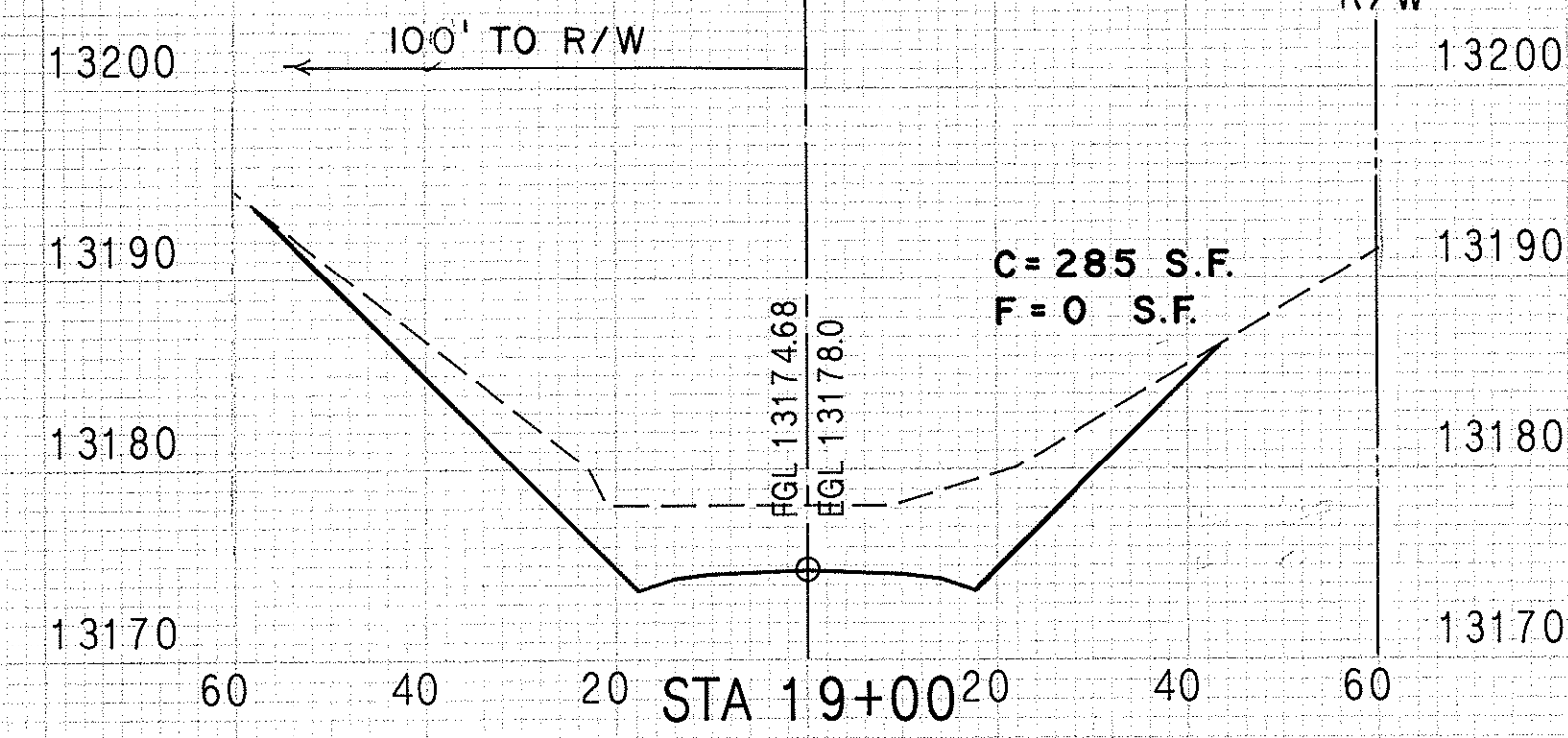
EXC. = 652 C.Y.  
EMB. = 0 C.Y.



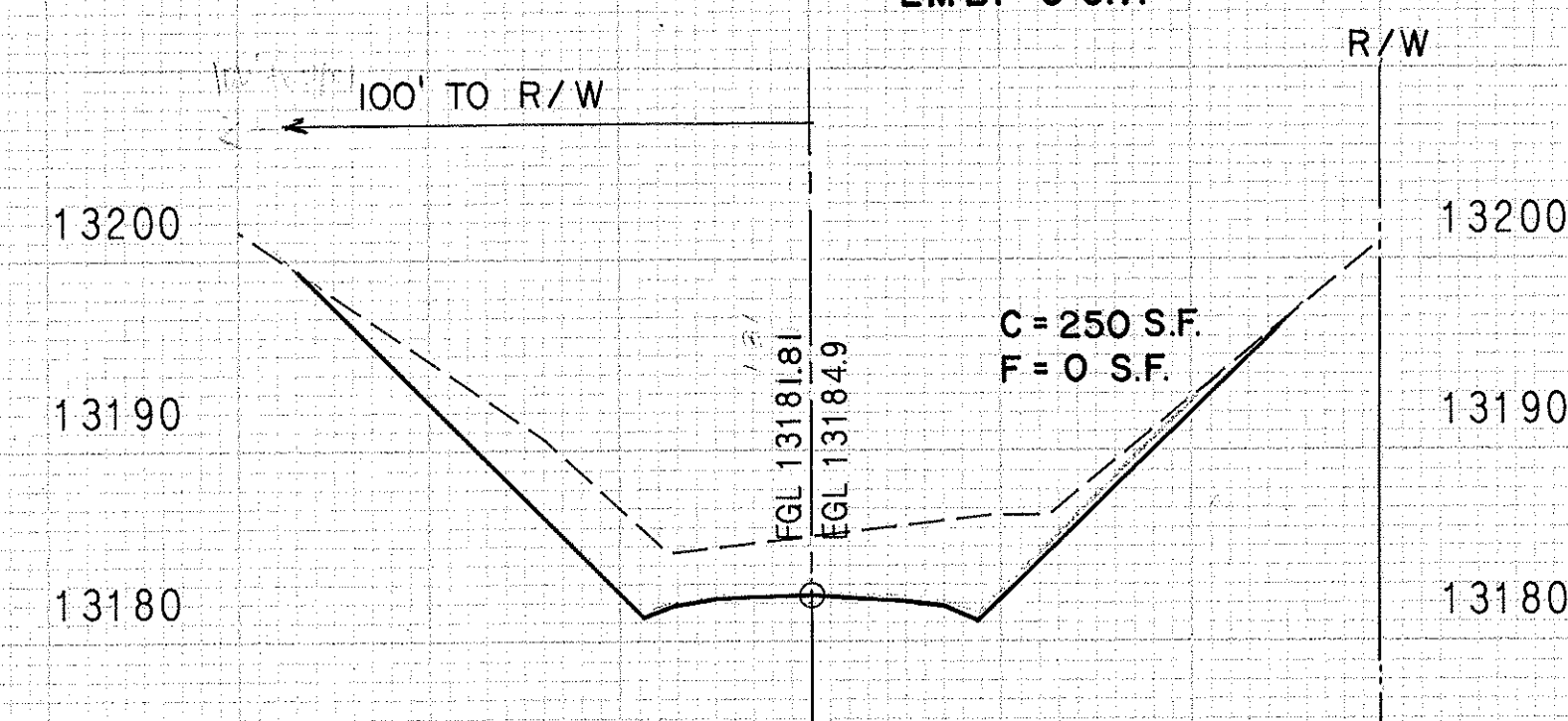
EXC. = 547 C.Y.  
EMB. = 0 C.Y.



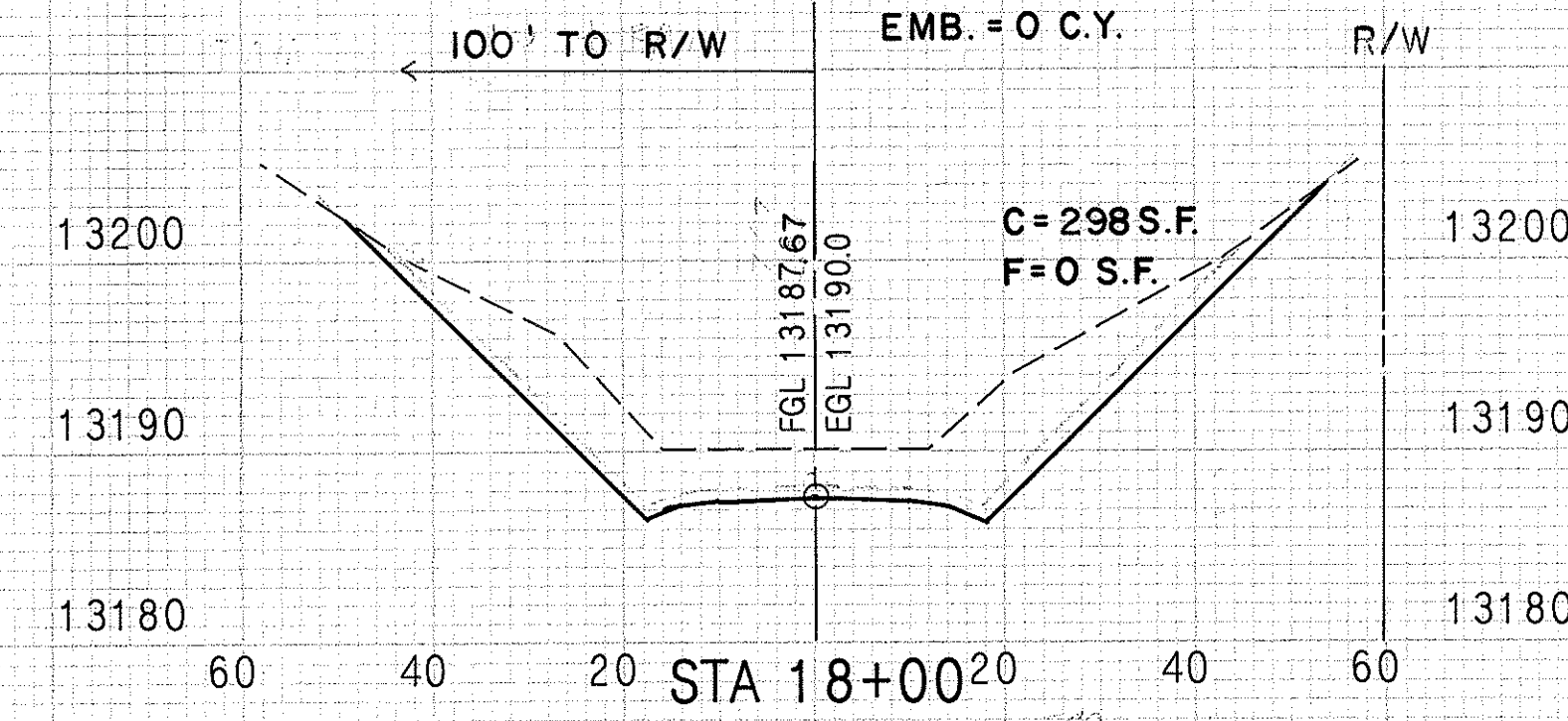
EXC. = 476 C.Y.  
EMB. = 0 C.Y.



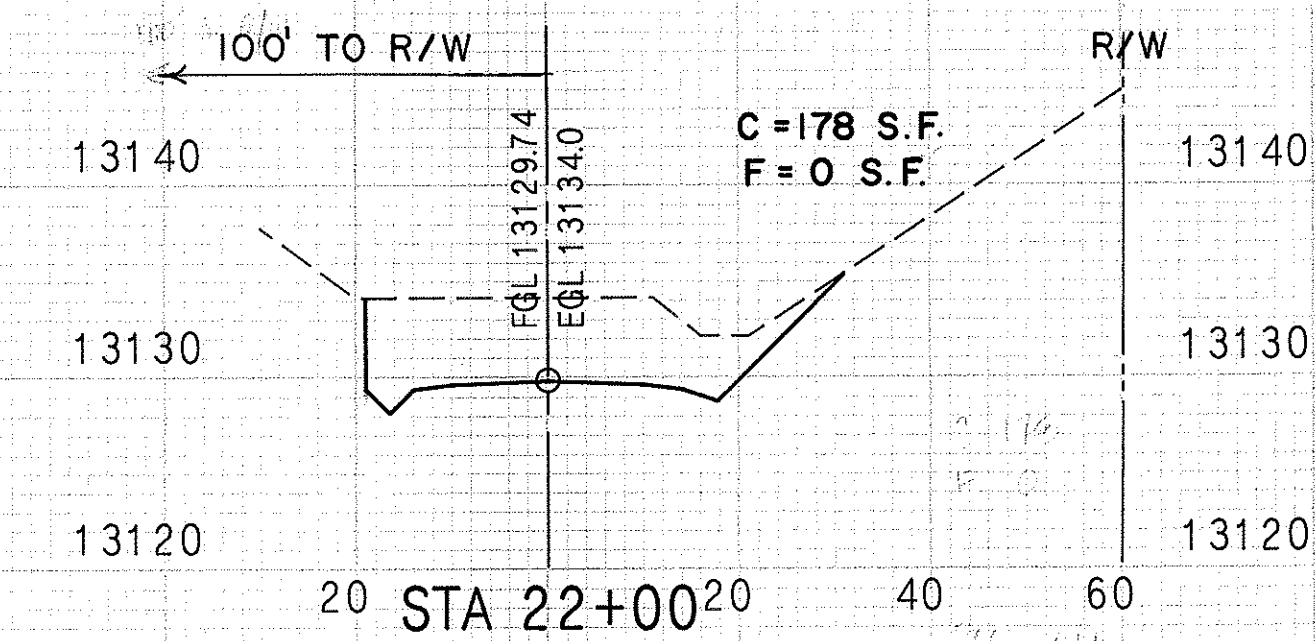
EXC. = 495 C.Y.  
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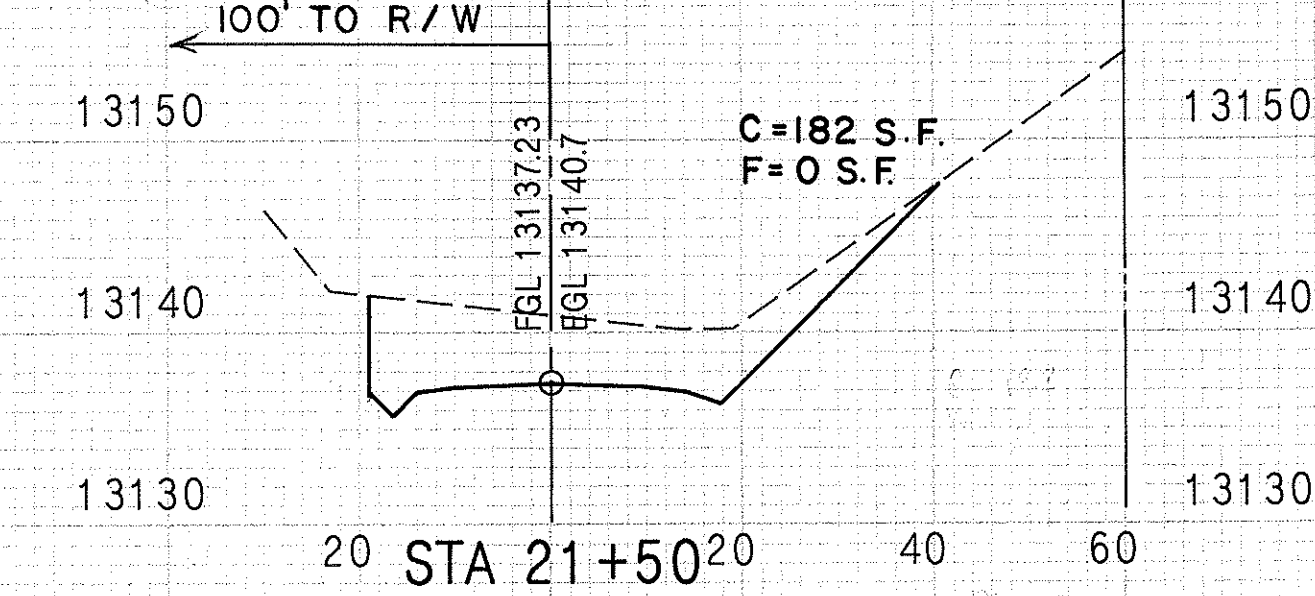
EXC. = 508 C.Y.  
EMB. = 0 C.Y.



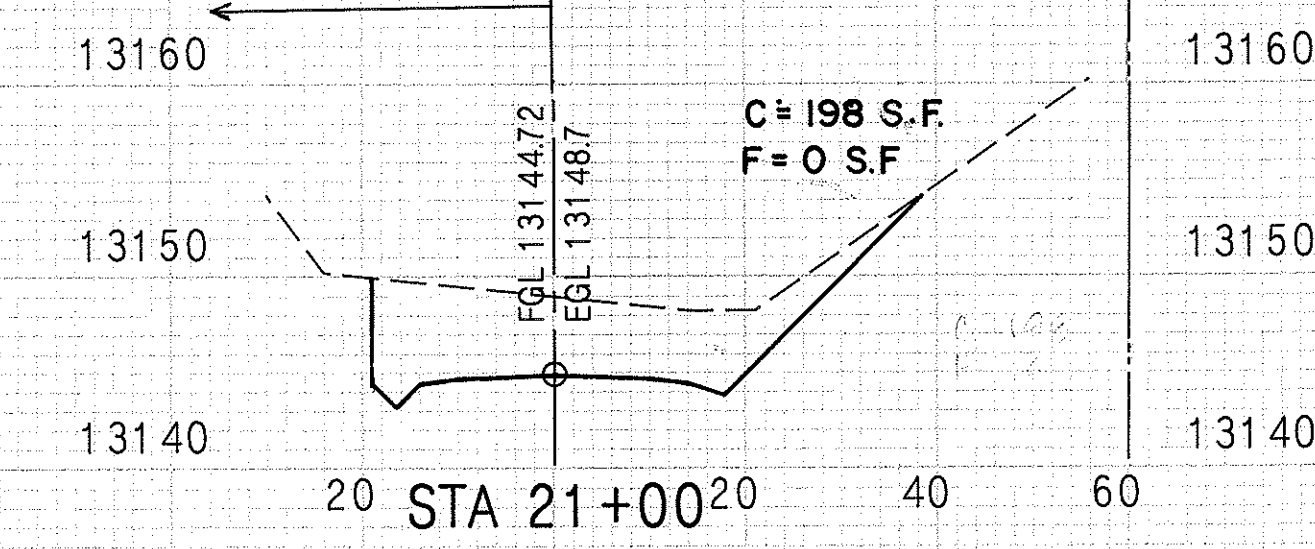
EXC. = 528 C.Y.  
EMB. = 0 C.Y.



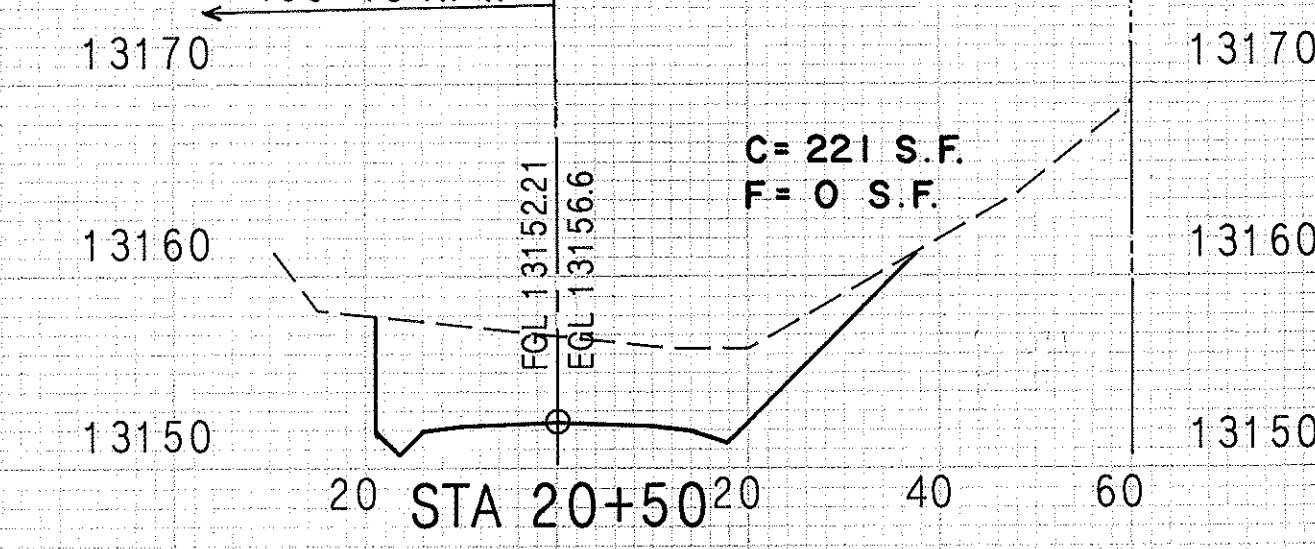
EXC. = 333 C.Y.  
EMB. = 0 C.Y.



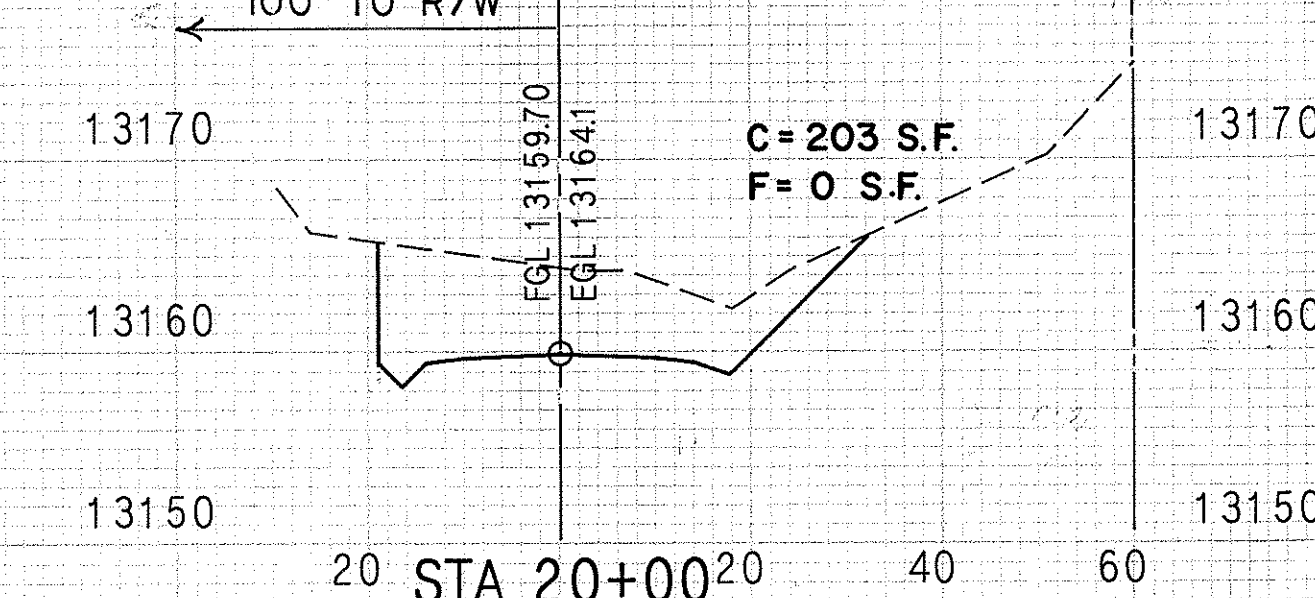
EXC. = 352 C.Y.  
EMB. = 0 C.Y.



EXC. = 367 C.Y.  
EMB. = 0 C.Y.



EXC. = 392 C.Y.  
EMB. = 0 C.Y.



EXC. = 400 C.Y.  
EMB. = 0 C.Y.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

## CROSS SECTIONS

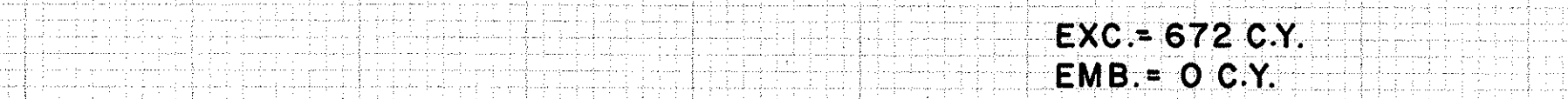
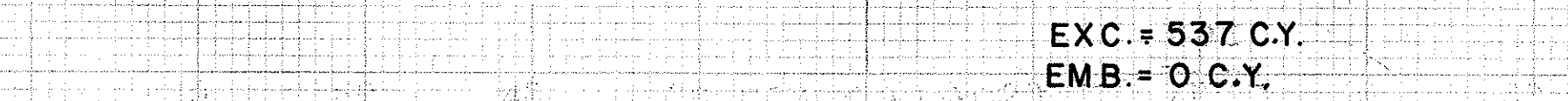
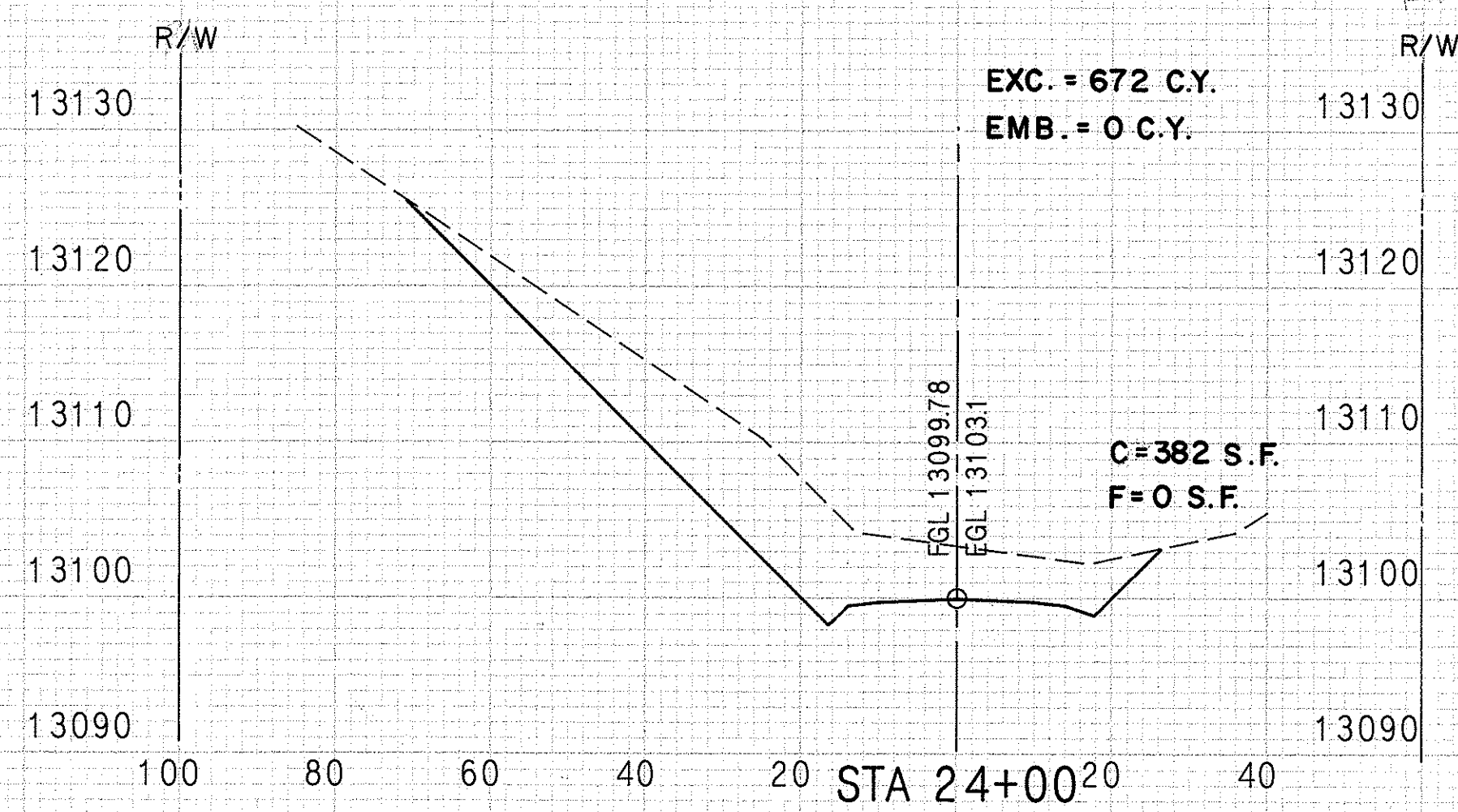
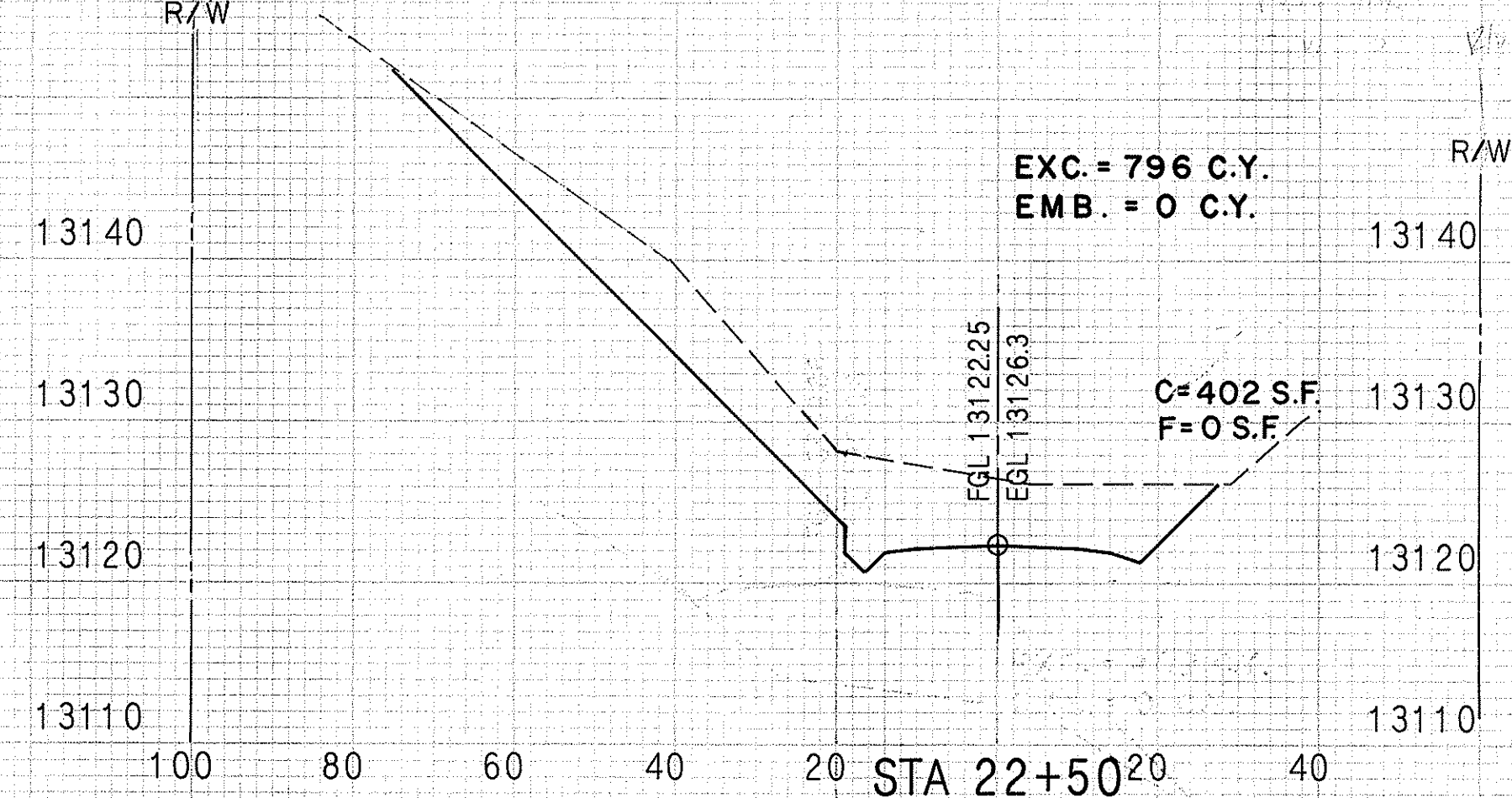
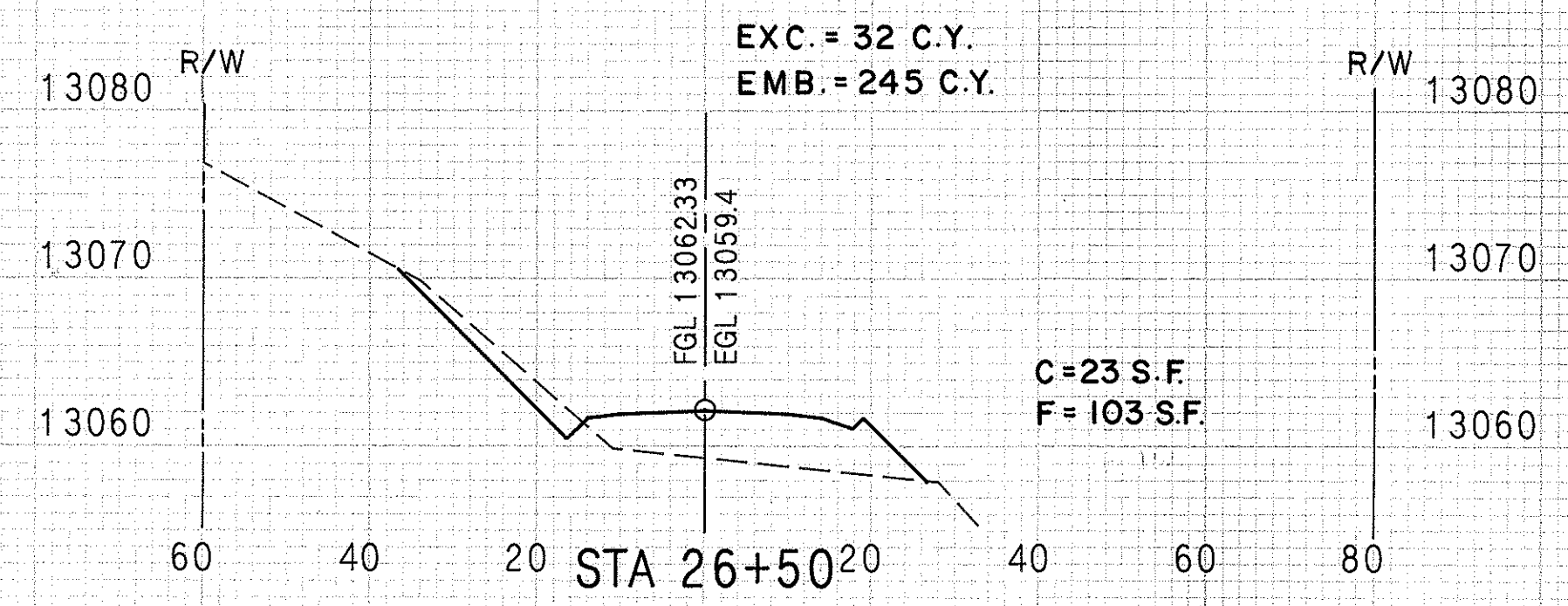
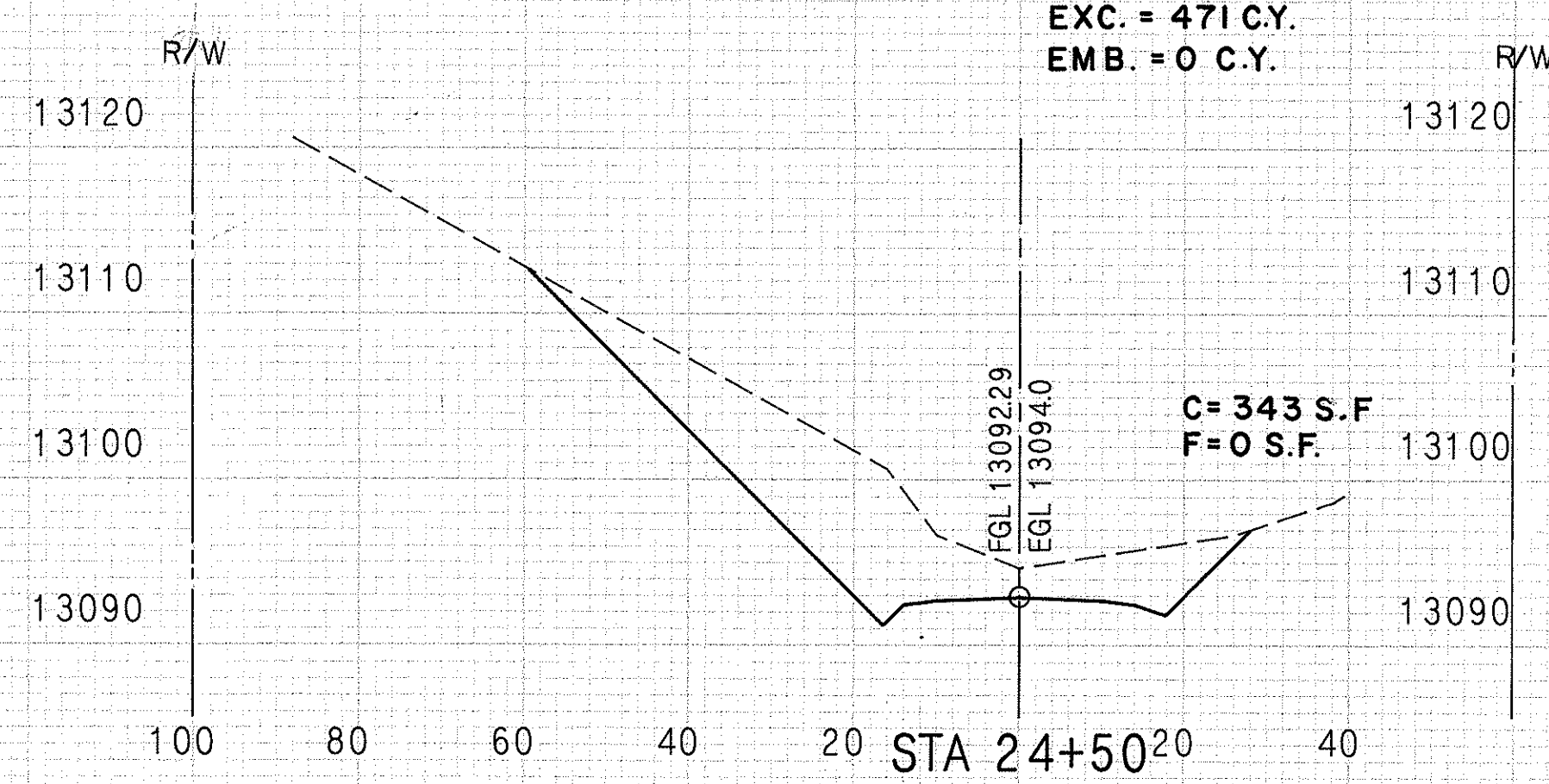
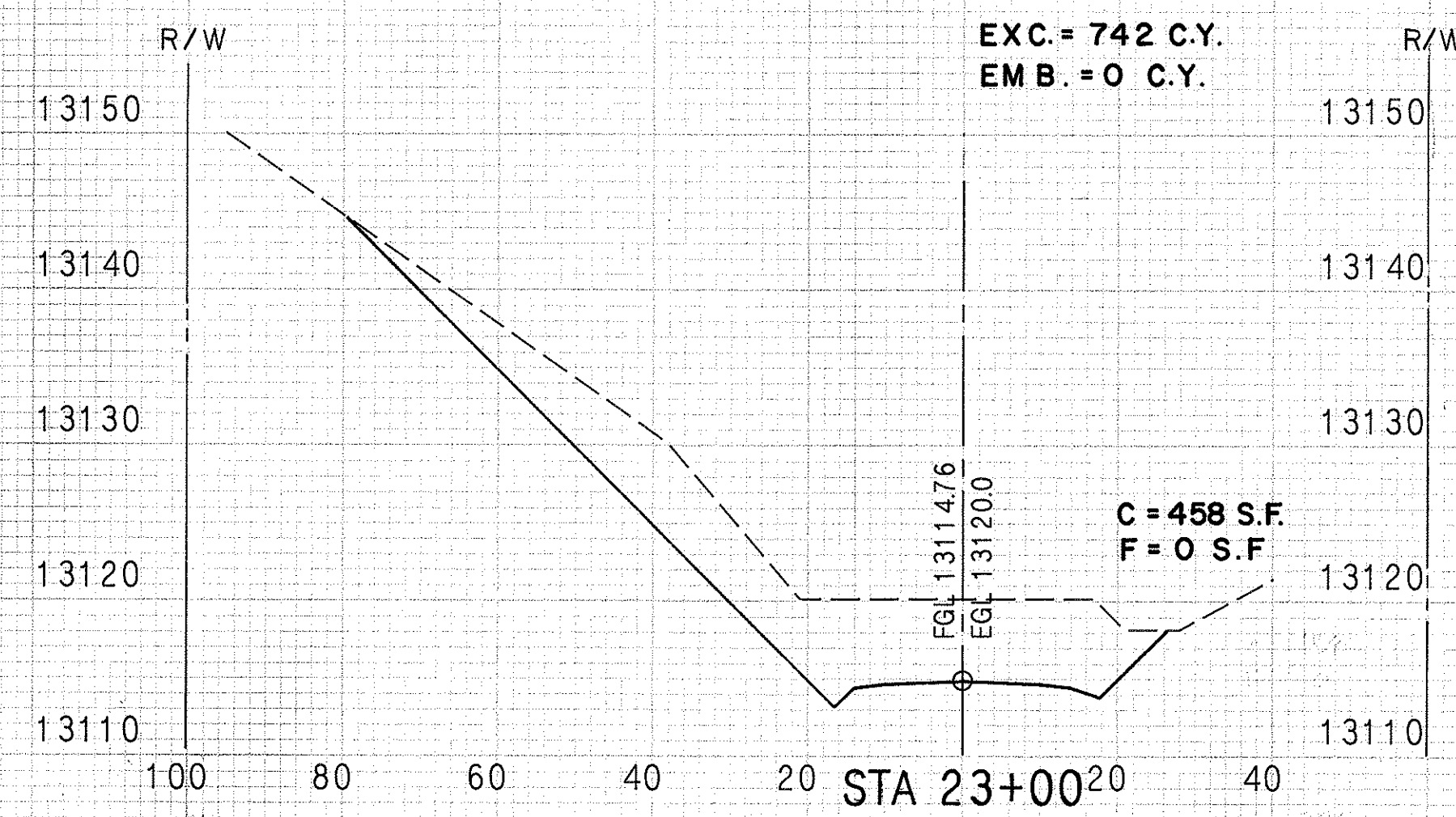
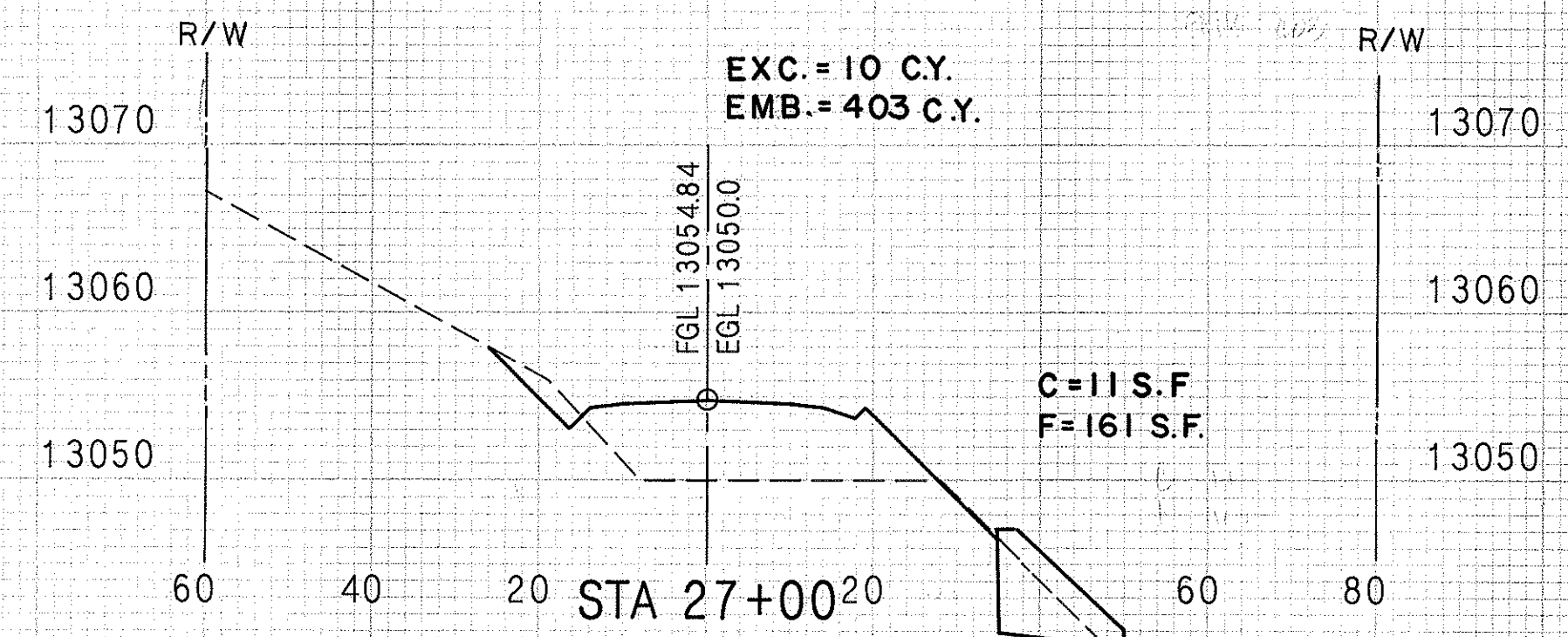
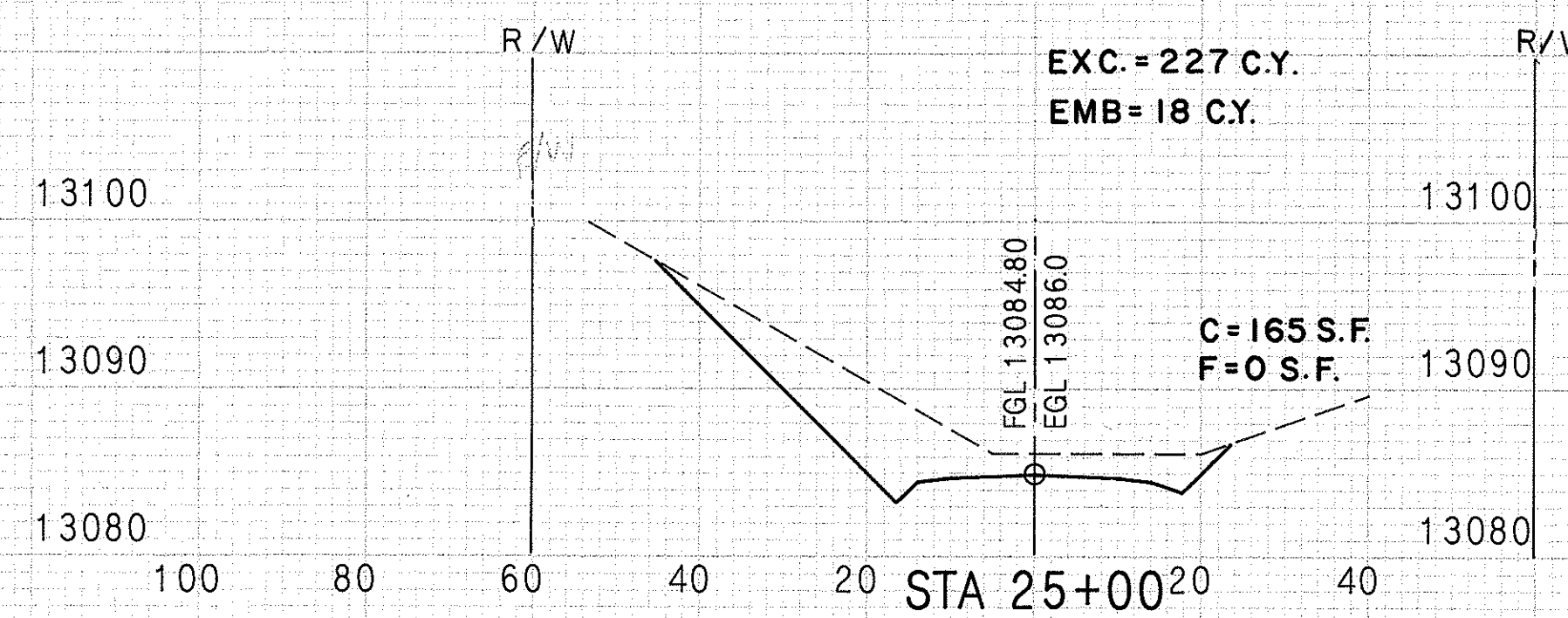
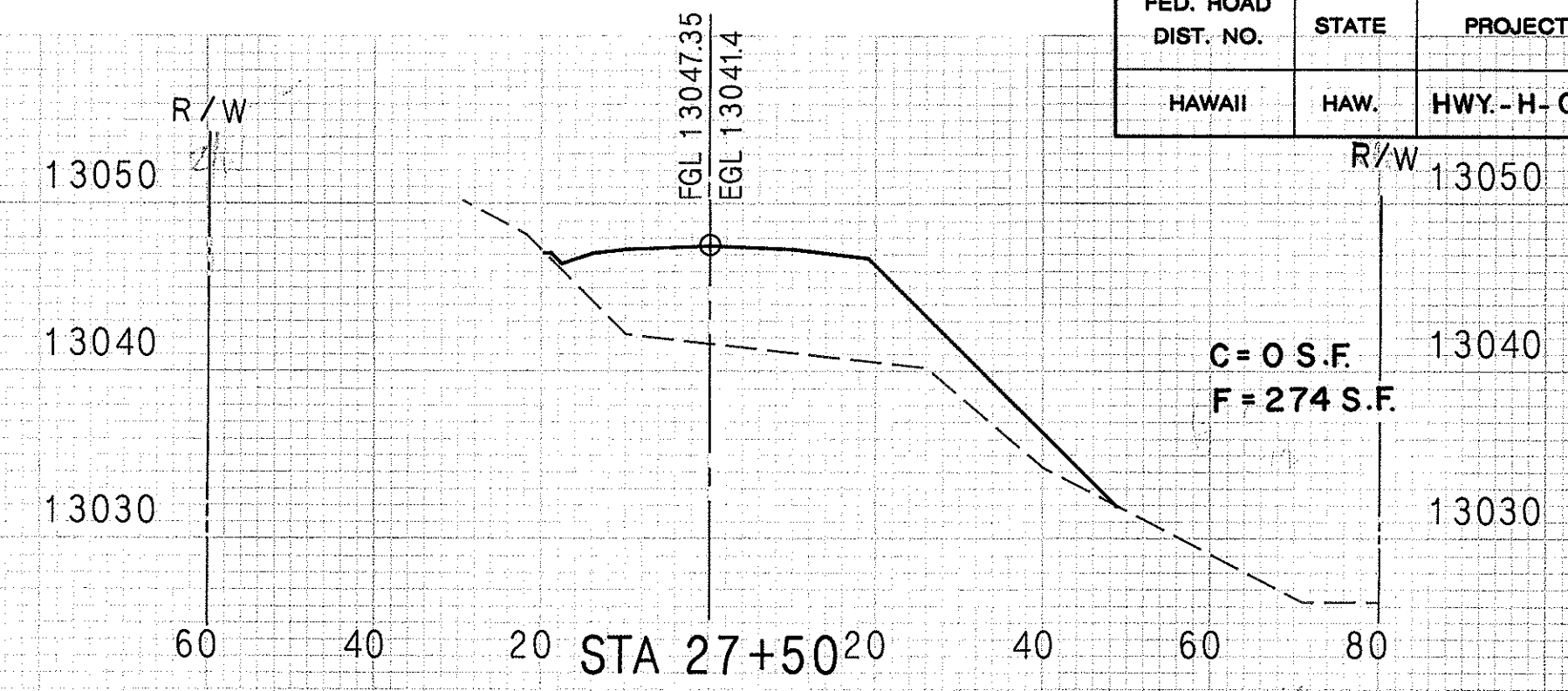
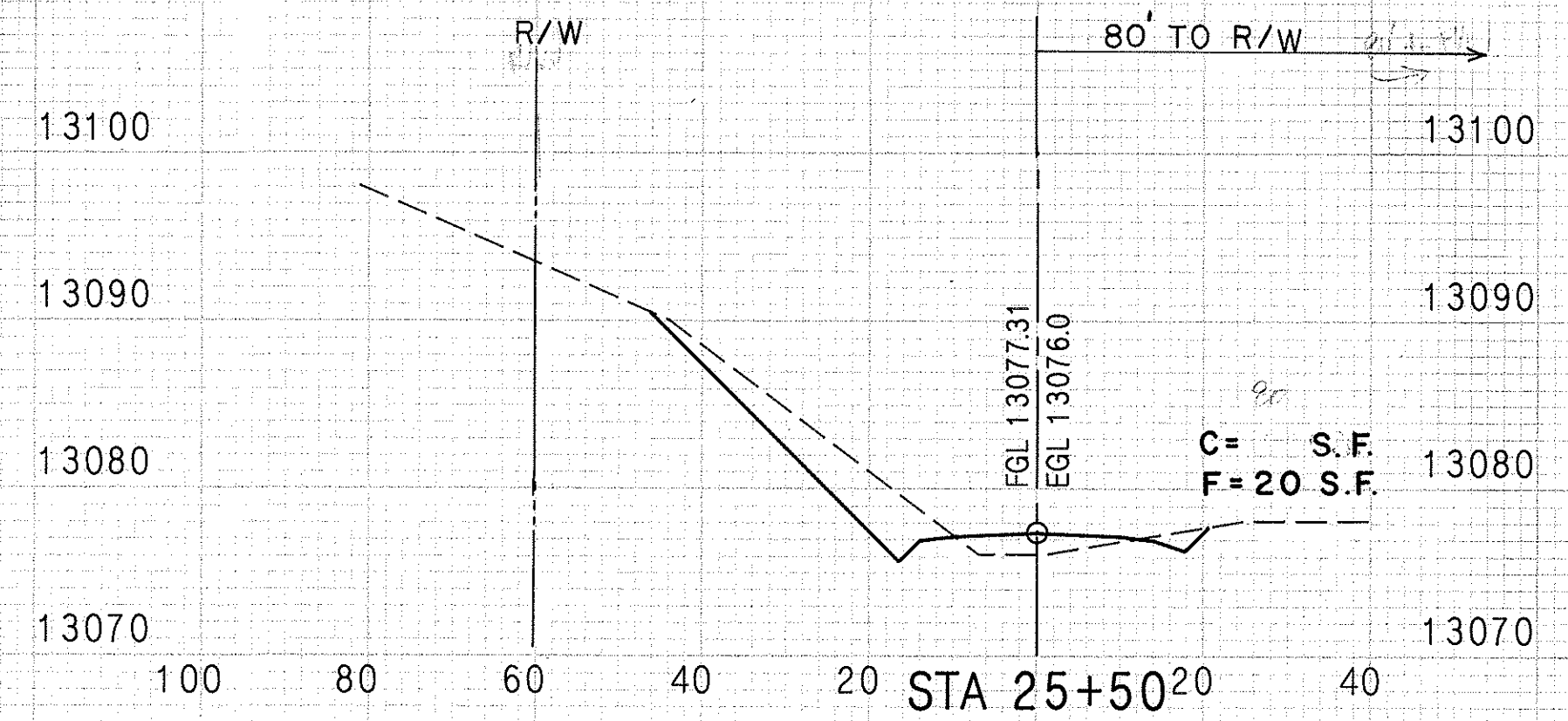
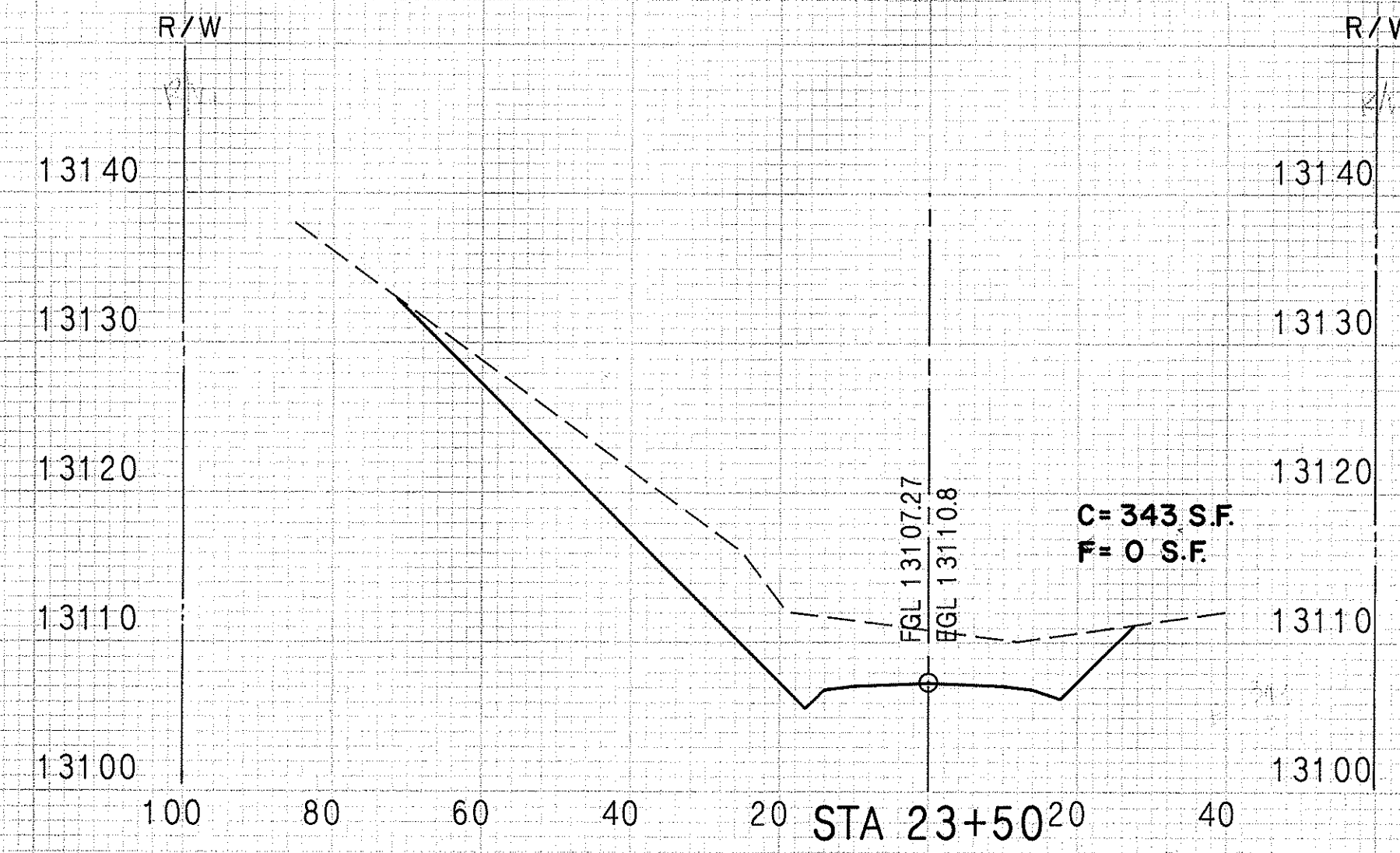
MAIN ACCESS ROAD

STA. 16 + 00 TO STA. 22 + 00  
MAUNA KEA OBSERVATORY ACCESS ROAD  
PHASE II-A

SCALE: HORIZONTAL 1" = 20'  
VERTICAL 1" = 10'

SHEET No. 4 OF 16 SHEETS

| FED. ROAD DIST. NO. | STATE | PROJECT NO.  | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | HWY.-H-01-86 | 1987        | 104       | 115          |



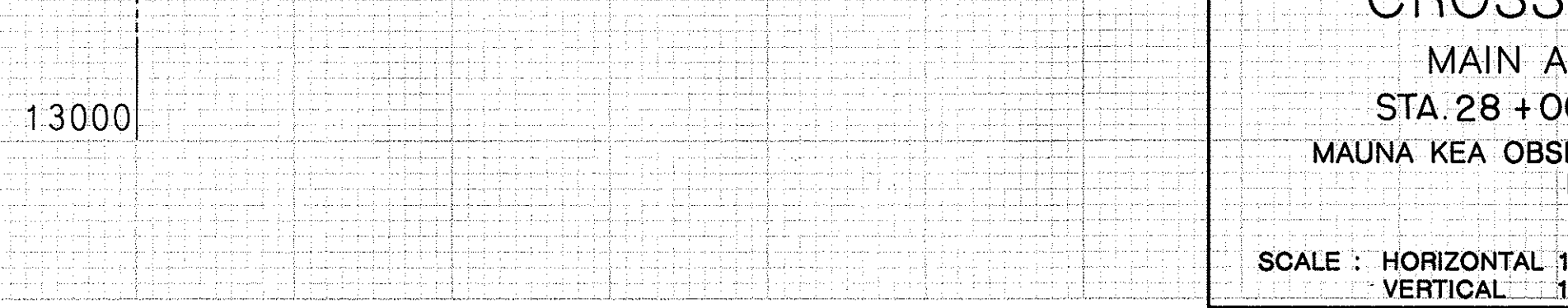
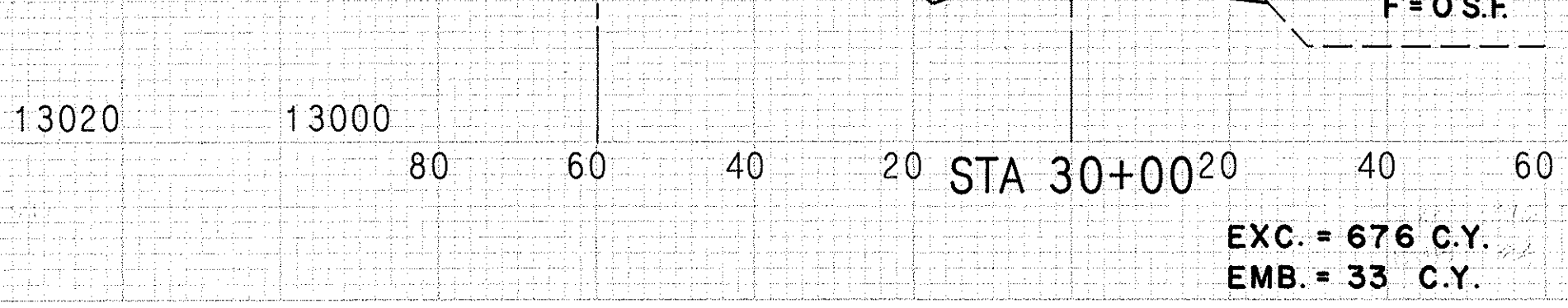
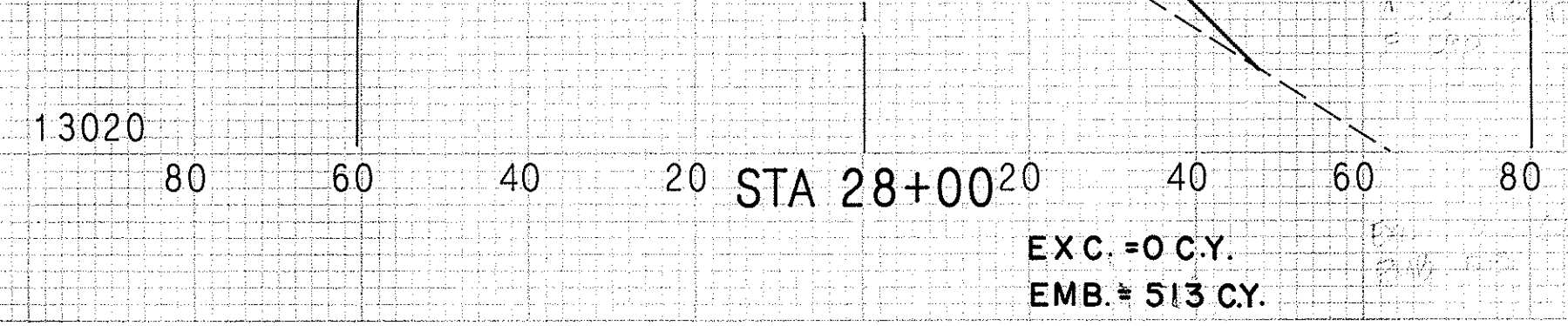
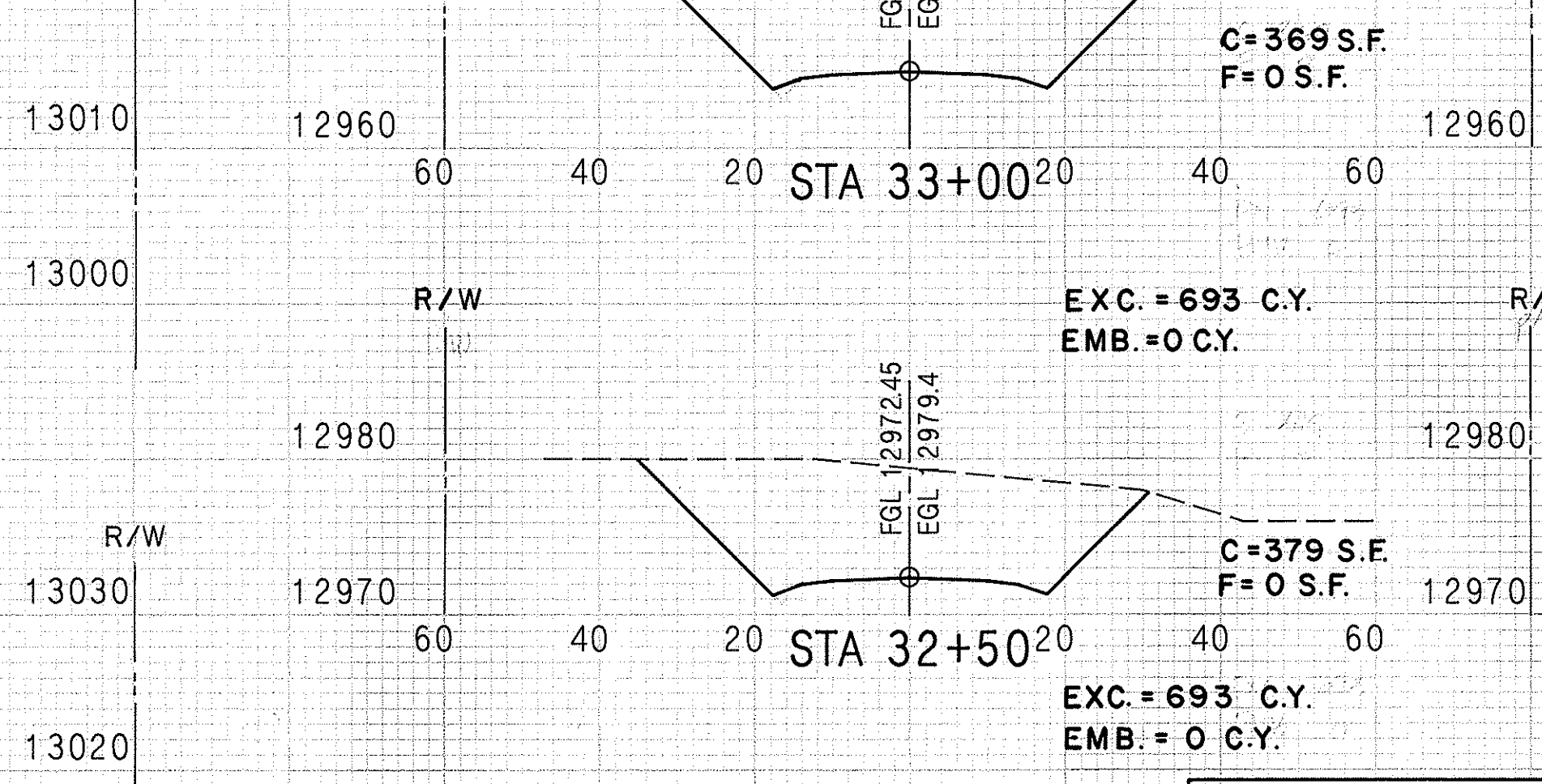
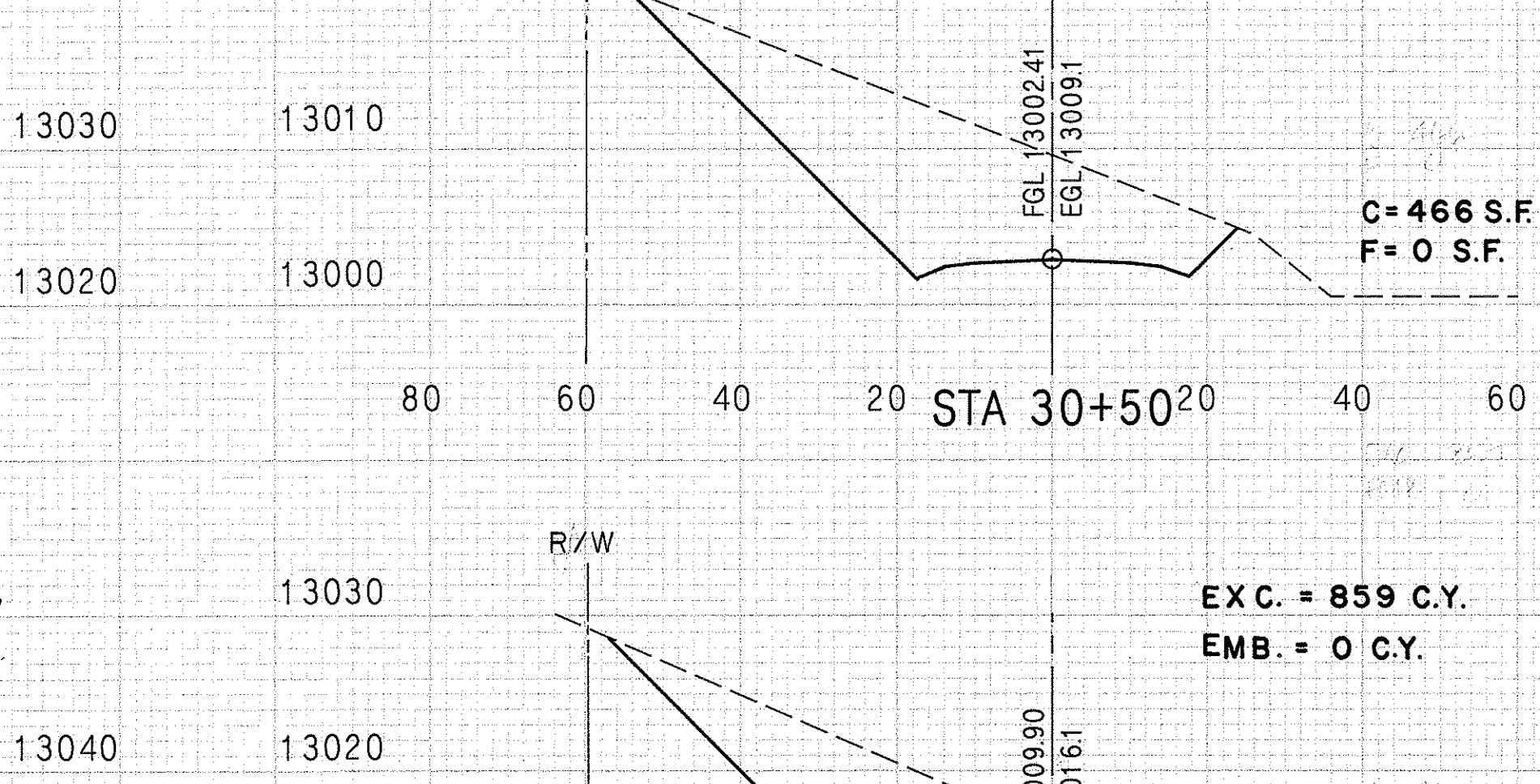
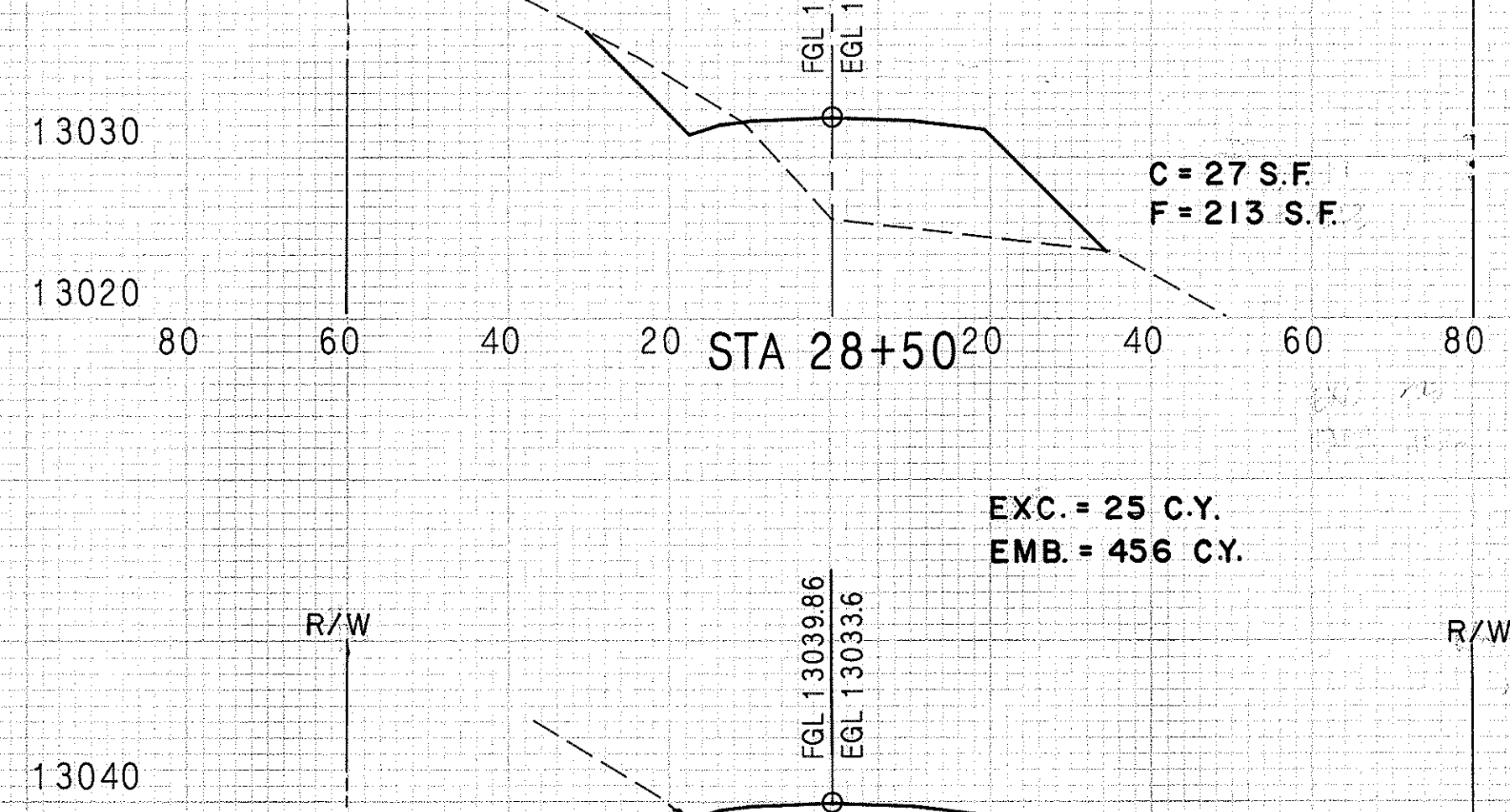
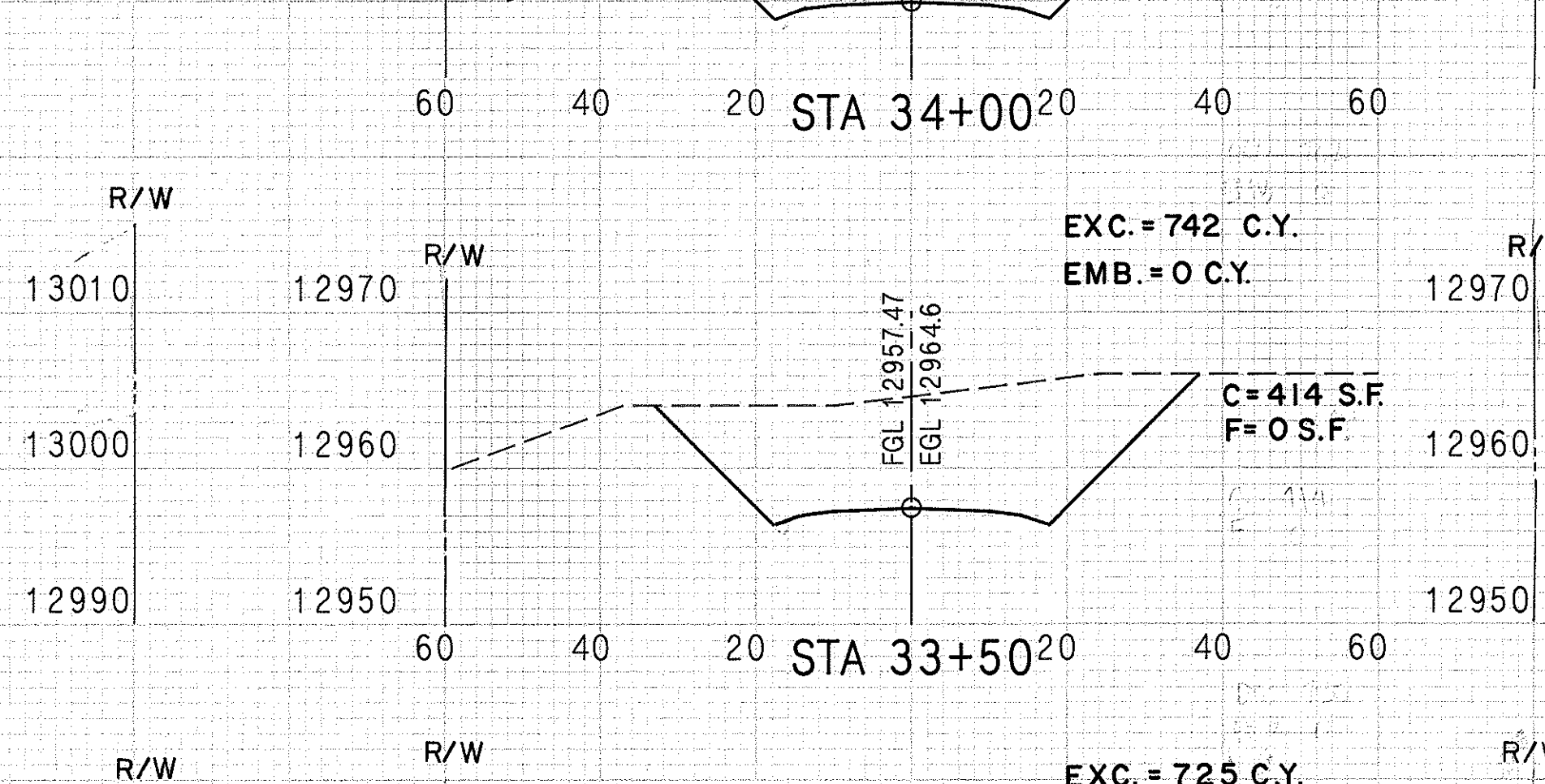
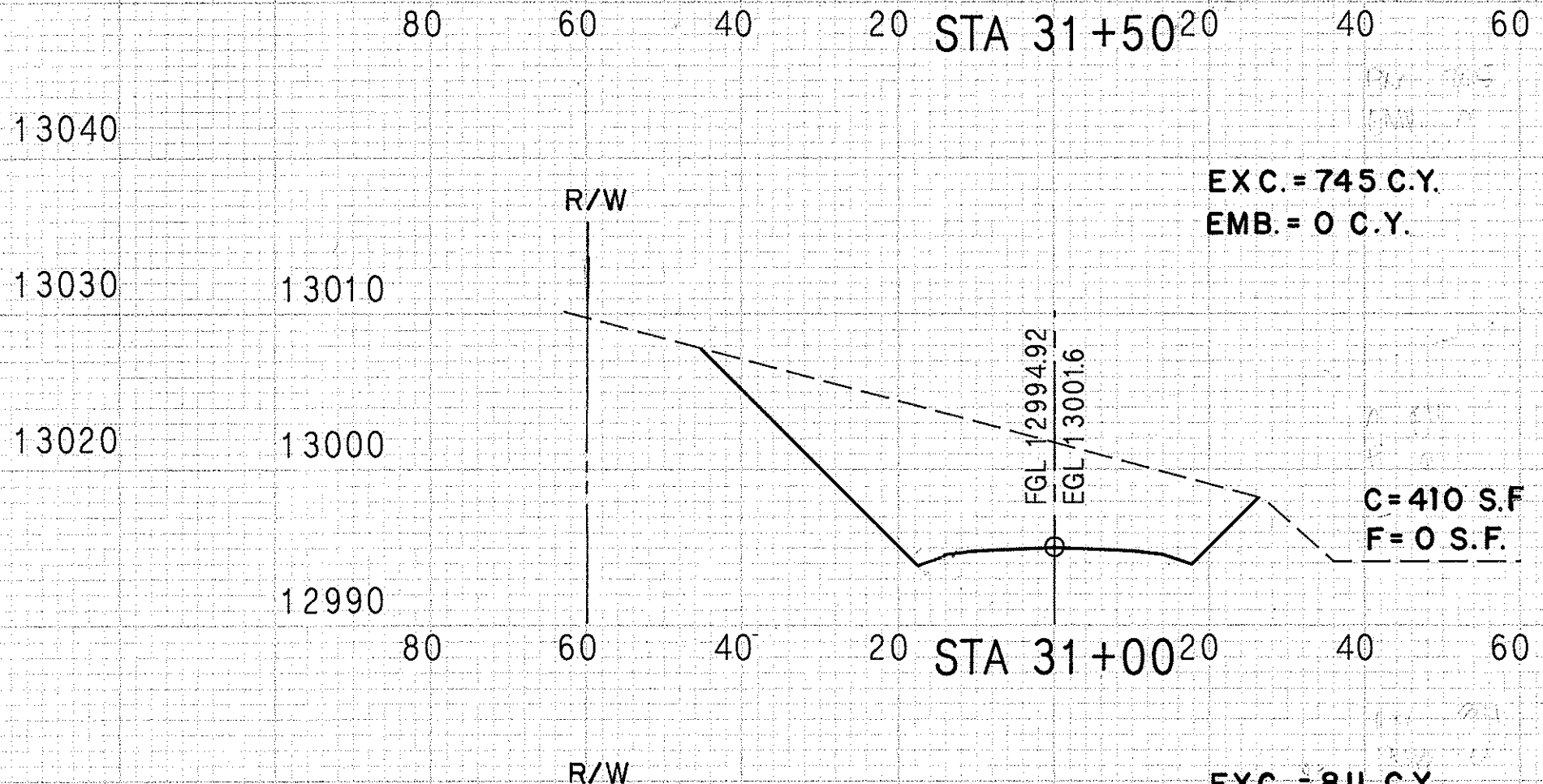
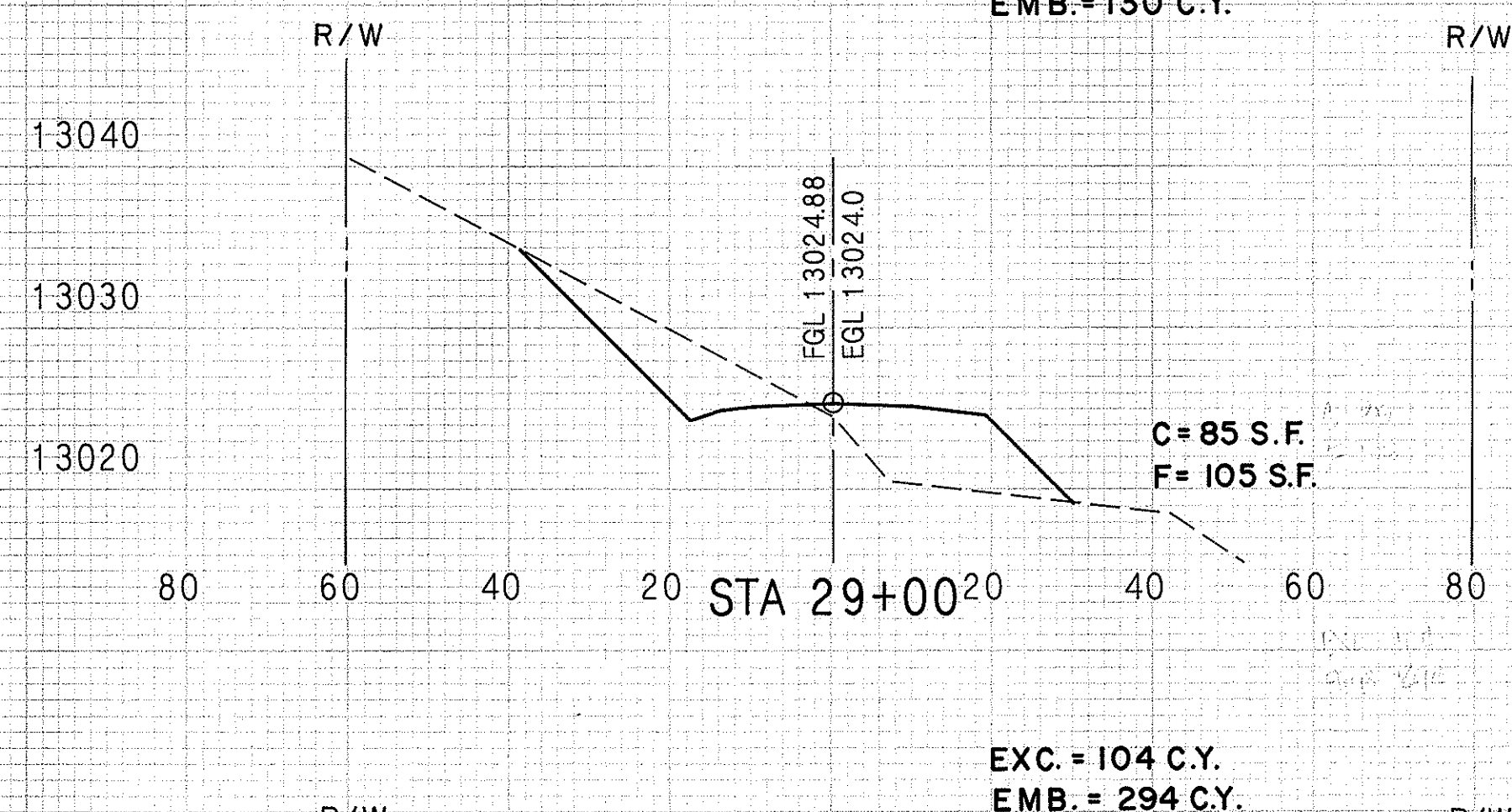
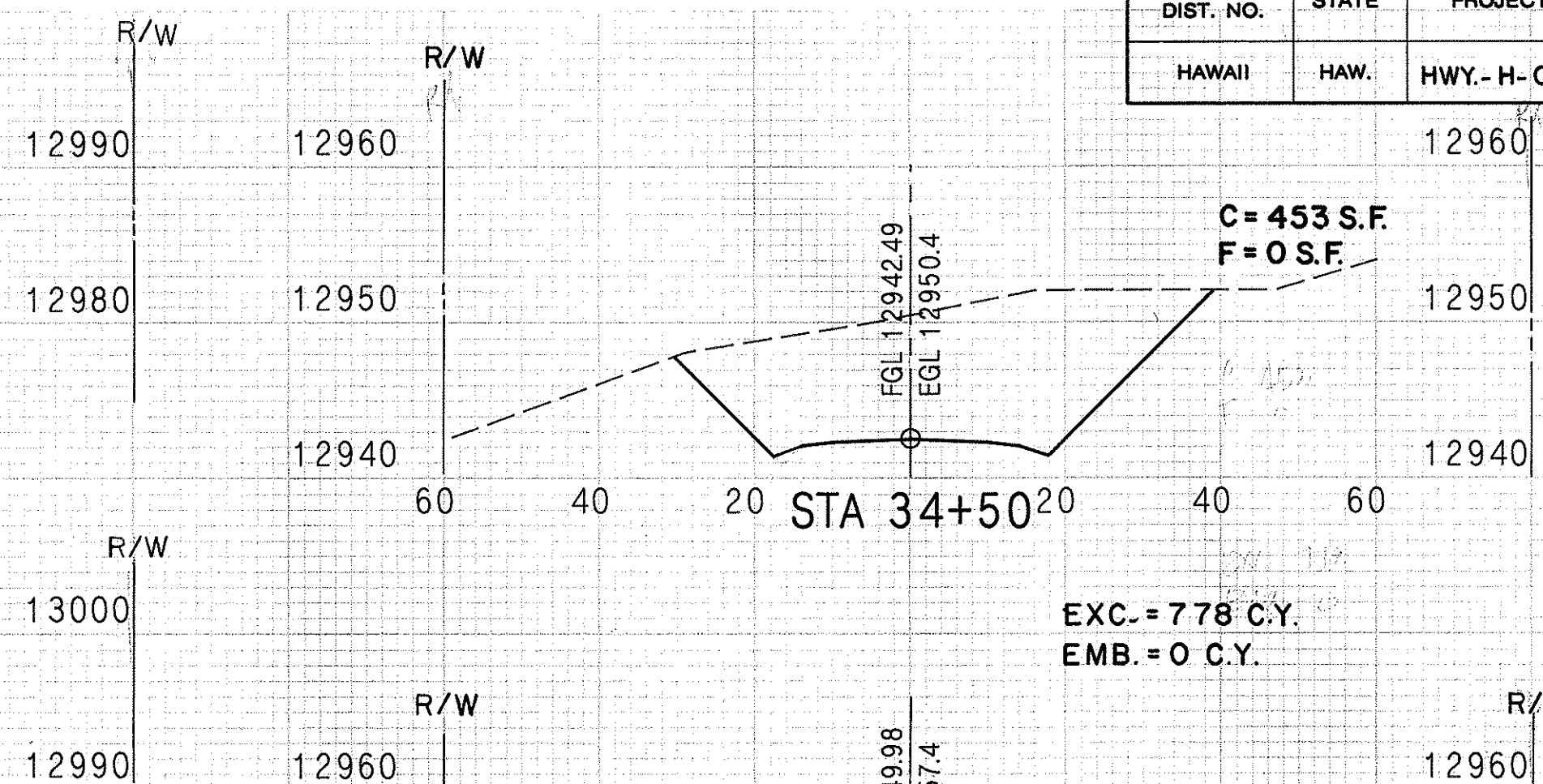
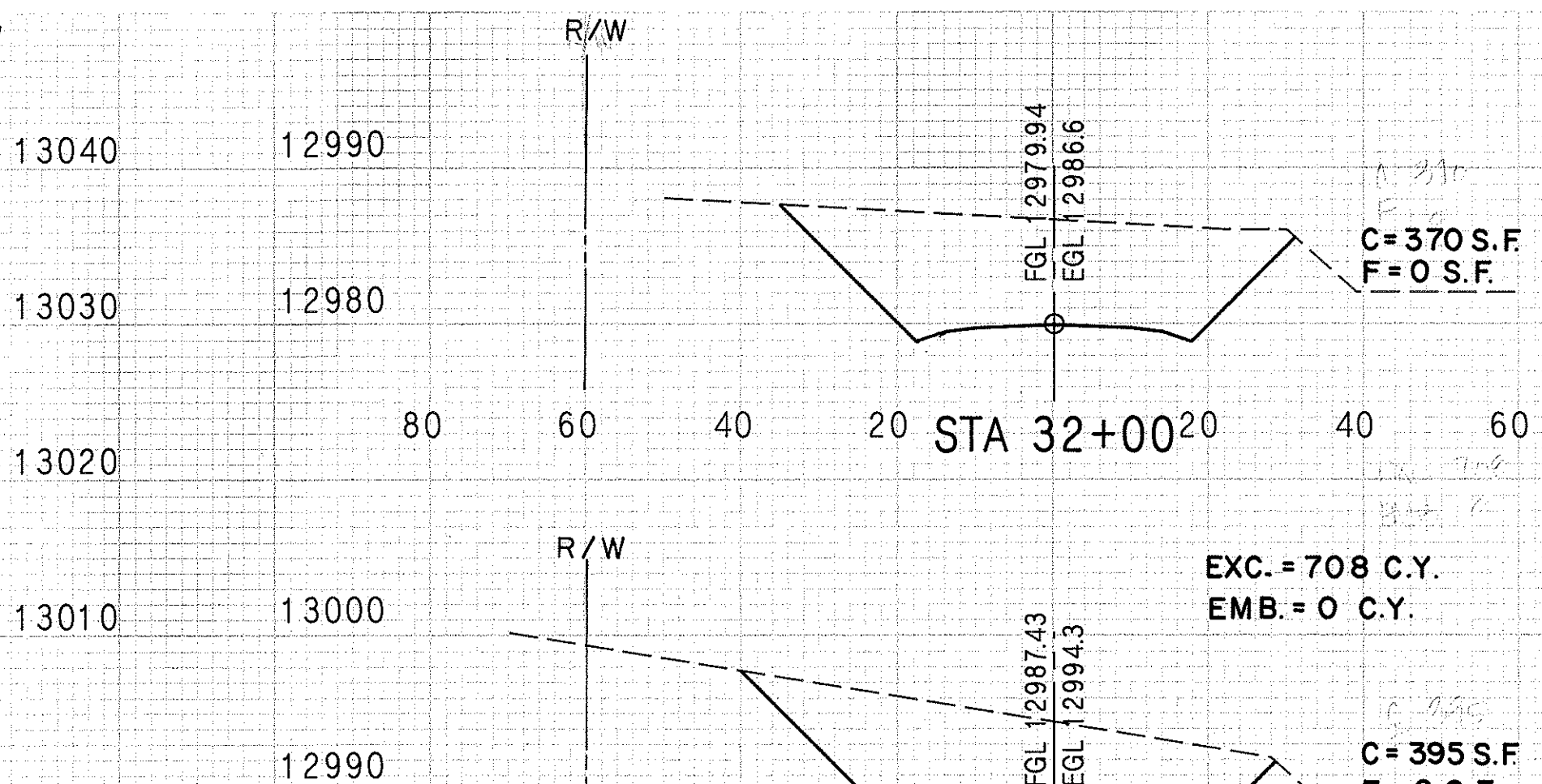
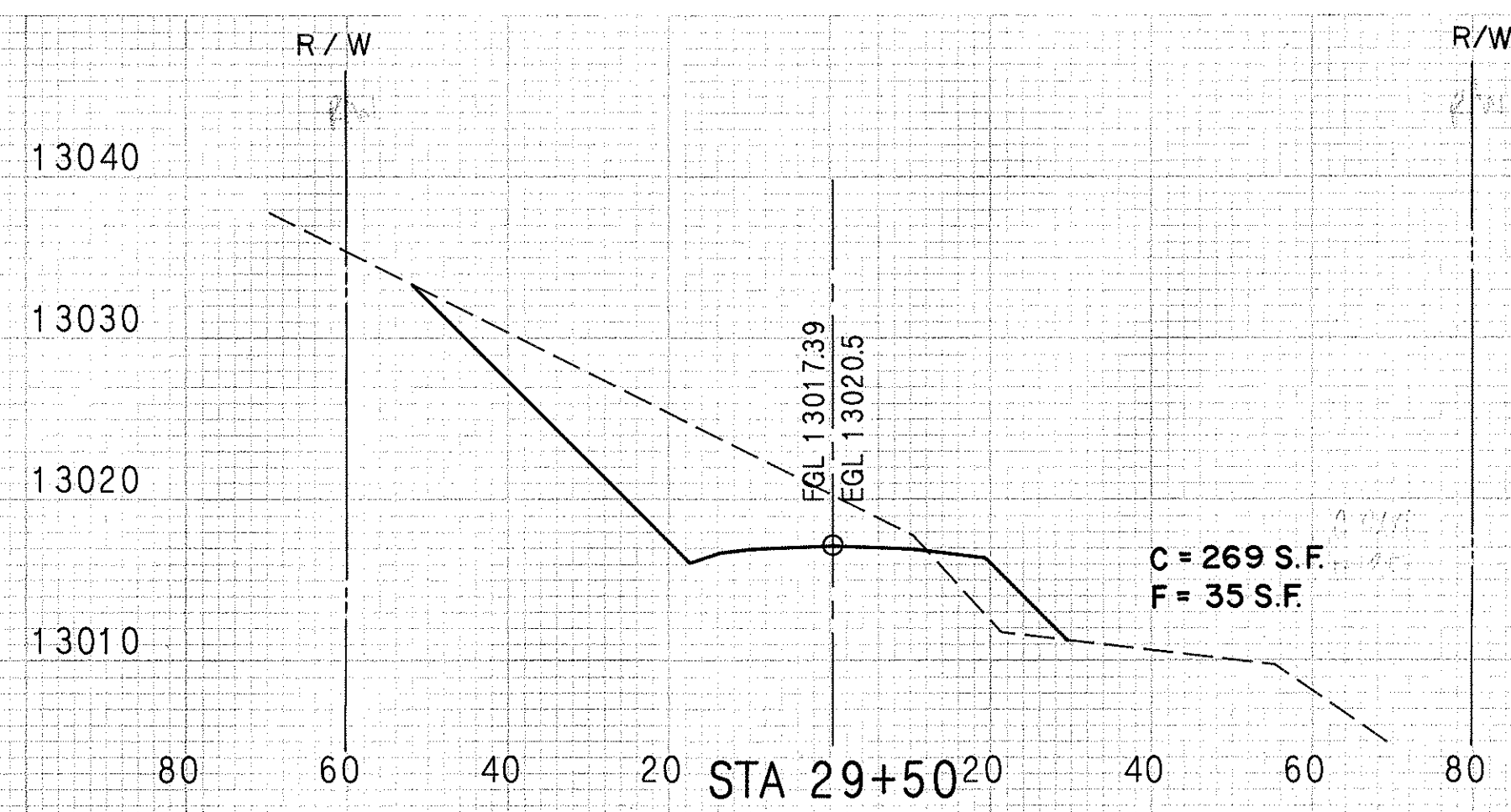
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**CROSS SECTIONS**  
MAIN ACCESS ROAD  
STA. 22 + 50 TO STA. 27 + 50  
MAUNA KEA OBSERVATORY ACCESS ROAD  
PHASE II-A

SCALE: HORIZONTAL 1" = 20'  
VERTICAL 1" = 10'

SHEET No. 5 OF 16 SHEETS

| FED. ROAD DIST. NO. | STATE | PROJECT NO.  | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | HWY.-H-01-86 | 1987        | 105       | 115          |



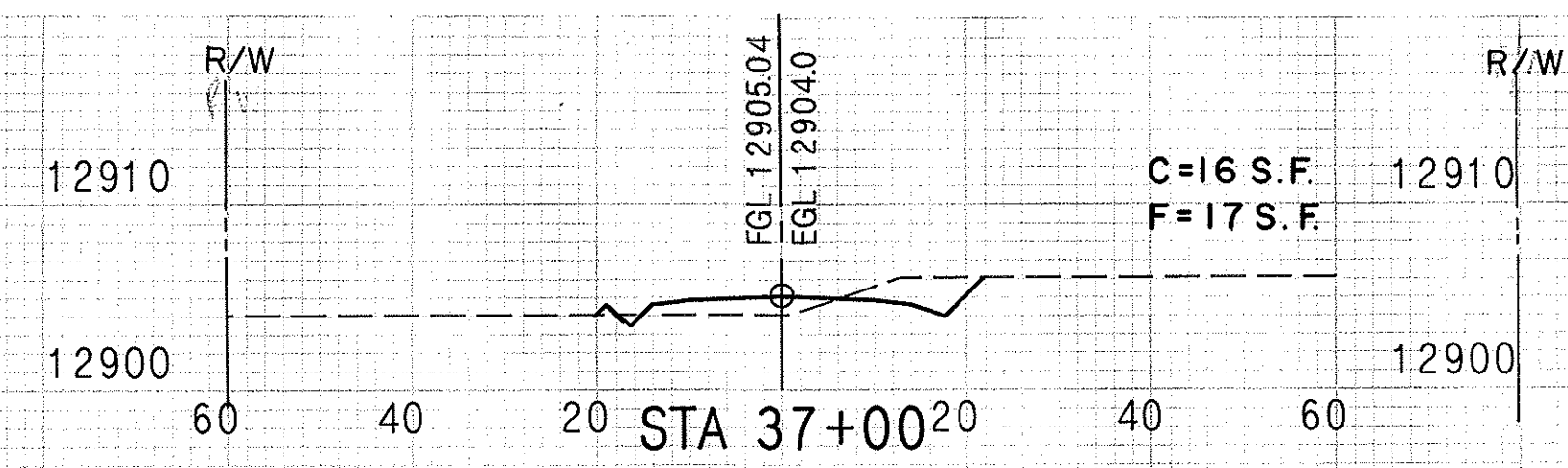
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**CROSS SECTIONS**  
MAIN ACCESS ROAD  
STA 28+00 TO STA 34+50  
MAUNA KEA OBSERVATORY ACCESS ROAD  
PHASE II-A

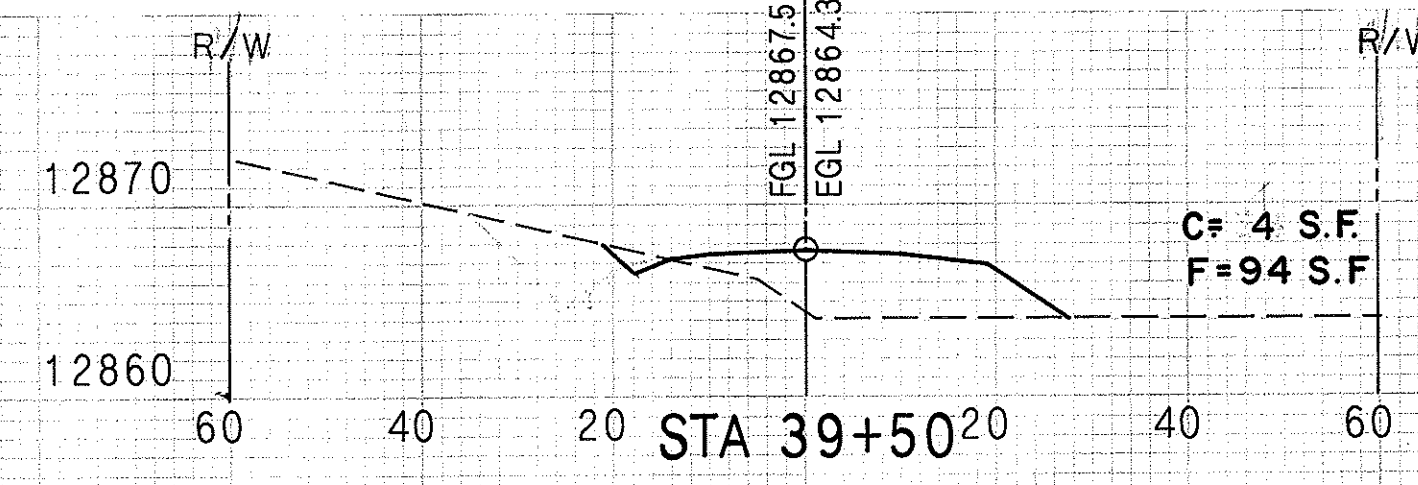
SCALE : HORIZONTAL 1" = 20'  
VERTICAL 1" = 10'

SHEET No. 6 OF 16 SHEETS

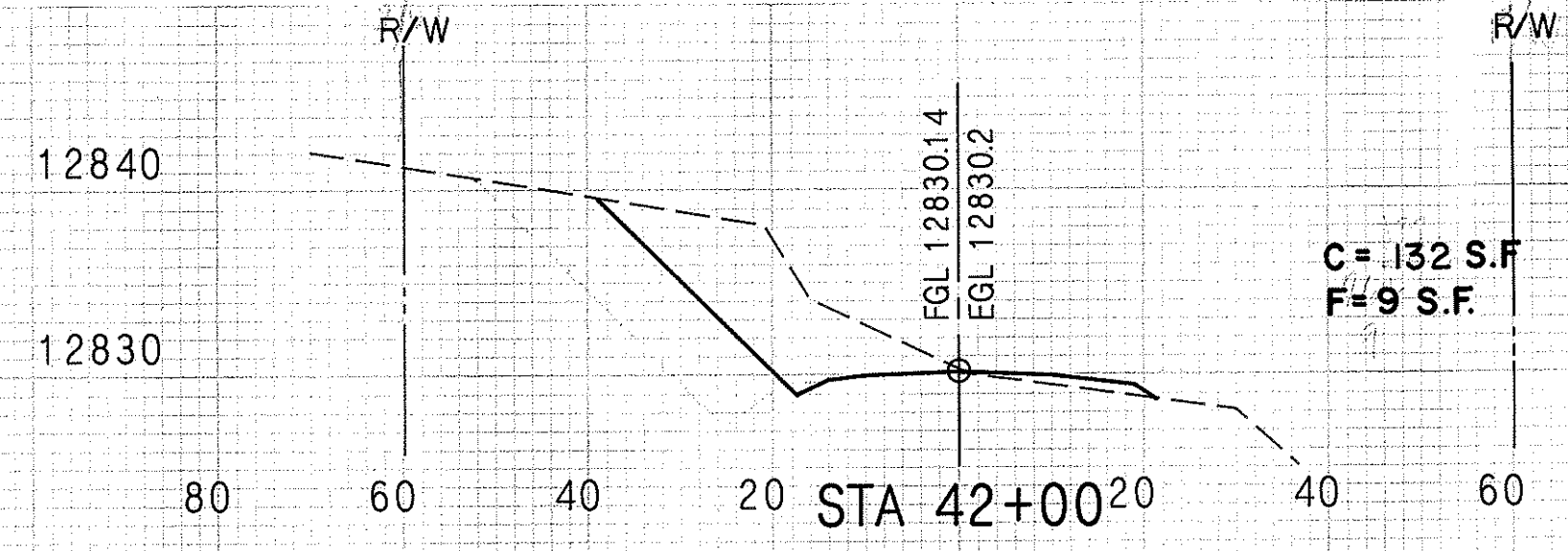
| FED. ROAD DIST. NO. | STATE | PROJECT NO.  | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | HWY.-H-01-86 | 1987        | 106       | 115          |



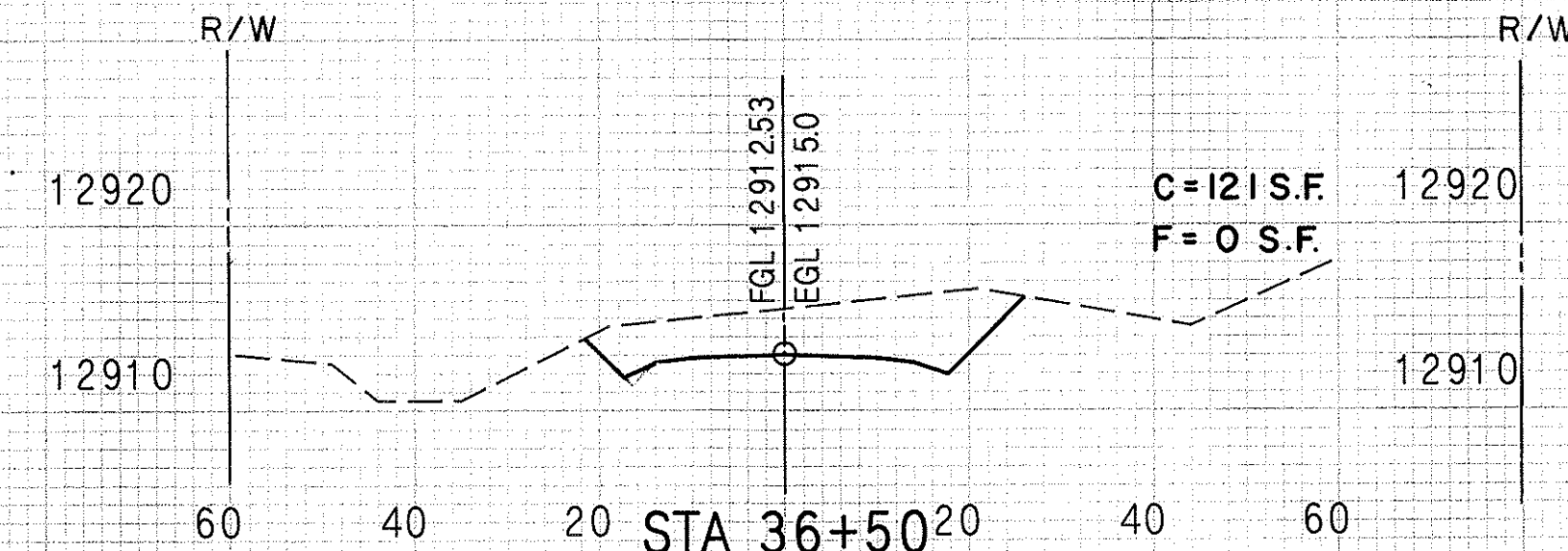
EXC. = 126 C.Y.  
EMB. = 16 C.Y.



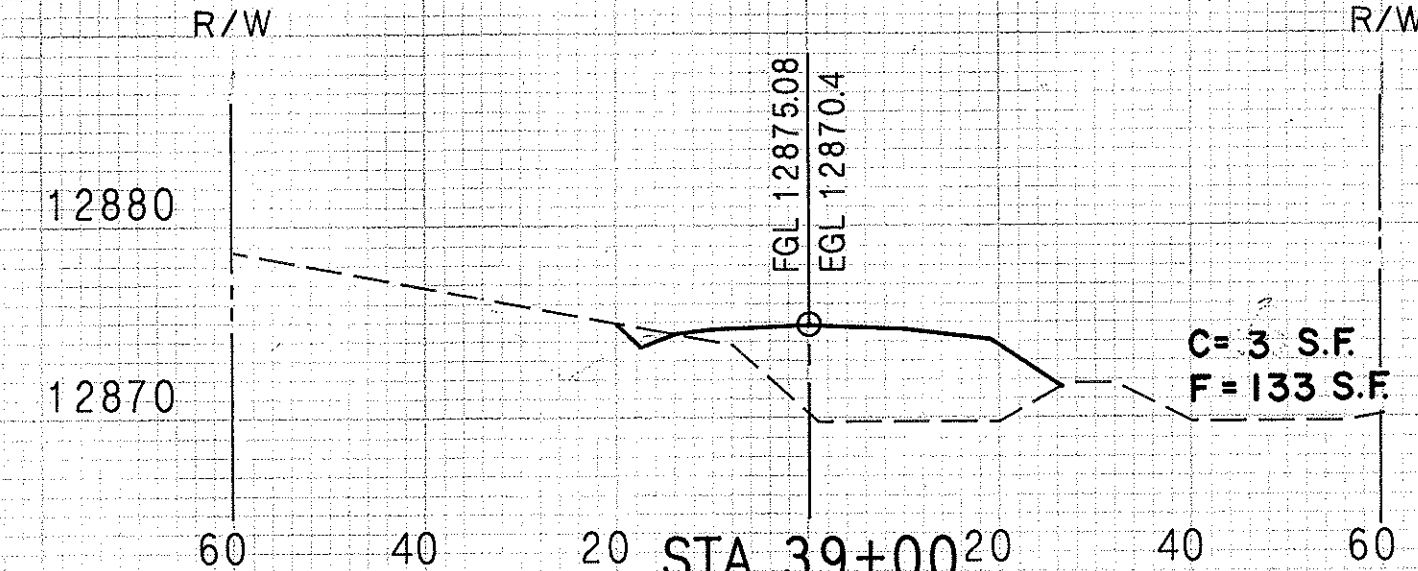
EXC. = 7 C.Y.  
EMB. = 211 C.Y.



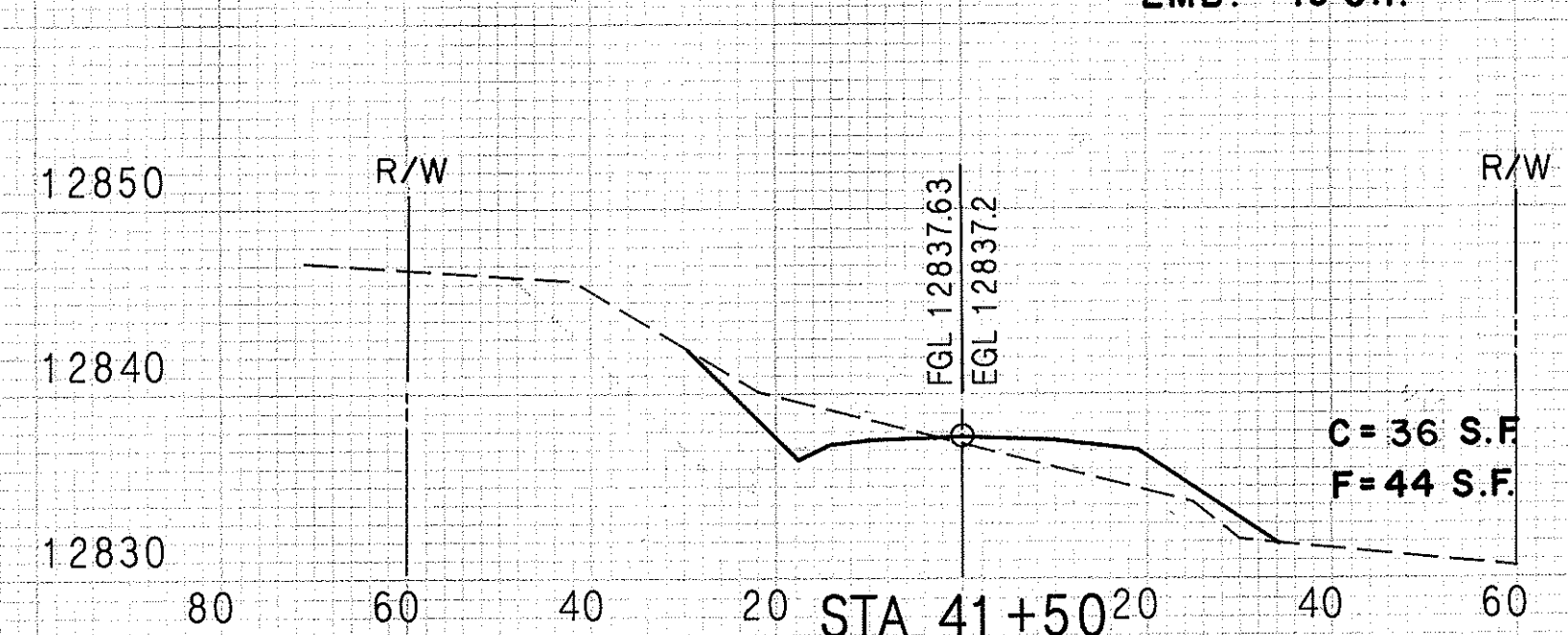
EXC. = 156 C.Y.  
EMB. = 49 C.Y.



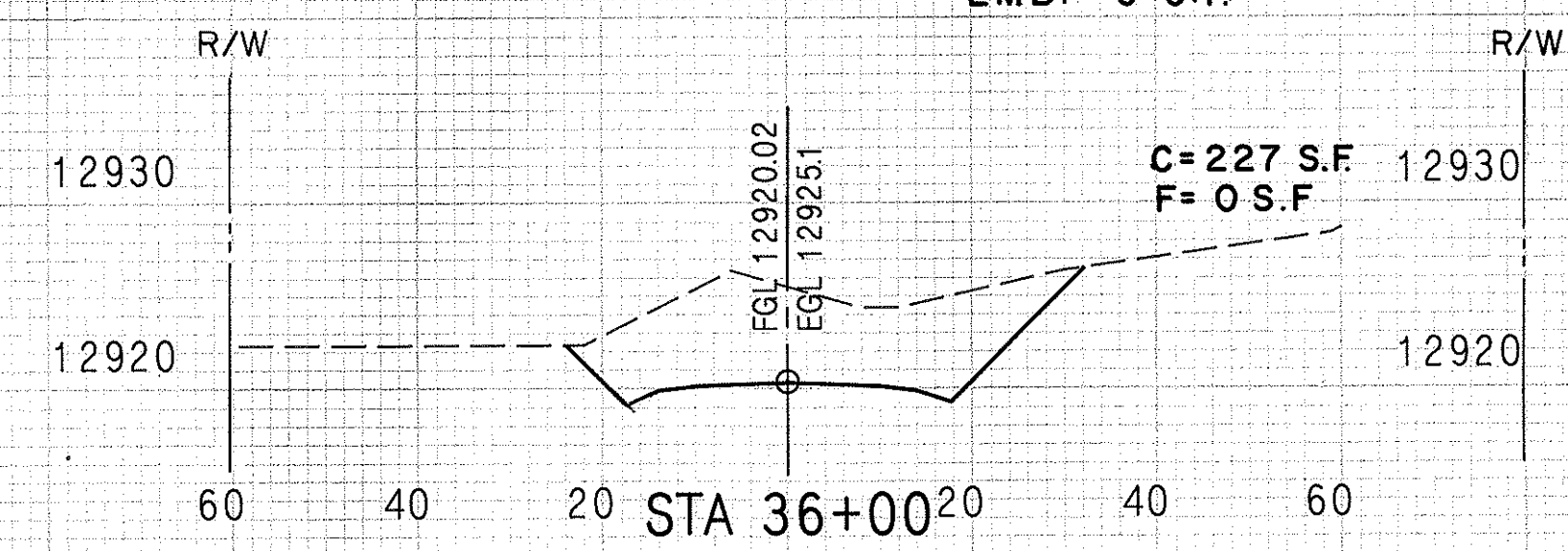
EXC. = 322 C.Y.  
EMB. = 0 C.Y.



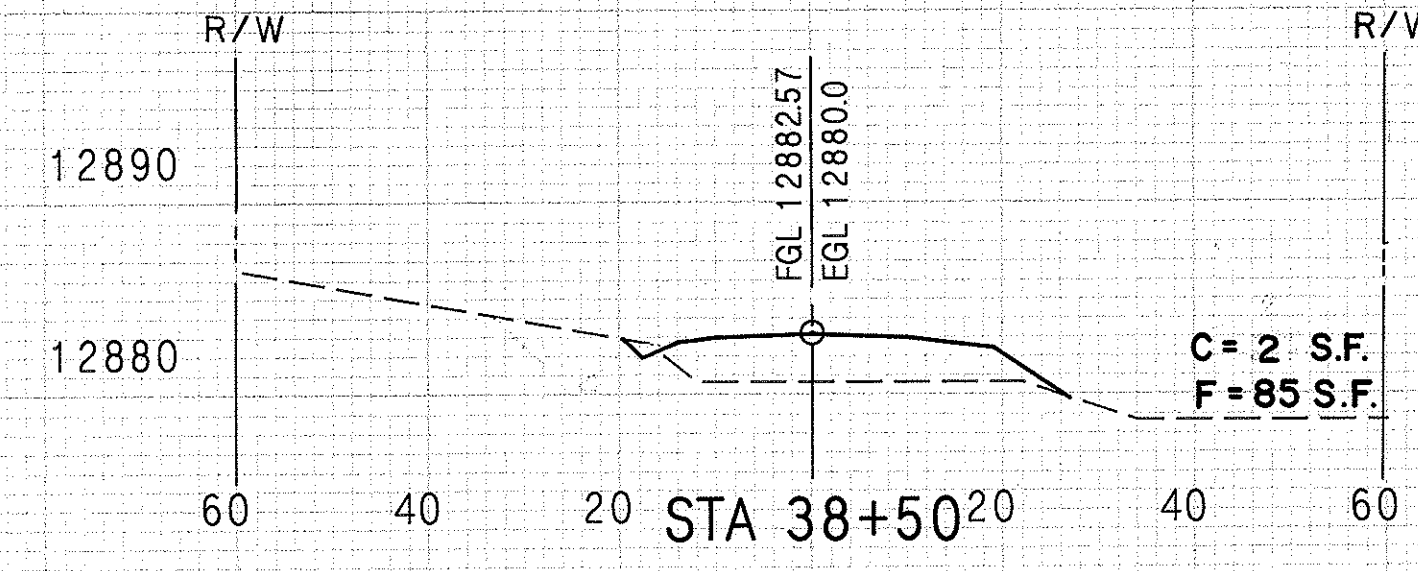
EXC. = 5 C.Y.  
EMB. = 202 C.Y.



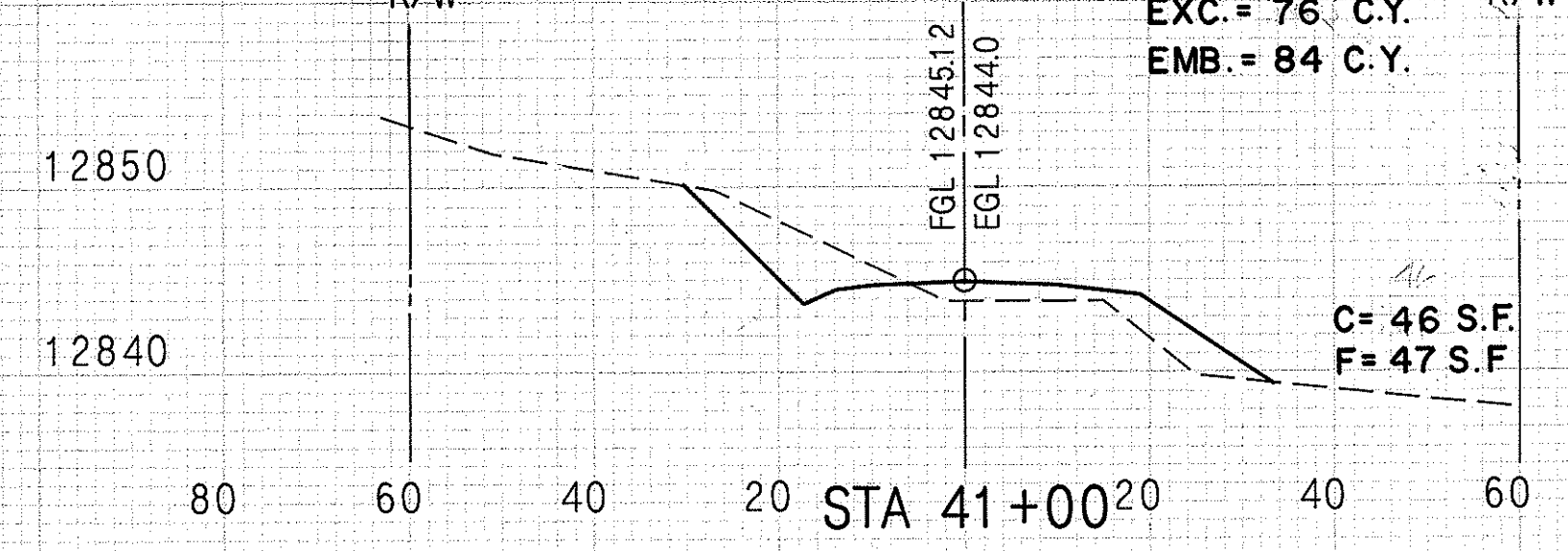
EXC. = 76 C.Y.  
EMB. = 84 C.Y.



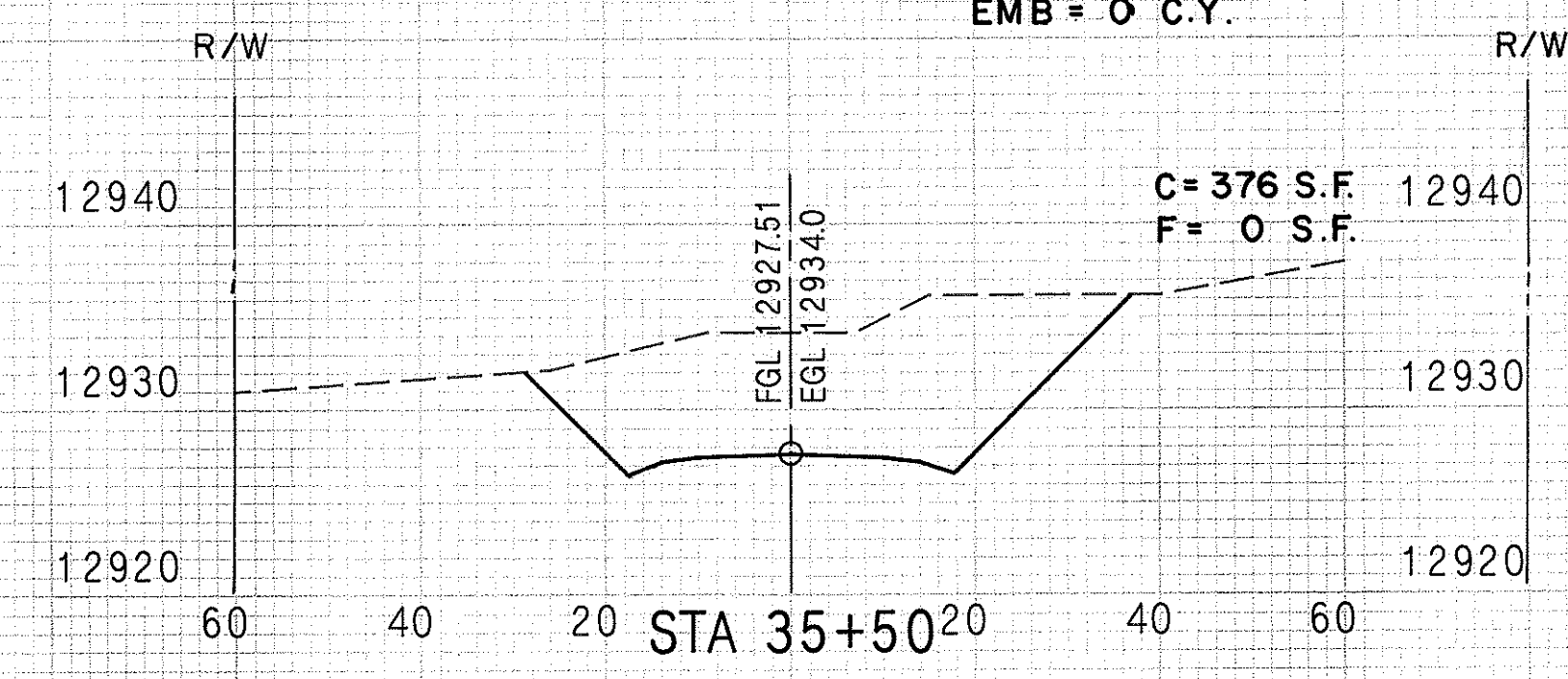
EXC. = 558 C.Y.  
EMB. = 0 C.Y.



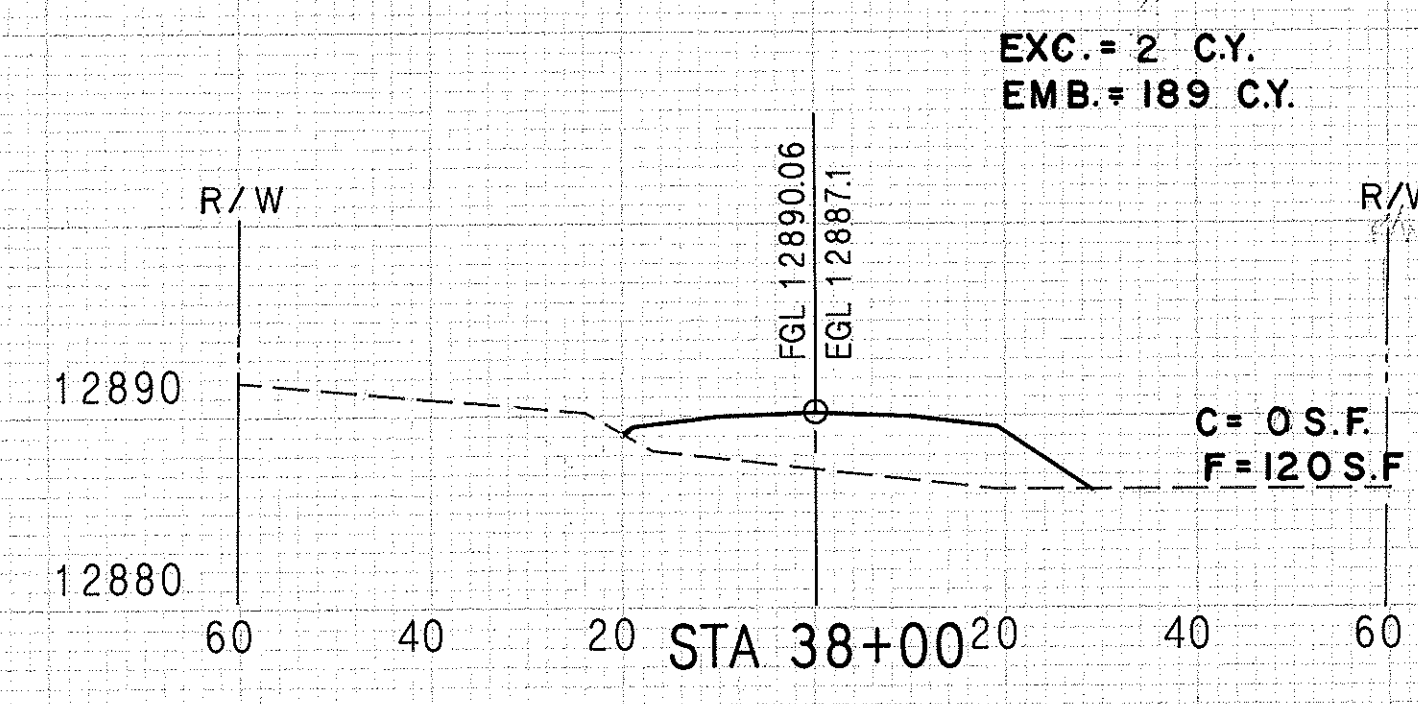
EXC. = 2 C.Y.  
EMB. = 189 C.Y.



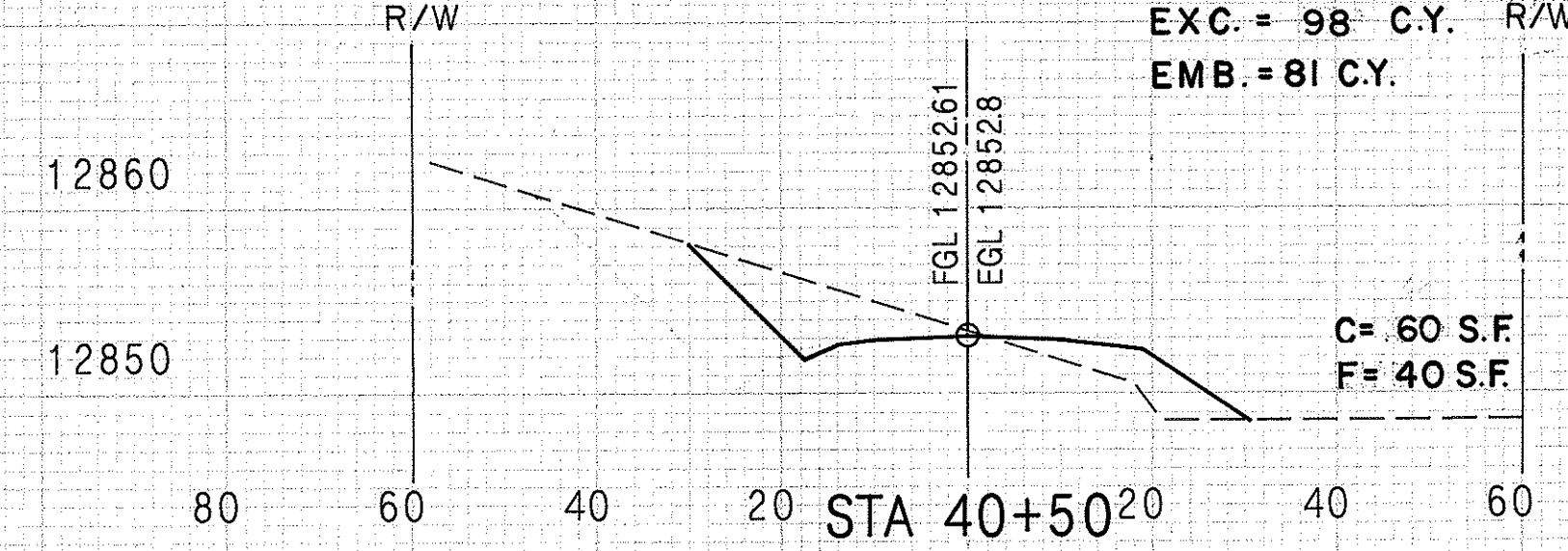
EXC. = 98 C.Y.  
EMB. = 81 C.Y.



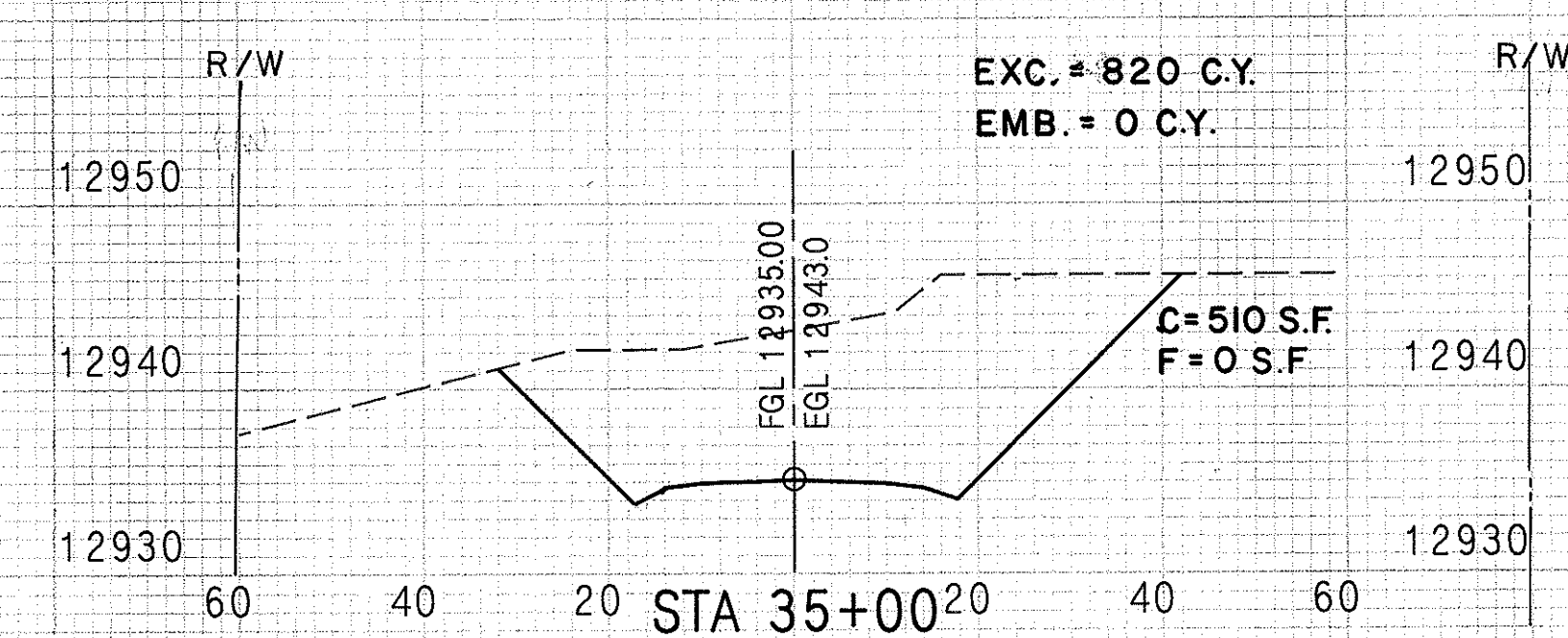
EXC. = 820 C.Y.  
EMB. = 0 C.Y.



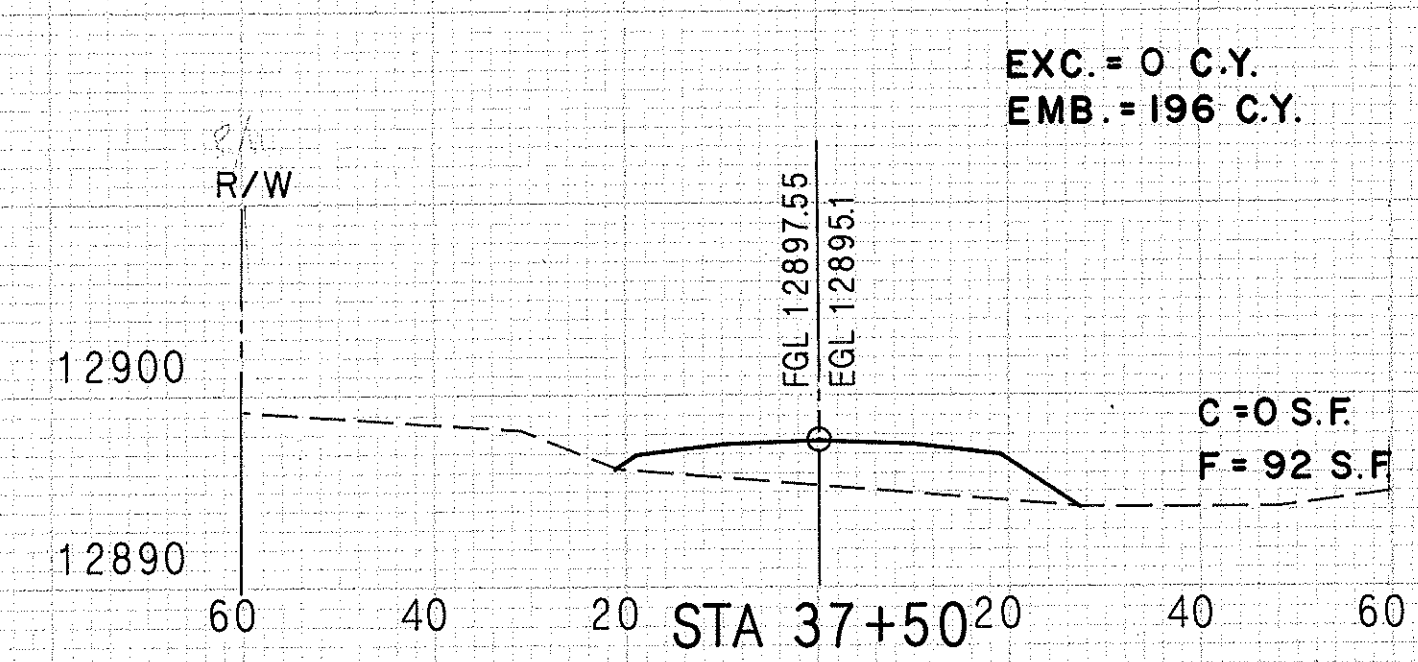
EXC. = 0 C.Y.  
EMB. = 196 C.Y.



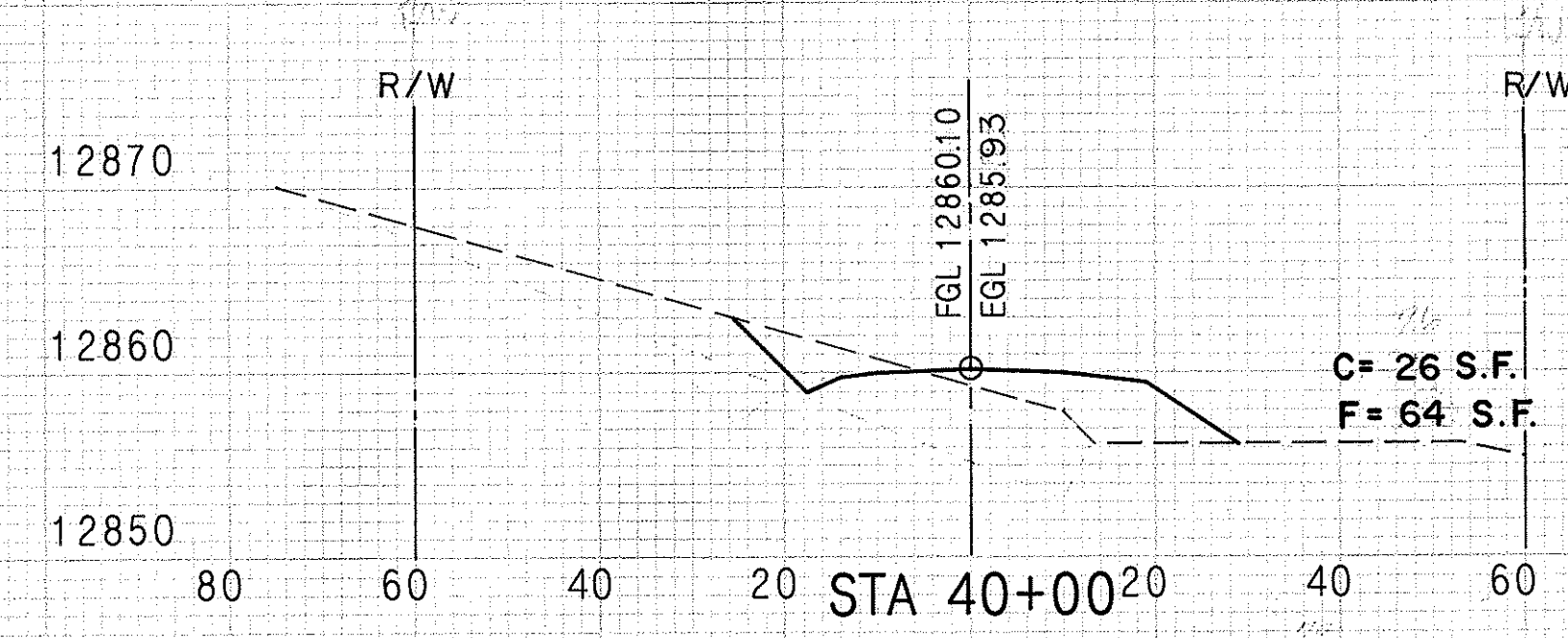
EXC. = 80 C.Y.  
EMB. = 96 C.Y.



EXC. = 892 C.Y.  
EMB. = 0 C.Y.



EXC. = 15 C.Y.  
EMB. = 101 C.Y.

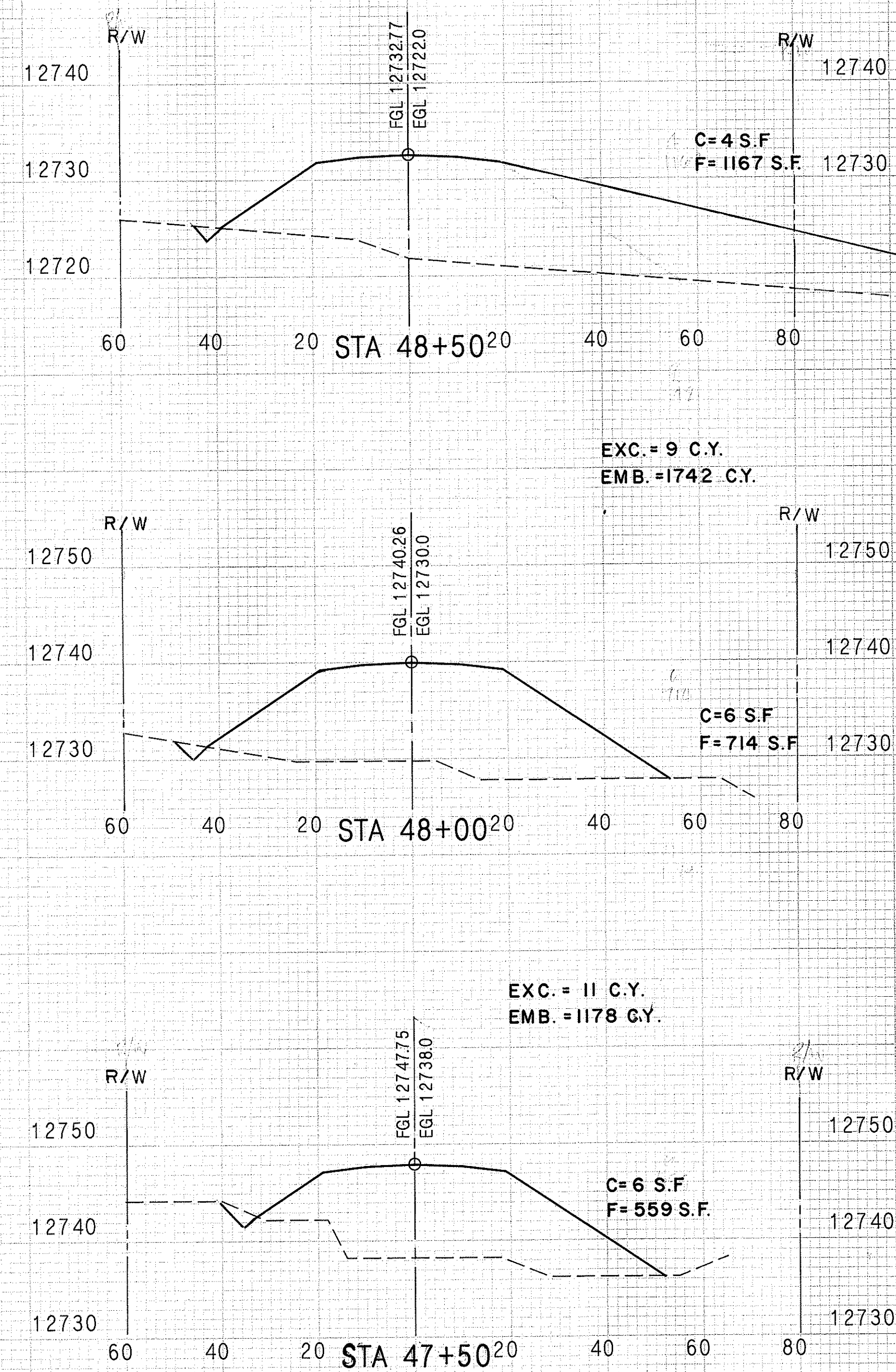
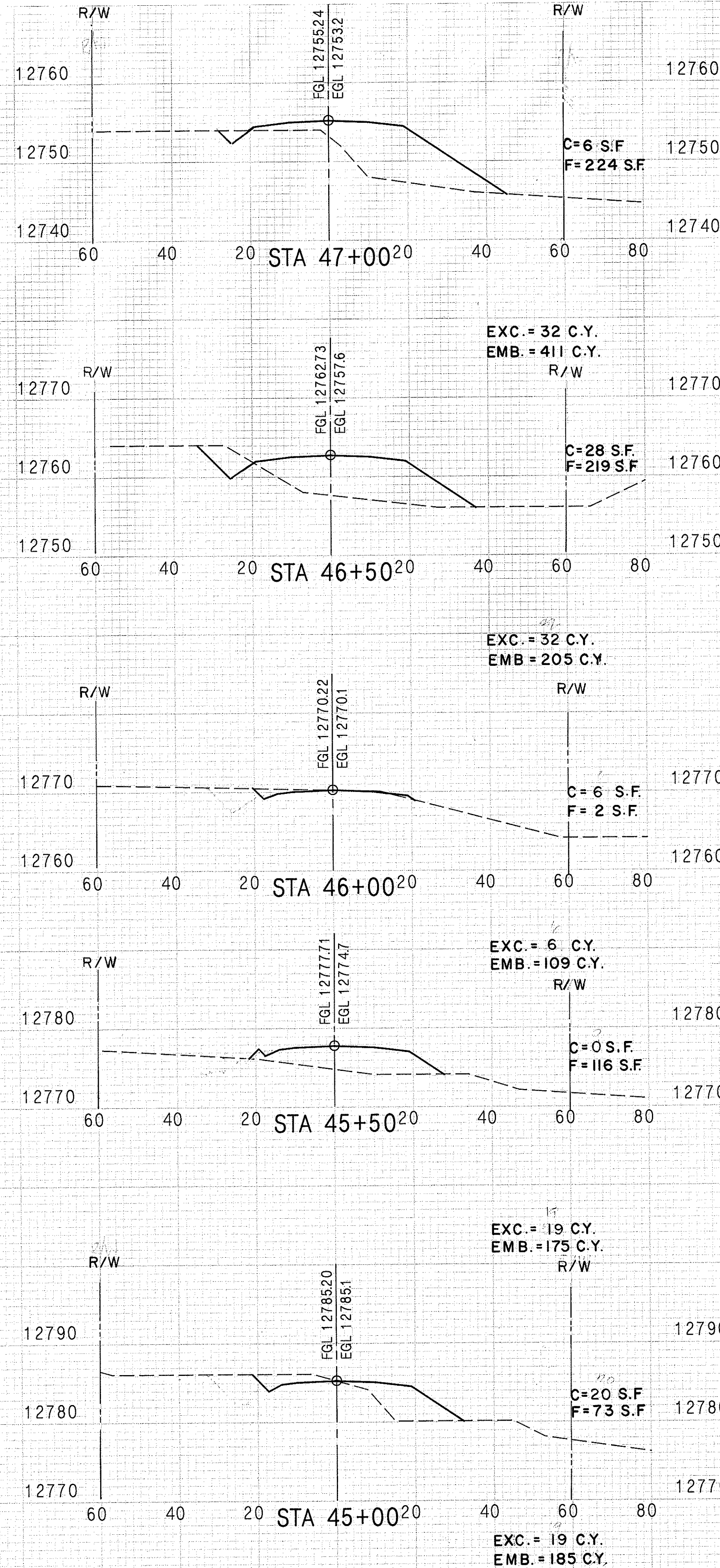
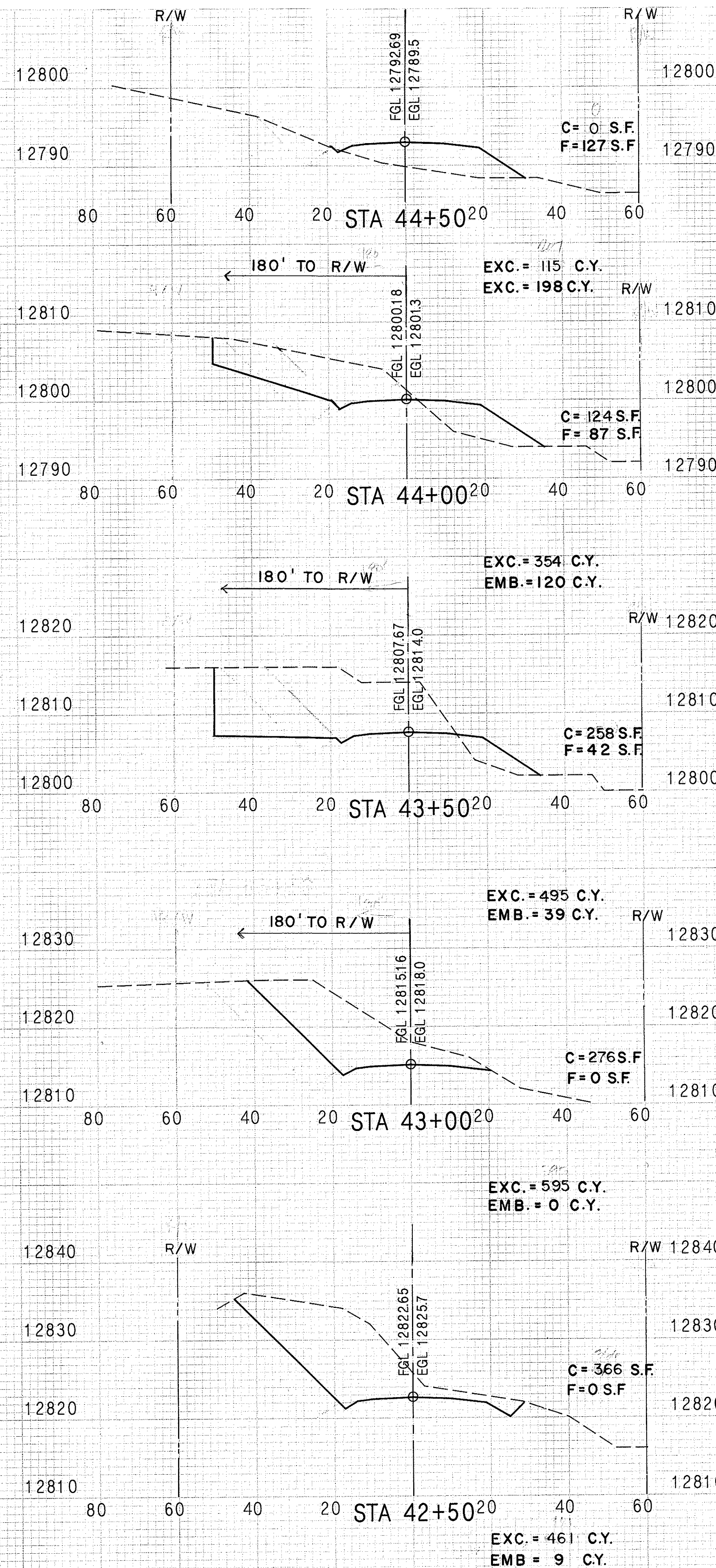


EXC. = 28 C.Y.  
EMB. = 146 C.Y.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**CROSS SECTIONS**  
MAIN ACCESS ROAD  
STA. 35 + 00 TO STA. 42 + 00  
MAUNA KEA OBSERVATORY ACCESS ROAD  
PHASE II-A  
SCALE : HORIZONTAL 1" = 20'  
VERTICAL 1" = 10'

SHEET No. 7 OF 16 SHEETS

| FED. ROAD DIST. NO. | STATE | PROJECT NO.  | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | HWY.-H-01-86 | 1987        | 107       | 115          |



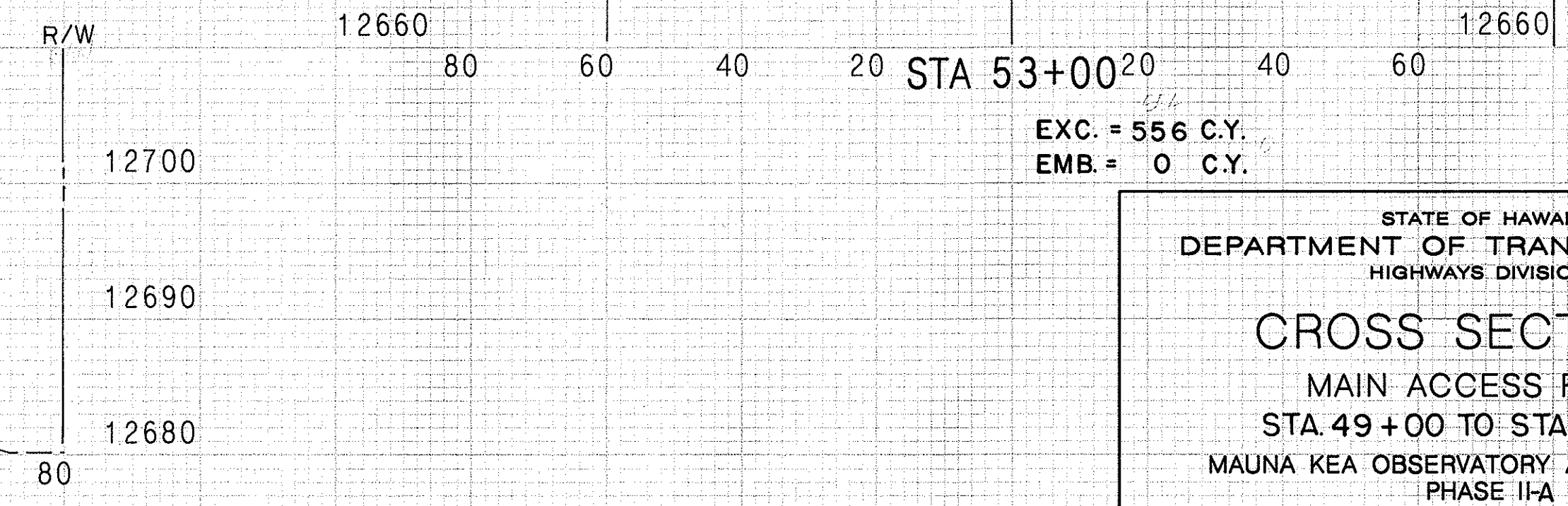
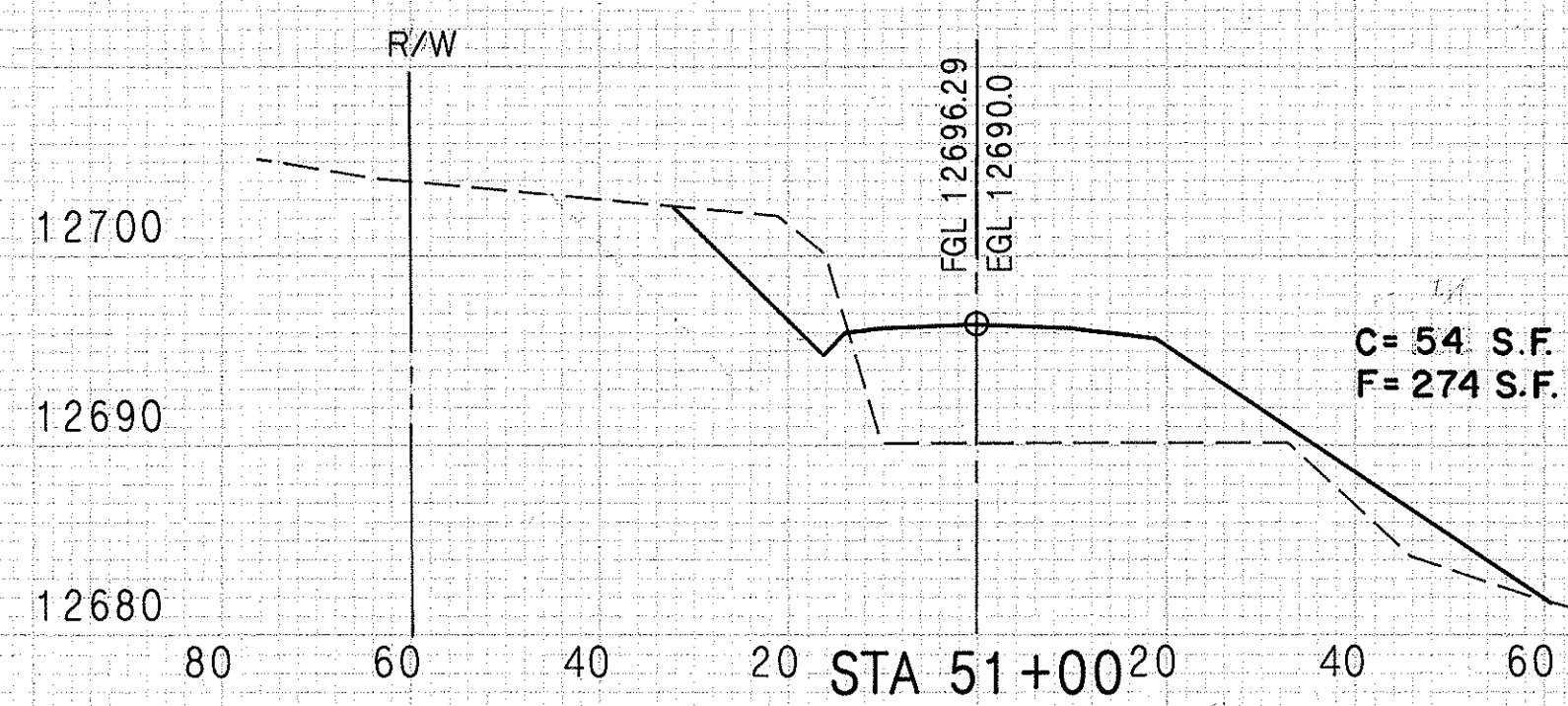
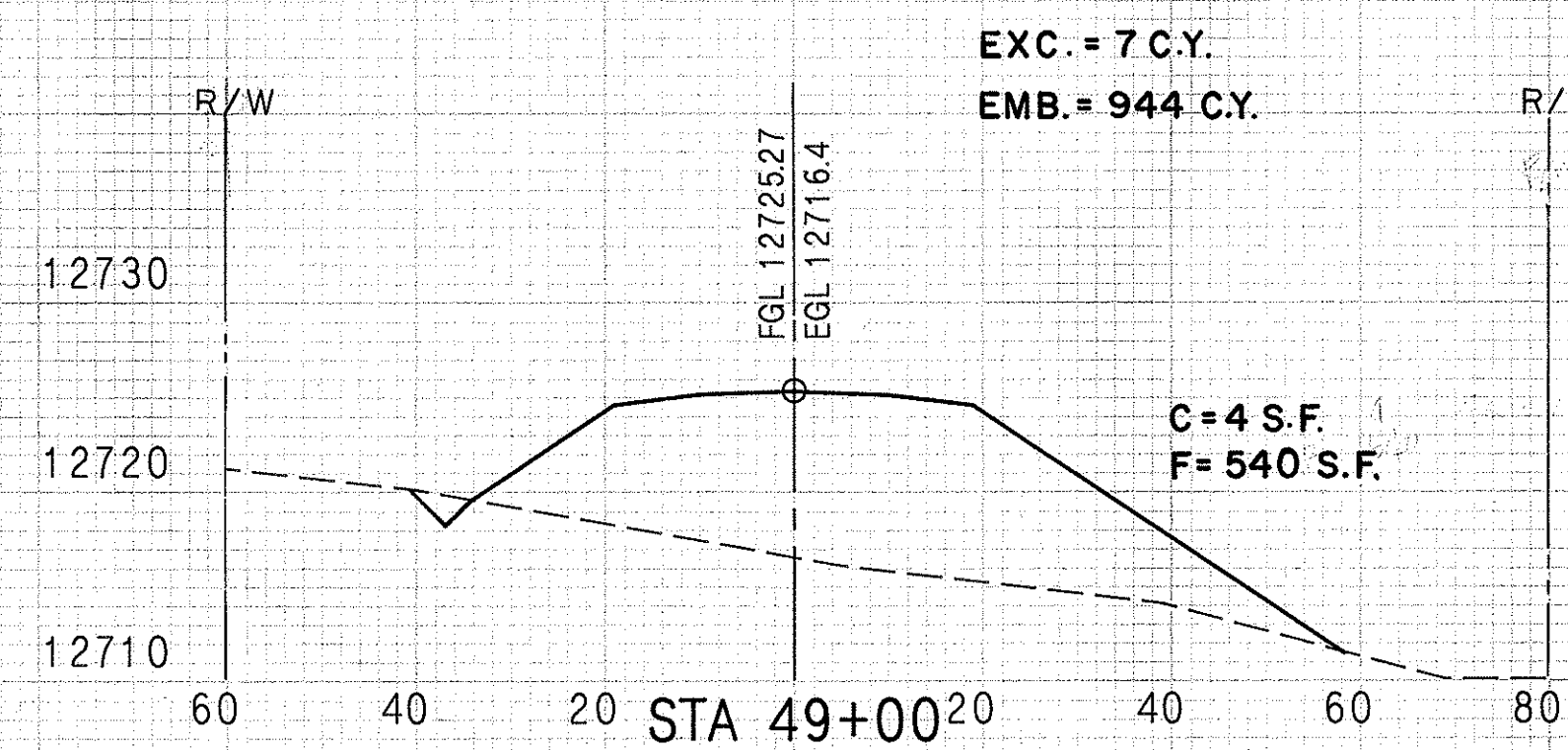
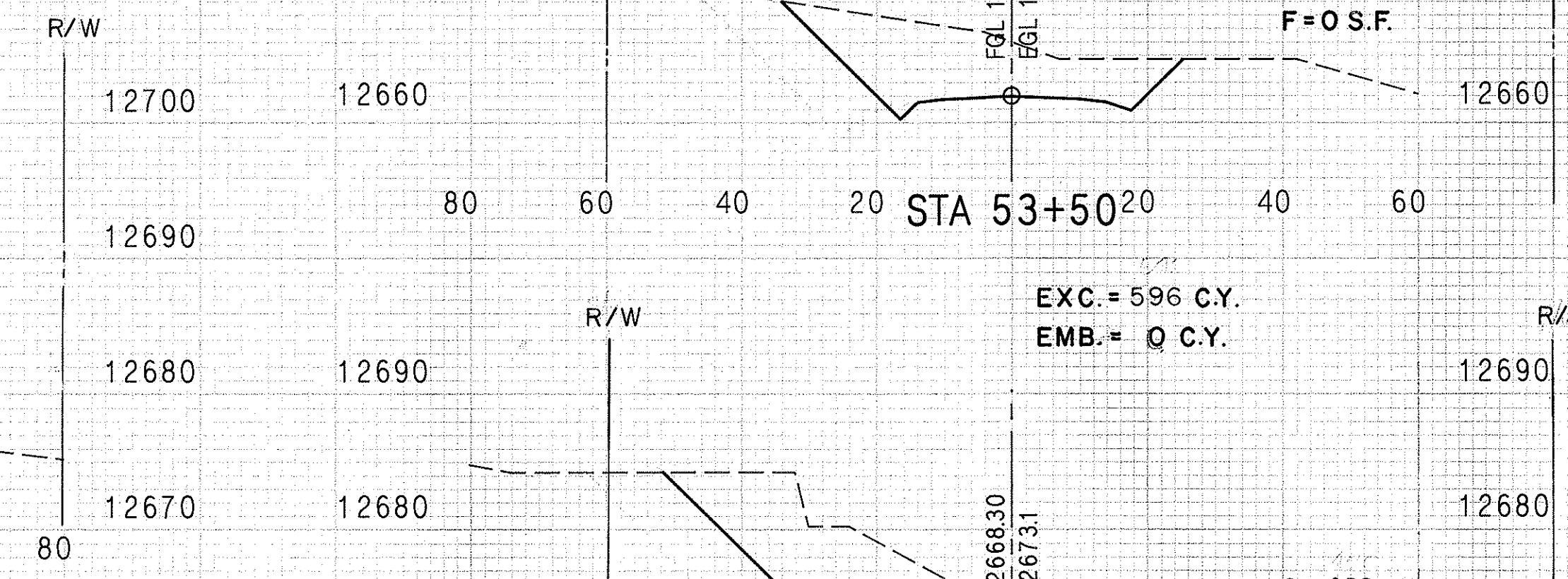
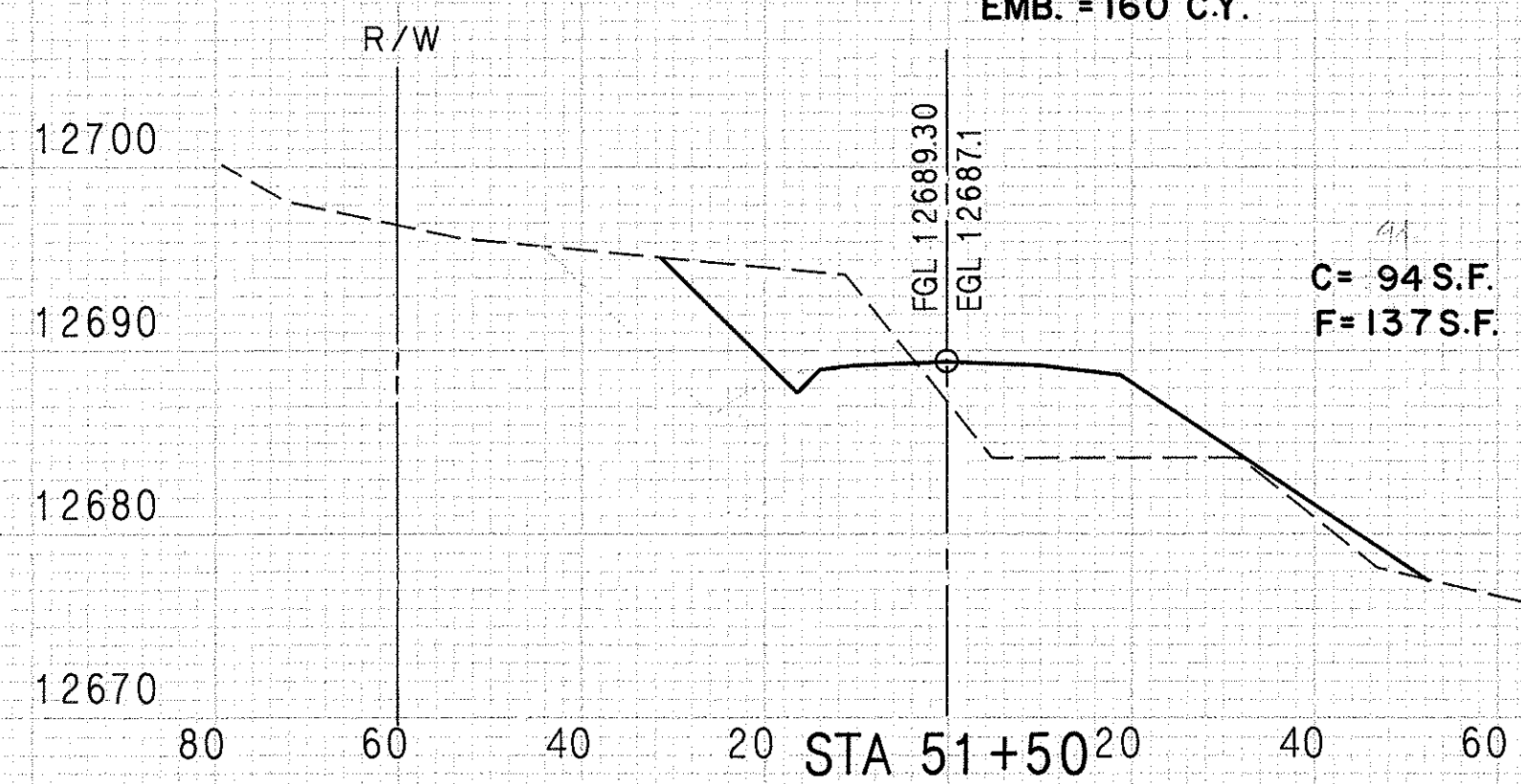
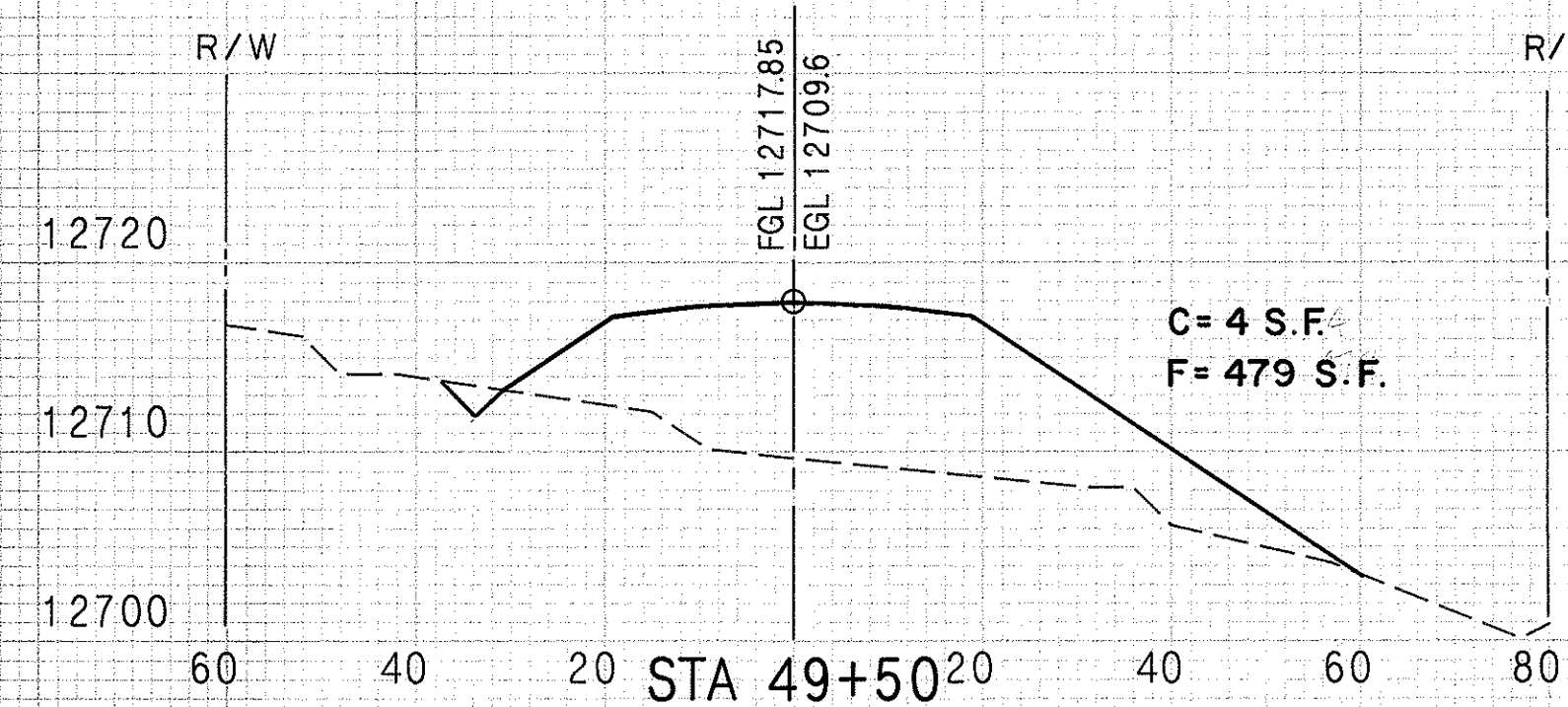
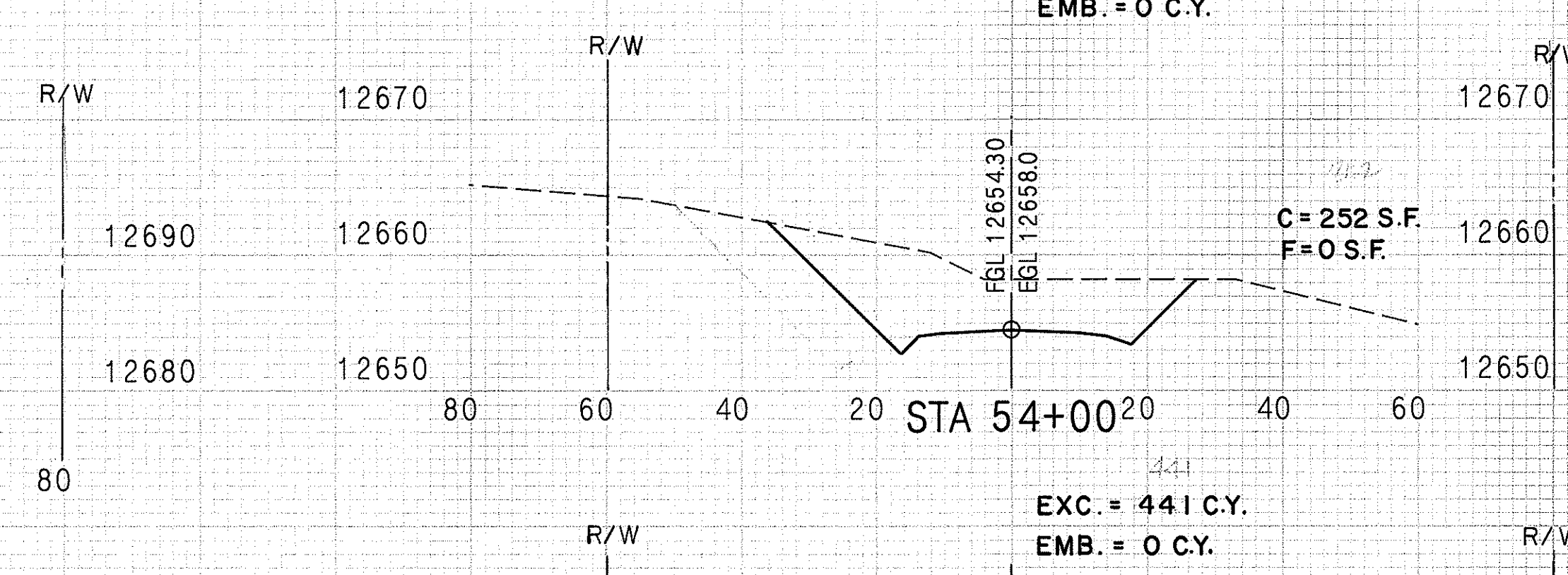
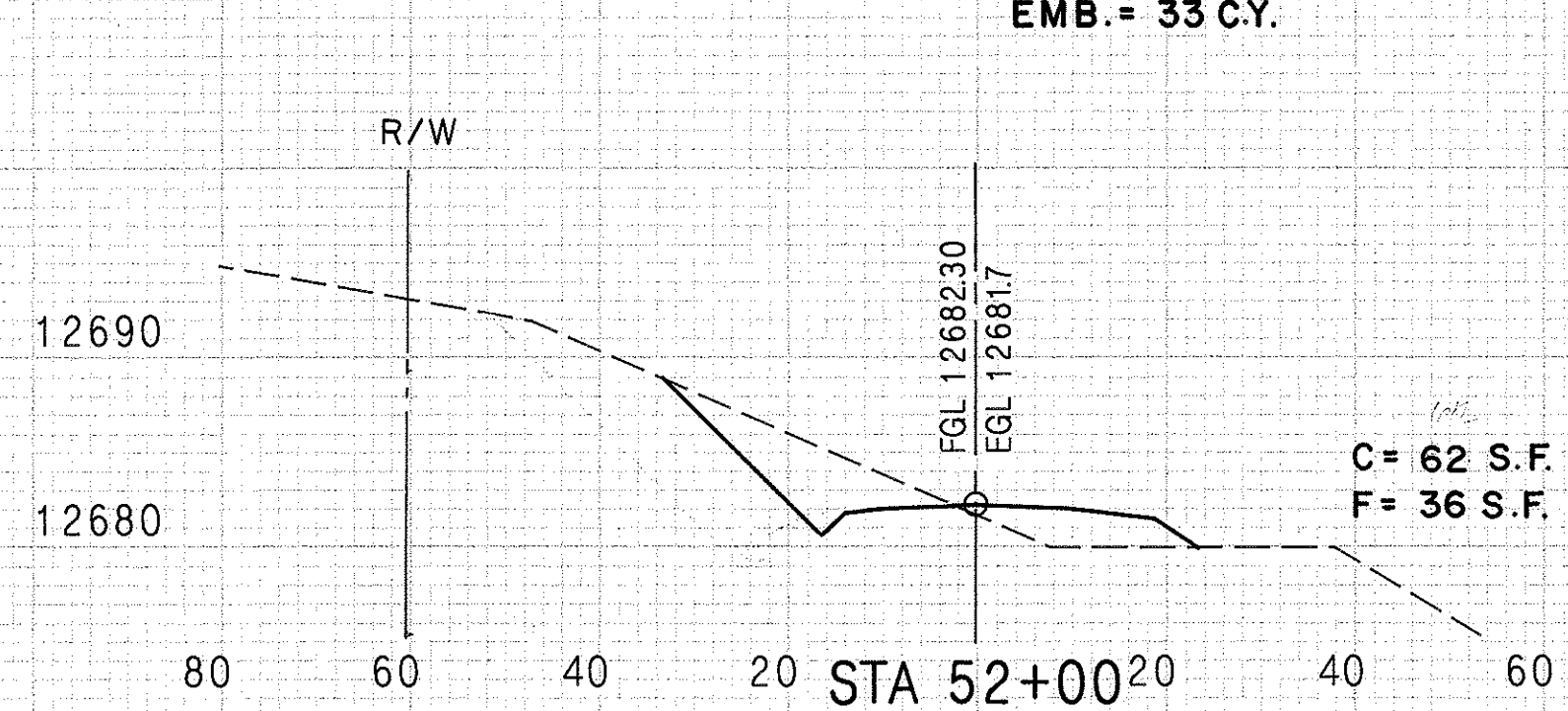
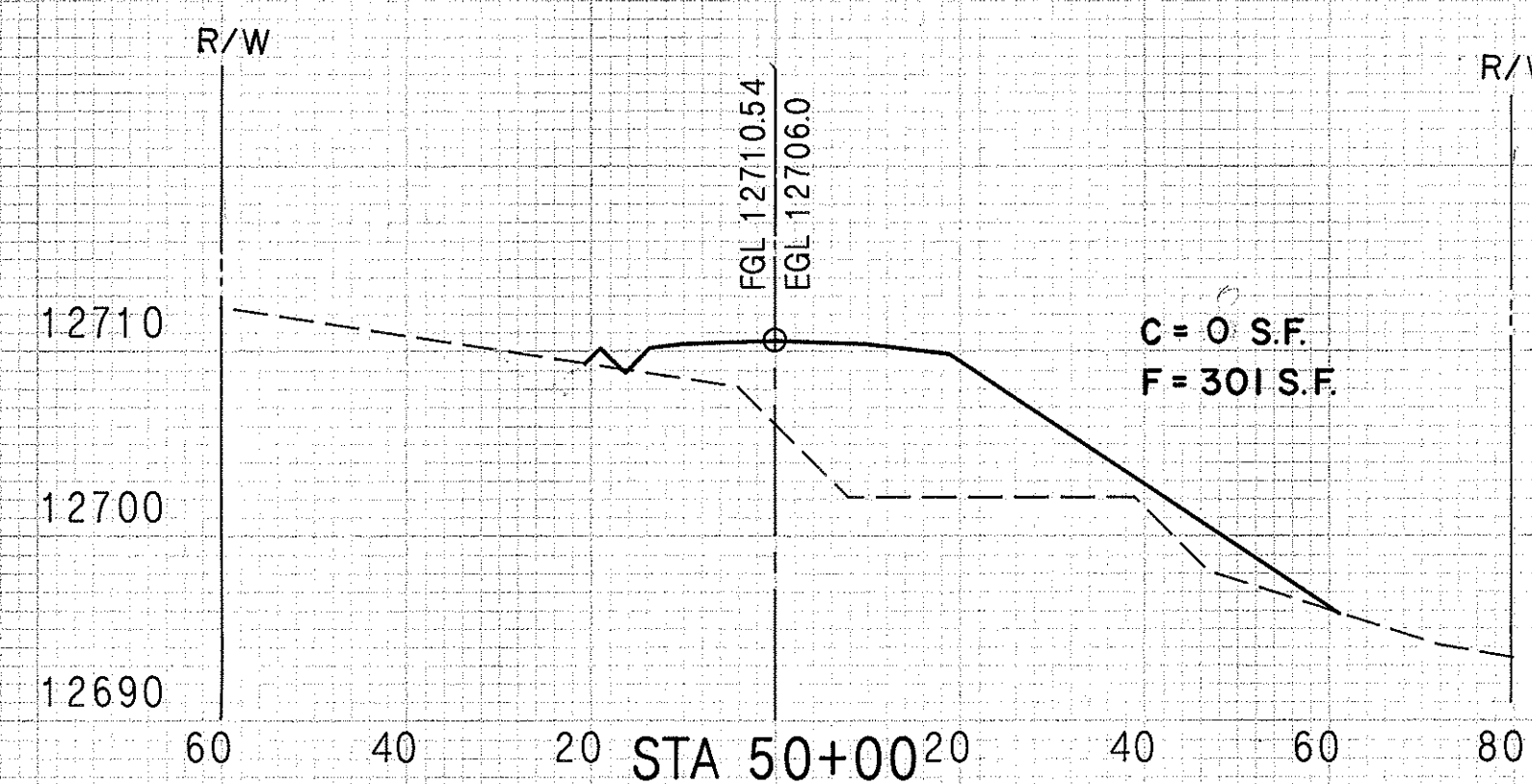
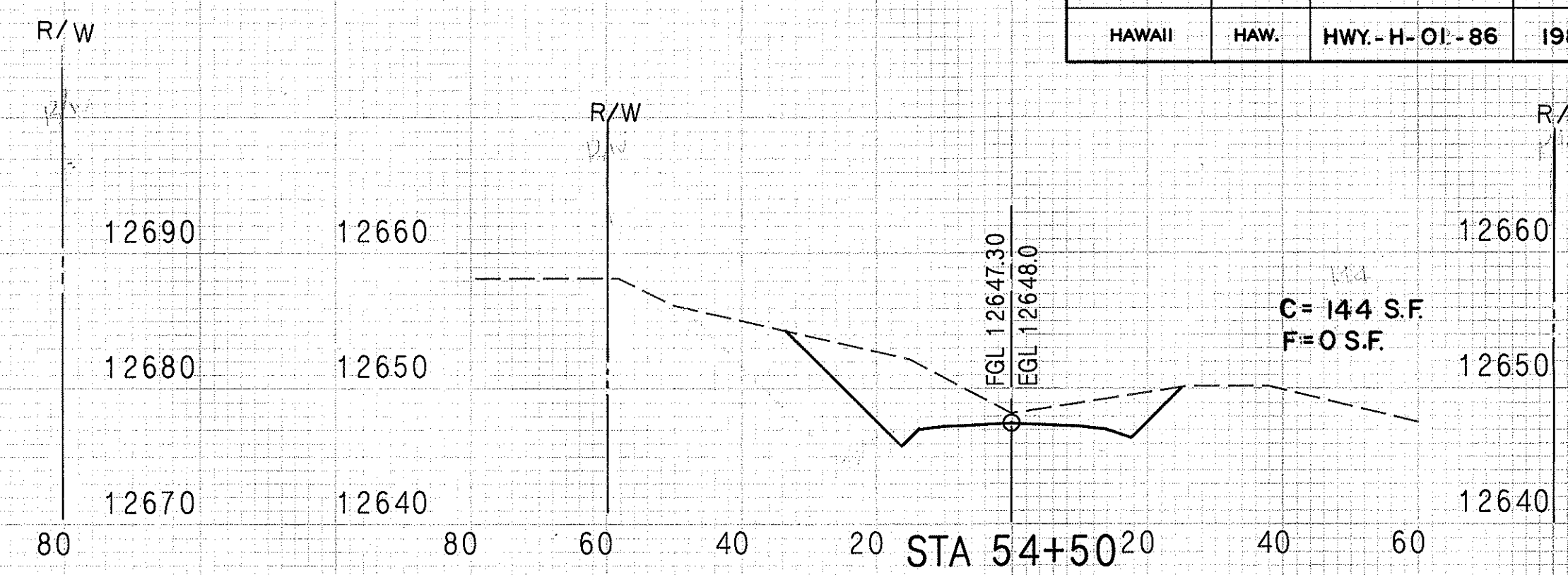
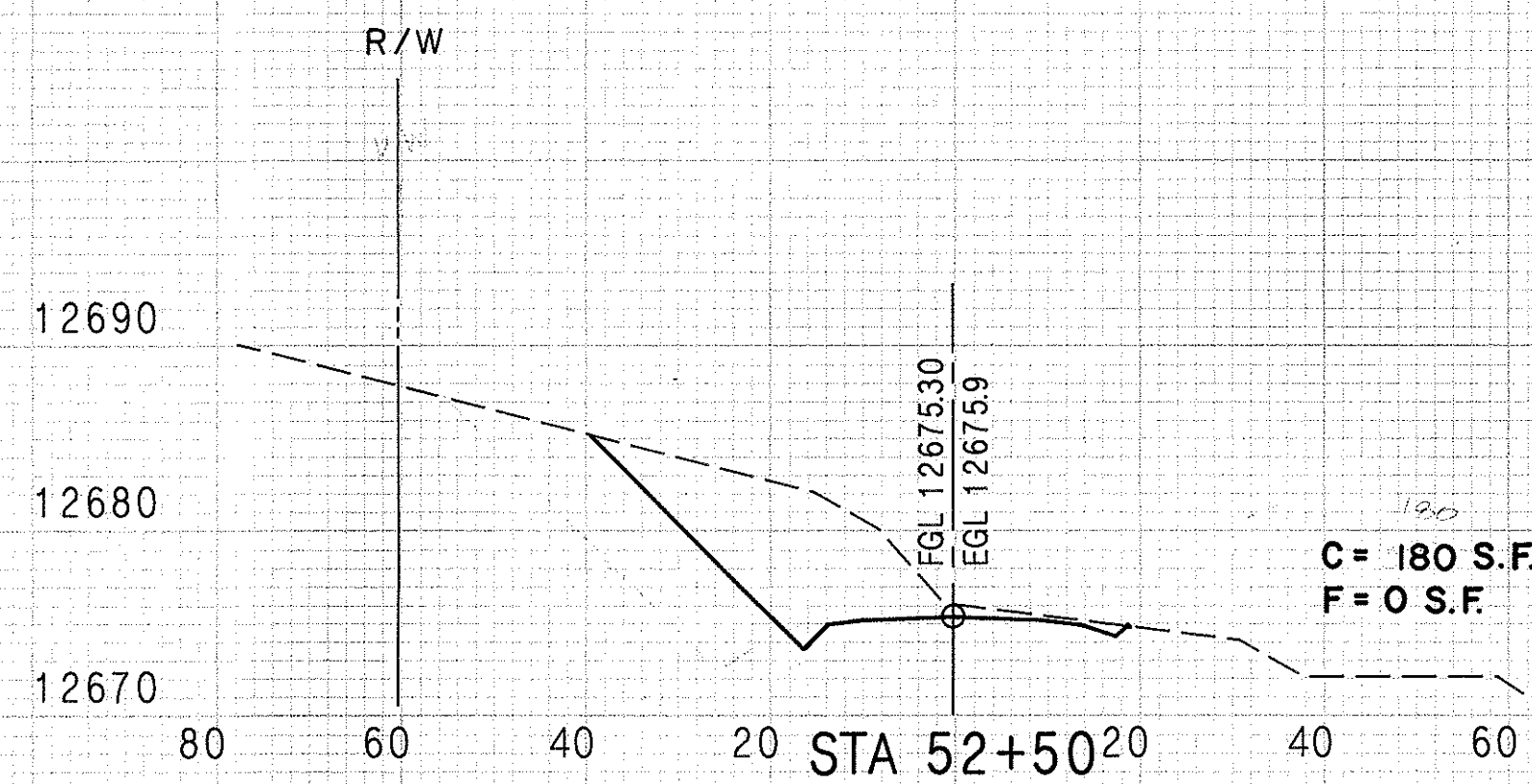
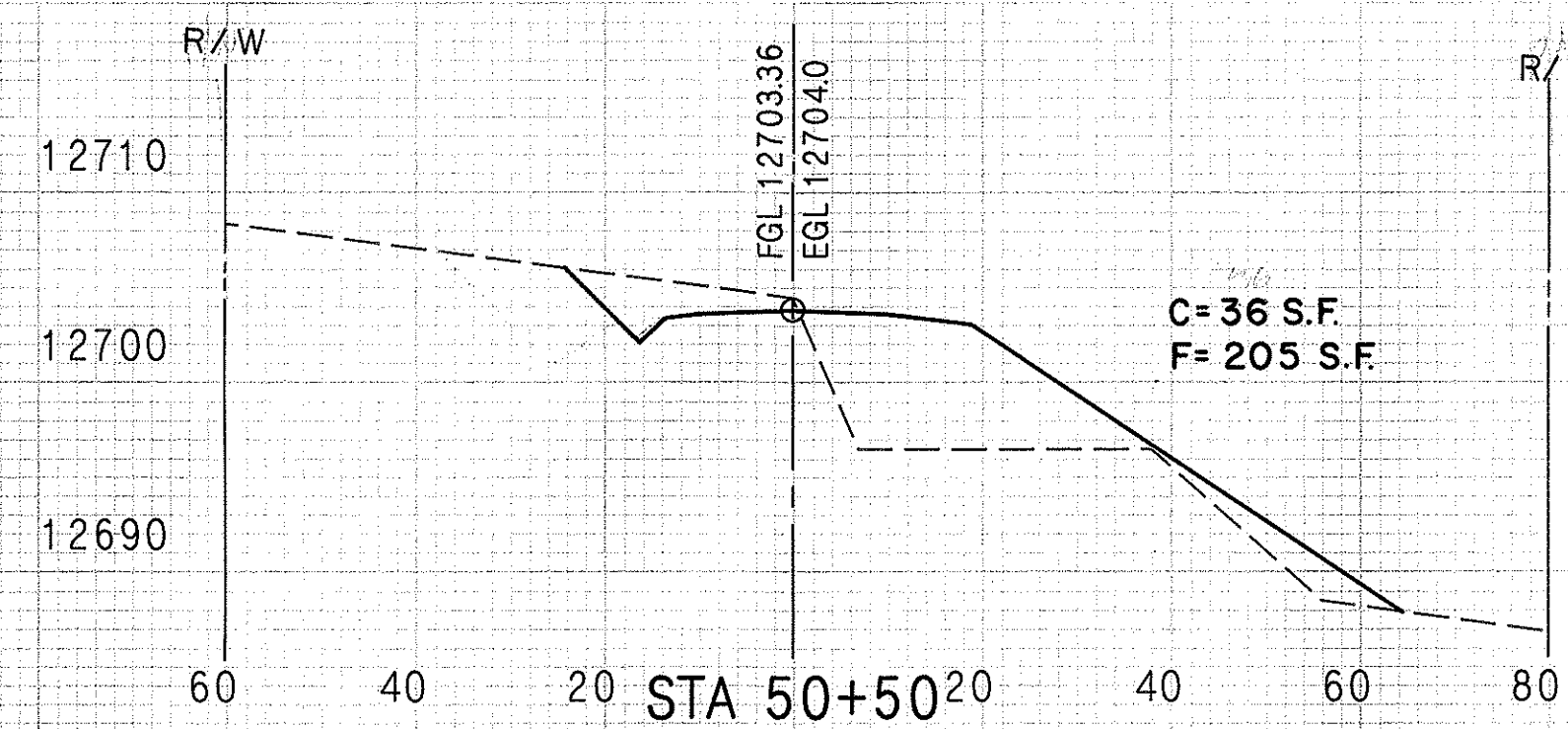
STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

**CROSS SECTIONS**  
 MAIN ACCESS ROAD  
 STA. 42+50 TO STA. 48+50  
 MAUNA KEA OBSERVATORY ACCESS ROAD  
 PHASE IIA

SCALE : HORIZONTAL 1" = 20'  
 VERTICAL 1" = 10'

SHEET No. 8 OF 16 SHEETS

| FED. ROAD DIST. NO. | STATE | PROJECT NO.  | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | HWY.-H-01-86 | 1987        | 108       | 115          |

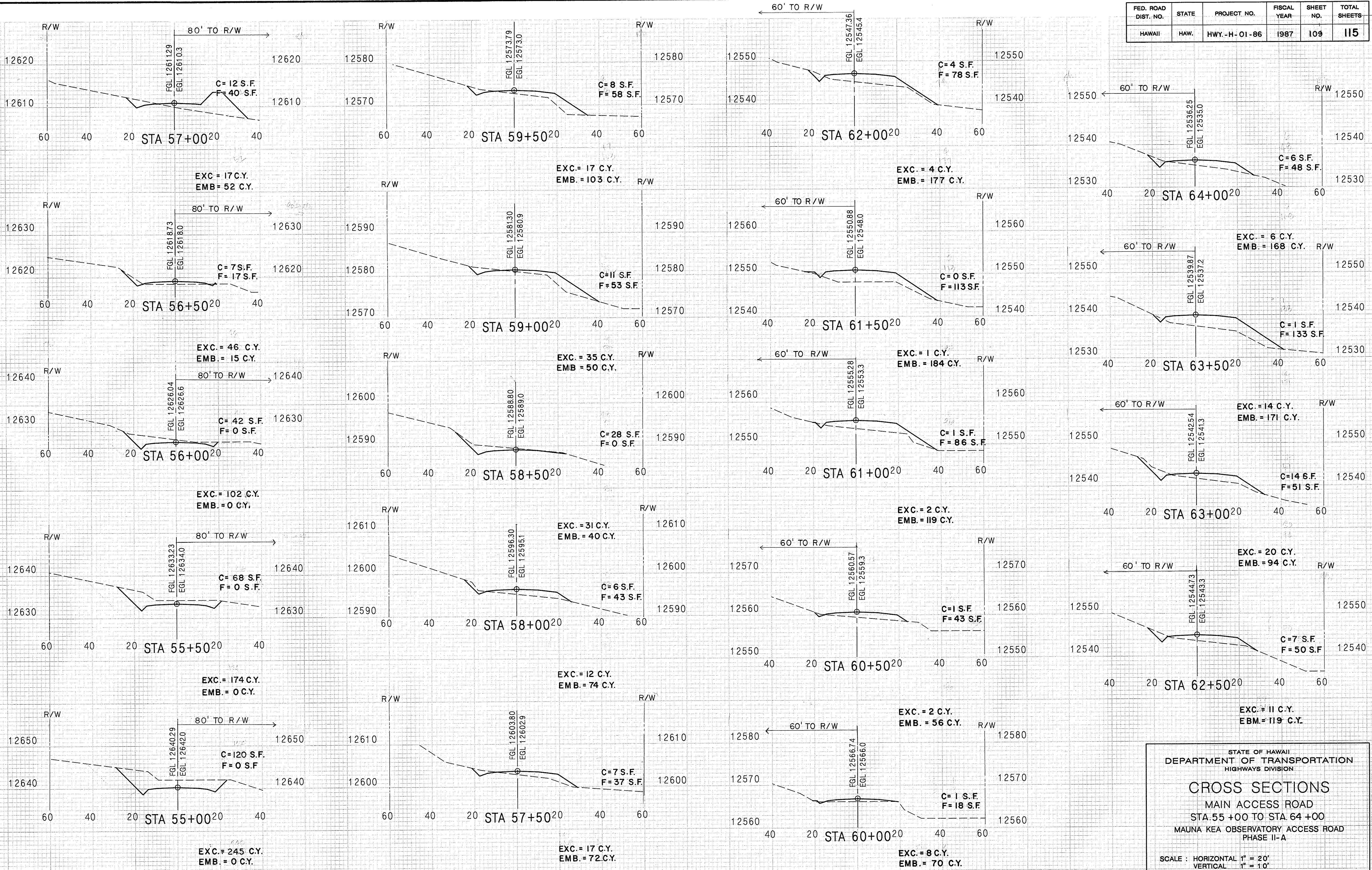


STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**CROSS SECTIONS**  
MAIN ACCESS ROAD  
STA 49+00 TO STA 54+50  
MAUNA KEA OBSERVATORY ACCESS ROAD  
PHASE IIA

SCALE: HORIZONTAL 1" = 20'  
VERTICAL 1" = 10'

| FED. ROAD DIST. NO. | STATE | PROJECT NO.  | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | HWY.-H-01-86 | 1987        | 109       | 115          |

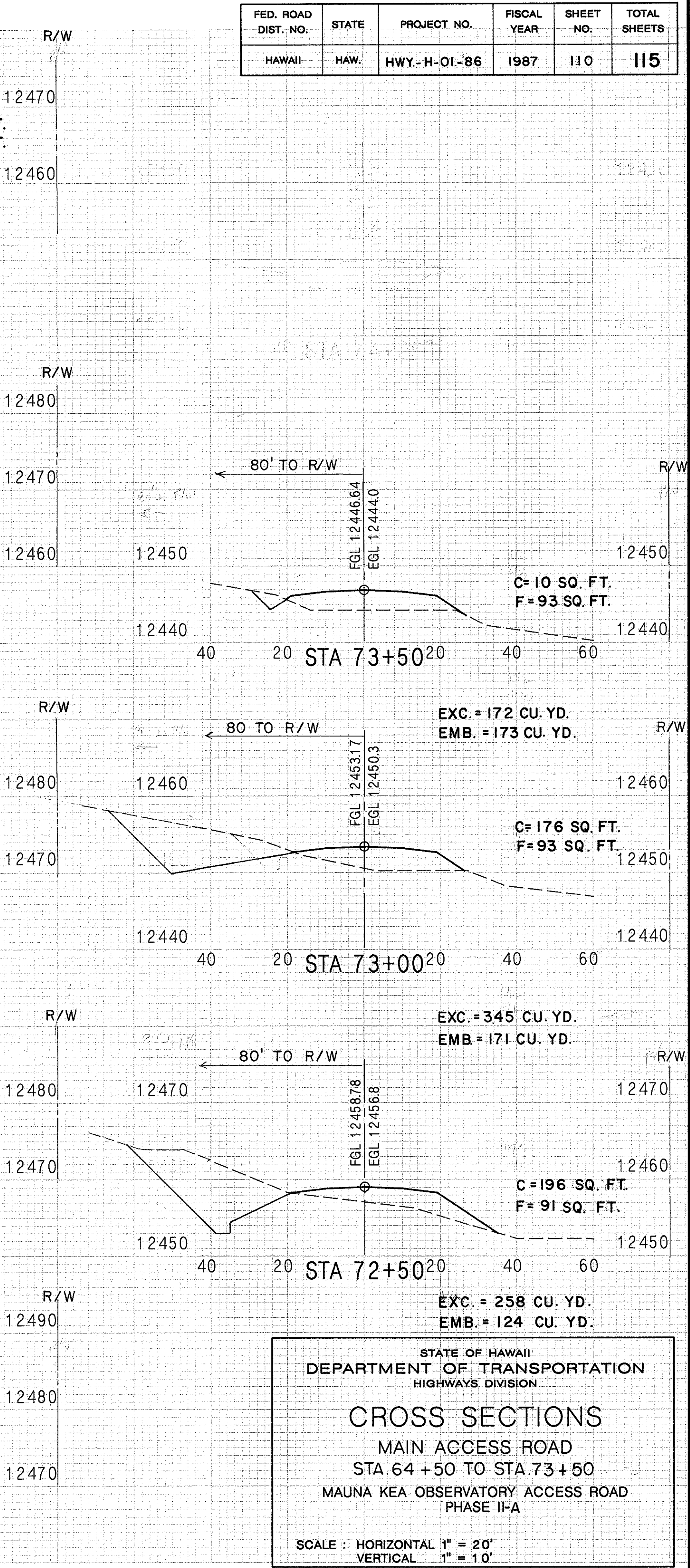
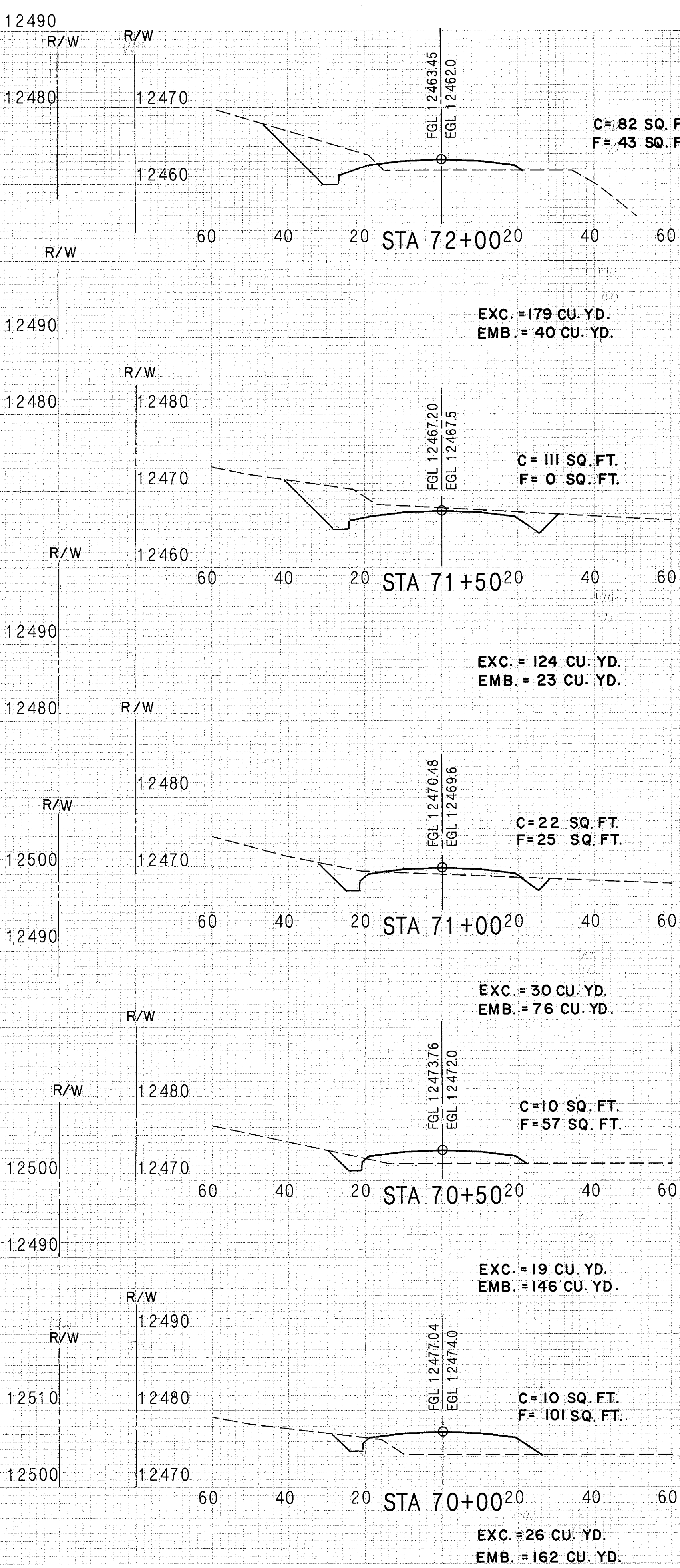
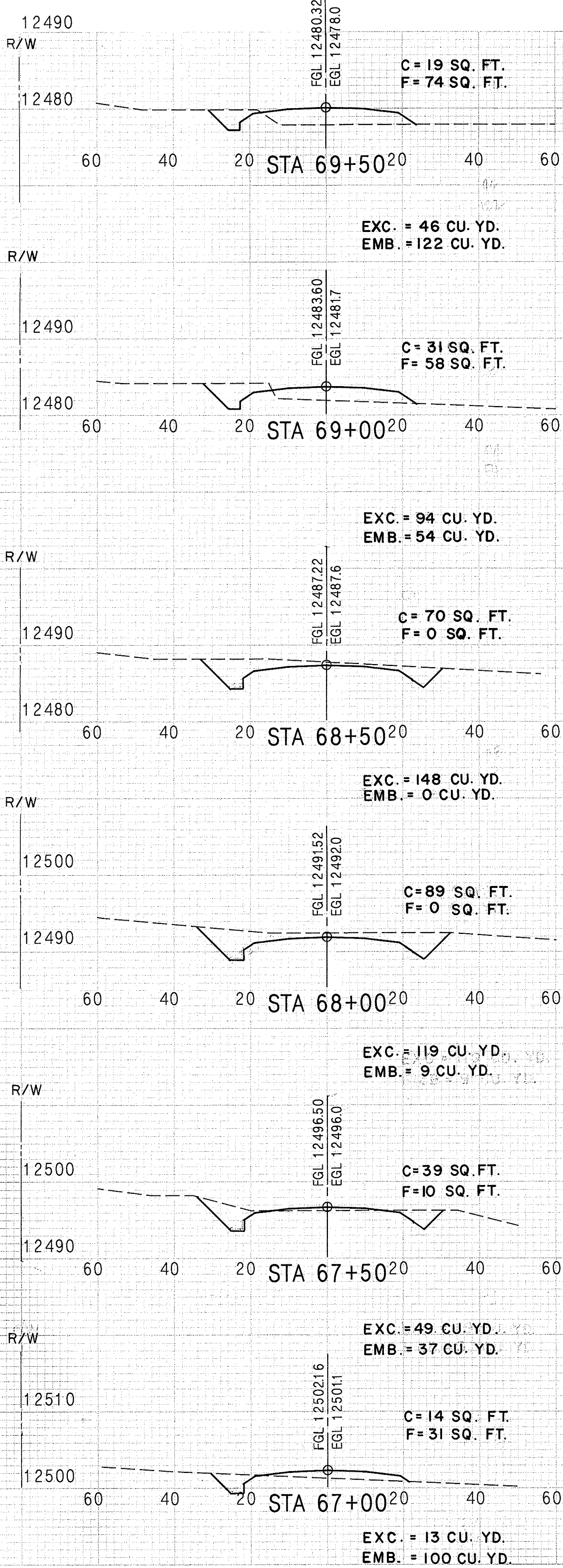
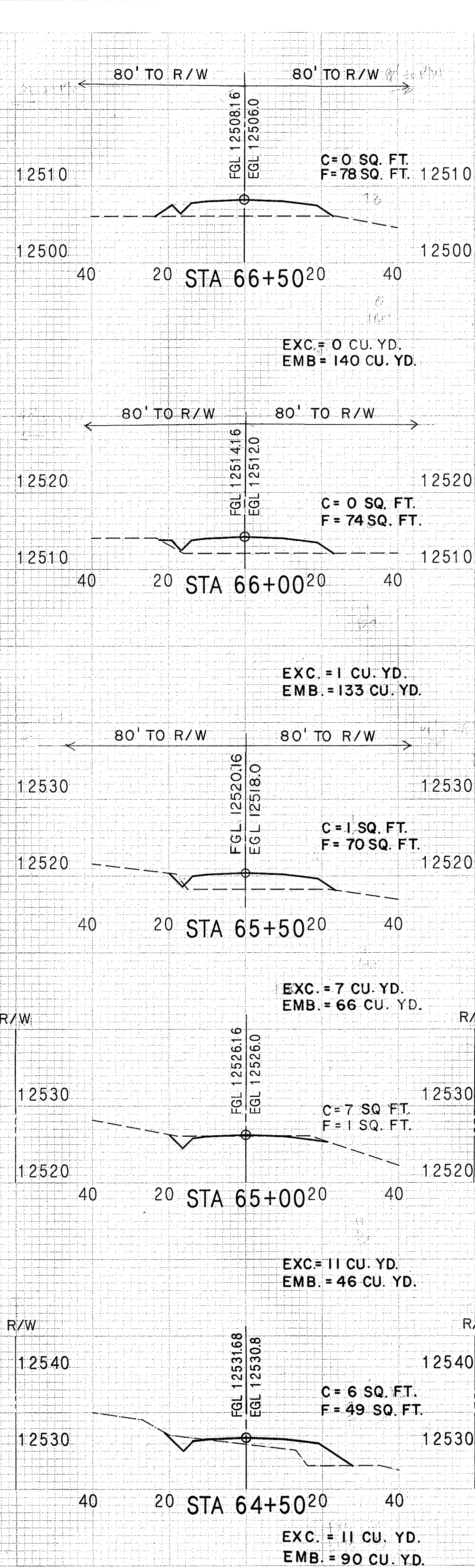


STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**CROSS SECTIONS**  
MAIN ACCESS ROAD  
STA. 55+00 TO STA. 64+00  
MAUNA KEA OBSERVATORY ACCESS ROAD  
PHASE II-A

SCALE: HORIZONTAL 1" = 20'  
VERTICAL 1" = 10'

| FED. ROAD DIST. NO. | STATE | PROJECT NO.  | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | HWY.-H-01-86 | 1987        | 110       | 115          |



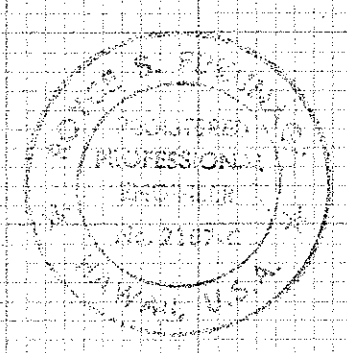
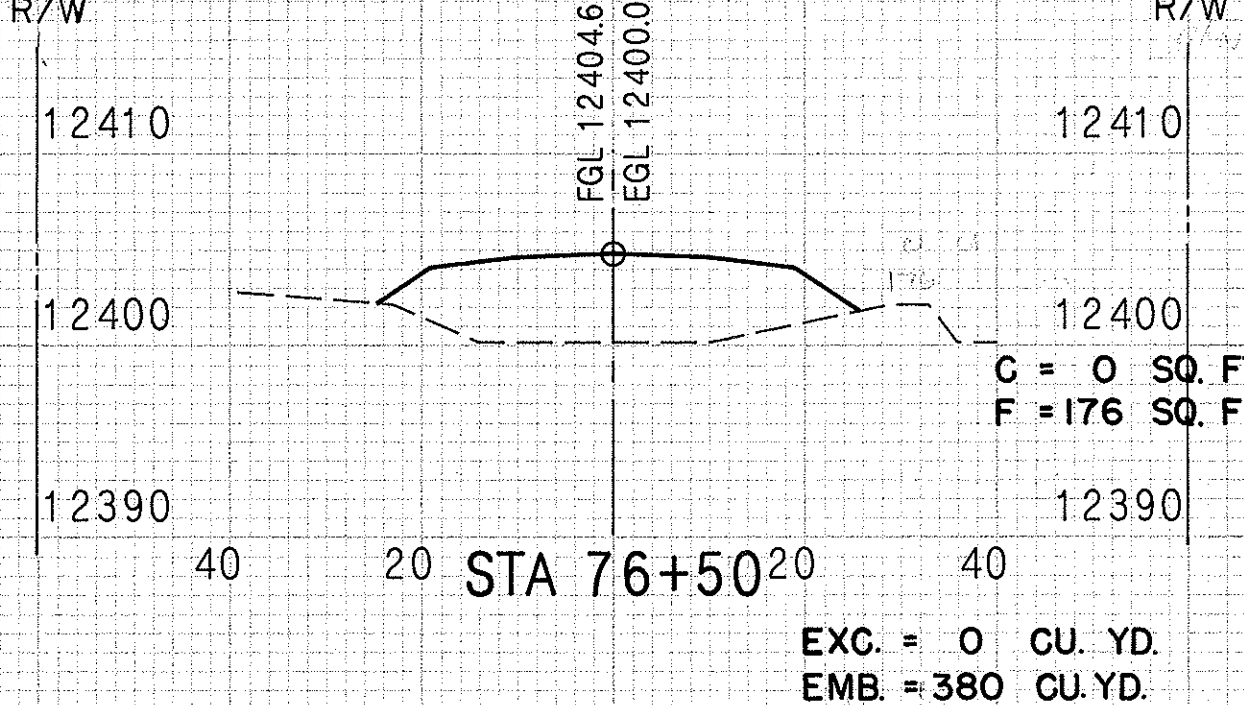
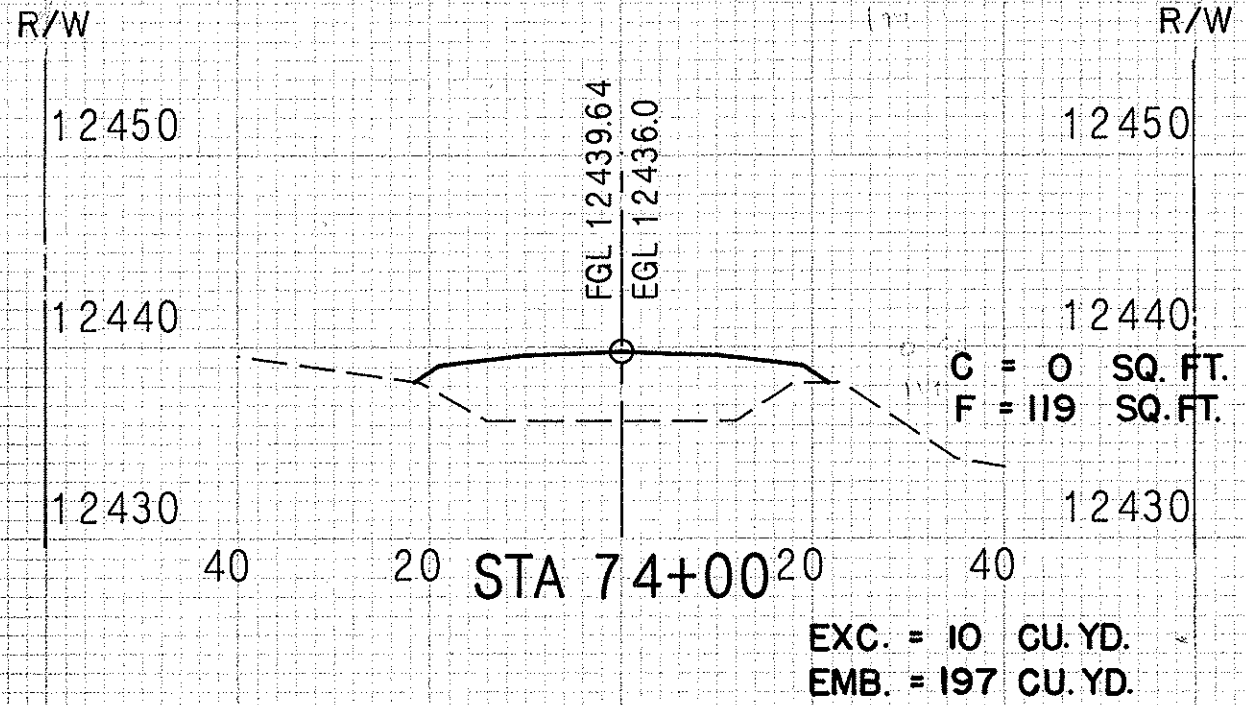
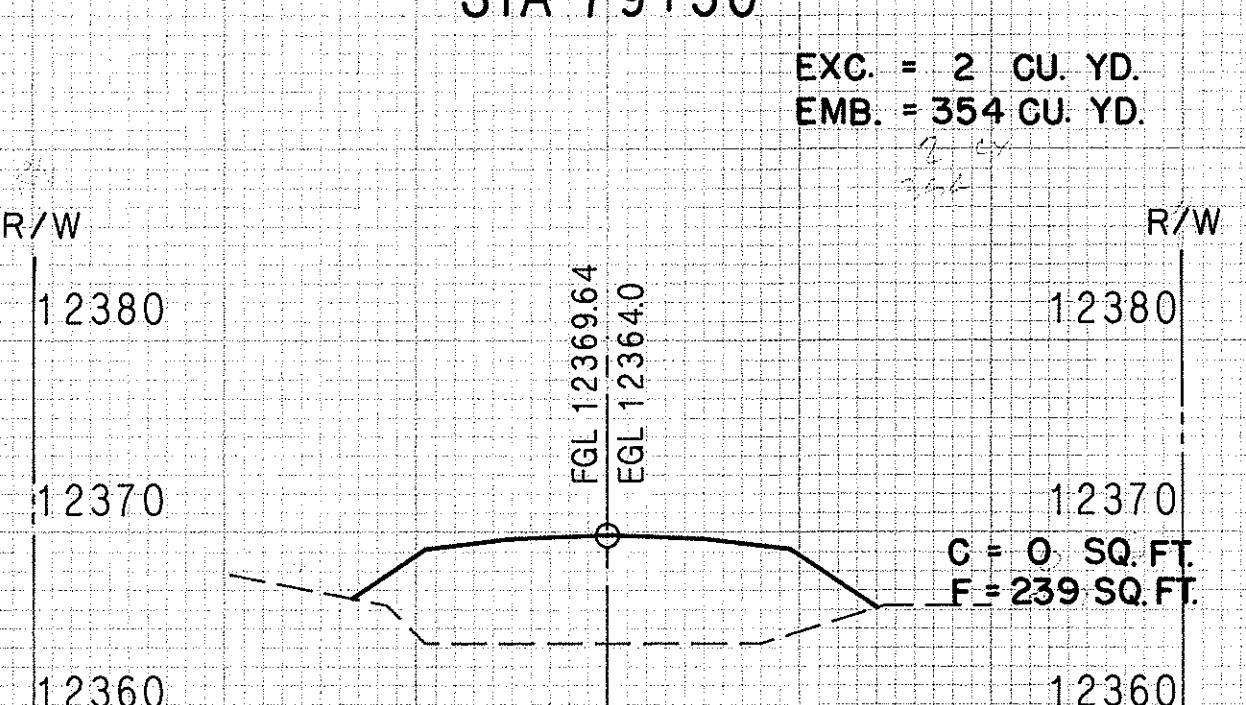
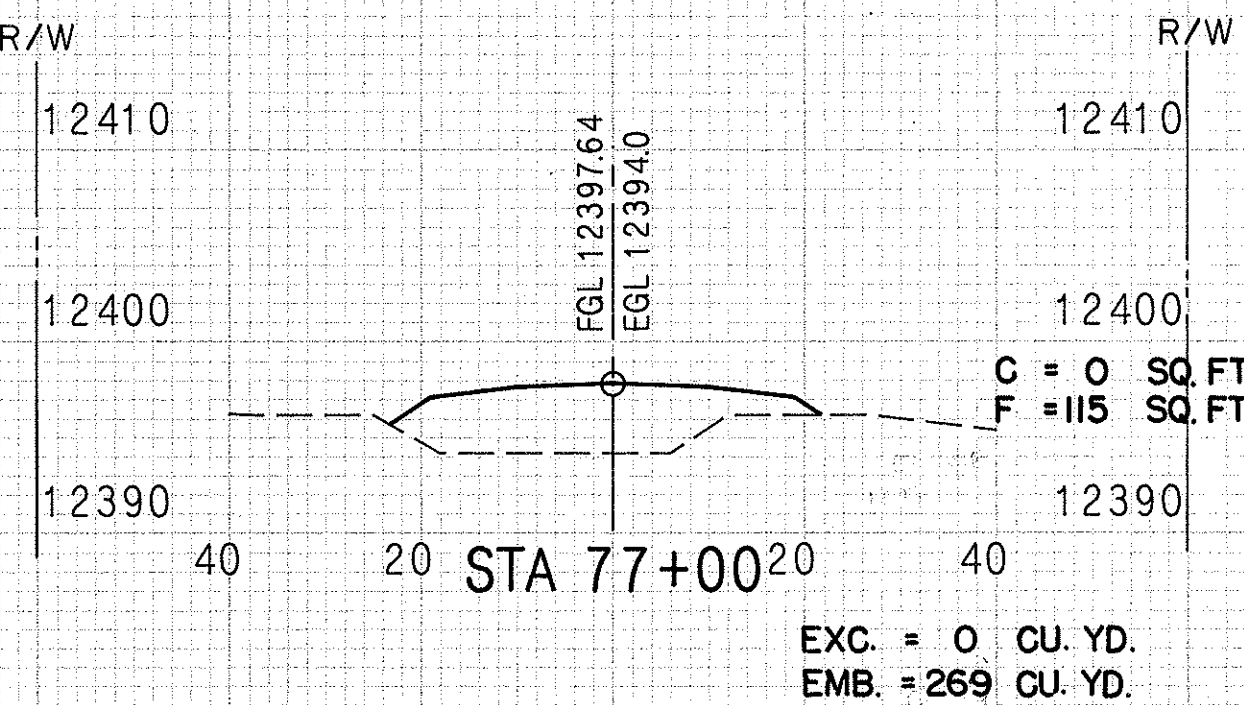
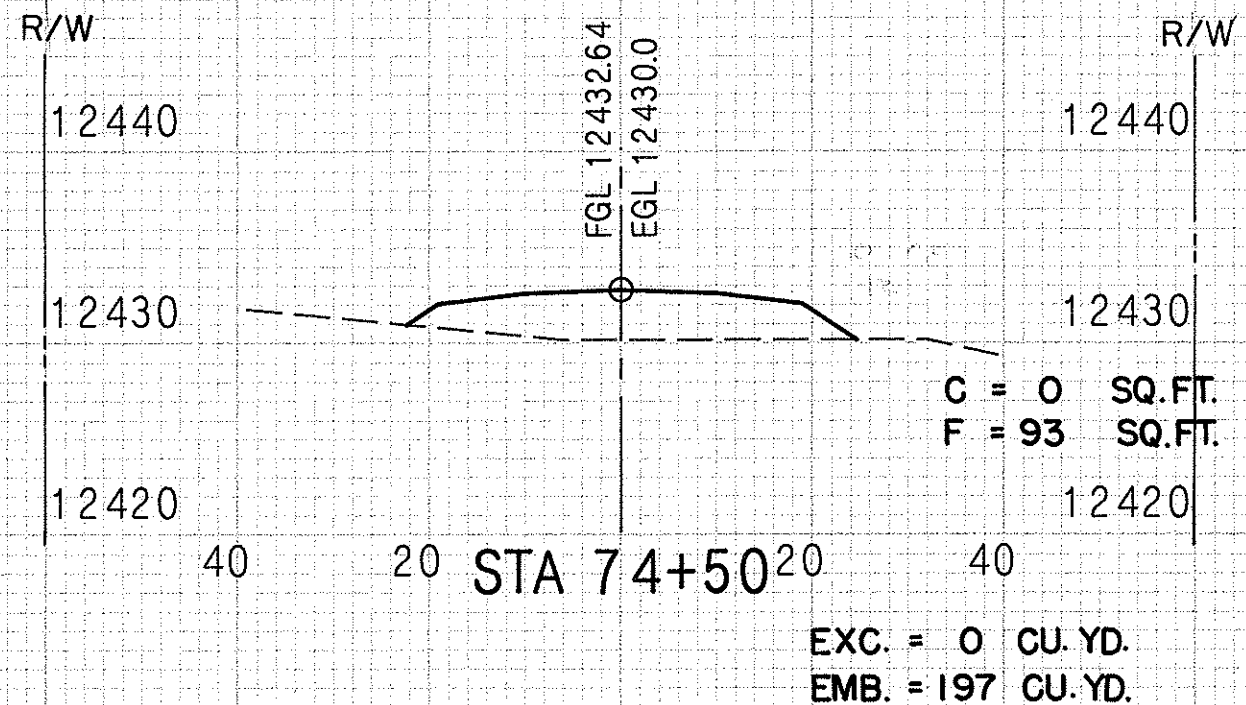
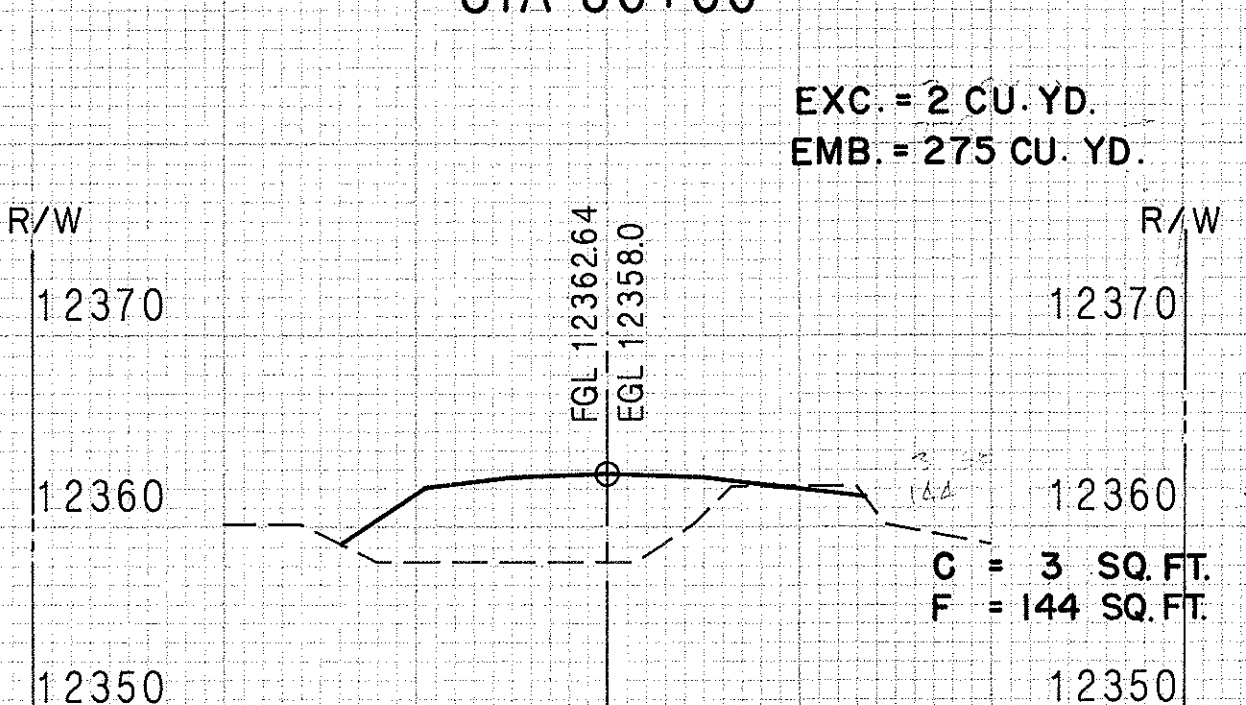
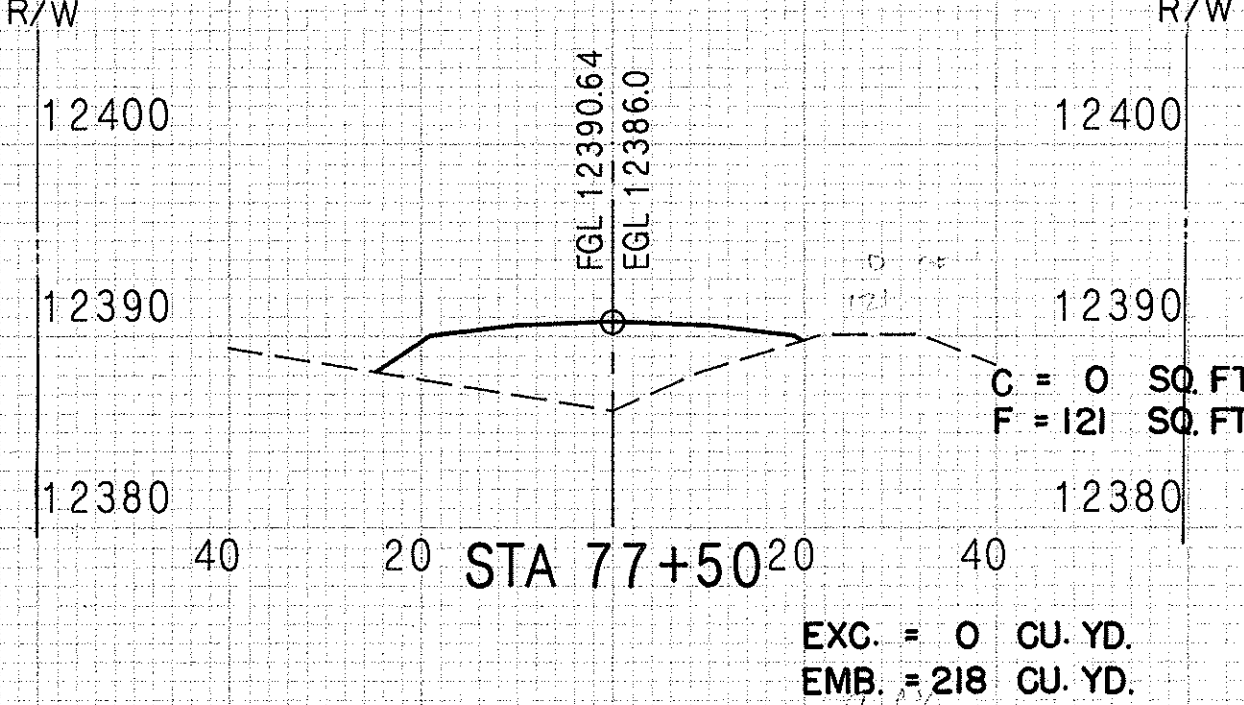
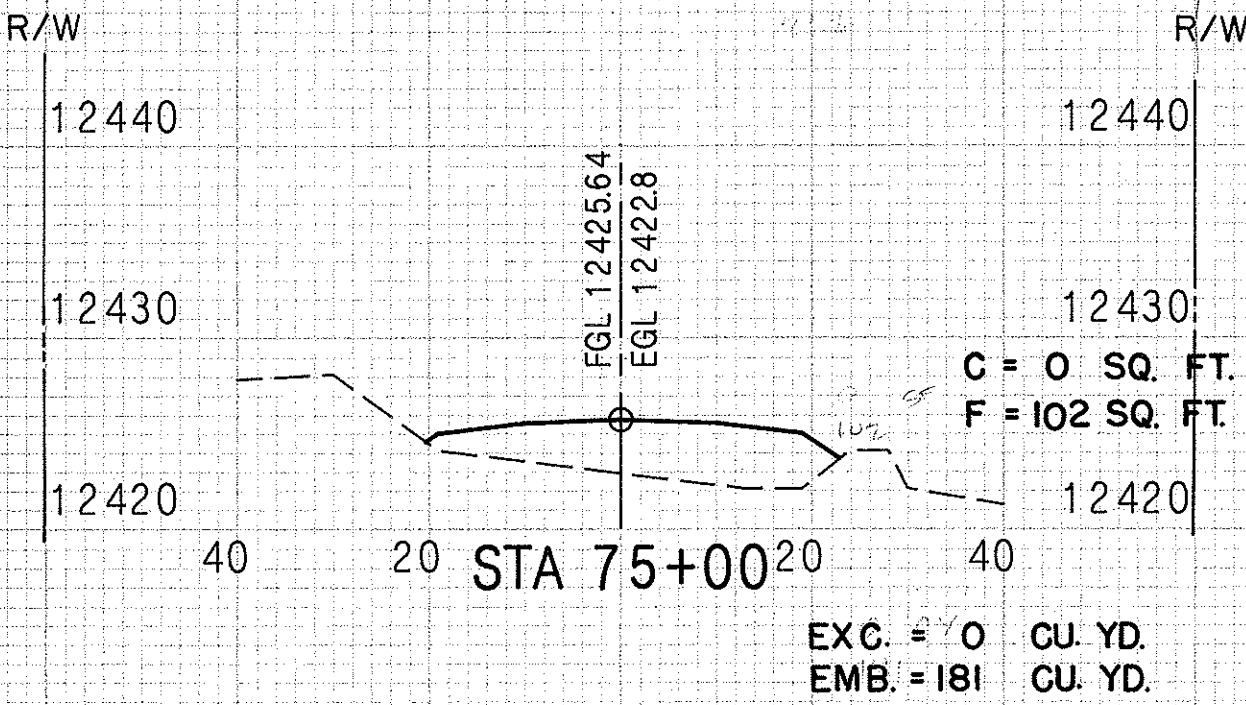
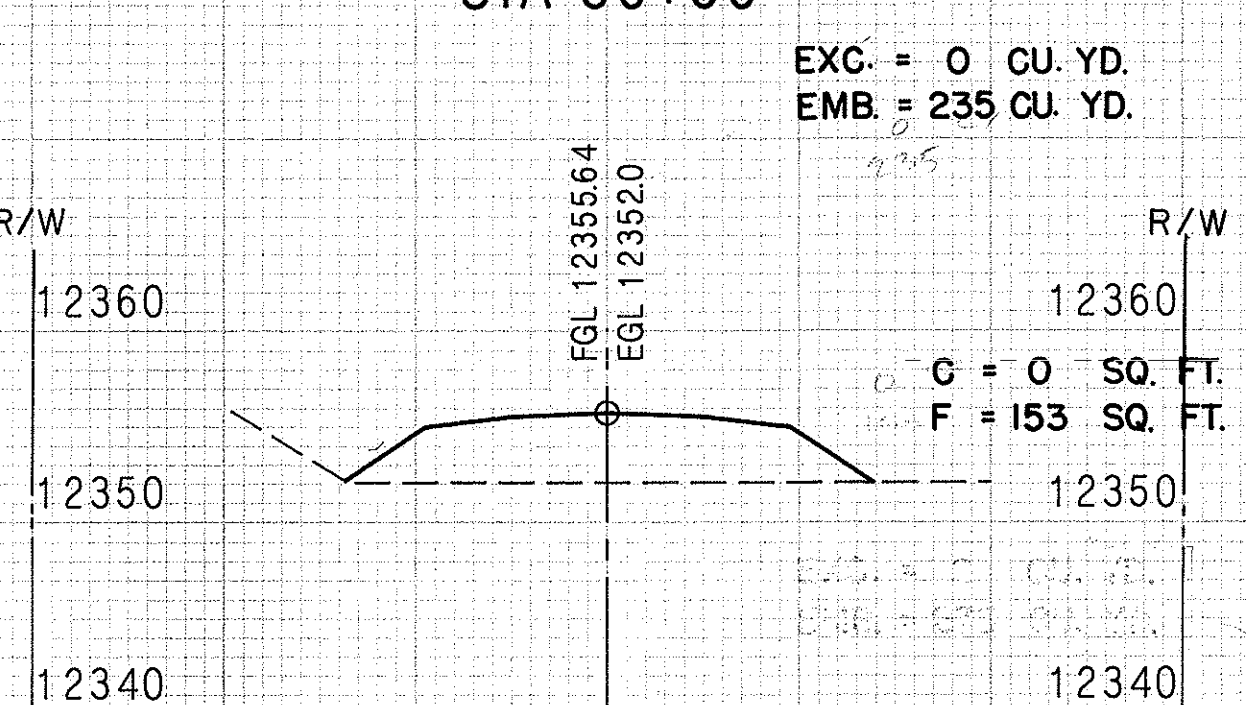
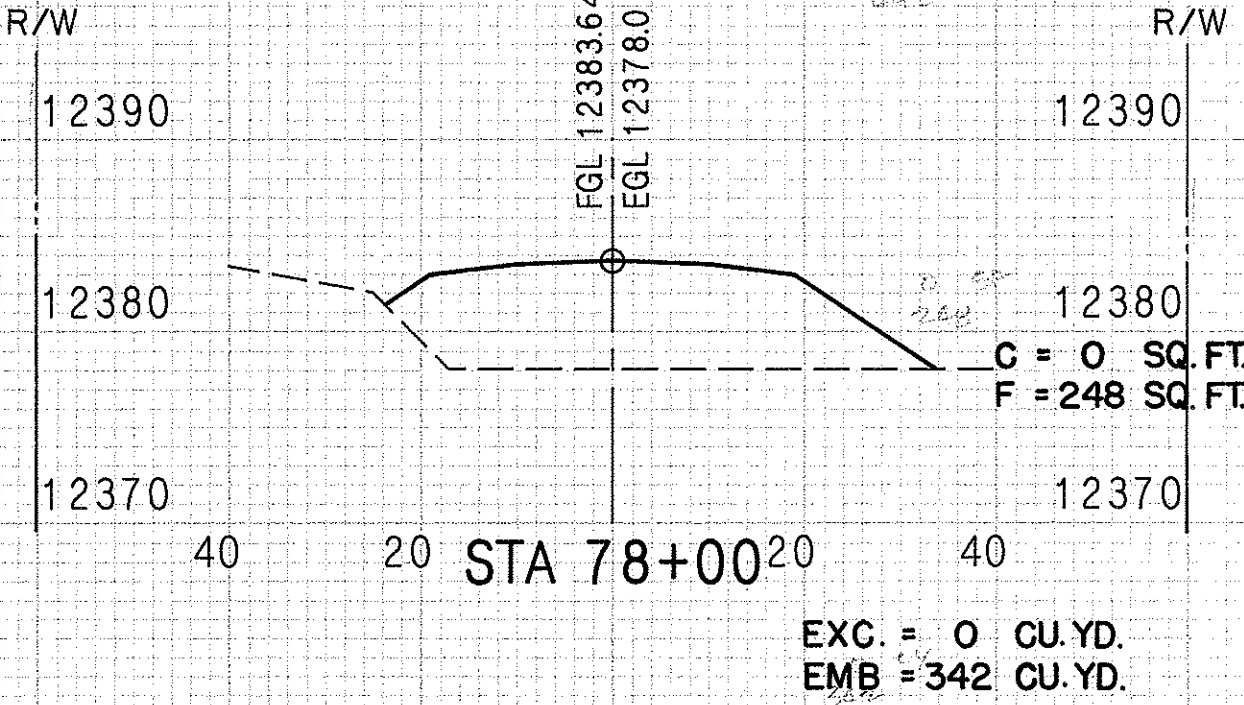
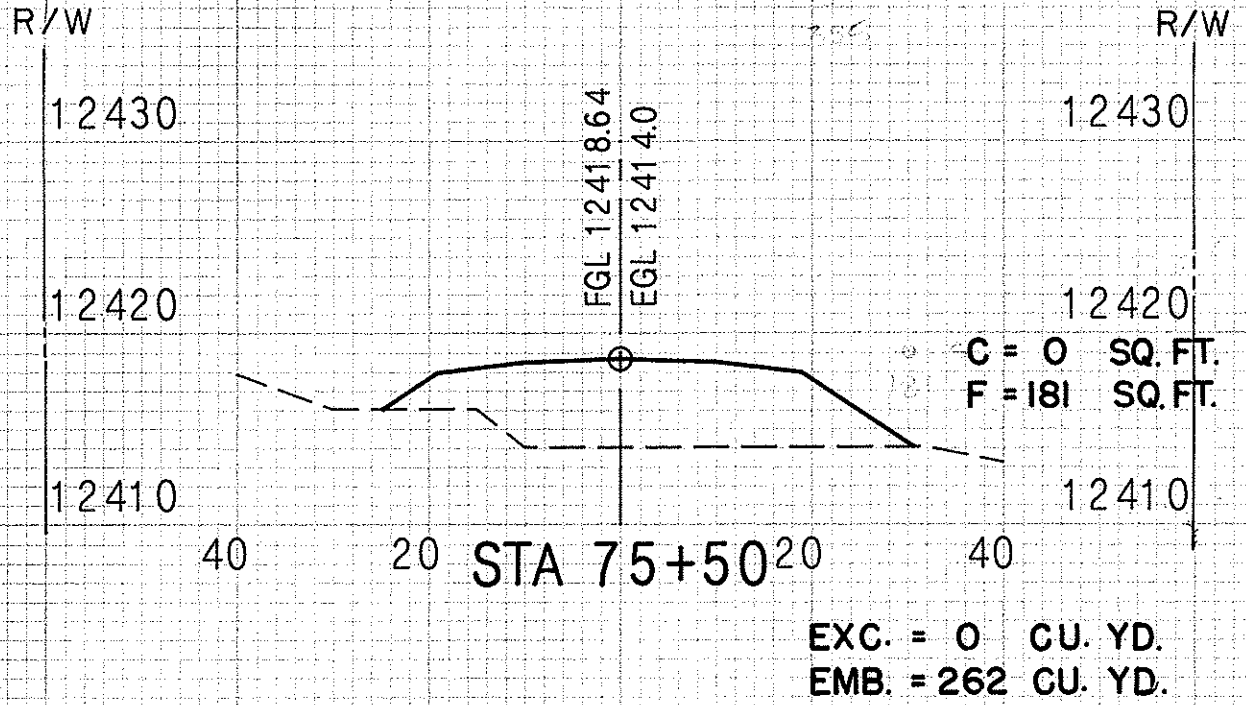
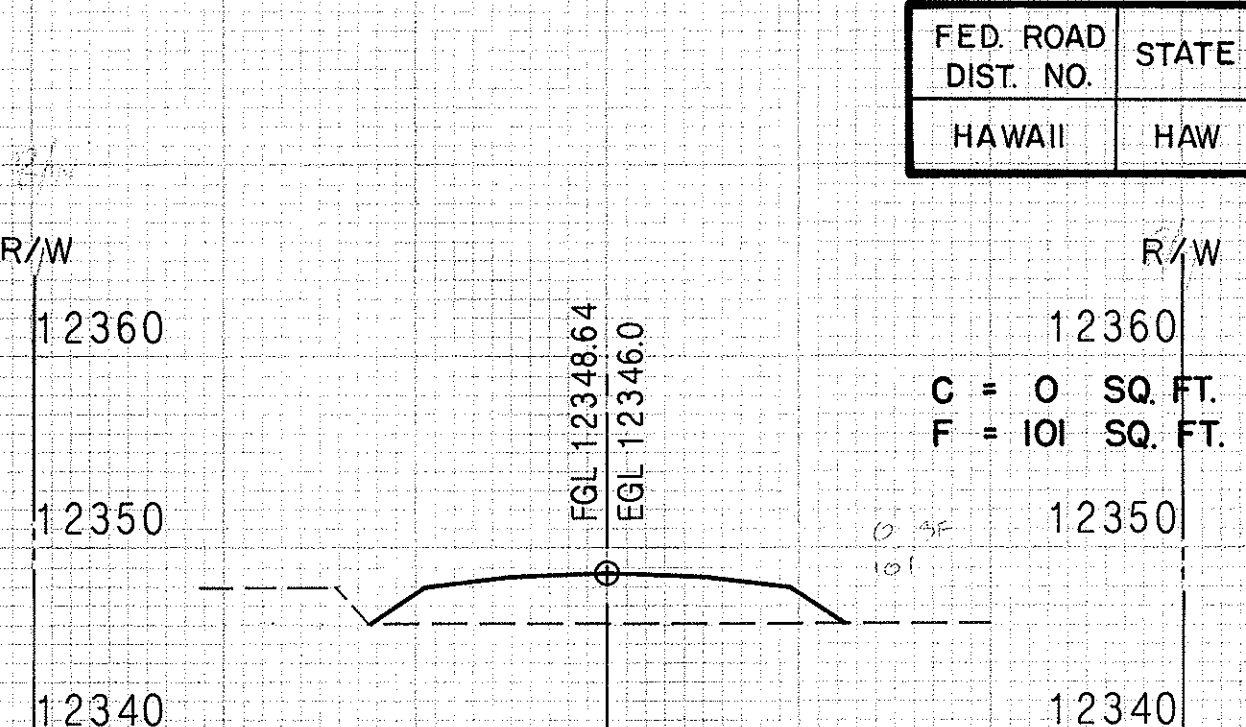
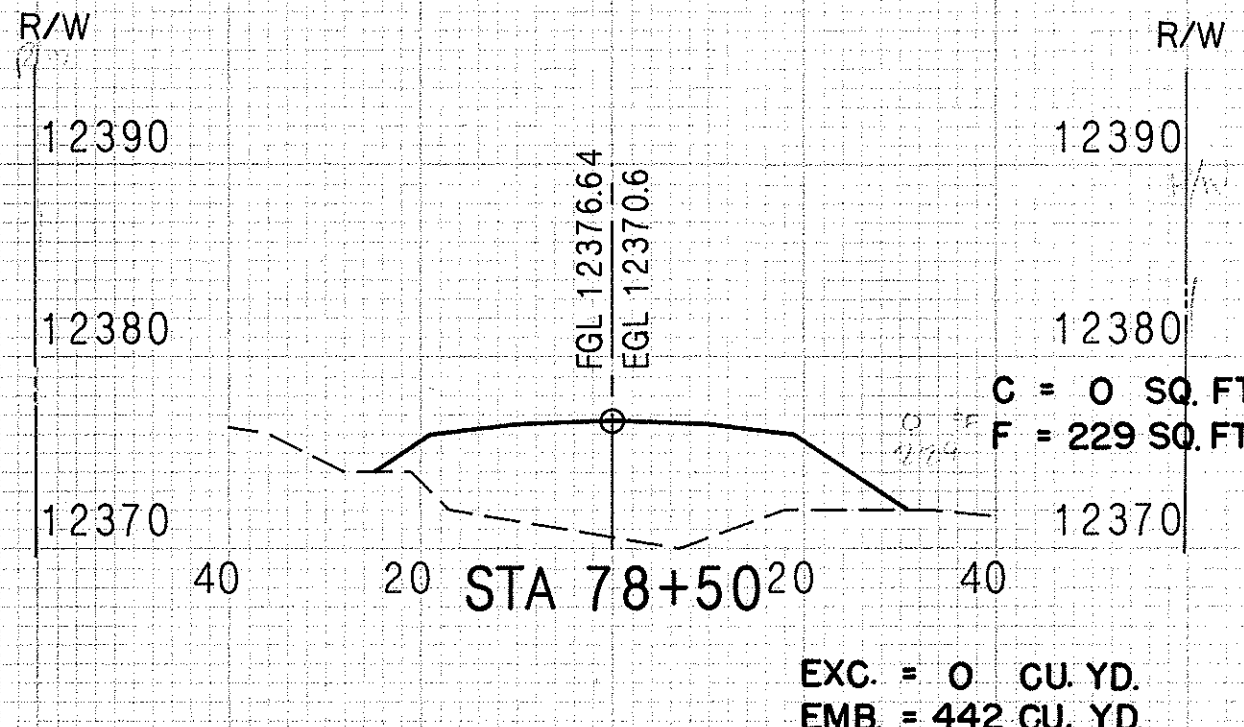
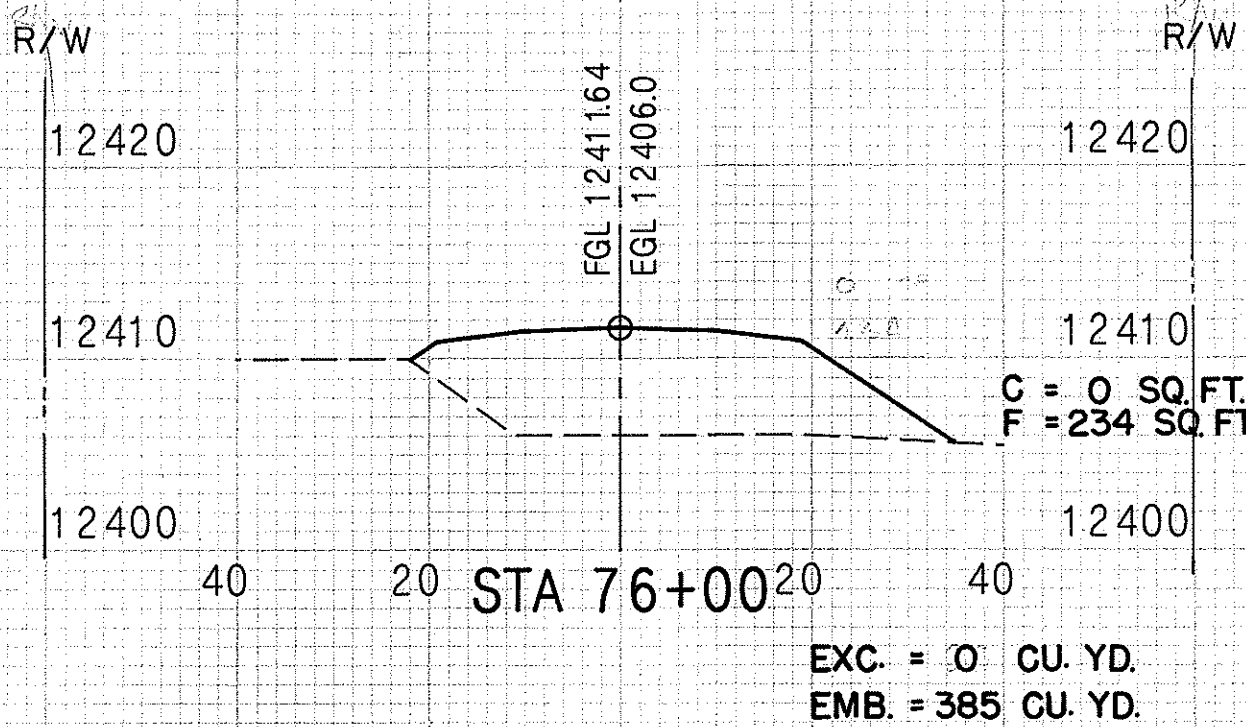
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**CROSS SECTIONS**  
MAIN ACCESS ROAD  
STA 64 + 50 TO STA 73 + 50  
MAUNA KEA OBSERVATORY ACCESS ROAD  
PHASE II-A

SCALE : HORIZONTAL 1" = 20'  
VERTICAL 1" = 10'

SHEET No. 11 OF 16 SHEETS

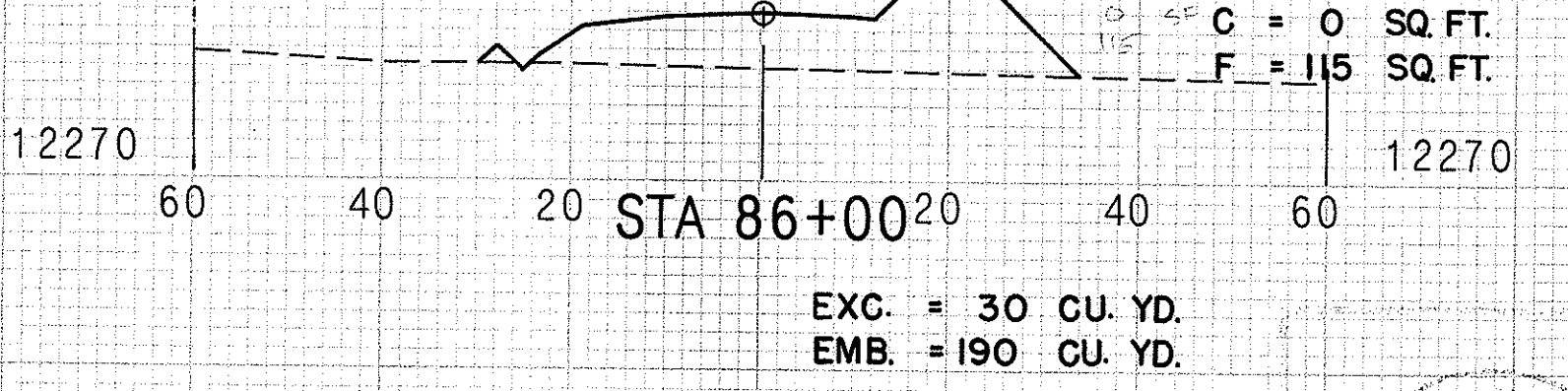
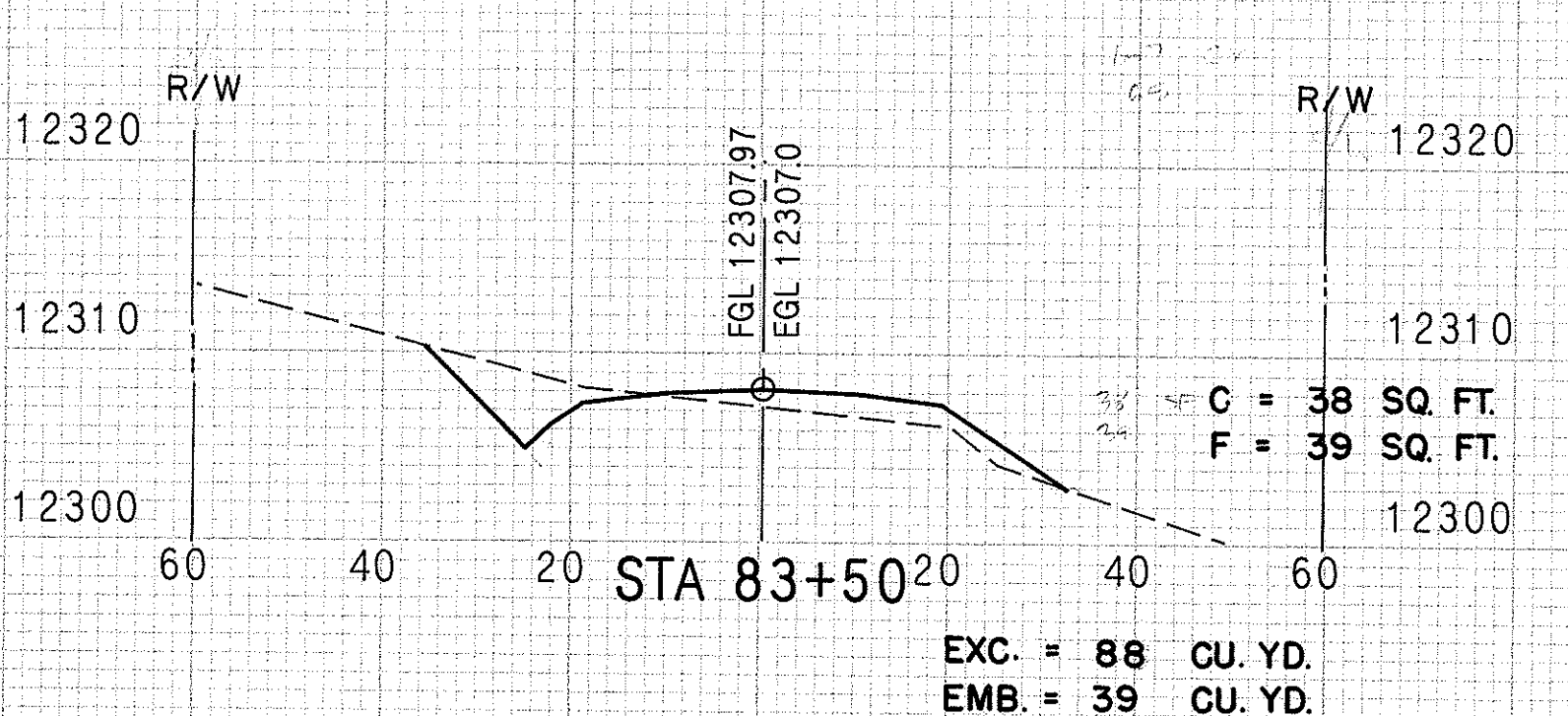
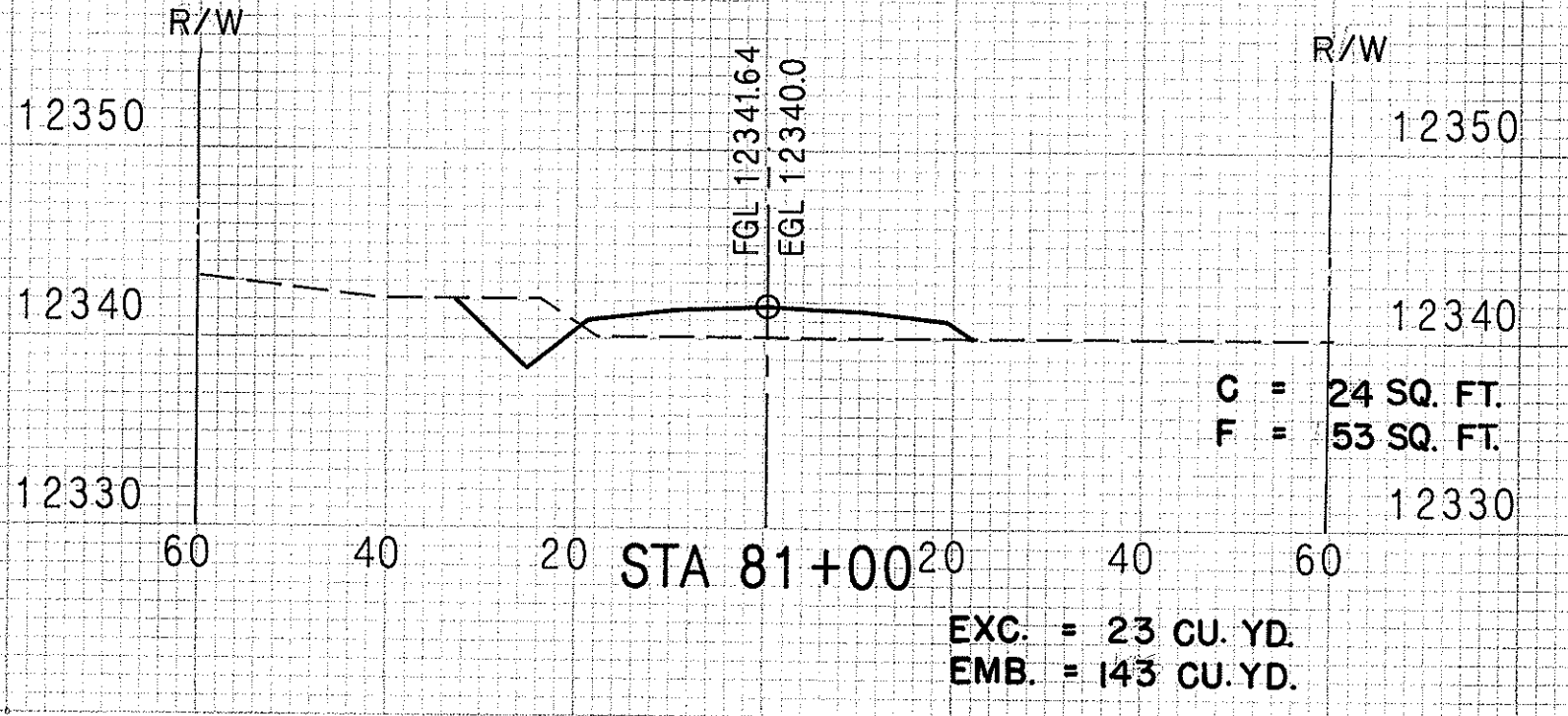
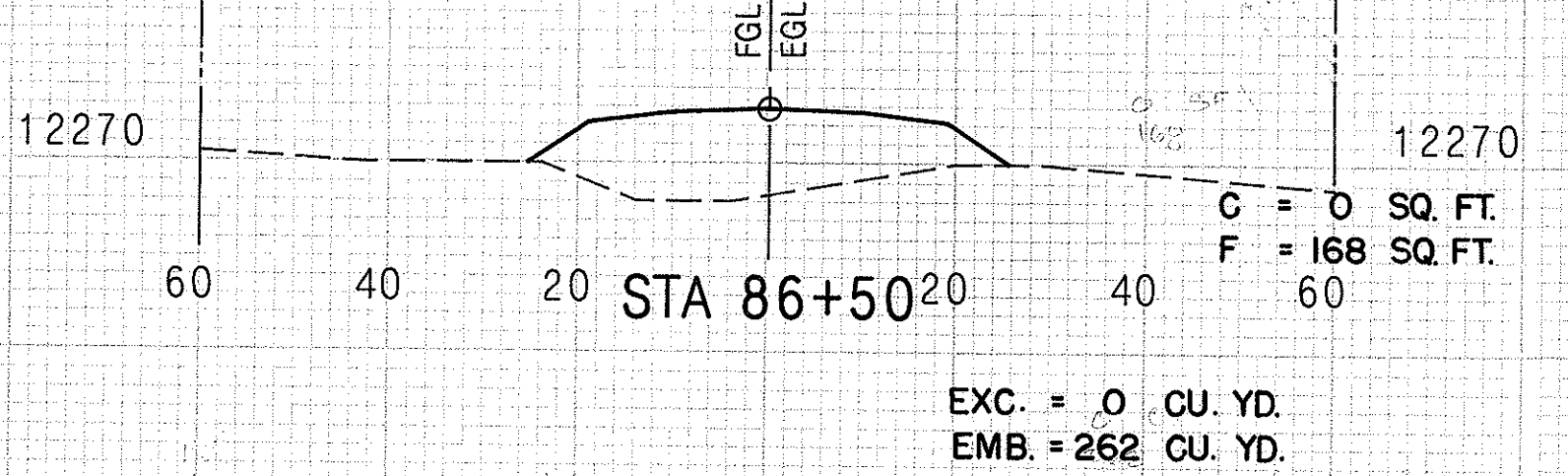
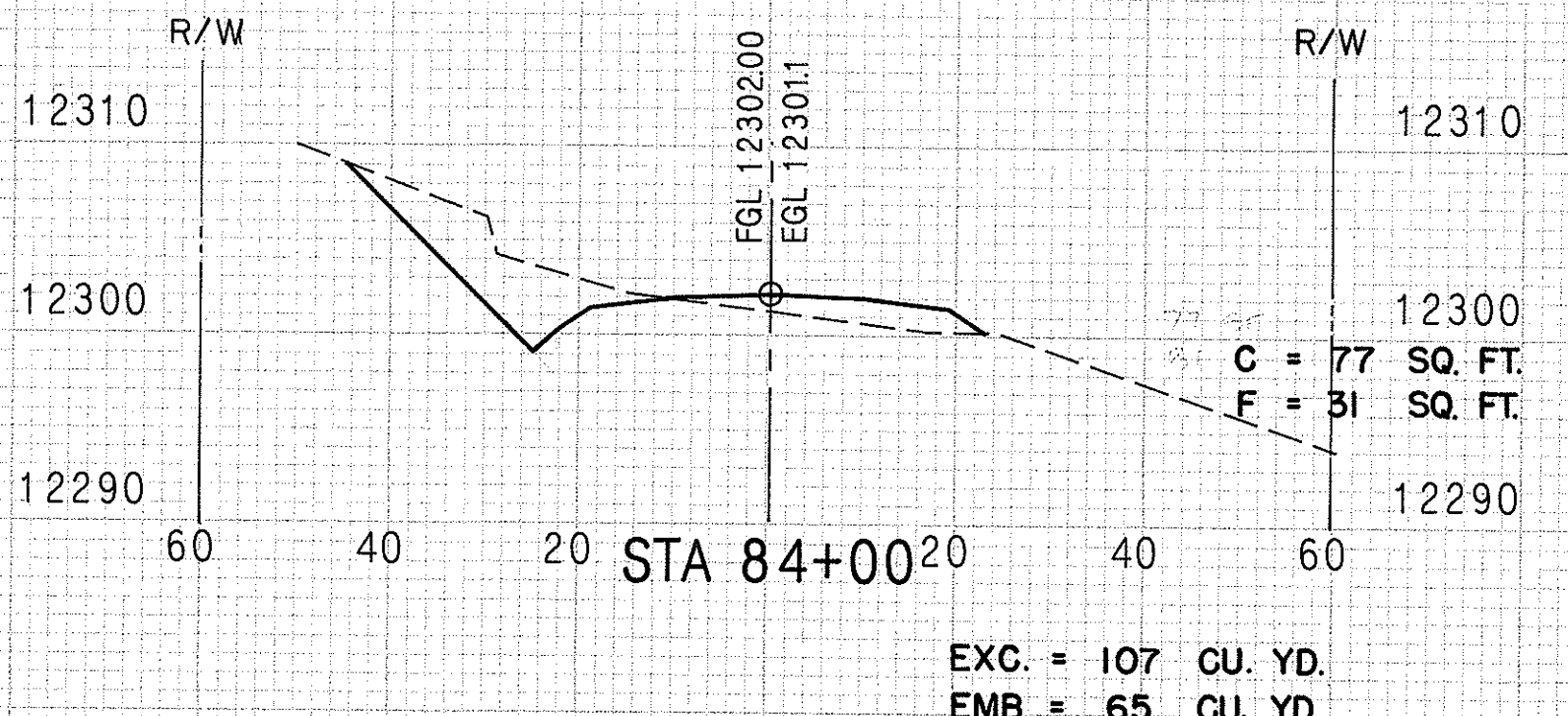
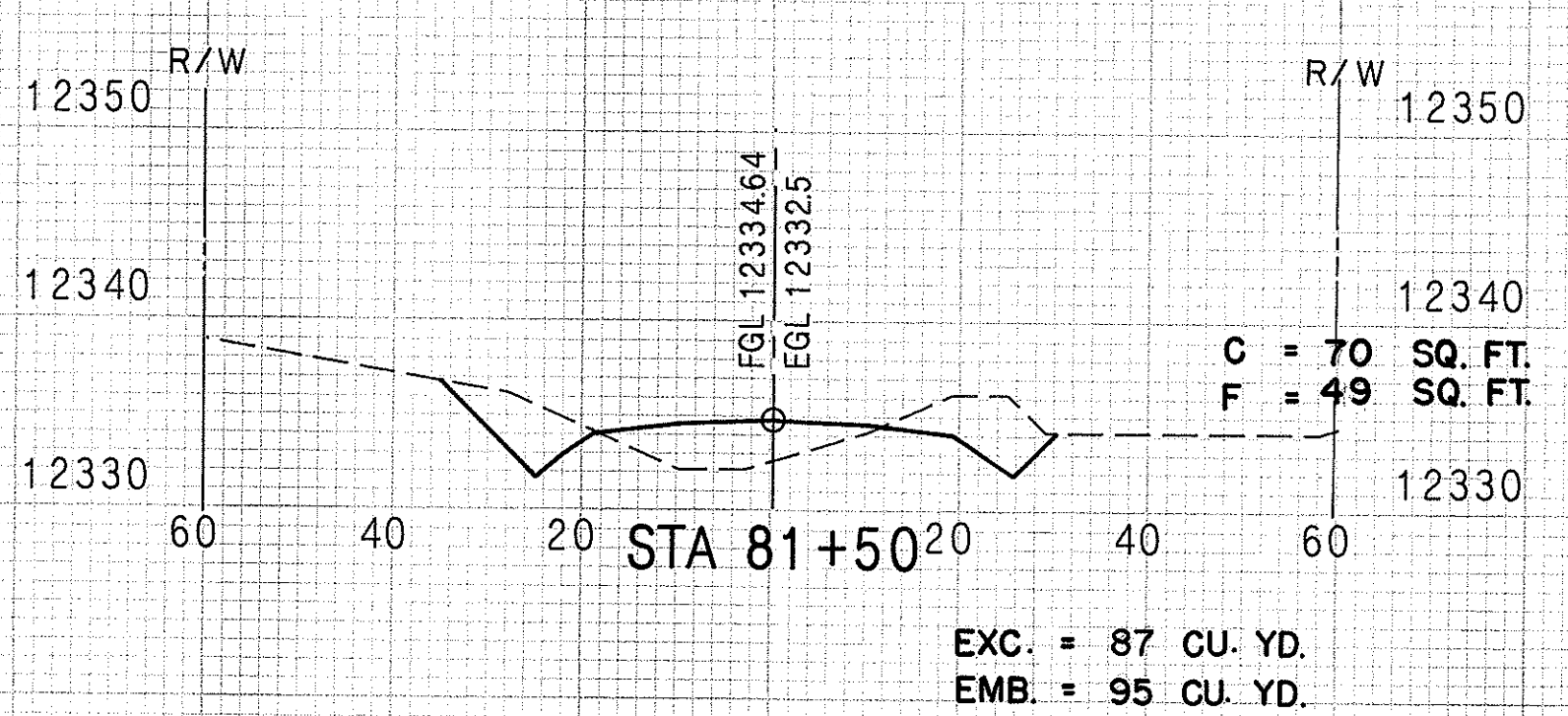
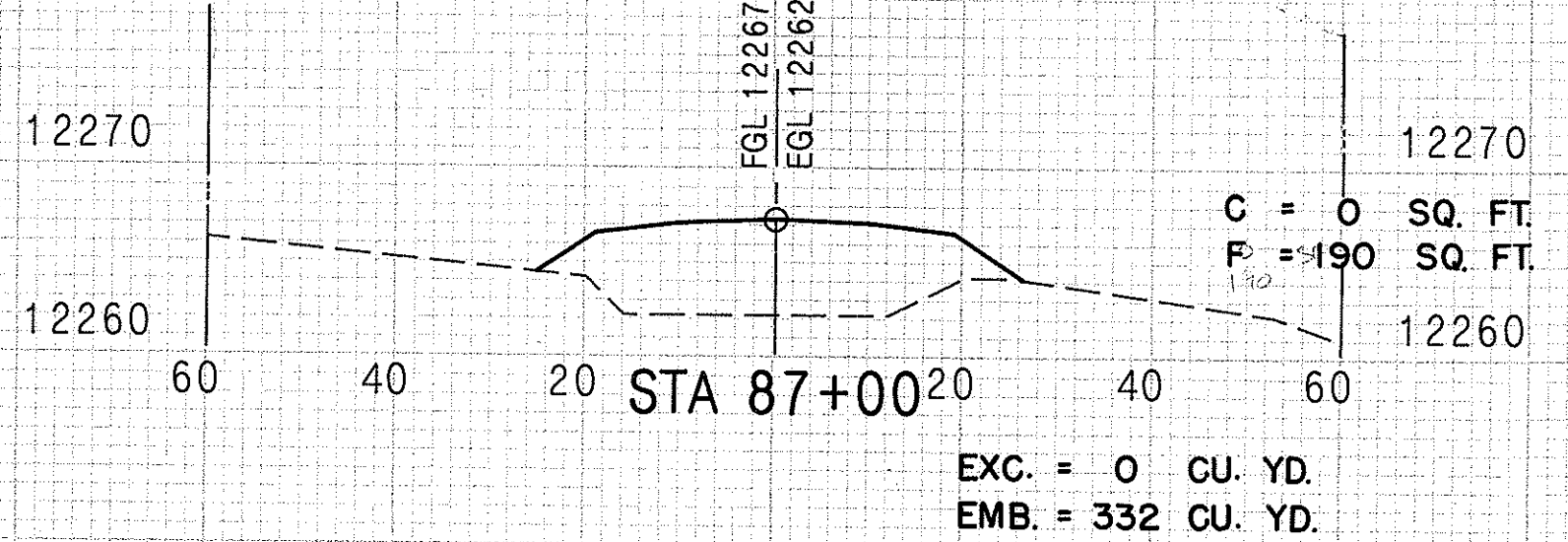
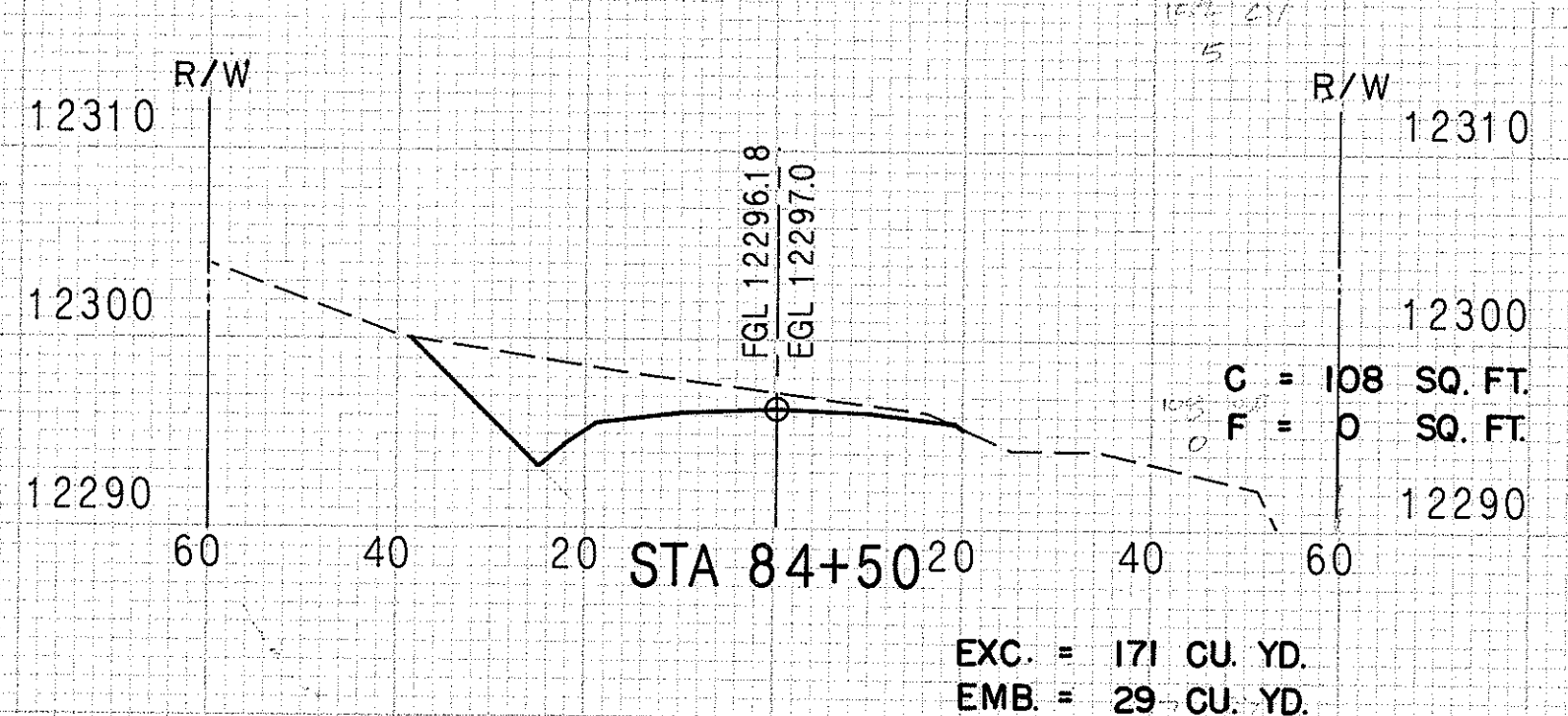
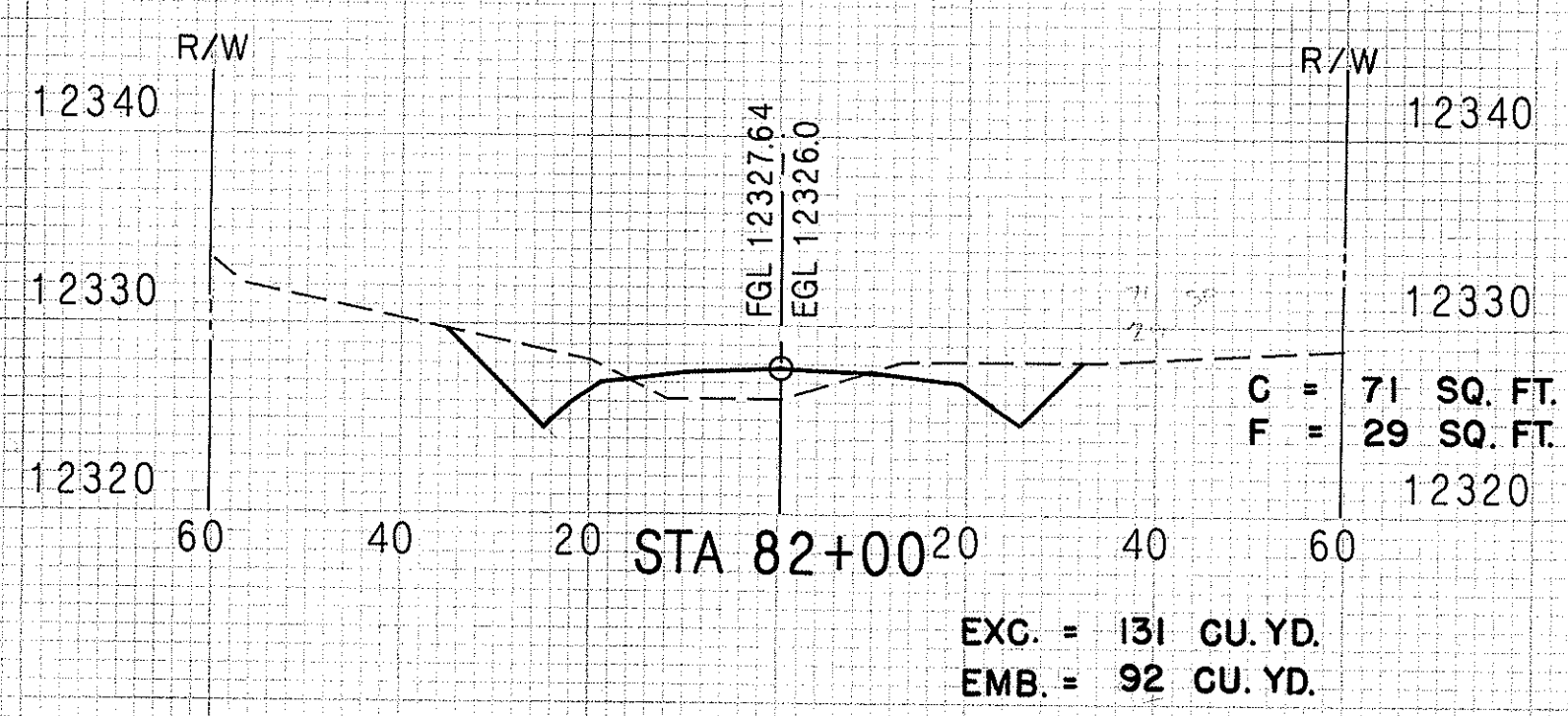
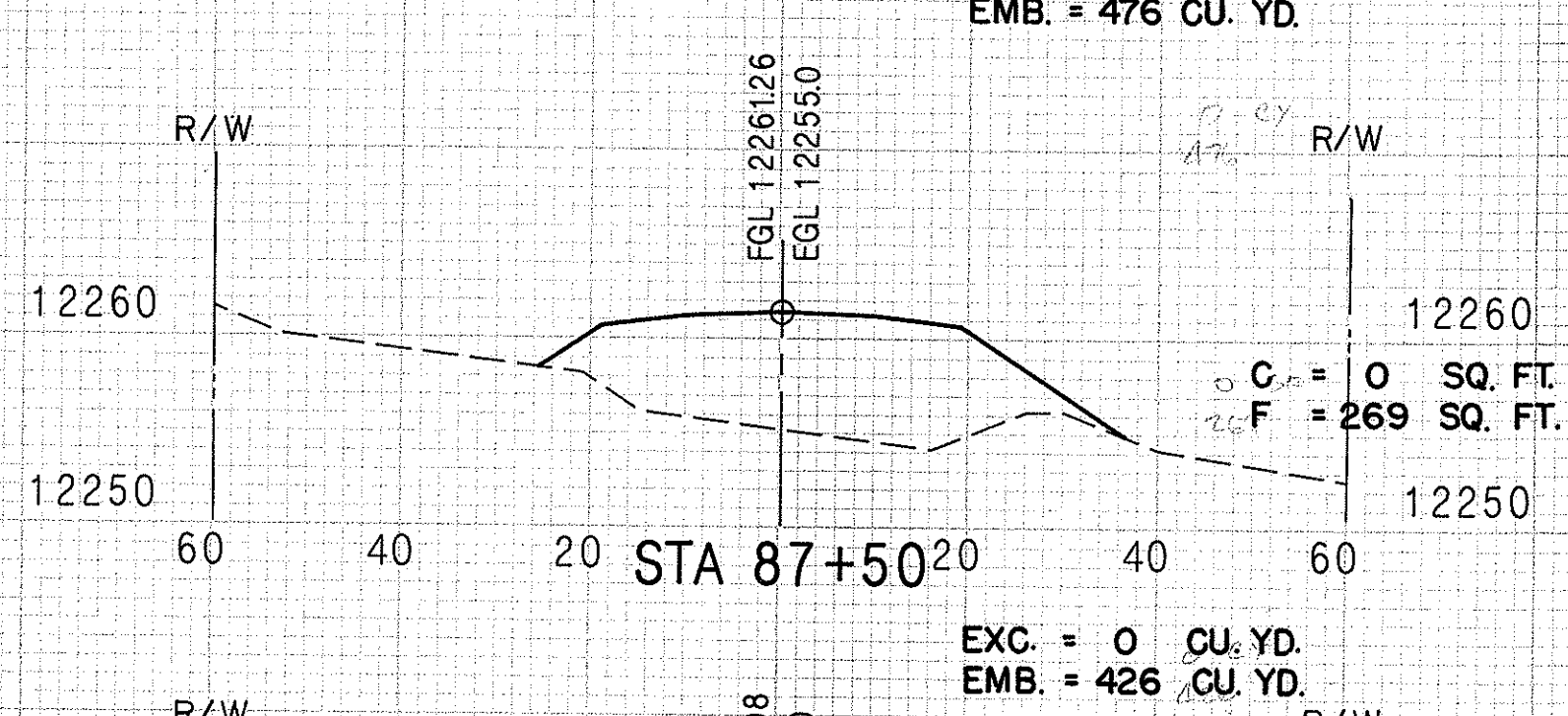
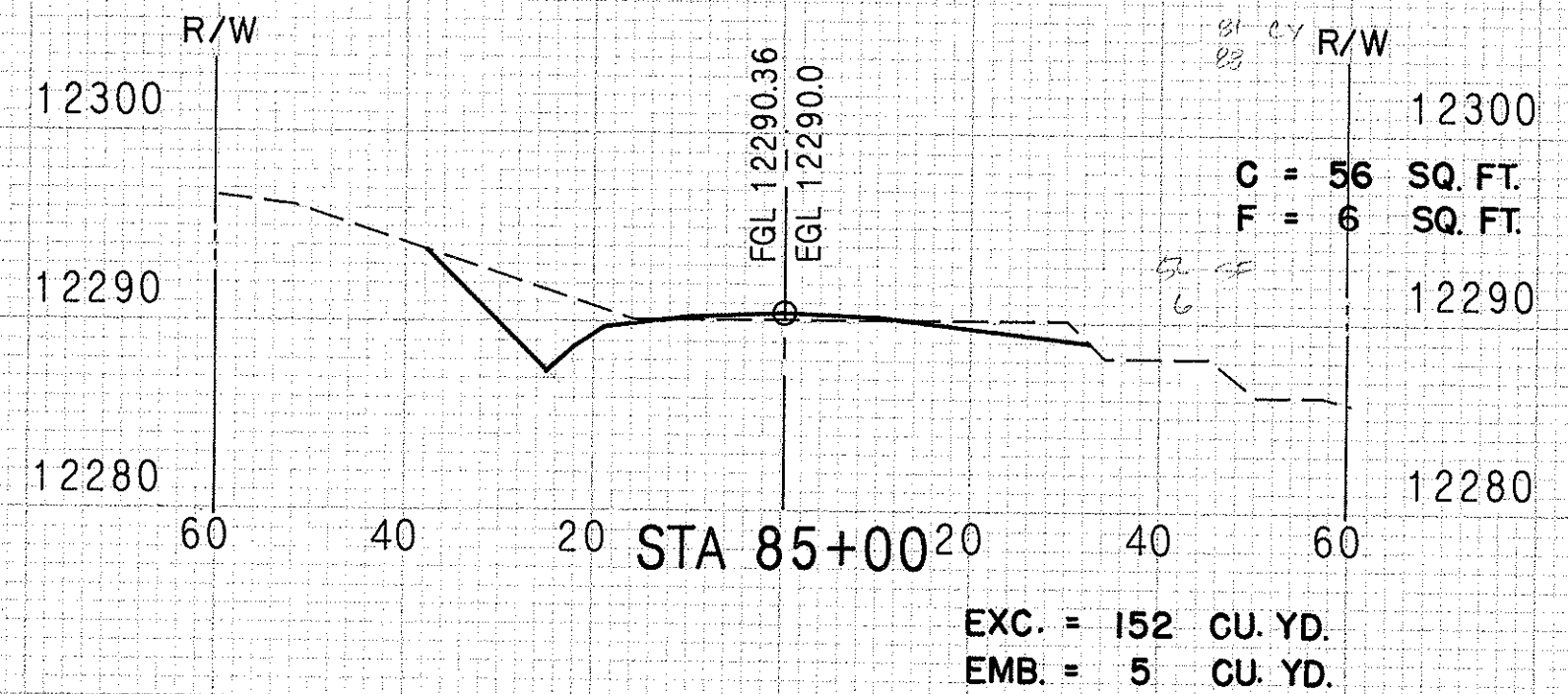
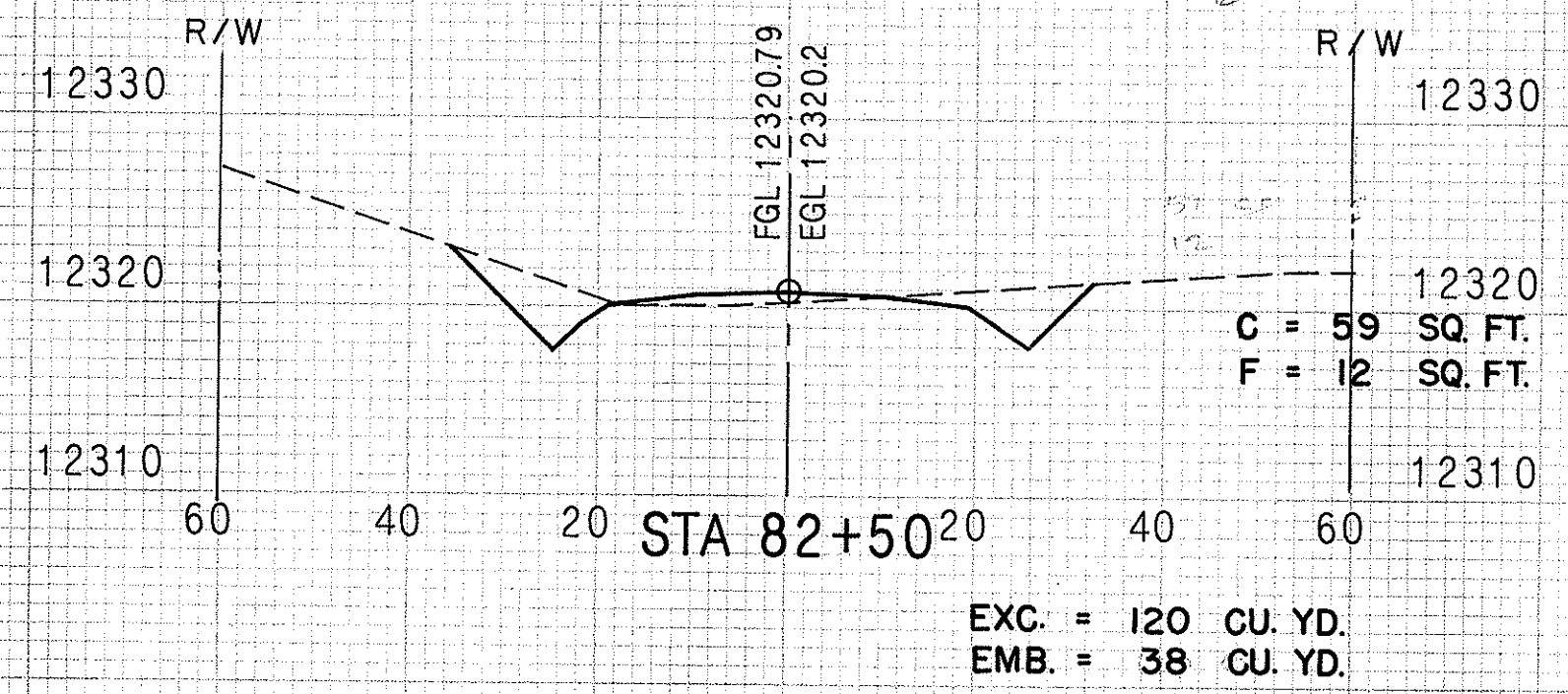
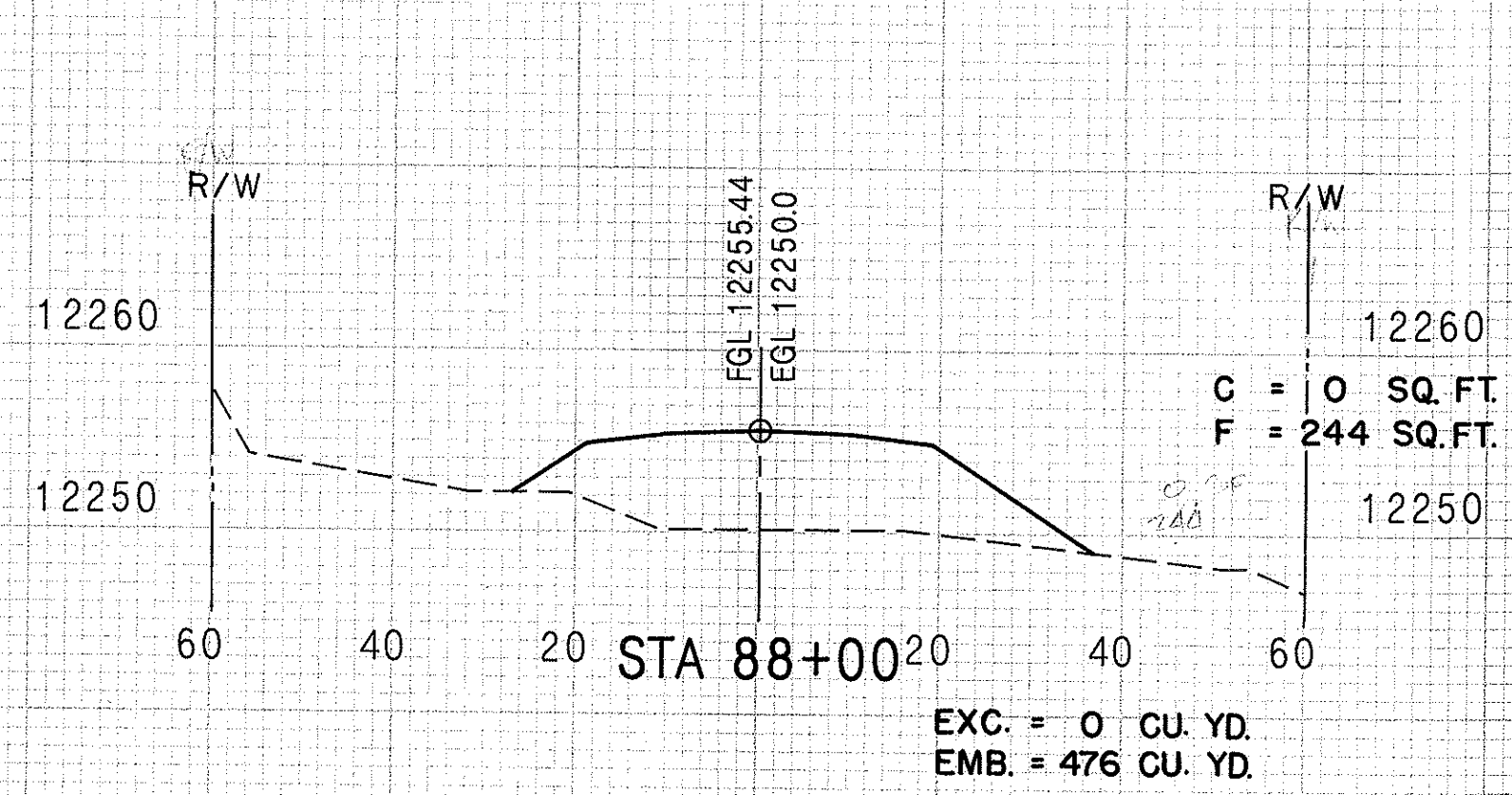
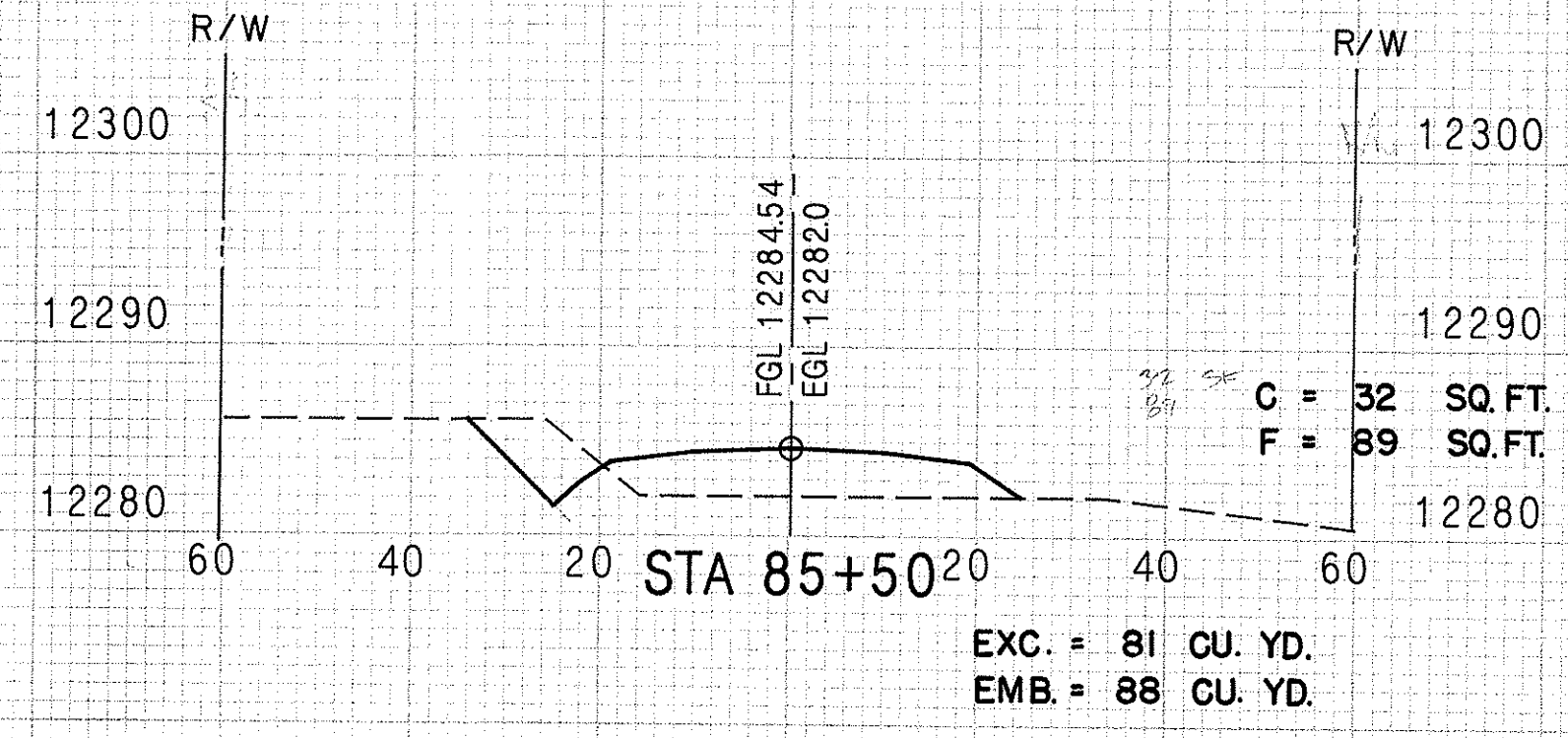
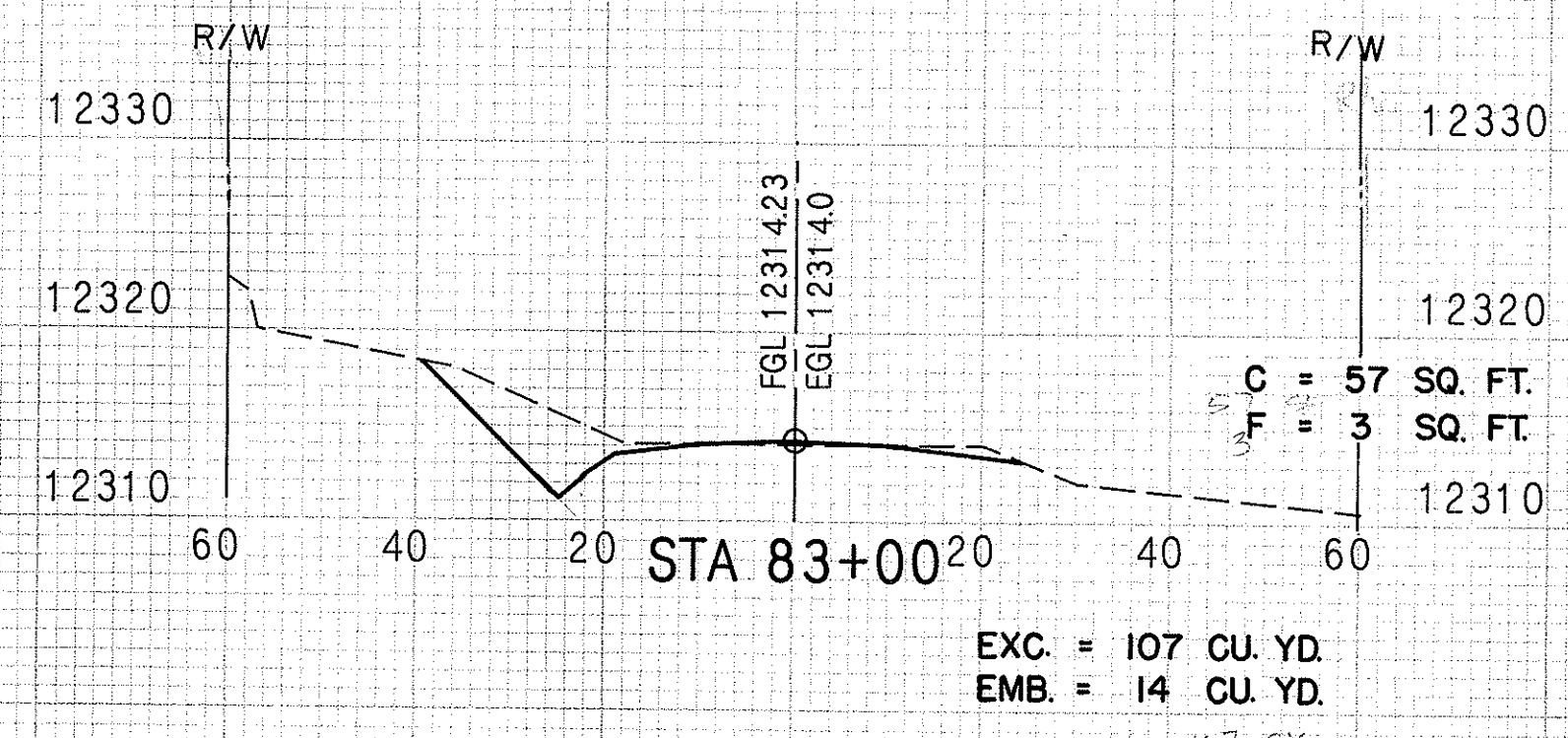
| FED. ROAD DIST. NO. | STATE | PROJECT NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-------------|-------------|-----------|--------------|
| HAWAII              | HAW   | HWY-H-01-86 | 1987        | 111       | 115          |



STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION  
**CROSS SECTIONS**  
 MAIN ACCESS ROAD  
 STA. 74+00 TO STA. 80+50  
 MAUNA KEA OBSERVATORY ACCESS ROAD  
 PHASE II-A  
 SCALE: HORIZONTAL 1"=20'  
 VERTICAL 1"=10'  
 SHEET NO 12. OF 16 SHEETS

NO. 1294-CROSS SECTION 10 x 10  
 "CLEARPRINT PAPER CO."  
 MADE IN U.S.A.

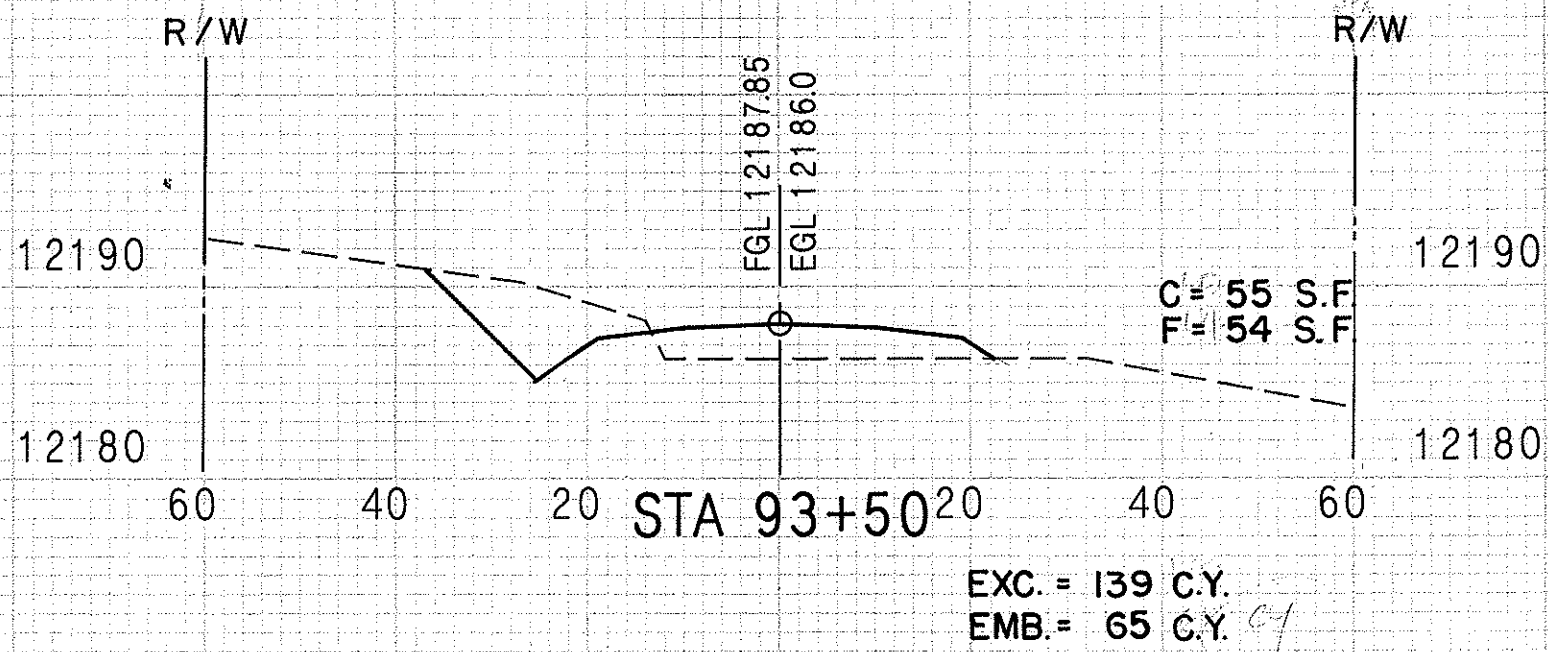
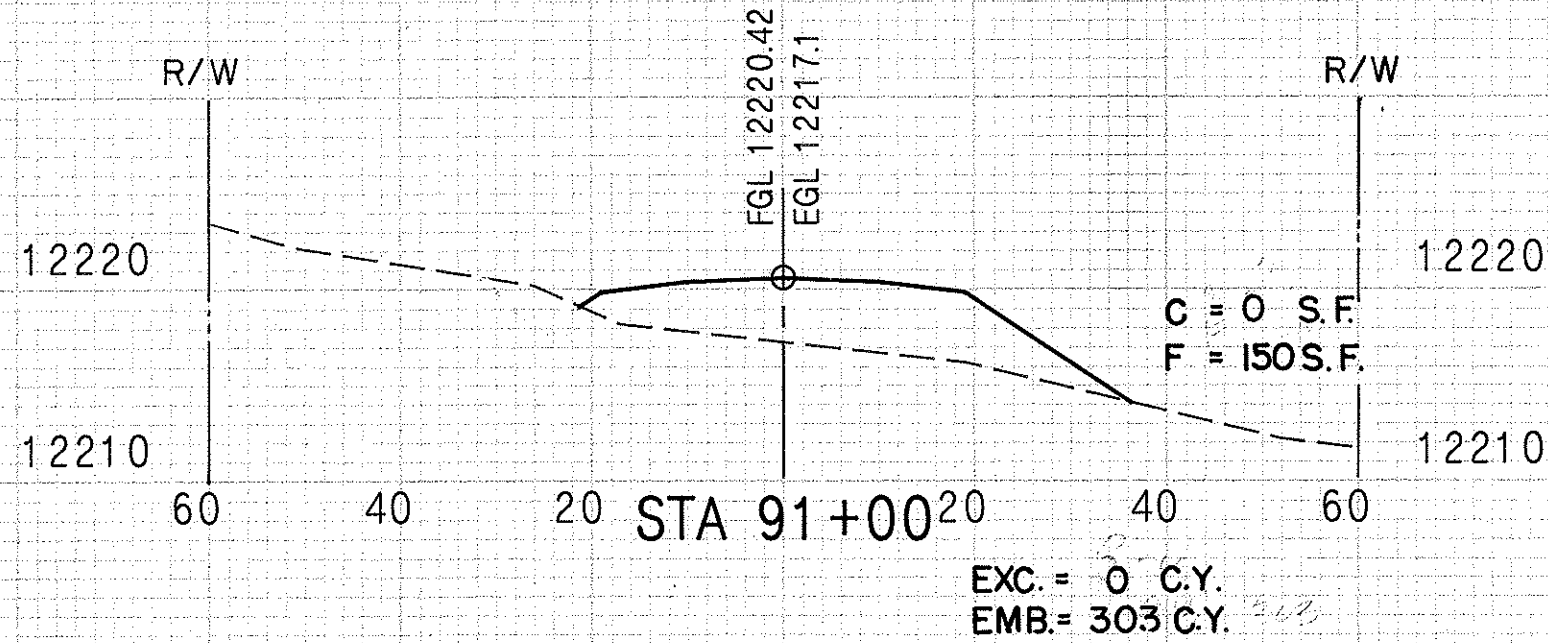
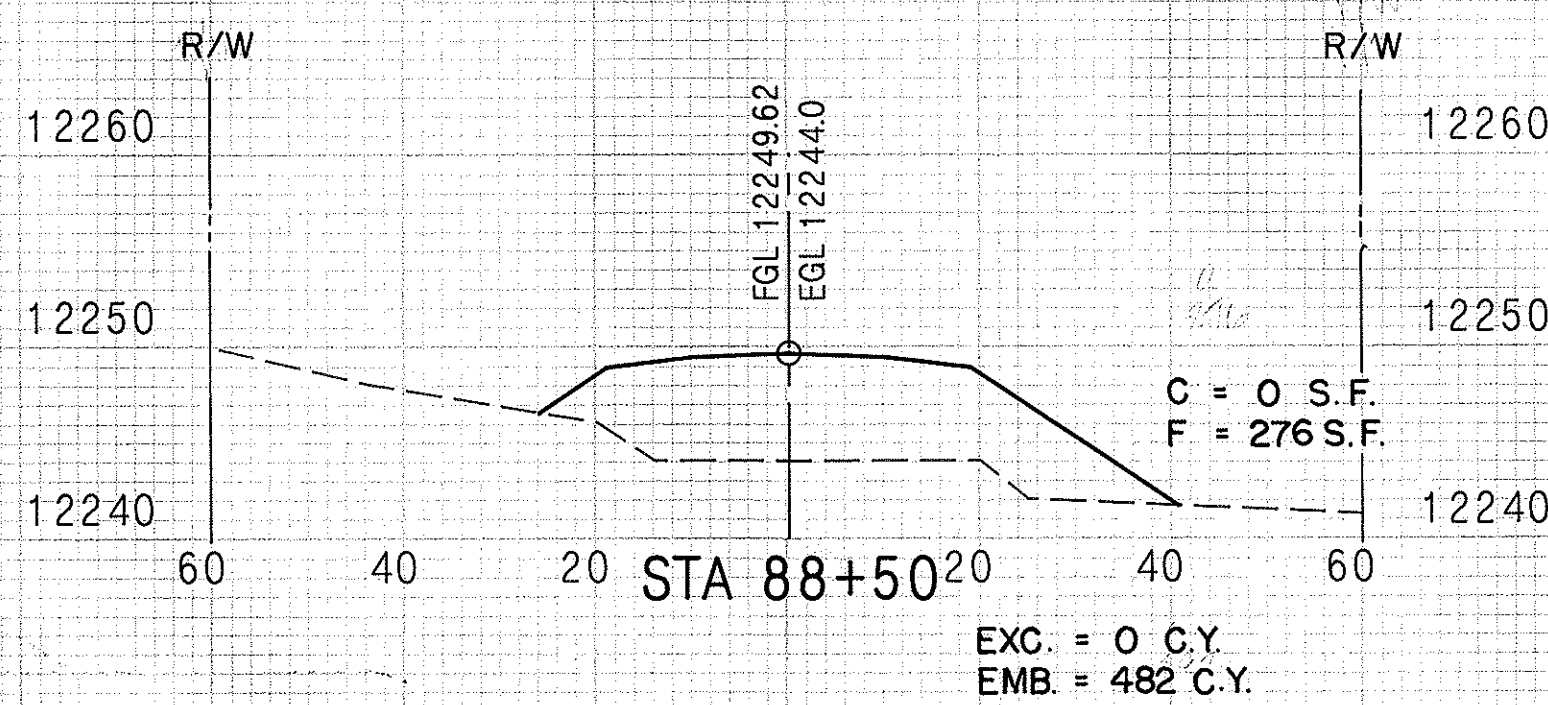
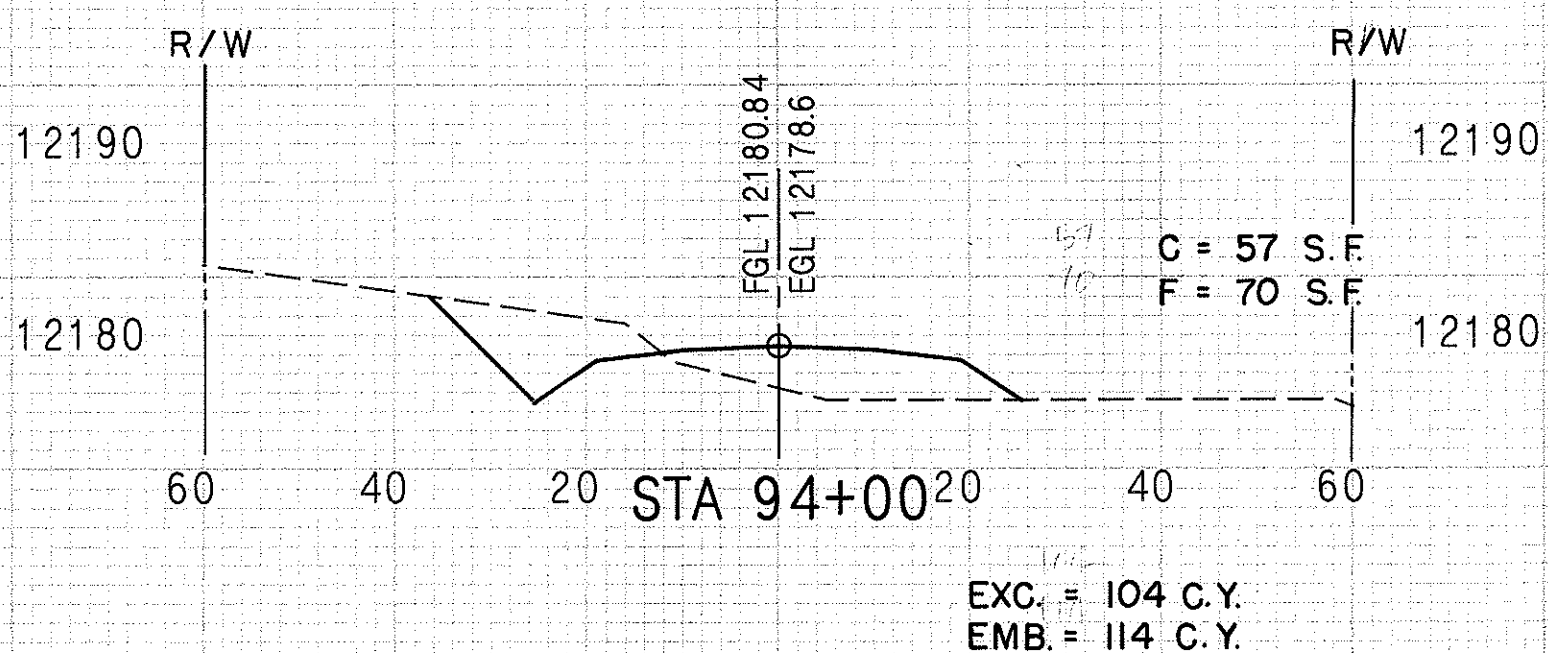
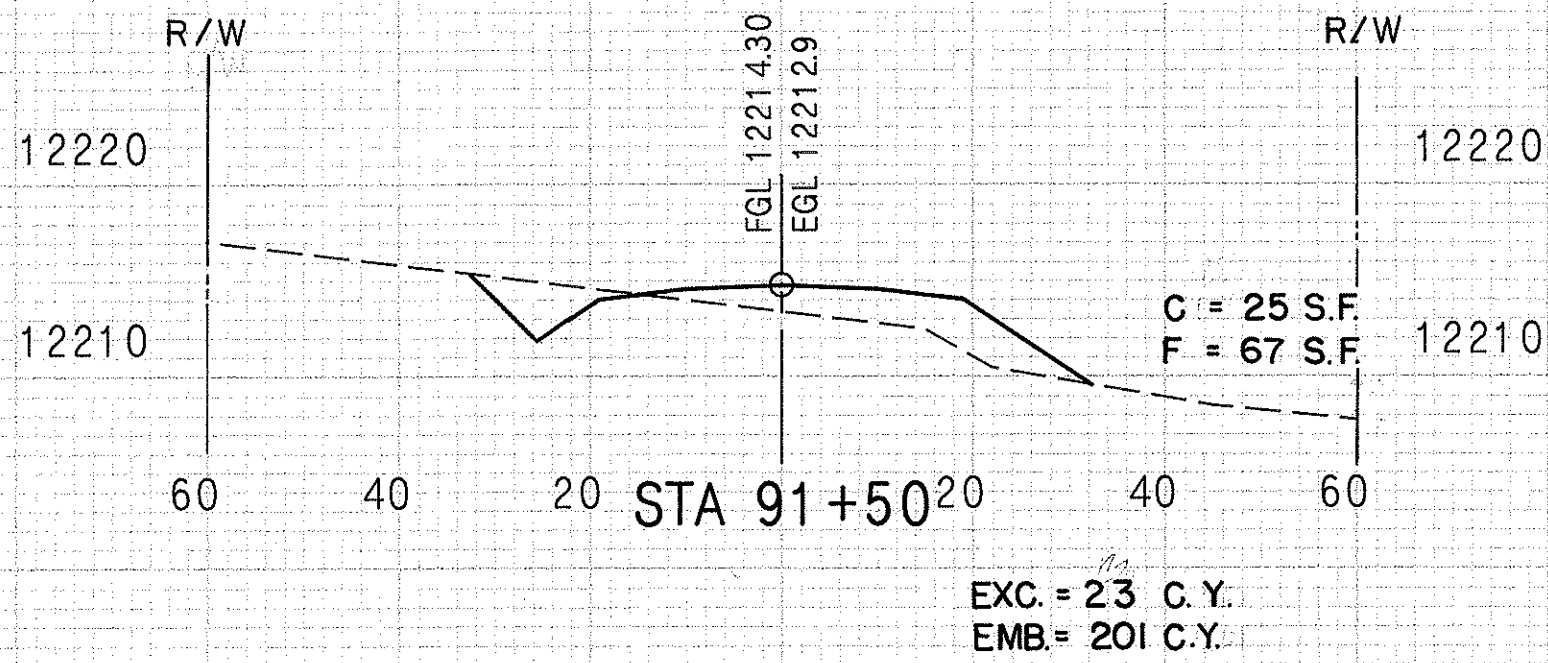
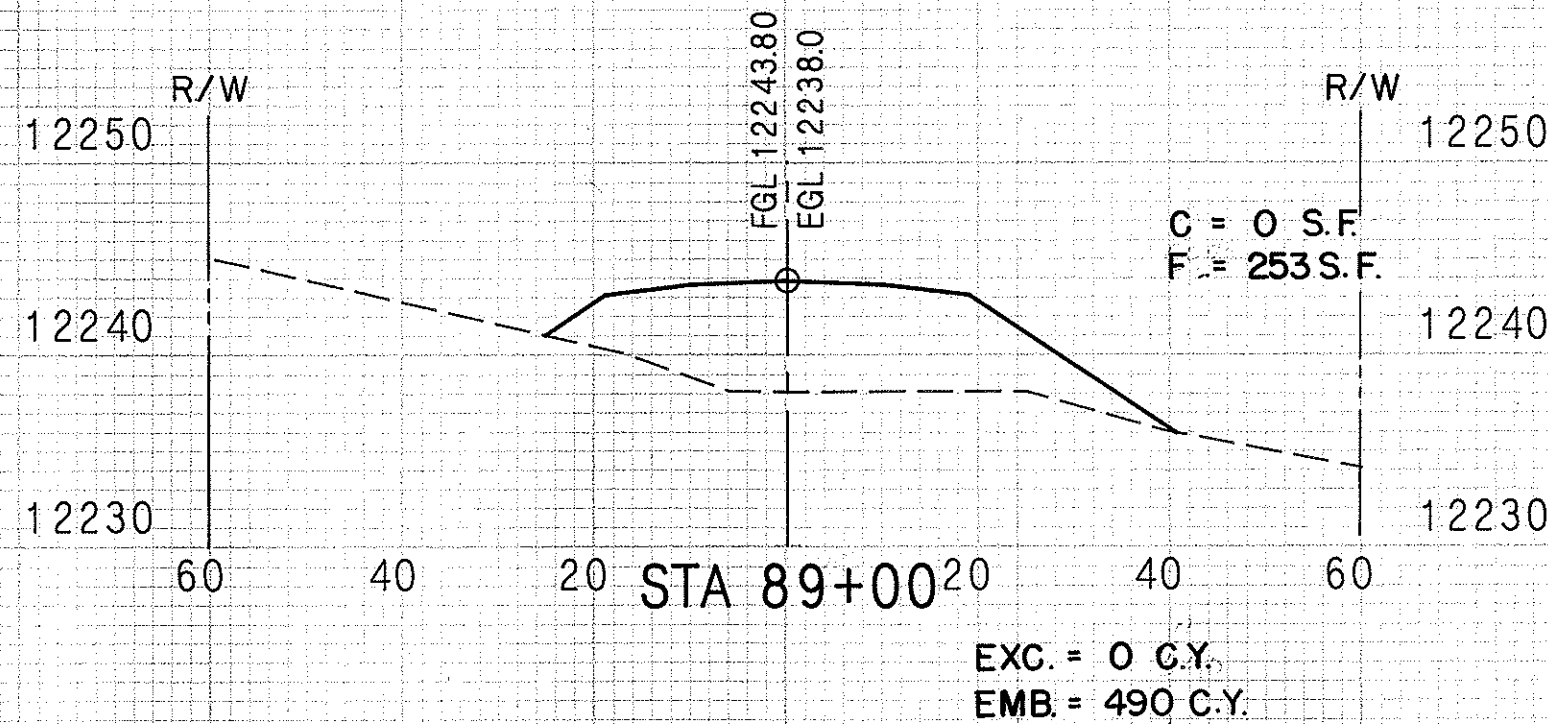
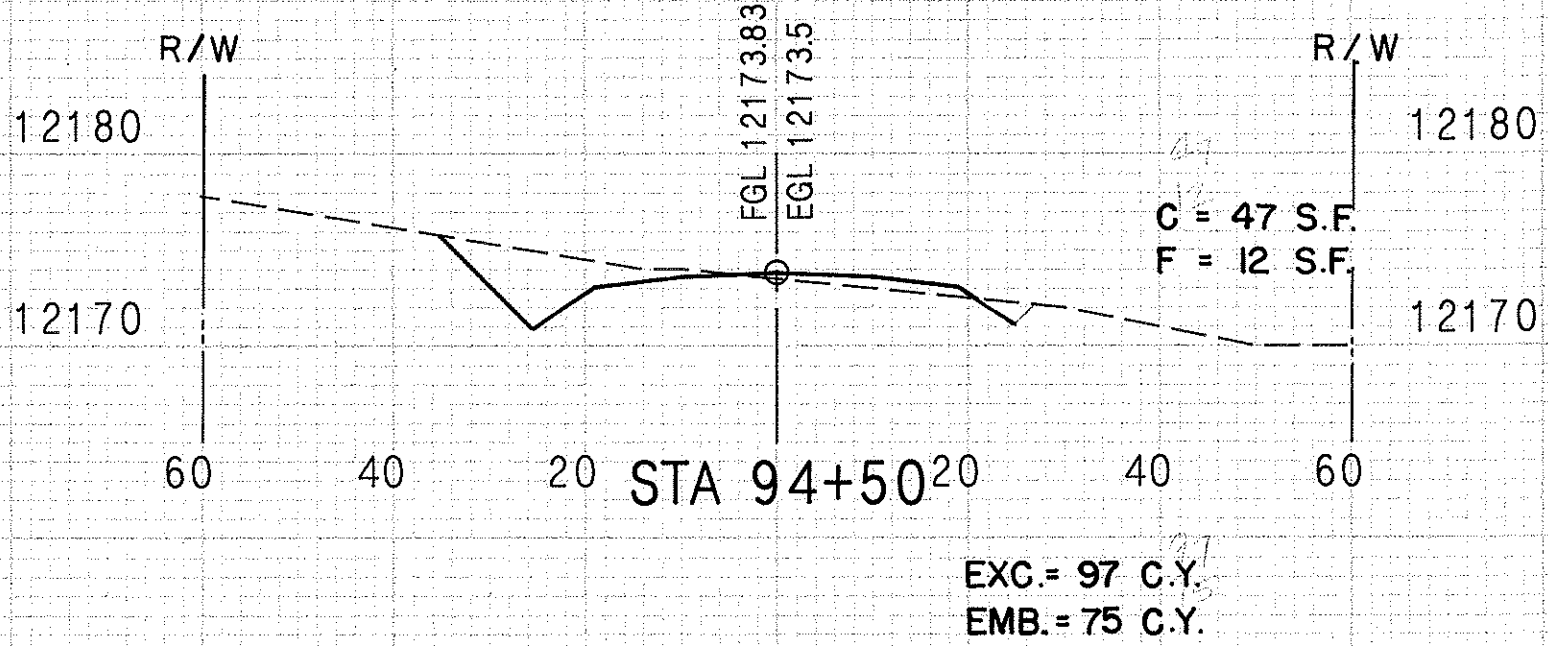
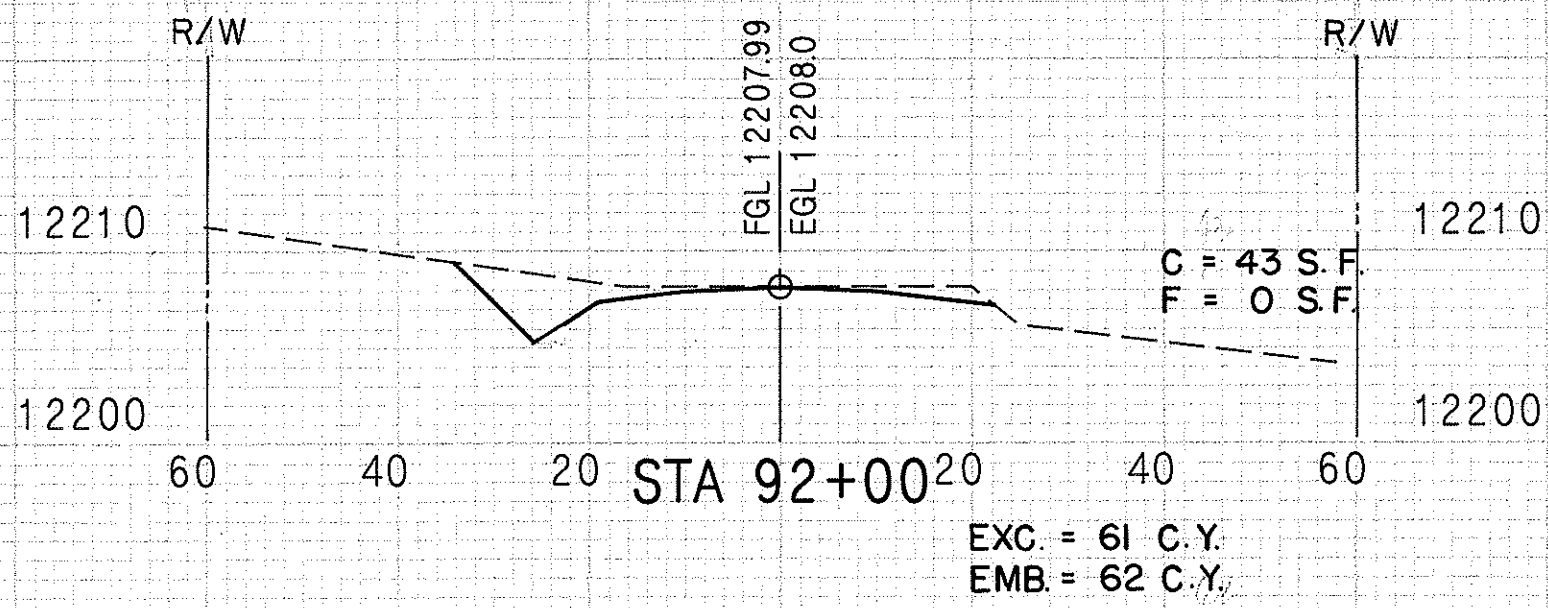
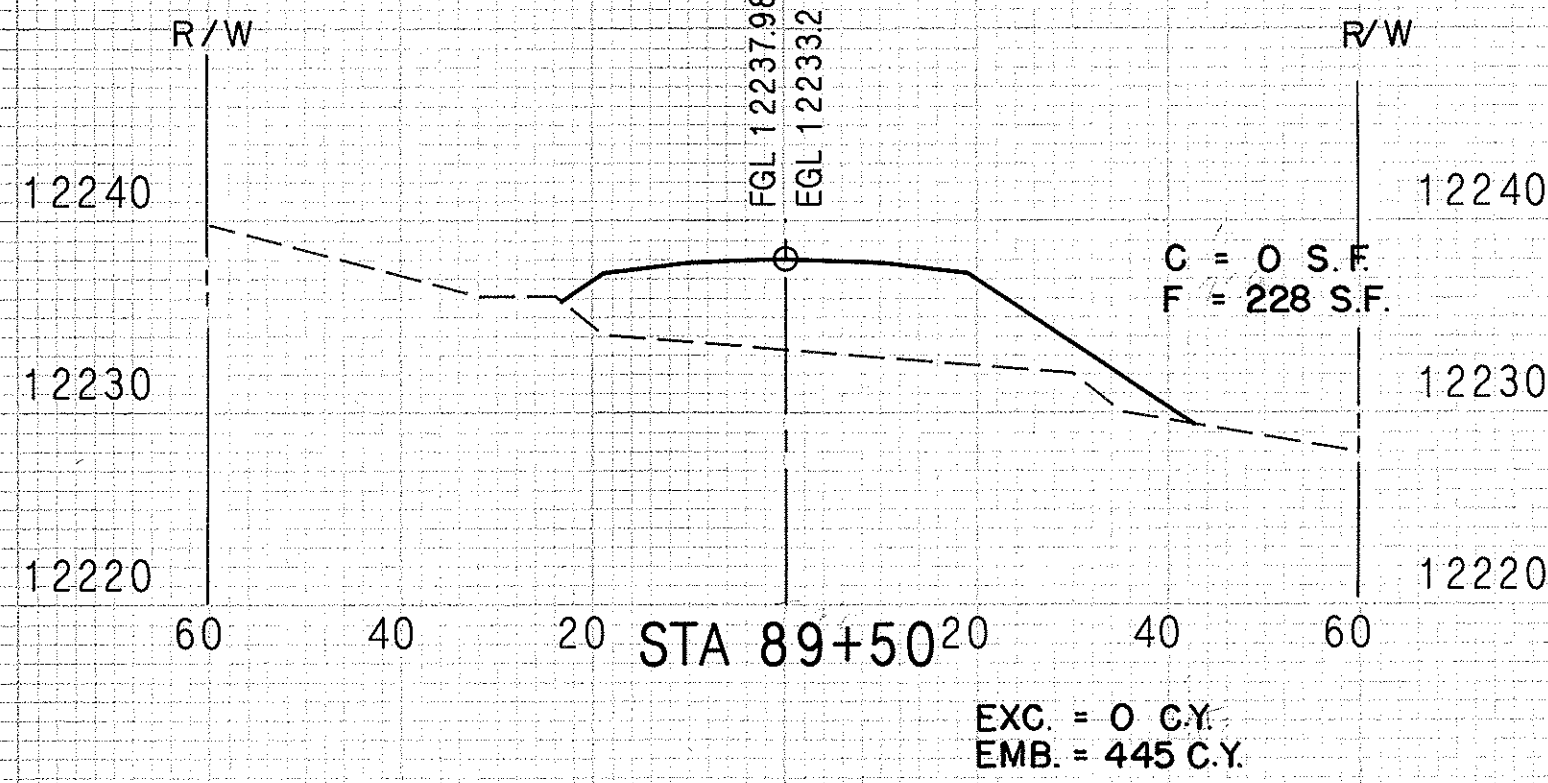
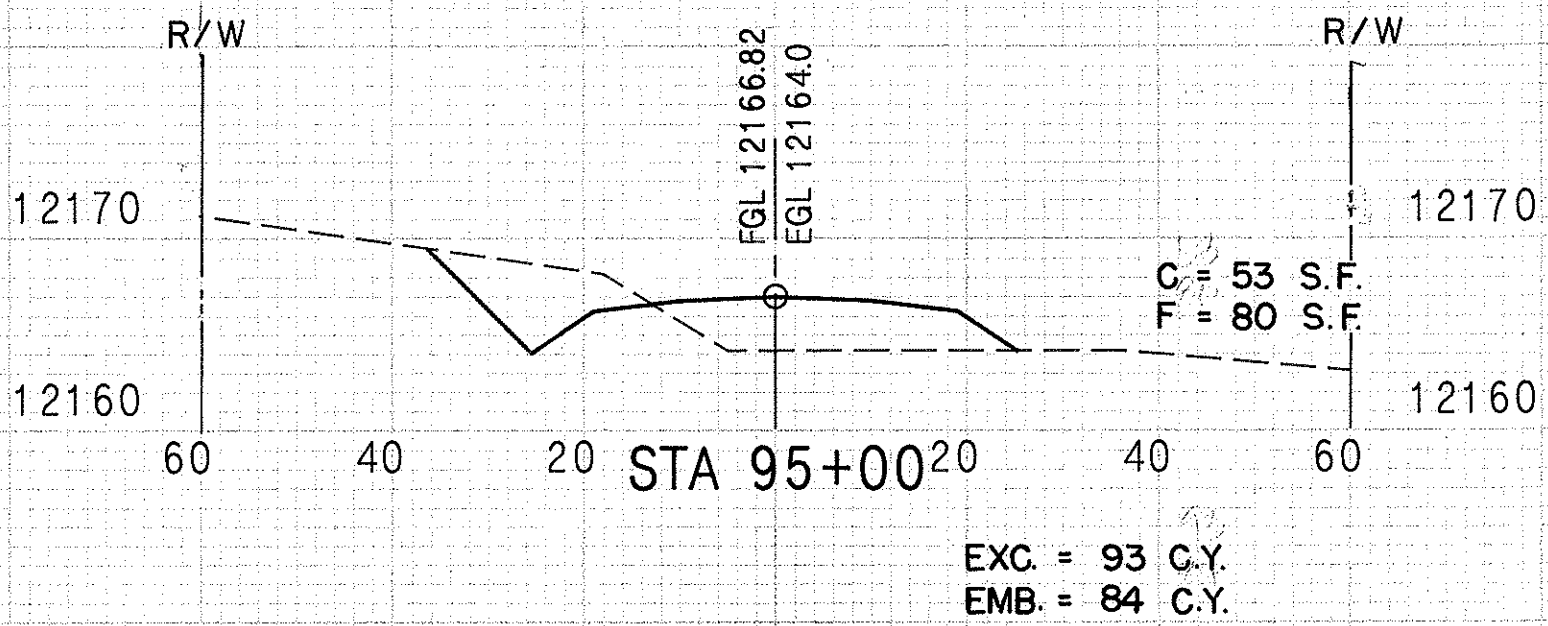
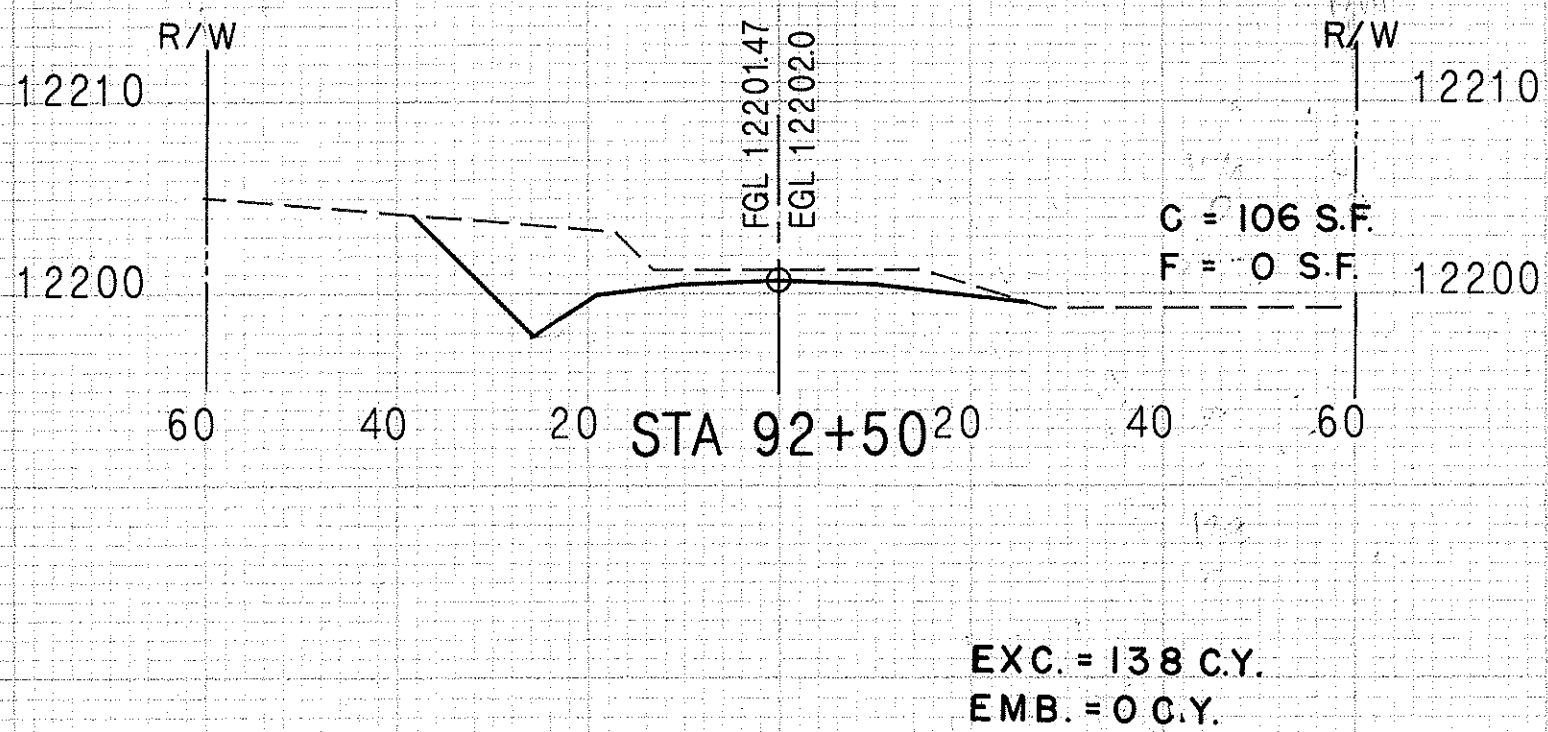
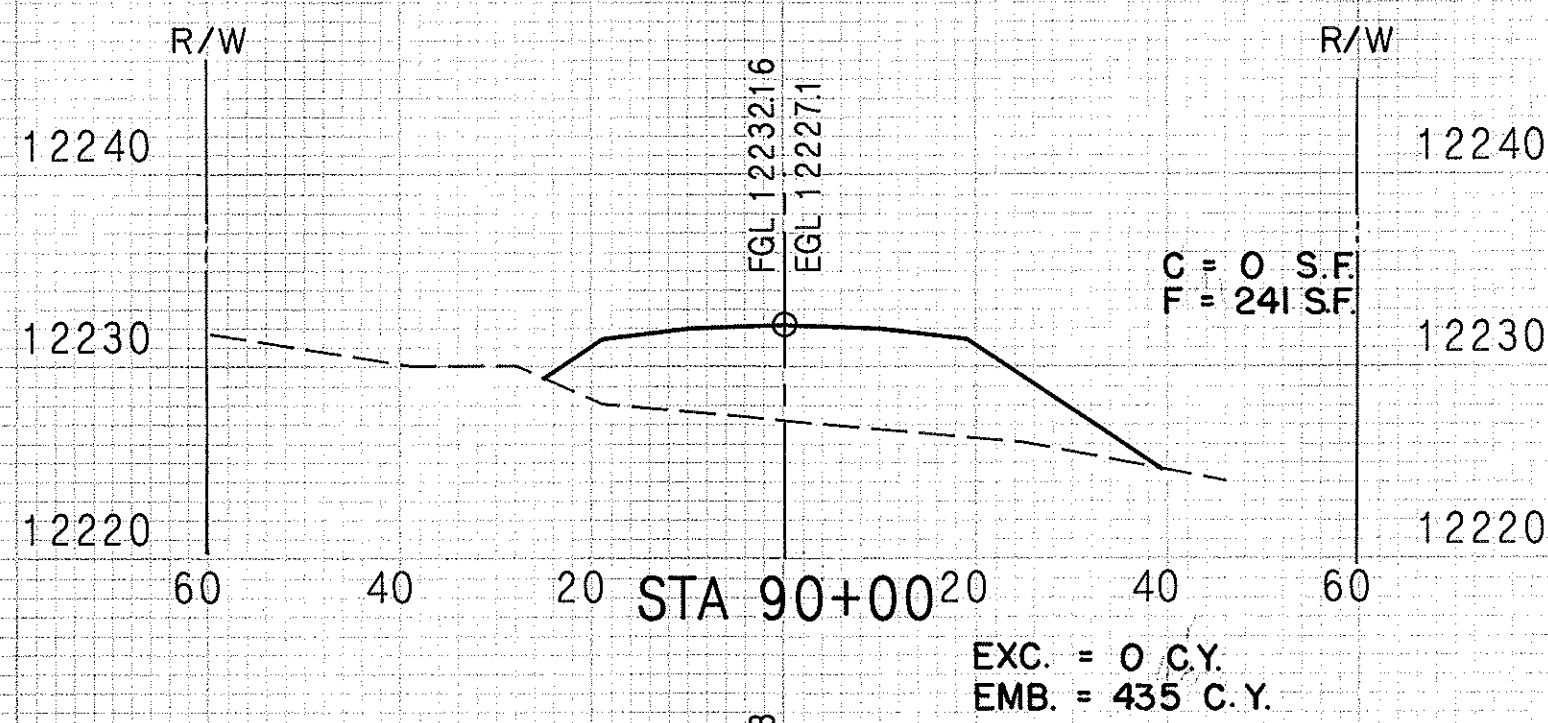
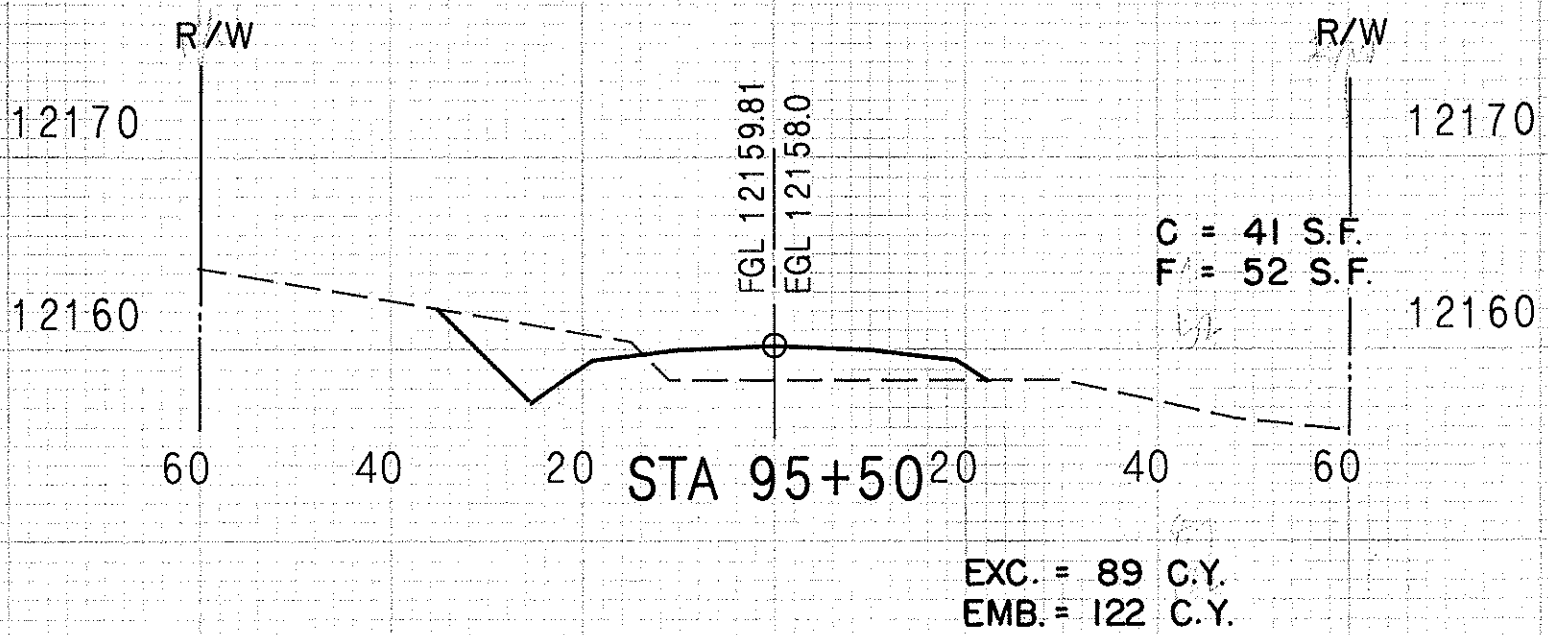
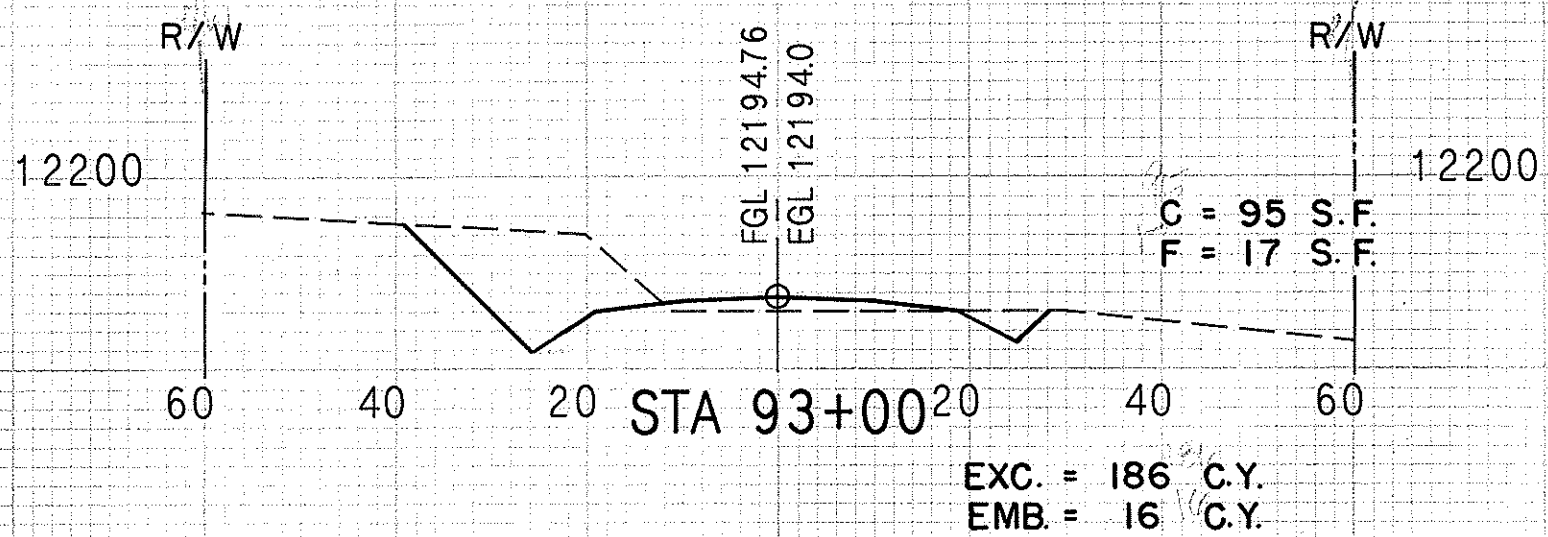
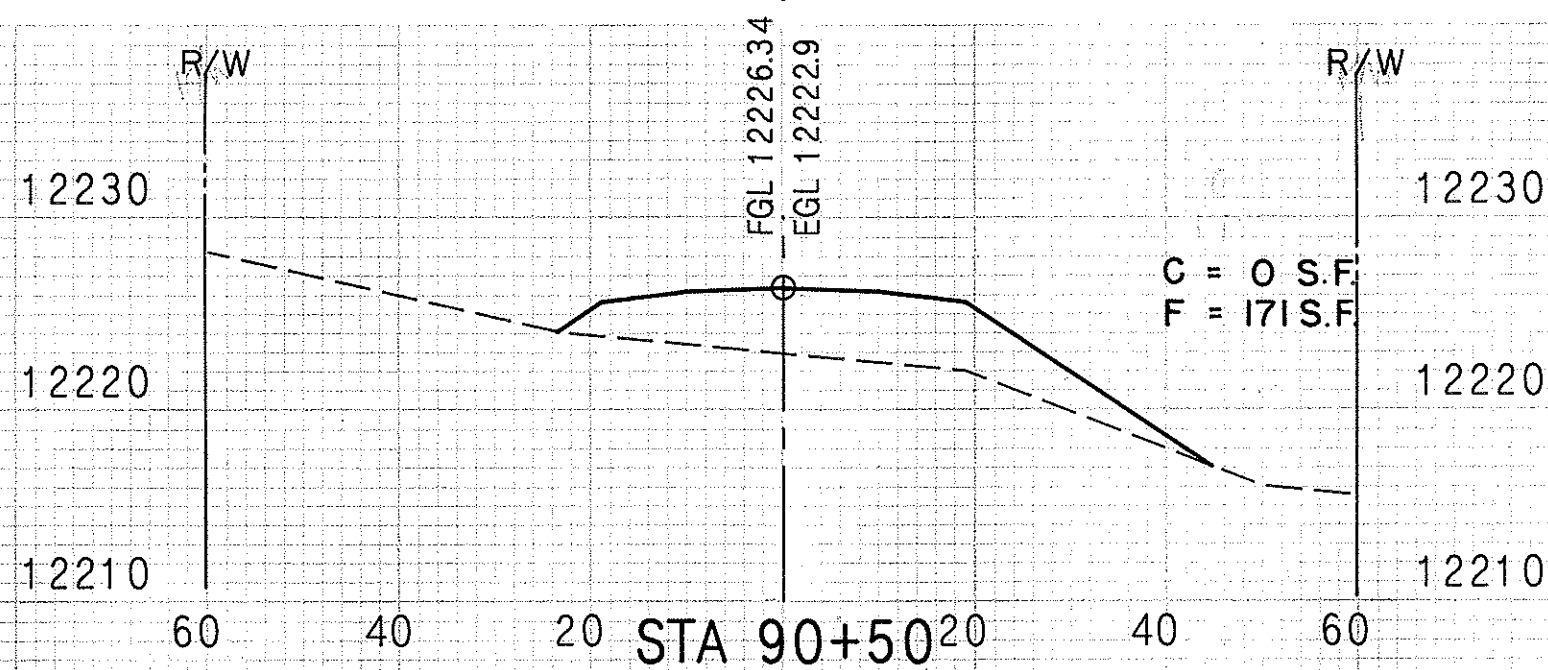
| FED. ROAD DIST. NO. | STATE | PROJECT NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-------------|-------------|-----------|--------------|
| HAWAII              | HAW   | HWY-H-01-86 | 1987        | 112       | 115          |



STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION  
**CROSS SECTIONS**  
 MAIN ACCESS ROAD  
 STA. 81 + 00 TO STA. 88 + 00  
 MAUNA KEA OBSERVATORY ACCESS ROAD  
 PHASE II-A

SCALE: HORIZONTAL: 1"=20'  
 VERTICAL: 1"=10'

| FED. ROAD DIST. NO. | STATE | PROJECT NO.  | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | HWY.-H-01-86 | 1987        | 113       | 115          |



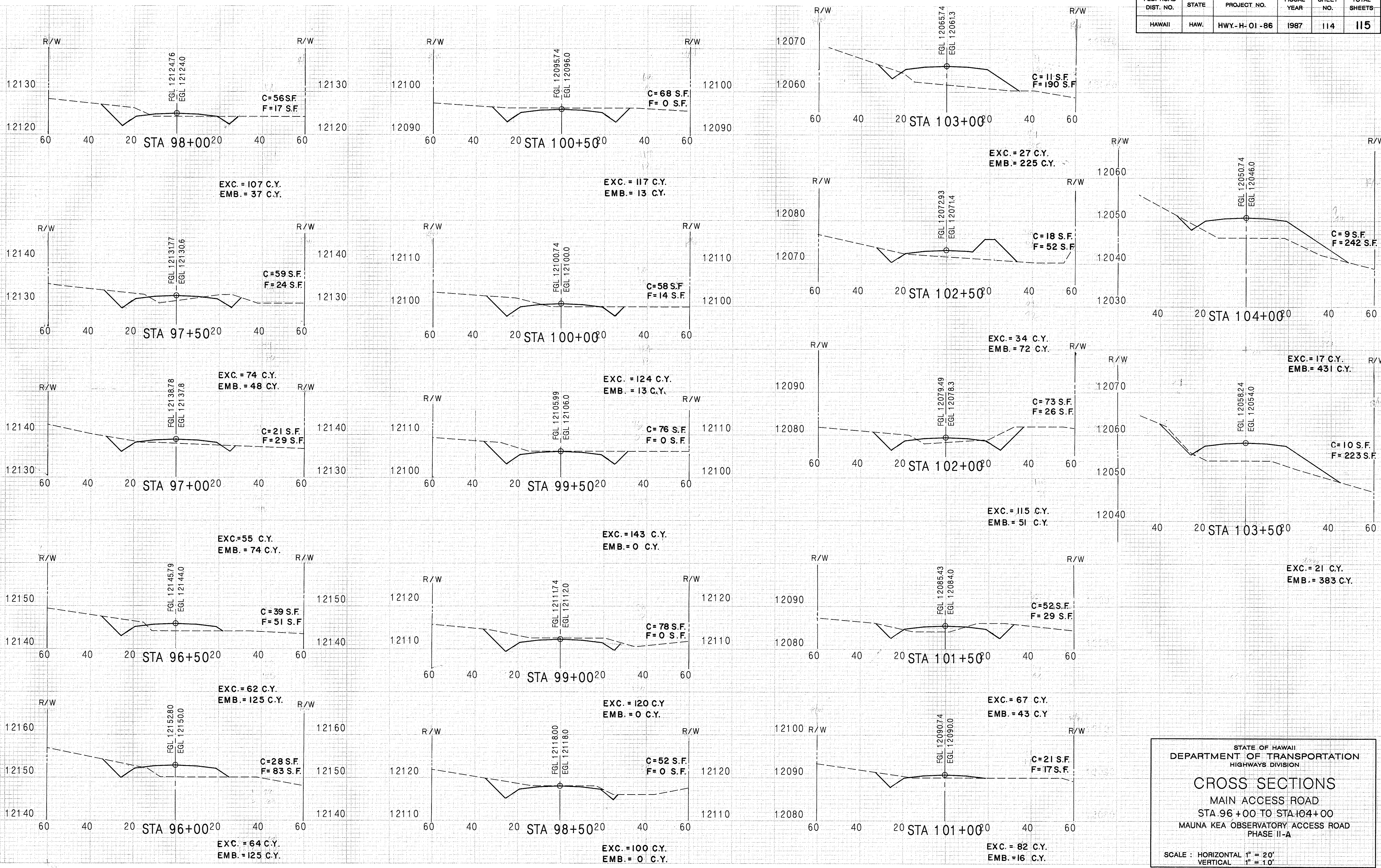
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  

### CROSS SECTIONS

  
MAIN ACCESS ROAD  
STA. 88+50 TO STA. 95+50  
MAUNA KEA OBSERVATORY ACCESS ROAD  
PHASE II-A  
SCALE : HORIZONTAL 1" = 20'  
VERTICAL 1" = 10'  
SHEET, No. 14 OF 16 SHEETS

NO. 1294-CROSS SECTION (10 x 10)  
MADE IN U.S.A.

| FED. ROAD DIST. NO. | STATE | PROJECT NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | HWY-H-01-86 | 1987        | 114       | 115          |



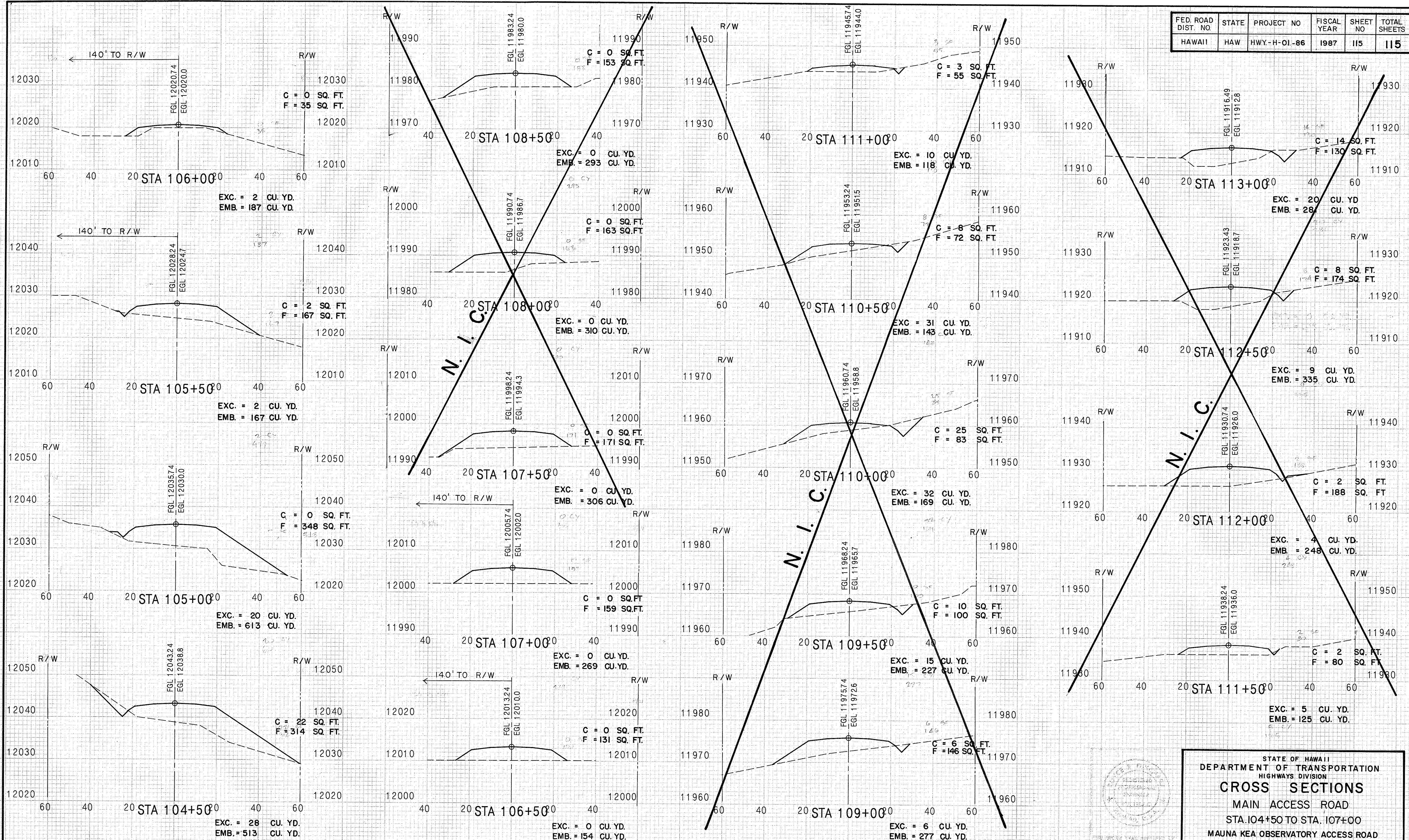
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**CROSS SECTIONS**  
MAIN ACCESS ROAD  
STA 96+00 TO STA 104+00  
MAUNA KEA OBSERVATORY ACCESS ROAD  
PHASE II-A

SCALE : HORIZONTAL 1" = 20'  
VERTICAL 1" = 10'

SHEET No. 15 OF 16 SHEETS

| FED. ROAD DIST. NO. | STATE | PROJECT NO  | FISCAL YEAR | SHEET NO | TOTAL SHEETS |
|---------------------|-------|-------------|-------------|----------|--------------|
| HAWAII              | HAW   | HWY-H-OI-86 | 1987        | 115      | 115          |



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**CROSS SECTIONS**  
MAIN ACCESS ROAD  
STA. 104+50 TO STA. 107+00  
MAUNA KEA OBSERVATORY ACCESS ROAD  
PHASE II-A  
SCALE: HORIZONTAL 1"=20'  
VERTICAL 1"=10'  
SHEET NO. 16 OF 16 SHEETS