

FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	F.A.P. 351-H & E.R.P. 13	1	

COLORADO

STATE HIGHWAY DEPARTMENT

PLAN AND PROFILE OF PROPOSED FEDERAL AID PROJECT NO. 351-H AND EMERGENCY RELIEF PROJECT NO. 13 STATE HIGHWAY NO. 102 YUMA COUNTY

INDEX OF SHEETS

1. SKETCH MAP AND TITLE SHEET.
2. TYPICAL CROSS SECTION AND SUMMARY OF QUANTITIES.
3. DETAILS OF BRIDGE, STA. 95+.
4. STANDARD WIRE CABLE GUARD FENCE. M20G
5. " WIRE FENCE (TREATED WOOD POSTS) AND MARKER POSTS. M24F M10A
6. " STRUCTURE NUMBER LETTERING. M2B
7. TYPICAL SIDE APPROACH ROADS/ROADWAY CONSTRUCTION TRAFFIC SIGNS.
8. ALIGNMENT PLAN AND PROFILE.

CONVENTIONAL SIGNS

- CENTER LINE OF SURVEY
- RIGHT OF WAY LINES
- TOWNSHIP OR RANGE LINES
- SECTION LINES
- ONE QUARTER SECTION LINES
- BARBED WIRE FENCE

SCALES OF ORIGINAL TRACINGS

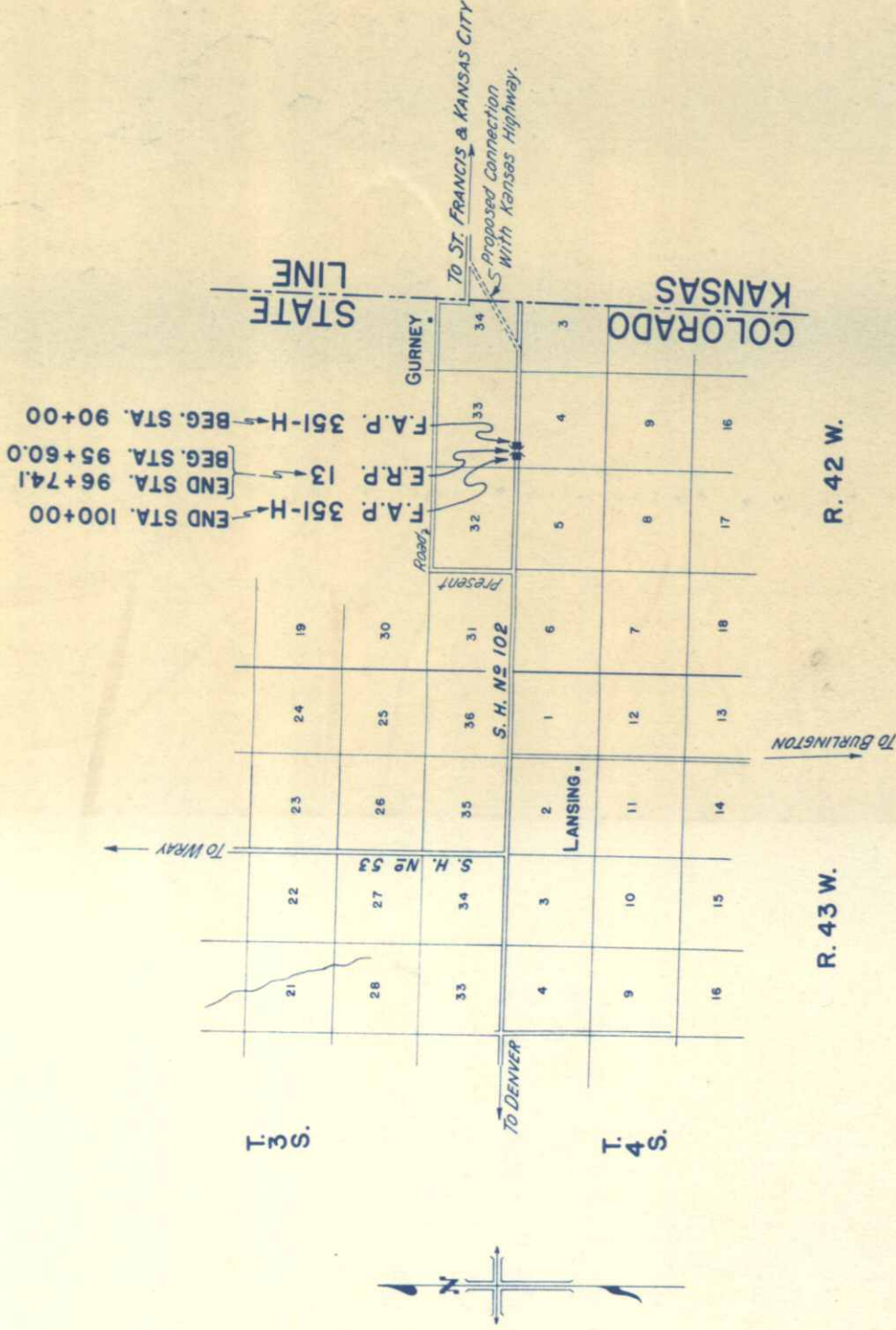
ON PLAN, 1 IN. = 100 FT.
ON PROFILE, 1 IN. = 100 FT. HORIZONTAL
1 IN. = 10 FT. VERTICAL

GRADE LINE ON PROFILE IS SHOWN AS GRADE OF FINISHED ROAD

F.A.P. 351-H { GROSS LENGTH OF PROJECT 1,000.0 FEET = 0.189 MI.
NET LENGTH OF PROJECT 885.9 FEET = 0.167 MI.

E.R.P. NO. 13 { GROSS LENGTH OF PROJECT 114.1 FEET = 0.022 MI.
NET LENGTH OF PROJECT

AS CONSTRUCTED PLANS
RETURN TO DIST. A DESIGN



NOTE
It is recommended that bidders on this Project go over the plan details with one of the following field representatives of this department:
R.J. Randall, Act'g. Division Engineer
D.S. Moore, Resident Engineer
Denver
Holyoke

RECOMMENDED FOR APPROVAL 3/14/36
APPROVED
ASSISTANT ENGINEER

RECOMMENDED FOR APPROVAL
APPROVED
STATE HIGHWAY ENGINEER

DIST. ENG. BUREAU PUBLIC ROADS
RECOMMENDED FOR APPROVAL

CHIEF ENG. BUREAU PUBLIC ROADS
APPROVED

DIRECTOR BUREAU PUBLIC ROADS

SCALE IN FEET
1 1/2 0 1 2 3

TYPICAL CROSS SECTION OF IMPROVEMENT AND SUMMARY OF QUANTITIES

GENERAL NOTES

This Project is to be constructed in conformity with the Standard Specifications of the Colorado State Highway Department, adopted August 1, 1935.

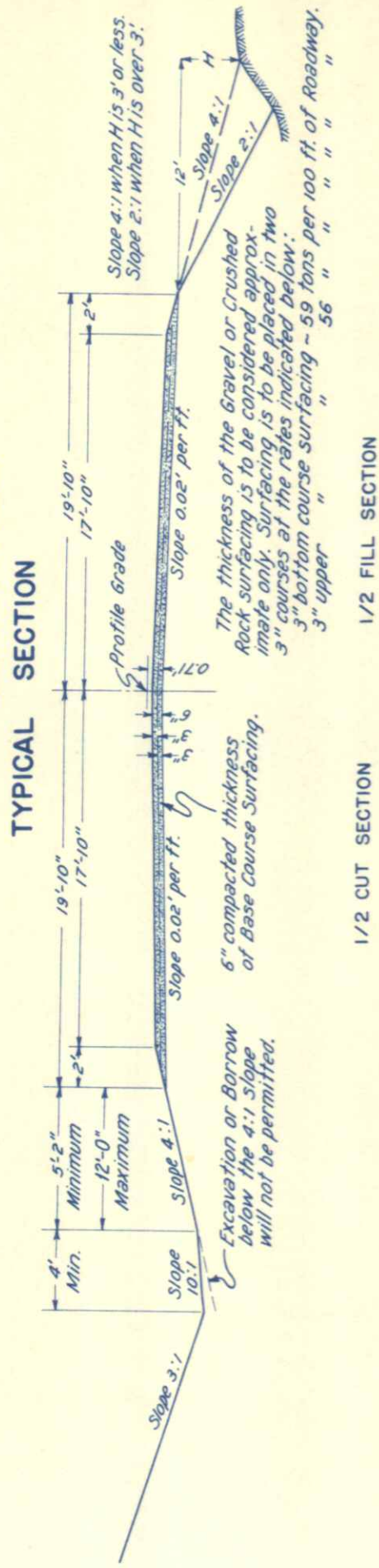
All quantities on preliminary plans are to be considered approximate only.

All roadway excavation required to construct the Project is to be obtained as indicated on the plans. Quantities involved beyond the limits of the ditch as shown on the Typical Section, either noted on Profile as "Borrow" or on Tabulation of Structures as "Embankment," are to be classified and paid for as "Unclassified Excavation."

These quantities are to be stated as part of the original excavation at locations indicated on the plans. Slope stakes, beyond the limits of the typical Section as shown, are subject to change by the Engineer to fit Embankment requirements actually met in construction.

Clearing and grubbing shall be of variable widths and be held to the minimum required for the construction of the road and channel improvements and to accommodate visibility. Ordinarily the clearing shall not extend more than 8 feet beyond the toes of fills or the tops of cut banks.

No overhaul will be paid for as a separate item on this project. The price bid per cubic yard for unclassified excavation shall include all hauling.



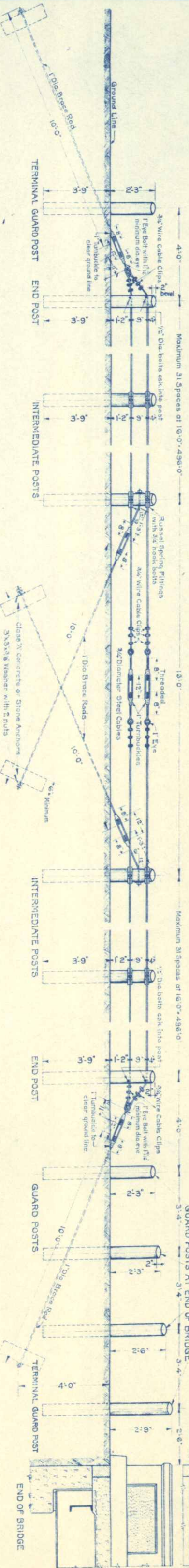
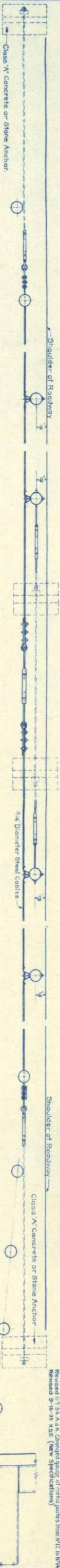
SUMMARY OF APPROXIMATE QUANTITIES

No.	ITEM	UNIT	ROADWAY F.A.R. 351-H	BRIDGE STA. 95+ E.R.R. 13	TOTALS
10a	Clearing & Grubbing Entire Project	Lump Sum	•	•	•
10b	Clearing & Grubbing Entire Project	Lump Sum		•	•
11a	Removal of Remaining Portions of Bridge	Lin. Ft.	500	•	•
12a	Removing Fence	" "	500		500
12b	" and Rebuilding Fence	" "	500		500
13c	Unclassified Excavation	Cu. Yd.	100	5600	5700
14b	Dry Common Excavation (Structural)	" "		200	200
26a	Gravel or Crushed Rock Surfacing	Ton	1020		1020
42a	Untreated Bridge Timber	M ft. bm		22	22
42b	Treated " "	" " "		495	495
43	Asphalt Plank Wearing Surface	Sq. Ft.		2815	2815
60a	Treated Timber Piling	Lin. Ft.		2252	2252
60c	Piling Cut-off-Treated	" "		10	10
60e	Metal Pile Shoes	Each		54	54
65	Dry Rubble Slope Paving - 18" thick	Sq. Yd.		176	176
74	Wire Cable Guard Fence	Lin. Ft.	232		232
76a	Barbed Wire Fence with Treated Wooden Posts	" "	300		300
81a	Project Markers	Each	2		2
89b	Drain Pipe (Timber Floor)	" "		10	10

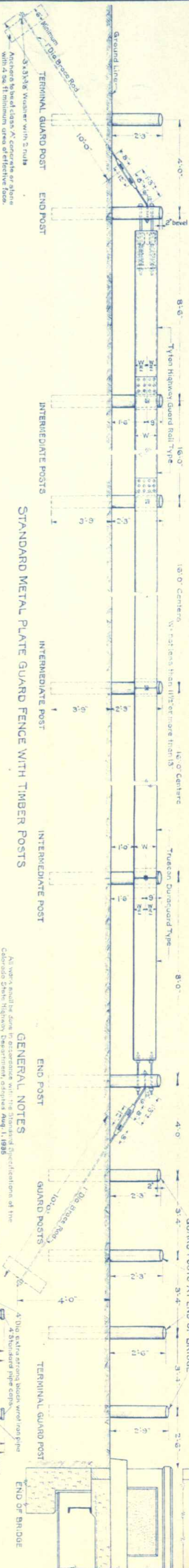
STANDARD M-20-G

FED. ROAD DIST. No.	STATE	PROJECT No.	SHEET No.	TOTAL SHEETS
3	COLO.	3514-13	7	

Revised 11-1-34 A.M. Changed gauge of metal plates from 1/16" to 1/8"
Revised 8-16-35 M.A.N. (New Specifications)



STANDARD WIRE CABLE FENCE WITH TIMBER POSTS
ITEM N° 12.



STANDARD METAL PLATE GUARD FENCE WITH TIMBER POSTS



GENERAL NOTES

All work shall be done in accordance with the Standard Specifications of the Colorado State Highway Department, adopted Aug. 1, 1935.
The length of guard fence to be used for and determined on plans shall be measured from terminal guard post to terminal guard post.
When continuous wire cable fence is more than 100' in length it shall have intermediate posts spaced complete with turnbuckles.

All wood posts shall be made from seasoned, straight, sound lodge pole pine, southern yellow pine or west coast Douglas fir.
No section of wood posts shall be less than 6" diameter.
Wood posts shall be entirely peeled and shored, thoroughly seasoned and dry, with barked tops and all holes drilled before treatment is applied.
All wood posts shall be pressure treated with creosote for the full length of posts, as provided for in the specifications.
Turnbuckles shall be made of steel and stamped in plumb and firm, to the lines and grades directed by the engineer.
All fittings, cables and hardware shall be hot dip galvanized steel with sizes as noted and located as shown.
Eye bolts shall be welded or drop forged.
Standard cast iron 10" O.D. washers shall be used under all bolt heads and nuts coming in contact with wood posts.
The contractor may use the Hubbard malleable offset casting fitting, the Blackburn U-bolt offset fitting, the standard Blackburn offset fitting, or other equivalent fitting providing a minimum offset of 2 1/2" from face of post to centerline of cable and approved by the engineer.
Weirlock fittings or other fittings equivalent to those shown on plans and approved by the engineer may be used in lieu of turnbuckles, eye bolts and clips shown on plans.
Only one style of offset fittings, turnbuckles, eye bolts and clips may be used on a project.
Metal plates for metal plate guard fence shall be not lighter than 1/4" gauge.
In the case of wire cable guard fence, the metal plates shall be not lighter than 1/8" gauge.
Types of plate guard fence approved by the engineer and complying with the specifications may be used. Only one type of plate guard fence may be used on a project.

ELEVATION OF ALL POSTS
IN MATERIAL
OTHER THAN SOLID ROCK

ELEVATION OF ALL POSTS
IN SOLID ROCK

DETAILS FOR WROTH IRON PIPE POSTS

DETAILS FOR WROTH IRON PIPE POSTS

DETAILS FOR WROTH IRON PIPE POSTS



SCALE OF LETTERING

SAMPLE BRIDGE NUMBER

o
e
ae
n
u
u
a
aa
ai
i

GENERAL NOTES

ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF THE COLORADO STATE HIGHWAY DEPARTMENT, ADOPTED AUG. 1, 1935.

THE STRUCTURE NUMBER SHALL BE STENCILED ON THE RIGHT HAND SIDE OF EACH BRIDGE END AS SHOWN ON THIS STANDARD AND AS SPECIFIED.

THE CORRECT NUMBER FOR EACH BRIDGE IS SHOWN IN THE LOWER RIGHT HAND CORNER OF THE DETAIL SHEETS FOR THAT PARTICULAR BRIDGE.

THE SIZE, SHAPE AND SPACING OF THE LETTERS AND FIGURES SHALL BE IDENTICAL WITH THE FULL SIZE SHOWN ON THIS SHEET. ADDITIONAL COPIES OF THIS FULL SIZE SHEET CAN BE OBTAINED FROM THE DEPARTMENT WITHOUT CHARGE.

BEFORE STENCILING THE NUMBER ON THE BRIDGE, THE SURFACE MUST BE THOROUGHLY CLEANED OFF. THE FOUNDATION SHALL BE PAINTED ON CONCRETE SURFACES, ON COARSE GRAVEL OR ON ROCK. THE BRIDGE NUMBER SHALL BE PROPERLY PLACED ON THE TIMBER HANDRAILS. THE WHITE CONCRETE SURFACE SHALL BE PROPERLY PREPARED BY PLACING THE WHITE RECTANGLE UNLESS AN APPROVED WHITE CONCRETE PAINT IS USED.

TWO COATS OF ACCEPTABLE WHITE PAINT SHALL BE APPLIED TO THE CONCRETE IN A NEAT RECTANGULAR SHAPE AND EXTEND THREE INCHES BEYOND THE LIMITS OF THE STRUCTURE NUMBER.

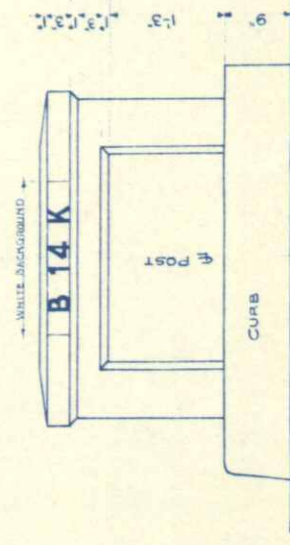
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SHALL BE CAREFULLY STENCILED ON IT WITH TWO COATS OF ACCEPTABLE WHITE PAINT. THE BRIDGE NUMBER SHALL BE CAREFULLY STENCILED ON IT WITH TWO COATS OF ACCEPTABLE WHITE PAINT. THE BRIDGE NUMBER SHALL BE CAREFULLY STENCILED ON IT WITH TWO COATS OF ACCEPTABLE WHITE PAINT. THE BRIDGE NUMBER SHALL BE CAREFULLY STENCILED ON IT WITH TWO COATS OF ACCEPTABLE WHITE PAINT.

COAT DARK" AS SPECIFIED UNDER ITEM 411 IN BRIDGES. THE BRIDGES OF THE STENCILED LETTERS AND FIGURES SHALL BE CAREFULLY FILLED IN BY HAND TO MAKE SOLID FIGURES. SUFFICIENT TIME BETWEEN SUCCESSIVE COATS SHALL BE ALLOWED TO PERMIT THE PRECEDING COAT TO DRY.

THE BRIDGE NUMBER SHALL BE STENCILED ON THE BRIDGE IN THE CORRECT STRUCTURE NUMBER. THE BRIDGE NUMBER SHALL BE STENCILED ON THE BRIDGE IN THE CORRECT STRUCTURE NUMBER. THE BRIDGE NUMBER SHALL BE STENCILED ON THE BRIDGE IN THE CORRECT STRUCTURE NUMBER. THE BRIDGE NUMBER SHALL BE STENCILED ON THE BRIDGE IN THE CORRECT STRUCTURE NUMBER.

IN THE ORIGINAL CONTRACT TERMS.



TYPICAL CONCRETE ENDPOST:



- TYPICAL TIMBER WING

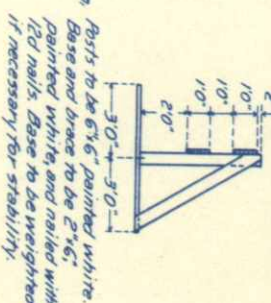
**COLORADO
STATE HIGHWAY DEPARTMENT
STANDARD STRUCTURE
NUMBER LETTERING.**

Near	Sta.	Sec.	T.	R.
Designed by C.H.D.	Approved by <i>Paul Bailey</i>			
Made by G.H.D.	Bridge Engineer			
Check Design	Date: <i>Feb. 6, 1935</i>			
Check Detail				

STANDARD
M-2-B

FED. ROAD DIST. NO.	STATE	FED-ER PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLOR.	351H-13	7	

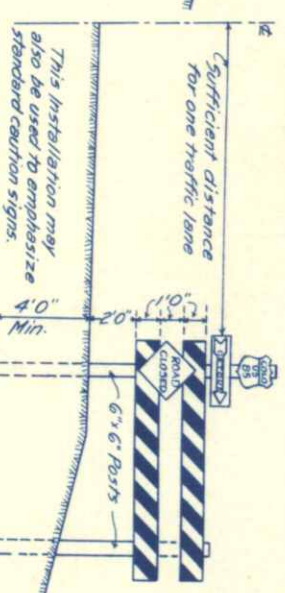
END VIEW OF
PORTABLE BARRICADE



This distance to be governed by the maximum day and night visibility which is influenced by grade, curvature, interference of local signs, shrubbery, fences, etc.

Exact location is to be stamped by the Engineer, but in no case shall it be more than 8 feet from the travelled zone.

Diagram illustrating a T-intersection. A vehicle is shown in the through lane, and another vehicle is shown in the turning lane. The turning lane is labeled "Sufficient distance for one traffic lane". The through lane is labeled "Through lane".



8' 5' 6'

SLOW
ROAD UNDER
CONSTRUCTION

Sign to be made on 1" material with at least three cleats on the back. Background to be white, SLOW and underline to be red, and other lettering to be black. Sign to be set on 2-6" x 6" posts 4 ft. in the ground.

[illegible]

¹/₂ Contractor shall be required to have at least two such arrows for use on barricades at the ends of each project. Reflector buttons shall be of a type and size, and the sign shall be subject to Department approval.

TYPICAL METHOD OF MARKING HIGHWAY TRAFFIC PERMITTED ON ROAD UNDER CONSTRUCTION

Diagram illustrating the typical method of marking highway traffic permitted on road under construction. The diagram shows a road with various construction zones and traffic flow directions. Key features include:

- Top Section:** Road under Construction. Stretch of Fresh Gravel - Aged Loose Gravel. Slow.
- Left Side (Top):** Traffic using New Grade Regal, New Grading Sign.
- Right Side (Top):** Loose Gravel.
- Center:** UNDER CONSTRUCTION - Placing C.M.P. New Grade, Traffic Travelling in Borrow Pits (Aged as shown).
- Left Side (Middle):** Detour, Detour Arrow, Slow.
- Right Side (Middle):** Detour Arrows at right angles, Turn r., Slow.
- Left Side (Bottom):** New Grading, Detour Arrow, Slow.
- Bottom:** Soft Shoulders, Road under Construction, Slow.
- Far Left (Bottom):** New Gravel Grading.

[illegible]

All Work shall be in accordance with the Standard Specifications of the Colorado State Highway Department adopted August 1, 1935. Whenever traffic is permitted on a road while under construction, the Contractor shall at all times adequately and appropriately mark the work and all hazards on the Project with well painted, well maintained barricades, and standard caution and warning signs. The Contractor shall use mark with standard directional signs any places where the direction of the flow of traffic is not plain. Whenever traffic is prohibited from a Project under construction, the Detour will be marked by the Department and the barricades of either All signs and barricades shall be immediately moved, added to, removed, or changed to appropriately mark hazards, or conditions altered, corrected or changed by construction progress. The Contractor shall be responsible for the maintenance of all signs and barricades.

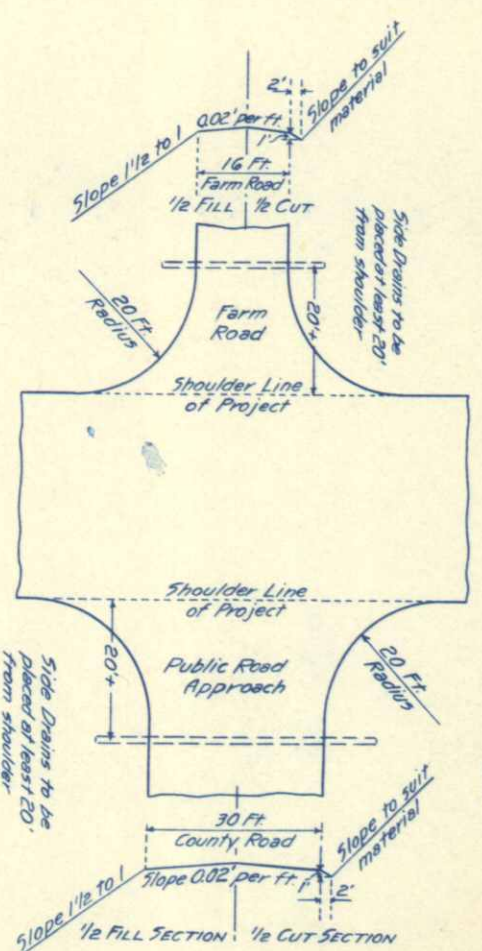
COLORADO

STATE HIGHWAY DEPARTMENT
TYPICAL

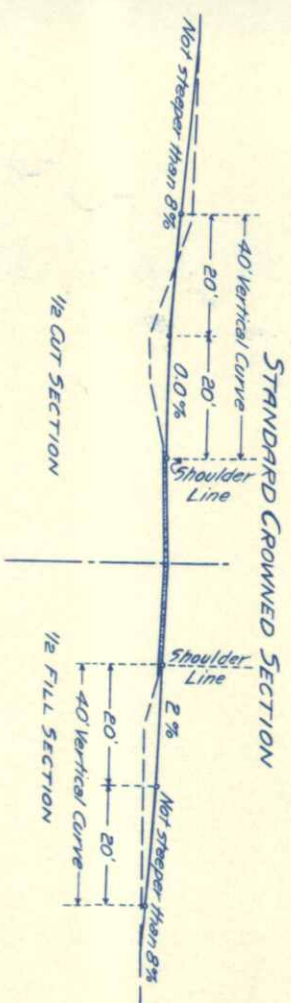
SIDE APPROACH ROADS

TRAFFIC SIGNS	
Designed by J.S.M. Made by K.A.N. Check *J.S.M. Check K.A.N.	Approved by <i>J.S.M.</i> Date: Aug. 20, 1935

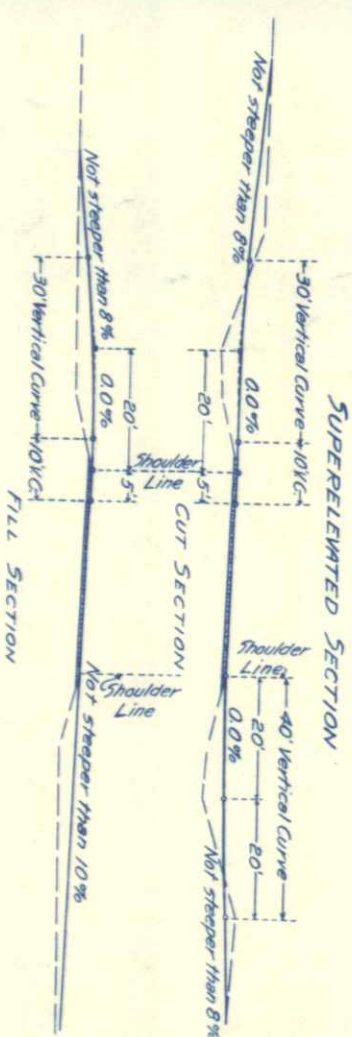
TYPICAL PLAN FOR SIDE APPROACH ROADS



STANDARD CROWNED SECTION



SUPERELEVATED SECTION



GENERAL NOTES ON APPROACHES

1. a maximum grades shown as to be the limiting grades for all except extreme cases.

When the length of the approach as determined by the intersection of these grades with the natural ground is such as to damage the property so served, or cause unreasonable conditions, the grades may be modified.

In such cases, methods used, and maximum grades, shall be as indicated on the plans, or provided by west order.

The Highway Department will furnish all standard signs not required to be furnished by the Contractor.

FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	F.A.P. 351-H	8	
R.P. 4-2-36 - JWS				

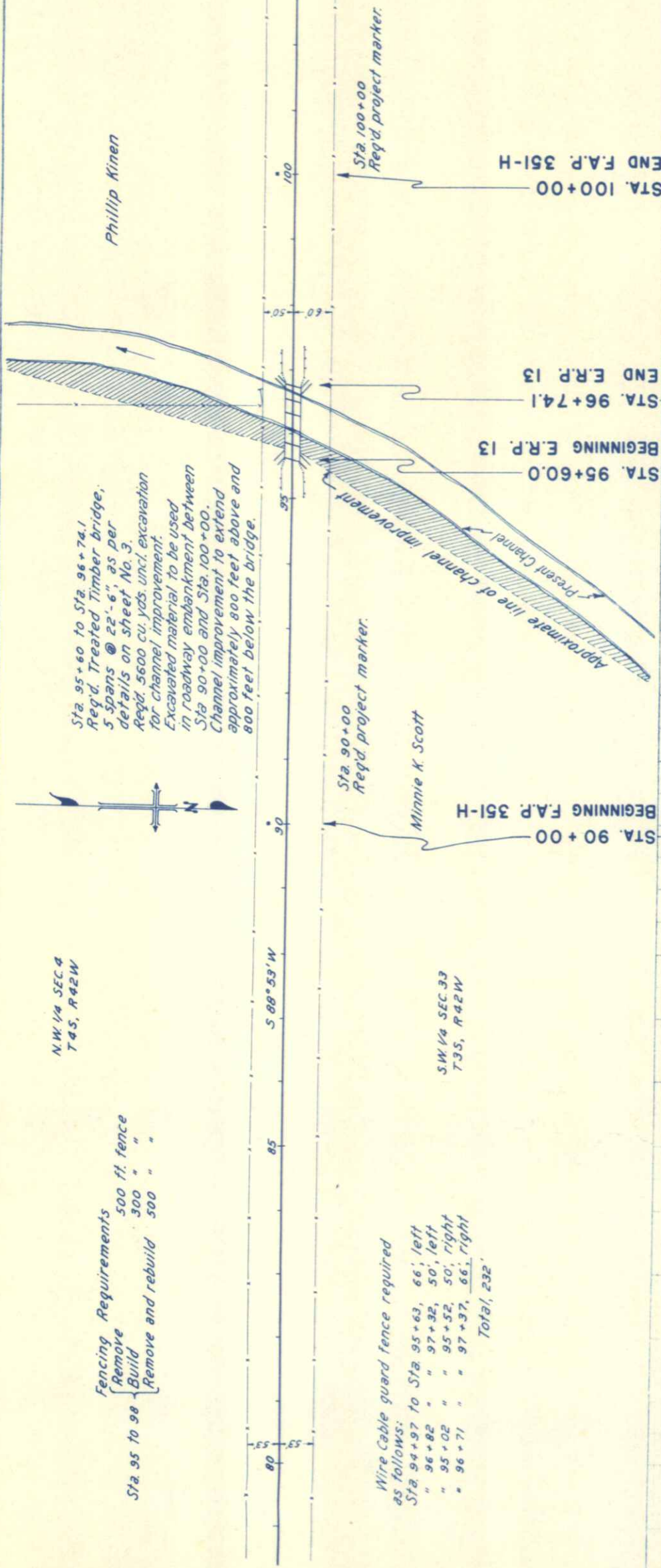
N.E. 1/4 SEC. 5

Ira Allen

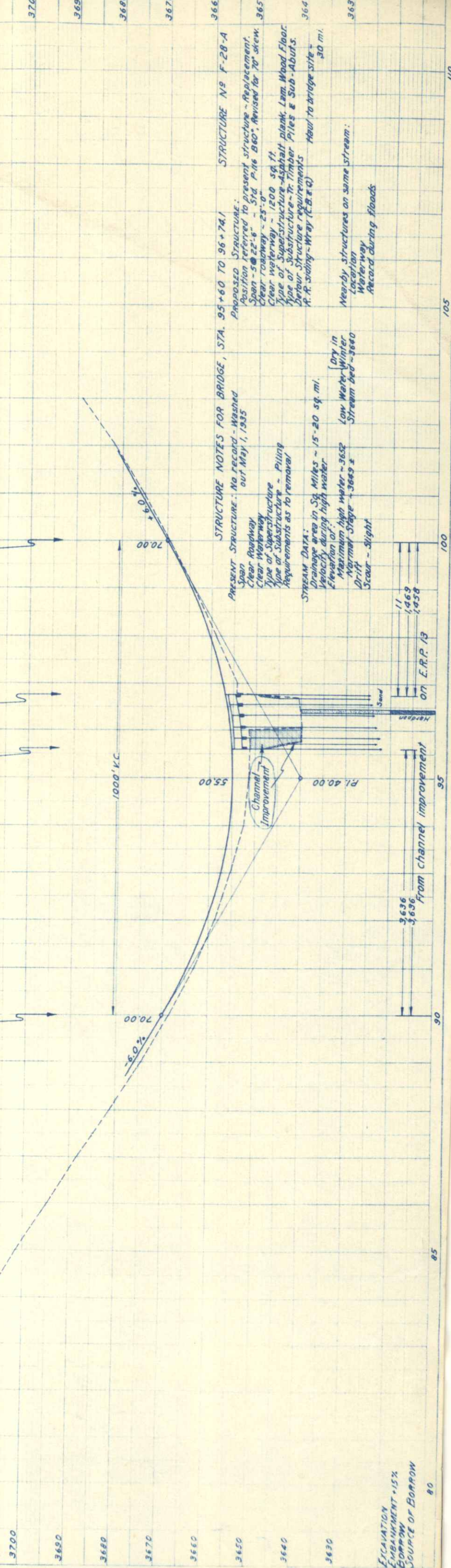
N.W. 1/4 SEC. 4
T.4S, R.42W

Fencing Requirements
Sta. 95 to 98
Remove 500 ft. fence
Build 300 " "
Remove and rebuild 500 " "

Wire Cable guard fence required
as follows:
Sta. 94+97 to Sta. 95+63, 66', left
" 96+82 " " 97+32, 50', left
" 95+02 " " 95+52, 50', right
" 96+71 " " 97+37, 66', right
Total, 232'



TYPICAL CROSS SECTION OF CHANNEL IMPROVEMENT



EXCAVATION
EMBANKMENT +15%
BORROW
SOURCE OF BORROW

80

85

90

95

100

105

110