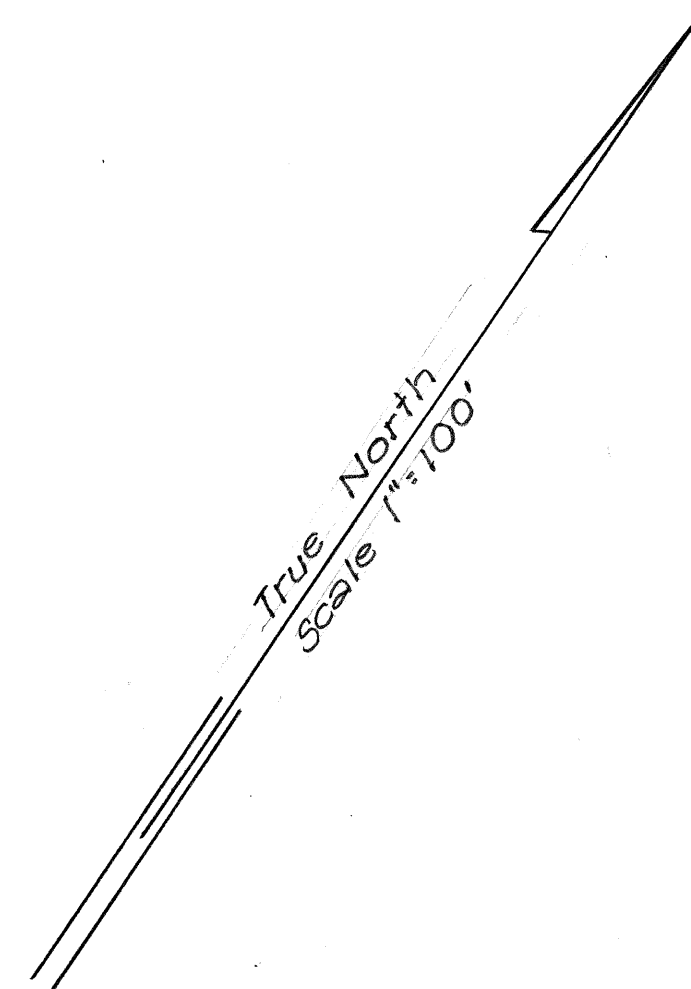


GENERAL NOTES:

1. All existing culverts shall be extended unless noted otherwise. See culvert summary & x-sections for exact locations and estimated quantities. Deflections shown are approx. Contractor shall verify same in field.
2. Removal of existing headwalls and drop intakes, structure excavation and backfill for extension of existing culverts will not be measured and paid for directly, but will be considered incidental to the respective contract item for CGMP culverts.
3. Structure excavation and backfill for new CRM headwalls and drop intakes will be considered incidental to the contract item for CRM.
4. Ashlar header stones to be removed may be used for CRM headwall.
5. All new and existing drainage structures and channels within the limits of the R/W shall be cleaned out as directed by the Engineer. Payment incidental to Item No. 50.
6. All shoulders throughout the length of this project are to be graded and compacted to provide the proper cross-section. Payment incidental to "Roadway Excavation."
7. In lieu of overhaul, embankment material may be obtained from elsewhere within the project area with the approval and under the direction of the Engineer. However, no payment will be made for any work done under this item.
8. See Cross-Section sheets for extra widening of shoulders.
9. Install Reflector Markers where shown on plans. •RM-1's. RM-3's designated. Exact location to be designated in field by Engineer.
10. All guard rails affected by construction shall be removed.

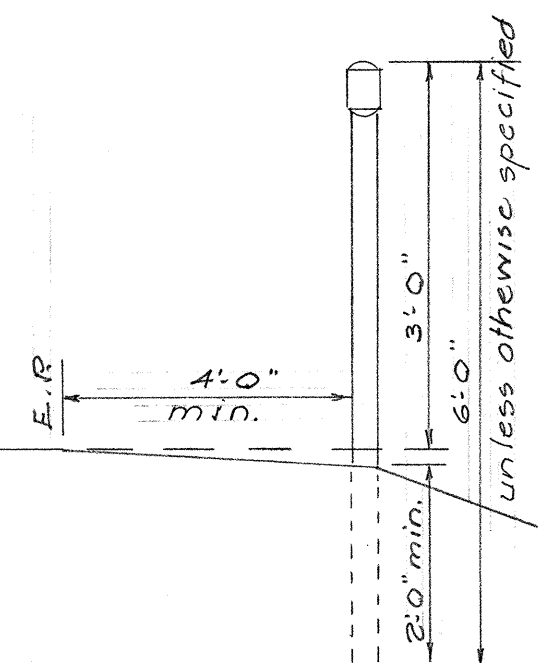


Improvement No. 19

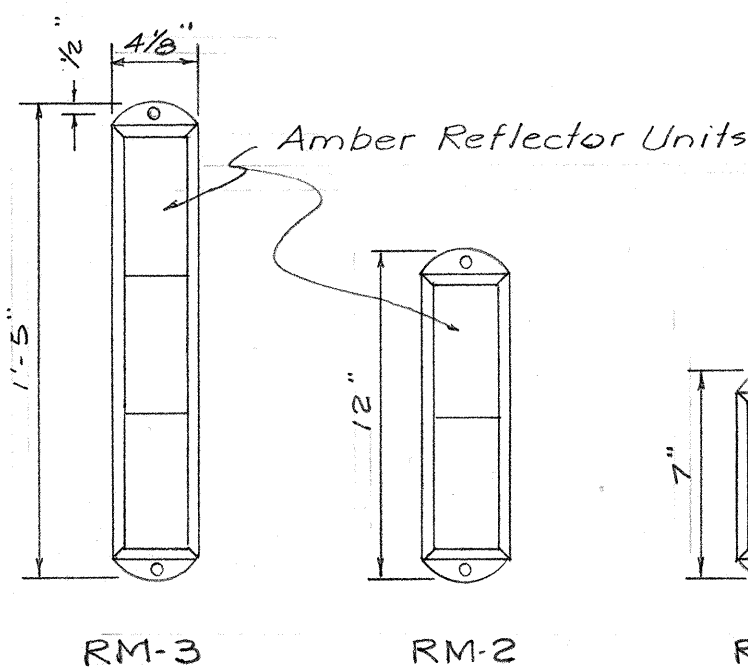
Length = 2642 l.f.
Pav't Area = ~~3110~~ s.y. 3106
B.C. Area = ~~3275~~ s.y. 3266
Exc. = ~~1306~~ c.y. 1333
Emb. = 1244 c.y.

Culvert Summary

Station	Dia.	Lgth.	CRM in c.y.	H.W.	D.I.
1+14	18"	16'	0.98		1.87
4+04	36"	26'	2.94		
7+78	48"	8'	5.46		
13+49	18"	14'	0.98		
15+77	18"	16'	0.98		
19+48	48"	16'	5.00 4.03		
20+52	48"	14'	5.46 4.49		

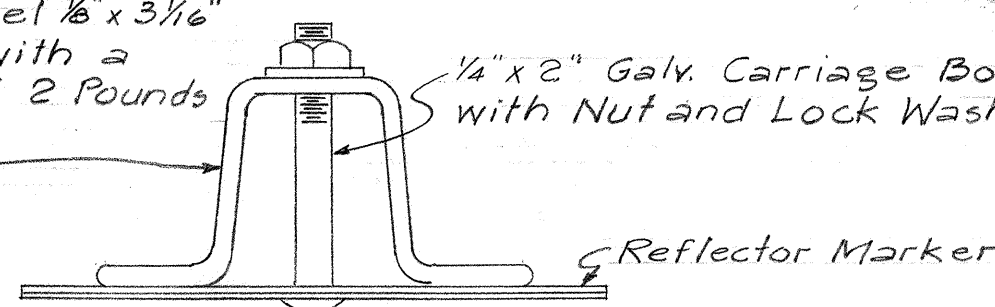


ROAD DELINEATOR
scale: 1/2" = 1' 0"



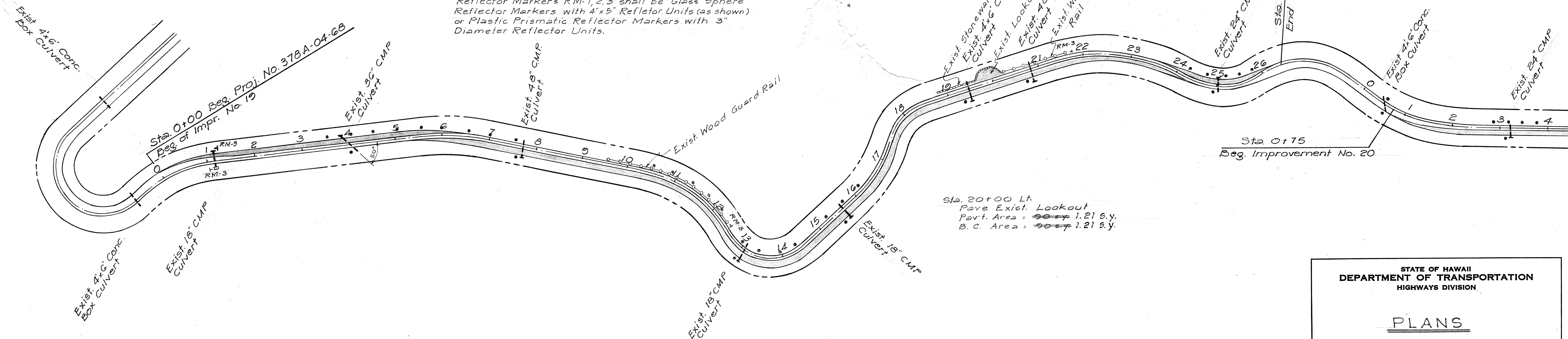
REFLECTOR MARKERS

Galv. Flanged Channel 1/8" x 3 1/4"
Rolled Section Post with a
Minimum Weight of 2 Pounds
per foot.



TYPICAL SECTION

Note:
Reflector Markers RM-1, 2, 3 shall be Glass Sphere Reflector Markers with 4"x5" Reflector Units (as shown) or Plastic Prismatic Reflector Markers with 3" Diameter Reflector Units.



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PLANS
HALEAKALA HIGHWAY

PROJ. NO. 378A-04-68

SCALE AS SHOWN

SHEET No. 1 OF 3 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	378A- 04-69	1968	4	18

Sta. 3+00 to 3+50 Lt.
Install Reflector Markers (RM-1)
2 Ea.

Existing U. H. Gravitational Study Marker
Not to be disturbed

True North
Scale 1"=100'

Exist. 24" C.M.P.
Col/v't.

Bridge No. 5

Exist. 18" C.M.P.
Culvert

Exist, 24" C.M.P.

EXIS

Exist. 18" CMP
Culv't.

Existivt.
Culiv.

Culvert Summary

Station	Dis.	19th	CRN in c.y. H.W.
5+03	18"	3' 0"	0.28 0.28
11+85	24"	2' 6"	1.47
15+06	18"	3' 0"	0.99 3.08
21+15	15"	3'	0.28 0.28
22+1	36"	16'	2.24
26	36"	14'	2.24
324	24"	10'	1.47
364	24"	13'	2.18 0.28
40+51		30'	0.28
43+02	10'	8'	0.28 3.44
47+103	18"	10'	0.28 0.28
55+46	24"	24'	0.28 0.28
62+30	3x5'	26'	4.61
65+61	36"	12'	0.28 0.28
70+32	24"	14'	0.28 3.28
80+80	18"	10'	0.28

Improvement No. 21

Gross Length = 7262 l.f.
 Bridge over 20' = -25 l.f.
 Net Length = 7237 l.f.
 Pav't. Area = ~~9550~~ sq. 9538
 P.C. Area = ~~10036~~ sq. 10060
 Exc. = ~~1250~~ cu. 4293
 Emb. = 7775 cu.

Improvement No. 20

Gross Length	=	1922 l.f.
Bridge over 20'	=	-81 l.f.
Net Length	=	1841 l.f.
Pav't Area	=	1984 sq.
P.C. Area	=	2086 sq.
Exc.	=	300 cu. 2999
Emb.	=	238 cu.

Culvert Summary

Station	Dia.	Lgth	CRM in c.y.	
			H.W.	D.I.
3 + 21	24"	12'	1.47	
10 + 87	24"	14'	1.47	2.30
15 + 20	18"	12'	0.98	
18 + 68	24"	14'	1.47	



ROAD
NARROWS



3" I.D. Galv. Pipe

Edge of Pav't.

Edge of Pav't.

3/8" x 12" bar welded to
pipe

5 3/8" x 12" bar welded to pipe

Exist. Metal Guard Rails

TYPICAL SIGN INSTALLATION
NOT TO SCALE

NOT TO SCALE

Exist. 18" C.M.P.
Culv't

Exist. 48" C.M.P.
CULV't

Exist. 36 C.M.P.
Cultv't.

36" C.M.F.
Exist. 14.
Culv.

Exist. Cult.

18" C.M. P
Exist. 't.
Cult. v.

Exist. θ C.N.T.

Exist. Cult. Cont.

Exist: 18" CMP

Exist. 18" C.M.

- Const. Drainage Swale
Payment Incidental to
Roadway Excavation

Exist. Cattle Guard to be widened
and reconstructed
For Details See Sheet No.

Relocate Exist. Cattle Gate.
Payment incidental to Item No. 92.01

**STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION**

PLANS

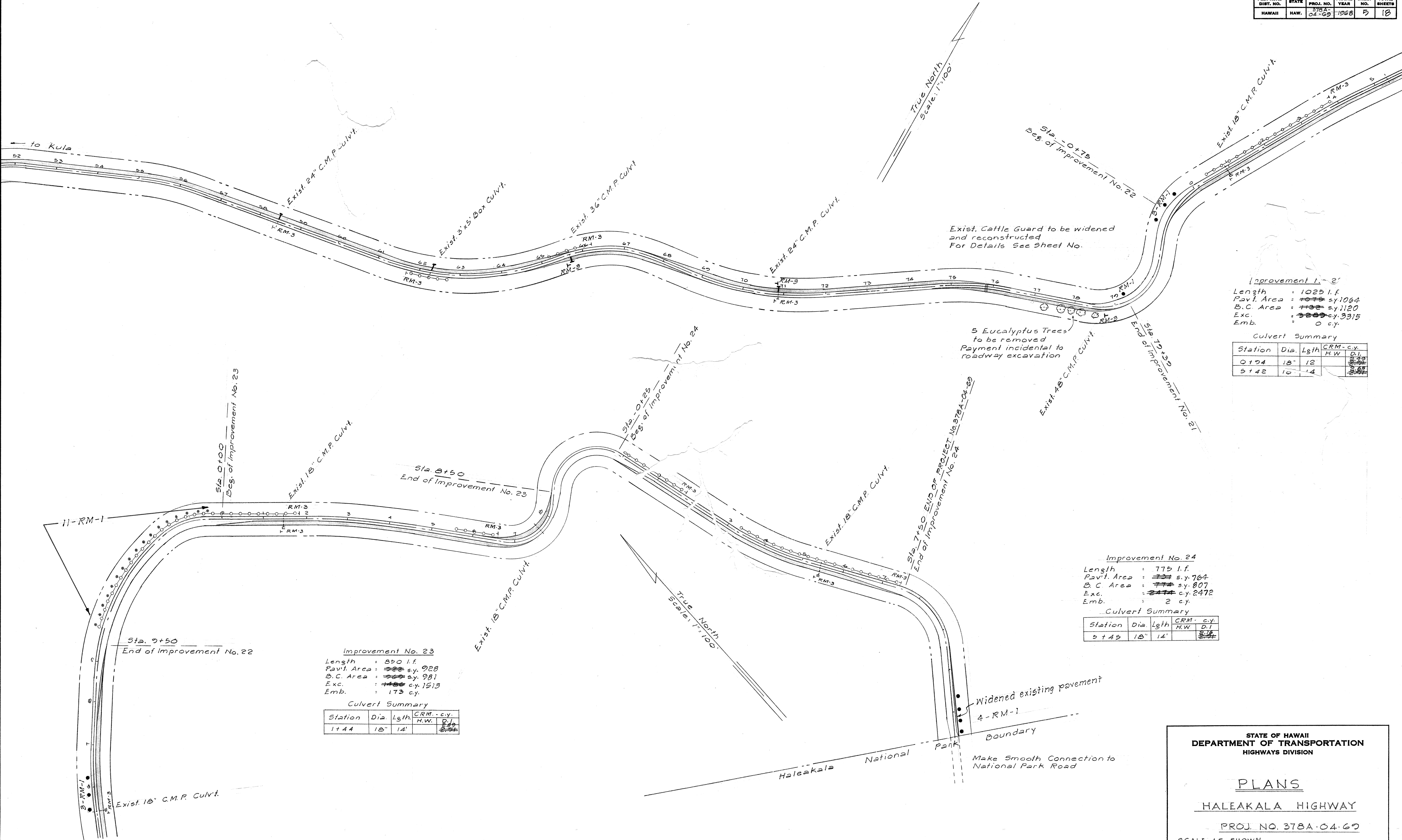
HALEAKALA HIGHWAY

PROJ. NO. 378A-04-69

SCALE AS SHOWN

SHEET No. 2 OF 3 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	378A-04-69	1968	5	18



Improvement 1-2
Length : 1025 l.f.
Pavt. Area : ~~775~~ s.y. 1064
B.C. Area : ~~713~~ s.y. 1120
Exc. : ~~328~~ cy. 3315
Emb. : 0 cy.

Culvert Summary

Station	Dia.	Lgth.	CRM - c.y.
0+04	18"	12	2.79
5+42	10"	14	2.24

Improvement No. 24
Length : 775 l.f.
Pavt. Area : ~~775~~ s.y. 764
B.C. Area : ~~775~~ s.y. 807
Exc. : ~~247~~ cy. 2472
Emb. : 2 cy.

Culvert Summary

Station	Dia.	Lgth.	CRM - c.y.
5+45	18"	14	2.79

Improvement No. 23
Length : 850 l.f.
Pavt. Area : ~~555~~ s.y. 928
B.C. Area : ~~555~~ s.y. 981
Exc. : ~~148~~ cy. 1513
Emb. : 173 cy.

Culvert Summary

Station	Dia.	Lgth.	CRM - c.y.
1+44	18"	14	2.79

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PLANS
HALEAKALA HIGHWAY
PROJ. NO. 378A-04-69
SCALE AS SHOWN

SHEET No. 3 OF 3 SHEETS

ORIGINAL PLAN	DATE
DESIGNED BY	
TRACED BY	
NOTED BY	
CHECKED BY	
NO.	