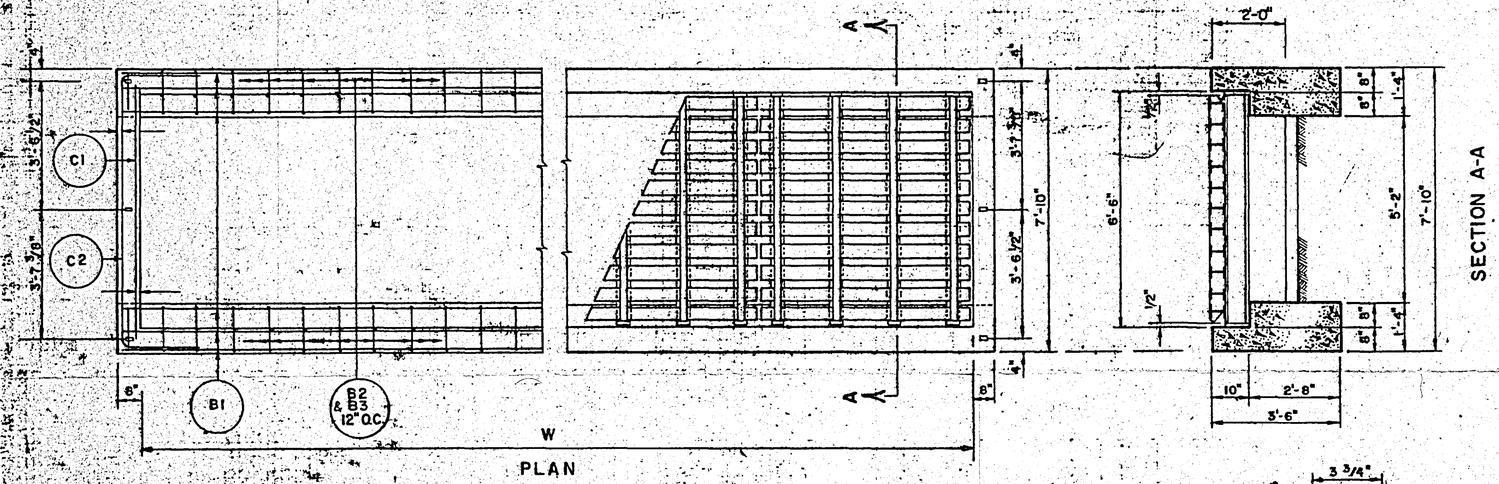
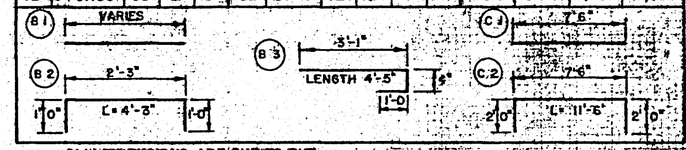
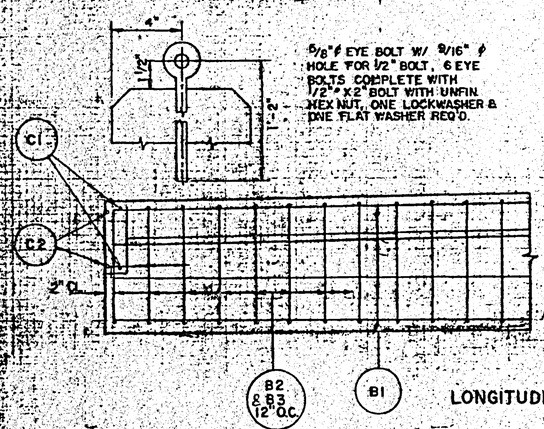


* CALCULATED ON THE BASIS OF FOOTINGS PARALLEL TO THE CROWN OF THE ROAD

LINE	ROADWAY WIDTH	W (FT)	GRILL UNITS REQ'D 8 FT	GRILL UNITS REQ'D 10 FT	REINFORCING STEEL # 4 BARS B1 NO	B1 LGTH	B2 NO	B3 NO	C1 NO	C2 NO	QUANTITIES EXC. CU. YD.	CONC.* CU. YD.	REINF. STEEL	STRUC. STEEL
1	12'	16	2	0	16	17'-0	36	36	4	4	22.4	5.844	441	2,498
2	14' OR 16'	20	0	2	16	21'-0	44	44	4	4	27.0	7.062	530	3,066
3	18' OR 20'	24	3*	0	16	25'-0	52	52	4	4	31.6	8.280	619	3,632
4	22' OR 24'	28	1*	2*	16	29'-0	60	60	4	4	36.3	9.498	708	4,200
5	26' OR 28'	32	4	0	16	33'-0	68	68	4	4	40.9	10.716	797	4,766
6	30' OR 32'	36	2	2	16	37'-0	76	76	4	4	45.5	11.934	886	5,334
7	34' OR 36'	40	0	4	32	21'-0	84	84	4	4	50.2	13.152	986	5,902
8	38' OR 40'	44	3*	2*	32	23'-0	92	92	4	4	54.8	14.370	1,075	6,468
9	42' OR 44'	48	6	0	32	25'-0	100	100	4	4	59.4	15.588	1,164	7,034
10	46' OR 48'	52	4	2	32	27'-0	108	108	4	4	64.0	16.807	1,253	7,602
11	50' OR 52'	56	2	4	32	29'-0	116	116	4	4	68.7	18.025	1,342	8,170
12	54' OR 56'	60	0	6	32	31'-0	124	124	4	4	73.0	19.243	1,431	8,738

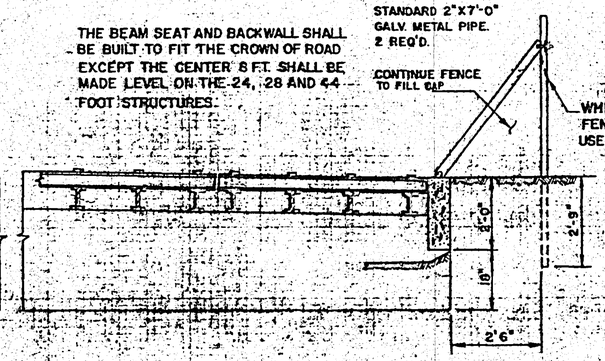


ALL DIMENSIONS ARE OUT TO OUT

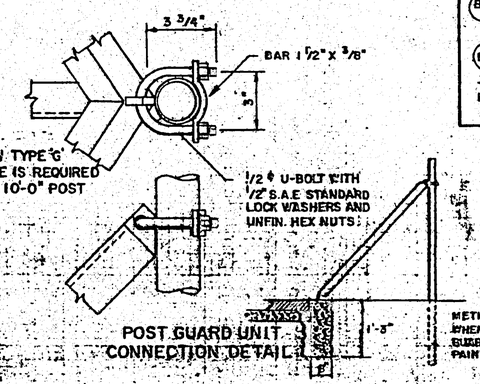


LONGITUDINAL SECTION

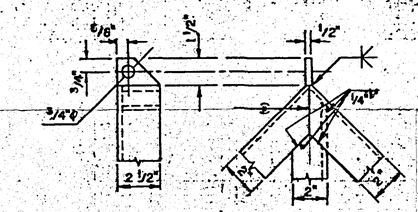
THE BEAM SEAT AND BACKWALL SHALL BE BUILT TO FIT THE CROWN OF ROAD EXCEPT THE CENTER 8 FT. SHALL BE MADE LEVEL ON THE 24, 28 AND 44 FOOT STRUCTURES.



NOTE: DRAINAGE SHALL BE PROVIDED BY A METHOD DETERMINED BY THE ENGINEER. C.M.P. DRAINS SHALL BE A MINIMUM OF 12" DIA.



POST GUARD UNIT CONNECTION DETAIL



GENERAL NOTES

MATERIALS, CONSTRUCTION AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE STATE OF UTAH STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND SUPPLEMENTS THERETO WHICH ARE IN EFFECT ON THE DATE OF REQUEST FOR BIDS.

ALL REINFORCING STEEL SHALL BE DEFORMED BILLET STEEL BARS CONFORMING TO ASTM DESIGNATION A 615-68, GRADE 60.

ALL STRUCTURAL STEEL SHALL BE STRUCTURAL CARBON STEEL CONFORMING TO AASHTO DESIGNATION M-183 (ASTM A-36) AND SHALL BE PAINTED OR GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH AASHTO DESIGNATION M-111 (ASTM A-123).

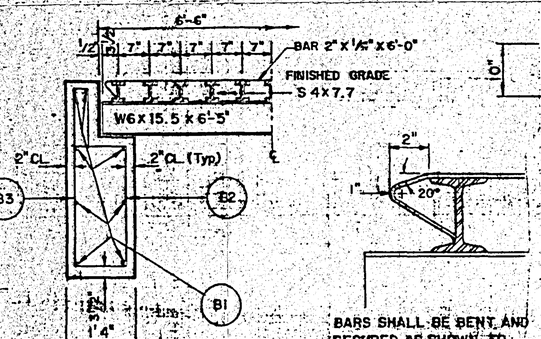
TYPE II CEMENT (LOW ALKALI) REQUIRED. CONCRETE SHALL BE CLASS AA(AE)

DESIGN DATA

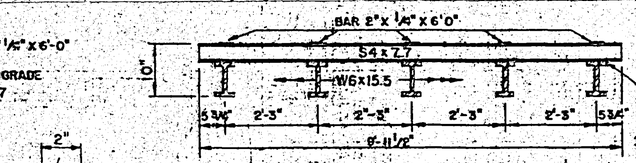
H20-44 LOADING IN ACCORDANCE WITH AASHTO SPECIFICATIONS OF 1973.

fc = 1400 psi
fs = 24,000 psi (REINFORCING STEEL)
fs = 20,000 psi (STRUCTURAL STEEL)
n = 8

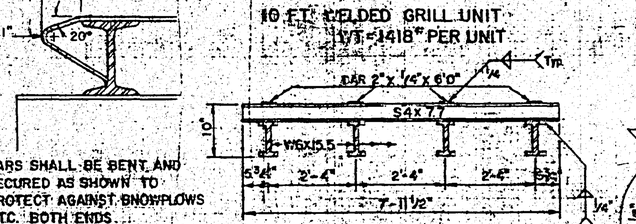
As Constructed
Creamer & Noble
CONSULTING ENGINEERS



HALF SECTION A-A

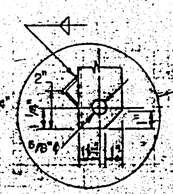


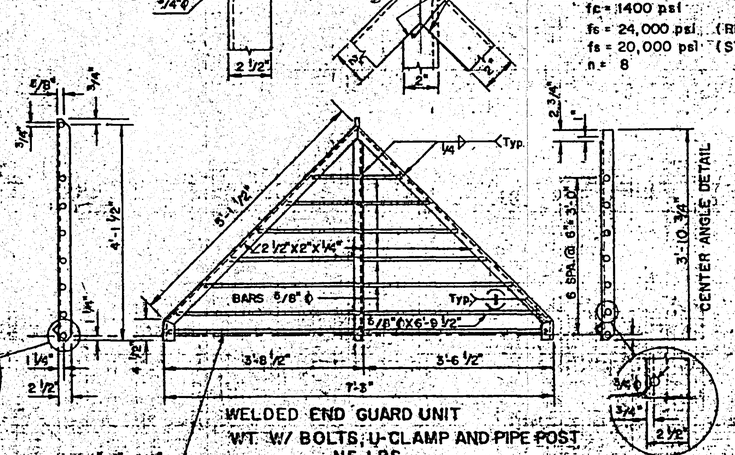
10 FT. WELDED GRILL UNIT
WT. = 1418# PER UNIT



8 FT. WELDED GRILL UNIT
WT. = 1134# PER UNIT

BARS SHALL BE BENT AND SECURED AS SHOWN TO PROTECT AGAINST SNOWPLOWS ETC. BOTH ENDS.





WELDED END GUARD UNIT
WT. W/ BOLTS, U-CLAMP AND PIPE POST
115 LBS.
(TWO REQUIRED)

5-11-81 DEL. REF. TO SPEC DATE
10-18-77 TYPE G FENCE REQ 10' POST

CONCRETE, REINFORCING STEEL AND STRUCTURAL STEEL QUANTITIES ARE CERTIFIED CORRECT FOR THE DIMENSIONS SHOWN W. D. Tolley PE

11-9-76 SNOWPLOW PROTECTION - LOWER LEFT
3-9-76 ADDITIONAL BAR END UNIT-DRAINAGE NOTE
6-6-74 ADDED NOTE ABOVE CHART
4-1-74 CHANGED B. CERTIFIED CHART QUANTITIES

SUPERSEDES	
ORIG 3-63	

REVISIONS Date	Appr.
4-1-74	
6-6-74	
3-9-76	
11-9-76	
10-18-77	
5-11-81	

CATTLE GUARDS FOR VARIOUS ROAD WIDTHS TYPE I

5-1
Addition 10-1-84

4-1-74
STATE STANDARDS COMMITTEE
APPROVED
4-1-74
STATE ROADWAY ENGINEER

STD. DWG. NO. 760-1

UTAH POWER & LIGHT COMPANY
DEPARTMENT OF MINING & EXPLORATION

Sheet 29 of 38 | AJB 6/9/84 | Dwg.# CM-10584-DS