

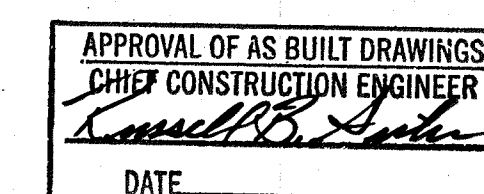
CONSTRUCTION PLANS
FOR
PROJECT NO. 4237.91
I-40/EUBANK EASTBOUND
OFF RAMP MODIFICATIONS
ALBUQUERQUE, NEW MEXICO



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
26-92 37,91 0197

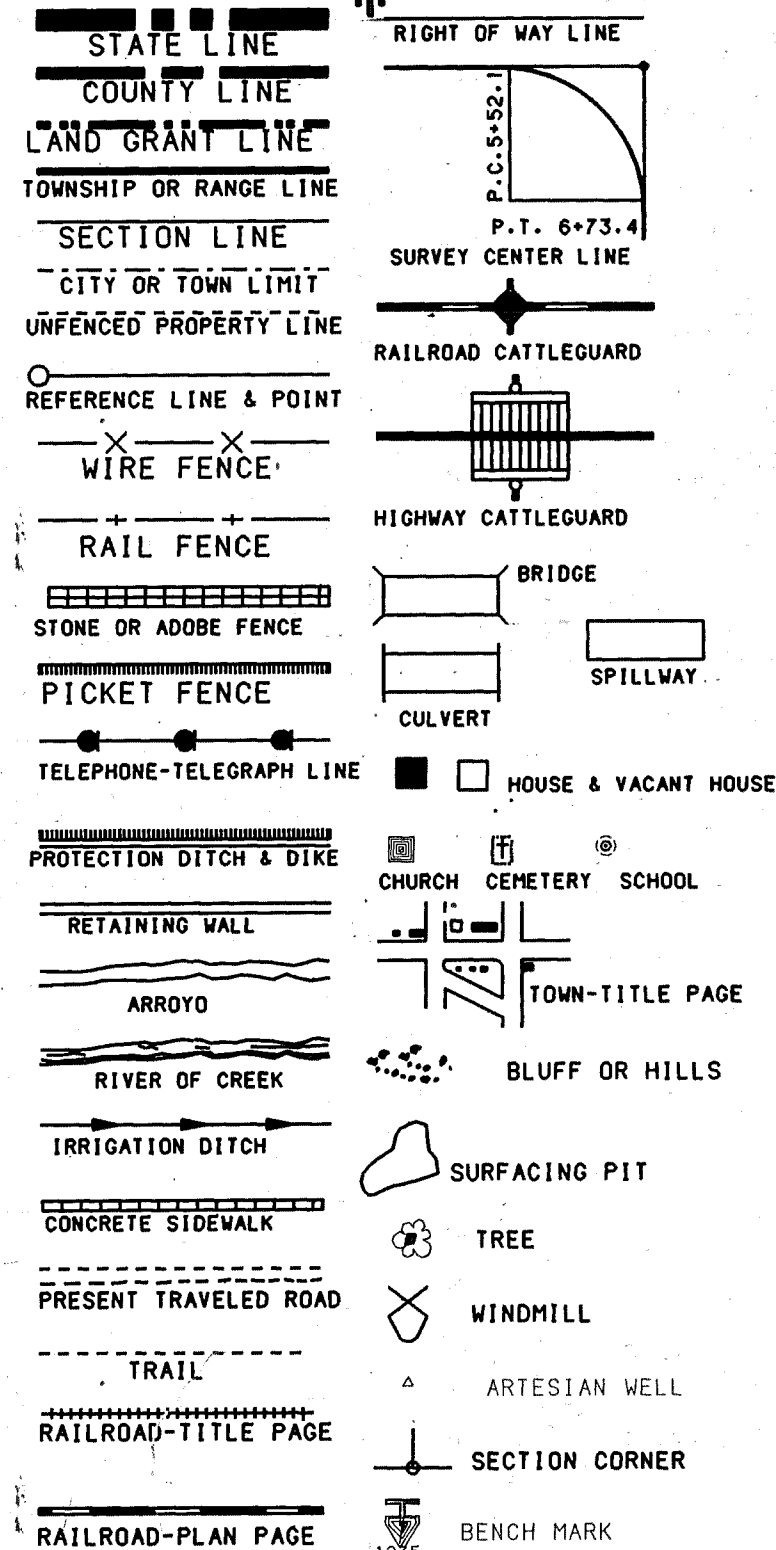
REV	SHEETS	CITY ENGINEER	DATE	USER	DEPARTMENT	DATE	USER	DEPARTMENT	DATE	USER	DEPARTMENT	DATE	USER	DEPARTMENT	DATE	USER	DEPARTMENT

APPROVAL OF REVISIONS

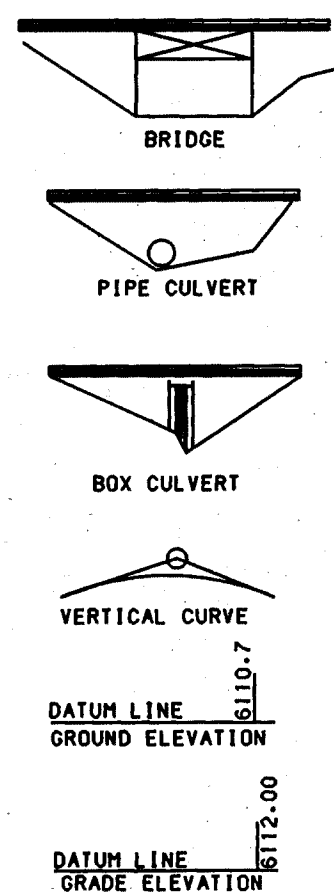


	BOHANNAN HUSTON INC. ALBUQUERQUE, NEW MEXICO ENGINEERS PLANNERS PHOTOGRAMMETRISTS	APPROVED FOR CONSTRUCTION <i>James A. White</i> 2-20-92 C.E.
	PROJECT NUMBER 4 2 3 7 . 9 1	SHEET 1-1

CONVENTIONAL
ON PLAN



SIGNS
ON PROFILE



LENGTH OF PROJECT 0.215 IN MILES

	F.H.W.A. REGION NO. 6	SHEET NO.
	4237.91	1-2

BOOK NUMBERS

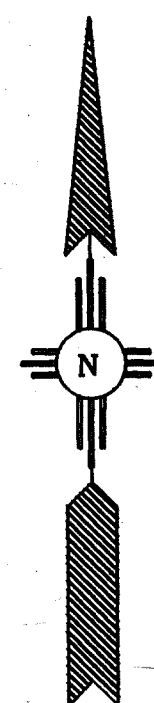
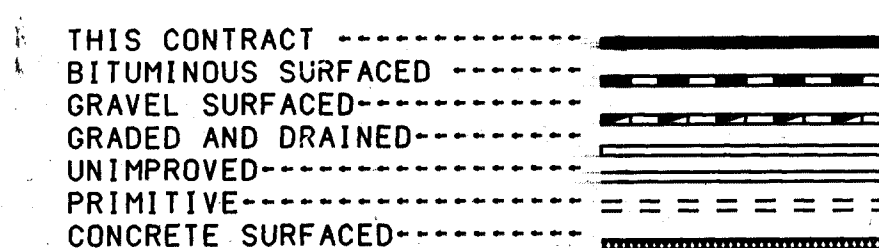
SCALES { PLAN - 1"=50'
PROFILE - 1"=50'
LAYOUT

SHIPPING POINTS

ALBUQUERQUE

THE 1984 EDITION OF NEW MEXICO STATE HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SHALL GOVERN CONSTRUCTION OF THIS PROJECT.

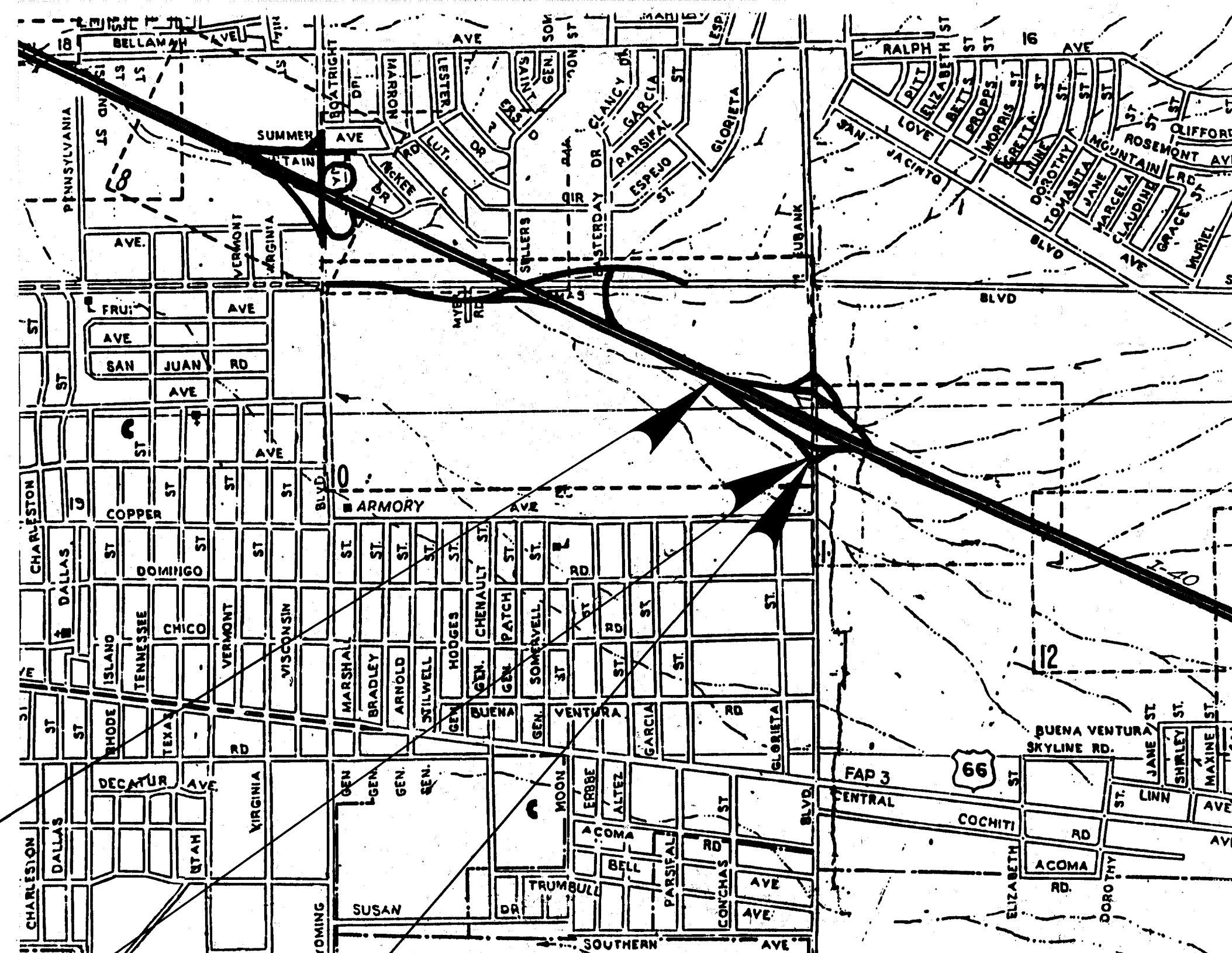
LEGEND



STA. 3+52.00 BEGIN
PROJECT NO. 4237.91

STA. 11+27.06 RAMP =
STA. 6+28.27 EUBANK BLVD.

STA. 2+68.27 EUBANK END
PROJECT NO. 4237.91



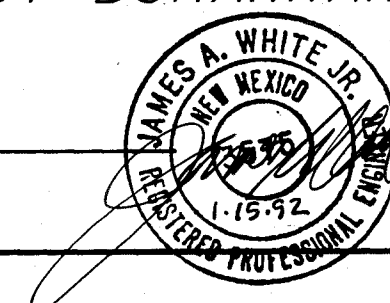
MAP NO. K-20 & K-21
VICINITY MAP
NO SCALE

TYPE OF CONSTRUCTION:

RECONSTRUCTION, RAMP SECTION, EARTHWORK (BORROW), CURB & GUTTER SECTIONS, EROSION CONTROL MEASURES, TRAFFIC CONTROL, STRUCTURES (DROP INLETS), PERMANENT SIGNING, LIGHTING STRUCTURES, CONC. PAVEMENT & MISCELLANEOUS CONSTRUCTION.

THESE PLANS WERE DESIGNED AND/OR ASSEMBLED BY BOHANNAN/HUSTON, INC.

JAMES A. WHITE
DESIGNER



505/823-1000
TELEPHONE NO.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
26-19237.91 0297

NO.	DESCRIPTION	DATE	BY
6			
5			
4			
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1			
REVISIONS (OR CHANGE NOTICES)			

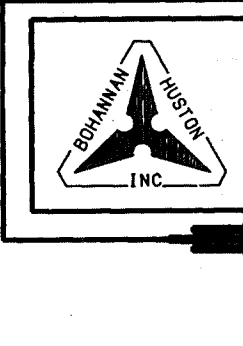
VICINITY MAP

INDEX OF SHEETS

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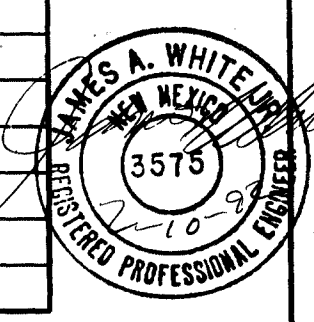
 INDEX OF SHEETS

SUMMARY OF QUANTITIES



ITEM NO.		UNIT	ROADWAY		LIGHTING		CONSTRUCTION SIGNING		PERMANENT SIGNING		CONSTRUCTION ENGINEERING		DETOURS				PROJECT TOTAL	
			ESTIMATE	FINAL	ESTIMATE	FINAL	ESTIMATE	FINAL	ESTIMATE	FINAL	ESTIMATE	FINAL	ESTIMATE	FINAL	ESTIMATE	FINAL	ESTIMATE	FINAL
202001	REMOVAL OF STRUCTURES & OBSTRUCTIONS	L.S.	L.S.														L.S.	
202010	REMOVAL OF SURFACING	SO. YD.											980				980	
203001	UNCLASSIFIED EXCAVATION	CU. YD.	1600														1600	
203010	BORROW	CU. YD.	4400														4400	
207001	SUBGRADE PREPARATION	SO. YD.	1700										980				2680	
212010	CLASS "A" SEEDING	ACRE	1.26														1.26	
212090	CLASS "I" TEMPORARY SOIL STABILANT	ACRE	1														1	
213001	OBLITERATING OLD ROAD	MILE	0.059														0.059	
304001	BASE COURSE-TYPE 1B	TON	524										306				830	
401002	PLANT MIX BITUMINOUS PAVEMENT-TYPE 1-GRADE "B"	TON											150				150	
401101	60-70 BITUMINOUS MATERIAL	TON											7				7	
401150	HYDRATED LIME	TON											3				3	
408012	ASPHALT FOR PRIME COAT	TON											2				2	
451012	CONCRETE PAVEMENT-8"	SO. YD.	1700														1700	
452020	SEALING CONCRETE PAVEMENT JOINTS	LIN. FT.	2800														2800	
501624	24" CULVERT PIPE	LIN. FT.	26														26	
501626	24" END SECTION	EA.	1														1	
504010	REINFORCING BARS-GRADE 40	LB.			552												552	
509050	STRUCTURAL CONCRETE-CLASS "A"	CU. YD.			7.98												7.98	
603030	WIRE ENCLOSED RIPRAP	CU. YD.	3														3	
606405	HAUL PRECAST CONCRETE WALL BARRIER	LIN. FT.						1080									1080	
606410	RESETTING OF CONCRETE WALL BARRIER	LIN. FT.						1800									1800	
609038	CONC. MOUNTABLE CURB & GUTTER-TYPE "A"-8"x24"	LIN. FT.	140														140	
609058	CONC. BARRIER CURB & GUTTER-TYPE "B"-8"x30"	LIN. FT.	1120														1120	
606403	PRECAST CONCRETE WALL BARRIER-TYPE II	LIN. FT.						30									30	
608004	CONCRETE SIDEWALK 4"	SQ. YD.	56														56	
618002	TRAFFIC CONTROL MANAGEMENT	CAL. DAYS									45						45	
621001	MOBILIZATION	L.S.	L.S.														L.S.	
623126	CURB DROP INLET-TYPE 1-OVER 4' FOR TYPE "B" CURB	EA.	1														1	
701010	PLYWOOD OR ALUMINUM PANEL SIGN	SO. FT.							17.5								17.5	
701101	STEEL POST & BASE POST FOR PLYWOOD OR ALUMINUM PANEL SIGNS	LIN. FT.							69								69	
702000	CONSTRUCTION SIGNING	SO. FT.						174									174	
702103	STEEL POST & BASE POST FOR CONSTRUCTION SIGNING	LIN. FT.						112									112	
702145	PORTABLE SIGN SUPPORTS	EA.						6									6	
702356	CHANNELIZATION DEVICES (BARRELS)-TYPE "H"	EA.						35									35	
702215	BARRICADE TYPE III-B'	EA.						2									2	
703210	REFLECTIVE BARRIER DELINEATOR	EA.						64									64	
718007	REFLECTIVE PLASTIC PAVEMENT STRIPE-24" 60 MIL.	LIN. FT.							24								24	
704010	REFLECTORIZED PAINTED MARKINGS	LIN. FT.							2510				750				3260	
707145	REMOVE & RESET ROADWAY STANDARDS & LUMINAIRES	EA.			6												6	
718004	REFLECTIVE PAVEMENT STRIPE-12" 60 MIL	LIN. FT.							226								226	
709030	RIGID ELECTRICAL CONDUIT 2"	LIN. FT.			1110	1110											1110	
718015	REFLECTORIZED RIGHT ARROW	EA.							2								2	
718020	REFLECTORIZED LEFT ARROW	EA.							4								4	
718025	REFLECTORIZED WORD ("ONLY")	EA.							3								3	
711234	SINGLE CONDUCTOR 2	LIN. FT.			2200	2200											2200	
720015	SAND BARREL VEHICULAR IMPACT ATTENUATOR UNIT	EA.					2										2	
720101	REMOVE & RESET SAND BARREL VEHICULAR IMPACT ATTENUATOR UNIT	EA.					1										1	
870001	CONSTRUCTION STAKING BY CONTRACTOR	L.S.									L.S.						L.S.	
900000	ON THE JOB TRAINING	HOOR	500														500	

CHECKED BY _____



GENERAL NOTES

1. THE DESIGN "R" VALUE FOR THIS PROJECT IS 40. MATERIAL WITH AN "R" VALUE LESS THAN 40 SHALL NOT BE PLACED OR ALLOWED TO REMAIN WITHIN TWO FEET OF THE FINISHED SUBGRADE.
2. FOR ESTIMATING PURPOSES ONLY, EARTHWORK QUANTITIES ARE BASED ON A SHRINK FACTOR OF 20 % IN ROADWAY EMBANKMENT.
3. WHEN TRAFFIC CONTROL DEVICES ARE REQUIRED AFTER DARK, ALL ADVANCE WARNING SIGNS AND ALL BARRICADES SHALL BE EQUIPPED WITH FLASHING WARNING LIGHTS (TYPE "A"); EXCEPT CHANNELIZATION BARRELS OR BARRICADES SHALL HAVE STEADY BURNING WARNING LIGHTS (TYPE "C"). UNLESS OTHERWISE DIRECTED BY THE PROJECT MANAGER. (REFER TO H.U.T.C.D. MANUAL FOR DEFINITION OF TYPES OF WARNING LIGHTS.)
4. THE CONTRACTOR SHALL KEEP THE PUBLIC APPRISED THROUGH THE LOCAL NEWS MEDIA FOR THE LIFE OF THE PROJECT, OF THE VARIOUS CONSTRUCTION OPERATIONS INVOLVING STREET OR LANE CLOSURES OR ANY OTHER PERTINENT INFORMATION RELATING TO TRAFFIC MOVEMENT AS APPROVED BY THE PROJECT MANAGER PRIOR TO BEING SUBMITTED TO THE MEDIA. DOCUMENTATION TO BE PROVIDED TO PROJECT MANAGER.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEBRIS, INCLUDING BUT NOT LIMITED TO HAZARDOUS WASTE, AT DISPOSAL SITES APPROVED BY GOVERNMENTAL AGENCIES REGULATING THE DISPOSAL OF SUCH MATERIALS. ALL COSTS INCURRED IN OBTAINING A DISPOSAL SITE AND HAUL THERE TO SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM NO. 1, SPEC. NO. 202001 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS.
6. THE CONSTRUCTION CLEAR ZONE FOR THIS PROJECT IS 36 FEET FROM THE EDGE OF THE DRIVING LANE. THE CONTRACTOR SHALL NOT STORE ANY EQUIPMENT OR MATERIAL WITHIN THE CONSTRUCTION CLEAR ZONE UNLESS THE EQUIPMENT OR MATERIAL IS PROPERLY SHIELDED, UTILIZING CURRENT SAFETY DESIGN AND INSTALLATION METHODS. THE SAFETY DESIGN FOR THIS SHIELDING SHALL BE PROVIDED BY THE CONTRACTOR AND MUST BE APPROVED BY THE PROJECT MANAGER BEFORE IMPLEMENTING. THERE WILL BE NO DIRECT MEASUREMENT OR PAYMENT FOR THE DESIGN, MATERIALS, INSTALLATION AND REMOVAL OF SAFETY BARRIERS.
7. THE CONTRACTOR IS HEREBY ADVISED THAT SOME UTILITY RELOCATION BY THE UTILITY COMPANIES WILL BE DONE CONCURRENTLY WITH CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE FOR UTILITY WORK IN CONJUNCTION WITH HIS OWN WORK AND SHALL BE REQUIRED TO COORDINATE THE SCHEDULING OF WORK WITH THE RESPECTIVE UTILITY COMPANIES IN ACCORDANCE WITH SECTION 18.8 OF THE GENERAL CONDITIONS OF THE CITY STANDARD SPECIFICATIONS.
8. THE AIR POLLUTION CONTROL REGULATIONS OF THE ALBUQUERQUE - BERNALILLO COUNTY AIR QUALITY CONTROL BOARD LIMITS EMISSION OF PARTICULATE MATTER AND THE USE OF CUT BACK ASPHALT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CLARIFY RESTRICTIONS WITH THE ENVIRONMENTAL HEALTH DEPARTMENT PRIOR TO SUBMITTAL OF BIDS TO AVOID CONFLICT WITH THE REGULATIONS. 768-2638.
9. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT ONE CALL SYSTEM, INC., 260-1990, FOR LOCATION OF EXISTING UTILITIES. CONTRACTOR SHALL COORDINATE ALL UTILITY WORK INCLUDING CUT OFF OF EXISTING UTILITIES FOR NEW CONNECTIONS (FIRE PROTECTION, DOMESTIC WATER, SEWER, STORM DRAIN, GAS PIPING, ETC.) WITH ENGINEER, OWNER, AND LOCAL UTILITY REPRESENTATIVES.
10. THE CONTRACTOR SHALL DETERMINE THE PROFILE GRADE ALONG THE EXISTING PAVEMENT AND ESTABLISH FINISHED GRADES FOR THE CONCRETE CURB & GUTTER AND LIGHT BASE FOUNDATIONS AS DIRECTED BY THE PROJECT MANAGER. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE CONCRETE CURB & GUTTER AND NO PAYMENT SHALL BE MADE THEREFORE.

SPECIAL PROVISIONS

~~FOR MINIMUM WAGE RATES~~
~~FOR SUBMISSION OF WEEKLY PAYROLLS ON FEDERAL AID PROJECTS (6-17-88)~~
~~FOR APPRENTICES (4-26-82)~~
~~MODIFYING SECTION 101 - ABBREVIATIONS & DEFINITIONS (6-12-87)~~
~~MODIFYING SECTION 102 - BIDDING REQUIREMENTS & CONDITIONS (9-29-87)~~
~~MODIFYING SECTION 103 - AWARD AND EXECUTION OF CONTRACT (3-10-88)~~
~~MODIFYING SECTION 105 - CONTROL OF WORK (5-8-90)~~
~~MODIFYING SECTION 106 - CONTROL OF MATERIALS (6-24-88)~~
~~FOR TAXES IMPOSED BY THE STATE OF NEW MEXICO, SECTION 107 (11-1-88)~~
~~MODIFYING SECTION 108 - PROSECUTION AND PROGRESS (6-23-88)~~
~~MODIFYING SECTION 304 - BASE COURSE AND SUBBASE (6-28-89)~~
~~FOR ACCESS CONTROL BREAKS (3-25-86)~~
~~FOR TRAFFIC CONTROL MANAGEMENT, SECTION 618 (8-29-91)~~
~~MODIFYING SECTION 701 - TRAFFIC SIGNS & SIGN STRUCTURES (4-16-91)~~
~~MODIFYING SECTION 702 - TRAFFIC CONTROL DEVICES FOR DETOURS (9-20-89)~~
~~FOR TYPE "H" BARRELS, SECTION 702-A (8-15-91)~~
~~MODIFYING SECTION 704 - PAVEMENT MARKINGS (6-13-91)~~
~~FOR SIGNAL & LIGHTING STANDARDS SECTION 707 (3-19-91)~~
~~MODIFYING SECTION 716 LUMINAIRES (12-12-85)~~
~~MODIFYING SECTION 606 METAL & CONCRETE BARRIER (7-28-88)~~
~~MODIFYING SECTION 503 - PORTLAND CEMENT CONCRETE (3-19-91)~~

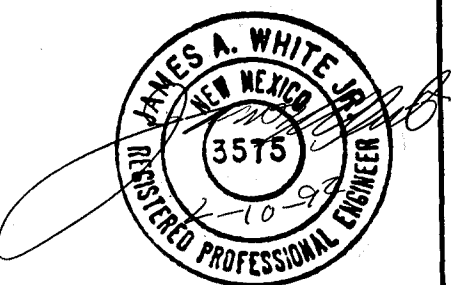
INCIDENTAL ITEMS

CONTRACTOR TO KEEP PUBLIC APPRISED, NOTE #4
SHIELDING OF MATERIAL & EQUIPMENT, NOTE #6

SUPPLEMENTAL SPECIFICATIONS

~~MODIFYING SECTION 101 - ABBREVIATIONS & DEFINITIONS (6-1-89)~~
~~MODIFYING SECTION 102 - BIDDING REQUIREMENTS & CONDITIONS (1-14-87)~~
~~MODIFYING SECTION 103 - AWARD AND EXECUTION OF CONTRACT (1-14-87)~~
~~MODIFYING SECTION 104 - SCOPE OF WORK (4-26-89)~~
~~MODIFYING SECTION 105 - CONTROL OF WORK (2-1-89)~~
~~MODIFYING SECTION 106 - CONTROL OF MATERIALS (1-14-87)~~
~~MODIFYING SECTION 107 - LEGAL RELATIONS & RESPONSIBILITY TO PUBLIC (9-12-89)~~
~~MODIFYING SECTION 108 - PROSECUTION AND PROGRESS (1-14-87)~~
~~MODIFYING SECTION 109 - MEASUREMENT AND PAYMENT (12-28-88)~~
~~MODIFYING SECTION 110 - CONTROL OF ENVIRONMENT (6-26-88)~~
~~MODIFYING SECTION 203 - EXCAVATION, BORROW AND EMBANKMENT (6-30-86)~~
~~MODIFYING SECTION 401 - PLANT MIX BITUMINOUS PAVEMENT (1-8-91)~~
~~MODIFYING SECTION 402 - BITUMINOUS MATERIALS (4-19-91)~~
~~MODIFYING SECTION 408 - PRIME COAT (2-2-87)~~
~~MODIFYING SECTION 501 - PIPE CULVERTS & UNDERDRAINS (6-30-86)~~
~~MODIFYING SECTION 503 - PORTLAND CEMENT CONCRETE (9-26-88)~~
~~MODIFYING SECTION 504 - STEEL REINFORCEMENT (10-29-84)~~
~~MODIFYING SECTION 509 - CONCRETE STRUCTURES (2-19-87)~~
~~MODIFYING SECTION 606 - METAL AND CONCRETE BARRIER (2-2-87)~~
~~MODIFYING SECTION 621 - MOBILIZATION (9-19-84)~~
~~MODIFYING SECTION 623 - DROP INLETS (1-17-86)~~
~~MODIFYING SECTION 701 - TRAFFIC SIGNS & SIGN STRUCTURES (9-3-87)~~
~~MODIFYING SECTION 702 - TRAFFIC CONTROL DEVICES FOR DETOURS (6-1-87)~~
~~MODIFYING SECTION 704 - PAVEMENT MARKINGS (2-6-90)~~
~~MODIFYING SECTION 711 - WIRING (6-30-89)~~
~~MODIFYING SECTION 870 - CONSTRUCTION STAKING BY THE CONTRACTOR (1-3-89)~~
~~MODIFYING SECTION 304 - BASE COURSE AND SUBBASE~~

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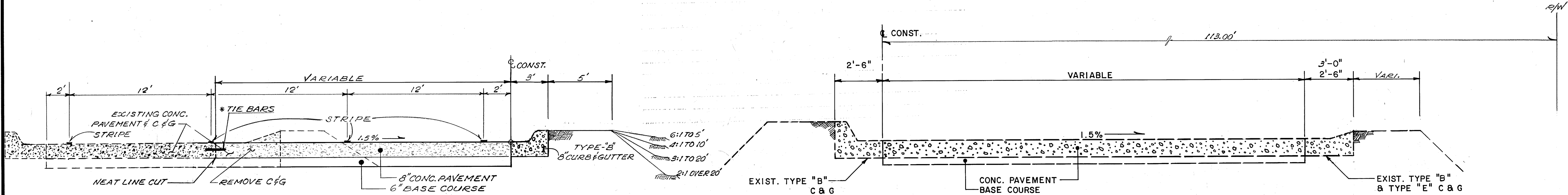


6			
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NO.	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			

GENERAL NOTES,
SPECIAL PROVISIONS, AND
SUPPLEMENTAL SPECIFICATIONS

DESIGN SPEED 25 M.P.H.

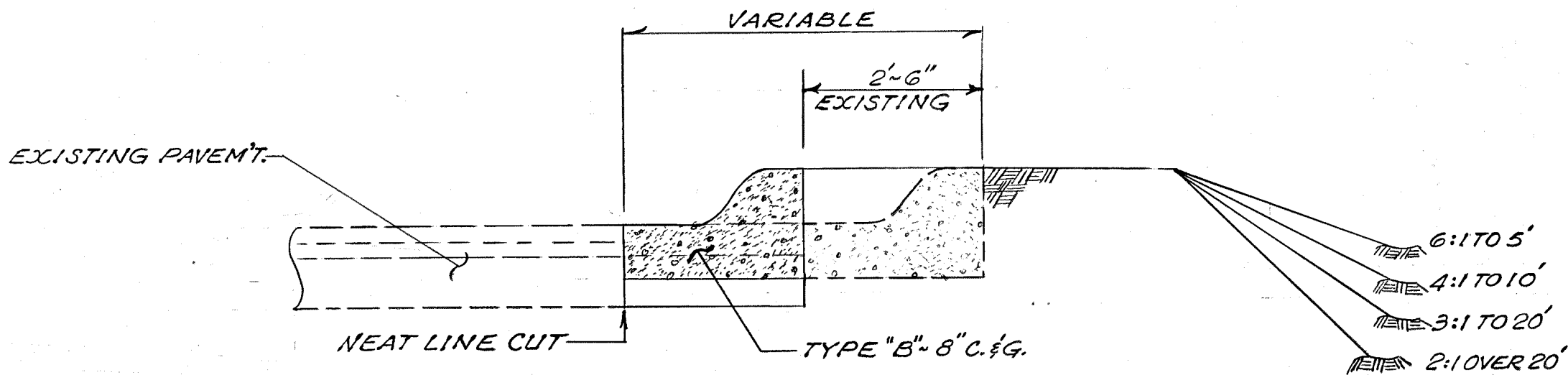
F.H.W.A. REGION NO. 6	SHEET NO.
4237.91	2-1



TYPICAL RAMP SECTION A-A
STA. 3+52.00 TO STA. 7+80.00

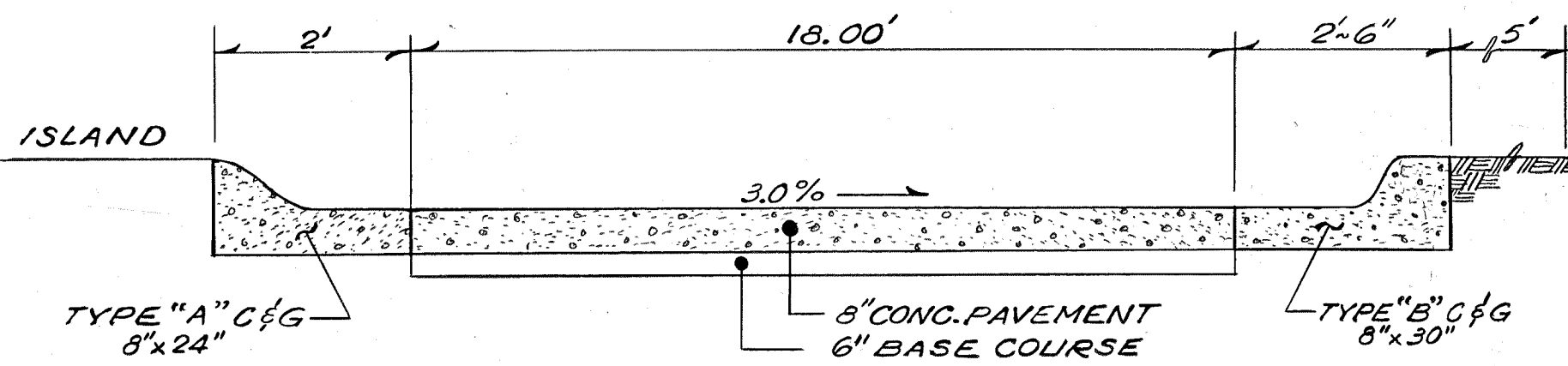
EXISTING TYPICAL RAMP "EES"

* TO BE DRILLED INTO EXISTING PAVEMENT (SEE SERIAL WD-001)



TYPICAL SECTION @ EUBANK LT.

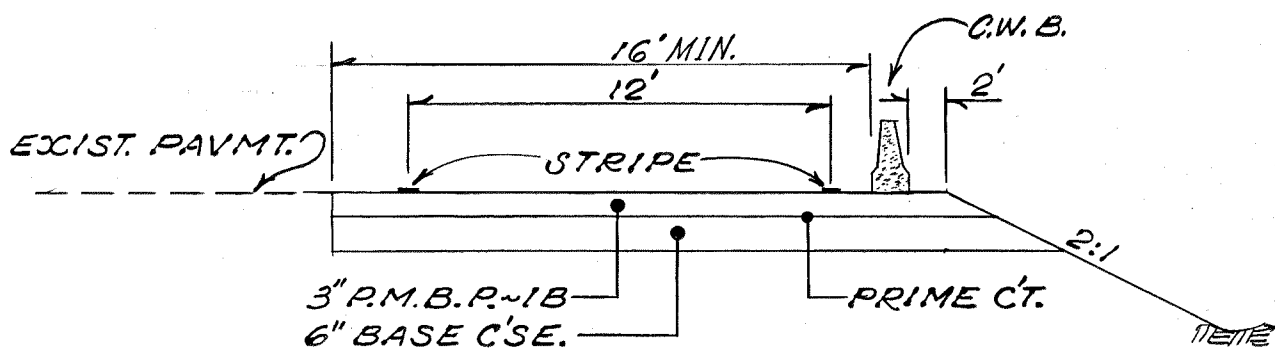
STA. 11+04.76 TO STA. 11+27.06 RAMP=
STA. 6+28.27 TO STA. 2+68.27 EUBANK



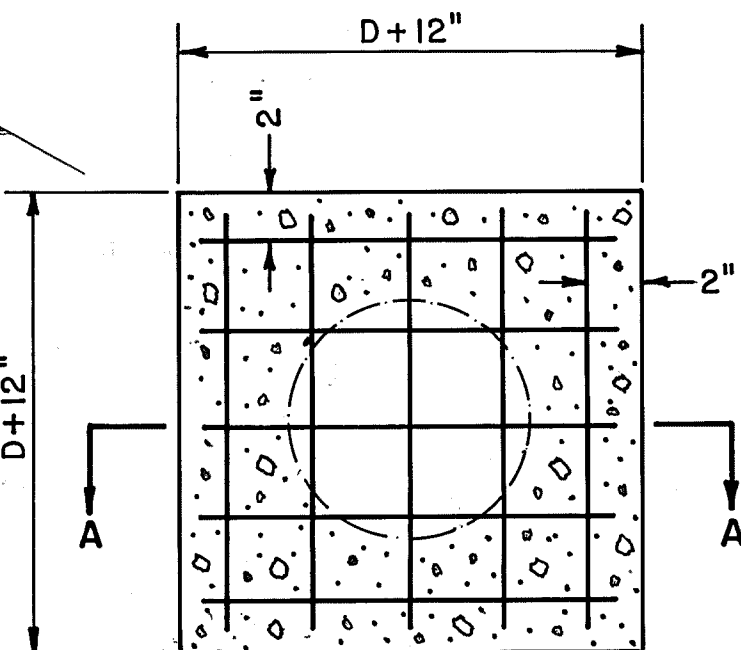
TYPICAL RAMP SECTION
STA. 7+80.00 TO STA. 11+00.00

LENGTH OF PROJECT

STATION TO STATION	LIN. FT.	MILES	REMARKS
3+52.00 " 11+27.06	775.06'	0.147	@ RAMP
6+28.27 " 2+68.27	360.00'	0.068	@ EUBANK
TOTAL	1135.06'	0.215	

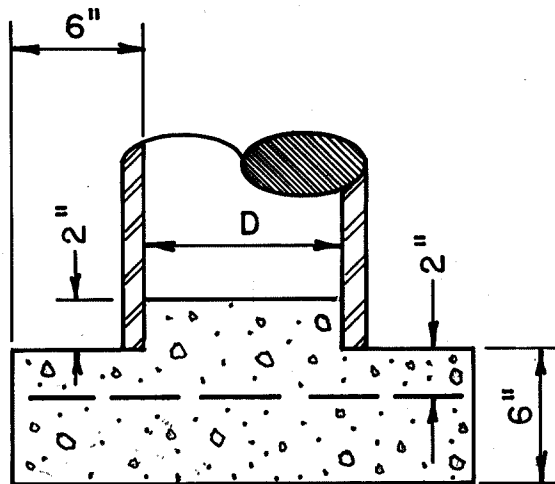


TYPICAL DETOUR SECTION



STEEL QUANTITIES				
SIZE	SPACING	LENGTH	NO. REQ'D.	WEIGHT
24" Ø	4"	32"	8 EA. WAY	28.50 lb.
USE NO. 4 REBAR IN ALL CASES				
12" Ø	4"	16"	4 EA. WAY	14.25 lb.

TYPICAL CONCRETE PIPE PLUG



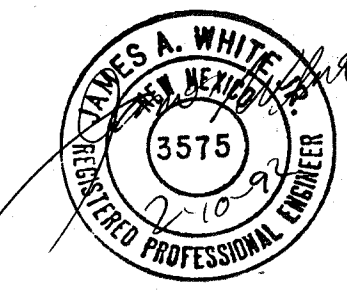
SECTION A-A

CONCRETE QUANTITIES

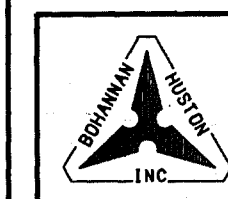
SIZE	CU. YD.
24" Ø	.1861
12" Ø	.093

CITY OF ALBUQUERQUE PUBLIC WORKS DEPARTMENT TRANSPORTATION DEVELOPMENT					
TITLE:					
APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
ORC CHAIRMAN		1/16/92	WATER		
TRANSPORTATION		1/16/92	WASTE WATER		
HYDROLOGY					

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
26-4237.91 0697



TYPICAL SECTION



F.H.W.A. REGION NO. 6

4237.91

SHEET

2-2

SURFACING SCHEDULE

						207001		304001				401002				401101	401150	408012	451012																
						SUBGRADE PREPARATION		BASE COURSE-1B				PLANT MIX BITUMINOUS PAVEMENT - TYPE 1B				60-70 BIT. MAT.	HYDRATED LIME	ASPH. FOR PRIME COAT	CONC. PAVEMENT-8"																
LOCATION	DESCRIPTION	STATION	TO	STATION	LIN. FT.	WIDTH	SO. YDS.	WIDTH	DEPTH	SO. YDS.	TONS	WIDTH	DEPTH	SO. YDS.	TONS	TONS	TONS	TONS	SO. YDS.																
RAMP	0' TO 26' ROADWAY TAPER	3+52.00	"	6+16.49	264.49'	AVG 13.00'	382.04	AVG 13.00'	6"	382.04	122.57								382.04																
"	26' TO 18' ROADWAY TAPER	6+16.49	"	7+80.00	163.51'	AVG 22.00'	399.69	AVG 22.00'	6"	399.69	128.23								399.69																
"	18' ROADWAY TAPER	7+80.00	"	11+00.00	320.00'	18.00'	640.00	18.00'	6"	640.00	205.33								640.00																
"	20' TO 10' ROADWAY TAPER	11+00.00	"	EUBANK 5+72.85	82.48'	AVG 15.00'	137.47	AVG 15.00'	6"	137.47	44.10								137.47																
"	5' TO 8' TAPER LT.	8+78.00	"	9+74.00	96.00'	AVG 6.50'	69.33	AVG 6.50'	6"	69.33	22.24								69.33																
DETOUR	0' TO 22' TAPER	0+00.00	"	0+65.00	65.00'	AVG 12.50'	90.28	AVG 12.00'	6"	86.67	27.81	AVG 11.25'	3"	81.25	13.20	0.58	0.20	0.18																	
"	22' ROADWAY	0+65.00	"	3+35.00	270.00'	23.50'	705.00	23.00'	6"	690.00	221.37	22.25'	3"	667.50	108.47	4.77	1.63	1.45																	
"	22' TO 3' TAPER	3+35.00	"	4+50.00	115.00'	AVG 14.00'	178.89	AVG 13.50'	6"	172.50	55.34	AVG 12.75'	3"	162.92	26.47	1.16	0.40	0.36																	
	TOTAL RAMP USE						1628.53			1628.53	522.47								1628.53																
							1700				524								1700																
	TOTAL DETOUR						974.17			949.17	304.52			911.76	148.14	6.51	2.23	1.99																	
	USE						980				306				150	7	3	2																	

EROSION CONTROL PLAN

REVEGETATION/EROSION CONTROL PLAN

I-40/EUBANK OFF-RAMP

A. ERODIBLE SURFACE AREA

EXPOSED AREAS OF DISTURBANCE SHALL BE KEPT TO A MINIMUM TO PERFORM PROJECT CONSTRUCTION AND SHALL BE PROTECTED BY THE APPLICATION OF TEMPORARY SOIL STABILANT AS STATED BELOW UNTIL PERMANENT MEASURES ARE APPLIED.

B. TEMPORARY MEASURES

TEMPORARY SOIL STABILANT PER ACRE SHALL CONSIST OF DRY POWDERED NUCLEOID DERIVED FROM SEED HUSKS OR SEMIREFINED SEAWEED EXTRACT, EITHER SHALL BE MIXED WITH VIRGIN WOOD CELLULOSE SEAMER COMBINED WITH WATER, MIXED ACCORDING TO MANUFACTURER'S RECOMMENDATION AND APPLIED UNIFORMLY. THIS OPERATION SHALL BE APPLIED TO AREAS IN WHICH THERE WILL BE A SIGNIFICANT DELAY (15 CALENDER DAYS OR MORE) IN APPLYING PERMANENT MEASURES AND/OR THE SOIL ERODIBILITY IS SEVERE. AREAS SHALL BE RETREATED WITH TEMPORARY SOIL STABILANT AS OFTEN AS NEEDED TO CONTROL EROSION.

C. PERMANENT MEASURES

"ALL SOIL SLOPES SHALL BE SCARIFIED OR LEFT ROUGH AS THEY ARE CONSTRUCTED" (NEW MEXICO STATE HIGHWAY AND TRANSPORTATION DEPARTMENT, STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 1984 EDITION, SECTION 211.031 CONSTRUCTION REQUIREMENTS, SEQUENCE OF OPERATIONS). THIS MAY BE ACCOMPLISHED ON STEEPER SLOPES BY WALKING A TRACKED VEHICLE PERPENDICULAR TO THE SLOPE. INDENTATIONS SHALL BE A MINIMUM OF THREE INCHES DEEP.

ALL SOIL AREAS EXPOSED DURING CONSTRUCTION WITHIN PROJECT LIMITS SHALL BE TREATED WITH CLASS "A" SEEDING. RAY MULCH FOR SEEDING SHALL BE BARLEY STRAW AT THE RATE OF 1.5 TONS PER ACRE. MULCH FOR CLASS "A" SEEDING SHALL BE ANCHORED WITH TACKIFIER. IT SHALL BE THE SAME AS THE TEMPORARY SOIL STABILANT EXCEPT THAT IT IS APPLIED AS AN OVERSPRAY AFTER FERTILIZER, SEED AND MULCH ARE IN PLACE. TACK SHALL BE APPLIED AT A SUFFICIENT RATE SO AS TO PREVENT MULCH FROM MOVING DUE TO WINDS OR TURBULENCE CREATED BY TRAFFIC ON THE ROADWAY. AREAS WHERE MULCH FAILS TO ADHERE SHALL BE REMULCHED AND TACKED AND NO EXTRA PAYMENT SHALL BE MADE THEREFOR.

CONTRACTORS' CAMPSITES, STOCKPILE AREAS AND ANY OTHER NONDESIGNATED HAUL ROAD OR DISTURBED AREA SHALL BE TREATED WITH CLASS "A" SEEDING AND NO MEASUREMENT OR PAYMENT WILL BE MADE THEREFOR.

WHEN SEEDING IS APPLIED, ALL VEGETATION WHICH WILL INTERFERE WITH THE SEED AND MULCH MAKING CONTACT WITH THE SOIL SHALL BE REMOVED.

CLASS "G" MULCH SHALL BE APPLIED FROM SEPTEMBER 1 THROUGH APRIL 30. MULCH SHALL BE BARLEY STRAW AT THE RATE OF 1.5 TONS PER ACRE AND SHALL BE ANCHORED AS IN CLASS "A" SEEDING ABOVE.

**SEED MIX

SPECIES	ORIGIN	LBS. PURE LIVE SEED PER ACRE
Boutelous gracilis(BLUE GRAMA)	HACHITA OR LOVINGTON	2.0
Boutelous curtipendula(SIDE-OATS GRAMA)	VAUGHN OR NINER	4.0
Oryzopsis hymenoides(INDIAN RICEGRASS)	FALCONA	2.0
Agropyron smithii(WESTERN WHEATGRASS)	BARTON OR ARRIBA	4.0
Hilaria jamesii(GALLETA)	VIVA	4.0
Echscholzia californica(CALIFORNIA POPPY) ANY	ANY	0.5
Gaillardia aristata(FIREWHEEL)	ANY	0.5
Linum lewisii(BLUE FLAX)	ANY	0.5
		TOTAL 17.5

**THE PROJECT MANAGER SHALL CONTACT THE NEW MEXICO DEPARTMENT OF AGRICULTURE SEED TESTING LABRATORY AT 646-2886 TWO WEEKS PRIOR TO SEEDING SO THAT AN OFFICIAL SEED SAMPLE CAN BE TAKEN.

FERTILIZER REQUIREMENTS

CHEMICAL	ACTUAL MIN. POUNDS/ACRE
SLOW RELEASE NITROGEN (I.E., UREA FORMALDEHYDE)	50
PHOSPHORUS, AS P ₂ O ₅	46
SULPHUR (IN A WATER SOLUBLE FORM)	48

SEEDING DATES

- *A. PERIOD A TO B - MAY 1 THROUGH MAY 31
B. PERIOD B TO E - JUNE 1 THROUGH AUGUST 31
C. PERIOD C TO D - NONE
D. PERIOD E TO A - SEPTEMBER 1 THROUGH APRIL 30

*WATER FOR PERIOD A TO B SHALL BE APPLIED ACCORDING TO SECTION 212.39 OF THE STANDARD SPECIFICATIONS AT THE FOLLOWING RATES AND SHALL BE CONTINUED UNTIL JUNE 14:

FIRST TWO WEEKS - FOUR APPLICATIONS OF ONE INCH EACH, TIMED THREE DAYS APART. SUBSEQUENT WEEKS - ONE INCH PER WEEK

DURING THIS PERIOD CLASS "G" MULCH SHALL BE APPLIED. IT SHALL BE THE RESPONSIBILITY OF THE PROJECT MANAGER TO ADVISE THE CONSTRUCTION BUREAU OF THE NEED TO INITIATE A PROJECT TO PERFORM PERMANENT SEEDING.

ANY PROPOSED CHANGES OR MODIFICATIONS TO THIS PLAN SHALL BE DISCUSSED WITH THE LANDSCAPE ARCHITECT PRIOR TO MAKING SUCH CHANGES OR MODIFICATIONS.

ESTIMATED SURFACING FACTORS

ITEM	BITUMINOUS MATERIAL			GALLONS PER TON	UNIT WT. LBS./CY.	HYDRATED LIME
	60-70/AC-20	SPEC. 407	SUPP. 408			
BASE COURSE-TYPE 1B					3850	
PLANT MIX BITUMINOUS PAVEMENT TYPE 1 GR. B	4.4% BY WEIGHT OF TOTAL MIX				3900	1.5%
ASPHALT FOR PRIME COAT			0.30 - 0.55 GAL./SQ. YD.	258.86		

NOTE: AC-20 VISCOSITY GRADE ASPHALT MAY BE SUBSTITUTED FOR 60-70 PENETRATION GRADE ASPHALT IN THE PLANT MIX BITUMINOUS PAVEMENT.

212010
CLASS "A" SEEDING

ROADWAY 1.26 ACRES

212090
CLASS "I" TEMPORARY SOIL STABILANT

* 60% OF CLASS "A" SEEDING = 0.756 ACRES. USE 1-ACRE

202010
REMOVAL OF SURFACING

SO. YDS.	REMARKS
980	* DETOUR

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
26-9237.91 0797



SURFACING SCHEDULE &
EROSION CONTROL PLAN

6			
5			
4			
3			
2			
1			
NO.	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			

	F.H.W.A. REGION NO. 6		SHEET NO. 2-3
	4237.91		

452020
SEALING CONCRETE PAVEMENT JOINTS

609038
CONC. MOUNTABLE CURB & GUTTER - TYPE "A" 8"X24"

202001
REMOVAL OF STRUCTURES AND OBSTRUCTIONS

213001
OBLITERATE OLD ROAD

609058
CONCRETE BARRIER CURB & GUTTER - TYPE "B" 8"X30"

EARTHWORK SUMMARY

ENVIRONMENTAL REQUIREMENTS

THE FOLLOWING ITEMS REQUIRE SPECIAL ATTENTION:

1. THERE ARE NO SPECIAL ENVIRONMENTAL CONCERNS.

2.

3.

W Taylor 2-6-92
ENVIRONMENTAL PROGRAM MANAGER

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
2	6	-	4	2	3	7	.	9	1		0	8	9	7

6			
5			
4			
3			
2			
1			
NO.	DESCRIPTION	DATE	B
REVISIONS (OR CHANGE NOTICES)			

MISCELLANEOUS QUANTITIES

UTILITY OWNERS

TELEPHONE: AT&T--ISHMAEL PANTOJA 842-2806

U.S. WEST COMMUNICATIONS JOYCE ELLIOTT 245-8787

ELECTRIC: PUBLIC SERVICE CO. OF N.M. TOM KRATTIGER 848-4947

CABLE T.V.: JONES INTERCABLE KAREN JARAMILLO 761-6200

GAS: GAS CO. OF NEW MEXICO TIM CYNQUA 761-7775

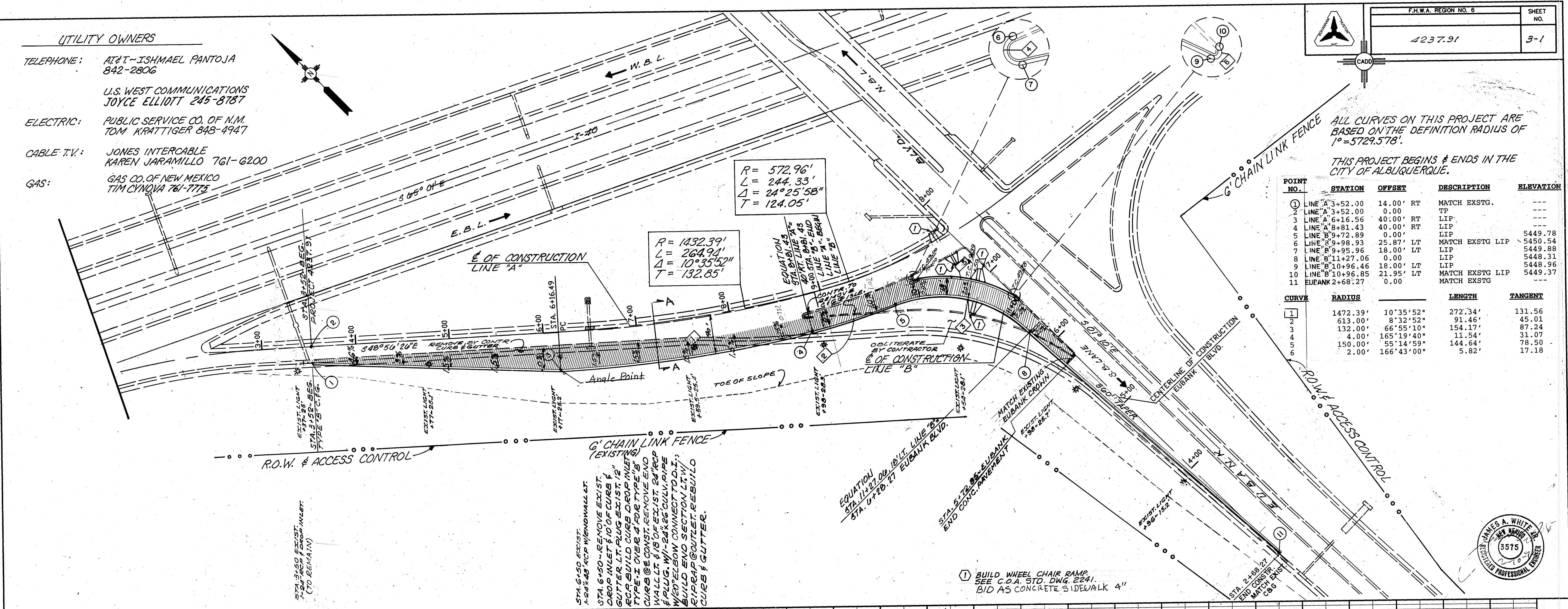
ALL CURVES ON THIS PROJECT ARE BASED ON THE DEFINITION RADIUS OF 1°=5729.578'.

THIS PROJECT BEGINS & ENDS IN THE CITY OF ALBUQUERQUE.

POINT NO.	STATION	OFFSET	DESCRIPTION	ELEVATION
1	LINE A 3+52.00	14.00' RT	MATCH EXSTG.	---
2	LINE A 3+52.00	0.00	TP	---
3	LINE A 6+16.56	40.00' RT	LIP	---
4	LINE A 8+81.43	40.00' RT	LIP	---
5	LINE B 9+72.89	0.00	LIP	5449.78
6	LINE B 9+98.93	25.87' LT	MATCH EXSTG LIP	5450.54
7	LINE B 9+95.96	18.00' LT	LIP	5449.88
8	LINE B 11+27.06	0.00	LIP	5448.31
9	LINE B 10+96.46	18.00' LT	LIP	5448.96
10	LINE B 10+96.85	21.95' LT	MATCH EXSTG LIP	5449.37
11	EUBANK 2+68.27	0.00	MATCH EXSTG	---

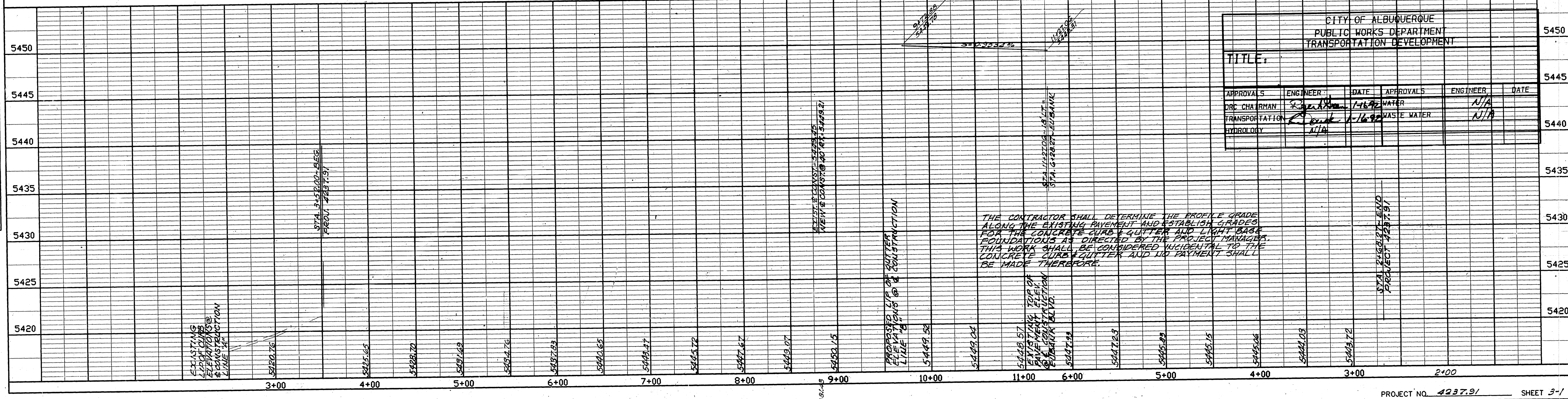
CURVE	RADIUS	LENGTH	TANGENT
1	1472.39'	10'35'52"	272.34'
2	613.00'	8'32'52"	91.46'
3	132.00'	66'55'10"	154.17'
4	4.00'	165'19'40"	11.54'
5	150.00'	55'14'59"	144.64'
6	2.00'	166'43'00"	5.82'

PLAN	DATE
NO.	
BY	
DATE	
BY	
DATE	
BY	
DATE	



1 BUILD WHEEL CHAIR RAMP SEE C.O.A. STD. DWG. 2241. BID AS CONCRETE SIDEWALK 4"

PROFILE	DATE
NO.	
BY	
DATE	
BY	
DATE	
BY	
DATE	

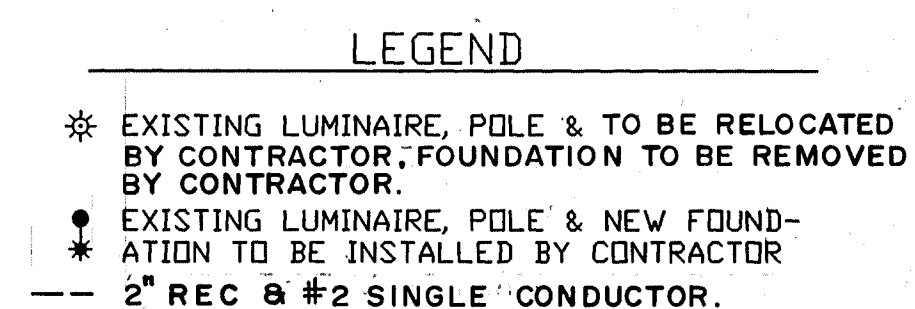


CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
TRANSPORTATION DEVELOPMENT

TITLE:

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
DR. CHAIRMAN	[Signature]	1-16-92	WATER	N/A	
TRANSPORTATION	[Signature]	1-16-92	WASTE WATER	N/A	
HYDROLOGY	N/A				

THE CONTRACTOR SHALL DETERMINE THE PROFILE GRADE ALONG THE EXISTING PAVEMENT AND ESTABLISH GRADES FOR THE CONCRETE CURB & GUTTER AND LIGHT BASE FOUNDATIONS AS DIRECTED BY THE PROJECT MANAGER. THIS WORK SHALL BE CONSIDERED NECESSARY TO THE CONCRETE CURB & GUTTER AND NO PAYMENT SHALL BE MADE THEREFORE.

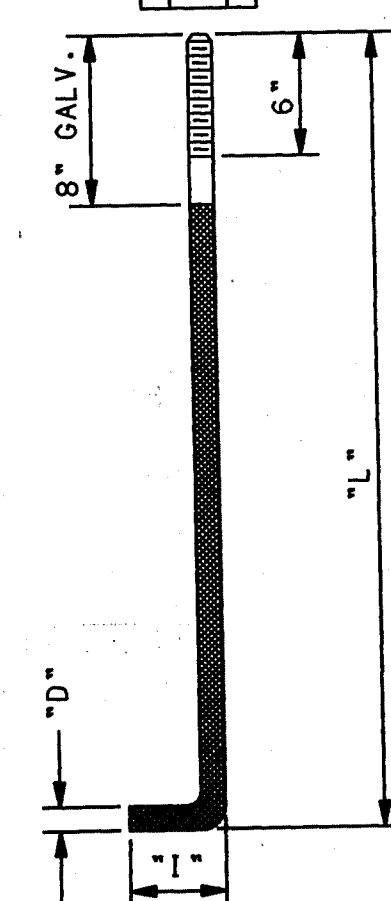
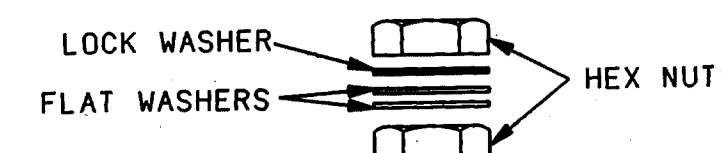


1. EXISTING LUMINAIRE & POLE TO BE REMOVED & RESET ON NEW FOUNDATION, SEE DETAIL 'A' THIS SHEET.
2. EXISTING CONDUIT TO REMAIN & PLUG.

DRAWING NO. 4237.91	MAP NO. K20 & K21	SHEET 4-1 OF
---------------------	-------------------	--------------

GENERAL NOTES

- ALL FOUNDATIONS SHALL INCLUDE COPPERWELD GROUND RODS AS SHOWN WHICH SHALL BE CONSIDERED INCIDENTAL TO THE COMPLETION OF THE FOUNDATION. NO PRICE OR PAYMENTS SHALL BE MADE THEREFOR.
- WELDING SHALL BE IN ACCORDANCE WITH SECTION 1.4.2 OF AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS.



DIMENSION TABLE					
MOUNTING HEIGHT	NO. OF ARMS	D	L	I	UNC
30' - 50'	1 OR 2	1"	36	4	8

ANCHOR BOLTS SHALL BE HOT BENT AND SHALL MEET THE REQUIREMENTS OF ASTM A-675 GRADE 90. NUTS MEET THE REQUIREMENTS OF ASTM A-563 GRADE A, AND ANSI B18-2.

FLAT WASHERS SHALL MEET THE REQUIREMENTS OF ANSI B27.2 HEAVY WASHERS.

LOCK WASHERS SHALL MEET THE REQUIREMENTS OF ANSI B18-21.1 HEAVY WASHERS.

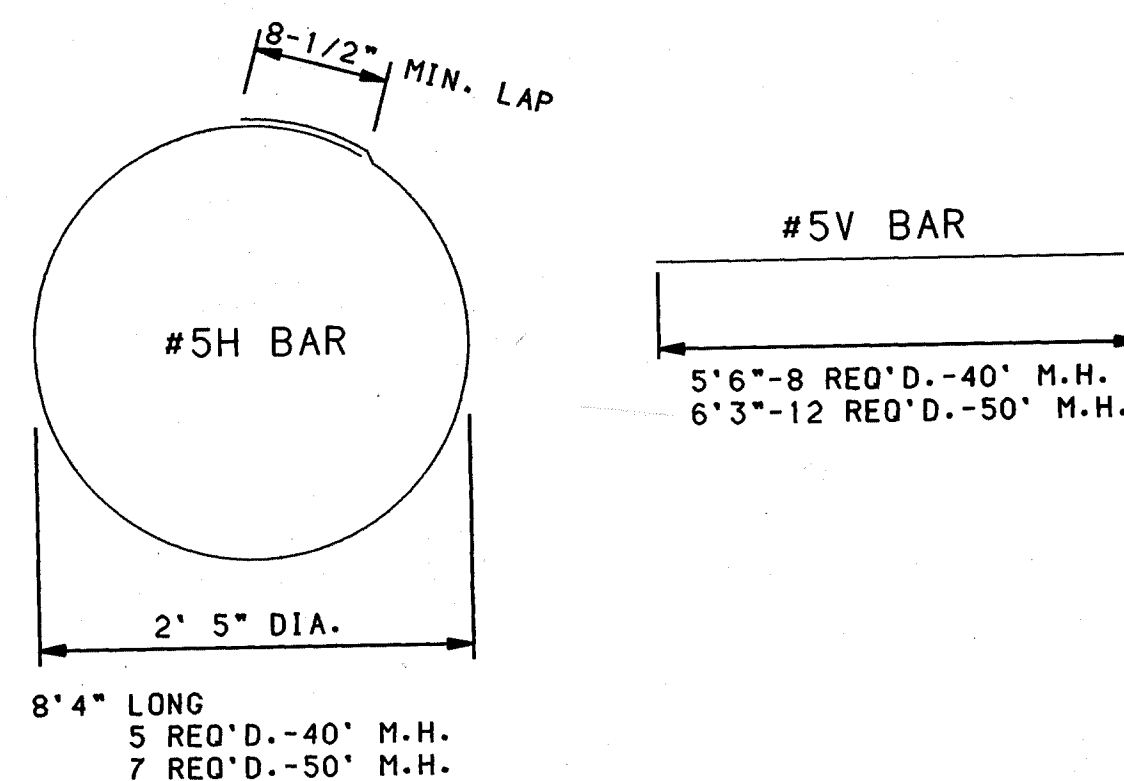
BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A-153.

FOUR (4) ANCHOR BOLTS, EIGHT (8) HEX NUTS, EIGHT (8) FLAT WASHERS, AND FOUR (4) LOCK WASHERS SHALL BE FURNISHED WITH EACH POLE.

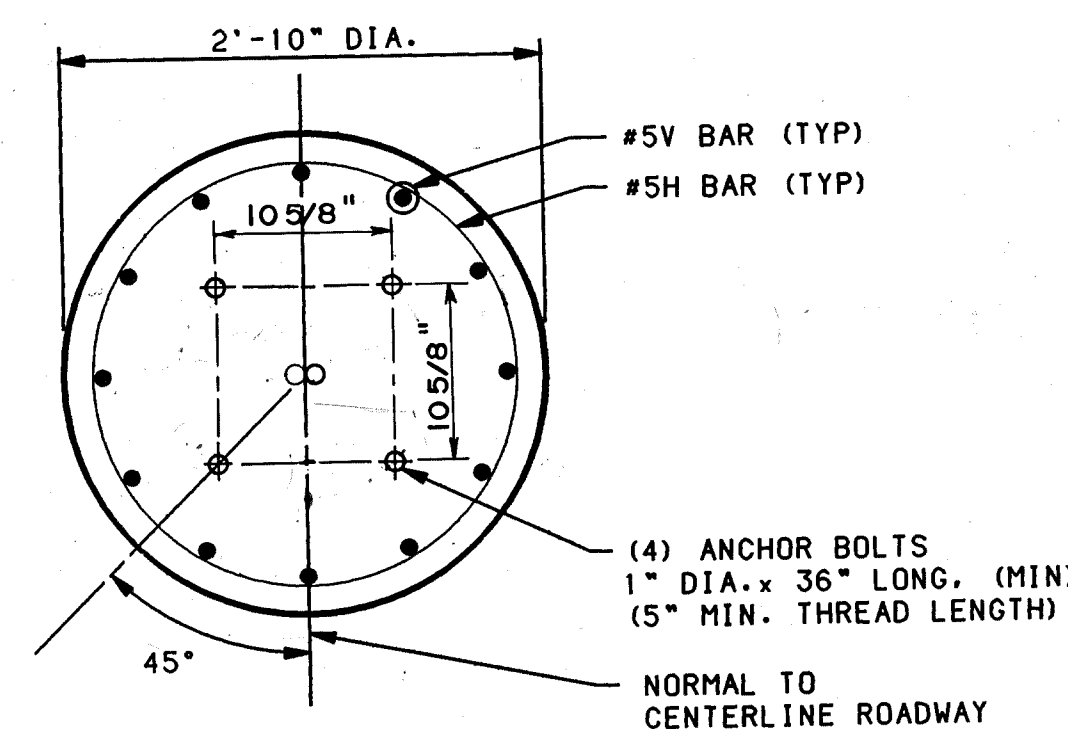
NUTS, FLAT WASHERS, AND LOCK WASHERS FURNISHED FOR BREAKAWAY SUPPORTS SHALL BE SPECIFIED ON DETAILS.

ANCHOR BOLTS

NO.	DESCRIPTION	DATE	BY
3			
2			
1			
REVISIONS (OR CHANGE NOTICES)			
NEW MEXICO STATE HIGHWAY AND TRANSPORTATION DEPARTMENT			
TRAFFIC DESIGN SECTION			
TYPE "V" STANDARD			
FOUNDATION & BASE DETAILS			
NO SCALE			

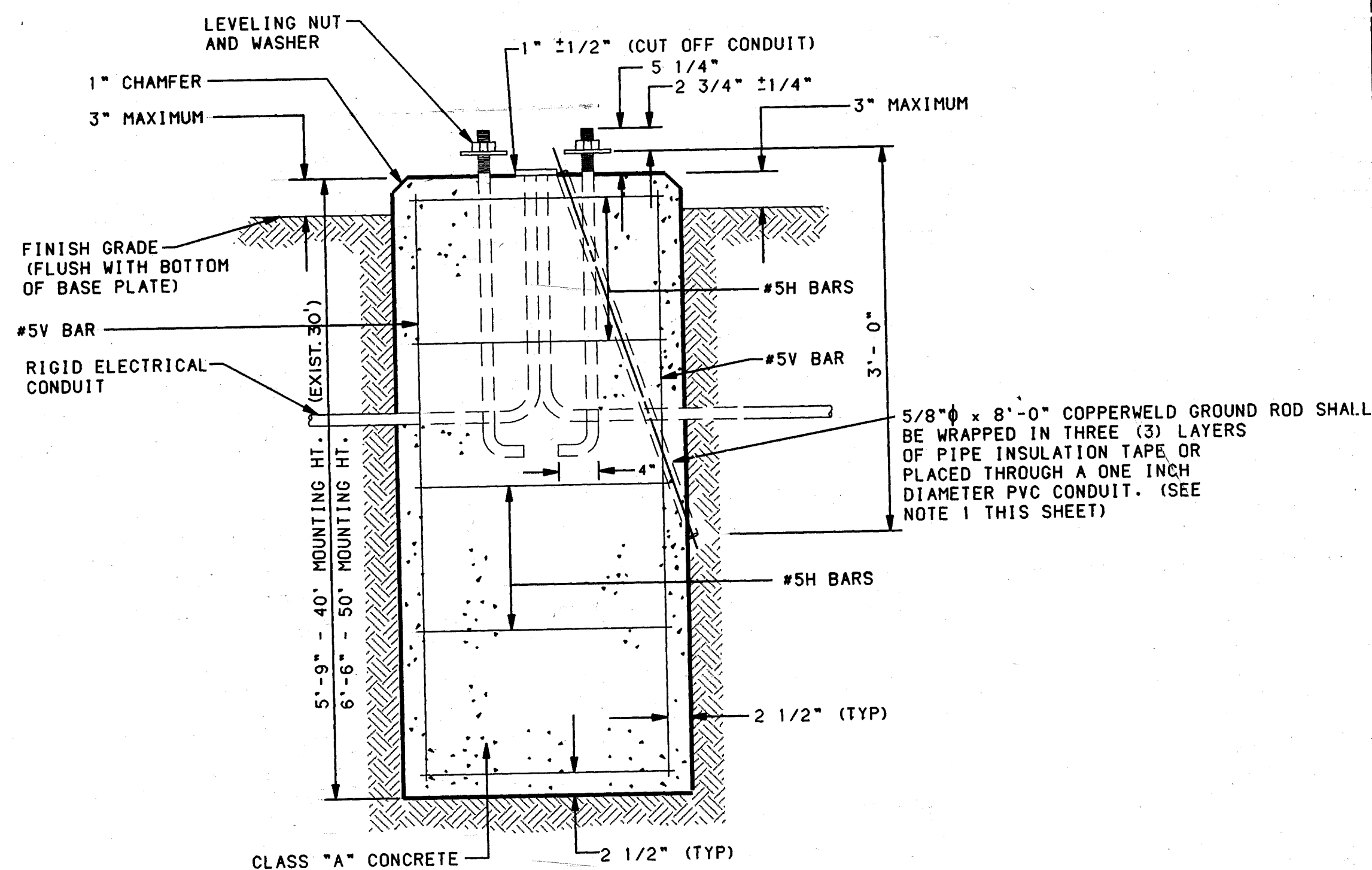


REINFORCING BARS



PLAN

NOTE: CONTRACTOR TO FIELD VERIFY THE REQUIRED ANCHOR BOLT DIMENSIONS PRIOR TO CONSTRUCTING FOUNDATION.

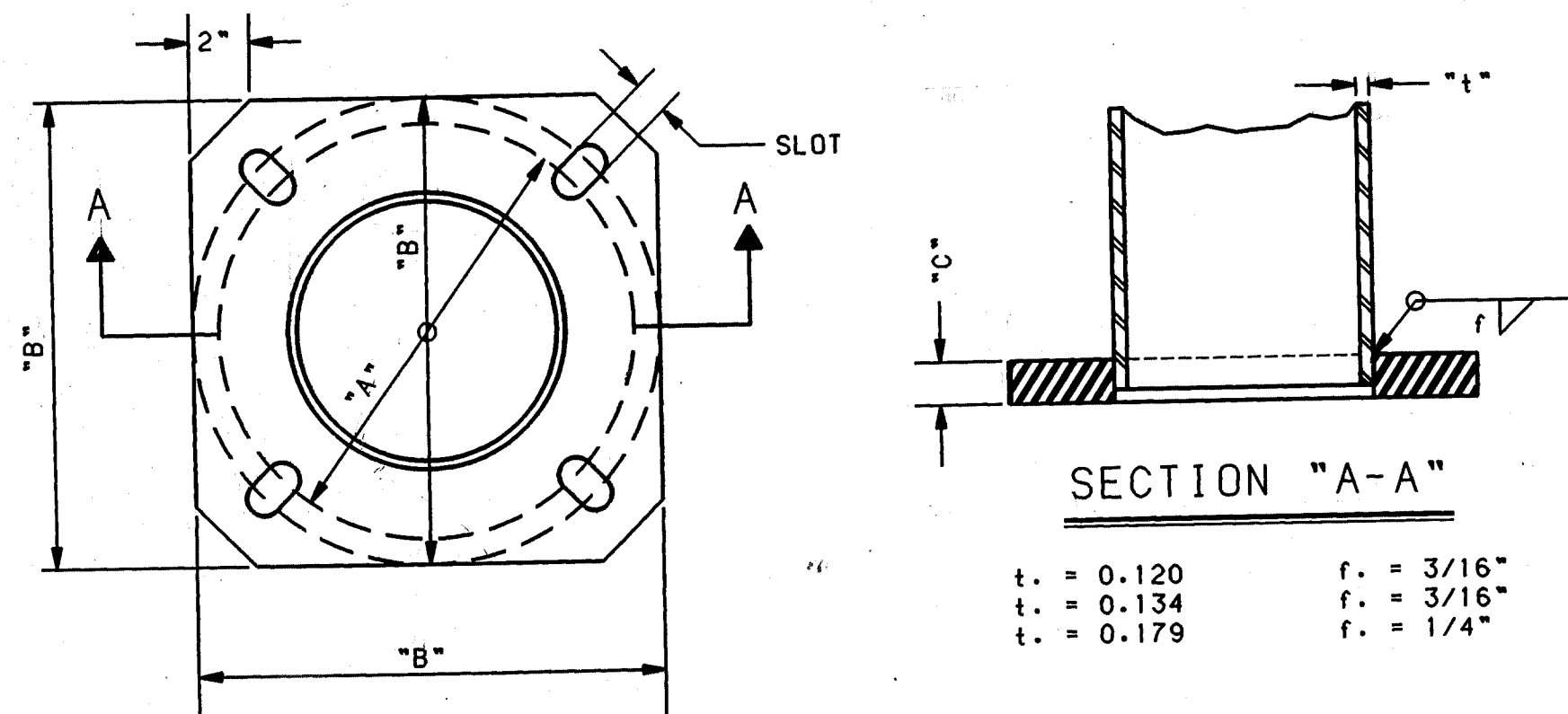


ELEVATION

ESTIMATED FOUNDATION MATERIAL

	40' MOUNTING HT. & EXISTING 30'	50' MOUNTING HT.
REINFORCING BARS, GRADE 40	92 POUNDS	139 POUNDS
PORTLAND CEMENT CONCRETE CLASS "A"	1.33 CU.YDS.	1.5 CU.YDS.

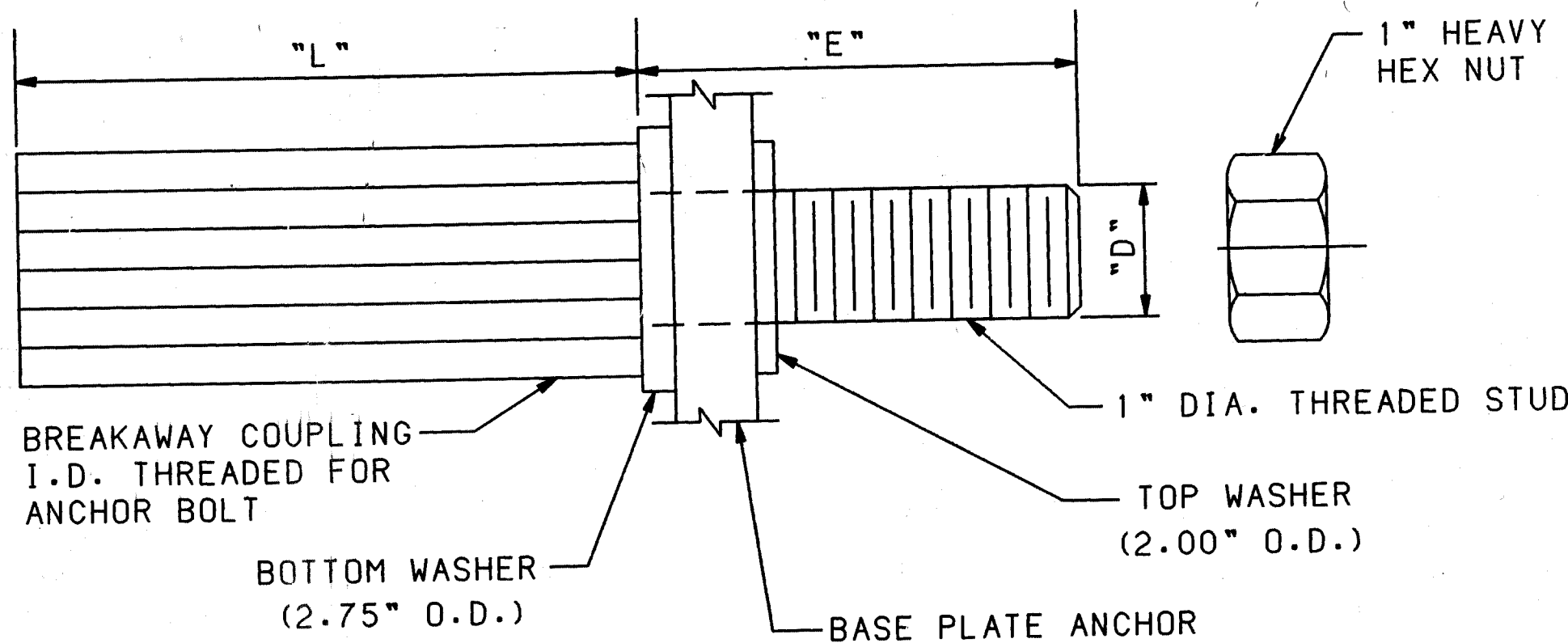
FOUNDATION DETAILS



DIMENSION TABLE					
MOUNTING HEIGHT	NO. OF ARMS	DIMENSIONS (INCHES)			SLOT
		A (MIN.)	B (MAX.)	C	
30' - 35'	1 OR 2	11	16	1"	1.13"x3.69"
40'	1 OR 2	11	16	1"	1.13"x3.69"
50'	1 OR 2	14	16	1"	1.13"x2.19"

ANCHOR BASE SHALL BE FABRICATED FROM PLATE STEEL CONFORMING TO ASTM A-36 AND SHALL BE WELDED TO POLE SHAFT PRIOR TO GALVANIZING SHAFT.

ANCHOR BASE DETAIL



DIMENSION TABLE						
D	THREAD	MINIMUM TENSILE STRENGTH	RESTRAINED SHEAR	NOT TORQUE	L	E
		MIN.	MAX.	25 FT. LBS.		
1"	8 UNC	25 KIPS	30 KIPS	7.5 KIPS	175	4-3/4" 3-5/16"

BREAKAWAY SUPPORT COUPLING SHALL CONFORM TO THE REQUIREMENTS OF AASHTO STANDARDS FOR BREAKAWAY SUPPORTS (FHWA ACCEPTABLE VENDOR).

COUPLING SHALL BE FABRICATED FROM EITHER DIE CAST ALUMINUM ALLOY 380 ACCORDING TO ASTM B-85, OR EXTRUDED FROM ALLOY 2024-T8511 ACCORDING TO ASTM A-153.

WASHERS SHALL BE FABRICATED FROM ASTM A-36 STEEL PLATE AND SHALL BE GALVANIZED ACCORDING TO ASTM A-153.

HEX NUTS SHALL MEET THE REQUIREMENTS OF ASTM A-563 GRADE A, AND ANSI 18.2-2 HEX TYPE AND SHALL BE GALVANIZED ACCORDING TO ASTM A-153.

THREADED STUD SHALL MEET THE REQUIREMENT OF ASTM A-675 GRADE 90 AND IS GALVANIZED WITH ASTM A-153, OR IS FABRICATED FROM AISI STAINLESS STEEL.

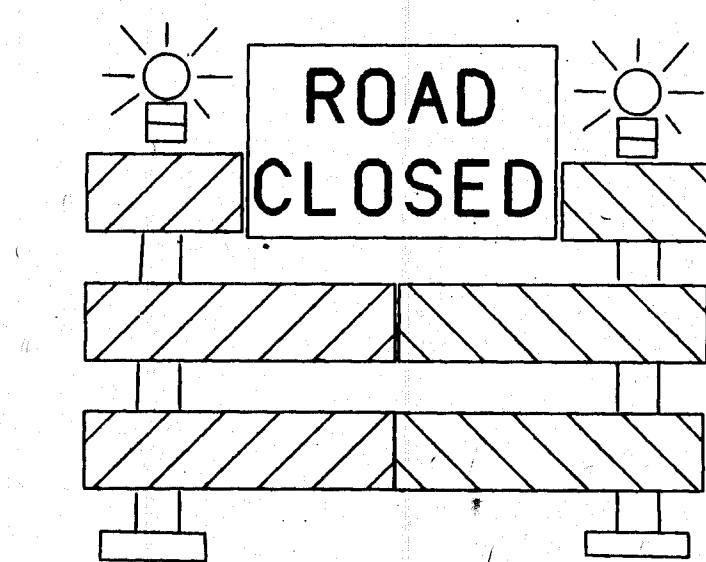
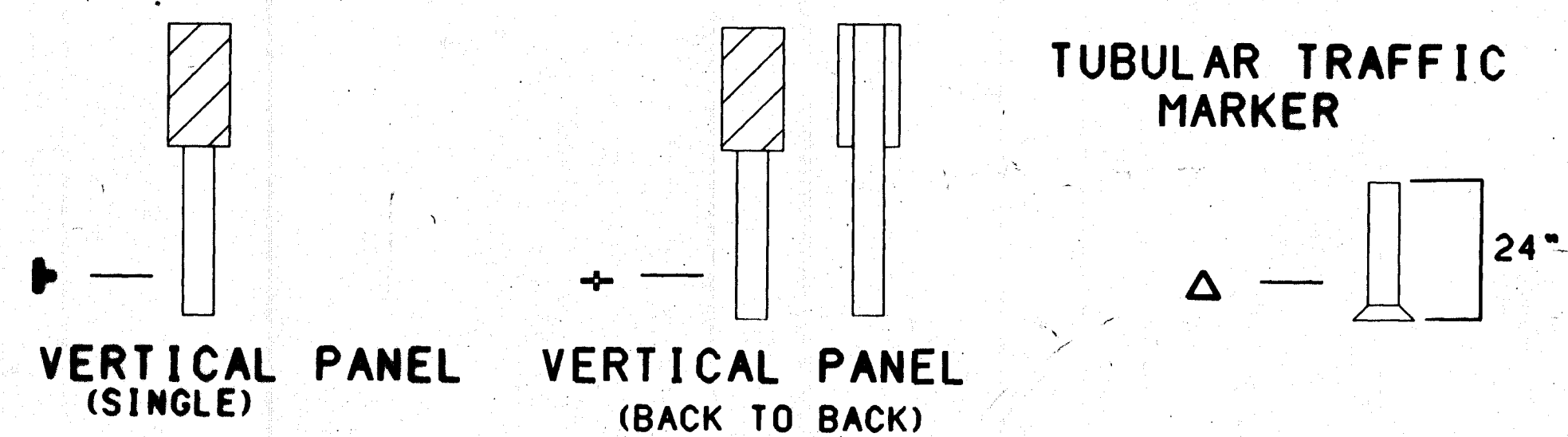
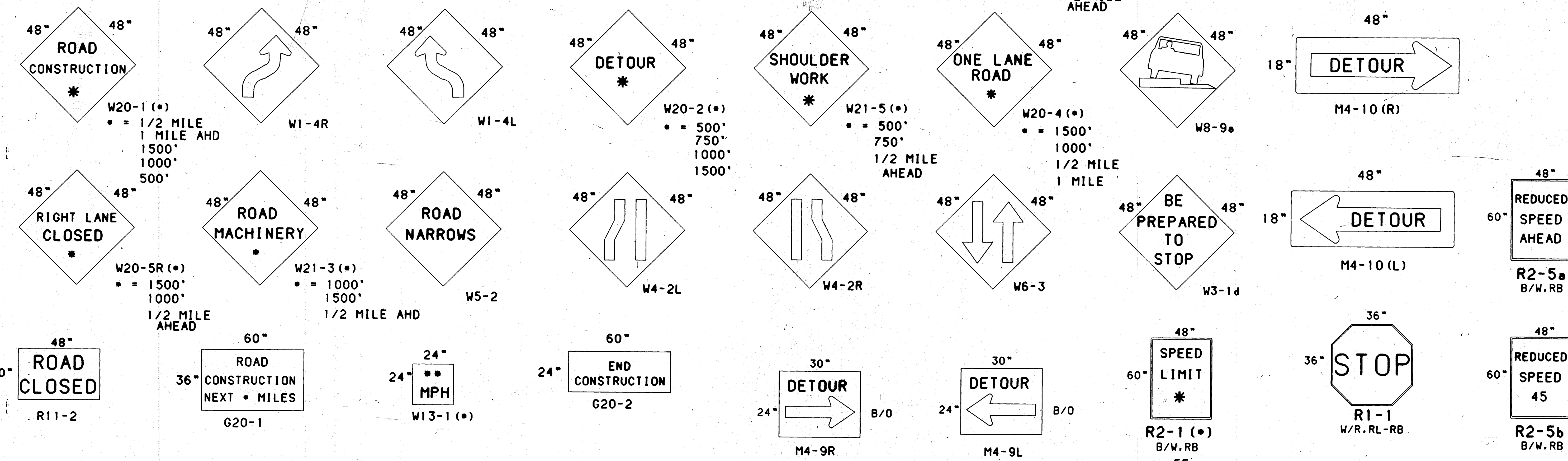
WHEN COUPLINGS ARE FURNISHED, EACH LIGHT POLE SHALL BE FURNISHED WITH FOUR (4) COUPLINGS AND THREADED STUDS, EIGHT (8) FLAT WASHERS, AND FOUR (4) HEX NUTS.

BREAKAWAY SUPPORT COUPLING

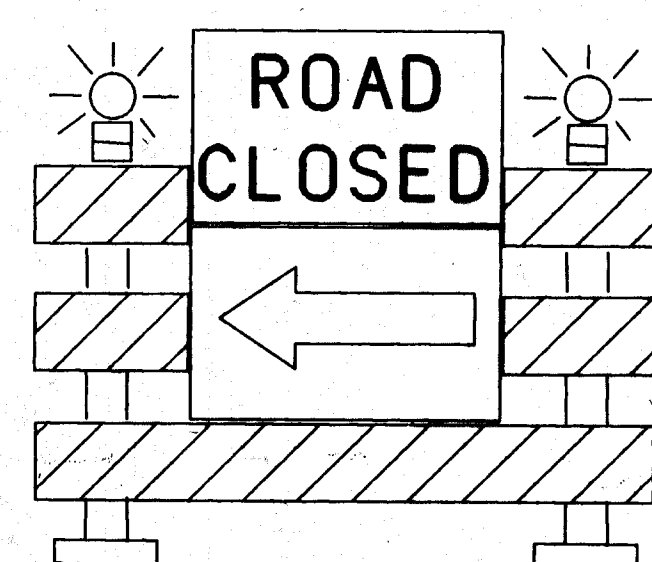
SIGN FACE DETAILS *

* - NOT ALL SIGNS UTILIZED IN THESE PLANS

F.H.W.A. REGION NO. 8	SHEET NO.
4237.91	5-1

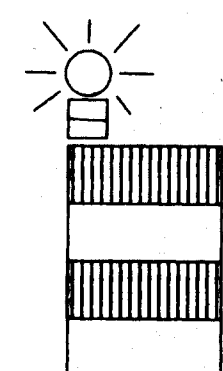


TYPE III BARRICADE (8 FT.)

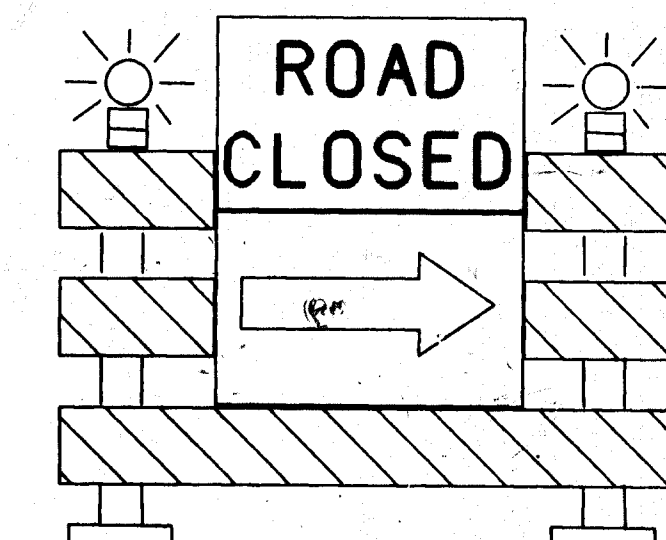


TYPE III BARRICADE (8 FT.) LEFT

BARREL (TYPE B)

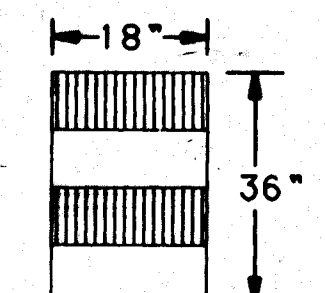


TYPE "A, B, H" BARRELS SHALL BE BALLASTED WITH SAND BAGS (S) A MAXIMUM OF 100LBS. OF BALLAST SHALL BE USED. REFLECTIVITY I SHEETING SHALL BE USED ON TYPE "A" & "B" BARRELS.

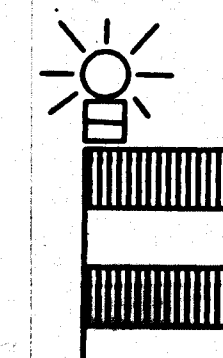


TYPE III BARRICADE (8 FT.) RIGHT

BARREL (TYPE A)



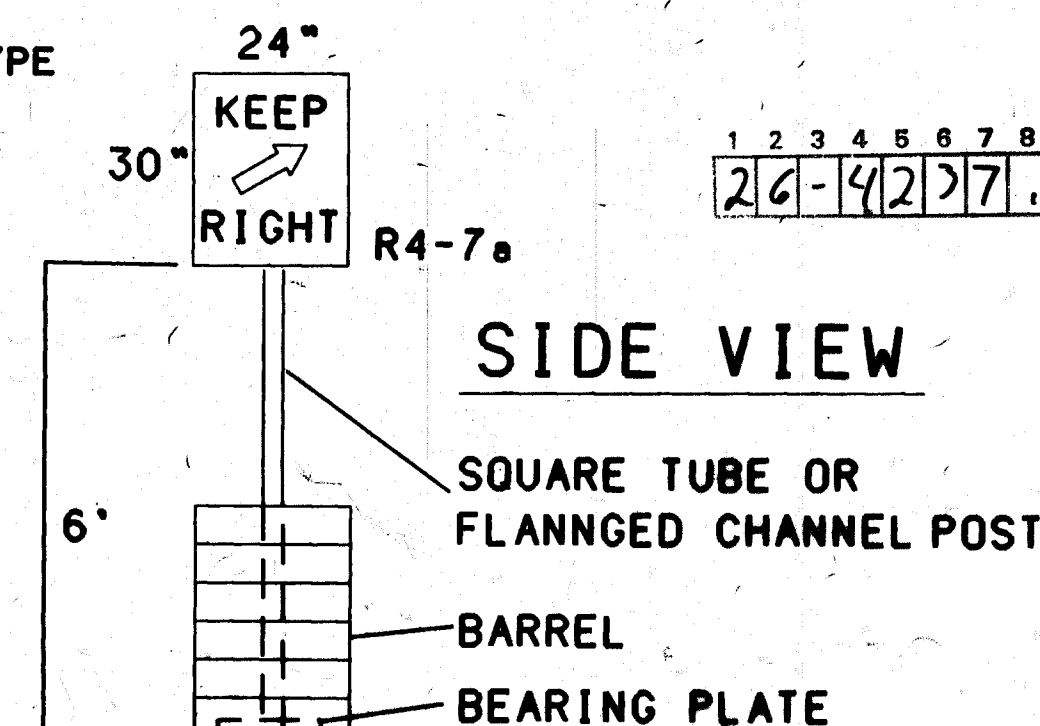
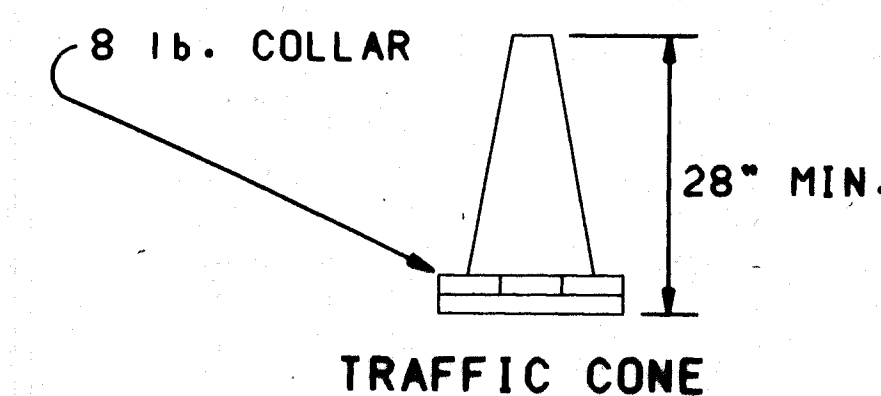
BARREL (TYPE H)



18" CIRCULAR BEARING PLATE OR AS DIRECTED BY THE PROJECT MANAGER

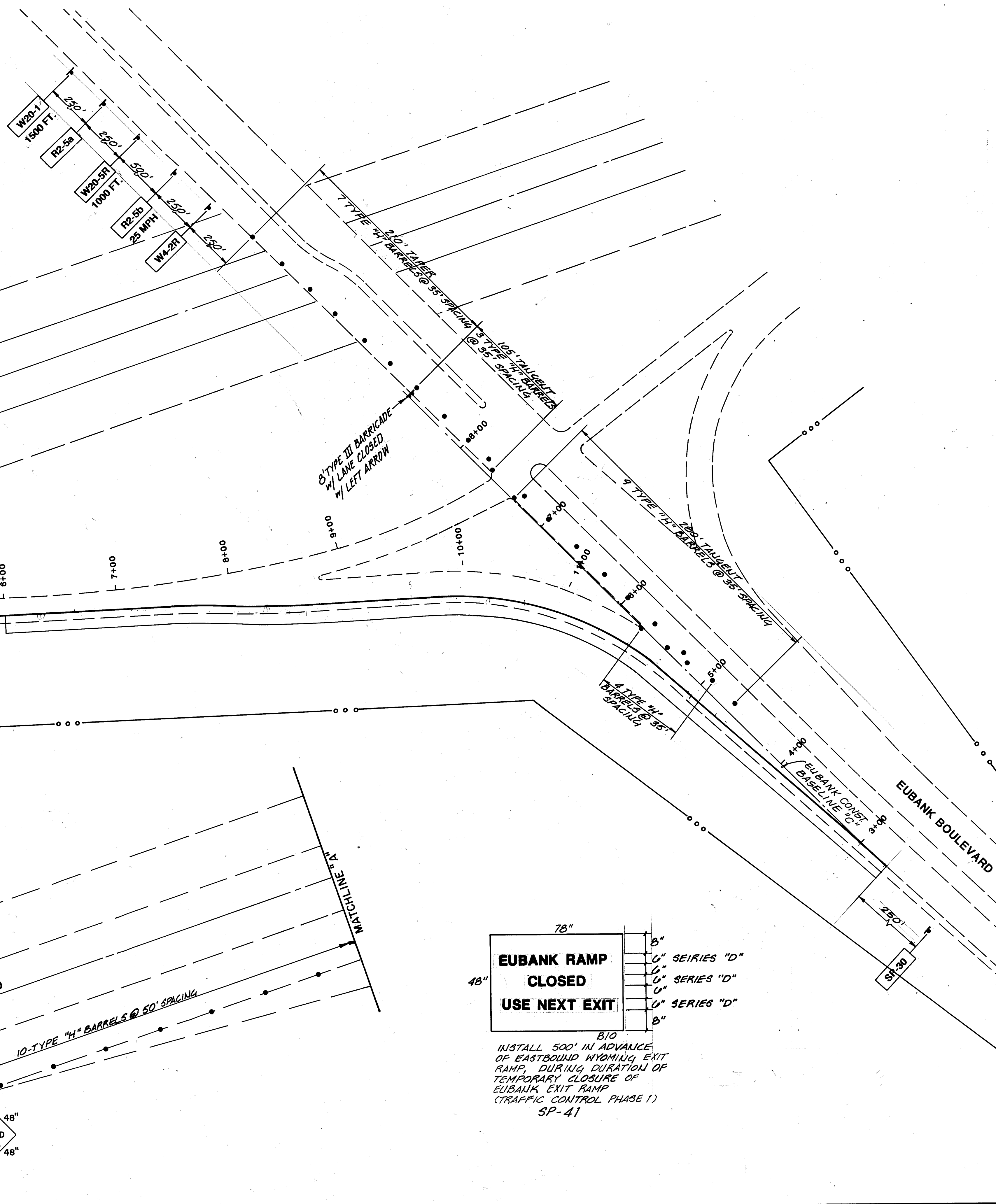
TOP VIEW

FILL WITH 12" SAND

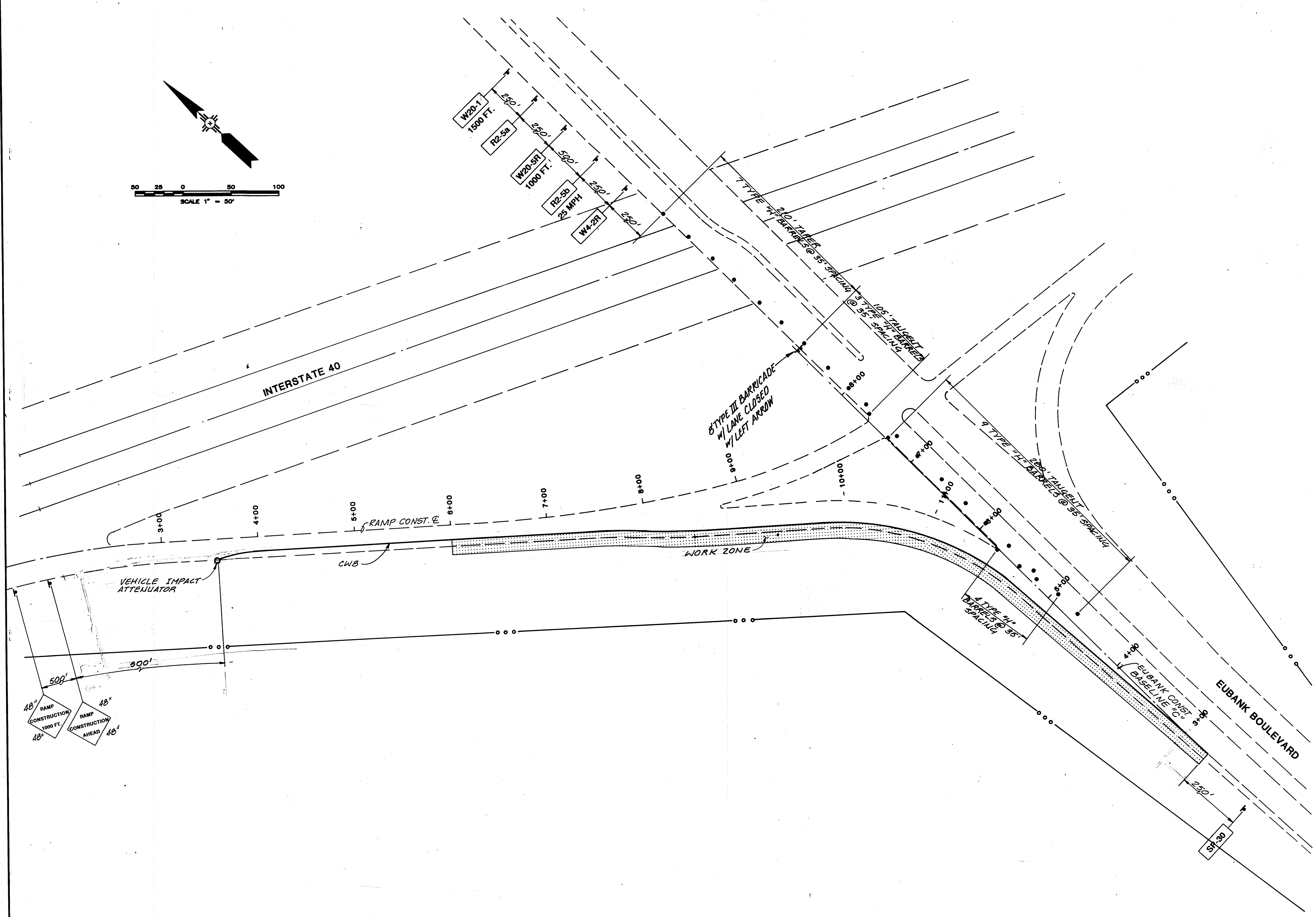
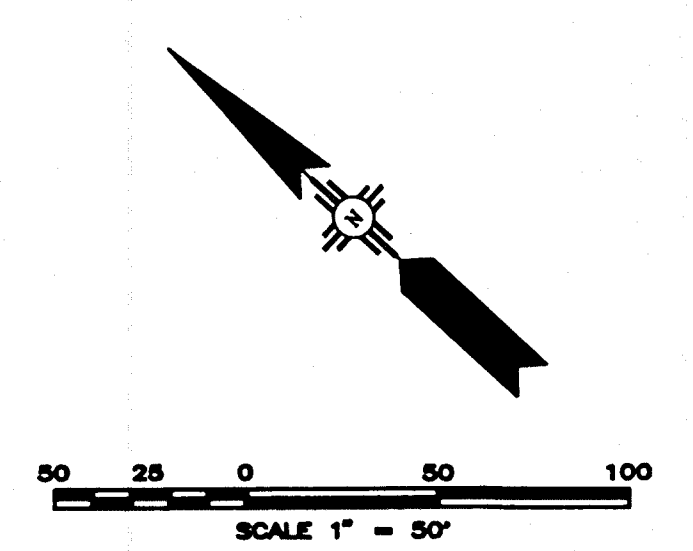


1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
2	6	9	2	7	9	7	1	1	2	9	7			

3			
2			
1			
NO.	DESCRIPTION	DATE	BY
	REVISIONS (OR CHANGE NOTICES)		
NEW MEXICO STATE HIGHWAY AND TRANSPORTATION DEPARTMENT			
CONST. TRAFFIC CONTROL PLAN			
SIGN FACE DETAILS			



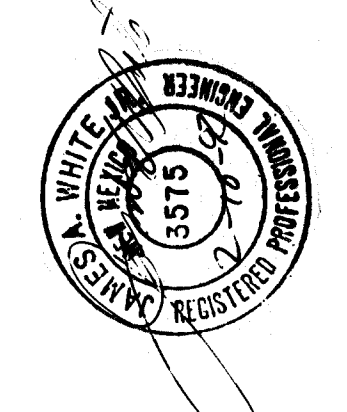
APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
DRC CHAIRMAN	<i>Roger [Signature]</i>	1-16-92	WATER	N/A	
TRANSPORTATION	<i>K. [Signature]</i>	1-16-92	WASTE WATER	N/A	
HYDROLOGY	<i>N/A</i>				
Cons. [Signature]	<i>RR [Signature]</i>	2/14/92			
DRAWING NO.	4237 91	MAP NO. K20-21	SHEET	OF	5-2



FHWA Region No.	6	NEW MEXICO	SHEET NO.	5-3	TOTAL SHEETS	5
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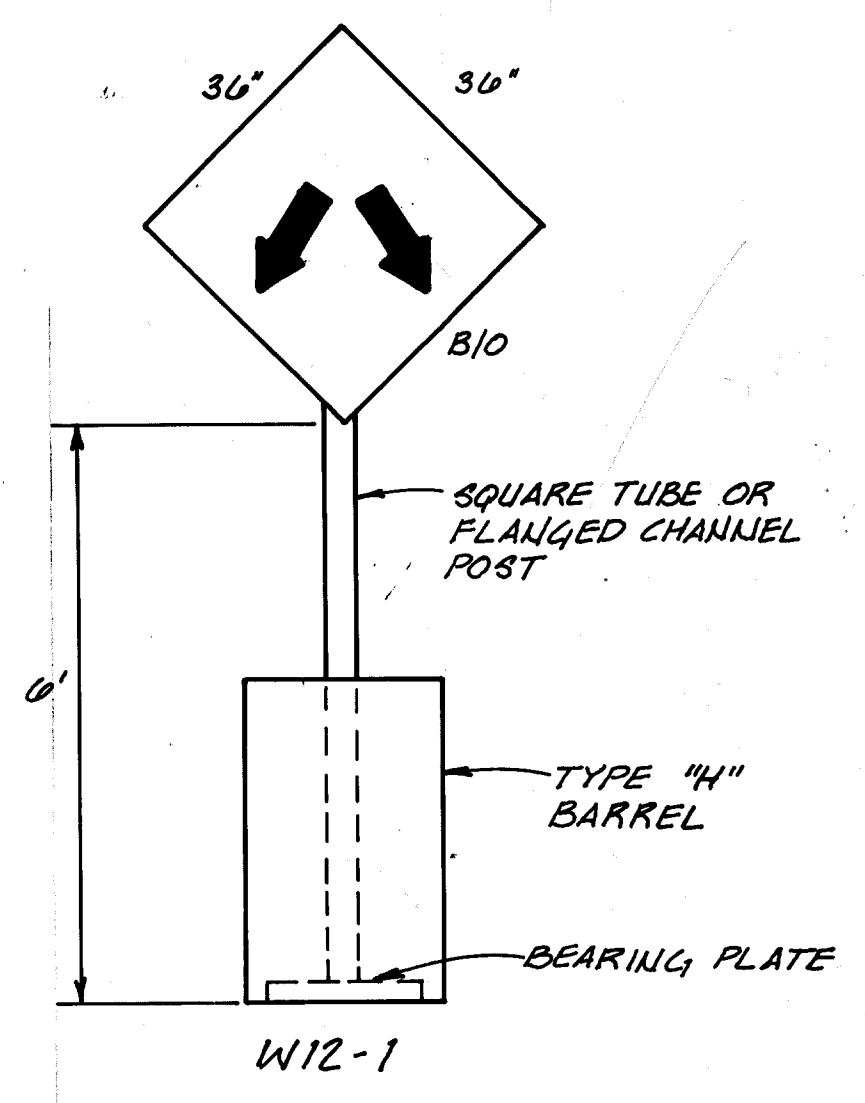
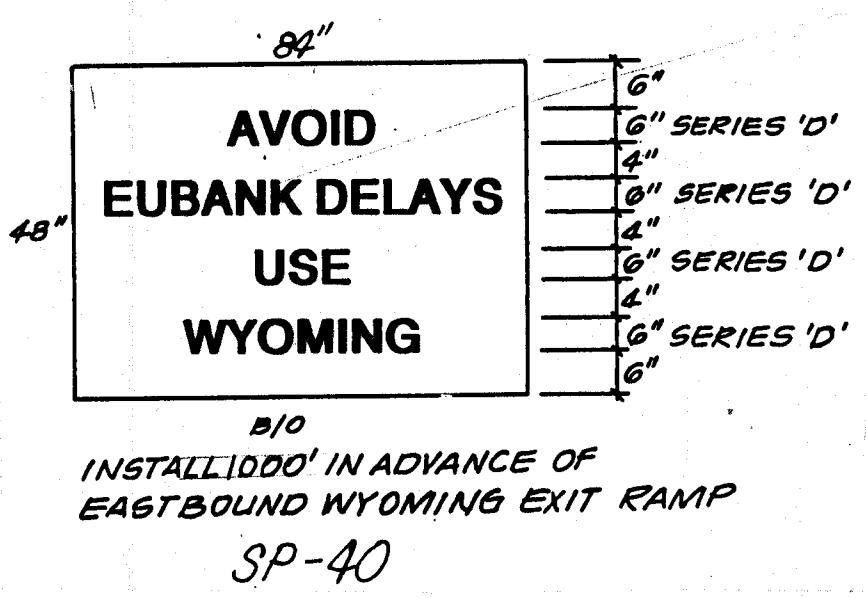
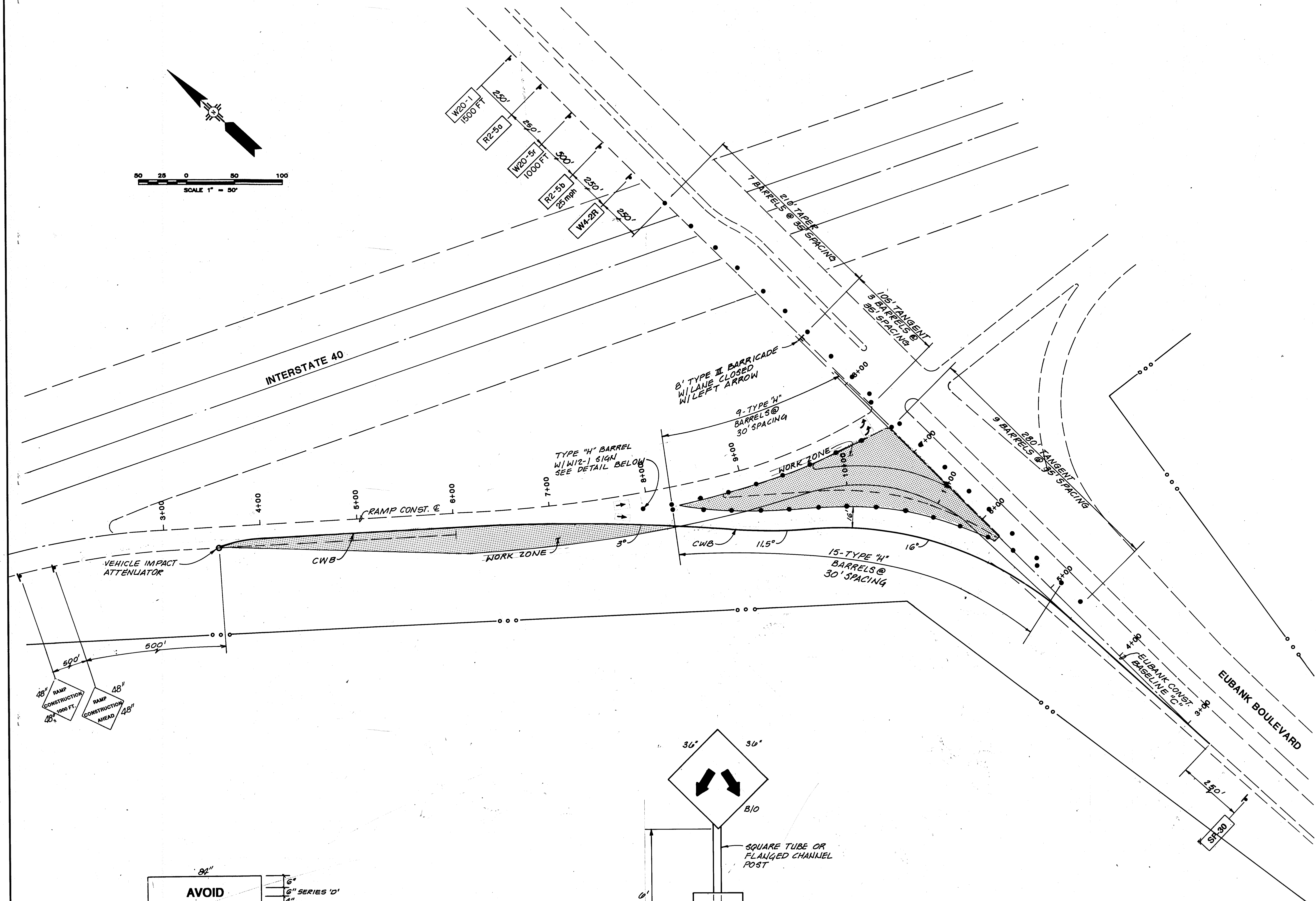
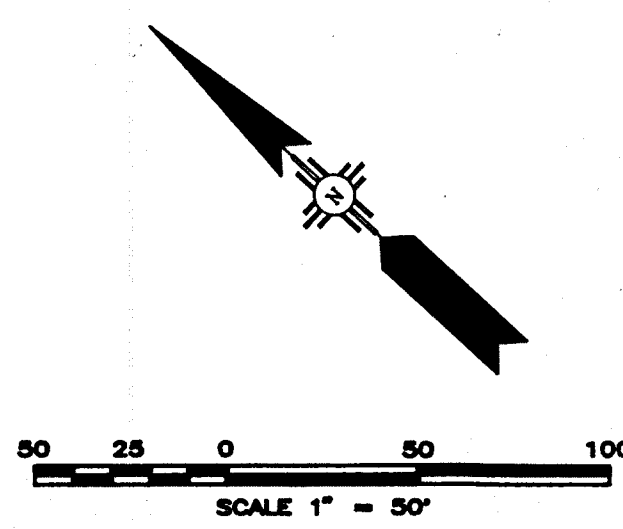
- PHASE IA
1. INSTALL CWB ALONG OUTSIDE EDGE OF RAMP EXISTING RIGHT-TURN LANE B.O.P. TO E.O.P.
 2. CLOSE OUTSIDE LANE OF SB EUBANK.
 3. REMOVE EXISTING CURB & GUTTER ON RIGHT SIDE OF RAMP FROM STA. 6+00 TO STA. 11+44.85 RAMP CONSTRUCTION CENTERLINE AND STA. 5+98.00 TO STA. 2+68.27 (E.O.P.) EUBANK CONSTRUCTION BASELINE "C".
 4. BUILD TEMPORARY DETOUR PAVEMENT STA 6+00 TO STA. 11+44.85 RAMP CONSTRUCTION CENTERLINE AND STA. 5+98.00 TO STA. 2+68.27 (E.O.P.) EUBANK CONSTRUCTION BASELINE "C".

AS-BUILT INFORMATION		BENCH MARKS		SURVEY INFORMATION		ENGINEER'S SEAL		REVISIONS		DESIGN		CHECKED BY	
CONTRACTOR	NO.	WORKED BY	DATE	NO.	BY	DATE	NO.	DATE	BY	DATE	BY	DATE	DATE
INSPECTOR	NO.	ACCEPTANCE BY	DATE										
VERIFICATION BY	DATE												
RECORDING BY	DATE												
MICRO-FILM INFORMATION													
RECORDED BY	NO.												



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
26-4237-91 9/1/14 9/1

CITY OF ALBUQUERQUE					
TITLE: TRAFFIC CONTROL - PHASE IA					
APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
DR. CHAIRMAN	<i>[Signature]</i>	1-16-92	WATER	N/A	
TRANSPORTATION	<i>[Signature]</i>	1-16-92	WASTE WATER	N/A	
HYDROLOGY	N/A				
Const. Coord.	<i>[Signature]</i>	2/4/92			
DRAWING NO.	4237.91	MAP NO.	K20-21	SHEET	OF
				5-3	



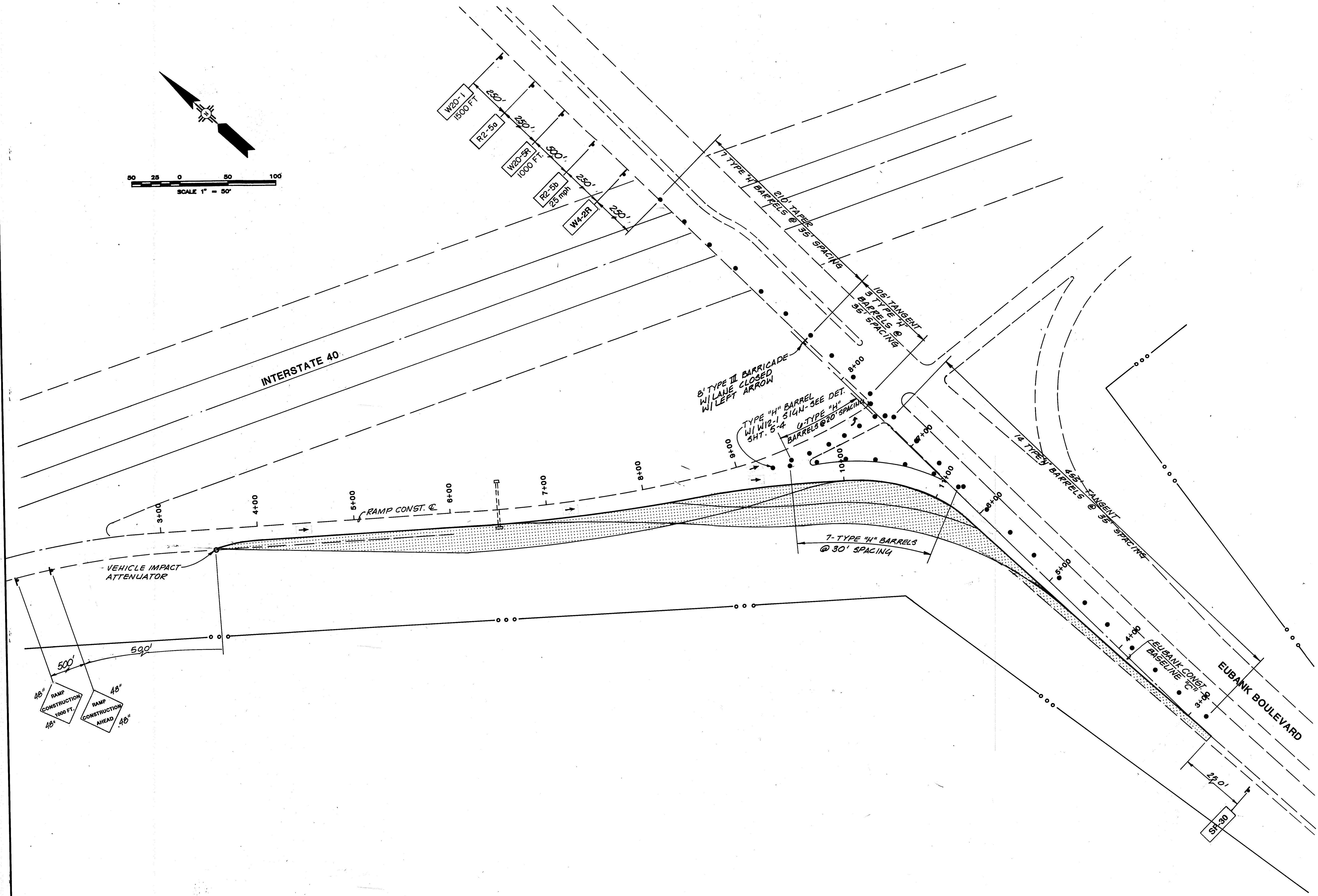
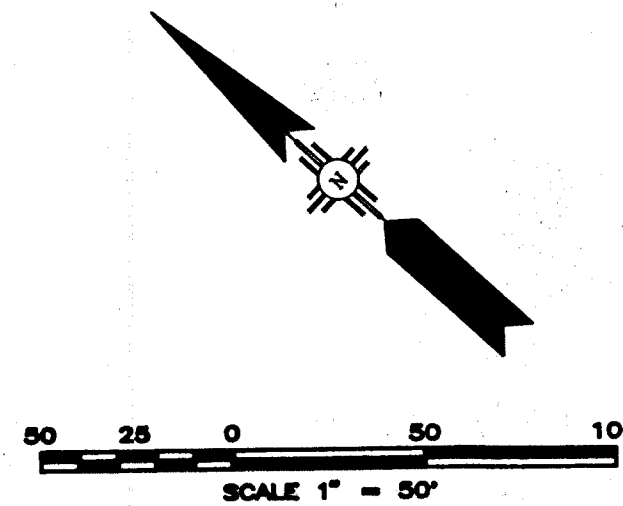
FHWA. Region No.	NEW MEXICO	SHEET NO.	TOTAL SHEETS
6		5-4	

- PHASE II
- 1 DETOUR EB TO SB TRAFFIC ONTO TEMPORARY RAMP.
 - 2 ALLOW DUAL LEFT EB TO NB TRAFFIC USING EXISTING LANES.
 - 3 CLOSE OUTSIDE LANE OF SB EUBANK BOULEVARD.
 - 4 BUILD NEW RIGHT-TURN LANE AND MEDIAN ISLAND IMPROVEMENTS STA. 8+81.43 TO STA. 11+44.85 RAMP CONSTRUCTION CENTERLINE AND STA. 5+99.00 TO STA. 5+60.00 EUBANK CONSTRUCTION BASELINE "C".

AS-BUILT INFORMATION		BENCH MARKS		SURVEY INFORMATION		ENGINEER'S SEAL		REVISIONS		DESIGN	
CONTRACTOR	DATE	NO.	DATE	NO.	DATE	NO.	DATE	NO.	DATE	NO.	DATE
WORK BY	DATE										
INSPECTOR'S	DATE										
FIELD	DATE										
VERIFICATION BY	DATE										
CORRECTED BY	DATE										
RECORDED BY	DATE										
NO.											

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
20-19237.91/1597

CITY OF ALBUQUERQUE					
TITLE: TRAFFIC CONTROL - PHASE II					
APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
DRG CHAIRMAN	R. A. [Signature]	1-16-92	WATER	N/A	
TRANSPORTATION	[Signature]	1-16-92	WASTE WATER	N/A	
HYDROLOGY	N/A				
DRG CHAIRMAN	R. A. [Signature]	1-16-92			
DRAWING NO.	4237 91	MAP NO.	K20-21	SHEET	OF
				5-4	

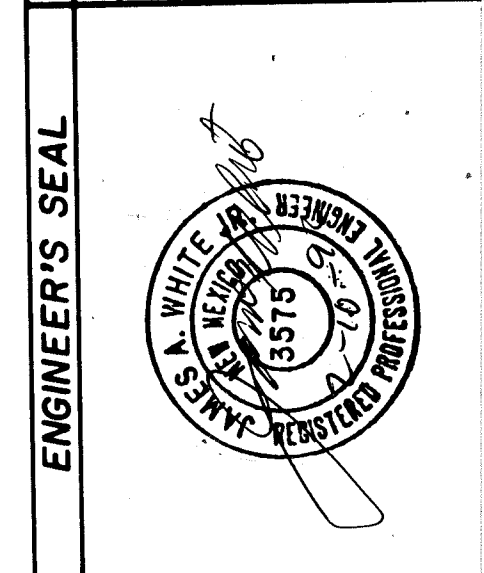


FHWA Region No.	NEW MEXICO	SHEET NO.	TOTAL SHEETS
6		5-5	

- PHASE III
- 1 OPEN NEWLY CONSTRUCTED RIGHT-TURN LANE TO TRAFFIC.
 - 2 CLOSE ONE LEFT-TURN LANE EB TO NB.
 - 3 MAINTAIN OUTSIDE LANE CLOSURE ON SB EUBANK.
 - 4 REMOVE TEMPORARY DETOUR PAVEMENT FROM STA. 6+00 TO STA. 11+44.85 RAMP CONSTRUCTION CENTERLINE AND STA. 5+99.00 TO STA. 2+68.27 (E.O.P.) EUBANK CONSTRUCTION BASELINE 'C'.
 - 5 REMOVE EXISTING OUTSIDE CURB & GUTTER STA. 3+52 TO STA. 6+00 RAMP CONSTRUCTION CENTERLINE.
 - 6 REMOVE EXISTING RIGHT-TURN LANE STA 6+00 TO STA. 11+44.85 RAMP CONSTRUCTION CENTERLINE AND STA. 5+99.00 TO STA 2+68.27 EUBANK CONSTRUCTION BASELINE 'C'.
 - 7 BUILD IMPROVEMENTS ON RAMP FROM STA. 3+52 (B.O.P.) TO STA. 8+81.43. REMOVE EXISTING DROP INLET AT STA. 6+50 AND PLUG EXISTING 24" PIPE.

AS-BUILT INFORMATION				MICRO-FILM INFORMATION			
CONTRACTOR	DATE	INSPECTOR'S	DATE	CONTRACTOR	DATE	INSPECTOR'S	DATE
STAMPED BY		FIELD		STAMPED BY		FIELD	
NO.		NO.		NO.		NO.	

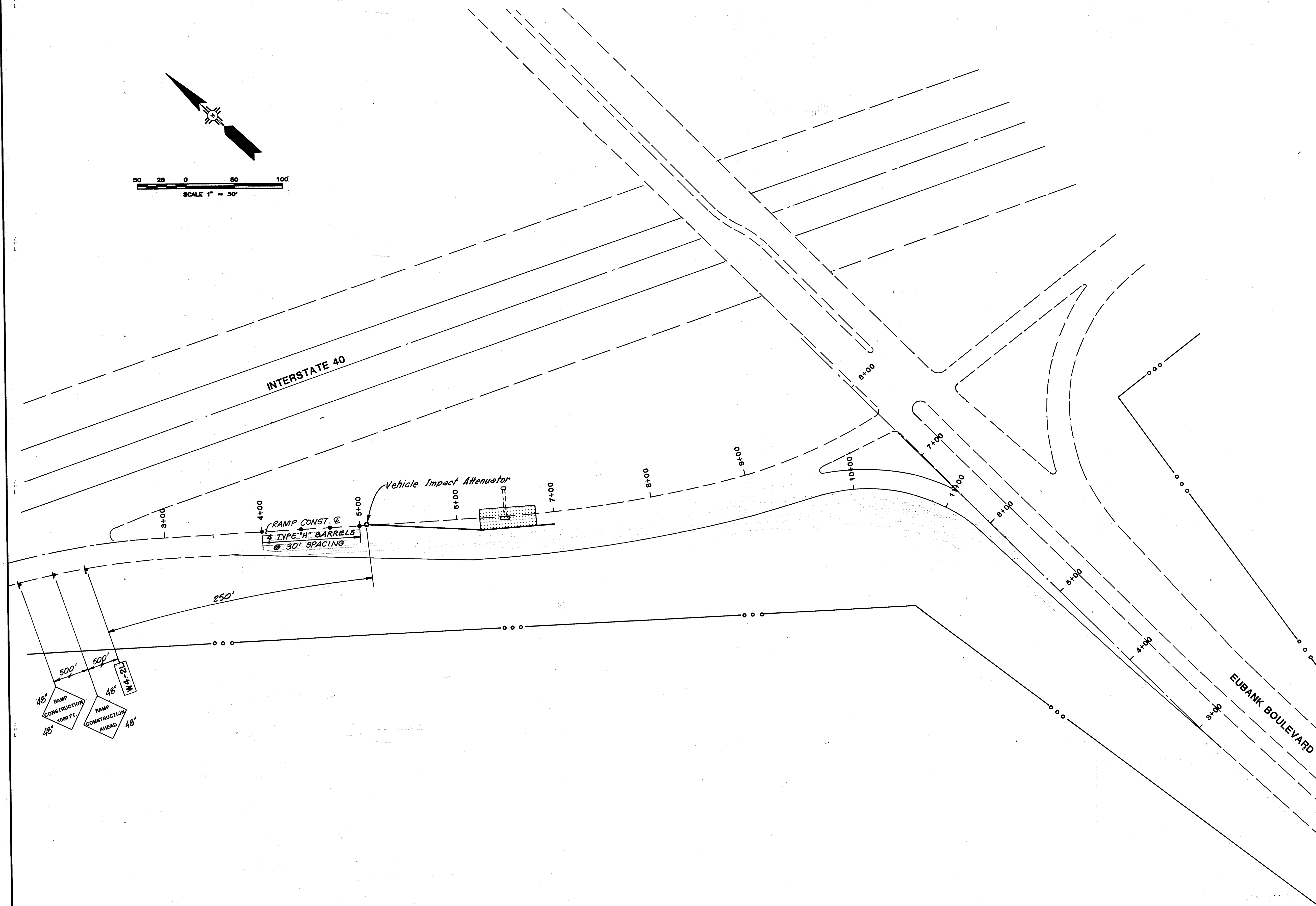
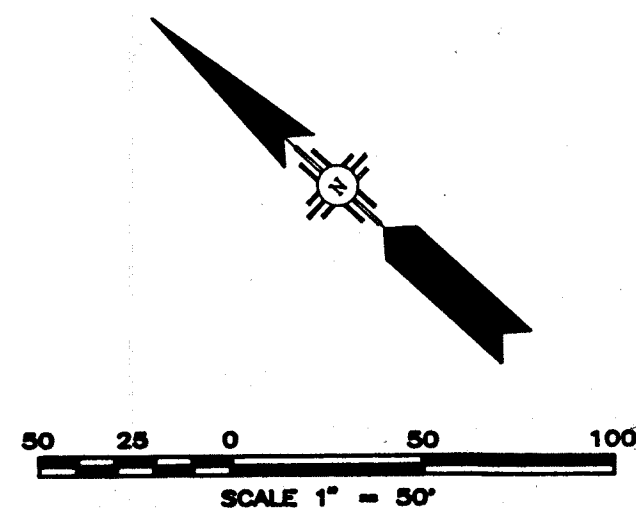
SURVEY INFORMATION			
FIELD	NOTES	BY	DATE
NO.			



REVISIONS				DESIGN			
NO.	DATE	REMARKS	BY	DESIGNED BY	DATE	DRAWN BY	DATE
				CHECKED BY			

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
20-192371.91 1/16/97

CITY OF ALBUQUERQUE					
TITLE: TRAFFIC CONTROL - PHASE III					
APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
DRG CHAIRMAN	Rodriguez	1-16-97	WATER	N/A	
TRANSPORTATION	R. D. Dwyer	1-16-97	WASTE WATER	N/A	
HYDROLOGY	R. D. Dwyer	2/14/97			
DRAWING NO.	4237.91	MAP NO.	K20-21	SHEET	OF
				5-5	



FHWA Region No.		SHEET NO.	TOTAL SHEETS
6	NEW MEXICO	5-5	

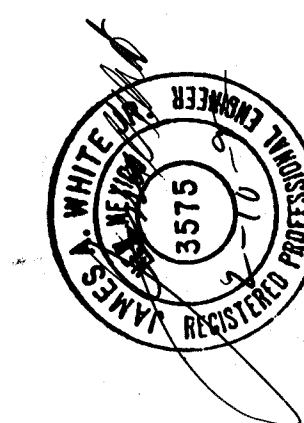
PHASE IV

- 1 OPEN NEWLY CONSTRUCTED RAMP TO TRAFFIC.
- 2 OPEN EUBANK BOULEVARD.
- 3 CLOSE LEFT LANE ON RAMP FROM STA. 6+00 TO STA. 7+00.
- 4 BUILD NEW DROP INLET AT STA. 6+50 RAMP CONSTRUCTION CENTERLINE.

PHASE V

- 1 COMPLETE PERMANENT STRIPING AND SIGNING.

AS-BUILT INFORMATION		BENCH MARKS		SURVEY INFORMATION		ENGINEER'S SEAL		REVISIONS		DESIGN		MICRO-FILM INFORMATION	
CONTRACTOR	DATE	NO.	DATE	NO.	DATE	NO.	DATE	NO.	DATE	NO.	DATE	NO.	DATE
STARTED BY	DATE			BY	DATE			REMARKS	BY	DESIGNED BY	DATE	RECORDED BY	DATE
INSPECTOR'S	DATE									DRAWN BY	DATE		
FIELD CHANGE BY	DATE									CHECKED BY	DATE		
VERIFICATION BY	DATE												
CORRECTED BY	DATE												



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26-4237.91-1797



CITY OF ALBUQUERQUE



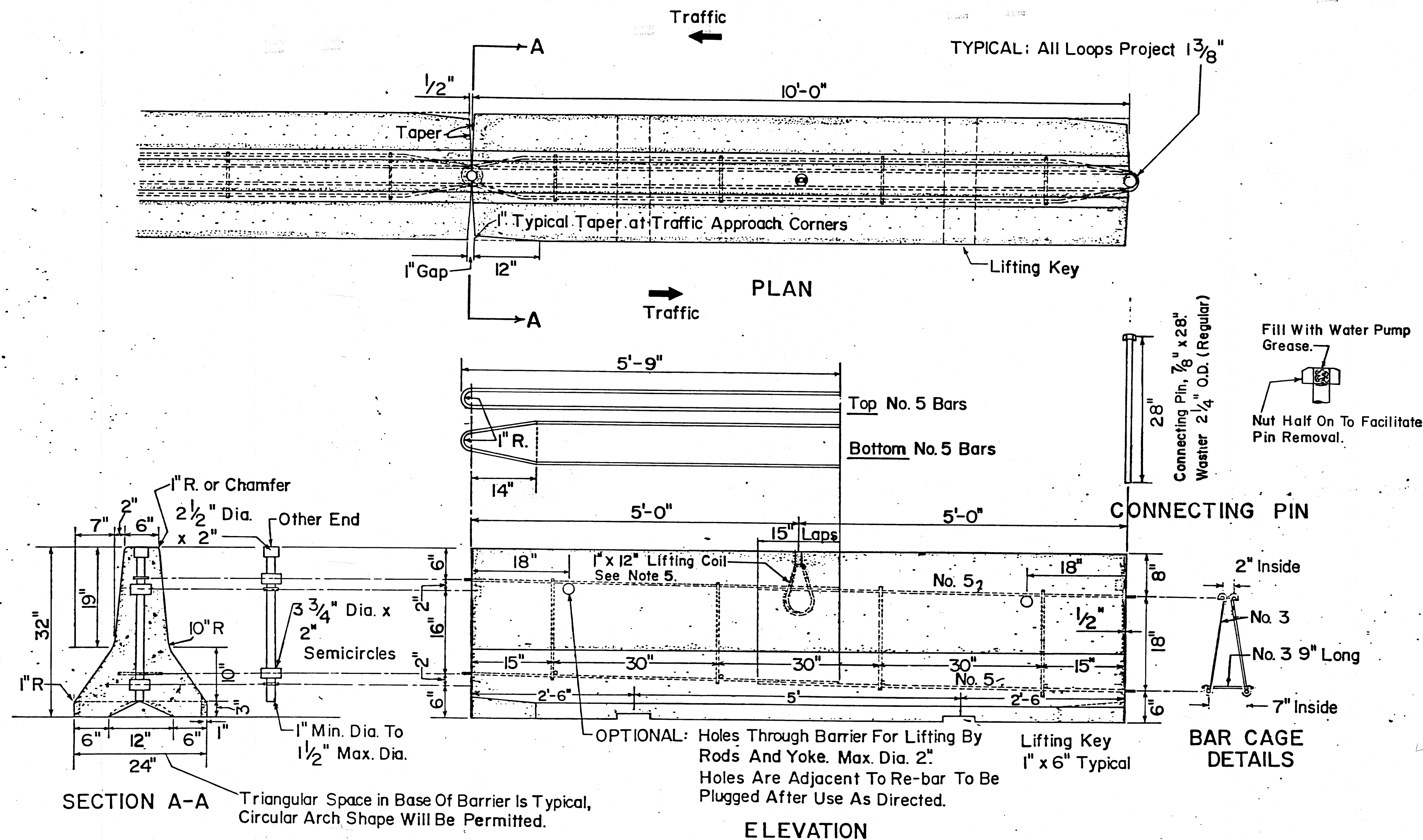
TITLE:

TRAFFIC CONTROL - PHASE IV & V

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
DRC CHAIRMAN	R. J. [Signature]	1-16-92	WATER	N/A	
TRANSPORTATION	R. J. [Signature]	1-16-92	WASTE WATER	N/A	
HYDROLOGY	N/A				
CONSTRUCTION	R. J. [Signature]	1-16-92			

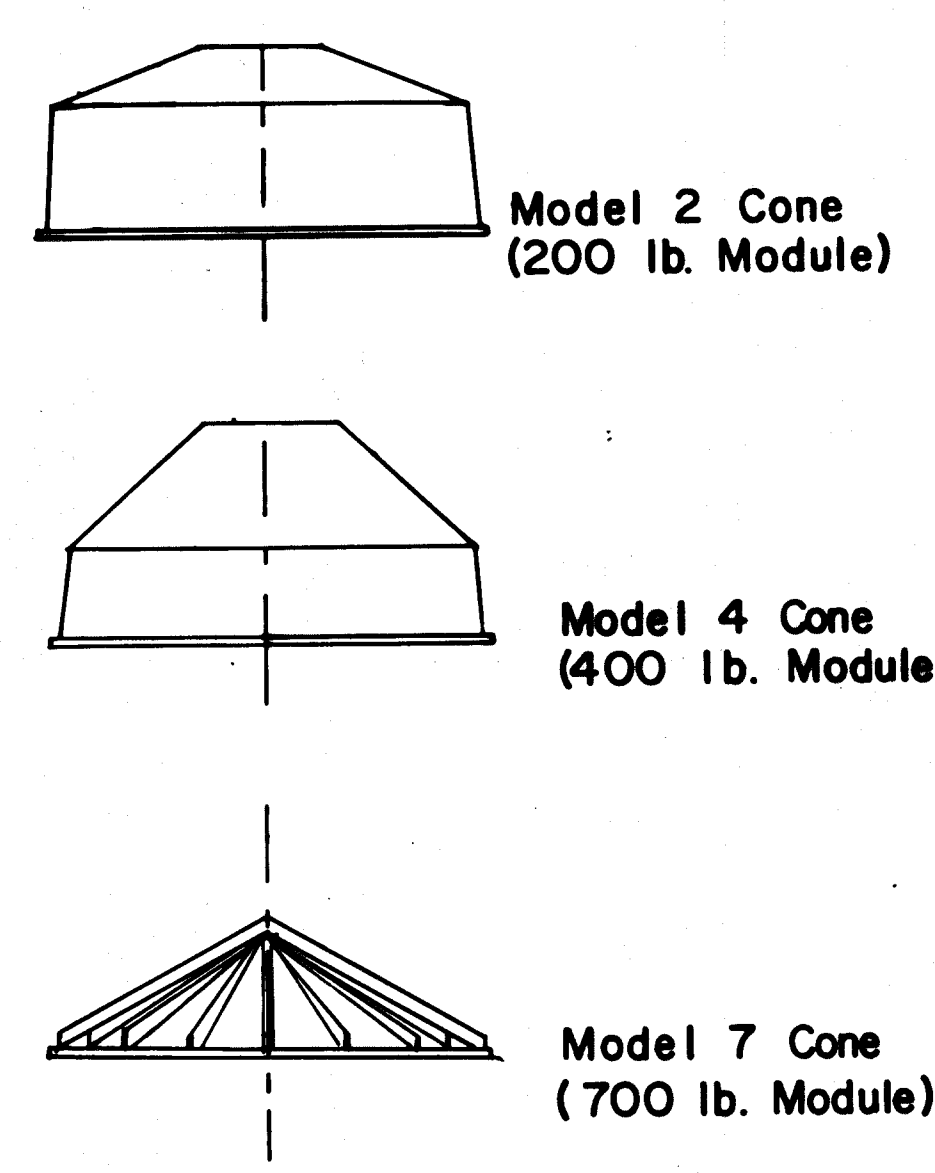
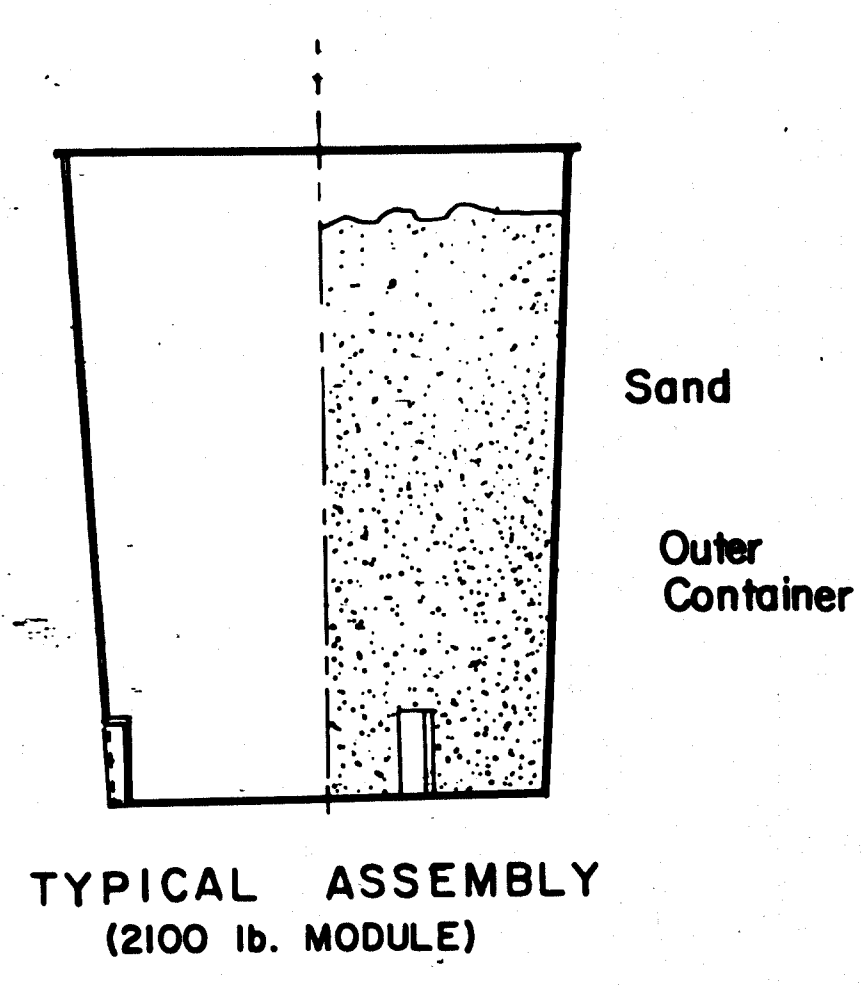
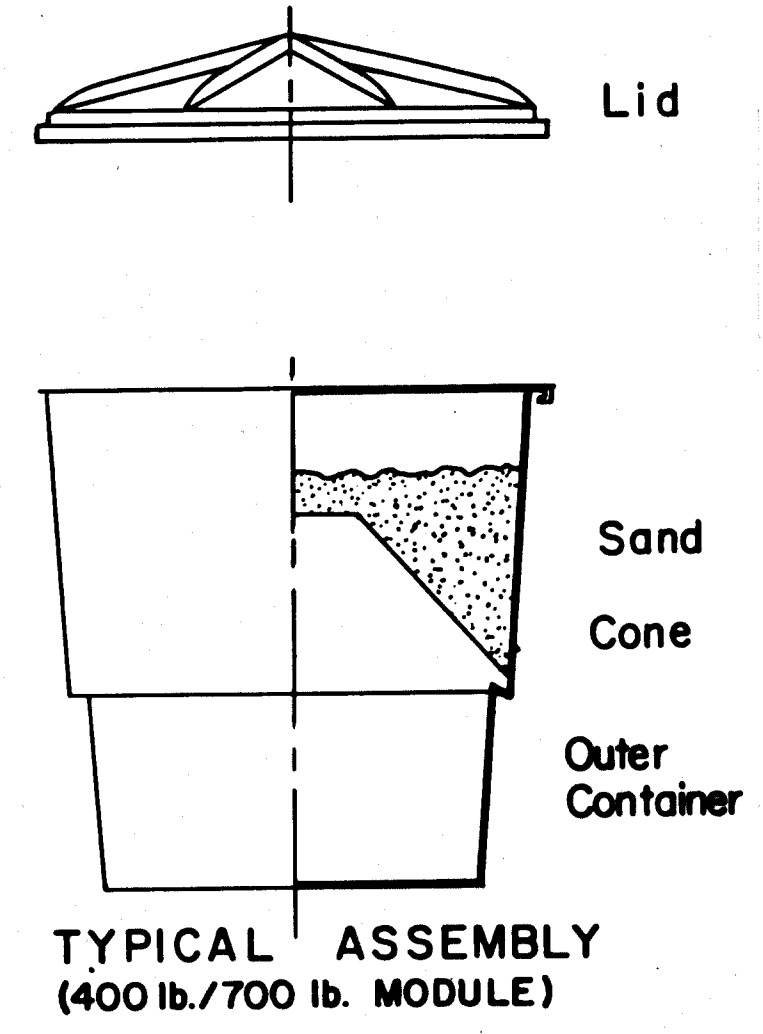
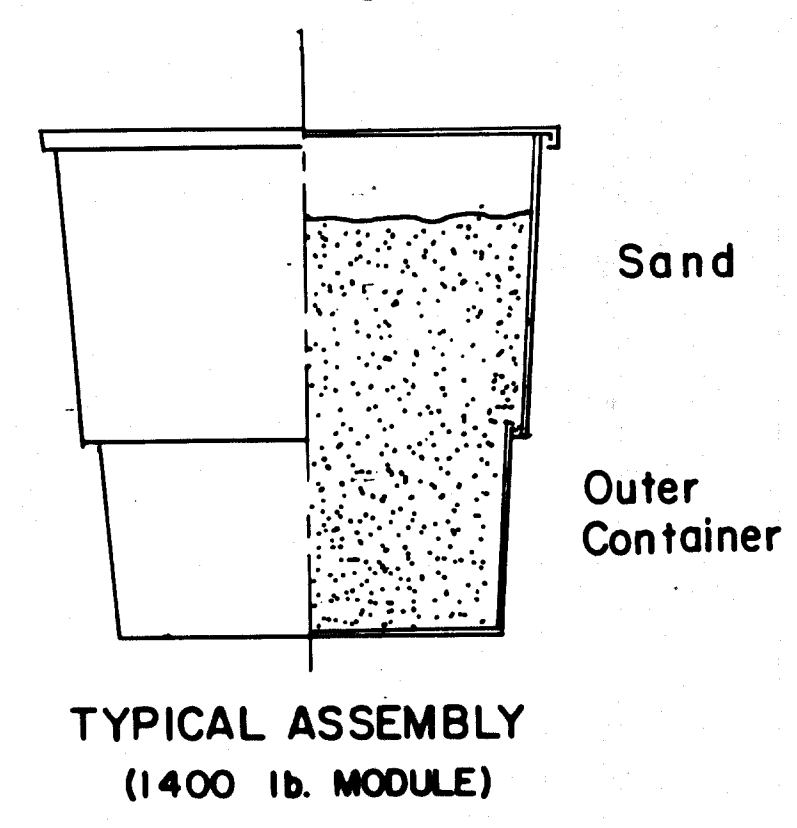
DRAWING NO.	4237.91	MAP NO.	K20-21	SHEET	5-6	OF	
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F.H.W.A. Project No.	STATE	SHEET NO.	TOTAL SHEETS
6	NEW MEXICO		5-6



IDENT. NO.	DESCRIPTION	DATE	BY
1	REVISIONS (OR CHANGE NOTICES)		
2			
3			
4			
5			
6			

NEW MEXICO
STATE HIGHWAY DEPARTMENT
TRAFFIC DESIGN SECTION
PRECAST CONCRETE
WALL BARRIER DETAILS
TYPE II



- NOTES:
- ALL ASSEMBLY, TRANSPORTATION TO SITE, ERECTION OF THE INDIVIDUAL MODULES AND THE CRASH CUSHION AS A WHOLE SHALL BE DONE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
 - THE COLOR OF THE MODULES IN AN INDIVIDUAL CRASH CUSHION SHALL BE GRAY OR YELLOW UNLESS OTHERWISE INDICATED.
 - SAND SHALL BE CLEAN, DRY GRANULAR SAND.

WEIGHT OF SAND (POUNDS)	HEIGHT OF CONE (INCHES)		MODULE DIAMETER (INCHES)	MODULE HEIGHT (INCHES)
200	12.6"		35.7" TOP 27.3" BOTTOM	36.2"
400	18"		"	"
700	8.0"		"	"
1400	—		"	"
2100	—		35.7" TOP 30.25" BOTTOM	45.50"

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
24-91237.91/1997

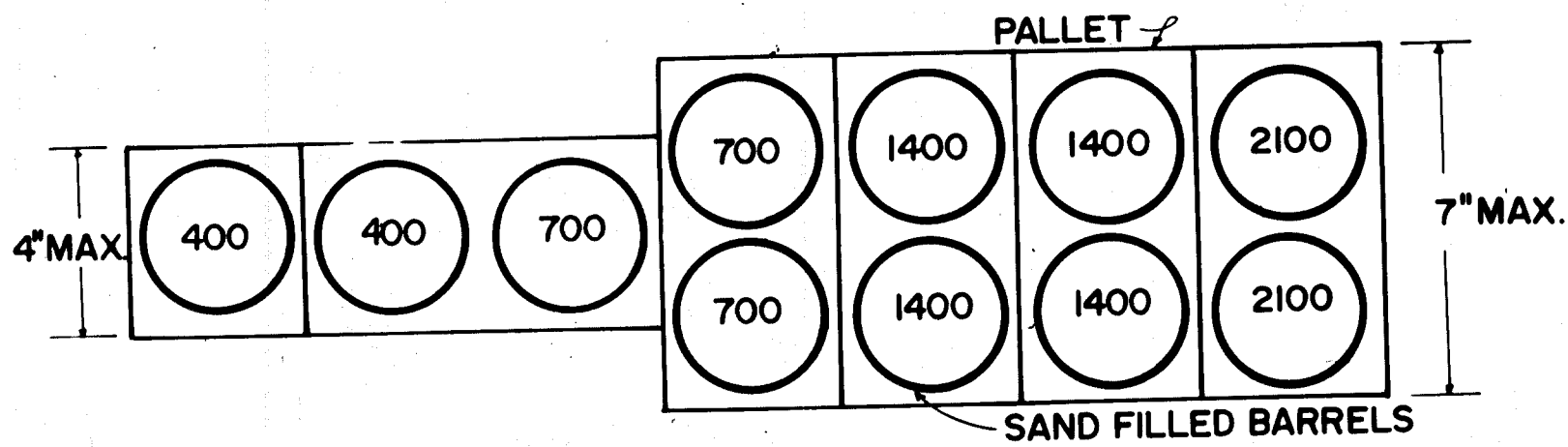
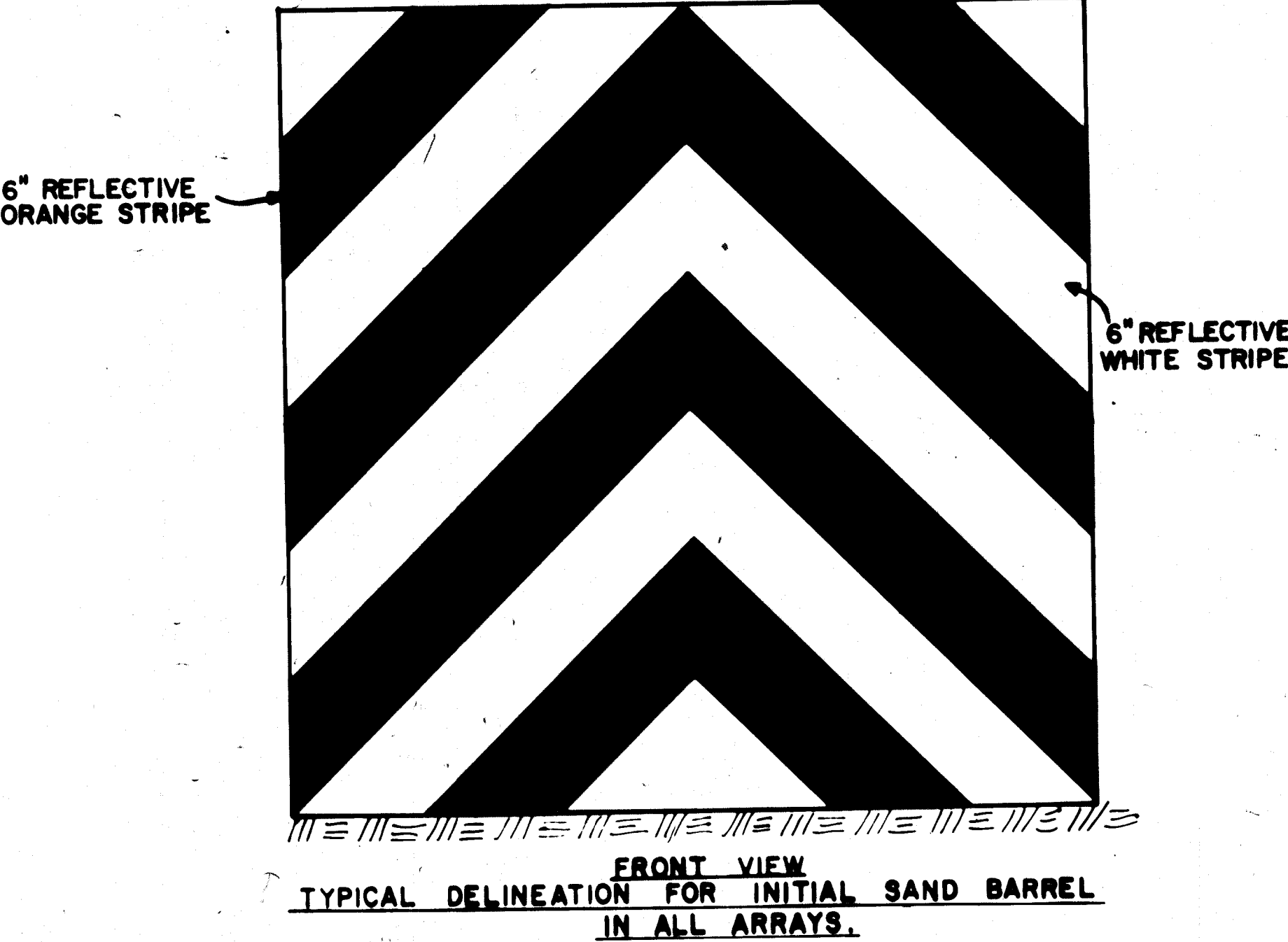
3			
2			
1	ADDED NOTE #3	10-20-86	E.R.
No.	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			
NEW MEXICO STATE HIGHWAY DEPARTMENT TRAFFIC DESIGN SECTION SAND BARREL CRASH CUSHION MODULE COMPONENTS			

DESIGNED BY _____ DRAWN BY L.S. _____
CHECKED BY _____

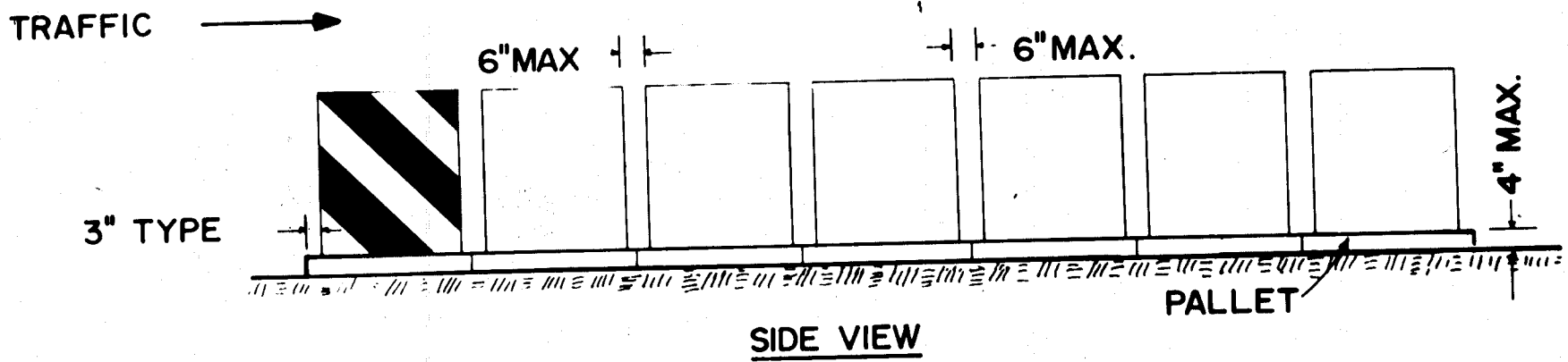
F.H.W.A. Region No.	STATE	SHEET NO.	TOTAL SHEETS
6	NEW MEXICO	5-8	

NOTES:

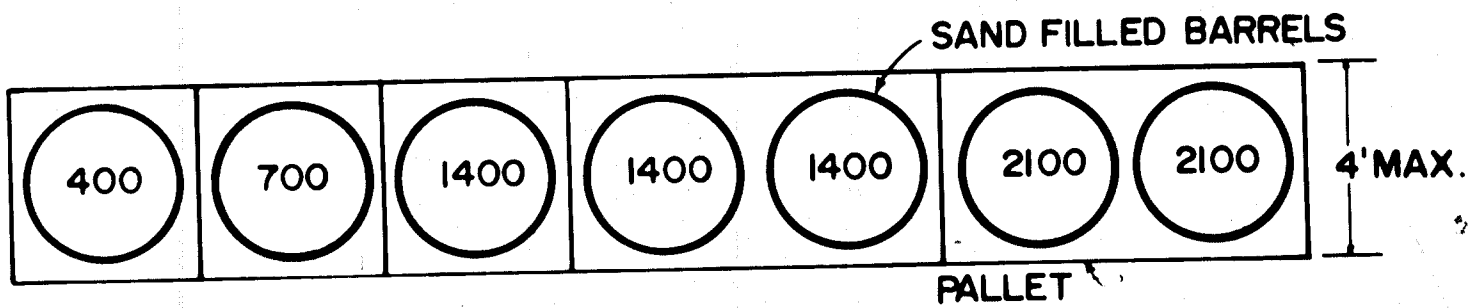
1. REFLECTIVE SHEETING FOR INITIAL SAND BARRELS SHALL COMPLY WITH SECTION 701.026 OF THE NEW MEXICO HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
2. PALLETS MAY BE OF WOOD, STEEL, OR COMPOSITE CONSTRUCTION NOT EXCEEDING 4" IN HEIGHT.
3. LATERAL DIMENSIONS OF PALLETS SHALL PERMIT SPACING OF SAND BARRELS AS SHOWN.
4. NO MORE THAN TWO (2) SAND BARRELS SHALL BE PLACED ON EACH PALLET.
5. PALLETS SHALL HAVE STOPS OR RESTRAINERS TO PREVENT LATERAL SHIFTING OF INDIVIDUAL SAND BARRELS.
6. SHOP DRAWINGS OF PALLETS SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO FABRICATION FOR APPROVAL.
7. ATTENUATOR ARRAY SHALL BE PLACED AT A SKEW OF 5° TOWARD TRAFFIC.



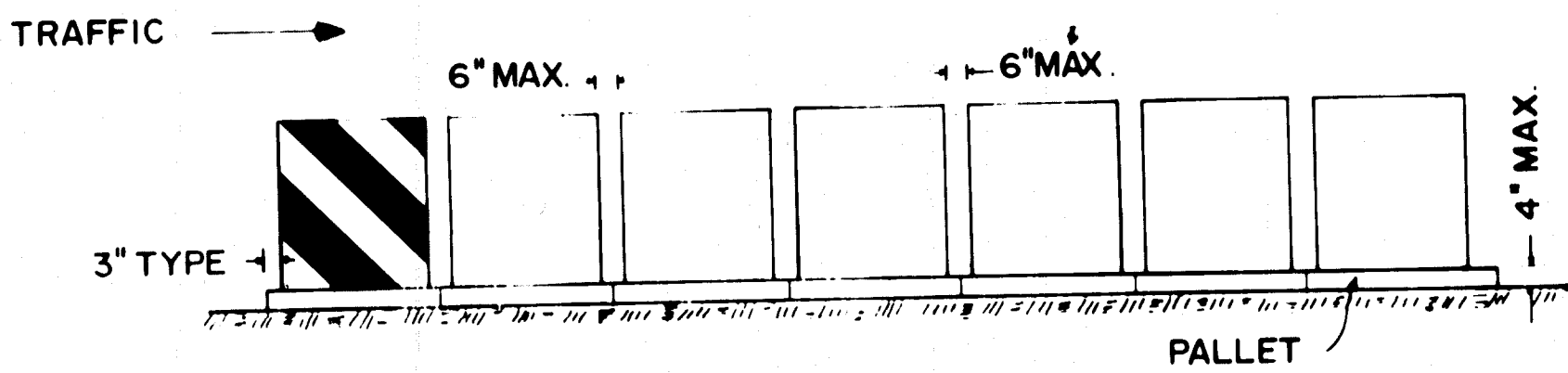
TOP VIEW



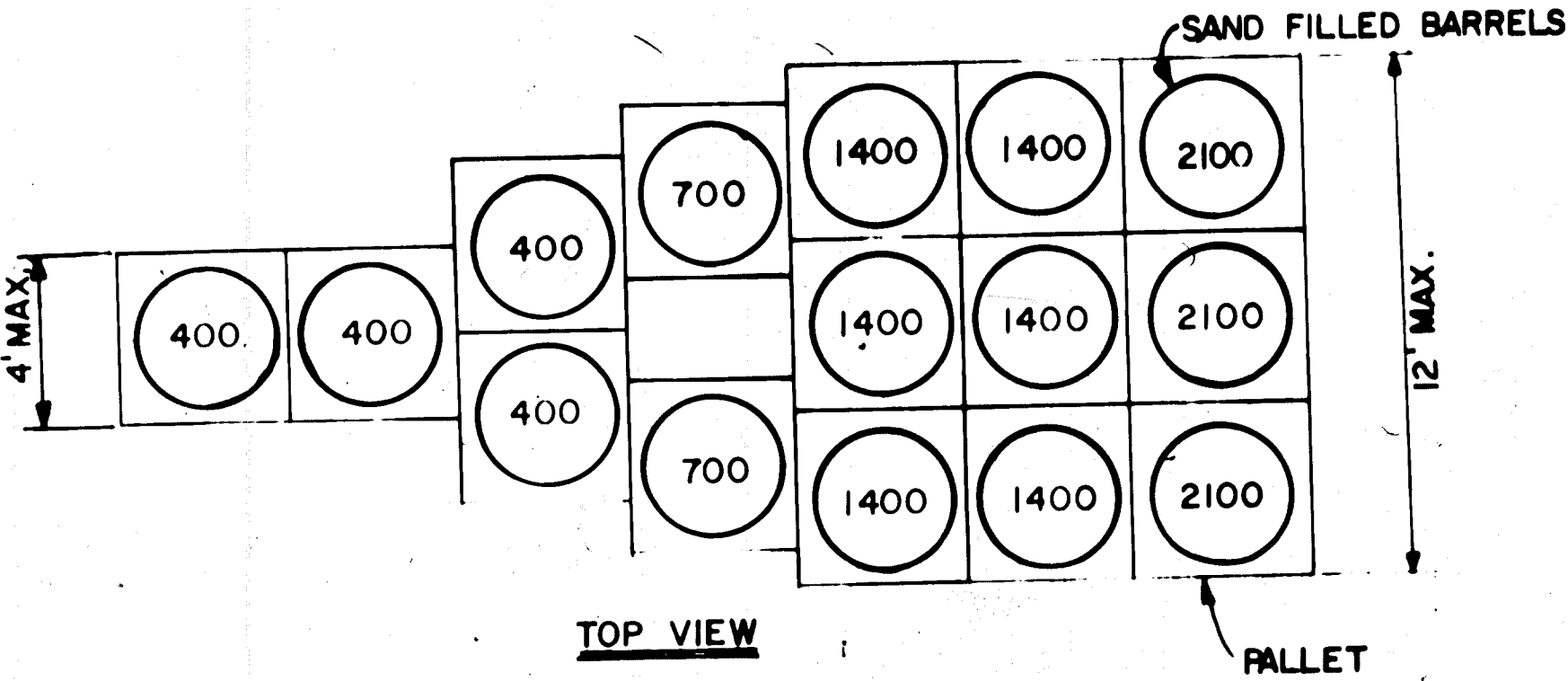
TYPICAL PALLET DETAIL-PYRAMID ARRAY



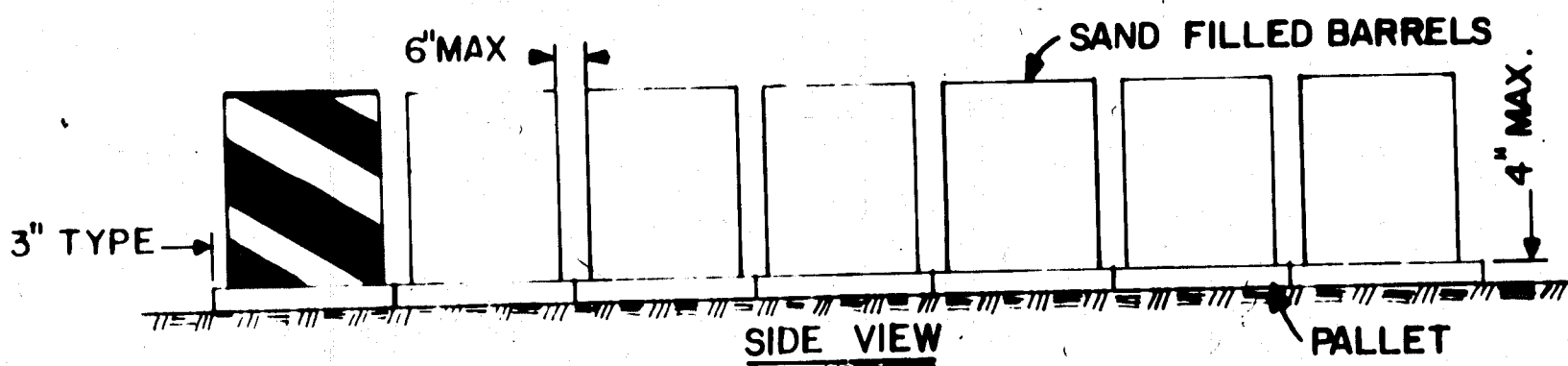
TOP VIEW



TYPICAL PALLET DETAIL-LINE ARRAY



TOP VIEW



TYPICAL PALLET DETAIL-MODIFIED PYRAMID ARRAY

DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)		
NEW MEXICO STATE HIGHWAY DEPARTMENT TRAFFIC DESIGN SECTION CONST. TRAFFIC CONTROL PLAN SAND BARREL CRASH CUSHION DETAILS		
SHEET	OF	

F.H.W.A. Revision No.	STATE	N.M.P. NO.	SHEET NO.	TOTAL SHEETS
6	NEW MEXICO	423791	5-10	

SUMMARY OF QUANTITIES.

ITEM N°	BID ITEM	UNITS	TOTAL
702000	CONSTRUCTION SIGNING	SQ. FT.	174
702103	STEEL POSTS AND BASE POSTS FOR CONSTRUCTION SIGNING	LIN. FT.	112
702205	BARRICADE, TYPE I	EACH	
702210	BARRICADE, TYPE II	EACH	
702215	BARRICADE, TYPE III 8 FT.	EACH	2
702214	BARRICADE TYPE III 6 FT.	EACH	
702330	VERTICAL PANEL, SINGLE TYPE	EACH	
702335	VERTICAL PANEL, BACK TO BACK TYPE	EACH	
702360	CONSTRUCTION TRAFFIC MARKER	EACH	
702145	PORTABLE SIGN SUPPORT	EACH	6
702349	CHANNELIZATION DEVICE - (BARREL) - TYPE "A"	EACH	
702350	CHANNELIZATION DEVICE (BARREL) - TYPE "H"	EACH	35
702400	SEQUENTIAL ARROW DISPLAY	EACH	
703210	REFLECTIVE BARRIER DELINEATOR	EACH	
703120	TUBULAR TRAFFIC MARKER	EACH	
702365	TRAFFIC CONES	EACH	
704010	REFLECTORIZED PAINTED MARKINGS	LIN. FT.	
704015	ADHESIVE MARKING TAPE FOR CONSTRUCTION ZONES	LIN. FT.	
704016	ADHESIVE NON-METALLIC MARKING TAPE	LIN. FT.	
720015	SAND-BARREL VEHICULAR IMPACT ATTENUATOR UNIT	EACH	2
721001	REMOVAL OF PAVEMENT STRIPE	LIN. FT.	
720101	REMOVE & RESET SAND-BARREL VEHICULAR IMPACT ATTENUATOR	EACH	1
606403	PRECAST CONCRETE WALL BARRIER - TYPE II	LIN. FT.	30
606012	W-BEAM / BARREL BARRIER	LIN. FT.	
606405	HAULING PRECAST CONCRETE WALL BARRIER	LIN. FT.	1080
606410	RESETTING OF PRECAST WALL BARRIER	LIN. FT.	1800
717140	TEMPORARY REFLECTIVE "T.D" PAVEMENT MARKER TYPE "T.D"	EACH	
INCIDENTAL TO ITEM 702000	CLEANING OF REFLECTIVE SURFACES ON TRAFFIC CONTROL DEVICES	SQ. FT.	

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
24-142377.911 12/97

No.	DESCRIPTION	DATE	BY
1	REVISIONS (OR CHANGE NOTICES)		

NEW MEXICO
STATE HIGHWAY DEPARTMENT
TRAFFIC DESIGN SECTION
TRAFFIC CONTROL DEVICES
FOR CONSTRUCTION
SUMMARY OF QUANTITIES

SHEET OF

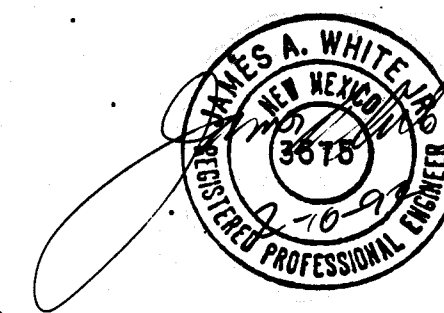
NO. 423791 SHEET NO 5-11

NOTES.

- 1.) TRAFFIC CONTROL PLAN AND QUANTITIES MAY VARY AS FIELD CONDITIONS DICTATE. THE CONTRACTOR WILL BE PAID FOR ACTUAL QUANTITIES USED. PLACING, RELOCATION, AND MAINTENANCE OF TRAFFIC CONTROL DEVICES AS SHOWN ON THE PLAN, OR AS DIRECTED BY THE PROJECT MANAGER ARE TO BE INCIDENTAL TO THE UNIT BID PRICE.
- 2.) ALL TRAFFIC CONTROL DEVICES FOR DETOURS SHALL COMPLY WITH STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION - SECTION 702 (1984 EDITION) AND CHAPTER VI OF THE 1978 EDITION MUTCD.
- 3.) ALL CONSTRUCTION SIGNING SHALL BE BLACK ON REFLECTIVE ORANGE UNLESS OTHERWISE SPECIFIED. ALL CONSTRUCTION BARRICADES AND CHANNELIZATION DEVICES SHALL BE ORANGE ON WHITE REFLECTORIZED UNLESS OTHERWISE SPECIFIED.
- 4.) BID ITEM - (STEEL POSTS AND BASE POSTS FOR DETOUR SIGNS). THE CONTRACTOR SHALL HAVE THE OPTION OF SUPPLYING EITHER THE FLANGED CHANNEL OR THE DRIVEDOWN POST AS PER NEW MEXICO STANDARD SERIALS. REFER TO SERIALS SN 75-1, TBAC-001-10 AND TBAC-002-11.
- 5.) BID ITEM - (TYPE III BARRICADE - 6' OR 8'). TYPE III BARRICADES SHALL BE ORANGE ON WHITE REFLECTORIZED. ATTACHED TYPE "A" FLASHING BEACONS, PLYWOOD ARROW AND ROAD CLOSED SIGNS ARE TO BE INCIDENTAL TO BID PRICE. BID UNIT - PER EACH.
- 6.) BID ITEM - (TYPE I BARRICADE - 8'). TYPE I BARRICADE SHALL BE ORANGE ON WHITE REFLECTORIZED. ATTACHED HIGH INTENSITY FLASHING BEACON ARE TO BE INCIDENTAL TO BID PRICE. BID UNIT - PER EACH.
- 7.) BID ITEM - (VERTICAL PANELS, SINGLE TYPE OR BACK TO BACK 8"x24"). VERTICAL PANELS SHALL BE ORANGE ON WHITE REFLECTORIZED SHEETING .060 MIN 6061 T-6. PANELS TO BE MOUNTED ON DRIVE-DOWN POST EITHER 3' DRIVE OR ON STANCHION. BID UNIT - PER EACH.
- 8.) FLAGGING SHALL BE PROVIDED FOR SAFETY AND/OR AS DIRECTED BY THE PROJECT MANAGER. FLAGGERS SHALL USE STOP/SLOW PADDOLES (18"x18" MIN.) IN ACCORDANCE WITH THE MUTCD. THE FLAGGER, APPLICABLE SIGNS AND OTHER RELATED ITEMS SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION, NO PAYMENT OR MEASUREMENT WILL BE MADE THEREFORE.
- 9.) BID ITEM - (CHANNELIZATION DEVICE BARREL TYPE "A" OR TYPE "B"). CHANNELIZATION DEVICE BARRELS SHALL BE ORANGE ON WHITE REFLECTORIZED. TYPE "A" REQUIRES NO BEACON. TYPE "B" SHALL BE EQUIPPED WITH BEACON AS SPECIFIED IN THE STANDARDS AND SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, SECTION 702.021 (g), 1984 EDITION.
- 10.) THE PROVISIONS AS INCLUDED IN THE PLANS AND SPECIFICATIONS FOR HANDLING AND CONTROLLING TRAFFIC DURING CONSTRUCTION OF THE PROJECT MAY BE CHANGED BY THE DISTRICT HIGHWAY ENGINEER IF, BECAUSE OF FIELD CONDITION AS ACTUALLY ENCOUNTERED, SUCH CHANGES ARE DESIRABLE AT THE DISCRETION OF THE PROJECT MANAGER. THESE CHANGES WILL BE MADE BY WRITTEN INSTRUCTION TO THE CONTRACTOR, AND SHALL BE CONSIDERED AN AMENDMENT TO THE PLANS AND SPECIFICATION AS OF THE DATE OF THE CHANGE.
- 11.) THE CONTRACTOR SHALL SUBMIT ANY PROPOSED CHANGES IN THE TRAFFIC CONTROL PLAN TO THE DISTRICT HIGHWAY ENGINEER FOR APPROVAL.
- 12.) NO PAYMENT WILL BE MADE FOR ANY ADDITIONAL COST RESULTING FROM APPROVED TRAFFIC CONTROL PLAN CHANGES REQUESTED BY THE CONTRACTOR.
- 13.) ITEM 704010 IS INCLUDED FOR PAVEMENT STRIPING BETWEEN SURFACING LIFTS AS DIRECTED BY THE PROJECT MANAGER.
- 14.) BID ITEM - (SAND-BARREL VEHICULAR IMPACT ATTENUATOR UNIT). SAND-BARREL VEHICULAR ATTENUATOR UNLESS OTHERWISE SPECIFIED, SHALL BECOME THE PROPERTY OF STATE OF NEW MEXICO AT COMPLETION OF CONSTRUCTION AND SHALL NOT REVERT TO THE CONTRACTOR. THIS ITEM SHALL BE DELIVERED AND STOCK-PILED AT LOCATIONS DIRECTED BY THE PROJECT MANAGER.
- 15.) THE CONTRACTOR SHALL HAVE A RESPONSIBLE PERSON ON SITE DURING WORKING HOURS AND ON CALL DURING NON WORKING HOURS TO INSPECT AND MAINTAIN PROJECT TRAFFIC CONTROL, OR AS DIRECTED BY PROJECT MANAGER.
- 16.) ALL NON-APPLICABLE SIGNING SHALL BE REMOVED OR COVERED COMPLETELY WITH AN OPAQUE NON-LIGHT TRANSMITTING MATERIAL. ALL REMAINING, NON-APPLICABLE TRAFFIC CONTROL DEVICES ARE TO BE REMOVED AND STORED AT LOCATIONS DESIGNATED BY THE PROJECT MANAGER.
- 17.) BID ITEM - (PRECAST CONCRETE WALL BARRIER). PRECAST CONCRETE WALL BARRIER WHEN USED FOR TRAFFIC CONTROL PURPOSES, SHALL BECOME THE PROPERTY OF THE STATE OF NEW MEXICO AT COMPLETION OF THE PROJECT. PRECAST CONCRETE WALL BARRIER SHALL NOT REVERT TO THE CONTRACTOR OR UNLESS OTHERWISE SPECIFIED. PRECAST CONCRETE WALL BARRIER SHALL BE FABRICATED IN EITHER 10' UNITS OR 12.5' UNITS TO THE DIMENSIONS SHOWN ON PLANS. ALL PRECAST CONCRETE WALL BARRIER UTILIZED IN THE WORK SHALL BE OF THE SAME LENGTH AND DESIGN. INTERMIXING WILL NOT BE ALLOWED. WORK SHALL BE DONE IN ACCORDANCE WITH APPLICABLE PROVISIONS OF SECTION 503 - PORTLAND CEMENT CONCRETE, SECTION 504.022(C) - STEEL REINFORCEMENT. WHEN NEW PRECAST CONCRETE WALL BARRIER IS CALLED FOR ON PLAN, THE WALL BARRIER SHALL BE DELIVERED TO THE DESIGNATED AREA AND SITE AT COMPLETION OF WORK. CONTRACTOR IS TO UNLOAD AND STOCKPILE PRECAST CONCRETE WALL BARRIER AS DIRECTED BY THE PROJECT MANAGER. HAULING AND STOCKPILING OF NEW PRECAST CONCRETE WALL BARRIER TO DESIGNATED AREA AND SITE SHALL BE INCIDENTAL TO THE ITEM FOR PRECAST CONCRETE WALL BARRIER. THE DESIGNATED AREA IS

SIGN CODE	N° OF SIGNS	TOTAL SIGN AREA SQ. FT.	POST LENGTHS				MOUNTING REQUIREMENTS						BASE-POSTS	
							FLANGED CHANNEL			DRIVEDOWN POSTS 0.1345 THICK		PORTABLE SIGN SUPPORT	N°	TOTAL LENGTH
			2.25 Lb/Ft.	3.00 Lb/Ft.	4.00 Lb/Ft.	2 ³ / ₁₆ X 2 ³ / ₁₆	2 ¹ / ₂ X 2 ¹ / ₂							
PHASE I														
RAMP CONSTR. 1000 FT.	1	16	10.5		10.5	21							2	7.0
RAMP CONSTR. AHEAD	1	16	10.5		10.5	21							2	7.0
W20-1	1	16										1		
R2-5a	1	20										1		
W20-5R	1	16										1		
R2-5b(25mph)	1	20										1		
W4-2R	1	16										1		
SP-30	1	10	10.5		10.5	21							2	7.0
TYPE 'H' BARRELS		24 EA.												
C.W.B.		1300 LF												
VEHICLE IMPACT ATTENUATOR		1 EA.												
PHASE II														
RAMP CONSTR. 1000 FT.	(1)	(16)	(10.5)		(10.5)	(21)							(2)	(7.0)
RAMP CONSTR. AHEAD	(1)	(16)	(10.5)		(10.5)	(21)							(2)	(7.0)
W20-1	(1)	(16)										(1)		
R2-5a	(1)	(20)										(1)		
W20-5R	(1)	(16)										(1)		
R2-5b(25mph)	(1)	(20)										(1)		
W4-2R	(1)	(16)										(1)		
SP-30	(1)	(10)	(10.5)		(10.5)	(21)							(2)	(7.0)
SP-40	1	28	10.5		10.5	21							2	7.0
TYPE 'H' BARRELS		31 EA.												
C.W.B.		300 LF												
RESET CWB		900 LF												
VEHICLE IMPACT ATTENUATOR		2 EA.												
PHASE III														
RAMP CONSTRUCTION 1000 FT.	(1)	(16)	(10.5)		(10.5)								(2)	(7.0)
RAMP CONSTRUCTION AHEAD	(1)	(16)	(10.5)		(10.5)	(2)							(2)	(7.0)
W20-1	(1)	(16)										(1)		
R2-5a	(1)	(20)										(1)		
W20-5R	(1)	(16)										(1)		
R2-5b(25mph)	(1)	(20)										(1)		
W4-2R	(1)	(16)										(1)		
SP-30	(1)	(10)	(10.5)		(10.5)	(21)							(2)	(7.0)
RESET CWB		700 LF												
TYPE 'H' BARRELS		35 EA.												
VEHICLE IMPACT ATTENUATOR		1 EA.												
PHASE IV														
RAMP CONSTR. 1000 FT.	(1)	(16)	(10.5)		(10.5)	(21)							(2)	(7.0)
RAMP CONSTR. AHD.	(1)	(16)	(10.5)		(10.5)	(21)							(2)	(7.0)
W4-2R	1	16										1		
RESET CWB		200 LF												
VEHICLE IMPACT ATTENUATOR		1 EA.												
		174				84						6		28

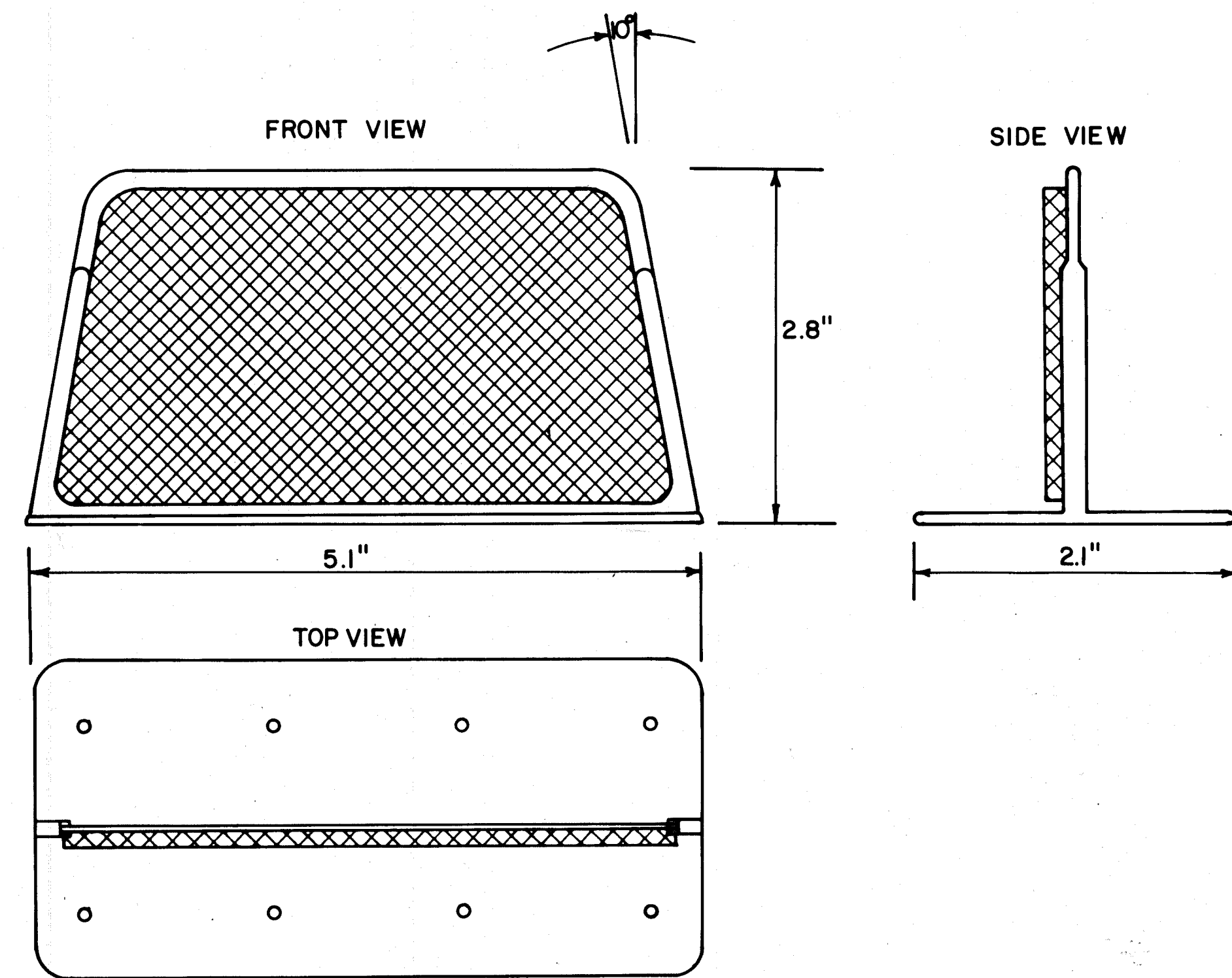
() SIGN (S) AND/OR SUPPORT () USED IN OTHER CONSTRUCTION PHASE (S). NO ADDITIONAL PAYMENT THEREFORE.
* NO ADDITIONAL POST NEEDED. SIGN TO BE MOUNTED ON COMMON POST WITH ANOTHER SIGN.



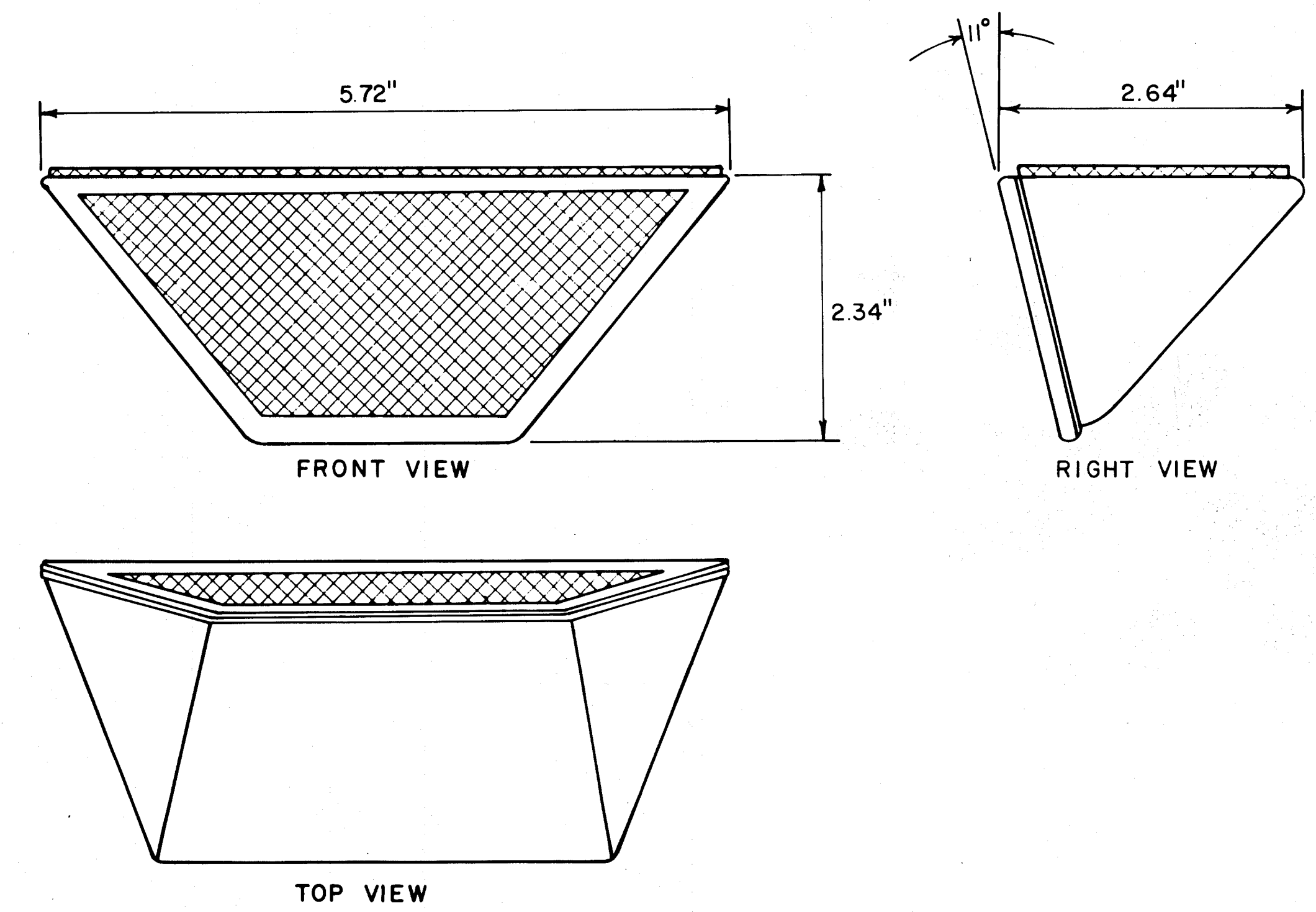
DESIGNED BY _____ DRAWN BY L.S. TRACED BY E.J.R.
CHECKED BY _____

BARRIER TRAFFIC MARKER

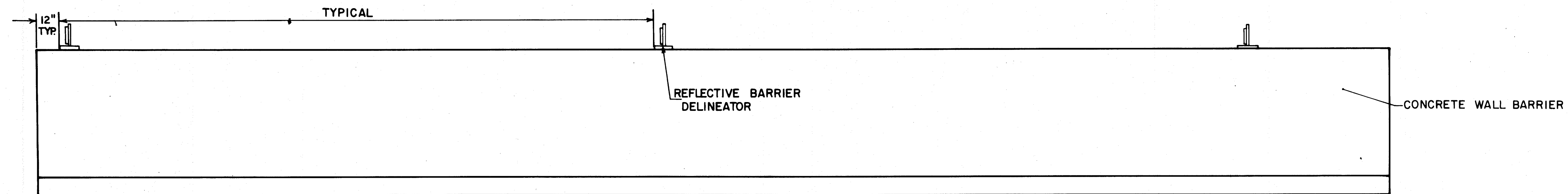
F.H.W.A. Region No.	STATE	SHEET NO.	TOTAL SHEETS
6	NEW MEXICO	5-9	



STYLE I



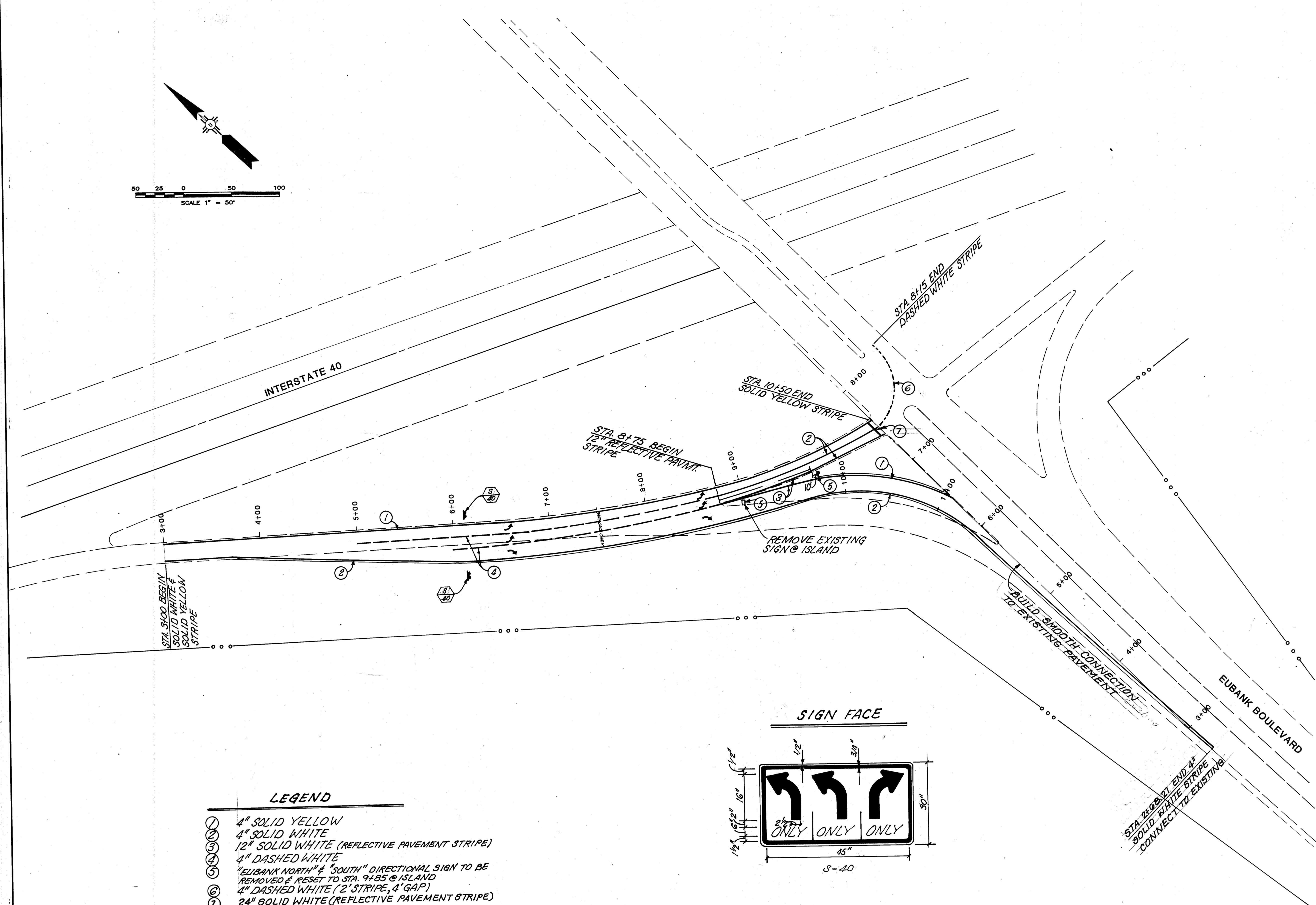
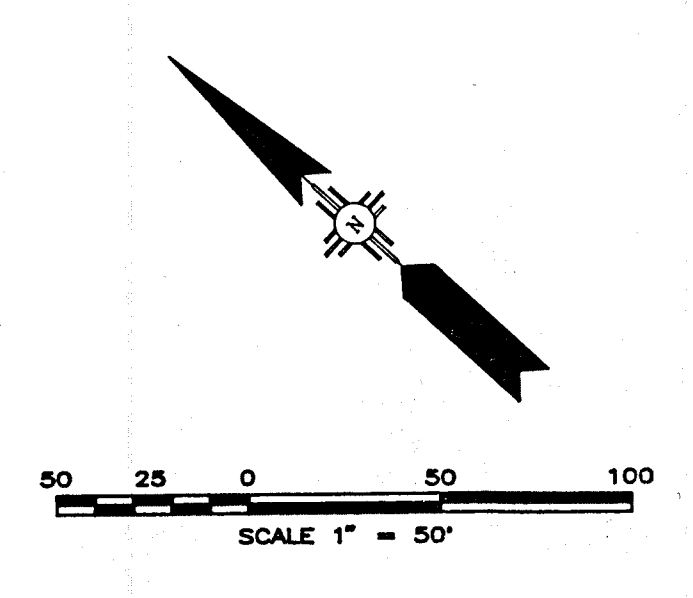
STYLE II



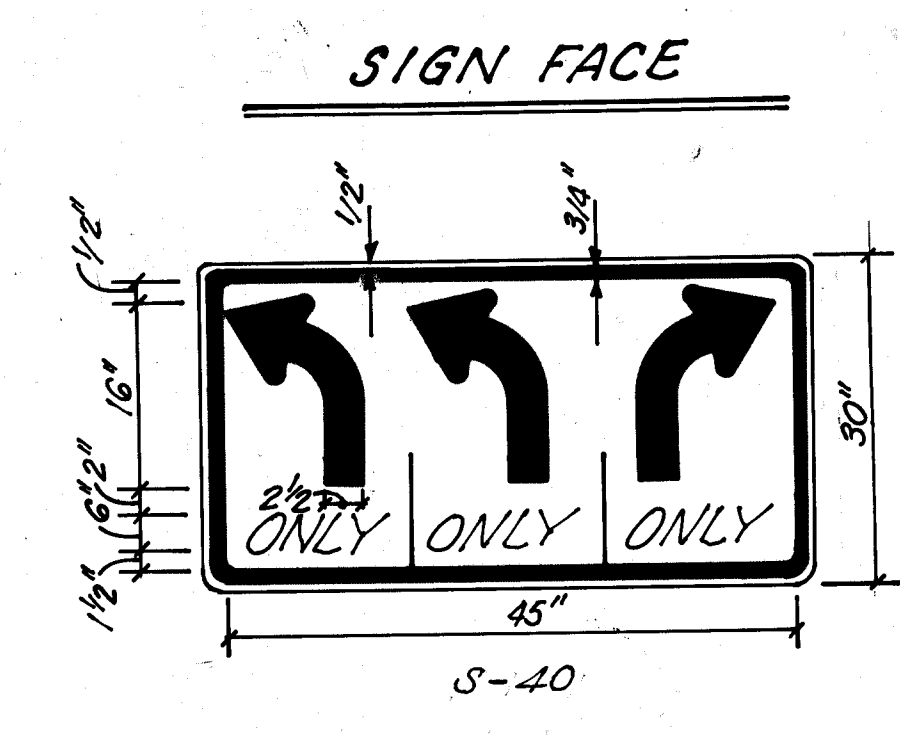
NOTES.
I. REFLECTIVE BARRIER DELINEATORS SHALL BE AMBER IN COLOR WHEN PLACED ON MEDIAN-TOP BARRIER, WHITE WHEN PLACED ON SHOULDER - SIDE BARRIER.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
26-4237.91 2297

No.	DESCRIPTION	DATE	BY
3			
2			
1			
REVISIONS (OR CHANGE NOTICES)			
NEW MEXICO STATE HIGHWAY DEPARTMENT TRAFFIC DESIGN SECTION BARRIER TRAFFIC MARKER DETAIL			

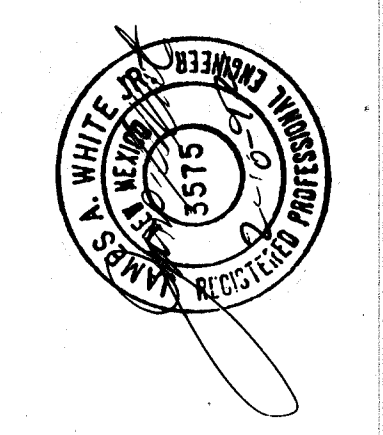


- LEGEND**
- ① 4" SOLID YELLOW
 - ② 4" SOLID WHITE
 - ③ 12" SOLID WHITE (REFLECTIVE PAVEMENT STRIPE)
 - ④ 4" DASHED WHITE
 - ⑤ "EUBANK NORTH" & "SOUTH" DIRECTIONAL SIGN TO BE REMOVED & RESET TO STA. 9+85 @ ISLAND
 - ⑥ 4" DASHED WHITE (2' STRIPE, 4' GAP)
 - ⑦ 24" SOLID WHITE (REFLECTIVE PAVEMENT STRIPE)



FHWA Region No.			SHEET NO.	TOTAL SHEETS
6	NEW MEXICO	4237.91	6-1	

AS-BUILT INFORMATION		BENCH MARKS		SURVEY INFORMATION		ENGINEER'S SEAL	
CONTRACTOR				FIELD NOTES			
WORK NO.	DATE			NO.	BY		
INSPECTOR'S ACCEPTANCE BY	DATE						
VERIFICATION BY	DATE						
DRAWING COMPILED BY	DATE						
MICRO-FILM INFORMATION							
RECORDED BY	DATE						



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
26	4	2	3	7	.	9	1	2	3	6	7			

CITY OF ALBUQUERQUE					
TITLE: PERMANENT SIGNING & STRIPING PLAN					
APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
DRG. CHAIRMAN	RAB	1/16/92	WATER		
TRANSPORTATION	R. D. D.	1/16/92	WASTE WATER		
HYDROLOGY					
DRAWING NO.	4237.91	MAP NO. K-20, K-21	SHEET 6-1	OF	

[illegible]

SUMMARY OF QUANTITIES.

ITEM N ^o	BID ITEM	UNITS	TOTAL
701010	PLYWOOD OR ALUMINUM PANEL SIGN	SQ. FT.	17.5
701825	REMOVING AND RESETTING PLYWOOD OR ALUMINUM PANEL SIGN	EACH	
701101	STEEL POST AND BASE POST FOR PLYWOOD OR ALUMINUM PANEL SIGN	LIN. FT.	69
703200	TRAFFIC MARKER-HAZARD (TYPE 2H)	EACH	
704010	REFLECTORIZED PAINTED MARKING	LIN. FT.	2510
717010	NON-REFLECTIVE PAVEMENT MARKER - TYPE "A"	EACH	
717011	NON-REFLECTIVE PAVEMENT MARKER - TYPE "AY"	EACH	
717014	REFLECTIVE PAVEMENT MARKER TYPE "D"	EACH	
717015	REFLECTIVE PAVEMENT MARKER TYPE "G"	EACH	
717017	REFLECTIVE PAVEMENT MARKER TYPE "H"	EACH	
717018	REFLECTIVE PAVEMENT MARKER TYPE "J"	EACH	
702015	BARRICADE, TYPE III - 8 FT.	EACH	
718003	REFLECTIVE PLASTIC PAVEMENT STRIPE 8" 90 MIL	LIN. FT.	
718004	REFLECTIVE PLASTIC PAVEMENT STRIPE 12" 60 MIL	LIN. FT.	226
718015	REFLECTORIZED RIGHT ARROW	EACH	2
718020	REFLECTORIZED LEFT ARROW	EACH	4
718025	REFLECTORIZED WORD (ONLY)		3
718007	REFLECTIVE PLASTIC PAVEMENT STRIPE - 24" 60 MIL	LF	24

1. QUANTITIES MAY VARY AS FIELD CONDITIONS DICTATE. THE CONTRACTOR WILL BE PAID FOR ACTUAL QUANTITIES USED.
2. ALL TRAFFIC CONTROL DEVICES SHALL COMPLY WITH THE N.M. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (CURRENT EDITION). ANY APPLICABLE SPECIAL PROVISION AND/OR SUPPLEMENTAL SPECIFICATION AND THE CURRENT EDITION OF THE M.U.T.C.D.
3. EACH REGULATORY AND WARNING SIGN FACE SHOWN ON PLANS SHALL MEET THE SPECIFICATIONS IN THE STANDARD HIGHWAY SIGNS MANUAL (1979 EDITION) FOR PROPER ARRANGEMENT, SPACING OF LETTERS, LETTER HEIGHT, LETTER SERIES, SYMBOLS, AND BORDERS FOR THE SPECIFIED SIZE AND MESSAGE AS SHOWN ON PLANS.
4. BID ITEM - STEEL POSTS AND BASE POSTS FOR PLYWOOD OR ALUMINUM PANEL SIGN. THE CONTRACTOR SHALL HAVE THE OPTION OF SUPPLYING EITHER THE FLANGED CHANNEL OR THE DRIVEDOWN POST CROSS-SECTION INDICATED. REFER TO NEW MEXICO STANDARDS: SN-75-1, SN-75-2, TBAC-001, AND TBAC-002.
5. WHERE EXISTING SIGNS ARE REPLACED WITH NEW BREAKAWAY EXTRUDED SIGNS, THE VOIDS LEFT FROM FOOTING REMOVAL ARE TO BE BACKFILLED AND THE PAD CONTOURED TO THE EXISTING TERRAIN. RESEEDING WILL NOT BE REQUIRED. THIS WORK IS CONSIDERED INCIDENTAL TO THE COMPLETION OF THE PROJECT.
6. PLYWOOD PANEL SIGNS SHALL BE MADE FROM ONE CONTINUOUS SHEET. NO VERTICAL OR HORIZONTAL SPLICING WILL BE PERMITTED.
7. SIGN POST LENGTHS UP TO 14 FT. SHALL BE CONTINUOUS. SPLICING WILL ONLY BE PERMITTED IF THE TOTAL LENGTH EXCEEDS 14 FT. A 12 FT LENGTH MAY BE USED TO OBTAIN LENGTHS OF 15 FT. AND ABOVE. ALL SPLICING MUST BE DONE WITHIN THE SIGN BLANK AREA AND NO SPLICING SHOULD EXTEND BELOW. SPLICING MUST CONFORM TO THE MANUFACTURER'S RECOMMENDATIONS AND PROCEDURES.
8. THE CONTRACTOR SHALL SUBMIT TO THE PROJECT MANAGER FOR APPROVAL, DRAWING OF SPECIAL SIGNS FACE DETAILS (THOSE OTHER THAN STANDARD M.U.T.C.D. SIGNS) SHOWING ARRANGEMENT AND SPACING OF LETTERS, LETTER HEIGHT, LETTER SERIES, SYMBOLS, AND BORDERS FOR THE MESSAGE INDICATED ON PLANS.
9. POST LENGTHS AND SECTIONS ARE BASED ON A 7'-0" CLEARANCE HEIGHT FROM THE TOP OF DRIVING LANE TO THE BOTTOM OF THE LOWEST SIGN. (EXCEPT WHERE INDICATED ON PLANS.) FINAL POST LENGTHS AND SECTIONS ARE TO BE DETERMINED IN THE FIELD BY THE CONTRACTOR AND APPROVED BY THE PROJECT MANAGER PRIOR TO THE FABRICATION OF SIGN POSTS.
10. SIGNS R5-1 and R5-1a SHALL HAVE REFLECTIVITY II (HIGH INTENSITY) LEGEND, BORDER AND BACKGROUND.

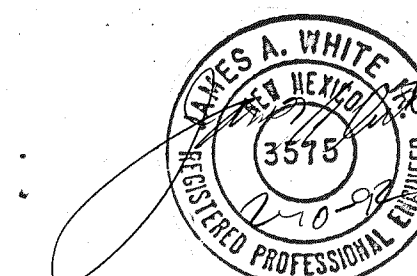
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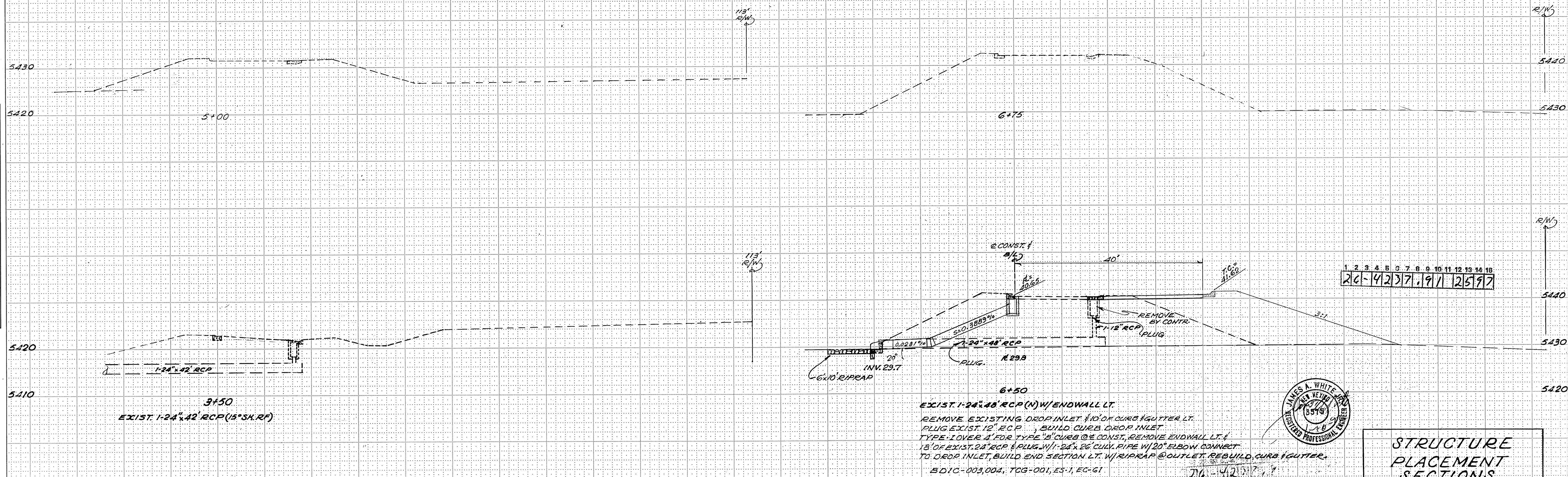
3		
2		
1		
No	5/13/81 DESCRIPTION	DATE
	REVISIONS (OR CHANGE NOTICES)	

NEW MEXICO
STATE HIGHWAY DEPARTMENT
TRAFFIC DESIGN SECTION
TRAFFIC CONTROL DEVICES
FOR
PERMANENT INSTALLATION
SUMMARY OF QUANTITIES

SHEET OF

NO. 4237.91 SHEET NO. 6-2





STRUCTURE PLACEMENT SECTIONS

FINAL SURVEY	SURVEYED	BY	DATE
NO.	NOTE BOOK		
	PLATE		
	AREAS CHECKED		

ORIGINAL SURVEY	SURVEYED	BY	DATE
NO.	NOTE BOOK		
	PLATE		
	AREAS CHECKED		

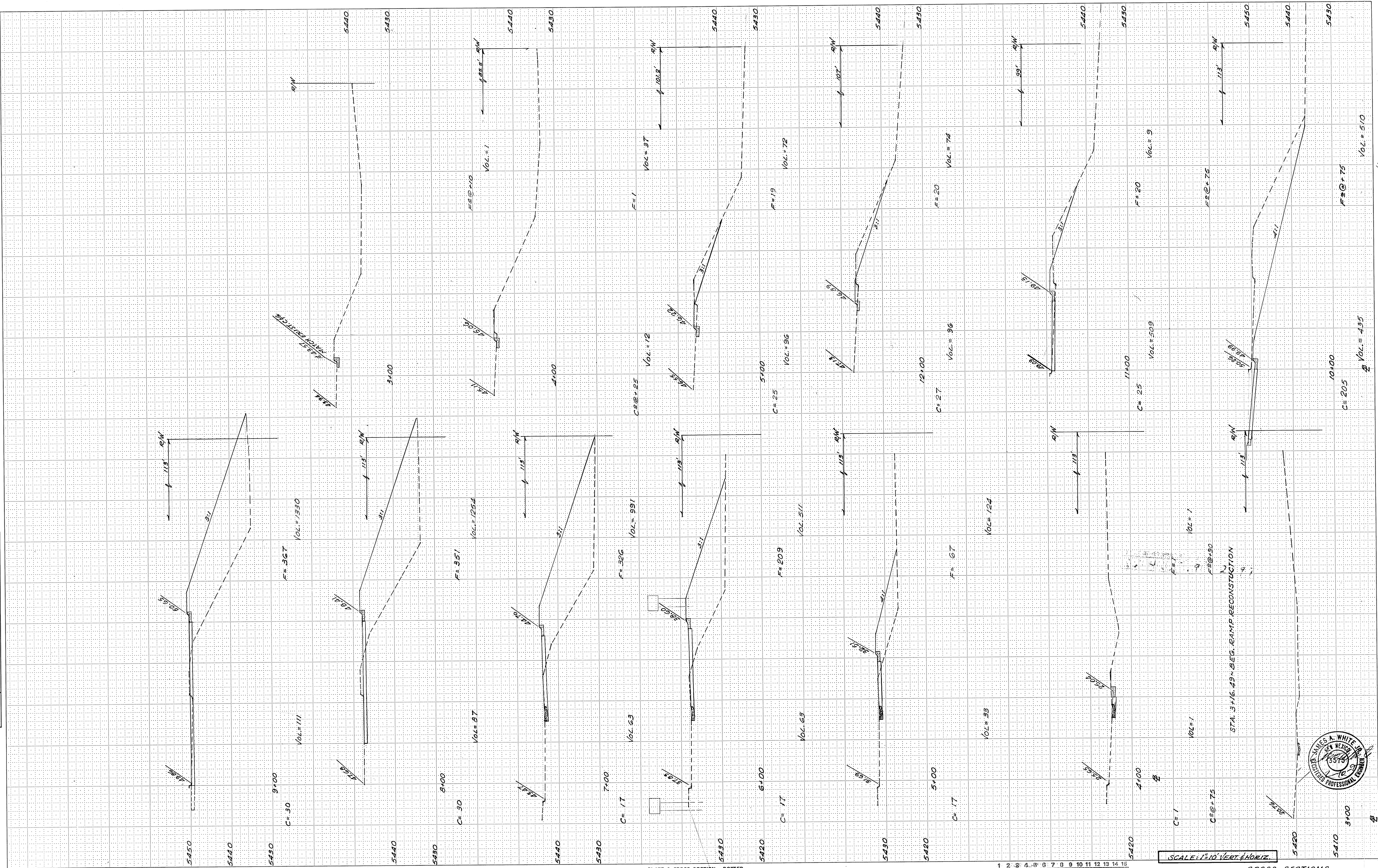


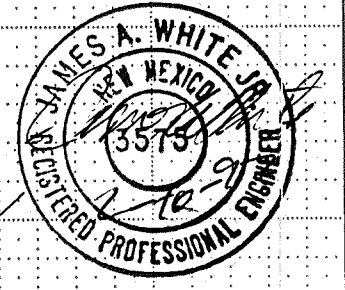
PLATE 3 CROSS SECTION - DOTTED
CHARLES BRUNING COMPANY
MADE IN U.S.A.

26-19237.91 2697

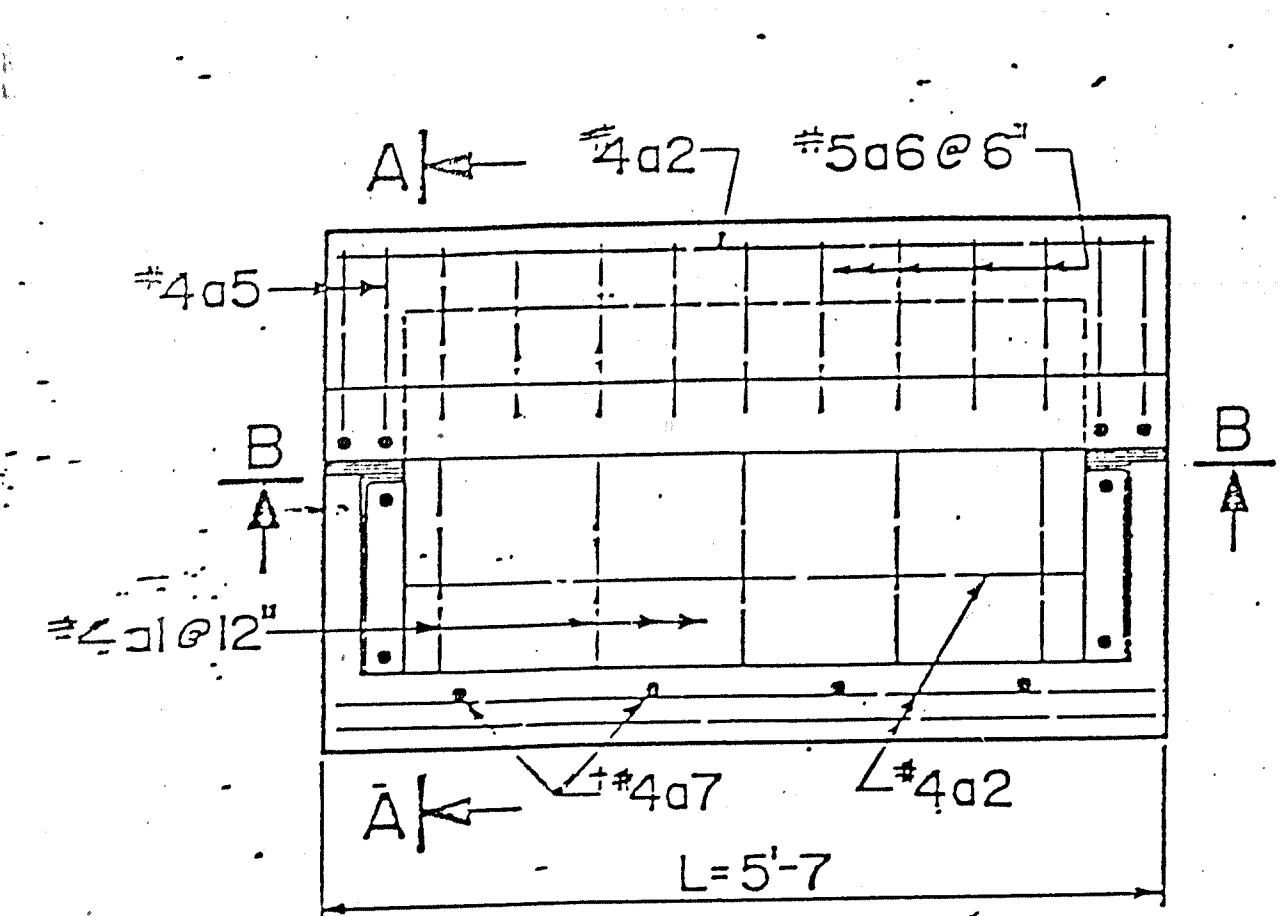
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CROSS SECTIONS

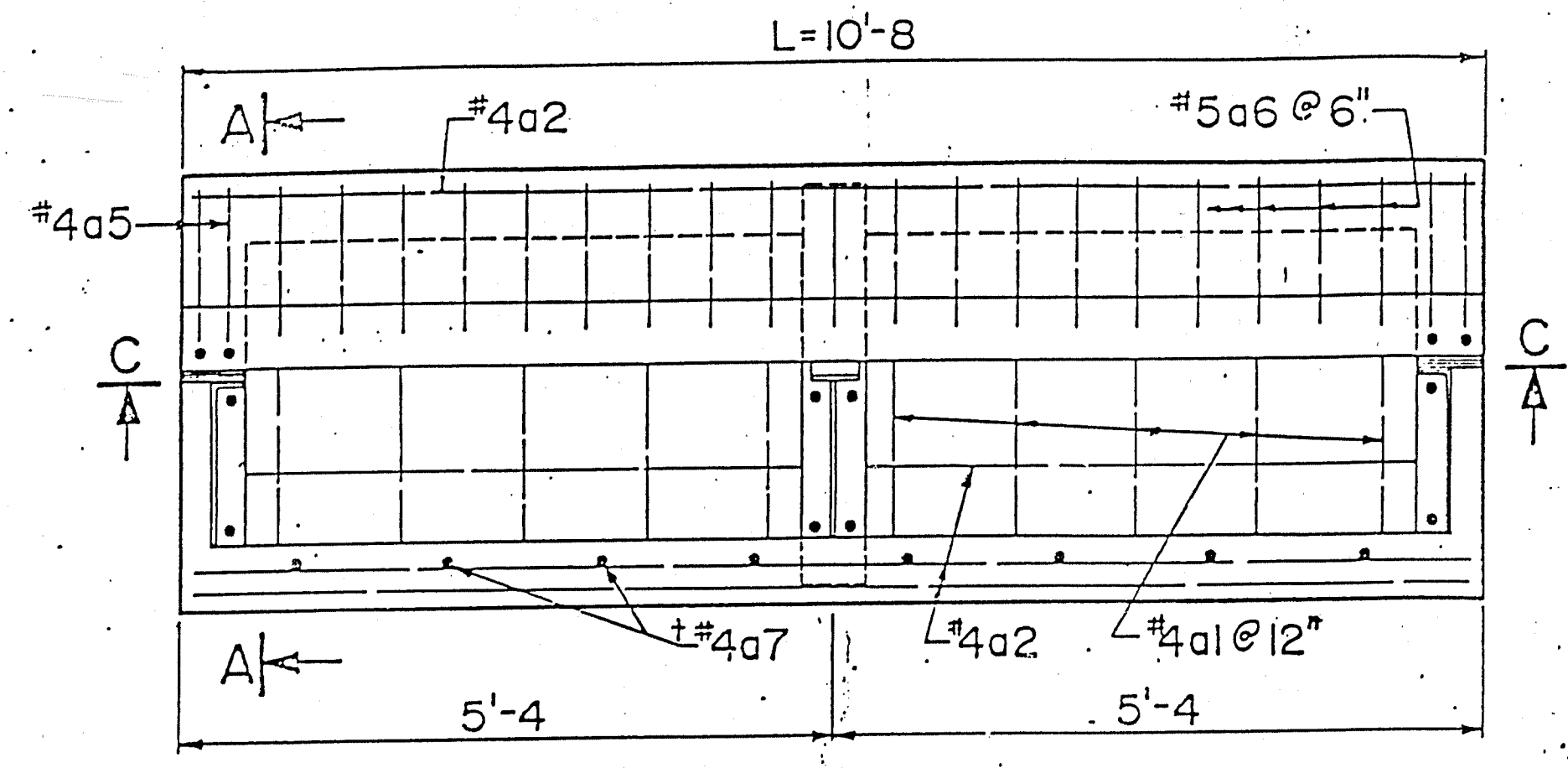
SHEET 8-1



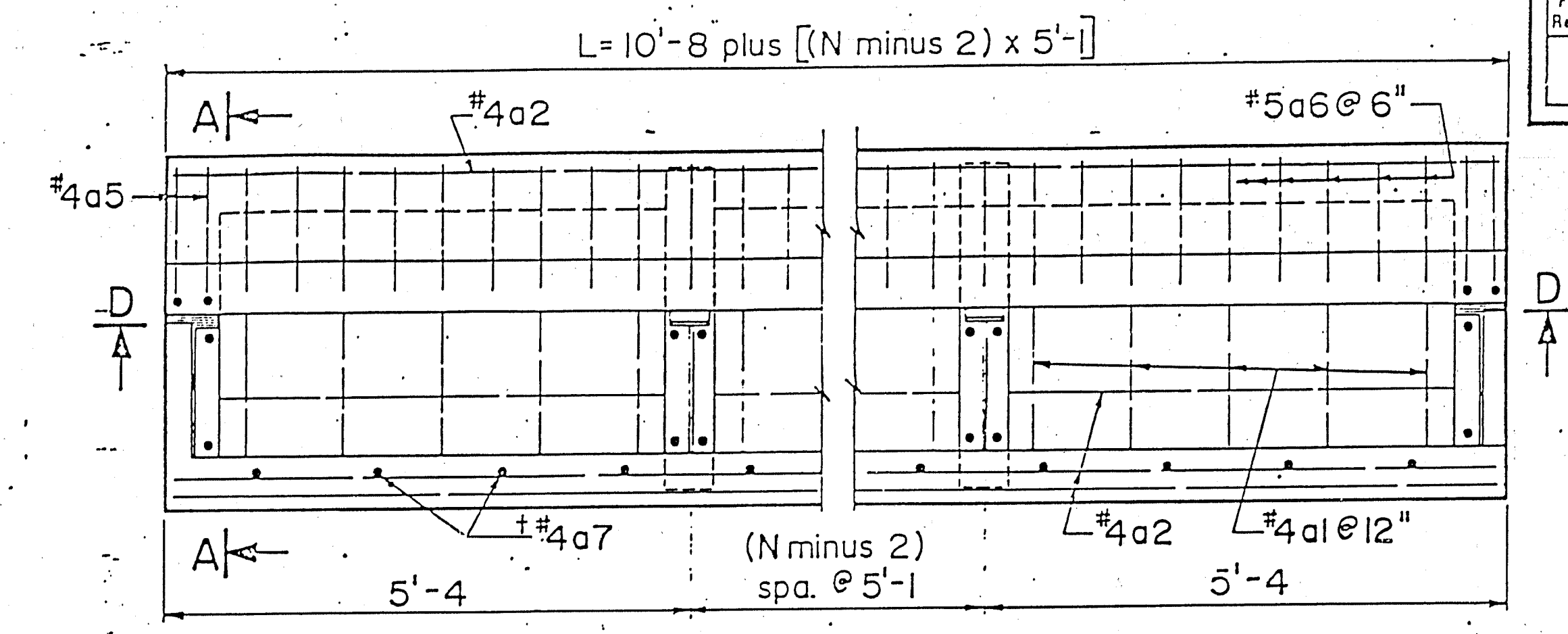
F.H.W.A. Region No.	STATE	SHEET NO.	TOTAL SHEETS
6	NEW MEXICO		



PLAN TYPE I



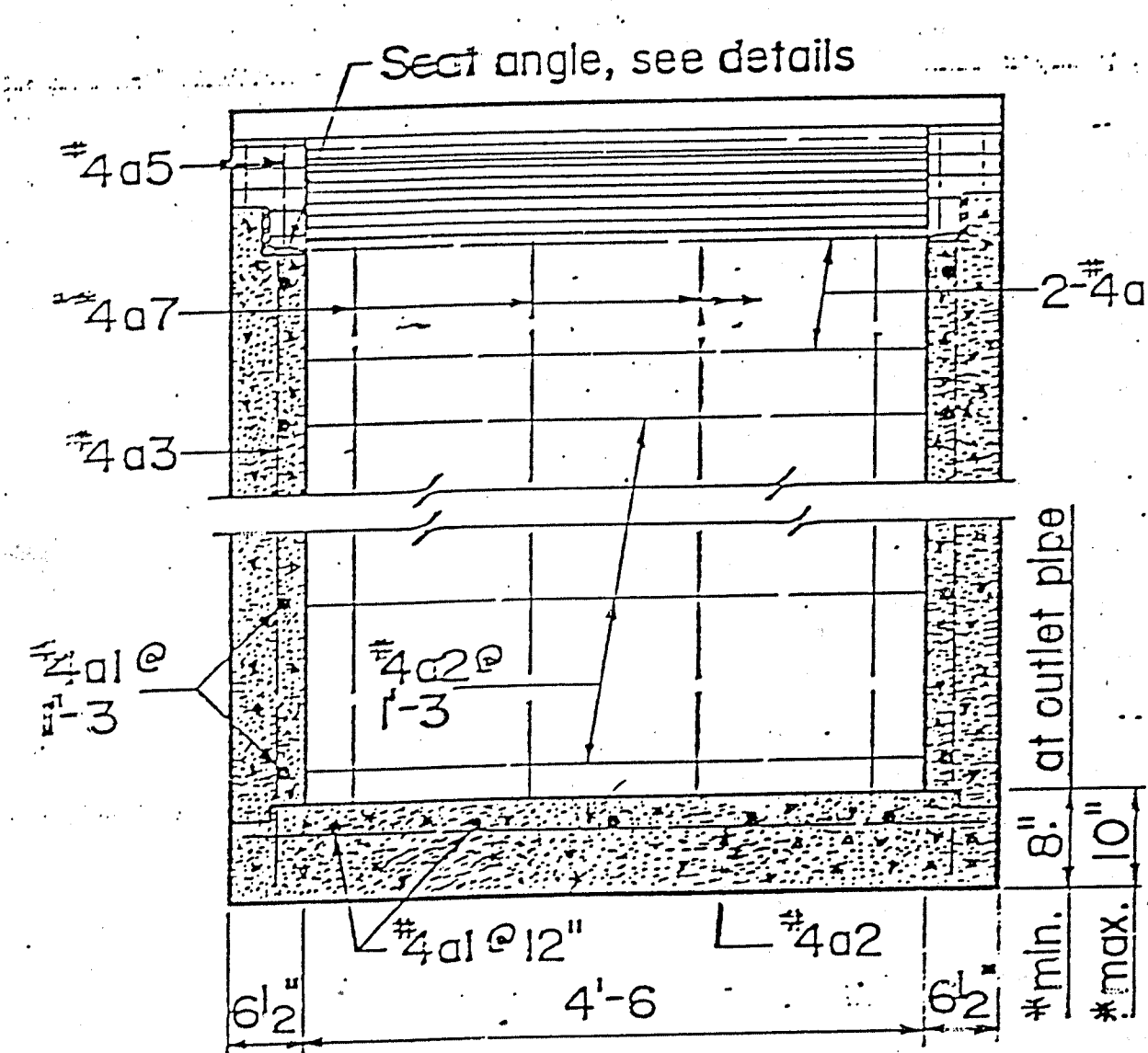
PLAN TYPE II



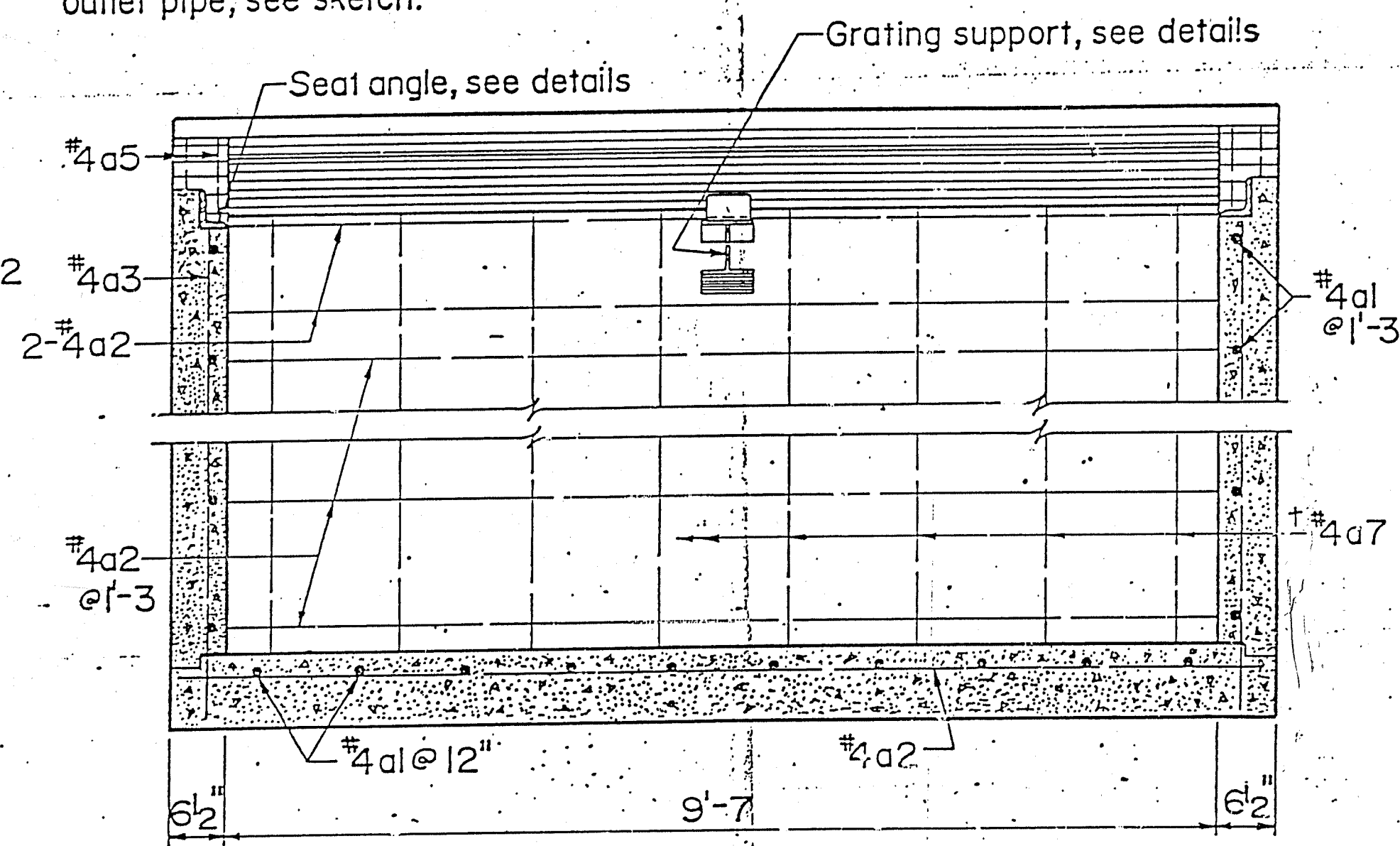
PLAN TYPE III TO TYPE "N"

* Note: Finish floor to drain to outlet pipe, see sketch.

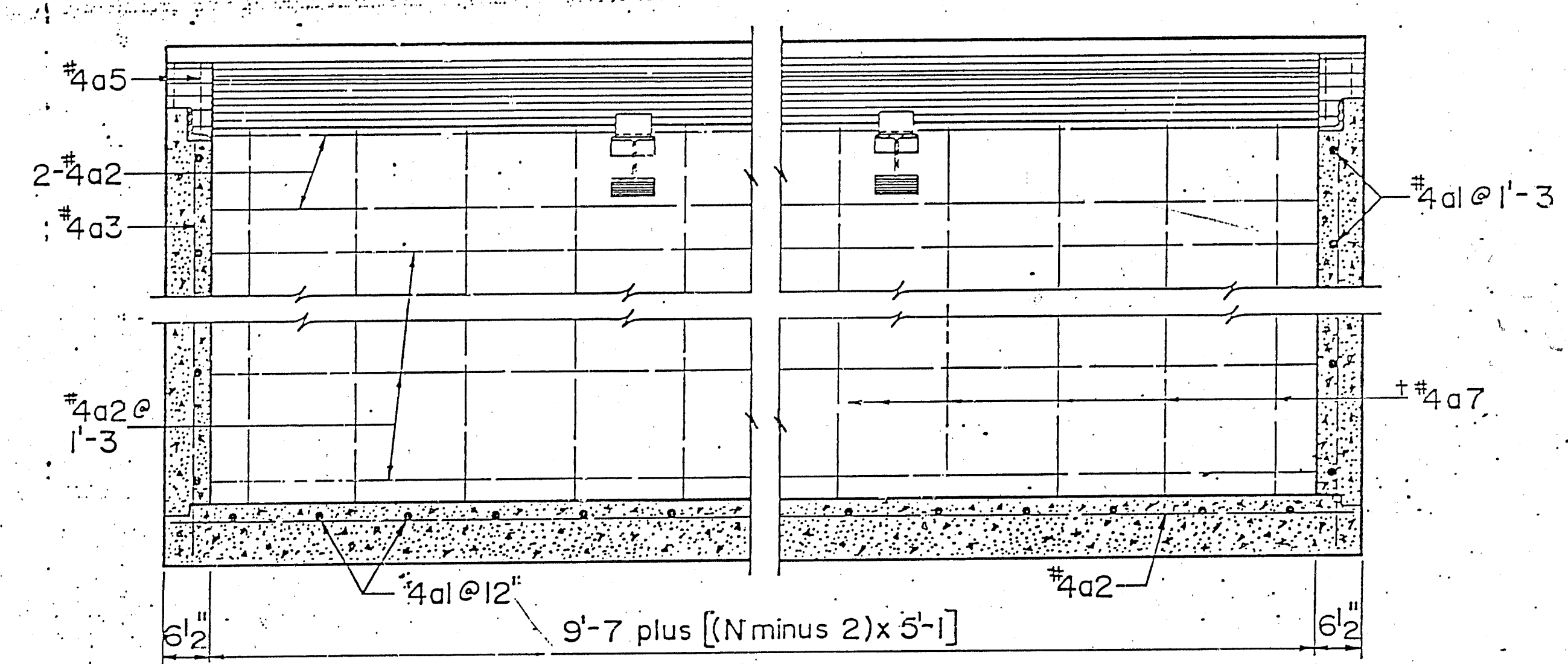
† Note: See Reinforcing Steel Schedule for Spacing of #4a7 bars.



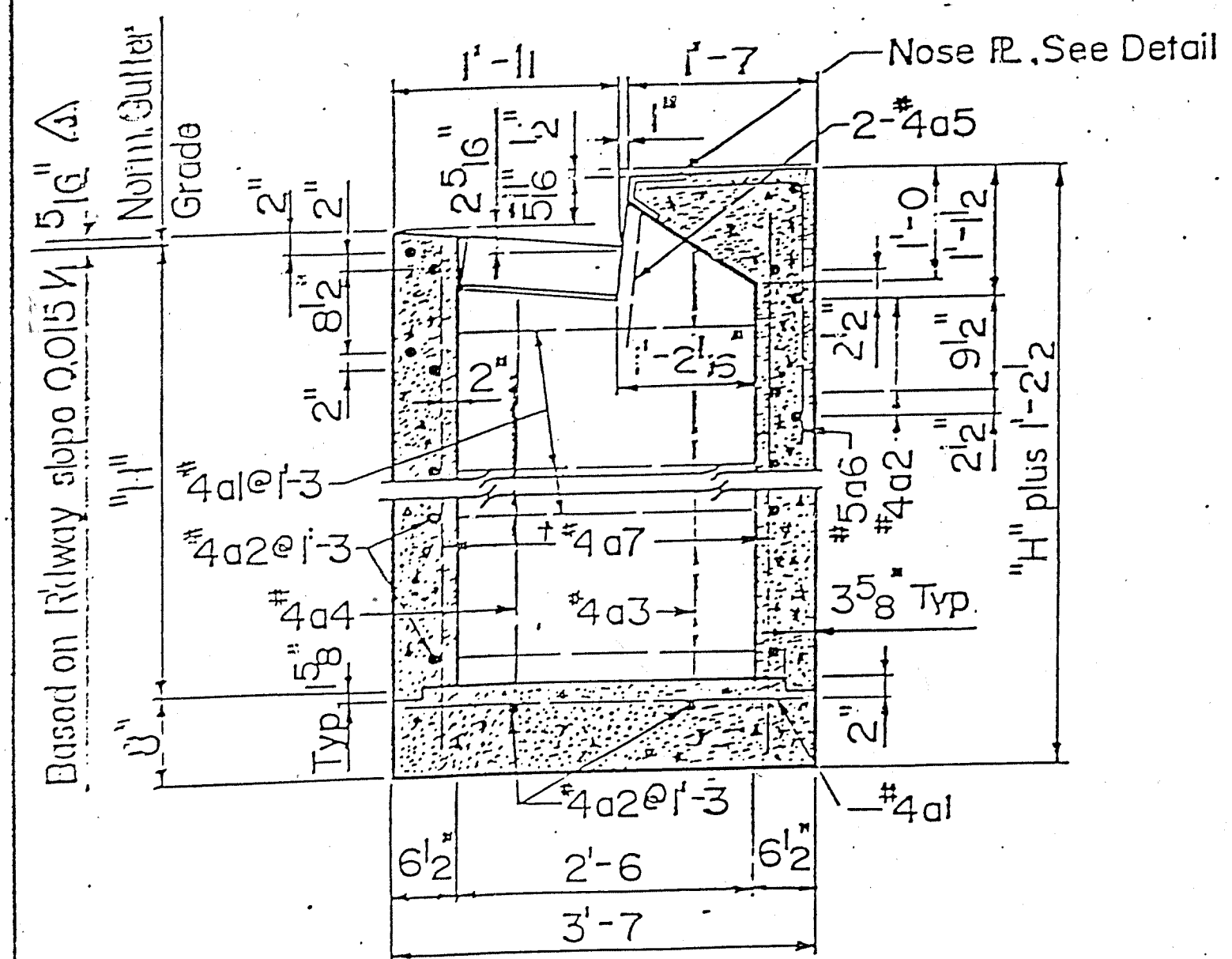
SECTION B-B



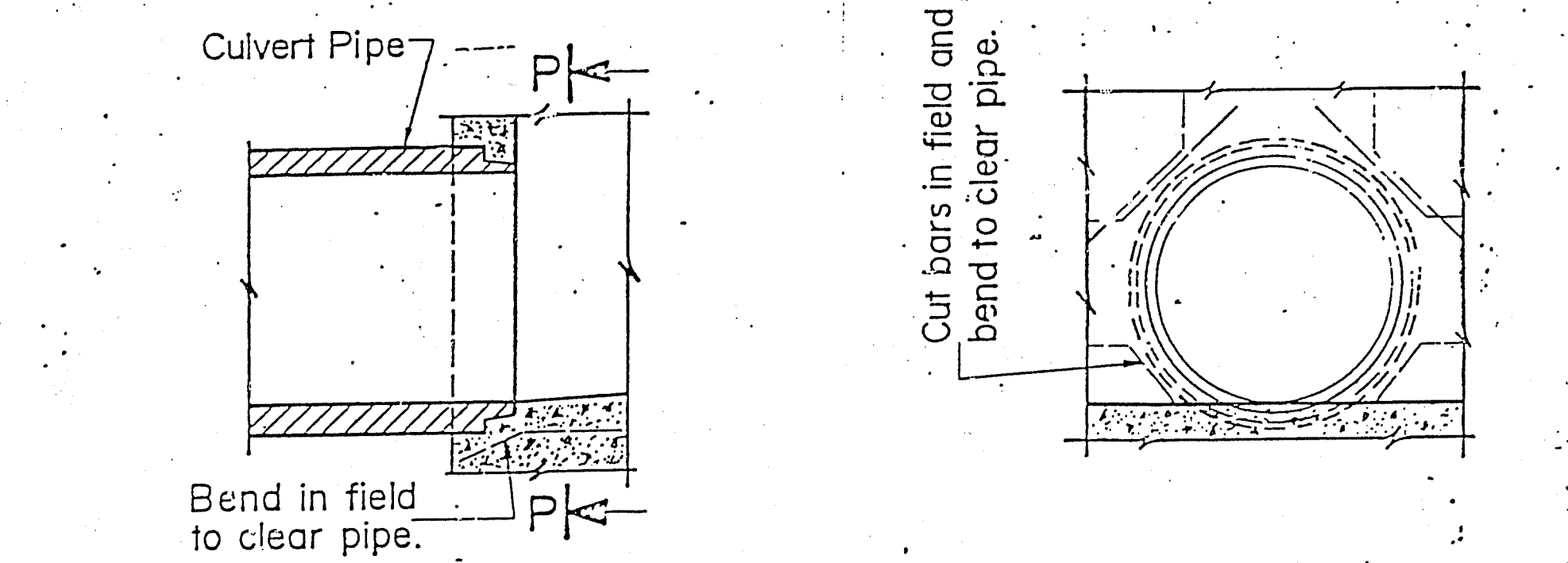
SECTION C-C



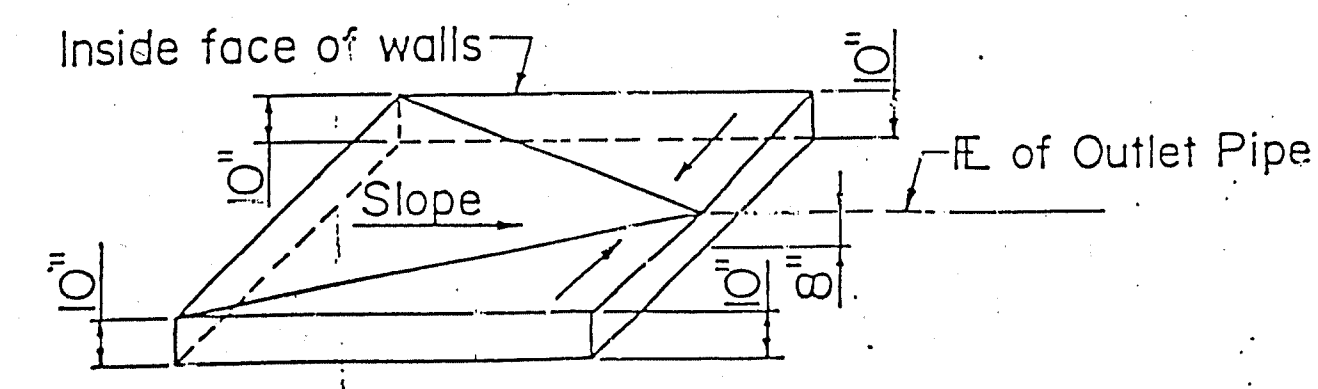
SECTION D-D



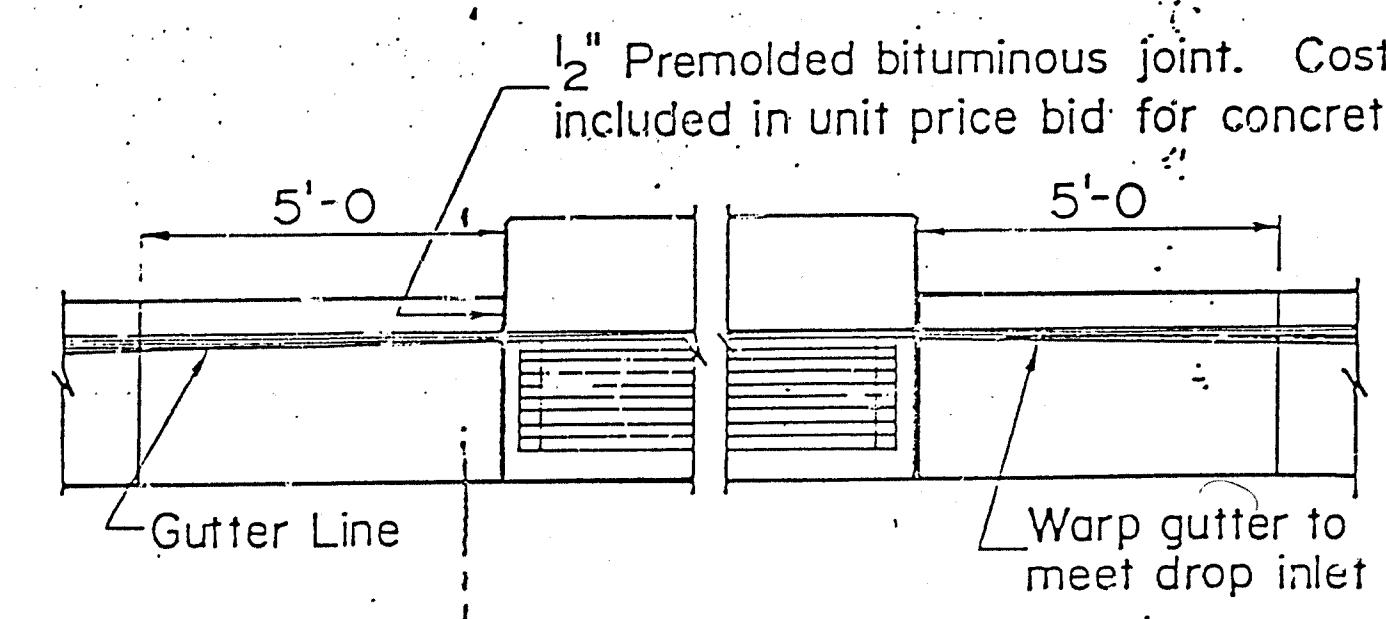
SECTION A-A
TYPICAL FOR ALL TYPES



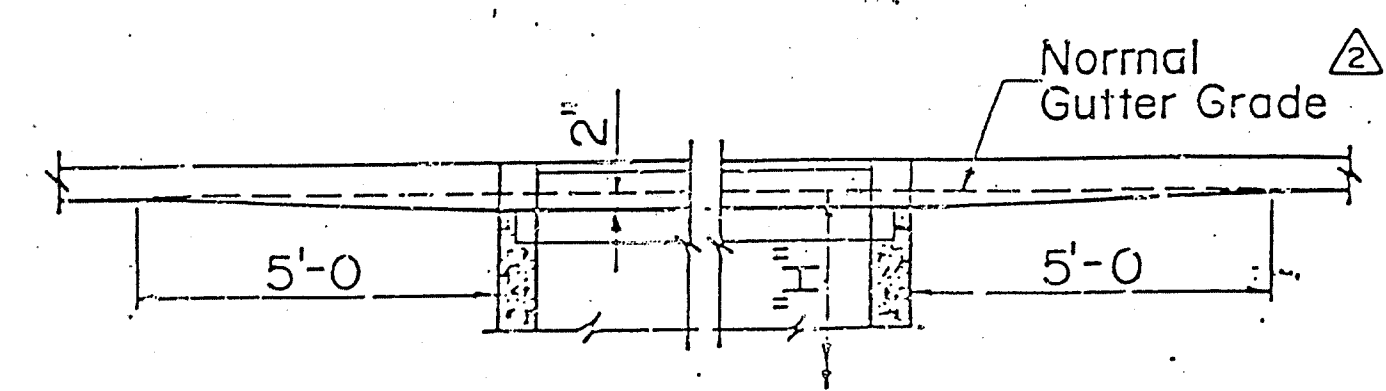
TYPICAL SECTION AT C PIPE PART SECTION P-P



SKETCH OF FLOOR SLAB BETWEEN WALLS
Showing finish to drain to outlet pipe



PLAN



SECTION ALONG GUTTER LINE
DETAIL FOR PLACING DROP INLET

Serial BDIC-004 must accompany this sheet.

THIS SERIAL REVISED: 2-1-80

IDENT. NO.	DESCRIPTION	DATE	BY
1	CHANGED DIMENSION	1-24-80 E.R.D.	
2	ADDED 'NORMAL' TO 'GUTTER GRADE'	1-24-80 E.R.D.	
3	CHANGED TITLE BLOCK AND SERIAL NUMBER	1-24-80 E.R.D.	
4	ADDED CROSS REFERENCE	2-1-80 E.R.D.	

REVISIONS (OR CHANGE NOTICES)

**NEW MEXICO
STATE HIGHWAY DEPARTMENT**

**DROP INLET
FOR TYPE "B" CURBS**

DESIGNED BY J.A.S. APPROVAL *[Signature]* 11-2-79
DRAWN BY A.J.S. RECOMMENDED - BRIDGE ENGINEER DATE
CHECKED BY C.R.D. APPROVED DIRECTOR "ROAD DEVELOPMENT" DIVISION DATE

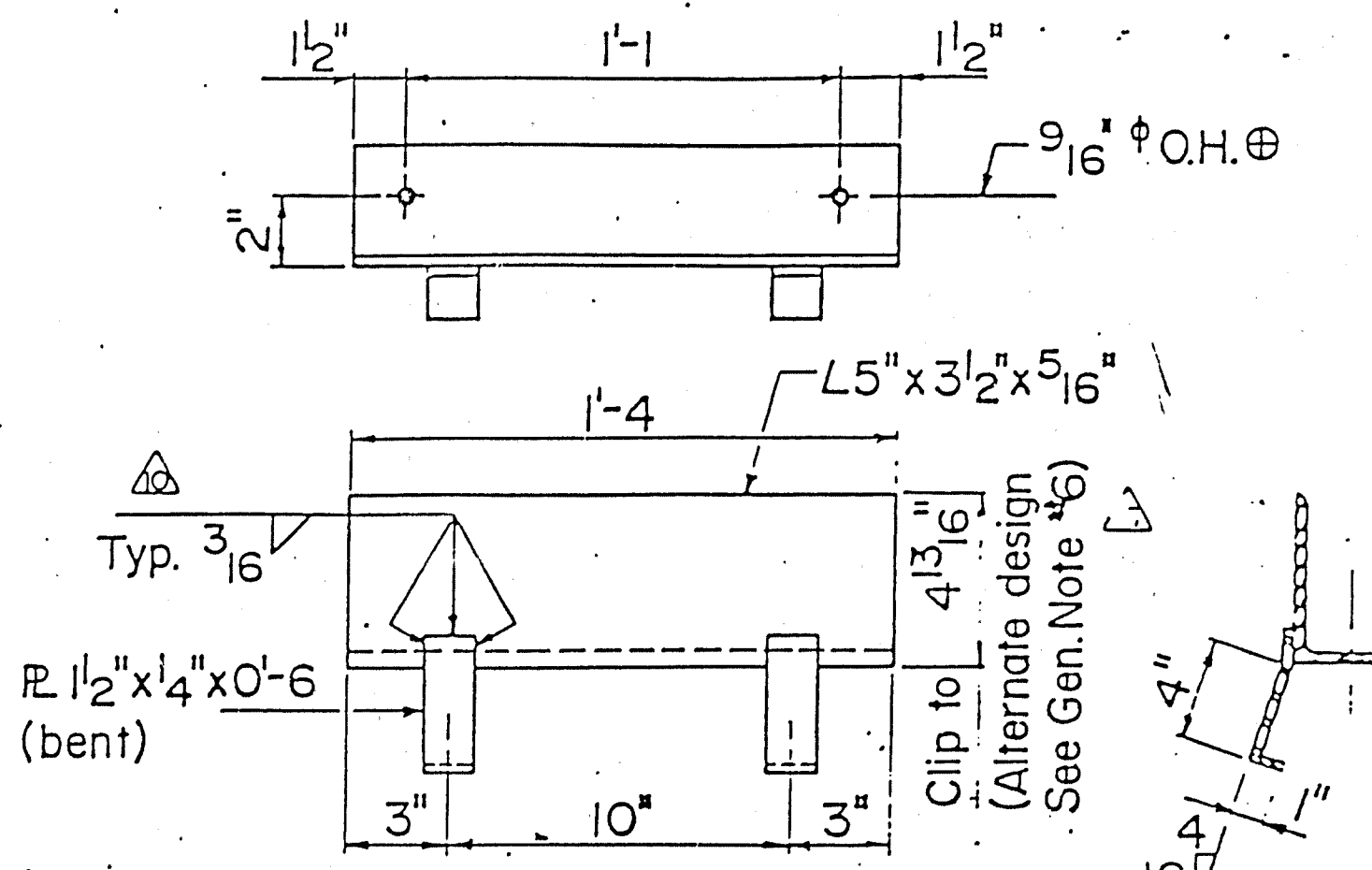
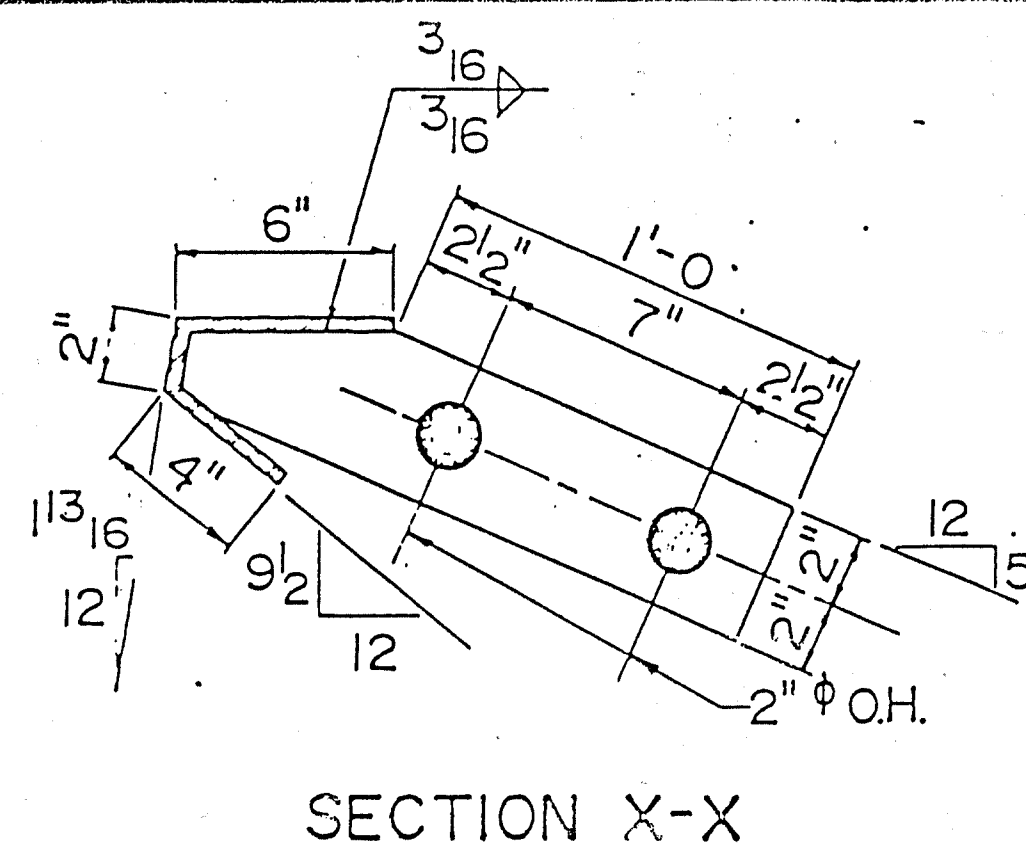
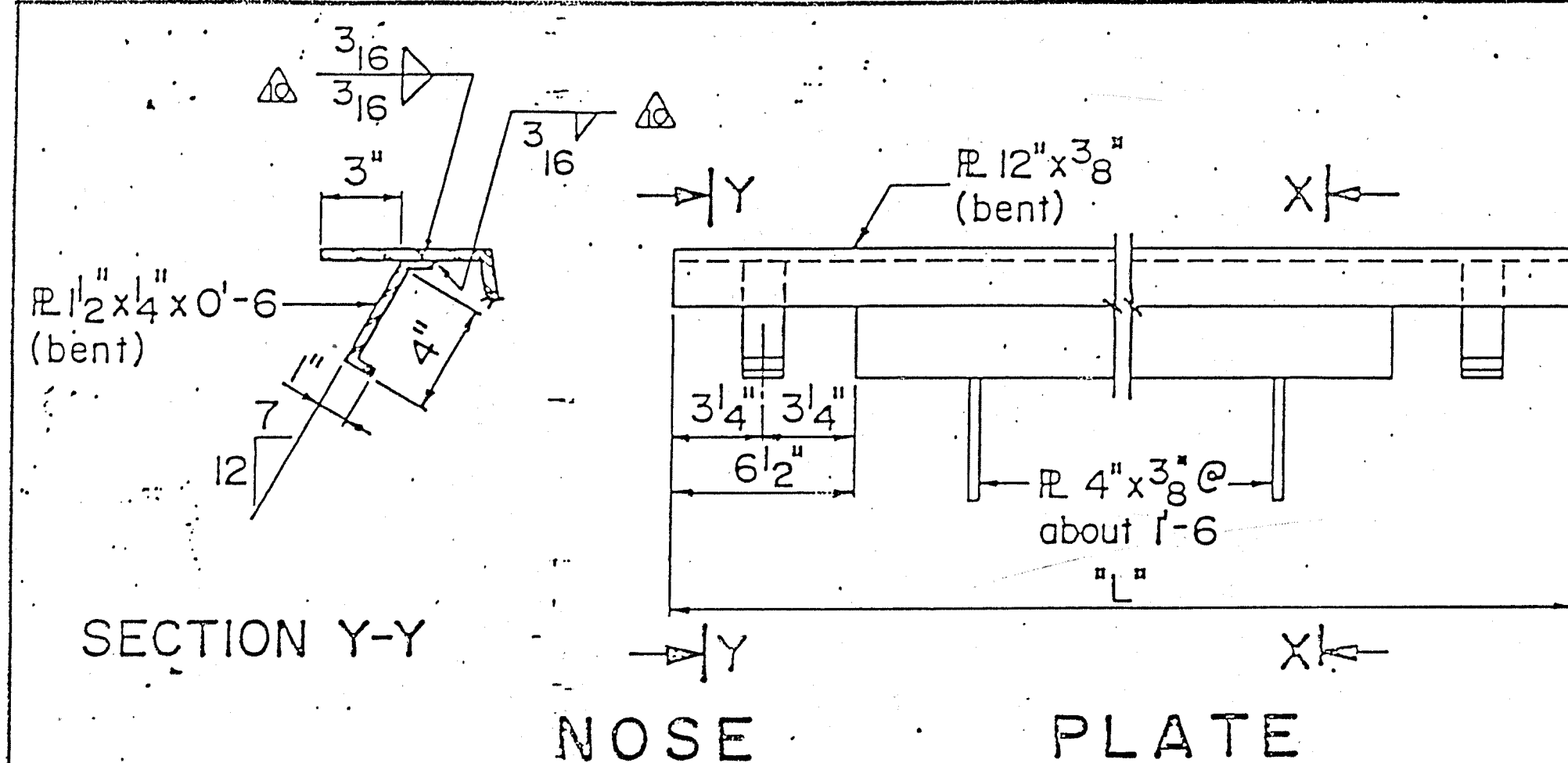
Serial BDIC-003-04

Proj. NO. 4237.91 SHEET NO. 9-1

F.H.W.A. Region No.	STATE	SHEET NO.	TOTAL SHEETS
6	NEW MEXICO		

GENERAL NOTES

- All concrete to be Class "A". Design based on a minimum compressive strength of 3000 psi at 28 days. Chamfer all exposed edges $\frac{3}{4}$ ".
 - Reinforcing steel to be deformed bars Grade 40. Dimensions are to ϕ bar.
 - Structural steel to be carbon steel conforming to A.A.S.H.T.O. Specifications M-183.
 - Paint all structural steel members one prime coat of red lead and two field coats of aluminum paint. Omit paint on contact surfaces and surfaces embedded in concrete. These surfaces shall be thoroughly cleaned. Prime coat may be applied in shop or field.
 - See Roadway Plans for location of drop inlet, number, size and $\bar{E}$ elevations of pipe drains and "H" dimension.
- Δ 6 Alternate design. Use $5" \times 3\frac{1}{2}" \times 5\frac{1}{16}"$ Seat angle, unclipped. Raise grate using shim bar welded under main bars.



Δ ϕ $\frac{9}{16}$ " ϕ O.H. are for use in aligning grating supports and seat angles.

ESTIMATED QUANTITIES

TYPE	N	L	CLASS "A" CONCRETE * * CU. YDS.	REINFORCING STEEL — LBS.				STRUCTURAL STEEL — LBS.
				H=6'-0 or less	H=6'-1 to 7'-0	H=7'-1 to 8'-0	H=8'-1 to 11'-6	
I	1	5'-7	0.324 H + 0.698	17.2 H + 91.9	18.5 H + 92.6	21.2 H + 93.9	29.14 H + 97.74	426
II	2	10'-8	0.528 H + 1.357	28.0 H + 175.1	32.0 H + 177.1	38.7 H + 180.5	54.97 H + 189.36	879
III	3	15'-9	0.732 H + 2.017	38.7 H + 258.6	44.1 H + 261.3	54.8 H + 266.6	80.76 H + 280.86	1337
IV	4	20'-10	0.936 H + 2.676	49.5 H + 342.1	57.5 H + 346.1	70.9 H + 352.8	106.55 H + 372.33	1790
V	5	25'-11	1.140 H + 3.335	60.3 H + 429.4	71.0 H + 434.7	87.0 H + 446.7	132.38 H + 463.95	2242
VI	6	31'-0	1.344 H + 3.995	71.1 H + 512.7	83.1 H + 518.7	103.1 H + 528.8	158.18 H + 555.49	2701

* * : See table for pipe deductions

N : Number of gratings to be placed in drop inlet.

H : Normal gutter elev. to flow line elev. of outlet pipe. Use H in feet.

Δ

CLASS "A" CONCRETE DEDUCTIONS
FOR ONE PIPE

SIZE	CONCRETE PIPE	METAL PIPE
18"	0.06 Cu. Yds.	0.04 Cu. Yds.
24"	0.10 " "	0.06 " "
30"	0.15 " "	0.10 " "
36"	0.21 " "	0.14 " "
42"	0.28 " "	0.19 " "

Note: Deductions noted are for pipes normal to walls; for skewed pipes multiply deductions by secant of skew angle. For smaller pipes other than those shown in table adjust deductions accordingly.

Serial BDIC-Q03 must accompany this sheet. Δ

REINFORCING BAR SCHEDULE

R=1/2", #4	└─ Embed this end of bar in wall.	
R=1/8", #5		
#4 a5	1'-2	2'-3 Long, Req'd 4
#5 a6	1'-2	3'-9 Long Req'd 2L minus 1.2

H	Spa.	#4 a7	Req'd: (0.80L minus 0.25) 2
6'-0 or less	15"	(H+6")	(1.10L minus 0.70) 2
6'-1 to 7'-0	11"	"	(1.60L minus 1.55) 2
7'-1 to 8'-0	7 1/2"	"	(3.0 L minus 3.8) 2
8'-1 to 11'-6	4 1/2"	"	

Note: "H" & "L" are in feet. Furnish bars to the nearest whole number of bars. For #4 a7 determine nearest whole number before multiplying by 2.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
26-102377.1971 2897

DESIGN DATA

Design according to A.A.S.H.T.O. Specifications, 1979.
Design stresses: $f_c = 1200 \text{ psi}$, $f_s = 20,000 \text{ psi}$, $n = 10$
Horizontal earth pressure = $36 \text{ cu ft. equiv fluid pressure with 2' surcharge}$
Live Load on grating = one 16,000 # wheel plus 30% impact.
Max. H = 11'-6" Δ

IDENT. NO.	DESCRIPTION	DATE	BY
1	CHANGED STRUCTURAL STEEL QUANTITIES	4-24-80	E.R.D.
2	MOVED NOTE	2-4-80	E.R.D.
3	ADDED CROSS REFERENCE	2-1-80	E.R.D.
4	EXPAND REBAR & ESTIMATED QUANTITIES TABLE	2-11-85	E.R.D.
5	REVISED WELD SYMBOLS	3-23-84	E.R.D.
6	CHANGED BAR SIZES AND SPACINGS	4-24-80	E.R.D.
7	CHANGED DETAIL 'A'	4-24-80	E.R.D.

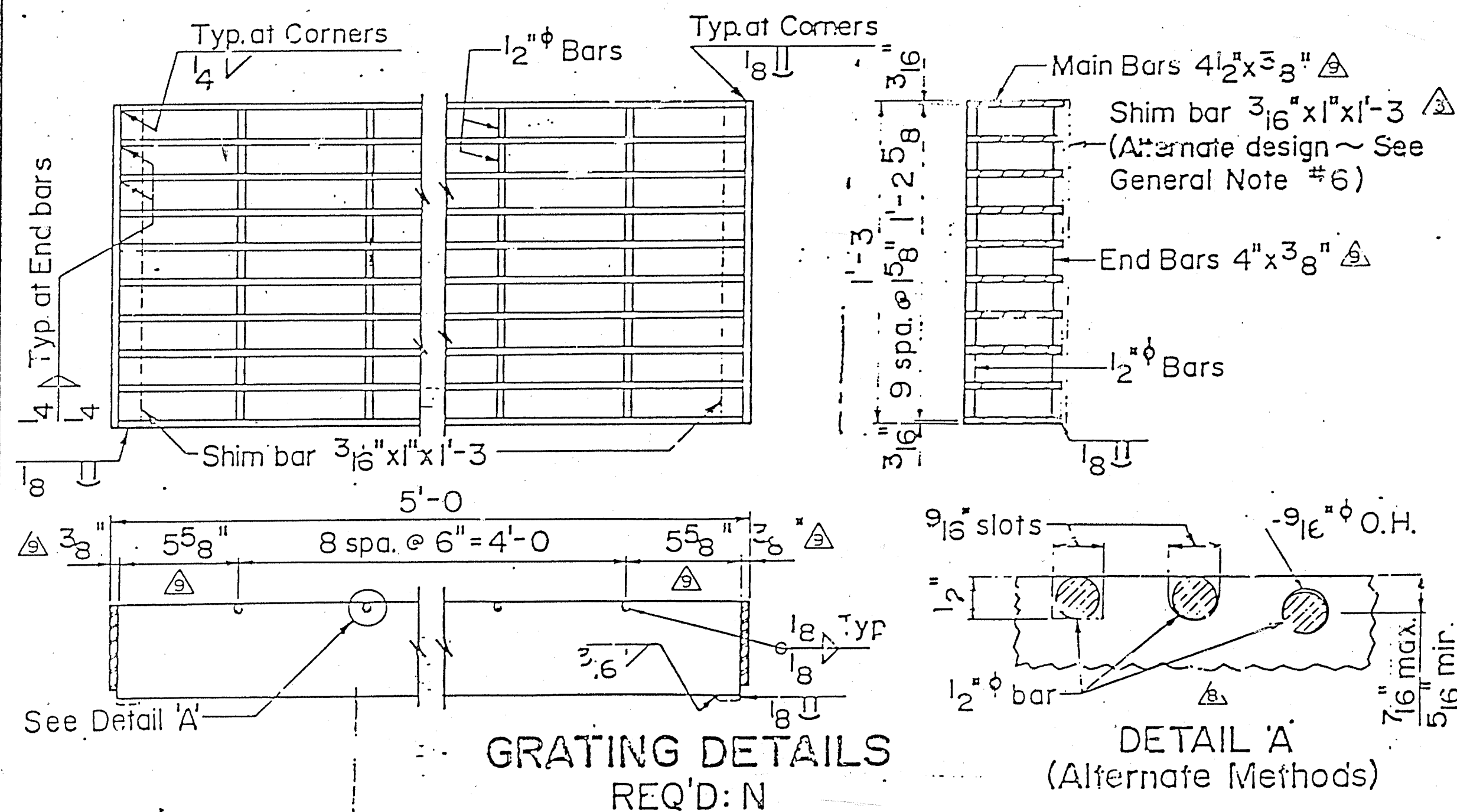
NEW MEXICO
STATE HIGHWAY DEPARTMENT

Δ DROP INLET
FOR TYPE "B" CURBS

DESIGNED BY J.A.S.	APPROVAL	11-2-77
DRAWN BY A.J.S.	RECOMMENDED — BRIDGE ENGINEER	DATE
CHECKED BY E.R.D.	APPROVED	DATE
	DIRECTOR PROJ. DEVELOPMENT DIVISION	DATE

Δ SERIAL BDIC-Q04-11

Proj. No. 423771 SHEET NO. 9-2

GRATING SUPPORT DETAILS
Hot Dip Galvanize After Fabrication
REQ'D: N minus 1

DETAIL 'A'
(Alternate Methods)

TABLE 1

2 3/4" x 1/2" CORRUGATIONS, RIVETED, WELDED, HELICAL										
PIPE DIAM.	Minimum Cover (inches)					Maximum Cover (feet)				
	16 Ga. .064"	14 Ga. .079"	12 Ga. .109"	10 Ga. .138"	8 Ga. .168"	16 Ga. .064"	14 Ga. .079"	12 Ga. .109"	10 Ga. .138"	8 Ga. .168"
12"	12	12	12	12	12	92(120)	101(165)	130(260)	136(272)	142(285)
15"	12	12	12	12	12	74(96)	80(132)	104(208)	108(217)	113(228)
18"	12	12	12	12	12	61(80)	67(110)	86(173)	90(181)	94(190)
21"	12	12	12	12	12	53(68)	57(94)	74(148)	77(155)	81(162)
24"	12	12	12	12	12	46(60)	50(82)	65(130)	68(136)	71(142)
30"	12	12	12	12	12	37(48)	40(66)	52(104)	54(108)	56(114)
36"	12	12	12	12	12	30(40)	33(55)	43(86)	45(90)	47(95)
42"	12	12	12	12	12	34	47	74	77	81
48"	12	12	12	12	12	30	41	65	68	71
54"	12	12	12	12	12	36	57	60	63	63
60"	12	12	12	12	12	52	54	57	57	57
66"	12	12	12	12	12	49	51	51	51	51
72"	12	12	12	12	12	45	47	47	47	47
78"	12	12	12	12	12	43	43	43	43	43
84"	12	12	12	12	12	40	40	40	40	40

() See Notes 8 & 11

TABLE 2

3" x 1" or 5" x 1" CORRUGATIONS, RIVETED, WELDED, HELICAL										
PIPE DIAM.	Minimum Cover (inches)					Maximum Cover (feet)				
	16 Ga. .064"	14 Ga. .079"	12 Ga. .109"	10 Ga. .138"	8 Ga. .168"	16 Ga. .064"	14 Ga. .079"	12 Ga. .109"	10 Ga. .138"	8 Ga. .168"
36"	12	12	12	12	12	53	66	98	118	130
42"	12	12	12	12	12	45	56	84	101	112
48"	12	12	12	12	12	39	49	73	88	98
54"	12	12	12	12	12	35	44	65	78	87
60"	12	12	12	12	12	31	39	58	70	78
66"	12	12	12	12	12	29	36	53	64	71
72"	12	12	12	12	12	26	33	49	59	65
78"	12	12	12	12	12	24	30	45	54	60
84"	12	12	12	12	12	22	28	42	50	56
90"	13	12	12	12	12	21	26	39	47	52
96"	12	12	12	12	12	24	36	44	49	49
102"	13	13	13	13	13	23	34	41	46	46
108"	14	14	14	14	14	32	39	43	43	43
114"	15	15	15	15	15	31	37	41	41	41
120"	15	15	15	15	15	29	35	39	39	39
126"	16	16	16	16	16	33	37	37	37	37
132"	17	17	17	17	17	32	35	35	35	35
138"	18	18	18	18	18	30	34	34	34	34
144"	18	18	18	18	18	32	32	32	32	32

GENERAL NOTES

- Where abrasive or corrosive conditions exist, heavier gages or protective coatings may be required.
- The contractor may furnish heavier gage metal than the minimum shown in the tables at no additional cost to the State.
- All pipes shall be protected by a cover of at least 4' before permitting heavy construction equipment to pass over them during construction.
- Minimum covers shown in tables shall be measured from top of pipe to bottom of flexible pavement or to top of rigid pavement. For min. covers, a min. 6" cushion of Backfill Material shall be provided between bottom of rigid pavement and top of pipe.
- All steel corrugated metal and structural plate shall conform to A.A.S.H.T.O. M-36 and M-167.
- For pipe sizes not shown, the gage will be that required by the minimum and maximum covers for the next larger tabulated pipe size.
- Covers over 100 feet shall be used only after thorough investigation of foundation materials.
- Maximum covers for 2 3/4" x 1/2" corrugation shown in parenthesis may be used only when pipes are double riveted or helical.
- Any pipe of a size and gage which falls below the heavy line must be reviewed by the Bridge Engineer for possible approval.
- Gages shown are "U.S. Standard Gage" for uncoated steel sheets and plates. Thicknesses shown in inches include galvanized coating.
- Pipes in Table 1, smaller than 42" diameter, may be helical, single riveted or double riveted. Pipes in Table 1, 42" in diameter or greater, must be double riveted or helical.
- All pipes to be cambered to accommodate soil settlement and consolidation. Amount of camber will depend on soil characteristics, cover, length of culvert, slope, and other factors and shall be approved by the Project Manager.
- See Serial BMC-005 for installation details.

DESIGN DATA

Specifications: A.A.S.H.T.O. Std. Specifications for Highway Bridges, 1983 Edition.

Dead Load: 120 pounds per cubic foot.

Live Load: HS-20-44.

Safety Factors: 3.0 for longitudinal seam strength, 2.0 for pipe wall buckling. See A.A.S.H.T.O. Specification for flexibility factors and seam strength.

Backfill: Soil Stiffness Coefficient (k) = 0.22.

TABLE 3

6" x 2" CORRUGATIONS, STRUCTURAL PLATE ~ BOLTED													
PIPE DIAM.	Minimum Cover (inches)			Maximum Cover (feet)									
	12 Ga. .109"	10 Ga. .138"	8 Ga. .168"	4 Bolts / Ft.					6 Bolts / Ft.		8 Bolts / Ft.		
	12 Ga. .109"	10 Ga. .138"	8 Ga. .168"	12 Ga. .109"	10 Ga. .138"	8 Ga. .168"	7 Ga. .188"	5 Ga. .218"	3 Ga. .249"	1 Ga. .280"	1 Ga. .280"	1 Ga. .280"	1 Ga. .280"
60"	12	12	12	47	68	90	103	124	146	160	200	215	215
72"	12	12	12	39	57	75	86	103	122	133	166	179	179
84"	12	12	12	34	49	64	73	88	104	114	142	154	154
96"	12	12	12	29	43	56	64	77	91	100	125	134	134
108"	14	14	14	26	38	50	57	69	81	88	111	119	119
120"	15	15	15	23	34	45	51	62	73	80	100	107	107
132"	17	17	17	21	31	40	47	56	66	72	90	98	98
144"	18	18	18	19	28	37	43	51	61	66	83	89	89
156"	20	20	20	18	26	34	39	47	56	61	76	82	82
168"	21	21	21	17	24	32	36	44	52	57	71	76	76
180"	23	23	23	15	22	30	34	41	48	53	66	71	71
192"	24	24	24	21	28	32	38	45	50	56	62	67	67
204"	26	26	26	20	26	30	36	43	47	58	58	63	63
216"	27	27	27	25	28	34	40	44	44	55	55	59	59
228"	29	29	29	23	27	32	38	42	42	52	52	56	56
240"	30	30	30	25	31	36	40	40	50	50	50	53	53
252"	32	32	32	29	34	38	47	47	47	51	51	51	51
264"	33	33	33	28	33	36	45	45	45	49	49	49	49
276"	35	35	35	31	34	43	43	43	43	46	46	46	46
288"	36	36	36	30	33	41	41	41	41	44	44	44	44
300"	38	38	38	32	40	40	40	40	40	43	43	43	43
312"													

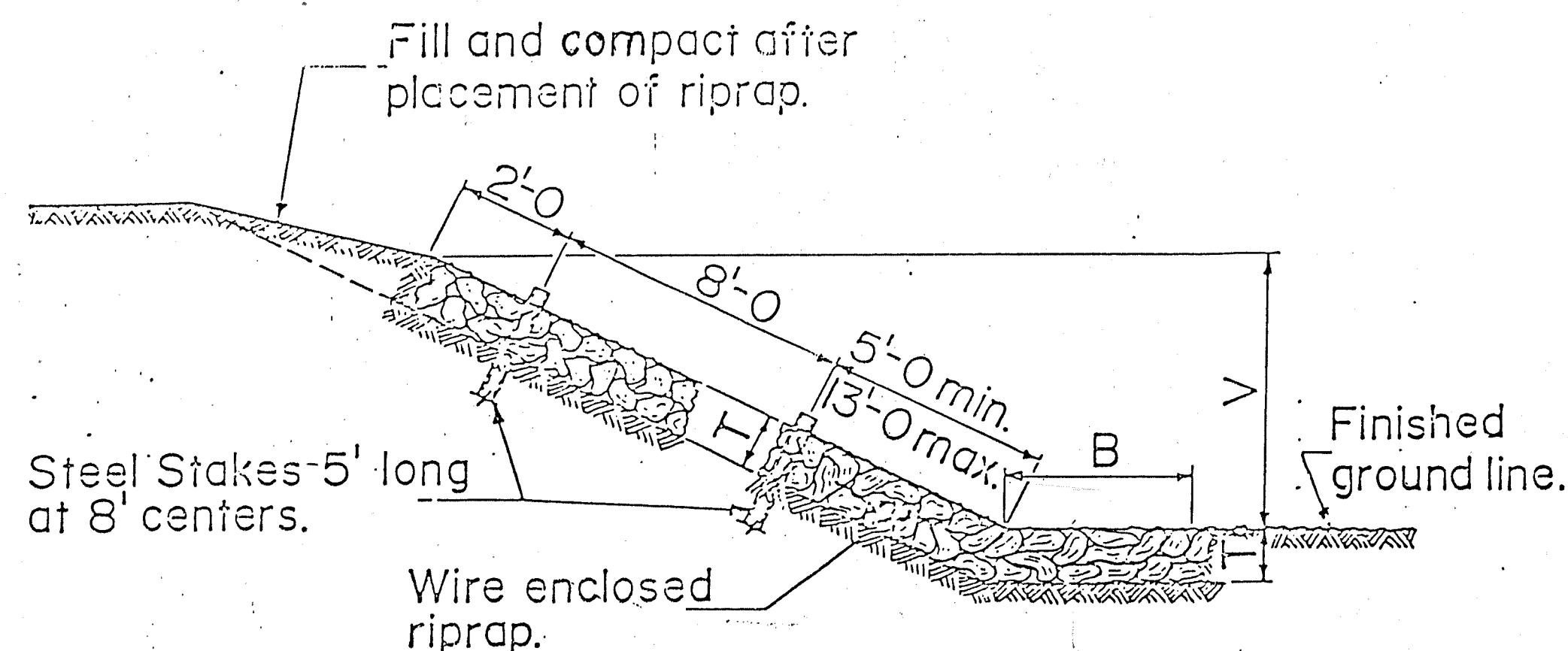
20-14237.91.1.2797

THIS SERIAL REVISED: 1-28-85

REFORMAT AND UPDATE OF BMC-001-02, DATED 7-28-83	1-28-85	CS
IDENT. NO.	DESCRIPTION	DATE
REVISIONS (OR CHANGE NOTICES)		
NEW MEXICO STATE HIGHWAY DEPARTMENT		
MAXIMUM & MINIMUM COVERS STEEL-ROUND PIPES CORR.METAL & STRUCT.PLATE		
SIGNED BY P.B.H.	APPROVAL	DATE
DRAWN BY D.J.R.	RECOMMENDED	DATE
CHECKED BY E.R.D.	APPROVED	DATE
SERIAL BMC-001-03		

QUANTITIES PER LIN. FT.

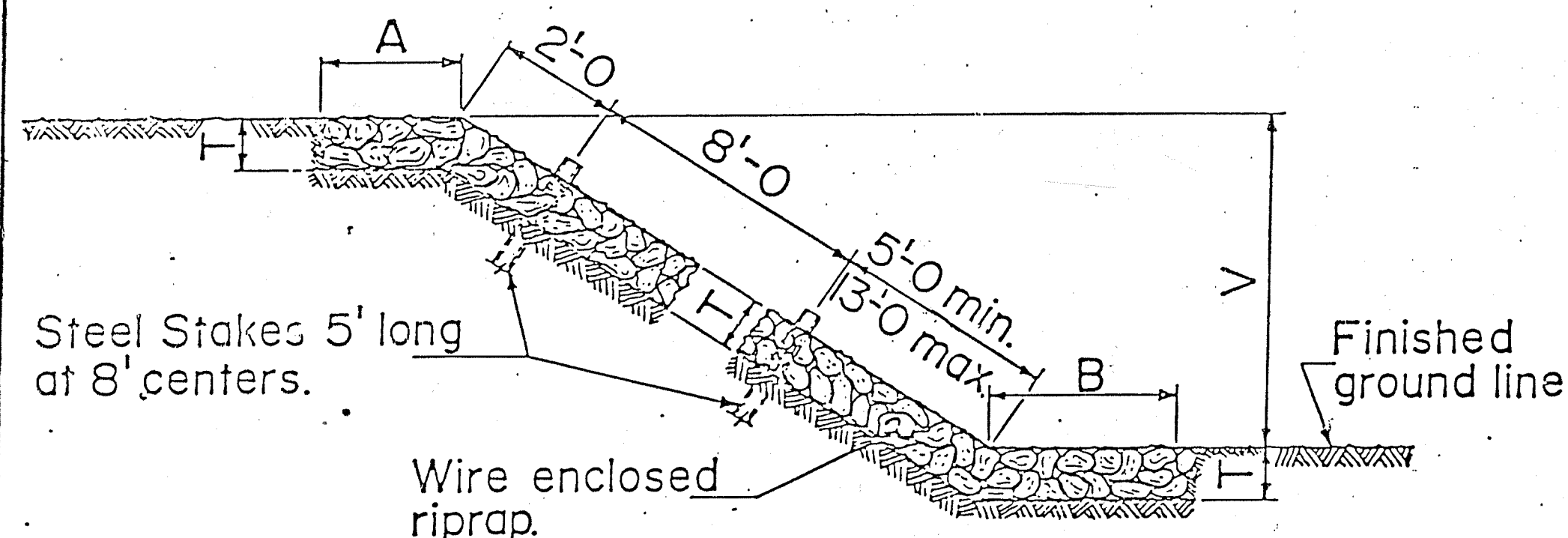
SLOPE	RIPRAP CU. YDS.
1 1/2 : 1	$\frac{T}{27} (B + 1.803V + 0.303T)$
1 3/4 : 1	$\frac{T}{27} (B + 2.016V + 0.266T)$
2 : 1	$\frac{T}{27} (B + 2.236V + 0.236T)$
3 : 1	$\frac{T}{27} (B + 3.162V + 0.162T)$
4 : 1	$\frac{T}{27} (B + 4.123V + 0.123T)$



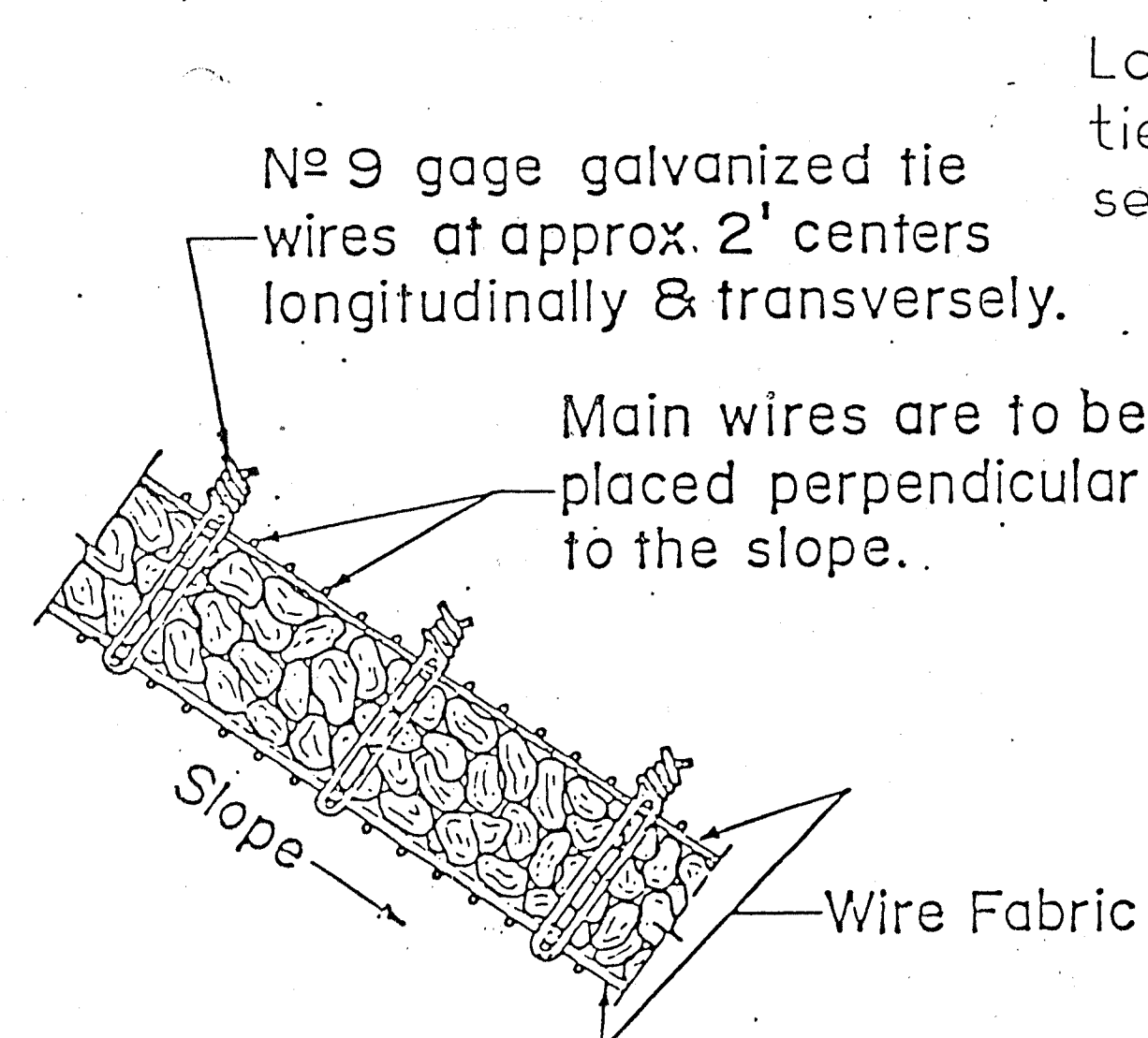
SECTION TYPE A

QUANTITIES PER LIN. FT.

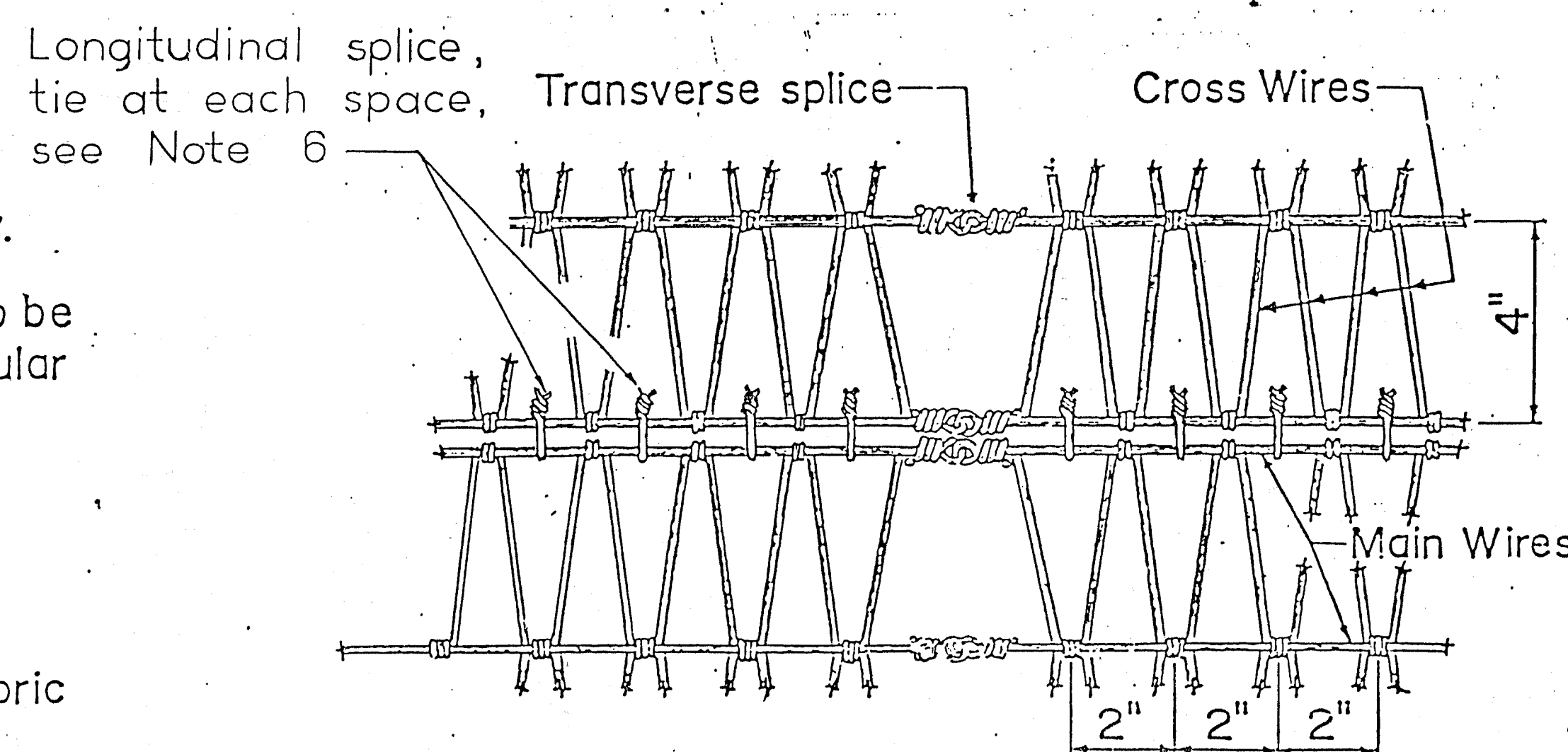
SLOPE	RIPRAP CU. YDS.
1 : 1	$\frac{T}{27} (A + B + 1.414V)$
1 1/2 : 1	$\frac{T}{27} (A + B + 1.803V)$
1 3/4 : 1	$\frac{T}{27} (A + B + 2.016V)$
2 : 1	$\frac{T}{27} (A + B + 2.236V)$
3 : 1	$\frac{T}{27} (A + B + 3.162V)$
4 : 1	$\frac{T}{27} (A + B + 4.123V)$



SECTION TYPE B



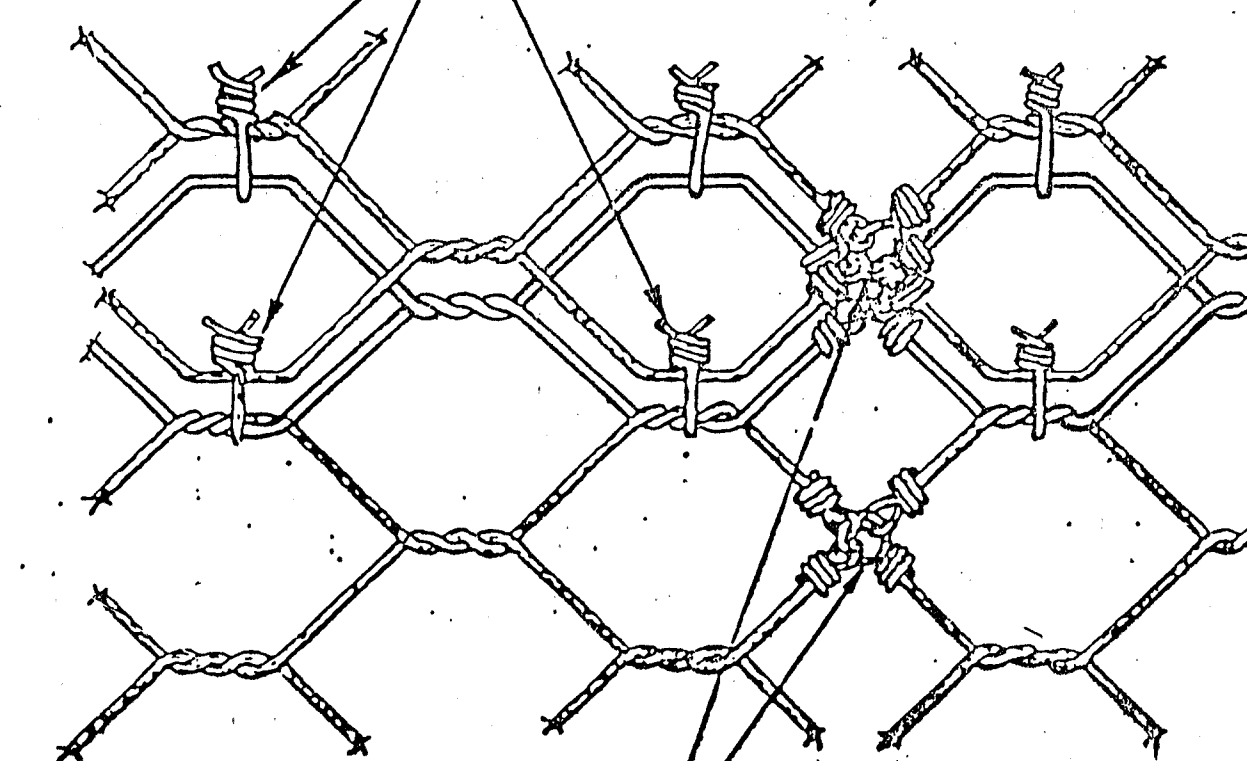
TYPICAL SECTION



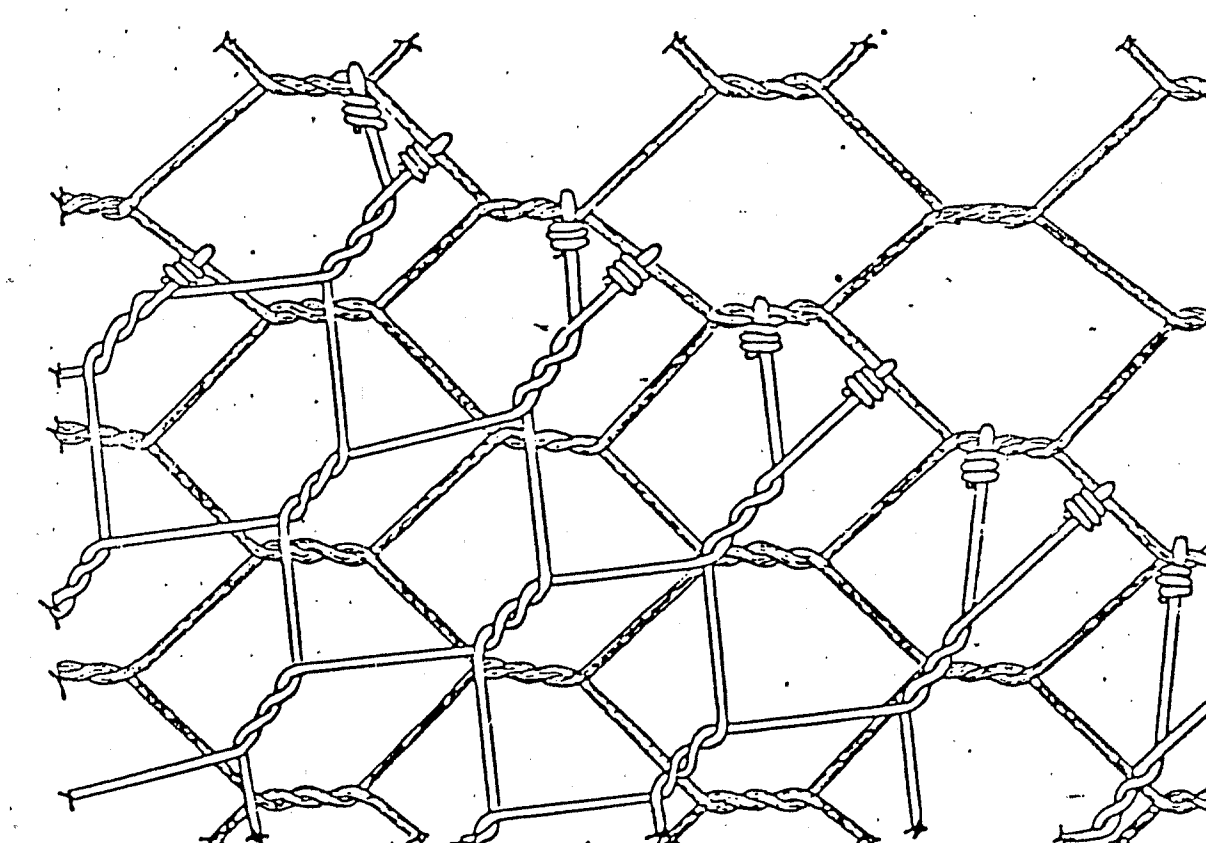
DETAIL OF WIRE FABRIC AND NORMAL SPLICE

"V" MESH

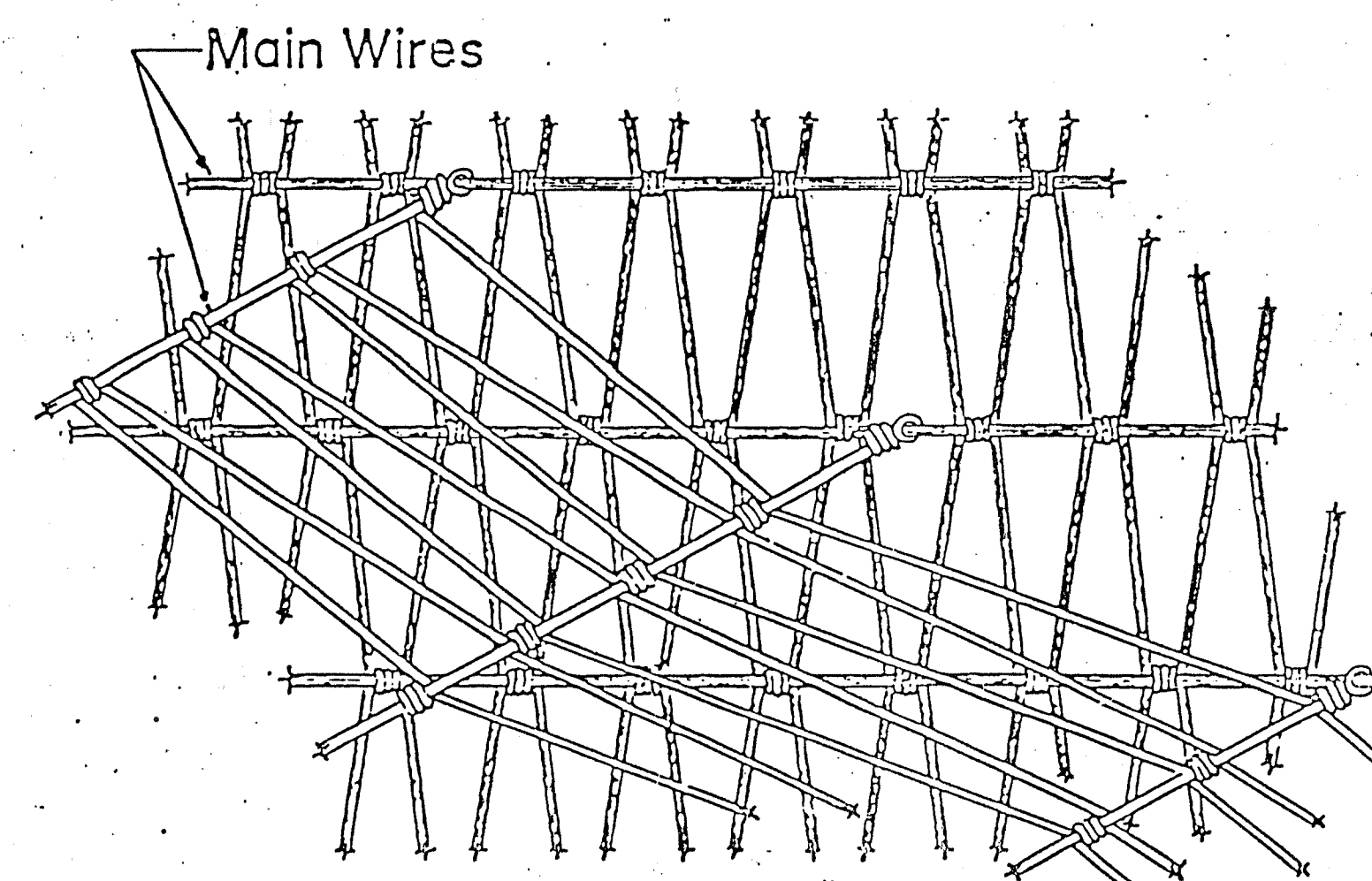
Longitudinal splice, lap fabric one mesh width and tie as shown, see Note 6



NORMAL INTERSECTION



SKewed INTERSECTION HEXAGONAL MESH



DETAIL OF SPLICE AT SKEWED INTERSECTIONS

GENERAL NOTES

- Wire fabric for riprap shall be "V" or hexagonal mesh meeting the requirements listed in the specifications.
- Steel stakes may be railroad rails, weighing not less than 30 lbs. per yard, 4" O.D. standard strength galvanized steel pipe or 4 x 4 x 3/8 steel angles. Steel stakes shall project 6" above top of riprap. Steel stakes are considered incidental to the completion of the work and no direct measurement or payment will be made therefor.
- If length of slope is 15 feet or less, only one row of steel stakes 2 feet from the top edge of the riprap will be required unless otherwise noted on plans.
- For dimensions A, B, V & T see Bridge or Roadway Plans.
- T = 12" unless otherwise shown on plans. T = 18" at bridges.
- Longitudinal splices may be made with one lap of galvanized 9 gage tie wire, 9 gage galvanized hog rings or 11 1/2 gage galvanized hard drawn interlocking wire clips.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
26 4237.91 13097

THIS SERIAL REVISED 9-12-89

IDENT. NO.	DESCRIPTION	DATE	BY
1	Notes 1 & 6 and splice details	9-12-89	I.R.H.
2	Changed Tensile Str., Twist, & Mesh Dimen.	4-18-86	C.E.S.
3	Rev. & combine Gen. note 6 w/ Gen. note no. 1	12-2-85	A.R.
4	Changed Mesh Dimensions and Tie Wire Spcg.	2/26/80	E.R.D.
5	Change Serial Designation	10/4/79	E.R.D.
6	Add General Note #6	10/4/79	E.R.D.
7	New Mesh Details	10/4/79	E.R.D.
8	New Subtitle - Existing Detail	10/4/79	E.R.D.

REVISIONS (OR CHANGE NOTICES)

NEW MEXICO
STATE HIGHWAY DEPARTMENT

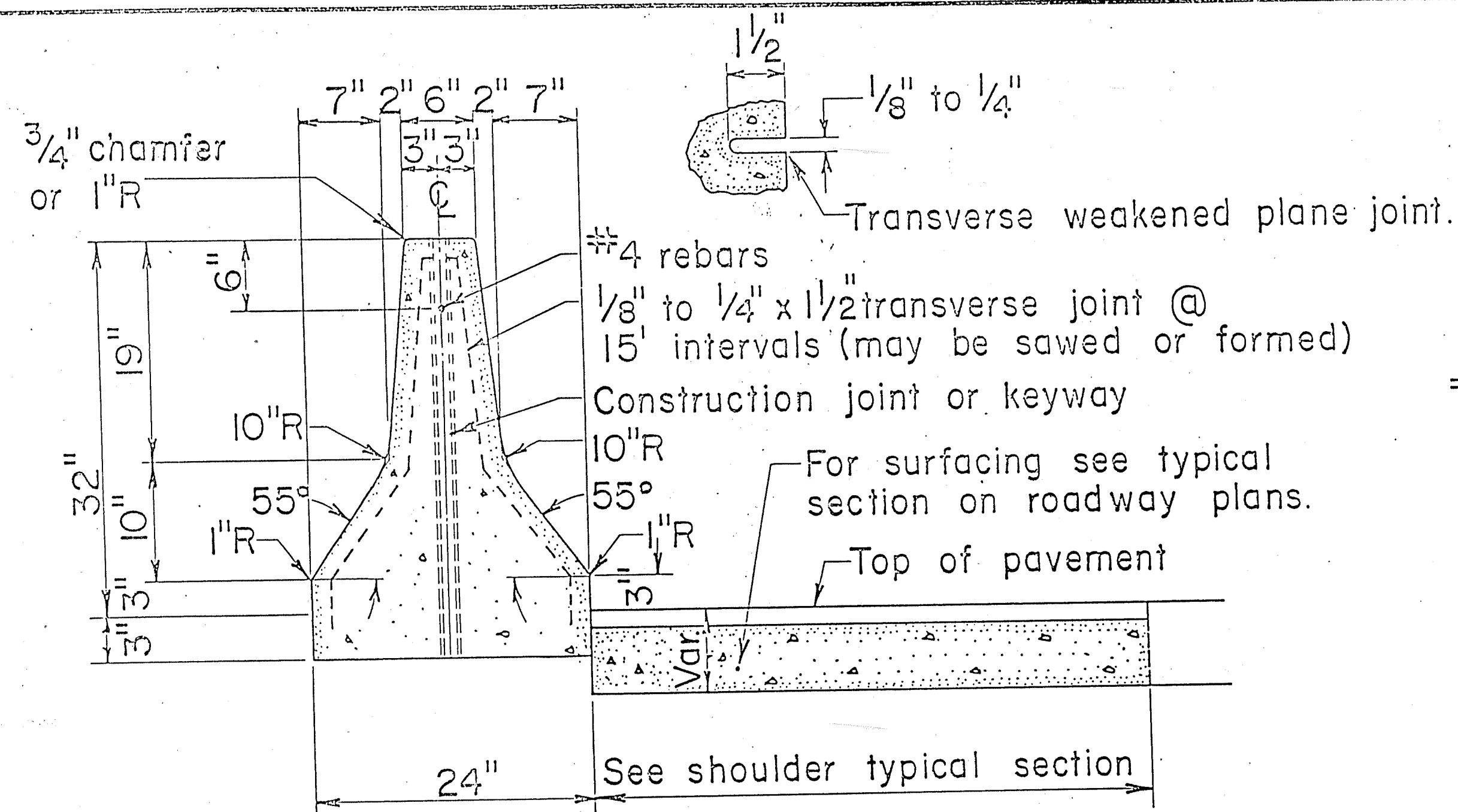
WIRE ENCLOSED RIPRAP

DESIGNED BY J.A.H.	APPROVAL	DATE
DRAWN BY A.J.S.	RECOMMENDED	DATE
CHECKED BY E.R.D.	APPROVED	DATE
	DESIGN BUREAU CHIEF	DATE

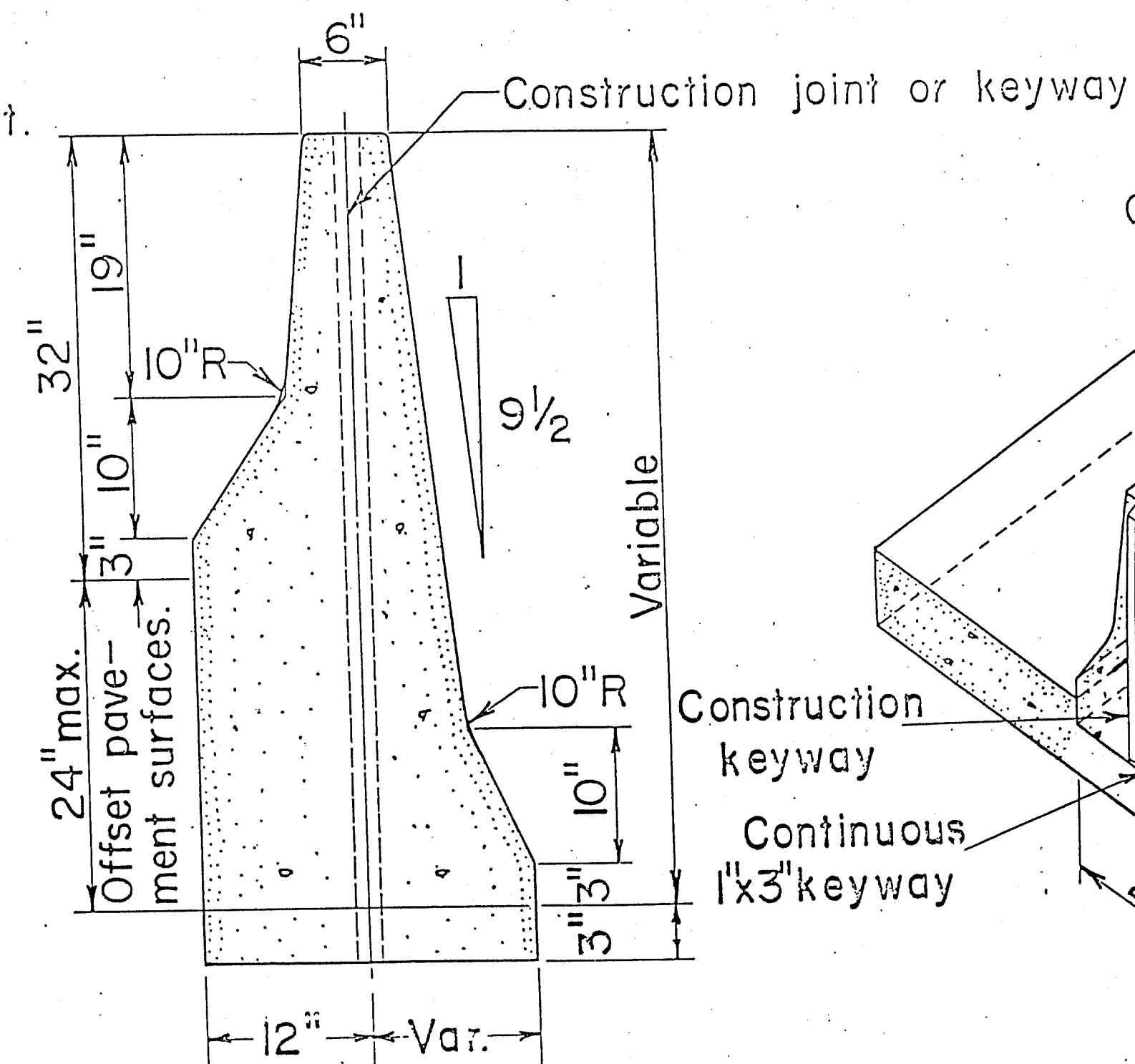
△ SERIAL BRR-001-08

Proj. NO 4237.91 SHEET NO 9-4

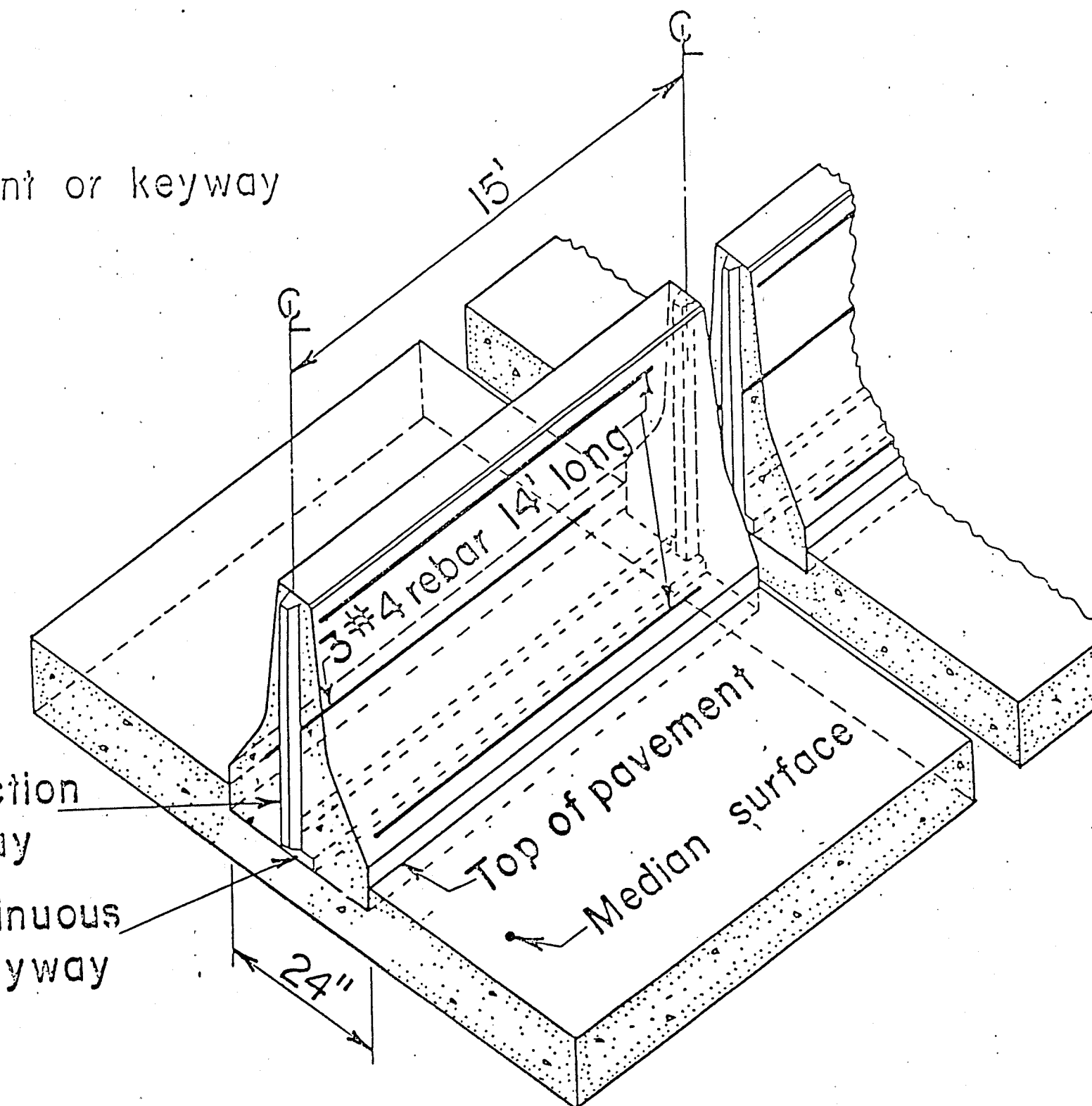
F.H.W.A. Region No.	STATE	SHEET NO.	TOTAL SHEETS
6	NEW MEXICO		



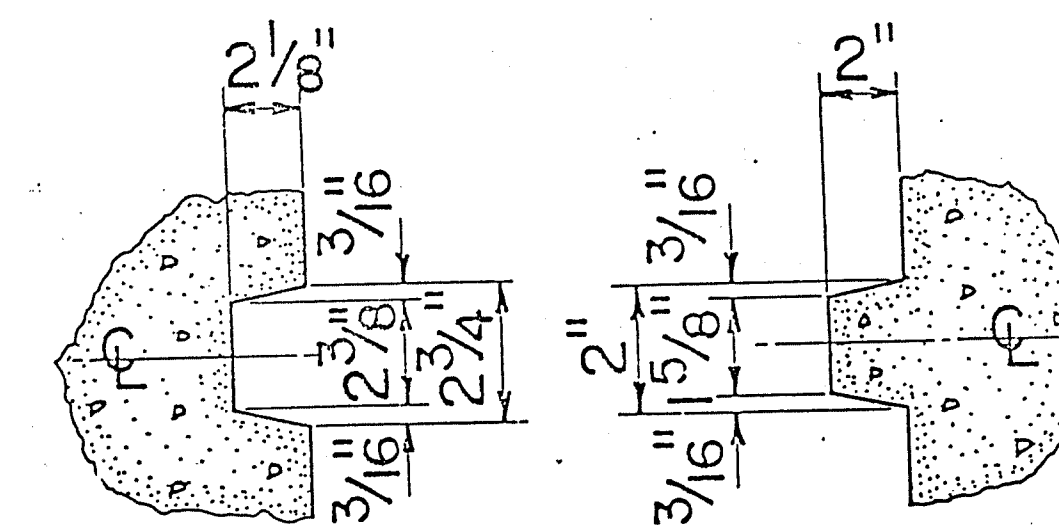
CONCRETE BARRIER - TYPICAL SECTION



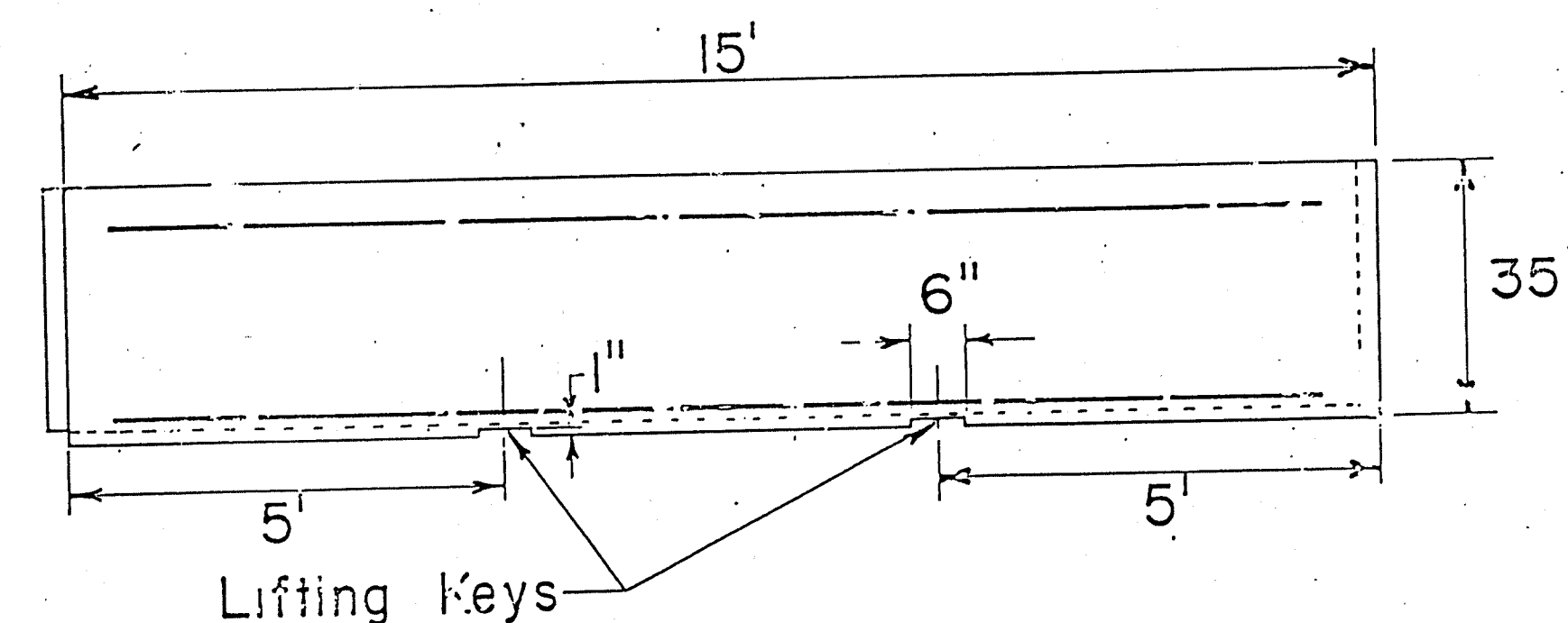
TYPICAL BARRIER FOR
OFFSET ROADWAY



PRECAST SECTION



KEYWAY DETAILS



ELEVATION

26-4237.91 3.17

NOTES

1. All work shall be done in accordance with New Mexico State Highway Department Standard Specifications, and shop drawing approval is required on precast sections.
2. Concrete shall be Class "A"
3. Structure and drainage requirements disallow any continuous voids (holes) in any precast sections.
4. No.4 bar to be continuous when cast in place or slip formed, and included in unit price bid for barrier.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
26-4237.91 3.17

THIS SERIAL REVISED: 12-30-76

IDENT. NO.	DESCRIPTION	DATE	BY
1	Changed Joint Intervals From 20' To 15'	12/30/76	D.R.R.

REVISIONS (OR CHANGE NOTICES)

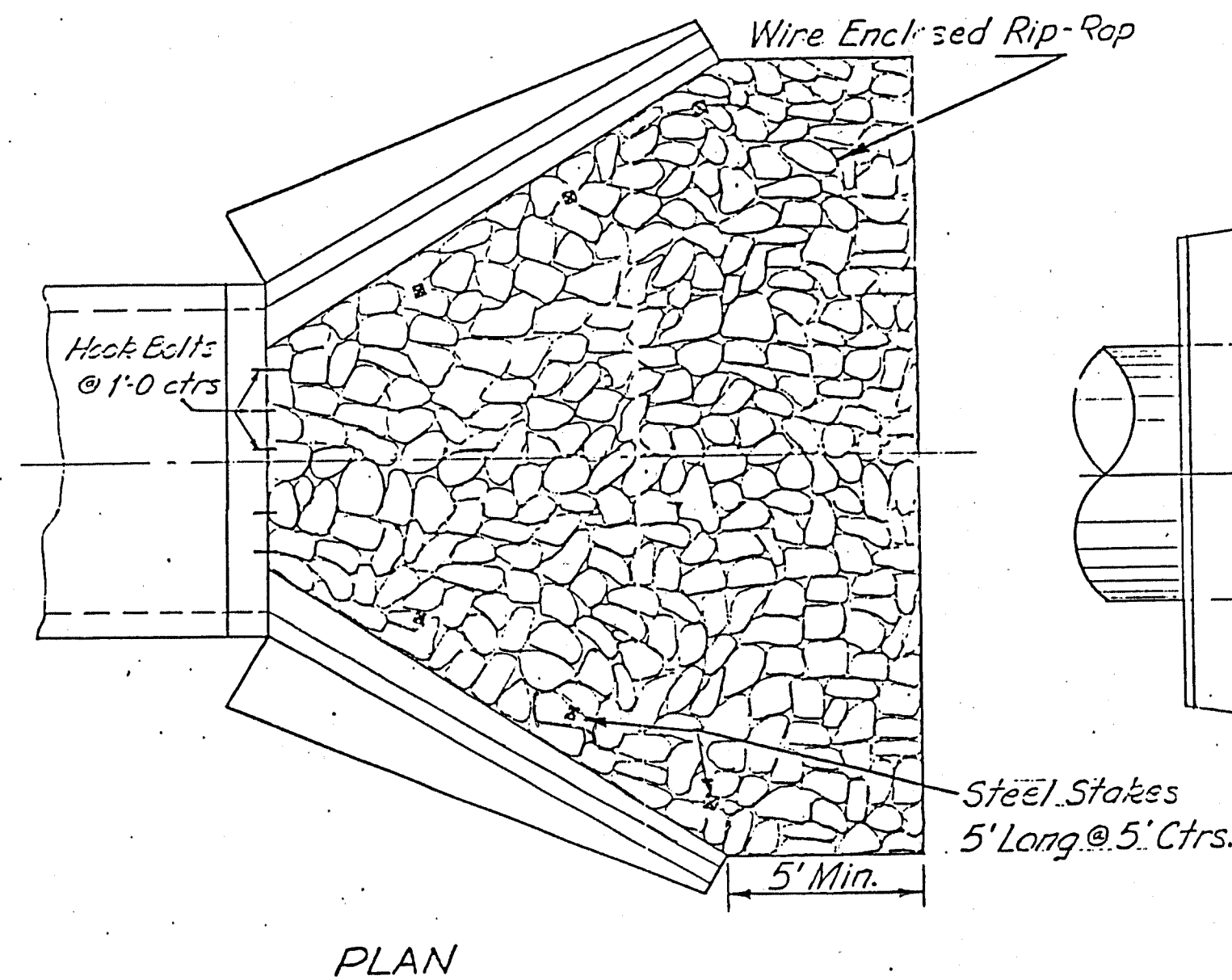
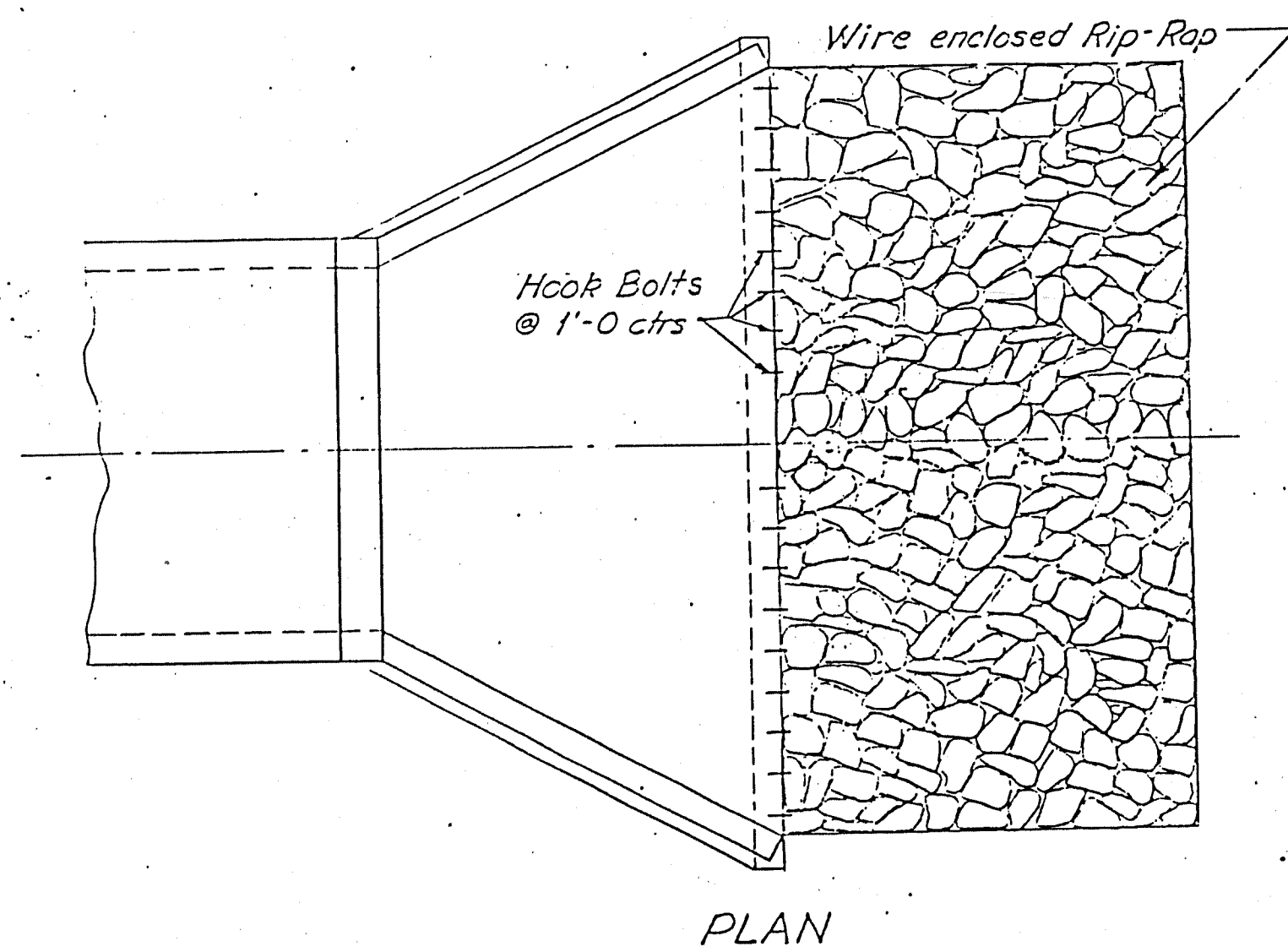
NEW MEXICO
STATE HIGHWAY DEPARTMENT

CONCRETE WALL BARRIER

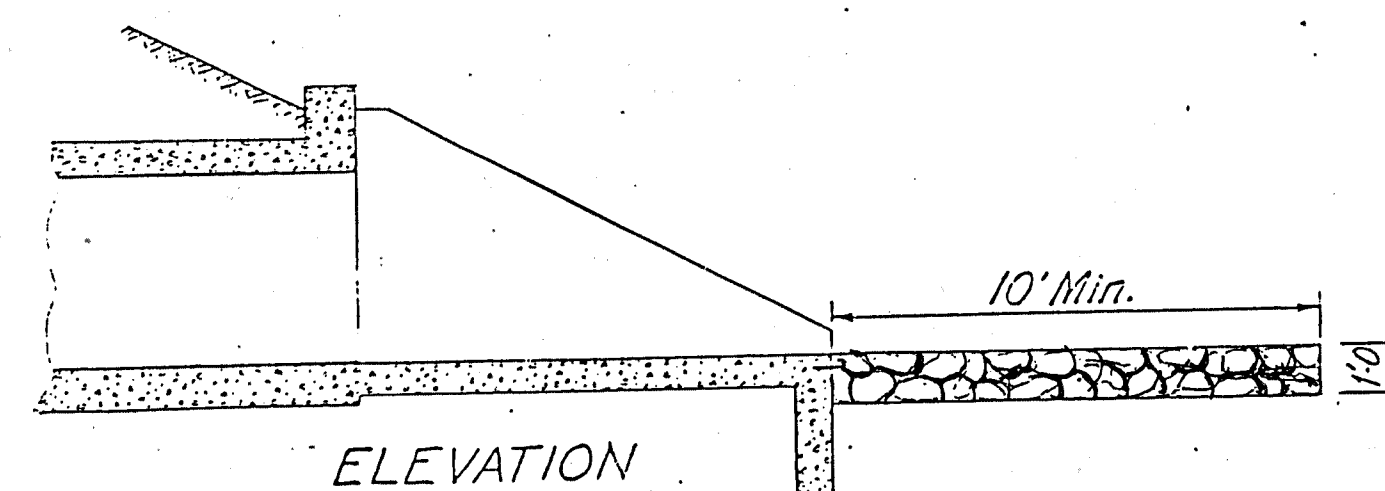
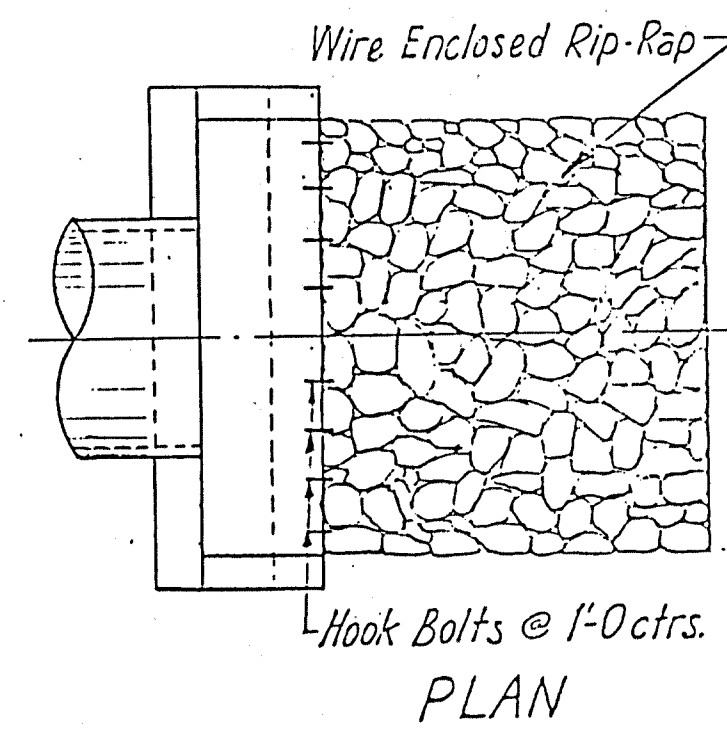
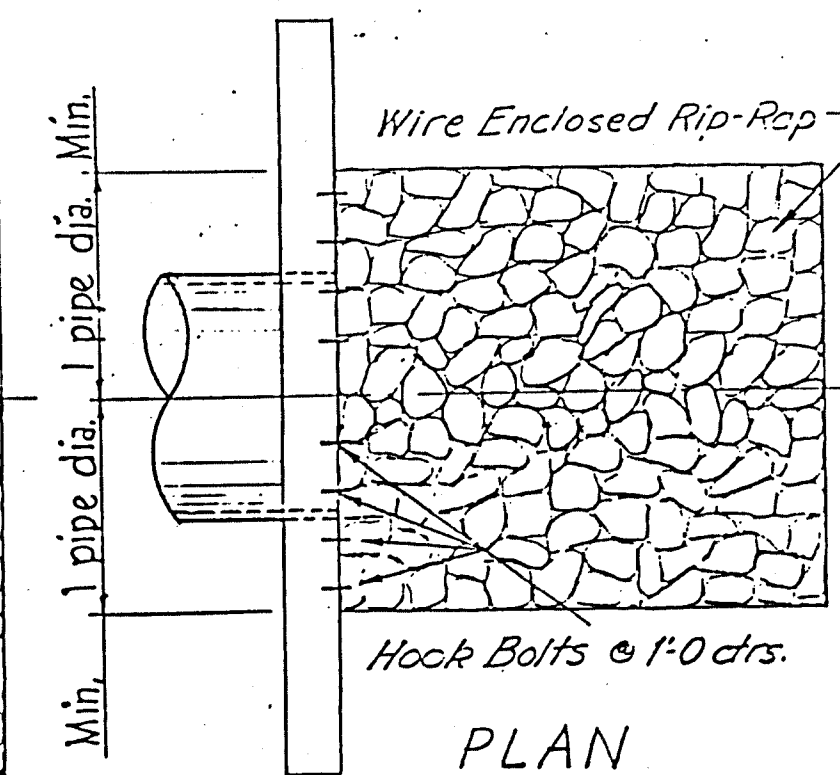
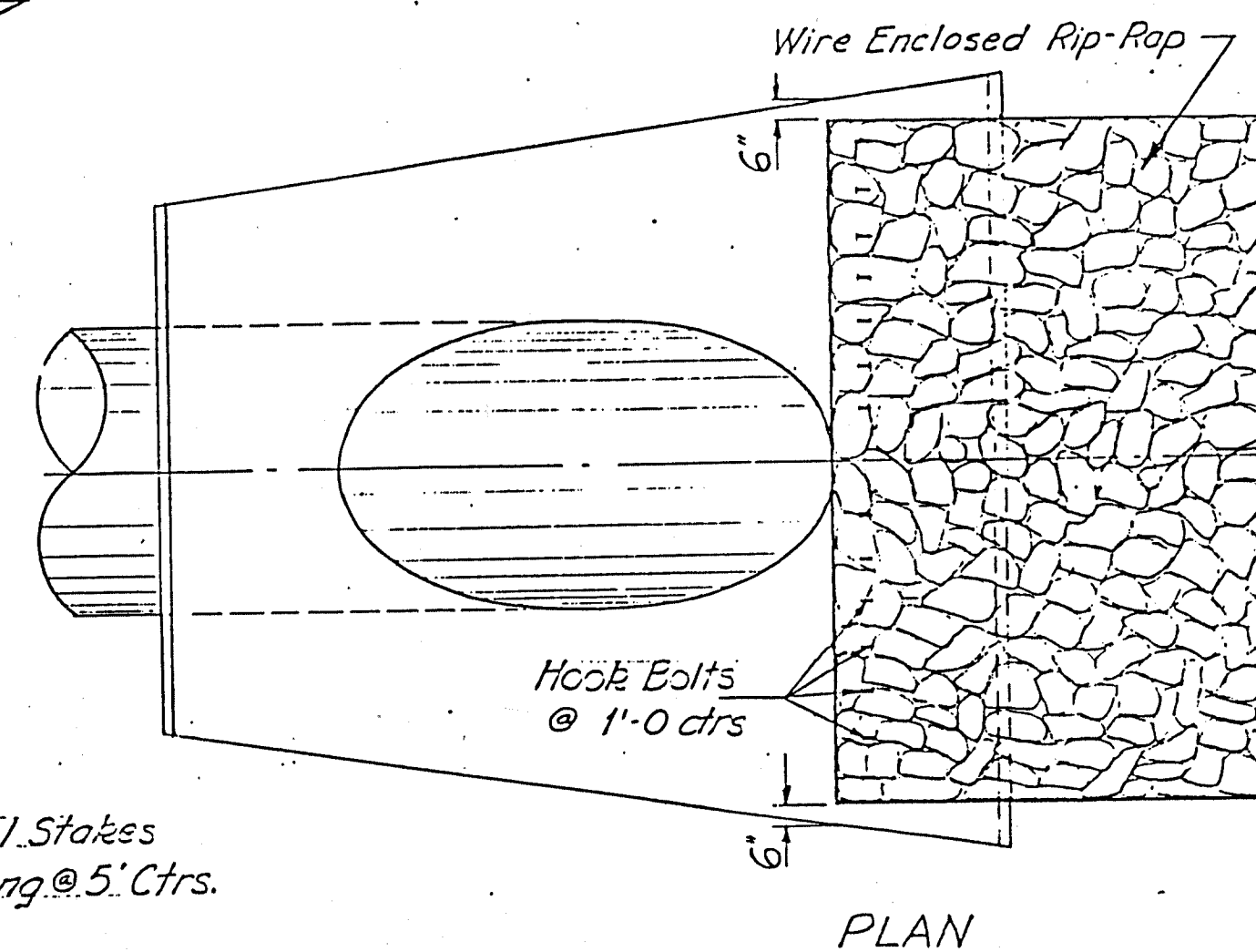
DESIGNED BY LAL	APPROVAL	DATE
DRAWN BY IPH	RECOMMENDED - TRAFFIC ENGINEER	DATE
CHECKED BY LAL	APPROVED	DATE

SERIAL CWB-75 SHEET 1. OF 1.

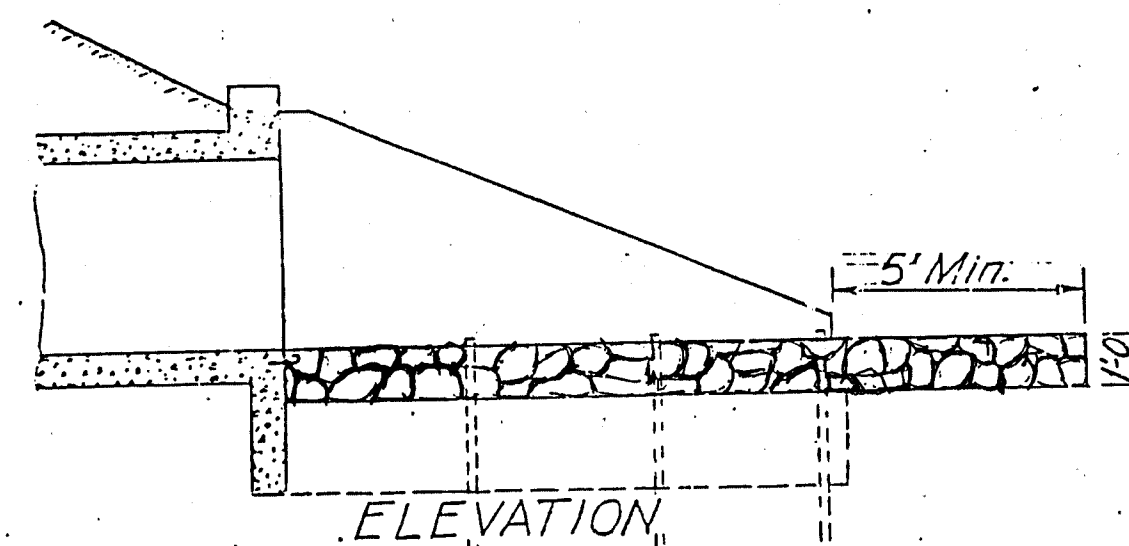
Praj NO. 4237.91 SHEET NO. 9-5



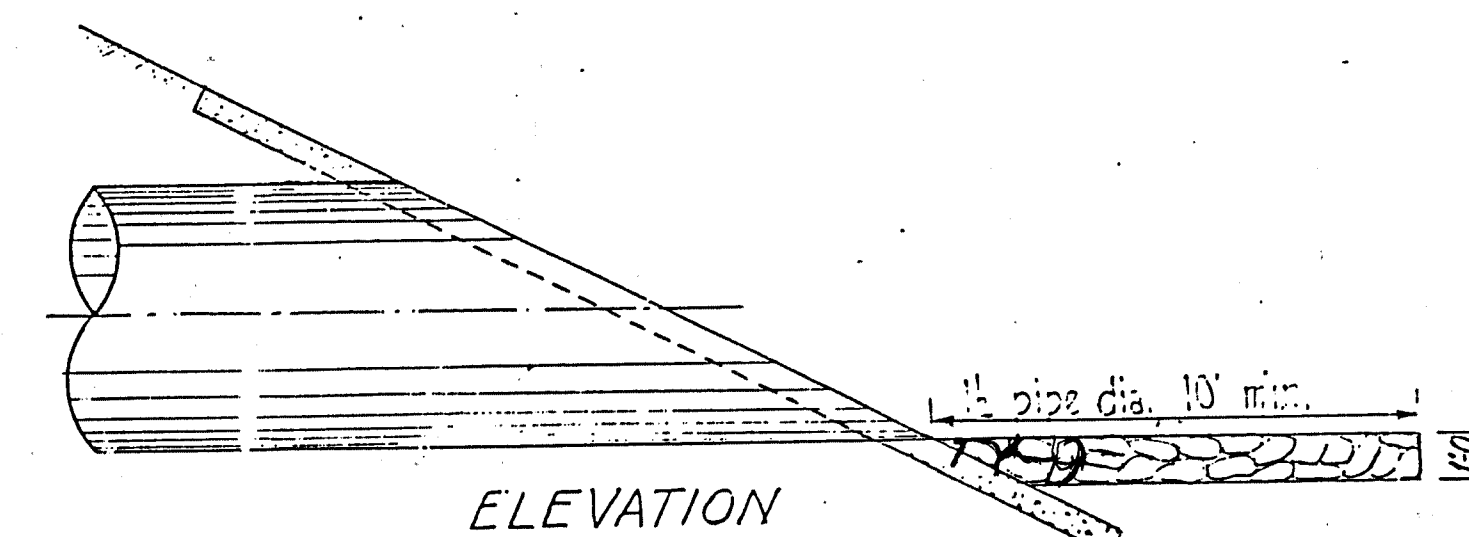
Steel stakes may be railroad rails weighing not less than 30 lbs. per yard, 4" O.D. Std. Strength Galv. Steel Pipe, or 4"x4"x8" steel angles.



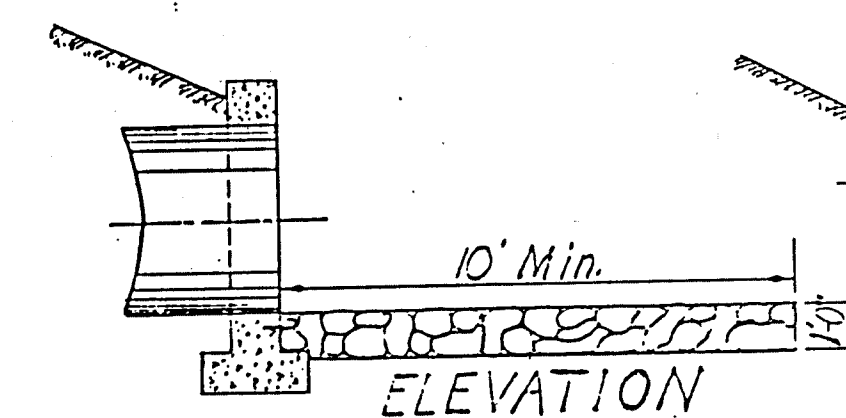
BOX CULVERTS WITH APRONS



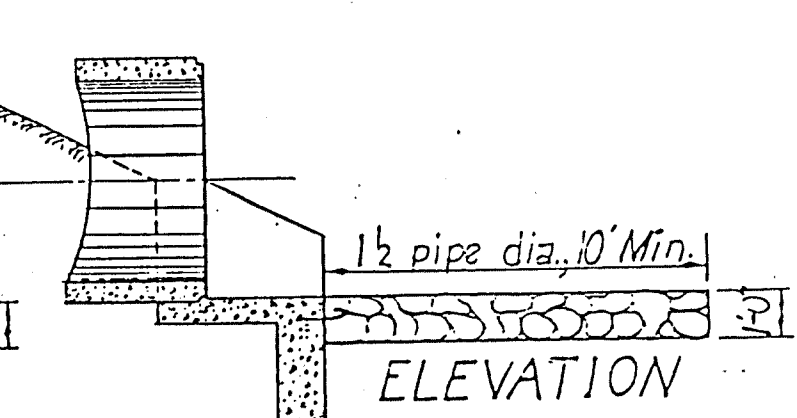
BOX CULVERTS WITHOUT APRONS



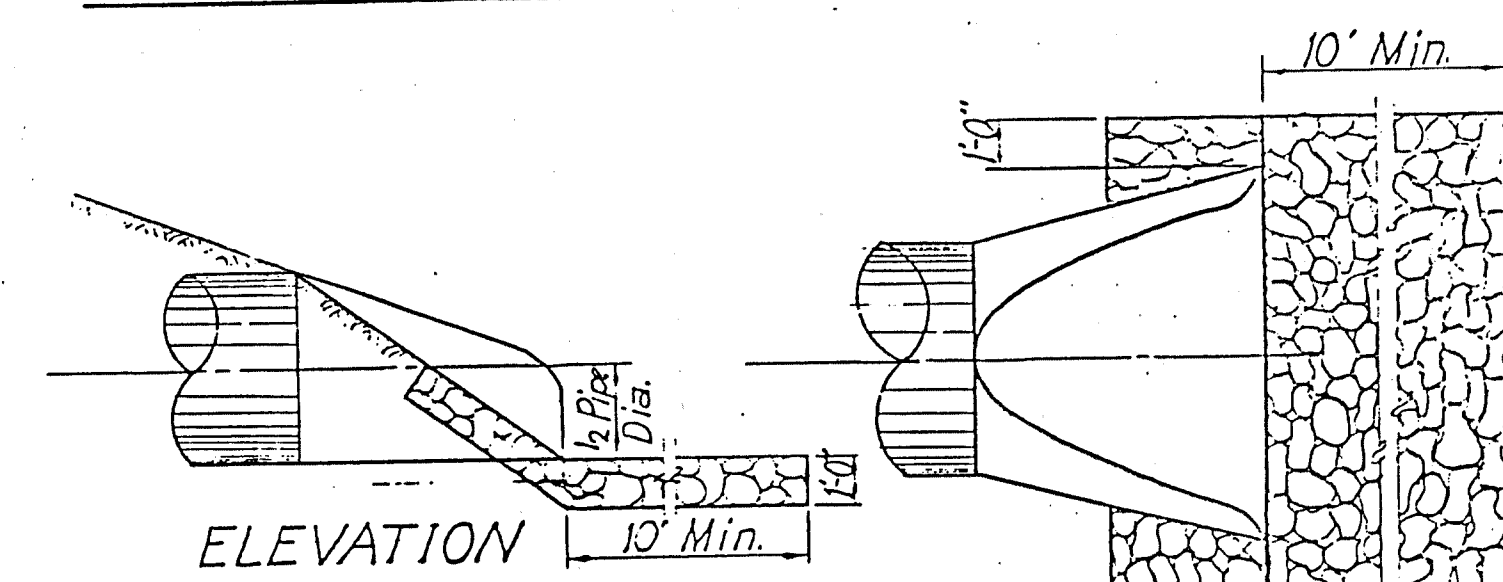
CONCRETE BLANKETS



H-1 HEADWALL

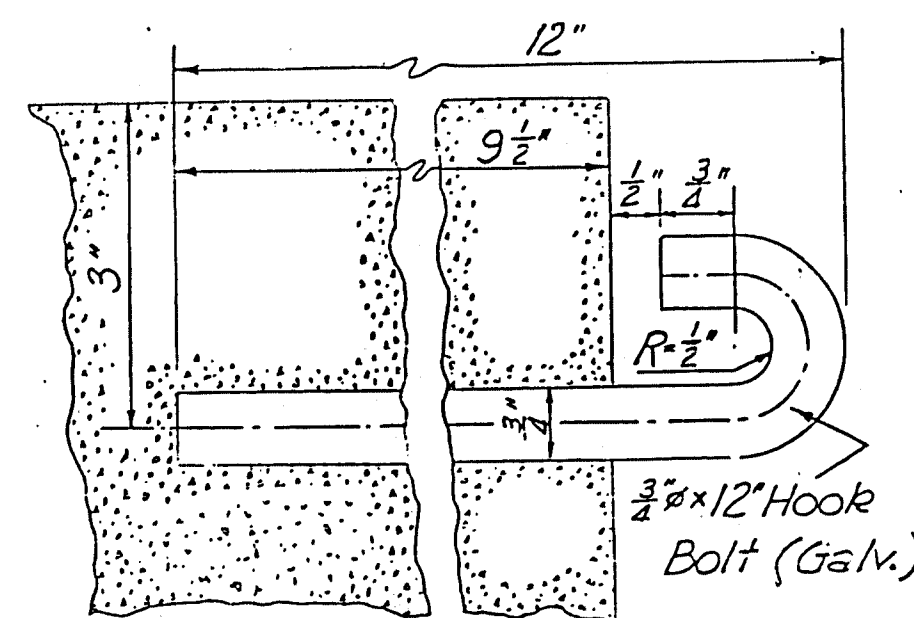
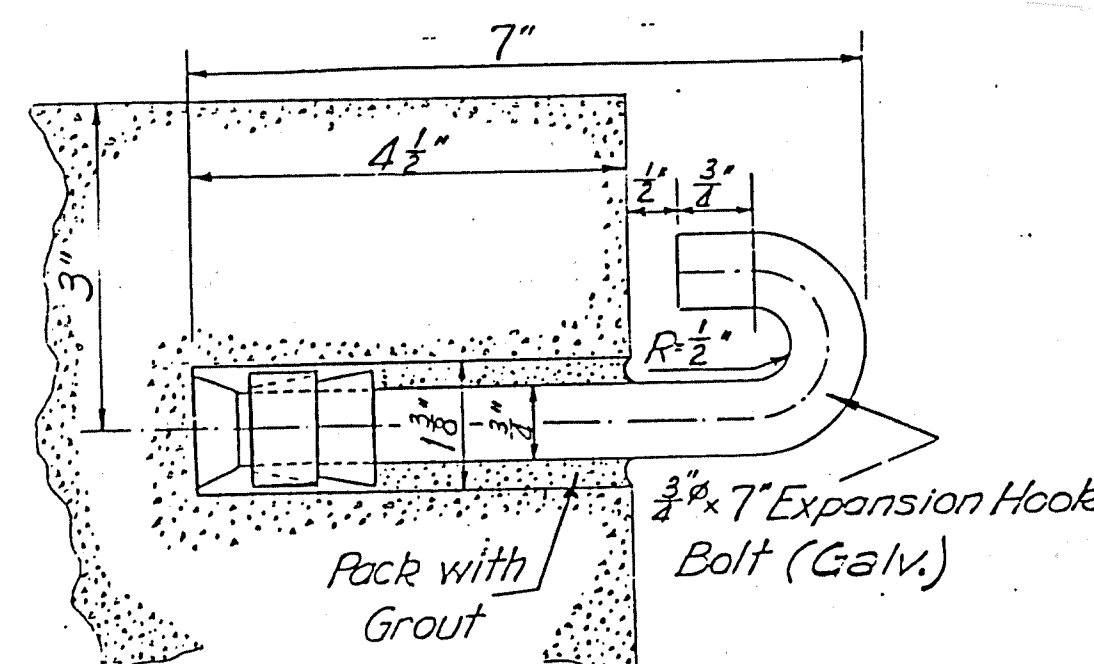


H-2 HEADWALL

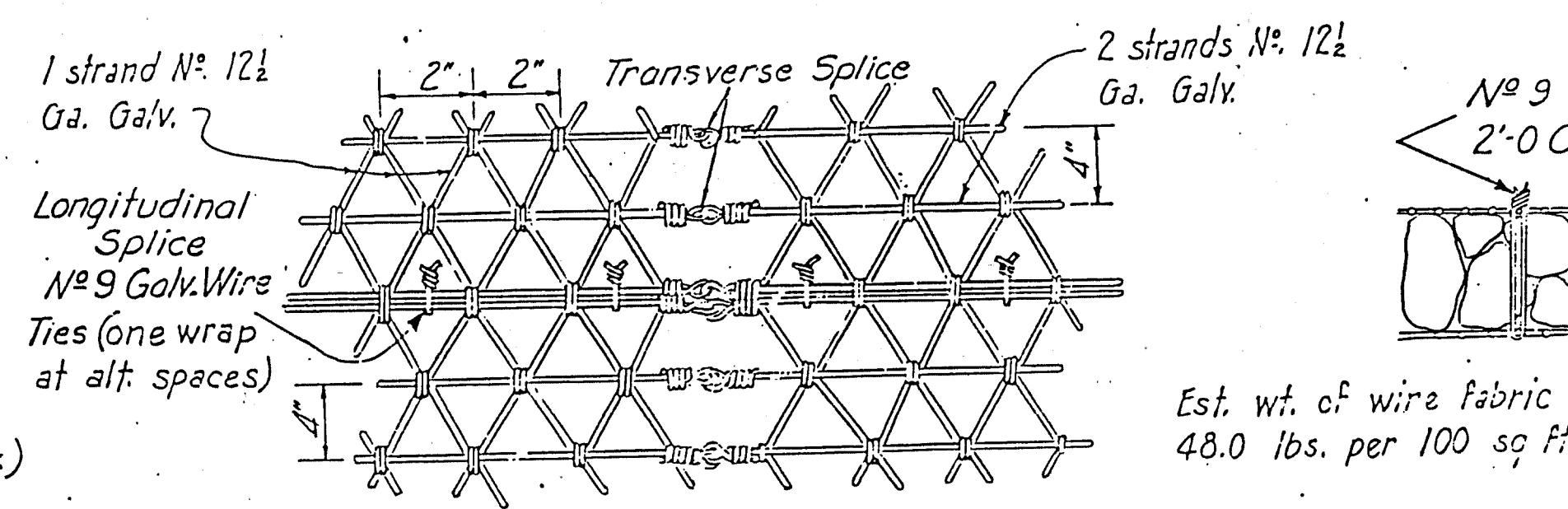


PIPES WITH END SECTIONS

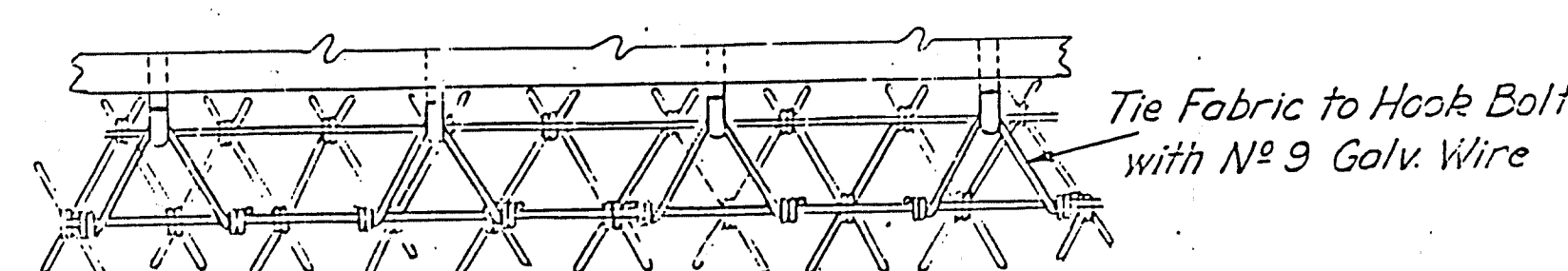
PLAN



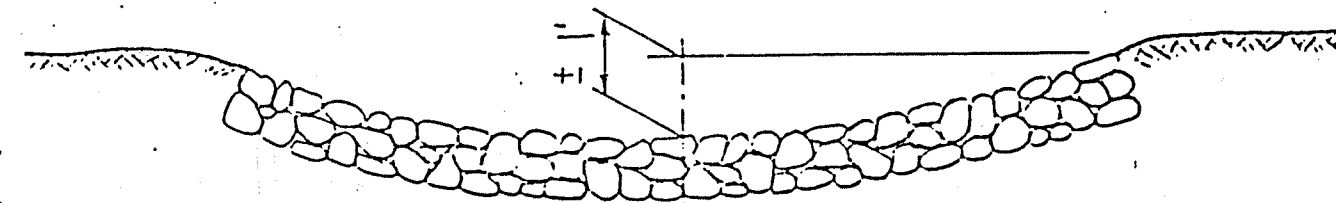
DETAILS OF HOOK BOLTS
cost of hook bolts in place to be included in unit price bid for riprap.



Est. wt. of wire fabric
48.0 lbs. per 100 sq ft.



Center of riprap to be about 1' min. below outer edges at outlet end. Place riprap to fit channel banks where possible.



GENERAL NOTES

THIS SERIAL REVISED: 3-17-80

- Materials and workmanship to conform to N.M.S.H. Department Specifications.
- Dimensions of Rip-Rap to be determined in field.
- Riprap is shown for single pipes. For multiple pipe installations extend riprap beyond outside pipes as shown in plan for single pipes, and place riprap between pipe, as shown in elevation.
- For description of wire fabric and permissible alternate pattern, see Standard Drawing Serial BRR-001.

NO.	DESCRIPTION	DATE	BY
7	GALV. DELETED TWO PLACES	7-18-74	J.A.M.
8	Sect. at end of riprap	4-30-70	RH
5	Hook Bolts to be Galvanized	12-14-67	J.A.S.
4	Added pipes with end sections.	11-16-67	LB
3	Added pipe without end walls; changed length of riprap pipes	10-29-62	ea
2	Increased width @ H-2 Hdwl.	4-21-61	J.A.S.
8	Added General Note #4	3-17-80	EBD

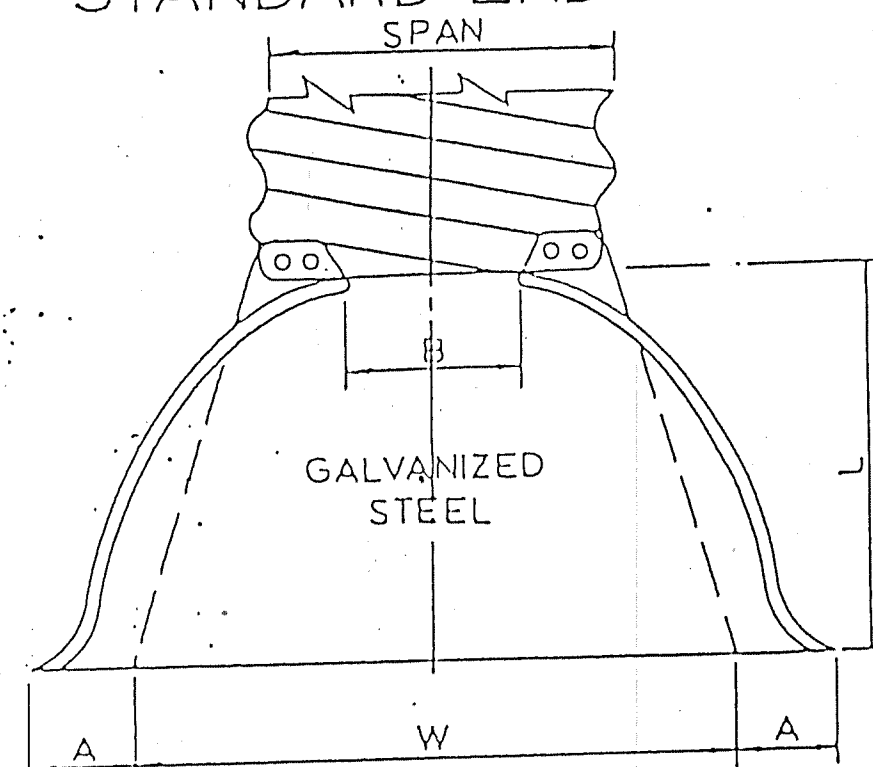
NEW MEXICO
STATE HIGHWAY DEPARTMENT
DETAILS OF EROSION CONTROL
AT CULVERT OUTLETS

Serial EC-61

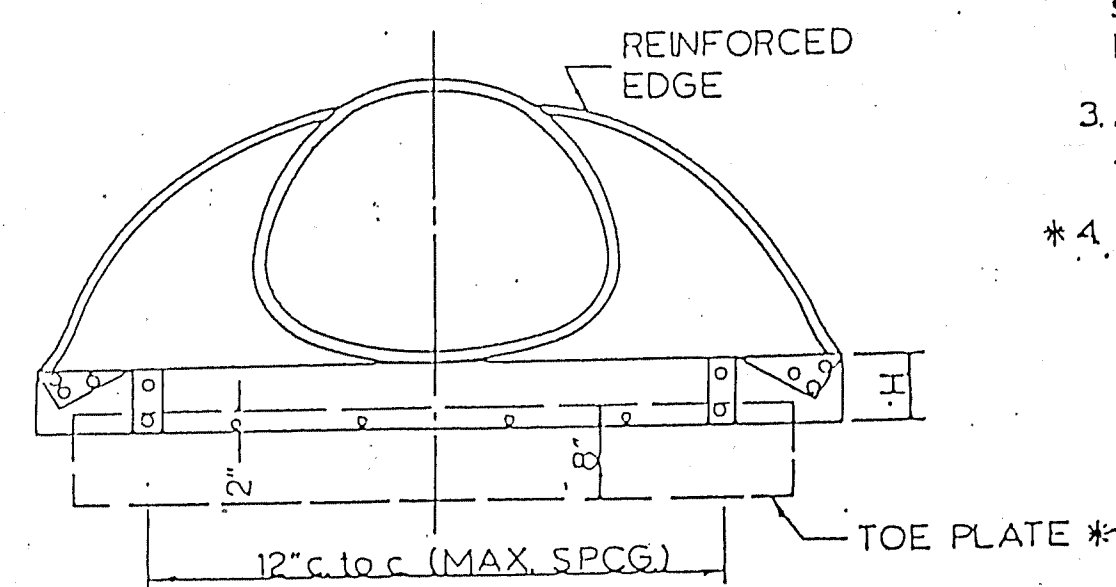
Approved *Charles E. Ward* 2-16-81
Bridge Engineer

Proj. No. 4237.91 SHEET NO. 9-6

STANDARD END SECTIONS FOR PIPE-ARCH STEEL PIPE

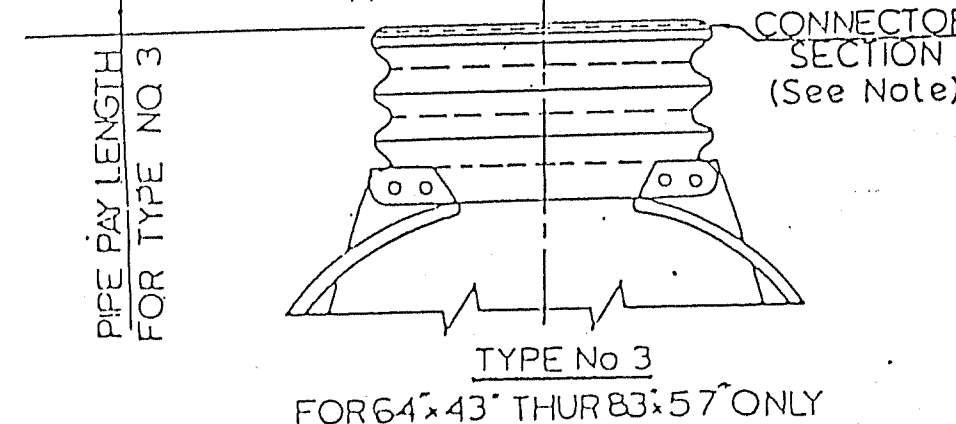


PLAN

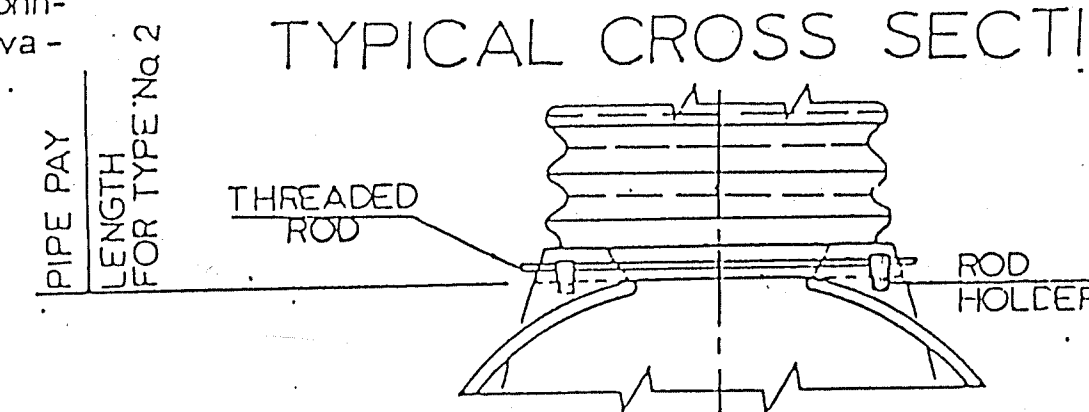


ELEVATION

NOTE:
Type No. 3 connection includes one foot of the PIPE LENGTH for 64" x 43" thru 83" x 57" sizes as a connector section. The connector section will be attached to the END SECTION by 3/8" galvanized rivets or bolts approx. 6" centers.



TYPE No. 3
FOR 64" x 43" THRU 83" x 57" ONLY



TYPICAL CROSS SECTION

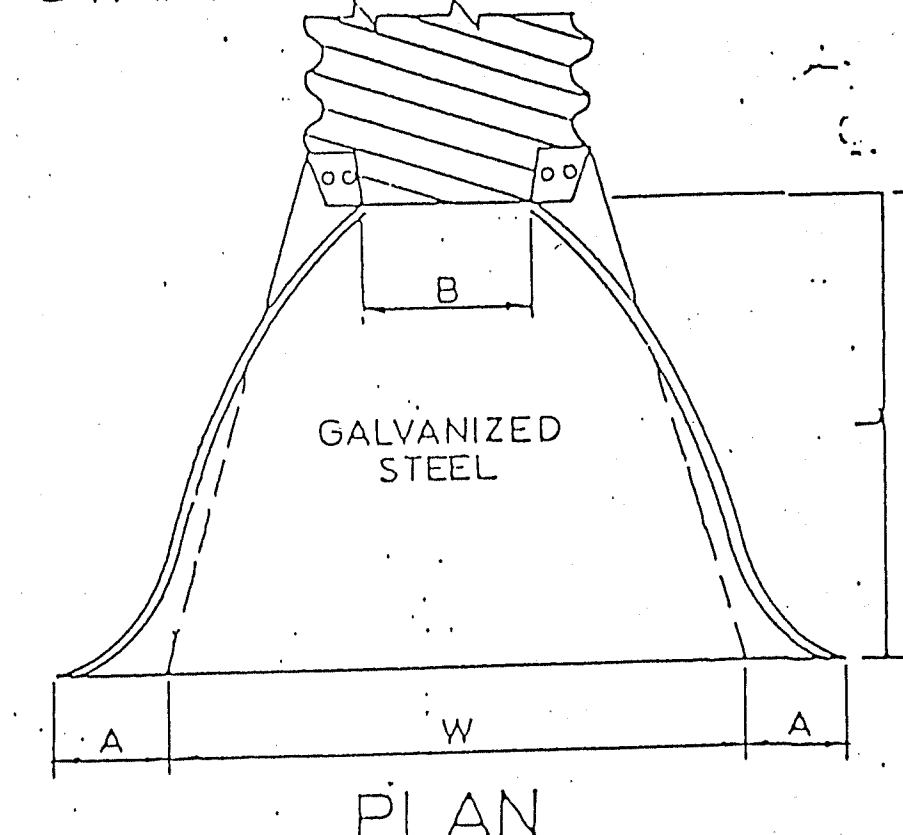
TYPE No. 2
FOR 17" x 13" THRU 57" x 38" ONLY

PIPE ARCH DIMENSIONS	SPAN	RISE	DIMENSIONS						APPROX SLOPE	BODY
			GA	A	B	H	L	W		
17	13	16	7	9	6	19	30	21 1/2	1 pc	1 pc
21	15	16	7	10	6	23	36	21 1/2	1 pc	1 pc
24	18	16	8	12	6	28	42	21 1/2	1 pc	1 pc
28	20	16	9	14	6	32	48	21 1/2	1 pc	1 pc
35	24	14	10	16	6	39	60	21 1/2	1 pc	1 pc
42	29	14	12	18	8	46	75	21 1/2	1 pc	1 pc
49	33	12	13	21	9	53	85	21 1/2	2 pc	2 pc
57	38	12	18	26	12	63	90	21 1/2	2 pc	2 pc
64	43	12	18	30	12	70	102	21 1/2	2 pc	2 pc
71	47	12	18	33	12	77	114	21 1/2	3 pc	3 pc
77	52	12	18	36	12	77	126	2	3 pc	3 pc
83	57	12	18	39	12	77	138	2	3 pc	3 pc

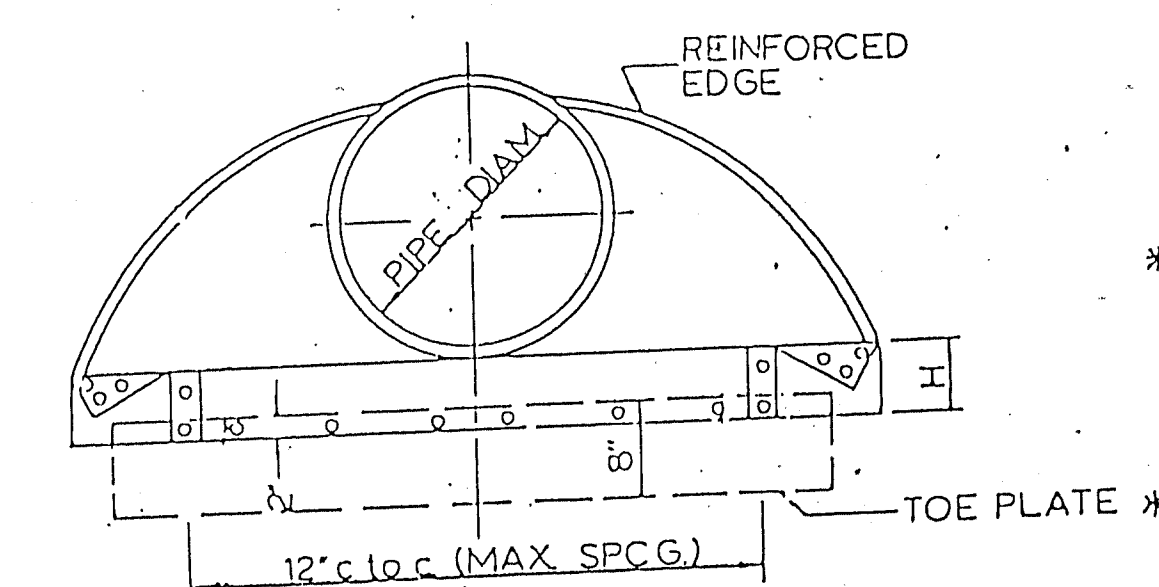
NOTE:
Sizes equivalent to the above, using 3" x 1" corrugations, may be used providing that they meet the sizes shown under table 4 of serial M-17-70.

- NOTES:
- All 3 pc. bodies to have 12 Ga. sides and 10 Ga. center panels. Width of center panels to be greater than 20% of the pipe periphery. Multiple panel bodies to have lap seams which are to be tightly joined by 3/8" galvanized rivets or bolts.
 - For the 77" x 52" and 83" x 57" sizes, reinforced edge to be supplemented by 2" x 2" x 1/4" galvanized angles. The angles to be attached by 3/8" galvanized nuts and bolts.
 - Angle reinforcement will be placed under the center panel seams on the 77" x 52" and 83" x 57" sizes.
 - Toe plate to be constructed where shown on plans.

STANDARD END SECTIONS FOR ROUND STEEL PIPE

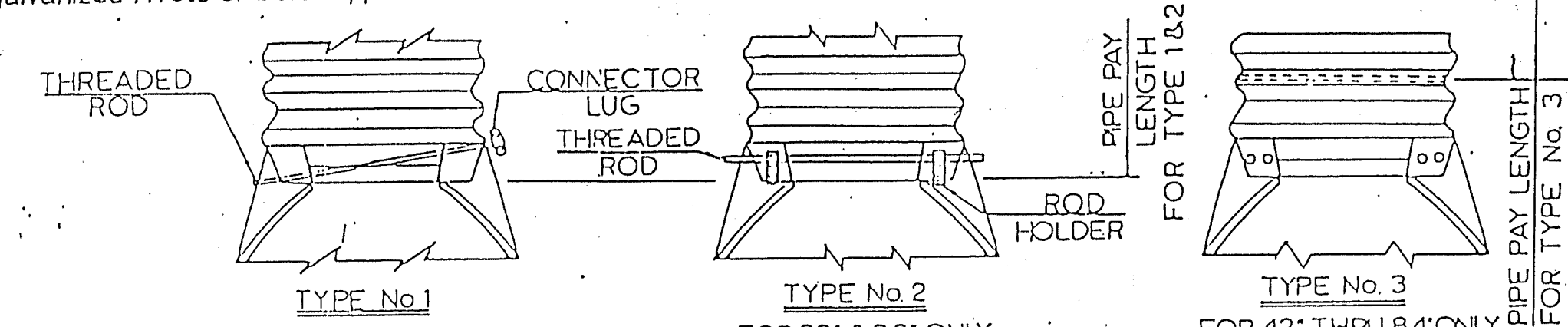


PLAN



ELEVATION

NOTE:
Type No. 3 connection includes one foot of PIPE LENGTH for 42" thru 84" diam. as a connector section. The connector section will be attached to the END SECTION by 3/8" galvanized rivets or bolts approx. 6" centers.



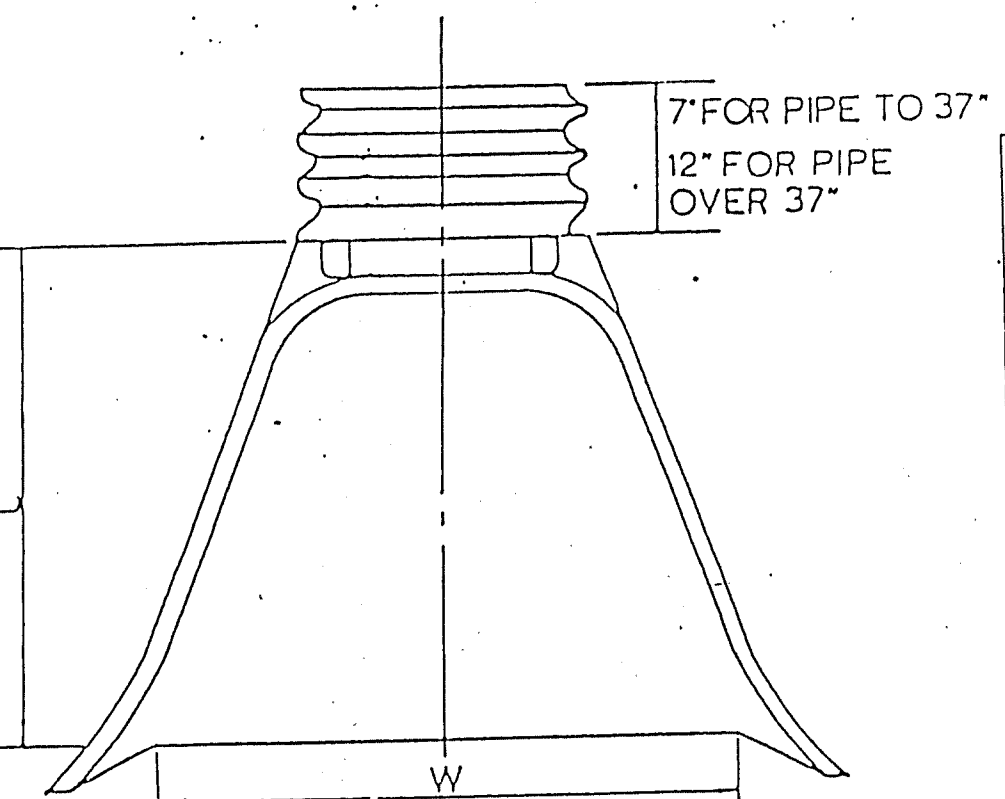
TYPICAL CROSS SECTION

- NOTES:
- All 3 pc. bodies to have 12 Ga. sides and 10 Ga. center panels. Width of center panels to be greater than 20% of the pipe periphery. Multiple panel bodies to have lap seams which are to be tightly joined by 3/8" galvanized rivets or bolts.
 - For 60" thru 84" sizes, reinforced edges to be supplemented with galvanized stiffener angles. The angles will be 2" x 2" x 1/4" for 60" thru 72" diam and 2 1/2" x 2 1/2" x 1/4" for 78" and 84" diam. The angles to be attached by 3/8" galvanized nuts and bolts.
 - Toe plate to be constructed where shown on plans.

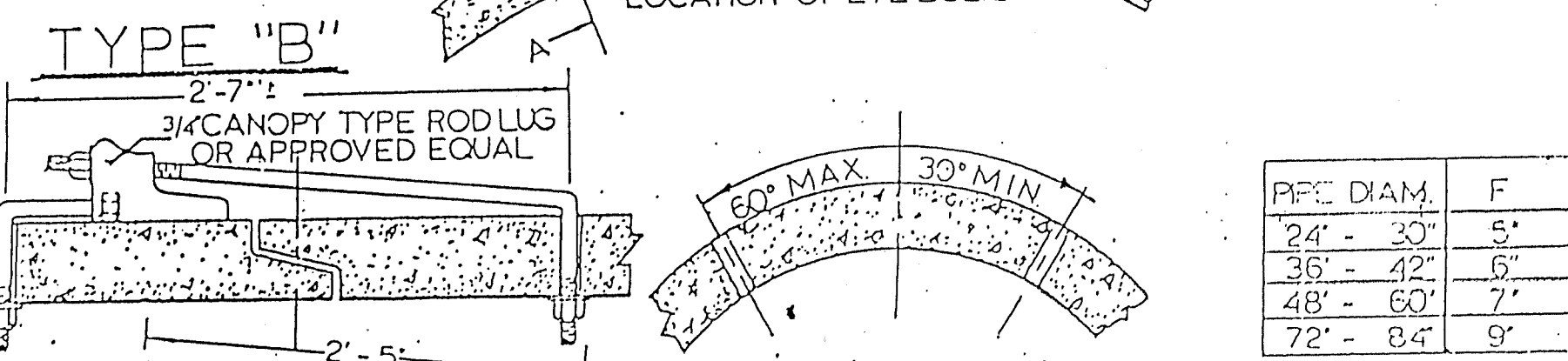
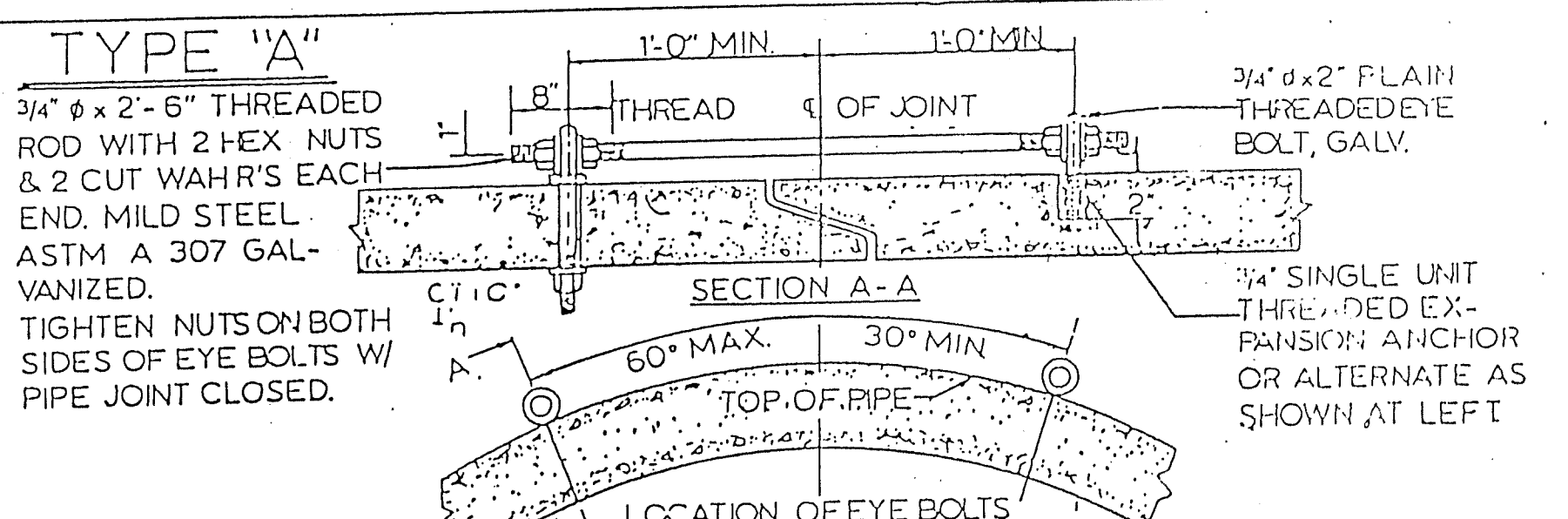
PIPE DIAM	GA	DIMENSIONS						APPROX SLOPE	BODY
		A	B	H	L	W			
12	16	6	6	6	21	24	2-1/2	1 pc	1 pc
15	16	7	8	6	26	30	2-1/2	1 pc	1 pc
18	16	8	10	6	31	36	2-1/2	1 pc	1 pc
21	16	9	12	6	36	42	2-1/2	1 pc	1 pc
24	16	10	13	6	41	48	2-1/2	1 pc	1 pc
30	14	12	16	6	51	60	2-1/2	1 pc	1 pc
36	14	14	19	9	60	72	2-1/2	2 pc	2 pc
42	12	16	22	11	69	84	2-1/2	2 pc	2 pc
48	12	18	27	12	78	90	2-1/4	2 pc	2 pc
54	12	18	30	12	84	102	2	2 pc	2 pc
60	12	18	33	12	87	114	1-3/4	3 pc	3 pc
66	12	18	36	12	87	120	1-1/2	3 pc	3 pc
72	12	18	39	12	87	126	1-1/2	3 pc	3 pc
78	12	18	42	12	87	132	1-1/4	3 pc	3 pc
84	12	18	45	12	87	138	1-1/6	3 pc	3 pc

CORR. ALUMINUM PIPE END SECTION

FHWA Rep. No.	STATE	SHEET NO.	TOTAL SHEETS
6	NEW MEXICO		



PIPE DIAM. INCHES	APRONS	
	L INCHES	W INCHES
18	19	30
21	23	36
24	28	42
30	31 1/2	48
36	38 1/2	60
42	47	75
48	54	85
60	63	96
66	70	112
72	77	128



- Fasteners shall be used only where called for on Plans.
- Type 'A', Type 'B', or approved equal may be used for pipe diameters of 24" thru 84".
- Cost of Fasteners to be considered incidental to completion of construction and no direct payment shall be made therefore.

DETAIL OF FASTENER FOR END SEC. FOR CONC. PIPE

GENERAL NOTES.

- For multiple installation of all types, a minimum of a 2 foot spacing measured along the horizontal between Flared End Sections at their widest Cross Section shall be used.
- Welding will not be permitted in connecting end sections to connector sections or connector sections to pipe.
- Type No. 1, Type No. 2, and Type No. 3 connections may be used with welded seam Helically Corrugated Pipe with re-rolled ends. Re-rolled ends shall include a minimum of 2 annular corrugations of the same size as the pipe corrugations.

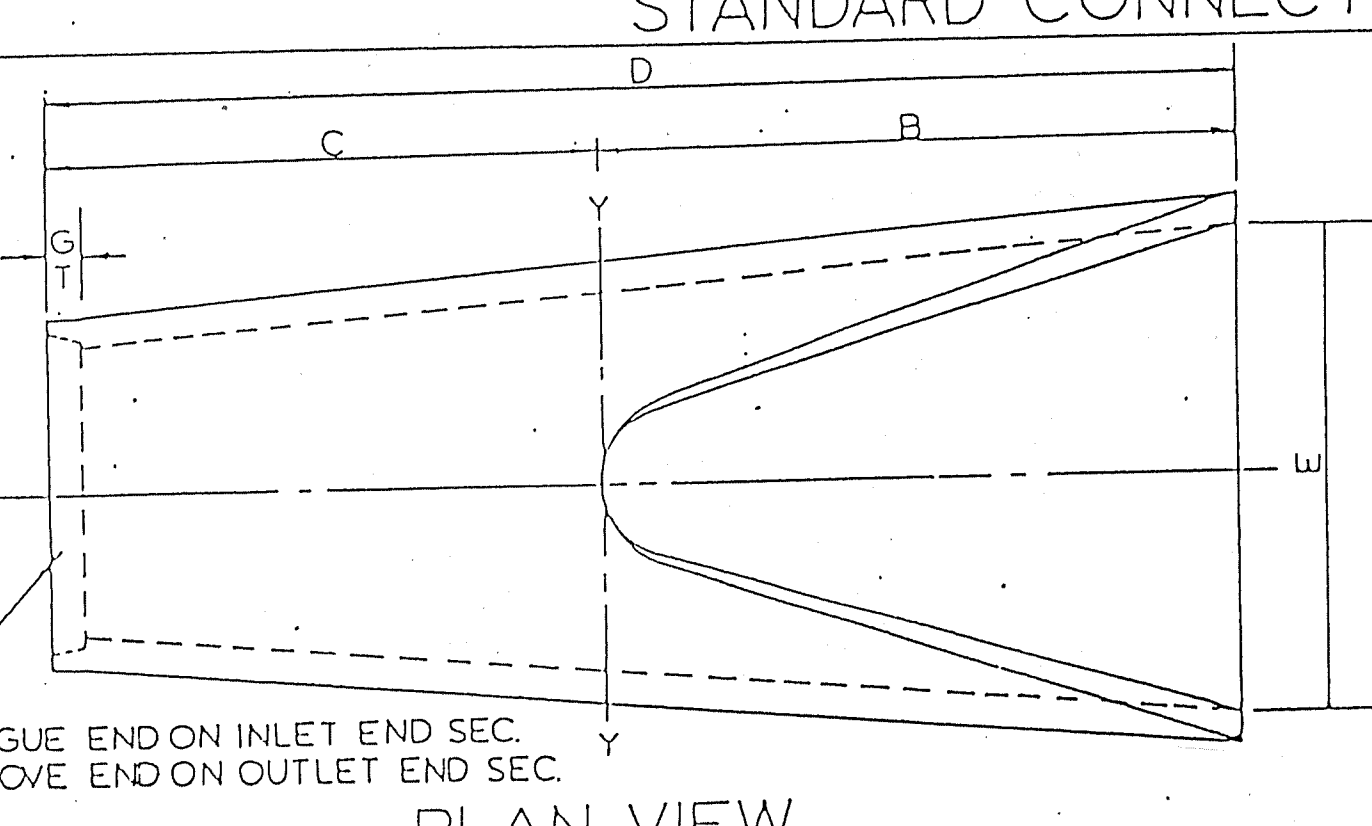
26-9237-911 33797

THIS SERIAL REVISED: 8-22-77

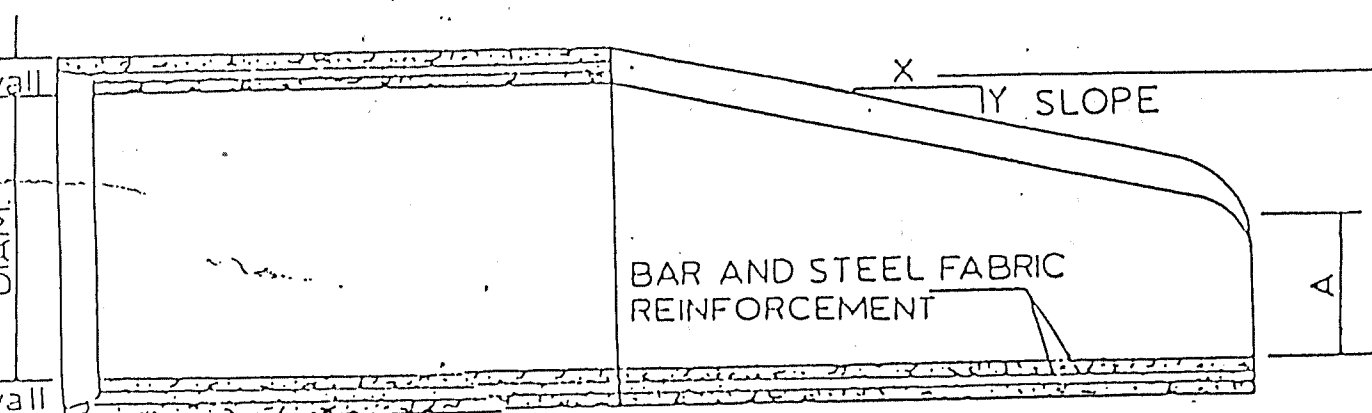
3. GENERAL NOTE NO. 3 ADDED 6/22/77
GENERAL NOTE NO. 2 REV. 10-26-78

NEW MEXICO
STATE HIGHWAY DEPARTMENT
STANDARD
CULVERT PIPE
END SECTIONS

ES-1



PLAN VIEW

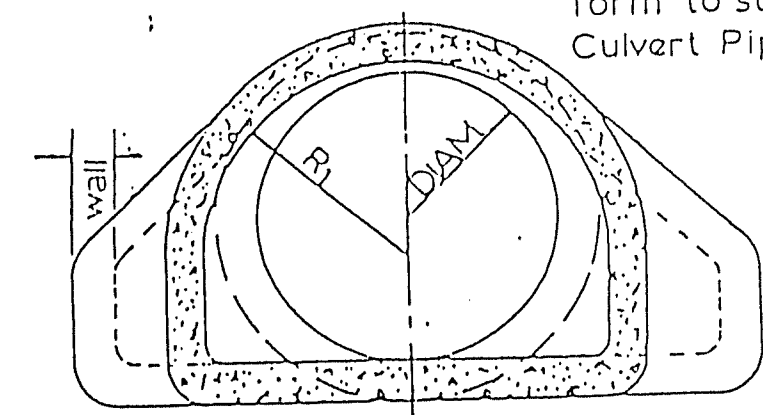


LONGITUDINAL SECTION

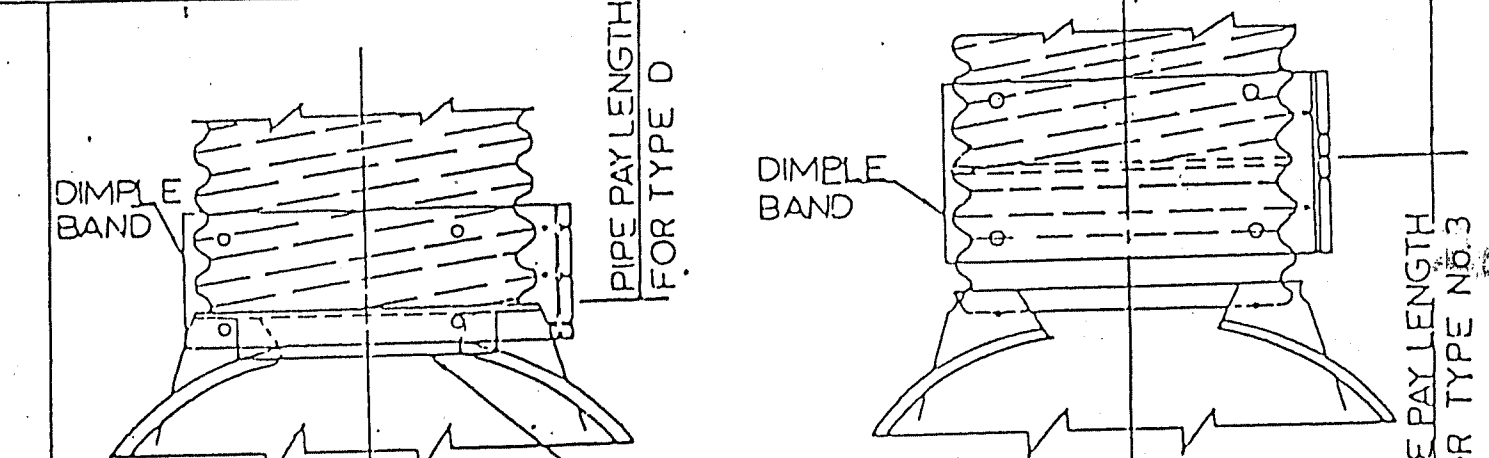
FLARED END SECTIONS FOR REINFORCED CONCRETE CULVERT PIPE

DIAM.	WALL	G or T	WEIGHT	SLOPE	A	B	C	D	E	DIAM. 1"
12	2	1 1/2	530	3:1	4"	2-0	4-0 7/8	6-0 7/8	2-0	13
15	2 1/4	2	740	3:1	6"	2-3	3-10	6-1	2-6	16
18	2 1/2	2 1/2	990	3:1	9"	2-3	3-10	6-1	3-0	19
21	2 3/4	2 1/2	1280	3:1	9"	2-11	3-2	6-1	3-6	22
24	3	2 1/2	1520	3:1	9 1/2"	3-7 1/2	2-6	6-1 1/2	4-0	25
27	3 1/4	2 1/2	1930	3:1	10 1/2"	4-0	2-1 1/2	6-1 1/2	4-6	28
30	3 1/2	3	2190	3:1	1-0"	4-6	1-7 3/4	6-1 3/4	5-0	31
33	3 3/4	3 3/8	3150	3:1	1-1 1/2"	4-10 1/2	3-3 1/4	8-1 3/4	5-6	34
36	4	3 1/2	4100	3:1	1-3"	5-3	2-10 1/4	8-1 3/4	6-0	37
42	4 1/2	3 3/4	5380	3:1	1-9"	5-3	2-11	8-2	7-0	49
48	5	4 1/4	6550	3:1	2-0"	5-5	3-3	8-3	8-0	61
54	5 1/2	4 3/4	8040	2.4:1	2-3"	5-5	2-11	8-4	7-6	55
60	6	5	8750	2:1	2-6"	5-0	3-3	8-3	8-5	67
66	6 1/2	5 1/2	10530	2:1	2-8"	6-6	1-9	8-3	9-0	73
72	7	6	12520	2:1	2-10"	6-6	1-9	8-3	9-6	79
78	7 1/2	6 1/2	14430	2:1	3-1"	6-6	1-9	8-3	10-0	85
84	8	7	15350	2:1	3-5"	6-6	1-9	8-3	10-0	85

NOTE: Design of End Section shall conform to standard reinforced Concrete Culvert Pipe.



END VIEW
Y-Y SECTION

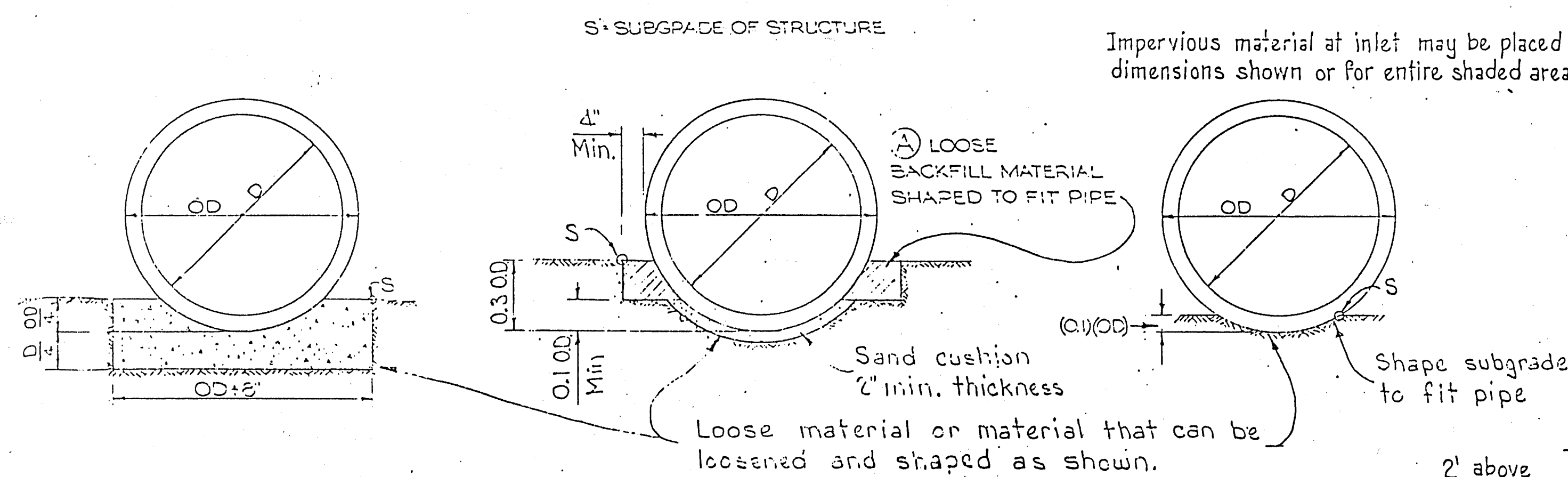


TYPE No. 1
FOR 12" THRU 36" AND FOR 17" x 13" THRU 57" x 38" ONLY
NOTE: FOR TYPE No. 1 AND TYPE No. 3 THE DIMPLE BAND OR CORRUGATED PIPE CONNECTOR SECTION SHALL BE ATTACHED TO THE END SECTION BY 3/8" GALVANIZED STEEL RIVETS OR BOLTS SPACED AT APPROXIMATELY 6" CENTERS.

FOR TYPE No. 3 THE CONNECTION INCLUDES 1 FOOT OF THE PIPE LENGTH AS A CONNECTOR SECTION FOR PIPE ARCH SIZES 64" x 43" THRU 83" x 57" AND ROUND PIPE SIZES 42" THRU 84" DIAM. GAGES OF CONNECTOR SECTION SHALL BE THE SAME AS THE END SECTIONS AS TABULATED ABOVE.

STD. CONN'S FOR HELICALLY CORRUGATED PIPE

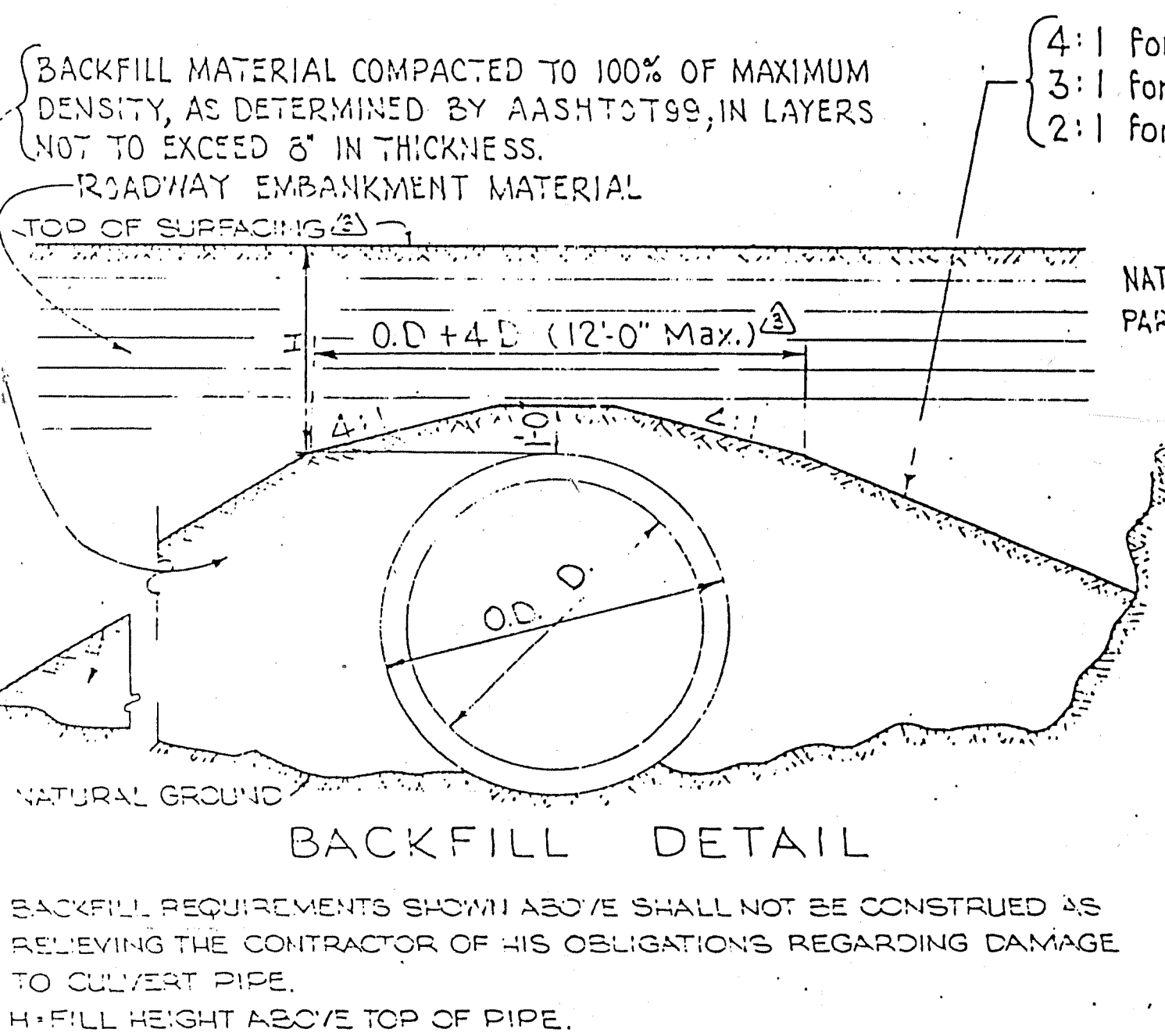
NO.	DESCRIPTION	DATE
1	ADDED GENERAL NOTE NO. 2	11-14-75 RER.
2	REV. PIPE ARCH. DIM.	12/10/74 R.A.H.
3	REV. NOTE FOR CONN. HELL CORR. PIPE	6/7/74 RER.
4	ADDED NOTE RE: TOE PLATE	8/22/72 RER.
5	ADDED ALTERNATE TO EXPANSION ANCHOR	11/13/69 M.A.M.
6	ADDED TYPE 'B' FASTENER, CPC END SEC.	11/13/69 M.A.M.
7	REDRAWN	10/17/69 M.A.M.



CLASS "A"
 CLASS "A" BEDDING SHALL CONSIST OF A CONTINUOUS CONCRETE CRADLE AND SHALL BE USED ONLY WHEN SHOWN ON THE PLANS.
 VOLUME OF CRADLE
 $0.0156 D^2 + 0.0123 D + 0.0011 = \text{CU YDS/FT.}$
 D IS IN FEET.

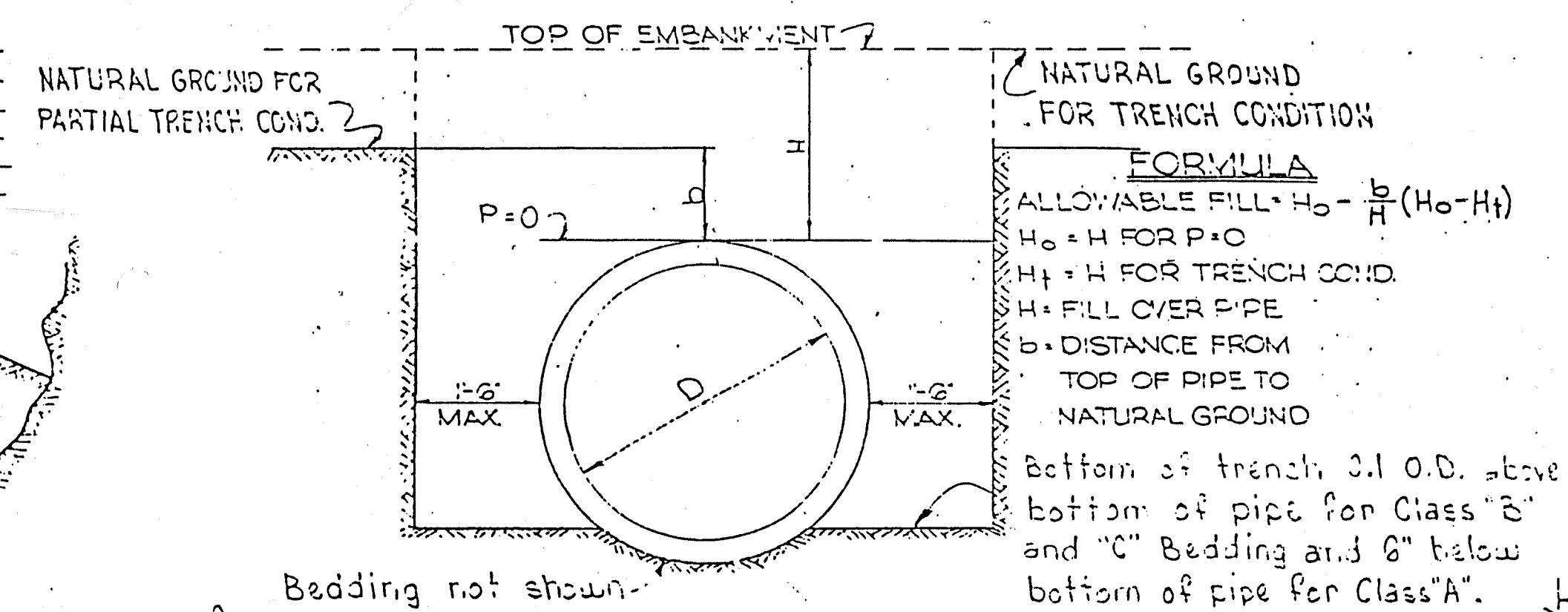
CLASS "B"
 See detail below for bedding in rock or other incompressible foundation.

CLASS "C"
 See detail below for bedding in rock or other incompressible foundation.



4:1 for D less than 3'
 3:1 for D = 3' to 4'-1" inclusive.
 2:1 for D larger than 4'-1"

LOOSE BACKFILL MATERIAL ROUGHLY SHAPED TO FIT BOTTOM OF PIPE AND THEN COMPACTED AT HAUNCHES AND SIDES OF PIPE.



METHOD OF INTERPOLATION FOR ALLOWABLE FILL WHEN NATURAL GROUND LIES BETWEEN TOP OF PIPE AND TOP OF EMBANKMENT (PARTIAL TRENCH CONDITION)

MAXIMUM HEIGHT OF FILL

INSIDE DIAMETER INCHES	CLASS II PIPE									CLASS III PIPE									CLASS IV PIPE									CLASS V PIPE									INSIDE DIAMETER INCHES
	CLASS "A" BEDDING			CLASS "B" BEDDING			CLASS "C" BEDDING			CLASS "A" BEDDING			CLASS "B" BEDDING			CLASS "C" BEDDING			CLASS "A" BEDDING			CLASS "B" BEDDING			CLASS "C" BEDDING			CLASS "A" BEDDING			CLASS "B" BEDDING			CLASS "C" BEDDING			
	P=0	P=10	TRENCH	P=0	P=10	TRENCH	P=0	P=10	TRENCH	P=0	P=10	TRENCH	P=0	P=10	TRENCH	P=0	P=10	TRENCH	P=0	P=10	TRENCH	P=0	P=10	TRENCH	P=0	P=10	TRENCH	P=0	P=10	TRENCH	P=0	P=10	TRENCH				
18	24	19	24	18	13	16	13	11	13	32	25	32	22	18	22	18	18	18	47	38	56	32	25	32	27	21	27	55	45	110	37	30	37	32	26	32	18
24																					87							56	45		33	30	37	32		32	24
30																					90							57	47		33	31	47	33		33	30
36																					90							58			39	31	51			36	
42													32								140							58			40	31	54			42	
48													33								110							58				31	54			48	
54													33								110							58				32	51			54	
60													32								78							59				32	51			60	
66													32								76				32			59				32	51			66	
72													33								76				34			59	47	110	40	32	50	33	26	33	72
78													34								74				35												
84													33								74				35												
90													33								47	38	68	32	25	34	27	21	27								
96													34																								
102													33																								
108	24	19	24	18	13	16	13	11	13	32	25	34	22	18	22	18	18	18																			

FOR FILL HEIGHTS GREATER THAN 100' FOUNDATION MATERIAL SHALL BE INVESTIGATED FOR ITS BEARING CAPACITY.

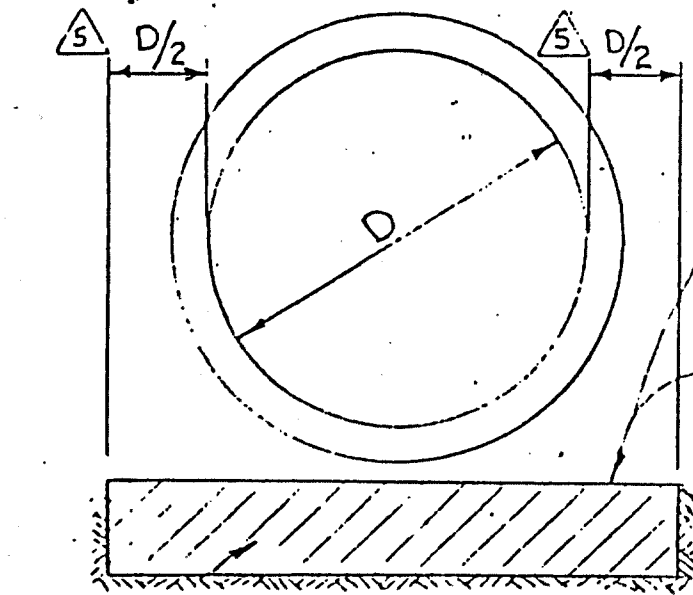
NOTE: FOR PROJECTION RATIOS WHEN P IS GREATER THAN ZERO AND LESS THAN ONE ALLOWABLE FILL MAY BE DETERMINED BY INTERPOLATION. WHERE NATURAL GROUND IS ABOVE TOP OF PIPE AND BELOW TOP OF FOUNDATION, ALLOWABLE FILL HEIGHTS ARE COMBINED FROM TRENCH AND FOUNDATION ALLOWABLES.

DESIGN DATA
 Design according to U.S.B.P.R. Circular Memorandum dated April 4, 1957 and A.A.S.H.T.O. Spec. M-170.
 Weight of fill material = 120 lbs./ft.³
 Factor of safety = 1.33 applied to ultimate 3 edge bearing load.
 Settlement Ratio = 0.7

FRWA Region No.	STATE	SHEET NO.	TOTAL SHEETS
6	NEW MEXICO		

GENERAL NOTES

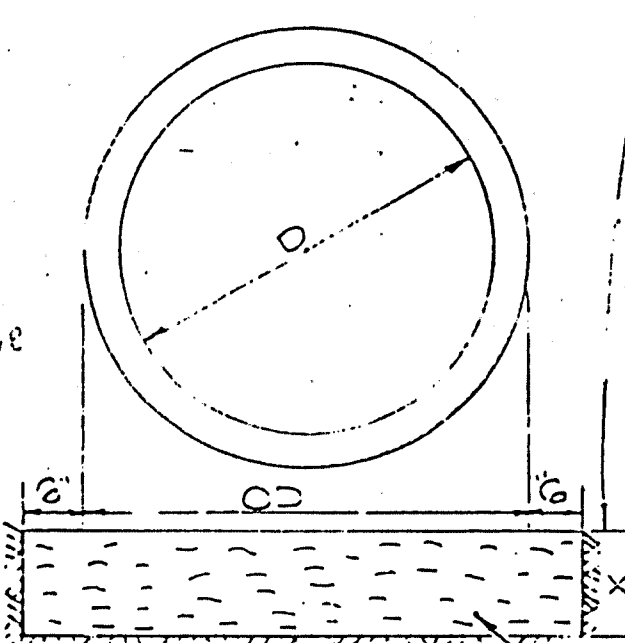
1. WORKMANSHIP AND MATERIALS SHALL CONFORM TO N.M.S.H. DEPT. SPECIFICATIONS.
2. CONCRETE PIPE SHALL CONFORM TO ALL REQUIREMENTS OF AASHTO SPECIFICATION M-170.
3. THE MINIMUM HEIGHT OF FILL BETWEEN TOP OF PIPE AND FINISHED GRADE OF THE ROADWAY SHALL BE 1.75 FT. FOR UNPAVED AND BITUMINOUS PAVED ROADS AND 1.25 FT. FOR CONCRETE PAVED ROADS.
4. SAND CUSHION FOR CLASS "B" BEDDING TO BE INCLUDED IN THE UNIT PRICE BID FOR CONCRETE PIPE.
5. SUITABLE MATERIAL FOR STABILIZING THE CULVERT FOUNDATION SHALL CONSIST OF MATERIAL APPROVED BY THE ENGINEER. THE MATERIAL MAY BE OBTAINED FROM THE ROADWAY OR STRUCTURE EXCAVATION OR FROM BORROW, AS DIRECTED BY THE ENGINEER. THE DEPTH OF SUCH MATERIAL SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD AFTER EXAMINATION OF THE NATURAL FOUNDATION MATERIAL, CONSIDERING THE DIAMETER OF THE PIPE AND HEIGHT OF COVER.
6. FOR MULTIPLE INSTALLATIONS, PIPES SHALL BE SPACED TO PROVIDE TWO FEET CLEAR DISTANCE BETWEEN END SECTIONS, SEE SERIAL ES-1. WHERE SERIAL ES-1 DOES NOT LIST END SECTIONS FOR THE SIZE OF PIPE TO BE USED, THE CENTER TO CENTER SPACING OF PIPES SHALL BE THE OUTSIDE DIAMETER PLUS THREE FEET.
7. EXISTING GROUND UNDER PIPE BEDDING SHALL BE BROKEN UP & COMPACTED TO A MINIMUM DEPTH OF 6 INCHES REGARDLESS OF FILL HEIGHT. COMPACTION SHALL BE 95% OF MAXIMUM DENSITY BY AASHTO T99.
8. BACKFILL MATERIAL SHALL CONFORM TO SPECIAL PROVISION MODIFYING SECTION 206.



FOR DETAILS ABOVE THIS PLANE SEE SPECIFIED CLASS OF BEDDING.
 BOTTOM OF CONCRETE CRADLE FOR CLASS "A" BEDDING. BOTTOM OF LOOSE BACKFILL MATERIAL FOR CLASS "B" BEDDING. SUBGRADE OF STRUCTURE FOR CLASS "C" BEDDING.

FOUNDATION STABILIZATION
 UNSUITABLE FOUNDATION MATERIAL SHALL BE REMOVED AS DIRECTED BY THE ENGINEER AND THE EXCAVATED AREA BACKFILLED AS SHOWN.

ADDITIONAL CUSHION FOR ROCK OR OTHER INCOMPRESSIBLE FOUNDATION



$x = 1/2$ PER FT. OF "H" FOR CLASS A,B & C BEDDING. 6" MIN., 0.75(D) MAX.
 FOR DETAILS ABOVE THIS PLANE SEE SPECIFIED CLASS OF BEDDING.
 BOTTOM OF CONCRETE CRADLE FOR CLASS "A" BEDDING. BOTTOM OF PIPE FOR CLASS "B" BEDDING AND CLASS "C" BEDDING.
 COMPRESSIBLE EARTH CUSHION SUCH AS SILTY CLAY OR LOAM. COMPACT LIGHTLY AND SHAPE AS REQUIRED FOR THE SPECIFIED CLASS OF BEDDING.

THIS SERIAL REVISED: 9-9-74

No.	DESCRIPTION	DATE	BY
1	Rev. Note 7 & Backfill Note	9-9-74	RH
2	Minor corrections	6-11-74	RH
3	Miscellaneous revisions	4-28-74	RH
4	Minor revisions	11-6-73	RH
5	Revised Width of Subgrade Stabilization	11-22-71	W.L.D.
6	ADDED NOTE #8	11-4-71	W.L.D.
7	Changes marked	10-20-71	W.L.D.
8	NOTE #6	8-2-71	H.H.Y.
9	REDRAWN	11-4-70	H.H.Y.

NEW MEXICO
STATE HIGHWAY DEPARTMENT
FILL HEIGHTS AND
BEDDING DETAILS
FOR
CONCRETE PIPE CULVERTS

SERIAL M-16-71

APPROVED: *J. J. ...* 2-2-71
 BRIDGE ENGINEER
 Proj. No. 42379 SHEET NO. 9-8

NOTE: FOR PROJECTION RATIOS WHEN P IS GREATER THAN ZERO AND LESS THAN ONE, ALLOWABLE FILL MAY BE DETERMINED BY INTERPOLATION. WHEN NATURAL GROUND IS ABOVE TOP OF PIPE AND BELOW TOP OF EMBANKMENT, ALLOWABLE FILL HEIGHTS ARE COMPUTED FROM SKETCH AND FORMULA SHOWN ABOVE.

CHART TO DETERMINE POST SIZE

		H in feet												
Post Size	H	5	6	7	8	9	10	11	12	13	14	15	16	
1 1/2" x 1 1/2"	SIGN AREA PER POST	4.9	4.1	3.5	3.0	2.7	2.4	2.2	2.0	1.9	1.7			
1 3/4" x 1 3/4"		7.5	6.2	5.3	4.7	4.1	3.7	3.4	3.1	2.9	2.7			
2" x 2"		10.5	8.8	7.5	6.6	5.8	5.3	4.8	4.4	4.0	3.8			
2 1/4" x 2 1/4"		14.0	11.7	10.0	8.8	7.7	7.1	6.4	5.9	5.3	5.1			
2 3/8" x 2 3/8"		16.7	13.9	11.9	10.4	9.3	8.3	7.6	7.0	6.4	6.0	5.6	5.2	
2 1/2" x 2 1/2"		22.2	18.5	15.8	13.8	12.3	11.1	10.1	9.2	8.5	7.9	7.4	6.9	

1345" THICK

1046" THICK

EXAMPLE:

DETERMINE SIZE AND NUMBER OF POSTS TO USE WITH SIGN 4'x4' AREA = 16'.
DETERMINE DESIGN HEIGHT FROM ROADWAY CROSS SECTION IN CONJUNCTION WITH SIGN SIZE
(DESIGN HEIGHT (H) IS FROM THE GROUND ELEVATION AT THE BASE OF THE LONGEST POST TO
CENTER OF SIGN).

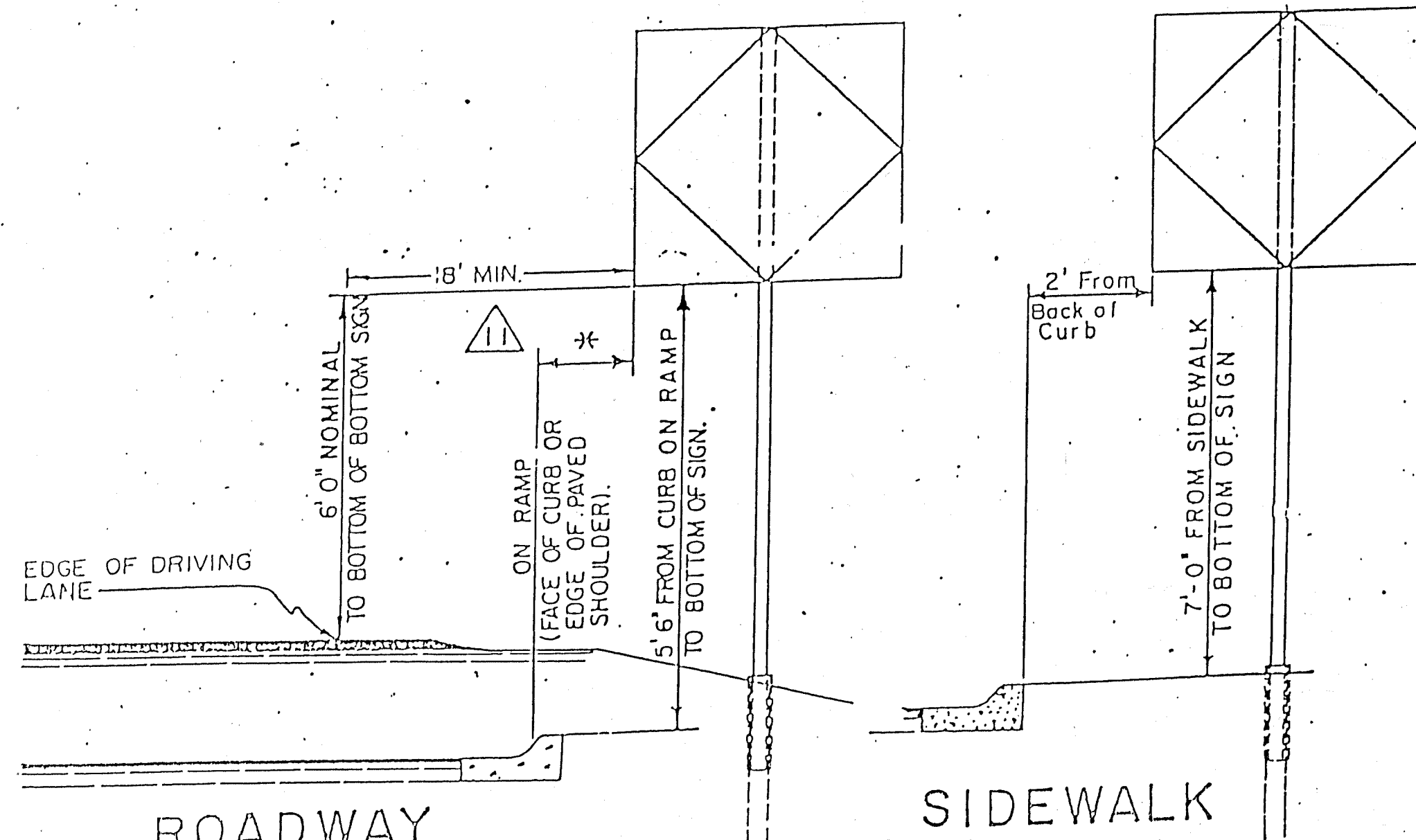
SOLUTION:

FROM ROADWAY CROSS SECTION, CLEARANCE TO BOTTOM OF SIGN = 9.5'
SIGN DEPTH IS 4'.
11.5' SAY 12'

DESIGN HEIGHT
NUMBER OF POSTS (n) NEEDED FOR A 16' AREA WOULD BE $n = \frac{16}{12 \times 8} = 2$ (NORMALLY NOT OVER 10 TO 12
SQ. FT. PER POST). SIGN AREA PER POST $A_n = 16/2 = 8$ SQ. FT. PER POST.

ENTER CHART AT TOP WHERE H=12.0' PROCEED DOWNWARD TO AN AREA EQUAL TO OR GREATER
THAN SIGN AREA PER POST. THEN PROCEED TO THE LEFT TO FIND THE REQUIRED POST SIZE.
THIS COMES OUT TO BE A 2 1/2" x 2 1/2", 10 GA. POST.

THE LENGTH OF THE LONGER POST WILL THEN BE THE 9.5' FROM GROUND LINE TO BOTTOM.
OF SIGN PLUS THE SIGN HEIGHT (5.0' IN THIS CASE) PLUS THE 1.5' IN THE GROUND FOR A TOTAL
OF 16.0'. THE OTHER POST LENGTH WILL BE 16.0' MINUS THE DIFFERENCE "Δ" (IN THIS CASE
16.0' - 0.4' OR 15.6')



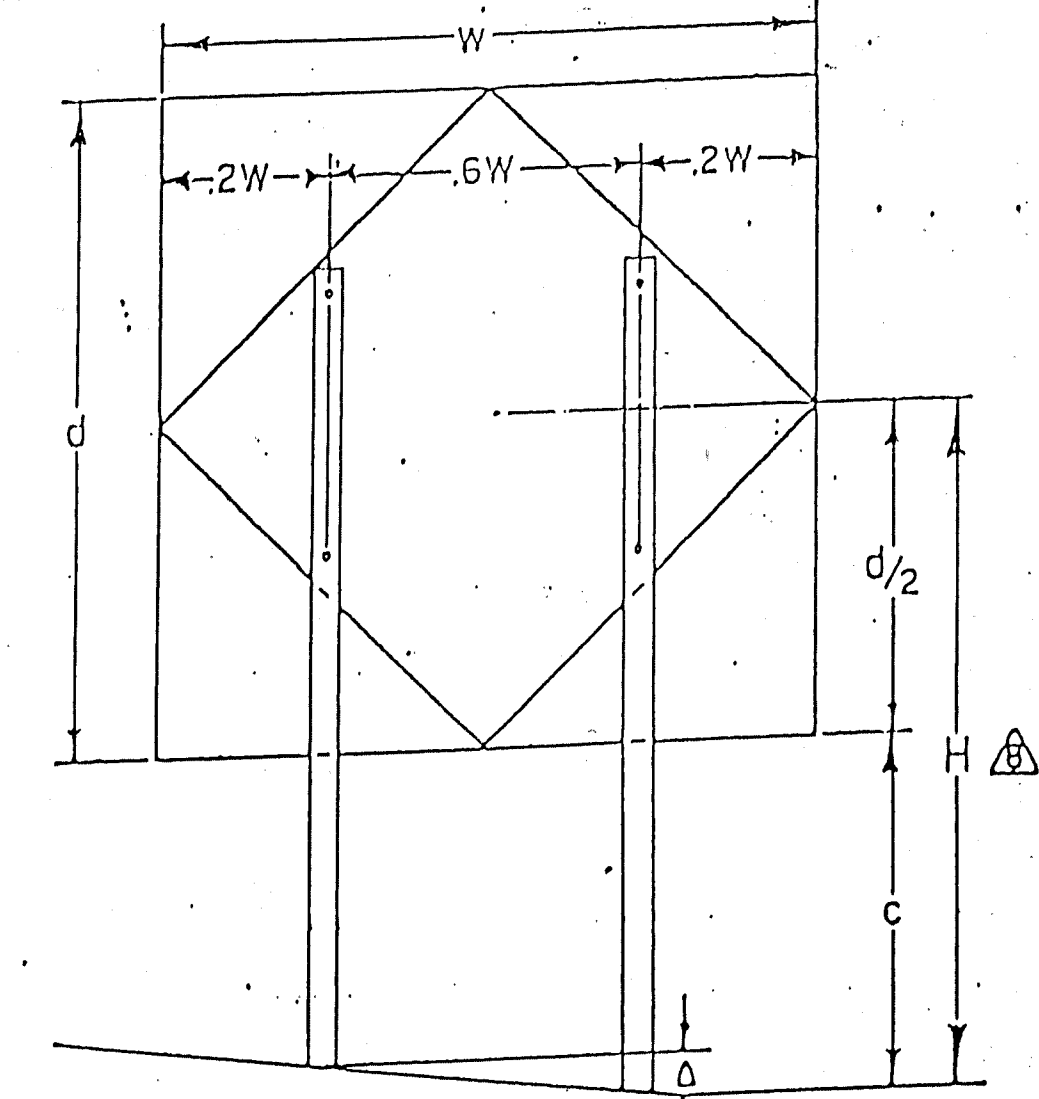
ROADWAY

POST INSTALLATION

3' MIN. FROM FACE OF CURB OR

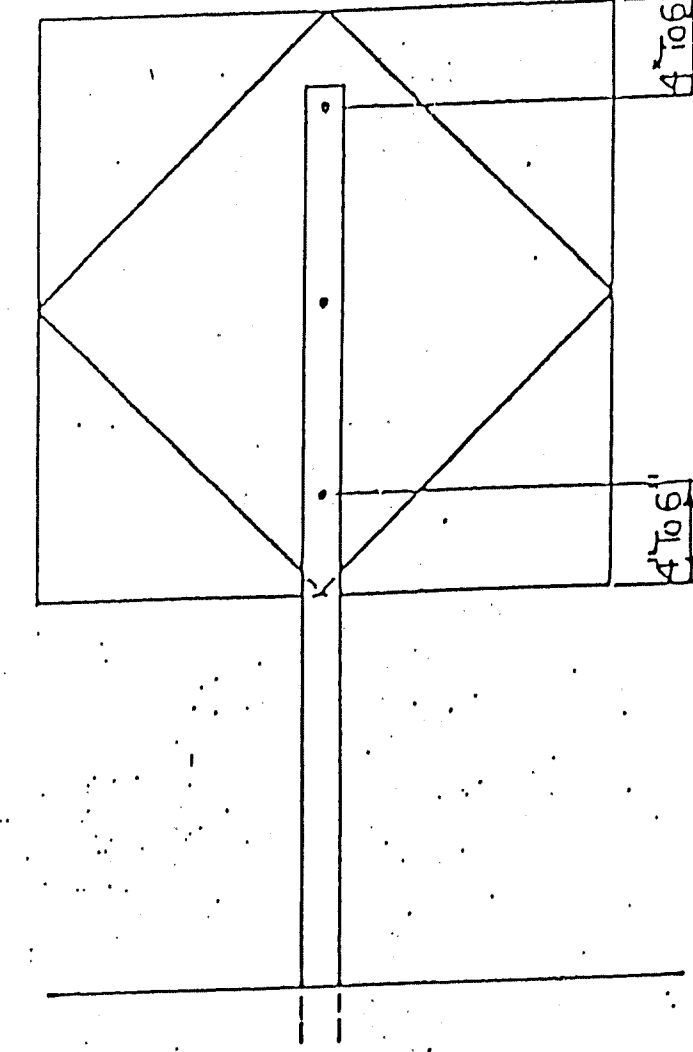
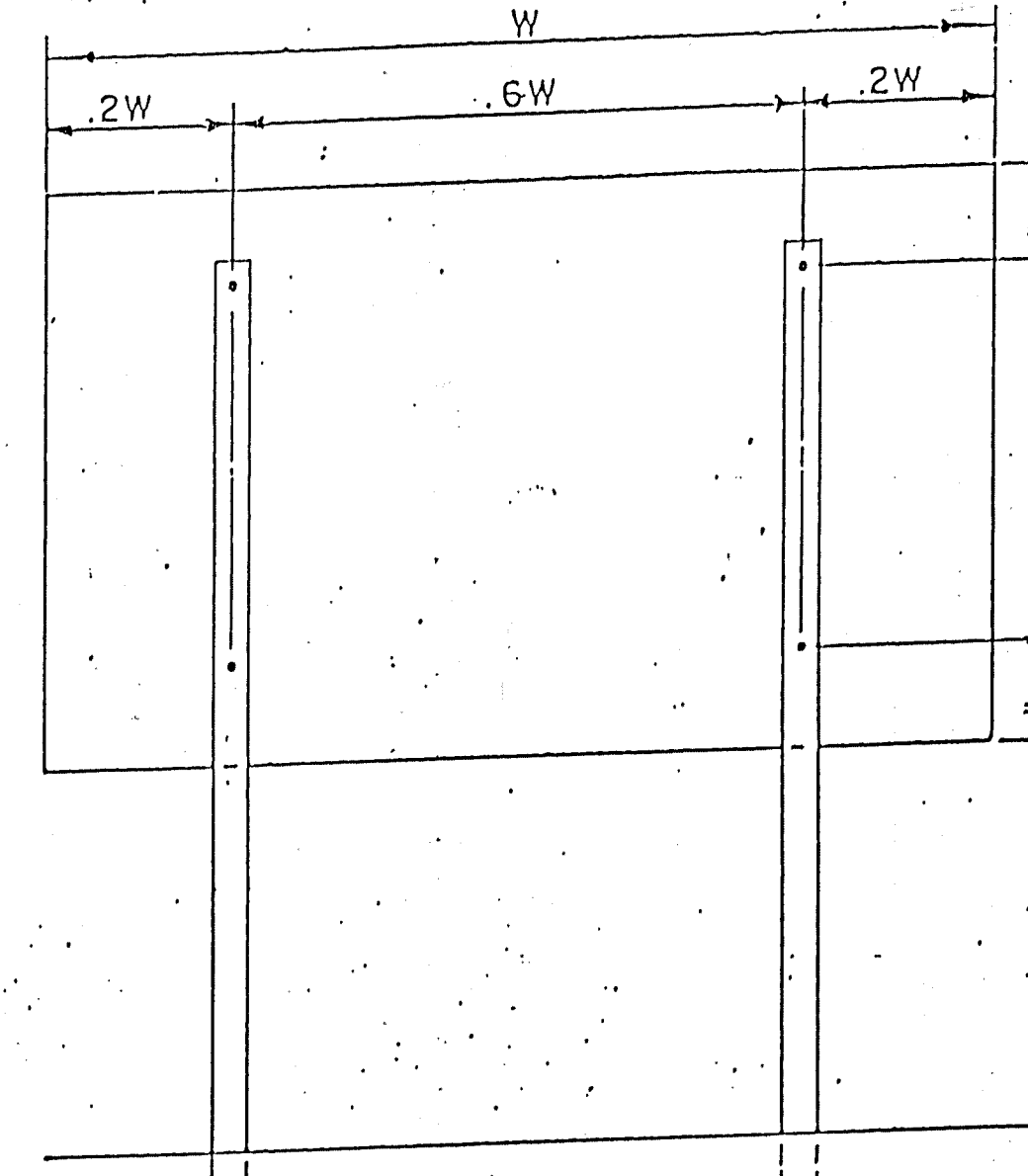
6' MIN. FROM EDGE OF PAVED SHOULDER

POST SIZE CALCULATION

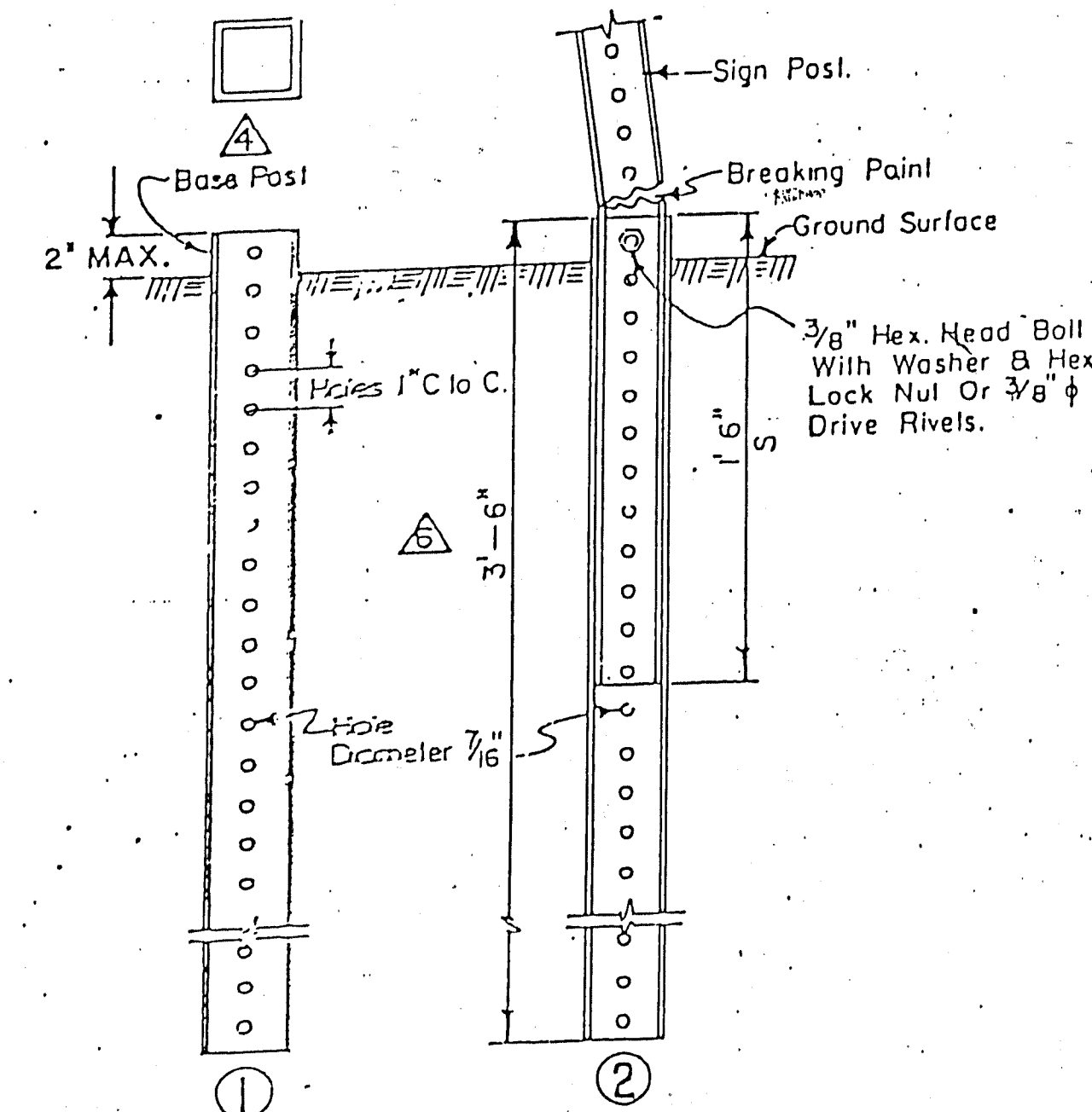


POST SPACING & SIGN MOUNTING

NOTE: WHERE 3 POSTS ARE USED SPACING SHOULD BE
.15W - .35W - .35W - .15W



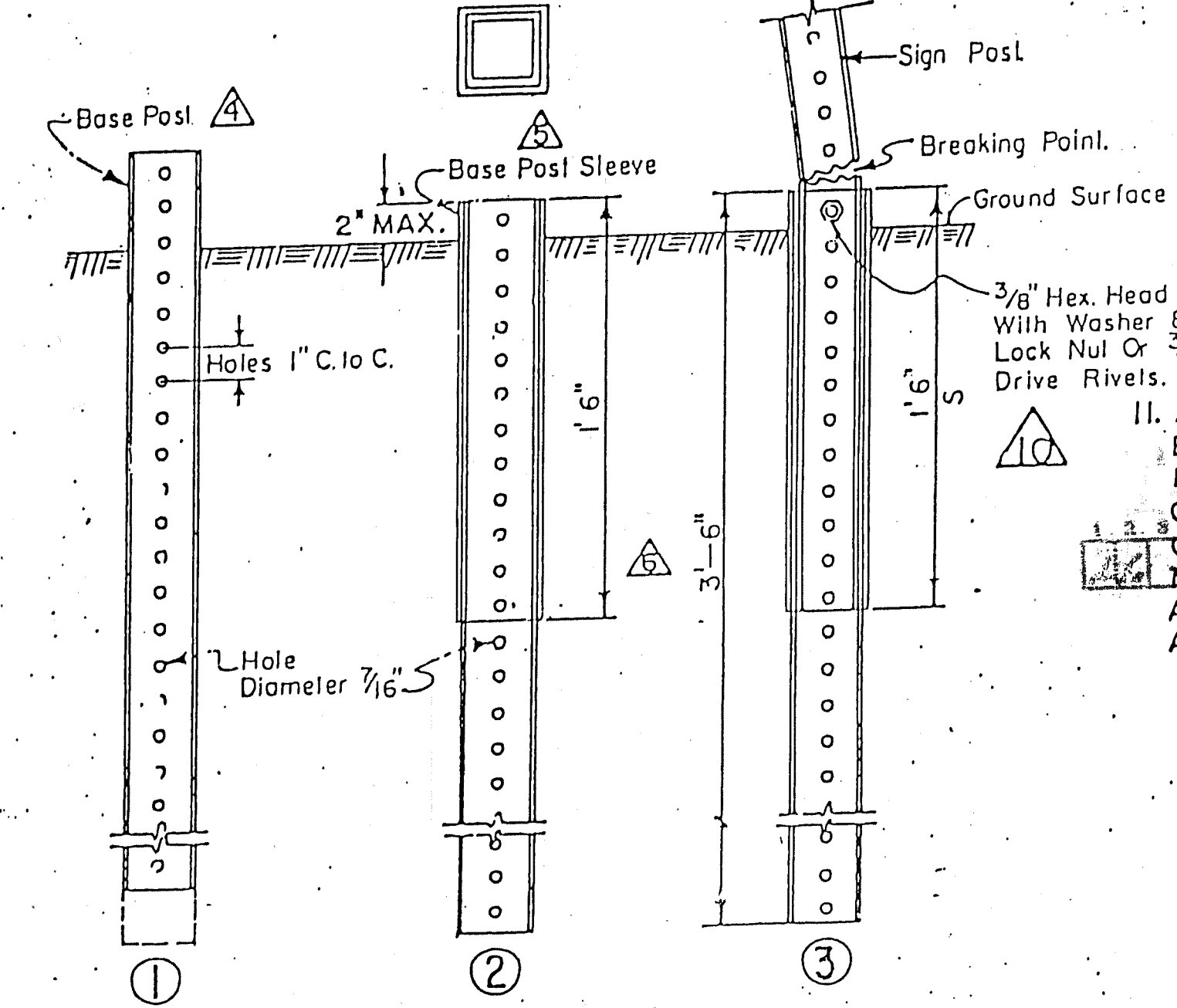
POSTS 0.1345" THICK (10 GA.)



GROUND INSTALLATION

1. DRIVE BASE POST UNTIL ONE HOLE IS EXPOSED ABOVE GROUND FOR RIVET OR BOLT INSTALLATION.
2. INSERT SIGN POST AND FASTEN WITH 2 EACH 3/8" φ DRIVE RIVET OR A 3/8" φ BOLT.
3. THE HOLE PATTERN SHOWN IS ONLY REQUIRED IN THE AREA OF THE BREAKAWAY INFLUENCE AND AT THE SIGN PANEL LOCATION (HOLES MAY BE FIELD DRILLED).

POSTS 0.1046" THICK (12 GA.)



GROUND INSTALLATION

1. DRIVE BASE POST TO WITHIN THREE OR FOUR INCHES OF SURFACE. BASE POST IS NEXT SIZE LARGER SECTION THAN SIGN POST.
2. PRE-CUT BASE POST SLEEVE (of next size larger tube) SO THAT THE HOLES WILL MATCH AND STILL BE FLUSH WITH TOP OF THE BASE POST. DRIVE BASE POST SLEEVE UNTIL HOLES MATCH AS NOTED ABOVE, THEN DRIVE BOTH THE BASE POST SLEEVE AND THE BASE POST UNTIL ONE HOLE IS EXPOSED ABOVE GROUND FOR BOLT CONNECTION.
3. INSERT SIGN POST 1'-6" FASTEN WITH 2 EACH 3/8" φ DRIVE RIVETS OR A 3/8" φ BOLT.
4. THE HOLE PATTERN SHOWN IS ONLY REQUIRED IN THE AREAS OF THE BREAKAWAY INFLUENCE AND AT THE SIGN PANEL LOCATION (HOLES MAY BE FIELD DRILLED).

NOTES:

1. MATERIALS AND WORKMANSHIP SHALL CONFORM TO NEW MEXICO STATE HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
2. BREAKAWAY SIGN SUPPORTS SHALL BE FABRICATED FROM PERFORATED STEEL AND SHALL CONFORM TO THE BREAKAWAY DESIGN SHOWN ON THIS SHEET. ALL HOLES TO BE 7/16" φ.
3. THE STEEL POSTS SHALL CONFORM TO COMMERCIAL QUALITY ASTM DESIGNATION A 446 GRADE A ZINC COATED (G 90) ASTM A 525. THE CROSS SECTION OF THE POST SHALL BE SQUARE TUBE FORMED OF 0.1046" THICK OR 0.1345" THICK. ROLL FORMED CARBON STEEL WELDED DIRECTLY IN THE CORNER BY HIGH FREQUENCY RESISTANCE WELDING OR EQUAL AND EXTERNALLY SCARFED TO AGREE WITH CORNER RADIUS. STANDARD OUTSIDE CORNER RADIUS SHALL BE 5/32" PLUS OR MINUS V64".
4. BOLTS AND NUTS SHALL BE CARBON STEEL A-307 OR STAINLESS STEEL A-193.
5. DRIVING CAPS MUST BE USED TO DRIVE POSTS 1'-6".
6. BASE POST SLEEVE IS REQUIRED WITH 0.1046" THICK POST, BUT NOT WITH 0.1345" THICK.
7. 3' x 3' x 4' 0" BASE POST OF 3/16" WALL THICKNESS TO BE USED WITH 2 1/2" x 2 1/2" 0.1345 POST.
8. POSTS SHALL HAVE A MINIMUM COLD FORMED YIELD STRESS OF 40,000 PSI.
9. DESIGN IS IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 1976.
WIND LOAD: 19 LBS./SQ. FT. (70 MPH)
SOIL BEARING CAPACITY: 3 K/SQ. FT.
10. CARBON STEEL NUTS, BOLTS AND WASHERS SHALL BE HOT DIP GALVANIZED A-153, CLASS D, ZINC COATED A-164, TYPE LS (0.0005 THICKNESS) OR CADMIUM COATED A-165, TYPE OS (0.0003 THICKNESS).
11. AS AN ALTERNATE TO GALVANIZING, STEEL POSTS AND BASE POSTS MAY BE PAINTED WITH A GREEN MODIFIED POLYESTER PAINT MEETING THE COLOR REQUIREMENTS OF FS 595-A (COLOR NO. 14109). METHOD OF APPLICATION SHALL BE BY ELECTRODEPOSITION TO A MINIMUM THICKNESS. FINISHED POSTS SHALL HAVE A SMOOTH, UNIFORM FINISH FREE FROM DEFECTS AFFECTING STRENGTH OR APPEARANCE.

ADDED NOTE No. 11	8/6/83	IGM
REVISED NOTE No. 9	9/24/77	T.M.
CORRECTED LETTER REFERENCE	7-2478	IGM
ADDED LARGER POST SIZE TO CHART	2-2879	IGM
REV. BASE POST DIMENSION	12-577	T.M.
ANCHOR SLEEVE TO BASE POST SLEEVE	12-577	T.M.
SIGN POST ANCHOR TO BASE POST	12-577	T.M.
Rev. Note 4 & Add Note 10	6-677	J.G.
Rev. Note 4	3-317	T.M.
Rev. Offset Distance	5/11/83	T.M.
IDENT. NO.	DESCRIPTION	DATE BY

NEW MEXICO
STATE HIGHWAY DEPARTMENT

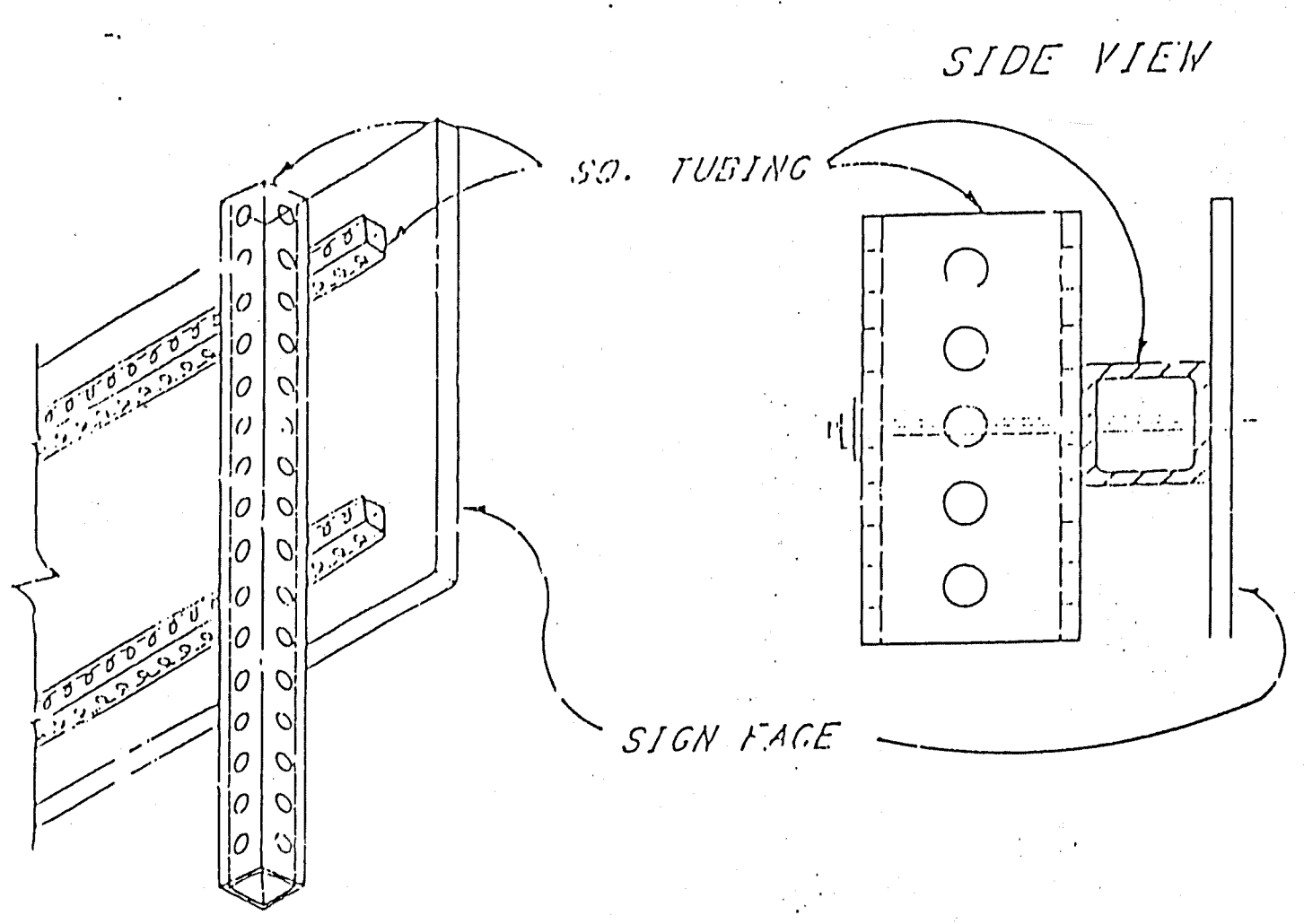
DESIGN LOADS FOR SQUARE TUBING POSTS

DESIGNED BY JG	APPROVAL	DATE
DRAWN BY JP	RECOMMENDED - TRAFFIC ENGINEER	DATE
CHECKED BY JG	APPROVED	ENGINEER OF DESIGN DATE

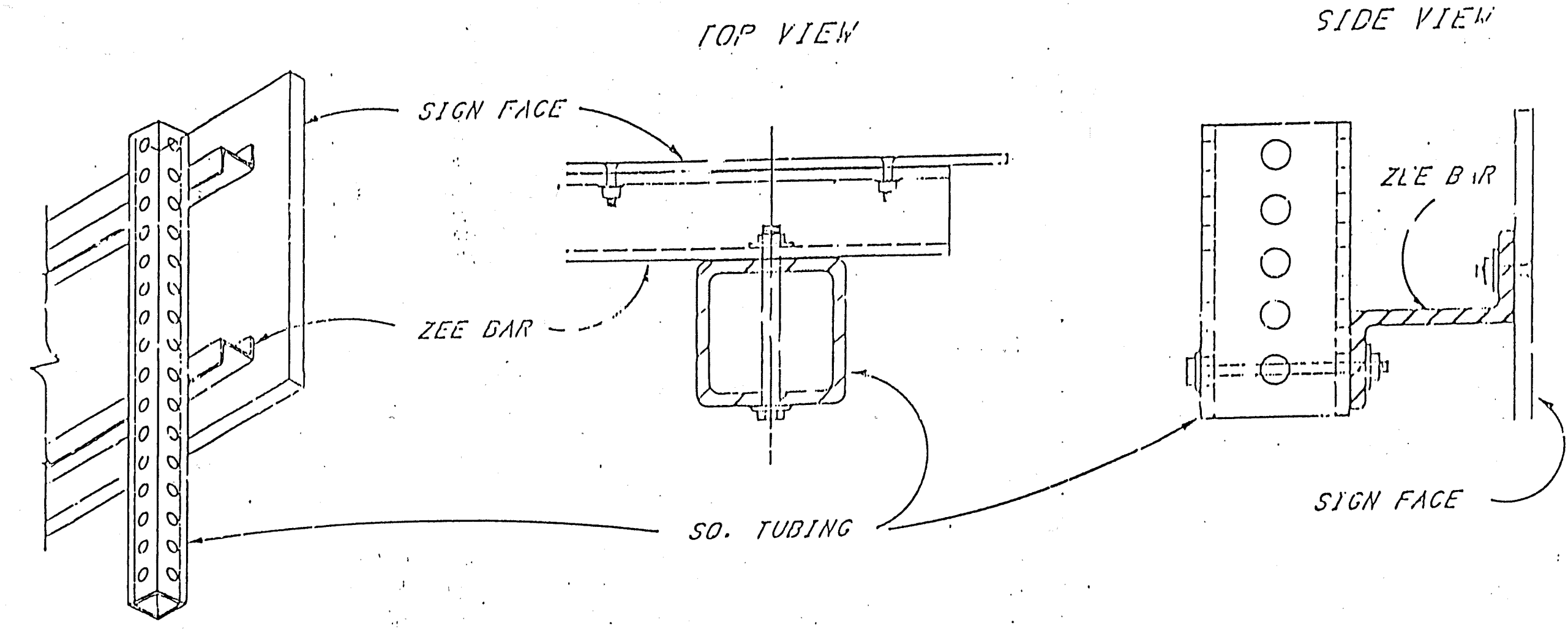
SERIAL N 75-1 SHEET 1 OF 9

Project N° 4237.91 Sheet 9-9

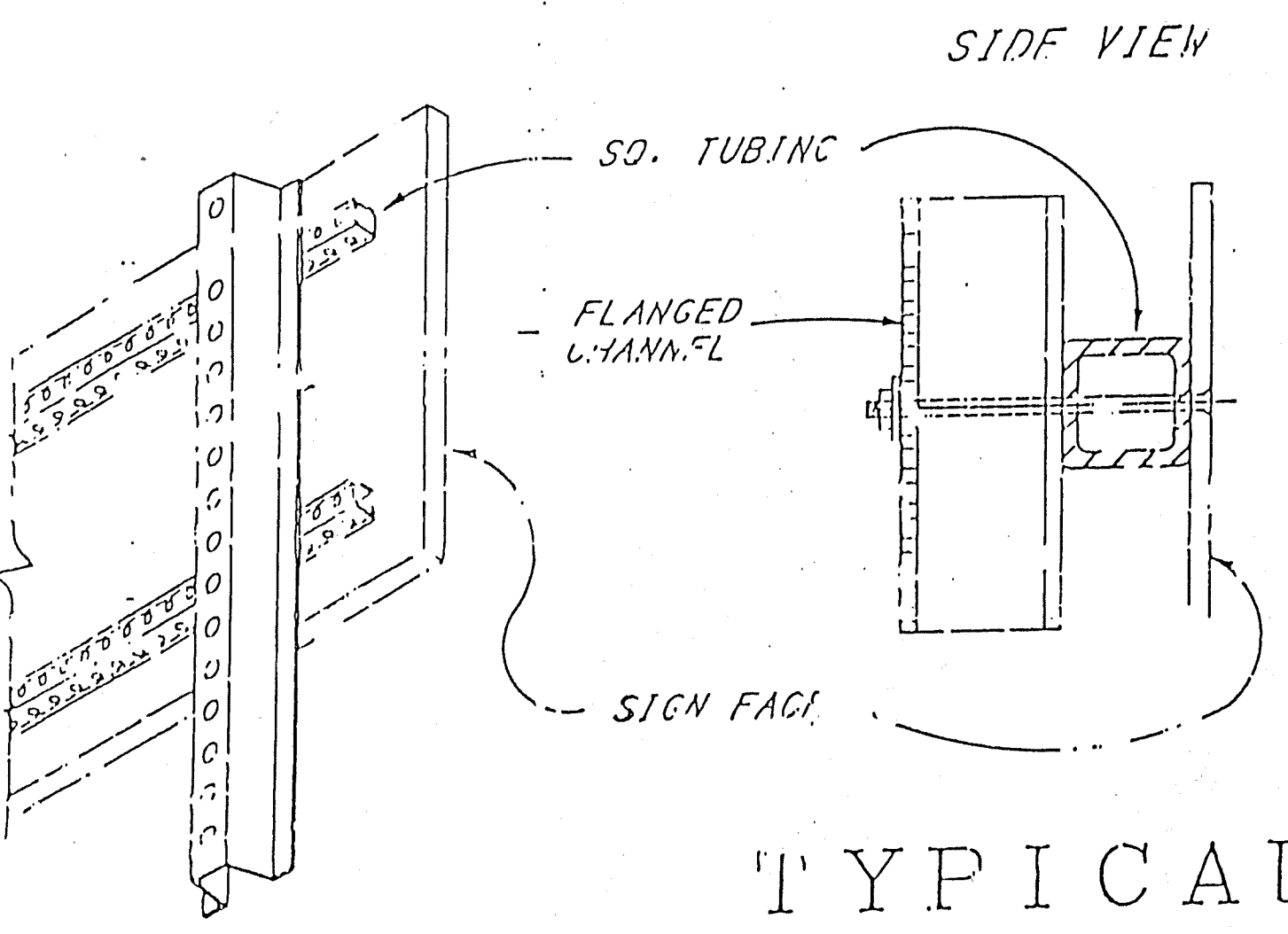
26-142371.127 135197



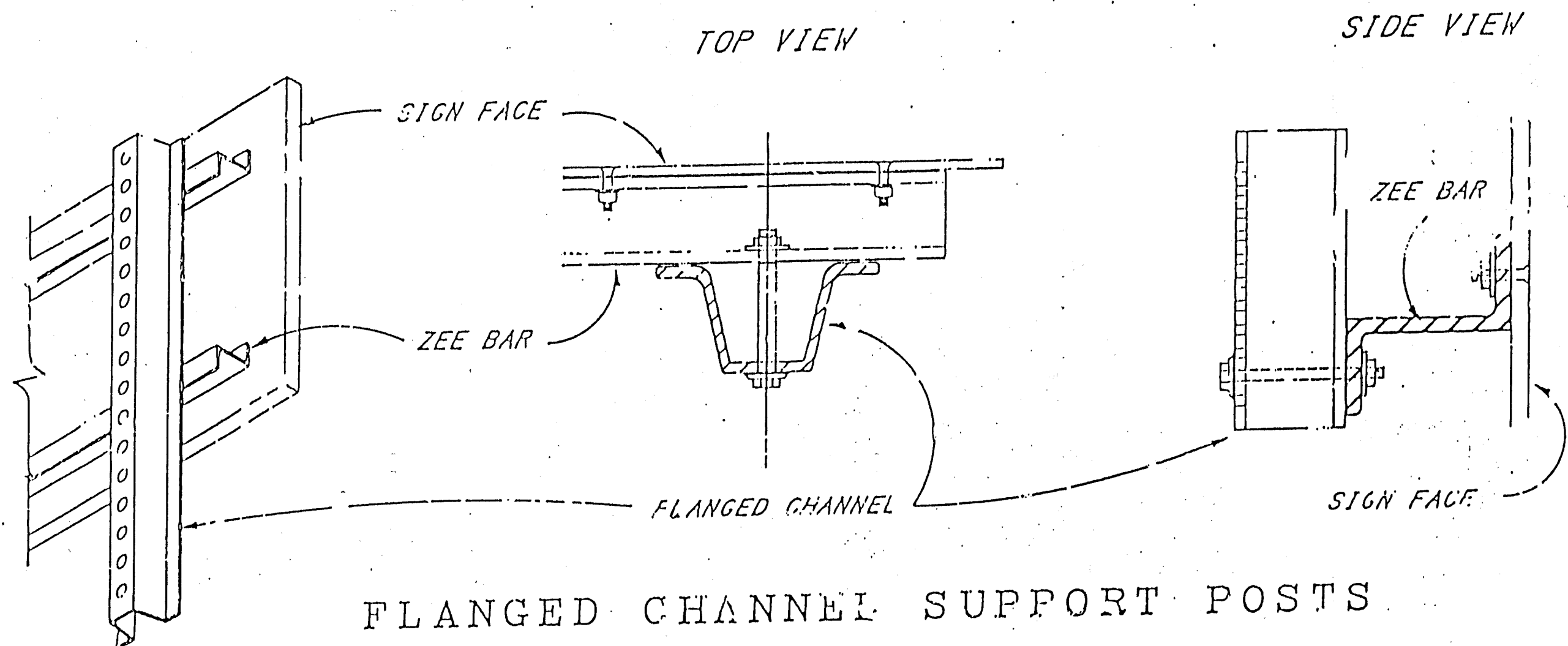
TYPICAL



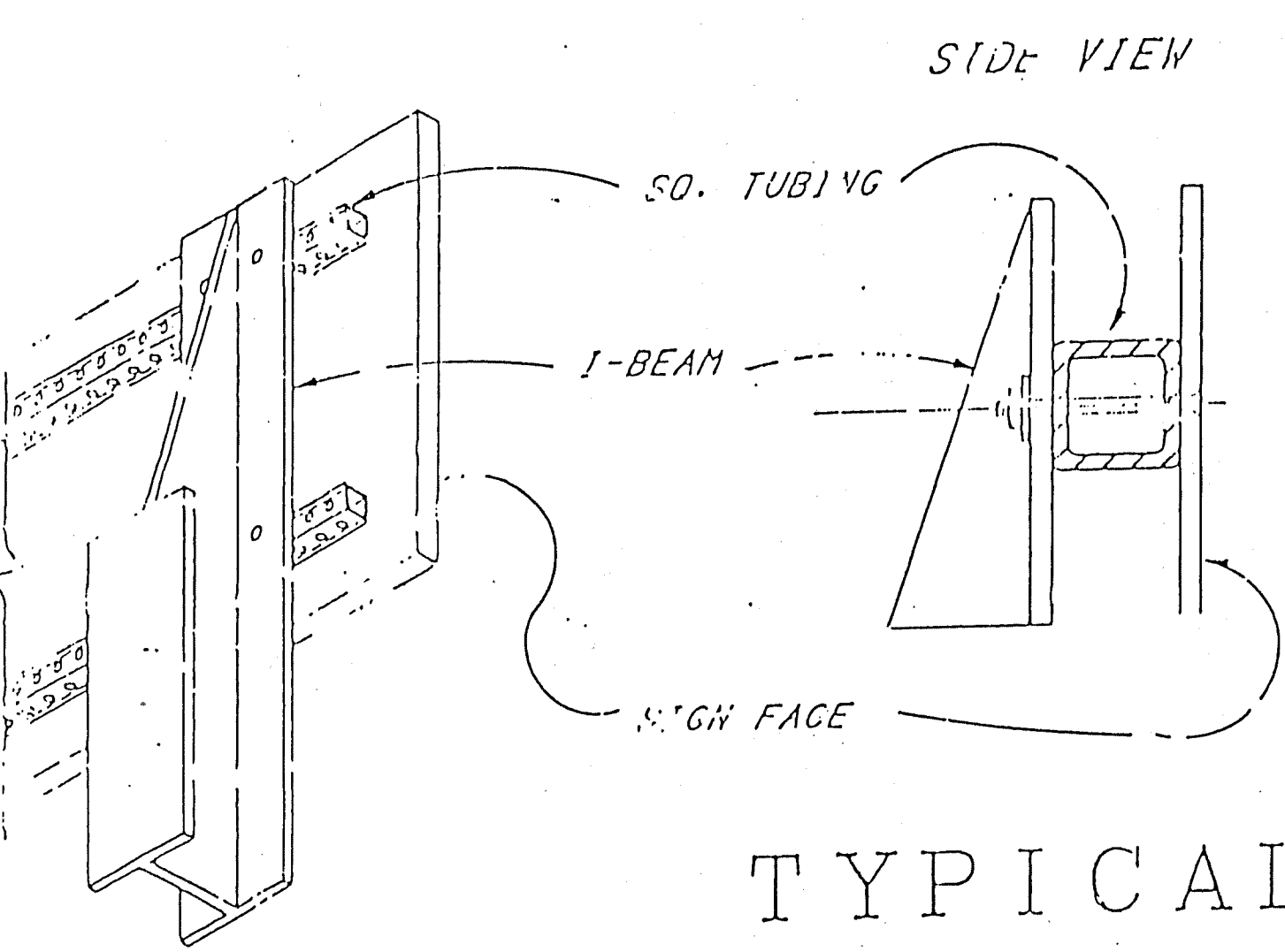
PERFORATED SQUARE TUBING (DRIVEDOWN) POSTS



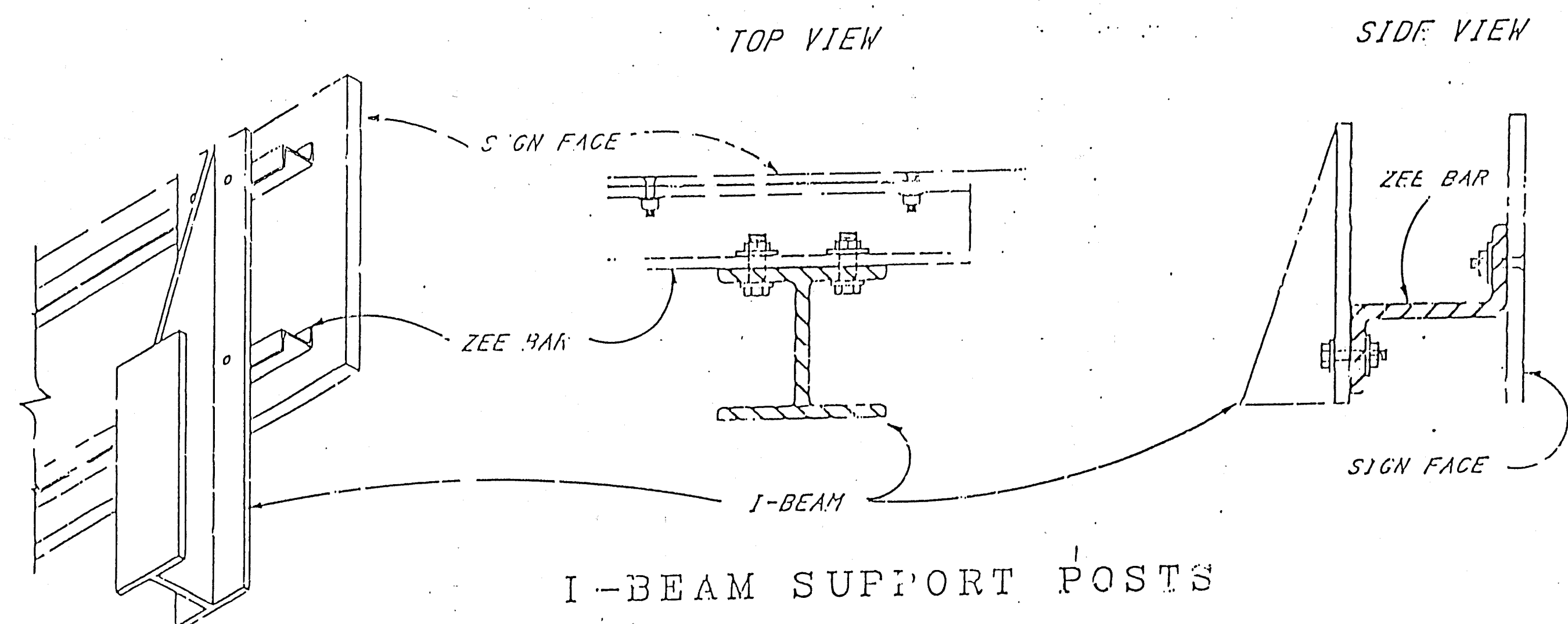
TYPICAL



FLANGED CHANNEL SUPPORT POSTS



TYPICAL



I-BEAM SUPPORT POSTS

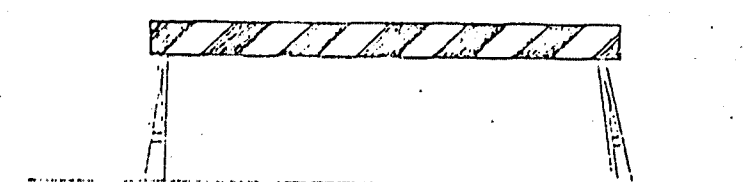
GENERAL NOTES

1. BACKING ZEE SHALL BE ALUMINUM ALLOY 6061-T6. 1" ZEE SHALL BE PROVIDED WITH A 9/16" x 2" HORIZONTAL SLOT FOR EACH POST MOUNTING BOLT.
2. BACKING ZEE SHALL BE FASTENED TO THE SIGN BLANK WITH 1/4" - 20 x 3/4" FLAT HEAD COUNTER SUNK MACHINE SCREWS WITH NUT AND LOCK WASHER. (CADMIUM OR GALVANIZED OR 2024-T4 ALUMINUM ALLOY) FASTENERS AT 9" +/- 1/2" INTERVALS.
3. BACKING ZEE WITH SIGN FACES SHALL BE FASTENED TO THE SIGN SUPPORT POST WITH 3/8" HEX. HEAD BOLT, NUT & TWO WASHERS GALVANIZED OR CADMIUM PLATED.
4. BACKING ZEE IS NOT NEEDED WHERE SIGN IS TO BE MOUNTED ON ONE POST AND IS APPROXIMATELY TEN SQUARE FEET OR LESS.
5. ALTERNATE BACKING MAY BE 1-1/2" PERFORATED SQUARE TUBING AND ASSOCIATED HARDWARE, DESCRIBED IN SERIAL SN-75-1.
6. SIGN PANELS SHALL BE SINGLE SHEET 6061-T6 ALUMINUM .120 MINIMUM THICKNESS.
7. BACKING ZEES SHALL BE 3"x2-3/4"x1/4" AL. 2.33 LBS. PER FT. FOR 6061-T6 ALUMINUM.
8. EXPOSED BOLT HEADS ON THE FACE OF THE SIGN SHALL BE PAINTED OR REFLECTORIZED TO MATCH THE SURROUNDING COLOR.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
26-4237.91 26-917

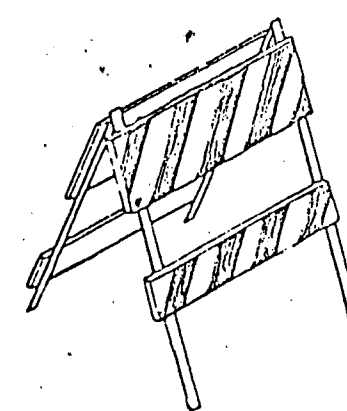
3			
2			
1			
NO.	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			
NEW MEXICO STATE HIGHWAY DEPARTMENT			
ALUMINUM PANEL SIGN DETAILS			
DRAWN BY	DESIGNED BY	CHECKED BY	DATE
TRAFFIC ENGINEER	TRAFFIC ENGINEER	TRAFFIC ENGINEER	3/6/91
SERIAL SN-75-02		SHEET 1 OF 2	

Project No 4237.91 Sheet 9-10



Stands may be detachable for portability. Type "I" Barricades have two (2) reflectorized rail faces (one in each direction). The stand materials may be metal, wood or other suitable light weight materials of structural soundness.

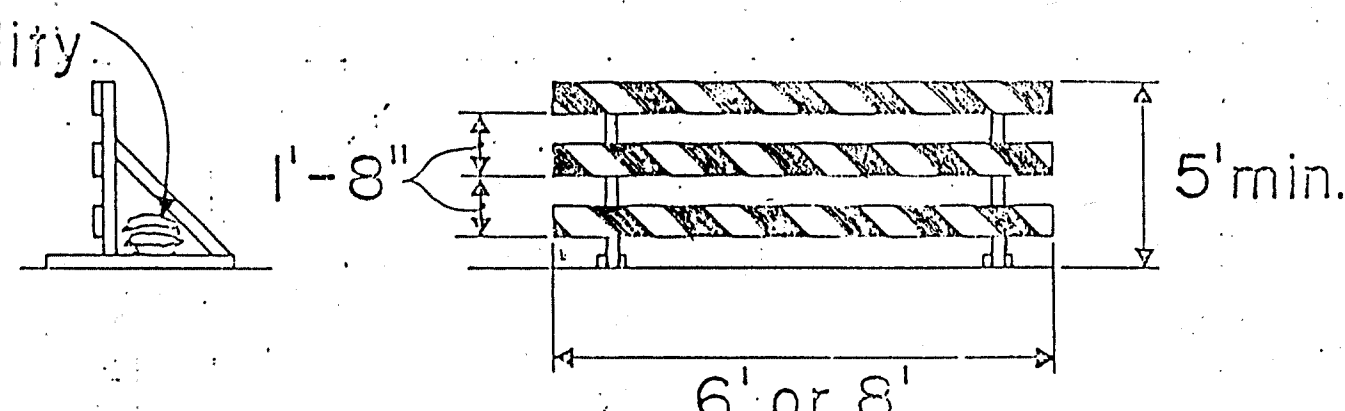
TYPICAL
TYPE "I" BARRICADE



Type "II" Barricades have four (4) reflectorized rail faces (two in each direction). Folding stands shall be of materials similar to Type "I" Barricade stands.

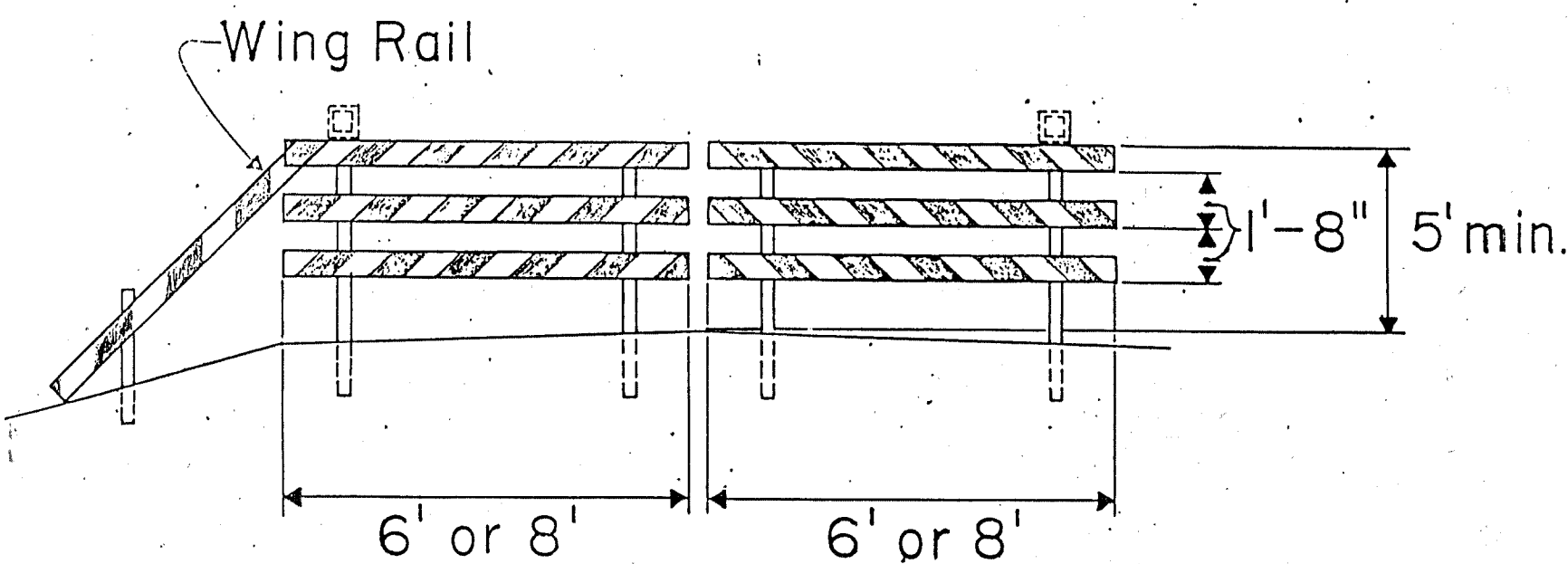
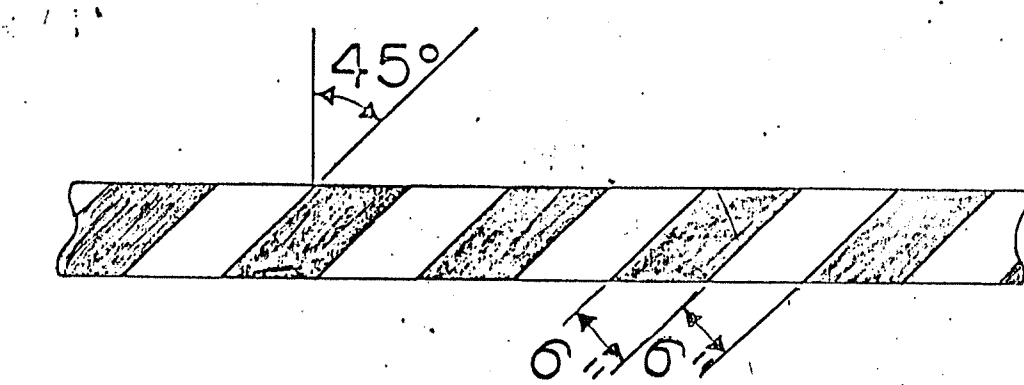
TYPICAL
TYPE "II" BARRICADE

Sand bags for added stability



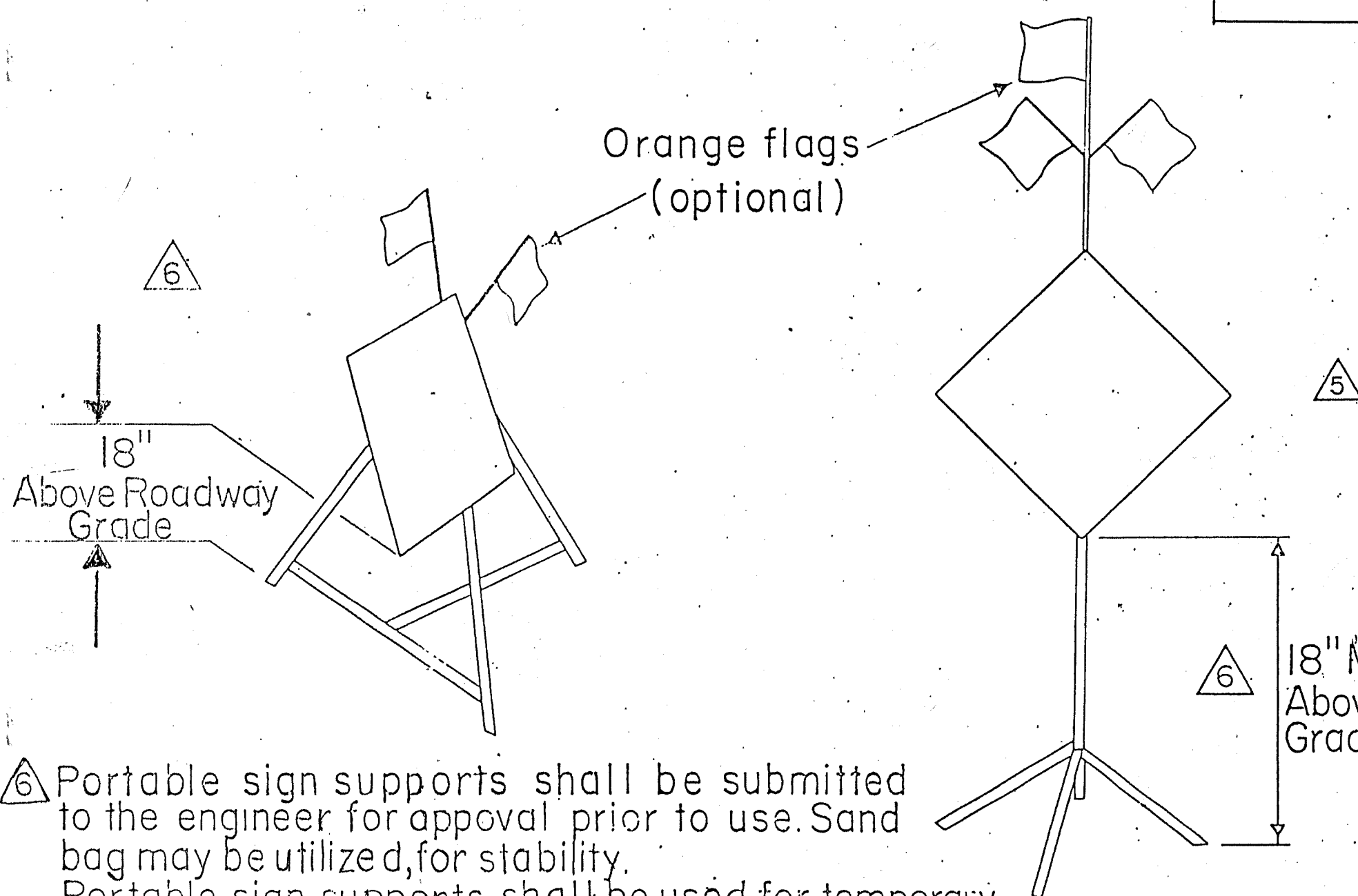
Type "III" Barricade framing and supports shall be 2"x2" min.-12Ga., square metal tubing or driven down posts.

TYPICAL
MOVABLE TYPE "III" BARRICADE



Type "III" Barricades have 3 reflectorized rail faces when facing traffic in one direction; 6 if facing traffic in two directions. Wing Rail may be fitted to the back of the top rail attached by two 5/16" bolts, nuts, and washers.

TYPICAL
FIXED TYPE "III" BARRICADE



Portable sign supports shall be submitted to the engineer for approval prior to use. Sand bag may be utilized for stability. Portable sign supports shall be used for temporary or moving construction operation only.

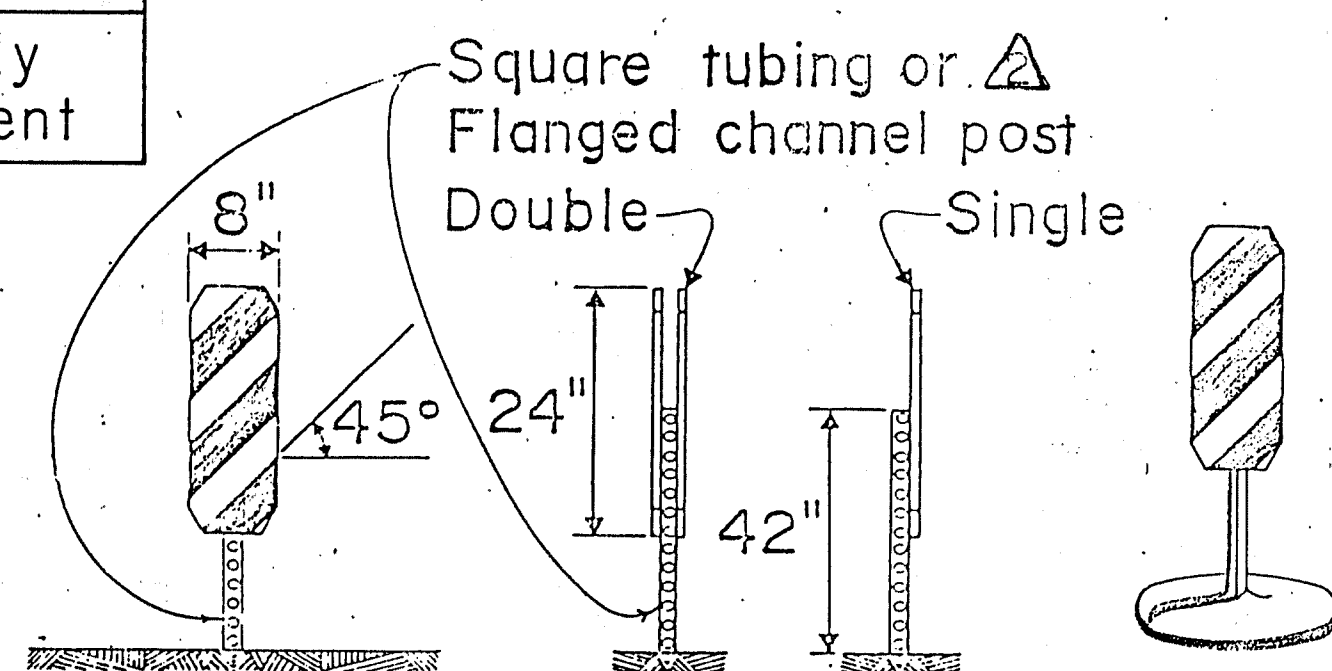
PORTABLE SIGN SUPPORT (TYPICAL)

BARRICADES - CHARACTERISTICS

	I	II	III
WIDTH OF RAIL	8"min.-12"max.	8"min.-12"max.	8"min.-12"max.
LENGTH OF RAIL	6' to 8'	3'min.-4'max.	6' or 8'
WIDTH OF STRIPES	6 ins.	6 ins.	6 ins.
HEIGHT	3 ft. min.	3 ft. min.	5 ft. min.
TYPE OF FRAME	Demountable or heavy "A" frame	Light "A" frame	Posts or skids
FLEXIBILITY	Essentially movable	Portable	Essentially permanent

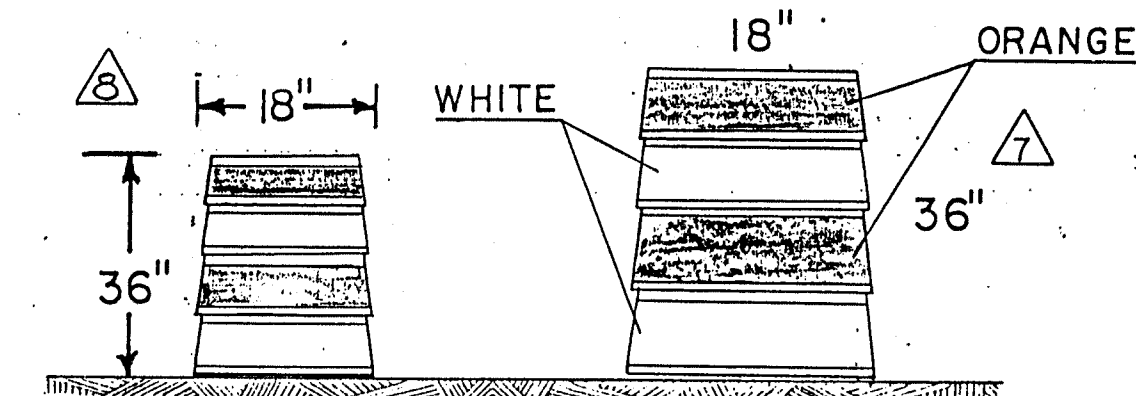
Rail shall be 1/2" min. 5 ply sign grade plywood or 2"x8" S4S quality wood. On Types "I" and "II", metal rails, if used, must be light weight material, commensurate with structural soundness. Stripes shall slant downward at 45° toward the side which traffic is to pass.

DETAIL OF BARRICADE
RAIL STRIPING



Panel to be 0.060 min., 6061-T6, or 5052-H38 aluminum alloy mounted on 1/2" min. square steel tubing post or 1.33 lb./ft. min. flanged channel post. Stripes shall slant downward at 45° toward the side which traffic is to pass. For temporary installation the post may be set to 3 ft. below ground or the panels may be mounted on stanchions.

CHANNELIZATION DEVICES
(VERTICAL PANELS)



With two (2) orange stripes minimum and alternating white stripes, all reflective tape or sheeting.

CHANNELIZATION DEVICES
(BARRELS)

GENERAL NOTES

1. All signs, sign materials, beacons, and barricade warning lights shall conform to the standards set forth in the M.U.T.C.D. 1978 edition.
2. The entire area of orange and white stripes shall be reflectorized on all barricades, barrels, vertical panels or other channelization devices when used on construction, detours, or participating connections, by use of reflective sheeting or tape.
3. Red and white barricades may be used to mark the end of a road, street, or highway where there is no crossroad or outlet at locations considered permanent and semi-permanent closures or termination of roadways.
4. Flashing beacons or steady burn lights, when used on barricades, shall be positioned above the top rail of the barricade, facing traffic.
5. High intensity flashing beacons shall be used to mark obstructions or hazards. Type "C" steady burn light may be used for delineation at night.
6. All barricade framing and supports, other than galvanized metal, shall be painted white.

THIS SERIAL REVISED: 9-20-88

REVISOR	REVISION	DATE
1	REVISED PORT. SIGN SUPPORT DETAILS	3/15/80 T.G.M.
2	REVISED PORT. SIGN SUPPORT DETAILS	1/31/80 T.G.M.
3	REVISED NOTE No. 1	9/24/79 T.G.M.
4	ADDED 5052 - H38 ALUMINUM ALLOY	5-9-76 T.G.M.
5	ADDED FLANGED CHANNEL POST	5-4-78 T.G.M.
6	REVISED BARREL DIMENSIONS	9-20-88
7	CHANGED No. of STRIPES ON BARRELS	3-4-88 E.R.

REVISIONS (OR CHANGE NOTICES)

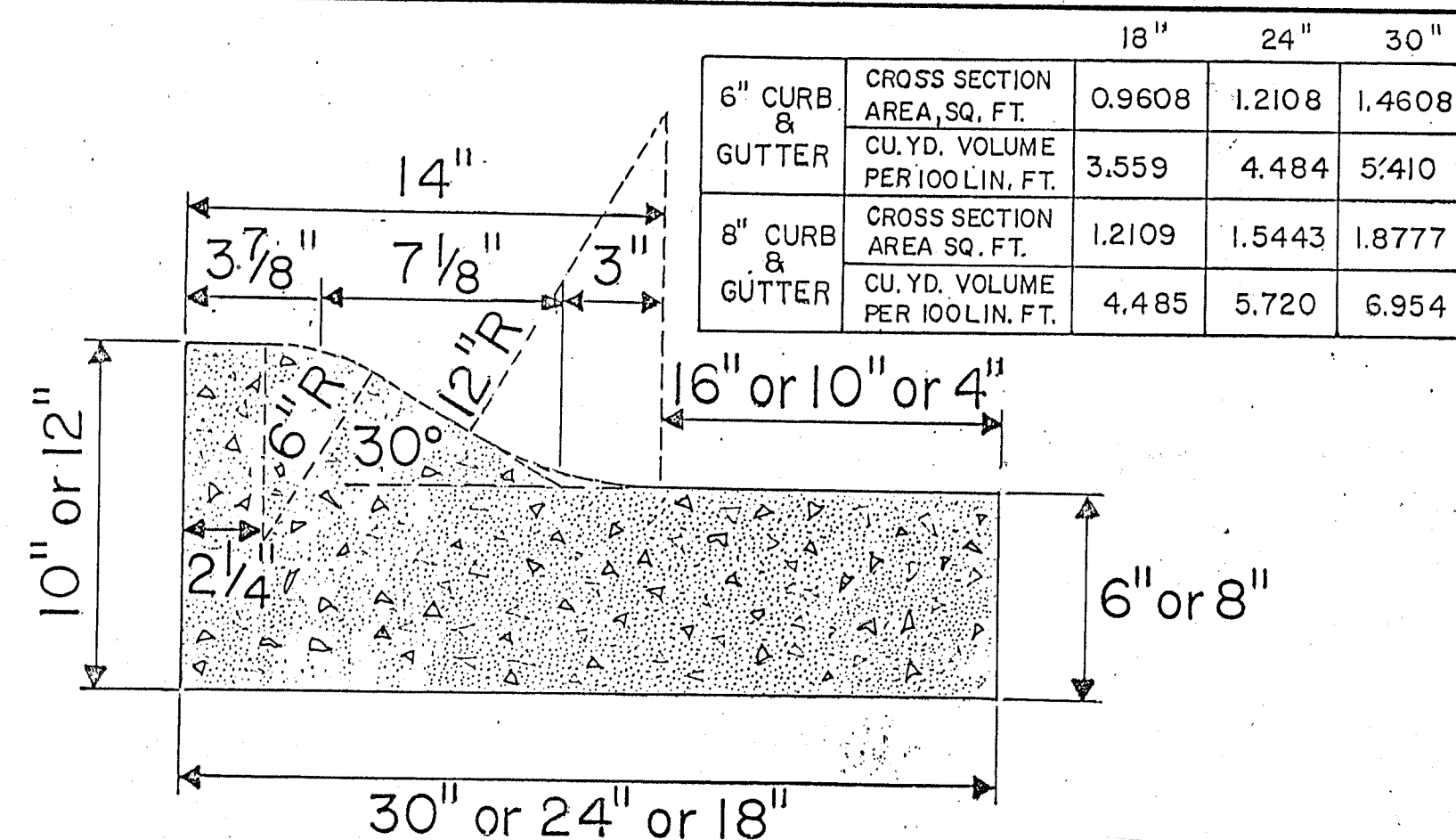
NEW MEXICO
STATE HIGHWAY DEPARTMENT

BARRICADES AND
CHANNELIZATION
DEVICES

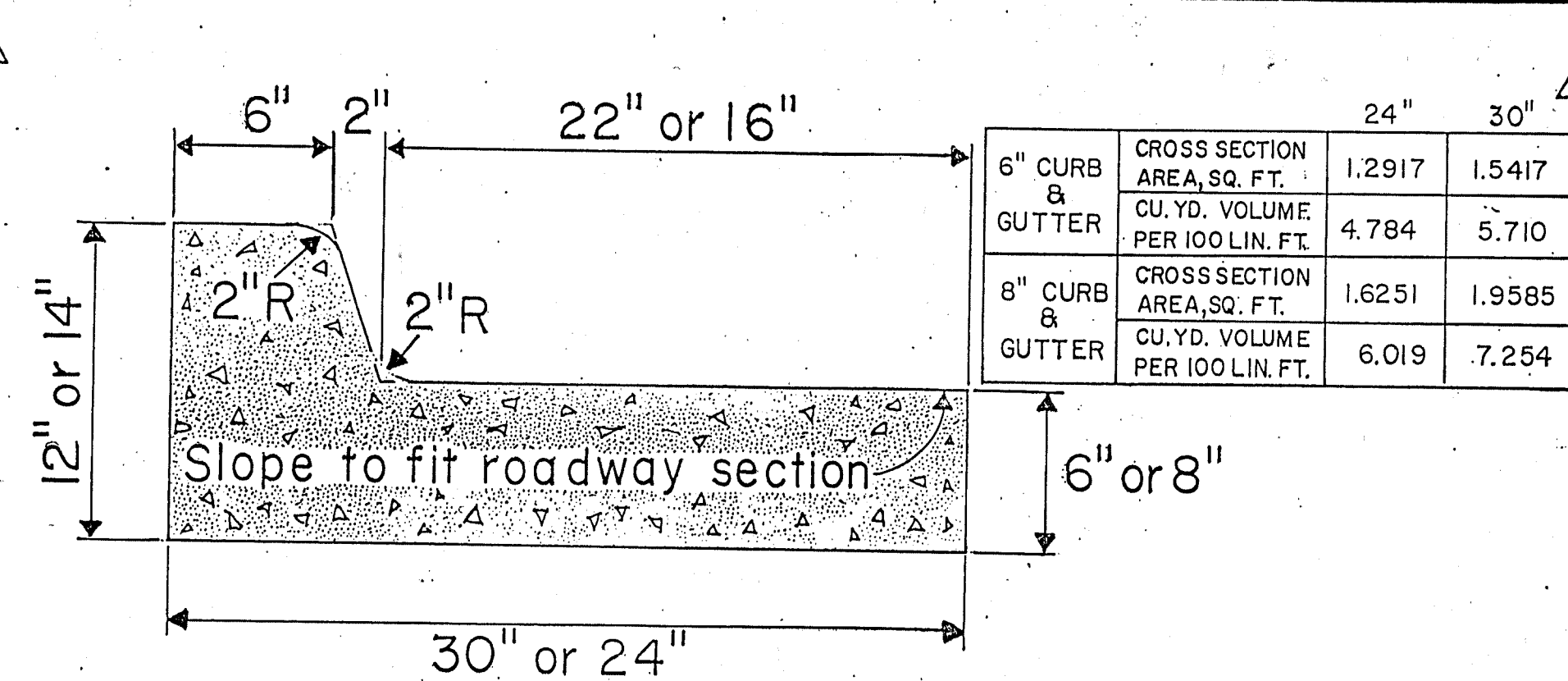
DESIGNED BY J.G.	APPROVAL	DATE
DRAWN BY J.L.B.	RECOMMENDED	10-7-77
CHECKED BY J.G.	APPROVED	DATE

SERIAL Sn 77-9 SHEET 9 OF 9

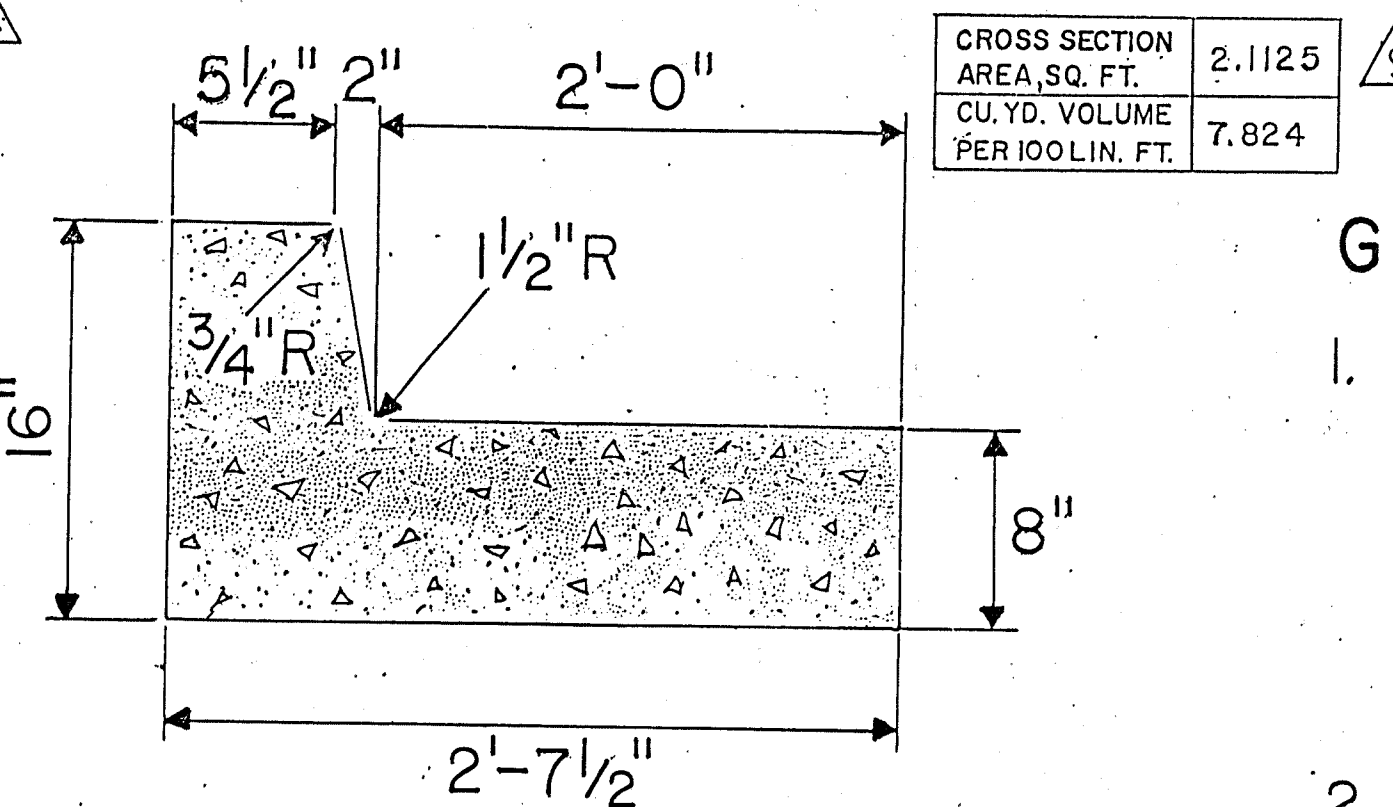
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20-19237-171-12797



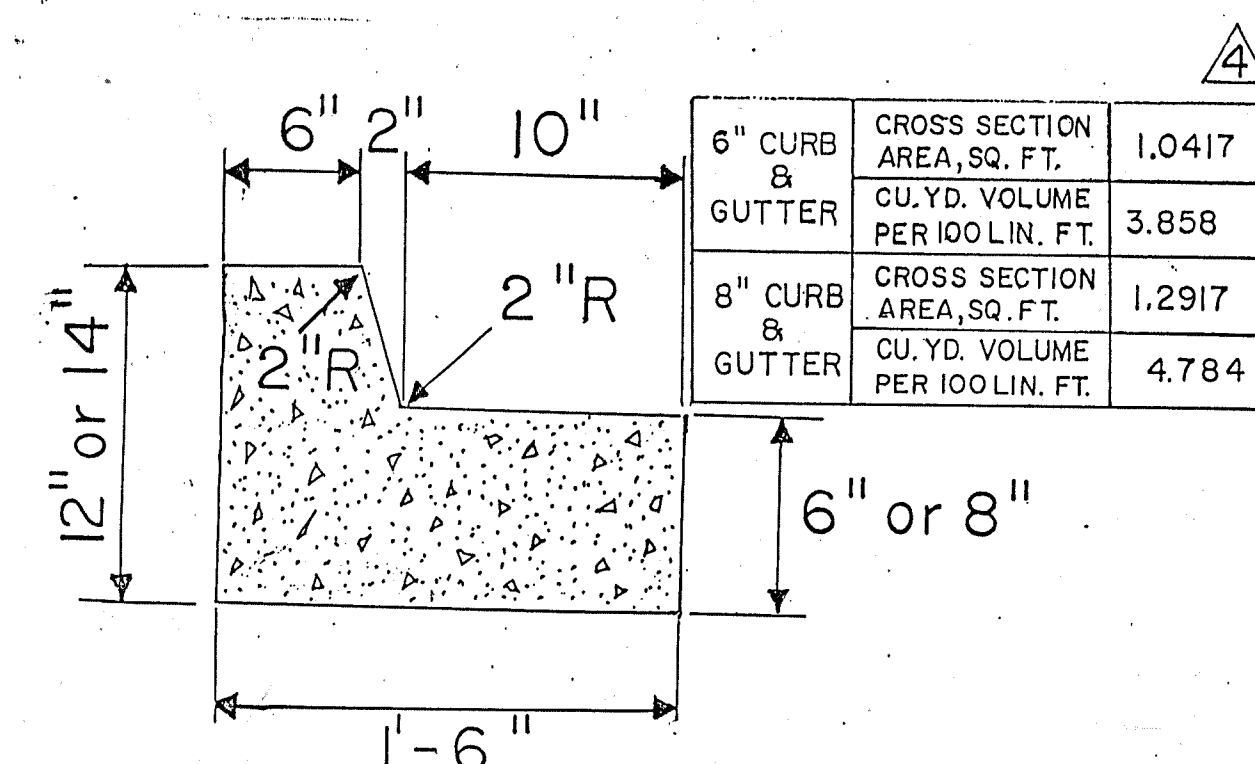
CONCRETE MOUNTABLE CURB AND GUTTER TYPE "A"



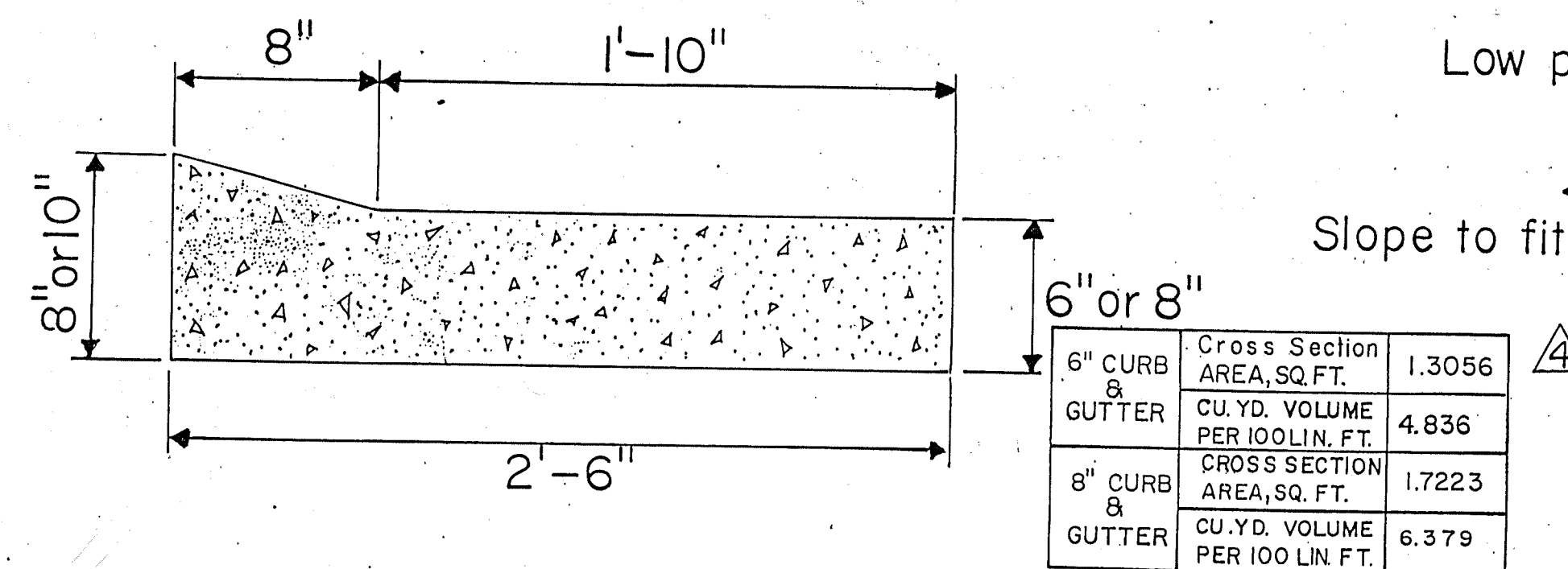
CONCRETE BARRIER CURB AND GUTTER TYPE "B"



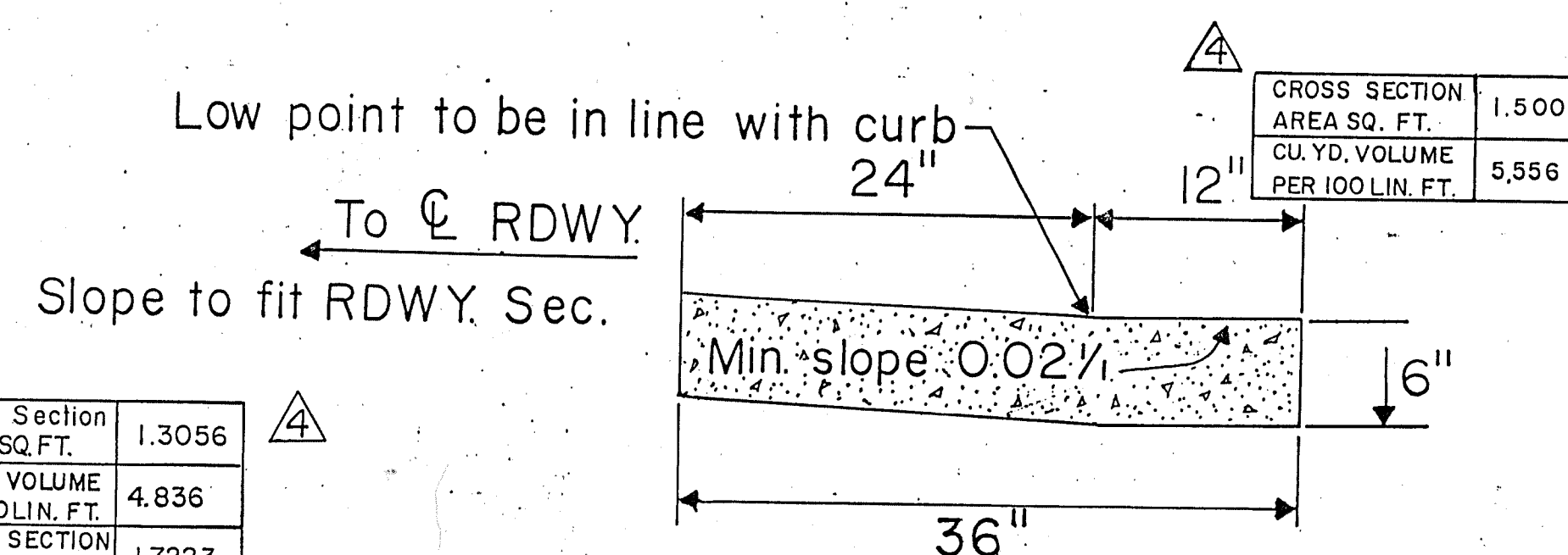
CONCRETE BARRIER CURB AND GUTTER TYPE "C"



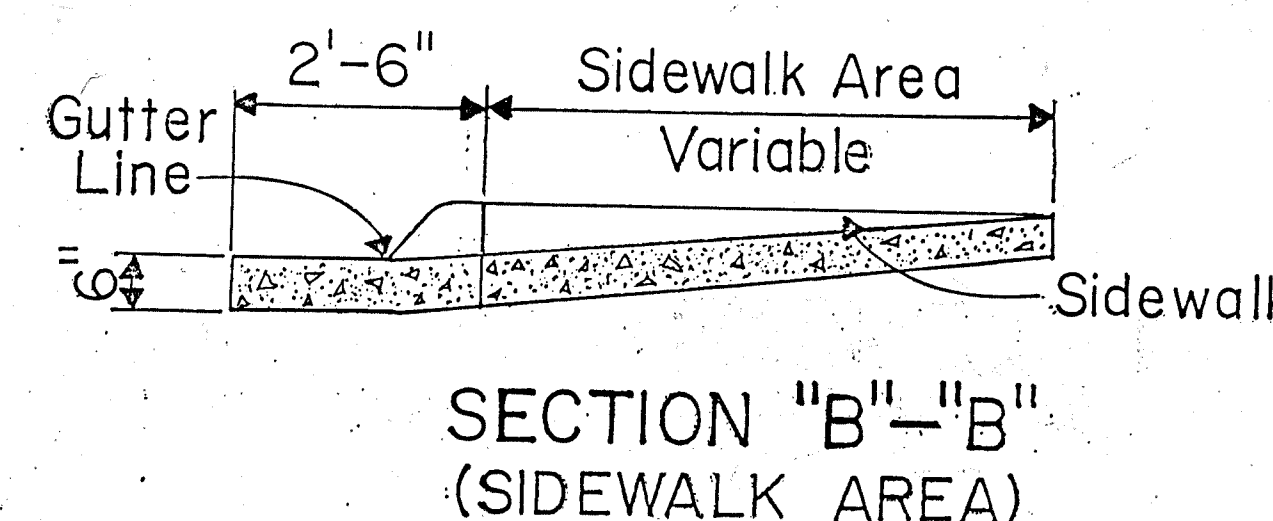
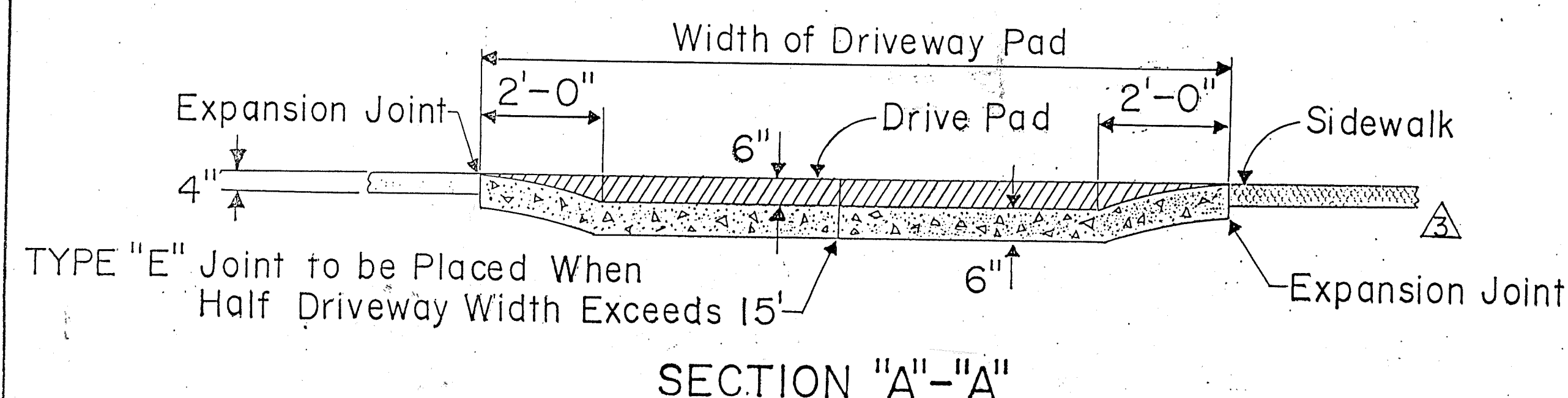
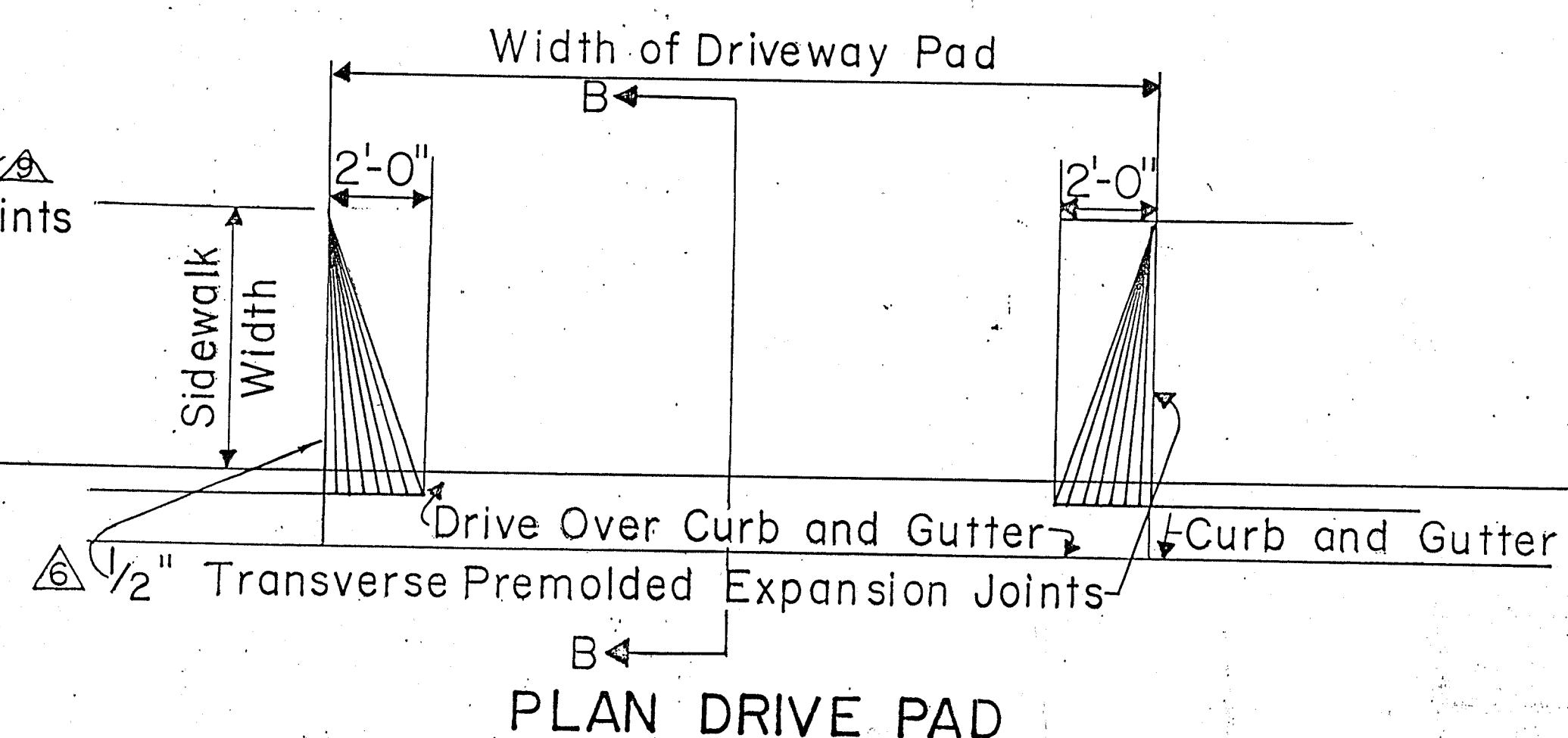
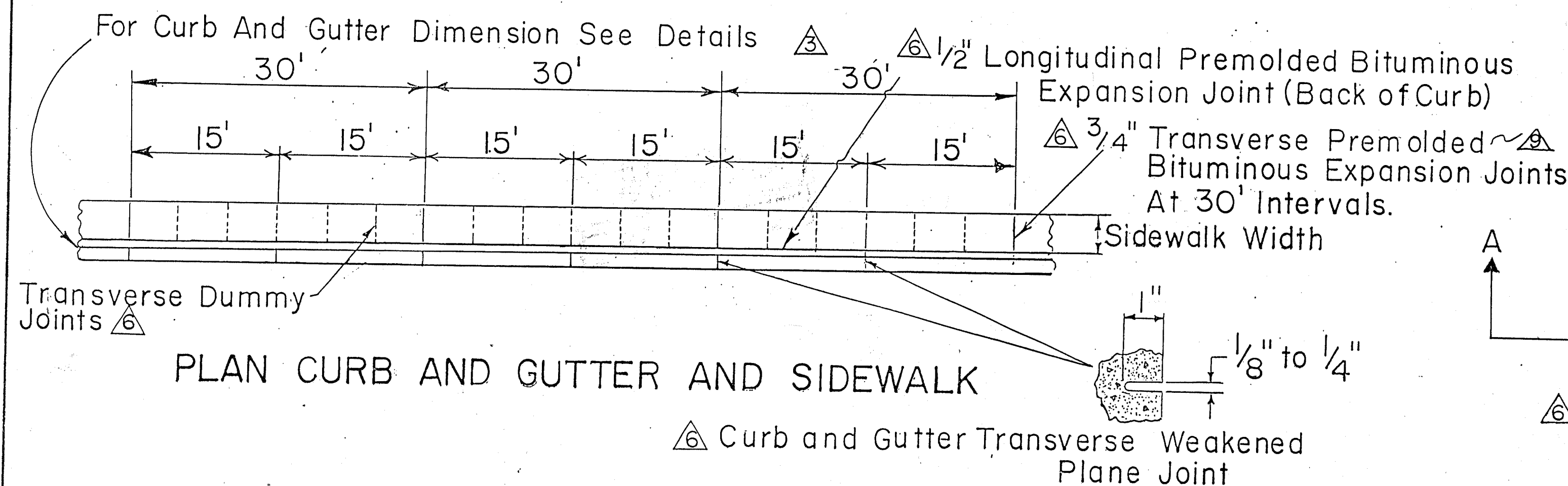
CONCRETE BARRIER CURB AND GUTTER TYPE "D"



CONCRETE LAYDOWN CURB TYPE "E"



CONCRETE VALLEY GUTTER



GENERAL NOTES

1. End of days pour, 30 minute interruptions, cold joints and drop inlets shall determine the location of a construction joint and a 0.75" pre-molded bituminous joint is required.

2. Place transverse weakened plane joints at 15' intervals and at end of radius points or island noses.

3. For wheel chair ramp installation details see Standard TWR-001-01.

4. Material on which sidewalk is to be placed shall be compacted to 90% of maximum density as determined by AASHTO T99, Method C.

5. Excavation and premolded joints to be included in unit bid price for sidewalks. Sidewalk to be scored 1/2" deep in squares not less than 4' in length.

6. Dummy joints may be substituted for 3/4" transverse premolded bituminous expansion joints on slip-formed curb and gutter.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
24-4237-91 13897

Added Note No. 6	9/18/79	J.R.
Sidewalk, Curb and Gutter Plan Clarified	9/29/77	J.R.
Deleted R/W Line	7/11/77	J.R.
Added Quantities to C & G	3/18/77	C.L.O.
Correct Cross Sect. Quantity for Type "C"	9-11-90	M.P.
Rev. Trans. Bit. Expansion Joint Interval		S.J.M.
Changed Standard No.-Note 3	1-31-86	DRR.
IDENT. NO.	DESCRIPTION	DATE BY

REVISIONS (OR CHANGE NOTICES)

NEW MEXICO
STATE HIGHWAY DEPARTMENT

CURB AND GUTTER

DESIGNED BY L.A.L. APPROVAL *[Signature]* 8-4-79
DRAWN BY J.L.B. RECOMMENDED - TRAFFIC ENGINEER DATE
CHECKED BY L.A.L. APPROVED *[Signature]* 8-19-79
ENGINEER OF DESIGN DATE

SERIAL TCG-001-09 SHEET 1 OF 1

Project No 4237.91 5th. 9-12