SUFFOLK COUNTY DEPARTMENT OF PUBLIC WORKS
HIGHWAY, TRAFFIC, AND BRIDGE DIVISIONS
STANDARD SHEETS

Page No.	Reference No.	Description
1	SC2-88	Benching Details
2	SC14-88	Reinforced Concrete Pipe
3	SC14ES-88	Reinforced Concrete Pipe End Sections
4	SC14W-88	Reinforced Elliptical Concrete Pipe
5	SC20-88	Headwall & Spillway & Typical Section Recharge Basin
6	SC27C-89	Longitudinal Joint Tie, Item No. 27C
7	SC27S-89	Transverse Joint Support, Item 27S
8	SC30-88	Frames, Grates, and Covers
9	SC33D-88	Heavy Post Blocked Out Corrugated Beam Guide Railing
10	SC33D-88N	Heavy Post Blocked Out Corrugated Beam Guide Railing
11	SC33DA-88	Approach Anchorage Unit for Heavy Post Blocked Out Corrugated Beam Guide Railing
12	SC33DB	Corrugated Beam Type Guide Rail Approach and Connection to Bridge Rail
13	SC33DBR	Transition Assembly, Four Rail Bridge Railing Heavy Post Blockout Corrugated Beam Guide Railing
14	SC33MB-88	Heavy Post Blocked Out Corrugated Beam Median Barrier
15	SC51-89	Standard Left Turn Treatment for Holding Lanes

Page No.	Reference No.	Description
16	SC51D-95	Curb, Sidewalk, Restoring Driveways and Pavement Restoration
17	SC76-88	Construction Signs and Barricade Details
~~18~~	~~SC76B-88~~	~~Maintenance and Protection of Traffic~~ Deleted 1/2014
19	SC100D-88	Drainage Structure, Precast Leaching Basin, Type "D" & Type "DX"
20	SC100F-94	Precast Leaching Basin Type F1, F2, F3
21	SC100G-89	Precast Leaching Basin Type G1, G2, G3
22	SC102S-88	Catch Basins & Manholes
23	SC102S2-89	Catch Basins, Type E1, E2, & E3
24	SC105-95	Sidewalk Ramp Details
25	SC106-88	Chain Link Fencing Details
26	SCP-106-89	Park Fence & Gate Details
27	SC124-89	Sodding and Sodded Drainage Ways
28	SC127-88	Tree Planting
29	SCTGT-88	General Traffic Notes Legend and Clearance Table
30	SCT4-88	Traffic Signal Details
31	SCT4M-88	Traffic Signal Details

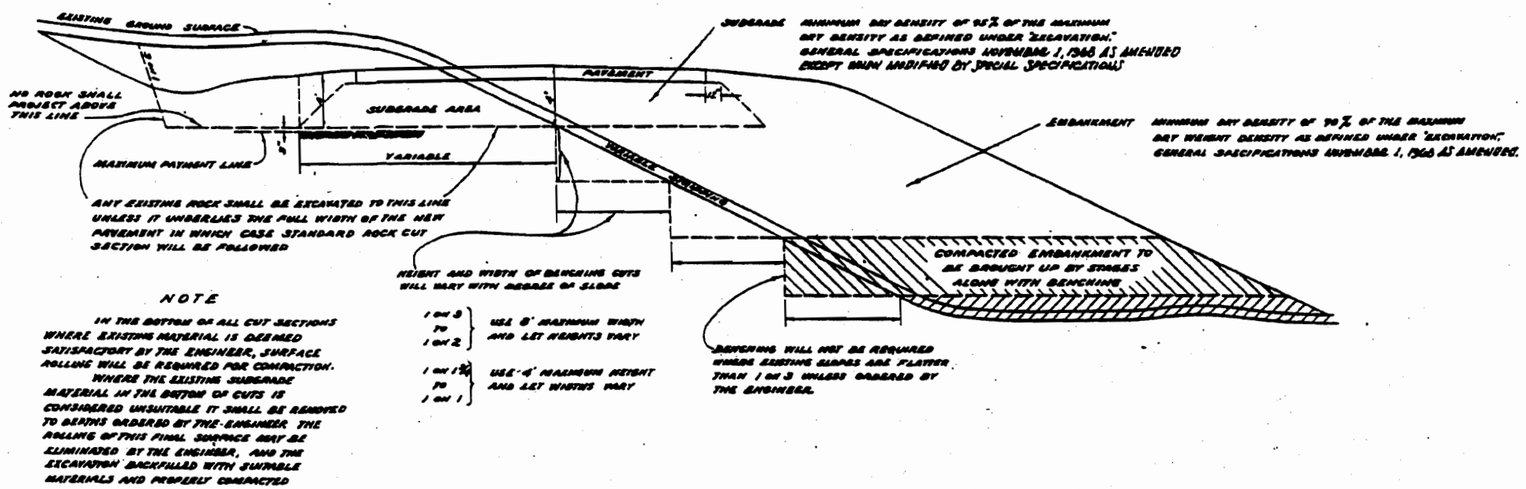
Page No.	Reference No.	Description
32	SCT20-88	Traffic Signal Details
33	SCT20CA	Traffic Signal Details
34	SCT21-88	Traffic Signal Details
35	SCT23-88	Traffic Signal Details
~~36~~	~~SCT71-88~~	~~Overhead Sign Installation~~ Deleted 1/2014
~~37~~	~~SCT645.1-88~~	~~Guide Sign Details~~ Deleted 1/2014
~~38~~	~~SCT645.2-88~~	~~Sign Post Details~~ Deleted 1/2014
~~39~~	~~SCT645.3-88~~	~~Road Number and Route Marker Details~~ Deleted 1/2014
~~40~~	~~SCT645.4-88~~	~~Standard Regulatory and Warning Signs~~ Deleted 1/2014
~~41~~	~~SCT650.1-88~~	~~Plowable Prismatic Markers, Typical Details~~ Deleted 1/2014
~~42~~	~~SCT685-88~~	~~Standard Regulatory and Warning~~ Deleted 1/2014
43		Waterstops and Joint Sealers
~~44~~		~~Temporary Concrete Barrier~~ Deleted 1/2014
45	Ref. NYS DoT BDD89-52A	Steel Bridge Railing- Four (4) Rail

Revised by Traffic Division 1/2014

COMPILED 5/1/1997

COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
JOSEPH P HURLEY, COMMISSIONER
YAPHANK, NEW YORK

TRANSVERSE SECTION



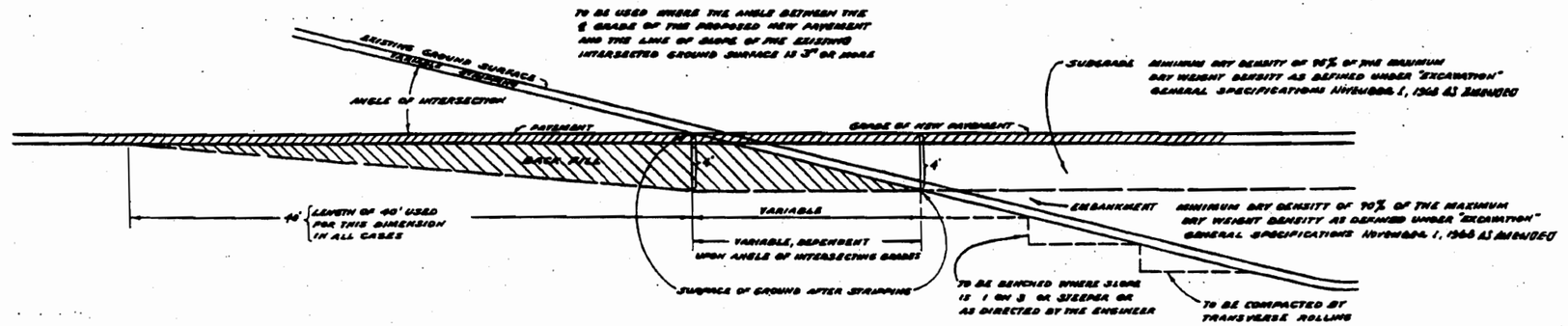
NOTE

IN THE BOTTOM OF ALL CUT SECTIONS WHERE EXISTING MATERIAL IS DEEMED SATISFACTORY BY THE ENGINEER, SURFACE ROLLING WILL BE REQUIRED FOR COMPACTION.

WHERE THE EXISTING SUBGRADE MATERIAL IN THE BOTTOM OF CUTS IS CONSIDERED UNSUITABLE IT SHALL BE REMOVED TO DEPTHS ORDERED BY THE ENGINEER. THE ROLLING OF THIS FINAL SURFACE MAY BE ELIMINATED BY THE ENGINEER, AND THE EXCAVATION BACKFILLED WITH SUITABLE MATERIALS AND PROPERLY COMPACTED

LONGITUDINAL TRANSITION

TO BE USED WHERE THE ANGLE BETWEEN THE ℄ GRADE OF THE PROPOSED NEW PAVEMENT AND THE LINE OF SLOPE OF THE EXISTING INTERSECTED GROUND SURFACE IS 3° OR MORE



TYPICAL SECTIONS SHOWING METHODS OF BENCHING

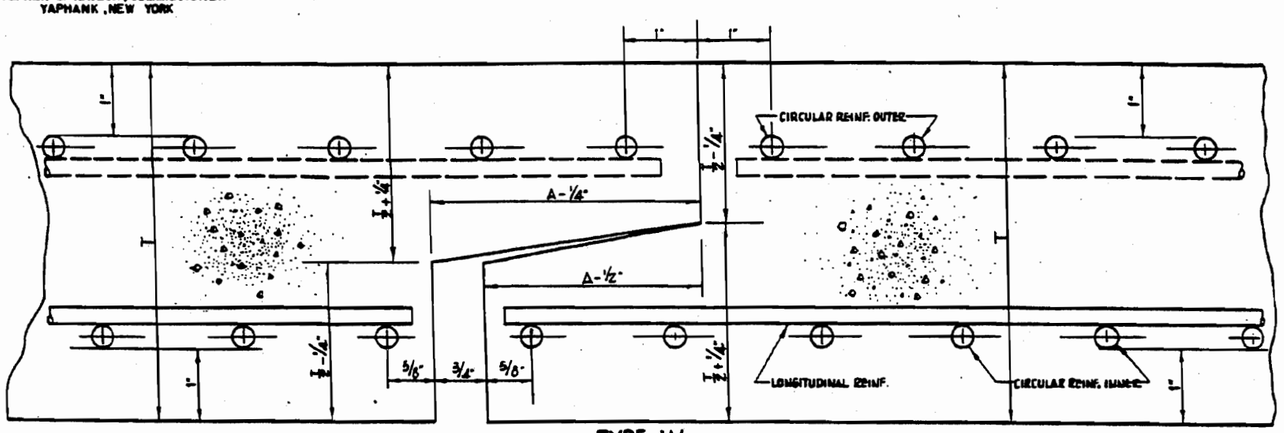
APPROVED BY _____
C ROGER MEEKER P.E., CHIEF ENGINEER

COUNTY OF SUFFOLK
NEW YORK

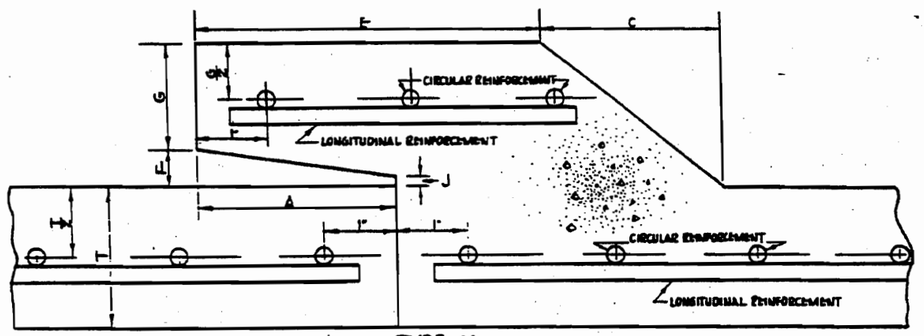
DEPARTMENT OF PUBLIC WORKS

BENCHING DETAILS

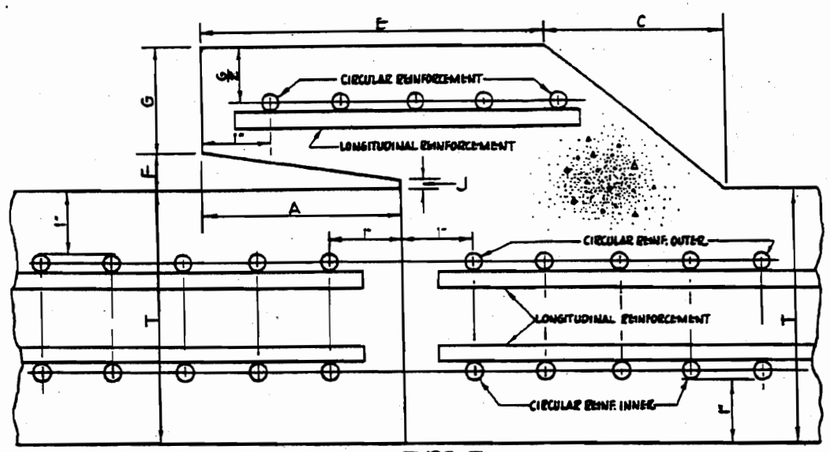
COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
STEPHEN G. HAYDUK, COMMISSIONER
YAPHANK, NEW YORK



TYPE-W-



TYPE-X-



TYPE-Z-

REINFORCED CONCRETE PIPE

DIAMETER INCHES	JOINT TYPE	MINIMUM 3-EDGE BEARING STRENGTH LBS. PER LIN. FT. ITEM-14 4000 PSI		MIN. AREA OF CIRC. REINF. SQ. IN. PER FT. & MIN. WALL THICKNESS (T) IN IN. ITEM-14			MINIMUM JOINT DIMENSIONS INCHES					
		0.01" CRACK	ULTIMATE	INNER	OUTER	T	A	C	E	F	G	J
12	X	2000	3000	0.07		2	2 3/4	2	1 3/4	1/2	1 1/2	1/2
15	X	2500	3750	0.10		2 1/4	2 3/4	2 1/2	1 3/4	1/2	1 3/4	1/2
18	X	3000	4500	0.14		2 1/2	2 3/4	2 1/2	1 3/4	1/2	1 3/4	1/2
21	X	3500	5250	0.20		2 3/4	3	2 3/4	2	1/2	2 1/4	1/2
24	X	4000	6000	0.27		3	3	2 3/4	2 1/4	1/2	2 1/4	1/2
27	W OR Z	4500	6750	0.31		3 1/4	3	3	2	1/2	2 1/2	1/2
30	W OR Z	5000	7500	0.35		3 1/2	3 1/2	3 1/2	2 1/2	3/4	2 3/4	1/2
33	W OR Z	5500	8250	0.27	0.20	3 3/4	3 1/2	3 1/2	2 3/4	3/4	2 3/4	1/2
36	W OR Z	6000	9000	0.30	0.22	4	3 1/2	3 3/4	3	3/4	3	1/2
42	W OR Z	7000	10500	0.35	0.26	4 1/2	3 1/2	4 1/2	3 1/2	3/4	3 1/4	1/2
48	W OR Z	8000	12000	0.42	0.32	5	3 1/2	4 1/2	3	3/4	3 3/4	1/2
54	W OR Z	9000	13500	0.50	0.37	5 1/2	4	5 1/2	3	1	4 1/2	3/4
		5000 PSI										
60	W OR Z	10000	15000	0.53	0.45	6	4	5 1/2	3	1	4 1/2	3/4
66	W	11000	16500	0.69	0.57	6 1/2	4 1/2					
72	W	12000	18000	0.79	0.60	7	4 1/2					
78	W	13000	19500	0.77	0.56	7 1/2	5					
84	W	14000	21000	0.85	0.64	8	5					
90	W	15000	22500	@	@	@	5 1/2					
96	W	16000	24000	@	@	@	5 1/2					

1. MINIMUM LAYING LENGTH FOR ALL DIAMETERS SHALL BE FOUR FEET.
2. CIRCULAR REINFORCING SHALL NOT EXCEED 8" C.TO C. SPACING UP TO 60" DIAMETERS. FOR THOSE DIAMETERS OVER 60", WHERE STEEL AREAS REQUIRED CANNOT BE FURNISHED IN ONE CAGE, THAN CAGES OF ONE HALF THE STEEL AREA SHOWN MAY BE SUBSTITUTED IF PROPERLY FASTENED TOGETHER SO AS TO ACT AS A UNIT. LONGITUDINAL REINFORCING SHALL NOT EXCEED 8" C.TO C. SPACING AND SHALL CONTAIN NOT LESS THAN 0.029 SQ. IN. OF STEEL AREA PER LINEAR FOOT PER CAGE.
3. THE MANUFACTURER MAY SUBMIT ALTERNATE DESIGNS TO THE COMMISSIONER OF PUBLIC WORKS FOR APPROVAL PRIOR TO MANUFACTURE PROVIDED THE JOINT DIMENSIONS REMAIN AS SHOWN HEREIN.
4. # ITEM-14 REINFORCED CONCRETE PIPE OF DIAMETERS OVER 84" WHEN REQUIRED BY THE PLANS WILL BE IN ACCORDANCE WITH THE MANUFACTURER'S DESIGN AS APPROVED BY THE COMMISSIONER OF PUBLIC WORKS.
5. @ THE MINIMUM COMPRESSIVE STRENGTH OF THE CONCRETE SHALL BE AS SPECIFIED IN THE TABLE.
6. THE PIPE SHALL COMPLY WITH PARA.706-02 REINFORCED CONCRETE PIPE CLASS III OF THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS DATED JANUARY 1, 1990 AND LATEST REVISIONS.

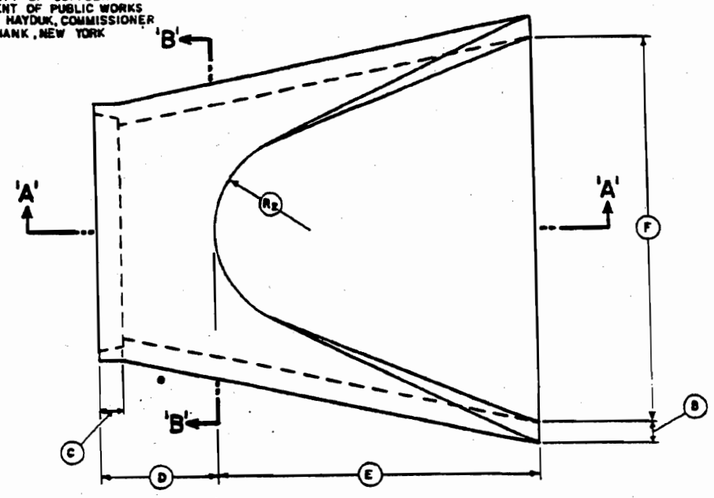
APPROVED BY: C. ROGER MEEKER P.E., CHIEF ENGINEER

COUNTY OF SUFFOLK
NEW YORK

DEPARTMENT OF PUBLIC WORKS

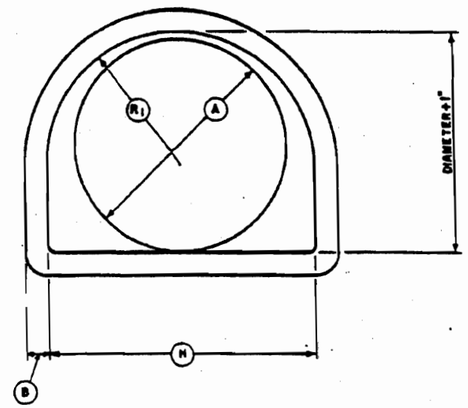
REINFORCED CONCRETE PIPE

COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
STEPHEN G. HAYDUK, COMMISSIONER
YAPHANK, NEW YORK

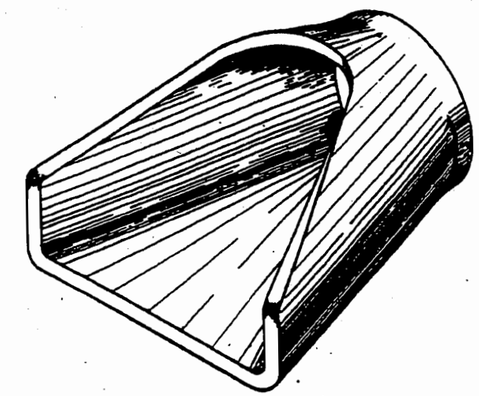


PLAN

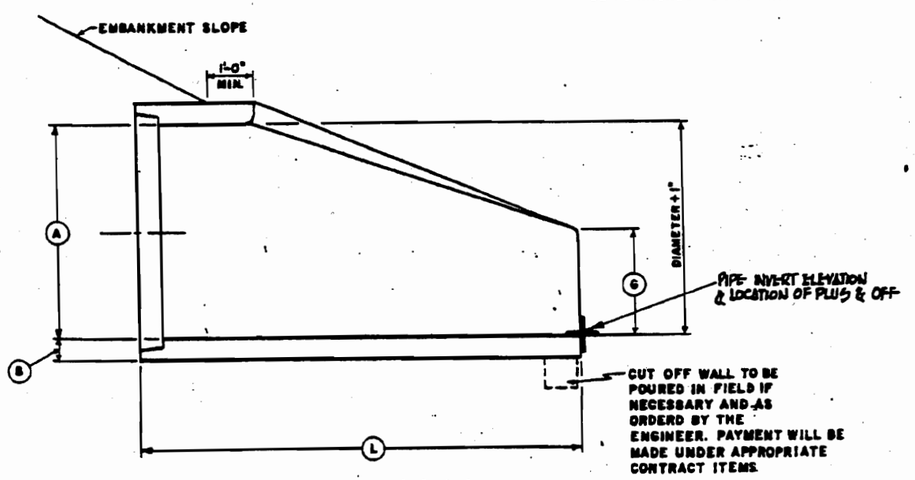
NOTE: PLAN AND SECTION 'A'-'A' INDICATES GROOVE TYPE JOINT ONLY. OTHER TYPES OF JOINTS (TONGUE, BELL, SPIGOT) SHALL BE FURNISHED AS REQUIRED.



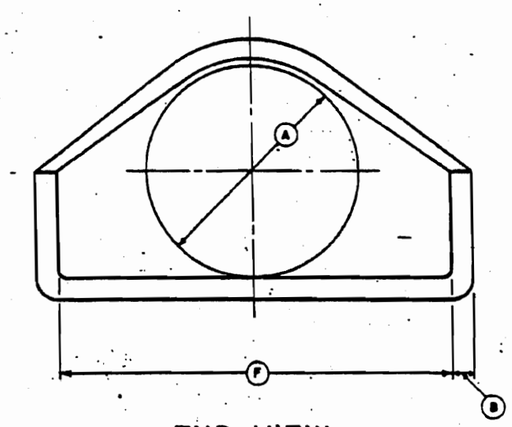
SECTION 'B'-'B'



PICTORIAL VIEW



SECTION 'A'-'A'



END VIEW

NOTES:

1. THE GENERAL SPECIFICATION FOR ITEM 14 – REINFORCED CONCRETE PIPE CLASS IV COVERING (A) WORK, (B) METHOD, (C) MATERIAL AND (D) TESTS SHALL APPLY EXCEPT AS MODIFIED BELOW.
2. REINFORCING TO BE AS SPECIFIED FOR ITEM 14 – REINFORCED CONCRETE PIPE CLASS IV WHERE TWO CAGES OF REINFORCING ARE SPECIFIED IN ITEM 14 IT SHALL APPLY TO BARREL OF END SECTION ONLY. REINFORCING FOR APRON SECTION SHALL BE ONE CAGE EQUAL TO THE INNER CAGE OF THAT REQUIRED IN BARREL.
3. JOINTS SHALL BE TONGUE AND GROOVE OR BELL AND SPIGOT AS REQUIRED AND DIMENSIONS SHALL CONFORM TO THE APPROPRIATE STANDARD SHEET FOR REINFORCED CONCRETE PIPE CLASS IV.
4. TESTS SHALL BE IN ACCORDANCE WITH REQUIREMENTS OF REINFORCED CONCRETE PIPE CLASS IV EXCEPT THAT NO STRENGTH OR LOAD TESTS WITH BE REQUIRED.

BASIC DIMENSIONS

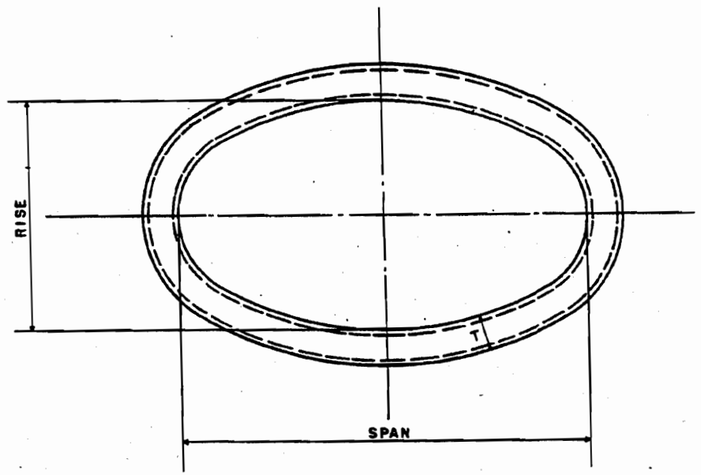
A	B	C	D	E	F	G	H	DIA.+1"	SLOPE	R_1	R_2	RATIO $\frac{A-2}{A-1}$	L
12"	2"	SEE NOTE NO. 3	48 5/16"	24"	24"	4"	19 13/16"	13"	2.7 : 1	10 1/8"	9"	1.92	6'-0 3/8"
15"	2 1/4"		48"	27"	30"	6"	24 1/4"	16"	2.7 : 1	12 3/16"	13"	1.90	6'-1"
18"	2 1/2"		46"	27"	36"	8"	29"	19"	2.7 : 1	15 1/2"	12"	1.88	6'-1"
24"	3"		30"	43 1/2"	48"	9 1/2"	33 3/16"	25"	2.8 : 1	16 13/16"	14"	1.58	6'-1 1/2"
30"	3 1/2"		19 3/4"	54"	60"	12"	37"	31"	2.8 : 1	18 1/2"	15	1.41	6'-1 3/4"
36"	4"		34 3/4"	63"	72"	15"	47 13/16"	37"	2.9 : 1	24 9/16"	20"	1.50	6'-1 3/4"
42"	4 1/2"		35"	63"	78"	21"	53 7/8"	43"	2.9 : 1	27 1/2"	22"	1.48	6'-2"
48"	5"		26"	72"	87"	24"	59 1/2"	49"	2.9 : 1	30"	22"	1.40	6'-2"

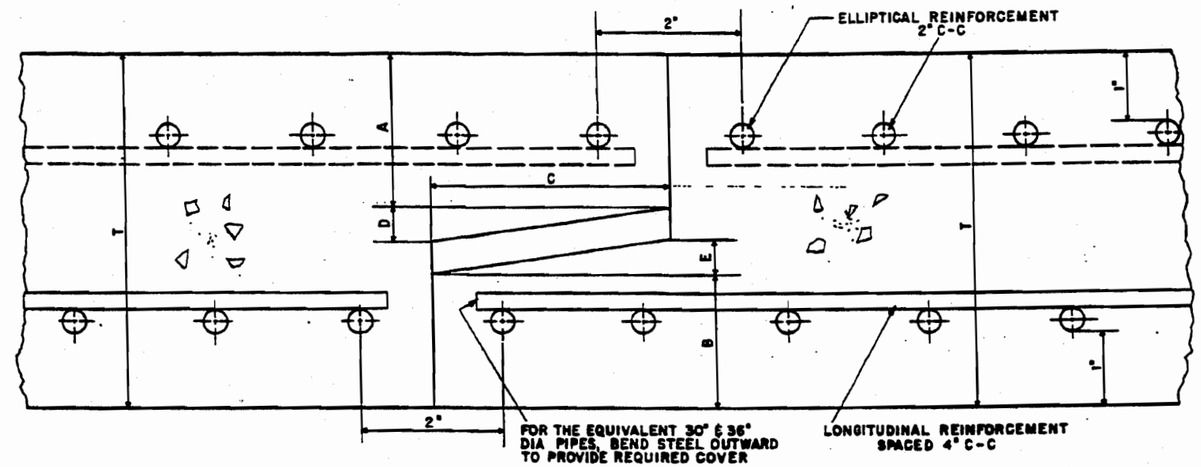
* AREA – 1 = AREA OF NOMINAL DIAMETER
AREA – 2 = AREA THRU SECTION 'B'-'B'

APPROVED BY: C. ROGER MEEKER P.E., CHIEF ENGINEER

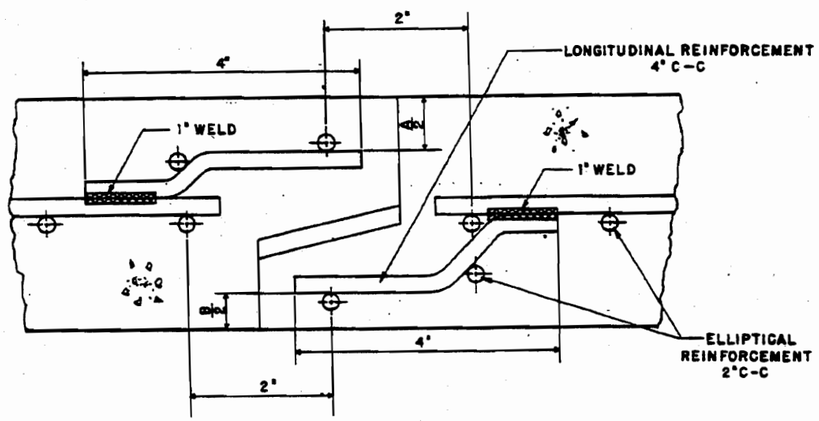
COUNTY OF SUFFOLK
NEW YORK
DEPARTMENT OF PUBLIC WORKS
REINFORCED CONCRETE PIPE END SECTIONS

COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
JOSEPH P. HURLEY, COMMISSIONER
YAPHANK, NEW YORK





JOINT DETAIL
(FOR 30" DIAMETER & LARGER)



JOINT DETAIL
(FOR 18" & 24" EQUIVALENT ROUND PIPE DIAMETERS)

I.D. OF ROUND PIPE EQUIV	INSIDE NOMINAL		MINIMUM DIMENSIONS (INCHES)						AREA SQ. FT.	MAX. LENGTH	ITEM 14W			
											MIN REINFORCEMENT IN LBS/LINEAR FT		MIN STRENGTH IN LBS PER FT LATERAL LENGTH - 3 EDGE BEARING	
	RISE	SPAN	T	A	B	C	D	E			INSIDE CAGE	OUTSIDE CAGE	0.01" CRACK	ULTIMATE
18"	14"	23"	$2\frac{3}{4}$	$1\frac{1}{8}$	$\frac{7}{8}$	2	$\frac{1}{2}$		1.8	6'	0.27	–	3,900	5,800
24"	19"	30"	$3\frac{1}{4}$	$1\frac{1}{2}$	1	2	$\frac{1}{2}$		3.3	6'	0.39	–	5,000	7,800
											2 LINES REINF 30" & LARGER			
30"	24"	38"	$3\frac{3}{4}$	2	1	2	$\frac{1}{2}$		5.1	6'	0.34	0.34	6,400	9,600
36"	29"	45"	$4\frac{1}{2}$	$2\frac{1}{2}$	$1\frac{1}{4}$	$2\frac{1}{4}$	$\frac{1}{2}$		7.3	6'	0.39	0.39	7,500	11,300
42"	34"	53"	5	$2\frac{3}{4}$	$1\frac{1}{2}$	$2\frac{1}{2}$	$\frac{1}{2}$		10.0	6'	0.50	0.50	8,900	13,300
48"	38"	60"	$5\frac{1}{2}$	$2\frac{3}{4}$	2	3	$\frac{1}{2}$		13.0	6'	0.66	0.66	10,000	15,000
54"	43"	68"	6	3	$2\frac{1}{8}$	3	$\frac{5}{8}$		16.5	6'	0.76	0.76	11,400	17,000
60"	48"	76"	$6\frac{1}{2}$	$3\frac{3}{8}$	$2\frac{1}{4}$	$3\frac{1}{4}$	$\frac{5}{8}$		20.4	6'	0.84	0.84	12,700	19,000

1 EACH LINE OF CIRCUMFERENTIAL REINFORCEMENT SHALL BE ASSEMBLED INTO A CAGE WHICH SHALL CONTAIN SUFFICIENT LONGITUDINAL MEMBERS, EXTENDING THROUGHOUT THE ENTIRE LENGTH OF THE PIPE SECTION, TO MAINTAIN THE REINFORCEMENT IN SHAPE AND CORRECT POSITION

2 THIS PIPE SHALL BE USED UNDER MINIMUM COVER OR LIMITED HEADROOM CONDITIONS.

3 THE SPECIFICATIONS FOR ITEM 14W SHALL APPLY EXCEPT THAT THE PIPE SHALL BE MANUFACTURED IN ACCORDANCE WITH THIS STANDARD STRUCTURE SHEET

4 THE WALL THICKNESS, REINFORCEMENT AND STRENGTH REQUIREMENTS SHALL BE NOT LESS THAN THE MINIMUM REQUIREMENTS GIVEN IN THE ABOVE TABLE. A TOLERANCE OF PLUS OR MINUS 2 % OF THE DIMENSIONS SPECIFIED WILL BE PERMITTED IN SPAN AND RISE.

5 FOR ELLIPTICAL PIPE HAVING AN INSIDE AREA OF OVER 20.4 SQUARE FEET: THE MINIMUM AMOUNT OF STEEL REINFORCEMENT AND THE STRENGTH REQUIREMENTS SHALL BE BASED ON THE SPECIFIC DESIGN OF THE UNIT

6 THE MANUFACTURER MAY SUBMIT ALTERNATE REINFORCEMENT AND/OR WALL THICKNESS DETAILS TO THE DEPARTMENT FOR CONSIDERATION HE SHALL THEN PRODUCE TWO LENGTHS OF PIPE, BOTH OF WHICH MUST MEET THE THREE EDGE BEARING STRENGTH TEST REQUIREMENTS TO ATTAIN FULL APPROVAL.

REINFORCED ELLIPTICAL CONCRETE PIPE

ITEM NO. 14W

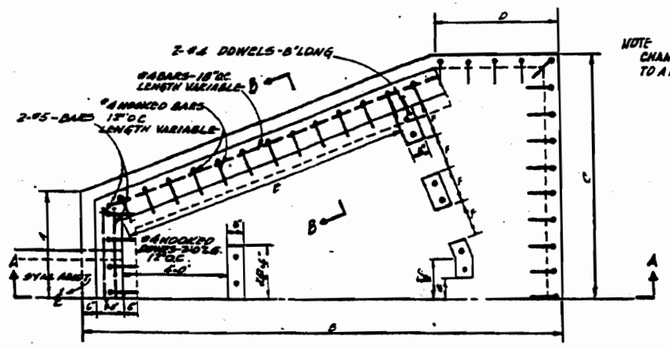
APPROVED BY
C. ROGER MEEKER P.E., CHIEF ENGINEER

COUNTY OF SUFFOLK
NEW YORK

DEPARTMENT OF PUBLIC WORKS

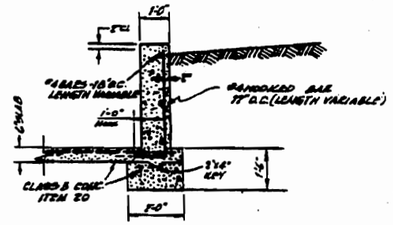
REINFORCED ELLIPTICAL CONCRETE PIPE

COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
STEPHEN G. HAYDUK, COMMISSIONER
YAPHANK, NEW YORK

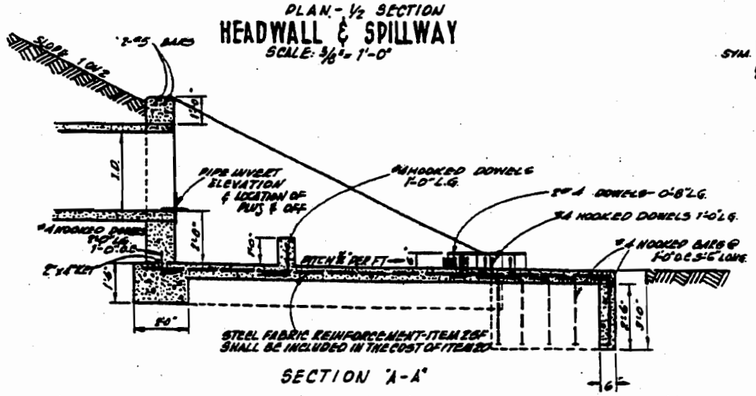


PLAN - ½ SECTION
HEADWALL & SPILLWAY
SCALE: 3/8" = 1'-0"

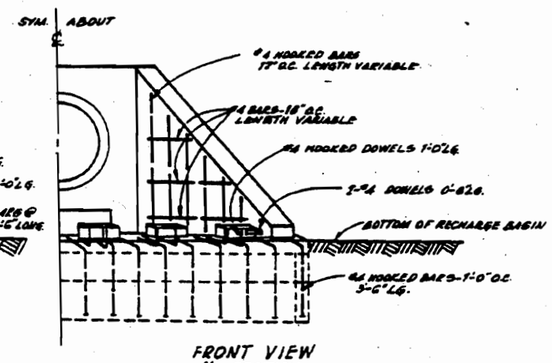
NOTE
CHAMFER ALL EXPOSED CONCRETE 1 INCH TO A POINT ONE FOOT BELOW FINISHED GROUND SURFACE.



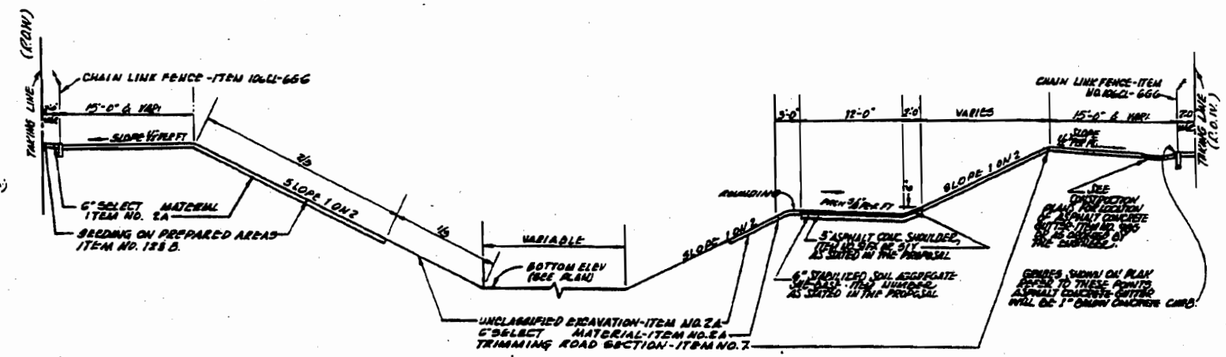
SECTION B-B



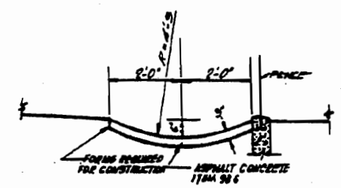
SECTION "A-A"



FRONT VIEW
½ SECTION

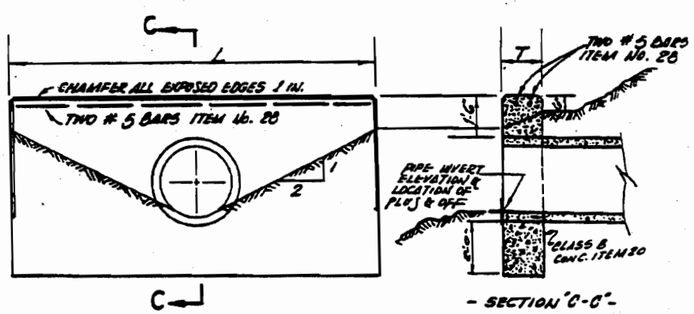


TYPICAL SECTION RECHARGE BASIN
SCALE: 1/16" = 1'-0"



TYPICAL SECTION
ASPHALT CONCRETE GUTTERS ITEM NO. 98G
SCALE: ½" = 1'-0"

DIMENSIONS								VOLUME	LBS.
PIPE DIAMETER	A	B	C	D	E	F	G	CUBIC FEET OF CONCRETE	ITEM NO. 28 STEEL BARS
18"	2'-10"	13'-3"	6'-5"	3'-0"	8'-3"	0'-11"	0'-6"	211	136
24"	3'-0"	15'-0"	7'-3"	3'-6"	9'-6"	1'-0"	0'-6"	234	167
30"	3'-3"	16'-6"	8'-3"	4'-0"	10'-9"	1'-2"	0'-9"	305	190
36"	4'-0"	18'-0"	9'-3"	4'-6"	11'-2"	1'-4"	0'-9"	374	216
42"	4'-3"	19'-3"	10'-0"	5'-0"	12'-3"	1'-6"	0'-9"	398	244
48"	4'-6"	20'-6"	10'-9"	5'-6"	13'-0"	1'-6"	1'-0"	461	275
54"	5'-3"	22'-3"	12'-0"	6'-0"	14'-0"	1'-8"	1'-3"	552	303
60"	5'-6"	24'-6"	12'-10"	6'-6"	15'-3"	1'-10"	1'-6"	571	337



STANDARD HEADWALL
SCALE: 3/8" = 1'-0"

PIPE SIZE	L IN FT.	T
12" & 15" CONT.	7'-0"	1'-6"
18" & 24" CONT.	8'-0"	1'-6"
24"	10'-4"	1'-6"
30"	12'-6"	1'-6"
36"	15'-0"	1'-10"
42"	17'-2"	1'-10"
48"	19'-6"	1'-10"

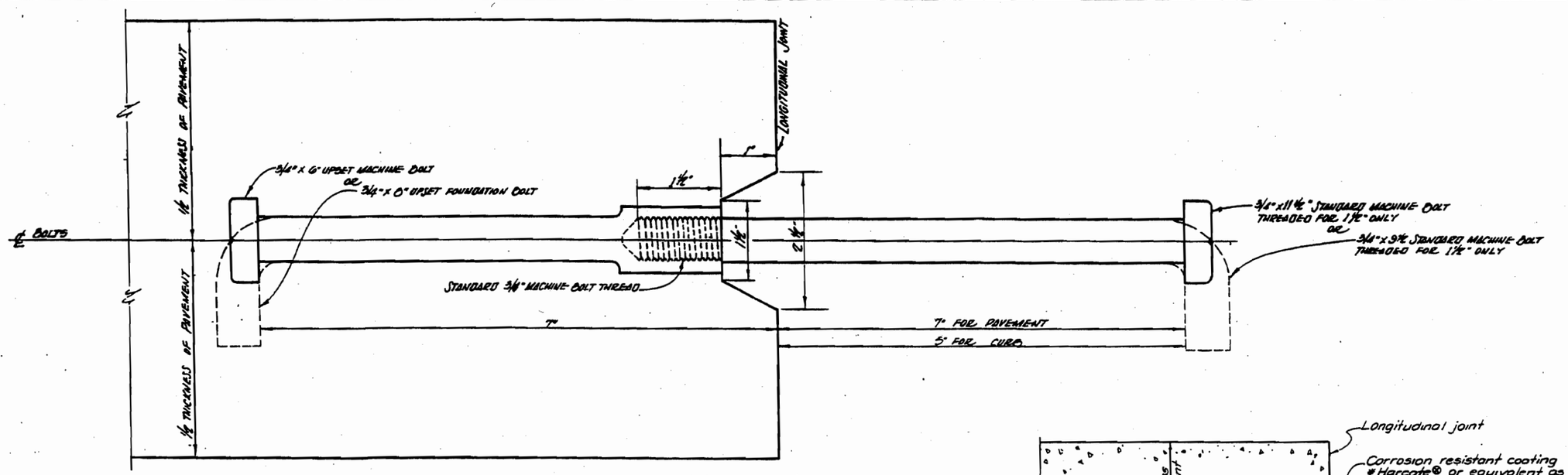
APPROVED BY: C. ROGER MEEKER P.E., CHIEF ENGINEER

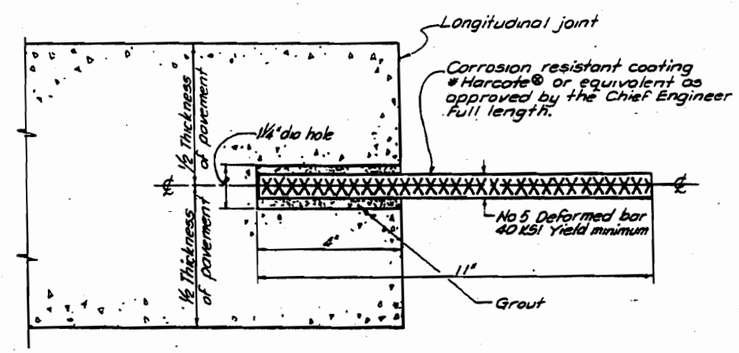
COUNTY OF SUFFOLK
NEW YORK

DEPARTMENT OF PUBLIC WORKS

HEADWALL & SPILLWAY & TYPICAL SECTION RECHARGE BASIN

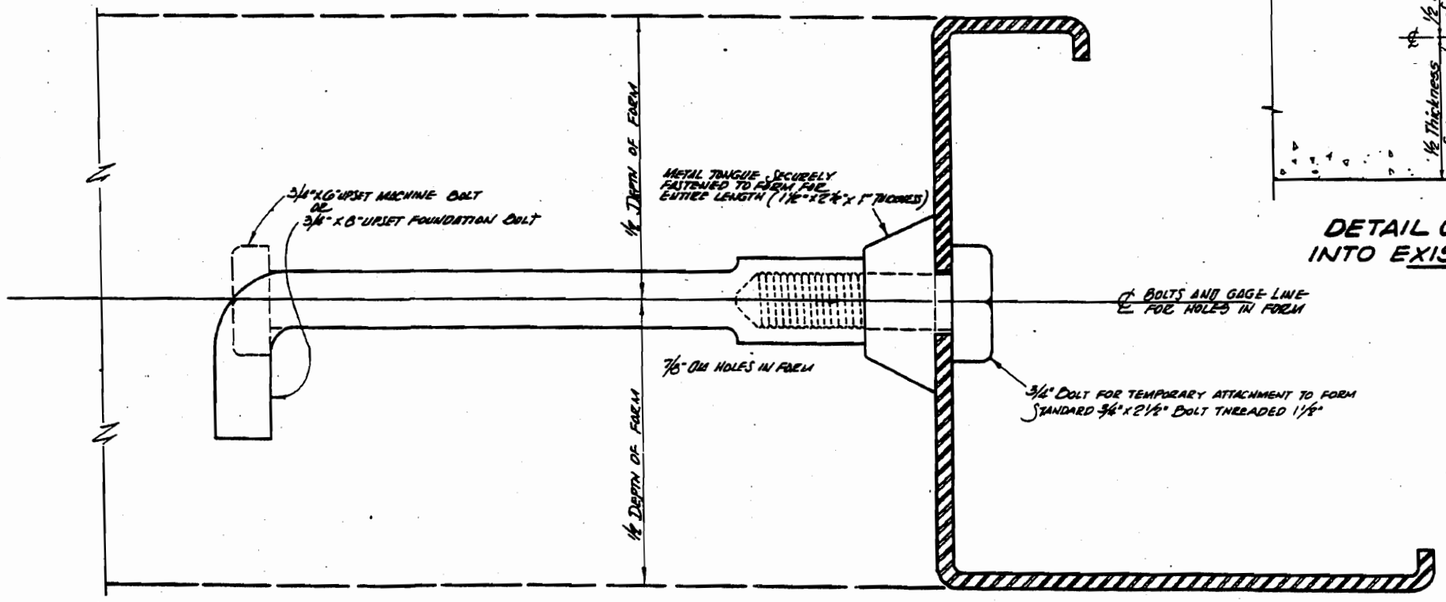
COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
JOSEPH P HURLEY, COMMISSIONER
YAPHANK, NEW YORK





DETAIL OF TIE ROD INSTALLATION INTO EXISTING CONCRETE PAVEMENT

Scale 1/2" = 1'-0"



LONGITUDINAL JOINT TIE
ITEM NO. 27C

SCALE · FULL SIZE

*Harcote® - Trade mark of A H Harris & Sons Inc.
Harcote - Epoxy coating nominal thickness 6 mils +12 or -3 mils
bond breaker as approved by the Chief Engineer

Normal thickness 5 mils +4 or -4 mils

Note:
For sawed joints see
Standard Sheet SC-27S-89

APPROVED BY C. Roger Meeker DATE 3/8/89
C. ROGER MEEKER P.E. CHIEF ENGINEER

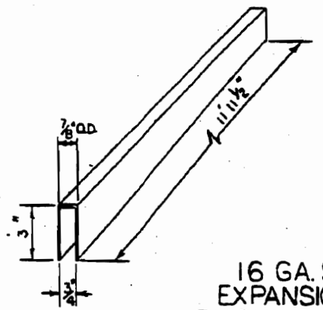
DATE	DESCRIPTION	APPROVAL
6/29/89	Detail of Tie Rod Installation added	

REVISIONS

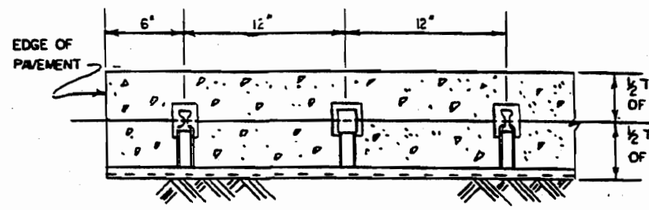
COUNTY OF SUFFOLK
NEW YORK
DEPARTMENT OF PUBLIC WORKS

LONGITUDINAL JOINT TIE
ITEM NO. 27C

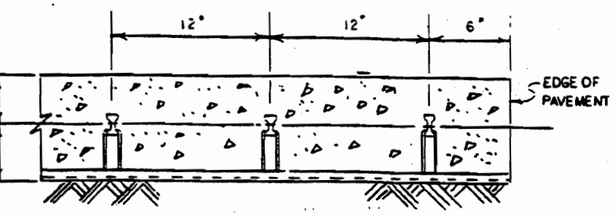
COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
JOSEPH P HURLEY, COMMISSIONER
YAPHANK, NEW YORK



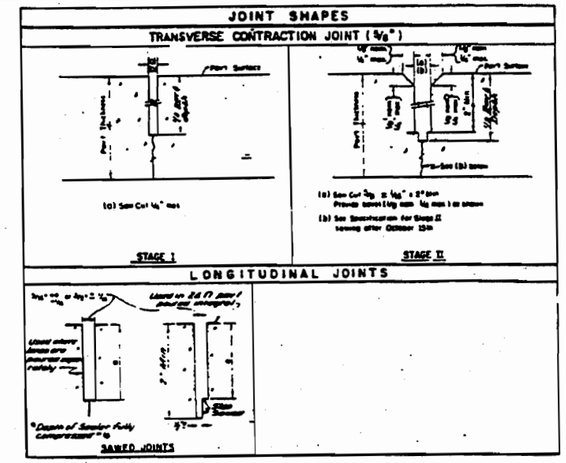
16 GA. STEEL
EXPANSION JOINT
FINISHING CAP

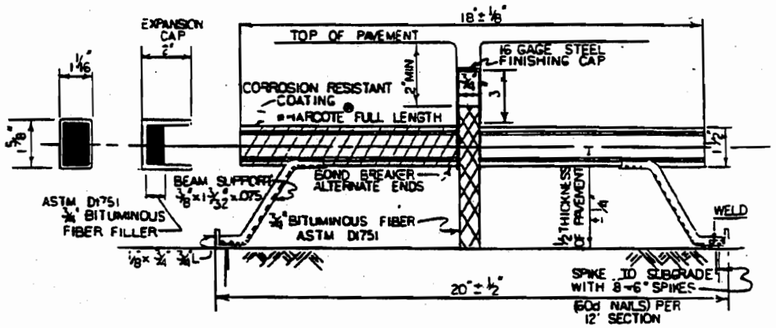


ELEVATION
EXPANSION JOINT

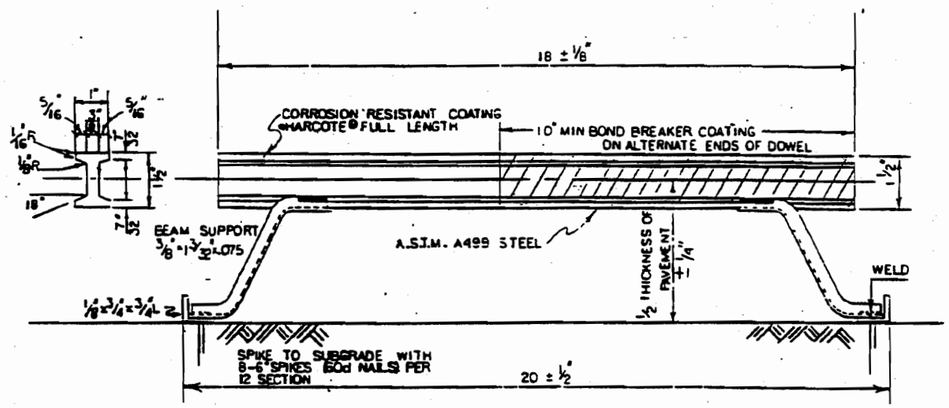


ELEVATION
CONTRACTION JOINT

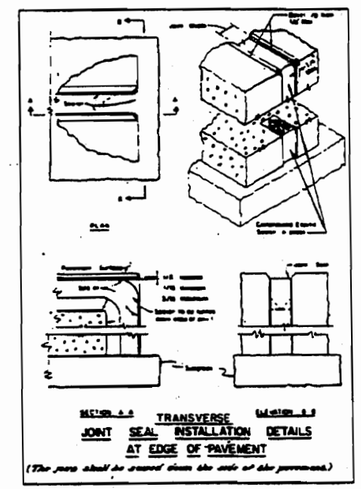


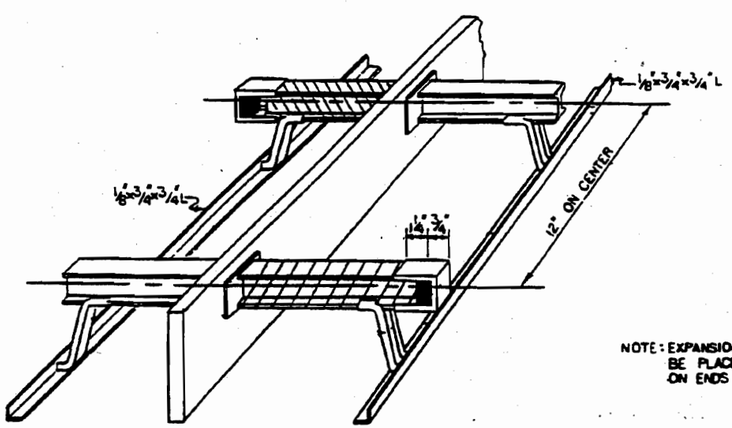


EXPANSION JOINT ASSEMBLY



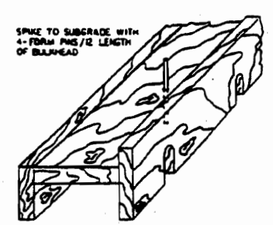
CONTRACTION JOINT ASSEMBLY
ITEM 27S



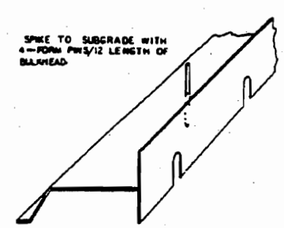


EXPANSION JOINT ASSEMBLY

NOTE: EXPANSION CAPS TO BE PLACED ALTERNATELY ON ENDS W/BOND BREAKER



WOOD BULKHEAD



12 GA STEEL
BULKHEAD

HARCOTE® TRADE MARK OF A.H.HARRIS & SONS, INC
HARCOTE-EPOXY COATING NOMINAL THICKNESS 8 MILS +12 OR -3 MILS
BOND BREAKER AS APPROVED BY THE CHIEF ENGINEER

NOMINAL THICKNESS 8 MILS +4 OR -4 MILS

NOTES

1 JOINT SEALERS
The nature and dimensions of joint sealers shall be approved by the Chief Engineer.

2 LONGITUDINAL JOINTS
(a) The minimum longitudinal joint seal shall be the minimum saw width (0.125" minimum for 5/16 nominal joints)

(b) If the actual width of joint exceeds approximately the dimensions of the sawing blades, exceeds the minimum width by 1/16" or more the next larger seal size is the base shall be installed.

JOINT & SEALER SIZE TABLE

The sizes of joint widths are minimum sizes to accommodate joint sealers. The contractor may install a wider joint or an intermediate size to the joint.

JOINT TYPE	NOMINAL JOINT WIDTH	NOMINAL JOINT SEALER SIZE TO BE USED
LONGITUDINAL	5/16"	[illegible]
	3/8"	[illegible]
TRANSVERSE CONTRACTION	5/8	1 1/16"
TRANSVERSE EXPANSION	7/8	1 5/8"

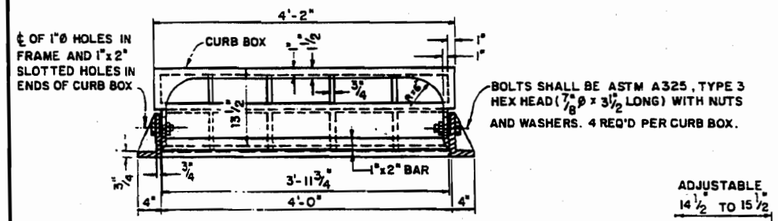
APPROVED BY: C. ROGER MEEKER P.E., CHIEF ENGINEER DATE 9/18/89

SYMBOL	DESCRIPTION	APPROVED	DATE
	REVISIONS		

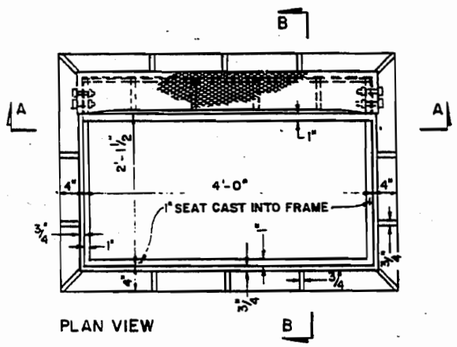
COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
YAPHANK, NEW YORK
JOSEPH P HURLEY, COMMISSIONER

TRANSVERSE JOINT SUPPORT
ITEM 27S

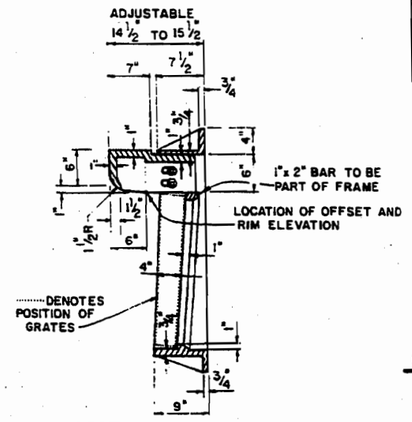
COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
JOSEPH P. HURLEY, COMMISSIONER
YAPHANK, N.Y.



SECTION A-A

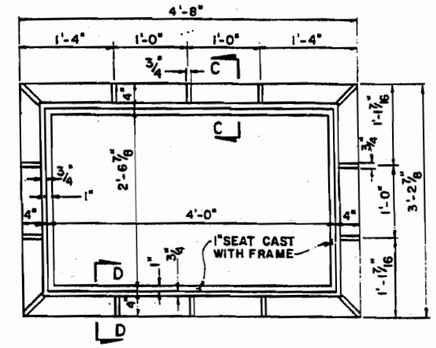


PLAN VIEW

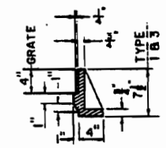


SECTION B-B

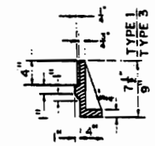
CAST IRON FRAME - TYPE 2 (INCLUDES CURB BOX)
ITEM 30C



PLAN VIEW

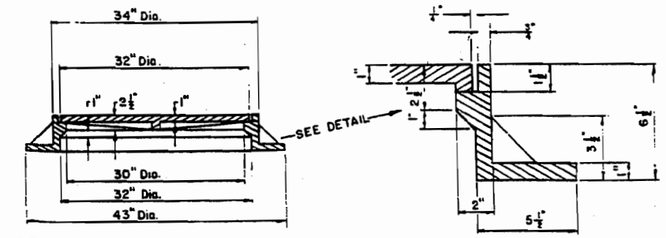


SECTION C-C

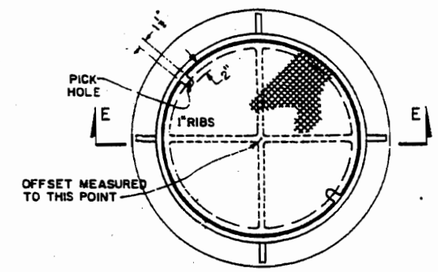


SECTION D-D

CAST IRON FRAME- TYPE 1 AND 3
ITEM 30C

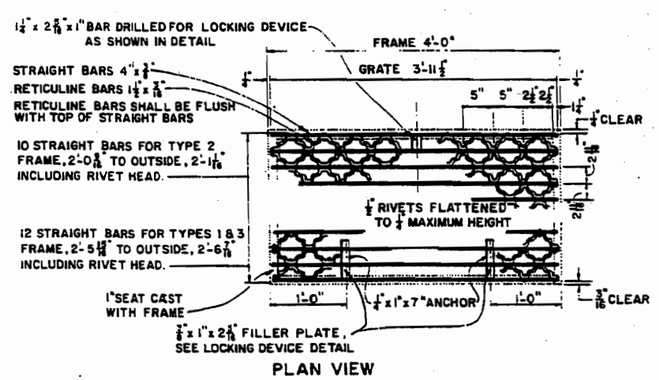


SECTION E-E



PLAN VIEW

CAST IRON MANHOLE FRAME AND COVER
TYPE C, ROADWAY TYPE, ITEM 30C

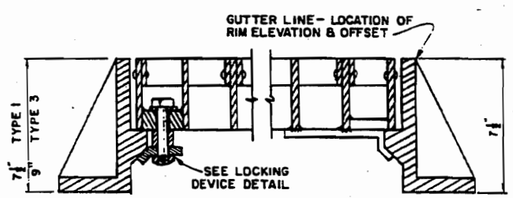


PLAN VIEW

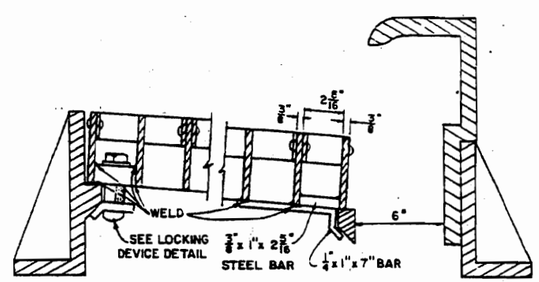
FABRICATED STEEL GRATE FOR FRAME TYPES 1, 2 & 3
ITEM 30F

NOTES

1. MATERIAL IN FABRICATED STEEL GRATES SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR STRUCTURAL STEEL FOR BRIDGES AND SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH SPECIFICATION M19.
2. EACH GRATE SHALL BE SET EVENLY UPON THE BEARING SEAT OF ITS CAST FRAME SO THAT NO VERTICAL MOVEMENT OR ROCKING OCCURS UNDER TRAFFIC GRATES AND/OR FRAMES WHICH CAN NOT BE ADJUSTED TO MEET THIS REQUIREMENT WILL BE REJECTED
3. ALL CASTINGS SHALL MEET THE REQUIREMENTS OF A.S.T.M. SPECIFICATIONS FOR:
   STEEL CASTING SERIAL DESIGNATION A-27-GRADE 65-35 OR
   IRON CASTING SERIAL DESIGNATION A-48-CLASS 30 OR
   MALLEABLE IRON CASTING SERIAL DESIGNATION A-47-GRADE 32510, AT THE CONTRACTORS OPTION.
4. ONE FIELD COAT OF BLACK ASPHALTIC MATERIAL AS APPROVED BY THE CHIEF ENGINEER SHALL BE APPLIED TO ALL EXPOSED AREAS OF FRAMES AND COVERS. COST TO BE INCLUDED UNDER ITEM 30C.



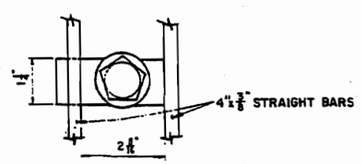
SECTION THRU GRATE, TYPE 1 OR 3 FRAME



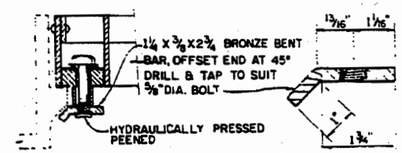
SECTION THRU GRATE, TYPE 2 FRAME

GRATE LOCKING DEVICE

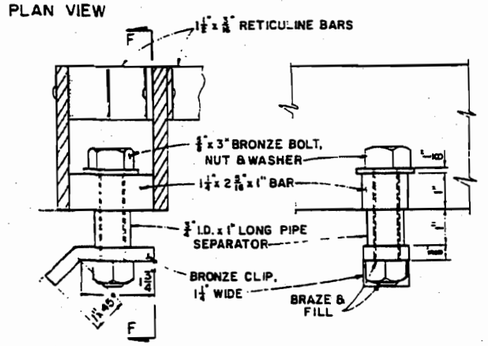
ONE LOCKING DEVICE REQUIRED PER GRATE ANY OTHER LOCKING DEVICE MAY BE SUBSTITUTED FOR THE ONE SHOWN AFTER APPROVAL BY THE CHIEF ENGINEER.



PLAN VIEW

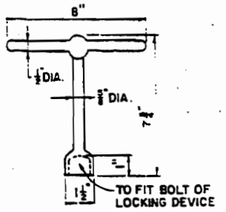


OPTIONAL LOCKING DEVICE



ELEVATION SECTION F-F

LOCKING DEVICE DETAIL



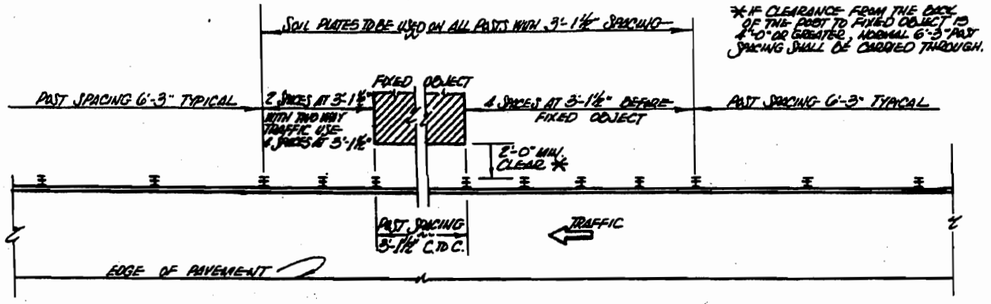
KEY
FURNISH ONE EACH

APPROVED BY: C. ROGER MEEKER P.E., CHIEF ENGINEER

COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS YAPHANK, NEW YORK, 11980

FRAMES, GRATES & COVERS
SC 30-88

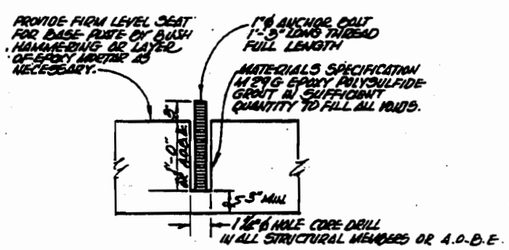
DO NOT SCALE | SHEET NO. OF



GUIDE RAIL PAST FIXED OBJECTS
SCALE: 1/4" = 1'-0"

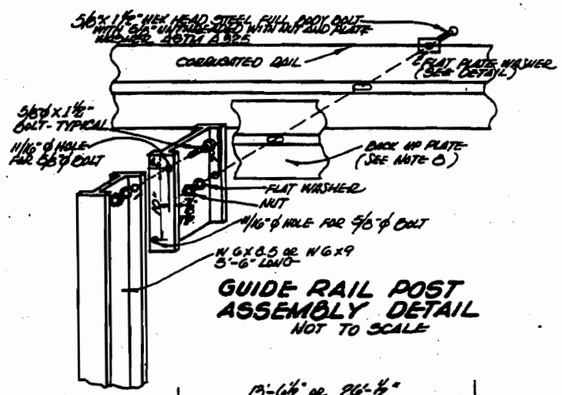
EXPLODED VIEW SHOWING RAIL SPLICE LAP
NOT TO SCALE

NOTE: RAIL SPLICES SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC.

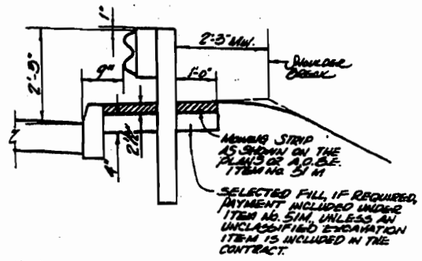


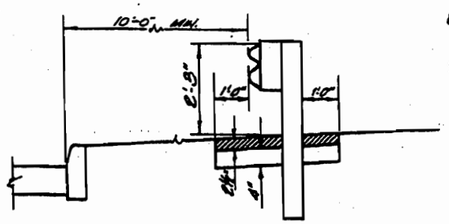
ANCHOR BOLT INSTALLATION
SCALE: 1" = 1'-0"

FOR USE ON PORTLAND CEMENT CONCRETE MEDIANS OR STRUCTURES



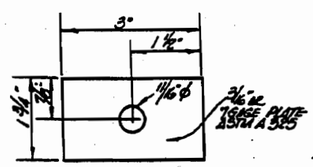
GUIDE RAIL POST ASSEMBLY DETAIL
NOT TO SCALE



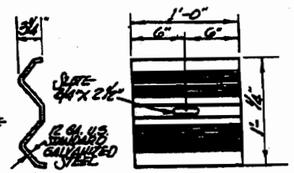


TYPICAL SECTION FOR CORRUGATED BLOCKED-OUT GUIDE RAIL
WITH CURB AND 10'-0" MINIMUM OFFSET

NOT TO SCALE

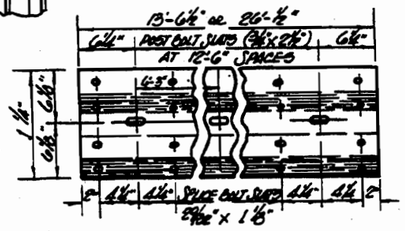


FLAT PLATE WASHER DETAIL
NOT TO SCALE

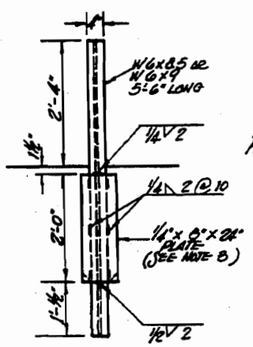


BACK UP PLATE DETAIL
(SEE NOTE B)

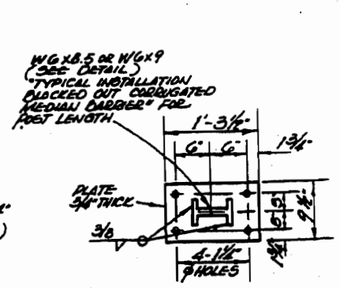
NOT TO SCALE



TYPICAL RAIL SECTION
NOT TO SCALE

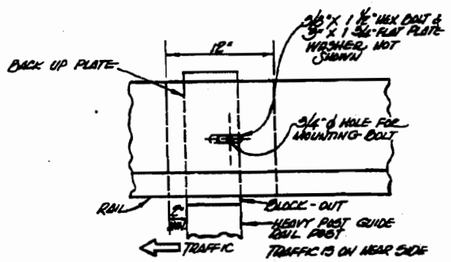


TYPICAL POST SHOWN WITH SOIL PLATE
NOT TO SCALE



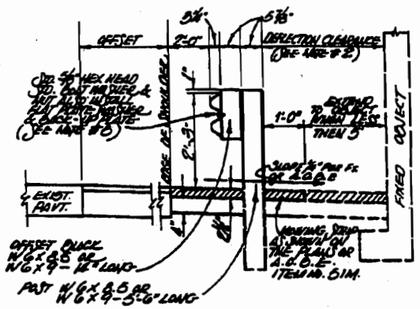
BASE PLATE DETAIL
SCALE: 1" = 1'-0"

FOR USE ON PORTLAND CEMENT CONCRETE MEDIANS OR STRUCTURES



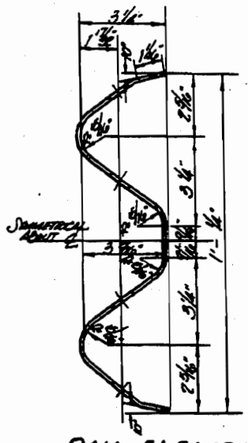
DETAIL SHOWING LOCATION OF BACK UP PLATE
NOT TO SCALE

NOTE: POSITION BACK UP PLATE SO AT LEAST 2" LAPS PAST BLOCK-OUT.

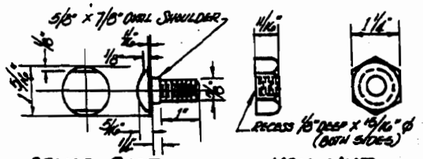


TYPICAL SECTION FOR CORRUGATED BLOCKED-OUT GUIDE RAIL SHOWN PAST FIXED OBJECT
WITHOUT CURB

NOT TO SCALE



RAIL ELEMENT
NOT TO SCALE



SPLICE BOLT — HEX NUT

BEAM SPLICE HARDWARE
NOT TO SCALE

NOTES

1. ALL RUNS OF GUIDE RAIL ARE TO BE ANCHORED AT BOTH ENDS.
2. THE POST SPACING FOR REDUCED DEFLECTION SHALL BE AS FOLLOWS:

DEFLECTION CLEARANCE	POST SPACING
2'-0" MIN. 4'-0" MAX.	3' - 1 1/2"
OVER 4'-0"	6' - 3"

3. STEEL SOIL PLATES SHALL BE USED ONLY IN AREAS OF 3'-1 1/2" POST SPACING.
4. IF THERE IS INSUFFICIENT DEPTH BETWEEN THE SURFACE OF THE GROUND, AT THE GUIDE RAIL, AND A CONCRETE FOOTING ONE OF THE FOLLOWING METHODS SHALL BE EMPLOYED DEPENDING ON THE AVAILABLE DEPTHS:
   - A. 2'-3" TO 3'-2" SHORTEN THE POST TO THE REQUIRED DEPTH BY CUTTING THE BOTTOM OFF THE POST.
   - B. 1'-6" TO 2'-3" SHORTEN THE POST TO THE REQUIRED DEPTH BY CUTTING THE BOTTOM OFF THE POST AND PLACE THE POST IN A 12" DIAMETER CONCRETE ENCASEMENT EXTENDING FROM THE TOP OF THE FOOTING TO THE GROUND SURFACE.
   - C. LESS THAN 1'-6" EXCAVATE TO THE FOOTING, SHORTEN THE POST TO THE REQUIRED LENGTH BY CUTTING OFF THE LOWER END AND WELD THE 1'-3 1/2" X 9 1/2" BASE PLATE SHOWN IN THE DETAIL TITLED "BASE PLATE DETAIL" ON THE CURRENT EDITION OF THE STANDARD SHEET TITLED "HEAVY POST BLOCKED-OUT CORRUGATED BEAM MEDIAN BARRIER" TO THE BOTTOM AND BOLT THE POST TO THE FOOTING USING A METHOD APPROVED BY THE ENGINEER.
5. EXPANSION ANCHORS FOR THE GUIDE RAIL CONNECTION SHALL BE 3/4" ϕ EXPANSION ANCHORS WITH A MINIMUM EMBEDMENT OF 3 1/4" AND A MINIMUM PULLOUT STRENGTH OF 12,000 POUNDS. DRILL HOLE SIZE AND METHOD OF INSTALLATION SHALL BE AS SPECIFIED BY THE MANUFACTURER. THE EMBEDMENT LENGTH IS TO BE PLACED IN THE STRUCTURAL CONCRETE AND THE TOTAL BOLT LENGTH IS TO BE LONG ENOUGH TO PASS THROUGH THE GUIDE RAIL ELEMENTS AND ANY STONE OR BRICK VENEER THAT EXISTS.
6. ONLY 12 GAUGE RAIL SHALL BE USED UNLESS OTHERWISE SHOWN ON THE PLANS.
7. ALL RAILS, POSTS, BLOCKS AND HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH THE GALVANIZING METHOD TY I (ASTM A 123). ALL OTHER HARDWARE SHALL BE TY II (ASTM A 153).
8. FLAT PLATE WASHERS ARE TO BE USED AT ALL POSTS BACK UP PLATES SHALL BE USED AT ALL POSTS EXCEPT SPLICE POSTS AND POSTS WHERE C 9 X 20 CHANNEL IS MOUNTED BEHIND THE RAIL ELEMENT.
9. ALL STEEL SHOWN ON THIS SHEET SHALL BE GALVANIZED IN ACCORDANCE WITH M 19.

APPROVED BY: _____ DATE 12/30/88

C. ROGER MEEKER ..... CHIEF ENGINEER

COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
YAPHANK, NEW YORK

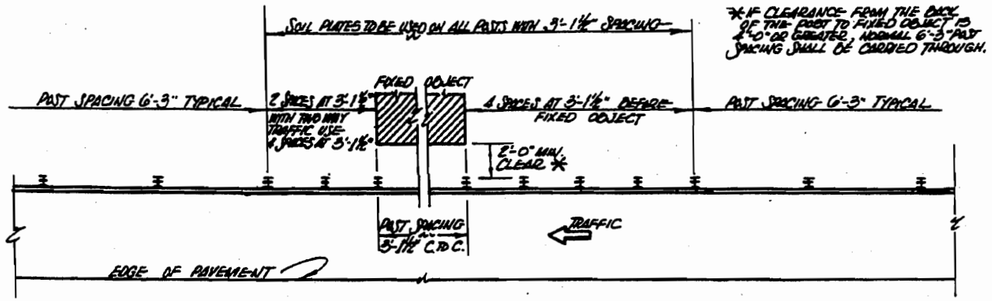
STEPHEN G. HAYDUK ... COMMISSIONER

HEAVY POST BLOCKED-OUT CORRUGATED BEAM GUIDE RAILING

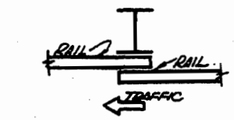
REVISION	APPROVED	DATE
Revised Typical Section for Corrugated Blocked Out Guide Rail		6/93
Revised Rail offset from Face of Curb to 9"		3/94
Revised Mowing Strip Thickness to 2 1/4"		3/94

PROJECT NO.	SCALE	SHEET NO.
	AS SHOWN	

H.D.C.



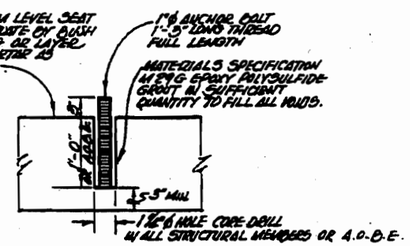
GUIDE RAIL PAST FIXED OBJECTS



EXPLODED VIEW SHOWING RAIL SPLICE LAP

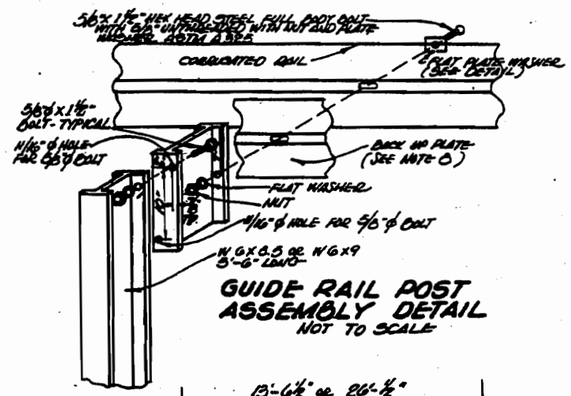
NOT TO SCALE

NOTE: RAIL SPLICES SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC.



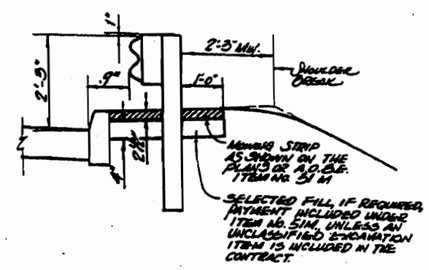
ANCHOR BOLT INSTALLATION

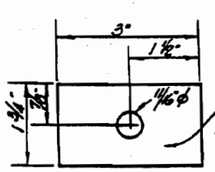
FOR USE ON PORTLAND CEMENT CONCRETE MEDIANS OR STRUCTURES



GUIDE RAIL POST ASSEMBLY DETAIL

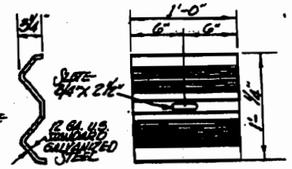
NOT TO SCALE





FLAT PLATE WASHER DETAIL

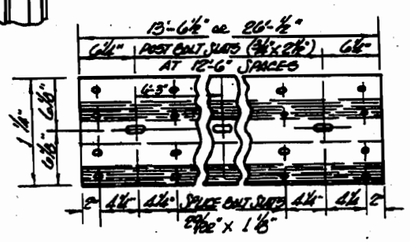
NOT TO SCALE



BACK UP PLATE DETAIL

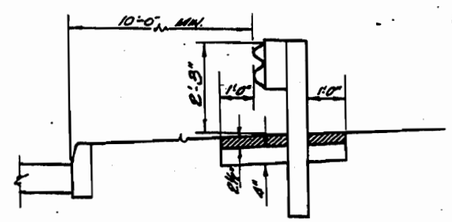
SEE NOTE B

NOT TO SCALE



TYPICAL RAIL SECTION

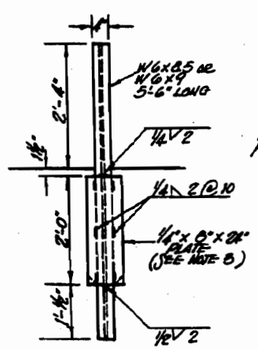
NOT TO SCALE



TYPICAL SECTION FOR CORRUGATED BLOCKED-OUT GUIDE RAIL

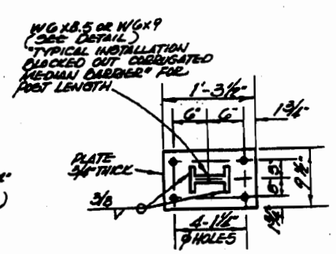
WITH CURB AND 10'-0" MINIMUM OFFSET

NOT TO SCALE



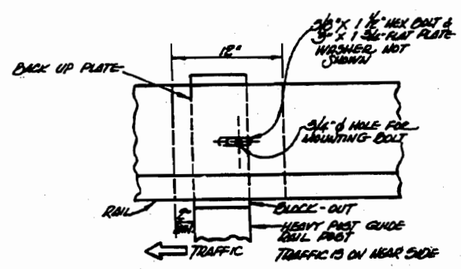
TYPICAL POST SHOWN WITH SOIL PLATE

NOT TO SCALE



BASE PLATE DETAIL

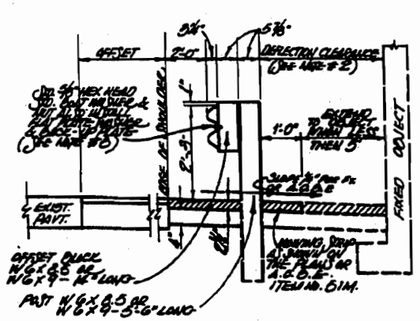
FOR USE ON PORTLAND CEMENT CONCRETE MEDIANS OR STRUCTURES



DETAIL SHOWING LOCATION OF BACK UP PLATE

NOT TO SCALE

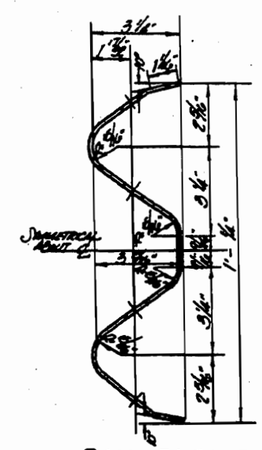
NOTE: POSITION BACK UP PLATE SO AT LEAST 2" LAPS PAST BLOCK-OUT.



TYPICAL SECTION FOR CORRUGATED BLOCKED-OUT GUIDE RAIL SHOWN PAST FIXED OBJECT

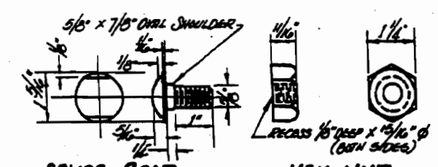
WITHOUT CURB

NOT TO SCALE



RAIL ELEMENT

NOT TO SCALE



SPLICE BOLT — HEX NUT

BEAM SPLICE HARDWARE

NOT TO SCALE

NOTES

1. ALL RUNS OF GUIDE RAIL ARE TO BE ANCHORED AT BOTH ENDS.
2. THE POST SPACING FOR REDUCED DEFLECTION SHALL BE AS FOLLOWS:

DEFLECTION CLEARANCE	POST SPACING
2'-0" MIN. 4'-0" MAX.	3'-1½"
OVER 4'-0"	6'-3"

3. STEEL SOIL PLATES SHALL BE USED ONLY IN AREAS OF 3'-1½" POST SPACING.
4. IF THERE IS INSUFFICIENT DEPTH BETWEEN THE SURFACE OF THE GROUND, AT THE GUIDE RAIL, AND A CONCRETE FOOTING ONE OF THE FOLLOWING METHODS SHALL BE EMPLOYED DEPENDING ON THE AVAILABLE DEPTHS:
   - A. 2'-3" TO 3'-2" SHORTEN THE POST TO THE REQUIRED DEPTH BY CUTTING THE BOTTOM OFF THE POST.
   - B. 1'-6" TO 2'-3" SHORTEN THE POST TO THE REQUIRED DEPTH BY CUTTING THE BOTTOM OFF THE POST AND PLACE THE POST IN A 12" DIAMETER CONCRETE ENCASEMENT EXTENDING FROM THE TOP OF THE FOOTING TO THE GROUND SURFACE.
   - C. LESS THAN 1'-6" EXCAVATE TO THE FOOTING, SHORTEN THE POST TO THE REQUIRED LENGTH BY CUTTING OFF THE LOWER END AND WELD THE 1'-3½" x 9½" BASE PLATE SHOWN IN THE DETAIL TITLED "BASE PLATE DETAIL" ON THE CURRENT EDITION OF THE STANDARD SHEET TITLED "HEAVY POST BLOCKED-OUT CORRUGATED BEAM MEDIAN BARRIER" TO THE BOTTOM AND BOLT THE POST TO THE FOOTING USING A METHOD APPROVED BY THE ENGINEER.
5. EXPANSION ANCHORS FOR THE GUIDE RAIL CONNECTION SHALL BE ¾" ϕ EXPANSION ANCHORS WITH A MINIMUM EMBEDMENT OF 3½" AND A MINIMUM PULLOUT STRENGTH OF 15,000 POUNDS. DRILL HOLE SIZE AND METHOD OF INSTALLATION SHALL BE AS SPECIFIED BY THE MANUFACTURER. THE EMBEDMENT LENGTH IS TO BE PLACED IN THE STRUCTURAL CONCRETE AND THE TOTAL BOLT LENGTH IS TO BE LONG ENOUGH TO PASS THROUGH THE GUIDE RAIL ELEMENTS AND ANY STONE OR BRICK VENEER THAT EXISTS.
6. ONLY 12 GAUGE RAIL SHALL BE USED UNLESS OTHERWISE SHOWN ON THE PLANS.
7. ALL RAILS, POSTS, BLOCKS AND HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH THE GALVANIZING METHOD TY I (ASTM A 123). ALL OTHER HARDWARE SHALL BE TY II (ASTM A 153).
8. FLAT PLATE WASHERS ARE TO BE USED AT ALL POSTS BACK UP PLATES SHALL BE USED AT ALL POSTS EXCEPT SPLICE POSTS AND POSTS WHERE C9 X 20 CHANNEL IS MOUNTED BEHIND THE RAIL ELEMENT.
9. ALL STEEL SHOWN ON THIS SHEET SHALL BE GALVANIZED IN ACCORDANCE WITH M 19.

APPROVED BY:

C. ROGER MEEKER ..... CHIEF ENGINEER — DATE 12/30/88

COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
YAPHANK, NEW YORK

STEPHEN G. HAYDUK ··· COMMISSIONER

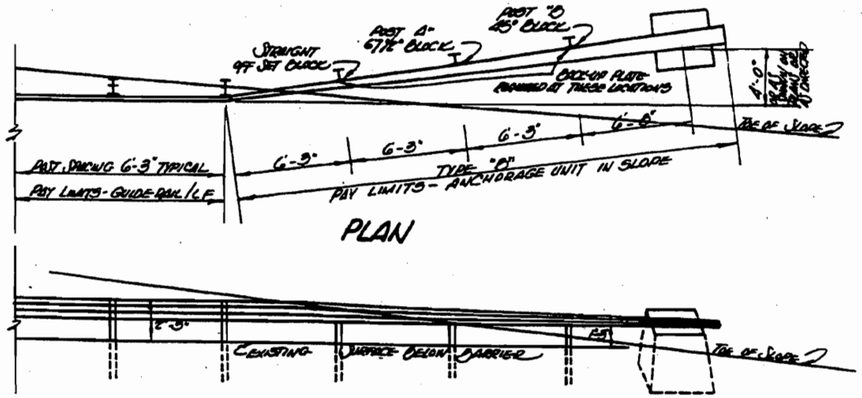
HEAVY POST BLOCKED-OUT CORRUGATED BEAM GUIDE RAILING

REVISION	APPROVED	DATE
Revised Typical Section of Corrugated Blocked Out Guide Rail		6/95
Revised Rail Offset from Face of Curb to 9"		3/94
Revised Mowing Strip Thickness to 2½"		3/94

PROJECT NO.	SCALE	SHEET NO.
	AS SHOWN	SC33D88N

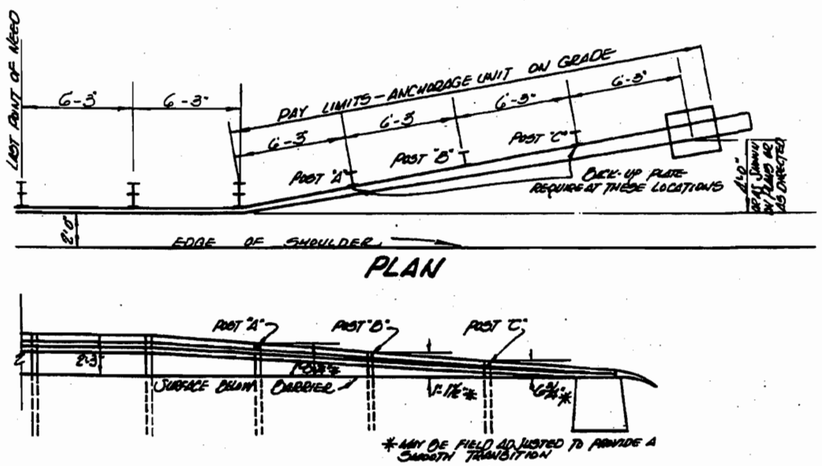
H.D.C.

SC 33 DA - 88



PLAN

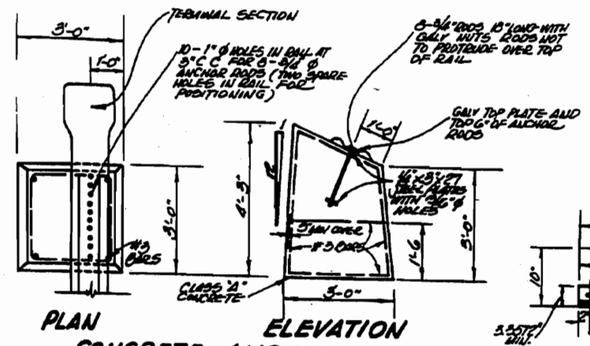
ELEVATION



PLAN

ELEVATION

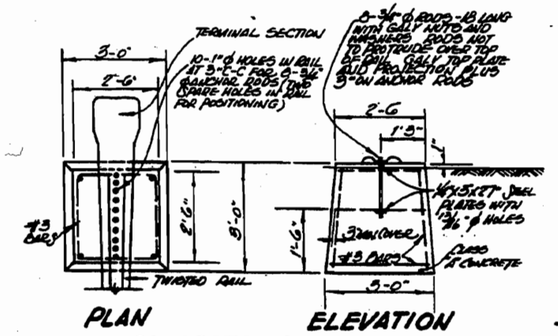
APPROACH ANCHORAGE UNIT FOR HEAVY POST BLOCKED OUT CORRUGATED GUIDE RAILING
SCALE 1/4" = 1'-0"



PLAN

ELEVATION

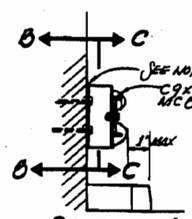
CONCRETE ANCHOR FOR SLOPE INSTALLATION
SCALE 1/2" = 1'-0"



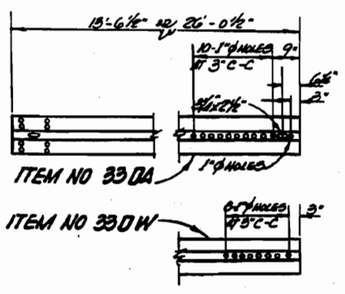
PLAN

ELEVATION

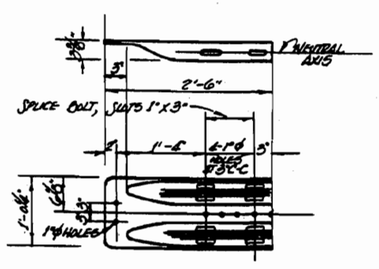
CONCRETE ANCHOR FOR ON GRADE INSTALLATION
SCALE 1/2" = 1'-0"



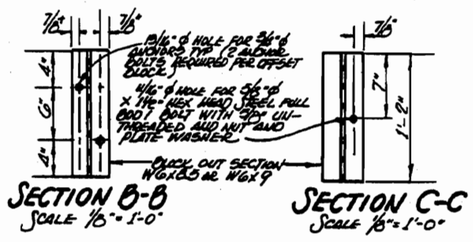
SECTION A-A
SCALE 3/4" = 1'-0"



TYPICAL TERMINAL RAIL
NOT TO SCALE

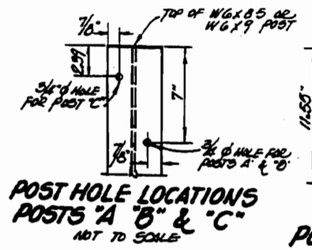


END SECTION DETAIL
MICHIGAN END SHOE
NOT TO SCALE

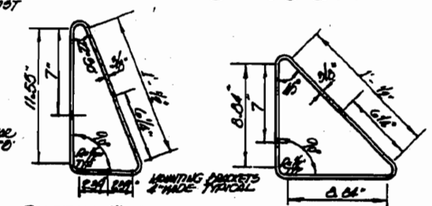


SECTION B-B
SCALE 1/8" = 1'-0"

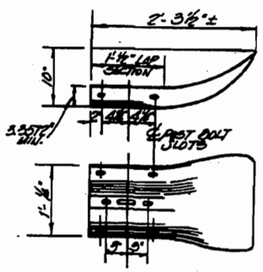
SECTION C-C
SCALE 1/8" = 1'-0"



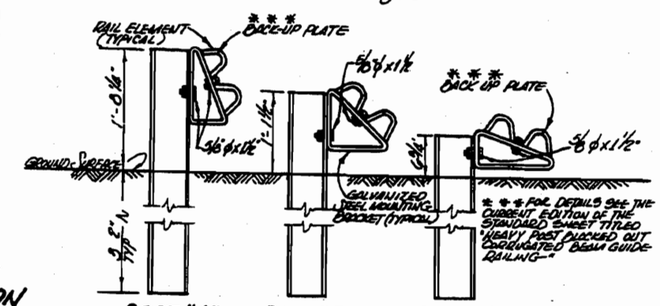
POST HOLE LOCATIONS
POSTS "A" "B" & "C"
NOT TO SCALE



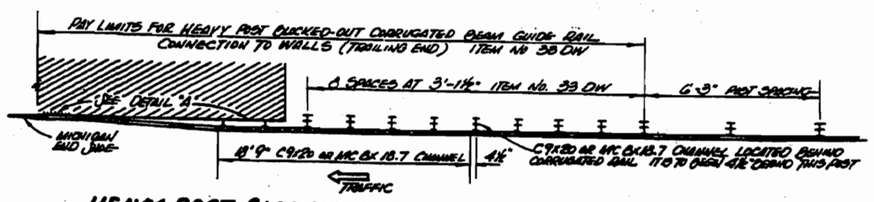
POSTS "A" & "C"
POST "B"
MOUNTING BRACKETS
NOT TO SCALE



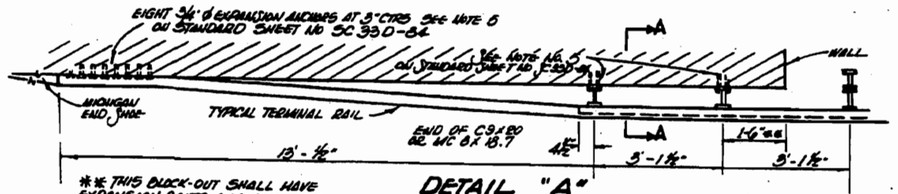
GUIDE RAILING
TERMINAL SECTION
NOT TO SCALE



POST "A" POST "B" POST "C"
POST ASSEMBLY
NOT TO SCALE



HEAVY POST BLOCKED-OUT CORRUGATED BEAM GUIDE RAIL CONNECTION TO WALLS (TRAILING END) ITEM NO 33 DW
NOT TO SCALE



DETAIL "A"
NOT TO SCALE

** THIS BLOCK-OUT SHALL HAVE EXPANSION BOLTS A MINIMUM OF 6" INTO STRUCTURAL CONCRETE MEASURED FROM THE FACE OF THE STRUCTURAL CONCRETE WALL

NOTE OFFSET BEAM TO BE SHIMMED AS REQUIRED FOR PROPER ALIGNMENT OF RAIL. PAYMENT INCLUDED UNDER WALL CONNECTION ITEM. SHIMS SHALL BE GALVANIZED AND MEET THE REQUIREMENTS OF A.S.T.M. A36.

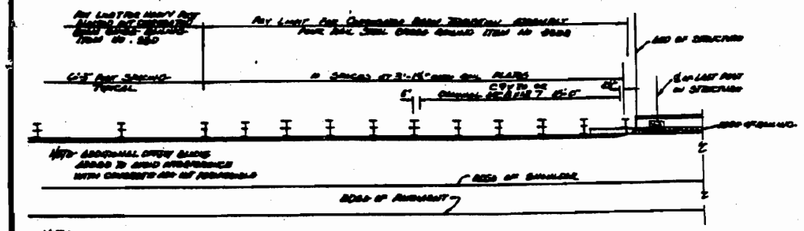
APPROVED BY:
C. Roger Meeker DATE 12/21/88
C. ROGER MEEKER CHIEF ENGINEER

COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
YAPHANK NEW YORK
JOSEPH P. HURLEY COMMISSIONER

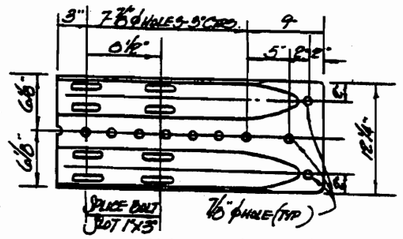
APPROACH ANCHORAGE UNIT FOR HEAVY POST BLOCKED-OUT CORRUGATED BEAM GUIDE RAILING

REVISION	APPROVED	DATE	PROJECT NO	SCALE	SHEET NO
				AS SHOWN	

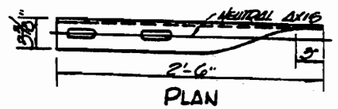
SC33DA-88



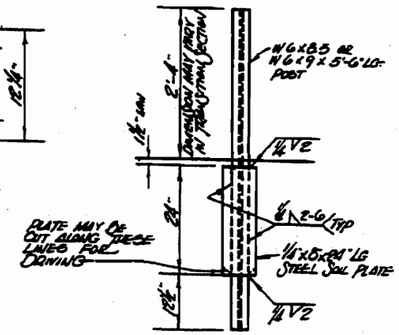
MOUNTING HEAVY POST BLOCKED OUT GUIDE RAIL ON EXISTING FOUR RAIL STEEL BRIDGE RAILING—
TYPICAL GUIDE RAIL APPROACH LAYOUT AT BRIDGE APPROACHES AND TRAILING ENDS



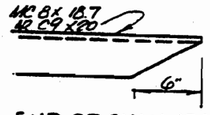
ELEVATION



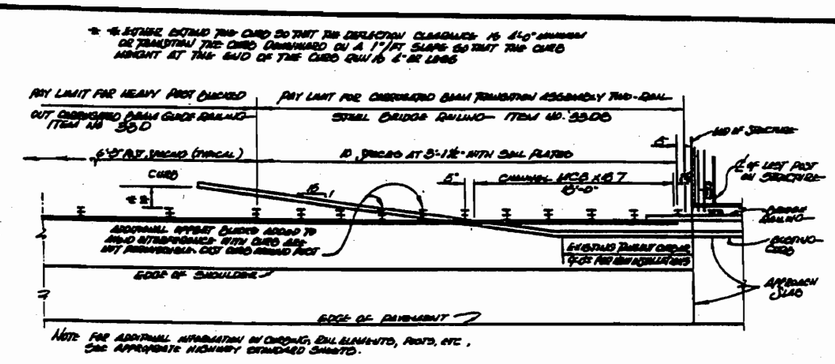
PLAN
END SECTION



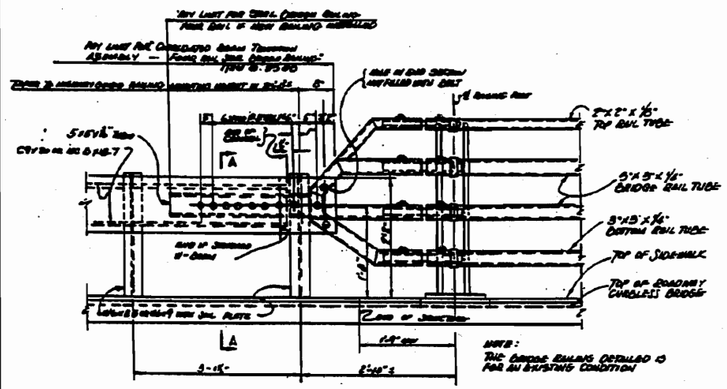
SOIL PLATE DETAIL



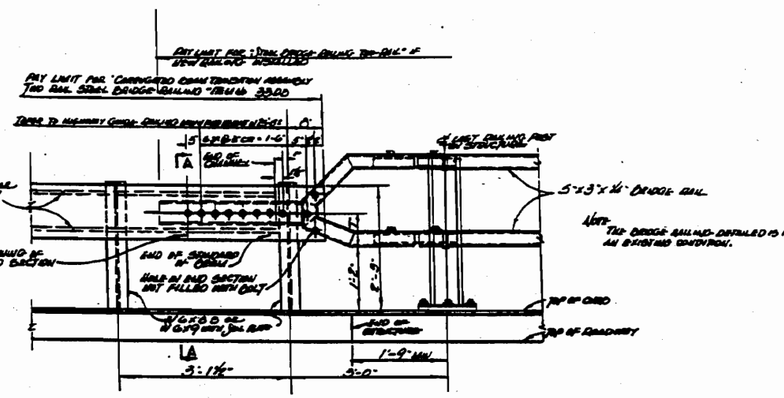
END OF CHANNEL
CUT DETAIL



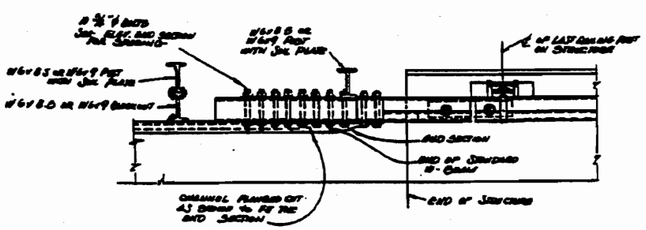
MOUNTING HEAVY POST BLOCKED OUT GUIDE RAIL ON EXISTING TWO RAIL STEEL BRIDGE RAILING—
TYPICAL GUIDE RAIL APPROACH LAYOUT AT BRIDGE APPROACHES AND TRAILING ENDS



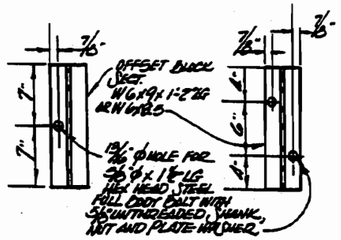
ELEVATION VIEW-END OF RAILING—



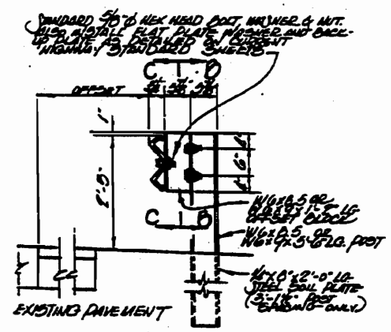
ELEVATION VIEW- END OF RAILING—



PLAN VIEW
BRIDGE RAILING CONNECTION DETAILS

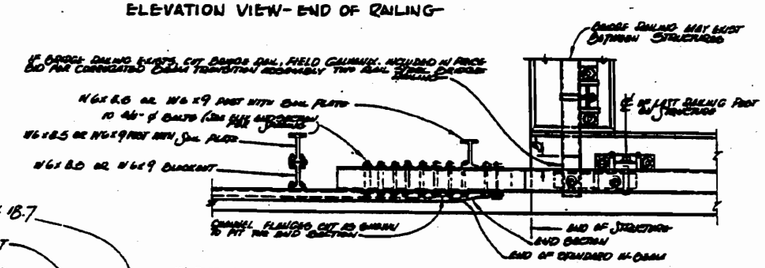


SECTION C-C SECTION B-B

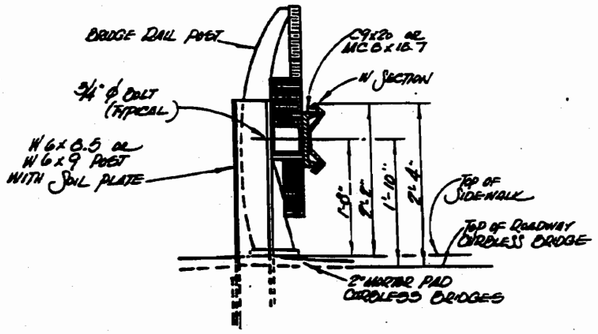


ELEVATION

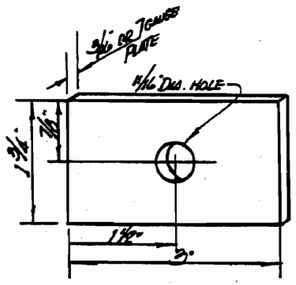
TYPICAL TREATMENT FOR CORRUGATED
BLOCKOUT GUIDE RAIL
(NO CURB AND NO CHANNEL)



PLAN VIEW
BRIDGE RAIL CONNECTION DETAIL



SECTION A-A



FLAT PLATE WASHER DETAIL
(USE AT ALL POST)

NOTE:

MATERIALS USED IN THE MANUFACTURE OF THIS RAILING SHALL CONFORM TO THE REQUIREMENTS AND/OR SPECIFICATIONS LISTED BELOW.

RAIL TUBES - ASTM DESIGNATION A500 GRADE B

CHANNEL RAIL - ASTM DESIGNATION A36.

TUBULAR RAIL - ASTM DESIGNATION A500 GRADE B

SPLICE PLATES - ASTM DESIGNATION A36

SPLICE BOLTS, NUTS AND WASHERS - ASTM DESIGNATION A307

GALVANIZED RAILING - ALL COMPONENTS OF THE RAILING INCLUDING NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO DESIGNATION M 111. THE CUT ENDS OF RAIL SPLICE HOLE SHALL BE GIVEN ONE FIELD COAT OF COLD GALVANIZING COMPOUND AND TWO FIELD COATS OF ready MIXED ALUMINUM PAINT CONFORMING TO THE REQUIREMENTS OF MATERIAL SPECIFICATIONS M 68 EA AND M 69 J IN THAT ORDER.

ALL BOLTS SHALL HAVE A GOOD EA THREAD FIT PRIOR TO GALVANIZING.

UNLESS COVERED BY STATE SPECIFICATIONS ALL COMPONENTS FAILING TO THE REQUIREMENTS AND SELECTION OF THE STEEL RAILING SHALL HAVE A TOLERANCE OF 1/16".

THE CONTRACTOR WILL BE REQUIRED TO FIELD CHECK EACH STRUCTURE TO DETERMINE THE ACCURACY OF THE DIMENSIONS SHOWN FOR THE RAILING. FIELD RAIL PRIOR TO SUBMITTING SHOP DRAWINGS. SHOP DRAWINGS SHALL REFLECT ANY CHANGES NEEDED TO MEET THE EXISTING CONDITIONS

SYMBOL	DESCRIPTION	APPROVED	DATE
	REVISIONS		

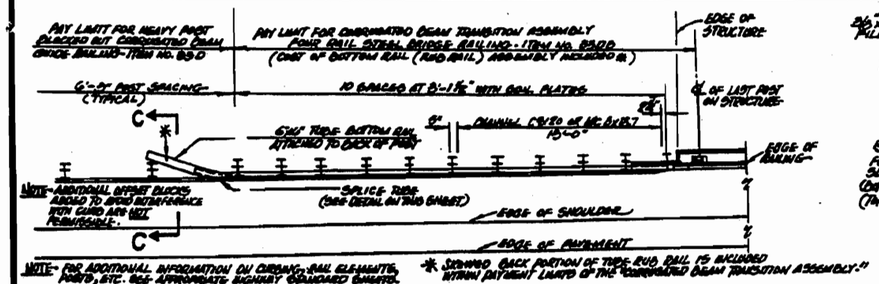
COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
YAPHANK, NEW YORK

JOSEPH P. HURLEY, COMMISSIONER

ITEM NO 3508

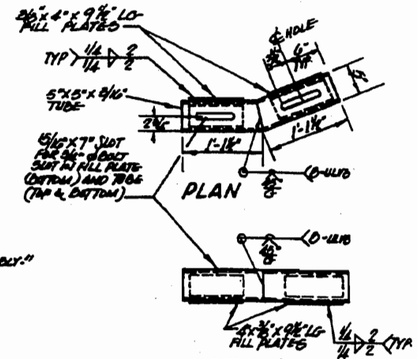
CORRUGATED BEAM TYPE GUIDE RAIL
APPROACH AND CONNECTION TO BRIDGE RAIL

PROJECT NO. | SCALE: NOT TO SCALE | SHEET NO.

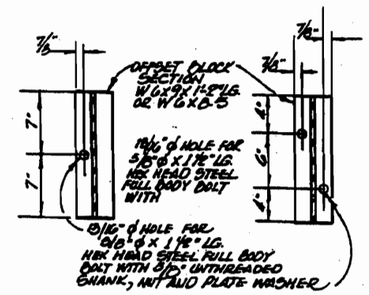


MOUNTING HEAVY POST BLOCKED OUT GUIDE RAIL ON EXISTING FOUR RAIL STEEL BRIDGE RAILING

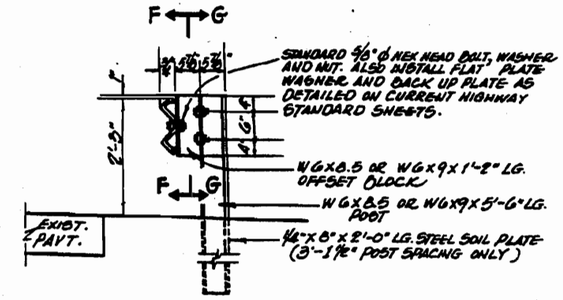
TYPICAL GUIDE RAIL APPROACH LAYOUT AT BRIDGE APPROACHES AND TRAILING ENDS



SPLICE TUBE DETAIL



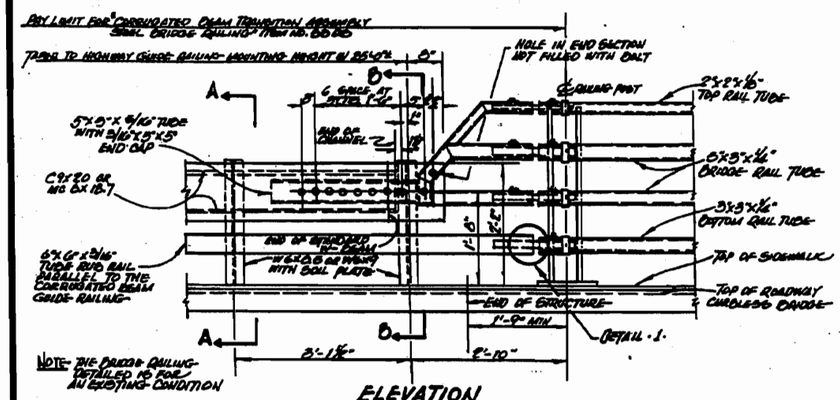
SECTION · F-F ·



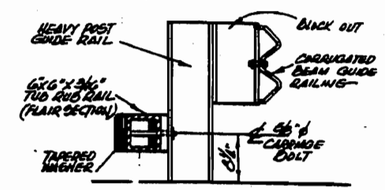
SECTION · G-G ·

ELEVATION

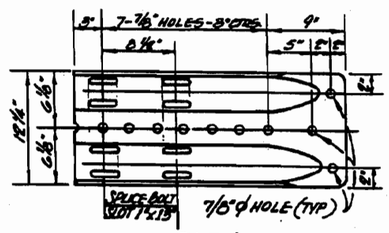
TYPICAL TREATMENT FOR CORRUGATED BLOCKOUT GUIDE RAIL (NO CURB AND NO CHANNEL)



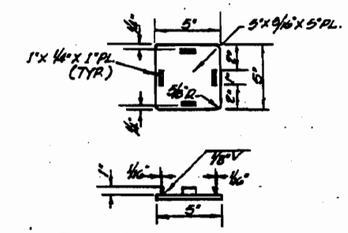
ELEVATION
END OF RAILING



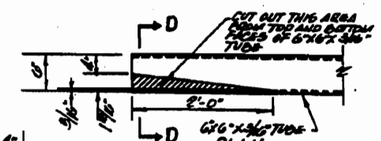
SECTION · C-C ·



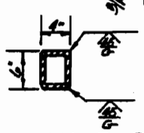
ELEVATION



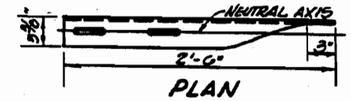
END CAP DETAILS



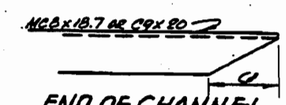
CUT DETAIL



SECTION · D-D ·



PLAN
END SECTION

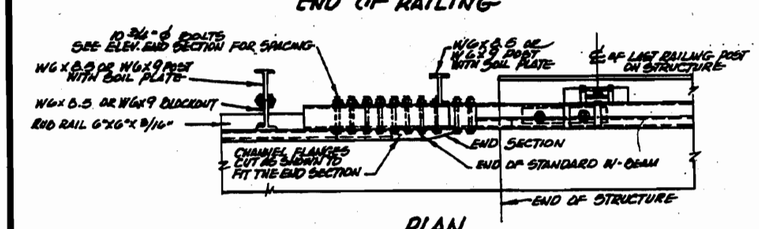


END OF CHANNEL
CUT DETAIL

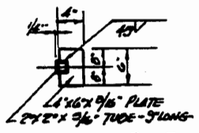
NOTES.

MATERIALS USED IN THE MANUFACTURE OF THIS RAILING SHALL CONFORM TO THE REQUIREMENTS AND/OR SPECIFICATIONS LISTED BELOW.

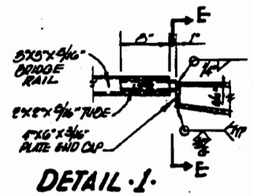
- RUB RAIL –
- RAIL TUBES – ASTM DESIGNATION A 500 GRADE B.
- CHANNEL RAIL – ASTM DESIGNATION A36
- TUBULAR RAIL – ASTM DESIGNATION A 500 GRADE B
- SPLICE PLATES – ASTM DESIGNATION A36
- SPLICE BOLTS, NUTS AND WASHERS – ASTM DESIGNATION A 307
- GALVANIZED RAILING - ALL COMPONENTS OF THE RAILING INCLUDING NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH MATERIAL SPECIFICATION M 111. THE CUT PORTION OF RAIL SPICE HOLE SHALL BE GIVEN ONE FIELD COAT OF COLD GALVANIZE REPAIR AND TWO FIELD COATS OF READY MIXED ALUMINUM PAINT CONFORMING TO THE REQUIREMENTS OF MATERIAL SPECIFICATIONS M 68 CA AND M 70 J IN THAT ORDER.
- ALL BOLTS SHALL HAVE A CLASS 2A THREAD FIT PRIOR TO GALVANIZING.
- UNLESS COVERED BY OTHER SPECIFICATIONS ALL DIMENSIONS RELATED TO THE FABRICATION AND ERECTION OF THE STEEL RAILING SHALL BE ± TOLERANCE OF 1/16" ±.
- THE CONTRACTOR WILL BE REQUIRED TO FIELD CHECK EACH STRUCTURE TO DETERMINE THE ACCURACY OF THE DIMENSIONS SHOWN FOR THE EXISTING BRIDGE RAIL PRIOR TO SUBMITTING SHOP DRAWINGS. SHOP DRAWINGS SHALL REFLECT ANY CHANGES NEEDED TO MEET THE EXISTING CONDITIONS.



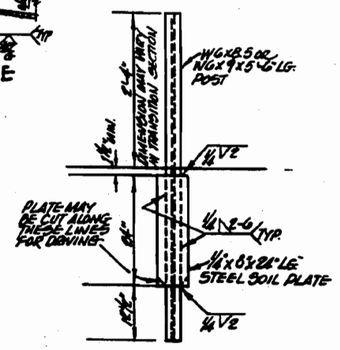
PLAN
BRIDGE RAILING CONNECTION DETAILS



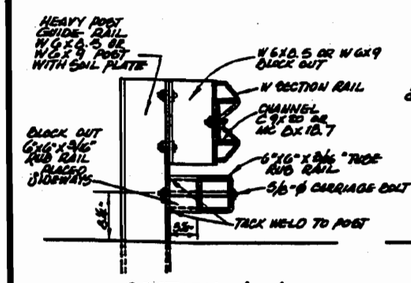
SECTION · E-E ·



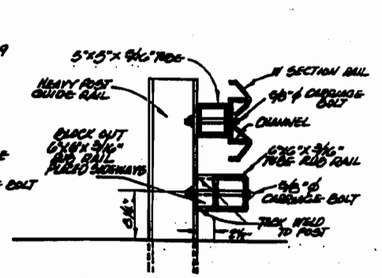
DETAIL · 1 ·



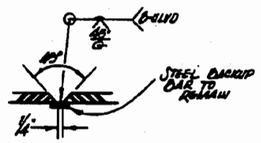
SOIL PLATE DETAIL



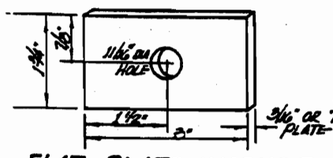
SECTION · A-A ·



SECTION · B-B ·



WELD DETAIL



FLAT PLATE WASHER DETAIL
USE ON ALL POST

APPROVED BY: 1/92
RICHARD J LAVALLETTE, CHIEF ENGINEER

COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
YAPHANK, NEW YORK

STEPHEN G. HAYDUK, P.E. COMMISSIONER

ITEM NO. 33DBR

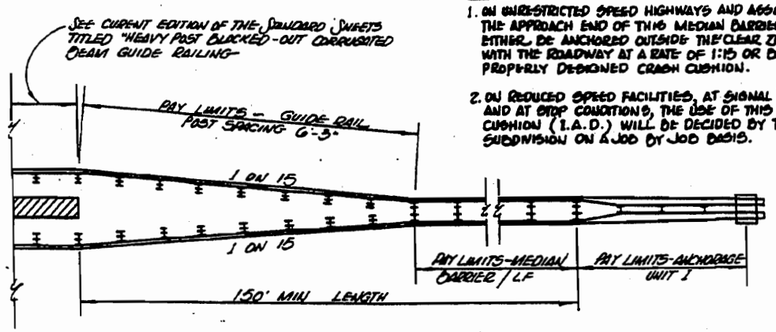
TRANSITION ASSEMBLY
FOUR RAIL BRIDGE RAILING HEAVY POST BLOCKOUT CORRUGATED BEAM GUIDE RAILING

SYMBOL	DESCRIPTION	APPROVED	DATE
	REVISIONS		

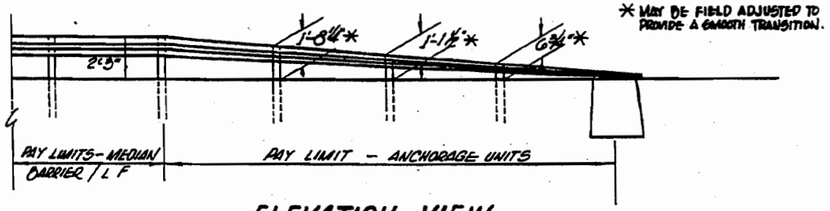
PROJECT NO.	SCALE	SHEET NO.
	NOT TO SCALE	

NOTES:

1. ON UNRESTRICTED SPEED HIGHWAYS AND ASSOCIATED RAMPS THE APPROACH END OF THIS MEDIAN BARRIER SYSTEM SHALL EITHER BE ANCHORED OUTSIDE THE CLEAR ZONE AND CONVERGE WITH THE ROADWAY AT A RATE OF 1:15 OR BE PROCEDED BY A PROPERLY DESIGNED CRASH CUSHION.
2. ON REDUCED SPEED FACILITIES, AT SIGNAL CONTROLLED INTERSECTIONS, AND AT STOP CONDITIONS, THE USE OF THIS DETAIL WITHOUT A CRASH CUSHION (I.A.D.) WILL BE DECIDED BY THE FACILITIES DESIGN SUBDIVISION ON A JOB BY JOB BASIS.



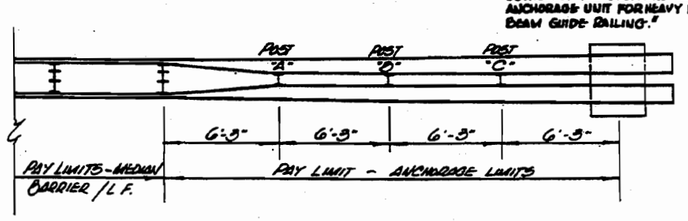
TYPICAL MEDIAN BARRIER INSTALLATION AT FIXED OBJECTS
NOT TO SCALE



* MAY BE FIELD ADJUSTED TO PROVIDE A SMOOTH TRANSITION.

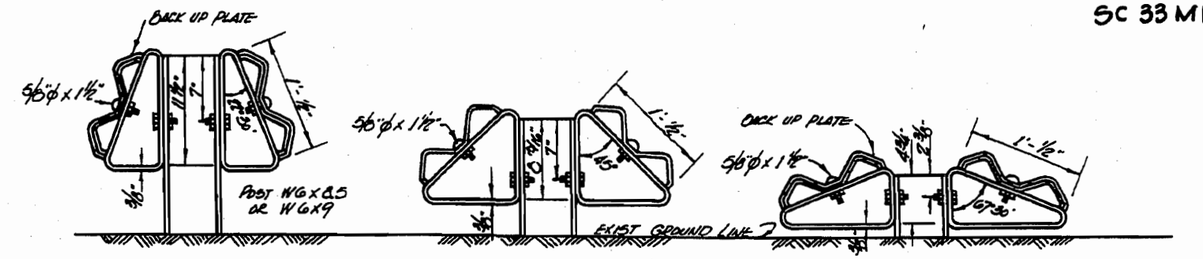
ELEVATION VIEW
SCALE: 1/4" = 1'-0"

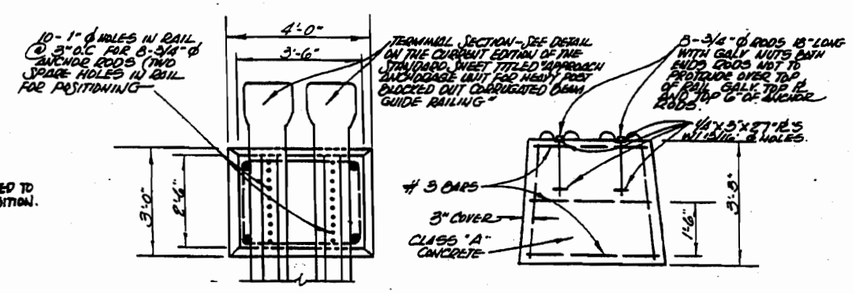
NOTE:
SPECIAL MOUNTING BRACKETS ARE REQUIRED ON BOTH SIDES OF POSTS "A", "B" AND "C". FOR DETAILS OF BRACKET AND REVISED BOLT HOLE LOCATION OF POSTS, SEE CURRENT EDITION OF THE STANDARD TITLE SHEET TITLED "APPROACH ANCHORAGE UNIT FOR HEAVY POST BLOCKED OUT CORRUGATED BEAM GUIDE RAILING."



PLAN VIEW
SCALE 1/4" = 1'-0"

ANCHORAGE UNIT FOR HEAVY POST BLOCKED-OUT CORRUGATED MEDIAN BARRIER



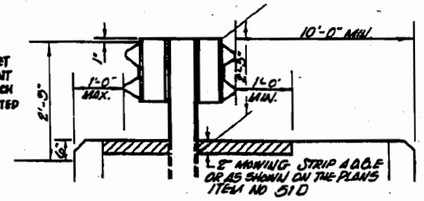


PLAN ELEVATION

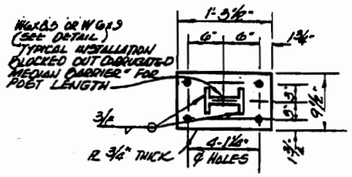
MEDIAN BARRIER CONCRETE ANCHOR
SCALE: 1/2" = 1'-0"

NOTES:

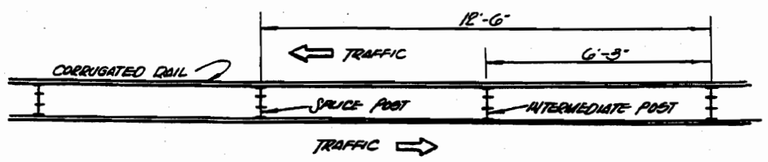
1. ALL RUNS OF MEDIAN BARRIER ARE TO BE ANCHORED AT BOTH ENDS.
2. IF THERE IS INSUFFICIENT DEPTH BETWEEN THE SURFACE OF THE GROUND, AT THE MEDIAN BARRIER AND A CONCRETE FOOTING ONE OF THE FOLLOWING METHODS SHALL BE EMPLOYED DEPENDING ON THE AVAILABLE DEPTHS.
   A. 2'-3" TO 3'-2" SHORTEN THE POST TO THE REQUIRED DEPTH BY CUTTING THE BOTTOM OFF THE POST.
   B. 1'-6" TO 2'-3" SHORTEN THE POST TO THE REQUIRED DEPTH BY CUTTING THE BOTTOM OFF THE POST AND PLACE THE POST IN A 12" DIA. CONCRETE ENCASEMENT EXTENDING FROM THE TOP OF THE FOOTING TO THE GROUND SURFACE.
   C. LESS THAN 1'-6" EXCAVATE TO THE FOOTING, SHORTEN THE POST BY CUTTING OFF THE LOWER END AND WELDING THE 1'-3½" x 9½" BASE PLATE SHOWN IN THE "BASE PLATE DETAIL" TO THE BOTTOM AND BOLT THE POST TO THE FOOTING USING A METHOD APPROVED BY THE ENGINEER.
3. FOR DETAILS ON RAIL ELEMENT AND SPLICE HARDWARE SEE DETAILS ON THE CURRENT STANDARD SHEET FOR HEAVY POST BLOCKED-OUT CORRUGATED BEAM GUIDE RAILING. ONLY 12 GAGE RAIL SHALL BE USED UNLESS OTHERWISE SHOWN ON THE PLANS.
4. ALL RAILS, POSTS, BLOCKS AND HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH M19.
5. FLAT PLATE WASHERS ARE TO BE USED AT ALL POSTS. BACK UP PLATES SHALL BE USED AT ALL POSTS EXCEPT SPLICE POSTS.



TYPICAL INSTALLATION BLOCKED OUT CORRUGATED MEDIAN BARRIER
SCALE 3/4" = 1'-0"
(CURB DETAILS AND RELATIONSHIPS ALSO APPLY TO GUIDE RAIL)

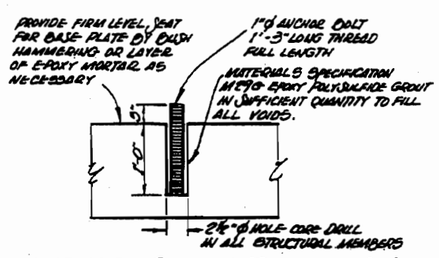


BASE PLATE DETAIL
SCALE 1" = 1'-0"
FOR USE ON PORTLAND CEMENT CONCRETE MEDIANS OR STRUCTURES

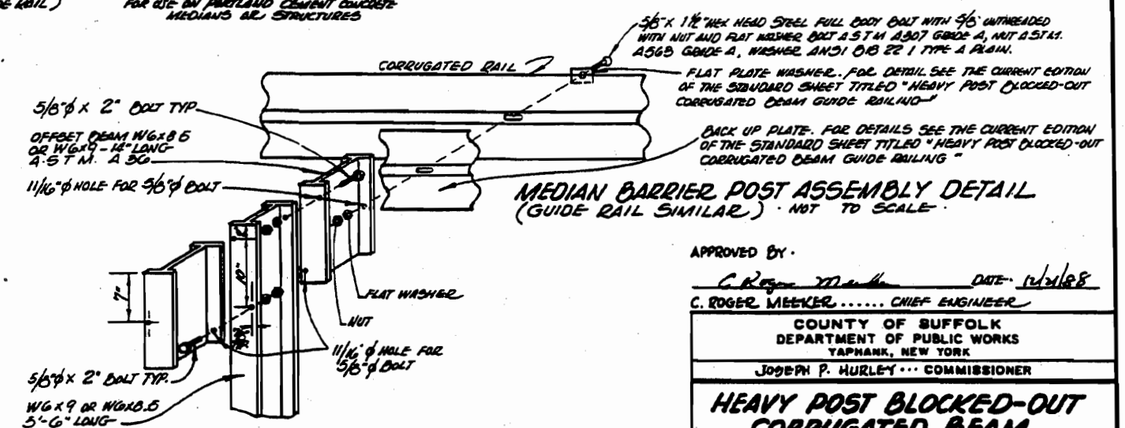


TYPICAL PLAN FOR MEDIAN BARRIER
SCALE: 1/4" = 1'-0"

REFER TO THE CURRENT EDITION OF THE STANDARD SHEET TITLED "HEAVY POST BLOCKED OUT CORRUGATED BEAM GUIDE RAILING" FOR DETAIL SHOWING RAIL SPLICE LAP.



ANCHOR BOLT INSTALLATION
SCALE 1" = 1'-0"
FOR USE ON PORTLAND CEMENT CONCRETE MEDIANS OR STRUCTURES



MEDIAN BARRIER POST ASSEMBLY DETAIL
(GUIDE RAIL SIMILAR) · NOT TO SCALE ·

APPROVED BY:
C. Roger Meeker DATE: 12/1/88
C. ROGER MEEKER ..... CHIEF ENGINEER

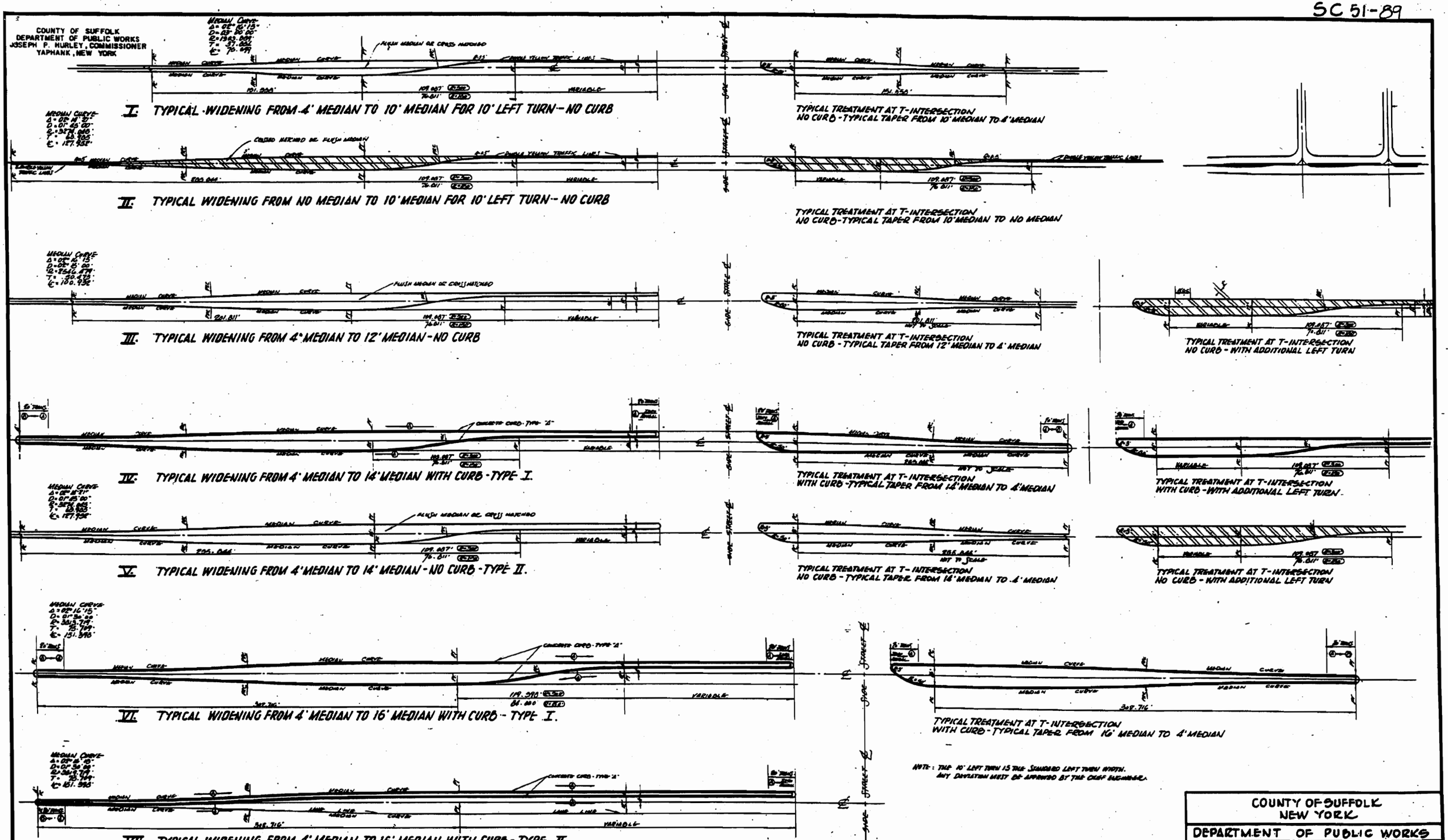
COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
YAPHANK, NEW YORK
JOSEPH P. HURLEY ··· COMMISSIONER

HEAVY POST BLOCKED-OUT CORRUGATED BEAM MEDIAN BARRIER

REVISION	APPROVED	DATE

PROJECT NO.	SCALE	SHEET NO.
	AS SHOWN	

COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
JOSEPH P. HURLEY, COMMISSIONER
YAPHANK, NEW YORK



NOTE: THE 10' LEFT TURN IS THE STANDARD LEFT TURN WIDTH.
ANY DEVIATION MUST BE APPROVED BY THE CHIEF ENGINEER.

APPROVED BY: C. Roger Meeker DATE 3/8/89
C. ROGER MEEKER P.E., CHIEF ENGINEER

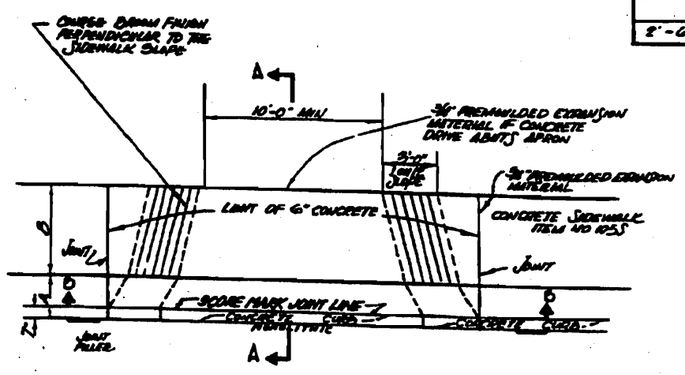
COUNTY OF SUFFOLK
NEW YORK

DEPARTMENT OF PUBLIC WORKS

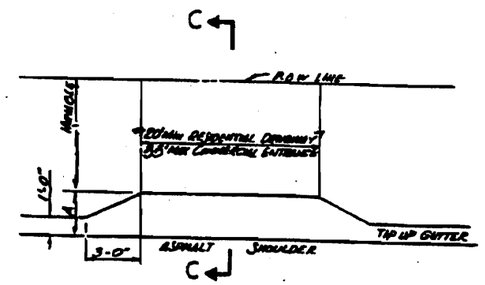
STANDARD LEFT TURN TREATMENT FOR HOLDING LANES

COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
STEPHEN G HAYDUK, COMMISSIONER
YAPHANK, NEW YORK

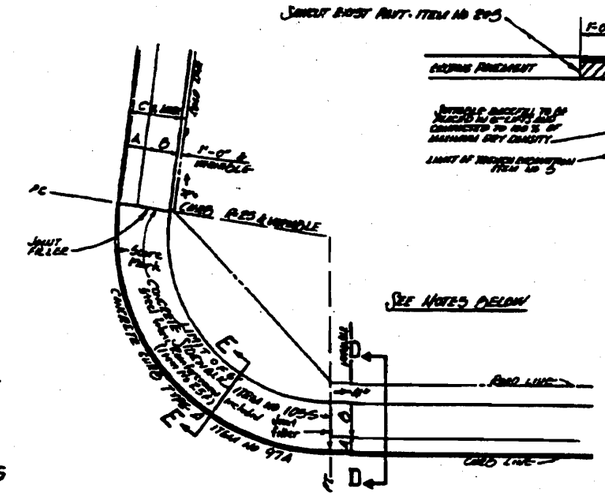
TABLE OF SIDEWALK DIMENSIONS		
A	B	C
2'-6"	5-0	7-9 OR GREATER



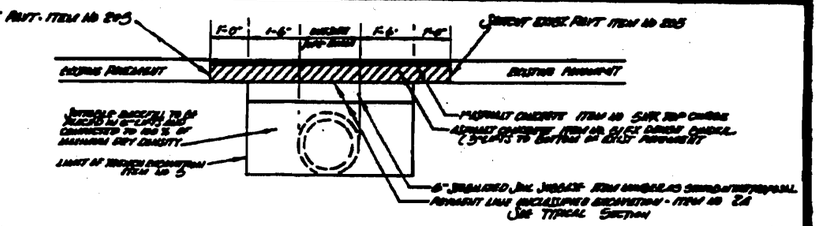
TYPICAL PLAN FOR RESTORING DRIVEWAYS
IN CURB SECTION
ITEM NO 105S



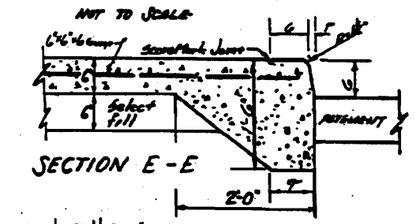
TYPICAL PLAN FOR RESTORING DRIVEWAYS
IN TIP UP SECTION
ITEM NO 51 D



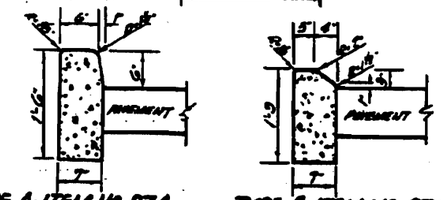
DETAIL OF CURB AND SIDEWALK
AT INTERSECTING STREETS
SCALE 1" = 10'-0"



PAVEMENT RESTORATION - ASPHALT
NOT TO SCALE

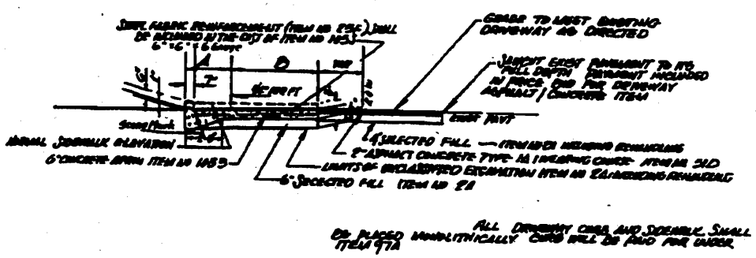


SECTION E-E

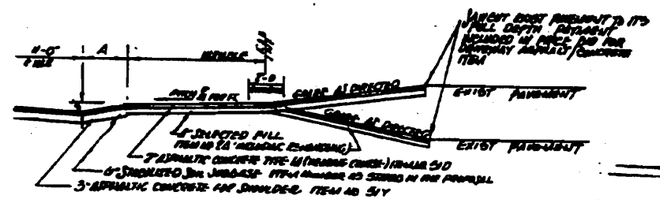


TYPE A-ITEM NO 97A TYPE B ITEM NO. 97B

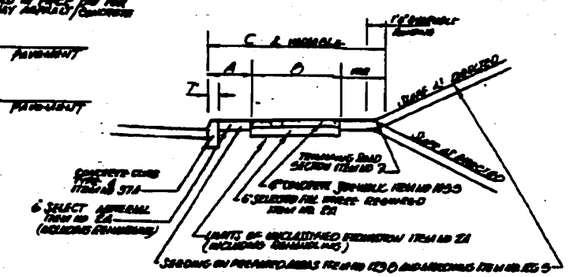
CONCRETE CURBS
SCALE 1" = 1'-0"



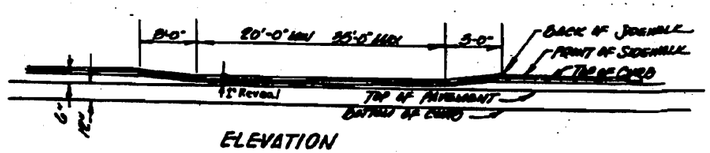
SECTION A-A



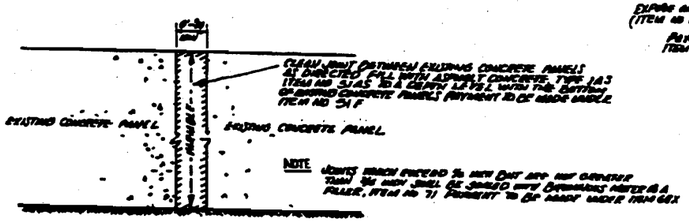
SECTION C-C



SECTION D-D

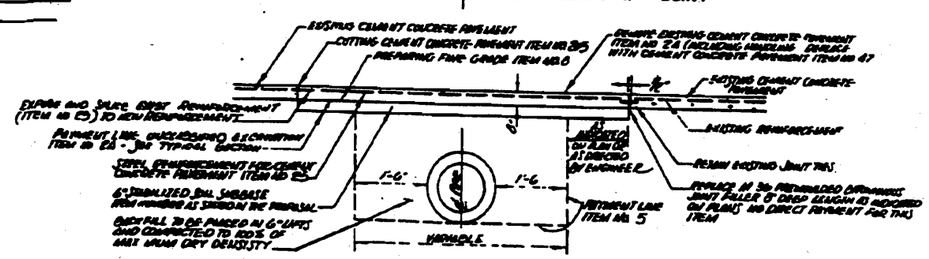


ELEVATION
SECTION B-B

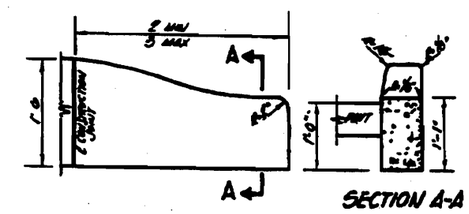


PREPARATION OF EXISTING JOINTS PRIOR TO
RESURFACING OF CEMENT CONCRETE PAVEMENT
NO SCALE

TYPICAL WHERE CUTTING IS REQUIRED ON CONCRETE PAVEMENT — TYPICAL WHERE CONCRETE PAVEMENT IS REPLACED AT A JOINT



PAVEMENT RESTORATION - CONCRETE
NO SCALE



CONCRETE CURB ENDING
SCALE 1" = 1'-0"
FOR TYPICAL TYPE A CURB OR AS INDICATED BY ENGINEER

CURB & SIDEWALK NOTES:

IN ADDITION TO THE REQUIREMENTS OF ITEM NO 97, 1/2" PREMOLDED EXPANSION JOINT FILLER SHALL BE PLACED IN JOINTS AT 60 FOOT INTERVALS OR EVERY THIRD JOINT ALONG THE LENGTH OF THE CURB AND WHERE THE CURB ABUTS DRAINAGE CASTINGS

CURB AND SIDEWALK ARE TO BE INSTALLED AS INDICATED ON CONSTRUCTION PLANS

TYPICAL SIDEWALK ENDING EXTENDS 10'-0" BEYOND PC OR PT, OR AS ORDERED BY ENGINEER

SEE STANDARD SHEET SC 103-97 FOR RAMP DETAILS.

Curb and Apron Sections to be poured monolithically

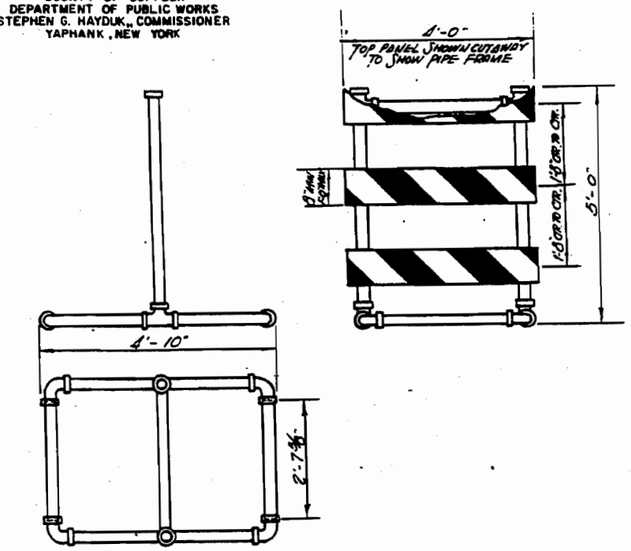
APPROVED BY: C. Robert Wagner
C. ROBERT WAGNER, P.E., CHIEF ENGINEER

SYMBOL	DESCRIPTION	APPROVED	DATE
	Revised to Manhattan Construction & Contract Work Rules		3-97
	REVISIONS		

COUNTY OF SUFFOLK
NEW YORK
DEPARTMENT OF PUBLIC WORKS
CURB, SIDEWALK, RESTORING DRIVEWAYS AND PAVEMENT RESTORATION

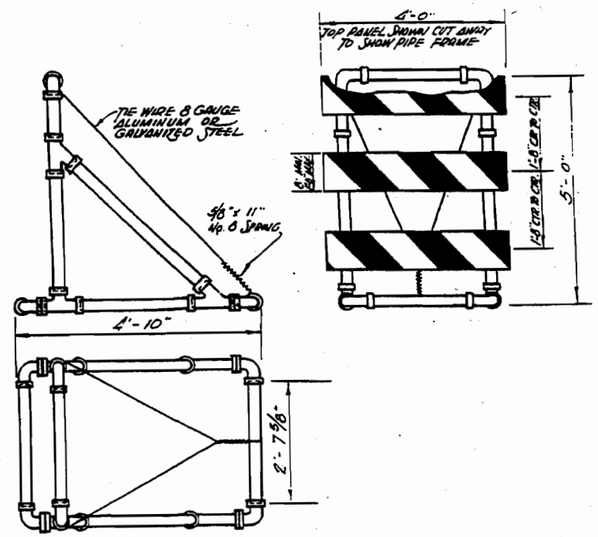
COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
STEPHEN G. HAYDUK, COMMISSIONER
YAPHANK, NEW YORK

SC 76 - 88



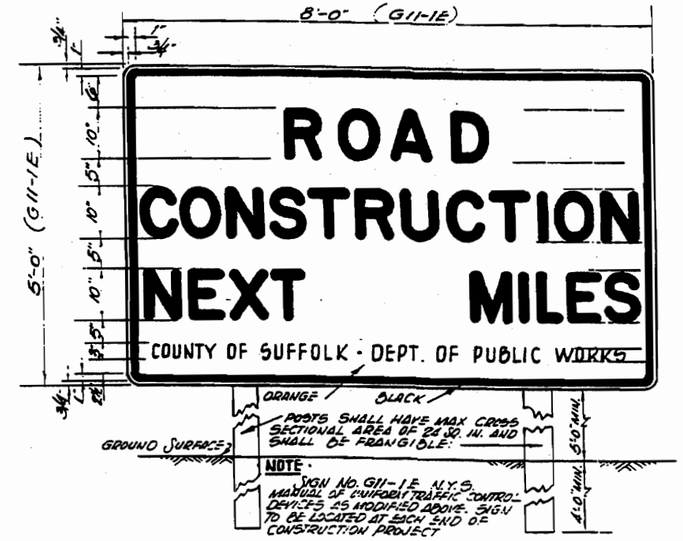
TYPICAL TYPE III BREAKAWAY BARRICADE ALTERNATE "A"

NOT TO SCALE



TYPICAL TYPE III BREAKAWAY BARRICADE ALTERNATE "B"

NOT TO SCALE



REFLECTORIZED WARNING SIGN · ITEM NO. 76 S

SCALE · 3/4" = 1'-0"

ALL POSTS SHALL BE PAINTED TWO COATS OF WHITE PAINT.
ALL BACKS OF SIGNS SHALL BE PAINTED TWO COATS OF ORANGE PAINT.
ALL SIGNS SHALL BE LETTERED IN BLACK PAINT ON A BACKGROUND OF ORANGE SHEET REFLECTORIZING MATERIAL CONFORMING TO THE FOLLOWING SPECIFICATIONS.

*

STANDARD SIGN W8-1, N.Y.S. M.U.T.C.D. (7-1-83) SECT. 2B.8.2 SHALL BE ERECTED AT EVERY INTERSECTING STREET, AT LOCATIONS AS ORDERED BY THE ENGINEER.

IN ADDITION THE CONTRACTOR SHALL ERECT THE NECESSARY SIGNS ALONG THE LENGTH OF THE CONSTRUCTION PROJECT AS SHOWN ON THE FIGURES OF SUB CHAPTER H OF N.Y.S. M.U.T.C.D. ALL COSTS TO BE INCLUDED IN THE SUM BID FOR ITEM NO. 76 S.

POSTS SHALL HAVE MAXIMUM CROSS SECTIONAL AREA OF 16 SQ. IN. AND SHALL BE FRANGIBLE. INSTALL SIGN 7'-0" MINIMUM FROM EXISTING GROUND TO BOTTOM OF SIGN.

GENERAL NOTES

1. THE DETAILS AND MATERIALS SHOWN FOR TYPE III BREAKAWAY BARRICADES ARE TYPICAL AND THE CONTRACTOR MAY ELECT ALTERNATE DESIGNS AND MATERIALS. IN THE EVENT HE SELECTS TO USE AN ALTERNATE DESIGN OR MATERIAL, HE MUST PREPARE SHOP DRAWINGS AND SUBMIT THEM TO THE CHIEF ENGINEER FOR APPROVAL.
2. THE TWO ALTERNATES SHOWN ARE EQUAL AND THE CONTRACTOR MAY USE ANY OF THE DESIGNS SHOWN OR AN APPROVED ALTERNATE UNLESS SHOWN OTHERWISE ON THE PLANS, OR IN THE CONTRACT DOCUMENTS.
3. ALL REFLECTORIZED FACE PANELS SHALL HAVE ORANGE AND WHITE REFLECTIVE SHEETING CONFORMING TO THE SPECIFICATIONS OF S.C.D.P.W. M16-A REFLECTIVE SHEETING (CLASS A) APPLIED IN THE PATTERN SHOWN IN FIG. L2.4 OF THE NEW YORK STATE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
4. TYPE III BREAKAWAY BARRICADES SHALL CONFORM TO THE REQUIREMENTS FOR BARRICADES IN PART 2B2 OF THE NEW YORK STATE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES EXCEPT THAT WOOD WILL NOT BE PERMITTED.
5. ALUMINUM FACE PANELS SHALL CONFORM TO S.C.D.P.W. M161.

NOTES FOR ALTERNATES "A" AND "B"

1. ALL PIPE SHALL BE 3" POLYVINYL CHLORIDE (PVC) PRESSURE RATED PIPE SDR21 OR SDR 26 ASTM D2241.
2. JOINT FITTINGS FOR ALTERNATE "D" MAY BE PVC-ASTM D2665 OR ACYLONITE BUTADIENE STYRENE (ABS) ASTM D2661 (DRAINAGE WASTE AND VENT). ALTERNATE "A" SHOULD USE PVC FITTINGS CONFORMING TO ASTM D2665.
3. ALL PIPE SHOULD BE WHITE. WHITE FITTINGS ARE PREFERRED, BLACK MAY BE USED.
4. ALL JOINTS IN ALTERNATE "A" SHALL BE GLUED WITH SOLVENT CEMENT ASTM D2564 TYPE I. ALL JOINTS IN ALTERNATE "D" SHALL BE FREE TO SEPERATE UPON VEHICLE COMPACT.
5. SHADED CONDUIT IN ALTERNATE "D" SHALL BE TIED TOGETHER WITH ROPE THREADED INTO THE PIPE INTERIOR. USE 3/16" NO. 6 SOLID BRAIDED NYLON OR EQUIVALENT.
6. A FIXED FRANGIBLE PAVEMENT CONNECTION IS PREFERRED TO SECURE THE BARRICADES. SAND BAGS MAY BE SUBSTITUTED.

SPECIFICATIONS FOR SHEET REFLECTING MATERIAL

SHEET REFLECTING MATERIAL · SHEET REFLECTING MATERIAL SHALL CONSIST OF GLASS SPHERES EMBEDDED IN A WATERPROOF BINDER AND ADHERED TO A WATERPROOF FLEXIBLE BACKING.

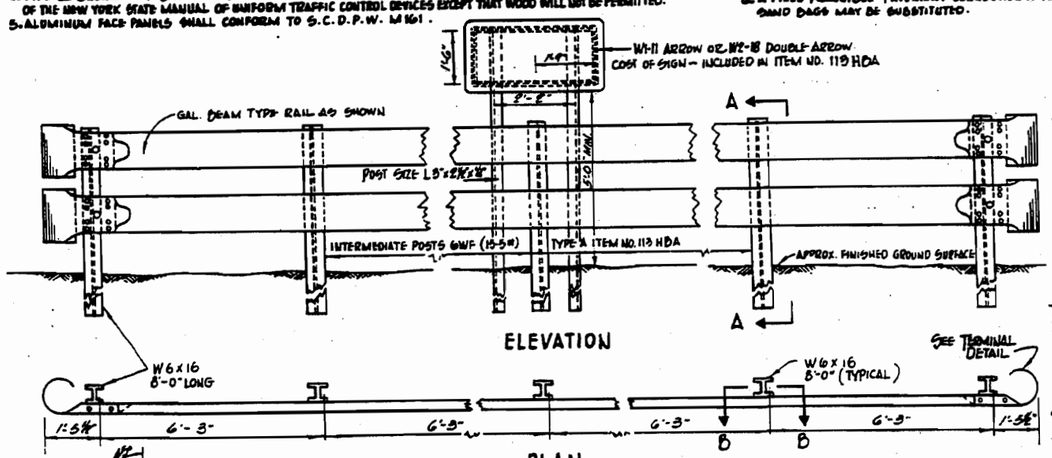
BACKING MATERIAL · THE BACKING TO WHICH THE GLASS SPHERES ARE ADHERED SHALL CONSIST OF SYNTHETIC SHEET RESIN OR OTHER SUITABLE NON-CELLULOS MATERIAL. IT SHALL BE MOISTURE RESISTANT, FLEXIBLE, TOUGH ENOUGH TO WITHSTAND ORDINARY HANDLING IN SHIPMENT, STORAGE AND APPLICATION, AND SHALL NOT BE SUBJECT TO SHRINKAGE, EXPANSION, CRACKING OR BRITTLENESS SO AS TO FAIL UNDER ORDINARY HANDLING IN SHIPMENT OR APPLICATION.

GLASS SPHERES · THE SPHERES USED IN THE MANUFACTURE OF THE SHEET REFLECTING MATERIAL SHALL BE COLORLESS, CLEAN AND TRANSPARENT. THEY SHALL BE OF SUCH TYPE THAT WHEN EMBEDDED IN THE BINDER COATING, THEIR UPPER SURFACE WILL BE EXPOSED FOR THE REFRACTING AND REFLECTING OF LIGHT RAYS. SPHERES WITH A DIAMETER GREATER THAN 0.015" SHALL NOT BE USED.

BINDER · THE ADHESIVE BINDER USED TO ADHERE THE SPHERES TO THE BACKING MAY BE TRANSPARENT OR PIGMENTED, AND SHALL BE OF GOOD QUALITY.

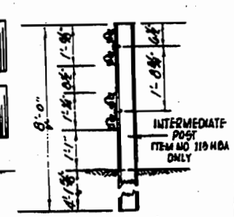
ADHESION · THE SHEET REFLECTING MATERIAL, WHEN CEMENTED TO A SMOOTH PRIMED SURFACE IN A MANNER PRESCRIBED BY THE MANUFACTURER AND USING THE ADHESIVE FURNISHED BY MANUFACTURER, SHALL BE BONDED TO THE SURFACE WITH A BOND EQUAL IN STRENGTH TO THE SHEET REFLECTING MATERIAL ITSELF.

PAYMENT · THE COST OF THESE SIGNS TO BE INCLUDED IN THE PRICE BID FOR ITEM NO. 76 S, MAINTENANCE AND PROTECTION OF TRAFFIC.

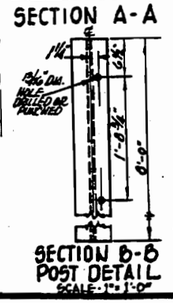


HIGHWAY BARRICADE - ITEM NO. 113 HBA

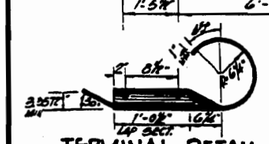
SCALE · 1 IN. = 2 FT.-0 IN.



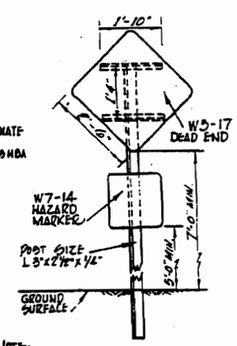
SECTION A-A



SECTION B-B
POST DETAIL
SCALE: 1" = 1'-0"



TERMINAL DETAIL
SCALE · 1" = 1'-0"



NOTE:
THIS SIGN SHALL BE PLACED ON DEAD END HIGHWAYS AT THEIR TERMINATION OR ON THE RIGHT SIDE WITHIN 100 FEET OF THE TERMINATION OF SUCH HIGHWAY.
COST OF SIGNS INCLUDED IN ITEM NO. 113 HBA

TYPICAL SIGNING - TRAFFIC MAINTAINED THROUGH PROJECT

SUFFOLK COUNTY STANDARD SHEET SC 76B-88 DEPICTS TWO TYPICAL SIGNING DETAILS - SCHEME A AND B. THE REQUIRED SCHEME IS SPECIFIED ON THE TITLE SHEET OF THIS SET OF PLANS.

NOTES FOR HIGHWAY BARRICADE (ITEM NO. 113 HBA)

1. ALL STEEL SHOWN ON THIS SHEET SHALL BE GALVANIZED IN ACCORDANCE WITH M19.
2. FOR DETAILS OF RAIL ELEMENT AND SPLICE HARDWARE SEE THE CURRENT EDITION OF THE STANDARD SHEET TITLED "HEAVY POST BLOCKED OUT CORRUGATED BEAM GUIDE RAILING.

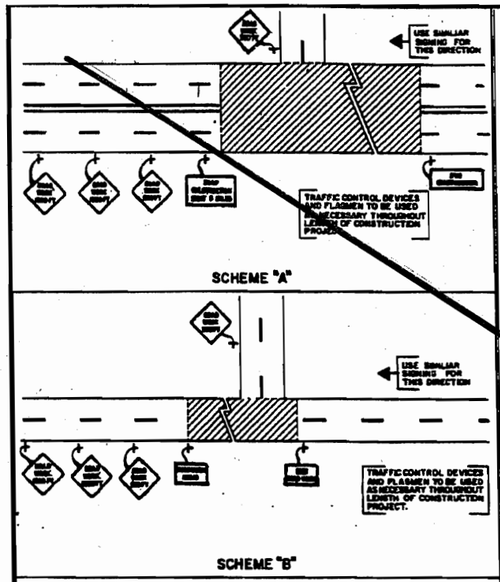
APPROVED BY: C. ROGER MEEKER P.E., CHIEF ENGINEER

COUNTY OF SUFFOLK
NEW YORK

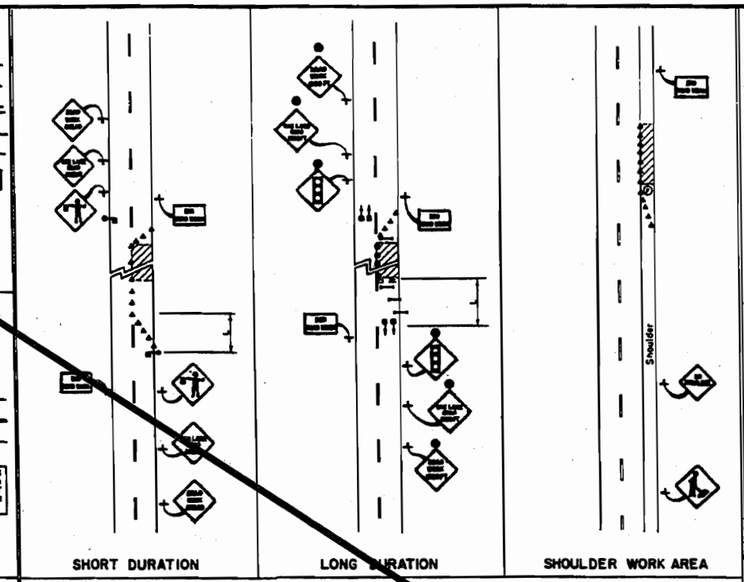
DEPARTMENT OF PUBLIC WORKS

CONSTRUCTION SIGNS AND BARRICADE DETAILS

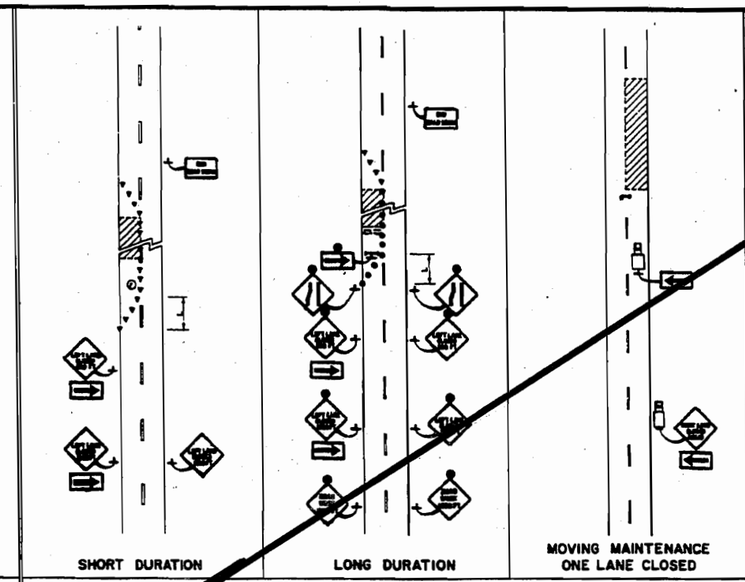
SC76-88



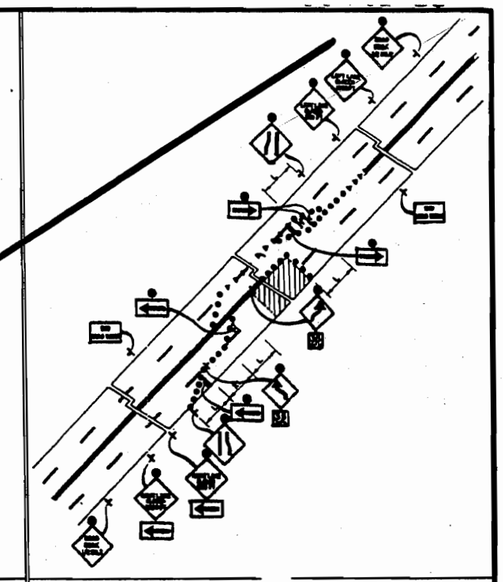
TRAFFIC CONTROL
TRAFFIC MAINTAINED THROUGH PROJECT



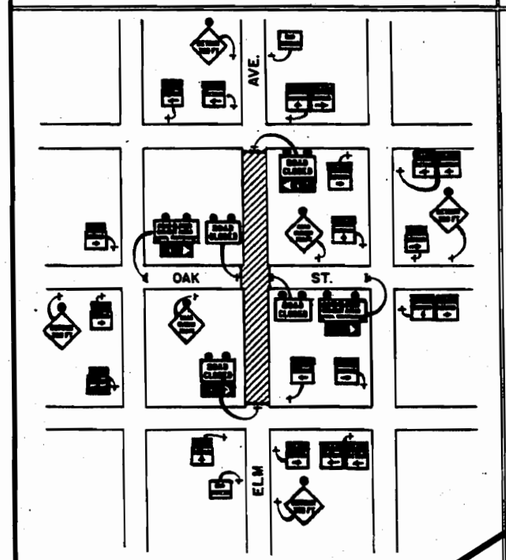
TRAFFIC CONTROL
TWO-LANE, TWO WAY ROADWAY



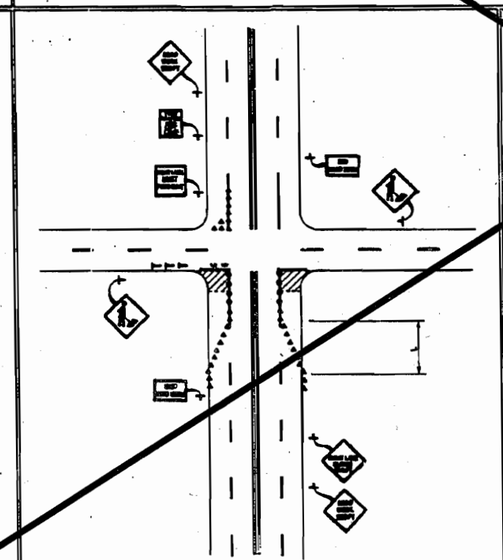
TRAFFIC CONTROL
TWO-LANE, ONE WAY ROADWAY



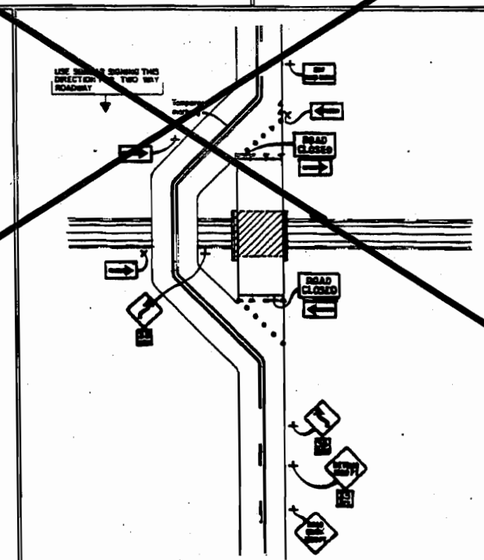
TRAFFIC CONTROL
FOUR-LANE, TWO WAY ROADWAY



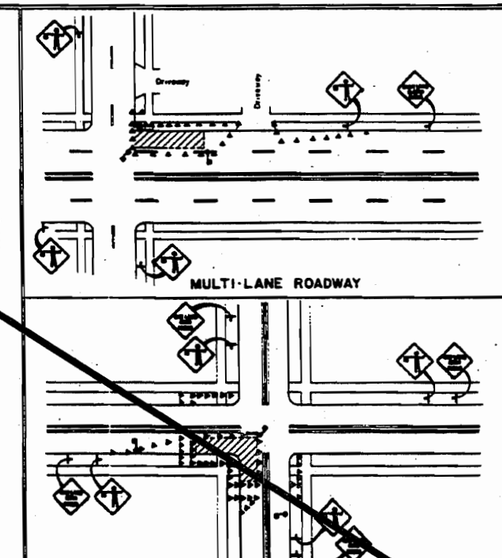
TRAFFIC CONTROL
ROADWAY CLOSED EXCEPT FOR LOCAL TRAFFIC



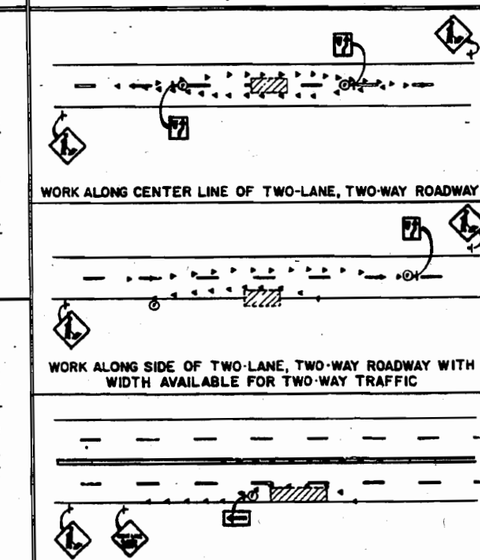
TRAFFIC CONTROL
WORK AT INTERSECTION



TRAFFIC CONTROL
MINOR DETOUR



TYPICAL OPERATIONS
AT INTERSECTIONS WITH PEDESTRIAN MOVEMENT



TRAFFIC CONTROL
SPOT WORK OPERATIONS

LEGEND

FLASHING WARNING LIGHT	WORK AREA
WORK VEHICLE	ARROW PANEL
BARRICADE	FLAG TREE
FLAGGER	DRUM
CONE	SIGN
SIGNAL FACE	VERTICAL PANEL

L = APPROXIMATE TRANSITION LENGTH, SEE SECT. 262.22 N.Y.S. M.U.T.C.D. (LATEST EDITION).

NOTES:

(1) TRAFFIC CONTROL DEVICES SHALL BE AVAILABLE PRIOR TO THE BEGINNING OF MAINTENANCE OR CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY INSTALLED AND MAINTAINED DURING THE TIME THEY ARE REQUIRED, THEY SHALL REMAIN IN PLACE ONLY AS LONG AS THEY ARE NEEDED AND SHALL BE REMOVED IMMEDIATELY THEREAFTER. WHERE OPERATIONS ARE PERFORMED IN STAGES THERE SHALL BE IN PLACE ONLY THOSE DEVICES THAT APPLY TO THE CONDITIONS PRESENT DURING THE STAGE IN PROGRESS.

(2) ALL SIGNS, DELINEATIONS AND GUIDING DEVICES USED TO MAINTAIN, PROTECT AND CONTROL TRAFFIC SHALL COMPLY WITH THE NEW YORK STATE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (LATEST EDITION).

(3) TRAFFIC CONTROL MAINTENANCE AND DEVICES SHALL INCLUDE BUT NOT BE LIMITED TO THOSE SHOWN HEREON. THEY SHALL BE SUPPLEMENTED AS REQUIRED OR AS ORDERED BY THE ENGINEER.

N/A

APPROVED BY: C. Roger Meeker
C. ROGER MEEKER, CHIEF ENGINEER
DATE: 12/21/85

SYMBOL	DESCRIPTION	APPROVED	DATE
	REVISIONS		

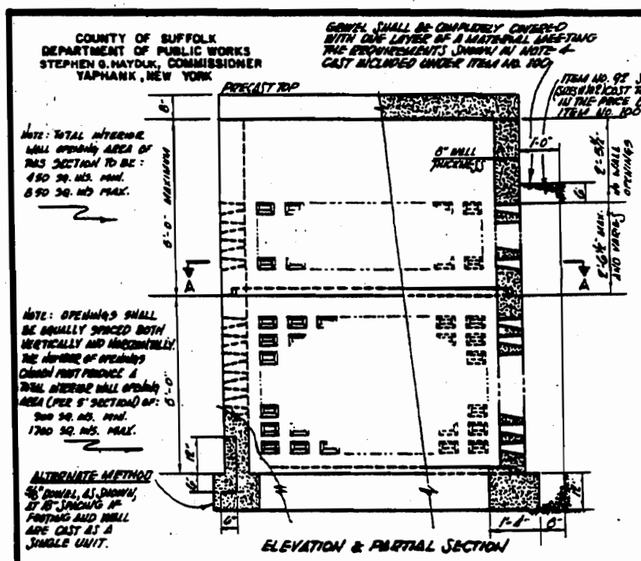
COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
YAPHANK, NEW YORK
STEPHEN G. HAYDUK · COMMISSIONER

MAINTENANCE AND PROTECTION OF TRAFFIC

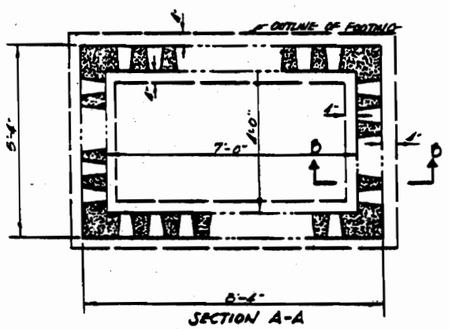
PROJECT NO.	SCALE	SHEET NO.

SC 76B-80

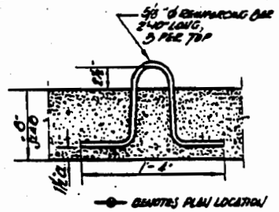
COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
STEPHEN G. HAYDUK, COMMISSIONER
YAPHANK, NEW YORK



ELEVATION & PARTIAL SECTION

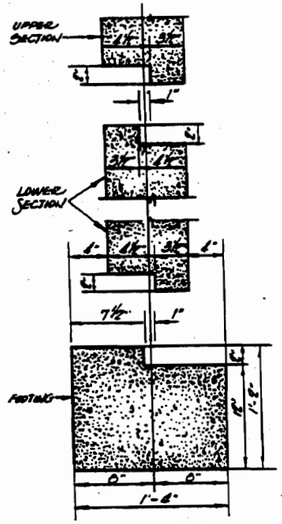


TYPE "D" LEACHING BASIN DETAIL
SCALE 1/2" = 1'-0"

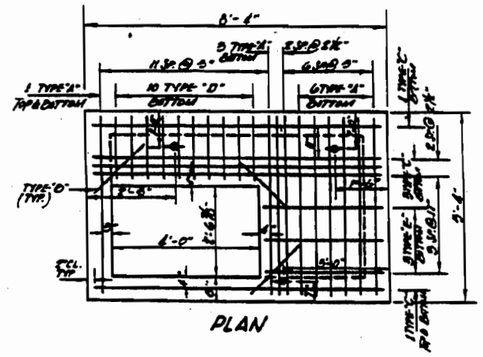


QUANTITIES PLAN LOCATION

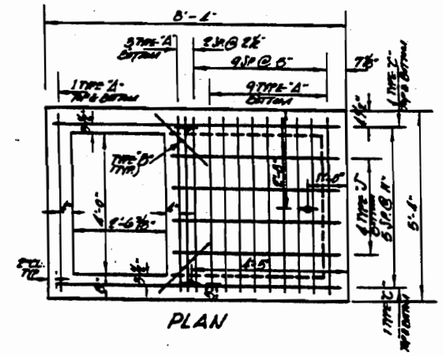
LIFTING RING DETAIL
SCALE - 1 1/2" = 1'-0"



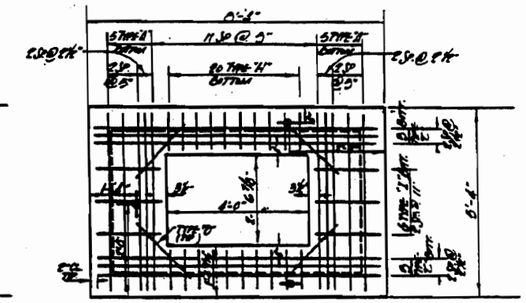
CONSTRUCTION KEY DETAILS
SCALE - 1 1/2" = 1'-0"

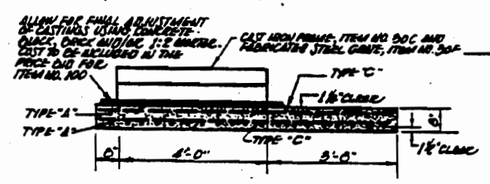


PLAN

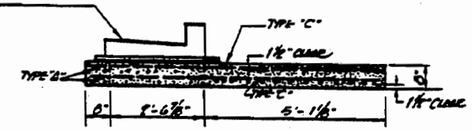


PLAN

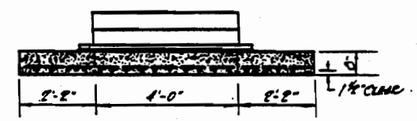




END SECTION
PRECAST TOP SLAB · TYPE "U"
SCALE · 1/2" = 1'-0"



END SECTION
PRECAST TOP-SLAB · TYPE "V"
SCALE · 1/2" = 1'-0"

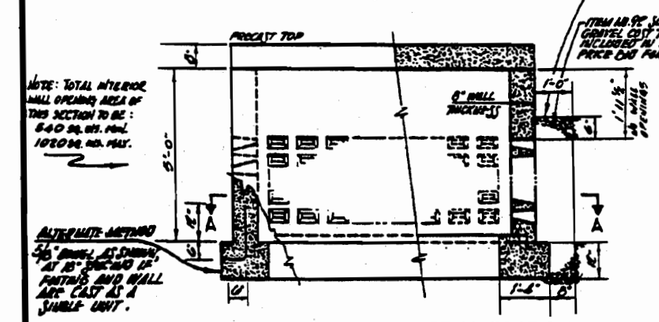


END SECTION
PRECAST TOP SLAB · TYPE "W"
SCALE · 1/2" = 1'-0"

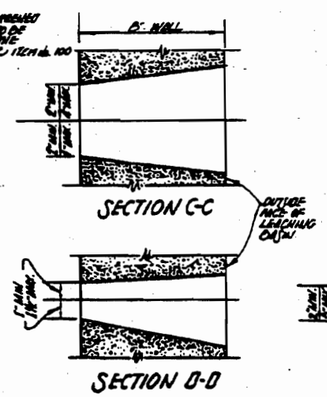
BAR LIST TYPE "U"				
TYPE	REQ'D.	SIZE	LENGTH	TOTAL LENGTH
A	11	#5	5'-0"	55'-0"
B	3	#5	2'-0"	6'-0"
C	6	#5	8'-0"	48'-0"
D	10	#5	1'-9"	17'-6"
E	3	#5	3'-4"	10'-0"

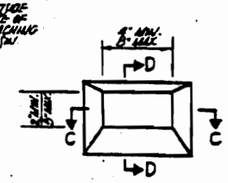
BAR LIST TYPE "V"				
TYPE	REQ'D.	SIZE	LENGTH	TOTAL LENGTH
A	14	#5	5'-0"	70'-0"
B	2	#5	2'-0"	4'-0"
C	4	#5	8'-0"	32'-0"
J	2	#5	6'-9	13'-0"

BAR LIST TYPE "W"				
TYPE	REQ'D.	SIZE	LENGTH	TOTAL LENGTH
A	10	#5	5'-0"	50'-0"
B	4	#5	2'-0"	8'-0"
C	6	#5	8'-0"	48'-0"
H	20	#5	1'-11"	20'-10"
I	6	#5	1'-10"	11'-0"



ELEVATION & PARTIAL SECTION
TYPE "DX" LEACHING BASIN DETAIL
SCALE 1/2" = 1'-0"





SEEPAGE OPENING DETAIL
SCALE - 3" = 1'-0"

NOTES

1. REQUIREMENTS FOR CONCRETE AND MATERIALS OF ITEM NO. 100 SHALL APPLY.
2. ALL REINFORCING SHALL BE IN ACCORDANCE WITH A.S.T.M. A-615.
3. STEP IRONS WILL NOT BE REQUIRED.
4. MATERIAL COVERING GRAVEL SHALL BE A 2 PLY FLAT REINFORCED PLASTIC LAMINATED SHEET MEETING THE FOLLOWING REQUIREMENTS:
   BURSTING STRENGTH (ASTM 774-67) - 95 PSIG MIN.
   WATER VAPOR TRANSMISSION (ASTM E96-66)-0.5 GMS PER SQ.IN. MAX.
   TEAR STRENGTH (ASTM D 1004-66) - 155 LBS.
5. SHOP DRAWINGS ARE REQUIRED. THE CONTRACTOR SHALL SUBMIT FIVE (5) PRINTS OF EACH DRAWING TO THE CHIEF ENGINEER FOR APPROVAL.
6. MINIMUM THREE (3") INCH ALLOWANCE IS MADE FOR ADJUSTMENT OF FRAMES. FULL BEARING SHALL BE PROVIDED USING COMMON BRICK AND/OR MORTAR.
7. WALL OPENINGS FOR ENTERING PIPES IN PRECAST OR CONCRETE PIPE DRAINS SHALL BE SQUARE IN SHAPE AND SIX (6") INCH LARGER IN DIAMETER THAN THE OUTSIDE DIAMETER OF THE ENTERING PIPE.
8. NOT WITHSTANDING OTHER PROVISIONS OF THE SPECIFICATIONS THE COST OF ALL EXCAVATION AND TEMPORARY SHEET PILING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR EACH LEACHING BASIN.

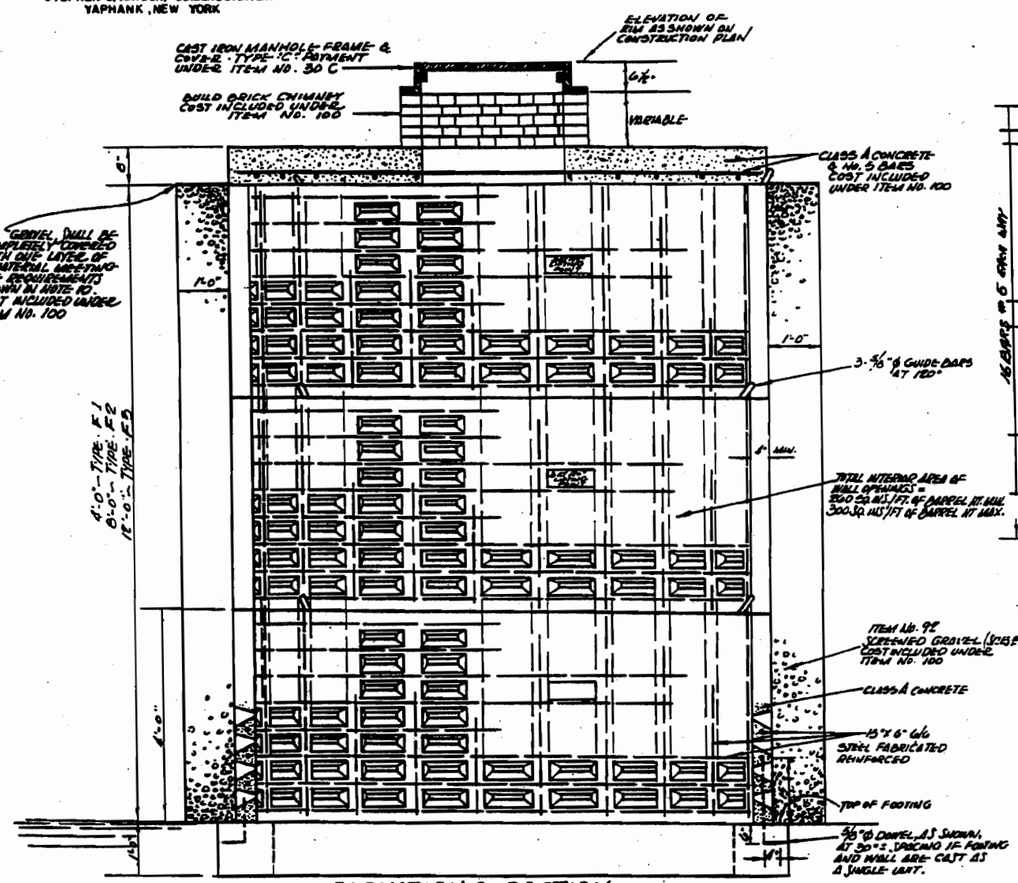
APPROVED BY: C. Roger Meeker
C. ROGER MEEKER P.E., CHIEF ENGINEER

COUNTY OF SUFFOLK
NEW YORK

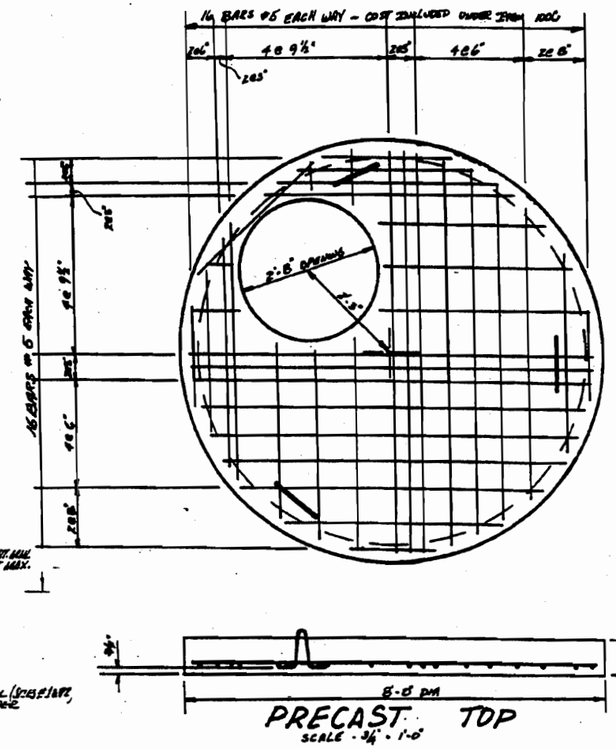
DEPARTMENT OF PUBLIC WORKS

DRAINAGE STRUCTURE
PRECAST LEACHING BASIN
TYPE "D" & TYPE "DX"

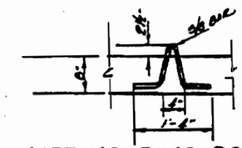
COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
STEPHEN G. HAYDUK, COMMISSIONER
YAPHANK, NEW YORK



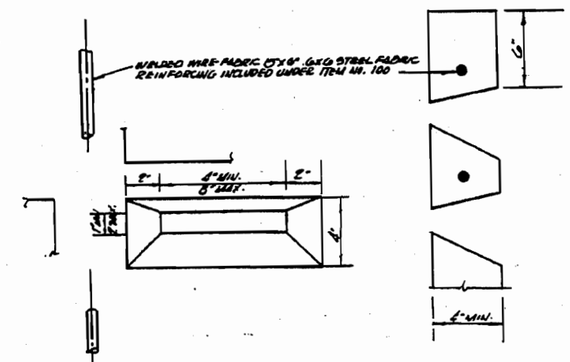
ELEVATION & SECTION
LEACHING BASIN - TYPE - F1, F2, F3
NOT TO SCALE



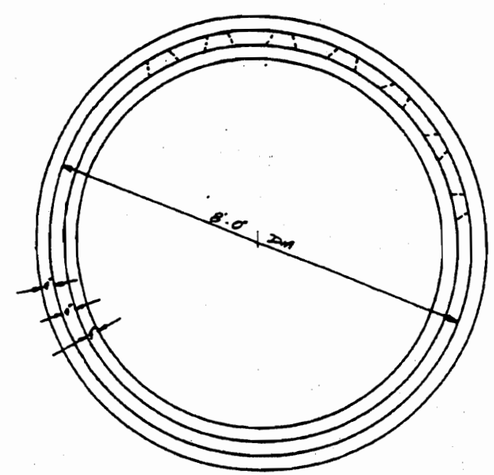
PRECAST TOP
SCALE - 3/4" = 1'-0"



LIFTING RING DETAIL
SCALE - 3/4" = 1'-0"



SEEPAGE OPENING DETAIL
SCALE - 1/4" = 1'-0"



PLAN
LEACHING BASIN
SCALE - 3/4" = 1'-0"

PRECAST CONCRETE TOP #5 BAR LIST					
NO. REQ'D.	LENGTH	NO. REQ'D.	LENGTH	NO. REQ'D.	LENGTH
2	1'-0"	2	3'-9"	2	7'-0"
4	1'-8"	4	4'-3"	2	7'-8"
3	3'-0"	2	4'-10"	6	7'-6"
2	3'-4"	2	5'-6"	2	8'-0"
2	3'-7"	2	6'-4"	2	0'-6"

NOTES

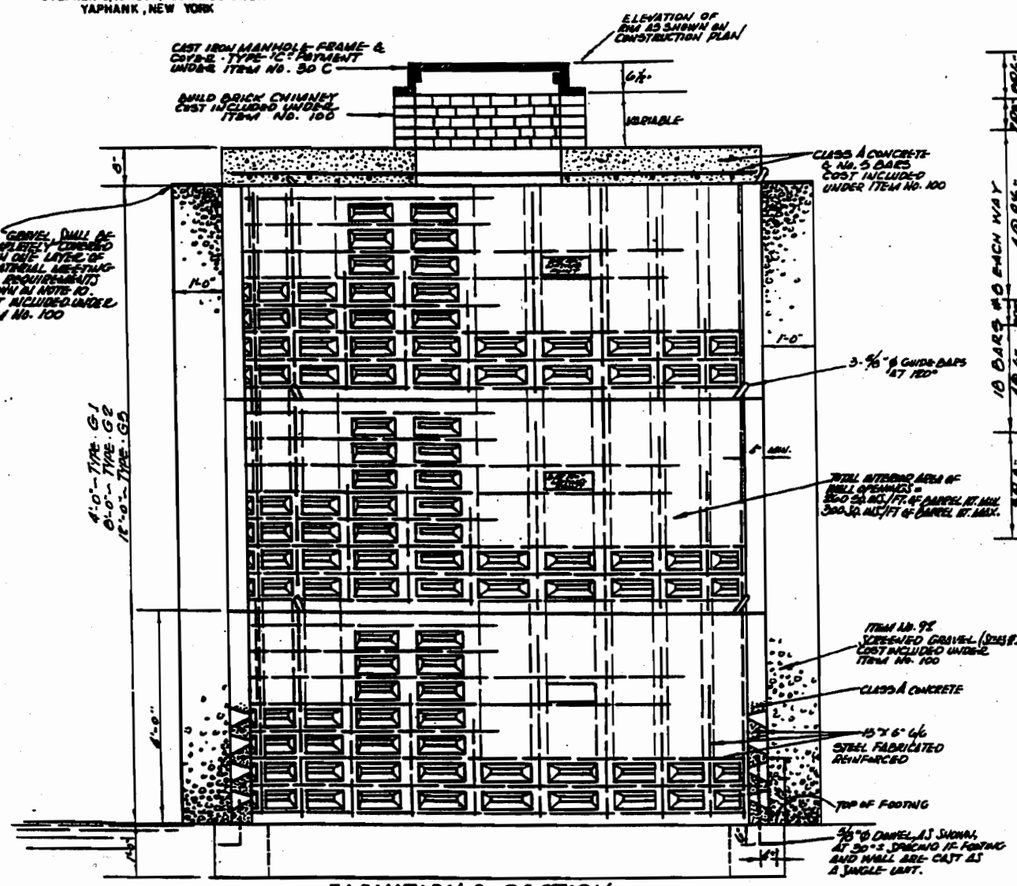
1. ALL BARS ARE SPACED AS SHOWN.
2. ALL REINFORCED STEEL IN ACCORDANCE WITH A.S.T.M. A615.
3. CONCRETE AND MATERIALS FOR ITEM NO. 100 SHALL APPLY.
4. LOCATION AND SIZE OF OPENING AS SHOWN.
5. EACH STRUCTURE WILL HAVE THREE (3) LIFTING RINGS 120° APART AS SHOWN.
6. SHOP DRAWINGS ARE REQUIRED. THE CONTRACTOR SHALL SUBMIT FIVE (5) PRINTS OF EACH DRAWING TO THE CHIEF ENGINEER FOR APPROVAL.
7. MINIMUM THREE (3") INCH ALLOWANCE IS MADE FOR ADJUSTMENT OF FRAMES. FULL BEARING SHALL BE PROVIDED USING COMMON BRICK AND/OR MORTAR.
8. WALL OPENINGS FOR ENTERING PIPES IN PRECAST OR CONCRETE PIPE BASINS SHALL BE ROUND IN SHAPE AND SIX (6") INCHES LARGER IN DIAMETER THAN THE OUTSIDE DIAMETER OF THE ENTERING PIPE.
9. NOT WITHSTANDING OTHER PROVISIONS OF THE SPECIFICATIONS THE COST OF ALL EXCAVATION AND TEMPORARY SHEET PILING SHALL BE INCLUDED IN THE UNIT PRICE FOR EACH LEACHING BASIN.
10. MATERIAL COVERING GRAVEL SHALL BE A 2 PLY FLAT REINFORCED PLASTIC LAMINATED SHEET MEETING THE FOLLOWING REQUIREMENTS:
    BURSTING STRENGTH (ASTM 774-67) - 35 PSIG MIN.
    WATER VAPOR TRANSMISSION (ASTM E96-66) - 0.5 G/M² PER 24 HOURS MAX.
    TEAR STRENGTH (ASTM D1004-66) - 135 LBS.

APPROVED BY [signature] DATE 3/23/94
RICHARD LAVALLE, P.E., CHIEF ENGINEER

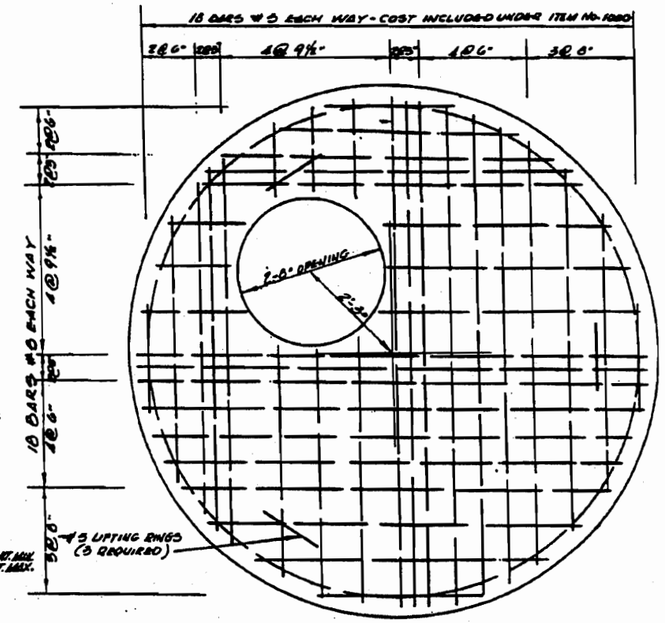
REVISIONS	APPROVED	DATE

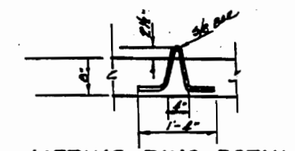
COUNTY OF SUFFOLK
NEW YORK
DEPARTMENT OF PUBLIC WORKS
PRECAST LEACHING BASIN
TYPE - F1, F2, F3

COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
STEPHEN D. HAYDUK, COMMISSIONER
YAPHANK, NEW YORK

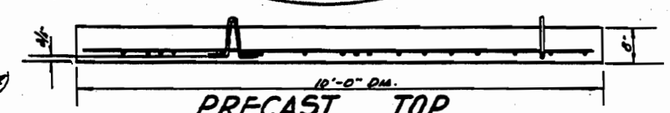


ELEVATION & SECTION
LEACHING BASIN - TYPE - G1, G2, G3
SCALE - 3/4" = 1'-0"

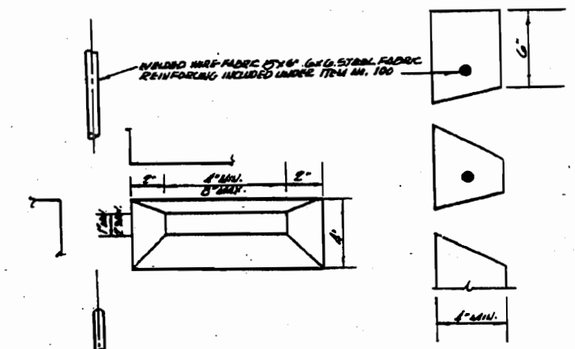




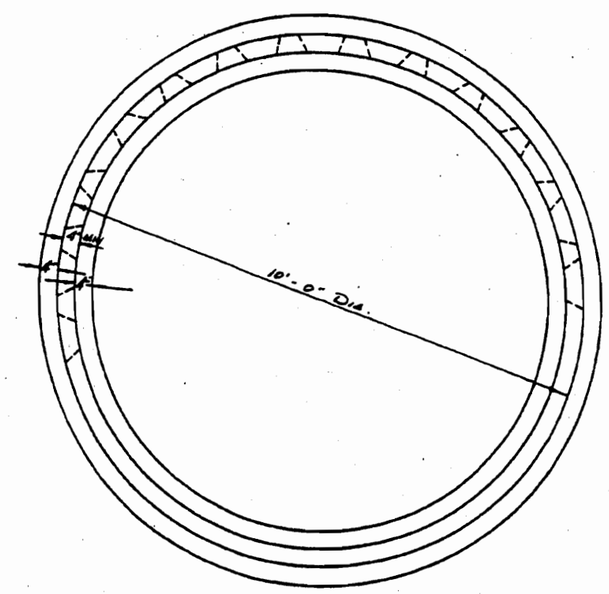
LIFTING RING DETAIL
SCALE - 3/4" = 1'-0"



PRECAST TOP
SCALE - 3/4" = 1'-0"



SEEPAGE OPENING DETAIL
SCALE 1/4" = 1'-0"



PLAN
LEACHING BASIN
SCALE - 3/4" = 1'-0"

PRECAST CONCRETE TOP #5 BAR LIST					
NO. REQ'D.	LENGTH	NO. REQ'D.	LENGTH	NO. REQ'D.	LENGTH
4	1-6	2	4-11	1	8-0
1	1-10	1	6-0	2	8-6
3	2-0	1	5-2	2	9-0
1	2-4	1	5-5	1	9-4
4	3-0	2	6-2	1	9-5
2	4-4	4	6-10	3	9-6
2	4-7	2	7-3	3	9-7
1	4-9	1	7-11		

NOTES

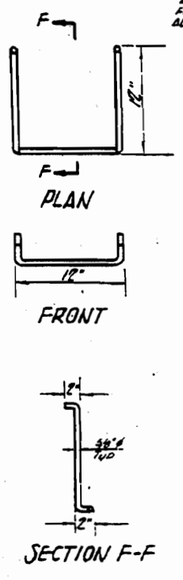
1. ALL BARS ARE SPACED AS SHOWN.
2. ALL REINFORCED STEEL IN ACCORDANCE WITH A.S.T.M. A615.
3. CONCRETE AND MATERIALS FOR ITEM NO. 100 SHALL APPLY.
4. LOCATION AND SIZE OF OPENING AS SHOWN.
5. EACH STRUCTURE WILL HAVE THREE (3) LIFTING RINGS 120° APART AS SHOWN.
6. SHOP DRAWINGS ARE REQUIRED. THE CONTRACTOR SHALL SUBMIT FIVE (5) PRINTS OF EACH DRAWING TO THE CHIEF ENGINEER FOR APPROVAL.
7. MINIMUM THREE (3") INCH ALLOWANCE IS MADE FOR ADJUSTMENT OF FRAMES. FULL BEARING SHALL BE PROVIDED USING COMMON BRICK AND/OR MORTAR.
8. WALLOPINGS FOR ENTERING PIPES IN PRECAST OR CONCRETE PIPE BASINS SHALL BE ROUND IN SHAPE AND ON (6") INCHES LARGER IN DIAMETER THAN THE OUTSIDE DIAMETER OF THE ENTERING PIPE.
9. NOT WITHSTANDING OTHER PROVISIONS OF THE SPECIFICATIONS THE COST OF ALL EXCAVATION AND TEMPORARY SHEET PILING SHALL BE INCLUDED IN THE UNIT PRICE FOR EACH LEACHING BASIN.
10. MATERIAL COVERING GRAVEL SHALL BE A 2 PLY FLAT REINFORCED PLASTIC LAMINATED SHEET MEETING THE FOLLOWING REQUIREMENTS:
    BURSTING STRENGTH (ASTM 774-67) - 35 PSIG MIN.
    WATER VAPOR TRANSMISSION (ASTM E96-66) - 0.5 G/M² PER 24 HOURS MAX.
    TEAR STRENGTH (ASTM D1004-66) - 185 LBS.

APPROVED BY: [signature] DATE 3/8/89
C. ROGER MEEKER P.E., CHIEF ENGINEER

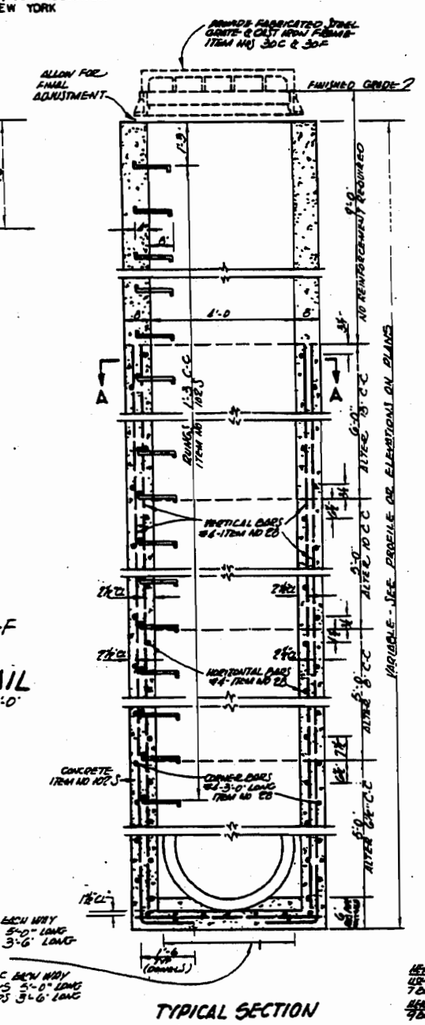
REVISIONS	APPROVED	DATE
4/6/89 - MODIFIED TO DETAIL ALTERNATE LEACHING BASIN TYPE - G1, G2, G3	[illegible]	6/8/89

COUNTY OF SUFFOLK
NEW YORK
DEPARTMENT OF PUBLIC WORKS
PRECAST LEACHING BASIN
TYPE - G1, G2, G3

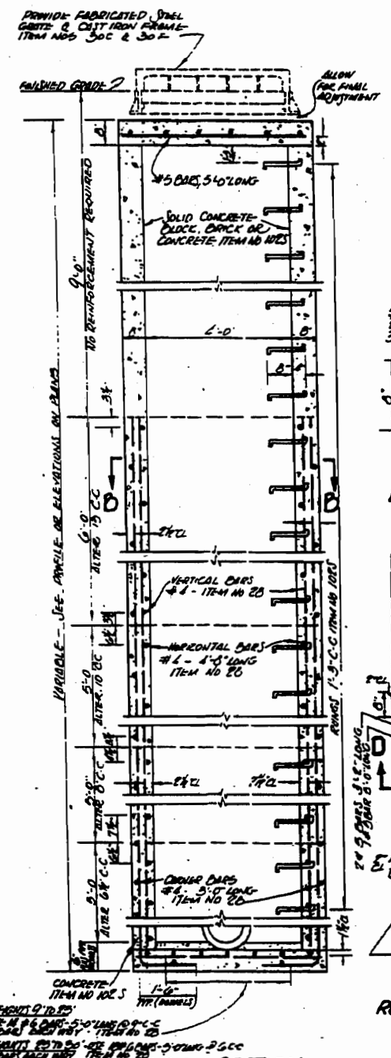
COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
STEPHEN G. HAYDUK, COMMISSIONER
YAPHANK, NEW YORK



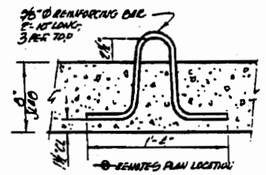
RUNG DETAIL
SCALE 1½" = 1'-0"



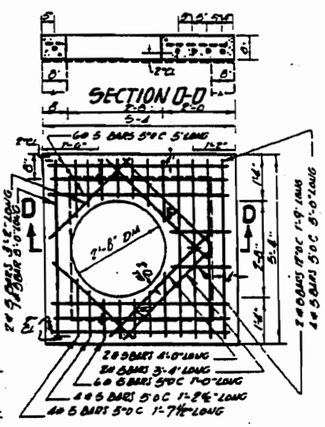
TYPICAL SECTION



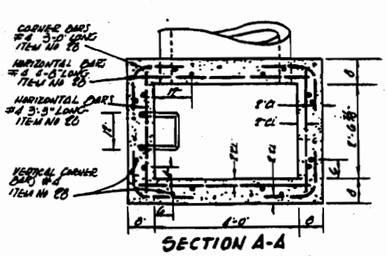
TYPICAL SECTION



LIFTING RING DETAIL
SCALE 1½" = 1'-0"

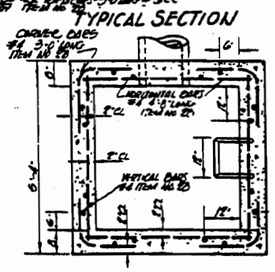


PLAN
ROADWAY SLAB C-1 (ROUND FRAME) FOR MANHOLE TYPE - C -

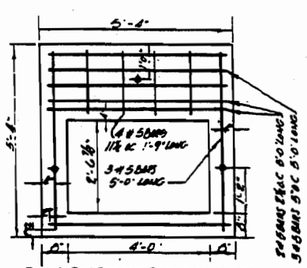


SECTION A-A

CATCH BASIN TYPE - A -
ITEM NO. 102 S
SCALE - ½" = 1'-0"

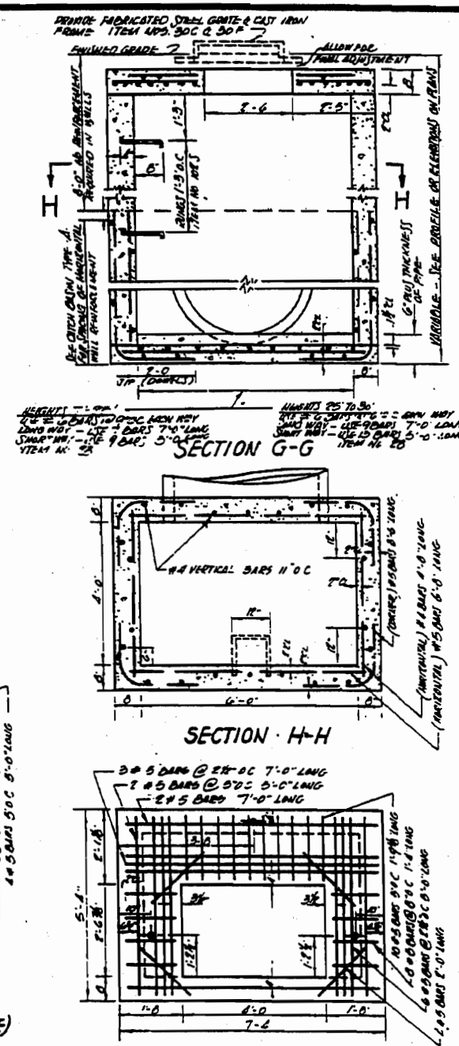


SECTION B-B



PLAN - SLAB TYPE B - FOR CATCH BASIN

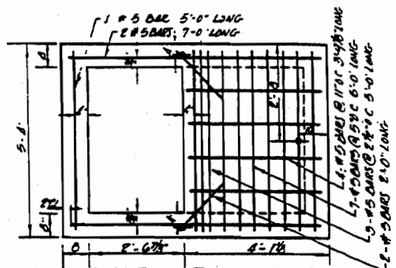
CATCH BASIN TYPE - B - & MANHOLE - TYPE - C -
ITEM NO. 102 S
SCALE - ½" = 1'-0"



SECTION G-G

SECTION H-H

PLAN - SLAB TYPE - Y - FOR CATCH BASIN

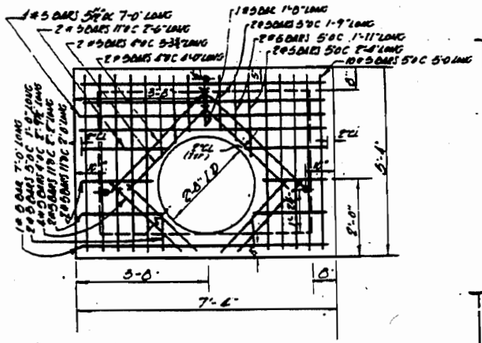


PLAN - SLAB TYPE Z - FOR CATCH BASIN

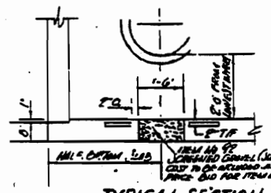
CATCH BASIN TYPE - X - & MANHOLE TYPE - X -
ITEM NO. 102 S
SCALE - ½" = 1'-0"

GENERAL NOTES

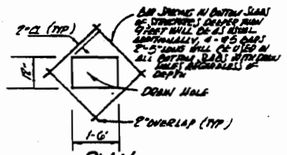
1. WHERE ALLOWANCE IS MADE FOR ADJUSTMENT OF CASTINGS, ADEQUATE BEARING WILL BE PROVIDED USING CONCRETE BLOCK, BRICK AND/OR 1:2 MORTAR ITEM NO 102 S
2. FOR WALL HEIGHTS 5' OR LESS, WALLS MAY BE SOLID CONCRETE BLOCK, BRICK OR CONCRETE. ITEM NO 102 S
3. FOR WALL HEIGHTS 5 OR GREATER, WALLS ARE TO BE EITHER CAST IN PLACE OR PRE-CAST CONCRETE
4. SIZE AND LOCATION OF PIPES VARIABLE. REFER TO PLANS AND PROFILES FOR SPECIFIC PIPE AND INVERT DATA
5. ALL POURED CONCRETE WALLS ARE TO BE DOWELED INTO BOTTOM SLABS IF UNREINFORCED WALLS, NO # DOWELS WILL BE SUBSTITUTED FOR VERTICAL CORNER BARS AND SHOULD EXTEND THE SAME AMOUNT VERTICALLY AS HORIZONTALLY (SEE TYPICAL HORIZONTAL DIMENSIONS) PAYMENT FOR DOWELS TO BE INCLUDED IN THE COST OF ITEM NO 102 S
6. NO RUNGS WILL BE REQUIRED FOR STRUCTURES 3' OR LESS IN DEPTH



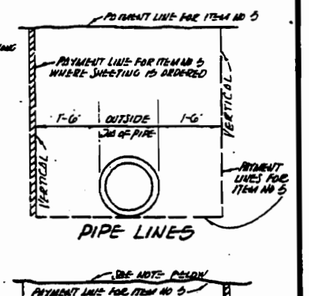
PLAN - SLAB FOR MANHOLE



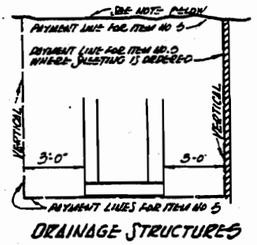
TYPICAL SECTION
BOTTOM SLAB & DRAIN HOLE FOR CATCH BASINS & MANHOLES WITH "H" DESIGNATION



PLAN
DRAIN HOLE REINFORCEMENT DETAIL
NO SCALE



PIPE LINES



DRAINAGE STRUCTURES

PAYMENT LINES FOR TRENCH, CULVERT & BRIDGE EXCAVATION & TEMPORARY SHEET PILING ARE TYPICAL UNLESS SHOWN OTHERWISE.
THE UPPER PAYMENT LINE FOR TRENCH, CULVERT & BRIDGE EXCAVATION & TEMPORARY SHEET PILING SHALL BE THE EXISTING GROUND SURFACE, SUBGRADE OR OTHER. PAYMENT LINE FOR UNCLASSIFIED EXCAVATION, WHICHEVER IS THE LOWEST.
WHERE PIPE LINES & DRAINAGE STRUCTURES ARE TO BE PLACED ON NEWLY MADE FILL, UNLESS OTHERWISE ORDERED BY THE ENGINEER, THE FILL IS TO BE PLACED AND COMPACTED TO A HEIGHT ABOVE THE PROPOSED TOP ELEVATION OF THE PIPE OF 1½ FEET, AFTER WHICH THE TRENCH SHALL BE EXCAVATED. THE QUANTITY OF EXCAVATION WILL BE COMPUTED TO THE HEIGHT TO WHICH THE FILL IS COMPLETED PRIOR TO STARTING TRENCHING OPERATIONS.
THE UPPER PAYMENT LINE FOR TEMPORARY SHEET PILING SHALL BE THE EXISTING GROUND SURFACE OR PAYMENT LINE FOR UNCLASSIFIED EXCAVATION (WHICHEVER IS LOWER) OR AS ORDERED, IN WRITING, BY THE ENGINEER.

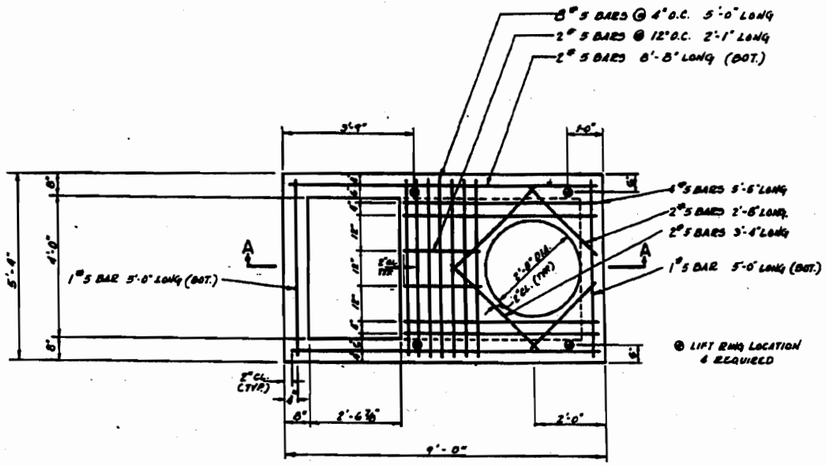
PAYMENT LINES FOR ITEM NO. 5
NOT TO SCALE

APPROVED BY
C. ROGER MEEKER P.E., CHIEF ENGINEER

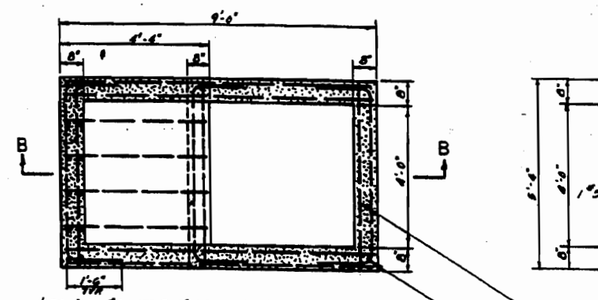
COUNTY OF SUFFOLK
NEW YORK
DEPARTMENT OF PUBLIC WORKS

CATCH BASINS & MANHOLES

COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
JOSEPH P. HURLEY, COMMISSIONER
YAPHANK, NEW YORK

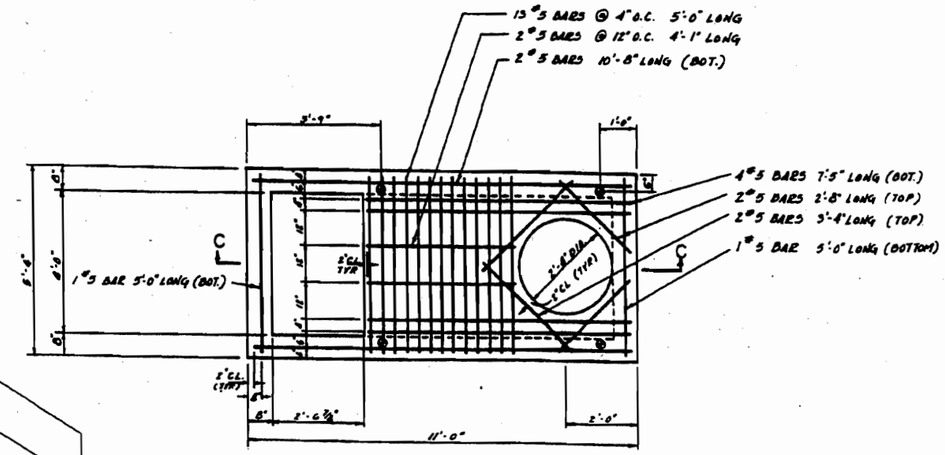


PLAN

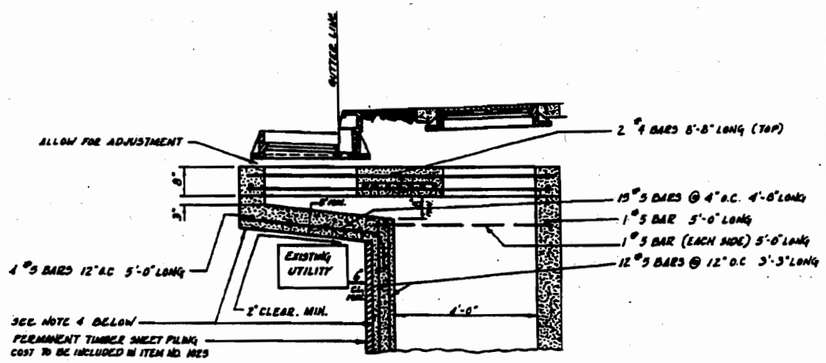


NOTE 1) USE #4 BARS @ 12" O.C. EACHWAY, EACH FACE IN WALLS
2) FOR TOP SLAB DETAILS SEE CATCH BASIN TYPE E-1

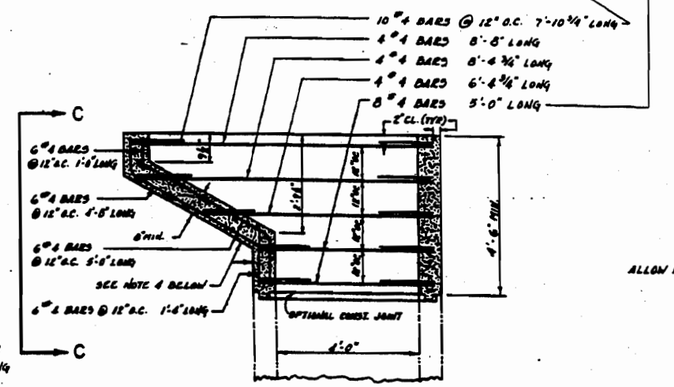
PLAN



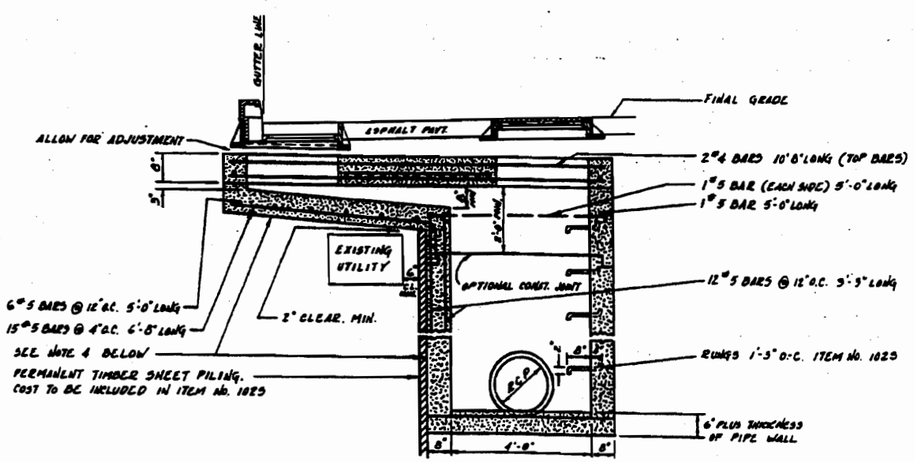
PLAN



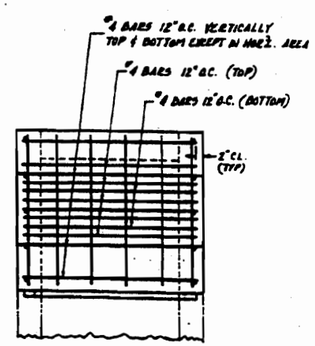
SECTION A-A
CATCH BASIN TYPE E-1
ITEM NO. 102 S



SECTION B-B
CATCH BASIN TYPE E-2
ITEM NO. 102 S



SECTION C-C
CATCH BASIN TYPE E-3
ITEM NO. 102 S



VIEW C-C

NOTES:

1) FOR STRUCTURE DEEPER THAN 9'-0", SEE TYPICAL SECTION FOR MANHOLE, TYPE C ON SUFFOLK COUNTY STANDARD SHEET SC 102 S-76 FOR DETAILS OF REINFORCEMENT.
2) FOR RUNG DETAIL, LIFTING RING DETAIL, PAYMENT LINES FOR ITEM NO. 5, AND GENERAL NOTES, SEE SC102S-76
3) CATCH BASIN TYPE E-2 HAS BEEN DESIGNED FOR USE WHEN PRECASTING IS DESIRED.
4) PAYMENT LINES FOR TRENCH, CULVERT, & BRIDGE EXCAVATION ON BOTH DESIGNATED SURFACES WILL BE ON THE OUTSIDE WALLS. ALL OTHER PAYMENT LINES ARE AS DEPICTED ON SC 102S-76

APPROVED BY [signature] DATE 3/8/89
C. ROGER MEEKER, P.E. ···· CHIEF ENGINEER

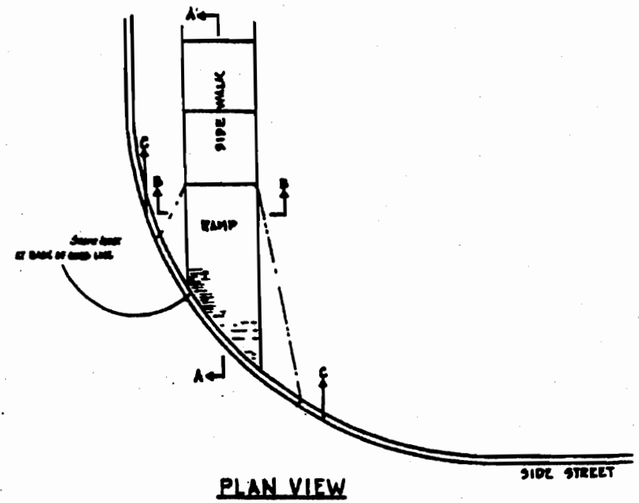
COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
YAPHANK, NEW YORK
JOSEPH P. HURLEY ···· COMMISSIONER

CATCH BASINS TYPE E1, E2, & E3

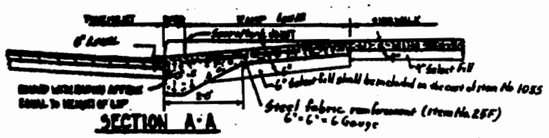
SYMBOL	DESCRIPTION	APPROVED	DATE
	REVISIONS		

PROJECT NO.	SCALE	SHEET NO.
	1/2" = 1'-0"	

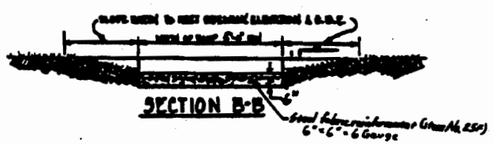
COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
STEPHEN G. HAYDUK, COMMISSIONER
YAPHANK, NEW YORK



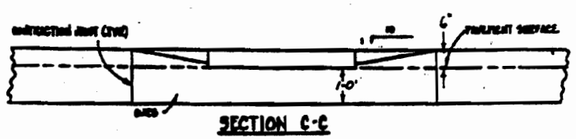
PLAN VIEW



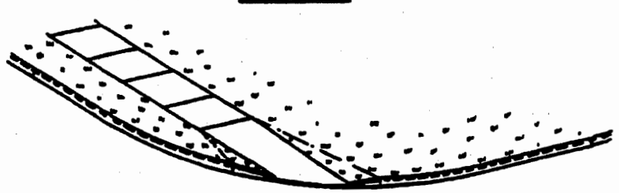
SECTION A-A



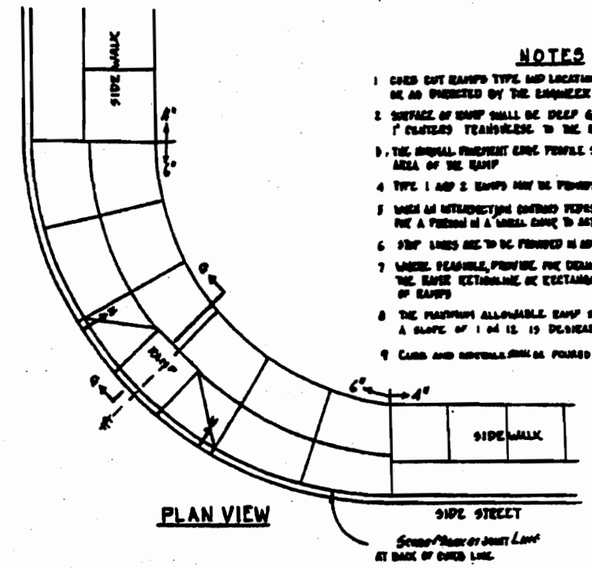
SECTION B-B



SECTION C-C



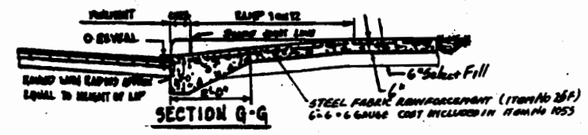
TYPE I



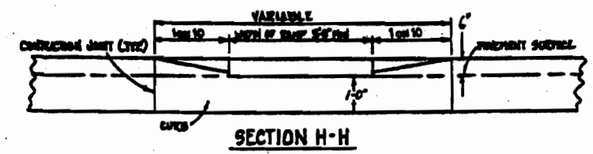
PLAN VIEW

NOTES

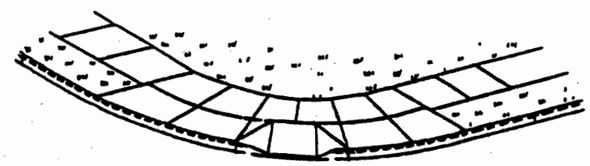
1. CURB CUT RAMPS TYPE AND LOCATIONS ARE TO BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER
2. SURFACE OF RAMP SHALL BE DEEP GROOVED ½" WIDE BY ¼" DEEP ON 1" CENTERS TRANSVERSE TO THE RAMP
3. THE ORIGINAL PAVEMENT CURB PROFILE SHALL BE MAINTAINED THROUGH THE AREA OF THE RAMP
4. TYPE 1 AND 2 RAMPS MAY BE PROVIDED IN BOTH DIRECTIONS
5. WHERE AN INTERSECTION CONTROL PEDESTRIAN ACTUATED SIGNALS, MAKE PROVISIONS FOR A PERSON IN A WHEEL CHAIR TO ACTUATE THE SIGNAL WITHOUT STOPPING ON RAMP
6. STOP LINES ARE TO BE PROVIDED IN ADVANCE OF WHEEL CHAIR RAMPS
7. WHERE FEASIBLE, PROVIDE FOR DRAINAGE PICK UPS IMMEDIATELY UPSTREAM FROM THE RAMP RECTANGULAR OR RECTANGULAR GRATES ARE TO BE USED IN THE AREA OF RAMPS
8. THE MAXIMUM ALLOWABLE RAMP SLOPE SHALL BE 1½ OR 12 A SLOPE OF 1 OR 12 IS DESIRABLE.
9. CURB AND ADJACENT RAMP SHALL BE POURED MONOLITHICALLY AT ROOTS



SECTION G-G



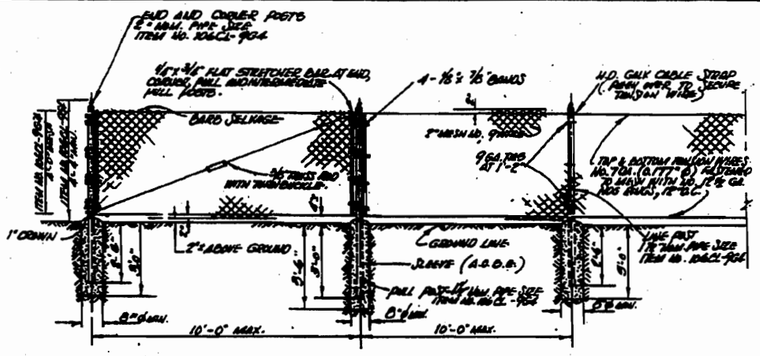
SECTION H-H



TYPE III

APPROVED BY: _____
C. ROGER MEEKER P.E., CHIEF ENGINEER

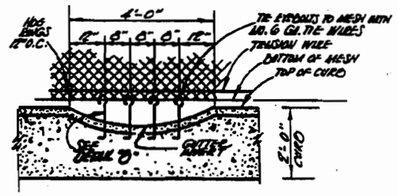
COUNTY OF SUFFOLK NEW YORK
DEPARTMENT OF PUBLIC WORKS
SIDEWALK RAMP DETAILS



NOTE: FENCE SHALL BE SET 1' WITHIN THE R.O.W. LINE OR AS DIRECTED.

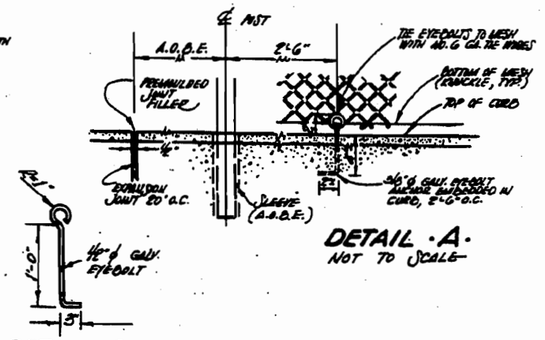
CHAIN LINK FENCING 4' HIGH · ITEM NO. 106CL - 964

SCALE · 3/8" = 1'-0"



DETAIL OF GUTTER THROUGH CURB

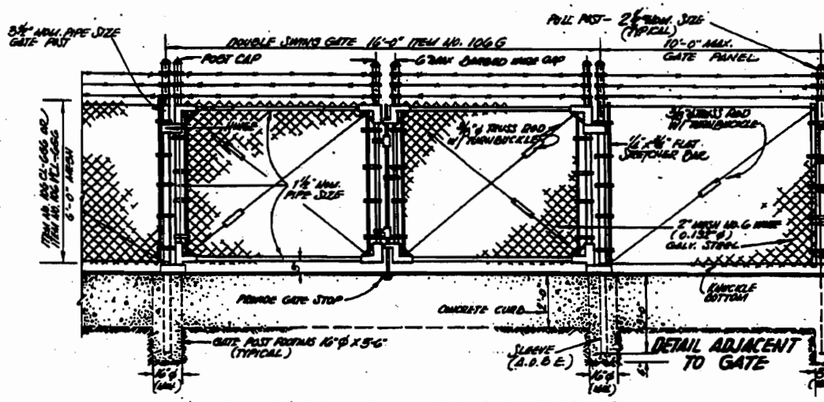
SCALE · 1/2" = 1'-0"



DETAIL · A ·
NOT TO SCALE

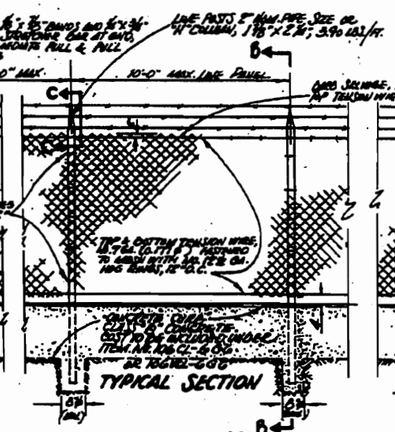
DETAIL · B ·
NOT TO SCALE

TABLE OF POSTS AND BRACES				
	GALVANIZED		ACRYLIC COATED	
NOMINAL PIPE SIZE INCHES	WALL THICKNESS INCHES	WEIGHT LBS./FT.	WALL THICKNESS INCHES	WEIGHT LBS./FT.
1	0.133	1.68	0.104	1.345
1¼	0.140	2.27	0.111	1.836
1½	0.145	2.72	0.120	2.281
2	0.154	3.65	0.130	3.117
2½	0.203	5.79	0.160	4.640
3½	0.226	9.11	—	—



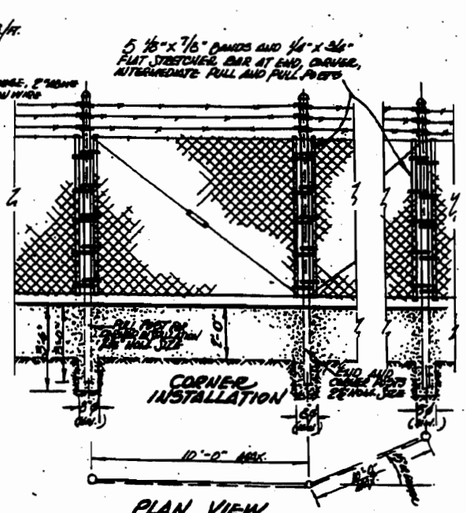
GATE FOR CHAIN LINK FENCING 6' HIGH · ITEM NO. 106G

SCALE · 3/8" = 1'-0"



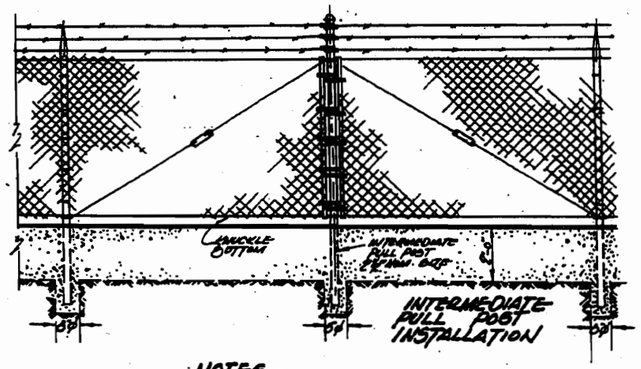
CHAIN LINK FENCING
6' HIGH · ITEM NO. 106 CL - 666
6' HIGH · ITEM NO. 106 VCL - 666

SCALE · 3/8" = 1'-0"



CORNER INSTALLATION

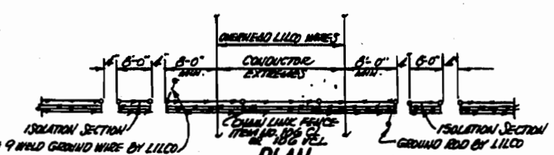
PLAN VIEW



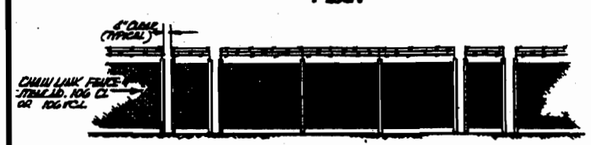
INTERMEDIATE PULL POST INSTALLATION

NOTES ·

1. BARBED WIRE SHALL BE TWO STRANDED TWISTED NO. 12½ ASW GAUGE GALVANIZED STEEL WIRE WITH FOUR-POINT BARBS OF NO. 14 ASW GAUGE GALVANIZED STEEL WIRE. ALL WIRES SHALL CONFORM TO LATEST ASTM DESIGNATION A121 CLASS 3 REQUIREMENTS.
2. TOP AND BOTTOM TENSION WIRE SHALL BE NO. 7 GAGE ATTACHED WITH 12½ GAGE 106 BANDS ON 12" C-C. ALL WIRE SHALL CONFORM TO LATEST ASTM DESIGNATION A641 CLASS 3 REQUIREMENTS.
3. FABRIC TIES FOR POSTS SHALL BE 6 GAGE ALUMINUM AND SPACED VERTICALLY AT 1'-2" C-C MAXIMUM.
4. ADDITIONAL 5 L.F. WILL BE PAID FOR EACH CORNER END AND PULL POSTS.



PLAN

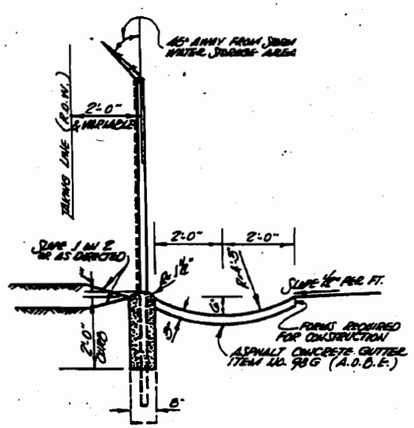


ELEVATION

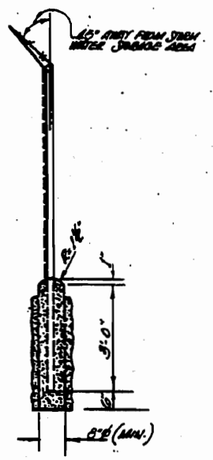
NOTE: LILCO FORCES WILL INSTALL GROUND WIRE, RODS & CONNECTIONS TO FENCE IN ACCORDANCE WITH LILCO'S SPECS. AND DRAWINGS.

FENCE ISOLATION AND GROUNDING WHEN INSTALLED UNDER HIGH TENSION UTILITY LINES

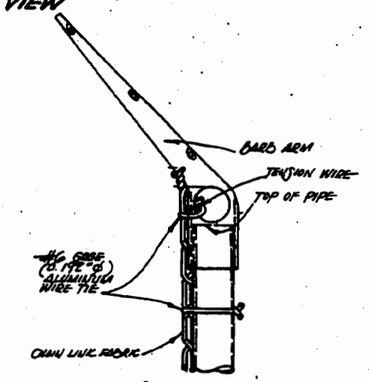
NOT TO SCALE



SECTION A-A
SCALE · 1/2" = 1'-0"



SECTION B-B
SCALE · 1/2" = 1'-0"



SECTION C-C
DETAIL OF TENSION WIRE ATTACHMENT TO POST
NOT TO SCALE

APPROVED BY: C. ROGER VEECKER ... CHIEF ENGINEER DATE: 12/21/88

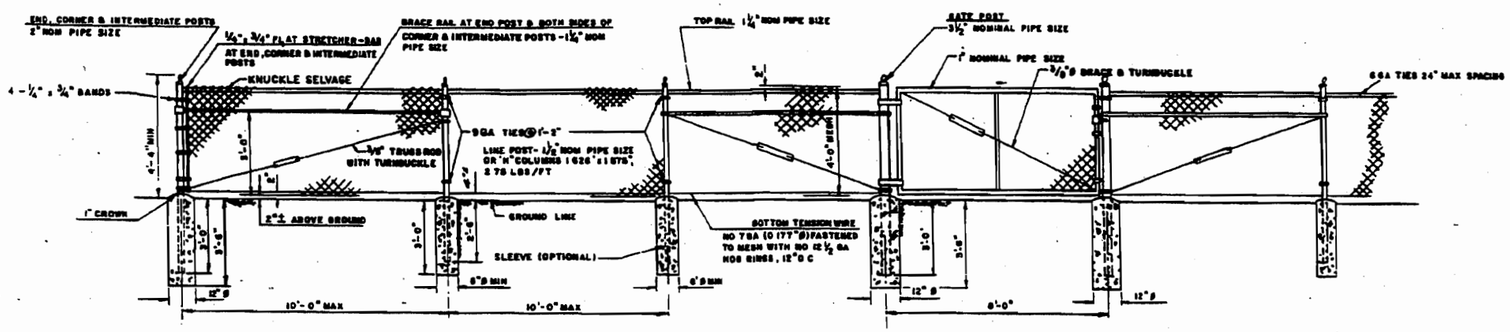
COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
YAPHANK, NEW YORK
STEPHEN G. HAYDUK ··· COMMISSIONER

CHAIN LINK FENCING DETAILS

DATE	REVISION	APPROVED BY: CHIEF ENGINEER

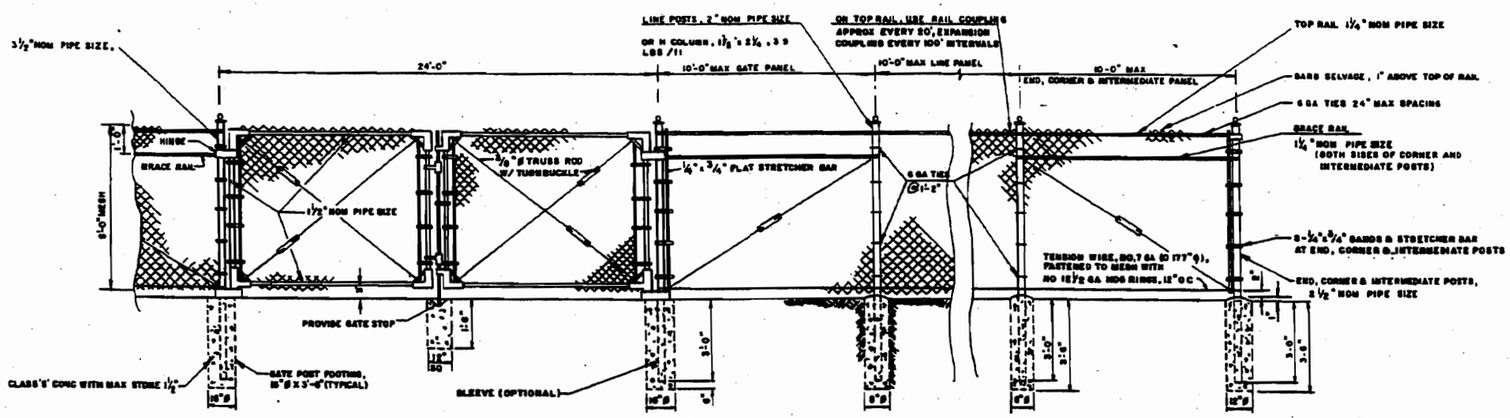
PROJECT NO.	SCALE	SHEET NO.
	AS SHOWN	

COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
JOSEPH P HURLEY, COMMISSIONER
YAPHANK, NEW YORK



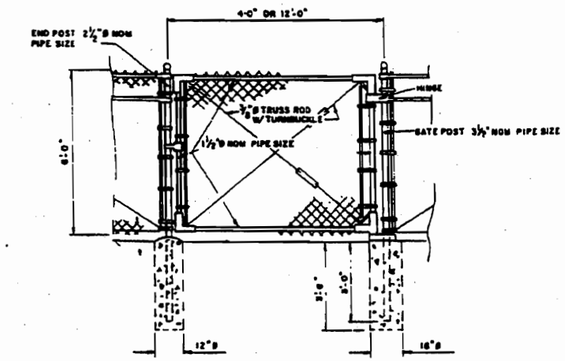
TYPICAL FENCING, 4' HIGH
ITEM NO. 106 VC-4

SINGLE GATE FOR 4' HIGH FENCING
ITEM NO 106 SG-4

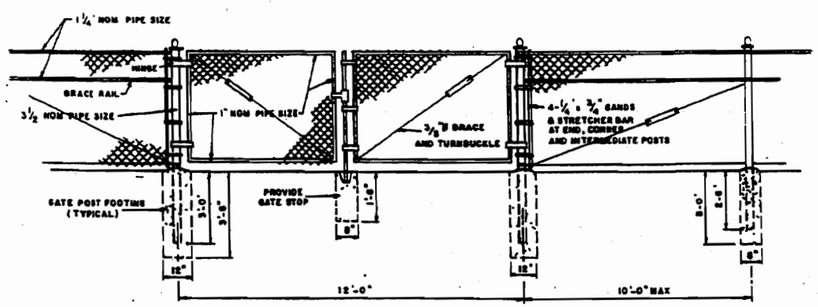


TYPICAL DOUBLE GATE FOR 6' HIGH FENCING
ITEM NO. 106 DG-6

TYPICAL FENCING, 6' HIGH
ITEM NO 106 VC-6, 106 VC-8



SINGLE GATE FOR 6' HIGH FENCING
ITEM NO. 106 SG-6
ITEM NO. 106 SG-4



TYPICAL DOUBLE GATE FOR 4' HIGH FENCING
ITEM NO 106 DG-4

TABLE OF POSTS AND BRACES				
	GALVANIZED		ACRYLIC COATED	
NOMINAL PIPE SIZE INCHES	WALL THICKNESS INCHES	WEIGHT LBS/FT	WALL THICKNESS INCHES	WEIGHT LBS/FT
1"	0.133	1.68	0.104	1.345
1 1/4	0.140	2.27	0.111	1.836
1 1/2	0.148	2.72	0.120	2.281
2	0.154	3.65	0.130	3.117
2 1/2	0.203	5.79	0.160	4.640
3 1/2	0.226	9.11	—	—

NOTE-
FENCE LINES WILL BE STAKED OUT BY THE COUNTY OF SUFFOLK DEPARTMENT OF PUBLIC WORKS

THE FENCE SHALL BE INSTALLED 0'-6" IN FROM THE PROPERTY LINES UNLESS OTHERWISE SPECIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

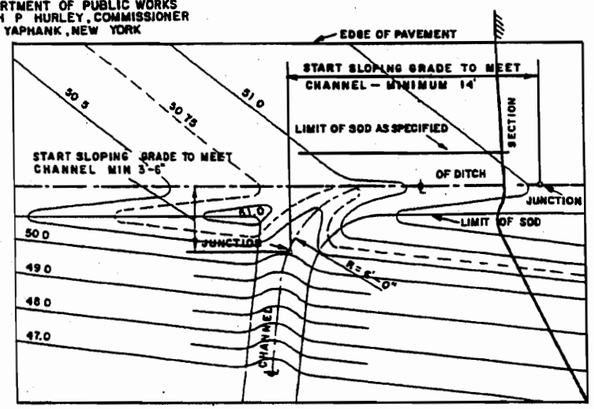
APPROVED BY C. Roger Meeker DATE 4/2/09
C ROGER MEEKER P E CHIEF ENGINEER

COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
YAPHANK, NEW YORK
JOSEPH P HURLEY, COMMISSIONER

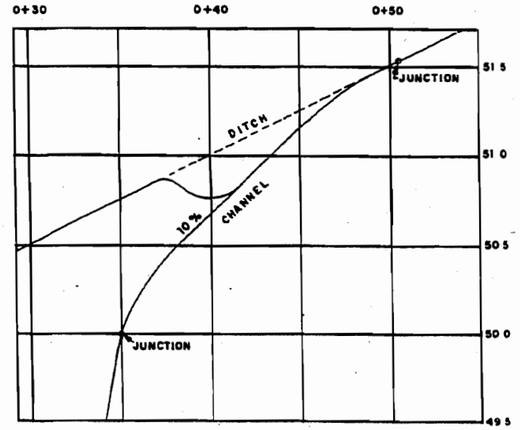
PARK FENCE & GATE DETAILS

PROJECT NO	SCALE	SHEET NO	OF

COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
JOSEPH P HURLEY, COMMISSIONER
YAPHANK, NEW YORK



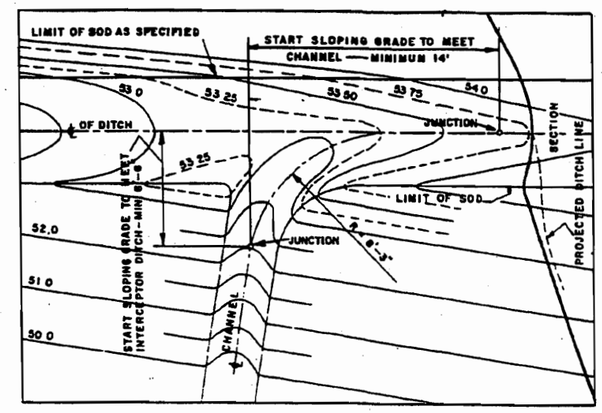
PLAN
SCALE 1"=4'



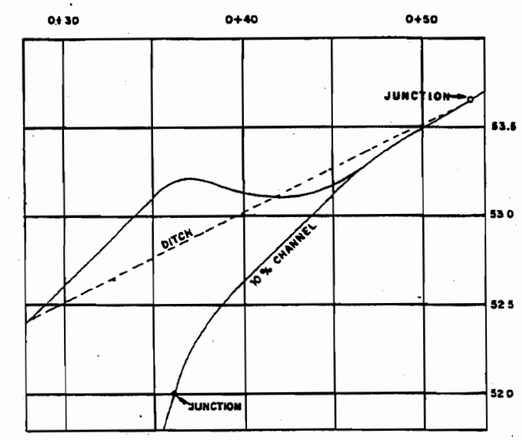
PROFILE
VERTICAL 2 1/2"=1' HORIZONTAL 1"=4'

DETAIL NO 1

EXAMPLE OF JUNCTION OF CHANNEL WITH ROADSIDE DITCH



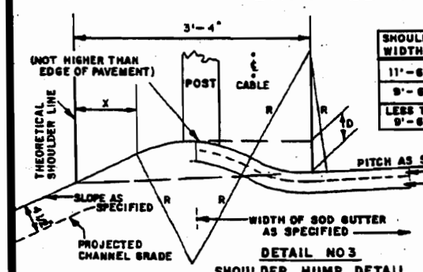
PLAN
SCALE 1"=4'



PROFILE
VERTICAL 2 1/2"=1 HORIZONTAL 1"=4'

DETAIL NO 2

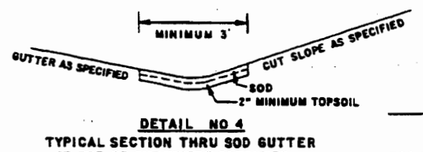
EXAMPLE OF JUNCTION OF CHANNEL WITH INTERCEPTOR DITCH



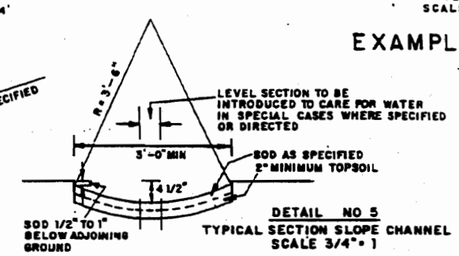
SHOULDER WIDTH	R	X	D
11'-6"	1'-9"	10 1/2"	5"
9'-6"	2'-3"	7 1/2"	4"
LESS THAN 9'-6"	3'-0"	3 1/2"	3"

(BASED ON SHOULDER PITCH 3/4" PER FT)

DETAIL NO 3
SHOULDER HUMP DETAIL
SCALE 1"=1'

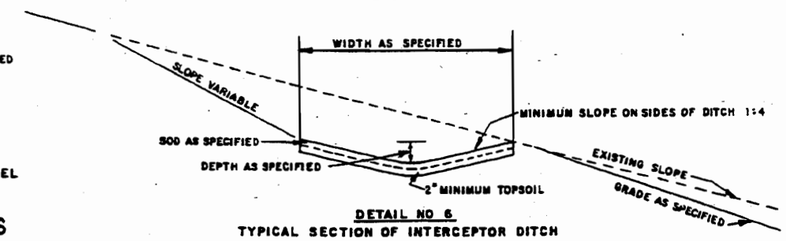


DETAIL NO 4
TYPICAL SECTION THRU SOD GUTTER
AT TOE OF CUT WHERE SPECIFIED
SCALE 1/2"=1'



DETAIL NO 5
TYPICAL SECTION SLOPE CHANNEL
SCALE 3/4"=1

DETAILS FOR CONSTRUCTING SOD GUTTERS



DETAIL NO 6
TYPICAL SECTION OF INTERCEPTOR DITCH
SCALE 1/2"=1'

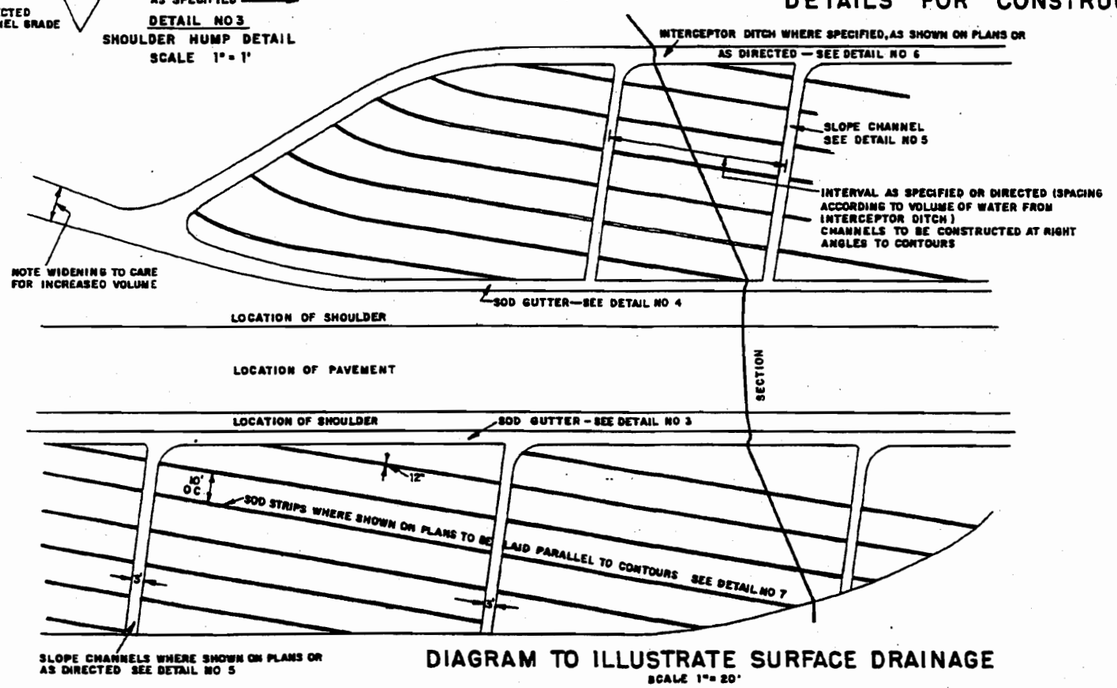
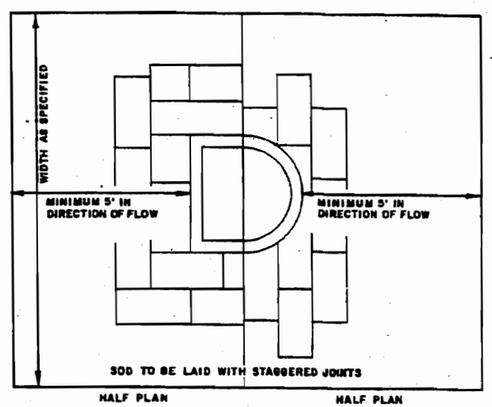
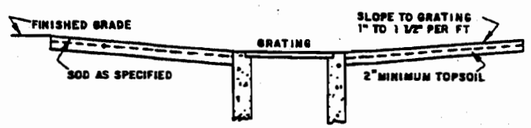


DIAGRAM TO ILLUSTRATE SURFACE DRAINAGE

SCALE 1"=20'

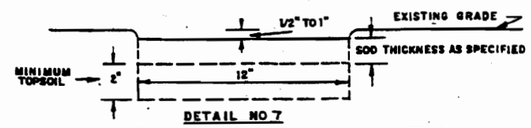




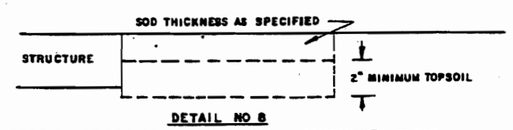
DETAIL NO 9

DETAIL OF LAYING SOD AROUND DRAIN INLET

SCALE 1/2"=1'



DETAIL NO 7
SECTION OF SOD STRIP LAID PARALLEL TO CONTOURS
SCALE 3"=1'



DETAIL NO 8
SECTION OF SOD ADJACENT TO PATHS, PAVEMENTS, DRAIN INLETS AND OTHER STRUCTURES
SCALE 3"=1'

DETAILS OF LAYING SOD

APPROVED BY C. Roger Meeker DATE 3/8/89
C ROGER MEEKER P.E., CHIEF ENGINEER

COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
YAPHANK, NEW YORK
JOSEPH P HURLEY COMMISSIONER

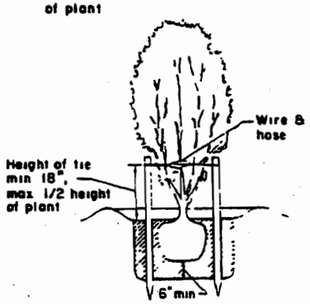
SODDING AND SODDED DRAINAGE WAYS

PROJECT NO	SCALE	SHEET NO
	AS SHOWN	

ADOPTED & TRACED FROM NYS DOT STAN. STR. BH 50-34

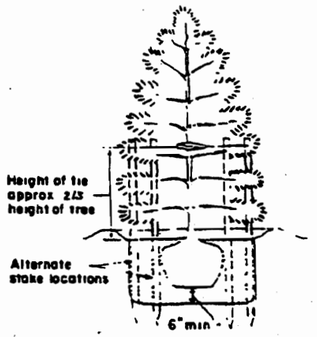
Ties on single stem minor trees shall be similar to those shown in DETAIL 3 & DETAIL 6 & 6A

Ties on multi-stem minor trees to be made on heaviest branches of plant



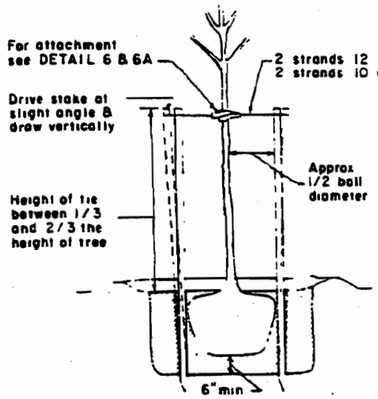
DETAIL NO. 1
STAKING MINOR TREES
Scale 1/2" = 1'

8' ht - 12' ht use 2 - 8' stakes
Over 12' ht use 2 - 10' stakes
Trees 4' ht to 8' ht shall have 2 - 4' or 6' stakes unless otherwise approved



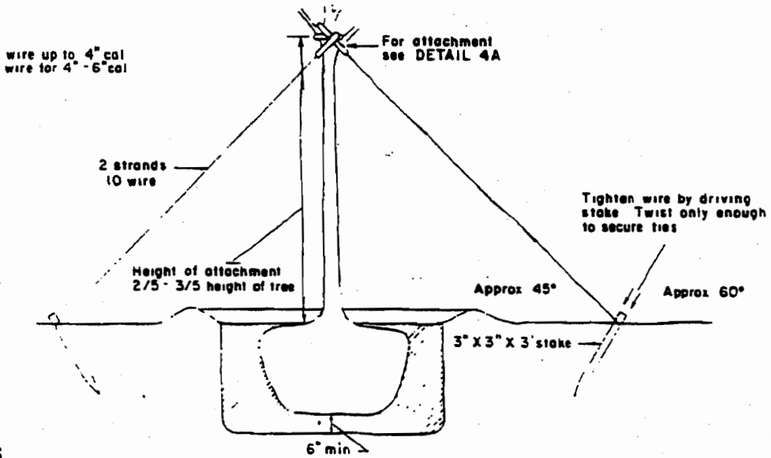
DETAIL NO. 2
STAKING EVERGREEN TREES
Scale 1/2" = 1'

2 - 12' ht use 2 stakes 2/3 ht of tree in proportion
10 & over use 3 stakes 2/3 ht of tree in proportion



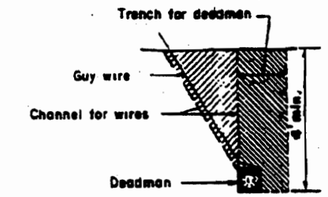
DETAIL NO 3
STAKING MAJOR TREES
Scale 1/2" = 1'

8' ht - 10' ht use 2 - 6' stakes
10' ht - 2" cal use 2 - 8' stakes
2" cal - 4" cal use 2 - 10' stakes
4" cal - 6" cal use 3 - 10' stakes
unless guying is specified
(See note for 4" - 6" cal trees)



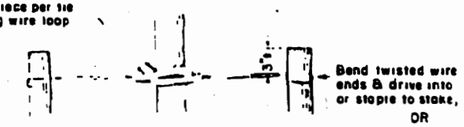
DETAIL NO. 4
GUYING TO STAKES
Scale 1/2" = 1'

Trees 4" - 6" cal when specified



DETAIL NO. 5A
DETAIL OF DEADMAN
Scale 1/2" = 1'

Approved hose, one piece per tie completely encircling wire loop around tree



DETAIL NO. 6A
DETAIL OF STAKING TIE
ELEVATION

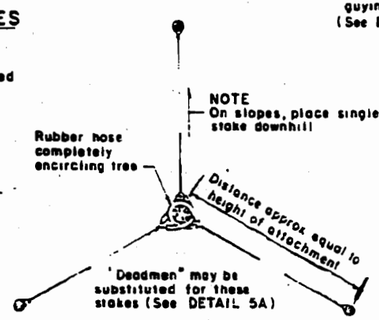
Note for 4" - 6" cal trees

Use stakes in mowed & - - sidewalk areas Use guys in other areas unless otherwise specified

DETAIL NO. 6
DETAIL OF STAKING TIE
PLAN
Scale 1½" = 1'

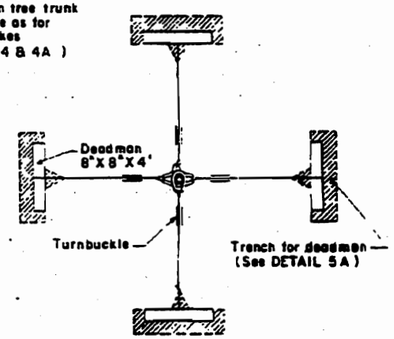
Loop wires around notch in stake & twist together on tree side of stake

DETAIL NO. 6B
ALTERNATE STAKING TIE



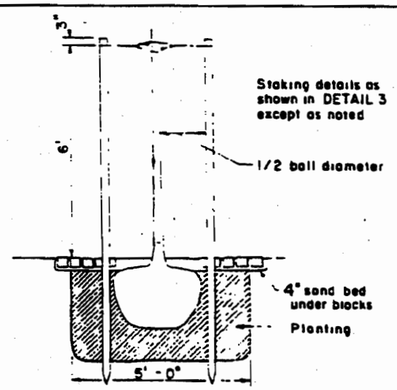
DETAIL NO. 4A
DETAIL OF GUYING TIE
No scale

Point of attaching wires to tree and distance of deadmen from tree trunk to be the same as for guying to stakes (See DETAIL 4 & 4A)

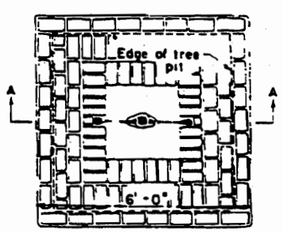


DETAIL NO. 5
GUYING TO DEADMEN
Trees over 6" cal where specified
Scale 1/4" = 1'

STAKING & GUYING DETAILS

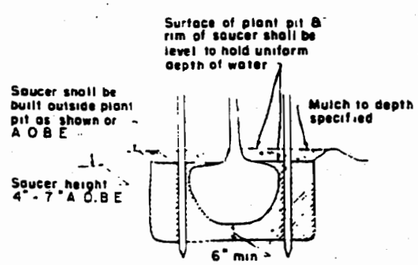


DETAIL NO. 7A
SECTION A - A

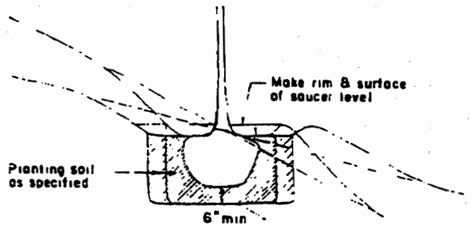


DETAIL NO 7
PLAN

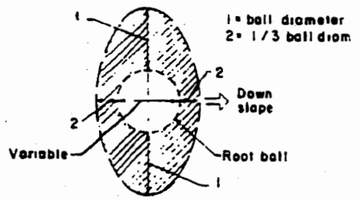
TYPICAL PLANTING WITH BRICK OR STONE BLOCK PAVING
Scale 1/2" = 1'



DETAIL NO 8
PLANT PIT & SAUCER DETAIL
FOR BALLED PLANTS
PLANTED ON LEVEL GROUND
Scale 1/2" = 1'



DETAIL NO. 9
PLANT PIT & SAUCER DETAIL
FOR BALLED PLANTS
PLANTED ON SLOPES
Scale 1/2" = 1'



DETAIL NO. 10
ELONGATED SLOPE PIT
Scale 1/4" = 1

Elongated pits may be used on slopes as ordered by the Engineer Rectangular or square pits are acceptable provided they accommodate the plants as shown for circular pits and equal the circular pits in ground surface and cubic content

PIT DETAILS

ADOPTED & TRACED FROM NYS DOT STAN STR SH SC 68-35 JBM

GUYS & ANCHORS

CAL OF TREE	NO OF GUYS	NO OF STRANDS	GAUGE	TURN-BUCKLE	ANCHOR
4" - 6"*	3	2	10	NONE	3" X 3" X 3' STAKE
6" - 10"	3	3	10	SPECIFY SIZE	8" X 8" X 4' DEADMAN BURIED 4' DEEP
OVER 10"	4	3	SPECIFY CABLE SIZE	SPECIFY SIZE	DITTO

* Where guying to stakes is specified

APPROVED BY C. ROGER MEEKER P.E., CHIEF ENGINEER

COUNTY OF SUFFOLK
NEW YORK

DEPARTMENT OF PUBLIC WORKS

TREE PLANTING

PROJECT NO.	ROAD NO.	SHEET NO.	TOTAL SHEETS

GENERAL TRAFFIC NOTES

The contractor shall notify the police dept. when a new traffic signal is activated.

Upon actuation of a new traffic signal installation the existing 'stop' or 'yield' signs shall be removed under item T31.

Traffic signal heads shall be wired separately by direction

The contractor shall be required to provide the use of his bucket truck, to allow for inspection of any overhead installations.

All bolts, nuts, and washers excepting anchor bolts and nuts shall be stainless steel. All other hardware shall be hot dipped galvanized unless otherwise noted.

Anchor base poles shall not be installed until 7 days after concrete foundation has been poured. Signal heads shall not be hung until 28 days after concrete has been poured unless otherwise specified by the engineer-in-charge.

EXCAVATION AND RESTORATION REQUIREMENTS

Should any excavation due to the installation or removal of pullboxes, jacking pits, conduits, poles, controllers, etc. be left open at the end of the working day, the contractor shall provide protection meeting the requirements of item 76S, the cost of which shall be included in the price bid for the installation and/or removal items, unless direct payment is provided for under item 76S.

Unless otherwise shown, the contractor is cautioned that existing curb is to be retained and shall not be broken or removed as part of his excavation and/or restoration work.

Restoration of areas disturbed due to the installation or removal of pullboxes, jacking pits, conduits, poles, controllers, etc. shall be included in the price bid for those items, unless otherwise indicated on the plans. The material requirements and construction methods are to conform to the following requirements.

Pavement and shoulders: cement concrete pavement, reinforced,-item 47
Asphalt concrete pavement, type A top-item 51F, asphalt concrete pavement type A binder, item-51FX

Concrete sidewalks and driveways: item 105SX, or item 105S, whichever item appears on the plans, 4" inches for sidewalks and 6" inches for driveways; reinforcement will be required in driveways.

Seeded areas - 6" inches topsoil, item 123B or A.O.B.E.

Asphalt concrete sidewalks, driveways, and class I bikeways-item 51D

CONDUIT AND PULLBOX NOTES

Whenever metallic conduit, meeting the requirements of subsection M metal steel conduit, zinc coated, is specified, it shall be class I-rigid metal steel conduit.

Non-metallic conduit shall be terminated with bell fittings which are grouted flush with the inside of the pullbox wall. Non-metallic conduits are not to protrude into the pullbox.

Metallic conduits are to protrude into the pullbox sufficiently to secure grounding bushings but not more than 3 inches.

All conduit runs containing service cable shall have a minimum cover of 30".

GROUNDING REQUIREMENTS

The contractor is responsible for providing a continuously grounded installation. All signal poles, pedestrian poles, and push button stations shall be grounded by means of a ground rod driven in the nearest pullbox or as indicated on the standard sheets. All conduits shall be grounded as follows.

1. Metallic conduits shall be bonded with grounding bushings and connected together by a No. 6 AWG solid copper wire.
2. Non-metallic conduits shall have a No. 6 AWG solid copper wire installed within. The ground wire shall ultimately be bonded to metallic conduit.
3. Combination metallic and non-metallic conduit runs shall be treated similar to non-metallic conduits except that each steel conduit within the run shall be bonded to the ground wire utilizing a grounding bushing.
4. Existing conduits will be grounded as indicated above.

All grounding shall be in conformance to Article 250 of the National Electric Code. At all points in the grounded system the maximum resistance to ground shall not exceed 25 ohms.

There shall be no separate payment for providing a continuously grounded system. These costs shall be reflected in the bid prices of either item T4, or item T6.

TRAFFIC SIGNAL HEAD REQUIREMENTS

Disconnect hangers shall not be used unless specified on the plans.

Lock nuts shall be made of galvanized malleable iron.

No couplings shall be permitted between the wire outlet fitting and the signal head or the bracket assembly.

Open tunnel visors shall be provided on all signal sections displaying arrow indications and on all indications where intersecting roadways are 15 degrees or more from the perpendicular. When catalog cuts are submitted for approval, the contractor shall indicate at what locations he proposes to use cutaways, tunnel and louvered visors

Signal heads for fully protected left turns having a circular red indication shall have a louvered tunnel visor on the circular red indication.

Cables and drip loops shall be installed on the span wire on the side of the signal hanger opposite the cotter pins

REMOVAL OF SIGNAL EQUIPMENT

The contractor, upon removing existing traffic signal heads, controller cabinets, controllers and accessories, ped buttons, wood poles and anchor based signal poles, shall neatly store the equipment. All controller equipment shall be stored in a manner that will protect it from weather The work shall be done in a workmanlike manner so as to salvage all usable parts. All removed equipment shall be disposed of as specified on the contract sheets and shall be removed from the site.

Upon removal of any pole mounted cabinets the contractor shall enclose the conduit outlet by means of a hot dipped galvanized cap. Payment to be included in the price bid for removal.

SPAN WIRE / TETHER WIRE

If new span wires are installed on existing poles new strand vises and eyebolts are to be used. If an existing span wire is extended to a new traffic signal pole, new strand vises and eyebolts are to be used. Payment included under item T14.

The "S" hook supplied with tether wires to provide a release mechanism shall release at a tension of between 1,500 and 2,000 pounds. Two "S" hooks and two turn buckles shall be required, one for each end of the tether span.

CABLE REQUIREMENTS

The splice between the loop lead in wire and the loop wire shall have soldered connections rather than sleeve connectors. The individual conductors shall be protected in accordance with the standard specification. The splice shall be covered with two layers of self-adhering tape. A splice case utilizing a two part polyurethane sealing compound shall be placed over the entire splice.

Five feet of cable slack shall be provided in all pullboxes.

SERVICE CONNECTIONS

The contractor shall install fuse links, approved by the utility company, to the service end of the contractor installed installed service cable. The utility company will attach their service cable to the free end of the fuse links. The fuse links shall be rated at 60 amps.

MAINTAIN TRAFFIC SIGNAL EQUIPMENT

When a new signal is installed and operating at an existing signalized location or when a traffic signal is installed at a new location, no direct payment will be made for maintenance. However, the contractor will still be required to maintain said signals in accordance with the specifications for Item T30. Cost of this work shall be included in the unit price bid for Item T16, Traffic Actuated Controller.

APPROVED BY: C. ROGER MEEKER P.E., CHIEF ENGINEER

STANDARD CLEARANCE TABLE

FROM / TO	R/G	G	G/G	R	G/G	R/G	
R/G	R/G	Y	Y/G	R	X	X	1ST Clearance
	R/G	R	R/G	R	X	X	2ND Clearance
G	R/Y	G	G	R	G/G	R/G	1ST Clearance
	R	G	G	R	G/G	R/G	2ND Clearance
G/G	R/G	G	G/G	R	X	X	1ST Clearance
	R/G	G	G/G	R	X	X	2ND Clearance
R	R/Y	Y	Y	R	Y	R/Y	1ST Clearance
	R	R	R	R	R	R	2ND Clearance
R/G	X	Y/G	X	R	Y/G	R/G	1ST Clearance
	X	R/G	X	R	R/G	R/G	2ND Clearance
G/G	X	G	X	R	G/G	R/G	1ST Clearance
	X	G	X	R	G/G	R/G	2ND Clearance

X Non possible clearances.

LEGEND

DESCRIPTION	EXISTING	PROPOSED
Metal Signal Pole		
Timber Signal Pole		
Pullbox		
Signal Face		
Controller Cabinet		
Roadway Loop		
Pressure Pad		
Down Guy		
Underground Conduit		
Pedestrian Push Button		
Handicap Ramp		
Concrete		
Asphalt		
Resurface Existing Pavement		
Trench and Pavement Repair		
Curb		
Chain Link Fence		
Guide Rail		
Right-Of-Way Line		

EXISTING TOPO SYMBOLS

Building Foundation		Dirt Driveway or Road		Under Ground Electric and Manhole	
Sign; Traffic, RR, etc.		Bush and Shrubs		Under Ground Telephone Duct and Manhole	
Utility Pole / Guy Wire		Tree (size & type)		Concrete Monument, ℄ and Right of Way Line	
Utility Pole / Light		Hedge		Water Main and Valve	
Fire Hydrant		Edge of Woods		Gas Main and Valve	
Leaching Basin		Edge of Water or Stream		Sanitary Sewer Line and Manhole	

COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
YAPHANK, NEW YORK

STEPHEN G. HAYDUK, COMMISSIONER

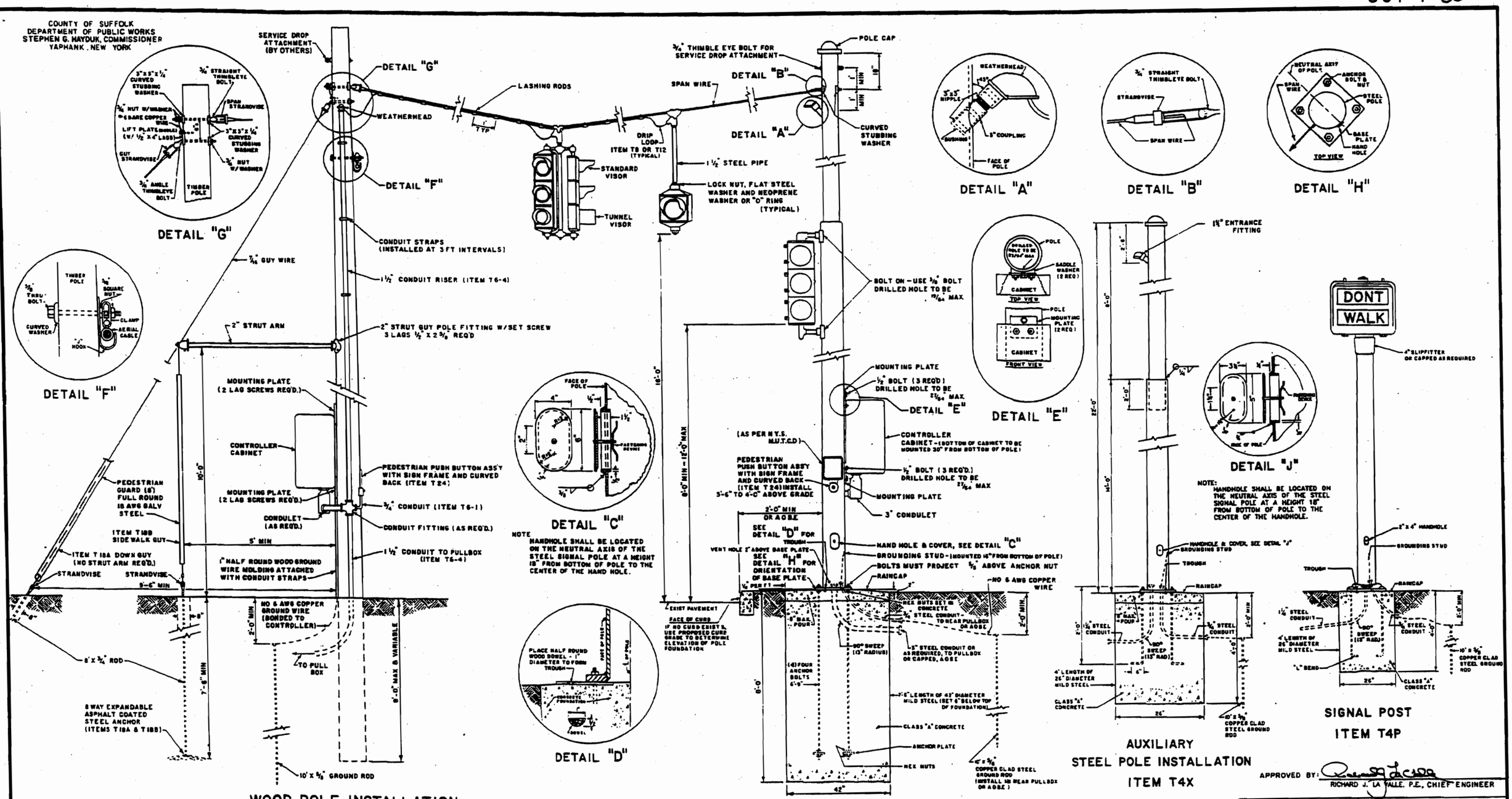
GENERAL TRAFFIC NOTES
LEGEND AND CLEARANCE TABLE

SYMBOL	DESCRIPTION	APPROVED	DATE
	REVISIONS		

PROJECT NO.	SCALE	SHEET NO.

SCT 6T-88

COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
STEPHEN G. HAYDUK, COMMISSIONER
YAPHANK, NEW YORK



NOTES
1 - FORMS FOR FOUNDATIONS SHALL BE MILD STEEL WITH MINIMUM WALL THICKNESS OF 0.125 INCHES.
2 - FORMS SHALL BE SUNK IN UNDISTURBED SOIL AND THE LOWER 6 FEET OF FOUNDATION SHALL BE EXCAVATED FROM INSIDE THE STEEL FORM.

DATE	REVISION	APPROVED
4/25/95	ADD HANDHOLE, ADD, INCREASE SIZE OF CONDULETS AND INCREASE SIZE OF WEATHERHEAD COUPLING	
1/10/95	ADDED FITTING HANDHOLE TO T4X & CHANGED SIZE OF ENTRANCE	

APPROVED BY: RICHARD J. LA VALLE, P.E., CHIEF ENGINEER

COUNTY OF SUFFOLK
NEW YORK

DEPARTMENT OF PUBLIC WORKS

TRAFFIC SIGNAL DETAILS

SCALE NONE | SHEET NO.

COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
STEPHEN G. HAYDUCK, RE-COMMISSIONER
YAPHANK, NEW YORK

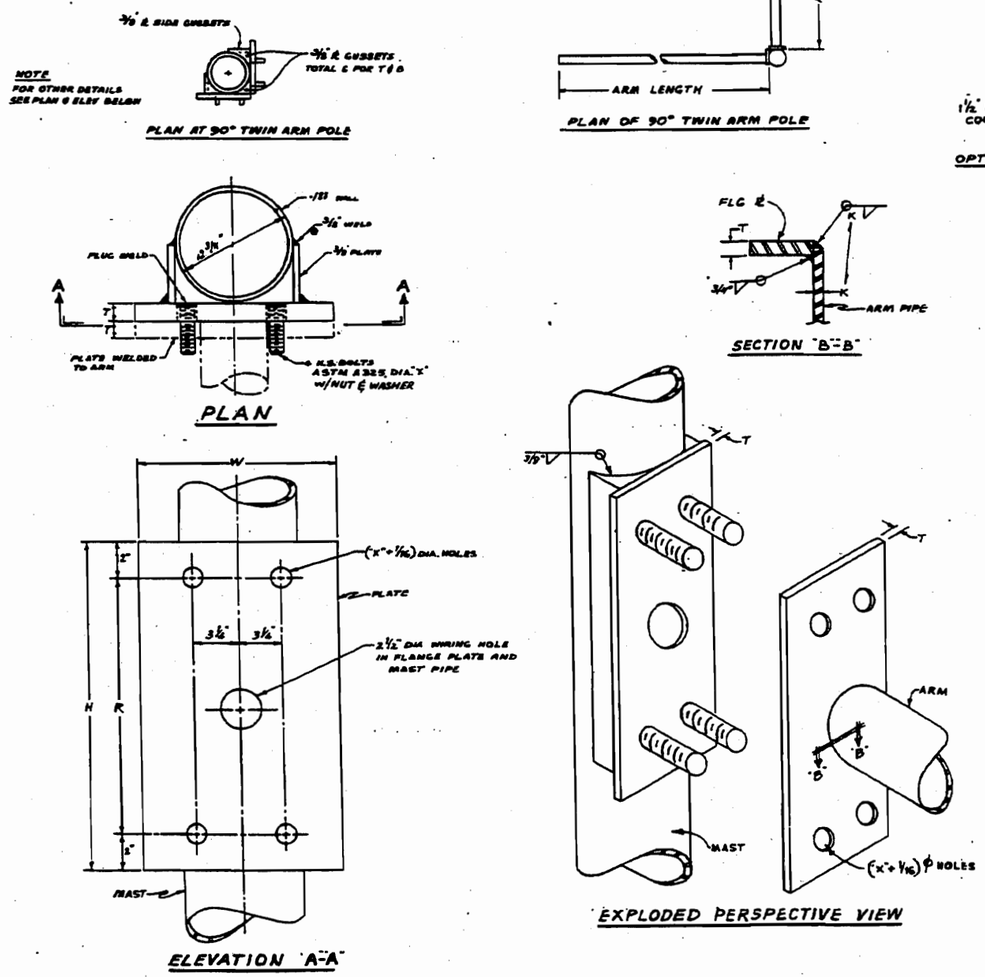
GENERAL NOTES

MATERIALS.
PIPE - ASTM A53 STEEL - MIN. YIELD 48 KSI, MIN. TENSILE 60,000 P.S.I.
PLATE - ASTM A36 STEEL

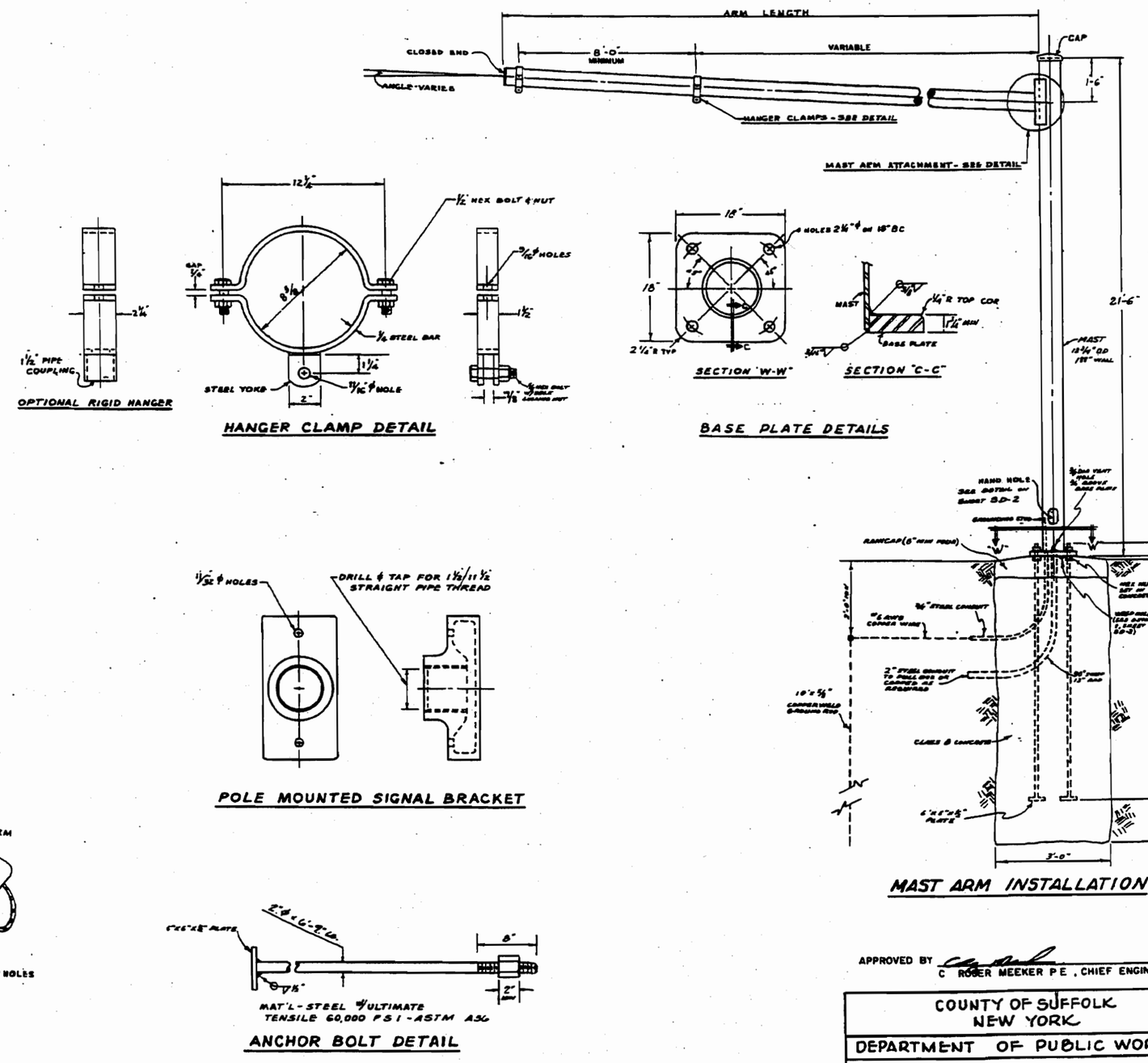
FINISH HOT DIP GALVANIZE

SPECIAL NOTE ARMS OVER 35'-0" TO BE GUSSETED AT FLANGE ℄

DIMENSIONS							
ARM LENGTH	W×H	T	X	R	ARM DIA.	ARM WALL	ANGLE
35'	16"×1'-6"	1 5/16"	1 1/4"	1'-2"	8 5/8"	.322	4°



MAST ARM ATTACHMENT DETAILS



APPROVED BY C ROGER MEEKER P.E., CHIEF ENGINEER

COUNTY OF SUFFOLK
NEW YORK
DEPARTMENT OF PUBLIC WORKS

TRAFFIC SIGNAL DETAILS

V.L.

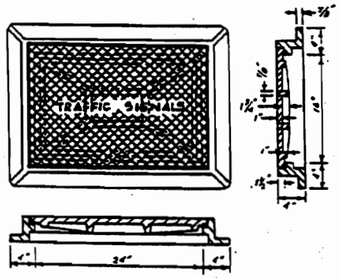
COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
STEPHEN G. HAYDUK, COMMISSIONER
YAPHANK, NEW YORK

ROADWAY COVER NOTES

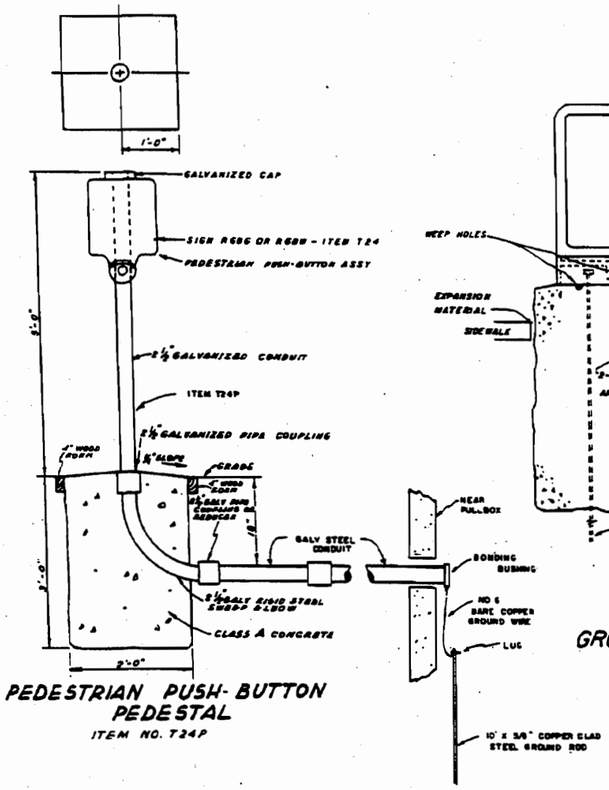
1 EACH COVER SHALL BE SET EVENLY UPON THE BEARING SEAT OF ITS FRAME SO THAT NO VERTICAL MOVING OR ROCKING OCCURS UNDER TRAFFIC. COVERS AND/OR FRAMES WHICH CANNOT BE ADJUSTED TO MEET THIS REQUIREMENT WILL BE REJECTED

2 ALL CASTINGS, SHALL MEET THE REQUIREMENTS OF A.S.T.M SPECIFICATIONS FOR
IRON CASTING SERIAL DESIGNATION A-48- CLASS 30 OR MALLEABLE IRON CASTING SERIAL DESIGNATION A-47- GRADE 32510, AT THE CONTRACTOR'S OPTION

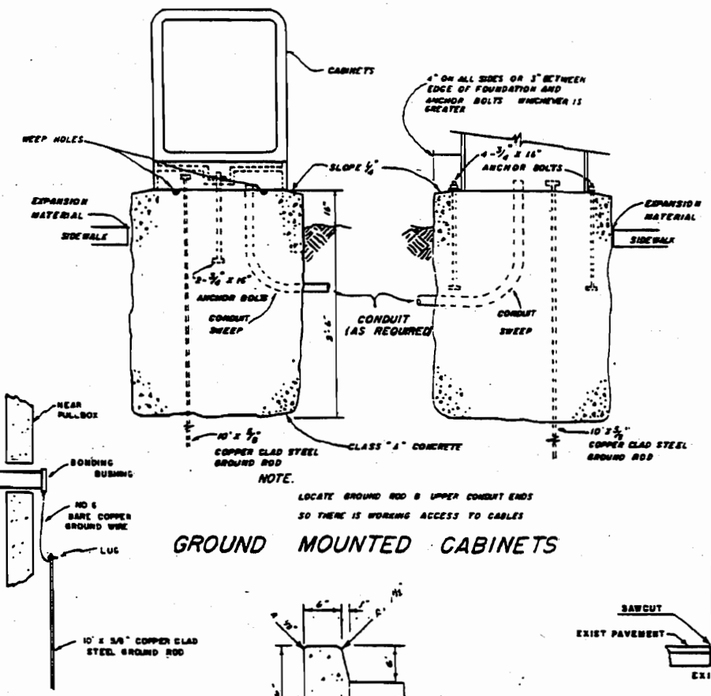
3 ONE (1) FIELD COAT OF BLACK ASPHALTIC MATERIAL AS APPROVED BY THE CHIEF ENGINEER SHALL BE APPLIED TO ALL EXPOSED AREA OF FRAMES AND CASTINGS COST TO BE INCLUDED UNDER ITEM NO. T 20



ROADWAY COVER



PEDESTRIAN PUSH-BUTTON PEDESTAL
ITEM NO. T24P

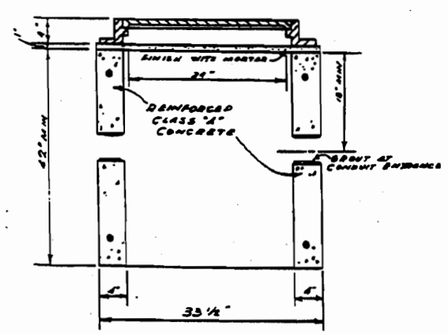


NOTE.
LOCATE GROUND ROD & UPPER CONDUIT ENDS SO THERE IS WORKING ACCESS TO CABLES

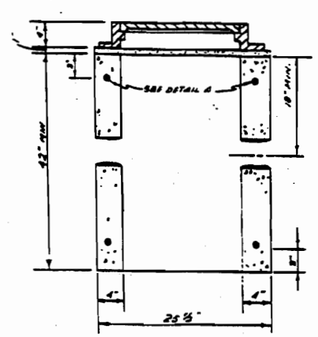
GROUND MOUNTED CABINETS

SPECIAL NOTE

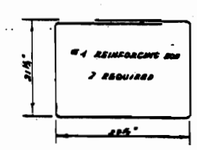
IF ITEM NOS. 51DX AND 105SX ARE NOT INCLUDED IN THE CONTRACT, THE PAVEMENT AND/OR SIDEWALK RESTORATION SHALL BE CONSTRUCTED AND PAID FOR IN ACCORDANCE WITH THE STANDARD SHEET FOR CURB, SIDEWALK AND THE RESTORATION OF DRIVEWAYS & PAVEMENT, SHEET # 51D-76



FRONT SECTION

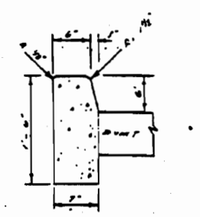


SIDE SECTION



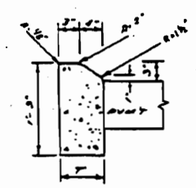
DETAIL A

PULL BOX

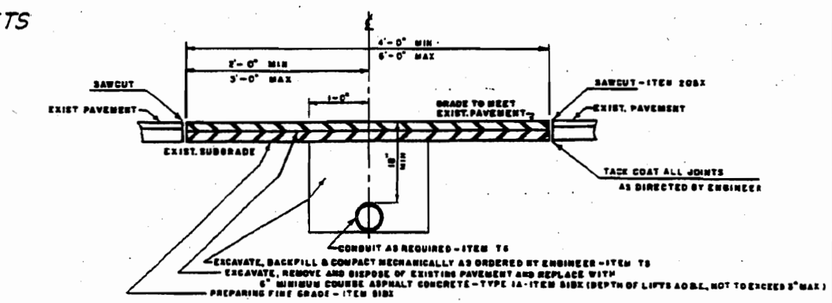


CONCRETE CURB TYPE A
ITEM NO. 97A
SCALE - 1 IN = 1 FT

NOTE CURB HEIGHT SHALL VARY FROM STANDARD HEIGHT TO ZERO AS DIRECTED

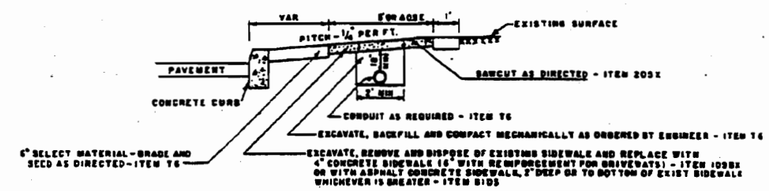


CONCRETE CURB TYPE B
ITEM NO. 97B
SCALE - 1 IN = 1 FT



NOTES
1 THE DEPTH OF THE NEW PAVEMENT SHALL BE AT LEAST EQUAL TO THE EXISTING PAVEMENT THICKNESS

TYPICAL SECTION
PAVEMENT RESTORATION



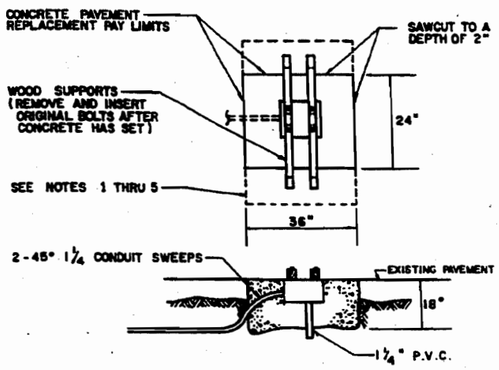
TYPICAL SECTION — SIDEWALK RESTORATION

APPROVED BY: C. ROGER MEEKER P.E., CHIEF ENGINEER

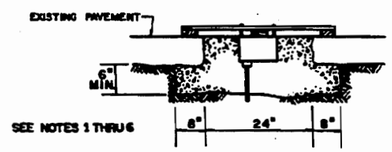
COUNTY OF SUFFOLK
NEW YORK

DEPARTMENT OF PUBLIC WORKS

TRAFFIC SIGNAL DETAILS



VIEW FACING TRAFFIC



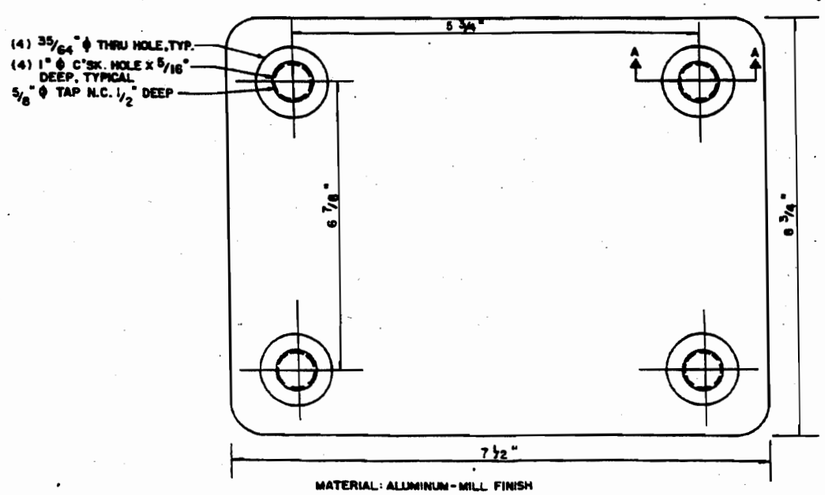
VIEW PERPENDICULAR TO TRAFFIC

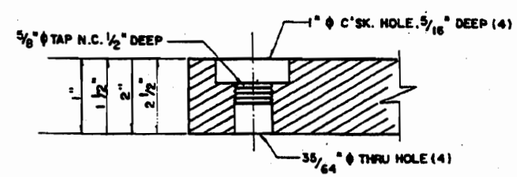
DETAIL FOR INSTALLATION OF CAST ALUMINUM BOX

(ITEM T20CA)

NOTES:

1. THE EXCAVATED AREA WITHIN THE PAY LIMITS OF THE ALUMINUM BOX INSTALLATION SHALL BE COMPLETELY FILLED WITH CONCRETE CLASS F TO A HEIGHT SPECIFIED BY THE ENGINEER. EXCAVATED AREAS BETWEEN THE ADJACENT ALUMINUM BOXES AND BETWEEN BOXES AND THE PAVEMENT EDGE OR CURBLINE SHALL LIKEWISE BE FILLED WITH CLASS F CONCRETE. PAYMENT IN THESE AREAS SHALL BE PAID FOR UNDER CONDUIT EXCAVATION AND RESTORATION IN CEMENT CONCRETE PAVEMENT.
2. A 1¼" PLASTIC CONDUIT AT LEAST 12" LONG SHALL BE INSTALLED FROM THE BOTTOM OF EACH BOX THROUGH THE CONCRETE TO ACT AS A DRAIN.
3. THE CAST ALUMINUM BOX SHALL BE ISOLATED FROM ALL INCOMING STEEL CONDUITS WITH THE USE OF A THREADED ¼" P.V.C. BUSHING.
4. SURFACE AREAS OF THE CAST ALUMINUM BOX WHICH WILL BE IN CONTACT WITH CONCRETE SHALL BE COATED WITH A ZINC CHROMATE PRIMER IN ACCORDANCE WITH SECTION 6 (MIBK) OF THE GENERAL SPEC. PART II.
5. WHEN THE CAST ALUMINUM BOX IS USED AS A SPLICE BOX FOR LOOP INSTALLATION A SEPARATE 1" CONDUIT SHALL BE FITTED INTO THE BOX FOR EACH LOOP. THE CONTRACTOR SHALL MAKE ADDITIONAL OPENINGS IN THE BOX AS NECESSARY TO PLACE THE PROPER NUMBER OF CONDUITS.
6. THE CONTRACTOR SHALL BE PERMITTED TO ENTER THE ALUMINUM BOX FROM THE BOTTOM WITH CONDUIT RUNS TO AN ADJACENT PULL BOX BY MAKING AN ADDITIONAL OPENING. IT SHALL BE NECESSARY TO PLACE THE ONE FOOT PIECE OF 1¼" P.V.C CONDUIT FOR DETECTOR PLACEMENT AND OR DRAINAGE.





SECTION A-A

ALUMINUM COLLAR FOR M.K.A. BOXES

COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
YAPHANK, NEW YORK

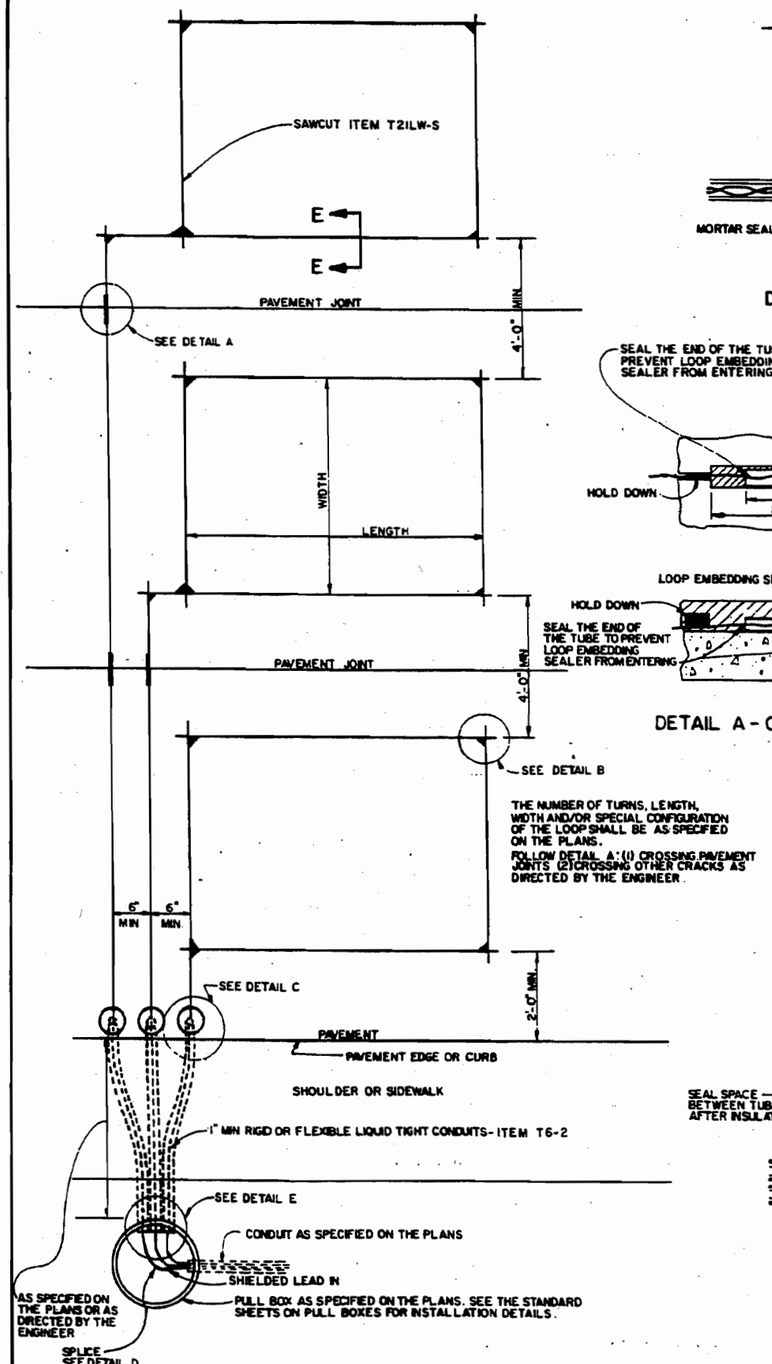
STEPHEN G. HAYDUK, P.E. COMMISSIONER

TRAFFIC SIGNAL DETAIL

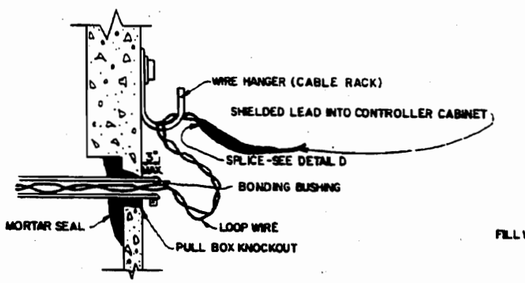
PROJECT ENGINEER:	
DESIGNED BY:	
CHECKED BY:	
DRAWN BY:	
COMPARED BY:	
SURVEY BOOK NO.	

SYMBOL	DESCRIPTION	APPROVED	DATE
	REVISIONS		

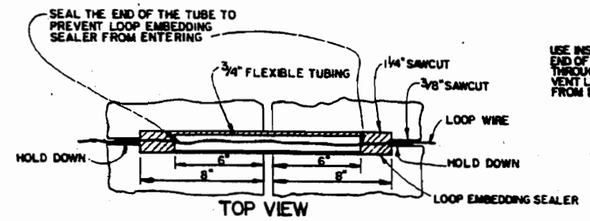
PROJECT NO.	SCALE	SHEET NO.	OF
	NOT TO SCALE		



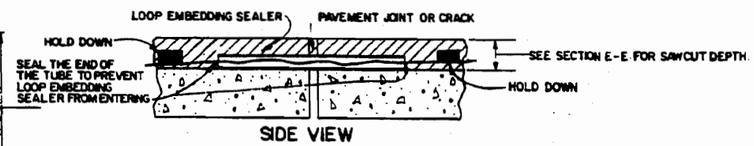
LOOP INSTALLATION DETAILS



DETAIL E

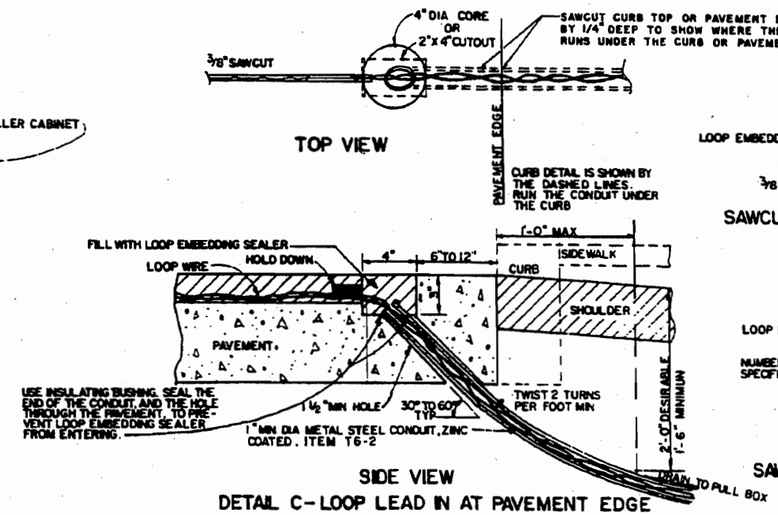


TOP VIEW



SIDE VIEW

DETAIL A - CROSSING PAVEMENT JOINTS OR CRACKS

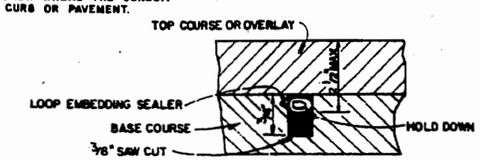


TOP VIEW

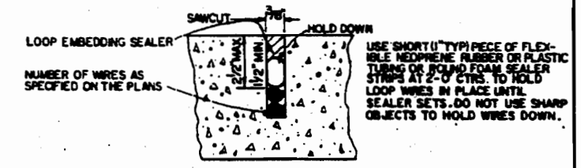
SIDE VIEW

DETAIL C - LOOP LEAD IN AT PAVEMENT EDGE

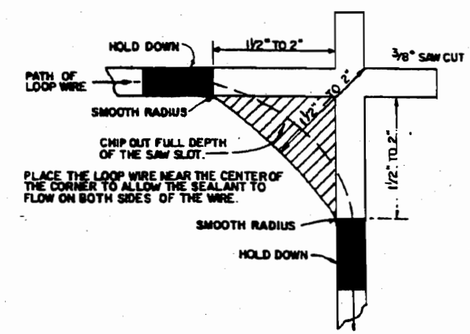
IF TOP COURSE IS MORE THAN 1 3/4" IN DEPTH THE SAWCUT SHALL BE MADE AFTER THE TOP COURSE IS PLACED.



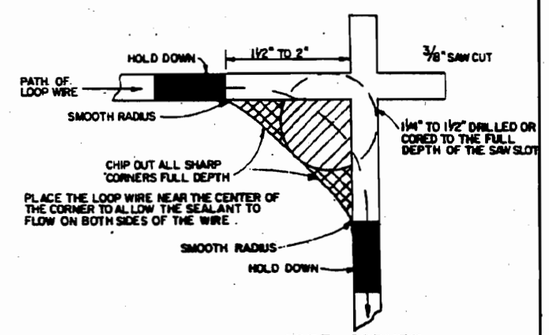
SAWCUT CROSS SECTION IN ASPHALT WHERE AN OVERLAY IS BEING PLACED



SAWCUT CROSS SECTION IN CONCRETE OR ASPHALT SECTION E-E

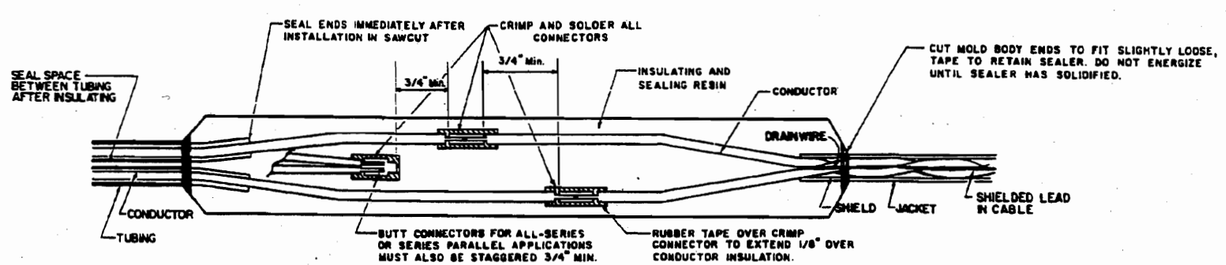


CHIPPED OUT CORNER



CORE CORNER

DETAIL B - CORNER DETAILS



DETAIL D - SPLICE KIT DETAIL

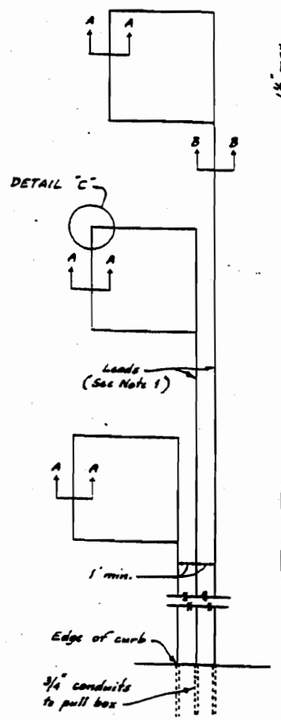
APPROVED BY [signature] DATE 6/15/89
C. ROGER MEEKER... CHIEF ENGINEER

COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
YAPHANK, NEW YORK
STEPHEN G. HAYDUK, P.E. - COMMISSIONER

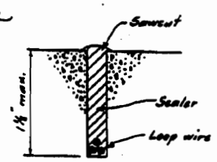
TRAFFIC SIGNAL DETAILS

DATE	REVISION	APPROVED BY	PROJECT NO.	SCALE	SHEET NO.	OF
	REVISIONS			NONE		

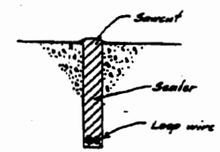
COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
STEPHEN G. NAYDUK, P.E. COMMISSIONER
YAPHANK, NEW YORK



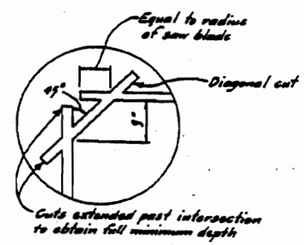
PLAN



SECTION A-A



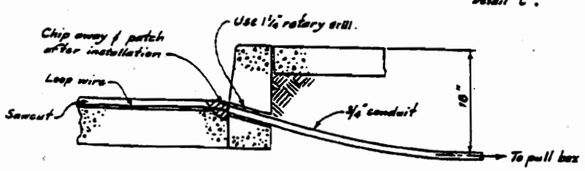
SECTION B-B



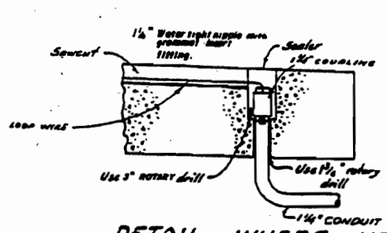
DETAIL "C"

LOOP DETECTOR NOTES:

1. Each pair of leads to be twisted three turns per foot.
2. All intersecting sawcuts shall be cut diagonally as shown in Detail "C".



TYPICAL CURB DETAIL

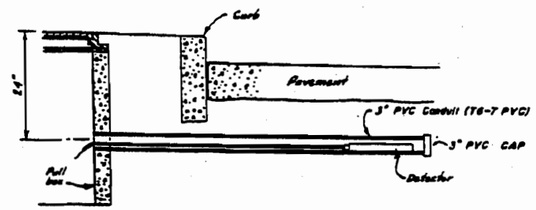


DETAIL WHERE NO CURB EXISTS

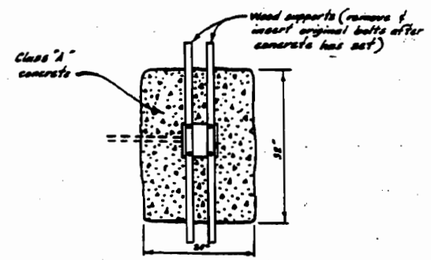
LOOP DETECTORS

MAGNETIC DETECTOR INSTALLATION

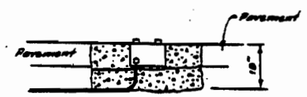
ITEM T23



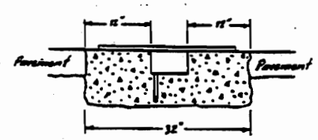
SINGLE LANE
MAGNETIC DETECTOR INSTALLATION
ITEM T23A



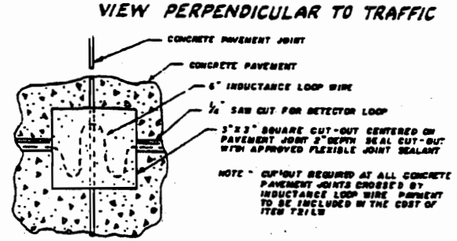
PLAN



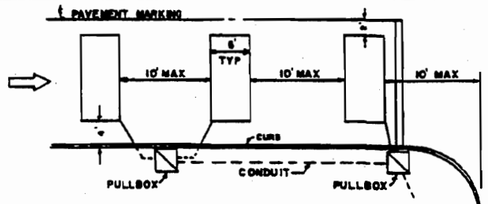
VIEW FACING TRAFFIC



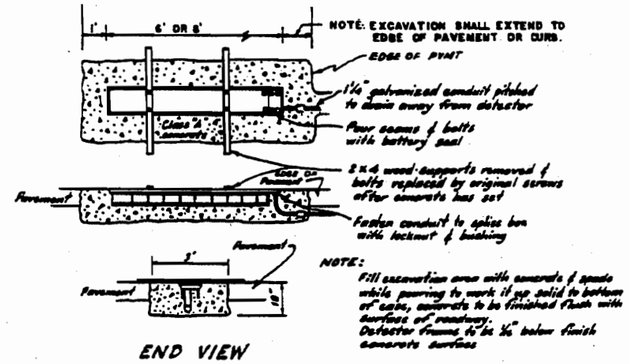
VIEW PERPENDICULAR TO TRAFFIC



ROADWAY LOOP INSTALLATION
AT CONCRETE PAVEMENT JOINTS



TYPICAL LAYOUT OF MULTIPLE
PRESENCE LOOPS



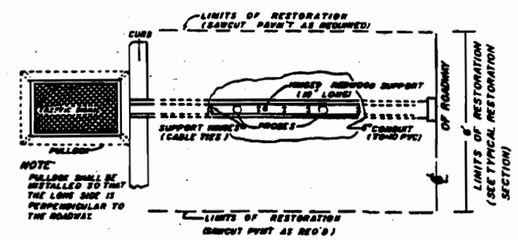
END VIEW

TYPICAL PRESSURE
DETECTOR INSTALLATION

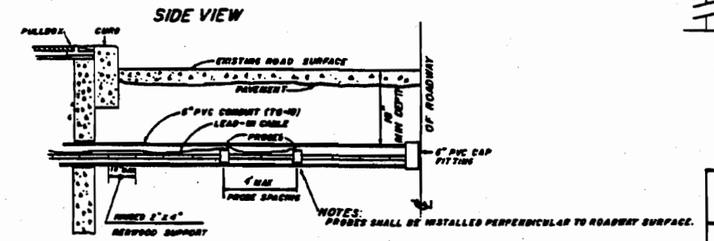
TYPICAL MAGNETOMETER
PROBE INSTALLATION

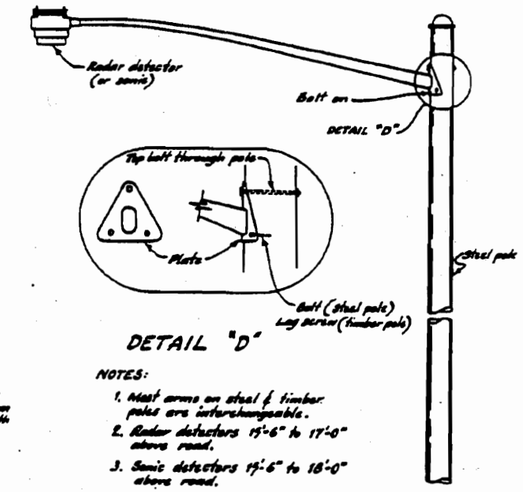
ITEM T23B-1

TOP VIEW



SIDE VIEW

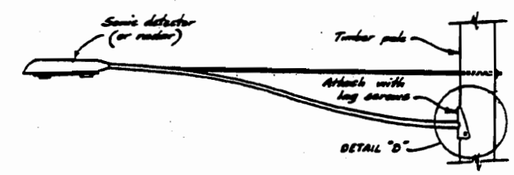




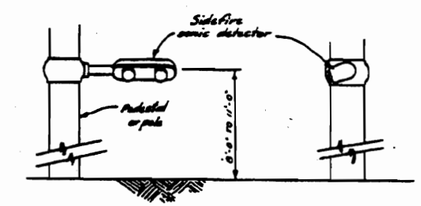
DETAIL "D"

NOTES:

1. Mast arms on steel & timber poles are interchangeable.
2. Radar detectors 15'-6" to 17'-0" above road.
3. Sonic detectors 17'-6" to 18'-0" above road.



OVERHEAD DETECTORS



SIDEFIRE DETECTOR

APPROVED BY: C. ROGER MEEKER P.E., CHIEF ENGINEER

COUNTY OF SUFFOLK
NEW YORK

DEPARTMENT OF PUBLIC WORKS

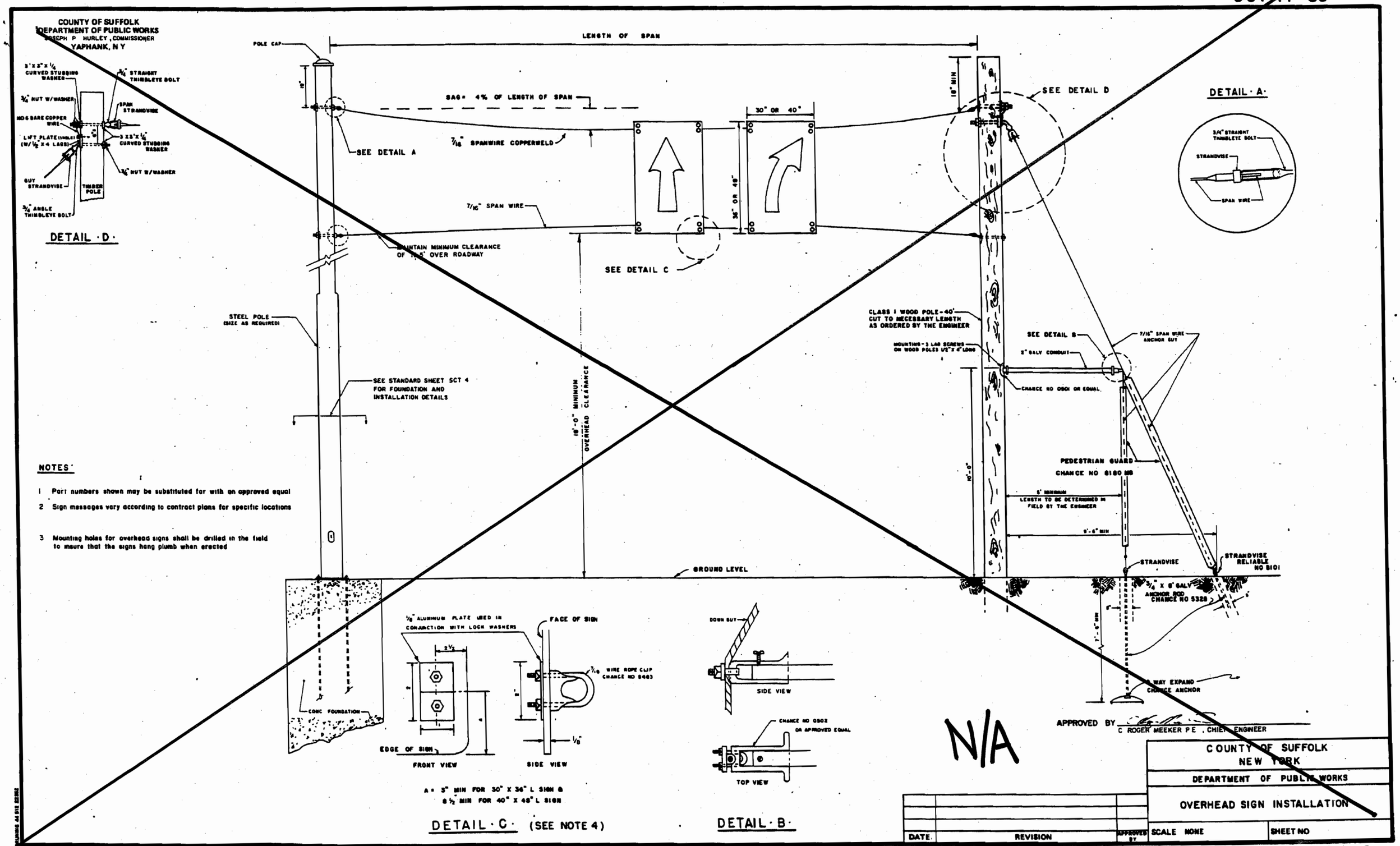
TRAFFIC SIGNAL DETAILS

DATE	REVISION	APPROVED	DATE	REVISION	APPROVED

Refer to NYSDOT SPECS and Standard sheets

SCT 71-88

COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
JOSEPH P HURLEY, COMMISSIONER
YAPHANK, N Y



NOTES:

1 Part numbers shown may be substituted for with an approved equal

2 Sign messages vary according to contract plans for specific locations

3 Mounting holes for overhead signs shall be drilled in the field to insure that the signs hang plumb when erected

N/A

APPROVED BY _____
C ROGER MEEKER P E , CHIEF ENGINEER

DATE	REVISION	APPROVED BY

COUNTY OF SUFFOLK
NEW YORK

DEPARTMENT OF PUBLIC WORKS

OVERHEAD SIGN INSTALLATION

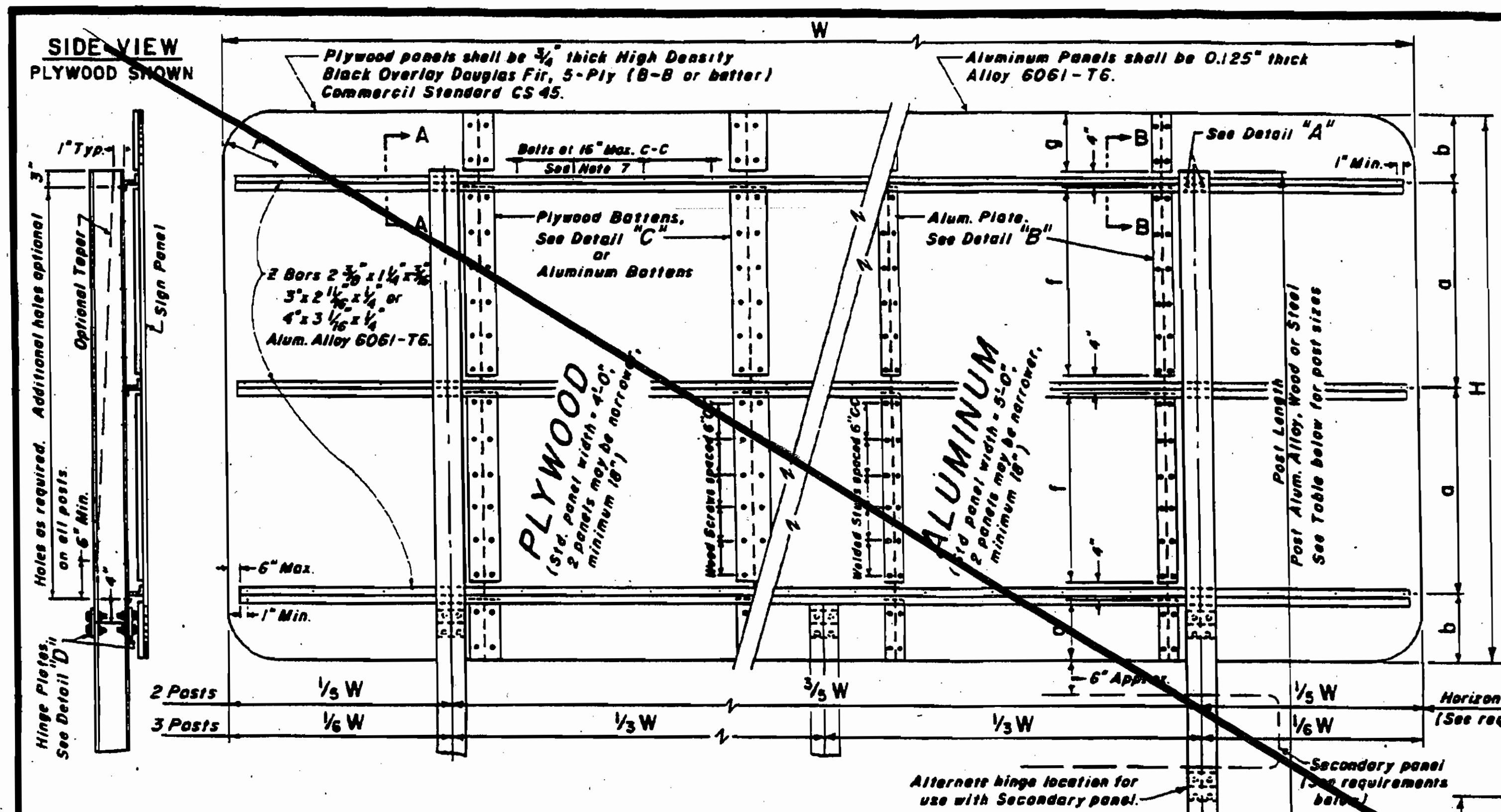
SCALE NONE | SHEET NO

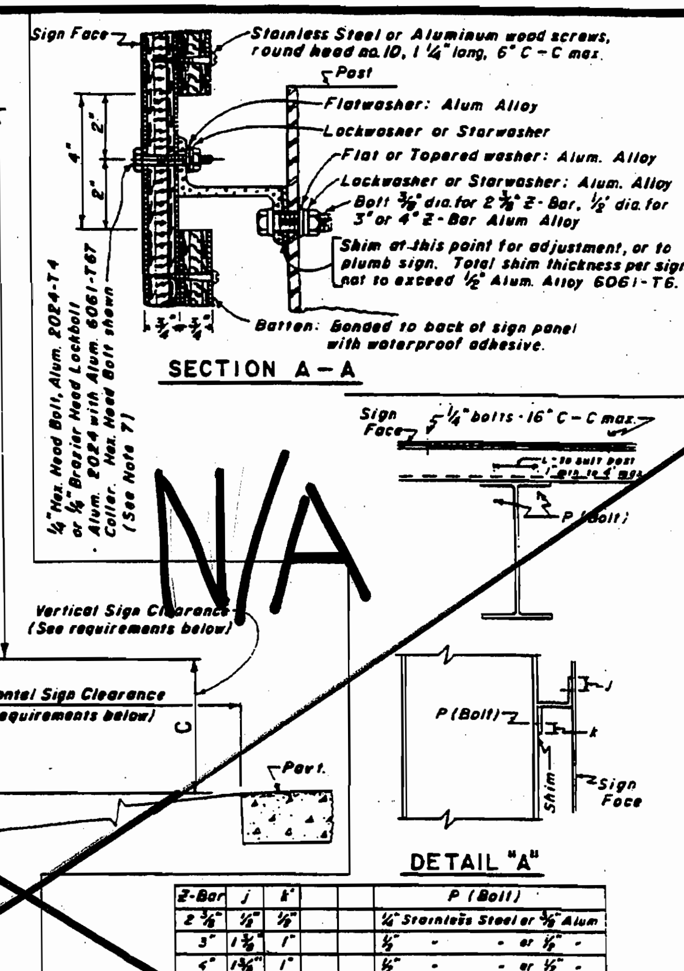
Deleted 1/2014

71-88

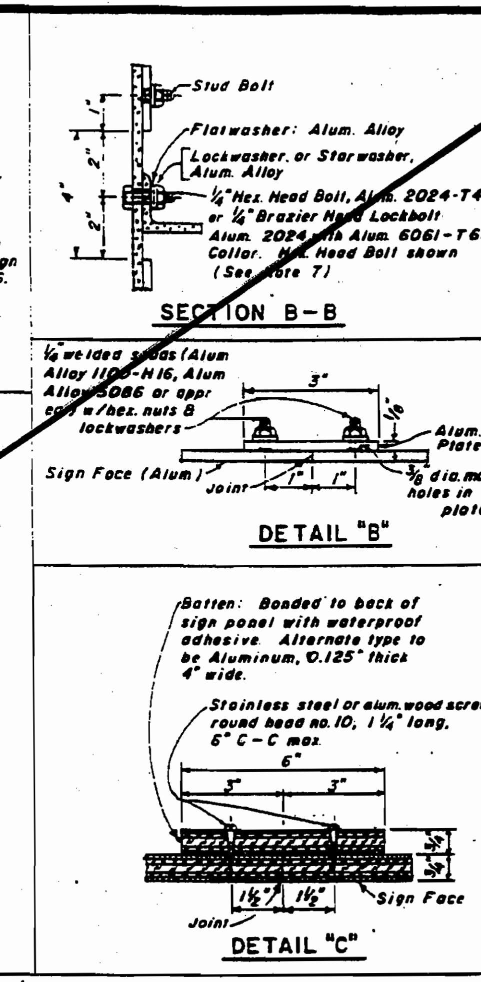
Refer to NYSDOT SPECS and Standard sheets

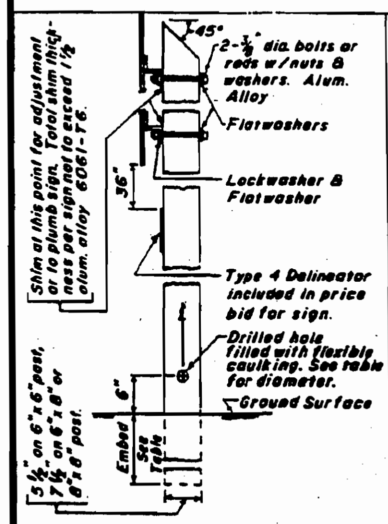
N/A





Z-Bar	j	k	P (Bolt)
2 3/8	1/2"	1/2"	1/4" Stainless Steel or 5/16" Alum
3"	1 3/8"	1"	1/2" - - or 1/2" -
4"	1 3/4"	1"	1/2" - - or 1/2" -



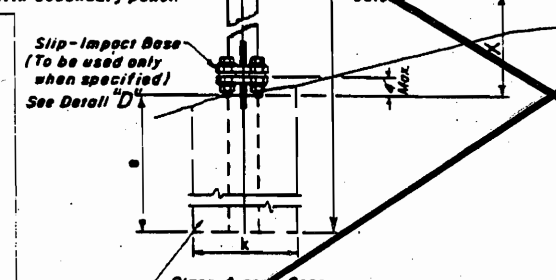


WOOD POST
(POST TYPES 4-6)

GENERAL NOTES

1. Steel posts shall be galvanized after fabrication in accordance with A S T M designation A 123 or A 386.
2. At the Contractor's option, panels larger than standard size may be used to minimize or eliminate joints.
3. Unless otherwise shown, all hardware shall be Alum. Alloy 6061-T6, 6262-T9, 2024-T4 or 7075-T6, or Stainless Steel A S T M A193 B8 and A194-8.
4. All 2024-T4 hardware shall be coated with Type 205 finish in accordance with 719-02.
5. Components of lockbolts may have modified tempers in cold-formed elements.
6. The Post Size Table is for posts fabricated of A-36 steel, and alum. alloy 6061-T6. For posts fabricated of A-242 steel, INCREASE the sign areas in the table by 25%. Posts for signs with slip-impact bases must be of weldable quality.
7. Overhead panels shall be constructed as shown except:
   (a) All lockbolts, bolts, nuts & washers shall be stainless steel, threads on threaded bolts must be burred or tack welded ⊛ after tightening to prevent loosening;
   (b) All stringers may be 2 3/8" x 1 1/4" x 3/16";
   (c) Vertical brackets, unless otherwise shown on the plans, shall support not more than 6 ft. of sign width;
   (d) When signs are lighted, there shall be a minimum of two vertical brackets per light fixture.

⊛ Type E 410 Welding Rods (Note 7)

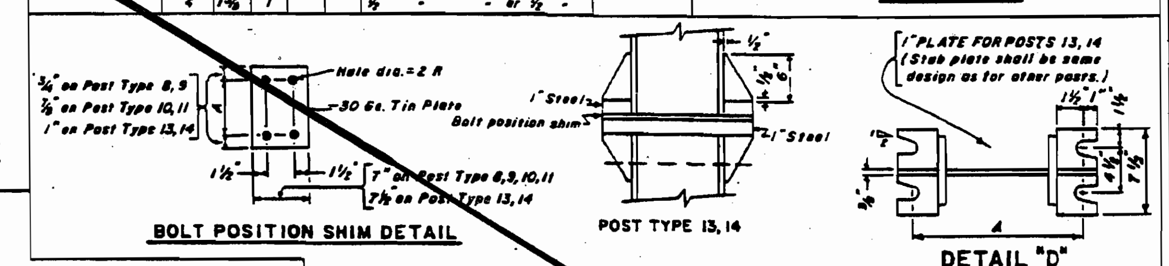


(To be used only when Slip-impact assembly is specified). 28 day cure required prior to panel installation.

REQUIREMENTS

Horizontal Sign Clearance — To be determined by Engineer.

Minimum Vertical Sign Clearance — Shall be 7'-0" to bottom of main panel. If a Secondary panel is used, the bottom of the main panel shall be 8'-0" and the bottom of the lowest Secondary panel shall be 5'-0". Clearance of lowest panel overhanging a sidewalk shall be 8'-0".



2-POST SIGNS: TYPE	POST: MATERIAL & SIZE	EMBEDMENT: k DIAM.	EMBEDMENT: e DEPTH	3-POST SIGNS: TYPE	POST: MATERIAL & SIZE	EMBEDMENT: k DIAM.	EMBEDMENT: e DEPTH	X=+4	X=+2	X=0	X=-2	X=-4	X=-6	X=-8	X=-10	X=-12	X=-14	X=-16	NO. OF POSTS 2: TYPE	NO. OF POSTS 3: TYPE
1	Steel ∠ 3½ X 2½ X ¼ or Alum. 4WF (A-N) 1.139	1'-0"	4'-0"					19	14	11	9	7	6	4	4	3	3	3	1	
2	Steel ∠ 4"X3"X¼" or Alum. 4WF (A-N) 1.788	1'-0"	4'-0"	1	Steel ∠ 3½X2½X¼ or Alum. 4WF (A-N) 1.139	1'-0"	4'-0"	27	20	15	13	10	9	6	5	5	4	4	2	1
	These posts are same as Reg., Warning & Rte Mkr. posts.			2	Steel ∠ 4"X3"X¼" or Alum. 4WF (A-N) 1.788	1'-0"	4'-0"	38	28	22	19	16	13	10	9	8	7	6		2
4	Wood 6"X6" Nom with 2" hole	None	5'-0"					55	42	34	28	24	19	15	13	12	11	10	4	
5	Wood 6"X8" Nom with 3" hole	None	6'-0"	4	Wood 6"X6" Nom with 2" hole	None	5'-0"	76	59	49	41	34	27	22	20	18	16	15	5	4
6	Wood 8"X8" Nom with 3" hole	None	6'-0"	5	Wood 6"X8" Nom with 3" hole	None	6'-0"	105	83	70	69	49	39	33	29	26	24	22	6	5
	These posts are embedded in earth only			6	Wood 8"X8" Nom with 3" hole	None	6'-0"	143	117	99	83	68	57	47	43	39	36	33		6
8	Steel W6X8.5 or Alum. 6WF 5.40	1'-6"	5'-0"					91	72	59	50	41	34	27	24	22	20	19	8	
9	Steel W8X10 or Alum. 8WF 5.90	1'-6"	5'-0"	8	Steel W6X8.5 or Alum. 6WF 5.40	1'-6"	5'-0"	127	103	86	73	60	49	41	37	34	31	28	9	8
10	Steel W10X11.5 or Alum. 10WF 7.30	2'-0"	5'-0"	9	Steel W8X10 or Alum. 8WF 5.90	1'-6"	5'-0"	174	143	121	101	83	71	59	54	50	45	42	10	9
11	Steel W12X14 or Alum. 12 I 10.99	2'-6"	5'-0"	10	Steel W10X11.5 or Alum. 10WF 7.30	2'-0"	5'-0"	238	200	167	139	118	101	87	79	73	67	62	11	10
				11	Steel W12X14 or Alum. 12 I 10.99	2'-6"	5'-0"	300	264	224	192	166	145	126	116	105	98	92		11
13	Steel W12X27 or Alum. Tube 12"X.750 wall	2'-6"	7'-0"							300	250	218	192	169	157	143	133	124	13	
14	Steel W14X34	3'-0"	9'-0"	13	Steel W12X27	2'-6"	7'-0"					300	286	238	218	204	189	176	14	13
				14	Steel W14X34	3'-0"	9'-0"								300	284	264	248		14

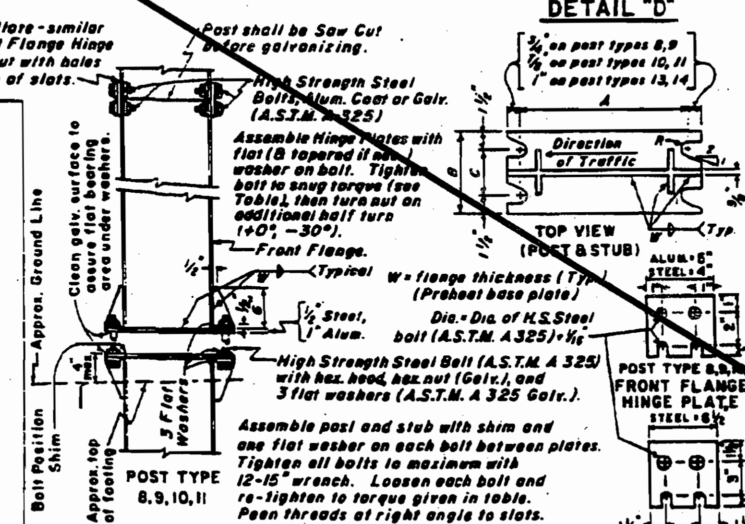
(MAX. TOTAL SIGN PANEL AREAS (SQ.FT.) FOR VARIOUS VALUES OF X (EDGE OF PAVEMENT TO GROUND SURFACE))

I Total Post Length = (X) plus Embedment Depth (e) plus Sign Height (H) plus height of sign face above pav't. (C) minus (g).
II Interpolate table for other values of "X".
(a) Plus values of "X" indicate ground surface above pav't. edge.
(b) Minus values of "X" indicate ground surface below pav't. edge.
III Each post shall be selected separately
IV Embedment Depth shown in the table is for Earth Embedment. When sound solid rock is encountered, posts shall be founded into rock a depth equal to Embedment Diameter (k) or to Depth (e), whichever is less. Anchorage diameter in rock may be reduced to suit post.

POST DIMENSIONS

STEEL: Designation	d	b_f	t_f	t_w	ALUMINUM: Designation	d	b	n	t
W6X8.5	5 7/8	4	3/16	3/16	4WF (A-N) 1.139	4	2.00	0.125	0.125
W8X10	7 7/8	4	3/16	3/16	4WF (A-N) 1.788	4	3.00	0.156	0.156
W10X11.5	9 7/8	4	3/16	3/16	6WF 5.40	6	6.000	0.269	0.240
W12X14	11 7/8	4	1/4	3/16	8WF 5.90	8	5.250	0.308	0.230
W12X27	12	6 1/2	3/8	1/4	10WF 7.30	10	5.750	0.340	0.240
W14X34	14	6 3/4	7/16	5/16	12 I 10.99	12	5.000	0.350	0.350
					Alum. Tube 12" x.750 wall				

APPROVED BY: C. ROGER MEEKER P.E., CHIEF ENGINEER



Assemble post and stub with shim and one flat washer on each bolt between plates. Tighten all bolts to maximum with 12-15" wrench. Loosen each bolt and re-tighten to torque given in table. Peen threads at right angle to slots.

POST TYPE	A	B	C	BASE BOLT: R.	BASE BOLT: DIA.	BASE BOLT: TORQUE	HINGE PLATE & BOLTS: THICKNESS	HINGE PLATE & BOLTS: BOLT DIA.	HINGE PLATE & BOLTS: SNUG TORQUE
8	8½	7"	4"	11/32	3/8	375 in.lbs.	STEEL ¼ ALUM ⅜	5/8	65 FT. LBS.
9	10½	7"	4	11/32	3/8	375 in.lbs.	" ¼ " ⅜	5/8	65 FT. LBS.
10	12¾	7"	4"	13/32	3/4	625 in.lbs.	" ⅜ " ½	3/4	110 FT. LBS.
11	14¾	7"	4"	13/32	3/4	625 in.lbs.	" ⅜ " ½	3/4	110 FT. LBS.
13	15"	7½	4½	15/32	7/8	750 in.lbs.	" ⅜	1"	150 FT. LBS.
14	17"	7½	4½	17/32	1"	833 in.lbs.	" ⅜	1"	150 FT. LBS.

POST SPACINGS & APPROPRIATE STRINGER (Z - BAR) SIZES

POST SPACING (2 POSTS): W	3/5 W	1/5 W	Z - BARS
3'-0"—4'-0"	2'-0"	6"—12"	Z 2 3/16 x 1 1/4 x 3/16 at 1.00 lbs. ft.
4'-6"—5'-6"	3'-0"	9"—15"	
6'-0"—7'-0"	4'-0"	12"—18"	
7'-6"—9'-0"	5'-0"	15"—21"	
9'-6"—10'-6"	6'-0"	1'-9"—2'-3"	
11'-0"—12'-0"	7'-0"	2'-0"—2'-6"	
12'-6"—14'-0"	8'-0"	2'-3"—3'-0"	
14'-6"—16'-6"	9'-0"	2'-9"—3'-3"	
16'-0"—17'-0"	10'-0"	3'-0"—3'-6"	
17'-6"—19'-0"	11'-0"	3'-3"—4'-0"	Z 3" x 2 11/16 x 1/4 at 2.33 lbs. ft.
19'-6"—20'-6"	12'-0"	3'-9"—4'-3"	
21'-0"—22'-0"	13'-0"	4'-0"—4'-6"	
22'-6"—24'-0"	14'-0"	4'-3"—5'-0"	
24'-6"—25'-6"	15'-0"	4'-9"—5'-3"	
26'-0"—28'-0"	16'-0"	5'-0"—6'-0"	
28'-6"—31'-6"	18'-0"	5'-3"—6'-9"	Z 4" x 3 1/16 x 1/4 at 2.85 lbs. ft.
32'-0"—34'-6"	20'-0"	6'-0"—7'-3"	
35'-0"—38'-0"	22'-0"	6'-6"—8'-0"	
38'-6"—41'-6"	24'-0"	7'-3"—8'-9"	
42'-0"—44'-6"	26'-0"	8'-0"—9'-3"	
45'-0"—48'-0"	28'-0"	8'-6"—10'-0"	

POST SPACING (3 POSTS): W	1/3 W (2 SPAC.)	1/6 W	Z - BARS
13'-6"—16'-0"	5'-0"	1'-9"—3'-0"	Z 2 3/16 x 1 1/4 x 3/16 at 1.00 lbs. ft.
16'-6"—19'-0"	6'-0"	2'-3"—3'-6"	
19'-6"—22'-0"	7'-0"	2'-9"—4'-0"	
22'-6"—25'-0"	8'-0"	3'-3"—4'-6"	Z 3" x 2 11/16 x 1/4 at 2.33 lbs. ft.
25'-6"—28'-0"	9'-0"	3'-9"—5'-0"	
28'-6"—31'-0"	10'-0"	4'-3"—5'-6"	
31'-6"—34'-0"	11'-0"	4'-9"—6'-0"	
34'-6"—37'-0"	12'-0"	5'-3"—6'-6"	Z 4" x 3 1/16 x 1/4 at 2.85 lbs. ft.
37'-6"—40'-0"	13'-0"	5'-9"—7'-0"	
40'-6"—43'-0"	14'-0"	6'-3"—7'-6"	
43'-6"—46'-0"	15'-0"	6'-9"—8'-0"	
46'-6"—49'-0"	16'-0"	7'-3"—8'-6"	

STRINGERS & BATTENS

H	a	b	f	g	r
TWO Z - BARS					
1'-6"	1 at 12"	3"	1 at 8"		3"
2'-0"	1 at 18"	3"	1 at 14"		3"
2'-6"—3'-6"	1 at 24"	3"-9"	1 at 20"	0"-7"	3"-6"
4'-0"—4'-6"	1 at 30"	9"-12"	1 at 26"	7"-10"	6"
5'-0"—6'-0"	1 at 36"	12"-18"	1 at 32"	10"-16"	9"
THREE Z - BARS					
6'-6"—9'-0"	2 at 36"	3"-18"	2 at 32"	0"-16"	9"-12"
FOUR Z - BARS					
9'-6"—12'-0"	3 at 36"	3"-18"	3 at 32"	0"-16"	12"
12'-6"—16'-0"	4 at 36"	3"-12"	4 at 32"	0"-8"	12"

Signs over one standard panel height (8 ft. for plywood, 12 ft. for aluminum) may be constructed as two separate signs of approx. equal height with a horizontal construction joint similar to the vertical joints detailed on this sheet; said horizontal joint to fall between lines of major legend.
Secondary panels shall be fabricated and erected in same manner as main panel.
The wider panel determines horiz. clearance.
The larger panel determines post spacing.

COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
STEPHEN G. HAYDUK, COMMISSIONER
YAPHANK, NEW YORK

COUNTY OF SUFFOLK
NEW YORK

DEPARTMENT OF PUBLIC WORKS

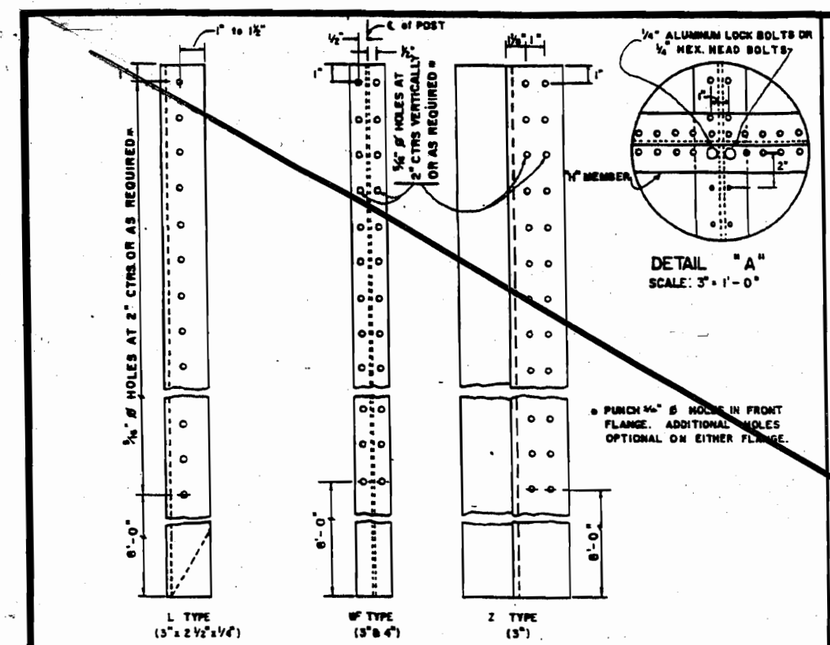
GUIDE SIGN DETAILS

SCALE NONE

Deleted 1/2014

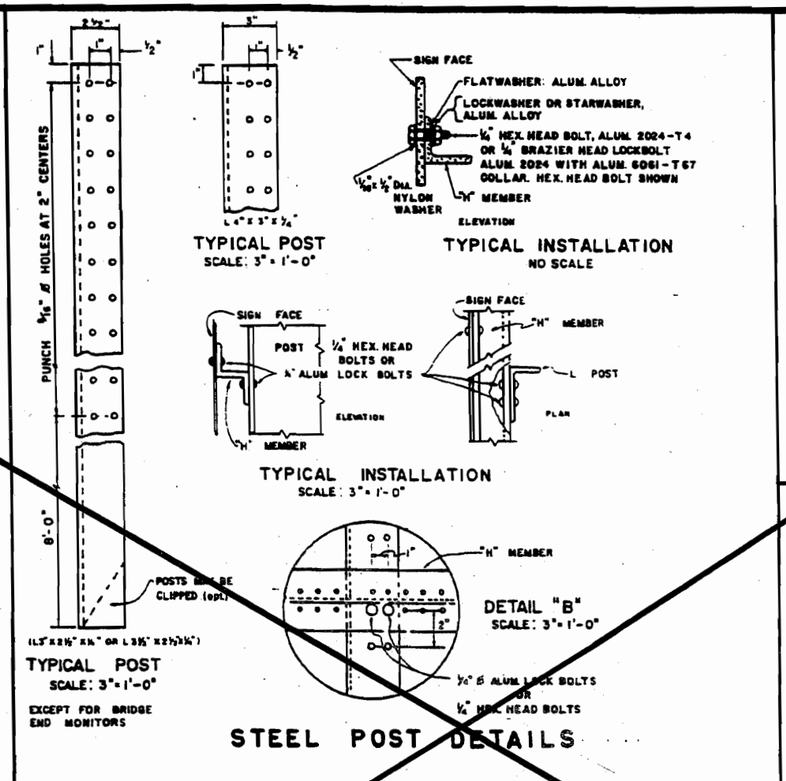
Refer to NYSDOT SPECS and Standard sheets

SCT 645.2 -88



TYPICAL POSTS
SCALE: 3" = 1'0"

ALUMINUM POST DETAILS



TYPICAL POST
SCALE: 3" = 1'-0"

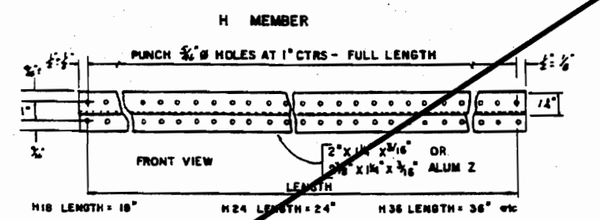
EXCEPT FOR BRIDGE END MONITORS

TYPICAL POST
SCALE: 3" = 1'-0"

TYPICAL INSTALLATION
NO SCALE

TYPICAL INSTALLATION
SCALE: 3" = 1'-0"

STEEL POST DETAILS

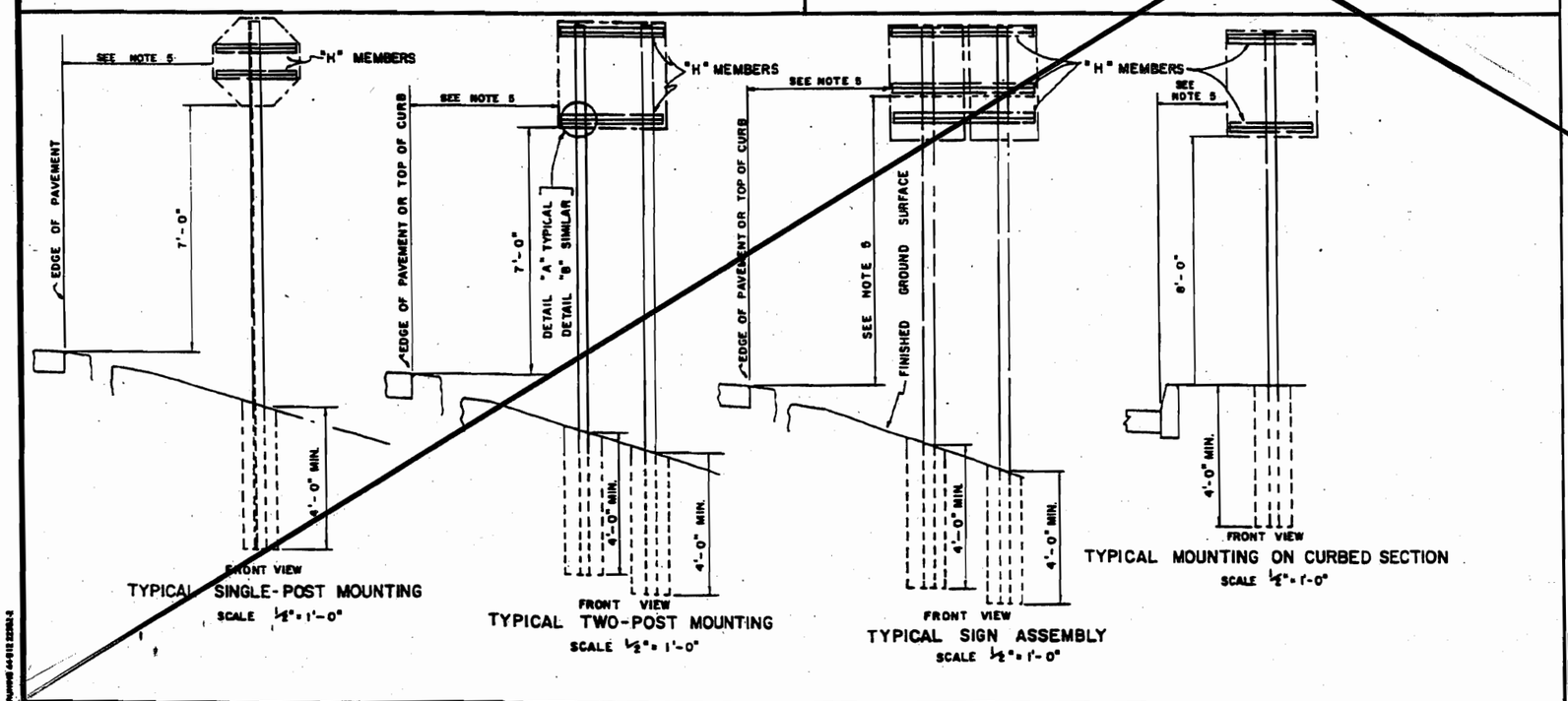


NOTE: OVERALL LENGTH OF H MEMBER TO BE A MINIMUM OF ONE INCH LONGER THAN H LENGTH, WHICH IS DISTANCE CENTER TO CENTER OF EXTREME SIGN FACE HOLES.

STEEL (A.S.T.M. DESIGNATION A-1 OR REROLLED AXLE STEEL),
THESE STEELS MAY BE USED FOR SMALL ANGLE POSTS, AND THE 3" x 2½" x ¼" POSTS OF A-1 OR REROLLED AXLE STEEL MAY BE SUBSTITUTED FOR 3" OR 3½" x 2½" x ¼" POSTS OF A-36 STEEL.

· NOTES ·

1. ALL POSTS SHALL BE EMBEDDED 4'-0" DEEP OR 1'-0" INTO SOUND ROCK; DIAMETER TO FIT POST. IF POST HOLES ARE EXCAVATED, THE HOLE SHALL BE 1'-0" DIAMETER.
2. ALUMINUM 6061 LOCKBOLTS ARE CONSIDERED INTERCHANGEABLE WITH ALUMINUM 2024-T4 BOLTS WITH LOCKWASHERS OR STARWASHERS IN ANODIZED AND CHROMATE SEALED FINISH.
3. ALL STEEL POSTS TO BE HOT DIP GALVANIZED AFTER FABRICATION FOR FULL LENGTH AND TOTAL AREA.
4. ALL SIGNS MOUNTED OVER SIDEWALKS SHALL HAVE A MIN. CLEARANCE OF 8'-0" ABOVE SIDEWALK. ALL OTHER SIGNS SHALL BE MOUNTED AS SHOWN.
5. TO BE DETERMINED BY ENGINEER.



TYPICAL SINGLE-POST MOUNTING
SCALE ½" = 1'-0"

TYPICAL TWO-POST MOUNTING
SCALE ½" = 1'-0"

TYPICAL SIGN ASSEMBLY
SCALE ½" = 1'-0"

TYPICAL MOUNTING ON CURBED SECTION
SCALE ½" = 1'-0"

N/A

APPROVED BY: _____
C. ROGER MEEKER P.E., CHIEF ENGINEER

COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
YAPHANK, NEW YORK

STEPHEN G. HAYDUK, COMMISSIONER

SIGN POST DETAILS

SYMBOL	DESCRIPTION	APPROVED	DATE	PROJECT NO.	SCALE	SHEET NO.
	REVISIONS					

Deleted 1/2014

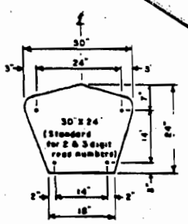
SCT 645.2 - 88

Refer to NYSDOT SPECS and Standard sheets

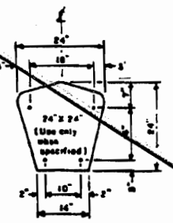
SCT 645.3 - 88

COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
S. G. HAYDUK · · · · COMMISSIONER
YAPHANK, N.Y.

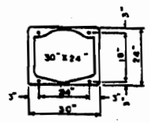
TYPICAL MARKER PANELS



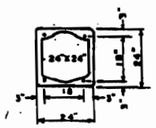
M52-3



M52-2

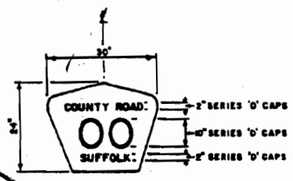


M3-3

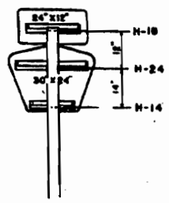


M3-2

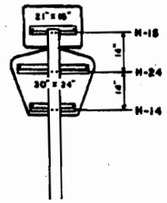
TYPICAL LEGEND MARKER PANEL



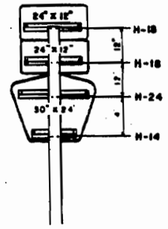
TYPICAL ASSEMBLIES



ITEM NO. 645-26 - 1

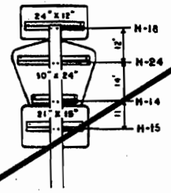


ITEM NO. 645-26 - 2

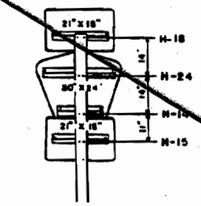


ITEM NO. 645-26 - 3

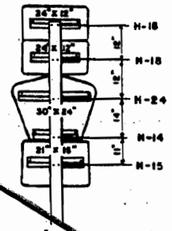
N/A



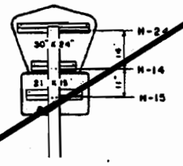
ITEM NO. 645-26 - 5



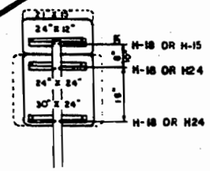
ITEM NO. 645-26 - 6



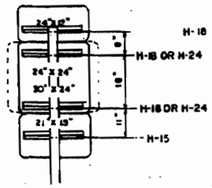
ITEM NO. 645-26 - 7



ITEM NO. 645-26 - 8



ITEM NO. 645-2620



ITEM NO. 645-2630

NOTES

1. Z-bar "H-members" are measured C-C of end holes, but the actual length shall be a minimum of 1/2" more on each end. Longer members may be used, however the ends shall not project beyond the edges of sign panels on a single marker assembly, nor beyond the left edges of the left-side panels and the right edges of the right-side panels on double marker assemblies. On double marker assemblies, all "H-members" shall be continuous.

2. All panels shall be centered about the left hole in Z-and L-posts. Two bolts shall be used to attach each "H-member" to the post.

3. Each of the typical assemblies shows the standard 30" X 24" County Road-Number Marker Panel. If a 24" X 24" is specified on the contract plans, the top "H-member" shall be on H-18 and the bottom shall be on H-10. The vertical dimensions shall be the same as those shown for the 30" X 24".

4. Also see the "Sign Post Details" standard sheet for further details of posts, post-embedments and "H-members".

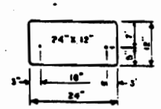
5. Single post – Steel L-4" X 3" X 1/4" OR Aluminum Z 3" X 2 11/16" X 1/4".

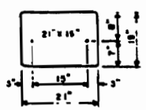
   Double post – Steel L-4" X 3" X 1/4" OR Aluminum 4 WF (A-N) 1.788.

6. Vertical dimensions shown with the Typical Assemblies are the C. to C. distances between holes in the post.

7. Lock Bolts shall not be used to attach the Auxiliary Marker Panels to single post assemblies. 1/4" Hex. Head Bolts must be used and shall be burred after tightening.

TYPICAL AUXILIARY MARKER PANELS





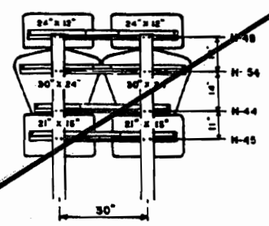
TYPICAL METHOD OF LAYOUT

COUNTY ASSEMBLIES

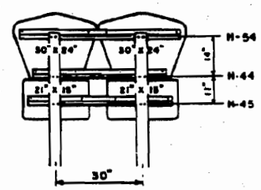
LEGEND	SIZE	PLACEMENT
JCT	21" X 15"	TOP
BEGIN / END / TO	24" X 12"	TOP
(DIRECTION)	24" X 12"	TOP
(ARROWS)	21" X 15"	BOTTOM

N.Y.S ASSEMBLIES

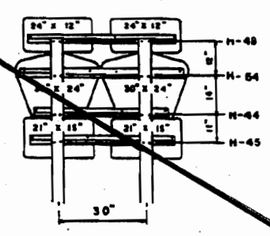
LEGEND	SIZE	PLACEMENT
JCT	21" X 15"	TOP
BEGIN / END / TO	24" X 12"	TOP
(DIRECTION)	24" X 12"	TOP
(ARROWS)	21" X 15"	BOTTOM



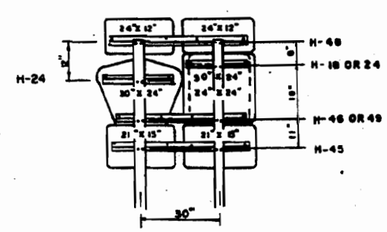
ITEM NO. 645-27 - 1



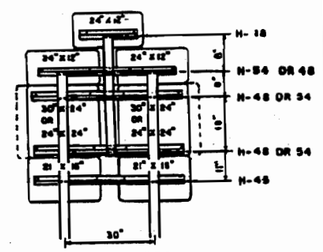
ITEM NO. 645-27 - 2



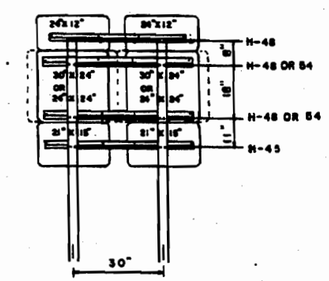
ITEM NO. 645-27-3



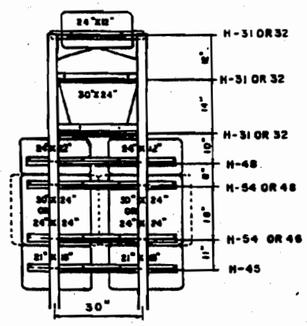
ITEM NO. 645-2720(MODIFIED)



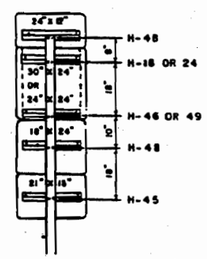
ITEM NO. 645-2730



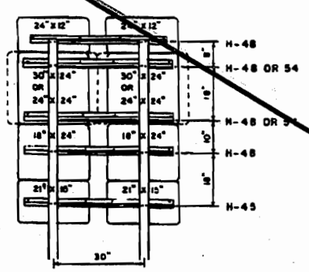
ITEM 645-2720



ITEM NO 645-2849 (MODIFIED)



ITEM NO 645-2630P



ITEM NO. 645-2720P

APPROVED BY

DATE 12/22/87

··· CHIEF ENGINEER

3/24/94	ADDED SIGN ASSEMBLY 645.2730	RKL
DATE	REVISION	APPROVED

COUNTY OF SUFFOLK
NEW YORK

DEPARTMENT OF PUBLIC WORKS

ROAD NUMBER AND ROUTE MARKER DETAILS

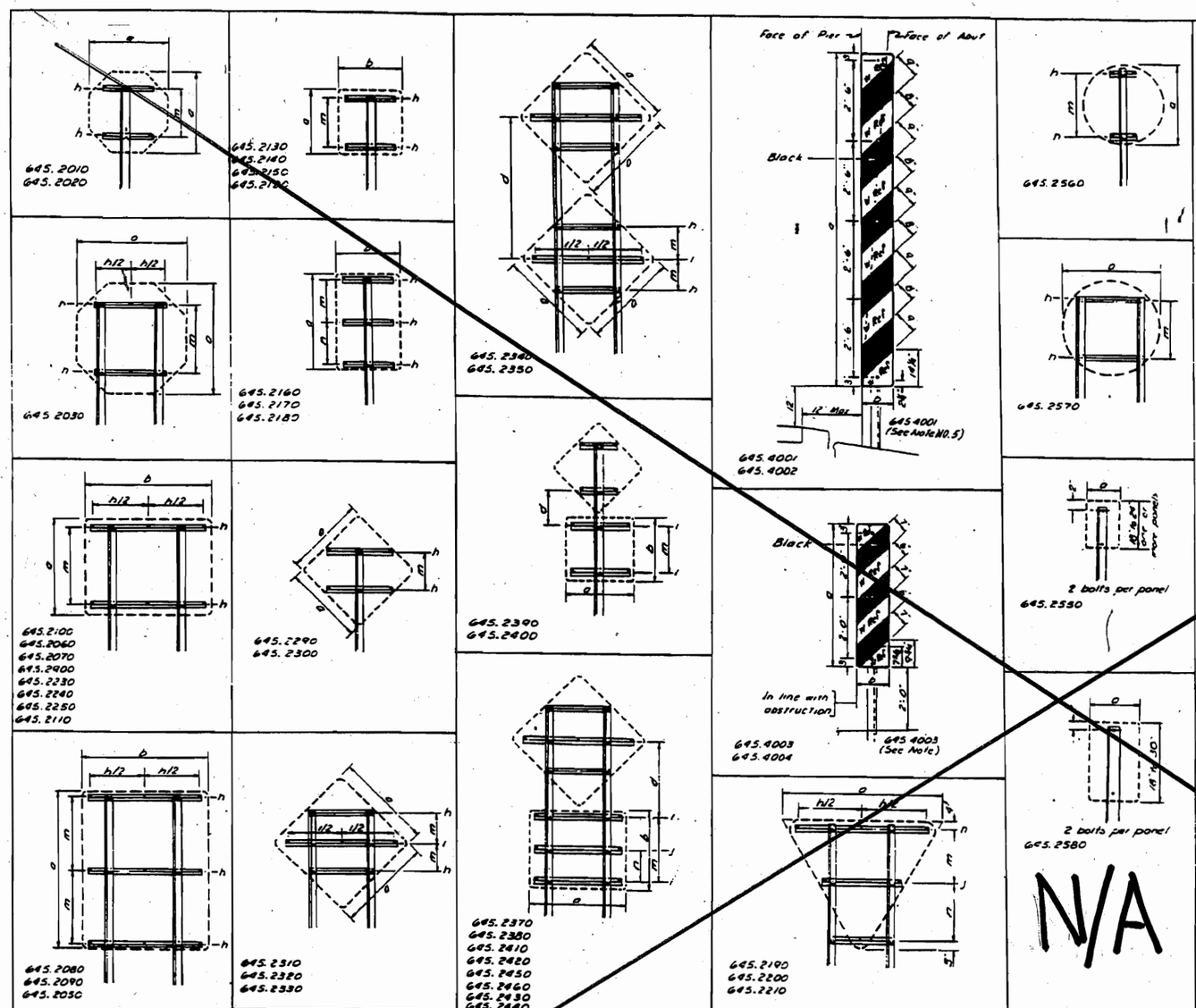
SCALE: NONE

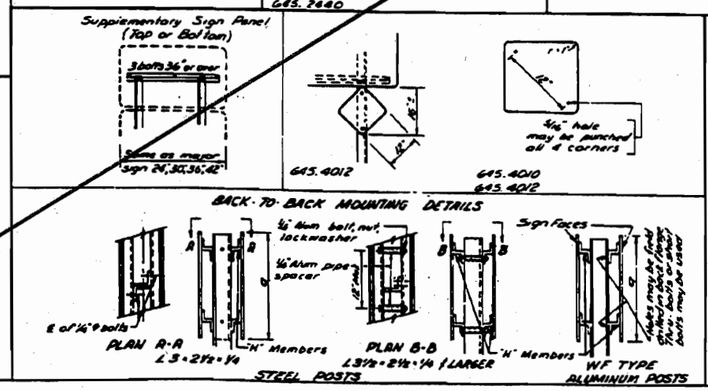
SHEET NO.

Deleted 1/2014

SCT 645.3-88

Refer to NYSDOT SPECS and Standard sheets





POST SIZE	POST STEEL	POST ALUMINUM
1	L 3 X 2 1/2 X 1/4	L 3 X 2 1/2 X 1/4
2	L 3 X 2 1/2 X 1/4	Z 3 X 2 11/16 X 1/4
3	L 3 1/2 X 2 1/2 X 1/4	Z 3 X 2 11/16 X 1/4
4	L 4 X 3 X 1/4	Z 3 X 2 11/16 X 1/4
5	L 3 X 2 1/2 X 1/4	3WF(A-N)1.001
6	L 3 X 2 1/2 X 1/4	4WF(A-N)1.139
7	L 3 1/2 X 2 1/2 X 1/4	4WF(A-N)1.139
8	L 3 1/2 X 2 1/2 X 1/4	4WF(A-N)1.788
9	L 4 X 3 X 1/4	4WF(A-N)1.139
10	L 4 X 3 X 1/4	4WF(A-N)1.788

DIMENSIONS

ITEM NUMBER	SIGN PANEL DIMENSIONS a	b	H-MEMBERS H-LENGTHS h	i	j	SPACING m	n	TWO PANEL MOUNTING MAJOR PANEL DIMENSION REFERENCE	VERT. SPAC. d	POSTS NO.	SPACING	SIZE WIND ZONE A	B	C
645.2010	24		14			14				1		2	2	2
645.2020	30		18			18				1		2	3	4
645.2030	42		26			26				2	22	6	8	10
645.2050	60	48	42			28				2	26	10	10	10
645.2060	24	48	42			18				2	26	5	6	7
645.2070	30	48	42			24				2	26	5	7	10
645.2080	36	48	42			16				2	26	7	10	10
645.2090	48	48	42			22				2	26	10	10	10
645.2100	18	48	42			12				2	26	5	5	7
645.2110	24	60	54			18				2	30	5	6	7
645.2120	30	24	18			24				1		2	3	4
	30	30	24			24				1		2	3	4
645.2130	12	24	18			6				1		2	2	2
	12	30	24			6				1		2	2	2
645.2140	18	24	18			12				1		2	2	2
	18	30	24			12				1		2	2	2
645.2150	24	24	18			18				1		2	2	3
	24	30	24			18				1		2	2	3
645.2160	36	24	18			16	16			1		3	4	4
	36	30	24			16	16			1		3	4	4
645.2170	42	24	18			18	20			1		3	4	4
	42	30	24			18	20			1		3	4	4
645.2180	48	24	18			22	22			1		4	4	4
	48	30	24			22	22			1		4	4	4
645.2190	36		24	23						1		2	2	3
645.2200	48		38	23	24	16	36			2	22	5	5	7
645.2210	60		48	23	28	20	22			2	22	5	6	10
645.2230	18	36	30			12				2	22	5	5	5
	18	42	36			12				2	22	5	5	5
645.2240	24	36	30			18				2	22	5	5	7
	24	42	36			18				2	22	5	6	7
645.2250	30	36	30			24				2	22	5	7	7
	30	42	36			24				2	22	5	7	7
645.2260	36	36	30			16	16			2	22	6	8	10
	36	42	36			16	16			2	22	6	8	10
645.2270	42	36	30			18	20			2	22	6	8	10
	42	42	36			18	20			2	22	6	8	10
645.2280	48	36	30			22	22			2	22	7	10	10
	48	42	36			22	22			2	22	7	10	10
645.2290	24		14			12				1		2	2	3
645.2300	30		22			16				1		3	4	4
645.2310	36		23	44		12				2	22	5	7	10
645.2320	42		23	52		16				2	22	7	10	10
645.2330	48		23	60		20				2	22	10	10	10
645.2340	30		23			8		645.2300	44	2	22	6	7	10
645.2350	36		23	42		12		645.2310	52	2	22	10	10	10
645.2370	[illegible]	30		24		24		645.2300	26	2	22	9	9	10
645.2380	36	12		30		6		645.2300	26	2	22	5	6	7
	24	18		18		12		645.2300	26	2	22	5	6	7
645.2390	24	24		18		18		645.2290	14	1		3	4	4
645.2400	36	12		30		6		645.2290	14	1		3	4	4
645.2410	30	24		24		18		645.2310	30	2	22	7	10	10
	36	24		30		18		645.2310	30	2	22	7	10	10
	36	36		30	30	32	16	645.2310	30	2	22	7	10	10
645.2420	36	12		30		6		645.2310	30	2	22	6	8	10
645.2430	36	36		30	30	32	16	645.2330	38	2	26	10	10	10
	42	30		36		26		645.2330	38	2	26	10	10	10
	48	36		42	42	32	16	645.2330	38	2	26	10	10	10
645.2440	36	12		30		6		645.2330	38	2	22	10	20	20
645.2450	36	36		30	30	32	16	645.2320	34	2	22	10	10	10
645.2460	36	12		30		6		645.2320	34	2	22	7	10	10
645.2550	12									1		1	1	1
645.2560	30		8			24				1		2	3	4
645.2570	36		23			22				2	22	5	5	7
645.2580	18									1		2	3	4
645.2900	12	36	30			6				2	22	5	5	5
	12	42	36			6				2	22	5	5	5
645.4001	126	12								1		3	4	4
645.4002	126	12								1		3	4	4
645.4003	54	12								1		2	2	2
645.4004	54	12								1		2	2	2

VARIATIONS IN MOUNTINGS AND PAYMENT

TO PROVIDE FLEXIBILITY IN THE SELECTION OF AND PAYMENT FOR THE APPROPRIATE COMBINATION OF SIGN PANELS AND POSTS, THE FOLLOWING VARIATIONS MAY BE SELECTED FOR ALL THE ITEMS SHOWN ON THIS SHEET BY SUBSTITUTING THE APPROPRIATE NUMERAL IN PLACE OF THE ZERO IN THE FOURTH DECIMAL PLACE. *(EXCEPT FOR CLEARANCE MARKERS - 645.4001 THROUGH 645.4004)*

645.X000 - FURNISH AND ERECT THE SIGN PANEL AND POST(S) AS SHOWN ON THIS SHEET.

645.X000 - FURNISH AND ERECT THE SIGN PANEL AND POST(S) AS SHOWN FOR 645.X000, AND FURNISH AND MOUNT A SUPPLEMENTARY SIGN PANEL AS SHOWN ON THIS SHEET.

645.X000 - FURNISH AND MOUNT THE SIGN PANEL AND APPROPRIATE H-MEMBERS AS SHOWN ON THIS SHEET FOR 645.X000 ON EXISTING POST(S) OR POST(S) SUPPLIED UNDER 645.X000.

645.X000 - FURNISH AND ERECT THE APPROPRIATE POST(S) TO ACCOMODATE A SIGN PANEL OF THE SIZE SHOWN IN 645.X000. THE SIGN PANEL AND H-MEMBERS WILL BE SUPPLIED AND MOUNTED UNDER ANOTHER ITEM.

WHEN NOTED ON THE CONTRACT PLANS TWO SIGN PANELS SHALL BE MOUNTED BACK TO BACK ON THE SAME POST(S) AS SHOWN.

HAZARD MARKERS

ITEM 645.4010 HAZARD MARKER SHALL BE MOUNTED ON A STEEL DELINEATOR POST AS SHOWN FOR A TYPE IV DELINEATOR ON STANDARD SHEET SCT 645-2-77

ITEM 645.4012 HAZARD MARKER, FURNISH AND MOUNT PANEL WHEN SPECIFIED IN THE PLANS SHALL BE MOUNTED AS SHOWN ON A SINGLE POST OR EACH POST OF A 2-POST ASSEMBLY.

NOTES

1. ALL SIGNS ON THIS SHEET, EXCEPT OCTAGONAL SHALL HAVE ROUNDED CORNERS. CORNER RADII SHALL BE AS FOLLOWS EXCEPT FOR ITEMS 645.2190, 645.2200, AND 645.2210 WHICH SHALL BE 2", 3" AND 4" RESPECTIVELY:

SIDE LENGTH	CORNER RADIUS (APPROX.)
0-24"	1 1/2"
25"-30"	1 7/8"
31"-36"	2 1/4"
37"-42"	2 1/2"
43"-48"	3"

2. FOR DEFINITION OF H-LENGTHS AND CONNECTION DETAILS, SEE STANDARD SHEET SCT 645.2-77

3. UNLESS OTHERWISE SHOWN, ALL H-MEMBERS AND POSTS SHALL BE CENTERED ON THE SIGN PANELS. FOR VERTICAL SPACING, THE H-MEMBERS SHALL BE CENTERED BASED ON THE LOCATION OF THE H-MEMBER-SIGN PANEL CONNECTIONS.

4. VERTICAL CLEARANCE FROM THE EDGE OF PAVEMENT, UNLESS OTHERWISE SHOWN, SHALL BE:

   A. 7'-0" TO BOTTOM OF A ONE PANEL ASSEMBLY.

   B. 7'-0" TO BOTTOM OF *TOP* PANEL ON A TWO PANEL ASSEMBLY, *EXCEPT THAT IN NO CASE SHALL THE VERTICAL CLEARANCE TO THE BOTTOM OF LOWER PANEL BE LESS THAN 5 FEET.*

5. ITEMS 645.4002 AND 645.4004 SHALL BE THE SAME AS 645.4001 AND 645.4003 RESPECTIVELY EXCEPT THAT THE STRIPING SHALL SLANT DOWNWARD FROM LEFT TO RIGHT.

6. POST SPACING GIVEN IN DIMENSION TABLE IS CENTER TO CENTER SPACING.

7. WHEN THE H-LENGTH IS NOT GIVEN IN THE DIMENSION TABLE, THAT H-MEMBER IS NOT USED WITH THAT SIZE SIGN PANEL.

8. ALL DIMENSIONS SHOWN ON THIS SHEET SHALL BE IN INCHES, UNLESS OTHERWISE SHOWN

APPROVED BY

C. ROGER MEEKER··· CHIEF ENGINEER DATE 12/2/88

COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
YAPHANK, NEW YORK
STEPHEN G. HAYDUK, COMMISSIONER

STANDARD REGULATORY AND WARNING SIGNS

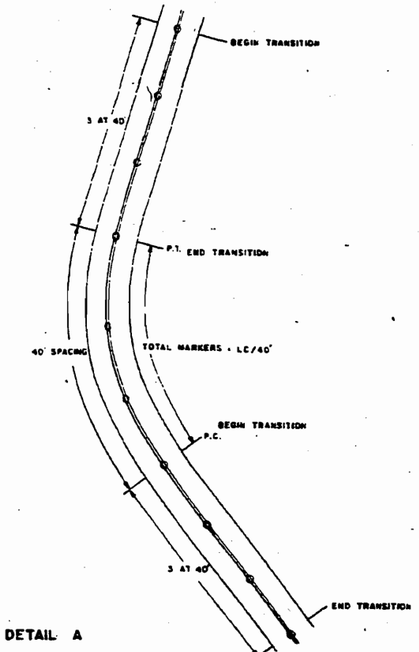
SYMBOL	DESCRIPTION	APPROVED	DATE
	REVISIONS		

PROJECT NO.	SCALE	SHEET NO.

Deleted 1/2014

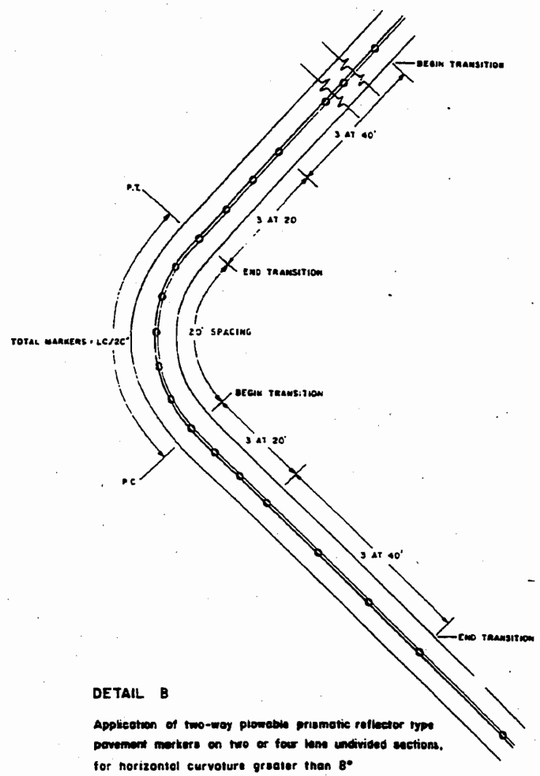
COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
A. BARTON CASE ... COMMISSIONER
YAPHANK, N.Y.

PROJECT NO.	ROAD NO.	SHEET NO.	TOTAL SHEETS
	–	–	–
SCT 650.1			



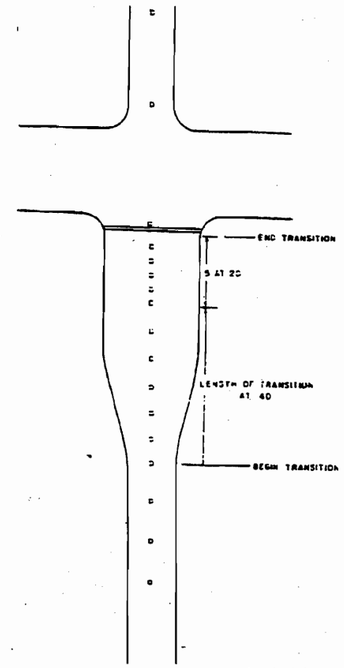
DETAIL A

Application of two-way plowable prismatic reflector type pavement markers at a 3° and greater horizontal curve, two or four lane undivided section.



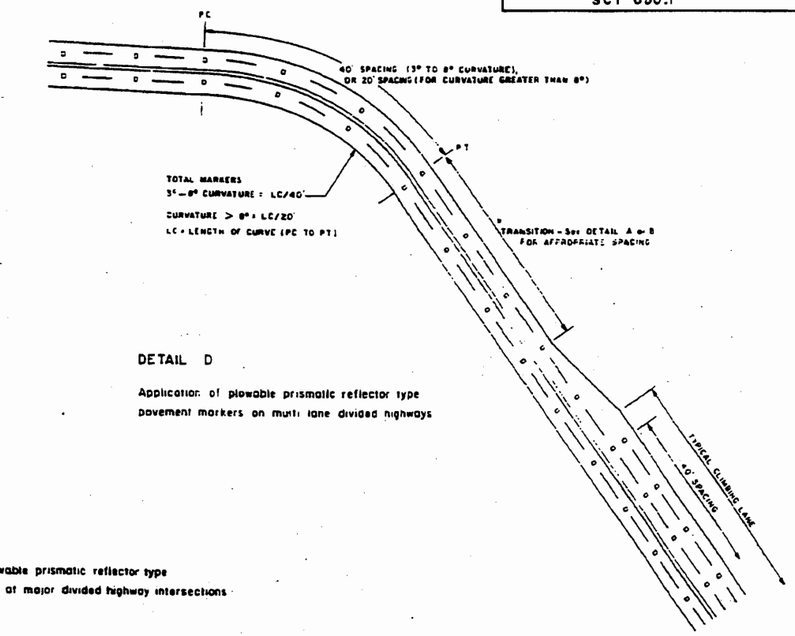
DETAIL B

Application of two-way plowable prismatic reflector type pavement markers on two or four lane undivided sections, for horizontal curvature greater than 8°



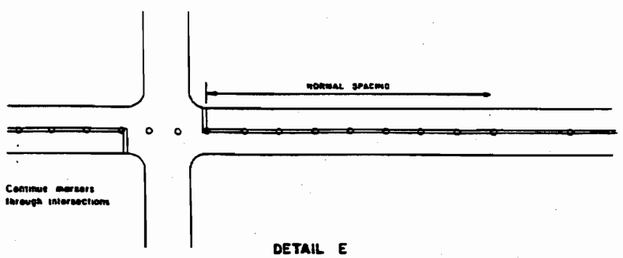
DETAIL C

Application of plowable prismatic reflector type pavement markers at major divided highway intersections



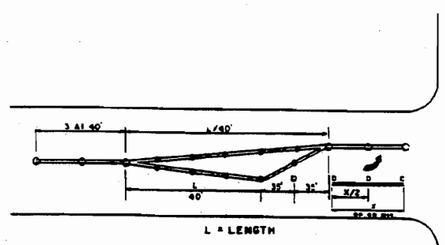
DETAIL D

Application of plowable prismatic reflector type pavement markers on multi lane divided highways



DETAIL E

Application of plowable prismatic reflector type pavement markers at two lane controlled approach.



DETAIL F

Application of plowable prismatic reflector type pavement markers for left turn island.

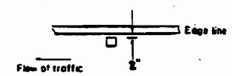
SPECIAL NOTES
PLOWABLE PRISMATIC MARKERS

1. Markers installed at double yellow center line shall be placed between the two painted lines. Markers installed along an edge line shall be placed so for edge of marker is not more than 2" from the near edge of the painted line. (See sketch 1,2,&3). Where painted markings do not exist, markers will be placed as ordered by the engineer.
2. Markers shall be placed within intersection areas. Edge line markers shall be placed at driveway curb cuts if edge line is present.
3. Marker placement shall be modified in case of poor pavement, A.O.B.E
4. Typical spacing as follows
   A - 80' on tangents and on curves up to 3°
   B - 40' on curves 3° to 8°
   C - 20' on curves greater than 8°

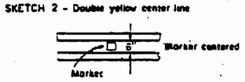
Approved By... C Roger Meeker Date 8/3/83
C. ROGER MEEKER... Chief Engineer

LEGEND

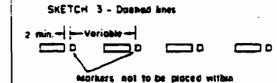
SKETCH 1 - Solid edge line



SKETCH 2 - Double yellow center line



SKETCH 3 - Dashed lines



D = 1 - Way – (Yellow)
D = 1 - Way – (White)
C = 2 - Way – (Yellow)

DATE	REVISION	APPROVED BY
4-12-84	Added one 1-WAY white marker to detail F half way between median end and of Lane Line	

DEPARTMENT OF PUBLIC WORKS

PLOWABLE PRISMATIC MARKERS
TYPICAL DETAILS

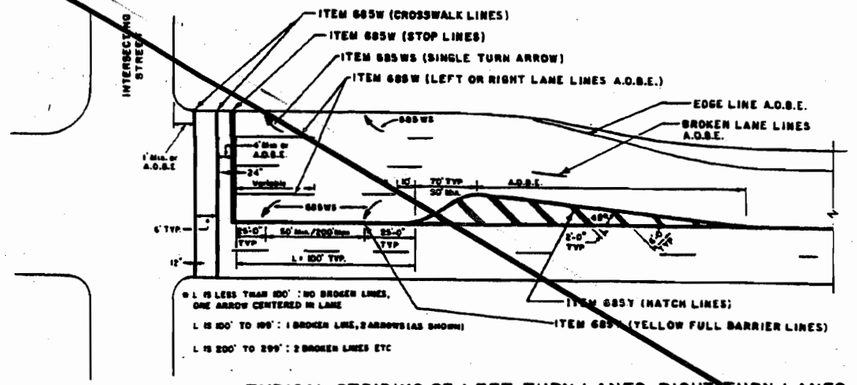
SCALE None | SHEET NO.

MADE BY	P. Campagnola	DATE 7/83
CHECKED BY	M. Ronkel	DATE 7/83
TRACED BY	J. Oswald	DATE 7/83
COMPARED BY	P. Campagnola	DATE 7/83

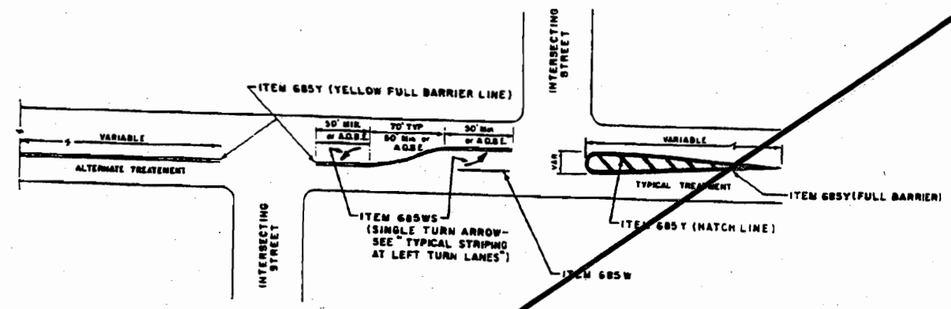
SCT 650.1 88

41

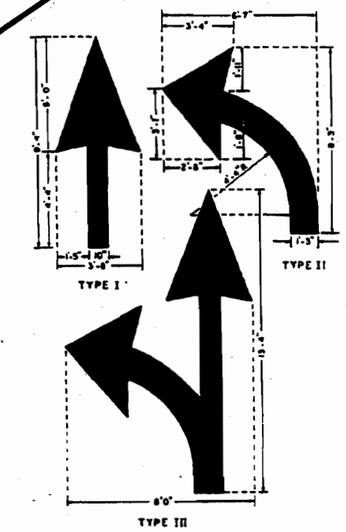
COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
STEPHEN G. HAYDUK, COMMISSIONER
YAPHANK, NEW YORK



TYPICAL STRIPING OF LEFT TURN LANES, RIGHT TURN LANES, LEFT TURN MEDIANS, CROSSWALK & STOP LINES



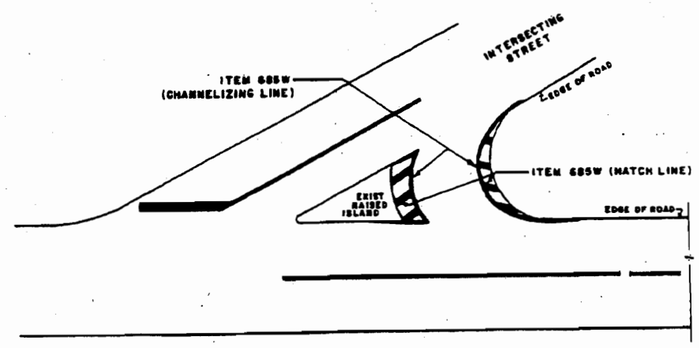
TYPICAL STRIPING AT OFFSET INTERSECTIONS (WITH LEFT TURN LANES)



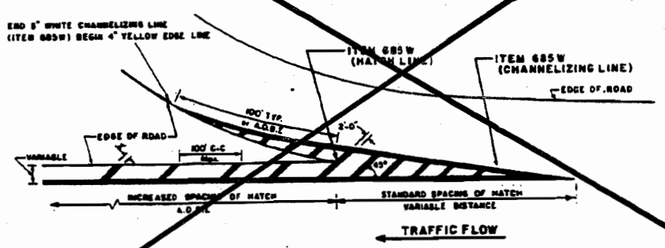
TYPICAL ARROW SYMBOLS

N/A

NOTE:
GORE STRIPING SHALL BE CONSTRUCTED AS SHOWN OR A.O.B.E.



TYPICAL STRIPING AT RAISED ISLAND



TYPICAL STRIPING AT GORE

TYPICAL PAVEMENT MARKINGS (ITEMS 640 & 685)

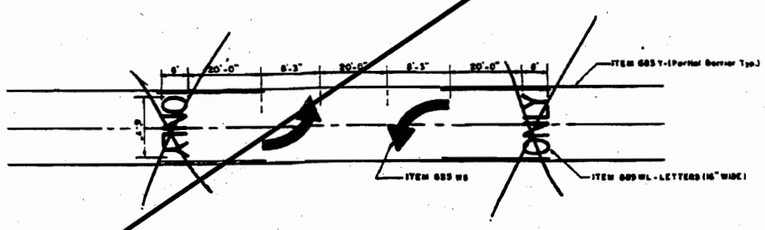
BARRIER LINES – 4" WIDE, 6" SEPARATION
SOLID LINE – 4" WIDE
STOP LINE – 24" WIDE, 4'-0" FROM CROSSWALK LINE OR A.O.B.E.

HATCH LINES – 2'-0" WIDE, 6'-0" SEPARATION AT 45° ANGLE WITH ADJACENT TRAFFIC OR A.O.B.E.
CHANNELIZING LINE – 8" WIDE
BROKEN LINE – 4" WIDE, 15' LINE SEGMENTS, 25' FOOT SEPARATION GAPS
CROSSWALK LINES 12" WIDE, 6'-0" SEPARATION OR A.O.B.E.
DOTTED LINE – 4" WIDE, 2' LINE SEGMENT, 6' SEPARATION GAPS OR A.O.B.E.

ALL TURN, STRAIGHT AND COMBINATION ARROWS ARE TO BE SPACED AT A MINIMUM SEPARATION OF 50' AND A MAXIMUM OF 200'

ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE N.Y.S. M.U.T.C.D. AND/OR AS MODIFIED HEREIN AND/OR A.O.B.E.

ITEM	DESCRIPTION	UNITS
640	PAINTED REFLECTORIZED PAVEMENT MARKINGS	L.F.
685	THERMOPLASTIC REFLECTORIZED PAVEMENT MARKINGS	L.F.



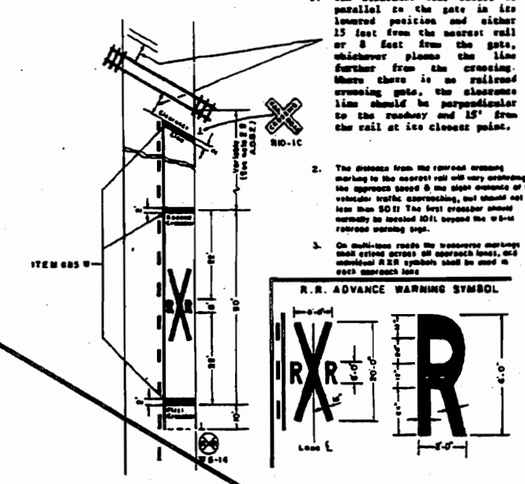
TYPICAL STRIPING IN TWO-WAY LEFT TURN LANE

NOTES:

1. The clearance line should be parallel to the gate in its lowered position and either 15 feet from the nearest rail or 8 feet from the gate, whichever places the line further from the crossing. Where there is no railroad crossing gate, the clearance line should be perpendicular to the roadway and 15' from the rail at its closest point.

2. The distance from the railroad crossing marking to the nearest rail will vary according to the approach speed & the sight distance of the vehicular traffic approaching, but should not be less than 50 ft. The first crossbar should normally be located 30 ft. beyond the w.b.-st. railroad crossing sign.

3. On multi-lane roads the crossover markings must extend across all approach lanes, and additional R.R. symbols shall be used in each approach lane.



RAILROAD ADVANCE WARNING LAYOUT

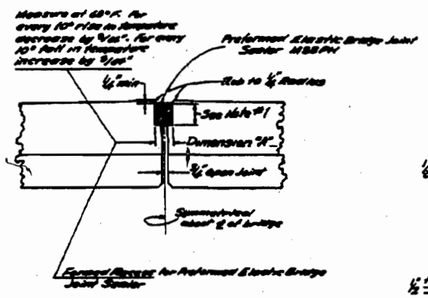
APPROVED BY: C. ROGER MEEKER P.E., CHIEF ENGINEER

PAVEMENT MARKING
TYPICAL DETAILS

SCALE NONE	DATE	SHEET NO.

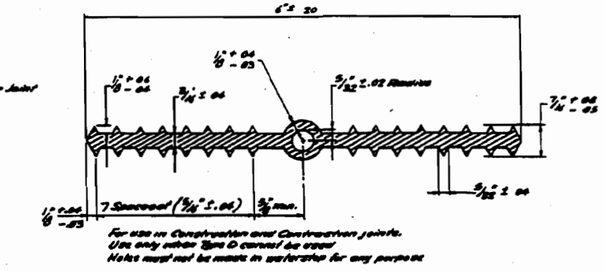
Deleted 1/2014

SCT 685-88

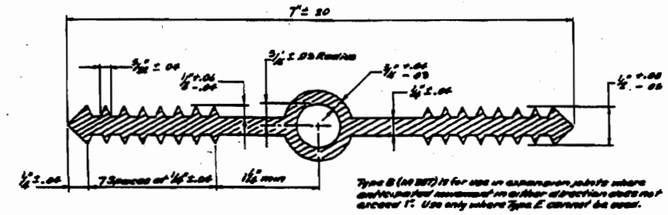


EXPANSION JOINT DETAIL

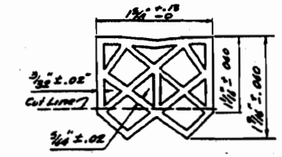
Not to Scale



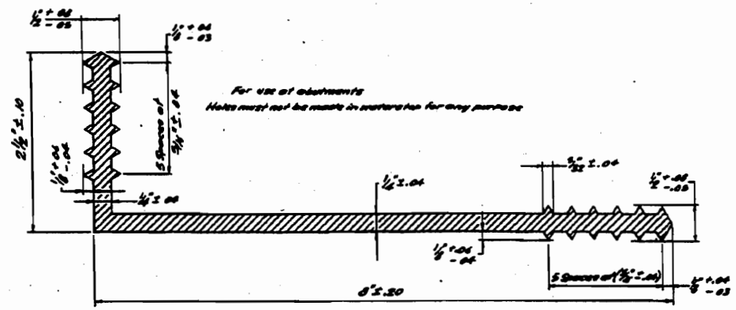
TYPE A (M38T)



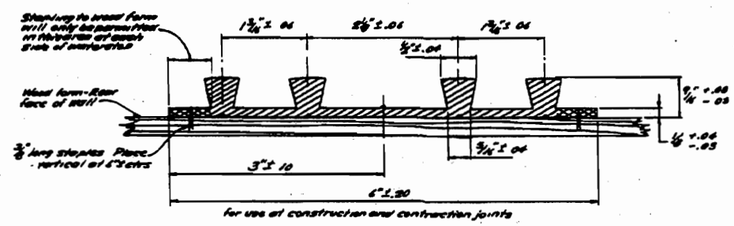
TYPE B (M38T)



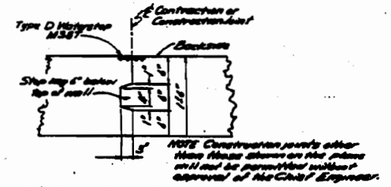
PREFORMED ELASTIC JOINT SEALER
TYPE G (M38PH)
Scale: Full Size



TYPE CA (M38T)



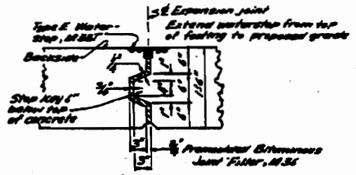
TYPE D (M38T)



See abutment and retaining wall plan for location

CONSTRUCTION/CONTRACTION JOINT DETAIL

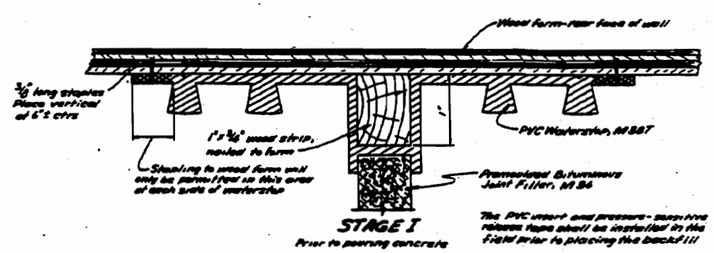
Not to Scale



See abutment and retaining wall plan for location

EXPANSION JOINT DETAIL

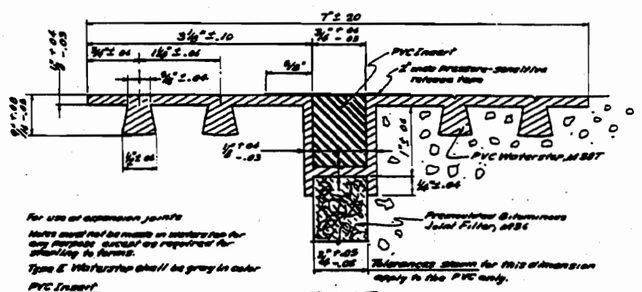
Not to scale



STAGE I

Prior to pouring concrete

The PVC insert and pressure-sensitive release tape shall be installed in the field prior to placing the backfill



STAGE II

After forms have been removed

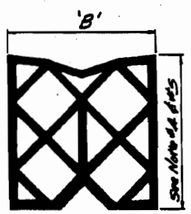
DETAILS OF INSTALLATION PROCEDURES FOR TYPE E WATERSTOP (M38T)

To facilitate shipping and handling of PVC waterstops, field butt splices will be permitted on straight runs at points approved by the Engineer. Shop splices shall be used at the locations shown on the contract plans. The method and equipment used to make the field splice must be approved by the Chief Engineer

Holes must not be made in waterstops for any purpose except for stapling as shown on this plan.

All waterstops shall be light gray in color

The cost of furnishing and placing all waterstops, preformed elastic joint sealer and premoulded bituminous joint filler shall be included in the price bid for the various concrete items



1. The depth shall be indicated on the submission approval request and shall be such that when the seal is compressed to 50% of its normal width the top of the seal shall be not less than 1/4" nor more than 3/4" below the top of the roadway.
2. The sealer shall be supplied in one piece for the full length of each joint. Splices will not be permitted when the length of the piece is less than 50 feet. For lengths in excess of 100 feet shop splices may be placed at approximately 50 foot intervals. For lengths up to 100', one shop splice will be permitted.
3. On structures with a longitudinal expansion joint the transverse sealers shall be placed in one piece between the transverse sealers or joints and all intersections between transverse and longitudinal sealers shall be sealed with lubricant (M38L)
4. Height to Width: The height of the uncompressed sealer shape shall be equal to or exceed the uncompressed width, Dimension 'B'
5. Height of Compressed Sealer: When compressed to 45% of its original width, the height of the sealer plus 1/4" shall not exceed the depth of the joint for for which it is intended.

PREFORMED ELASTIC BRIDGE JOINT SEALER M38PH

DIMENSIONS FOR PREFORMED ELASTIC BRIDGE JOINT SEALER M38PH

Type	1	2	3	4	5	6	7	8
Dimension 'B'	1 3/16"	2"	2 5/8"	3"	3 1/2"	4"	5"	6"
Dimension 'H' @ 68°F	1"	13/16"	15/16"	1 1/4"	1 3/16"	1 5/16"	1 7/8"	2 1/4"

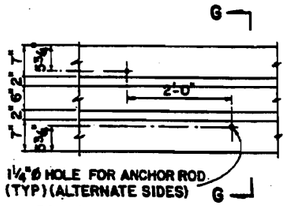
PROJECT ENGINEER	
DESIGNED BY	
CHECKED BY	
DRAWN BY	Charles L. Bennett
COMPARED BY	
SURVEY BOOK NO	

COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
YAPHANK, NEW YORK

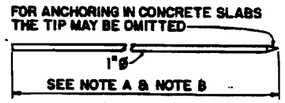
SYMBOL	DESCRIPTION	APPROVED	DATE
	REVISIONS		

WATERSTOPS AND JOINT SEALERS

PROJECT NO. | SCALE | SHEET NO OF



PLAN-ANCHOR RECESS

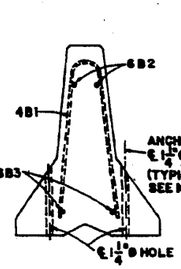


ANCHOR ROD

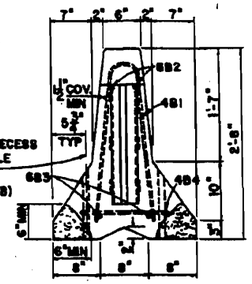
NOTE A
THE LENGTH OF THE ANCHOR RODS SHALL BE SUCH THAT THE FOLLOWING MINIMUM EMBEDMENT LENGTHS ARE OBTAINED
a) INTO BRIDGE DECKS AND PORTLAND CEMENT CONCRETE PAVEMENT, 0'-5"
b) INTO FLEXIBLE PAVEMENT, 1'-6"
c) INTO UNPAVED AREAS, 2'-6"
WHEN ANCHOR RODS ARE IN PLACE, THEY SHALL NOT PROJECT ABOVE THE PLANE OF THE CONCRETE SURFACE OF THE BARRIER

HOLES IN BRIDGE DECKS SHALL BE 1½"ø MAXIMUM AND MADE WITH A CORE DRILL OR ANY OTHER APPROVED ROTARY DRILLING DEVICE THAT DOES NOT IMPART AN IMPACT FORCE

NOTE B
IN UNITS THAT ARE TO BE ANCHORED, PINS SHALL BE REQUIRED IN EVERY RECESS

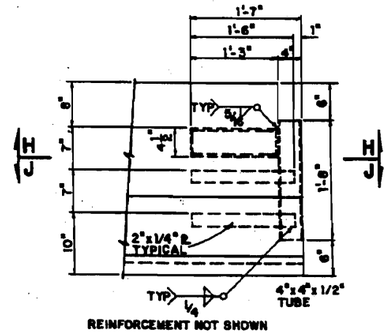


SECTION G-G



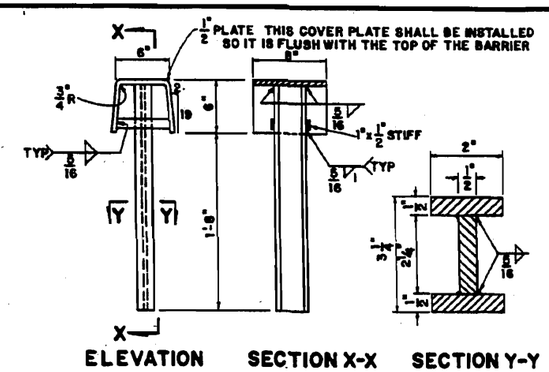
PLACE MORTAR IN SHADED AREAS WHEN SHOWN ON THE PLANS, WHEN REQUIRED BY THE TABLE OF JOINT TREATMENT, OR WHERE DIRECTED BY THE ENGINEER

SECTION K-K



REINFORCEMENT NOT SHOWN

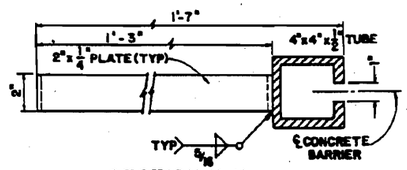
ELEVATION



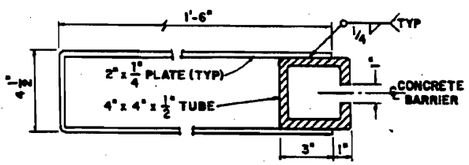
ELEVATION SECTION X-X SECTION Y-Y

CONCRETE BARRIER NOTES

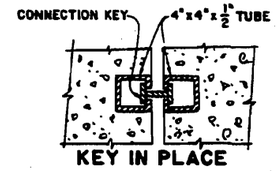
1 STEEL PLATE SHALL BE ASTM A36, A588, A441 OR A572 GRADE 50
2 REINFORCING BARS SHALL BE ASTM A615, GRADE 60
3 CONCRETE SHALL BE AIR ENTRAINED AND HAVE A MINIMUM AIR CONTENT OF 5% AND A MAXIMUM AIR CONTENT OF 9% WITH A MINIMUM COMPRESSIVE STRENGTH OF 3000 P S I
4 CONCRETE CLEAR COVER FOR REINFORCING BARS SHALL BE 1 1/2"(MIN) EXCEPT WHERE OTHERWISE SPECIFIED
5 A MINIMUM OF (2) TWO RECESSED LIFTING DEVICES SHALL BE USED ON EACH SECTION EACH LIFTING DEVICE SHALL HAVE A MINIMUM CAPACITY OF 6 TONS.
6 TUBE STEEL SHALL BE ASTM A500, GRADE B OR C
7 ANCHOR RODS SHALL BE 1"ø ASTM A36 STEEL.
8 ANCHOR RODS ARE NOT REQUIRED IN EVERY UNIT SEE TABLE OF JOINT TREATMENTS
9 1 5/8" x 5 1/2" DRAINAGE POCKETS—ONE REQUIRED FOR 8' AND 10' LENGTHS, TWO OTHERWISE
10 AFTER A BARRIER UNIT HAS BEEN PLACED AND THE CONNECTION KEY INSERTED, REMOVE ANY SLACK IN THE JOINT BY PULLING THE UNIT IN A DIRECTION PARALLEL TO ITS LONGITUDINAL AXIS
11 THE DETAILS SHOWN FOR THE END SECTIONS ON THIS SHEET ARE FOR APPROACH ENDS WHICH ARE TO BE LOCATED TO THE LEFT OF THE TRAFFIC FLOW ON ONE-WAY OPERATIONS OR BETWEEN OPPOSING FLOWS OF TRAFFIC ON TWO-WAY OPERATIONS WHEN AN APPROACH END IS TO BE LOCATED TO THE RIGHT OF THE TRAFFIC FLOW, THE END SECTION SHALL BE CONSTRUCTED SO THAT IT IS OPPOSITE-HANDED (REVERSED IN ALL CROSS-SECTIONAL CONFIGURATIONS, ANCHOR HOLE LOCATIONS AND REINFORCEMENT)
12 THE TEMPORARY CONCRETE BARRIER SHALL BE PRECAST UNITS OF ONE OF THE FOLLOWING NOMINAL LENGTHS 8', 10', 12', 14', 16', 18', 20'. THE NUMBER AND PLACEMENT OF THE 4B4 AND 4B5 BARS WILL VARY WITH THE LENGTH OF THE BARRIER UNIT AS SHOWN ON THE TABLE OF VARIABLE BARS THE 6B2 AND 6B3 BARS SHALL BE 1'-0" SHORTER THAN THE NOMINAL LENGTH OF THE BARRIER UNITS
13 THE TEMPORARY CONCRETE BARRIER SECTIONS SHALL BE PRECAST IN STEEL FORMS THE REQUIREMENTS FOR CURING AND REPAIRS OF PART II SECTION 7 APPLY THE BARRIER UNITS SHALL HAVE A SMOOTH FINISH. NO RUBBING, BROOMING OR OTHER WORKING SHALL BE PERMITTED AFTER THE FORMS ARE REMOVED EXCEPT FOR NECESSARY REPAIRS WHICH SHALL BE FINISHED TO MATCH THE SURROUNDING SURFACE



SECTION H-H



SECTION J-J



KEY IN PLACE

CONNECTION KEY

NOTE
ALL WELDING SHALL BE PERFORMED BY A WELDER QUALIFIED IN ACCORDANCE WITH A W S SPECIFICATIONS SURFACES TO BE WELDED SHALL BE FREE OF SCALE, SLAG, RUST, MOISTURE, GREASE, OR ANY OTHER MATERIAL THAT WILL PREVENT PROPER WELDING OR PRODUCE OBJECTIONAL FUMES WELDING SHALL BE SHIELDED METAL ARC WELDING USING PROPERLY DRIED 5/32"ø E 7018 ELECTRODES, CONFORMING TO THE REQUIREMENTS OF A W S SPECIFICATIONS.

TABLE OF VARIABLE BARS

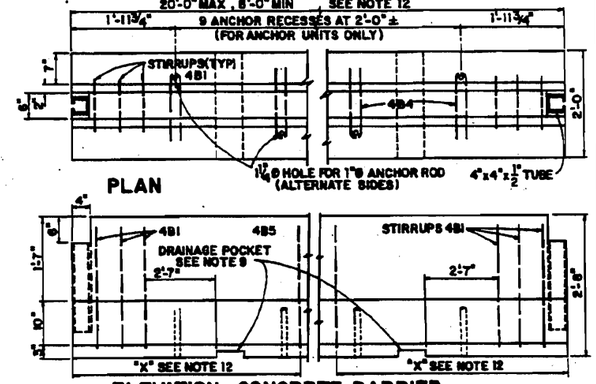
NOMINAL LENGTH OF BARRIER UNIT	MARK	X*	NO REQ'D PER SECTION
20'	4B4	N.A.	9
20'	4B5	6'-11"	2
18'	4B4	N.A.	8
18'	4B5	6'-5"	2
16'	4B4	N.A.	7
16'	4B5	5'-11"	2
14'	4B4	N.A.	6
14'	4B5	7'-0"	1
12'	4B4	N.A.	5
12'	4B5	6'-0"	1
10'	4B4	N.A.	4
10'	4B5	5'-0"	1
8'	4B4	N.A.	3
8'	4B5	—	0

X* DISTANCE FROM END OF BARRIER TO 4B5 BAR

TEMPORARY CONCRETE BARRIER JOINT CONNECTION DETAILS

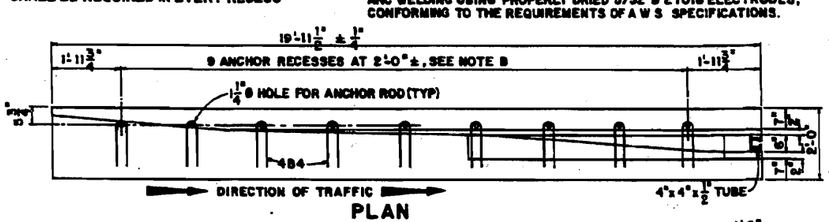
NOTES
AFTER REMOVAL OF THE BARRIER, THE HOLES IN THE SURFACE ON WHICH THE BARRIER SAT WHICH WERE USED TO ANCHOR THE SYSTEM, SHALL BE FILLED THE ONLY EXCEPTION IS WHEN THE HOLES ARE IN AN AREA WHICH IS TO BE REMOVED HOLES IN FLEXIBLE PAVEMENT, OR IN UNPAVED AREAS SHALL BE FILLED WITH MATERIAL CONSISTENT WITH THE WEARING SURFACE, BASE AND SUBBASE MATERIAL. HOLES IN PORTLAND CEMENT CONCRETE PAVEMENTS, OR STRUCTURAL DECKS, SHALL BE FILLED WITH GROUT MATERIAL MEETING THE REQUIREMENTS OF M296, EPOXY POLYSULFIDE GROUT

TOLERANCES SHALL BE AS SHOWN ON THE VARIOUS DETAILS; WHERE NOT SPECIFIED AS FOLLOWS: CROSS-SECTIONAL DIMENSIONS SHALL NOT VARY FROM THE DIMENSIONS SHOWN BY MORE THAN 1/4". LONGITUDINAL DIMENSIONS SHALL NOT VARY FROM THE DIMENSION BY MORE THAN 1/4" PER 10 FOOT OF BARRIER SECTION. LOCATION OF ANCHORING DEVICES SHALL NOT VARY BY MORE THAN 1/2 INCH. SURFACE STRAIGHTNESS, WHEN CHECKED WITH A 10 FOOT STRAIGHT EDGE, SHALL NOT EXHIBIT IRREGULARITIES EXCEEDING 1/4"

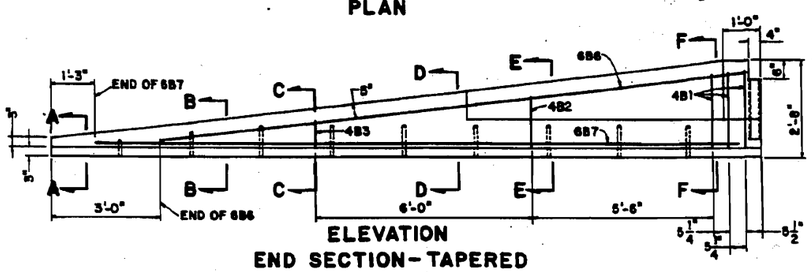


PLAN

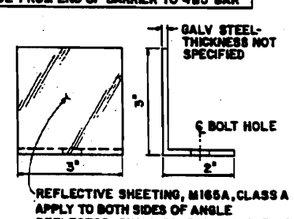
ELEVATION-CONCRETE BARRIER

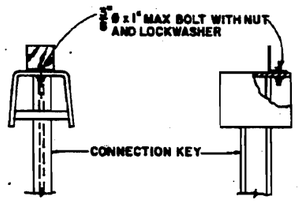


PLAN



ELEVATION
END SECTION-TAPERED





REFLECTIVE SHEETING, M165A, CLASS A
APPLY TO BOTH SIDES OF ANGLE
REFLECTOR-SHALL CONFORM TO THE REQUIREMENTS FOR SPACING AND COLOR FOR DELINEATORS IN THE N.Y.S MUTCD

NOTE THIS DETAIL IS SUGGESTED. ALTERNATE DESIGNS MAY BE SUBMITTED TO THE CHIEF ENGINEER FOR APPROVAL.

DELINEATOR DETAIL

PLAN

ELEVATION

BARRIER AT JOINT

SECTION A-A SECTION B-B SECTION C-C SECTION D-D SECTION E-E SECTION F-F

NOTE
ALL CORNERS ON THE TOP OF THE SECTION SHALL BE ROUNDED TO A (1) INCH RADIUS THE UNIT SHALL HAVE A SMOOTH TRANSITION FROM THE STANDARD SHAPE TO THE (6) INCH END OF SECTION HEIGHT

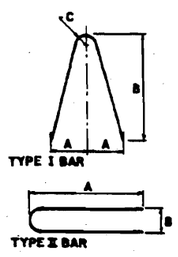
TRANSITION SECTIONS
ALL END SECTIONS SHALL BE PINNED UNLESS OTHERWISE NOTED.

TABLE OF JOINT AND ANCHORAGE TREATMENT

ALLOWABLE MOVEMENT	JOINT TREATMENT
OVER 16"	CONNECTION KEY ONLY
11" TO 16"	CONNECTION KEY & MORTAR
LESS THAN 11"	CONNECTION KEY & MORTAR IN EVERY JOINT & PIN EVERY OTHER UNIT IN UNITS THAT ARE TO BE ANCHORED PINS SHALL BE REQUIRED IN EVERY ANCHOR RECESS

BAR LIST (EACH BARRIER SECTION)

MARK	SIZE	NUMBER IN EACH SECTION	LENGTH	TYPE	A	B	C	LOCATION
4B1	4	6*	4'-11"	I	6"	26"	2"	STIRRUPS* ONLY 3 IN END SECTION
4B2	4	1	3'-3"	I	6"	16"	2"	STIRRUPS-END SECTION
4B3	4	1	1'-8"	I	6"	8"	2"	STIRRUPS-END SECTION
4B4	4	SEE NOTE 12	3'-1"	II	18½	4		STIRRUPS-ANCHOR UNITS & END SECTIONS
4B5	4	SEE NOTE 12	4'-11"	I	6"	26"	2"	STIRRUPS-ANCHOR UNITS & END SECTIONS
6B2	6	2	NOTE 12	STR				LONGITUDINAL (TOP) NORMAL SECTION
6B3	6	2	NOTE 12	STR				LONGITUDINAL (BOTTOM) NORMAL SECTION
6B4	6	2	1'-2"	STR				TRANSVERSE (BOTTOM) NORMAL SECTION
6B5	6	2	0'-6"	STR				TRANSVERSE (TOP) NORMAL SECTION
6B6	6	2	16'-7"	STR				LONGITUDINAL (TOP) END SECTION
6B7	6	2	16'-2"	STR				LONGITUDINAL (BOTTOM) END SECTION



TYPE I BAR

TYPE II BAR

PROJECT ENGINEER
DESIGNED BY
CHECKED BY
DRAWN BY
COMPARED BY
SURVEY BOOK NO

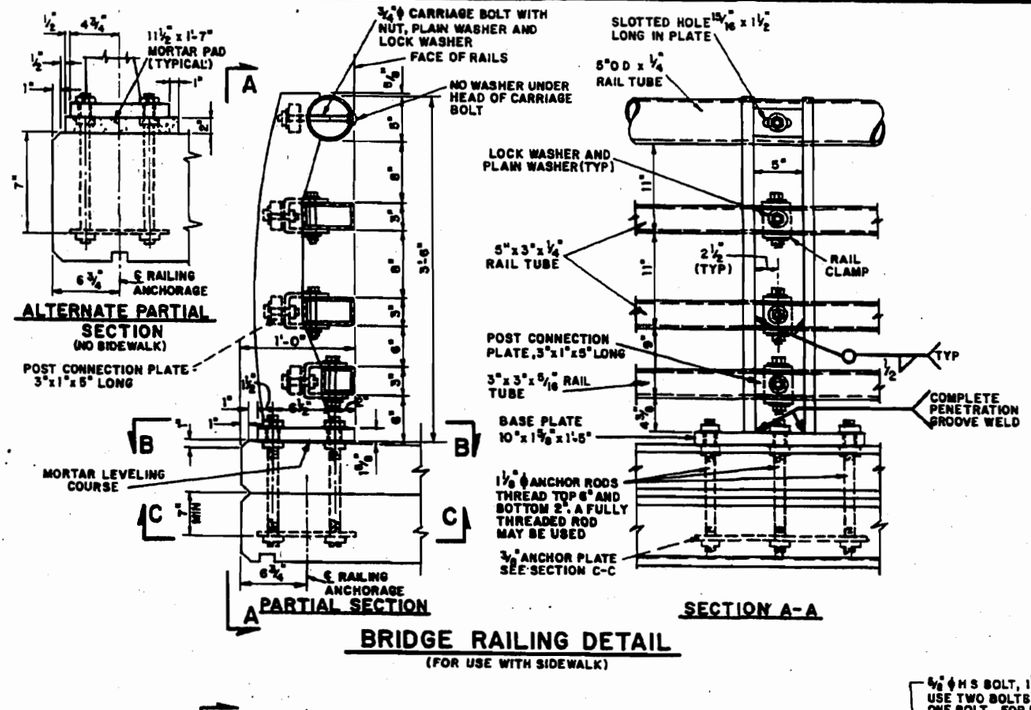
SYMBOL	DESCRIPTION	APPROVED	DATE
	REVISIONS		

COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
YAPHANK, NEW YORK

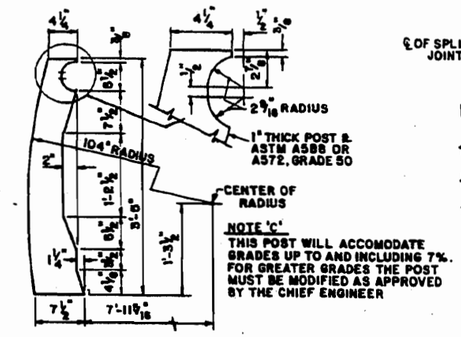
TEMPORARY CONCRETE BARRIER

PROJECT NO	SCALE	SHEET NO	OF
	NONE		

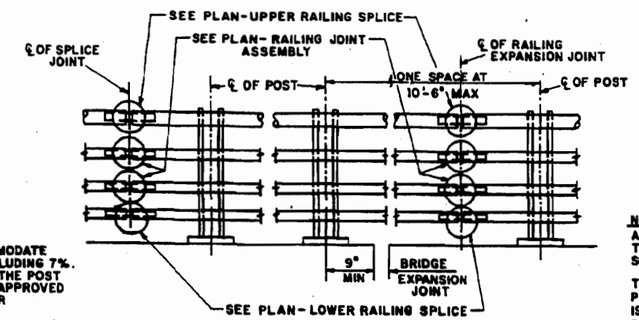
4.1



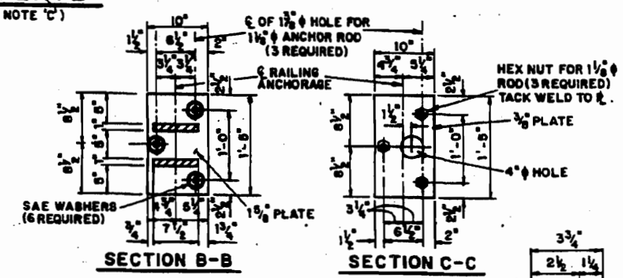
BRIDGE RAILING DETAIL
(FOR USE WITH SIDEWALK)

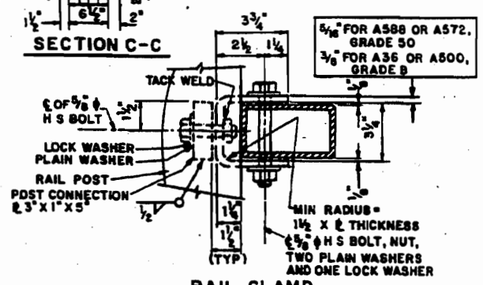


POST PLATE
(SEE NOTE 'C')

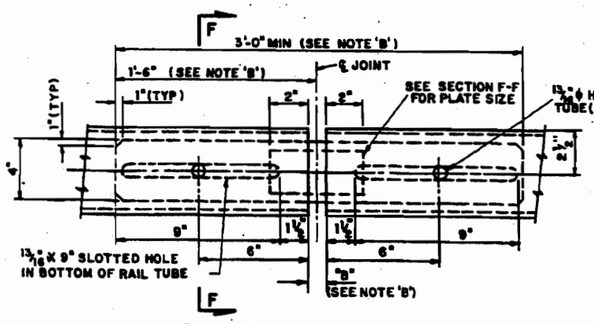


TYPICAL BRIDGE RAILING ELEVATION

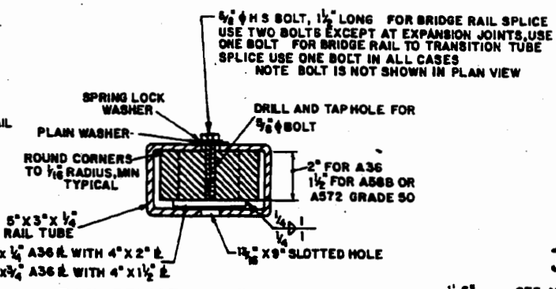




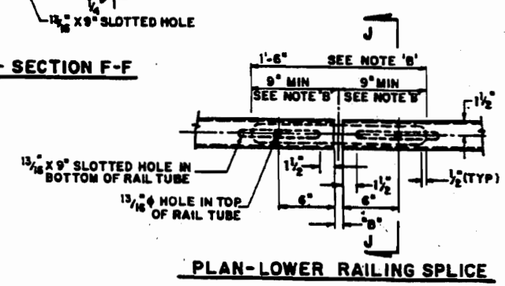
RAIL CLAMP
PARTIAL ELEVATION



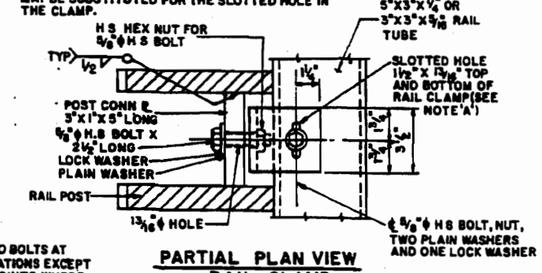
PLAN-RAILING JOINT ASSEMBLY
(5" x 3" x 1/4" TUBE)



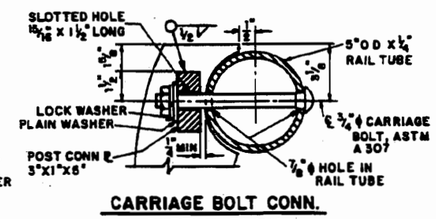
RAIL SPLICE- SECTION F-F



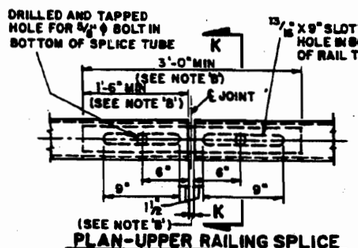
PLAN-LOWER RAILING SPLICE



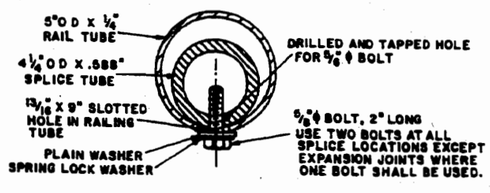
PARTIAL PLAN VIEW
RAIL CLAMP



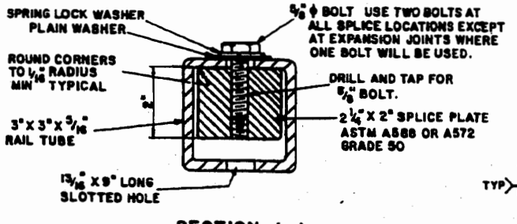
CARRIAGE BOLT CONN.
PARTIAL ELEV.



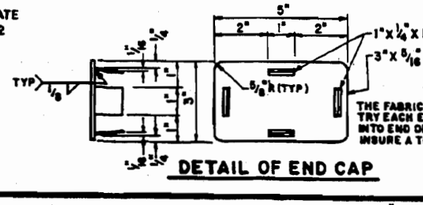
PLAN-UPPER RAILING SPLICE
(5"O D X 1/4" TUBE)



SECTION K-K



SECTION J-J



DETAIL OF END CAP

NOTES

ALL RAILING IS TO BE FABRICATED AND ERECTED SO THAT THE RAILS ARE PARALLEL TO EACH OTHER, AND SO THAT THE POSTS ARE TRULY VERTICAL

THE BASE PLATES SHALL BE PERPENDICULAR TO THE POSTS UNLESS OTHERWISE NOTED. WHEN THE RAILING IS TO BE PLACED ON A PREFORMED SURFACE, THE BASE PLATE MAY BE PARALLEL TO THE GRADE OR MAY BE PERPENDICULAR TO THE POSTS AND MADE LEVEL BY THE USE USE OF A 1 1 RATIO CEMENT TO SAND MORTAR.

TUBULAR STEEL RAILS, RAIL CLAMP ASSEMBLIES, NUTS AND WASHERS, POSTS, POST SPACERS, BASE PLATES, RAILING JOINT ASSEMBLIES AND ANY NECESSARY SHIMS AND MORTAR LEVELING COURSE SHALL BE PAID FOR UNDER THE RAILING ITEM

ANCHOR RODS, NUTS, WASHERS AND ANCHOR PLATES SHALL BE PAID FOR UNDER THE RAILING ITEM

AFTER THE ANCHOR ROD NUTS HAVE BEEN PLACED AND TIGHTENED TO THE SATISFACTION OF THE ENGINEER, THE STUDS SHALL BE FLAME CUT OFF ONE INCH ABOVE THE NUT AND THE FIRST THREE THREADS ABOVE THE NUT SHALL BE DAMAGED AS ORDERED BY THE ENGINEER.

RAIL SHALL SPAN A MINIMUM OF THREE POSTS EXCEPT AT THE ENDS OF THE BRIDGE RAILING WHERE THE RAILS SHALL SPAN A MINIMUM OF TWO POSTS

RAILING POSTS SHALL BE ERECTED TO PROPER LINE AND GRADE BEFORE CONCRETE UNDER POST AND IN BACK OF THE GRANITE CURB IS POURED UNLESS OTHERWISE INDICATED ON THE CONTRACT PLANS.

IF THE END OF THE BOLTS FOR THE LOWER THREE RAILS CONNECTING THE CLAMP TO THE POST CONNECTION PLATE BEAR AGAINST THE TUBE WHEN IN THE FINAL POSITION, ADDITIONAL PLAIN WASHERS SHALL BE ADDED TO PREVENT THE END OF THE BOLT FROM BEARING AGAINST THE TUBE.

BOLTS SHALL BE TORQUED SNUG TIGHT (APPROX 100 FT-LBS)

THE HOLE FOR THE BOLT CONNECTING THE LOWER THREE RAIL TUBES AND THE CLAMP SHALL BE LOCATED IN THE TUBE SO THAT THE TUBES WILL BEAR AGAINST THE POST PLATES WHEN IN FINAL POSITION

PRIOR TO GALVANIZING THE ASSEMBLED POST, GRIND ALL EDGES OF ALL PLATES AND BARS TO A MINIMUM RADIUS OF 1/16".

UNLESS COVERED BY OTHER SPECIFICATIONS, ALL DIMENSIONS RELATED TO THE FABRICATION OF THE STEEL RAILING SHALL HAVE A TOLERANCE OF $\pm\frac{1}{16}$"

NOTE 'B'

"B" FOR SPLICE JOINT = 1"

"B" FOR EXPANSION JOINT = MAXIMUM JOINT OPENING IN THE DECK + 1/4" (1" MIN)

IF AN EXPANSION CAPACITY GREATER THAN 6" IS NEEDED, INCREASE THE SPLICE LENGTH TO EQUAL 3'-0" + (B-6") OR 1'-6" + (B-6") FOR LOWER RAIL

COUNTY OF SUFFOLK
DEPARTMENT OF PUBLIC WORKS
YAPHANK, NEW YORK

STEEL BRIDGE RAILING-FOUR(4)RAIL

FROM NYS DOT SHEET BDD 89-52A

PROJECT NO	SCALE	SHEET NO.	OF
	NONE		