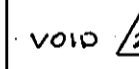
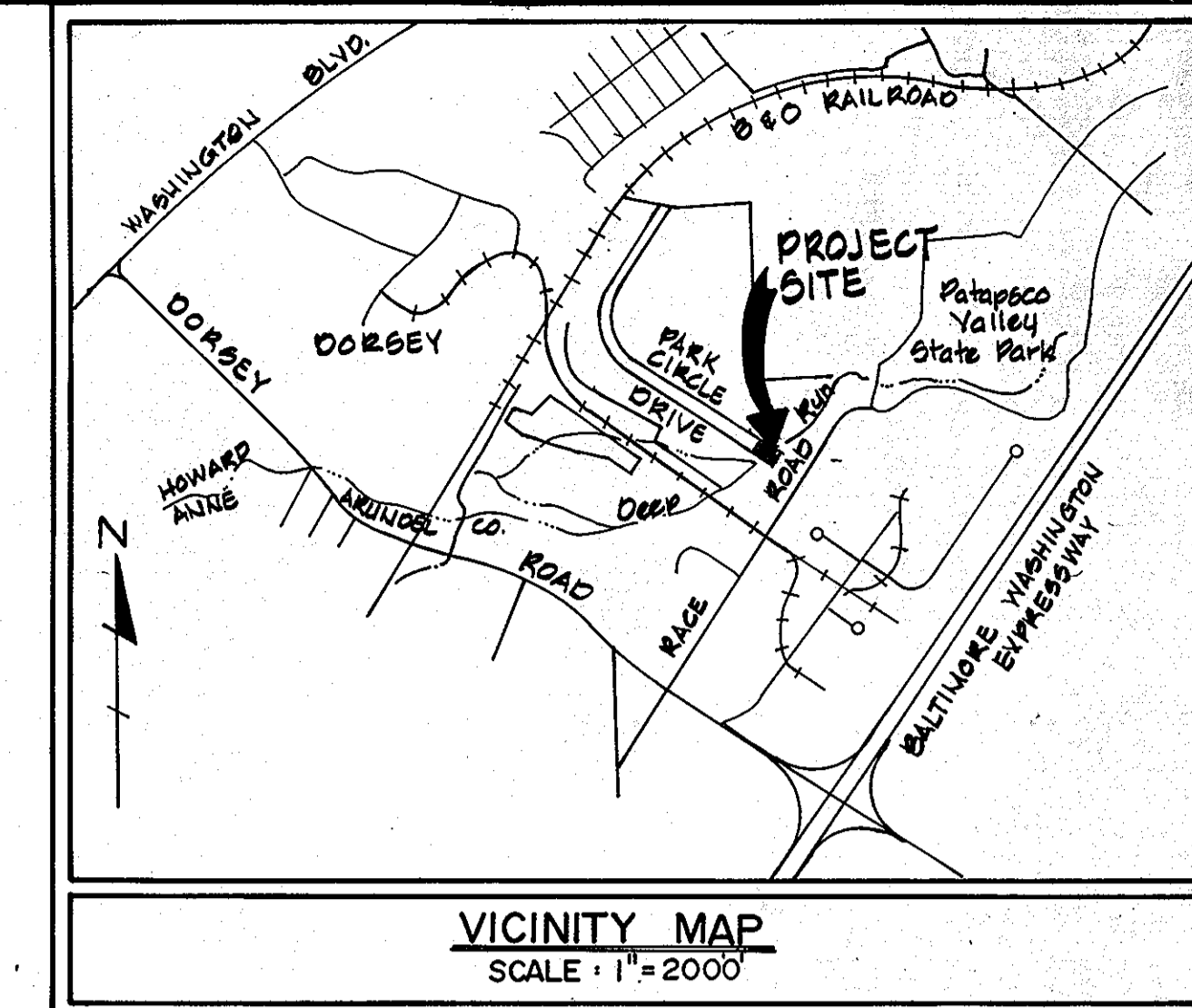
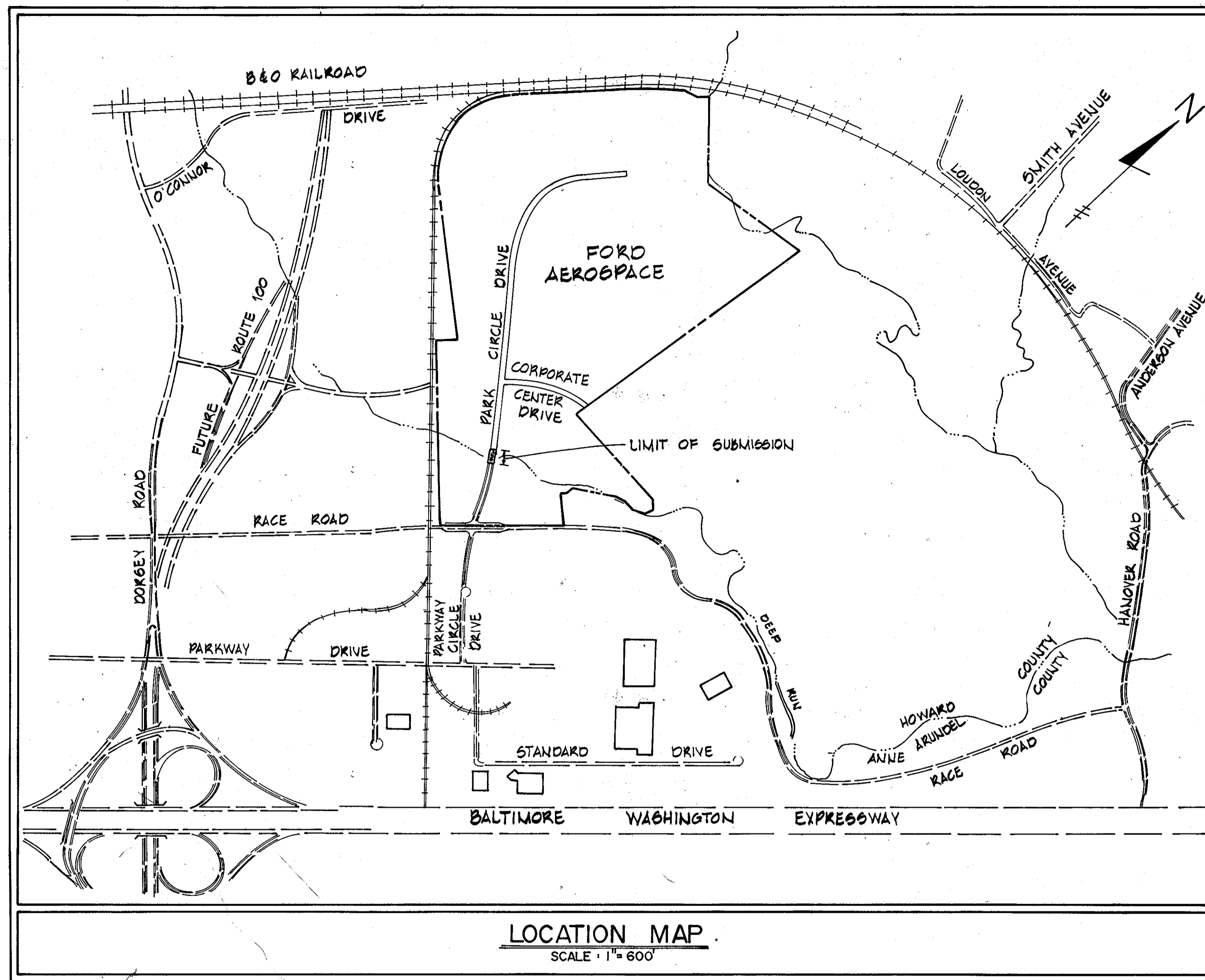


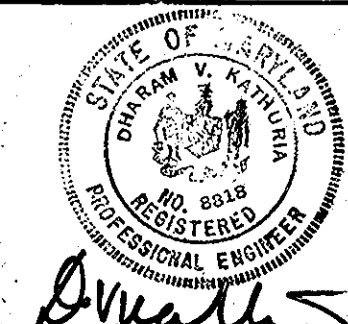
DRAWING INDEX		
NO.	DRAWING TITLE	DWG. NO.
ROAD PLANS		
1	COVER SHEET	R-1
2	ROAD PLAN AND PROFILE (STA. 16+18.75 TO STA. 17+25.93)	R-2
3	SEDIMENT AND EROSION CONTROL PLAN AND DETAILS	R-3
4	STREAM CROSS SECTIONS	R-4
BRIDGE PLANS		
5	PARK CIRCLE DRIVE OVER DEEP RUN PLAN AND ELEVATION	S-1
6	ABUTMENT A - PLAN AND ELEVATION	S-2
7	ABUTMENT B - PLAN AND ELEVATION	S-3
8	WINGWALL DETAILS	S-4
9	FOOTING PLAN	S-5
10	TYPICAL SECTION	S-6
11	FRAMING PLAN, BEAM ELEVATION AND CAMBER DIAGRAM	S-7
12	FINISHED DECK ELEVATIONS	S-8
13	BORING LOGS	S-9
14	DETAILS FOR HANGING GAS PIPE	S-10
15	DETAILS FOR HANGING ELECTRIC PVC CONDUITS	S-11
16	DETAILS FOR HANGING C/P CONDUITS	S-12
17	LAYOUT OF REINFORCING STEEL OVER PILES	S-13
18	STANDARD DETAILS	S-14
19	STANDARD DETAILS	S-15
20	STANDARD DETAILS	S-16




VOID 
VOID



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
Donald Egan 6/14/89
 CHIEF, LAND DEVELOPMENT DIVISION
Elizabeth Anderson Palen 6/28/89
 CHIEF, BUREAU OF ENGINEERING
Danville W. Wellwood 6/22/89
 CHIEF, BUREAU OF HIGHWAYS
Mark DeAngelis 7/1/89
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

ENGINEERING TECHNOLOGIES ASSOCIATES, INC.
 ENGINEERS, SURVEYORS, CONSTRUCTION MANAGERS.
 3468 ELLICOTT CENTER DRIVE
 ELLICOTT CITY, MD. 21043
 (301) 461-8920



DES:			
DRN:			
CHK:		C/P CONDUIT SIDEWALK ENCASEMENT	3/19/90
		RELOCATION OF B.G. & E. CONDUIT UNDER DEEP RUN	
		B.G. & E. CONDUIT UNDER DEEP RUN	2/15/90
DATE:	BY	NO.	REVISION

HI-TECH VENTURE LIMITED PARTNERSHIP
 OWNER AND DEVELOPER
 7223 PARKWAY DRIVE
 HANOVER, MARYLAND 21076
 (301) 796-4446

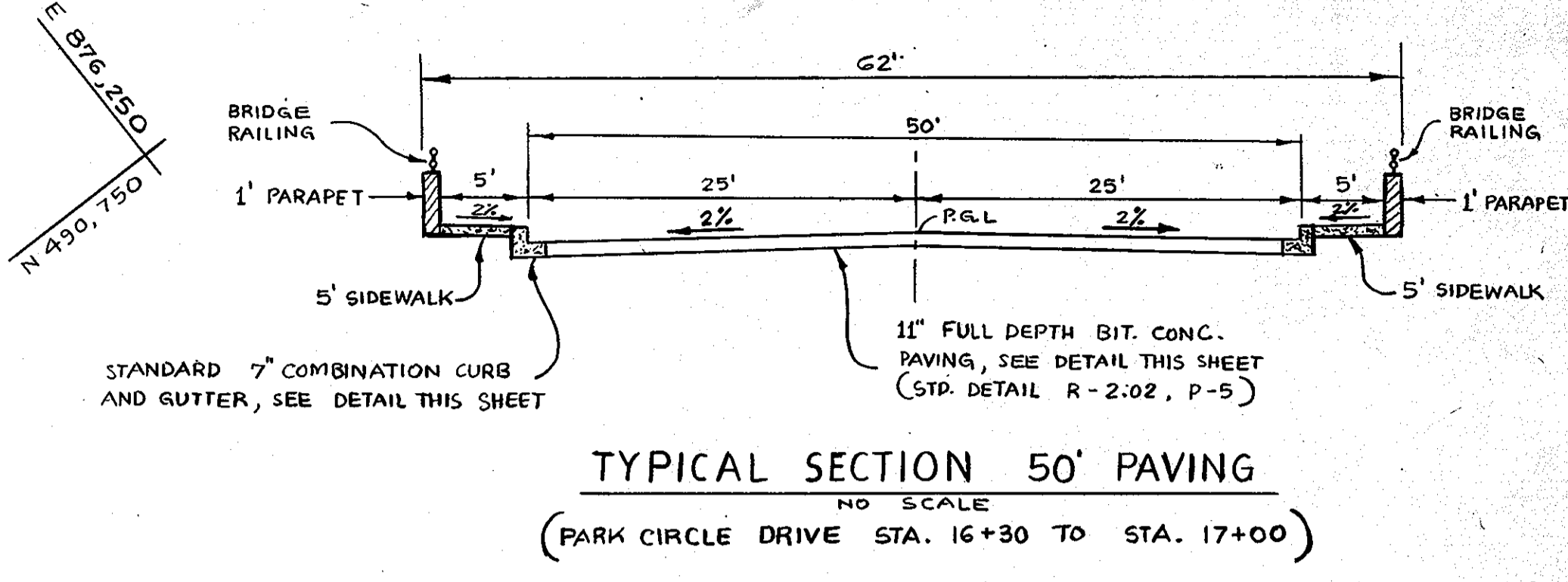
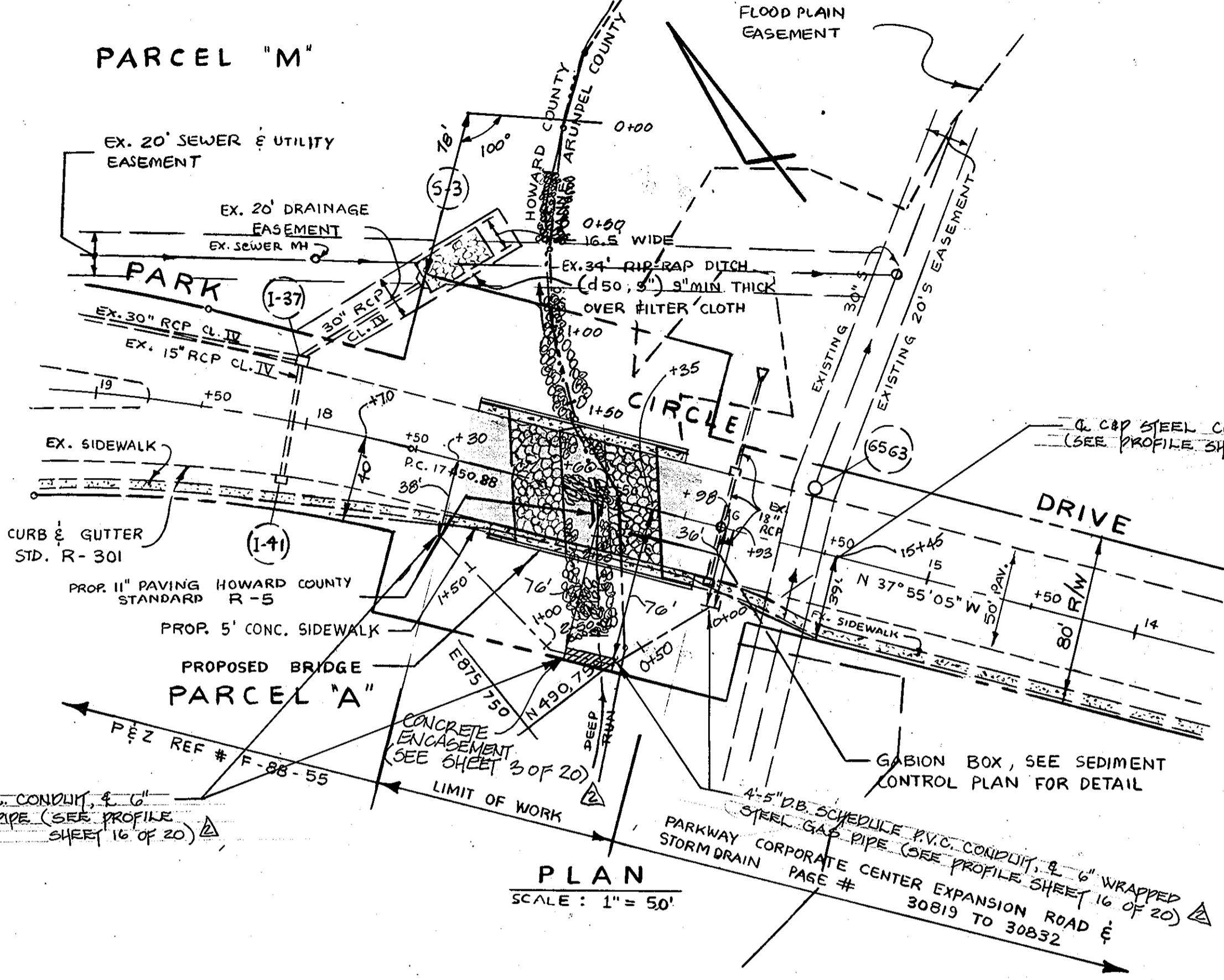
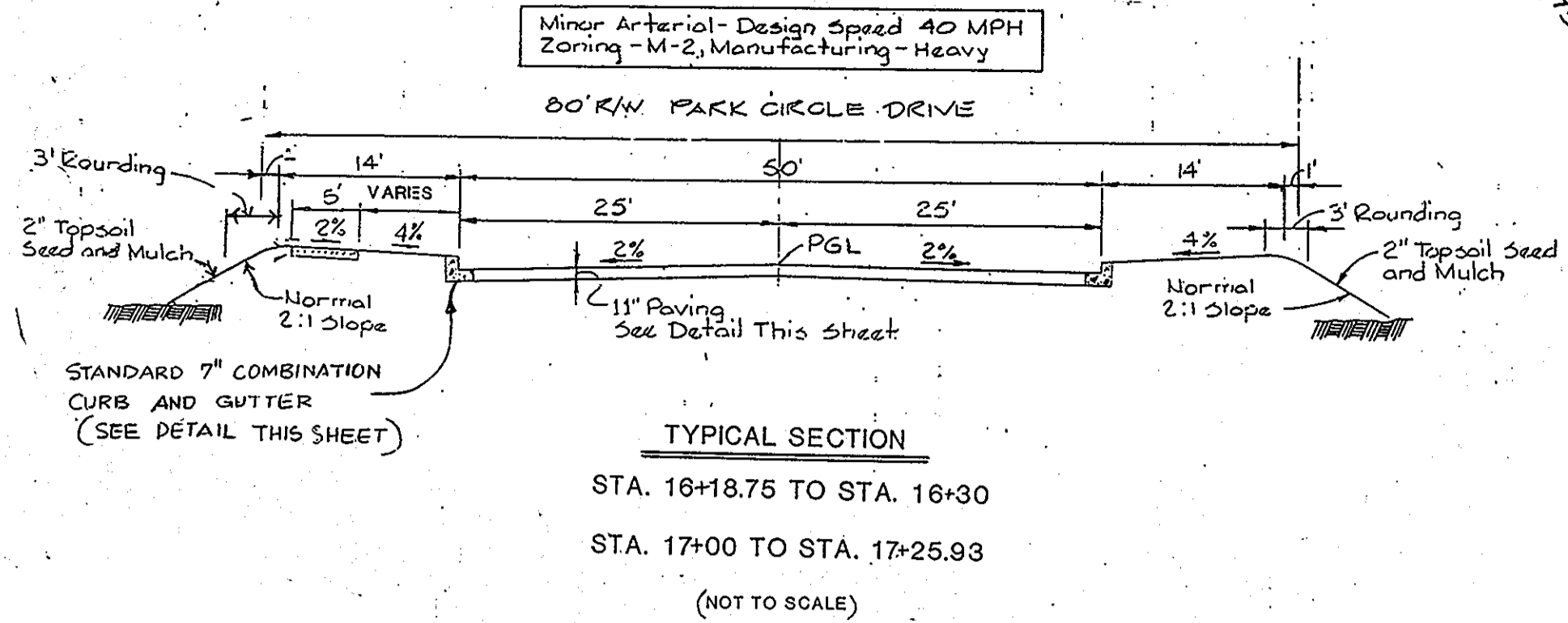
COVER SHEET DWG. R-1 OF R-4

PARKWAY CORPORATE CENTER SECTION 1
 PARCELS "A" THROUGH "G" AND "K", "L", "M"
 REVISED ROAD CONSTRUCTION PLANS
 PARK CIRCLE DRIVE, BRIDGE OVER DEEP RUN
 STA. 16 + 18.75 TO STA. 17 + 25.93

FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

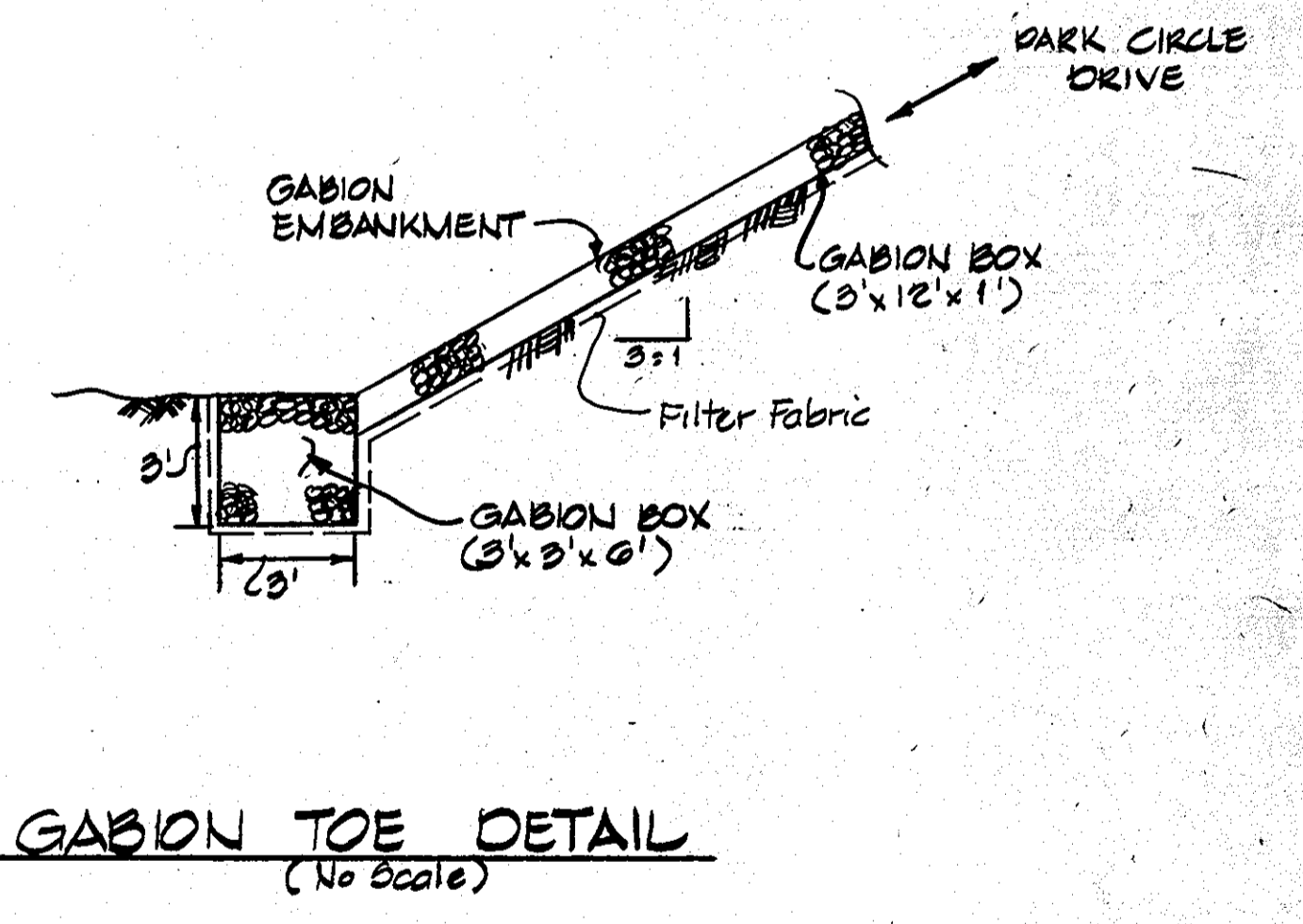
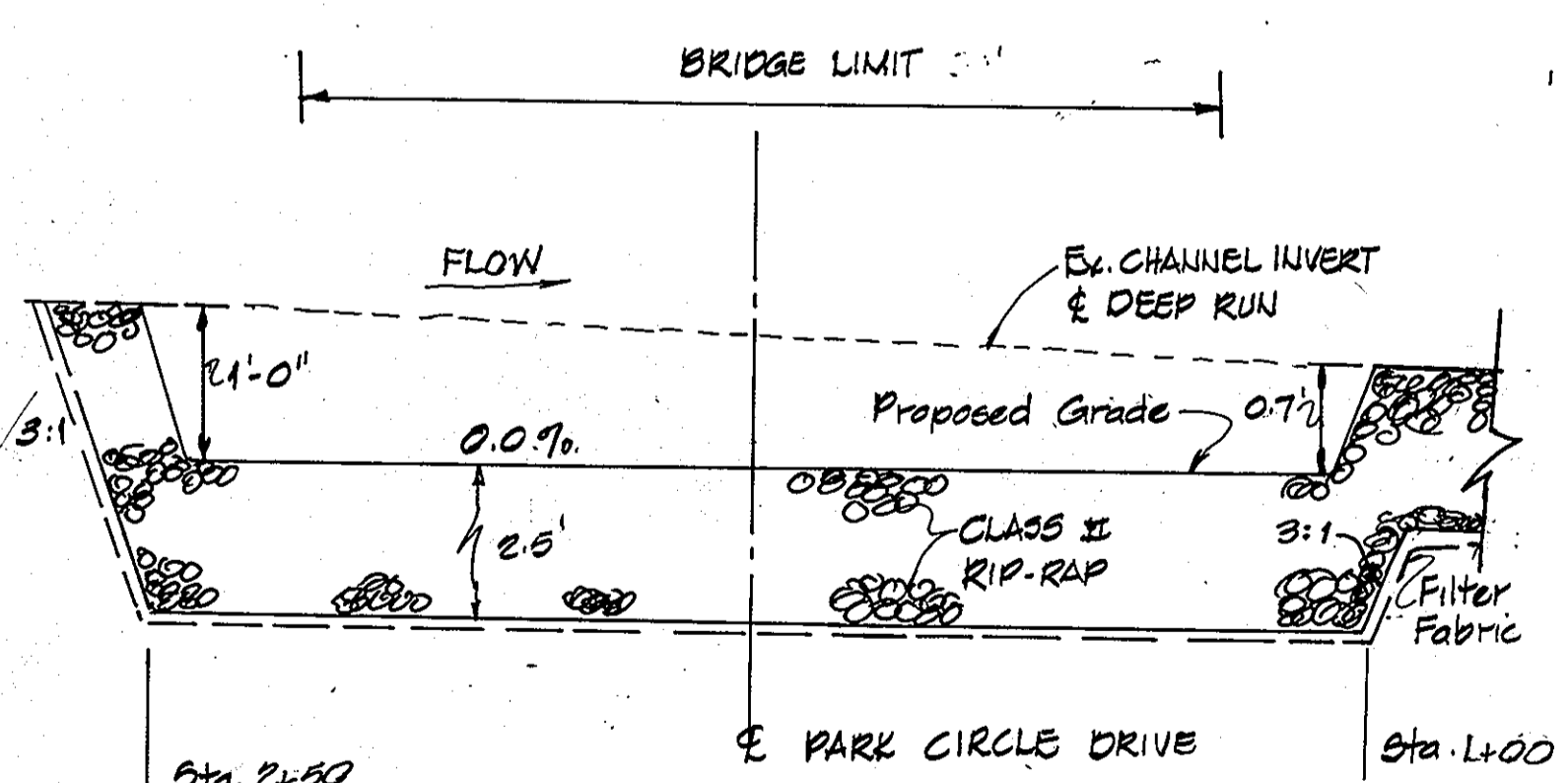
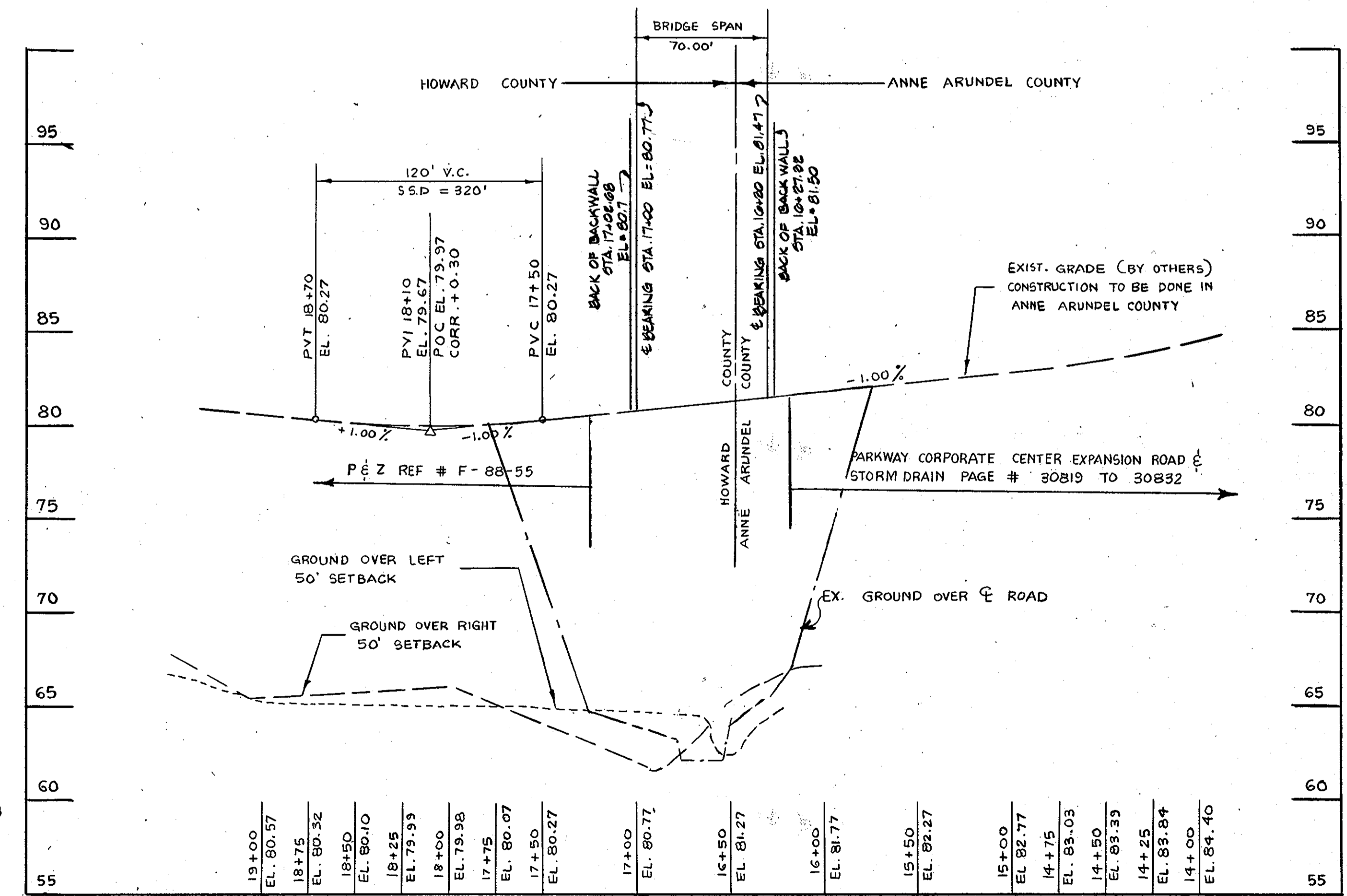
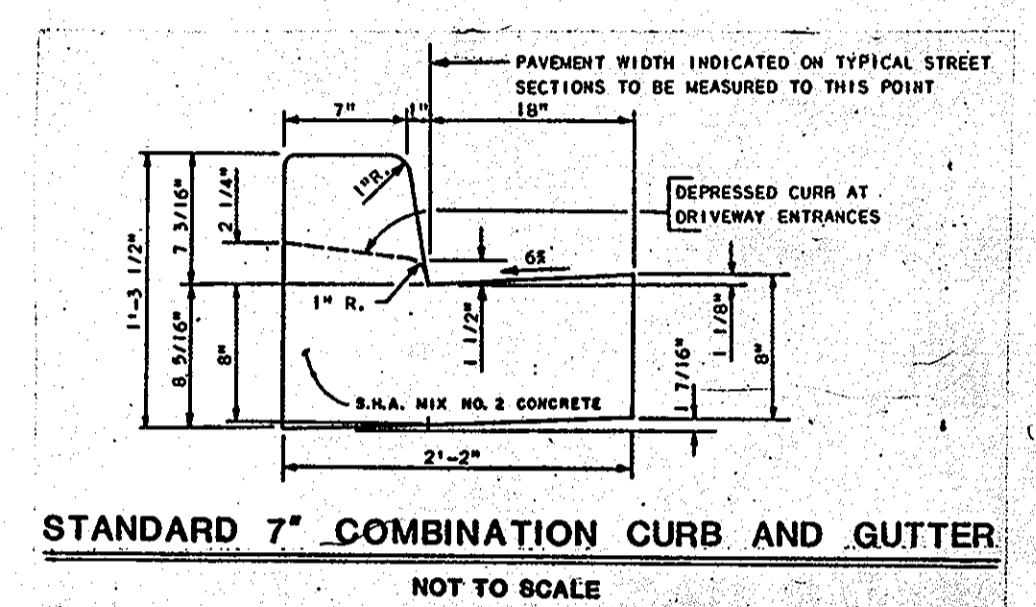
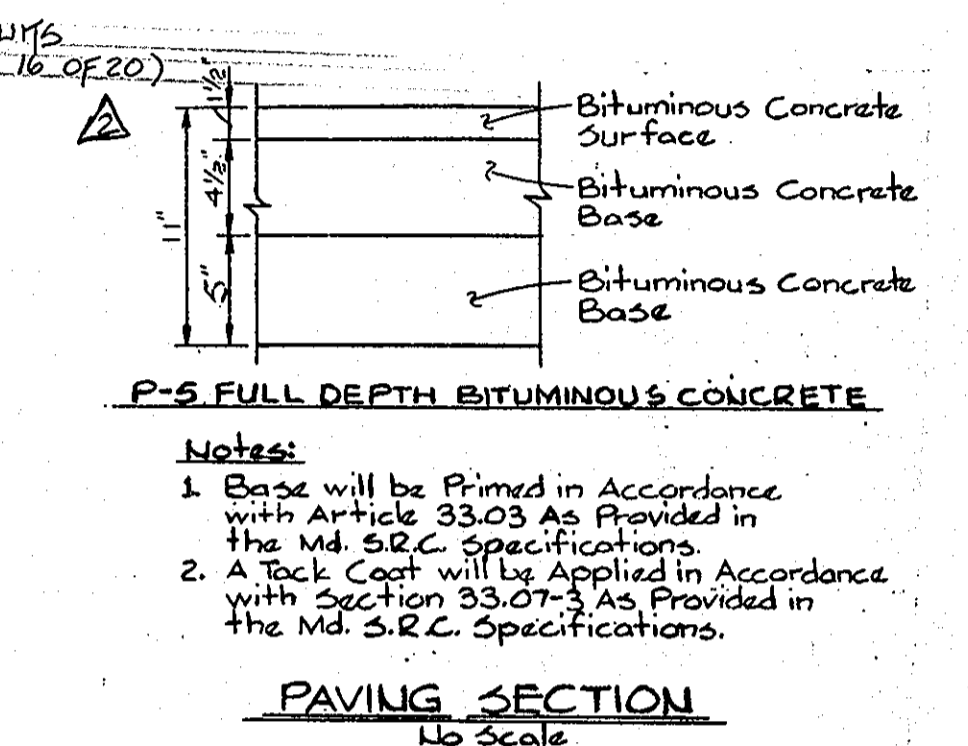
1314

MINOR ARTERIAL - DESIGN SPEED 40 MPH
ZONING - M-2, MANUFACTURING - HEAVY



GENERAL NOTES

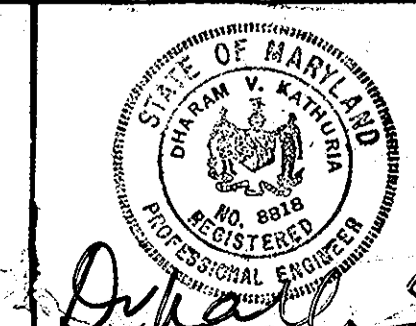
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH HOWARD COUNTY STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
- ALL UTILITY COMPANIES SHALL BE NOTIFIED 24 HOURS IN ADVANCE OF CONSTRUCTION.
- STORM DRAIN TRENCHES WITHIN ROAD RIGHTS OF WAY SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH HOWARD COUNTY ROAD CODE.
- APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATIONS SHALL BE REPAIRED IMMEDIATELY AT CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL TEST PIT EXISTING UTILITIES WHERE DIRECTED BY THE ENGINEER A MINIMUM OF TWO WEEKS IN ADVANCE OF ANY CONSTRUCTION.
- CONTRACTOR TO NOTIFY THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS AND PERMITS AT LEAST THREE DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS TELEPHONE NO. 992-2436.
- ALL DISTURBED SLOPE AREAS TO BE STABILIZED AS SOON AS GRADING IS COMPLETED.
- STONE FOR RIP-RAP SHALL BE AS SPECIFIED ON THE DRAWINGS AS BEING UNGROUTED.
- NO BUILDING PERMITS WILL BE ISSUED FOR BUILDING CONSTRUCTION WITHIN THIS SUBDIVISION UNTIL SUCH TIME AS ANNE ARUNDEL COUNTY, MARYLAND HAS EXECUTED AN AGREEMENT WITH THE DEVELOPER TO CONSTRUCT THE ROADWAY LEADING TO THIS DEVELOPMENT.
- ALL TRAFFIC CONTROL DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 1984 REVISED EDITION.
- TAMPED FILL TO BE COMPACTED TO A MINIMUM DENSITY OF 95% IN ACCORDANCE WITH A.A.S.H.T.O. DESIGNATION T-198, METHOD 'C'.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
 Chief, Land Development Division
 Chief, Bureau of Engineering
 Chief, Bureau of Highways
 Chief, Division of Community Planning and Land Development

*Note: See Plan View, sheet 3 of 20 and Stream Cross Sections, Sheet 4 of 20 for Rip-Rap Detail for Sta. 0+25 to Sta. 1+00.

ENGINEERING TECHNOLOGIES ASSOCIATES, INC.
 ENGINEERS, SURVEYORS, CONSTRUCTION MANAGERS.
 3468 ELLICOTT CENTER DRIVE
 ELLICOTT CITY, MD. 21043
 (301) 461-9920



DES:	
DRN:	
CHK:	3/10/89
DATE:	
BY:	
NO.	
REVISION:	
DATE:	

HI-TECH VENTURE LIMITED PARTNERSHIP
 OWNER AND DEVELOPER
 7223 PARKWAY DRIVE
 HANOVER, MARYLAND 21076
 (301) 796-4446

PARKWAY CORPORATE CENTER SECTION 1
 PARCELS 'A' THROUGH 'G' AND 'K', 'L', 'M'
 REVISED ROAD CONSTRUCTION PLANS
 PARK CIRCLE DRIVE BRIDGE OVER DEEP RUN
 STA. 16 + 18.75 TO STA. 17 + 25.93
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SEDIMENT CONTROL NOTES

- 1) A minimum of 24 hours notice must be given to the Howard County Office of Inspection and Permit prior to the start of any construction. (992-2437)
- 2) All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- 3) Following initial soil disturbance or redisturbance, permanent or temporary stabilization shall be completed within a 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, by 14 days as to all other disturbed or graded areas on the project site.
- 4) All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 12, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
- 5) All disturbed areas must be stabilized within the time period specified above in accordance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings (Sec. 51) and (Sec. 54), temporary seedings (Sec. 50) and mulching (Sec. 52). Temporary stabilization with which alone can only be done when recommended seeding dikes do not allow for proper germination and establishment of grasses.
- 6) All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
- 7) Site Analysis:
 - Total Area of Site: 1.05 Acres
 - Area Disturbed: 0.60 Acres
 - Area to be roofed or paved: 0.06 Acres
 - Area to be vegetatively stabilized: 0.37 Acres
 - Total Cut: 270 Cu. yds
 - Offsite waste/borrow area location: FROM APPROVED SITE
 - * 0.175 Ac. GABION BOX: HOWARD CO. S.C.D.
- 8) Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- 9) Additional sediment controls must be provided, if deemed necessary by the Howard County DSW sediment control inspector.
- 10) On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth cutting or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.

PERMANENT SEEDING NOTES

- Seedbed Preparation:** Loosen upper 3 inches of soil by raking, discing or other acceptable means before seeding, if not previously loosened.
- Soil Amendments:** Use one of the following schedules:
- 1) Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs./1000 square ft.) and 600 lbs. per acre 10-0-10 fertilizer (15 lbs./1000 square ft.) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs. per acre 30-0-0 uniform fertilizer (9 lbs./1000 square ft.).
 - 2) Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs./1000 square ft.) and 1000 lbs. per acre 10-10-10 fertilizer (23 lbs./1000 square ft.) before seeding. Harrow or disc into upper three inches of soil.
- Seeding:** For the periods March 1 through April 30, and August 1 through October 15, seed with 30 lbs. per acre (1.4 lbs./1000 sq. ft.) of Kentucky 31 Tall Fescue. For the period May 1 through July 31, seed with 60 lbs. Kentucky 31 Tall Fescue per acre and 2 lbs. per acre (.05 lbs./1000 square ft.) of seeding legumines. During the period of October 16 through February 28, protect site by Option (1) 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option (2) Use sod. Option (3) Seed with 60 lbs./acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.
- Mulching:** Apply 1 1/2 to 2 tons per acre (70 to 90 lbs./1000 sq. ft.) of untreated small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal./1000 sq. ft.) of mulchified asphalt on flat areas. On slopes, 8 feet or higher, use 348 gallons per acre (8 gal./1000 sq. ft.) for anchoring.
- Maintenance:** Inspect all seeded areas and make needed repairs, replacements and reseedings.

TEMPORARY SEEDING NOTES

- Seedbed Preparation:** Loosen upper 3 inches of soil by raking, discing or other acceptable means before seeding, if not previously loosened.
- Soil Amendments:** Apply 600 lbs. per acre 10-10-10 fertilizer (14 lbs./1000 sq. ft.).
- Seeding:** For periods March 1 through April 30 and from August 15 through November 15, seed with 24 lbs. per acre of annual ryegrass (3.2 lbs./1000 sq. ft.). For the period May 1 through August 14, seed with 3 lbs. per acre of seeding legumines (.07 lbs./1000 sq. ft.). For the period November 16 through February 28, protect the site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring or use sod.
- Mulching:** Apply 1 1/2 to 2 tons per acre (70 to 90 lbs./1000 sq. ft.) of untreated small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal. per acre (5 gal./1000 sq. ft.) of mulchified asphalt on flat areas. On slopes, 8 ft. or higher use 348 gal. per acre (8 gal./1000 sq. ft.) for anchoring.

REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

James H. Helm 5/3/89
Soil Conservation Service

DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT

Stephen P. Helm 5/2/89
Howard Soil Conservation District

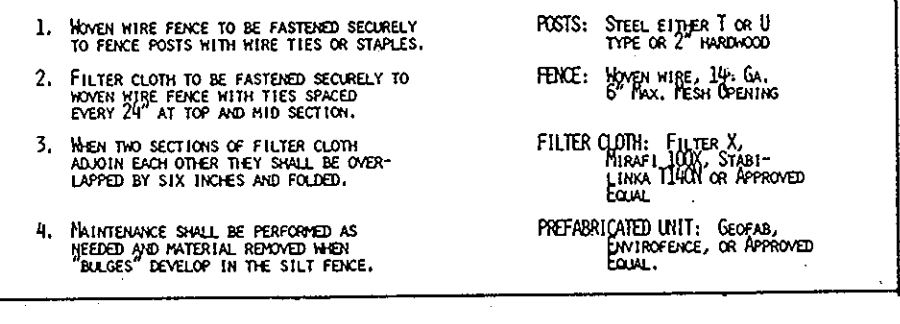
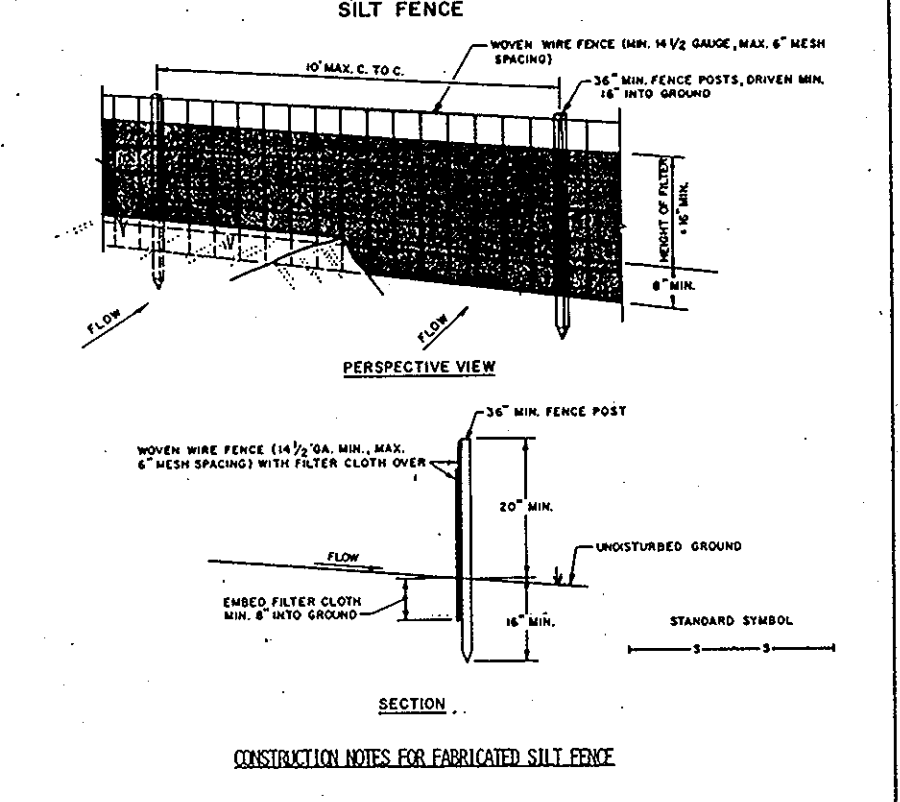
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Donald J. Epp 6/14/89
CHIEF, LAND DEVELOPMENT DIVISION

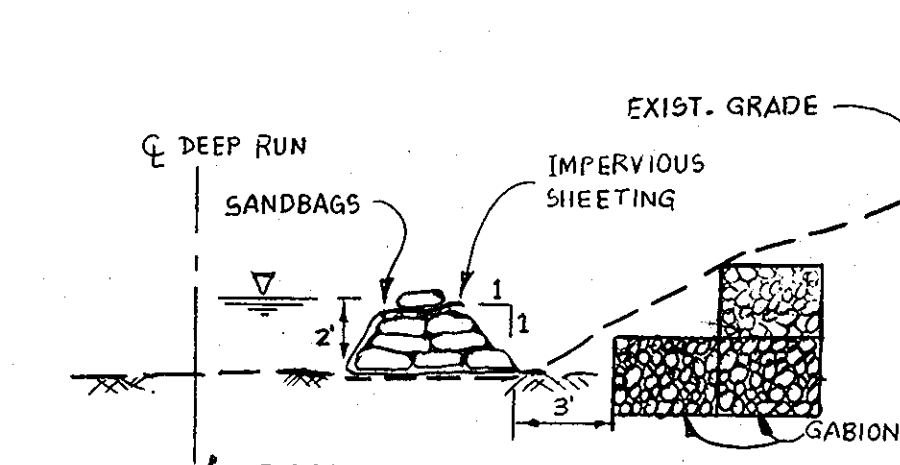
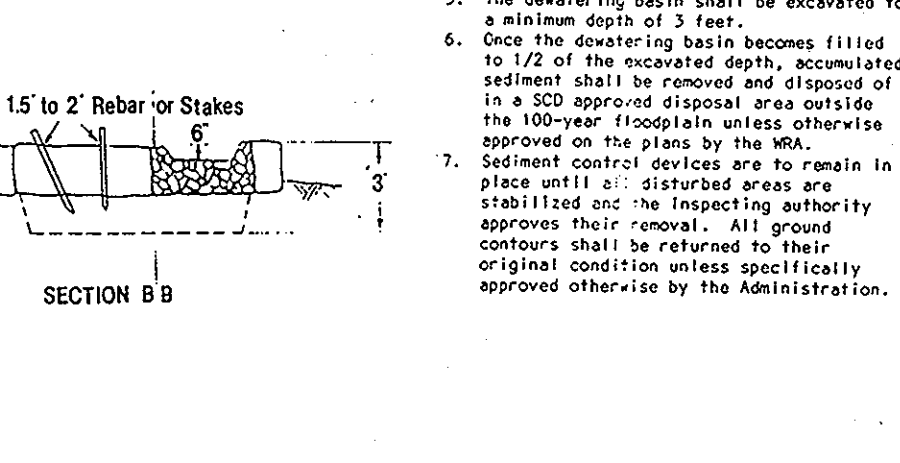
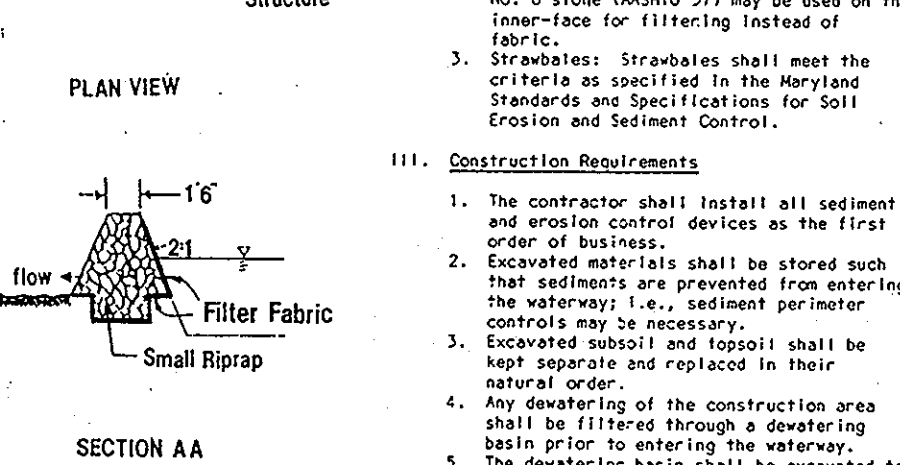
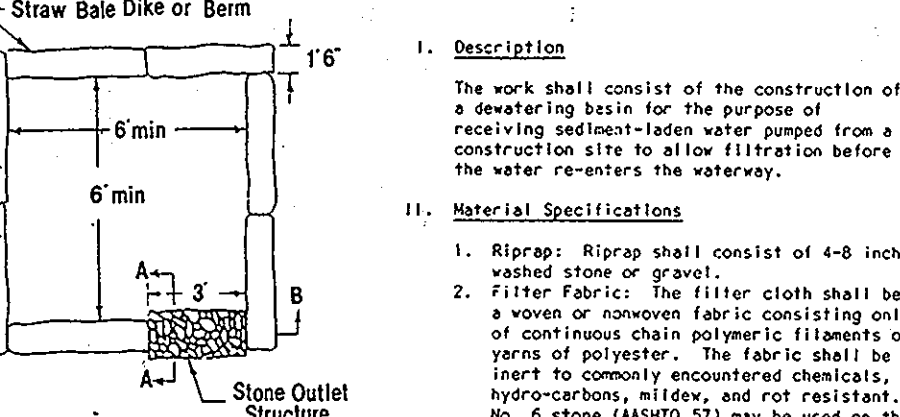
Elizabeth Anderson-Collins 6/26/89
CHIEF, BUREAU OF ENGINEERING, acting

Lawrence H. Welsch 6/22/89
CHIEF, BUREAU OF HIGHWAYS

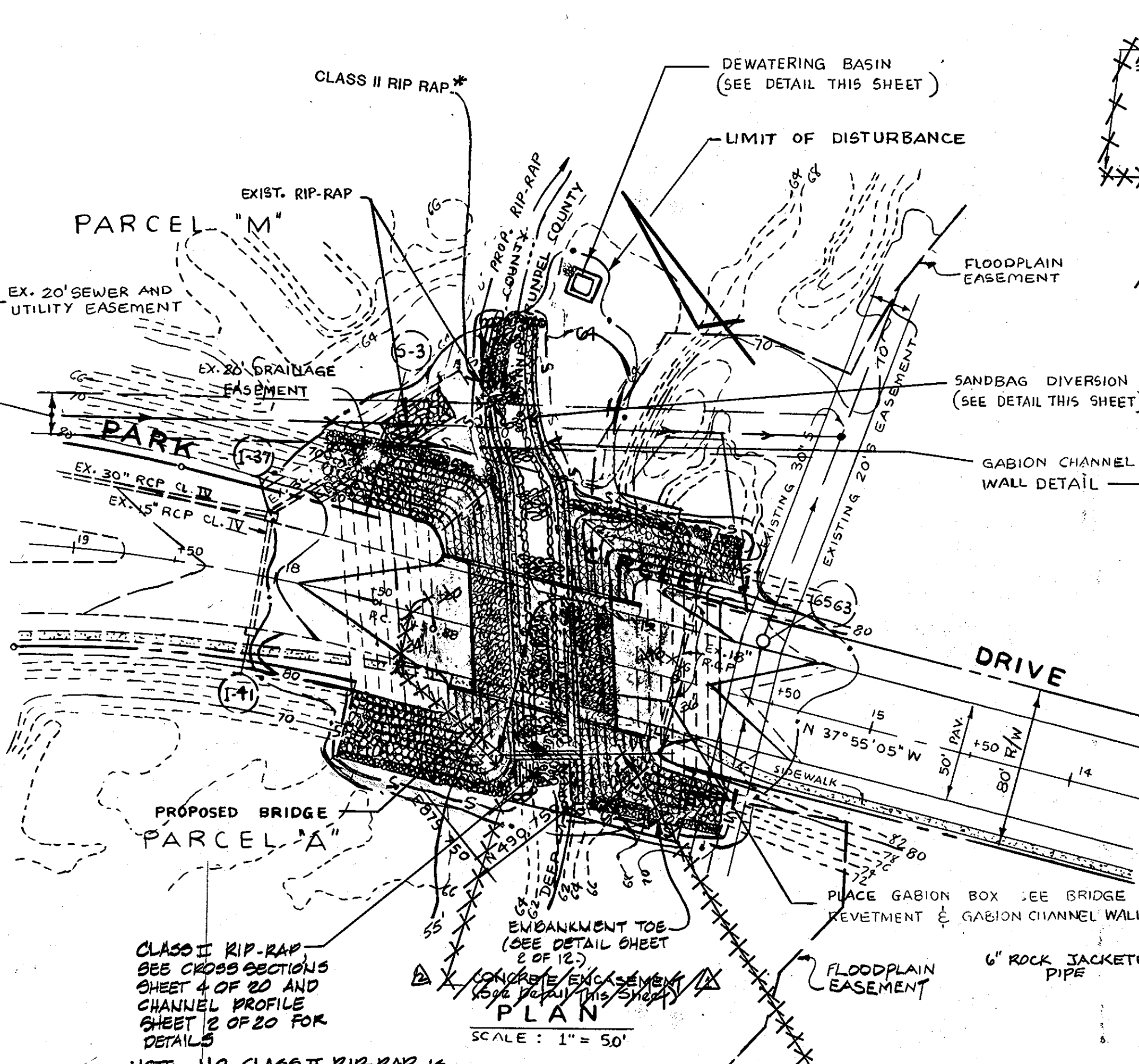
Mark J. Campbell 7/6/89
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT



DEWATERING BASIN



- DESCRIPTION**
The work shall consist of installing flow diversions for the purpose of erosion control when construction activities take place within the stream channel such as bank stabilization or bridge abutment construction.
- MATERIAL SPECIFICATIONS**
1. Sandbags: Sandbags shall consist of materials which are resistant to ultraviolet radiation, tearing and puncture and worn tightly enough to prevent leakage of fill material (i.e., sand, fine gravel, etc.).
 2. Stones: Stone shall be washed and have a minimum diameter of 6 inches.
 3. Sheeting: Sheeting shall consist of polyethylene or other material which is impervious and resistant to puncture and tearing.
- CONSTRUCTION REQUIREMENTS**
1. All erosion and sediment control devices shall be installed as the first order of work.
 2. The diversion structure shall be installed from upstream to downstream.
 3. The height of the diversion structure shall be one half the distance from stream bed to stream bank plus control, as indicated on the cross-section view.
 4. All excavated materials shall be disposed of in a SCD approved disposal area outside the 100-year floodplain unless otherwise approved on the plans by the M&A.
 5. All dewatering of the construction area shall be pumped to a dewatering basin prior to re-entering the stream.
 6. Sheeting shall be overlapped such that the upstream portion covers the downstream portion with at least an 18-inch overlap.
 7. Sediment control devices are to remain in place until all disturbed areas are stabilized in accordance with an approved sediment and erosion control plan and the inspecting authority approves their removal.



GABION NOTES

DESCRIPTION
This work shall consist of protecting stream banks and channels with stone-filled wire baskets in order to provide stabilization for stream channels and banks. Baskets shall be placed in such a manner as to prevent undercutting from water velocities and overturning from lateral earth pressures.

MATERIAL SPECIFICATIONS

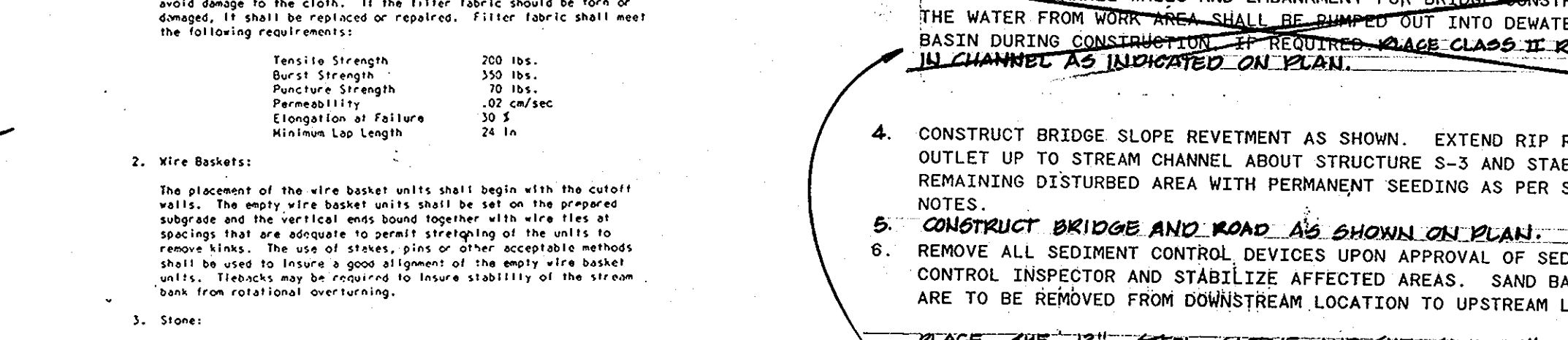
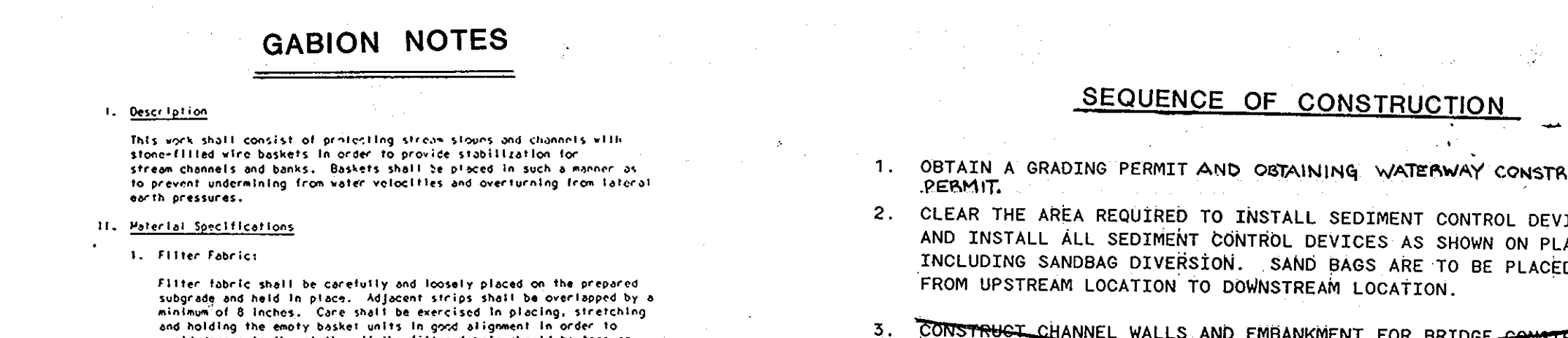
1. Filter Fabric: Filter fabric shall be carefully and loosely placed on the prepared subgrade and held in place. Adjacent strips shall be overlapped by a minimum of 8 inches. Care shall be exercised in placing, stretching and holding the empty baskets until a good alignment is achieved in order to avoid damage to the cloth. If the filter fabric should be torn or damaged it shall be replaced or repaired. Filter fabric shall meet the following requirements:

Property	Requirement
Tensile Strength	200 lbs.
Burst Strength	350 lbs.
Puncture Strength	20 lbs.
Permeability	.02 cm/sec
Elongation at Failure	30 %
Minimum Lap Length	24 in
2. Wire Baskets: The placement of the wire basket units shall begin with the cutoff walls. The empty wire basket units shall be set on the prepared subgrade and the vertical ends joined together with wire ties of spacings that are adequate to permit straggling of the units to remain loose. The use of stakes, pins or other acceptable methods shall be used to insure a good alignment of the empty wire basket units. Stakes may be required to insure stability of the stream bank from rotational overturning.
3. Stones: Stone for gabions, for which the size of particles will be determined visually, shall meet the following:

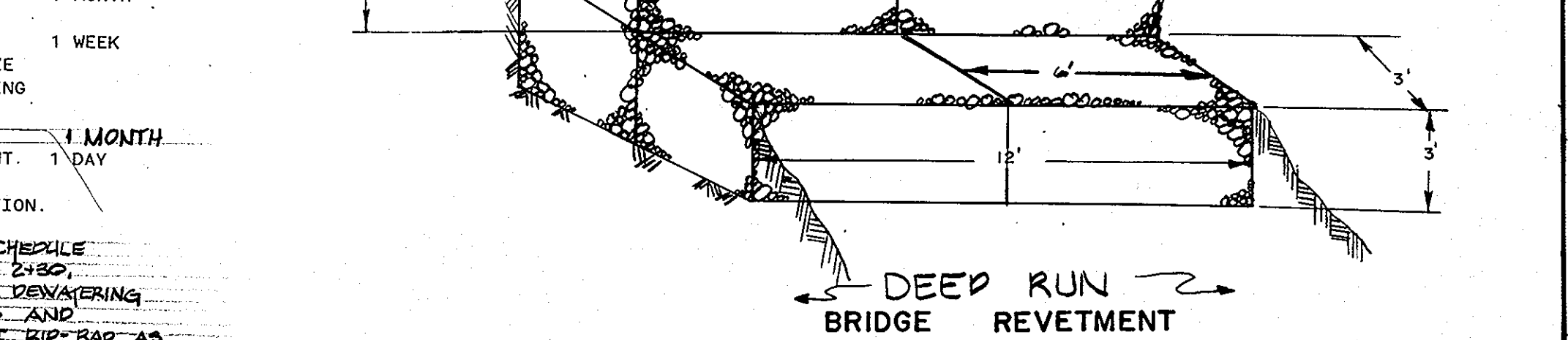
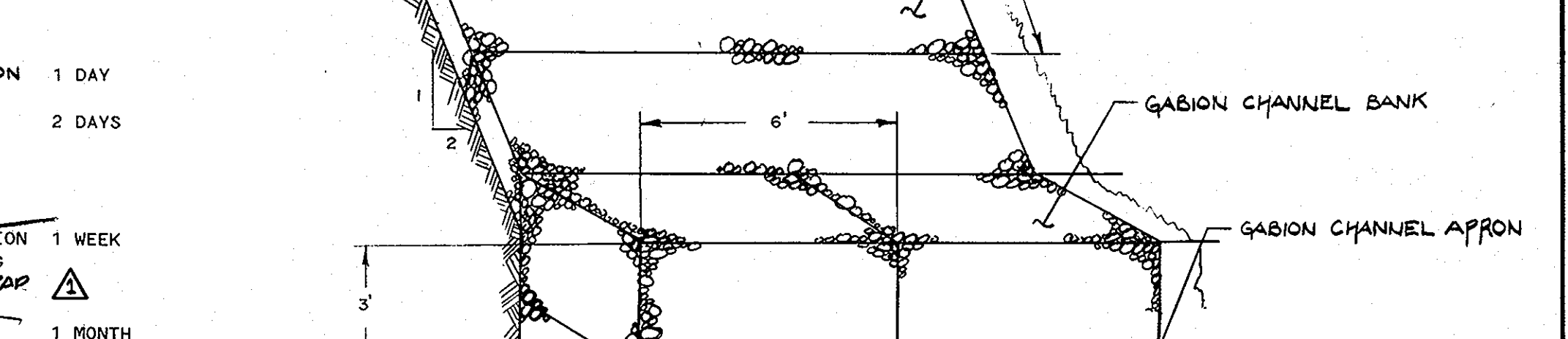
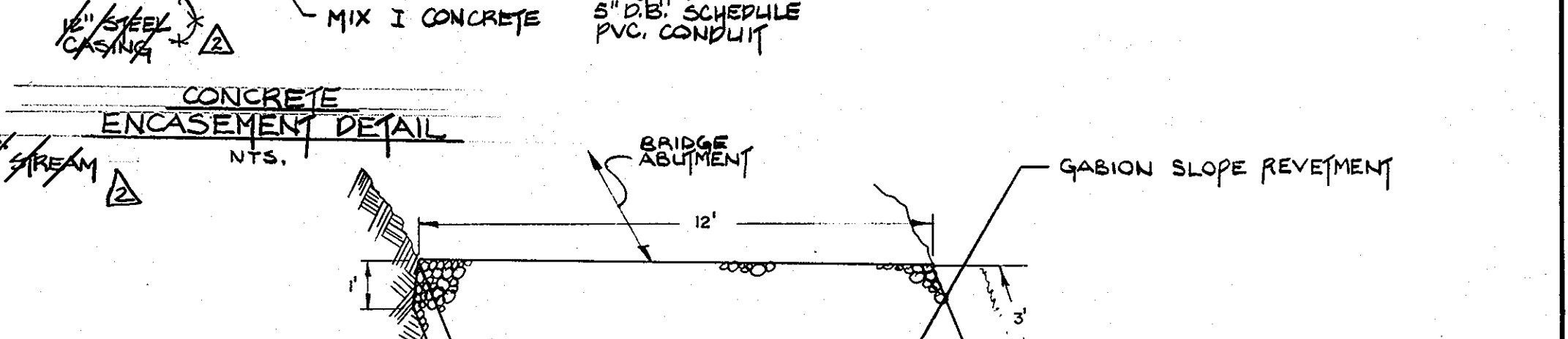
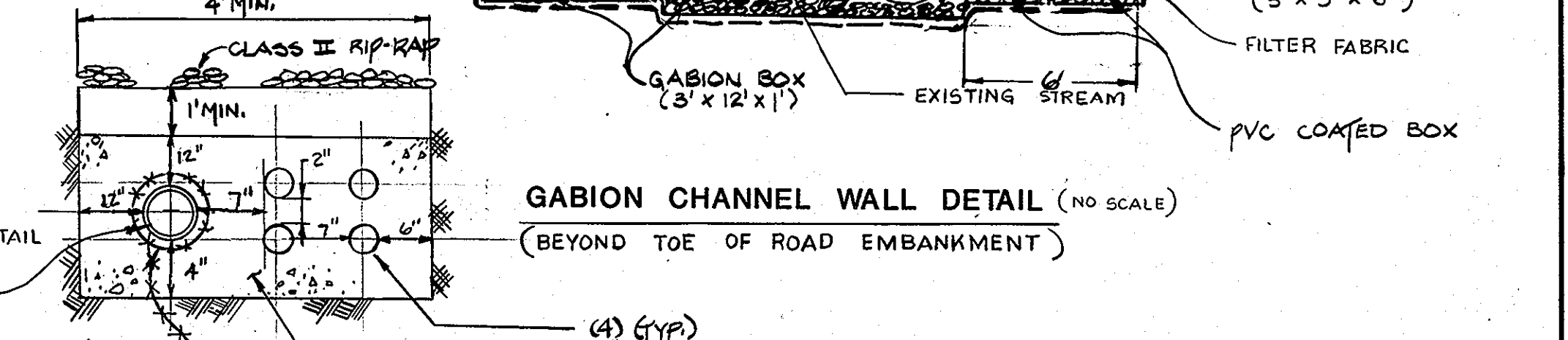
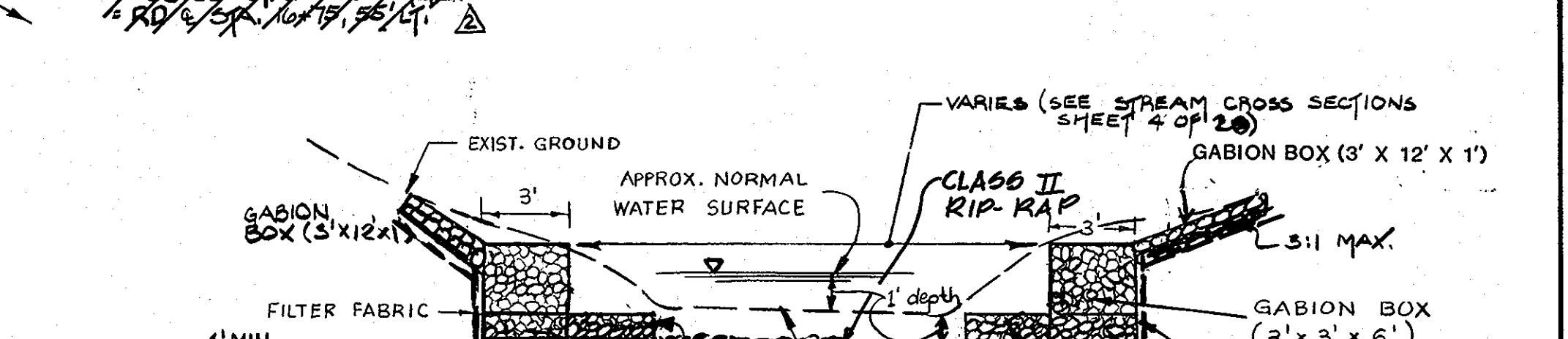
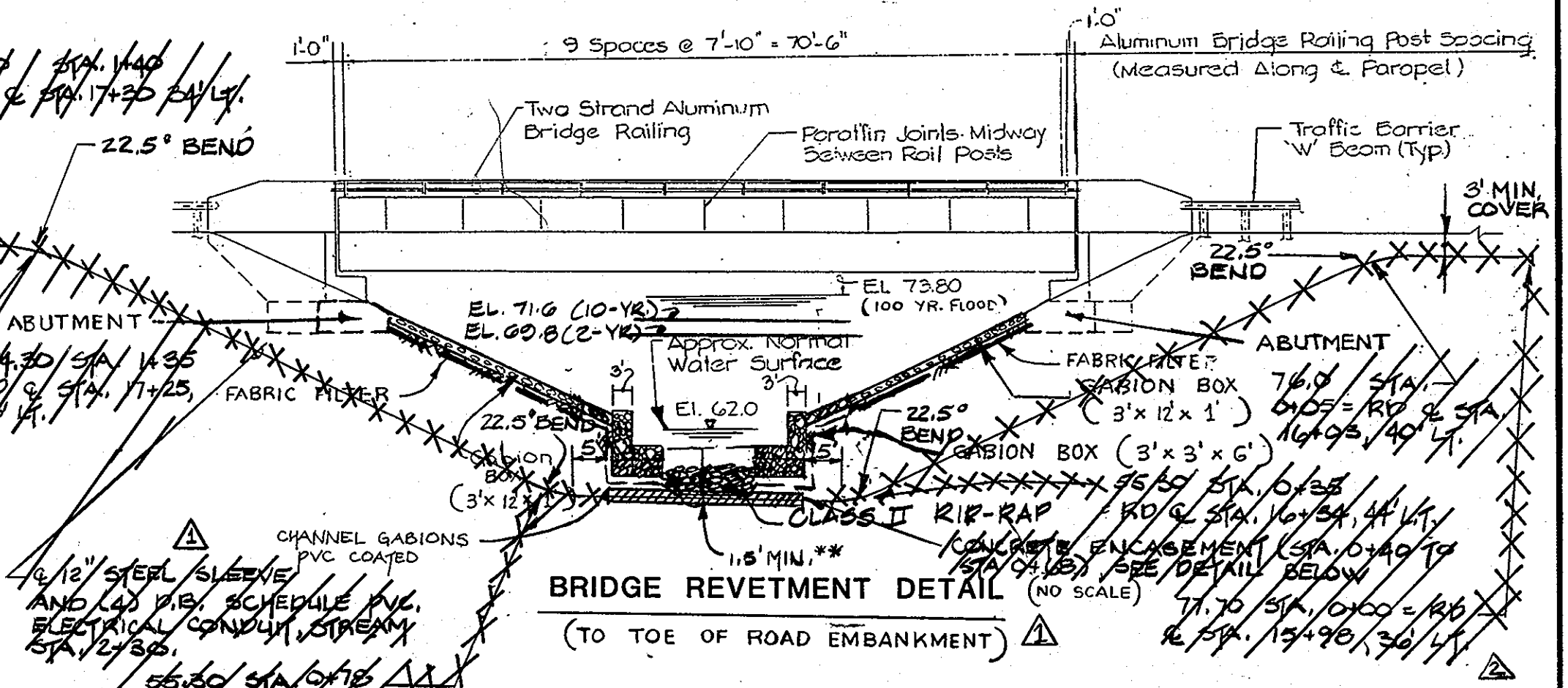
Report	Thickness	Size of Individual Particles
6	150	3 - 5
8	225	4 - 7
12	300	5 - 9
18	400	6 - 12
24	910	8 - 12

CONSTRUCTION REQUIREMENTS

1. The contractor shall install all sediment and erosion control devices as a first order of business.
2. Excavated materials shall be stored such that sediments are prevented from entering the waterway. i.e., sediment perimeter control may be necessary.
3. Excavated soil and topsoil shall be kept separate and replaced in their natural order.
4. Any dewatering of the construction area shall be filtered through a dewatering basin prior to entering the waterway.
5. The dewatering basin shall be excavated to a minimum depth of 3 feet.
6. Once the dewatering basin becomes filled to 1/2 of the excavated depth, accumulated sediment shall be removed and disposed of in a SCD approved disposal area outside the 100-year floodplain unless otherwise approved on the plans by the M&A.
7. Sediment control devices are to remain in place until all disturbed areas are stabilized in accordance with an approved sediment and erosion control plan and the inspecting authority approves their removal.



- SEQUENCE OF CONSTRUCTION**
1. OBTAIN A GRADING PERMIT AND OBTAINING WATERWAY CONSTRUCTION PERMIT. 1 DAY
 2. CLEAR THE AREA REQUIRED TO INSTALL SEDIMENT CONTROL DEVICES AND INSTALL ALL SEDIMENT CONTROL DEVICES AS SHOWN ON PLAN INCLUDING SANDBAG DIVERSION. SAND BAGS ARE TO BE PLACED FROM UPSTREAM LOCATION TO DOWNSTREAM LOCATION. 2 DAYS
 3. CONSTRUCT CHANNEL WALLS AND EMBANKMENT FOR BRIDGE CONSTRUCTION. THE WATER FROM DOWNSTREAM SHALL BE PUMPED OUT INTO DEWATERING BASIN DURING CONSTRUCTION. PLACE CLASS II RIP-RAP IN CHANNEL AS INDICATED ON PLAN. 1 WEEK
 4. CONSTRUCT BRIDGE SLOPE REVETMENT AS SHOWN. EXTEND RIP-RAP OUTLET UP TO STREAM CHANNEL ABOUT STRUCTURE S-3 AND STABILIZE REMAINING DISTURBED AREA WITH PERMANENT SEEDING AS PER SEEDING NOTES. 1 MONTH
 5. CONSTRUCT BRIDGE AND ROAD AS SHOWN ON PLAN. 1 MONTH
 6. REMOVE ALL SEDIMENT CONTROL DEVICES UPON APPROVAL OF SEDIMENT CONTROL INSPECTOR AND STABILIZE AFFECTED AREAS. SAND BAGS ARE TO BE REMOVED FROM DOWNSTREAM LOCATION TO UPSTREAM LOCATION. 1 DAY
- PLACE THE 12\"/>**



DEVELOPER'S CERTIFICATE
I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. ALSO AUTHORIZED PERIODIC ON-SITE INSPECTION BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.

Michael J. ... 4-18-89
STRUCTURE OF DEVELOPMENT

ENGINEER'S CERTIFICATE
I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.

Shells 4/18/89
SIGNATURE OF ENGINEER DATE

DWG R-3 OF R-4

SEDIMENT AND EROSION CONTROL PLAN AND DETAILS

PARKWAY CORPORATE CENTER SECTION 1
PARCELS "A" THROUGH "G" AND "K", "L", "M"

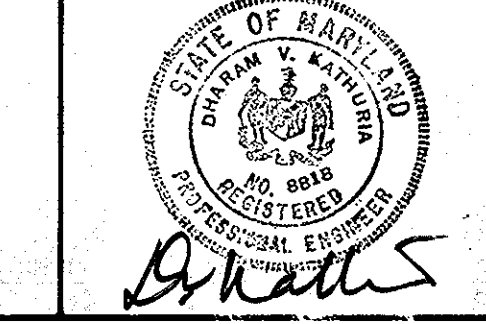
REVISED ROAD CONSTRUCTION PLANS
PARK CIRCLE DRIVE BRIDGE OVER DEEP RUN
STA. 16 + 18.75 TO STA. 17 + 25.93

FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

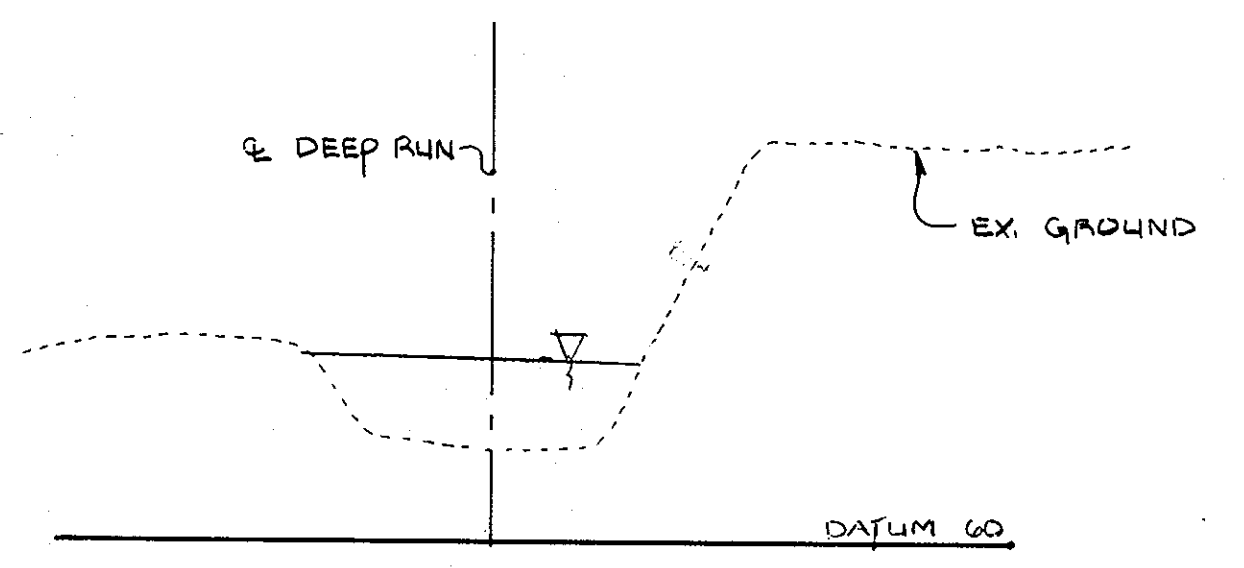
HI-TECH VENTURE LIMITED PARTNERSHIP
OWNER AND DEVELOPER
7223 PARKWAY DRIVE
HANOVER, MARYLAND 21076
(301) 798-4448

600' SCALE MAP NO. _____ BLOCK NO. _____

ENGINEERING TECHNOLOGIES ASSOCIATES, INC.
ENGINEERS, SURVEYORS, CONSTRUCTION MANAGERS.
3488 ELLICOTT CENTER DRIVE
ELLICOTT CITY, MD. 21043
(301) 461-9920

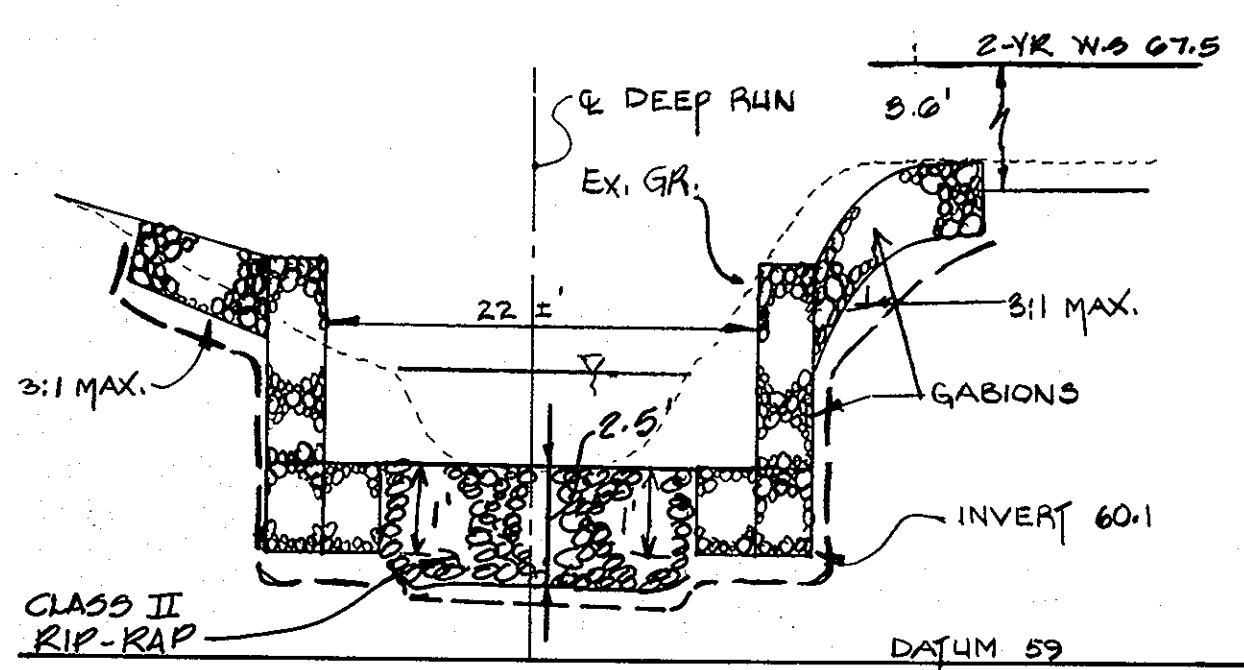


DES:			
DRN:			
CHK:			
DATE:			
BY:			
NO:			
REVISION:			

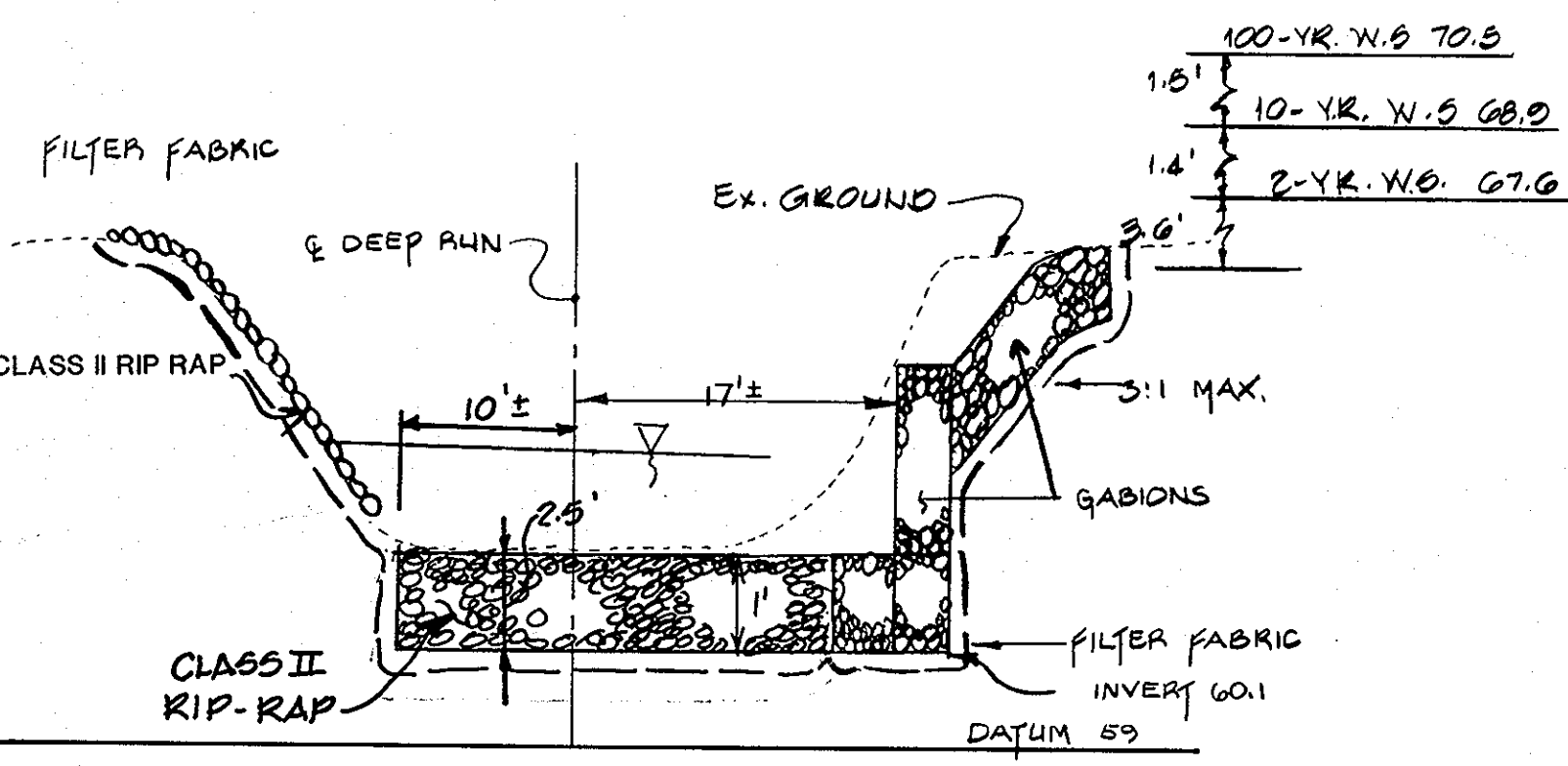


SECTION 0+00

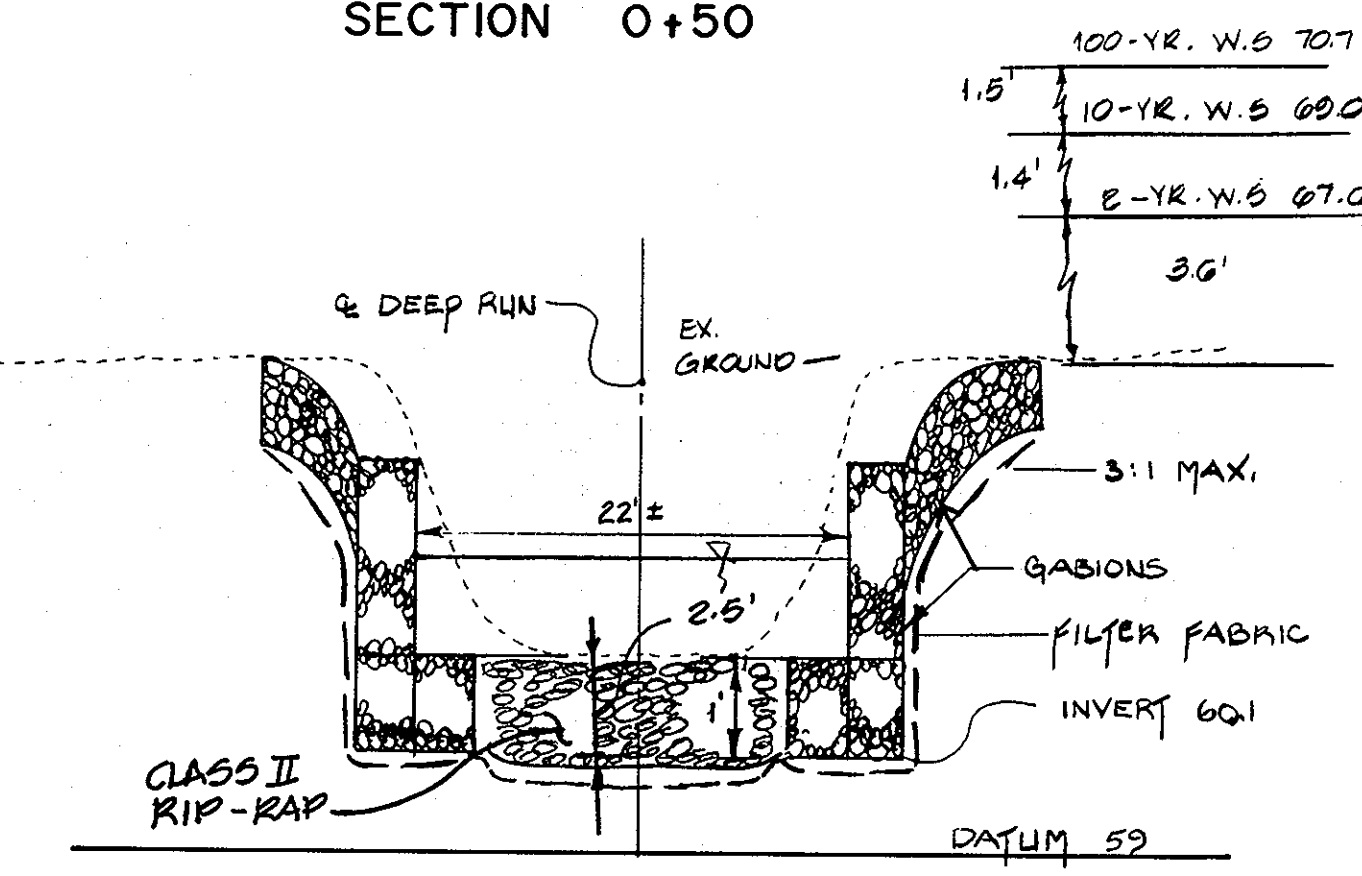
100-YR. W.S. 70.3
10-YR. W.S. 68.8
2-YR. W.S. 67.5



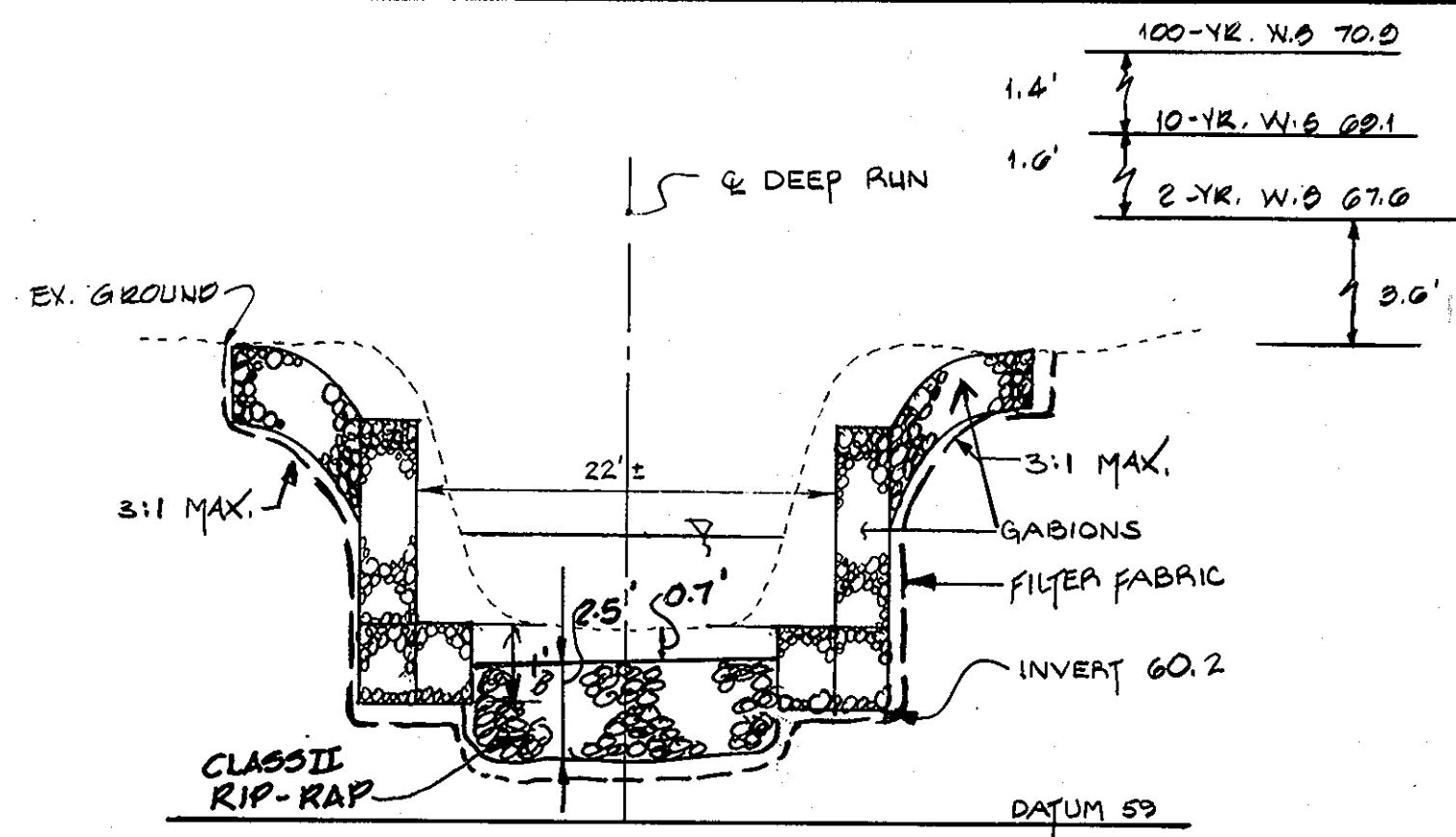
SECTION 0+25
(BEGINNING OF STREAM CHANNEL REVETMENT)



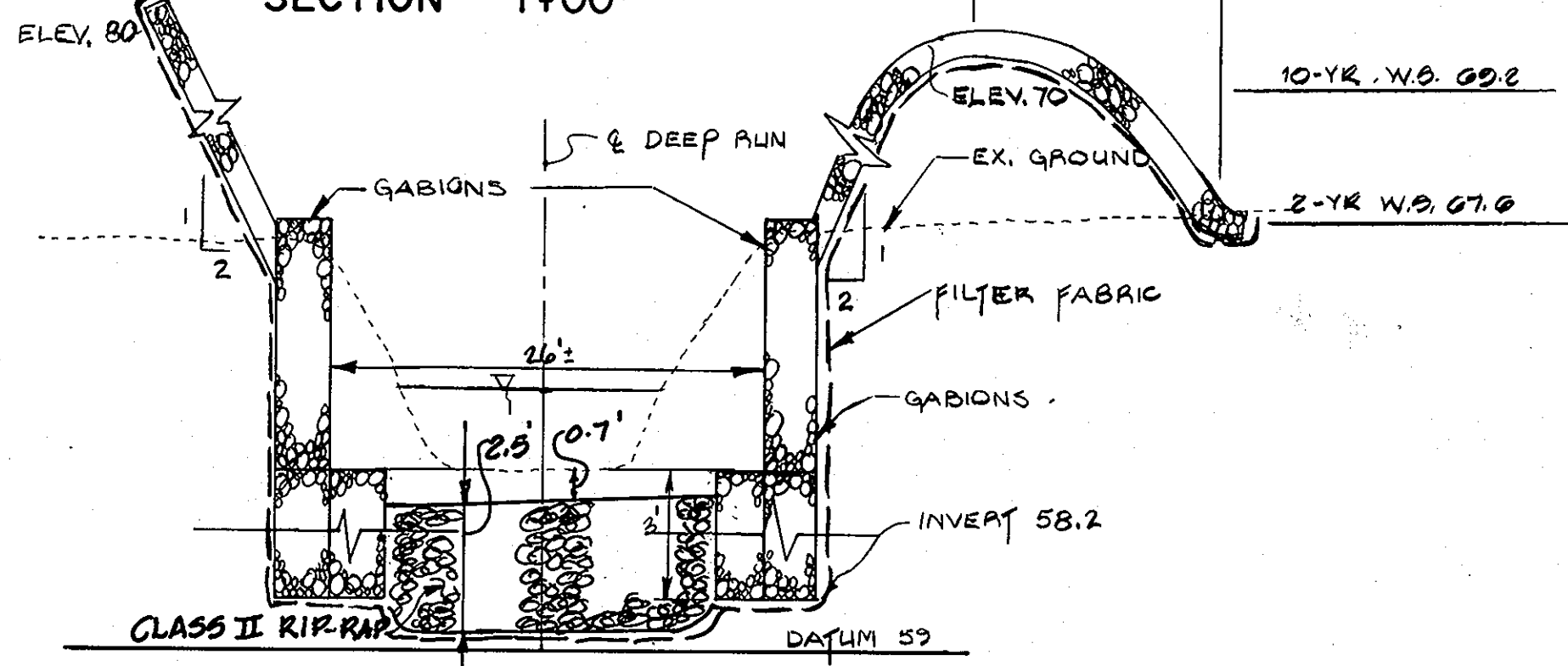
SECTION 0+50



SECTION 0+75

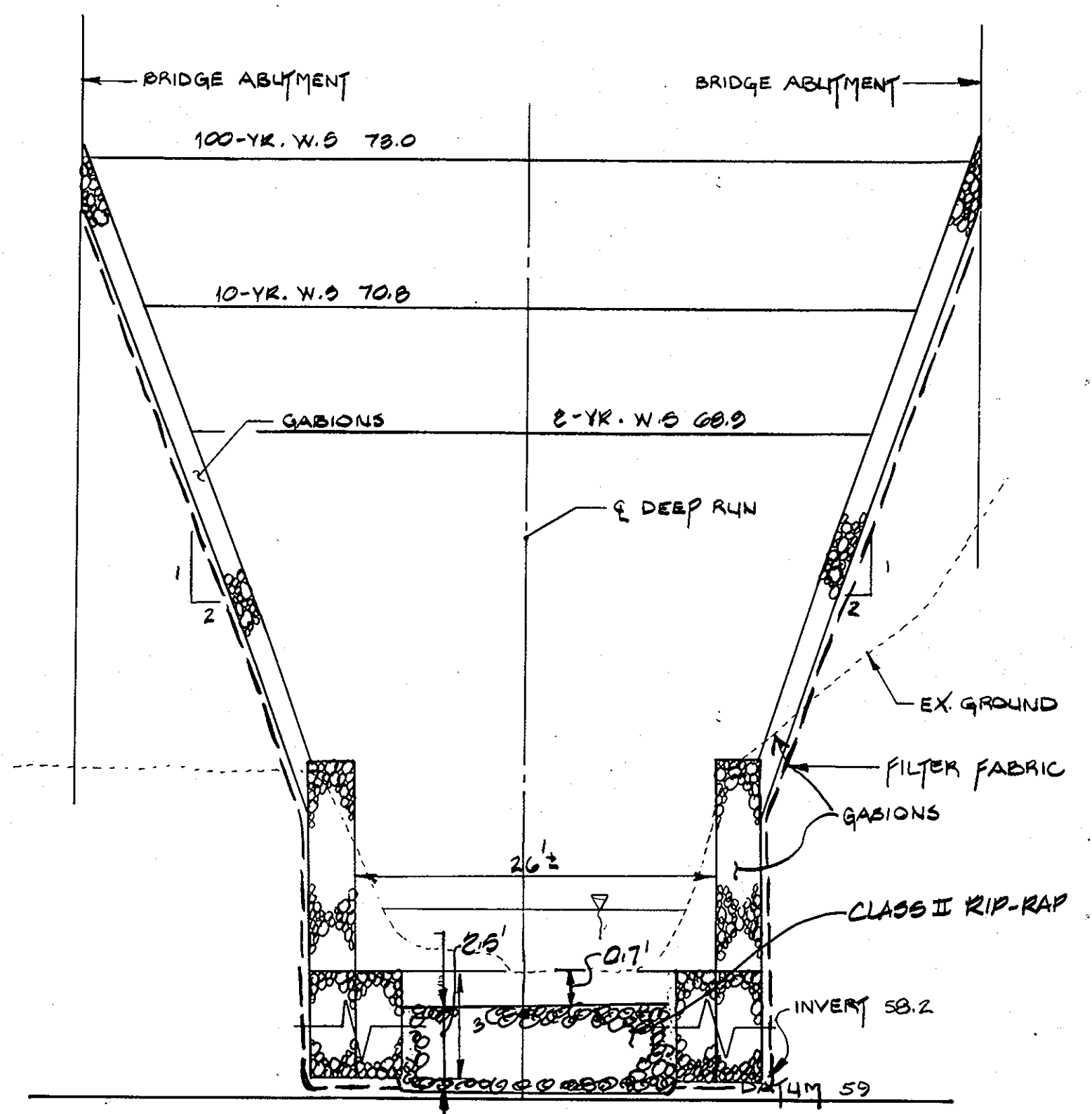


SECTION 1+00*



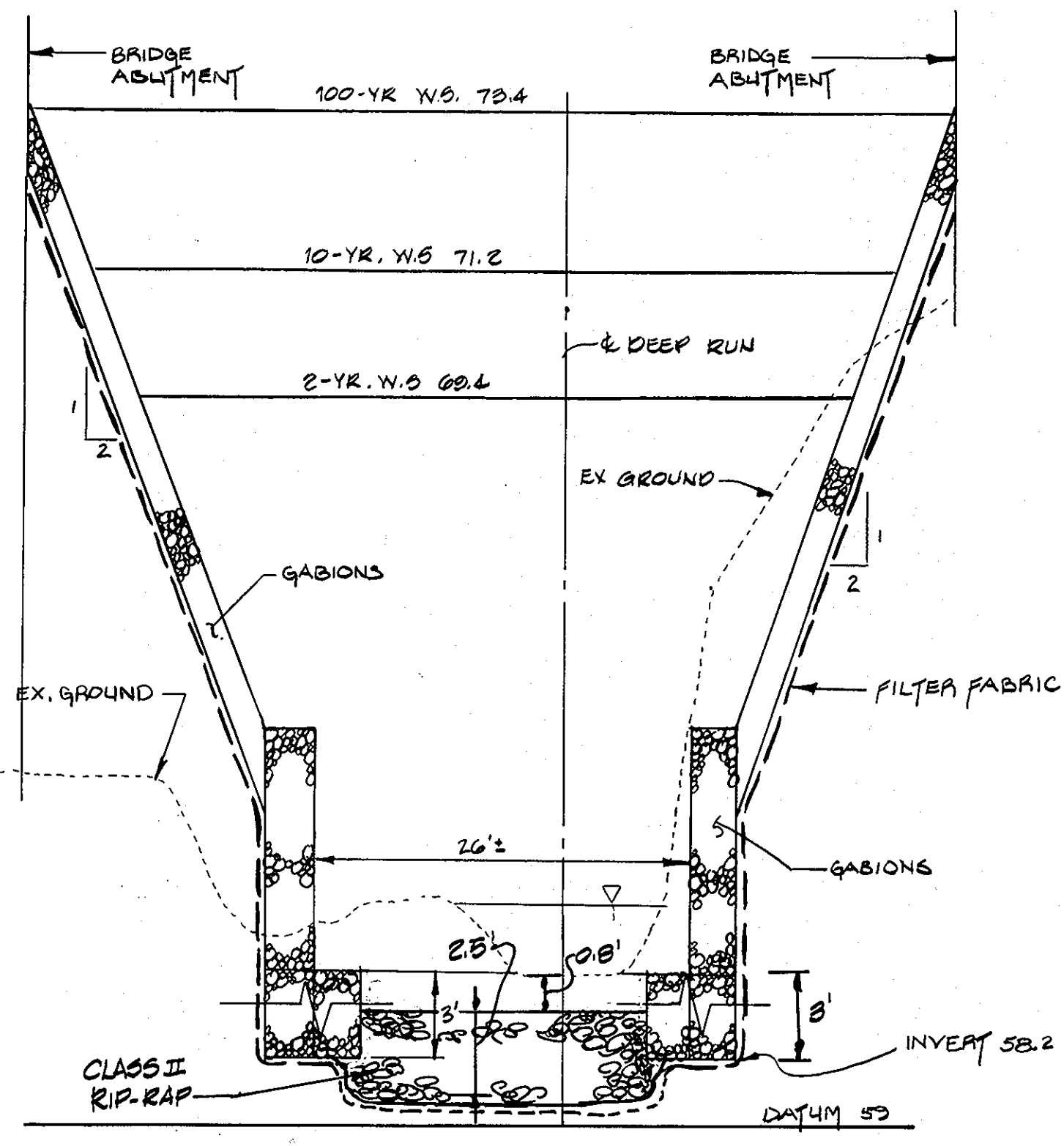
SECTION 1+25*

* NOTE: STATION 1+10, END OF STREAM CHANNEL REVETMENT
BEGINNING OF BRIDGE REVETMENT.

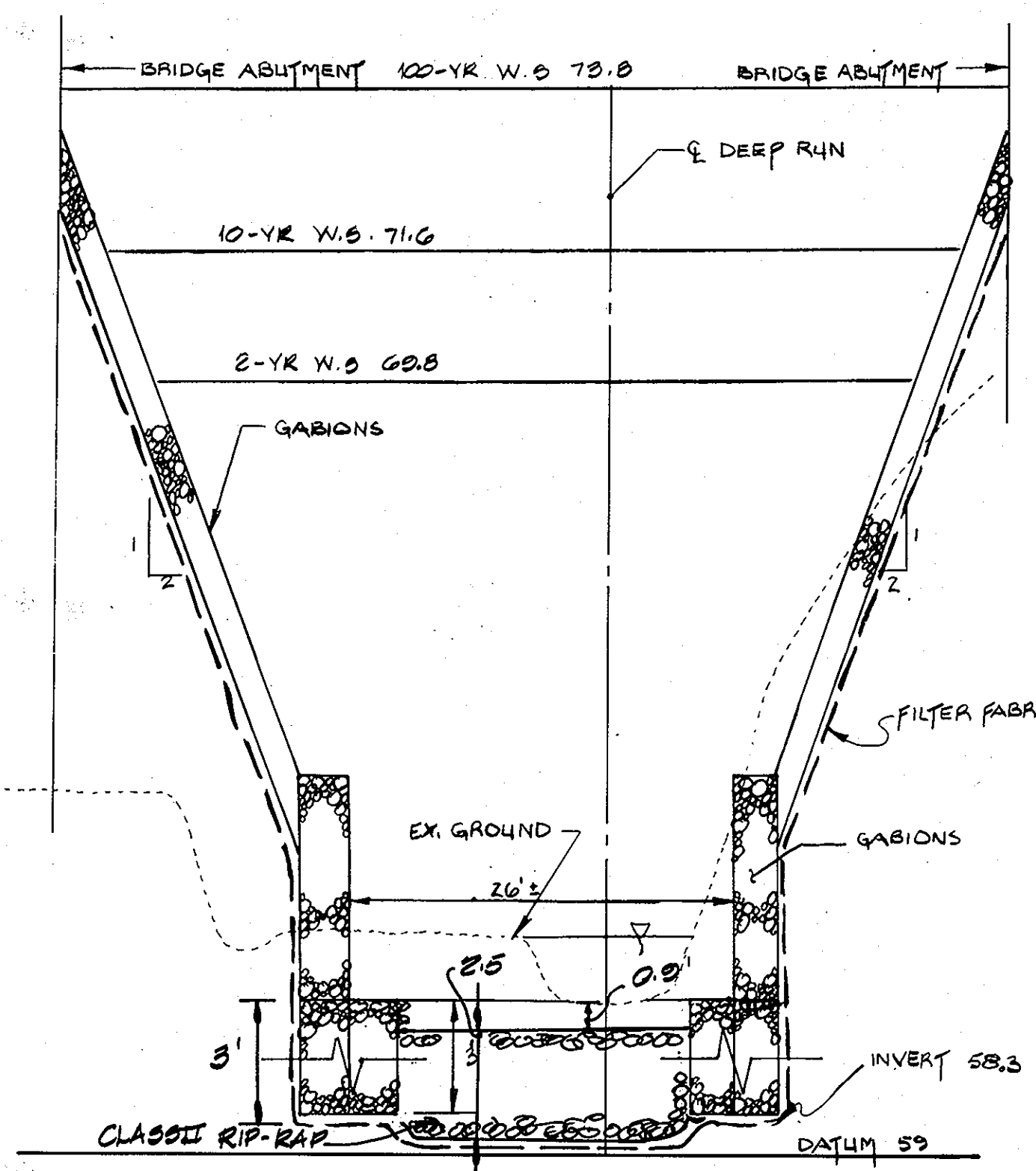


SECTION 1+50*

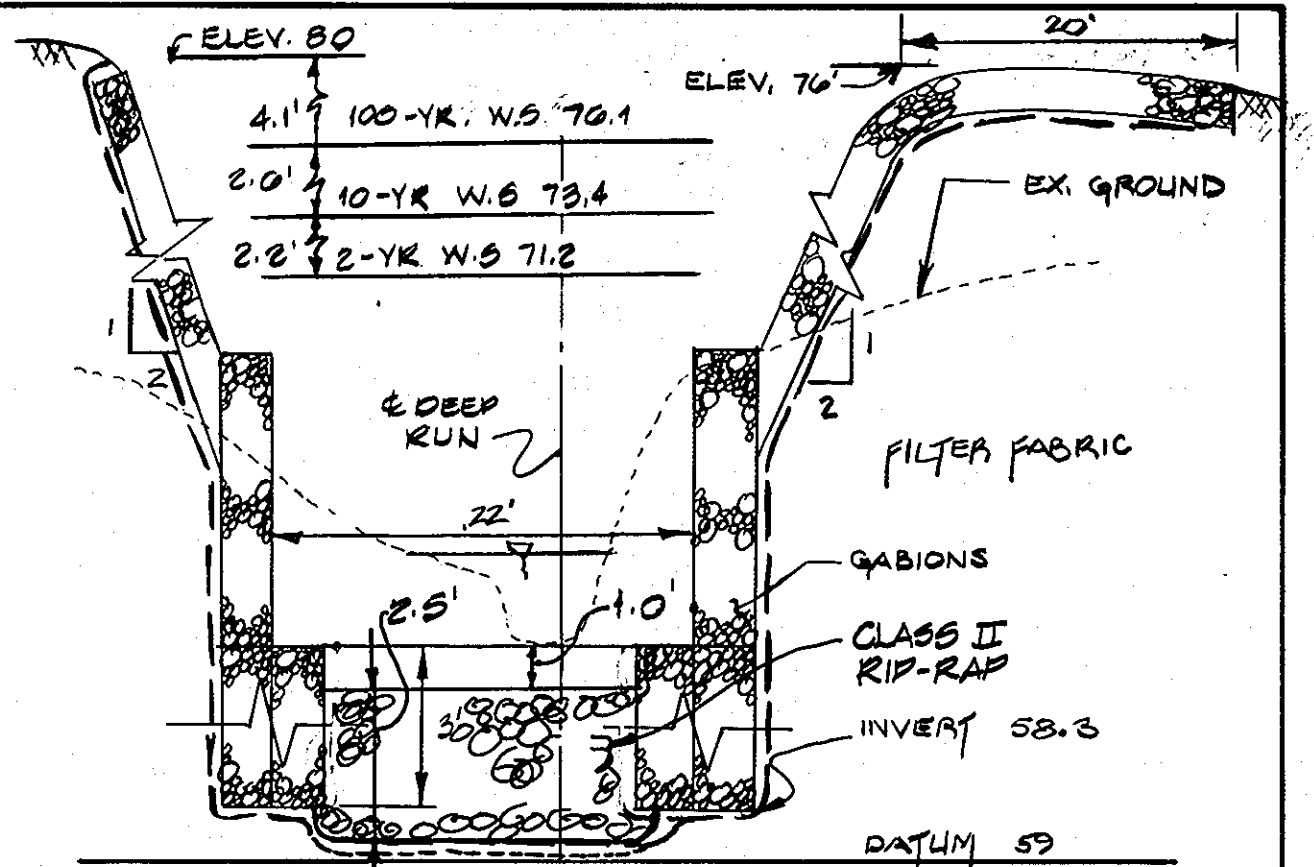
*NOTE: SEE SHEET 2 OF 20, GENERAL NOTE #11
FOR COMPACTION BEHIND GABIONS



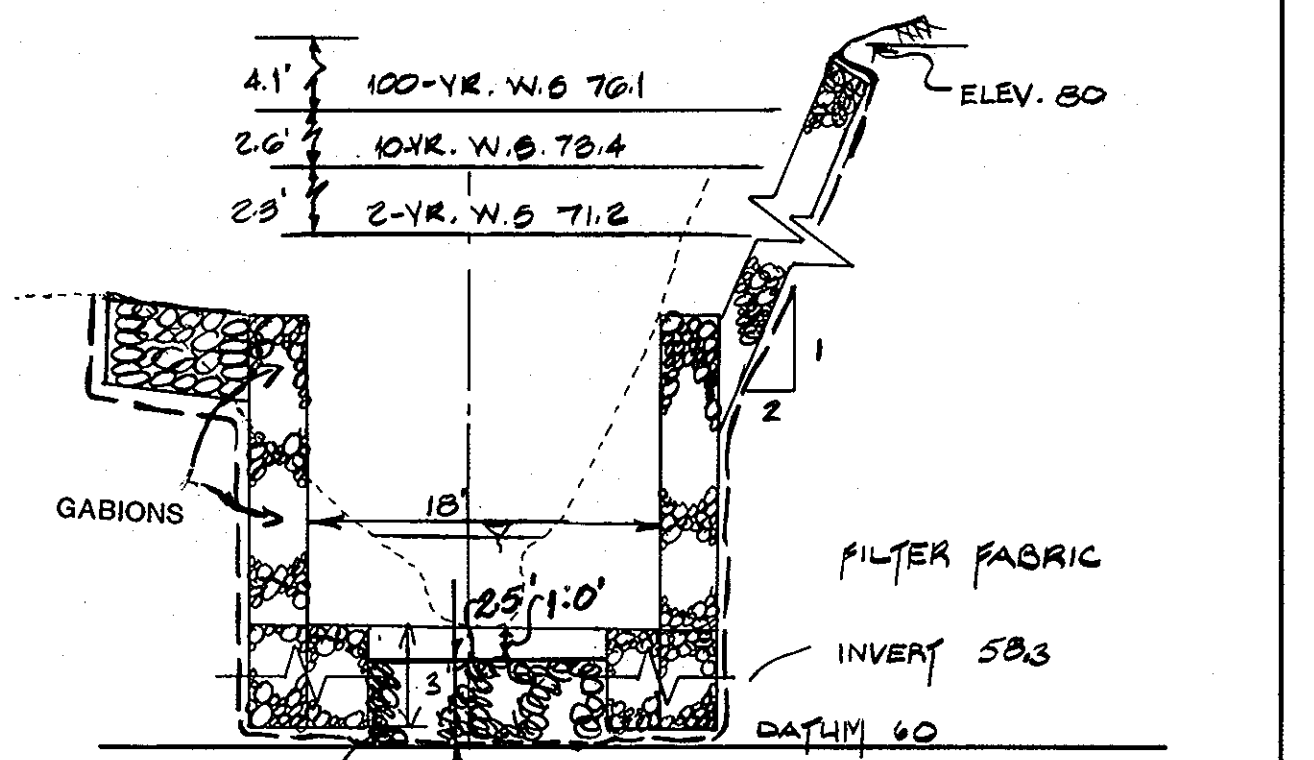
SECTION 1+75*



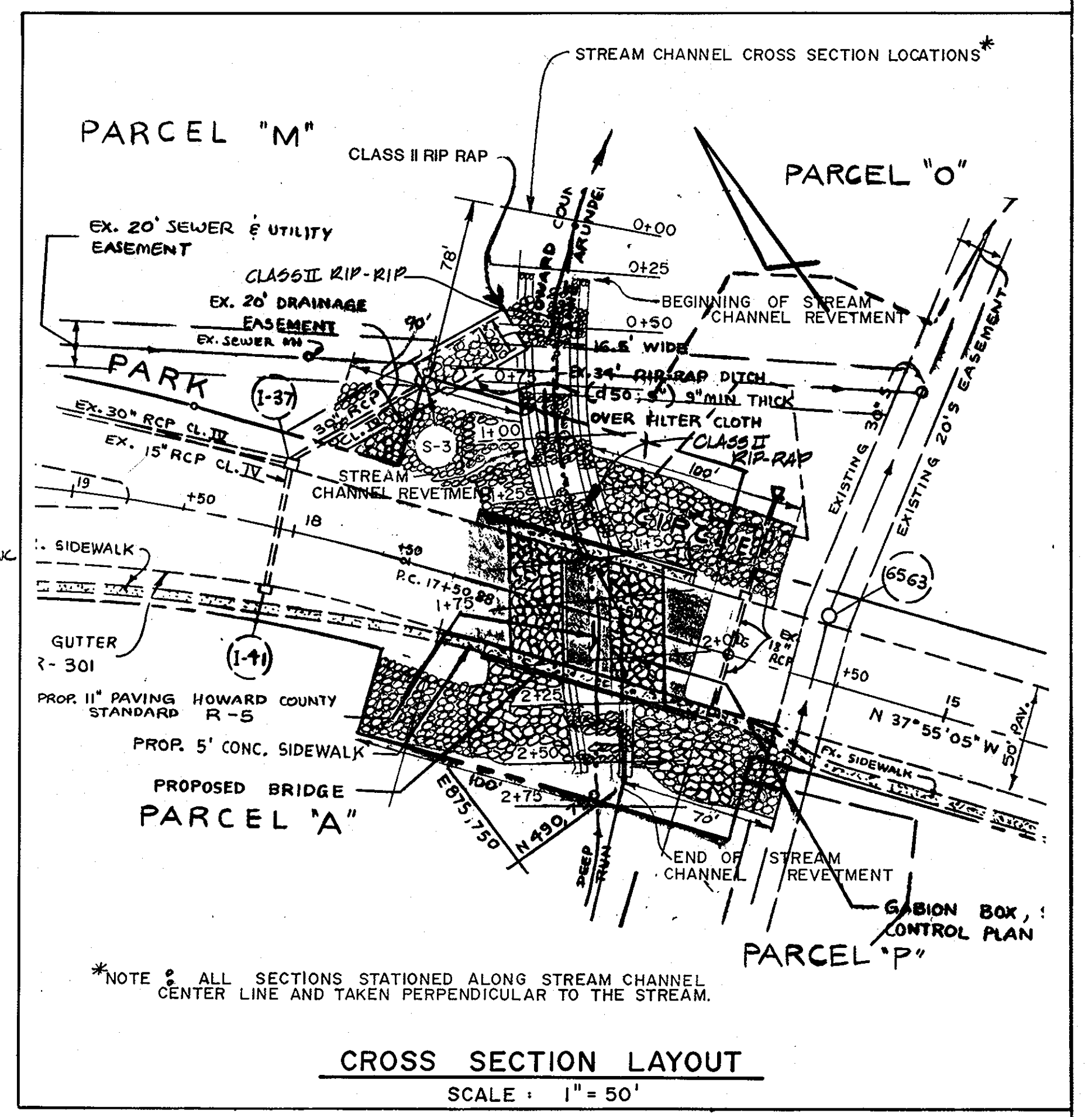
SECTION 2+00*



SECTION 2+25



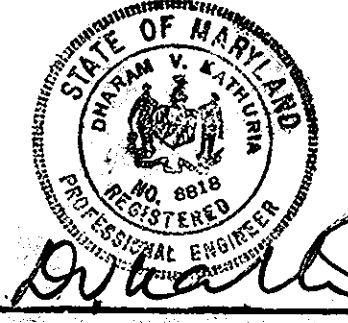
SECTION 2+50
(END OF BRIDGE REVETMENT)



CROSS SECTION LAYOUT
SCALE: 1" = 50'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
[Signature] 6/19/89
 CHIEF, LAND DEVELOPMENT DIVISION
[Signature] 6/28/89
 CHIEF, BUREAU OF ENGINEERING, acting
[Signature] 6/27/89
 CHIEF, BUREAU OF HIGHWAYS
[Signature] 7/1/89
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

ENGINEERING TECHNOLOGIES ASSOCIATES, INC.
 ENGINEERS • PLANNERS • SURVEYERS
 3450 ELLICOTT CENTER DRIVE, SUITE 101
 ELLICOTT CITY, MD. 21043
 (301) 481-9200



DES:	
DRN:	S.G.P.
CHK:	
DATE:	
BY:	NO.
REVISION:	

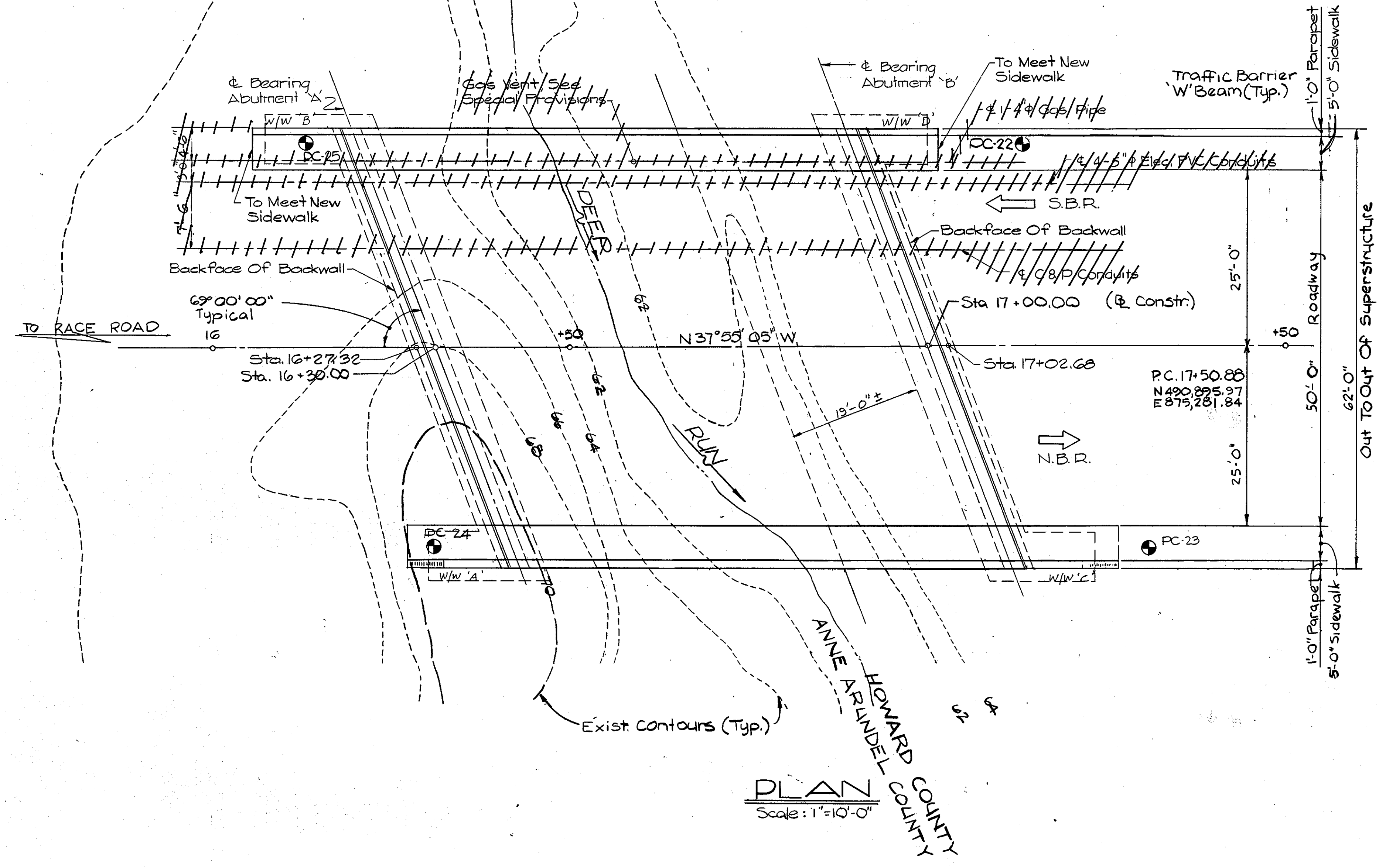
HI-TECH VENTURE LIMITED PARTNERSHIP
 OWNER AND DEVELOPER
 7223 PARKWAY DRIVE
 HANOVER, MARYLAND 21076
 (301) 796-4446

STREAM CROSS SECTIONS DWG. R-4 OR R-4
PARK CIRCLE DRIVE BRIDGE OVER DEEP RUN
 FIRST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 SCALE AS SHOWN
 SHEET 4 OF 20

F-87-85

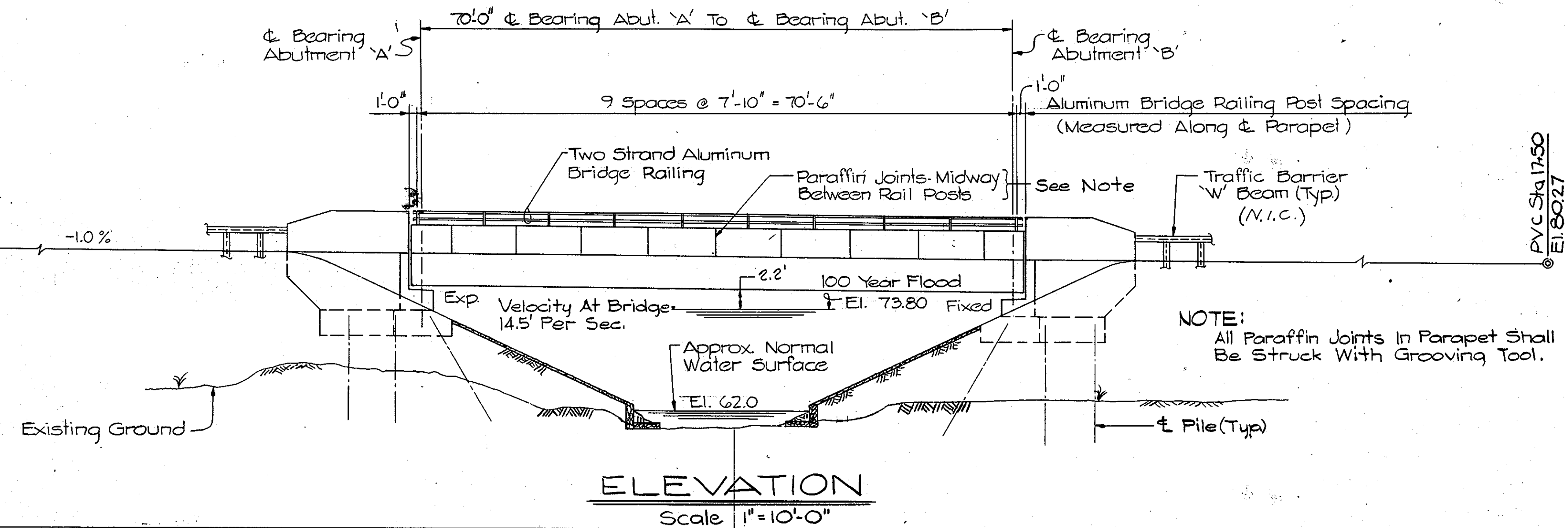
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 DATE: 6/14/89
 CHIEF, LAND DEVELOPMENT DIVISION
 DATE: 4/22/88
 CHIEF, BUREAU OF ENGINEERING, acting
 DATE: 6/22/89
 CHIEF, BUREAU OF HIGHWAYS
 DATE: 7/1/89
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT
 DATE: 7/1/89

BENCH MARKS
 W.R. & A - BM = 9504 - Elev. 87.43
 N 49° 06' 41.149 E 874,710.368
 Iron pipe west of Parkway Industrial Center along
 railroad spur line 579' left of road sta. 21+16
 W.R. & A - BM = 9505 - Elev. 97.15
 N 49° 04' 35.395 E. 874976.505
 Iron pipe west of Parkway Industrial Center along
 railroad spur line 525' left of road sta. 15+77.50.



GENERAL NOTES

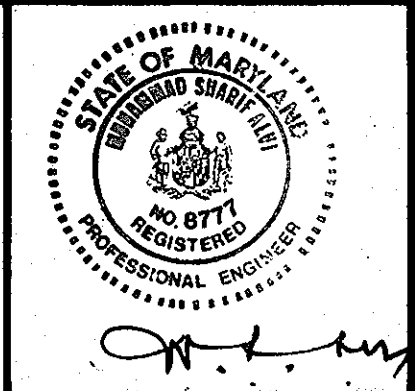
- SPECIFICATIONS:** HOWARD COUNTY DESIGN MANUAL VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION, INCLUDING LATEST AMENDMENTS.
 SHA SPECIFICATIONS DATED JANUARY 1982, REVISIONS THEREOF AND ADDITIONS THERETO, AND SPECIAL PROVISIONS FOR MATERIALS AND CONSTRUCTION.
 A.A.S.H.T.O. STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES DATED 1983 FOR DESIGN INCLUDING 1984, THROUGH 1988 INTERIM SPECIFICATIONS.
 REINFORCED CONCRETE DESIGN: SERVICE LOAD DESIGN METHOD, $f_c = 1200$ PSI EXCEPT THAT IN BRIDGE DECK SLABS SUPPORTED BY STRINGERS IT SHALL BE 1350 PSI.
 REINFORCING STEEL DESIGN: $f_s = 24,000$ PSI.
 STRUCTURAL STEEL DESIGN: ELASTIC DESIGN METHOD, $f_s = 27,000$ psi.
LOADING: HS 20-44 WITH PROVISIONS FOR FUTURE 2" WEARING SURFACE AND 15 POUNDS PER SQUARE FOOT FOR USE OF BRIDGE DECK FORMS.
CONCRETE: ALL CONCRETE FOR ABUTMENT BACKWALLS, PARAPETS AT ABUTMENTS AND ENTIRE SUPERSTRUCTURES SHALL BE MIX. No. 6 (4500 PSI). ALL OTHER STRUCTURE CONCRETE SHALL BE MIX No. 3 (3500 PSI). SEE SPECIAL PROVISIONS.
CHAMFER: ALL EXPOSED CORNERS OF CONCRETE SHALL BE CHAMFERED WITH 3/4"x3/4" MILLED CHAMFER STRIPS, EXCEPT ON UNEXPOSED FOOTINGS OR WHERE INDICATED BY THE FOLLOWING NOTATION ON THE PLANS "DO NOT CHAMFER".
REINFORCING STEEL: REINFORCING STEEL SHALL CONFORM TO A.S.T.M. A-615 GRADE 60. ALL SPLICES, NOT SHOWN, SHALL BE LAPPED AS PER BAR LAP CHARTS. MINIMUM COVER FOR ANY BAR SHALL BE 2" UNLESS OTHERWISE NOTED.
 ONLY GRADE 60 BARS CAN BE USED ON THIS PROJECT.
STRUCTURAL STEEL: ALL REINFORCING STEEL FOR SUPERSTRUCTURE, INCLUDING PARAPETS, ABUTMENT BACKWALLS, BEARING SEAT PADS, PARAPET PORTION OF WINGWALLS SHALL BE EPOXY COATED. SEE SPECIAL PROVISIONS.
KEYS: STRUCTURAL STEEL SHALL CONFORM TO ASTM A588, INCLUDING THE ADDITIONAL REQUIREMENTS FOR CHARPY V-NOTCH TESTING OF AASHTO M-222 FOR PRIMARY LOAD CARRYING MEMBERS. SEE SPECIAL PROVISIONS.
EPOXY BONDING COMPOUND: ALL EXISTING CONCRETE THAT WILL BE IN CONTACT WITH NEW CONCRETE AND THE ENTIRE FACE OF BRIDGE DECK SLAB CONSTRUCTION JOINTS SHALL BE COATED WITH AN EPOXY BONDING COMPOUND. SEE SPECIAL PROVISIONS.
PILES: THE MINIMUM SAFE BEARING VALUE AND MINIMUM PENETRATION SHOWN ON THESE PLANS MUST BE ACHIEVED FOR EACH PILE. IF THE "ESTIMATED TIP ELEVATION" IS NOT REACHED OR IS EXCEEDED WHILE ACHIEVING THE MINIMUM SAFE BEARING VALUE AND THE MINIMUM PENETRATION, THE PILE WILL BE CONSIDERED SATISFACTORY.
HYDRAULIC DATA: D.A. = 8.1 MI²
 Q100 = 5650 CFS
 EL100 = 73.8 FT.
 VELOCITY = 14.5 FT. PER SEC.
TRAFFIC DATA: PROJECTED ADT = 6550



ELEVATION
 Scale: 1"=10'-0"

DESIGNED	DATE	DATE	BY	DESCRIPTION
S.G.P.	7/88	8/19/89	S.G.P.	C&P CONDUIT SIDEWALK ENCASEMENT
CHECKED				RELOCATION OF S.G. & E. CONDUIT UNDER DEEP RUN
APPROVED				

ENGINEERING TECHNOLOGIES ASSOCIATES, INC.
 ENGINEERS, SURVEYORS, CONSTRUCTION MANAGERS.
 8400 ELLICOTT CENTER DRIVE
 ELLICOTT CITY, MD. 21043
 (301) 481-9920

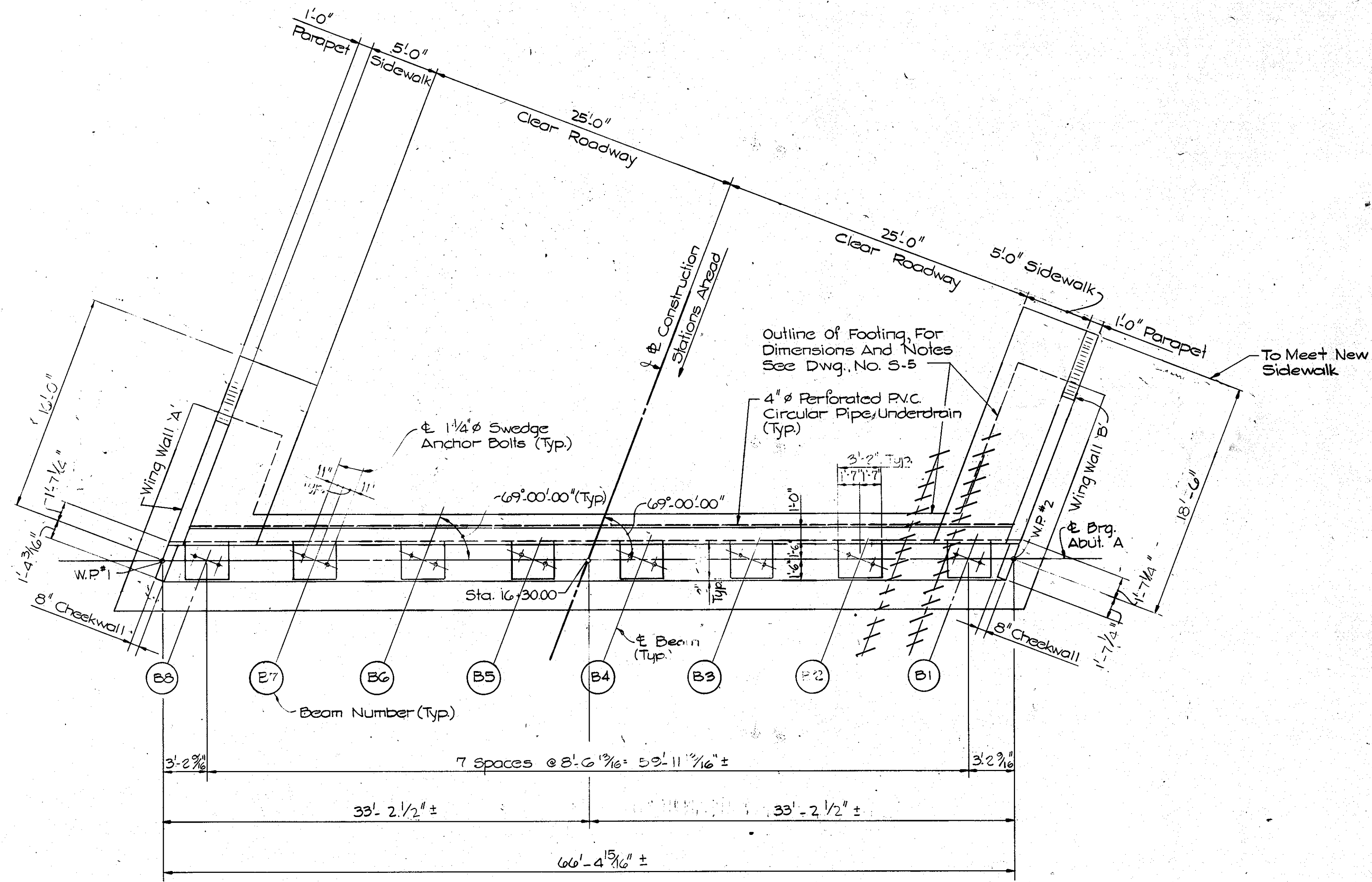


HI-TECH VENTURE LIMITED PARTNERSHIP
 OWNER AND DEVELOPER
 7223 PARKWAY DRIVE
 HANOVER, MARYLAND 21076
 (301) 796-4446

PARK CIRCLE DRIVE BRIDGE OVER DEEP RUN
 FIRST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN CONTRACT NO. DATE: 7/88 SHEET: 5 of 20

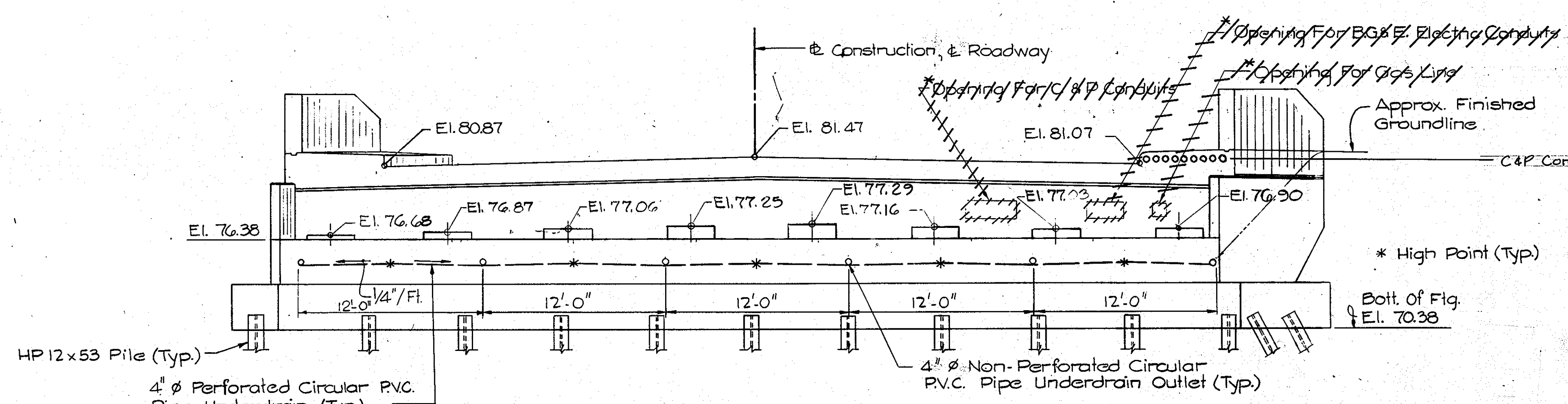
1314

F-89-85



PLAN - ABUTMENT 'A'
Scale: 3/16" = 1'-0"

- REFERENCES:**
1. FOR WING WALL ELEVATIONS, SEE DWG. NO. S-4
 2. FOR FOOTING PLAN, SEE DWG. NO. S-5
 3. ALL BEARING SHOES ARE TYPE ME IV - SEE SHA STD. NO. BR-85(9.01)-80-114
 4. FOR BEARING PAD REINFORCING, SEE SHA STD. NO. BR-88(6.02)-80-121
 5. FOR INSTALLATION OF UTILITIES, SEE GENERAL NOTES ON DWG. NO. S-1

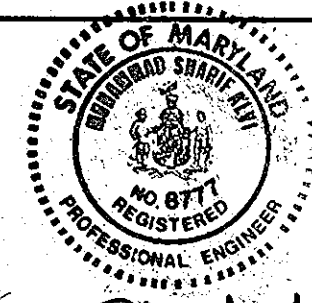


ELEVATION - ABUTMENT 'A'
Scale: 3/16" = 1'-0"

* The Openings Around The Conduits Or Sleeves Shall Be Sealed With Watertight Cement Grout.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	
<i>[Signature]</i> CHIEF, LAND DEVELOPMENT DIVISION	6/14/89 DATE
<i>[Signature]</i> CHIEF, BUREAU OF ENGINEERING, acting	6/28/89 DATE
<i>[Signature]</i> CHIEF, BUREAU OF HIGHWAYS	6/2/89 DATE
<i>[Signature]</i> CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT	7/10/89 DATE

ALVI ASSOCIATES, INC.
CONSULTING ENGINEERS
1300 YORK ROAD
LUTHERVILLE, MARYLAND



DES:			
DRN:			
CHK:	Δ	C&P CONDUIT SUPERWALK ENCASUREMENT	5/15/89
DATE:		RELOCATION OF B.G. & E. CONDUIT UNDER DEEP RUN	
BY:	NO.	REVISION	DATE

HI-TECH VENTURE LIMITED PARTNERSHIP
OWNER AND DEVELOPER
7223 PARKWAY DRIVE
HANOVER, MARYLAND 21076
(301) 796-4446

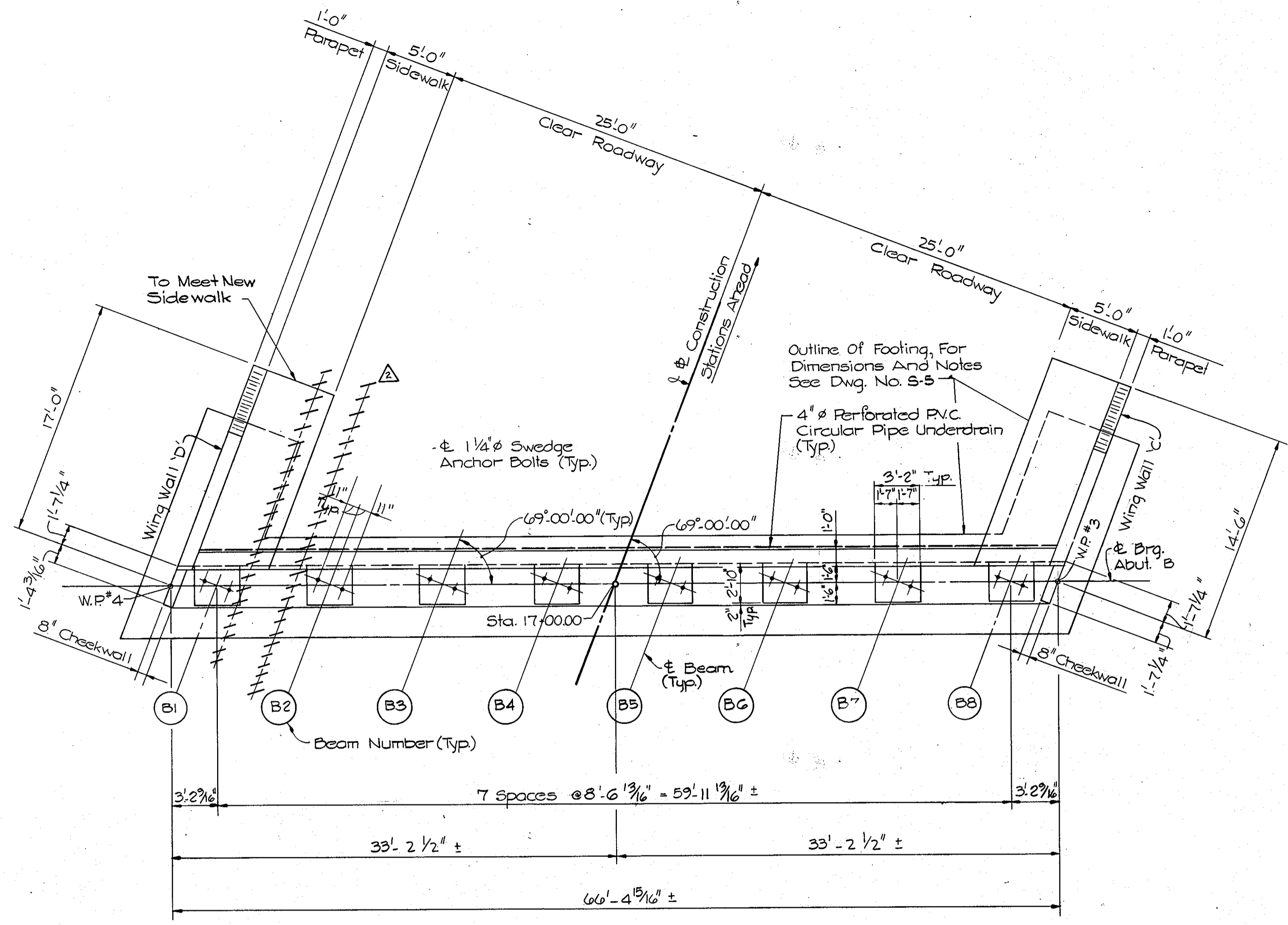
**PARK CIRCLE DRIVE
BRIDGE OVER DEEP RUN**
FIRST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 6 OF 20

Dwg. No. S-2 of S-16

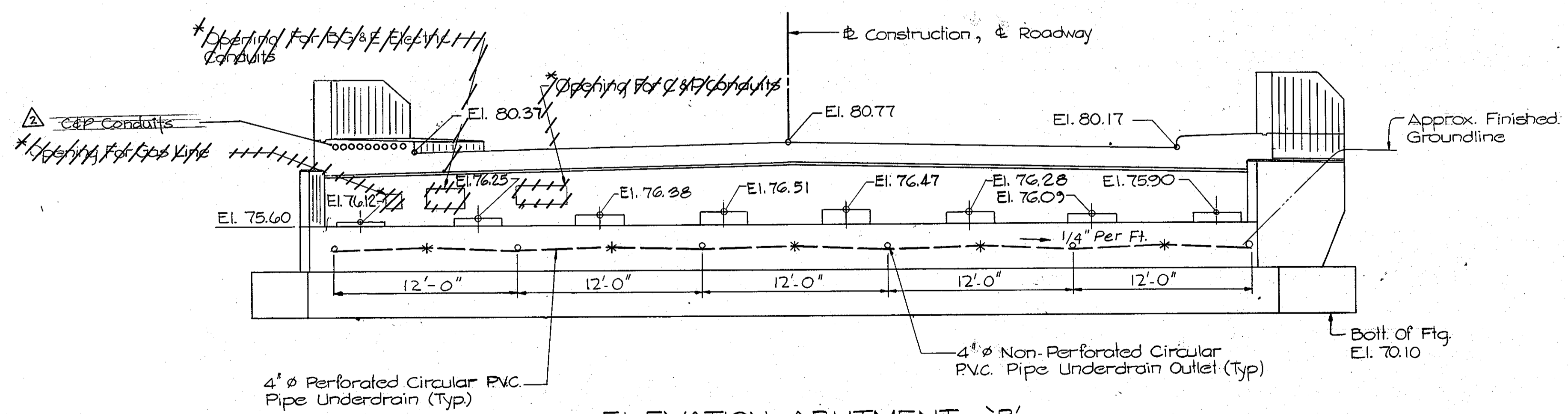
F-89-85

13/4



PLAN - ABUTMENT 'B'
Scale: 3/16" = 1'-0"

- REFERENCES:
1. FOR WING WALL ELEVATIONS, SEE DWG. NO. S-4
 2. FOR FOOTING PLAN, SEE DWG. NO. S-5
 3. ALL BEARING SHOES ARE TYPE MF IV - SEE SHA STD NO. BR-SS (9-02)-80-115
 4. FOR BEARING PAD REINFORCING SEE SHA STD NO. RR-SB (6-02)-80-121
 5. FOR INSTALLATION OF UTILITIES, SEE GENERAL NOTES ON DWG. NO. S-1.

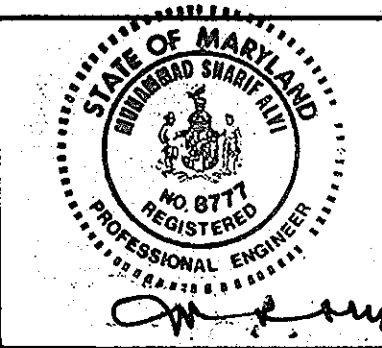


ELEVATION - ABUTMENT 'B'
Scale: 3/16" = 1'-0"

1314

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	
<i>Paul M. Egan</i>	6/14/89
CHIEF, LAND DEVELOPMENT DIVISION	DATE
<i>Samuel Anderson Calia</i>	6/28/89
CHIEF, BUREAU OF ENGINEERING, acting	DATE
<i>Dravilla W. Welwood</i>	6/22/89
CHIEF, BUREAU OF HIGHWAYS	DATE
<i>Mark S. Langley</i>	7/1/89
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT	DATE

ALVI ASSOCIATES, INC.
CONSULTING ENGINEERS
1300 YORK ROAD
LUTHERVILLE, MARYLAND



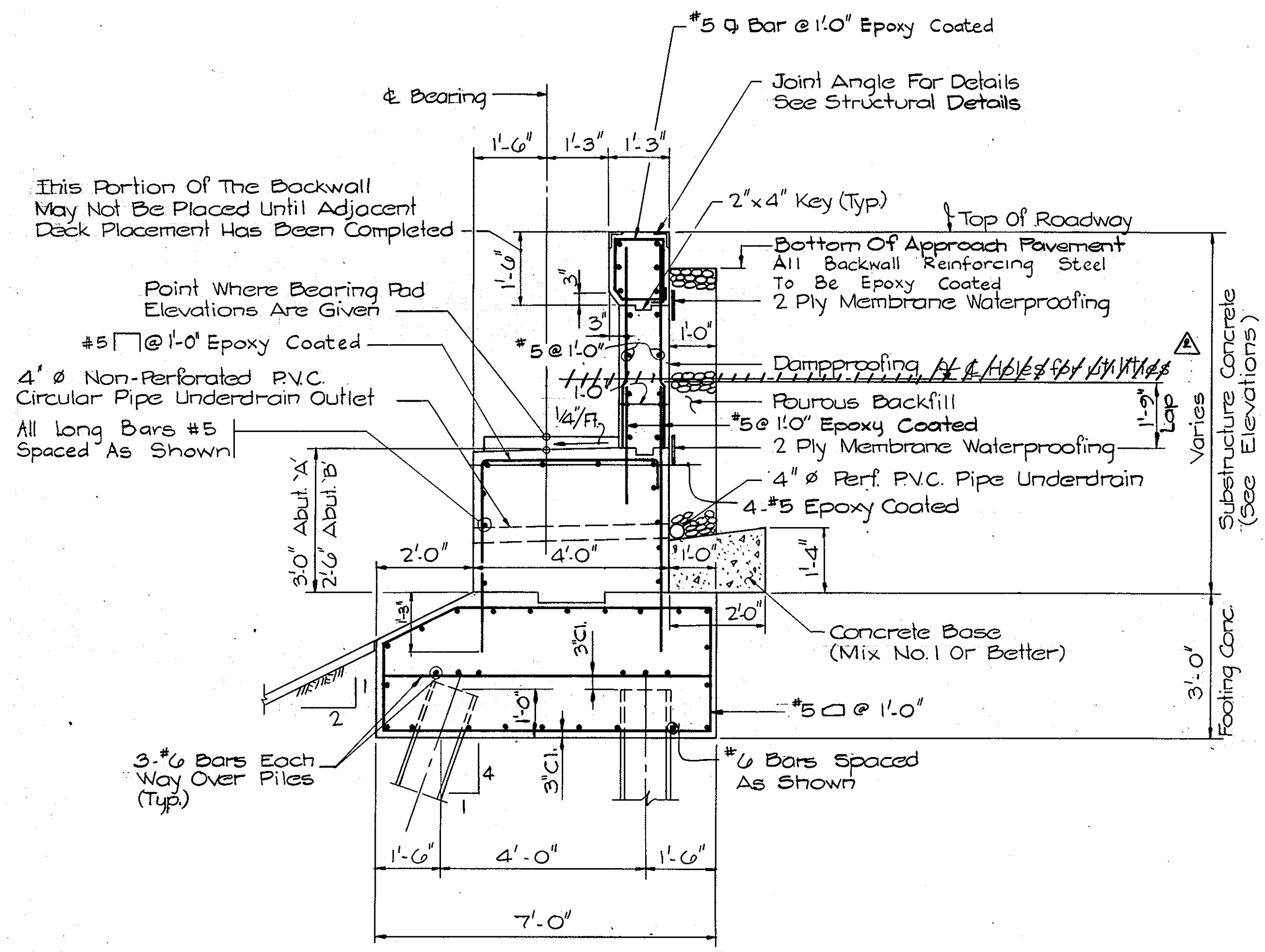
DES:	
DRN:	
CHK:	3/19/89
DATE:	
BY:	
NO.:	
REVISION:	

HI-TECH VENTURE LIMITED PARTNERSHIP
OWNER AND DEVELOPER
7223 PARKWAY DRIVE
HANOVER, MARYLAND 21076
(301) 798-4448

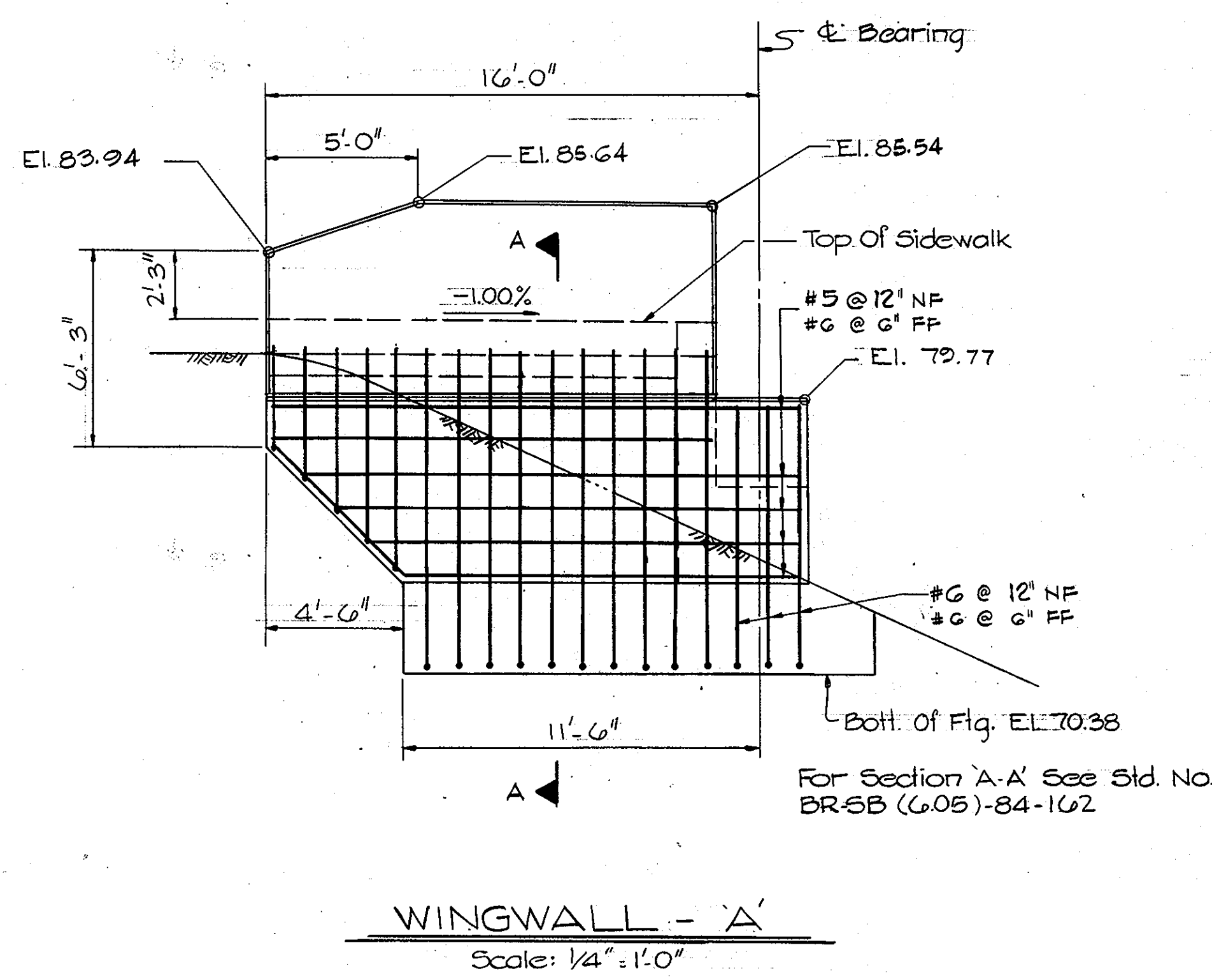
PARK CIRCLE DRIVE
BRIDGE OVER DEEP RUN
FIRST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

Dwg. No. S-3 of S-16

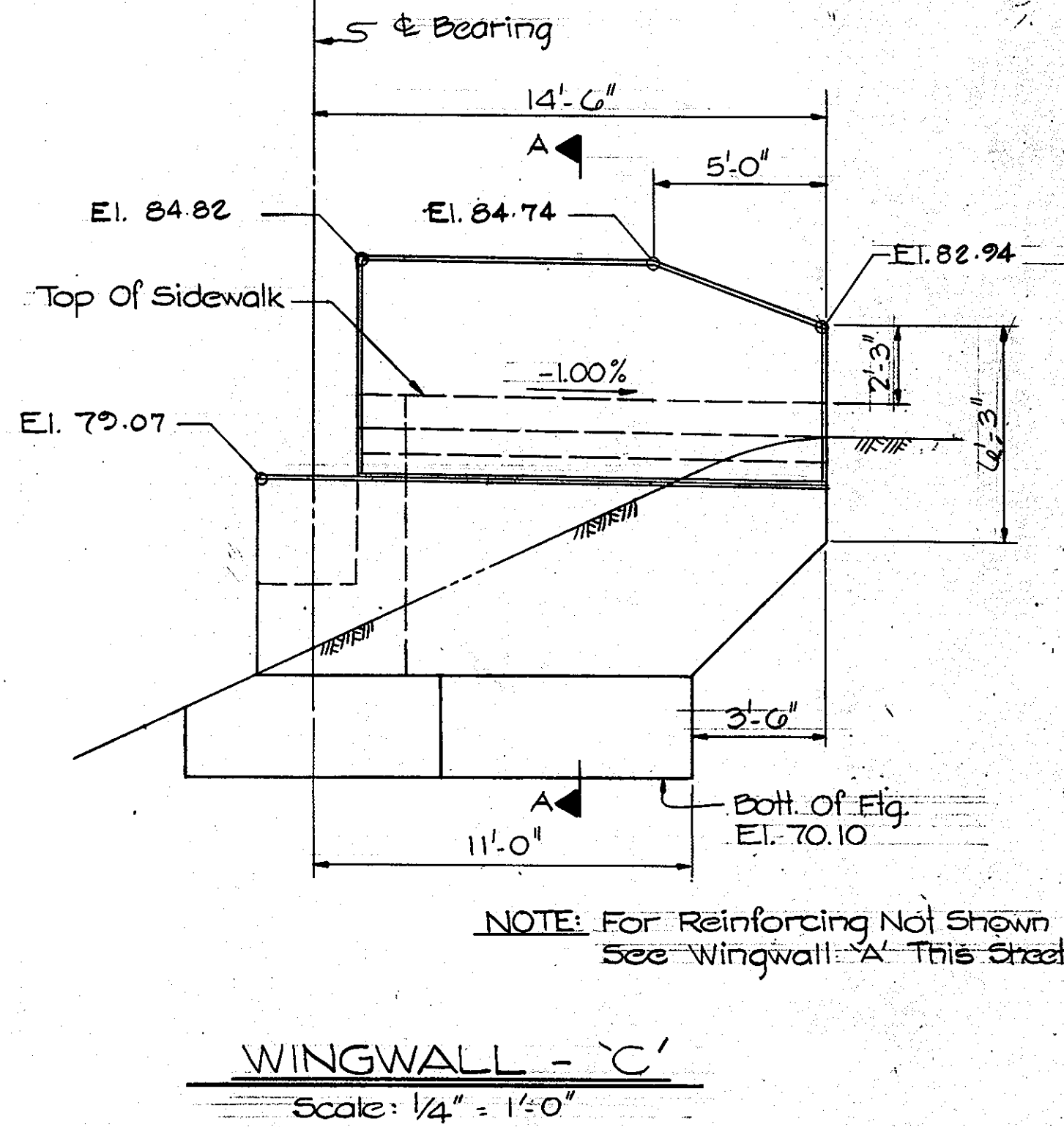
SCALE AS SHOWN
SHEET 7 OF 20



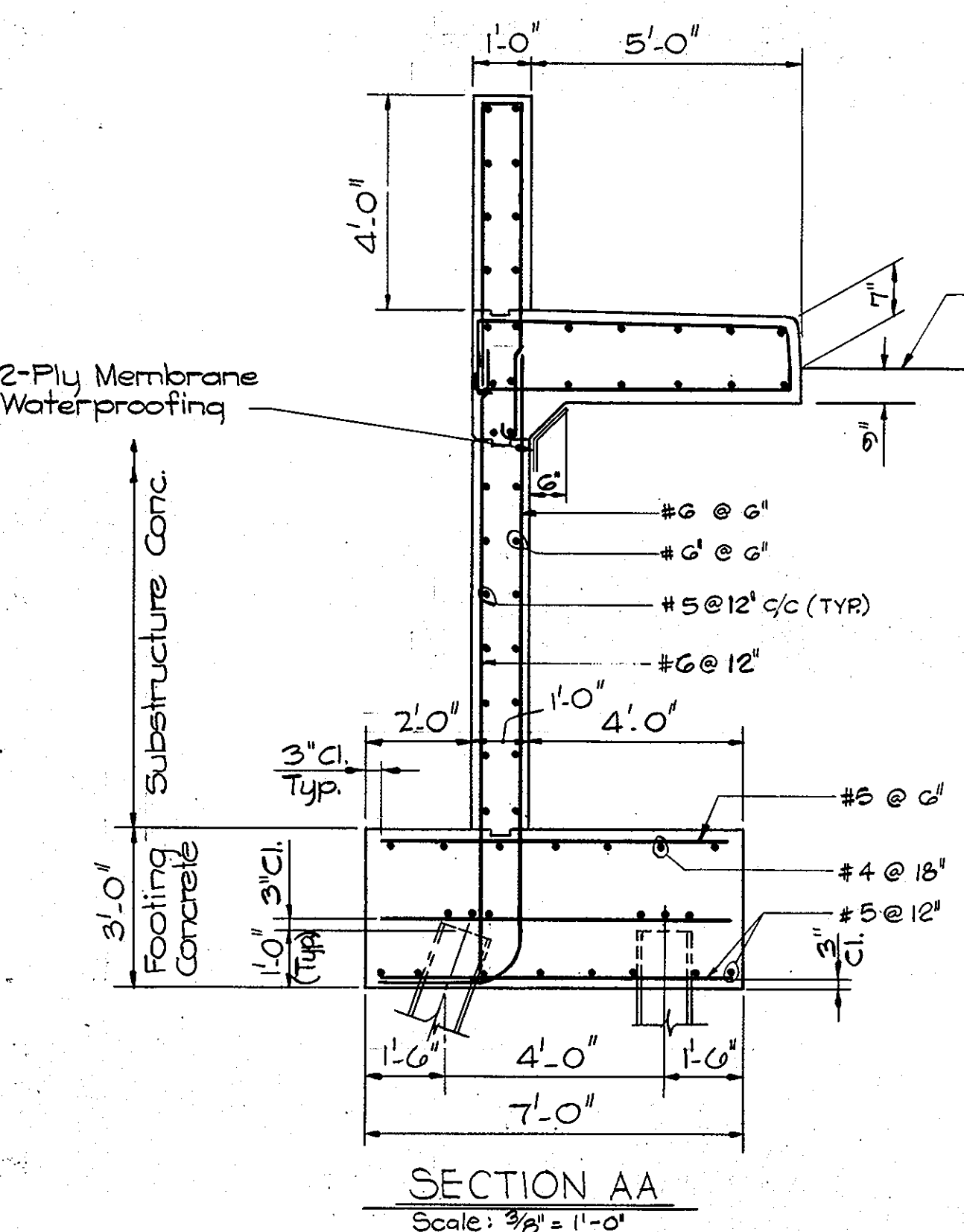
TYPICAL ABUTMENT SECTION
Scale: 1/2" = 1'-0"



WINGWALL - 'A'
Scale: 1/4" = 1'-0"



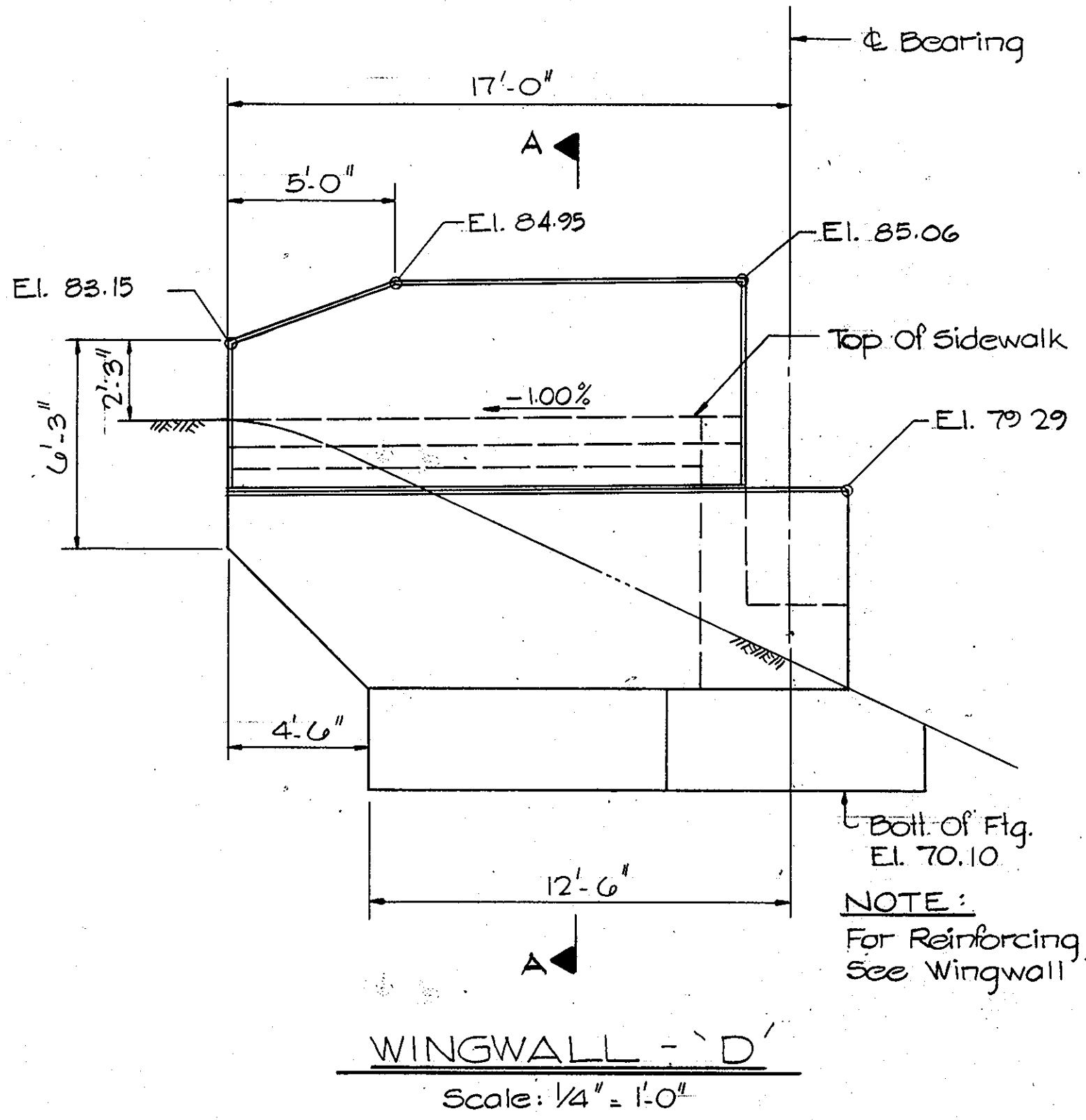
WINGWALL - 'C'
Scale: 1/4" = 1'-0"



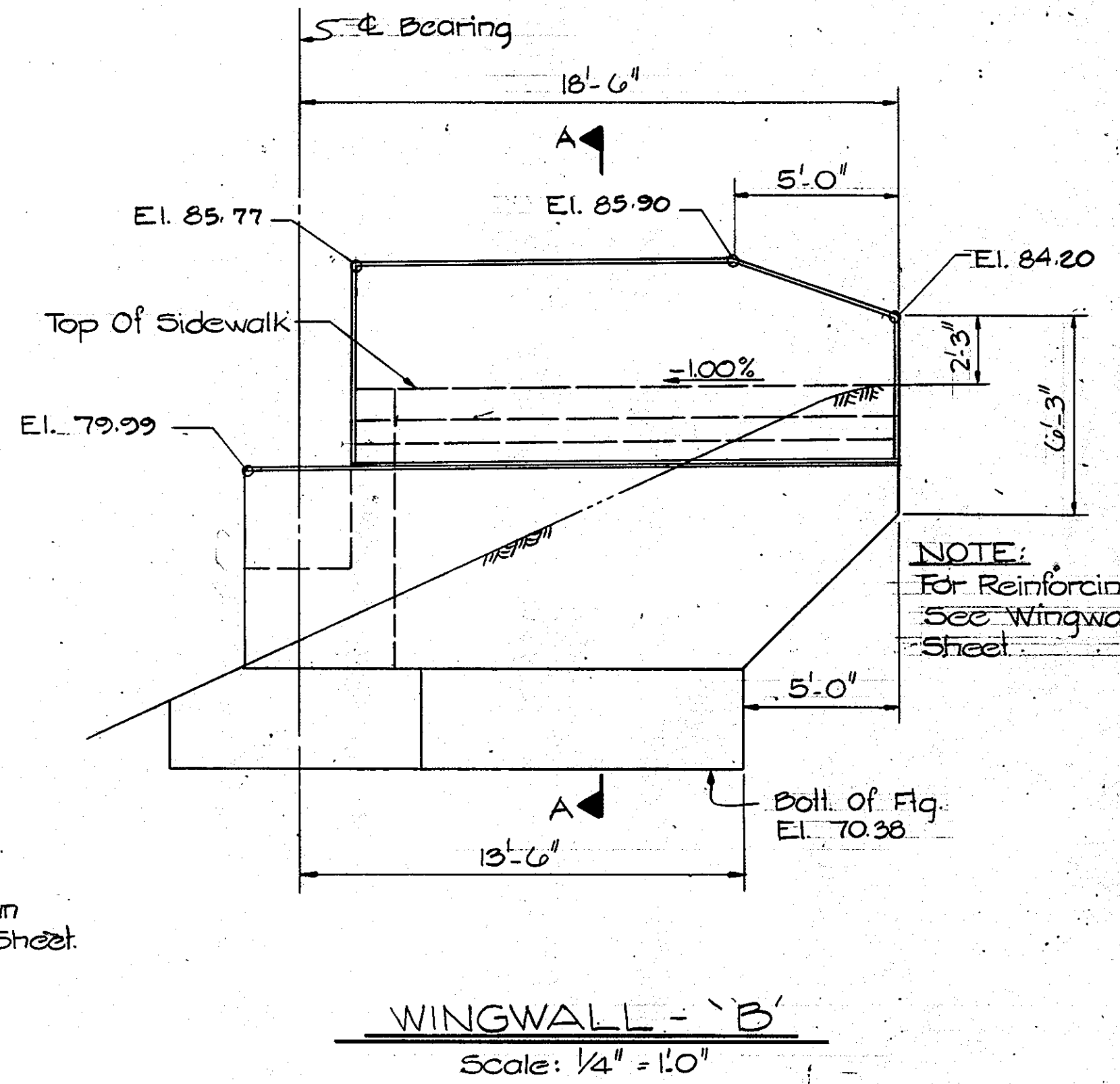
SECTION AA
Scale: 3/8" = 1'-0"

- REFERENCES
1. For Additional Information, See SHA Std. No. BR-5B (6-05)-84-162
 2. FOR INSTALLATION OF UTILITIES, SEE GENERAL NOTES ON Dwg. NO. S-1.

NOTE: All Reinforcing Steel in Sidewalk and Parapet Shall Be Epoxy Coated.



WINGWALL - 'D'
Scale: 1/4" = 1'-0"

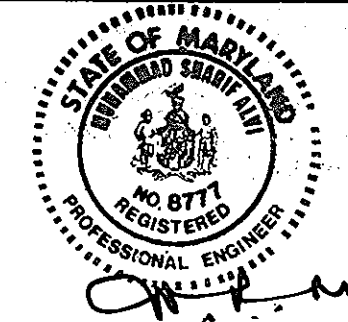


WINGWALL - 'B'
Scale: 1/4" = 1'-0"

For Piles, See Section 'A-A'.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
 [Signature] 6/14/89 DATE
 CHIEF, LAND DEVELOPMENT DIVISION
 [Signature] 6/22/89 DATE
 CHIEF, BUREAU OF HIGHWAYS
 [Signature] 6/28/89 DATE
 CHIEF, BUREAU OF ENGINEERING, acting
 [Signature] 7/10/89 DATE
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

ALVI ASSOCIATES, INC.
 CONSULTING ENGINEERS
 1300 YORK ROAD
 LUTHERVILLE, MARYLAND



DES:	
DRN:	
CHK:	CRP CONDUIT SIDEWALK ENCASUREMENT 3/19/89
DATE:	RELOCATION OF B.G. & E. CONDUIT UNDER DEEP RUN
BY:	
NO.	
REVISION	
DATE	

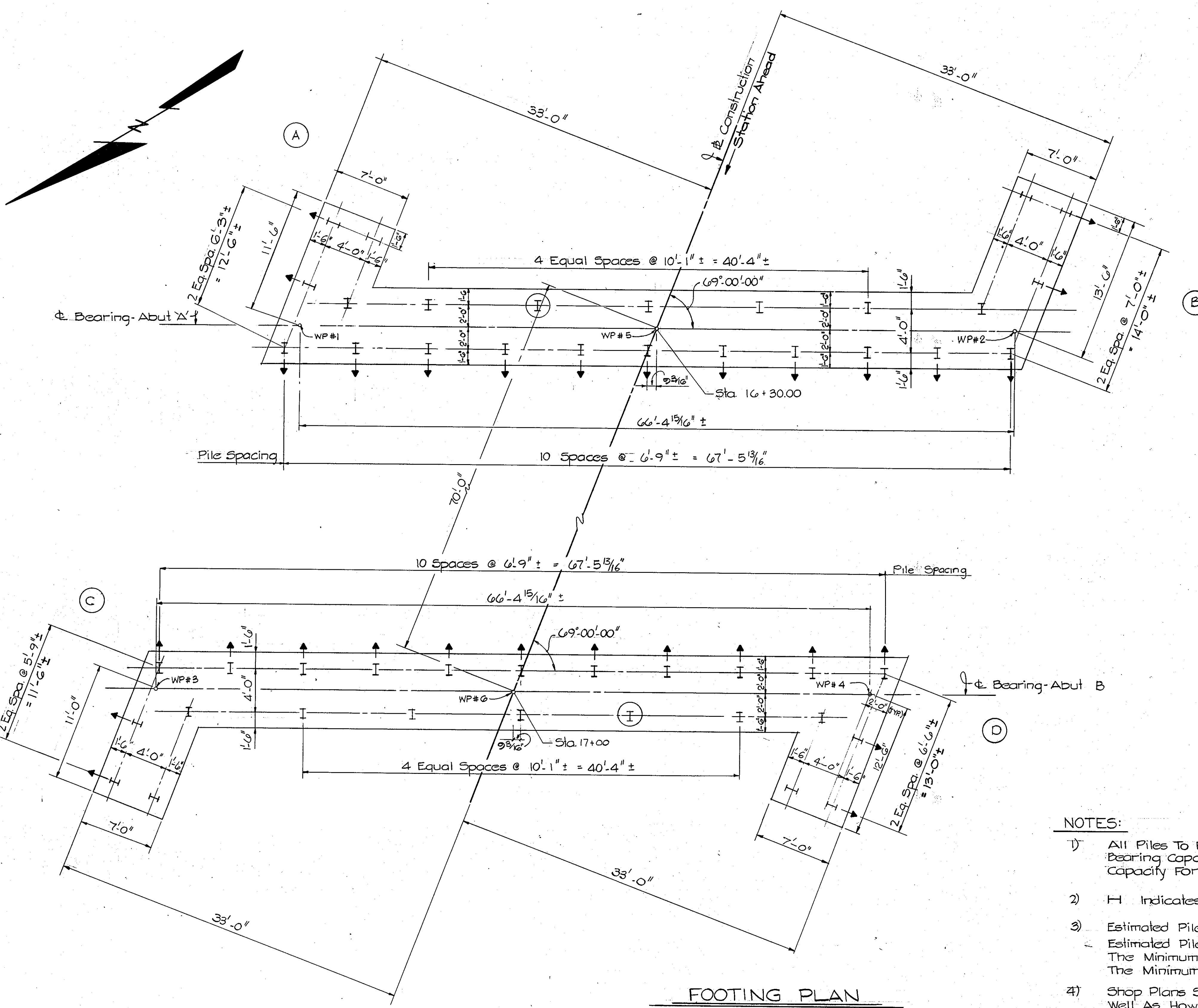
HI-TECH VENTURE LIMITED PARTNERSHIP
 OWNER AND DEVELOPER
 7223 PARKWAY DRIVE
 HANOVER, MARYLAND 21076
 (301) 796-4446

PARK CIRCLE DRIVE
 BRIDGE OVER DEEP RUN
 FIRST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET 8 OF 20

Dwg. No. S-4 of S-16

F-89-85

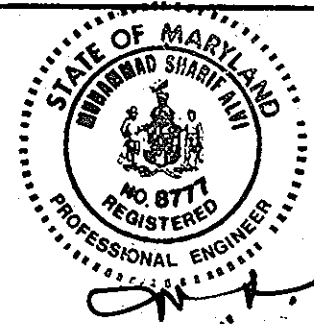


NOTES:

- 1) All Piles To Be HP 12x53 Driven To A Minimum Safe Bearing Capacity Of 48 Tons. The Design Bearing Capacity For HP 12x53 Piles Is 40 Tons.
- 2) H Indicates Plumb Pile, H → Indicates Batter Pile, ⊕ Indicates Test Pile.
- 3) Estimated Pile Tip Elevation For Abutment 'A' Is 25.00
Estimated Pile Tip Elevation For Abutment 'B' Is 20.00
The Minimum Pile Tip Elevation For Abutment 'A' Is 28.00
The Minimum Pile Tip Elevation For Abutment 'B' Is 23.00
- 4) Shop Plans Shall Show How Rebars Are To Be Tied As Well As How They Will Be Held In Place Above Piling While Pour Is Being Made.
- 5) Max. Design Pile Load Is 38 Tons.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
Donald E. Spang 6/14/89
 CHIEF, LAND DEVELOPMENT DIVISION DATE
Dr. W. W. Wehland 6/22/89
 CHIEF, BUREAU OF ENGINEERING, acting DATE
Mark S. D. [unclear] 7/1/89
 CHIEF, BUREAU OF HIGHWAYS DATE
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

ALVI ASSOCIATES, INC.
 CONSULTING ENGINEERS
 1300 YORK ROAD
 LUTHERVILLE, MARYLAND



DES:	
DRN:	
CHK:	
DATE:	
BY	NO.
REVISION	
DATE	

HI-TECH VENTURE LIMITED PARTNERSHIP
 OWNER AND DEVELOPER
 7223 PARKWAY DRIVE
 HANOVER, MARYLAND 21078
 (301) 796-4446

PARK CIRCLE DRIVE
 BRIDGE OVER DEEP RUN

FIRST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

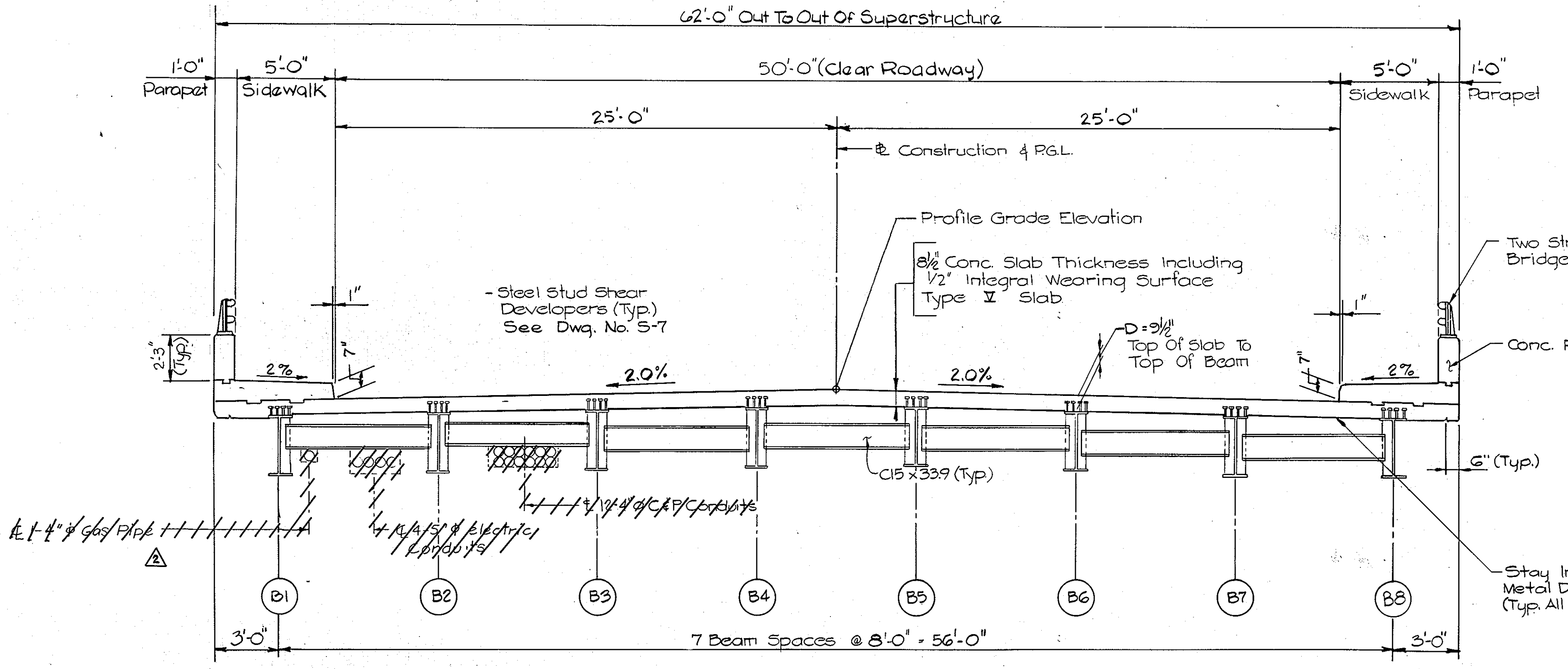
Dwg. No. S-5 of S-16

SCALE AS SHOWN
 SHEET 9 OF 20

F-89-85

1314

APPROVED HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 6/14/89
 CHIEF, LAND DEVELOPMENT DIVISION
Shawelle W. Cleveland 6/22/89
 CHIEF, BUREAU OF HIGHWAYS
Elizabeth Anderson Calie 6/23/89
 CHIEF, BUREAU OF ENGINEERING, *et al.* DATE
Mark S. [Signature] 7/1/89
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT



NOTE:
 The Top Surface Of Bridge Deck, Sidewalks Curb Faces Shall Be Coated With Silane Penetrating Sealer, Fox Industry, FX-425 Or Approved Equal.

- REFERENCES:**
1. FOR TWO STRAND ALUMINUM BRIDGE RAILING, SEE SHA STD. No. BR-SS(5-01)-76-35
 2. FOR PARAPET AND SIDEWALK, SEE SHA STD. No. BR-SS(G-21)-80-106
 3. FOR CONCRETE DIAPHRAGM, SEE SHA STD. No. BR-SS(G-22)-80-120
 4. FOR TYPE IV BRIDGE DECK SLAB, SEE SHA STD. No. BR-SS(G-15)-79-94
 5. FOR STEEL STUD SHEAR DEVELOPERS SEE SHA STD. No. BR-SS(8-05)-75-30
 6. FOR STEEL DECK FORMS, SEE SHA STD. No. BR-SS (606)-75-29
 7. FOR INSTALLATION OF UTILITIES, SEE GENERAL NOTES, ON DWG. No. S-1.

TYPICAL SECTION
 (LOOKING STATIONS AHEAD)
 Scale: 1/4" = 1'-0"

Dwg. No. S-6 OF S-16

1314

REVISIONS			
DATE	BY	DESCRIPTION	
7/88	SGP	E&P CONPLY SIDEWALK ENCASMENT	
3/19/89		RELOCATION OF E.G. & E. CONPLY UNDER DEEP RUN.	

ENGINEERING TECHNOLOGIES ASSOCIATES, INC.
 ENGINEERS, SURVEYORS, CONSTRUCTION MANAGERS.
 3458 ELLICOTT CENTER DRIVE
 ELLICOTT CITY, MD. 21043
 (301) 461-9920

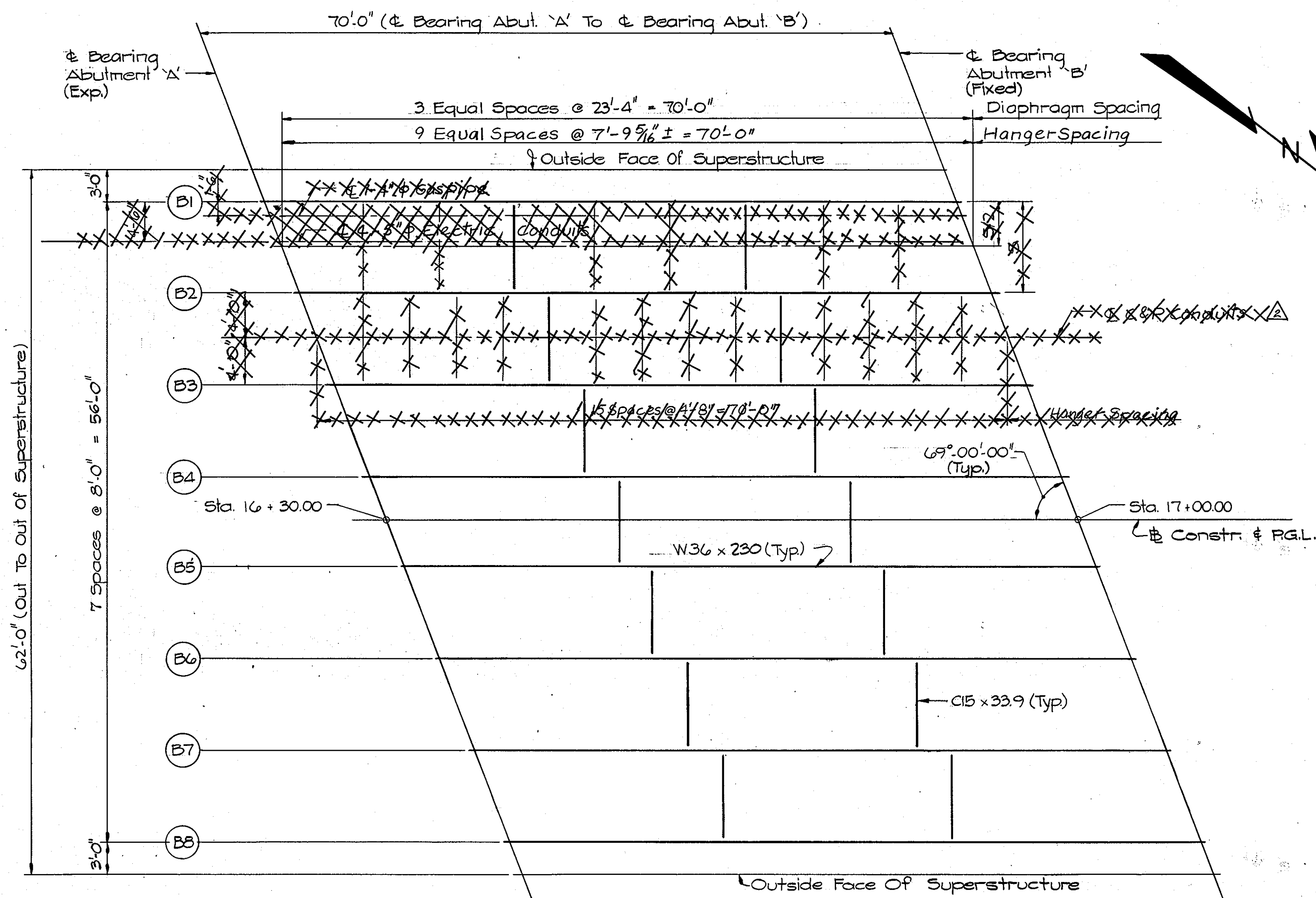


HI-TECH VENTURE LIMITED PARTNERSHIP
 OWNER AND DEVELOPER
 7223 PARKWAY DRIVE
 HANOVER, MARYLAND 21076
 (301) 796-4446

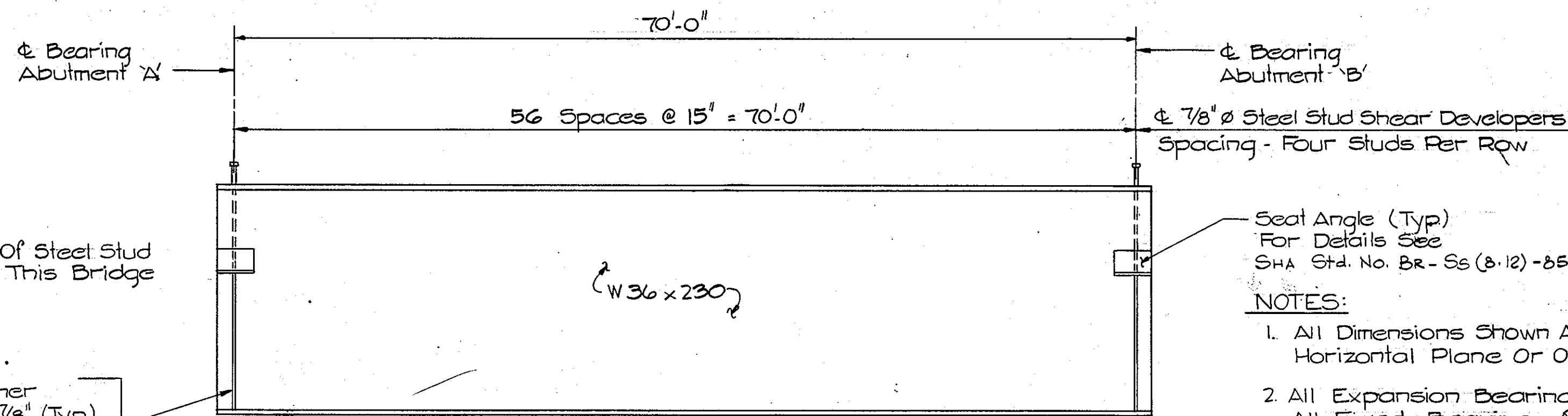
PARK CIRCLE DRIVE BRIDGE OVER DEEP RUN
 FIRST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN CONTRACT NO. DATE: 7/ 88 SHEET: 10 of 20

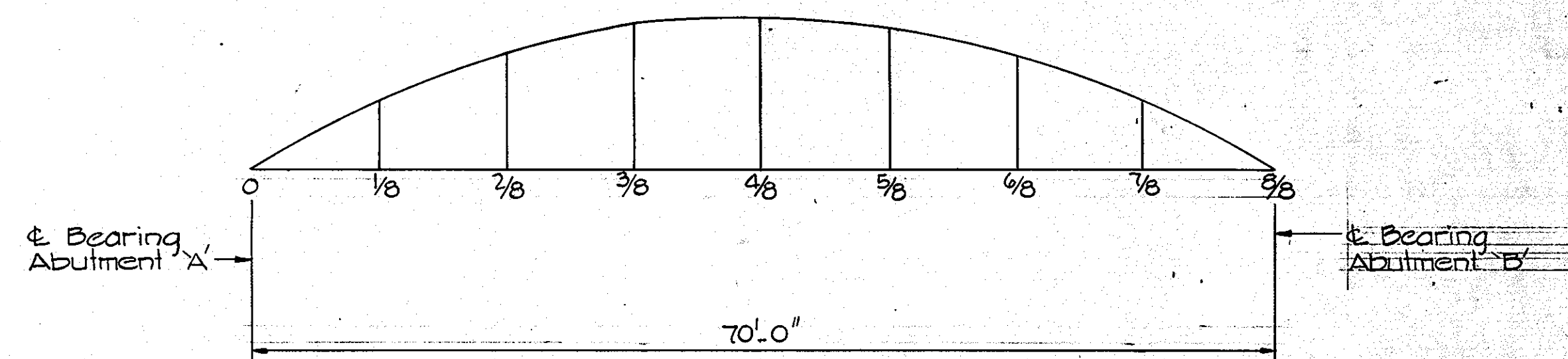
F-89-85



FRAMING PLAN
N.T.S.



BEAM ELEVATION
Not To Scale

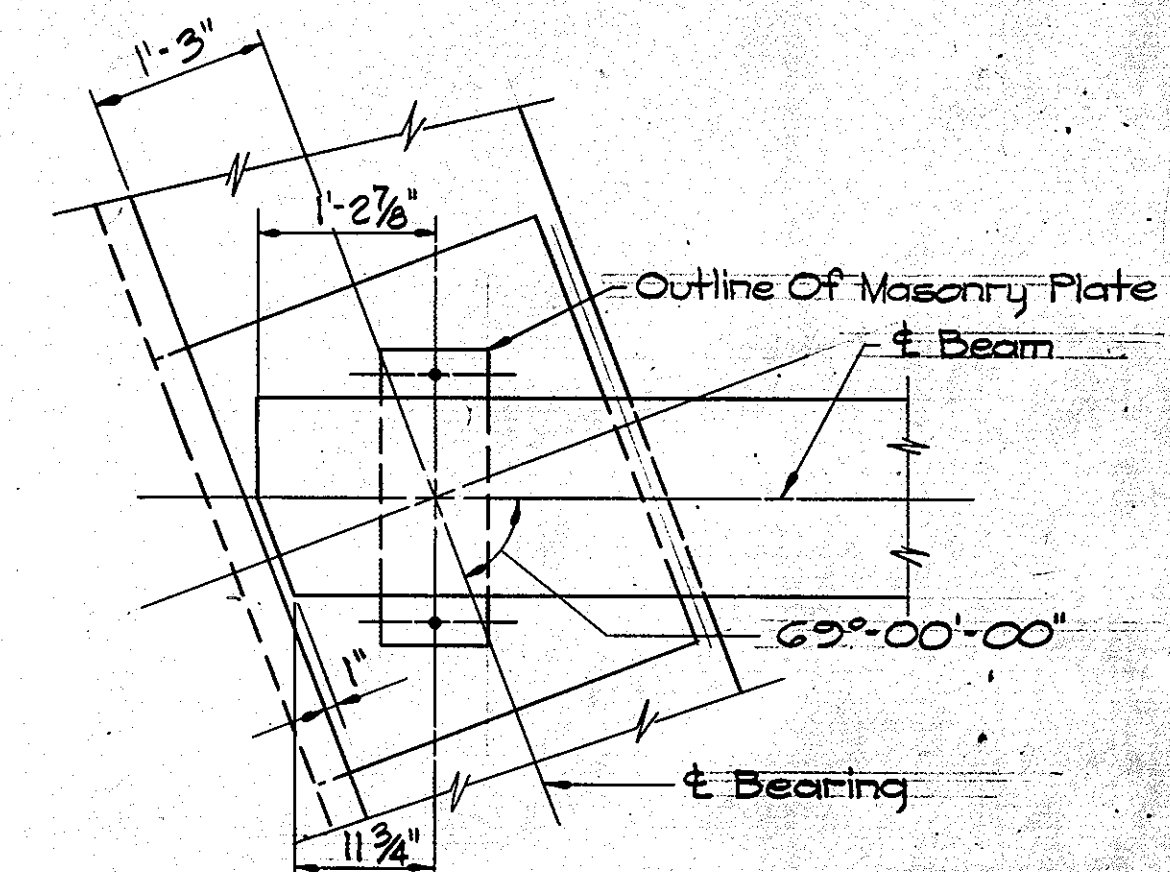


CAMBER DIAGRAM
Not To Scale

		CAMBER SCHEDULE									
		0	1/8	2/8	3/8	4/8	5/8	6/8	7/8	8/8	
BEAMS 27	Δ STEEL	0	1/8	2/8	3/16	4/16	5/16	6/16	7/16	8/16	
	Δ CONCRETE	0	1/2	7/8	1 1/8	1 1/4	1 1/8	7/8	1/2	0	
	Δ SDL	0	1/8	3/16	1/4	5/16	1/4	3/16	1/8	0	
TOTAL		0	1 1/16	1 5/16	1 11/16	1 13/16	1 11/16	1 5/16	1 1/16	0	
BEAMS 148	Δ STEEL	0	1/8	1/4	5/16	5/16	5/16	1/4	1/8	0	
	Δ CONCRETE	0	7/16	13/16	1 3/16	1 1/8	1 3/16	1 1/16	7/16	0	
	Δ SDL	0	1/8	1/4	5/16	5/16	5/16	1/4	1/8	0	
TOTAL		0	1 1/16	1 1/4	1 9/16	1 11/16	1 9/16	1 1/4	1 1/16	0	

CAMBER NOTES:

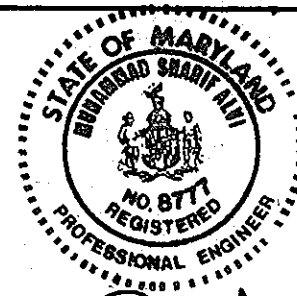
- All Cambers Are Given In Inches. A Positive Number Denotes Camber In The Upward Direction And A Negative Number Denotes Camber In The Downward Direction.
- Δ STEEL: Denotes Camber Due To Weight Of Steel Only.
- Δ CONCRETE: Denotes Camber Due To Concrete Deck Slab Including S.I.P. Forms.
- Δ SDL: Denotes Camber Due To The Superimposed Dead Loads (Including Parapets, Sidewalks And Rolling).
- TOTAL: Denotes The Summation Of Δ Steel, Δ Concrete, And ΔSDL.
- All Beams Shall Be Cambered For Dead Load Deflection To The Dimensions Shown On This Plan. The Camber Tolerance Is Nothing Under, One-Half (1/2) Inch Over.



TYPICAL DETAIL @ BEAM END
Scale: 3/4"=1'-0"

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
 6/14/89
 CHIEF, LAND DEVELOPMENT DIVISION
 6/20/89
 CHIEF, BUREAU OF ENGINEERING, acting
 6/22/89
 CHIEF, BUREAU OF HIGHWAYS
 J.B. DATE
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

ALVI ASSOCIATES, INC.
 CONSULTING ENGINEERS
 1300 YORK ROAD
 LUTHERVILLE, MARYLAND



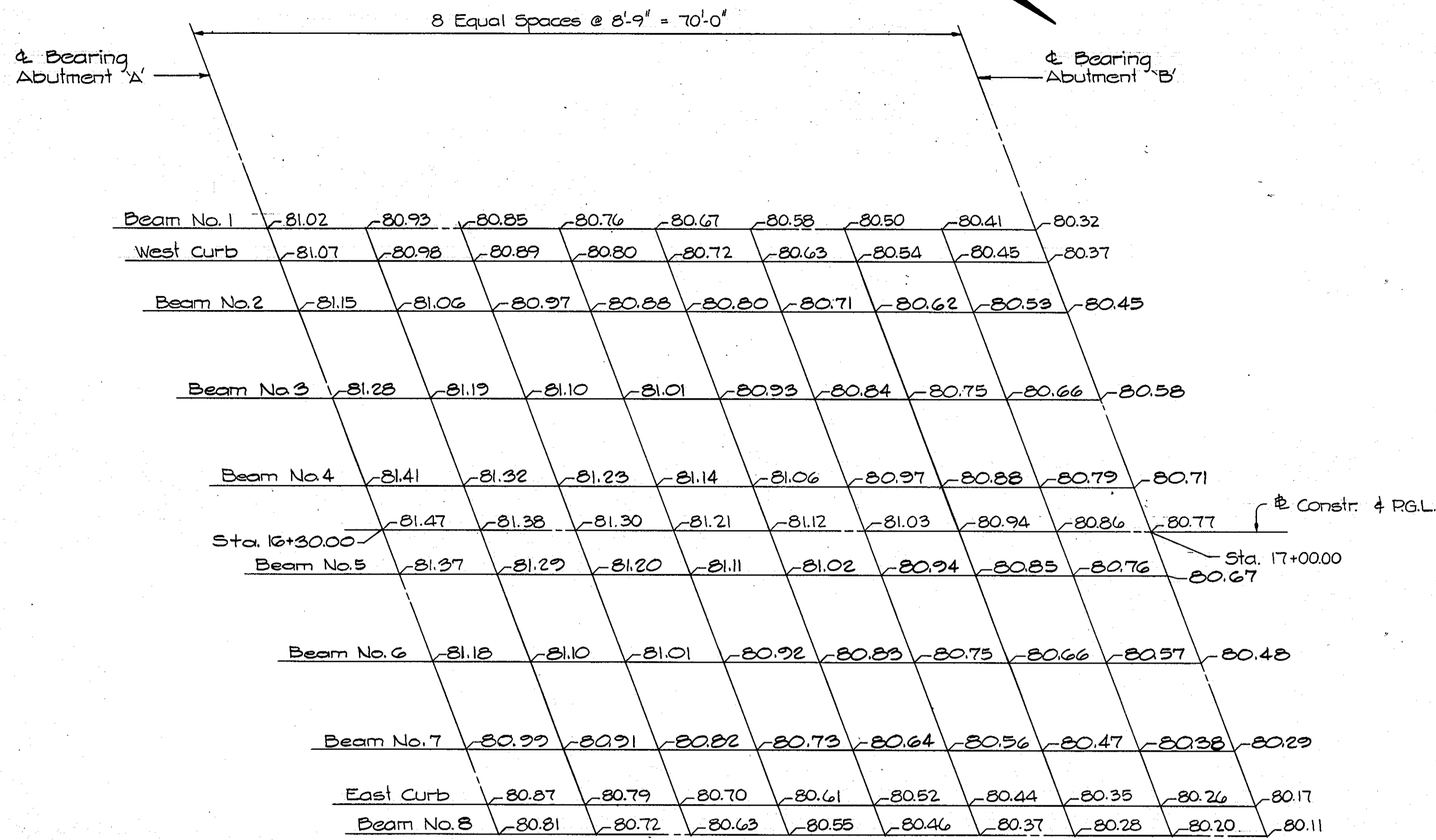
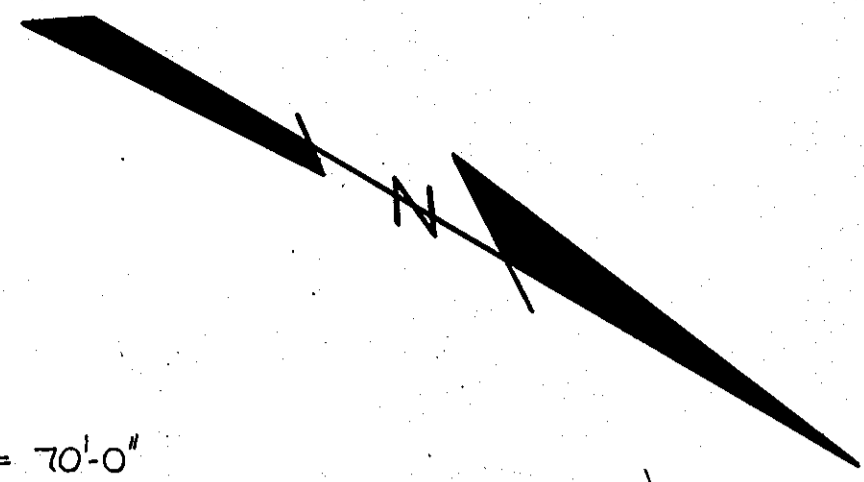
DES: MSA
 DRN: AMP
 CHK:
 DATE:
 BY NO. REVISION DATE

HI-TECH VENTURE LIMITED PARTNERSHIP
 OWNER AND DEVELOPER
 7223 PARKWAY DRIVE
 HANOVER, MARYLAND 21076
 (301) 796-4446

PARK CIRCLE DRIVE
 BRIDGE OVER DEEP RUN

FIRST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

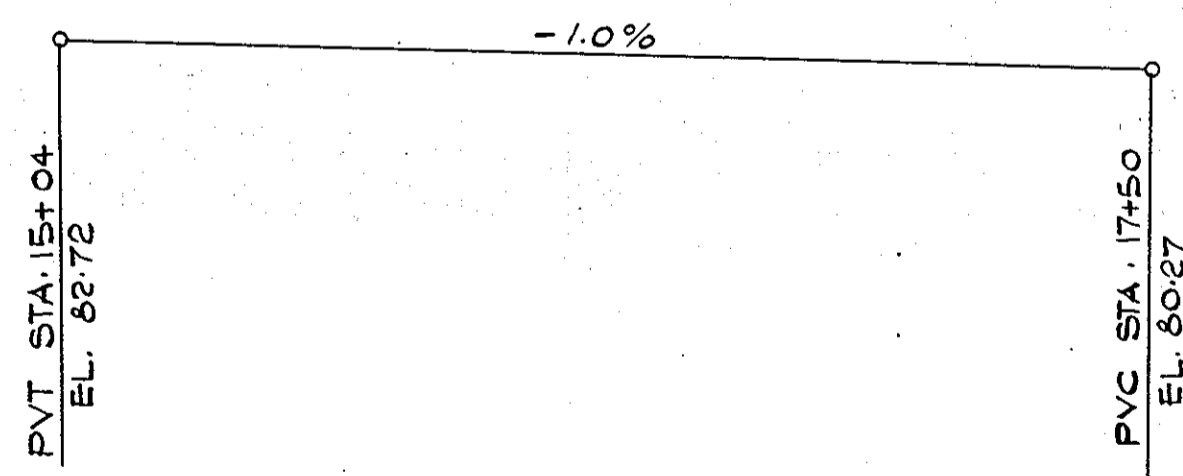
SCALE AS SHOWN
 SHEET 11 OF 20



Finished Grade Elevations Shown Are Top of Proposed Concrete Deck.

FINISHED DECK ELEVATIONS

Scale: 1/8" = 1'-0"



PROFILE - PARK CIRCLE DRIVE
(NTS)

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	
<i>Donald L. Sporn</i>	6/14/89
CHIEF, LAND DEVELOPMENT DIVISION	DATE
<i>Shirley Anderson Calia</i>	6/22/89
CHIEF, BUREAU OF ENGINEERING, acting	DATE
<i>Lawrence W. Wickland</i>	6/22/89
CHIEF, BUREAU OF HIGHWAYS	DATE
<i>John S. Langley</i>	7/13/89
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT	DATE

ALVI ASSOCIATES, INC.
CONSULTING ENGINEERS
1300 YORK ROAD
LUTHERVILLE, MARYLAND

DES:			
DRN:			
CHK:			
DATE:	BY	NO.	REVISION

HI-TECH VENTURE LIMITED PARTNERSHIP
OWNER AND DEVELOPER
7223 PARKWAY DRIVE
HANOVER, MARYLAND 21076
(301) 796-4446

**PARK CIRCLE DRIVE
BRIDGE OVER DEEP RUN**

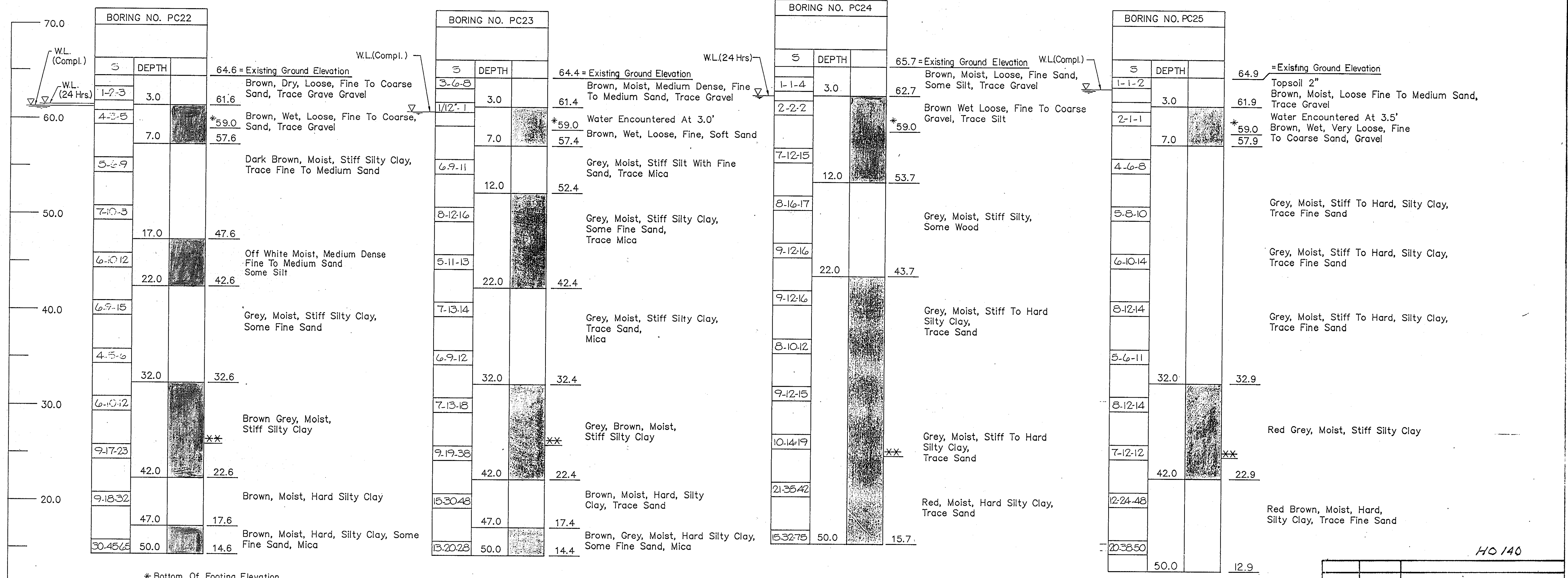
FIRST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN

SHEET
12 OF 22

Dwg. No. 5-8 of 5-16

1314



- NOTES:
- Borings PC22, PC23, PC24 And PC25 Were Taken In August, 1987 By Pittsburgh Testing Laboratory.
 - S = Blows Per Ft. On Standard 2" O.D. Sampling Spoon By 140 lb. Weight Freely Falling 30"
 WL(H) = Water Table Level. (Figure In Parenthesis indicates Reading In Hours After Completion Of Boring.)
 - For Boring Location Plan, See General Plan & Elevation Dwg No. S-1

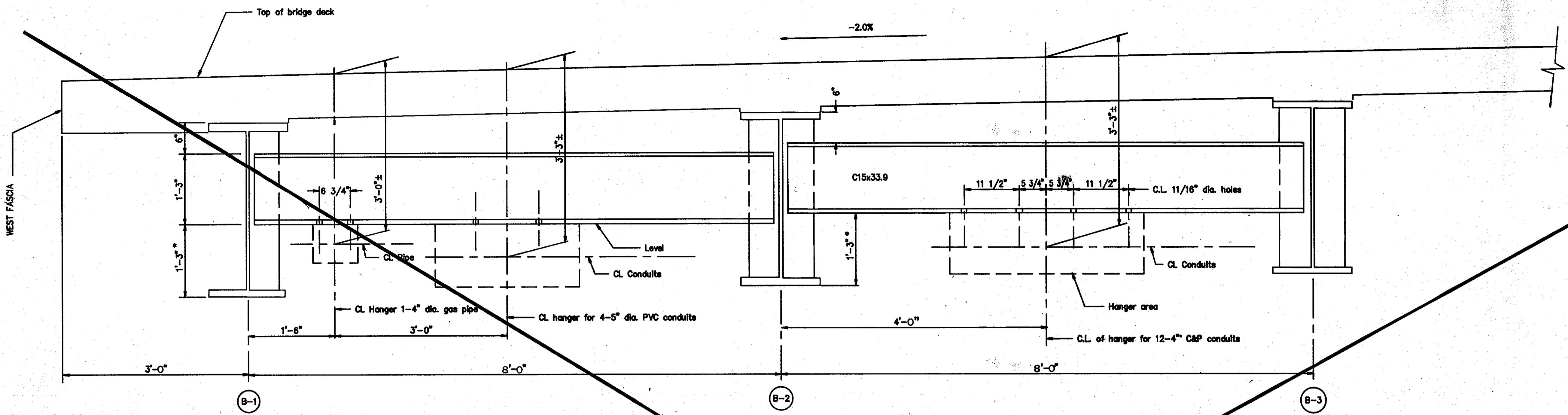
BORING LOGS
 Scale: 1" = 5'-0"



HO 140

REV NO	REV DATE	REVISIONS
PARKWAY CORPORATE CENTER 5 TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND		
HITECH VENTURE LIMITED PARTNERSHIP OWNER AND DEVELOPER 7223 PARKWAY CENTER HANOVER, MARYLAND 21076		
PROJECT AREA		
SECTION 1		
PROJECT TITLE		
PARK CIRCLE DRIVE BRIDGE OVER DEEP RUN BORING LOGS		
SCALE:		DATE: 12-18-87
WHITMAN, REQUARDT AND ASSOCIATES ENGINEERS BALTIMORE, MARYLAND 21218		
ALVI ASSOCIATES, INC. CONSULTING ENGINEERS TOWSON, MARYLAND		
DWG. NO. S-9 OF		
S-16		

1314

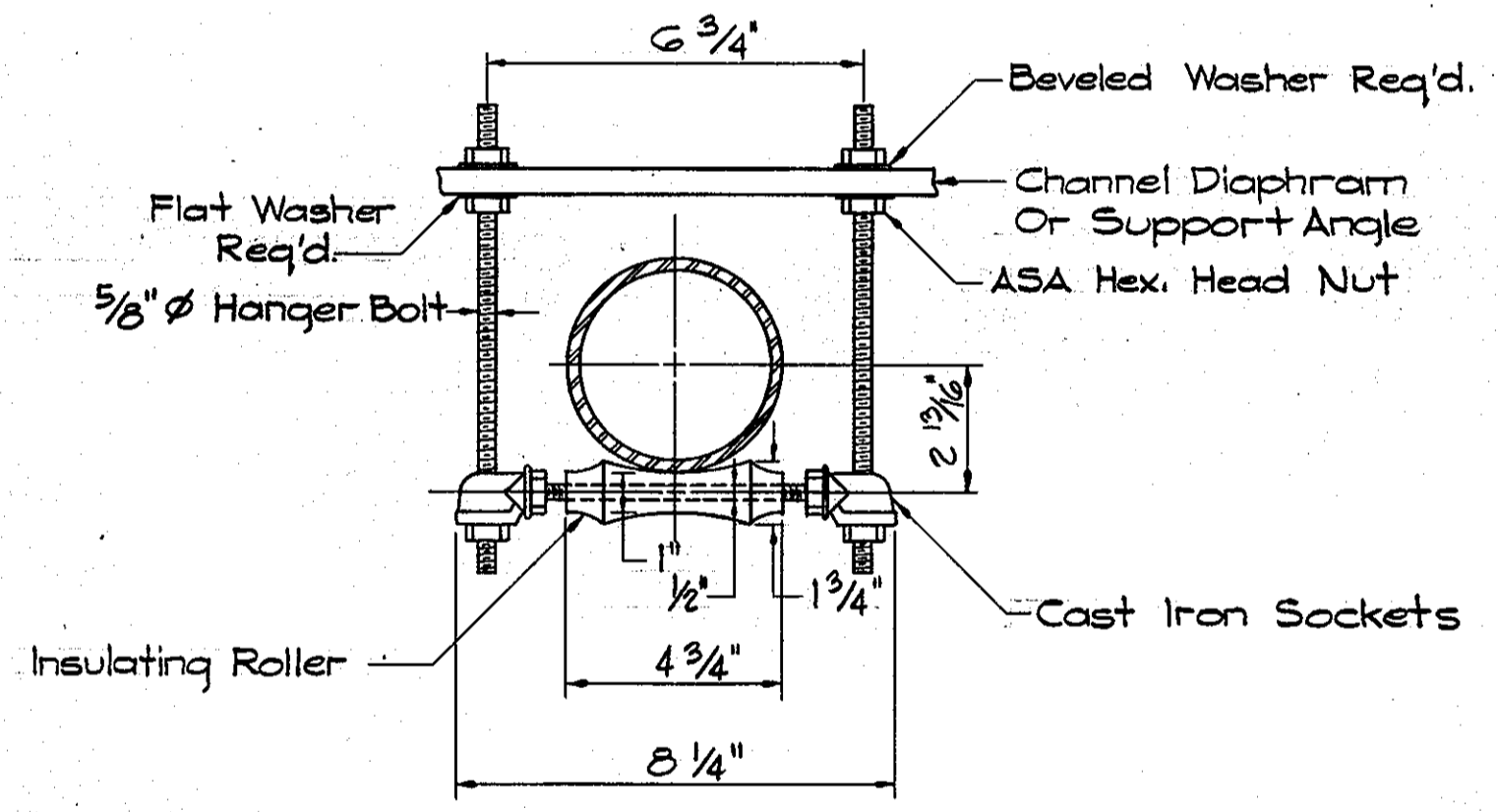


LOCATION OF UTILITIES

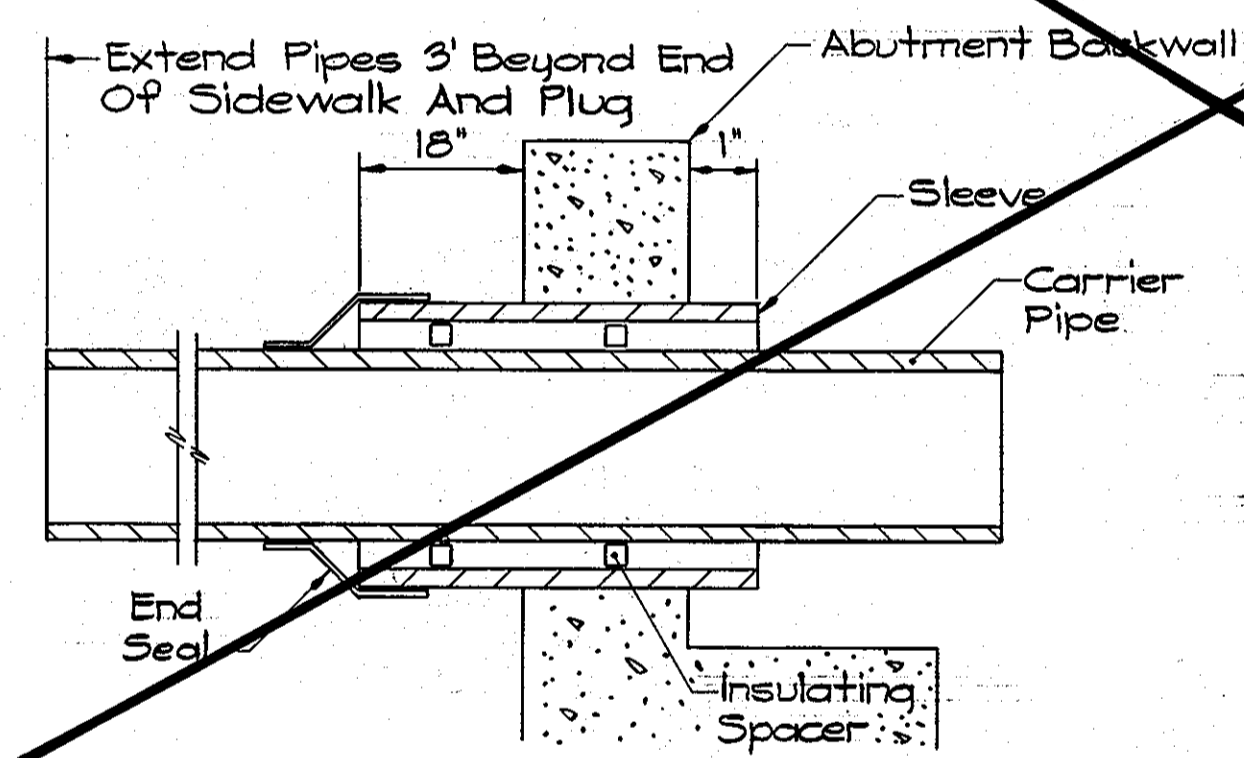
Scale: 1" = 1'-0"

* For intermediate supports using 6x3 angles, maintain this dimension

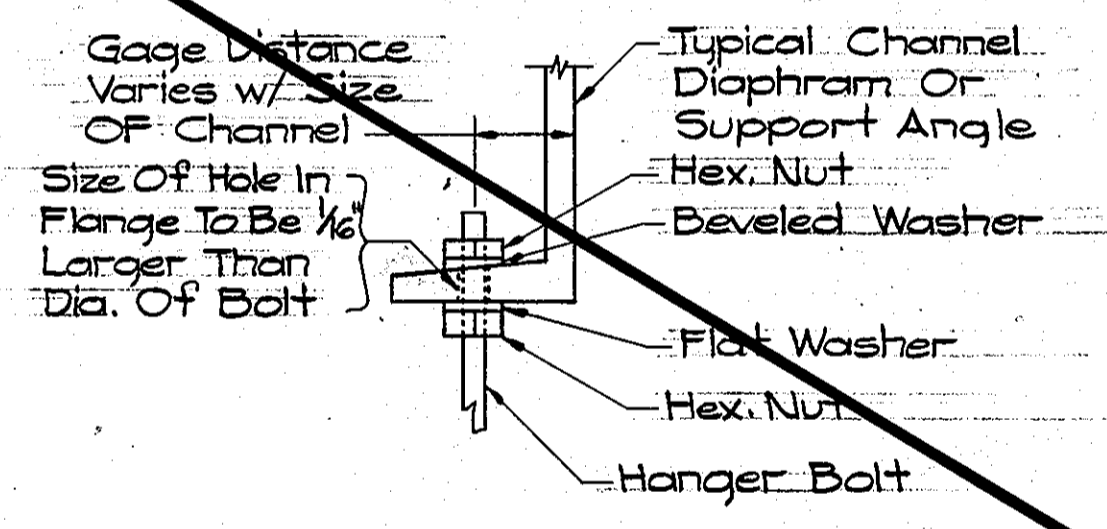
VOID



ROLLER HANGER



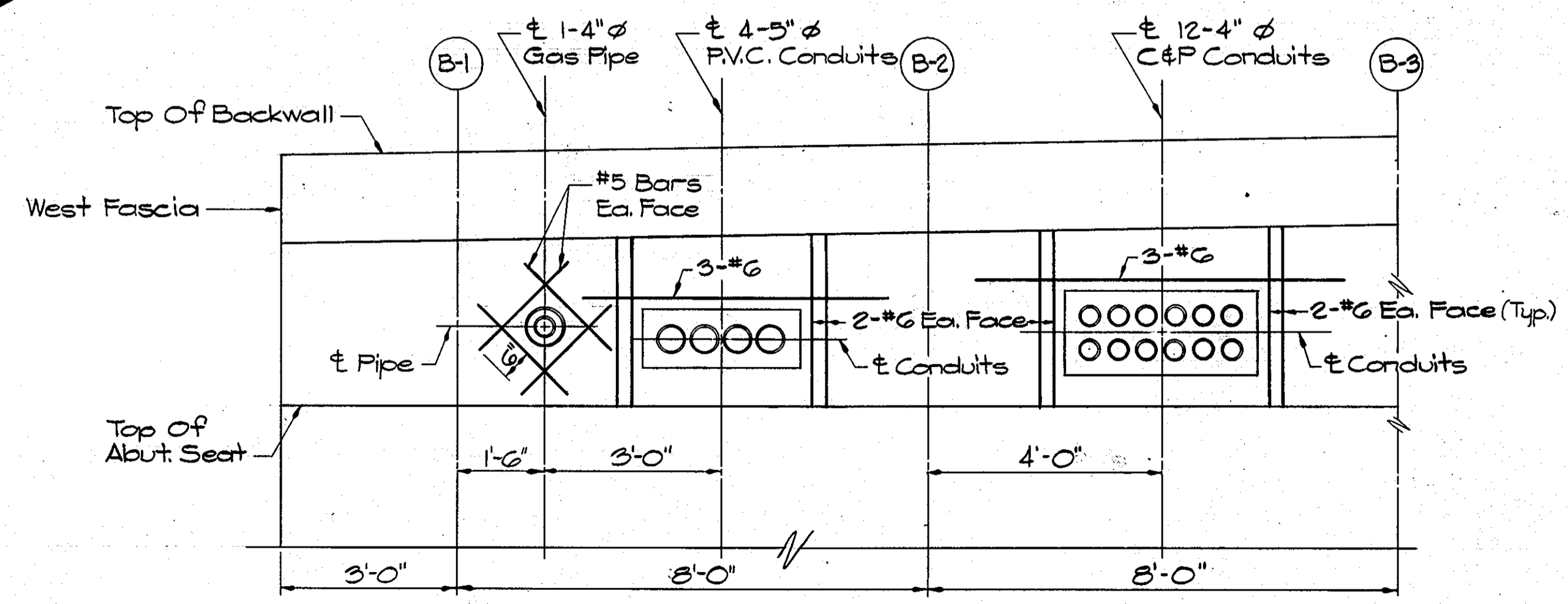
SLEEVE & CASING DETAIL



SUPPORT ATTACHMENT

NOTE:
For Additional Details, See Special Provisions Book.

NOTE:
FOR INSTALLATION OF UTILITIES, SEE GENERAL NOTES ON DWG. NO. S-1



ADDITIONAL REINFORCING AROUND OPENING IN BACKWALL

Scale: 1/2" = 1'-0"

NOTE:
For Backwall Reinforcing, See Dwg. No. S-4

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	DATE: 6/14/89
<i>Paul S. Anderson</i> CHIEF, LAND DEVELOPMENT DIVISION	DATE: 6/28/89
<i>Marshall Anderson</i> CHIEF, BUREAU OF ENGINEERING	DATE: 6/22/89
<i>Lawrence W. McLeod</i> CHIEF, BUREAU OF HIGHWAYS	DATE: 7/1/89
<i>Paul S. Anderson</i> CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT	DATE: 7/1/89

ALVI ASSOCIATES, INC.
CONSULTING ENGINEERS
1300 YORK ROAD
LUTHERVILLE, MARYLAND



DES:	
DRN:	
CHK:	5/19/89
DATE:	
BY:	
NO.	
REVISION	

HI-TECH VENTURE LIMITED PARTNERSHIP
OWNER AND DEVELOPER
7223 PARKWAY DRIVE
HANOVER, MARYLAND 21076
(301) 796-4446

DETAILS FOR HANGING GAS PIPE

**PARK CIRCLE DRIVE
BRIDGE OVER DEEP RUN**

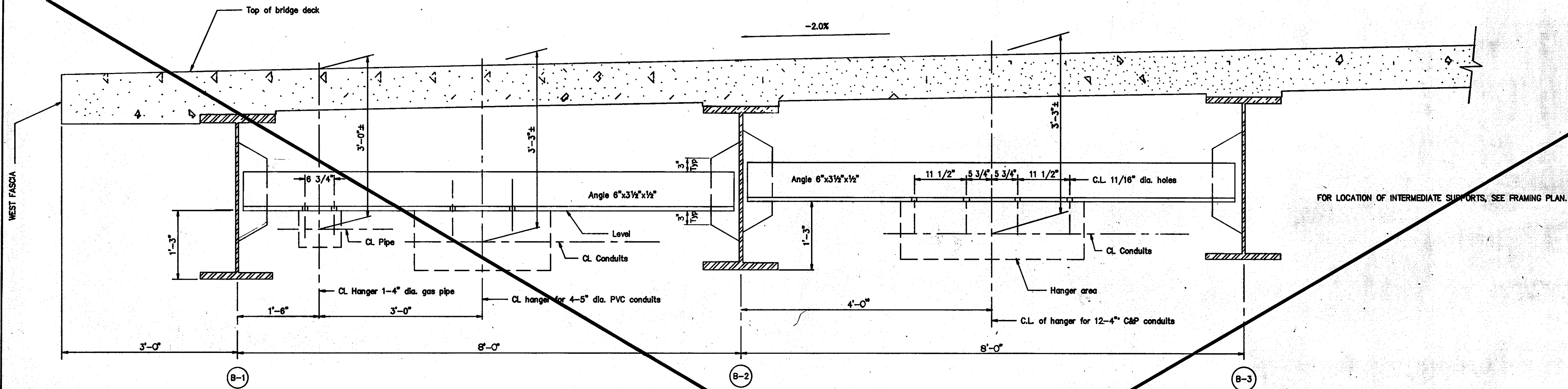
FIRST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 14 OF 22

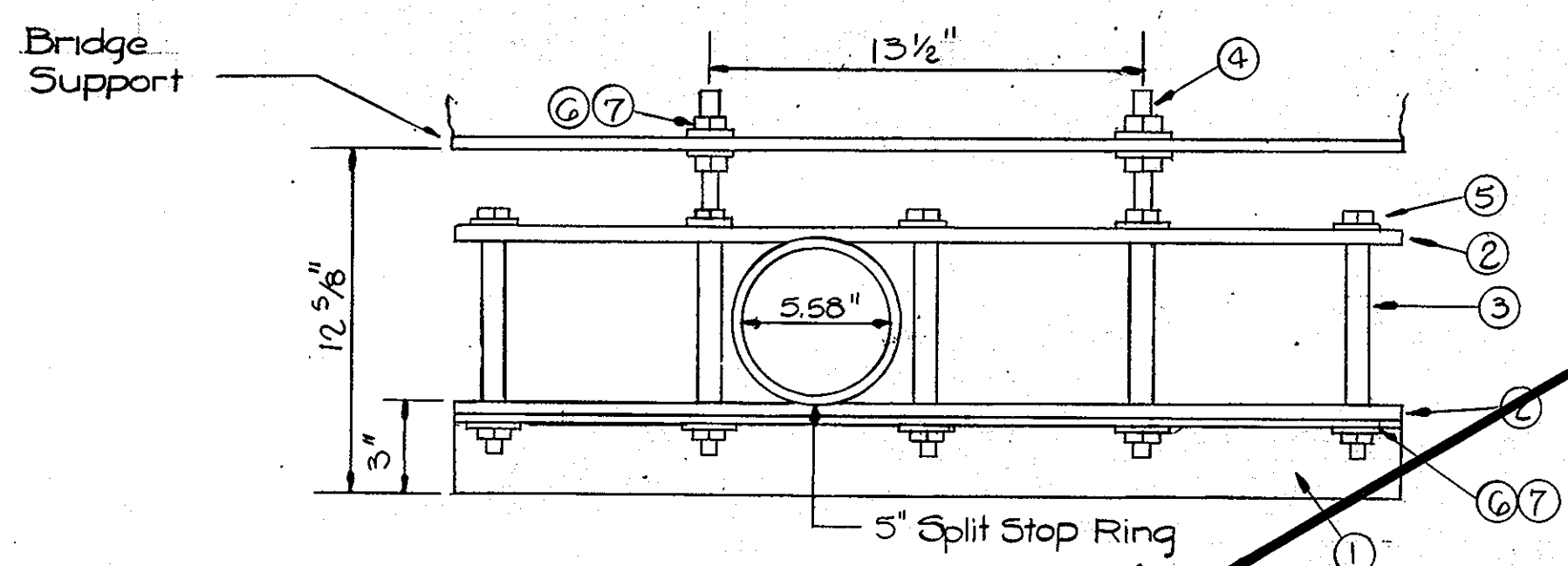
DWG. NO. S-10 OF S-15

F-89-85

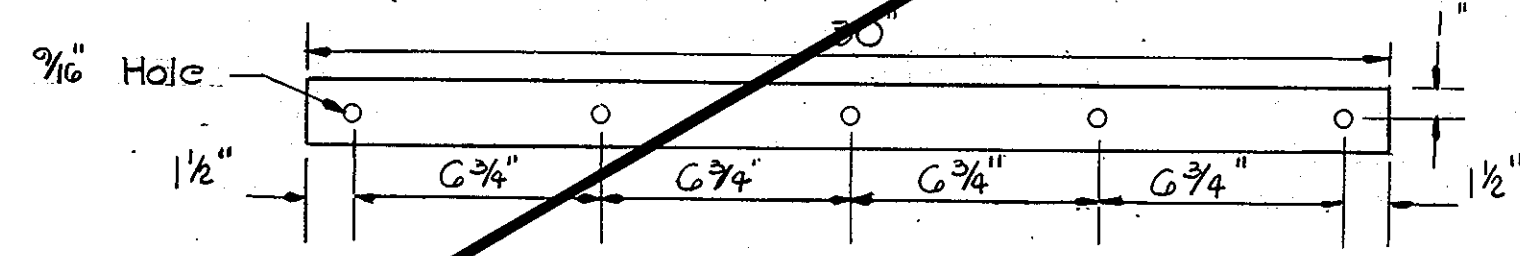


INTERMEDIATE SUPPORT USING 6"X3 1/2"X1 1/2" ANGLES
Scale 1" = 1'-0"

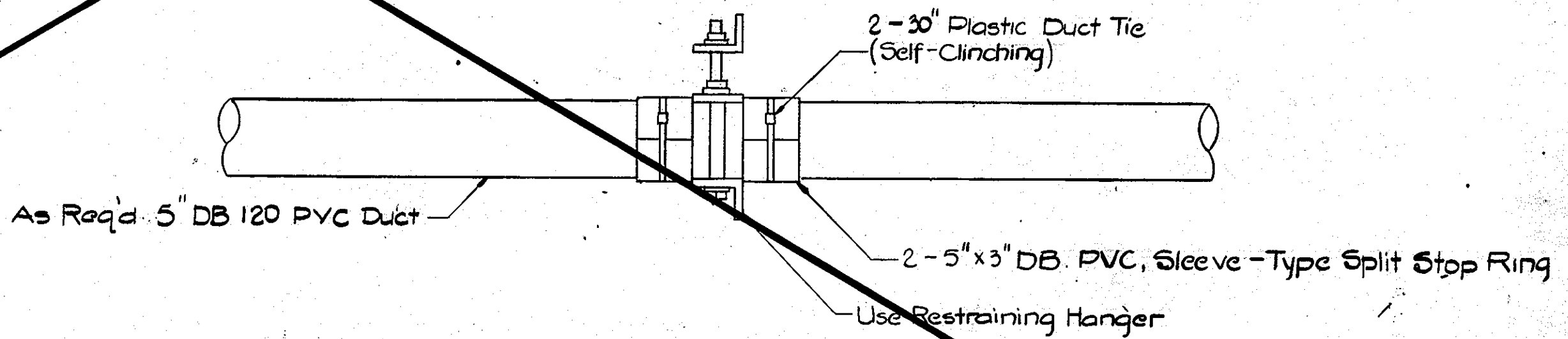
VOID



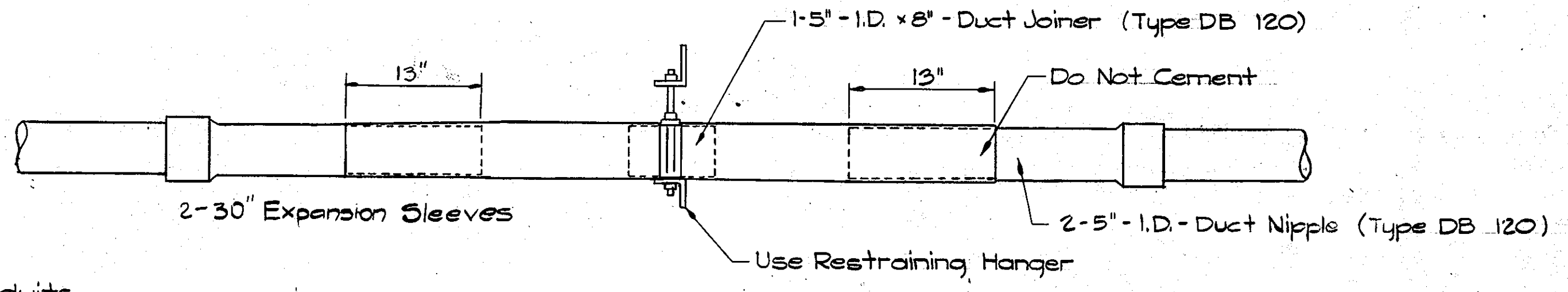
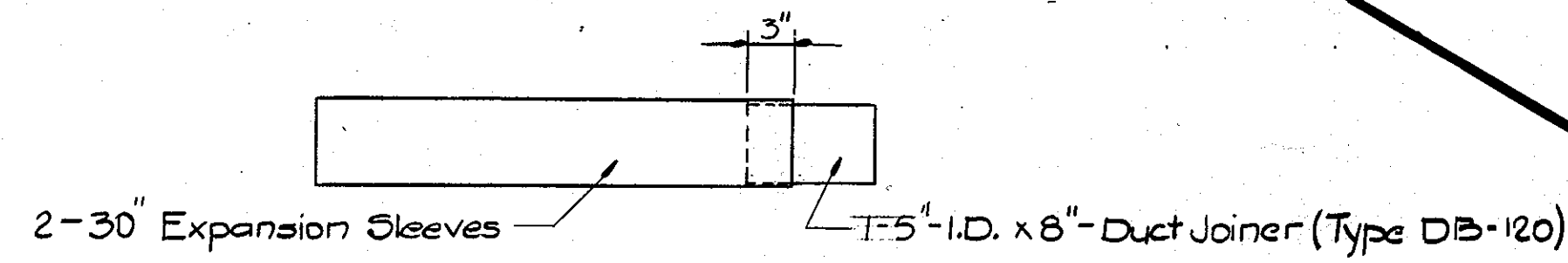
HANGER TYPE R-4



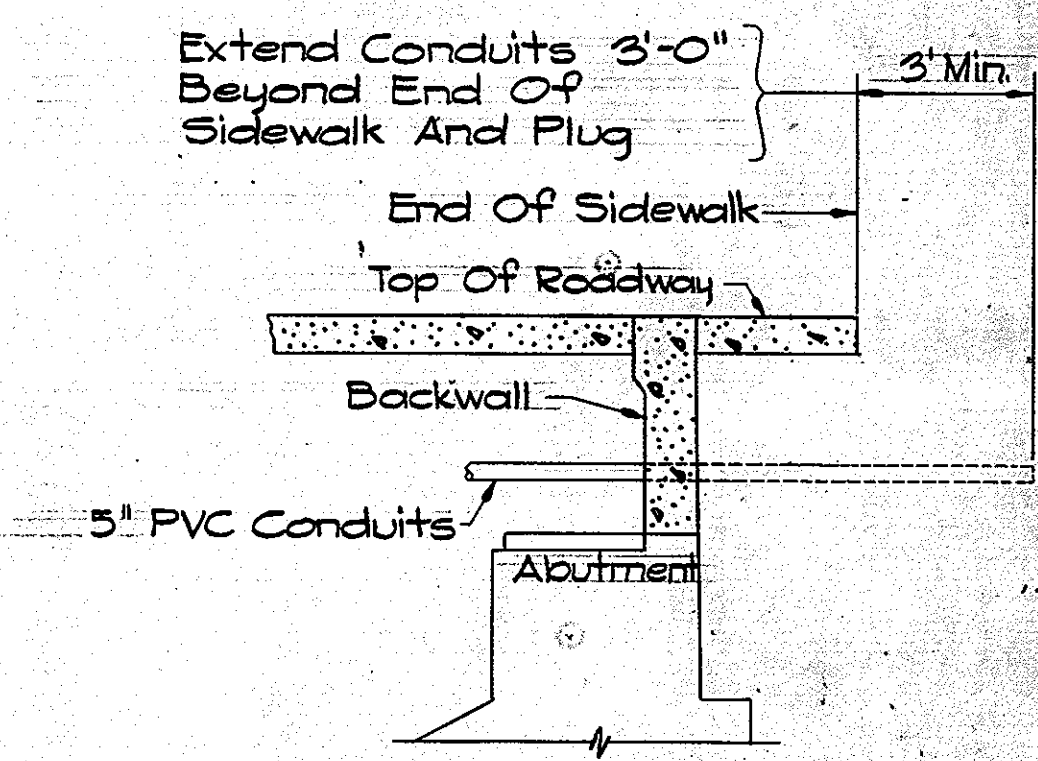
DRILLING DETAIL



TYPICAL STOP RING INSTALLATION



EXPANSION JOINT DETAIL



DETAIL AT ABUTMENT
N.T.S.

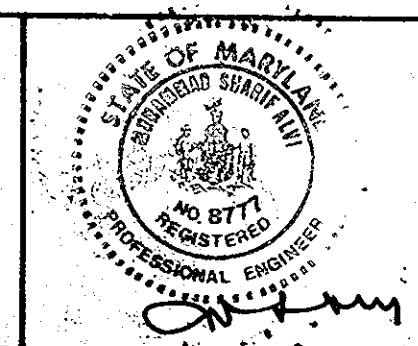
BILL OF MATERIAL

ITEM	DESCRIPTION
1	1-3"x2"x1/4"x30" Lg. Steel Angle
2	2-1/2"x2"x30" PVC Plate
3	5-1/2"x5-3/4" Schedule 40 PVC Pipe
4	2-1/2"x13" Galv. All Thread Hanger Rod
5	3-1/2"x9" Galv. Sq. Hd. Bolts
6	11-1/2" Galv. Hex. Hd. Locknuts
7	14-1/2" Galv. Round Flat Washers

NOTE:
* For Additional Details Of Hangers For PVC Conduits And Gas Pipe, See Special Provisions Book.
NOTE:
FOR INSTALLATION OF UTILITIES, SEE GENERAL NOTES ON DWG. No. 6-1.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
Donald E. [Signature] 6/14/89
 CHIEF, LAND DEVELOPMENT DIVISION
Elizabeth Anderson [Signature] 6/28/89
 CHIEF, BUREAU OF ENGINEERING, active
Braville W. [Signature] 6/22/89
 CHIEF, BUREAU OF HIGHWAYS
[Signature] 7/1/89
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

ALVI ASSOCIATES, INC.
CONSULTING ENGINEERS
1300 YORK ROAD
LUTHERVILLE, MARYLAND

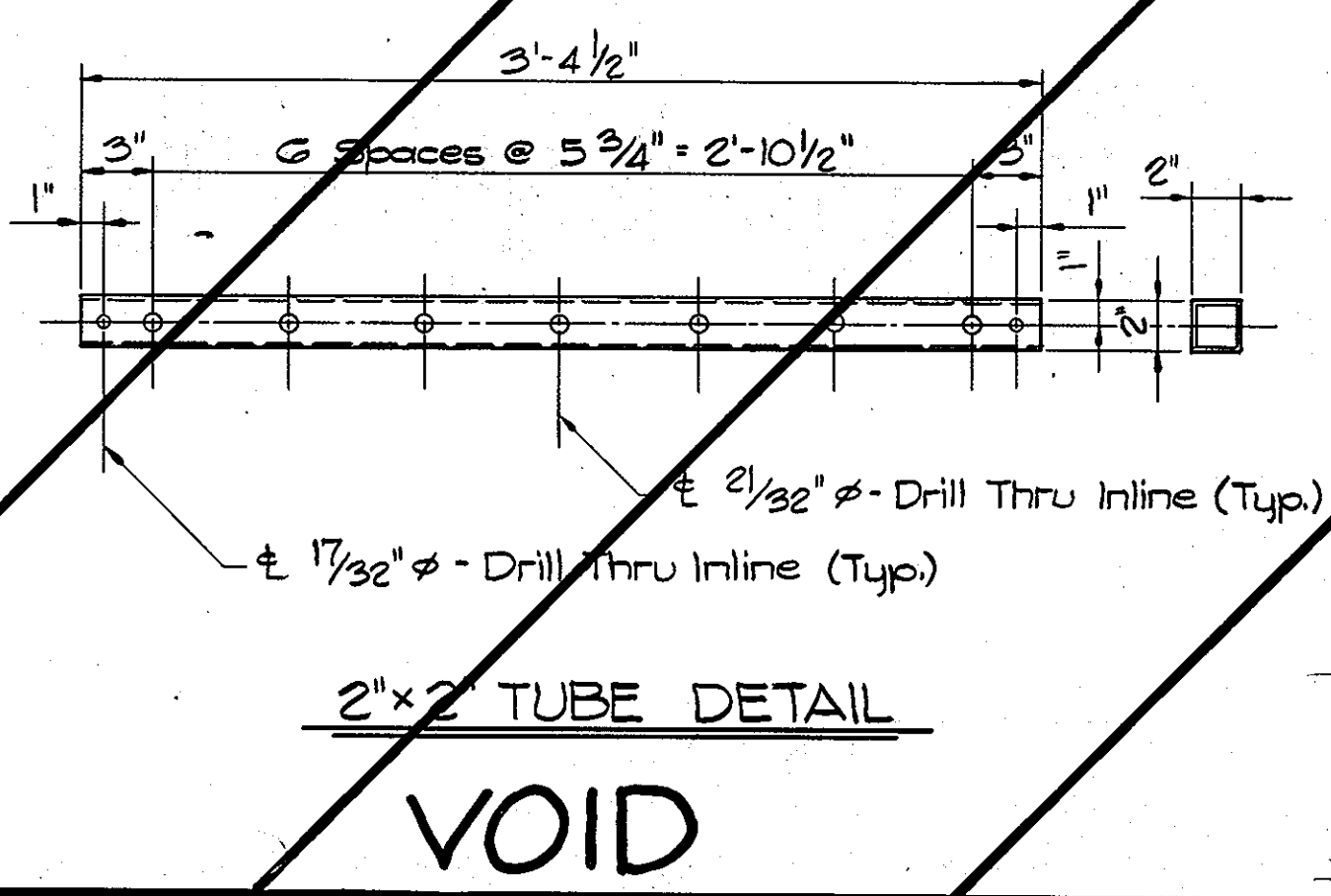
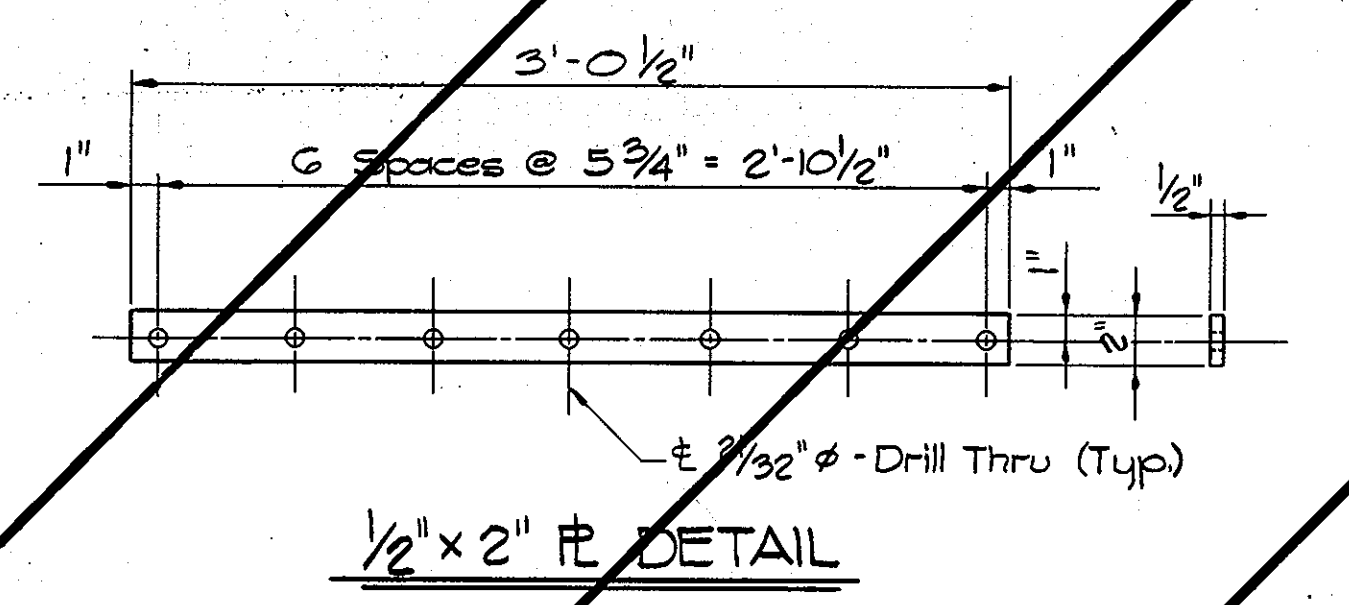
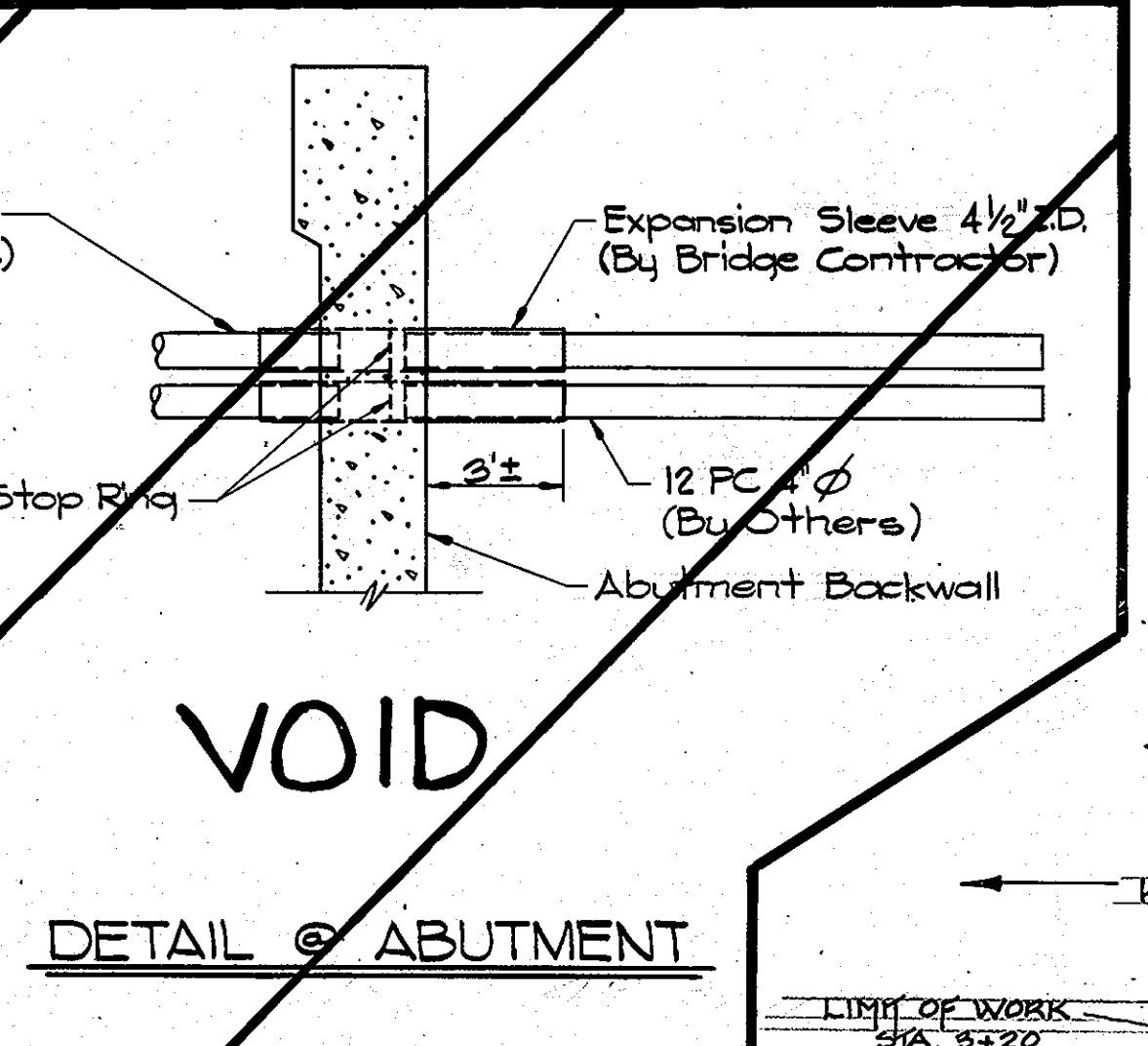
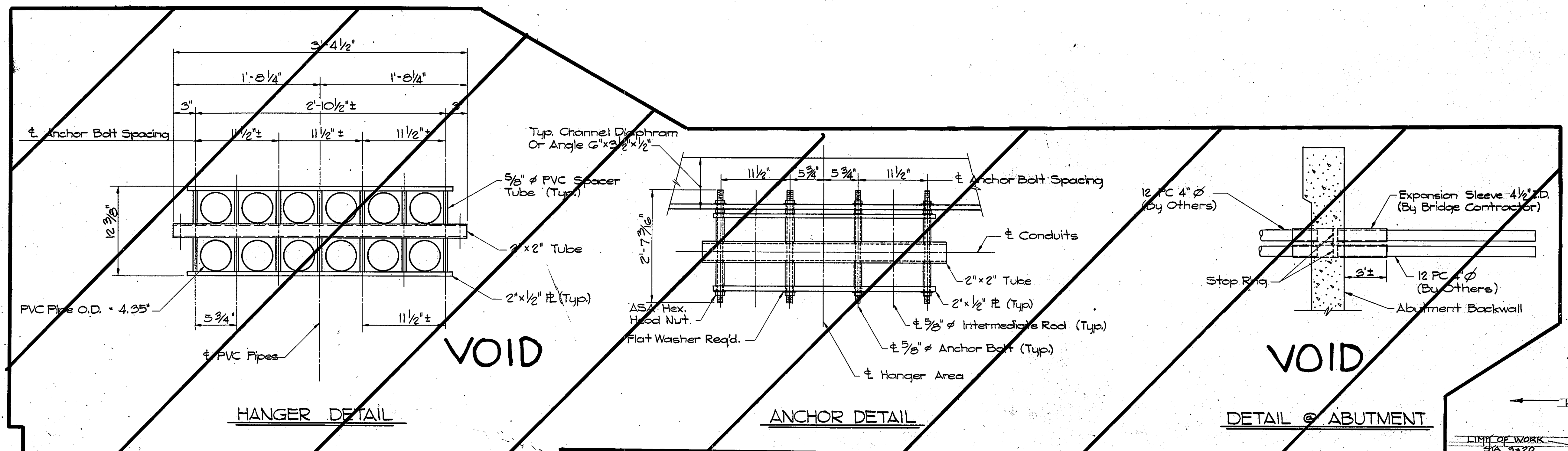


DES:	
DRN:	
CHK:	CEP CONDUIT SIDEWALK ENCASUREMENT s/mjbc
DATE:	RELOCATION OF B.G. & E. CONDUIT UNDER DEEP RUN
BY	NO.
REVISION	DATE

HI-TECH VENTURE LIMITED PARTNERSHIP
OWNER AND DEVELOPER
7223 PARKWAY DRIVE
HANOVER, MARYLAND 21076
(301) 798-4446

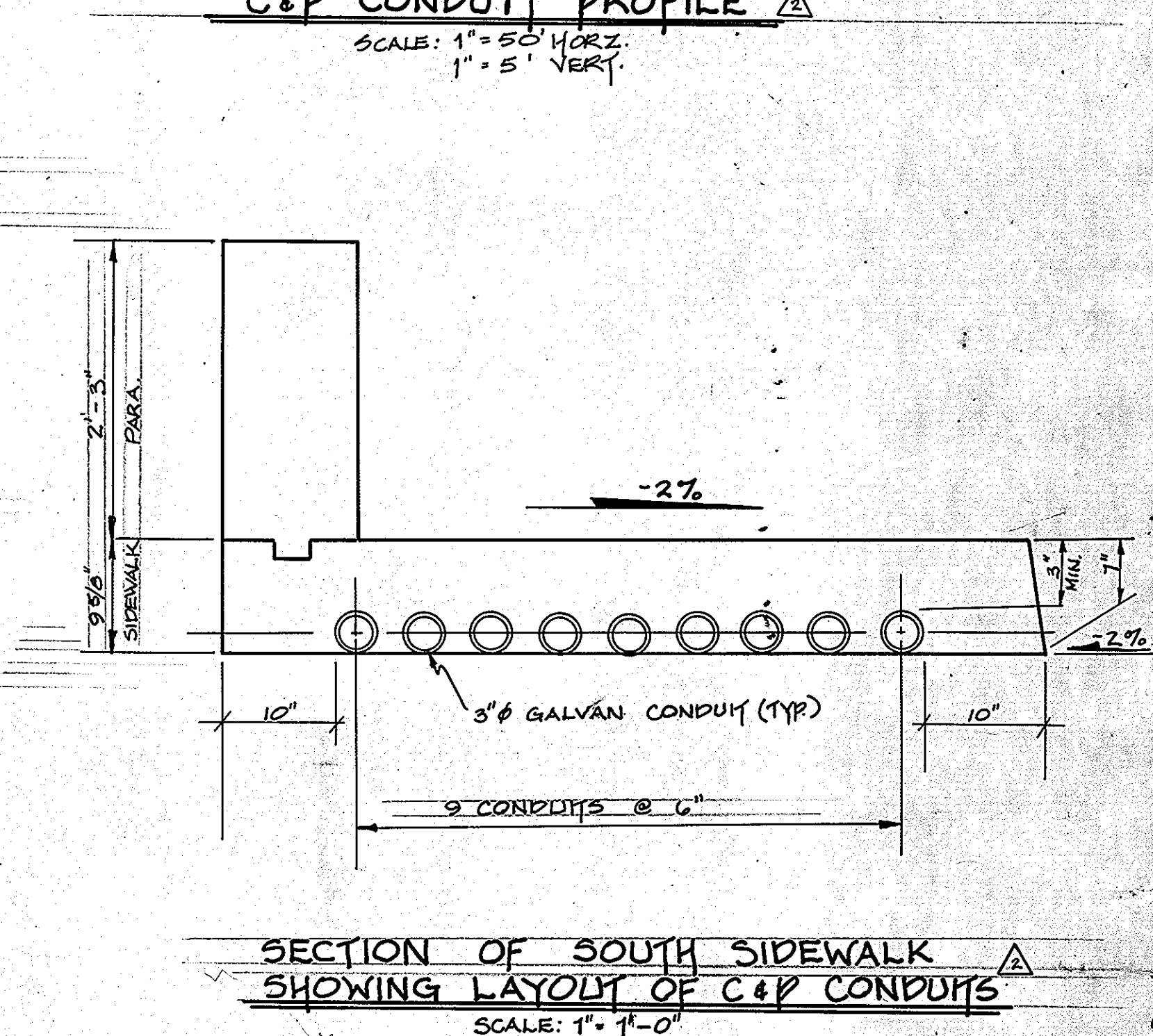
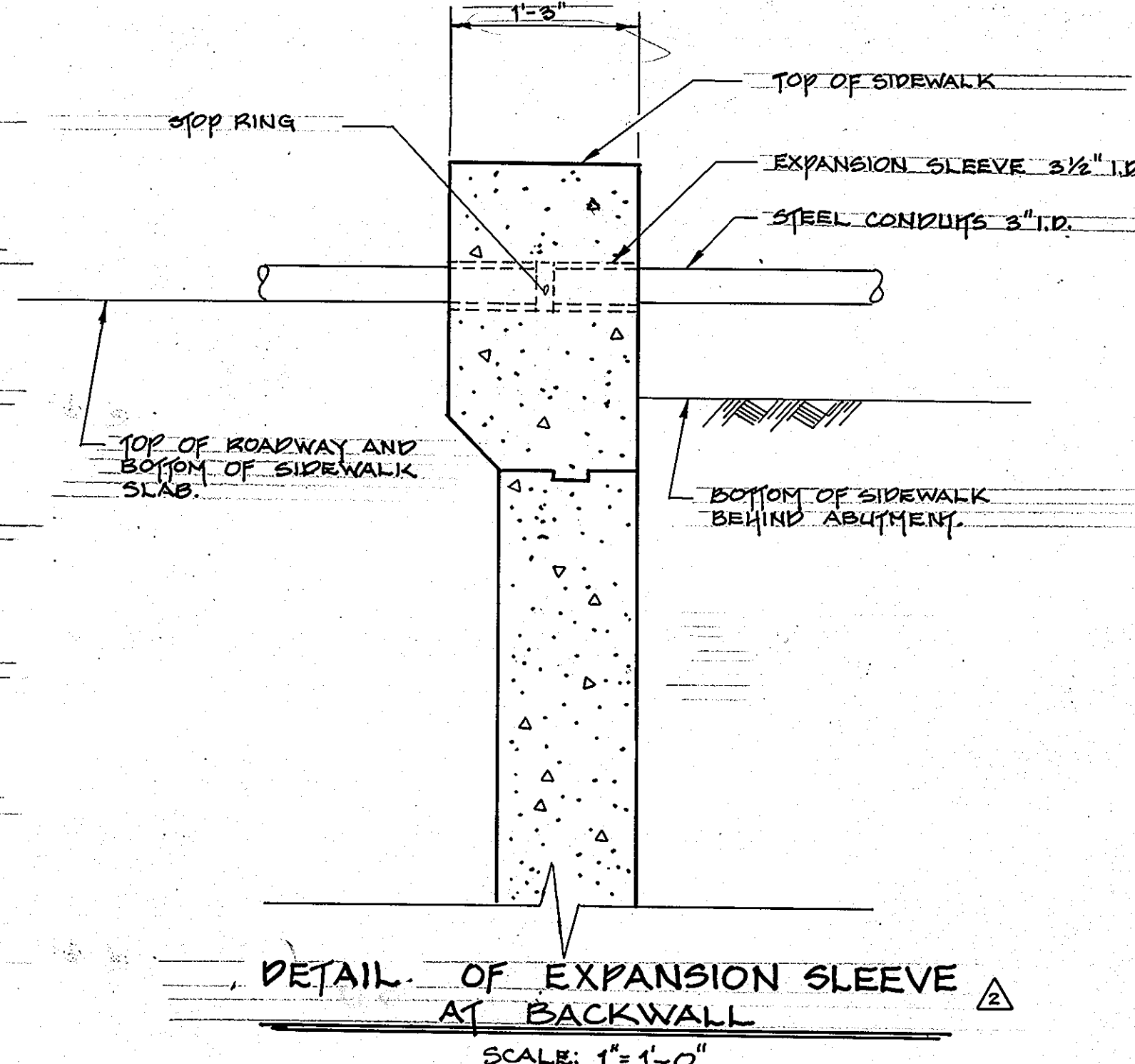
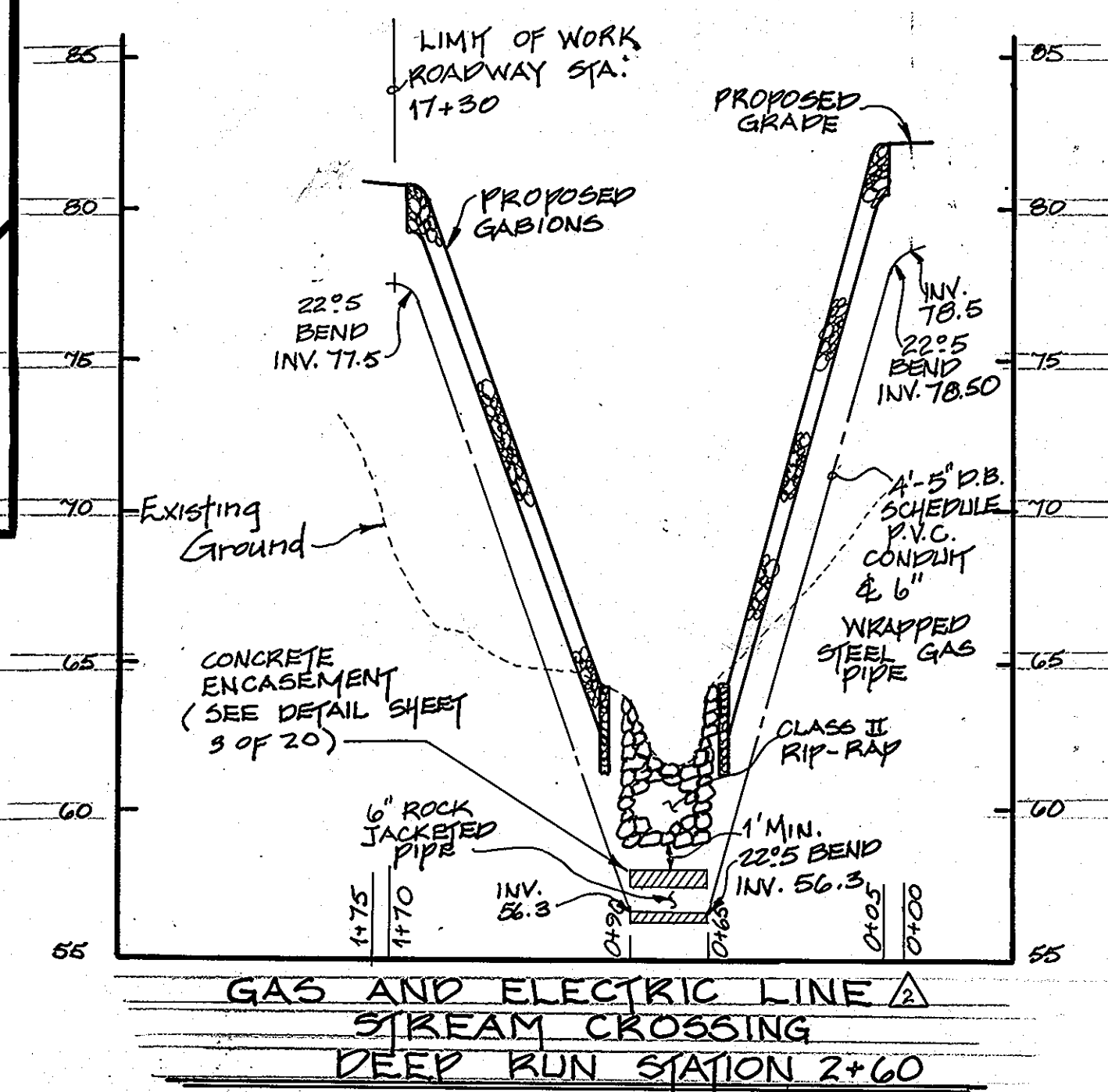
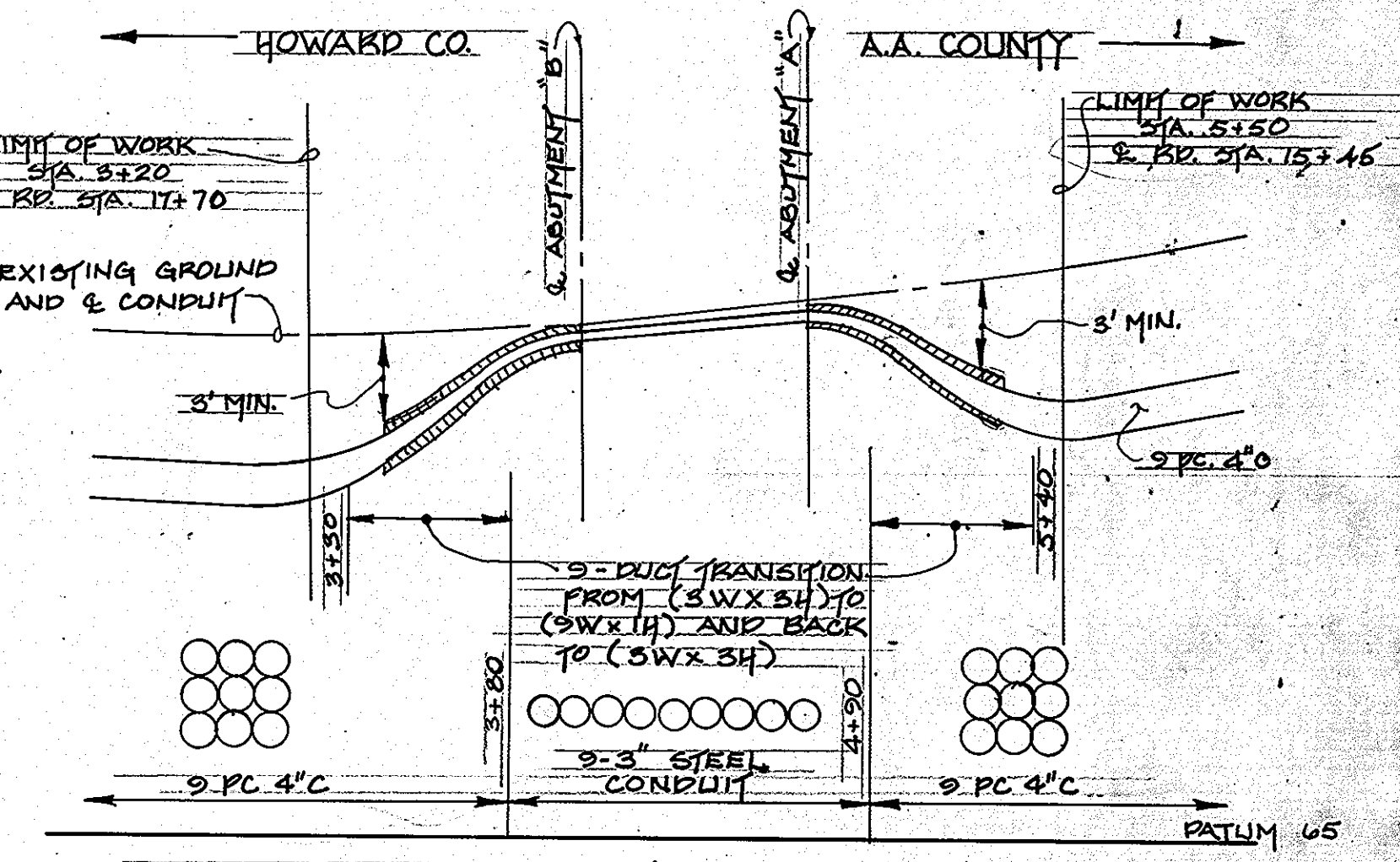
DETAILS FOR HANGING ELECTRIC PVC CONDUITS
**PARK CIRCLE DRIVE
BRIDGE OVER DEEP RUN**
 FIRST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 15 OF 20



NOTE:
 For Additional Details, See Special Provisions Book.
NOTE:
 FOR INSTALLATION OF UTILITIES, SEE GENERAL NOTES ON DWG. NO. S-1.

UTILITY	CONDUIT TYPE	ROAD STA. TO ROAD STA.	LENGTH	REMARKS
C&P	3" I.D. STEEL COND.	STA. 1602 TO STA. 1703, L.T.	909 FT.	ENCASED IN SOUTH SIDE. WALK CENTERLINE OF ROAD. 21.5 FEET LEFT OF ROAD CENTERLINE.
B&E	5" P.B. SCHEDULE CONDUIT	STA. 1538 TO STA. 1730, L.T.	780 FT.	SEE SHEET 2 OF 20 FOR CONDUIT LOCATION
"	6" WRAPPED STEEL GAS PIPE	STA. 1538 TO STA. 1635, L.T. STA. 1640 TO STA. 1730, L.T.	180 FT.	" " "
"	6" ROCK JACKETED PIPE	STA. 1635 TO STA. 1640, L.T.	25 FT.	TO BE ENCASED IN CONCRETE UNDER DEEP RUN, 18' OF ROAD CENTERLINE
C&P	4" I.D. STEEL CONDUIT	STA. 1540 TO STA. 1602, L.T. STA. 1708 TO STA. 1730, L.T.	1440 FT.	SEE SHEET 2 OF 20 FOR PROFILE



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
 Chief, Land Development Division
 Chief, Bureau of Engineering
 Chief, Bureau of Highways
 Chief, Division of Community Planning and Land Development

ALVI ASSOCIATES, INC.
 CONSULTING ENGINEERS
 1300 YORK ROAD
 LUTHERVILLE, MARYLAND

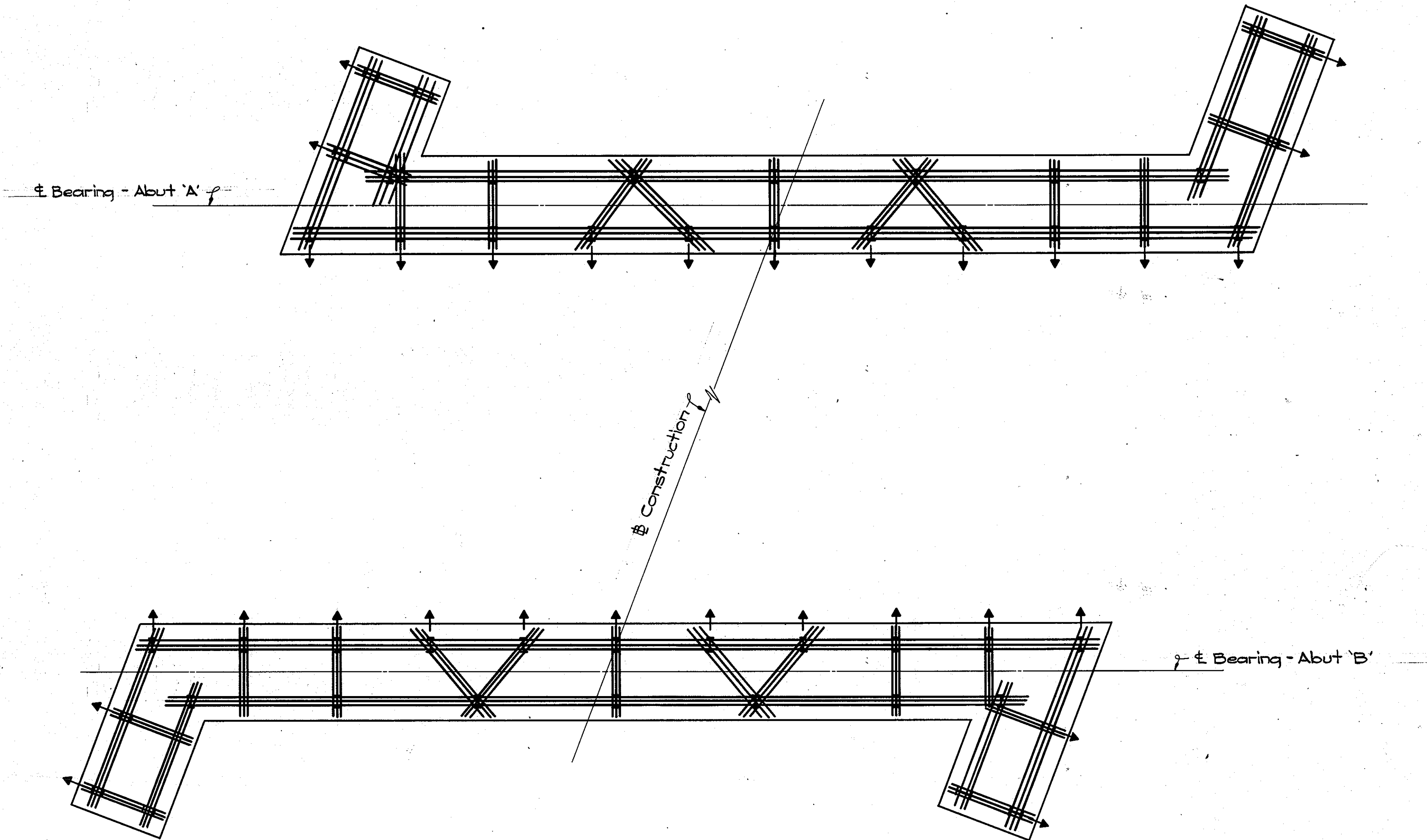


DES:	
DRN:	
CHK:	3/19/89
DATE:	
BY:	
NO.	
REVISION	
DATE	

HI-TECH VENTURE LIMITED PARTNERSHIP
 OWNER AND DEVELOPER
 7223 PARKWAY DRIVE
 HANOVER, MARYLAND 21076
 (301) 796-4446

PARK CIRCLE DRIVE
 BRIDGE OVER DEEP RUN
 FIRST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET 16 OF 22



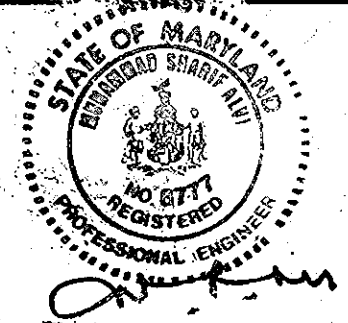
LAYOUT OF REINFORCING STEEL OVER PILES
Scale: 3/16" = 1'-0"

- NOTE:**
- 1) All Rebars Shall Be 3-#6 @ 4" OC.
 - 2) Lower Mat Of Bars Shall Be 3" (Vertical) Above Top Of Centerline Of Pile
 - 3) Shop Plans Shall Show How Rebars Are To Be Tied As Well As How They Will Be Held In Place Above Piling While Pour Is Being Made.

1314

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
[Signature] 6/14/89
 CHIEF, LAND DEVELOPMENT DIVISION DATE
[Signature] 6/22/89
 CHIEF, BUREAU OF ENGINEERING DATE
[Signature] 6/22/89
 CHIEF, BUREAU OF HIGHWAYS DATE
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

ALVI ASSOCIATES, INC.
 CONSULTING ENGINEERS
 1300 YORK ROAD
 LUTHERVILLE, MARYLAND



DES:			
DRN:			
CHK:			
DATE:	BY	NO.	REVISION

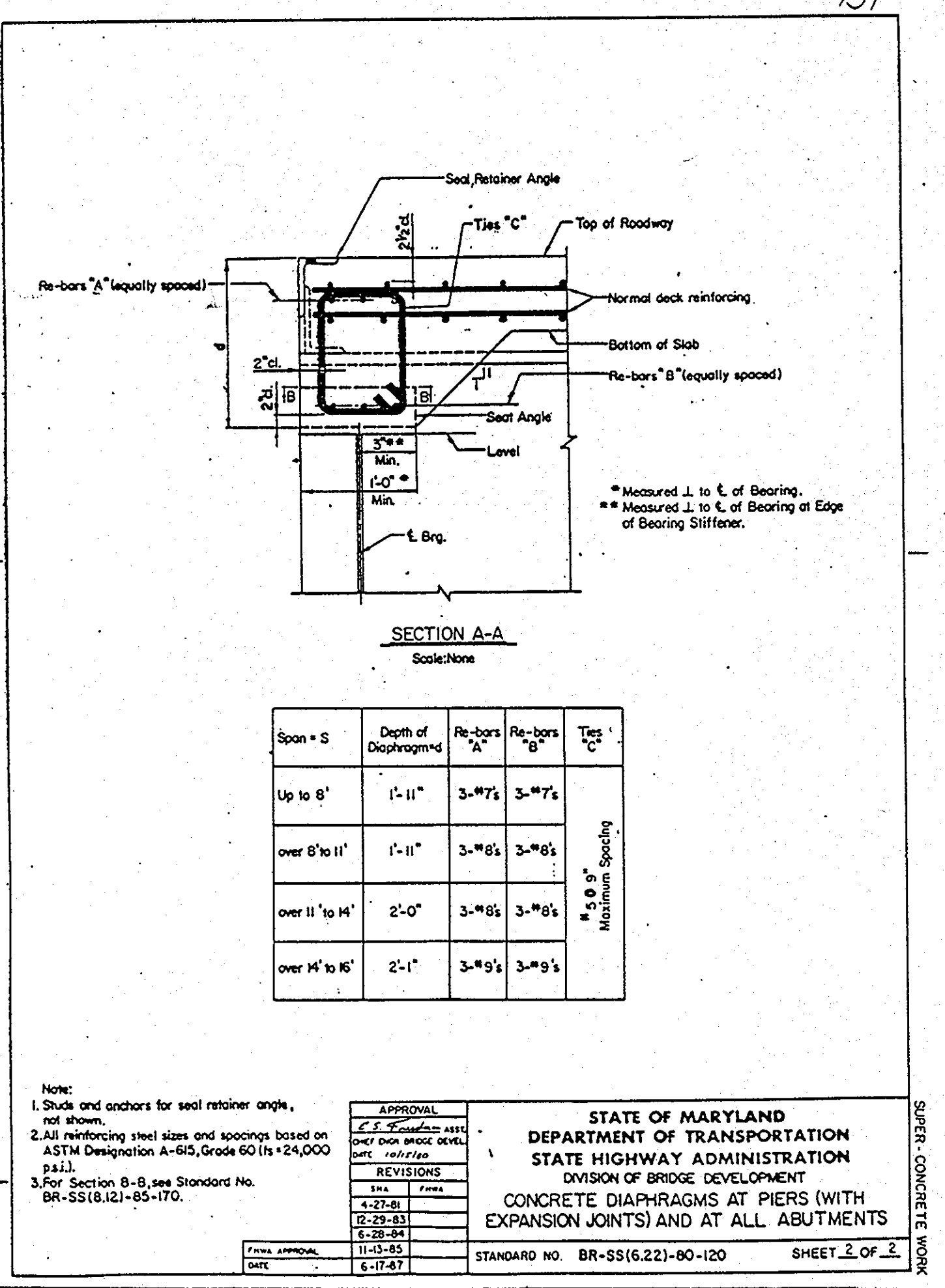
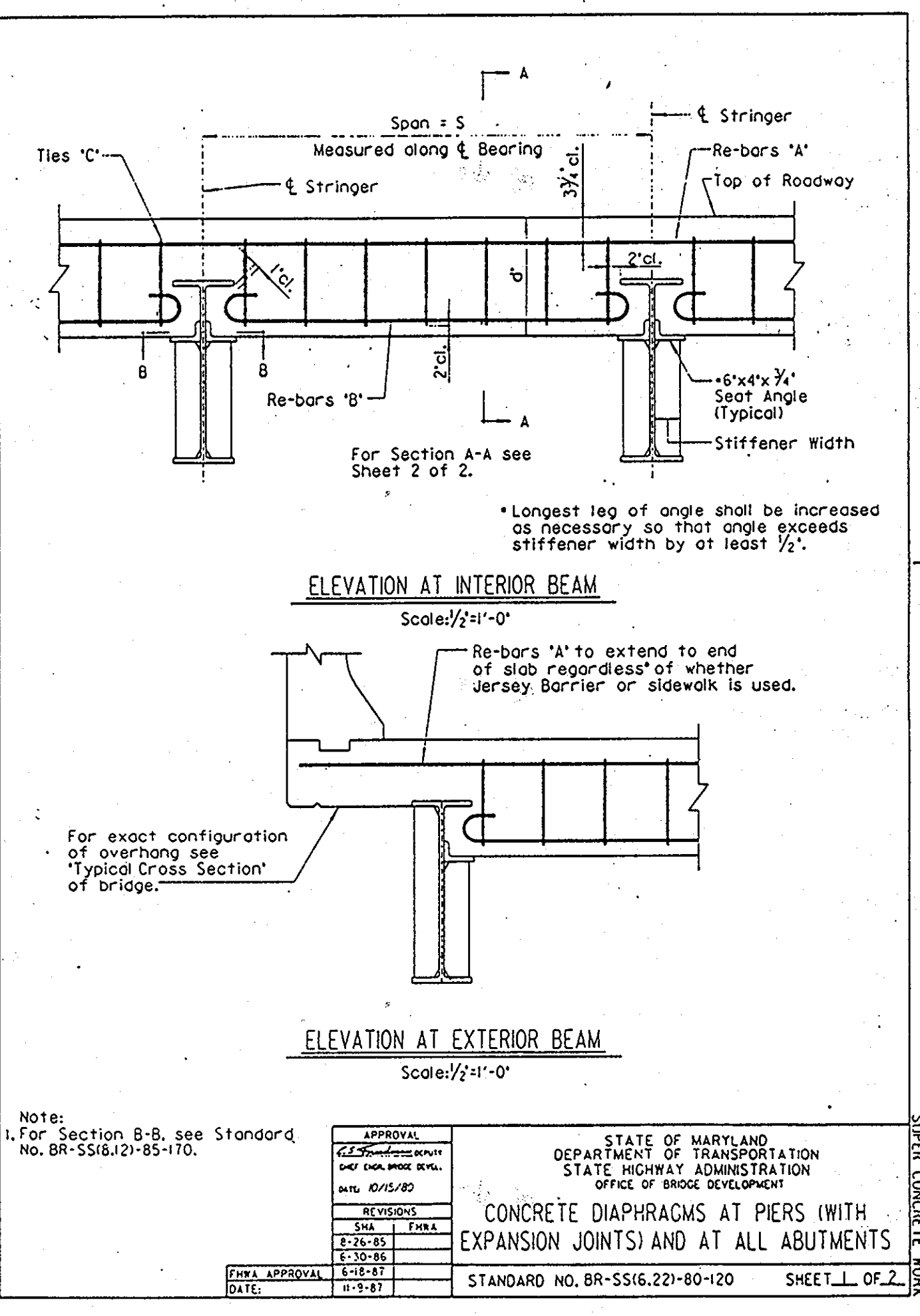
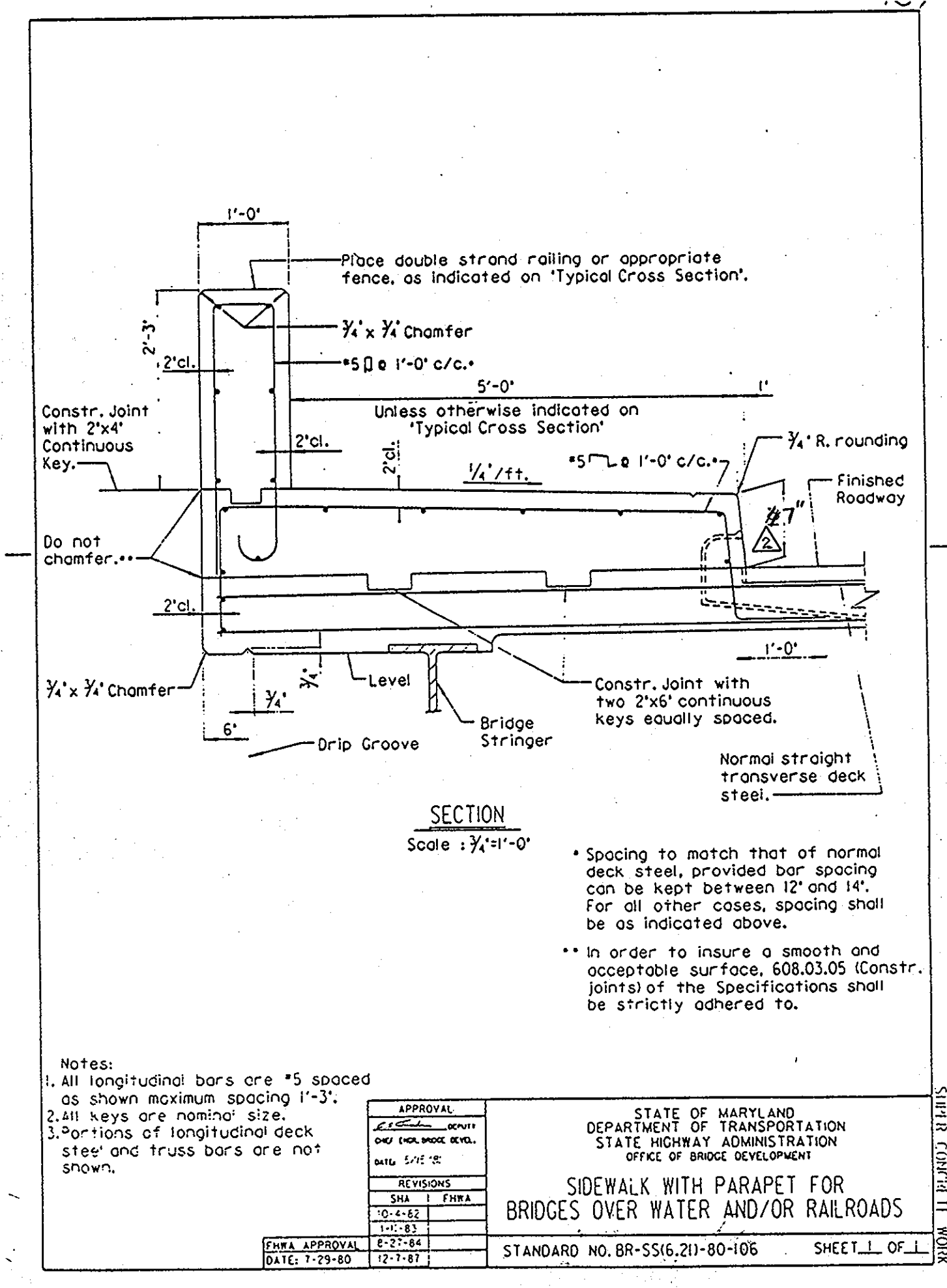
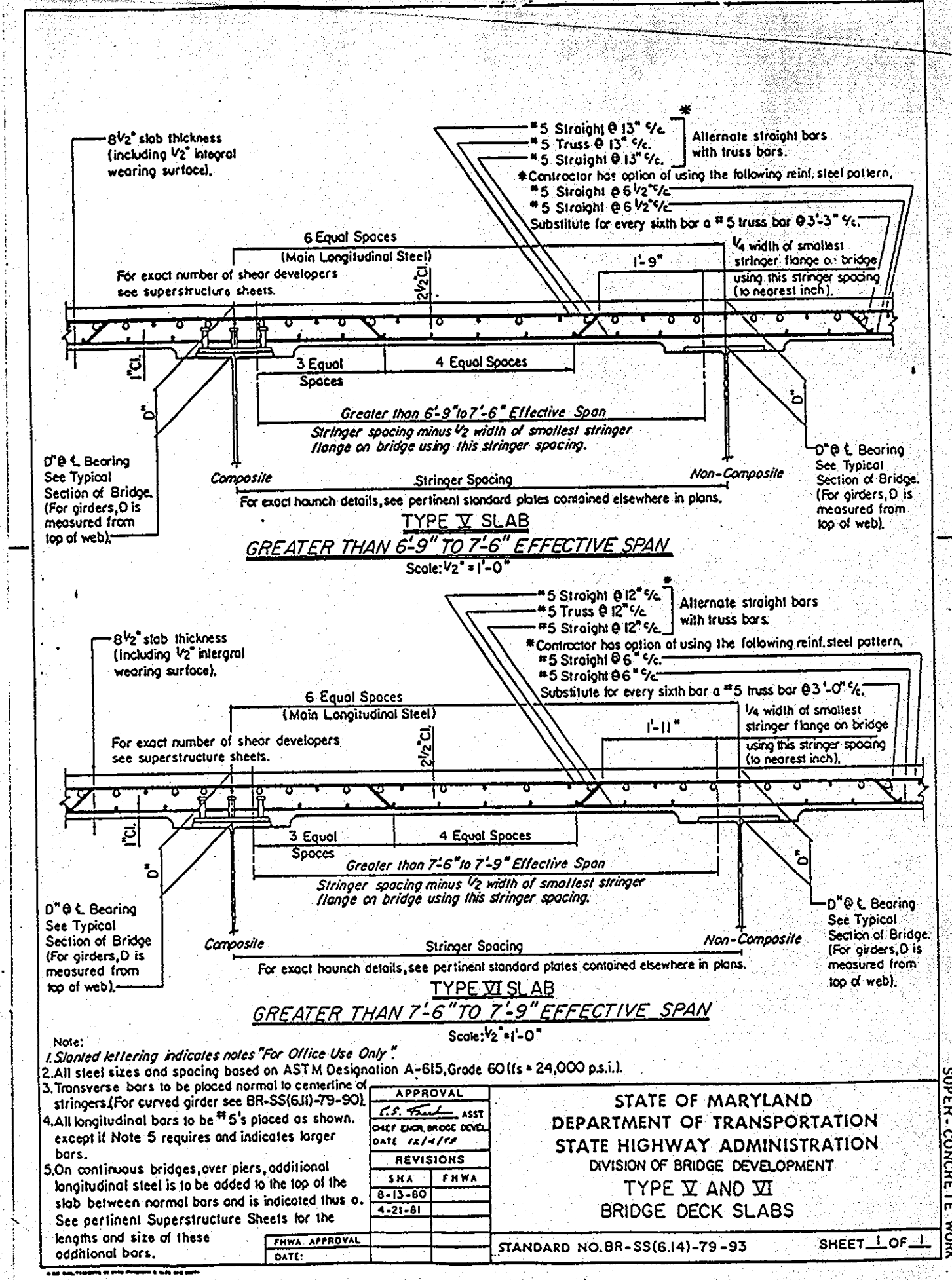
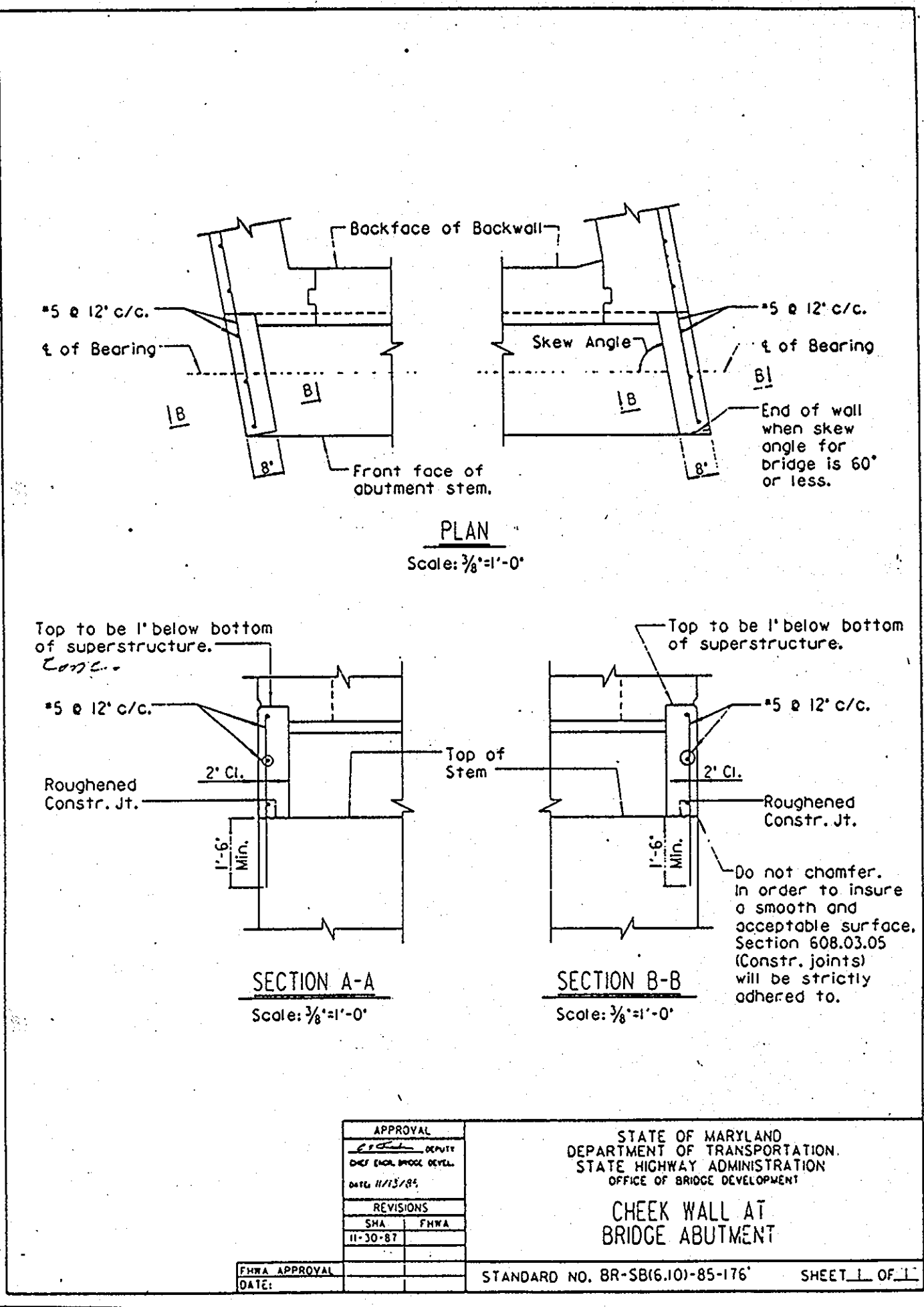
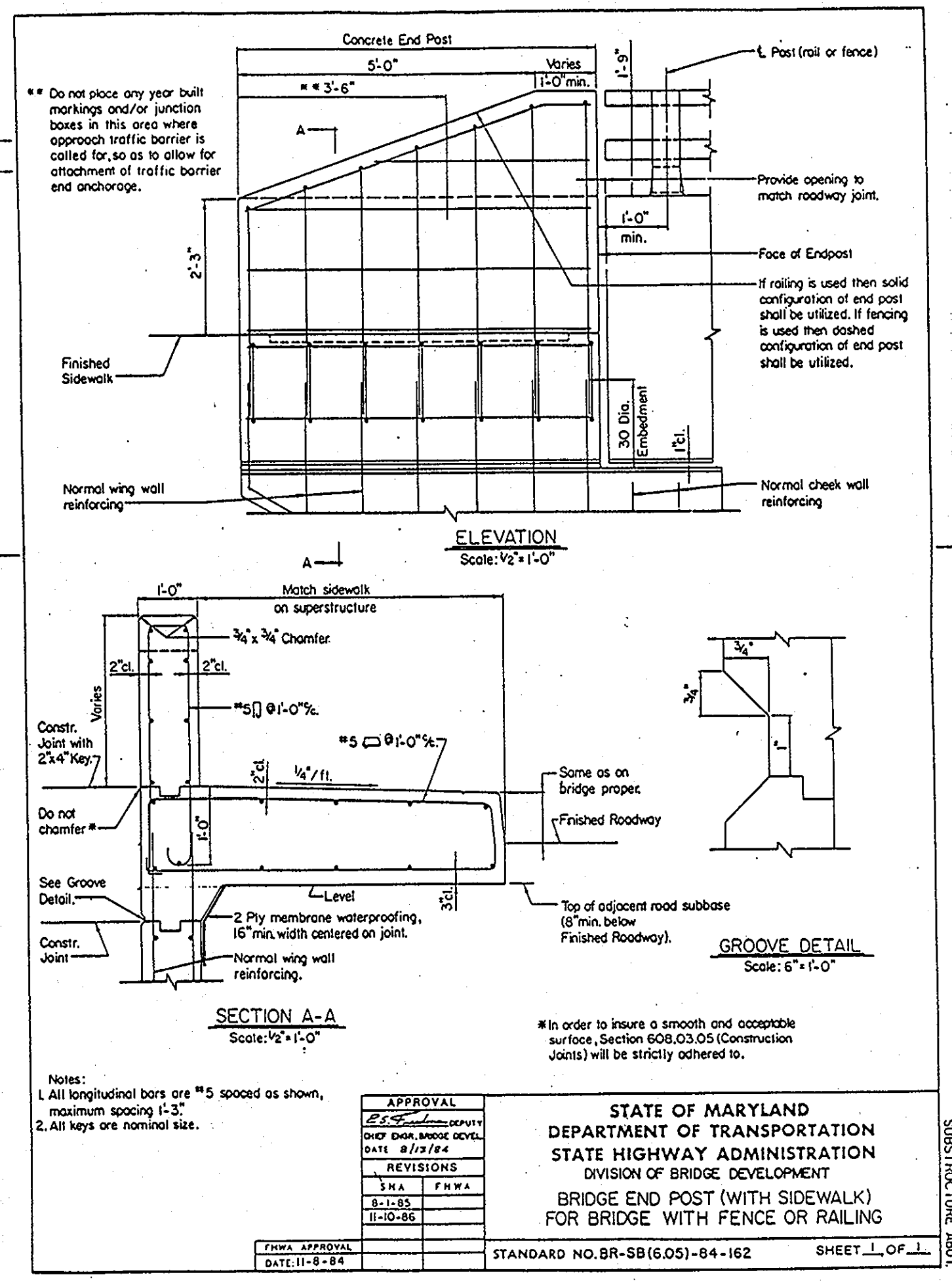
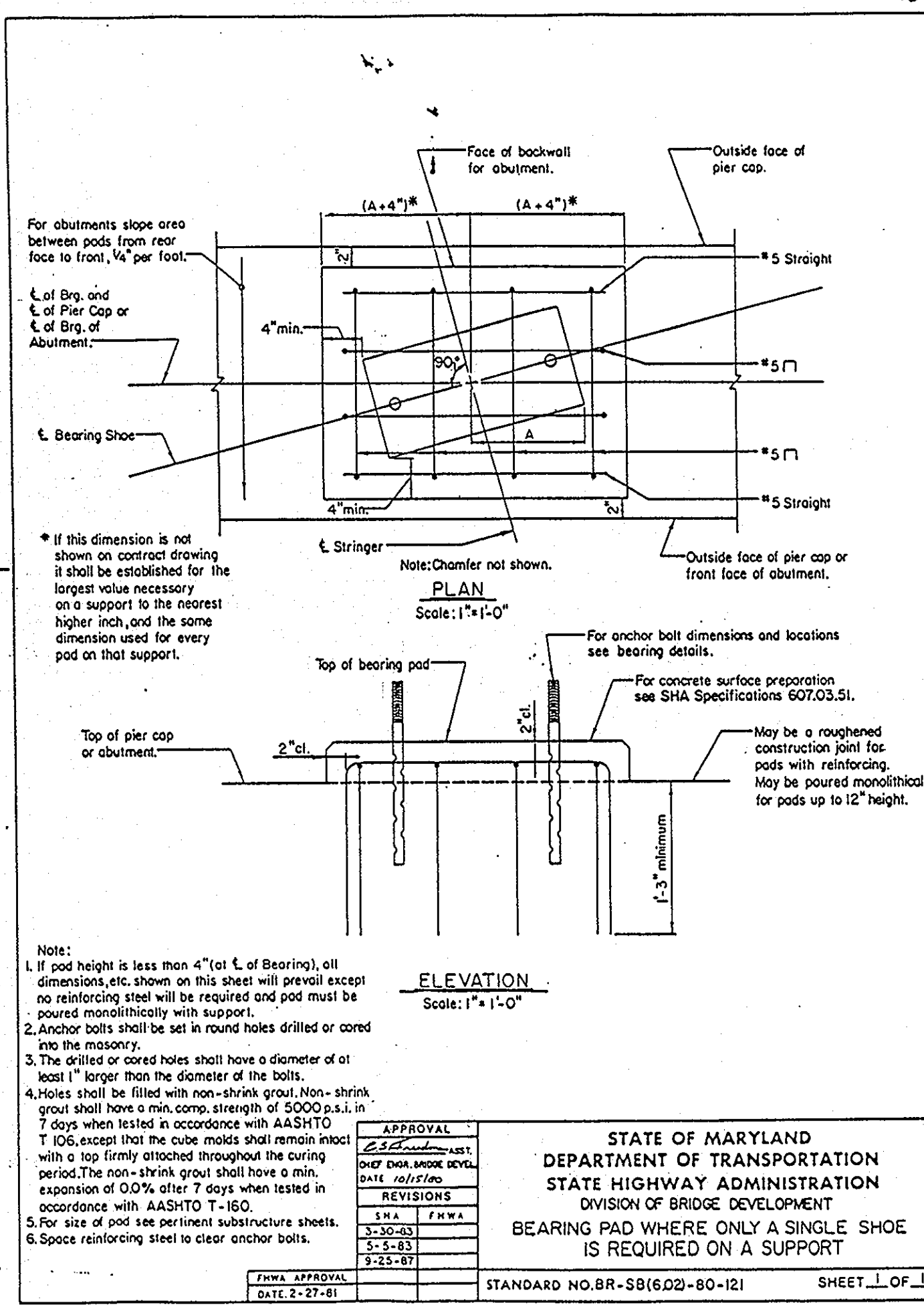
HI-TECH VENTURE LIMITED PARTNERSHIP
 OWNER AND DEVELOPER
 7223 PARKWAY DRIVE
 HANOVER, MARYLAND 21076
 (301) 796-4446

PARK CIRCLE DRIVE
 BRIDGE OVER DEEP RUN
 FIRST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET 17 OF 22

DWG. NO. S-13 OF S-16

F-89-85



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Howard County Department of Public Works
Chief, Land Development Division
DATE: 6/14/87

Chief, Bureau of Engineering, Active
DATE: 6/26/87

Chief, Bureau of Highways
DATE: 6/22/87

Chief, Division of Community Planning and Land Development
DATE: 7/13/87

ALVI ASSOCIATES, INC.
CONSULTING ENGINEERS
1300 YORK ROAD
LUTHERVILLE, MARYLAND



DES: _____
DRN: _____
CHK: _____
DATE: _____

BY: _____ NO. _____ REVISION _____ DATE: _____

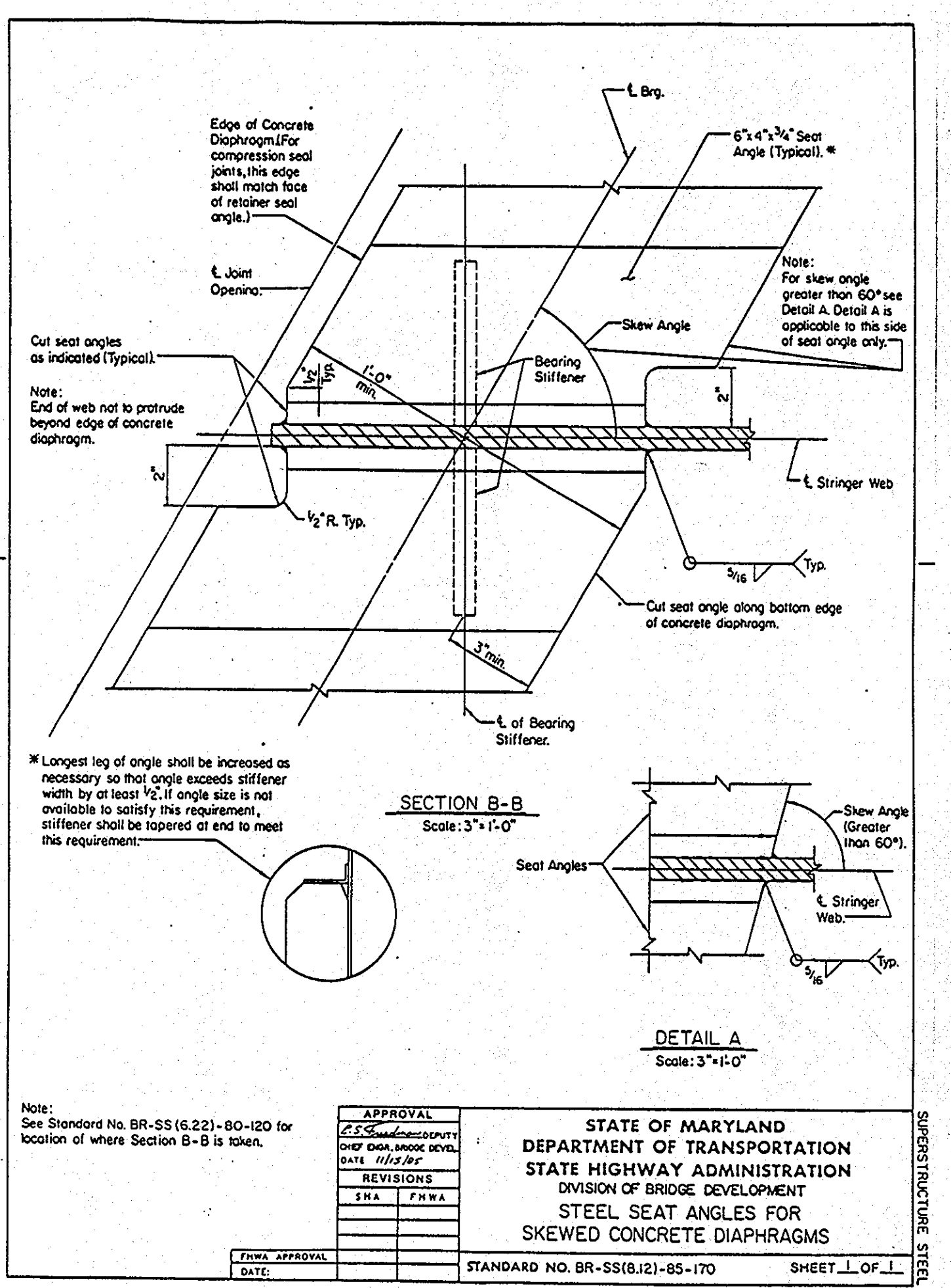
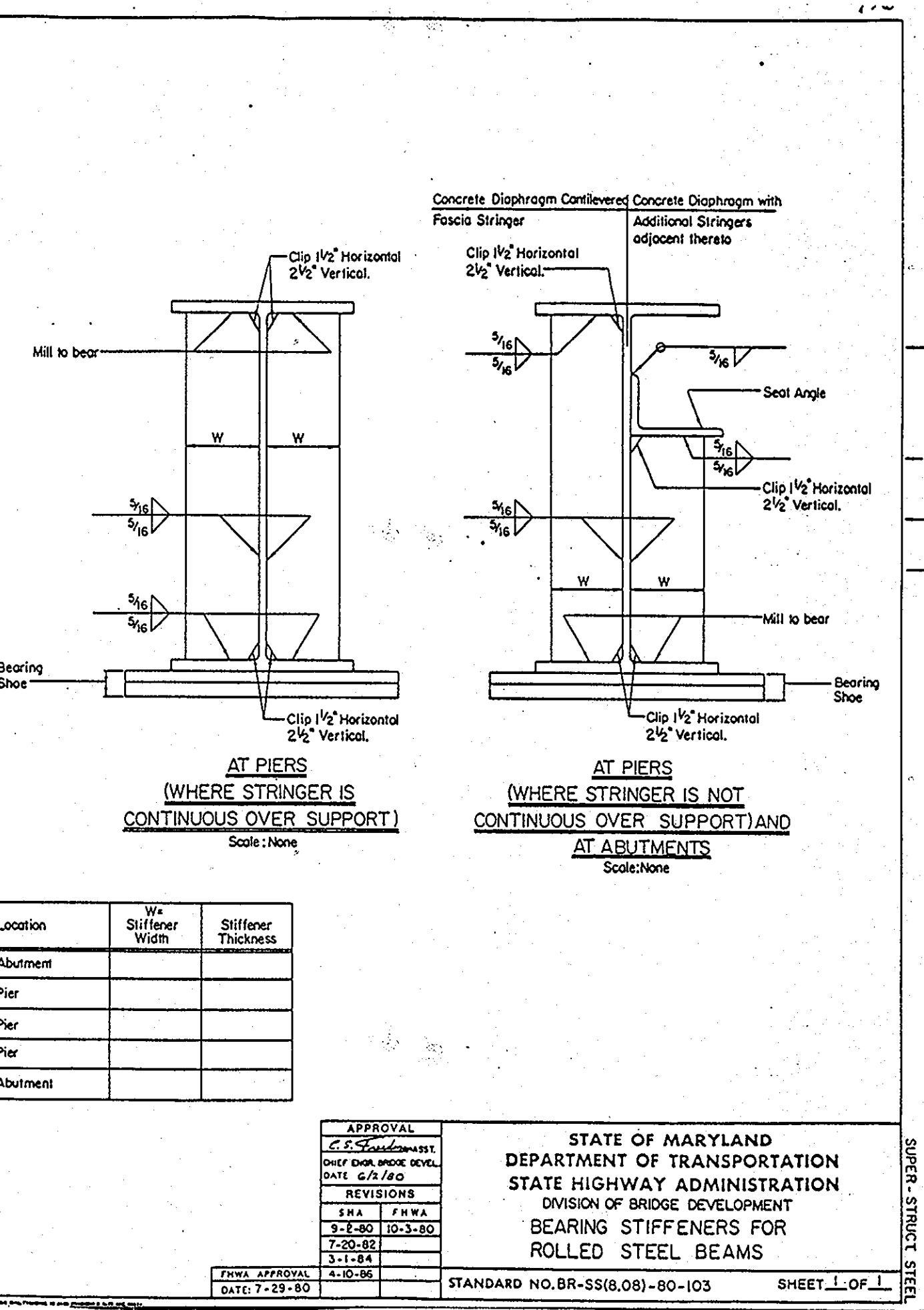
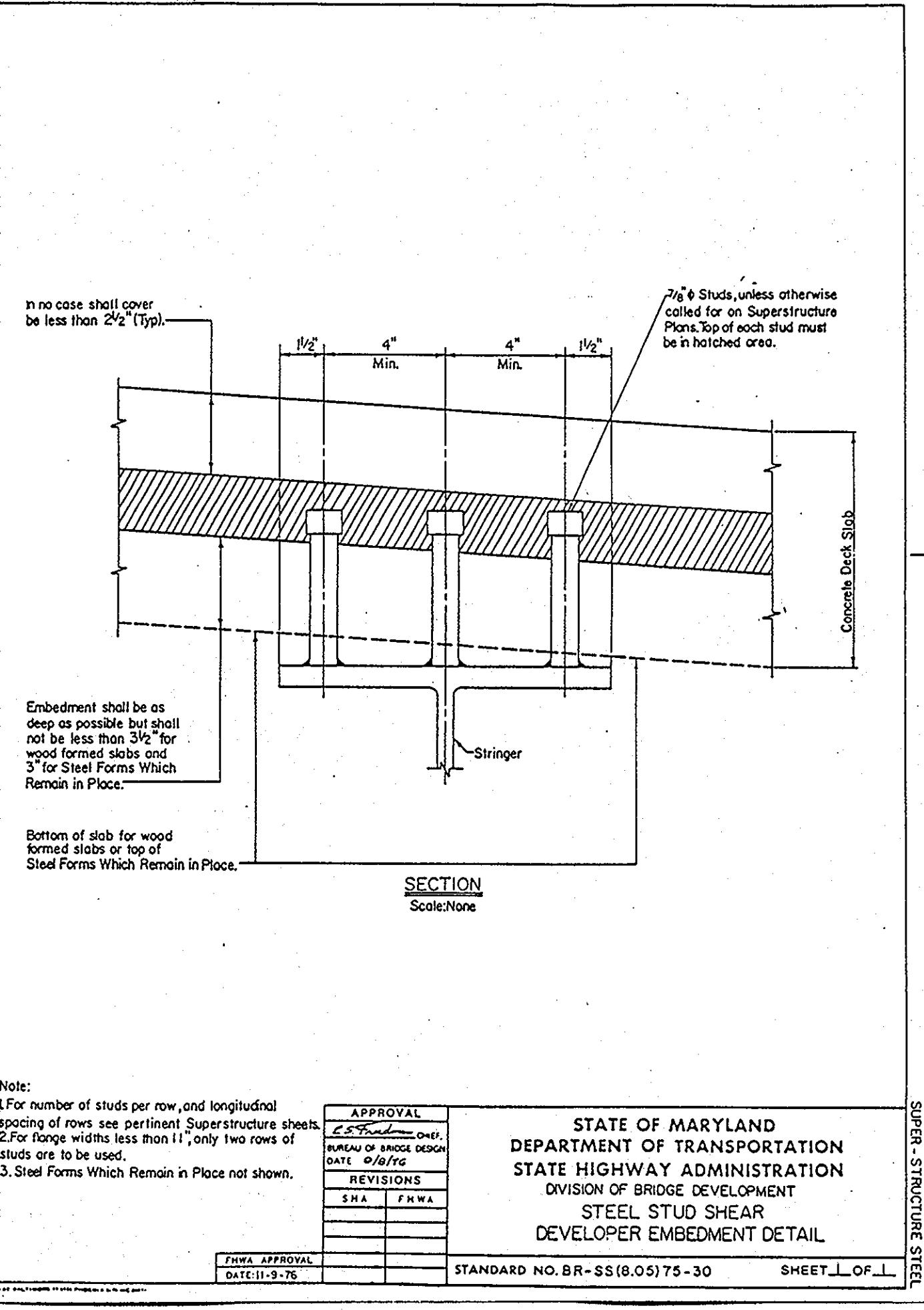
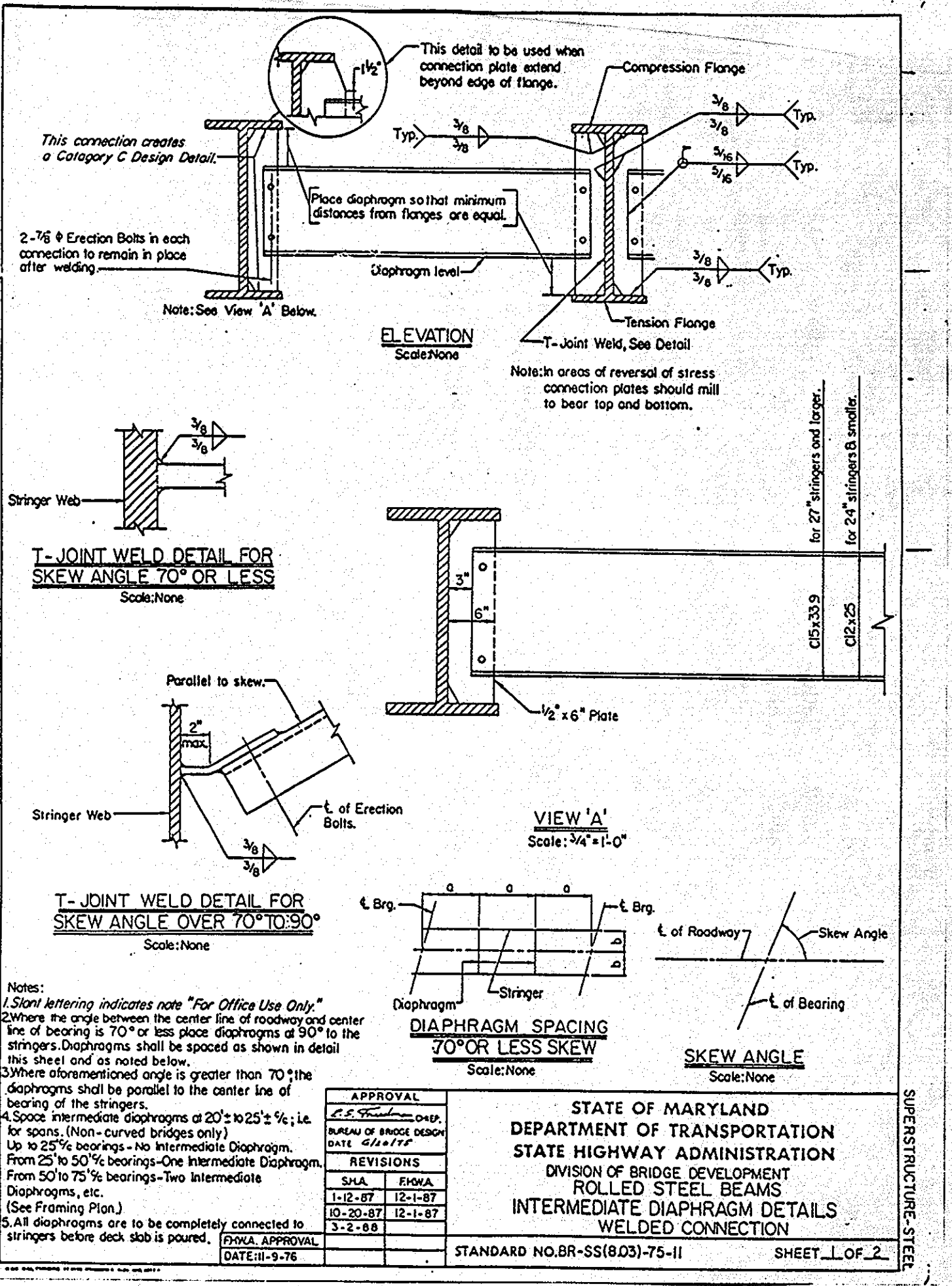
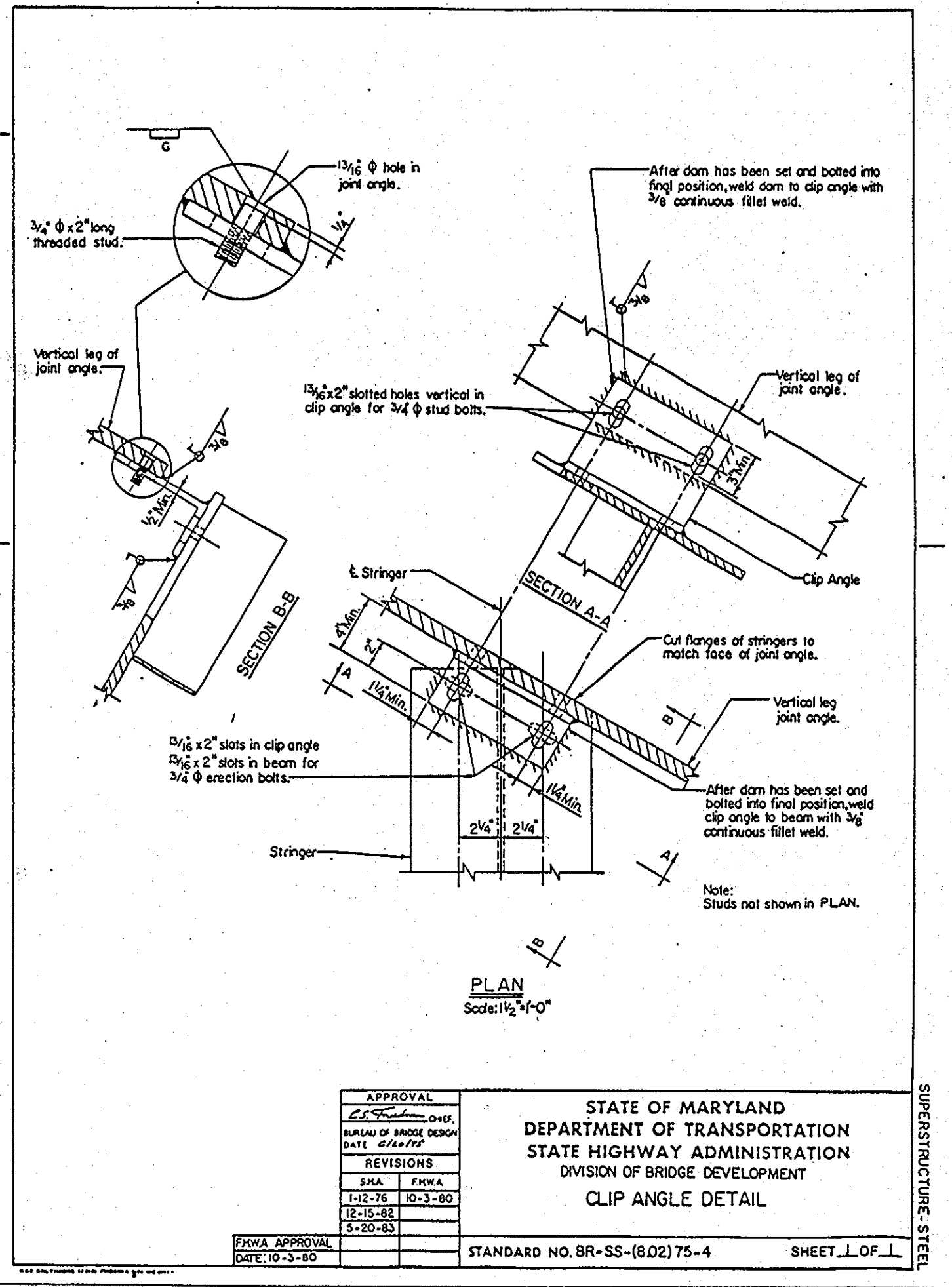
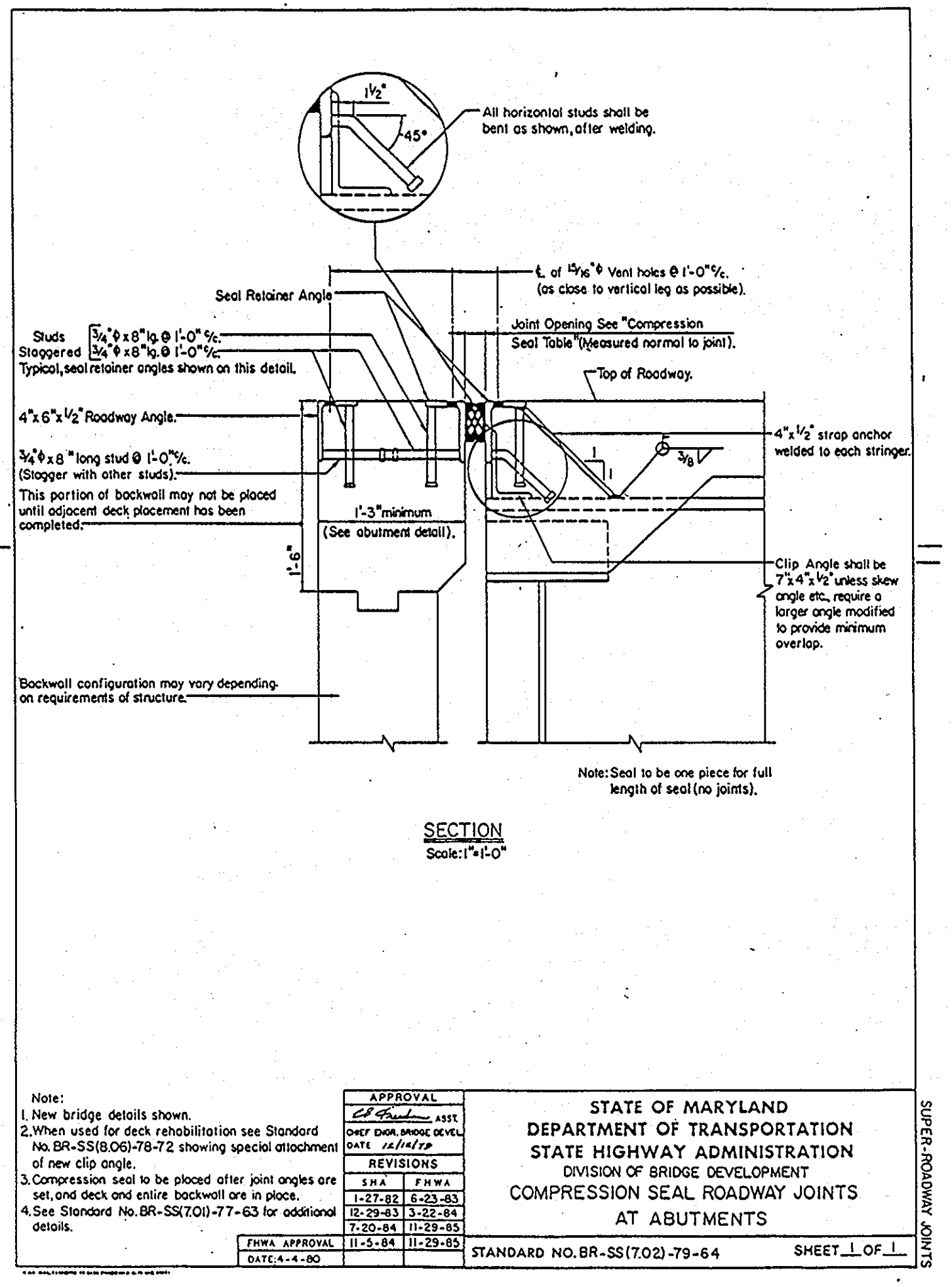
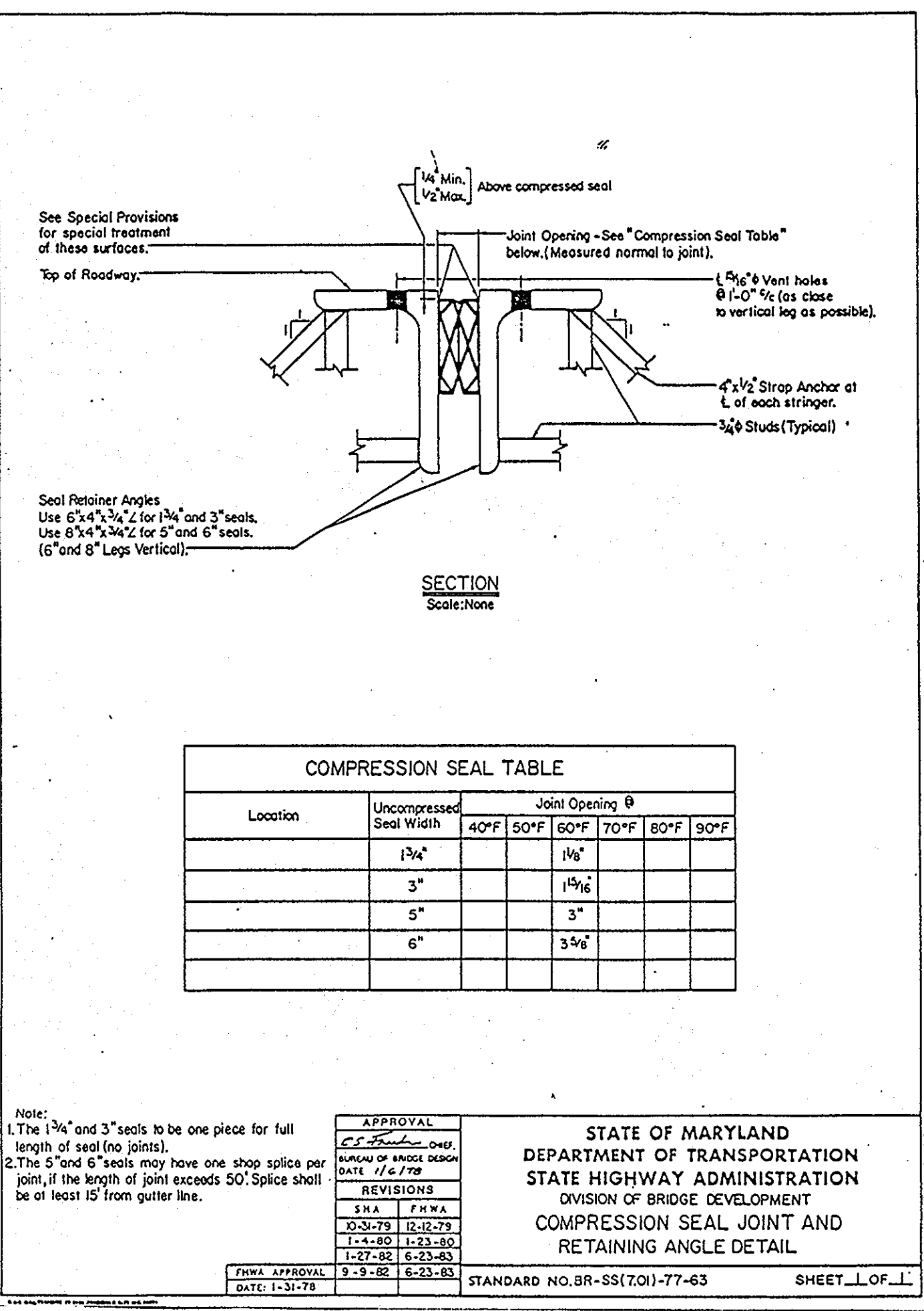
HI-TECH VENTURE LIMITED PARTNERSHIP
OWNER AND DEVELOPER
7223 PARKWAY DRIVE
HANOVER, MARYLAND 21076
(301) 796-4446

PARK CIRCLE DRIVE
BRIDGE OVER DEEP RUN

FIRST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 18 OF 20

F-89-85



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

6/14/89 DATE

CHIEF LAND DEVELOPMENT DIVISION

6/28/89 DATE

CHIEF, BUREAU OF ENGINEERING

6/28/89 DATE

CHIEF, BUREAU OF HIGHWAYS

7/1/89 DATE

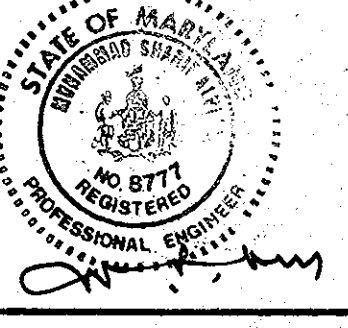
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

ALVI ASSOCIATES, INC.

CONSULTING ENGINEERS

1300 YORK ROAD

LUTHERVILLE, MARYLAND



DES:	DRN:	CHK:	DATE:	BY	NO.	REVISION	DATE

HI-TECH VENTURE LIMITED PARTNERSHIP

OWNER AND DEVELOPER

7223 PARKWAY DRIVE

HANOVER, MARYLAND 21076

(301) 796-4446

PARK CIRCLE DRIVE

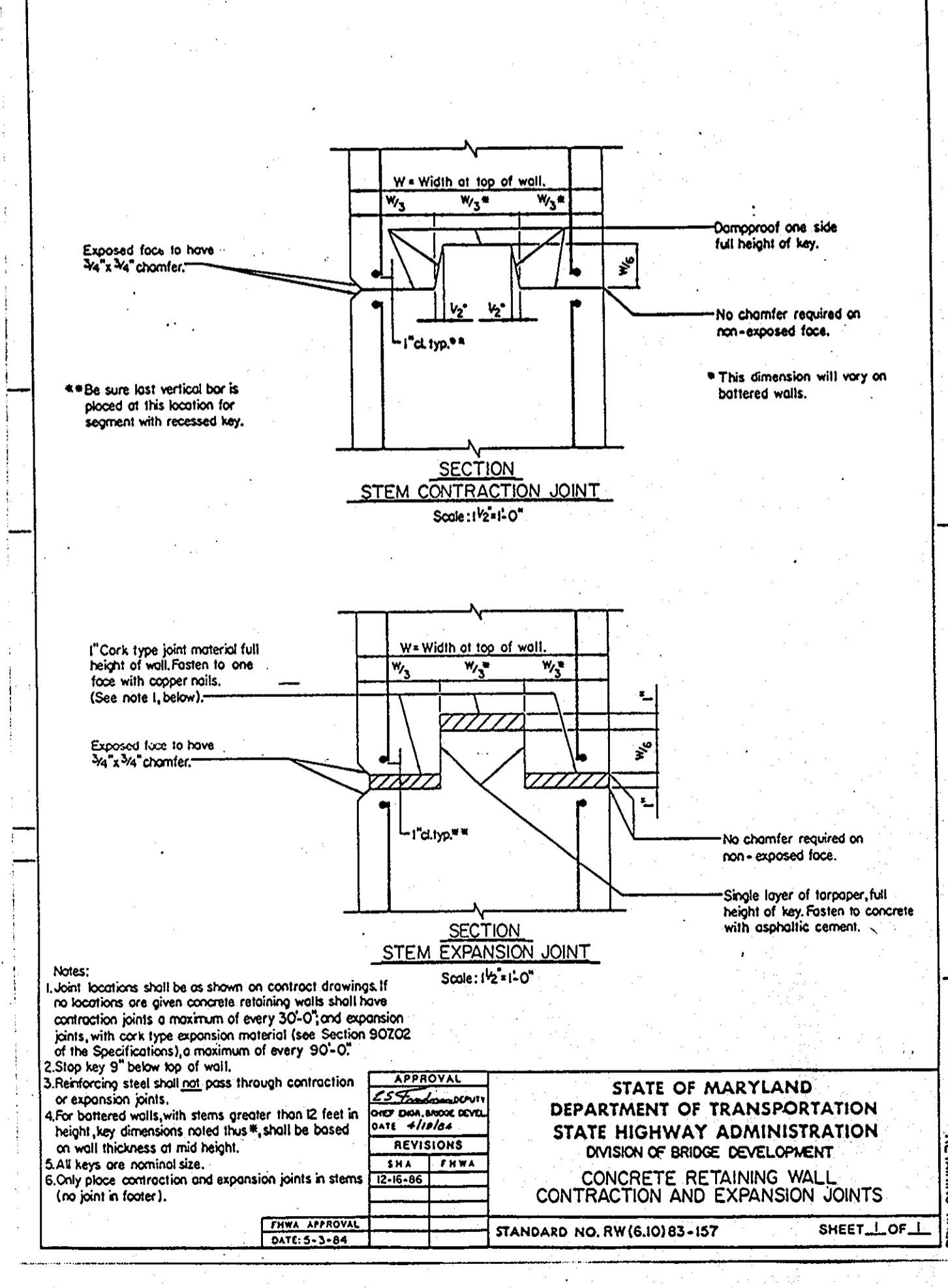
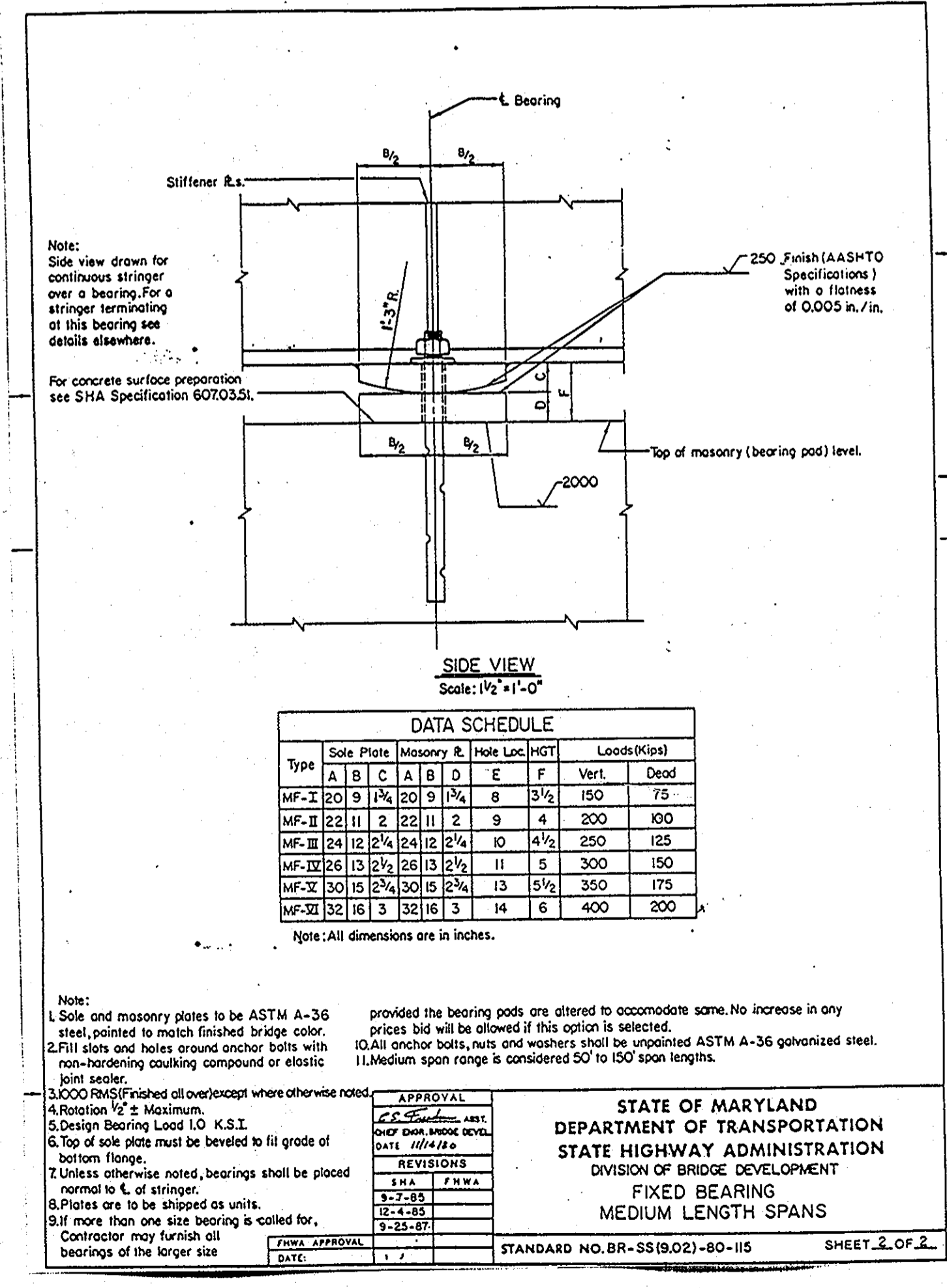
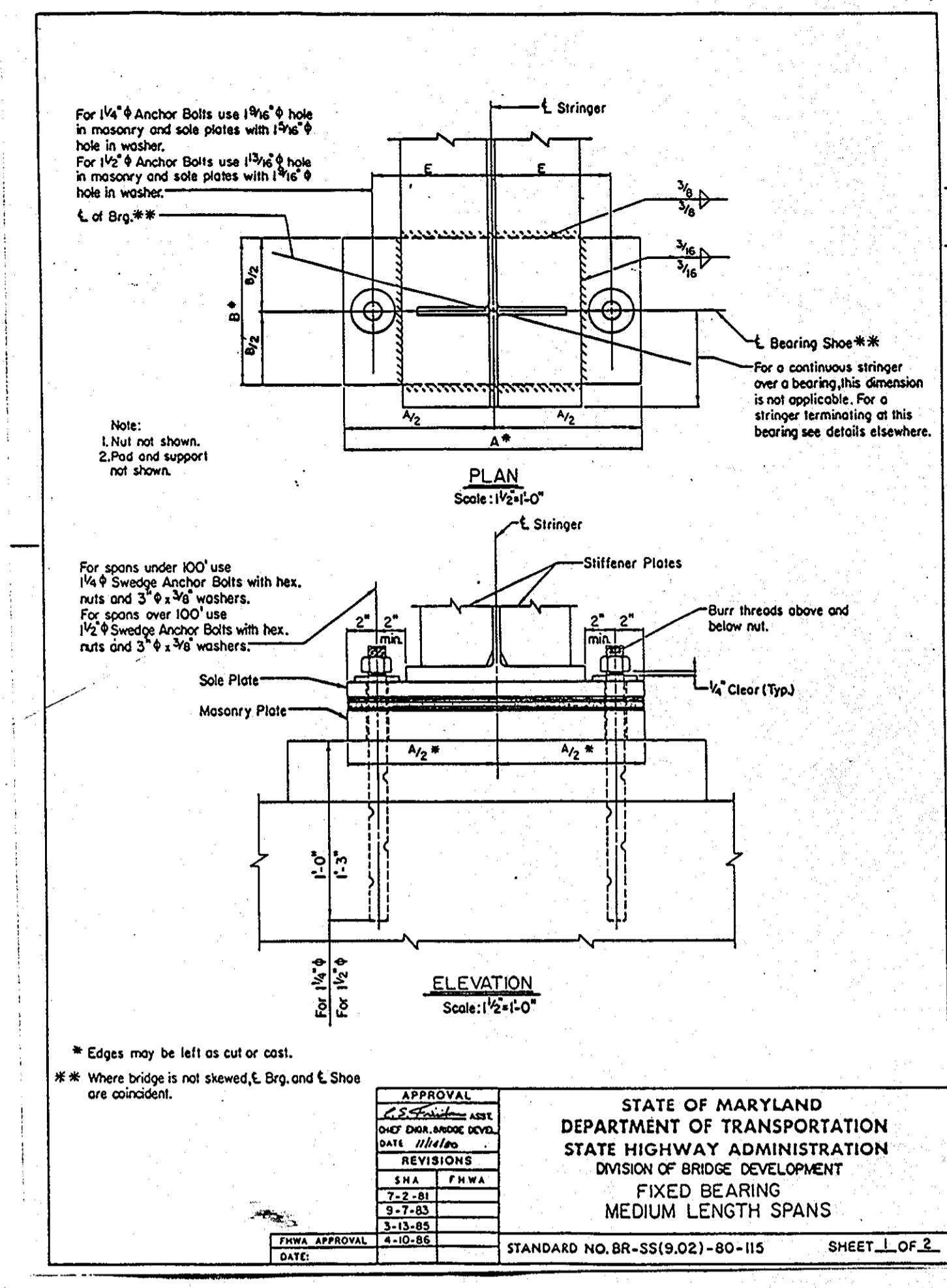
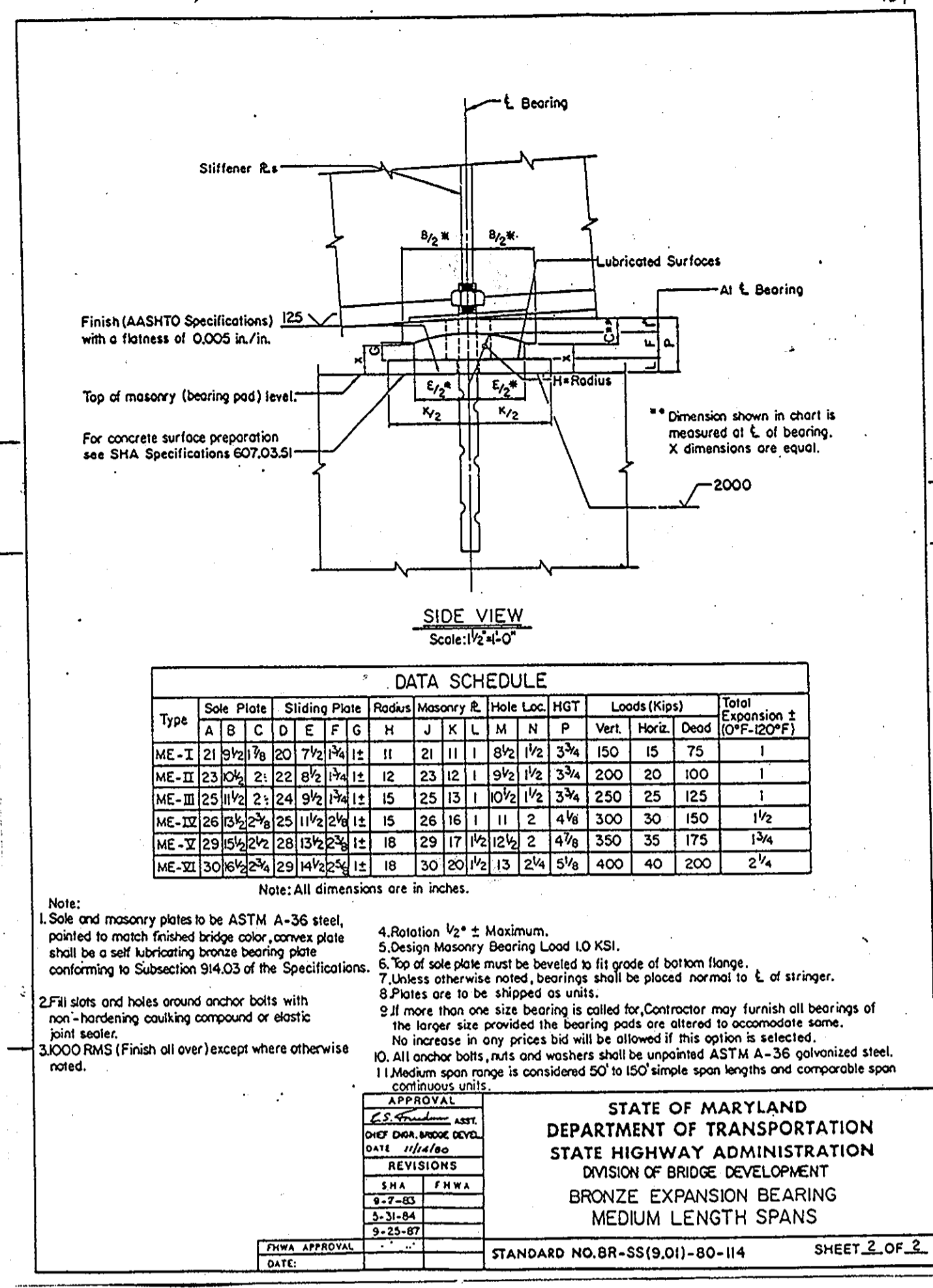
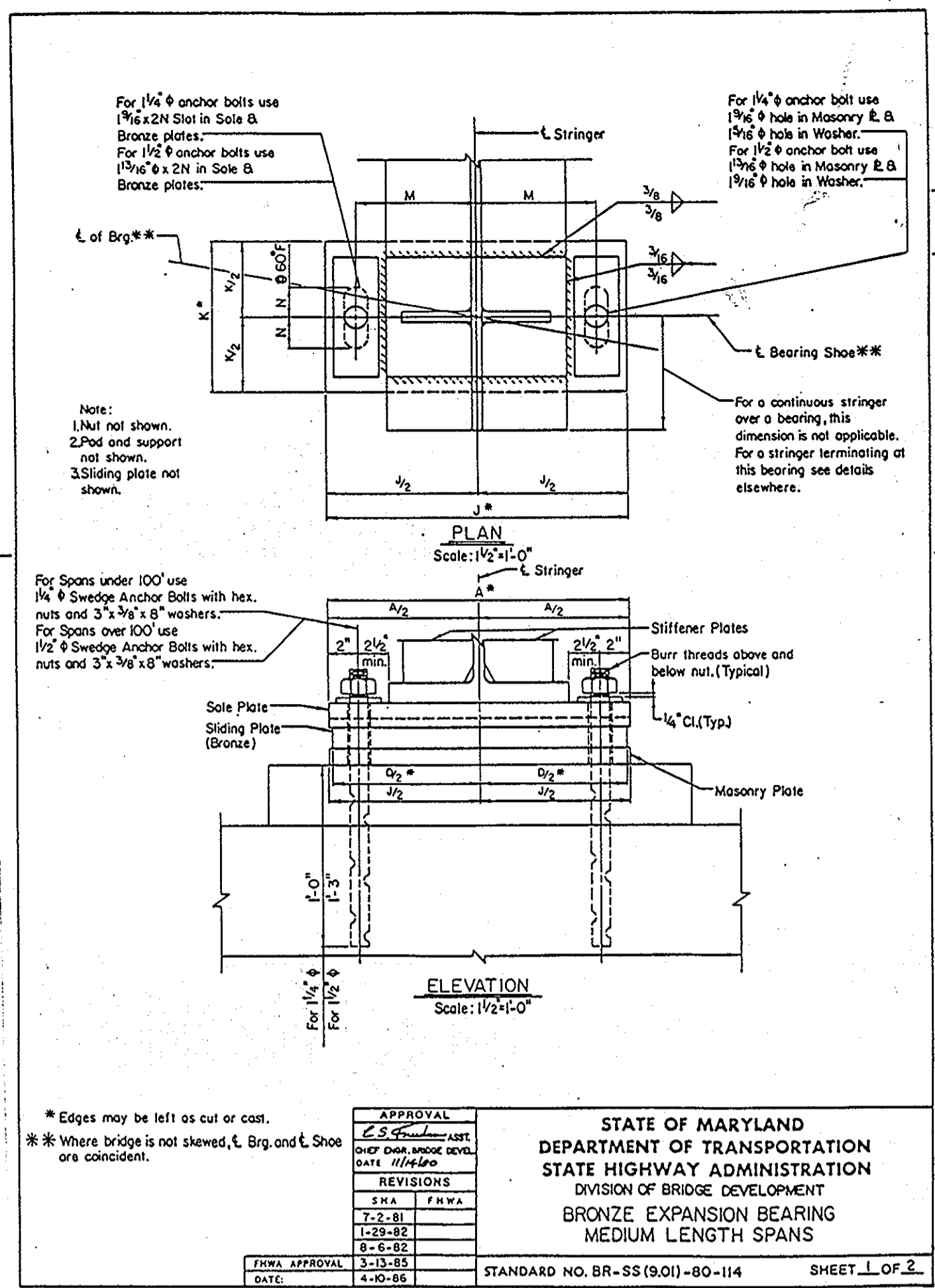
BRIDGE OVER DEEP RUN

FIRST ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 19 OF 20



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

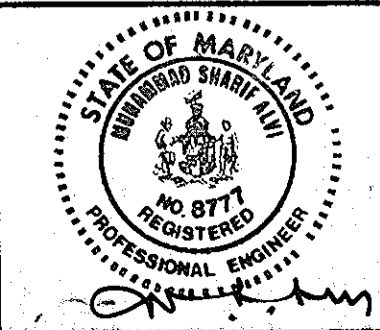
[Signature] DATE: 6/14/89
 CHIEF, LAND DEVELOPMENT DIVISION

[Signature] DATE: 6/22/89
 CHIEF, BUREAU OF ENGINEERING acting

[Signature] DATE: 6/22/89
 CHIEF, BUREAU OF HIGHWAYS

[Signature] DATE: 7/1/89
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

ALVI ASSOCIATES, INC.
 CONSULTING ENGINEERS
 1300 YORK ROAD
 LUTHERVILLE, MARYLAND



DES:	
DRN:	
CHK:	
DATE:	
BY NO.	
REVISION	

HI-TECH VENTURE LIMITED PARTNERSHIP
 OWNER AND DEVELOPER
 7223 PARKWAY DRIVE
 HANOVER, MARYLAND 21076
 (301) 798-4448

PARK CIRCLE DRIVE
 BRIDGE OVER DEEP RUN

FIRST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET 22 OF 22

F-89-85