

**CERTIFICATION BY THE DEVELOPER**  
 I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT THE RESPONSIBLE PERSONAL INVOLVED IN THIS CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT THE DEPARTMENT OF NATIONAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT.

SIGNATURE OF DEVELOPER \_\_\_\_\_ DATE \_\_\_\_\_

REVIEWED FOR \_\_\_\_\_ S.C.D.  
 NAME \_\_\_\_\_  
 AND MEETS TECHNICAL REQUIREMENTS

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_  
 U.S. SOIL CONSERVATION SERVICE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: *[Signature]* DATE \_\_\_\_\_  
 HOWARD S.C.D.

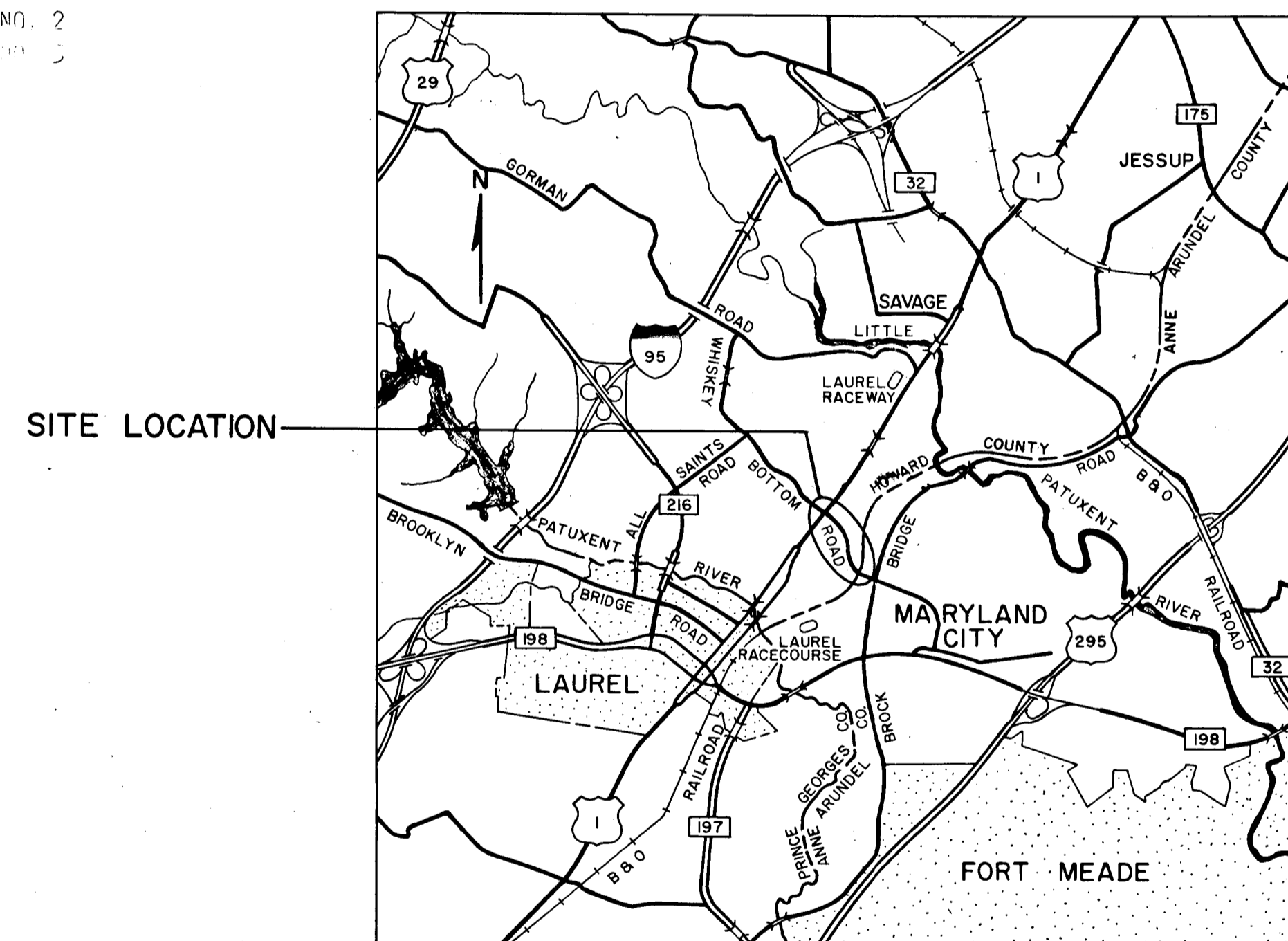
CAPITAL PROJECTS B-3816 AND J-4059

RUMMEL, KLEPPER AND KAHL - ENGINEERS  
 I Herby Certify That These Plans And The Control Of Siltation And Erosion Shown Hereon Meet The Requirements Established By The Howard County Soil Conservation District.  
 E. Robert Seitz \_\_\_\_\_ Date \_\_\_\_\_

**HOWARD COUNTY, MARYLAND  
 DEPARTMENT OF PUBLIC WORKS**

**WHISKEY BOTTOM BRIDGE AND ROAD  
 FROM U.S. ROUTE 1 TO 600 FEET EAST OF THE COUNTY LINE**

NO.	DESCRIPTION
1	TITLE SHEET
2	TRAFFIC CONTROL PLAN I
3	TRAFFIC CONTROL PLAN II
4	TYPICAL SECTION, SUPERELEVATION AND PAVING DETAILS
5	PLAN AND PROFILE, STA. 10+00 TO STA. 23+00
6	PLAN AND PROFILE, STA. 23+00 TO STA. 36+00
7	PLAN AND PROFILE, STA. 36+00 TO STA. 44+85 $\Delta$
8	STORM DRAIN PROFILES AND DRAINAGE STRUCTURE SCHEDULE
9	STORM DRAIN PROFILES, DETAILS AND DRAINAGE STRUCTURE SCHEDULE
10	PLAN AND PROFILE WATER MAIN
11	STORM DRAIN PROFILE, DETAILS AND DRAINAGE STRUCTURE SCHEDULE
12	SEDIMENT AND EROSION CONTROL PLAN I AND DETAILS FOR INFILTRATION TRENCH AND CHECK DAM
13	SEDIMENT AND EROSION CONTROL PLAN II AND BORING LEGEND
14	SEDIMENT AND EROSION CONTROL DETAILS AND NOTES
15	SEDIMENT AND EROSION CONTROL AND EARTHWORK SUMMARY
16	NOT USED
17	PLAN AND ELEVATION
18	ABUTMENT A
19	ABUTMENT B
20	ABUTMENT DETAILS
21	PIER NO. 1
22	PIER NO. 2
23	FRAMING PLAN
24	BEAM DETAILS
25	SUPERSTRUCTURE ELEVATIONS
26	SUPERSTRUCTURE DETAILS
27	SUPERSTRUCTURE DETAILS
28	JOINT DETAILS
29	BEARING SHOE DETAILS
30	CHAIN LINK SAFETY FENCE DETAILS
31	MISCELLANEOUS DETAILS
32	MISCELLANEOUS DETAILS
33	BORING AND DRIVE TEST
34	HOWARD COUNTY DRAINAGE AREA MAP EXISTING ROADWAY
35	HOWARD COUNTY DRAINAGE AREA MAP FOR IMPROVEMENTS TO WHISKEY BOTTOM ROAD BRIDGE
36	ANNE ARUNDEL COUNTY DRAINAGE AREA MAP EXISTING ROADWAY AND PROPOSED ROADWAY
37	TRAFFIC SIGNAL - SYMBOL SHEET
38	TRAFFIC SIGNAL - PLAN
39	TRAFFIC SIGNAL - TYPICAL SHEET NO. 1
40	TRAFFIC SIGNAL - TYPICAL SHEET NO. 2
41	TRAFFIC SIGNAL - TYPICAL SHEET NO. 3



LOCATION MAP  
 SCALE: 1" = 1 MILE

LENGTH OF PROJECT: 0.65 MILES  
 DESIGN SPEED: 40 M.P.H.  
 MINOR ARTERIAL

**DESIGN TRAFFIC DATA**

DESCRIPTION	1986	2005
A. D. T.	6786	12,600
D. H. V.	—	—
DIRECTIONAL DISTRIBUTION	—	—
PERCENT TRUCKS	12	12

**GENERAL UTILITY NOTES**

- Approximate Location Of Existing Utilities And Services Are Shown. The Contractor Shall Take All Necessary Precautions To Protect Existing Utilities And Services And Maintain Uninterrupted Supply. Any Damage Incurred Shall Be Repaired Immediately To The Satisfaction Of The Engineer And At The Contractor's Expense.
- Project Horizontal And Vertical Controls Are Based On The Howard County Department Of Public Works Datum.
- All Pipe Elevations Shown Are Invert Elevations.
- Clear All Utilities By A Minimum Of 6". Clear All Poles By 2'-0" Minimum Or Tunnel As Required. The Owner Has Contacted The Utility Companies And Has Made Arrangements For Bracing Of Poles As Shown On The Drawings. In The Event The Contractor's Work Requires The Bracing Of Additional Poles, Any Cost Incurred By The Owner For The Bracing Of Additional Poles Or Damages Shall Be Deducted From Money Owed The Contractor. The Contractor Shall Coordinate With The Utility Companies To Schedule The Bracing Of The Poles.
- For Details Not Shown On The Drawings, And For Materials And Construction Methods Use Howard County Design Manual, Volume IV, Standard Specifications And Details For Construction. The Contractor Shall Have A Copy Of Volume IV On The Job.
- Existing Utilities In The Vicinity Of The Proposed Work Which Require Test Pitting Shall Be So Located By The Contractor Two (2) Weeks In Advance Of Construction Operations; Data Obtained Shall Be Utilized To Determine Method Of Adapting/Connecting To Perform Proposed Tie-ins Where Applicable.
- The Contractor Shall Notify The Following Utility Companies Or Agencies At Least Five Working Days Before Starting Work Shown On These Plans:
  - State Highway Administration - 531-5533
  - Baltimore Gas & Electric Co. - Contractor Services 850-4620
  - Baltimore Gas & Electric Co. Under Ground Damage Control - 859-9004
  - Baltimore Gas & Electric Co. Trouble Shooting - 298-9001
  - Miss Utility - 1-800-257-7777
  - Bureau Of Utilities, Howard County Department Of Public Works - 992-2366
 (See Contract Special Provisions For Additional HCDPW Notification Requirements.)
- Trees And Shrubs Are To Be Protected From Damage To Maximum Extent. Trees And Shrubs Located Within The Construction Strip Are Not To Be Removed Or Damaged By The Contractor.
- Contractor Shall Remove Trees, Stumps And Roots Along The Line Of Excavation. Payment For Such Removal Shall Be Included In The Unit Price Bid For Construction Of The Utility Being Installed.
- All Water Mains To Be D.I.P. Class 52 Unless Otherwise Noted.
- Tops Of All Water Mains To Have A Minimum Of 3-1/2' Cover Unless Otherwise Noted.
- Fire Hydrants Shall Be Set To The Bury Line Elevations Shown On The Drawings, And In Accordance With The Standard Details Except As Modified By The Contract Special Provisions. Soil Around The Fire Hydrant Shall Be Compacted In Accordance With Section 1003 Of The Standard Specifications.
- The Contractor Shall Not Operate Any Water Main Valves On The Existing Water System.

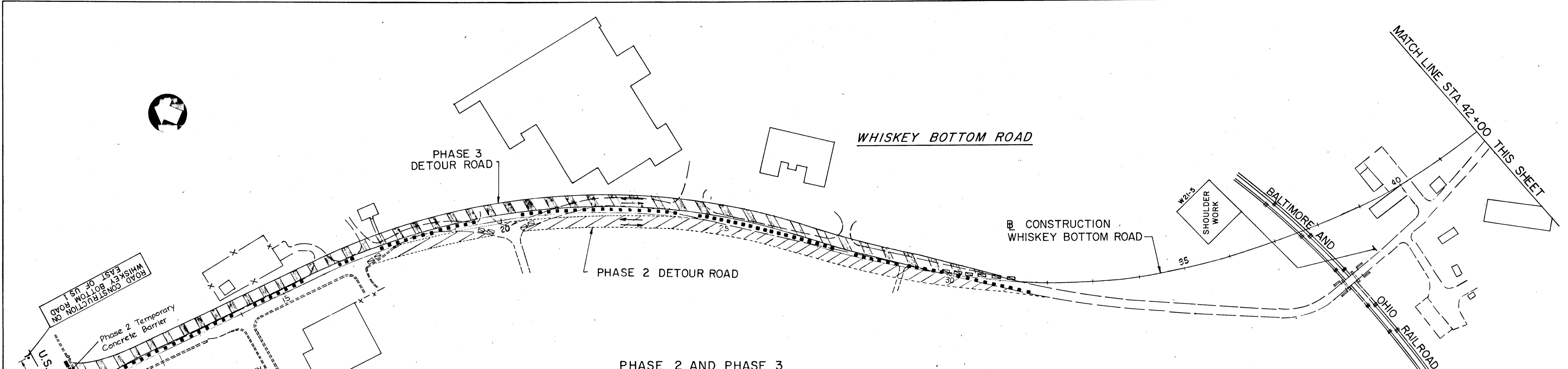
**CONVENTIONAL SIGNS**

STATE AND NATIONAL LINE	-----	CULVERTS	=====
COUNTY LINE	-----	RETAINING WALL	=====
CITY OR VILLAGE	-----	DROP INLET	□=====
GUARD RAIL	-----	TROLLEY POLE	-----●-----
FENCE LINE	-----	POWER POLE	-----●-----
UNFENCED PROPERTY	-----	TELEPHONE OR TELEGRAPH POLE	-----●-----
RIGHT OF WAY LINE	-----	MARSH	
TRAVELED WAY	-----	HEDGE	-----
RAILROADS	=====	GROUND ELEVATION	DATUM LINE 173.4
BASE OR SURVEY LINE	-----	GRADE ELEVATION	DATUM LINE 202

BY	NO.	REVISION	DATE
		STATION CHANGE	1/10/89

*[Handwritten signature]*

**RUMMEL, KLEPPER & KAHL**  
 CONSULTING ENGINEERS  
 1035 N. CALVERT STREET  
 BALTIMORE, MARYLAND 21202



**PHASE 2 AND PHASE 3**

**MAINTENANCE OF TRAFFIC  
SEQUENCE OF CONSTRUCTIONS**

FOR EACH PHASE OF WORK INSTALL ALL NECESSARY SIGNS BEFORE COMMENCING WITH CONSTRUCTION NOTED THEREIN.

**PHASE 1**

BEGIN CONSTRUCTION OF BRIDGE AND ROADWAY FROM STATION 33+00 TO STATION 40+50. NO PERMANENT SIGNS SHOULD BE NECESSARY. CONSTRUCT LEFT SIDE OF ROADWAY FROM STA. 40+50 TO STA. 44+85.

**PHASE 2**

MAINTAIN TWO LANES OF TRAFFIC AND ACCESS TO ALL ENTRANCES AND MAINTAIN ALL PERTINENT TRAFFIC CONTROL DEVICES.

ADJUST OR RELOCATE EXISTING UTILITY AND DRAINAGE FACILITIES NECESSARY FOR CONSTRUCTION OF PHASE 2 DETOUR ROAD.

INSTALL TYPE III BARRICADES WHERE SHOWN AT STATION 17+ , STATION 19+ AND STATION 20+ .

CONSTRUCT PHASE 2 DETOUR ROAD. REMOVE PHASE 2 BARRICADES, STRIPE ROADWAY. INSTALL TYPE III BARRICADES WHERE SHOWN FROM 29+00 TO 31+50. INSTALL TEMPORARY CONCRETE BARRIERS ALONG U.S. ROUTE 1 AND DIVERT TRAFFIC ON TO PHASE 2 DETOUR ROAD.

**PHASE 3**

INSTALL DRUMS WITH REFLECTORIZED TAPE WITH A MINIMUM SPACING OF 20 FT. BETWEEN TRAVELED ROADWAY AND CONSTRUCTION AREA REQUIRED FOR PHASE 3 DETOUR ROAD.

MAINTAIN TWO LANES OF TRAFFIC AND ACCESS TO ALL ENTRANCES AND MAINTAIN ALL PERTINENT TRAFFIC CONTROL DEVICES.

ADJUST OR RELOCATE EXISTING UTILITY, DRAINAGE AND TRAFFIC SIGNAL FACILITIES NECESSARY FOR THE CONSTRUCTION OF PHASE 3 DETOUR ROAD.

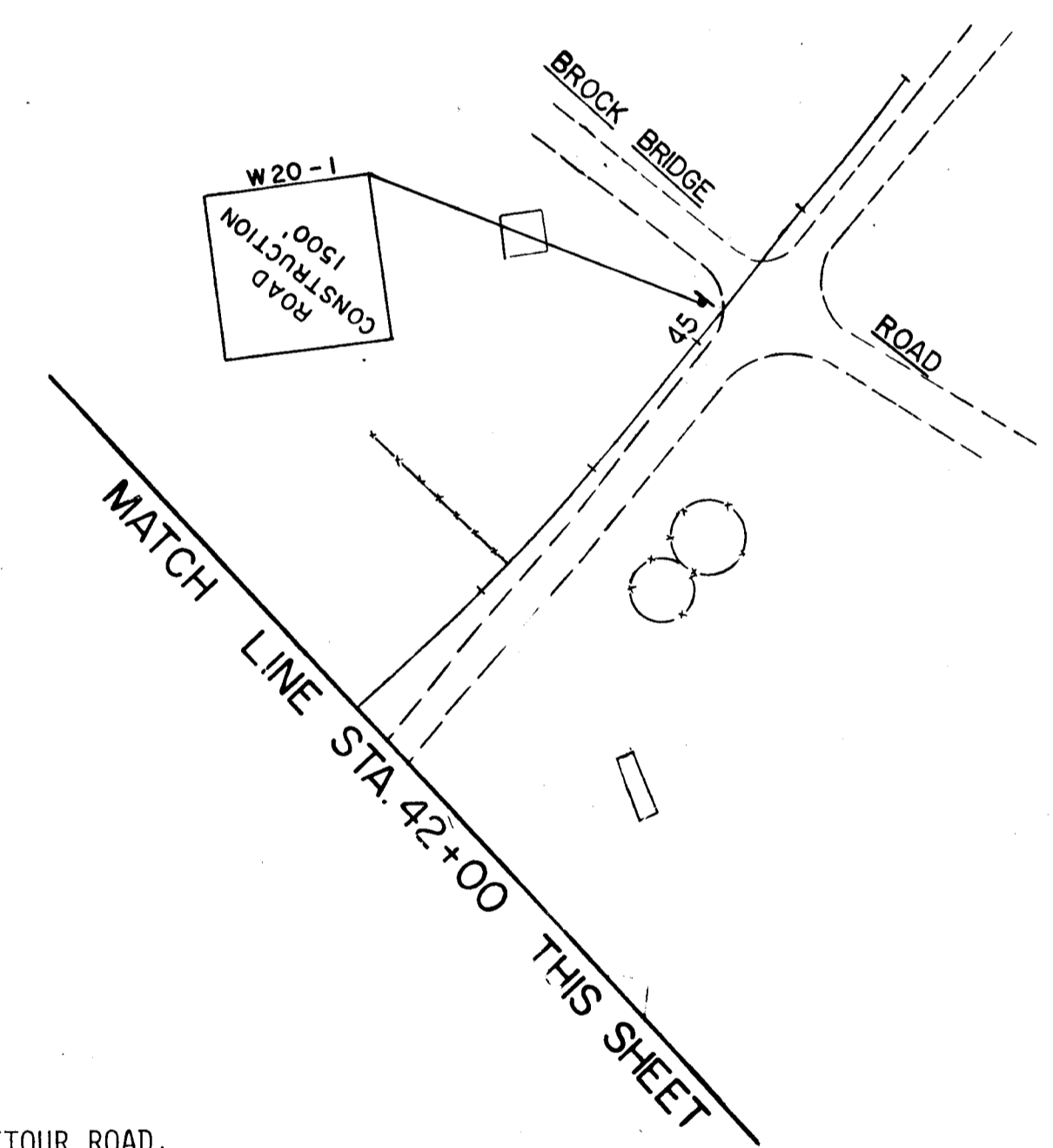
CONSTRUCT PHASE 3 DETOUR ROAD.

PLACE BARRICADES OR BARRIERS TO PROTECT ALL UTILITY POLES AND OTHER FACILITIES, PROVIDE TEMPORARY STRIPING; INSTALL SIGNS AS SHOWN.

REMOVE PHASE 2 TEMPORARY CONCRETE BARRIER AND INSTALL TEMPORARY CONCRETE BARRIER WHERE SHOWN ALONG U.S. ROUTE 1, RIGHT OF STATION 10+25.

**PHASE 3 CONT.**

DIVERT TRAFFIC TO PHASE 3 DETOUR ROAD. CONSTRUCT NEW ROADWAY AND ALL ASSOCIATED FACILITIES TO THE RIGHT OF PHASE 3 DETOUR ROAD FROM U.S. ROUTE 1 TO STATION 30+ .



**LEGEND**

TYPE III BARRICADES	
DRUMS	
SIGNS	
PHASE 3 AND PHASE 6 TEMPORARY ROADWAY	
PHASE 2 AND PHASE 4 TEMPORARY ROADWAY	
TEMPORARY CONCRETE BARRIER - DOUBLE FACE	

**SUPERELEVATION TRANSITION**

LEFT SIDE	STATION	RIGHT SIDE
+ 2%	10+70.00	- 2%
+ 2%	11+63.36	- 2%
+ 1.33%	P.T. 12+05.36	- 2%
- 1.66%	13+91.83	- 2%
+ 1.33%	P.C. 15+78.30	- 2%
+ 2%	16+20.30	- 2%
+ 2%	25+58.00	- 2%
+ 1.33%	P.T. 26+00.00	- 2%
+ 0.64%	26+43.08	- 2%
- 2%	28+08.00	+ 0.64%
- 2%	P.C. 28+51.08	+ 1.33%
- 2%	28+93.08	+ 2%
- 2%	42+70.00	+ 2%

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS DATE

CHIEF, BUREAU OF ENGINEERING DATE

CHIEF, DIVISION OF ROADS, BRIDGES AND STORM DRAINAGE DATE

CHIEF, BUREAU OF HIGHWAYS DATE

RUMMEL, KLEPPER & KAHL  
CONSULTING ENGINEERS  
1035 N. CALVERT STREET  
BALTIMORE, MARYLAND 21202

DES: R.A.

DRN: F.R.O./F.W.C.

CHK: J.A.R.

DATE: 9/87

STATION CHANGE

1/10/89

REVISION

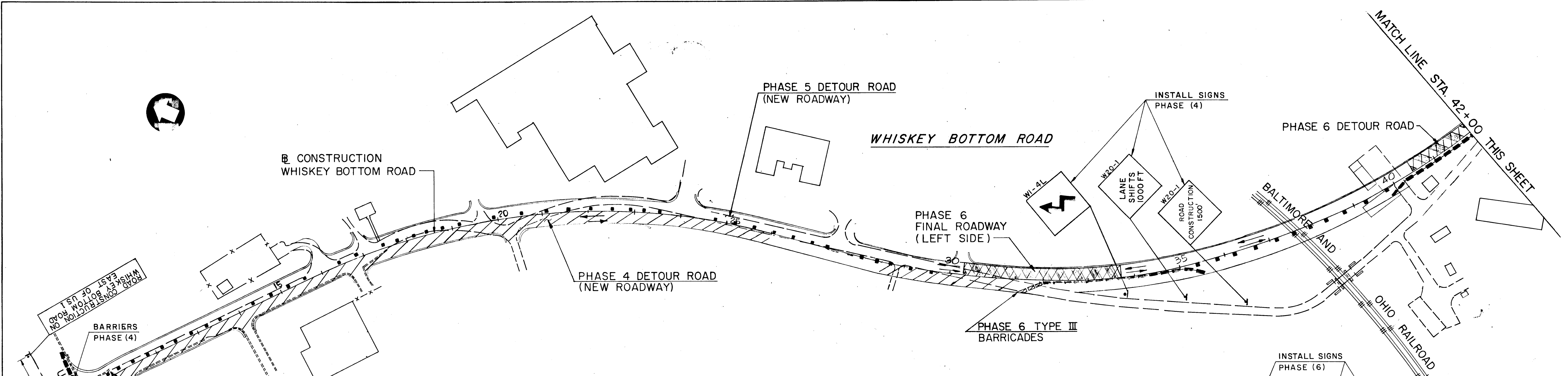
TRAFFIC CONTROL  
PLAN I

600' SCALE MAP NO. 50 BLOCK NO. 4

WHISKEY BOTTOM ROAD AND BRIDGE  
CAPITAL PROJECT J-4059 & B-3816  
ELECTION DISTRICT NO. 6  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 2 OF 41



**PHASE 4 AND PHASE 5**

**MAINTENANCE OF TRAFFIC SEQUENCE OF CONSTRUCTIONS**

**PHASE 4**

REVISE OR INSTALL NEW SIGNS, BARRICADES, AND DRUMS TO LOCATIONS SHOWN. DRUMS ARE TO BE PLACED ALONG EDGE OF TRAVELED ROADWAY AND CAN BE ADJUSTED TO FACILITATE CONSTRUCTION OF NEW ROADWAY.

DIVERT TRAFFIC FROM PHASE 3 DETOUR ROAD TO PHASE 4 DETOUR ROAD (NEW ROADWAY) COMPLETED FROM U.S. ROUTE 1 TO STATION 30+.

MAINTAIN TWO LANES OF TRAFFIC AND ACCESS TO ALL ENTRANCES.

COMPLETE CONSTRUCTION OF NEW ROADWAY AND ASSOCIATED FACILITIES INCLUDING PLACEMENT OF FINAL ROADWAY SURFACE COURSE ON THE LEFT SIDE OF WHISKEY BOTTOM ROAD FROM U.S. ROUTE 1 TO STATION 30+.

REMOVE ALL TEMPORARY SIGNS AND STRIPING NOT REQUIRED.

**PHASE 5**

REMOVE ALL SIGNS, DRUMS AND BARRICADES NOT REQUIRED FOR PAVING OPERATIONS. ADJUST LOCATION OF DRUMS AND MAINTAIN ALL PERTINENT TRAFFIC CONTROL DEVICES.

DIVERT TRAFFIC TO LEFT SIDE OF ROADWAY FROM ROUTE 1 TO STATION 30+ AND MAINTAIN TWO LANES OF TRAFFIC AND ALLOW ACCESS TO ALL ENTRANCES.

COMPLETE PLACEMENT OF FINAL ROADWAY SURFACE COURSE ON THE RIGHT SIDE OF WHISKEY BOTTOM ROAD FROM U.S. ROUTE 1 TO STATION 30+00.

REMOVE ALL TEMPORARY STRIPING, DRUMS, CONES, BARRICADES, SIGNS, ETC...

**PHASE 6**

DIVERT TRAFFIC FROM PHASE 5 ROADWAY TO RIGHT SIDE OF ROADWAY.

CONSTRUCT DETOUR ROAD AND INSTALL TEMPORARY CONCRETE BARRIER FROM STATION 40+50 TO STATION 44+85 AS SHOWN.

COMPLETE CONSTRUCTION OF FINAL ROADWAY AND ASSOCIATED FACILITIES ON THE LEFT SIDE OF WHISKEY BOTTOM ROAD FROM STATION 30+ TO STATION 33+.

PLACE TEMPORARY CONCRETE BARRIER FROM STATION 30+ TO STATION 35+. PLACE DRUMS FROM STATION 35+ TO STATION 40+.

INSTALL TYPE III BARRICADES AT STATION 31+ AND STATION 44+.

DIVERT TRAFFIC TO PHASE 6 DETOUR ROAD AND TO THE NEW ROADWAY APPROACHES AND NEW BRIDGE AT THE RAILROAD.

CONSTRUCT ENTRANCE RIGHT OF STATION 39+.

COMPLETE CONSTRUCTION OF FINAL ROADWAY AND ASSOCIATED FACILITIES ON THE RIGHT SIDE OF WHISKEY BOTTOM ROAD FROM STATION 30+ TO STATION 44+85

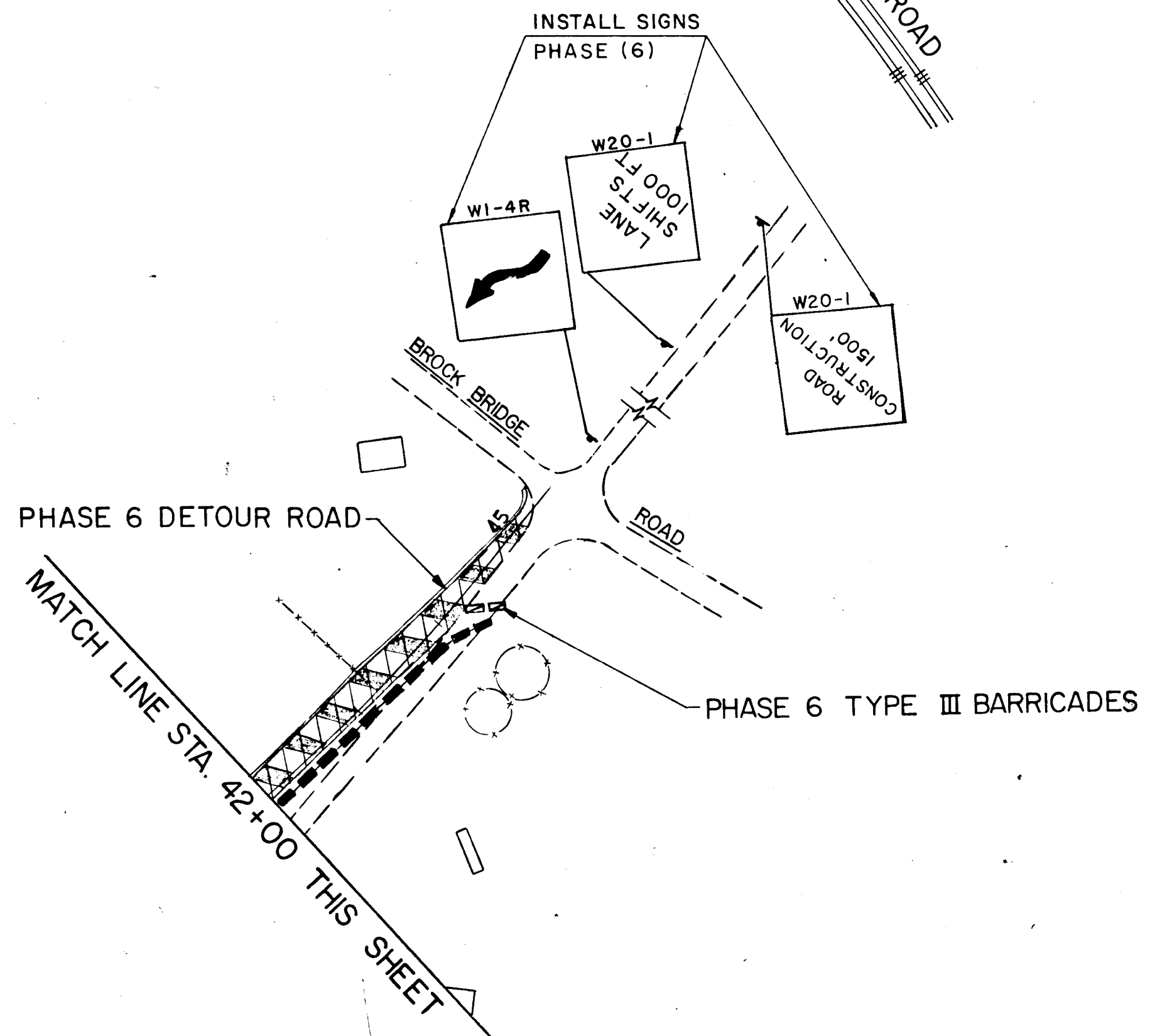
CONSTRUCT NEW ROADWAY AND ASSOCIATED FACILITIES FROM STATION 40+50 TO STATION 44+85, LEFT SIDE ROADWAY

REMOVE EXISTING BRIDGE, REMOVE PAVEMENT AS SHOWN ON CONSTRUCTION PLANS. RESTORE AND STABILIZE ALL AREAS. REMOVE ALL TEMPORARY TRAFFIC CONTROL DEVICES.

MAINTAIN TWO LANES OF TRAFFIC AND ACCESS TO ALL ENTRANCES DURING PHASE 6.

**LEGEND**

- TYPE III BARRICADES
- DRUMS
- SIGNS
- PHASE 3 AND PHASE 6 TEMPORARY ROADWAY
- PHASE 2 AND PHASE 4 TEMPORARY ROADWAY
- TEMPORARY CONCRETE BARRIER - DOUBLE FACE



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

RUMMEL, KLEPPER & KAHL

CONSULTING ENGINEERS  
1035 N CALVERT STREET  
BALTIMORE, MARYLAND 21202

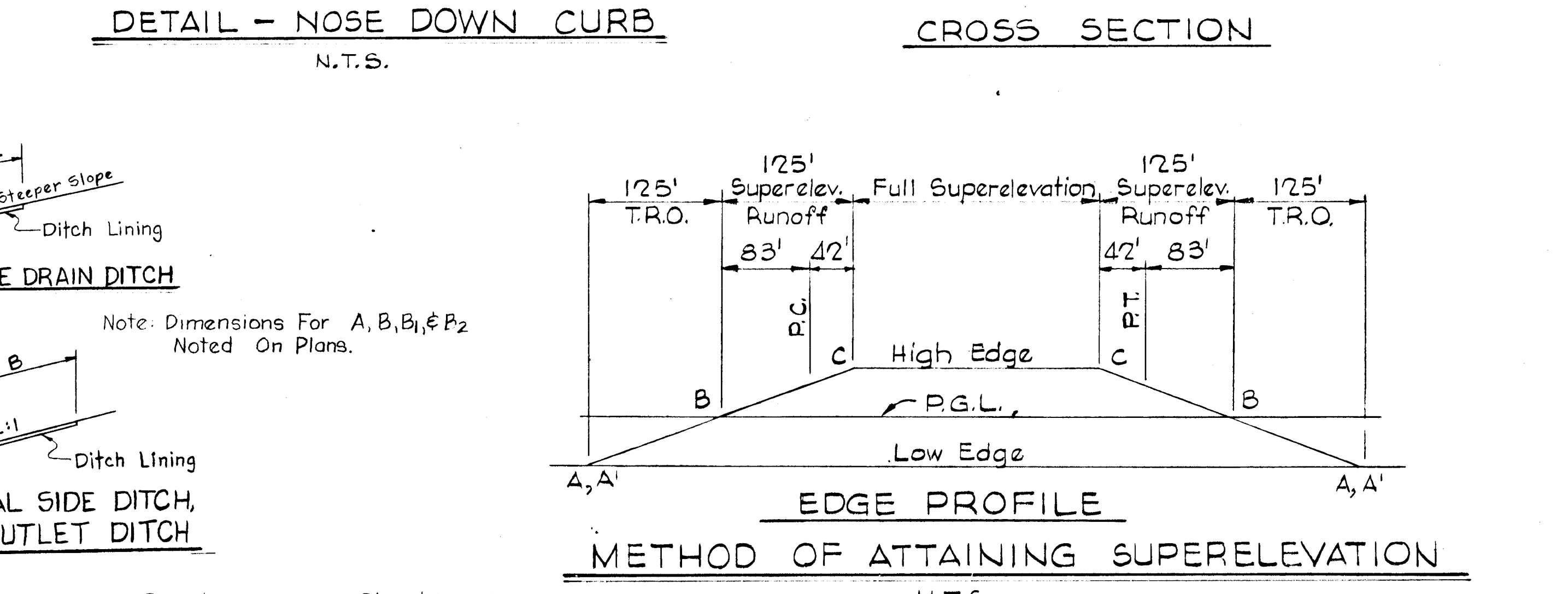
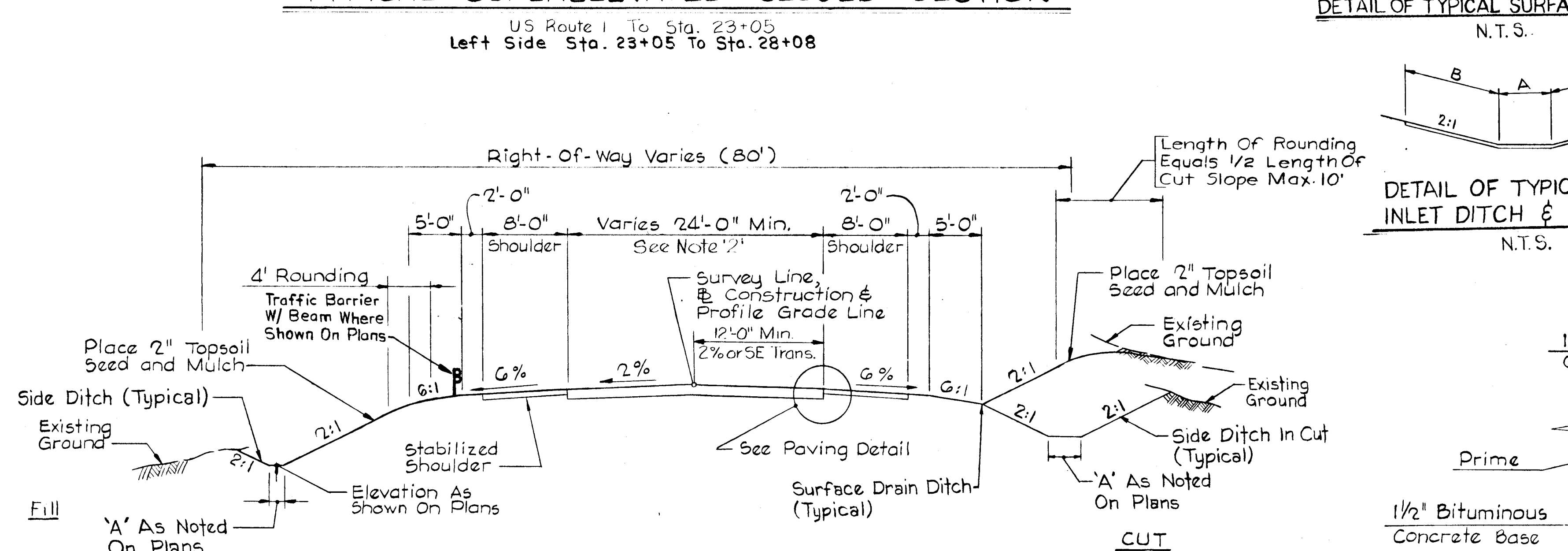
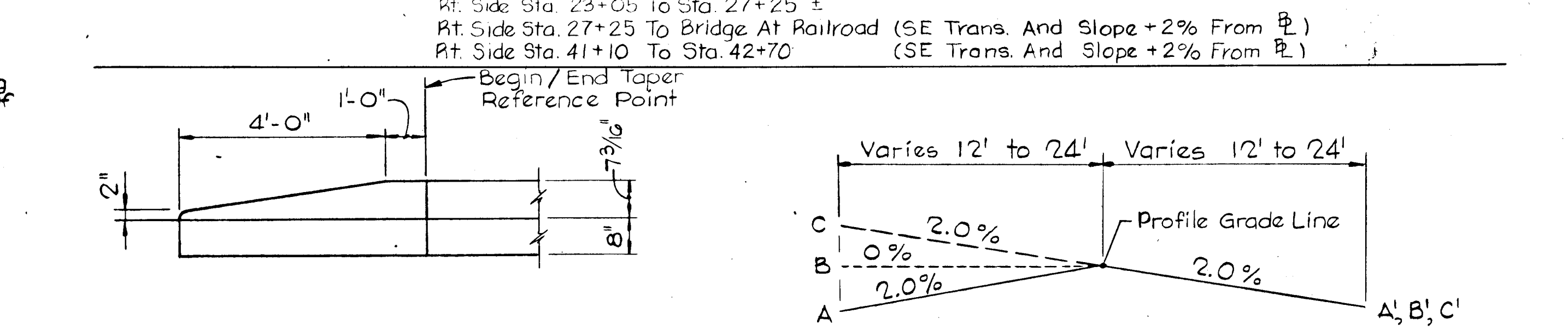
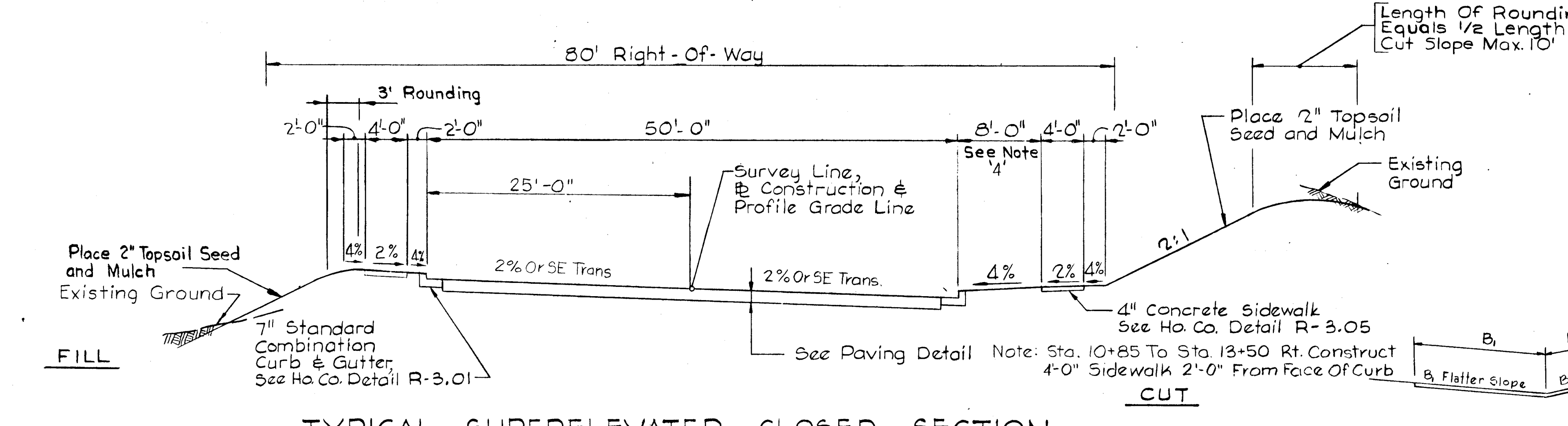
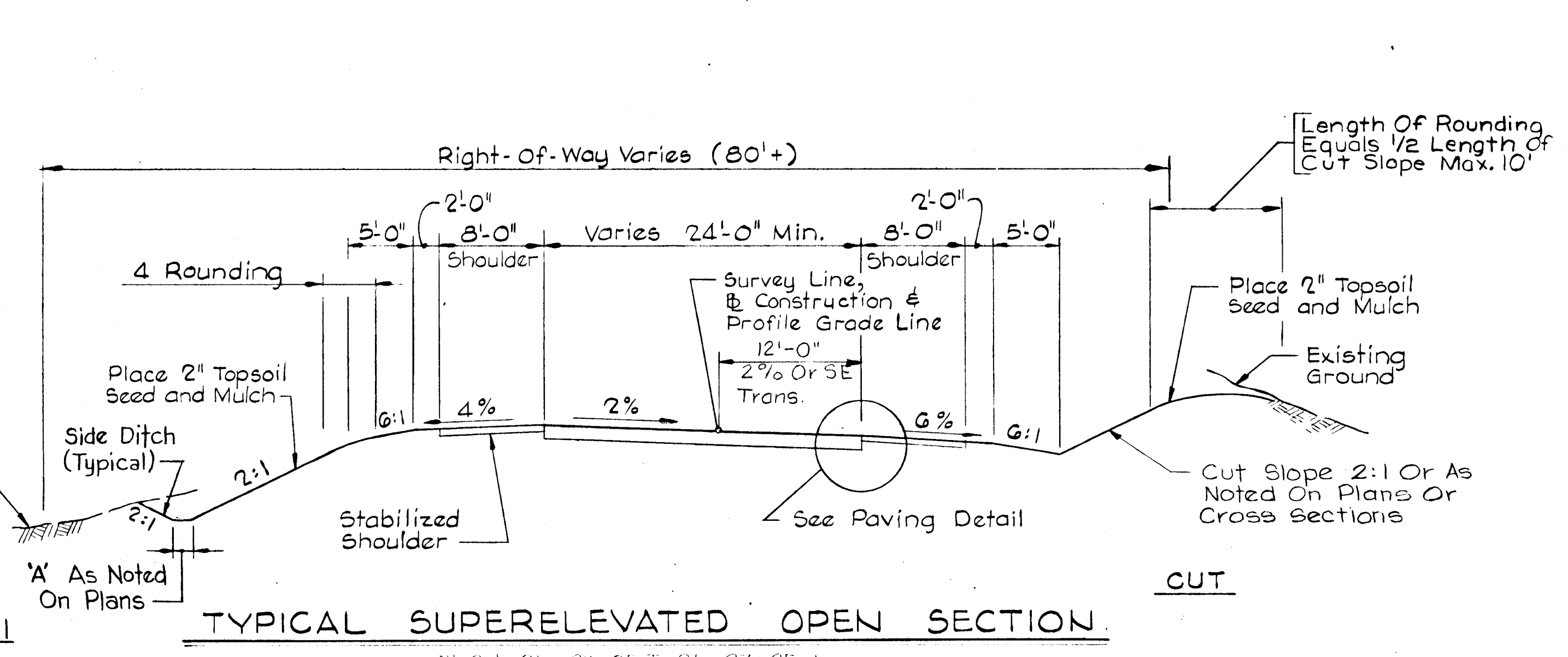
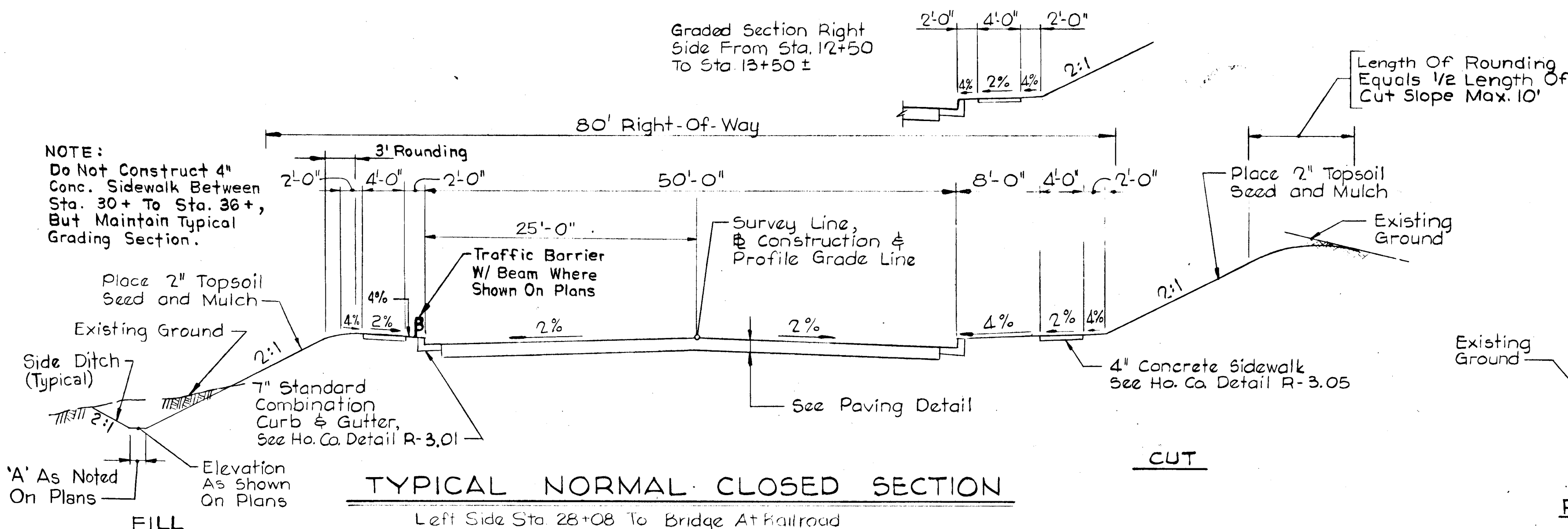
DIRECTOR OF PUBLIC WORKS DATE  
CHIEF, BUREAU OF ENGINEERING DATE  
CHIEF, DIVISION OF ROADS, BRIDGES AND STORM DRAINAGE DATE  
CHIEF, BUREAU OF HIGHWAYS DATE

DES: R.A.	STATION CHANGE	1/10/89
DRN: F.R.O./F.W.S.	CHANGED "SCARIFY" TO "REMOVE"	1/10/89
CHK: J.A.R.	ADDED "LEFT SIDE ROADWAY"	1/10/89
DATE: 9/87	BY NO. REVISION	DATE

TRAFFIC CONTROL  
PLAN 2

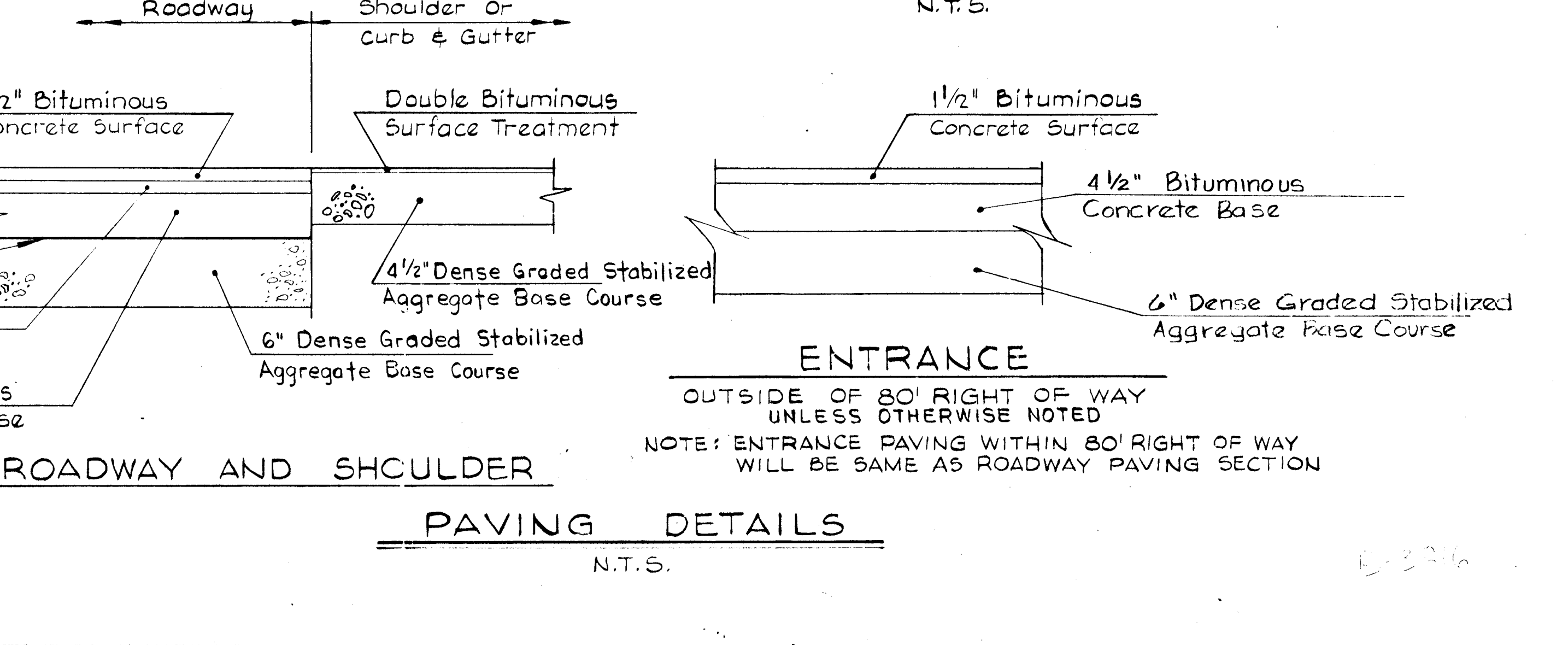
WHISKEY BOTTOM ROAD AND BRIDGE  
CAPITAL PROJECT J-4059 & B-3816  
ELECTION DISTRICT NO. 6  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 3 OF 41

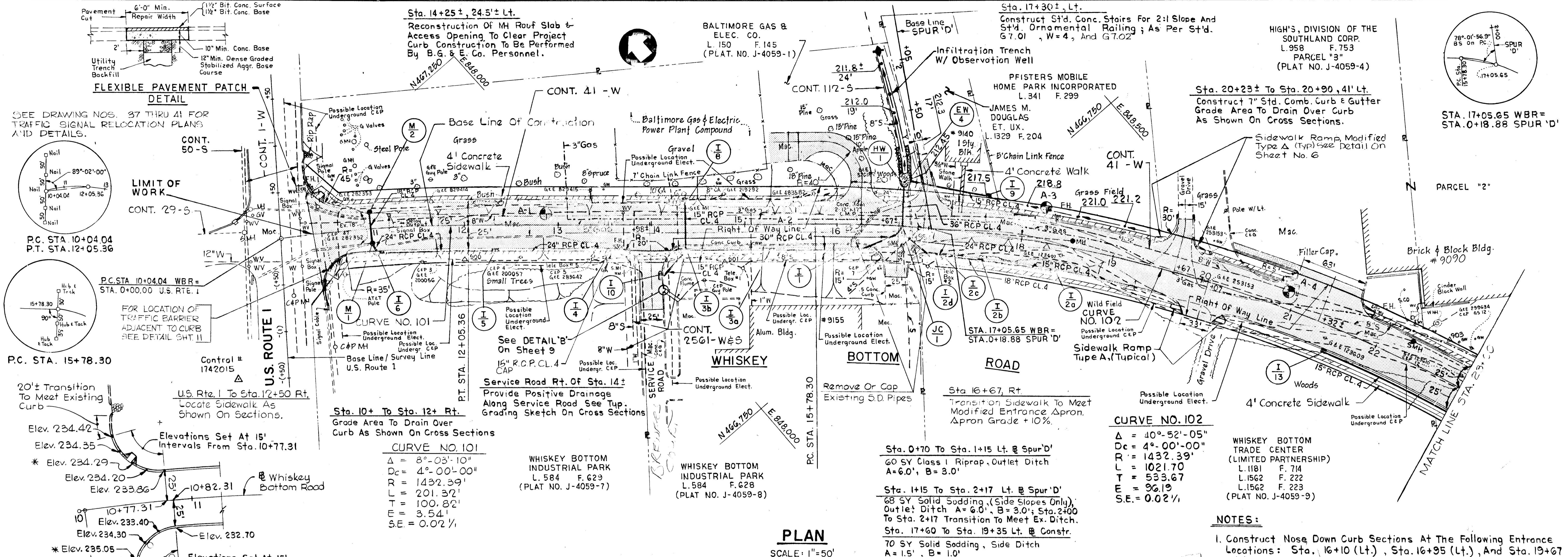


Notes:

- For The Right Side From Bridge To Sta. 40+25, The Distance From Face Of Curb To Edge Of Sidewalk Is 2'-0"
- For Warp And Taper Transition Section From Sta. 42+70 To Sta. 44+85, Hold 24' Δ Width Of Roadway To Sta. 44+00
- Permanent Painting And Striping To Be Completed By Others.
- Place 2" Topsoil And Seed And Mulch All Disturbed Areas Unless Otherwise Noted.

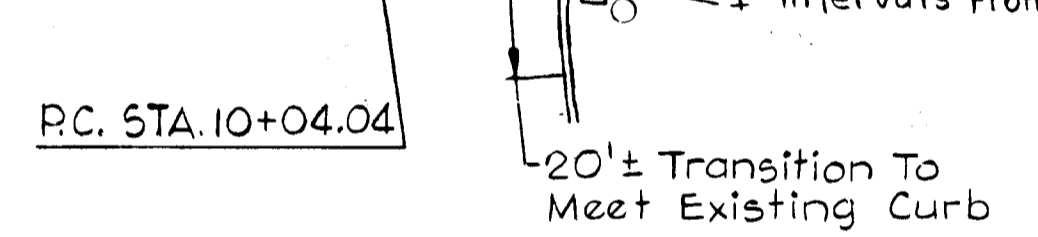


DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DIRECTOR OF PUBLIC WORKS: <i>[Signature]</i> DATE: <i>[Date]</i> CHIEF, BUREAU OF ENGINEERING: <i>[Signature]</i> DATE: <i>[Date]</i>		RUMMEL, KLEPPER & KAHL CONSULTING ENGINEERS 1035 N. CALVERT STREET BALTIMORE, MARYLAND 21202 <i>[Signature]</i>		DES: R.A. DRN: F.R.O./F.W.S. CHK: J.A.R. DATE: 9/87		STATION CHANGE 1/10/89 TYPICAL SECTIONS, SUPERELEVATION AND PAVING DETAILS 60' SCALE MAP NO. 50 BLOCK NO. 4		WHISKEY BOTTOM ROAD AND BRIDGE CAPITAL PROJECT J-4059 & B-3816 ELECTION DISTRICT NO. HOWARD COUNTY, MARYLAND		SCALE AS SHOWN SHEET 4 OF 41
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**PLAN**

SCALE: 1"=50'



**CURVE NO. 101**  
 $\Delta = 8^{\circ}03'10''$   
 $D_c = 4^{\circ}00'00''$   
 $R = 1432.39'$   
 $L = 201.32'$   
 $T = 100.82'$   
 $E = 3.54'$   
 $S.E. = 0.02\%$

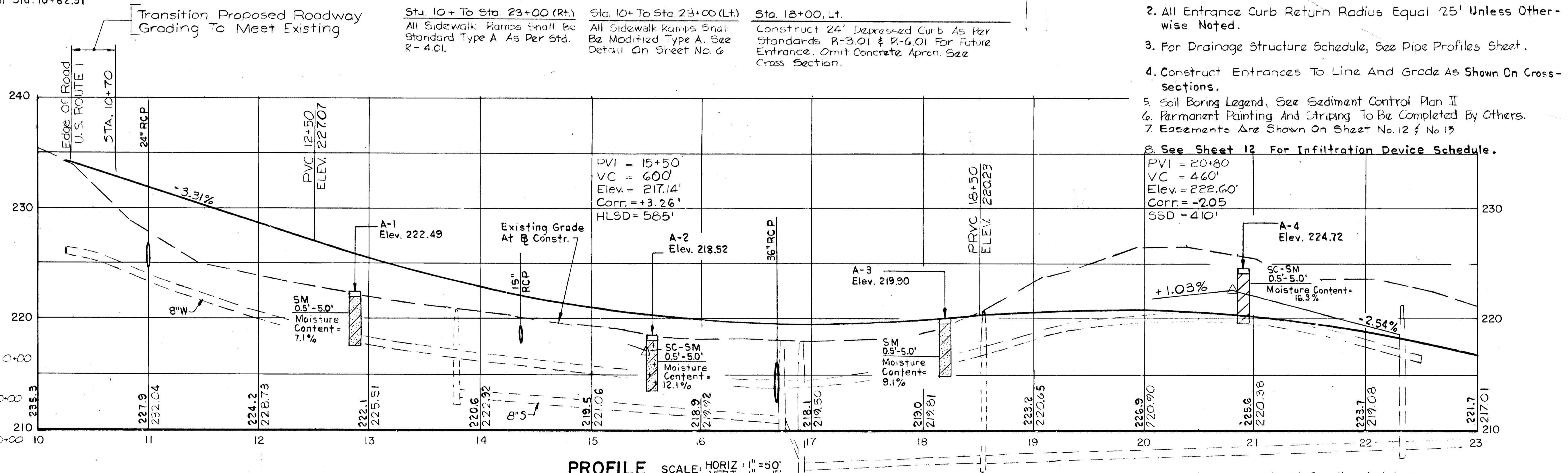
**CURVE NO. 102**  
 $\Delta = 40^{\circ}52'05''$   
 $D_c = 4^{\circ}00'00''$   
 $R = 1432.39'$   
 $L = 1021.70'$   
 $T = 533.67'$   
 $E = 96.19'$   
 $S.E. = 0.02\%$

- NOTES:**
1. Construct Nose Down Curb Sections At The Following Entrance Locations: Sta. 16+10 (Lt.), Sta. 16+95 (Lt.), And Sta. 19+67 (Lt.).
  2. All Entrance Curb Return Radius Equal 25' Unless Otherwise Noted.
  3. For Drainage Structure Schedule, See Pipe Profiles Sheet.
  4. Construct Entrances To Line And Grade As Shown On Cross Sections.
  5. Soil Boring Legend, See Sediment Control Plan II
  6. Permanent Painting And Striping To Be Completed By Others.
  7. Easements Are Shown On Sheet No. 12 of No. 13
  8. See Sheet 12 For Infiltration Device Schedule.

**CURVE RETURN DETAILS**  
N.T.S.

\* Theoretical Top Of Curb Exclusive Of Sidewalk Ramp

DESCRIPTION OR STATION	COORDINATES	
	NORTH	EAST
P.C. 10+04.04	467223.814	847730.903
P.T. 12+05.36	467103.503	847892.108
P.I. Curve #101	467169.332	847815.740
C.C. Curve #101	466018.556	846956.884
P.C. 15+78.30	466860.009	848174.584
P.T. 26+00.00	465983.584	848656.495
P.I. Curve #102	466511.570	848578.805
C.C. Curve #102	465775.062	847239.360
P.O.C. 17+05.65	466772.687	848267.220
SPUR 'D' 3+00	467012.790	848413.439
P.R. ENT. LT. 16+25	466828.947	848209.453
P.C. 0+48.48	466864.618	848242.288
P.T. 1+12.62	466922.006	848238.975
P.R. ENT. LT. 16+95	466780.300	848259.777
P.C. 0+45.89	466812.505	848292.469
P.T. 0+61.58	466825.080	848301.752
P.R. ENT. LT. 19+67	466569.624	848431.176
P.C. 0+41.13	466592.441	848465.400
P.T. 0+55.24	466601.806	848475.885



**PROFILE**

SCALE: HORIZ: 1"=50' VERT: 1"=5'

Note: For Limit Of Grading / Disturbance See Sediment Control Drawings

**DEPARTMENT OF PUBLIC WORKS**  
 HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS: \_\_\_\_\_ DATE: \_\_\_\_\_

CHIEF, BUREAU OF ENGINEERING: \_\_\_\_\_ DATE: \_\_\_\_\_

CHIEF, DIVISION OF ROADS, BRIDGES & STORM DRAINAGE: \_\_\_\_\_ DATE: \_\_\_\_\_

CHIEF, BUREAU OF HIGHWAYS: \_\_\_\_\_ DATE: \_\_\_\_\_

**RUMMEL, KLEPPER & KAHL**

CONSULTING ENGINEERS

1035 N CALVERT STREET  
 BALTIMORE, MARYLAND 21202

DES: R.A.

DRN: F.R.D./W.S.

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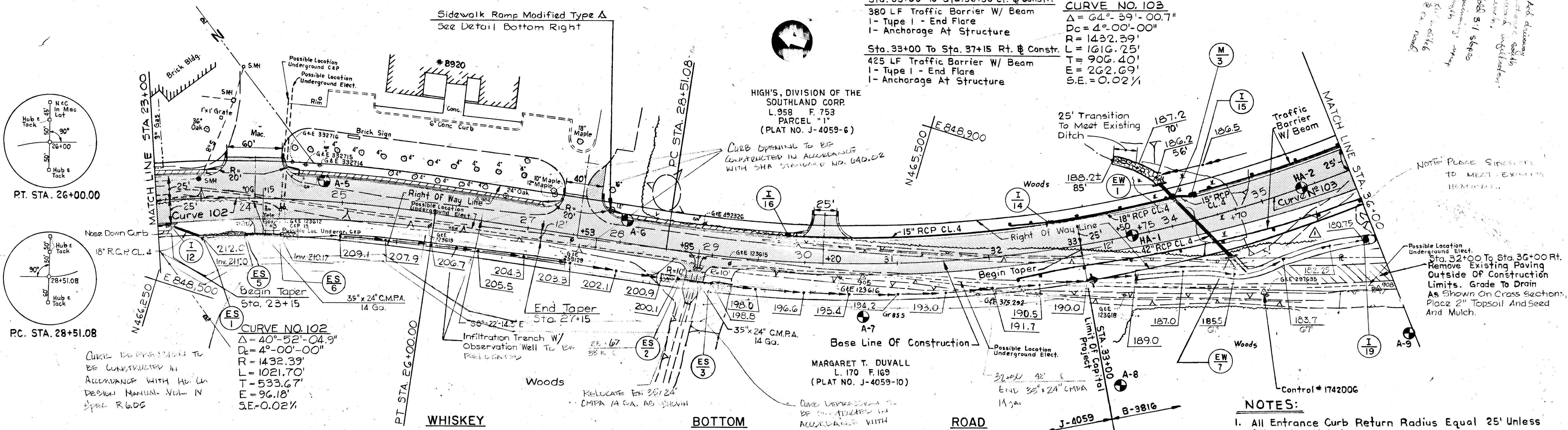
**PLAN AND PROFILE**  
 STA. 10+00 TO STA. 23+00

600' SCALE MAP NO. 50 BLOCK NO. 4

**WHISKEY BOTTOM ROAD AND BRIDGE**  
 CAPITAL PROJECT J-4059 & B-3816  
 ELECTION DISTRICT NO. 6  
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 5 OF 41



**PLAN**

SCALE: 1" = 50'

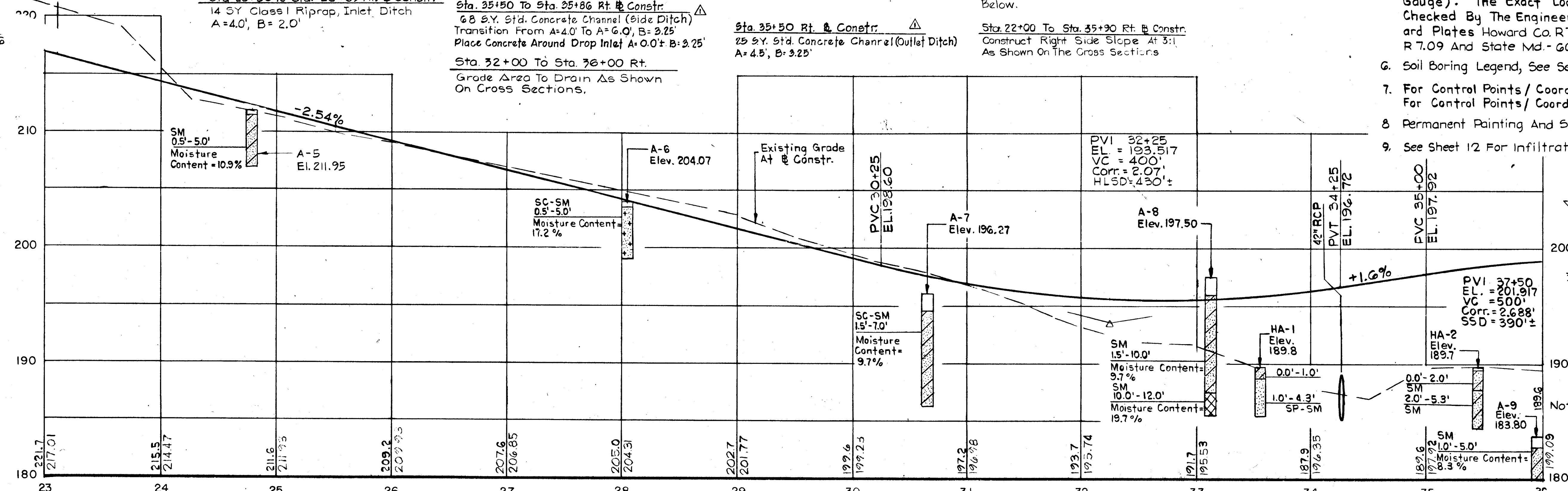
Sta. 23+50 To Sta. 23+95 Rt. & Constr. 25 SY Class I Riprap, Side Ditch In Cut A=1.5', B=2.0'	Sta. 24+51 To Sta. 25+50 Rt. & Constr. 61 SY Solid Sodding, Side Ditch In Cut A=1.5', B=2.0'	Sta. 29+05 To Sta. 29+25 Rt. & Constr. 27 SY Class I Riprap, Outlet Ditch A=4.0', B=4.0'
Sta. 24+34 To Sta. 24+51 Rt. & Constr. 11 SY Class I Riprap, Side Ditch In Cut A=1.5', B=2.0'	Sta. 25+50 To Sta. 27+45 Rt. & Constr. 87 SY Solid Sodding (Side Slopes Only), Side Ditch In Cut A=4.0', B=2.0'	Sta. 29+25 To Sta. 33+50 Rt. & Constr. 484 SY Solid Sodding, Side Ditch A=4.0', B=3.0'
	Sta. 27+45 To Sta. 28+50 Rt. & Constr. 24 SY Solid Sodding, Side Ditch In Cut A=4.0', B=2.0'	Sta. 33+50 To Sta. 35+50 Rt. & Constr. Δ 253 SY Std. Concrete Channel (Side Ditch) A=4.0', B=3.25
	Sta. 28+50 To Sta. 28+65 Rt. & Constr. 14 SY Class I Riprap, Inlet Ditch A=4.0', B=2.0'	Sta. 35+50 To Sta. 35+86 Rt. & Constr. Δ 68 SY Std. Concrete Channel (Side Ditch) Transition From A=4.0' To A=6.0', B=3.25 Place Concrete Around Drop Inlet A=0.0' B=3.25'
		Sta. 32+00 To Sta. 36+00 Rt. Grade Ar2o To Drain As Shown On Cross Sections.

Sta. 33+50 To Sta. 34+00 Lt. & Constr.  
48 SY Class I Riprap, Inlet Ditch  
A=4.0', B=2.0'

Sta. 34+00 To Sta. 35+00 Lt. & Constr.  
62 SY Solid Sodding, Side Ditch  
A=1.5', B=2.0'

Sta. 23+00 To Sta. 30+ (Lt.)  
All Sidewalk Ramps Shall Be  
Modified Type A. See Detail  
Below.

Sta. 22+00 To Sta. 35+90 Rt. & Constr.  
Construct Right Side Slope At 3:1  
As Shown On The Cross Sections



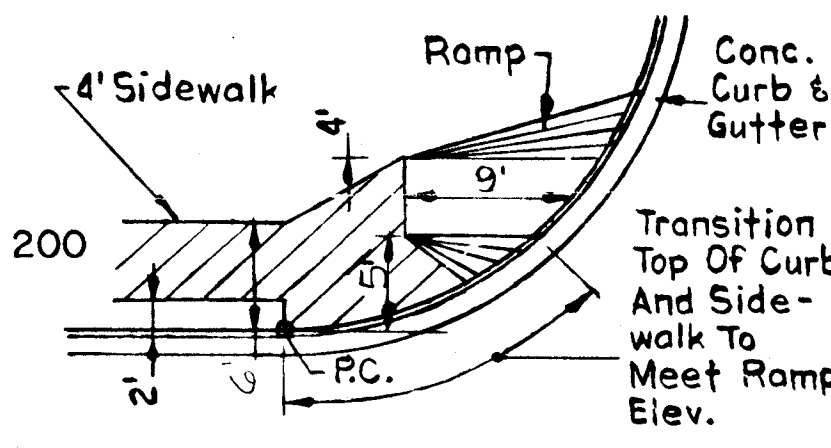
**PROFILE**

SCALE: HORIZ. 1" = 50', VERT. 1" = 5'

Note: Easements Are Shown On Sht. Nos. 12 & 13 Note: For Limit Of Grading/Disturbance, See Sediment Control Drawings

**NOTES:**

- All Entrance Curb Return Radius Equal 25' Unless Otherwise Noted.
- For Drainage Structure Schedule, See Pipe Profiles Sheet
- Construct Entrances To Line And Grade As Shown On Cross-Sections.
- Construct Nose Down Curb Sections At The Following Entrance Locations: Sta. 24+06 (Lt.), Sta. 27+53 (Lt.) And Sta. 30+20 (Lt.).
- Traffic Barrier Is To Be Traffic Barrier W/ Beam (12 Gauge). The Exact Location And Quantity Shall Be Checked By The Engineer Before Ordering. See Standard Plates Howard Co. R7.01, R7.02, R7.05, R7.06, R7.07, R7.09 And State Md-660.11, .21, .22, .23, .31 & .33
- Soil Boring Legend, See Sediment Control Plan II.
- For Control Points/ Coordinates-Curve No. 102, See Sh. 5 For Control Points/ Coordinates-Curve No. 103, See Sh. 7
- Permanent Painting And Striping To Be Completed By Others.
- See Sheet 12 For Infiltration Device Schedule.



**SIDEWALK RAMP-MODIFIED TYPE A**  
190 (Detail For Sidewalk Located 2' Back From Face Of Curb)  
Note: All Sidewalk Ramp Modified Type A-Standard R401 Unless Otherwise Noted.

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* DATE: 10/1/88

Chief, Bureau of Engineering: *[Signature]* DATE: 10/1/88

Chief, Bureau of Highways: *[Signature]* DATE: 10/1/88

RUMMEL, KLEPPER & KAHL  
CONSULTING ENGINEERS

1035 N. CALVERT STREET  
BALTIMORE, MARYLAND 21202

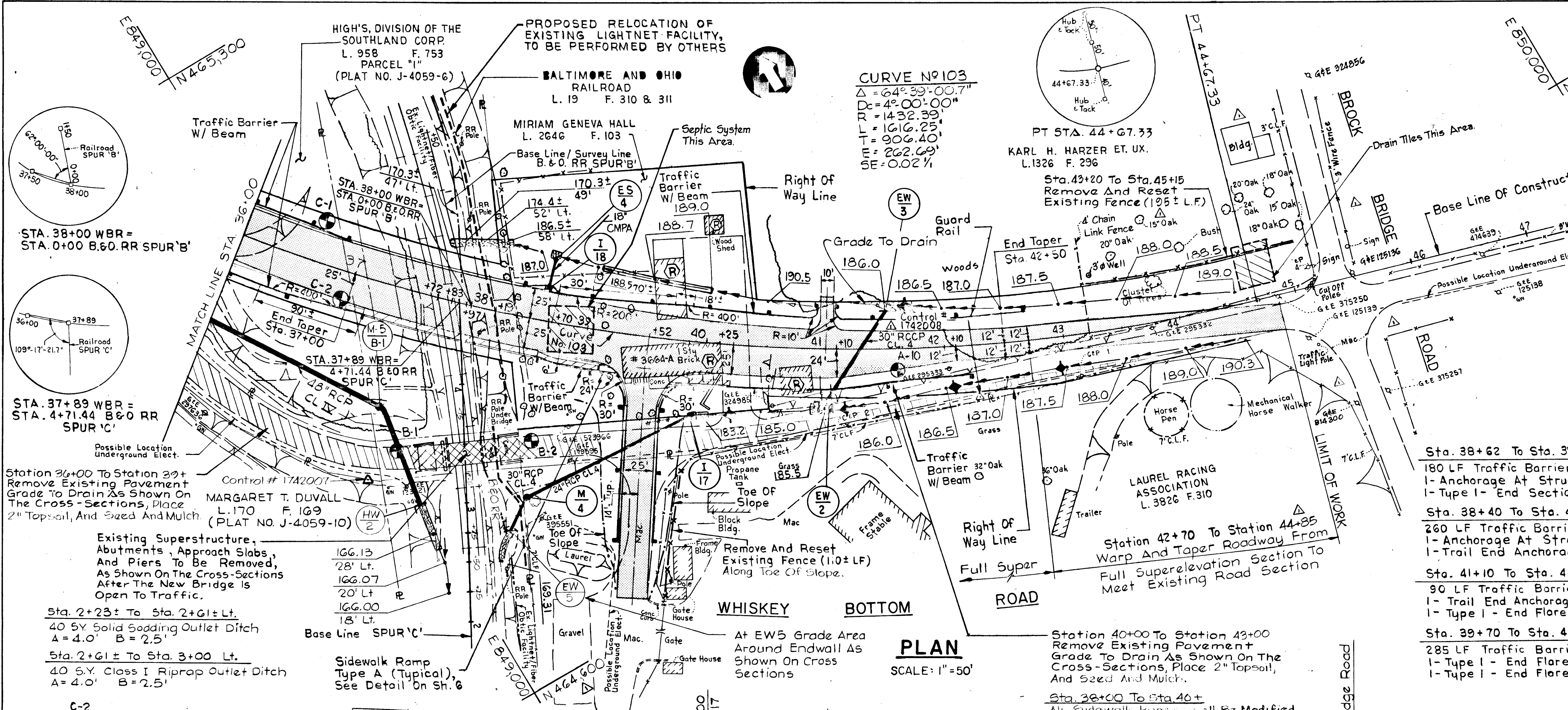
DES: R.A.	Revised Ditch Notes	11/10/89
DRN: F.R.O./F.W.S.	Removed Stone Symbol	11/10/89
CHK: J.A.R.		
DATE: 9/87		
BY NO.	REVISION	DATE

PLAN AND PROFILE  
STA. 23+00 TO STA. 36+00

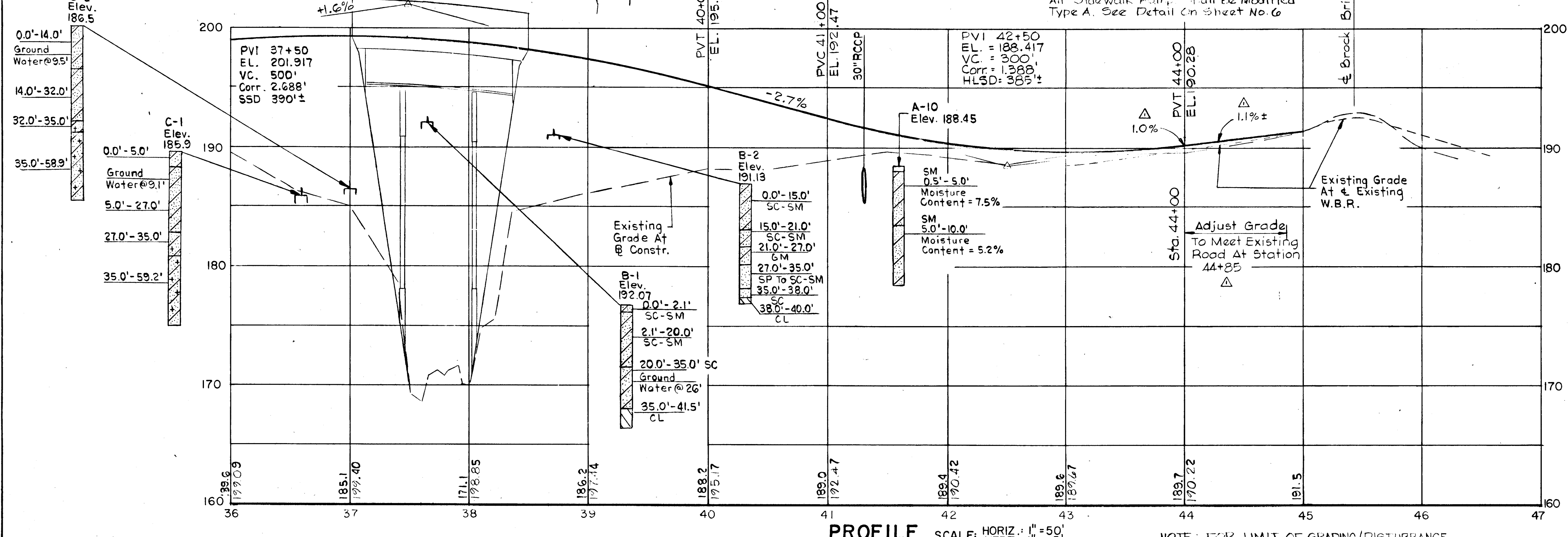
600' SCALE MAP NO. 50 BLOCK NO. 4

WHISKEY BOTTOM ROAD AND BRIDGE  
CAPITAL PROJECT J-4059 & B-3816  
ENGINEERING DISTRICT NO. 6  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 6 OF 41



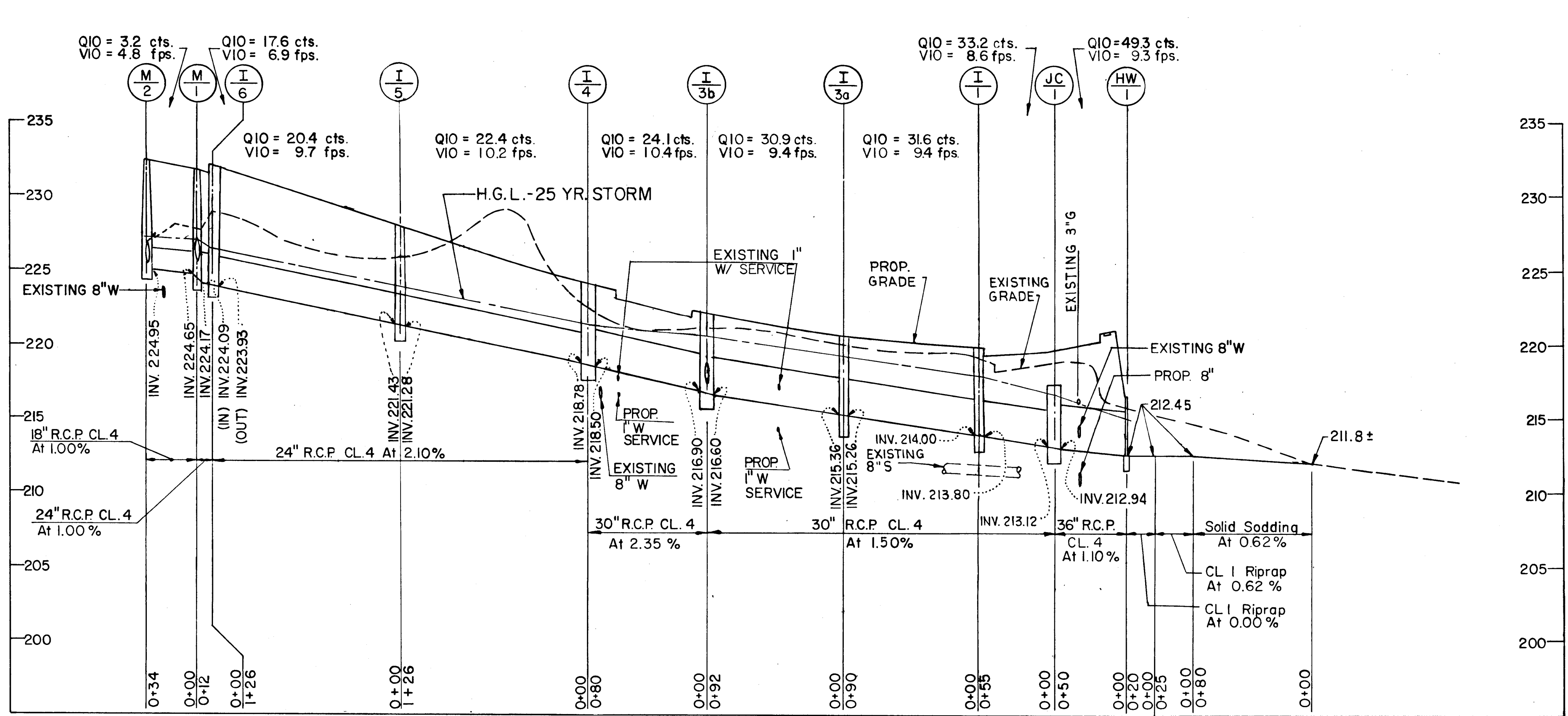
- Sta. 37+70 To Sta. 38+25 Lt. B Constr. 97 SY Class II Riprap, Outlet Ditch A=4.0', B=2.25', t=24" Δ
- Sta. 38+25 To Sta. 38+55 Lt. B Constr. 24 SY Solid Sodding, Side Ditch A=4.0', B=1.5'
- Sta. 38+55 To Sta. 38+65 Lt. B Constr. 9 SY Class I Riprap, Outlet Ditch A=4.0', B=2.0'
- Sta. 38+65 To Sta. 39+00 Lt. B Constr. 28 SY Solid Sodding, Side Ditch A=4.0', B=1.5'
- Sta. 39+00 To Sta. 40+00 Lt. B Constr. 34 SY Solid Sodding (Side Slopes Only) Side Ditch A=4.0', B=1.5'
- Sta. 40+00 To Sta. 41+00 Lt. B Constr. 78 SY Solid Sodding, Side Ditch A=4.0', B=1.5'
- Sta. 41+10 To 41+45 (Lt) Grade Area To Drain To EW-3
- Sta. 41+45 To Sta. 41+65 Lt. B Constr. 20 SY Class I Riprap, Inlet Ditch A=4.0', B=2.25'
- Sta. 41+65 To Sta. 44+85 Lt. B Constr. 317 SY Solid Sodding, Side Ditch In Cut A=4.0', B=2.25'
- Sta. 2+50 To Sta. 2+75 Rt. B Spur 'C' 42 SY Class I Riprap, Outlet Ditch Δ=4.0', B=5.5'
- Sta. 39+95 To Sta. 40+85 Rt. B Constr. 95 SY Solid Sodding, Side Ditch Δ=4.0', B=2.5'
- Sta. 40+85 To Sta. 41+05 Rt. B Constr. 34 SY Class I Riprap, Outlet Ditch Δ=4.0', B=5.5'
- Sta. 41+05 To Sta. 44+50 Rt. B Constr. 137 SY Solid Sodding, Side Ditch Δ=1.5', B=1.0'



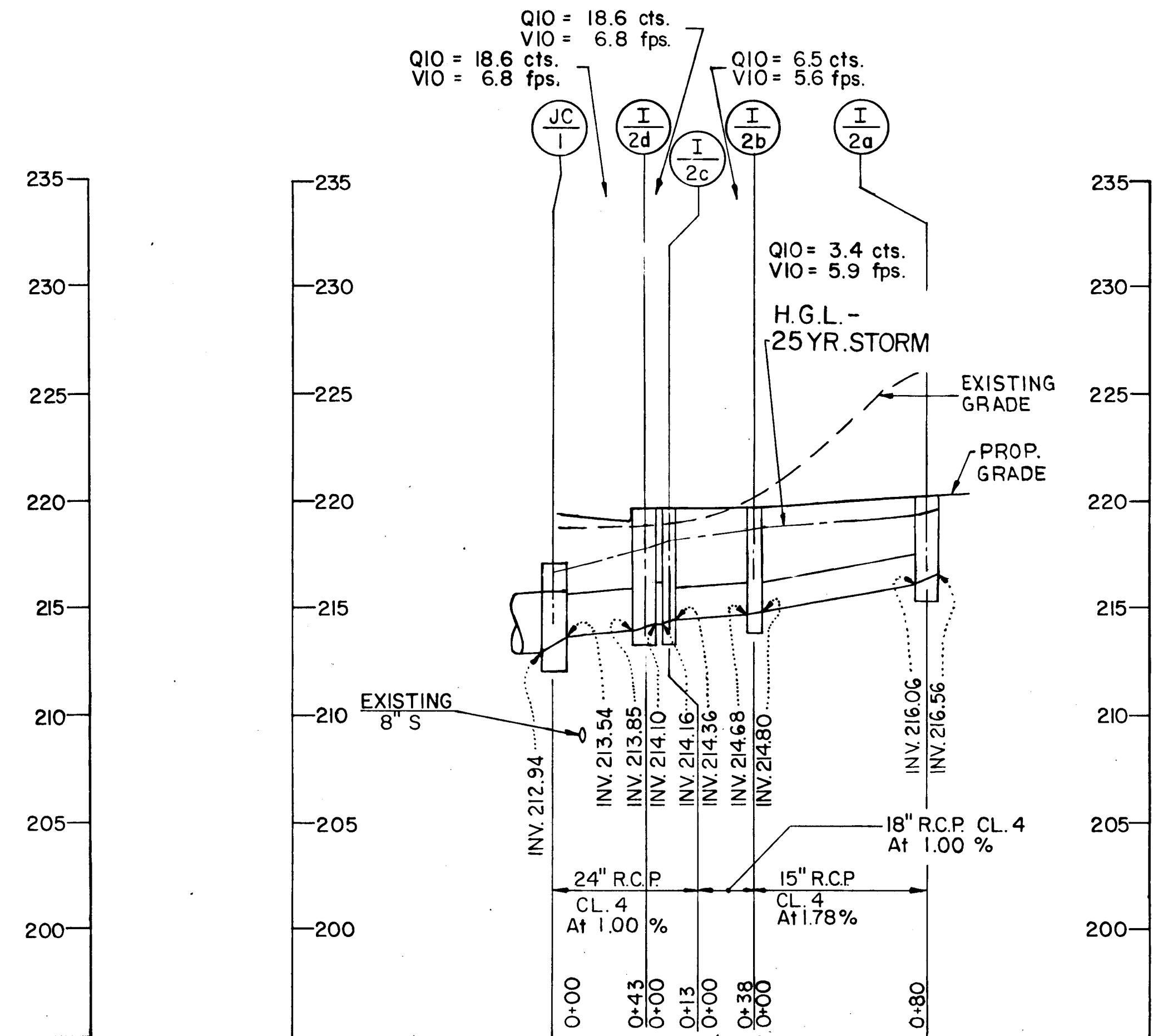
- NOTES:**
- All Entrance Curb Return Radius Equal 25' Unless Otherwise Noted.
  - For Drainage Structure Schedule, See Pipe Profiles Sheet.
  - Construct Entrances To Line And Grade As Shown On Cross-Sections.
  - Overhead Wires And Poles Along Railroad Will Be Relocated By Railroad Personnel.
  - Traffic Barrier Is To Be Traffic Barrier W/ Beam (12 Gauge). The Exact Location And Quantity Shall Be Checked By The Engineer Before Ordering. See Standard Plates Howard Co R7.01, R7.02, R7.05, R7.06, R7.07, R7.09 And State Md.-GG0.11, .21, .22, .23, .31 & .33
  - Soil Boring Legend, See Sediment Control Plan II
  - See Sheet 12 For Infiltration Device Schedule.
  - Easements Shown On Sheet No. 12 & No. 13
  - Permanent Painting And Striping To Be Completed By Others.
  - ⊕ Denotes Structure To Be Removed

DESCRIPTION OR STATION	ALIGNMENT COORDINATES	
	NORTH	EAST
P.C. 28+51.08	465735.179	848693.046
P.T. 44+67.33	464573.748	849691.888
P.I. Curve #103	464838.435	848824.996
C.C. Curve #103	464573.702	849691.888
P.O.C. 37+00	464979.174	849051.201
P.O.C. 37+89	464915.276	849113.138
P.O.C. 38+00	464907.653	849121.062
SPUR 'B' 1+50	465051.345	849164.097
SPUR 'C' 2+00	464676.966	848983.190

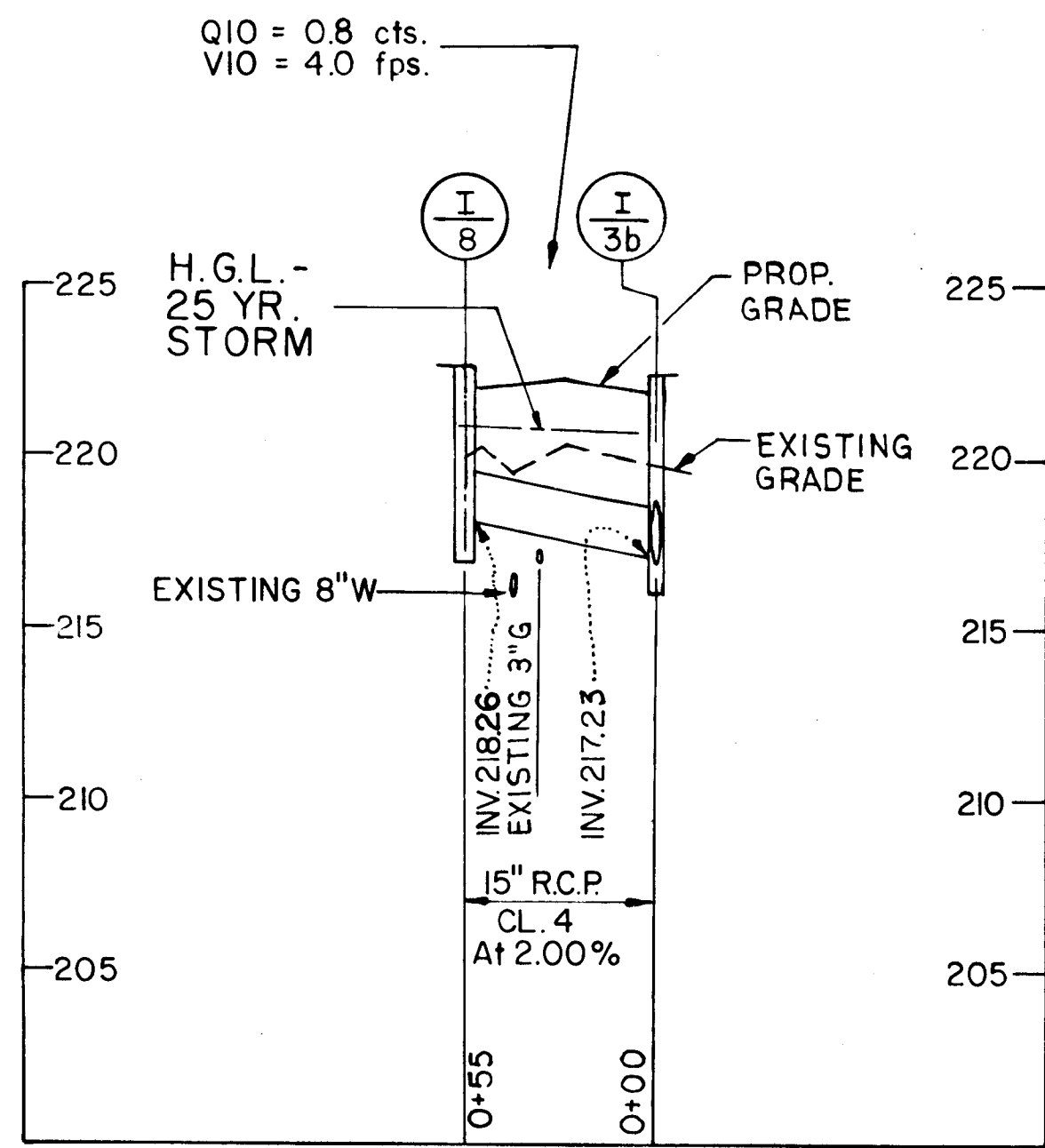
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DIRECTOR OF PUBLIC WORKS: [Signature] CHIEF, BUREAU OF ENGINEERING: [Signature] CHIEF, DIVISION OF ROADS, BRIDGES AND STORM DRAINAGE: [Signature]	RUMMEL, KLEPPER & KAHL CONSULTING ENGINEERS 1035 N. CALVERT STREET BALTIMORE, MARYLAND 21202	DES: R.A. DRN: F.R.O./F.W.S. CHK: J.A.R. DATE: 9/87	Revised Topo Sta 49+ To Sta 47+ Revised Grade @ Tie-In Revised Taper @ Tie-In Revised Cl. II Riprap Depth Station Change Change Grid Value, Change Control No. 174 2008	11/01/89 11/10/89 11/10/89 11/10/89 11/10/89 11/10/89	PLAN AND PROFILE STA. 36+00 TO STA. 44+85	WHISKEY BOTTOM ROAD AND BRIDGE CAPITAL PROJECT J-4059 & B-3816 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 7 OF 41
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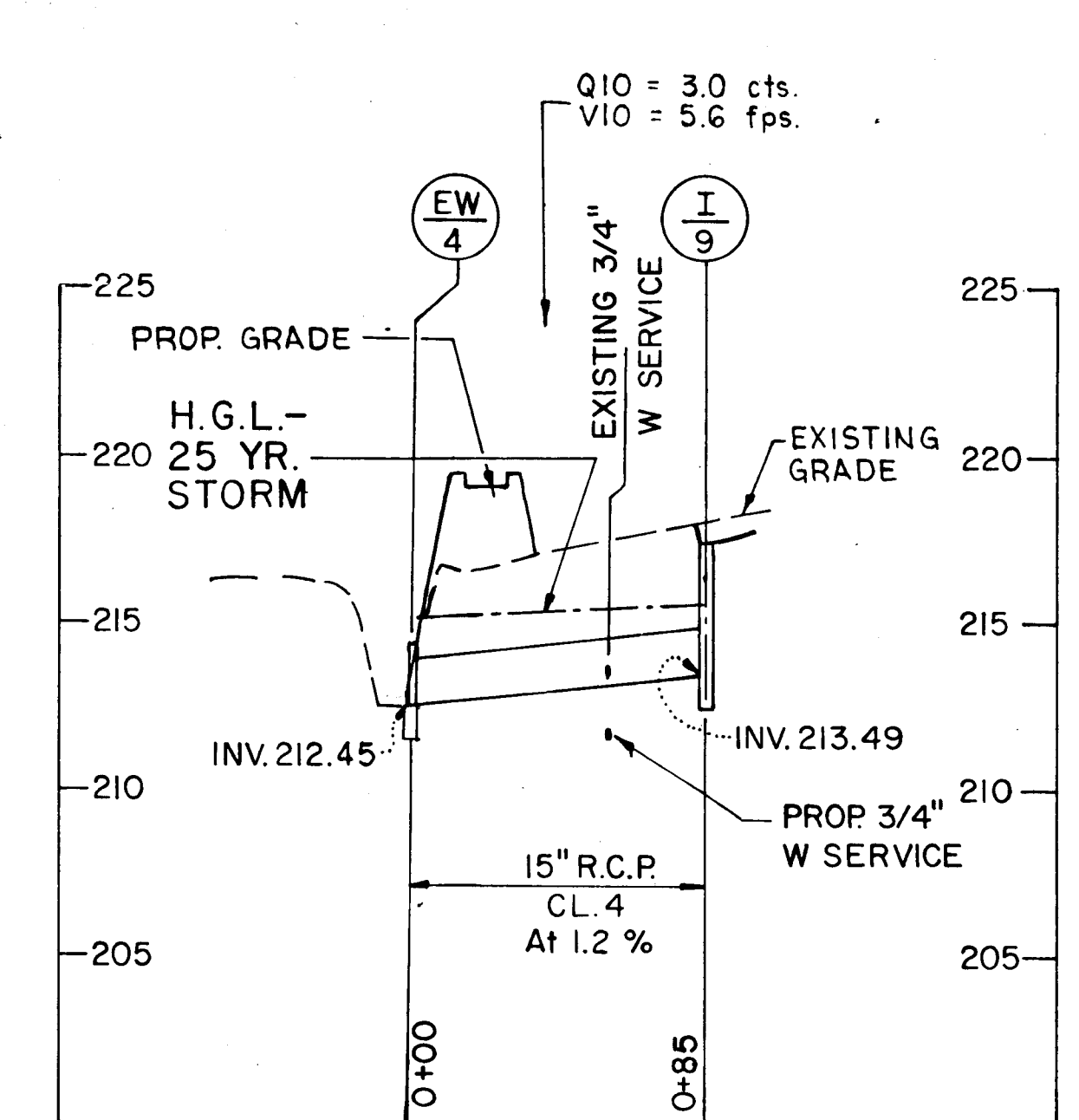
CONSTR. STA. 11+ TO 16+



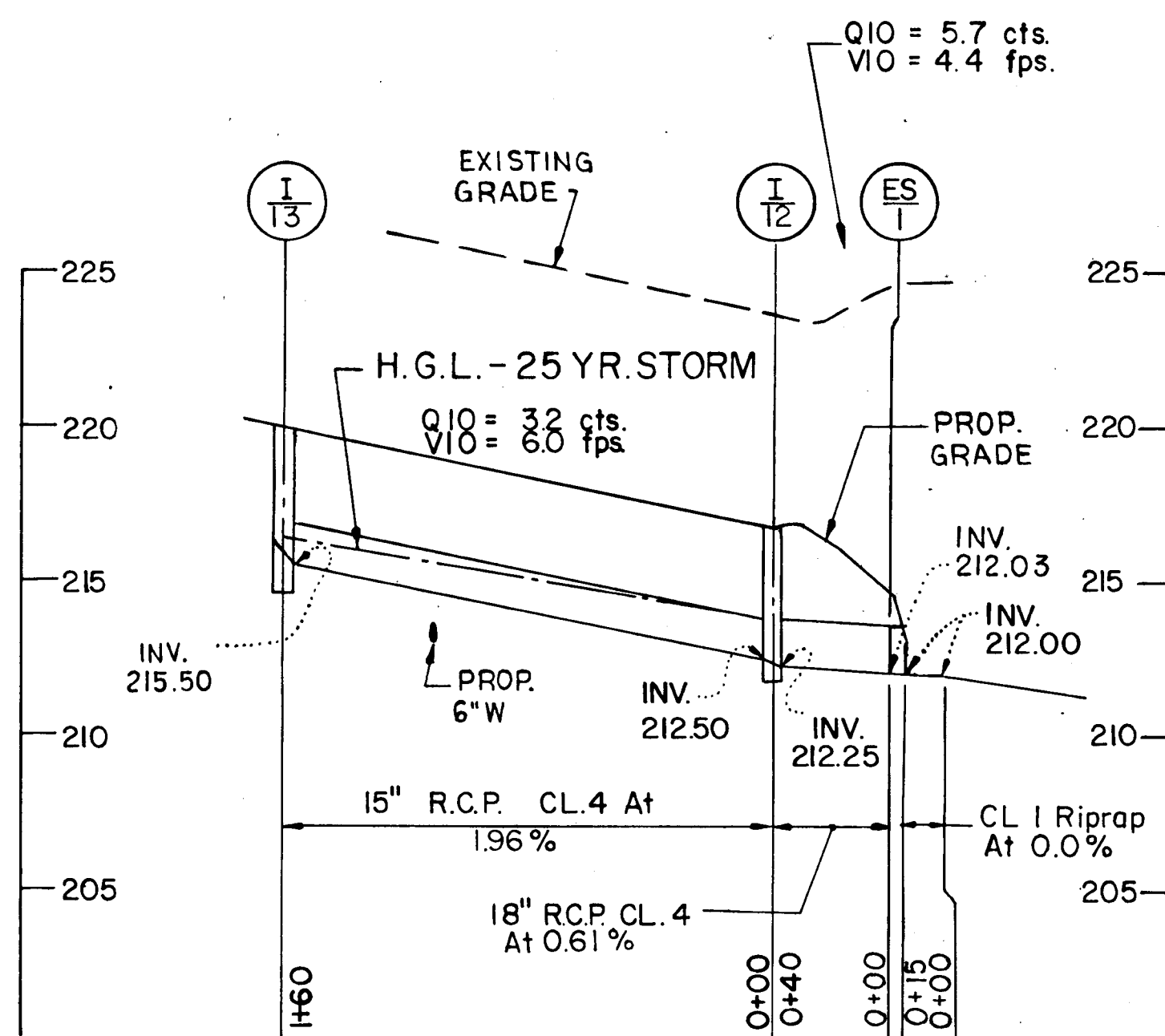
CONSTR. STA. 16+ TO 18+ ,RT.



CONSTR. STA. 14+ RT. TO LT.



CONSTR. STA. 17+ , LT.



CONSTR. STA. 21+ TO 23+ , RT.

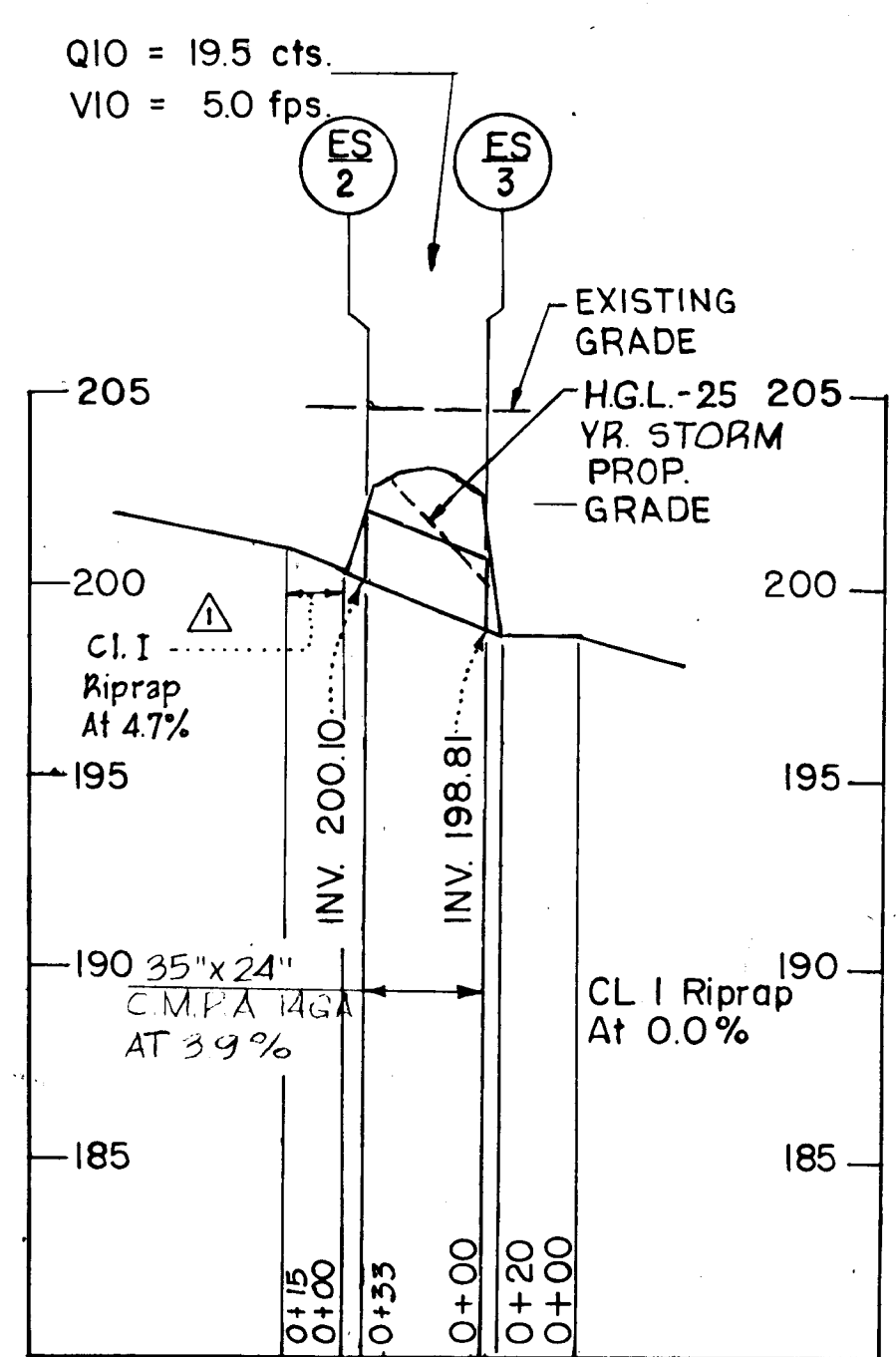
Scale: Horiz. 1" = 50'  
Vert. 1" = 5'

NOTE: DRAINAGE STRUCTURE SCHEDULE NO.2 SEE SHEET NO.9, SCHEDULE NO.3 SEE SHEET NO.11

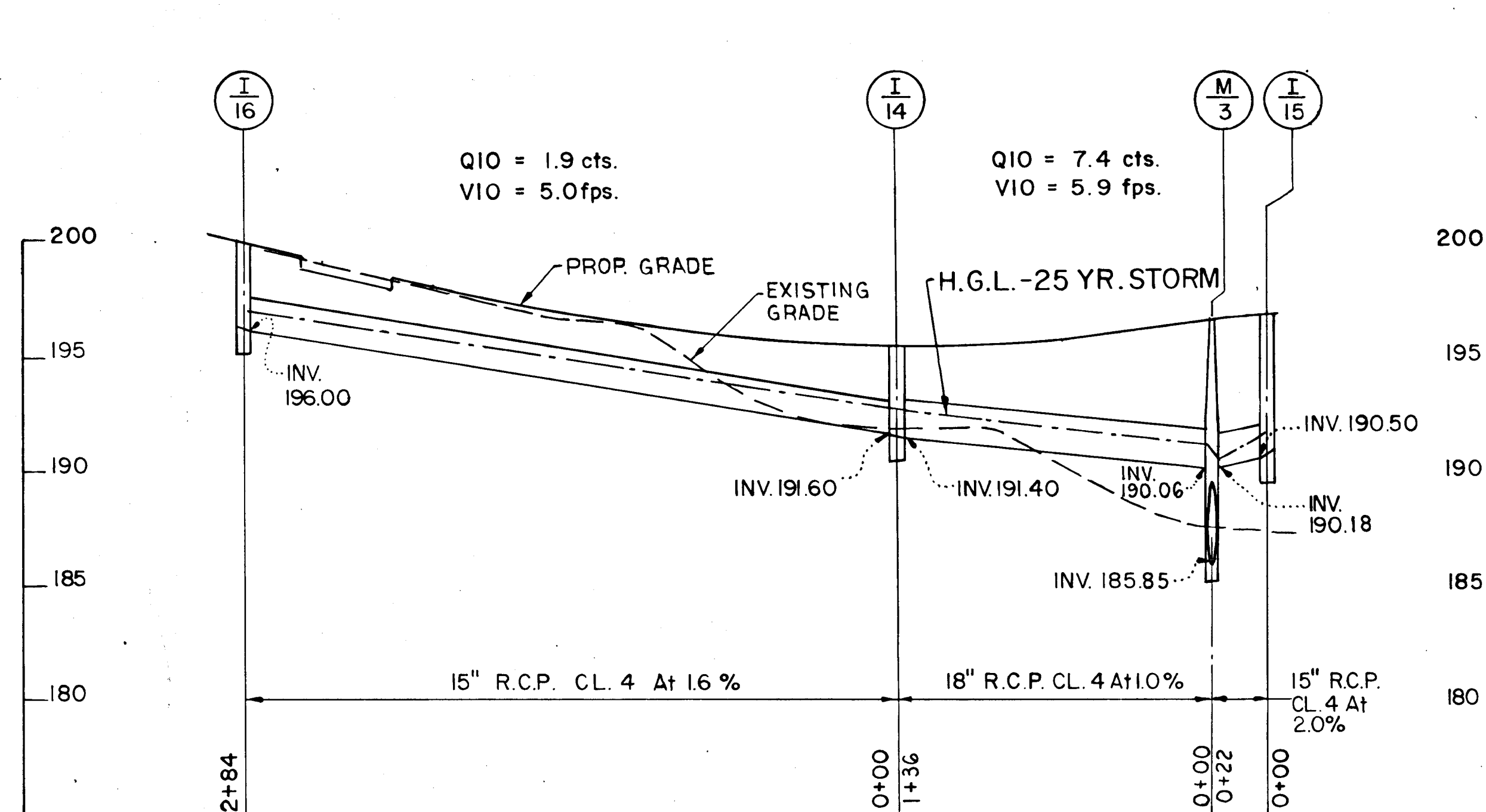
DRAINAGE STRUCTURE SCHEDULE No. 1 ***					
NO.	STD. NO.	TYPE	TOP EL.	STA. AND OFFSET	REMARKS
M-2	G-5.01	4' BRICK MANHOLE	232.39	11+00 18' LT.	
M-1	G-5.01	4' BRICK MANHOLE	231.69	11+00 17' RT.	
I-10	SD4.34	DOUBLE TYPE S COMB. INLET	222.80	14+10 55' RT.	
I-6	SD4.01	TYPE 'A-5' INLET	231.93	11+06 26' RT.	*
I-5	"	"	227.75	12+32 26' RT.	*
I-4	"	"	224.01	13+58 26' RT.	*
I-8	"	"	222.48	14+38 26' LT.	*
I-3b	SD4.02	TYPE 'A-10' INLET	222.21	14+38 26' RT.	*
I-3a	SD4.01	TYPE 'A-5' INLET	220.74	15+30 26' RT.	*
I-1	"	"	219.87	16+20 26' RT.	*
I-2a	SD4.02	TYPE 'A-10' INLET	220.25	18+42 26' RT.	*
I-2b	SD4.01	TYPE 'A-5' INLET	219.68	17+60 26' RT.	*
I-2c	"	"	219.60	17+22 26' RT.	*
I-2d	SD4.02	TYPE 'A-10' INLET	219.99	17+08 26' RT.	*
JC-1	SD1.12	JUNCTION CHAMBER	---	16+70 7' RT.	**
HW-1	SD5.11	TYPE 'A' HEADWALL	216.95	16+70 42' LT.	
I-9	SD4.14	YARD INLET	217.37	17+60 42' LT.	
EW-4	SD5.21	TYPE 'C' ENDWALL	214.45	16+73 53' LT.	
I-13	SD4.01	TYPE 'A-5' INLET	219.91	21+50 26' RT.	*
I-12	"	"	216.84	23+10 26' RT.	*
ES-1	SD5.51	CONCRETE END SECTION	213.46	23+48 42' RT.	

\* INLET TO BE CONSTRUCTED WITH INLET DEFLECTOR, STANDARD SD-4.83.  
\*\* REFER TO DETAIL 'A' AND STANDARDS SD.1.01 AND S.D. 1.12  
\*\*\* ALL DETAILS ARE HOWARD CO. STANDARD DETAILS UNLESS OTHERWISE NOTED

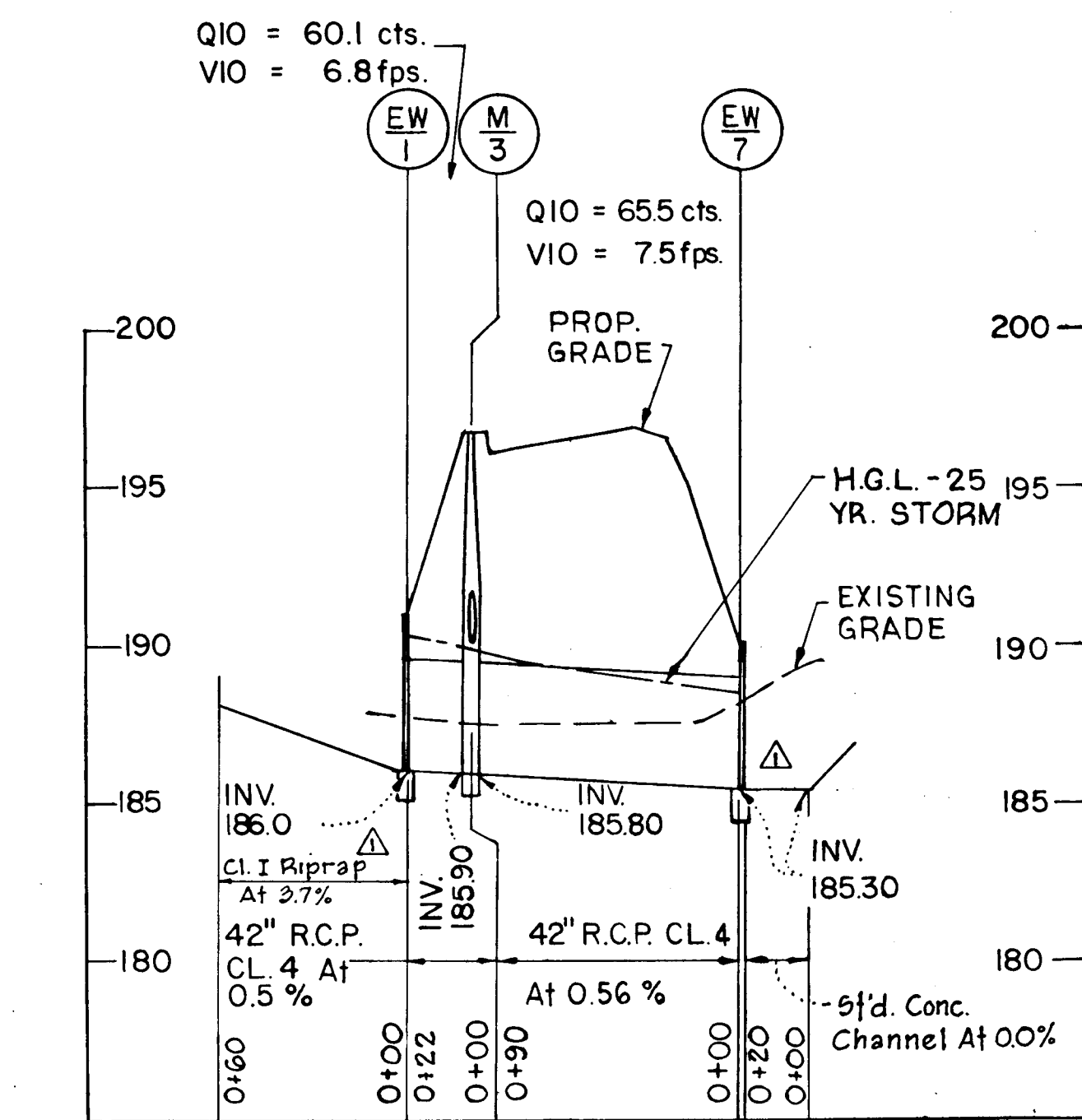




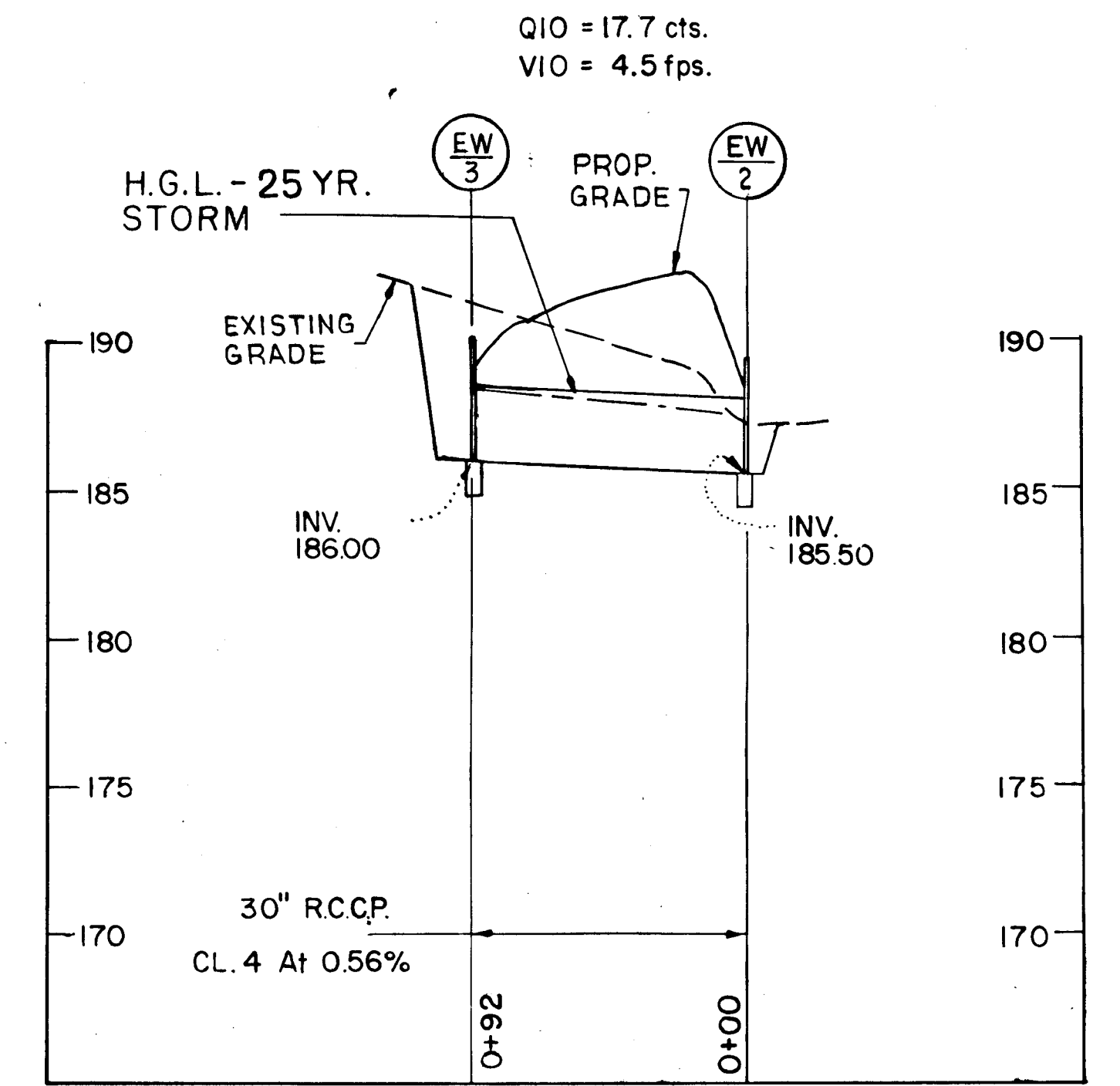
CONSTR. STA. 29+ RT.



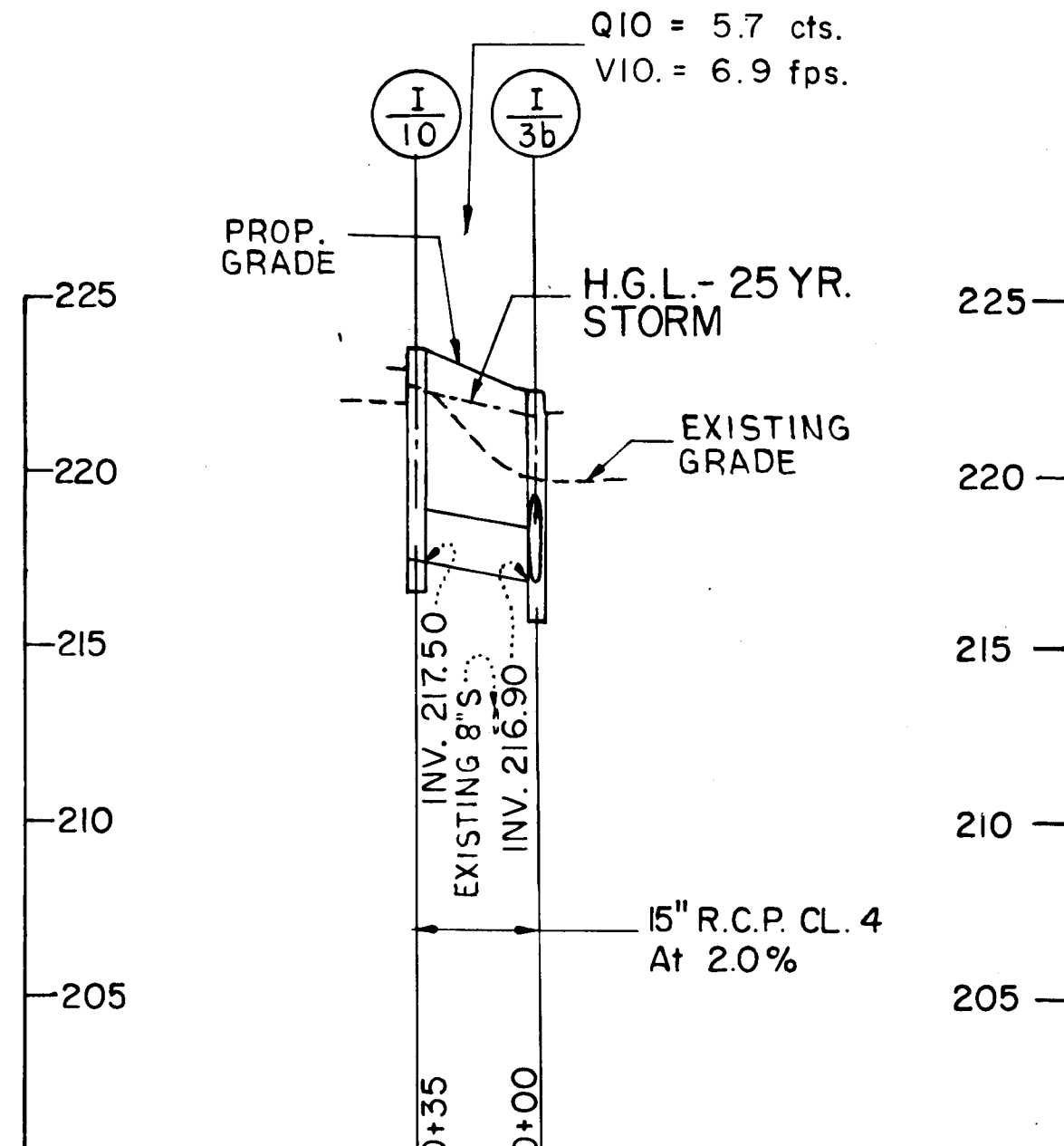
CONSTR. STA. 30+ TO 34+ LT.



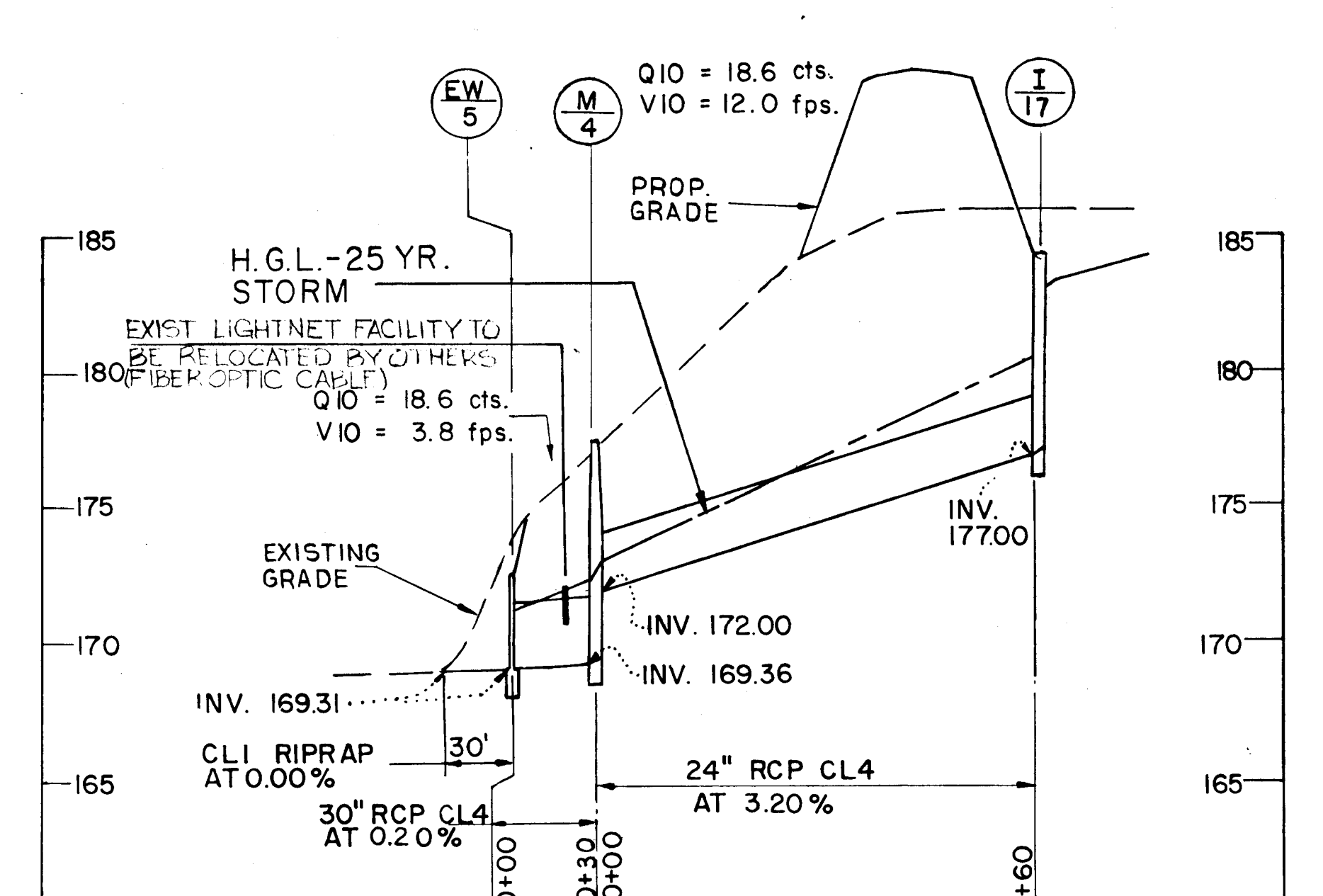
CONSTR. STA. 34+ RT. TO LT.



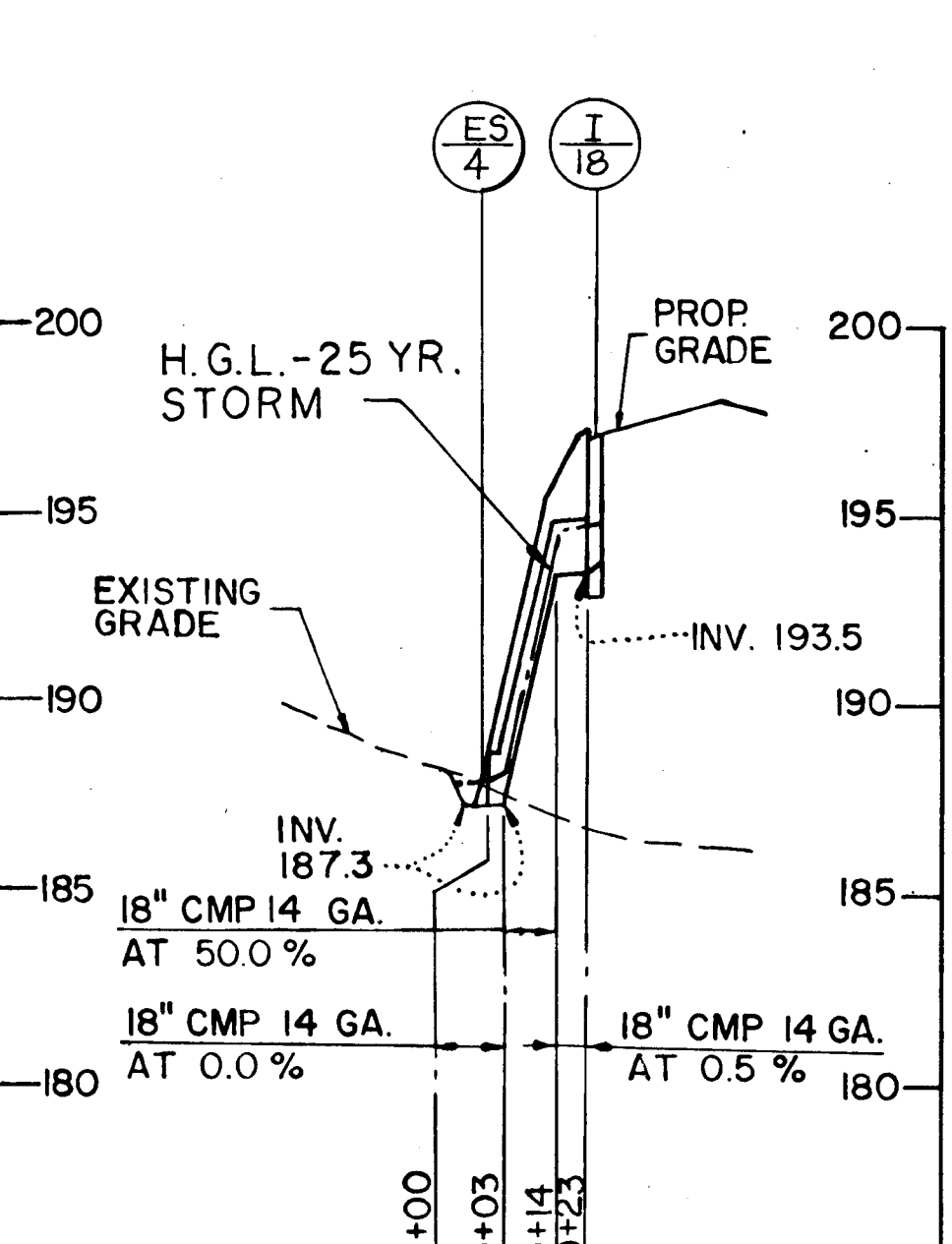
CONSTR. STA. 41+ RT. TO LT.



CONSTR. STA. 14+ RT.



CONSTR. STA. 39+ RT.



CONSTR. STA. 38+ LT.

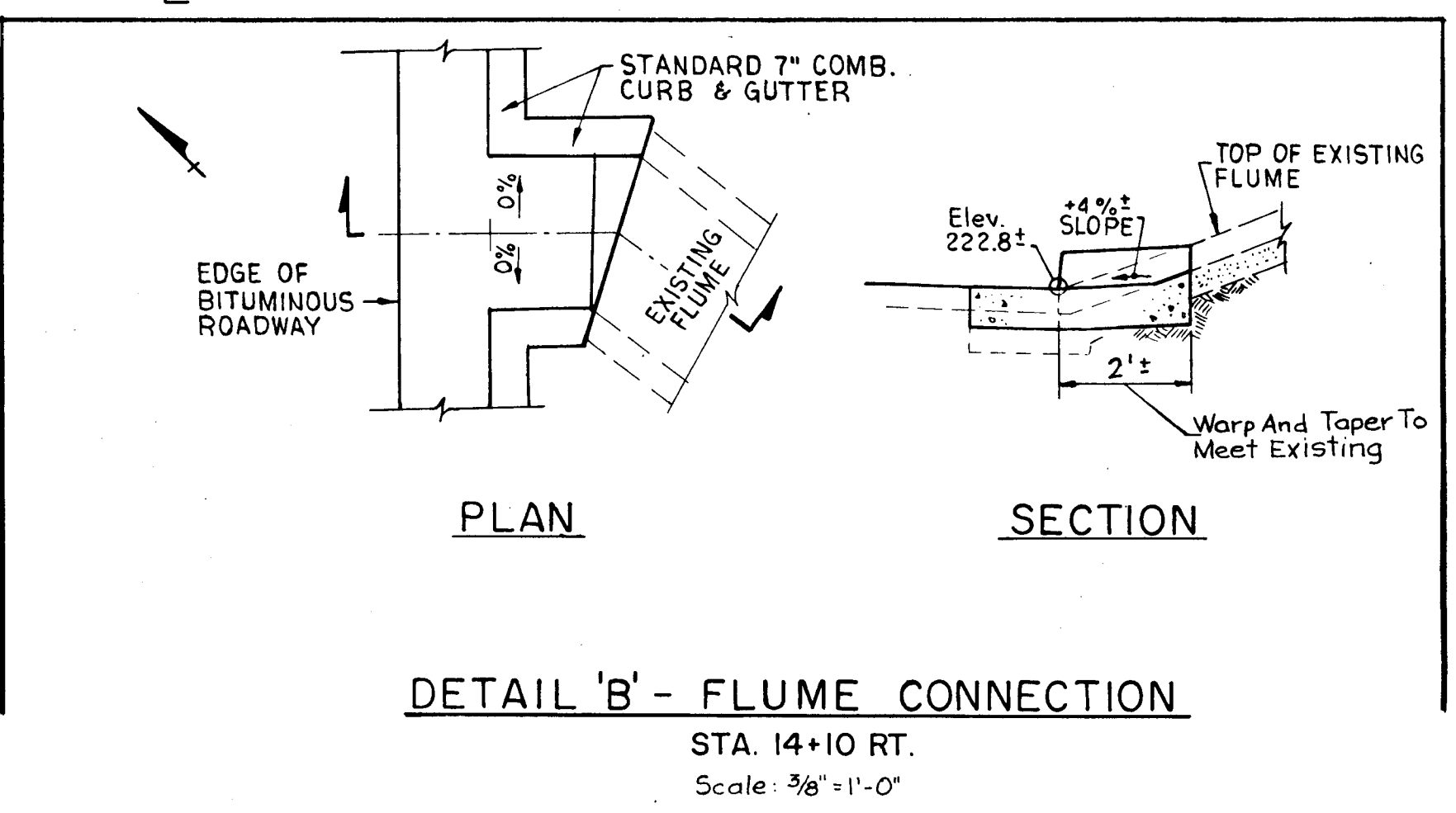
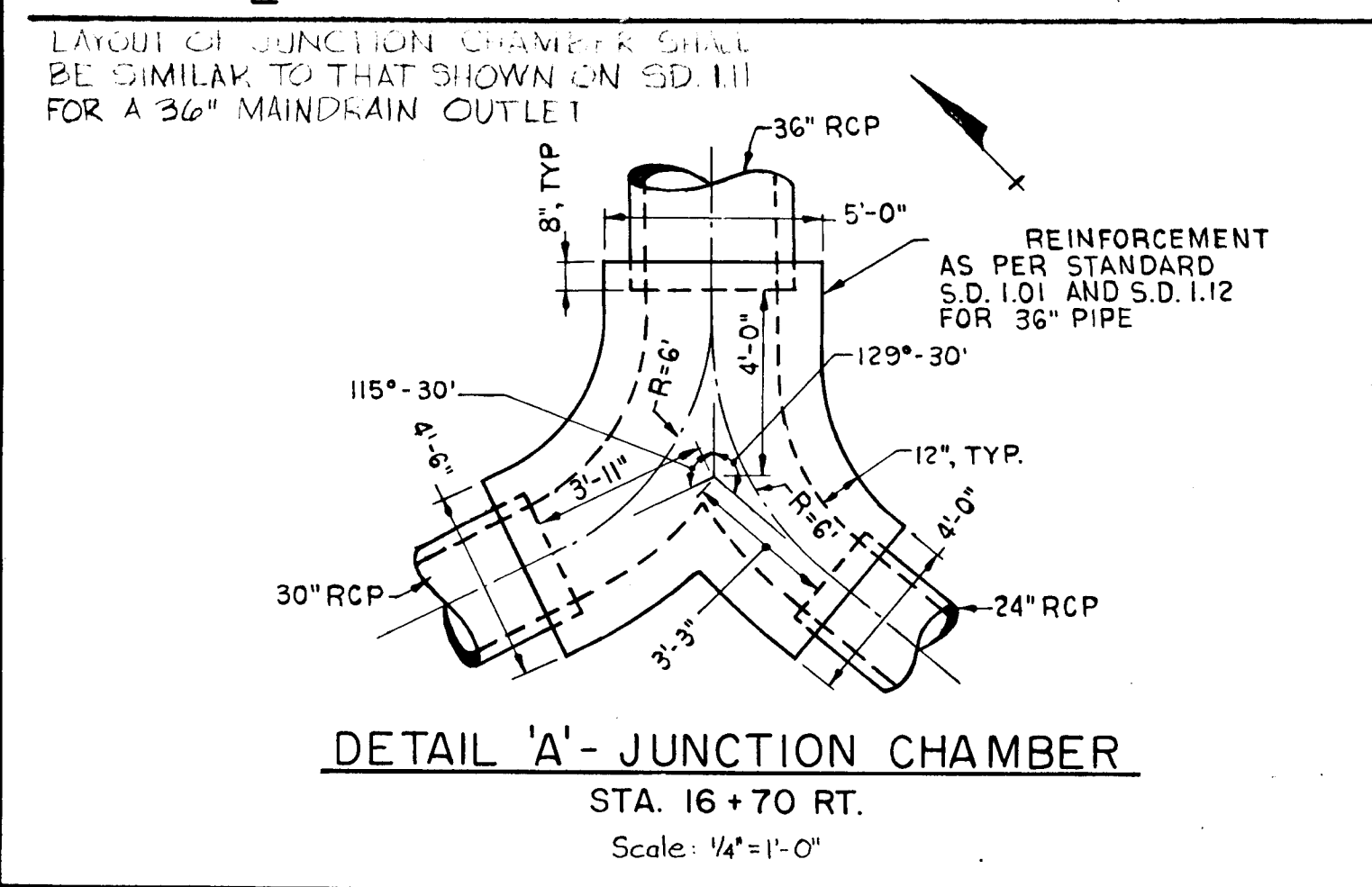
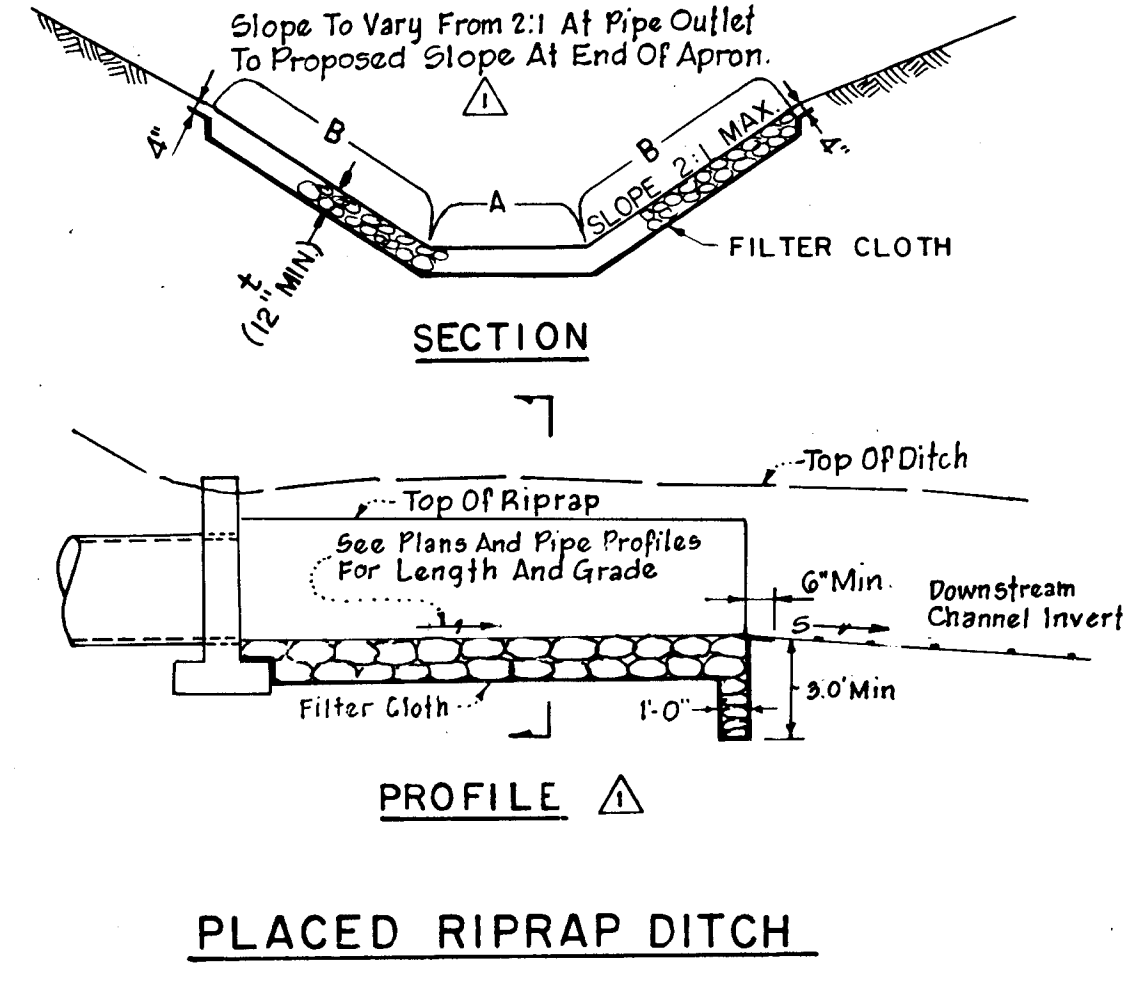
NOTE: DRAINAGE STRUCTURE SCHEDULE NO. 1 SHOWN ON SHEET NO. 8  
DRAINAGE STRUCTURE SCHEDULE NO. 3 SHOWN ON SHEET NO. 11

DRAINAGE STRUCTURE SCHEDULE No. 2 ****					
NO.	STD. NO.	TYPE	TOP EL.	STA. AND OFFSET	REMARKS
ES-3	SD 5.63	METAL END SECTION	---	29+00 31' RT.	
ES-2	SD 5.63	METAL END SECTION	---	28+67 31' RT.	
I-16	SD 4.01	TYPE 'A-5' INLET	199.82	29+80 26' LT.	*
I-14	SD 4.01	TYPE 'A-10' INLET	195.56	32+70 26' LT.	
I-15	SD 4.01	TYPE 'A-5' INLET	196.88	34+30 26' LT.	*
M-3	G-5.03	BRICK MANHOLE	196.69	34+09 30' LT.	
EW-1	SD 5.21	TYPE 'C' ENDWALL	190.00	34+00 48' LT.	
EW-7	"	"	189.30	34+50 48' RT.	
EW-3	SD 5.11	"	190.00	41+50 33' LT.	
EW-2	SD 5.11	"	189.50	41+00 43' RT.	
M-4	G-5.02	BRICK MANHOLE	177.00	3+04 50' RT.	SPUR 'C'
EW-5	MD-358.02	TYPE 'F' ENDWALL	172.64	2+75 35' RT.	FOR 2:1 SLOPE
I-17	SD 4.12	TYPE 'K' INLET	184.75	39+92 63' RT.	**
I-18	***	***	---	38+60 29' LT.	
ES-4	SD 5.63	METAL END SECTION	---	38+60 54' LT.	

\* INLET TO BE CONSTRUCTED WITH INLET DEFLECTOR, STANDARD SD-4.83.  
 \*\* CONSTRUCT 5.0 SQUARE YARDS 5" CONCRETE GUTTER, STANDARD MD-389.01  
 \*\*\* STD. NO. M(0.03)-80-123/ TYPE: DRAINAGE INLET AT END OF BRIDGE STRUCTURE  
 \*\*\*\* ALL DETAILS ARE HOWARD CO. STANDARD DETAILS UNLESS OTHERWISE NOTED  
 † SEE NOTES ON CROSS SECTIONS

- RIPRAP DITCH NOTES -

- Width of Filter Cloth must be sufficient to cover total width of ditch. If more than one roll width is required adjacent, parallel rolls shall be sewn together, either by manufacturer or on job site.
- Ditch sides and bottom shall be smooth and free of debris prior to placing filter cloth.
- Filter cloth shall be placed flat and loose, wrinkles shall be avoided.
- Sufficient securing pins to hold the filter cloth in place prior to and during riprap placement are required. Securing pins shall be 18" long, 3/16" in diameter, made of steel and have a head or washer of 1/2" in diameter.
- Grading of the ditch after riprap placement will not be allowed.
- Filter cloth shall be overlapped at all roll ends.
- All dimensions and locations not indicated on the plans or in the special provisions shall be as directed by the engineer.
- Riprap shall meet the requirements of the latest specifications or the special provisions.



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

Director of Public Works: [Signature]  
Date: [Date]

Chief, Bureau of Engineering: [Signature]  
Date: [Date]

Chief, Division of Roads, Bridges and Storm Drainage: [Signature]  
Date: [Date]

Chief, Bureau of Highways: [Signature]  
Date: [Date]

RUMMEL, KLEPPER & KAHL  
CONSULTING ENGINEERS

1035 N. CALVERT STREET  
BALTIMORE, MARYLAND 21202

DATE: 9/87

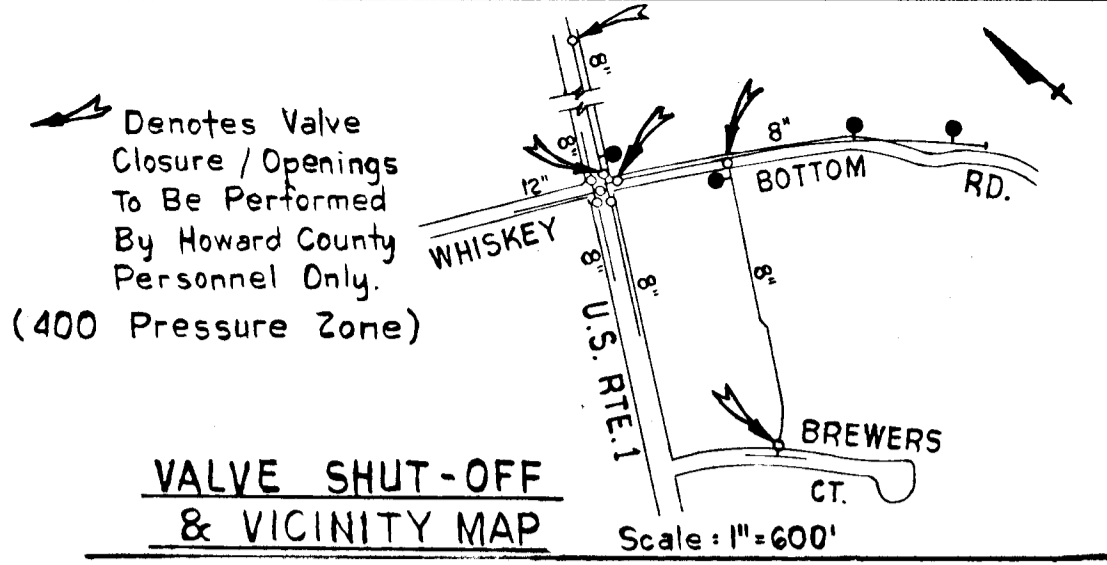
DESIGNED BY	DATE	REVISION	DATE
R.A.	1/10/89	Revised Profile To Show Riprap	1/10/89
F.R.O./F.W.S.	1/10/89	Changed Outlet From Riprap To Concrete	1/10/89
J.A.R.	1/10/89	Revised Placed Riprap Ditch	1/10/89

STORM DRAIN PROFILES, DETAILS AND DRAINAGE STRUCTURE SCHEDULE

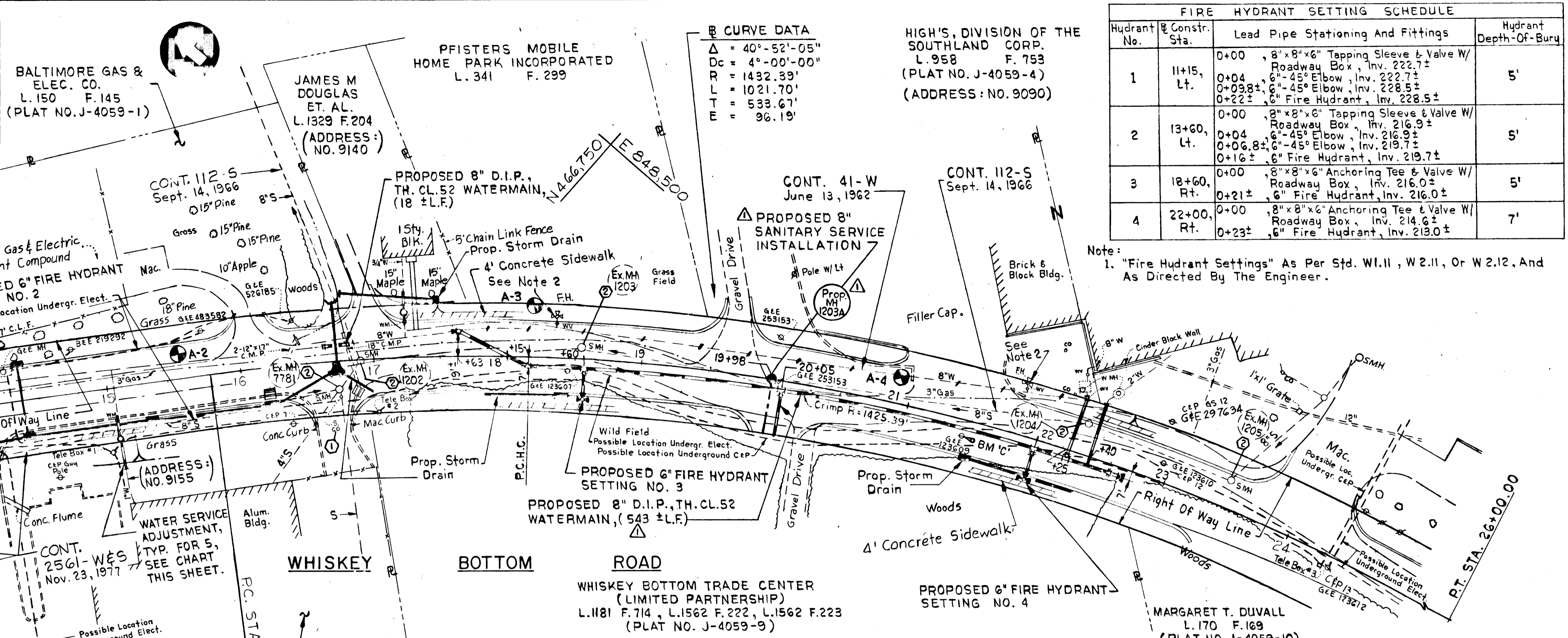
600' SCALE MAP NO. 50 BLOCK NO. 4

WHISKEY BOTTOM ROAD AND BRIDGE  
CAPITAL PROJECT J-4059 & B-3816  
ELECTION DISTRICT NO.  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 9 OF 41



**BENCH MARK DATA**  
 BM 'A': Cut Nail In South Side Of B.G.&E. Co. Pole 282353 On Northeast Corner Of Intersection Of Rte. 1 And Whiskey Bottom Rd.; Elev. 228.44  
 BM 'C': Cut Nail In North Side Of B.G.&E. Co. Pole 123609 On South Side Of Whiskey Bottom Rd. At East Coast Ice Cream Plant; Elev. 226.40

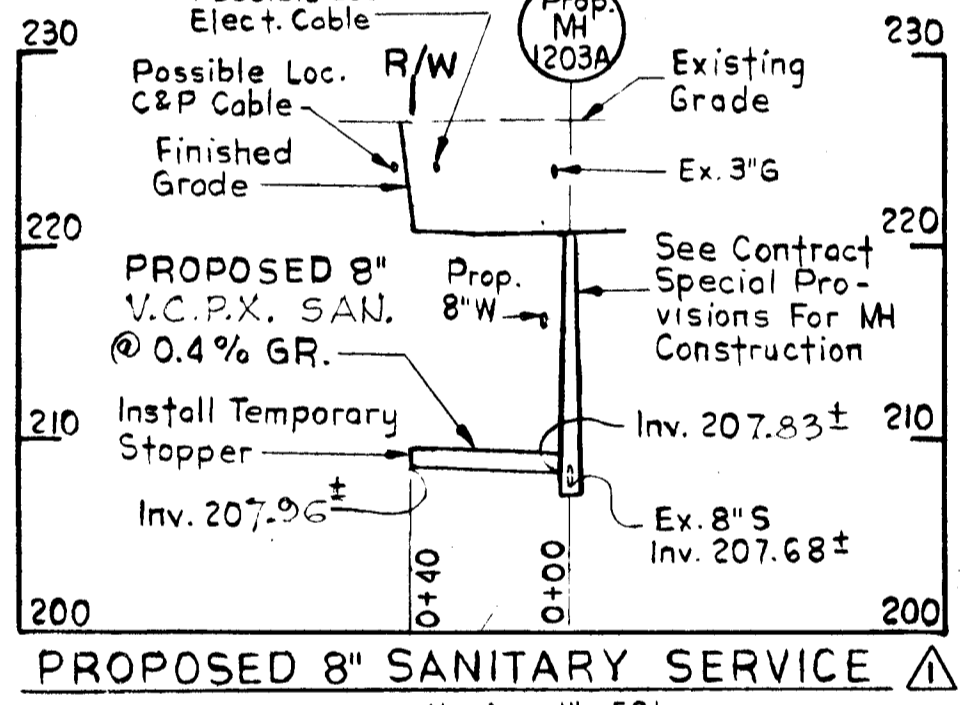


FIRE HYDRANT SETTING SCHEDULE				
Hydrant No.	Constr. Sta.	Lead Pipe Stationing And Fittings	Hydrant Depth-Of-Bury	
1	11+15, Lt.	0+00, 8" x 8" x 6" Tapping Sleeve & Valve W/ Roadway Box, Inv. 222.7± 0+04, 6" - 45° Elbow, Inv. 222.7± 0+09.8±, 6" - 45° Elbow, Inv. 228.5± 0+22±, 6" Fire Hydrant, Inv. 228.5±	5'	
2	13+60, Lt.	0+00, 8" x 8" x 6" Tapping Sleeve & Valve W/ Roadway Box, Inv. 216.9± 0+04, 6" - 45° Elbow, Inv. 216.9± 0+06.8±, 6" - 45° Elbow, Inv. 219.7± 0+16±, 6" Fire Hydrant, Inv. 219.7±	5'	
3	18+60, Rt.	0+00, 8" x 8" x 6" Anchoring Tee & Valve W/ Roadway Box, Inv. 216.0± 0+21±, 6" Fire Hydrant, Inv. 216.0±	5'	
4	22+00, Rt.	0+00, 8" x 8" x 6" Anchoring Tee & Valve W/ Roadway Box, Inv. 214.6± 0+23±, 6" Fire Hydrant, Inv. 213.0±	7'	

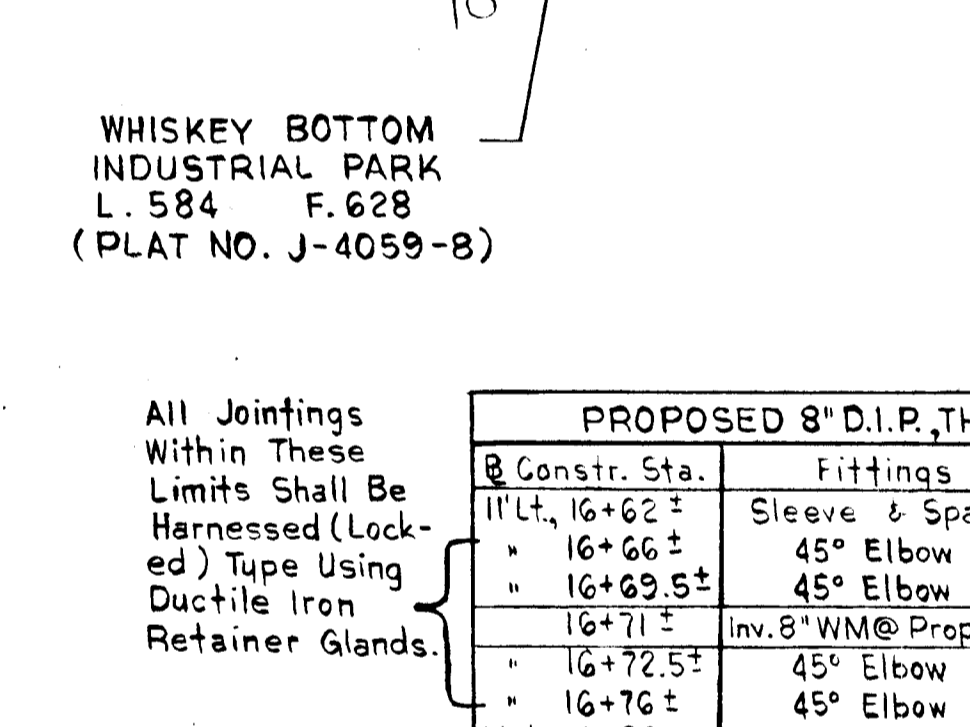
**LEGEND AND NOTES**

- ① Adjust Existing Utility Appurtenances To Finished Grade.
- ② Vertical Adjustment To Existing San. MH Stacks And Frames & Covers, Typical For 6, See Contract Special Provisions.

- Notes:**
- Remove Existing Fire Hydrant & Roadway Box; Valve To Remain In The Ground. See Contract Special Provisions For Additional Information, Typical For Two (2) Locations.
  - Remove Existing Fire Hydrant & Valve W/ Roadway Box, Bulkhead Open Ends Of Pipe Remaining In The Ground. Transport Hydrants & Valves (2 Each) In An Undamaged Condition To The HCDPW Bureau Of Utilities Storage Yard.



**PLAN**  
Scale: 1" = 50'

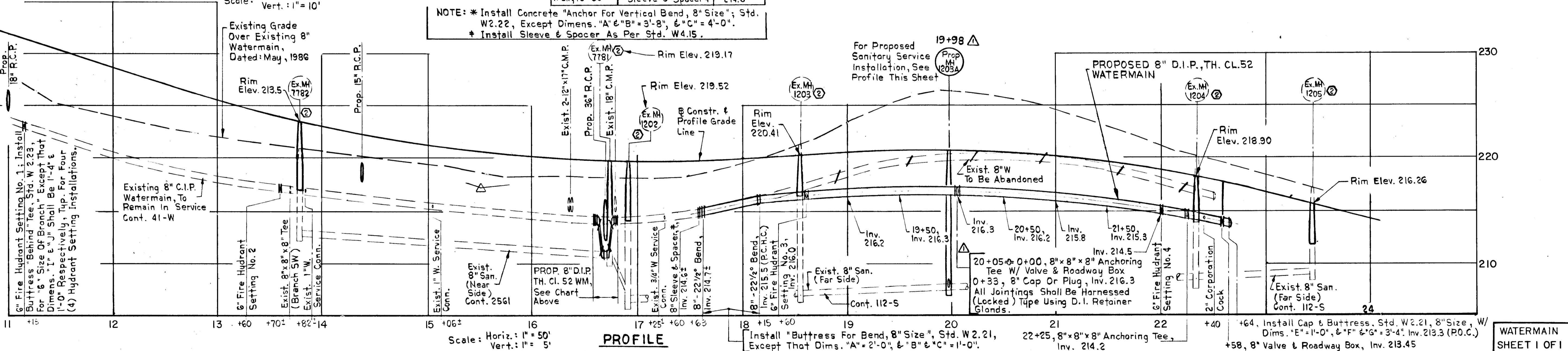


**WATER SERVICE ADJUSTMENTS**

Constr. Sta.	Service x Meter Size	Remarks
13+82± Rt. NO. 9157 WHISKEY BOTTOM RD.	1" x 3/4"	Remove Existing Housing And All Contained Items And Reset Vertically Upward To New Project Finished Grade, All As Per Std. W3.31. Install 30± LF. Of 1" Copper Tube And Compression Connectors To Avoid Conflict With Proposed Storm Drain (See Above Std.), And To Tie-In To Existing Plastic Service Pipe.
15+06± Rt. NO. 9155 WHISKEY BOTTOM RD.	1" x 3/4"	Remove Existing Meter Vault & Contained Items In Their Entirety; Salvage Meter For Reinstallation. Install Totally New 1" x 3/4" Metered Service "Behind" Sidewalk To New Project Finished Grade, Complete, Including Vault With All Contained Items & New Frame & Cover; Reinstall Meter, All As Per Std. W3.31. Service Extension At 40± OF 1" Copper Tube, Fittings, & Adapters To Tie-In To Exist. Plastic Service Pipe.
17+25± Lt. NO. 9140 WHISKEY BOTTOM RD.	3/4" x 5/8"	As Per Operations For Address No. 9155, Except That Installation Shall Be 3/4" x 5/8" Metered Service, With Extension At 25± OF 3/4" Copper Tube, Fittings, And Adapters To Tie-In To Existing Copper Tube Service Pipe.
22+25± Lt. NO. 9090 WHISKEY BOTTOM RD.	8" x 8"	Remove Existing 8" Main And 8" x 8" Tapping Sleeve & Valve And Install New "PROPOSED 8" D.I.P., TH. CL. 52, WATER SERVICE" As Follows: Sta. 0+00: 8" x 8" x 8" Anchoring Tee & Valve W/ Roadway Box, Inv. 214.2 Sta. 0+25±: Point-On-Line, Inv. 214.7± Sta. 0+49±: Remove Existing Systems, Furnish/ Install Elbows, Sleeve & Spacer, And Adapters As Required To Effect Tie-In To Existing 8" Service, Inv. 216.6±. Install "Buttress For Tee, 8" Size", Std. W.2.23, W/ Dims. "I" & "J" At 1'-8" Ea. Install "Buttress For Horiz. Bends (Sta. 0+49) To Suit Elbows Installed, Std. W.2.21 & W/ Allow. Soil Brng. Pressure Of 110.0 * (SF).
And 20+40± Lt.	2" x 2"	Utilize Tapped Tee, Or Saddle (See Contr. Spec. Prov.), & Install New 2" Corp. Cock; Install 50± L.F. Of 2" Copper Tube And Tie-In To Existing Copper Tube Service Pipe Upstream Of Meter Setting (Existing Setting May Be Similar To As Shown On Std. W.3.34). Remove Existing Systems As Necessary To Perform Tie-In, And Furnish/ Install All Fittings And Adapters To Effect Such New Tie-Ins. Tapped Tee, Or Saddle, Installation Shall Be As Per Std. W.3.21.

**QUANTITIES**

ITEM	BID	UNIT	MATERIAL/SUPPLIER
6" Watermain	80	LF	
8" Watermain	613	LF	
6" Valve	2	EA	
8" x 8" x 6" Tapp. Sleeve & Valve	2	EA	
8" Valve	3	EA	
3/4" Tubing	25	LF	
1" Tubing	70	LF	
2" Tubing	50	LF	
Fire Hydrants	4	EA	
3/4" M.V. & S.Hg.	1	EA	
5/8" M.V. & S.Hg.	1	EA	
Sanitary MH	1	LF	
8" S. Service	38	LF	



**DEPARTMENT OF PUBLIC WORKS**  
 HOWARD COUNTY, MARYLAND  
 Director of Public Works: James J. ...  
 Chief, Bureau of Engineering: ...  
 Chief, Bureau of Utilities: ...

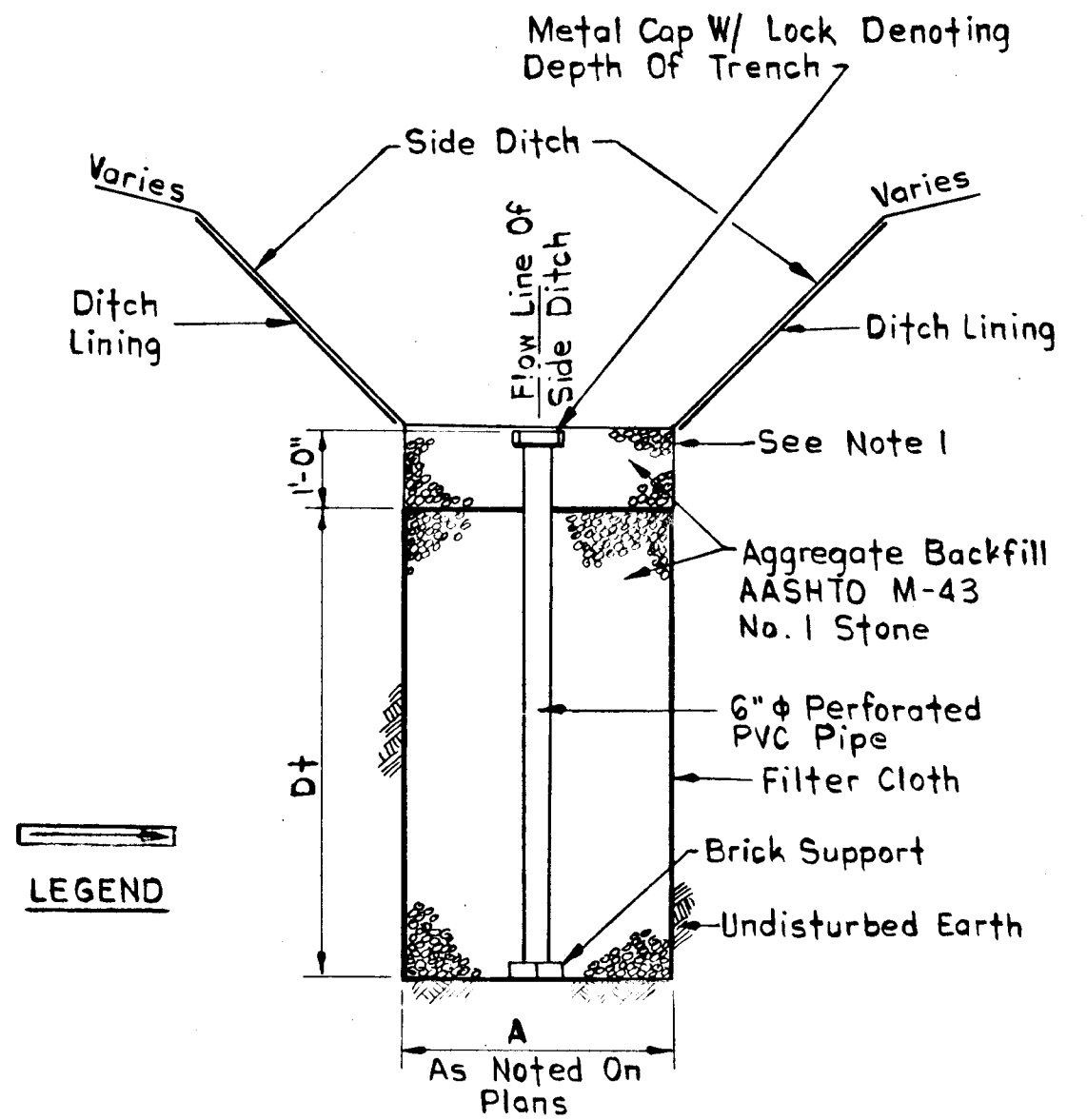
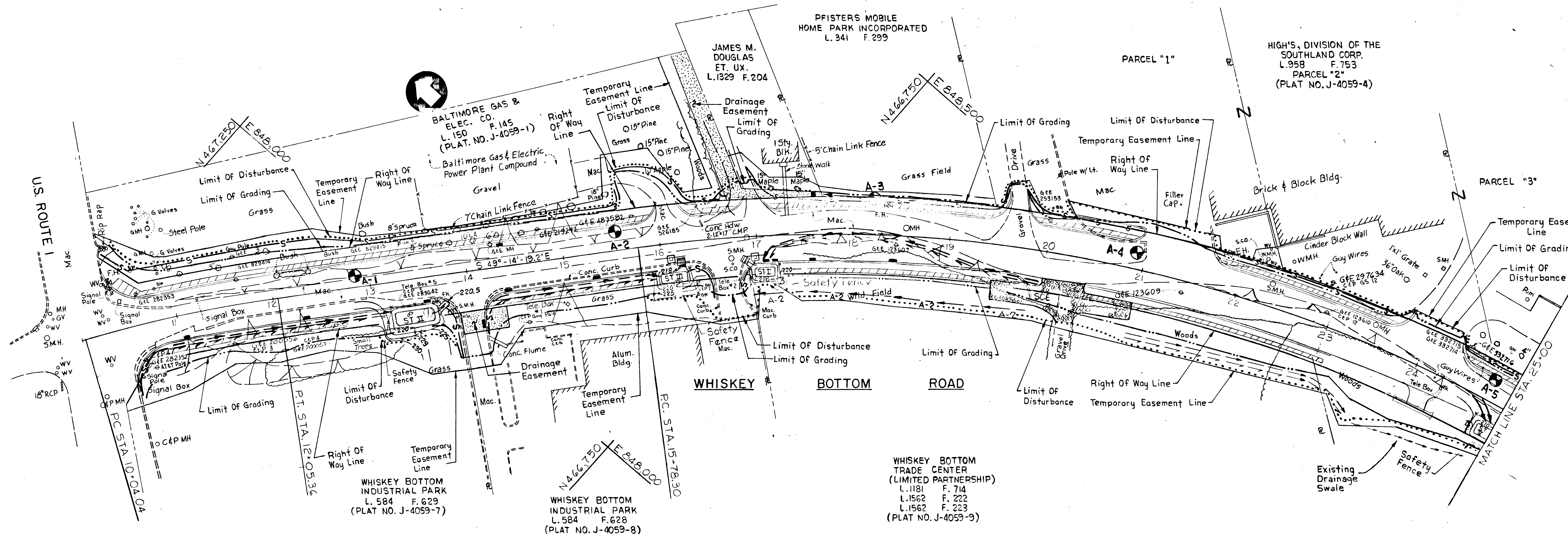
**RUMMEL, KLEPPER & KAHL**  
 CONSULTING ENGINEERS  
 1035 N. CALVERT STREET  
 BALTIMORE, MARYLAND 21202

DES: F.W.S.  
 DRN: F.W.S.  
 CHK: W.F.K.  
 DATE: 9/87  
 BY: ...

**PLAN AND PROFILE**  
**WATER MAIN**  
 600' SCALE MAP NO. 50 BLOCK NO. 4

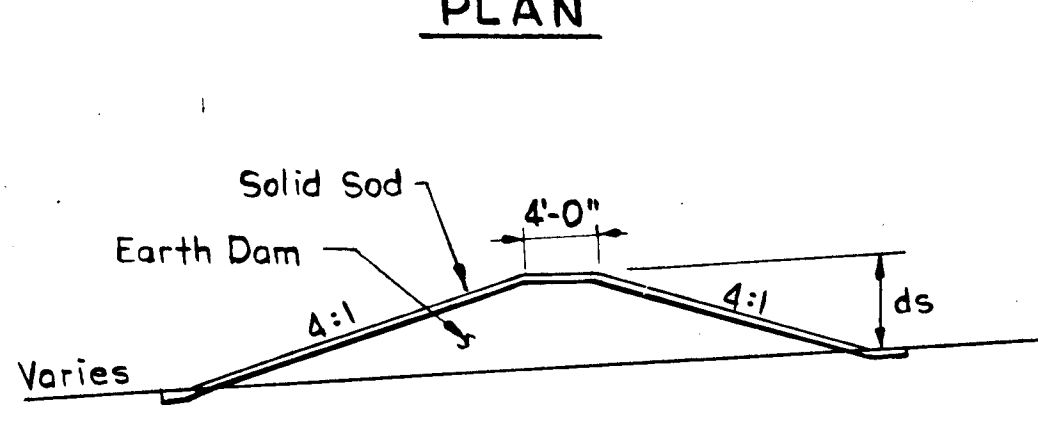
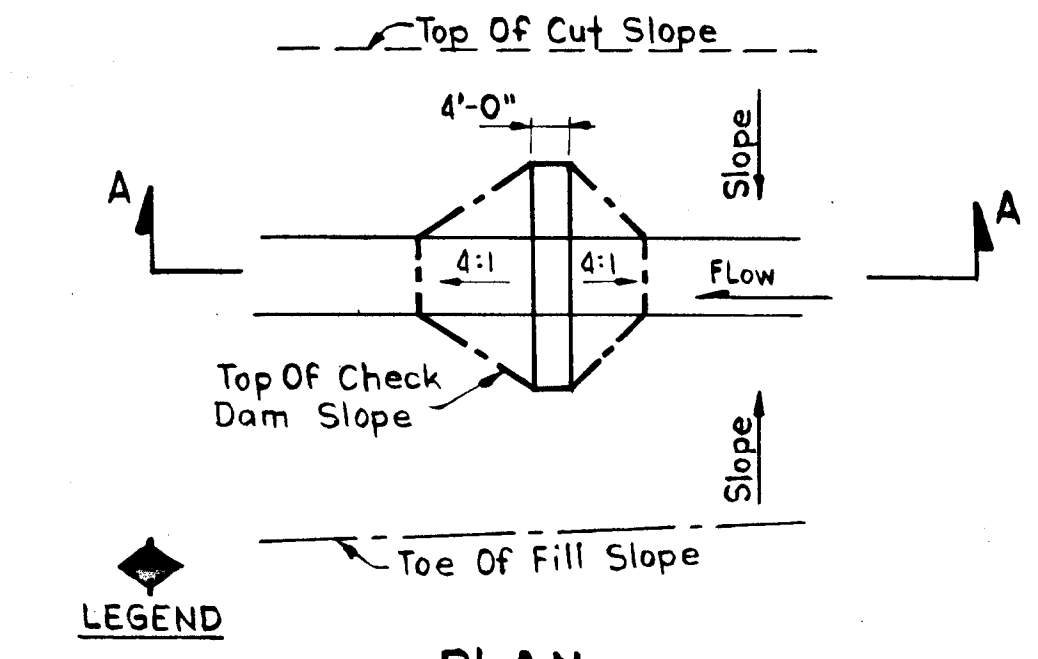
**WHISKEY BOTTOM ROAD 8" WATER MAIN RELOCATION**  
 CAPITAL PROJECT J-4059 & B-3816  
 CONTRACT NO. 44-1639  
 ELECTION DISTRICT NO. 6  
 HOWARD COUNTY, MARYLAND  
 SCALE AS SHOWN  
 SHEET 10 OF 41





- NOTE:**
- When Trench Is To Be Placed In A Riprap Lined Ditch, Riprap Shall Be Used In The Top 1' Layer Of Backfill In Lieu Of No. 1 Stone.
  - Perimeter Overlap Of Filter Cloth Shall Be 6".
  - End Of Roll Overlap Of Filter Cloth Shall Be 2'-0" Over The Downstream Roll To Provide A Shingled Effect.
  - Well Cap Shall Be Marked W/ Depth Of Trench At Time Of Installation.

**DETAIL - INFILTRATION TRENCH W/ OBSERVATION WELL**



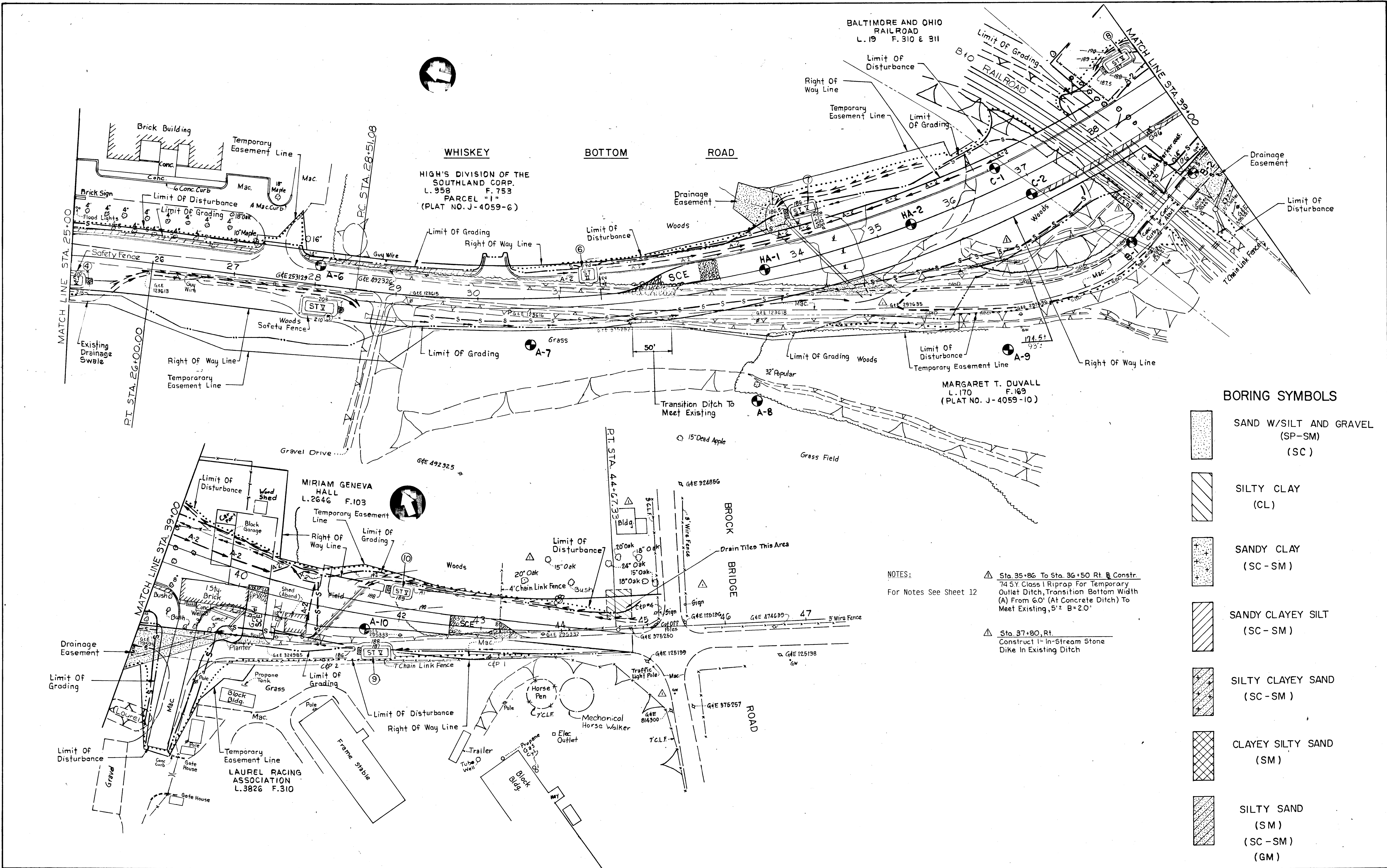
**SECTION A-A  
DETAIL - CHECK DAM**

LOCATION	INFILTRATION SCHEDULE		
	DEVICE		
	TRENCH	CHECK DAM	
(@ Construction)			
Sta. 25+50 To Sta. 27+45 Rt.	195	6	
Sta. 33+04 Rt.			1.0
Sta. 39+00 To Sta. 40+00 Lt.	100	3	
Sta. 40+26 Rt.			1.0
Sta. 41+16.5 Rt.			0.75
Sta. 41+70.5 Lt.			1.25
Sta. 42+06.5 Rt.			0.75
Sta. 42+97 Rt.			0.5
(@ Spur 'D')			
Sta. 0+80 To Sta. 2+17 Lt.	137	7	
Sta. 2+21 Lt.			1.0

- NOTES:**
- Construct And Stabilize Sediment Control Devices Before Grading Is Initiated.
  - Before Constructing Roadway Embankment, Construct And Stabilize Side Ditches And Place Silt Fence Along Toe Of Fill.
  - Construct Earthdike And Grade Stabilization Structures Along The Top Of Embankments To Prevent Erosion Of Fill Slopes.
  - In Locations Where Infiltration Trench Is To Be Installed, Temporarily Stabilize Ditch With Soil Stabilization Matting.
  - Infiltration Trench And Check Dams Shall Not Be Installed Until The Device's Drainage Area Has Been Permanently Stabilized.

SEDIMENT TRAP SCHEDULE								
NO	LOCATION (B/L STA.)	OFFSET (FT.)	TYPE	BOTTOM ELEVATION	BOTTOM DIMENSION (FT.)	CREST ELEVATION		
					LENGTH	WIDTH	DEPTH	
1	13+60	38 RT.	ST - II	217.5	40	14	3	220.5
2	16+20	35 RT.	ST - III	215.0	26	10	3	218.0
3	16+95	37 RT.	ST - II	215.0	21	10	3	218.0
4	25+15	30 RT.	ST - V	207.5	30	12	3	210.5
5	28+26	27 RT.	ST - V	200.0	35	13	3	203.0
6	31+45	25 LT.	ST - II	191.0	15	14	3	194.0
7	34+05	60 LT.	ST - V	183.0	30	12	3	186.0
8	38+55	67 LT.	ST - V	184.0	30	10	3	187.0
9	41+64	47 RT.	ST - V	184.0	30	10	3	187.0
10	41+88	35 LT.	ST - V	186.0	20	10	3	189.0

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DIRECTOR OF PUBLIC WORKS CHIEF, DIVISION OF ROADS, BRIDGES AND STORM DRAINAGE	RUMMEL, KLEPPER & KAHL CONSULTING ENGINEERS 1035 N. CALVERT STREET BALTIMORE, MARYLAND 21202	DES: R.A.	Added Crest Elev. Column	1/10/89	SEDIMENT AND EROSION CONTROL PLAN I AND DETAILS FOR INFILTRATION TRENCH AND CHECK DAM	WHISKEY BOTTOM ROAD AND BRIDGE CAPITAL PROJECT J-4059 & B-3816 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 12 OF 41
		DRN: F.R.O./F.W.S.	CHK: J.A.R.	DATE: 9/87			



NOTES:  
 For Notes See Sheet 12  
 Sta. 35+86 To Sta. 36+50 Rt. @ Constr. 74 5/8" Class 1 Riprap For Temporary Outlet Ditch, Transition Bottom Width (A) From 60' (At Concrete Ditch) To Meet Existing, 5'± B=2.0'  
 Sta. 37+80, Rt. Construct 1'-In-Stream Stone Dike In Existing Ditch

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 DIRECTOR OF PUBLIC WORKS  
 CHIEF, BUREAU OF ENGINEERING  
 CHIEF, BUREAU OF HIGHWAYS

RUMMEL, KLEPPER & KAHL  
 CONSULTING ENGINEERS  
 1035 N. CALVERT STREET  
 BALTIMORE, MARYLAND 21202

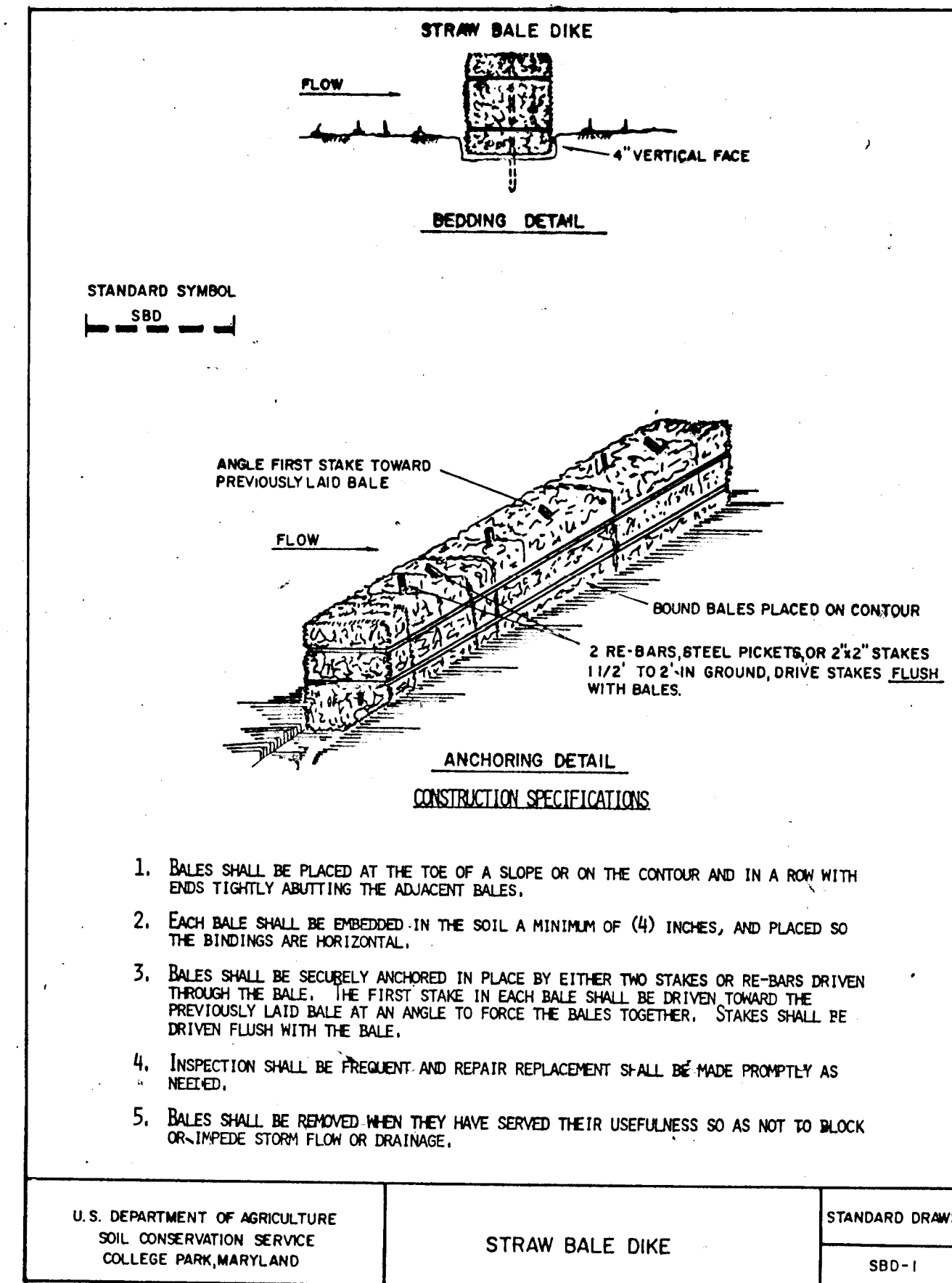
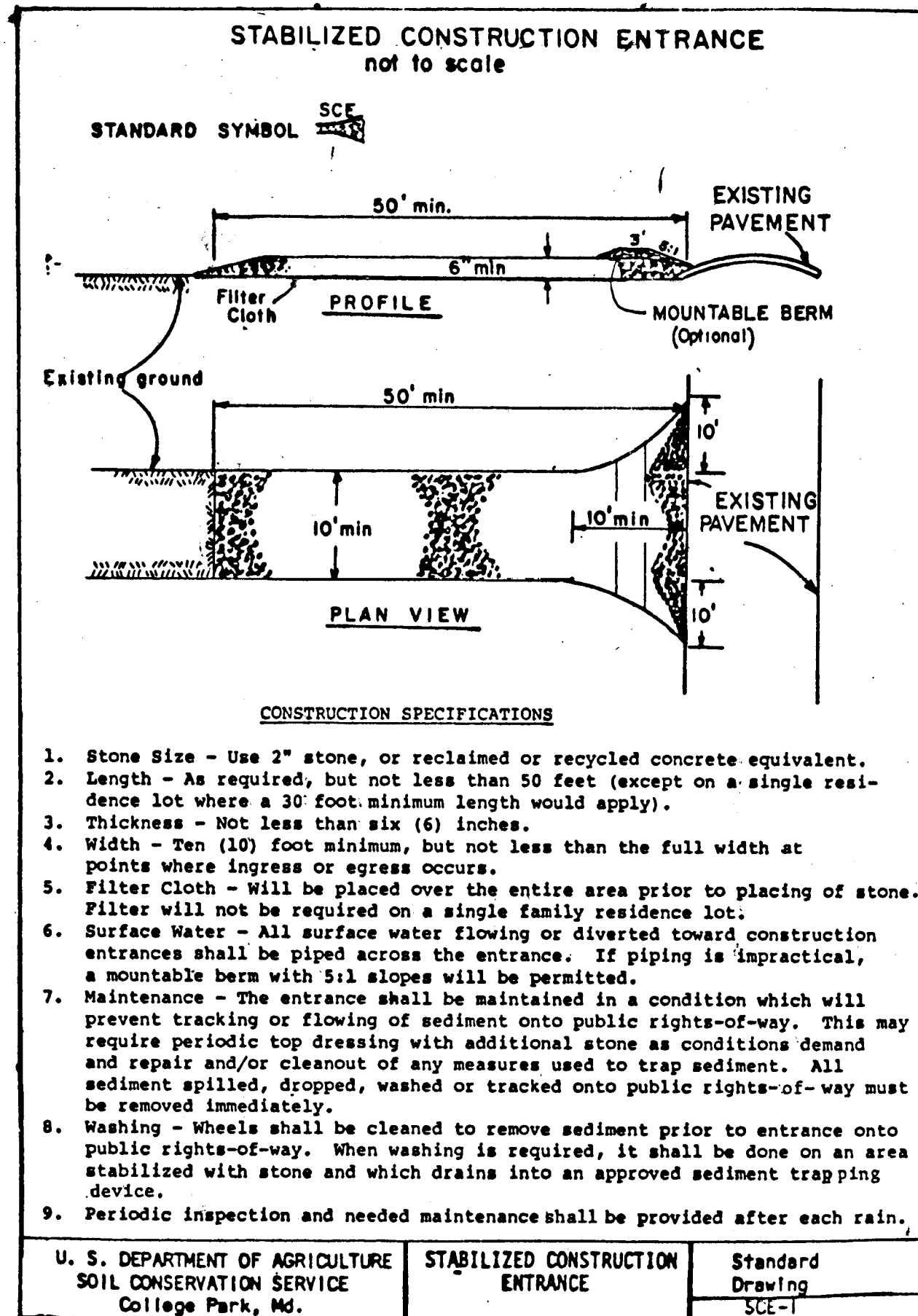
DES: R.A.	Revised Location Of Outlet Ditch	11/10/89
DRN: F.R.O./F.W.S.	Added In-Stream Stone Dike @ 37+80, Rt.	11/10/89
CHK: J.A.R.	Added Temporary Ditch At 35+, Rt.	11/10/89
DATE: 9/87	Revised Topo @ Sta. 43+ To Sta. 47+	11/10/89
BY NO.	REVISION	DATE

SEDIMENT AND EROSION CONTROL  
 PLAN II  
 AND BORING LEGEND  
 600' SCALE MAP NO. 50 BLOCK NO. 4

WHISKEY BOTTOM ROAD AND BRIDGE  
 CAPITAL PROJECT J-4059 & B-3816  
 ELECTION DISTRICT NO. 6  
 HOWARD COUNTY, MARYLAND  
 SCALE AS SHOWN  
 SHEET 13 OF 41

LIST OF STANDARD SYMBOLS

Earth Dike	
Straw Bale Dike	
Silt Fence	
Temporary Swale	
Stabilized Construction Entrance	
Grade Stabilization Structure	
Pipe Slope Drain	
Perimeter Dike/Swale	
Inlet Protection	
Diversions	
Grassed Waterway	
Lined Waterway	
Rock Outlet Protection	
Subsurface Drain	
Sod Lined Ditch	
Ridrap Ditch	
In-Stream Stone Dike	



SEDIMENT CONTROL NOTES

- 1) A minimum of 24 hours notice must be given to the Howard County Office of Inspection and Permits 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 redistribution, 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, b) 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) sod (Sec. 54), temporary seeding (Sec. 50) and mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seeding dates 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	10.1 Acres
Area Disturbed	9.9 Acres
Area to be roofed or paved	4.3 Acres
Area to be vegetatively stabilized	5.6 Acres
Total Cut	~14,500 Cu. yds
Total Fill	~26,000 Cu. yds
Offsite waste/borrow area location	N.A.
- 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 DPW 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 disturbance 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

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

**Seeded Preparation:** Loosen upper three inches of soil by raking, discing or other acceptable means before seeding.

**Soil Amendments:** In lieu of soil test recommendations, 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 10-10-10 fertilizer (14 lbs/1000 sq ft) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs per acre 30-0-0 ureaform fertilizer (9 lbs/1000 sq ft).
- 2) Acceptable -- Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sq ft) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000 sq ft) before seeding. Harrow or disc into upper three inches of soil.

**Seeding -** For the periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs per acre (1.4 lbs/1000 sq ft) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs per acre (.05 lbs/1000 sq ft) of weeping lovegrass. During the period of October 16 thru 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 unrotted 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 emulsified 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 reseeding.

**TEMPORARY SEEDING NOTES**

Apply to graded or cleared areas likely to be redistributed where a short-term vegetative cover is needed.

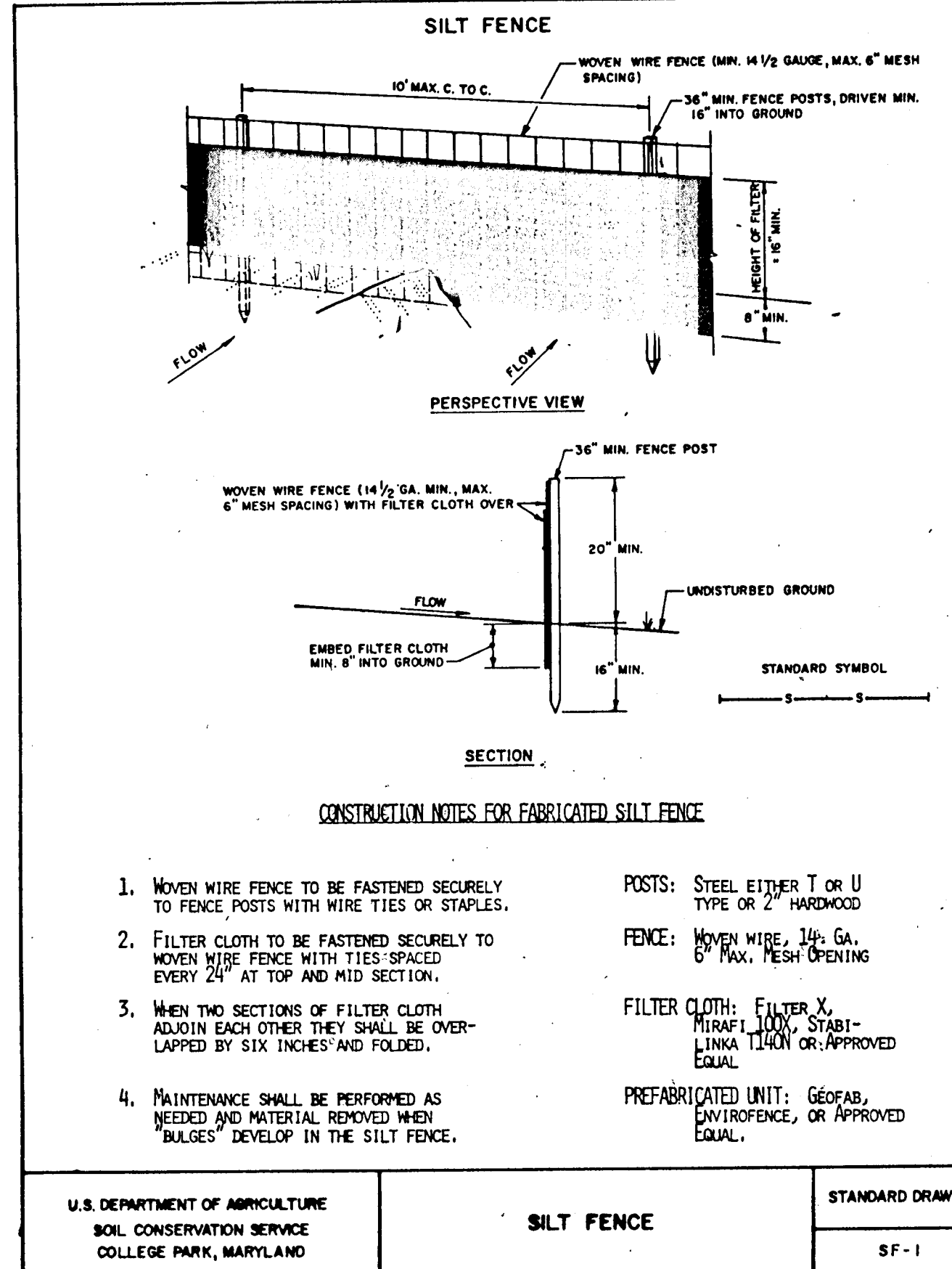
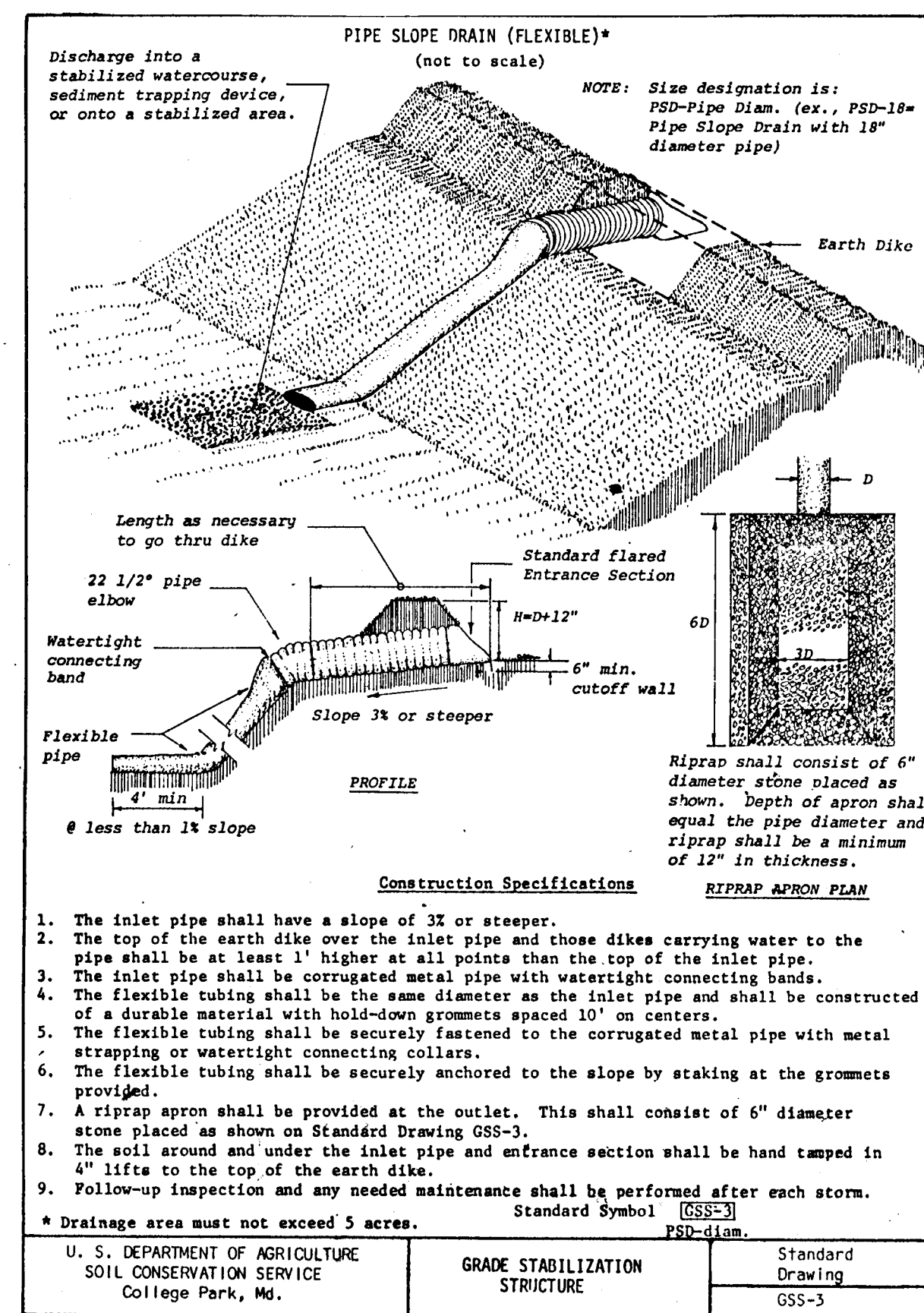
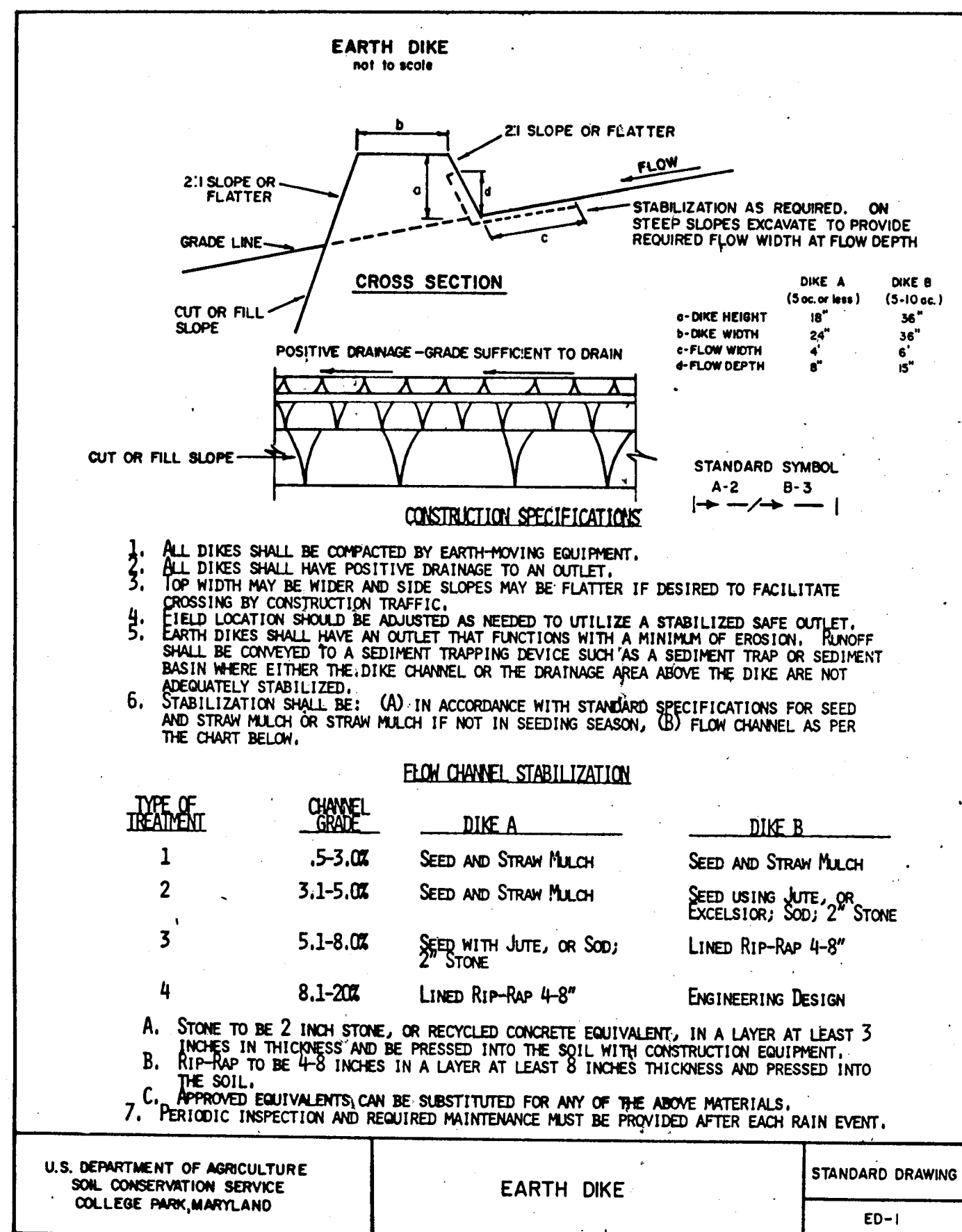
**Seeded Preparation:** Loosen upper three inches of soil by raking, discing or other acceptable means before seeding.

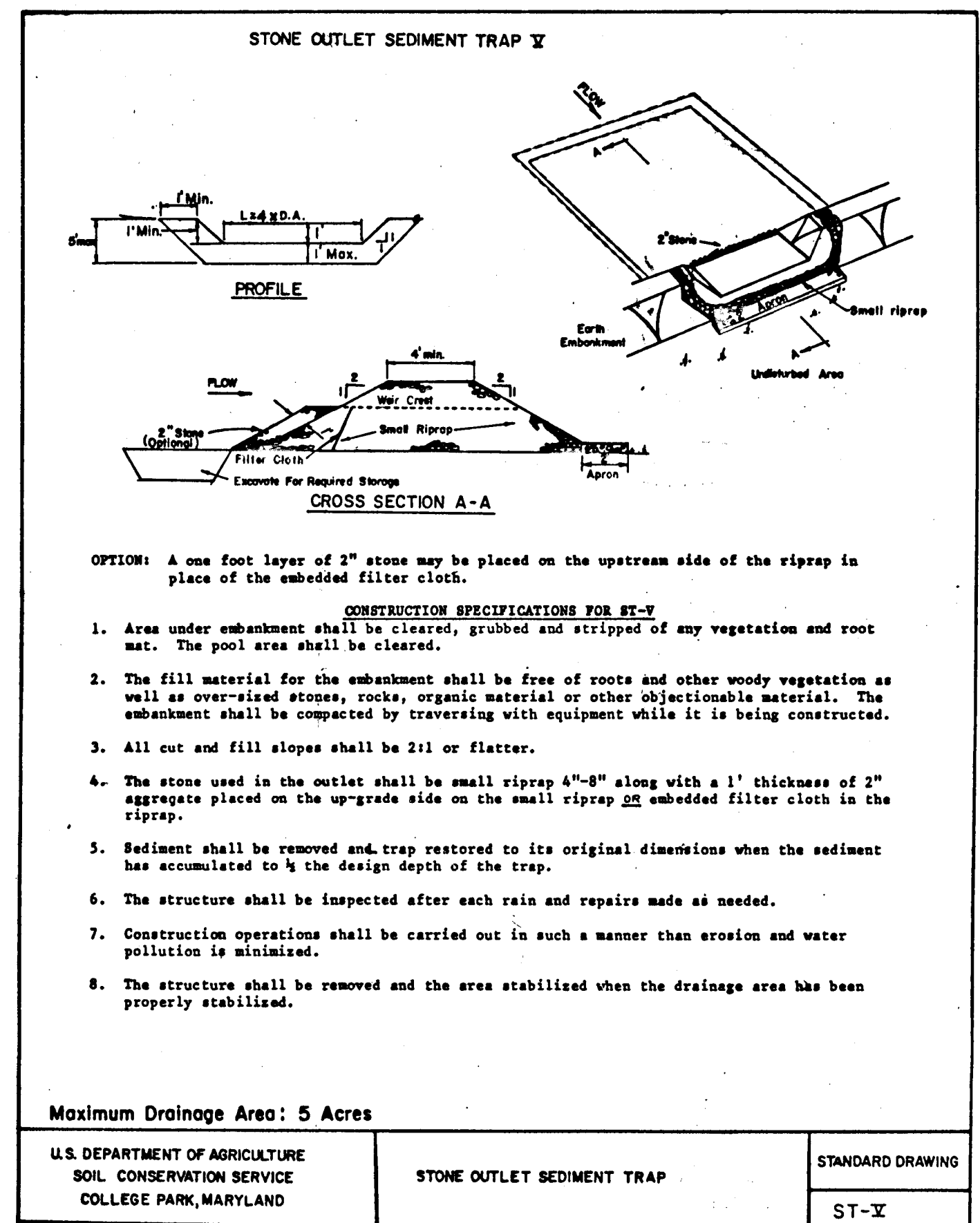
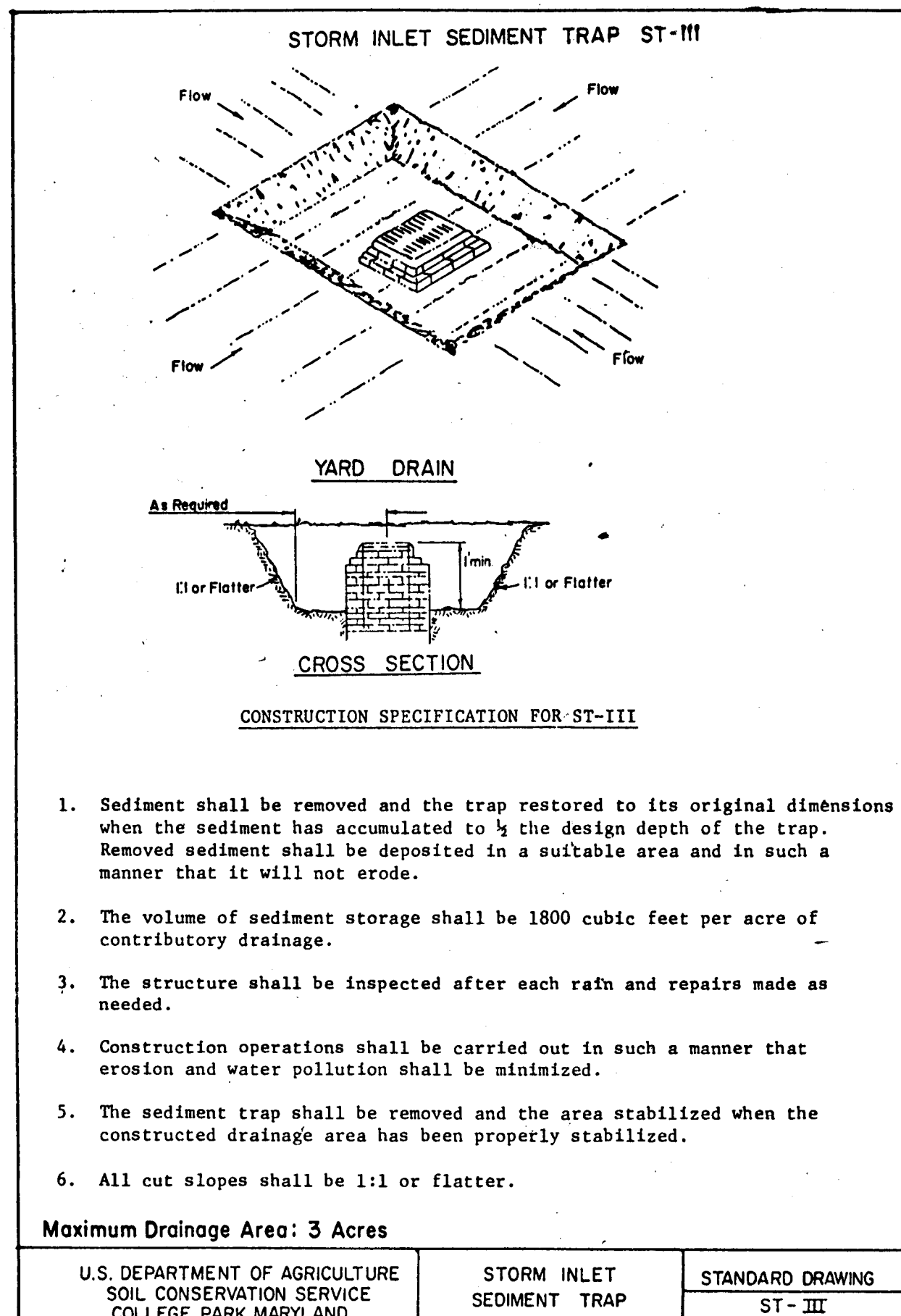
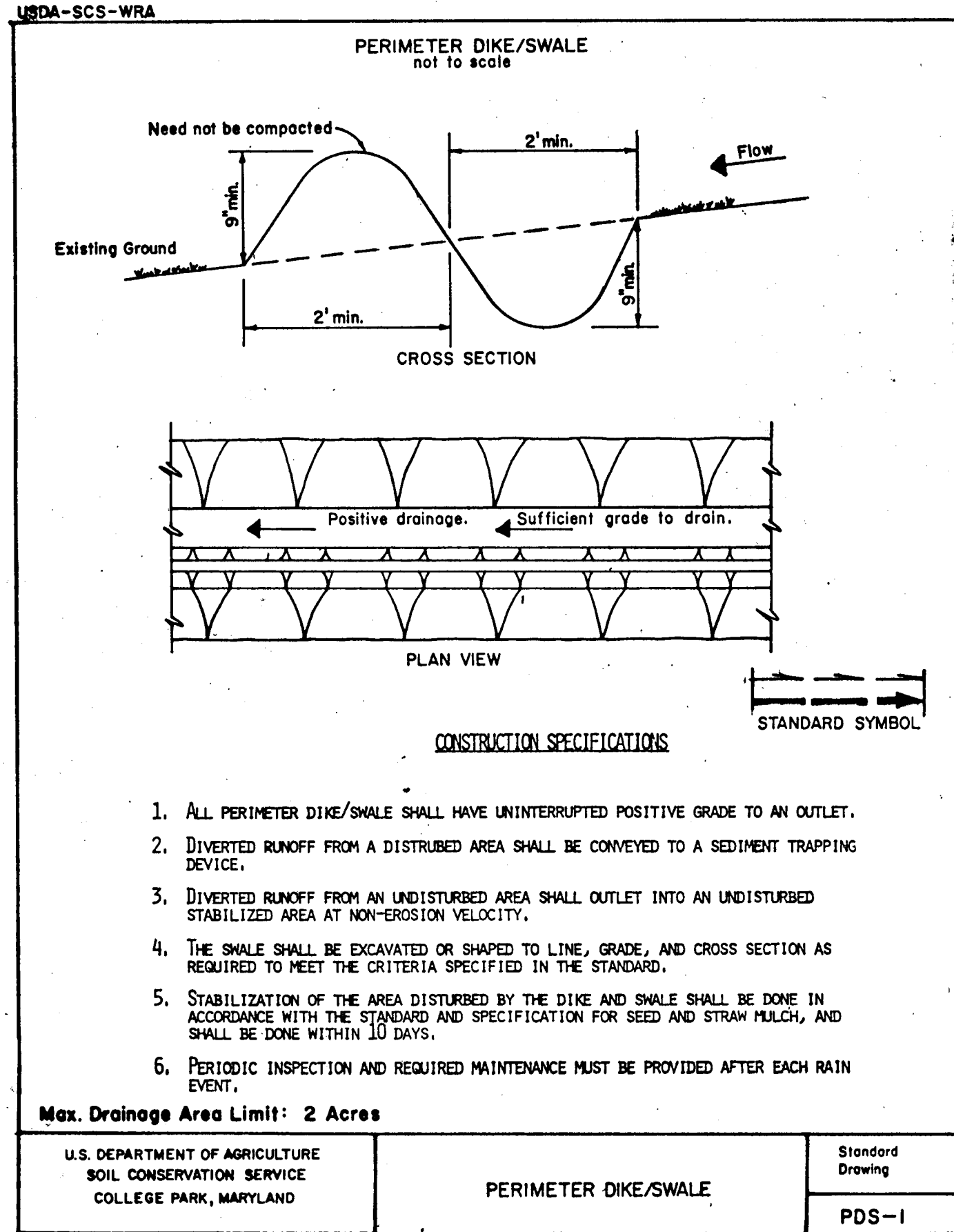
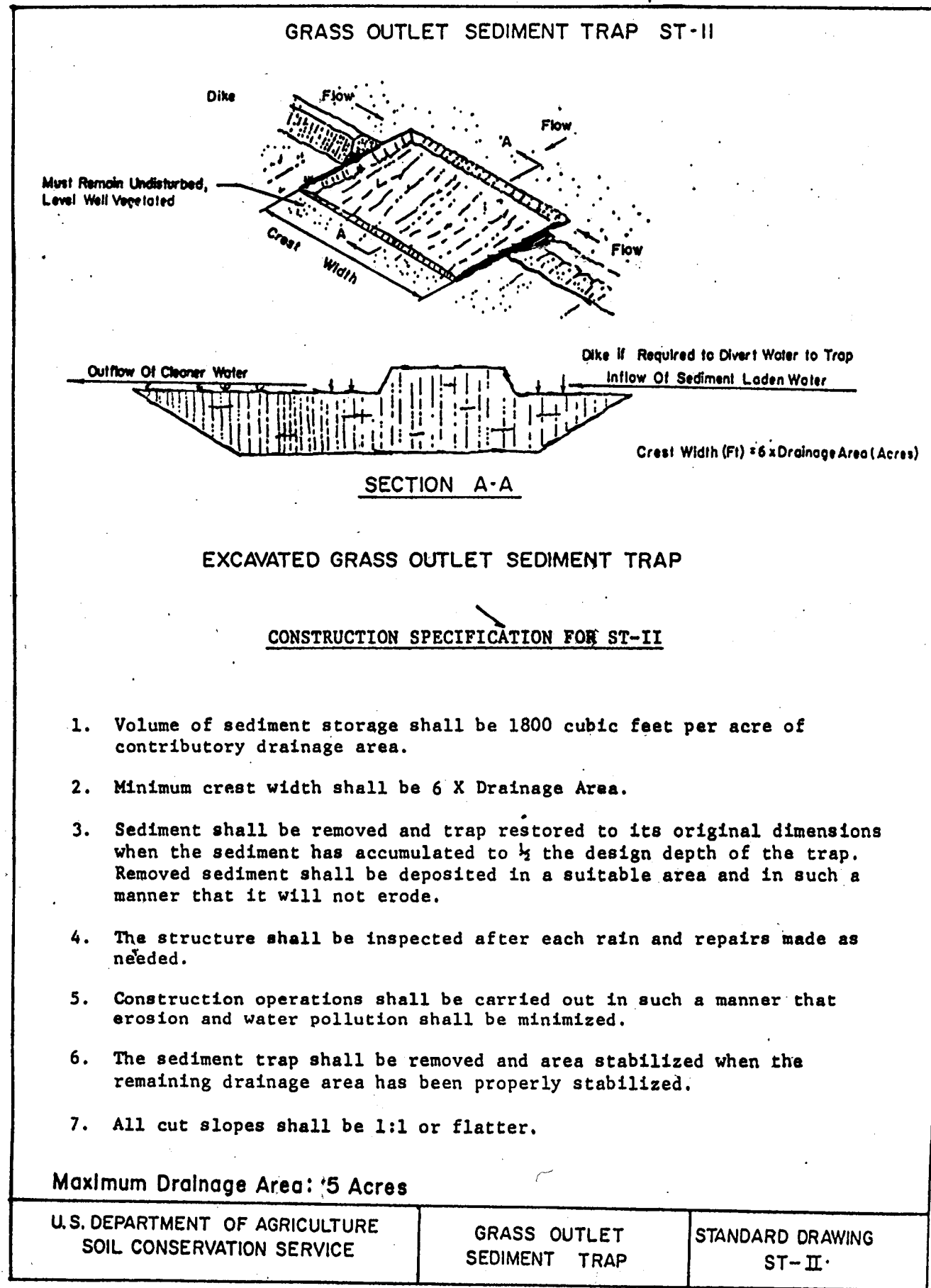
**Soil Amendments:** Apply 60 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq ft).

**Seeding:** For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2 1/2 bushel per acre of annual rye (3.2 lbs/1000 sq ft). For the period May 1 thru August 14, seed with 3 lbs per acre of weeping lovegrass (.07 lbs/1000 sq ft). For the period November 16 thru February 28, protect 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 unrotted 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 emulsified asphalt on flat areas. On slopes 8 ft or higher, use 348 gal per acre (8 gal/1000 sq ft) for anchoring.

Refer to the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.





**EXCAVATION**

IF BERM DITCHES ARE TO BE USED IN A CUT SECTION, THEY WILL BE EXCAVATED AND STABILIZED AS THE FIRST ORDER OF BUSINESS AS DIRECTED BY THE ENGINEER.

ALL CUT SLOPES SHALL BE DRESSED, PREPARED, SEEDED AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE EXCAVATED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 15 FEET.

**CONSTRUCTION SEQUENCE:**

- EXCAVATE AND STABILIZE BERM, SIDE AND OUTLET DITCHES.
- PERFORM PHASE 1 EXCAVATION, DRESS, SEED & MULCH SLOPES WITH PERMANENT SEED & MULCH.
- PERFORM PHASE 2 EXCAVATION, DRESS, SEED & MULCH SLOPES WITH PERMANENT SEED & MULCH. OVERSEED PHASE 1 SLOPES, IF REQUIRED.
- PERFORM FINAL PHASE EXCAVATION, DRESS, SEED & MULCH SLOPES WITH PERMANENT SEED & MULCH. STABILIZE SURFACE DRAIN DITCHES, OVERSEED PHASE 1 & 2 SLOPES, IF REQUIRED, AS DETERMINED BY THE ENGINEER.

**PHASING PLAN-CUT SECTION**

**NOTE:** ONCE THE EXCAVATION WITHIN A SPECIFIC AREA HAS BEGUN, THE OPERATION SHALL BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION OF THE GRADING AND PLACEMENT OF PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OF 14 DAYS OR MORE MUST BE APPROVED BY THE ENGINEER. ANY VIOLATION OF THIS REQUIREMENT WILL RESULT IN THE CONTRACTOR ASSUMING THE RESPONSIBILITY OF PLACING TEMPORARY STABILIZATION AT HIS OWN COST AND EXPENSE.

**EMBANKMENT**

THE FIRST ORDER OF BUSINESS WILL BE THE EXCAVATION AND STABILIZATION OF SIDE DITCHES AND PLACEMENT OF PERIMETER CONTROLS (SILT FENCE, ETC.). THE EMBANKMENT WILL BE MADE IN LIFTS MEETING THE SAME HEIGHT REQUIREMENTS AS PREVIOUSLY STATED FOR CUT SECTIONS. THE SLOPES WILL BE STABILIZED IMMEDIATELY FOLLOWING THE COMPLETION OF THE INTERMEDIATE STAGE(S).

AT THE END OF EACH WORK DAY TEMPORARY BERMS (EARTH) AND SLOPE DRAINS WILL BE CONSTRUCTED ALONG THE TOP EDGE(S) OF THE EMBANKMENT TO INTERCEPT SURFACE RUNOFF.

**CONSTRUCTION SEQUENCE:**

- EXCAVATE AND STABILIZE SIDE DITCH AND/OR INSTALL PROPOSED CONTROLS AT THE TOE OF SLOPE.
- TEMPORARY SEEDING OR STRAW MULCH.
- PLACE PHASE 2 EMBANKMENT, DRESS TEMPORARY SEEDING OR STRAW MULCH.
- PLACE FINAL PHASE EMBANKMENT, DRESS PREPARE & PLACE PERMANENT SEED & MULCH ON THE ENTIRE SLOPE.

**PHASING PLAN-FILL SECTION**

**GRADING TABLE**

LOCATION	CUT		TOPSOIL		ROOTMAT		PAVEMENT		CLASS 2	CLASS 1-A	EROS. & SED. CON. EXCAV.
	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.			
Sta. 10+40 to Sta. 18+50											
Sta. 18+50 to Sta. 31+50	1,285	4,400				15		240	10		275
Sta. 31+50 to Sta. 37+50	155	13,180				575		140	260	450	100
Sta. 37+50 to Sta. 44+25	540	8,015				80		190	210		220
<b>TOTAL</b>	<b>14,405</b>	<b>25,800</b>	<b>140</b>	<b>0</b>	<b>790</b>	<b>710</b>	<b>510</b>	<b>570</b>	<b>565</b>	<b>450</b>	<b>865</b>

**SUMMARY OF EARTHWORK**

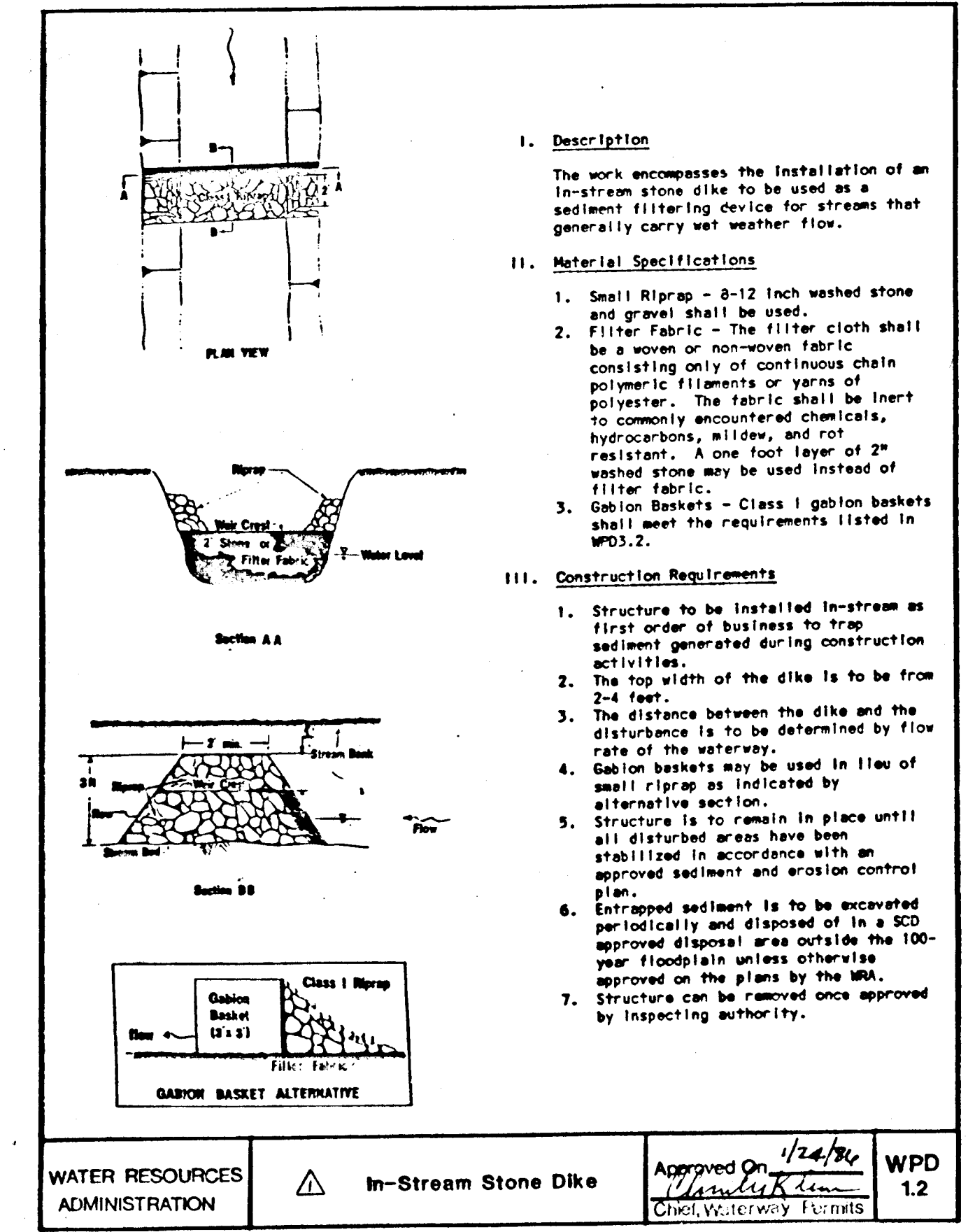
<b>CLASS '1' EXCAVATION</b>	<b>CLASS '1-A' EXCAVATION - TOTAL</b>	<b>= 450 CY</b>
Cut: 14,405 CY		
Plus: Rootmat Removed Under Fill: 710 CY	<b>CLASS '2' EXCAVATION - TOTAL</b>	<b>= 565 CY</b>
Pavement Removed Under Fill: 570 CY	Loss due to handling and densification (-50%): 285 CY	
<b>TOTAL CLASS '1' EXCAVATION</b>	<b>TOTAL CLASS '2' EXCAVATION AVAILABLE FOR EMBANKMENT</b>	<b>= 280 CY</b>
<b>15,685 CY</b>		

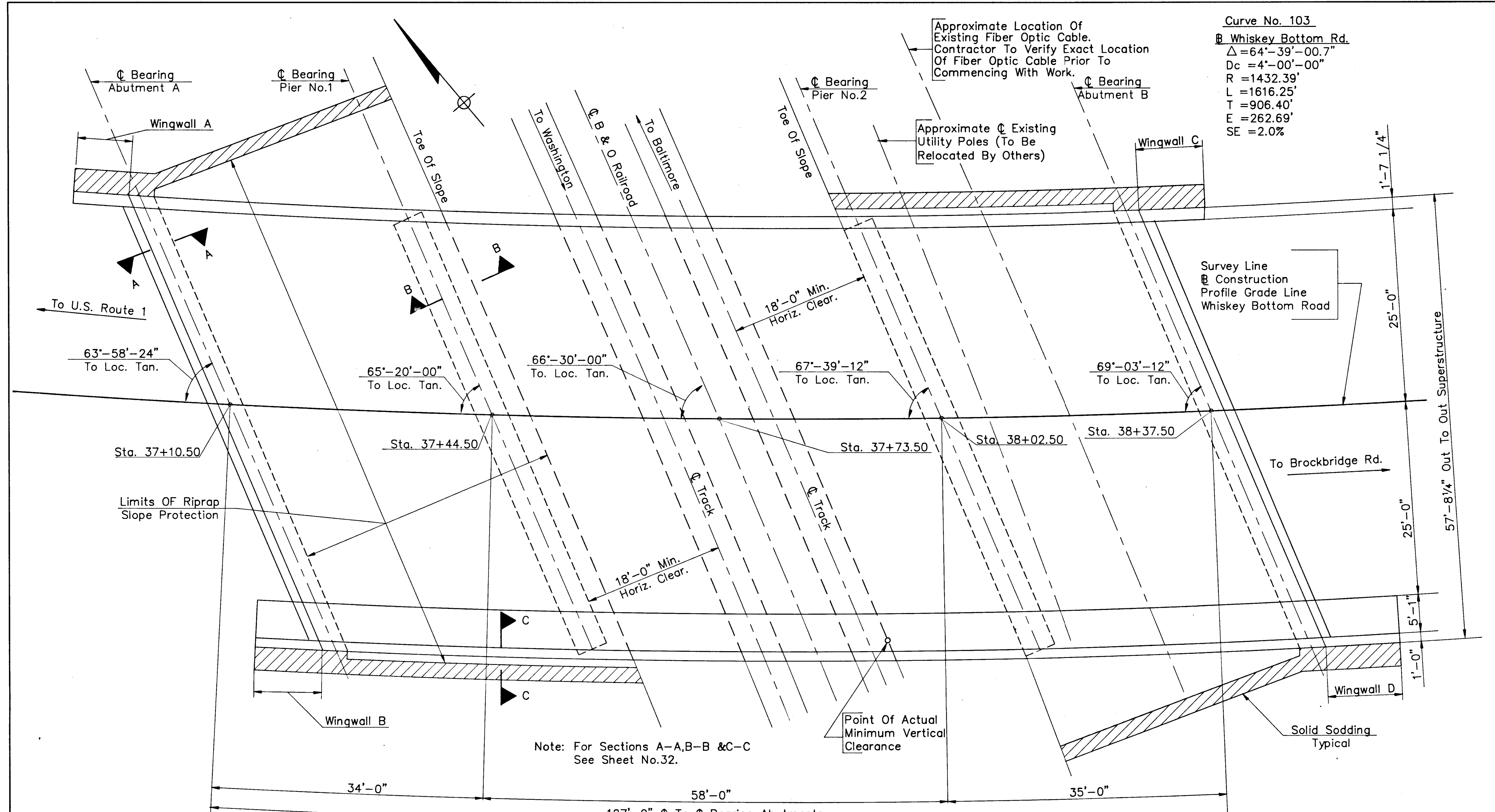
**EXCAVATION AVAILABLE FOR EMBANKMENT**

Total Class '1' Excavation: 15,685 CY	<b>BORROW EXCAVATION TYPE I</b>	<b>= 25,800 CY</b>
Minus: Topsoil Removed in Cut: 140 CY	Fill: 25,800 CY	
Rootmat Removed in Cut: 790 CY	Plus: Refill for Rootmat Removed Under Fill: 710 CY	
Rootmat Removed Under Fill: 710 CY	Pavement Removed Under Fill: 570 CY	
Pavement Removed in Cut: 570 CY	Class '1-A' Excavation: 450 CY	
Pavement Removed Under Fill: 570 CY	Minus: 2-Inch Topsoil: 830 CY	
Cut Adjusted: 12,965 CY	Excavation Available for Embankment: 11,300 CY	
Cut Densified (85%): 11,020 CY	Increased for Densification of Borrow (+0.85): 18,120 CY	
<b>TOTAL EXCAVATION AVAILABLE FOR EMBANKMENT</b>	<b>TOTAL BORROW EXCAVATION TYPE I</b>	<b>18,120 CY</b>
<b>11,300 CY</b>		

**PROPOSAL QUANTITIES**

ITEM	PROPOSAL QUANTITY
Class '1' Excavation	15,700
Class '1-A' Excavation	450
Class '2' Excavation	570
Borrow Excavation Type I	18,200
Contingent Borrow Excavation Type I	2,000
Erosion and Sediment Control Excavation	870

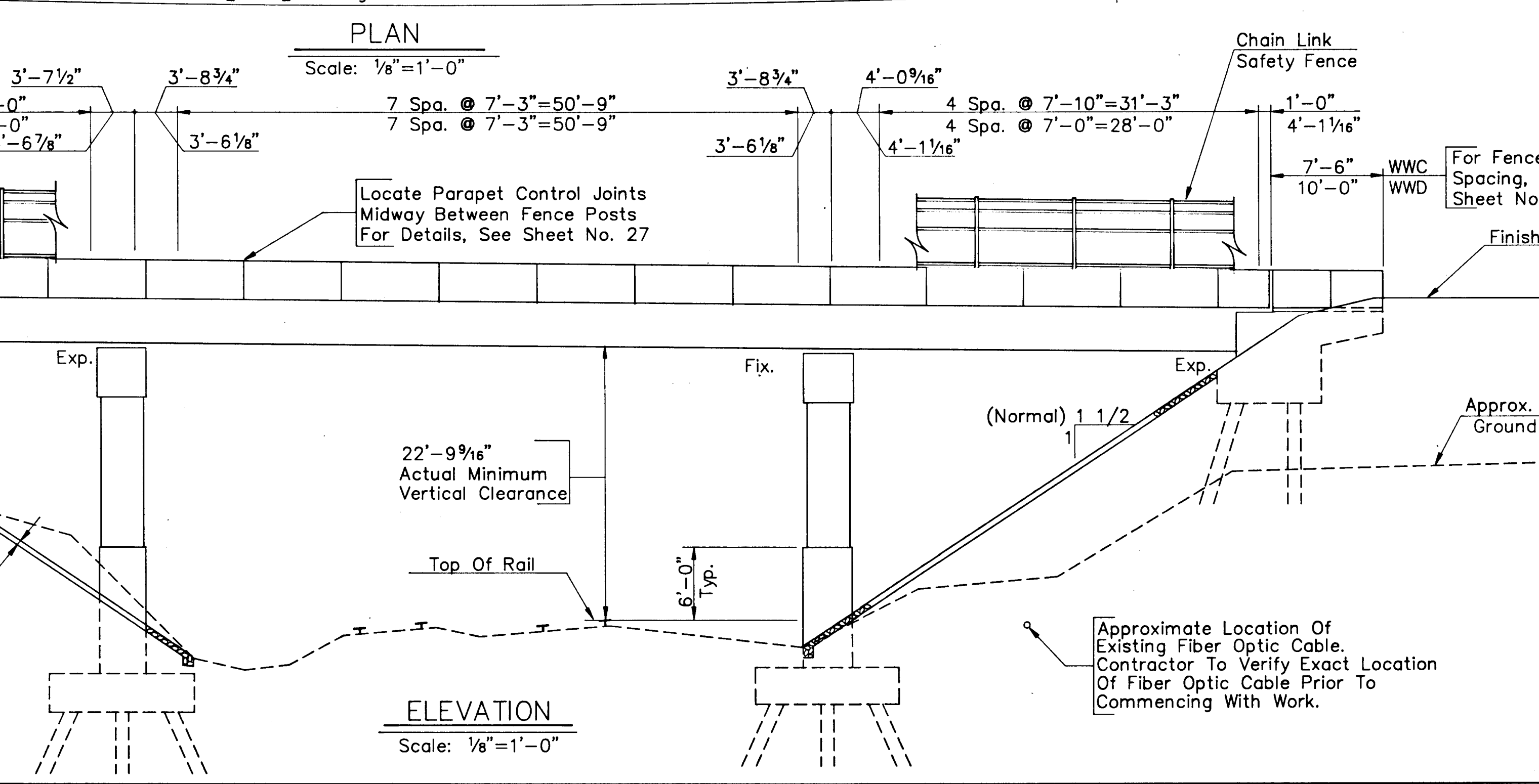




**Curve No. 103**  
 Whiskey Bottom Rd.  
 $\Delta = 64^{\circ}-39'-00.7''$   
 $D_c = 4^{\circ}-00'-00''$   
 $R = 1432.39'$   
 $L = 1616.25'$   
 $T = 906.40'$   
 $E = 262.69'$   
 $SE = 2.0\%$

**GENERAL NOTES**

- Specifications:** Howard County Design Manual and Special Provisions for materials and construction.
- A.A.S.H.T.O. Standard Specifications for Highway Bridges dated 1983 for design including all interim specifications.
- Concrete Design: Service Load Design Method  $f_c = 1200$  p.s.i. except that in bridge deck slabs supported by stringers, it shall be 1350 p.s.i.
- Reinforcing Steel Design:  $F_s = 24,000$  p.s.i.
- Structural Steel Design: Elastic Design Method  $F_s = 27,000$  p.s.i.
- 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 and parapets at abutments and entire superstructure shall be Mix. No.6 (4500 p.s.i.). All other structure concrete shall be Mix. No. 3 (3500 p.s.i.). See Special Provisions.
- Chamfer:** All exposed corners of concrete shall be chamfered with  $\frac{3}{4}'' \times \frac{3}{4}''$  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 CAN BE USED ON THIS PROJECT.**
- All reinforcing steel for superstructure (including parapets), abutments backwalls, bearing seat pads and parapet portions of wingwalls shall be epoxy-coated. See Special Provisions.
- Keys:** All Keys are nominal size.
- Structural Steel:** Structural steel shall conform to A.S.T.M. A588 including the additional requirements for Charpy V-notch testing of A.A.S.H.T.O. M222 for primary load carrying members. See Special Provisions.



DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS DATE  
 CHIEF, BUREAU OF ENGINEERING DATE  
 CHIEF, DIVISION OF ROADS, BRIDGES AND STORM DRAINAGE DATE  
 CHIEF, BUREAU OF HIGHWAYS DATE

RUMMEL, KLEPPER & KAHL  
 CONSULTING ENGINEERS  
 1035 N. CALVERT STREET  
 BALTIMORE, MARYLAND 21202

*Albert P. Kelly*

DES: T.H.Y.				
DRN: C.D.J.				
CHK: C.M.E.				
DATE: May, 1988	BY	NO.	REVISION	DATE

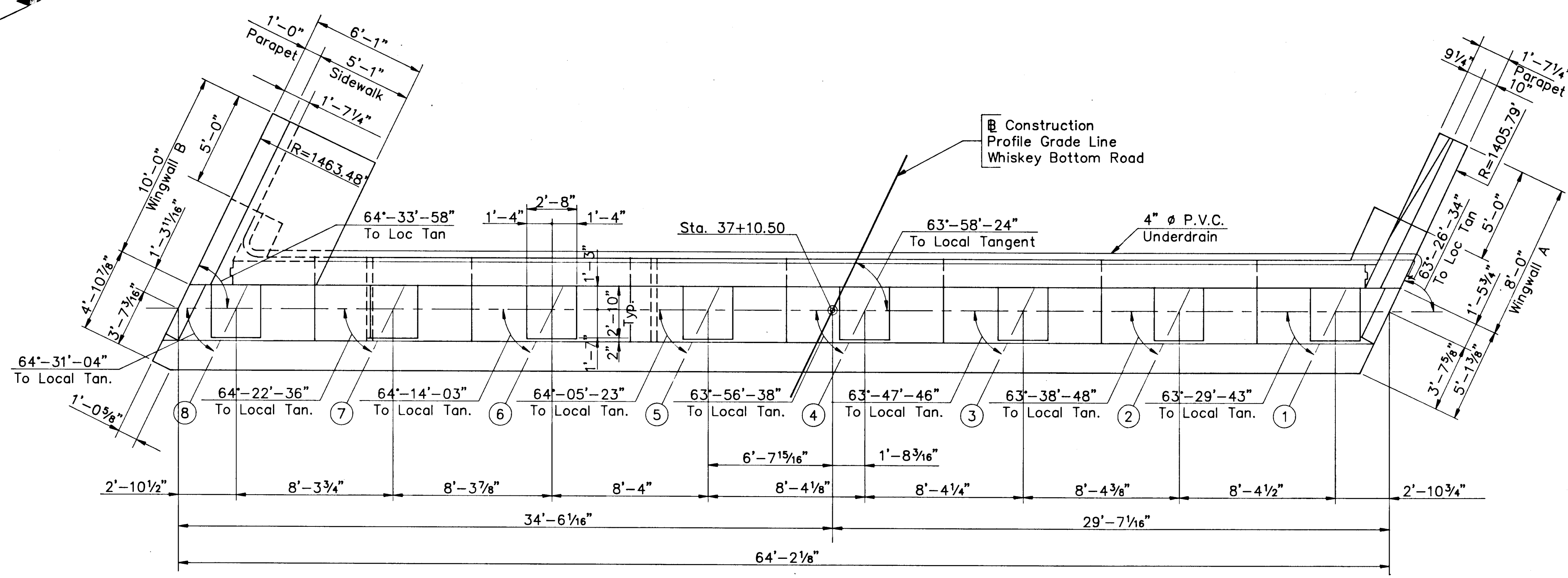
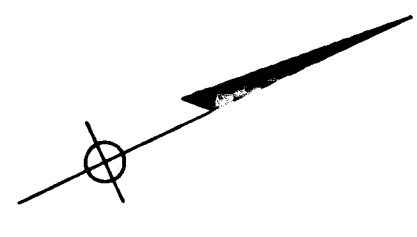
PLAN AND ELEVATION

600' SCALE MAP NO. 50 BLOCK NO. 4

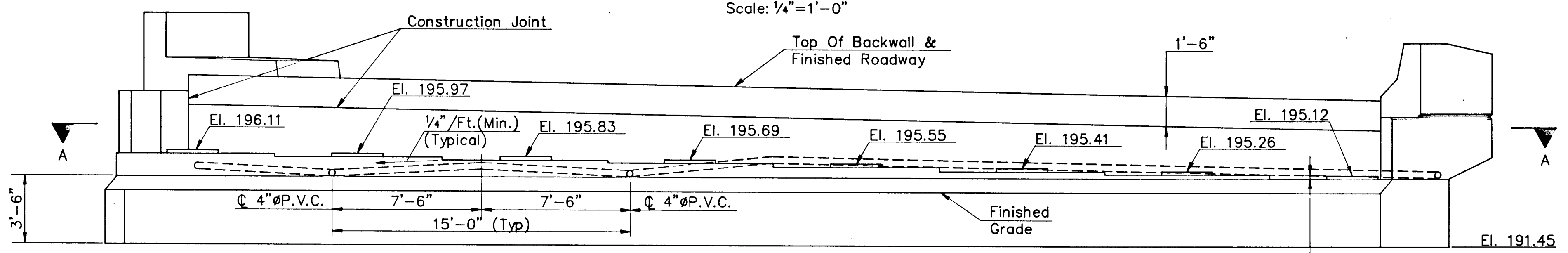
WHISKEY BOTTOM ROAD AND BRIDGE  
 CAPITAL PROJECT J-4059 & B3816  
 ELECTION DISTRICT NO.  
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
 SHEET 17 OF 41

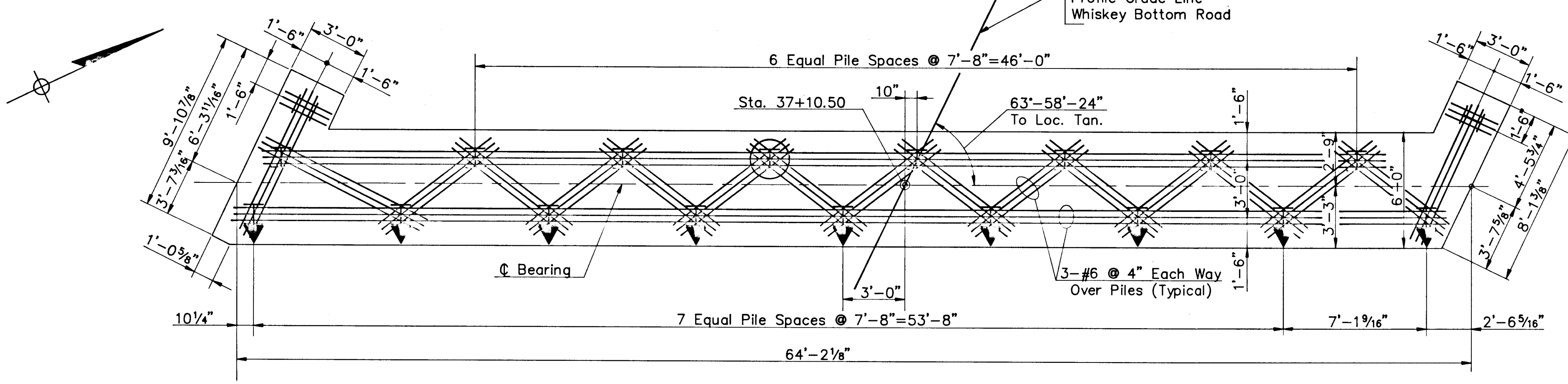




PLAN  
Scale: 1/4"=1'-0"



ELEVATION  
Scale: 1/4"=1'-0"



FOUNDATION PLAN  
Scale: 1/4"=1'-0"

LEGEND

- ⊥ Indicates Plumb Piles
  - ◀ Indicates Battered Piles (3:12)
  - ⊕ Indicates Test Pile
- All Piles Are HP 12 x 53 Steel Piles

NOTES: Pile Design Bearing Value Is 50 Tons.  
Piles Shall Be Driven To A Minimum  
Safe Bearing Capacity Of 60 Tons.  
Estimated Pile Tip Elevation Is El. 135.0.

VERABUTA

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS DATE  
CHIEF, BUREAU OF ENGINEERING DATE  
CHIEF, DIVISION OF ROADS, BRIDGES AND STORM DRAINAGE DATE  
CHIEF, BUREAU OF HIGHWAYS DATE

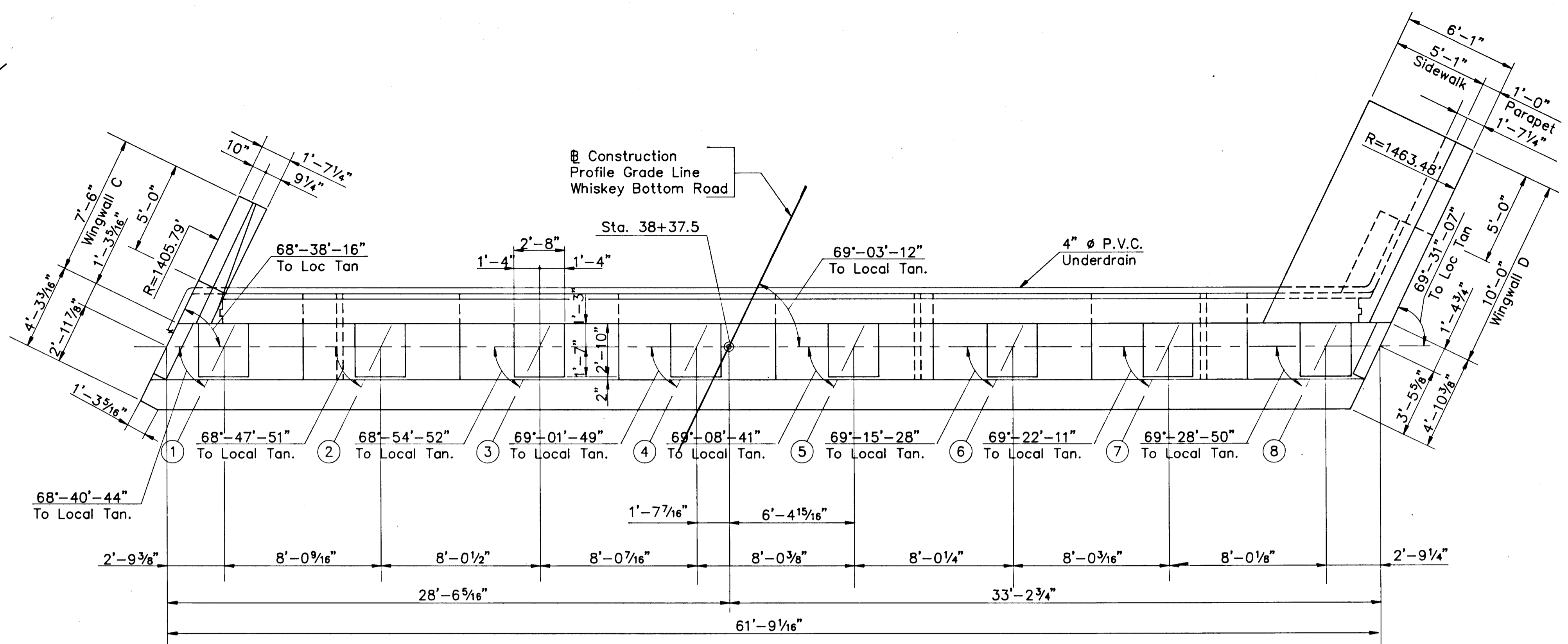
RUMMEL, KLEPPER & KAHL  
CONSULTING ENGINEERS  
1035 N. CALVERT STREET  
BALTIMORE, MARYLAND 21202

DES: T.H.Y.					
DRN: C.D.J.					
CHK: C.M.E.					
DATE: May, 1988	BY	NO.	REVISION	DATE	600' SCALE MAP NO. 50 BLOCK NO. 4

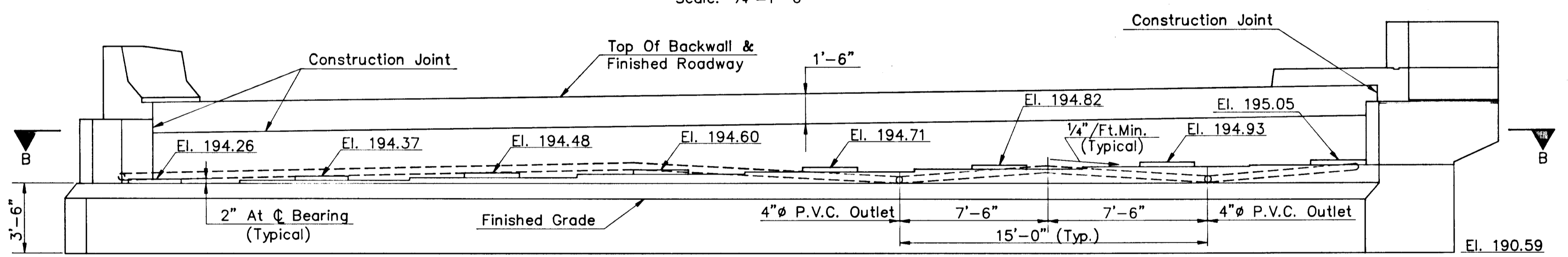
ABUTMENT A

WHISKEY BOTTOM ROAD AND BRIDGE  
CAPITAL PROJECT J-4059 & B3816  
ELECTION DISTRICT NO.  
HOWARD COUNTY, MARYLAND

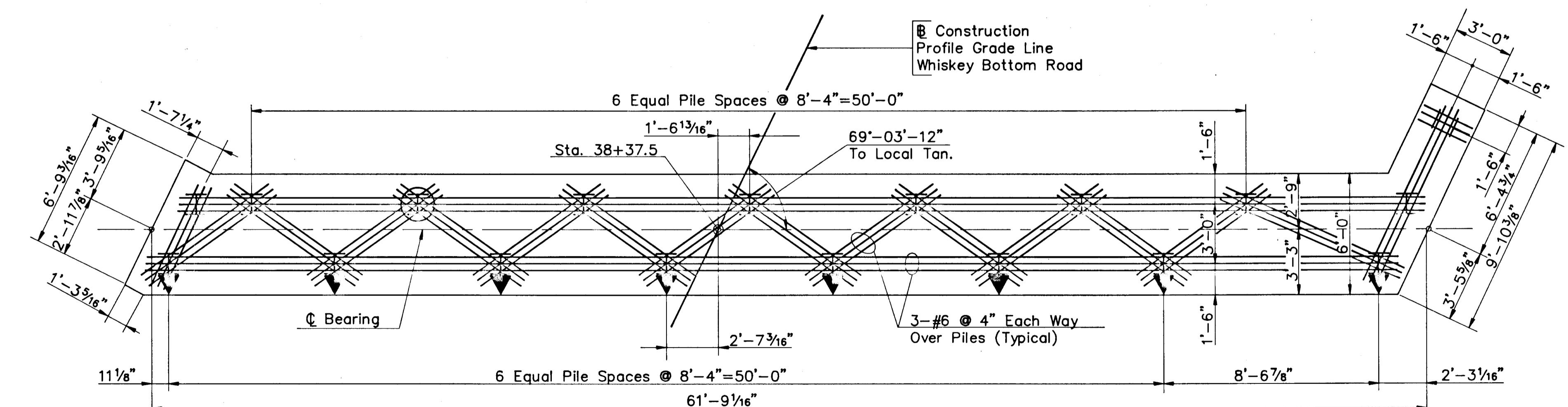
SCALE AS SHOWN  
SHEET 18 OF 41



**PLAN**  
Scale: 1/4"=1'-0"



**ELEVATION**  
Scale: 1/4"=1'-0"



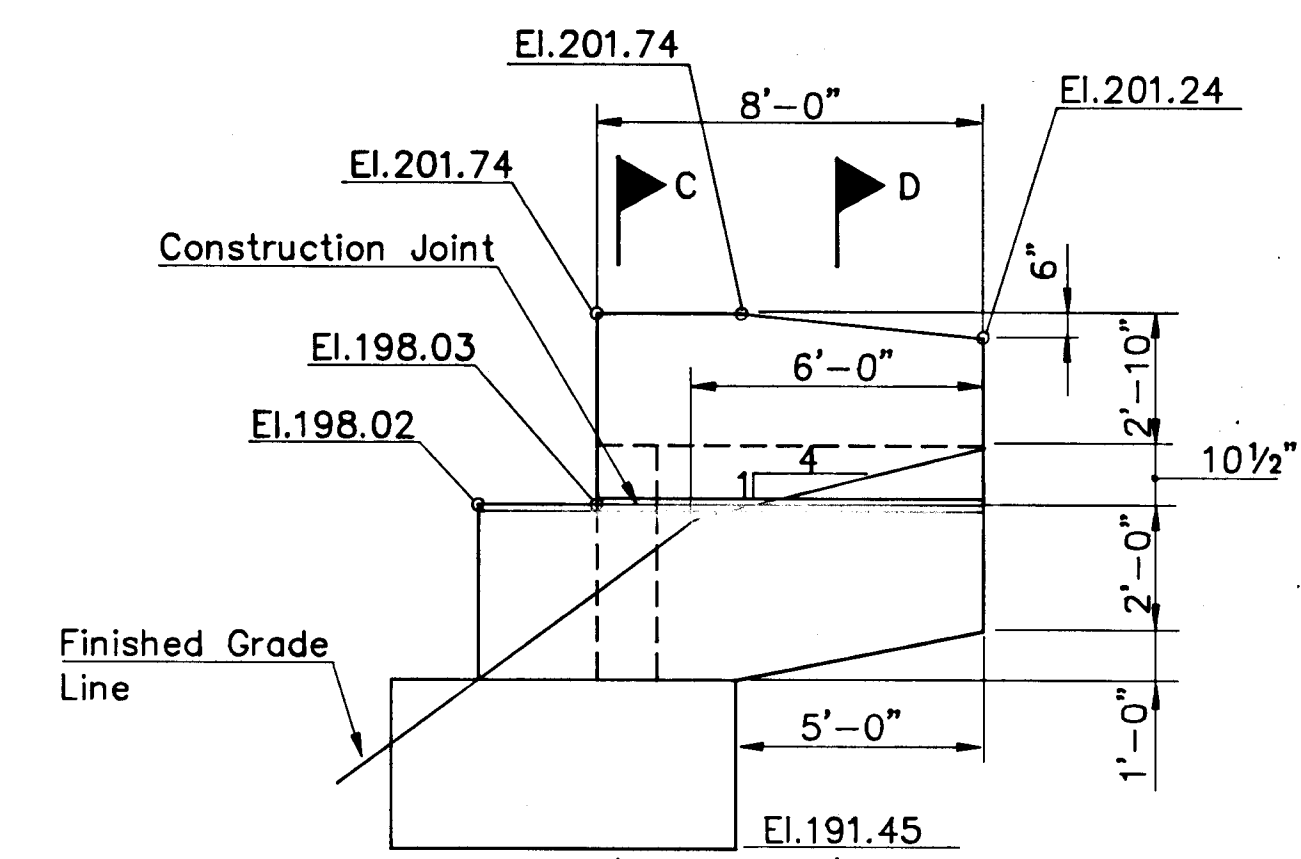
**FOUNDATION PLAN**  
Scale: 1/4"=1'-0"

- LEGEND**
- H Indicates Plumb Piles
  - ← Indicates Battered Piles (3:12)
  - (H) Indicates Test Pile
- All Piles Are HP 12 x 53 Steel Piles

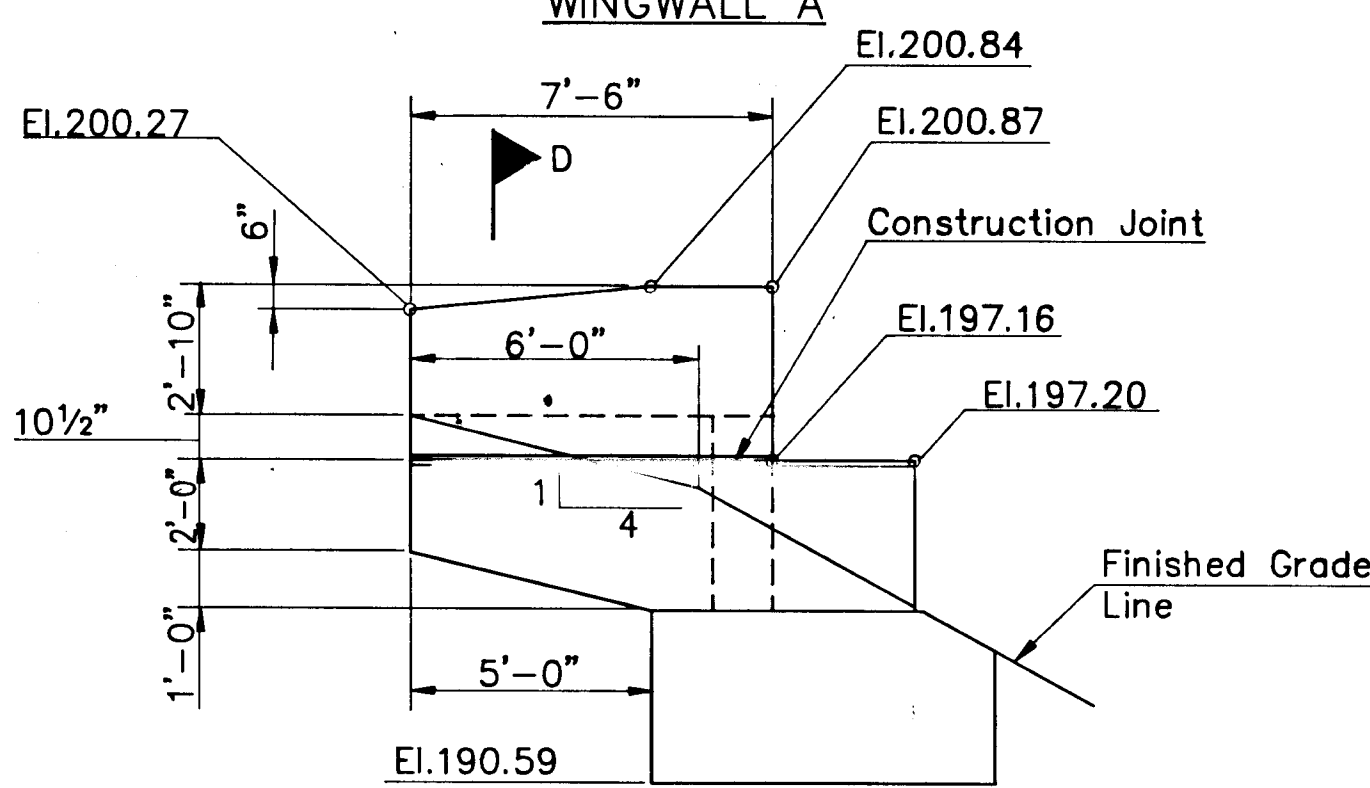
**NOTES:** Pile Design Bearing Value Is 50 Tons.  
Piles Shall Be Driven To A Minimum  
Safe Bearing Capacity Of 60 Tons.  
Estimated Pile Tip Elevation Is El. 131.0

WBRABUTB

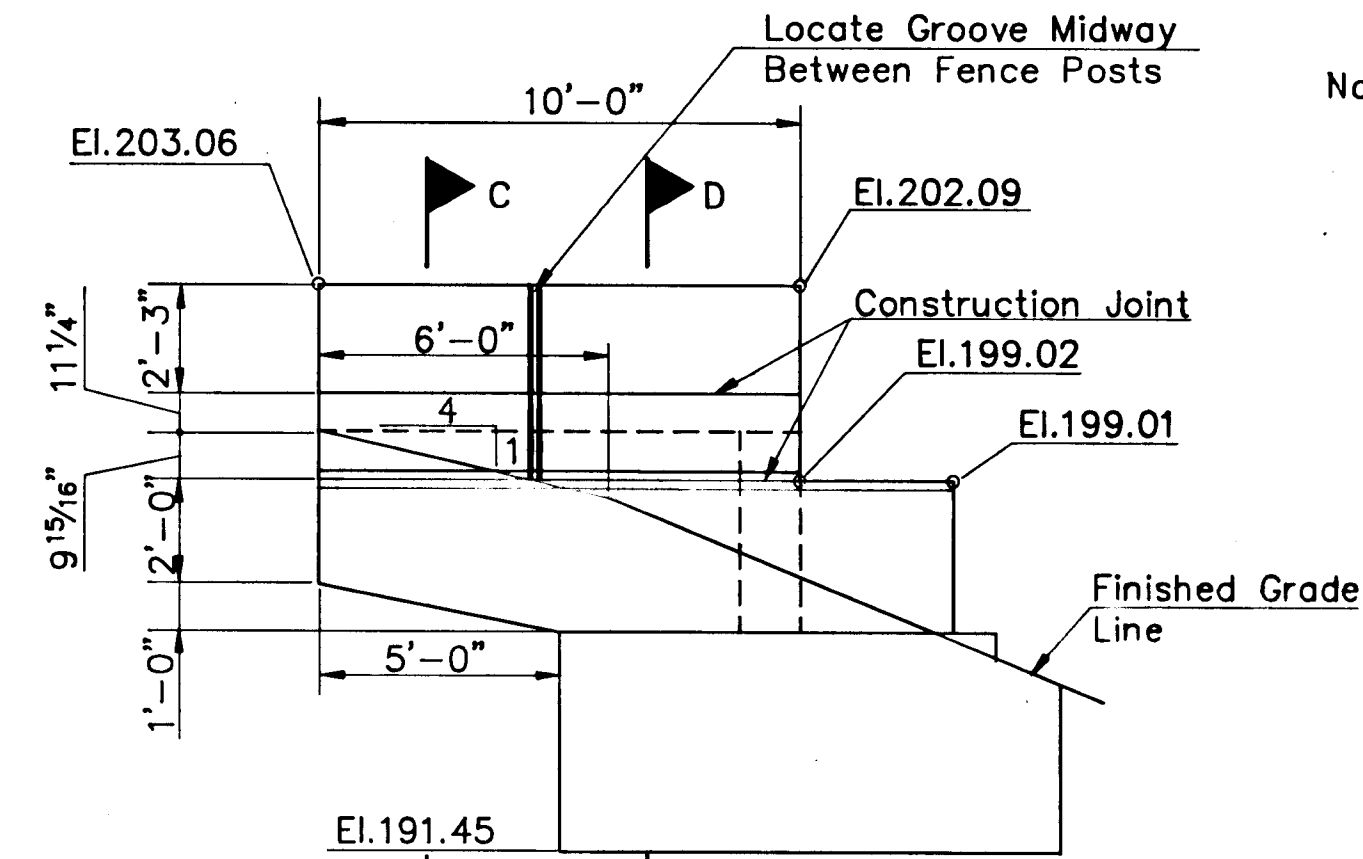
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DIRECTOR OF PUBLIC WORKS _____ DATE _____ CHIEF, BUREAU OF ENGINEERING _____ DATE _____ CHIEF, DIVISION OF ROADS, BRIDGES AND STORM DRAINAGE _____ DATE _____	RUMMEL, KLEPPER & KAHL CONSULTING ENGINEERS 1035 N. CALVERT STREET BALTIMORE, MARYLAND 21202 DATE: May, 1988	DES: T.H.Y. DRN: C.D.J. CHK: C.M.E. BY NO. _____ REVISION _____ DATE _____	<b>ABUTMENT B</b>	WHISKEY BOTTOM ROAD AND BRIDGE CAPITAL PROJECT J-4059 & B3816 ELECTION DISTRICT NO. HOWARD COUNTY, MARYLAND SCALE AS SHOWN SHEET 19 OF 41
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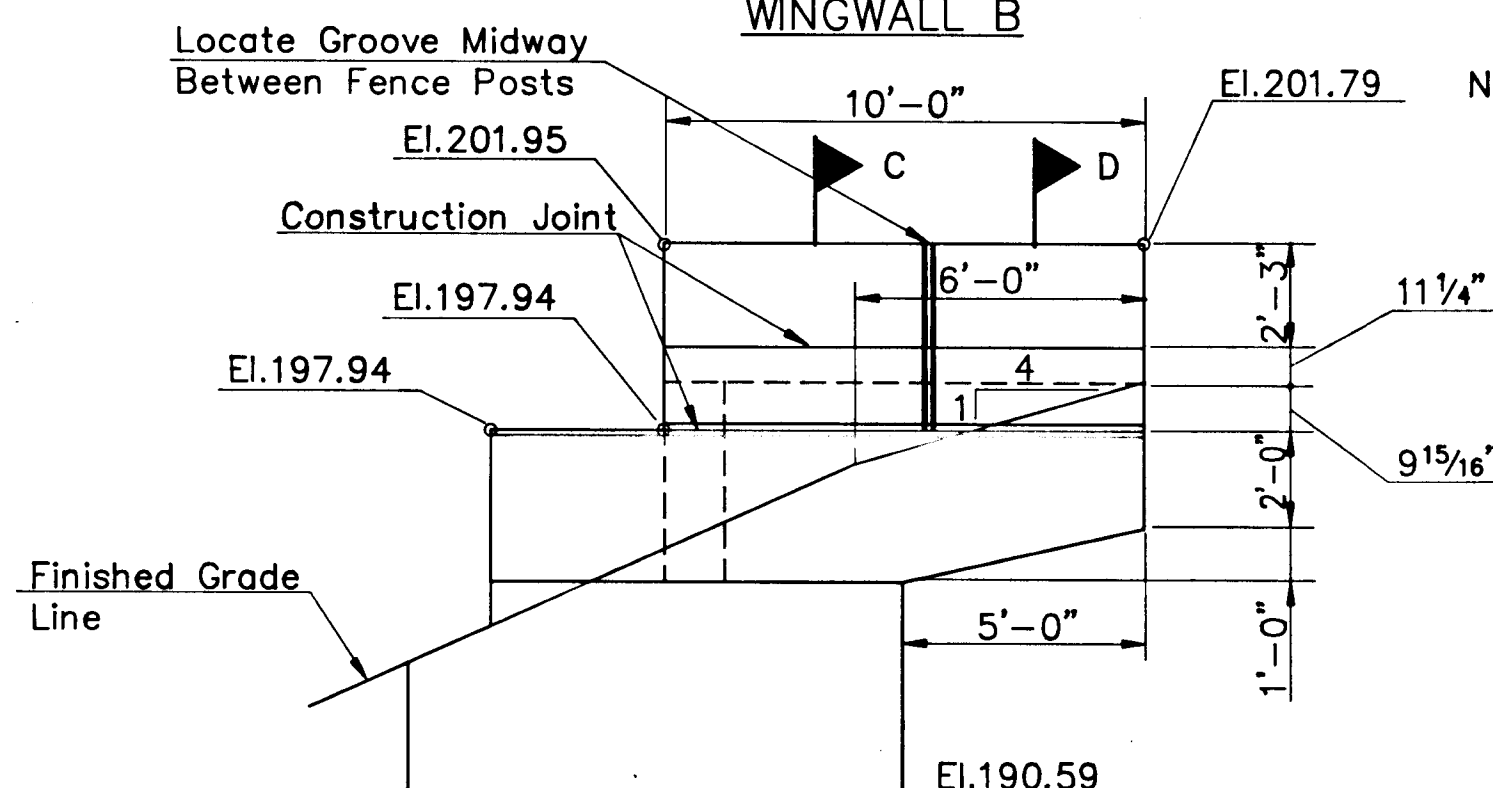
WINGWALL A



WINGWALL C



WINGWALL B



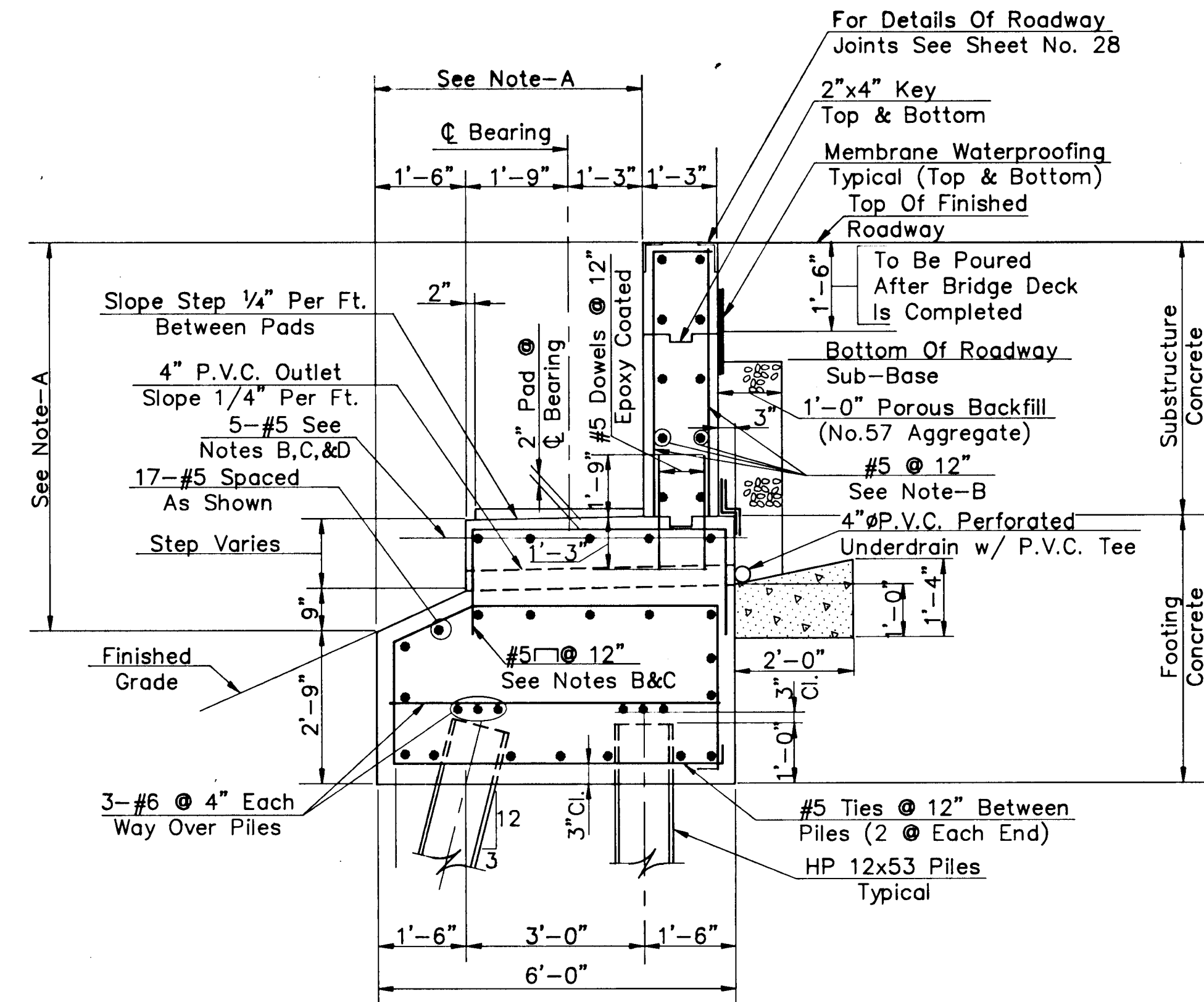
WINGWALL D

WINGWALL ELEVATIONS

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

Note: For Fence Post Spacing, See Sheet No. 17. For Groove Detail, See Sheet No. 27

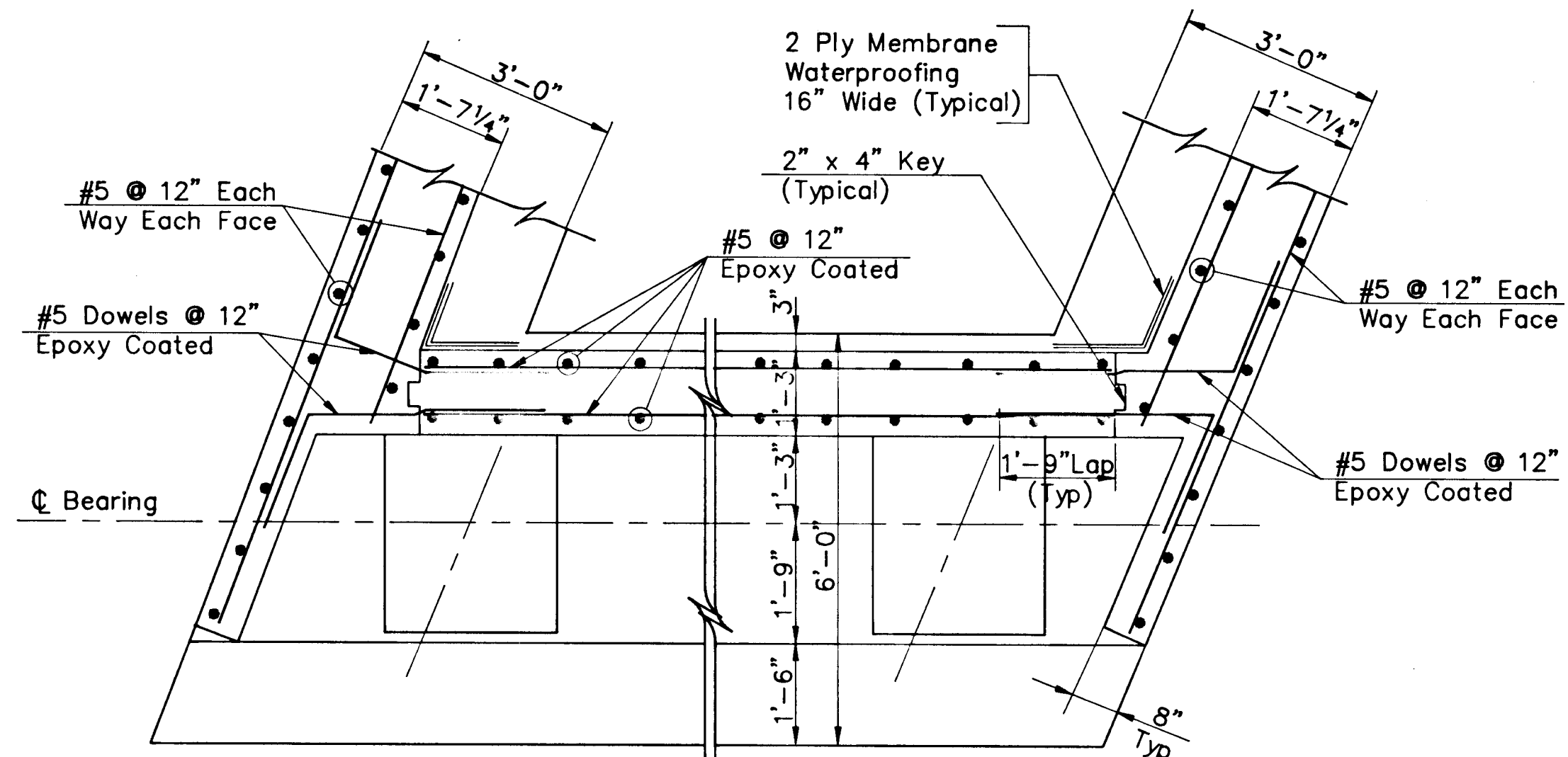
Note: For Fence Post Spacing, See Sheet No. 17. For Groove Detail, See Sheet No. 27.



TYPICAL SECTION THRU ABUTMENTS

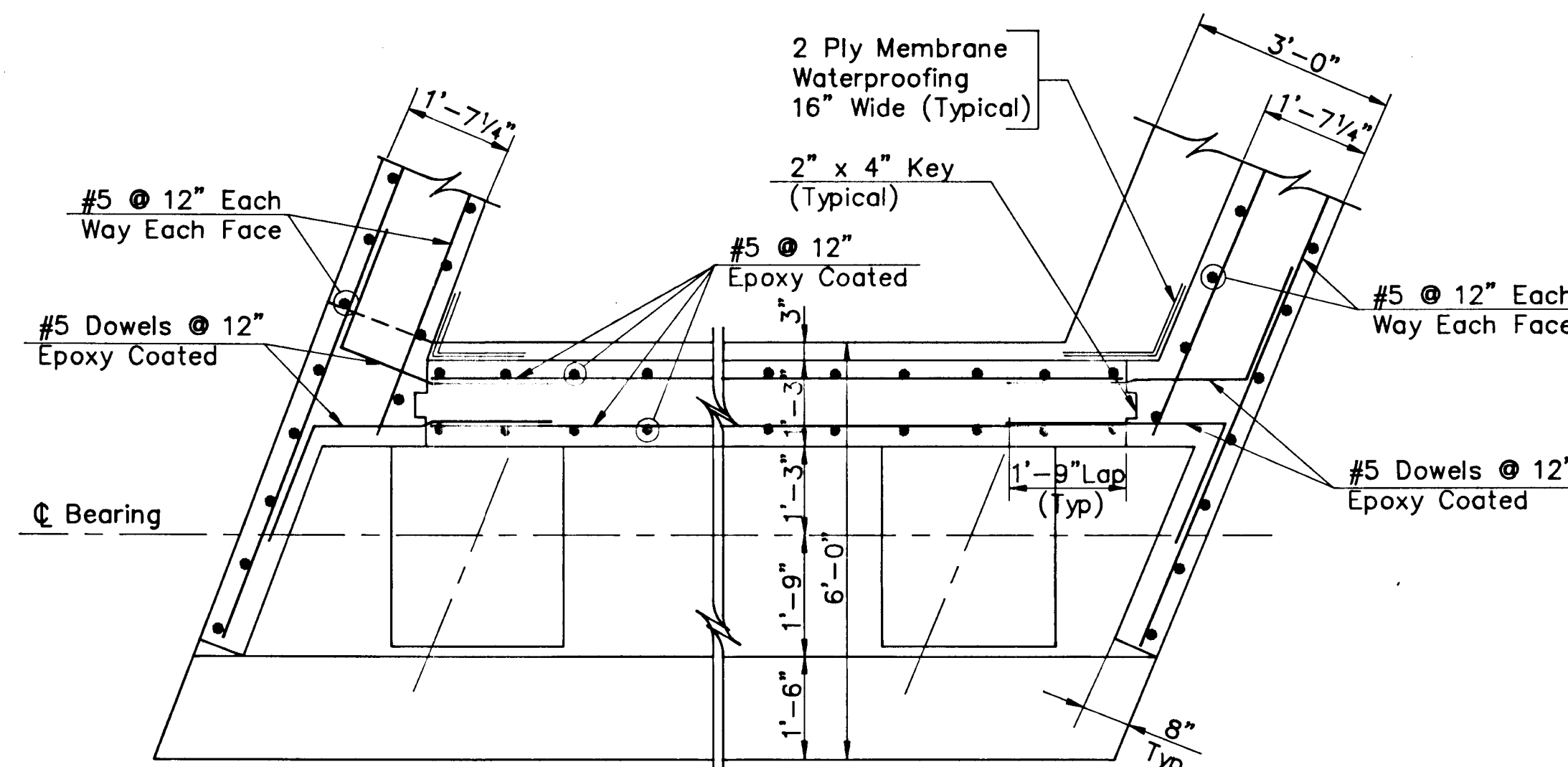
Scale: 1/2"=1'-0"

- Note-A Limits Of Epoxy Protective Coatings(See Specifications)
- Note-B Reinforcing To Be Epoxy Coated(See Special Provisions & Specifications)
- Note-C Reinforcing Not Required When Step Height Is 4" Or Less.
- Note-D Locate Reinforcing To Clear Anchor Bolts.



SECTION A-A

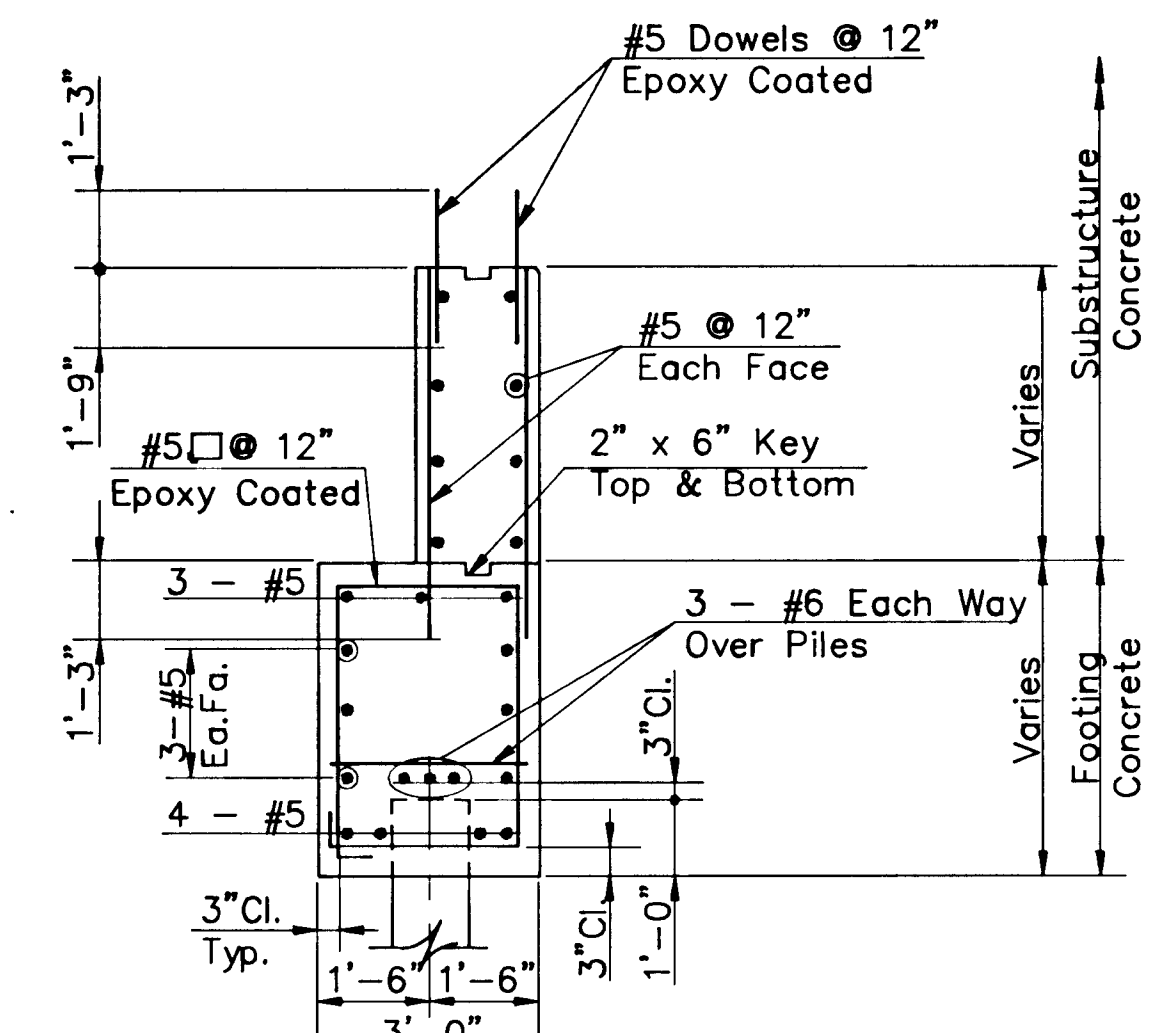
Scale: 1/2"=1'-0"



SECTION B-B

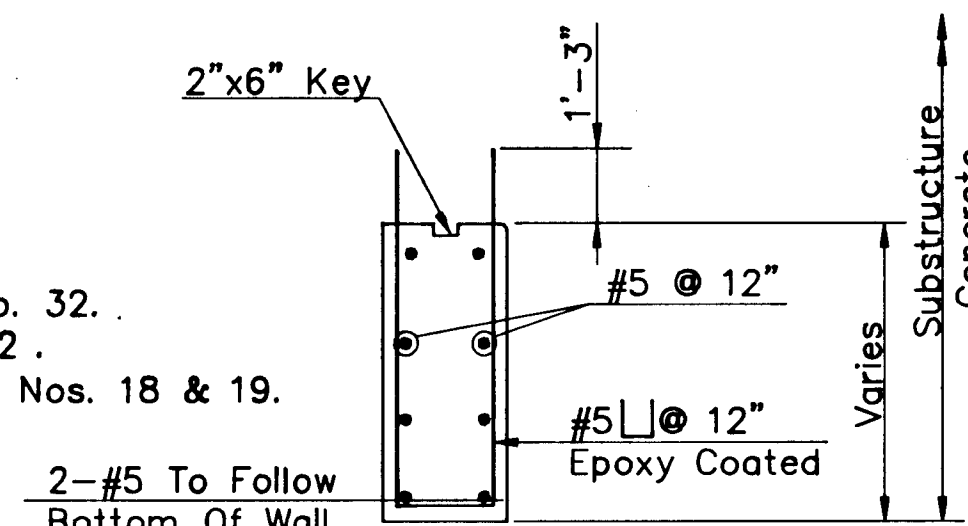
Scale: 1/2"=1'-0"

- Notes:
1. For Jersey Barrier Details See Sheet No. 32.
  2. For Sidewalk With Parapet Details See Sheet No. 32.
  3. For Construction Joint Details See Sheet No. 32.
  4. For Location Of 4"Ø PVC Underdrain See Sheet Nos. 18 & 19.



SECTION C-C

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



SECTION D-D

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

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS DATE

CHIEF, BUREAU OF ENGINEERING DATE

CHIEF, DIVISION OF ROADS, BRIDGES AND STORM DRAINAGE DATE

CHIEF, BUREAU OF HIGHWAYS DATE

RUMMEL, KLEPPER & KAHL  
CONSULTING ENGINEERS  
1035 N. CALVERT STREET  
BALTIMORE, MARYLAND 21202

*Albert P. Kelly*

DES: T.H.Y.			
DRN: C.D.J.			
CHK: C.M.E.			
DATE: May, 1988	BY NO.	REVISION	DATE

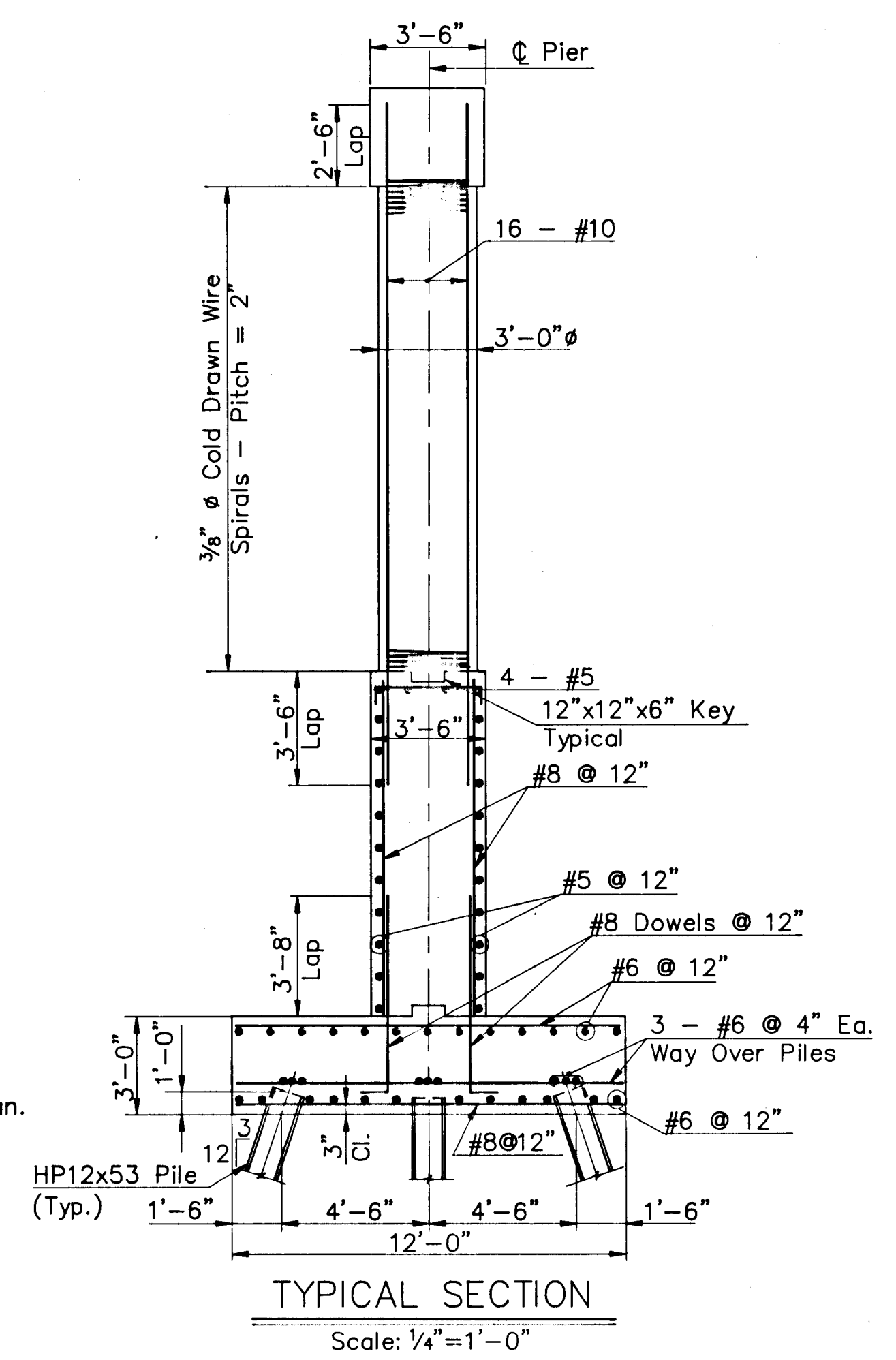
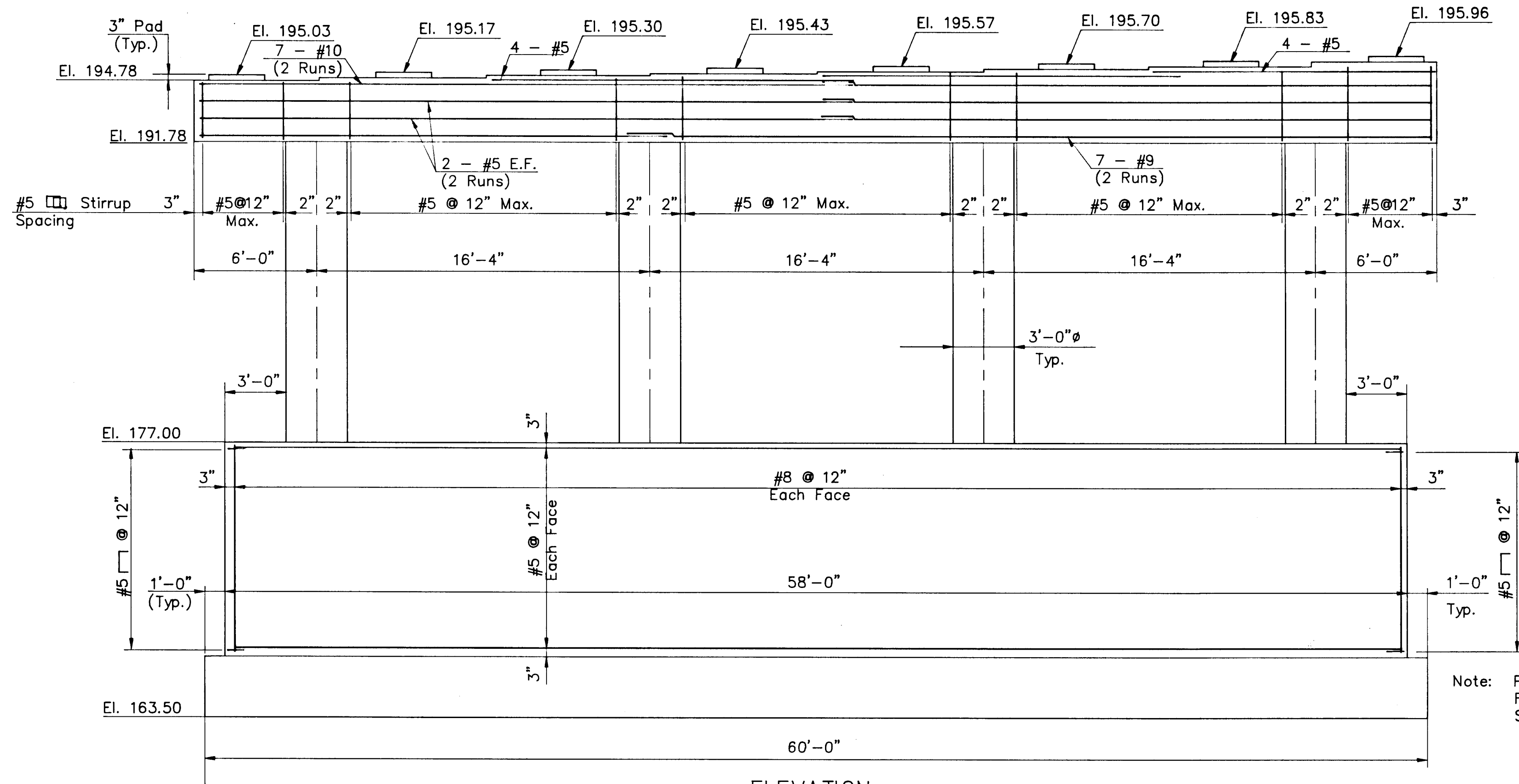
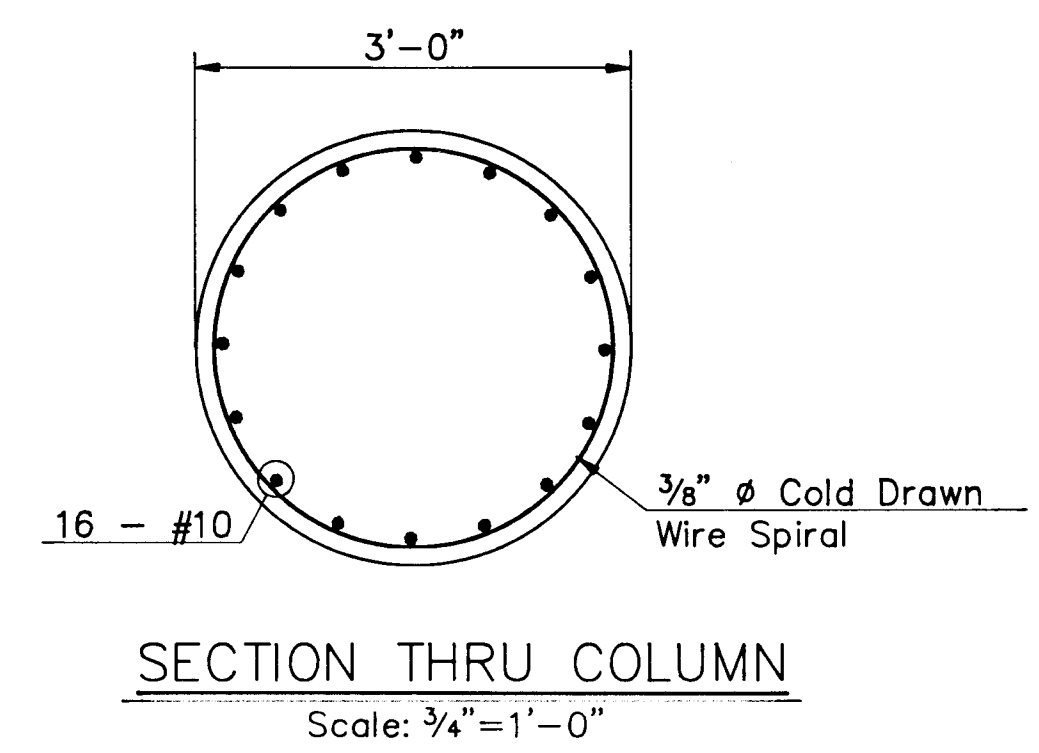
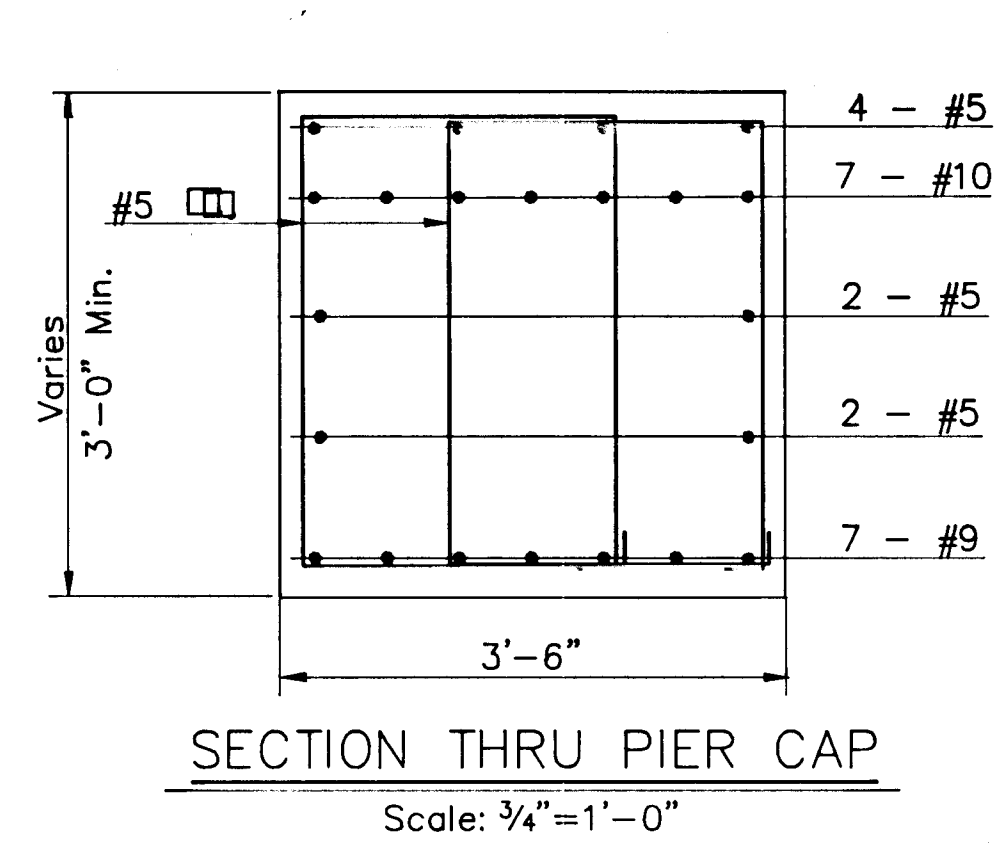
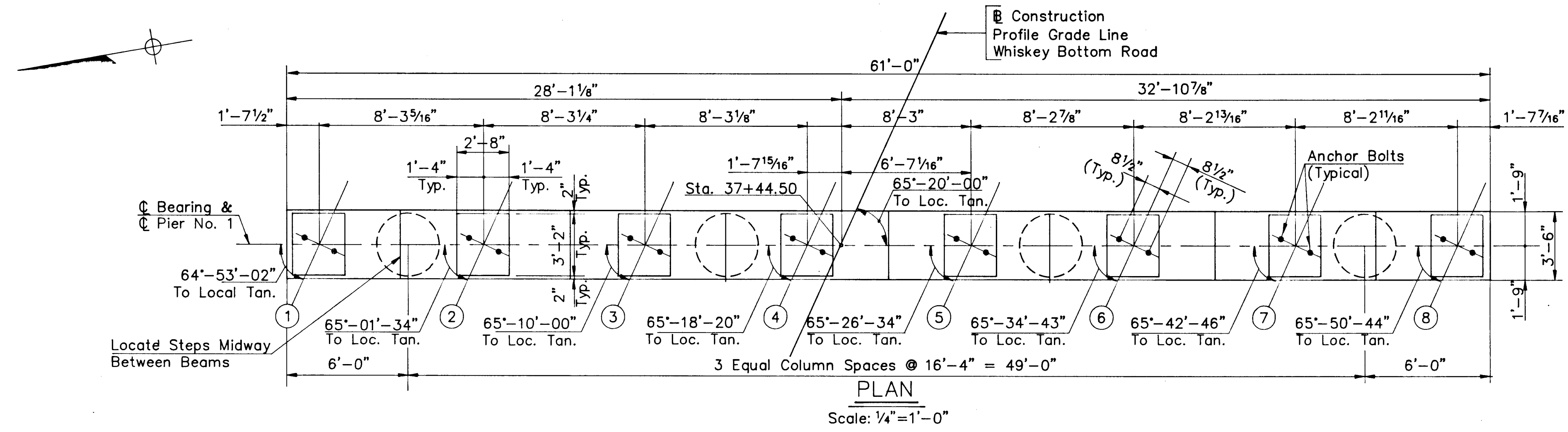
ABUTMENT DETAILS

600' SCALE MAP NO. 50 BLOCK NO. 4

WHISKEY BOTTOM ROAD AND BRIDGE  
CAPITAL PROJECT J-4059 & B3816  
ELECTION DISTRICT NO.  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

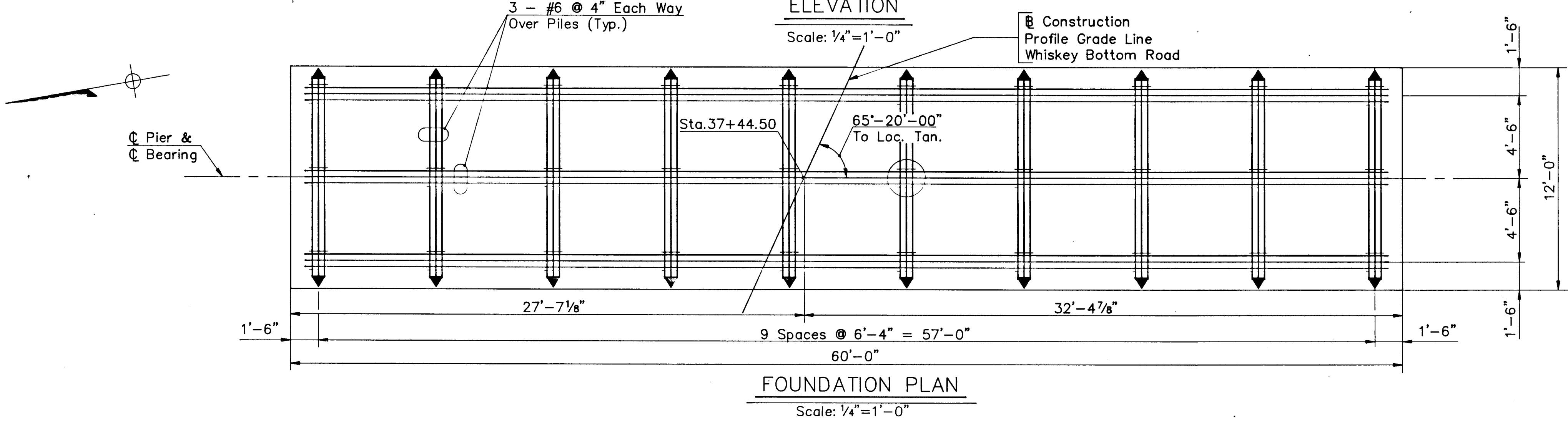
SHEET 20 OF 41



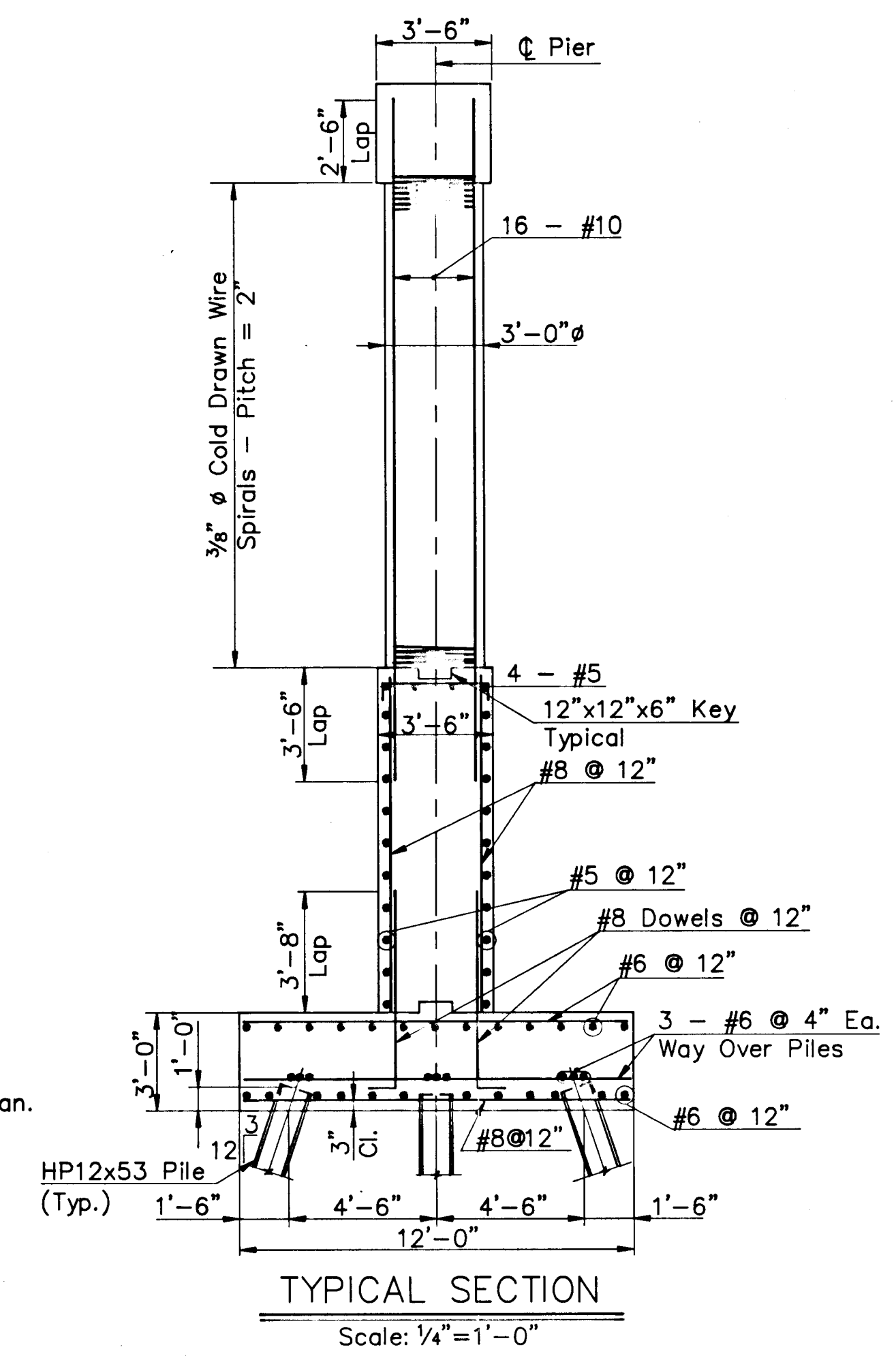
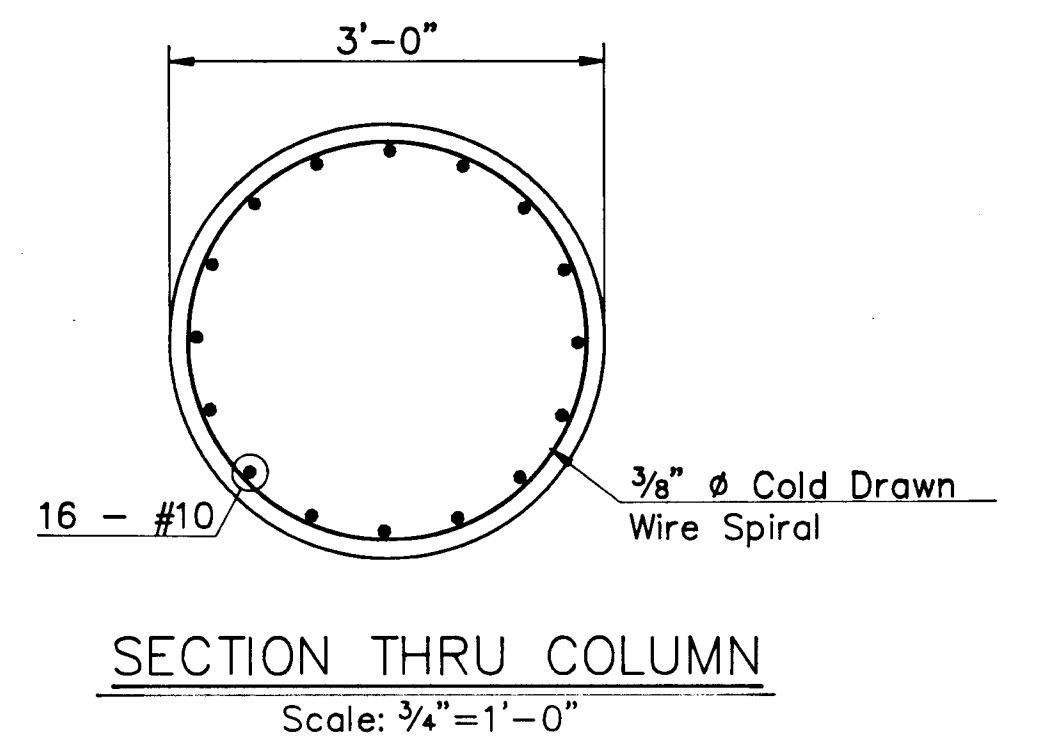
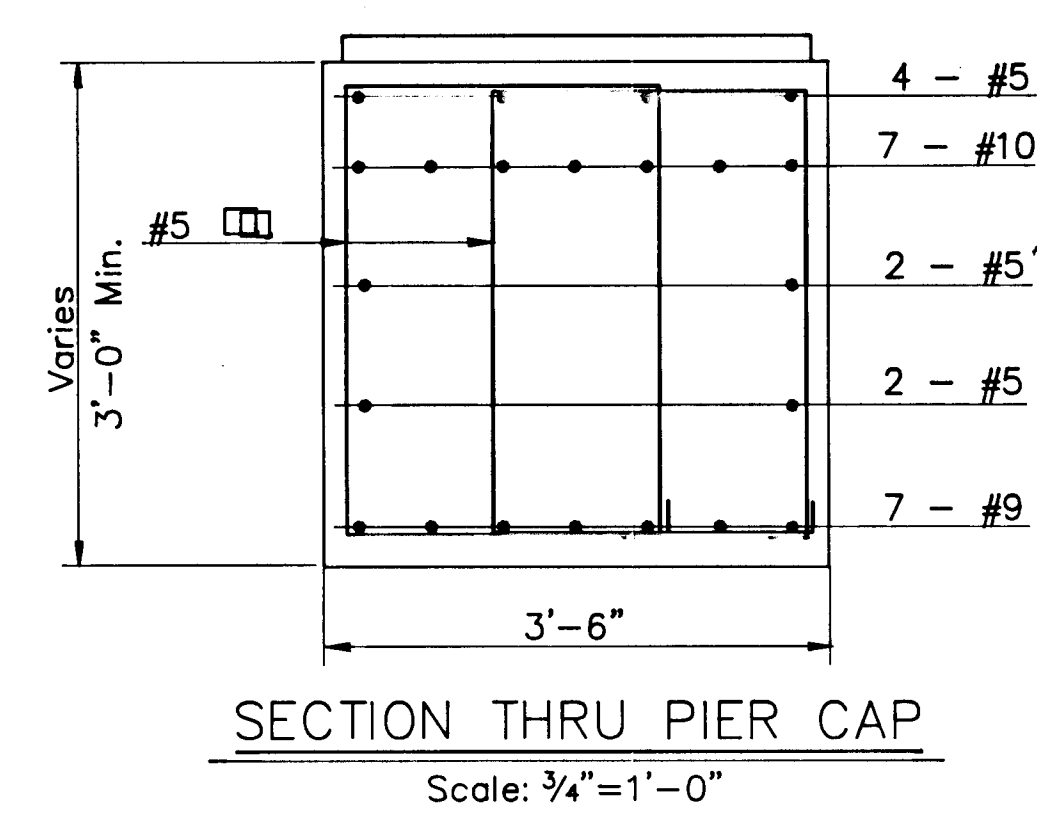
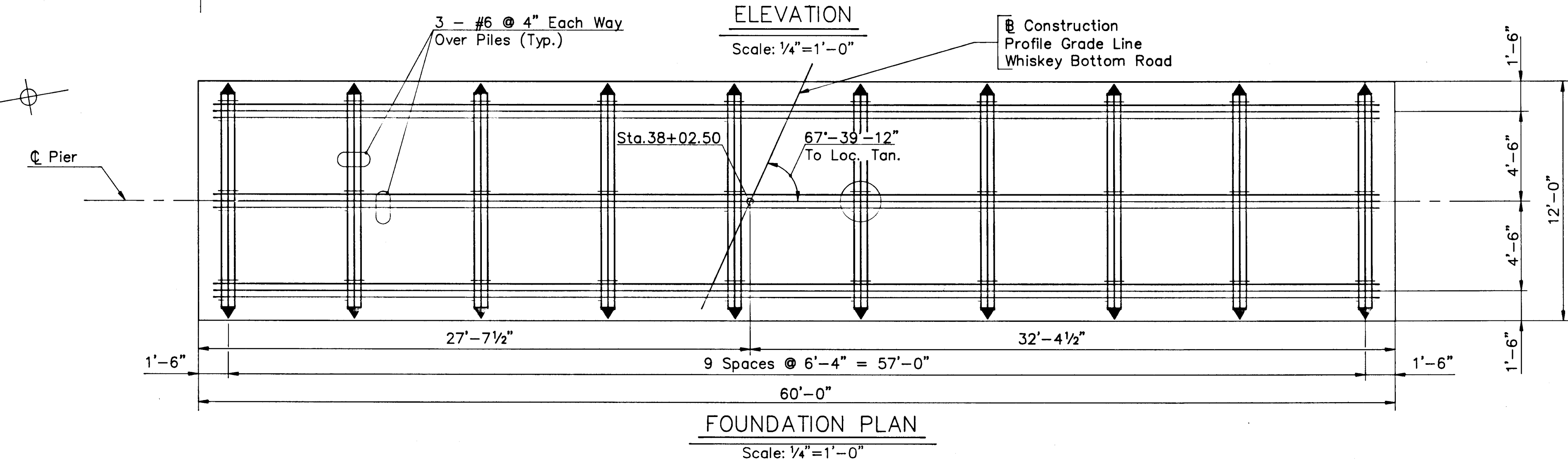
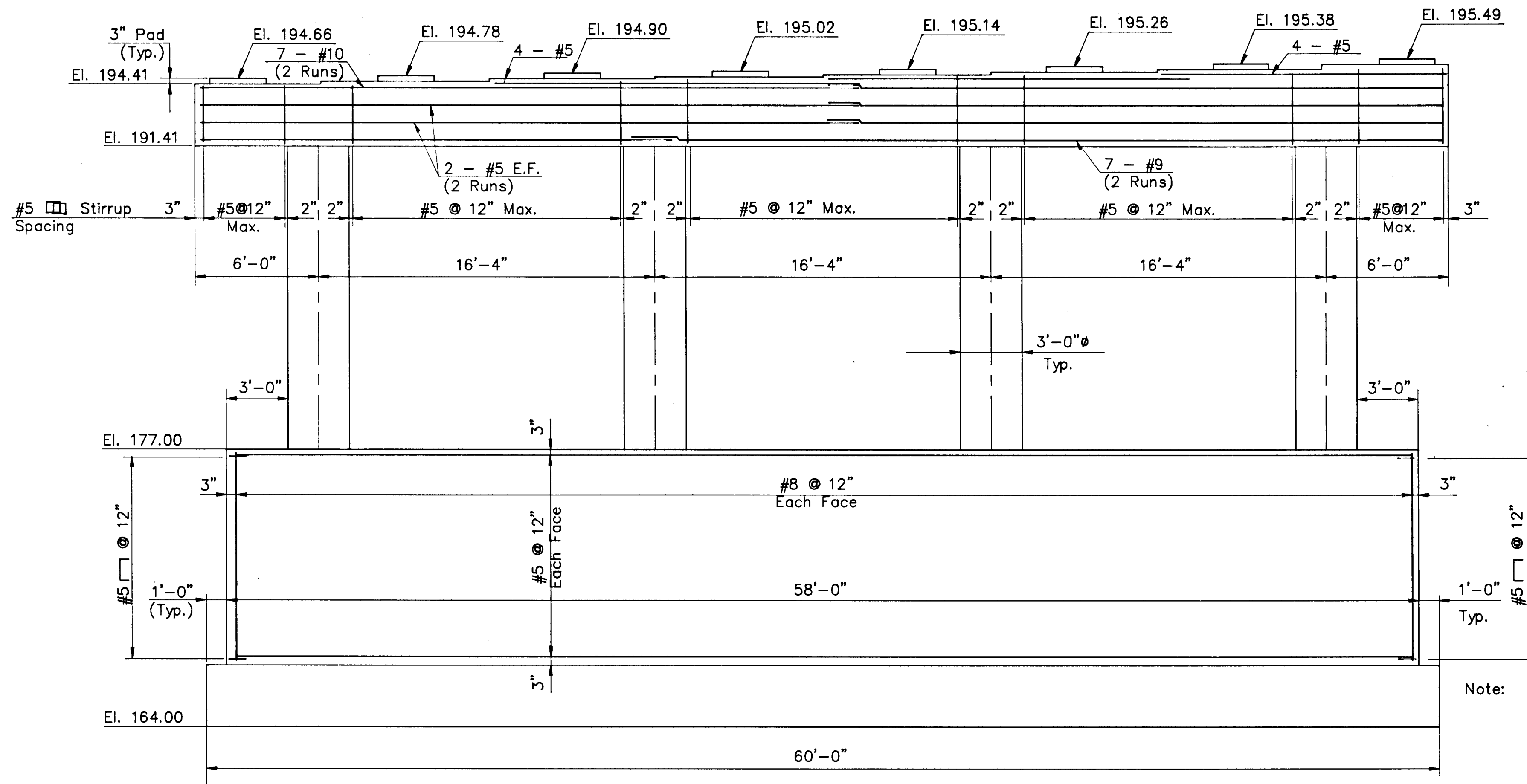
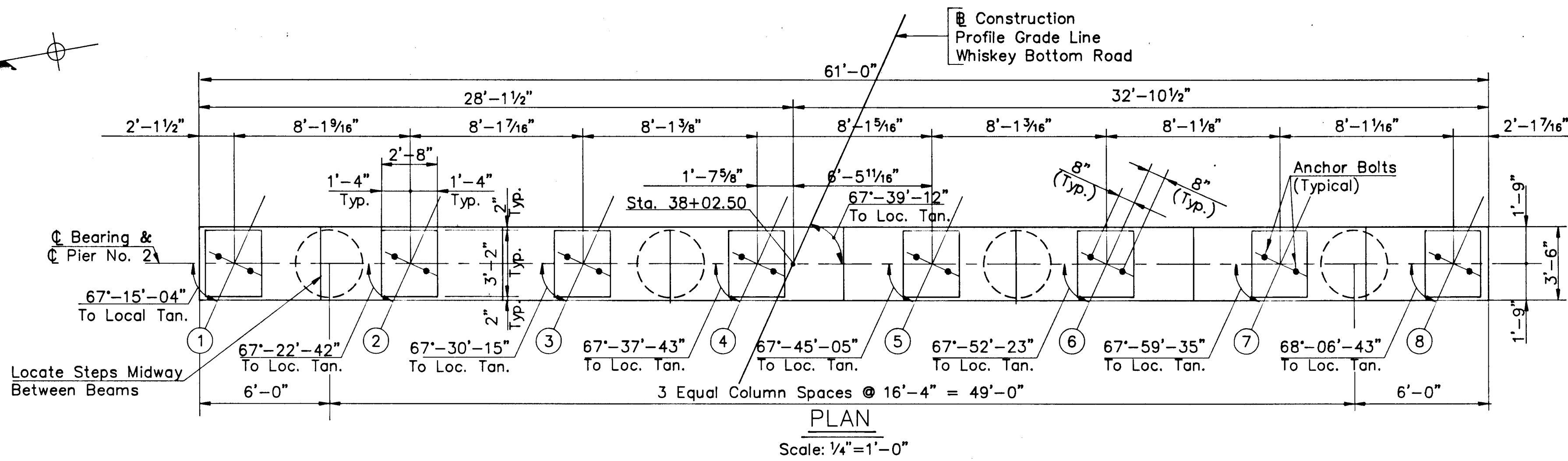
Note: Piles Not Shown. For Pile Spacing, See Foundation Plan.

Notes: All Piles Are HP 12 x 53 Steel Piles. Pile Design Bearing Value Is 50 Tons. Piles Shall Be Driven To A Minimum Safe Bearing Capacity Of 60 Tons. Estimated Pile Tip Elevation Is 135.0

- LEGEND**
- ⊥ Indicates Plumb Piles
  - ◀ Indicates Battered Piles (3:12)
  - ⊕ Indicates Test Pile



DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND		RUMMEL, KLEPPER & KAHL CONSULTING ENGINEERS 1035 N. CALVERT STREET BALTIMORE, MARYLAND 21202		DES: T.H.Y. DRN: C.D.J. CHK: C.M.E. DATE: May, 1988		PIER NO. 1		WHISKEY BOTTOM ROAD AND BRIDGE CAPITAL PROJECT J-4059 & B3816 ELECTION DISTRICT NO. HOWARD COUNTY, MARYLAND		SCALE AS SHOWN
DIRECTOR OF PUBLIC WORKS CHIEF, DIVISION OF ROADS, BRIDGES AND STORM DRAINAGE	DATE DATE DATE	CHIEF, BUREAU OF ENGINEERING CHIEF, BUREAU OF HIGHWAYS	DATE DATE DATE	<i>Albert H. ...</i>		BY NO.	REVISION	DATE	600' SCALE MAP NO. 50 BLOCK NO. 4	SHEET 21 OF 41



Note: Piles Not Shown. For Pile Spacing, See Foundation Plan.

**LEGEND**

- ⊥ Indicates Plumb Piles
- ◀ Indicates Battered Piles (3:12)
- ⊕ Indicates Test Pile

Notes: All Piles Are HP 12 x 53 Steel Piles  
Pile Design Bearing Value Is 50 Tons.  
Piles Shall Be Driven To A Minimum  
Safe Bearing Capacity Of 60 Tons.  
Estimated Pile Tip Elevation Is 131.0

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS  
DATE

CHIEF, BUREAU OF ENGINEERING  
DATE

CHIEF, DIVISION OF ROADS, BRIDGES AND STORM DRAINAGE  
DATE

RUMMEL, KLEPPER & KAHL  
CONSULTING ENGINEERS  
1035 N. CALVERT STREET  
BALTIMORE, MARYLAND 21202

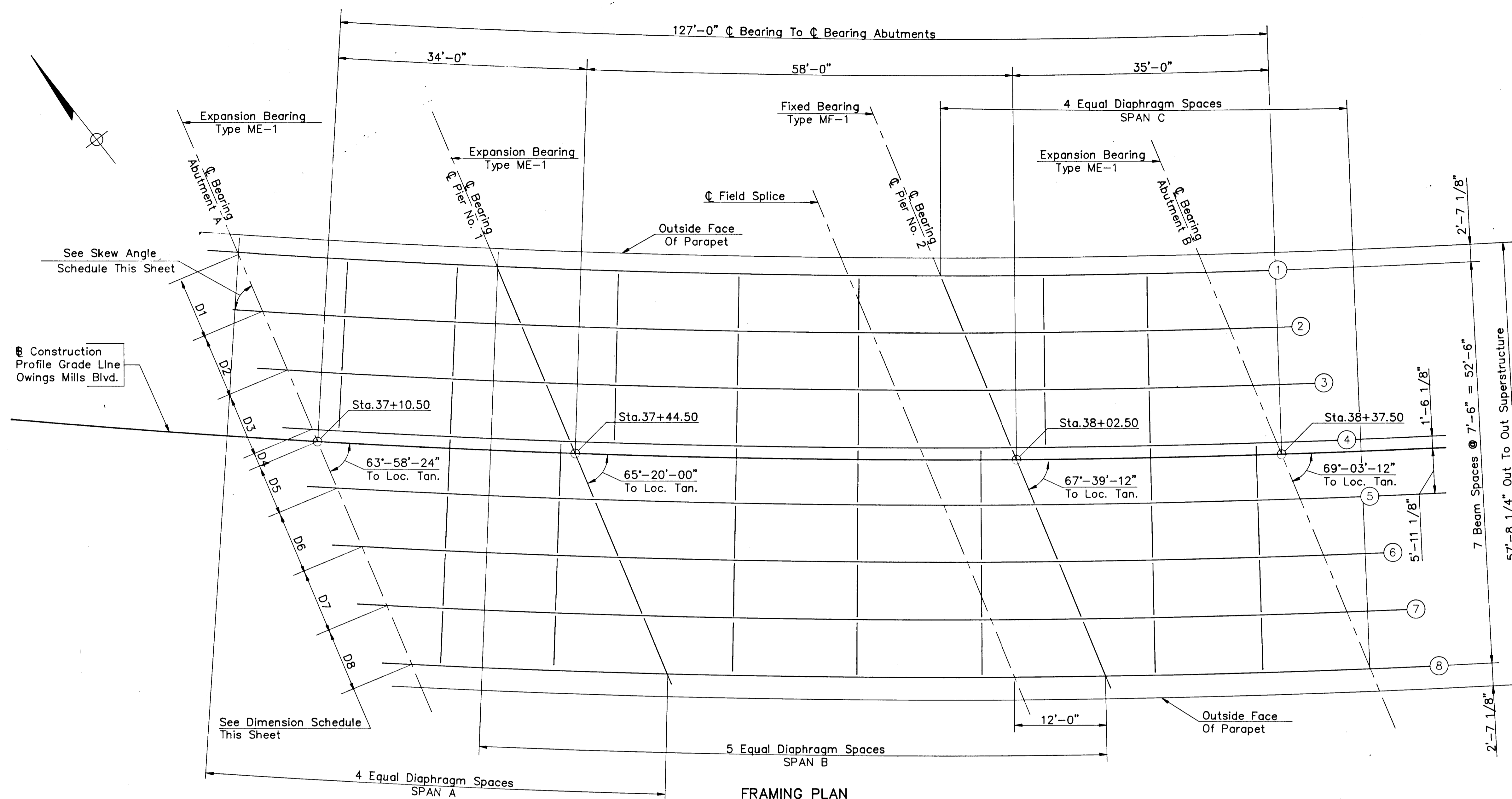
DES. T.H.Y.  
DRN. C.D.J.  
CHK. C.M.E.  
DATE: May 1988

PIER NO. 2

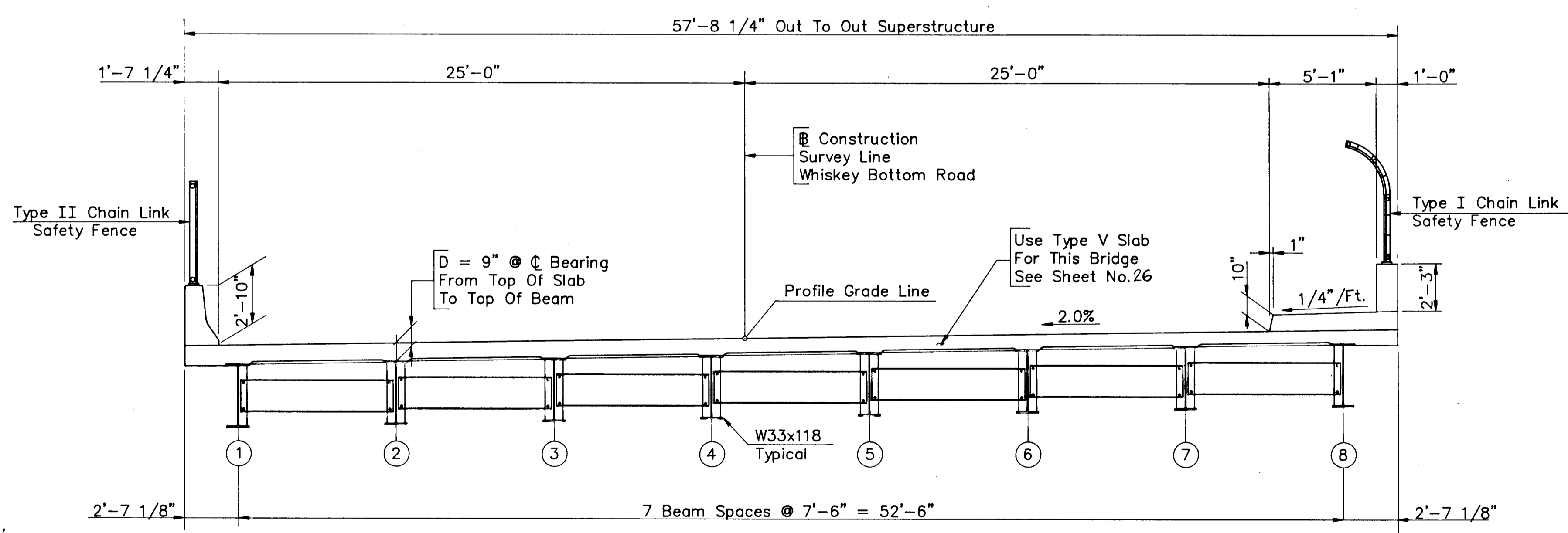
600' SCALE MAP NO. 50 BLOCK NO. 4

WHISKEY BOTTOM ROAD AND BRIDGE  
CAPITAL PROJECT J-4059 & B3816  
ELECTION DISTRICT NO.  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 22 OF 41



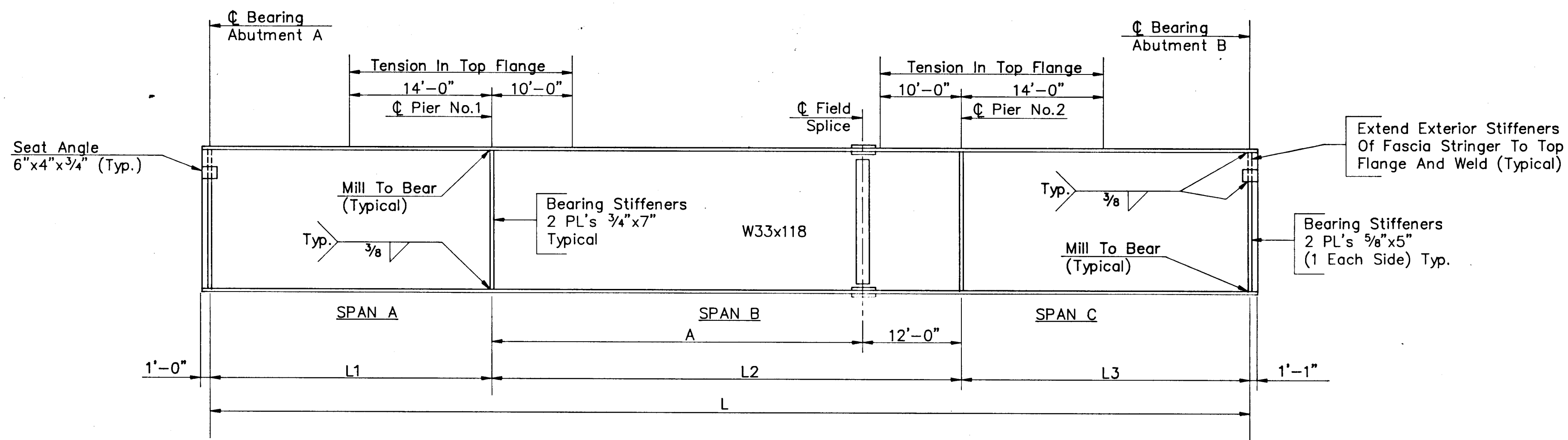
DIMENSION SCHEDULE				
	ABUTMENT A	PIER NO.1	PIER NO.2	ABUTMENT B
D1	8'-4 1/2"	8'-3 5/16"	8'-1 9/16"	8'-0 9/16"
D2	8'-4 3/8"	8'-3 1/4"	8'-1 7/16"	8'-0 1/2"
D3	8'-4 1/4"	8'-4 1/4"	8'-1 3/8"	8'-0 7/16"
D4	1'-8 3/16"	1'-7 15/16"	1'-7 5/8"	1'-7 7/16"
D5	6'-7 15/16"	6'-7 1/16"	6'-5 11/16"	6'-4 15/16"
D6	8'-4"	8'-2 7/8"	8'-1 3/16"	8'-0 1/4"
D7	8'-3 7/8"	8'-2 13/16"	8'-1 1/8"	8'-0 3/16"
D8	8'-3 3/4"	8'-2 11/16"	8'-1 11/16"	8'-0 1/8"



GIRDER SKEW ANGLES									
ABUTMENT A									
GIRDER	1	2	3	4	5	6	7	8	
ANGLE	63°-29'-43"	63°-38'-48"	63°-47'-46"	63°-58'-24"	64°-05'-23"	64°-14'-03"	64°-22'-36"	64°-31'-04"	
PIER 1									
GIRDER	1	2	3	4	5	6	7	8	
ANGLE	64°-53'-02"	65°-01'-34"	65°-10'-00"	65°-18'-20"	65°-26'-34"	65°-34'-43"	65°-42'-46"	65°-50'-44"	
PIER 2									
GIRDER	1	2	3	4	5	6	7	8	
ANGLE	67°-15'-04"	67°-22'-42"	67°-30'-15"	67°-37'-43"	67°-45'-05"	67°-52'-23"	67°-59'-35"	68°-06'-43"	
ABUTMENT B									
GIRDER	1	2	3	4	5	6	7	8	
ANGLE	68°-40'-44"	68°-47'-51"	68°-54'-52"	69°-01'-49"	69°-08'-41"	69°-15'-28"	69°-22'-11"	69°-28'-50"	

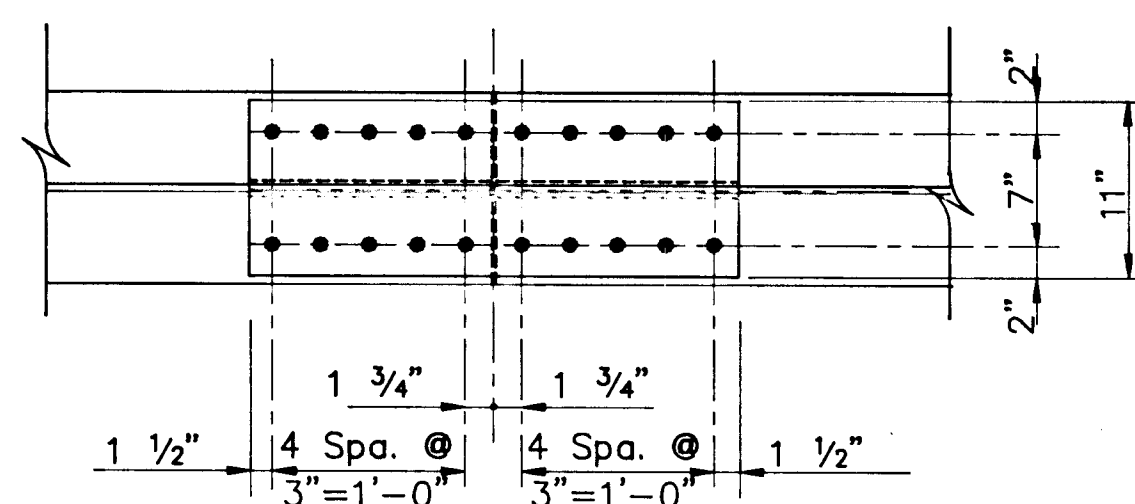
Note: All Angles Are Measured To Local Tangent.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND		RUMMEL, KLEPPER & KAHL CONSULTING ENGINEERS 1035 N. CALVERT STREET BALTIMORE, MARYLAND 21202		DES: T.H.Y. DRN: C.D.J. CHK: C.M.E. DATE: MAY, 1988		FRAMING PLAN		WHISKEY BOTTOM ROAD AND BRIDGE CAPITAL PROJECT J-4059 & B3816 ELECTION DISTRICT NO. HOWARD COUNTY, MARYLAND		SCALE AS SHOWN SHEET 23 OF 41	
DIRECTOR OF PUBLIC WORKS DATE	CHIEF, BUREAU OF ENGINEERING DATE	DATE: MAY, 1988 BY NO. REVISION DATE		600' SCALE MAP NO. 50 BLOCK NO. 4							

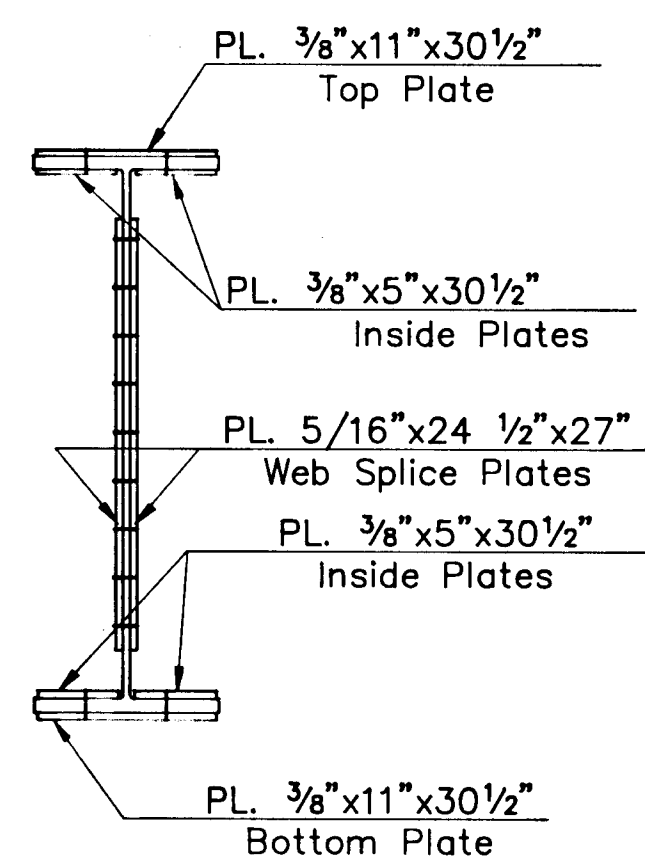
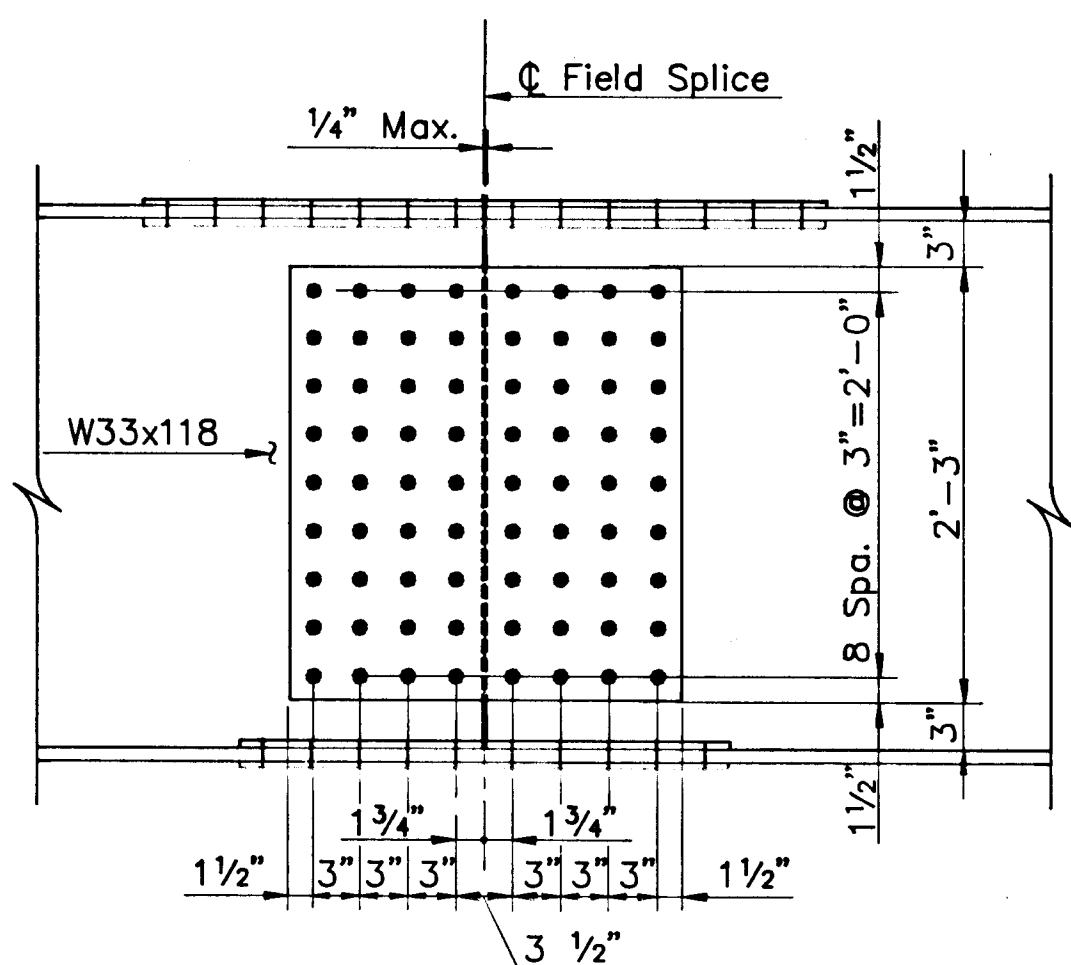


DIMENSION SCHEDULE						
Girder	L	L1	L2	L3	A	RADII
1	127'-4 1/16"	34'-1 9/16"	58'-2 1/4"	35'-1 1/8"	46'-2 1/4"	1408.38
2	127'-3 3/8"	34'-1 1/16"	58'-1 9/16"	35'-0"	46'-1 9/16"	1415.88
3	127'-1 13/16"	34'-0 9/16"	58'-0 13/16"	35'-0 7/16"	46'-0 13/16"	1423.38
4	127'-0 9/16"	34'-0 1/8"	58'-0 1/8"	35'-0 1/16"	46'-0 1/8"	1430.88
5	126'-10 13/16"	33'-11 9/8"	57'-11 7/16"	34'-11 3/4"	45'-11 7/16"	1438.38
6	126'-9 1/4"	33'-11 1/8"	57'-10 3/4"	34'-11 3/8"	45'-10 3/4"	1445.88
7	126'-7 7/8"	33'-10 1/16"	57'-10 1/8"	34'-11 1/16"	45'-10 1/8"	1453.38
8	126'-6 7/16"	33'-10 1/4"	57'-9 7/16"	34'-10 3/4"	45'-9 7/16"	1460.88

CAMBER SCHEDULE																		
Description	Beam	☉ Bearing Abut. A	1/4 Pt.	2/4 Pt.	3/4 Pt.	☉ Bearing Pier 1	1/8 Pt.	2/8 Pt.	3/8 Pt.	4/8 Pt.	5/8 Pt.	6/8 Pt.	7/8 Pt.	☉ Bearing Pier 2	1/4 Pt.	2/4 Pt.	3/4 Pt.	☉ Bearing Abut. B
Deflection Due To Dead Weight Of Steel Beams	1 Thru 8	0	0	0	0	0	1/16	1/8	1/8	3/16	1/8	1/8	1/16	0	0	0	0	0
Deflection Due To Dead Weight Of Concrete Roadway Slab	1 Thru 8	0	0	0	0	0	1/8	1/4	3/8	7/16	3/8	1/4	1/8	0	0	0	0	0
Deflection Due To Dead Weight Of Parapet, Sidewalk And Fencing	1 Thru 8	0	0	0	0	0	0	1/16	1/16	1/16	1/16	1/16	0	0	0	0	0	0
Deflection Due To Total Dead Weight	1 Thru 8	0	0	0	1/16	0	3/16	7/16	9/16	11/16	9/16	7/16	3/16	0	1/16	0	1/16	0
Vertical Curve Correction	1 Thru 8	0	1/8	1/8	1/8	0	3/16	5/16	7/16	7/16	7/16	5/16	3/16	0	1/8	3/16	1/8	0
Total Dead Weight Deflection Plus Vertical Curve Correction	1 Thru 8	0	1/8	1/8	3/16	0	3/8	13/16	1	1 1/8	1	13/16	3/8	0	3/16	3/16	3/16	0



Note: All Beams Shall be Cambered For Dead Load Deflection And Vertical Curve Correction To The Dimensions Shown In The Schedule. The Camber Tolerance Is Nothing Under To One Half (1/2) Inch Over.



FIELD SPLICE DETAILS

Scale: 1"=1'-0"

Note: All Bolts To Be 7/8" High Strength Bolts A-325 Type 3.

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

RUMMEL, KLEPPER & KAHL

CONSULTING ENGINEERS

1035 N. CALVERT STREET  
BALTIMORE, MARYLAND 21202

DES: T.H.Y.

DRN: C.D.J.

CHK: C.M.E.

DATE: MAY 1988

BEAM DETAILS

WHISKEY BOTTOM ROAD AND BRIDGE  
CAPITAL PROJECT J-4059 & B3816  
ELECTION DISTRICT NO.  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 24 OF 41

DIRECTOR OF PUBLIC WORKS  
DATE

CHIEF, BUREAU OF ENGINEERING  
DATE

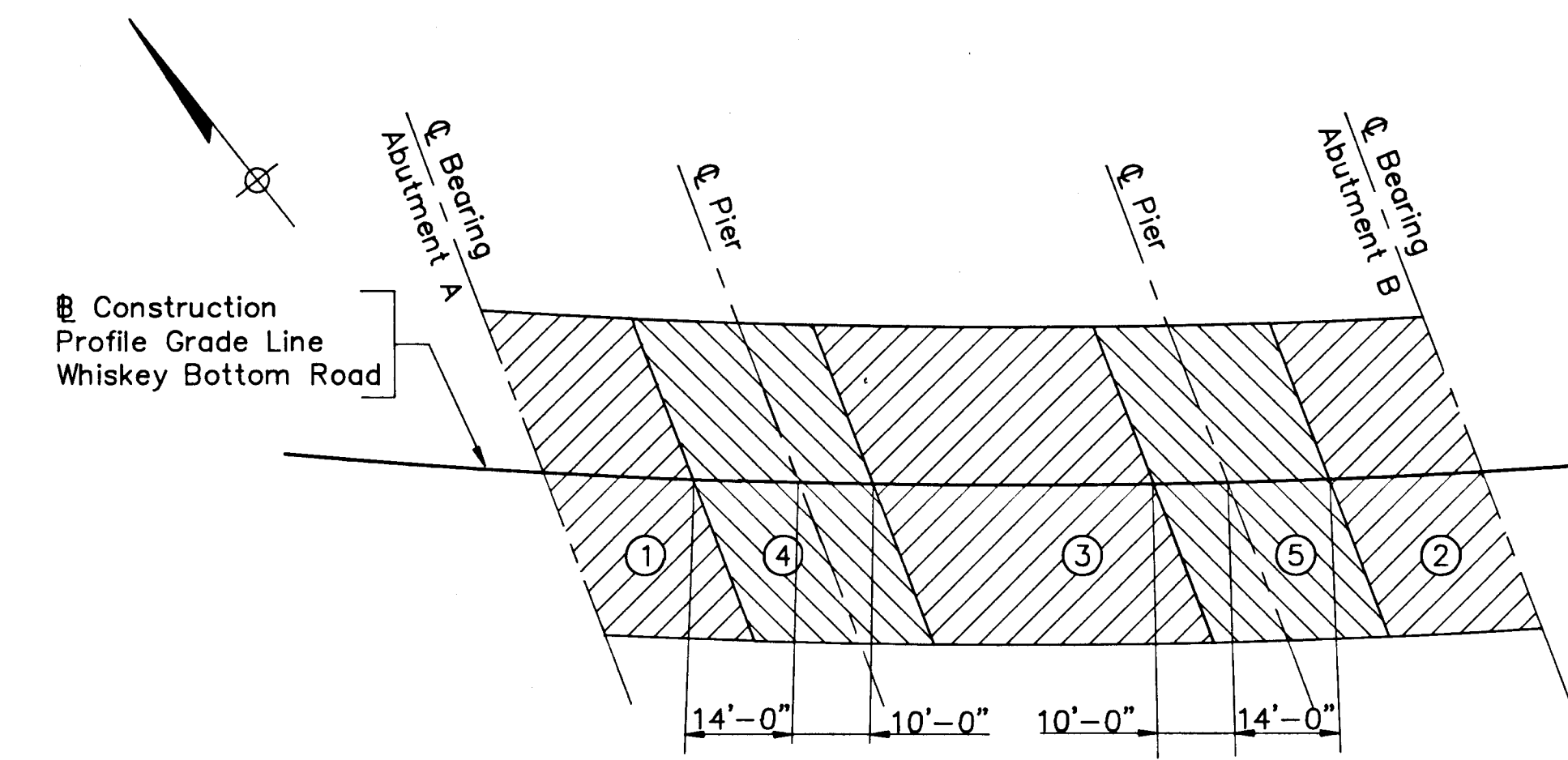
CHIEF, DIVISION OF ROADS, BRIDGES AND STORM DRAINAGE  
DATE

CHIEF, BUREAU OF HIGHWAYS  
DATE

BY NO. REVISION

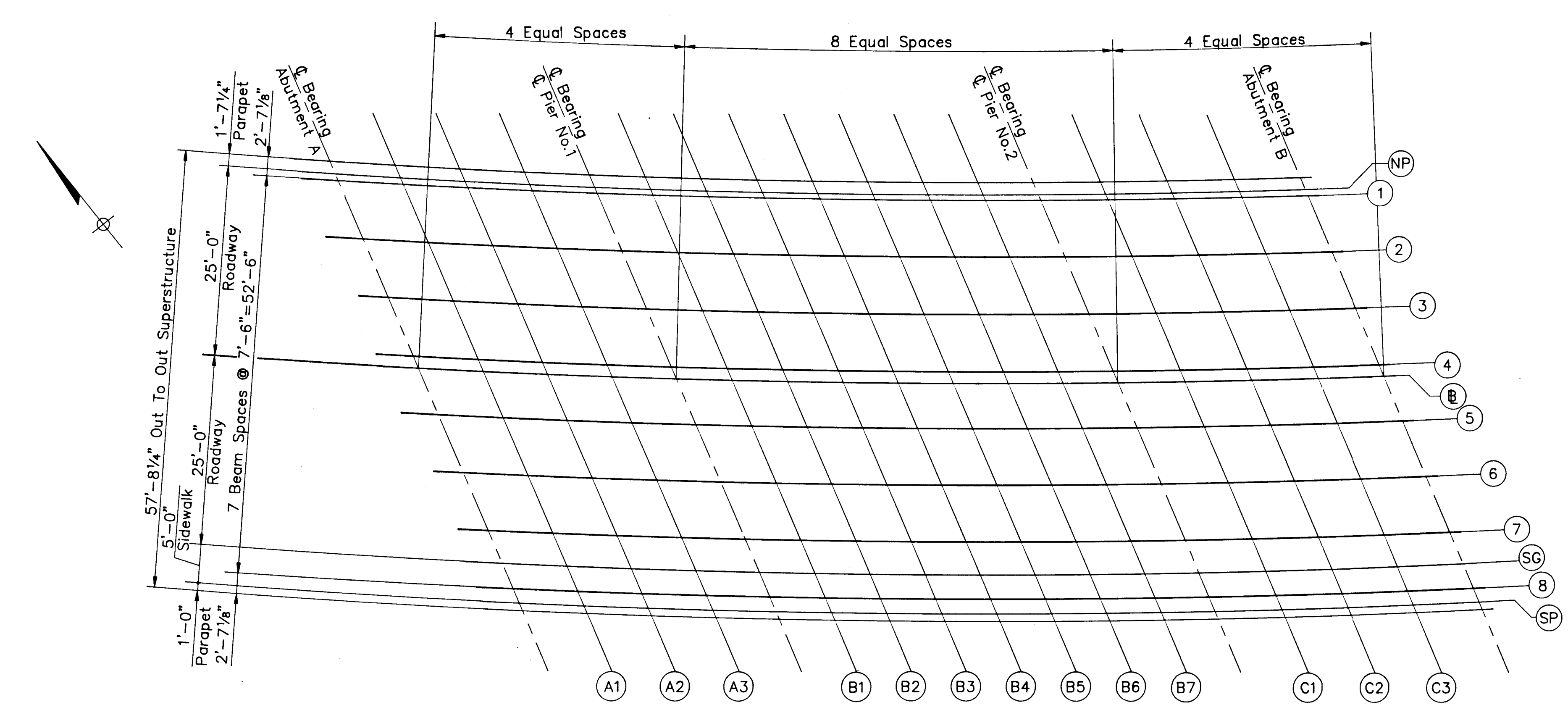
DATE 600' SCALE MAP NO. 50 BLOCK NO. 4

LINE	STATION	ELEVATION SCHEDULE																							
		SPAN-A						SPAN-B						SPAN-C											
		C BEARING ABUTMENT A		A1	A2	A3	C BEARING PIER NO. 1		B1	B2	B3	B4	B5	B6	B7	C BEARING PIER NO. 2		C1	C2	C3	C BEARING ABUTMENT B				
P.G.L. ELEV.	FIN. ELEV.	FIN. ELEV.	FIN. ELEV.	FIN. ELEV.	FIN. ELEV.	FIN. ELEV.	FIN. ELEV.	FIN. ELEV.	FIN. ELEV.	FIN. ELEV.	FIN. ELEV.	FIN. ELEV.	FIN. ELEV.	FIN. ELEV.	FIN. ELEV.	FIN. ELEV.	FIN. ELEV.	FIN. ELEV.	FIN. ELEV.	FIN. ELEV.	FIN. ELEV.				
NP	36+98.05	199.40	198.90	198.89	198.87	198.85	37+32.79	199.31	198.81	198.78	198.75	198.70	198.66	198.61	198.55	198.49	37+92.02	198.93	198.43	198.34	198.25	198.15	38+27.75	198.55	198.05
1	36+98.55	199.40	198.92	198.91	198.89	198.86	37+33.27	199.31	198.83	198.80	198.76	198.72	198.67	198.62	198.57	198.51	37+92.45	198.92	198.44	198.36	198.26	198.17	38+28.14	198.54	198.06
2	37+02.33	199.40	199.07	199.05	199.03	199.00	37+36.82	199.30	198.97	198.93	198.89	198.85	198.80	198.75	198.69	198.63	37+95.63	198.89	198.56	198.47	198.38	198.28	38+31.10	198.50	198.17
3	37+06.07	199.39	199.21	199.19	199.17	199.14	37+40.33	199.28	199.10	199.07	199.02	198.98	198.93	198.87	198.81	198.75	37+98.77	198.86	198.68	198.59	198.50	198.40	38+34.03	198.47	198.29
4	37+09.76	199.38	199.35	199.33	199.31	199.27	37+43.81	199.26	199.23	199.20	199.15	199.11	199.05	199.00	198.94	198.87	38+01.89	198.83	198.80	198.71	198.61	198.51	38+36.92	198.43	198.40
B	37+10.50	199.38	199.38	199.36	199.33	199.30	37+44.50	199.26	199.22	199.18	199.13	199.08	199.02	198.96	198.90	198.83	38+02.50	198.83	198.83	198.73	198.64	198.53	38+37.50	198.42	198.42
5	37+13.41	199.38	199.50	199.47	199.44	199.41	37+47.24	199.25	199.37	199.33	199.28	199.23	199.18	199.12	199.06	198.99	38+04.95	198.80	198.92	198.83	198.73	198.62	38+39.78	198.39	198.51
6	37+17.02	199.37	199.64	199.61	199.58	199.54	37+50.63	199.23	199.50	199.46	199.41	199.36	199.30	199.24	199.18	199.11	38+07.99	198.77	199.04	198.94	198.84	198.74	38+42.61	198.35	198.62
7	37+20.58	199.36	199.78	199.75	199.72	199.68	37+53.99	199.21	199.63	199.59	199.54	199.49	199.43	199.37	199.30	199.23	38+10.99	198.74	199.16	199.06	198.96	198.85	38+45.41	198.32	198.74
SG	37+22.47	199.35	199.85	199.82	199.79	199.75	37+55.76	199.20	199.70	199.65	199.61	199.55	199.49	199.43	199.37	199.30	38+12.59	198.72	199.22	199.12	199.02	198.91	38+46.89	198.30	198.80
8	37+24.11	199.35	199.92	199.89	199.85	199.81	37+57.30	199.19	199.76	199.71	199.66	199.61	199.55	199.49	199.42	199.35	38+13.96	198.70	199.27	199.18	199.07	198.96	38+48.18	198.28	198.85
SP	37+24.85	199.34	200.78	200.75	200.71	200.67	37+58.00	199.19	200.62	200.57	200.52	200.47	200.41	200.34	200.28	200.21	38+14.59	198.70	200.13	200.03	199.93	199.82	38+48.76	198.27	199.70

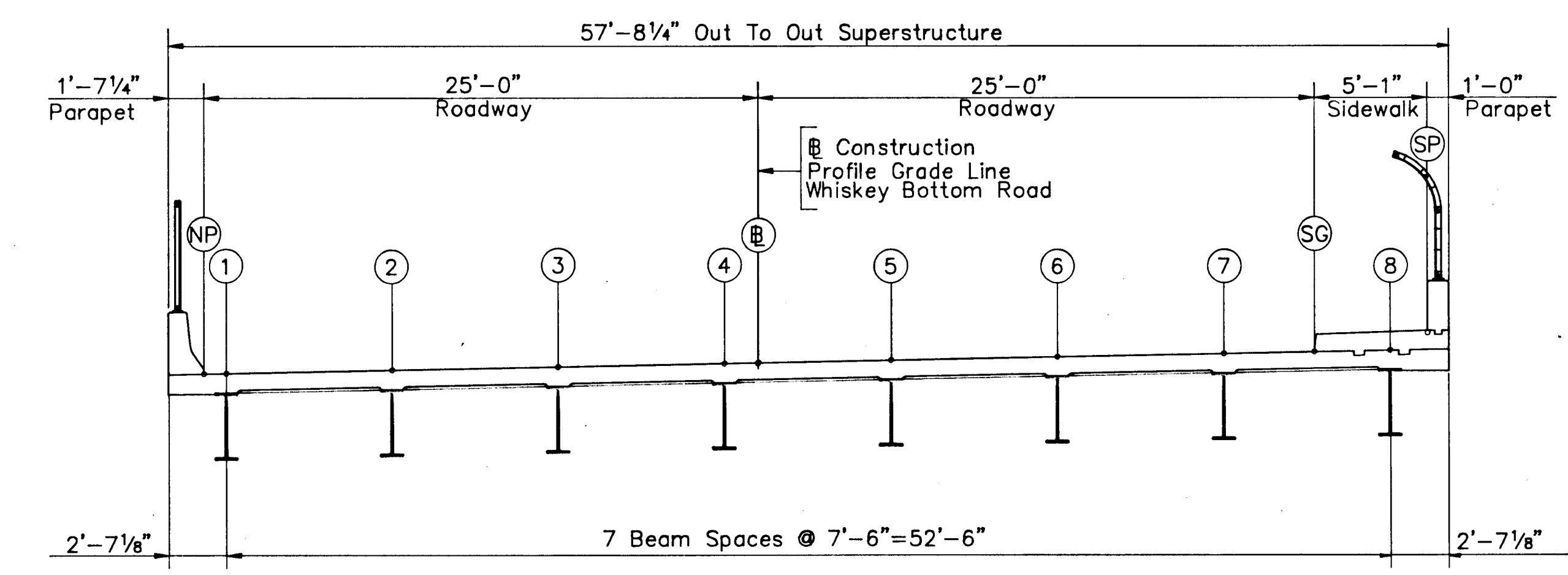


SLAB POURING SEQUENCE

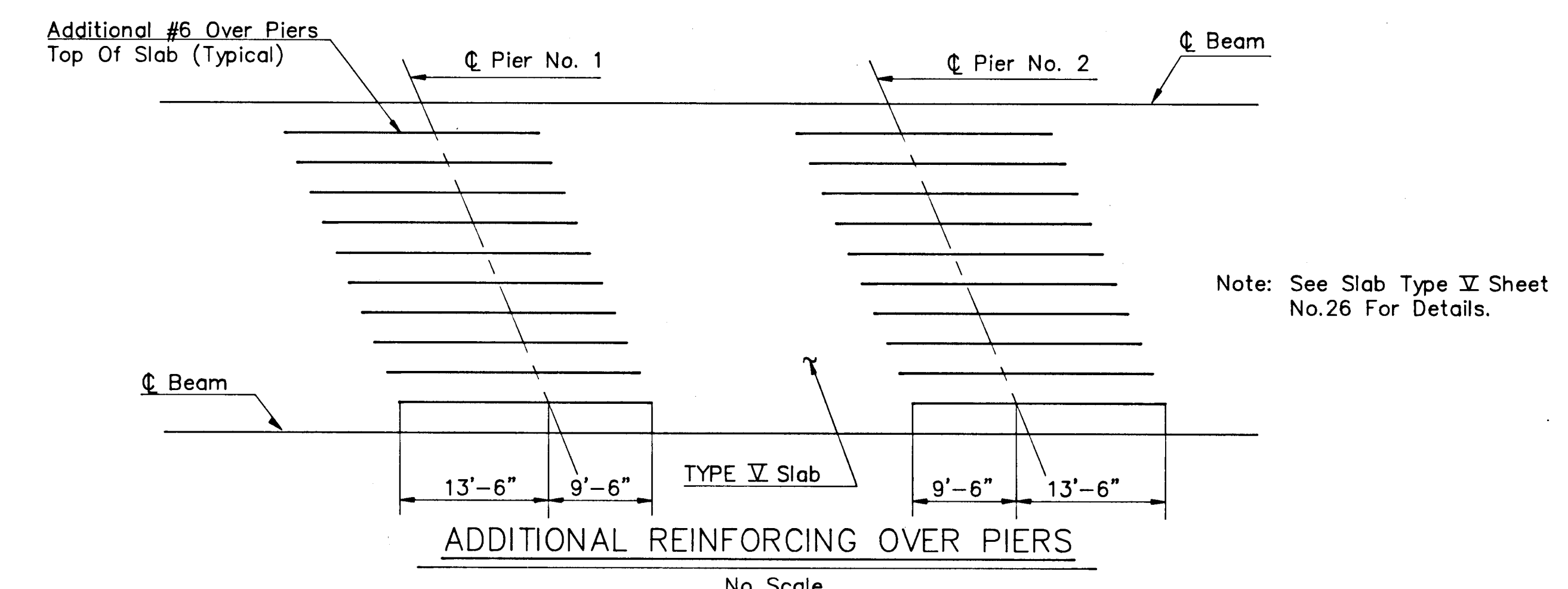
NOTE: The Pouring Sequence For The Bridge Roadway Slab Shall Be Made In The Numbered Order Indicated: 1,2,3, etc. There Must Be At Least Forty(40) Hours Between The Completion Of One Pour And The Start Of The Next Numbered Pour. This Pouring Sequence May Not Be Changed And No Alternate Will Be Considered.



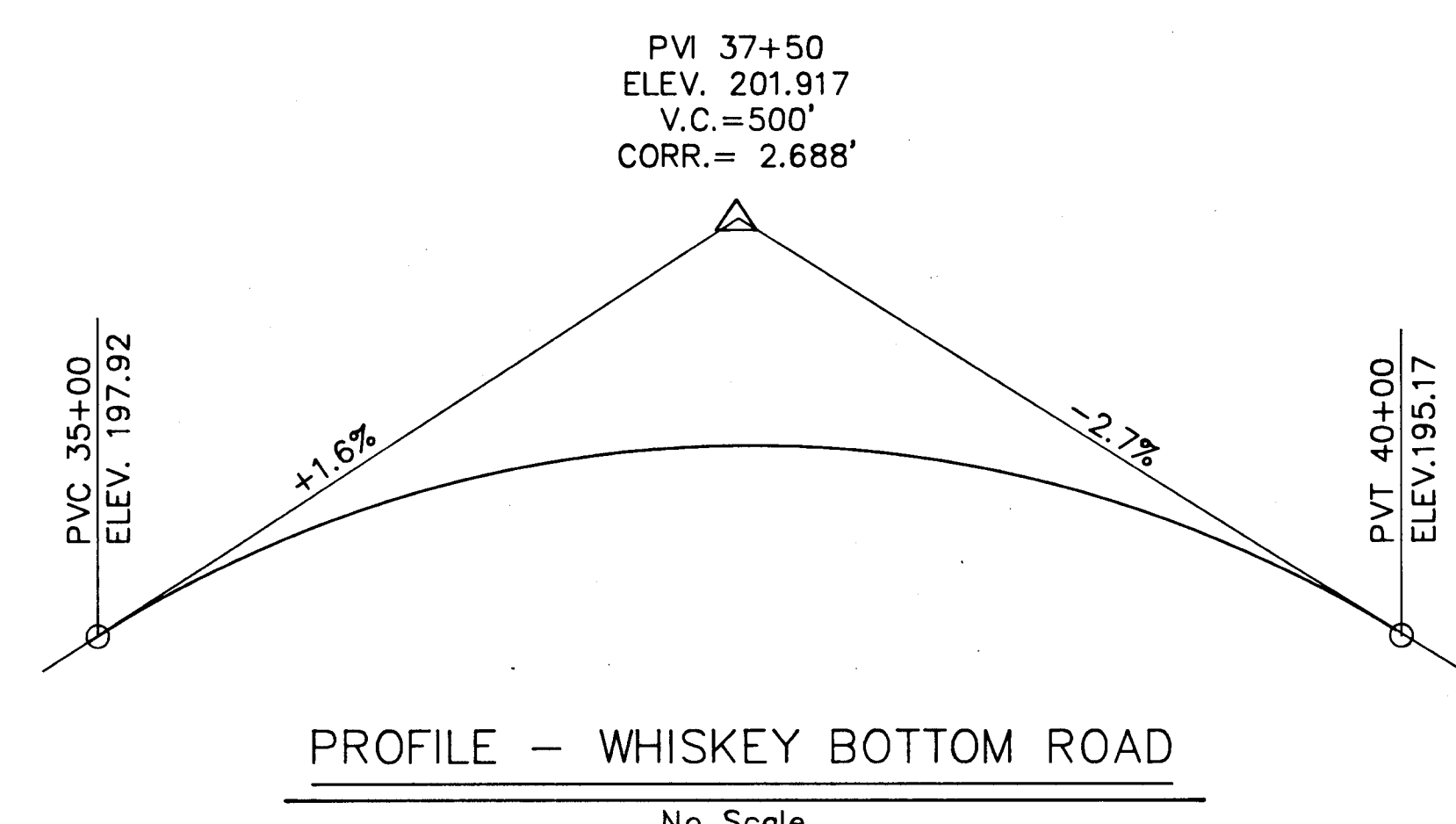
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TYPICAL SECTION Scale: 3/16"=1'-0"



ADDITIONAL REINFORCING OVER PIERS No Scale

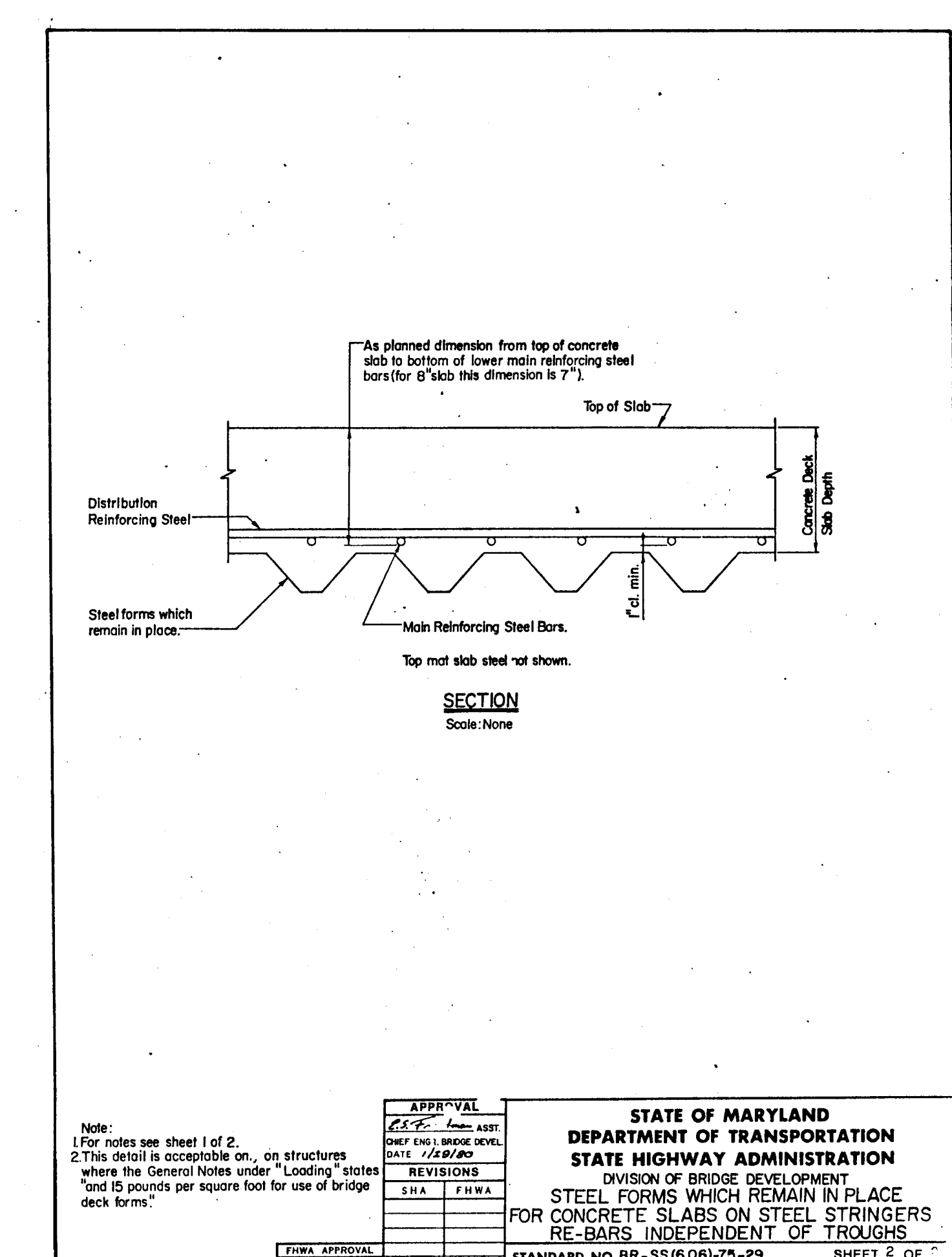
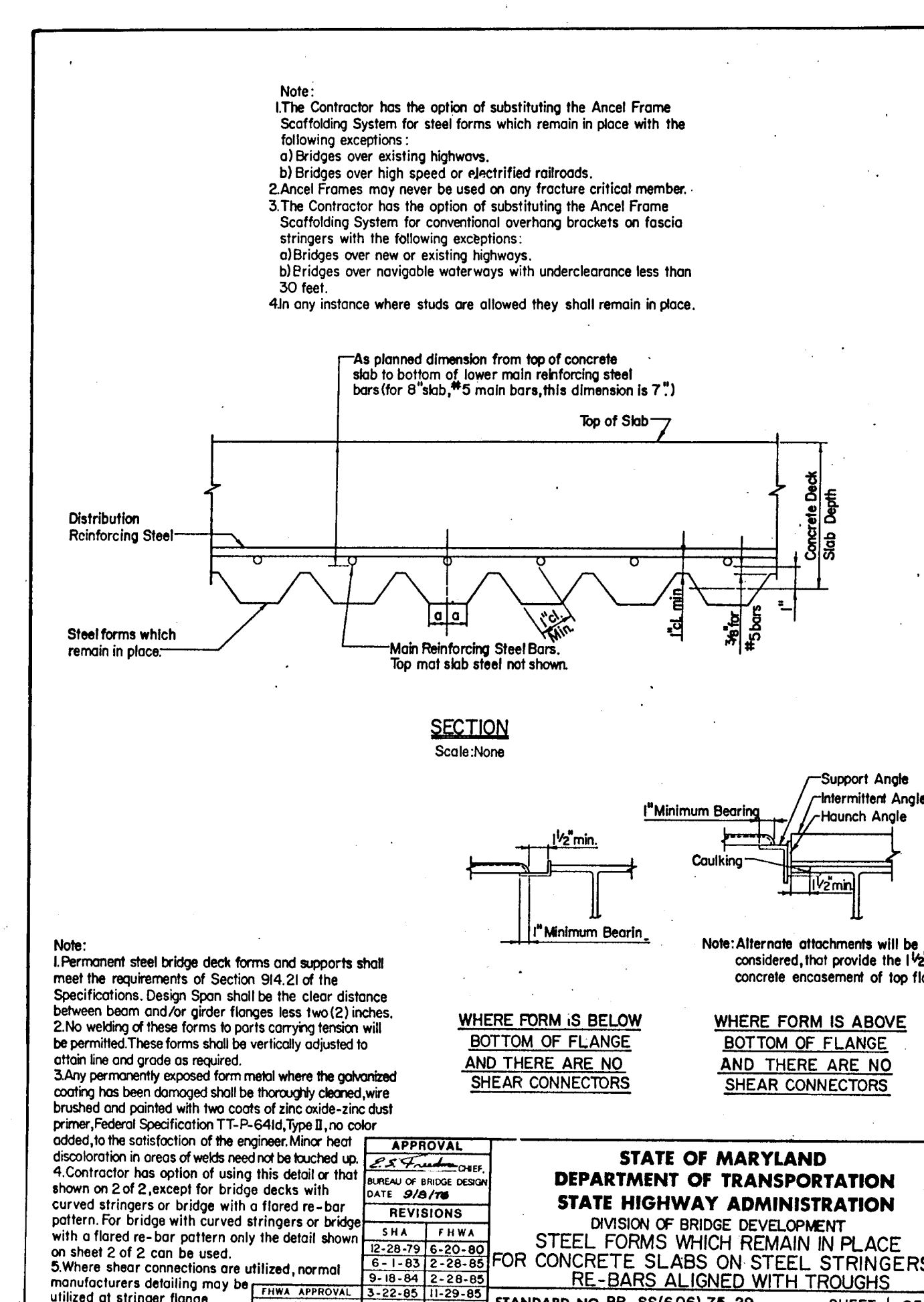
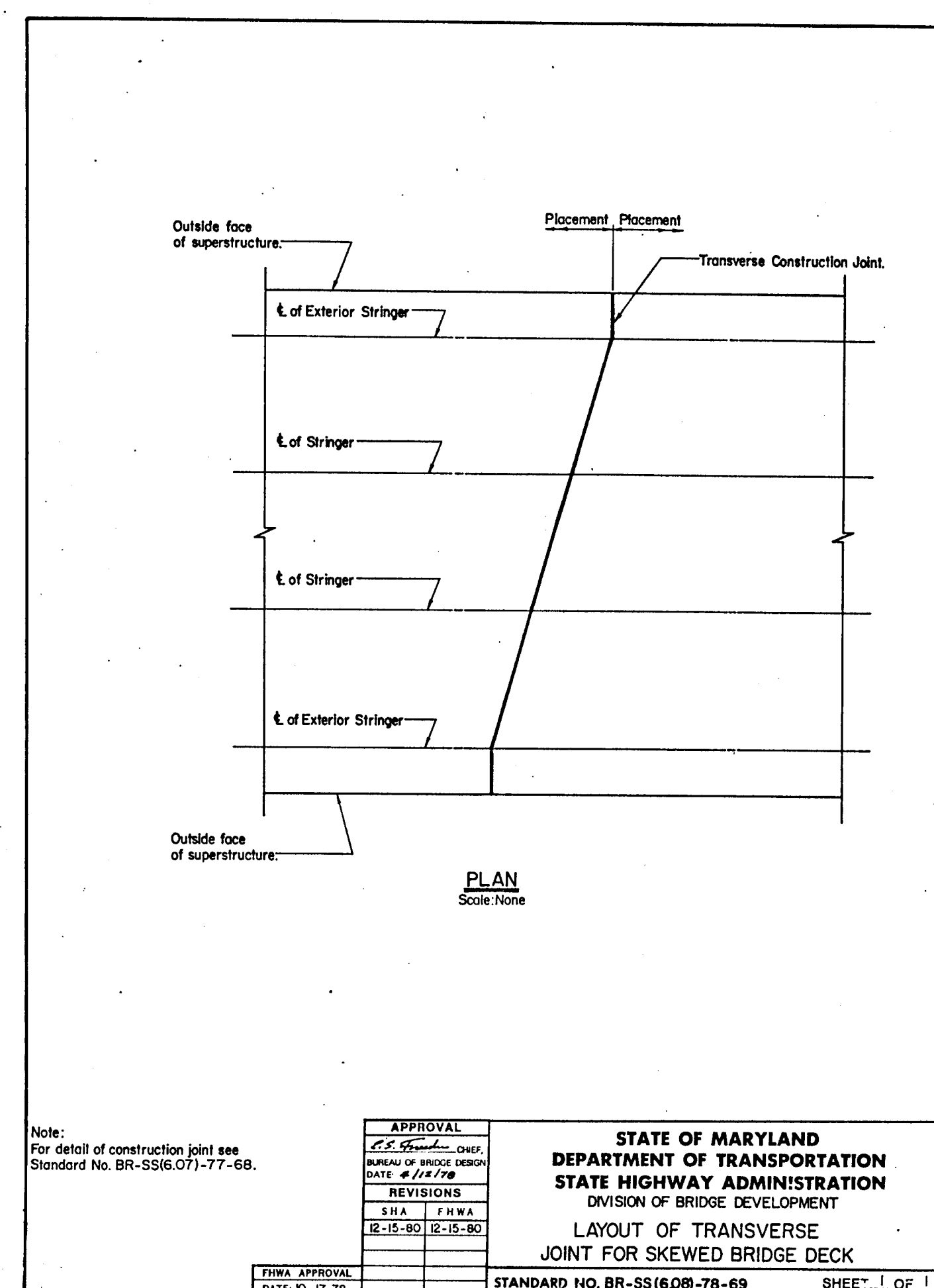
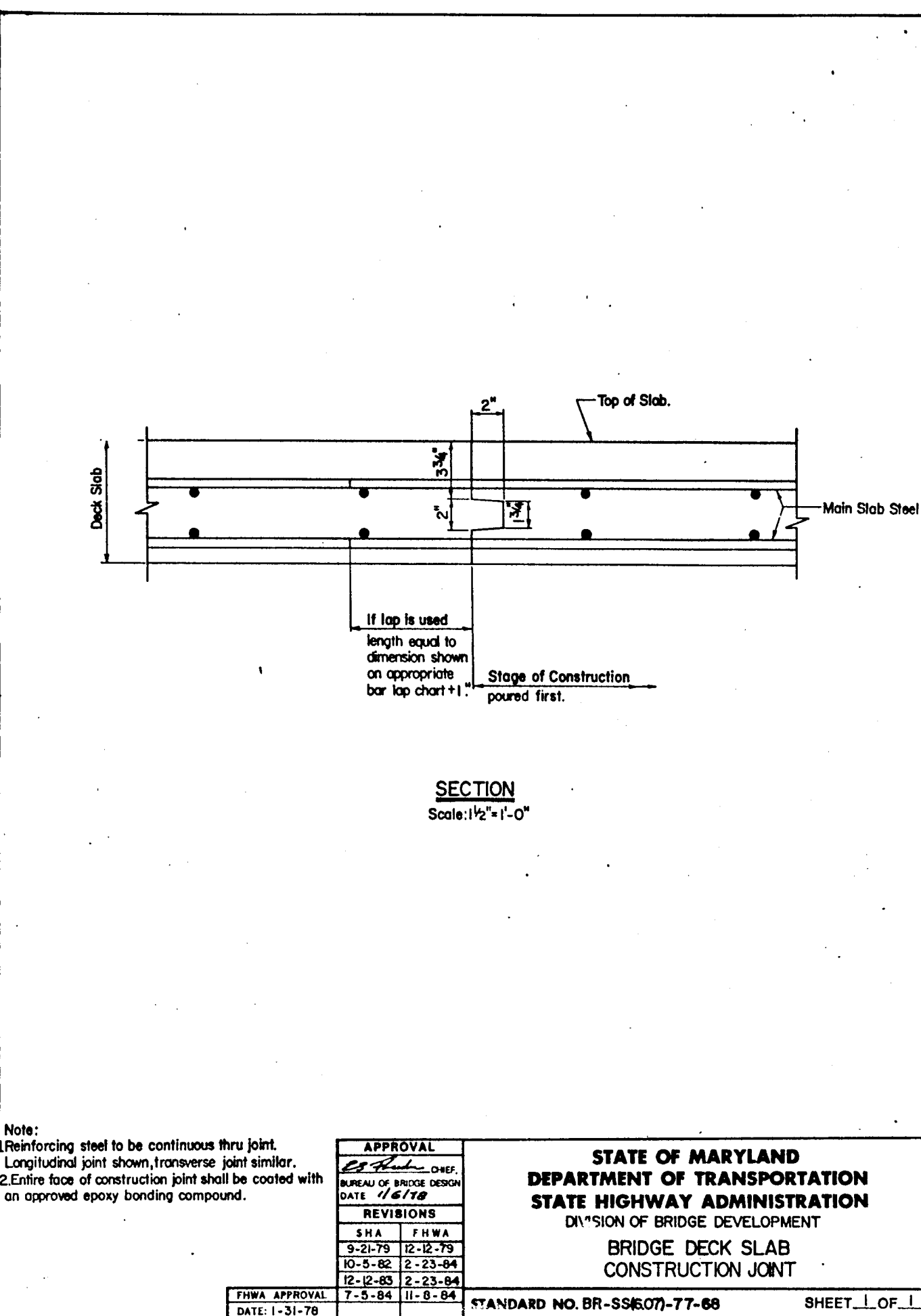
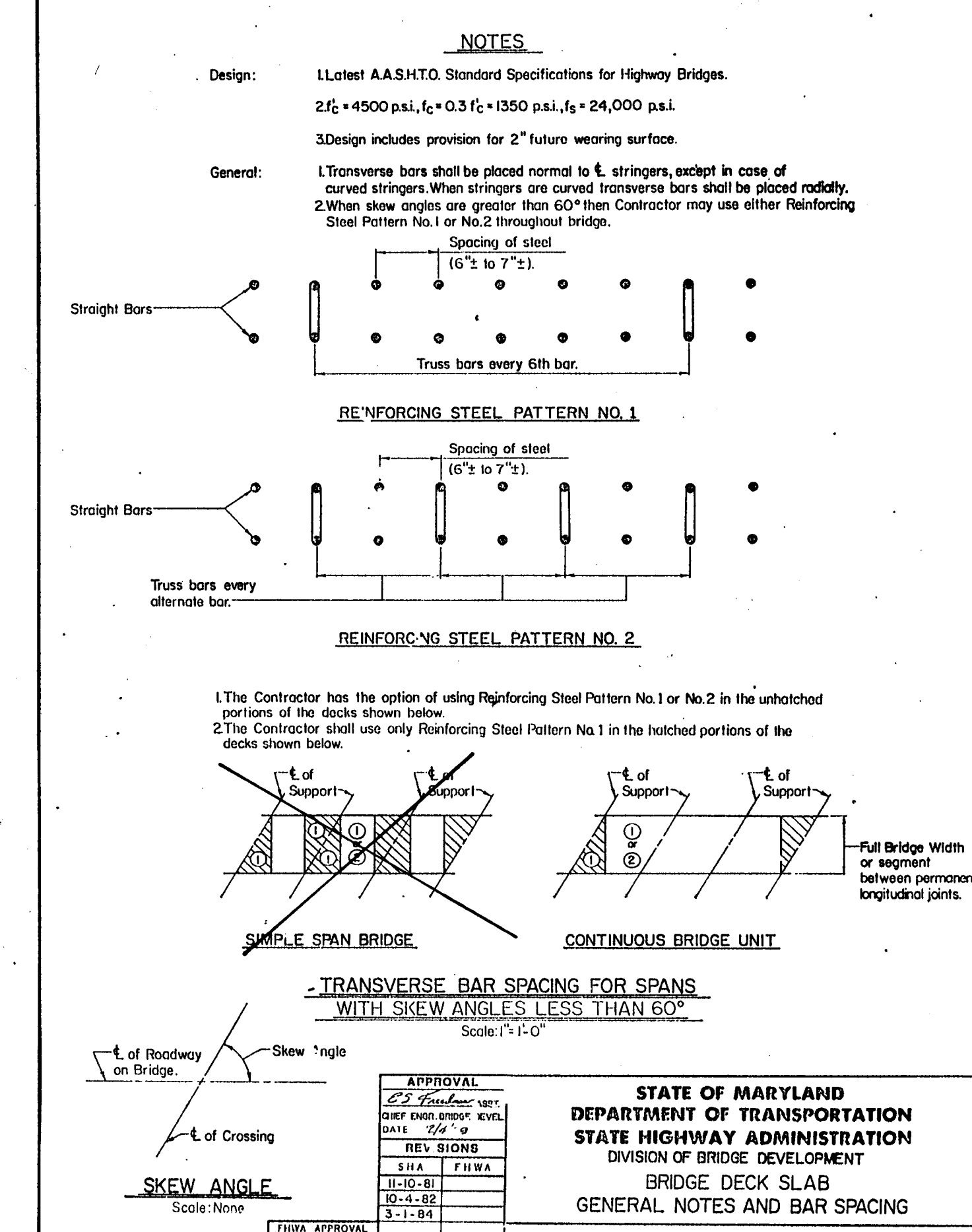
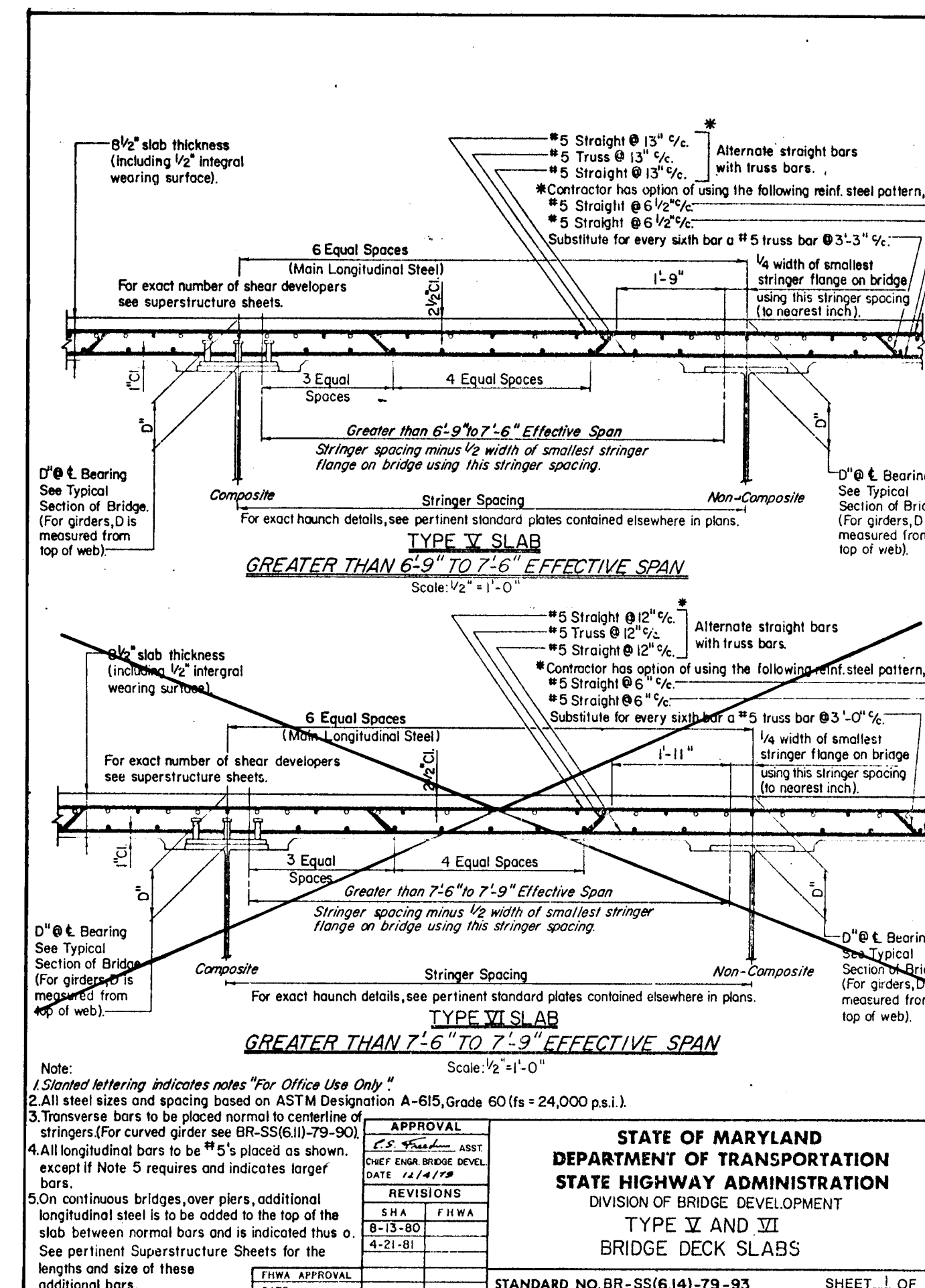
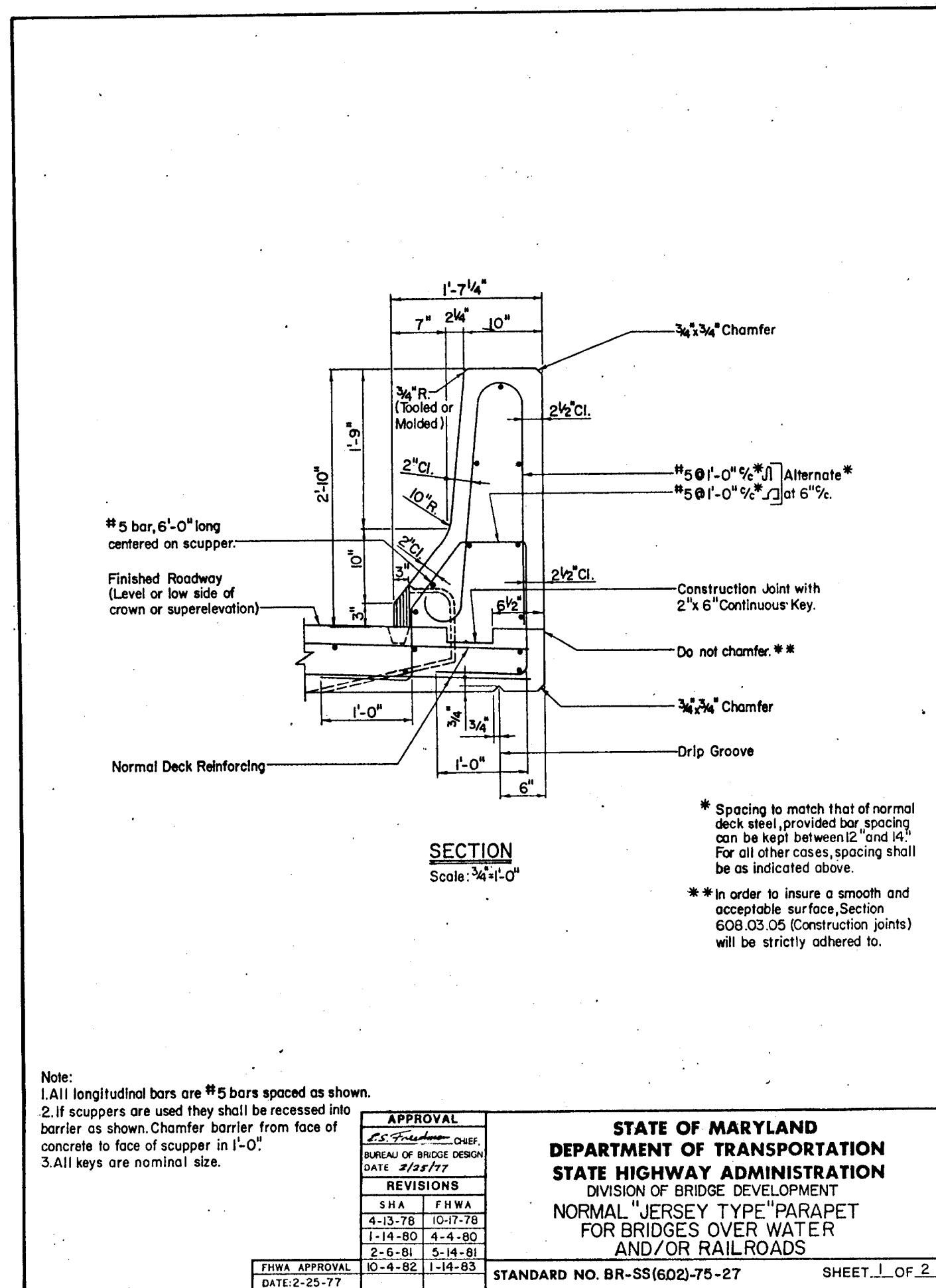
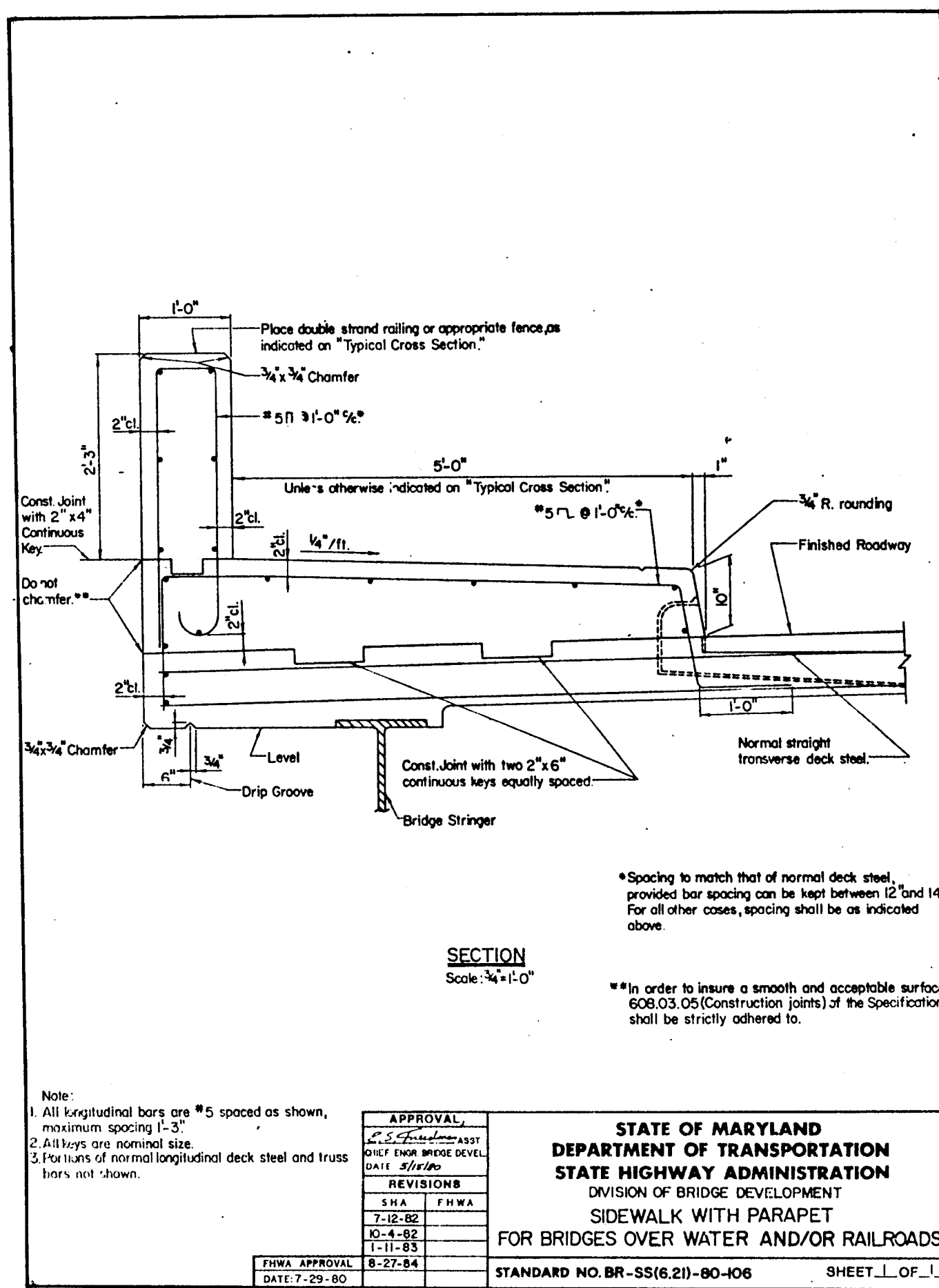


PROFILE - WHISKEY BOTTOM ROAD No Scale

WBDECK

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND		RUMMEL, KLEPPER & KAHL CONSULTING ENGINEERS 1035 N. CALVERT STREET BALTIMORE, MARYLAND 21202		DES: T.H.Y. DRN: C.D.J. CHK: C.M.E. DATE: May, 1988		SUPERSTRUCTURE ELEVATIONS		WHISKEY BOTTOM ROAD AND BRIDGE CAPITAL PROJECT J-4059 & B3816 ELECTION DISTRICT NO. HOWARD COUNTY, MARYLAND		SCALE AS SHOWN SHEET 25 OF 41
DIRECTOR OF PUBLIC WORKS DATE	CHIEF, BUREAU OF ENGINEERING DATE	DATE: May, 1988	BY NO.	REVISION	DATE	600' SCALE MAP NO. 50	BLOCK NO. 4			





BRUNING

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS DATE

CHIEF DIVISION OF ROADS, BRIDGES AND STORM DRAINAGE DATE

CHIEF, BUREAU OF ENGINEERING DATE

CHIEF, BUREAU OF HIGHWAYS DATE

RUMMEL, KLEPPER & KAHL  
CONSULTING ENGINEERS

1035 N. CALVERT STREET  
BALTIMORE, MARYLAND 21202

DES: THY.

DRN: K.A.B.

CHK: C.M.E.

DATE: MARCH 1988 BY NO.

REVISION

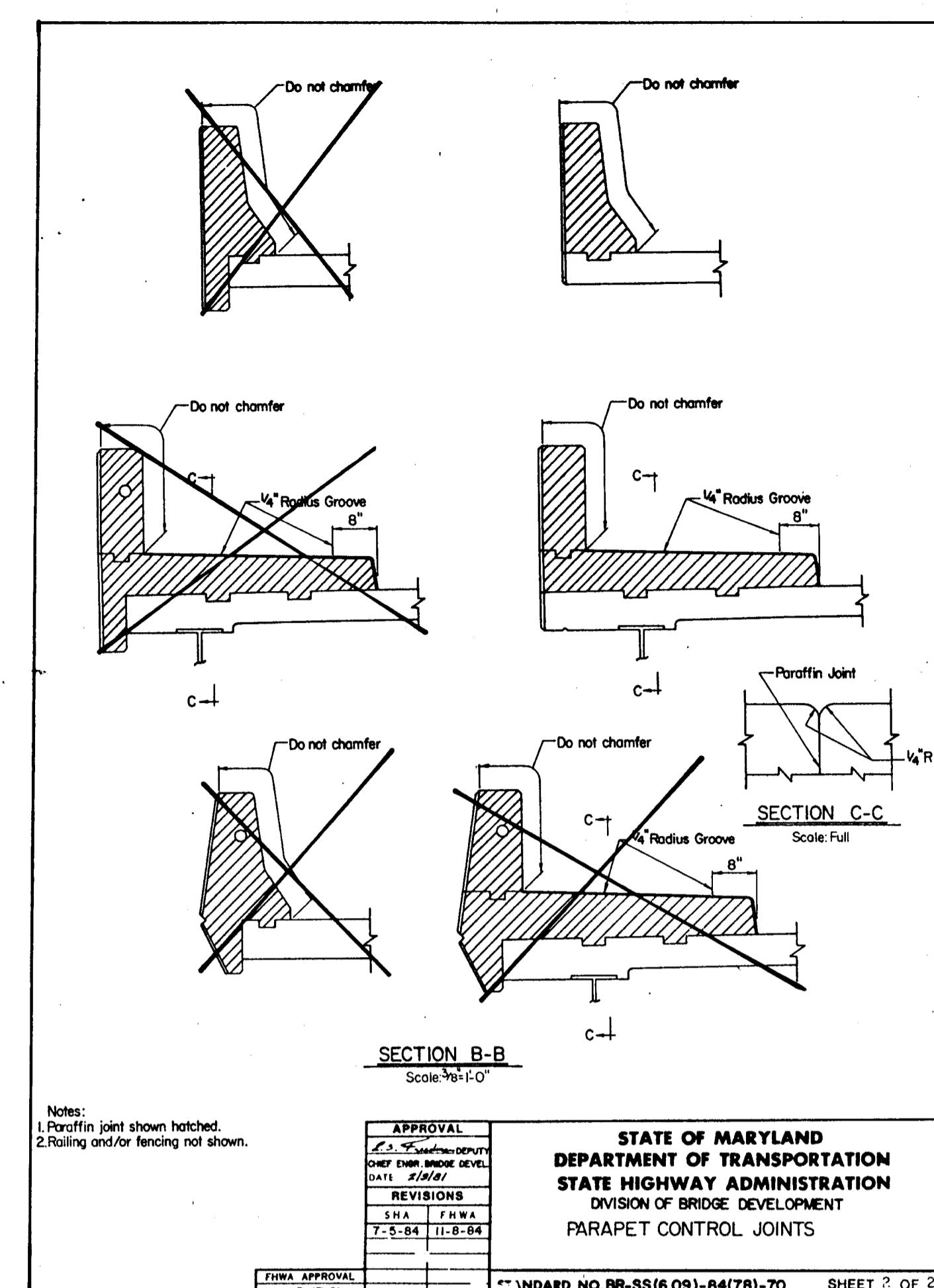
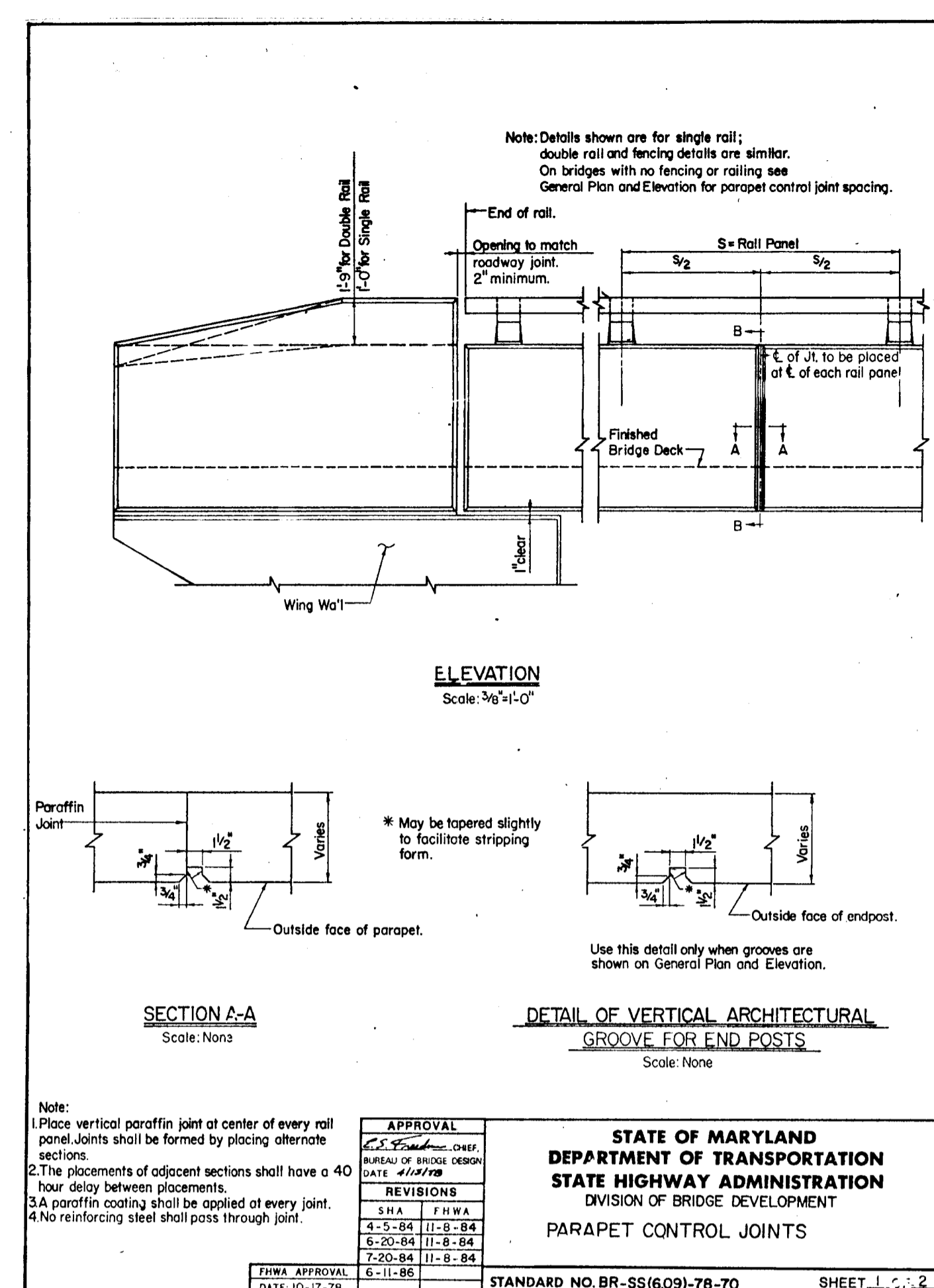
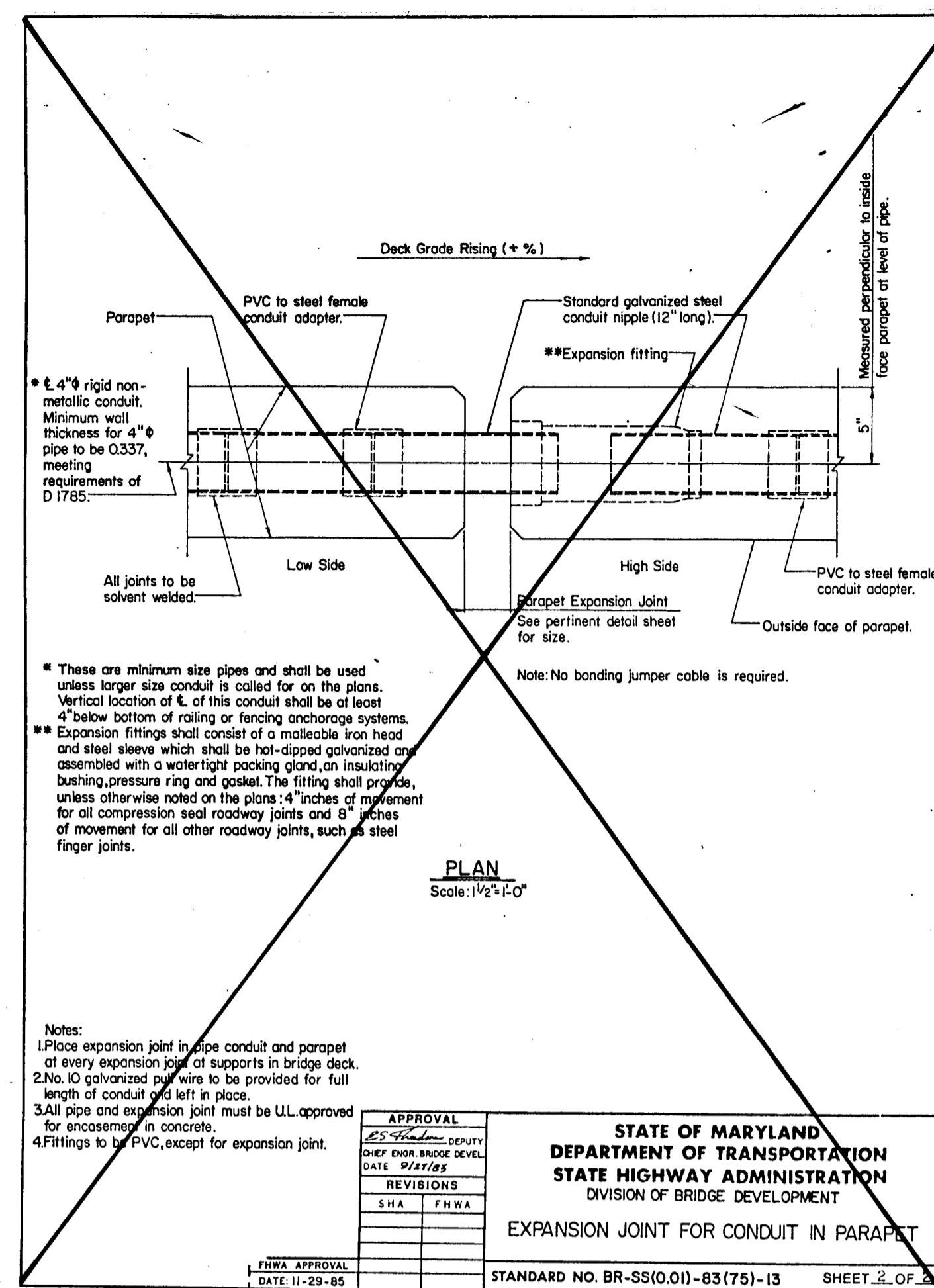
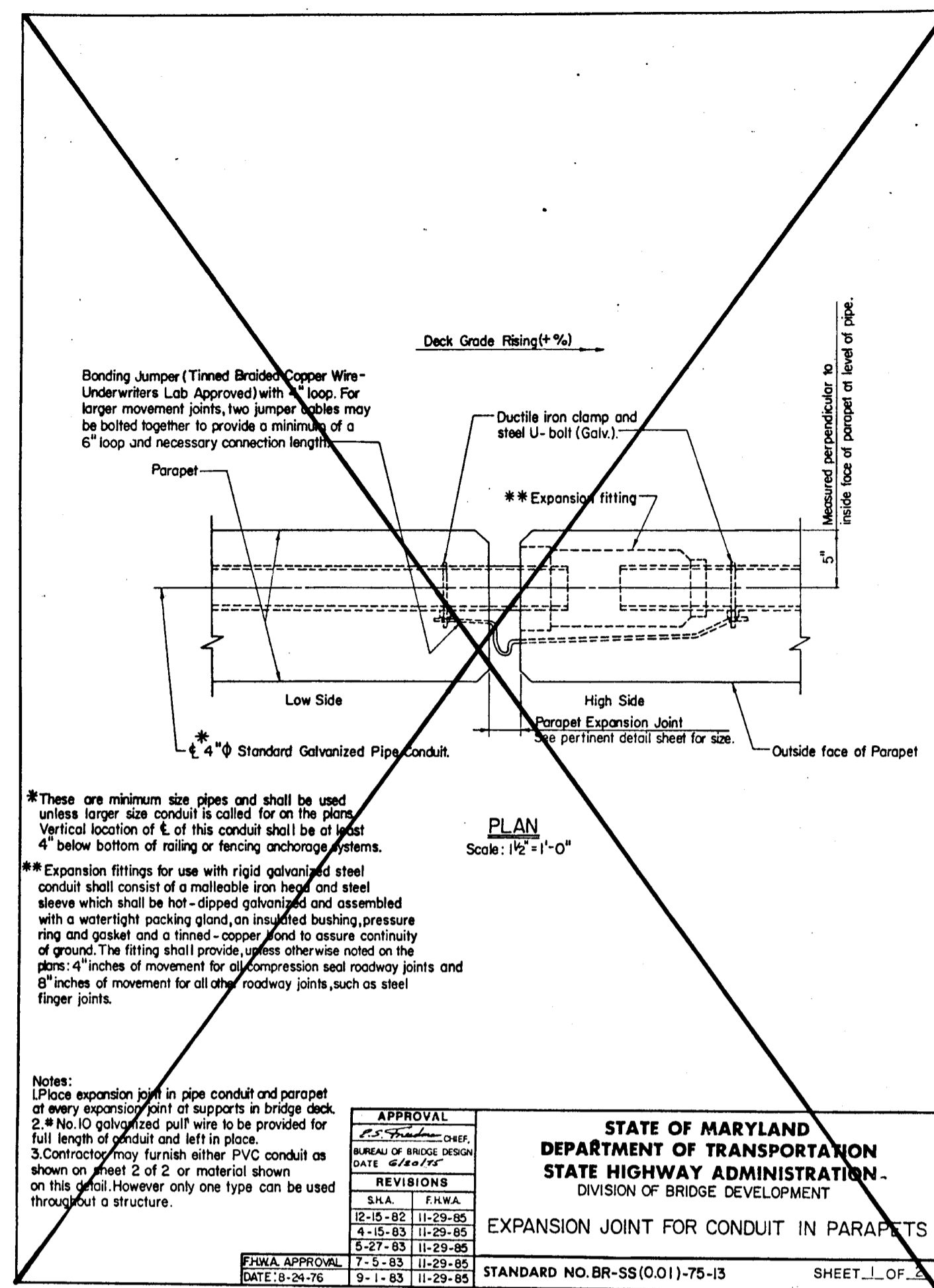
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600' SCALE MAP NO. 50 BLOCK NO. 4

WHISKEY BOTTOM ROAD AND BRIDGE  
CAPITAL PROJECT J-4059 & B3816  
ELECTION DISTRICT NO.  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 26 OF 41



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

RUMMEL, KLEPPER & KAHL

DES: T.H.Y.

DRN: K.A.B.

CHK: C.M.E.

DATE: May 1988

CONSULTING ENGINEERS

1035 N. CALVERT STREET  
BALTIMORE, MARYLAND 21202

SUPERSTRUCTURE DETAILS

WHISKEY BOTTOM ROAD AND BRIDGE  
CAPITAL PROJECT J-4059 & B3816  
ELECTION DISTRICT NO.  
HOWARD COUNTY, MARYLAND

SCALE  
AS  
SHOWN

SHEET  
27 OF 41

DIRECTOR OF PUBLIC WORKS DATE

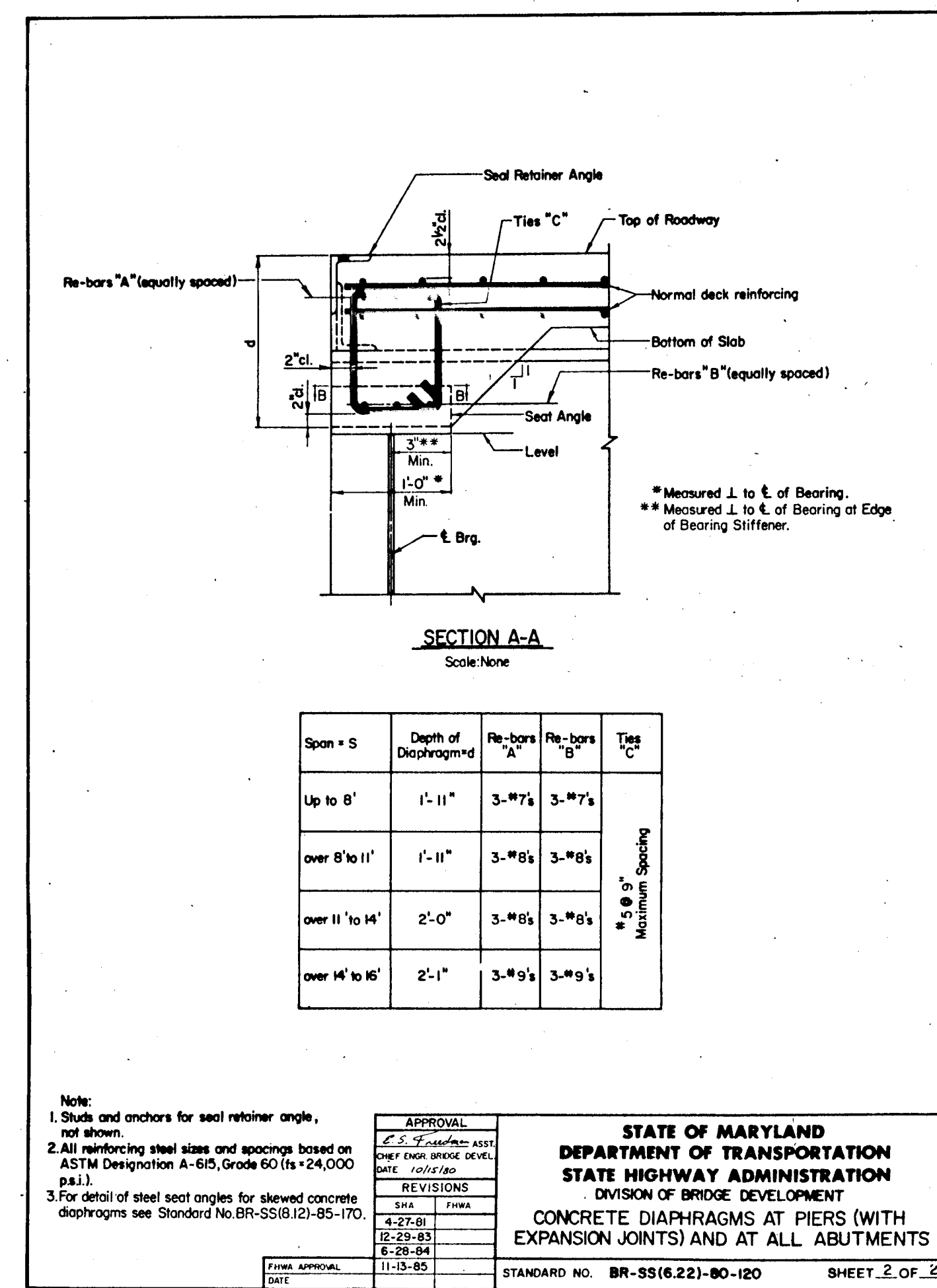
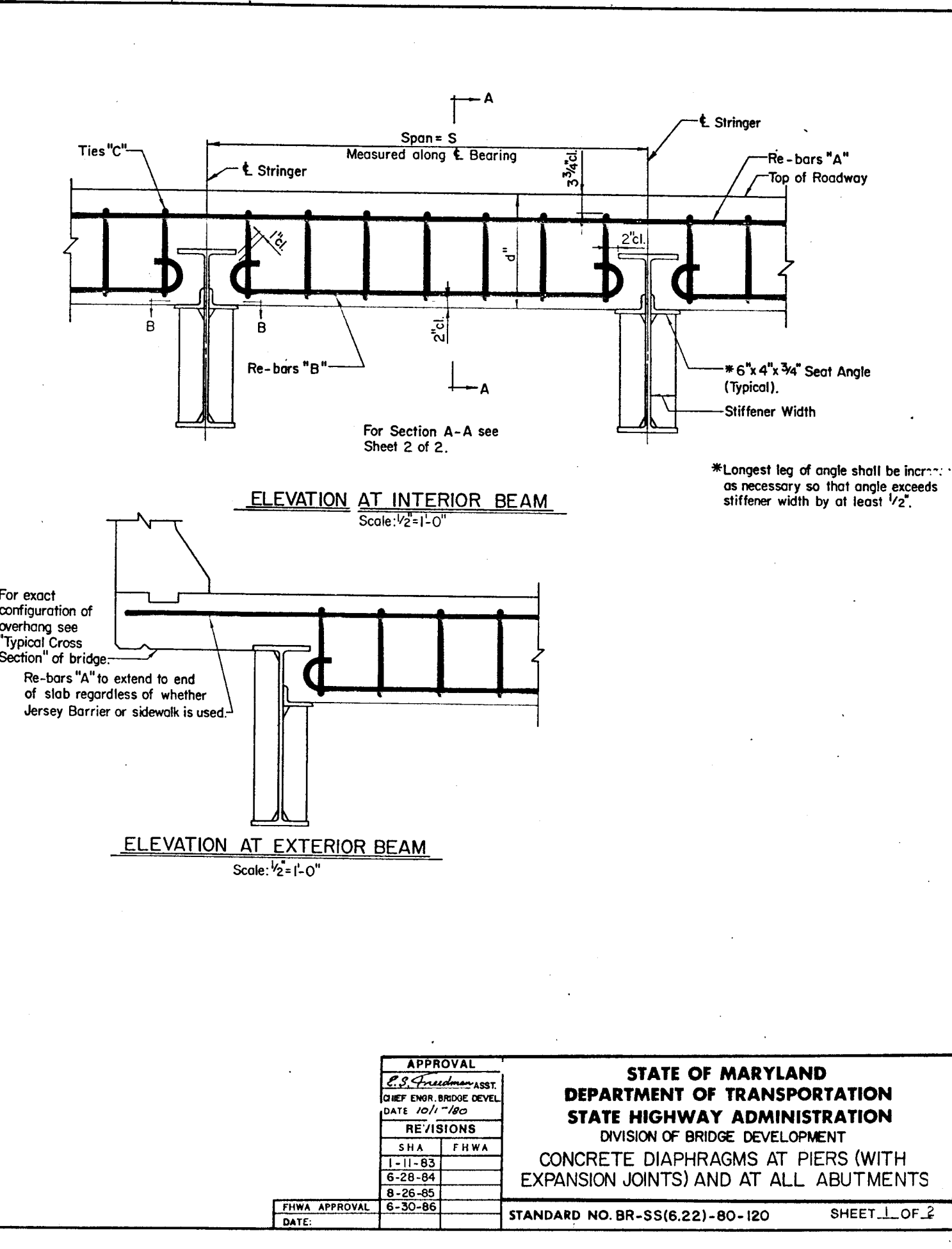
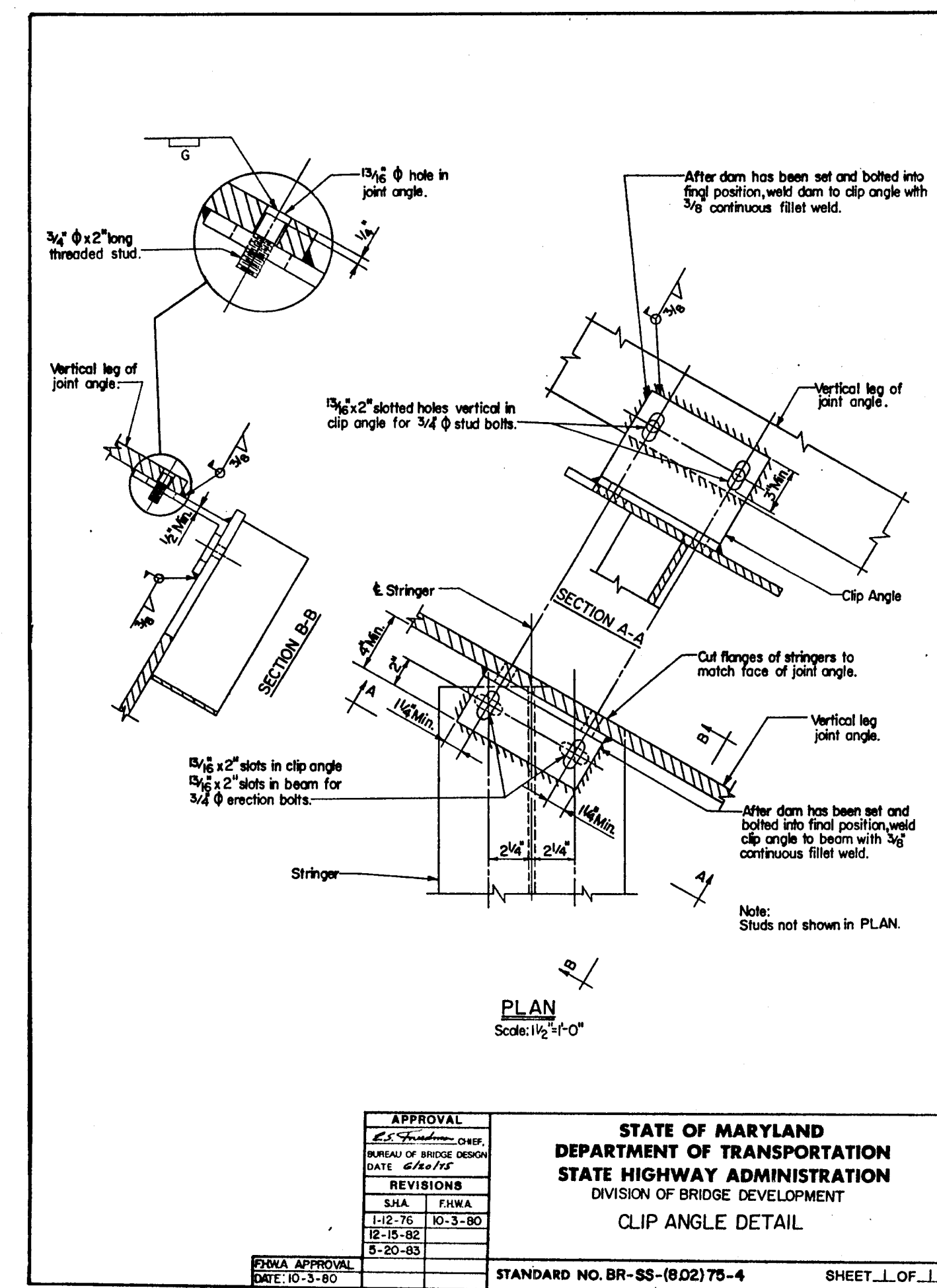
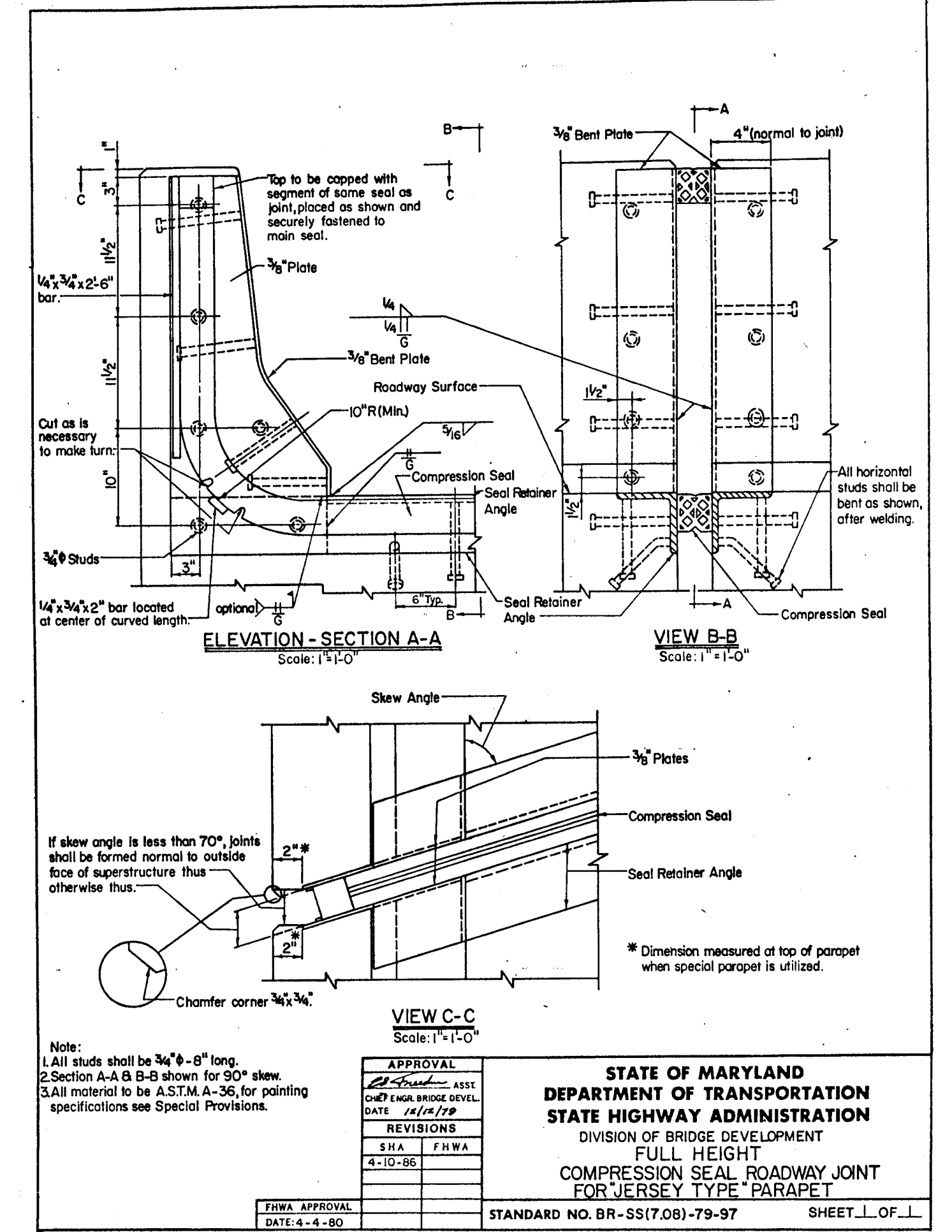
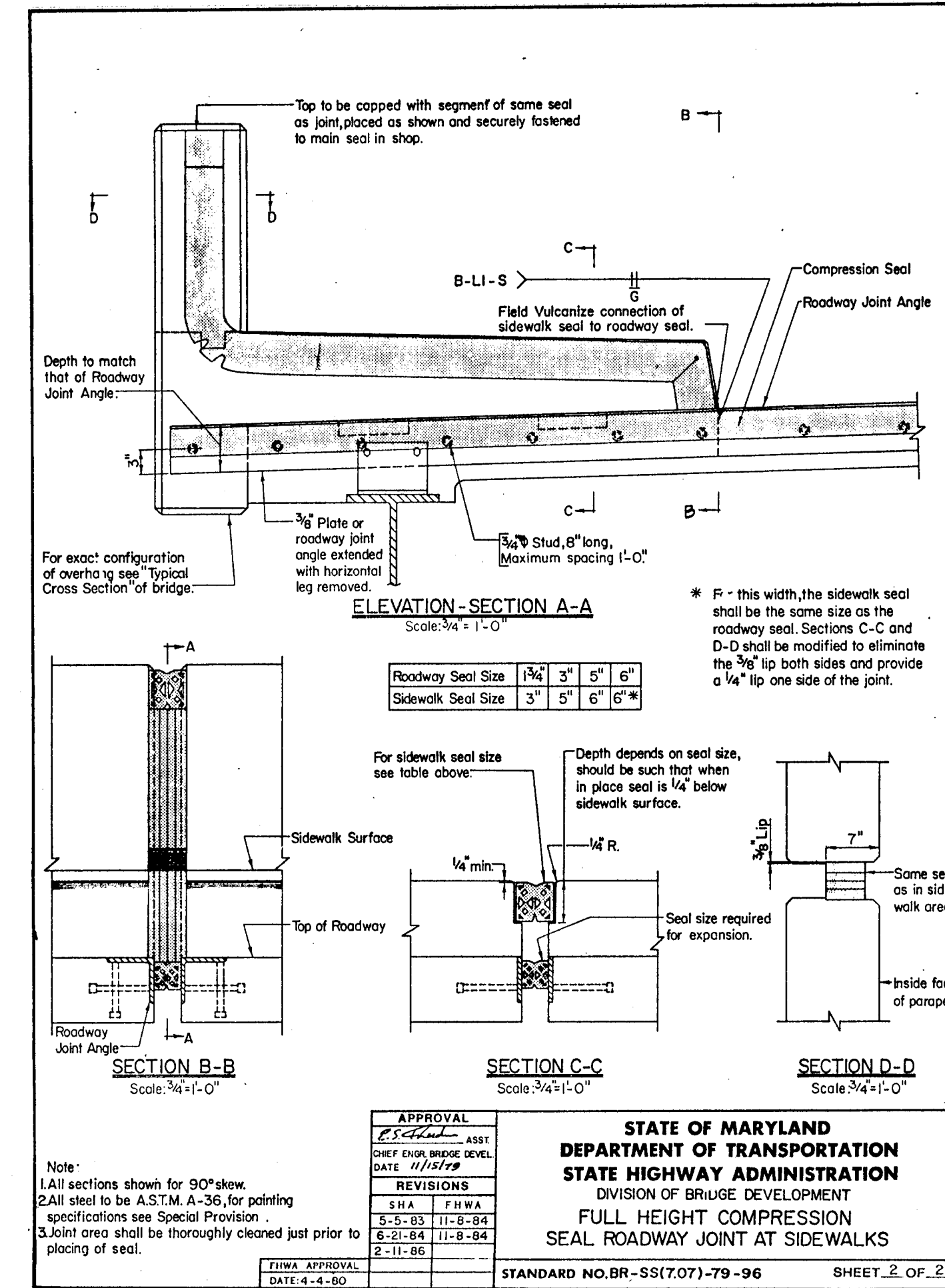
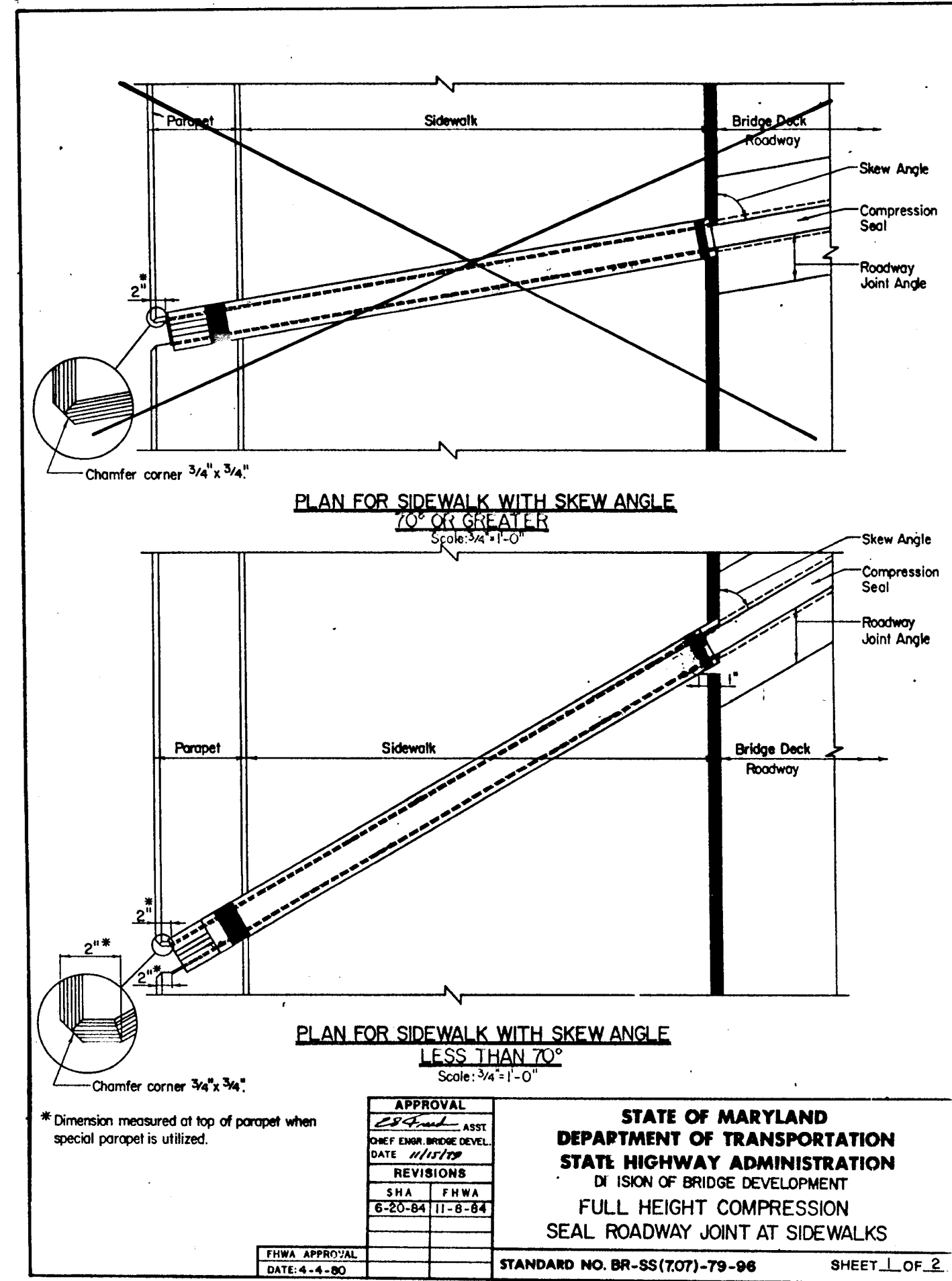
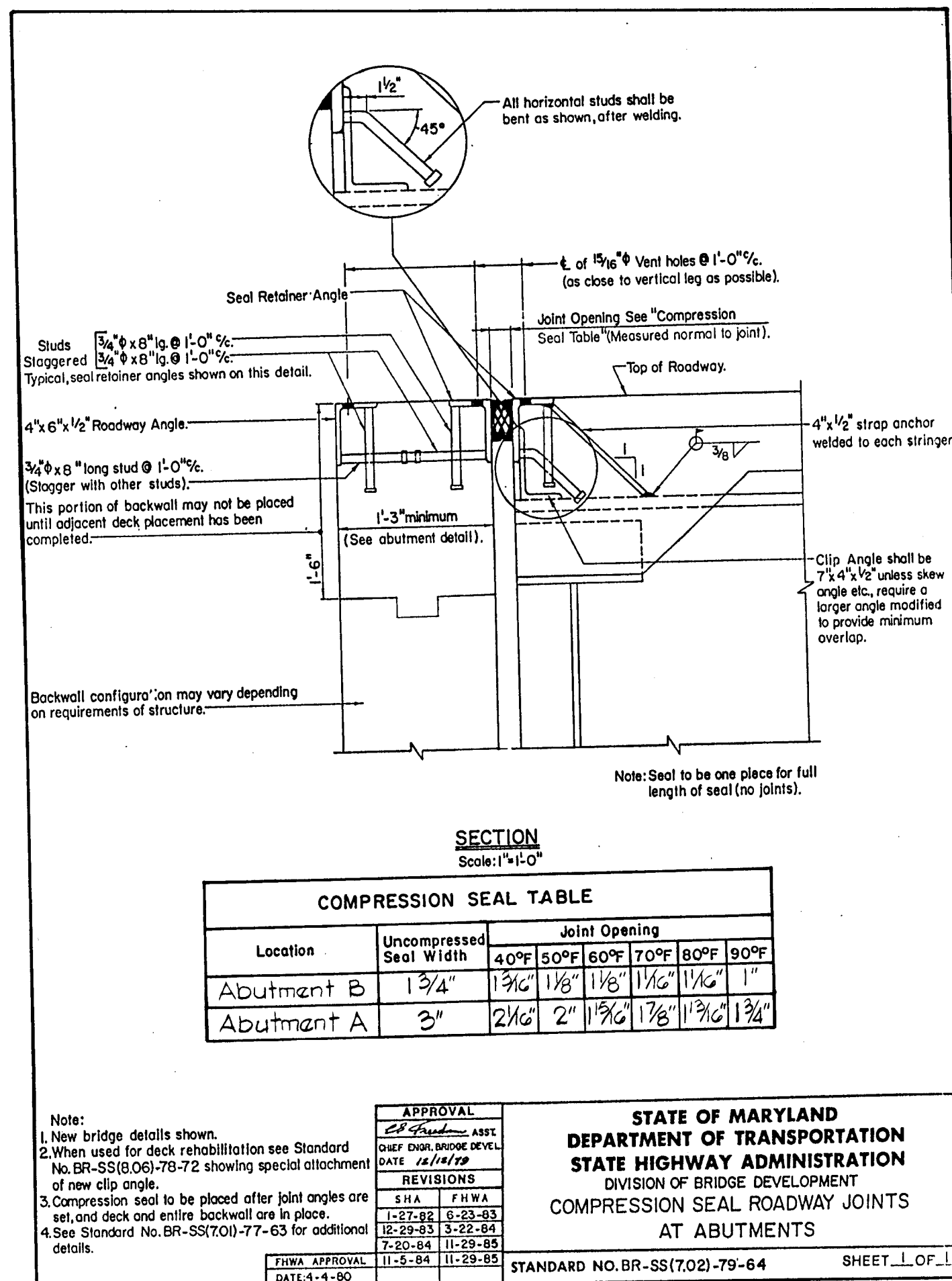
CHIEF, BUREAU OF ENGINEERING DATE

CHIEF, DIVISION OF ROADS, BRIDGES AND STORM DRAINAGE DATE

CHIEF, BUREAU OF HIGHWAYS DATE

BY NO. REVISION

DATE 600' SCALE MAP NO. 50 BLOCK NO. 4



BRUNING 69150

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS DATE

CHIEF, BUREAU OF ENGINEERING DATE

CHIEF, BUREAU OF HIGHWAYS DATE

RUMMEL, KLEPPER & KAHL  
CONSULTING ENGINEERS

1035 N. CALVERT STREET  
BALTIMORE, MARYLAND 21202

DES: T.H.Y.  
DRN: K.A.B.  
CHK: C.M.E.  
DATE: May 1988

BY NO. REVISION DATE

JOINT DETAILS

600' SCALE MAP NO. 50 BLOCK NO. 4

WHISKEY BOTTOM ROAD AND BRIDGE  
CAPITAL PROJECT J-4059 & B3816  
ELECTION DISTRICT NO.  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 28 OF 41

For 1/4" Anchor Bolts use 1 1/8" hole in masonry and sole plates with 1/8" hole in washer.  
For 1/2" Anchor Bolts use 1 3/8" hole in masonry and sole plates with 1/8" hole in washer.  
t. of Brg. \*\*

Note:  
1 Nut not shown.  
2 Pad and support not shown.

For spans under 100' use 1/4" Sledge Anchor Bolts with hex. nuts and 3" x 3/8" washers.  
For spans over 100' use 1/2" Sledge Anchor Bolts with hex. nuts and 3" x 3/8" washers.

Sole Plate  
Masonry Plate  
Stiffener Plates  
Burr threads above and below nut.  
1/4" Clear (Typ.)

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

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

\* Edges may be left as cut or cast.  
\*\* Where bridge is not skewed, t. Brg. and t. Shoe are coincident.

APPROVAL		STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION DIVISION OF BRIDGE DEVELOPMENT FIXED BEARING MEDIUM LENGTH SPANS	
DATE	BY	DATE	BY
11/16/80	SHA	11/16/80	FHWA
7-2-81	SHA	7-2-81	FHWA
3-13-85	SHA	3-13-85	FHWA
4-10-86	SHA	4-10-86	FHWA

STANDARD NO. BR-SS(9.02)-80-115 SHEET 1 OF 2

Note:  
Side view drawn for continuous stringer over a bearing. For a stringer terminating at this bearing see details elsewhere.

125 Finish (AASHTO Specifications) with a flatness of 0.005 in./in.

Top of masonry (bearing pad) level.

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

DATA SCHEDULE													
Type	Sole Plate	Masonry R.	Hole Loc.	HGT	Loads (Kips)							Dead	
	A B C	A B D E F	A B C D E F										
MF-I	20 9 1 1/4	20 9 1 1/4	20 9 1 1/4	8	3 1/2	150							75
MF-II	22 11 2 2 1/4	22 11 2 2 1/4	22 11 2 2 1/4	9	4	200							100
MF-III	24 12 2 2 1/4	24 12 2 1/4	24 12 2 1/4	10	4 1/2	250							125
MF-IV	26 13 2 2 1/2	26 13 2 1/2	26 13 2 1/2	11	5	300							150
MF-V	30 15 2 3/4	30 15 2 3/4	30 15 2 3/4	13	5 1/2	350							175
MF-VI	32 16 3 3/4	32 16 3 3/4	32 16 3 3/4	14	6	400							200

Note: All dimensions are in inches.

Note:  
1 Sole and masonry plates to be ASTM A-36 steel, painted to match finished bridge color.  
2 Fill slots and holes around anchor bolts with non-hardening caulking compound or plastic joint sealer.  
3 250 RMS (Finish all over).  
4 Rotation 1/4" ± Maximum.  
5 Design Bearing Load 10 K.S.I.  
6 Top of sole plate must be beveled to fit grade of bottom flange.  
7 Unless otherwise noted, bearings shall be placed normal to t. of stringer.  
8 Plates are to be shipped as units.  
9 If more than one size bearing is called for, Contractor may furnish all bearings of the larger size provided the bearing pads are altered to accommodate same. No increase in any prices bid will be allowed if this option is selected.  
10 All anchor bolts, nuts and washers shall be unpainted ASTM A-36 galvanized steel.  
11 Medium span range is considered 50' to 100' span lengths.

APPROVAL		STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION DIVISION OF BRIDGE DEVELOPMENT FIXED BEARING MEDIUM LENGTH SPANS	
DATE	BY	DATE	BY
11/16/80	SHA	11/16/80	FHWA
7-2-81	SHA	7-2-81	FHWA
3-13-85	SHA	3-13-85	FHWA
4-10-86	SHA	4-10-86	FHWA

STANDARD NO. BR-SS(9.02)-80-115 SHEET 2 OF 2

Edge of Concrete Diaphragm (For compression seal joints, this edge shall match face of exterior seal angle.)

Note:  
End of web not to protrude beyond edge of concrete diaphragm.

Longest leg of angle shall be increased as necessary so that angle exceeds stiffener width by at least 1/2" if angle size is not available to satisfy this requirement, stiffener shall be tapered at end to meet this requirement.

SECTION B-B  
Scale: 3"=1'-0"

DETAIL A  
Scale: 3"=1'-0"

APPROVAL		STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION DIVISION OF BRIDGE DEVELOPMENT STEEL SEAT ANGLES FOR SKEWED CONCRETE DIAPHRAGMS	
DATE	BY	DATE	BY
11/16/80	SHA	11/16/80	FHWA
7-2-81	SHA	7-2-81	FHWA
3-13-85	SHA	3-13-85	FHWA
4-10-86	SHA	4-10-86	FHWA

STANDARD NO. BR-SS(6.22)-80-120 SHEET 1 OF 1

This detail to be used when connection plate extends beyond edge of flange.

Note: See View 'A' Below.

ELEVATION  
Scale: None

VIEW 'A'  
Scale: 3/4"=1'-0"

Notes:  
1 Show bearing indicates note "For Office Use Only."  
2 Where the angle between the center line of roadway and center line of bearing is 70° or less place diaphragms at 90° to the stringers. Diaphragms shall be spaced as shown in detail this sheet and as noted below.  
3 Where aforementioned angle is greater than 70° the diaphragms shall be parallel to the center line of bearing of the stringers.  
4 Space intermediate diaphragms at 20' to 25' ±; i.e. for spans:  
Up to 25' bearings - No Intermediate Diaphragm.  
From 25' to 50' bearings - One Intermediate Diaphragm.  
From 50' to 75' bearings - Two Intermediate Diaphragms, etc.  
(See Framing Plan.)  
5 All diaphragms are to be completely connected to stringers before deck slab is poured.

APPROVAL		STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION DIVISION OF BRIDGE DEVELOPMENT INTERMEDIATE DIAPHRAGM DETAILS WELDED CONNECTION	
DATE	BY	DATE	BY
11/16/80	SHA	11/16/80	FHWA
7-2-81	SHA	7-2-81	FHWA
3-13-85	SHA	3-13-85	FHWA
4-10-86	SHA	4-10-86	FHWA

STANDARD NO. BR-SS(8.03)-75-11 SHEET 1 OF 2

For 1/4" anchor bolts use 1 1/8" hole in masonry and sole plates with 1/8" hole in washer.  
For 1/2" anchor bolts use 1 3/8" hole in masonry and sole plates with 1/8" hole in washer.  
t. of Brg. \*\*

Note:  
1 Nut not shown.  
2 Pad and support not shown.  
3 Sliding plate not shown.

For spans under 100' use 1/4" Sledge Anchor Bolts with hex. nuts and 3" x 3/8" washers.  
For spans over 100' use 1/2" Sledge Anchor Bolts with hex. nuts and 3" x 3/8" washers.

Sole Plate  
Sliding Plate (Bronze)  
Stiffener Plates  
Burr threads above and below nut. (Typical)  
1/4" Clear (Typ.)  
Masonry Plate

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

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

\* Edges may be left as cut or cast.  
\*\* Where bridge is not skewed, t. Brg. and t. Shoe are coincident.

APPROVAL		STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION DIVISION OF BRIDGE DEVELOPMENT BRONZE EXPANSION BEARING MEDIUM LENGTH SPANS	
DATE	BY	DATE	BY
11/16/80	SHA	11/16/80	FHWA
7-2-81	SHA	7-2-81	FHWA
3-13-85	SHA	3-13-85	FHWA
4-10-86	SHA	4-10-86	FHWA

STANDARD NO. BR-SS(9.01)-80-114 SHEET 1 OF 2

Note:  
Finish (AASHTO Specifications) 125 with a flatness of 0.005 in./in.

Lubricated Surfaces

Top of masonry (bearing pad) level.

For surface preparation see SHA Specifications.

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

DATA SCHEDULE															
Type	Sole Plate	Sliding Plate	Radius	Masonry R.	Hole Loc.	HGT	Loads (Kips)	Total Expansion							
	A B C D E F G H I J K L M N P	A B C D E F G H I J K L M N P		A B C D E F G H I J K L M N P	A B C D E F G H I J K L M N P			3/8"							
ME-I	21 9 1/2	20 7 1/2	1 1/4	11	21 11 1 1/2	8 1/2	150	15	75						
ME-II	23 10 1/2	22 8 1/2	1 1/4	12	23 12 1 1/2	9 1/2	200	20	100						
ME-III	25 11 1/2	24 9 1/2	1 1/4	13	25 13 1 1/2	10 1/2	250	25	125						
ME-IV	26 12 1/2	25 10 1/2	1 1/4	14	26 14 1 1/2	11 1/2	300	30	150						
ME-V	29 13 1/2	28 11 1/2	1 1/4	15	29 17 1 1/2	12 1/2	350	35	175						
ME-VI	30 14 1/2	29 12 1/2	1 1/4	16	30 20 1 1/2	13 1/2	400	40	200						

Note: All dimensions are in inches.

Note:  
1 Sole and masonry plates to be ASTM A-36 steel, painted to match finished bridge color, convex plate shall be a self-lubricating bronze bearing plate conforming to Subsection 914.03 of the Specifications and the Special Provisions.  
2 Fill slots and holes around anchor bolts with non-hardening caulking compound or elastic joint sealer.  
3 250 RMS (Finish all over).  
4 Rotation 1/4" ± Maximum.  
5 Design Masonry Bearing Load 10 K.S.I.  
6 Top of sole plate must be beveled to fit grade of bottom flange.  
7 Unless otherwise noted, bearings shall be placed normal to t. of stringer.  
8 Plates are to be shipped as units.  
9 If more than one size bearing is called for, Contractor may furnish all bearings of the larger size provided the bearing pads are altered to accommodate same. No increase in any prices bid will be allowed if this option is selected.  
10 All anchor bolts, nuts and washers shall be unpainted ASTM A-36 galvanized steel.  
11 Medium span range is considered 50' to 100' simple span lengths and comparable span configurations.

APPROVAL		STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION DIVISION OF BRIDGE DEVELOPMENT BRONZE EXPANSION BEARING MEDIUM LENGTH SPANS	
DATE	BY	DATE	BY
11/16/80	SHA	11/16/80	FHWA
7-2-81	SHA	7-2-81	FHWA
3-13-85	SHA	3-13-85	FHWA
4-10-86	SHA	4-10-86	FHWA

STANDARD NO. BR-SS(9.01)-80-114 SHEET 2 OF 2

Weld only where indicated on superstructure drawings or other standard plates.

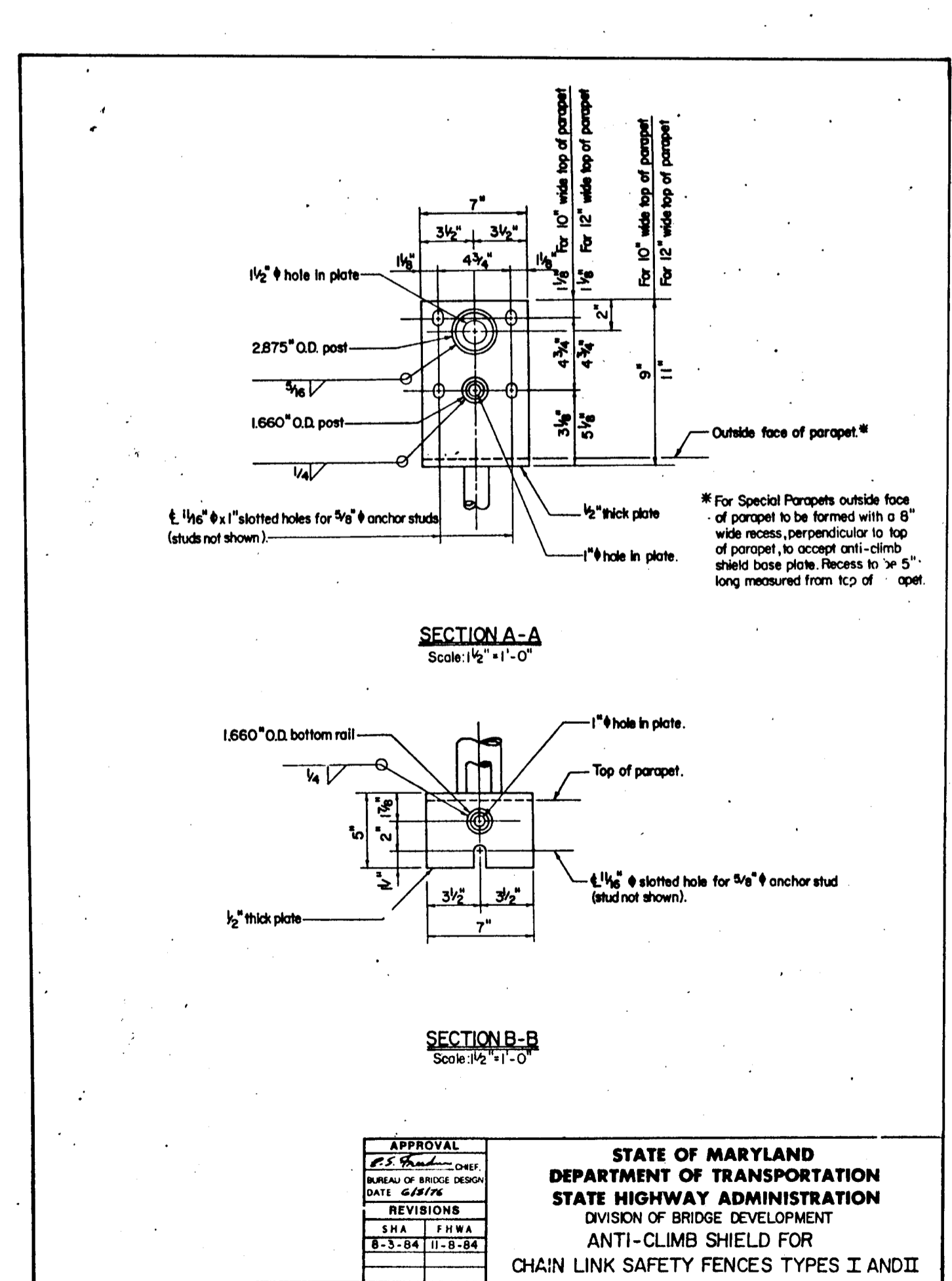
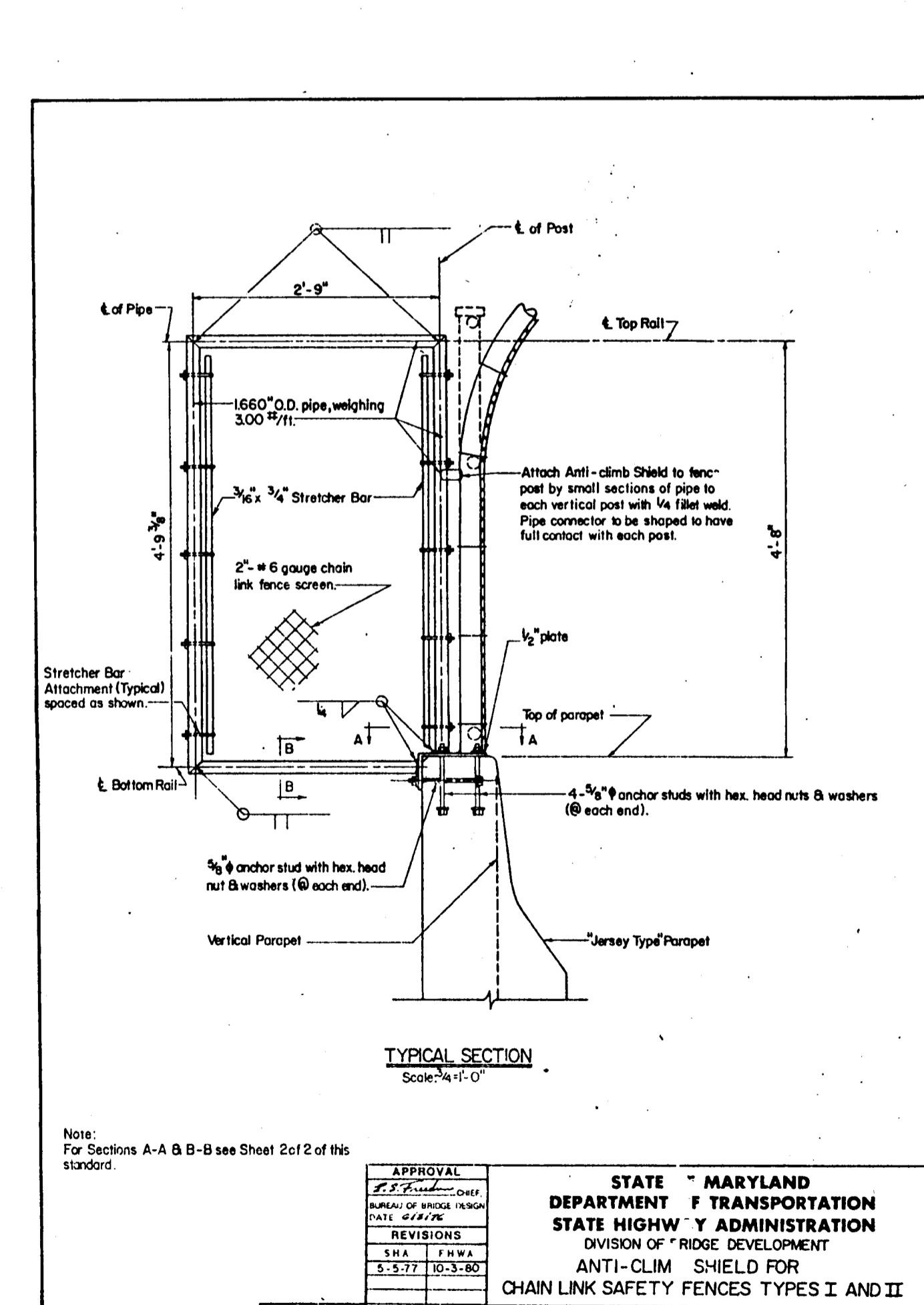
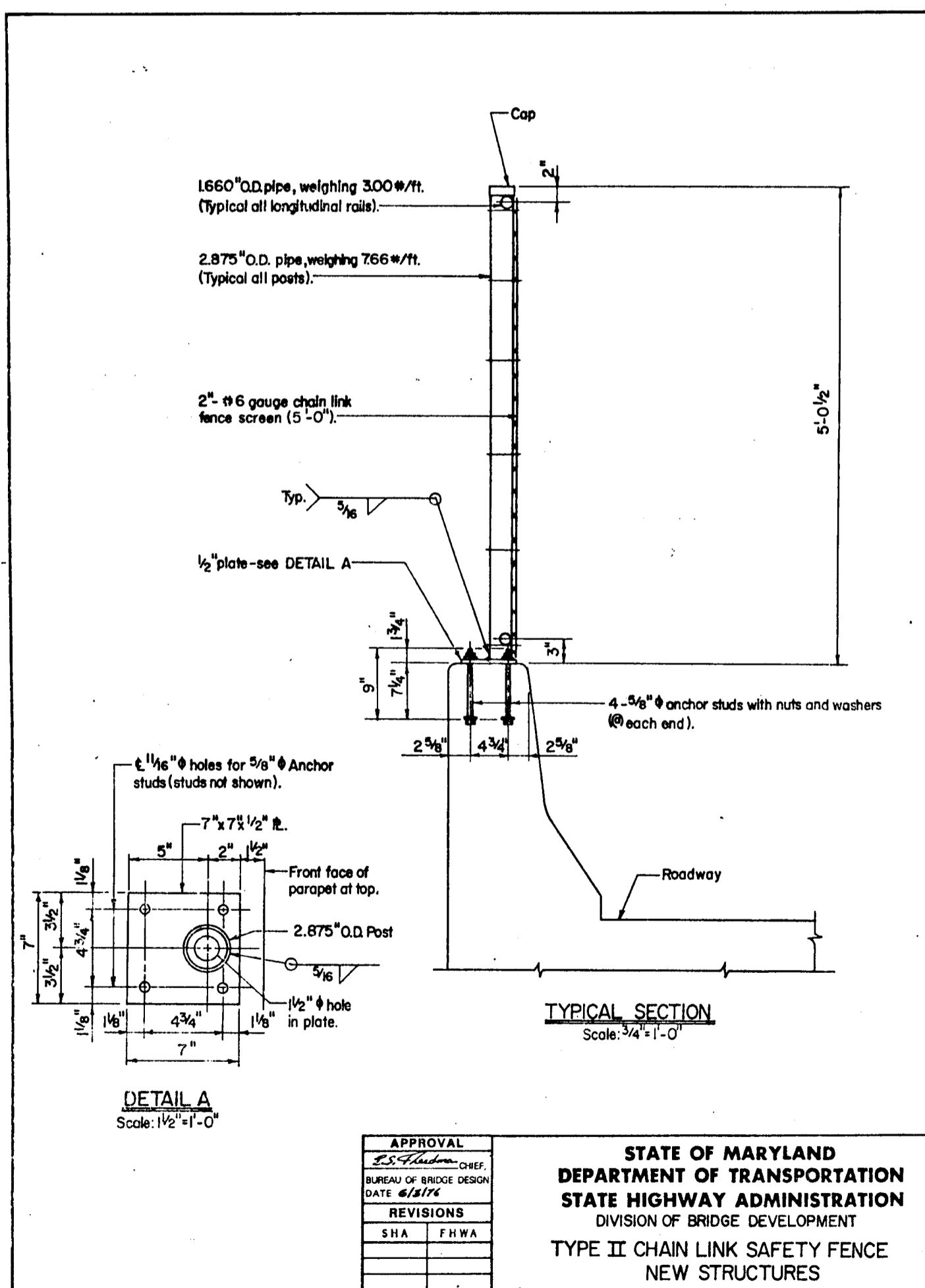
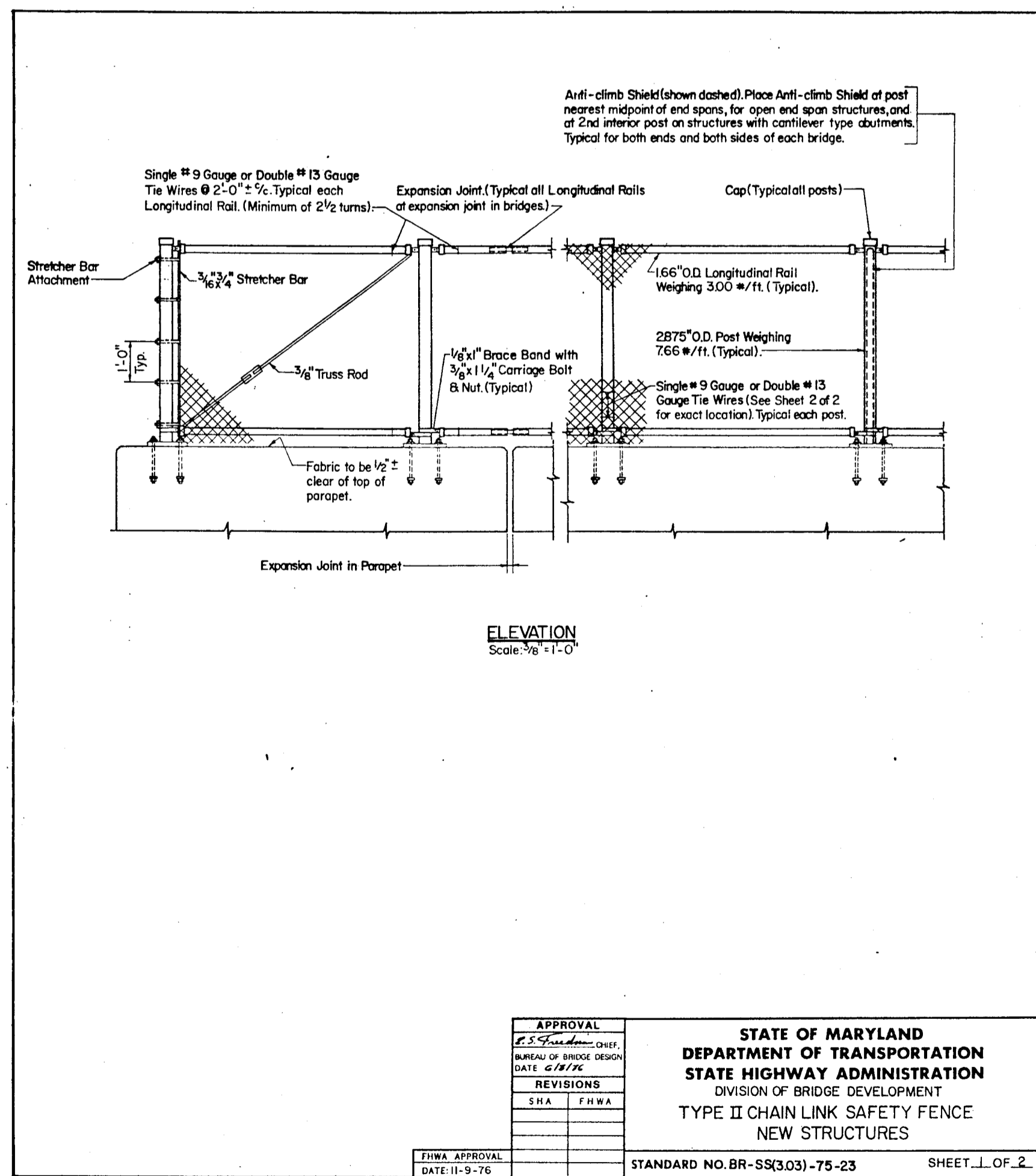
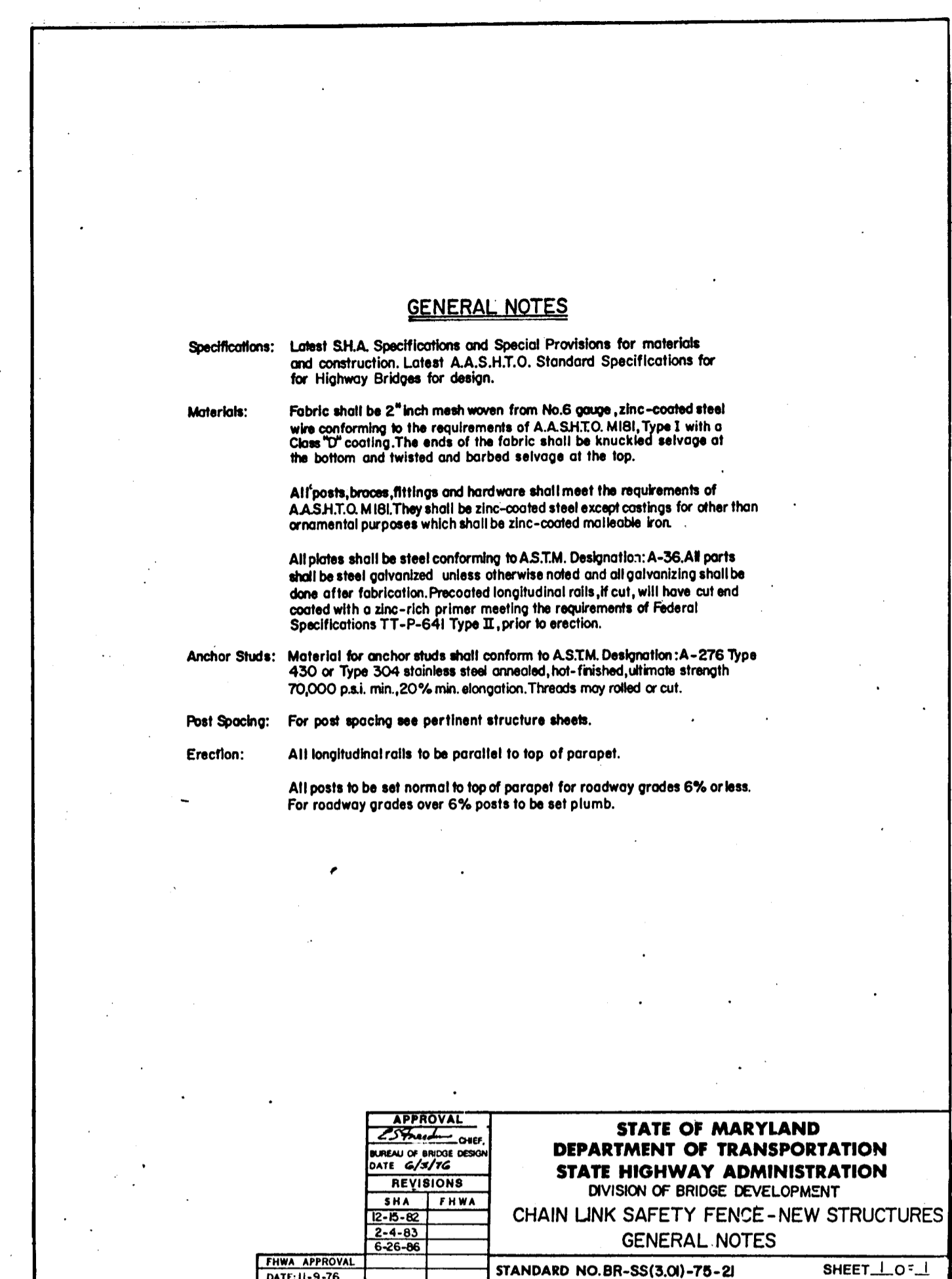
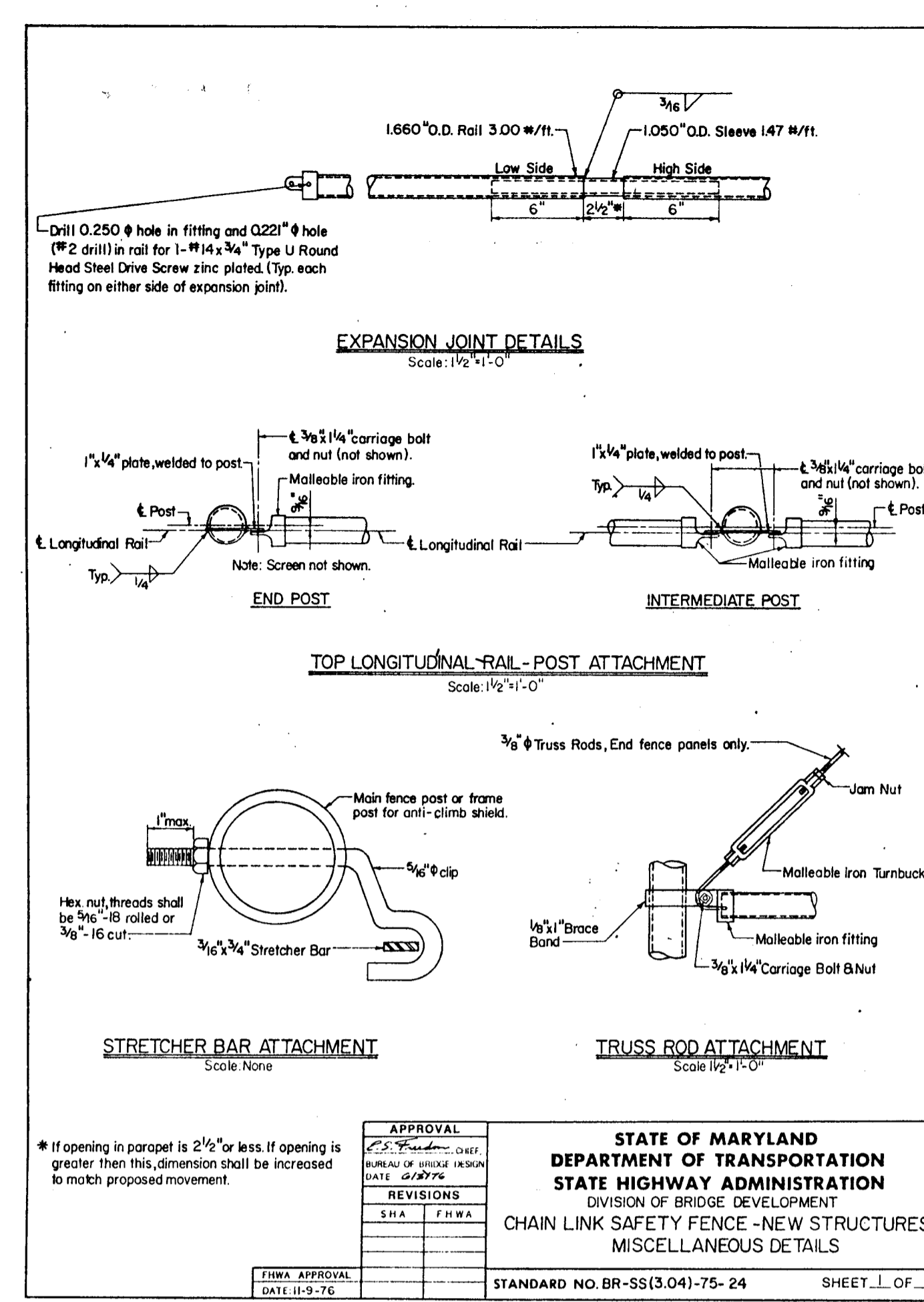
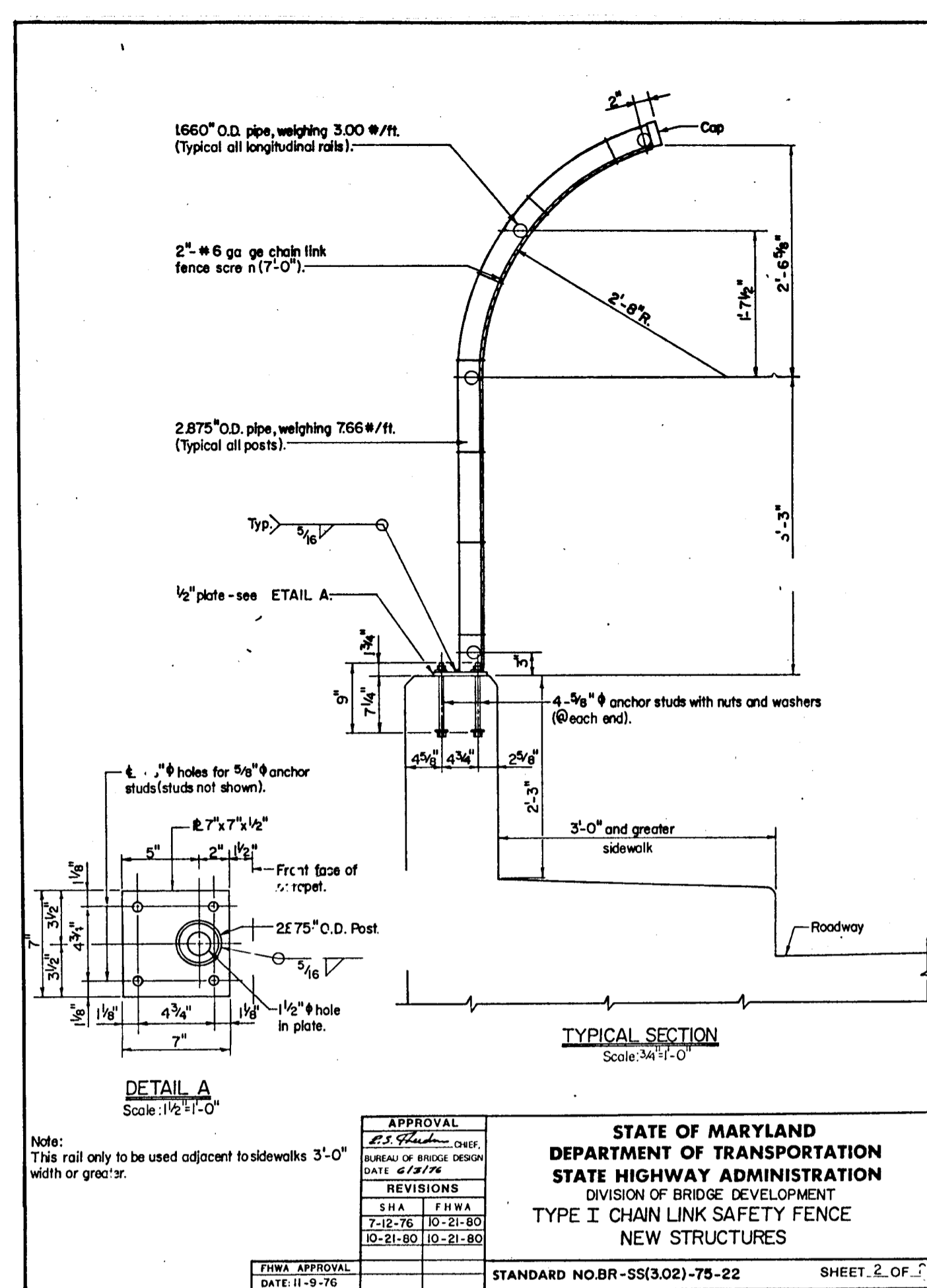
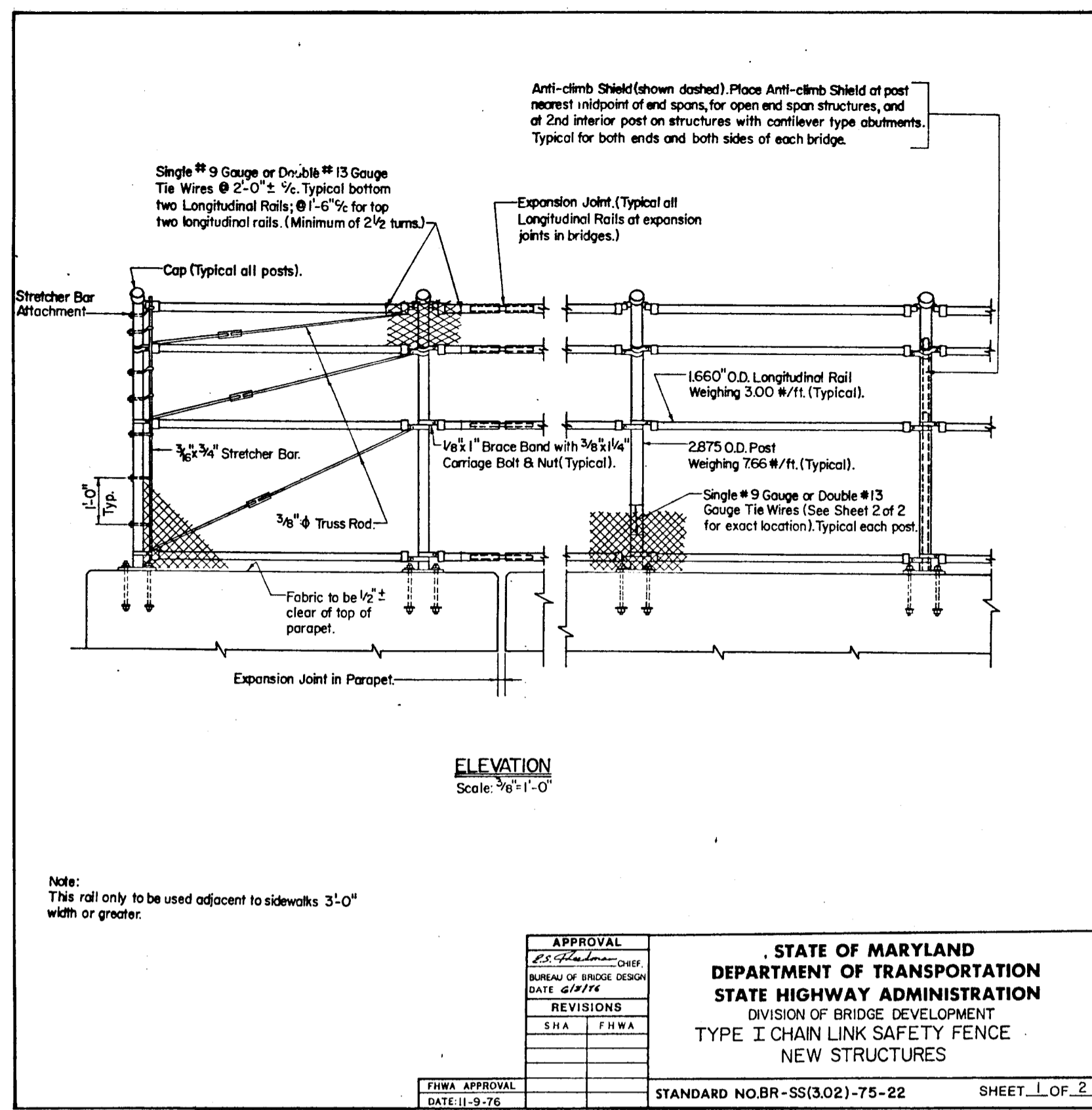
Note: Girder section shown.

SECTION  
Scale: 3/4"=1'-0"

Notes:  
1 For all stiffeners (intermediate or bearing) top and bottom, including connection plates for channel diaphragms for all girders and rolled beams.  
2 Welding to flange as per this detail will only be required where plans or other standard sheets indicate stiffener is extended and welded to flange.

APPROVAL		STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION DIVISION OF BRIDGE DEVELOPMENT STIFFENER AND STRINGER CONNECTION PLATE WELD TERMINATION DETAIL	
DATE	BY	DATE	BY
11/16/80	SHA	11/16/80	FHWA
7-2-81	SHA	7-2-81	FHWA
3-13-85	SHA	3-13-85	FHWA
4-10-86	SHA	4-10-86	FHWA

STANDARD NO. BR-SS(8.10)83-154 SHEET 1 OF 1



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

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

**SIDE VIEW**  
Scale: 1/2" = 1'-0"

Size of Pile	Size of 45° Bevel	Size of Groove Weld
12x53	1/4"	3/8"
12x74	3/8"	3/8"

**APPROVAL**  
STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION  
DIVISION OF BRIDGE DEVELOPMENT  
PILE POINT FOR 12" H PILE  
STANDARD NO. BR-FD(005)-79-85 SHEET J OF J

**SECTION C-C**  
ALTERNATE FLANGE WELD  
Scale: 6" = 1'-0"

**SECTION A-A**  
Scale: None

**SECTION B-B**  
Scale: 6" = 1'-0"

**APPROVAL**  
STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION  
DIVISION OF BRIDGE DEVELOPMENT  
STEEL H PILE SPLICE DETAILS  
STANDARD NO. BR-FD(001)-75-16 SHEET J OF J

**PLAN**  
Scale: 1" = 1'-0"

**ELEVATION**  
Scale: 1" = 1'-0"

**APPROVAL**  
STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION  
DIVISION OF BRIDGE DEVELOPMENT  
BEARING PAD WHERE ONLY A SINGLE SHOE IS REQUIRED ON A SUPPORT  
STANDARD NO. BR-SB(602)-80-121 SHEET J OF J

Bar Size	* LOCATION CATEGORY		
	A	B	C
#4	2'-5"	1'-9"	1'-5"
#5	3'-0"	2'-2"	1'-9"
#6	3'-7"	2'-7"	2'-1"
#7	4'-10"	3'-6"	2'-9"
#8	6'-5"	4'-7"	3'-8"
#9	8'-1"	5'-9"	4'-8"
#10	10'-3"	7'-4"	5'-10"
#11	12'-7"	9'-0"	7'-2"

**APPROVAL**  
STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION  
DIVISION OF BRIDGE DEVELOPMENT  
BAR LAP DIMENSIONS FOR GRADE 60 REINFORCING STEEL IN MIX NO. 3 (3500 P.S.I.) CONCRETE  
STANDARD NO. M(607)-81-127 SHEET J OF J

Bar Size	* LOCATION CATEGORY		
	A	B	C
#4	2'-5"	1'-9"	1'-5"
#5	3'-0"	2'-2"	1'-9"
#6	3'-7"	2'-7"	2'-1"
#7	4'-4"	3'-1"	2'-6"
#8	6'-8"	4'-0"	3'-3"
#9	7'-2"	5'-1"	4'-1"
#10	9'-0"	6'-6"	5'-2"
#11	11'-1"	7'-11"	6'-4"

**APPROVAL**  
STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION  
DIVISION OF BRIDGE DEVELOPMENT  
BAR LAP DIMENSIONS FOR GRADE 60 REINFORCING STEEL IN MIX NO. 3 (3500 P.S.I.) CONCRETE  
STANDARD NO. M(605)-80-122 SHEET J OF J

**STANDARD STRAIGHT BAR**

**STANDARD 90° HOOK**

**STANDARD 180° HOOK**

Bar Size	* LOCATION CATEGORY					
	A	B	C	D	E	F
#4	1'-5"	1'-0"	1'-0"	8"	11"	7"
#5	1'-9"	1'-3"	1'-0"	9"	11"	8"
#6	2'-2"	1'-6"	1'-3"	11"	1'-4"	9"
#7	2'-11"	2'-1"	1'-8"	1'-1"	1'-6"	11"
#8	3'-11"	2'-9"	2'-3"	1'-3"	1'-9"	1'-0"
#9	4'-10"	3'-5"	2'-9"	1'-5"	1'-11"	1'-2"
#10	6'-1"	4'-4"	3'-6"	1'-7"	2'-2"	1'-4"
#11	7'-6"	5'-4"	4'-4"	1'-9"	2'-5"	1'-5"

**APPROVAL**  
STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION  
DIVISION OF BRIDGE DEVELOPMENT  
DEVELOPMENT LENGTH DIMENSIONS FOR GRADE 60 REINFORCING STEEL IN MIX NO. 3 (3500 P.S.I.) CONCRETE  
STANDARD NO. M(608)-86-178 SHEET J OF J

**STANDARD STRAIGHT BAR**

**STANDARD 90° HOOK**

**STANDARD 180° HOOK**

Bar Size	* LOCATION CATEGORY					
	A	B	C	D	E	F
#4	1'-5"	1'-0"	1'-0"	7"	9"	6"
#5	1'-9"	1'-3"	1'-0"	8"	1'-0"	7"
#6	2'-2"	1'-6"	1'-3"	10"	1'-2"	8"
#7	2'-7"	1'-10"	1'-6"	11"	1'-4"	9"
#8	3'-5"	2'-5"	2'-0"	1'-11"	1'-6"	11"
#9	4'-3"	3'-0"	2'-5"	1'-3"	1'-9"	1'-0"
#10	5'-3"	3'-9"	3'-0"	1'-4"	1'-11"	1'-1"
#11	6'-7"	4'-8"	3'-9"	1'-6"	2'-2"	1'-3"

**APPROVAL**  
STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION  
DIVISION OF BRIDGE DEVELOPMENT  
DEVELOPMENT LENGTH DIMENSIONS FOR GRADE 60 REINFORCING STEEL IN MIX NO. 3 (3500 P.S.I.) CONCRETE  
STANDARD NO. M(610)-86-180 SHEET J OF J

BRUNING 69150

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS DATE \_\_\_\_\_

CHIEF, BUREAU OF ENGINEERING DATE \_\_\_\_\_

CHIEF, DIVISION OF ROADS, BRIDGES AND STORM DRAINAGE DATE \_\_\_\_\_

CHIEF, BUREAU OF HIGHWAYS DATE \_\_\_\_\_

RUMMEL, KLEPPER & KAHL

CONSULTING ENGINEERS

1035 N. CALVERT STREET  
BALTIMORE, MARYLAND 21202

DES: T.H.Y.

DRN: K.A.B.

CHK: C.M.E.

DATE: 10/11/88

BY NO. \_\_\_\_\_

MISCELLANEOUS DETAILS

REVISION \_\_\_\_\_

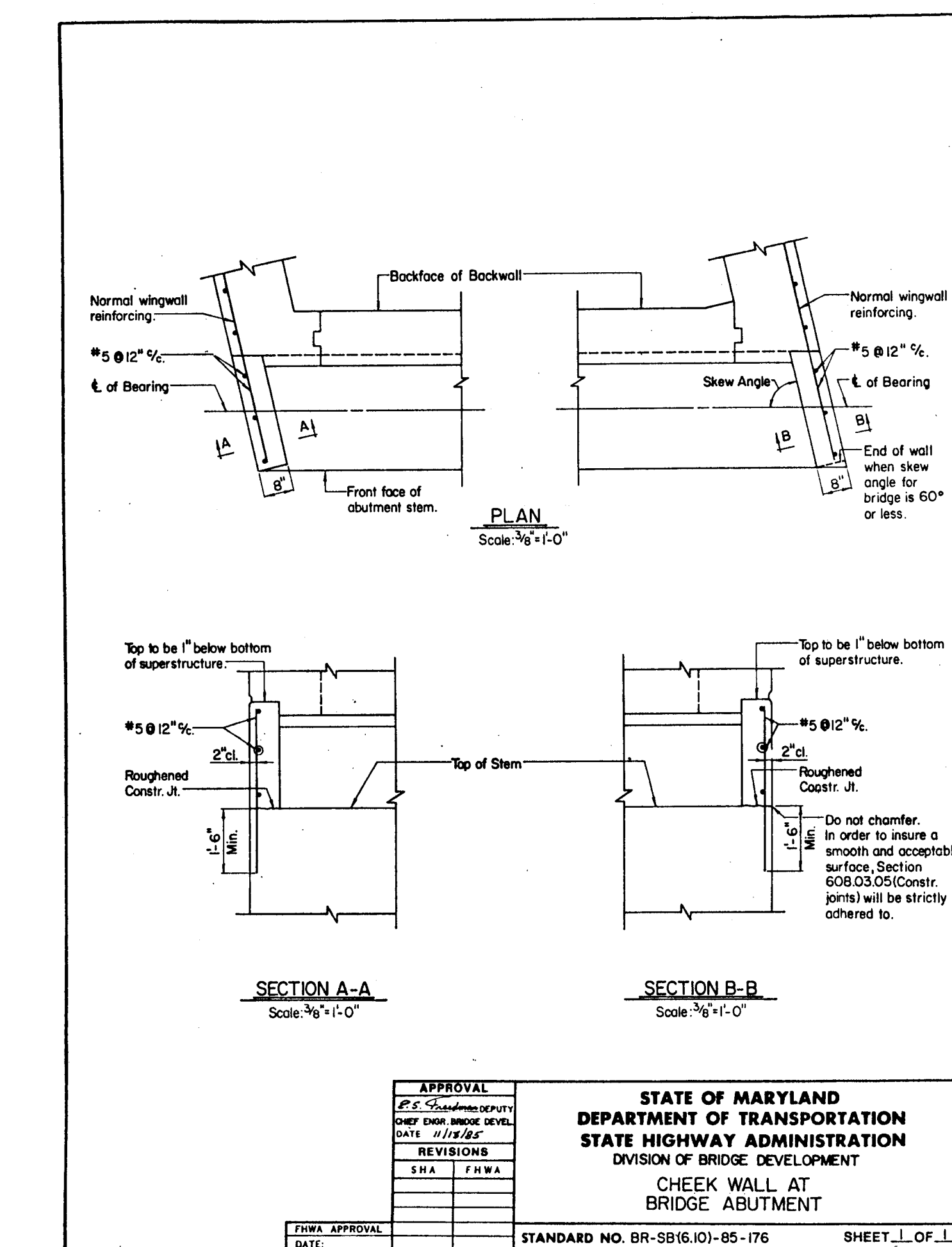
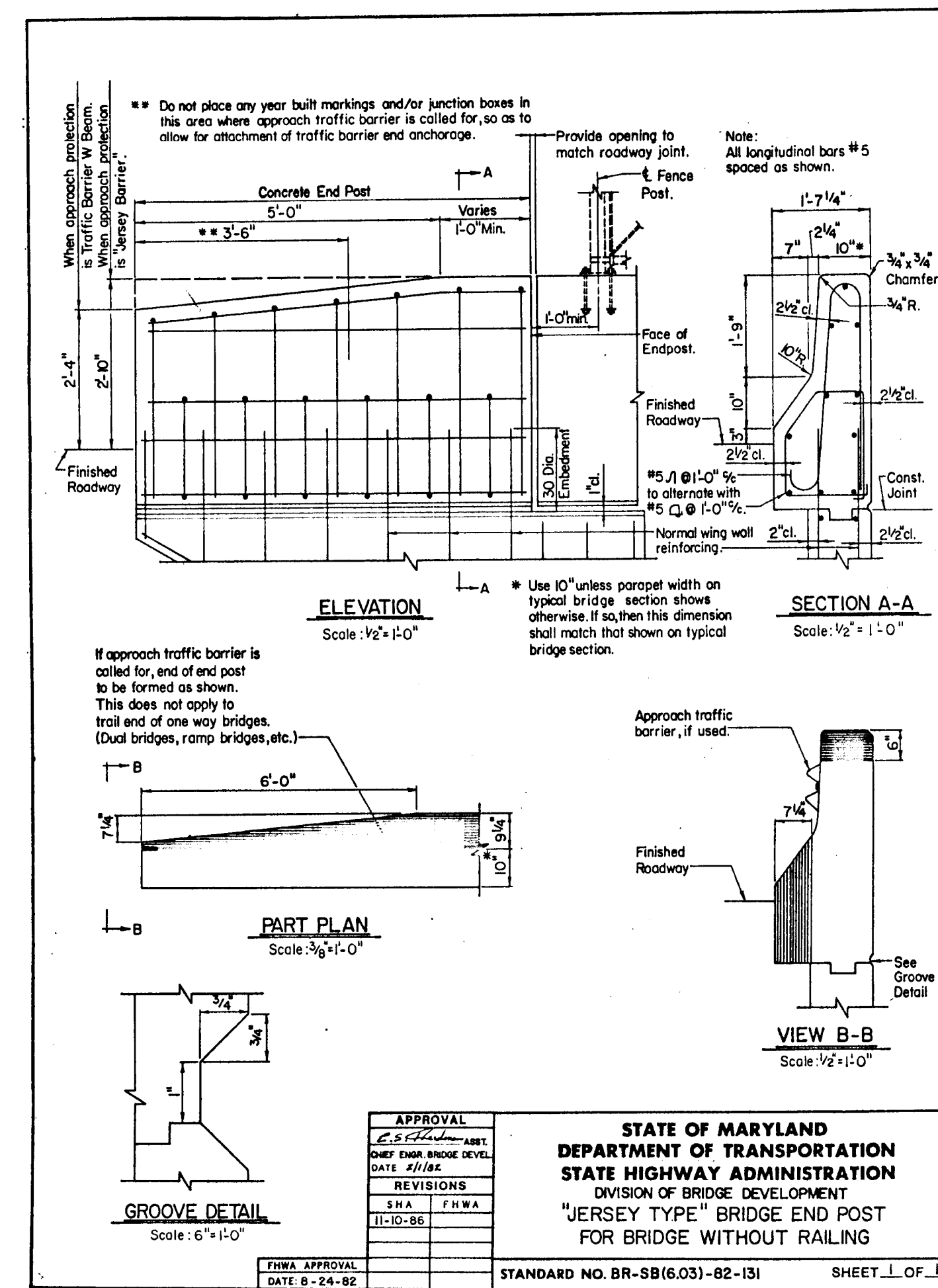
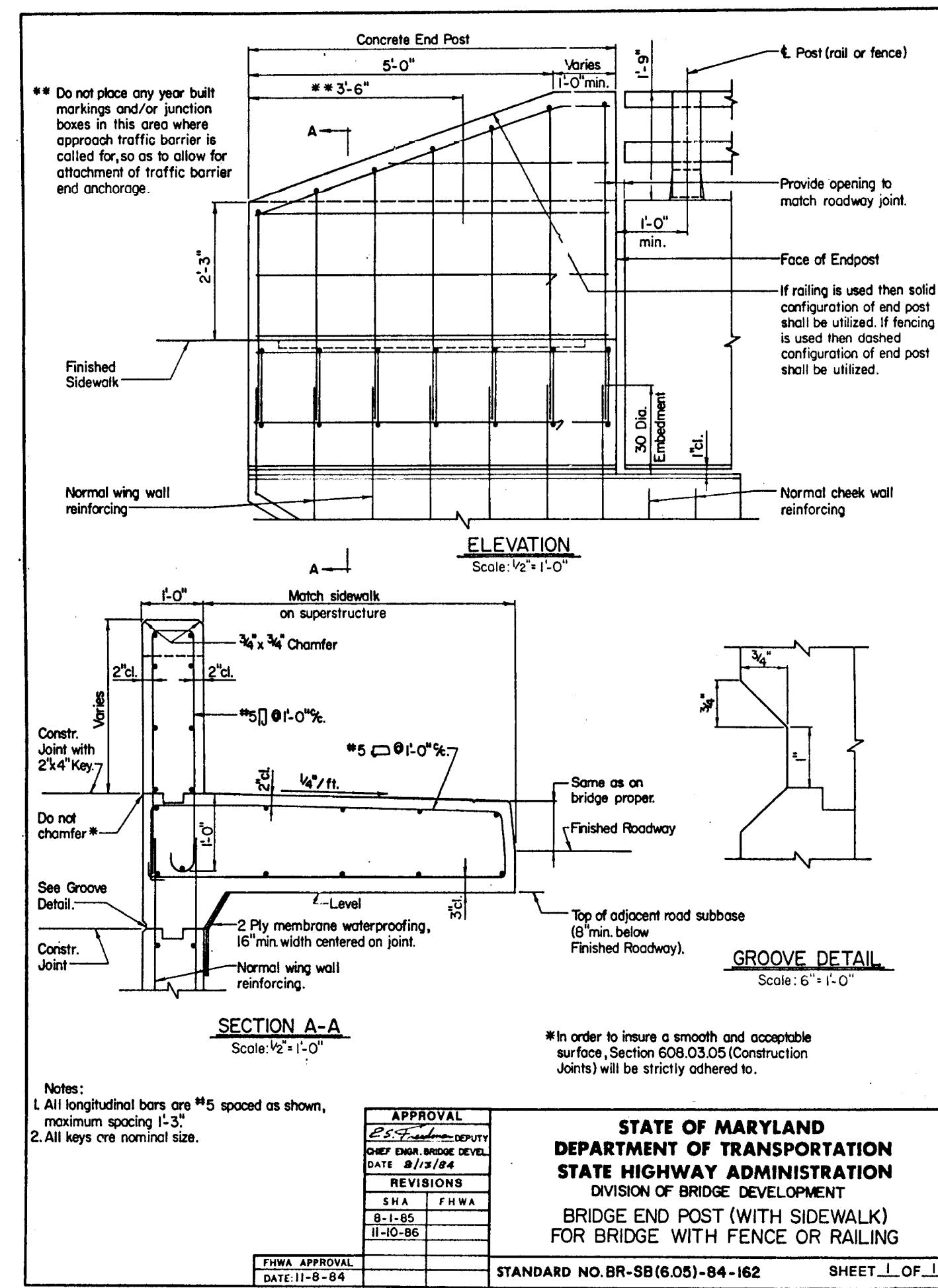
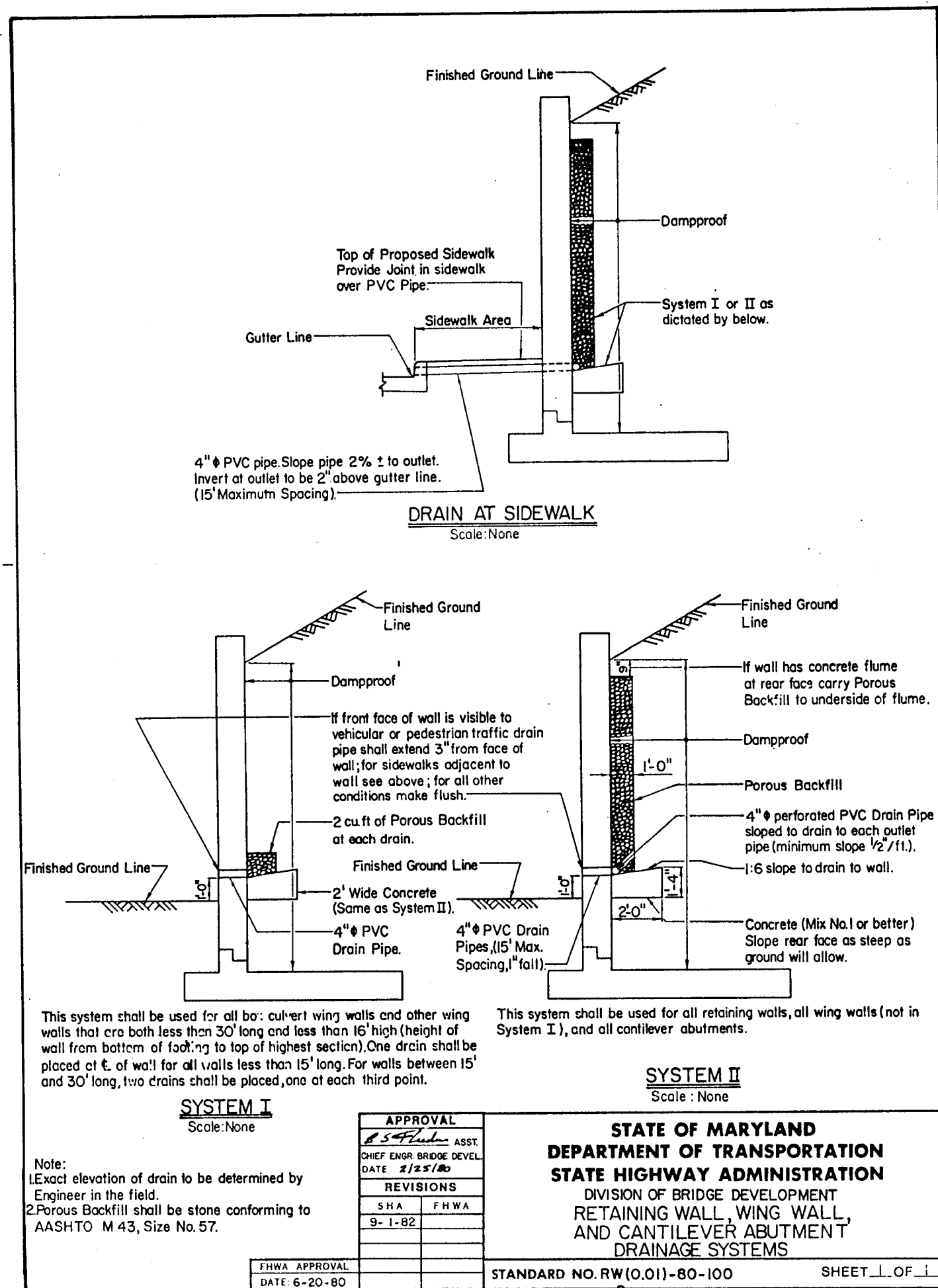
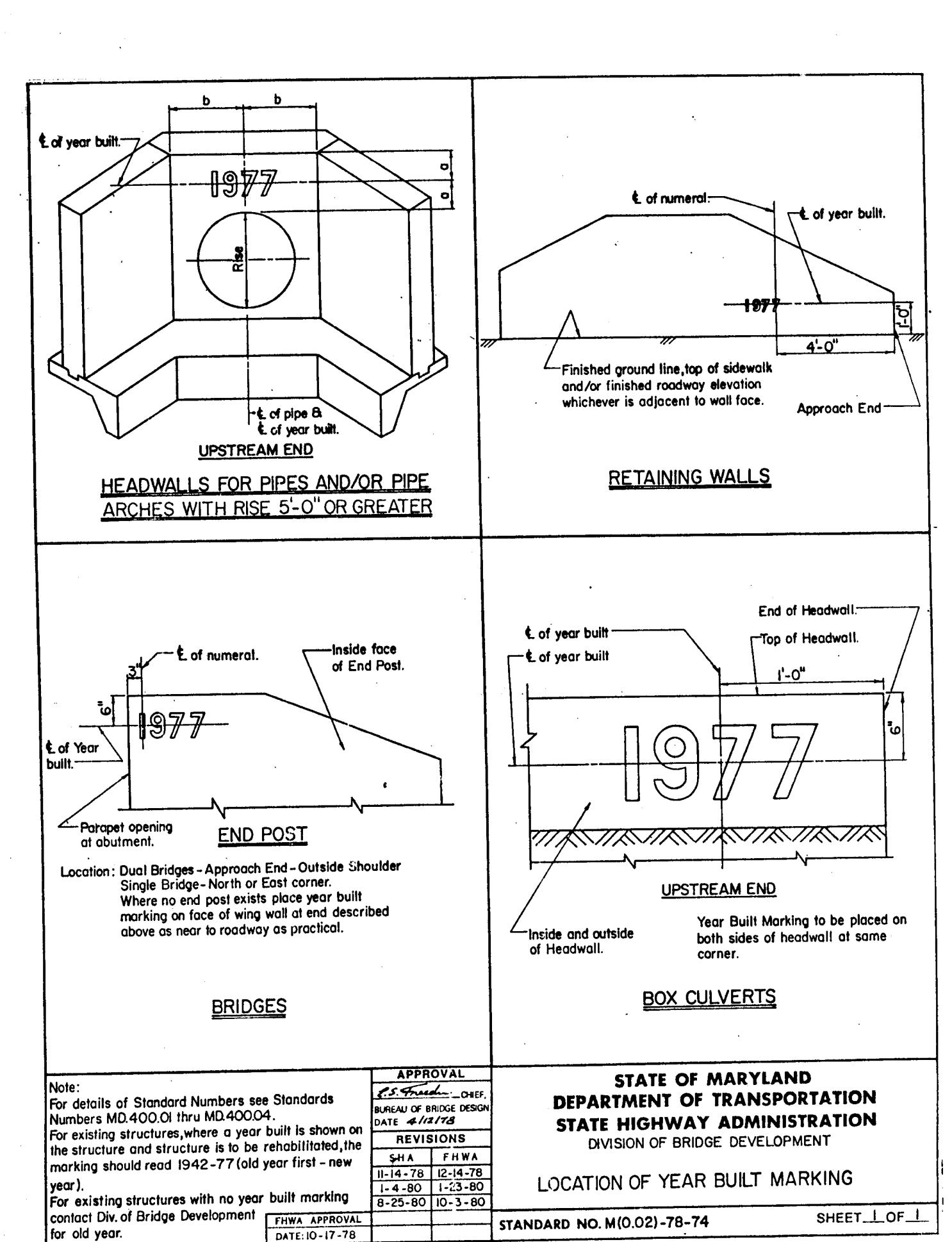
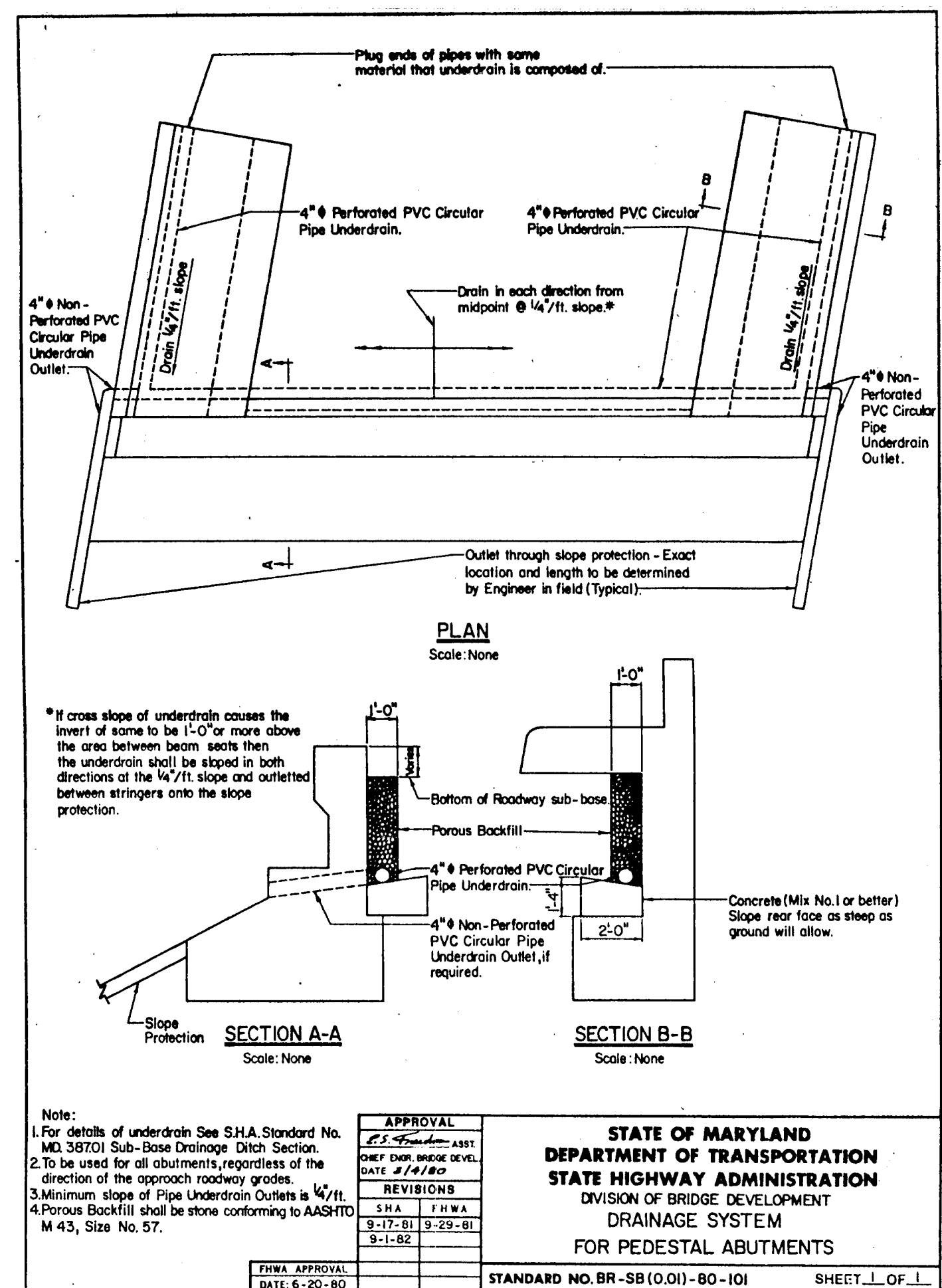
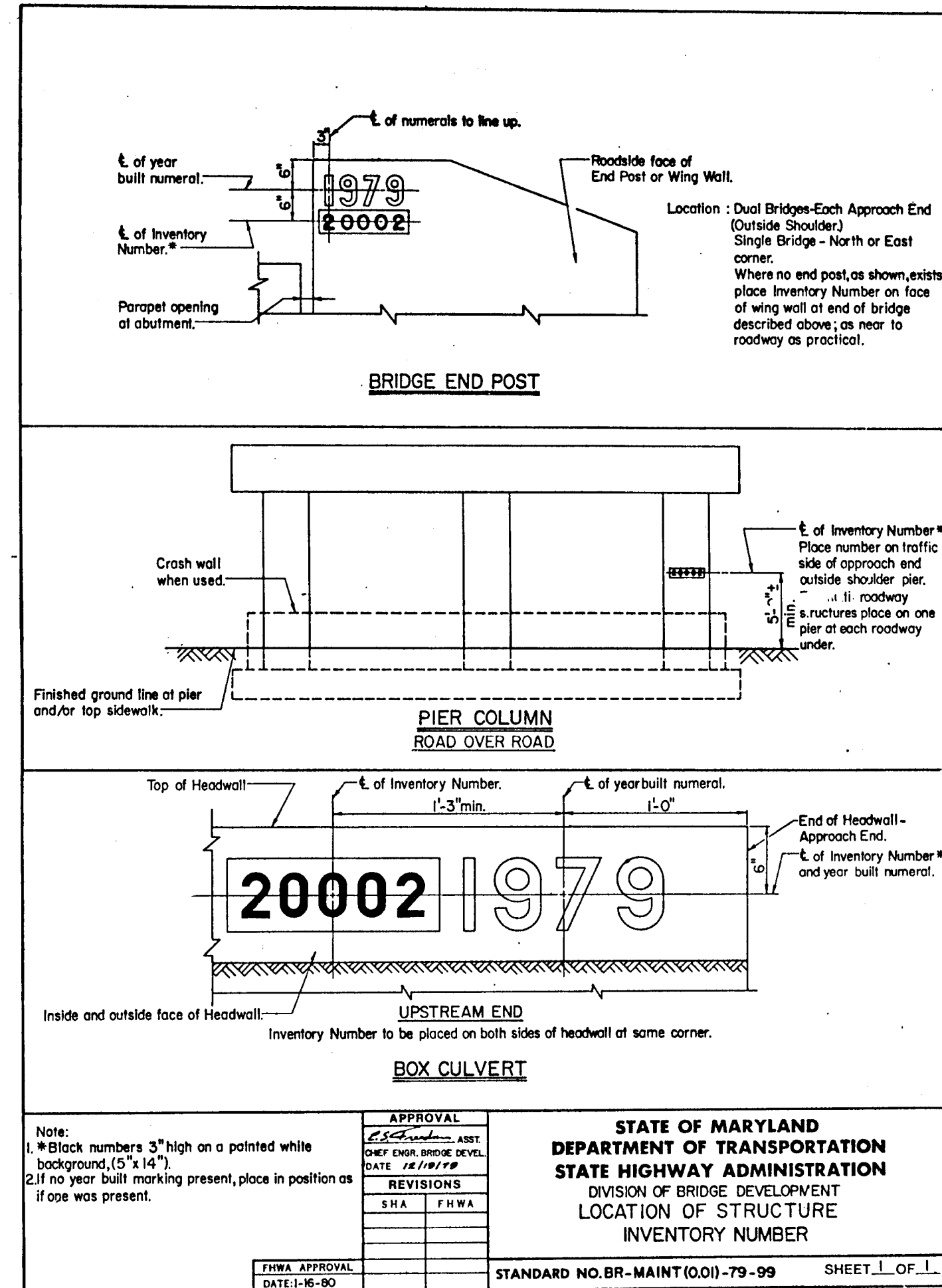
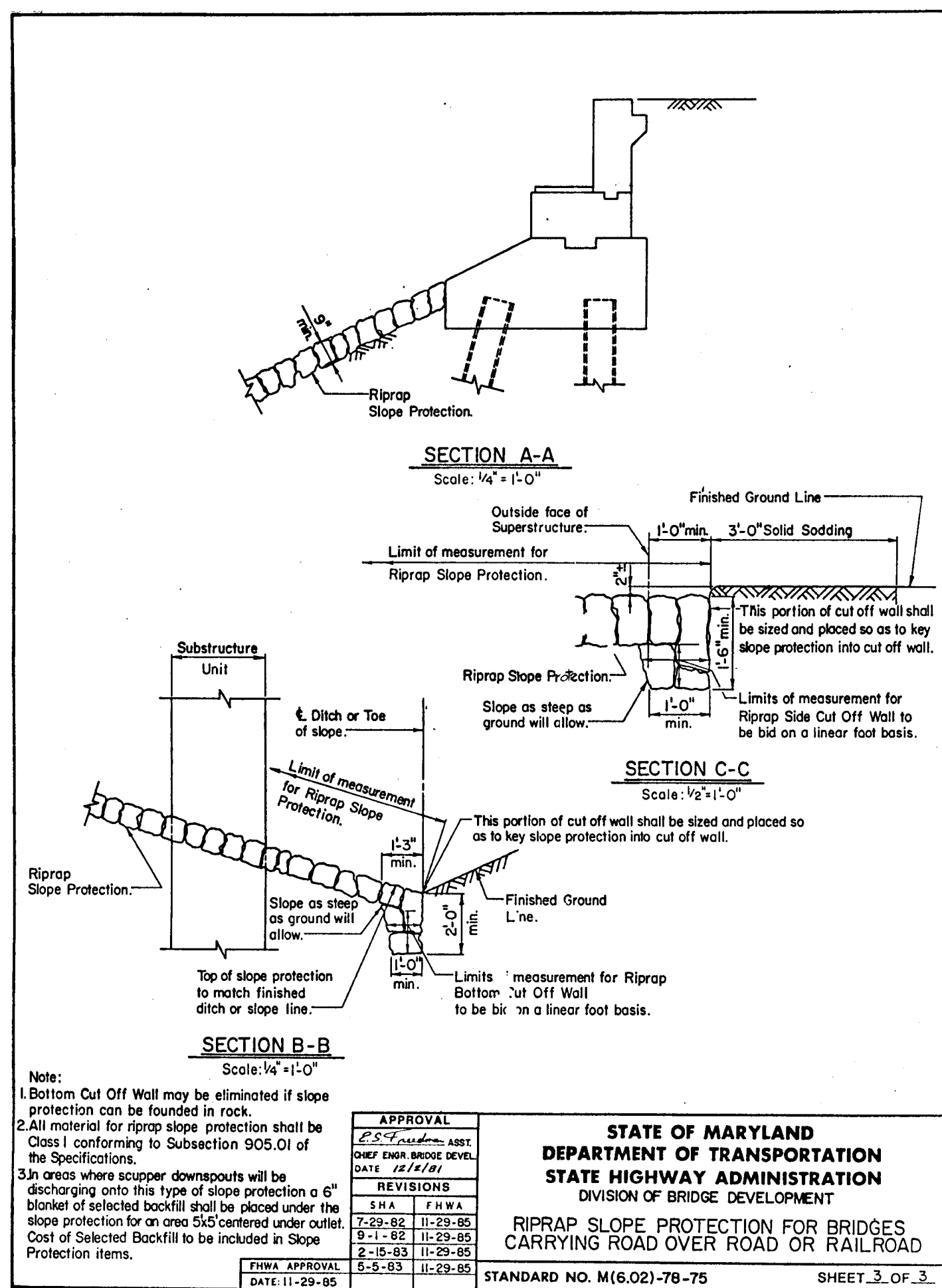
DATE \_\_\_\_\_

600' SCALE MAP NO. 50 BLOCK NO. 4

WHISKEY BOTTOM ROAD AND BRIDGE  
CAPITAL PROJECT J-4059 & B3816  
ELECTION DISTRICT NO.  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 31 OF 41



BRUNING 69150

**DEPARTMENT OF PUBLIC WORKS**  
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS DATE \_\_\_\_\_

CHIEF, BUREAU OF ENGINEERING DATE \_\_\_\_\_

CHIEF, DIVISION OF ROADS, BRIDGES DATE \_\_\_\_\_

CHIEF, BUREAU OF HIGHWAYS DATE \_\_\_\_\_

**RUMMEL, KLEPPER & KAHL**  
CONSULTING ENGINEERS

1035 N. CALVERT STREET  
BALTIMORE, MARYLAND 21202

DES: T.H.Y.

DRN: K.A.B.

CHK: C.M.E.

DATE: May 1988

BY NO. \_\_\_\_\_

MISCELLANEOUS DETAILS

REVISION \_\_\_\_\_

DATE \_\_\_\_\_

600' SCALE MAP NO. 50 BLOCK NO. 4

**WHISKEY BOTTOM ROAD AND BRIDGE**  
**CAPITAL PROJECT J-4059 & B3816**  
ELECTION DISTRICT NO.  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 32 OF 41

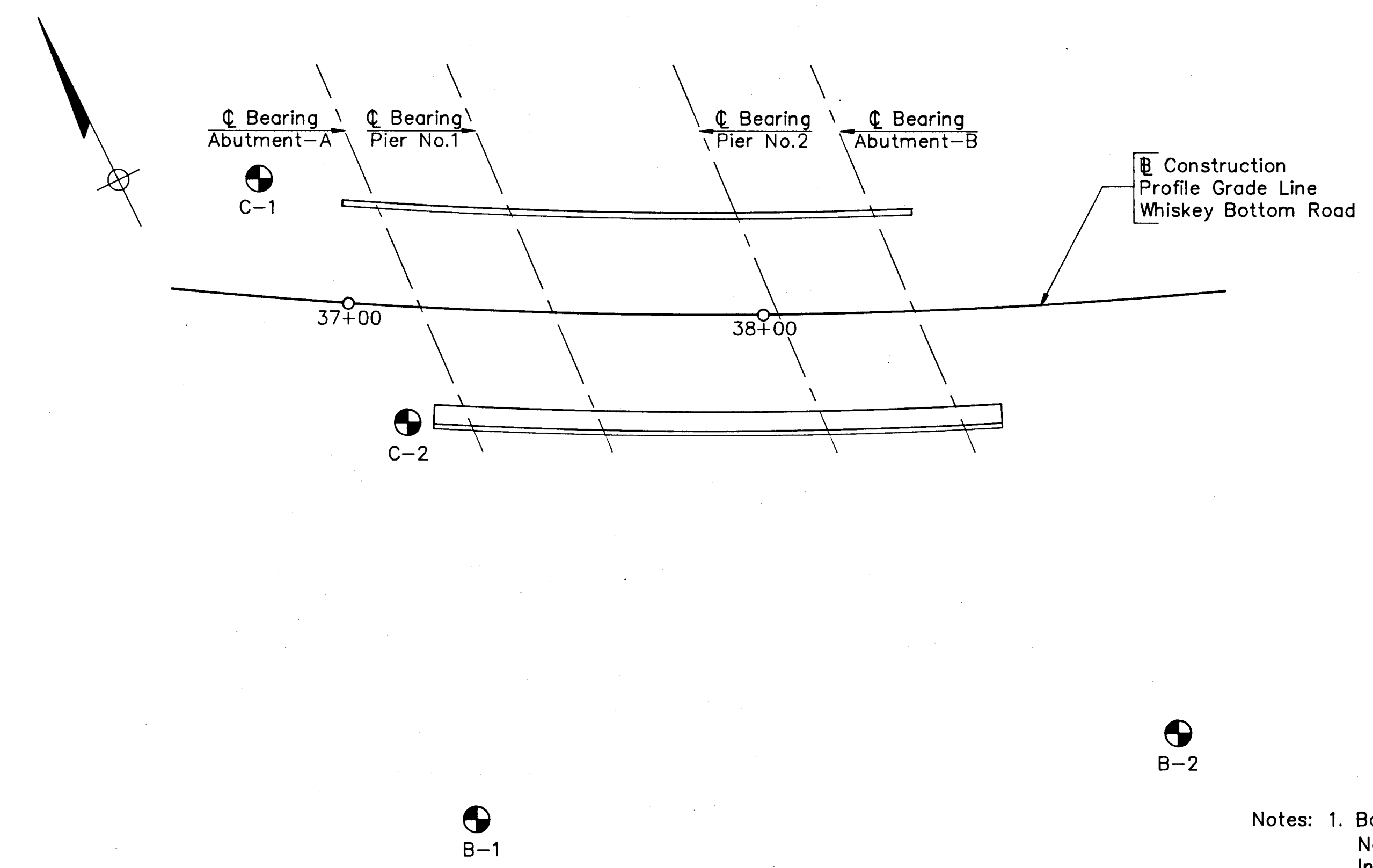
BLOW NUMBER	BLOWS ON SPOON OR % ROCK CORE RECOVERY	BLOWS ON CASING	DESCRIPTION OF MATERIALS	STRATA ELEVATIONS	
Surface Elevation 192.07					
5-9-7		Hollow Stem Augers To 41.5'	Brown Silty Sand & Gravel (Fill) (SC-SM)	190.07	
8-8-6			Moist Silty Sand With Trace Gravel (Fill) (SC)		
3-4-3					
5-4-3					
2-4-4					
2-3-4					
2-3-3					
3-3-3					
1-2-3					
2-5-4				See Note A	171.07
2-5-5			Brown, Wet Silty Sand w/Trace Gravel (SM)	164.07	
2-3-2				158.07	
2-4-3			Mottled Red-Brown & Grey Silty Clay Stiff Moist, Mottled Red-Brown & Grey Silty Clay (CL)	150.57	
2-3-3					
4-6-9					
7-12-14					
3-8-10					
Note A: Grayish Brown, Wet Silty Sand & Gravel (SC-SM)					
Surface Elevation 191.13					
7-8-9		Hollow Stem Augers To 40'	Moist Silty Sand & Gravel (Fill) (SC-SM)	176.13	
5-3-5					
3-3-4					
2-1-3					
1-2-2					
1-2-3					
6-10-7					
4-8-13				White-Yellow Brown Moist Silty Sand & Gravel (SC-SM)	170.13
4-8-13				Yellow Brown, Wet Silty Sandy Gravel (GM)	164.13
7-8-11					
4-7-10			Brown Fine-Coarse Sand w/Trace Fines & Gravel	153.13	
4-2-5			Brown Medium Sand w/ Trace Fines (SC)	151.13	
5-12-12					
11-14-14					
9-15-32					
6-19-45			See Note B:		
Note B: Mottled Red Brown & Grey, Moist, Hard Silty Clay					
Surface Elevation 185.9					
3-4-5		Mud Drilling	6" Topsoil & Root Mat Tan Fine-Medium Damp Sand W/Coarse To Fine Gravel	180.9	
7-7-9					
13-12-11					
15-19-21					
13-18-14					
3-4-4					
3-4-5					
3-7-6					
7-11-16					
3-9-12					
8-16-20			Light Gray And Red Moist Silty Clay With Rock Fragments	158.9	
9-15-22					
21-28-40					
18-32-40					
20-22-42					
27-35-82					
38-50/3					
41-50/3					
17-30-50/4					
15-39-50/2					
39-50/4					
9-15-22					
35-50/2				126.7	
Surface Elevation 186.5					
3-5-5		Mud Drilling	Brown Silty Sand, Moist, Trace Clay And Gravel	172.5	
2-4-4					
6-8-12					
8-16-20					
10-16-17					
10-8-5					
5-6-8				Light Brown Silty Sand Moist Trace Gravel	154.5
9-6-9					
12-12-12					
10-11-14					
10-13-15					
8-9-13					
15-28-31					
14-16-32			White & Red Brown, Silty Clay, Moist-Damp Trace Gravel	127.6	
12-18-26					
16-26-35					
18-25-33					
28-50-50/3					
21-50/3					
31-50-50/2					
33-50/3					
35-50/2					
50/6					

**BORING NO. B-1**  
170' RT. STA. 37+35

**BORING NO. B-2**  
122' RT. STA. 39+04

**BORING NO. C-1**  
35' LT. STA. 36+60

**BORING NO. C-2**  
25' RT. STA. 36+97



**BORING AND LOCATION PLAN**  
Scale: 1"=15'

- Notes:
1. Boring And Drive Tests Were Taken By National Foundation Engineering, Inc. In March, 1986 And June, 1987.
  2. Boring And Drive Tests Are Numbered And Located Thus:
  3. Blows On Spoon Indicate The Number Of Blows Required By A 140 Pound Weight Falling 30 Inches To Drive A 2 Inch Sampling Spoon Successive Six (6) Inch Increments Or Fractions Thereof. Indicated % Is Equal
  4. W.L. Indicates Water Level At Time Shown.
  5. Soil Classifications Are Based On Visual Examination Of The Recovered Samples By The Driller.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DIRECTOR OF PUBLIC WORKS DATE CHIEF, DIVISION OF ROADS, BRIDGES AND STORM DRAINAGE DATE		RUMMEL, KLEPPER & KAHL CONSULTING ENGINEERS 1035 N. CALVERT STREET BALTIMORE, MARYLAND 21202 CHIEF, BUREAU OF ENGINEERING DATE CHIEF, BUREAU OF HIGHWAYS DATE		DES: R.K.K. DRN: C.D.J. CHK: T.H.Y. DATE: May, 1988		<b>BORING AND DRIVE TEST</b> 600' SCALE MAP NO. 50 BLOCK NO. 4		WHISKEY BOTTOM ROAD AND BRIDGE CAPITAL PROJECT J-4059 & B3816 ELECTION DISTRICT NO. HOWARD COUNTY, MARYLAND		SCALE AS SHOWN SHEET 33 OF 41
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HOWARD COUNTY

DRAWING NO. D-1

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS  
DATE 10/10/88

CHIEF, DIVISION OF ROADS, BRIDGES AND STORM DRAINAGE  
DATE 10/10/88

RUMMEL, KLEPPER & KAHL  
CONSULTING ENGINEERS

1035 N. CALVERT STREET  
BALTIMORE, MARYLAND 21202

DATE: 9/87

DES: R.A.					
DRN: FR.O.					
CHK: J.A.R.					
DATE: 9/87	BY	NO.	REVISION	DATE	

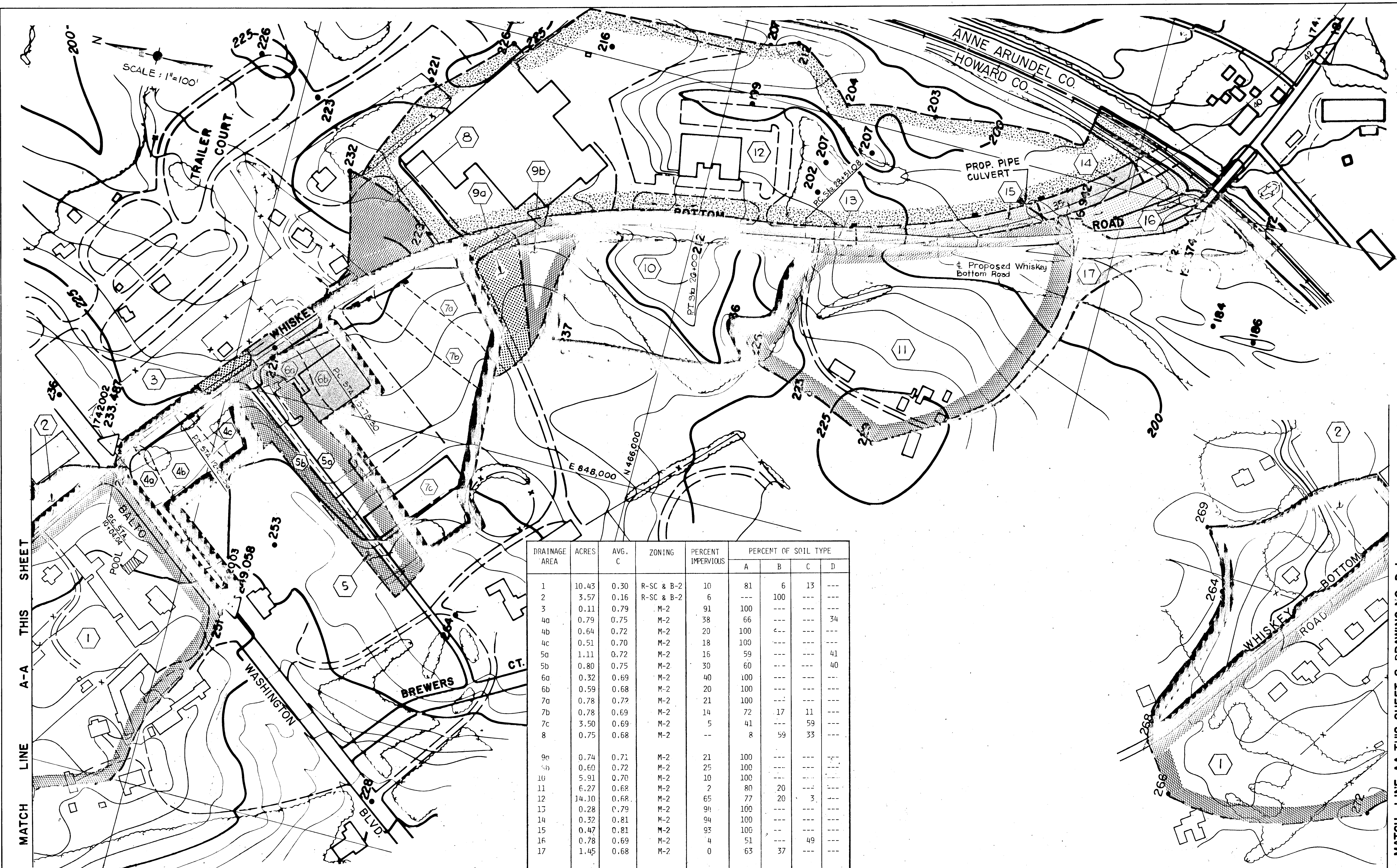
DRAINAGE AREA MAP  
EXISTING ROADWAY

600' SCALE MAP NO. 50 BLOCK NO. 4

WHISKEY BOTTOM ROAD AND BRIDGE  
CAPITAL PROJECT J-4059 & B-3816  
ELECTION DISTRICT NO. 6  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 34 OF 41



MATCH LINE A-A THIS SHEET

MATCH LINE AA THIS SHEET & DRAWING NO. D-1

HOWARD COUNTY

DRAWING NO. D-2

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Roman*  
DIRECTOR OF PUBLIC WORKS

*John*  
DATE

*John*  
CHIEF, BUREAU OF ENGINEERING

*John*  
DATE

*John*  
CHIEF, DIVISION OF ROADS, BRIDGES AND STORM DRAINAGE

*John*  
DATE

*John*  
CHIEF, BUREAU OF HIGHWAYS

*John*  
DATE

RUMMEL, KLEPPER & KAHL

CONSULTING ENGINEERS

1035 N. CALVERT STREET  
BALTIMORE, MARYLAND 21202

*John*

DES: R.A.

DRN: F.R.O.

CHK: J.A.R.

DATE: 9/87

BY NO. REVISION DATE

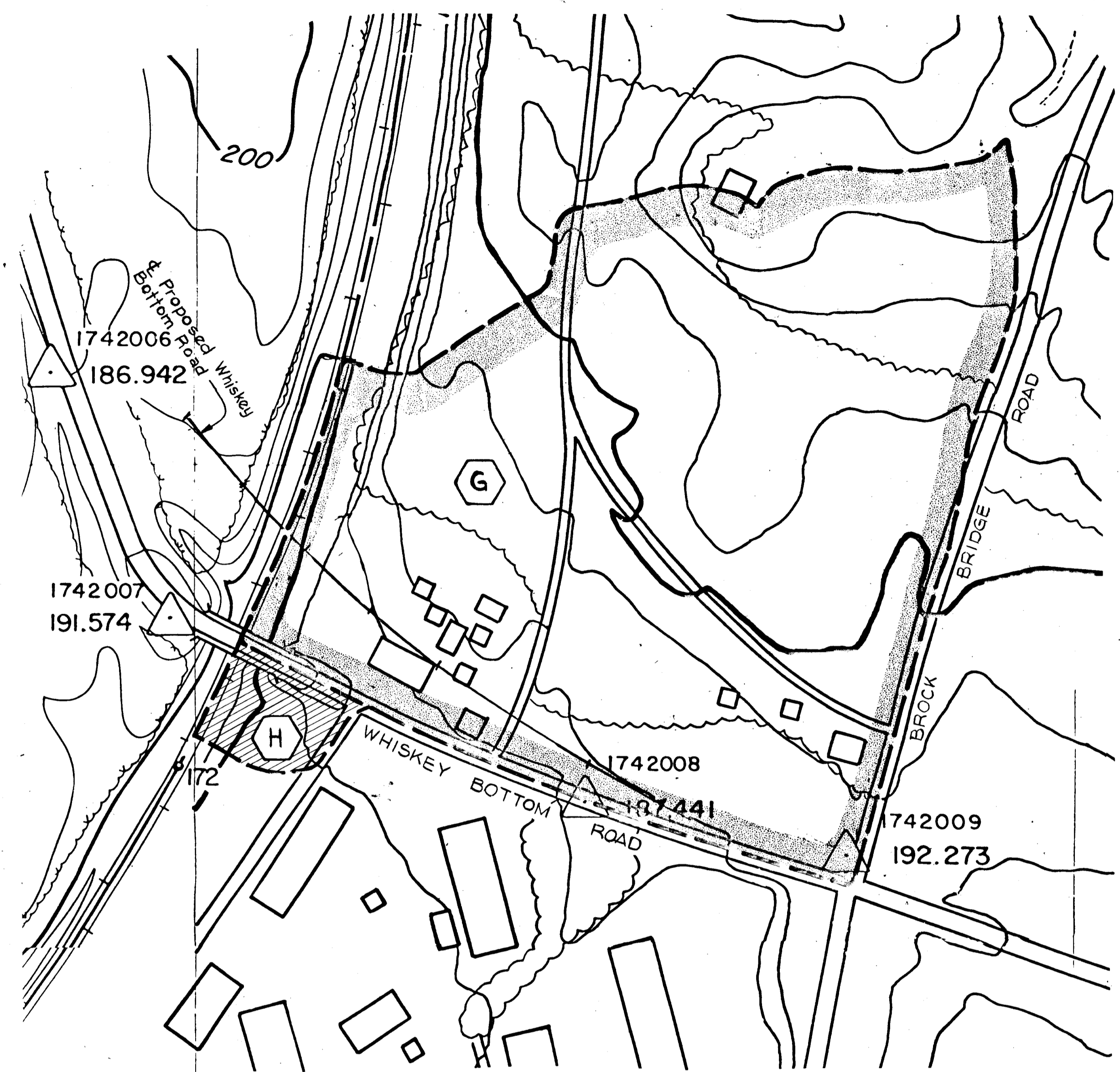
DRAINAGE AREA MAP  
FOR IMPROVEMENTS TO  
WHISKEY BOTTOM ROAD BRIDGE

600' SCALE MAP NO. 50 BLOCK NO. 4

WHISKEY BOTTOM ROAD AND BRIDGE  
CAPITAL PROJECT J-4059 & B-3816  
ELECTION DISTRICT NO. 6  
HOWARD COUNTY, MARYLAND

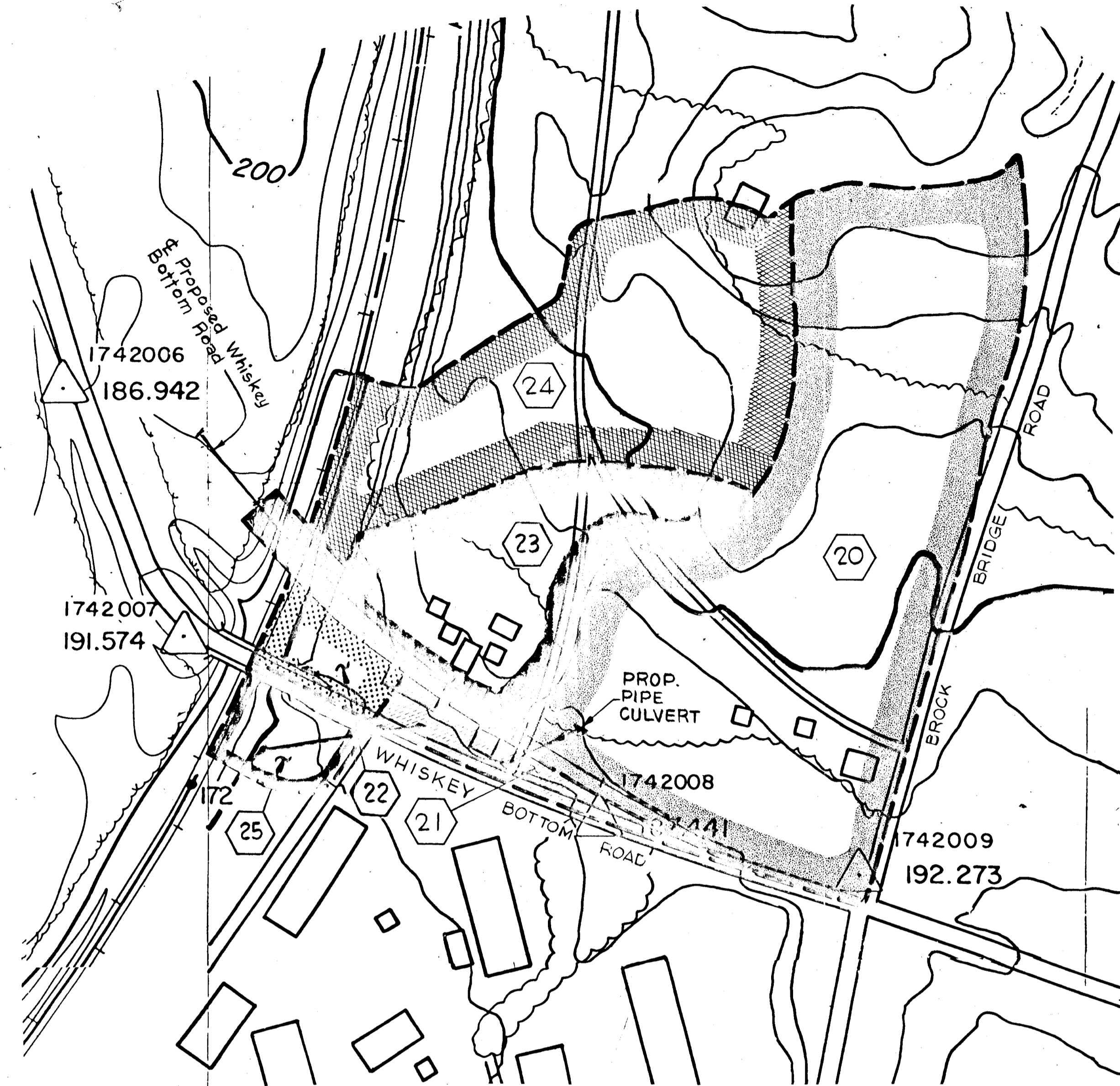
SCALE AS SHOWN

SHEET 35 OF 41



EXISTING ROADWAY

DRAINAGE AREA	ACRES	AVG. C	ZONING	PERCENT IMPERVIOUS	PERCENT OF SOIL TYPE			
					A	B	C	D
G	10.96	0.72	9-WIA-1	1.6	---	---	100	---
H	0.41	0.73	9-25-74-WIB-3	17.0	---	---	---	100



PROPOSED ROADWAY

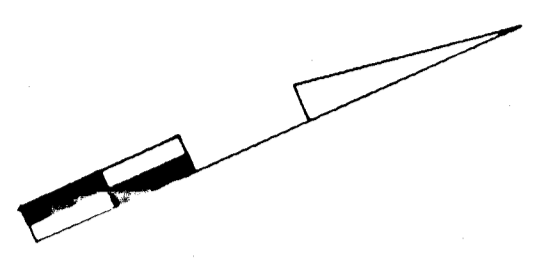
DRAINAGE AREA	ACRES	AVG. C	ZONING	PERCENT IMPERVIOUS	PERCENT OF SOIL TYPE			
					A	B	C	D
20	5.79	0.73	9-WIA-1	5.4	---	---	100	---
21	0.32	0.75	9-WIA-1	23.0	---	---	100	---
22	0.38	0.73	9-WIA-1	5.3	---	---	100	---
23	1.91	0.76	9-WIA-1	25.0	---	---	100	---
24	2.76	0.72	9-WIA-1	0.0	---	---	100	---
25	0.41	0.73	9-25-74-WIB-3	17.0	---	---	---	100

ANNE ARUNDEL COUNTY

<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</p> <p>DIRECTOR OF PUBLIC WORKS: <i>[Signature]</i> DATE: <i>10-11-88</i></p> <p>CHIEF, BUREAU OF ENGINEERING: <i>[Signature]</i> DATE: <i>10-11-88</i></p> <p>CHIEF, DIVISION OF ROADS, BRIDGES AND STORM DRAINAGE: <i>[Signature]</i> DATE: <i>10-11-88</i></p>	<p>RUMMEL, KLEPPER &amp; KAHL</p> <p>CONSULTING ENGINEERS</p> <p>1035 N. CALVERT STREET BALTIMORE, MARYLAND 21202</p>	<p>DES: R.A.</p> <p>DRN: F.R.O.</p> <p>CHK: J.A.R.</p> <p>DATE: 9/87</p>	<p>DRAINAGE AREA MAP EXISTING ROADWAY &amp; PROPOSED ROADWAY</p> <p>600' SCALE MAP NO. 50 BLOCK NO. 4</p>	<p>WHISKEY BOTTOM ROAD AND BRIDGE CAPITAL PROJECT J-4059 &amp; B-3816 ELECTION DISTRICT NO. HOWARD COUNTY, MARYLAND</p>	<p>SCALE AS SHOWN</p> <p>SHEET 36 OF 41</p>
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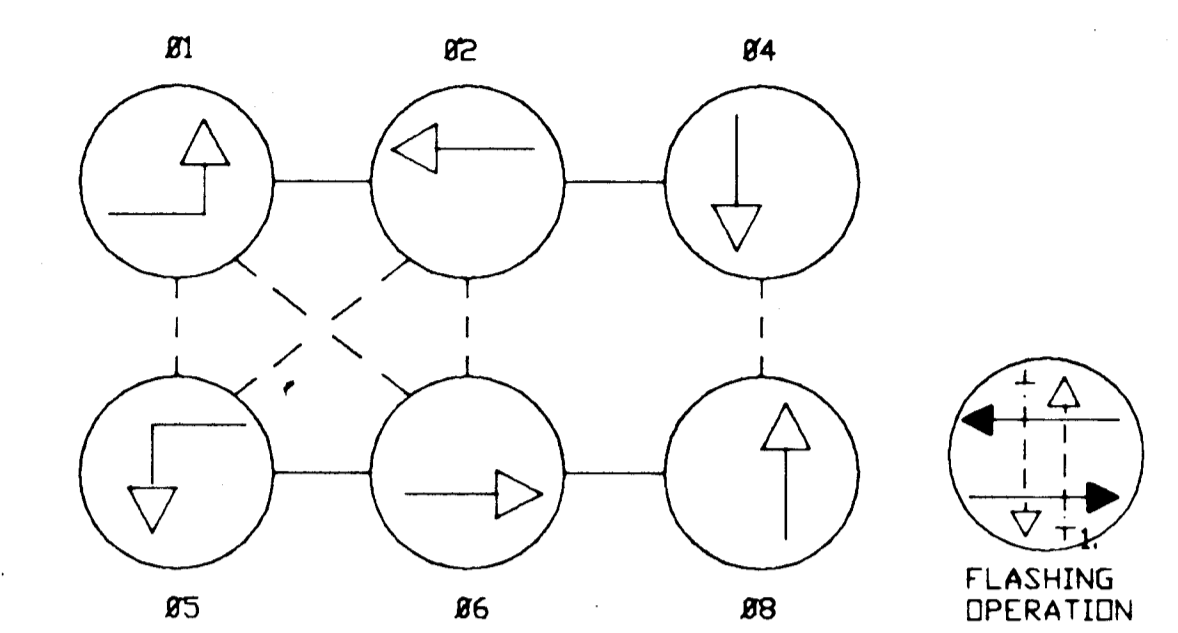
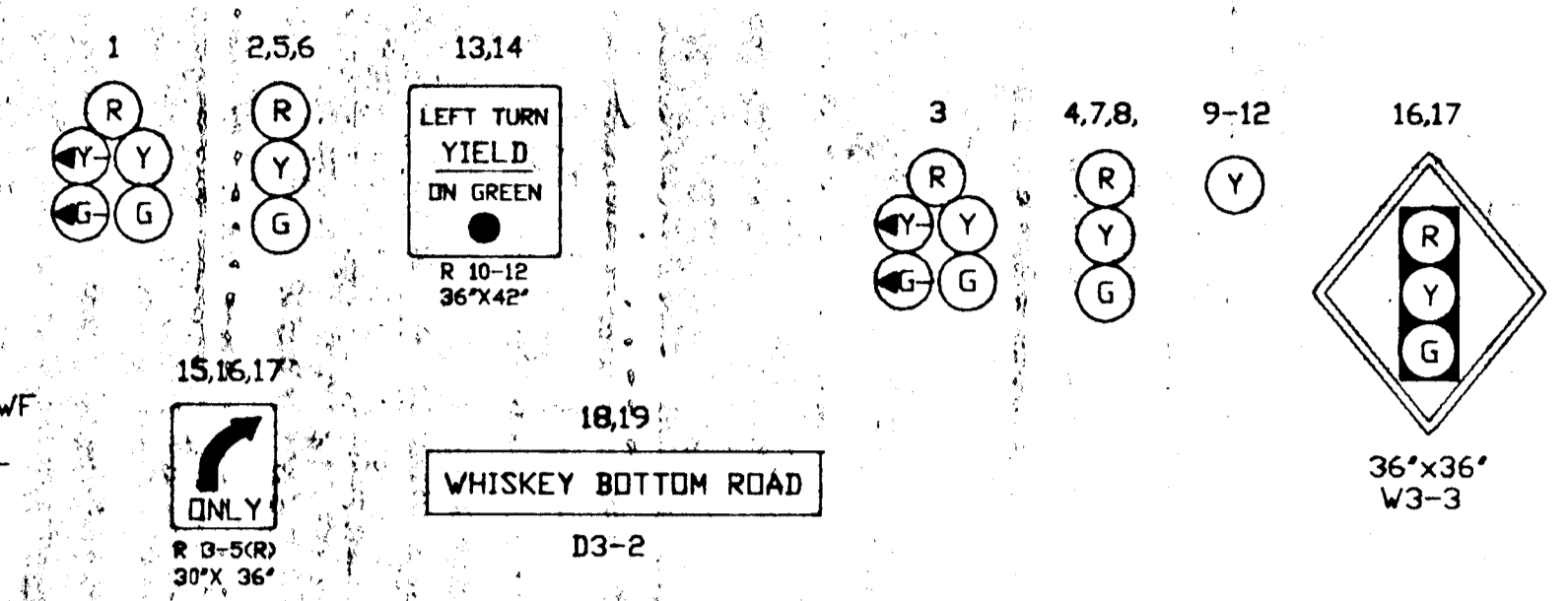
F H WA REGION NO	STATE	FED. AID PROJ. NO	SHEET NO.	TOTAL SHEETS
3	MD.			



PROPOSED SIGNALS & SIGNS

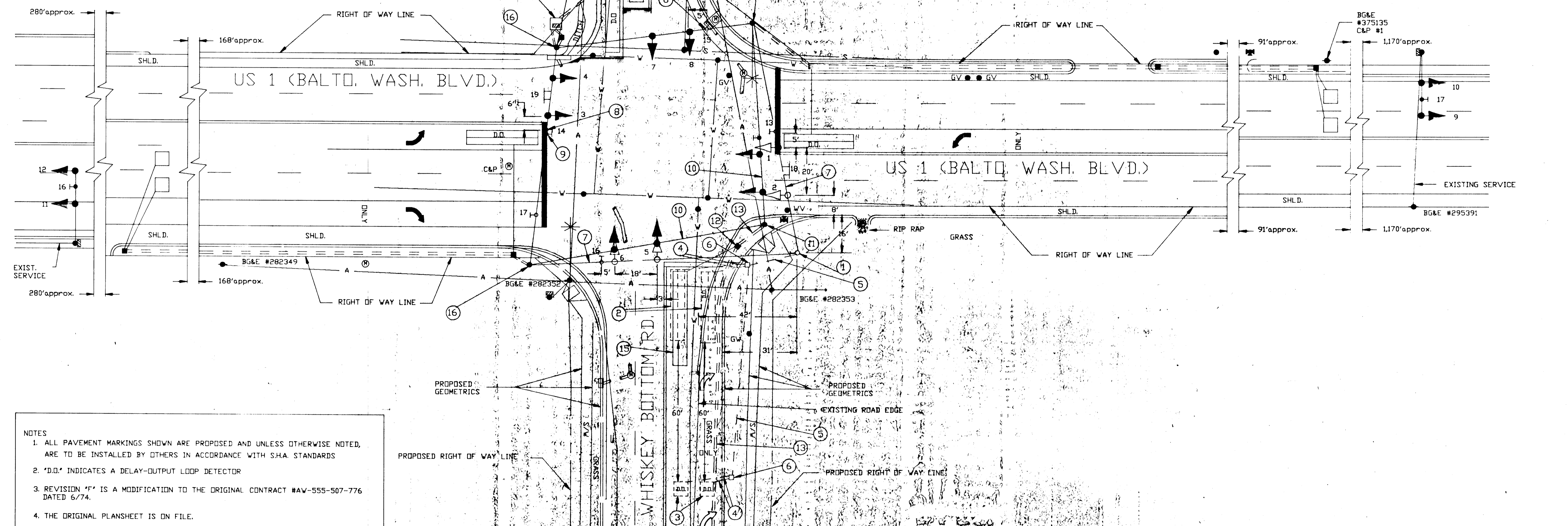
EXIST. SIGNAL & SIGNS

NEMA PHASING



PHASES ASSOCIATED BY A DASHED LINE WILL OPERATE CONCURRENTLY  
PHASES ASSOCIATED BY A SOLID LINE WILL NOT OPERATE CONCURRENTLY

AMVETS  
THRIFT  
CENTER



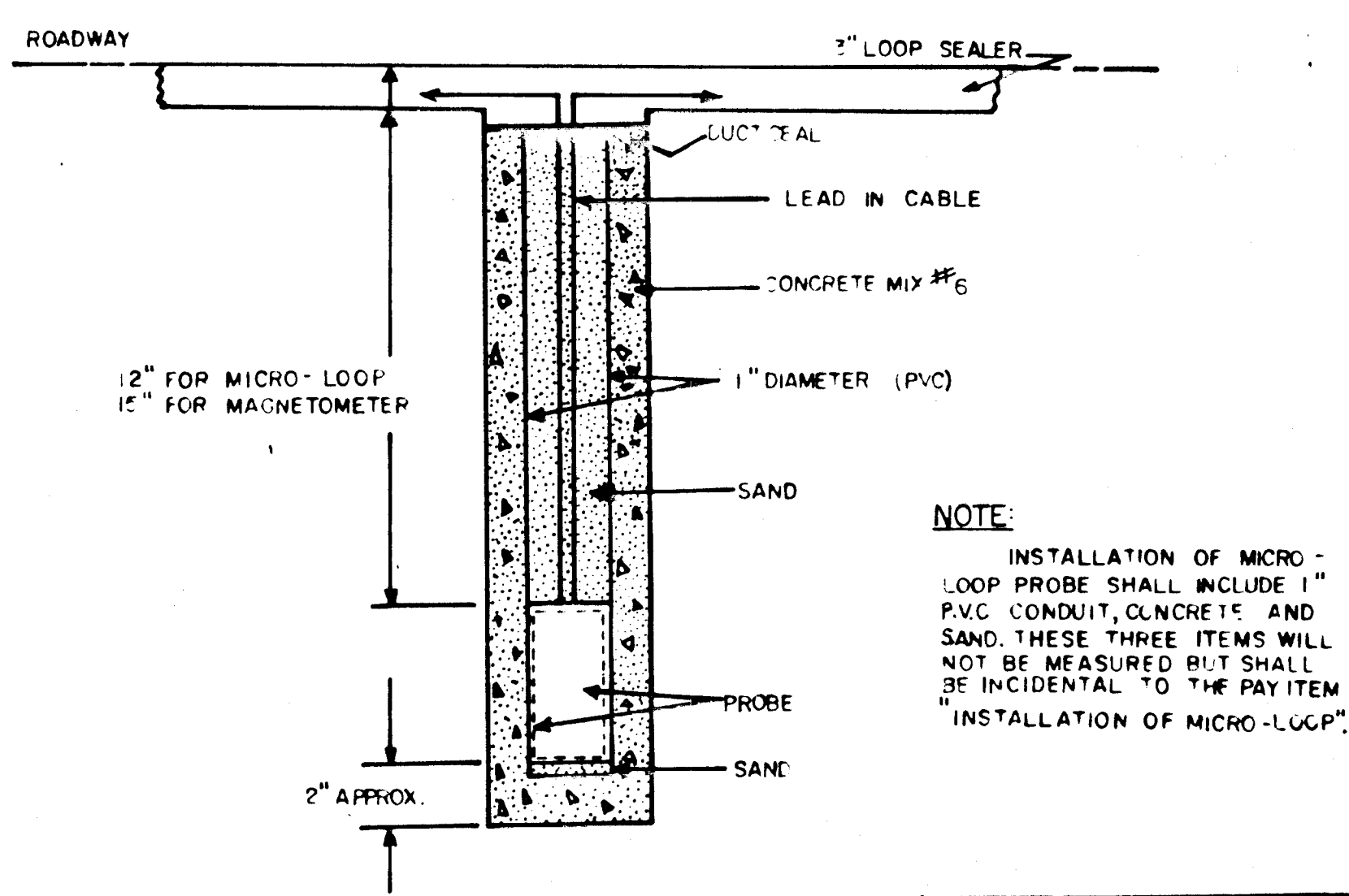
- NOTES**
1. ALL PAVEMENT MARKINGS SHOWN ARE PROPOSED AND UNLESS OTHERWISE NOTED, ARE TO BE INSTALLED BY OTHERS IN ACCORDANCE WITH S.H.A. STANDARDS
  2. 'D.O.' INDICATES A DELAY-OUTPUT LOOP DETECTOR
  3. REVISION 'F' IS A MODIFICATION TO THE ORIGINAL CONTRACT #AW-555-507-776 DATED 6/74.
  4. THE ORIGINAL PLANSHEET IS ON FILE.

**UTILITY LEGEND**

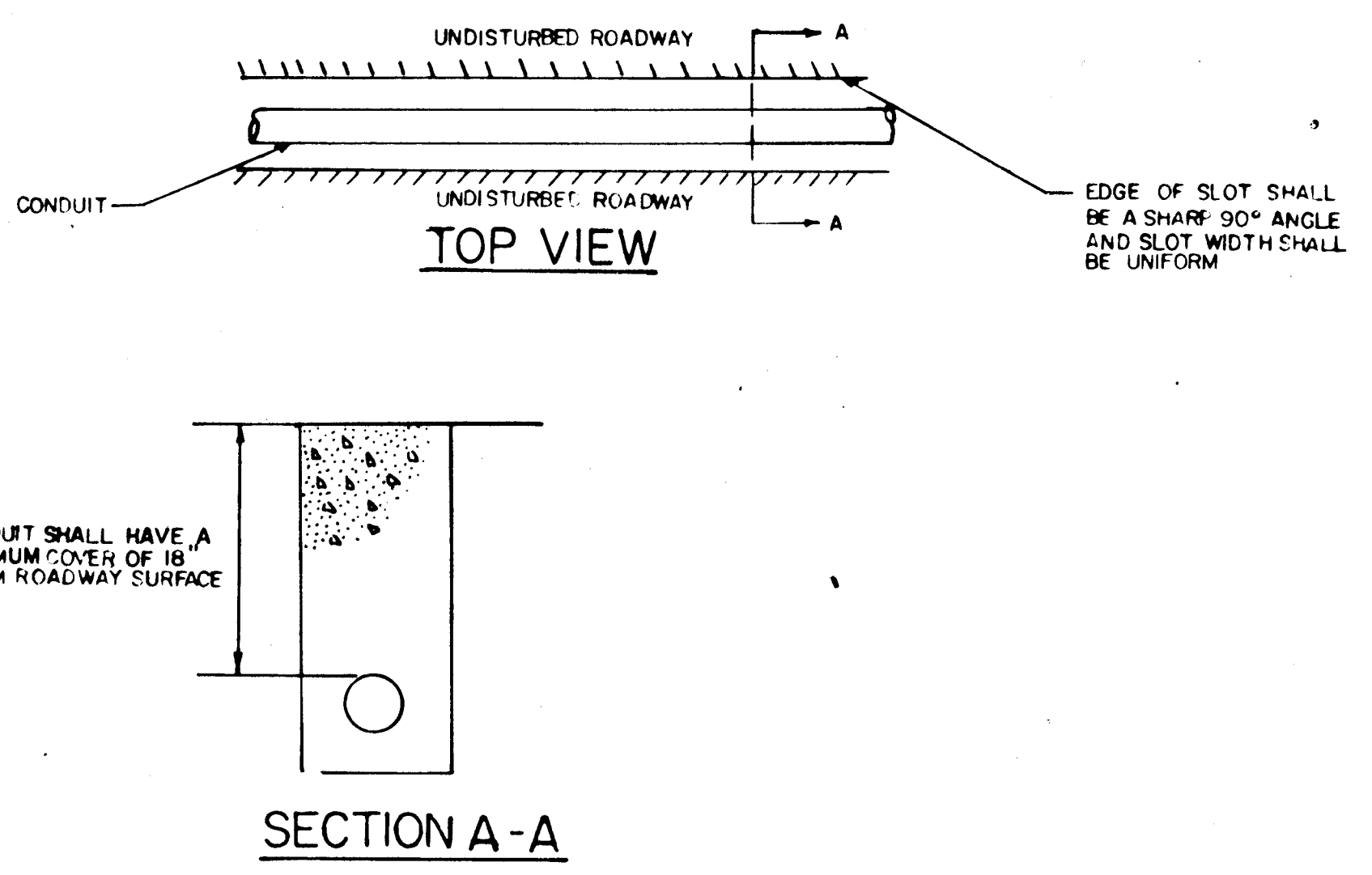
— G —	— G —	GAS MAIN
— W —	— W —	WATER MAIN
— S —	— S —	SEWER MAIN
— E —	— E —	ELECTRIC CABLES
— T —	— T —	TELEPHONE CABLES
— A —	— A —	AERIAL CABLES

<p>REVISIONS</p> <p>NO. DATE</p> <p>1 11/87 MOD. DUE TO WIDENING</p>		<p>APPROVALS</p> <p>DESIGN SECTION</p> <p>ASST. DISTRICT ENGINEER, TRAFFIC</p> <p>CHIEF, BUREAU OF TRAFFIC ENGINEERING</p> <p>DEPUTY CHIEF ENGINEER-OFFICE OF TRAFFIC</p>		<p>MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION - OFFICE OF TRAFFIC BUREAU OF TRAFFIC ENGINEERING</p>	
<p>DRAWN BY: ROBERT LIGON/VACAD</p> <p>DES. BY: ROBERT LIGON</p> <p>CHK. BY: S. RENZI</p>		<p>DATE: REDRAWN 11/87</p> <p>SCALE: 1" = 20'</p>		<p>F.A.P. NO. NONE</p> <p>S.H.A. NO. BW-985-801-712</p>	
<p>US 1 (WASHINGTON BLVD.) &amp; WHISKEY BOTTOM ROAD</p> <p>COUNTY: HOWARD</p>				<p>TS/FILE NO. TS-79F</p> <p>SHEET NO. 28 OF 41</p>	

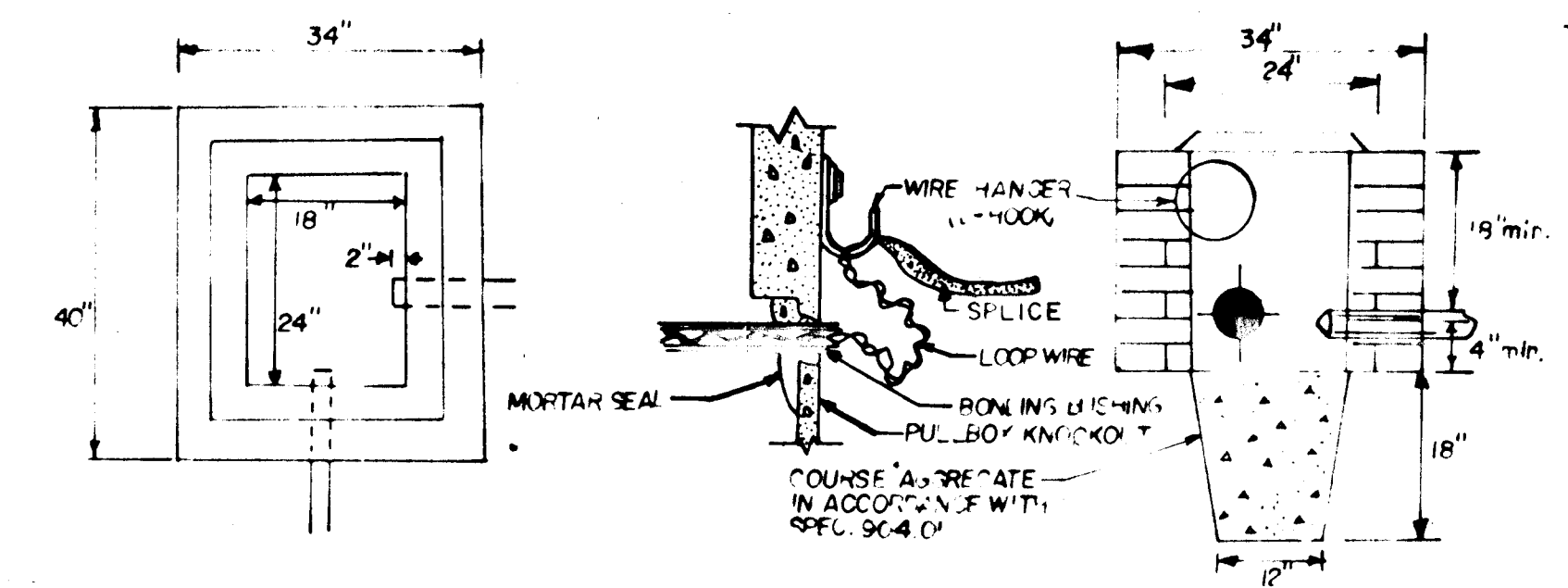
### TYPICAL FOR MICRO-LOOP/MAGNETOMETER INSTALLATION



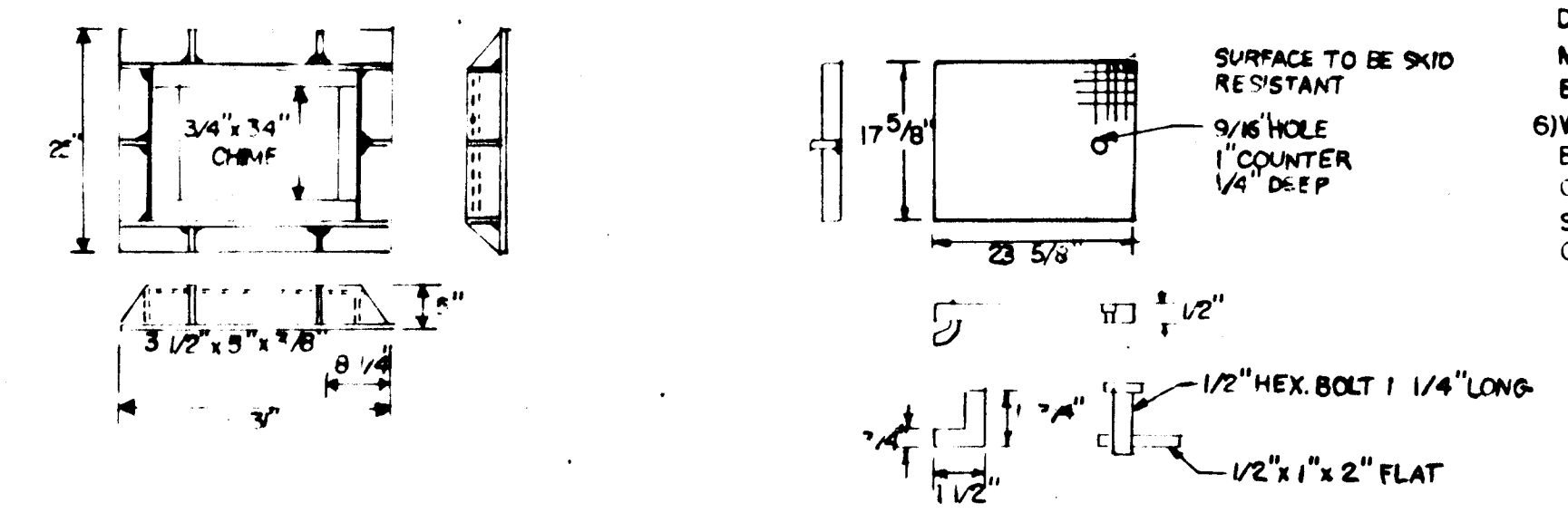
### SLOT TRENCH CONDUIT IN PAVEMENT



### TYPICAL FOR HANDBOX CONSTRUCTION

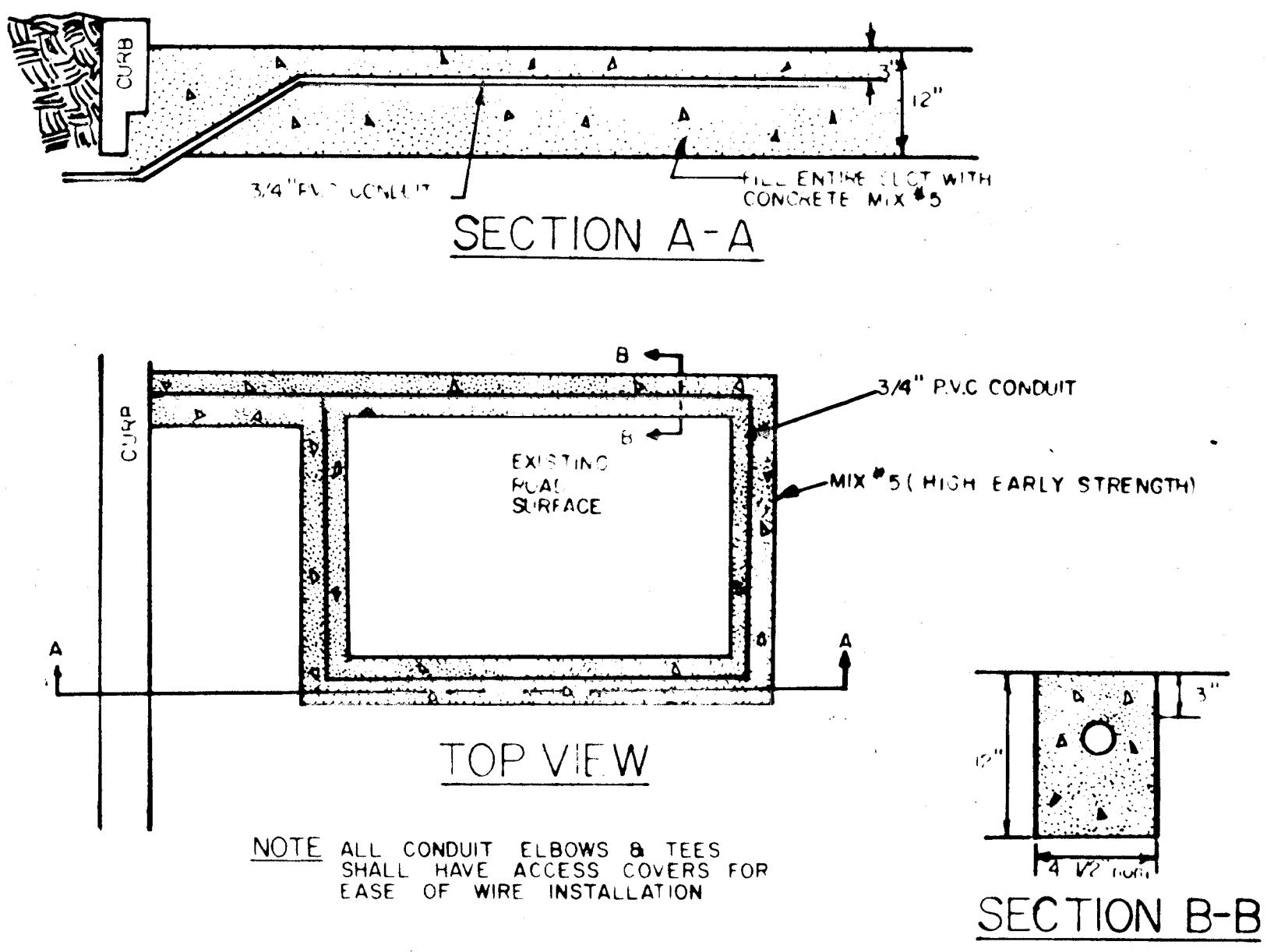


### TYPICAL HANDBOX FRAME AND COVER

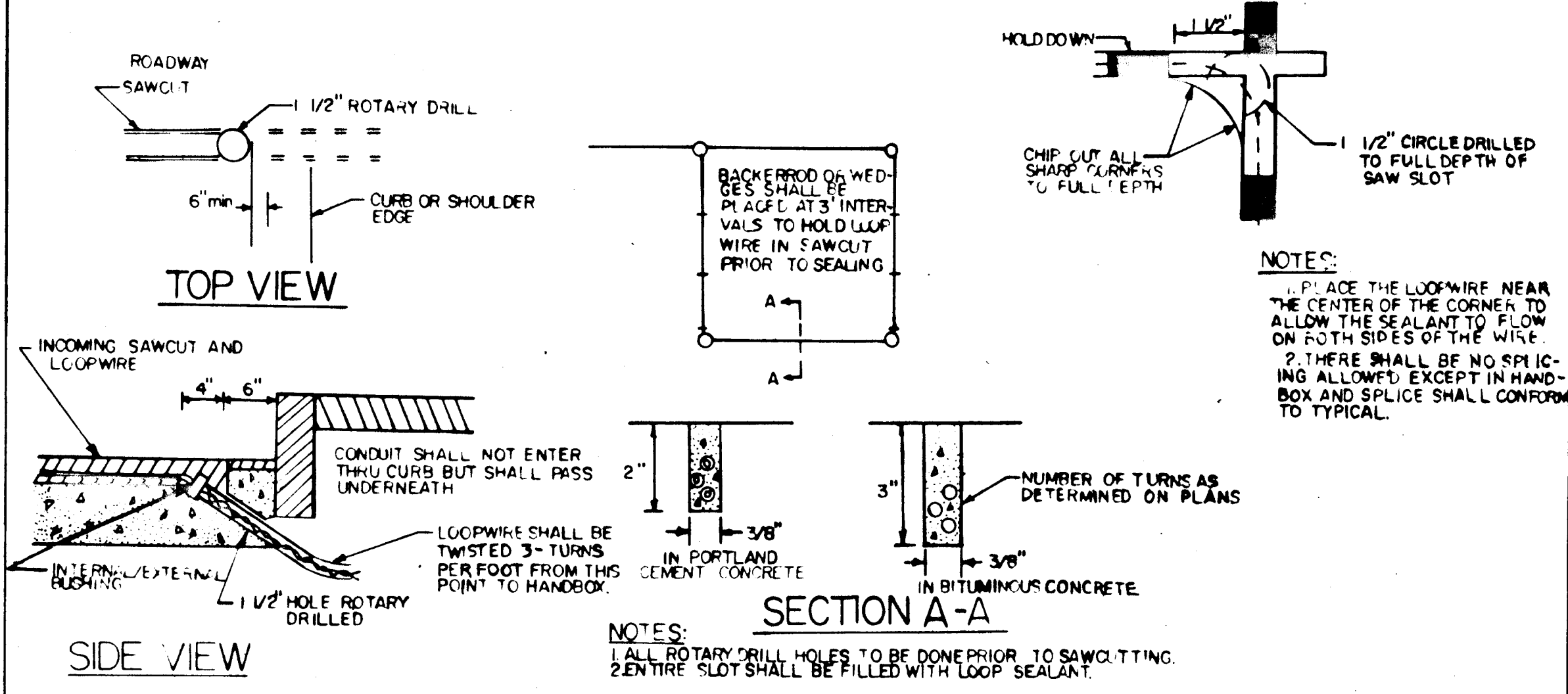


- 5) WHEN ALL CONDUIT AND ELECTRICAL WIRE IS IN PLACE, THE END OF THE CONDUITS SHALL BE SEALED WITH DUCT SEALER OR OTHER PLIABLE MATERIAL AS APPROVED BY THE ENGINEER.
- 6) WALLS (IF APPLICABLE) SHALL BE BRICK OR CONCRETE BLOCK (NO CINDER BLOCK). ONLY FINAL COURSE SHALL BE CAPPED (NO VOILS USING CONCRETE BLOCK).

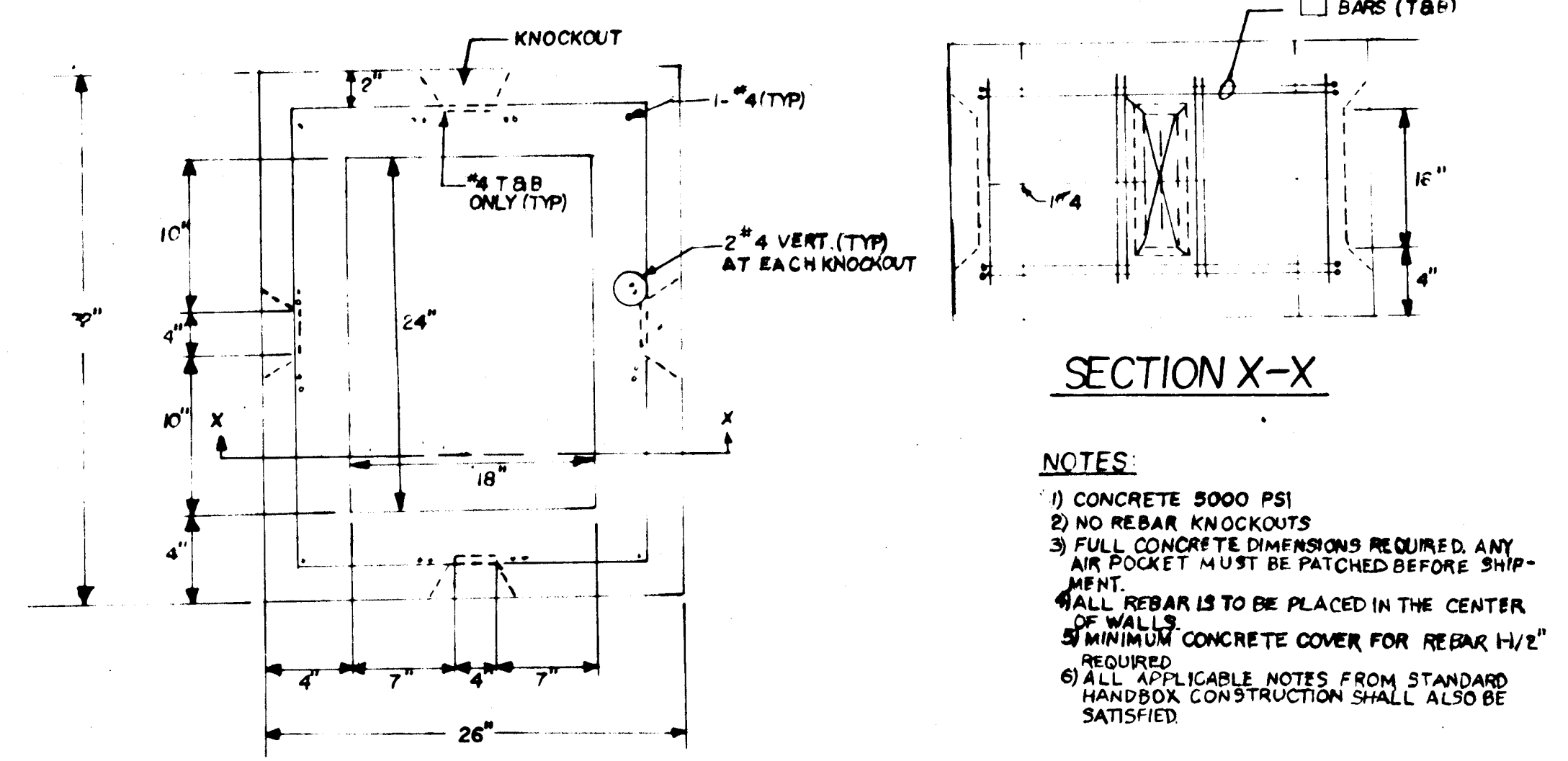
### TYPICAL FOR P.V.C. LOOP PLACEMENT



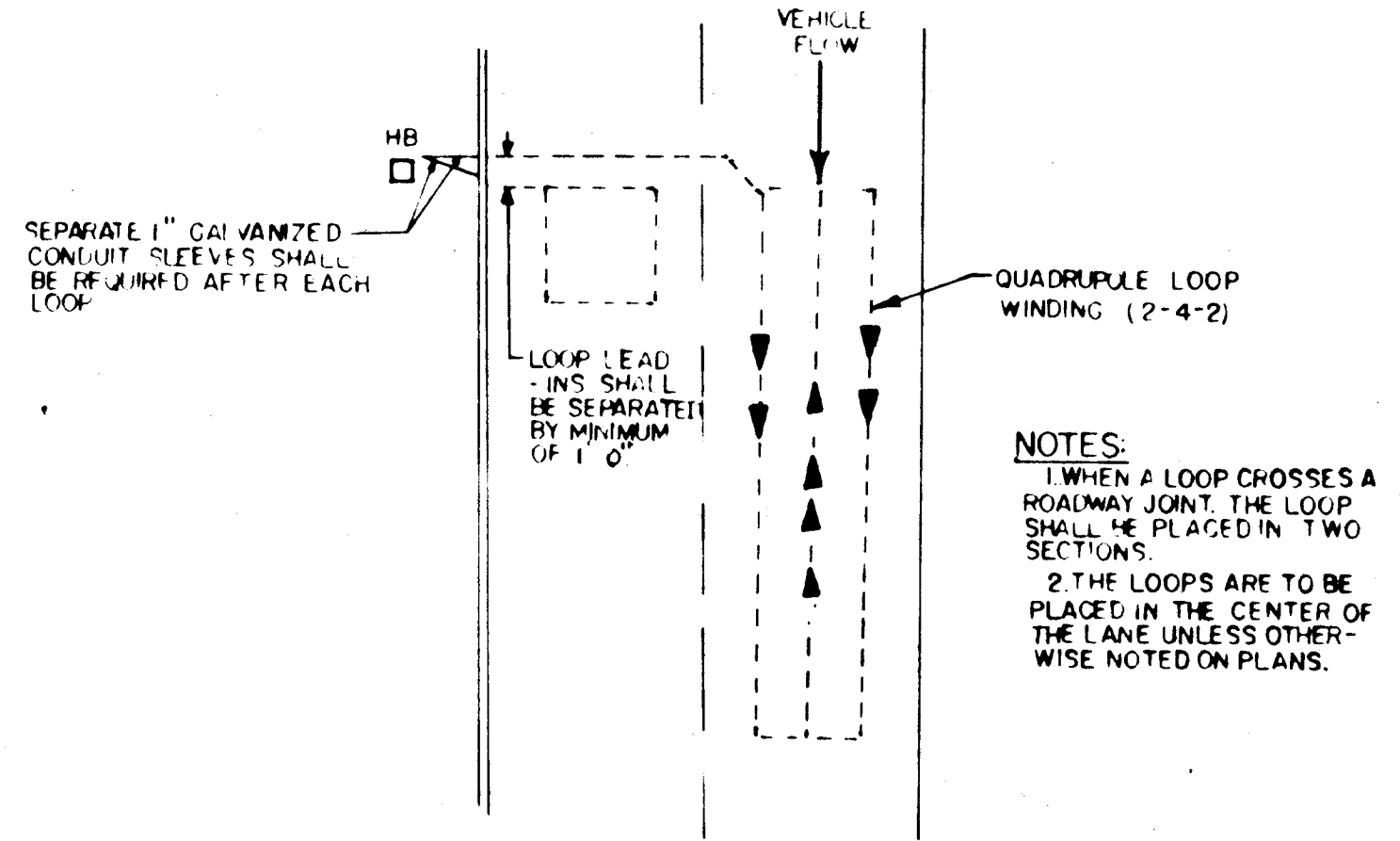
### SAWCUT & CURB ENTRANCE DETAIL



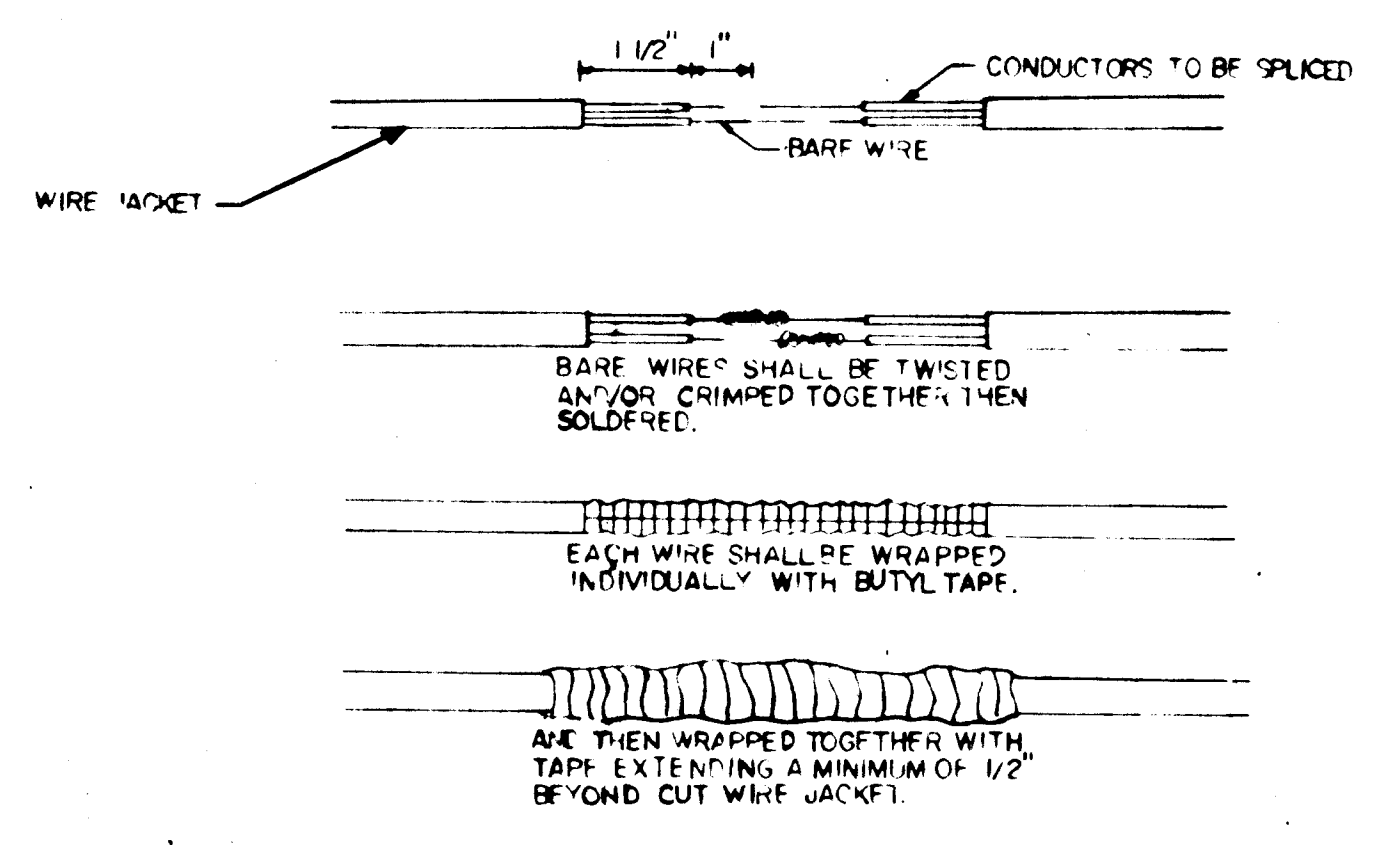
### ALTERNATE HANDBOX PRECAST CONCRETE



### LOOP PLACEMENT



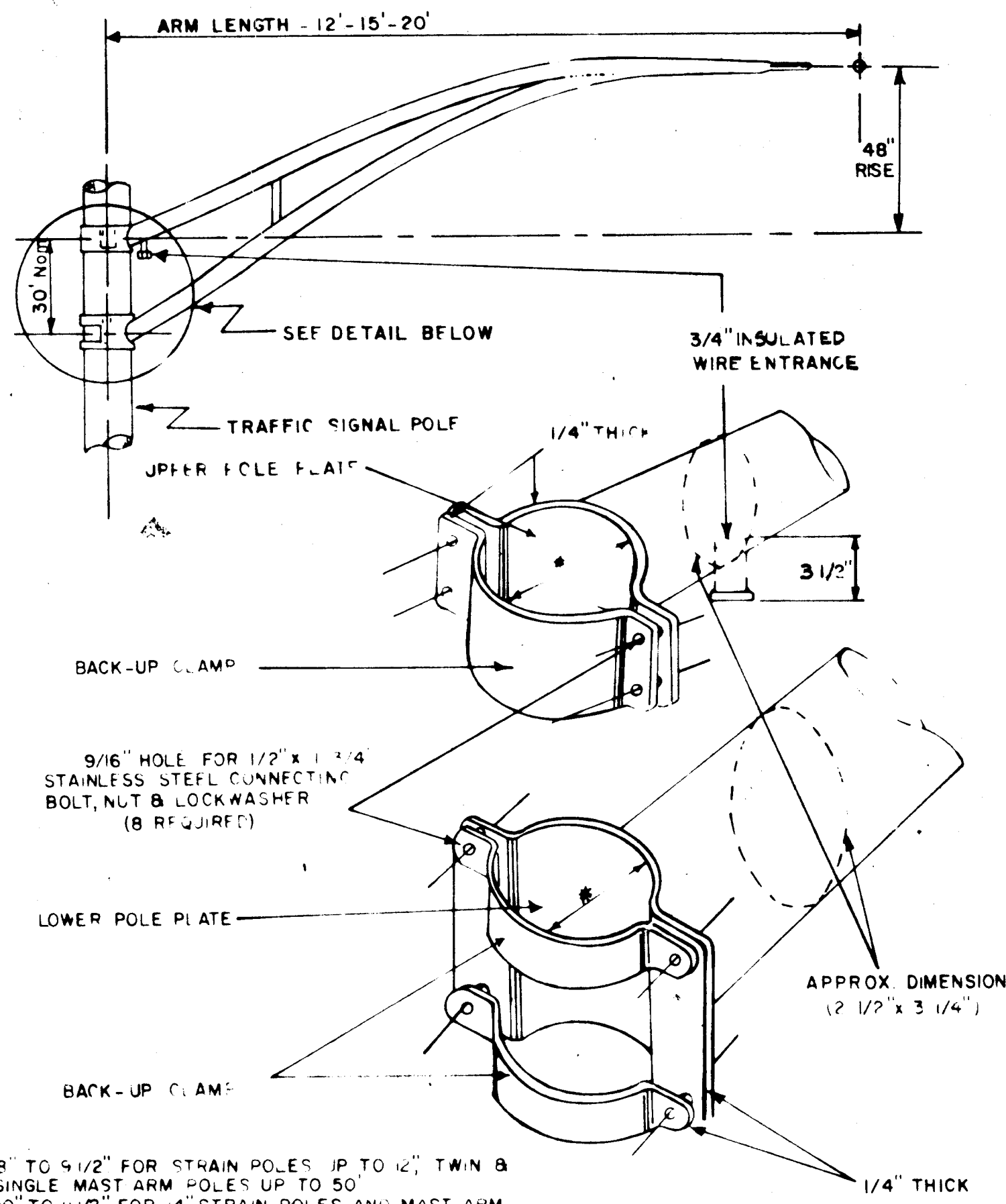
### LOOP DETECTOR LEAD IN TO SHIELDED CABLE SPLICE



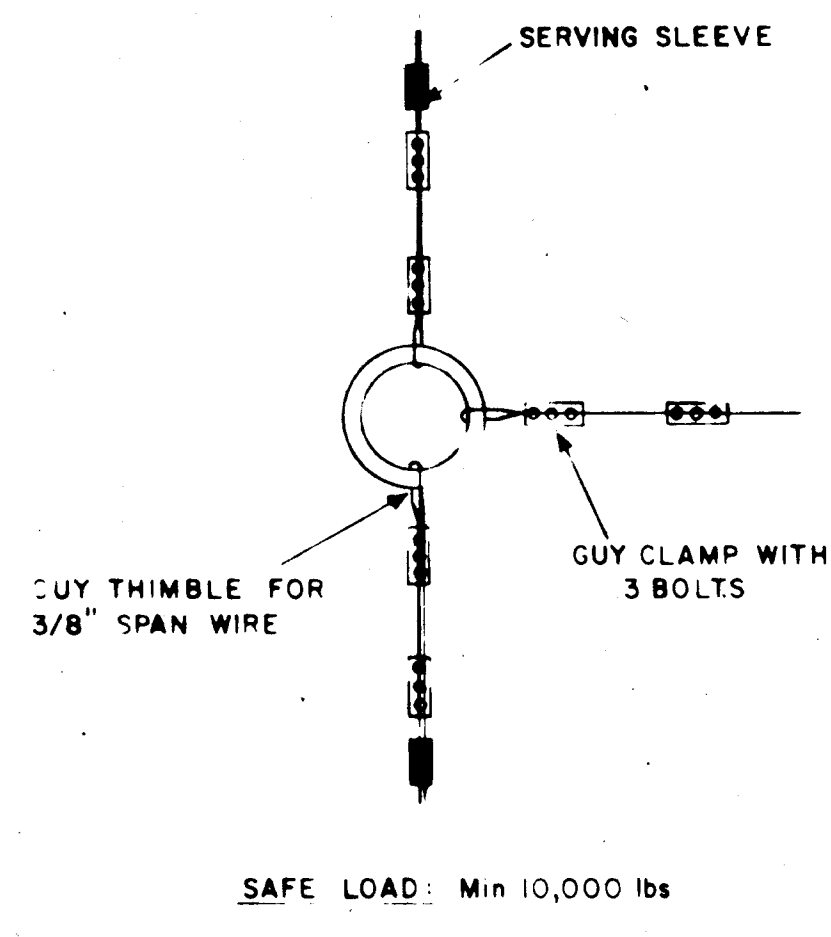
APPROVAL	CHIEF SIGNAL DESIGN SECTION	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION BUREAU OF TRAFFIC ENGINEERING OFFICE OF TRAFFIC
APPROVAL	DISTRICT TRAFFIC ENGINEER	
APPROVAL	CHIEF BUREAU OF TRAFFIC ENGINEERING	
APPROVAL	DEPUTY CHIEF ENGINEER OFFICE OF TRAFFIC	
		TYPICAL SHEET NO. 1
		4-30-85 S.H.A. NO. BW-985-801-712
		DESIGNED BY: _____
		CHECKED BY: _____
		DRAWN BY: _____
		39 of 41



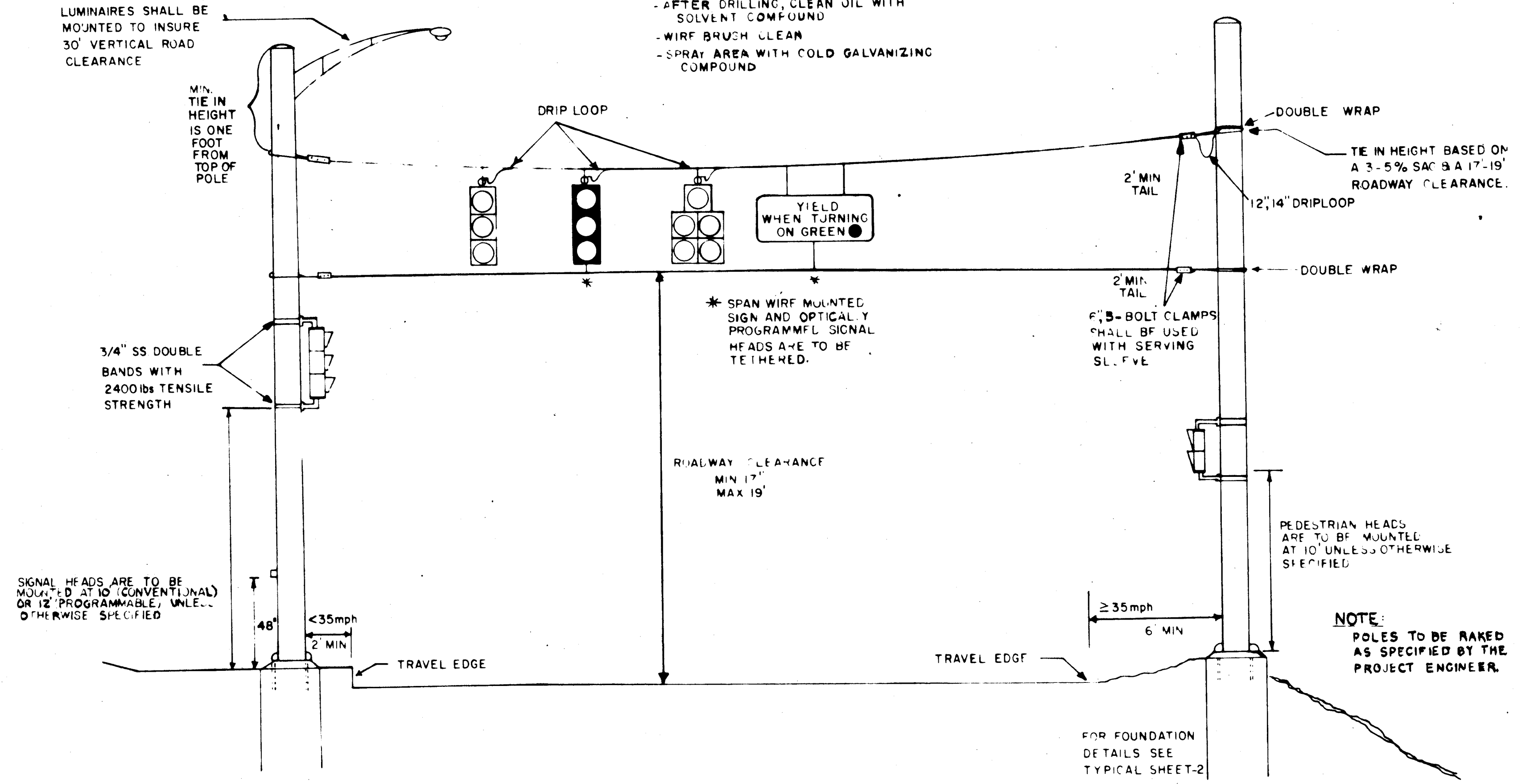
**LIGHTING ARM AND LUMINAIRE**



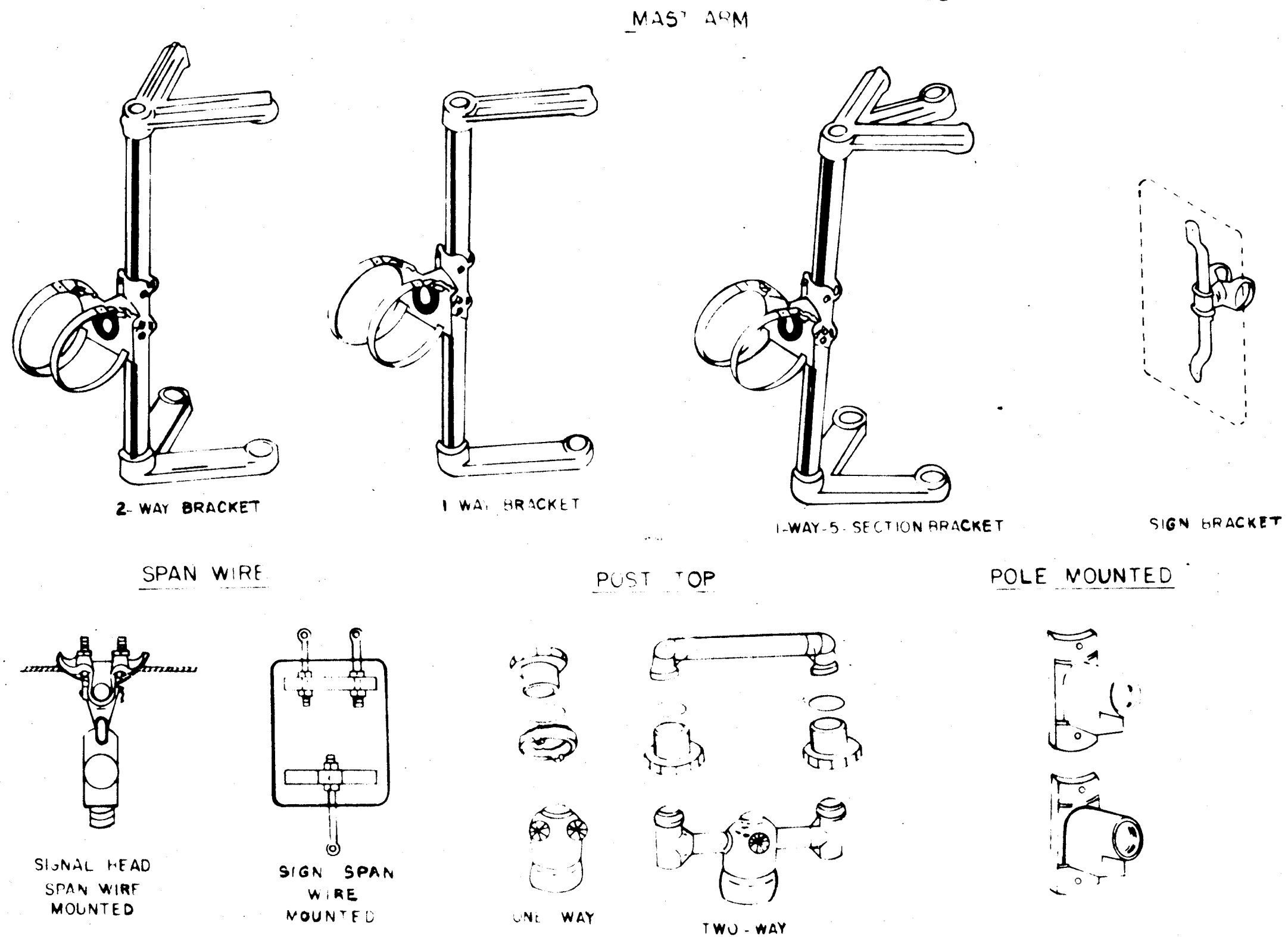
**BULL RING INSTALLATION**



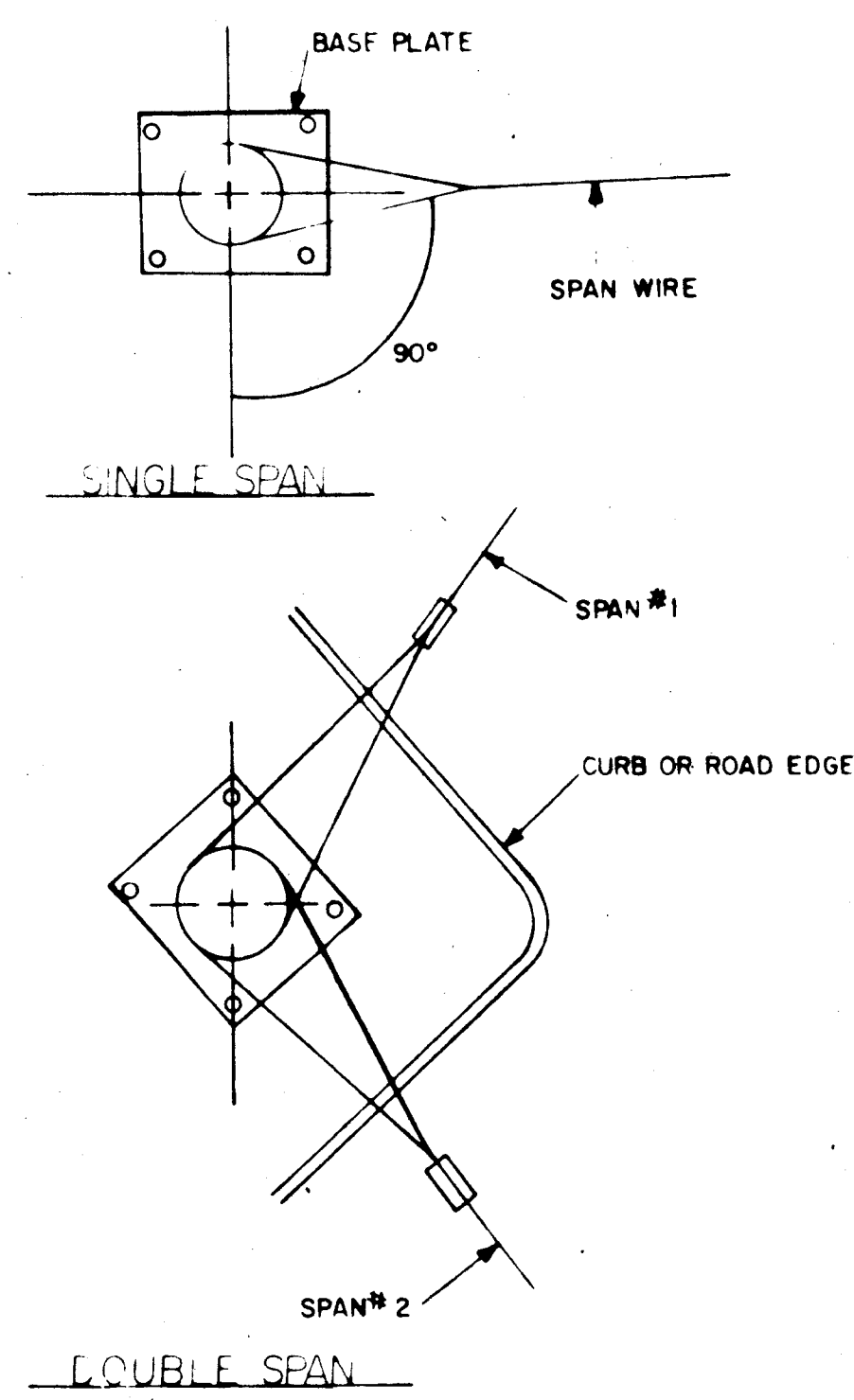
NOTES: FIELD DRILLING OF HOLES  
 - FIELD DRILLING MAX 1" DIAM. HOLE  
 - AFTER DRILLING, CLEAN OIL WITH SOLVENT COMPOUND  
 - WIRE BRUSH CLEAN  
 - SPRAY AREA WITH COLD GALVANIZING COMPOUND



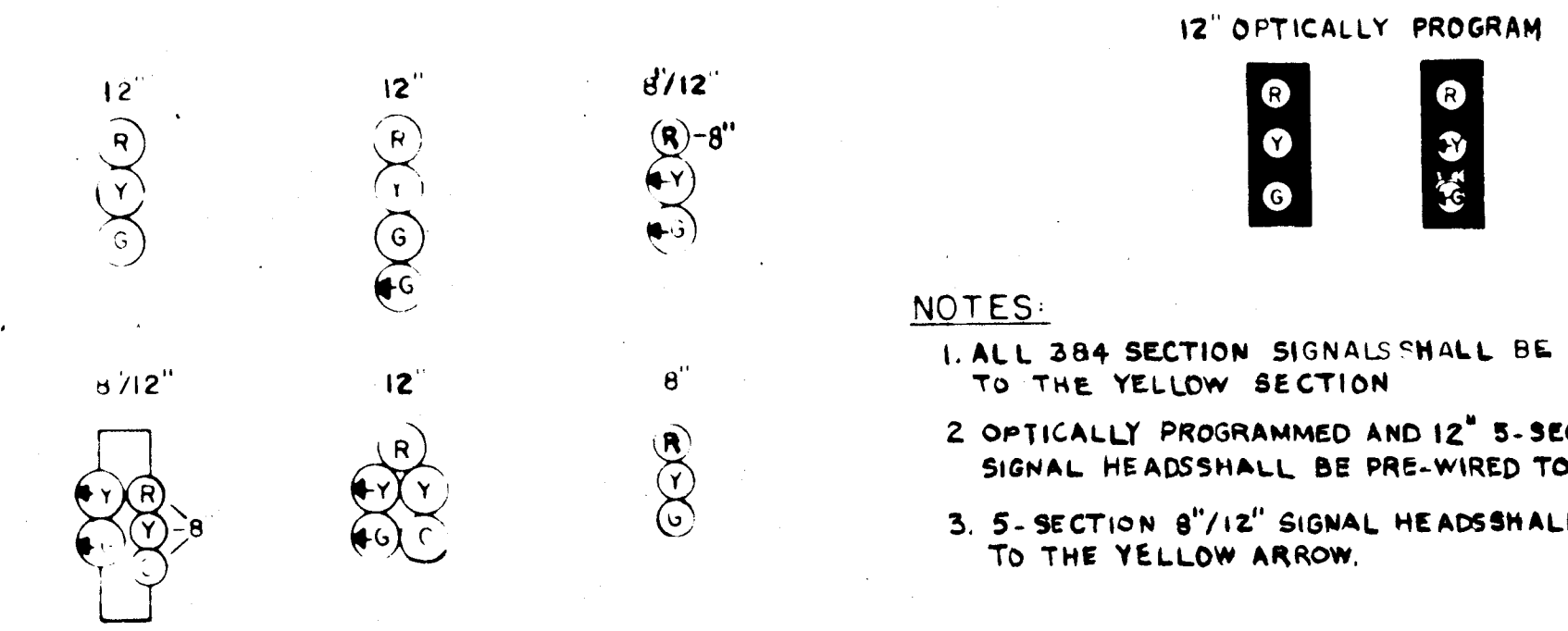
**MOUNTING HARDWARE**



**PLACEMENT OF STRAIN POLE vs SPAN WIRE**



**SIGNAL HEAD DISPLAYS**



NOTES:  
 1. ALL 304 SECTION SIGNALS SHALL BE PRE-WIRED TO THE YELLOW SECTION  
 2. OPTICALLY PROGRAMMED AND 12" 5-SECTION & 12" SIGNAL HEADS SHALL BE PRE-WIRED TO THE RED SECTION.  
 3. 5-SECTION 8 1/2" 12" SIGNAL HEADS SHALL BE PRE-WIRED TO THE YELLOW ARROW.

DESIGNED BY	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION TRAFFIC ENGINEERING
APPROVED BY	
TYPICAL SHEET 3	
JULY 12, 1985 S.H.A. NO. BW-985-801-712	
D ZITO	
APPROVAL	DEPUTY CHIEF ENGINEER OFFICE OF TRAFFIC
Sheet No. 41 of 41	