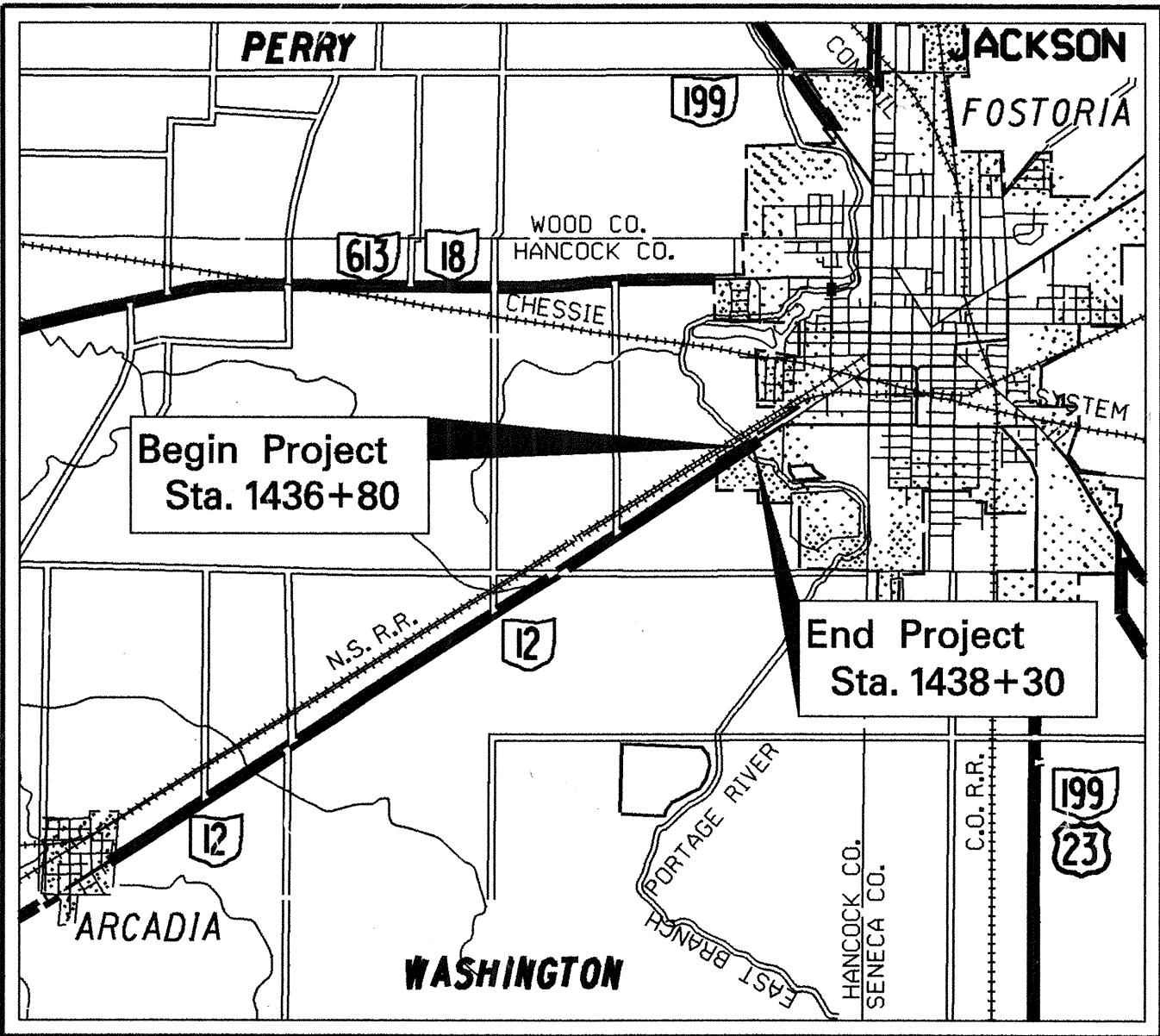
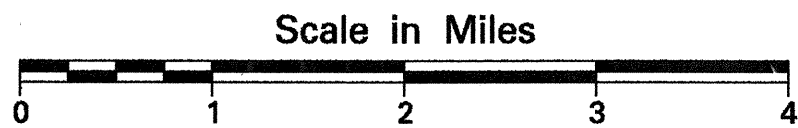


STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
HAN-12-27.21
CITY OF FOSTORIA
HANCOCK COUNTY



LOCATION MAP



Portion to be improved -----
State & Federal Routes -----
Other Roads -----

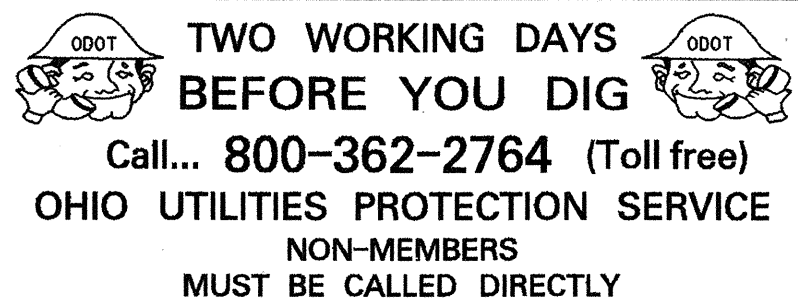
DESIGN DESIGNATION

Current Year A.D.T.(1994) 7470
Design Year A.D.T.(2014) 8970
DHV (.08) 718
D .65
T .08
V (Design Speed) 55 M.P.H.
V (Legal Speed) 35/55 M.P.H.
Design Functional Classification Urban Minor Arterial

DESIGN EXCEPTIONS

No Design Exceptions Required

UNDERGROUND UTILITIES



Plan Prepared By:
DISTRICT NO.1
OHIO DEPARTMENT OF
TRANSPORTATION

INDEX OF SHEETS

TITLE SHEET	1
SCHEMATIC PLAN	2
TYPICAL SECTIONS	3
GENERAL NOTES	4
MAINTENANCE OF TRAFFIC	5-8
GENERAL SUMMARY	9-10
MISCELLANEOUS CALCULATIONS & TABLES	11
PLAN & PROFILE	12
CROSS SECTIONS	13-15
STRUCTURE OVER 20'	16-22
FOUNDATION INVESTIGATION	3 Sheets

PROJECT DESCRIPTION

Replacement of existing structure HAN-12-2723 with a single span prestressed precast reinforced concrete box beam bridge on spill thru abutments. Wearing surface shall be asphalt concrete. Foundation shall be driven steel H-piles. Utilization of part width construction, to maintain traffic. Project length is 150 Lin. Ft. (or 0.028 miles).

1995 SPECIFICATIONS

The standard specifications of the State of Ohio, Department of Transportation, including changes and supplemental specifications listed in the proposal shall govern this improvement.

I hereby approve these plans and declare that the making of this improvement will not require the closing to traffic of the highway and that provisions for the maintenance and safety of traffic will be as set forth in the plans and estimates.

DISTRICT
CERTIFIED
PLAN

Approved [Signature]
Date 4/28/94 District Deputy Director of Transportation

Approved B.D. Hanblummi/MEH
Date 5-10-94 Engineer, Bureau of Bridges and Structural Design

Approved _____
Date _____ Deputy Director of Design

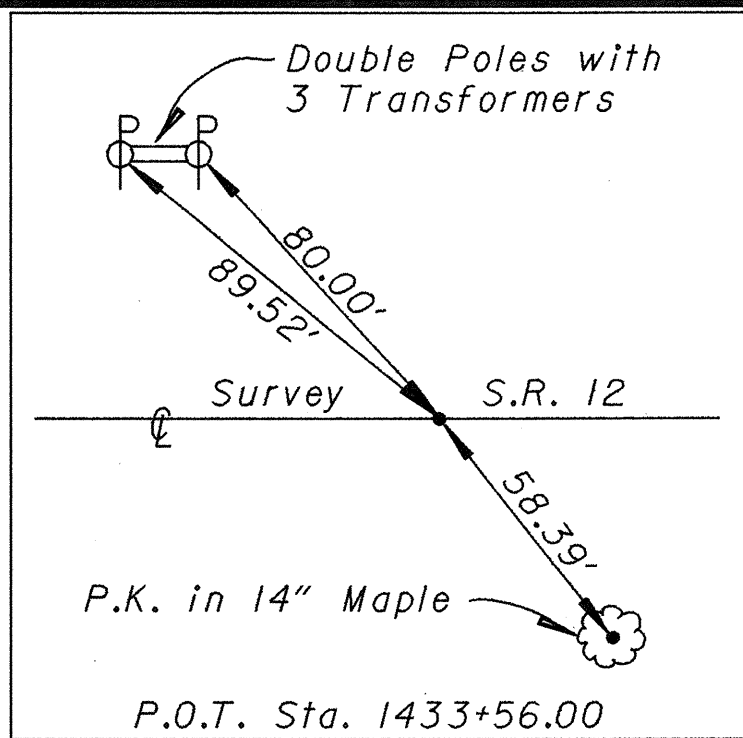
Approved [Signature]
Date 6-14-94 Director, Department of Transportation

REVISED 12-26-95

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED

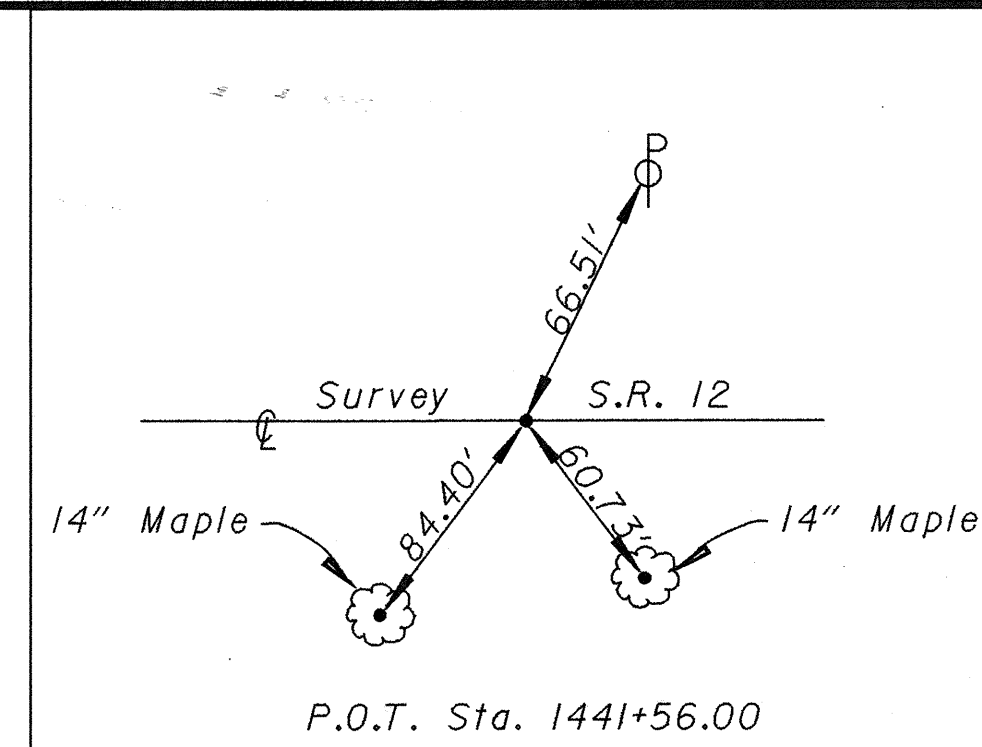
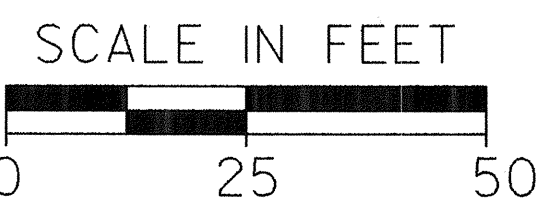
Division Administrator _____ Date _____

FEDERAL PROJECT No. BRF-94B(3)
PID No. 3425
CONSTRUCTION PROJECT No.
RAILROAD INVOLVEMENT NONE
HAN-12-27.21

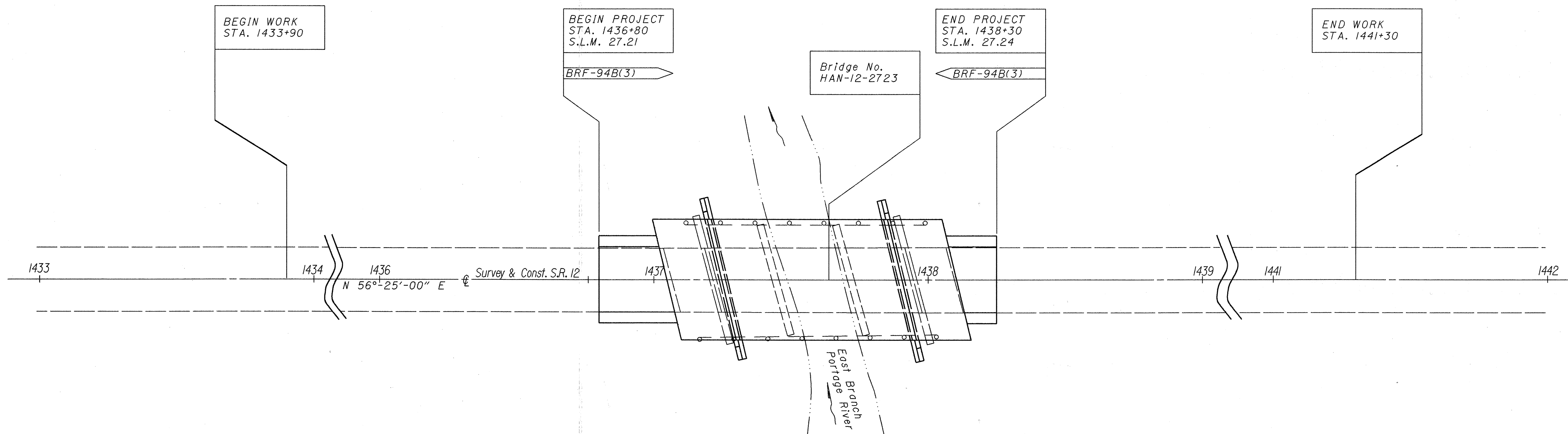


SCHEMATIC PLAN

S.R. 12



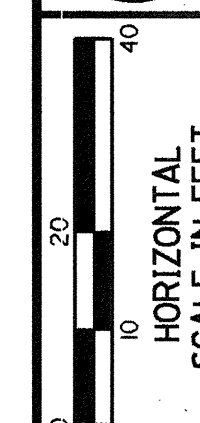
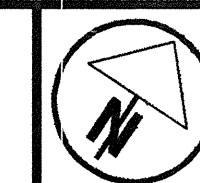
City of
FOSTORIA



City of
FOSTORIA

DESIGN DESIGNATION

CURRENT A.D.T. (1994)	= 7470
DESIGN A.D.T. (2014)	= 8970
DHV	= 718
D	= 65 %
T	= 8 %
V (DESIGN SPEED)	= 55 m.p.h.
V (LEGAL SPEED)	= 35/55 m.p.h.
DESIGN FUNCTIONAL CLASSIFICATION	URBAN MINOR ARTERIAL



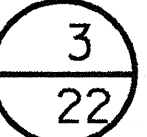
CALCULATED
CHECKED

SCHEMATIC PLAN

HAN-12-27.21

TYPICAL SECTIONS

HAN-12-27.21



Applies at:

EXISTING LEGEND

- PROPOSED LEGEND**

- 1 ITEM 404 1 1/4" Asphalt Concrete, AC-20
- 2 ITEM 402 1 3/4" Asphalt Concrete, AC-20
- 3 ITEM 301 - 8" Bituminous Aggregate Base, AC-20
- 4 ITEM 408 Prime Coat, Applied at a rate of 0.40 Gal. per Sq. Yd.
- 5 ITEM 304 6" Aggregate Base (See Proposal Note)
- 6 ITEM 203 Subgrade Compaction
- 7 ITEM 606 Guardrail, Type 5
- 8 ITEM 659 Seeding & Mulching (See General Note)
- 9 ITEM 611 Reinforced Conc. Approach Slab (Thickness = 13')
- 10 ITEM 407 Tack Coat
- 11 ITEM 403 Asphalt Concrete (Thickness Varies)
- 13 ITEM 605 Aggregate Drains
- 14 ITEM 615 Temporary Pavement, Class A
- 15 ITEM 202 Wearing Course Removed (1 1/4" Thick)



Applies at:

Survey & Construction

22'-0"

2'-0"

4'-0"

Rounding

6"

Profile Grade

3 1/16" /ft.

1" /ft.

3 1/2'

See Typical Section above for side slope information

10, 1, 11, 9, 6, 5, 7, 13, 8

Applies at:

* - 4' to 2' width transition will occur at Sta.1435+40 to Sta.1435+50 and Sta.1439+70 to Sta.1439+80.



Applies at:

Sta. 1435+40 to Sta. 1436+14.74	= 74.74 L.F.
Sta. 1439+00.56 to Sta. 1439+80	= 79.44 L.F.
Total	= 154.18 L.F.

ITEM 614 MAINTAINING TRAFFIC

A MINIMUM OF ONE LANE SHALL BE MAINTAINED FOR TWO-WAY TRAFFIC AT ALL TIMES BY USE OF THE EXISTING PAVEMENT & STRUCTURE, PROPOSED PAVEMENT & STRUCTURE, 615 TEMPORARY PAVEMENT, TEMPORARY TRAFFIC SIGNALS, AND PORTABLE CONCRETE BARRIER AS SHOWN ON SHEET 6 AND STD. DWGS. MT-96.11, MT-96.20, AND MT-96.25.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER FOR THE MAINTENANCE OF TRAFFIC.

ITEM 615, TEMPORARY PAVEMENT, CLASS A - 689 SQ. YD.
ITEM 615, TEMPORARY ROAD - LUMP SUM

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

TEMPORARY WORK ZONE MARKINGS

PRIOR TO PLACEMENT OF ANY TEMPORARY PAVEMENT MARKINGS, THE CONTRACTOR SHALL COMPLETELY OBLITERATE, AS PER 641.10, ALL EXISTING PAVEMENT MARKINGS THAT WOULD CREATE CONFUSION OR CONFLICT WITH THE TEMPORARY PAVEMENT MARKINGS. PAYMENT FOR THIS COMPLETE REMOVAL SHALL BE INCLUDED IN THE PERTINENT 614 ITEM.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER FOR TEMPORARY WORK ZONE PAVEMENT MARKINGS PER THE REQUIREMENTS OF THE STANDARD CONSTRUCTION DRAWINGS:

ITEM 614, TEMPORARY EDGE LINE, CLASS 1, 740.05, TYPE C - 0.54 MILES*
ITEM 614, TEMPORARY CENTER LINE, CLASS 1, 740.05, TYPE C - 0.31 MILES*
ITEM 614, TEMPORARY STOP LINE, CLASS 1, 740.05, TYPE C - 24 LIN. FT.

* -INCLUDES 3 APPLICATIONS

SEQUENCE OF OPERATIONS

- PHASE I
1. PLACE TEMPORARY PAVEMENT, SIGNALS, PORTABLE CONCRETE BARRIER, AND TEMPORARY PAVEMENT MARKINGS WHILE MAINTAINING TRAFFIC AS PER STD. DRWG. MT-97J0
 2. REMOVE RIGHT PORTION OF EXISTING STRUCTURE
 3. CONSTRUCT RIGHT PORTION OF PROPOSED STRUCTURE FOUNDATION, SUBSTRUCTURE, SUPERSTRUCTURE, APPROACH SLABS, WATERPROOFING, AND PAVEMENT
 4. PLACE TEMPORARY PAVEMENT TO BE UTILIZED IN PHASE II
 5. PLACE ITEM 402 AND ITEM 403 ONLY AND PROPOSED RIGHT SIDE GUARDRAIL
 6. ALL WORK AS DIRECTED BY THE ENGINEER
- PHASE II
1. MOVE PORTABLE CONCRETE BARRIER AND TEMPORARY PAVEMENT MARKINGS
 2. REMOVE LEFT (REMAINING) PORTION OF EXISTING STRUCTURE
 3. CONSTRUCT LEFT (REMAINING) PORTION OF PROPOSED STRUCTURE FOUNDATION, SUBSTRUCTURE, SUPERSTRUCTURE, APPROACH SLABS, WATERPROOFING, AND PAVEMENT
 4. PLACE ITEM 402 AND ITEM 403 ONLY AND PROPOSED LEFT SIDE GUARDRAIL
 5. ALL WORK AS DIRECTED BY THE ENGINEER
- PHASE III
1. MAINTAIN MINIMUM ONE LANE TRAFFIC AS PER STD. DRWG. MT-97J0 AND WITH THE AID OF TEMPORARY PAVEMENT MARKINGS
 2. PLACE ITEM 404 ON BRIDGE DECK, APPROACH SLABS, AND PAVEMENT AREAS
 3. PLACE POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM
 4. PLACE PERMANENT PAVEMENT MARKINGS
 5. ALL MISCELLANEOUS WORK INCLUDING DRAINAGE, SEEDING, ETC. AS DIRECTED BY THE ENGINEER

DUST CONTROL

THE CONTRACTOR SHALL FURNISH AND APPLY WATER AND CALCIUM CHLORIDE FOR DUST CONTROL AS DIRECTED BY THE ENGINEER. THE FOLLOWING CONTINGENCY QUANTITIES HAVE BEEN INCLUDED FOR DUST CONTROL PURPOSES:

ITEM 616, WATER - 20 MGAL.
ITEM 616, CALCIUM CHLORIDE - 2 TONS

ITEM 614 BARRIER REFLECTORS & OBJECT MARKERS

BARRIER REFLECTORS & OBJECT MARKERS SHALL BE INSTALLED ON ALL PORTABLE CONCRETE BARRIER USED FOR TRAFFIC CONTROL. BARRIER REFLECTORS, OBJECT MARKERS AND THEIR INSTALLATION SHALL CONFORM TO PROPOSAL NOTE 142-92 AND SHALL BE SPACED AT 25 FEET. BASIS OF PAYMENT SHALL BE AT THE UNIT PRICE BID FOR THE APPROPRIATE 614 ITEMS AND SHALL INCLUDE ALL LABOR, EQUIPMENT, HARDWARE AND INCIDENTALS REQUIRED TO PERFORM WORK.

ITEM 614, BARRIER REFLECTOR, TYPE A2 - 15 EACH
ITEM 614, BARRIER REFLECTOR, TYPE B2 - 26 EACH
ITEM 614, OBJECT MARKER - 24 EACH

ITEM 622 PORTABLE CONCRETE BARRIER, 32"

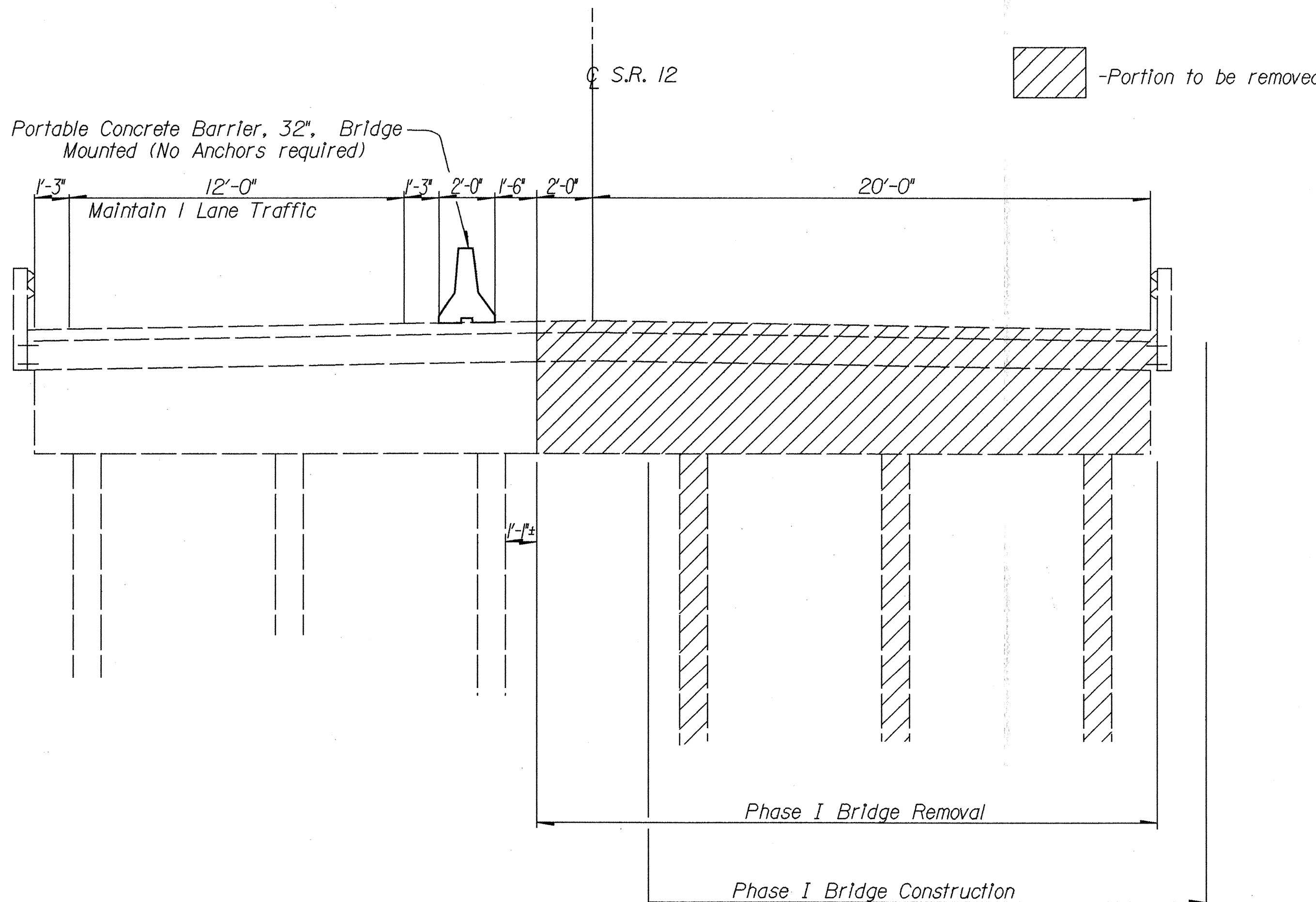
THIS STANDARD TYPE OF P.C.B. SHALL BE FURNISHED AND INSTALLED AS PER STD. DRWG. MC-9.2. ALL BARRIER SHALL USE CONNECTING PIN AND STEEL ROD CONNECTOR METHOD OF CONNECTING THE SECTIONS TOGETHER. NO TONGUE AND GROOVE CONNECTIONS SHALL BE PERMITTED.

ALL P.C.B. SHALL BE PAID FOR BY THE LENGTH OF BARRIER FURNISHED, INSTALLED, MAINTAINED AND SUBSEQUENTLY REMOVED. ALL P.C.B. SHALL BE IN GOOD SHAPE, FREE OF CRACKS, SPALLING OR ANY OTHER DAMAGE OR DETERIORATION.

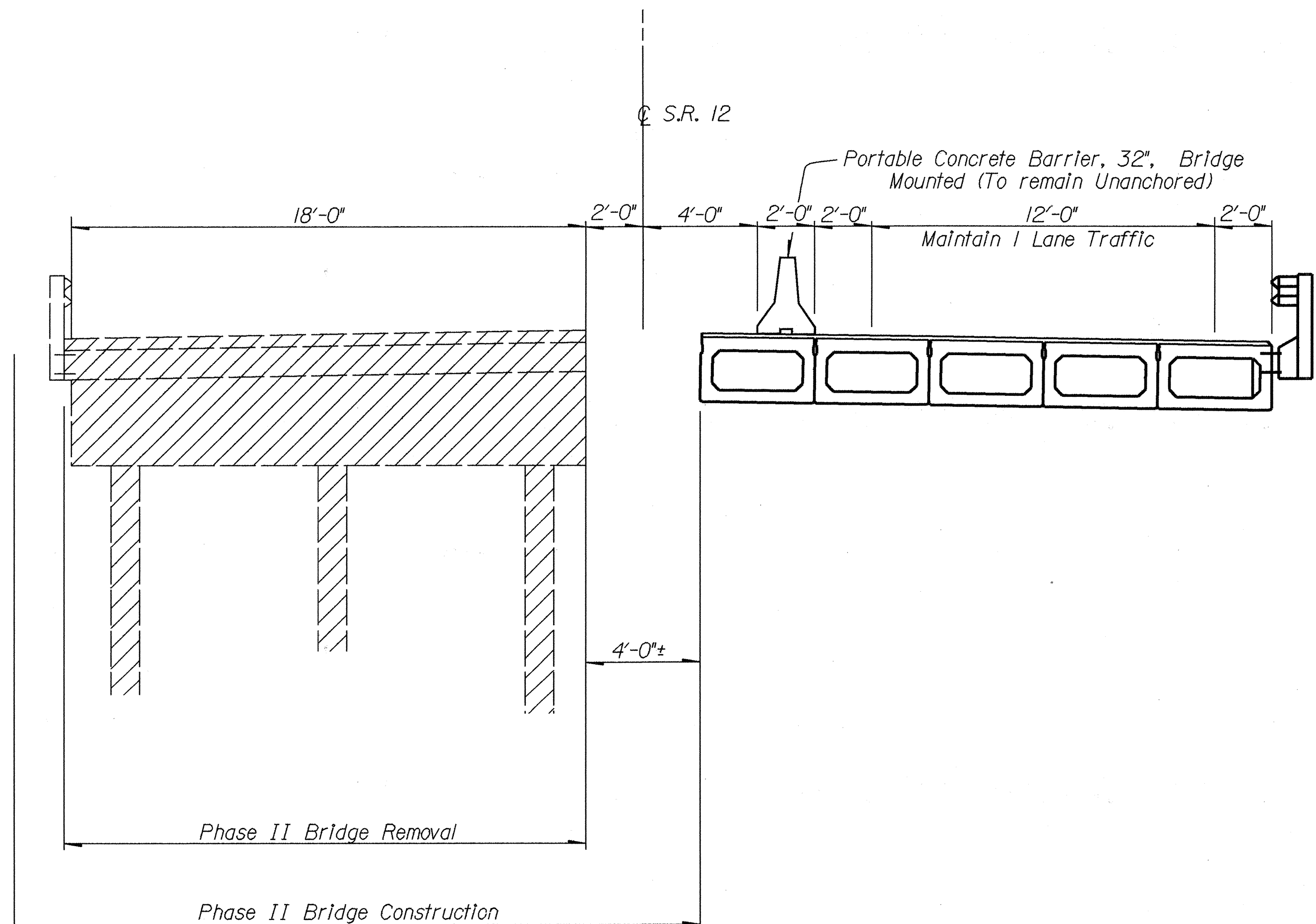
IT IS ANTICIPATED THAT THE SAME BARRIER WILL BE USED IN VARIOUS PHASES OF CONSTRUCTION. MOVEMENT OF THE CONCRETE BARRIER BETWEEN PHASES SHALL BE ACCOMPLISHED IN ONE WORKING DAY. FLAGGERS SHALL BE UTILIZED FOR PROTECTION OF VEHICULAR TRAFFIC UNTIL MOVEMENT OF THE BARRIER IS COMPLETE.

ALL COSTS INVOLVED IN REMOVING AND REINSTALLING THE CONCRETE BARRIER WILL BE INCLUDED IN THE CONTRACT PRICE FOR ITEM 622, PORTABLE CONCRETE BARRIER, 32" AND ITEM 622, PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED.

ITEM 622, PORTABLE CONCRETE BARRIER, 32" - 480 LIN. FT.
ITEM 622, PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED- 140 LIN. FT.



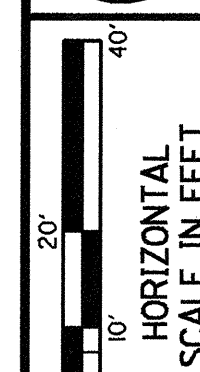
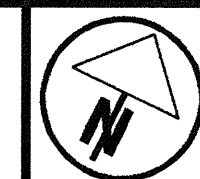
MAINTENANCE OF TRAFFIC-PHASE I DETAIL



MAINTENANCE OF TRAFFIC-PHASE II DETAIL

MAINTENANCE OF TRAFFIC
DETAILS AND NOTES

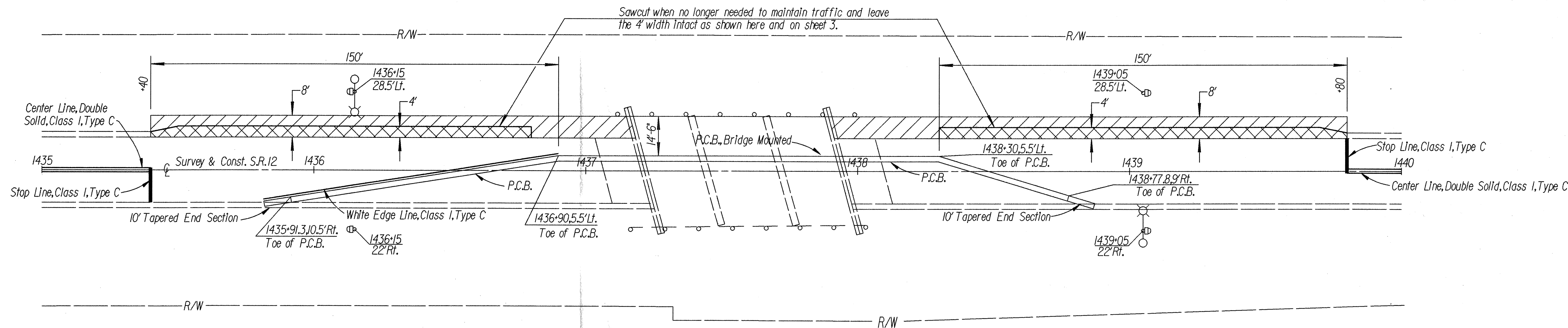
HAN-12-27.21



CALCULATED
LAB
CHECKED
BUS

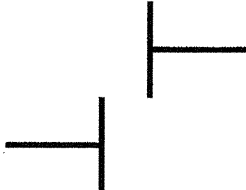
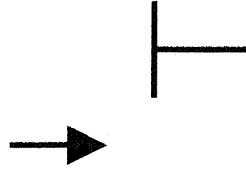
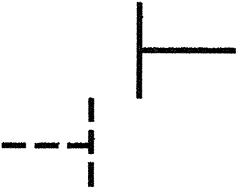
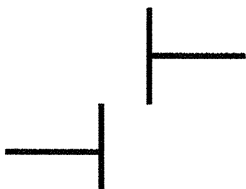
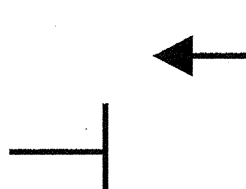
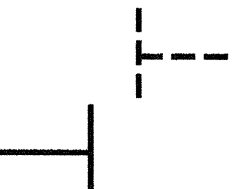
MAINTENANCE OF TRAFFIC
DETAILS

HAN-12-27.21



PHASE 1

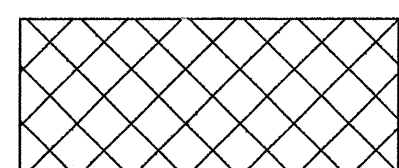
SIGNAL TIMING

			Cycle Split	Time
				Seconds
Split 1	Split 2	Split 3	1	15
			2	29
			3	3.5
			4	15
			5	29
			6	3.5
			Total Cycle	

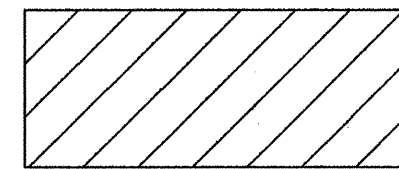
NOTES

For additional notes and details, see Std. Drwgs., MT-96.11, MT-96.20, and MT-96.25.

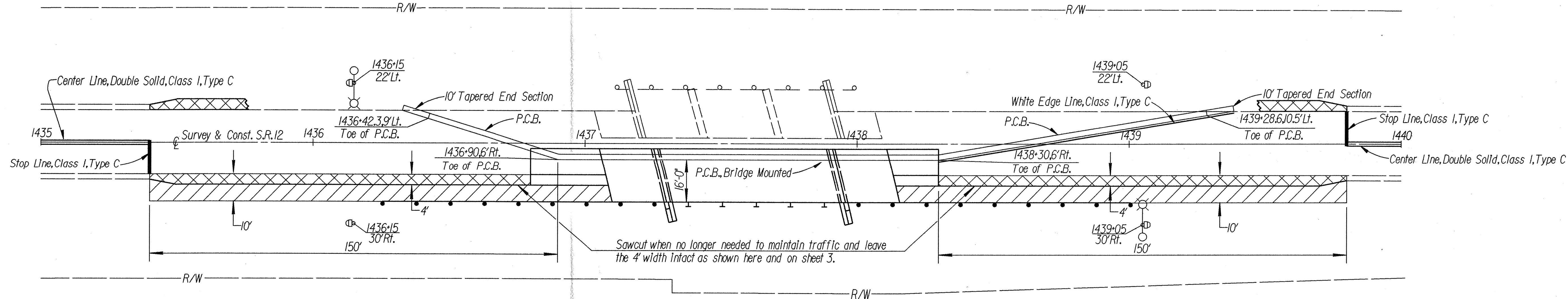
Contractor shall verify location of pipes and utilities prior to the installation of poles for signals and lighting.



~ Temporary Pavement to remain



~ Item 615, Temporary Pavement, Class A



PHASE 2

GENERAL

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING, INSTALLING, MAINTAINING, AND SUBSEQUENTLY REMOVING TEMPORARY RAISED PAVEMENT MARKERS (TRPM'S). THE MARKERS SHALL BE YELLOW OR WHITE, AS DESCRIBED IN THE PLAN.

MATERIAL

ALL MARKERS SHALL BE OF SUFFICIENT STRENGTH AND PROPERLY SHAPED SO AS NOT TO BE DISLODGED OR BROKEN, OR THE REFLECTOR DISLODGED OR BROKEN, OR THE REFLECTOR DISLODGED OR DAMAGED BY IMPACTS FROM VEHICLES TIRES, INCLUDING THOSE OF HIGH PRESSURE TRUCK TIRES LOADED TO 4500 POUNDS.

RETROREFLECTORS SHALL BE PROVIDED IN ONE OR TWO DIRECTIONS ON EACH MARKER AS REQUIRED BY THE USAGE AND SHALL RETURN WHITE OR YELLOW LIGHT AS IS APPROPRIATE FOR THE APPLICATION.

THE REFLECTOR SHALL HAVE AN EFFECTIVE AREA OF 0.35 SQUARE INCHES FOR TYPE A OR 3.0 SQUARE INCHES FOR TYPE B. ITS BRIGHTNESS OR SPECIFIC INTENSITY (WHEN TESTED AT 0.2 DEGREE ANGLE OF OBSERVATION AND THE FOLLOWING ANGLES OF INCIDENCE) SHALL MEET OR EXCEED THE FOLLOWING:

SPECIFIC INTENSITY		
TYPE A		
INCIDENCE ANGLE (DEGREES)	WHITE	YELLOW
0	1.0	0.6
20	0.4	0.24
45	—	—
TYPE B		
	WHITE	YELLOW
0	3.0	1.8
20	1.2	0.72
45	0.3	0.2

ANGLE OF INCIDENCE FORMED BY A RAY FROM LIGHT SOURCE TO THE MARKER AND THE NORMAL TO THE LEADING EDGE OF THE MARKER FACE (ALSO HORIZONTAL ENTRANCE ANGLE) .

ANGLE OF OBSERVATION FORMED BY A RAY FROM LIGHT SOURCE TO THE MARKER AND THE RETURNED RAY FROM THE MARKER TO THE MEASURING RECEPTOR.

SPECIFIC INTENSITY IS THE MEAN CANDLEPOWER OF THE REFLECTED LIGHT (AT GIVEN INCIDENCE AND DIVERGENCE ANGLES) FOR EACH FOOT-CANDLE AT THE REFLECTOR (ON A PLANE PERPENDICULAR TO THE INCIDENT LIGHT) .

TYPE A MARKERS ARE INTENDED TO PROVIDE HIGH VISIBILITY BOTH DAY AND NIGHT. THEIR DAY TIME VISIBILITY SHALL BE ASSURED BY SIZE, SHAPE AND COLOR AS FOLLOWS:

1) THE MARKERS SHALL BE A HIGH VISIBILITY YELLOW OR WHITE COLOR WHICH WILL NOT DEGRADE SUBSTANTIALLY DUE TO TRAFFIC WEAR AND WHICH WILL MATCH THE COLOR OF THE REFLECTOR.

2) WHEN VIEWED FROM ABOVE, THE MARKERS SHALL HAVE A VISIBLE AREA OF NOT LESS THAN 14 SQUARE INCHES.

3) WHEN VIEWED FROM THE FRONT, PARALLEL TO THE PAVEMENT, AS FROM APPROACHING TRAFFIC, THE MARKER SHALL HAVE A WIDTH OF APPROXIMATELY 4 INCHES AND A VISIBLE AREA OF NOT LESS THAN 15 SQUARE INCHES.

TYPE B MARKERS ARE INTENDED TO PROVIDE HIGH VISIBILITY AT NIGHT BY RETROREFLECTING AUTOMOTIVE HEADLIGHT BACK TO DRIVER.

INSTALLATION

TEMPORARY RAISED PAVEMENT MARKERS SHALL BE ATTACHED TO CLEAN, DRY PAVEMENT BY A BUTYL ADHESIVE PAD, ABITUMINOUS ADHESIVE OR OTHER CONSTRUCTION GRADE ADHESIVES (SUCH AS FRANKLIN PANEL AND METAL ADHESIVE) SUITABLE TO ANCHOR THE MARKER UNDER THE ABOVE CONDITIONS. WHEN IT IS NECESSARY TO ATTACH MARKERS TO NEW CONCRETE PAVEMENT WITH CURING COMPOUND REMAINING, THE CURING COMPOUND MEMBRANE SHALL BE REMOVED BY SANDBLASTING OR OTHER MECHANICAL CLEANING METHOD. MARKERS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

THE CONTRACTOR SHALL IMMEDIATELY REPLACE, AT HIS EXPENSE, ANY MARKERS WHICH FAIL (BROKEN HOUSING, HOUSING WORN TO THE EXTENT THAT DAYTIME VISIBILITY IS SIGNIFICANTLY DIMINISHED OR OF AN UNACCEPTABLE COLOR, DETACHED OR BROKEN REFLECTOR, HOUSING DETACHED FROM ADHESIVE).

MARKERS ARE LIKELY TO BE REMOVED BY SNOW PLOWING OPERATIONS, THUS THEY ARE NOT CONSIDERED SUITABLE FOR USE DURING THE PERIOD FROM OCTOBER 15 UNTIL APRIL 30. THE CONTRACTOR IS ADVISED TO SCHEDULE HIS WORK AND/OR THE USE OF THESE DEVICES TO AVOID THIS PERIOD. SHOULD THE CONTRACTOR CHOOSE TO USE TRPM'S DURING THIS PERIOD AND THEY ARE SUBSEQUENTLY REMOVED OR DESTROYED BY SNOW AND ICE CONTROL ACTIVITIES, THE CONTRACTOR SHALL IMMEDIATELY, AT HIS EXPENSE, PROVIDE A SUBSTITUTE TRAFFIC GUIDANCE SYSTEM EFFECTIVE DURING DAY AND NIGHT AND WHICH IS ACCEPTABLE TO THE ENGINEER.

THE MARKERS SHALL BE PLACED ACCURATELY TO DEPICT STRAIGHT OR UNIFORMLY CURVING LINES. WHEN USED TO SUPPLEMENT TEMPORARY PAVEMENT MARKINGS, THEY SHALL BE PLACED ON OR IMMEDIATELY ADJACENT TO THE PAVEMENT MARKING. LOCATIONS SHALL BE ADJUSTED UP TO ONE FOOT LONGITUDINALLY OR SIX INCHES laterally TO AVOID PLACEMENT ON JOINTS, OR ON CRACKED OR DETERIORATED PAVEMENT. MARKERS SHALL NOT BE PLACED DIRECTLY ON PAVEMENT MARKINGS IF THIS DISTRACTS FROM THEIR ABILITY TO REMAIN ATTACHED TO THE PAVEMENT.

APPLICATION

1) WHEN REQUIRED TO SUPPLEMENT PAVEMENT MARKING, TEMPORARY RAISED PAVEMENT MARKERS SHALL BE PLACED AS FOLLOWS:

LINE	TYPE	SPACING
EDGE LINE	A OR B	20'C/C
LANE LINE	A OR B	40'C/C*
CENTER LINE (SINGLE/BROKEN)	A OR B	40'C/C*
CENTER LINE (DOUBLE/SOLID)	A OR B	2 UNITS SIDE BY SIDE 4 INCHES APART 20'C/C
CHANNELIZING LINE (INCLUDES EXIT GORE NOSE)	A OR B	10'C/C

* CENTERED IN GAP

2) WHEN USED TO SIMULATE (REPLACE) PAVEMENT MARKING, TEMPORARY RAISED PAVEMENT MARKERS SHALL BE PLACED AS FOLLOWS:

LINE	TYPE	SPACING
EDGE LINE	A	5' C/C
LANE LINE	A	4 @ 3.33'C/C 30' GAP (40' CYCLE)
CENTER LINE (DOUBLE/SOLID)	A	2 UNITS SIDE BY SIDE 5' C/C
CENTER LINE (SINGLE/BROKEN)	A	4 @ 3.33'C/C 30' GAP (40' CYCLE)
CHANNELIZING LINE (INCLUDES EXIT GORE NOSE)	A	5' C/C
EDGE LINE (TWO COLOR) (WHITE/YELLOW)	A	BACK TO BACK 5' C/C

YELLOW MARKERS USED TO SEPARATE OPPOSITE FLOWS OF TRAFFIC (CENTER LINES) SHALL INCLUDE REFLECTIONS FOR BOTH DIRECTIONS. ALL OTHER YELLOW AND WHITE MARKERS SHALL PROVIDE RETROREFLECTIVITY FOR ONE DIRECTION ONLY.

REMOVAL

REMOVAL SHALL BE ACCOMPLISHED IN A MANNER THAT LITTLE OR NONE OF THE ADHESIVE REMAINS ON THE PAVEMENT. PERMANENT PAVEMENT SURFACES SHALL NOT BE SCARRED, BROKEN OR ROUGHENED SIGNIFICANTLY.

PAVEMENT

BASIS OF PAYMENT SHALL BE AT THE CONTRACT UNIT PRICE PER EACH MARKER AND SHALL INCLUDE ALL LABOR, EQUIPMENT, HARDWARE AND INCIDENTALS REQUIRED TO PERFORM THE WORK. IT SHALL ALSO INCLUDE REPLACEMENT AT NO ADDITIONAL COST OF ALL TEMPORARY RAISED PAVEMENT MARKERS WHICH, IN THE JUDGEMENT OF THE ENGINEER, FAIL FOR ANY REASON, EXCEPT DUE TO FAILURE OF THE PAVEMENT TO WHICH THEY ARE ATTACHED.

ITEM	UNIT	DESCRIPTION
614	EACH	TEMPORARY RAISED PAVEMENT MARKERS.

STATIONING			SPACING	TYPE A			TYPE B OR A			REMARKS
FROM	TO	SIDE	(FT)	W	Y	Y/Y	W	Y	Y/Y	(LINE TYPE)
PHASE I										
1433+90	1435+40	℄	20 c/c		16					2 UNITS SIDE BY SIDE
1435+40	1438+30	Lt.	5 c/c	58	58					
1436+90	1438+30	Rt.	5 c/c	25	25					
1438+35	1439+80	Lt.	5 c/c	30						
1439+80	1441+30	℄	20 c/c		16					2 UNITS SIDE BY SIDE
PHASE II										
1435+40	1436+90	Rt.	5 c/c	30						
1436+90	1438+30	Lt.	5 c/c	25	25					
1436+95	1439+80	Rt.	5 c/c	57	57					
TOTALS				225	197					
				422*						

*-QUANTITY CARRIED TO GENERAL SUMMARY, SHEET 10

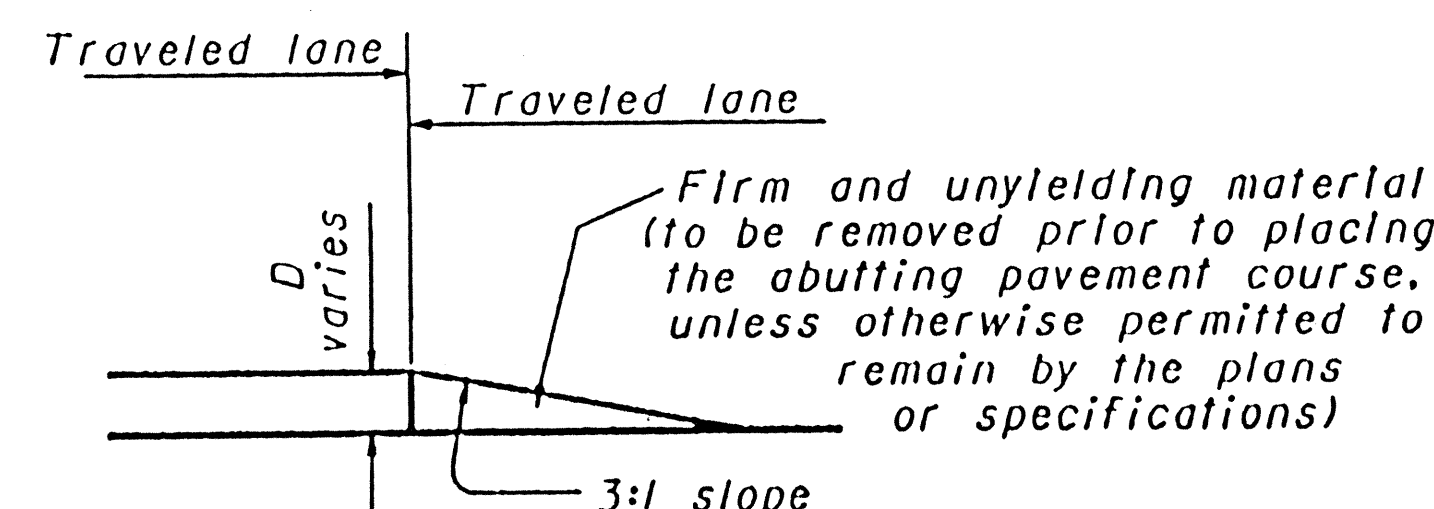
REVISED BY: LAB		DATE: 04/19/94	
210120		DATE	
614 TEMPORARY RAISED PAVEMENT MARKERS		03/30/88 03/23/90 03/28/90 07/03/90	
PLAN INSERT SHEET		7 22	

GENERAL NOTES

1. It is intended that this drawing be used for treatment of drop-offs that develop during construction operations, and that are not otherwise provided for in the construction plans. Where the plans do not provide specific items for labor, equipment, or materials to implement the drop-off treatments specified hereon, they shall be included for payment in the lump sum bid for Item 614 - Maintaining Traffic.
2. While the need for certain advisory signing is noted hereon, it is not intended that this be indicative of all signing that may be required to advise or warn motorists, and all requirements of the Ohio Manual of Uniform Traffic Control Devices (OMUTCD) must be fulfilled.
3. In urban or otherwise heavily developed areas where pedestrians and/or bicyclists may be present in significant numbers, additional signing and protective measures other than those shown hereon may be required.
4. The drop-off treatment selected for use at any given location shall be as appropriate for the prevailing conditions at the site.
5. Where concrete barrier is specified, it shall be in accordance with Standard Construction Drawing MC-9.2 and Item 622.
6. When drums are specified for a dropoff condition, a minimum number of four drums shall be used. Spacing shall be as indicated in the plans or as specified in the OMUTCD.
7. When OW-151 (Low Shoulder) signs or OW-171 (Uneven Lanes) and OWP-171 signs are required, they shall be placed 750' in advance of the condition, on all intersecting entrance ramps within the limits of the condition and immediately beyond all intersecting roadways within the limits of the condition. When the dropoff condition extends more than one-half mile, additional signs should be erected at intervals of one mile or less.
8. For locations, such as at ramps, lane shifts, lane closures, etc., where traffic is required to negotiate any difference in elevation between pavements, a 3:1 slope treatment similar to the Optional Wedge Treatment shall be provided.
9. Portable concrete barrier shall be placed on the same level as the traffic surface or an adjacent surface that is no more than 3" below the traffic surface, and shall not encroach on lane width(s) designated as the minimum required for traffic use. Where drums are used, and their presence would reduce traveled lane widths to less than 10', drums may be placed below the traffic surface provided the dropoff depth does not exceed 5" and approval is granted by the Project Engineer.
10. Pavement Repairs (or similar work):
 - a. Lengths greater than 60 feet - utilize appropriate treatment from Condition 1.
 - b. Lengths of 60 feet or less - repairs shall be effected in accordance with 255.08. Drums may be used as a separator adjacent to the traveled lane.

OPTIONAL WEDGE TREATMENT (MILLING OR RESURFACING)

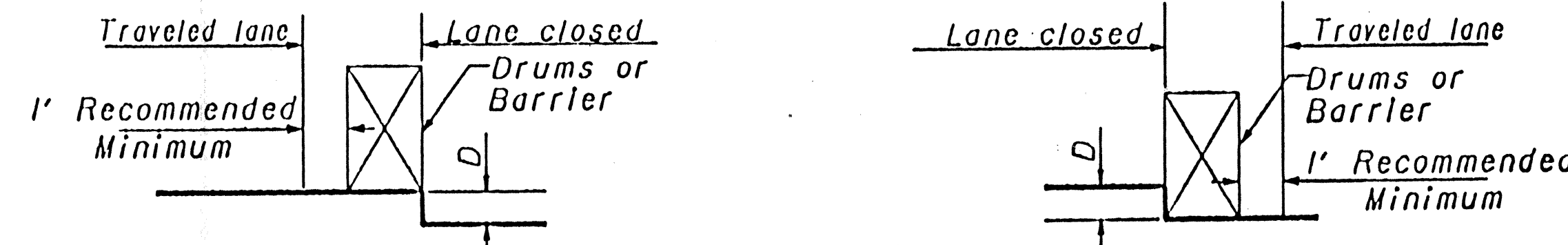
1. This treatment may be used when permitted for Condition 1 only.
2. OW-171 and OWP-171 signs required.



CONDITION I DROPOFFS BETWEEN TRAVELED LANES

1. These treatments are to be used for resurfacing, pavement planing, excavation, etc. between or within traveled lanes.

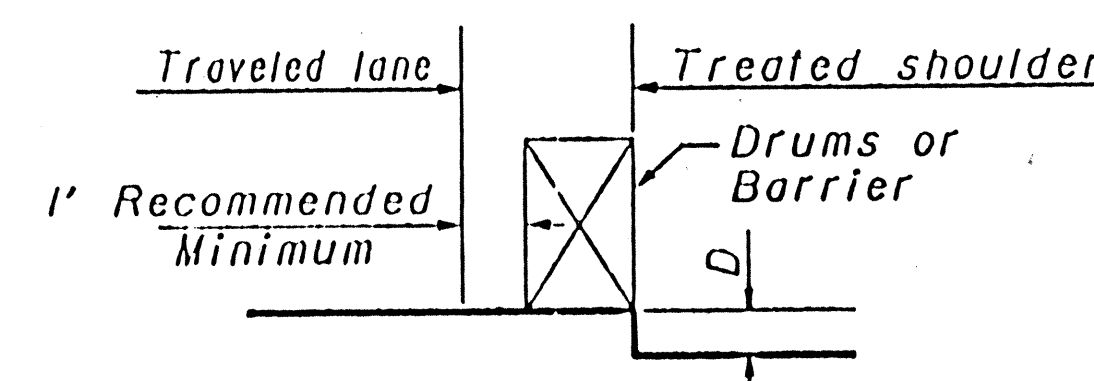
D (In.)	Treatment
< 1 1/2	Erect OW-171 and OWP-171 signs.
> 1 1/2 - 3	1) Lane closure utilizing drums as shown below OR 2) Optional Wedge Treatment
> 3 - 5	Lane closure utilizing drums as shown below.
> 5	Lane closure utilizing portable concrete barrier as shown below.



CONDITION II DROPOFFS WITHIN GRADED SHOULDER AREA

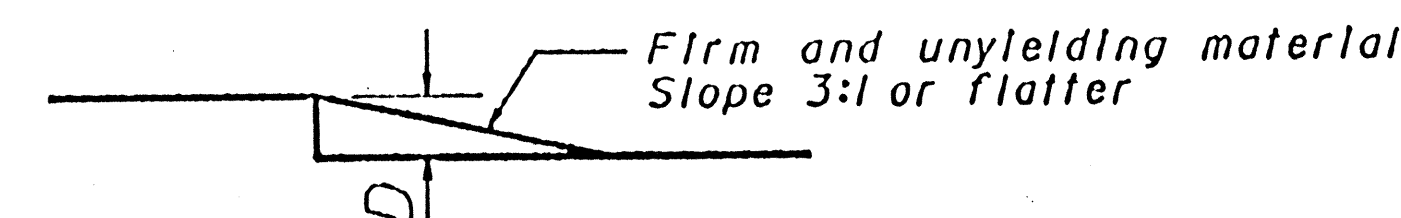
1. The treatments indicated below are for use in conjunction with resurfacing, planing, or excavations within the graded shoulder area.
2. The graded shoulder area is that flat or gradually sloping area between the edge of a normally traveled lane and the more steeply sloping ditch foreslope or embankment slope. Its surface may be soil or turf, and/or it may be inclusive of a "treated" area (improved with aggregates, asphaltic materials, or concrete). For the purposes herein, its maximum width shall be considered to be twelve (12) feet.

D (In.)	Treatment
< 1 1/2	1) If edgelines are present, no treatment necessary OR 2) Erect OW-171 and OWP-171 signs.
> 1 1/2 - 5	1) If min. lane width requirements can be met, maintain lanes utilizing drums as shown below OR 2) If min. lane width requirements cannot be met, close adjacent lane utilizing drums OR 3) Optional Shoulder Treatment.
> 5 - 12 Daylight only	If min. lane width requirements can be met, maintain lanes utilizing drums as shown below.
> 5 - 24	1) If min. lane width requirements can be met, maintain lanes utilizing portable concrete barrier as shown below. OR 2) If min. lane width requirements cannot be met, close adjacent lane utilizing drums.
> 24	Lane closure utilizing portable concrete barrier as shown below.



OPTIONAL SHOULDER TREATMENT

1. This treatment may not be used within a bituminous shoulder where a hot longitudinal joint per 401.15 is required.
2. OW-151 signs required.



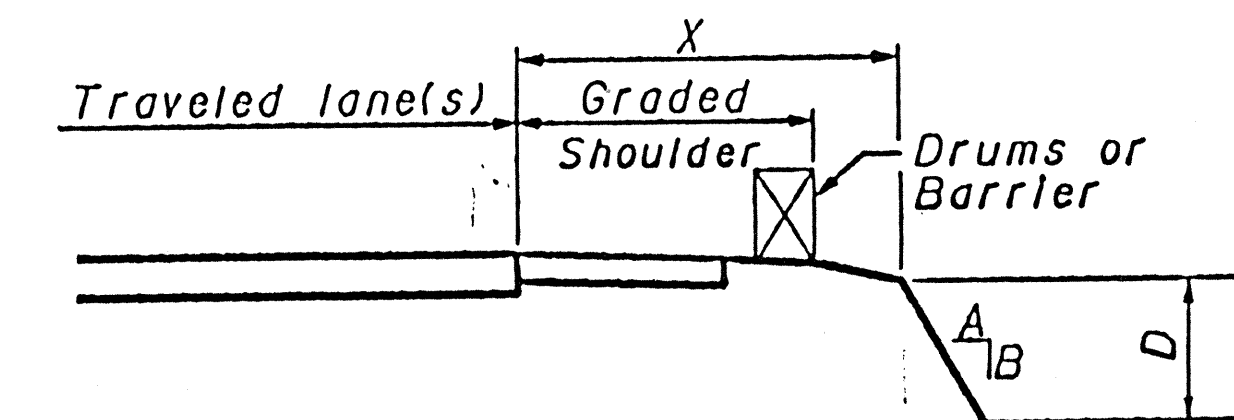
CONDITION III

DROPOFFS BEYOND GRADED SHOULDER OR BACK OF CURB

1. See Note 2 under Condition II.
2. Use Chart A or B below, as applicable.

CHART A

- USE FOR:
1. Uncurbed Facilities.
 2. Curbed Facilities, where:
 - a. Curbs are less than 6" in height.
 - b. Curbs are 6" or greater in height and the legal speed is greater than 40 mph.

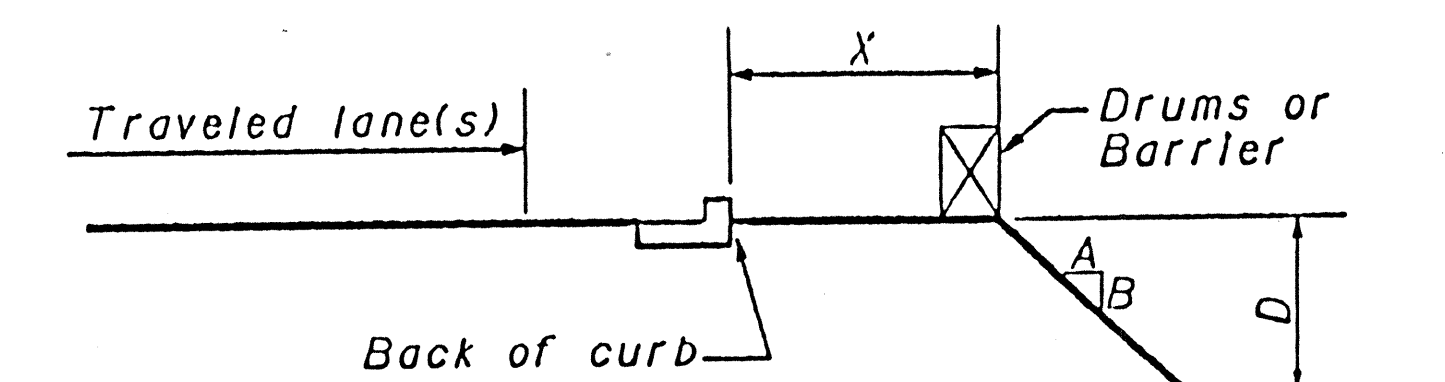


X (Ft.)	D (In.)	A/B	Treatment Required	
			Day	Night
0-4	Any	Any	(a)	(a)
4-30	Any	3:1 or Flatter	None	None
4-12	< 3	Steeper than 3:1	None	None
4-12	> 3 - < 12	Steeper than 3:1	Drums	Drums
4-12	> 12	Steeper than 3:1	Drums	Barrier
> 12 - 20	< 12	Steeper than 3:1	None	None
> 12 - 20	> 12 - < 24	Steeper than 3:1	Drums	Drums
> 12 - 20	> 24	Steeper than 3:1	Drums	Barrier
> 20 - 30	< 24	Steeper than 3:1	None	Drums
> 20 - 30	> 24	Steeper than 3:1	Drums	Barrier
> 30	Any	Any	None	None

(a) Use treatment specified under Condition 2.

CHART B

- USE FOR: Curbed facilities, where the curb is 6" or greater in height and the legal speed is 40 mph or less.



X (Ft.)	D (In.)	A/B	Treatment Required	
			Day	Night
0-10	< 12	Any	None	Drums
0-10	> 12	Any	Drums	Drums
> 10	Any	Any	None	None

9 22 HAN-12-27.21	GENERAL SUMMARY			CALCULATED
	LAB	CHECKED	BRH	

9 22	HAN-12-27.21	GENERAL SUMMARY			CALCULATED	
					LAB	
					CHECKED	
						BRH

CALCULATED LAB	CHECKED BRH
-------------------	----------------

GENERAL SUMMARY

PAVEMENT CALCULATIONS

Sta. 1435+40 to Sta. 1436+80

Distance = 140 Lin. Ft.

Width of mainline = 24'

Item 202 - 1/4" Wearing Course Removed
(24)(140)(1/9) = 373.33 Sq.Yd.

Item 404 - 1/4"
(1.25/12)(24)(140)(1/27) = 12.96 Cu.Yd.

Item 407 - Tack
(0.075)(24)(140)(1/9) = 28.00 Gal.

Sta. 1436+80 to Sta. 1437+04.84

Distance = 24.84

Width of mainline & shoulder = 32'

Item 402 - 1 3/4"
(1.75/12)(24.84)(32)(1/27) = 4.29 Cu.Yd.

Item 404 - 1/4"
(1.25/12)(24.84)(32)(1/27) = 3.07 Cu.Yd.

Item 408 - 0.40 gal./Sq.Yd.
(0.40)(24.84)(32)(1/9) = 35.33 Gal.

Item 301 - 8"
(8/12)(24.84)(32)(1/27) = 19.63 Cu.Yd.

Item 304 - 6"
(6/12)(24.84)(32)(1/27) = 14.72 Cu.Yd.

Item 203 - Compaction
(24.84)(32)(1/9) = 88.32 Sq.Yd.

Sta. 1437+04.84 to Sta. 1438+10.46

Deduct Structure HAN-12-2723

Sta. 1437+24.84 to Sta. 1437+90.46

APPROACH SLABS

Sta. 1437+04.84 to Sta. 1437+24.84 = 20'

Sta. 1437+90.46 to Sta. 1438+10.46 = 20'

Item 404 - 1/4"
(1.25/12)(40)(44)(1/27) = 6.79 Cu.Yd.

Item 403 - (Varies) 2 3/4" to 1 3/4"
(2.75+1.75)(1/2)(1/12)(40)(44)(1/27)= 12.22 Cu.Yd.

Item 304 - 6"
(6/12)(40)(45)(1/27) = 33.33 Cu.Yd.

Item 407 - Tack
(0.075)(40)(44)(1/9) = 14.67 Gal.

Item 203 - Compaction
(40-2)(45)(1/9) = 190.00 Sq.Yd.

Item 611 - Approach Slabs
(40)(44)(1/9) = 195.56 Sq.Yd.

Item 202 - Approach Slabs Removed
2x(15)(24)(1/9) = 80.00 Sq.Yd.

Sta. 1438+10.46 to Sta. 1438+30

Distance = 19.54'

Width of mainline & shoulder = 32'

Item 402 - 1 3/4"
(1.75/12)(19.54)(32)(1/27) = 3.38 Cu.Yd.

Item 404 - 1/4"
(1.25/12)(19.54)(32)(1/27) = 2.41 Cu.Yd.

Item 408 - 0.40 gal./Sq.Yd.
(0.40)(19.54)(32)(1/9) = 27.79 Gal.

Item 301 - 8"
(8/12)(19.54)(32)(1/27) = 15.44 Cu.Yd.

Item 304 - 6"
(6/12)(19.54)(32)(1/27) = 11.58 Cu.Yd.

Item 203 - Compaction
(19.54)(32)(1/9) = 69.48 Sq.Yd.

Sta. 1438+30 to Sta. 1439+80

Distance = 150 Lin. Ft.

Width of mainline = 24'

Item 202 - 1/4" Wearing Course Removed
(24)(150)(1/9) = 400.00 Sq.Yd.

Item 404 - 1/4"
(1.25/12)(24)(150)(1/27) = 13.89 Cu.Yd.

Item 407 - Tack
(0.075)(24)(150)(1/9) = 30.00 Gal.

PAVEMENT TABLE

Station		Length	202		203	301	304	402	403	404	407	408	611
			Wearing Course Removed	Approach Slab Removed	Subgrade Compaction	Bituminous Aggregate Base, AC-20	Aggregate Base (See Proposal Note)	Asphalt Concrete AC-20	Asphalt Concrete AC-20	Asphalt Concrete AC-20	Tack Coat	Bituminous Prime Coat	Reinforced Concrete Approach Slab (7'-13")
From	To	Lin. Ft.	Sq. Yd.	Sq. Yd.	Sq. Yd.	Cu. Yd.	Cu. Yd.	Cu. Yd.	Cu. Yd.	Cu. Yd.	Gal.	Gal.	Sq. Yd.
Mainline													
Sta. 1435+40	Sta. 1436+80	140.00	373.33							12.96	28.00		
Sta. 1438+30	Sta. 1439+80	150.00	400.00							13.89	30.00		
Mainline & Shoulders													
Sta. 1436+80	Sta. 1437+04.84	24.84			88.32	19.63	14.72	4.29		3.07		35.33	
Sta. 1438+10.46	Sta. 1438+30	19.54			69.48	15.44	11.58	3.38		2.41		27.79	
Approach Slabs													
1437+04.84	1437+24.84	20.00		80.00	190.00		33.33		12.22	6.79	14.67		195.56
1437+90.46	1438+10.46	20.00											
Str. HAN-12-2723													
1437+24.84	1437+90.46	65.62											
Totals													
		150.00	773.33	80.00	347.80	35.07	59.63	7.67	12.22	39.12	72.67	63.12	195.56

PAVEMENT MARKINGS

Station		Side	642	642	862
			Center Lines Type 2	Edge Lines Type 2	Raised Pavement Marker
From	To		Lin. Ft.	Lin. Ft.	Each
Sta. 1435+40	Sta. 1439+80		440		12
Sta. 1435+40	Sta. 1439+80	Rt.		440	
Sta. 1435+40	Sta. 1439+80	Lt.		440	
Totals			440 or 0.08 Mi.	880 or 0.17 Mi.	12

AGGREGATE DRAINS

Station	Side	605 Length Ft.
1436+98.50	Lt.	19.5
1437+06.50	Rt.	17.5
1437+14.00	Lt.	15
1437+26.00	Rt.	13
1438+04.50	Lt.	15
1438+14.50	Rt.	15
1438+29.00	Lt.	25
1438+29.00	Rt.	19
Total		139

MISCELLANEOUS CALCULATIONS

- 601 ROCK CHANNEL PROTECTION, TYPE C WITH FILTER
2x(58.5)(19.5)(2)(1/27) = 169 Cu. Yd.**
- 605 AGGREGATE DRAINS (from table) = 139 Lin.Ft.
- 659 SEEDING & MULCHING (from table) = 1245 Sq.Yd*.
Net Seeding = 1245 Sq.Yd.
- 659 COMMERCIAL FERTILIZER
(1245)(9/1000)(20/2000) = 0.11 Ton
- 659 WATER
(1245)(9/1000)(240) = 2.7 M Gal*.

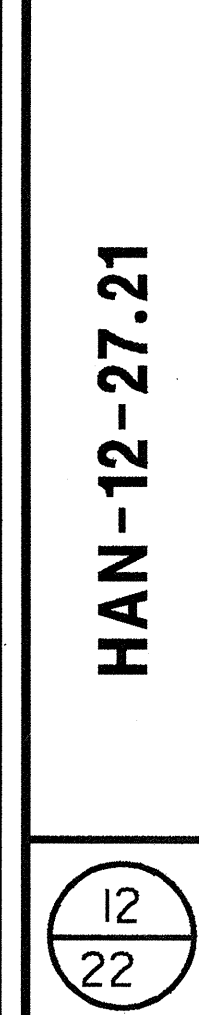
*-Carried to Sheet 4.
**-Carried to Sheet 12.

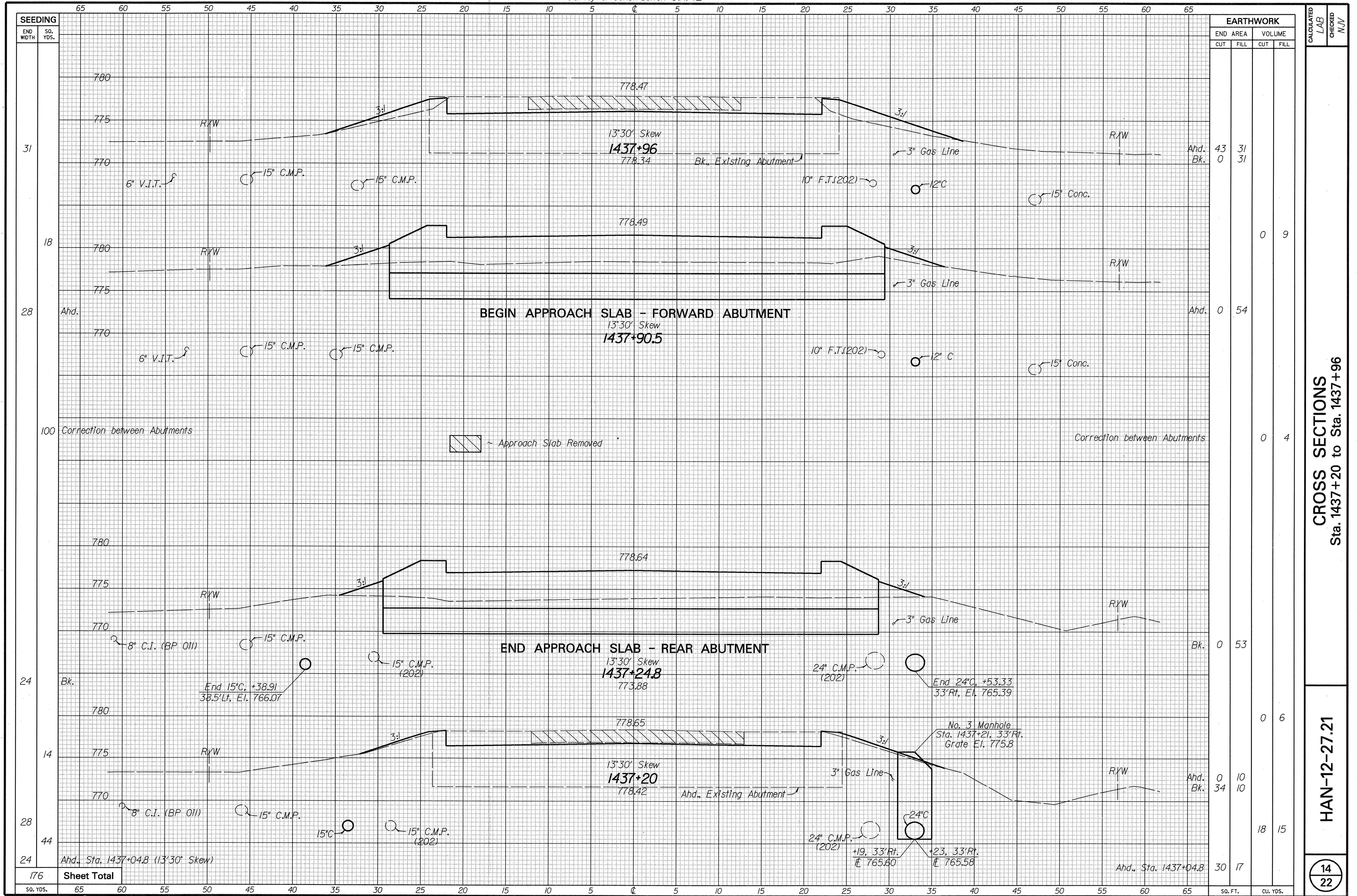
EARTHWORK

Sheet No.	203	
	Excavation not including Embankment Construction	Embankment
	Cu. Yd.	Cu. Yd.
12	131	120
Totals	131	120

SEEDING

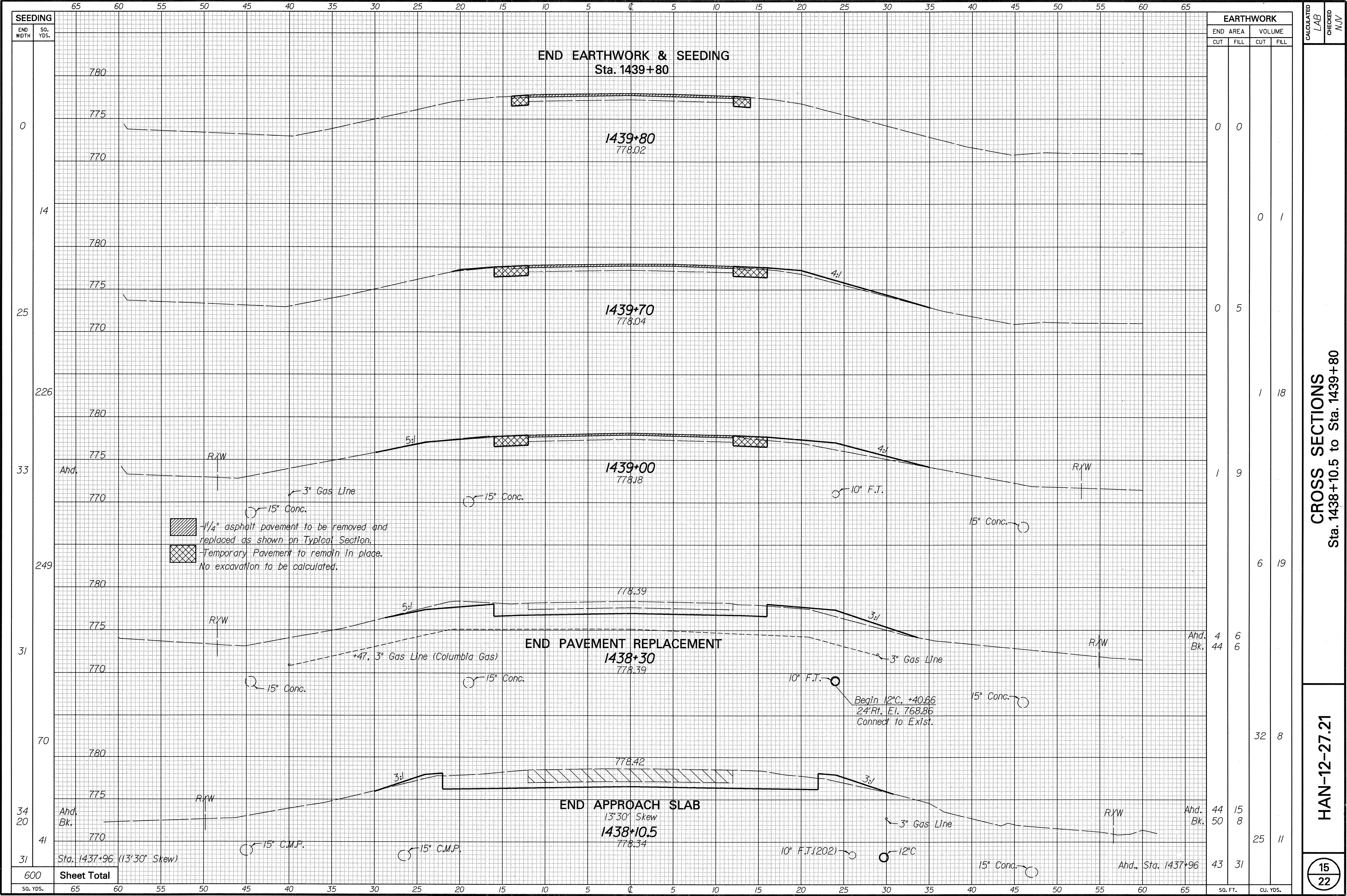
Sheet No.	659 Seeding & Mulching
	Sq. Yd.
13	469
14	176
15	600
Total	1245





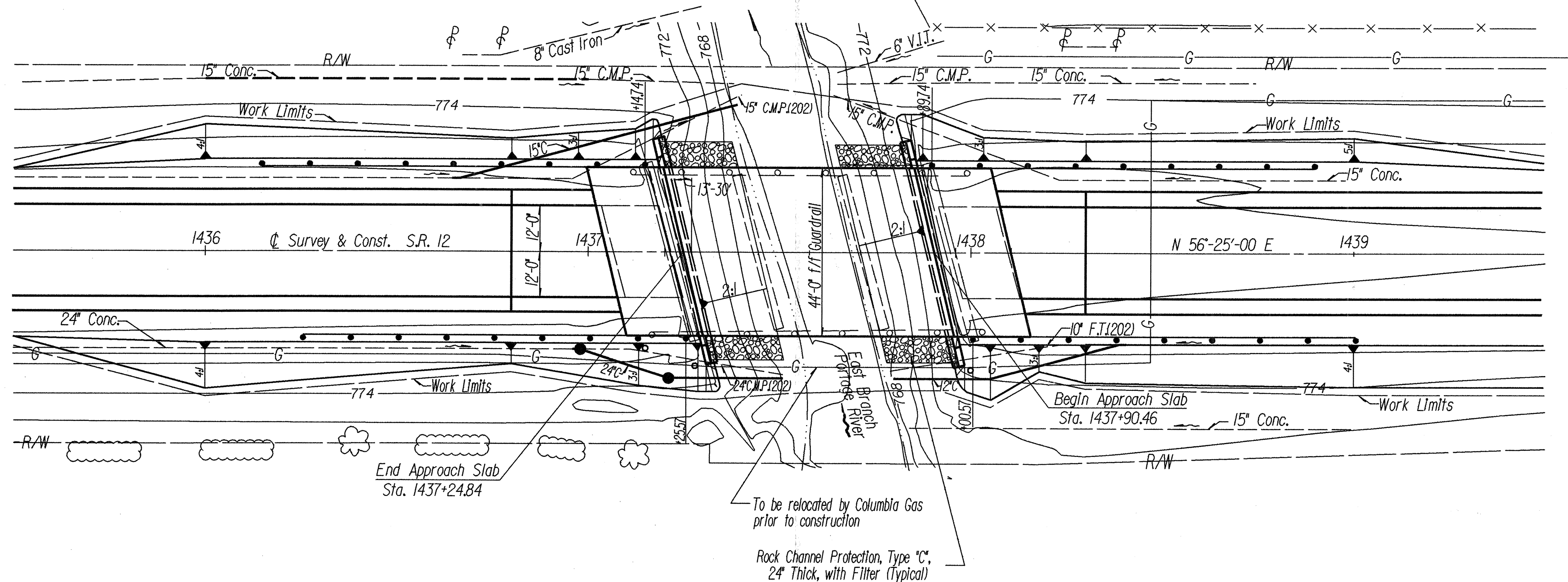
CROSS SECTIONS
Sta. 1437+20 to Sta. 1437+96

HAN-12-27.21



CROSS SECTIONS
Sta. 1438+10.5 to Sta. 1439+80

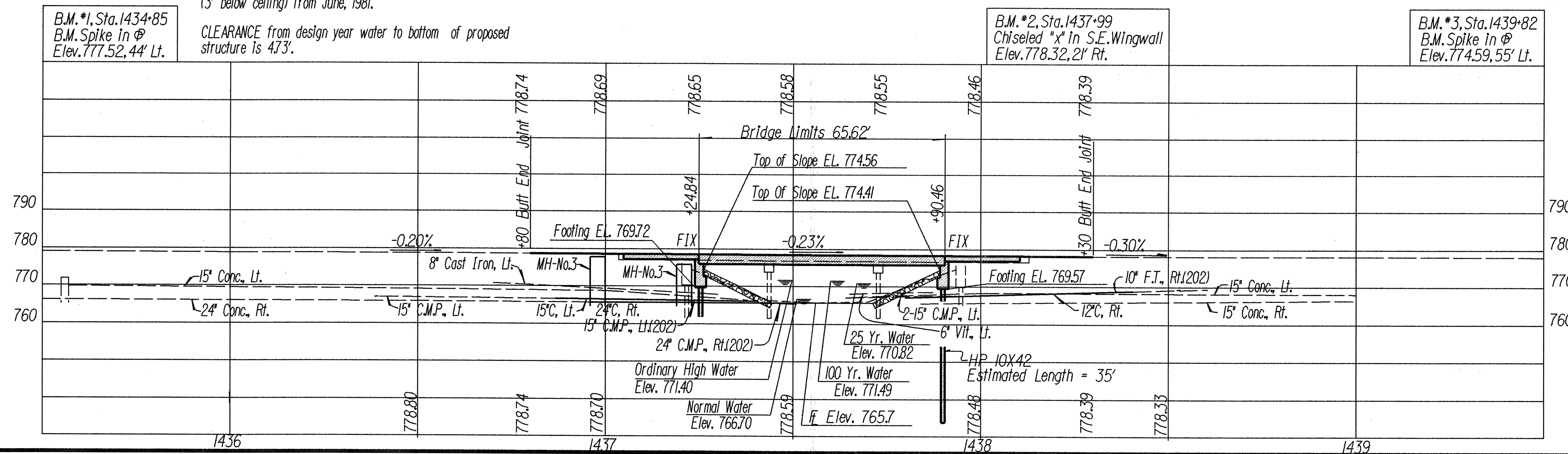
HAN-12-27.21



EARTHWORK limits shown are approximate. Actual slopes shall conform to plan cross-sections.

HIGHEST known water elevation, as provided by information from the golf pro at the adjoining country club, is 775.70. Records, in office, give a high water elevation of 774.2 (3' below ceiling) from June, 1981.

CLEARANCE from design year water to bottom of proposed structure is 4.73'.



DESIGN DESIGNATION

CURRENT A.D.T. (1994) = 7470
DESIGN A.D.T. (2014) = 8970
DHV = 718
D = 65 %
T = 8 %
V (DESIGN SPEED) = 55 m.p.h.
V (LEGAL SPEED) = 35/55 m.p.h.
DESIGN FUNCTIONAL CLASSIFICATION URBAN MINOR ARTERIAL

HYDRAULIC DATA

Drainage Area = 13.7 Mile²

	DESIGN DISCHARGE	DESIGN VELOCITY	ELEVATION
Q ₂₅	649 cfs	4.27 fps	770.82
Q ₁₀₀	796 cfs	4.44 fps	771.49

EXISTING STRUCTURE DATA

TYPE: Continuous reinforced concrete slab with capped pile substructure
SPANS: 22'-27.5'-22' center to center of bearings
ROADWAY: 40'-0" face to face of guardrail
SKEW: 15'-0" R.F.
WEARING SURFACE: Asphalt Concrete
APPROACH SLAB: 15'
ALIGNMENT: Tangent
SUPERELEVATION: None
BUILT: 1951
STRUCTURE FILE NUMBER: 3200396

PROPOSED STRUCTURE

TYPE: Prestressed Precast Concrete Box Beams on Capped Pile Abutments
SPANS: 64'-5" c/c Bearings
ROADWAY WIDTH: 44'-0" f/f Railing
LOADING: HS-20-44 and the Alternate Military Loading
CROWN: 3/16" / ft.
SKEW: 13'-30" R.F.
WEARING SURFACE: 2 1/2" Minimum Asphalt Concrete
APPROACH SLAB: 20'-0" (AS-1-81)
ALIGNMENT: Tangent
SUPERELEVATION: None
STRUCTURE FILE NUMBER: 3200418

DESIGN AGENCY
District One
Ohio Department of Transportation
Planning & Design

VIEWED	DATE
DMK	4-27-94
STRUCTURE FILE NUMBER	
3200418	

DESIGNED <i>LAB</i>	DRAWN <i>BJD</i>
CHECKED <i>JRC</i>	REVISED

1885

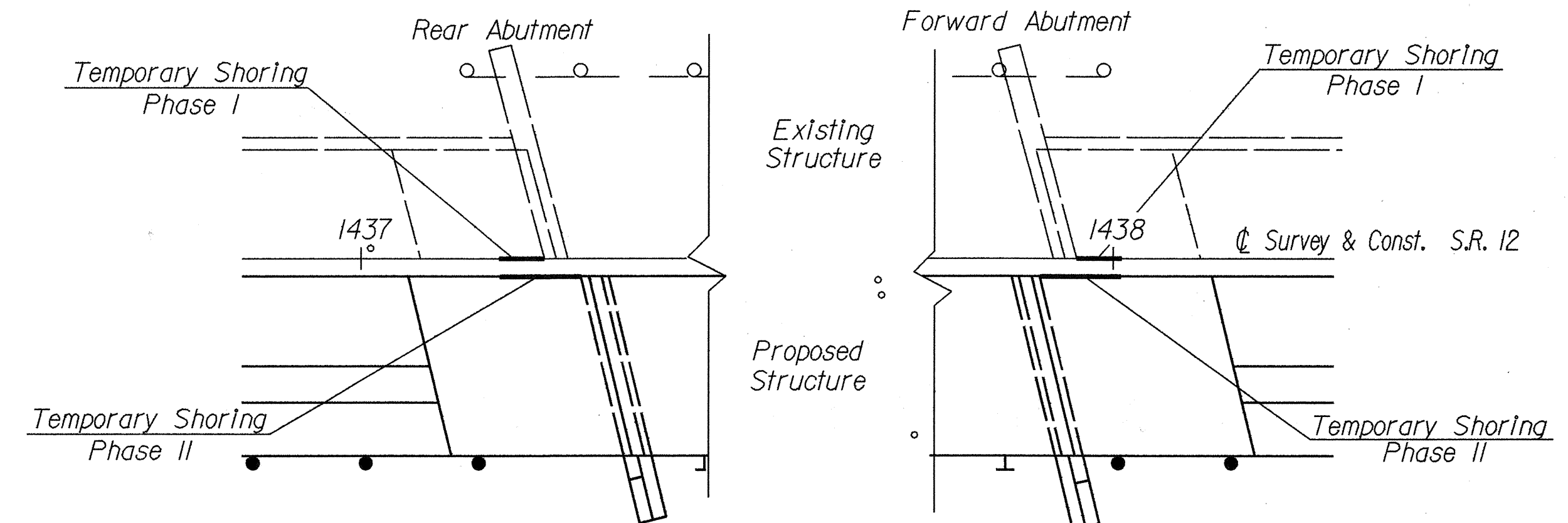
GENERAL PLAN & GENERAL NOTES
BRIDGE NO. HAN-12-2723
over East Branch of the Portage River

IAN-12-27 21

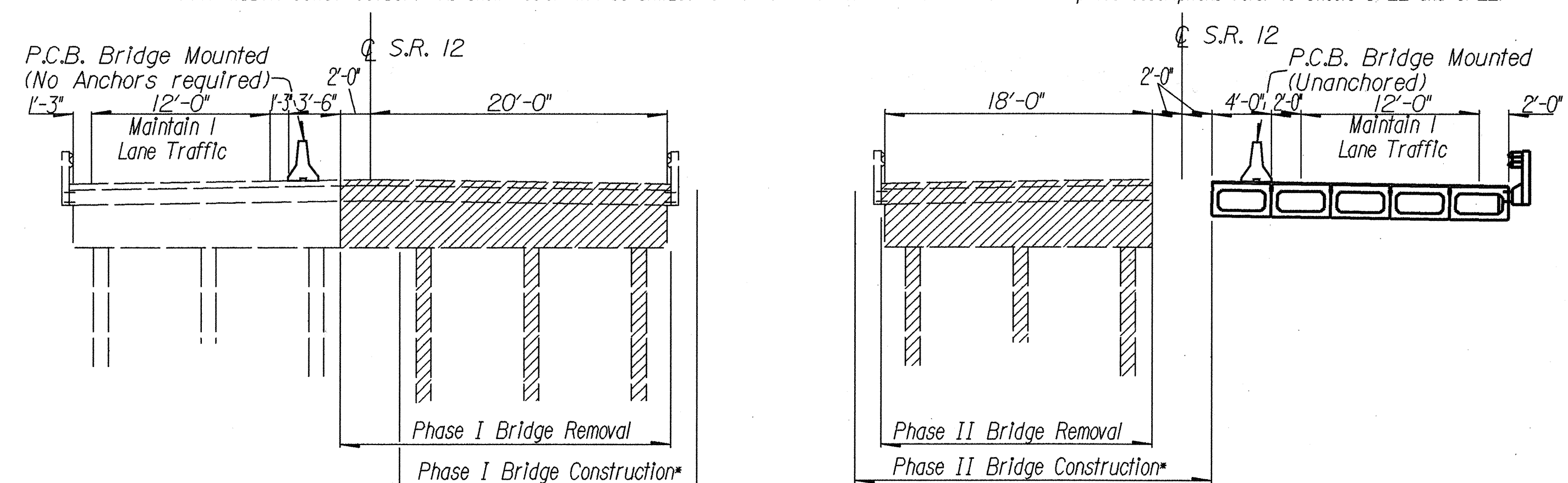
2 / 7	
	

[illegible]

BEARING PAD SHIMS: 1/8 Inch thick preformed bearing pad shims, plan area 6 inches by 9 inches (the same size of the elastomeric bearing pad should be used) shall be placed under elastomeric bearing pads where required for proper bearing. The amount supplied is sufficient for 2 shims per beam. Payment will be made at the contract bid price for Item 516 - 1/8 Inch Preformed Bearing Pads. Any unused shims shall become the property of the State.



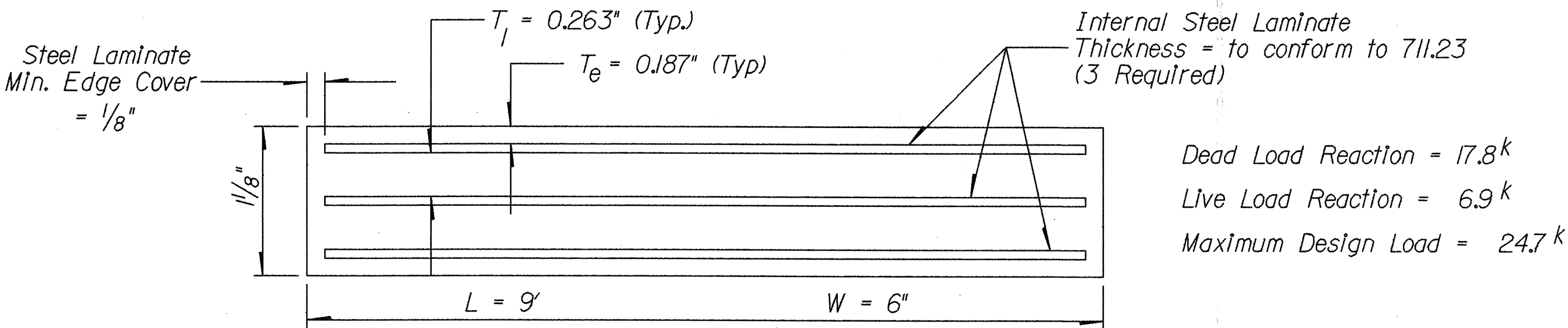
PART-WIDTH CONSTRUCTION: As shown below will be utilized to maintain traffic. For further details and phase descriptions refer to Sheets 5/22 and 6/22.



MAINTENANCE OF TRAFFIC-PHASE II

*- Limits do not include protruding reinforcing steel at proposed abutments.

ESTIMATED QUANTITIES							
Item	Ext.	Total	Unit	Description	Abut.	Super.	Gen'l
202	11002	Lump		Structure Removed, Over 20' Span			Lump
403	20000	18	Cu.Yd.	Asphalt Concrete, AC-20		18	
404	20000	11	Cu.Yd.	Asphalt Concrete, AC-20		11	
503	11100	Lump		Cofferdams, Crlbs and Sheetpiling			Lump
503	21301	Lump		Unclassified Excavation, As Per Plan See Sheet 2 / 7	Lump		
505	11100	Lump		Pile Driving Equipment Mobilization	Lump		
507	11100	630	Lin.Ft.	Steel Piles, HP 10x42	630		
507	93300	18	Each	Steel Point	18		
509	15820	6,665	Pound	Epoxy Coated Reinforcing Steel, Grade 60	6,665		
511	45500	72	Cu.Yd.	Class C Concrete, Abutment	72		
Special	51267030	340	Sq.Yd.	Membrane Waterproofing (Sheet Type 3) (See Proposal Note)		340	
Special	51267502	73	Sq.Yd.	Sealing of Concrete Surface (Epoxy) (See Proposal Note) See Sheet 2 / 7	34	39	
515	54300	11	Each	Prestressed Concrete Box Beam (62'-78' LENGTH) B 27x48 (See Proposal Note)		11	
516	13600	222	Sq.Ft.	1" Preformed Expansion Joint Filler		222	
Special	51631300	91	Lin.Ft.	Polymer Modified Asphalt Expansion Joint System (4" Thick) See Sheet 7 / 7		91	
516	41100	22	Each	1/8" Preformed Bearing Pad, 711.21		22	
516	43100	44	Each	Elastomeric Bearing with Internal Laminates Only (Neoprene) 1 1/8"x 6"x 9"		44	
517	72300	150	Lin.Ft.	Railing (Deep Beam Rail with Steel Tubular Backup and Type 2 Steel Posts and Anchor Bolts)		150	
518	40001	119	Lin.Ft.	6" Perforated Corrugated Plastic Pipe, As Per Plan See Sheet 2 / 7	119		
518	40011	52	Lin.Ft.	6" Non-Perforated Corrugated Plastic Pipe, Including Specials, As Per Plan See Sheet 2 / 7	52		
518	21200	63	Cu.Yd.	Porous Backfill with Filter Fabric	63		
Special	51822300	128	Lin.Ft.	Steel Drip Strip See Sheet 6 / 7		128	



ELASTOMERIC BEARING WITH INTERNAL LAMINATES
ONLY (NEOPRENE) 50 DUROMETER

EPOXY COATED REINFORCING STEEL LIST										
ABUTMENTS										
Mark	Rear	Forward	Total	Length	Weight	Type	"A"	"B"	"C"	Notes
EA401	18	18	36	8'-3"	198	I	1'-9"	2'-6 ³ / ₄ "		
EA501	18	18	36	29'-7"	1111	ST.				Mechanical Connector
EA503	2	2	4	8'-4"	35	ST.				
EA504	2	2	4	7'-3"	30	ST.				
EA505	8	8	16	22'-7"	377	ST.				Mechanical Connector
EA507	4	4	8	22'-5"	187	ST.				Mechanical Connector
EA509	1	1	2	5'-9"	12	ST.				
EA510	1	1	2	5'-6"	11	ST.				
EA511	1	1	2	7'-4"	15	3	2'-7 ¹ / ₂ "	4'-9"	1'-11 ¹ / ₂ "	
EA512	1	1	2	7'-0"	15	3	2'-3"	4'-9"	1'-11 ¹ / ₂ "	
EA513	1	1	2	5'-2"	11	ST.				
EA514	1	1	2	5'-5"	11	ST.				
EA515	1	1	2	6'-9"	14	3	2'-0"	4'-9"	1'-11 ¹ / ₂ "	
EA516	1	1	2	7'-1"	15	3	2'-4"	4'-9"	1'-11 ¹ / ₂ "	
EA517	92	92	184	6'-7"	1263	2	2'-8"	2'-1"	2'-1"	
EA518	32	32	64	10'-4"	690	2	1'-11"	4'-4"	4'-4"	
EA519	6	6	12	12'-9"	160	2	1'-2"	5'-11"	5'-11"	
EA520	6	6	12	14'-3"	178	2	1'-2"	6'-8"	6'-8"	
EA521	31	31	62	5'-0"	323	2	0'-7"	2'-4"	2'-4"	
EA801	8	8	16	29'-7"	1264	ST.				Mechanical Connector
EA803	31	31	62	4'-6"	745	4	1'-9"	1'-5"	1'-5"	
				Total	= 6,665					

Type 1

Type 2

Type 3

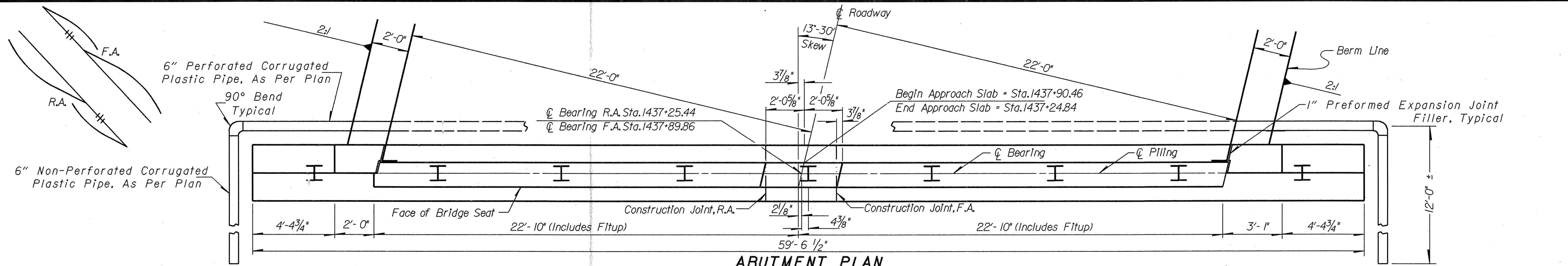
Type 4

REINFORCING STEEL SAMPLES:

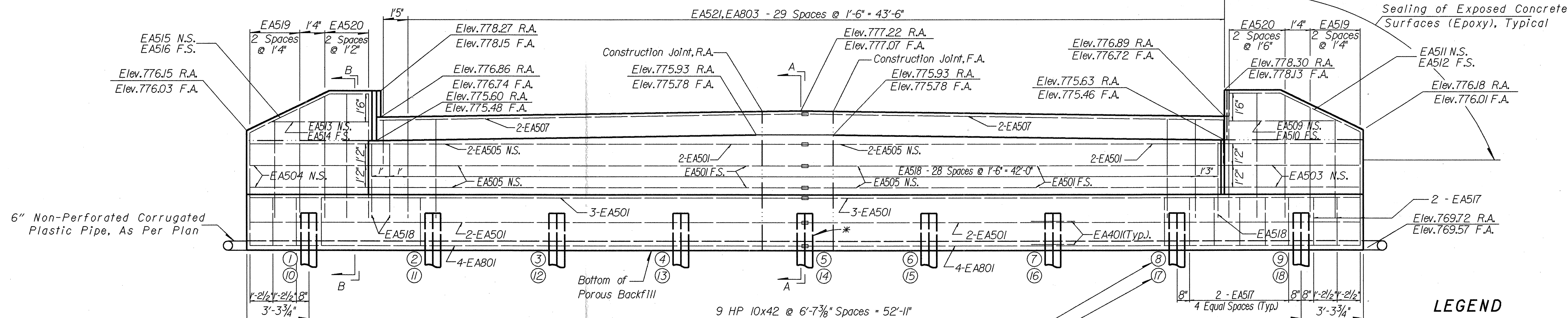
Refer to C.M.S. Section 106.03, 700, 709.01 through 709.05 and 709.08.
Sufficient additional reinforcing steel shall be provided for sampling.
Random samples shall be replaced in the structure by the
additional steel, spliced in accordance with 509.08.

REINFORCING STEEL:

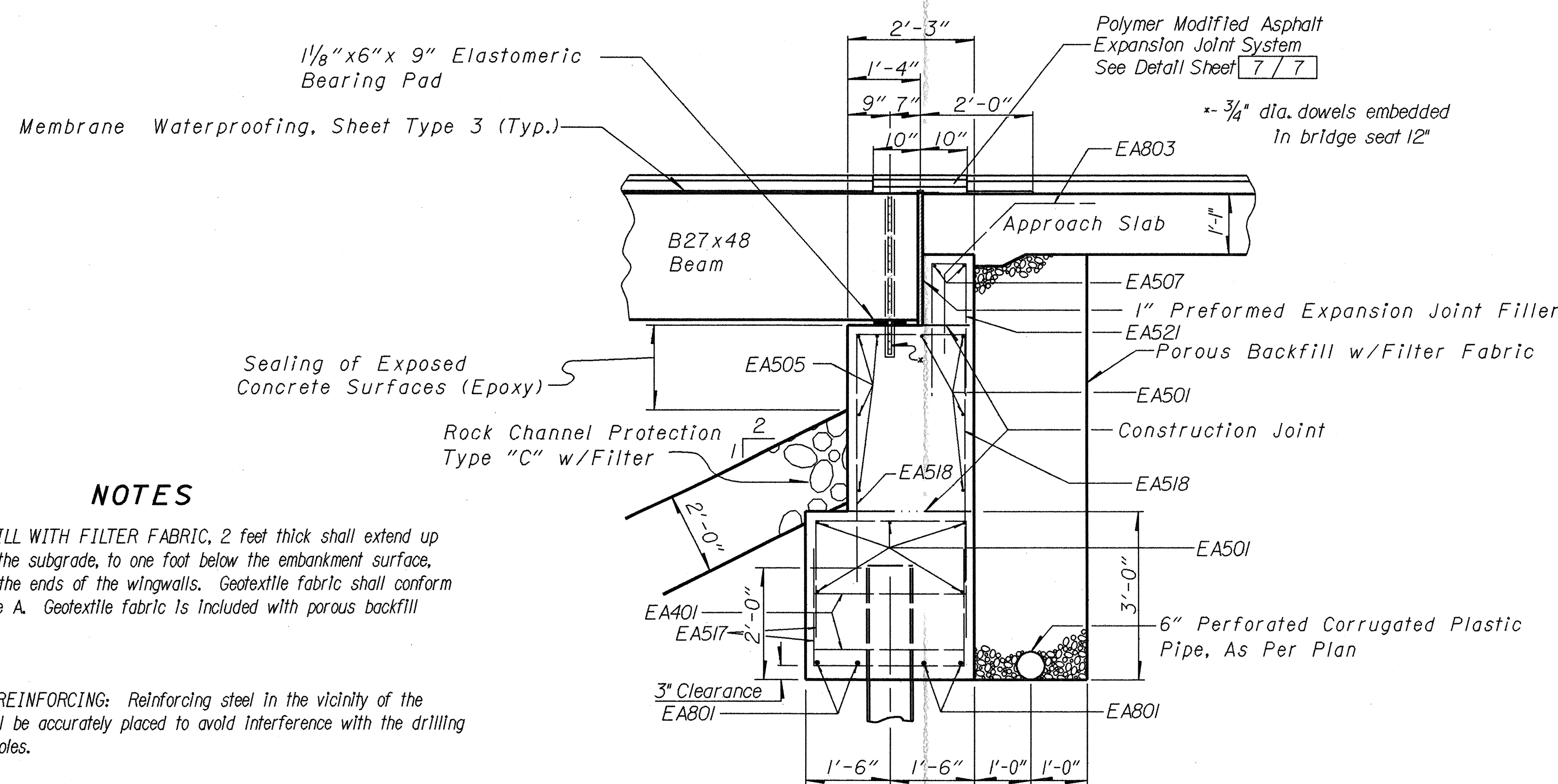
All bars are designated on the plans by bar numbers. The bar is designated by the first digit of three-digit numbers. The clear distance between reinforcing steel and face of concrete shall be 3 inches for all bars at bottom of footings, and 2 inches elsewhere unless otherwise shown on the plans. All bar dimensions are given out to out.



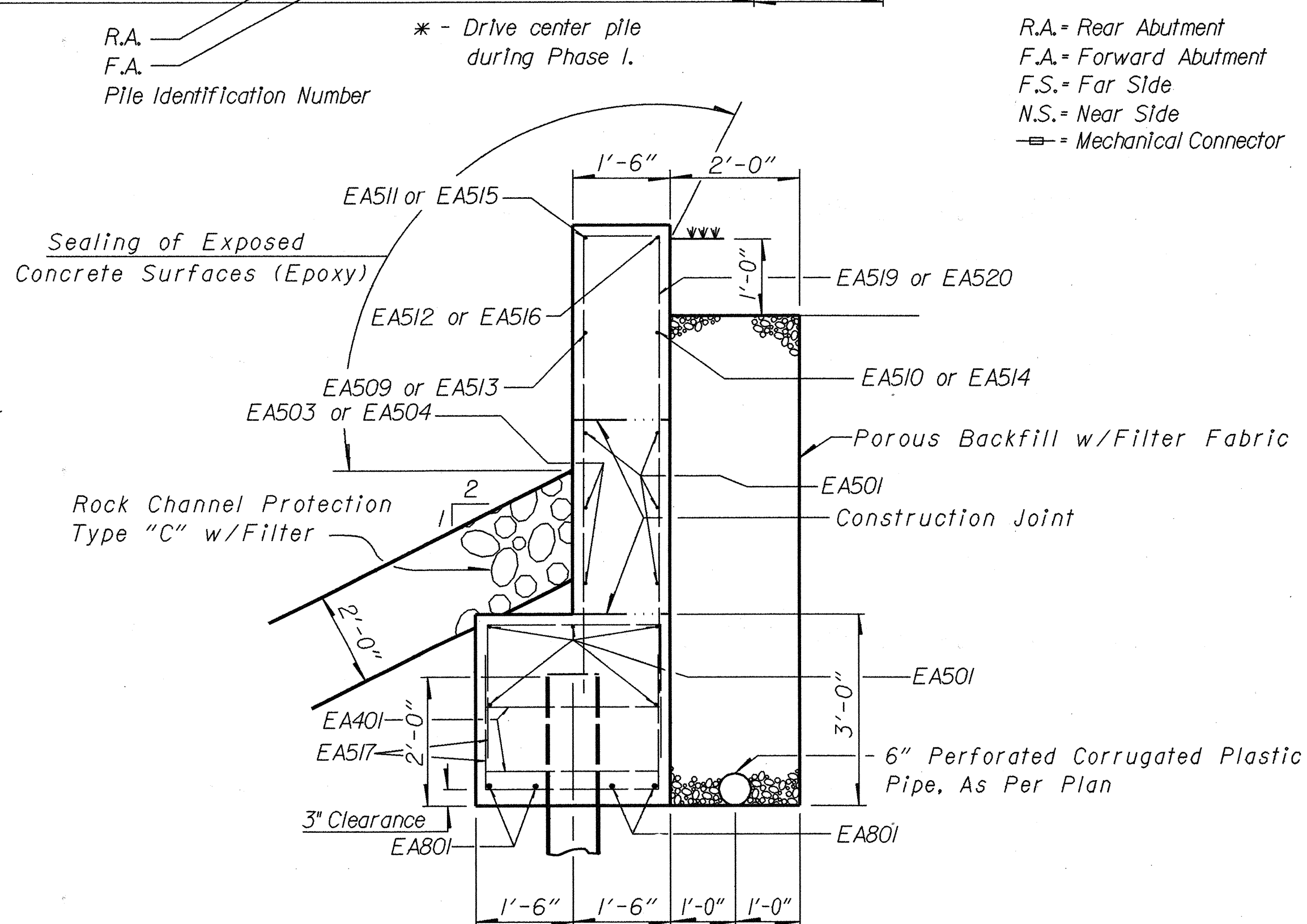
ABUTMENT PLAN



ABUTMENT ELEVATION



SECTION A-A



SECTION B-B

NOTES

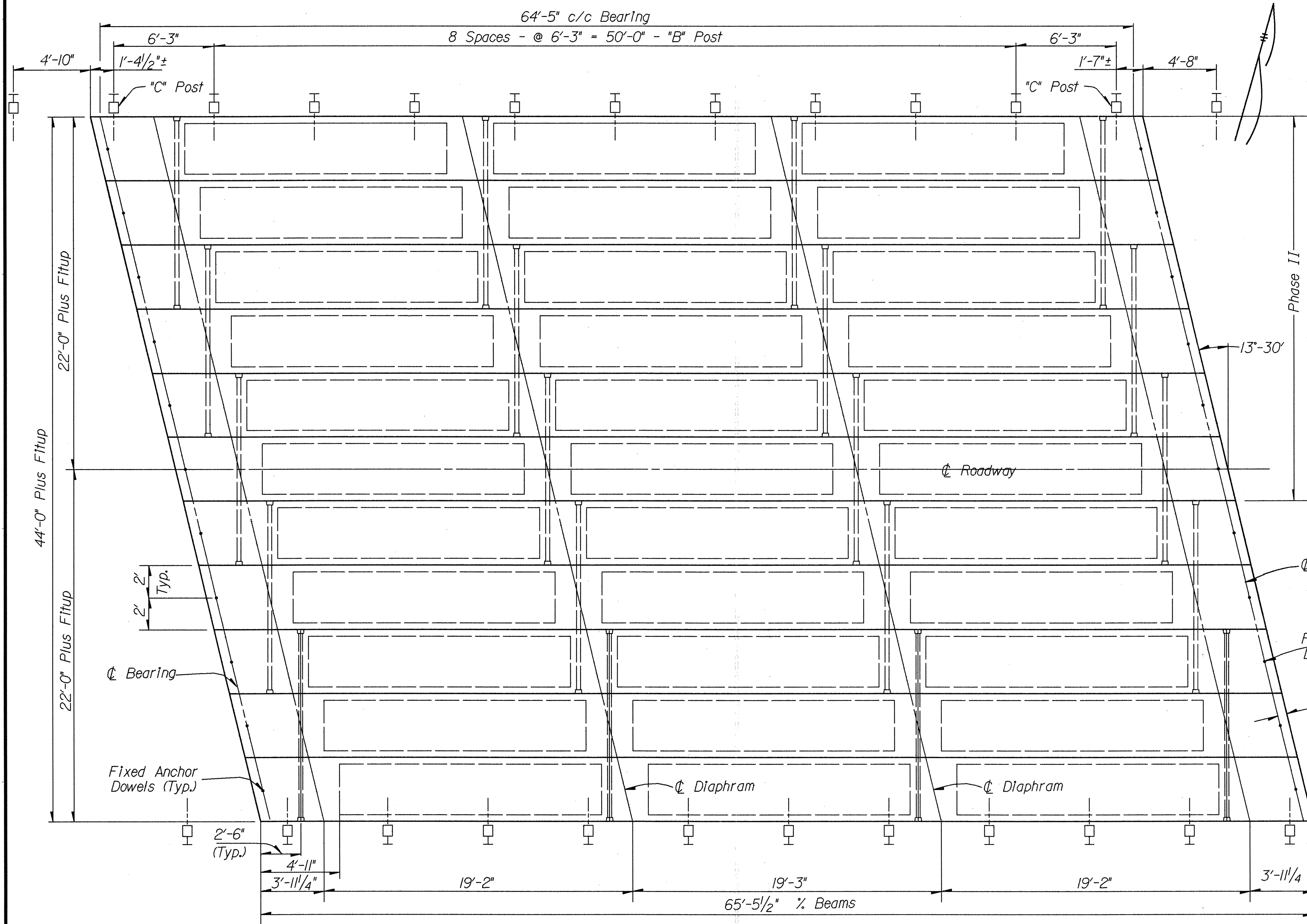
POROUS BACKFILL WITH FILTER FABRIC, 2 feet thick shall extend up to the plane of the subgrade, to one foot below the embankment surface, and laterally to the ends of the wingwalls. Geotextile fabric shall conform with 712.09, Type A. Geotextile fabric is included with porous backfill for payment.

BRIDGE SEAT REINFORCING: Reinforcing steel in the vicinity of the bridge seat shall be accurately placed to avoid interference with the drilling of anchor bar holes.

ABUTMENT CONCRETE above the bridge seat construction joint shall not be placed until the prestressed concrete box beams have been erected.

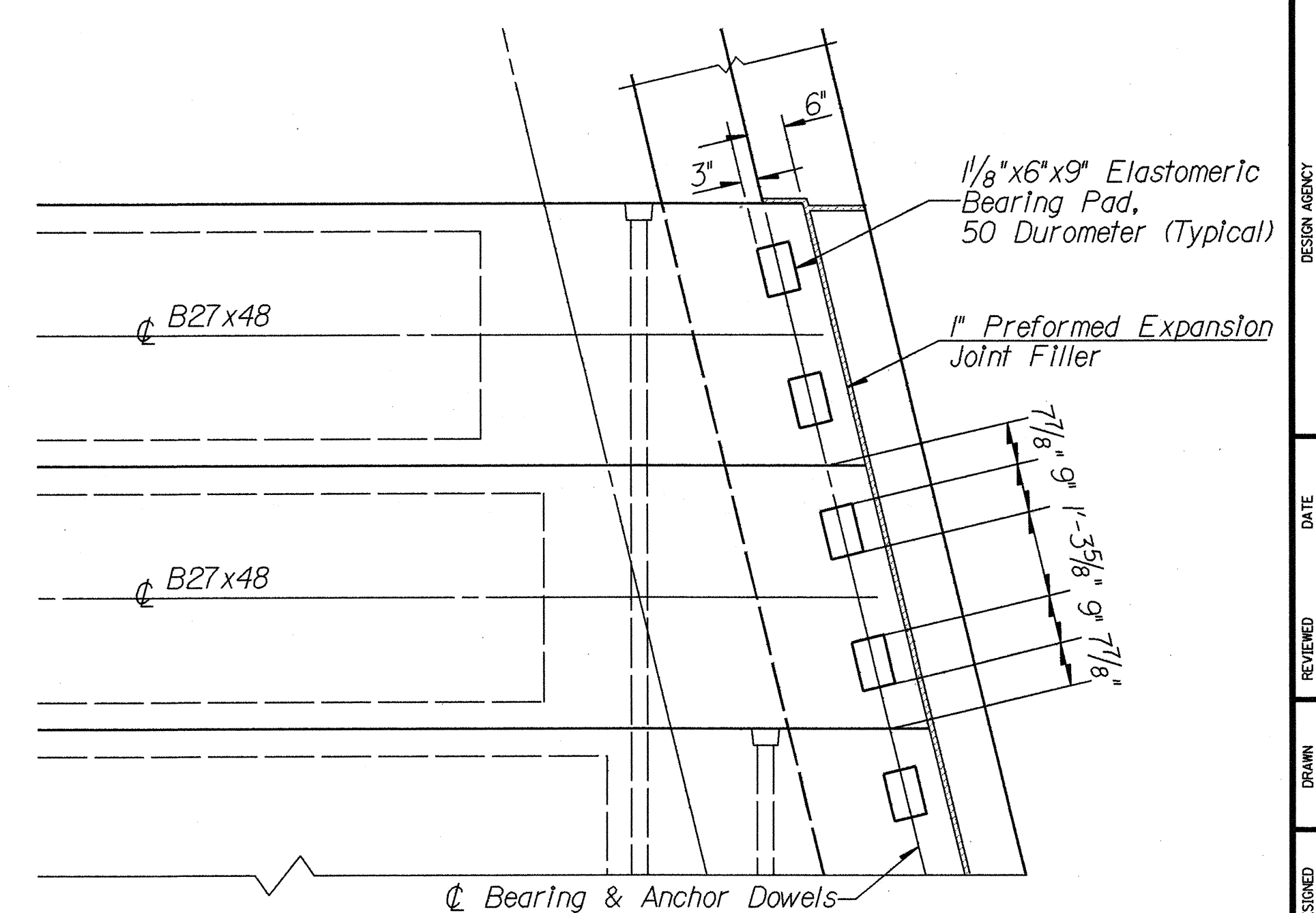
LEGEND

R.A. = Rear Abutment
 F.A. = Forward Abutment
 F.S. = Far Side
 N.S. = Near Side
 * = Mechanical Connector



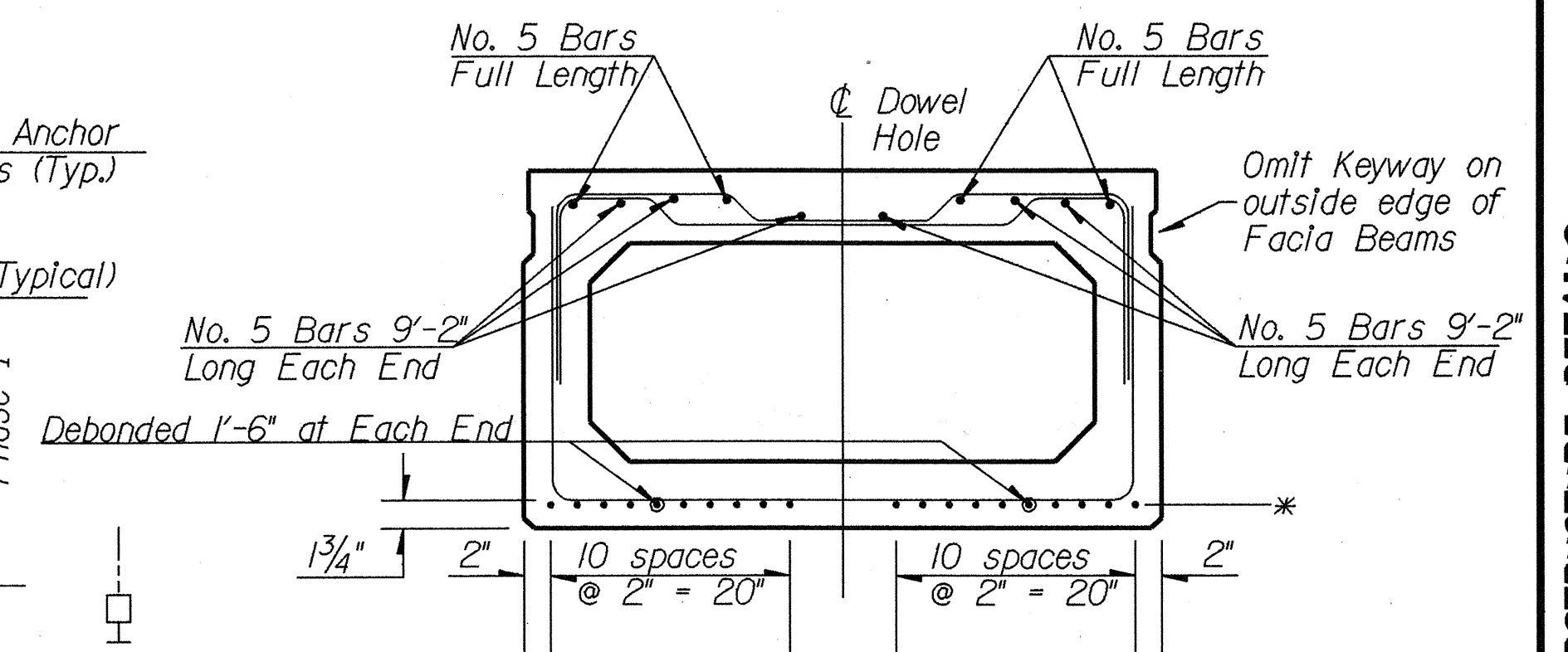
BEAM LAYOUT PLAN

All beams are B27x48
 Omit Keyway on outside of fascia beam



TYPICAL BEARING PAD LAYOUT

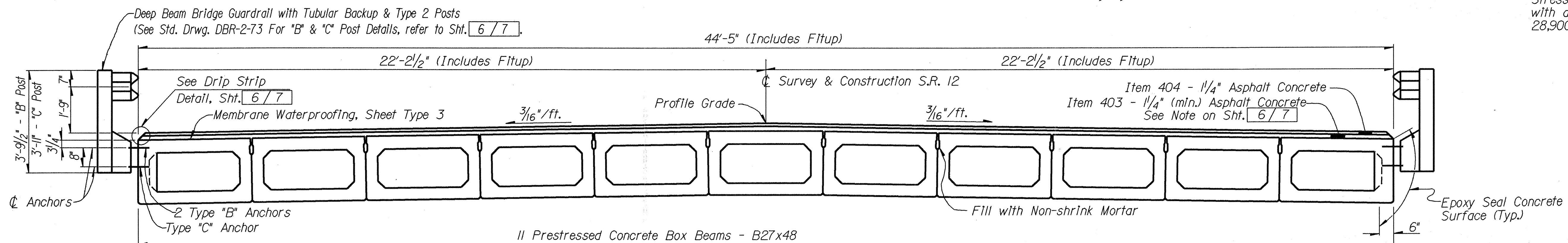
For additional details, refer to sheet 3 / 7



B27x48

For additional details,
 see Std. Dwg. PSBD-1-81

* 20 Strands, ASTM-A416
 Grade 270, 1/2" Dia.
 Seven Wire, Uncoated
 Stress-Relieved Strand
 with an initial tension at
 28,900 lbs. per strand



TRANSVERSE DECK SECTION

SUPERSTRUCTURE DETAILS

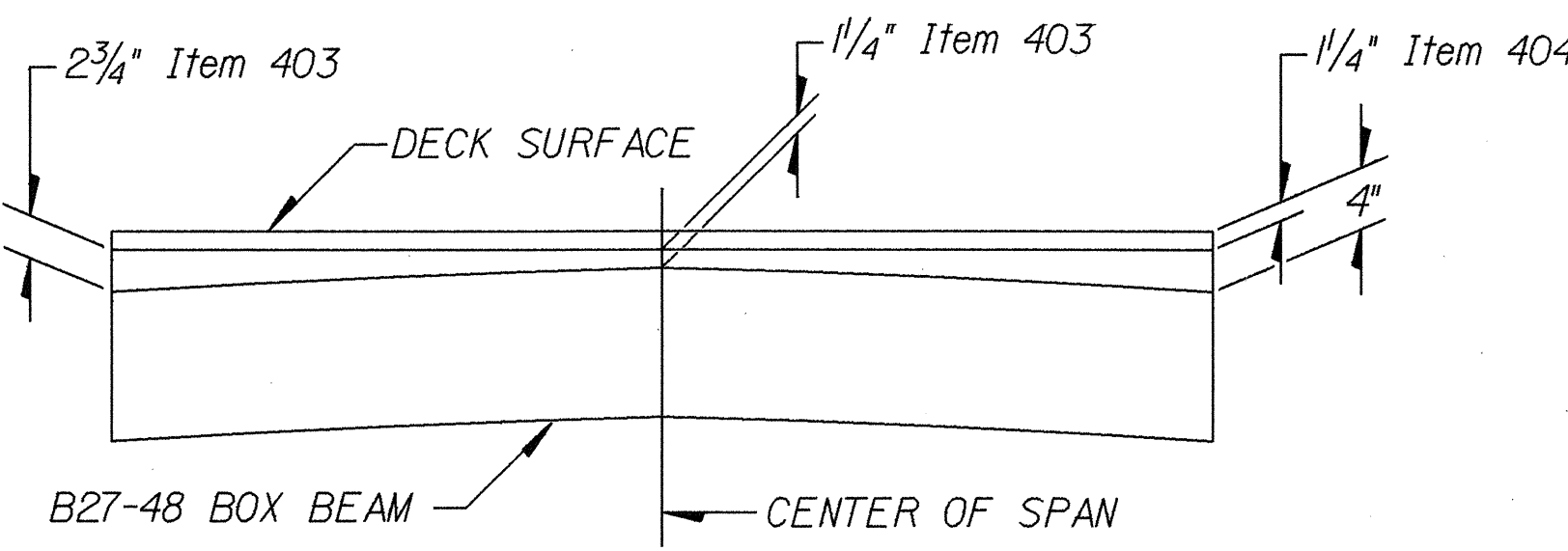
NOTES

CAMBER

Calculated camber at time of paving, including allowance for camber growth due to creep is $1\frac{3}{4}$ ". Calculated deflection due to weight of surface course and railing is $\frac{1}{4}$ ". Net final camber of beams is $1\frac{1}{2}$ ". This is $1\frac{1}{2}$ " in excess of the amount required to place the top of the beam parallel to the profile grade. This excess amount shall be compensated for by thickening the 403 leveling course from $1\frac{1}{4}$ " at center of spans to $2\frac{3}{4}$ " at ends of span.

ASPHALT CONCRETE SURFACE COURSE shall consist of a variable thickness of 403 and $1\frac{1}{4}$ " thickness of 404. The 403 shall be placed in two operations. The first course shall be of $1\frac{1}{4}$ " uniform thickness. The second course shall be feathered to place the surface parallel to and $1\frac{1}{4}$ " below final surface elevation.

NON-SHRINKING GROUT used to fill the beam shear keys, tie rod recesses in the fascia beams, and the dowel holes shall be included with Item 515 for payment.



ASPHALT CONCRETE SURFACE COURSE DETAIL

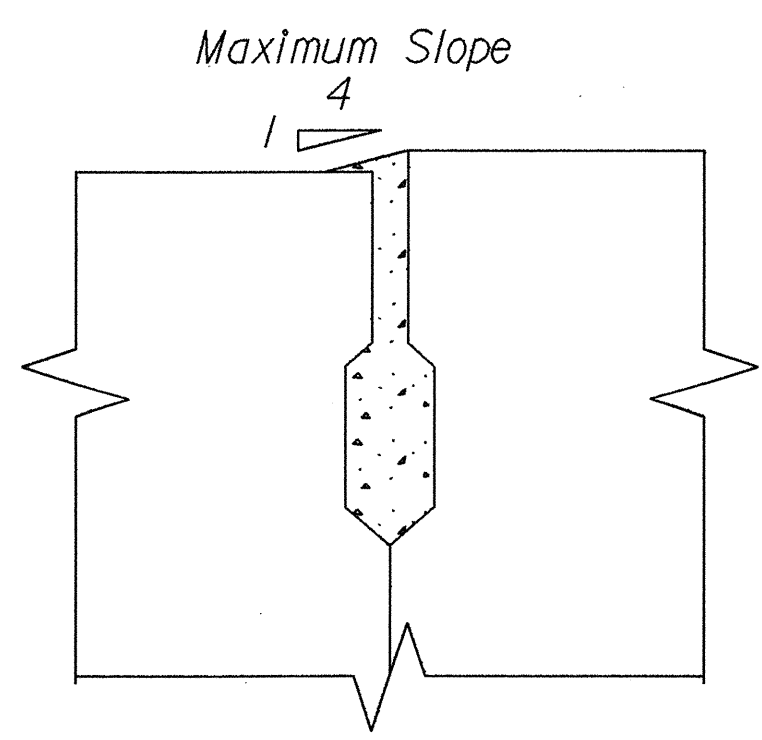
PRESTRESSED BEAM

Minimum Concrete: compressive strength at 28 days = 5,500 p.s.i., compressive strength at time of initial prestress = 4,000 p.s.i.

Prestressing Strands: ASTM A416, Grade 270; $\frac{1}{2}$ " dia., seven wire uncoated stress relieved, $A_s = 0.153$ in²; Initial tension = 28,900 lbs. per strand; ultimate strength = 41,300 lbs per strand.

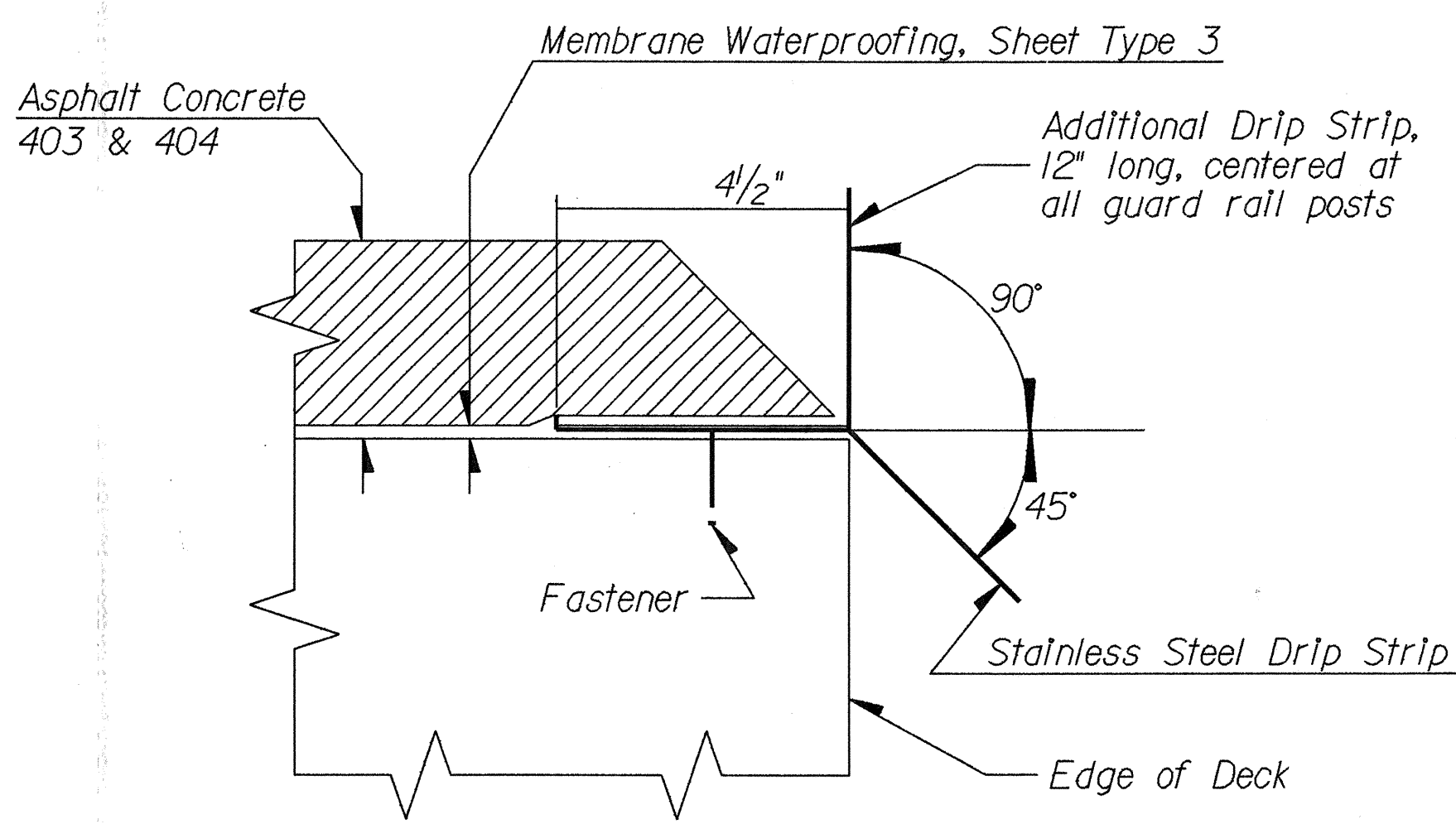
Non-Prestressing Steel shall meet the requirements of Item 509. The Fabricators Shop Drawings shall show complete details of the reinforcing.

Refer to Standard Drawing PSBD-I-81 for the following details:
Beam lifting Inserts, Anchor Dowels, Notes, Details and Reinforcement of Beam Ends, End Details of Transverse Tie Rod Anchorage, Beam Dimensional Tolerances Typical plans of Diaphragms and Transverse Tie Rods, Wall Thickening at Railing Post Anchors and Joint at ϕ of Roadway.



Detail of shear key mortar where adjacent beams have vertical offset due to different camber, skew effect.

SHEAR KEY MORTAR DETAIL

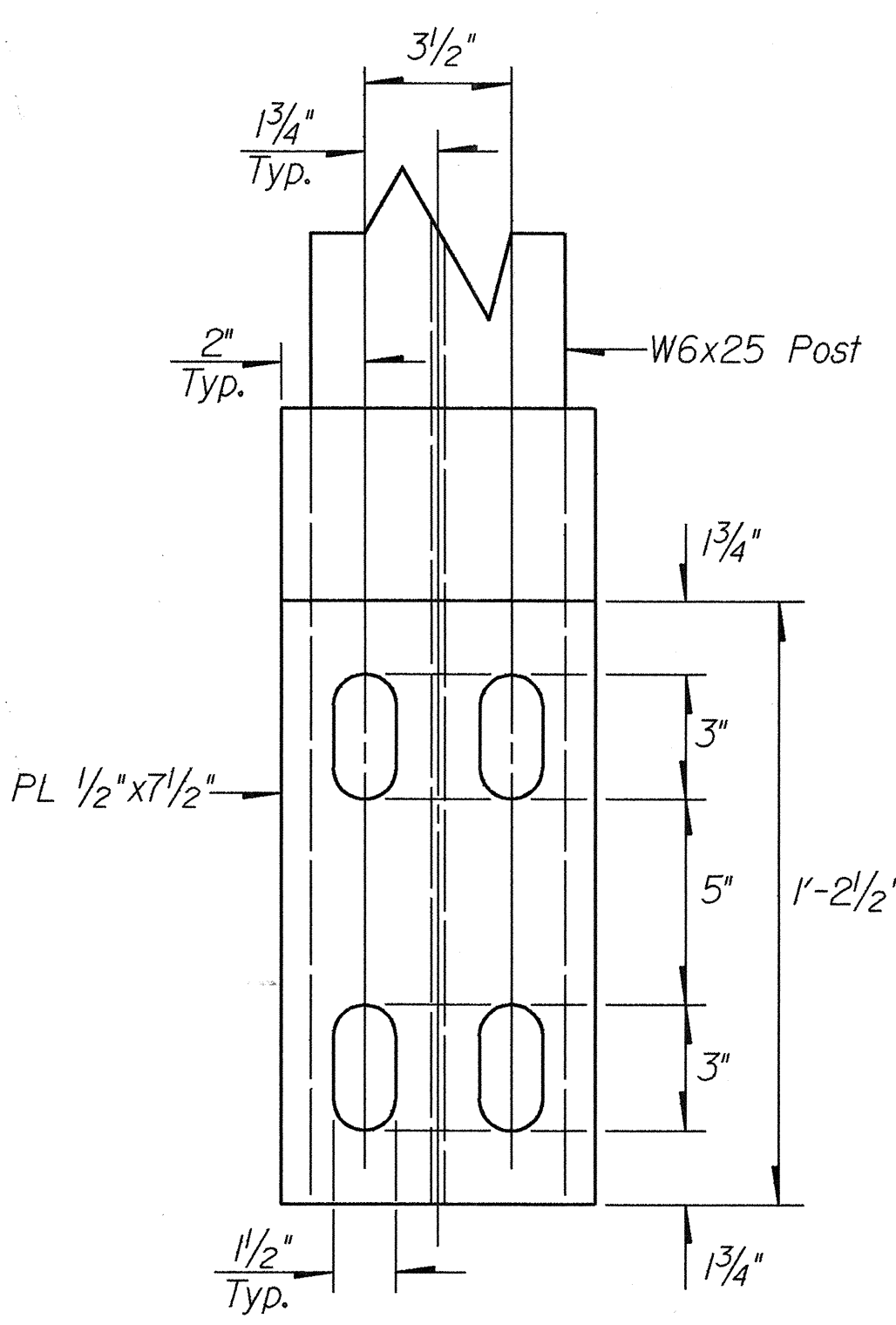


DRIP STRIP: Prior to applying waterproofing, a bent drip strip shall be installed along the edges of the deck. An additional 1'-0" long drip strip shall be installed centered on each post.

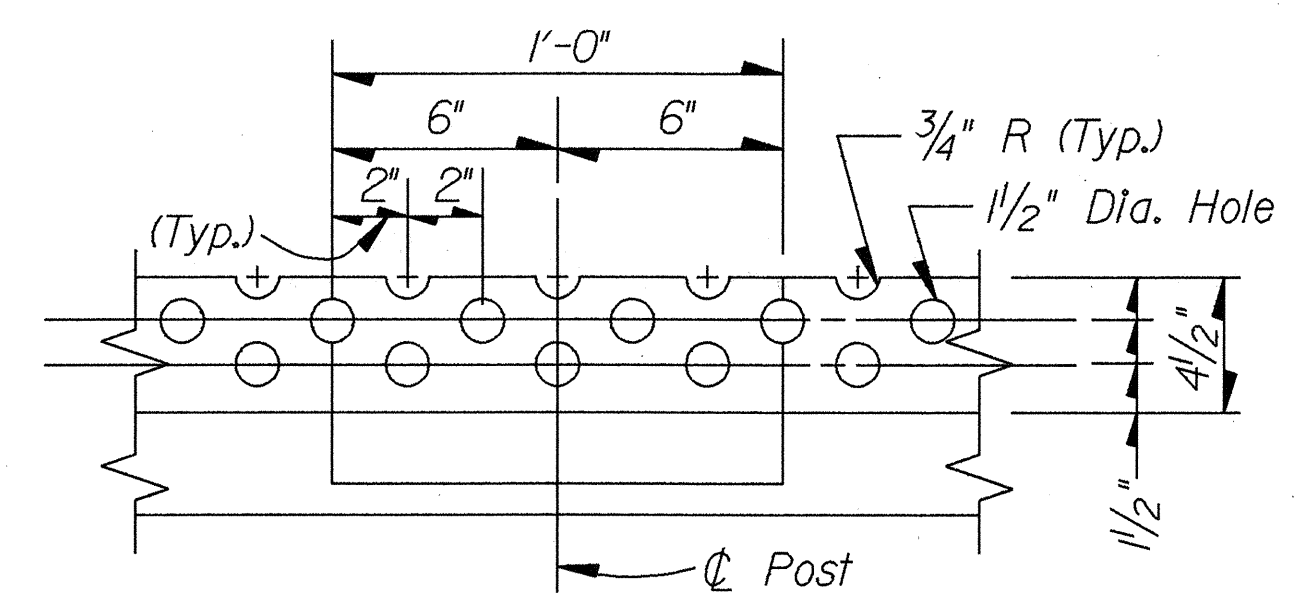
The strips shall be fastened at 1'-6" c/c maximum with $1\frac{1}{4}$ " x $\frac{5}{32}$ " x $\frac{1}{4}$ " flat head drive pin and washer (length x shank diameter x head diameter) or No. 10 galvanized screws and expansion anchors, subject to approval of the Engineer. The strips shall be placed the full length of the deck, ending at the abutments. Where splices are required the individual pieces shall be butted together. Stainless steel shall be 22 gauge ASTM A167, Type 304, mill finish.

The final pay quantity shall be the actual overall length of the drip strip. Additional strips at posts shall not be measured for payment.

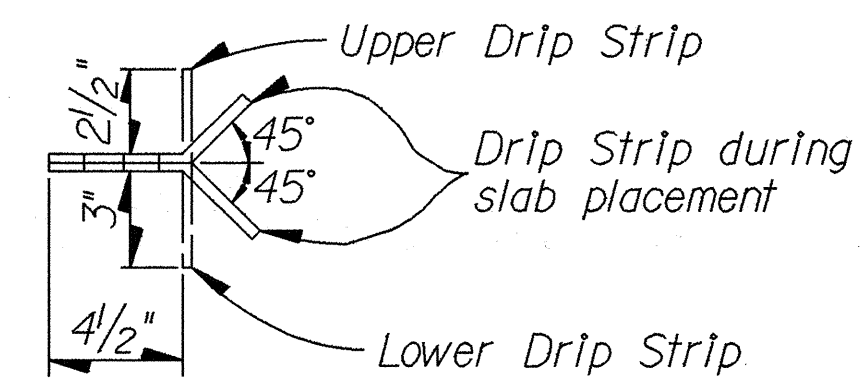
Payment shall be at the contract price bid for Item Special, linear feet, Steel Drip Strip, which shall include all materials, labor, tools, and incidentals necessary to complete the item.



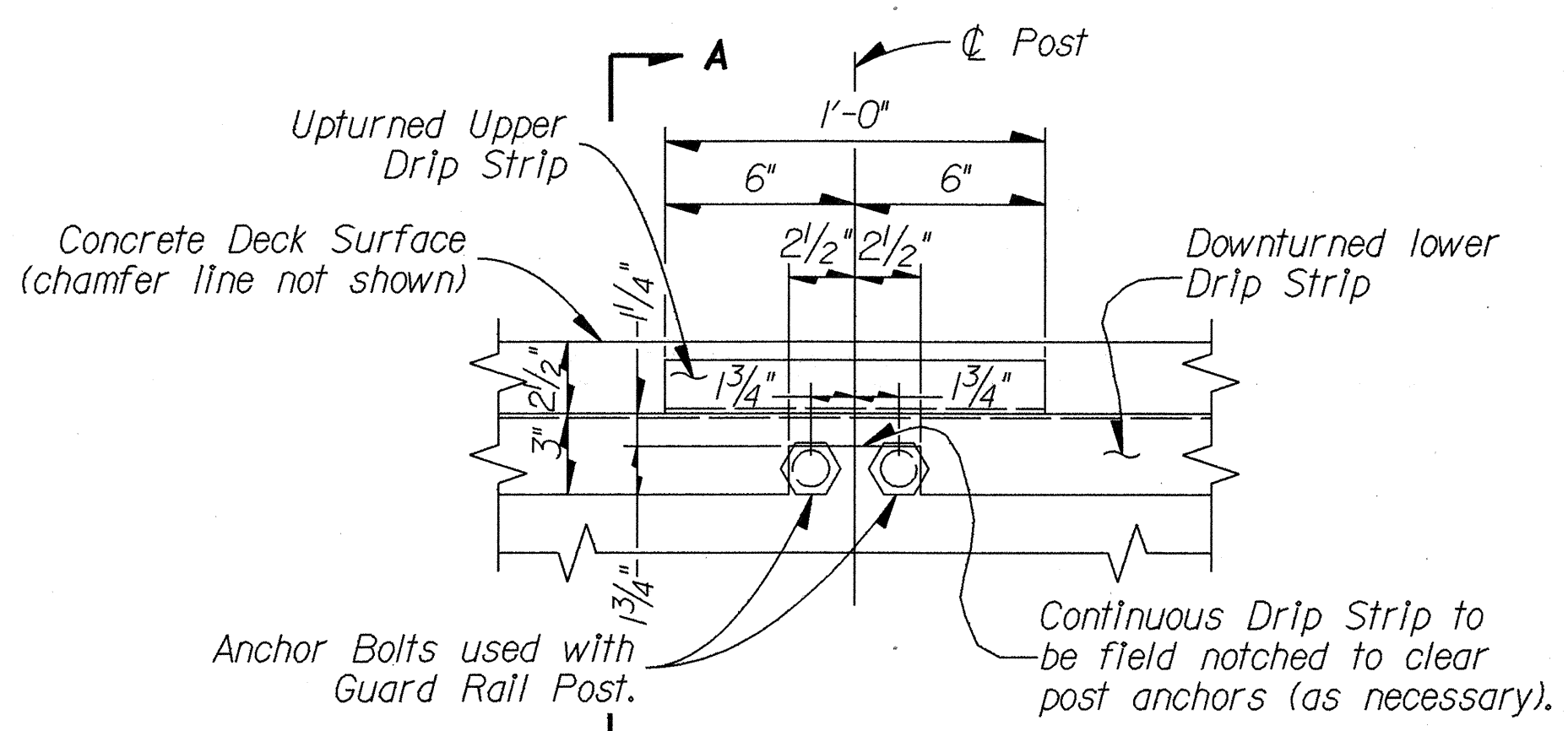
DETAIL "A"



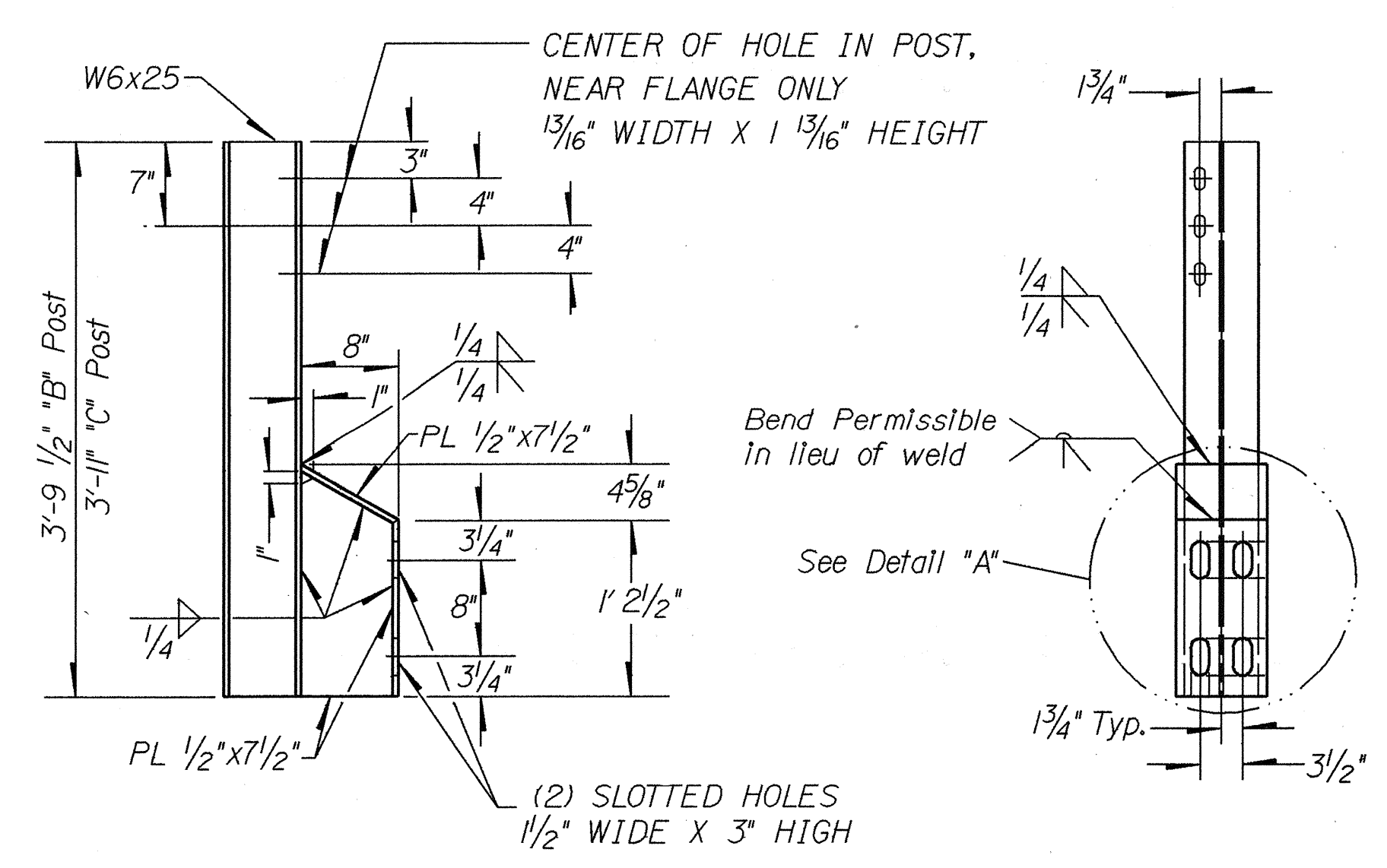
DRIP STRIP PARTIAL PLAN



SECTION A-A



ELEVATION



TYPE 2 POST DETAILS

GENERAL NOTES AND DETAILS FOR POLYMER MODIFIED ASPHALT
EXPANSION JOINT SYSTEM

ITEM SPECIAL - POLYMER-MODIFIED ASPHALT EXPANSION
JOINT SYSTEM

THIS ITEM WILL BE USED TO SEAL THE EXPANSION/CONTRACTION JOINTS AS
PER THESE DETAILS AND THE MANUFACTURER'S REQUIREMENTS USING A POLYMER-
MODIFIED ASPHALT SYSTEM.THE PRIME CONTRACTOR WILL OBTAIN THE SERVICES
OF ONE OF THE FOLLOWING LICENSED APPLICATORS WHO WILL FURNISH AND
INSTALL THE NEW BRIDGE EXPANSION JOINT SYSTEM AFTER ALL PAVING ON THE
AFFECTED BRIDGE HAS BEEN COMPLETED.

PAVETECH ENGINEERED SYSTEMS INC. LINEAR DYNAMICS,INC.
2575 US.RT.22 & 3,OFFICE 1 400 LAWIDEX PLAZA
MAINEVILLE,OH 45039 PARSIPPANY,NJ 07054
TEL:1-800-258-0162 TEL:(201) 884-0300

MATERIALS:

BRIDGING PLATE:
MILD STEEL OR ALUMINUM 1/8" OR 1/4" THICK PLATE, 8" WIDE

BINDER:

TYPE: POLYMER MODIFIED ASPHALT
SOFTENING POINT: 180 DEGREES F. MIN.
FLOW: 3 MM. MAX. AT 140 DEGREES F.
PENETRATION: 9 MM. MAX. AT 77 DEGREES F.
1 MM. MAX. AT 0 DEGREES F.
ASTM D 3407
DUCTILITY: 40 CM. MIN. ASTM D 113
RESILIENCE: 60% MIN. AT 77 DEGREES F.
TENSILE ADHESION: 700% MIN.
SPECIFIC GRAVITY: 1.0 ± 0.05
POURING TEMP: 350 - 390 DEGREES F.

AGGREGATE:

TYPE: CRUSHED, DOUBLE WASHED, AND
DRIED GRANITE OR BASALT

GRADATION THE GRADATION OF THE AGGREGATE
VARIES BY MANUFACTURER AND
WILL BE AS PER THE MANUFACTURER'S
RECOMMENDATIONS FOR THE SYSTEM
BEING USED ON THIS PROJECT.

PROPERTY	NOMINAL VALUE	TEST METHOD
DENSITY	2.0 LBS/CU FT	ASTM D 1622
TENSILE STRENGTH	25 PSI	ASTM D 1623
WATER ABSORPTION BY VOLUME	0.5%	ASTM C 509
COMPRESSION DEFLECTION AT 8 PSI	25%	ASTM D 1621
TEMPERATURE RESISTANCE	-45 TO +450 DEGREES F	

INSTALLATION PROCEDURES:

SAWING AND SURFACE PREPARATION:

AFTER ALL PAVING OPERATIONS ARE COMPLETE, THE OVERLAY IS TO BE
TRANSVERSELY SAW CUT FULL DEPTH NO LESS THAN TWO INCHES DEEP
(20" CENTERED OVER JOINT OPENING).
REMOVE ALL MATERIAL, INCLUDING WATER-PROOFING MATERIAL, BETWEEN
SAW CUTS. THOROUGHLY CLEAN AND DRY EXPOSED CONCRETE
AND CUT SURFACES USING COMPRESSED AIR AND A HOT COMPRESSED AIR
(HCA) LANCE. THE LANCE MUST PRODUCE A FLAME RETARDED AIR STREAM
TEMPERATURE OF 3000 DEGREES F. AT A VELOCITY OF 3,000 FEET PER
SECOND WITH 15 PSIG CHAMBER PRESSURE. IF THERE IS AN INTERRUPTION
DUE TO WEATHER OR OTHER CAUSES, THE OPERATION WILL BE REPEATED
WITH THE HCA LANCE IMMEDIATELY BEFORE THE TANKING OPERATION.
ALSO, 6 INCHES OF THE ROAD SURFACE ON EITHER SIDE OF THE JOINT
WILL BE DRIED SO THAT A SUITABLE SURFACE FOR BITUMEN ADHESION
IS OBTAINED.

SEALING OF EXPANSION JOINT: (PRE-STRESSED BOX)

THE EXPANSION JOINT GAP IS TO BE SEALED AND A BRIDGING PLATE
CENTERED ALONG IT. A VERY NARROW GAP WILL BE SEALED BY POURING
HOT BINDER INTO THE GAP. GAPS OF 1/8" OR MORE WILL FIRST BE FILLED
WITH AN APPROPRIATELY SIZED BACKER ROD. THE BACKER ROD WILL BE
INSTALLED SO THAT IT IS BETWEEN 1/8" AND 1 1/8" BELOW THE TOP OF
THE EXISTING GAP. THE GAP WILL THEN BE FILLED WITH BINDER. ADDITIONAL
BINDER WILL BE SPREAD OVER THE SURFACE AREA WHERE THE METAL PLATE
WILL BE PLACED.

BOND BREAKER:

CENTER THE BRIDGING PLATE OVER THE EXISTING JOINT AND BED
INTO THE HOT BINDER. BUTT JOINT THE BRIDGING PLATES TO
ACCOMMODATE THE ENTIRE JOINT LENGTH. SPIKE HOLES WILL BE
DRILLED AT 1 FOOT INTERVALS ALONG THE LONGITUDINAL CENTERLINE
OF THE PLATES. SECURE BRIDGING PLATE WITH NAILS OR SPIKES.
SEAL BUTT JOINTS WITH HOT BINDER AND ALLOW TO COOL BEFORE
TANKING THE JOINT.

TANKING:

SEAL ALL PREPARED, EXPOSED SURFACES OF THE JOINT WITH BINDER.
POUR THE HOT BINDER OVER THE FLOOR AREA OF THE JOINT AND
SPREAD TO COAT ALL EXPOSED SURFACES. THE BINDER WILL BE
A MINIMUM OF 1/32" THICK ON THE BOTTOM OF THE JOINT CAVITY,
WITH POOLS OF GREATER THICKNESS WHERE SURFACE IRREGULARITIES
EXIST. THE BINDER APPLICATION TEMPERATURE WILL BE BETWEEN 350
350 AND 390 DEGREES F. THE BINDER WILL NOT BE ALLOWED TO BE
HEATED ABOVE 410 DEGREES F. NOR ALLOWED TO EXCEED 390 DEGREES
F. FOR MORE THAN 1 HOUR.

BUILD-UP OF JOINT LAYERS:

AGGREGATE PREPARATION:

HEAT THE AGGREGATE TO A TEMPERATURE OF 275 TO 325 DEGREES F.,
WITH A SUITABLE ROTATING DRUM WITH ATTACHED HEAT SOURCE OR A
HOT COMPRESSED AIR LANCE, TO REMOVE ALL DUST AND MOISTURE.

AGGREGATE PROPORTION AND LAYER THICKNESS:

MIX THE AGGREGATE WITH THE BINDER SUCH THAT THE MINIMUM AGGREGATE
CONTENT BY WEIGHT WILL BE 68%. THE HEATED AGGREGATE AND BINDER
WILL BE COMBINED IN LAYERS NOT LESS THAN 3/4 OF AN INCH NOR
NOR EXCEEDING 2 INCHES. THE THICKNESS OF EACH LAYER CAN BE VARRIED,
WITHIN THESE LIMITS, TO ACHIEVE THE REQUIRED JOINT THICKNESS. THE
OBJECTIVE IS TO COAT EACH STONE AND FILL THE VOIDS WHILE AVOIDING AN
EXCESS OF BINDER. THIS WILL ACHIEVE THE MAXIMUM CONTENT OF STONE
CONSISTENT WITH ALL STONES BEING COATED WITH BINDER AND A MAXIMUM
VOID CONTENT OF 2%. RAKE THE MIXTURE TO MIX AND LEVEL.

AGGREGATE PREPARATION:

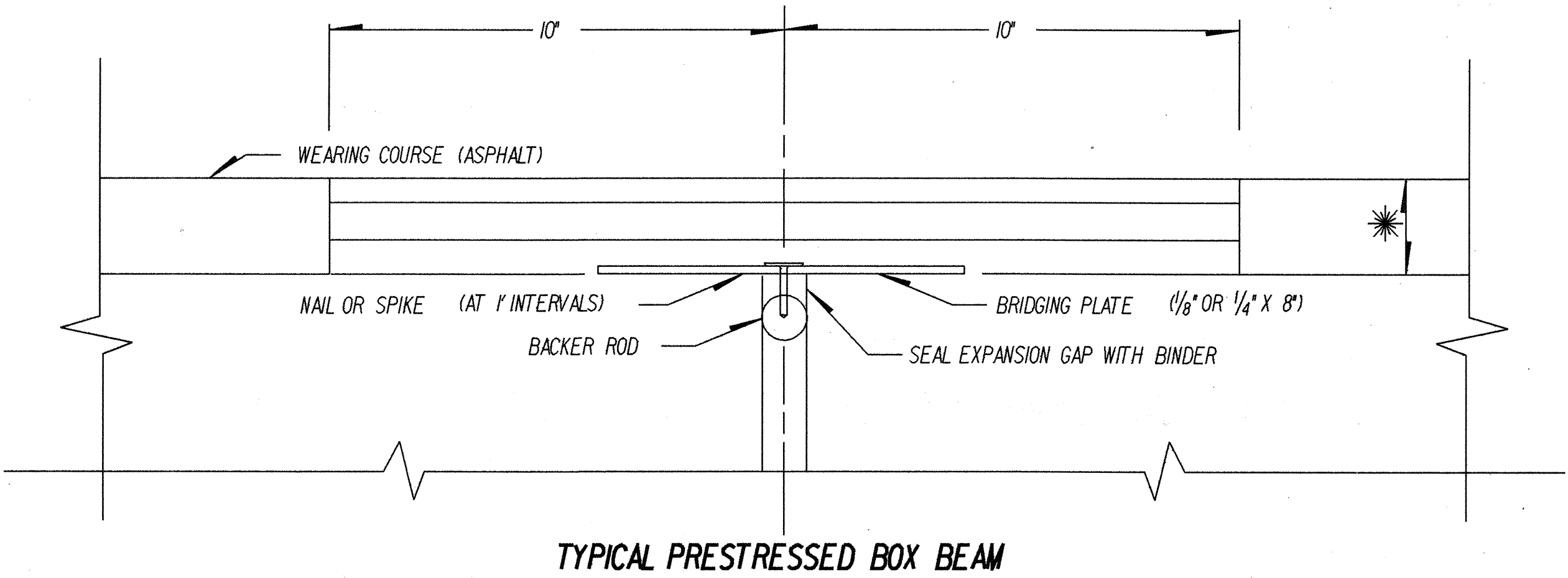
THE TOP LAYER THICKNESS WILL VARY BETWEEN 1/2 INCH AND ONE (1) INCH.
IN PREPARING THE TOP LAYER, THE RATIO OF AGGREGATE TO BINDER WILL
BE APPROXIMATELY 6:1 BY WEIGHT. THIS RATIO IS NOT ABSOLUTELY
VITAL SINCE ADDITIONAL BINDER WILL INFILTRATE THE TOP LAYER FROM
BOTH BELOW AND ABOVE. OVERFILL THE TOP LAYER AND COMPACT TO THE
LEVEL OF THE ADJACENT SURFACES USING A ROLLER OR VIBRATORY PLATE
COMPACTOR. IMMEDIATELY AFTER COMPLETION OF THE COMPACTION, POUR
SUFFICIENT BINDER OVER THE JOINT TO FILL THE SURFACE VOIDS AND COAT
THE SURFACE STONE. DUST THE FINISHED JOINT WITH A FINE, DRY AGGREGATE
TO PREVENT TACKINESS.

MAINTENANCE OF TRAFFIC:

IF NECESSARY TO FACILITATE TRAFFIC MAINTENANCE, THE JOINT WILL BE
INSTALLED IN TWO (2) HALF-WIDTH PHASES. DURING PHASE 1
APPROXIMATELY HALF OF THE TOTAL JOINT WILL BE INSTALLED. DURING
PHASE 2, A MINIMUM OF TWO (2) INCHES OF THE PHASE 1 JOINT WILL
BE REMOVED, AT OR NEAR THE CENTERLINE, WITH THE REMAINDER OF THE
JOINT INSTALLED. IN ALL CASES, OPERATIONS WILL BE SCHEDULED SO
THAT ALL LANES CAN BE OPEN TO TRAFFIC DURING ALL NON-WORKING HOURS.

PAYMENT:

PAYMENT FOR ALL THE ABOVE WILL BE AT THE UNIT PRICE BID PER LINEAR
FOOT OF SEALED JOINT IN PLACE FOR ITEM SPECIAL 516 31300, POLYMER
MODIFIED ASPHALT EXPANSION JOINT SYSTEM (4 INCHES THICK). THIS
WILL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS
NECESSARY TO COMPLETE THE ABOVE WORK.



* TWO INCH MINIMUM JOINT DEPTH. JOINT DEPTH MAY VARY (SEE PAY QUANTITY)

GEOLOGY OF THE SITE

THE STRUCTURE SITE IS LOCATED IN THE RELATIVELY FLAT GLACIATED PORTION OF THE LEXINGTON PENEPLAIN REGION, ON THE FLOODPLAIN UP AND OVER THE EAST BRANCH OF THE PORTAGE RIVER, IN AN AREA WHERE DEEP, GLACIAL-DERIVED MATERIAL, ALLUVIAL DEPOSITS AND FILL MATERIAL OVERLIE LIMESTONE AND LEACHED LIMESTONE BEDROCK OF SILURIAN AGE.

EXPLORATION

THE EXPLORATION CONSISTED OF ONE DRIVE SAMPLE BORING AND ONE DRIVE SAMPLE-CORE BORING MADE BY MEANS OF A MECHANICALLY-POWERED HOLLOW STEM ROTARY AUGER MOUNTED ON A MOBILE PLATFORM, PERFORMED ON AUGUST 7, 8 AND 9, 1989.

INVESTIGATIONAL FINDINGS AND OBSERVATIONS

THE TEST BORINGS DISCLOSED THAT INTERVALS OF LOOSE TO EXTREMELY DENSE UNSTRATIFIED BASIC SILT, CLAY, FILL MATERIAL AND GRAVEL MODIFIED WITH SAND AND VARYING AMOUNTS OF EACH OTHER THAT ERRATICALLY INCREASE IN DENSITY WITH INCREASE IN DEPTH OVERLIE RELATIVELY FLAT-LYING BEDROCK SURFACE. TEST BORING B-1 (MADE IN THE VICINITY OF THE REAR ABUTMENT) ENCOUNTERED BEDROCK SURFACE AT 40.0 FOOT DEPTH, ELEVATION 737.8 FEET AND CONTINUED TO ADVANCE TO A TOTAL DEPTH OF 45.0 FEET, ELEVATION 732.8 FEET WHERE THE BORING WAS TERMINATED AFTER HAVING PENETRATED 5.0 FEET BELOW BEDROCK SURFACE. TEST BORING B-2 (MADE IN THE VICINITY OF THE FORWARD ABUTMENT) ENCOUNTERED BEDROCK SURFACE AT 40.0 FOOT DEPTH, ELEVATION 738.0 FEET AND CONTINUED TO ADVANCE 0.1 FEET WHERE THE BORING WAS TERMINATED AT A DEPTH OF 40.1 FEET, ELEVATION 737.9 FEET. RUNNING SAND WAS ENCOUNTERED IN BORING B-2 AT 35.0 FOOT DEPTH, ELEVATION 743.0 FEET AND IT HEAVED IN THE AUGER FLIGHTS 3.0 FEET.

NO FREE WATER OBSERVATIONS WERE MADE IN EITHER OF THE TEST BORINGS PERFORMED DURING, OR AT THE CONCLUSION OF DRILLING OPERATIONS. HOWEVER, NON-PLASTIC MATERIAL WITH A HIGH WATER CONTENT WAS ENCOUNTERED IN BORING B-1 AT 15.0 FOOT DEPTH, ELEVATION 762.8 FEET. IN ADDITION, THE MAJORITY OF THE MATERIAL ENCOUNTERED IN BORING B-2 BETWEEN 15.0 FOOT DEPTH, ELEVATION 763.0 FEET AND 30.0 FOOT DEPTH, ELEVATION 748.0 FEET WAS WET IN NATURE.

-  Auger Boring Location - Plan View
-  Press and/or Drive Sample and/or Core Boring Location - Plan View
-  Top Of Rock
-  Indicates Free Water Elevation
-  Indicates Static Water Elevation

-  Horizontal Bar on Boring Log Indicates the Depth the Sample Was Taken
-  Figures Beside the Boring Log in Profile Indicate the Number of Blows for Standard Penetration Test
X = Number of Blows for First 6 Inches
Y = Number of Blows for Second 6 Inches
Z = Number of Blows for Third 6 Inches

SYMBOLS OF ROCK TYPES

-  Coal
-  Weathered Mudstone
-  Mudstone
-  Claystone
-  Weathered Shale
-  Shale
-  Weathered Siltstone
-  Siltstone
-  Fire Clay or Underclay
-  Weathered Sandstone
-  Sandstone
-  Leached Dolomite
-  Dolomite
-  Leached Limestone
-  Limestone
-  Boulders or Cobbles

GENERAL INFORMATION

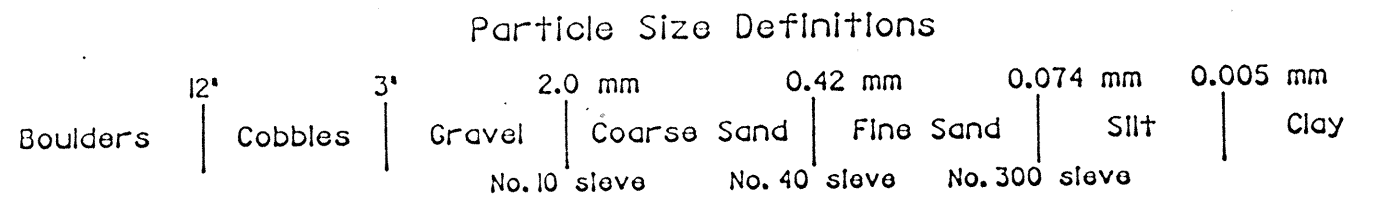
DRIVE SAMPLE BORINGS - DRIVE-PRESS SAMPLE BORINGS

Drive sample borings are made by means of a rotary-type drill rig, employing a 2' 0.D., 1-3/8" I.D. sampler, at 2-1/2 and/or 5-foot depth intervals, driven by means of a 140 pound hammer with a free fall of 30 inches. The number of blows required to drive the sampler 18 inches is considered the standard penetration test.

Drive-press sample borings are made by means of a rotary-type drill rig, employing a 2' 0.D., 1-3/8" I.D. drive sampler, and 3' 0.D. thin-wall press sampler. The press sampler is advanced by continuous uniform pressure, applied by the drill rig.

The boring log sheets show a graphic plot of the information obtained, including depth and elevation of the sample, number of blows for the standard penetration tests in three 6-inch increments, depth of press samples, field sample number sample description - based on laboratory tests and the Casagrande AC classification system - and gradation, plasticity, and moisture content determinations. Results of strength and consolidation testing, if performed, appear on separate enclosures.

At depths where materials are bouldery or gravelly to the extent that a sampler cannot be driven, a wash sample is produced for visual classification, in order to determine the general character of the material. These samples are not considered sufficiently representative to warrant laboratory testing.



NOTE: ALL AVAILABLE SOIL AND BEDROCK INFORMATION WHICH MAY BE CONVENIENTLY SHOWN ON THE STRUCTURE FOUNDATION INVESTIGATION SHEETS HAS BEEN SO REPORTED. ADDITIONAL SUBSURFACE INVESTIGATIONS MAY HAVE BEEN MADE TO STUDY SOME SPECIAL ASPECT OF THE PROJECT. COPIES OF THIS DATA, IF ANY MAY BE INSPECTED IN THE DISTRICT DEPUTY DIRECTOR'S OFFICE, THE BUREAU OF TESTS AT 1600 WEST BROAD STREET, THE PAVEMENT AND SOILS SECTION OF THE BUREAU OF LOCATION AND DESIGN OR IN THE BRIDGE BUREAU AT 25 SOUTH FRONT STREET.

REVISED III/ 8 /93

Note: Information shown by this subsurface investigation was obtained solely for the use in establishing design controls for the project. The State of Ohio does not guarantee the accuracy of this data and it is not to be construed as a part of the plans governing construction of the project.

OHIO DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS-TESTING LABORATORY
1600 WEST BROAD STREET, COLUMBUS, OHIO 43223

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. HAN-12-2723
OVER EAST BRANCH OF PORTAGE RIVER
SEC. HAN-12-27.21

CHECKED BY A.F.	REVIEWED BY M.R.S.	DATE 8/21/89
--------------------	-----------------------	-----------------

CURRENT A.D.T. (1988)	- 7470
DESIGN A.D.T. (2008)	- 8970
DHV	- 718
D	- 65 %
T	- 8 %
V (DESIGN SPEED)	- 55 m.p.h.
V (LEGAL SPEED)	- 35/55 m.p.h.
FUNCTIONAL	ARTERIAL

$$\text{Drainage Area} = 13.70 \text{ Mile}^2$$

<u>DESIGN DISCHARGE</u>	<u>DESIGN VELOCITY</u>	<u>ELEVATION</u>
Q_{25}	4.27 fps	770.82
Q_{100}	4.44 fps	771.49

TYPE: Continuous reinforced concrete slab with capped pile substructure
SPANS: 22'-27.5'-22' center to center of bearings
ROADWAY: 40'-0" face to face of guardrail
SKEW: 15'-0" R.F.
WEARING SURFACE: Asphalt Concrete
APPROACH SLAB: 15'
ALIGNMENT: Tangent
SUPERELEVATION: None

TYPE: *Prestressed Precast Concrete Box Beams on Capped Pile Abutments*

SPANS: 64'-5" c/c Bearings
ROADWAY WIDTH: 44'-0" f/f Railing
LOADING: HS-20-44 and the Alternate Military Loading
SKEW: 13'-30" R.F.
WEARING SURFACE: 2 1/2" Minimum Asphalt Concrete
APPROACH SLAB: 20'-0" (AS-1-81)
ALIGNMENT: Tangent
SUPERELEVATION: None

REVISÉ 11/ 8 /93

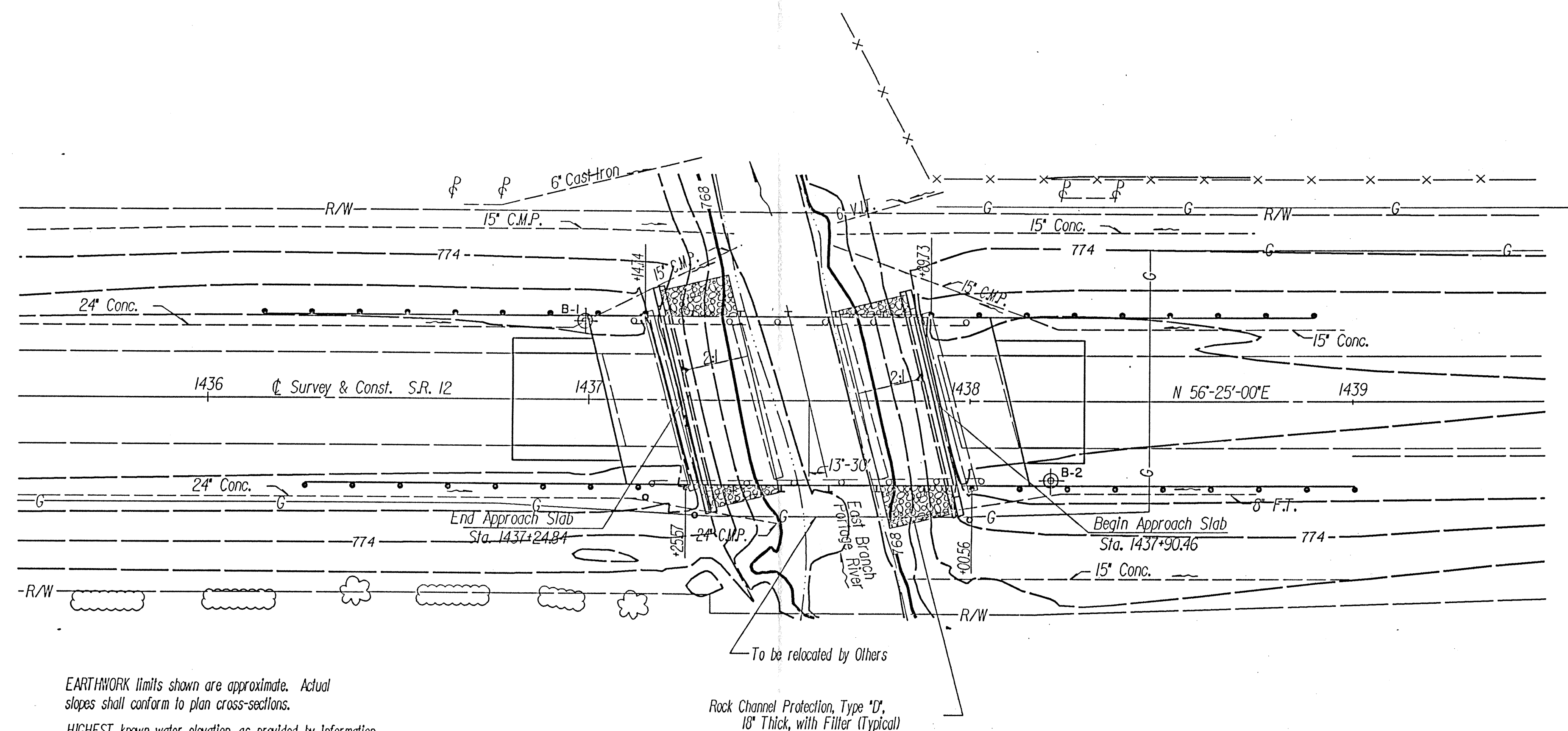
OHIO DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS-TESTING LABORATORY
1600 WEST BROAD STREET COLUMBUS, OHIO 43223

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. HAN-12-2723
OVER EAST BRANCH OF PORTAGE RIVER
SEC. HAN-12-2721

PLAN AND PROFILE - COMPUTER GENERATED

DRAWN BY J.B.H.	CHECKED BY A.F.	REVIEWED BY M.R.S.	DATE 8/21/89
--------------------	--------------------	-----------------------	-----------------

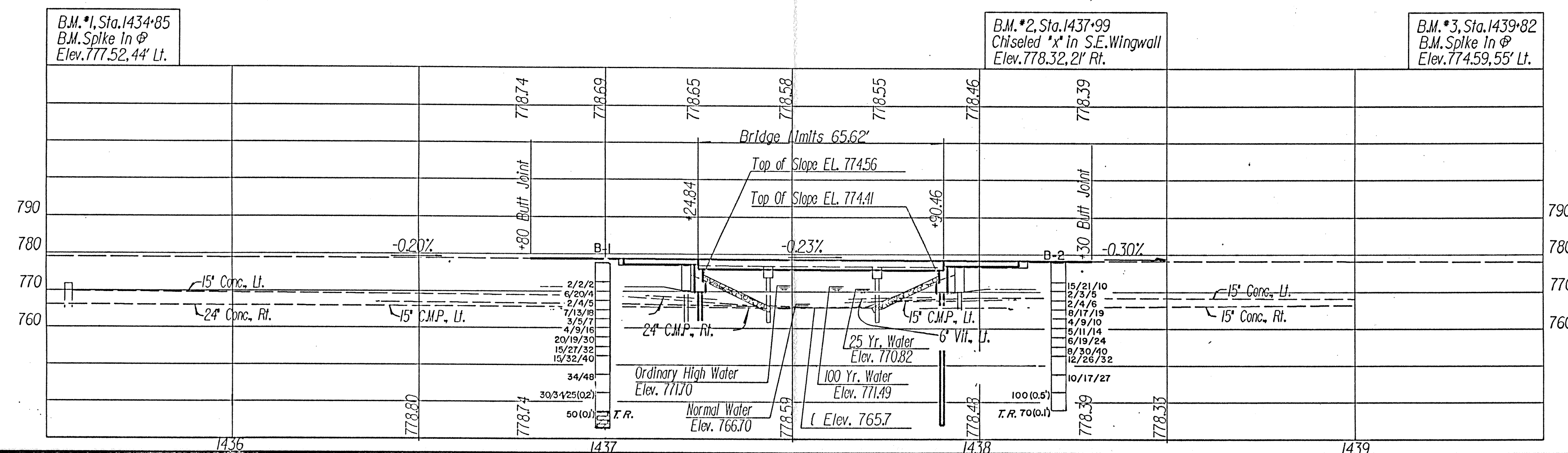
СПЕДИ АМ



EARTHWORK limits shown are approximate. Actual slopes shall conform to plan cross-sections.

HIGHEST known water elevation, as provided by information from the golf pro at the adjoining country club, is 775.70. Records, in office, give a high water elevation of 774.2 (3' below ceiling) from June, 1981.

CLEARANCE from design year water to bottom of proposed structure is 473'.



LOG OF BORING

Date Started 8/7/89 Sampler Type SS Dia. 1 3/8"
Date Completed 8/8/89
Boring No. B-1 Station & Offset 1436+99, 21' LT. (REAR ABUTMENT)

Water Elev. -
Surface Elev. 777.8'

Elev.	Depth	Std.	Pen.	Regr.	Log	Description	Sample No.	Physical Characteristics										SHTL Class
								A ₆₀	C _s	F _s	S ₁	clay	L ₁	P ₁	W _c			
777.8	0																	
776.8	2					SOD AND TOPSOIL											VISUAL	
	4																	
772.8	6	2/2/2				GRAYISH-BROWN SANDY GRAVELLY CLAY, FILL MATL.	1	33	7	12	26	22	32	16	20		VISUAL	
770.3	8	6/20/4				GRAY AND BLACK GRAVEL AND ASPHALT	2	54	7	8	17	14	31	15	24		VISUAL	
767.8	10	2/4/5				GRAY AND BROWN SANDY GRAVELLY CLAY	3	16	4	11	36	33	32	14	20		A-6A	
765.3	12	7/13/18				GRAY AND BROWN SILTY CLAY	4	0	1	2	35	62	39	18	20		A-6B	
762.8	14	3/5/7				GRAY SANDY SILT	5	0	0	42	56	2	NP	NP	28		A-4B	
760.3	16	4/9/16				GRAY SANDY SILT	6	0	6	21	56	17	NP	NP	13		A-4B	
757.8	20	20/19/30				GRAY SANDY GRAVELLY SILT	7	16	3	12	55	14	NP	NP	13		A-4B	
755.3	22	15/27/32				GRAY SANDY GRAVELLY SILT	8	36	5	12	32	15	18	6	9		A-4A	
752.8	24	15/32/40				GRAY SANDY GRAVELLY SILT	9	33	10	15	19	23	19	7	8		A-4A	
	26																	
	28																	
747.8	30	34/48				GRAY GRAVELLY SANDY SILT	10	21	10	15	33	21	19	6	7		A-4A	
	32																	
	34																	
742.8	36	30/34/25(0.2)				GRAY SILTY SANDY GRAVEL	11	43	8	11	25	13	10	6	9		A-4A	
	38																	
737.8	40	50(0.1)				TOP OF ROCK GRAY BROKEN LIMESTONE	12										VISUAL	
737.7	42																	
	44																	
732.8	46																	
	48																	

LOG OF BORING

Date Started 8/8/89 Sampler Type SS Dia. 1 3/8"
Date Completed 8/9/89
Boring No. B-2 Station & Offset 1438+21, 20' RT. (FWD. ABUTMENT)

Water Elev. -
Surface Elev. 778.0'

Elev.	Depth	Std.	Pen.	Regr.	Log	Description	Sample No.	Physical Characteristics										SHTL Class
								A ₆₀	C _s	F _s	S ₁	C ₁	L ₁	P ₁	W _c			
778.0	0					SOD AND TOPSOIL												VISUAL
777.0	2																	
773.0	6					RED BRICKS AND LIMESTONE SLAB - FILL MATL.												VISUAL
770.5	8	15/21/10				RED BRICK BATS	1											VISUAL
769.0	10	2/3/5				BROWN SILTY CLAY	2	0	1	6	51	42	40	17	29			A-6B
765.5	12	2/4/6				BROWN GRAVELLY SANDY CLAY	3	21	7	15	27	30	35	16	27			A-6B
763.0	14	8/17/19				BROWN AND GRAY SILT AND CLAY	4	0	1	3	41	55	35	14	21			A-6A
760.5	16	4/9/10				GRAY SANDY SILT	5	0	0	37	59	4	MP	MP	21			A-4B
758.0	20	5/11/14				GRAY SILT	6	0	2	8	57	33	MP	MP	17			A-4B
755.5	22	6/19/24				GRAY SILT	7	0	1	5	77	17	21	3	21			A-4B
753.0	26	8/30/40				GRAY SILT	8	0	4	11	55	30	MP	MP	20			A-4B
743.0	30	12/26/32				GRAY SANDY SILT	9	10	2	32	43	13	MP	MP	21			A-4A
743.0	36	100(0.5)				GRAY SILTY SANDY GRAVEL (SAND HEAVED 3" IN FLIGHTS)	11	57	9	14	15	5	MP	MP	8			A-1-B
738.0	40	70(0.1)				TOP OF ROCK GRAY BROKEN LIMESTONE	12											VISUAL
737.9	42					BOTTOM OF BORING												

REVISED 11/8/93

OHIO DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS - TESTING LABORATORY
1600 WEST BROAD STREET COLUMBUS, OHIO 43223

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. HAN-12-2723
OVER EAST BRANCH OF PORTAGE RIVER
SEC. HAN-12-27.21

BORING DATA

TYPED BY L.A.O.	CHECKED BY A.F.	REVIEWED BY M.R.S.	DATE 8/21/89
--------------------	--------------------	-----------------------	-----------------

DESIGN FILE : /usr/odot/dgn/h12/h12gn.dgn
USERNAME : lbr1nkma

DATE : 27-APR-1994
TIME : 13:16

GENERAL NOTES

ROUNDING

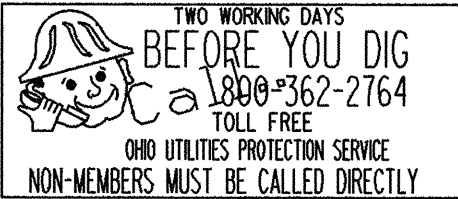
THE ROUNDING AT SLOPE BREAKPOINTS SHOWN ON THE TYPICAL SECTIONS APPLY TO ALL CROSS-SECTIONS EVEN THOUGH OTHERWISE SHOWN.

UTILITIES

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

TELEPHONE	OHIO BELL TELEPHONE 121 HURON ST. RM. 207 TOLEDO, OHIO 43604 ATTN: DICK LUDWIG TEL. (419) 245-7589
ELECTRIC	OHIO POWER 215 NORTH FRONT ST. COLUMBUS, OHIO 43215 ATTN: TEL. (614) 464-7700
PIPELINE	SOHIO PIPELINE 4421 BRADLEY RD. CLEVELAND, OHIO 44109 ATTN: TOM COYNE TEL. (216) 352-2212
GAS	COLUMBIA GAS OF OHIO 1800 BROAD ST. FINDLAY, OHIO 45839 ATTN: BOB BEELEN TEL. (419) 422-3565
CABLE T.V.	CONTINENTAL CABLEVISION OF OHIO 209 WEST MAIN CROSS FINDLAY, OHIO 45840 ATTN: DAN BEMIS TEL. (419) 423-8515

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS AS REQUIRED BY SECTION 153.64 O.R.C.



CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED FOR SUCH ITEMS SHALL BE INCORPORATED INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

ELEVATION DATUM

ALL ELEVATIONS ARE BASED ON U.S.G.S. DATUM.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE PHYSICAL CONSTRUCTION ONLY. THE INSTALLATION AND OPERATION OF ALL TEMPORARY TRAFFIC CONTROL AND TEMPORARY TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS SHALL BE PROVIDED BY THE CONTRACTOR WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

REMOVAL OF TREES OR STUMPS

ALL TREES AND STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE CONSTRUCTION LIMITS SHALL BE REMOVED UNDER THE LUMP SUM BID FOR ITEM 201, CLEARING AND GRUBBING. THE FOLLOWING IS AN APPROXIMATE ESTIMATE OF THE NUMBER OF TREES AND STUMPS TO BE REMOVED:

SIZES	NO. TREES	NO. STUMPS	TOTAL
18"	NONE	NONE	NONE

ITEM 407, TACK COAT

THE RATE OF APPLICATION OF THE 407 TACK COAT SHALL BE SUBJECT TO ADJUSTMENT AS DIRECTED BY THE ENGINEER. PLAN QUANTITIES INDICATE AN AVERAGE APPLICATION RATE OF 0.075 GALLONS PER SQUARE YARD OF TACK COAT FOR ESTIMATING PURPOSES ONLY.

ITEM 606: ANCHOR ASSEMBLY, TYPE E, MODIFIED

THIS WORK SHALL CONSIST OF FURNISHING AND INSTALLING AN ANCHOR ASSEMBLY SYSTEM.

THE ANCHOR ASSEMBLY SYSTEM SHALL BE ONE OF THE FOLLOWING:

1. THE SENTRE GUARDRAIL END TREATMENT MANUFACTURED BY ENERGY ABSORPTION SYSTEMS, INC. ONE EAST WACKER DRIVE, CHICAGO, ILLINOIS 60601 (TELEPHONE 312-467-6750). THE STRAIGHT INSTALLATION AND CONCRETE PAD FOUNDATION ARE SPECIFIED FOR THIS PROJECT.
2. THE ET-2000, OPTION "B", GUARDRAIL END TERMINAL MANUFACTURED BY SYRO STEEL COMPANY, 1170 N. STATE STREET, GIRARD, OHIO, 44420 (TELEPHONE 216-545-4373).

THE ANCHOR ASSEMBLY SHALL BE PLACED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND AT THE LOCATIONS SHOWN ON THE PLANS.

PAYMENT:

1. THE SENTRE SYSTEM IS CONSIDERED TO BE 46'-3" LONG AND SHALL INCLUDE: THE THRIE BEAM TO W-BEAM TRANSITION PANEL.
2. THE ET-2000 SYSTEM IS CONSIDERED TO BE 50'-0" LONG, INCLUSIVE OF TWO 25-FEET LONG RAIL ELEMENTS.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT BID PRICE FOR ITEM 606, EACH, ANCHOR ASSEMBLY, TYPE E, MODIFIED AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED HARDWARE, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

ITEM 659, SEEDING & MULCHING

SEEDING & MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT-OF-WAY LINES, AND WITHIN THE CONSTRUCTION LIMITS FOR AREAS OUTSIDE THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT. QUANTITY CALCULATIONS FOR ITEM 659, SEEDING AND MULCHING, ARE BASED ON THESE LIMITS. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 659, SEEDING AND MULCHING 1245 SQ. YDS.

WATERING PERMANENT SEEDED AREAS

THE FOLLOWING ESTIMATED QUANTITY IS TO BE USED AS DIRECTED BY THE ENGINEER TO PROMOTE GROWTH AND TO CARE FOR PERMANENT SEEDED AREAS PER 659.09:

ITEM 659, WATER 3 M. GAL.

TEMPORARY SOIL EROSION & SEDIMENT CONTROL

THE FOLLOWING ESTIMATED QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER TO PROMOTE GROWTH AND TO CARE FOR PERMANENT SEEDED AREAS PIER 659.09:

ITEM 207, TEMPORARY SEEDING AND MULCHING	249 SQ.YD.
ITEM 207, STRAW OR HAY BALES	20 EACH
ITEM 207, FILTER FABRIC FENCE	200 LIN.FT.
ITEM 601, ROCK CHANNEL PROTECTION, TYPE C (WITH FILTER)	5 CU. YD.
ITEM 659, COMMERCIAL FERTILIZER	0.01 TON
ITEM 659, REPAIR SEEDING AND MULCHING	62 SQ.YD.
ITEM 659, WATER	1 M. GAL.

EROSION CONTROL

ITEM 601 IS PROVIDED IN THE PLANS FOR EROSION CONTROL. ROCK OF A STABLE NATURE SHALL NOT BE REMOVED IN ORDER TO PLACE ANY OF THIS ITEM AND TURF OF A STABLE NATURE SHALL NOT BE REMOVED IN ORDER TO PLACE 659. THE ENGINEER SHALL CHECK AND NON-PERFORM QUANTITIES OR ADJUST LOCATIONS AND QUANTITIES OF THESE ITEMS WHERE INDICATED BY FIELD CONDITIONS DURING CONSTRUCTION. IN ADDITION, THESE ITEMS SHALL MEET THE REQUIREMENT OF 108.04.

PART-WIDTH CONSTRUCTION

BECAUSE OF THE NECESSITY TO BUILD THIS PROJECT UNDER TRAFFIC AND CONSTRUCTING THE FULL PAVEMENT WIDTH IN STAGES, EXTREME CARE SHALL BE TAKEN TO PREVENT THE CONSTRUCTION OF A BUTT JOINT IN THE BASE COURSES. LONGITUDINAL JOINTS SHALL BE LAPPED AS SHOWN ON STANDARD CONSTRUCTION DRAWING BP-3J.

STREAM CHANNEL EXCAVATION

THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT ANY INCIDENTAL DISCHARGES ASSOCIATED WITH THE EXCAVATION AND HAULING OF MATERIAL FROM THE

STREAM CHANNEL. THIS PERTAINS TO ANY EXCAVATION OPERATIONS SUCH AS, FOUNDATION PIER OR ABUTMENT EXCAVATION, CHANNEL CLEANOUT, EXCAVATION FOR ROCK CHANNEL PROTECTION AND REMOVAL OF ANY TEMPORARY FILL ASSOCIATED WITH CONSTRUCTION OPERATIONS.

CROSSINGS AND CONNECTIONS TO EXISTING PIPES & UTILITIES

WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING SEWER OR UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT.

IF IT IS DETERMINED THAT THE ELEVATION OF THE EXISTING CONDUIT, OR EXISTING APPURTENANCE TO BE CONNECTED, DIFFERS FROM THE PLAN ELEVATION OR RESULTS IN A CHANGE IN THE PLAN CONDUIT SLOPE, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WILL BE AFFECTED BY THE VARIANCE IN THE EXISTING ELEVATIONS.

IF IT IS DETERMINED THAT THE PROPOSED CONDUIT WILL INTERSECT AN EXISTING SEWER OR UNDERGROUND UTILITY IF CONSTRUCTED AS SHOWN ON THE PLAN, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH AN EXISTING FACILITY.

PAYMENT FOR ALL THE OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 603 CONDUIT ITEM.

FARM DRAINS

ALL FARM DRAINS, WHICH ARE ENCOUNTERED DURING CONSTRUCTION, SHALL BE PROVIDED WITH UNOBSTRUCTED OUTLETS. EXISTING COLLECTORS WHICH ARE LOCATED BELOW THE ROADWAY DITCH ELEVATIONS, AND WHICH CROSS THE ROADWAY, SHALL BE REPLACED WITHIN THE (CONSTRUCTION) LIMITS BY ITEM 603 CONDUIT, TYPE B, ONE COMMERCIAL SIZE LARGER THAN THE EXISTING CONDUIT.

EXISTING COLLECTORS AND ISOLATED FARM DRAINS, WHICH ARE ENCOUNTERED ABOVE THE ELEVATION OF ROADWAY DITCHES SHALL BE OUTLETTED INTO THE ROADWAY DITCH BY 603 TYPE F CONDUIT. THE OPTIMUM OUTLET ELEVATION SHALL BE ONE FOOT ABOVE THE FLOWLINE ELEVATION OF THE DITCH. LATERAL FIELD TILES WHICH CROSS THE ROADWAY SHALL BE INTERCEPTED BY 603, TYPE E CONDUIT, AND CARRIED ON A LONGITUDINAL DIRECTION TO AN ADEQUATE OUTLET OR ROADWAY CROSSING.

THE LOCATION, TYPE, SIZE AND GRADE OF REPLACEMENTS SHALL BE DETERMINED BY THE ENGINEER AND PAYMENT SHALL BE MADE ON FINAL MEASUREMENTS.

EROSION CONTROL PADS AND ANIMAL GUARDS SHALL BE PROVIDED AT THE OUTLET END OF ALL FARM DRAINS AS PER STANDARD CONSTRUCTION DRAWING MC-4, EXCEPT WHEN THEY OUTLET INTO A DRAINAGE STRUCTURE. PAYMENT FOR THE EROSION CONTROL PADS AND ANIMAL GUARDS AND ANY NECESSARY BENDS OR BRANCHES SHALL BE INCLUDED FOR PAYMENT IN THE PERTINENT CONDUIT ITEM.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE WORK NOTED ABOVE:

ITEM 603, 15" CONDUIT, TYPE B	24 LIN.FT.
ITEM 603, 10" CONDUIT, TYPE F	20 LIN.FT.
ITEM 603, 12" CONDUIT, TYPE F	20 LIN.FT.
ITEM 603, 15" CONDUIT, TYPE F	20 LIN.FT.
ITEM 601, ROCK CHANNEL PROTECTION, TYPE C, WITH FILTER	5 CU.YDS.

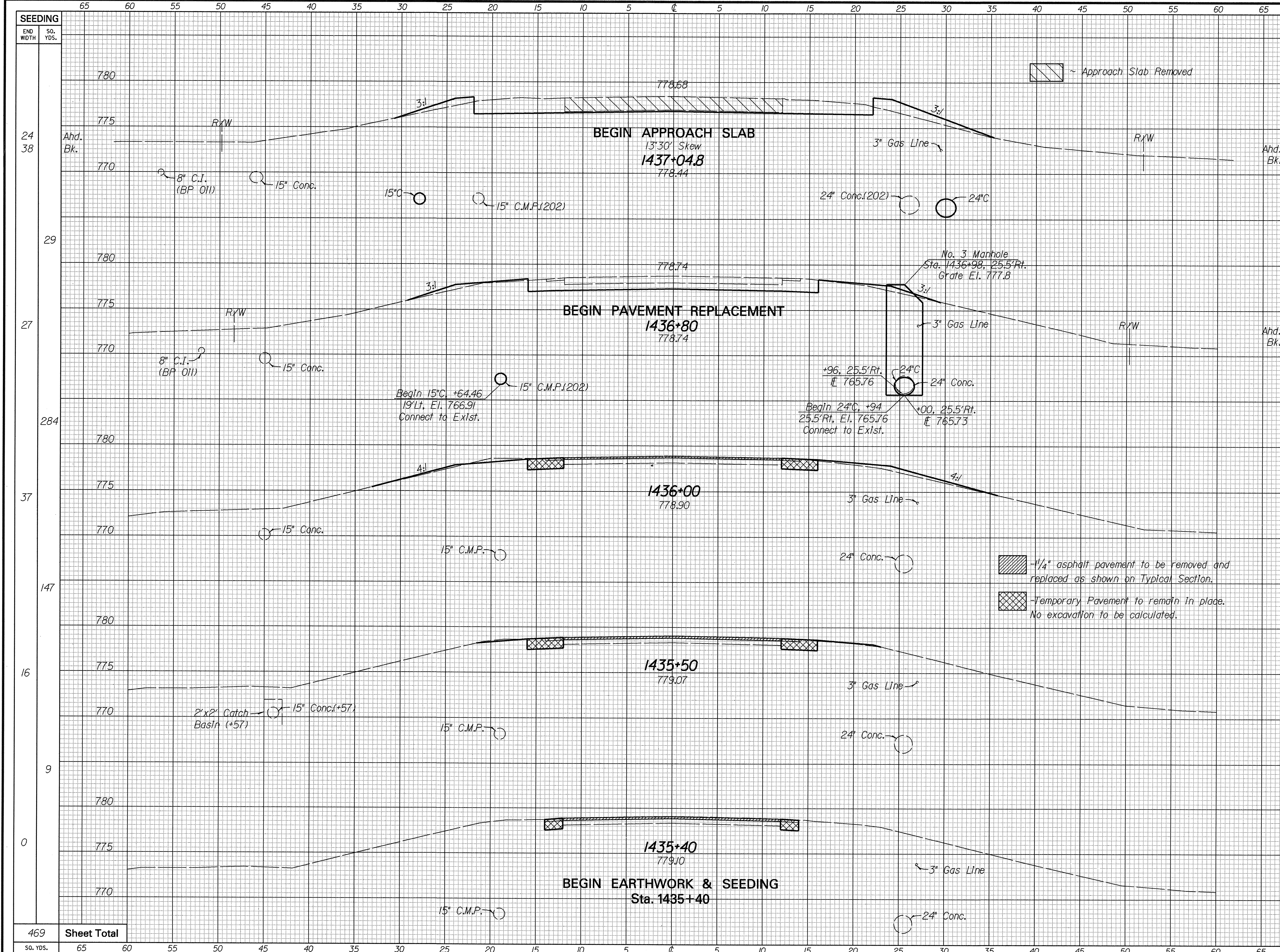
REVIEW OF DRAINAGE FACILITIES

BEFORE ANY WORK IS STARTED ON THE PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE STATE, REPRESENTATIVES OF THE STATE AND THE CONTRACTOR, ALONG WITH LOCAL REPRESENTATIVES, SHALL MAKE AN INSPECTION OF ALL EXISTING SEWERS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCES SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION SHALL BE KEPT IN WRITING BY THE STATE.

ALL NEW CONDUITS, INLETS, CATCH BASINS, AND MANHOLES CONSTRUCTED AS A PART OF THE PROJECT SHALL BE FREE OF ALL FORIEGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED BY THE STATE.

ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 603 CONDUIT ITEMS.



SEEDING		EARTHWORK			
END WIDTH	SO. YDS.	END CUT	AREA FILL	VOLUME CUT	VOLUME FILL
24	38	30	17	46	27
29				42	4
27		46	6	0	6
284				3	18
37		2	6		
147				3	6
16		1	1		
9				1	1
0		0	0		
469	Sheet Total				
SO. YDS.		SO. FT.		CU. YDS.	

CALCULATED
LAB
CHECKED
NJV

CROSS SECTIONS
Sta. 1435+40 to Sta. 1437+04.8

HAN-12-27.21

13
22