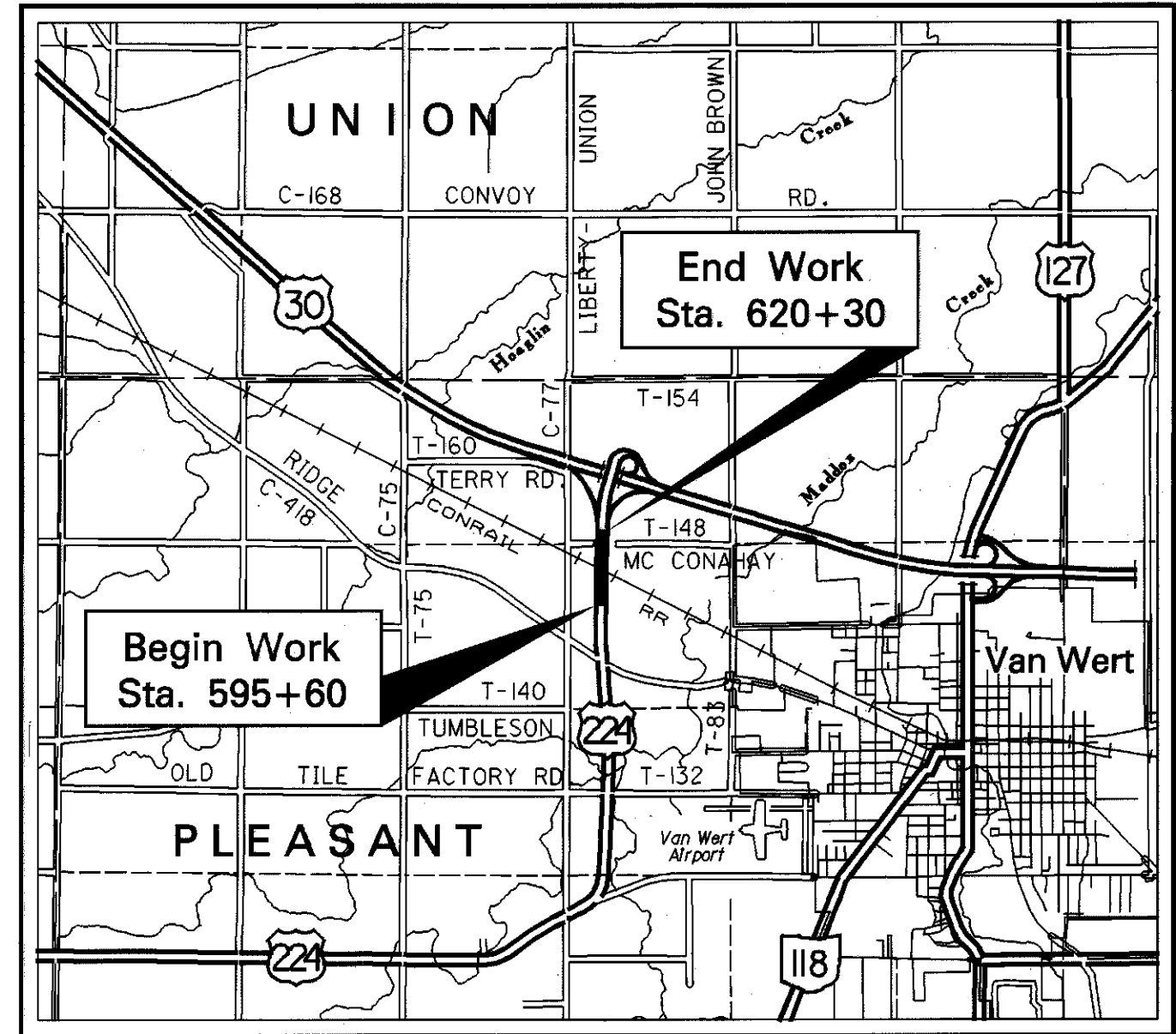
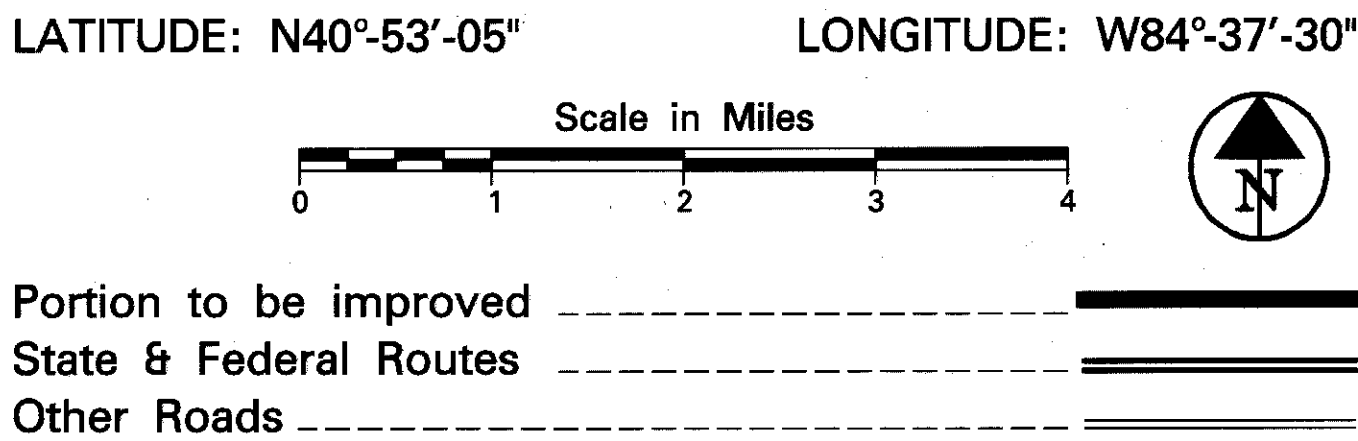


STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
VAN-224-11.20
PLEASANT TOWNSHIP
VAN WERT COUNTY



LOCATION MAP



DESIGN DESIGNATION

Current A.D.T. (1998) = 3240
Design Year A.D.T. (2018) = 4970
Design Hourly Volume (2018) = 497
Directional Distribution = 55%
Trucks (24 Hour B & C) = 17%
Design Speed = 55 m.p.h.
Legal Speed = 55 m.p.h.

Design Functional Classification = Rural Minor Arterial

DESIGN EXCEPTIONS

No Design Exceptions Required

INDEX OF SHEETS

TITLE SHEET	1
TYPICAL SECTION	2
GENERAL NOTES	3-5
GENERAL SUMMARY	6-7
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MISCELLANEOUS DETAILS & TABLES	9
STORM WATER POLLUTION PREVENTION PLAN	10
PLAN & PROFILE	11-15
CROSS SECTIONS	16-22

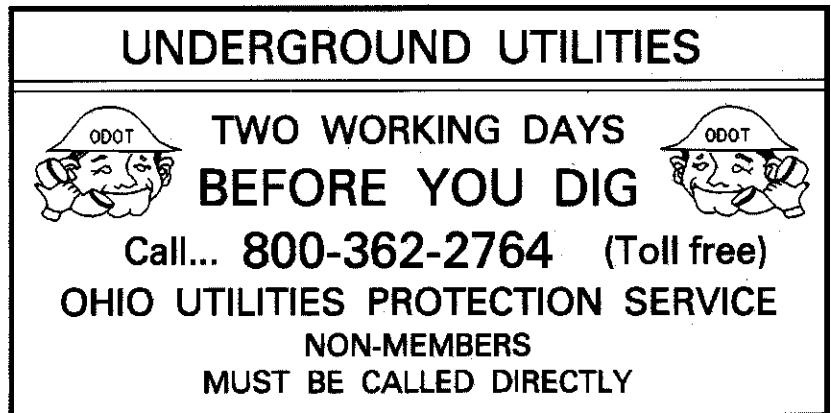
PROJECT DESCRIPTION

Slope and Shoulder Rehabilitation along 0.45 Miles of U.S.R. 224 including Underdrains and Asphalt Concrete Curb.

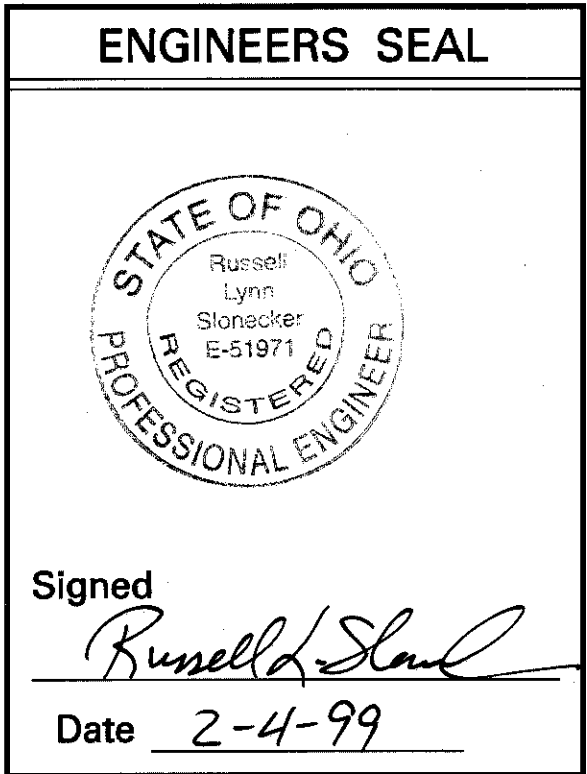
1997 SPECIFICATIONS

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 require the closing to traffic of the highway and that detours will be provided as indicated on Sheet 5.




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



SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS						SUPPLEMENTAL SPECIFICATIONS
BP-3.1	2-21-92	CB-6	5-1-79	MT-101.60	7-1-92	TC-41.20 6-21-94
BP-5.1	10-28-94			MT-105.10	7-1-92	TC-42.10 3-26-79
		DM-1.1M	10-21-97	MT-105.11	7-1-92	TC-42.20 3-26-79
GR-1.1M	10-21-97	DM-4.3M	6-30-95			TC-52.10 4-3-79
GR-1.2M	1-3-96					TC-52.20 4-3-79
GR-2.1M	4-14-98	TBR-91	4-24-92			
GR-3.3M	10-21-97					

Approved 
Date 2/4/99 District Deputy Director

Approved 
Date 2-16-99 Director, Department of Transportation

FEDERAL PROJECT No.

NONE

PID No.

19048

CONSTRUCTION PROJECT No.

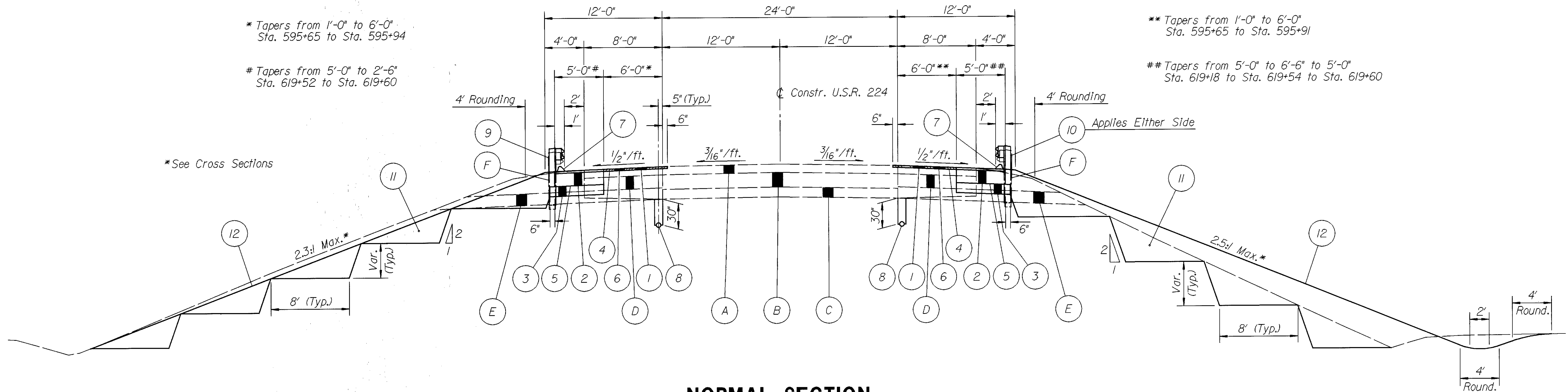
RAILROAD INVOLVEMENT

NONE

VAN-224-11.20

1
22

VAN-224-11.20
990333
DIST. 01
05-12-99
PID # 19048



NORMAL SECTION

Applies @:

Sta. 595+65 to Sta. 608+78 = 1313 Lin Ft
Sta. 610+52 to Sta. 619+60 = 908 Lin Ft
Total = 2221 Lin Ft

EXISTING LEGEND

- (A) ±4" Asphalt Concrete
- (B) 9" Reinforced Portland Cement Concrete Pavement
- (C) 6" Subbase
- (D) 8" Aggregate Base
- (E) Aggregate Drain
- (F) Guardrail

PROPOSED LEGEND

- (1) Item 448 1 1/4" Asphalt Concrete Surface Course, Type I PG64-22, as per Plan (See General Note)
- (2) Item 301 8" Bituminous Aggregate Base, PG64-22
- (3) Item 304 6" Aggregate Base
- (4) Item 407 Tack Coat (See General Note)
- (5) Item 408 Bituminous Prime Coat applied at a Rate of 0.40 Gallon per Sq Yd
- (6) Item 254 Pavement Planing, Bituminous
- (7) Item 609 Asphalt Concrete Curb, Type I
- (8) Item 605 4" Shallow Pipe Underdrain, as per Plan (See General Note)
- (9) Item 606 Guardrail, Type 5, as per Plan (See General Note)
- (10) Item 606 Guardrail Rebuilt, Type 5, as per Plan (See General Note)
- (11) Item 203 Embankment
- (12) Item 659 Seeding and Mulching, as per Plan (See General Note)

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TIME : 12:12

ELEVATION DATUM

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

ROUNDING

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

UTILITY OWNERSHIP

THERE ARE NO KNOWN UNDERGROUND OR OVERHEAD UTILITIES WITHIN THE PROJECT CONSTRUCTION LIMITS.

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.

WORK LIMITS

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

CLEARING AND GRUBBING

ALTHOUGH THERE ARE NO TREES OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THE PROJECT, A LUMP SUM QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

ITEM 659 SEEDING AND MULCHING, AS PER PLAN

SEEDING AND 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.

ALL AREAS WITH SLOPES GREATER THAN 3 TO 1 SHALL BE SEEDDED WITH (1) CROWN VETCH AT THE RATE AND MIXTURE SPECIFIED IN 659.09, SEED MIX MEETING THE FOLLOWING REQUIREMENTS: THE SEED (FORMULA 1 & 2) SHALL BE THOUGHLY MIXED AND THEN EVENLY SOWN OVER 100 LBS/ACRE. SEED SHALL BE SOWN DRY OR HYDRAULICALLY.

FORMULA 1: 60 PERCENT HARD FESCUE (FESTUCA)
40 PERCENT CREEPING RED FESCUE (FESTUCA RUBRA)
SEED AT 90 LBS/ACRE

FORMULA 2: 100 PERCENT PERENNIAL RYEGRASS (LOLIUM PERENNE)
SEED AT 10 LBS/ACRE

THE REMAINING SEEDING AND MULCHING REQUIREMENTS SHALL CONFORM TO 659.09.

TEMPORARY SOIL EROSION AND SEDIMENT CONTROL

THE FOLLOWING ESTIMATED QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES:

ITEM 207	TEMPORARY SEEDING AND MULCHING	=	5100	SQ YD
ITEM 207	FILTER FABRIC FENCE	=	1600	LIN FT
ITEM 207	TEMPORARY SLOPE DRAIN	=	300	LIN FT
ITEM 207	TEMPORARY DIKES	=	6000	LIN FT
ITEM 207	STRAW OR HAY BALES	=	50	EACH
ITEM 659	WATER	=	11	M GAL
ITEM 659	COMMERCIAL FERTILIZER	=	0.23	TON

WATERING PERMANENT SEEDED AREAS

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

ITEM 659	WATER	=	55	M GAL
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ITEM 605 4" SHALLOW PIPE UNDERDRAIN, AS PER PLAN

THIS ITEM SHALL INSTALLED USING A TRENCH WIDTH OF 10 INCHES WITH A MINIMUM TRENCH WIDTH OF 2 INCHES ON EACH SIDE OF THE PIPE.

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 RIGHT OF WAY 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 IN 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 DM-1.1M, 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	6" CONDUIT, TYPE F	=	50	LIN FT
ITEM 603	8" CONDUIT, TYPE F	=	20	LIN FT
ITEM 603	10" CONDUIT, TYPE F	=	20	LIN FT
ITEM 603	12" CONDUIT, TYPE B	=	20	LIN FT
ITEM 603	12" CONDUIT, TYPE F	=	20	LIN FT

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 THIS ITEM. THE ENGINEER SHALL CHECK AND NON-PERFORM QUANTITIES OR ADJUST LOCATIONS AND QUANTITIES FOR THE ITEM WHERE INDICATED BY FIELD CONDITIONS DURING CONSTRUCTION. IN ADDITION, THIS ITEM SHALL MEET THE REQUIREMENT OF 108.04.

STORM WATER POLLUTION PREVENTION

THE CONDITIONS OF THE NPDES CONSTRUCTION STORM WATER GENERAL PERMIT (SEE PROPOSAL) SHALL BE MET DURING ALL STAGES OF CONSTRUCTION. THE LOCATION AND TIMING OF ALL EROSION AND SEDIMENT CONTROL ITEMS SHALL BE FIELD ADJUSTED TO PREVENT SIGNIFICANT IMPACTS ON RECEIVING WATERS. IMPLEMENTATION OF THIS STORM WATER POLLUTION PLAN SHALL CONTINUE THROUGHOUT THE DURATION OF THE PROJECT OR UNTIL SUCH TIME THAT THE UPSLOPE DISTURBED AREAS ARE STABILIZED.

INSTALLATION OF SEDIMENT BASINS/DAMS, PERIMETER FILTER FABRIC FENCE, AND DITCH CHECKS SHALL BE CONCURRENT WITH CLEARING AND GRUBBING AND/OR GRADING OPERATIONS.

ALL REASONABLE ATTEMPTS SHOULD BE MADE TO MINIMIZE THE TOAL AREA OF DISTURBED LAND.

AREAS TO REMAIN DORMANT FOR MORE THAN 45 DAYS SHOULD BE IMMEDIATELY STABILIZED WITH TEMPORARY SEEDING AND MULCHING, EROSION CONTROL MATTING OR OTHER APPROPRIATE EROSION CONTROL MEASURES.

ADDITIONAL QUANTITIES OF TEMPORARY SOIL EROSION AND SEDIMENT CONTROL ITEMS ARE GIVEN IN THE GENERAL NOTES.

CONVERSION OF STANDARD DRAWINGS

THE METRIC STANDARD DRAWINGS REFERENCED IN THIS PLAN SHALL BE CONVERTED TO ENGLISH UNITS USING THE SI (METRIC) TO ENGLISH CONVERSION FACTORS PROVIDED IN SECTION 109.011 OF THE 1997 CONSTRUCTION AND MATERIALS SPECIFICATIONS. THE APPENDIX OF ASTM E 380 SHALL BE UTILIZED FOR ANY ADDITIONAL CONVERSION FACTORS REQUIRED. CONVERSIONS SHALL BE APPROPRIATELY PRECISE AND SHALL REFLECT STANDARD INDUSTRY ENGLISH VALUES WHERE SUITABLE.

ESTIMATED QUANTITIES			
ITEM	QUANTITY	UNIT	DESCRIPTION
201	LUMP		CLEARING AND GRUBBING
207	5100	SQ YD	TEMPORARY SEEDING AND MULCHING
207	1600	LIN FT	FILTER FABRIC FENCE
207	300	LIN FT	TEMPORARY SLOPE DRAIN
207	6000	LIN FT	TEMPORARY DIKES
207	50	EACH	STRAW OR HAY BALES
603	50	LIN FT	6" CONDUIT, TYPE F
603	20	LIN FT	8" CONDUIT, TYPE F
603	20	LIN FT	10" CONDUIT, TYPE F
603	20	LIN FT	12" CONDUIT, TYPE B
603	20	LIN FT	12" CONDUIT, TYPE F
659	0.23	TON	COMMERCIAL FERTILIZER
659	66	M GAL	WATER
QUANTITIES CARRIED TO GENERAL SUMMARY, SHEET 6			

CALCULATED

N/V

CHECKED

JRC

GENERAL NOTES

VAN-224-11.20

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AIRWAY-HIGHWAY CLEARANCE

THIS PROJECT HAS BEEN IDENTIFIED AS BEING WITHIN THE INFLUENCE AREA OF A PUBLIC USE AIRPORT. THE CONTRACTOR IS ADVISED THAT NO TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT AT MAXIMUM OPERATING HEIGHT SHALL EXCEED A HEIGHT OF 136 FEET. IF ANY TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT WILL EXCEED THIS HEIGHT, THE CONTRACTOR IS ADVISED THAT COORDINATION WITH THE FEDERAL AVIATION ADMINISTRATION(FAA) WILL BE NECESSARY PRIOR TO ERECTING SUCH TEMPORARY STRUCTURES OR OPERATING EQUIPMENT ON THE PROJECT. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT FORM 7460-1 TO THE FAA. A COPY OF THE SUBMISSION AND TWO COPIES OF FORM 7460-1 SHALL BE FORWARDED TO THE ODOT OFFICE OF AVIATION. THE CONTRACTOR IS ADVISED THAT NO TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT SHALL EXCEED THE PERMISSIBLE HEIGHT, UNTIL A COPY OF THE FAA APPROVAL AND ODOT OFFICE OF AVIATION PERMIT HAS BEEN FURNISHED TO THE PROJECT ENGINEER.

THE CONTRACTOR IS FURTHER ADVISED THAT THE FAA APPROVAL MAY TAKE UP TO 45 DAYS. ALL SUBMISSIONS SHALL BE DIRECTED TO THESE OFFICES:

FEDERAL AVIATION ADMINISTRATION
GREAT LAKES REGIONAL OFFICE
AIR TRAFFIC DIVISION AGL-530
2300 EAST DEVON AVENUE
DES PLAINES, ILLINOIS 60018
(847) 294-7568

OHIO DEPARTMENT OF TRANSPORTATION
OFFICE OF AVIATION
2829 WEST DUBLIN-GRANVILLE RD.
COLUMBUS, OHIO 43235
(614) 793-5046

ITEM 448 ASPHALT CONCRETE SURFACE COURSE,
TYPE 1, PG64-22, AS PER PLAN

THIS ITEM SHALL MEET ALL REQUIREMENTS OF THE SPECIFICATIONS FOR 401, 441, AND 448 WITH THE FOLLOWING EXCEPTION:

1) NO RECYCLED ASPHALT PAVEMENT SHALL BE USED IN THE SURFACE COURSE.

ALL COSTS ASSOCIATED WITH THE EQUIPMENT, LABOR AND MATERIALS NECESSARY FOR SUPPLYING AND PLACING THIS ITEM SHALL BE INCLUDED IN THE PRICE BID PER CUBIC METER FOR ITEM 448 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22, AS PER PLAN.

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-98

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING EITHER OF THE FOLLOWING GUARDRAIL END TERMINALS.

1) THE ET-2000 (1997) MANUFACTURED BY SYRO, INC., 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 330-545-4373).

THE LENGTH OF THE ET-2000 (1997) SYSTEM IS CONSIDERED TO BE 50 FEET, INCLUSIVE OF TWO 25 FOOT LONG RAIL ELEMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PREAPPROVED SHOP DRAWING:

DRAWING NUMBER: SS265M
DRAWING NAME: ET-2000 (1997) PLAN, ELEVATION & SECTIONS
DWG./REV. DATE: 6/20/97
ODOT APPROVAL DATE: 3/6/98

2) THE SKT-350 MANUFACTURED BY ROAD SYSTEMS, INC., 7631 NEW CASTLE DRIVE, FRANKFORT, IL 60423 (TELEPHONE: 815-464-5917).

THE LENGTH OF THE SKT-350 SYSTEM IS CONSIDERED TO BE 50 FEET INCLUSIVE OF FOUR 12.5 FOOT LONG RAIL ELEMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PREAPPROVED SHOP DRAWING:

DRAWING NUMBER: SKT-4M
DRAWING NAME: SEQUENTIAL KINKING TERMINAL (SKT-350)
ASSEMBLY WITH 4 FOUNDATION TUBES
DWG./REV. DATE: 12/11/97
ODOT APPROVAL DATE: 3/6/98

THE FACE OF THE TYPE E-98 IMPACT HEAD SHALL BE COVERED WITH A SHEET OF TYPE G REFLECTIVE SHEETING, PER CMS 730.19, APPROXIMATELY 18 INCHES X 18 INCHES.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, TYPE E-98. EACH AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED TRANSITIONS, REFLECTIVE SHEETING, HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

INSTALLATION OF FOUNDATION TUBES

THE FOLLOWING METHOD SHALL BE USED FOR INSTALLATION OF ALL FOUNDATION TUBES REQUIRED FOR GUARDRAIL END TREATMENTS ON THIS PROJECT:

- 1) AUGER 8 INCH DIAMETER HOLE AT THE LOCATION OF THE FOUNDATION TUBE TO A DEPTH OF ONE FOOT LESS THAN THE LENGTH OF THE FOUNDATION TUBE.
- 2) DRIVE FOUNDATION TUBE WITH SOIL PLATE TO GRADE.(NOTE: IF A GUARDRAIL POST IS USED IN THE DRIVING OPERATION, IT SHALL BE REMOVED AND DISCARDED)
- 3) PERFORM ANY NECESSARY BACKFILLING OF THE HOLE IN ACCORDANCE WITH 606.03 AND INSERT THE REQUIRED GUARDRAIL POST.

ALL MATERIALS, LABOR AND EQUIPMENT REQUIRED TO INSTALL THE FOUNDATION TUBES AS DESCRIBED ABOVE SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE PERTINENT GUARDRAIL END TREATMENT.

ITEM 606 GUARDRAIL, TYPE 5, AS PER PLAN

THIS ITEM SHALL MEET THE REQUIREMENTS OF ITEM 606 GUARDRAIL, TYPE 5 AS SPECIFIED IN THE CONSTRUCTION AND MATERIAL SPECIFICATIONS MANUAL AND APPROPRIATE STANDARD DRAWINGS EXCEPT AS FOLLOWS:

- 1) THE POST LENGTH SHALL BE 9 FEET.
- 2) THE POSTS SHALL BE SET IN 8" DIAMETER DRILLED HOLES.
- 3) BACKFILLING OF THE HOLE SHALL BE IN ACCORDANCE WITH 606.03.

ALL MATERIALS, LABOR AND EQUIPMENT REQUIRED TO INSTALL THE GUARDRAIL AS DESCRIBED ABOVE SHALL BE INCLUDED IN THE COST OF ITEM 606 GUARDRAIL, TYPE 5, AS PER PLAN.

ITEM 606 GUARDRAIL REBUILT, TYPE 5, AS PER PLAN

THIS ITEM SHALL MEET THE REQUIREMENTS OF ITEM 606 GUARDRAIL REBUILT, TYPE 5 AS SPECIFIED IN THE CONSTRUCTION AND MATERIAL SPECIFICATIONS MANUAL AND APPROPRIATE STANDARD DRAWINGS EXCEPT AS FOLLOWS:

- 1) EXISTING STEEL POSTS SHALL NOT BE REUSED.
- 2) THE POST LENGTH SHALL BE 9 FEET.
- 3) THE POSTS SHALL BE SET IN 8" DIAMETER DRILLED HOLES.
- 4) BACKFILLING OF THE HOLE SHALL BE IN ACCORDANCE WITH 606.03.

ALL MATERIALS, LABOR AND EQUIPMENT REQUIRED TO INSTALL THE GUARDRAIL AS DESCRIBED ABOVE SHALL BE INCLUDED IN THE COST OF ITEM 606 GUARDRAIL REBUILT, TYPE 5, AS PER PLAN.

CONNECTION BETWEEN EXISTING AND PROPOSED GUARDRAIL

WHEN IT IS NECESSARY TO SPLICE PROPOSED AND EXISTING GUARDRAIL, ONLY THE EXISTING GUARDRAIL SHALL BE CUT, DRILLED, OR PUNCHED. THE CONNECTION SHALL BE MADE USING A "W-BEAM RAIL SPLICE" AS SHOWN IN STANDARD CONSTRUCTION DRAWING GR-IJM. PAYMENT SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE RESPECTIVE GUARDRAIL ITEMS.

BENCHING OF FOUNDATION SLOPES

ALTHOUGH CROSS SECTIONS INDICATE SPECIFIC DIMENSIONS FOR PROPOSED BENCHING OF THE EMBANKMENT FOUNDATIONS IN CERTAIN AREAS, NO WAIVER OF THE SPECIFICATIONS IS INTENDED. ALL OTHER SLOPED EMBANKMENT AREAS SHALL BE BENCHED AS SET FORTH IN 203.09. NO ADDITIONAL PAYMENT WILL BE MADE FOR BENCHING REQUIRED UNDER THE PROVISIONS OF 203.09.

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ITEM 614 MAINTAINING TRAFFIC

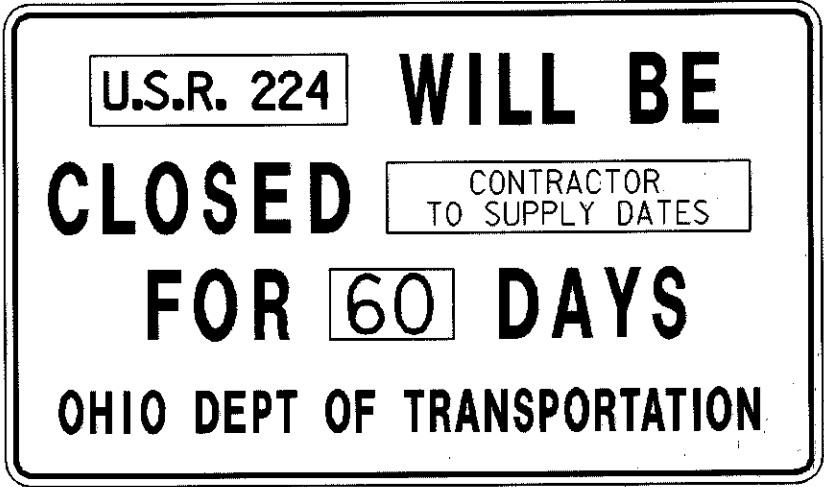
TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES, EXCEPT FOR A PERIOD NOT TO EXCEED SIXTY (60) CONSECUTIVE CALENDAR DAYS. THROUGH TRAFFIC SHALL BE DETOURED AS SHOWN ON THIS SHEET. THE DETOUR SHALL BE ESTABLISHED, MAINTAINED, AND SUBSEQUENTLY REMOVED BY THE STATE OF OHIO.

THE FIRST DAY THAT THE DETOUR IS IN EFFECT SHALL BE CONSIDERED THE STARTING DATE OF THE 60 DAY DETOUR LIMITATION. THE 60TH DAY OF THE 60 DAY DETOUR LIMITATION SHALL BE CONSIDERED AS AN INTERIM COMPLETION DATE. ON OR BEFORE THE 60TH DAY, THE ROADWAY SHALL BE OPENED TO THE SAFE AND CONVENIENT USE OF THE TRAVELING PUBLIC. IF THE ROADWAY IS NOT OPENED BY THIS INTERIM COMPLETION DATE, LIQUIDATED DAMAGES SHALL BE ASSESSED AS PER SPECIFICATION 108.07 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS BOOK.

THE CONTRACTOR SHALL NOTIFY THE DISTRICT ONE ROADWAY SERVICES ADMINISTRATOR OR CONSTRUCTION ENGINEER A MINIMUM OF FOURTEEN (14) DAYS IN ADVANCE OF THE PLANNED DATE OF CLOSURE.

NOTICE OF CLOSURE SIGNS, AS DETAILED BELOW, SHALL BE ERECTED BY THE CONTRACTOR AT LEAST 14 DAYS IN ADVANCE OF THE SCHEDULED ROAD CLOSURE. THE SIGNS SHALL BE ERECTED ON THE RIGHT HAND SIDE OF THE ROAD FACING TRAFFIC. THEY SHALL BE ERECTED AT THE POINT OF CLOSURE AND PLACED SO AS NOT TO INTERFERE WITH THE VISIBILITY OF ANY OTHER TRAFFIC CONTROL SIGNS.

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.



OC-60B

DESIGNATED LOCAL DETOUR ROUTE

IN ADDITION TO THE OFFICIAL, SIGNED DETOUR ROUTE, A LOCAL ROUTE HAS BEEN DETERMINED TO BE THE SECONDARY, UNSIGNED DETOUR ROUTE OR "DESIGNATED LOCAL DETOUR ROUTE." THIS ROUTE IS SHOWN ON THIS SHEET. DURING THE TIME THAT TRAFFIC IS DETOURED, THE CONTRACTOR SHALL MAINTAIN THIS ROUTE IN A CONDITION WHICH IS REASONABLY SMOOTH AND FREE FROM HOLES, RUTS, RIDGES, BUMPS, DUST AND STANDING WATER. ONCE THE DETOUR IS REMOVED AND TRAFFIC RETURNED TO ITS NORMAL PATTERN, THE DESIGNATED LOCAL DETOUR ROUTE SHALL BE RESTORED TO A CONDITION THAT IS EQUIVALENT TO THAT WHICH EXISTED PRIOR TO ITS USE FOR THIS PURPOSE. ALL SUCH WORK SHALL BE PERFORMED WHEN AND AS DIRECTED BY THE ENGINEER.

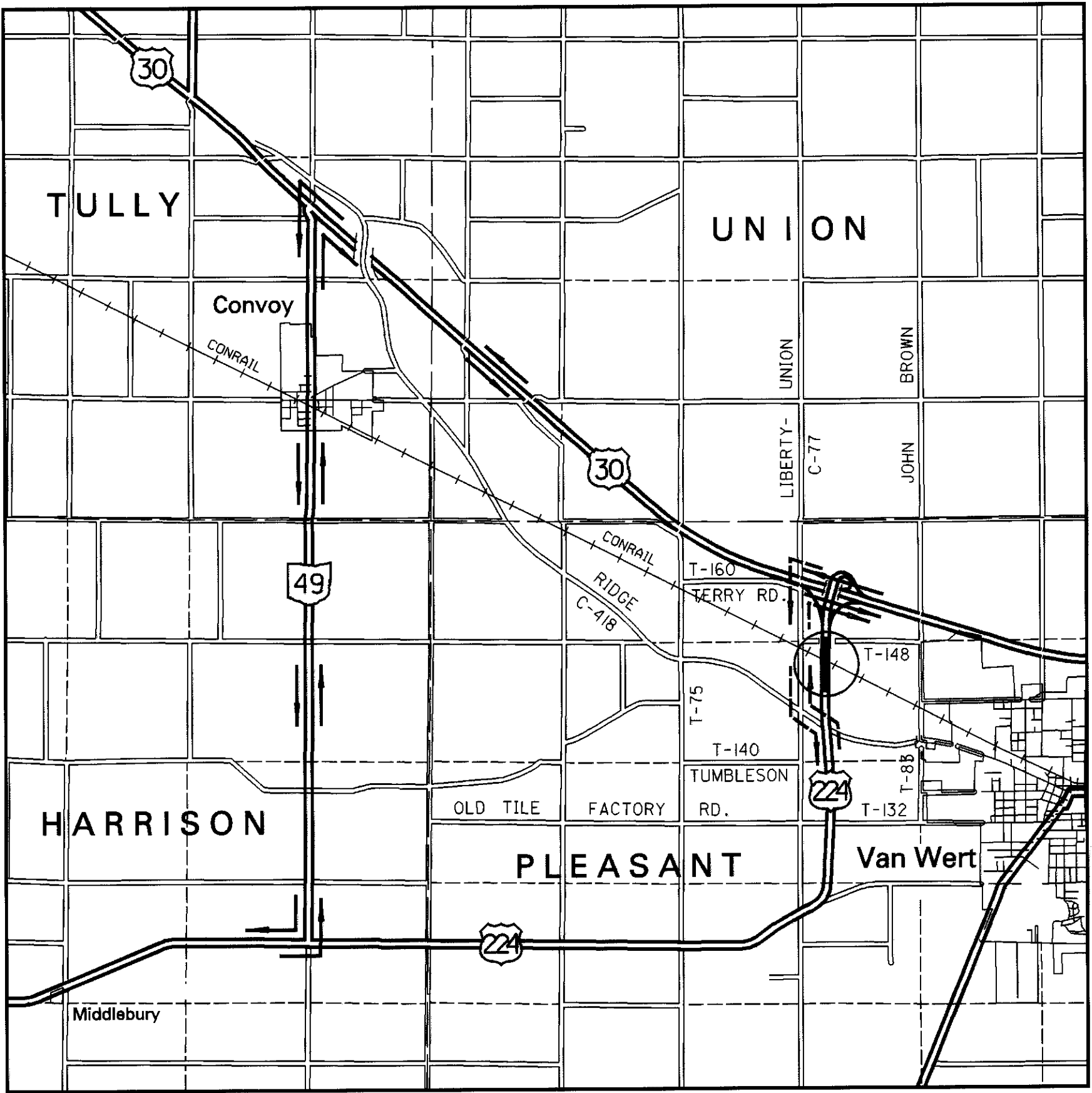
THE FOLLOWING ESTIMATED QUANTITIES ARE PROVIDED FOR USE AS DIRECTED BY THE ENGINEER TO MAINTAIN AND SUBSEQUENTLY RESTORE THE DESIGNATED LOCAL DETOUR ROUTE:

ITEM 301	BITUMINOUS AGGREGATE BASE, PG64-22	=	10	CU YD
ITEM 304	AGGREGATE BASE	=	10	CU YD
ITEM 407	TACK COAT	=	200	GALLON
ITEM 408	BITUMINOUS PRIME COAT	=	100	GALLON
ITEM 448	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22, AS PER PLAN	=	20	CU YD

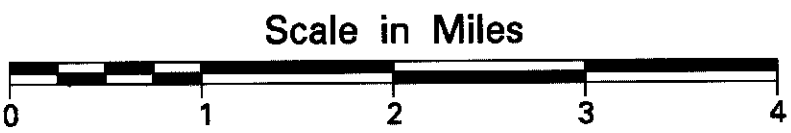
DUST CONTROL

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	=	10	M GAL
ITEM 616	CALCIUM CHLORIDE	=	1	TON



DETOUR MAP



- ⊙ - Project Location
- - Official Signed Detour
- - - Designated Local Detour

ESTIMATED QUANTITIES			
ITEM	QUANTITY	UNIT	DESCRIPTION
301	10	CU YD	BITUMINOUS AGGREGATE BASE, PG64-22
304	10	CU YD	AGGREGATE BASE
407	200	GALLON	TACK COAT
408	100	GALLON	BITUMINOUS PRIME COAT
448	20	CU YD	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22, AS PER PLAN
616	10	M GAL	WATER
616	1	TON	CALCIUM CHLORIDE
QUANTITIES CARRIED TO GENERAL SUMMARY, SHEET 7			

CALCULATED
NJV
CHECKED
JRC

GENERAL NOTES

VAN-224-11.20

5
22

DATE : 27-JAN-1999
TIME : 12:37

[illegible]

[illegible]

CURB "C"						
Reference No.	Sheet No.	Station		Side	202	609
					Curb Removed	Asphalt Concrete Curb, Type I
		From	To		Lin Ft	Lin Ft
1-C	11	595+94	598+00	Lt		206
2-C	11	595+91	598+00	Rt		209
3-C	12	598+00	604+00	Lt		600
4-C	12	598+00	604+00	Rt		600
5-C	13	604+00	608+88.1	Lt		488.1
6-C	13	608+76.1	608+88.1	Lt	12	
7-C	13	604+00	608+66.9	Rt		466.9
8-C	13	608+54.9	608+66.9	Rt	12	
9-C	14	610+63.1	610+75.1	Lt	12	
10-C	14	610+63.1	616+00	Lt		536.9
11-C	14	610+41.9	610+53.9	Rt	12	
12-C	14	610+41.9	616+00	Rt		558.1
13-C	15	616+00	619+60	Lt		360
14-C	15	616+00	619+60	Rt		360
Totals Carried to General Summary, Sht. 6					48	4385

SEEDING		EARTHWORK		
Sheet No.	202	Sheet No.	203	
	Seeding and Mulching, as per Plan		Excavation Not Including Embankment Construction	Embankment
			Lin Ft	Cu Yd
16	2215	16	1295	1376
17	5803	17	3379	4707
18	4258	18	3112	2433
19	1784	19	1634	820
20	4646	20	3260	3657
21	4608	21	2872	3880
22	2224	22	1067	1926
Total	25,538	Totals	16,619	18,799
Totals Carried to General Summary, Sht. 6				

MISCELLANEOUS CALCULATIONS

659 COMMERCIAL FERTILIZER

Net Seeding and Mulching = 25,538 Sq Yd
 (25,538)(9)(1/1000)(20)(1/2000) = 2.30 Ton

(Quantity Carried to General Summary, Sheet 6)

659 WATER

(2)(25,538)(9)(1/1000)(120)(1/1000) = 55 M Gal

(Carried to "Watering Permanent Seeded Areas" General Note on Sheet 3)

PAVEMENT CALCULATIONS

Sta. 595+65 to Sta. 608+78 Length = 1313 Ft

Item 254 Pavement Planing, Bituminous: [(6.5)(1313)-70](1/9)(2) = 1881.0 Sq Yd

Item 301 Bituminous Aggregate Base, PG64-22: [(5)(1313)-25](8/12)(1/27)(2) = 323.0 Cu Yd

Item 304 Aggregate Base: [(5.5)(1313)-25](6/12)(1/27)(2) = 266.5 Cu Yd

Item 407 Tack Coat: [(11.5)(1313)-70-25](1/9)(0.075 Gal/Sq Yd)(2) = 250.1 Gallon

Item 408 Bituminous Prime Coat: [(5)(1313)-25](1/9)(0.40 Gal/Sq Yd)(2) = 581.3 Gallon

Item 448 Asphalt Concrete Surface Course, Type I, PG64-22: [(11.5)(1313)-70-25](1.25/12)(1/27)(2) = 115.8 Cu Yd

Sta. 609+52 to Sta. 619+60 Length = 1008 Ft

Item 254 Pavement Planing, Bituminous: (6.5)(1008)(1/9)(2) = 1456.0 Sq Yd

Item 301 Bituminous Aggregate Base, PG64-22: [(5)(1008)-25-10(1/2)+40(1/2)](8/12)(1/27)(2) = 248.4 Cu Yd

Item 304 Aggregate Base: [(5.5)(1008)-25-10(1/2)+40(1/2)](6/12)(1/27)(2) = 205.0 Cu Yd

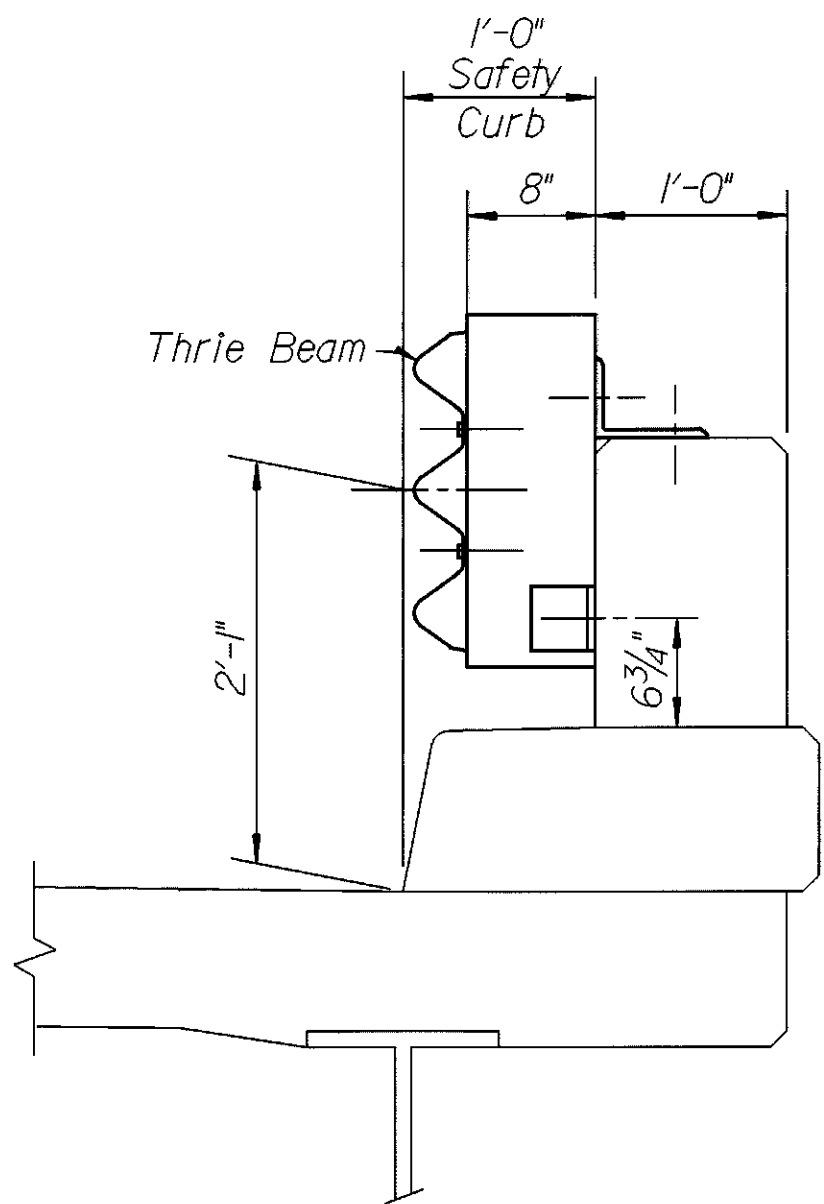
Item 407 Tack Coat: [(11.5)(1008)-25-10(1/2)+40(1/2)](1/9)(0.075 Gal/Sq Yd)(2) = 193.0 Gallon

Item 408 Bituminous Prime Coat: [(5)(1008)-25-10(1/2)+40(1/2)](1/9)(0.40 Gal/Sq Yd)(2) = 447.1 Gallon

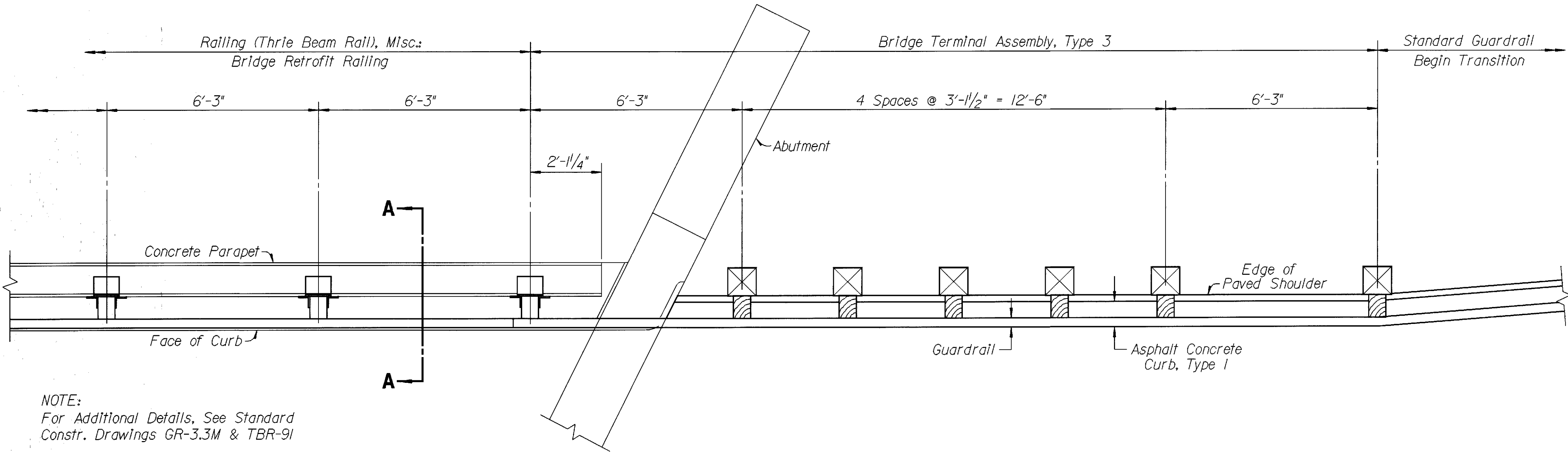
Item 448 Asphalt Concrete Surface Course, Type I, PG64-22: [(11.5)(1008)-25-10(1/2)+40(1/2)](1.25/12)(1/27)(2) = 89.4 Cu Yd

DRAINAGE "D"														
Reference No.	Sheet No.	Station		Side	202		601	603				604	605	Bends & Branches
					Pipe Removed 24" & Under	Rock Channel Protection, Type D, with Filter, T=24"	Conduit (Lin Ft)				Catch Basin, No. 6	4" Shallow Pipe Underdrain, as per Plan		
		From	To				Type	C	C	C			F	
			Lin Ft		Cu Yd	6"	12"	30"	12"	Each	Lin Ft			
1-D	11	595+96	598+00	Lt			1.8	9	28			1	204	2
2-D	11	595+93	598+00	Rt			3.6	9	43			1	207	2
3-D	12	598+00	604+00	Lt			3.0	9	62			1	600	2
4-D	12	598+00	604+00	Rt			2.4	9	60			1	600	2
5-D	12	603+57	603+63.5	Rt	18						10			
6-D	13	604+00	608+56	Lt									456	
7-D	13	608+00		Lt						10				
8-D	13	605+00	605+28	Rt			12.5							
9-D	13	604+00	608+46	Rt									446	
10-D	14	609+84	616+00	Lt			3.3	9	82			1	516	2
11-D	14	609+74	616+00	Rt			2.4	9	75			1	526	2
12-D	14	612+62	613+27	Rt			23.7							
13-D	15	616+00	619+50	Lt			1.8	9	49			1	350	2
14-D	15	616+00	619+52	Rt			2.4	10	55			1	352	2
Totals Carried to General Summary, Sht. 6					18		57	73	454	10	10	8	4257	

PAVEMENT TABLE									
Station	Length	254		301	304		407	408	448
		Pavement Planing, Bituminous		Bituminous Aggregate Base, PG64-22 (T=8')	Aggregate Base (T=6')		Tack Coat	Bituminous Prime Coat, applied at 0.40 Gallon/Sq Yd	Asphalt Concrete Surface Course, Type I, PG64-22, as/plan (T=1 1/4')
From	To	Lin Ft	Sq Yd	Cu Yd	Cu Yd		Gallon	Gallon	Cu Yd
595+65	608+78	1313	1881.0	323.0	266.5		250.1	581.3	115.8
609+52	619+60	1008	1456.0	248.4	205.0		193.0	447.1	89.4
Totals Carried to Gen Sum, Sht. 6			3337	571	472		443	1028	205



SECTION A-A



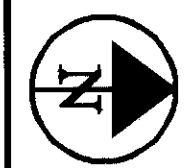
NOTE:
For Additional Details, See Standard
Constr. Drawings GR-3.3M & TBR-9I

BRIDGE RETROFIT RAILING &
BRIDGE TERMINAL ASSEMBLY DETAIL

PAVEMENT MARKING			
Station		Side	642
			Edge Line
From	To		Mile
595+65	619+60	Lt	0.45
595+65	619+60	Rt	0.45
Total Carried to Gen Sum, Sht. 7			0.90

SIGNS "S"							
Reference No.	Sheet No.	Station	Side	630			
				Ground Mounted Support, No. 3 Post	Removal of Ground Mounted Sign and Reerection	Removal of Ground Mounted Post Support and Disposal	
				Lin Ft	Each	Each	
1-S	11	595+85	Lt	12	1	1	
2-S	11	597+96	Rt	14/14	1	2	
3-S	12	598+35	Lt	14/14	1	2	
Totals Carried to Gen Sum, Sht. 7				68	3	5	

GUARDRAIL "G"																
Reference No.	Sheet No.	Station		Side	202			517	606				620	626		
					Guardrail Removed	Guardrail Removed for Reuse	Bridge Railing Removed for Storage		Guardrail, Type 5, as per Plan	Guardrail Rebuilt, Type 5, as per Plan	Anchor Assembly, Type E-98	Bridge Terminal Assembly, Type 3				
		From	To		LIn Ft	LIn Ft	LIn Ft		LIn Ft	LIn Ft	Each	Each			Each	Each
1-G	11	595+74.57	598+00	Lt		225.43				225.43					3	
2-G	11	595+89.56	598+00	Rt	50.00	160.44				160.44	1			1	3	
3-G	12	598+00	604+00	Lt		600.00				600.00					6	
4-G	12	598+00	604+00	Rt		600.00				600.00					6	
5-G	13	604+00	608+93.32	Lt		493.32				493.32		1			5	
6-G	13	608+93.32	610+00	Lt			103.7	106.68							1	
7-G	13	604+00	608+70.81	Rt		470.81				470.81		1			5	
8-G	13	608+70.81	610+00	Rt			126.3	129.19							1	
9-G	14	610+00	610+59.18	Lt			56.3	59.18							1	
10-G	14	610+59.18	616+00	Lt	540.82				540.82			1			6	
11-G	14	610+00	610+36.67	Rt			33.7	36.67							1	
12-G	14	610+36.67	616+00	Rt		563.33				563.33		1			6	
13-G	15	616+00	619+59.18	Lt	359.18				359.18						4	
14-G	15	616+00	619+61.67	Rt		361.67				361.67					4	
Totals Carried to General Summary, Sht. 6-7					950	3475	320		331.72	900.00	3475.00	1	4		1	52



HORIZONTAL
SCALE IN FEET
0 100 200 400

CALCULATED
NJV
CHECKED
JRC

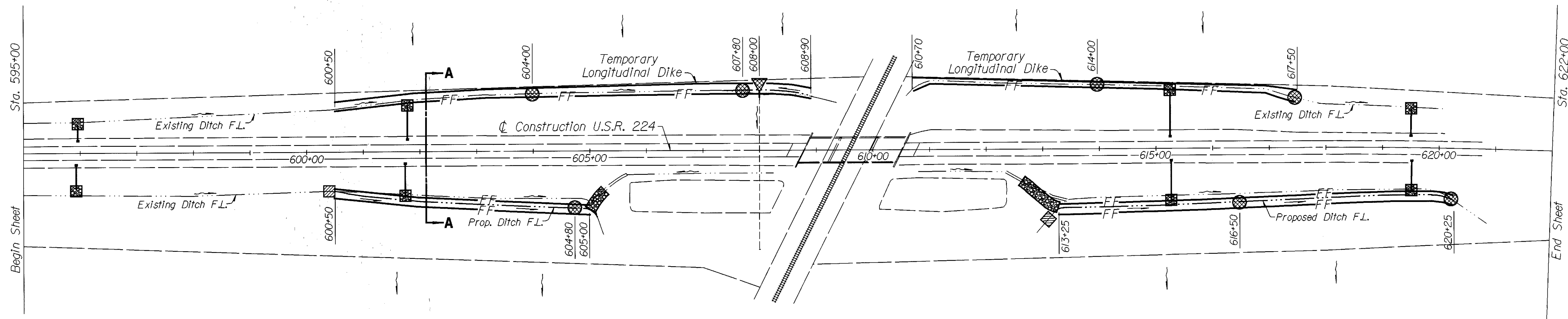
STORM WATER POLLUTION PREVENTION PLAN

VAN-224-11.20

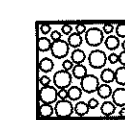
10
22

~ FOR FURTHER DETAILS, SEE Std. Dwg. DM-4.3M.

~ FOR FURTHER NOTES AND QUANTITIES, SEE
GENERAL NOTES ON SHEET 3.

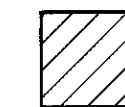


LEGEND



~ Rock Channel Protection,
Type D, with Filter, for
permanent erosion control.
Quantities included with
Roadway Plans.

—FF— ~ Filter Fabric Fence



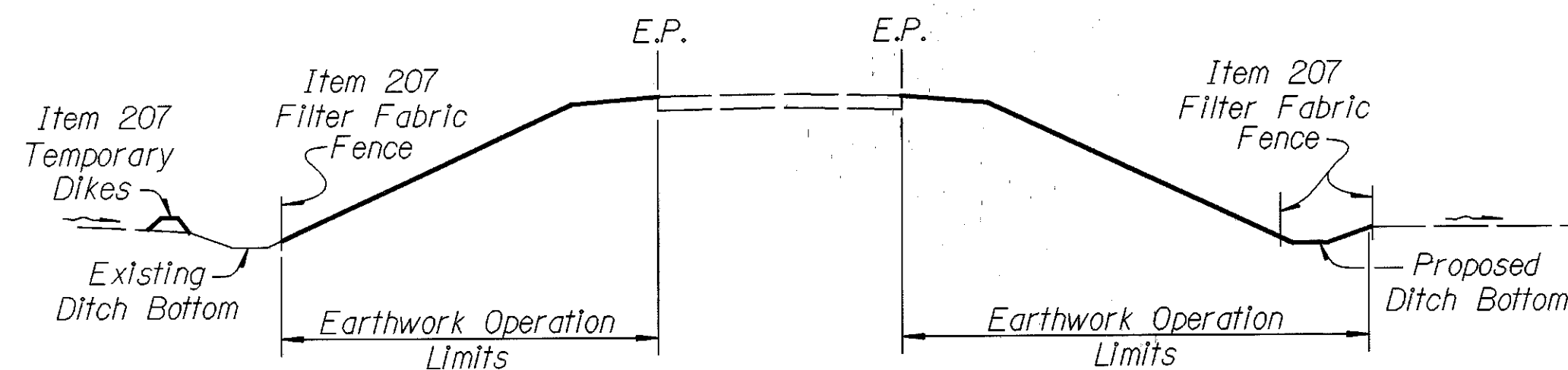
~ Ditch Check



~ Rock Channel Protection,
Type C, without Filter, for
temporary erosion control.



~ Temporary Benches, Dams
& Sediment Basins
(@ 67 Cu Yd Each)



SECTION A-A

TYPICAL PLACEMENT OF FILTER FABRIC
FENCE TO PREVENT SEDIMENTATION OF
DITCH DURING CONSTRUCTION.

~ NATURE OF WORK

The work on this project shall include rehabilitating
the side slopes, flattening the ditch side slopes on
the right side and perpetuating all existing drainage
items encountered during the previously mentioned
operations.

SCOTT QUADRANGLE
USGS CONTINENTAL QUADRANGLE
Longitude (Approx.) W84°-37'-30" §
Latitude (Approx.) N40°-53'-05" §
§ - Approximate Center of Project

PROJECT DATA

Total Area of Project (Approx. Right of Way)	= ± 7 Acres
Total Area to Undergo Excavation, Embankment or Grading	= ± 4.9 Acres
Runoff Coefficient for Pre-Construction Site	= 0.3
Runoff Coefficient for Post Construction Site	= 0.3
Soil Data	~ None Available
Immediate Receiving Waters	~ Hoaglin Creek
Total Area of Earth Disturbing Activities	= ± 4.9 Acres

ESTIMATED QUANTITIES

Location	Side	207				601
		Filter Fabric Fence	Temporary Benches, Dams, & Sediment Basins	Temporary Dikes	Straw or Hay Bales	Rock Channel Protection, Type C, w/o Filter (lg. Th.)
		Lin Ft	Cu Yd	Lin Ft	Each	Cu Yd
600+50 to 608+90	Lt	840		840		
610+70 to 617+50	Lt	680		680		
600+50 to 605+00	Rt	900				
613+25 to 620+25	Rt	1400				
600+50	Rt				5	0.5
613+20	Rt				5	0.5
608+00	Lt					5
At Callouts along Ditch	Lt/Rt		469			94
Totals Carried to General Summary on Sheet 6		3820	469	1520	10	100

DITCH STABILIZATION

THE PROPOSED DITCH AND SIDE SLOPES SHALL BE STABILIZED IMMEDIATELY FOLLOWING ANY CHANNEL CONSTRUCTION. THE STABILIZATION SHALL BE EITHER SEEDING AND OR EROSION CONTROL, WHICHEVER OPERATION IS APPLICABLE.

ITEM 207 TEMPORARY BENCHES, DAMS AND SEDIMENT BASINS

THE SEDIMENT BASIN QUANTITIES LISTED ON THIS STORM WATER POLLUTION PREVENTION PLAN ARE THE STORAGE VOLUMES REQUIRED FOR THE SEDIMENT BASIN. THE PAY QUANTITY FOR EACH BASIN SHALL BE DETERMINED AS THE ACTUAL AMOUNT OF EXCAVATION OR EMBANKMENT REQUIRED TO PROVIDE THAT STORAGE VOLUME.

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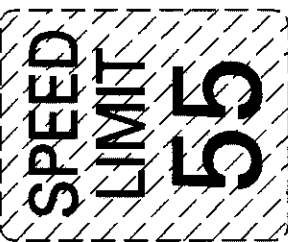
Begin Sheet Sta. 592+00

Curve Data

PI Sta. 589+47.98
 $\Delta = 3^{\circ}-08'-00''$ Rt.
 $D_C = 0^{\circ}-28'-00''$
 $R = 12,277.67'$
 $T = 335.80'$
 $L = 671.43'$

SIGN LEGEND

 - Existing, to be Removed and Reerected



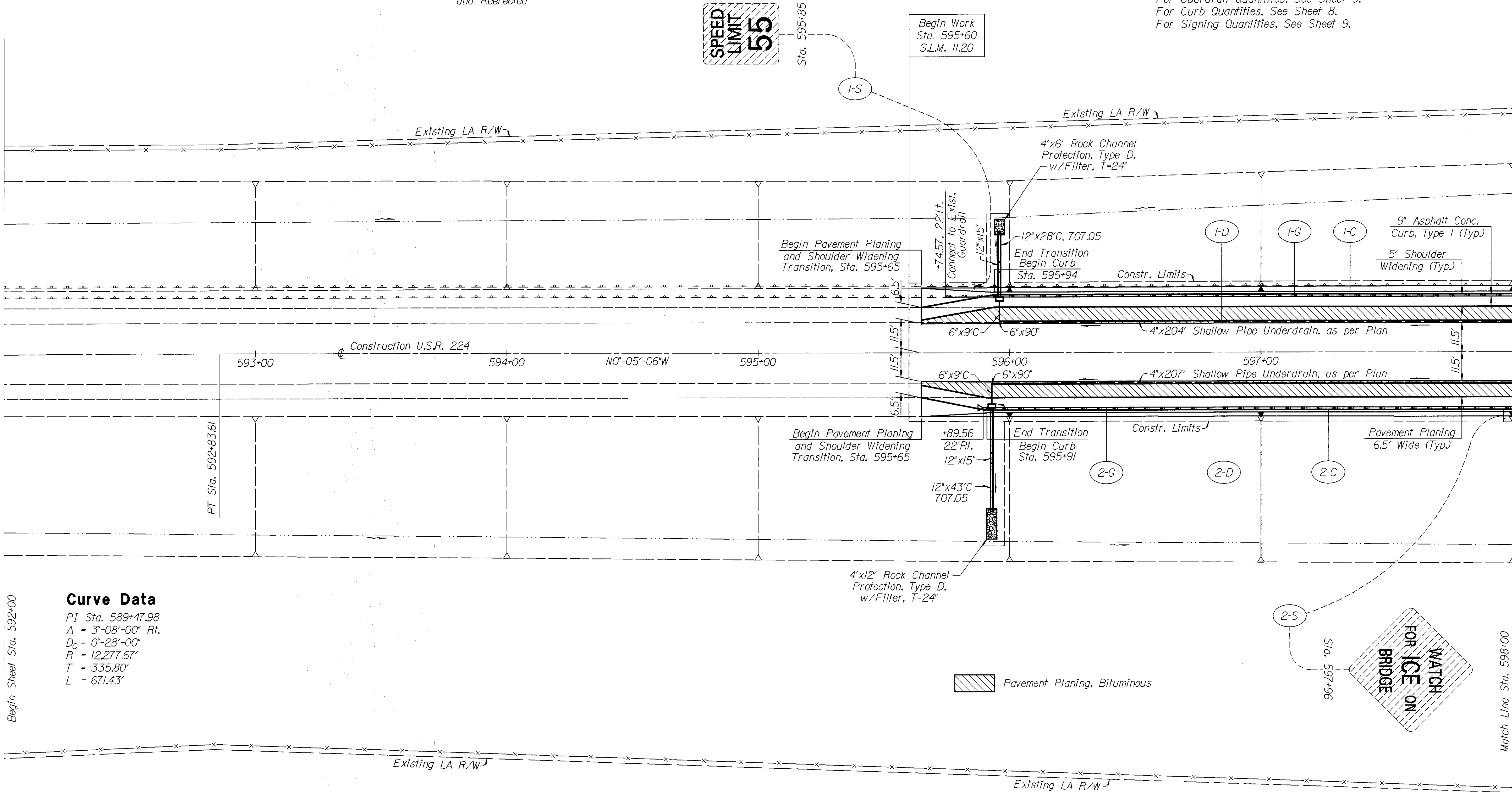
Sta. 595+85

Begin Work
Sta. 595+60
S.L.M. 11.20

Catch Basin, No. 6
Sta. 595+96, 22'Lt.
Grate El. 785.76

NOTES:

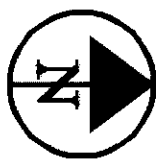
For Drainage Quantities, See Sheet 8.
For Guardrail Quantities, See Sheet 9.
For Curb Quantities, See Sheet 8.
For Signing Quantities, See Sheet 9.



 Pavement Planing, Bituminous

Catch Basin, No. 6
Sta. 595+93, 22'Rt.
Grate El. 785.73

Match Line Sta. 598+00



HORIZONTAL
SCALE IN FEET
0 10 20 40

CALCULATED
NJV
CHECKED
JRC

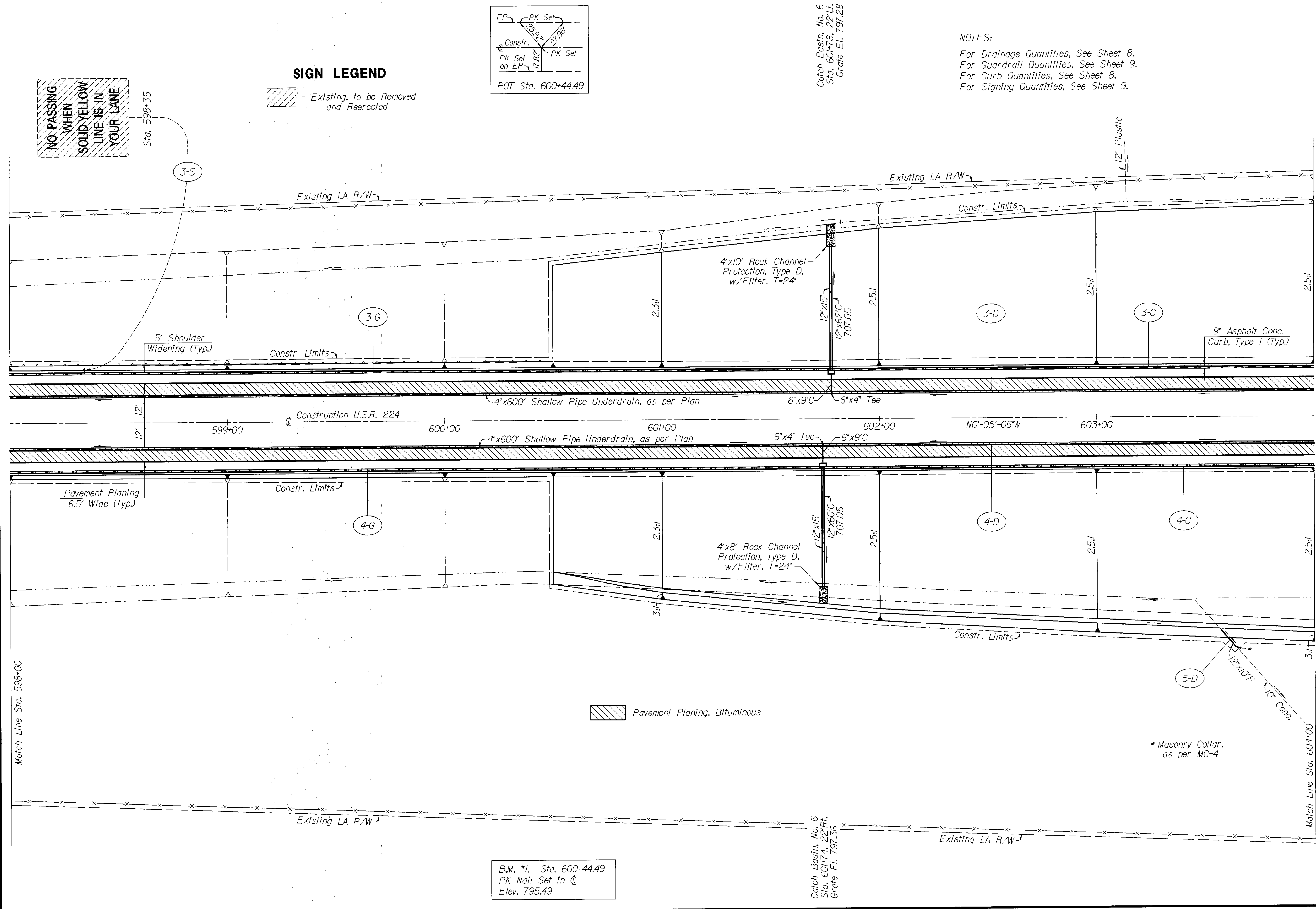
PLAN SHEET - U.S.R. 224
Sta. 592+00 to Sta. 598+00

VAN-224-11.20

11
22

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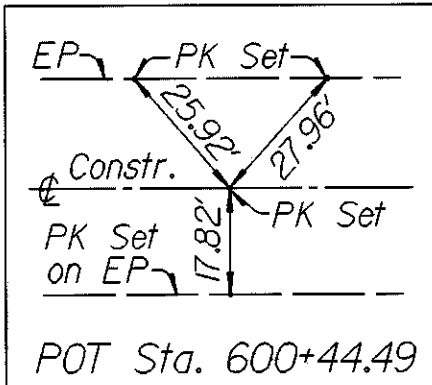
DATE : 27-JAN-1999
TIME : 08:08



NO PASSING
WHEN
SOLID YELLOW
LINE IS IN
YOUR LANE

SIGN LEGEND

 Existing, to be Removed and Reerected



Catch Basin, No. 6
Sta. 601+78, 22' Lt.
Grate El. 797.28

NOTES:
For Drainage Quantities, See Sheet 8.
For Guardrail Quantities, See Sheet 9.
For Curb Quantities, See Sheet 8.
For Signing Quantities, See Sheet 9.



HORIZONTAL
SCALE IN FEET
0 10 20 40

CALCULATED
N/V
CHECKED
JRC


PLAN SHEET - U.S.R. 224
Sta. 598+00 to Sta. 604+00

VAN-224-11.20

12
22

DESIGN FILE : I:\pdx\9048\224\gp.dgn
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DATE : 27-JAN-1999
TIME : 08:11

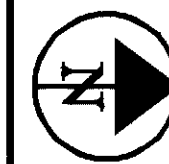
SIGN LEGEND

 - Existing, Not to be Disturbed

NOTES:

For Drainage Quantities, See Sheet 8.
For Guardrail Quantities, See Sheet 9.
For Curb Quantities, See Sheet 8.

STRUCTURE No.
VAN-224-1144



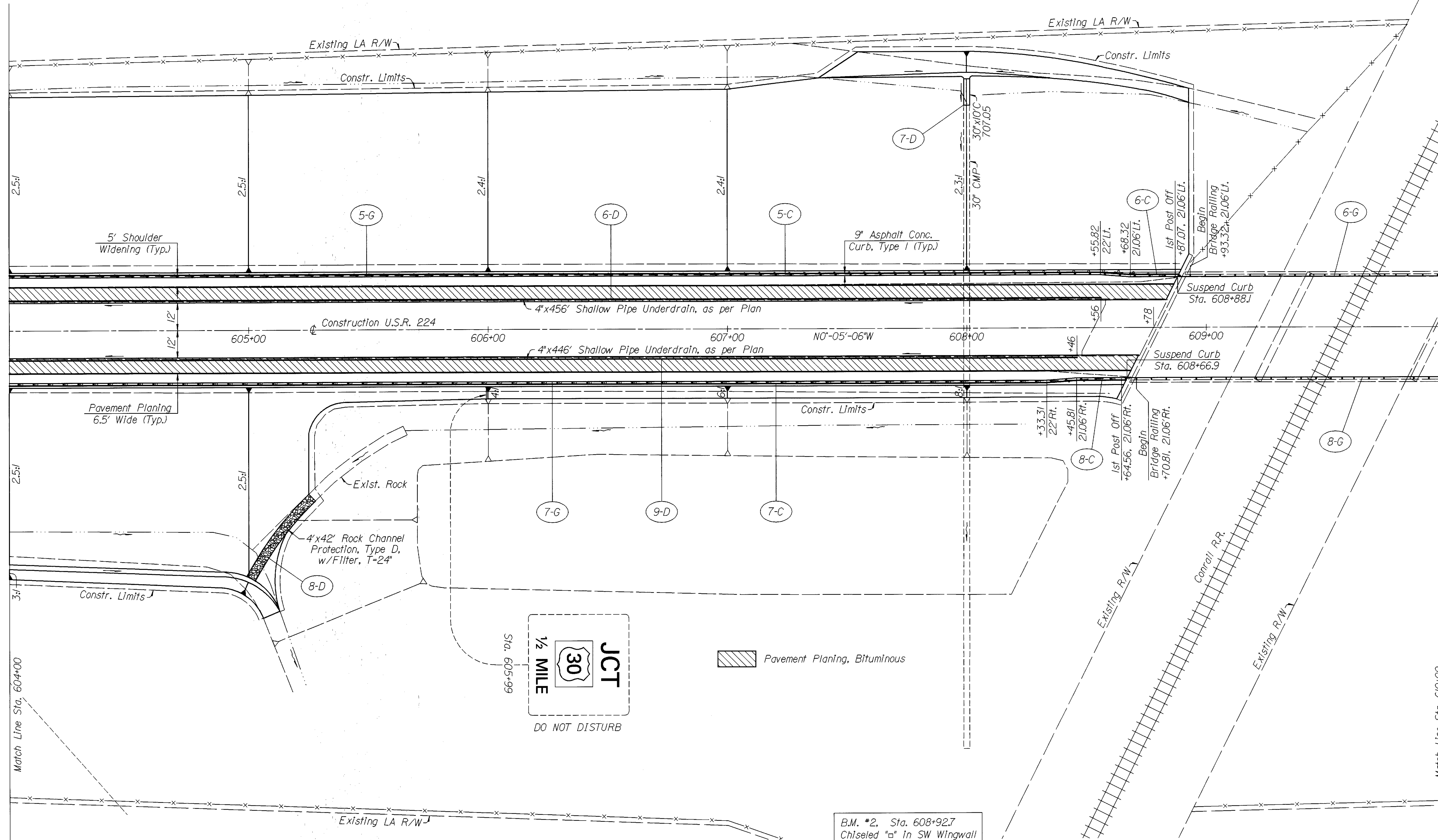
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SCALE IN FEET
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CALCULATED
N/J/V
CHECKED
J/R/C

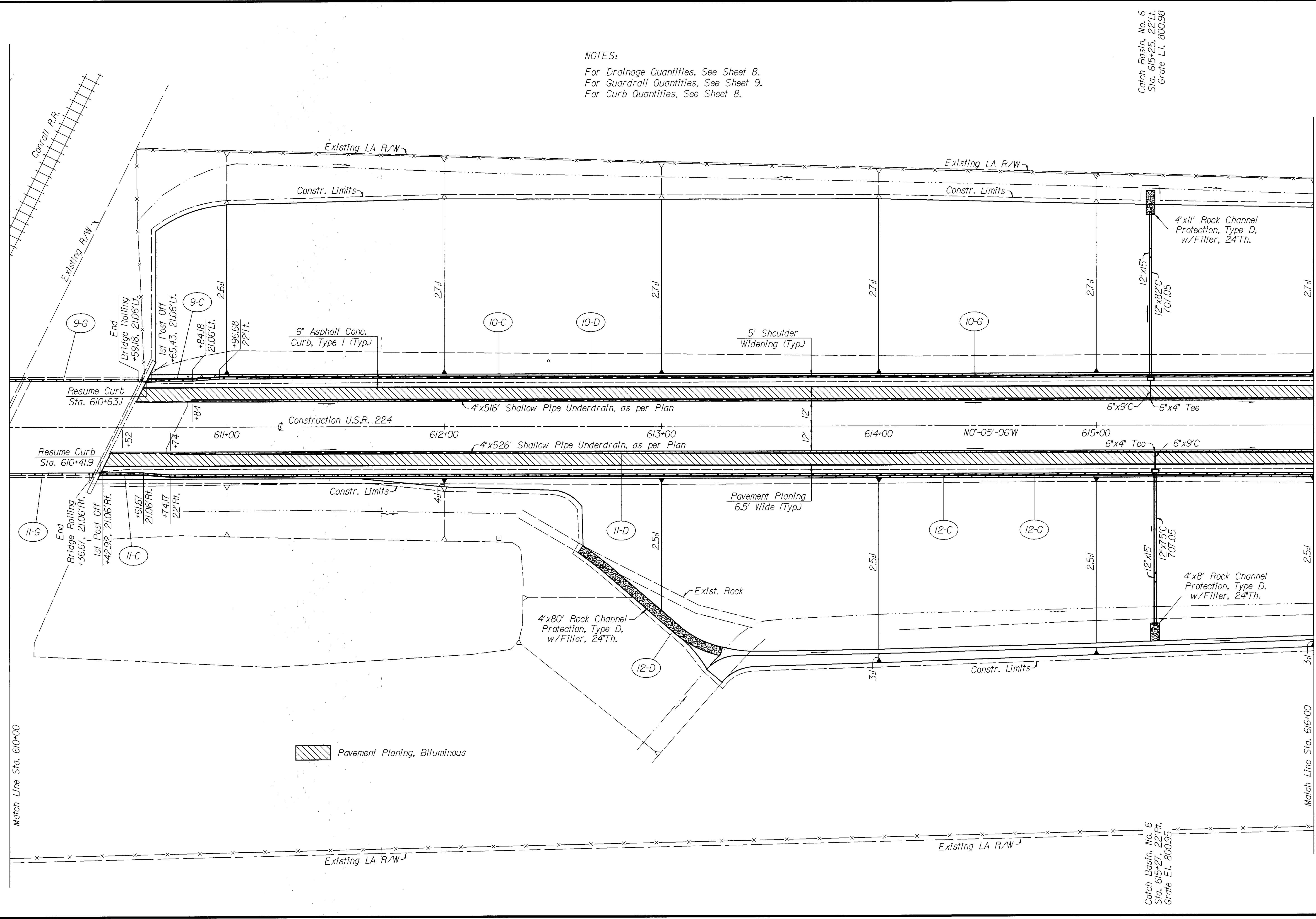
PLAN SHEET - U.S.R. 224
Sta. 604+00 to Sta. 610+00

VAN-224-11.20

13
22



DATE : 27-JAN-1999
TIME : 08:11
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USERNAME : nvondere



NOTES:
For Drainage Quantities, See Sheet 8.
For Guardrail Quantities, See Sheet 9.
For Curb Quantities, See Sheet 8.

Catch Basin, No. 6
Sta. 615+25, 22' Lt.
Grate El. 800.98

Catch Basin, No. 6
Sta. 615+27, 22' Rt.
Grate El. 800.95



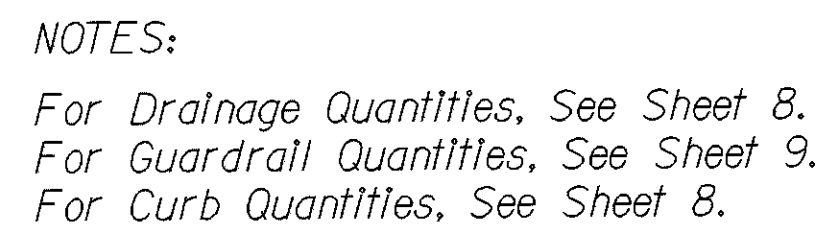
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SCALE IN FEET
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CALCULATED
NJV
CHECKED
JRC


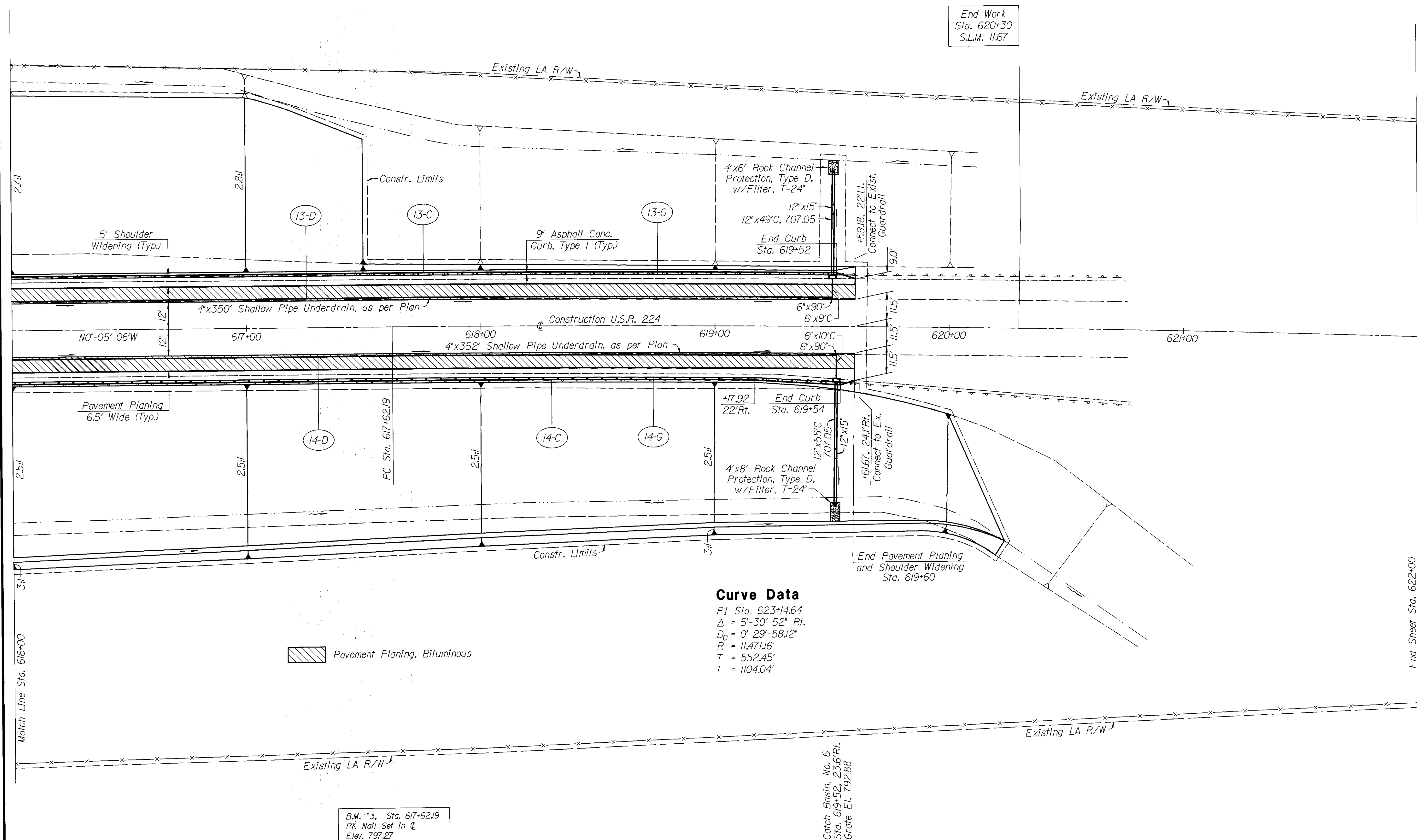
PLAN SHEET - U.S.R. 224
Sta. 610+00 to Sta. 616+00

VAN-224-11.20

DATE : 27-JAN-1999
TIME : 07:30



Catch Basin, No. 6
Sta. 619+50, 22'Lt.
Grate El. 792.97



**HORIZONTAL
SCALE IN FEET**

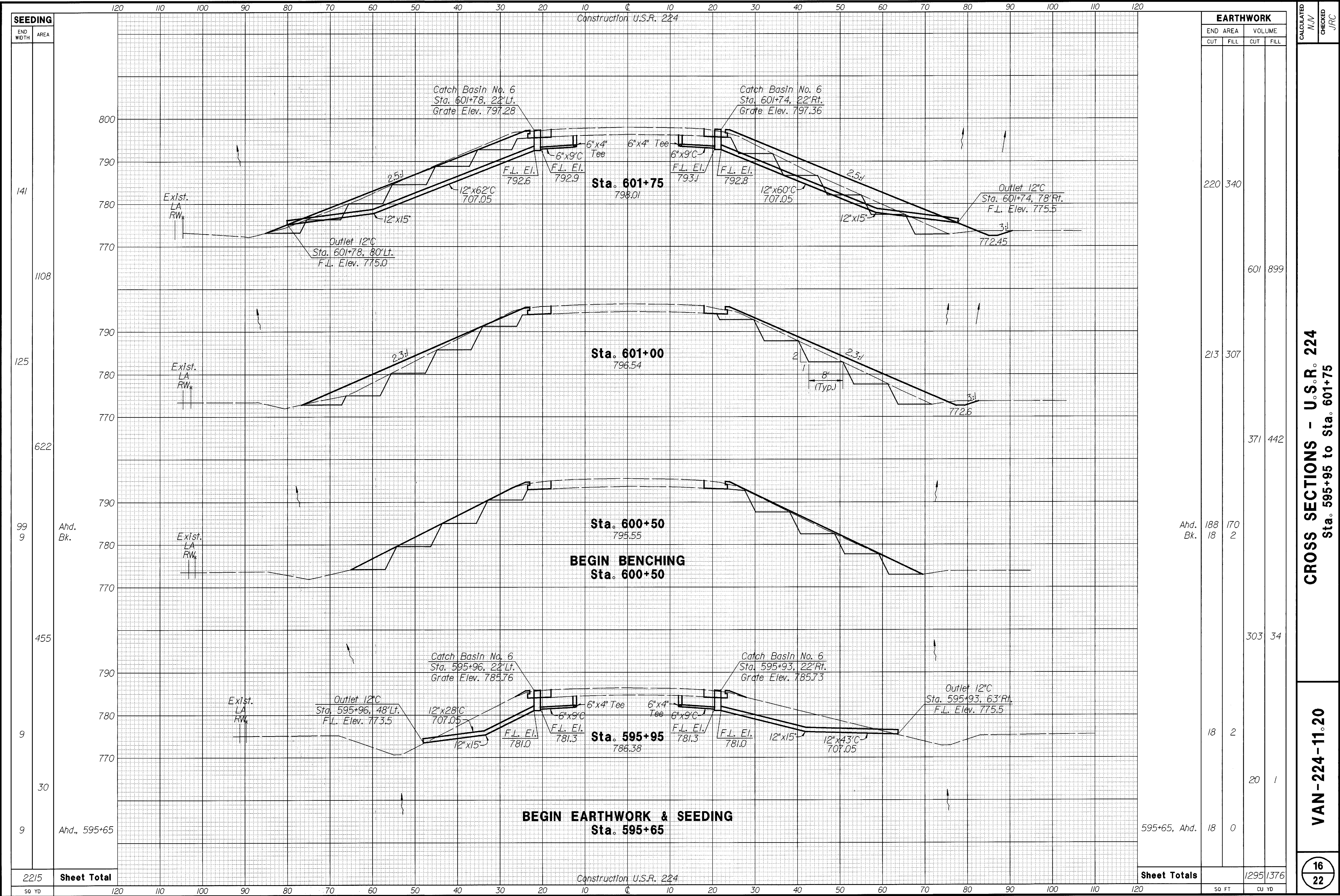
CALCULATED	CHKD
NJV	100

PLAN SHEET - U.S.R. 224
Sta 616+00 to Sta 622+00

VAN-224-11.20

15
22

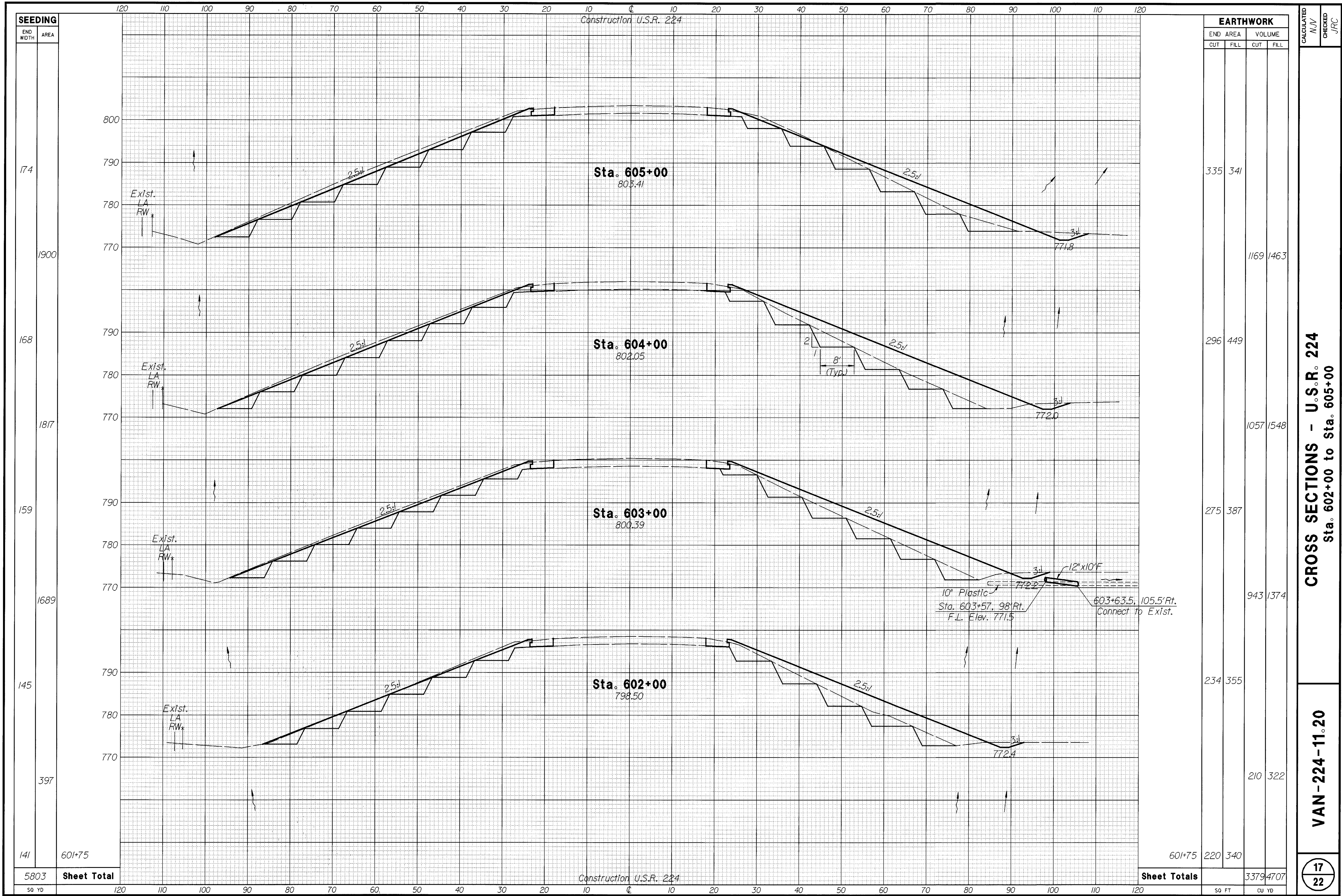
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DATE : 27-JAN-1999
TIME : 09:04



CROSS SECTIONS - U.S.R. 224
Sta. 595+95 to Sta. 601+75

VAN-224-11.20

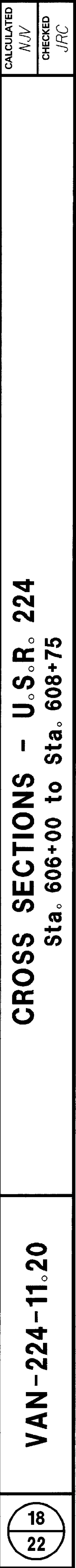
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CROSS SECTIONS - U.S.R. 224
Sta. 602+00 to Sta. 605+00

VAN-224-11.20

DATE : 27-JAN-1999
TIME : 09:05

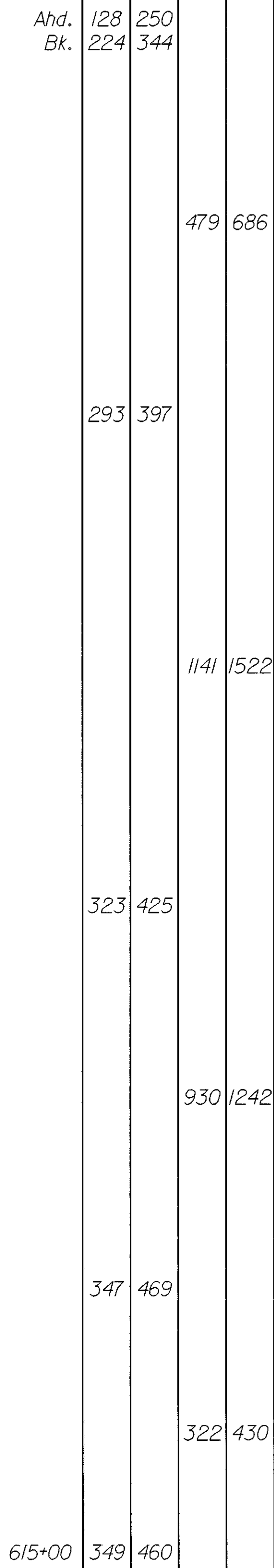


Construction U.S.R. 224

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			<i>NIV</i>
			CHECKED
			<i>JRC</i>

Construction U.S.R. 224

EARTHWORK			
END AREA		VOLUME	
CUT	FILL	CUT	FILL
128 224	250 344		
		479	686
293	397		
		1141	1522
323	425		
		930	1242
347	469		
		322	430
349	460		
		2872	3880
SQ FT		CU YD	



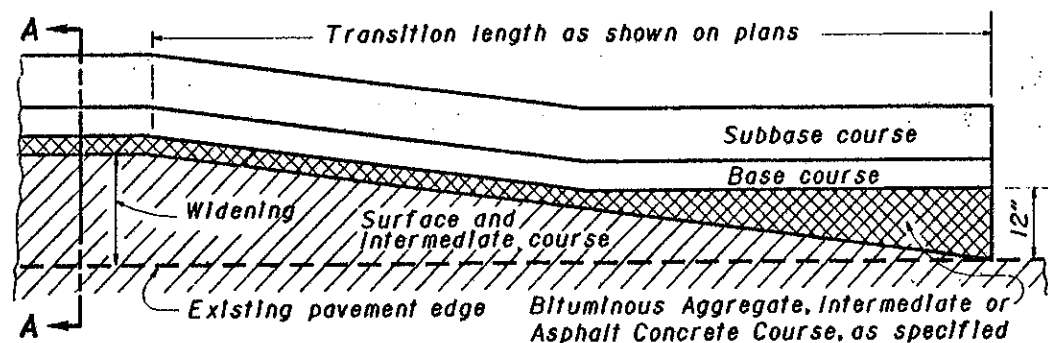
VAN-224-11.20

21
22

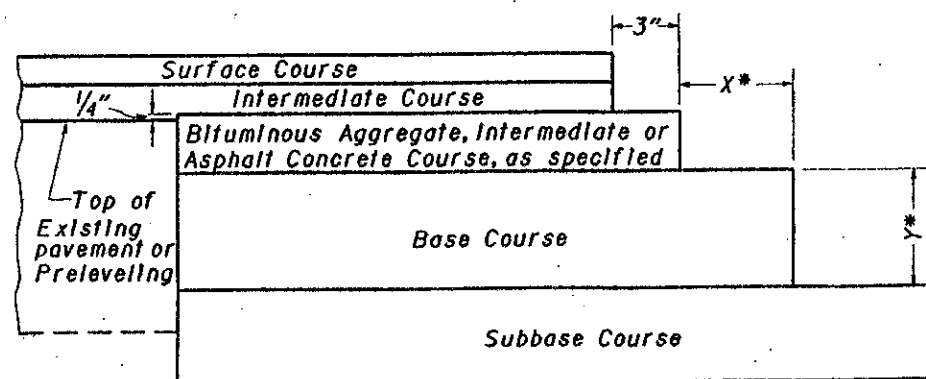
CALCULATED NJN	CHECKED JRC
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DATE : 27-JAN-1999
TIME : 09:59

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			N/V
			CHECKED
			JRC



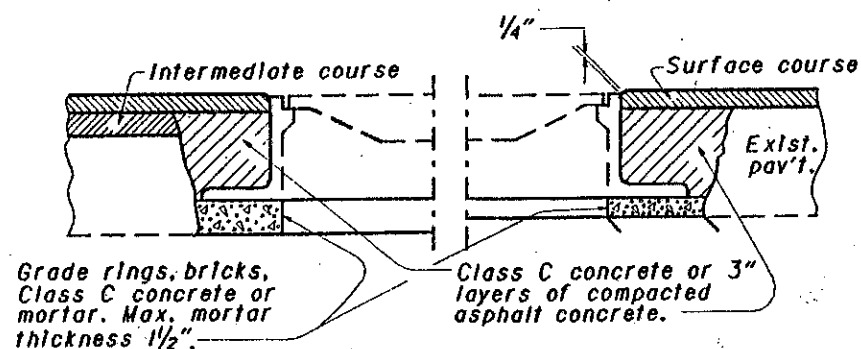
PLAN
MERGING EDGE OF PAVEMENT WIDENING
WITH EDGE OF EXISTING PAVEMENT



The Bituminous Aggregate in the upper part of the base widening shall finish approximately 1/4" above the edge of the existing pavement where no prelevelling is used. Where a prelevelling (using intermediate course material) is specified it shall be placed prior to excavation of the widening trench and the upper course of the base widening shall finish approximately 1/4" above the prelevelling.

*The extended width (X) of a base or subbase course shall be equal to the depth (Y) of that particular course, unless otherwise specified in the plans.

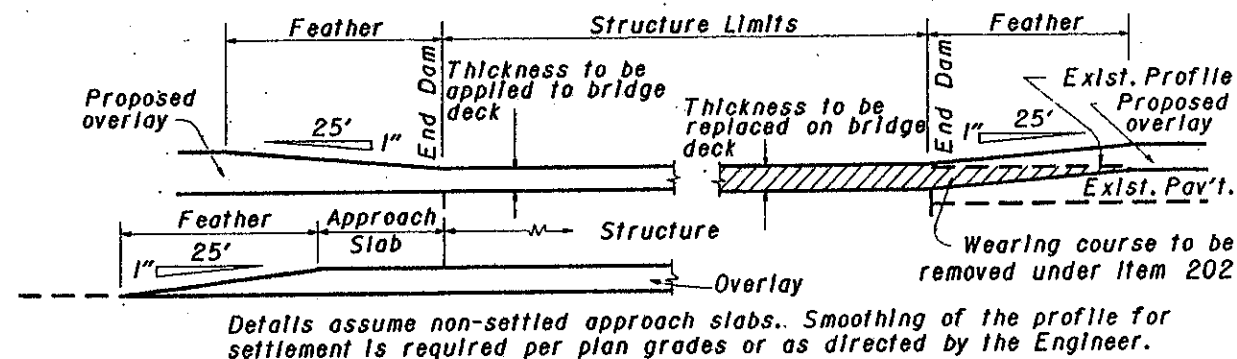
SECTION A-A
COURSE DETAIL FOR WIDENING



USING CONCRETE OR MORTAR

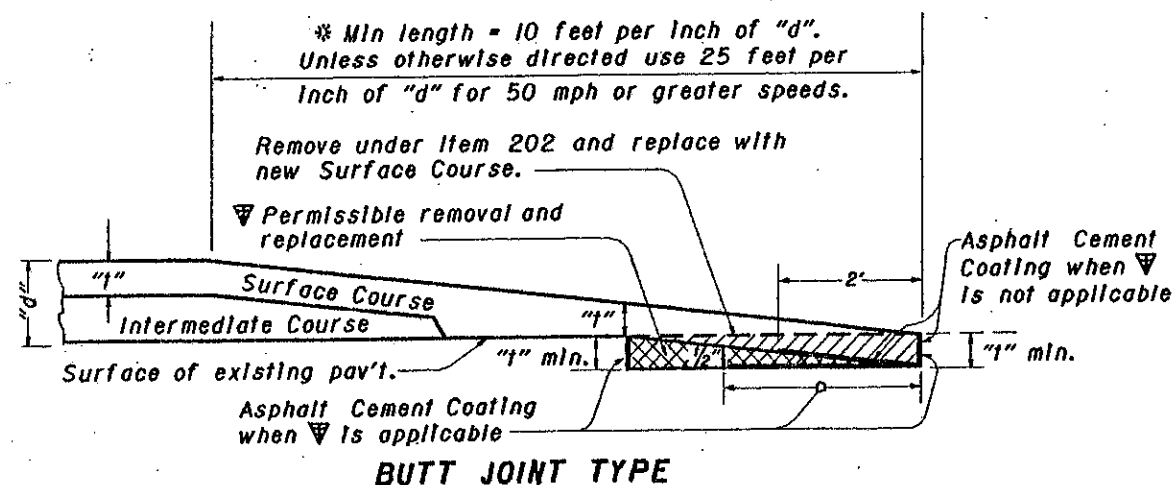
Metal adjusting rings shall: (a) attach securely to the existing frame by welding or mechanical devices; (b) consist either of cast metal having an integral rim and seat, or be fabricated metal with a sturdy connection between the seat and rim; and (c) provide an even seat for the manhole cover. In addition, the adjusting ring type shall be a design acceptable to the local governmental agency responsible for street and sewer maintenance. Any installation unacceptable to the Engineer shall be replaced by the Contractor at his expense.

MANHOLES ADJUSTED TO GRADE

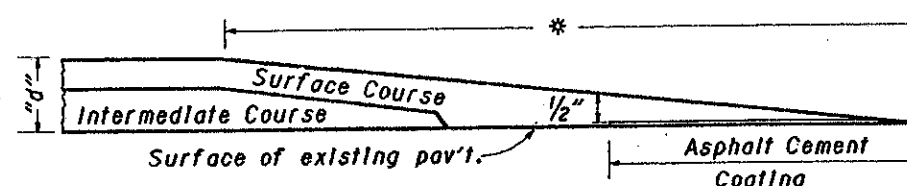


Details assume non-settled approach slabs. Smoothing of the profile for settlement is required per plan grades or as directed by the Engineer.

FEATHERING AT STRUCTURES



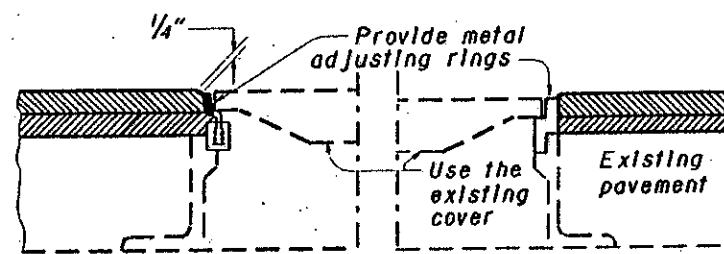
BUTT JOINT TYPE



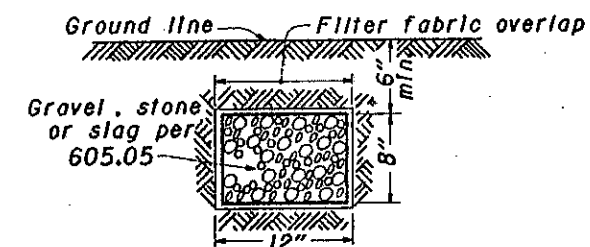
TAPER EDGE TYPE

NOTE: Either butt or taper type may be used unless type is specified by the plan.

PLACING FEATHERED AREAS

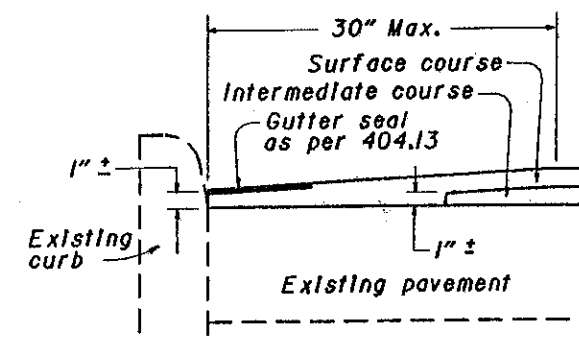


USING METAL ADJUSTING RINGS



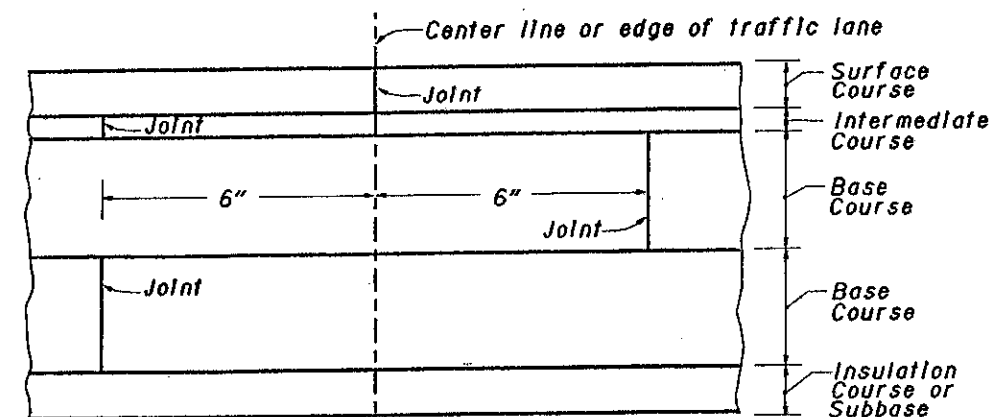
Aggregate drains to be placed where and as directed by Engineer. Provide filter fabric when specified as a separate pay item.

AGGREGATE DRAIN



Special care shall be taken during construction to obtain maximum compaction of bituminous concrete in gutters.

GUTTER FINISH



LAPPING LONGITUDINAL JOINTS

BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF TRANSPORTATION

RESURFACING

STANDARD
CONSTRUCTION
DRAWING

BP-3.1

APPROVED *D.K. Hulman* ENGR., L & D

DATE
2-21-92

NOTES

GENERAL: This drawing shows alternate types of curb that may be used on various types of pavement. Typical section of project shows the type to be used, also the thickness of the edge of the pavement or the edge of the curb and gutter section.

JOINTS: One inch expansion joints shall extend up to the top of the curb and shall be constructed in the curb and gutter section in such a manner that the joint seal will extend the full width of the gutter and into the curb face a sufficient distance to seal the joint to an elevation of at least 2 inches above the flow line of the gutter. Dowel bars shall be used in the curb and gutter section at expansion joints which are identical with the joints in the pavement. All joints shall be constructed perpendicular to the edge of the curb and to the surface of the pavement.

Transverse expansion joint material shall meet the requirements of Item 705.03.

GUTTER PLATE THICKNESS: Thickness of gutter plate "T" shall be 9 inches unless otherwise shown on the plans.

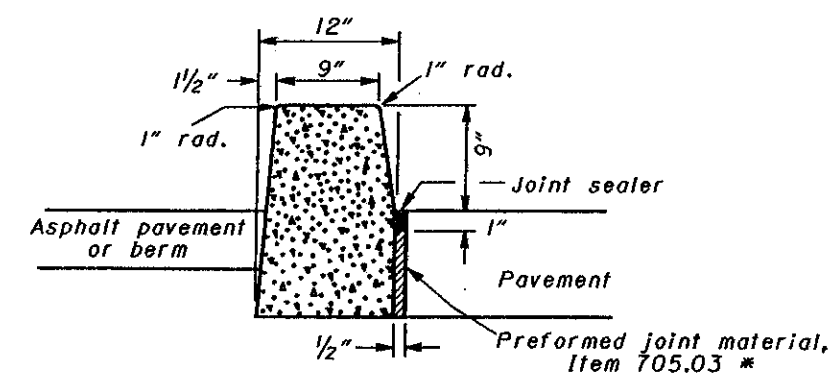
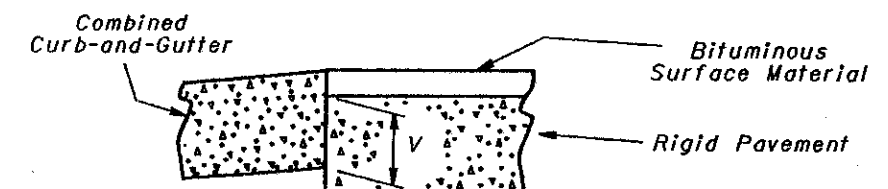
TOLERANCES in dimensions are as follows:

Curbs: $-1/32"$ to $+1/4"$, Gutters 0 to $+1/2"$.

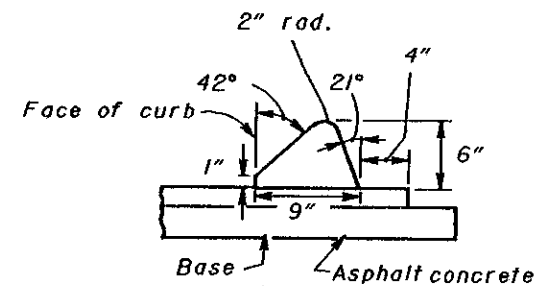
* Expansion joint material and joint sealer is not required for that portion of the curb which is adjacent to a flexible type pavement. Both materials are required as detailed for the full height of rigid pavement and concrete bases.

• Butt joints shall be provided between combined curb-and-gutter and new or existing rigid pavements, with tie bars or hook bolts provided at intervals of 5 feet. See Std. Constr. Dwg. BP-2.1 for details of tie bars and hook bolts.

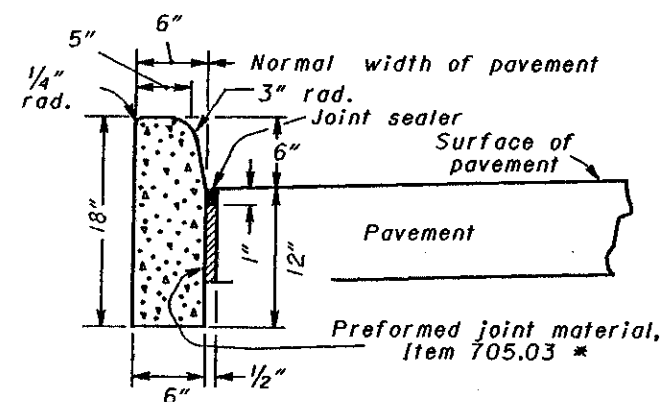
If the combined curb-and-gutter adjoins a new rigid base or an existing rigid base or pavement that is to be surfaced with bituminous material, a butt joint shall also be provided. However, tie bars or hook bolts shall be omitted when the vertical overlap ("V" in detail below) between the curb-and-gutter and rigid pavement is less than 7 inches.



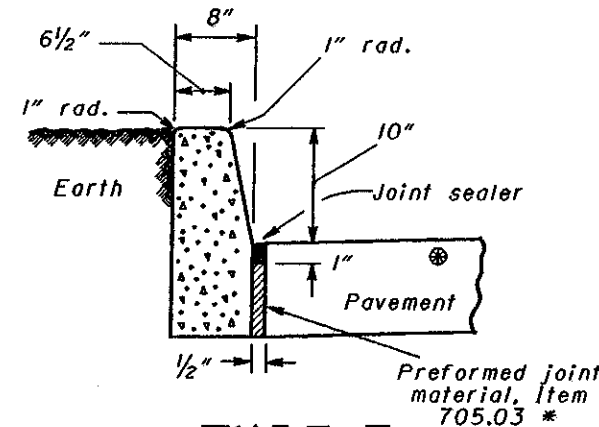
TYPE 8



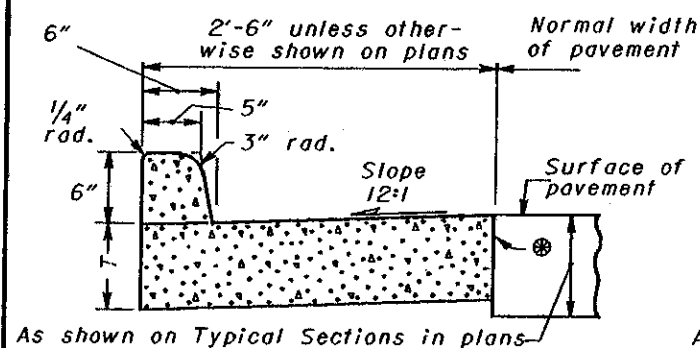
TYPE 1



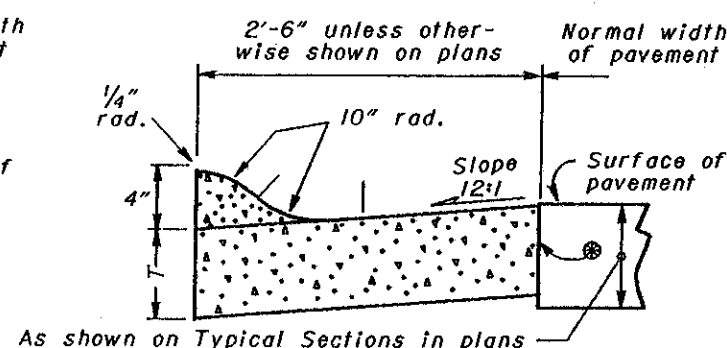
TYPE 6



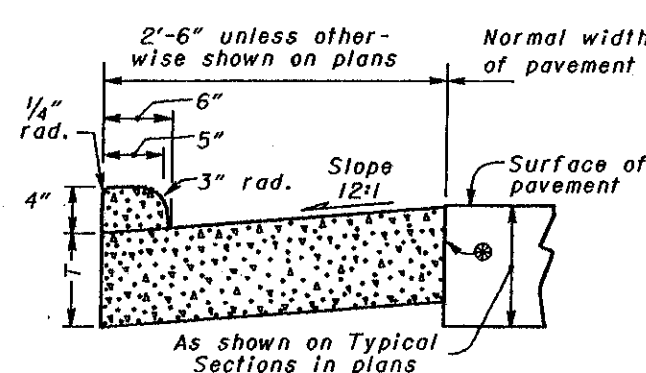
TYPE 7



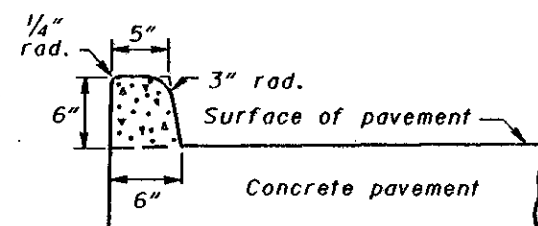
TYPE 2



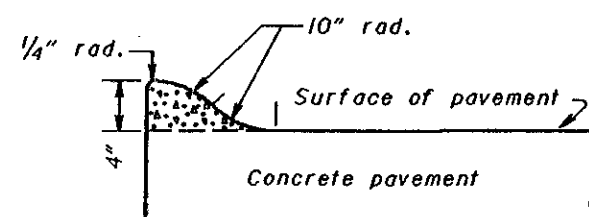
TYPE 3



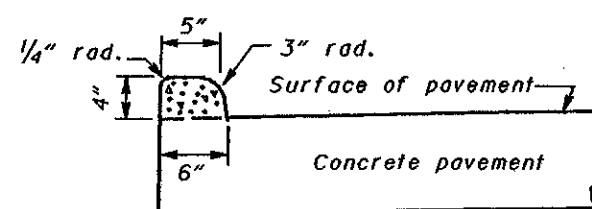
TYPE 4



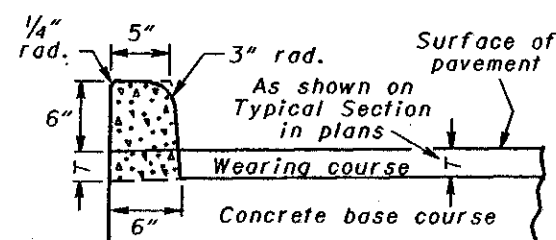
TYPE 2-A



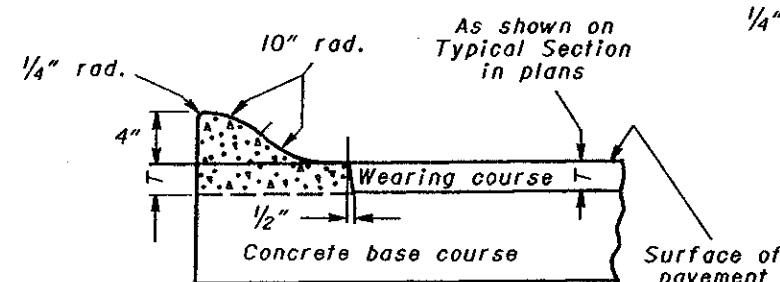
TYPE 3-A



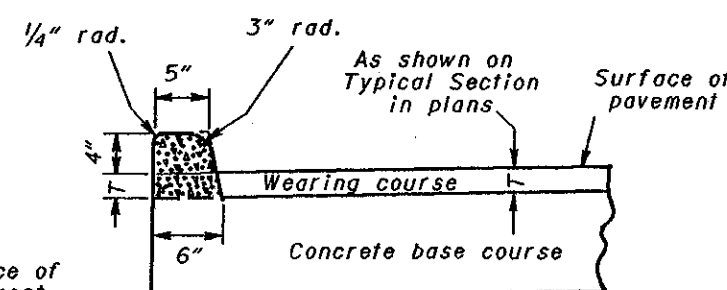
TYPE 4-A



TYPE 2-B

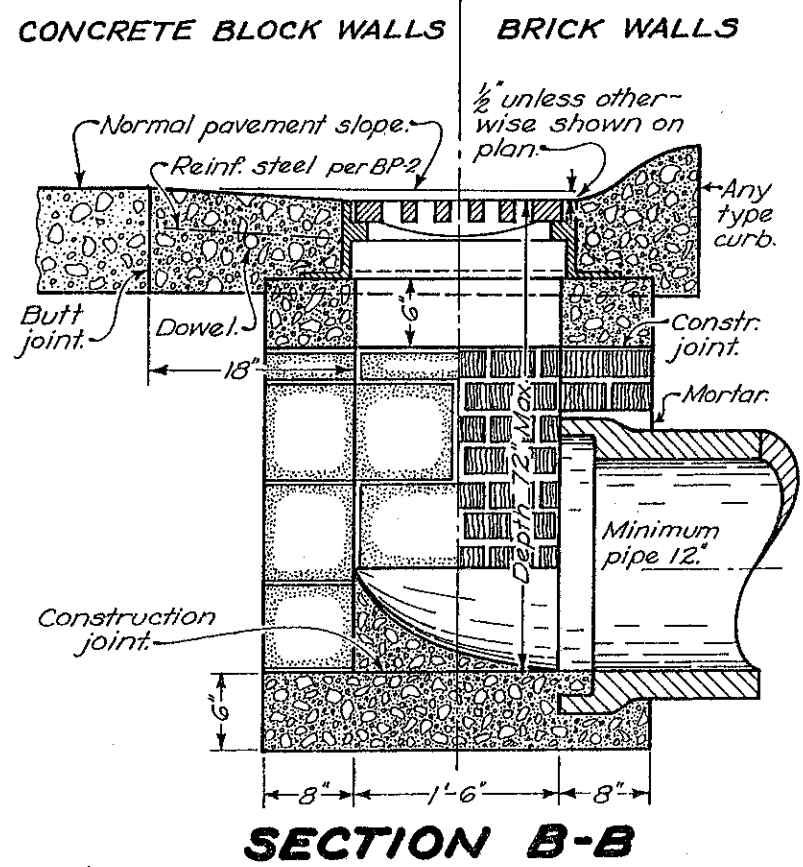
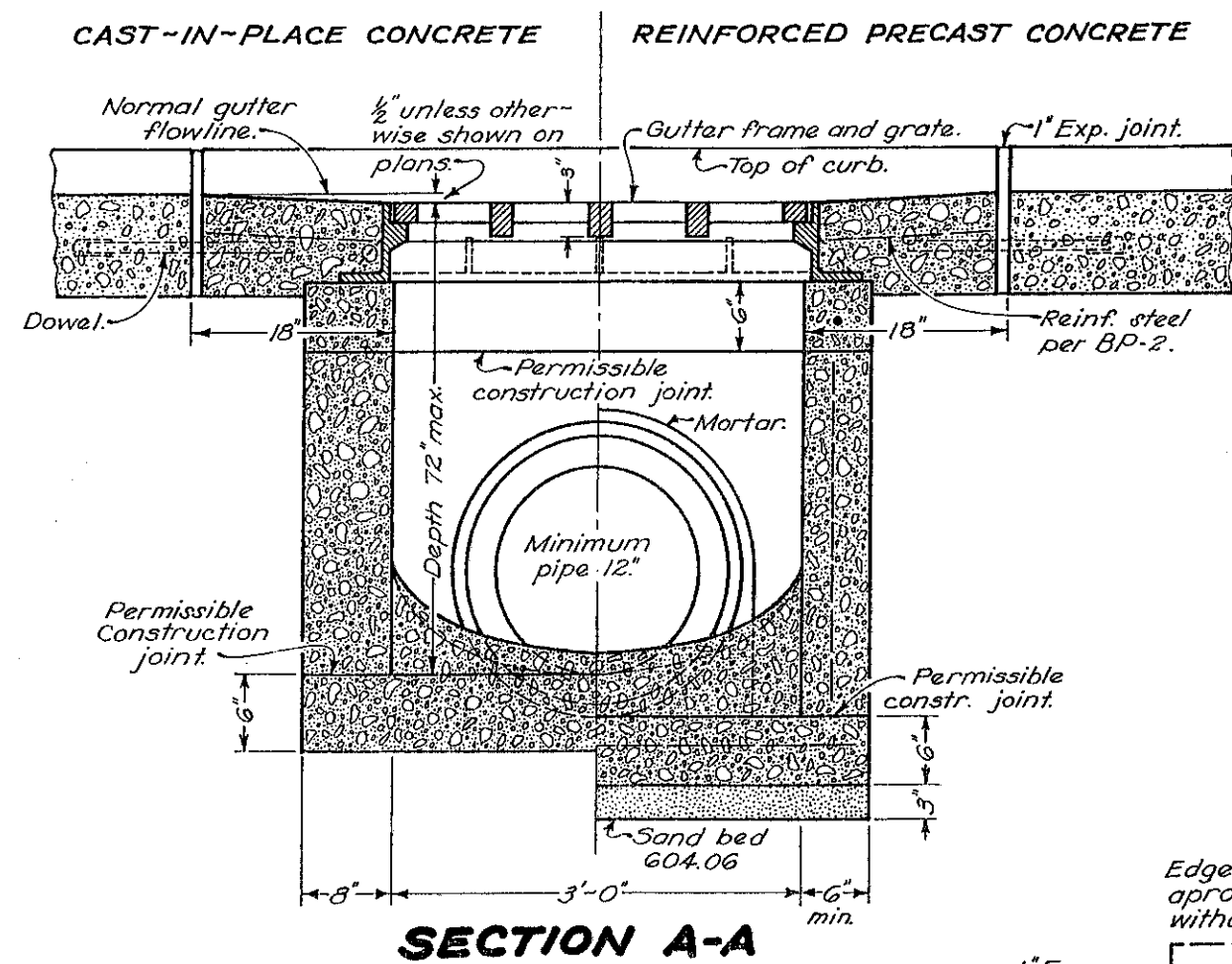


TYPE 3-B



TYPE 4-B

BUREAU OF LOCATION AND DESIGN OHIO DEPARTMENT OF TRANSPORTATION	
CONCRETE CURBS AND COMBINED CURB AND GUTTERS	DATE 2-21-92 10-28-94
STANDARD CONSTRUCTION DRAWING BP-5.1	
APPROVED	W. K. Huhman ENGR., L & D



CASTINGS:
The design shall be essentially the same and equally as strong as those shown hereon.

WEIGHT of the castings, minimum:
Grate 210 pounds
Frame 265 pounds

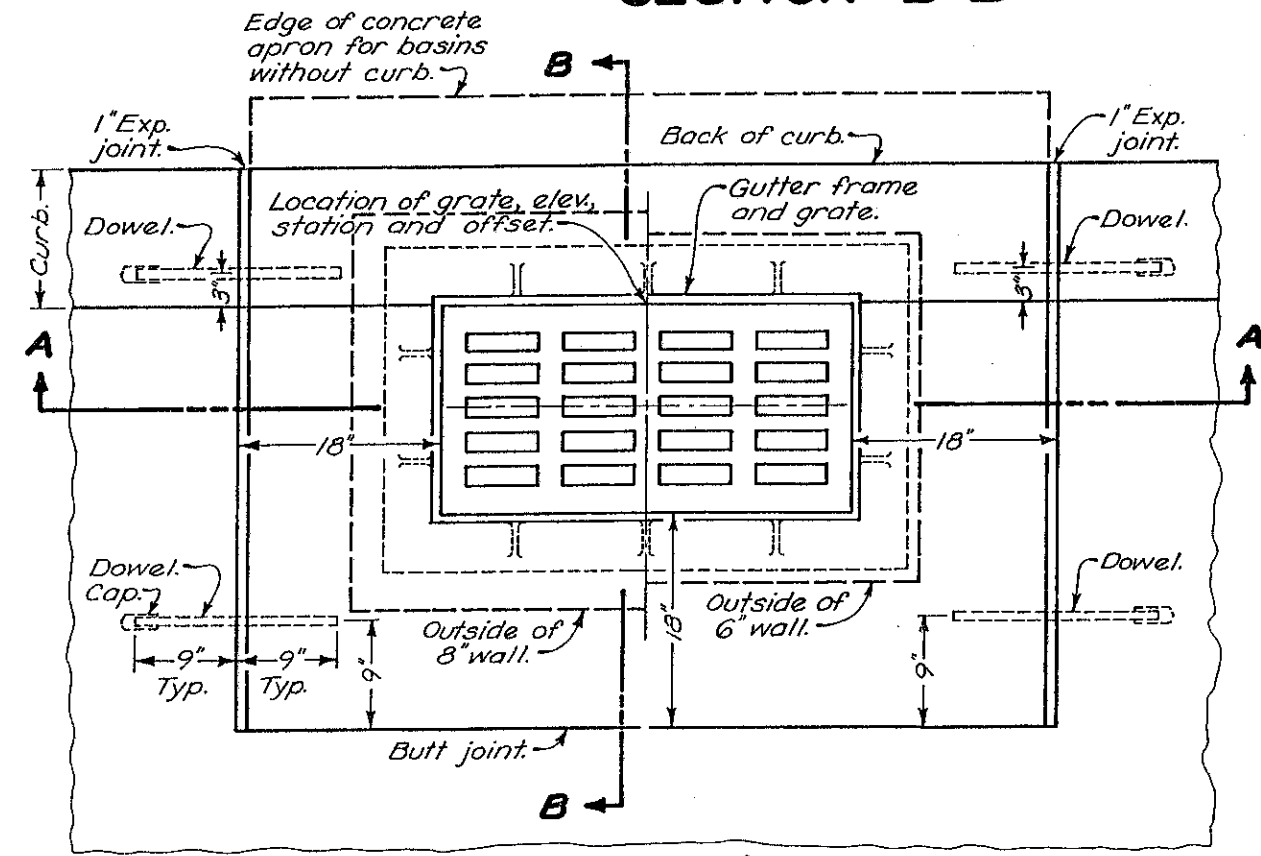
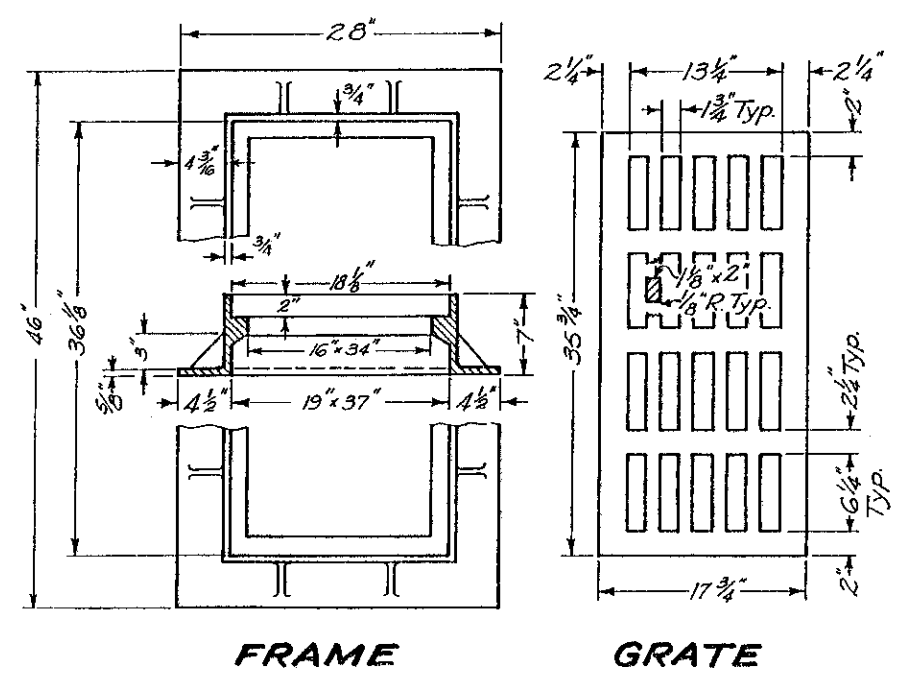
BEARING AREAS of frame and grate shall be so fitted and finished as to provide a firm and even seat for all portions of the grate in the frame. No projections shall exist on bearing areas of either casting and the grate shall seat in its frame without rocking. Frame and grate shall be fitted, matched and marked before delivery to the project.

DOWELS: Four 1"x18" dowels are required for concrete pavement and curb. See BP-4 for dowel details.

CONCRETE, cast-in-place, to be Class C. All precast concrete shall meet the requirements of 706.13 with 6 ±2% air void content in the hardened concrete and be marked with the catch basin number.
BRICK, concrete block or cast-in-place walls shall have a nominal thickness of 8 inches. Precast walls shall have a minimum thickness of 6 inches and be reinforced sufficiently to permit shipping and handling without damage.

OPENINGS for pipes shall be O.D.+2" when fabricated or field cut.

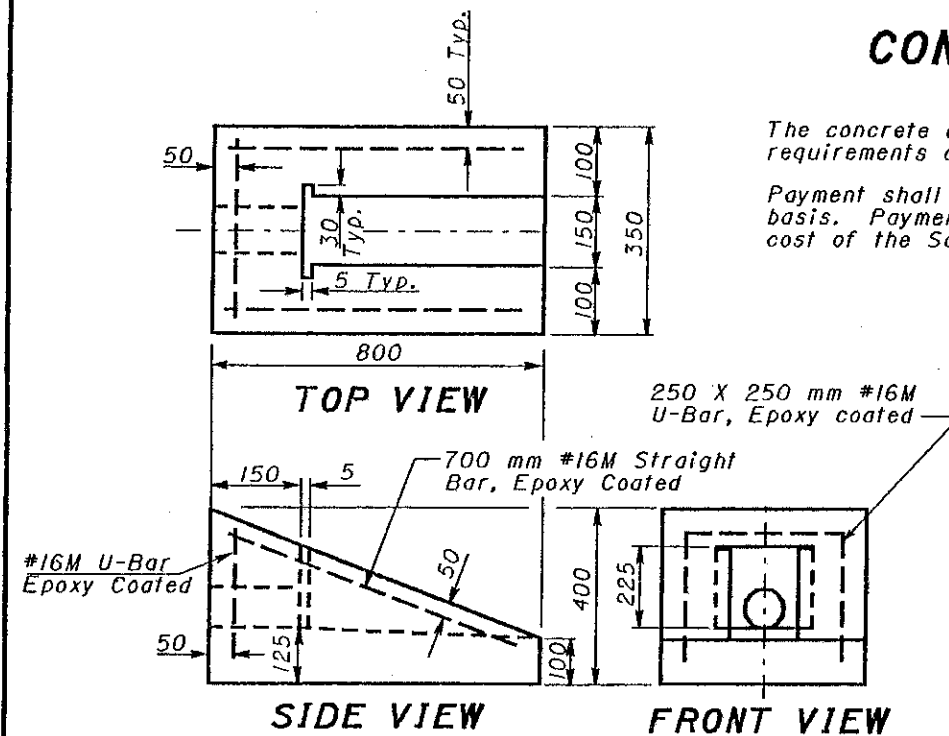
BLOCKOUT apron shall be Class C concrete. Cost of apron shall not be included in catch basin bid price when located in PCC pavement and no deduction in normal pavement quantities shall be made because of the blockout. When adjacent paving is asphalt, the dowels shall be omitted and the cost of the concrete apron shall be included in the catch basin bid price. Cost of curb, if any, shall be included in item 609. For basins without curb, the grate elevation shall be 1" below the normal pavement slope measured at the center of the grate.



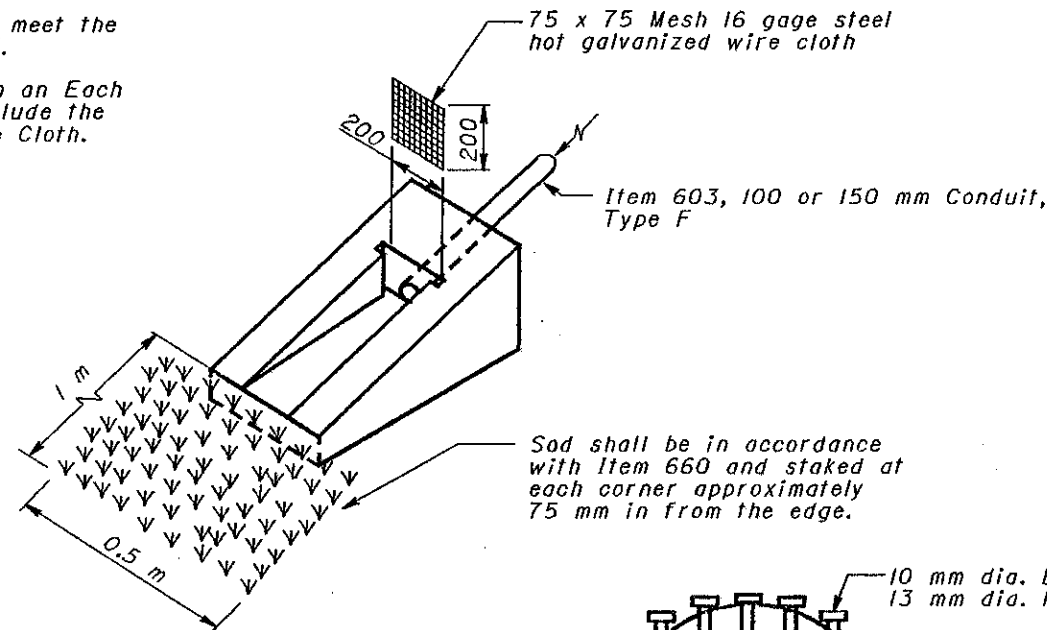
PLAN OF CATCH BASINS & PAVEMENT JOINTS

BUREAU OF LOCATION AND DESIGN OHIO DEPARTMENT OF TRANSPORTATION	
CATCH BASINS	
STANDARD CONSTRUCTION DRAWING	CB-6
APPROVED <i>[Signature]</i> ENGR., L. & D.	
DATE 5-1-79	

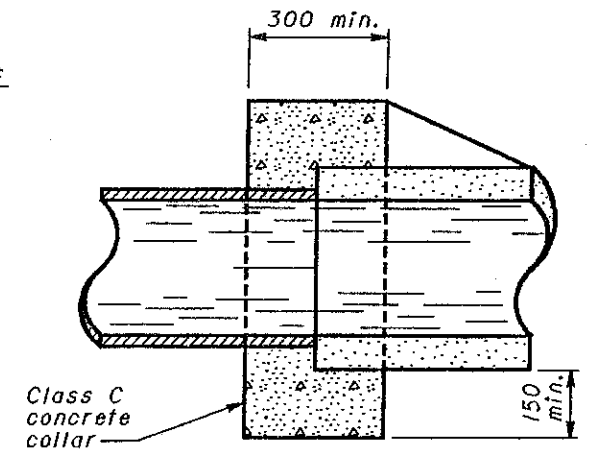
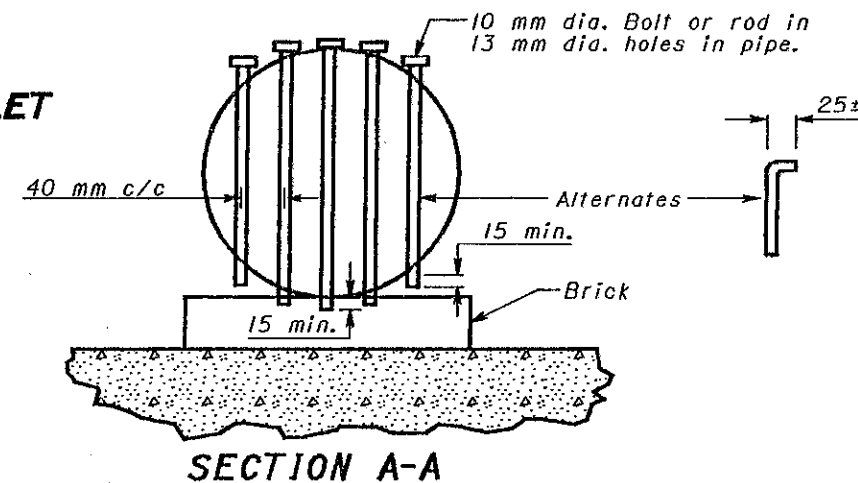
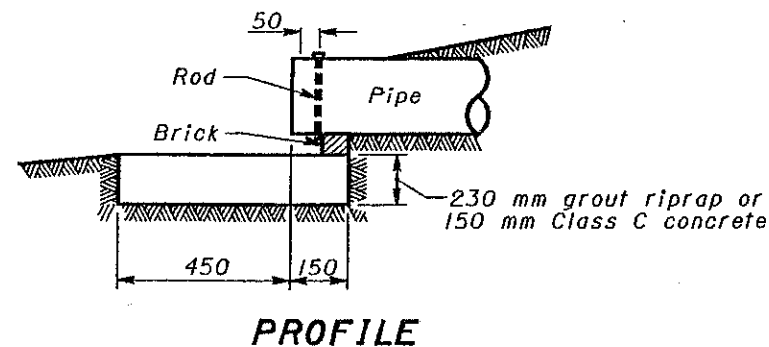
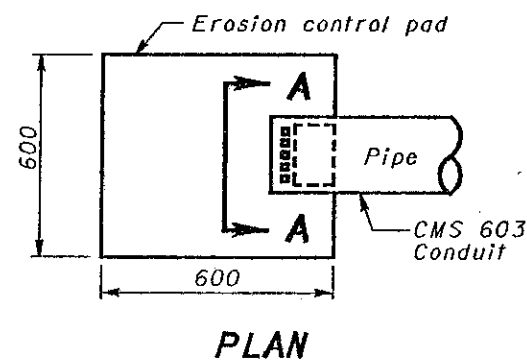
CONSTRUCTION METHODS



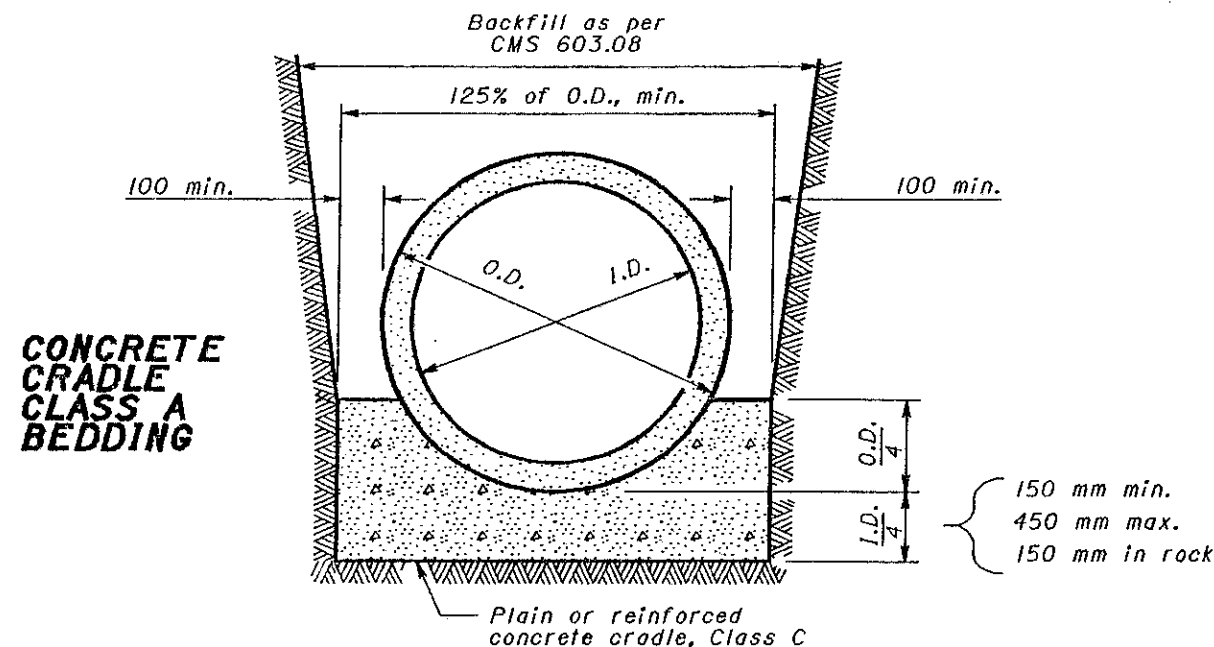
Payment shall be made on an Each basis. Payment shall include the cost of the Sod and Wire Cloth.



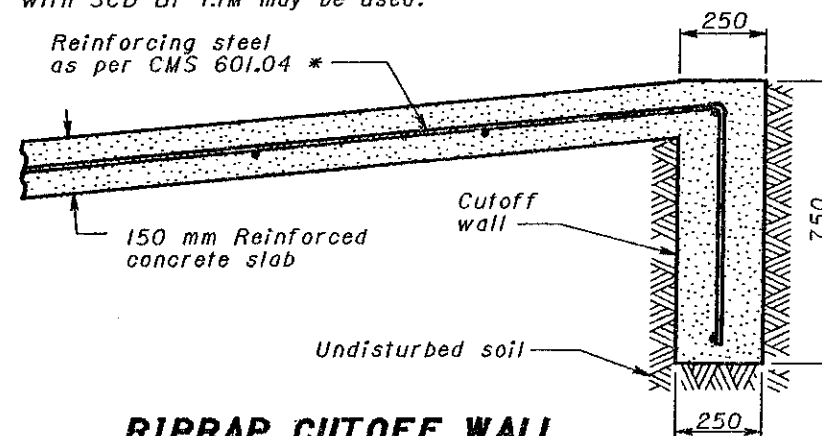
PRECAST REINFORCED CONCRETE OUTLET



EROSION CONTROL PAD AND ANIMAL GUARD FOR OUTLET PIPE



* If wire fabric is used in the slab, #10M bars at 600 mm overlapping the fabric. 300 mm, or wire fabric in accordance with SCD BP-1.1M may be used.



RIPRAP CUTOFF WALL

The cost of the cutoff wall shall be included in the unit price bid for Item 601 Riprap using 150 mm reinforced concrete slab

NOTES

MASONRY COLLARS: A masonry collar shall be provide where plans require that a pipe extension be joined to the end of an existing pipe with a butt joint. The cost shall be included in the unit price bid for the new conduit.

EROSION CONTROL PAD AND ANIMAL GUARDS:
These items shall be provided at the outlet end of all farm drains except where they outlet into a drainage structure.
The steel bolts or rods for the animal guard shall be galvanized per CMS 710.06.
In lieu of drilling or punching the 13 mm diameter holes into the pipe, a metal collar meeting all of the above requirements may be clamped onto the pipe if approved by the Engineer.
Payment for the erosion control pads and animal guards shall be included in the unit price bid for Item 603 — mm Conduit, Type — .

MASONRY COLLAR

*All dimensions are in millimeters
unless otherwise noted.*



This Drawing Replaces MC-4.

OHIO DEPARTMENT OF TRANSPORTATION

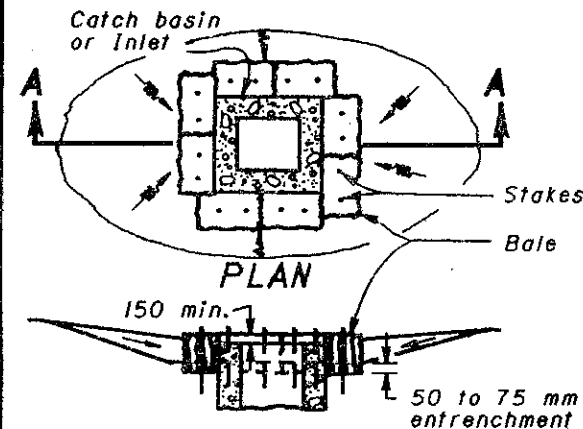
OUTLETS, DRAINS AND SEWERS

DATE
-30-95
0-21-97

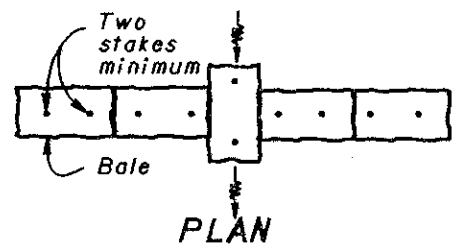
STANDARD
CONSTRUCTION
DRAWING **DM-1.1M**

APPROVED Kenneth E. Sutherland

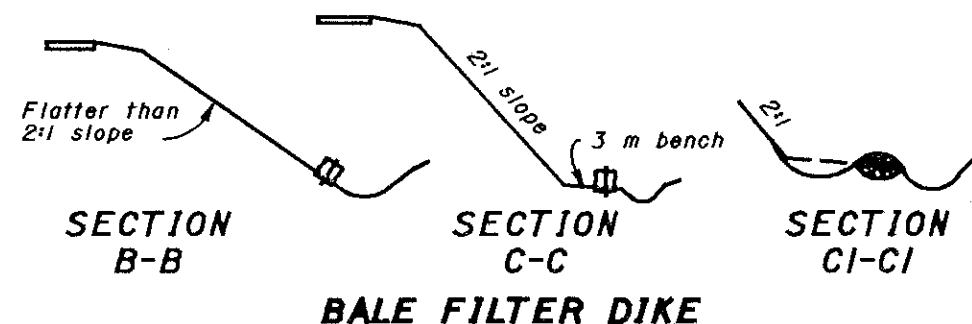
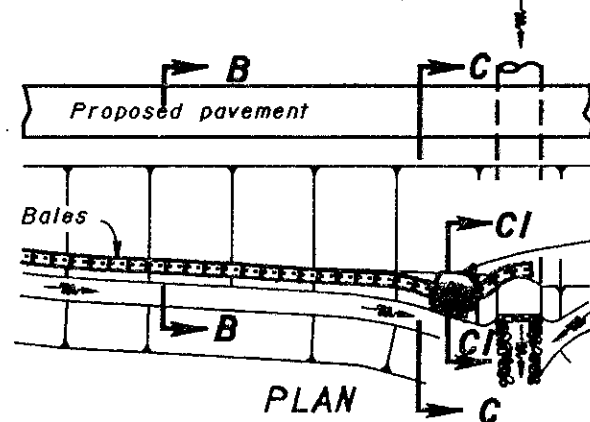
STRAW OR HAY BALES



SECTION A-A
BALE INLET FILTER



PLAN
ELEVATION
BALE DITCH CHECK



SECTION C-C
BALE FILTER DIKE

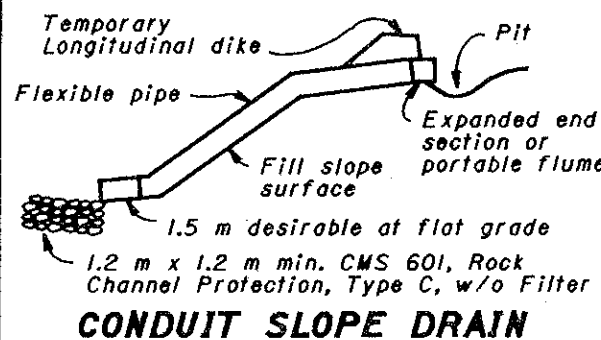
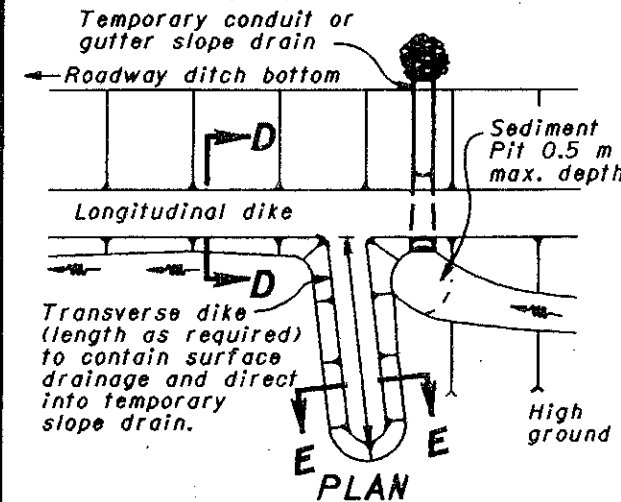
BALE PLACEMENT: Bales shall be tightly placed adjacently and entrenched 50 mm to 75 mm before staking; or a small amount of loose soil shall be lightly compacted along the upstream edge of the bales. Each bale shall be firmly staked with a minimum of two stakes at least 1 m in length. Stakes shall be wooden 50 x 50 mm, reinforcing bars or fence posts, as approved by the Engineer. Loose straw or hay shall be scattered for a distance of 3 m on the upstream side of each ditch check, and shall be wedged between and under staked bales.

PITS: Sediment pits shall be provided where directed by the Engineer, and their cost included in the unit price bid for the adjacent CMS 207 items.

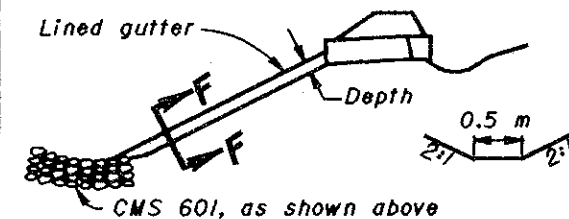
MAINTENANCE: Sediment shall be removed when its depth reaches half the height of the exposed portion of the lowest bale.

BASIS OF PAYMENT: Straw or hay bale installation shall be paid for under Item 207, Straw or Hay Bales. Cost will include placing, staking, maintaining and removing.

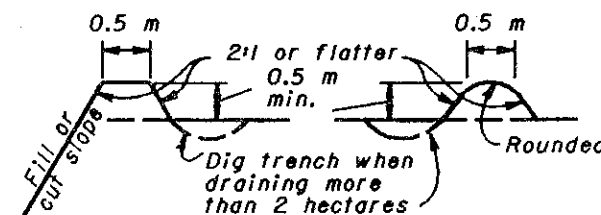
DIKES AND SLOPE PROTECTION



CONDUIT SLOPE DRAIN



SECTION F-F
GUTTER SLOPE DRAIN



SECTION D-D
SECTION E-E

TEMPORARY SLOPE DRAINS RECOMMENDED SIZES				
Area (hectares)	Pipe Sizes (mm)			Gutter depth (mm)
	Smooth	Corru- gated	Half- round	
0-1.6	150	150	450	200
1.6-3.2	200	300	450	200
3.2-4.9	250	375	525	300

GENERAL: Dikes & drains shown shall be used when earthwork operations on slopes higher than 2.5 m are suspended for three weeks or more and/or as directed by the Engineer. Smaller dikes used at the end of a day's operation shall be considered as part of the earthwork. Temporary slope drains shall be suitably positioned and anchored to prevent movement or undermining, as directed by the Engineer.

LONGITUDINAL DIKES: shall be constructed of suitable material as per CMS 203 and compacted to 85% maximum density.

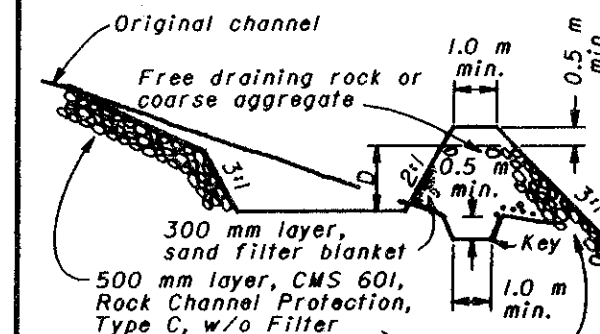
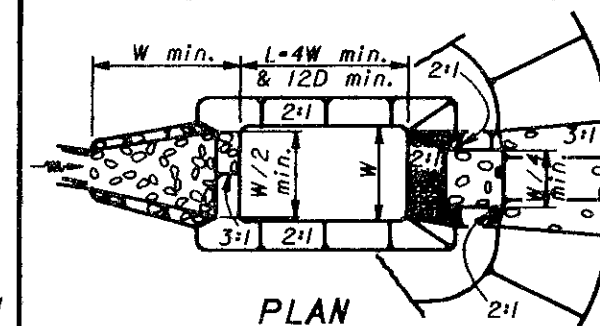
CONDUITS: Conduits for slope drains shall be corrugated steel pipe, corrugated or smooth plastic pipe, rubber conduit, or an approved equal.

GUTTERS: Gutters for slope drains shall be lined with Type C rock channel protection, crushed aggregate slope protection, portland cement concrete, bituminous concrete, plastic sheeting (on slopes 4:1 max.), partial pipe sections or approved equal.

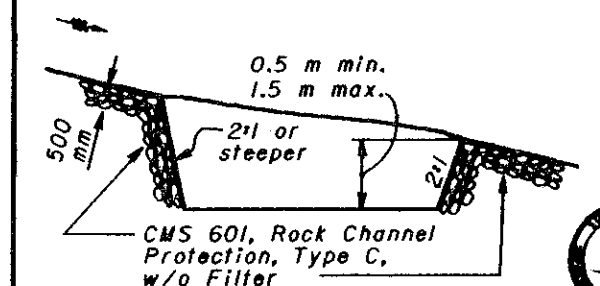
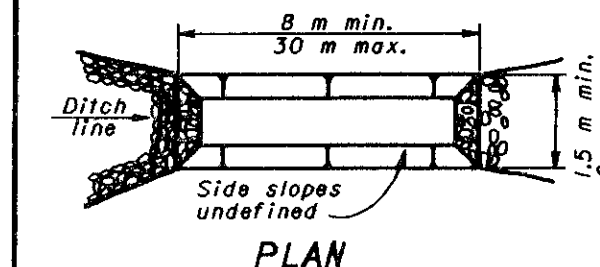
PITS: Sediment pits shall be provided where directed by the Engineer and their cost included in the price bid for adjacent CMS 207 items.

BASIS OF PAYMENT: Temporary dikes shall be paid for under Item 207, Temporary Dikes. Temporary slope drains shall be paid for under Item 207, Temporary Slope Drains. Rock required shall be paid for under Item 601, Rock Channel Protection, Type C, w/o Filter.

SEDIMENT BASINS & DAMS



PROFILE
SEDIMENT DAM



PROFILE
SEDIMENT BASIN

EMBANKMENT: Sediment basin embankment construction shall be as per CMS 203 compacted as directed by the Engineer.

MAINTENANCE: Sediment pits, dams and basins shall be acceptably maintained. Deposited sediment shall be removed when the initial volume has been reduced one-half. The sand filter blanket on sediment basins shall be replaced when deposited sediment is removed. The cost of maintenance shall be included in the unit price bid for the appropriate CMS 207 item.

FILTERS: Plastic filter fabric, as approved by the Engineer, may be substituted for the sand filter blanket on sediment dams. Such fabrics may be cleaned in lieu of replacement, when approved by the Engineer.

SIZE: The volume shown on the plans is the total storage volume required for the sediment basin or dam. A series of smaller basins or dams may be substituted for a larger basin or dam when approved by the Engineer.

BASIS OF PAYMENT: Sediment Dams and Basins shall be paid for under Item 207, Temporary Benches, Dams and Sediment Basins. The pay quantity shall be the actual number of cubic meters of excavation and embankment required to construct the basin or dam. Rock required shall be paid for under Item 601, Rock Channel Protection, Type C, w/o Filter.



This Drawing Replaces MC-II.

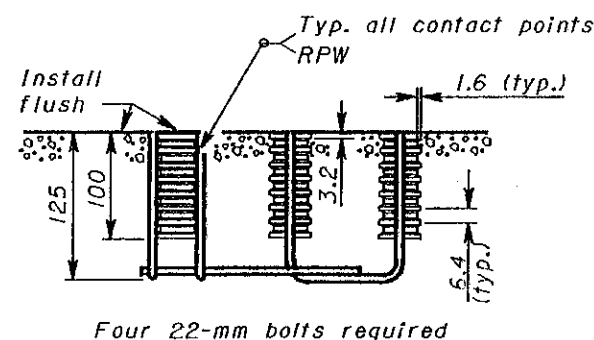
BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF TRANSPORTATION

TEMPORARY
EROSION
CONTROL

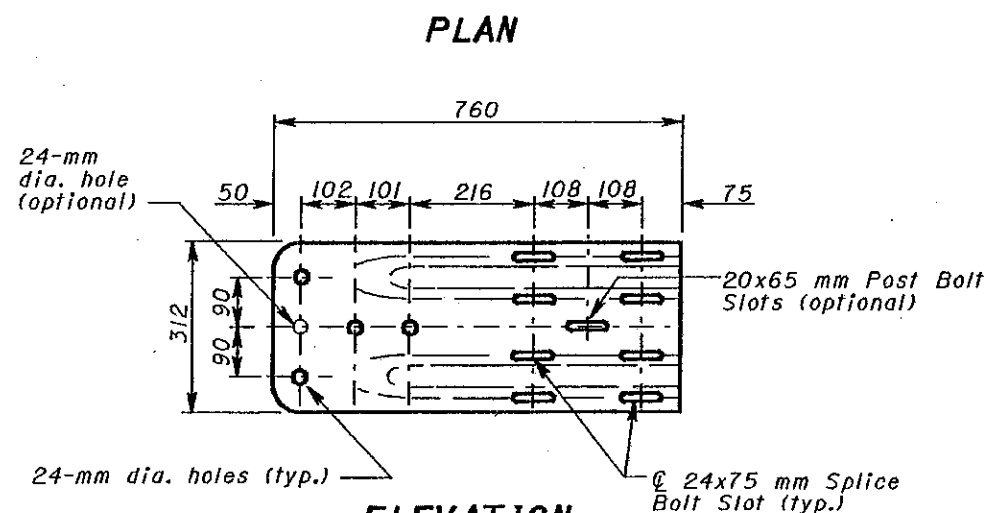
DATE
6-30-95

STANDARD
CONSTRUCTION
DRAWING

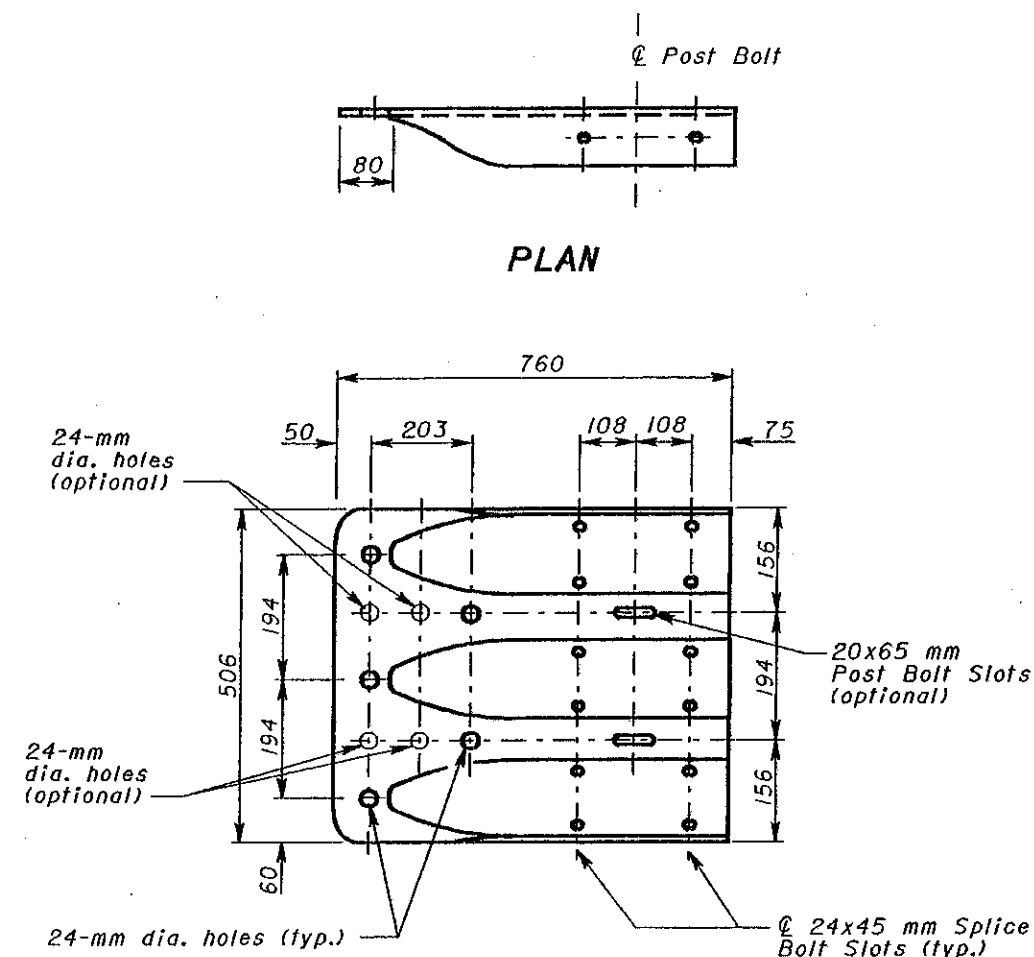
APPROVED: W.K. Hubman
ENGR. L & D



CONCRETE INSERT ANCHOR ASSEMBLY (W-BEAM ONLY)



W-BEAM TERMINAL CONNECTOR



THREE-BEAM TERMINAL CONNECTOR

*All dimensions are in millimeters
unless otherwise noted.*



L (mm)	T m/n. (mm)	Bolt Use
455 (Standard Rail)	85	Type 5: WP/WB, PB
660 (Barrier Rail)		
255	60	Type 4: WP Type 5: SP/WB, PB
50	35	Type 4: SP
32	Full	Splice Bolt

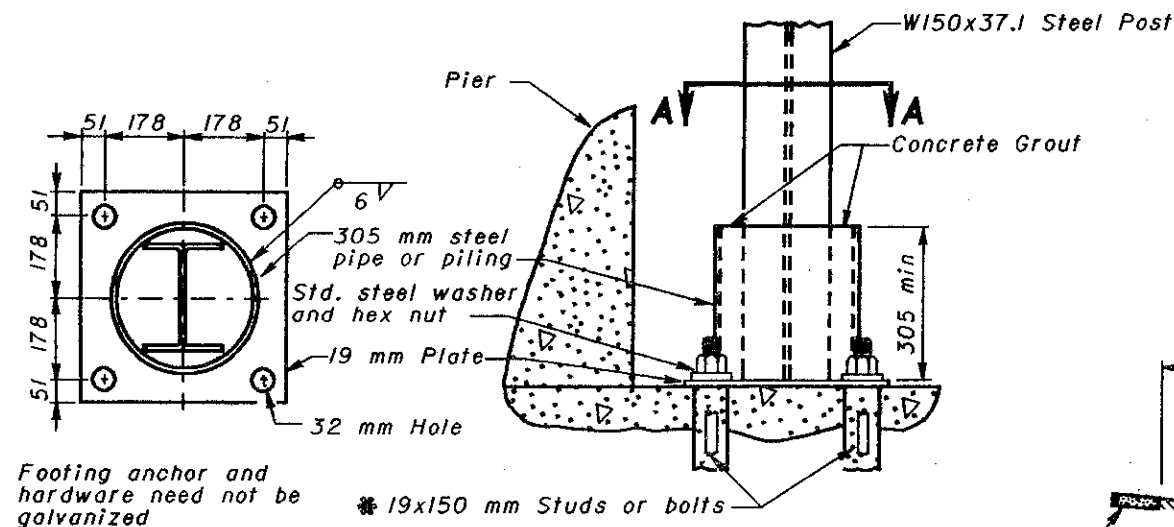
WP- wood post WB- wood blackout
SP- steel post PB- plastic blackout
Longer bolt may be needed for
round WP larger than 200 mm dia.

BUTTON HEAD BOLT
(For post and splice bolts)

NOTE

Refer to AASHTO M 180 for dimensional details of W-Beam and Thrie-Beam rail elements, related buffer and end sections, beam splices, post and splice bolts and nuts, and Type I W-Beam to Thrie-Beam Transition section.

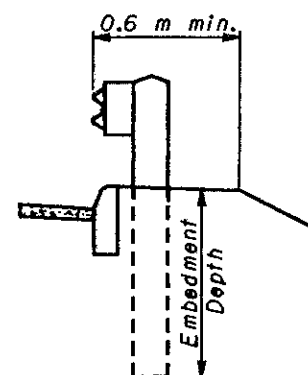
OHIO DEPARTMENT OF TRANSPORTATION	
GUARDRAIL DETAILS	DATE 11-30-94 10-21-97
STANDARD CONSTRUCTION DRAWING	GR-1.1M
APPROVED <i>Raymond T. Luthersland</i>	



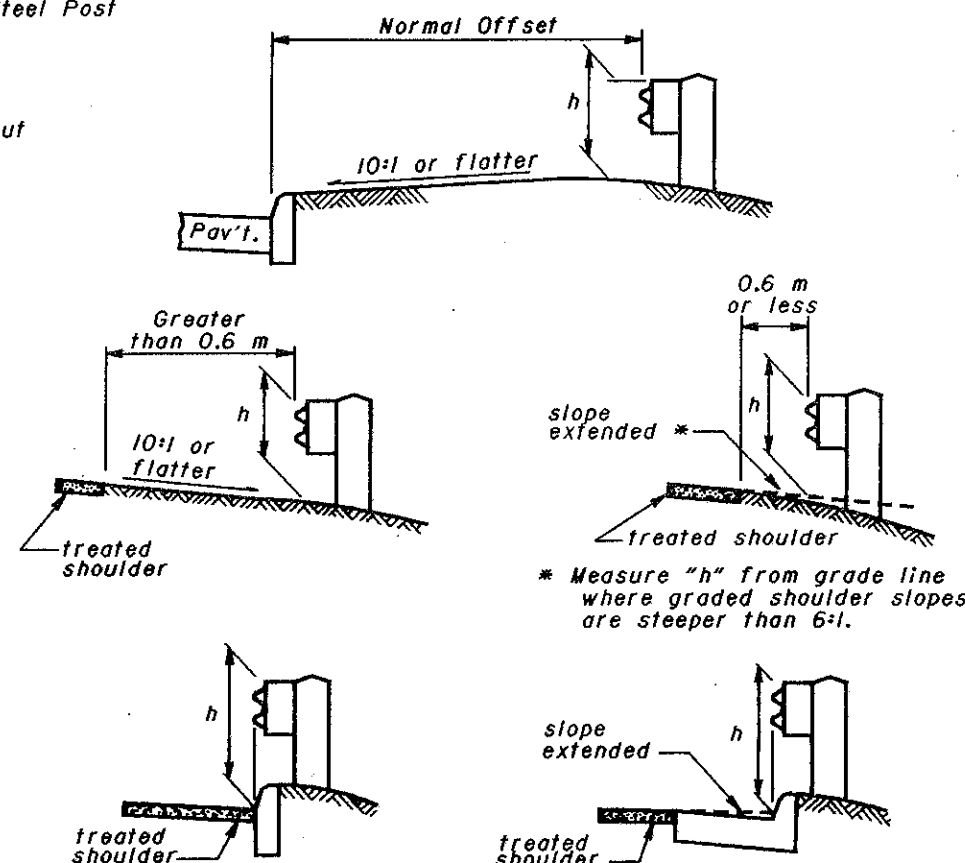
SECTION A-A

ELEVATION

FOOTING ANCHOR

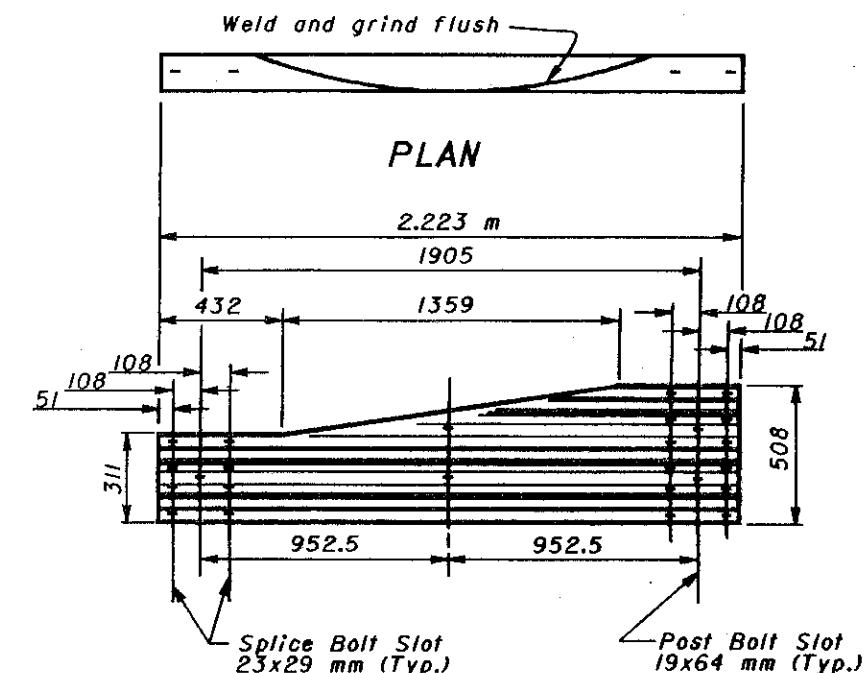


DETAIL A



h = Standard height (Tolerance ± 25 mm)

MEASURING GUARDRAIL HEIGHT



ELEVATION

TYPE 2
TRANSITION SECTION *
(W-Beam to Thrie-Beam)

* For details of Type 1 Transition Section, refer to AASHTO M 180, Figure 4.

NOTES

BEAM RAIL ELEMENTS: Elements shall be 3.81 m effective length, unless otherwise specified, with 19x64 mm post bolt slots on 1,905 m centers regardless of post spacing. Field punching or drilling of bolt holes or slots for irregularly spaced posts shall be according to CMS 606.05.

BEAM RAIL SPLICE between two rail elements or between a rail and terminal connector shall be lapped in the direction of traffic. The buffer or flared end sections shall lap on the traffic face. A 305 mm length of beam rail (Back-up Plate), with a 19 mm diameter bolt hole or a 19x64 mm slot, shall be provided at steel posts not having a rail splice.

EMBEDMENT DEPTH: Where less than 0.6 m of graded shoulder width (10:1 or flatter) exists, measured from the face of the guardrail (see Detail "A"), longer posts shall be used so that a minimum of 1.65 m embedment depth is provided. Payment for the longer posts will be made at the unit price bid per Each, Item 606 - Guardrail Post, 2.75 m.

PROTECTIVE COATING: In lieu of the requirements of CMS 710.06, expansion shields, anchors and insert anchor assemblies installed (embedded) in concrete shall be coated in accordance with ASTM A 153 or be of stainless steel. Any bolts screwed into these embedded devices shall meet CMS 710.06.

SPECIAL POST MOUNTINGS:

Posts located over a drainage inlet or structure shall be encased or anchored per the details shown on Standard Construction Drawing GR-2.2M.

Posts located over a footing with a cover of less than 0.75 m shall be installed with a footing anchor as detailed hereon. (A plate, as detailed on Section B-B of Standard Construction Drawing GR-2.2M, may be used as an alternate attachment method.) Where the cover is between 0.75 m and 1.04 m, the footing anchor may be omitted and the post encased instead with 100 mm (min.) of concrete.

Posts located over a culvert with less than 1.3 m of cover shall not be driven, but shall be set in drilled or dug holes. Where the available post embedment depth is less than 1.04 m, the post shall be encased with 100 mm (min.) of concrete.

All costs associated with special post mountings shall be included in the unit price bid for 606 Guardrail of the type specified in the plans.

* **ANCHORS:** Holes and grouting shall comply with CMS 510. Either cement or nonshrink, nonmetallic grout may be used.

Expansion shield anchors conforming to CMS 712.01 may be substituted except where concrete deterioration has occurred, as determined by the Engineer. The same bolt diameter specified shall be required. Where self-drilling anchors are used, the holes shall be drilled with the expansion shield (not by a drill bit) and the shield installed flush with the concrete surface.

All dimensions are in millimeters unless otherwise noted.



This Drawing Replaces GR-1.2.

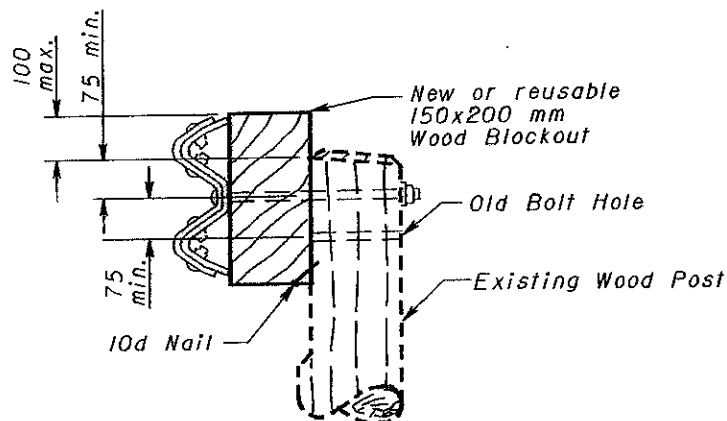
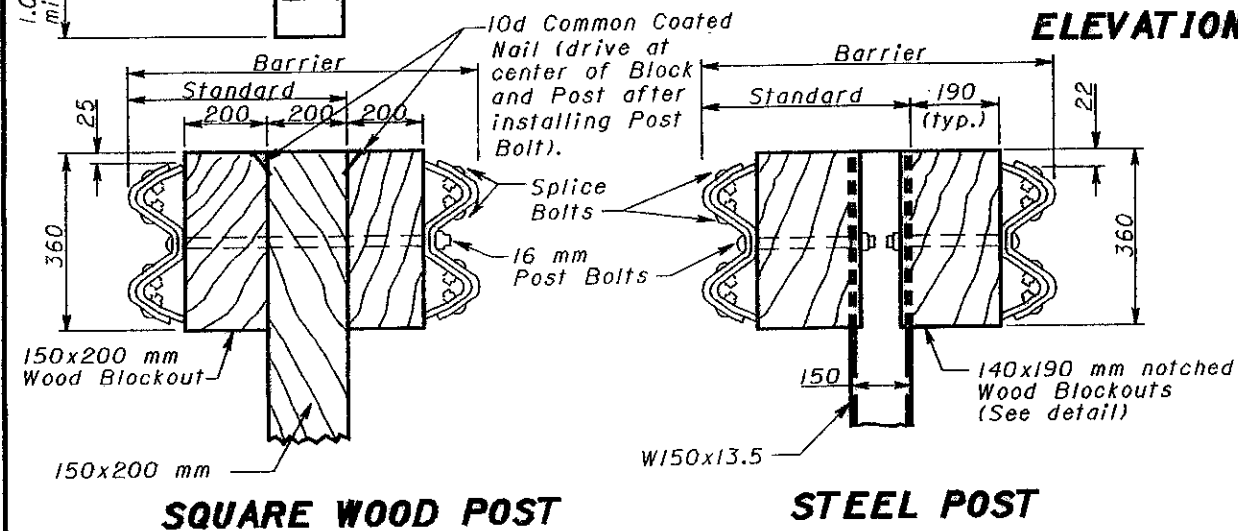
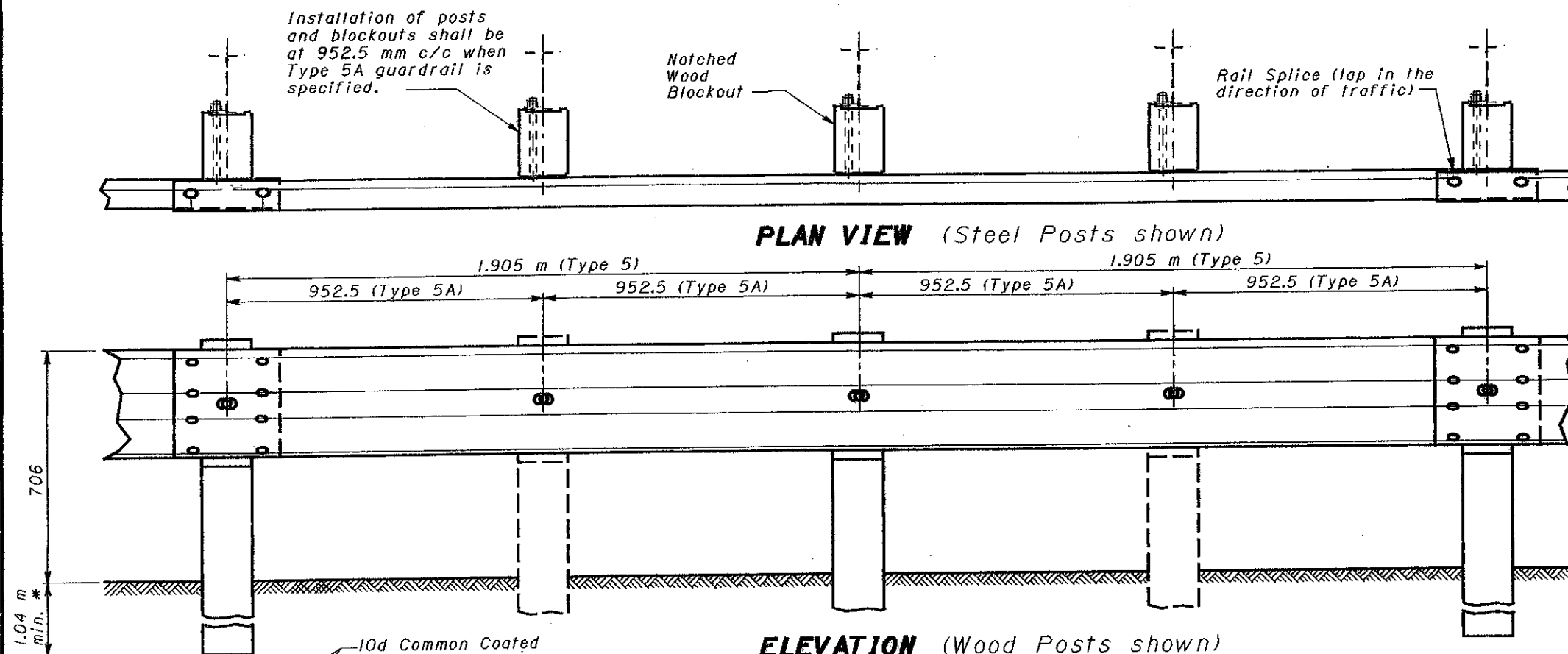
OFFICE OF ROADWAY ENGINEERING
OHIO DEPARTMENT OF TRANSPORTATION

GUARDRAIL
DETAILS

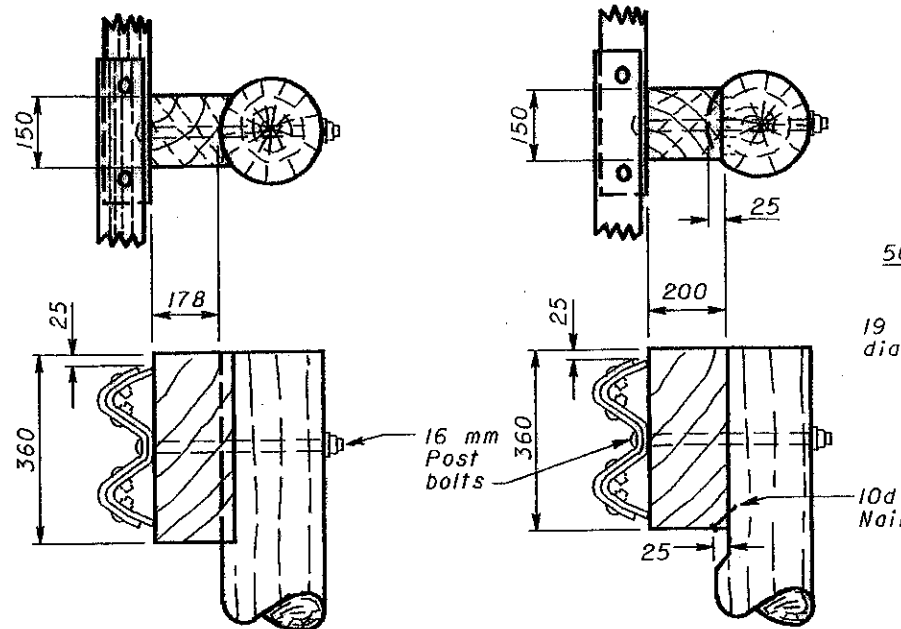
DATE
1-3-96

STANDARD
CONSTRUCTION DRAWING
GR-1.2M

APPROVED D.K. Hulman, P.E.
ADMINISTRATOR



**WOOD POSTS WITH WOOD BLOCK
RAISING EXISTING GUARDRAIL HEIGHT**



ROUND WOOD POSTS

Alternate methods of placing the blockouts on round posts may be submitted for consideration and approved by the Engineer.

All dimensions are in millimeters unless otherwise noted.



NOTES

POSTS: Posts may be round (standard single rail only) or 150x200 mm square-sawn pressure-treated wood or W150x13.5 galvanized steel. The same type post shall be used throughout the length of the project unless otherwise required by the plans or permitted by the Engineer. Round posts shall be 200 mm \pm 25 mm in diameter at the top and not more than 75 mm larger at the butt with a uniform taper. Post may be set in drilled holes or may be driven to grade.

Wood posts shall be fabricated with square ends. Posts and blockouts shall be pressure-treated per CMS 710.14. Bolt holes shall be bored and the tops of posts shall be trimmed as shown, if required, after posts are set.

ALTERNATE BLOCKOUTS: Approved plastic blockouts may be used in lieu of the wood blockouts shown. The approved list is maintained by the Office of Materials Management.

WASHERS: Standard galvanized steel washers of the appropriate size shall be installed on the nut side of bolts through wood posts.

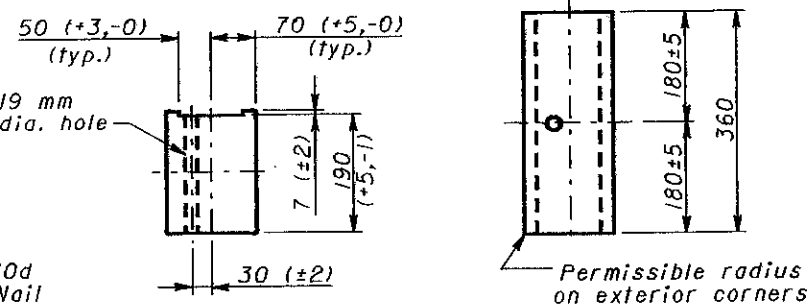
WELDED BEAMS: Welded beam guardrail posts may be used for Item 606, Guardrail, provided the web and flange sizes are as shown hereon. Welding of the web to the flanges shall conform to ASTM A 769M, Class 1 using Grade 36 steel (250 MPa yield point) with the following exceptions:

- Sec. 7.2 Test reports of tensile properties for each lot shall accompany each shipment.
- Sec. 12 Beams that have imperfections repaired by welding shall not be accepted for use in Item 606.
- Sec. 13 Random samples shall be tested by the Department from materials delivered to the project site or other locations designated by the Laboratory.

*** POST EMBEDMENT DEPTH:** For specific depth requirements, see SCD GR-1.2M.

STEEL BEAM POSTS				
Size	Beam depth	Flange width	Flange thickness	Web thickness
Rolled W150x12.6	148 mm	100 mm	4.9 mm	4.3 mm
Rolled W150x13.5	150 mm	100 mm	5.5 mm	4.3 mm
Welded 150x12.6	152 mm	100 mm	4.9 mm	4.3 mm
Welded 150x13.5	152 mm	100 mm	5.5 mm	4.3 mm

MISCELLANEOUS: For details not shown see SCD's GR-1.1M and GR-1.2M.



**PLAN
NOTCHED BLOCKOUTS FOR STEEL POSTS**

OHIO DEPARTMENT OF TRANSPORTATION

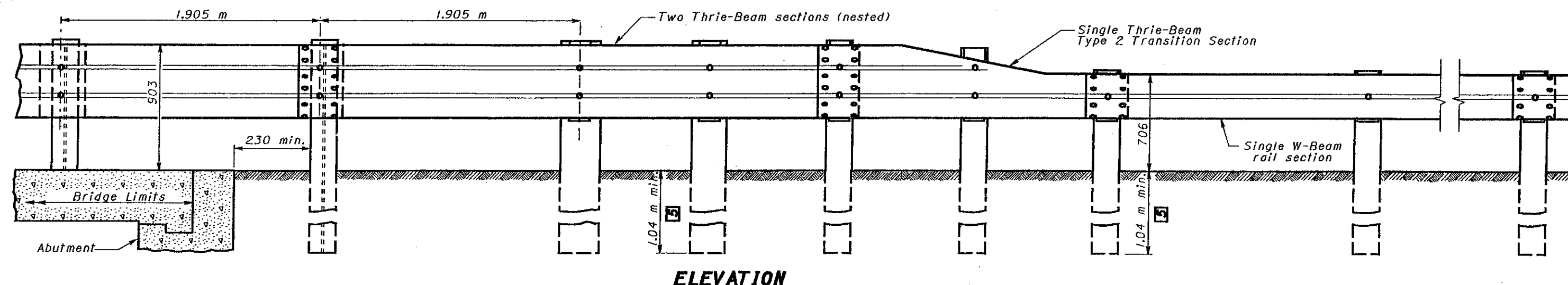
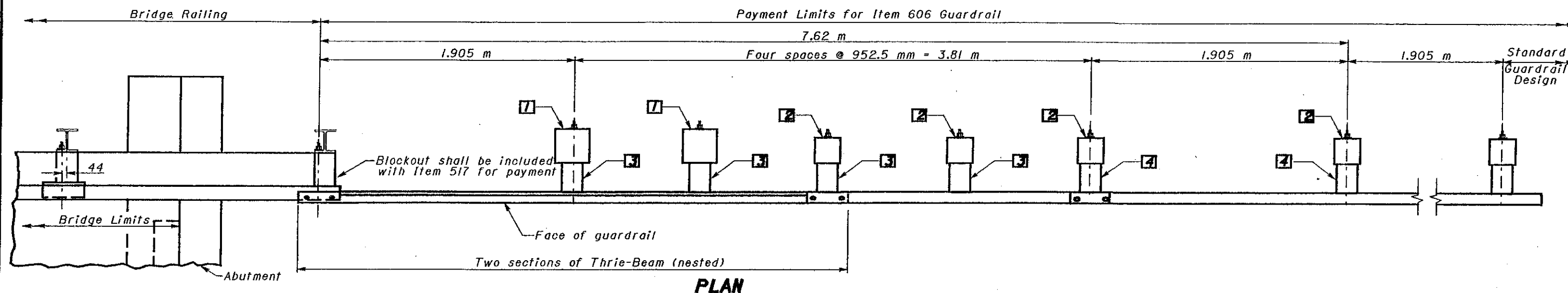
**GUARDRAIL
TYPE 5 & 5A**

**STANDARD
CONSTRUCTION
DRAWING**

GR-2.1M

DATE
11-30-94
10-21-97
4-14-98

APPROVED *Larry T. Linderland*



All dimensions are in millimeters unless otherwise noted.

NOTES

LEGEND

- 1 250 x 250 mm wood post
- 2 200 x 200 mm wood post
- 3 150 x 200 x 570 mm wood blockout (See ALTERNATE POSTS AND BLOCKOUTS note)
- 4 150 x 200 x 355 mm wood blockout (See ALTERNATE POSTS AND BLOCKOUTS note)
- 5 See SCD GR-1.2M for additional post embedment details.

GENERAL

For additional details, see SCD's. GR-1.1M, GR-1.2M and other Drawings pertaining to specific guardrail types.

APPLICATION

The Type 3 Bridge Terminal Assembly shall be used to connect guardrail runs to both the approach and trailing ends of Thrie-Beam bridge railings.

POSTS

GENERAL - Posts may be set in drilled holes or driven to grade.

WOOD POSTS - shall be square-sawed pressure treated wood as per CMS 710.14 and fabricated with square ends. Bolt holes shall be bored and tops of posts trimmed, if required, after posts are set.

ALTERNATE POSTS AND BLOCKOUTS for Type 3 Bridge Terminal Assemblies may be furnished according to the following chart. Plastic blockouts shall not be permitted for Type 3 Bridge Terminal Assemblies.

Wood Posts & Blockouts	250x250 mm	200x200 mm
Steel Posts	W200x35.9	W150x37.1
Wood Blockouts	150x200 mm	
Steel Blockouts	W150x13.5	

PAYMENT

Payment for Item 606 - Each, Bridge Terminal Assembly, Type 3, shall include the extra cost, in excess of normal guardrail costs, for additional and different type posts and blockouts, nested Thrie-Beam sections, Thrie-Beam transition section, and other hardware.

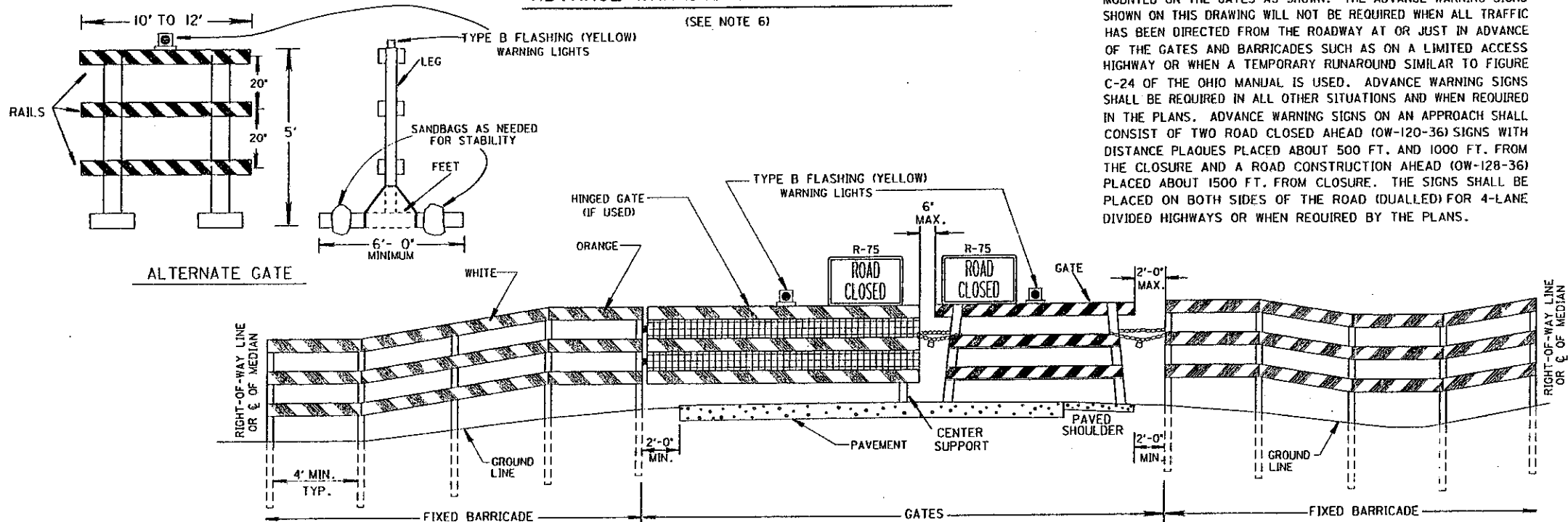
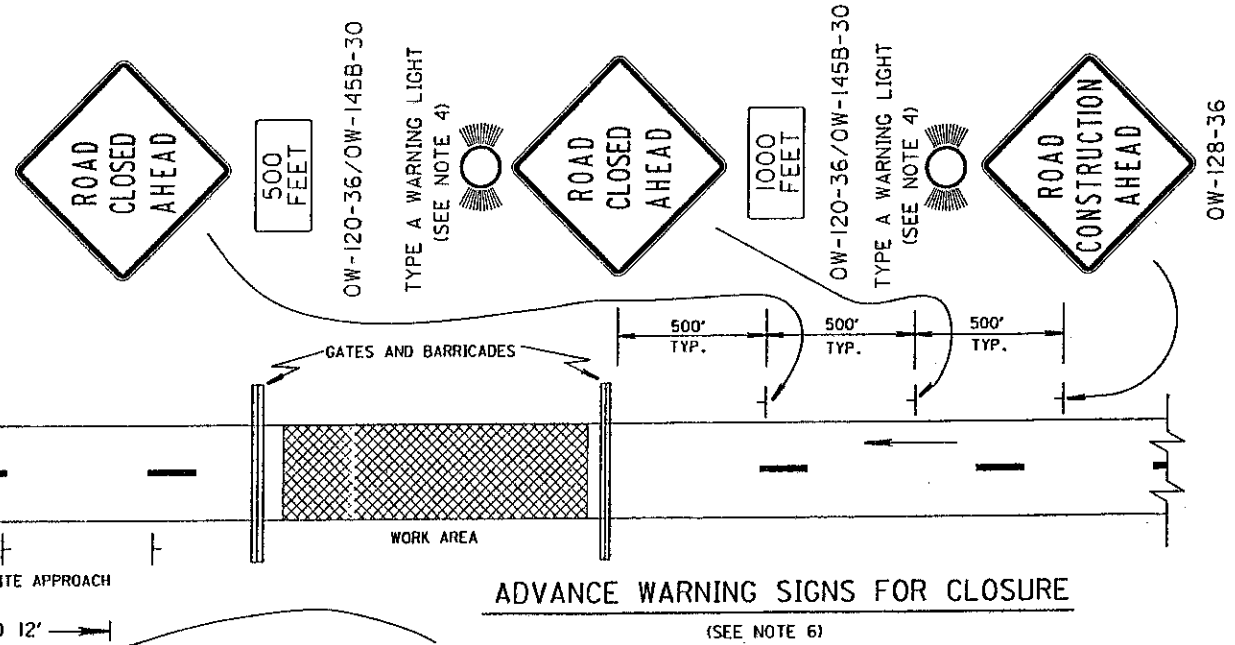
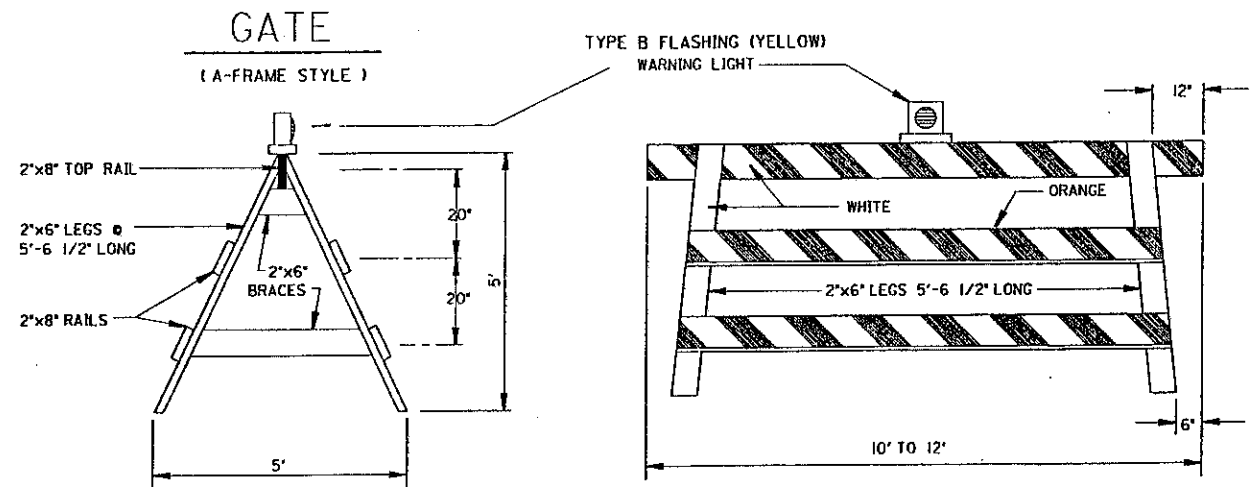


OHIO DEPARTMENT OF TRANSPORTATION

BRIDGE TERMINAL
ASSEMBLY, TYPE 3

DATE
11-30-94
10-21-97

STANDARD
CONSTRUCTION
DRAWING
GR-3.3M
APPROVED *August F. Luchessa*



GENERAL NOTES

- BARRICADES:** BARRICADES SHALL BE CONSTRUCTED ACCORDING TO DETAILS SHOWN. WHEN THE ROAD IS CLOSED TO TRAFFIC, BARRICADES AND GATES SHALL BE USED TO EFFECTIVELY CLOSE THE ENTIRE ROADWAY INCLUDING THE MEDIAN OF DIVIDED HIGHWAYS. IN URBAN AREAS AND AT LOCATIONS WHERE IT IS IMPRACTICAL TO EXTEND THE BARRICADE TO THE RIGHT-OF-WAY LINE BECAUSE OF A SIDEWALK WHICH IS TO REMAIN OPEN OR OTHER OBSTRUCTION, THE ENDS OF THE BARRICADE SHALL BE LOCATED AS DIRECTED BY THE ENGINEER TO EFFECT THE DESIRED CLOSING OF THE HIGHWAY.
- PAINTING AND REFLECTORIZATION:** IN CONSTRUCTION OR MAINTENANCE AREAS ALL RAILS OF THE BARRICADES AND GATES SHALL BE REFLECTORIZED WITH ORANGE AND WHITE REFLECTORIZED TYPE G SHEETING IN 6\"/>

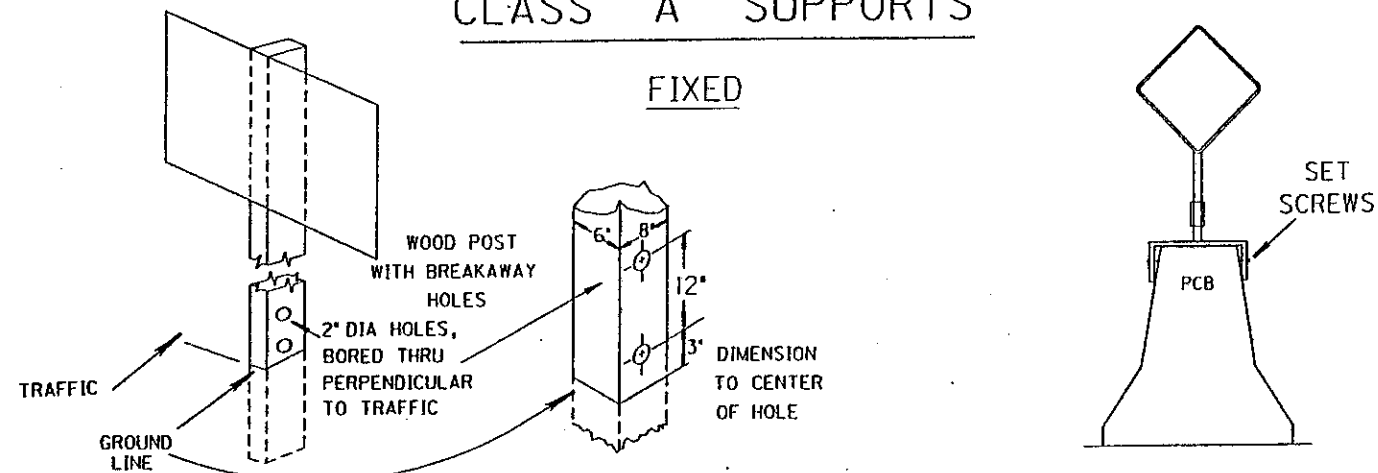
- OPERATION:** ON A 2-LANE 2-WAY ROADWAY THE CONTRACTOR WILL NORMALLY OPEN ONLY THE LEFT HAND GATE AS NECESSARY TO ALLOW VEHICLES TO ENTER AND IMMEDIATELY CLOSE IT. BOTH GATES WILL NOT NORMALLY BE OPENED AT THE SAME TIME. THE CONTRACTOR SHALL ASSIGN AN EMPLOYEE TO ASSURE THAT GATES ARE CLOSED AND CHAINED SHUT AT THE END OF EACH WORKDAY.
- MATERIALS:** GATES OR BARRICADES SHALL BE FABRICATED OF THE FOLLOWING MATERIALS:
FIXED BARRICADE:
 POST: - 4\"/>

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH 614 AND OTHER APPLICABLE PORTIONS OF THE C & M SPECIFICATIONS AS WELL AS IN ACCORDANCE WITH PART 7 OF OMUTCD. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS TO PROVIDE THIS METHOD OF TRAFFIC CONTROL SHALL BE INCLUDED IN THE LUMP SUM BID FOR 614 MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

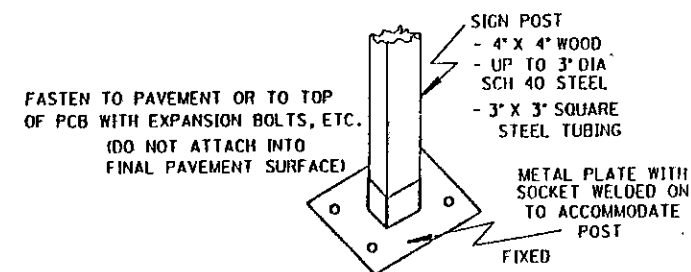
BUREAU OF DESIGN SERVICES DIVISION OF HIGHWAYS OHIO DEPARTMENT OF TRANSPORTATION	
MAINTENANCE OF TRAFFIC	DATE 04/01/90 12/12/90 07/01/92
GATES AND BARRICADES IN POSITION	
STANDARD CONSTRUCTION DRAWING	MT-101.60
APPROVED <i>[Signature]</i> ENGR. OF DESIGN SERVICES	

CLASS A SUPPORTS

FIXED

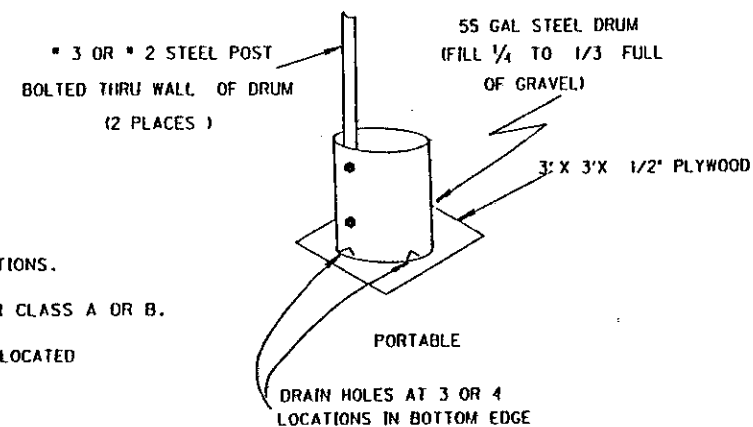


CLASS B SUPPORTS



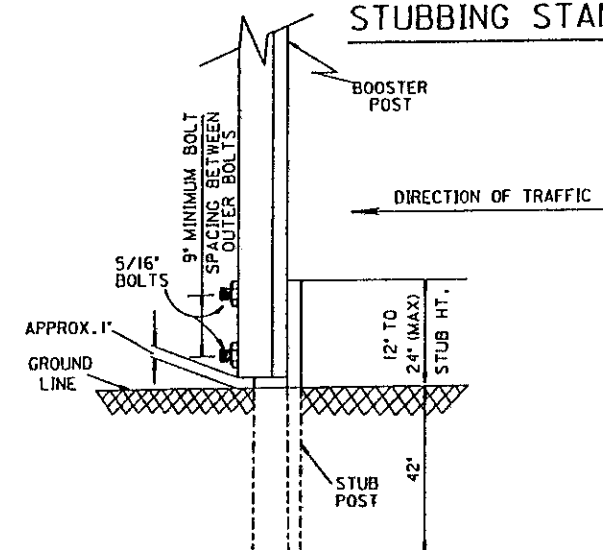
ANY CLASS A SIGN POST WITH GUY WIRES ADDED TO INCREASE SIGN CARRYING ABILITY. (GUY WIRES SHALL NOT BE HEAVIER THAN 1/8" DIA. BRAIDED CABLE. GUY ANCHORS SHALL NOT EXTEND MORE THAN 6' ABOVE GROUND SURFACE).

CLASS C SUPPORTS



CLASS A SUPPORTS

STUBBING STANDARD

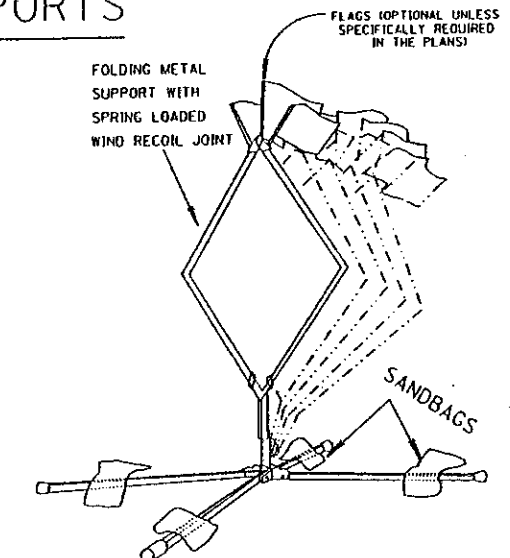
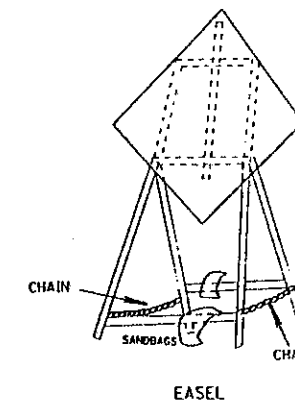
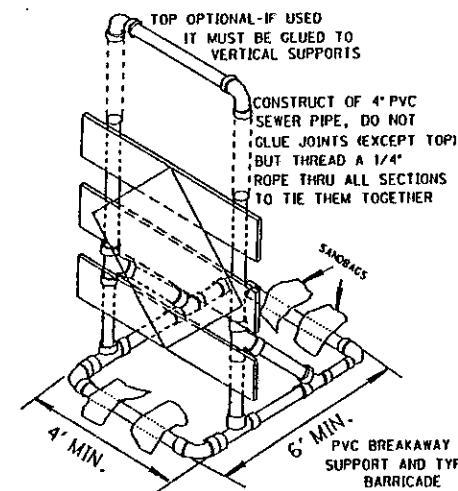


NOTES

1. FOR USE WITH #3 POST OR SMALLER ONLY
2. BOLTS SHALL BE STEEL OR ALUMINUM
3. A MINIMUM OF TWO FASTENERS SHALL BE USED PER ASSEMBLY
4. BOOSTER POST SHALL BE MOUNTED BEHIND STUB POST
5. BOOSTER POST SHALL BE THE SAME OR 1 LB./FT. LESS THAN STUB POST

CLASS A SUPPORTS

PORTABLE



NOTES

RAIL MATERIALS:

1" X 8" OR 2" X 8" COMMON LUMBER
8" X (5/8" TO 1") THICK EXTERIOR PLYWOOD
EXTRUDED PLASTIC OR FORMED SHEET METAL WITH AN 8" WIDE SURFACE AND OF SUFFICIENT STIFFNESS TO RESIST TYPICAL WIND LOADS OF UP TO 30 POUNDS PER SQUARE FOOT, BUT HAVING A WEIGHT OF NOT MORE THAN 5.0 POUNDS PER FOOT.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH 614 AND OTHER APPLICABLE PORTIONS OF THE C & M SPECIFICATIONS AS WELL AS IN ACCORDANCE WITH PART 7 OF THE OMUTED. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS TO PROVIDE THIS METHOD OF TRAFFIC CONTROL SHALL BE INCLUDED IN THE LUMP SUM BID FOR 614 MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

1. ALL BEAM TYPE SUPPORTS WITHOUT BREAKAWAY CONNECTIONS.
2. SUPPORTS SIMILAR TO BUT LARGER THAN PERMITTED FOR CLASS A OR B.
3. THE STEEL DRUM(S) SHOWN BELOW MAY BE USED ONLY WHEN LOCATED BEHIND GUARDRAIL OR BARRIER.

BUREAU OF DESIGN SERVICES DIVISION OF HIGHWAYS OHIO DEPARTMENT OF TRANSPORTATION	
MAINTENANCE OF TRAFFIC	DATE 05/07/90 07/01/92
TEMPORARY SIGN SUPPORT	
STANDARD CONSTRUCTION DRAWING	MT-105.11
APPROVED <i>[Signature]</i> ENGR. OF DESIGN SERVICES	

TEMPORARY SIGN SUPPORT REQUIREMENTS

A. PLACEMENT OF SIGNS WHICH WILL REMAIN MORE THAN ONE DAY:

- 1) LATERAL PLACEMENT TO NEAREST EDGE OF SIGNS SHALL BE AS FOLLOWS:
 - a) ON THE RIGHT SIDE OF THE ROAD FOR APPROACHING TRAFFIC (EXCEPT FOR DUAL MOUNTED SIGNS AND SIGNS DESIGNATED IN THE PLANS FOR LEFT SIDE MOUNTING).
 - b) CURBED ROADWAY - MINIMUM 2 FT. BEHIND FACE OF CURB.
 - c) UNCURBED ROADWAY-12 FT. FROM EDGE OF TRAFFIC LANE OR 6 FT. FROM EDGE OF PAVED OR USEABLE SHOULDER, WHICHEVER IS GREATER.
 - d) BEHIND GUARDRAIL OR BARRIER - PREFERABLY 2 FT. BEHIND FACE OF GUARDRAIL (MINIMUM 1 FT.) FOR SIGNS ON CLASS A SUPPORTS; 4 FT. FOR CLASS B OR C SUPPORTS; 1 FT. BEHIND FACE OF CONCRETE BARRIER UNLESS BARRIER TOP MOUNTING IS REQUIRED BY THE PLAN.
- 2) VERTICAL CLEARANCE OF SIGNS, MEASURED ABOVE ROADWAY ELEVATION, SHALL BE AS FOLLOWS:
 - a) RURAL - 5 FT. WHEN PARKED CARS, CONSTRUCTION EQUIPMENT, ETC WILL NOT OBSCURE SIGN VISIBILITY.
 - b) RURAL AREAS WITH PARKED CARS OR CONSTRUCTION EQUIPMENT - 7 FT.
 - c) URBAN - 7 FT.
 - d) CARE SHALL BE TAKEN TO ASSURE THAT SIGNS WILL NOT BE OBSCURED BY CONSTRUCTION EQUIPMENT, TREES, WEEDS OR OTHER OBSTACLES. BRUSH, WEEDS OR GRASS WITHIN THE RIGHT OF WAY SHALL BE TRIMMED AS NECESSARY. SIGNS SHALL NORMALLY BE VISIBLE TO TRAFFIC 400 TO 600 FT. IN ADVANCE OF THE SIGN.
- 3) SUPPORTS FOR SIGNS WHICH WILL REMAIN IN PLACE MORE THAN ONE DAY SHALL BE FIXED RATHER THAN PORTABLE EXCEPT IN SITUATIONS WHERE THE SIGN MUST REST ON PERMANENT PAVEMENT OR OTHER SURFACE WHICH WOULD BE DAMAGED BY INSERTION OF POST TYPE SUPPORTS.

B. PLACEMENT OF SIGNS WHICH WILL REMAIN FOR ONE DAY OR LESS:

- 1) SAME AS A-1 ABOVE EXCEPT THAT SIGNS MAY BE PLACED ON THE ROADWAY ONLY IF THEY DO NOT INTRUDE INTO A TRAFFIC LANE IN USE.
- 2) MINIMUM OF 1 FT. ABOVE ROADWAY

C. CLASSES OF SUPPORTS:

ALL TEMPORARY SIGN SUPPORTS SHALL BE OF THE FOLLOWING TYPES:

1) CLASS A:

SUPPORTS SHALL BE USED FOR EXPOSED LOCATIONS ON HIGHWAYS WHERE TRAFFIC APPROACH SPEEDS OF 40 MPH AND HIGHER ARE ENCOUNTERED. THEY ARE ALSO SUITABLE FOR USE IN ALL OTHER LOCATIONS.

2) CLASS B:

SUPPORTS SHALL BE USED FOR EXPOSED LOCATIONS ON HIGHWAYS WHERE TRAFFIC APPROACH SPEEDS OF LESS THAN 40 MPH ARE ENCOUNTERED. THEY ARE ALSO SUITABLE FOR USE IN ALL APPLICATIONS DEFINED FOR CLASS C SUPPORTS.

3) CLASS C:

SUPPORTS MAY ONLY BE USED WHERE FULLY PROTECTED BY GUARDRAIL, CONCRETE BARRIER AND IN LOCATIONS POSITIVELY PROTECTED FROM TRAFFIC SUCH AS ON RETAINING WALLS OR WHERE TRAFFIC APPROACH SPEEDS ARE LESS THAN 25 MPH.

D. TRAFFIC APPROACH SPEEDS:

TRAFFIC APPROACH SPEEDS SHALL BE THE LOCALLY POSTED SPEED (NOT ADVISORY SPEED SIGNS) OR THE MEASURED ACTUAL (85TH PERCENTILE) SPEED (IF AVAILABLE) OF APPROACHING TRAFFIC, WHICHEVER IS HIGHER, ADJACENT TO THE SIGN LOCATION.

TABLE

APPROACH SPEED (MPH)	COMPLETELY PROTECTED BY GUARDRAIL OR BARRIER	PARTLY PROTECTED BY GUARDRAIL OR BARRIER *	GREATER THAN 30' FROM EDGE OF PAVEMENT	WITHIN 30' FROM EDGE OF PAVEMENT
40 AND HIGHER	A, B OR C	A OR B	A OR B **	A ONLY
26 TO 39	A, B OR C	A OR B	A OR B	A OR B
0 TO 25	A, B OR C	A, B OR C	A, B OR C	A, B OR C

* IF SUPPORTS ARE BEHIND GUARDRAIL BUT NOT FULLY 5.5' BEHIND FACE OF RAIL OR IF SIGN IS NOT 1' BEHIND FACE OF CONCRETE BARRIER.

** 30' CRITERION IS BASED UPON STRAIGHT ROADWAY AND A SLOPE OF 6:1 OR FLATTER. SUPPORTS ON THE OUTSIDE OF CURVES OR LOCATED DOWN A SLOPE (STEEPER THAN 6:1) WILL REQUIRE USE OF CLASS A SUPPORTS.

E. BALLASTING

BALLASTING OF PORTABLE SUPPORTS SHALL BE WITH SANDBAGS PLACED WITHIN 1 FT. OF THE GROUND. IN NO CASE SHALL HARD OBJECTS BE USED FOR BALLAST.

F. STRENGTH OF SIGN SUPPORTS

THE CONTRACTOR SHALL CHOOSE SIGN SUPPORTS OF ADEQUATE STRENGTH AND WITH ADEQUATE FOUNDATIONS AND ANCHORAGE TO SUPPORT THE SIGN SIZES ERECTED. PROPRIETARY DEVICES SHALL NOT BE LOADED BEYOND THE LIMITS RECOMMENDED BY THE MANUFACTURER. SLIP BASE TYPE BREAKAWAY BEAM CONNECTIONS SHALL BE AT LEAST PARTIALLY EMBEDDED IN CONCRETE CONSISTING OF A 1 FT. DEEP BY 12" DIAMETER COLLAR. SIGN SUPPORTS WHICH FAIL UNDER TYPICAL WIND LOAD CONDITIONS SHALL BE IMMEDIATELY MODIFIED OR REPLACED WITH A SUPPORT OF ADEQUATE STRENGTH.

G. PROHIBITED SUPPORTS

THE FOLLOWING SUPPORT TYPES SHALL NOT BE PERMITTED ON PROJECTS:

- 1) SUPPORTS FABRICATED FROM AUTOMOTIVE AXLE DIFFERENTIAL ASSEMBLIES AND SIMILARLY HEAVY ASSEMBLIES WHICH CANNOT BE CONSIDERED BREAKAWAY TYPE.
- 2) SUPPORTS CONSISTING OF VERTICAL POSTS WITH ANGLED BRACES MADE FROM DRIVEPOST OR OTHER RIGID ELEMENTS.

CLASS A SUPPORTS

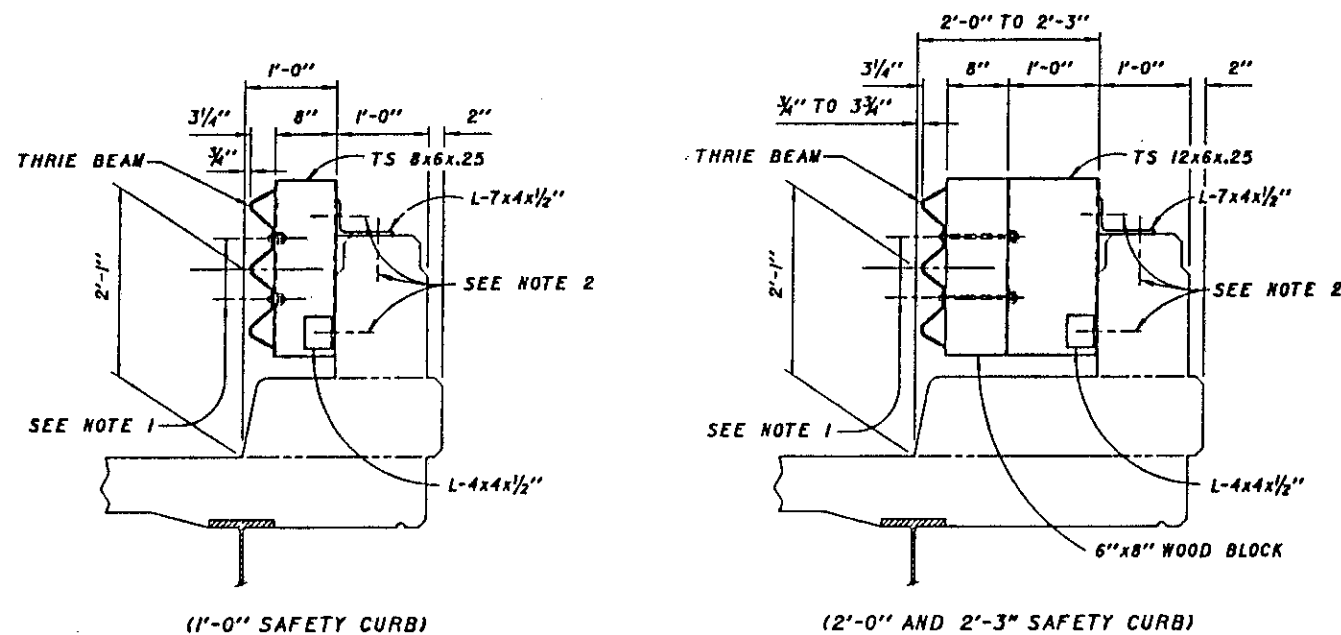
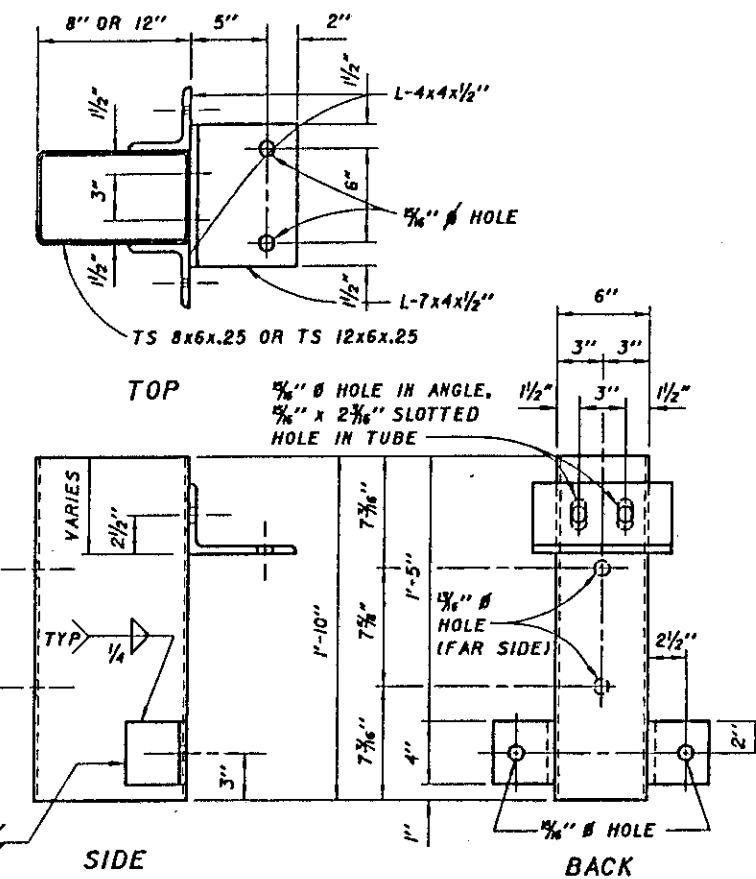
FIXED SUPPORTS

- 1) ALL #2 AND #3 POSTS WHEN INSTALLED SINGLY OR IN PAIRS (SIDE BY SIDE) ACCORDING TO THE DETAILS OF TC-41.20. THE NUMBER OF SUPPORTS SHALL BE AS SHOWN ON TC-52.10 AND TC-52.20.
- 2) THE FOLLOWING POST TYPES, WHEN INSTALLED SINGLY, BY IMBEDMENT OR DRIVING INTO EARTH TO A DEPTH OF ABOUT 42 INCHES:
 - a) - UP TO 4" X 4" WOOD
 - b) - UP TO 2 INCH DIAMETER SCHEDULE 40 STEEL PIPE
 - c) - UP TO 3 INCH DIAMETER SCHEDULE 40 ALUMINUM PIPE
 - d) - UP TO 2 1/4 INCH SQUARE, 12 GAUGE WALL, PUNCHED STEEL POST
 - e) - UP TO 6" X 8" WOOD WITH BREAKAWAY HOLES SHOWN BELOW
- 3) THE FOLLOWING POST TYPES WHEN INSTALLED IN PAIRS (SIDE BY SIDE) WITH LESS THAN 7 FT. BETWEEN POSTS, BY IMBEDMENT OR DRIVING INTO EARTH TO A DEPTH OF ABOUT 42 INCHES:
 - a) - UP TO 4" X 4" WOOD
 - b) - UP TO 2 INCH DIAMETER SCHEDULE 40 STEEL PIPE
 - c) - UP TO 3 INCH DIAMETER SCHEDULE 40 ALUMINUM PIPE
 - d) - UP TO 2 INCH SQUARE, 14 GAUGE WALL, PUNCHED STEEL POST
- 4) FIXED TYPE III BARRICADES:
- 5) ALL BREAKAWAY CONNECTION BEAM SUPPORTS, WHEN INSTALLED ACCORDING TO THE PROPER DETAILS SHOWN ON TC-41.10 WITH A MINIMUM CLEAR DISTANCE BETWEEN SUPPORTS OF 7 FT. FOR SUPPORTS LARGER THAN W6 X 9.
- 6) ANY BREAKAWAY POST OR POST AND CONNECTION WHICH HAS BEEN CRASH TESTED AND APPROVED BY THE FHWA AS SATISFYING THE BREAKAWAY CRITERIA DESCRIBED IN 630.06.

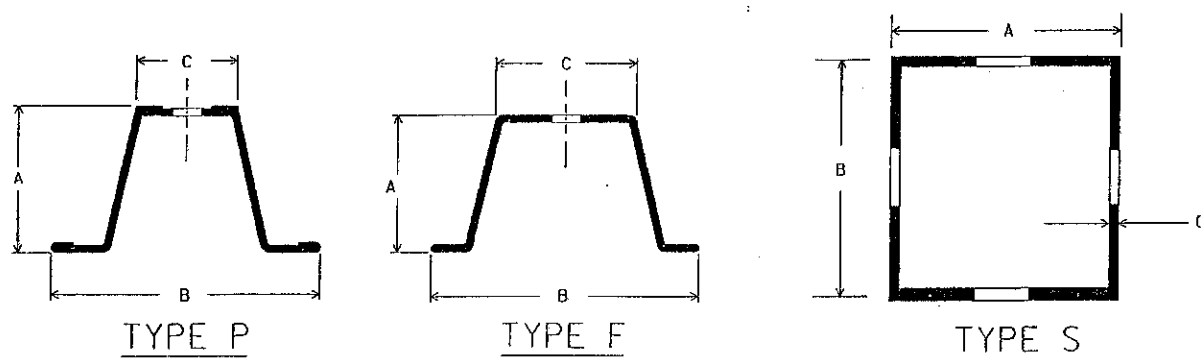
(CONTINUED ON MT-105.11)

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH 614 AND OTHER APPLICABLE PORTIONS OF THE C & M SPECIFICATIONS AS WELL AS IN ACCORDANCE WITH PART 7 OF THE OMUTCD. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS TO PROVIDE THIS METHOD OF TRAFFIC CONTROL SHALL BE INCLUDED IN THE LUMP SUM BID FOR 614 MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

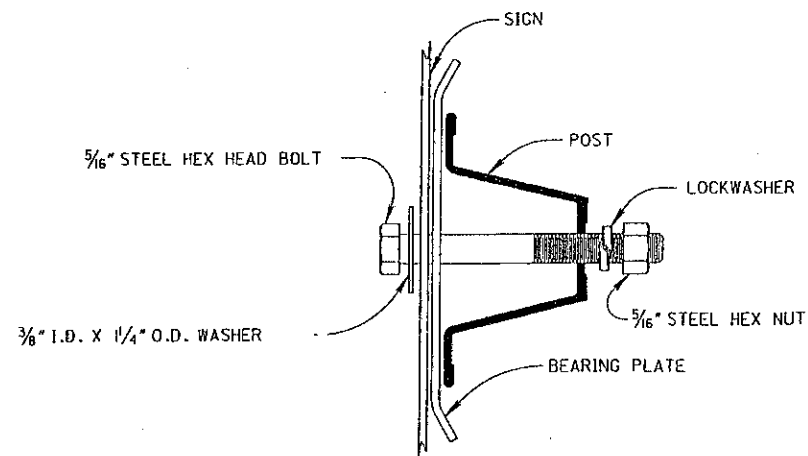
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MAINTENANCE OF TRAFFIC	DATE 05/07/90 07/01/92
TEMPORARY SIGN SUPPORT	
STANDARD CONSTRUCTION DRAWING	MT-105.10
APPROVED <i>[Signature]</i> ENGR. OF DESIGN SERVICES	



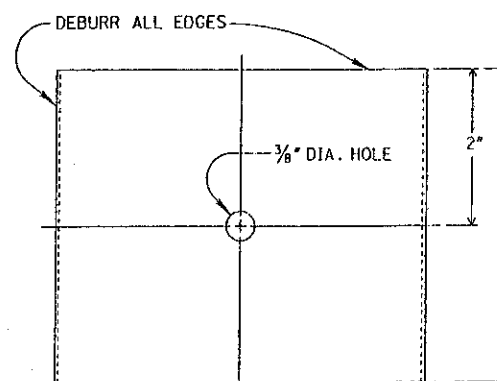
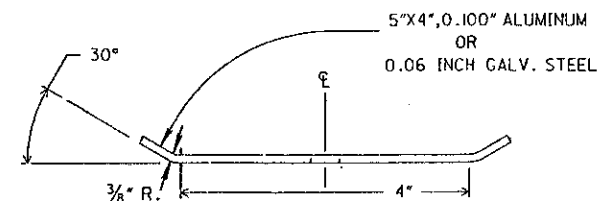
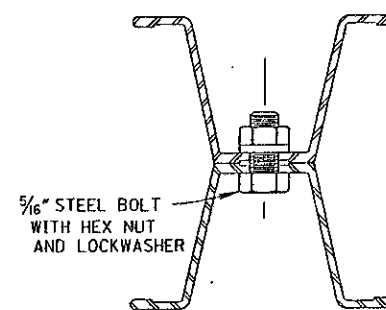
(2'-0" AND 2'-3" SAFETY CURB)



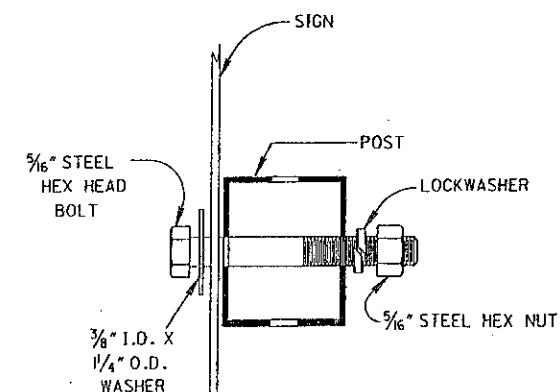
POST NO.	TYPE	LB/FT	POST DIMENSIONS (INCHES)			ANCHOR DIMENSIONS			NUMBER OF POSTS PERMITTED IN SEVEN FOOT PATH IN EXPOSED LOCATIONS
			A	B	C	A	B	C	
1	F	1.12	0.875	2.063	0.813				
	P	2.00	1.469	3.063	1.281				2
2	F	2.00	1.516	3.125	1.250				2
	S		2.000	2.000	0.083	2.250	2.250	0.105	2
3	P	3.00	1.875	3.500	1.313				2
	F	3.00	1.750	3.500	1.625				2
4	S		2.000	2.000	0.083	2.250	2.250	0.105	2
	P	4.00	TWO NO.2 POST						0
5	F	4.00	TWO NO.2 POST						0
	S		2.500	2.500	0.105	3.00	3.00	0.188	1
6	P	6.00	TWO NO.3 POST						0
	F	6.00	TWO NO.3 POST						0



U - CHANNEL SIGN ATTACHMENT DETAIL

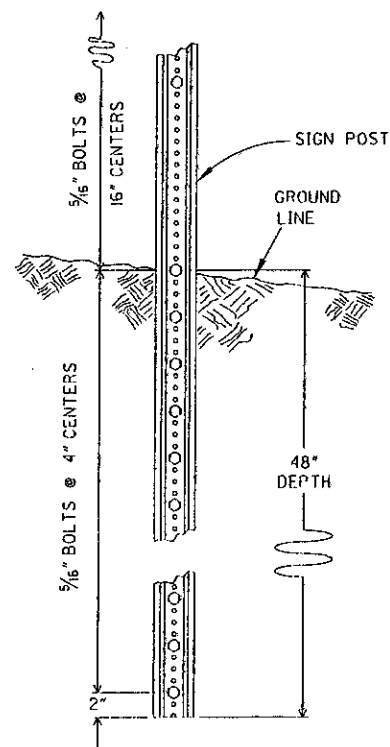


BEARING PLATE

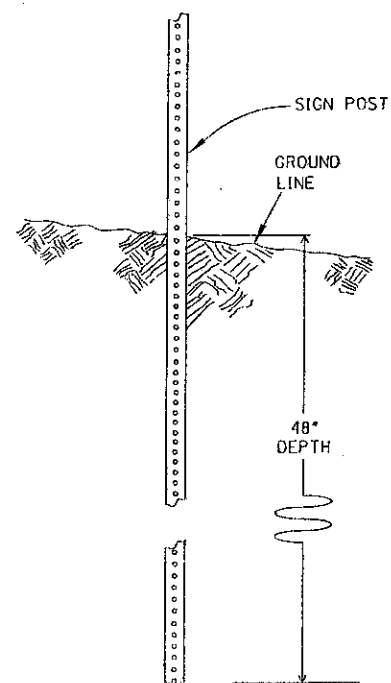


SQUARE POST

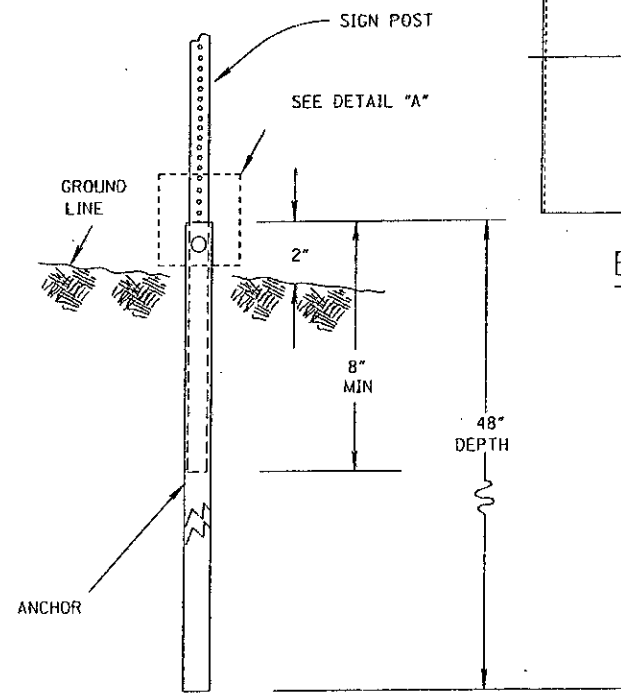
SIGN ATTACHMENT DETAIL



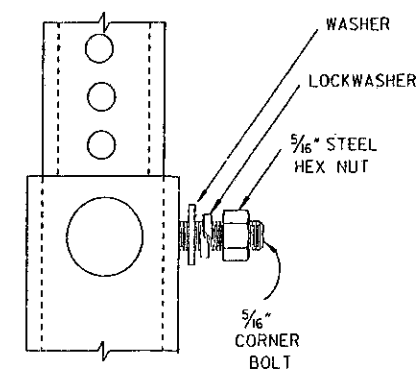
TYPICAL U - CHANNEL
DRIVEN INSTALLATION



TYPICAL SQUARE POST
DRIVEN INSTALLATION



TYPICAL SQUARE POST ANCHOR
BASE INSTALLATION



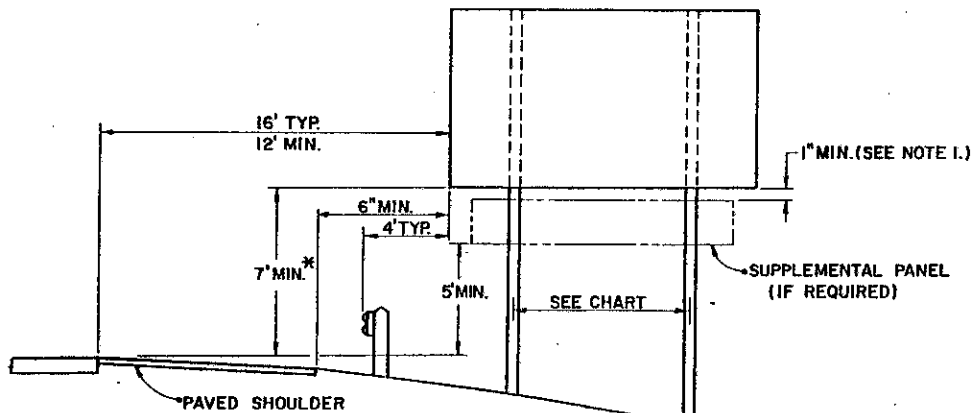
DETAIL "A"

NOTES

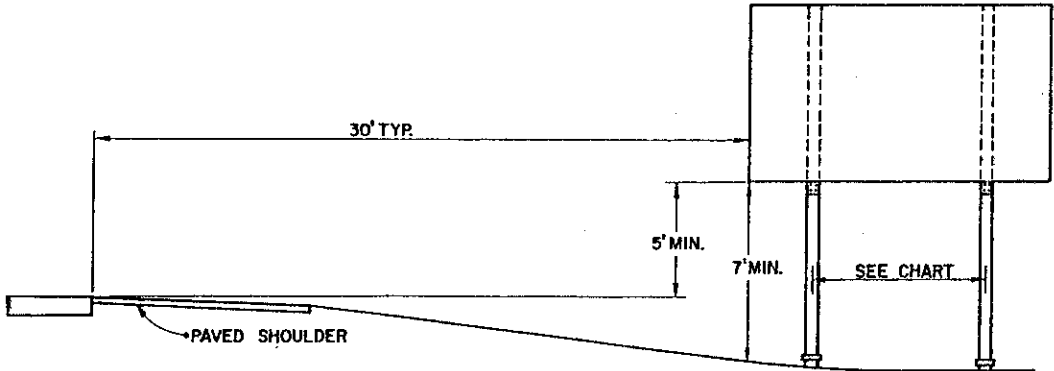
1. NUMBER 4 TYPE P AND F POST, AND NUMBER 6 TYPE P AND F POST, SHALL ONLY BE INSTALLED IN PROTECTED LOCATIONS (e.g. BEHIND GUARDRAIL). TWO POST INSTALLATIONS OF NUMBER 4 TYPE S POST SHALL BE INSTALLED IN PROTECTED LOCATIONS.
2. USE OF ANCHOR BASE WITH SQUARE POST IS OPTIONAL.
3. SQUARE POST MAY HAVE DIE-CUT KNOCKOUTS OR OPEN HOLES.

BUREAU OF DESIGN SERVICES DIVISION OF HIGHWAYS OHIO DEPARTMENT OF TRANSPORTATION	
TRAFFIC CONTROL	DATE 04/01/77 03/26/79 06/21/94
YIELDING POST	
STANDARD CONSTRUCTION DRAWING APPROVED: <i>[Signature]</i> ENGR. OF DESIGN SERVICES	TC-41.20

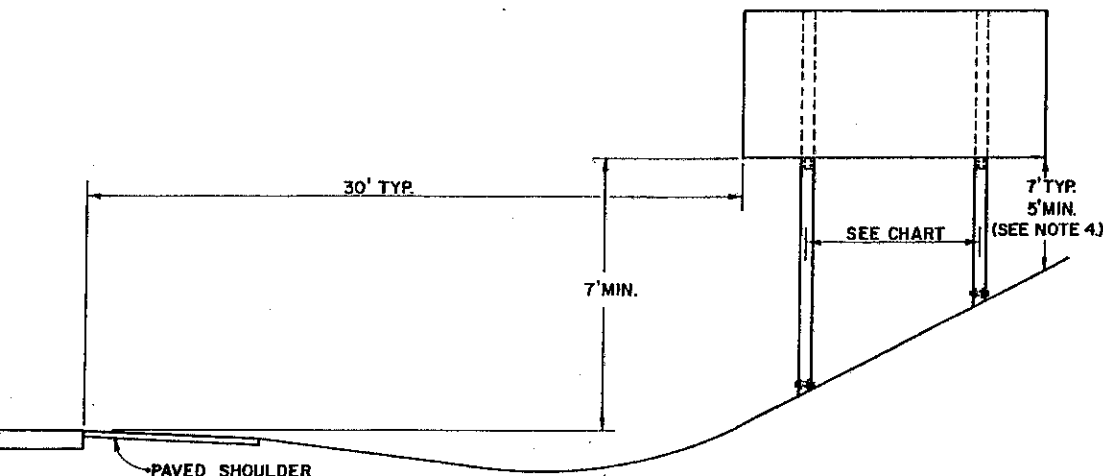
FREEWAYS AND EXPRESSWAYS



TYPICAL INSTALLATION WITH GUARDRAIL
* 8' MIN. WITH SUPPLEMENTAL PANEL.

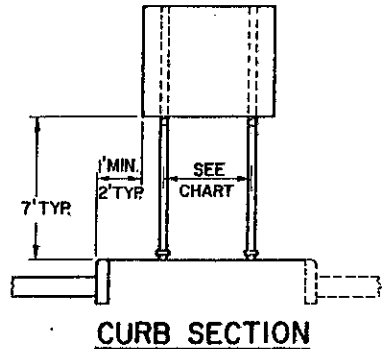
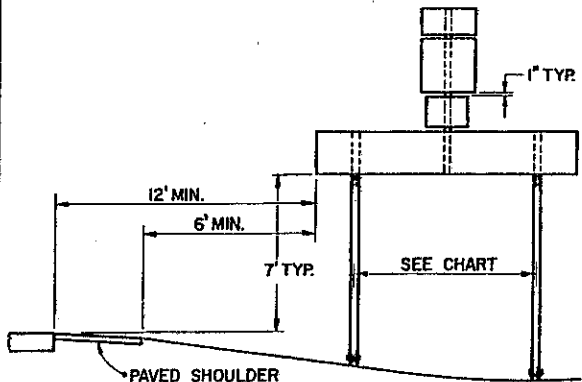


TYPICAL INSTALLATION, FILL SECTION, 30' OFFSET



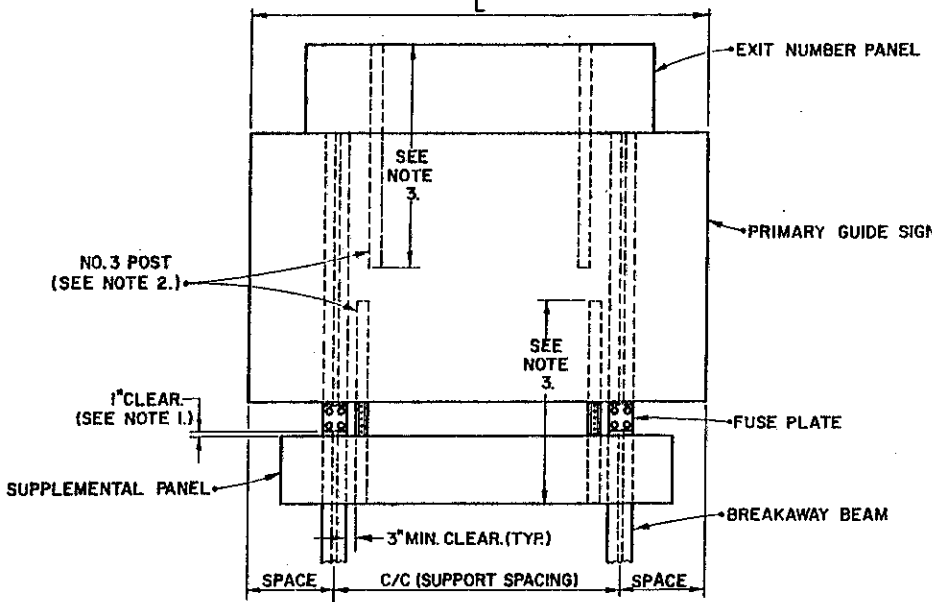
TYPICAL INSTALLATION, CUT SECTION, 30' OFFSET

STREETS-RAMPS-HIGHWAYS



NOTES

1. SUPPLEMENTAL PANELS SHALL BE MOUNTED ONE (1) INCH BELOW THE FUSE PLATE ON BREAKAWAY BEAM INSTALLATIONS AND ONE (1) INCH MINIMUM BELOW THE GUIDE SIGN WHEN THE SIGN SUPPORTS ARE RIGID BEAMS.
2. NO. 3 POST SHALL BE ATTACHED TO BOTH THE GUIDE SIGN AND THE EXIT NUMBER OR OTHER SUPPLEMENTAL PANELS BY MOUNTING CLIPS FASTENED ALTERNATELY AT EACH HORIZONTAL EXTRUSION AND BOTH SIDES AT THE TOP AND BOTTOM OF THE POSTS. NO CONNECTIONS SHALL BE MADE BETWEEN THE SUPPLEMENTAL PANEL AND BREAKAWAY BEAMS.
3. LENGTH OF POST SHALL BE 2.5 TIMES THE HEIGHT OF THE SUPPLEMENTAL PANEL. THE POST SPACING SHALL BE AS PER THE SUPPORT SPACING CHART.
4. USE 5'-0" MINIMUM IF BACK SLOPES ARE GREATER THAN 3:1.



SUPPLEMENTAL PANEL ATTACHMENT

SUPPORT SPACING CHART								
2 SUPPORTS					3 SUPPORTS			
L (feet)	SPACING (feet)				L (feet)	SPACING (feet)		
	SPACE	C/C	SPACE			SPACE	C/C	SPACE
5	1.10	2.80	1.10		20	1.50	8.50	1.50
6	1.32	3.36	1.32		21	2.00	8.50	2.00
7	1.54	3.92	1.54		22	2.50	8.50	2.50
8	1.76	4.48	1.76		23	3.00	8.50	3.00
9	1.98	5.04	1.98		24	3.36	8.64	3.36
10	2.20	5.60	2.20		25	3.50	9.00	3.50
11	2.42	6.16	2.42		26	3.64	9.36	3.64
12	1.75	8.50	1.75		27	3.78	9.72	3.78
13	2.25	8.50	2.25		28	3.92	10.08	3.92
14	2.75	8.50	2.75					
15	3.25	8.50	3.25					
16	3.52	8.96	3.52					
17	3.74	9.52	3.74					
18	3.96	10.08	3.96					
19	4.18	10.64	4.18					

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL

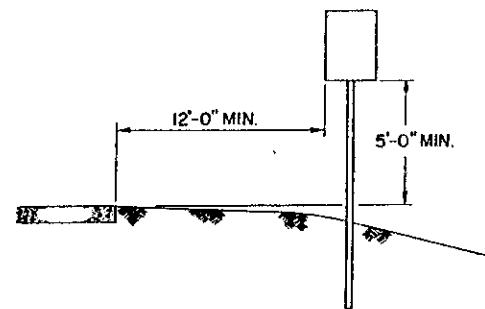
**TYPICAL SIGN PLACEMENT
GUIDE SIGNS**

**STANDARD
CONSTRUCTION
DRAWING**

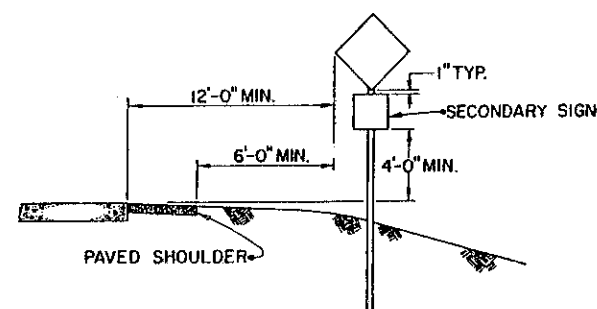
TC-42.10

APPROVED: *E. J. [Signature]* Engineer of Design Services

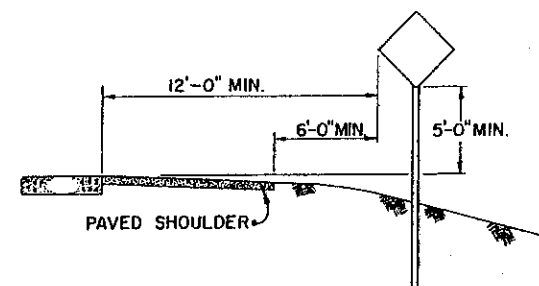
DATE
8/19/77



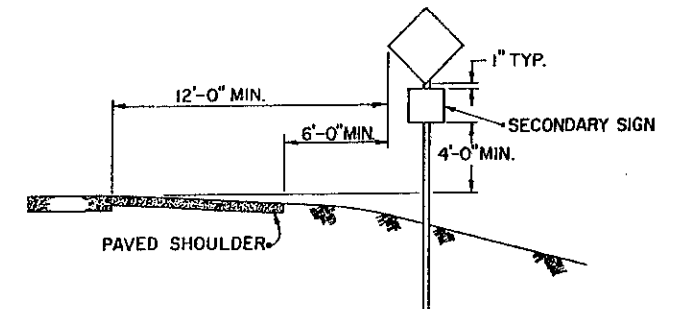
RURAL UNDIVIDED



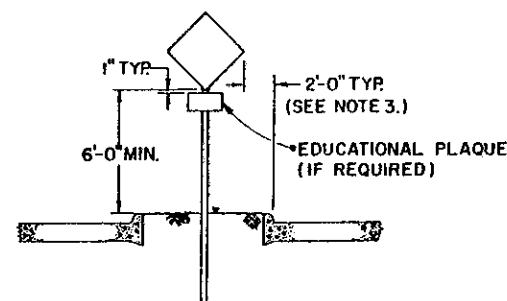
RURAL UNDIVIDED
(W / SECONDARY SIGN)



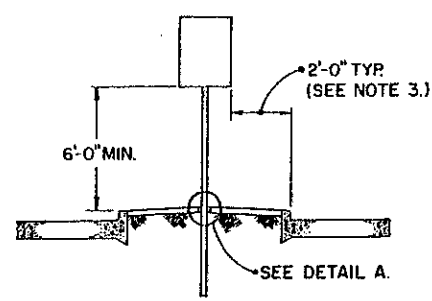
RURAL DIVIDED



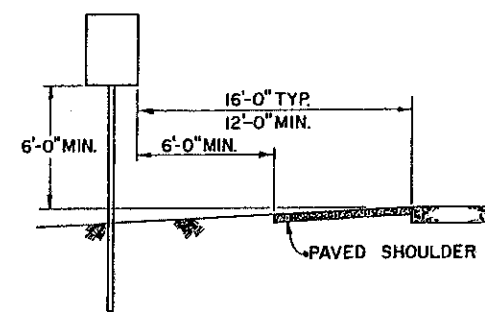
RURAL DIVIDED
(W / SECONDARY SIGN)



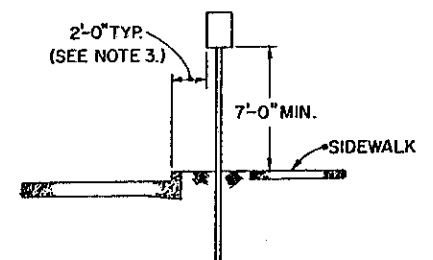
MEDIAN



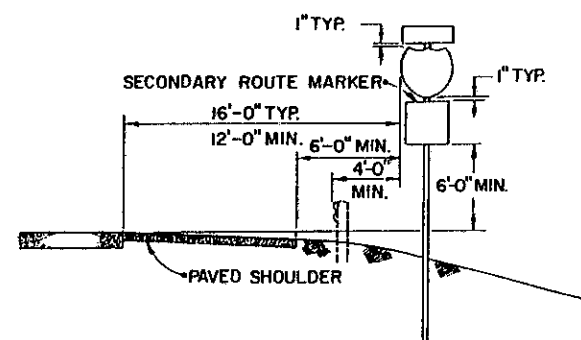
PAVED MEDIAN



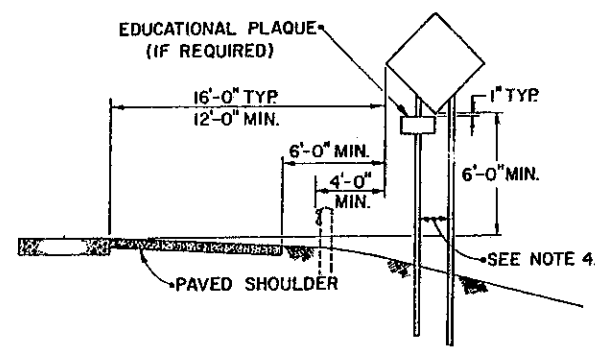
MEDIAN-EXPRESSWAY OR FREEWAY



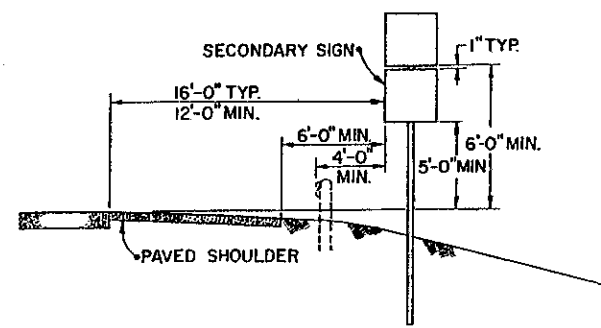
URBAN-RESIDENTIAL AND BUSINESS



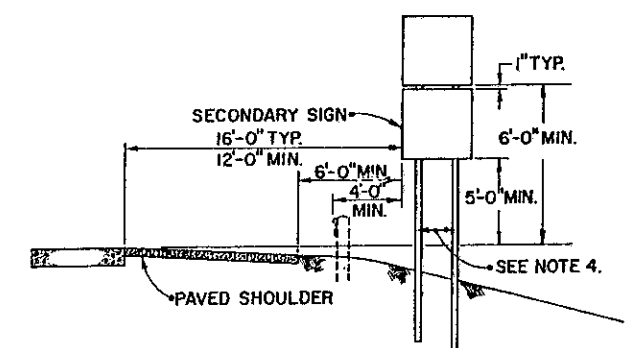
EXPRESSWAY OR FREEWAY
(W / SECONDARY SIGN)



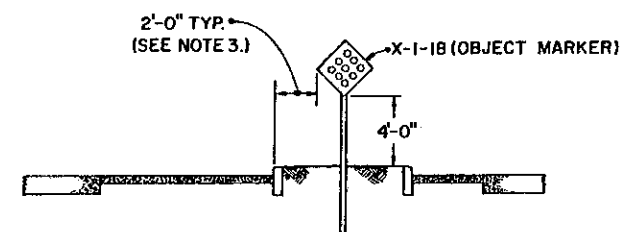
EXPRESSWAY OR FREEWAY



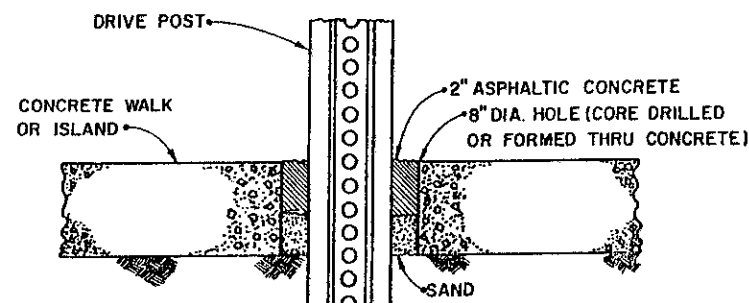
EXPRESSWAY OR FREEWAY
(W / SECONDARY SIGN)



EXPRESSWAY OR FREEWAY
(W / SECONDARY SIGN)



EXPRESSWAY OR FREEWAY



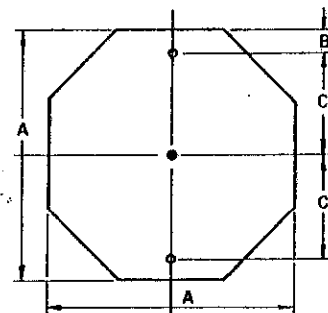
DETAIL A.

NOTES

1. SEE STANDARD CONSTRUCTION DRAWING TC-41.20 FOR DETAILS ON YIELDING SUPPORTS.
2. ALL SIGNS SHALL BE PLACED 90° TO THE ROADWAY, EXCEPT PARKING SIGNS WITH ARROW SHALL BE SET AT AN ANGLE OF NOT LESS THAN 30° NOR MORE THAN 45° WITH A LINE PARALLEL TO THE FLOW OF TRAFFIC.
3. A CLEARANCE OF ONE FOOT IS PERMISSIBLE WHERE SIDEWALK WIDTH IS LIMITED OR WHERE EXISTING POLES ARE CLOSE TO THE CURB.
4. SEE STANDARD CONSTRUCTION DRAWINGS TC-52.10 AND TC-52.20 FOR DIMENSIONS BETWEEN SUPPORTS.

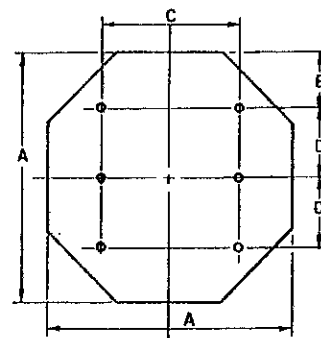
ALL ITEMS SHALL CONFORM TO SUPPLEMENTAL SPECIFICATIONS 857 AND 957, UNLESS OTHERWISE SPECIFIED

BUREAU OF DESIGN SERVICES DIVISION OF HIGHWAYS OHIO DEPARTMENT OF TRANSPORTATION	
TRAFFIC CONTROL	DATE
TYPICAL SIGN PLACEMENT REGULATORY, WARNING AND ROUTE MARKER SIGNS	4/11/77 3/26/79
STANDARD CONSTRUCTION DRAWING	
TC-42.20	
APPROVED: <i>E. J. [Signature]</i> Engineer of Design Services	



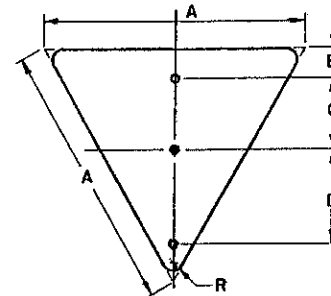
OCTA-1-3

A	B	C	GAUGE	SQ. FT.
30	3	12	.080	6.25
36	6	12	.080	9.00



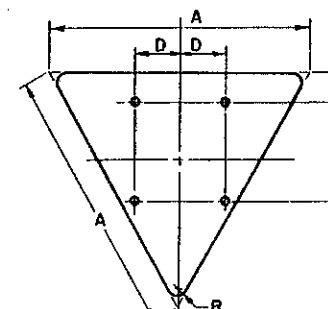
OCTA-2-6

A	B	C	D	GAUGE	SQ. FT.
48	12	24	12	.100	16.00



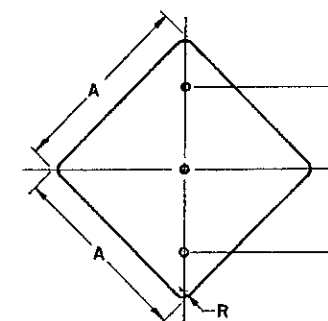
TRI-1-3

A	B	C	D	R	GAUGE	SQ. FT.
36	3	10	11	2.00	.100	3.90



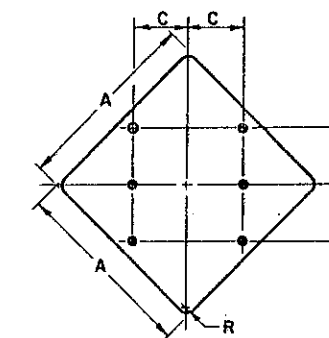
TRI-2-4

A	B	C	D	R	GAUGE	SQ. FT.
48	3	12	12	3	.100	6.93
60	3	18	15	4	.100	10.83



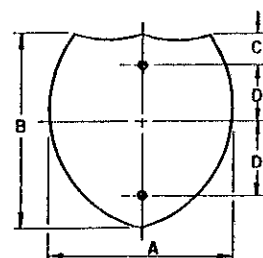
DIA-1-3

A	B	R	GAUGE	SQ. FT.
24	12	1.50	.063	4.00
30	15	1.88	.080	6.25
36	18	2.25	.080	9.00



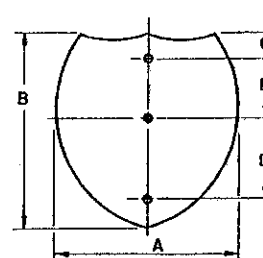
DIA-2-6

A	B	C	R	GAUGE	SQ. FT.
48	15	15	3	.100	16.00
60	18	18	3.75	.100	25.00



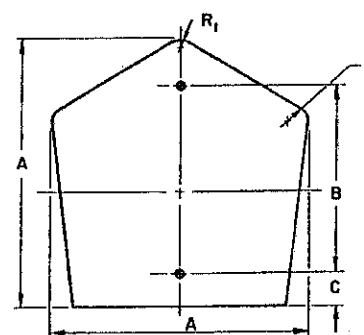
I.S.-1-2

A	B	C	D	GAUGE	SQ. FT.
24	24	3	9	.063	4.00
30	24	3	9	.080	5.00
30	30	3	12	.080	6.25
40	30	3	12	.080	8.33



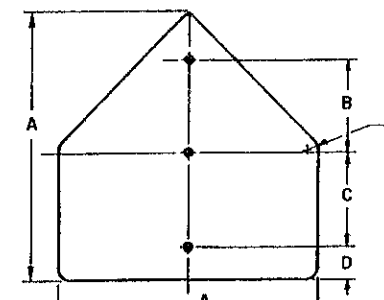
I.S.-1-3

A	B	C	D	GAUGE	SQ. FT.
36	36	6	12	.080	9.00
48	36	6	12	.100	12.00



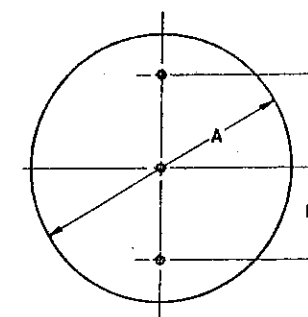
CO-1-2

A	B	C	R ₁	R	GAUGE	SQ. FT.
18	15	1	5	2	.063	2.25
24	18	2	5.31	2.69	.063	4.00
30	24	2	6.63	3.38	.080	6.25



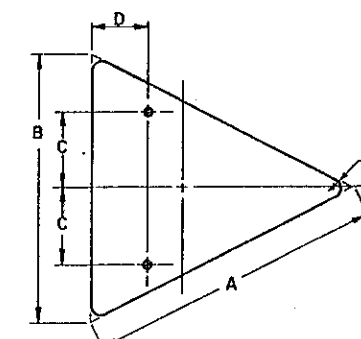
PENT-1-3

A	B	C	D	R	GAUGE	SQ. FT.
30	10	11	3	1.88	.080	6.25
36	12	12	3	2.25	.080	9.00
42	14	13	4	2.50	.100	12.25



CIR-1-3

A	B	GAUGE	SQ. FT.
30	12	.063	6.25
36	15	.080	9.00

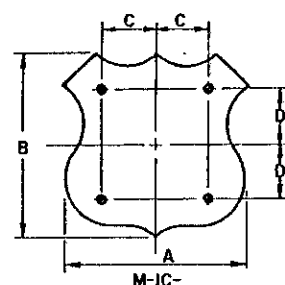


ISOS-1-2

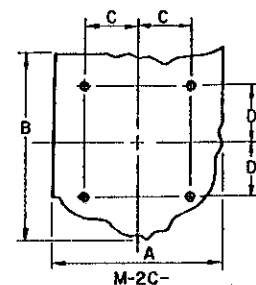
A	B	C	D	R	GAUGE	SQ. FT.
40	30	7.50	12	1.88	.080	3.86
48	36	9	15	2.25	.100	5.56

ROUTE SHIELDS

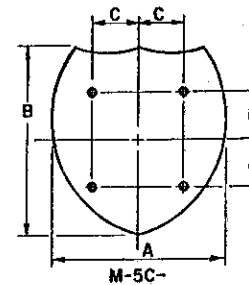
(FOR GUIDE SIGNS ONLY)



A	B	C	D
24	24	7	7
30	24	8	8
30	30	9	9
37.5	30	9	9
36	36	10	10
45	36	15	10



A	B	C	D
24	24	7	7
30	24	8	8
30	30	9	9
37.5	30	9	9
36	36	10	10
45	36	15	10



A	B	C	D
24	24	7	7
30	24	8	8
30	30	9	9
40	30	9	9
36	36	10	10
48	36	15	10

ALL SHIELDS SHALL BE .063 GAUGE

NOTES

1. ALL DIMENSIONS ARE IN INCHES, UNLESS OTHERWISE NOTED.
2. ALL BOLT HOLES SHALL BE $\frac{3}{8}$ " DIAMETER, AND MAY BE DRILLED OR PUNCHED TO FINISHED SIZE.
3. DIMENSIONS BETWEEN BOLT HOLES SHALL BE TO TOLERANCE OF $\pm \frac{1}{32}$ INCH.
4. FOR ADDITIONAL BLANK DETAILS SEE SIGN LAYOUT DRAWINGS.

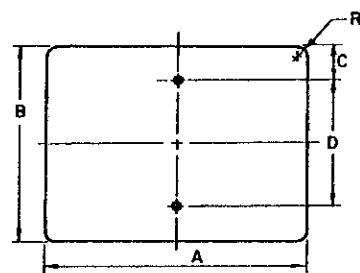
SHAPE NO. BOLTS REQUIRED

OCTA-2-6

NO. SUPPORT REQUIRED

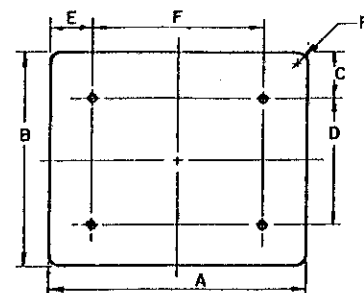
ALL ITEMS SHALL CONFORM TO SUPPLEMENTAL SPECIFICATIONS 857 AND 957, UNLESS OTHERWISE SPECIFIED.

BUREAU OF DESIGN SERVICES DIVISION OF HIGHWAYS OHIO DEPARTMENT OF TRANSPORTATION	
TRAFFIC CONTROL	
SIGN BLANK DETAILS I	
STANDARD CONSTRUCTION DRAWING	
APPROVED: <i>[Signature]</i> Engineer of Design Services	
TC-52.10	
DATE	4/1/77 4/3/79



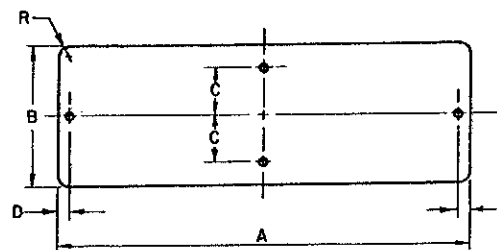
H-REC-1-2

A	B	C	D	R	GAUGE	SQ. FT.
12	6	1.50	3	1.50	.063	.50
18	6	1.50	3	1.50	.063	.75
18	12	1.50	9	1.50	.063	1.50
21	15	1.50	12	1.50	.063	2.19
21	18	3	12	1.50	.063	2.63
24	6	1.50	3	1.50	.063	1.00
24	8	1.50	5	1.50	.063	1.33
24	10	1.50	7	1.50	.063	1.67
24	12	1.50	9	1.50	.063	2.00
24	18	3	12	1.50	.063	3.00
30	8	1.50	5	1.50	.063	1.67
30	10	1.50	7	1.50	.063	2.08
30	12	1.50	9	1.50	.080	2.50
30	15	1.50	12	1.50	.080	3.13
30	16	1.50	13	1.50	.080	3.33
30	18	3	12	1.50	.080	3.75
30	24	3	18	1.50	.080	5.00
36	6	1.50	3	1.50	.080	1.50
36	12	1.50	9	1.50	.080	3.00
36	15	1.50	12	1.50	.080	3.75
36	18	3	12	1.50	.080	4.50
36	24	3	18	1.50	.080	6.00
37.5	30	3	24	1.50	.080	7.81
42	15	1.50	12	1.50	.080	4.38
48	20	3	14	1.50	.080	6.67



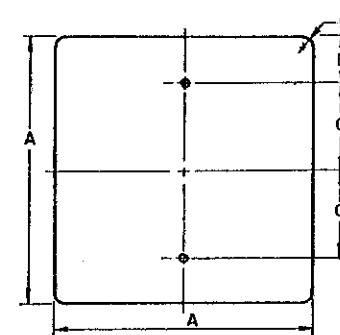
H-REC-2-4

A	B	C	D	E	F	R	GAUGE	SQ. FT.
36	24	3	18	6	24	1.50	.080	6.00
36	30	3	24	6	24	1.88	.080	7.50
40	20	3	14	6	28	1.50	.080	5.56
42	36	6	24	9	24	2.25	.100	10.50
45	36	6	24	9	27	2.25	.100	11.25
48	8	1.50	5	9	30	1.50	.080	2.67
48	8.50	1.50	5.50	9	30	1.50	.080	2.83
48	14	1.50	11	9	30	1.50	.080	4.67
48	16	1.50	13	9	30	1.50	.080	5.33
48	18	3	12	9	30	1.50	.080	6.00
48	24	3	18	9	30	1.88	.100	8.00
48	30	3	24	9	30	1.88	.100	10.00
48	36	6	24	9	30	2.25	.100	12.00
48	42	6	30	9	30	2.25	.100	14.00
56	8	1.50	5	12	32	1.50	.100	3.11
60	12	1.50	9	12	36	1.50	.080	5.00
60	24	3	18	12	36	1.50	.100	10.00
60	30	3	24	12	36	1.88	.100	12.50
60	36	6	24	12	36	2.25	.100	15.00
60	40	6	28	12	36	2.25	.100	16.67
64	8	1.50	5	12	40	1.50	.100	3.56
66	24	3	18	12	42	1.50	.100	11.00
66	36	6	24	12	42	2.25	.100	16.50
72	12	1.50	9	12	48	1.50	.100	6.00
72	18	3	12	12	48	1.50	.100	9.00
72	24	3	18	12	48	1.50	.100	12.00
72	36	6	24	12	48	1.50	.100	18.00



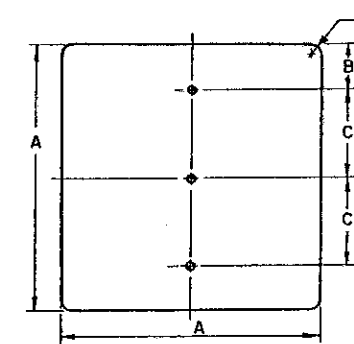
H-REC-1-4 (ONE WAY)

A	B	C	D	R	GAUGE	SQ. FT.
36	12	4	1	1.50	.080	3.00
48	18	6	1.50	1.50	.100	6.00



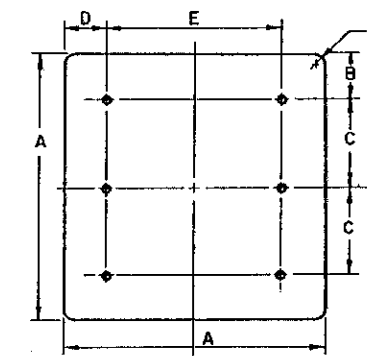
SQ-1-2

A	B	C	R	GAUGE	SQ. FT.
15	3	4 1/2	1.50	.063	1.56
18	3	6	1.50	.063	2.25
24	3	9	1.50	.063	4.00



SQ-1-3

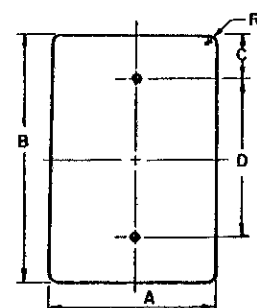
A	B	C	R	GAUGE	SQ. FT.
30	3	12	1.88	.080	6.25
36	6	12	2.25	.080	9.00



SQ-2-6

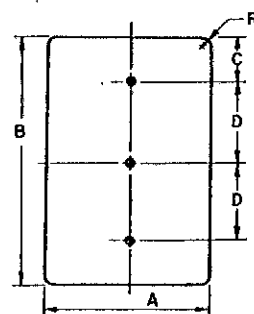
A	B	C	D	E	R	GAUGE	SQ. FT.
36	6	12	6	24	2.25	.080	9.00
48	6	18	9	30	3.00	.100	16.00

* "DO NOT ENTER" SIGN.



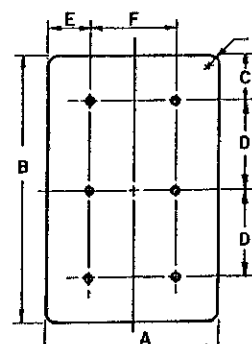
V-REC-1-2

A	B	C	D	R	GAUGE	SQ. FT.
8	26	3	16	1.50	.063	1.44
9	12	1.50	9	1.50	.063	.75
12	18	1.50	15	1.50	.063	1.50
12	24	3	18	1.50	.063	2.00
18	24	3	18	1.50	.063	3.00



V-REC-1-3

A	B	C	D	R	GAUGE	SQ. FT.
6	54	9	18	1.50	.080	2.25
12	36	3	15	1.50	.063	3.00
12	48	6	18	1.50	.080	4.00
24	30	3	12	1.50	.080	5.00
24	36	3	15	1.50	.080	6.00
24	48	9	15	1.50	.100	8.00
30	36	3	15	1.88	.080	7.50
30	38	3	16	1.50	.080	7.92
30	42	9	12	1.50	.080	8.75
36	42	9	12	2.25	.100	10.50



V-REC-2-6

A	B	C	D	E	F	R	GAUGE	SQ. FT.
36	48	6	18	6	24	2.25	.080	12.00
36	54	6	21	6	24	2.25	.100	13.50
36	60	6	24	6	24	2.25	.100	15.00
36	72	9	27	6	24	2.25	.100	18.00
48	54	6	21	9	30	3.00	.100	18.00
48	60	6	24	9	30	3.00	.100	20.00
48	96	12	36	9	30	3.00	.100	32.00

NOTES

1. ALL DIMENSIONS ARE IN INCHES, UNLESS OTHERWISE NOTED.
2. ALL BOLT HOLES SHALL BE $\frac{3}{8}$ " DIAMETER, AND MAY BE DRILLED OR PUNCHED TO FINISHED SIZE.
3. DIMENSIONS BETWEEN BOLT HOLES SHALL BE TO TOLERANCE OF $\pm \frac{1}{32}$ " INCH.
4. FOR ADDITIONAL BLANK DETAILS SEE SIGN LAYOUT DRAWINGS.

SHAPE **H-REC-2-4** NO. BOLTS REQUIRED
NO. SUPPORTS REQUIRED

ALL ITEMS SHALL CONFORM TO SUPPLEMENTAL SPECIFICATIONS 857 AND 957, UNLESS OTHERWISE SPECIFIED.

BUREAU OF DESIGN SERVICES DIVISION OF HIGHWAYS OHIO DEPARTMENT OF TRANSPORTATION	
TRAFFIC CONTROL	DATE 4/1/77 4/3/79
SIGN BLANK DETAILS II	
STANDARD CONSTRUCTION DRAWING APPROVED: <i>E. J. [Signature]</i> Engineer of Design Services	
TC-52.20	