

LOCATION MAP

LONG/LAT: 81° 59' 19" / 39° 53' 11"

PORTION TO BE IMPROVED

DESIGN DESIGNATION	LOC. 1	LOC. 2	LOC. 3
	8.86-13.02	13.02-15.02	15.02-16.64
Functional Classification	RMC	RPA	UPA
Opening Year ADT (2011)	12300	12300	11700
Design Year ADT (2023)	13700	13700	13000
Design Hourly Volume (2023)	1370	1370	1300
Directional Distribution	55%	55%	55%
Trucks (24 Hour B&C)	8%	8%	8%
Design Speed	55mph	55mph	55mph
Legal Speed	55mph	55mph	35mph

RMA = RURAL MAJOR COLLECTOR  
 RPA = RURAL PRINCIPAL ARTERIAL  
 UPA = URBAN PRINCIPAL ARTERIAL

DESIGN EXCEPTIONS: NONE

**UNDERGROUND UTILITIES**  
 CONTACT BOTH SERVICES  
 CALL TWO WORKING DAYS  
**BEFORE YOU DIG**  
 CALL  
 1-800-362-2764  
 (TOLL FREE)  
 OHIO UTILITIES PROTECTION SERVICE  
 NON-MEMBERS  
 MUST BE CALLED DIRECTLY  
 OIL & GAS PRODUCERS PROTECTIVE  
 SERVICE CALL: 1-800-925-0988

PLAN PREPARED BY:  
 OHIO DEPARTMENT OF TRANSPORTATION  
 DISTRICT 5 PRODUCTION OFFICE

ENGINEER'S SEAL  
  
 DOUGLAS N. MORGAN  
 E-63839  
 REGISTERED PROFESSIONAL ENGINEER  
 SIGNED: *Douglas N. Morgan*  
 DATE: 2-18-2011

STATE OF OHIO  
 DEPARTMENT OF TRANSPORTATION

**MUS-60-8.86**

CITY OF ZANESVILLE

WAYNE TOWNSHIP

MUSKINGUM COUNTY

INDEX OF SHEETS:

TITLE SHEET ..... 1  
 GENERAL NOTES ..... 2-4  
 ASPHALT CONCRETE DATA ..... 5  
 SHOULDER TREATMENT DATA ..... 6  
 EXTRA AREA DATA ..... 7-8  
 BRIDGE TREATMENT DATA ..... 9  
 CURB RAMP DATA/PLAN SHEET ..... 10  
 CURB RAMP AND DETECTABLE WARNING DETAILS ..... 11-13  
 PAVEMENT MARKING DATA ..... 14-18  
 RAISED PAVEMENT MARKER DATA ..... 19  
 GUARDRAIL DATA ..... 20  
 LOCATION SUB-SUMMARIES ..... 21-23  
 GENERAL SUMMARY ..... 24-25

STANDARD CONSTRUCTION DRAWINGS				SUPPLEMENTAL SPECIFICATIONS	
BP-3.1	10-19-07	TC-65.10	1-21-05	800	1-21-11
BP-4.1	7-16-04	TC-65.11	1-21-05	832	5-5-09
BP-5.1	7-28-00	TC-71.10	1-21-11	817	7-16-10
		TC-73.10	1-19-01		
GR-1.1	7-16-04	TC-82.10	1-21-11		
GR-2.1	1-16-04	DBR-2-73	7-19-02		
GR-2.4	4-18-03	MT-35.10	4-20-01		
GR-3.2	10-16-09	MT-95.31	7-17-09		
GR-3.4	10-16-09	MT-95.32	7-17-09		
GR-4.2	1-19-07	MT-97.10	10-15-10		
GR-5.1	4-16-10	MT-97.12	10-15-10		
GR-5.2	4-16-10	MT-99.20	1-16-09		
GR-5.3	4-16-10	MT-101.90	1-16-09		
GR-6.1	4-16-10	MT-105.10	1-16-09		

LOCATION	COUNTY	ROUTE	BEGIN SLM	END SLM	LENGTH MILES	CITY/VILLAGE
1	MUS	60	8.86	13.02	4.16	
2	MUS	60	13.02	15.02	2.00	
3	MUS	60	15.02	16.64	1.62	ZANESVILLE

2010 SPECIFICATIONS

THE STANDARD 2010 SPECIFICATIONS OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PLANS AND THE PROPOSAL SHALL GOVERN THESE IMPROVEMENTS.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THESE IMPROVEMENTS WILL NOT REQUIRE THE CLOSING OF THE HIGHWAY AND PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS INDICATED IN THE PROPOSAL.

APPROVED *[Signature]*  
 DATE 2/18/11 DISTRICT DEPUTY DIRECTOR

APPROVED \_\_\_\_\_  
 DATE \_\_\_\_\_ DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO.  
**E090 (676)**

FID NO.  
**86512**

CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT  
**NONE**

**MUS-60-8.86**

**UTILITIES**

THERE ARE NO UNDERGROUND UTILITIES SHOWN ON THIS PLAN. THE NATURE OF THE WORK REQUIRED BY THIS PROJECT WILL NOT AFFECT ANY KNOWN UNDERGROUND UTILITIES THAT EXIST UNDER OR ADJACENT TO THE WORK AREA.

**NOTIFICATION OF ROAD CLOSURE OR RESTRICTION**

IN ORDER FOR ODOT TO PROPERLY PERMIT OVERSIZE LOADS, PREPARE PROPER SIGNING WHEN REQUIRED AND FURTHER TO NOTIFY THE GENERAL MOTORING PUBLIC, THE CONTRACTOR SHALL NOTIFY (IN WRITING THE DISTRICT 5 HIGHWAY MANAGEMENT ADMINISTRATOR WITH COPIES FOR THE DISTRICT 5 ROADWAY SERVICES MANAGER AND PROJECT ENGINEER NOT LESS THAN 21 DAYS BEFORE SUCH CLOSURE OR LANE RESTRICTIONS.

SEND NOTIFICATION TO:  
DISTRICT 5 HIGHWAY MANAGEMENT ADMINISTRATOR  
P.O. BOX 306  
JACKSONSTOWN, OH 43030  
PHONE: (740) 323-4400 EXT. 5241

**ITEM 617, COMPACTED AGGREGATE, AS PER PLAN**

ALL AGGREGATE SHALL BE 100% CRUSHED LIMESTONE. ALL QUALITY REQUIREMENTS EXCEPT SHALE SHALL BE WAIVED. OTHER GRADATION REQUIREMENTS SHALL BE AS SPECIFIED EXCEPT THE INDEX SHALL BE WAIVED. IF SO PERMITTED, THE CONTRACTOR MAY USE ASPHALT CONCRETE PAVEMENT (RACP MEETING REQUIREMENTS OF 617.02) IN LIEU OF CRUSHED LIMESTONE.

**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 FOR ESTIMATING PURPOSES ONLY.

**ITEM 407, TACK COAT FOR INTERMEDIATE COURSE**

THE RATE OF APPLICATION OF THE 407 TACK COAT FOR INTERMEDIATE COURSE SHALL BE SUBJECT TO ADJUSTMENT AS DIRECTED BY THE ENGINEER. PLAN QUANTITIES INDICATE AN AVERAGE APPLICATION RATE OF 0.05 GALLONS PER SQUARE YARD FOR ESTIMATING PURPOSES ONLY.

**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 RESTRICTIONS**

THE CONTRACTOR CANNOT WORK WITHIN LOCATION 3 UNTIL JULY 31, 2011, DUE TO WATER LINE UTILITY WORK.

THE CONTRACTOR WILL NOT BE ENTITLED TO ANY COMPENSATION FOR DELAYS DUE TO THE WATER LINE NOT BEING COMPLETED.

**ITEM 516, 2" DEEP JOINT SEALER, AS PER PLAN**

THE CONTRACTOR SHALL PLACE A 1" X 2.0" DEEP BEAD OF JOINT SEALER (AS PER 705.04) AT THE LOCATIONS SHOWN IN PLANS. THE CONTRACTOR SHALL SAW CUT A CHANNEL FOR THE JOINT SEALER. THE COST FOR SAW CUTTING THE CHANNEL FOR THE JOINT SEALER SHALL BE INCLUDED FOR PAYMENT WITH ITEM 516, 2" DEEP JOINT SEALER, AS PER PLAN.

**MAIL BOX TURN OUTS**

A QUANTITY OF ASPHALT CONCRETE HAS BEEN PROVIDED IN THE PLAN TO COVER MAIL BOX TURN-OUTS. TURN-OUTS SHALL BE PAVED AS SHOWN IN THE DETAIL IN DRAWING BP-4.1. ANY EXTRA GRADING OF THE SHOULDERS, PRIME OR TACK COAT, MATERIALS, LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE MAIL BOX TURN OUTS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE ITEMS LISTED BELOW.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE SUB-SUMMARIES FOR THE ABOVE PURPOSES.

**ITEM 448, ASPHALT CONCRETE INTERM. COURSE, TYPE 2, PG 64-22**  
LOCATION 1 - 21 CU.YD.  
LOCATION 2 - 10 CU.YD.

**ITEM 448, ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG 70-22M**  
LOCATION 1 - 15 CU.YD.  
LOCATION 2 - 7 CU.YD.

**ITEM 202, WEARING COURSE REMOVED**  
LOCATION 1 - 620 SQ.YD.  
LOCATION 2 - 310 CU.YD.

**ITEM 408, PRIME COAT, AS PER PLAN**

THE CONTRACTOR SHALL APPLY ONE COAT OF MC-70 (AS PER SECTION 702) AT A RATE OF 0.40 GALLON PER SQUARE YARD TO THE COMPLETED AGGREGATE SHOULDER (ITEM 617) AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE A SHIELD TO PREVENT THE SPRAYING OR DRIFTING OF LIQUID BITUMINOUS MATERIAL ONTO THE EDGE OF PAVEMENT OR EDGE LINE. THE ATTENTION OF THE CONTRACTOR IS DIRECTED TO 107.10 OF THE SPECIFICATIONS.

THE FOLLOWING QUANTITIES OF PRIME COAT, AS PER PLAN HAVE BEEN CARRIED TO THE SUB-SUMMARIES AND SHALL INCLUDE ALL LABOR, MATERIAL AND EQUIPMENT TO PERFORM THE ABOVE MENTIONED WORK.

**ITEM 408 PRIME COAT, AS PER PLAN**  
LOCATION 1 - 9,762 SQ.YD. x 0.40 GAL./SQ YD = 3901 GAL  
LOCATION 2 - 4,694 SQ.YD. x 0.40 GAL./SQ YD = 1878 GAL

**PAVEMENT MARKING**

STOP LINES, CROSSWALK LINES, CHANNELIZING LINES, ETC., SHOWN IN THE PLANS ARE TAKEN FROM EXISTING MARKINGS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DOCUMENT EXISTING MARKING LOCATIONS (i.e. BY USE OF VIDEO, PICTURES) AND PLACE NEW PAVEMENT MARKINGS AS NEAR AS POSSIBLE TO THE EXISTING LOCATIONS UNLESS OTHERWISE DIRECTED BY THE ENGINEER. DOCUMENTATION OF PAVEMENT MARKING SHALL BE SUPPLIED TO THE ENGINEER BEFORE COMMENCEMENT OF ANY OPERATION WHICH WILL REMOVE/OBLITERATE MARKINGS.

**ITEM 614, WORK ZONE MARKING SIGN**

IN ACCORDANCE WITH CMS SECTION 614.04, THE QUANTITIES OF WORK ZONE MARKING SIGN HAVE BEEN CARRIED TO THE SUB-SUMMARIES TO BE USED AS DIRECTED BY THE ENGINEER.

W8-H12a (NO EDGE LINES): LOCATION 1 - 4 EACH, LOCATION 2 - 2 EACH  
W8-H15 (GROOVED PAVEMENT): LOCATION 1 - 4 EACH, LOCATION 2 - 7 EACH  
LOCATION 3 - 11 EACH

**ITEM 614, WORK ZONE MARKING SIGN**  
LOCATION 1 - 8 EACH  
LOCATION 2 - 9 EACH  
LOCATION 3 - 11 EACH

**RESIDENTIAL AND COMMERCIAL DRIVES**

AN ESTIMATED QUANTITY OF ITEM 448 ASPHALT CONCRETE, HAS BEEN INCLUDED IN THE PLAN TO BE USED AS DIRECTED BY THE ENGINEER TO PAVE APPROACH AREAS TO EXISTING DRIVEWAYS. PAVING SHALL TYPICALLY EXTEND 4' INTO THE DRIVEWAY (MEASURED FROM THE EDGE OF PAVEMENT OR PAVED SHOULDER IF PRESENT). THERE ARE 5 TYPES OF DRIVES: CONCRETE, ASPHALT, GRAVEL, GRAVEL WITH ASPHALT APRON AND FIELD/OIL WELL DRIVES. FIELD DRIVES AND OIL WELL DRIVES SHALL NOT BE PAVED. GRAVEL DRIVES SHALL BE PAVED BACK 4' INTO THE DRIVE-WAY UNLESS OTHERWISE DIRECTED BY THE ENGINEER. CONCRETE AND ASPHALT DRIVES SHALL HAVE BUTT JOINTS OR AS SHORT AN ASPHALT TAPER AS POSSIBLE (PREFERRED 4') AS DIRECTED BY THE ENGINEER SO AS TO PROVIDE A SMOOTH TRANSITION. GRAVEL DRIVES WITH ASPHALT APRONS SHALL ALSO HAVE BUTT JOINTS OR AS SHORT A ASPHALT TAPER AS POSSIBLE (PREFERRED 4') BUT ONLY IF THE EXISTING ASPHALT APRON IS IN AN ACCEPTABLE CONDITION TO BE PAVED OVER AS DIRECTED BY THE ENGINEER. IF THE ASPHALT APRON CANNOT BE PAVED OVER (FOR EXAMPLE, BROKEN INTO SMALL PIECES) AS DETERMINED BY THE ENGINEER, IT SHALL BE REMOVED BEFORE BEING PAVED BACK 4' INTO THE DRIVEWAY. ALL GRADING, PRIME OR TACK COAT, MATERIALS, LABOR, EQUIPMENT TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE DRIVES SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE ITEMS LISTED BELOW.

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE SUB-SUMMARIES FOR THE ABOVE DESCRIBED PURPOSE.

**ITEM 448, ASPHALT CONCRETE INTERM. COURSE, TYPE 2, PG 64-22**  
LOCATION 1 - 27 CU.YD.  
LOCATION 2 - 14 CU.YD.

**ITEM 448, ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG 70-22M**  
LOCATION 1 - 19 CU.YD.  
LOCATION 2 - 10 CU.YD.

**ITEM 202, WEARING COURSE REMOVED**  
LOCATION 1 - 413 SQ.YD.  
LOCATION 2 - 207 CU.YD.

**ITEM 621, RAISED PAVEMENT MARKER REMOVED**

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE PLANS TO REMOVE RAISED PAVEMENT MARKERS FOR DISPOSAL BY THE CONTRACTOR. RPM REMOVAL SHALL NOT OCCUR SOONER THAN 10 DAYS PRIOR TO RESURFACING OF THE ROADWAY. ALL RPM'S REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE SUB-SUMMARIES FOR THE ABOVE DESCRIBED PURPOSE.

**ITEM 621, RAISED PAVEMENT MARKER REMOVED**  
LOCATION 1 - 840 EACH  
LOCATION 2 - 814 EACH

CALCULATED  
LIVE  
CHECKED  
DNM

GENERAL NOTES

MUS - 60 - 8.86

M060\_MGN\_001.DGN 2-11-11

**ITEM 209, LINEAR GRADING**

IN ORDER TO PROVIDE POSITIVE DRAINAGE FROM THE ROADWAY SURFACE TO THE SHOULDER BREAK, THE EXISTING ROADWAY SHOULDERS SHALL BE GRADED AND SHAPED USING A GRADER OF ADEQUATE SIZE TO PERFORM THE WORK TO THE SATISFACTION OF THE ENGINEER.

ALL EXCESS MATERIAL REMAINING AROUND GUARDRAIL AND OTHER AREAS AFTER THE GRADER WORK IS COMPLETED AND NOT DISPOSED OF ON THE SITE, SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR. ALL EQUIPMENT, LABOR, OR INCIDENTALS REQUIRED TO COMPLETE THIS ITEM SHALL BE INCLUDED FOR PAYMENT IN THE UNIT PRICE BID FOR ITEM 209 LINEAR GRADING.

THIS WORK MAY BE INTERMITTENT AND SPREAD THROUGHOUT THE PROJECT LIMITS, AS DIRECTED BY THE ENGINEER. THE CONTRACTOR WILL ONLY BE PAID FOR INTERSECTIONS AND GAPS IF THEY ARE WITHIN THE LIMITS OF A SECTION MARKED BY THE ENGINEER FOR GRADING.

ALL LINEAR GRADING WORK SHALL BE DONE BEFORE PLACING THE ASPHALT SURFACE COURSE

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE **SUB-SUMMARIES** FOR THE ABOVE PURPOSES.

**ITEM 209, LINEAR GRADING**

LOCATION 1 - 4 MILE

LOCATION 2 - 2 MILE

**BUTT JOINT**

A BUTT JOINT WILL BE REQUIRED AT LOCATIONS SPECIFIED BELOW AND AT THE EXTRA AREAS WITH WEARING COURSE REMOVED.

**BUTT JOINTS SHALL BE AS PER STANDARD CONSTRUCTION DRAWING BP-3.1 UNLESS OTHERWISE SHOWN IN THE PLANS.**

MINIMUM BUTT JOINT LENGTHS SHALL BE 35' ON THE MAINLINE AND 10' ON THE EXTRA AREAS.

LOCATION	ROUTE	DESCRIPTION	S.L.M.	ITEM 614, ASPHALT CONCRETE FOR MAINTAINING TRAFFIC  CU. YD.
1	S.R. 60	BEGIN WORK	8.86	2.8
2	S.R. 60	BRIDGE: MUS-60-1401	14.01	5.6
3	S.R. 60	END WORK @ MAIN ST.	16.64	2.8

**ITEM 254, PAVEMENT PLANING, ASPHALT CONCRETE**

DEPTH OF PLANING SHALL BE 1.5" FULL WIDTH OF PAVEMENT FOR LOCATIONS 1 AND 2. THE CONTRACTOR SHALL VARY THE DEPTH OF PLANING IN ORDER TO TRANSITION FROM 1.5" PLANING IN LOCATION 2 TO 3.0" PLANING IN LOCATION 3. THE LENGTH OF THE TRANSITION SHALL BE 100 FEET.

THE ROADWAY SHALL BE PLANED SUCH THAT POSITIVE DRAINAGE IS CREATED FROM THE CENTER LINE TO THE EDGE OF PAVEMENT IN TANGENT SECTIONS AND SHALL FOLLOW EXISTING SUPERELEVATIONS WHERE APPLICABLE. ALL REQUIREMENTS OF ITEM 254 SHALL APPLY.

**ITEM 253, PAVEMENT REPAIR**

AN ESTIMATED QUANTITY FOR PAVEMENT REPAIR HAS BEEN INCLUDED IN THE PLAN TO BE USED AS DIRECTED BY THE ENGINEER. REPAIRS SHALL TAKE PLACE PRIOR TO THE PLANING/CHIP SEAL OPERATIONS. THE INTENT OF THIS OPERATION IS TO REPAIR THOSE AREAS OF PAVEMENT WHICH HAVE COMPLETELY FAILED (PUMPING OF SUB-BASE MATERIAL) AND NOT TO CORRECT SURFACE IRREGULARITIES. DEPTH OF EXCAVATION SHALL BE APPROXIMATELY 7". AFTER EXCAVATION HAS BEEN COMPLETED, THE FACE OF THE REPAIR SHALL BE COATED WITH 407 TACK COAT. REPLACEMENT MATERIAL WILL BE 7" OF ITEM 301 ASPHALT CONCRETE BASE, PG64-22 (PLACED AND COMPACTED AS DIRECTED). REPAIR QUANTITIES MAY BE USED ON THE MAINLINE PAVEMENT OR ON PAVED SHOULDERS. ALL EXCAVATION, MATERIALS, LABOR, EQUIPMENT, TOOLS, TRAFFIC CONTROL AND INCIDENTALS NEEDED TO COMPLETE THE WORK DESCRIBED ABOVE SHALL BE PAID FOR UNDER ITEM 253 PAVEMENT REPAIR, AS PER PLAN.

THE FOLLOWING CONTINGENCY QUANTITIES HAVE BEEN CARRIED TO THE **SUB-SUMMARIES** FOR THE ABOVE DESCRIBED PURPOSE.

**ITEM 253, PAVEMENT REPAIR**

LOCATION 1 - 750 CU.YD.

LOCATION 2 - 250 CU.YD.

LOCATION 3 - 250 CU.YD.

**ITEM 254, PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN**

DEPTH OF PLANING SHALL BE 3.0" FOR LOCATION 3.

DUE TO RECENT UTILITY WORK IN LOCATION 3, THE CONTRACTOR WILL ENCOUNTER CONCRETE DURING PAVEMENT PLANING OPERATIONS. THE TRENCHES EXCAVATED IN THE PAVEMENT BY UTILITIES HAVE BEEN BACKFILLED WITH CONCRETE. THEREFORE, PAVEMENT PLANING IN LOCATION 3 WILL INCLUDE BOTH ASPHALT AND CONCRETE. ANY ADDITIONAL COST TO PLANE THE CONCRETE LOCATED IN THE PAVEMENT WILL BE INCLUDED IN THIS ITEM.

THE ROADWAY SHALL BE PLANED SUCH THAT POSITIVE DRAINAGE IS CREATED FROM THE CENTER LINE TO THE EDGE OF PAVEMENT IN TANGENT SECTIONS AND SHALL FOLLOW EXISTING SUPERELEVATIONS WHERE APPLICABLE. ALL REQUIREMENTS OF ITEM 254 SHALL APPLY.

**S.R. 60 & S.R. 555 SIGNALIZED INTERSECTION**

THE EXISTING LOOPS ARE COMBINED TOGETHER AND RETURN TO THE CABINET ON THE SAME LOOP LEAD-IN. THE INTENT OF THIS PROJECT IS TO SEPARATE THOSE LOOPS TO HAVE THEIR OWN LOOP LEAD-IN CABLES. CURRENTLY L-3 & L-4, L-5 & L-6, L-8 & L-9 ARE COMBINED INTO ONE LOOP LEAD-IN CABLE FOR EACH PAIR. THESE WILL BE SEPARATED AT THE PULL BOXES AND A SEPARATE LOOP LEAD-IN CABLE RAN BACK TO THE CABINET FOR EACH LOOP.

NOTE: L-5 & L-6 ARE CURRENTLY 6' X 22' LOOPS LAID PERPENDICULAR TO SR 60. THESE TWO LOOPS WILL BE SPLIT INTO TWO SETS OF 6' X 6' DIAMONDS WITH L-5 & L-10, L-6 & L-11 BEING COMBINED AND RETURNING BACK TO THE CABINET ON 1 LOOP LEAD-IN PER PAIR (L-5 & L-10 = ONE LEAD-IN CABLE, L-6 & L-11 = ONE LEAD-IN CABLE).

(A DRAWING WILL BE PROVIDED AT THE PRE-CONSTRUCTION MEETING WITH MORE INFORMATION)

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE **SUB-SUMMARIES** FOR THE ABOVE PURPOSES.

**ITEM 632, DETECTOR LOOP LEAD-IN CABLE**

LOCATION 2 - 1250 FT

**ITEM 632, DETECTOR LOOP, AS PER PLAN**

ALL STOP LINE INDUCTANCE DETECTOR LOOPS SHALL BE THE POWER HEAD CONFIGURATION SHOWN ON TC-82.10. THE WIDTH SHALL BE AS SPECIFIED ON TC-82.10 AND THE LENGTH SHALL BE AS CURRENTLY CALLED FOR IN THE PLANS. THE STOP LINE DETECTOR LOOPS SHALL NOT BE WIRED TO ANY OTHER LOOPS AND SHALL HAVE ITS OWN DETECTOR CHANNEL.

ALL DILEMMA ZONE INDUCTANCE DETECTOR LOOPS CALLED FOR IN THE PLANS SHALL BE THE ANGULAR DESIGN DETECTION (ADD) LOOP AS SHOWN ON TC-82.10. DIMENSIONS SHALL BE AS SPECIFIED ON TC-82.10.

SYSTEM LOOPS SHALL BE AS DEPICTED IN THE PLANS.

ALL STOP LINE DETECTION SHALL BE TESTED FOR A BICYCLE TARGET AND ALL DILEMMA DETECTION ZONES SHALL BE TESTED FOR A MOTORCYCLE TARGET.

ALL DETECTOR LOOPS SHALL BE CUT INTO THE PLANED SURFACE OR THE PROPOSED INTERMEDIATE COURSE AT A DEPTH OF 4" FROM THE PROPOSED SURFACE ELEVATION. IF THE CONTRACTOR SO CHOOSES, THEY MAY CUT THE DETECTOR LOOPS INTO THE EXISTING ASPHALT BEFORE PLANING BUT SHALL MAKE SURE THE MATERIAL USED TO FILL THE SAW CUT IS LEFT FAR ENOUGH BELOW THE SURFACE COURSE THAT IT WILL NOT BE DISTURBED DURING THE PLANING OPERATION. THE CONTRACTOR SHALL TEST ALL LEAD-IN CABLES PRIOR TO MAKING THE FINAL SPLICE. PLACEMENT SHALL BE AS PER SPECIFICATION 632.10. FINAL LOCATIONS, SIZE AND ORIENTATION SHALL BE PROVIDED TO THE CONTRACTOR AT THE PRE-CONSTRUCTION MEETING. ALL MATERIALS, LABOR, TOOLS, EQUIPMENT, TRAFFIC CONTROL AND INCIDENTALS NECESSARY TO PERFORM THE WORK DESCRIBED ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 632, DETECTOR LOOP, AS PER PLAN.

**LOCATION 1 - 5 EACH**

S.R.60 S.B. @ MILLERS LANE - 4 DELIMNA ZONE, 1 POWERHEAD

**LOCATION 2 - 10 EACH**

S.R.60 N.B. @ S.R. 555 - 4 DELIMNA ZONE TRIANGLES, 1 POWERHEAD

S.R.60 S.B. @ S.R. 555 - 4 DELIMNA ZONE TRIANGLES, 1 POWERHEAD

**LOCATION 3 - 8 EACH**

S.R.60 N.B. @ S.R. 146 (MARIETTA ST.) - 3 POWERHEAD

S.R.60 S.B. @ S.R. 146 (MARIETTA ST.) - 3 POWERHEAD

S.R.60 N.B. @ MAIN ST - 2 POWERHEAD

**ITEM 614, MAINTAINING TRAFFIC**

A MINIMUM OF 1 LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES BY USE OF THE EXISTING PAVEMENT AND STANDARD DRAWINGS MT-97.10 AND MT-97.12.

**AT NO TIME SHALL TRAFFIC BE MAINTAINED ON THE PLANED SURFACE, AT LEAST ONE COURSE OF ASPHALT CONCRETE SHALL BE IN PLACE BEFORE OPENING TO TRAFFIC.**

LENGTH AND DURATION OF LANE CLOSURES AND RESTRICTIONS SHALL BE AT THE APPROVAL OF THE ENGINEER. IT IS THE INTENT TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC. LANE CLOSURES OR RESTRICTIONS OVER SEGMENTS OF THE PROJECT, IN WHICH NO WORK IS ANTICIPATED WITHIN A REASONABLE TIME FRAME, AS DETERMINED BY THE ENGINEER, SHALL NOT BE PERMITTED. THE LEVEL OF UTILIZATION OF MAINTENANCE OF TRAFFIC DEVICES SHALL BE COMMENSURATE WITH THE WORK IN PROGRESS.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH CMS 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 ITEM 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

**ITEM 606, ANCHOR ASSEMBLY, TYPE E**

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING EITHER OF THE FOLLOWING GUARDRAIL END TERMINALS, OR AN APPROVED EQUAL AS LISTED ON ROADWAY ENGINEERING'S WEB PAGE AT [WWW.DOT.STATE.OH.US/DRRC/](http://WWW.DOT.STATE.OH.US/DRRC/) UNDER ROADSIDE SAFETY DEVICES FOR APPROVED GUARDRAIL END TREATMENTS:

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

THE LENGTH OF THE ET-2000 (1997) SYSTEM IS CONSIDERED TO BE 50'-0", INCLUSIVE OF TWO 25'-0" 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 PRE-APPROVED SHOP DRAWINGS:

DWG. #	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL DATE
SS142	ET2000 PLUS 50'-0" PLAN, ELEVATION & SECTION 25'-0" RAIL, SLEEVE W/PL POSTS 1-4	4/12/00	7/31/00
SS141	ET2000 PLUS PLAN, ELEVATION & SECTION 25'-0" RAIL, HBA POSTS 1-4	2/29/00	7/31/00
SS158	ET2000 PLUS 50'-0" WITH 12'-6" PANELS & HBA POSTS 1-4 PLAN, ELEVATION & SECTION	5/22/00	7/31/00
SS330	ET2000 PLUS 50'-0" WITH FOUR FOUNDATION TUBES AND FOUR CRT POSTS	3/28/06	3/29/06
SS373	ET2000 PLUS 50'-0" WITH 7 SYT POSTS AND ON HBA POST	6/20/09	1/20/09

- 2) THE SKT-350 MANUFACTURED BY ROAD SYSTEMS, INC. 2516 MALLORY LANE, STOW, OHIO 44224 (TELEPHONE: 330-346-0721).

THE LENGTH OF THE SKT-350 SYSTEM IS CONSIDERED TO BE 50'-0, INCLUSIVE OF FOUR 12'-6" 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 PRE-APPROVED SHOP DRAWINGS:

**ITEM 606, ANCHOR ASSEMBLY, TYPE E (CONT'D)**

DWG. #	DRAWING NAME	DWG./REV. DATE	ODOT APPROVAL DATE
SKT-4M	SEQUENTIAL KINKING TERMINAL (SKT-350) ASSEMBLY WITH 4 FOUNDATION TUBES	12/11/97	3/6/98
SKT Hinged CRT	SEQUENTIAL KINKING TERMINAL (SKT-350) FOUR POSTS ARE STEEL HINGED AND FIVE POSTS ARE CRT	4/30/06	5/23/06
SKT-SP	SEQUENTIAL KINKING TERMINAL (SKT-350) A SEVEN POST OPTION USING STANDARD STEEL POST	3/30/09	3/4/09

THE FACE OF THE TYPE E IMPACT HEAD SHALL BE COVERED WITH A SHEET OF TYPE G REFLECTIVE SHEETING, PER CMS 730.19, APPROXIMATELY 18" x 18" OR 12" x 18" IF APPLIED TO A RECTANGULAR ET-2000 "PLUS" EXTRUDER HEAD.

REFER TO THE MANUFACTURER'S INSTRUCTION REGARDING THE INSTALLATION OF, AND THE GRADING AROUND, THE FOUNDATION TUBES AND GROUND STRUT. THE TOP OF ANY FOUNDATION TUBE SHOULD BE LESS THAN 4-INCHES ABOVE THE GROUND. THE PLACEMENT OF THE FOUNDATION TUBES SHOULD BE AN APPROPRIATE DEPTH BELOW THE LEVEL LINE IN ORDER TO MAINTAIN THE FINISHED GUARDRAIL HEIGHT OF 273/4-INCHES FROM THE EDGE OF THE SHOULDER.

ON-SITE GRADING IS REQUIRED IF THE TOP OF THE FOUNDATION TUBES OR TOP OF THE GROUND STRUT DOES PROJECT MORE THAN 4-INCHES ABOVE THE GROUND LINE.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, TYPE E, 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, GRADING, EMBANKMENT AND EXCAVATION NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

**ITEM 606, SPECIAL- RESHAPING BERM**

BERMS AT LOCATIONS WHERE EXISTING GUARDRAIL IS REMOVED OR WHERE NEW GUARDRAIL IS TO BE ERECTED, SHALL BE RESHAPED AS DIRECTED BY THE ENGINEER TO INSURE A SMOOTH SURFACE FREE OF ALL IRREGULARITIES. THE INTENT IS TO PROVIDE A 10:1 OR FLATTER SLOPE IN FRONT OF THE GUARDRAIL AND TO PROVIDE THE PROPER GRADING AT ANCHOR ASSEMBLIES. EXCESS EXCAVATION RESULTING FROM RESHAPING BERMS SHALL BE DISPOSED OF AS DIRECTED BY THE ENGINEER. PAYMENT FOR RESHAPING BERMS SHALL BE INCLUDED IN THE CONTRACT BID PRICE.

**ITEM 407 TACK COAT, TRACKLESS TACK, INTERMEDIATE AND SURFACE COURSE**

**DESCRIPTION:** THIS WORK CONSISTS OF PREPARING AND TREATING A PAVED SURFACE WITH NTSS-1HM TRACKLESS TACK PRODUCED BY BLACKLIDGE EMULSIONS, INC. MEET ALL REQUIREMENTS OF CONSTRUCTION AND MATERIAL SPECIFICATIONS ITEM 407 TACK COAT EXCEPT AS NOTED BELOW.

**MATERIAL:** CONFORM TO THE FOLLOWING TYPICAL PHYSICAL PROPERTIES:

PARAMETER	TEST METHOD	MIN	MAX.
SAYBOLT FUROL VISCOSITY, SFS @ 25°C	ASTM D88	15	100
STORAGE STABILITY, 24 HRS, %	ASTM D244	--	1
STORAGE STABILITY, 5 DAYS, %	ASTM D244	--	5
RESIDUE BY DISTILLATION, %	ASTM D244	50	--
OIL DISTILLATE, %	ASTM D244	--	1
SIEVE TEST, %	ASTM D244	--	0.3

**TEST ON RESIDUE:**

PENETRATION, @ 25°C,	ASTM D5	--	20
SOFTENING POINT RANGE DEG C	ASTM D36	65	--
SOLUBILITY, %	ASTM D2042	97.5	--
ORIGINAL BINDER DSR@82°C			
G/SIN δ, 10 RAD/SEC	AASHTO T111	1	--

NOTE: PRODUCT SHOULD NOT CONTAIN FILLER SUCH AS CLAY, ETC KEEP FROM FREEZING. SUPPLY CERTIFIED TEST DATA TO THE ENGINEER SHOWING THE MATERIAL SUPPLIED WAS TESTED FOR AND MEETS THE ABOVE PROPERTIES.

**EQUIPMENT:** ALL REQUIREMENTS OF 407.03 APPLY. SEE MANUFACTURER'S REPRESENTATIVE FOR CORRECT DISTRIBUTOR SETTINGS. THOROUGHLY CLEAN ALL EQUIPMENT IF CATIONIC EMULSION WAS PREVIOUSLY USED.

**WEATHER LIMITATIONS:** ALL REQUIREMENTS OF 407.04 APPLY.

**PREPARATION OF SURFACE:** ALL REQUIREMENTS OF 407.05 APPLY..

**APPLICATION OF ASPHALT MATERIAL:** UNIFORMLY APPLY THE ASPHALT MATERIAL WITH A DISTRIBUTOR PER THE REQUIREMENTS OF 407.06 EXCEPT AS NOTED.

IF PRODUCT IS STORED FOR AN EXTENDED PERIOD OF TIME, PRIOR TO APPLICATION, AGITATE OR GENTLY CIRCULATE THE MATERIAL.

ALL NOZZLES AND SPRAY PATTERNS SHALL BE IDENTICAL TO ONE ANOTHER ALONG THE DISTRIBUTOR SPRAY BAR. THE ANGLE OF THE NOZZLE SHOULD A 15 TO 30 DEGREE ANGLE TO THE SPRAY BAR AXIS TO MAXIMIZE OVERLAP OR AS RECOMMENDED BY THE NOZZLE MANUFACTURER. CONTACT THE MANUFACTURER'S REPRESENTATIVE FOR REQUIRED SPRAY NOZZLE SIZE, AND DISTRIBUTOR AND NOZZLE SETTINGS.

APPLY AT A RATE OF 0.04 TO 0.08 GALLONS PER SQUARE YARD. RECOMMENDED APPLICATION TEMPERATURE IS 160°F TO 180° F. DO NOT EXCEED 180°F.

DILUTION IS NOT ALLOWED.

THE ENGINEER AND MANUFACTURER'S REPRESENTATIVE WILL APPROVE RATE OF APPLICATION, TEMPERATURE, DISTRIBUTOR SETTINGS, AND AREAS TO BE TREATED BEFORE APPLICATION OF THE TACK COAT. THE ENGINEER WILL DETERMINE THE ACTUAL APPLICATION IN GALLONS PER SQUARE YARD BY A CHECK ON THE PROJECT.

THE APPLICATION IS CONSIDERED SATISFACTORY WHEN THE MATERIAL IS APPLIED UNIFORMLY WITH NO VISIBLE EVIDENCE OF STREAKING OR RIDGING AND THE APPLICATION RATE IS ±10% OF THE SPECIFIED RATE. **METHOD OF MEASUREMENT:** ALL REQUIREMENTS OF 407.07 APPLY. **BASIS OF PAYMENT:** ALL REQUIREMENTS OF 407.08 APPLY.

CALCULATED  
LME  
CHECKED  
DNM

GENERAL NOTES

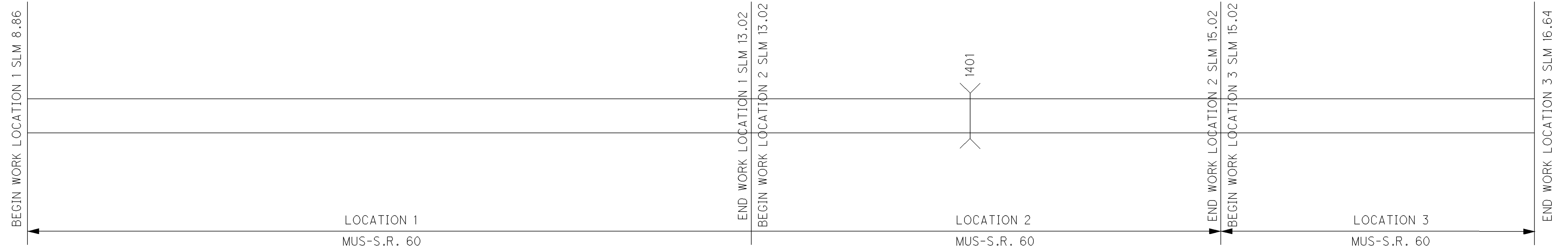
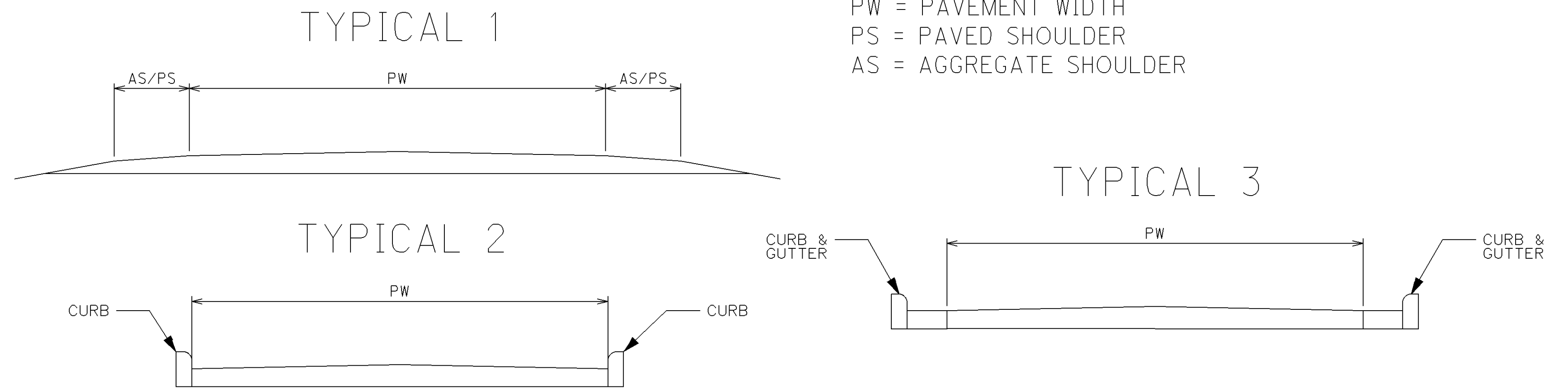
MUS-60-8.86

4  
25

NOTE:

THE PAVEMENT WIDTHS SHOWN IN THE "PAVEMENT DATA" TABLE BELOW ARE THE WIDTHS WHICH HAVE BEEN DETERMINED TO HAVE SUFFICIENT ROADWAY BASE FOR PAVING. IF ACTUAL ROADWAY WIDTHS DIFFER, THE ROADWAY SHALL BE PAVED ONLY THE WIDTH SHOWN IN THE AFOREMENTIONED TABLE. IF THE EXISTING ROADWAY IS WIDER THAN THAT WHICH IS SHOWN IN THE TABLE, PAVING SHALL BE CENTERED ABOUT THE FULL WIDTH OF THE ROADWAY AND ANY EXCESS EXISTING PAVEMENT ON THE EDGES SHALL BE COVERED WITH ITEM 617 COMPACTED AGGREGATE. PAVING IN CURBED ROADWAY SECTIONS SHALL BE FROM CURB TO CURB.

PW = PAVEMENT WIDTH  
 PS = PAVED SHOULDER  
 AS = AGGREGATE SHOULDER



PAVEMENT DATA

LOCATION	COUNTY	ROUTE	BEGIN LOG POINT SLM	END LOG POINT SLM	LENGTH		PAVEMENT WIDTH (FEET)	TYPICAL	PAVEMENT AREA	254		407				448 ASPHALT CONCRETE				614		
					MILES	LIN. FT.				SQ. YD.	SQ. YD.	SQ. YD.	TACK COAT @ 0.075 GAL./S.Y.	TACK COAT FOR INTERMEDIATE COURSE @ 0.05 GAL./S.Y.	TACK COAT, TRACKLESS TACK, INTERMEDIATE COURSE @ 0.05 GAL./S.Y.	TACK COAT, TRACKLESS TACK, SURFACE COURSE @ 0.075 GAL./S.Y.	THICKNESS INCHES	INTERMEDIATE COURSE, TYPE 2, PG 64-22 CU. YD.	THICKNESS INCHES	SURFACE COURSE, TYPE 1, PG 70-22M CU. YD.	WORK ZONE CENTER LINE, CLASS II MILE	WORK ZONE CENTER LINE, CLASS III, 642 PAINT MILE
1	MUS	S.R. 60	8.86	13.02	4.16	21,964.80	48.0	1	117,145.6	117,145.6		8,786.0	5,857.3			1.75	5,694.6	1.25	4,067.6	4.16	4.16	
<b>TOTALS (CARRIED TO LOCATION 1 SUB-SUMMARY)</b>										117,145.6		8,786.0	5,857.3			1.75	5,694.6	1.25	4,067.6	4.16	4.16	
2	MUS	S.R. 60	13.02	14.89	1.87	9,873.60	48.0	1	52,659.2	52,659.2		3,949.5	2,633.0			1.75	2,559.9	1.25	1,828.5	1.87	1.87	
2	MUS	S.R. 60	14.89	15.02	0.13	686.40	38.0 AVG	1	2,898.1	2,898.1		217.4	145.0			1.75	140.9	1.25	100.7	0.13	0.13	
DEDUCT FOR BRIDGES (FROM SHEET 9)									(864.0)	(864.0)		(64.8)	(43.2)			1.75	(42.0)	1.25	(30.0)	(0.04)	(0.04)	
<b>TOTALS (CARRIED TO LOCATION 2 SUB-SUMMARY)</b>										54,693.3		4,102.1	2,734.8			1.75	2,658.8	1.25	1,899.2	1.96	1.96	
3	MUS	S.R. 60	15.02	16.23	1.21	6,388.80	30.0	2	21,296.0	21,296.0				1,064.8	1,597.2	1.75	1,035.3	1.25	739.5	1.21	1.21	
3	MUS	S.R. 60	16.23	16.25	0.02	105.60	38.0 AVG	3	445.9	445.9				22.3	33.5	1.75	21.7	1.25	15.5	0.02	0.02	
3	MUS	S.R. 60	16.25	16.39	0.14	739.20	48.0	3	3,942.4	3,942.4				197.2	295.7	1.75	191.7	1.25	136.9	0.14	0.14	
3	MUS	S.R. 60	16.39	16.57	0.18	950.40	48.0	3	5,068.8	5,068.8				253.5	380.2	1.75	246.4	1.25	176.0	0.18	0.18	
3	MUS	S.R. 60	16.57	16.64	0.07	369.60	54.0	3	2,217.6	2,217.6				110.9	166.4	1.75	107.8	1.25	77.0	0.07	0.07	
3	SLIP FROM MAIN ST. TO S.R. 60 SOUTH						100.00	38.0 AVG	3	422.2	422.2				21.2	31.7	1.75	20.6	1.25	14.7		
<b>TOTALS (CARRIED TO LOCATION 3 SUB-SUMMARY)</b>																	1.75	1,623.5	1.25	1,159.6	1.62	1.62

CALCULATED  
LME  
CHECKED  
DNM

ASPHALT CONCRETE DATA

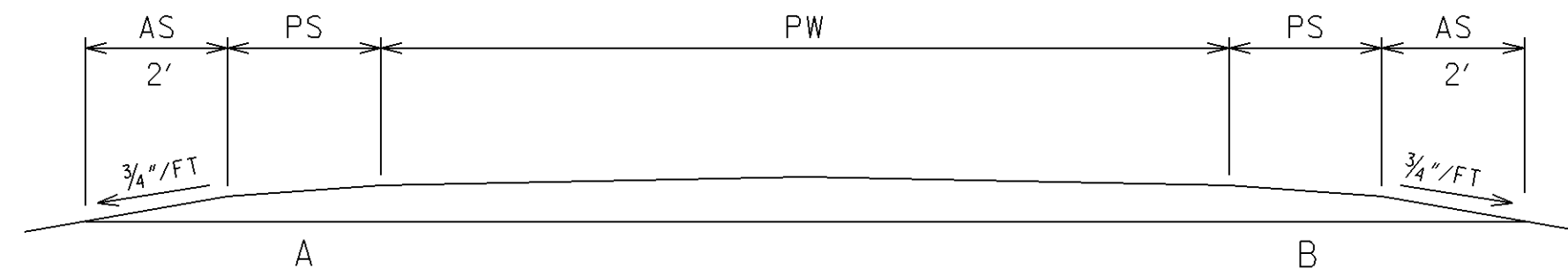
MUS - 60 - 8.86

5  
25

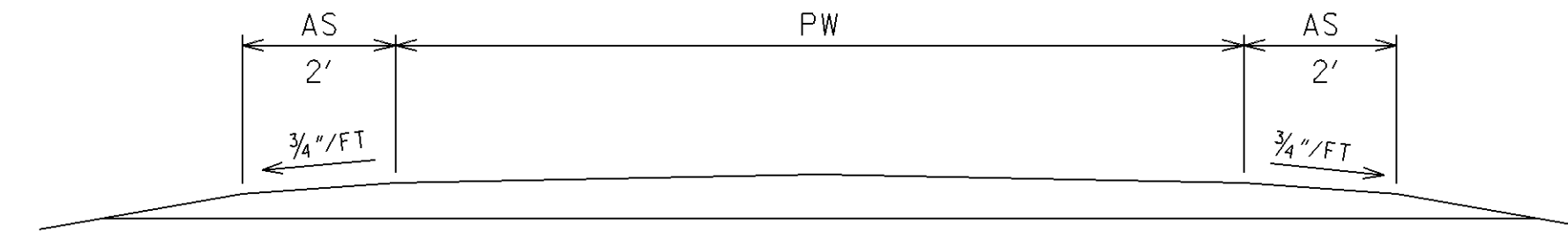
PW = PAVEMENT WIDTH  
 PS = PAVED SHOULDER  
 AS = AGGREGATE SHOULDER

CALCULATED  
 LME  
 CHECKED  
 DNM

TYPICAL 1



TYPICAL 2



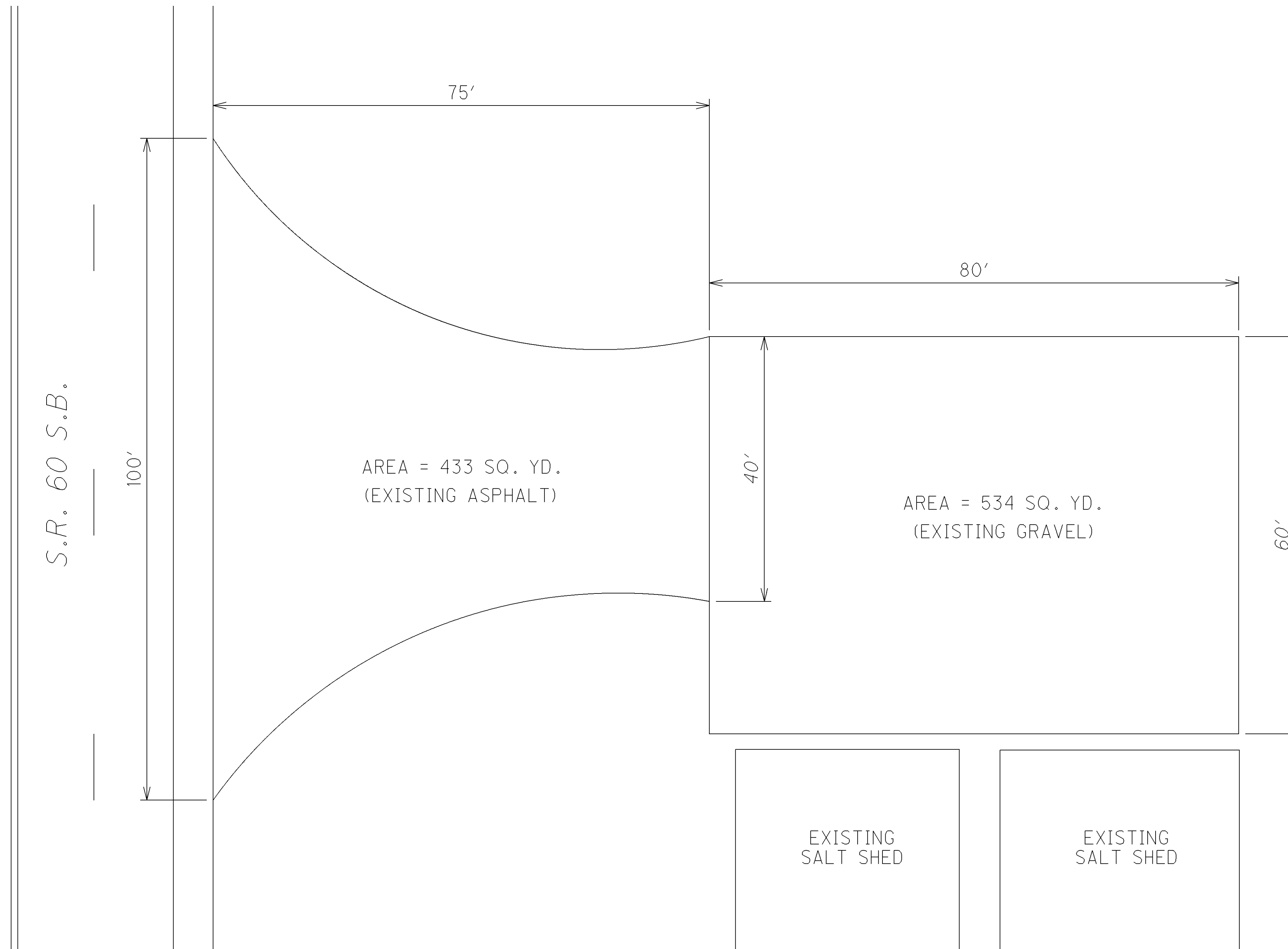
SHOULDER DATA

LOCATION	COUNTY	ROUTE	BEGIN LOG POINT SLM	END LOG POINT SLM	LENGTH		TYPICAL	PROPOSED WIDTH (FT.)		SHOULDER AREA	254		407		448 ASPHALT CONCRETE				617					
											MILES	LIN. FT.	A	B	SQ. YD.	SQ. YD.	GAL.	GAL.	THICKNESS	INTERMEDIATE COURSE, TYPE 2, PG 64-22	THICKNESS	SURFACE COURSE, TYPE 1, PG 70-22M	THICKNESS	COMPACTED AGGREGATE, AS PER PLAN (2' WIDTH)
1	MUS	S.R. 60	8.86	13.02	4.16	21964.8	1	6	6	29,286.4	29,286.4	2,196.5	1,464.3	1.75	1,423.6	1.25	1,016.9	2.00	542.4					
TOTALS (CARRIED TO LOCATION 1 SUB-SUMMARY)											29,286.4	2,196.5	1,464.3		1,423.6		1,016.9		542.4					
2	MUS	S.R. 60	13.02	14.89	1.87	9873.6	1	6	6	13,164.8	13,164.8	987.4	658.2	1.75	640.0	1.25	457.1	2.00	243.8					
2	MUS	S.R. 60	14.89	15.02	0.13	686.4	1	3.0 AVG	3.0 AVG	457.6	457.6	34.3	22.9	1.75	22.2	1.25	15.9	2.00	17.0					
DEDUCT FOR BRIDGES (FROM SHEET 9)										(216.0)	(216.0)	(16.2)	(10.8)	1.75	(10.5)	1.25	(7.5)	2.00	(12.0)					
TOTALS (CARRIED TO LOCATION 2 SUB-SUMMARY)											13,406.4	1,005.5	670.3		651.7		465.5		248.8					

PAVED SHOULDER DATA

MUS - 60 - 8.86





ESTIMATED QUANTITIES CARRIED TO LOCATION 1 SUB-SUMMARY

ITEM 202 WEARING COURSE REMOVED = 433 SQ. YD.

ITEM 203 EXCAVATION:  $(80' \times 60') / 9 = 534 \text{ SQ. YD.} \times 3''/36 = 45 \text{ CU.YD.}$

ITEM 204 SUBGRADE COMPACTION - 534 SQ. YD.

ITEM 407 TACK COAT -  $433 \text{ SQ.YD.} \times 0.075 = 33 \text{ GAL.}$

ITEM 407 TACK COAT FOR INTERMEDIATE COURSE -  $967 \text{ SQ.YD.} \times 0.05 = 49 \text{ GAL.}$

ITEM 448 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-22 -  $967 \text{ SQ. YD.} \times 1.75''/36 = 47 \text{ CU.YD.}$

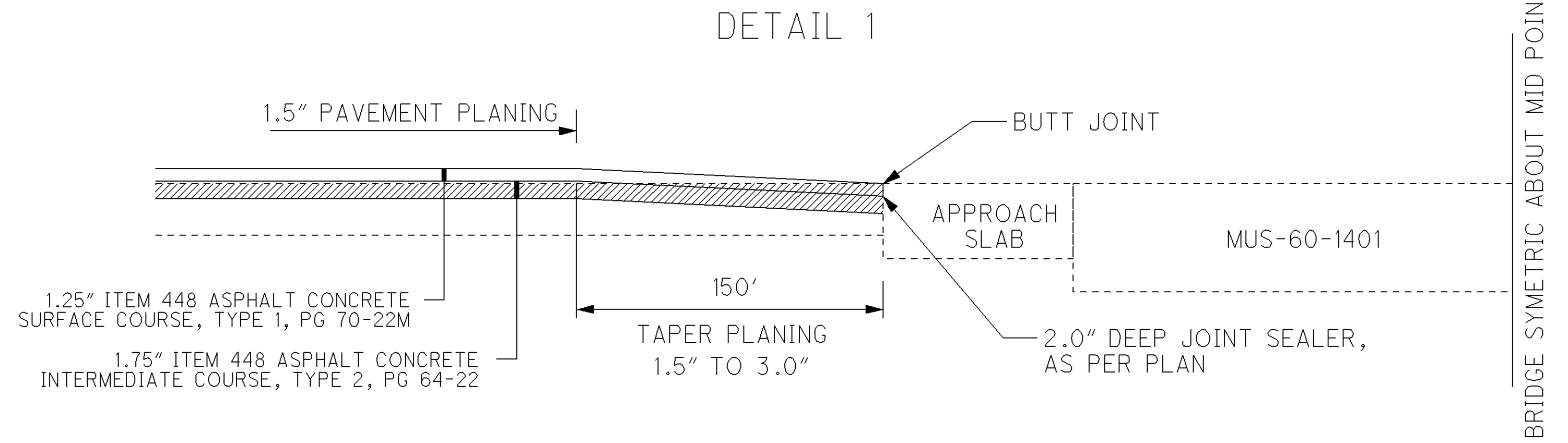
ITEM 448 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG 64-22 -  $967 \text{ SQ. YD.} \times 1.25''/36 = 34 \text{ CU.YD.}$



BRIDGE TREATMENT

LOCATION 2

DETAIL ① MUS-60-1401 - BUTT JOINT AT APPROACH SLABS



ITEM 517 RAILING (DEEP BEAM RAIL WITH STEEL TUBULAR BACKUP AND TYPE 2 STEEL POSTS), AS PER PLAN

THIS ITEM SHALL BE USED TO REPLACE RAIL ELEMENTS ONLY. THE CONTRACTOR SHALL NOT DISTURB THE STEEL POSTS OR TUBULAR BACKUP. ALL WORK AND MATERIALS INCLUDING ANY NEW BOLTS REQUIRED TO REPLACE THE RAIL ELEMENT OF THE DEEP BEAM RAIL WITH STEEL TUBULAR BACKUP AND TYPE 2 STEEL POSTS SHALL BE AS PER STANDARD CONSTRUCTION DRAWING DBR-2-73.

DEDUCTIONS = PAVEMENT/SHOULDER WIDTHS X (BRIDGE LENGTH + APPROACH SLABS)

BRIDGE DATA													
LOCATION	COUNTY, ROUTE, BRIDGE NO.	LENGTH (BRIDGE LIMITS)			AREA	APPROACH SLAB		APPROACH SLAB AREA (INCLUDES BOTH APPROACH SLABS)	DETAILS (THIS SHEET)	DEDUCTIONS		516	517
		LIN. FT.	LIN. FT.	SQ. YD.		LIN. FT.	LIN. FT.			SQ. YD.	MAINLINE DEDUCTIONS (CARRIED TO SHEET 5)	SHOULDER DEDUCTIONS (CARRIED TO SHEET 6)	2" DEEP JOINT SEALER, AS PER PLAN
												FEET	FEET
2	MUS-60-1401	112	72	896.0	25	72.0	400.0	1	864.0	216.0	120.0	225.0	
SUB-TOTALS										864.0	216.0		
TOTALS (CARRIED TO LOCATION 2 SUB-SUMMARY)												120.0	225.0

CALCULATED  
LME  
CHECKED  
DNM

BRIDGE DECK TREATMENT DATA

MUS-60-8.86

SEE SHEETS 11-13 FOR CURB RAMP AND DETECTABLE WARNING DETAILS

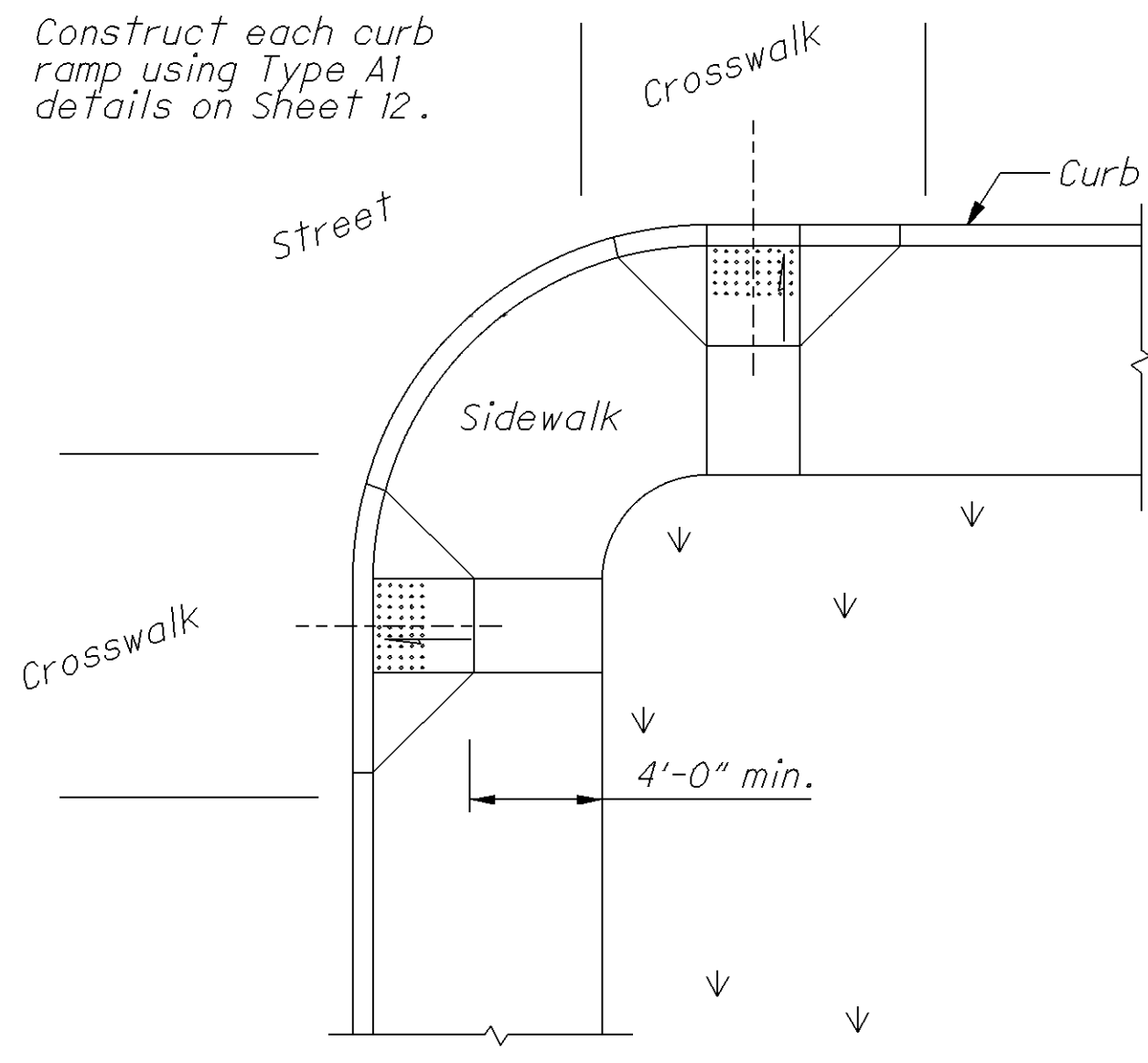
CALCULATED  
LIVE  
CHECKED  
DNM

REFERENCE NO.	SHEET NO.	LOCATION	SIDE	202		608		690 SPECIAL-MISC.:			609	COMMENTS	
				WALK REMOVED	CURB REMOVED	4" CONCRETE WALK, (CURB RAMP AREA)	4" CONCRETE WALK, (EXTRA WALK AREA)	DETECTABLE WARNING	CURB RAMP,				CURB, TYPE 6
									TYPE A1	TYPE B2	TYPE D		
CL./LT./RT.	SQ. FT.	FT.	SQ. FT.	SQ. FT.	SQ. FT.	EACH	EACH	EACH	FT.				
		<b>S.R. 60 ZANESVILLE</b>											
		HUGHES ST	RT.	20.0		12.0		8				SOUTH EAST CORNER	
		HUGHES ST	RT.	20.0		12.0		8				NORTH EAST CORNER	
		HUGHES ST	LT.	54.0	10	54.0			1		10	SOUTH WEST CORNER	
		HUGHES ST	LT.	54.0	10	54.0			1		10	NORTH WEST CORNER	
		ALLEN ST	RT.	20.0		12.0		8					
		ALLEN ST	RT.	20.0		12.0		8					
		AT S.R. 146 - MARIETTA ST.	RT.	64.0	16	64.0				1	32	SOUTH EAST CORNER	
		AT S.R. 146 - MARIETTA ST.	LT.	20.0		12.0		8				SOUTH WEST CORNER	
		AT S.R. 146 - MARIETTA ST.	RT.	60.0	14	60.0					14	NORTH EAST CORNER	
		AT S.R. 146 - MARIETTA ST.	LT.	60.0	14	60.0					14	NORTH WEST CORNER	
		AT U.S. 22 - MAIN ST.	RT.	20.0		12.0		8				SOUTH EAST CORNER	
		AT U.S. 22 - MAIN ST.	CL.	108.0	20	108.0			2		20	RAMPS FOR CONCRETE ISLAND	
		AT U.S. 22 - MAIN ST.	LT.	20.0		12.0		8				SOUTH WEST CORNER	
<b>SUB-TOTALS</b>						<b>484.0</b>							
<b>TOTALS (CARRIED TO LOCATION 3 SUB-SUMMARY)</b>				<b>540.0</b>	<b>84</b>	<b>484.0</b>		<b>56</b>	<b>4</b>	<b>1</b>	<b>2</b>	<b>100</b>	

CURB RAMP PLAN / QUANTITIES (ZANESVILLE)

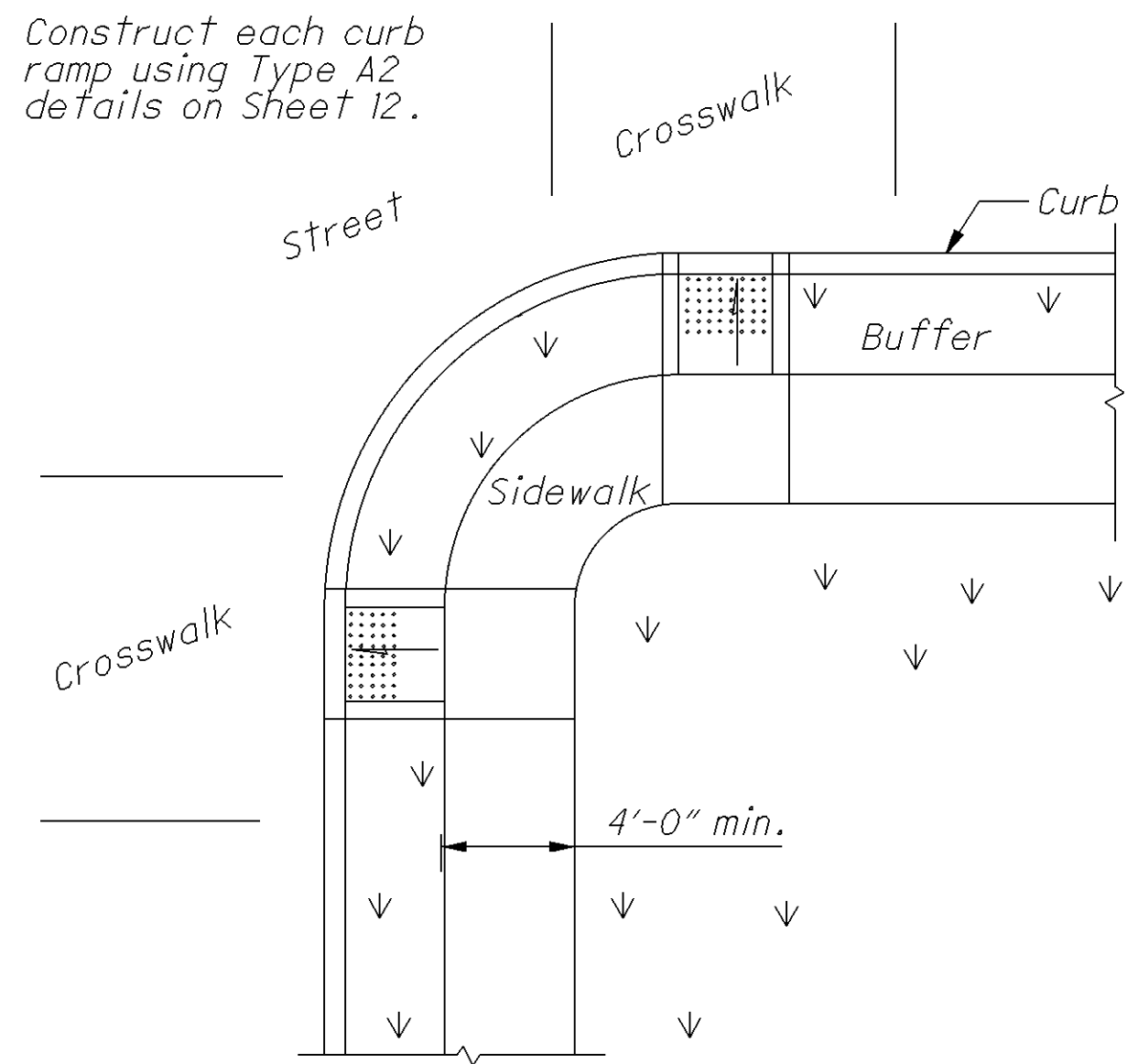
MUS - 60 - 8.86

M060\_CRP\_001.DGN 2-16-11

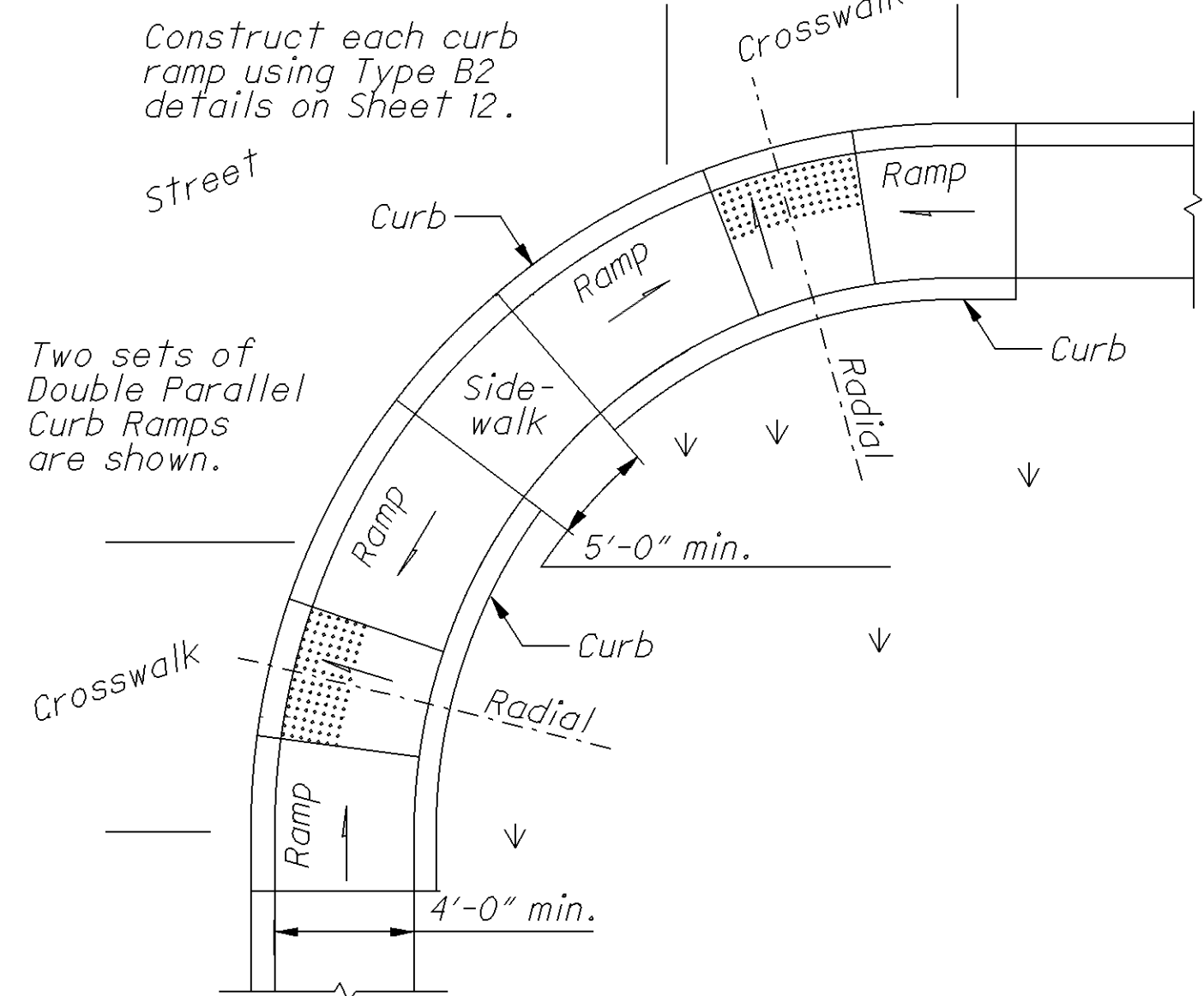


Use curb ramps with flared sides at locations with wide sidewalks.

PERPENDICULAR CURB RAMPS

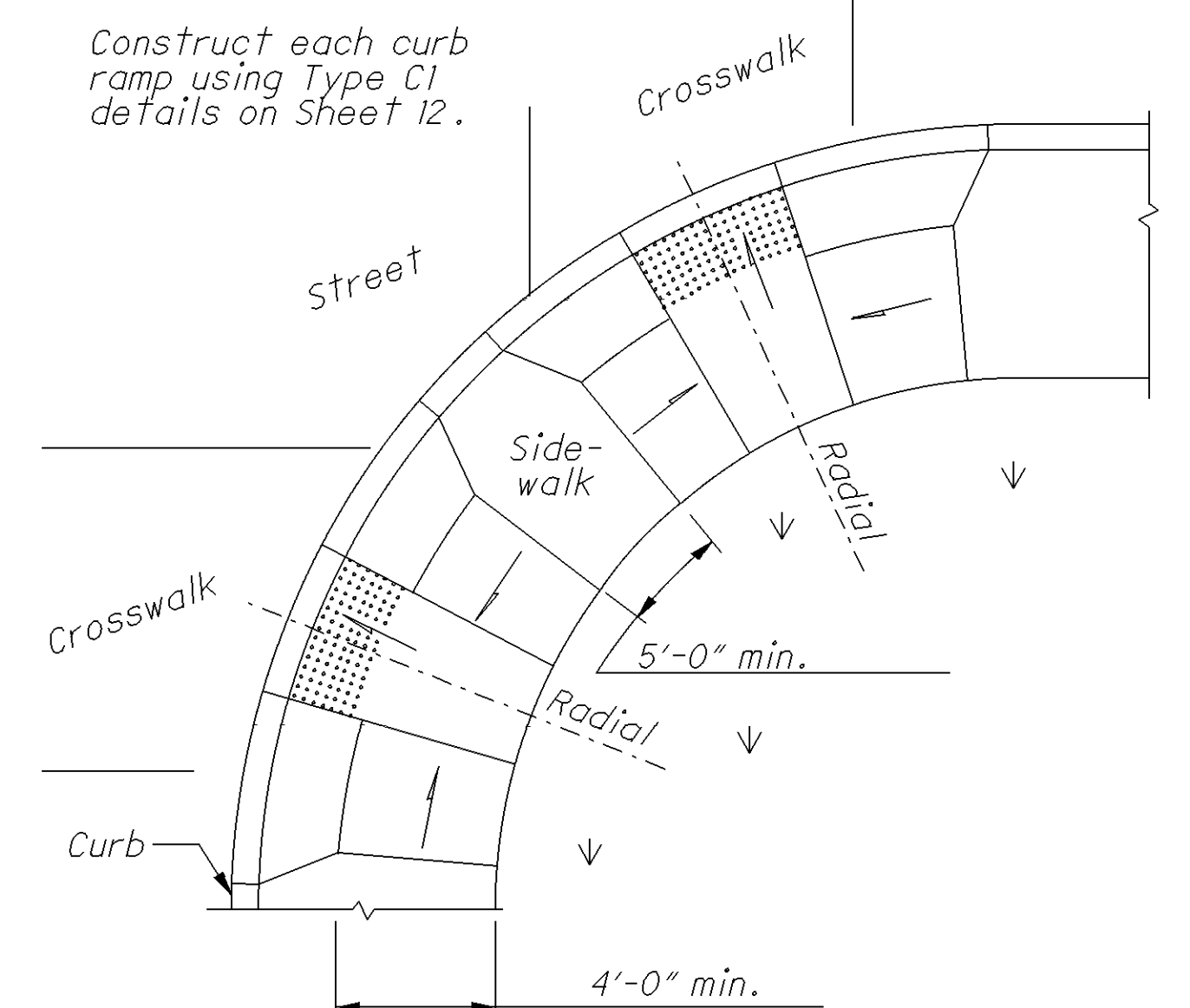


Use curb ramps with returned curbs where buffer is wide enough to accommodate ramp slope.



Place on streets having wide turning radius and where sidewalks are narrow.

PARALLEL CURB RAMPS



Curb ramp placement where streets have wide turning radius, and sufficient sidewalks width.

COMBINATION CURB RAMPS

NOTES

GENERAL: This drawing shows curb ramp types details and placement examples for curb ramp construction, including the installation of detectable warnings.

Curb ramp types are shown on Sheet 12 and include Perpendicular, Parallel, and Combined types as specified to be constructed in the locations shown in the project plans.

The contractor may adjust the placement of curb ramps if existing field conditions warrant with the approval of the Engineer.

Excavate, form, place, finish, and cure according to 608.03.A, 608.03.B, 608.03.C, and 608.03.E.

DETECTABLE WARNINGS: Install Detectable Warnings on each curb ramp with approved materials, as shown on Sheet 13. Install these proprietary products as per manufacturer's written instructions.

DRAINAGE: Contractor is to ensure the base of each constructed curb ramp allows for proper drainage, without exceeding allowable cross slope or ramp slopes. Vertical change in level exceeding 1/8" between the 1) pavement and gutter, and 2) gutter and ramp, are not allowed.

JOINTS: Provide expansion joints in the curb ramp as extensions of walk joints and consistent with Item 608.03 requirements for a new concrete walk. Provide a 1/2" Item 705.03 expansion joint filler around the edge of ramps built in existing concrete walks. Lines shown on this drawing indicate the ramp edges and slope changes, and do not necessarily indicate joint lines.

METHOD OF MEASUREMENT: The Department will measure Curb Ramps by the number of each completed curb ramp. The Department will measure Detectable Warnings in existing curb ramps and at grade crossings by the number of square feet completed.

Concrete Walk and Curb, Item 608 and 609, will be measured through out the curb ramp area and paid for under their respective Items.

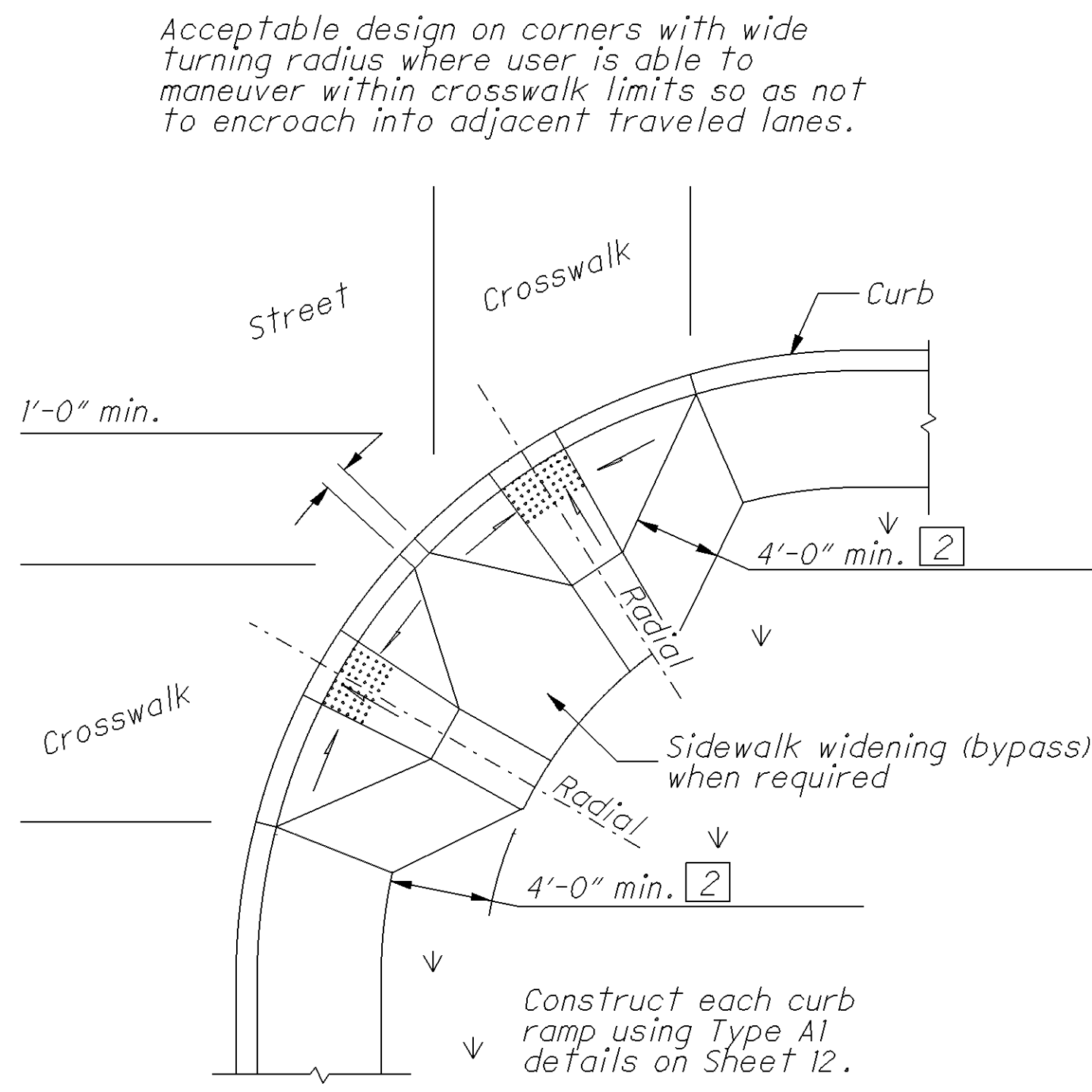
METHOD OF PAYMENT: New Curb Ramps constructed in new or existing Walk are paid for under Item 690 Special Misc.: Curb Ramp, Type -- (A1, A2, B1, B2, B3, C1, C2, or D) each, and includes the cost of any additional materials and installation (including detectable warnings), grading, forming and finishing.

Detectable Warnings constructed in existing curb ramps or for at-grade crossing locations are paid for under Item 690-Special Misc.: Detectable Warning (Sq. Ft.) and is full compensation for excavation, backfill, base course material, reinforcing steel, expansion joint materials, and any incidentals required to complete the installation as specified. The work to cast the tiles in place will also require removal of existing pavement or sidewalk (Item 202) to the nearest joint, or if no joint exists, a minimum of 4 feet.

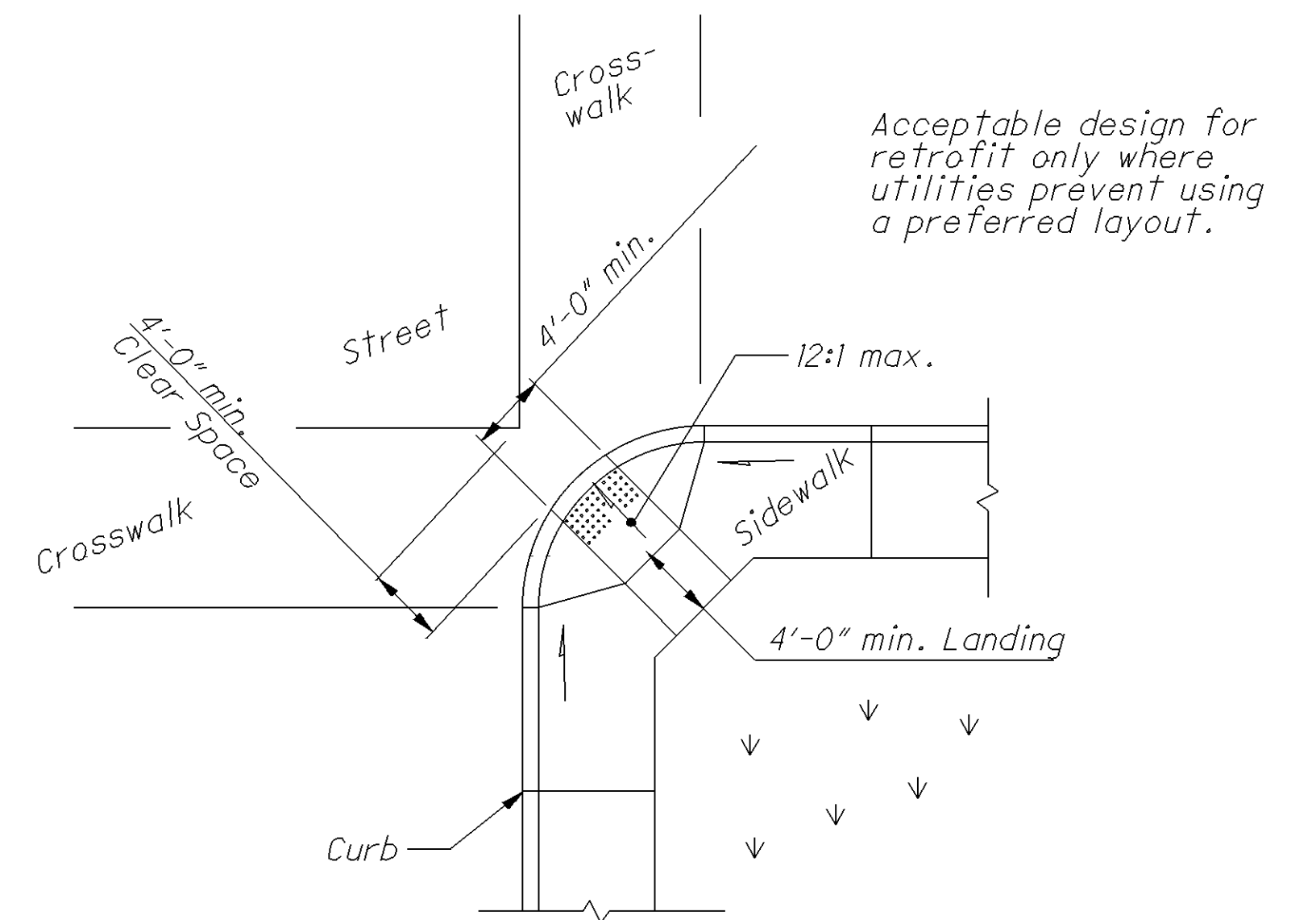
Removal of existing curb, pavement, walk (or existing curb ramps) are paid under Item 202.

LEGEND

② May be reduced to 3'-4" in existing sidewalks to better fit the walk configuration or where site conditions are restricted by narrow walks, pole foundations, drainage inlets, etc. The width may be tapered.



PERPENDICULAR RAMPS



DIAGONAL RAMP (Type D)

Use this design only for existing walks, and when site constraints prohibit other designs. The diagonal Type D ramp may be constructed as either a Perpendicular, Parallel or Combination curb ramp type. Avoid using where curb radii are less than 20'-0" .

ACCEPTABLE CONSTRUCTION PLACEMENT

NOTES

The running slope of the ramp is preferred to be 12:1 or flatter. In existing sidewalks, where the maximum ramp slope is not feasible due to site constraints (e.g. utility poles or vaults, right-of-way limits) it may be reduced as follows:

- A) 10:1 for a max. rise of 6",
- B) 8:1 for a max. rise of 3",
- C) 6:1 over a max. run of 2'-0" for historic areas where a flatter slope is not feasible.

To prevent chasing the grade indefinitely, the transition from existing sidewalk to the curb ramp area is not required to exceed 15 feet in length.

While ramps may be skewed to the crosswalk, the entire lower landing area must fall within the cross walk that the ramp serves and cannot be located in the traveled lane of opposing traffic.

The counter slope of the gutter or street at the foot of a curb ramp, landing, or blended transitions shall be 20:1 or flatter.

The bottom edge of the ramp shall change planes perpendicular to the landing.

The edge of the curb shall be flush with the edge of the adjacent pavement and gutter and surface slopes that meet grade breaks shall also be flush.

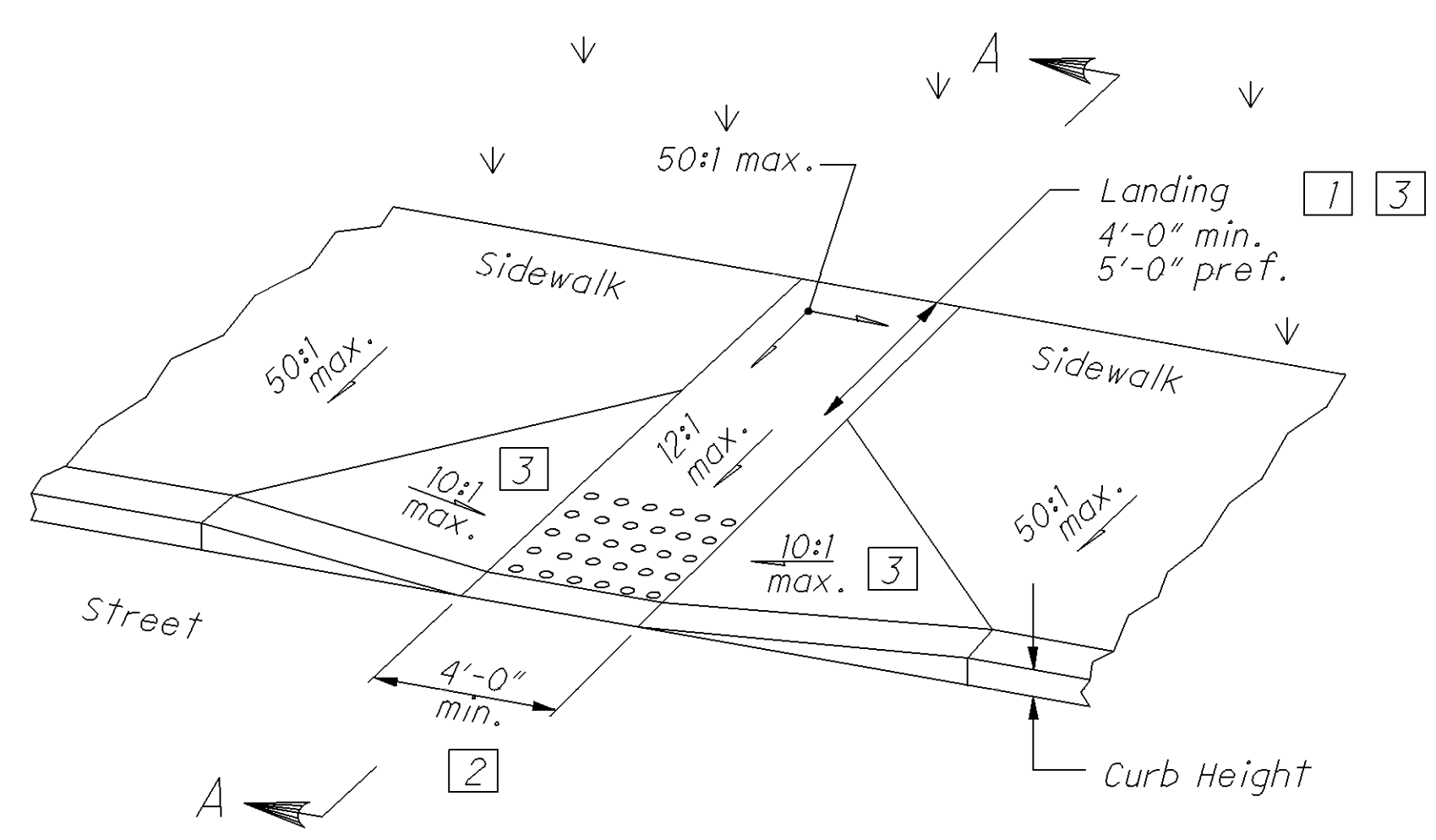
Ramp landings shall be 4' min. x 4' min. with a 50:1 or flatter cross slope and running slope, unless otherwise shown.

LEGEND

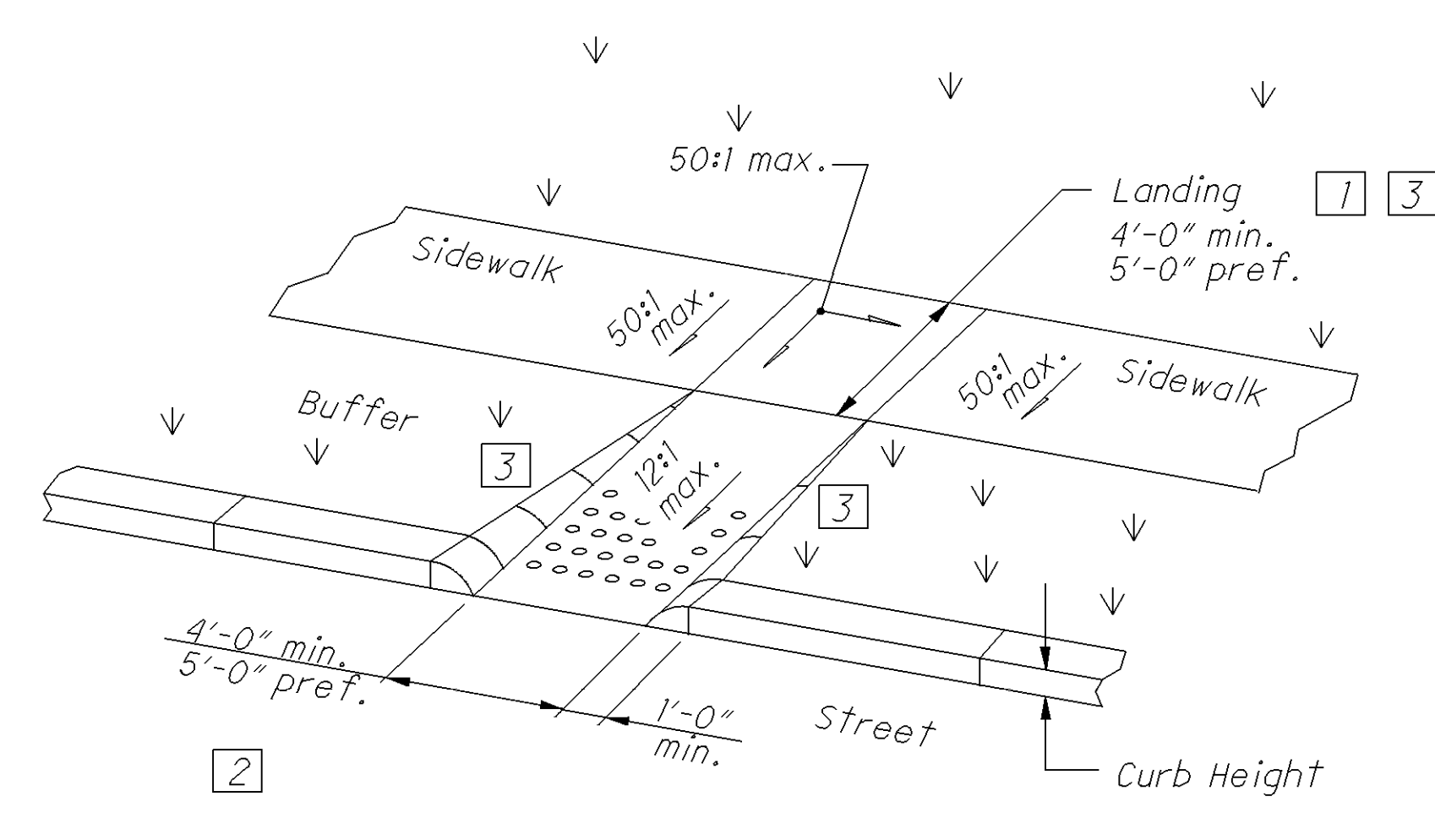
- 1 Dimension may be reduced to 3'-0" in existing sidewalks if the landing is unconstrained along the back edge.
- 2 May be reduced to 3'-4" in existing sidewalks to better fit the walk configuration or where site conditions are restricted by narrow walks, pole foundations, drainage inlets, etc. The width may be tapered.
- 3 Where landing width (D) has been reduced to 3'-0" the flared sides shall have a maximum slope of 12:1.

Flared sides are not required where the edges of a curb ramp are protected by landscaping or other barriers to travel by wheelchair users or pedestrians across the edge of the curb ramp. However, if the flared sides are used in these areas, they may be of any slope.

See Sheet 13 for Sections.

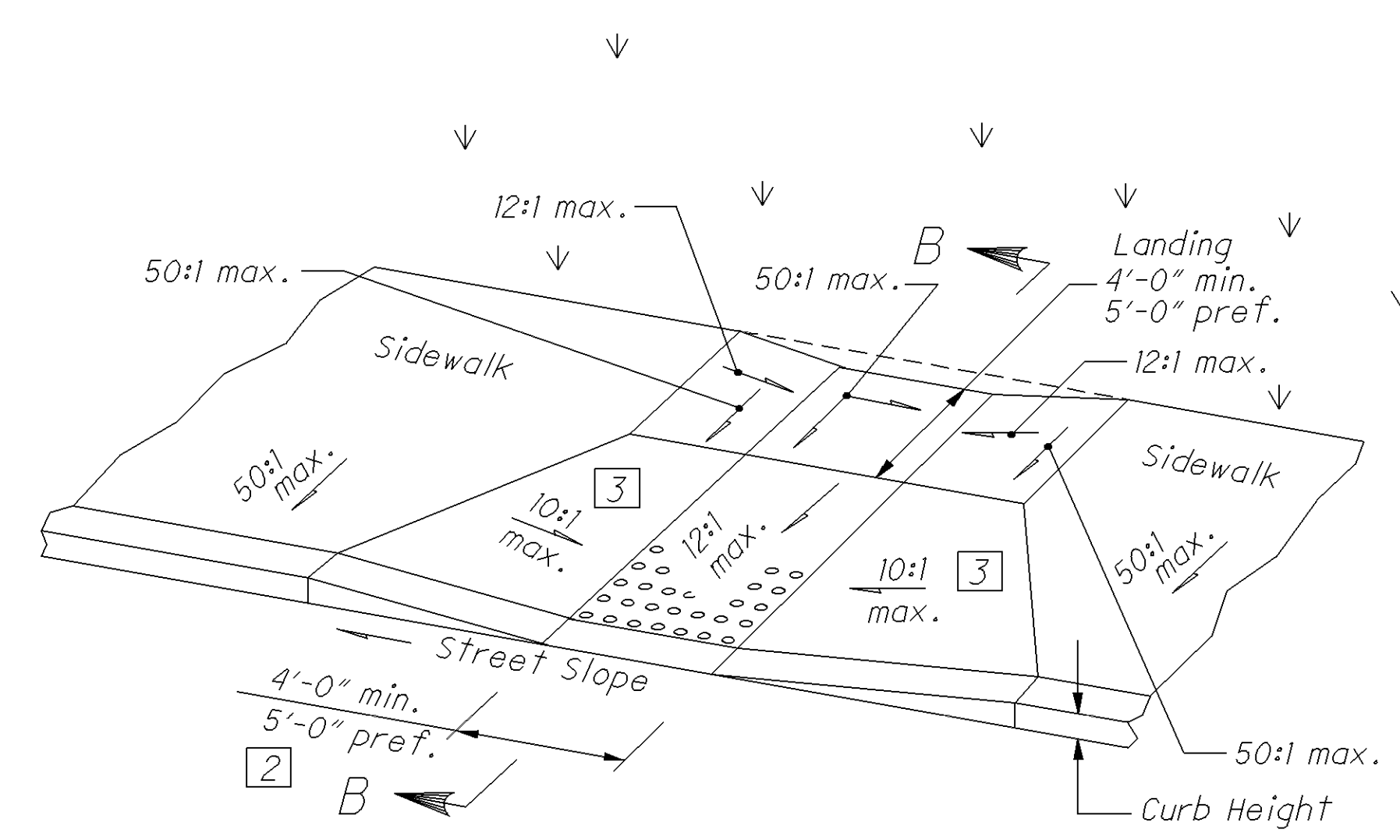


Type A1 (Perpendicular with flared sides)

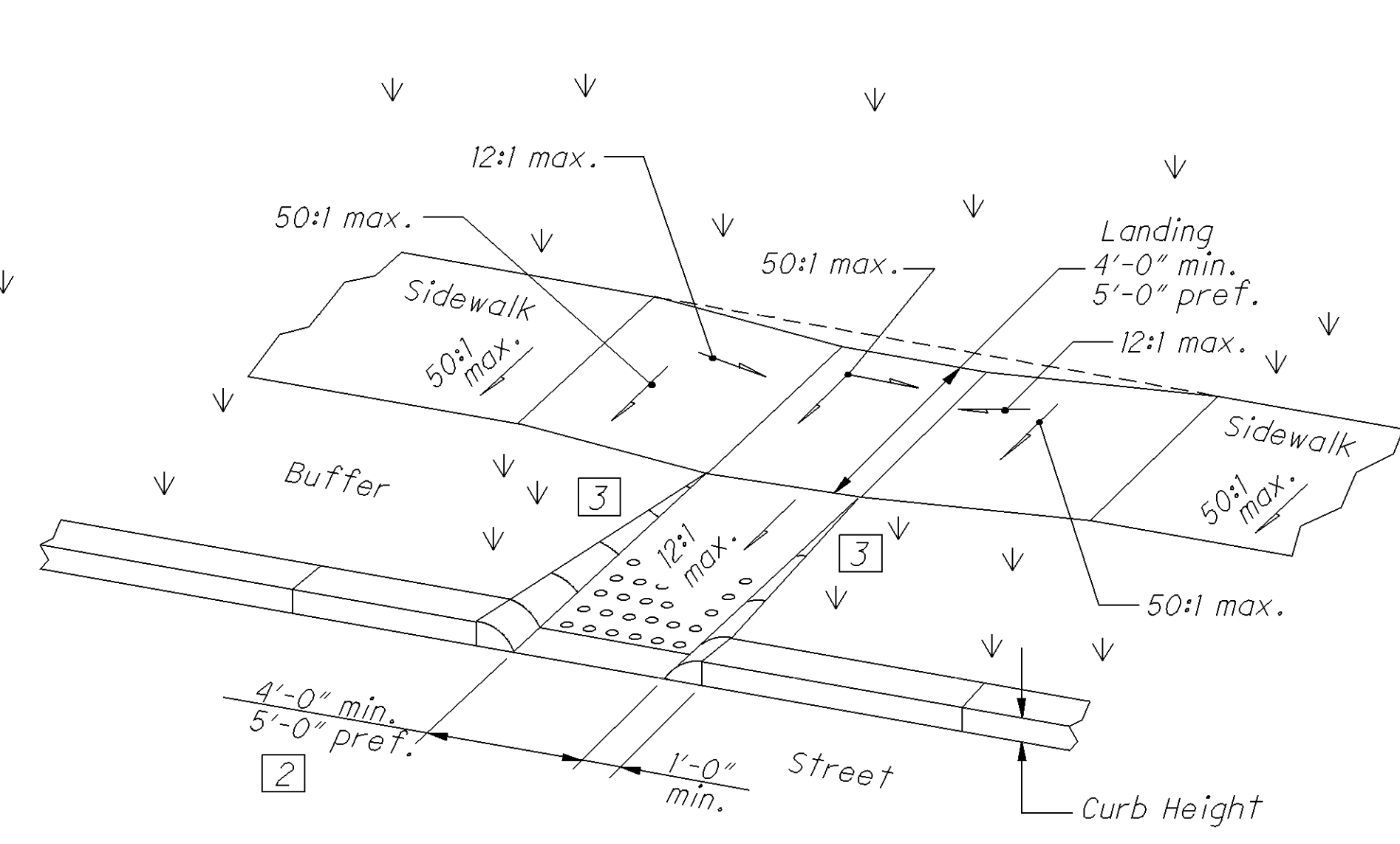


Type A2 (Perpendicular with returned curb)

PERPENDICULAR CURB RAMP DETAILS

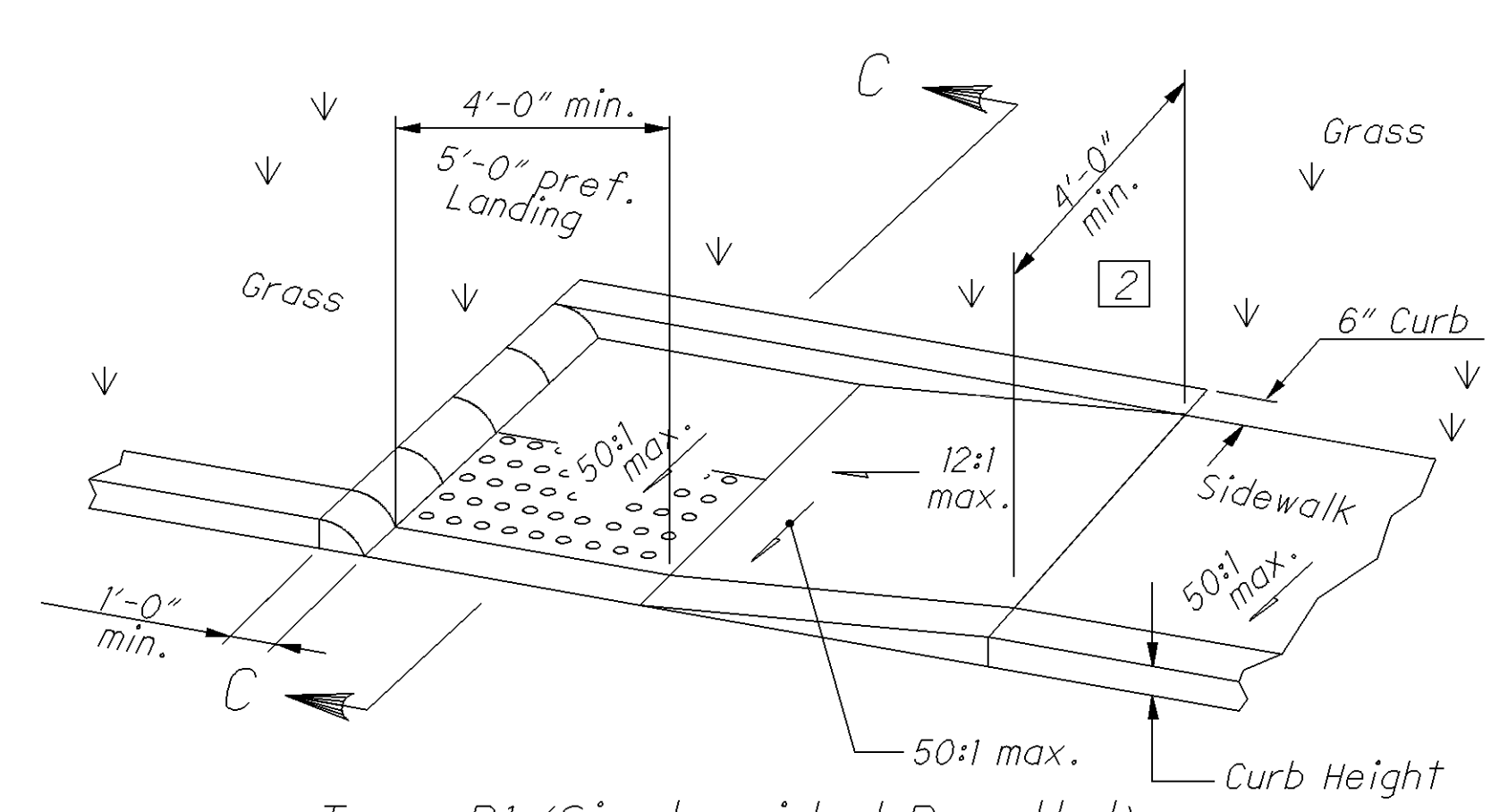


Type C1 (Combined with flared sides)

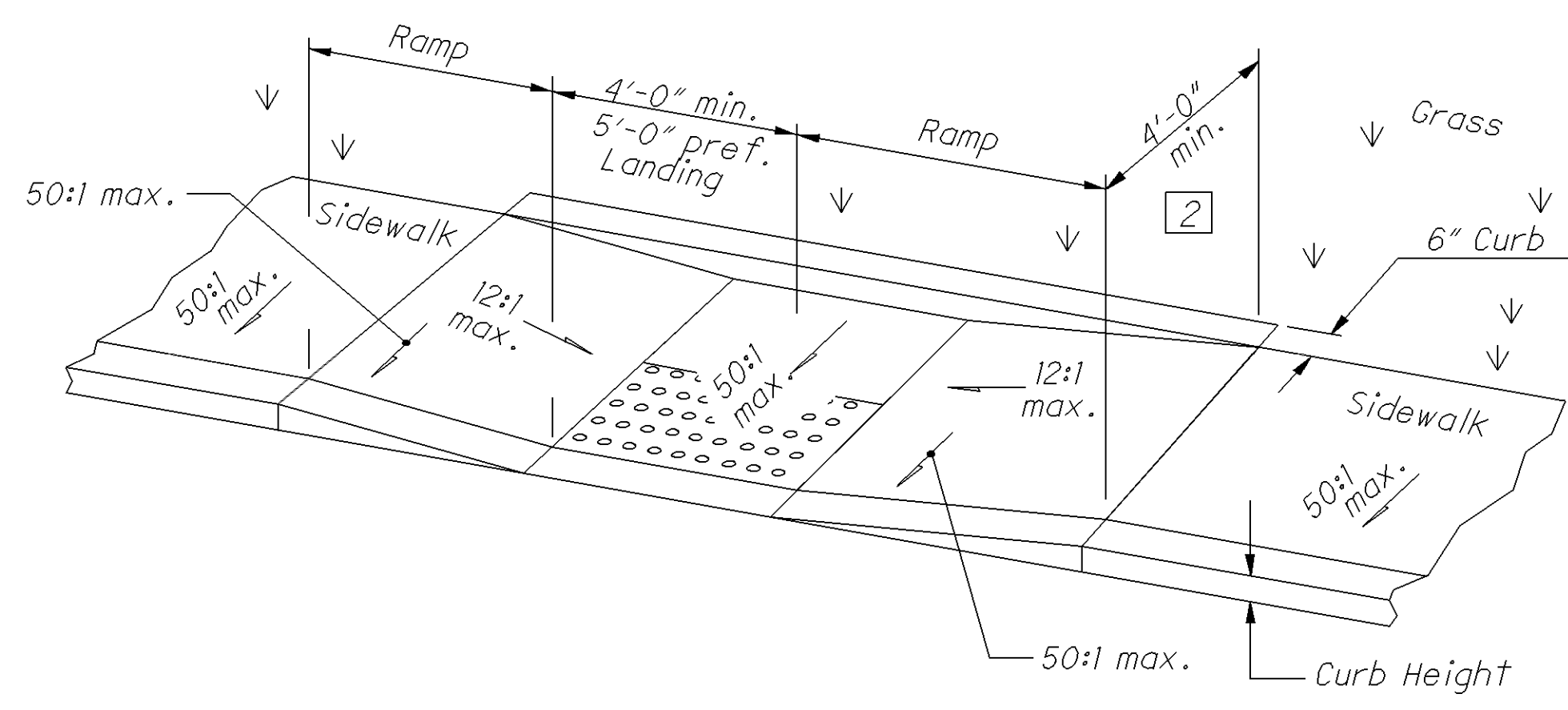


Type C2 (Combined with returned curb)

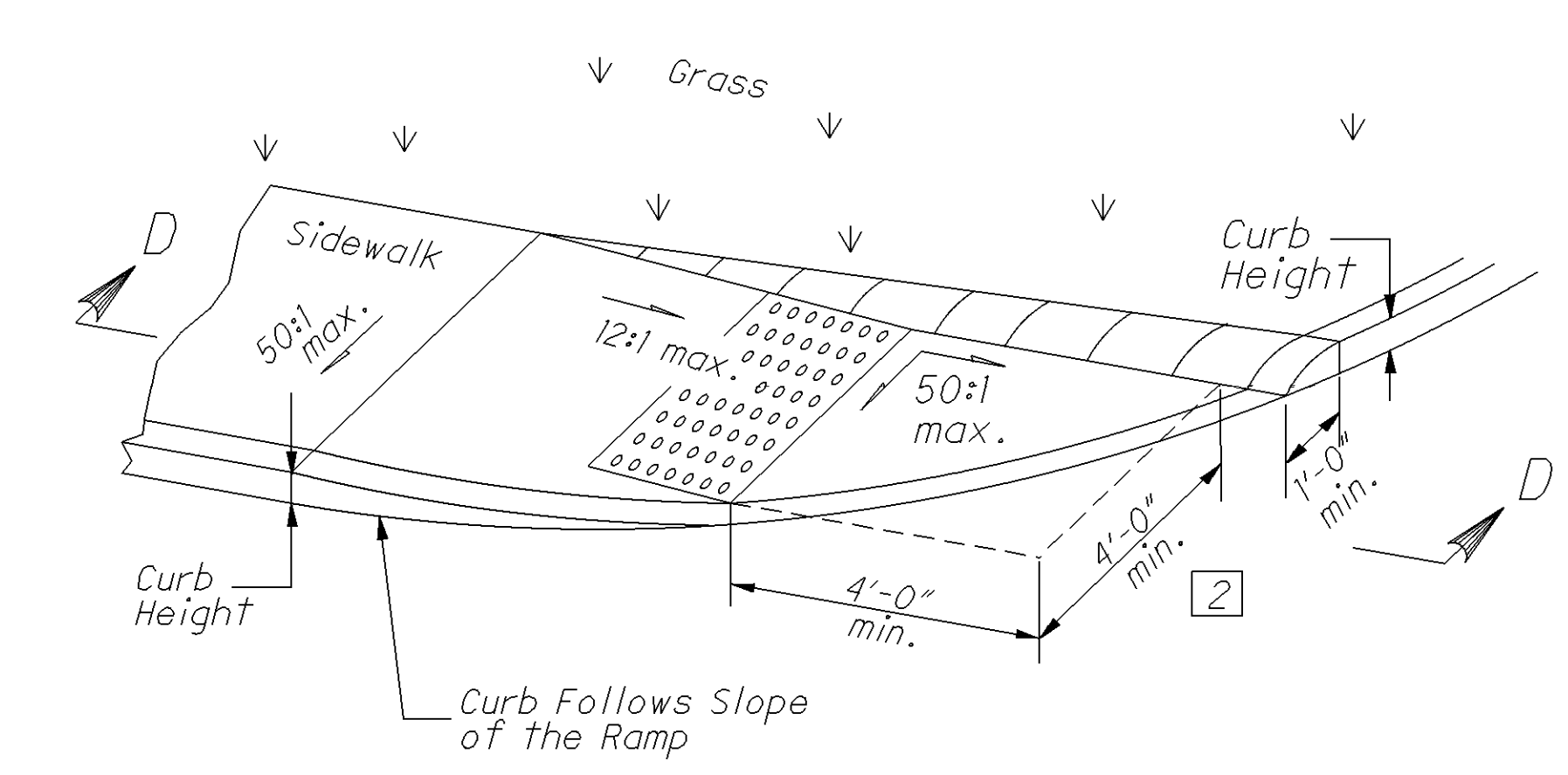
COMBINED CURB RAMP DETAILS



Type B1 (Single sided Parallel)



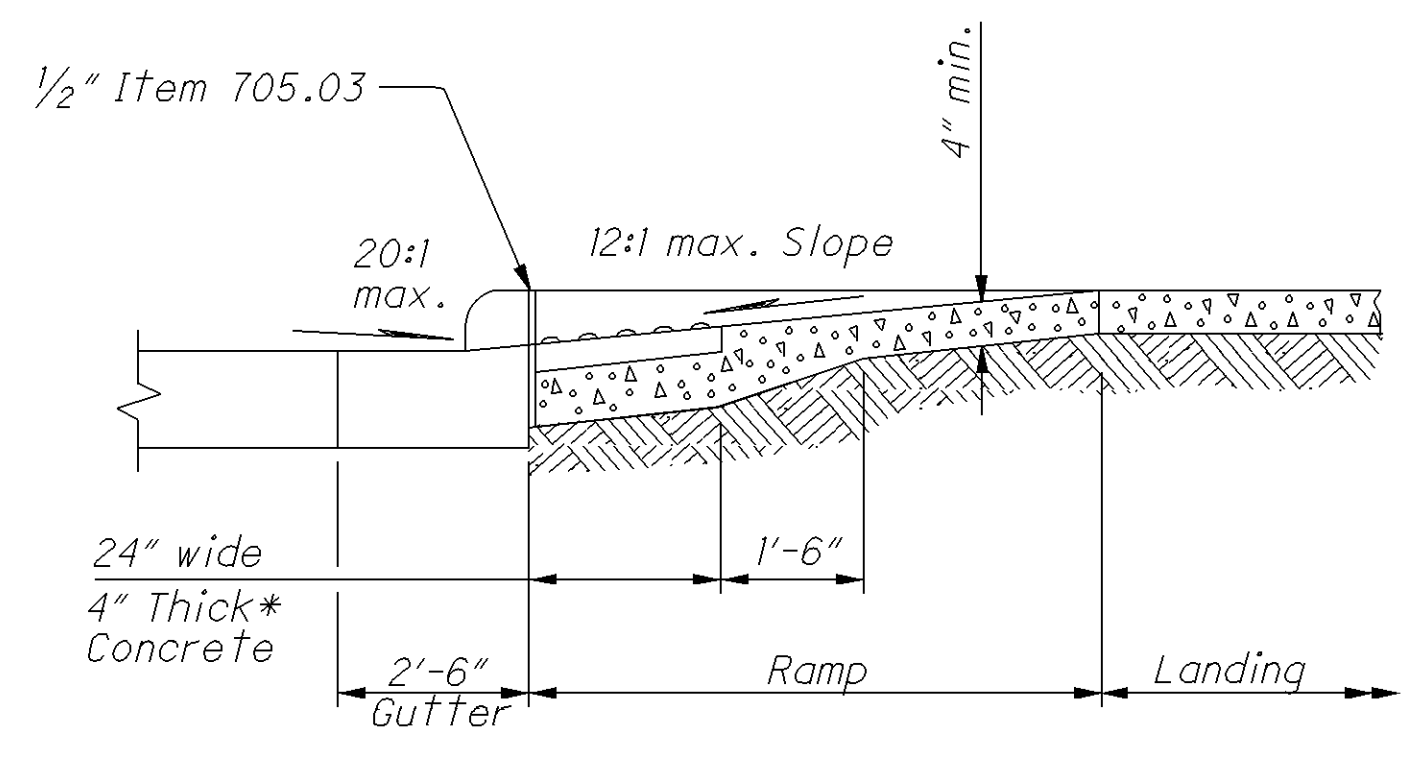
Type B2 (Double sided Parallel)



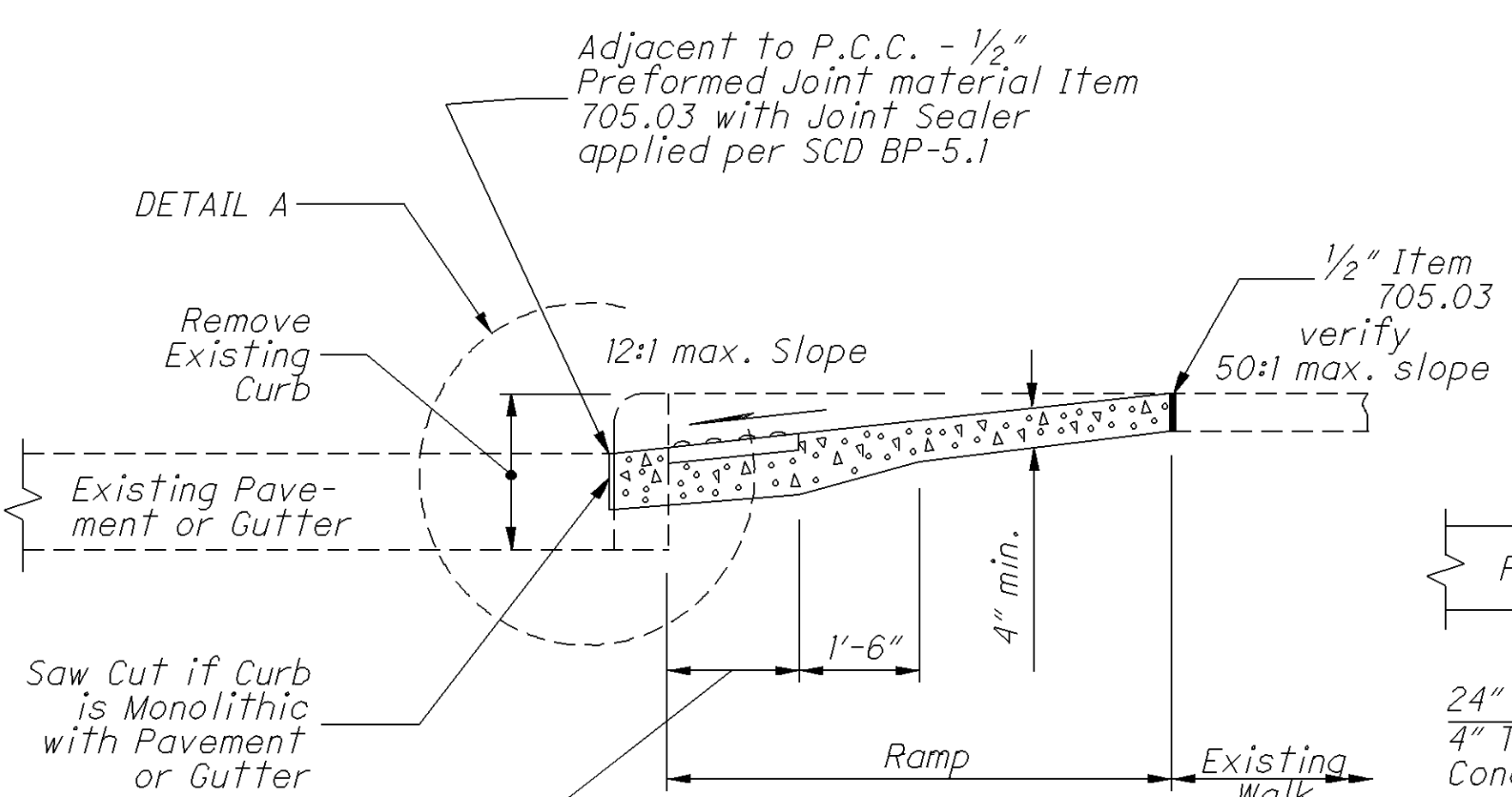
Type B3 (Single sided Parallel)

PARALLEL CURB RAMP DETAILS

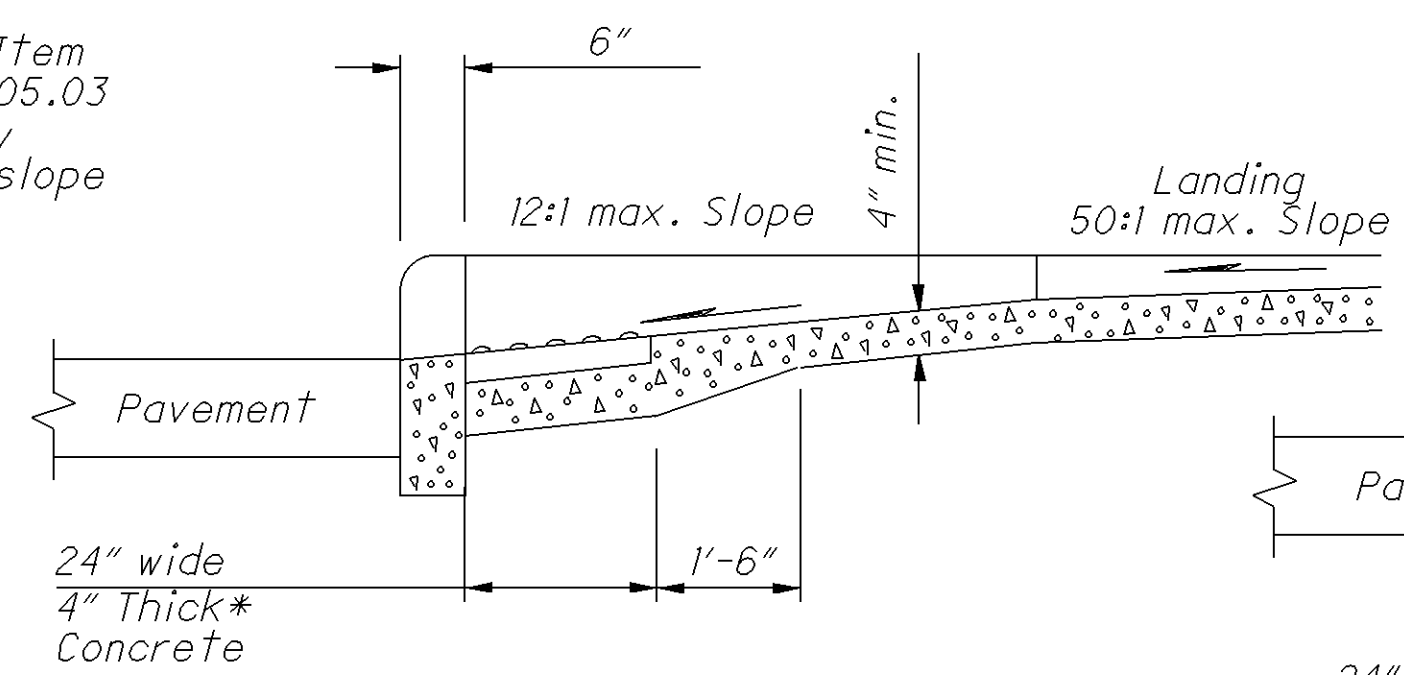
8/20/03\_CRD\_002.DGN 2-1-11



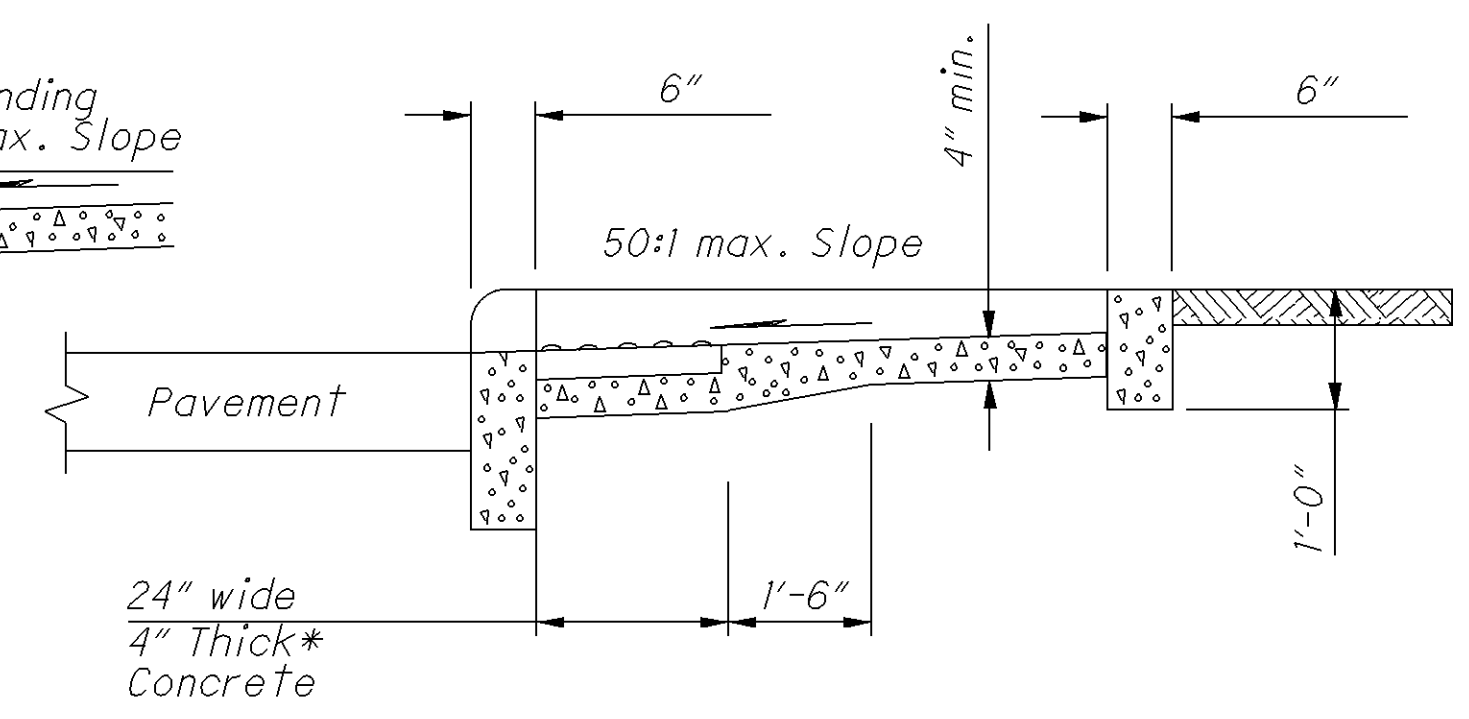
SECTION A-A  
NORMAL DETAIL  
See Sheet 12.



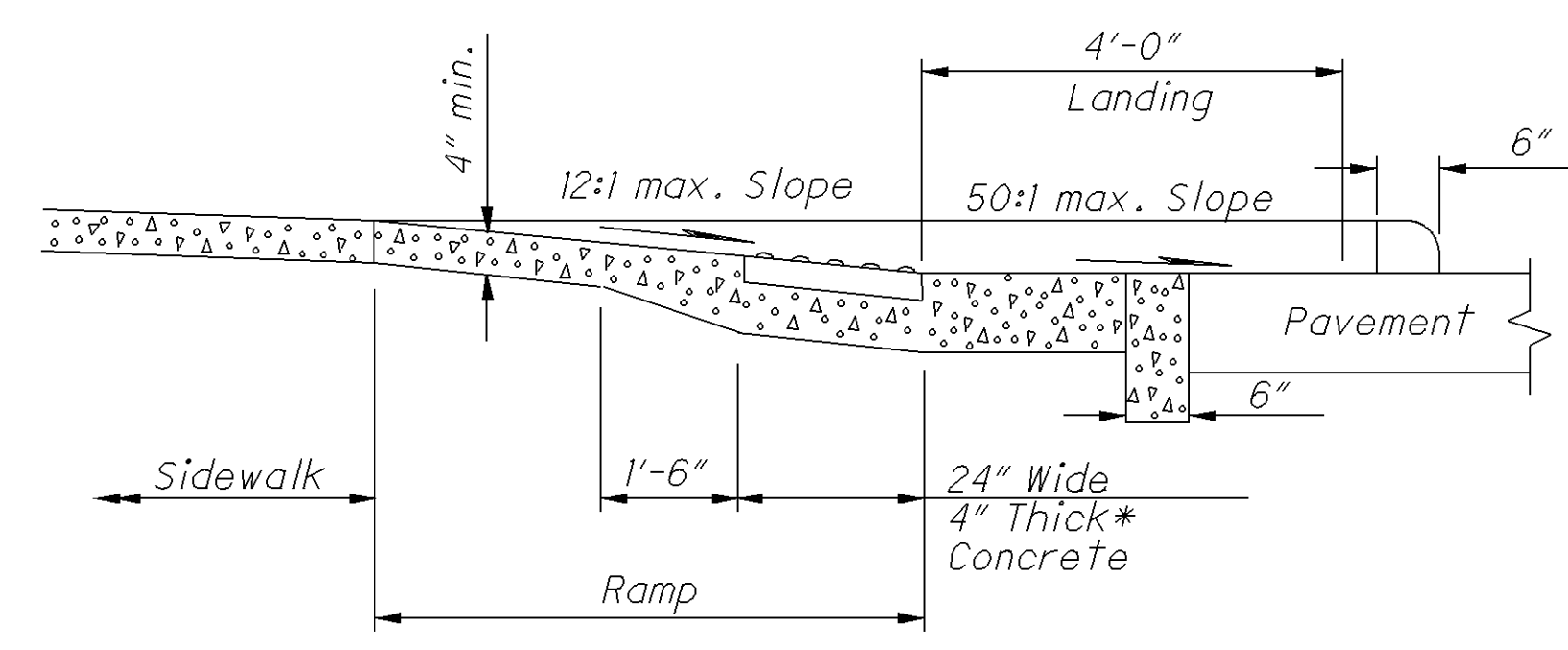
SECTION A-A  
EXISTING WALK DETAIL  
See Sheet 12.



SECTION B-B  
See Sheet 12.

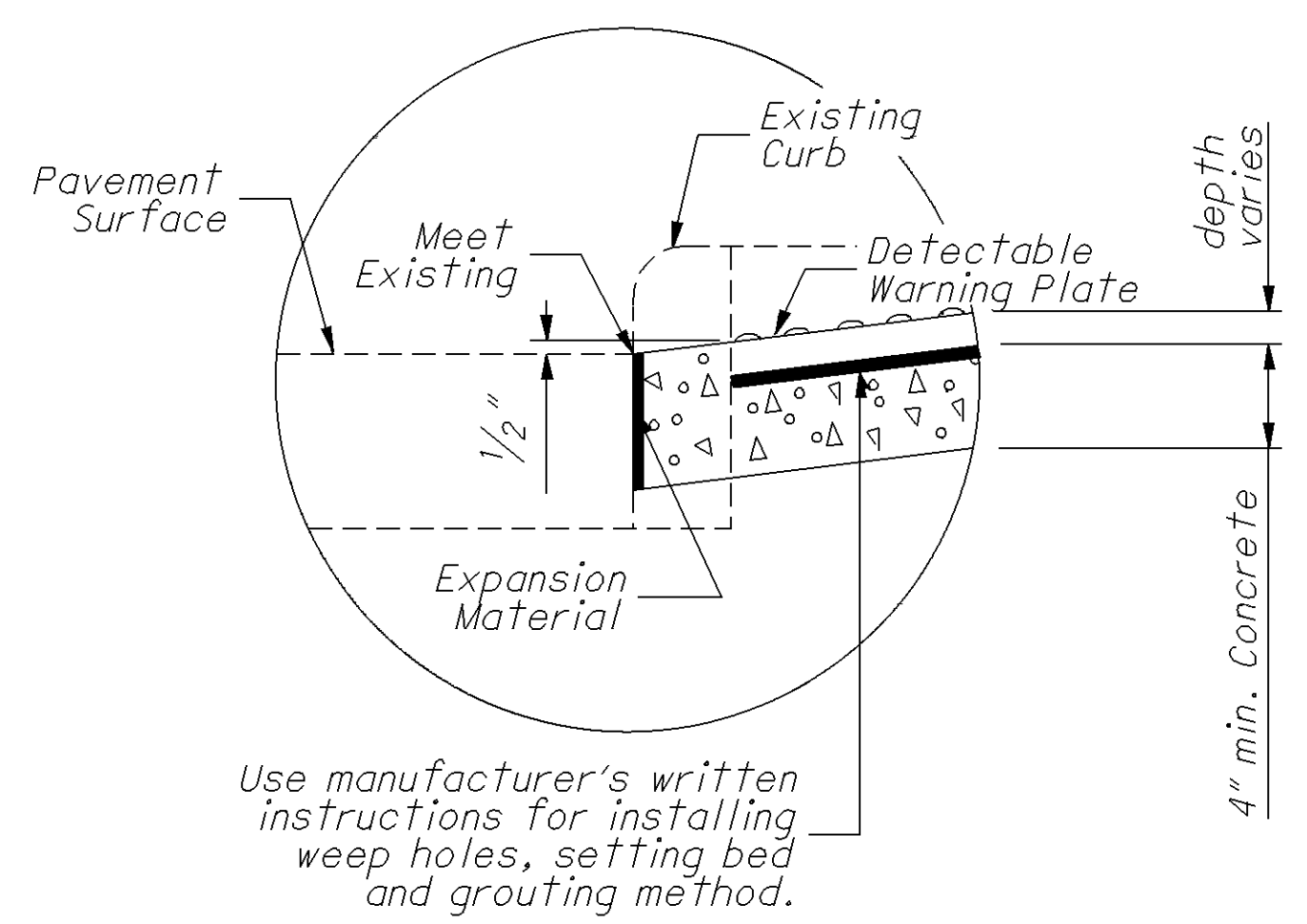


SECTION C-C  
See Sheet 12.

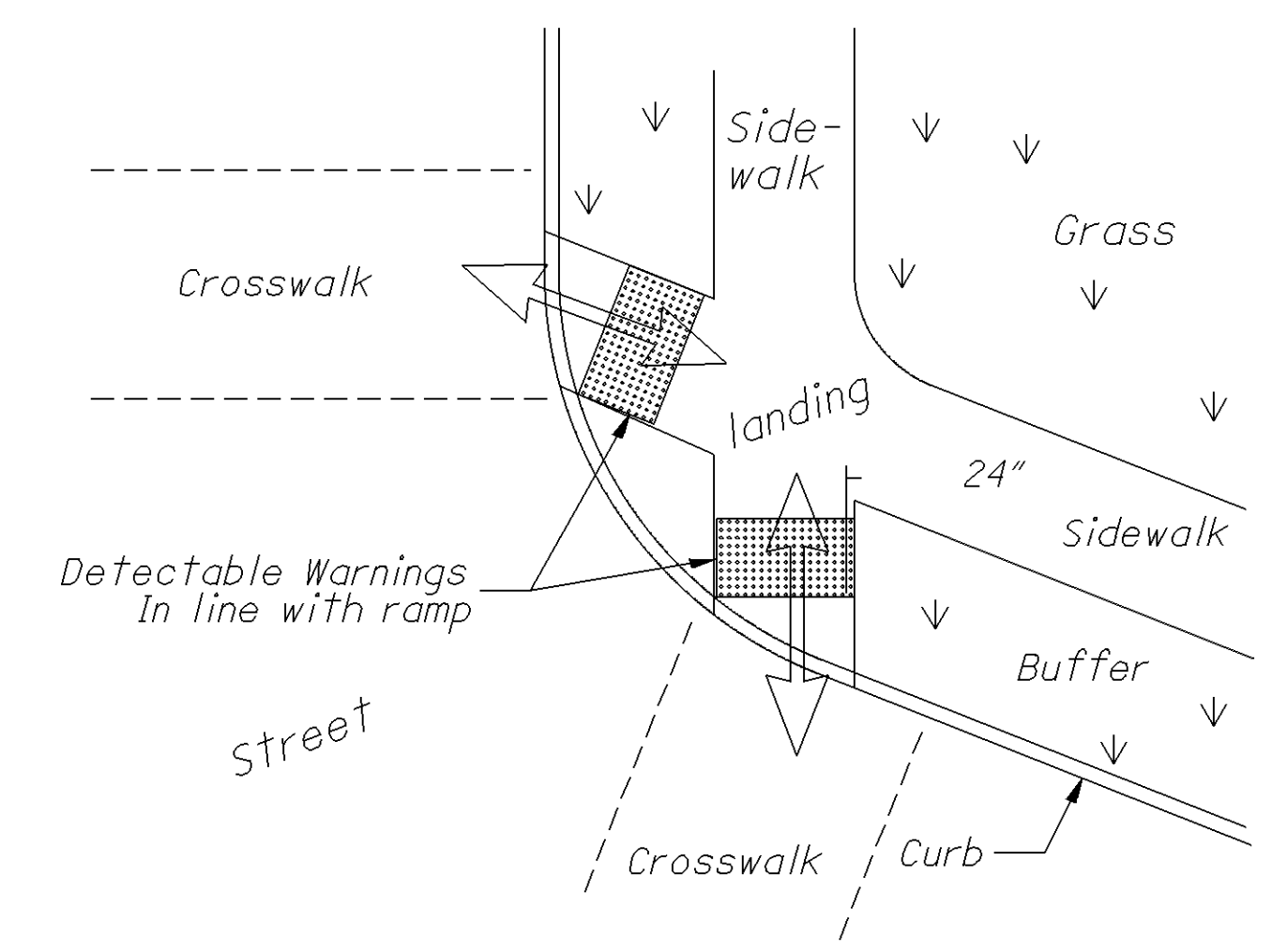


SECTION D-D  
See Sheet 12.

\*Where possible, pour ramp area integral with the curb, otherwise use 6 inch thick walk.



DETAIL A



DETECTABLE WARNING ALIGNMENT

**DETECTABLE WARNINGS NOTES**

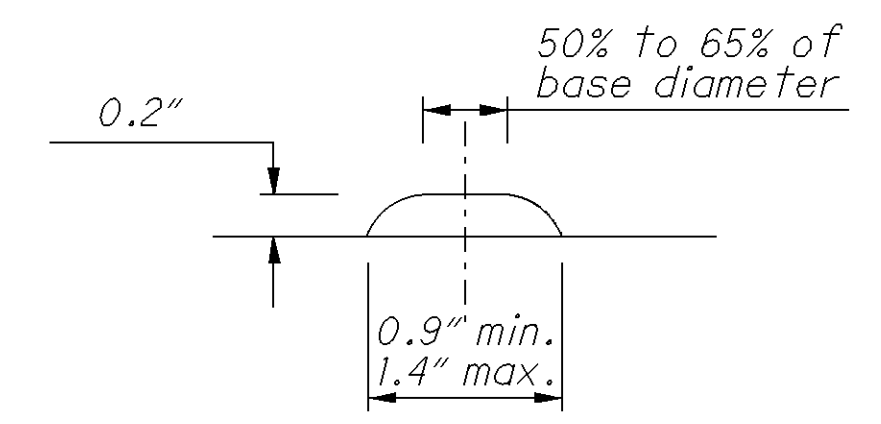
**GENERAL:** Detectable Warnings are a distinctive surface pattern of truncated domes which are detectable by cane or underfoot to alert people with vision impairments of their approach to streets and hazardous drop-offs.

**PLACEMENT:** Detectable warnings are to be installed at any location where pedestrians might cross paths with vehicular traffic lanes, such as the base of curb ramps or at blended curbs. A 24 inch strip of domes is to be installed for the full width of the ramp or walk. Typical street corner placement locations are shown on Sheet 11.

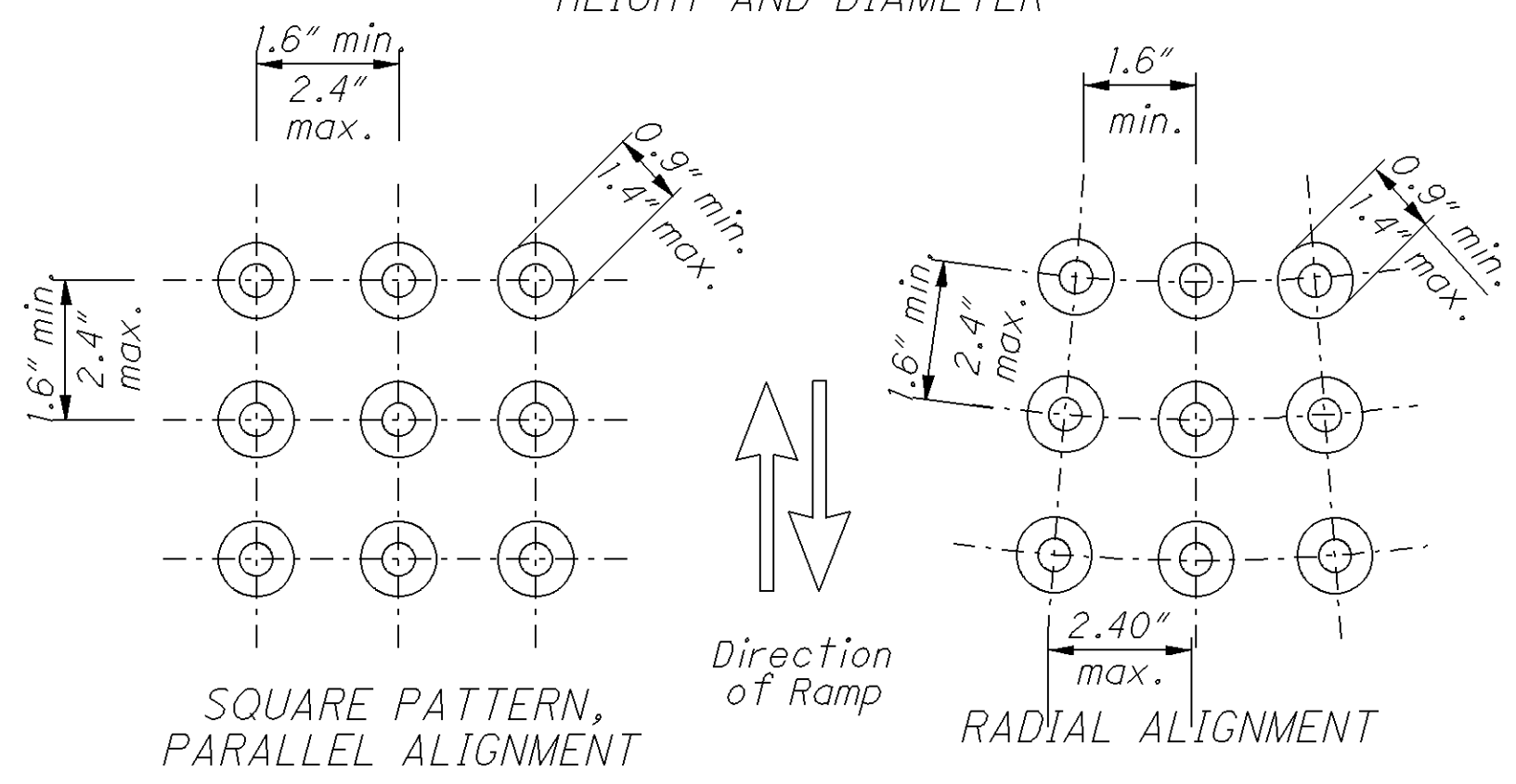
The depth of concrete underneath detectable warning products shall be a minimum of 4 inch. See DETAIL A.

**ALIGNMENT:** Truncated domes should be aligned with the primary direction of the ramp as shown on the DETECTABLE WARNING ALIGNMENT Detail. Normally the detectable warnings should be flush with the back of the curb, but in skewed conditions at least one corner of the 24 inch strip should be adjacent to the back of curb. For non-standard layouts, detectable warning materials may have to be mitered and placed segmentally.

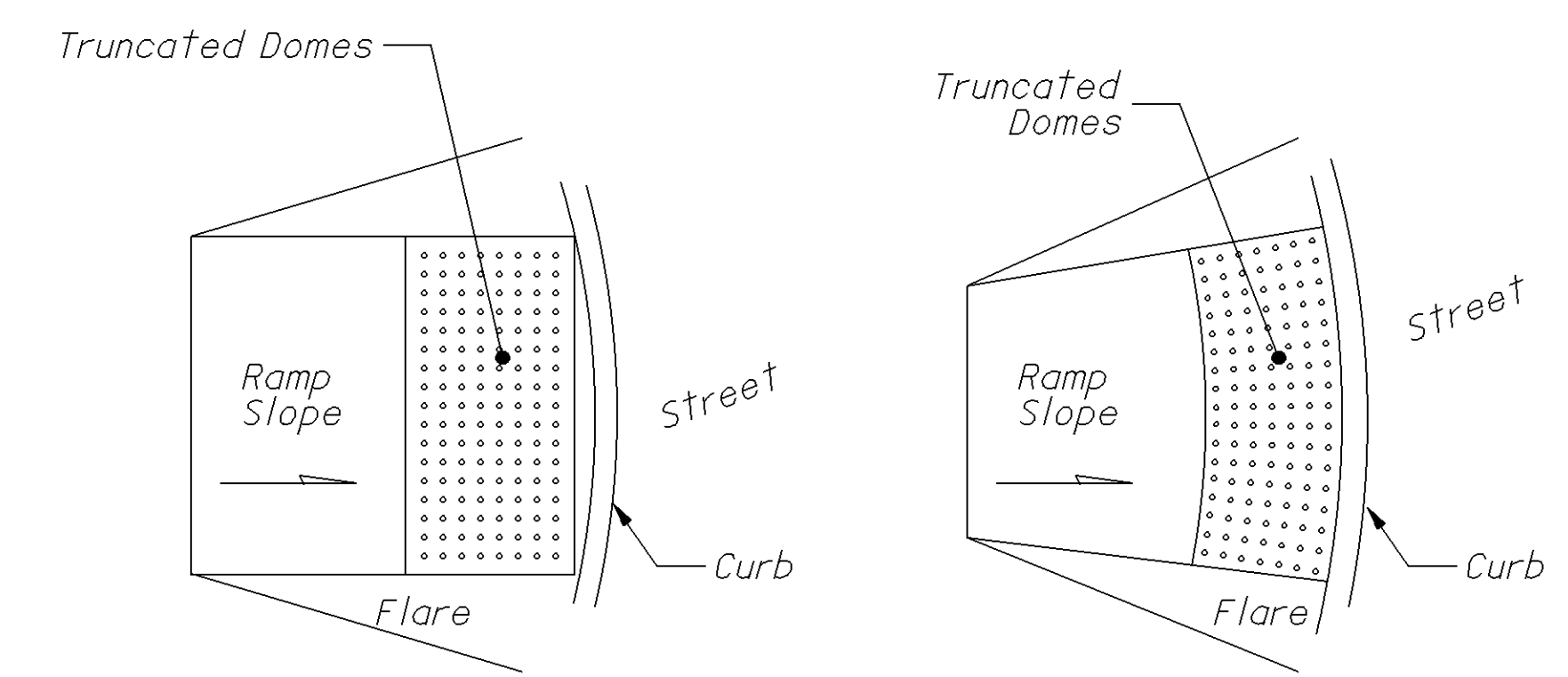
**PRODUCTS & COLORS:** Color of the detectable warnings should contrast with surrounding concrete walk and ramp. Black is not an acceptable color. Approved products and guidance on color may be found on the Office of Roadway Engineering Service's Detectable Warnings Approved List. Install products as per manufacturer's printed instructions.



HEIGHT AND DIAMETER



TRUNCATED DOMES DETAILS



DOME ALIGNMENT ON RADIUS CURB

ITEM 817 EDGE/CENTER LINE

LOCATION	COUNTY	ROUTE	S.L.M.		TOTAL LENGTH (MILES)	INFORMATION ONLY			TOTAL EDGE LINE MILES	INFORMATION ONLY		TOTAL CENTER LINE MILES	REMARKS
			FROM	TO		WHITE EDGE LINE QUANTITIES				CENTER LINE QUANTITIES			
						TOTAL MILES	HIGHWAY MILES	RAMP MILES		TOTAL MILES	EQUIVALENT SOLID LINE		
1	MUS	S.R. 60	8.86	13.02	4.16	8.32	8.32		8.32	4.16	8.320	4.16	
TOTAL (CARRIED TO LOCATION 1 SUB-SUMMARY)									8.32			4.16	
2	MUS	S.R. 60	13.02	15.02	2.00	4.00	4.00		4.00	2.00	4.480	2.24	0.24 MILES ADDED FOR TRANSITION (CENTER LINE)
TOTAL (CARRIED TO LOCATION 2 SUB-SUMMARY)									4.00			2.24	
3	MUS	S.R. 60	15.02	16.64	1.62					1.62	3.360	1.68	0.06 MILES ADDED FOR TRANSITION AT SLM 16.23 (CENTER LINE)
TOTAL (CARRIED TO LOCATION 3 SUB-SUMMARY)												1.68	

ITEM 817 LANE LINE

LOCATION	COUNTY	ROUTE	S.L.M.		TOTAL LENGTH (MILES)	INFORMATION ONLY		TOTAL LANE LINE MILES	REMARKS	
			FROM	TO		LANE LINE QUANTITIES				
						DASHED MILE	SOLID MILE			
1	MUS	S.R. 60 N.B.	8.86	13.02	4.16	4.16		4.16		
1	MUS	S.R. 60 S.B.	8.86	13.02	4.16	4.16		4.16		
TOTAL (CARRIED TO LOCATION 1 SUB-SUMMARY)									8.32	
2	MUS	S.R. 60 N.B.	13.02	14.76	1.74	1.74		1.74		
2	MUS	S.R. 60 S.B.	13.02	14.84	1.82	1.82		1.82		
TOTAL (CARRIED TO LOCATION 2 SUB-SUMMARY)									3.56	
3	MUS	S.R. 60 N.B.	16.39	16.61	0.22	0.22		0.22		
3	MUS	S.R. 60 S.B.	16.42	16.61	0.19	0.19		0.19		
TOTAL (CARRIED TO LOCATION 3 SUB-SUMMARY)									0.41	

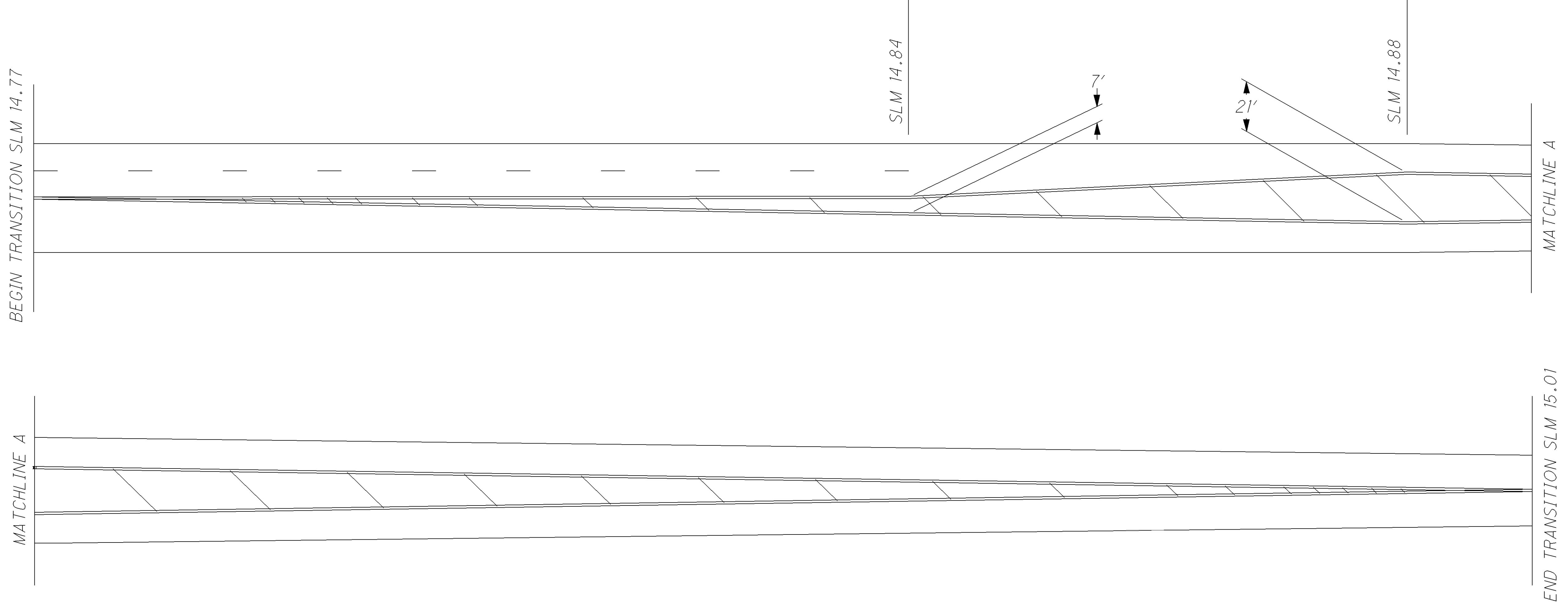
644 THERMOPLASTIC AUXILARY MARKING

LOCATION	COUNTY	ROUTE	DESCRIPTION	SIDE	SLM	TRANVERSE/DIAGONAL LINES (24")		STOP LINE (24")	12" CROSSWALK LINE	8" CHANNELIZING LINE	WORD ON PAVEMENT		SCHOOL SYMBOL MARKING		LANE ARROWS				REMARKS	
						WHITE	YELLOW				ONLY		72"	96"	COMBINATION		TURN			
											72"	96"			LT./TH.	RT./TH.	LT.	RT.		
						FT.	FT.				EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH		
1	MUS	S.R. 60	DUNCAN FALLS OUTPOST	LT				20											PLACE 44' FROM S.R. 60 CENTER LINE	
1	MUS	S.R. 60	DURANT RD	RT				10											PLACE 51' FROM S.R. 60 CENTER LINE	
1	MUS	S.R. 60	LAWHEAD LANE	RT				20											PLACE 53' FROM S.R. 60 CENTER LINE	
<b>TOTALS (CARRIED TO LOCATION 1 SUB-SUMMARY)</b>								50												
2	MUS	S.R. 60	PAUL LANE	RT				9											PLACE 42' FROM S.R. 60 CENTER LINE	
2	MUS	S.R. 60	CHATEAU ESTATES (EXIT)	RT				23											PLACE 52' FROM S.R. 60 CENTER LINE	
2	MUS	S.R. 60	WALTER DR	RT				10											PLACE 47' FROM S.R. 60 CENTER LINE	
2	MUS	S.R. 60	BAM LANE	RT				12											PLACE 40' FROM S.R. 60 CENTER LINE	
2	MUS	S.R. 60	DIETZ LANE	RT				18											PLACE 48' FROM S.R. 60 CENTER LINE	
2	MUS	S.R. 60	VAN BUREN AVE	RT				8											PLACE 37' FROM S.R. 60 CENTER LINE	
2	MUS	S.R. 60	S.R. 555	LT				34											PLACE AS DIRECTED	
2	MUS	S.R. 60	ON S.R. 60 N.B. AT S.R. 555	CL				24	180		1						2		PLACE AS DIRECTED	
2	MUS	S.R. 60	ON S.R. 60 S.B. AT S.R. 555	CL				24											PLACE AS DIRECTED	
2	MUS	S.R. 60	4-LANE TO 2-LANE TRANSITION	CL	14.77-15.01														SEE DETAIL SHEET 16	
<b>TOTALS (CARRIED TO LOCATION 2 SUB-SUMMARY)</b>								358	162	180		1						2		
3	MUS	S.R. 60	ARCADIA LANE	RT				12											PLACE AS DIRECTED	
3	MUS	S.R. 60	DILLON RD	RT				29	160										PLACE AS DIRECTED	
3	MUS	S.R. 60	DULTY LANE	RT					56										PLACE AS DIRECTED	
3	MUS	S.R. 60	HUGHES ST	LT					80										PLACE AS DIRECTED	
3	MUS	S.R. 60	HUGHES ST	RT					64										PLACE AS DIRECTED	
<b>TOTALS (CARRIED TO LOCATION 3 SUB-SUMMARY)</b>								41	360											

CALCULATED  
LIVE  
CHECKED  
DNM

AUXILARY MARKING DATA

MUS - 60 - 8.86



QUANTITIES FOR PAVEMENT MARKINGS SHOWN ARE INLCUDED IN THE TABLE ON SHEET 15 UNDER LOCATION 2.

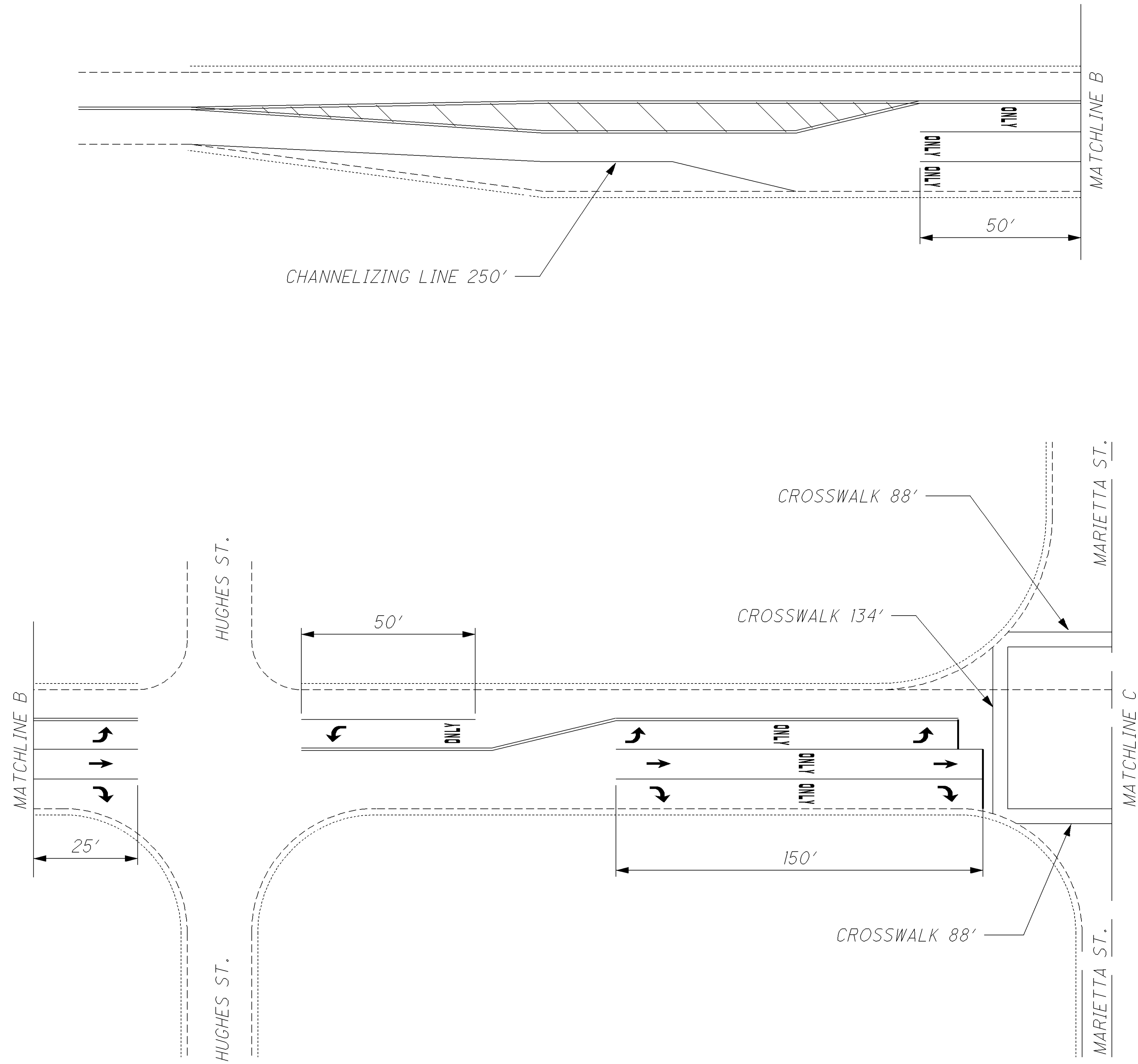
CALCULATED
LME
CHECKED
DNM

**PAVEMENT MARKING DETAIL**

**MUS -60-8.86**



ALL PAVEMENT MARKING SHALL BE PLACED ACCORDING TO STD. DWGS. TC-71.10 AND TC-73.10 OR AS DIRECTED BY THE ENGINEER



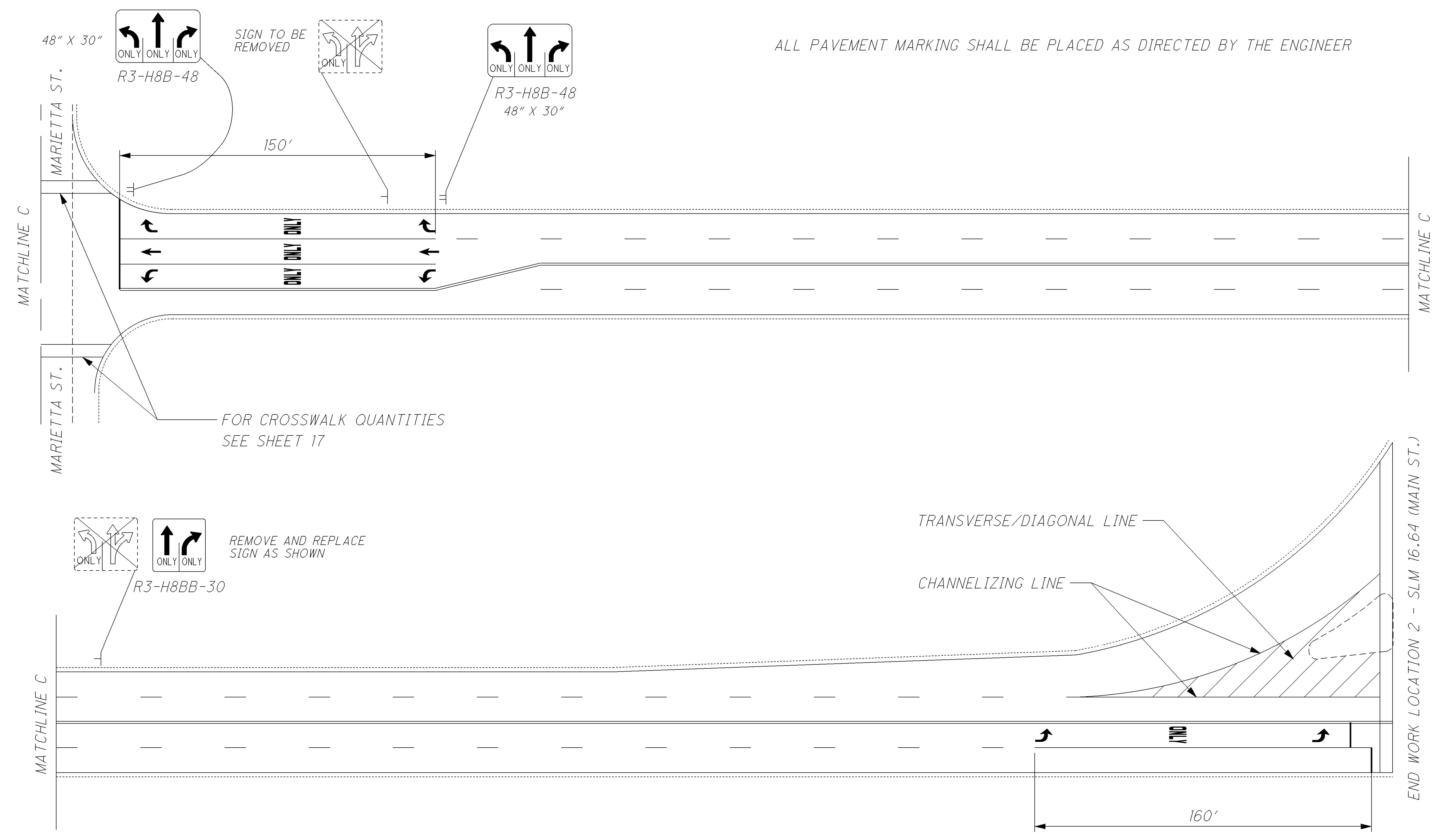
FOR CENTER LINE QUANTITIES SEE PAVEMENT MARKING DATA SHEET 14.

PAVEMENT MARKING QUANTITIES

- ITEM 644 CHANNELIZING LINE - 750 FEET
- ITEM 644 STOP LINE - 40 FEET
- ITEM 644 CROSSWALK LINE - 310 FEET
- ITEM 644 TRANSVERSE/DIAGONAL LINE - 183 FEET
- ITEM 644 LANE ARROW - 10 EACH
- ITEM 644 WORD ON PAVEMENT, 72" - 7 EACH

QUANTITIES CARRIED TO LOCATION 3 SUB-SUMMARY

ALL PAVEMENT MARKING SHALL BE PLACED AS DIRECTED BY THE ENGINEER



**PAVEMENT MARKING QUANTITIES**

- ITEM 644 CHANNELIZING LINE - 760 FEET
- ITEM 644 STOP LINE - 70 FEET
- ITEM 644 CROSSWALK LINE - 266 FEET
- ITEM 644 TRANSVERSE/DIAGONAL LINE (WHITE) - 250 FEET
- ITEM 644 LANE ARROW - 8 EACH
- ITEM 644 WORD ON PAVEMENT, 72" - 4 EACH

**SIGN QUANTITIES**

- ITEM 630 GROUND MOUNTED SUPPORT, NO. 2 POST - 44 FEET
- ITEM 630 SIGN, FLAT SHEET - 25 SQ. FT.
- ITEM 630 REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL - 2 EACH
- ITEM 630 REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL - 1 EACH

QUANTITIES CARRIED TO LOCATION 3 SUB-SUMMARY

DETAIL	SEE STD. DWG. TC-65.11
1	TAPERED ACCELERATION LANE
2	DECELERATION LANE
3	MULTILANE DIVIDED/ CONTROLLED ACCESS

DETAIL	SEE STD. DWG. TC-65.11
4	4 LANE DIVIDED TO 2 LANE TRANSITION
5	4 LANE UNDIVIDED TO 2 LANE TRANSITION
6	ONE LANE BRIDGE
7	STOP APPROACH
8	THRU APPROACH
9	TWO WAY LEFT TURN LANE

DETAIL	SEE STD. DWG. TC-65.11
10	APPROACH W/LT. TURN LANE
11	HORIZONTAL CURVE 40'
12	HORIZONTAL CURVE ALT.
GAP	CENTERLINE AT 80' TYP.

**ITEM 621 RPM SUB-SUMMARY**

L O C A T I O N	C O U N T Y	R O U T E	B E G I N L O G P O I N T S L M	E N D L O G P O I N T S L M	L E N G T H		D E T A I L	621	P R I S M A T I C R E T R O - R E F L E C T O R C O L O R S					R E M A R K S
								R P M	I N F O R M A T I O N O N L Y					
									O N E - W A Y	T W O - W A Y				
										W H I T E	Y E L L O	Y E L L O / Y E L L O	W H I T E / R E D	
					M I L E S	L I N. F T.		E A C H						
1	MUS	S.R. 60	8.86	13.02	4.16	21,965	GAP/REM	840	16		275	549		STOP S.B. AT MILLERS LN, LANE LINE SPACING 80'
SUB-TOTALS									16		275	549		
<b>TOTAL (CARRIED TO LOCATION 1 SUB-SUMMARY)</b>								<b>840</b>						
2	MUS	S.R. 60	13.02	14.61	1.59	8,395	GAP/REM	315			105	210		
2	MUS	S.R. 60	14.61	14.77	0.16	845	GAP/REM	64	32		11	21		STOP N.B. & S.B. AT S.R. 555, LANE LINE SPACING 80'
2	MUS	S.R. 60	14.77	15.01	0.24	1,267	GAP/REM	53	16		32	5		2 LANE TO 4 LANE TRANSITION
SUB-TOTALS									80		148	236		
<b>TOTAL (CARRIED TO LOCATION 2 SUB-SUMMARY)</b>								<b>432</b>						

**RAISED PAVEMENT MARKER DATA**

**MUS - 60 - 8.86**

LOCATION	BEGIN SLM	END SLM	LENGTH	SIDE	202	203	606							626	659				REMARKS  (ADDED DIMENSIONS DO NOT INCLUDE ANCHOR ASSEMBLY GUARDRAIL)			
					GUARDRAIL REMOVED	EMBANKMENT	GUARDRAIL, TYPE 5	GUARDRAIL, TYPE 5 USING 9' POSTS	GUARDRAIL, TYPE 5, LONGSPAN	ANCHOR ASSEMBLY, TYPE E	ANCHOR ASSEMBLY, TYPE T	BRIDGE TERMINAL ASSEMBLY, TYPE 2	BRIDGE TERMINAL ASSEMBLY, TYPE 4	SPECIAL - RESHAPING BERM	BARRIER REFLECTOR	SEEDING AND MULCHING	COMMERCIAL FERTILIZER	LIME		WATER		
			FEET	LT./RT.	FT.	CU. YD.	FT.	FT.	FT.	EACH	EACH	EACH	EACH	FT.	EACH	SQ. YD.	TON	ACRE	M. GAL.			
1	9.29	9.43	750.0	RT	750.0	1.0	725.0				2			750.0	8	167	0.02	0.03	0.90			
1	9.19	9.34	800.0	LT	800.0	1.0		775.0			2			800.0	8	178	0.02	0.04	0.96			
1	9.58	9.66	425.0	LT	425.0	2.0		362.5		1	1			425.0	4	94	0.01	0.02	0.51			
1	9.91	10.36	2387.5	LT	2,387.5	2.0		2,325.0		1	1			2,387.5	24	531	0.05	0.11	2.87	REMOVE WALK-THRU		
1	10.47	10.50	162.5	RT	162.5	2.0	100.0			1	1			162.5	3	36	0.01	0.01	0.20			
1	10.45	10.53	425.0	LT	425.0	2.0		362.5		1	1			425.0	4	94	0.01	0.02	0.51			
1	10.61	10.65	212.5	RT	212.5	2.0	150.0			1	1			212.5	3	47	0.01	0.01	0.26			
1	10.55	10.69	750.0	LT	750.0	2.0		687.5		1	1			750.0	8	167	0.02	0.03	0.90			
1	10.77	10.93	850.0	LT	850.0	2.0		787.5		1	1			850.0	9	189	0.02	0.04	1.02			
1	10.94	10.98	212.5	LT	212.5	2.0		150.0		1	1			212.5	3	47	0.01	0.01	0.26			
1	11.37	11.39	112.5	RT	112.5	1.0	87.5				2			125.0	3	28	0.01	0.01	0.15	ADD 12.5' TO BEGINNING RADIUS		
1	11.00	11.81	4287.5	LT	4,287.5	2.0		4,225.0		1	1			4,287.5	43	953	0.09	0.20	5.15			
1	11.97	12.00	162.5	LT	162.5	1.0		137.5			2			162.5	3	36	0.01	0.01	0.20			
1	12.07	12.11	212.5	RT	112.5	1.0	237.5				2			262.5	3	58	0.01	0.01	0.32	ADD 150' TO BEGINNING, WRAP AT DRIVE		
1	12.12	12.16	212.5	RT	212.5	1.0	187.5				2			212.5	3	47	0.01	0.01	0.26			
1	12.23	12.88	3437.5	LT	3,437.5	2.0		3,375.0		1	1			3,427.5	34	762	0.07	0.16	4.11	REMOVE 2 WALK-THRU		
1	12.34	12.35	62.5	RT	62.5	1.0	12.5		37.5		2			75.0	3	17	0.01	0.00	0.09	ADD 12.5' TO BEGINNING		
1	12.60	12.61	62.5	RT	62.5	1.0	50.0				2			75.0	3	17	0.01	0.00	0.09	ADD 12.5' TO BEGINNING		
1	12.90	12.99	487.5	RT	487.5	2.0	425.0			1	1			487.5	5	108	0.01	0.02	0.59			
<b>TOTALS (CARRIED TO LOC. 1 SUB-SUMMARY)</b>					<b>15,912.5</b>	<b>30.0</b>	<b>1,975.0</b>	<b>13,187.5</b>	<b>37.5</b>	<b>11</b>	<b>27</b>			<b>16,090.0</b>	<b>174</b>	<b>3,576</b>	<b>0.41</b>	<b>0.74</b>	<b>19.35</b>			
2	12.90	13.11	1112.5	LT	1,112.5	2.0		1,050.0		1	1			1,112.5	11	247	0.02	0.05	1.34			
2	13.13	13.88	3962.5	LT	3,962.5	2.0		3,900.0		1	1			3,962.5	40	881	0.08	0.18	4.76	REMOVE 4 WALK-THRU		
2	13.19	13.23	212.5	RT	100.0	1.0	162.5				2			187.5	3	42	0.01	0.01	0.23	ADD 87.5' TO BEGINNING		
2	13.60	13.62	112.5	RT	100.0	2.0	62.5			1	1			125.0	3	28	0.01	0.01	0.15	ADD 25' TO BEGINNING		
2	13.98	14.10	637.5	RT	637.5	1.0	575.0				2		2	575.0	6	128	0.01	0.03	0.69	ADD 50' TO BEGINNING		
2	13.95	14.39	2325.0	LT	2,325.0	2.0		2,150.0		1	1		2	2,212.5	22	492	0.04	0.10	2.66			
2	14.40	14.54	750.0	LT	750.0	2.0		687.5		1	1			750.0	8	167	0.02	0.03	0.90			
2	14.55	14.60	275.0	LT	275.0	2.0		262.5			1	1	1	275.0	3	61	0.01	0.01	0.33			
2	14.89	14.90	62.5	RT	62.5	1.0	37.5				2			62.5	3	14	0.01	0.01	0.08			
<b>TOTALS (CARRIED TO LOC. 2 SUB-SUMMARY)</b>					<b>9,325.0</b>	<b>15.0</b>	<b>837.5</b>	<b>8,050.0</b>		<b>5</b>	<b>12</b>	<b>1</b>	<b>4</b>	<b>9,262.5</b>	<b>99</b>	<b>2,060</b>	<b>0.21</b>	<b>0.43</b>	<b>11.14</b>			
3	WAYNE AVE.				200.0		200.0															
<b>TOTALS (CARRIED TO LOC. 3 SUB-SUMMARY)</b>					<b>200.0</b>		<b>200.0</b>															

CALCULATED  
LIME  
CHECKED  
DNM

**GUARDRAIL QUANTITIES**

**MUS - 60 - 8.86**

LOCATION 1										ITEM	ITEM EXT.	LOCATION 1 TOTAL	UNIT	DESCRIPTION
Sht. 2	Sht. 3	Sht. 5	Sht. 6	Sht. 7	Sht. 8	Sht. 14	Sht. 15	Sht. 19	Sht. 20					
1,033				985	433					202	23500	2,451	SQ YD	WEARING COURSE REMOVED
									15,912.5	202	38000	15,912.5	FT	GUARDRAIL REMOVED
					45					203	10000	45	CU YD	EXCAVATION
									30	203	20000	30	CU YD	EMBANKMENT
					534					204	10000	534	SQ YD	SUBGRADE COMPACTION
	4									209	60500	4	MILE	LINEAR GRADING
	750									253	02000	750	CU YD	PAVEMENT REPAIR
		117,146	29,287							254	01000	146,433	SQ YD	PAVEMENT PLANING, ASPHALT CONCRETE
		8,786	2,197	74	33					407	10000	11,090	GALLON	TACK COAT
		5,858	1,465	50	49					407	14000	7,422	GALLON	TACK COAT FOR INTERMEDIATE COURSE
3,901										408	10001	3,901	GALLON	PRIME COAT, AS PER PLAN
48		5,695	1,424	49	47					448	46050	7,263	CU YD	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22
34		4,068	1,017							448	46904	5,119	CU YD	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG70-22M
				35	34					448	47020	69	CU YD	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22
									1,975.0	606	13000	1,975.0	FT	GUARDRAIL, TYPE 5
									13,187.5	606	13030	13,187.5	FT	GUARDRAIL, TYPE 5, USING 9 FOOT POSTS
									37.5	606	17290	37.5	FT	GUARDRAIL, TYPE 5, LONG-SPAN
									11	606	26100	11	EACH	ANCHOR ASSEMBLY, TYPE E
									27	606	26500	27	EACH	ANCHOR ASSEMBLY, TYPE T
									16,090	606	50000	16,090	FT	SPECIAL - RESHAPING BERM
8										614	12460	8	EACH	WORK ZONE MARKING SIGN
	3									614	13000	3	CU YD	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC
		4.16								614	21400	4.16	MILE	WORK ZONE CENTER LINE, CLASS II
		4.16								614	21550	4.16	MILE	WORK ZONE CENTER LINE, CLASS III, 642 PAINT
			543							617	10101	543	CU YD	COMPACTED AGGREGATE, AS PER PLAN
								840		621	00100	840	EACH	RPM
840										621	54000	840	EACH	RAISED PAVEMENT MARKER REMOVED
									174	626	00100	174	EACH	BARRIER REFLECTOR
	5									632	26501	5	EACH	DETECTOR LOOP, AS PER PLAN
							50			644	00500	50	FT	STOP LINE
									3,576	659	10000	3,576	SQ YD	SEEDING AND MULCHING
									0.41	659	20000	0.41	TON	COMMERCIAL FERTILIZER
									0.74	659	31000	0.74	ACRE	LIME
									19.35	659	35000	19.35	M GAL	WATER
						8.32				817	00100	8.32	MILE	EDGE LINE
						8.32				817	00200	8.32	MILE	LANE LINE
						4.16				817	00300	4.16	MILE	CENTER LINE

CALCULATED  
LME  
CHECKED  
DNM

LOCATION 1 SUB-SUMMARY

MUS -60-8.86

M060-LSS-001.DGN 2-16-11

LOCATION 2										ITEM	ITEM EXT.	LOCATION 2 TOTAL	UNIT	DESCRIPTION	
Sht. 2	Sht. 3	Sht. 5	Sht. 6	Sht. 7	Sht. 9	Sht. 14	Sht. 15	Sht. 19	Sht. 20						
				1,426						202	23500	1,943	SQ YD	WEARING COURSE REMOVED	
517									9,325.0	202	38000	9,325.0	FT	GUARDRAIL REMOVED	
									15	203	20000	15	CU YD	EMBANKMENT	
	2									209	60500	2	MILE	LINEAR GRADING	
	250									253	02000	250	CU YD	PAVEMENT REPAIR	
		54,694	13,407							254	01000	68,101	SQ YD	PAVEMENT PLANING, ASPHALT CONCRETE	
		4,103	1,006	108						407	10000	5,217	GALLON	TACK COAT	
		2,735	671	72						407	14000	3,478	GALLON	TACK COAT FOR INTERMEDIATE COURSE	
1,878										408	10001	1,878	GALLON	PRIME COAT, AS PER PLAN	
24		2,659	652	70						448	46050	3,405	CU YD	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22	
17		1,900	466							448	46904	2,383	CU YD	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG70-22M	
				50						448	47020	50	CU YD	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	
							120			516	31011	120	FT	2" DEEP JOINT SEALER, AS PER PLAN	
									225	517	72307	225	FT	RAILING (DEEP BEAM RAIL WITH STEEL TUBULAR BACKUP AND TYPE 2 STEEL POSTS), AS PER PLAN	
									837.5	606	13000	837.5	FT	GUARDRAIL, TYPE 5	
									8,050.0	606	13030	8,050.0	FT	GUARDRAIL, TYPE 5, USING 9 FOOT POSTS	
									5	606	26100	5	EACH	ANCHOR ASSEMBLY, TYPE E	
									12	606	26500	12	EACH	ANCHOR ASSEMBLY, TYPE T	
									1	606	35100	1	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 2	
									4	606	35140	4	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 4	
									9,263	606	50000	9,263	FT	SPECIAL - RESHAPING BERM	
9										614	12460	9	EACH	WORK ZONE MARKING SIGN	
	6									614	13000	6	CU YD	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC	
		1.96								614	21400	1.96	MILE	WORK ZONE CENTER LINE, CLASS II	
		1.96								614	21550	1.96	MILE	WORK ZONE CENTER LINE, CLASS III, 642 PAINT	
										617	10101	249	CU YD	COMPACTED AGGREGATE, AS PER PLAN	
									432	621	00100	432	EACH	RPM	
814										621	54000	814	EACH	RAISED PAVEMENT MARKER REMOVED	
										99	626	00100	99	EACH	BARRIER REFLECTOR
	10									632	26501	10	EACH	DETECTOR LOOP, AS PER PLAN	
	1,250									632	65200	1,250	FT	LOOP DETECTOR LEAD-IN CABLE	
							180			644	00400	180	FT	CHANNELIZING LINE	
							162			644	00500	162	FT	STOP LINE	
							358			644	00700	358	FT	TRANSVERSE/DIAGONAL LINE	
							2			644	01300	2	EACH	LANE ARROW	
							1			644	01410	1	EACH	WORD ON PAVEMENT, 96"	
									2,060	659	10000	2,060	SQ YD	SEEDING AND MULCHING	
									0.21	659	20000	0.21	TON	COMMERCIAL FERTILIZER	
									0.43	659	31000	0.43	ACRE	LIME	
									11.14	659	35000	11.14	M GAL	WATER	
							4.00			817	00100	4.00	MILE	EDGE LINE	
							3.56			817	00200	3.56	MILE	LANE LINE	
							2.24			817	00300	2.00	MILE	CENTER LINE	

LOCATION 2 SUB-SUMMARY

MUS-60-8.86

LOCATION 3										ITEM	ITEM EXT.	LOCATION 3 TOTAL	UNIT	DESCRIPTION
Sht. 2	Sht. 3	Sht. 5	Sht. 7	Sht. 10	Sht. 14	Sht. 15	Sht. 17	Sht. 18	Sht. 20					
			1,043							202	23500	1,043	SQ YD	WEARING COURSE REMOVED
				540						202	30000	540	SQ FT	WALK REMOVED
				84						202	32000	84	FT	CURB REMOVED
									200	202	38000	200	FT	GUARDRAIL REMOVED
	250									253	02000	250	CU YD	PAVEMENT REPAIR
		33,393								254	01001	33,393	SQ YD	PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN
		1,670	53							407	20000	1,723	GALLON	TACK COAT, TRACKLESS TACK, INTERMEDIATE COURSE
		2,505	79							407	20100	2,584	GALLON	TACK COAT, TRACKLESS TACK, SURFACE COURSE
		1,624	51							448	46050	1,675	CU YD	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22
		1,160								448	46904	1,160	CU YD	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG70-22M
			37							448	47020	37	CU YD	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22
									200	606	13000	200	FT	GUARDRAIL, TYPE 5
				484						608	10000	484	SQ FT	4" CONCRETE WALK
				100						609	26000	100	FT	CURB, TYPE 6
11										614	12460	11	EACH	WORK ZONE MARKING SIGN
	3									614	13000	3	CU YD	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC
		1.62								614	21400	1.62	MILE	WORK ZONE CENTER LINE, CLASS II
		1.62								614	21550	1.62	MILE	WORK ZONE CENTER LINE, CLASS III, 642 PAINT
								44		630	02100	44	EACH	GROUND MOUNTED SUPPORT, NO. 2 POST
								25		630	80100	25	SQ FT	SIGN, FLAT SHEET
								2		630	84900	2	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL
								1		630	86002	1	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL
	8									632	26501	8	EACH	DETECTOR LOOP, AS PER PLAN
								750	760	644	00400	1,510	FT	CHANNELIZING LINE
						41	40	70		644	00500	151	FT	STOP LINE
						360	310	266		644	00600	936	FT	CROSSWALK LINE
							183	250		644	00700	433	FT	TRANSVERSE/DIAGONAL LINE
							10	8		644	01300	18	EACH	LANE ARROW
							7	4		644	01400	11	EACH	WORD ON PAVEMENT, 72"
				4						690	98000	4	EACH	SPECIAL - MISC.: CURB RAMP, TYPE A1
				1						690	98000	1	EACH	SPECIAL - MISC.: CURB RAMP, TYPE B2
				2						690	98000	2	EACH	SPECIAL - MISC.: CURB RAMP, TYPE D
				56						690	98200	56	SQ FT	SPECIAL - MISC.: DETECTABLE WARNING
					0.41					817	00200	0.41	MILE	LANE LINE
					1.68					817	00300	1.68	MILE	CENTER LINE

CALCULATED LME CHECKED DNM  
**LOCATION 3 SUB-SUMMARY**  
**MUS-60-8.86**  
 23  
 25

M060-LSS-003.DGN 2-16-11

CALCULATED  
LME  
CHECKED  
DNM

**GENERAL SUMMARY**

**MUS -60-8.86**

LOCATION 1 (80% FED / 20% STATE) RURAL	LOCATION 2 (80% FED / 20% STATE) URBAN	LOCATION 3 (80% FED / 20% LOCAL)	100% LOCAL	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET
2,451	1,943	1,043		202	23500	5,437	SQ YD	WEARING COURSE REMOVED	
		540		202	30000	540	SQ FT	WALK REMOVED	
		84		202	32000	84	FT	CURB REMOVED	
15,912.5	9,325.0	200.0		202	38000	25,437.5	FT	GUARDRAIL REMOVED	
45				203	10000	45	CU YD	EXCAVATION	
30	15			203	20000	45	CU YD	EMBANKMENT	
534				204	10000	534	SQ YD	SUBGRADE COMPACTION	
4	2			209	60500	6	MILE	LINEAR GRADING	
750	250	250		253	02000	1,250	CU YD	PAVEMENT REPAIR	
146,433	68,101			254	01000	214,534	SQ YD	PAVEMENT PLANING, ASPHALT CONCRETE	3
		33,393		254	01001	33,393	SQ YD	PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN	3
11,090	5,217			407	10000	16,307	GALLON	TACK COAT	
7,422	3,478			407	14000	10,900	GALLON	TACK COAT FOR INTERMEDIATE COURSE	
		1,723		407	20000	1,723	GALLON	TACK COAT, TRACKLESS TACK, INTERMEDIATE COURSE	4
		2,584		407	20100	2,584	GALLON	TACK COAT, TRACKLESS TACK, SURFACE COURSE	4
3,901	1,878			408	10001	5,779	GALLON	PRIME COAT, AS PER PLAN	2
7,263	3,405	1,675		448	46050	12,343	CU YD	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22	
5,119	2,383	1,160		448	46904	8,662	CU YD	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG70-22M	
69	50	37		448	47020	156	CU YD	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	
	120			516	31011	120	FT	2" DEEP JOINT SEALER, AS PER PLAN	2
	225			517	72307	225	FT	RAILING (DEEP BEAM RAIL WITH STEEL TUBULAR BACKUP AND TYPE 2 STEEL POSTS), AS PER PLAN	
1,975.0	837.5	200.0		606	13000	3,012.5	FT	GUARDRAIL, TYPE 5	
13,187.5	8,050.0			606	13030	21,237.5	FT	GUARDRAIL, TYPE 5, USING 9 FOOT POSTS	
37.5				606	17290	37.5	FT	GUARDRAIL, TYPE 5, LONG-SPAN	
11	5			606	26100	16	EACH	ANCHOR ASSEMBLY, TYPE E	
27	12			606	26500	39	EACH	ANCHOR ASSEMBLY, TYPE T	
	1			606	35100	1	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 2	
	4			606	35140	4	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 4	
16,090	9,263			606	50000	25,353	FT	SPECIAL - RESHAPING BERM	
		484		608	10000	484	SQ FT	4" CONCRETE WALK	
		100		609	26000	100	FT	CURB, TYPE 6	
8	9	11		614	12460	28	EACH	WORK ZONE MARKING SIGN	
3	6	3		614	13000	12	CU YD	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC	
4.16	1.96	1.62		614	21400	7.74	MILE	WORK ZONE CENTER LINE, CLASS II	
4.16	1.96	1.62		614	21550	7.74	MILE	WORK ZONE CENTER LINE, CLASS III, 642 PAINT	

M060\_MGS\_001.DGN 2-16-11



LOCATION 1 (80% FED / 20% STATE) RURAL	LOCATION 2 (80% FED / 20% STATE) URBAN	LOCATION 3 (80% FED / 20% LOCAL)	100% LOCAL	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET
543	249			617	10101	792	CU YD	COMPACTED AGGREGATE, AS PER PLAN	2
840	432			621	00100	1,272	EACH	RPM	
840	814			621	54000	1,654	EACH	RAISED PAVEMENT MARKER REMOVED	
174	99			626	00100	273	EACH	BARRIER REFLECTOR	
		44		630	02100	44	EACH	GROUND MOUNTED SUPPORT, NO. 2 POST	
		25		630	80100	25	SQ FT	SIGN, FLAT SHEET	
		2		630	84900	2	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
		1		630	86002	1	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
5	10	8.00		632	26501	23	EACH	DETECTOR LOOP, AS PER PLAN	3
	1,250			632	65200	1,250	FT	LOOP DETECTOR LEAD-IN CABLE	
	180	1,510		644	00400	1,690	FT	CHANNELIZING LINE	
50	162	151		644	00500	363	FT	STOP LINE	
		936		644	00600	936	FT	CROSSWALK LINE	
	358	433		644	00700	791	FT	TRANSVERSE/DIAGONAL LINE	
	2	18		644	01300	20	EACH	LANE ARROW	
		11		644	01400	11	EACH	WORD ON PAVEMENT, 72"	
	1			644	01410	1	EACH	WORD ON PAVEMENT, 96"	
3,576	2,060			659	10000	5,636	SQ YD	SEEDING AND MULCHING	
0.41	0.21			659	20000	0.62	TON	COMMERCIAL FERTILIZER	
0.74	0.43			659	31000	1.17	ACRE	LIME	
19.35	11.14			659	35000	30.49	M GAL	WATER	
			4	690	98000	4	EACH	SPECIAL - MISC.: CURB RAMP, TYPE A1	
			1	690	98000	1	EACH	SPECIAL - MISC.: CURB RAMP, TYPE B2	
			2	690	98000	2	EACH	SPECIAL - MISC.: CURB RAMP, TYPE D	
			56	690	98200	56	SQ FT	SPECIAL - MISC.: DETECTABLE WARNING	
8.32	4.00			817	00100	12.32	MILE	EDGE LINE	
8.32	3.56	0.41		817	00200	12.29	MILE	LANE LINE	
4.16	2.00	1.68		817	00300	7.84	MILE	CENTER LINE	
				103	05000	LUMP		PREMIUM FOR CONTRACT PERFORMANCE BOND AND FOR PAYMENT BOND	
				614	11000	LUMP		MAINTAINING TRAFFIC	
				619	16000	4	MONTH	FIELD OFFICE, TYPE A	
				623	10000	LUMP		CONSTRUCTION LAYOUT STAKES	
				624	10000	LUMP		MOBILIZATION	

CALCULATED  
LIME  
CHECKED  
DNM

GENERAL SUMMARY

MUS - 60 - 8.86