



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
16 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0016

Janet T. Mills
GOVERNOR

Bruce A. Van Note
COMMISSIONER

June 2, 2023

Subject: Interstate 95 & Broadway Bridge
replacement, with Intersection safety

Improvements

State WIN: 021663.00 & 022276.01

Location: **Bangor**

Amendment No. 3

Dear Sir/Ms.:

Make the following changes to the Bid documents:

In the plan set:

REMOVE SHEETS NUMBER 10 OF 54 and 11 OF 54, GENERAL PLANS, dated 5/1/2023, and REPLACE with the attached SHEETS NUMBER 10 OF 54 and 11 OF 54, GENERAL PLANS, dated 6/1/2023.

REMOVE SHEET NUMBER 20 OF 54, SIGNAL NOTES, dated 5/1/2023, and REPLACE with the attached SHEET NUMBER 20 OF 54, SIGNAL NOTES, dated 6/1/2023.

REMOVE SHEETS NUMBER 25 OF 54 and 26 OF 54, SIGNING AND STRIPING PLANS, dated 5/1/2023, and REPLACE with the attached SHEETS NUMBER 25 OF 54 and 26 OF 54, SIGNING AND STRIPING PLANS, dated 6/1/2023.

On SHEET NUMBER 97 of 201, ABUTMENT NO. 1 PILE LAYOUT, **ADD** the following note to the Abutment Notes: **“9. Recessed panels on the abutments shall receive Medium Sandblast Form Liner Finish. Payment for Concrete Form Liner is considered incidental to related Contract Items.”** Make this change in pen and ink.

The following questions have been received:

Question: Will changes in quantities of earthwork due to contractor specific southbound diversion design be paid for by adjustment to the 203 and 304 pay items or by other means?

Response: Pay Item 510.10 is measured by the lump sum and all items included in that will not be adjusted for payment. Payment for the 203 and 304 Pay Items will be for the quantities actually used..

Question: Does the bridge rail system on a modular temporary bridge need to meet TL-3 crash test specifications?

Response: The temporary bridge rail system shall meet TL-4.

Question: In the project signal notes on page 20, note 29 states the video detection shall be FLIR Trafisense 2. Note 36 states the video detection shall be Traficam X-Stream. Note 48 states the video detection shall be Gridsmart, Miovision, Flir or Wavetronix. Please clarify which is correct.

Response: Stop bar video detection shall be supplied by one of the following manufacturers:

- Mio Vision
- Flir (thermal)

Question: During construction, who is responsible for maintenance of the existing bridges?

Response: See Standard Specification Subsection 105.4.5. Once the temporary detour is open to traffic or the Contractor begins any work on the existing structure, the Contractor is solely responsible for maintenance of the existing bridges.

Question: The typical section of special detour construction provided in bid amendment 2 shows the 10' of fill against the temporary sheet wall as structural backfill. Can this area be backfilled with common borrow?

Response: Since some wall types require specific types of backfill, 10 feet of fill behind the temporary wall was included in the 510.10 Pay Item. The limits and type of backfill required behind the temporary wall are to be determined by the Contractor's engineer designing the temporary wall. If no specific fill requirements are specified by the temporary wall designer, Common Borrow may be used, but the quantity within the 10 foot pay limit will be included in Pay Item 510.10 and will not be measured separately for payment.

Question: Considering significant risk of damage to FRP sheet piling borne by the contractor, we request that the Department consider steel sheet piling as an alternate for the southwest retaining wall.

Response: Response: Steel sheet piling was considered for the project. FRP was chosen because it is expected to provide a design life of 75 years or more in an environment where the sheet piling is exposed to moisture that could cause significant corrosion. Plans from the 1998 Noise Barrier project have been posted to the Department's website with some additional soil information from the area where the wall is being constructed.

Question: Can you please confirm if there is an opportunity to submit equivalent LED fixtures for review and pre-approval? Or will proposed fixtures be evaluated and approved after bid opening?

Response: Proposed fixtures will be evaluated after bid opening.

Question: Special Provision Section 510.031 and Special Provision Section 524.03 requires the Contractor to perform slope stability analyses for the detour embankments and temporary sheet pile wall embankments. These requirements shift a considerable amount of risk onto the Contractor that will result significant costs added to the project. These requirements also will have negative impacts on the project's overall schedule and critical path which will not facilitate the November 20, 2026 project completion date. Given the fact that the Department has designed and specified the project's Traffic Control Plan, and defined the diversion's vertical and horizontal geometry, can the Department perform the slope stability analyses required for the detour and temporary earth support embankments?

Response: The geometry developed by the Department for the Special Detour allows for multiple types of temporary wall or abutment construction. The specifics of those wall types affect the slope stability analysis, so the analysis cannot be done until the wall systems and requirements are known. As is stated in Special Provision Section 510, the Special Detour shall be designed by a Professional Engineer and that design shall include the slope stability for the temporary walls and abutments. Minimum factors of safety for slope stability are given in Special Provision Section 510, Subsection 510.031.

Question: On Sheet 20 of 59, Signal Notes:

Note #29 calls for FLIR TRAFISENSE2 (Termo based system) for video detection.

Note #36 calls for video detection to be Trafficom X-Strem video.

Note #48 calls for stop bar detection to be supplied by Girdsmart, Miovision, Flir or Wavetronix.

Note #49 requires Wavetronix smart sensor advance for advanced vehicle detection.

Please clarify which detection system/manufacturer is required for this project.

Response: Stop bar video detection shall be supplied by one of the following manufacturers:

- Mio Vision
- Flir (thermal)

Question: On Sheet 20 of 59, Signal Notes:

Note #55 requires the Polara iN3 Navigator-3 pedestrian signal system. Will approved equals be accepted?

Response: Approved equals will be considered by the City of Bangor; however, the preference is to match the manufacturers currently used within the city.

Question: On page 103 in the abutment typical section, a note for a 16' form liner is specified for the 2" recessed panel. What is the finish of the form liner?

Response: See above Pen and Ink changes to add Note 9 to the Abutment Notes on Sheet 97 of 201.

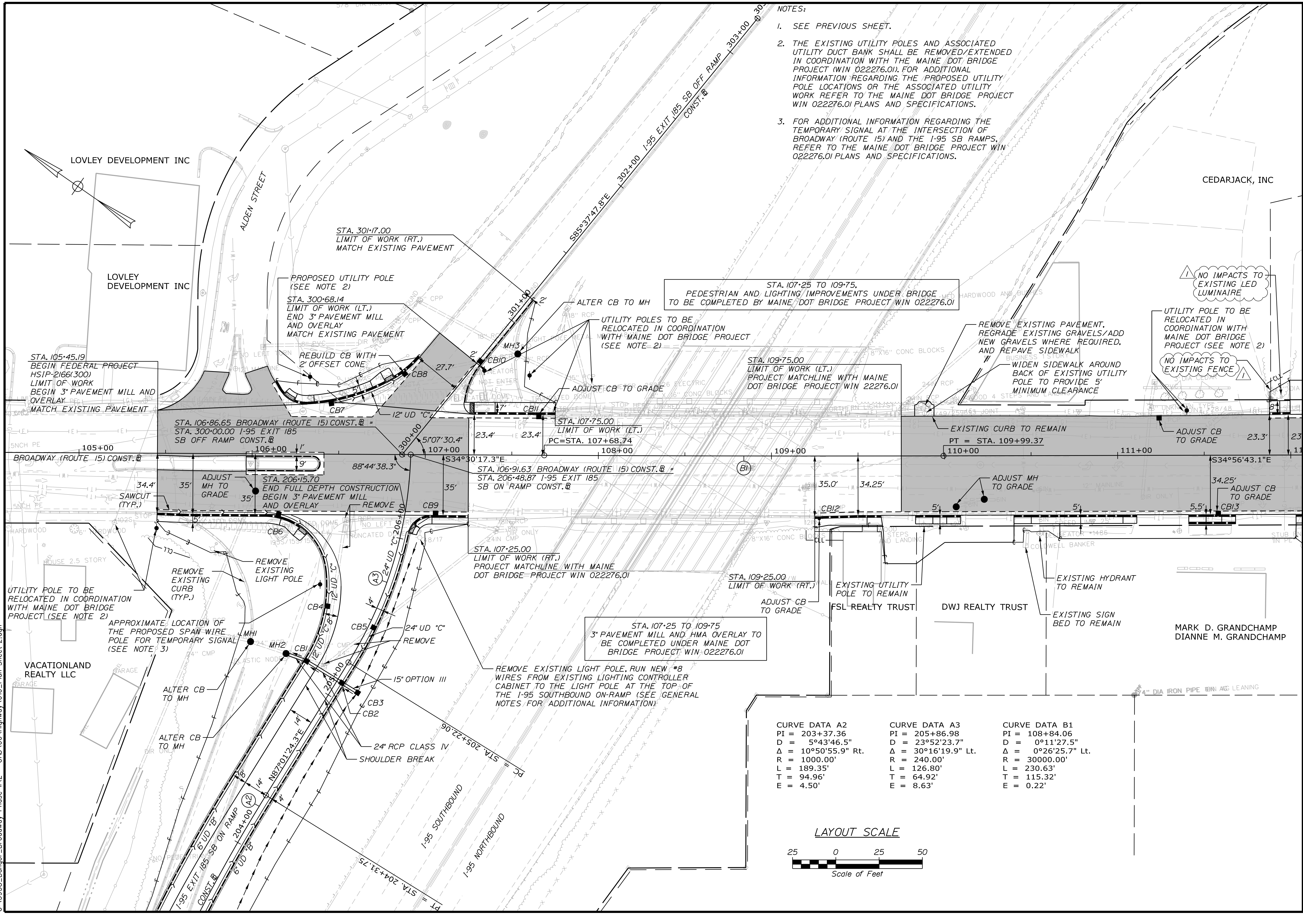
Consider these changes and information prior to submitting your bid on **June 7, 2023**.

Sincerely,



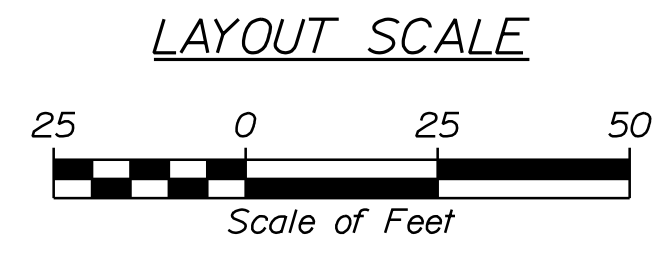
George M. A. Macdougall P.E.
Contracts & Specifications Engineer

U:\3938_Bangor_Broadway Phase II\Z - CAD\00_Highway\010_Plan Sheet 2.dgn
 Filename: ... \Highway\010_Plan Sheet 2.dgn
 Division: HIGHWAY
 Username: Mike.Cundiff
 Date: 6/1/2023



- NOTES:
- SEE PREVIOUS SHEET.
 - THE EXISTING UTILITY POLES AND ASSOCIATED UTILITY DUCT BANK SHALL BE REMOVED/EXTENDED IN COORDINATION WITH THE MAINE DOT BRIDGE PROJECT (WIN 022276.01). FOR ADDITIONAL INFORMATION REGARDING THE PROPOSED UTILITY POLE LOCATIONS OR THE ASSOCIATED UTILITY WORK REFER TO THE MAINE DOT BRIDGE PROJECT WIN 022276.01 PLANS AND SPECIFICATIONS.
 - FOR ADDITIONAL INFORMATION REGARDING THE TEMPORARY SIGNAL AT THE INTERSECTION OF BROADWAY (ROUTE 15) AND THE I-95 SB RAMPS, REFER TO THE MAINE DOT BRIDGE PROJECT WIN 022276.01 PLANS AND SPECIFICATIONS.

CURVE DATA A2	CURVE DATA A3	CURVE DATA B1
PI = 203+37.36	PI = 205+86.98	PI = 108+84.06
D = 5°43'46.5"	D = 23°52'23.7"	D = 0°11'27.5"
Δ = 10°50'55.9" Rt.	Δ = 30°16'19.9" Lt.	Δ = 0°26'25.7" Lt.
R = 1000.00'	R = 240.00'	R = 30000.00'
L = 189.35'	L = 126.80'	L = 230.63'
T = 94.96'	T = 64.92'	T = 115.32'
E = 4.50'	E = 8.63'	E = 0.22'



CITY OF BANGOR
 73 HARLOW STREET,
 BANGOR, MAINE 04401

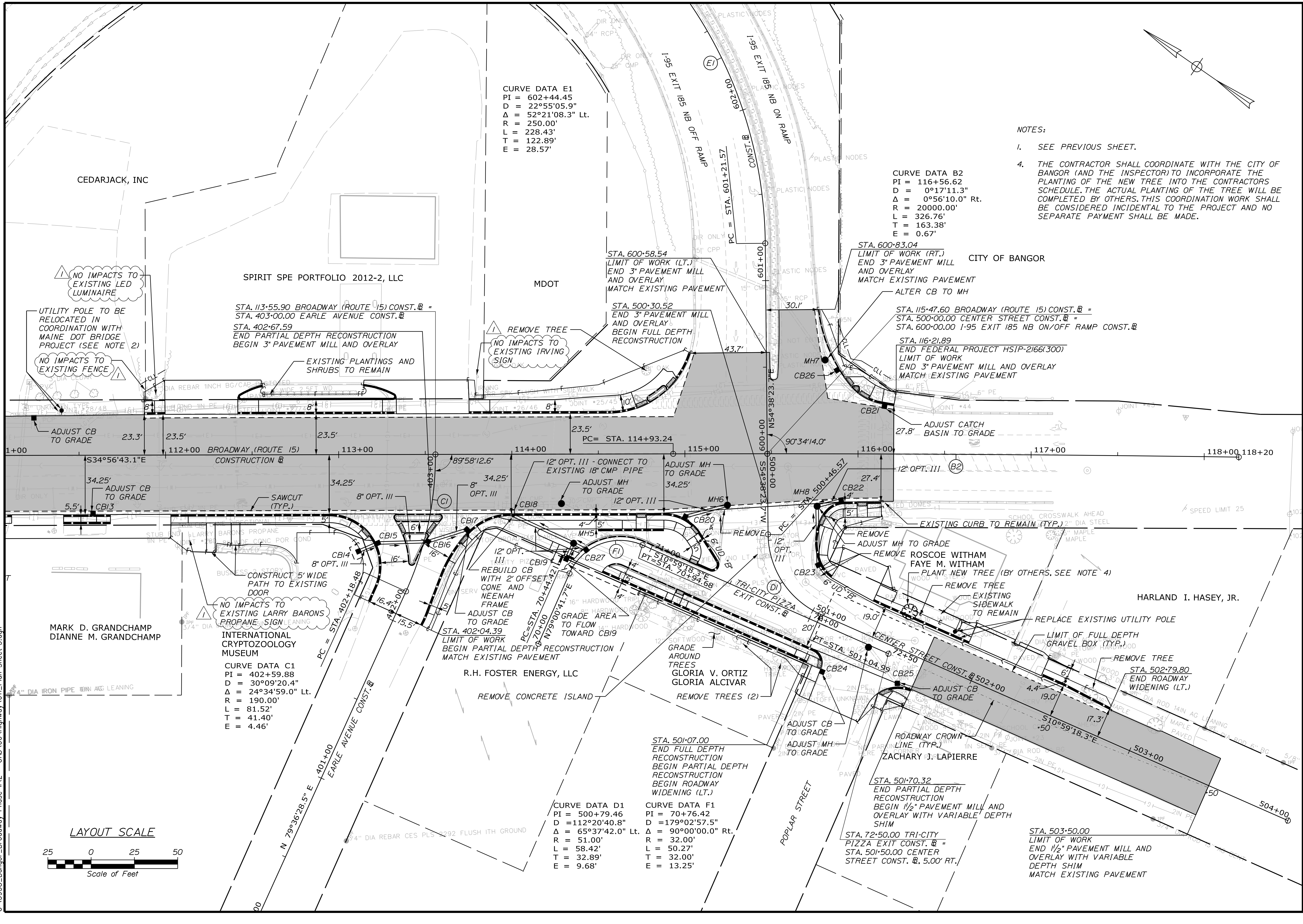
WIN
 21663.00

BANGOR
 BROADWAY (ROUTE 15)
 GENERAL PLANS

PROJ. MANAGER	DATE	BY	DATE	SIGNATURE
D. LORING	05/23	M. CUNDIFF	05/23	
CHECKED/REVIEWED	05/23	J. WINGEBACH	05/23	
DESIGN/DETAILS				
REVISIONS 1	06/23			
REVISIONS 2				
REVISIONS 3				
REVISIONS 4				
FIELD CHANGES				

SHEET NUMBER
10
 OF 54

Filename: ... \Highway\011_Plan Sheet 3.dgn
 Division: HIGHWAY
 Username: Mike.Cundiff
 Date: 6/1/2023



CURVE DATA E1
 PI = 602+44.45
 D = 22°55'05.9"
 Δ = 52°21'08.3" Lt.
 R = 250.00'
 L = 228.43'
 T = 122.89'
 E = 28.57'

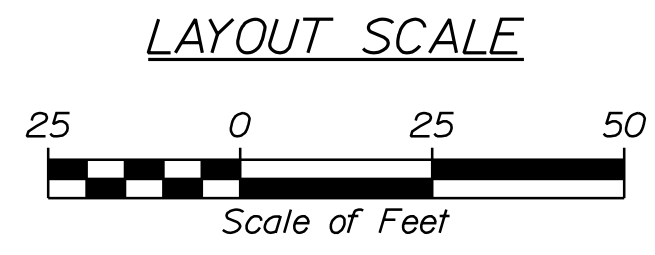
CURVE DATA B2
 PI = 116+56.62
 D = 0°17'11.3"
 Δ = 0°56'10.0" Rt.
 R = 20000.00'
 L = 326.76'
 T = 163.38'
 E = 0.67'

CURVE DATA C1
 PI = 402+59.88
 D = 30°09'20.4"
 Δ = 24°34'59.0" Lt.
 R = 190.00'
 L = 81.52'
 T = 41.40'
 E = 4.46'

CURVE DATA D1
 PI = 500+79.46
 D = 112°20'40.8"
 Δ = 65°37'42.0" Lt.
 R = 51.00'
 L = 58.42'
 T = 32.89'
 E = 9.68'

CURVE DATA F1
 PI = 70+76.42
 D = 179°02'57.5"
 Δ = 90°00'00.0" Rt.
 R = 32.00'
 L = 50.27'
 T = 32.00'
 E = 13.25'

- NOTES:**
- SEE PREVIOUS SHEET.
 - THE CONTRACTOR SHALL COORDINATE WITH THE CITY OF BANGOR (AND THE INSPECTOR) TO INCORPORATE THE PLANTING OF THE NEW TREE INTO THE CONTRACTORS SCHEDULE. THE ACTUAL PLANTING OF THE TREE WILL BE COMPLETED BY OTHERS. THIS COORDINATION WORK SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO SEPARATE PAYMENT SHALL BE MADE.



CITY OF BANGOR 73 HARLOW STREET, BANGOR, MAINE 04401		WIN 21663.00
BANGOR BROADWAY (ROUTE 15)		GENERAL PLANS
SHEET NUMBER 11		OF 54

PROJ. MANAGER	D. LORING	BY	DATE	DESIGN DETAIL	DATE	SIGNATURE
CHECKED/REVIEWED	M. RICHARD	M. CUNDIFF	05/23	DESIGNED/DETAILS	05/23	
DESIGNED/DETAILS	J. WINGBACH	D. EITINGER		REVISIONS 1		
REVISIONS 1				REVISIONS 2		
REVISIONS 2				REVISIONS 3		
REVISIONS 3				REVISIONS 4		
REVISIONS 4				FIELD CHANGES		

Date: 6/1/2023

Username: Mike.Cundiff

Division: HIGHWAY

Filename: ... \Highway\020_SignalNotes01.dgn

U:\3938_Bangor_Broadway Phase II.V - CAD\00\Highway\020_SignalNotes01.dgn

SIGNAL NOTES

- 1. ALL MATERIALS AND WORK SHALL CONFORM TO THE CITY OF BANGOR AND MAINE DOT STANDARD SPECIFICATIONS AND BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS", U.S.D.O.T., F.H.W.A., LATEST EDITION.
- 2. ALL SIGNAL AND SIGNAL RELATED EQUIPMENT SHALL MEET OR EXCEED THE CITY OF BANGOR TRAFFIC SIGNAL STANDARDS.
- 3. IT IS THE INTENT OF THIS WORK TO HAVE A COMPLETE OPERATIONAL, TESTED AND ACCEPTED TRAFFIC SIGNAL UPON COMPLETION OF THIS CONTRACT.
- 4. TRAFFIC SIGNAL WORK SHALL BE COMPLETED IN A MANNER AND ORDER THAT WILL CAUSE THE MINIMUM DISRUPTION TO TRAFFIC.
- 5. THE RESIDENT, CITY AND MAINE DOT SHALL HAVE THE RIGHT AND AUTHORITY TO DETERMINE THE ACCEPTABILITY OF WORK AND MATERIALS IN PROGRESS OR COMPLETED AND SHALL HAVE THE RIGHT TO REJECT ANY WORK OR MATERIALS WHICH DO NOT CONFORM, IN ITS SOLE OPINION, TO THE PLANS OR SPECIFICATIONS.
- 6. THE LOCATIONS OF SIGNAL EQUIPMENT AND POLES INCLUDING THE MOUNTED TRAFFIC DEVICES AND SIGNS ARE APPROXIMATE. FINAL LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE RESIDENT, MAINE DOT OR CITY REPRESENTATIVE.
- 7. CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY TRAFFIC SIGNALS AND ASSOCIATED WORK IF REQUIRED. CONTRACTOR SHALL REMOVE THE TEMPORARY TRAFFIC SIGNAL ONCE NEW SIGNAL IS OPERATIONAL. ALL COSTS ASSOCIATED WITH TEMPORARY SIGNALS SHALL BE INCIDENTAL TO THE 643 ITEMS.
- 8. TWO COPIES OF AS-BUILT PLANS, SIGNAL TIMING, WIRING DIAGRAMS, BOX PRINTS AND EQUIPMENT MANUALS SHALL BE LEFT IN THE CONTROLLER CABINET. ONE ELECTRONIC COPY OF EACH SHALL BE PROVIDED TO THE CITY ENGINEER/PUBLIC WORKS DIRECTOR.
- 9. CONTRACTOR SHALL PROVIDE AND INSTALL ALL JUNCTION BOXES PER MAINE DOT STANDARDS AT A MINIMUM.
- 10. THE CONTRACTOR SHALL PREPARE A MATERIAL SCHEDULE BASED UPON THEIR PLAN REVIEW. ALL SCHEDULES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO ORDERING MATERIALS OR PERFORMING WORK.
- 11. UTILITIES THAT HAVE FACILITIES IN THE GENERAL PROJECT ARE LISTED IN SPECIAL PROVISION 104.
- 12. UTILITY LOCATIONS SHOWN ARE APPROXIMATE ONLY AND THE CONTRACTOR IS RESPONSIBLE FOR FINDING EXACT LOCATIONS OF UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL CONTACT DIG SAFE AT 1-888-DIG-SAFE AND APPROPRIATE AUTHORITIES PRIOR TO ANY SUBSURFACE ACTIVITIES.
- 13. THE CONTRACTOR SHALL MEET ALL REQUIREMENTS OF THE UTILITY COMPANIES WHEN MODIFYING THE EXISTING SERVICE CONNECTIONS AND WHEN INSTALLING EQUIPMENT ON THEIR POLES OR NEAR THEIR WIRES.
- 14. THE CONTRACTOR IS RESPONSIBLE FOR THE RELOCATION AND/OR INSTALLATION OF POWER METERS IF REQUIRED AND ASSURING THE POWER METER LOCATION AND INSTALLATION CONFORMS TO THE LOCAL UTILITY REQUIREMENTS. THIS WORK WILL BE INCIDENTAL TO ITEM 643.80.
- 15. ALL CONDUIT CROSSING AREAS OF EXISTING PAVEMENT SHALL BE INSTALLED USING TRENCHLESS TECHNOLOGIES, UNLESS OTHERWISE APPROVED.
- 16. ALL NEW SIGNAL SECTIONS SHALL HAVE LED LENSES 12 INCHES IN DIAMETER, AND SHALL HAVE 5 INCH LOUVERED BACK PLATES WITH 3" YELLOW RETROREFLECTIVE STRIP AROUND BORDER OF BACK PLATES.
- 17. ALL SPLICES WILL BE MADE IN THE CABINETS OR POLES MEETING MAINE DOT SPECIFICATIONS.
- 18. THE CONTRACTOR SHALL PROVIDE MAST ARM DESIGN IN ACCORDANCE WITH SECTION 643.023.
- 19. ANY DAMAGE TO SLOPES, NON-BRICK SIDEWALKS OR PAVEMENT RESULTING FROM INSTALLATION OF MAST ARM POLES AND FOUNDATIONS, SHALL BE REPAIRED BY THE CONTRACTOR AS DIRECTED BY THE RESIDENT. COSTS OF REPAIRS SHALL BE INCIDENTAL TO PAYMENT UNDER SECTION 643.
- 20. PAYMENT FOR MAST ARM OR DUAL PURPOSE POLES AND FOUNDATIONS SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS 643, 645 AND 626 AND WILL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT AND MATERIALS FOR THE ACCEPTED SIGNAL OR SIGN INSTALLATION INCLUDING BUT NOT LIMITED TO SIGNS, SIGNALS, SUPPORT STRUCTURES AND FOUNDATIONS, EXCAVATION, EXCAVATION STABILIZATION, BACKFILL, REPLACEMENT OF SUBBASE GRAVEL, REPLACEMENT OR REPAIR OF HIGHWAY PAVEMENT, SIDEWALK, SLOPE REGRADING, AND PLACEMENT OF LOAM, SEED AND MULCH ON DISTURBED SLOPES. PAYMENT FOR CONSTRUCTION TRAFFIC CONTROL WILL BE MADE UNDER APPLICABLE PAY ITEMS OF SECTION 652.
- 21. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY NECESSARY STREET/SIDEWALK OCCUPANCY OR OPENING PERMITS.
- 22. ALL SIGNAL HEADS AND SIGNS SHALL BE MOUNTED TO MAST ARMS WITH ASTROBRACKETS.

- 23. ALL CONFLICTING SIGNS AND PAVEMENT MARKINGS SHALL BE PERMANENTLY REMOVED IN ACCORDANCE WITH THE MAINE DOT STANDARD SPECIFICATIONS, LATEST EDITION.
- 24. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING RED-LINE AS-BUILT DRAWINGS OF THE FINAL WORK TO THE RESIDENT. THOSE DRAWINGS SHALL BE A CLEAN SET OF PLANS SHOWING ALL CHANGES, MODIFICATIONS, AND ELEVATIONS TO THE BID PLANS.
- 25. COUNTDOWN PEDESTRIAN HEADS SHALL HAVE AUDIBLE/TACTILE FEATURES AND SHALL BE INCIDENTAL TO ITEM 643.80. IF PUSH BUTTONS ARE LOCATED LESS THAN 10 FEET APART OR ON THE SAME POLE, EACH PUSH BUTTON SHALL PROVIDE THE FOLLOWING FEATURES: PUSH BUTTON LOCATOR TONE, TACTILE ARROW, SPEECH WALK MESSAGE FOR THE WALKING PERSON INDICATION, SPEECH PUSH BUTTON INFORMATION MESSAGE, IF FROM WHERE A PEDESTRIAN ENTERS THE CROSSWALK TO THE PEDESTRIAN HEAD ON THE OPPOSITE SIDE IS MORE THAN 100 FEET, THE NUMBERS SHALL BE AT LEAST 9 INCHES HIGH.
- 26. ALL PROPOSED PEDESTRIAN PUSH BUTTON LOCATIONS SHALL MEET THE AMERICANS WITH DISABILITIES ACT STANDARDS, LATEST EDITION.
- 27. ALL SIGNAL EQUIPMENT INCLUDING CONTROLLER CABINET, UPRIGHTS, AND MAST ARMS SHALL BE GALVANIZED.
- 28. ALL SIGNAL HEADS SHALL BE HEAVY DUTY POLYCARBONATE.
- 29. VIDEO DETECTION SHALL BE FLIR TRAFISENSE2 (THERMO BASED SYSTEM) WITH COUNTING CAPABILITIES ENABLED AND IP ACCESSIBLE VIEWING AND CONFIGURATION.
- 30. THE PROPOSED TRAFFIC SIGNAL TIMING AND PHASING PLAN SHALL BE INPUT BY THE CONTRACTOR UNDER OBSERVATIONS BY THE RESIDENT OR MAINE DOT REPRESENTATIVE. THE CONTRACTOR SHALL PROVIDE 48 HOURS NOTICE TO THE RESIDENT.
- 31. JUNCTION BOXES SHALL BE LISTED AS TIER 22 RATING (22000LBS).
- 32. THE TRAFFIC SIGNAL SHALL BE EQUIPPED WITH AN APPLIED INFORMATION FMU SO SIGNAL CAN BE MONITORED REMOTELY.
- 33. SEE STANDARD SPECIFICATIONS FOR GROUND MOUNTED CABINET FOUNDATION SIZE AND REINFORCING REQUIREMENTS.
- 34. ALL SIGNAL EQUIPMENT INCLUDING CONTROLLER CABINET, UPRIGHTS, AND MAST ARMS SHALL BE POWDER COAT BLACK IN COLOR. UPRIGHTS AND MAST ARMS SHALL BE GALVANIZED.
- 35. ALL SIGNAL HEADS SHALL BE HEAVY DUTY POLYCARBONATE.
- 36. VIDEO DETECTION SHALL BE TRAFFICAM X STREAM VIDEO.
- 37. SEE MAINE DOT STANDARD SPECIFICATIONS AND STANDARD DETAILS, LATEST EDITION FOR CONTROLLER EQUIPMENT REQUIREMENTS.
- 38. VIDEO DETECTION SHALL HAVE APPROPRIATE FOCAL LENGTH BASED ON DISTANCE FROM THE STOP BAR AND HEIGHT ABOVE THE GROUND. LOCATION OF VIDEO DETECTION AND ADVANCED DETECTION SHALL BE ADJUSTED AS NEEDED TO MEET MANUFACTURER SPECIFICATIONS AND OPERATIONS. THIS INCLUDES EXTENSION ARMS IF NEEDED.
- 39. VIDEO DETECTION SHALL BE CHECKED TO ENSURE OCCLUSION IS NOT OCCURRING. IF IT IS, THE EQUIPMENT OR ITS LOCATION SHALL BE ADJUSTED AS NEEDED. THIS INCLUDES EXTENSION ARMS IF NEEDED.
- 40. EMERGENCY PREEMPTION SHALL BE PROVIDED WITH THE NEW SIGNAL SYSTEM. THE CONTRACTOR SHALL COORDINATE WITH THE CITY ON SPECIFIC EQUIPMENT TO BE USED SUCH THAT IT IS COMPATIBLE WITH THEIR EXISTING EQUIPMENT.
- 41. SEE SIGNAL CABINET DETAIL SPECIFICATIONS FOR CONTROLLER EQUIPMENT REQUIREMENTS.
- 42. THE CABINET SHALL HAVE A UL APPROVED GENERATOR SWITCH.
- 43. ALL SIGNAL CABLE SHALL BE IMSA RATED.
- 44. THE POWER SERVICE METER AND SEPARATE DISCONNECT ENCLOSURE SHOULD BE MOUNTED ON THE SIDE OF THE NEW ATC CABINET, TO ALLOW DISCONNECT OF THE SIGNAL IN CASE OF EMERGENCY WITHOUT OPENING THE DOORS.
- 45. THE SEPARATE DISCONNECT ENCLOSURE SHOULD HAVE TWO BREAKERS, ONE FOR THE SIGNALS AND ONE FOR LIGHTING.
- 46. LIGHTING CONTROLS CAN BE INSTALLED IN THE ATC CABINET AND WILL NOT REQUIRE A SEPARATE ENCLOSURE.
- 47. PROPOSED OVERHEAD LIGHTING SHALL BE LED WITH TYPE 3 DISTRIBUTION.

- 48. STOP BAR VIDEO DETECTION (SBVD) SHALL BE SUPPLIED BY ONE OF THE FOLLOWING MANUFACTURERS:
 - A. GRIDSMART/CUBIC
 - B. MIO VISION
 - C. FLIR (THERMAL)
 - D. WAVETRONIX STOP BAR DETECTION SYSTEM
- 49. ADVANCED VEHICLE DETECTION, IF REQUIRED, SHALL BE THE WAVETRONIX SMART SENSOR ADVANCE.
- 50. ALL EXISTING SIGNAL EQUIPMENT THAT IS REMOVED SHALL BE RETURNED TO THE CITY.
- 51. THE NEW CONTROLLER CABINET SHALL BE EQUIPPED FOR A MINIMUM OF 16 PHASES.
- 52. CITY TO MAKE AND SUPPLY MAST ARM SUPPORTED STREET NAME SIGNS AND CONTRACTOR WILL ERECT. THIS ITEM SHALL BE INCIDENTAL TO 645 ITEMS.
- 53. PAYMENT FOR REMOVAL OF EXISTING SIGNS SHALL BE INCIDENTAL TO OTHER 645 ITEMS.
- 54. ALL NEW CONTROLLERS AND CABINETS SHALL BE TRANSIT SIGNAL PRIORITY (TSP) CAPABLE/READY AND AUTOMATIC VEHICLE LOCATION (AVL) CAPABLE.
- 55. SIGNAL EQUIPMENT:
 - SIGNAL HOUSINGS SHALL BE MCCAIN MODEL MTSTA OR MTSTP SERIES ONLY
 - LED MODULES FOR VEHICLE INDICATIONS SHALL BE GELCORE MODEL DR6 SERIES ONLY
 - LED MODULES FOR PEDESTRIAN INDICATIONS SHALL BE GELCORE MODEL PS7 SERIES ONLY
 - PEDESTRIAN PUSH BUTTON ASSEMBLIES SHALL BE POLARA IN3 NAVIGATOR-3 WIRE AUDIBLE-TACTILE PEDESTRIAN SIGNAL SYSTEM.
- 56. TRAFFIC STRUCTURES:
 - MAST ARMS SHALL BE VALMONT SM6 OR CB6 SERIES ONLY (GALVANIZED)
 - PEDESTAL POLES SHALL BE ONE PIECE WELDED CONFIGURATION.
- 57. PROPOSED SIGNS ON SIGNAL MAST ARMS AND POLES SHALL BE INCIDENTAL TO ITEM 643.80.
- 58. REMOVAL OF THE EXISTING SIGNAL SYSTEM SHALL BE INCIDENTAL TO PAY ITEM 643.80.
- 59. REMOVE EXISTING PEDESTAL POLE FOUNDATIONS NOT BEING REUSED AND EXISTING MAST ARM FOUNDATIONS TO A MINIMUM OF TWO FEET BELOW GRADE. FILL IN HOLE, RESURFACE TO MATCH SURROUNDING AREA. PAYMENT INCIDENTAL TO ITEM 643.80.
- 60. REMOVE EXISTING CONTROLLER CABINET FOUNDATIONS THAT ARE NOT BEING REUSED, RESURFACE TO MATCH SURROUNDING AREA. PAYMENT INCIDENTAL TO 643.80.
- 61. THE BOTTOM OF THE HOUSING OF NEW SIGNAL FACES SHALL BE AT LEAST 17 FEET BUT NOT MORE THAN 19 FEET ABOVE THE PAVEMENT GRADE AT THE CENTER OF THE ROADWAY UNLESS OTHERWISE SPECIFIED.
- 62. THE CONTRACTOR IS DIRECTED TO PROJECT SPECIAL PROVISION 718 FOR ADDITIONAL INFORMATION RELATED TO THE CONTROLLER AND CONTROLLER CABINET. SPECIAL PROVISION 718 EXPANDS UPON THE INFORMATION FOUND IN THESE NOTES. AS SUCH, THE MORE RESTRICTIVE LANGUAGE BETWEEN THESE NOTES AND SPECIAL PROVISION 718 SHALL GOVERN THE WORK TO BE PERFORMED UNDER THIS PROJECT.
- 63. THE SIGNAL SYSTEM MUST BE FULLY FUNCTIONAL AND FREE OF COMMUNICATIONS OR EQUIPMENT FAILURES FOR A PERIOD OF SEVEN (7) DAYS. IF PROBLEMS OCCUR, THEY SHALL BE RECTIFIED BY THE CONTRACTOR AND THE START UP PERIOD RESTARTED FOR ANOTHER SEVEN (7) DAYS.
- 64. UPON DEMONSTRATING A SUCCESSFUL 7 DAY START UP TEST, THE CITY AND MAINE DOT SHALL EVALUATE THE OPERATION OF THE SYSTEM FOR A PERIOD OF 30 DAYS. SHOULD THE SYSTEM MALFUNCTION DURING THIS PERIOD THE CONTRACTOR SHALL MAKE ANY REPAIRS OR CORRECTIONS AND THE ACCEPTANCE TEST PERIOD WILL START OVER AGAIN. ACCEPTANCE TESTING MUST DEMONSTRATE TO THE CITY AND MAINE DOT THAT ALL HARDWARE AND EQUIPMENT FUNCTION IN ACCORDANCE WITH THESE SPECIFICATIONS, REQUIREMENTS, THROUGH-PUTS AND FUNCTIONALITY.
- 65. THE CONTRACTOR SHALL WARRANTY ALL WORK AND EQUIPMENT FOR A MINIMUM PERIOD OF ONE YEAR AFTER INSTALLATION AND ACCEPTANCE.
- 66. THE CONTRACTOR SHALL COORDINATE, ATTEND, AND PARTICIPATE IN A FIELD REVIEW WITH CITY STAFF (AS NEEDED) TO FIELD ADJUST SIGNAL TIMING AND PHASING OF THE TRAFFIC SIGNALS. THIS FIELD REVIEW SHALL TAKE PLACE BETWEEN TWO WEEKS AND 30 DAYS AFTER COMPLETION OF THE SIGNAL INSTALLATION AND VERIFICATION OF NORMAL SIGNAL OPERATIONS, UNLESS OTHERWISE APPROVED BY THE CITY.

CITY OF BANGOR
73 HARLOW STREET,
BANGOR, MAINE 04401

WIN
21663.00

PROJ. MANAGER	D. LORING	BY	DATE	SIGNATURE
DESIGN-DETAILED	M. RICHARD	M. CUNDIFF	05/23	
CHECKED-REVIEWED	J. WINGEBACH	D. ETTINGER	05/23	
DESIGN-DETAILED				
DESIGN-DETAILED				
REVISIONS 1	NOTE REVISIONS		06/23	P.E. NUMBER
REVISIONS 2				DATE
REVISIONS 3				
REVISIONS 4				
FIELD CHANGES				

BANGOR
BROADWAY (ROUTE 15)

SIGNAL NOTES

SHEET NUMBER

20

OF 54



Relationships. Responsiveness. Results.
www.gorillpalmer.com
207.772.2515

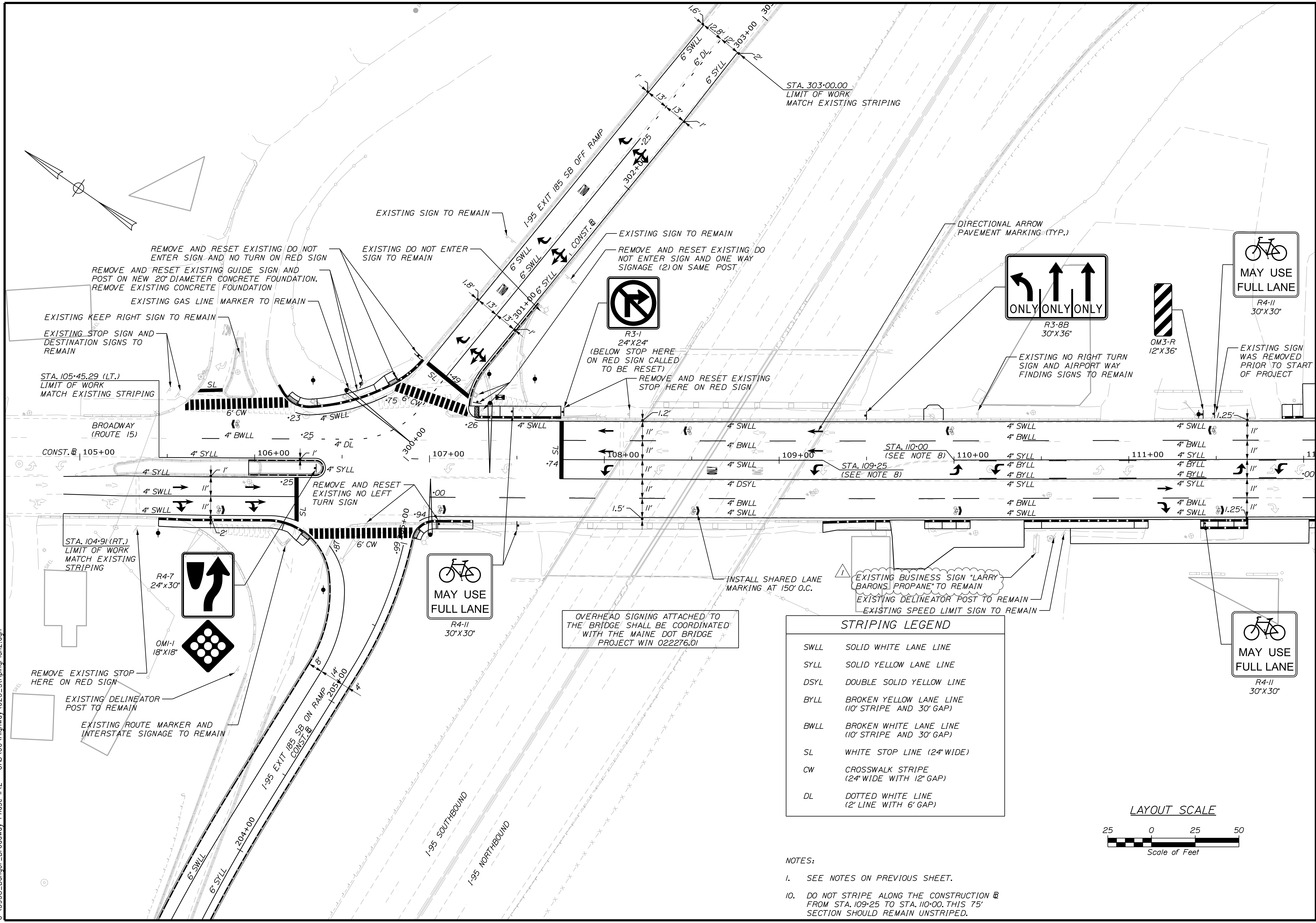
Date: 6/1/2023

Username: Mike.Cundiff

Division: HIGHWAY

Filename: ... \Highway\025_StripingPlan2.dgn

U:\3938_Bangor_Broadway Phase II\Z - CAD\00\Highway\025_StripingPlan2.dgn



CITY OF BANGOR
 73 HARLOW STREET,
 BANGOR, MAINE 04401

PROJ. MANAGER	DATE	BY	DATE	SIGNATURE
D. LORING	05/23	M. RICHARD	05/23	
DESIGN DETAILED		J. WINGBACH	05/23	
CHECKED/REVIEWED		D. ETTINGER	05/23	
DESIGN DETAILED				
REVISIONS 1				
REVISIONS 2				
REVISIONS 3				
REVISIONS 4				
FIELD CHANGES				

NOTE REVISIONS	P.E. NUMBER	DATE
	06/23	

BANGOR
 BROADWAY (ROUTE 15)
 SIGNING AND
 STRIPING PLANS

SHEET NUMBER
25
 OF 54

WIN
 21663.00

Date: 6/1/2023

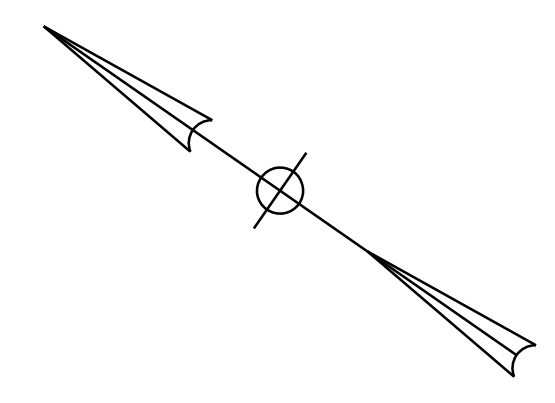
Username: Mike.Cundiff

Division: HIGHWAY

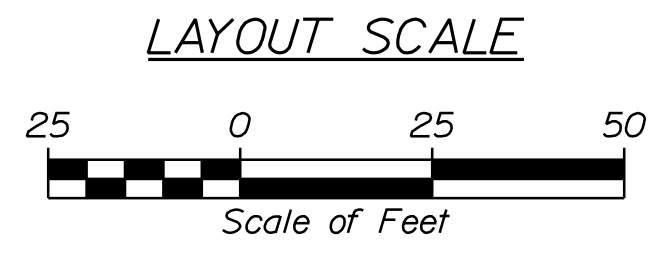
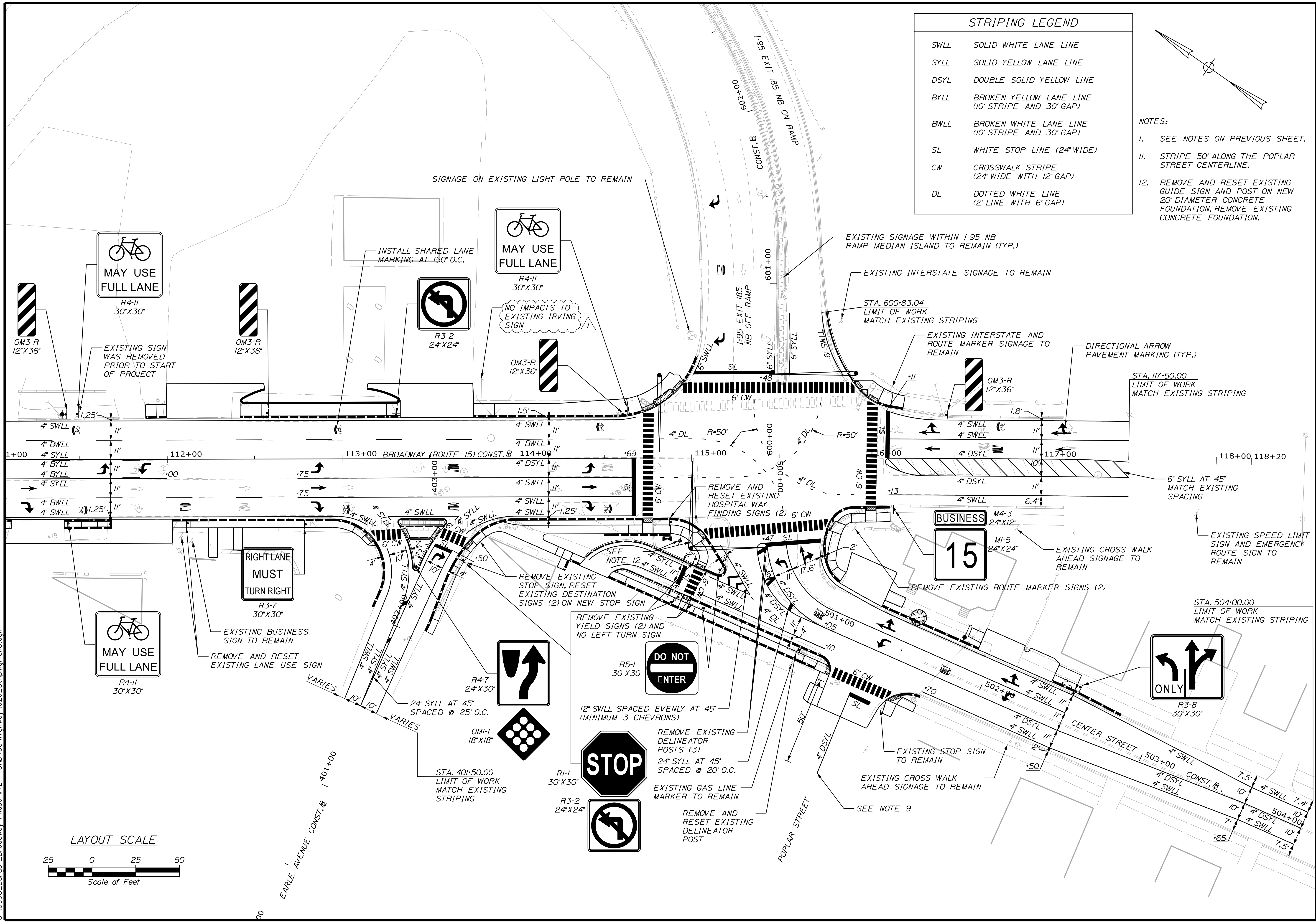
Filename: ... \Highway\026_StripingPlan3.dgn

U:\3938_Bangor_Broadway Phase II.Z - CAD\00\Highway\026_StripingPlan3.dgn

STRIPING LEGEND	
SWLL	SOLID WHITE LANE LINE
SYLL	SOLID YELLOW LANE LINE
DSYL	DOUBLE SOLID YELLOW LINE
BYLL	BROKEN YELLOW LANE LINE (10' STRIPE AND 30' GAP)
BWLL	BROKEN WHITE LANE LINE (10' STRIPE AND 30' GAP)
SL	WHITE STOP LINE (24" WIDE)
CW	CROSSWALK STRIPE (24" WIDE WITH 12" GAP)
DL	DOTTED WHITE LINE (2' LINE WITH 6' GAP)



- NOTES:
- SEE NOTES ON PREVIOUS SHEET.
 - STRIPES 50' ALONG THE POPLAR STREET CENTERLINE.
 - REMOVE AND RESET EXISTING GUIDE SIGN AND POST ON NEW 20" DIAMETER CONCRETE FOUNDATION. REMOVE EXISTING CONCRETE FOUNDATION.



CITY OF BANGOR
73 HARLOW STREET,
BANGOR, MAINE 04401

PROJ. MANAGER	DATE	BY	DATE	SIGNATURE
D. LORING	05/23	M. CUNDIFF	05/23	
DESIGNED		J. WINGBACH		
CHECKED		D. ETTINGER		
DESIGNED				
REVISIONS 1	06/23			
REVISIONS 2				
REVISIONS 3				
REVISIONS 4				
FIELD CHANGES				

BANGOR
BROADWAY (ROUTE 15)
SIGNING AND
STRIPING PLANS

SHEET NUMBER
26
OF 54

WIN
21663.00

STATE OF MAINE DEPARTMENT OF TRANSPORTATION



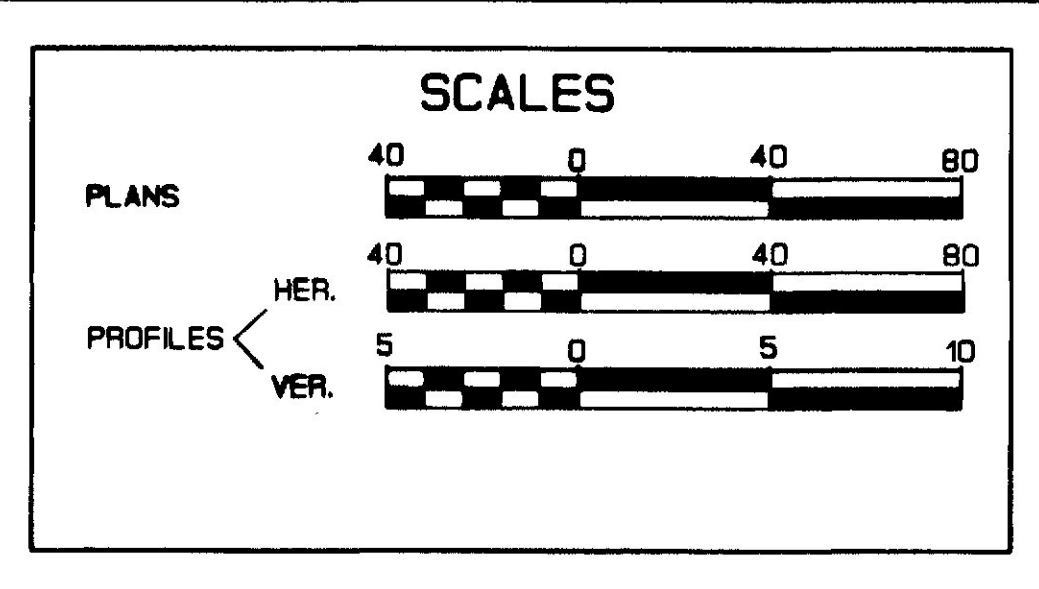
PLANS

BANGOR

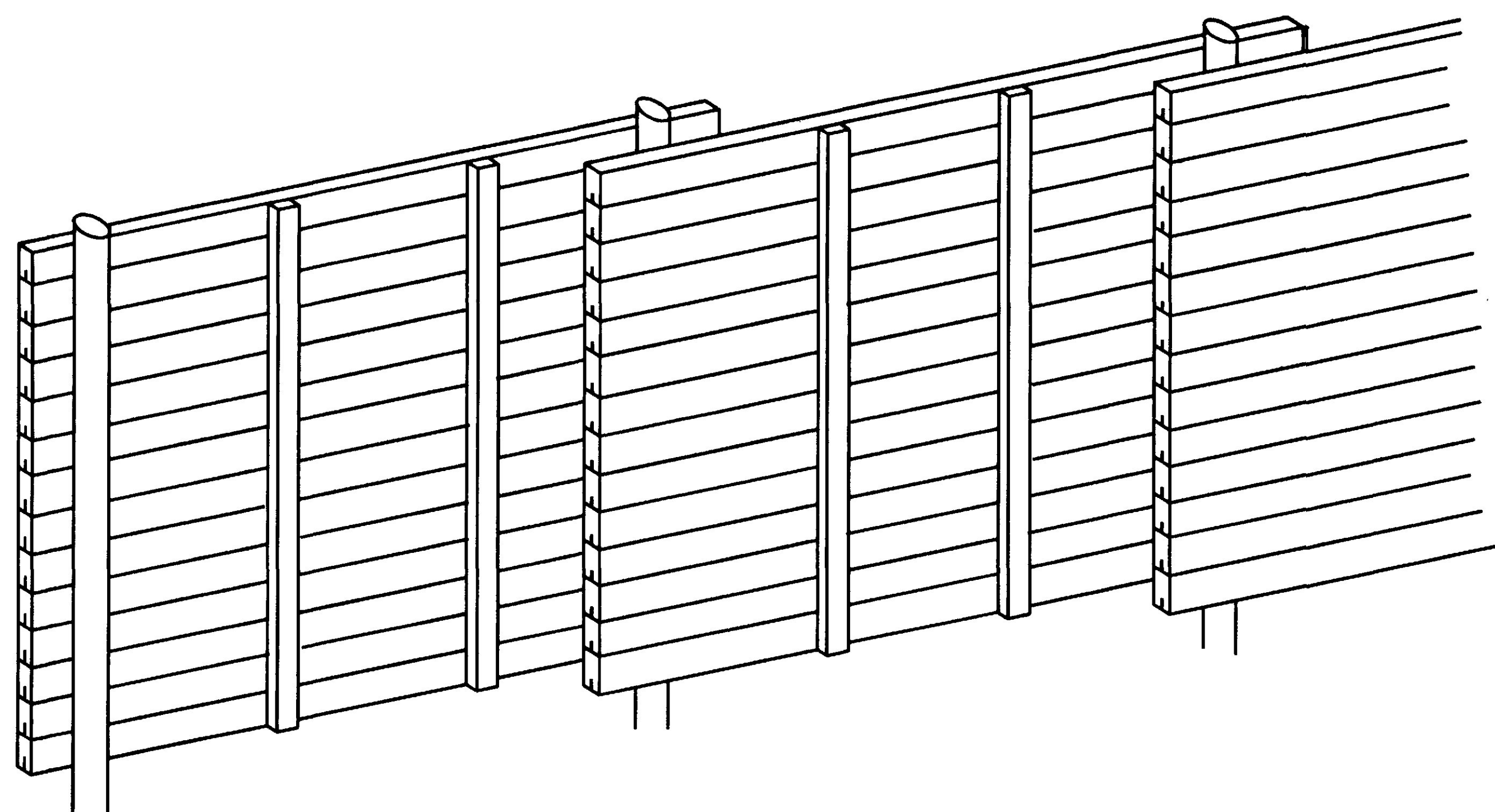
PENOBSCOT COUNTY

I-95 NORTHBOUND TIMBER NOISE BARRIER PROJECT
PROJECT NO. IM-95-8465(00)E

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	ESTIMATED QUANTITIES & GENERAL NOTES
3	PLAN & PROFILE
4-7	STANDARD DETAILS
8	SPECIAL DETAILS

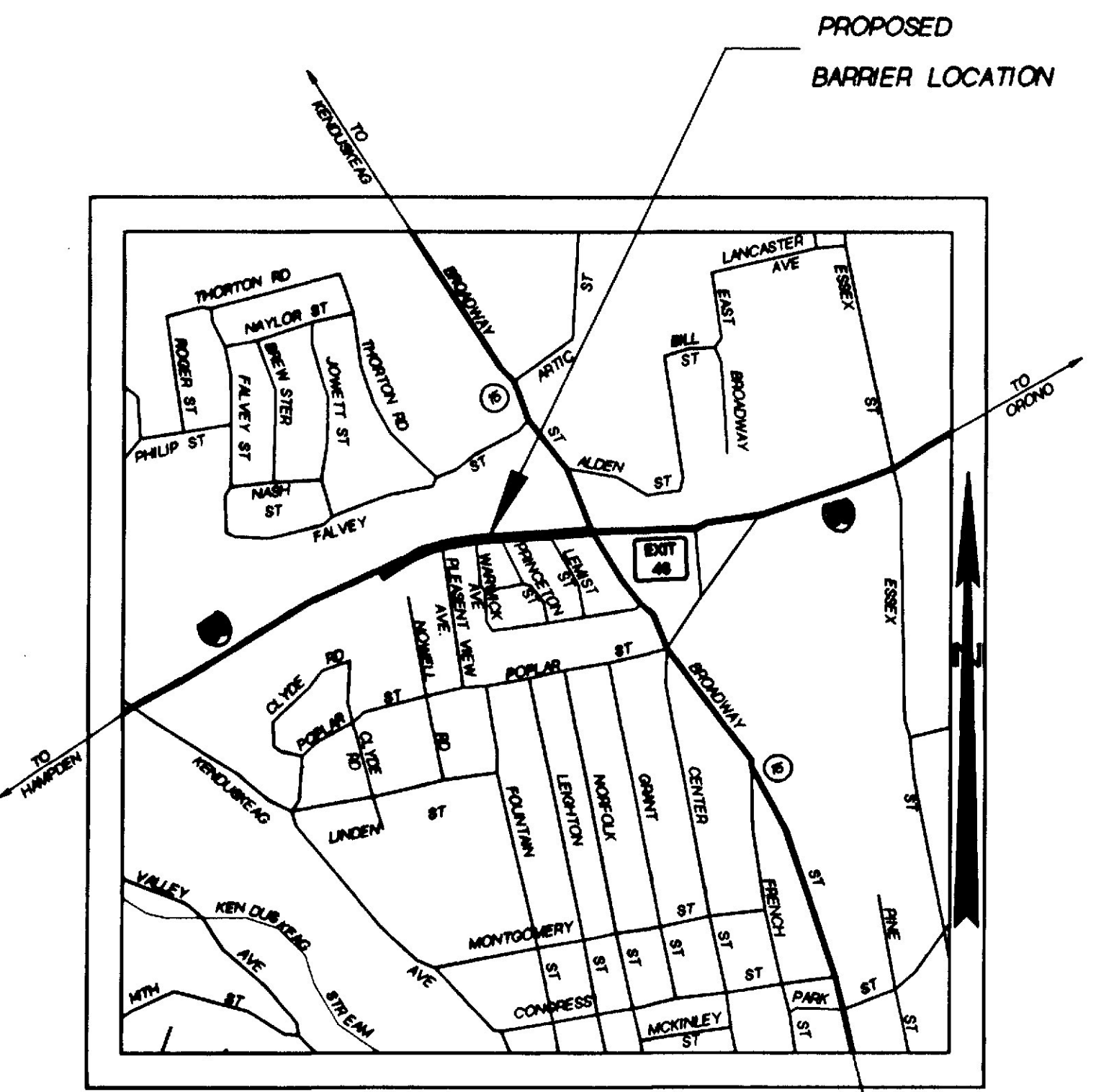


PLAN LEGEND	
COUNTY LINES	TRAVELWAY-EXISTING
TOWN LINES	TRAVELWAY-PROPOSED
PROPERTY LINES	RAILROAD
R/W LINES-EXISTING	OUTLINE OF BODIES OF WATER
R/W LINES-NEW-ACCESS-CONTROL	CATCH BASINS
R/W LINES-NEW-NO ACCESS-CONTROL	MANHOLES
R/W LINES-NEW WITHIN EXISTING R/W	UTILITY POLES
R/W LINES-EXISTING WITHIN NEW R/W	UTILITY POLES-JOINT OCCUPANCY
CULVERT-EXISTING	PROPOSED UTILITY POLE-TEMPORARY
CULVERT-PROPOSED	FENCE (LABEL TYPE)
CURBING-EXISTING	TREES
CURBING-PROPOSED	WOODS
FIRE HYDRANTS	



6632

PROJECT DESIGN ENGINEER	DATE
CHECKED	8/98
REVISIONS	
FIELD CHANGES	

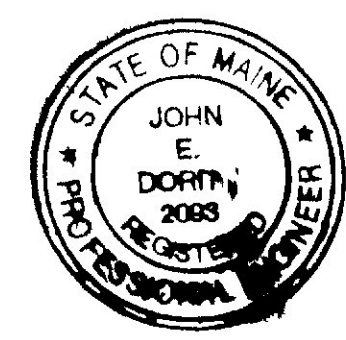


A PORTION OF PENOBSCOT COUNTY



P.H.V. 1977 (1997)
P.H.V. 2894 (2017)
T.(X.P.H.V.) 6 (2017)

NOTE
ALL WORK CONTEMPLATED UNDER THIS CONTRACT TO BE GOVERNED BY AND IN CONFORMITY WITH THE STANDARD SPECIFICATIONS (REVISION OF APRIL 1995) AND SUPPLEMENTALS THERETO AS MODIFIED ON THE PLANS AND IN THE SPECIAL PROVISIONS.



APPROVED:
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

John E. Dorn
COMMISSIONER
John E. Dorn
CHIEF ENGINEER

7/16/98
DATE
9/16/98
DATE

UNITED STATES
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
REGION 1

APPROVED:

DIVISION ADMINISTRATOR

DATE

ESTIMATED QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
607.243	REMOVE CHAIN LINK FENCE	1000	LF
607.422	TIMBER NOISE BARRIER	1	LS
639.19	FIELD OFFICE TYPE B	1	EA
652.30	FLASHING ARROW BOARD	1	EA
652.33	DRUM	30	EA
652.34	CONE	25	EA
652.35	CONSTRUCTION SIGNS	120	SF
652.361	MAINTENANCE OF TRAFFIC CONTROL DEVICES	1	LS
652.38	FLACGER	500	MH
659.10	MOBILIZATION	1	LS

GENERAL NOTES

- ① CONCRETE SHALL BE CLASS "A" IN CONFORMANCE WITH SPECIAL PROVISION 502.
- ② LUMBER & POLES
 ALL LUMBER SHALL BE NO. 1 KD OR BETTER SOUTHERN YELLOW PINE OR DOUGLAS FIR SURFACED FOUR SIDES. ALL LUMBER AND POLES SHALL BE COMMERCIALY INSPECTED BY AN INDEPENDENT COMPANY. ALL CCA TREATED LUMBER AND POLES SHALL BE KILN DRIED TO 15% MOISTURE CONTENT AFTER TREATMENT. POLES TO BE STRAIGHT SOUTHERN YELLOW PINE OR DOUGLAS FIR CONFORMING TO ANSI 05.1-1987. (ANSI--AMERICAN NATIONAL STANDARDS INSTITUTE)
- ③ TREATING SPECIFICATIONS
 TWO TYPES OF TREATMENT ARE ACCEPTABLE:
 A: CCA IN ACCORDANCE WITH AWPA P-5 (AWPA--AMERICAN WOOD PRESERVERS ASSOCIATION)
 B: PENTACHLOROPHENOL IN ACCORDANCE WITH AWPA P-9, TYPE B (L.P.G.)
 ALL MATERIAL SHALL HAVE A MINIMUM TREATMENT AS FOLLOWS:
 PENTACHLOROPHENOL 0.50 LBS. PER CU. FT.
 CCA 0.40 LBS. PER CU. FT.
 CCA (POLES) 0.60 LBS. PER CU. FT.
 TREATMENT TO CONFORM TO AWPA C-2 FOR PLANK, PANELS, BATTENS AND AWPA C-4 FOR POLES. ALL MATERIAL SHALL BE PROTECTED FROM WEATHER UNTIL INSTALLED.
- ④ THE PLANK ENDS SHALL BE IN A VERTICAL STRAIGHT LINE AND ALL PLANKS SHALL FIT TIGHTLY AT THE TIME OF INSTALLATION. ANY PLANK WHICH DOES NOT FIT TIGHTLY SHALL BE REJECTED.
- ⑤ FIELD CUTS AND HOLES SHALL BE TREATED IN ACCORDANCE WITH AWPA M4.
- ⑥ ALL METAL SHALL BE STAINLESS STEEL TYPE 304 OR 316. 20D NAILS SHALL BE A MINIMUM DIAMETER OF .190 INCHES AND SHALL BE A MINIMUM OF 4 INCHES LONG. 10D NAILS SHALL HAVE A MINIMUM DIAMETER OF .145 INCHES AND SHALL BE A MINIMUM OF 2 3/4 " INCHES LONG. ALL NAILS SHALL BE RINGSHANKED. LAG BOLTS SHALL BE 1/4 " DIAMETER X 4" LONG. INSTALLED NAILS SHALL BE SET SO THAT HEADS ARE FLUSH WITH FACE OF PLANKS.
- ⑦ THE CRUSHED STONE SHALL CONFORM TO ARTICLE 703.31 OF THE STANDARD SPECIFICATIONS AND PLACED TO A MIN. DEPTH OF 2" ABOVE THE BOTTOM OF THE PLANKS. STONE DITCH PROTECTION CONFORMING TO ARTICLE 703.29 OF THE STANDARD SPECIFICATIONS SHALL BE REQUIRED IN LIEU OF CRUSHED STONE BETWEEN STATIONS 4+50 AND 4+50. "S" SHALL BE A MIN. OF 2" AND SHALL BE INCIDENTAL TO ITEM 607.422 TIMBER NOISE BARRIER.
- ⑧ CLEARING SHALL BE KEPT TO A MINIMUM AS DIRECTED BY THE ENGINEER. ONLY VEGETATION WITHIN THE EXISTING RIGHT OF WAY SHALL BE CLEARED FOR CONSTRUCTION OF THE NOISE BARRIER. OVERHANGING TREE LIMBS MAY BE PRUNED AS REQUIRED FOR CONSTRUCTION. CLEARING SHALL BE CONSIDERED INCIDENTAL TO ITEM 607.422 TIMBER NOISE BARRIER.
- ⑨ SEED AND MULCH SHALL BE APPLIED TO ALL AREAS OF DISTURBED SOIL UPON COMPLETION OF THE TIMBER NOISE BARRIER PROJECT (WORK SHALL BE INCIDENTAL TO ITEM 607.422 TIMBER NOISE BARRIER).
- ⑩ ACCESS FOR BUILDING THE BARRIER SHALL BE FROM THE NORTHBOUND LANES OF INTERSTATE 95. IF NECESSARY, TEMPORARY ACCESS RIGHTS ARE ALSO AVAILABLE FROM NOWELL ROAD -- HOWEVER, THE AREA USED FOR TEMPORARY ACCESS SHALL BE RESTORED UPON COMPLETION OF THE NOISE BARRIER. RESTORATION SHALL INCLUDE: ANY GRADING AS REQUIRED; PLACING LOAM, SEED, AND MULCH; AND REPLACING ANY DAMAGED TREES, SHRUBS, OR FLOWER GARDENS AS DIRECTED BY THE ENGINEER. (THIS WORK SHALL BE CONSIDERED INCIDENTAL TO ITEM 607.422 TIMBER NOISE BARRIER.)
- ⑪ ALL WORK INVOLVING CONSTRUCTION OF THE TIMBER NOISE BARRIER AND REMOVAL OF THE CHAIN LINK RIGHT OF WAY FENCE SHALL BE CONDUCTED FROM WITHIN THE EXISTING RIGHT OF WAY.
- ⑫ AS DIRECTED BY THE ENGINEER, PORTIONS OF THE EXISTING CHAIN LINK RIGHT OF WAY FENCE MAY NEED TO BE REMOVED PRIOR TO CONSTRUCTION OF THE TIMBER NOISE BARRIER SO AS TO ALLOW WORK TO BE CONDUCTED ENTIRELY FROM WITHIN THE RIGHT OF WAY. UPON COMPLETION OF THE TIMBER NOISE BARRIER, THE REMAINDER OF THE EXISTING CHAIN LINK FENCE SHALL BE REMOVED EXCEPT ADJACENT TO THE DETOUR PROPERTY (38 PRINCETON STREET). THE EXISTING CHAIN LINK FENCE WILL ALSO REMAIN BEYOND BOTH ENDS OF THE NOISE BARRIER. IT SHALL BE ATTACHED TO THE BARRIER AT BOTH ENDS BY FASTENING STEEL FENCE POSTS WITH STAINLESS STEEL U-BOLTS AS DIRECTED BY THE ENGINEER. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO ITEM 607.243 REMOVE CHAIN LINK FENCE.
- ⑬ THE NEIGHBORHOOD SIDE OF THE BARRIER SHALL BE STAINED WITH A SOLID COLOR STAIN ADJACENT TO THE DETOUR PROPERTY (38 PRINCETON STREET--BETWEEN PRINCETON AND WARWICK STREETS) AS PER SPECIAL PROVISION 607 TIMBER NOISE BARRIER. STAIN SHALL BE PENETRATING EXTERIOR OIL BASE COMPATIBLE WITH THE PRESERVATIVE TREATMENT. COLOR SHALL BE WHITE.

SOILS INFORMATION

		DEPTH	
S-1	ROD SOUNDING	0 - 16 FT.	NO REFUSAL
B-2	POWER AUGER BORING	0 - 4.0 FT. 4.0 - 19.5 FT.	SILTY SANDY GRAVEL (FILL) SANDY CLAY SILT WITH COBBLES (AASHTO CLASSIFICATION A-4)
B-3	POWER AUGER BORING	0 - 2.5 FT. 2.5 - 16.0 FT. 2.5 - 16.0 FT.	SILTY SANDY GRAVEL (FILL) SANDY CLAY SILT WITH COBBLES (AASHTO CLASSIFICATION A-4) SANDY CLAY SILT WITH COBBLES (AASHTO CLASSIFICATION A-4) VERY FIRM AT DEPTH OF 16.4 FT. SOIL INCREASINGLY MOIST WITH DEPTH, HOWEVER WATER TABLE IS BELOW 19.5 FT.
B-4	POWER AUGER BORING	0 - 1.0 FT. 1.0 - 15.0 FT. 15.0 - 19.0 FT.	SILTY SANDY GRAVEL (FILL) SANDY CLAY SILT (AASHTO CLASSIFICATION A-6) SANDY CLAY SILT WITH COBBLES
B-5	POWER AUGER BORING	0-19 FT. 1.9 - 19 FT.	SILTY SANDY GRAVEL (FILL) SANDY CLAY SILT (AASHTO CLASSIFICATION A-6)
S-6	ROD SOUNDING	0 -12 FT.	NO REFUSAL (MATERIAL IS BLASTED LEDGE FILL)

TABLE - PIER DEPTH - "D" - FT.

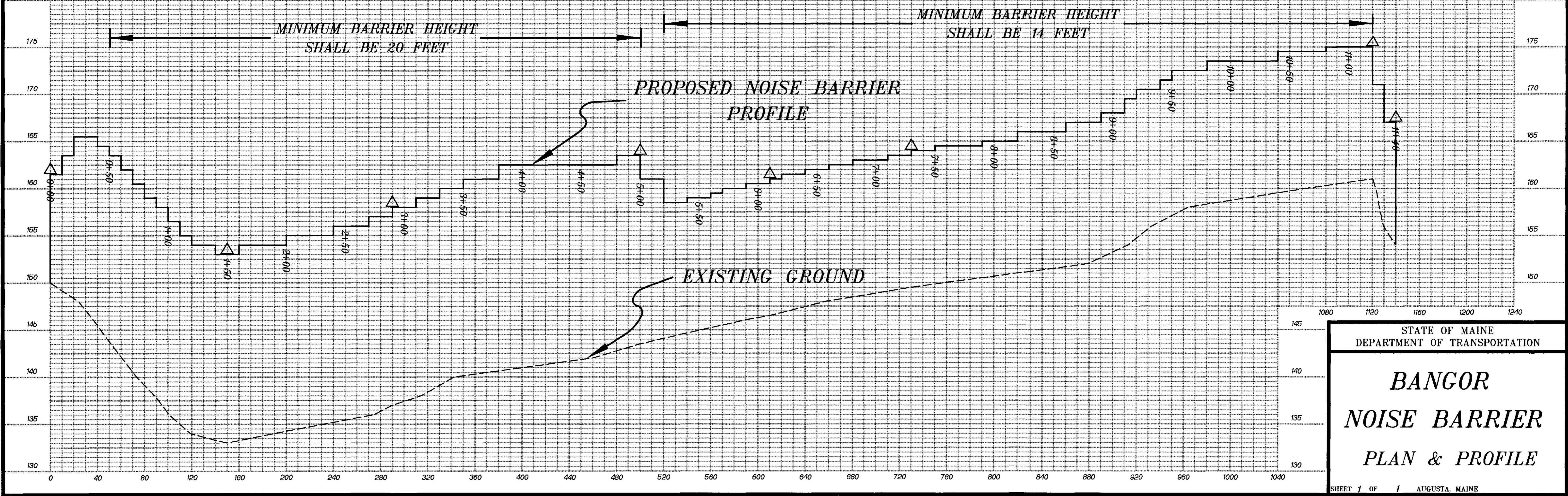
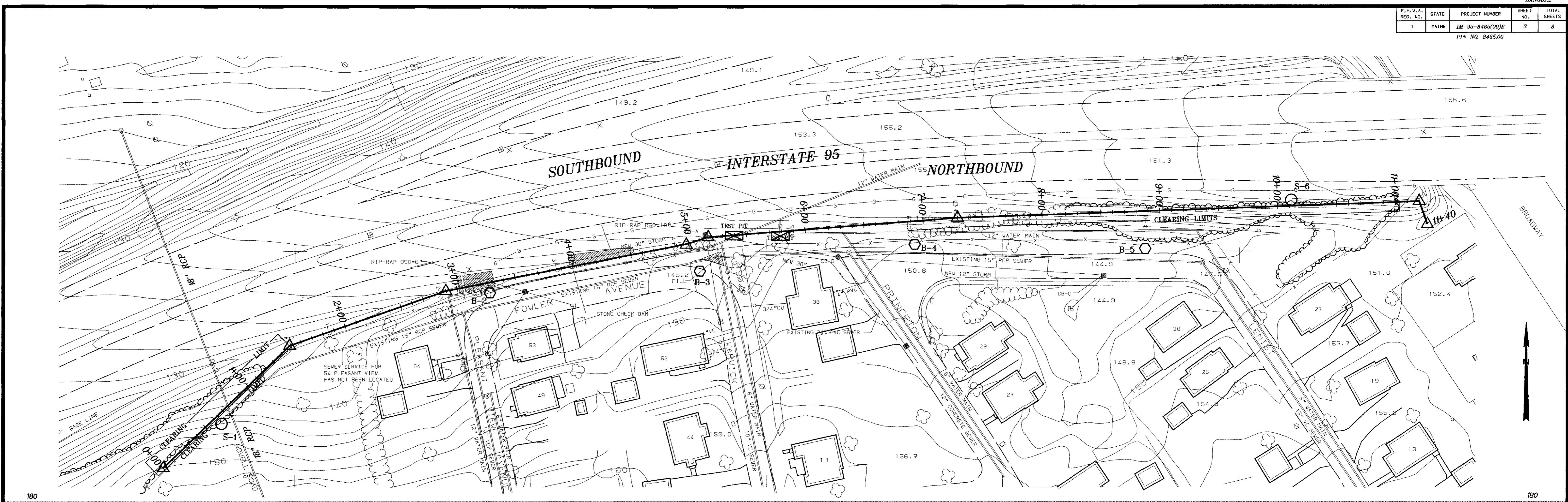
WALL HIGHT "H"	POLE DIAMETER OF PIER AT TOP	MIN. ALLOWABLE DIAMETER AT TOP OF POLE	PIER DEPTH "D"
11.5' - 14'	11"	7.5"	10.5'
20'	14"	9"	12.5'

1. LOCATIONS OF BORINGS AND ROD SOUNDINGS ARE AS INDICATED ON THE PLAN VIEW. SOILS INVESTIGATION WAS CONDUCTED FOR PURPOSES OF DESIGN AND SHOWS CONDITIONS AT INVESTIGATION POINTS ONLY. IT DOES NOT NECESSARILY SHOW THE NATURE OF MATERIALS TO BE ENCOUNTERED DURING CONSTRUCTION.
2. THE CONTRACTOR IS TO FORM HIS OWN OPINION OF THE CHARACTER OF THE MATERIAL AND TO MAKE HIS OWN INTERPRETATION OF THE RESULTS.
3. THE ENGINEER DOES NOT WARRANT THE FINDINGS AS BEING ACCURATE OR COMPLETE.
4. SOILS INVESTIGATION WAS CONDUCTED BY THE MAINE DEPARTMENT OF TRANSPORTATION DURING THE MONTH OF JULY 1998.

PROJECT DESIGN ENGINEER
 DATE
 BY
 J. DEWYN
 D. CHIRASO
 8/98
 DESIGN-DETAILED
 CHECKED
 REVISIONS
 FIELD CHANGES
PLANS

22SEP98-0100.00

STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION
**ESTIMATED QUANTITIES
 &
 GENERAL NOTES**
 SHEET 1 OF 1 AUGUSTA, MAINE



PROJECT DESIGN ENGINEER	DESIGN-DETAILED
BY	CHECKED
J. BRYAN	D. CRANCO
DATE	REVISIONS
8/28	FIELD CHANGES

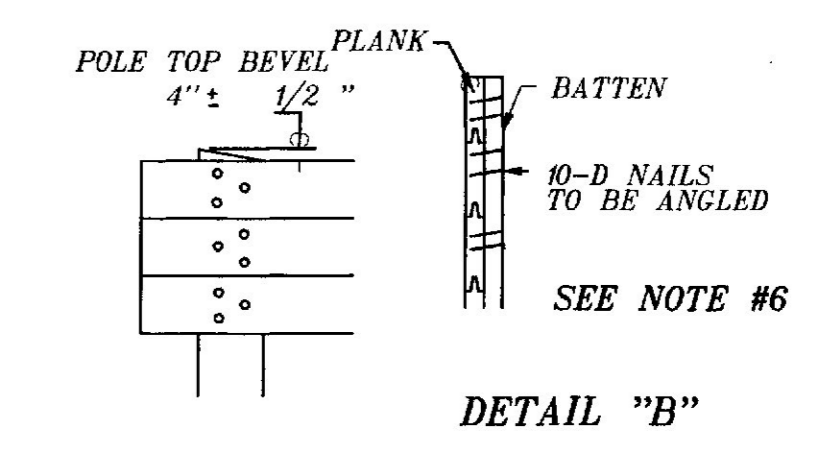
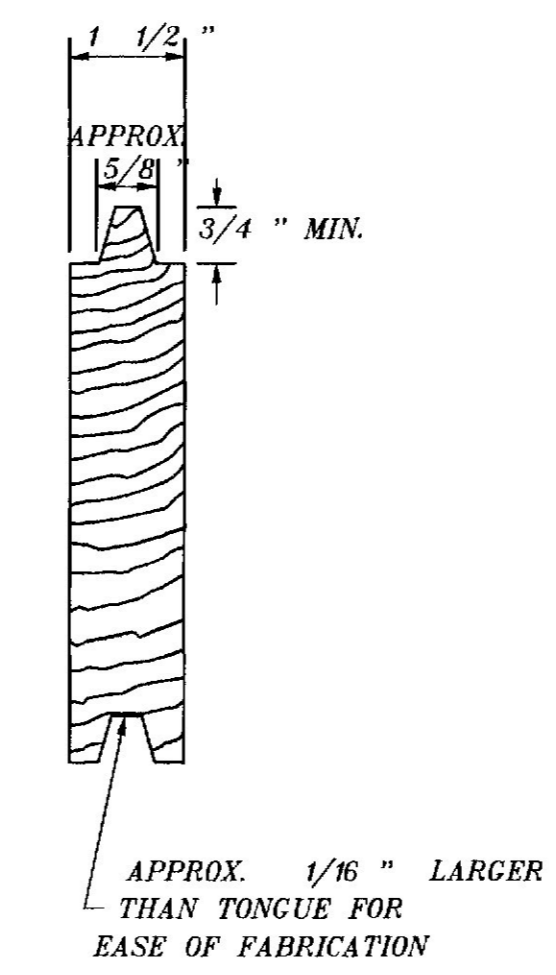
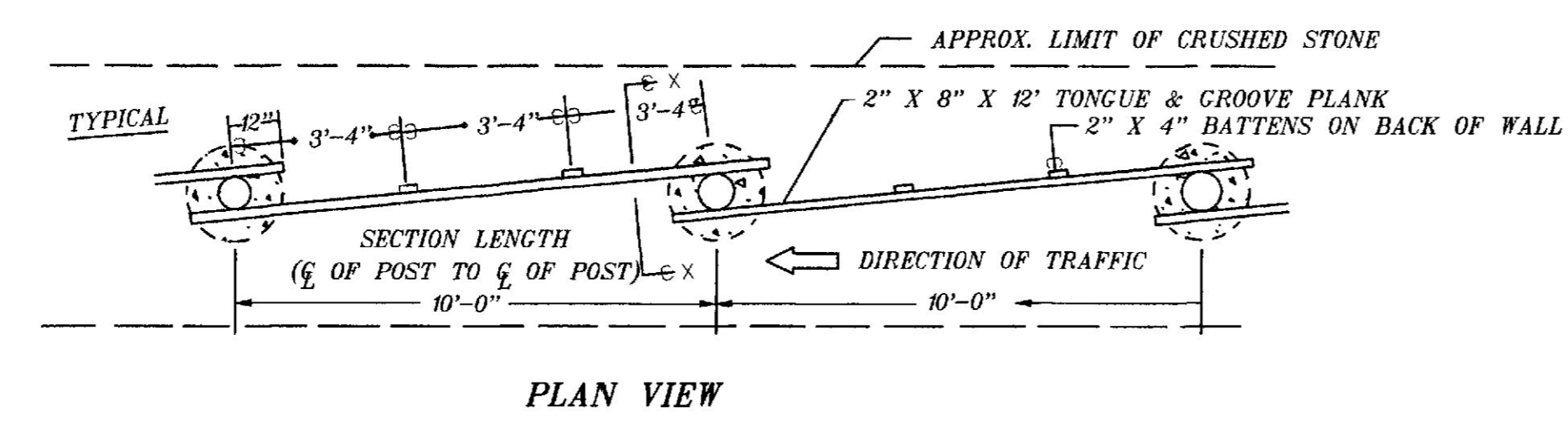
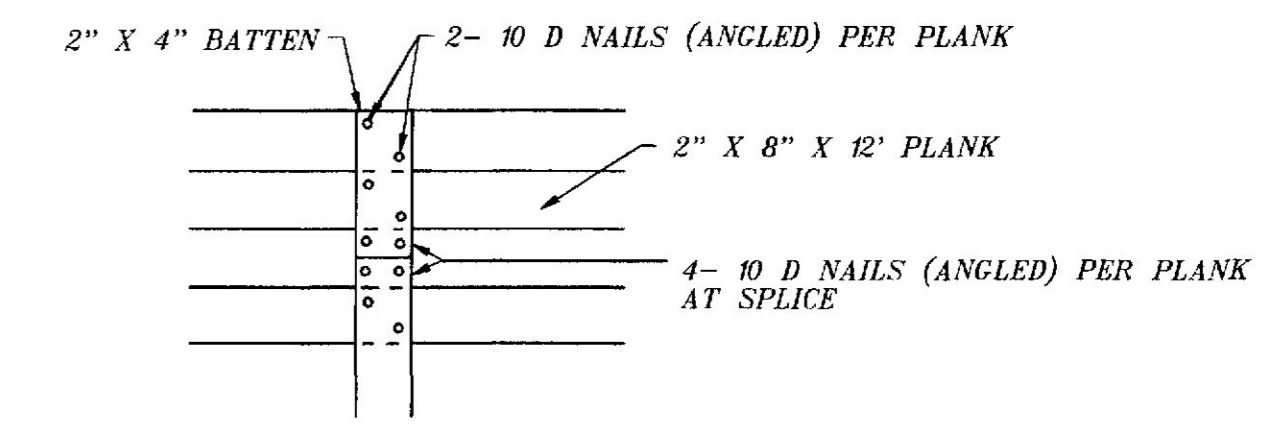
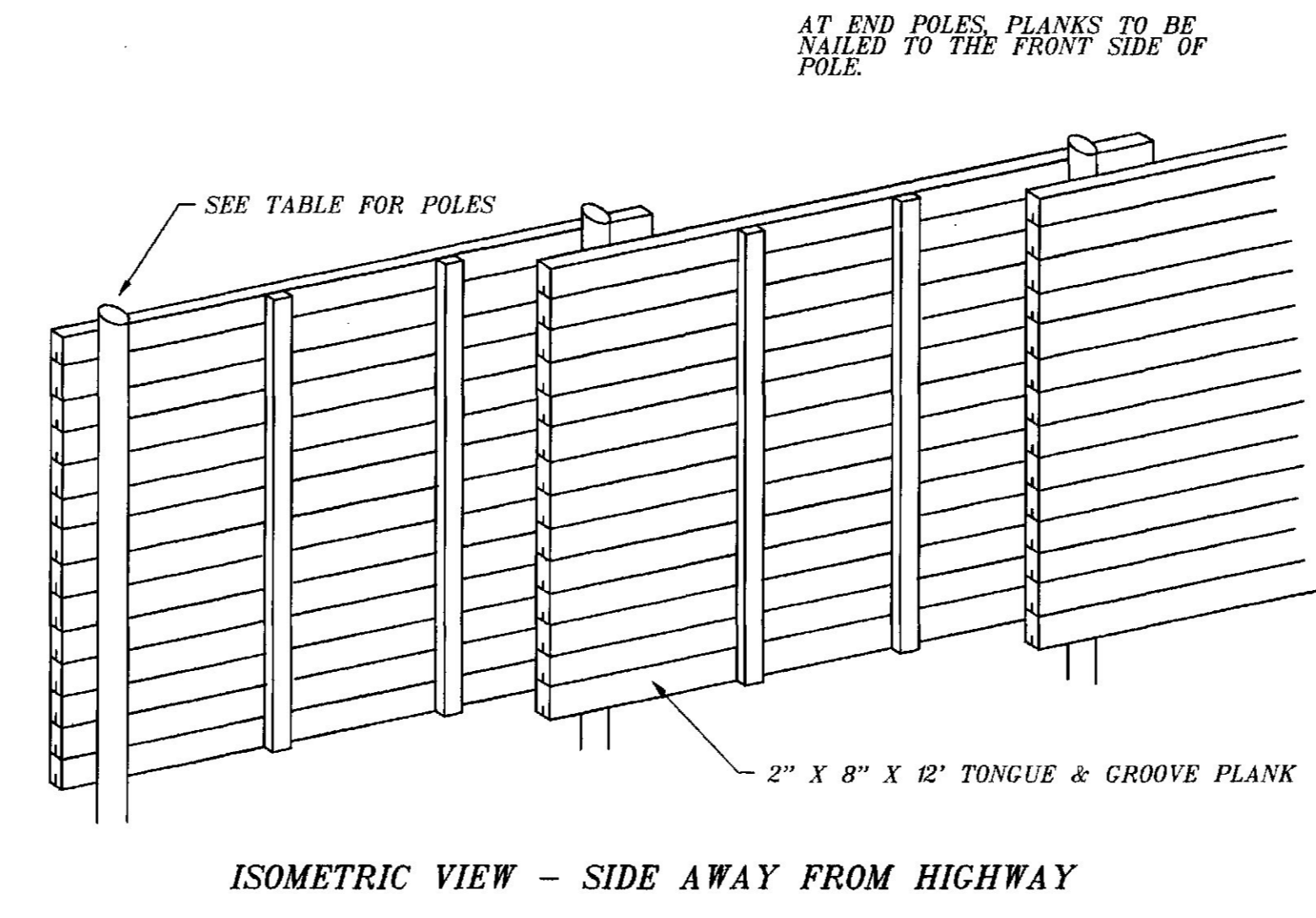
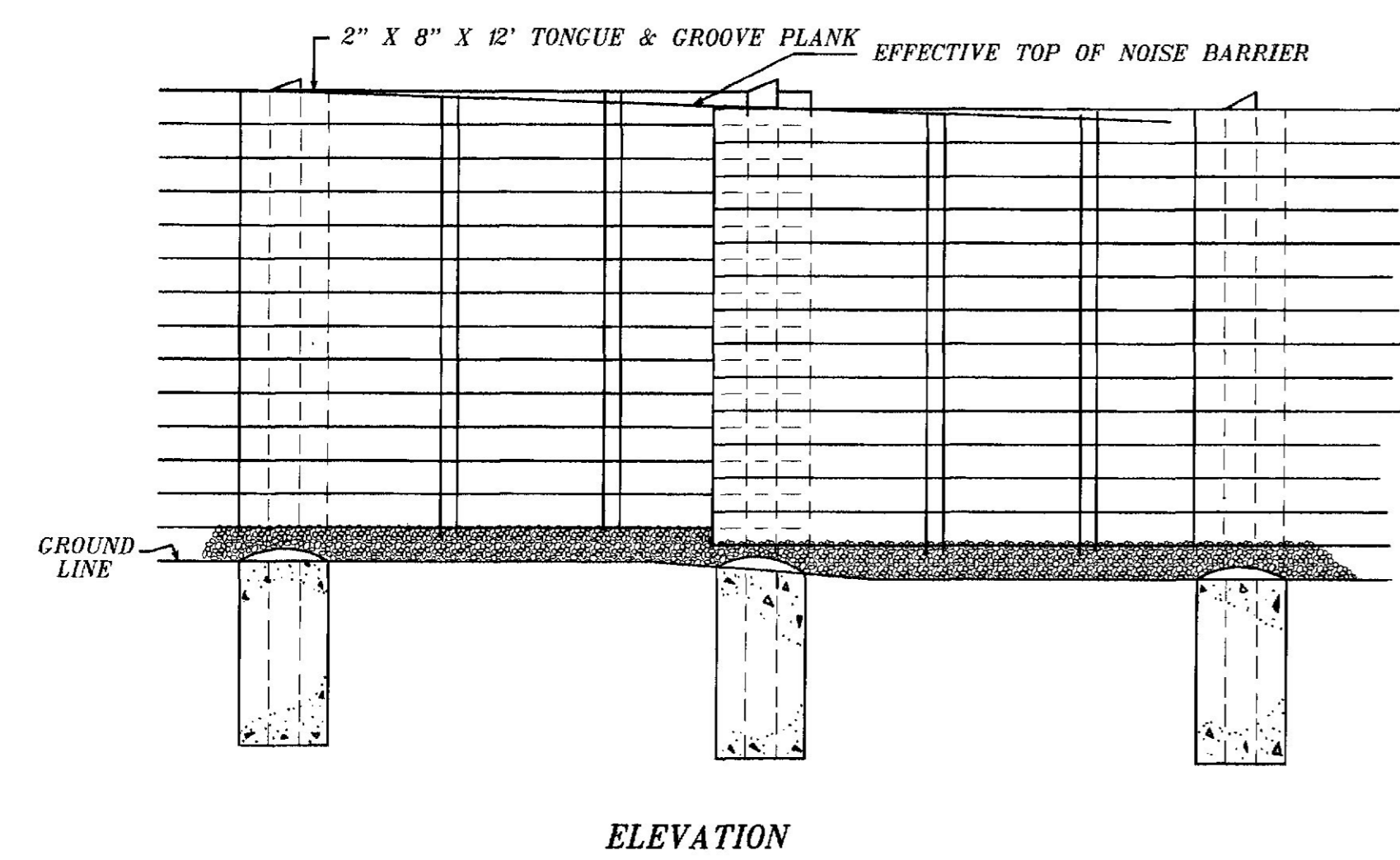
PLANS

14FEB98-010000

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

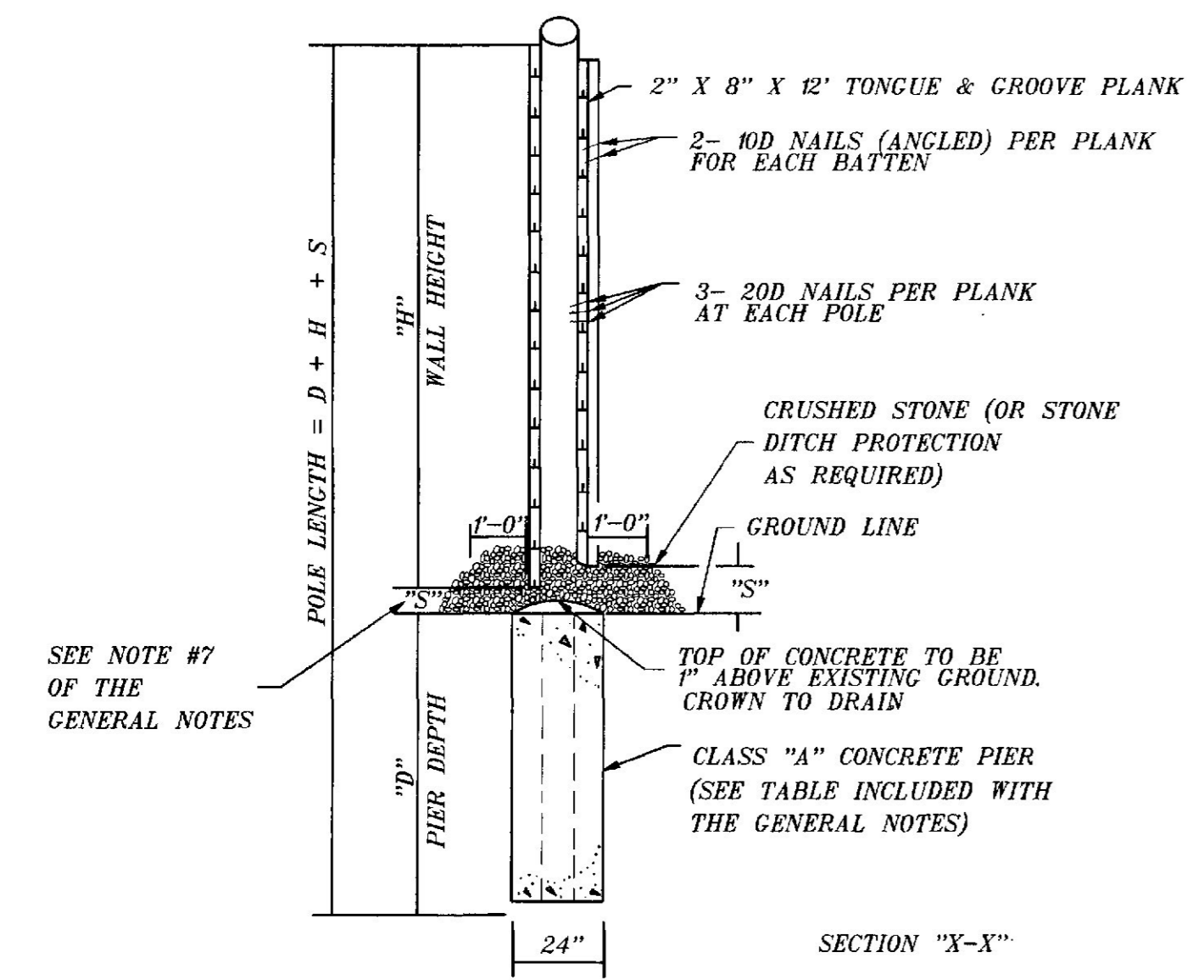
**BANGOR
NOISE BARRIER
PLAN & PROFILE**

SHEET 1 OF 1 AUGUSTA, MAINE

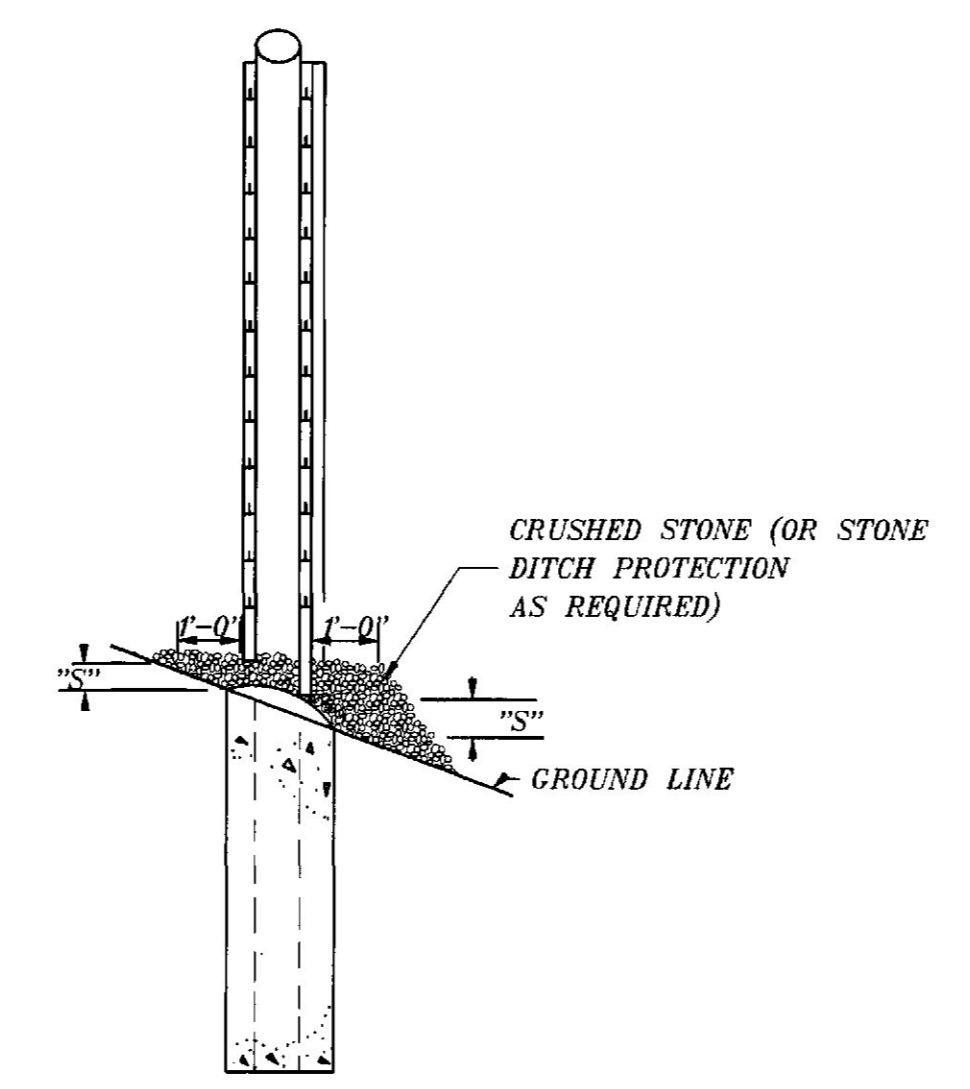


NOTE: INSTALL PLANKS WITH TONGUE UP. TOP PLANK SHALL NOT HAVE TONGUE. BOTTOM PLANK MAY HAVE GROOVE. NOMINAL LUMBER DIMENSIONS WILL BE SATISFACTORY.

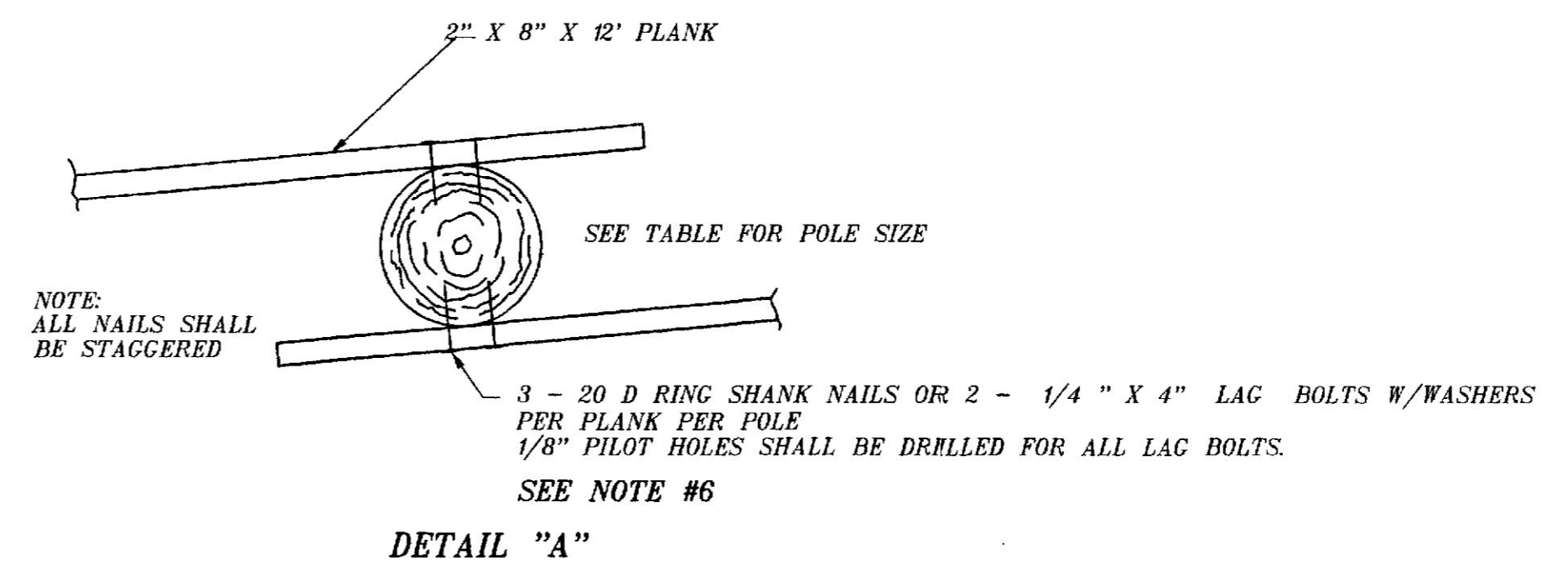
TIMBER NOISE BARRIER TYPE 2



INSTALLED ON LEVEL GROUND



INSTALLED ON SLOPE



NOTE: ALL NAILS SHALL BE STAGGERED

PROJECT DESIGN ENGINEER	DATE
DESIGN-DETAILED	6/98
CHECKED	
REVISIONS	
FIELD CHANGES	

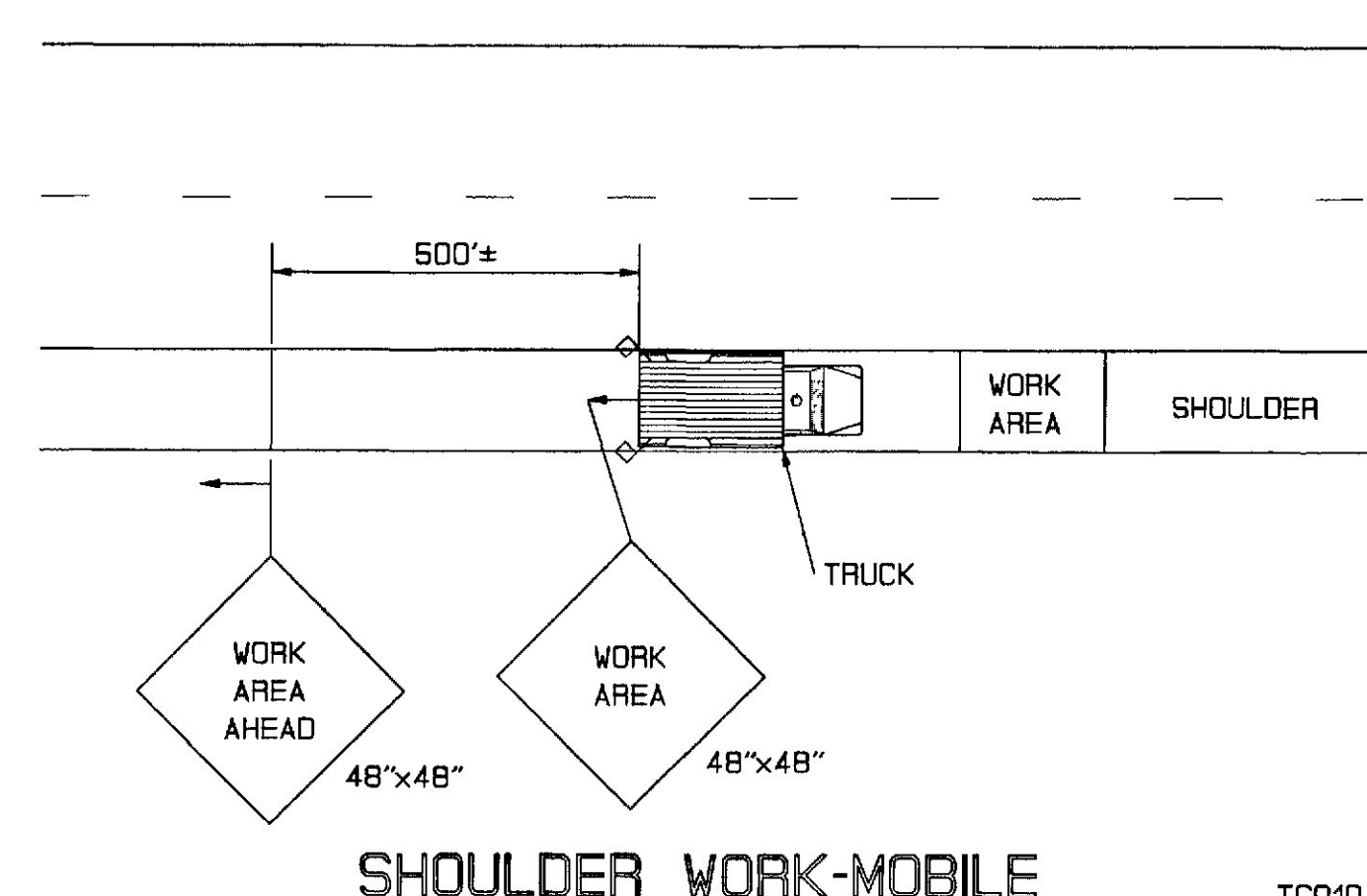
PLANS

18SEFP98-0100.00

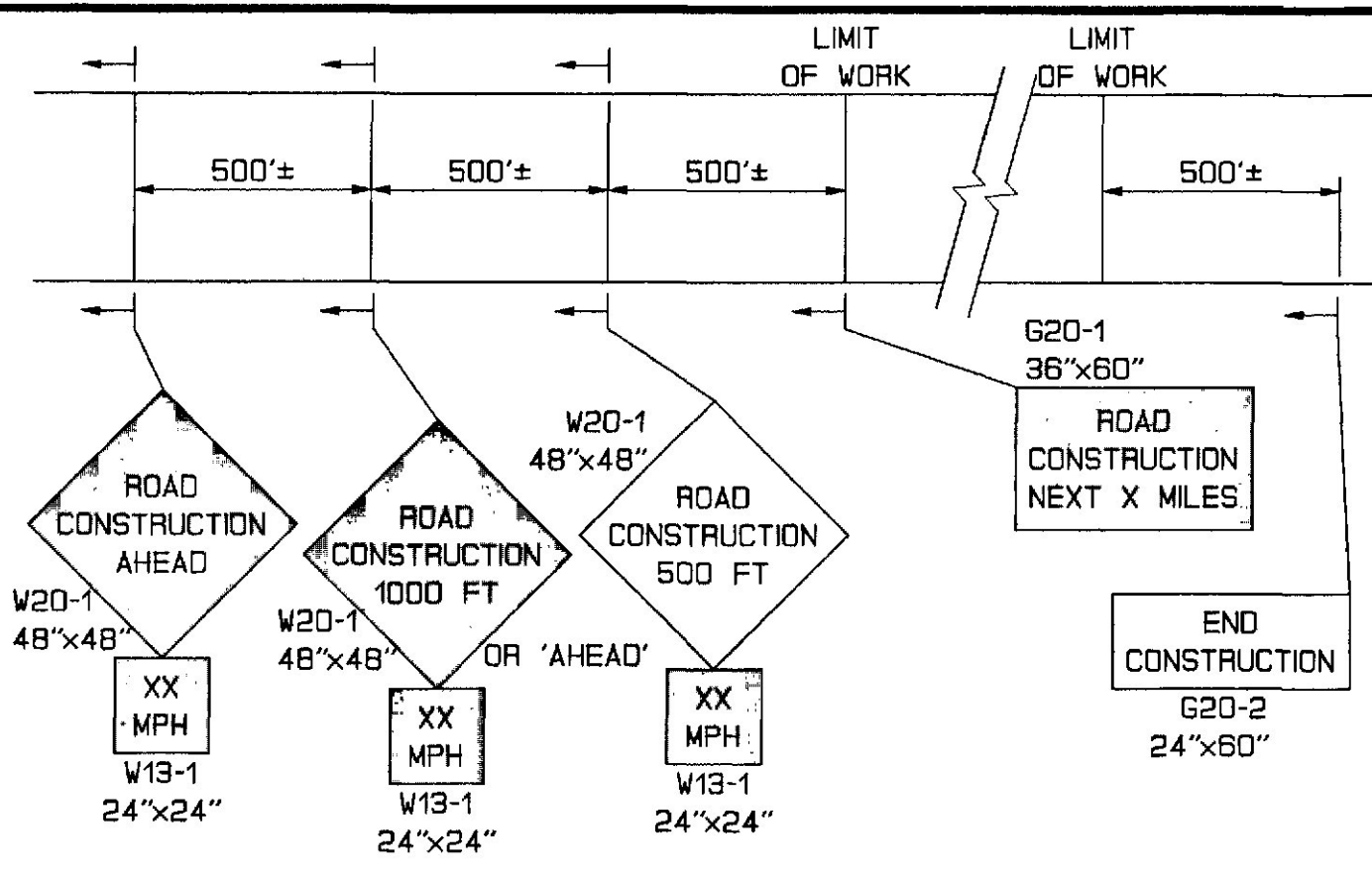
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

**BANGOR
NOISE BARRIER
DETAILS**

SHEET 1 OF 4 AUGUSTA, MAINE

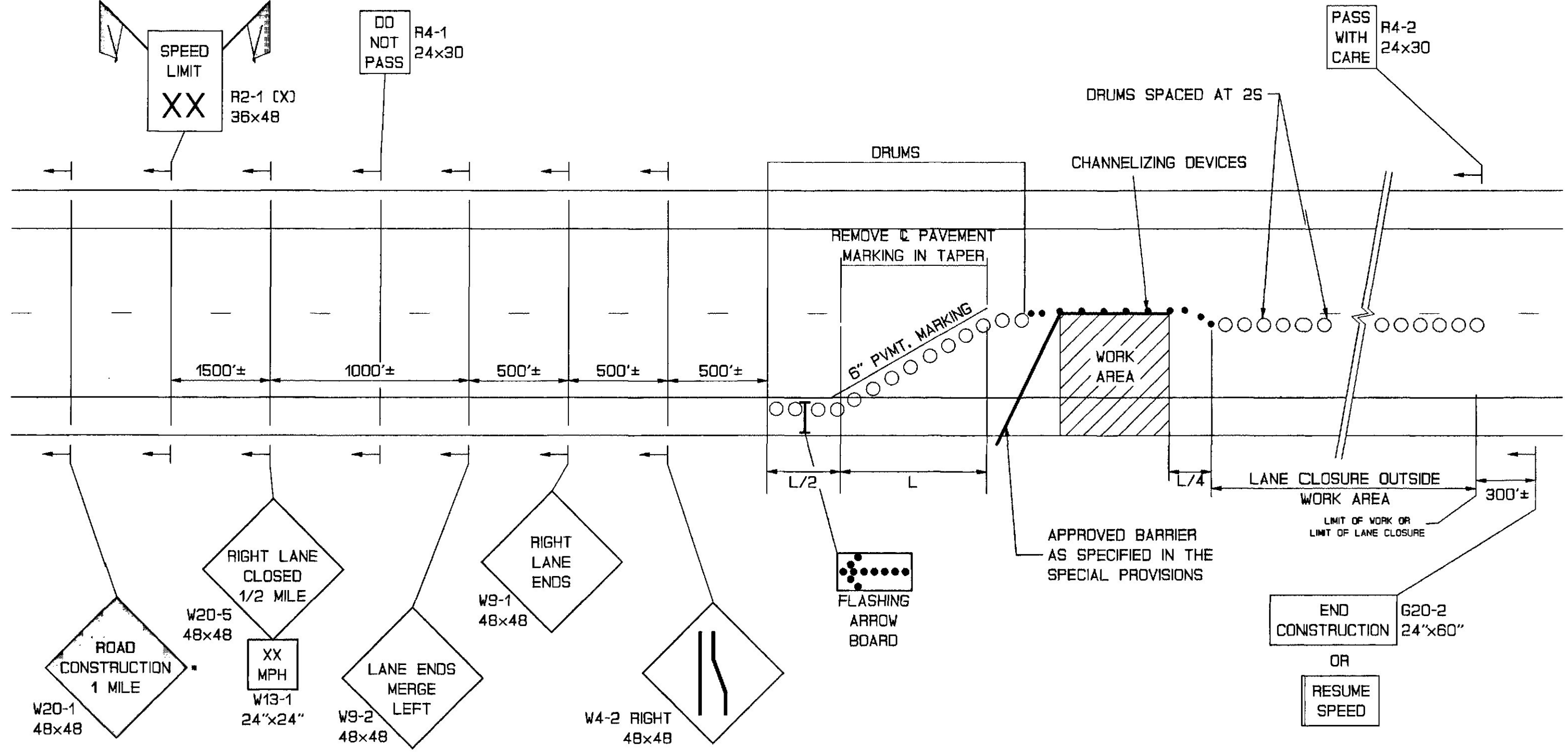


SHOULDER WORK-MOBILE TC010

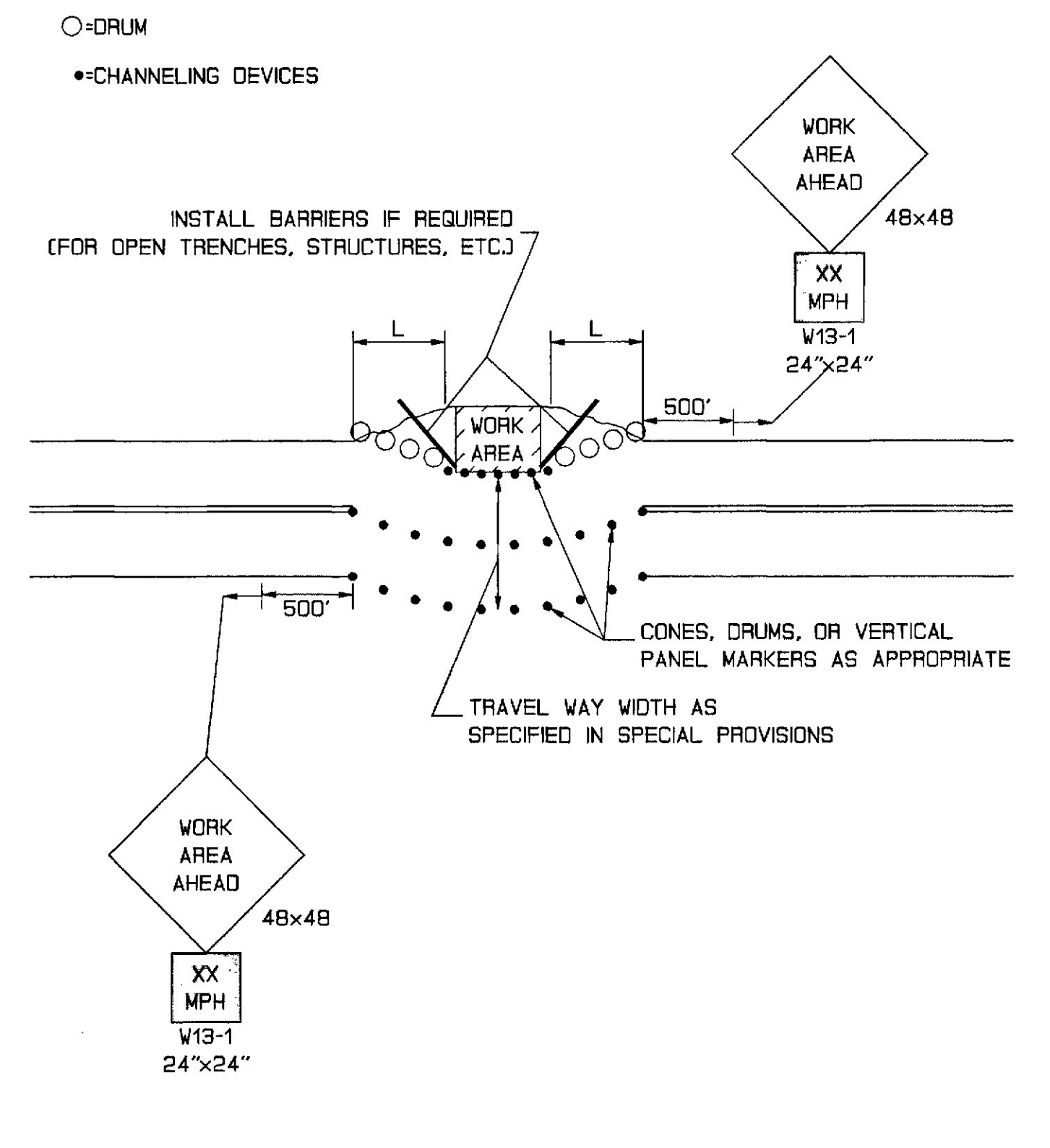


PROJECT APPROACH SIGNING EXPRESSWAY TC009

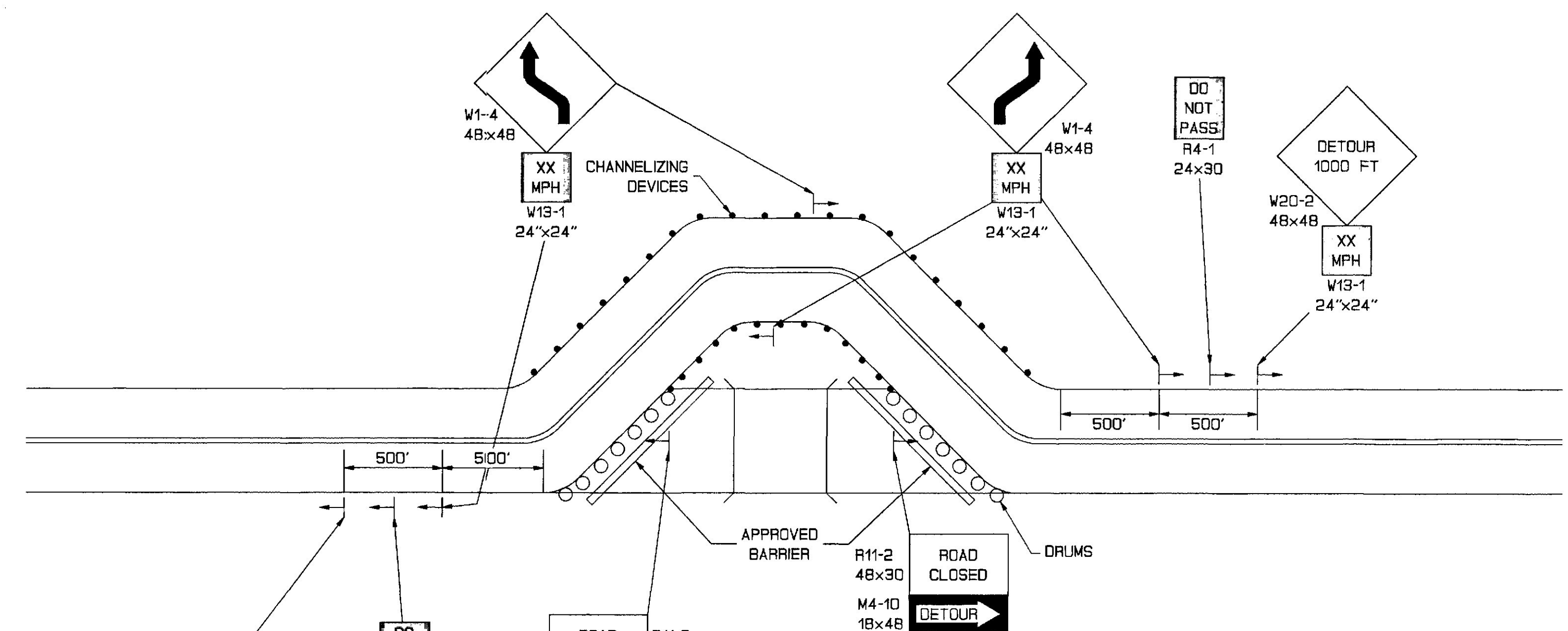
NOTE
 * OMIT W20-1 IF LANE CLOSURE SIGNING ARRAY IS WITHIN PROJECT LIMITS.
 ALTER PAVEMENT MARKINGS AS REQUIRED.
 MAINTAIN 15 FT. LATERAL CLEARANCE.
 USE SIMILAR SIGNING FOR LEFT LANE CLOSURE.



EXPRESSWAY LANE CLOSURE TC011



TWO WAY TRAFFIC MAINTAINED THROUGH WORK AREA TC013



TWO WAY TWO LANE DETOUR TC014

NOTE
 APPROACH SIGNING AND END ROADWORK SIGNS ARE REQUIRED IF THIS WORK IS THE CONSTRUCTION PROJECT.

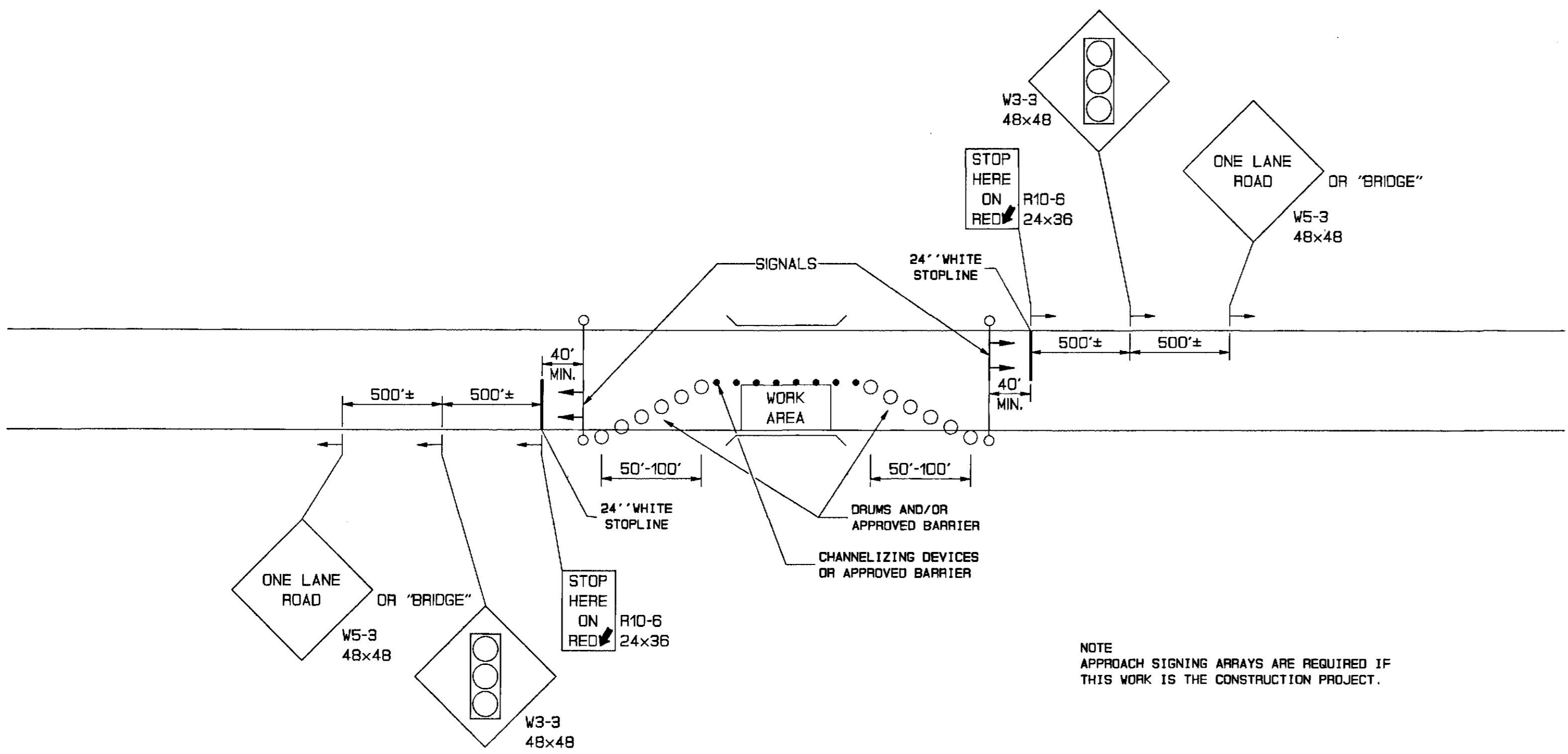
REVISIONS	APPROVED
Description	Me. DOT FHWA
ORIGINAL PLAN	OCT. 92 OCT. 93
TC011-Drums	AUG. 95
TC012-Eliminated	MAY 96
TC011-Drum Spacing	MAY 96
TC014-Signing Note	MAY 96

STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION

BANGOR
 NOISE BARRIER
 MAINTENANCE OF TRAFFIC
 IN CONSTRUCTION ZONES

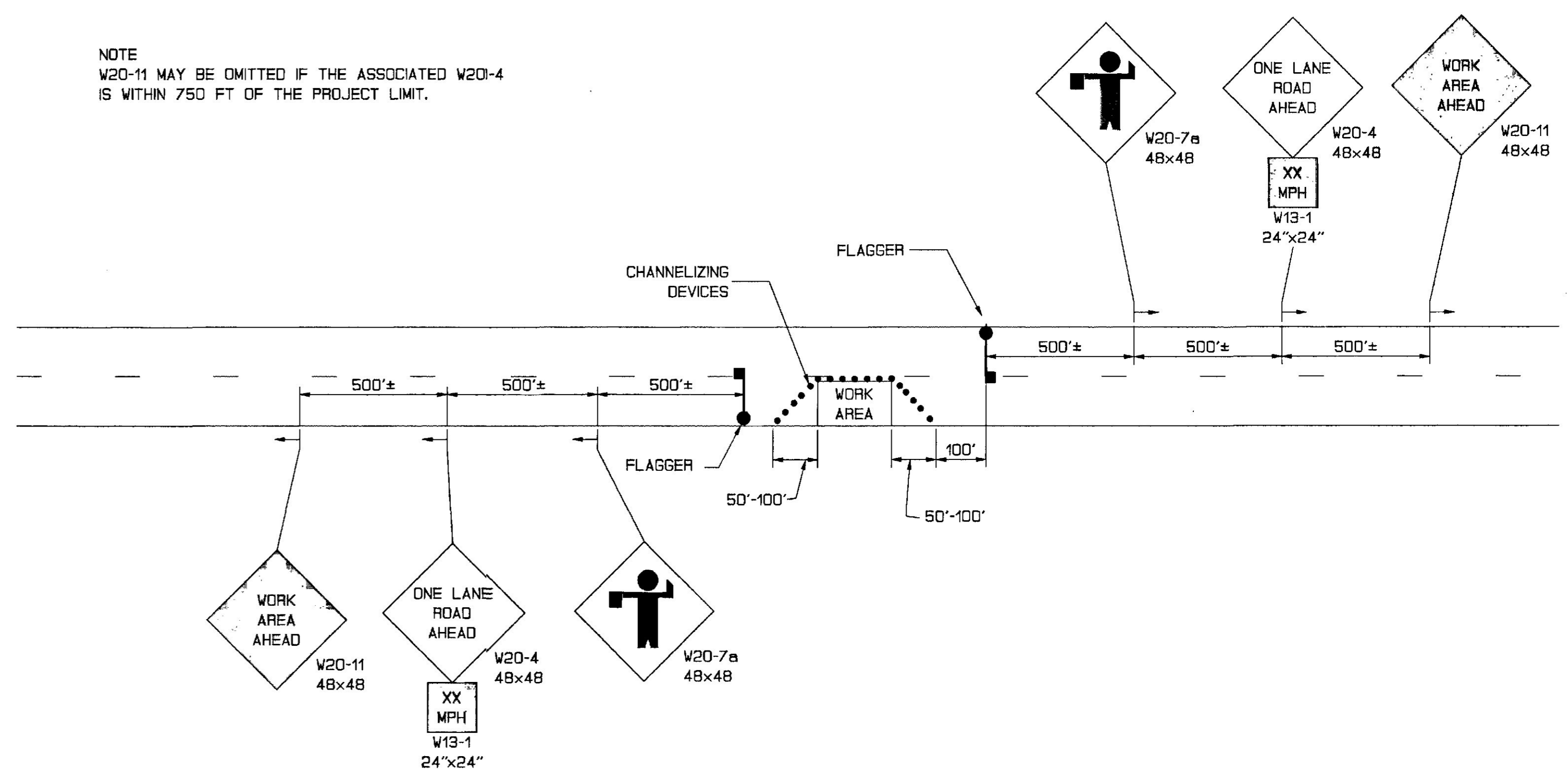
PROJECT DESIGN ENGINEER: J. DAYTON
 BY: J. DAYTON
 DATE: 8/98
 DESIGN-DETAILED
 CHECKED
 REVISIONS
 FIELD CHANGES
PLANS

16SEP98-01000.00



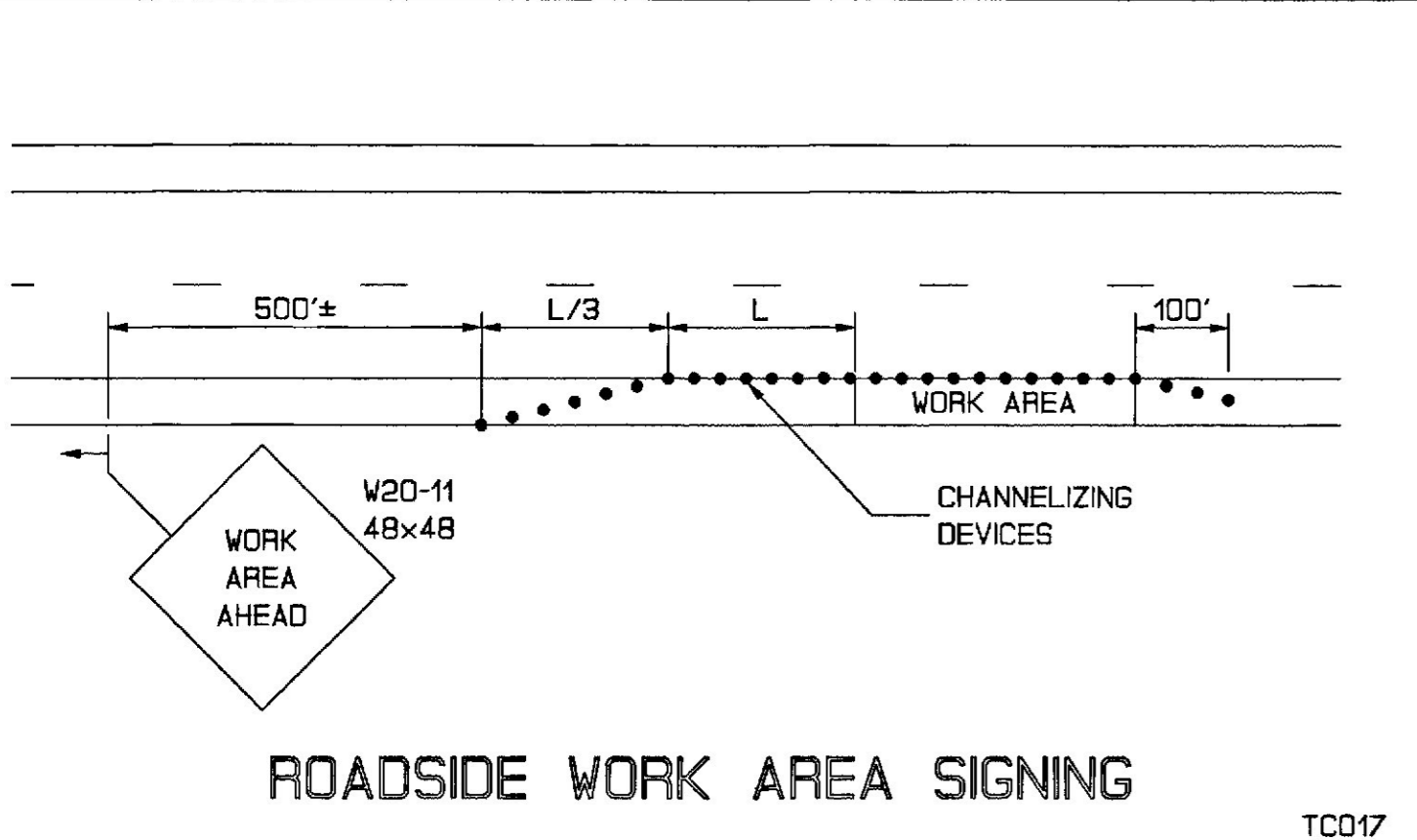
TWO WAY TRAFFIC LANE CLOSURE WITH TEMPORARY TRAFFIC SIGNALS

TC015



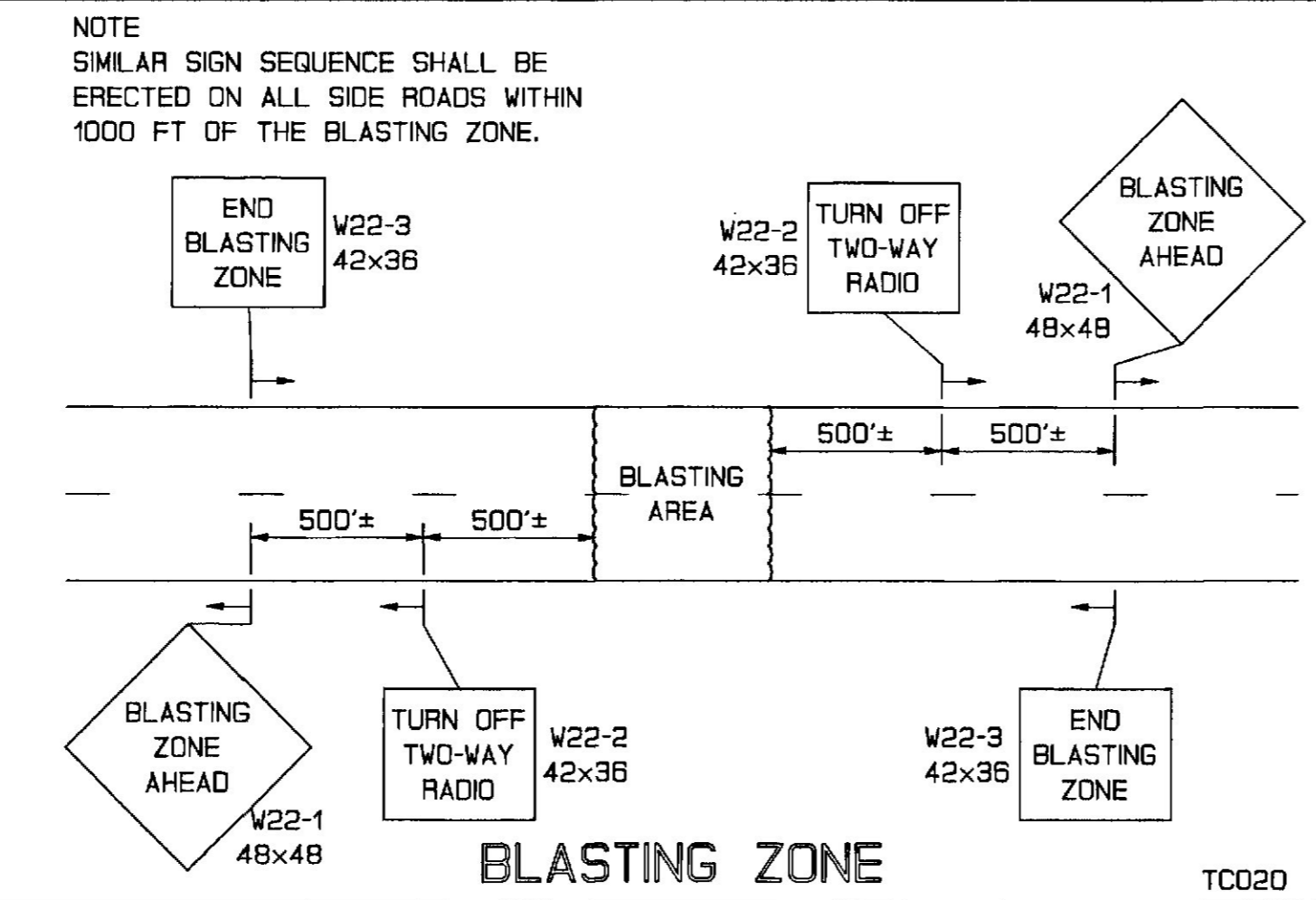
TWO-WAY TRAFFIC LANE CLOSURE WITH FLAGGERS

TC016



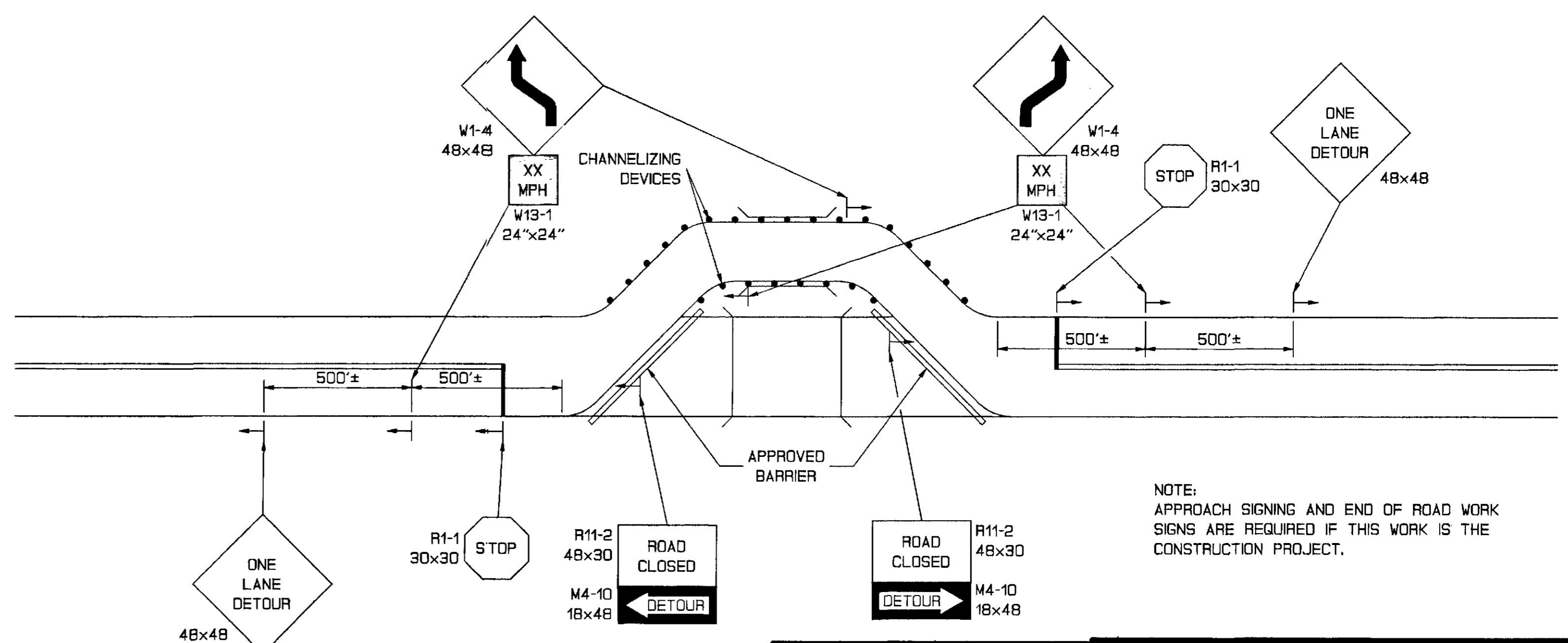
ROADSIDE WORK AREA SIGNING

TC017



BLASTING ZONE

TC020



ONE WAY DETOUR LOW VOLUME ROAD WITH ADEQUATE SIGHT DISTANCE

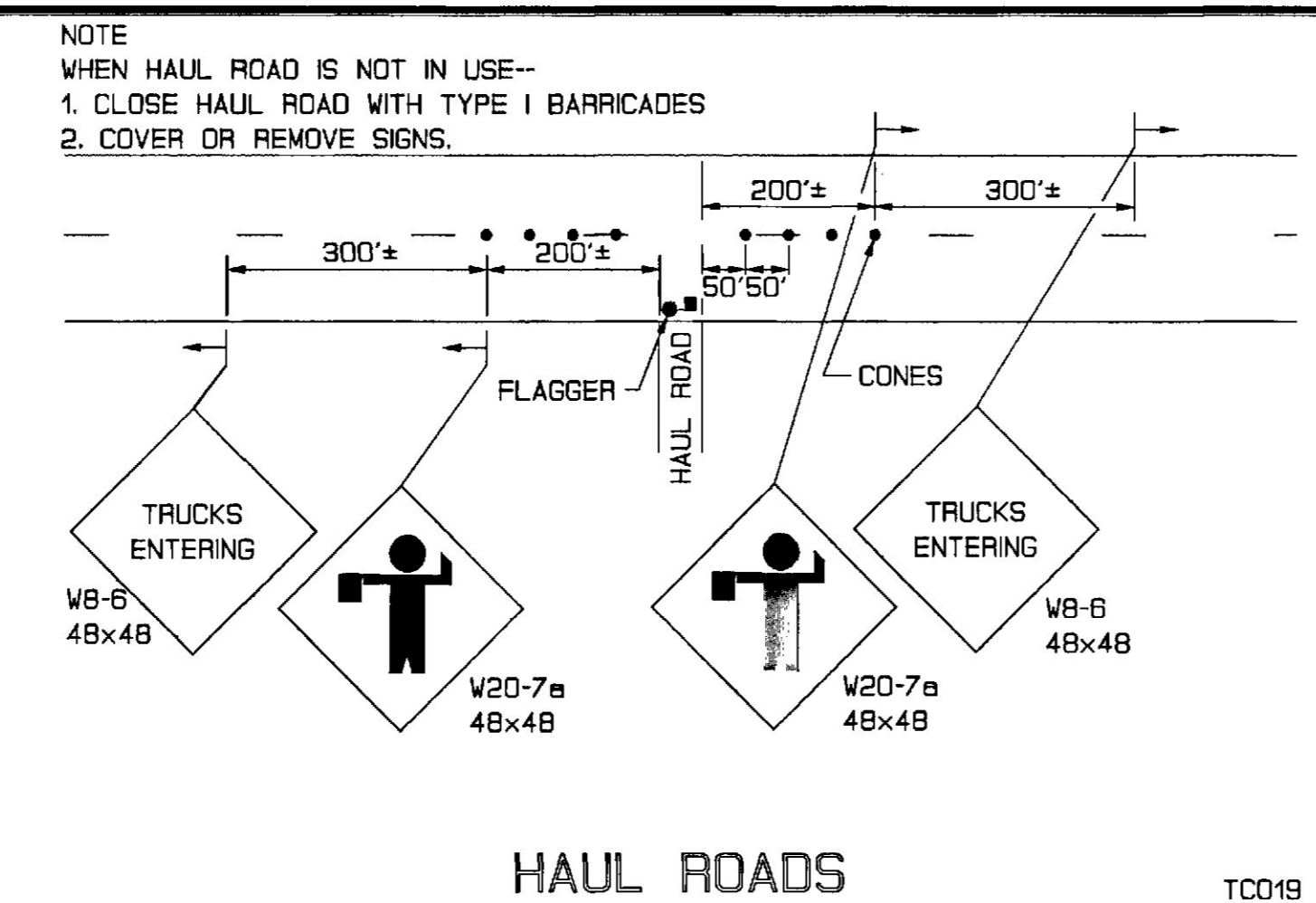
TC018

PORTABLE ENERGY ABSORPTION UNITS
ARRAYS FOR SPEEDS OF 20 TO 65 MPH

KEY:
 (21) PLASTIC CRASH BARREL
 (14) WEIGHT OF SAND IN HUNDREDS OF POUNDS

ITEM NO. 527.32	Direction of Traffic	(14) (14) (21)	Direction of Traffic	(2) (2) (4) (7) (7) (14) (14) (21)
20 & 25 MPH	Direction of Traffic	(7) (14) (14) (21)	Direction of Traffic	(2) (2) (2) (4) (7) (7) (14) (14) (21)
30 & 35 MPH	Direction of Traffic	(4) (7) (14) (14) (21)	Direction of Traffic	(2) (2) (2) (2) (4) (7) (7) (14) (14) (21)
40 MPH	Direction of Traffic	(2) (4) (7) (14) (14) (21)	Direction of Traffic	(2) (2) (2) (2) (2) (4) (7) (7) (14) (14) (21)
45 MPH	Direction of Traffic	(2) (4) (7) (14) (14) (21)		

Maximum Deceleration = 6 - 7 G's



HAUL ROADS

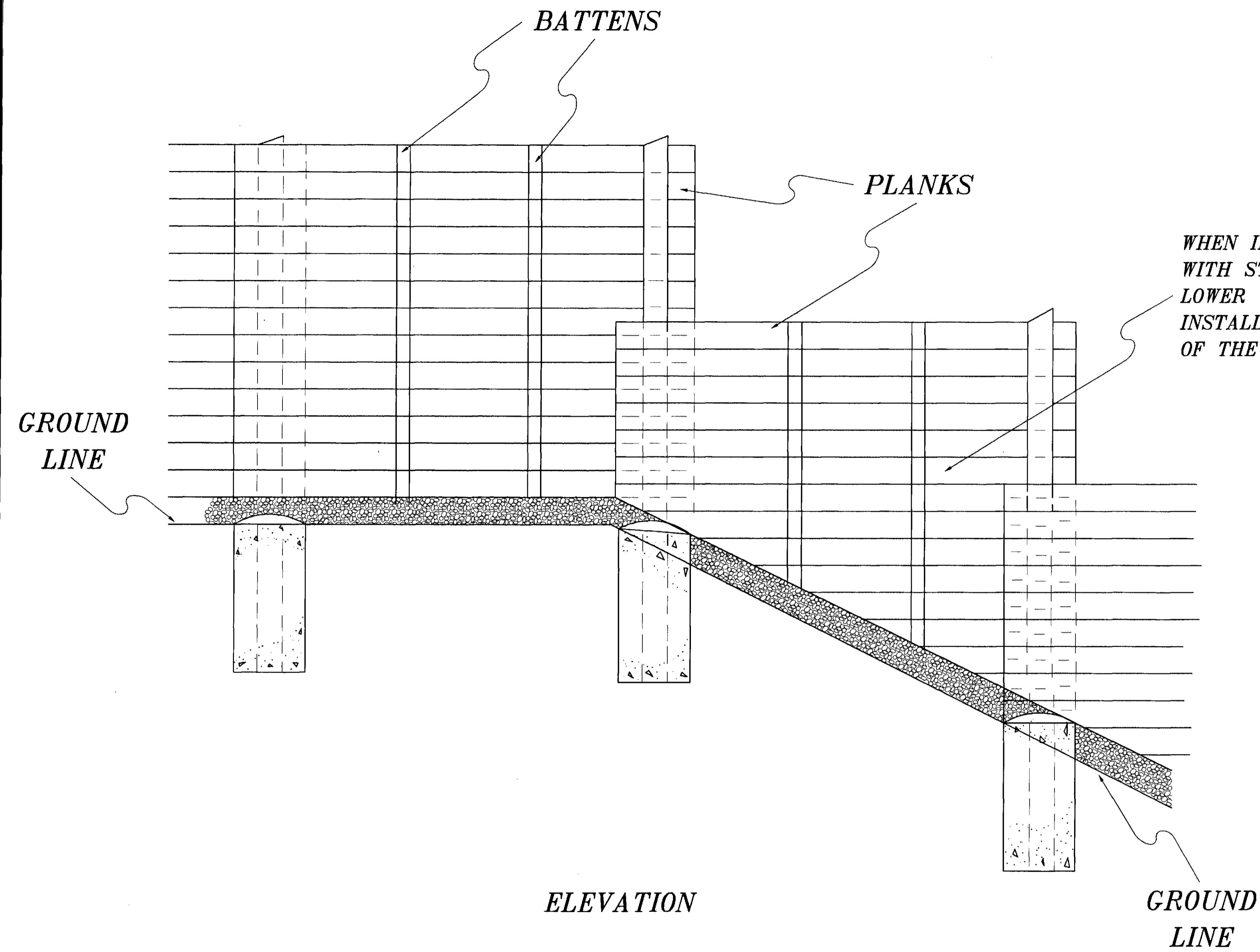
TC019

REVISIONS	APPROVED
Description	Me. DOT FHWA
ORIGINAL PLAN	OCT. 92 OCT. 93
Add TC022	JUNE 93 OCT. 93
TC018 Signing Note	MAY 95

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

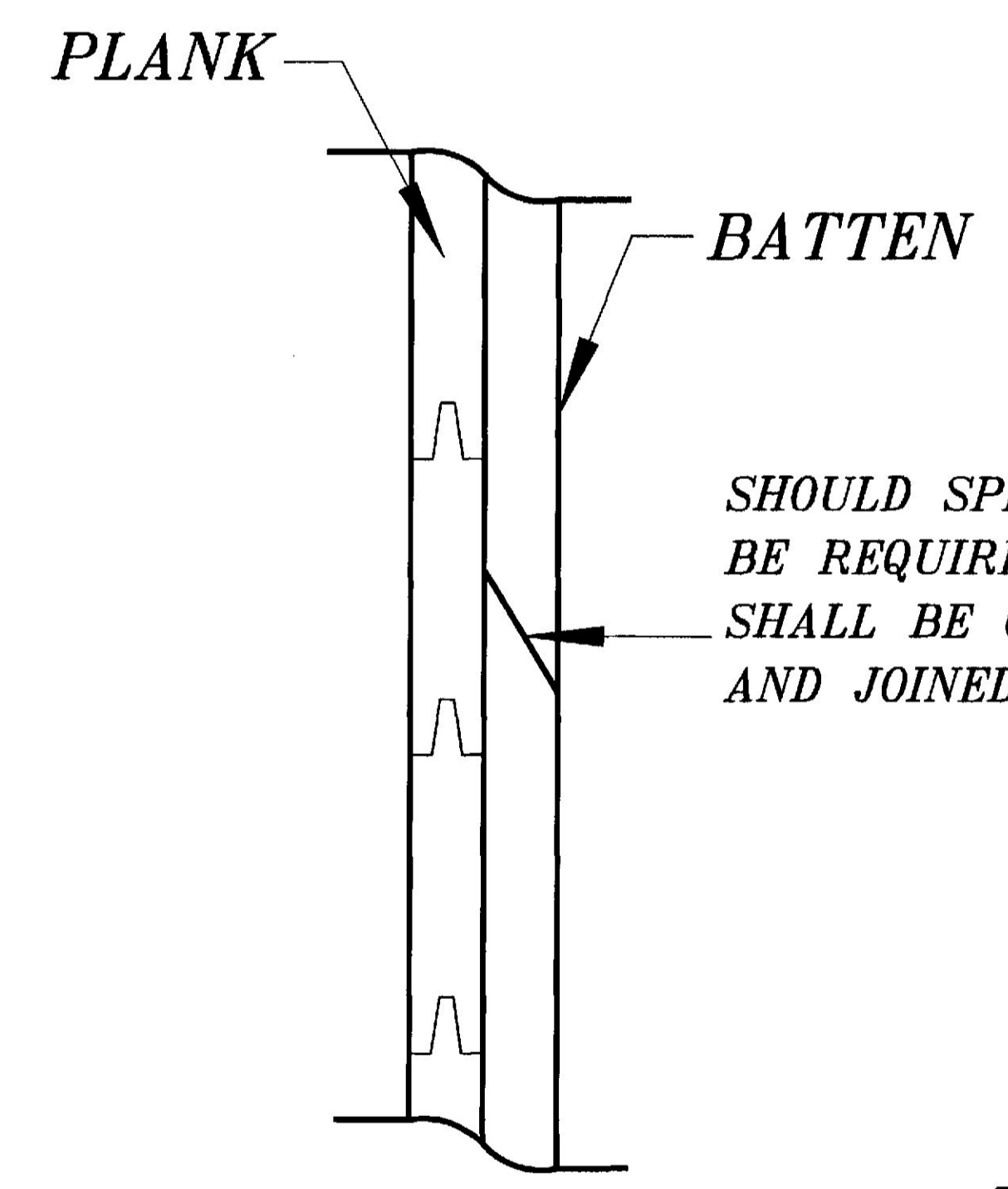
BANGOR
NOISE BARRIER
MAINTENANCE OF TRAFFIC
IN CONSTRUCTION ZONES

PROJECT DESIGN ENGINEER: J. DEYAN
 CHECKED: J. DEYAN
 REVISIONS: J. DEYAN
 FIELD CHANGES: J. DEYAN
 DATE: 8/98
 BY: J. DEYAN
 PROJECT NO. 859EP98-0100000



WHEN INSTALLING PLANKS ON STEPPED SECTION WITH STEEP SLOPE, INSTALL THIS BOARD FIRST. LOWER TONGUE AND GROOVE BOARDS SHALL BE INSTALLED AFTER PLANKS ON UPPER PORTION OF THE SECTION AND THE BATTENS ARE IN PLACE.

STEP IN WALL HEIGHT ON STEEP SCOPE



SHOULD SPLICE IN BATTEN BE REQUIRED, THE TWO PIECES SHALL BE CUT AT 45° ANGLE AND JOINED AS SHOWN.

BATTEN SPLICE

PROJECT DESIGN ENGINEER	DESIGN-DETAILED	CHECKED	REVISIONS	FIELD CHANGES
PLANS				

18SEP98-010000

NOT TO SCALE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BANGOR
NOISE BARRIER
SPECIAL DETAILS