Maryland Transportation Authority

CONTRACT NO.HT 705-000-002R

AASHTO DESIGN CRITERIA

THIS PROJECT WAS DESIGNED IN ACCORDANCE WITH THE 2001 EDITION OF AASHTO'S "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS."

EROSION AND SEDIMENT CONTROL REGULATIONS WILL BE STRICTLY ENFORCED DURING CONSTRUCTION.

BALTIMORE HARBOR TUNNEL

BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE

BALTIMORE CITY

CONTRACT NO.HT 705-000-002R

STANDARDS AND SPECIFICATIONS

THIS PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE MARYLAND STATE HIGHWAY ADMINISTRATION'S "STANDARDS FOR HIGHWAY AND INCIDENTAL CONSTRUCTION", THE MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION'S "STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, JULY 2008" AND ALL REVISIONS THEREOF, THE LATEST MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND AS SPECIFIED IN THE CONTRACT DOCUMENTS.

COMPLETENESS OF DOCUMENTS

THE MARYLAND TRANSPORTATION AUTHORITY SHALL ONLY BE RESPONSIBLE FOR THE COMPLETENESS OF DOCUMENTS OBTAINED DIRECTLY FROM THE MARYLAND TRANSPORTATION AUTHORITY'S CASHIER'S OFFICE. FAILURE TO ATTACH ADDENDA MAY CAUSE THE BID TO BE IRREGULAR.

RIGHT OF WAY

RIGHT OF WAY AND EASEMENT LINES SHOWN ON THESE PLANS ARE FOR ASSISTANCE IN INTERPRETING THE PLANS. THEY ARE NOT OFFICIAL. FOR OFFICIAL FEE RIGHT OF WAY AND EASEMENT INFORMATION, SEE APPROPRIATE RIGHT OF WAY PLATS.

UTILITIES

THE LOCATION OF UTILITIES SHOWN ON THE PLANS ARE FOR INFORMATION AND GUIDANCE ONLY. NO GUARANTEE IS MADE OF THE ACCURACY OF SAID LOCATIONS. NOTIFICATION TO "MISS UTILITY", 1.800.257.7777, SHALL BE GIVEN 72 HOURS (THREE FULL WORKING DAYS) IN ADVANCE OF WORKING IN THE AREA OF THE SPECIFIC AFFECTED UTILITY. THE NOTIFICATION TO "MISS UTILITY" IS REQUIRED WHENEVER ANY EXCAVATING OR SIMILAR WORK IS TO BE PERFORMED.

NOTIFICATION TO JEFF ROBSON, THE MdTA UTILITIES MANAGER, SHALL BE GIVEN 72 HOURS (THREE FULL WORKING DAYS) IN ADVANCE OF WORKING IN THE AREA OF MdTA UTILITIES.

ENVIRONMENTAL INFORMATION

ALL STORMWATER MANAGEMENT FACILITIES CONSTRUCTED FOR CONTRACT NO. HT-705-000-002R SHALL BE INSPECTED BIANNUALLY WITH MAINTENANCE PROVIDED WHEN REQUIRED.

FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN (7) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) AND FOURTEEN (14) DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

THE GRADING LIMITS SHOWN ON THE PLAN SHALL NOT BE EXCEEDED. ANY CHANGES IN THE SEDIMENT CONTROL PLAN, STORMWATER MANAGEMENT FACILITY OR OTHER SEGMENT OF WORK MUST BE REVIEWED AND APPROVED BY THE OFFICE OF ENVIRONMENTAL DESIGN AND/OR THE OFFICE OF THE CHIEF ENGINEER.

ADA COMPLIANCE

THE DESIGN OF THIS PROJECT HAS INCORPORATED FACILITIES IN COMPLIANCE WITH THE STATE AND FEDERAL LEGISLATION

OWNERS / DEVELOPERS CERTIFICATION :

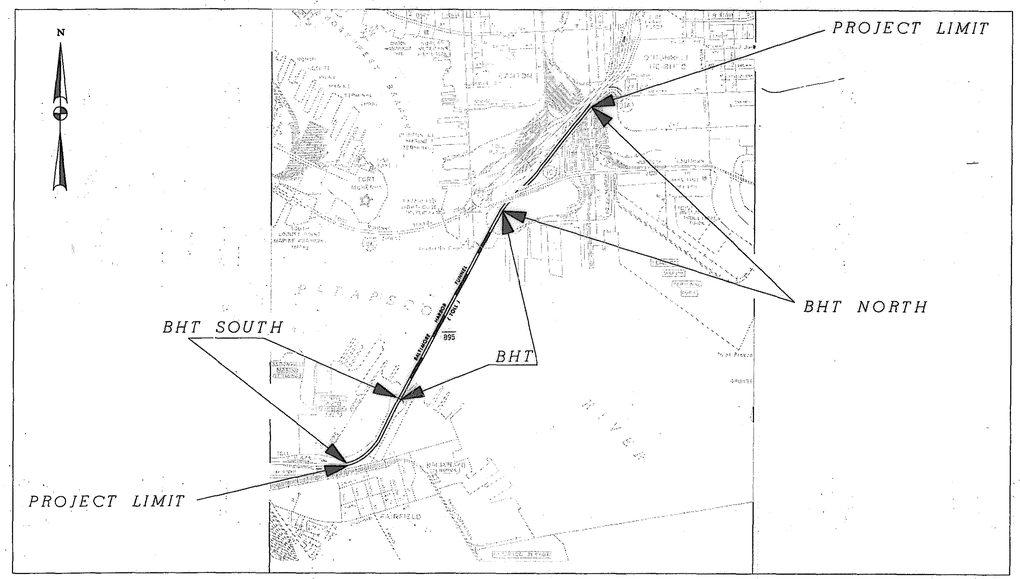
I / WE HEREBY CERTIFY THAT ALL CLEARING, GRADING, CONSTRUCTION AND/OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS PLAN AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT BEFORE BEGINNING THE PROJECT. I HEREBY AUTHORIZE THE RIGHT OF ENTRY FOR PERIODIC ON-SITE EVALUATION BY STATE OF MARYLAND, DEPARTMENT OF THE ENVIRONMENT, COMPLIANCE INSPECTORS.

5/19/2010
DATE:

OWNER/DEVELOPER SIGNATURE:

165
CARD. NO.

DOUGLAS NOVOCIN, ENV. MGR
PRINTED NAME AND TITLE:



HORIZONTAL DATUM	NAD 83 / 91
VERTICAL DATUM	NAVD 88

LOCATION MAP
NOT TO SCALE

MILEAGE
2.5 MILES

DESIGN SPEED
55 MPH

ADVERTISEMENT

DATE

ADDENDA	MARYLAND TRANSPORTATION AUTHORITY
	RECOMMENDED FOR APPROVAL DIRECTOR OF ENGINEERING — DATE 6/2/10
	APPROVED CHIEF ENGINEER, OFFICE OF ENGINEERING AND CONSTRUCTION — DATE 6/7/10
	APPROVED EXECUTIVE SECRETARY — DATE 6/8/10

T3 DESIGN, P.C.
3927 OLD LEE HWY
SUITE 101-C
FAIRFAX, VA 22030
PHONE: 703-359-5861
www.t3design.us

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 37127, EXPIRATION DATE: 6-11-11.

WHITNEY BAILEY COX MAGNANI
CONSULTING ENGINEERS
849 FAIRMOUNT AVENUE
SUITE 100
BALTIMORE, MD 21286
(410) 512-4500

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 17828, EXPIRATION DATE: 6-10-12

BY: AMYM

INDEX OF SHEETS

WHITNEY BAILEY COX MAGNANI
CONSULTING ENGINEERS
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BALTIMORE, MD 21286
(410) 512-4500

Maryland Transportation Authority
ENGINEERING DIVISION

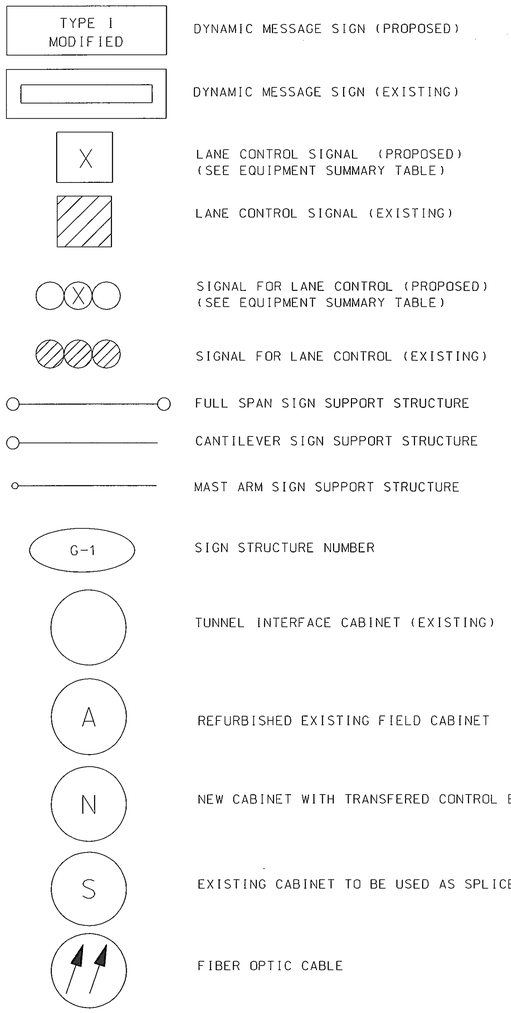
ADDENDUMS & REVISIONS			
NO.	DESCRIPTION	BY	DATE

BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE

INDEX OF SHEETS

DESIGNED BY WJH	DRAWN BY	CHECKED BY JWH	CONTRACT NO. HT-705-000-002R
CONST. REVIEW BY	DATE JANUARY, 2010	SCALE NOT TO SCALE	DRAWING NO. 105-01
			SHEET NO. 2 OF 47

SYMBOL LEGEND



EQUIPMENT SUMMARY TABLE

TYPE	DESCRIPTION	
I (MOD.)	LED DMS 3 LINES/21 CHARACTERS PER LINE FULL MATRIX, 15° VIEWING ANGLE 18" CHARACTERS WALK-IN ACCESS	DMS
I	LED LCS RED X 18" CHARACTER - FRONT ACCESS	LCS
2	LED LCS RED X/AMBER X/GREEN ↓ 18" CHARACTERS - FRONT ACCESS	LCS
4	LED LCS RED X 24" CHARACTER - FRONT ACCESS	LCS
5	LED LCS RED X/AMBER X/GREEN ↓ 24" CHARACTERS - FRONT ACCESS	LCS
A	LED TRAFFIC SIGNAL RED 8" I-SECTION	SLC
B	LED TRAFFIC SIGNAL RED-AMBER-GREEN 8" 3-SECTION	SLC

STANDARD ABBREVIATIONS

AOC - AUTHORITY OPERATIONS CENTER
BHT - BALTIMORE HARBOR TUNNEL
DLN - DISPLAY LOCATION NUMBER
DMS - DYNAMIC MESSAGE SIGN
LCS - LANE CONTROL SIGNAL
LED - LIGHT EMITTING DIODE
MM - MILE MARKER
SLC - SIGNAL FOR LANE CONTROL
TBD - TO BE DETERMINED
TIF - TUNNEL INTERFACE
VSL - VARIABLE SPEED LIMIT SIGN

GENERAL NOTES

1. THIS PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE MUTCD, THE MARYLAND SUPPLEMENT TO THE MUTCD, MARYLAND STATE HIGHWAY ADMINISTRATION (MDSHA) STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS DATED JULY 2008 AND ALL ADENDA AND REVISIONS.
2. THE HORIZONTAL CONTROL FOR THIS PROJECT IS BASED ON EXISTING MARYLAND TRANSPORTATION AUTHORITY (MdTA) PLANS. HORIZONTAL CONTROL WAS NOT ESTABLISHED.
3. THE CONTRACTOR SHALL BE LIABLE FOR ANY DAMAGE TO MdTA PROPERTY RESULTING FROM HIS OPERATION AND SHALL BE REQUIRED TO REPAIR ANY AND ALL DAMAGES INCURRED AS DIRECTED BY THE ENGINEER.
4. ANY EXISTING UTILITIES SHOWN ON THE PLANS ARE IN ACCORDANCE WITH THE BEST INFORMATION AVAILABLE AND ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. ALL EXISTING UTILITIES SHALL BE PROTECTED AND TEMPORARILY SUPPORTED OR RELOCATED AS NECESSARY TO COMPLETE THE WORK IN ACCORDANCE WITH THE PERTINENT UTILITY COMPANY REQUIREMENT AND SECTION 107.03.06 OF THE 2001 MDSHA STANDARD SPECIFICATIONS (OR LATEST VERSION). BEFORE EXCAVATION IS STARTED IN AREAS OF UNDERGROUND UTILITIES, THE CONTRACTOR SHALL GIVE NOTIFICATION BY TELEPHONE BY CALLING "MISS UTILITY", TEL. 800-257-7777.
5. FOR LOCATING MdTA UTILITIES, THE CONTRACTOR SHALL CONTACT MR. JEFF ROBSON (410-537-1274) A MINIMUM OF FOURTEEN (14) DAYS PRIOR TO THE START OF ANY WORK.
6. THE CONTRACTOR MAY CONDUCT WORK AT ONE OR MORE SITES CONCURRENTLY, IF SO DESIRED, SUBJECT TO THE LIMITATIONS NOTED BELOW. THE CONTRACTOR SHALL COORDINATE THE WORK SCHEDULE WITH THE ENGINEER A MINIMUM OF FOURTEEN (14) DAYS PRIOR TO CONSTRUCTION.
   - GANTRIES ADJACENT TO CROSSOVERS SHALL BE PLACED BACK IN SERVICE AT THE END OF THE WORK DAY.
   - CONSECUTIVE GANTRIES CAN NOT BE OUT OF SERVICE.
   - NO MORE THAT TWO GANTRIES CAN BE OUT OF SERVICE AT ANY TIME PER DIRECTION.
7. THE CONTRACTOR SHALL INSTALL SLACK CABLE AS REQUIRED TO PREVENT CABLE DAMAGE DURING INSTALLATION AND TO ACCOMMODATE SPLICES. THE CONTRACTOR SHALL ALLOW 50 FT. OF SLACK CABLE IN EACH JUNCTION BOX TO ACCOMMODATE FUTURE CABLE SPLICES.
8. ALL EXISTING SIGNS AND CABINETS TO BE REMOVED ARE SHOWN ON DEMOLITION PLANS. THE SIGNS AND CABINETS SHALL BE DISPOSED OF BY THE CONTRACTOR, AS DIRECTED BY THE ENGINEER; HOWEVER, MdTA SHALL HAVE FIRST RIGHT OF REFUSAL OF ANY EQUIPMENT THAT HAS BEEN REMOVED.
9. THE CONTRACTOR SHALL USE EXISTING CONDUIT FROM THE FIELD EQUIPMENT CABINET TO THE DMS AND LCS. ALL WIRE AND CABLE SHALL BE INSTALLED IN EXISTING CONDUIT. UPON FIELD INSPECTION, IF THE CONTRACTOR IDENTIFIES THAT EXISTING CONDUIT IS DAMAGED OR INADEQUATE, THE CONTRACTOR SHALL NOTIFY THE AUTHORITY. NO CONDUIT REMOVAL OR MODIFICATION SHALL BE PERFORMED WITHOUT WRITTEN APPROVAL FROM THE AUTHORITY.
10. THE CONTRACTOR SHALL FOLLOW APPLICABLE REQUIREMENTS OF THE NATIONAL ELECTRIC CODE (NEC) FOR INSTALLATION OF ALL PROJECT ELEMENTS.
11. ALL WORK SHALL BE CONFINED WITHIN THE EXISTING HIGHWAY RIGHT-OF-WAY.
12. DMS SIGNS AND CONTROLLERS TO BE INSTALLED UNDER THIS CONTRACT SHALL BE FURNISHED UNDER A SEPARATE CONTRACT (MA 727-000-002). THE CONTRACTOR SHALL COORDINATE WITH THE SIGN MANUFACTURER FOR DELIVERY OF THESE SIGNS AND CONTROLLERS TO THE LOCATIONS IDENTIFIED ON THESE PLANS.
13. LCS, SLC AND FIELD CABINETS PROPOSED FOR THIS PROJECT SHALL BE FURNISHED AND INSTALLED UNDER THIS CONTRACT.
14. PLC CONTROLLERS TO BE FURNISHED AND INSTALLED UNDER SEPARATE CONTRACT (MA 328-000-002) FOR LCS AND SLC CONTROLS AND MOUNTED IN FIELD CABINETS AS STATED IN PRECEDING NOTE 12.
15. THE TYPES OF DMS, LCS, SLC AND FIELD CABINETS TO BE INSTALLED UNDER THIS CONTRACT ARE IDENTIFIED IN THE EQUIPMENT SUMMARY TABLE AND SYMBOL LEGEND.
16. PROPOSED DMS, LCS AND SLC SHALL BE INSTALLED ON EXISTING STRUCTURES UNLESS OTHERWISE NOTED. EXISTING STRUCTURE DRAWINGS MAY BE OBTAINED FROM THE AUTHORITY.
17. DMS VISORS TO BE INSTALLED BY THE SIGN MANUFACTURER AT THE SITE AND BEFORE THE DMS INSTALLATION. THE CONTRACTOR SHALL COORDINATE WITH THE SIGN MANUFACTURER ABOUT THE CONTRACTOR'S DMS INSTALLATION SCHEDULE AND INFORM THE SIGN MANUFACTURER AT LEAST 14 DAYS PRIOR THE DMS INSTALLATION.
18. LANE CLOSURES INCLUDING LANE CLOSURES FOR DMS INSTALLATION SHALL BE PROVIDED BY THE CONTRACTOR, EXCEPT FOR CLOSURES INSIDE TUNNEL BORES AND TWO-WAY TUNNEL CLOSURES. CLOSURES INSIDE TUNNEL BORES AND TWO-WAY TUNNEL CLOSURES SHALL BE PROVIDED BY THE AUTHORITY. SEE SHEETS 24-46 FOR MOT DETAILS.
19. PROTECTION VEHICLE BACKUP AND TRAFFIC MANAGER SHALL BE PROVIDED BY THE CONTRACTOR. PROVIDE A MINIMUM OF 14 DAYS NOTICE FOR ALL WORK ON THE ROADWAY. CONTRACTOR SHALL SCHEDULE OPERATIONS SO PICK-UP AND DROP-OFF OF MATERIALS AND EQUIPMENT OCCURS DURING PERIODS OF DAILY CLOSURE. IF SPECIAL CLOSURES ARE REQUIRED, CONTRACTOR SHALL COORDINATE WITH THE AUTHORITY.
20. THE ESTABLISHED NUMBERING SYSTEM FOR THE EXISTING DMS, LANE CONTROL SIGNS, SIGNALS FOR LANE CONTROL AND VARIABLE SPEED LIMIT SIGNS ARE UTILIZED ON THE DRAWINGS. FOR EXAMPLE, LCS 3 1 F MEANS "LANE USE SIGNAL AT LOCATION 3 OVER LANE ONE ON THE FRONT OF THE STRUCTURE."

LCS MOUNTING NOTES

1. CONTRACTOR SHALL MOUNT THE NEW SIGNS ON EXISTING STRUCTURES, UNLESS OTHERWISE NOTED IN THE CONTRACT DOCUMENTS OR AS DIRECTED BY THE AUTHORITY'S PROJECT ENGINEERING.
2. THE CONTRACTOR SHALL INSTALL TYPE 1 AND TYPE 2 LCS ON EXISTING MOUNTING FRAMES SUBJECT TO A FIELD INSPECTION OF EXISTING MOUNTINGS. UPON FIELD INSPECTION, IF DAMAGE, MODIFICATION, OR COMPLETE REPLACEMENT WITH A NEW MOUNTING DESIGN IS IDENTIFIED, CONTRACTOR SHALL NOTIFY THE AUTHORITY IN WRITING INDICATING THE NATURE OF DAMAGE OR MODIFICATION, PROPOSED REPAIR OR REPLACEMENT WITH NEW MOUNTING DESIGN. IF NEW MOUNTING DESIGN IS REQUIRED, THE CONTRACTOR MUST SUBMIT DESIGNS FOR AUTHORITY'S APPROVAL BEFORE FABRICATION AND INSTALLATION. IF NEW MOUNTING DESIGN IS REQUIRED, FABRICATION OF THE NEW MOUNTINGS AND THE REMOVAL OF EXISTING MOUNTINGS IS CONSIDERED INCIDENTAL TO THE LCS TYPE 1 AND 2 PAY ITEM. CONTRACTOR MUST RECEIVE WRITTEN APPROVAL FROM THE AUTHORITY PRIOR TO INITIATING ANY ACTION RELATED TO MOUNTING REPAIRS OR REPLACEMENT.
3. TYPE 4 AND TYPE 5 LCS REQUIRE A NEW MOUNTING FRAME. MOUNTING DETAIL SHOWN ON SHEET NO. 19 FOR EXISTING LCS IS PROVIDED FOR CONTRACTOR'S REFERENCE PRIOR TO DESIGNING NEW MOUNTING FOR TYPE 4 AND TYPE 5 LCS. CONTRACTOR MUST SUBMIT DESIGNS TO THE AUTHORITY FOR WRITTEN APPROVAL PRIOR TO INITIATING ANY ACTION RELATED TO FABRICATION OF THE NEW MOUNTINGS.
4. THE CONTRACTOR SHALL COORDINATE WITH THE SIGN MANUFACTURER TO DETERMINE THE OPTIMUM VIEWING ANGLE FOR THE INSTALLATION OF THE SIGN.
5. ALL MOUNTING HARDWARE SHALL BE STAINLESS STEEL.

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Maryland Transportation Authority
ENGINEERING DIVISION

ADDENDUMS & REVISIONS			
NO.	DESCRIPTION	BY	DATE

BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE

GENERAL NOTES & LEGEND

DESIGNED BY WJH	DRAWN BY	CHECKED BY JWH	
CONST. REVIEW BY	DATE JANUARY, 2010	SCALE NOT TO SCALE	

CONTRACT NO. HT-705-000-002R
DRAWING NO. GEN-01
SHEET NO. 3 OF 47

SIGN/SIGNAL DEMOLITION SCHEDULE

SIGN ID	SIGN LOCATION			COMMENTS
	DIRECTION	UPSTREAM MM	OFFSET (FROM MM)	
LCS 3 1 F, VSL 3 1 F, LCS 3 2 F	I-895 NB	8.7	250'	LANE CONTROL SIGNALS, VARIABLE SPEED LIMIT
LCS 4 1 F, LCS 4 2 F	I-895 NB	8.8	220'	LANE CONTROL SIGNALS
LCS 4 1 B, LCS 4 2 B, LCS 4 3 F, LCS 4 4 F	I-895 SB	8.6	460'	LANE CONTROL SIGNALS
LCS 5 1 F, LCS 5 2 F, LCS 5 3 B, LCS 5 4 B	I-895 NB	8.9	430'	LANE CONTROL SIGNALS
LCS 5 1 B, LCS 5 2 B, LCS 5 3 F, LCS 5 4 F	I-895 SB	8.7	215'	LANE CONTROL SIGNALS
LCS 7 1 F, VSL 7 1 F, LCS 7 2 F, LCS 7 3 B, VSL 7 3 B, LCS 7 4 B	I-895 NB	8.9	440'	LANE CONTROL SIGNALS, VAR. SP. LMT. - (ON TUNNEL FACE)
SLC 8 3 F, SLC 8 4 F	I-895 SB	10.3	0'	SIGNALS FOR LANE CONTROL - (ON TUNNEL FACE)
SLC 8 1 F, SLC 8 2 F	I-895 NB	10.3	100'	SIGNALS FOR LANE CONTROL - (ON TUNNEL FACE)
LCS 8 1 B, LCS 8 2 B, LCS 8 3 F, LCS 8 4 F	I-895 SB	10.4	290'	LANE CONTROL SIGNALS - (ON TUNNEL FACE)
LCS 8 1 F, LCS 8 2 F, SLC 8 3 B, SLC 8 4 B	I-895 NB	10.3	420'	SIGNS AND SIGNALS FOR LANE CONTROL - (ON TUNNEL FACE)
LCS 9 1 B, LCS 9 2 B, LCS 9 3 F, LCS 9 4 F	I-895 SB	10.4	110'	LANE CONTROL SIGNALS - (ON TUNNEL FACE)
LCS 10 1 F, LCS 10 2 F, LCS 10 3 B, LCS 10 4 B	I-895 NB	10.5	160'	LANE CONTROL SIGNALS
LCS 10 1 B, LCS 10 2 B, LCS 10 3 F, LCS 10 4 F	I-895 SB	10.6	370'	LANE CONTROL SIGNALS
LCS 11 1 F, LCS 11 2 F, LCS 11 3 B, LCS 11 4 B	I-895 NB	10.6	30'	LANE CONTROL SIGNALS
LCS 11 3 F, DMS 11 3 F, LCS 11 4 F	I-895 SB	10.7	500'	LANE CONTROL SIGNALS, 1-LINE DYNAMIC MESSAGE SIGN
LCS 12 3 F, VSL 12 3 F, LCS 12 4 F	I-895 SB	10.7	180'	LANE CONTROL SIGNALS, VARIABLE SPEED LIMIT
DMS 12 1 F	I-895 NB	10.6	350'	DYNAMIC MESSAGE SIGN
LCS 13 3 F, VSL 13 3 F, LCS 13 4 F	I-895 SB	10.8	470'	LANE CONTROL SIGNALS, VARIABLE SPEED LIMIT
LCS 14 3 F, VSL 14 3 F, LCS 14 4 F	I-895 SB	11.0	425'	LANE CONTROL SIGNALS, VARIABLE SPEED LIMIT

SIGN/SIGNAL REPLACEMENT SCHEDULE

SIGN ID	TYPE	SIGN LOCATION			COMMENTS
		DIRECTION	UPSTREAM MM	OFFSET (FROM MM)	
LCS 3 1 F, LCS 3 2 F	2, 2	I-895 NB	8.7	250'	LANE CONTROL SIGNALS (LCS) [REPLACING EXISTING LCS]
LCS 4 1 F, LCS 4 2 F	2, 2	I-895 NB	8.8	220'	
LCS 4 1 B, LCS 4 2 B, LCS 4 3 F, LCS 4 4 F	1, 2, 2, 2	I-895 SB	8.6	460'	
LCS 5 1 F, LCS 5 2 F, LCS 5 3 B, LCS 5 4 B	2, 2, 2, 1	I-895 NB	8.9	430'	
LCS 5 1 B, LCS 5 2 B, LCS 5 3 F, LCS 5 4 F	4, 5, 5, 5	I-895 SB	8.7	215'	
LCS 7 1 F, LCS 7 2 F, LCS 7 3 B, LCS 7 4 B	5, 5, 5, 4	I-895 NB	8.9	440'	
SLC 8 3 F, SLC 8 4 F	B, B	I-895 SB	10.3	0'	SIGNALS FOR LANE CONTROL (SLC) [REPLACING EXISTING SLC]
SLC 8 1 F, SLC 8 2 F	B, B	I-895 NB	10.3	100'	
LCS 8 1 B, LCS 8 2 B, LCS 8 3 F, LCS 8 4 F	1, 2, 2, 2	I-895 SB	10.4	290'	LANE CONTROL SIGNALS (LCS) [REPLACING EXISTING LCS]
LCS 8 1 F, LCS 8 2 F, SLC 8 3 B, SLC 8 4 B	2, 2, B, A	I-895 NB	10.3	420'	SIGNS (LCS) AND SIGNALS (SLC FOR LANE CONTROL) [REPLACING EXISTING LCS]
LCS 9 1 B, LCS 9 2 B, LCS 9 3 F, LCS 9 4 F	1, 2, 2, 2	I-895 SB	10.4	110'	LANE CONTROL SIGNALS (LCS) [REPLACING EXISTING LCS]
LCS 10 1 F, LCS 10 2 F, LCS 10 3 B, LCS 10 4 B	2, 2, 2, 1	I-895 NB	10.5	160'	
LCS 10 1 B, LCS 10 2 B, LCS 10 3 F, LCS 10 4 F	1, 2, 2, 2	I-895 SB	10.6	370'	
LCS 11 1 F, LCS 11 2 F, LCS 11 3 B, LCS 11 4B	2, 2, 2, 1	I-895 NB	10.6	30'	
LCS 11 3 F, LCS 11 4 F	2, 2	I-895 SB	10.7	500'	
LCS 12 3 F, LCS 12 4 F	2, 2	I-895 SB	10.7	180'	
DMS 12 1 F	1(MOD.)	I-895 NB	10.6	350'	DYNAMIC MESSAGE SIGN [REPLACING EXISTING DMS]
LCS 13 3 F, LCS 13 4 F	2, 2	I-895 SB	10.8	470'	LANE CONTROL SIGNALS (LCS) [REPLACING EXISTING LCS]
LCS 14 3 F, LCS 14 4 F	2, 2	I-895 SB	11.0	425'	

NOTES:

1. SEE SHEET 3 FOR SIGN AND SIGNAL TYPE DESIGNATION.
2. SEE SHEETS 5-12 FOR DEMOLITION AND REPLACEMENT PLANS.

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Maryland Transportation Authority
ENGINEERING DIVISION

ADDENDUMS & REVISIONS

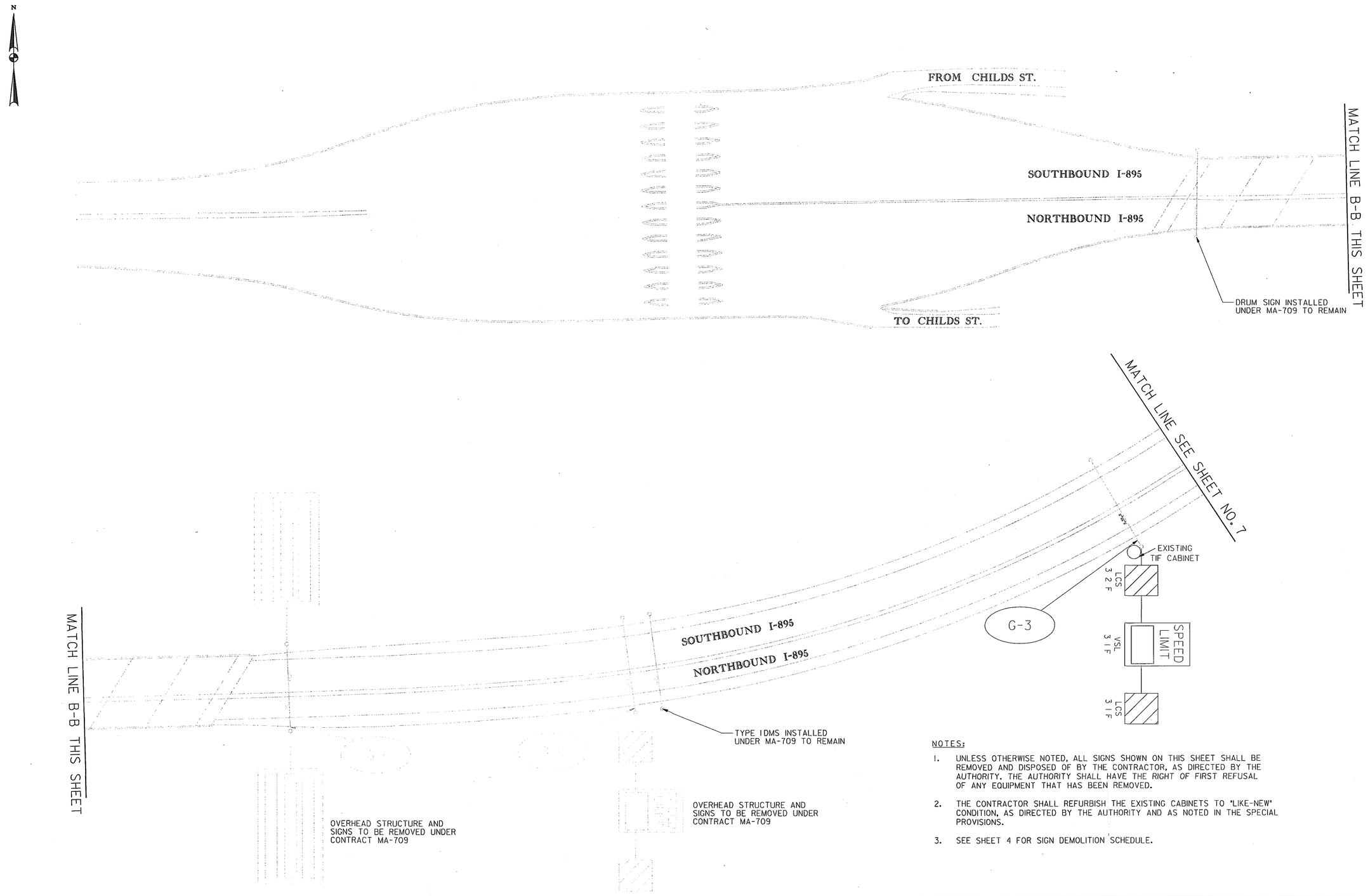
NO.	DESCRIPTION	BY	DATE

BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE

DMS AND LCS DEMOLITION SCHEDULE AND PROPOSED REPLACEMENT SCHEDULE

DESIGNED BY WJH | DRAWN BY | CHECKED BY JWH
CONST. REVIEW BY | DATE JANUARY, 2010 | SCALE NOT TO SCALE

CONTRACT NO. HT-705-000-002R
DRAWING NO. SCH - 01
SHEET NO. 4 OF 47



NOTES:

1. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR, AS DIRECTED BY THE AUTHORITY. THE AUTHORITY SHALL HAVE THE RIGHT OF FIRST REFUSAL OF ANY EQUIPMENT THAT HAS BEEN REMOVED.
2. THE CONTRACTOR SHALL REFURBISH THE EXISTING CABINETS TO "LIKE-NEW" CONDITION, AS DIRECTED BY THE AUTHORITY AND AS NOTED IN THE SPECIAL PROVISIONS.
3. SEE SHEET 4 FOR SIGN DEMOLITION SCHEDULE.

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Maryland Transportation Authority
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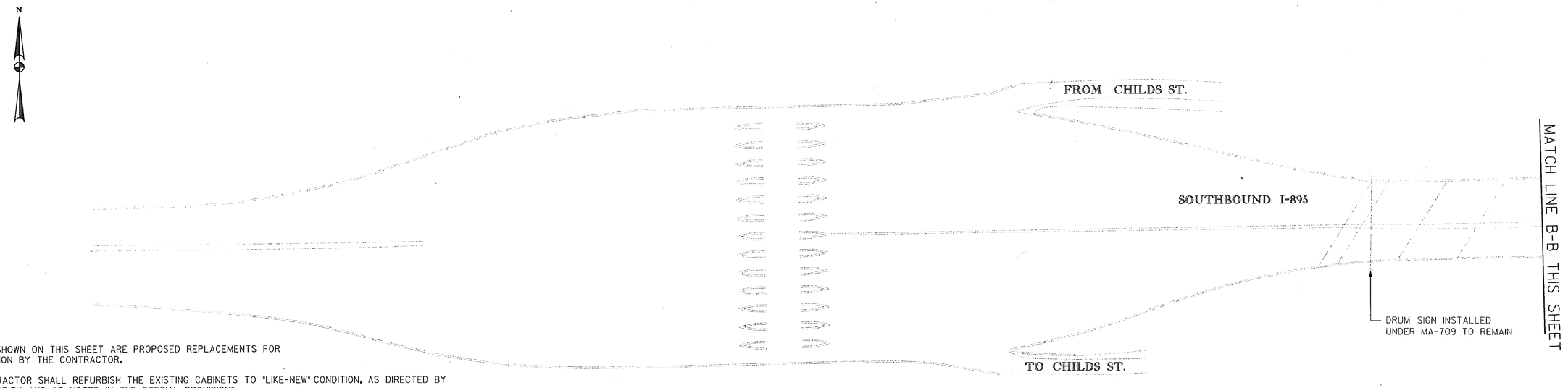
ADDENDUMS & REVISIONS			
NO.	DESCRIPTION	BY	DATE

BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE

BHT SOUTH - DEMOLITION I

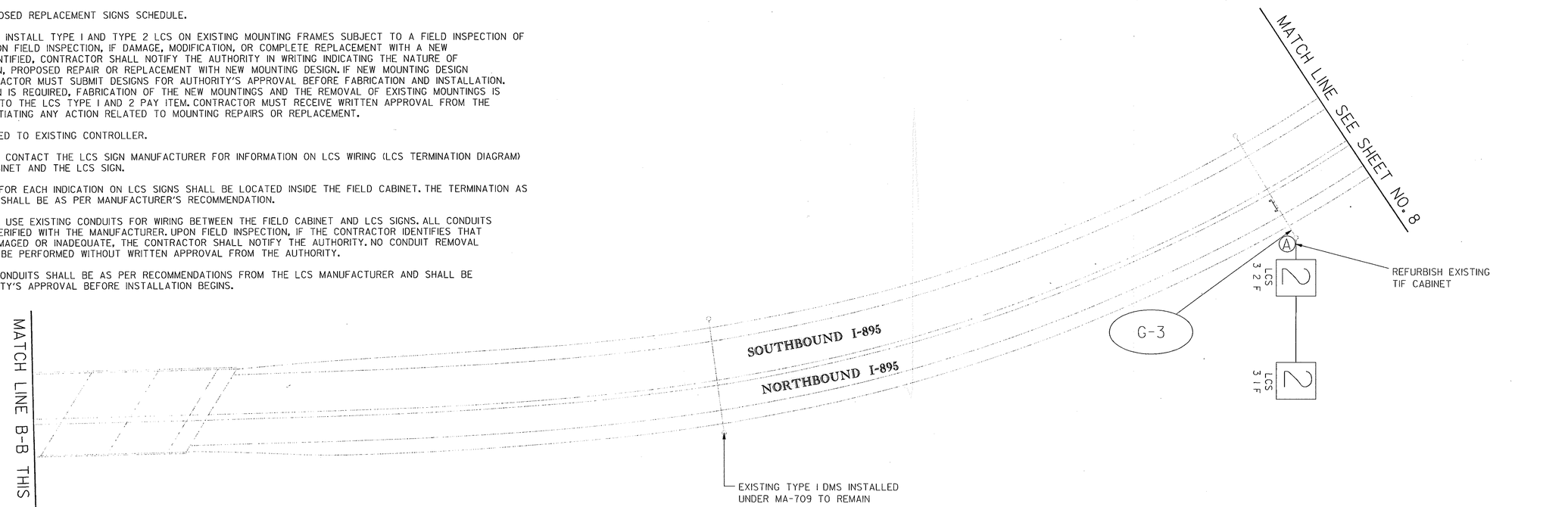
DESIGNED BY WJH	DRAWN BY	CHECKED BY JWH	
CONST. REVIEW BY	DATE JANUARY, 2010	SCALE NOT TO SCALE	

CONTRACT NO. HT-705-000-002R
DRAWING NO. DEM-01
SHEET NO. 5 OF 47



NOTES:

1. ALL LCS SHOWN ON THIS SHEET ARE PROPOSED REPLACEMENTS FOR INSTALLATION BY THE CONTRACTOR.
2. THE CONTRACTOR SHALL REFURBISH THE EXISTING CABINETS TO "LIKE-NEW" CONDITION, AS DIRECTED BY THE AUTHORITY AND AS NOTED IN THE SPECIAL PROVISIONS.
3. SEE SHEET 4 FOR PROPOSED REPLACEMENT SIGNS SCHEDULE.
4. THE CONTRACTOR SHALL INSTALL TYPE I AND TYPE 2 LCS ON EXISTING MOUNTING FRAMES SUBJECT TO A FIELD INSPECTION OF EXISTING MOUNTINGS. UPON FIELD INSPECTION, IF DAMAGE, MODIFICATION, OR COMPLETE REPLACEMENT WITH A NEW MOUNTING DESIGN IS IDENTIFIED, CONTRACTOR SHALL NOTIFY THE AUTHORITY IN WRITING INDICATING THE NATURE OF DAMAGE OR MODIFICATION, PROPOSED REPAIR OR REPLACEMENT WITH NEW MOUNTING DESIGN. IF NEW MOUNTING DESIGN IS REQUIRED, THE CONTRACTOR MUST SUBMIT DESIGNS FOR AUTHORITY'S APPROVAL BEFORE FABRICATION AND INSTALLATION. IF NEW MOUNTING DESIGN IS REQUIRED, FABRICATION OF THE NEW MOUNTINGS AND THE REMOVAL OF EXISTING MOUNTINGS IS CONSIDERED INCIDENTAL TO THE LCS TYPE I AND 2 PAY ITEM. CONTRACTOR MUST RECEIVE WRITTEN APPROVAL FROM THE AUTHORITY PRIOR TO INITIATING ANY ACTION RELATED TO MOUNTING REPAIRS OR REPLACEMENT.
5. LCS SHALL BE CONNECTED TO EXISTING CONTROLLER.
6. THE CONTRACTOR SHALL CONTACT THE LCS SIGN MANUFACTURER FOR INFORMATION ON LCS WIRING (LCS TERMINATION DIAGRAM) BETWEEN THE FIELD CABINET AND THE LCS SIGN.
7. THE 120V AC SUPPLIES FOR EACH INDICATION ON LCS SIGNS SHALL BE LOCATED INSIDE THE FIELD CABINET. THE TERMINATION AS WELL AS THE LABELING SHALL BE AS PER MANUFACTURER'S RECOMMENDATION.
8. THE CONTRACTOR SHALL USE EXISTING CONDUITS FOR WIRING BETWEEN THE FIELD CABINET AND LCS SIGNS. ALL CONDUITS AND WIRING SHALL BE VERIFIED WITH THE MANUFACTURER. UPON FIELD INSPECTION, IF THE CONTRACTOR IDENTIFIES THAT EXISTING CONDUIT IS DAMAGED OR INADEQUATE, THE CONTRACTOR SHALL NOTIFY THE AUTHORITY. NO CONDUIT REMOVAL OR MODIFICATION SHALL BE PERFORMED WITHOUT WRITTEN APPROVAL FROM THE AUTHORITY.
9. ALL FIELD WIRING AND CONDUITS SHALL BE AS PER RECOMMENDATIONS FROM THE LCS MANUFACTURER AND SHALL BE SUBMITTED FOR AUTHORITY'S APPROVAL BEFORE INSTALLATION BEGINS.



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Maryland Transportation Authority
ENGINEERING DIVISION

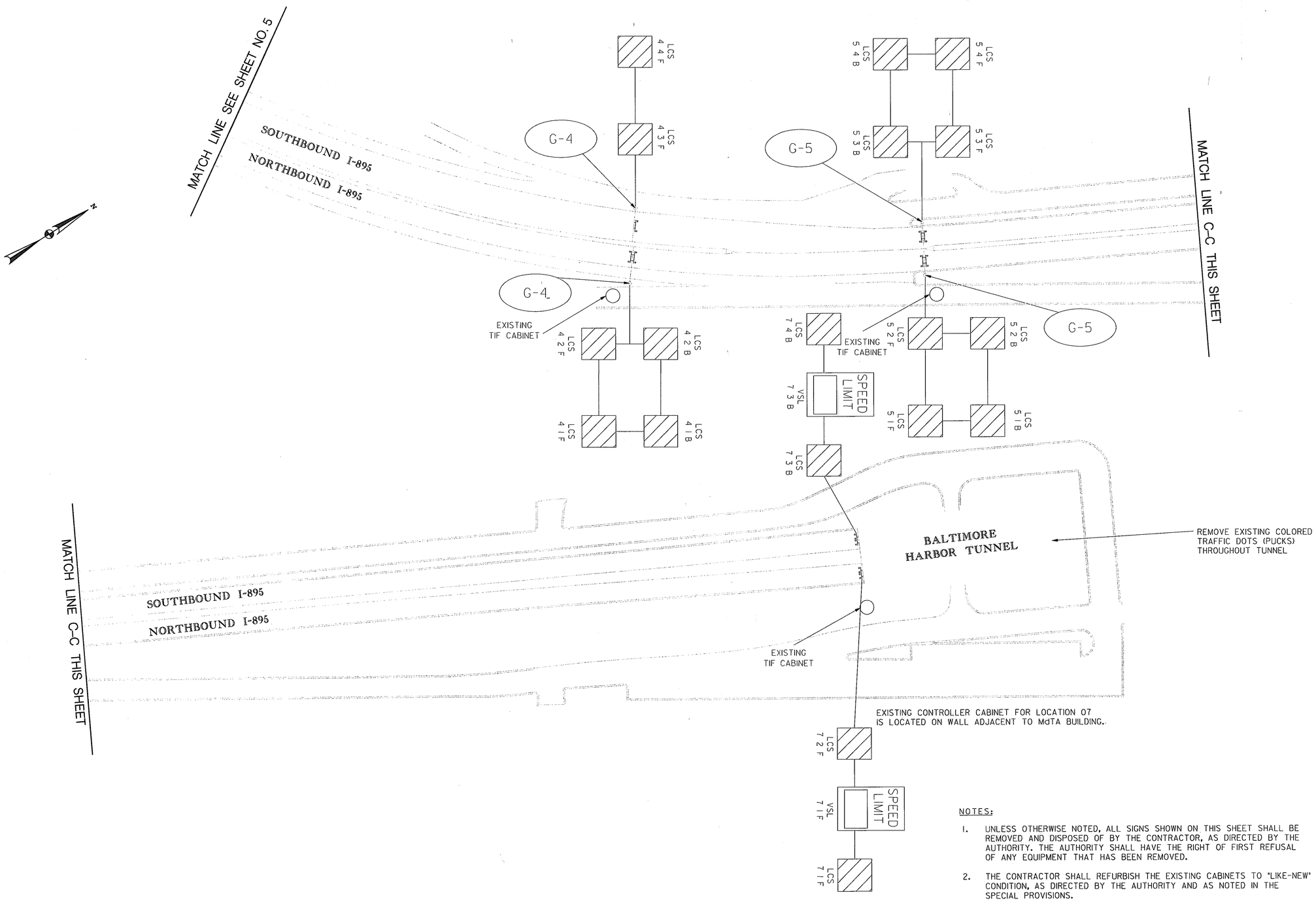
ADDENDUMS & REVISIONS			
NO.	DESCRIPTION	BY	DATE

BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE

BHT SOUTH - PROPOSED FOR REPLACEMENT I

DESIGNED BY WJH	DRAWN BY	CHECKED BY JWH	
CONST. REVIEW BY	DATE: JANUARY, 2010	SCALE NOT TO SCALE	

CONTRACT NO. HT-705-000-002R
DRAWING NO. REP-01
SHEET NO. 6 OF 47



NOTES:

1. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR, AS DIRECTED BY THE AUTHORITY. THE AUTHORITY SHALL HAVE THE RIGHT OF FIRST REFUSAL OF ANY EQUIPMENT THAT HAS BEEN REMOVED.
2. THE CONTRACTOR SHALL REFURBISH THE EXISTING CABINETS TO "LIKE-NEW" CONDITION, AS DIRECTED BY THE AUTHORITY AND AS NOTED IN THE SPECIAL PROVISIONS.
3. SEE SHEET 4 FOR SIGN DEMOLITION SCHEDULE.

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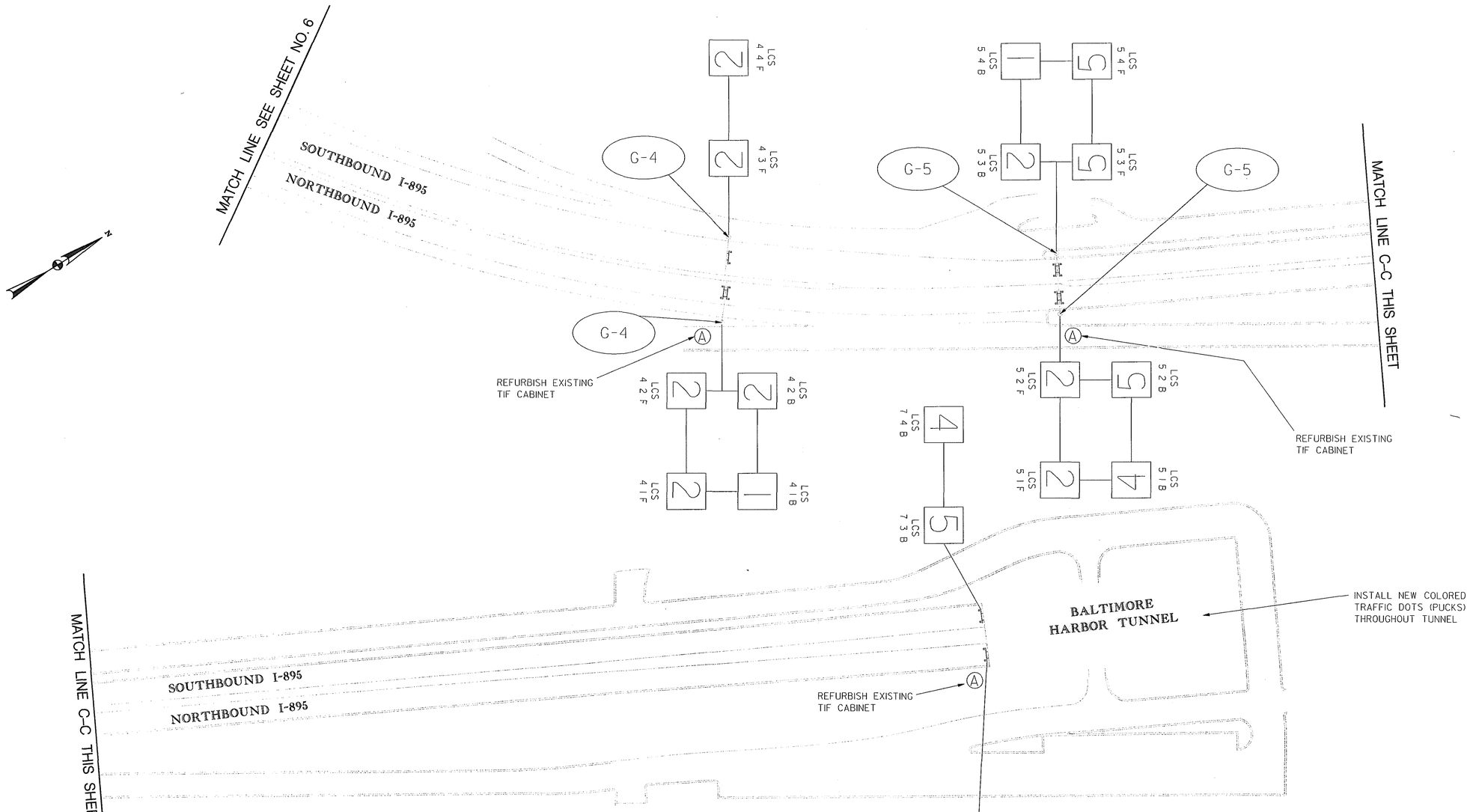
ADDENDUMS & REVISIONS			
NO.	DESCRIPTION	BY	DATE

BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE

BHT SOUTH - DEMOLITION 2

DESIGNED BY WJH	DRAWN BY	CHECKED BY JWH	
CONST. REVIEW BY	DATE JANUARY, 2010	SCALE NOT TO SCALE	

CONTRACT NO. HT-705-000-002R
DRAWING NO. DEM-02
SHEET NO. 7 OF 47



NOTES:

1. ALL LCS SHOWN ON THIS SHEET ARE PROPOSED REPLACEMENTS FOR INSTALLATION BY THE CONTRACTOR.
2. THE CONTRACTOR SHALL REFURBISH THE EXISTING CABINETS TO "LIKE-NEW" CONDITION, AS DIRECTED BY THE AUTHORITY AND AS NOTED IN THE SPECIAL PROVISIONS.
3. SEE SHEET 4 FOR PROPOSED REPLACEMENT SIGNS SCHEDULE.
4. THE CONTRACTOR SHALL INSTALL TYPE I AND TYPE 2 LCS ON EXISTING MOUNTING FRAMES SUBJECT TO A FIELD INSPECTION OF EXISTING MOUNTINGS. UPON FIELD INSPECTION, IF DAMAGE, MODIFICATION, OR COMPLETE REPLACEMENT WITH A NEW MOUNTING DESIGN IS IDENTIFIED, CONTRACTOR SHALL NOTIFY THE AUTHORITY IN WRITING INDICATING THE NATURE OF DAMAGE OR MODIFICATION, PROPOSED REPAIR OR REPLACEMENT WITH NEW MOUNTING DESIGN. IF NEW MOUNTING DESIGN IS REQUIRED, THE CONTRACTOR MUST SUBMIT DESIGNS FOR AUTHORITY'S APPROVAL BEFORE FABRICATION AND INSTALLATION. IF NEW MOUNTING DESIGN IS REQUIRED, FABRICATION OF THE NEW MOUNTINGS AND THE REMOVAL OF EXISTING MOUNTINGS IS CONSIDERED INCIDENTAL TO THE LCS TYPE I AND 2 PAY ITEM. CONTRACTOR MUST RECEIVE WRITTEN APPROVAL FROM THE AUTHORITY PRIOR TO INITIATING ANY ACTION RELATED TO MOUNTING REPAIRS OR REPLACEMENT.
5. LCS SHALL BE CONNECTED TO EXISTING CONTROLLER.
6. PROPOSED LCS TYPE 4 AND 5 REQUIRE NEW MOUNTING BRACKET. REFER TO SHEET LCS-01 NO. 19 FOR DETAILS OF EXISTING MOUNTING BRACKET. CONTRACTOR TO REMOVE EXISTING MOUNTINGS AND DESIGN, FABRICATE AND INSTALL NEW MOUNTING.

NOTES (CONT.):

7. THE CONTRACTOR SHALL CONTACT THE LCS SIGN MANUFACTURER FOR INFORMATION ON LCS WIRING (LCS TERMINATION DIAGRAM) BETWEEN THE FIELD CABINET AND THE LCS SIGN.
8. THE 120V AC SUPPLIES FOR EACH INDICATION ON LCS SIGNS SHALL BE LOCATED INSIDE THE FIELD CABINET. THE TERMINATION AS WELL AS THE LABELING SHALL BE AS PER MANUFACTURER'S RECOMMENDATION.
9. THE CONTRACTOR SHALL USE EXISTING CONDUITS FOR WIRING BETWEEN THE FIELD CABINET AND LCS SIGNS. ALL CONDUITS AND WIRING SHALL BE VERIFIED WITH THE MANUFACTURER. UPON FIELD INSPECTION, IF THE CONTRACTOR IDENTIFIES THAT EXISTING CONDUIT IS DAMAGED OR INADEQUATE, THE CONTRACTOR SHALL NOTIFY THE AUTHORITY. NO CONDUIT REMOVAL OR REPLACEMENT SHALL BE PERFORMED WITHOUT WRITTEN APPROVAL FROM THE AUTHORITY.
10. ALL FIELD WIRING AND CONDUITS SHALL BE AS PER RECOMMENDATIONS FROM THE LCS MANUFACTURER AND SHALL BE SUBMITTED FOR AUTHORITY'S APPROVAL BEFORE INSTALLATION BEGINS.

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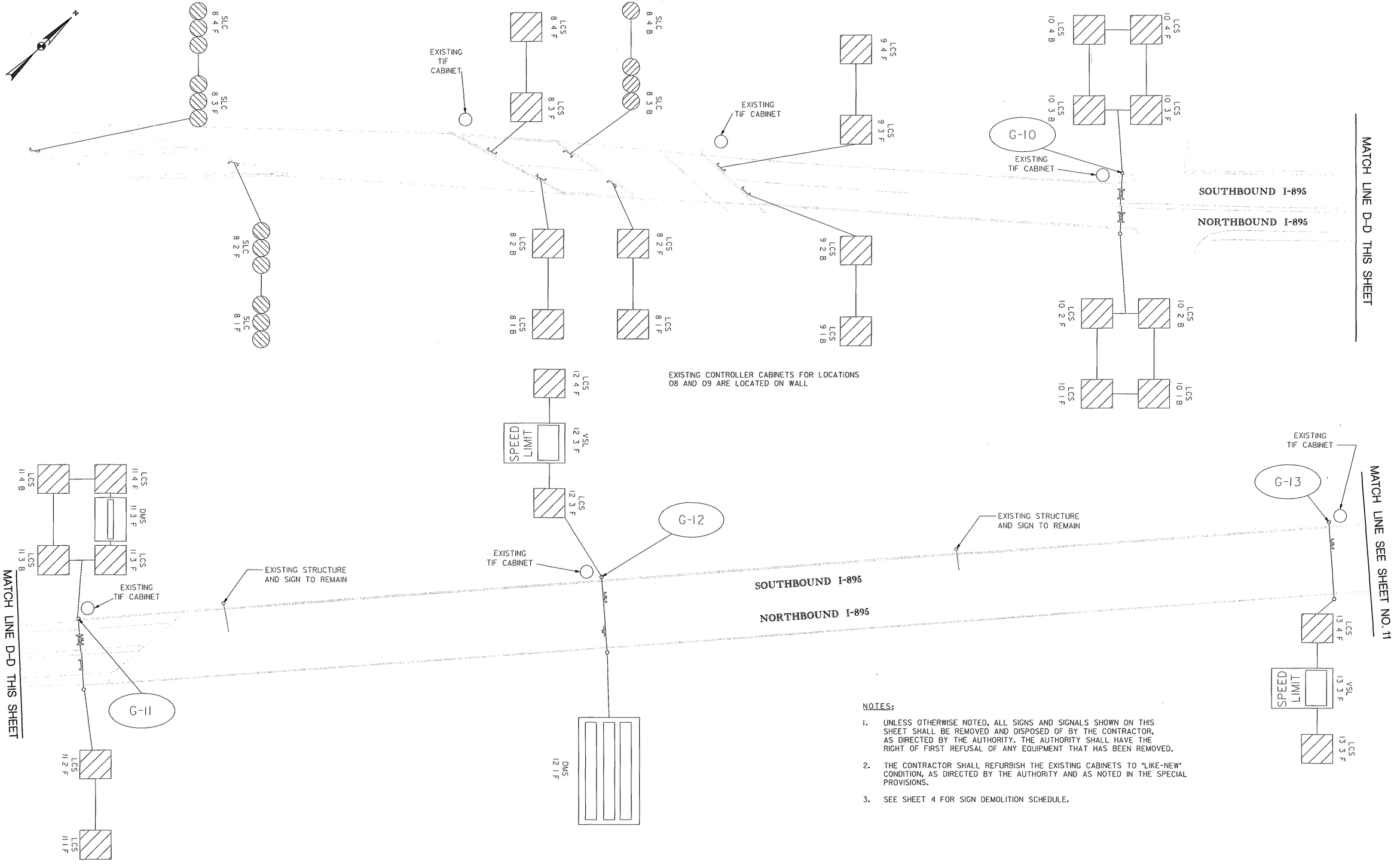
BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE

BHT SOUTH - PROPOSED FOR REPLACEMENT 2

DESIGNED BY WJH	DRAWN BY	CHECKED BY JWH	
CONST. REVIEW BY	DATE JANUARY, 2010	SCALE NOT TO SCALE	

CONTRACT NO. HT-705-000-002R
DRAWING NO. REP-02
SHEET NO. 8 OF 47



EXISTING CONTROLLER CABINETS FOR LOCATIONS 08 AND 09 ARE LOCATED ON WALL

NOTES:

1. UNLESS OTHERWISE NOTED, ALL SIGNS AND SIGNALS SHOWN ON THIS SHEET SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR, AS DIRECTED BY THE AUTHORITY. THE AUTHORITY SHALL HAVE THE RIGHT OF FIRST REFUSAL OF ANY EQUIPMENT THAT HAS BEEN REMOVED.
2. THE CONTRACTOR SHALL REFURBISH THE EXISTING CABINETS TO "LIKE-NEW" CONDITION, AS DIRECTED BY THE AUTHORITY AND AS NOTED IN THE SPECIAL PROVISIONS.
3. SEE SHEET 4 FOR SIGN DEMOLITION SCHEDULE.

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ADDENDUMS & REVISIONS			
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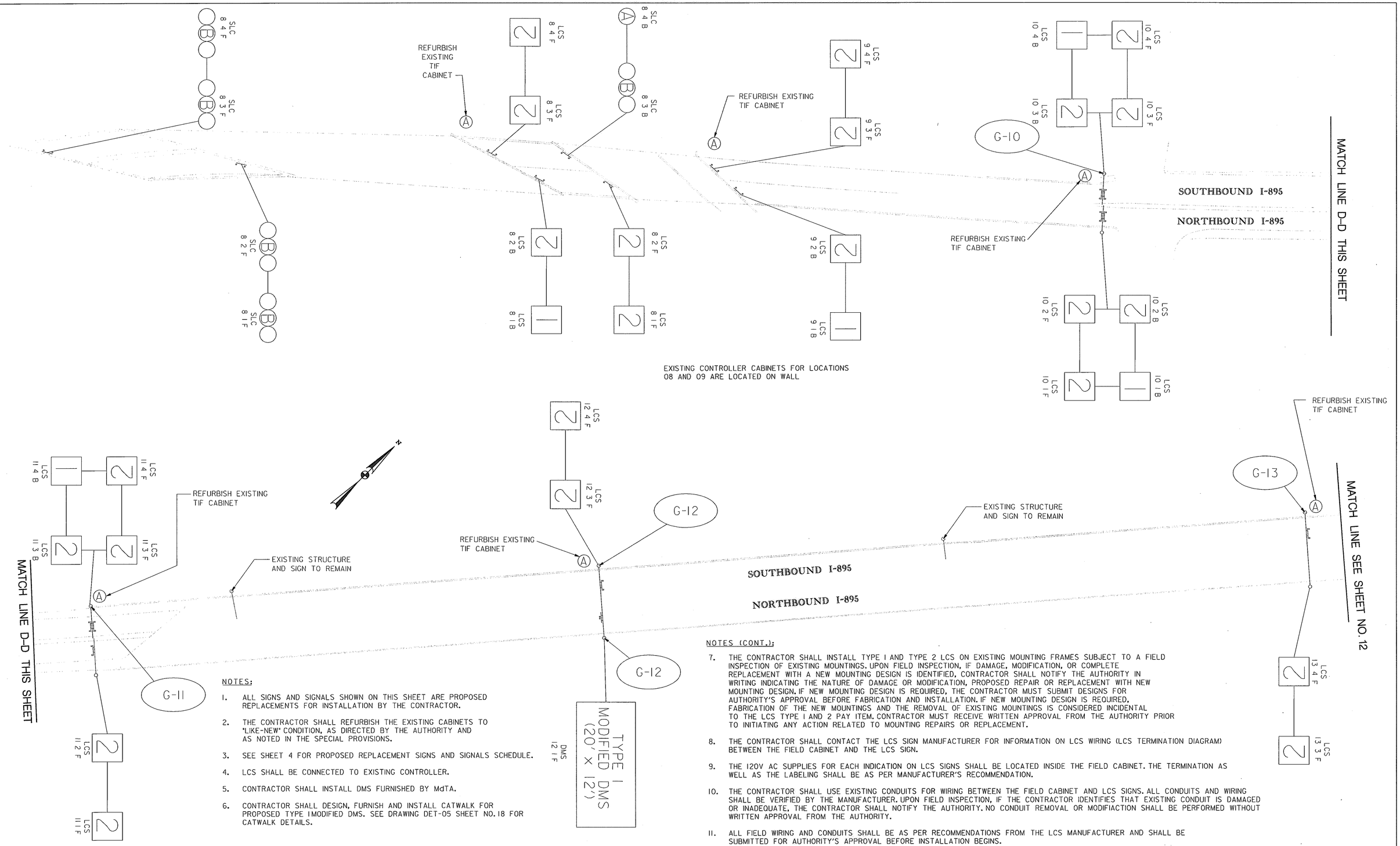
BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE

BHT NORTH - DEMOLITION I

DESIGNED BY WJH	DRAWN BY	CHECKED BY JWH	
CONST. REVIEW BY	DATE JANUARY, 2010	SCALE NOT TO SCALE	

CONTRACT NO. HT-705-000-002R
DRAWING NO. DEM-03
SHEET NO. 9 OF 47



NOTES:

1. ALL SIGNS AND SIGNALS SHOWN ON THIS SHEET ARE PROPOSED REPLACEMENTS FOR INSTALLATION BY THE CONTRACTOR.
2. THE CONTRACTOR SHALL REFURBISH THE EXISTING CABINETS TO 'LIKE-NEW' CONDITION, AS DIRECTED BY THE AUTHORITY AND AS NOTED IN THE SPECIAL PROVISIONS.
3. SEE SHEET 4 FOR PROPOSED REPLACEMENT SIGNS AND SIGNALS SCHEDULE.
4. LCS SHALL BE CONNECTED TO EXISTING CONTROLLER.
5. CONTRACTOR SHALL INSTALL DMS FURNISHED BY MdTA.
6. CONTRACTOR SHALL DESIGN, FURNISH AND INSTALL CATWALK FOR PROPOSED TYPE I MODIFIED DMS. SEE DRAWING DET-05 SHEET NO. 18 FOR CATWALK DETAILS.

NOTES (CONT.):

7. THE CONTRACTOR SHALL INSTALL TYPE I AND TYPE 2 LCS ON EXISTING MOUNTING FRAMES SUBJECT TO A FIELD INSPECTION OF EXISTING MOUNTINGS. UPON FIELD INSPECTION, IF DAMAGE, MODIFICATION, OR COMPLETE REPLACEMENT WITH A NEW MOUNTING DESIGN IS IDENTIFIED, CONTRACTOR SHALL NOTIFY THE AUTHORITY IN WRITING INDICATING THE NATURE OF DAMAGE OR MODIFICATION, PROPOSED REPAIR OR REPLACEMENT WITH NEW MOUNTING DESIGN. IF NEW MOUNTING DESIGN IS REQUIRED, THE CONTRACTOR MUST SUBMIT DESIGNS FOR AUTHORITY'S APPROVAL BEFORE FABRICATION AND INSTALLATION. IF NEW MOUNTING DESIGN IS REQUIRED, FABRICATION OF THE NEW MOUNTINGS AND THE REMOVAL OF EXISTING MOUNTINGS IS CONSIDERED INCIDENTAL TO THE LCS TYPE I AND 2 PAY ITEM. CONTRACTOR MUST RECEIVE WRITTEN APPROVAL FROM THE AUTHORITY PRIOR TO INITIATING ANY ACTION RELATED TO MOUNTING REPAIRS OR REPLACEMENT.
8. THE CONTRACTOR SHALL CONTACT THE LCS SIGN MANUFACTURER FOR INFORMATION ON LCS WIRING (LCS TERMINATION DIAGRAM) BETWEEN THE FIELD CABINET AND THE LCS SIGN.
9. THE 120V AC SUPPLIES FOR EACH INDICATION ON LCS SIGNS SHALL BE LOCATED INSIDE THE FIELD CABINET. THE TERMINATION AS WELL AS THE LABELING SHALL BE AS PER MANUFACTURER'S RECOMMENDATION.
10. THE CONTRACTOR SHALL USE EXISTING CONDUITS FOR WIRING BETWEEN THE FIELD CABINET AND LCS SIGNS. ALL CONDUITS AND WIRING SHALL BE VERIFIED BY THE MANUFACTURER. UPON FIELD INSPECTION, IF THE CONTRACTOR IDENTIFIES THAT EXISTING CONDUIT IS DAMAGED OR INADEQUATE, THE CONTRACTOR SHALL NOTIFY THE AUTHORITY. NO CONDUIT REMOVAL OR MODIFIACTION SHALL BE PERFORMED WITHOUT WRITTEN APPROVAL FROM THE AUTHORITY.
11. ALL FIELD WIRING AND CONDUITS SHALL BE AS PER RECOMMENDATIONS FROM THE LCS MANUFACTURER AND SHALL BE SUBMITTED FOR AUTHORITY'S APPROVAL BEFORE INSTALLATION BEGINS.

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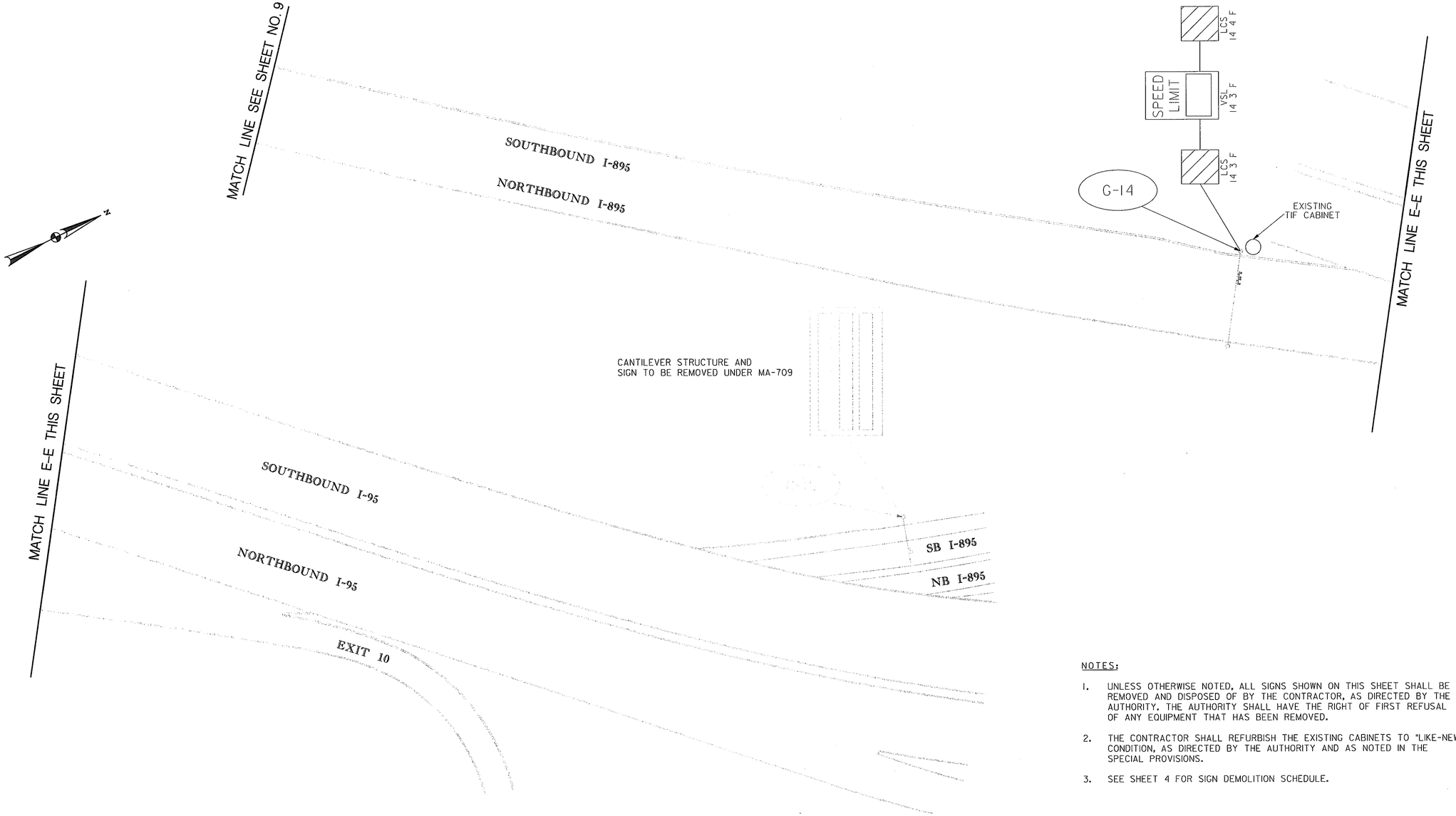
ADDENDUMS & REVISIONS			
NO.	DESCRIPTION	BY	DATE

BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE

BHT NORTH - PROPOSED FOR REPLACEMENT I

DESIGNED BY WJH	DRAWN BY	CHECKED BY JWH	
CONST. REVIEW BY	DATE JANUARY, 2010	SCALE NOT TO SCALE	

CONTRACT NO. HT-705-000-002R
DRAWING NO. REP-03
SHEET NO. 10 OF 47



NOTES:

1. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR, AS DIRECTED BY THE AUTHORITY. THE AUTHORITY SHALL HAVE THE RIGHT OF FIRST REFUSAL OF ANY EQUIPMENT THAT HAS BEEN REMOVED.
2. THE CONTRACTOR SHALL REFURBISH THE EXISTING CABINETS TO "LIKE-NEW" CONDITION, AS DIRECTED BY THE AUTHORITY AND AS NOTED IN THE SPECIAL PROVISIONS.
3. SEE SHEET 4 FOR SIGN DEMOLITION SCHEDULE.

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ENGINEERING DIVISION

ADDENDUMS & REVISIONS

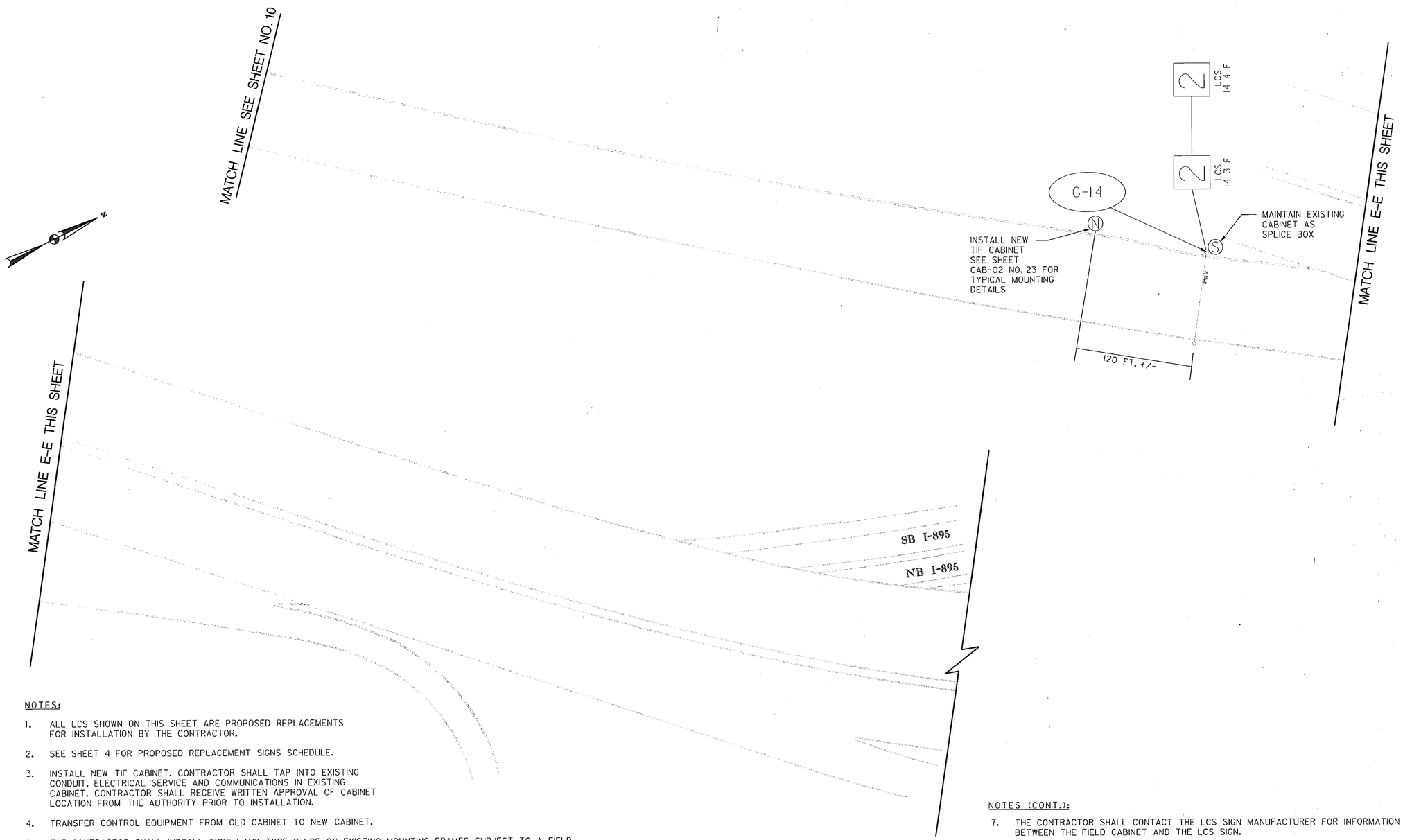
NO.	DESCRIPTION	BY	DATE

BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE

BHT NORTH - DEMOLITION 2

DESIGNED BY WJH | DRAWN BY | CHECKED BY JWH
CONST. REVIEW BY | DATE JANUARY, 2010 | SCALE NOT TO SCALE

CONTRACT NO. HT-705-000-002R
DRAWING NO. DEM-04
SHEET NO. 11 OF 47



NOTES:

1. ALL LCS SHOWN ON THIS SHEET ARE PROPOSED REPLACEMENTS FOR INSTALLATION BY THE CONTRACTOR.
2. SEE SHEET 4 FOR PROPOSED REPLACEMENT SIGNS SCHEDULE.
3. INSTALL NEW TIF CABINET. CONTRACTOR SHALL TAP INTO EXISTING CONDUIT, ELECTRICAL SERVICE AND COMMUNICATIONS IN EXISTING CABINET. CONTRACTOR SHALL RECEIVE WRITTEN APPROVAL OF CABINET LOCATION FROM THE AUTHORITY PRIOR TO INSTALLATION.
4. TRANSFER CONTROL EQUIPMENT FROM OLD CABINET TO NEW CABINET.
5. THE CONTRACTOR SHALL INSTALL TYPE 1 AND TYPE 2 LCS ON EXISTING MOUNTING FRAMES SUBJECT TO A FIELD INSPECTION OF EXISTING MOUNTINGS. UPON FIELD INSPECTION, IF DAMAGE, MODIFICATION, OR COMPLETE REPLACEMENT WITH A NEW MOUNTING DESIGN IS IDENTIFIED, CONTRACTOR SHALL NOTIFY THE AUTHORITY IN WRITING INDICATING THE NATURE OF DAMAGE OR MODIFICATION, PROPOSED REPAIR OR REPLACEMENT WITH NEW MOUNTING DESIGN. IF NEW MOUNTING DESIGN IS REQUIRED, THE CONTRACTOR MUST SUBMIT DESIGNS FOR AUTHORITY'S APPROVAL BEFORE FABRICATION AND INSTALLATION. IF NEW MOUNTING DESIGN IS REQUIRED, FABRICATION OF THE NEW MOUNTINGS AND THE REMOVAL OF EXISTING MOUNTINGS IS CONSIDERED INCIDENTAL TO THE LCS TYPE 1 AND 2 PAY ITEM. CONTRACTOR MUST RECEIVE WRITTEN APPROVAL FROM THE AUTHORITY PRIOR TO INITIATING ANY ACTION RELATED TO MOUNTING REPAIRS OR REPLACEMENT.
6. LCS SHALL BE CONNECTED TO RELOCATED EXISTING CONTROLLER IN NEW CABINET.

NOTES (CONT.):

7. THE CONTRACTOR SHALL CONTACT THE LCS SIGN MANUFACTURER FOR INFORMATION ON LCS WIRING (LCS TERMINATION DIAGRAM) BETWEEN THE FIELD CABINET AND THE LCS SIGN.
8. THE 120V AC SUPPLIES FOR EACH INDICATION ON LCS SIGNS SHALL BE LOCATED INSIDE THE FIELD CABINET. THE TERMINATION AS WELL AS THE LABELING SHALL BE AS PER MANUFACTURER'S RECOMMENDATION.
9. THE CONTRACTOR SHALL USE EXISTING CONDUITS FOR WIRING BETWEEN THE FIELD CABINET AND LCS SIGNS. ALL CONDUITS AND WIRING SHALL BE VERIFIED BY THE MANUFACTURER. UPON FIELD INSPECTION, IF THE CONTRACTOR IDENTIFIES THAT EXISTING CONDUIT IS DAMAGED OR INADEQUATE, THE CONTRACTOR SHALL NOTIFY THE AUTHORITY. NO CONDUIT REMOVAL OR MODIFICATION SHALL BE PERFORMED WITHOUT WRITTEN APPROVAL FROM THE AUTHORITY.
10. ALL FIELD WIRING AND CONDUITS SHALL BE AS PER RECOMMENDATIONS FROM THE LCS MANUFACTURER AND SHALL BE SUBMITTED FOR AUTHORITY'S APPROVAL BEFORE INSTALLATION BEGINS.

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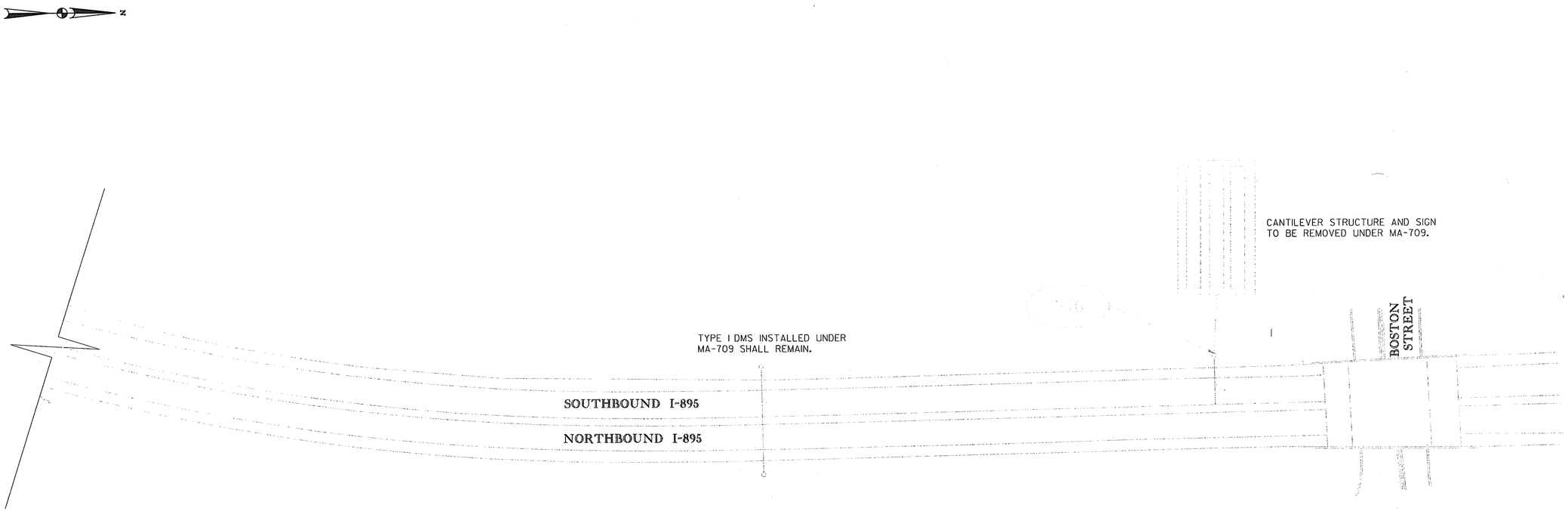
ADDENDUMS & REVISIONS			
NO.	DESCRIPTION	BY	DATE

BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE

BHT NORTH - PROPOSED FOR REPLACEMENT 2

DESIGNED BY WJH	DRAWN BY	CHECKED BY JWH	
CONST. REVIEW BY	DATE JANUARY, 2010	SCALE NOT TO SCALE	

CONTRACT NO. HT-705-000-002R
DRAWING NO. REP-04
SHEET NO. 12 OF 47



SHEET IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY.
NO WORK TO BE DONE BY CONTRACTOR IS SHOWN ON SHEET.

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Maryland Transportation Authority
ENGINEERING DIVISION

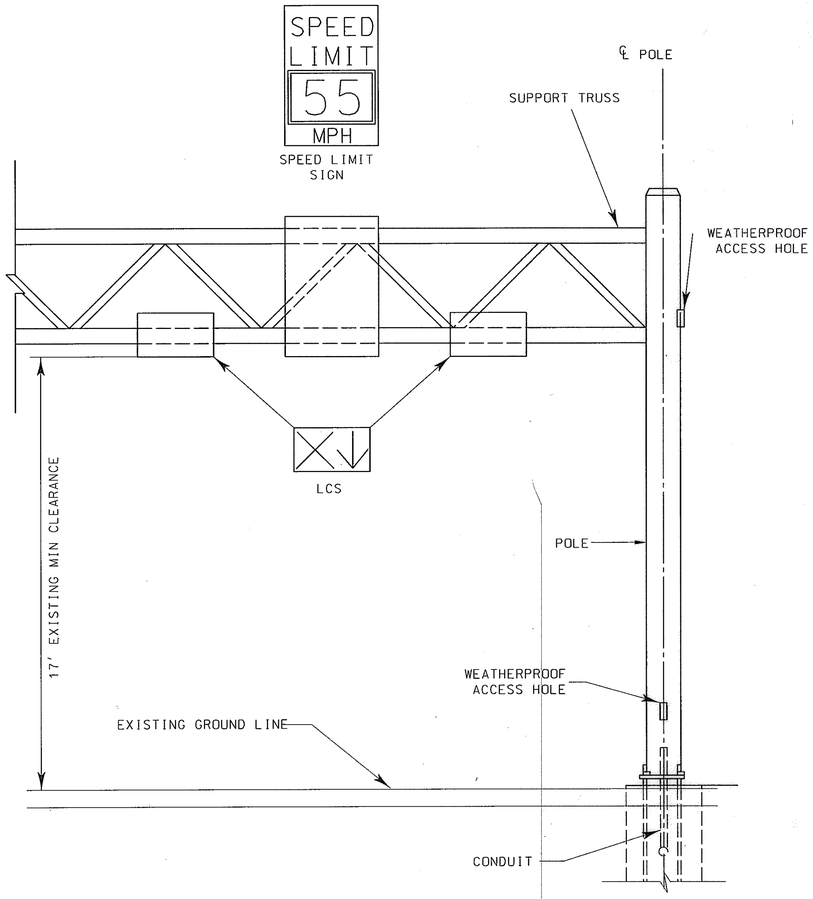
ADDENDUMS & REVISIONS

NO.	DESCRIPTION	BY	DATE

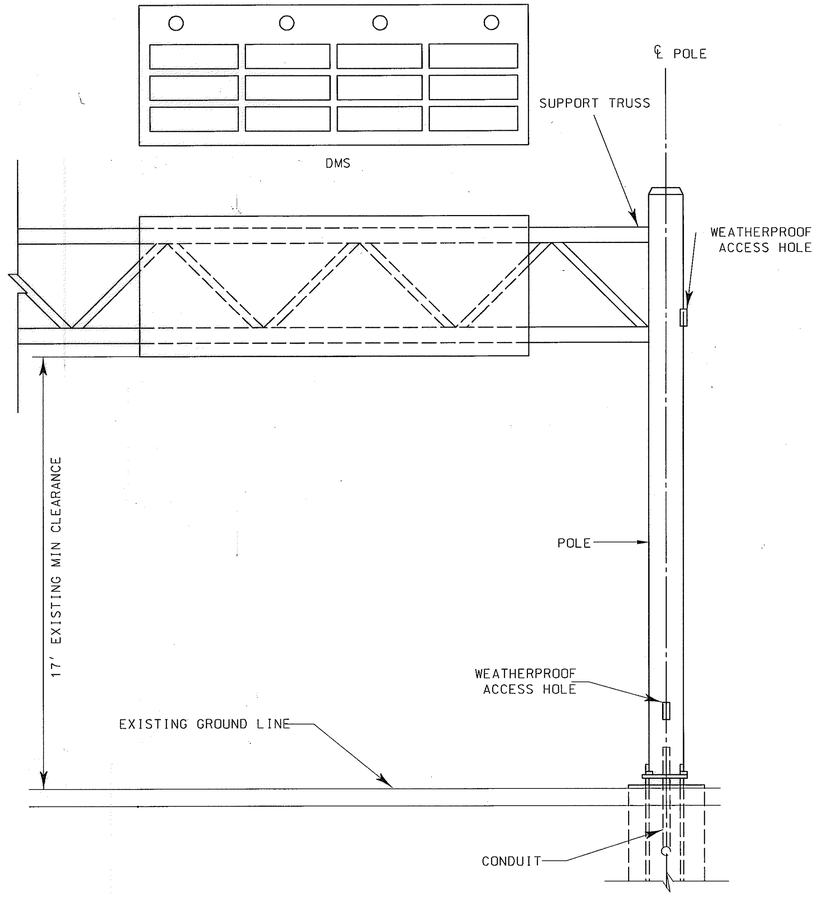
BALTIMORE HARBOR TUNNEL LANE CONTROL
SIGNAL AND DYNAMIC MESSAGE SIGN
SYSTEM UPGRADE
BHT NORTH - DEMOLITION 3

DESIGNED BY WJH	DRAWN BY	CHECKED BY JWH	
CONST. REVIEW BY	DATE JANUARY, 2010	SCALE NOT TO SCALE	

CONTRACT NO. HT-705-000-002R
DRAWING NO. DEM-05
SHEET NO. 13 OF 47



LCS AND VSL
FRONTVIEW
(TYP.)



DMS G-12
FRONTVIEW
(TYP.)

EXISTING
(TYP.)

NOTES:

1. EXISTING STRUCTURE DETAILS SHOWN FOR INFORMATION PURPOSES ONLY. CONTRACTOR SHALL FIELD VERIFY PRIOR TO REMOVAL OF EXISTING SIGNS. CONTRACTOR SHALL NOT DAMAGE EXISTING STRUCTURES DURING REMOVAL OF SIGNS.
2. LOCATION G-12 HAS NORTHBOUND DMS AND SOUTHBOUND LCS/VSL.
3. LOCATIONS G-3, G-13 AND G-14 ONLY HAVE LCS/VSL.

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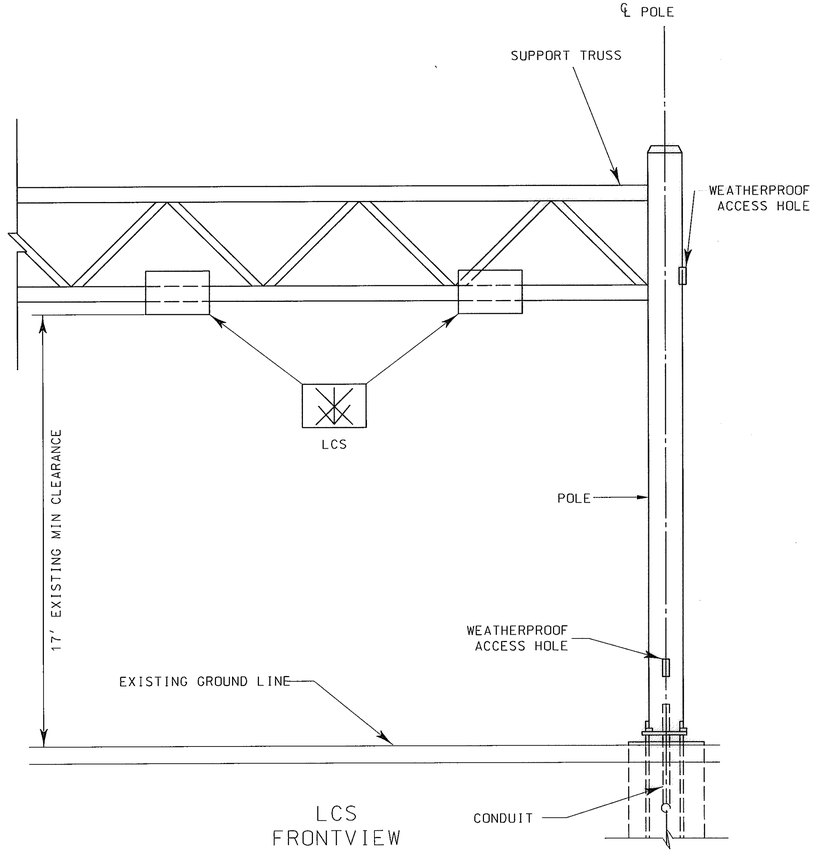
ADDENDUMS & REVISIONS			
NO.	DESCRIPTION	BY	DATE

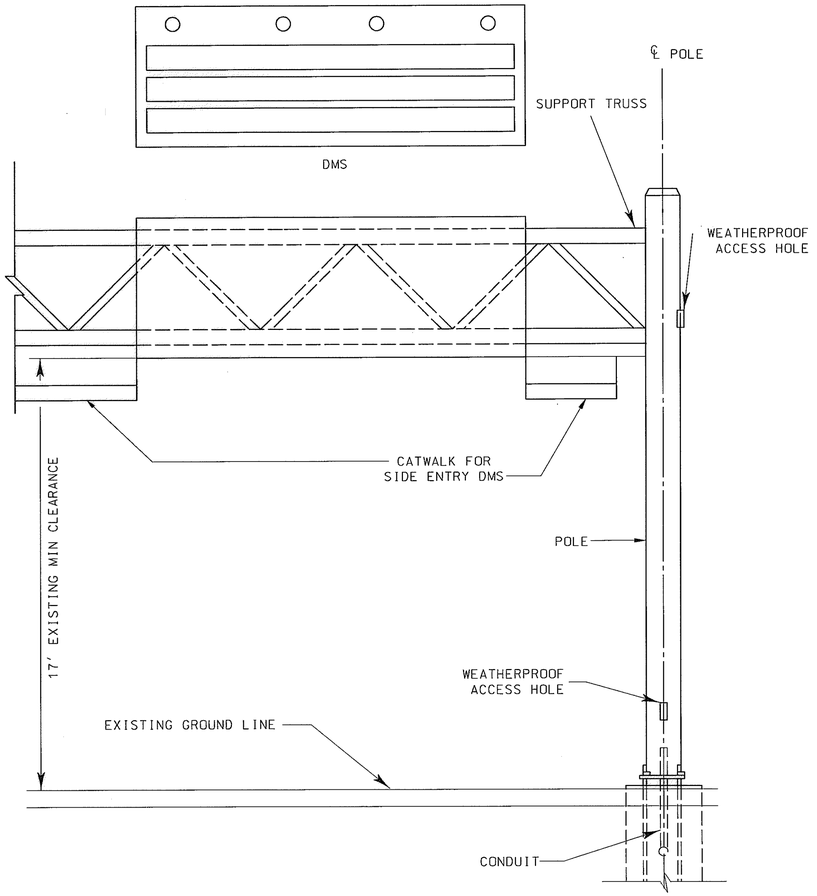
BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE
FULL SPAN STRUCTURE ELEVATION DETAILS EXISTING

DESIGNED BY WJH	DRAWN BY	CHECKED BY JWH	
CONST. REVIEW BY	DATE JANUARY, 2010	SCALE NOT TO SCALE	

CONTRACT NO. HT-705-000-002R
DRAWING NO. DET - 01
SHEET NO. 14 OF 47



LCS
FRONTVIEW
(TYP.)



DMS G-12
FRONTVIEW
(TYP.)

PROPOSED
(TYP.)

NOTES:

1. THIS SHEET IS PROVIDED FOR INFORMATION PURPOSES ONLY.
2. CONTRACTOR SHALL MOUNT THE NEW SIGNS ON THE EXISTING STRUCTURES, UNLESS OTHERWISE NOTED BY THE AUTHORITY.
3. THE CONTRACTOR SHALL INSTALL TYPE I AND TYPE 2 LCS ON EXISTING MOUNTING FRAMES SUBJECT TO A FIELD INSPECTION OF EXISTING MOUNTINGS. UPON FIELD INSPECTION, IF DAMAGE, MODIFICATION, OR COMPLETE REPLACEMENT WITH A NEW MOUNTING DESIGN IS IDENTIFIED, CONTRACTOR SHALL NOTIFY THE AUTHORITY IN WRITING INDICATING THE NATURE OF DAMAGE OR MODIFICATION, PROPOSED REPAIR OR REPLACEMENT WITH NEW MOUNTING DESIGN. IF NEW MOUNTING DESIGN IS REQUIRED, THE CONTRACTOR MUST SUBMIT DESIGNS FOR AUTHORITY'S APPROVAL BEFORE FABRICATION AND INSTALLATION. IF NEW MOUNTING DESIGN IS REQUIRED, FABRICATION OF THE NEW MOUNTINGS AND THE REMOVAL OF EXISTING MOUNTINGS IS CONSIDERED INCIDENTAL TO THE LCS TYPE I AND 2 PAY ITEM. CONTRACTOR MUST RECEIVE WRITTEN APPROVAL FROM THE AUTHORITY PRIOR TO INITIATING ANY ACTION RELATED TO MOUNTING REPAIRS OR REPLACEMENT.
4. UNLESS OTHERWISE STATED, ALL ELECTRIC AND COMMUNICATIONS CABLE IS TO BE FURNISHED AND INSTALLED UNDER THIS CONTRACT. THE CONTRACTOR SHALL COORDINATE WITH THE SIGN MANUFACTURER TO DETERMINE THE REQUIRED CABLE PRIOR TO INSTALLATION.
5. THE CONTRACTOR SHALL COORDINATE WITH THE SIGN MANUFACTURER TO DETERMINE THE OPTIMUM VIEWING ANGLE FOR THE INSTALLATION OF THE SIGN.
6. THE DMS MUST BE PENETRATED FROM THE BACK THROUGH THE OPENINGS PROVIDED BY THE DMS ENCLOSURE MANUFACTURER.
7. THE CONTRACTOR SHALL INSTALL AND PULL THE CABLES IN THE NEW CONDUIT.
8. THE COST OF FURNISHING AND INSTALLING CABLES, FASTENERS AND PULL BOXES IS CONSIDERED INCIDENTAL TO THE PICK-UP, DELIVERY AND/OR STORAGE COST OF INSTALLING THE DMS.
9. ALL MOUNTING HARDWARE SHALL BE STAINLESS STEEL.
10. CONTRACTOR SHALL DESIGN, FURNISH AND INSTALL CATWALK FOR PROPOSED DMS AT G-12. REFER TO DRAWING DET-05 SHEET NO.18 FOR CATWALK DETAILS. CATWALK REQUIRED ON BOTH SIDES OF SIGN.
11. FOR LCS FURNISH, INSTALL AND TERMINATE 8 CONDUCTOR CABLE AS IDENTIFIED BY LCS SUPPLIER FROM SIGN TO CONTROLLER CABINET.
12. FOR DMS FRNISH & INSTALL
    - 100A 2P 240/120 TO DMS FROM CABINET.
    - 6 COUNT MULTIMODE FIBER FROM DMS TO CABINET.

NOTES (CONT.):

13. THE CONTRACTOR SHALL CONTACT THE LCS SIGN MANUFACTURER FOR INFORMATION ON LCS WIRING (LCS TERMINATION DIAGRAM) BETWEEN THE FIELD CABINET AND THE LCS SIGN.
14. THE 120V AC SUPPLIES FOR EACH INDICATION ON LCS SIGNS SHALL BE LOCATED INSIDE THE FIELD CABINET. THE TERMINATION AS WELL AS THE LABELING SHALL BE AS PER MANUFACTURER'S RECOMMENDATION.
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16. ALL FIELD WIRING AND CONDUITS SHALL BE AS PER RECOMMENDATIONS FROM THE LCS MANUFACTURER AND SHALL BE SUBMITTED FOR AUTHORITY'S APPROVAL BEFORE INSTALLATION BEGINS.

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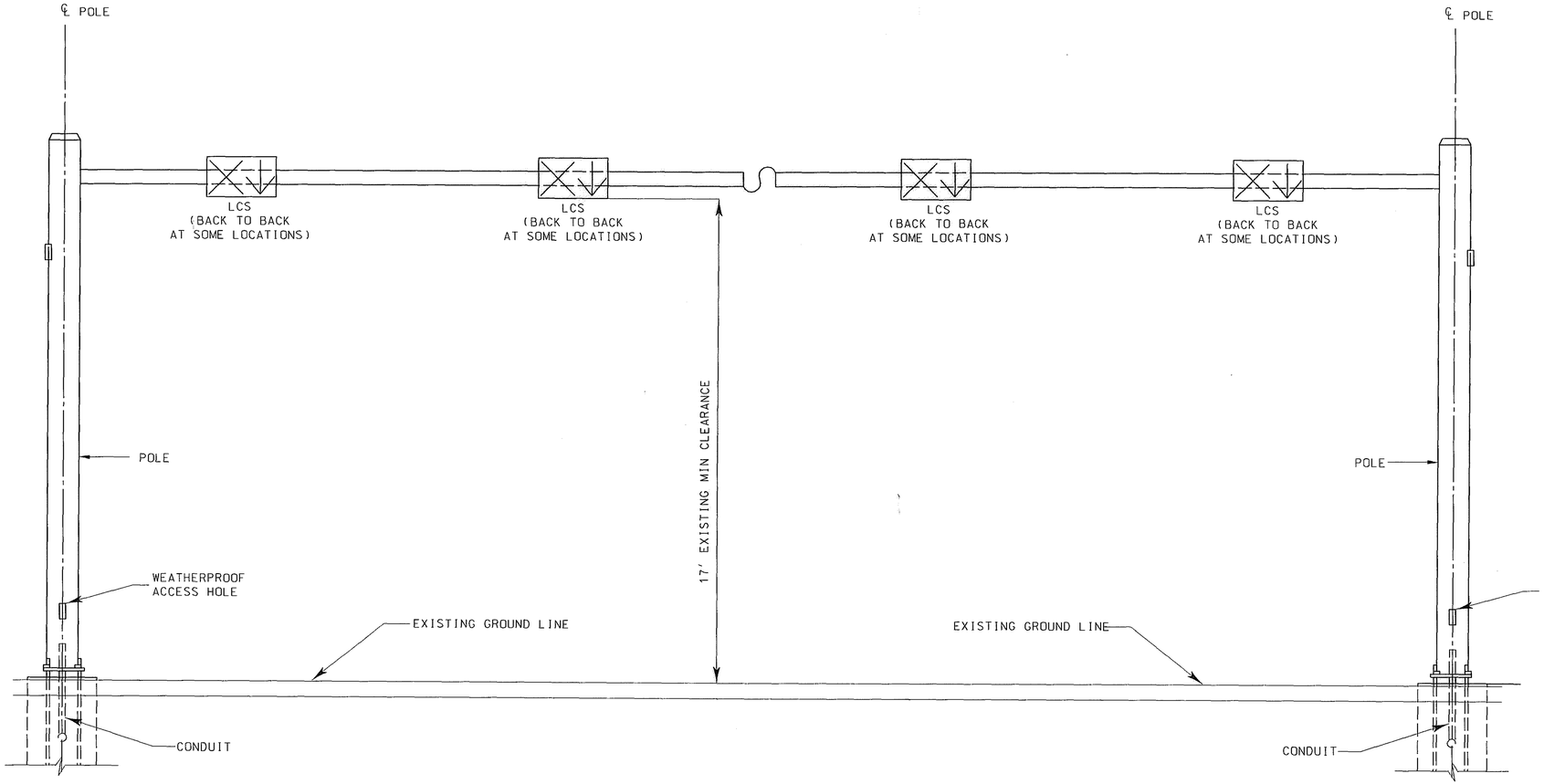
ADDENDUMS & REVISIONS			
NO.	DESCRIPTION	BY	DATE

BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE
FULL SPAN STRUCTURE ELEVATION DETAILS PROPOSED

DESIGNED BY WJH	DRAWN BY	CHECKED BY JWH	
CONST. REVIEW BY	DATE JANUARY, 2010	SCALE NOT TO SCALE	

CONTRACT NO. HT-705-000-002R
DRAWING NO. DET - 02
SHEET NO. 15 OF 47



FRONT ELEVATION OF SIGN SUPPORT
(TYP.)

EXISTING
(TYP.)

NOTES:

1. EXISTING MAST-ARM DETAILS SHOWN FOR INFORMATION PURPOSES ONLY. CONTRACTOR SHALL FIELD VERIFY PRIOR TO REMOVAL OF EXISTING SIGNS. CONTRACTOR SHALL NOT DAMAGE EXISTING STRUCTURES DURING REMOVAL OF SIGNS.
2. MAST-ARM MOUNTED LCS ARE AT LOCATIONS G-4, G-5, G-10 AND G-11.
3. LOCATION G-11 ALSO HAS SOUTHBOUND SINGLE LINE DMS.

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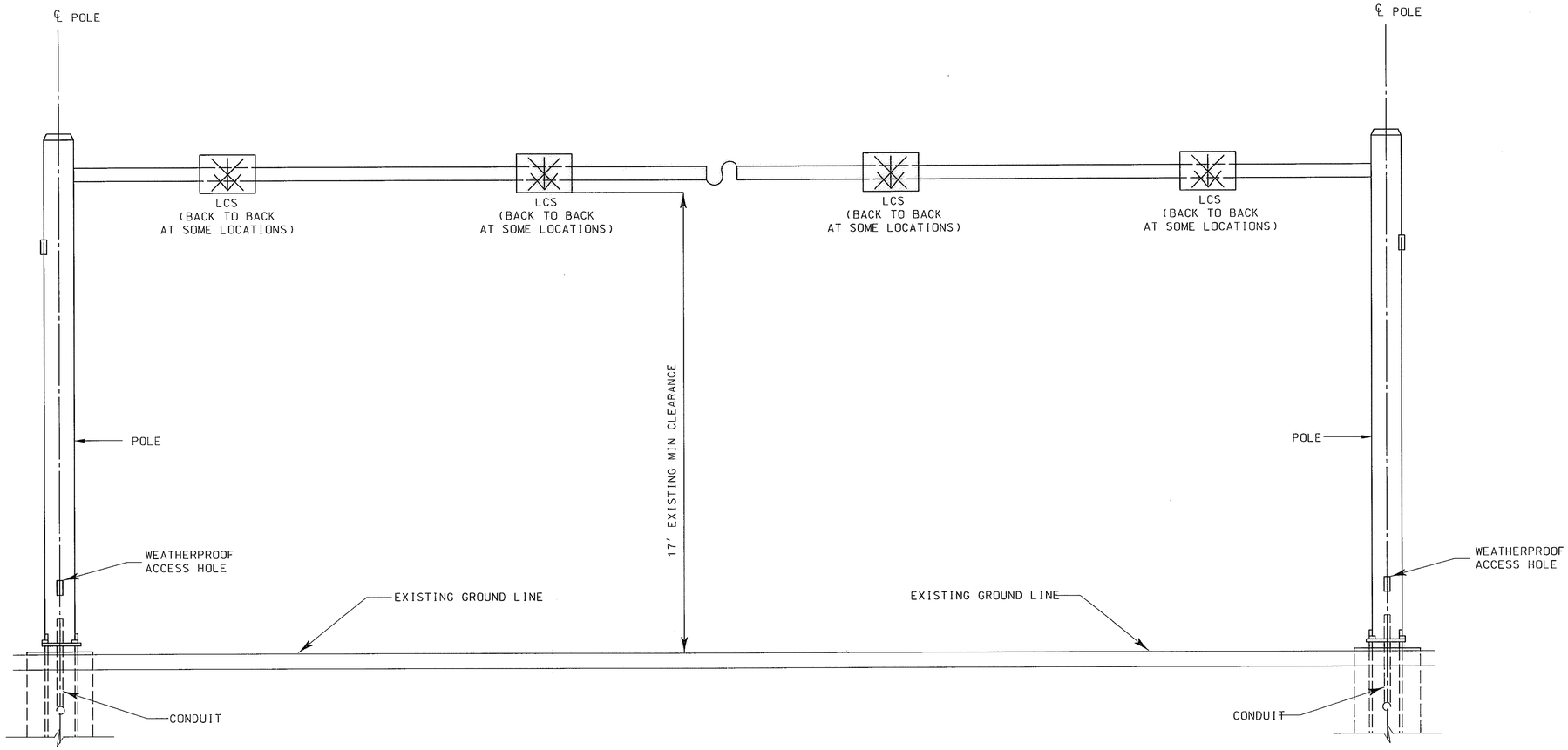
ADDENDUMS & REVISIONS			
NO.	DESCRIPTION	BY	DATE

BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE
MAST ARM STRUCTURE ELEVATION DETAILS EXISTING

DESIGNED BY WJH	DRAWN BY	CHECKED BY JWH	CONTRACT NO. HT-705-000-002R
CONST. REVIEW BY	DATE JANUARY, 2010	SCALE NOT TO SCALE	DRAWING NO. DET - 03
			SHEET NO. 16 OF 47



FRONT ELEVATION OF SIGN SUPPORT
(TYP.)

PROPOSED
(TYP.)

NOTES:

1. THIS SHEET IS PROVIDED FOR INFORMATION PURPOSES ONLY.
2. CONTRACTOR SHALL MOUNT THE NEW SIGNS ON THE EXISTING STRUCTURES, UNLESS OTHERWISE NOTED BY MdTA.
3. THE CONTRACTOR SHALL INSTALL TYPE 1 AND TYPE 2 LCS ON EXISTING MOUNTING FRAMES SUBJECT TO A FIELD INSPECTION OF EXISTING MOUNTINGS. UPON FIELD INSPECTION, IF DAMAGE, MODIFICATION, OR COMPLETE REPLACEMENT WITH A NEW MOUNTING DESIGN IS IDENTIFIED, CONTRACTOR SHALL NOTIFY THE AUTHORITY IN WRITING INDICATING THE NATURE OF DAMAGE OR MODIFICATION, PROPOSED REPAIR OR REPLACEMENT WITH NEW MOUNTING DESIGN. IF NEW MOUNTING DESIGN IS REQUIRED, THE CONTRACTOR MUST SUBMIT DESIGNS FOR AUTHORITY'S APPROVAL BEFORE FABRICATION AND INSTALLATION. IF NEW MOUNTING DESIGN IS REQUIRED, FABRICATION OF THE NEW MOUNTINGS AND THE REMOVAL OF EXISTING MOUNTINGS IS CONSIDERED INCIDENTAL TO THE LCS TYPE 1 AND 2 PAY ITEM. CONTRACTOR MUST RECEIVE WRITTEN APPROVAL FROM THE AUTHORITY PRIOR TO INITIATING ANY ACTION RELATED TO MOUNTING REPAIRS OR REPLACEMENT.
4. TYPE 4 AND 5 LCS REQUIRE A NEW MOUNTING FRAME. MOUNTING DETAIL SHOWN ON SHEET LCS-01 NO. 19 FOR EXISTING LCS IS PROVIDED FOR CONTRACTOR'S REFERENCE PRIOR TO DESIGNING NEW MOUNTING FOR TYPE 4 AND TYPE 5 LCS. CONTRACTOR MUST SUBMIT DESIGNS TO THE AUTHORITY FOR WRITTEN APPROVAL PRIOR TO INITIATING ANY ACTION RELATED TO FABRICATION OF MOUNTINGS. REMOVAL AND DISPOSAL OF EXISTING MOUNTING FRAMES SHALL BE INCIDENTAL TO THE LCS TYPE 4 OR TYPE 5 PAY ITEM.
5. UNLESS OTHERWISE STATED, ALL ELECTRIC AND COMMUNICATIONS CABLE IS TO BE FURNISHED AND INSTALLED UNDER THIS CONTRACT. THE CONTRACTOR SHALL COORDINATE WITH THE SIGN CONTRACTOR TO DETERMINE THE REQUIRED CABLE PRIOR TO INSTALLATION.
6. THE CONTRACTOR SHALL COORDINATE WITH THE SIGN MANUFACTURER TO DETERMINE THE OPTIMUM VIEWING ANGLE FOR THE INSTALLATION OF THE SIGN.
7. THE CONTRACTOR SHALL INSTALL AND PULL THE CABLES IN THE NEW CONDUIT.
8. THE COST OF FURNISHING AND INSTALLING CABLES, FASTENERS AND PULL BOXES IS CONSIDERED INCIDENTAL TO THE PICK-UP, DELIVERY AND/OR STORAGE COST OF INSTALLING THE LCS.
9. ALL MOUNTING HARDWARE SHALL BE STAINLESS STEEL.

NOTES (CONT.):

10. THE CONTRACTOR SHALL MOUNT NEW SIGNALS FOR LANE CONTROL TYPE A AND TYPE B DIRECTLY TO THE PORTAL WALL USING EXISTING MOUNTING HARDWARE SUBJECT TO A FIELD INSPECTION OF EXISTING MOUNTINGS. IF DAMAGE OF EXISTING MOUNTINGS IS IDENTIFIED, CONTRACTOR SHALL NOTIFY THE AUTHORITY IN WRITING INDICATING NATURE OF DAMAGE, PROPOSED REPAIR AND COST OF REPAIR. CONTRACTOR MUST RECEIVE WRITTEN APPROVAL FROM THE AUTHORITY PRIOR TO INITIATING ANY ACTION RELATED TO MOUNTING REPAIRS. IF NEW MOUNTINGS ARE REQUIRED FOR THE SLC CONTRACTOR MUST SUBMIT DESIGNS TO THE AUTHORITY FOR WRITTEN APPROVAL PRIOR TO INITIATING ANY ACTION RELATED TO FABRICATION OF MOUNTINGS. FABRICATION OF NEW MOUNTINGS AND REMOVAL AND DISPOSAL OF EXISTING MOUNTING FRAMES IF REQUIRED SHALL BE INCIDENTAL TO THE SLC TYPE A OR TYPE B PAY ITEM.
11. THE CONTRACTOR SHALL CONTACT THE LCS SIGN MANUFACTURER FOR INFORMATION ON LCS WIRING (LCS TERMINATION DIAGRAM) BETWEEN THE FIELD CABINET AND THE LCS SIGN.
12. THE 120V AC SUPPLIES FOR EACH INDICATION ON LCS SIGNS SHALL BE LOCATED INSIDE THE FIELD CABINET. THE TERMINATION AS WELL AS THE LABELING SHALL BE AS PER MANUFACTURER'S RECOMMENDATION.
13. THE CONTRACTOR SHALL USE EXISTING CONDUITS FOR WIRING BETWEEN THE FIELD CABINET AND LCS SIGNS. ALL CONDUITS AND WIRING SHALL BE VERIFIED BY THE MANUFACTURER. UPON FIELD INSPECTION, IF THE CONTRACTOR IDENTIFIES THAT EXISTING CONDUIT IS DAMAGED OR INADEQUATE, THE CONTRACTOR SHALL NOTIFY THE AUTHORITY. NO CONDUIT REMOVAL OR MODIFICATION SHALL BE PERFORMED WITHOUT WRITTEN APPROVAL FROM THE AUTHORITY.
14. ALL FIELD WIRING AND CONDUITS SHALL BE AS PER RECOMMENDATIONS FROM THE LCS MANUFACTURER AND SHALL BE SUBMITTED FOR AUTHORITY'S APPROVAL BEFORE INSTALLATION BEGINS.

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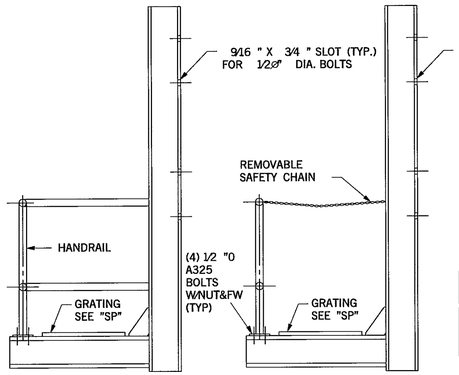
ADDENDUMS & REVISIONS			
NO.	DESCRIPTION	BY	DATE

BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE
MAST ARM STRUCTURE GENERAL PLAN AND ELEVATION DETAILS PROPOSED

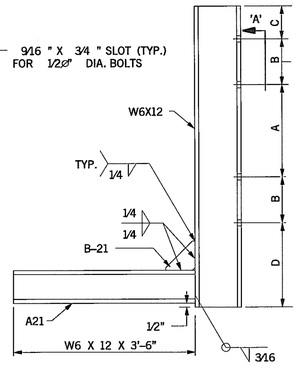
DESIGNED BY WJH	DRAWN BY	CHECKED BY JWH	
CONST. REVIEW BY	DATE JANUARY, 2010	SCALE NOT TO SCALE	

CONTRACT NO. HT-705-000-002R
DRAWING NO. DET - 04
SHEET NO. 17 OF 47



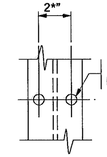
LEFT SIDE
ENTRY PLATFORM

RIGHT SIDE
ENTRY PLATFORM

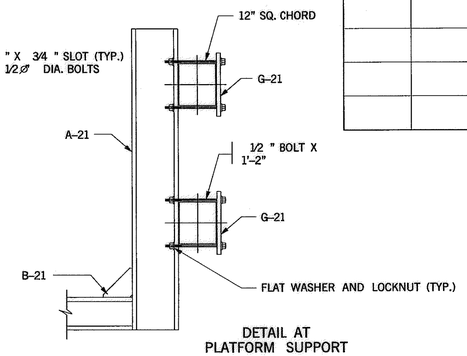


ENTRY PLATFORM
SUPPORT DETAILS

SEE TABLE NO. 1
GALV. PER ASTM A123



SECTION 'A'



DETAIL AT
PLATFORM SUPPORT
FOR 12" SQ. CHORDS

STRUCT.	A	B	C	D	DAH	NO. REQ'D	PC MARK

TABLE NO. 1

MARK	QUAN	DESCRIPTION	LENGTH FT	LENGTH IN	REMARK
–	–	–	–	–	–
–	–	–	–	–	–
–	–	–	–	–	–
–	–	–	–	–	–
–	–	–	–	–	–
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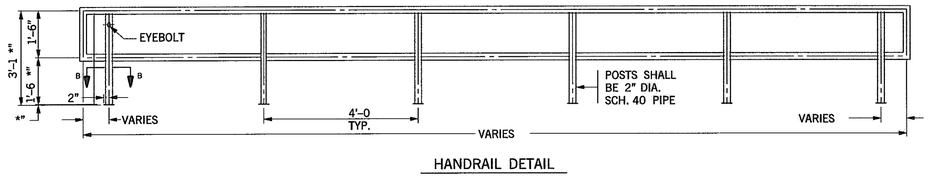
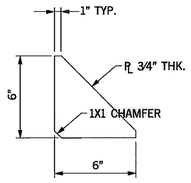
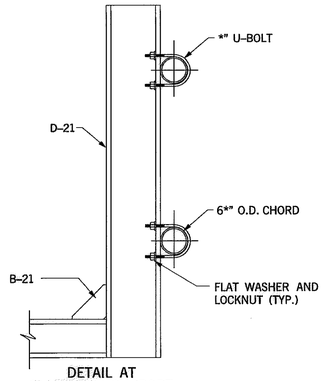


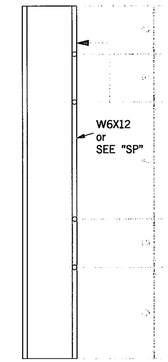
HANDRAIL DETAIL



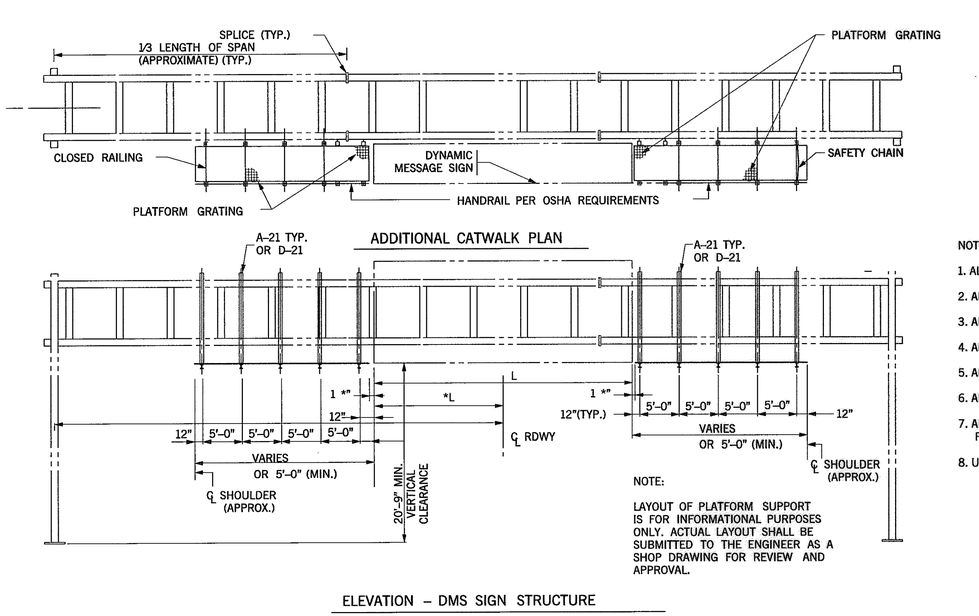
SUPPORT GUSSET P L
(B-21)



DETAIL AT
PLATFORM SUPPORT
FOR 6.625" O.D. CHORDS



SIGN SUPPORT

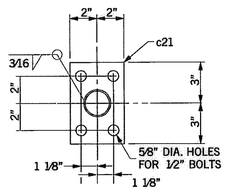


ADDITIONAL CATWALK PLAN

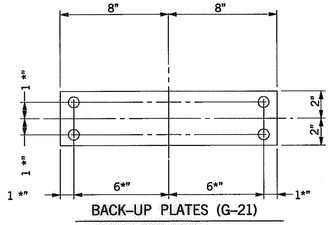
NOTE:

LAYOUT OF PLATFORM SUPPORT IS FOR INFORMATIONAL PURPOSES ONLY. ACTUAL LAYOUT SHALL BE SUBMITTED TO THE ENGINEER AS A SHOP DRAWING FOR REVIEW AND APPROVAL.

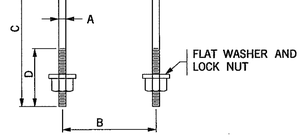
ELEVATION – DMS SIGN STRUCTURE



SECTION B–B



BACK-UP PLATES (G-21)
GALV. PER ASTM A123



U-BOLT DETAIL
SEE TABLE NO. 2

NOTES:

1. ALL PLATES AND STRUCTURAL SHAPES TO BE ASTM-A-36, PIPE A501.
2. ALL BOLTS, U-BOLTS AND FASTENERS TO BE GALVANIZED.
3. ALL WELDING SHALL BE IN ACCORDANCE WITH AWS.D1.1.
4. ALL PIPE FOR HANDRAIL TO BE ASTM A500 GRADE 'A'.
5. ALL GRATING TO BE 1 1/2 " THICK GALVANIZED, ABLE TO WITHSTAND 100 LBS/SQ. FT.
6. ALL VERTICAL SIGN ATTACHMENT MEMBERS, U-BOLTS SHALL BE S.S. TYPE 304 OR A307.
7. ALL RAIL SHALL BE DESIGNED TO CARRY ONE 500 POUND CONCENTRATED LOAD, PLACED ANYWHERE ALONG TOP OF RAILING.
8. USE LOCK NUTS AND FLAT WASHERS FOR ALL 'U' BOLTS.

STRUCT.	A	B	C	D

TABLE NO. 2

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Maryland Transportation Authority
ENGINEERING DIVISION

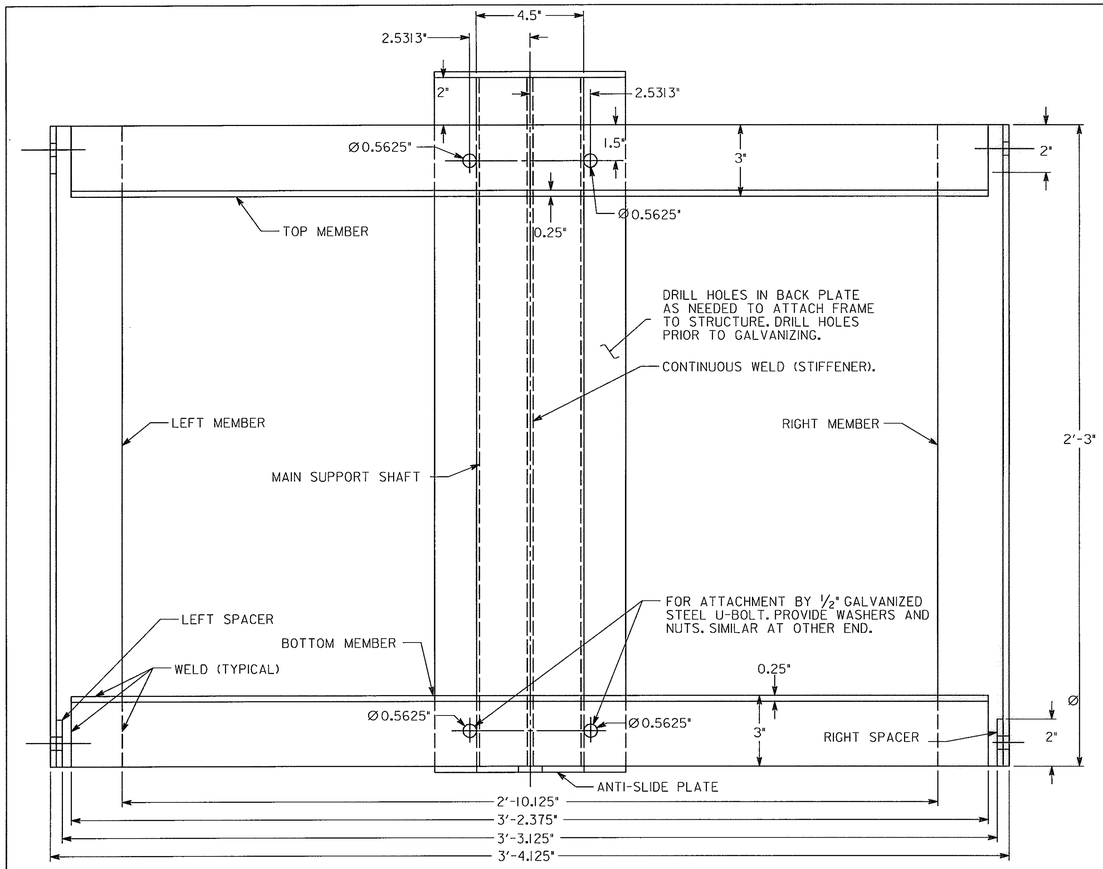
ADDENDUMS & REVISIONS NO.	DESCRIPTION	BY	DATE

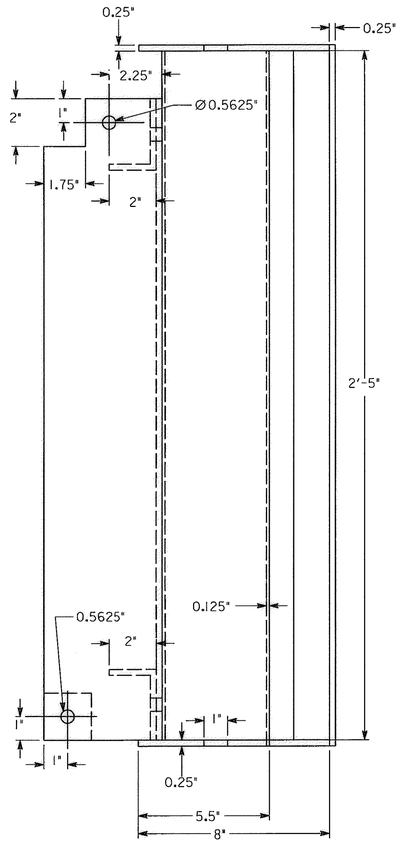
BALTIMORE HARBOR TUNNEL LANE CONTROL
SIGNAL AND DYNAMIC MESSAGE SIGN
SYSTEM UPGRADE

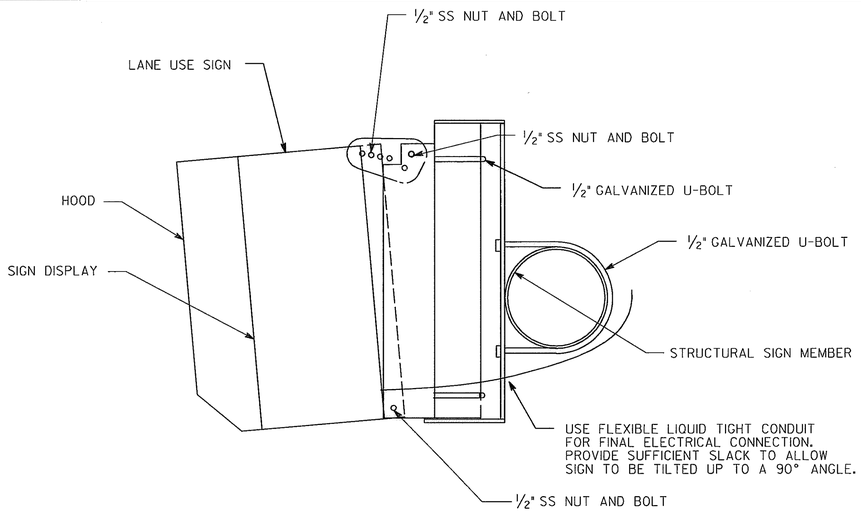
DMS STRUCTURES (CATWALK)

CONTRACT NO. HT-705-000-002R
DRAWING NO. DET-05
SHEET NO. 18 OF 47

DESIGNED BY WJH | DRAWN BY | CHECKED BY JWH
CONST. REVIEW BY | DATE JANUARY, 2010 | SCALE NOT TO SCALE

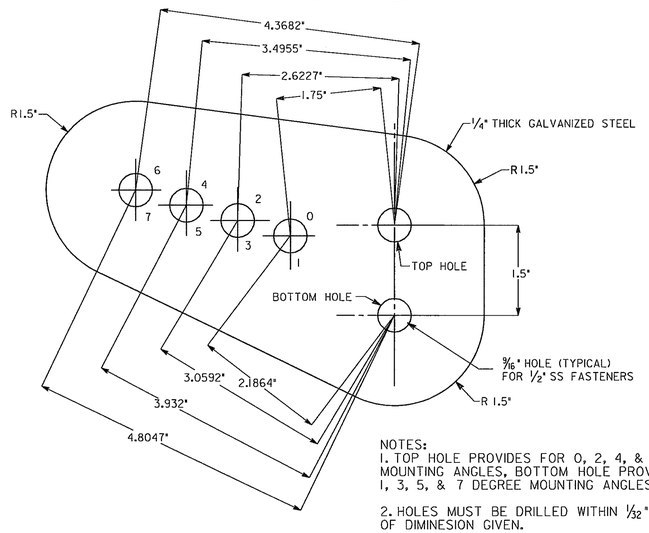






TYPICAL MOUNTING DETAIL FOR 18" CHARACTER LANE USE SIGN (TYP.)

NOT TO SCALE

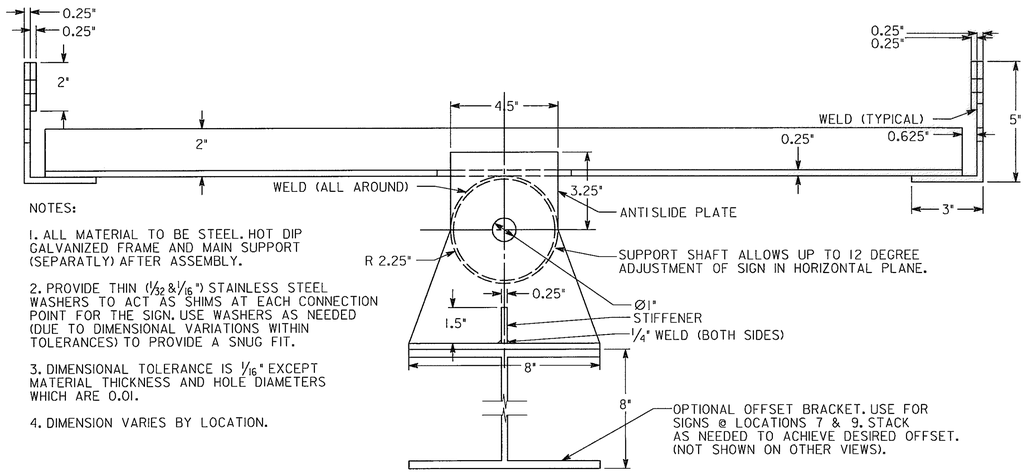


NOTES:

1. TOP HOLE PROVIDES FOR 0, 2, 4, & 6 DEGREE MOUNTING ANGLES, BOTTOM HOLE PROVIDES FOR 1, 3, 5, & 7 DEGREE MOUNTING ANGLES.
2. HOLES MUST BE DRILLED WITHIN 1/32" OF DIMINESION GIVEN.
3. THE ADJUSTMENT HOLES ARE NOT LAID OUT ON A STRAIGHT LINE, ALTHOUGH THEY MAY APPEAR SO.

ADJUSTMENT PLATE DETAIL

NOT TO SCALE



NOTES:

1. ALL MATERIAL TO BE STEEL. HOT DIP GALVANIZED FRAME AND MAIN SUPPORT (SEPARATLY) AFTER ASSEMBLY.
2. PROVIDE THIN (1/32 & 1/16") STAINLESS STEEL WASHERS TO ACT AS SHIMS AT EACH CONNECTION POINT FOR THE SIGN. USE WASHERS AS NEEDED (DUE TO DIMENSIONAL VARIATIONS WITHIN TOLERANCES) TO PROVIDE A SNUG FIT.
3. DIMENSIONAL TOLERANCE IS 1/16" EXCEPT MATERIAL THICKNESS AND HOLE DIAMETERS WHICH ARE 0.01.
4. DIMENSION VARIES BY LOCATION.

TYPICAL MOUNTING FRAME - LCS TYPE 1 AND 2

NOT TO SCALE

TYPICAL DESIGNS FOR EXISTING LCS TYPE 1 AND 2 PROVIDED FOR CONTRACTOR'S INFORMATION ONLY NOT FOR CONSTRUCTION

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Maryland Transportation Authority
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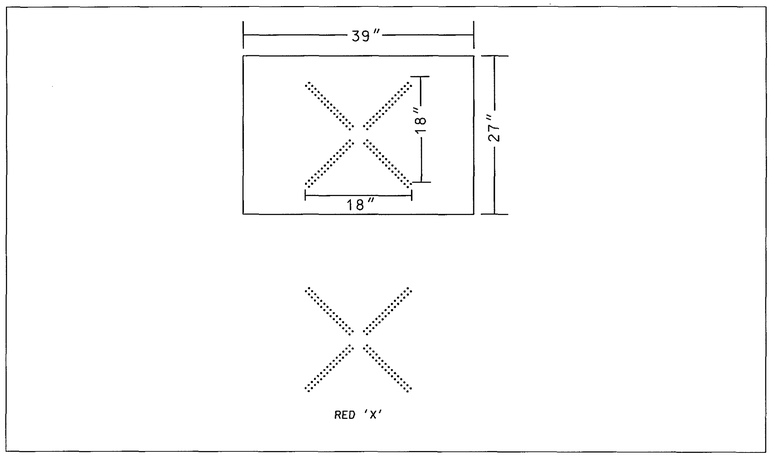
ADDENDUMS & REVISIONS			
NO.	DESCRIPTION	BY	DATE

BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE

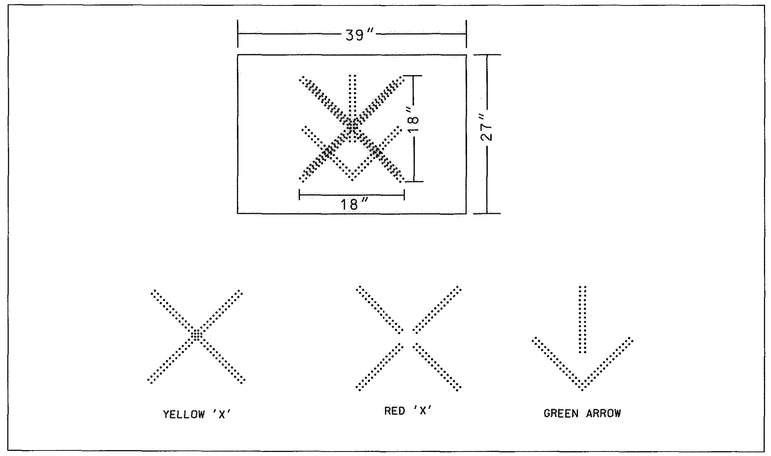
LCS MOUNTING DETAILS

DESIGNED BY WJH	DRAWN BY	CHECKED BY JWH	
CONST. REVIEW BY	DATE JANUARY, 2010	SCALE NOT TO SCALE	

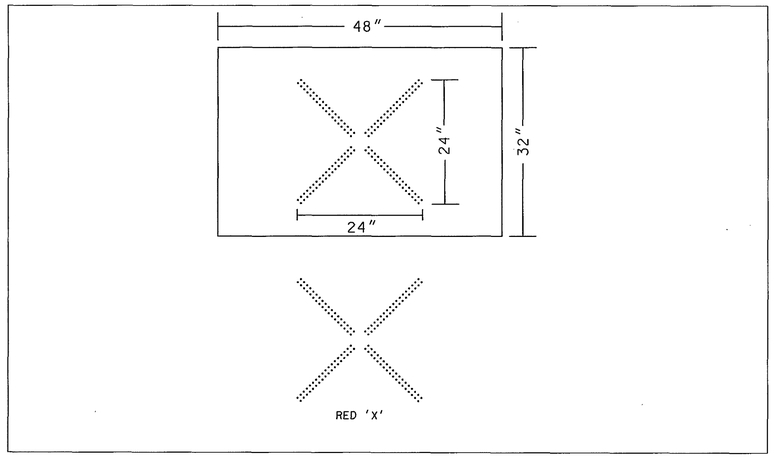
CONTRACT NO. HT-705-000-002R
DRAWING NO. LCS-01
SHEET NO. 19 OF 47



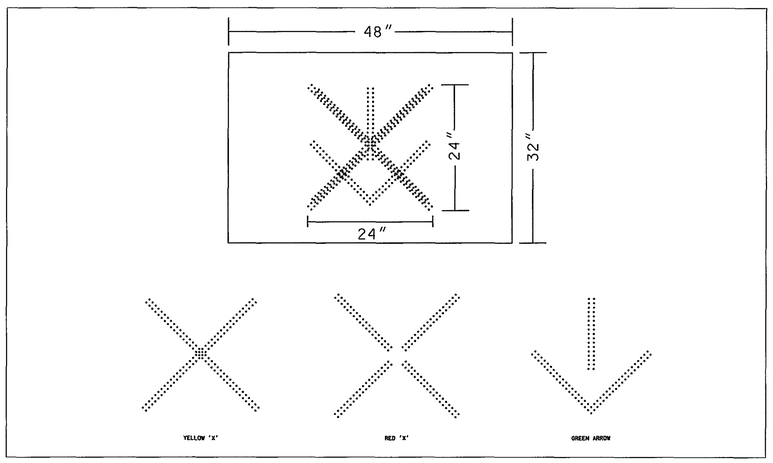
TYPE 1 LCS
18" CHARACTERS
RED X ONLY



TYPE 2 LCS
18" CHARACTERS
RED X, YELLOW X, GREEN ARROW



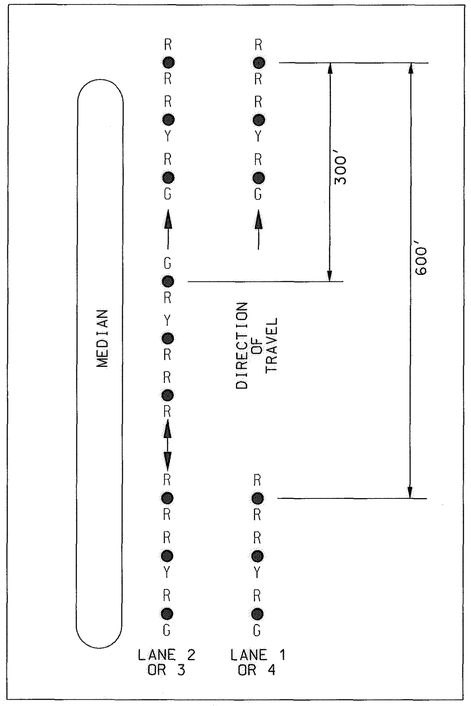
TYPE 4 LCS
24" CHARACTERS
RED X ONLY



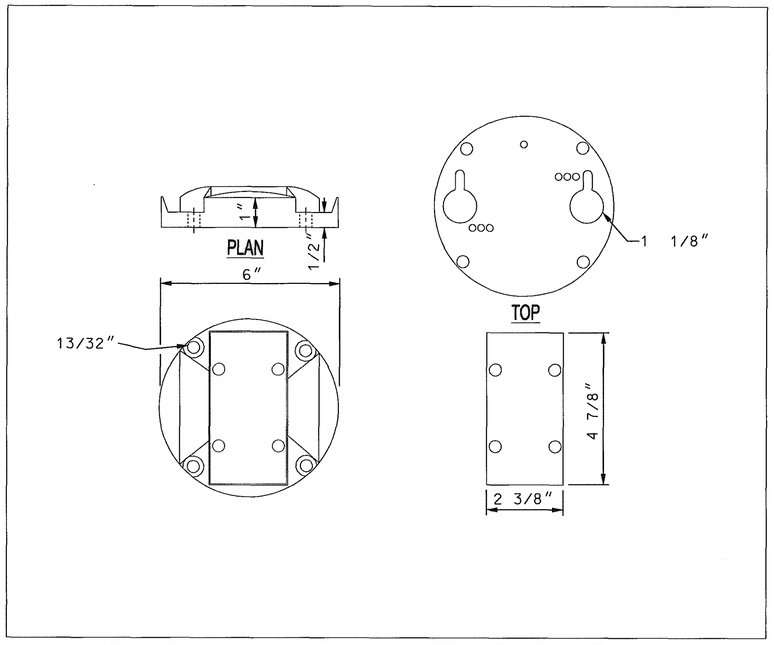
TYPE 5 LCS
24" CHARACTERS
RED X, YELLOW X, GREEN ARROW

NOTES:

1. THE LED'S SHALL BE ARRANGED IN A MANNER TO FORM AN OUTLINE OF THE SYMBOLS AND SHALL BE DISTRIBUTED EVENLY. THE MAXIMUM DISTANCE BETWEEN CONSECUTIVE LED'S SHALL BE 0.5 INCHES AND SHALL NOT VARY MORE THAN 10%.
2. SIGN DIMENSIONS SHOWN ON THIS SHEET ARE NOMINAL.
3. TYPE 1 AND 2 LCS DIMENSIONS SHOWN ARE THE SAME AS THE EXISTING LCS. CONTRACTOR SHALL FIELD VERIFY THAT PROPOSED TYPE 1 AND 2 LCS CAN BE INSTALLED ON EXISTING MOUTNING FRAMES, AS SHOWN ON THE REPLACEMENT SHEETS.
4. ALL LCS'S SHALL BE EQUIPPED WITH SUNSHIELDS.
5. CONTRACTOR MUST VERIFY DIMENSIONS AND PROPERTIES OF EXISTING COLORED TRAFFIC DOT (PUCK) HOUSING.
6. ALL EXISTING COLORED TRAFFIC DOTS (PUCKS) SHALL BE REMOVED AND REPLACED. CONTRACTOR SHALL SUBMIT DETAILS AND SAMPLE REPLACEMENT PUCKS TO THE AUTHORITY FOR APPROVAL PRIOR TO INITIATING ANY ACTION RELATED TO PUCK REPLACEMENT.



TYPICAL
COLORED TRAFFIC DOTS (PUCK)
LAYOUT



EXISTING COLORED TRAFFIC DOTS (PUCK)
HOUSING DETAIL (SEE NOTE 4 AND 5)

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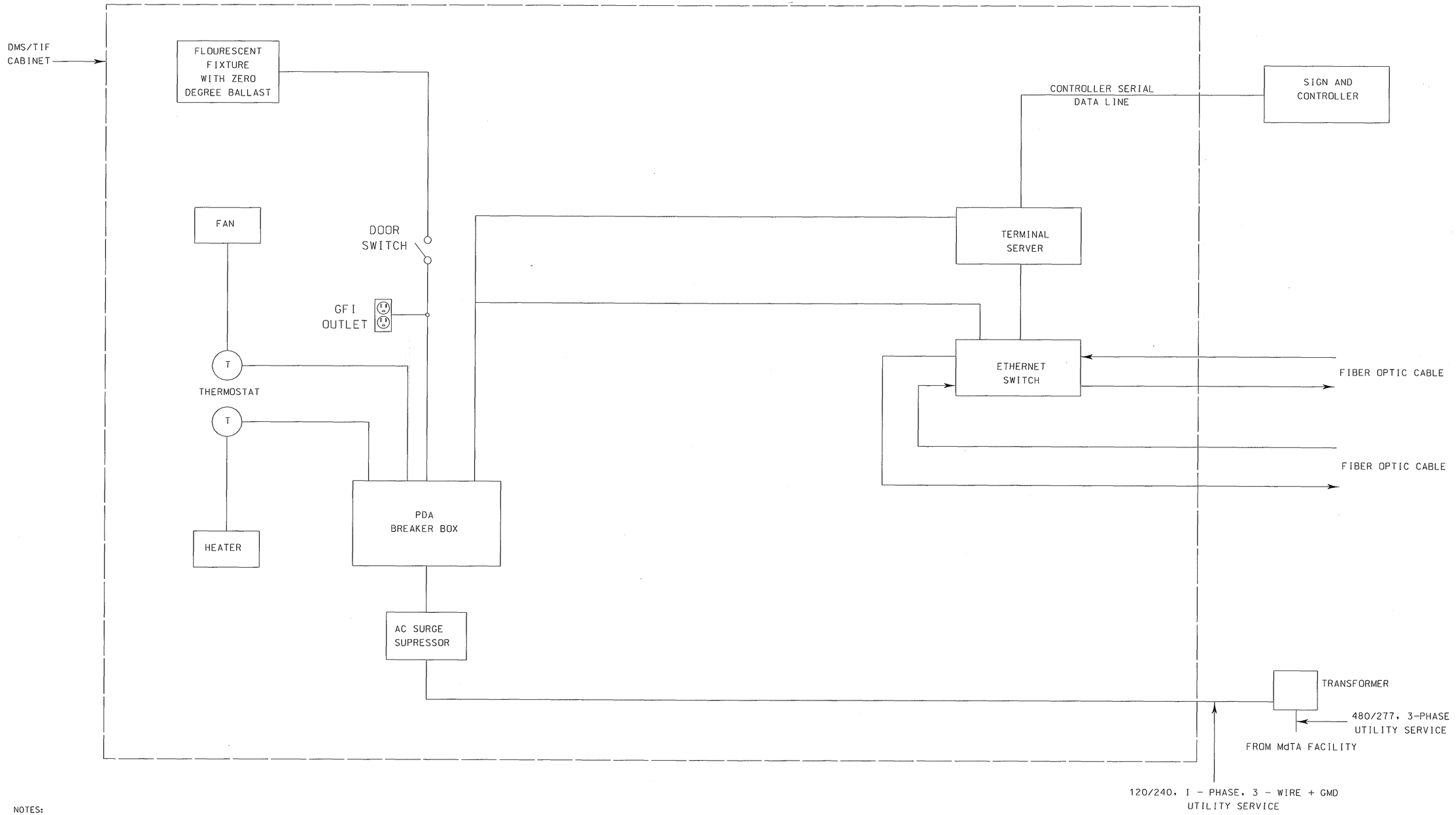
Maryland Transportation Authority
ENGINEERING DIVISION

ADDENDUMS & REVISIONS			
NO.	DESCRIPTION	BY	DATE

BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE
DISPLAY LAYOUT FOR LCS AND COLORED TRAFFIC DOTS (PUCKS) DETAIL

DESIGNED BY WJH	DRAWN BY	CHECKED BY JWH	
CONST. REVIEW BY	DATE JANUARY, 2010	SCALE NOT TO SCALE	

CONTRACT NO. HT-705-000-002R
DRAWING NO. DPL-01
SHEET NO. 20 OF 47



NOTES:

1. THE CONTRACTOR SHALL CONTACT THE SIGN MANUFACTURER FOR INFORMATION ON DMS WIRING (DMS TERMINATION DIAGRAM) PRIOR TO SIGN INSTALLATION.
2. THIS SHEET IS PROVIDED TO CONTRACTOR FOR INFORMATION PURPOSES ONLY.

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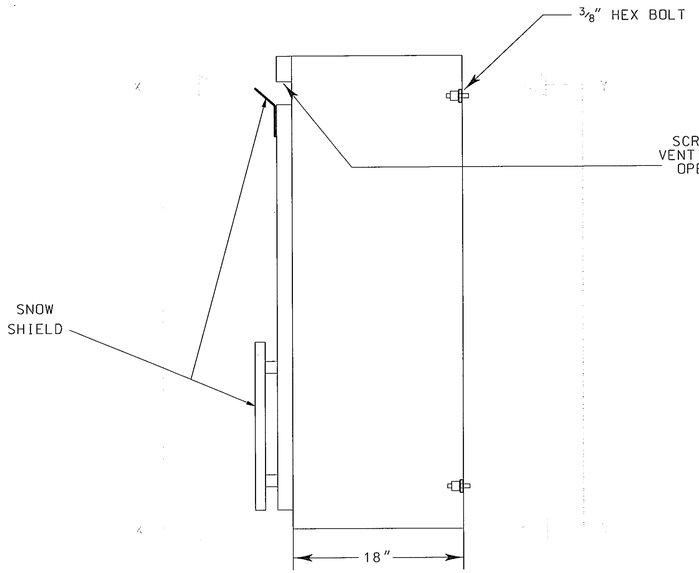
Maryland Transportation Authority
ENGINEERING DIVISION

ADDENDUMS & REVISIONS			
NO.	DESCRIPTION	BY	DATE

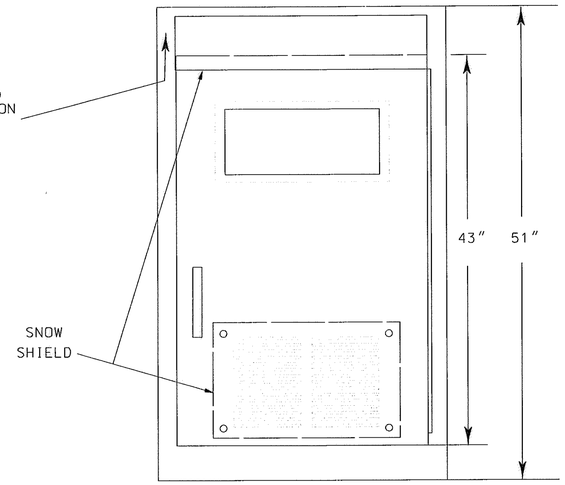
BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE

DMS/TIF CABINET SINGLE LINE DIAGRAM

DESIGNED BY WJH	DRAWN BY	CHECKED BY JWH	CONTRACT NO. HT-705-000-002R
CONST. REVIEW BY	DATE JANUARY, 2010	SCALE NOT TO SCALE	DRAWING NO. SLD-01
			SHEET NO. 21 OF 47

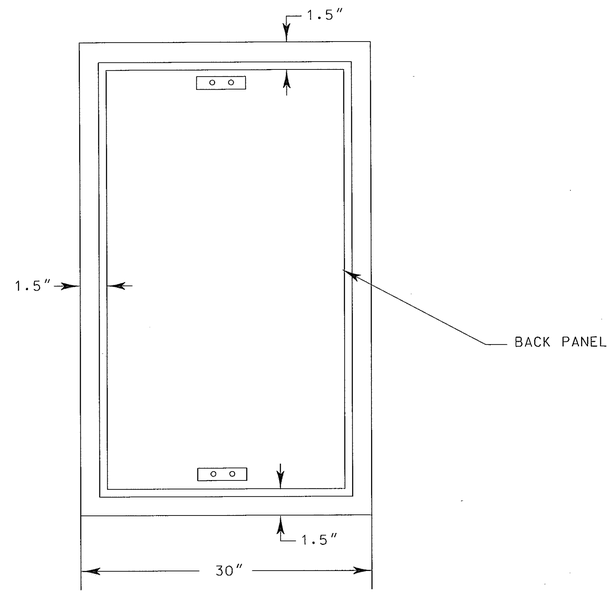


SIDE VIEW



SECTION X - X

FRONT VIEW

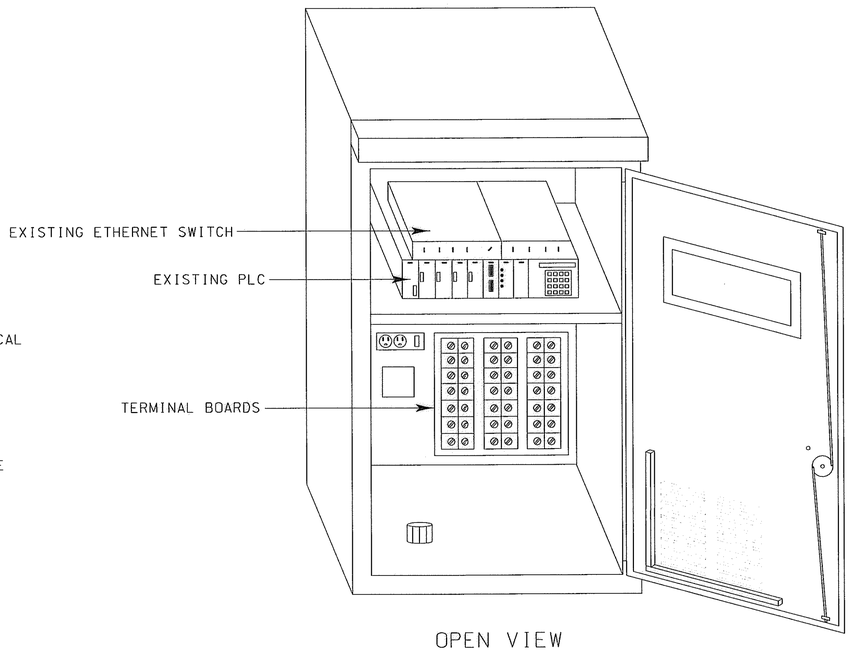


SECTION Y - Y

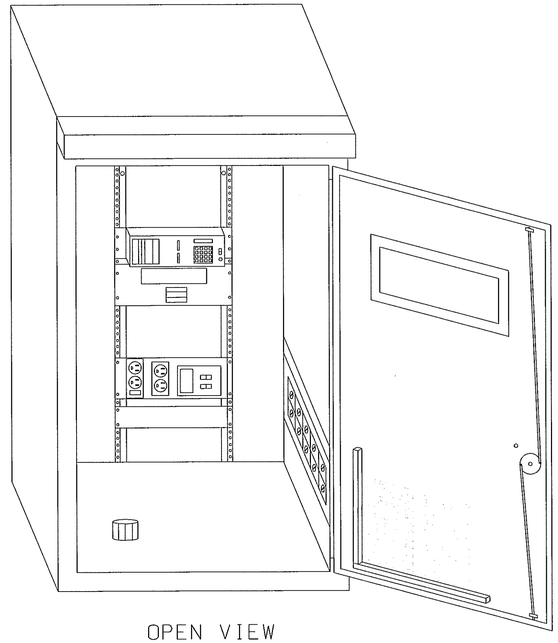
BACK VIEW

NOTES:

1. THE CONTRACTOR SHALL REFURBISH THE EXISTING CABINETS.
2 ALL CABINET SHELVES, IF REPLACED, SHALL BE ADJUSTABLE FOR VERTICAL SPACING AND SHALL BE REMOVABLE.
3. CONTROLLER UNITS, PLUG-MOUNTED EQUIPMENT, SHELF-MOUNTED EQUIPMENT AND WALL-MOUNTED EQUIPMENT SHALL BE LOCATED TO PERMIT ITS SAFE AND EASY REMOVAL OR REPLACEMENT WITHOUT REMOVING ANY OTHER PIECE OF EQUIPMENT.
4. TWO POSSIBLE CABINET CONFIGURATIONS ARE SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. INTERNAL CABINET CONFIGURATION MAY NOT REFLECT THE INSTALLED LAYOUT.
5. THE CONTRACTOR SHALL REPLACE ALL WIRING FROM TRANSFORMER TO CABINET AND FROM CABINET TO SIGN.
6. THE CONTRACTOR SHALL USE GALVANIZED RMC OR PVC-COATED RMC AS DIRECTED BY AUTHORITY.



OPEN VIEW
CONFIGURATION A



OPEN VIEW
CONFIGURATION B

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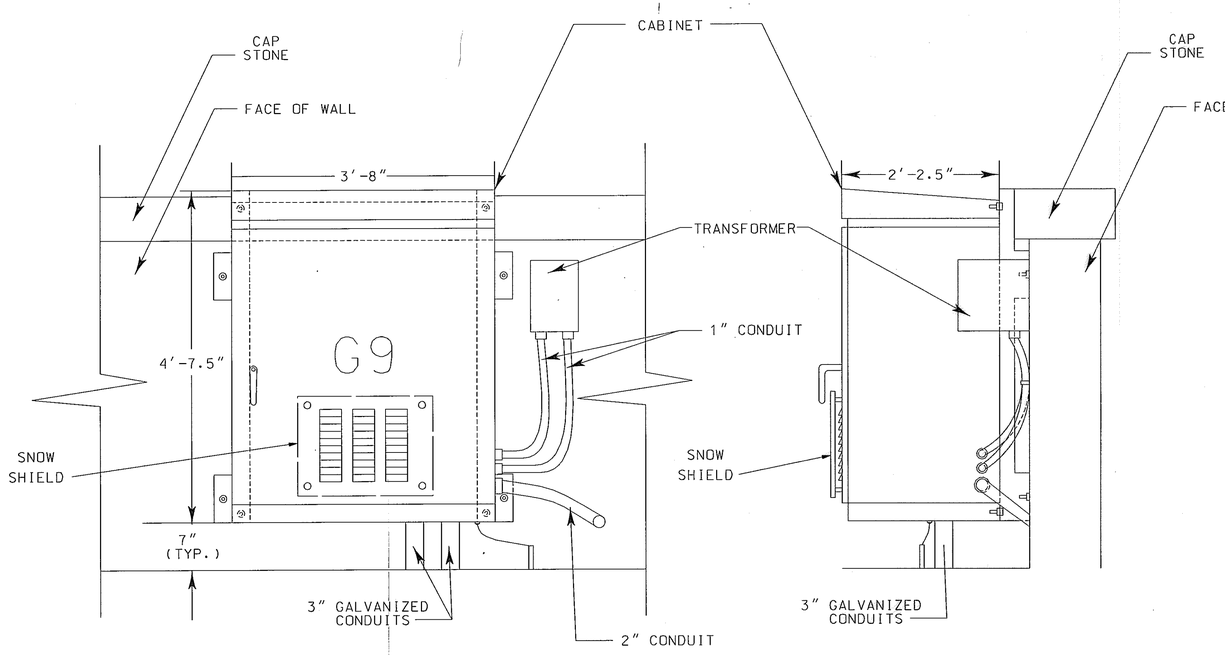
ADDENDUMS & REVISIONS			
NO.	DESCRIPTION	BY	DATE

BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE
TYPICAL FIELD EQUIPMENT CABINET DETAILS

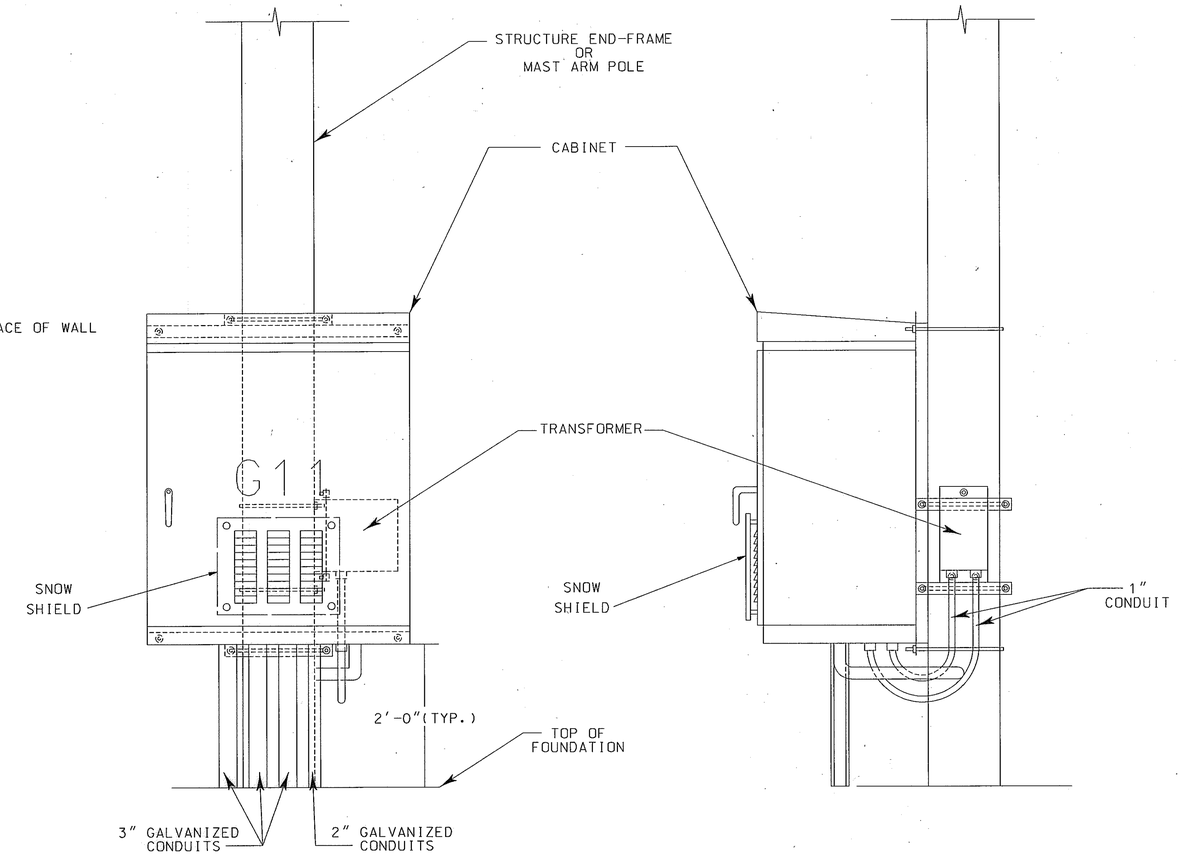
DESIGNED BY WJH	DRAWN BY	CHECKED BY JWH	CONTRACT NO. HT-705-000-002R
CONST. REVIEW BY	DATE JANUARY, 2010	SCALE NOT TO SCALE	DRAWING NO. CAB-01
			SHEET NO. 22 OF 47



FRONT VIEW

SIDE VIEW

EXISTING WALL-MOUNT LOCATIONS (TYP.)



FRONT VIEW

SIDE VIEW

EXISTING POLE-MOUNT LOCATIONS (TYP.)

NOTES:

1. DETAILS ARE SHOWN FOR INFORMATION PUSPOSES ONLY.
2. THE CONTRACTOR SHALL REFURBISH EXISTING CABINETS TO "LIKE-NEW" CONDITION AS NOTED IN SPECIAL PROVISIONS AND AS DIRECTED BY THE AUTHORITY.
3. THE CONTRACTOR SHALL USE GALVANIZED RMC OR PVC-COATED RMC AS DIRECTED BY AUTHORITY.
4. CONTRACTOR SHALL REPLACE ALL WIRING FROM CABINET TO SIGN AND SIGN TO TRANSFORMER.
5. SNOW SHIELDS ON CABINETS AT EXISTING LOCATIONS G-12 AND G-13 SHALL BE MAINTAINED.

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ADDENDUMS & REVISIONS			
NO.	DESCRIPTION	BY	DATE

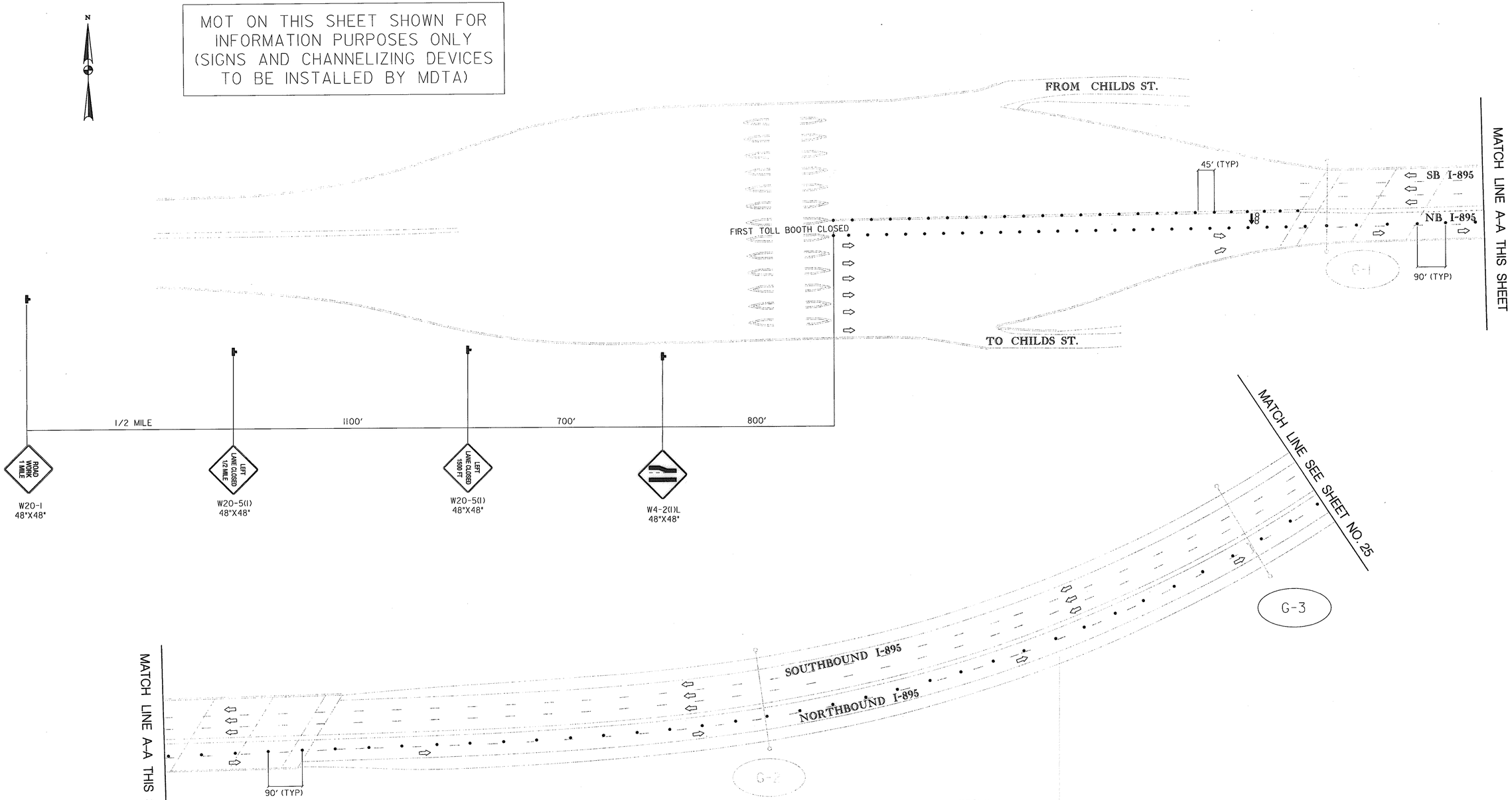
BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE

TYPICAL DMS/LCS CABINET INSTALLATION DETAILS

DESIGNED BY WJH	DRAWN BY	CHECKED BY JWH	
CONST. REVIEW BY	DATE JANUARY, 2010	SCALE NOT TO SCALE	

CONTRACT NO. HT-705-000-002R
DRAWING NO. CAB-02
SHEET NO. 23 OF 47

MOT ON THIS SHEET SHOWN FOR INFORMATION PURPOSES ONLY (SIGNS AND CHANNELIZING DEVICES TO BE INSTALLED BY MDTA)



NOTES:

1. AT A MINIMUM, THE FOLLOWING MSHA TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS (TTCTA) SHALL BE USED FOR THE WORK SHOWN ON THIS PLAN: MD 104.00-01 - MD 104.00-18, MD 104.04-11, AND MD 104.05-19.
2. SEE SHEETS 5-11 FOR PROPOSED DEMOLITION AND REPLACEMENT SCHEDULE.
3. SEE SHEET 46 FOR MOT PHASING SCHEDULE.

MAINTENANCE OF TRAFFIC LEGEND

- WORK THIS PHASE
- TRAFFIC FLOW ARROW
- TYPE III BARRICADE
- EXISTING MEDIAN TRAFFIC BARRIER
- CHANNELIZING DEVICES
- ARROW PANEL
- SIGN SUPPORT

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ADDENDUMS & REVISIONS			
NO.	DESCRIPTION	BY	DATE

BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE

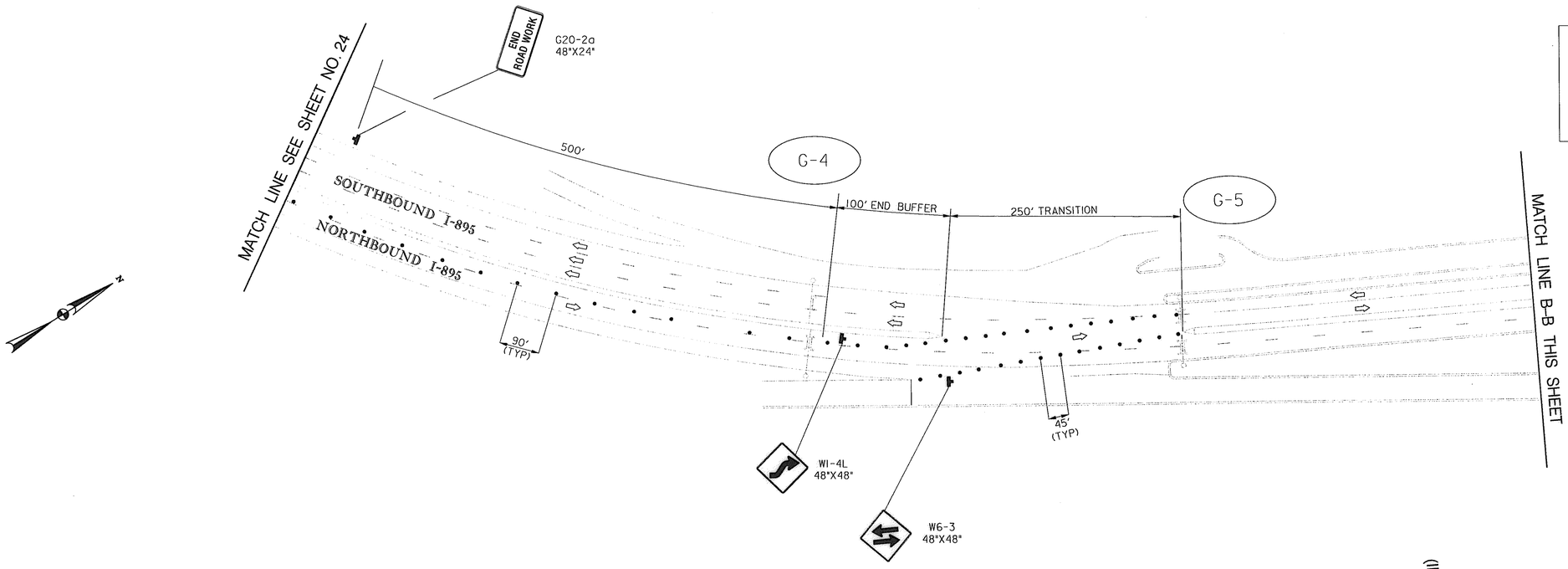
BHT MOT - PHASE I

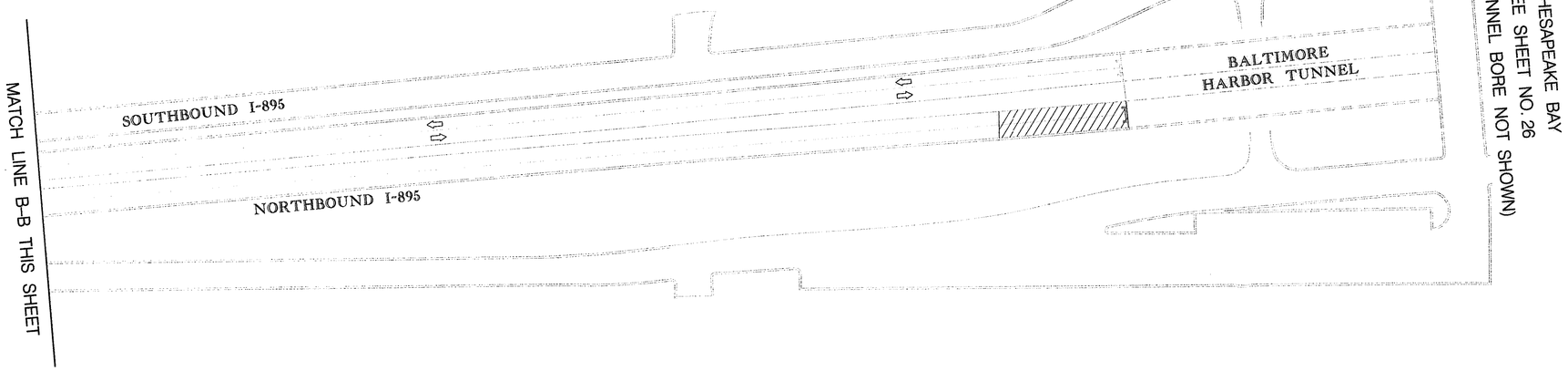
CONTRACT NO. HT-705-000-002R

DRAWING NO. MOT-01

DESIGNED BY JRL	DRAWN BY RLO	CHECKED BY AJM	SHEET NO. 24 OF 47
CONST. REVIEW BY	DATE JANUARY, 2010	SCALE NOT TO SCALE	

MOT ON THIS SHEET SHOWN FOR INFORMATION PURPOSES ONLY (SIGNS AND CHANNELIZING DEVICES TO BE INSTALLED BY MDTA)





WORK AREA CONTINUES INSIDE TUNNEL BORE (NOT SHOWN). MOT INSIDE TUNNEL BORE TO BE INSTALLED BY MDTA.

NOTES:

1. AT A MINIMUM, THE FOLLOWING MSHA TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS (TTCTA) SHALL BE USED FOR THE WORK SHOWN ON THIS PLAN: MD 104.00-01 - MD 104.00-18, AND MD 104.05-22.
2. SEE SHEETS 5-11 FOR PROPOSED DEMOLITION AND REPLACEMENT SCHEDULE.
3. SEE SHEET 46 FOR MOT PHASING SCHEDULE.

MAINTENANCE OF TRAFFIC LEGEND

- WORK THIS PHASE
- TRAFFIC FLOW ARROW
- TYPE III BARRICADE
- EXISTING MEDIAN TRAFFIC BARRIER
- CHANNELIZING DEVICES
- ARROW PANEL
- SIGN SUPPORT

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ADDENDUMS & REVISIONS

NO.	DESCRIPTION	BY	DATE

BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE

BHT MOT - PHASE I

DESIGNED BY JRL	DRAWN BY RLO	CHECKED BY AJM	
CONST. REVIEW BY	DATE JANUARY, 2010	SCALE NOT TO SCALE	

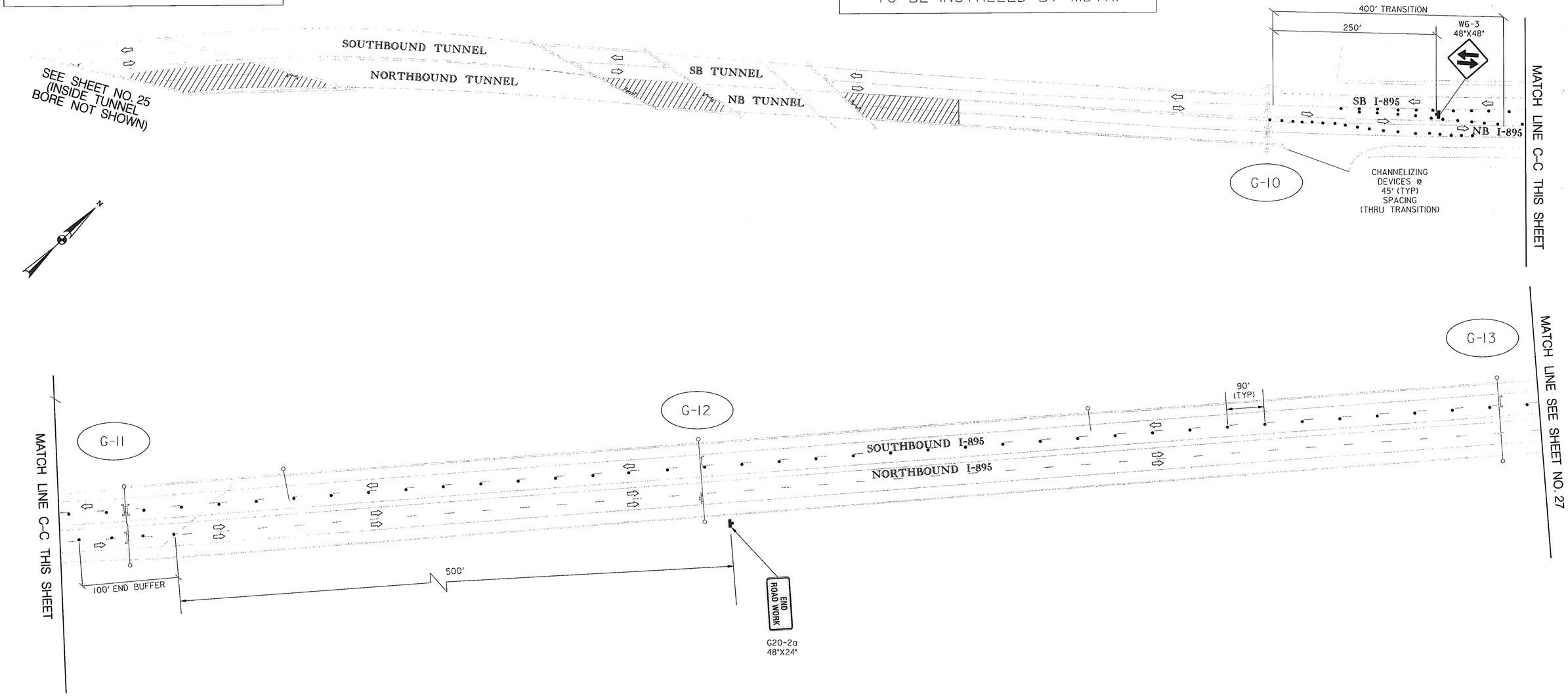
CONTRACT NO. HT-705-000-002R

DRAWING NO. MOT-02

SHEET NO. 25 OF 47

WORK AREA CONTINUES INSIDE TUNNEL BORE (NOT SHOWN). MOT INSIDE TUNNEL BORE TO BE INSTALLED BY MDTA.

MOT ON THIS SHEET SHOWN FOR INFORMATION PURPOSES ONLY (SIGNS AND CHANNELIZING DEVICES TO BE INSTALLED BY MDTA)



NOTES:

1. AT A MINIMUM, THE FOLLOWING MSHA TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS (TTCTA) SHALL BE USED FOR THE WORK SHOWN ON THIS PLAN: MD 104.00-01 - MD 104.00-18, AND MD 104.05-22.
2. SEE SHEETS 5-11 FOR PROPOSED DEMOLITION AND REPLACEMENT SCHEDULE.
3. SEE SHEET 46 FOR MOT PHASING SCHEDULE.
4. 15 MINUTE MAXIMUM CLOSURES FOR STRUCTURE LIFTS.

MAINTENANCE OF TRAFFIC LEGEND

- WORK THIS PHASE
- TRAFFIC FLOW ARROW
- TYPE III BARRICADE
- EXISTING MEDIAN TRAFFIC BARRIER
- CHANNELIZING DEVICES
- ARROW PANEL
- SIGN SUPPORT

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ADDENDUMS & REVISIONS			
NO.	DESCRIPTION	BY	DATE

BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE

BHT MOT - PHASE I

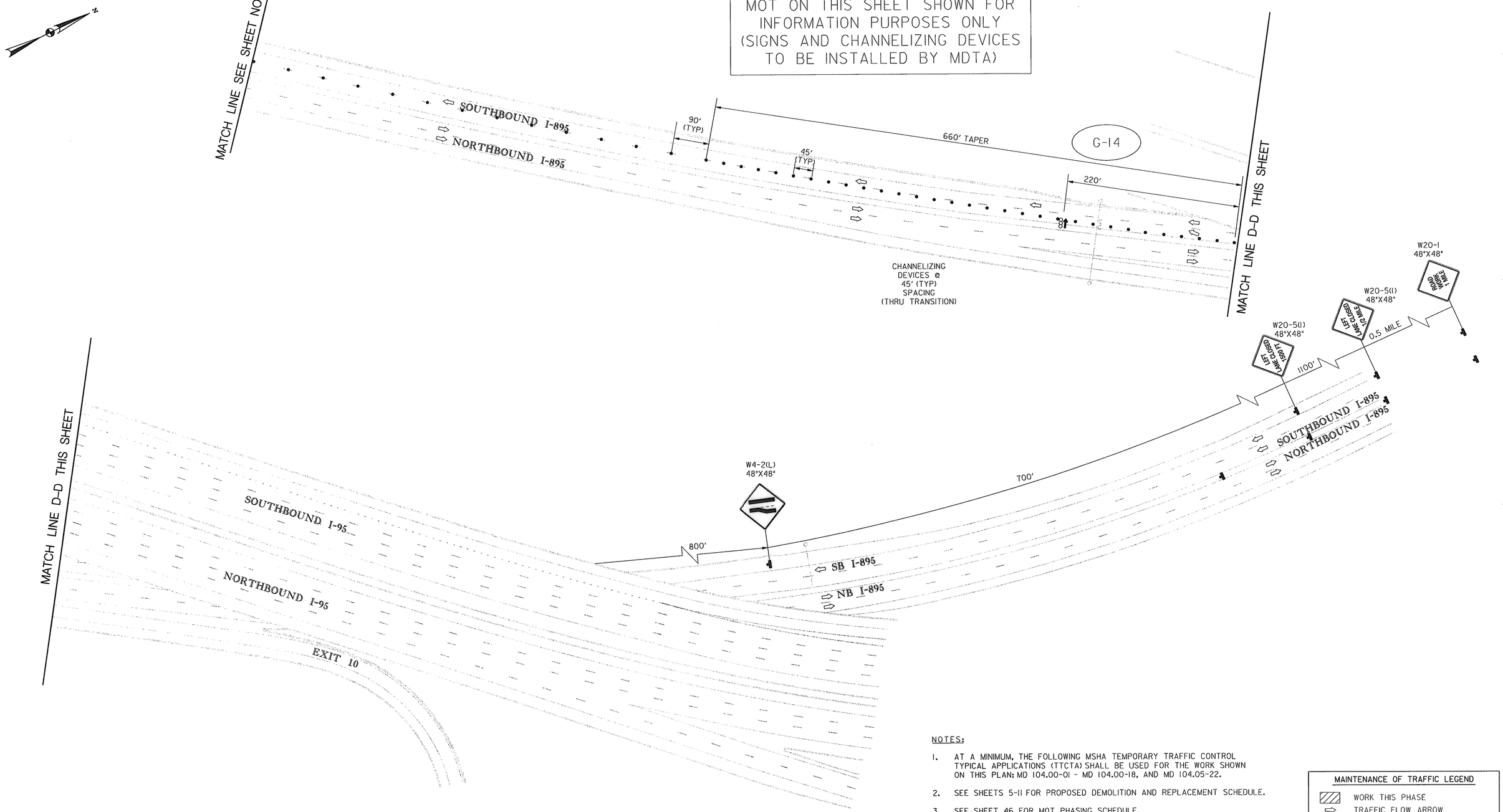
DESIGNED BY JRL	DRAWN BY RLO	CHECKED BY AJM	
CONST. REVIEW BY	DATE JANUARY, 2010	SCALE NOT TO SCALE	

CONTRACT NO. HT-705-000-002R

DRAWING NO. MOT-03

SHEET NO. 26 OF 47

MOT ON THIS SHEET SHOWN FOR INFORMATION PURPOSES ONLY (SIGNS AND CHANNELIZING DEVICES TO BE INSTALLED BY MDTA)



NOTES:

1. AT A MINIMUM, THE FOLLOWING MSHA TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS (TTCTA) SHALL BE USED FOR THE WORK SHOWN ON THIS PLAN: MD 104.00-01 - MD 104.00-18, AND MD 104.05-22.
2. SEE SHEETS 5-11 FOR PROPOSED DEMOLITION AND REPLACEMENT SCHEDULE.
3. SEE SHEET 46 FOR MOT PHASING SCHEDULE.
4. CONTRACTOR IS RESPONSIBLE FOR RIGHT AND LEFT LANE CLOSURES WITH DRAGS.
5. MAXIMUM WIDTH OF BUCKET TRUCK IS 11' FOR WORK COMPLETED WITHIN RIGHT OR LEFT LANE CLOSURES.

MAINTENANCE OF TRAFFIC LEGEND

- WORK THIS PHASE
- TRAFFIC FLOW ARROW
- TYPE III BARRICADE
- EXISTING MEDIAN TRAFFIC BARRIER
- CHANNELIZING DEVICES
- ARROW PANEL
- SIGN SUPPORT

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ADDENDUMS & REVISIONS

NO.	DESCRIPTION	BY	DATE

BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE

BHT MOT - PHASE I

CONTRACT NO. HT-705-000-002R

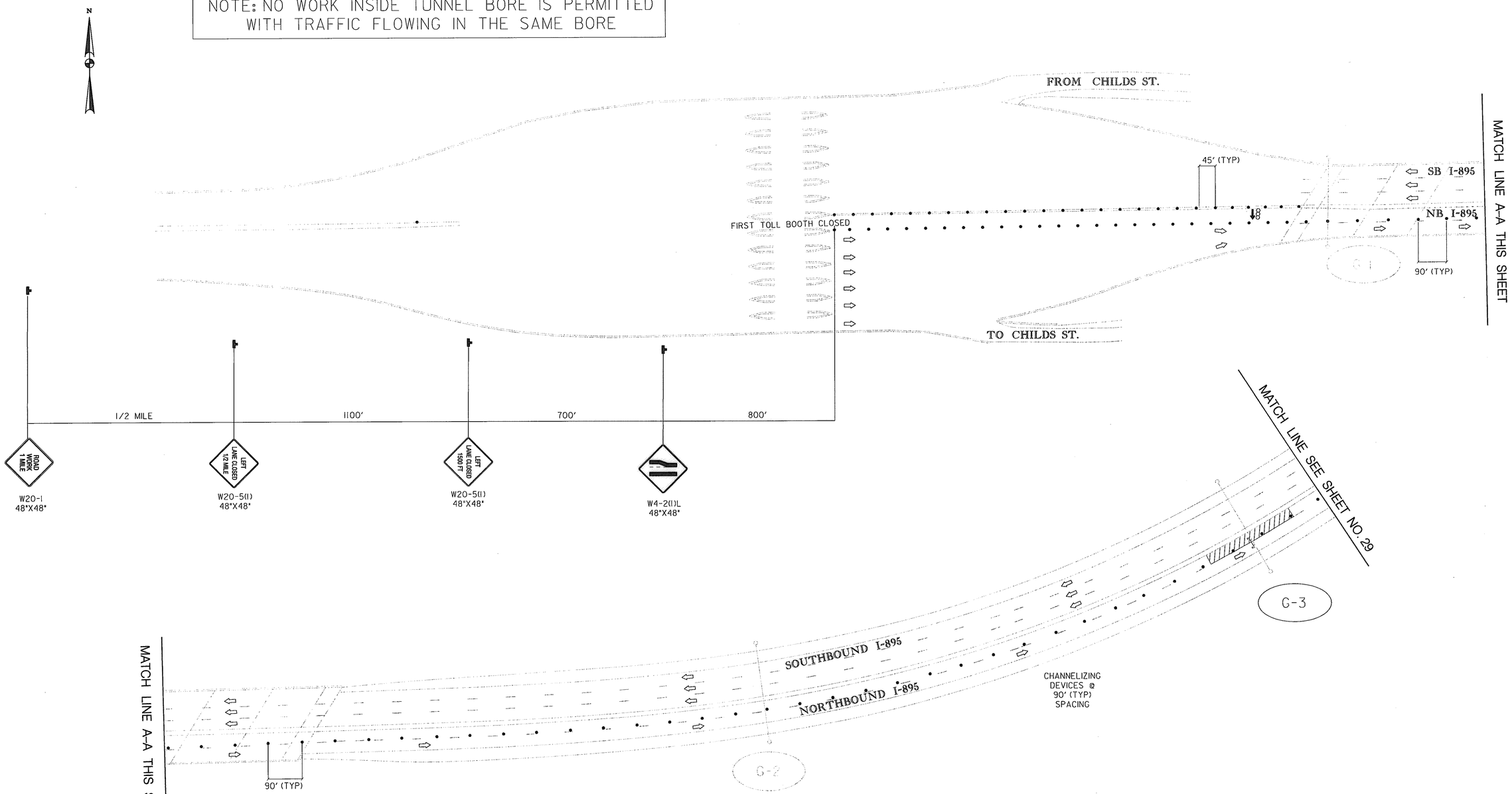
DRAWING NO. MOT-04

DESIGNED BY JRL | DRAWN BY RLQ | CHECKED BY AJM

CONST. REVIEW BY _____ | DATE JANUARY, 2010 | SCALE NOT TO SCALE

SHEET NO. 27 OF 47

NOTE: NO WORK INSIDE TUNNEL BORE IS PERMITTED WITH TRAFFIC FLOWING IN THE SAME BORE



NOTES:

1. AT A MINIMUM, THE FOLLOWING MSHA TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS (TTCTA) SHALL BE USED FOR THE WORK SHOWN ON THIS PLAN: MD 104.00-01 - MD 104.00-18, MD 104.04-11, AND MD 104.05-19.
2. SEE SHEETS 5-11 FOR PROPOSED DEMOLITION AND REPLACEMENT SCHEDULE.
3. SEE SHEET 46 FOR MOT PHASING SCHEDULE.
4. CONTRACTOR IS RESPONSIBLE FOR RIGHT AND LEFT LANE CLOSURES WITH DRAGS.
5. MAXIMUM WIDTH OF BUCKET TRUCK IS 11' FOR WORK COMPLETED WITHIN RIGHT OR LEFT LANE CLOSURES.

MAINTENANCE OF TRAFFIC LEGEND

- WORK THIS PHASE
- TRAFFIC FLOW ARROW
- TYPE III BARRICADE
- EXISTING MEDIAN TRAFFIC BARRIER
- CHANNELIZING DEVICES
- ARROW PANEL
- SIGN SUPPORT

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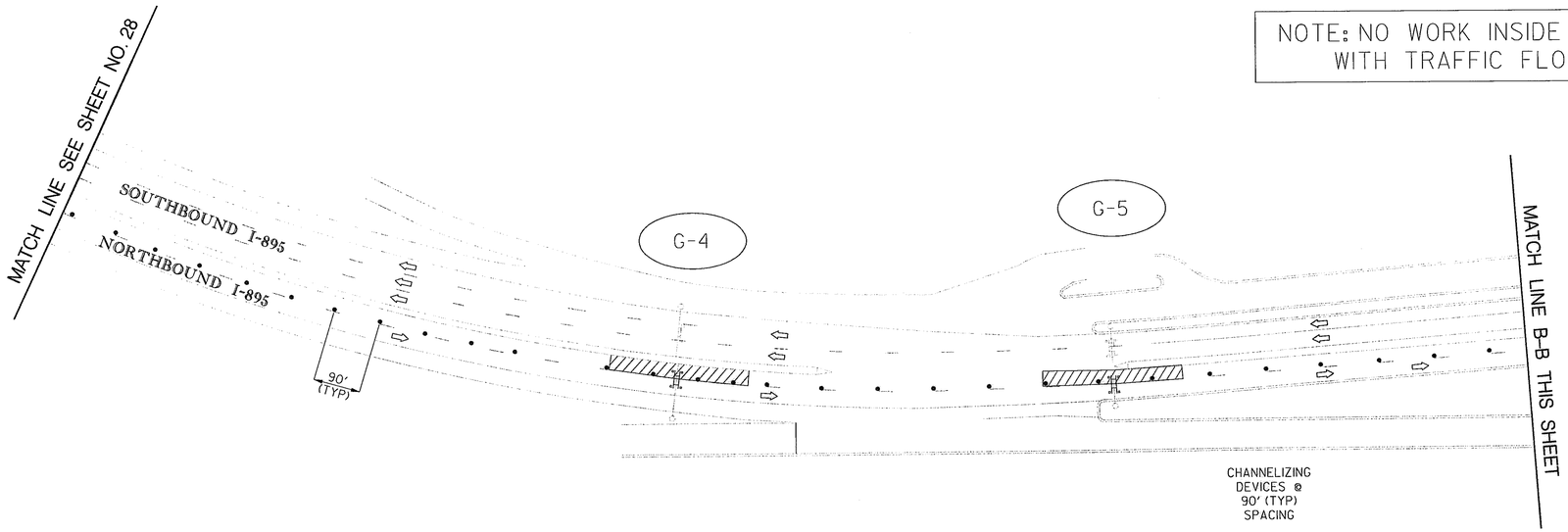
ADDENDUMS & REVISIONS			
NO.	DESCRIPTION	BY	DATE

BALTIMORE HARBOR TUNNEL LANE CONTROL
SIGNAL AND DYNAMIC MESSAGE SIGN
SYSTEM UPGRADE
BHT MOT - PHASE IA

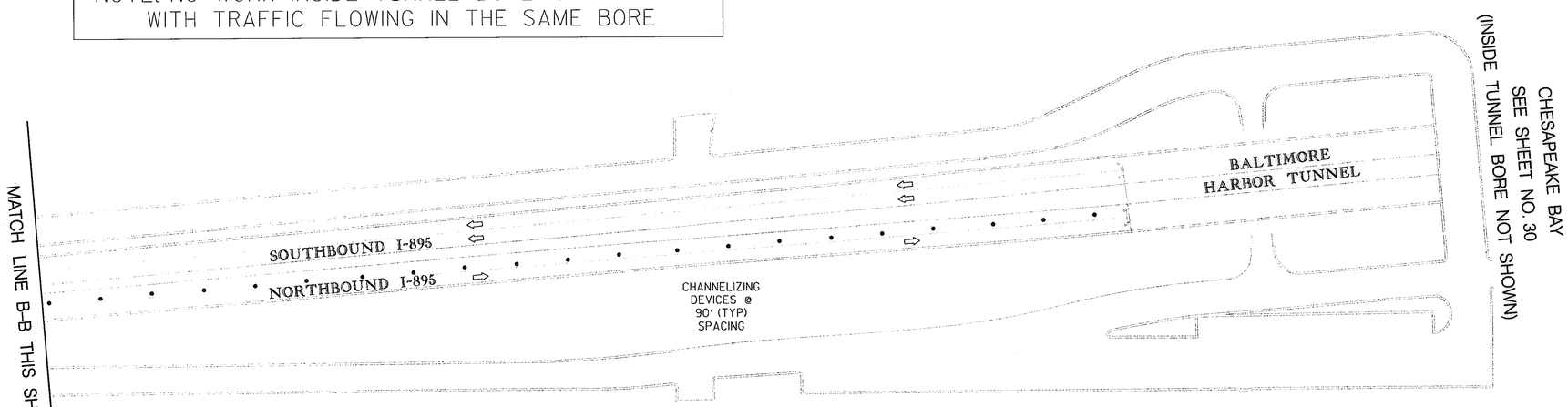
DESIGNED BY JRL	DRAWN BY RLO	CHECKED BY AJM	
CONST. REVIEW BY	DATE JANUARY, 2010	SCALE NOT TO SCALE	

CONTRACT NO. HT-705-000-002R
DRAWING NO. MOT-05
SHEET NO. 28 OF 47

NOTE: NO WORK INSIDE TUNNEL BORE IS PERMITTED WITH TRAFFIC FLOWING IN THE SAME BORE



NOTE: NO WORK INSIDE TUNNEL BORE IS PERMITTED WITH TRAFFIC FLOWING IN THE SAME BORE



NOTES:

1. AT A MINIMUM, THE FOLLOWING MSHA TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS (TTCTA) SHALL BE USED FOR THE WORK SHOWN ON THIS PLAN: MD 104.00-01 - MD 104.00-18, AND MD 104.04-11.
2. SEE SHEETS 5-11 FOR PROPOSED DEMOLITION AND REPLACEMENT SCHEDULE.
3. SEE SHEET 46 FOR MOT PHASING SCHEDULE.
4. CONTRACTOR IS RESPONSIBLE FOR RIGHT AND LEFT LANE CLOSURES WITH DRAGS.
5. MAXIMUM WIDTH OF BUCKET TRUCK IS 11' FOR WORK COMPLETED WITHIN RIGHT OR LEFT LANE CLOSURES.
6. CONTRACTOR SHALL INSTALL CONES INSIDE TUNNEL BORE SET BACK 3' FROM CENTER LINE.
7. CONES INSIDE TUNNEL BORE MUST BE REMOVED BY CONTRACTOR EACH DAY AND CANNOT BE STORED INSIDE TUNNEL.
8. CONES INSIDE TUNNEL MUST BE MONITORED BY CONTRACTOR AT ALL TIMES.

MAINTENANCE OF TRAFFIC LEGEND

- WORK THIS PHASE
- TRAFFIC FLOW ARROW
- TYPE III BARRICADE
- EXISTING MEDIAN TRAFFIC BARRIER
- CHANNELIZING DEVICES
- ARROW PANEL
- SIGN SUPPORT

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ADDENDUMS & REVISIONS

NO.	DESCRIPTION	BY	DATE

BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE

BHT MOT - PHASE IA

DESIGNED BY JRL	DRAWN BY RLO	CHECKED BY AJM	
CONST. REVIEW BY	DATE JANUARY, 2010	SCALE NOT TO SCALE	

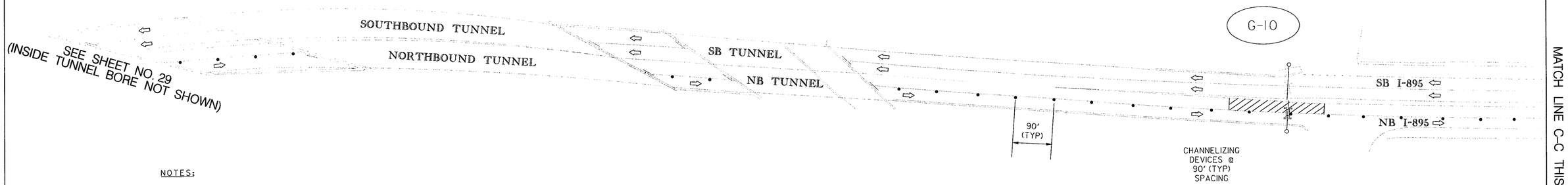
CONTRACT NO. HT-705-000-002R

DRAWING NO. MOT-06

SHEET NO. 29 OF 47

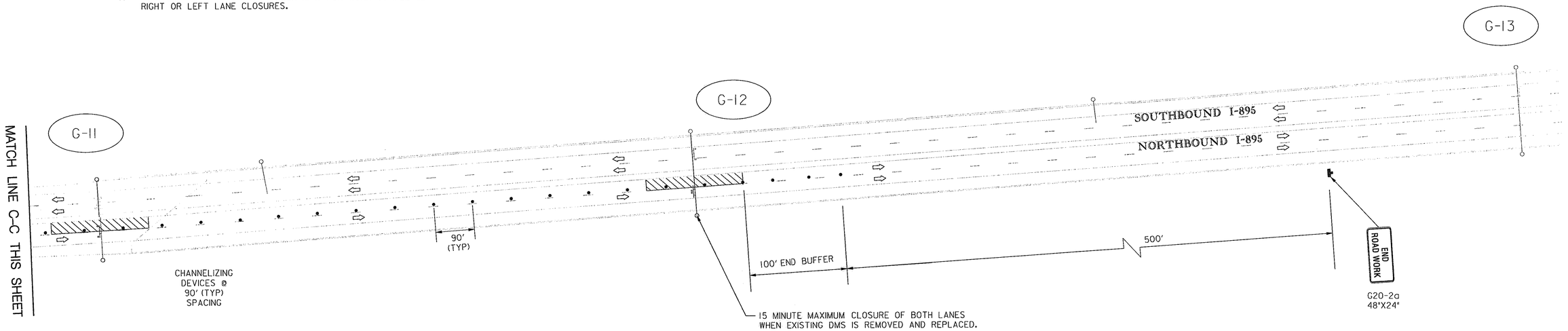
N

NOTE: NO WORK INSIDE TUNNEL BORE IS PERMITTED WITH TRAFFIC FLOWING IN THE SAME BORE



NOTES:

1. AT A MINIMUM, THE FOLLOWING MSHA TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS (TTCTA) SHALL BE USED FOR THE WORK SHOWN ON THIS PLAN: MD 104.00-01 - MD 104.00-18, AND MD 104.04-11.
2. SEE SHEETS 5-11 FOR PROPOSED DEMOLITION AND REPLACEMENT SCHEDULE.
3. SEE SHEET 46 FOR MOT PHASING SCHEDULE.
4. CONTRACTOR IS RESPONSIBLE FOR RIGHT AND LEFT LANE CLOSURES WITH DRAGS.
5. MAXIMUM WIDTH OF BUCKET TRUCK IS 11' FOR WORK COMPLETED WITHIN RIGHT OR LEFT LANE CLOSURES.
6. INSTALL CONES INSIDE TUNNEL BORE SET BACK 3' FROM CENTER LINE.
7. CONES INSIDE TUNNEL BORE MUST BE REMOVED EACH DAY AND CANNOT BE STORED INSIDE TUNNEL.
8. CONES INSIDE TUNNEL MUST BE MONITORED AT ALL TIMES.
9. MAXIMUM WIDTH OF BUCKET TRUCK IS 11' FOR WORK COMPLETED WITHIN RIGHT OR LEFT LANE CLOSURES.



MAINTENANCE OF TRAFFIC LEGEND

- WORK THIS PHASE
- TRAFFIC FLOW ARROW
- TYPE III BARRICADE
- EXISTING MEDIAN TRAFFIC BARRIER
- CHANNELIZING DEVICES
- ARROW PANEL
- SIGN SUPPORT

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ADDENDUMS & REVISIONS			
NO.	DESCRIPTION	BY	DATE

BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE

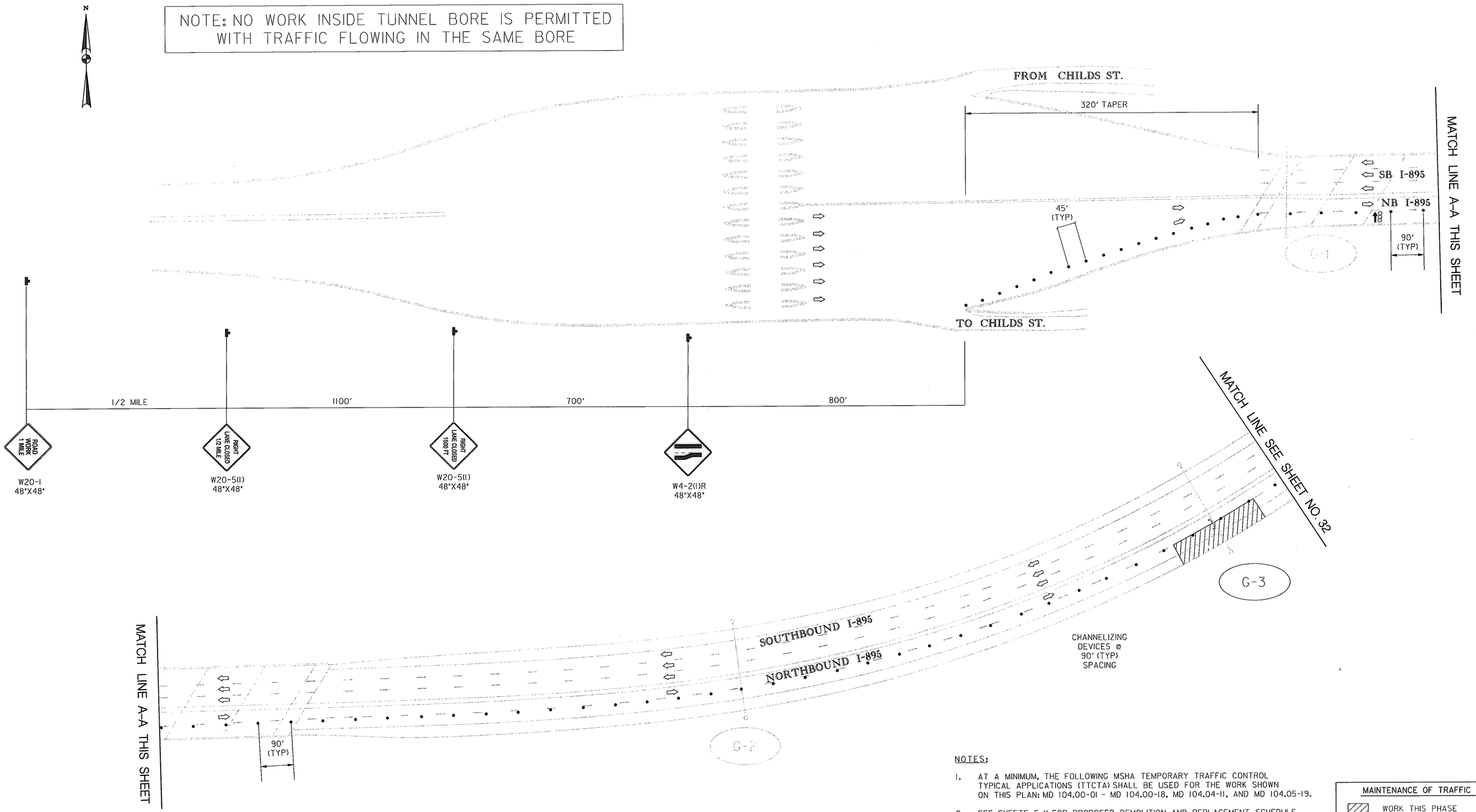
BHT MOT - PHASE IA

CONTRACT NO. HT-705-000-002R

DRAWING NO. MOT-07

DESIGNED BY JRL	DRAWN BY RLO	CHECKED BY AJM	SHEET NO.
CONST. REVIEW BY	DATE JANUARY, 2010	SCALE NOT TO SCALE	30 OF 47

NOTE: NO WORK INSIDE TUNNEL BORE IS PERMITTED WITH TRAFFIC FLOWING IN THE SAME BORE



NOTES:

1. AT A MINIMUM, THE FOLLOWING MSHA TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS (TTCTA) SHALL BE USED FOR THE WORK SHOWN ON THIS PLAN: MD 104.00-01 - MD 104.00-18, MD 104.04-11, AND MD 104.05-19.
2. SEE SHEETS 5-11 FOR PROPOSED DEMOLITION AND REPLACEMENT SCHEDULE.
3. SEE SHEET 46 FOR MOT PHASING SCHEDULE.
4. CONTRACTOR IS RESPONSIBLE FOR RIGHT AND LEFT LANE CLOSURES WITH DRAGS.
5. MAXIMUM WIDTH OF BUCKET TRUCK IS 11' FOR WORK COMPLETED WITHIN RIGHT OR LEFT LANE CLOSURES.

MAINTENANCE OF TRAFFIC LEGEND

- WORK THIS PHASE
- TRAFFIC FLOW ARROW
- TYPE III BARRICADE
- EXISTING MEDIAN TRAFFIC BARRIER
- CHANNELIZING DEVICES
- ARROW PANEL
- SIGN SUPPORT

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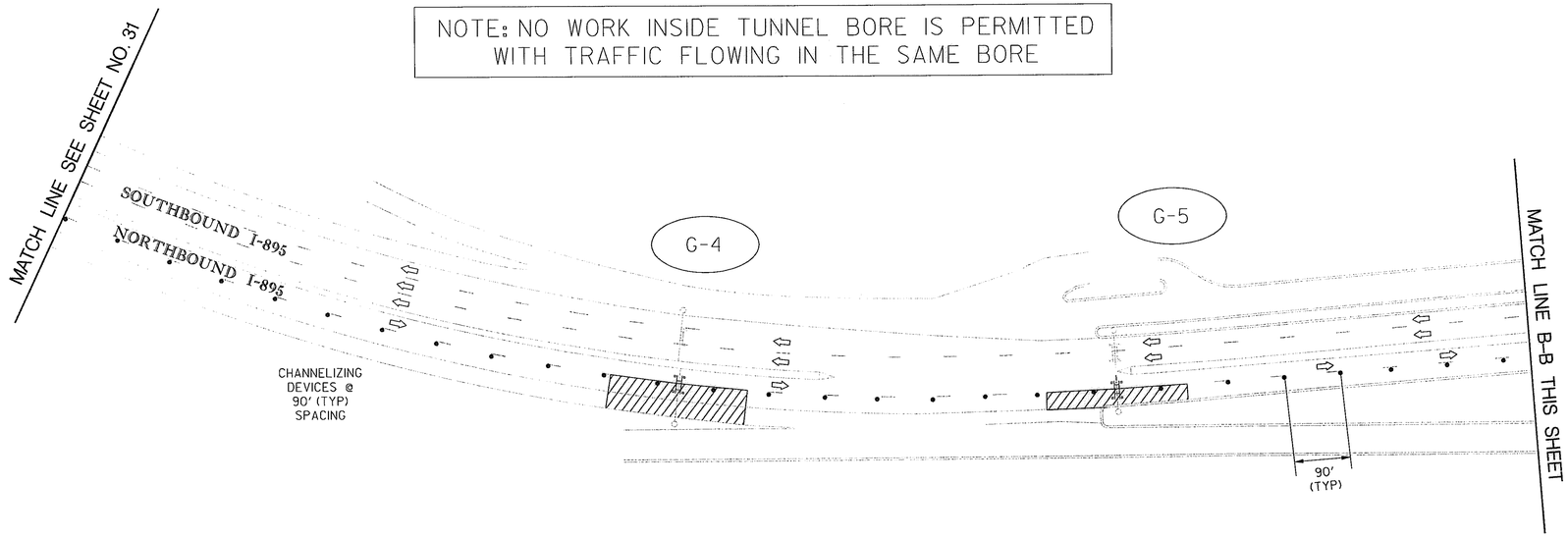
ADDENDUMS & REVISIONS			
NO.	DESCRIPTION	BY	DATE

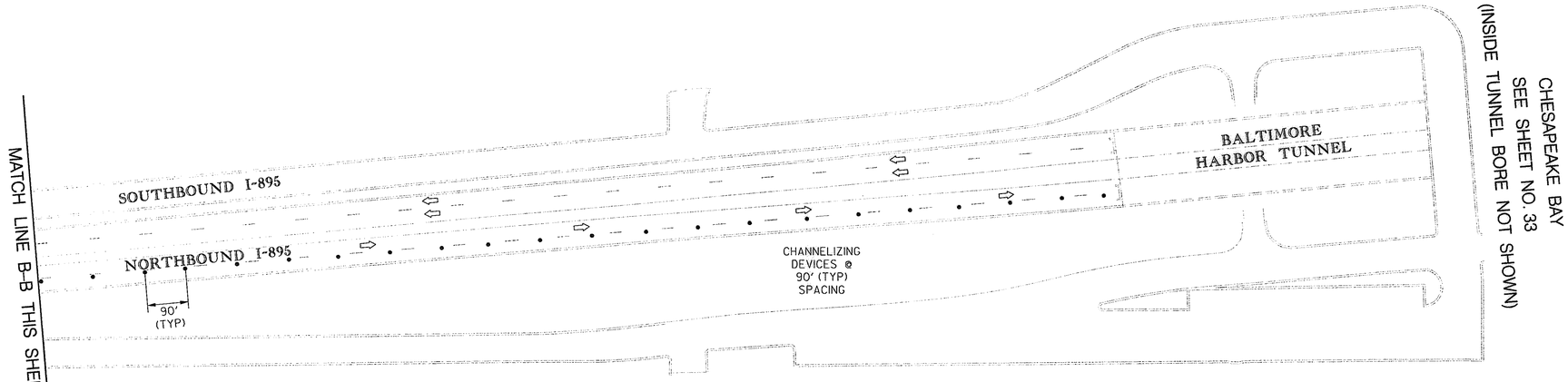
BALTIMORE HARBOR TUNNEL LANE CONTROL
SIGNAL AND DYNAMIC MESSAGE SIGN
SYSTEM UPGRADE
BHT MOT - PHASE 2

CONTRACT NO. HT-705-000-002R
DRAWING NO. MOT-08

DESIGNED BY JRL	DRAWN BY RLO	CHECKED BY AJM	SHEET NO. 31 OF 47
CONST. REVIEW BY	DATE JANUARY, 2010	SCALE NOT TO SCALE	

NOTE: NO WORK INSIDE TUNNEL BORE IS PERMITTED WITH TRAFFIC FLOWING IN THE SAME BORE





NOTE: NO WORK INSIDE TUNNEL BORE IS PERMITTED WITH TRAFFIC FLOWING IN THE SAME BORE

NOTES:

1. AT A MINIMUM, THE FOLLOWING MSHA TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS (TTCTA) SHALL BE USED FOR THE WORK SHOWN ON THIS PLAN: MD 104.00-01 - MD 104.00-18, AND MD 104.04-11.
2. SEE SHEETS 5-11 FOR PROPOSED DEMOLITION AND REPLACEMENT SCHEDULE.
3. SEE SHEET 46 FOR MOT PHASING SCHEDULE.
4. CONTRACTOR IS RESPONSIBLE FOR RIGHT AND LEFT LANE CLOSURES WITH DRAGS.
5. MAXIMUM WIDTH OF BUCKET TRUCK IS 11' FOR WORK COMPLETED WITHIN RIGHT OR LEFT LANE CLOSURES.
6. CONTRACTOR SHALL INSTALL CONES INSIDE TUNNEL BORE SET BACK 3' FROM CENTER LINE.
7. CONES INSIDE TUNNEL BORE MUST BE REMOVED EACH DAY BY CONTRACTOR AND CANNOT BE STORED INSIDE TUNNEL.
8. CONES INSIDE TUNNEL MUST BE MONITORED BY CONTRACTOR AT ALL TIMES.

MAINTENANCE OF TRAFFIC LEGEND

- WORK THIS PHASE
- TRAFFIC FLOW ARROW
- TYPE III BARRICADE
- EXISTING MEDIAN TRAFFIC BARRIER
- CHANNELIZING DEVICES
- ARROW PANEL
- SIGN SUPPORT

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ADDENDUMS & REVISIONS

NO.	DESCRIPTION	BY	DATE

BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE

BHT MOT - PHASE 2

CONTRACT NO. HT-705-000-002R

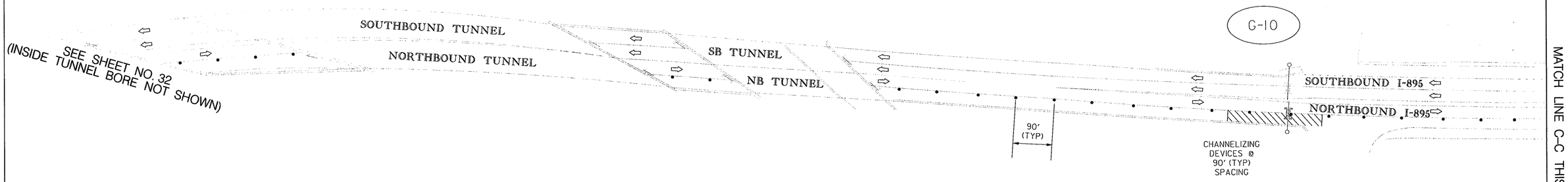
DRAWING NO. MOT-09

DESIGNED BY JRL | DRAWN BY RLO | CHECKED BY AJM

CONST. REVIEW BY | DATE JANUARY, 2010 | SCALE NOT TO SCALE

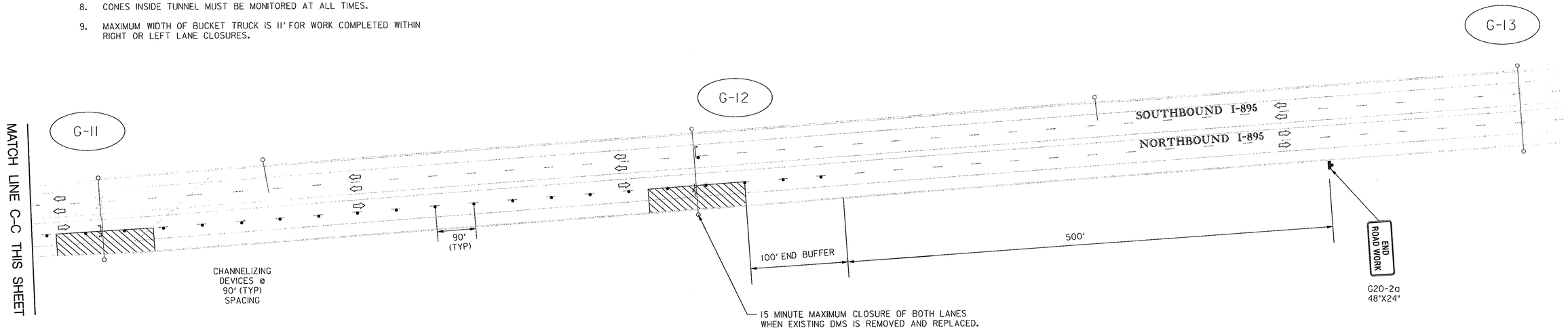
SHEET NO. 32 OF 47

NOTE: NO WORK INSIDE TUNNEL BORE IS PERMITTED
WITH TRAFFIC FLOWING IN THE SAME BORE



NOTES:

1. AT A MINIMUM, THE FOLLOWING MSHA TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS (TTCTA) SHALL BE USED FOR THE WORK SHOWN ON THIS PLAN: MD 104.00-01 - MD 104.00-18, AND MD 104.04-11.
2. SEE SHEETS 5-11 FOR PROPOSED DEMOLITION AND REPLACEMENT SCHEDULE.
3. SEE SHEET 46 FOR MOT PHASING SCHEDULE.
4. CONTRACTOR IS RESPONSIBLE FOR RIGHT AND LEFT LANE CLOSURES WITH DRAGS.
5. MAXIMUM WIDTH OF BUCKET TRUCK IS 11' FOR WORK COMPLETED WITHIN RIGHT OR LEFT LANE CLOSURES.
6. INSTALL CONES INSIDE TUNNEL BORE SET BACK 3' FROM CENTER LINE.
7. CONES INSIDE TUNNEL BORE MUST BE REMOVED EACH DAY AND CANNOT BE STORED INSIDE TUNNEL.
8. CONES INSIDE TUNNEL MUST BE MONITORED AT ALL TIMES.
9. MAXIMUM WIDTH OF BUCKET TRUCK IS 11' FOR WORK COMPLETED WITHIN RIGHT OR LEFT LANE CLOSURES.



MAINTENANCE OF TRAFFIC LEGEND

- WORK THIS PHASE
- TRAFFIC FLOW ARROW
- TYPE III BARRICADE
- EXISTING MEDIAN TRAFFIC BARRIER
- CHANNELIZING DEVICES
- ARROW PANEL
- SIGN SUPPORT

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ADDENDUMS & REVISIONS			
NO.	DESCRIPTION	BY	DATE

BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE

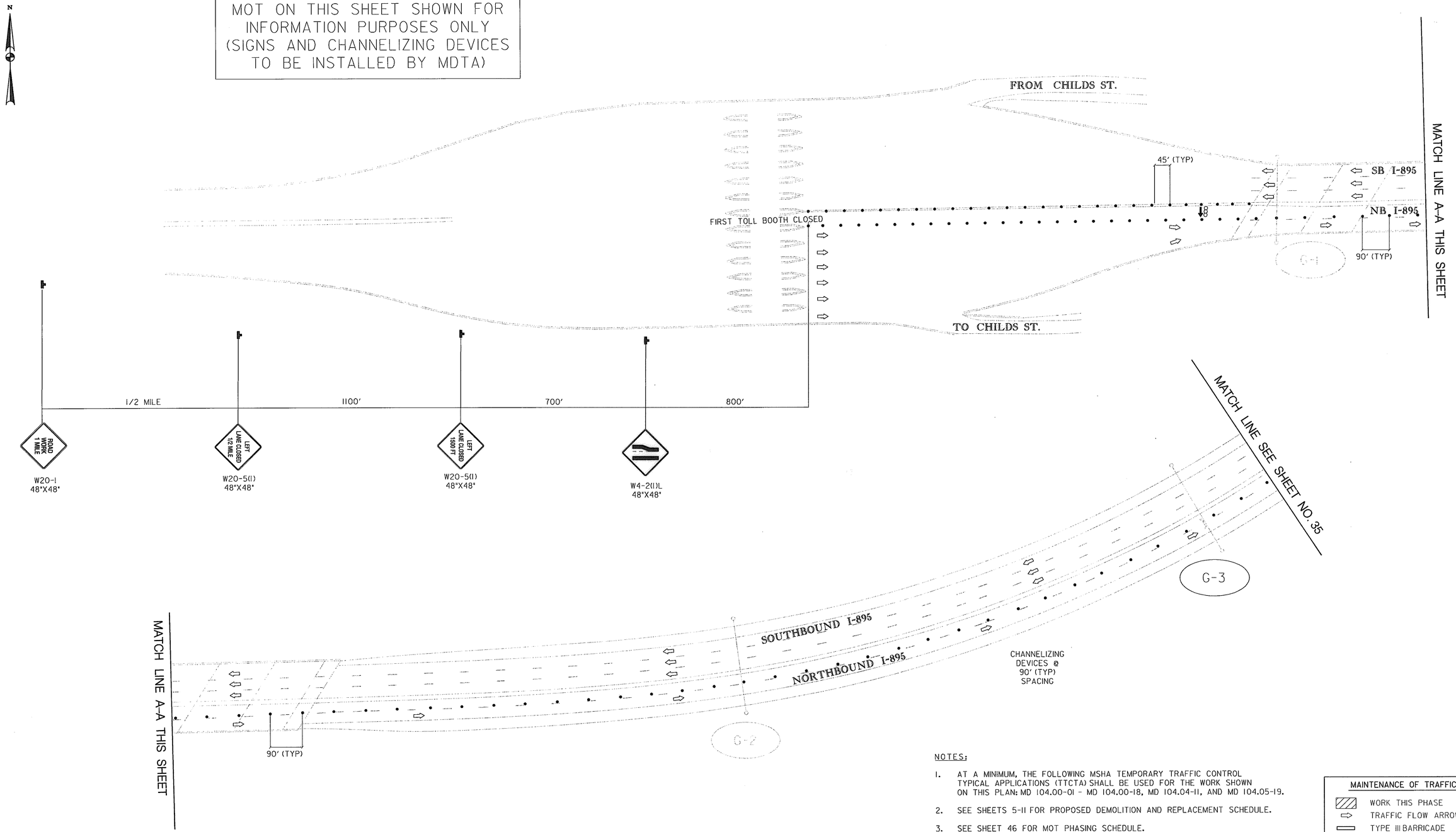
BHT MOT - PHASE 2

CONTRACT NO. HT-705-000-002R

DRAWING NO. MOT-10

DESIGNED BY JRL	DRAWN BY RLO	CHECKED BY AJM	SHEET NO.
CONST. REVIEW BY	DATE JANUARY, 2010	SCALE NOT TO SCALE	33 OF 47

MOT ON THIS SHEET SHOWN FOR INFORMATION PURPOSES ONLY (SIGNS AND CHANNELIZING DEVICES TO BE INSTALLED BY MDTA)



NOTES:

1. AT A MINIMUM, THE FOLLOWING MSHA TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS (TTCTA) SHALL BE USED FOR THE WORK SHOWN ON THIS PLAN: MD 104.00-01 - MD 104.00-18, MD 104.04-11, AND MD 104.05-19.
2. SEE SHEETS 5-11 FOR PROPOSED DEMOLITION AND REPLACEMENT SCHEDULE.
3. SEE SHEET 46 FOR MOT PHASING SCHEDULE.
4. CONTRACTOR IS RESPONSIBLE FOR RIGHT AND LEFT LANE CLOSURES WITH DRAGS.
5. MAXIMUM WIDTH OF BUCKET TRUCK IS 11' FOR WORK COMPLETED WITHIN RIGHT OR LEFT LANE CLOSURES.

MAINTENANCE OF TRAFFIC LEGEND

- WORK THIS PHASE
- TRAFFIC FLOW ARROW
- TYPE III BARRICADE
- EXISTING MEDIAN TRAFFIC BARRIER
- CHANNELIZING DEVICES
- ARROW PANEL
- SIGN SUPPORT

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ADDENDUMS & REVISIONS			
NO.	DESCRIPTION	BY	DATE

BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE

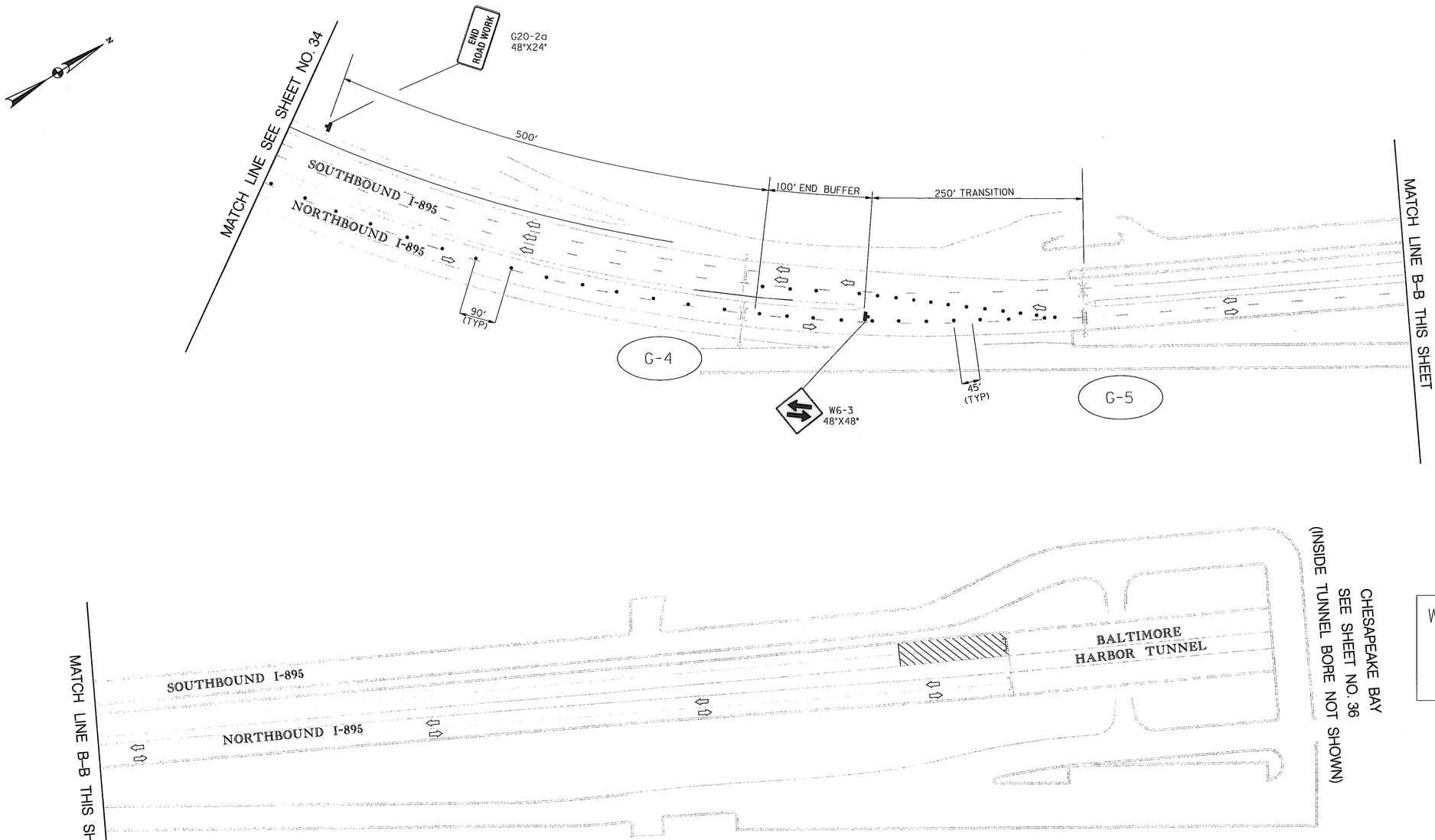
BHT MOT - PHASE 3

DESIGNED BY JRL	DRAWN BY RLO	CHECKED BY AJM	
CONST. REVIEW BY	DATE JANUARY, 2010	SCALE NOT TO SCALE	

CONTRACT NO. HT-705-000-002R

DRAWING NO. MOT-11

SHEET NO. 34 OF 47



MOT ON THIS SHEET SHOWN FOR INFORMATION PURPOSES ONLY (SIGNS AND CHANNELIZING DEVICES TO BE INSTALLED BY MDTA)

WORK AREA CONTINUES INSIDE TUNNEL BORE (NOT SHOWN). MOT INSIDE TUNNEL BORE TO BE INSTALLED BY MDTA.

NOTES:

1. AT A MINIMUM, THE FOLLOWING MSHA TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS (TTCTA) SHALL BE USED FOR THE WORK SHOWN ON THIS PLAN: MD 104.00-01 - MD 104.00-18, AND MD 104.05-22.
2. SEE SHEETS 5-11 FOR PROPOSED DEMOLITION AND REPLACEMENT SCHEDULE.
3. SEE SHEET 46 FOR MOT PHASING SCHEDULE.
4. CONTRACTOR IS RESPONSIBLE FOR RIGHT AND LEFT LANE CLOSURES WITH DRAGS.
5. MAXIMUM WIDTH OF BUCKET TRUCK IS 11' FOR WORK COMPLETED WITHIN RIGHT OR LEFT LANE CLOSURES.

MAINTENANCE OF TRAFFIC LEGEND

- WORK THIS PHASE
- TRAFFIC FLOW ARROW
- TYPE III BARRICADE
- EXISTING MEDIAN TRAFFIC BARRIER
- CHANNELIZING DEVICES
- ARROW PANEL
- SIGN SUPPORT

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ADDENDUMS & REVISIONS

NO.	DESCRIPTION	BY	DATE

BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE

BHT MOT - PHASE 3

DESIGNED BY JRL	DRAWN BY RLO	CHECKED BY AJM	
CONST. REVIEW BY	DATE JANUARY, 2010	SCALE NOT TO SCALE	

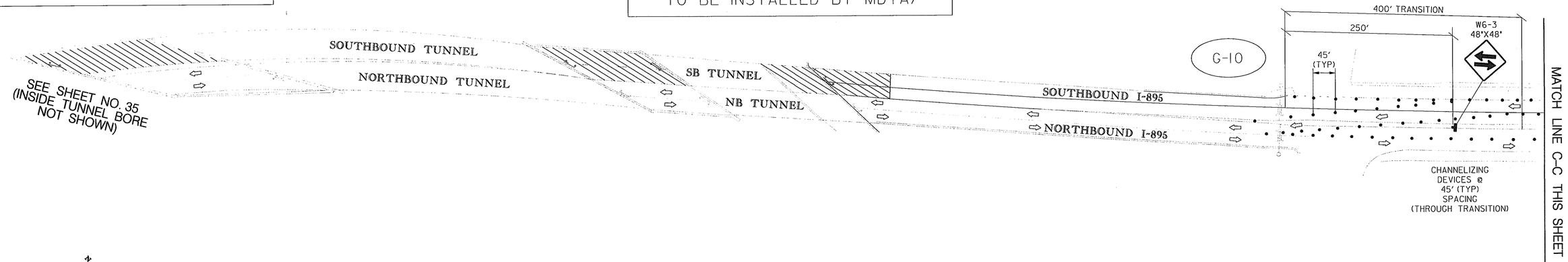
CONTRACT NO. HT-705-000-002R

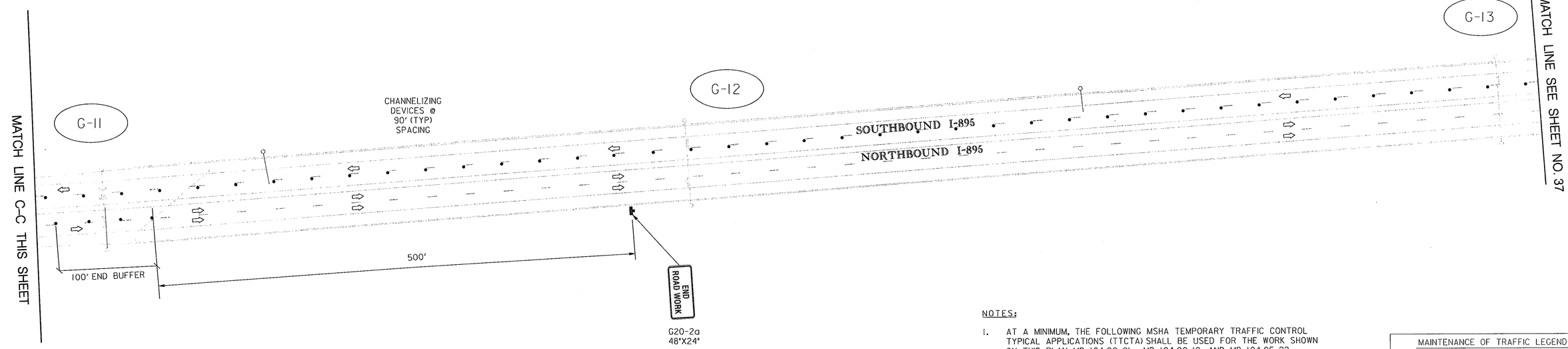
DRAWING NO. MOT-12

SHEET NO. 35 OF 47

WORK AREA CONTINUES INSIDE TUNNEL BORE (NOT SHOWN). MOT INSIDE TUNNEL BORE TO BE INSTALLED BY MDTA.

MOT ON THIS SHEET SHOWN FOR INFORMATION PURPOSES ONLY (SIGNS AND CHANNELIZING DEVICES TO BE INSTALLED BY MDTA)





NOTES:

1. AT A MINIMUM, THE FOLLOWING MSHA TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS (TTCTA) SHALL BE USED FOR THE WORK SHOWN ON THIS PLAN: MD 104.00-01 - MD 104.00-18, AND MD 104.05-22.
2. SEE SHEETS 5-11 FOR PROPOSED DEMOLITION AND REPLACEMENT SCHEDULE.
3. SEE SHEET 46 FOR MOT PHASING SCHEDULE.
4. CONTRACTOR IS RESPONSIBLE FOR RIGHT AND LEFT LANE CLOSURES WITH DRAGS.
5. MAXIMUM WIDTH OF BUCKET TRUCK IS 11' FOR WORK COMPLETED WITHIN RIGHT OR LEFT LANE CLOSURES.

MAINTENANCE OF TRAFFIC LEGEND

- WORK THIS PHASE
- TRAFFIC FLOW ARROW
- TYPE III BARRICADE
- EXISTING MEDIAN TRAFFIC BARRIER
- CHANNELIZING DEVICES
- ARROW PANEL
- SIGN SUPPORT

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ADDENDUMS & REVISIONS

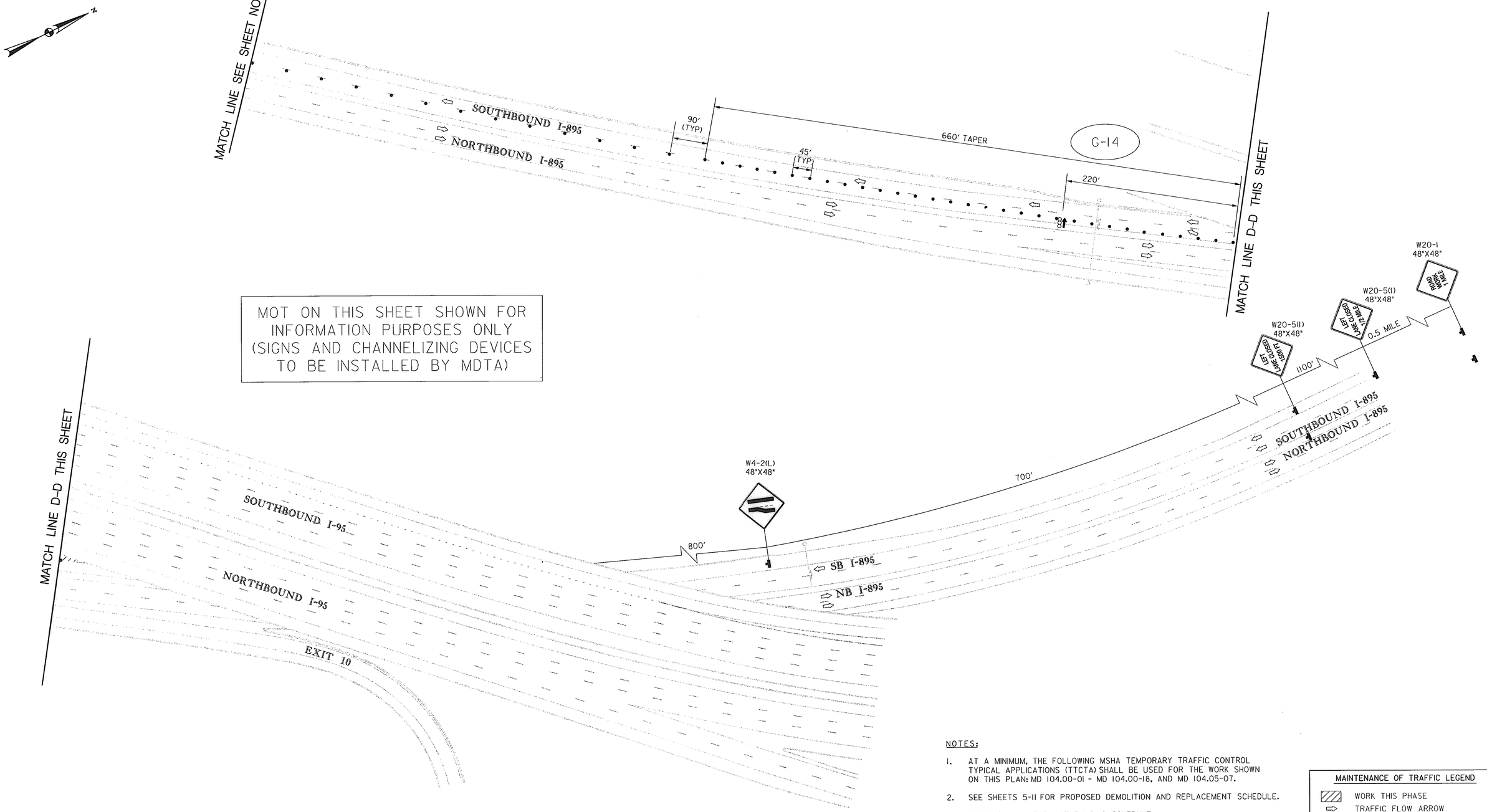
NO.	DESCRIPTION	BY	DATE

BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE

BHT MOT - PHASE 3

DESIGNED BY JRL	DRAWN BY RLO	CHECKED BY AJM	
CONST. REVIEW BY	DATE JANUARY, 2010	SCALE NOT TO SCALE	

CONTRACT NO. HT-705-000-002R
DRAWING NO. MOT-13
SHEET NO. 36 OF 47



MOT ON THIS SHEET SHOWN FOR INFORMATION PURPOSES ONLY (SIGNS AND CHANNELIZING DEVICES TO BE INSTALLED BY MDTA)

NOTES:

1. AT A MINIMUM, THE FOLLOWING MSHA TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS (TTCTA) SHALL BE USED FOR THE WORK SHOWN ON THIS PLAN: MD 104.00-01 - MD 104.00-18, AND MD 104.05-07.
2. SEE SHEETS 5-11 FOR PROPOSED DEMOLITION AND REPLACEMENT SCHEDULE.
3. SEE SHEET 46 FOR MOT PHASING SCHEDULE.
4. CONTRACTOR IS RESPONSIBLE FOR RIGHT AND LEFT LANE CLOSURES WITH DRAGS.
5. MAXIMUM WIDTH OF BUCKET TRUCK IS 11' FOR WORK COMPLETED WITHIN RIGHT OR LEFT LANE CLOSURES.

MAINTENANCE OF TRAFFIC LEGEND

- WORK THIS PHASE
- TRAFFIC FLOW ARROW
- TYPE III BARRICADE
- EXISTING MEDIAN TRAFFIC BARRIER
- CHANNELIZING DEVICES
- ARROW PANEL
- SIGN SUPPORT

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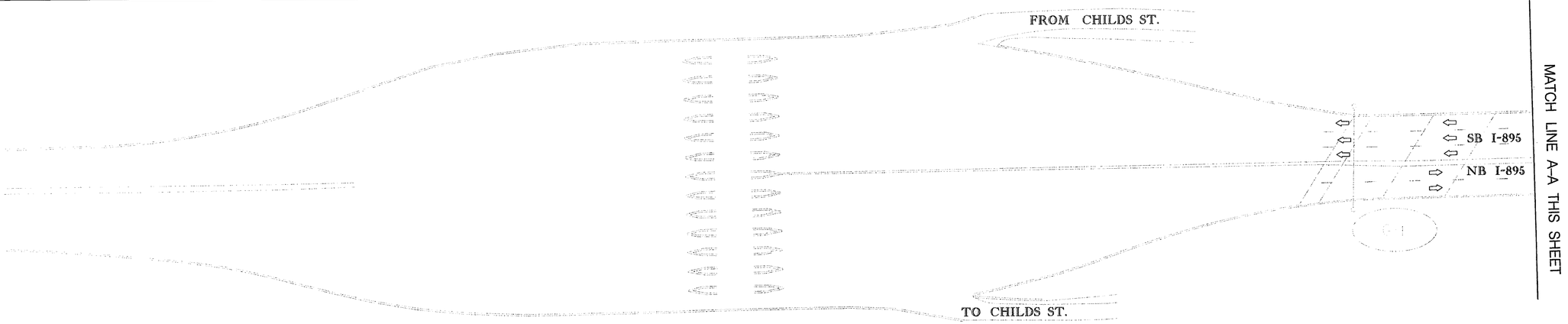
ADDENDUMS & REVISIONS			
NO.	DESCRIPTION	BY	DATE

BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE
BHT MOT - PHASE 3

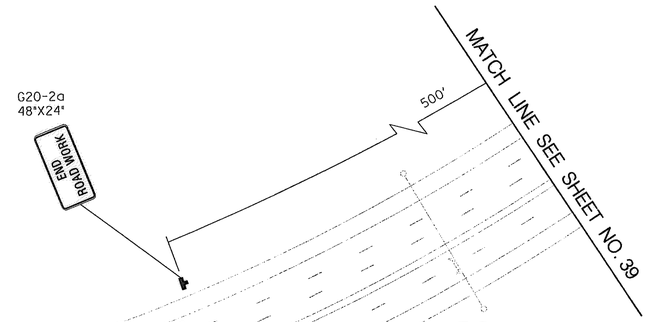
CONTRACT NO. HT-705-000-002R
DRAWING NO. MOT-14

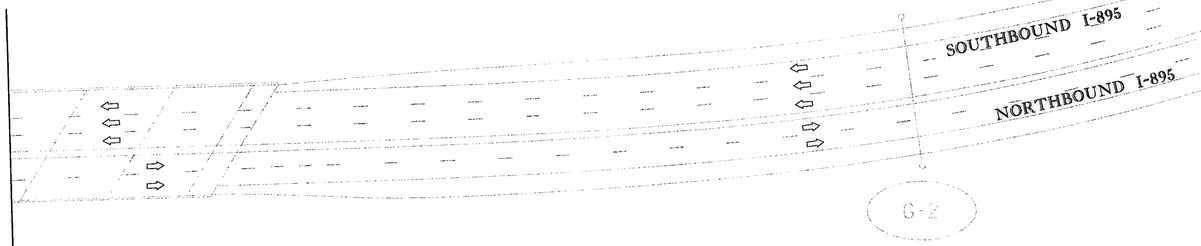
DESIGNED BY JRL	DRAWN BY RLO	CHECKED BY AJM	SHEET NO. 37 OF 47
CONST. REVIEW BY	DATE JANUARY, 2010	SCALE NOT TO SCALE	

NOTE: NO WORK INSIDE TUNNEL BORE IS PERMITTED WITH TRAFFIC FLOWING IN THE SAME BORE



MATCH LINE A-A THIS SHEET





MATCH LINE A-A THIS SHEET

NOTES:

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2. SEE SHEETS 5-11 FOR PROPOSED DEMOLITION AND REPLACEMENT SCHEDULE.
3. SEE SHEET 46 FOR MOT PHASING SCHEDULE.
4. CONTRACTOR IS RESPONSIBLE FOR RIGHT AND LEFT LANE CLOSURES WITH DRAGS.
5. MAXIMUM WIDTH OF BUCKET TRUCK IS 11' FOR WORK COMPLETED WITHIN RIGHT OR LEFT LANE CLOSURES.

MAINTENANCE OF TRAFFIC LEGEND

- WORK THIS PHASE
- TRAFFIC FLOW ARROW
- TYPE III BARRICADE
- EXISTING MEDIAN TRAFFIC BARRIER
- CHANNELIZING DEVICES
- ARROW PANEL
- SIGN SUPPORT

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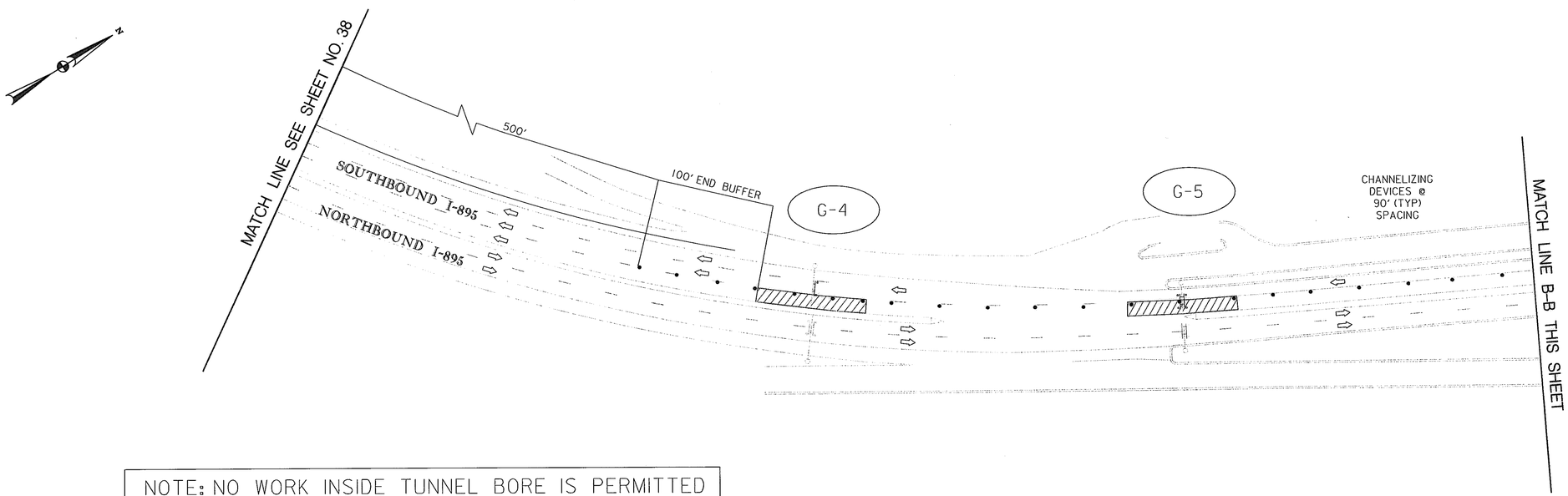
ADDENDUMS & REVISIONS			
NO.	DESCRIPTION	BY	DATE

BALTIMORE HARBOR TUNNEL LANE CONTROL
SIGNAL AND DYNAMIC MESSAGE SIGN
SYSTEM UPGRADE
BHT MOT - PHASE 3A

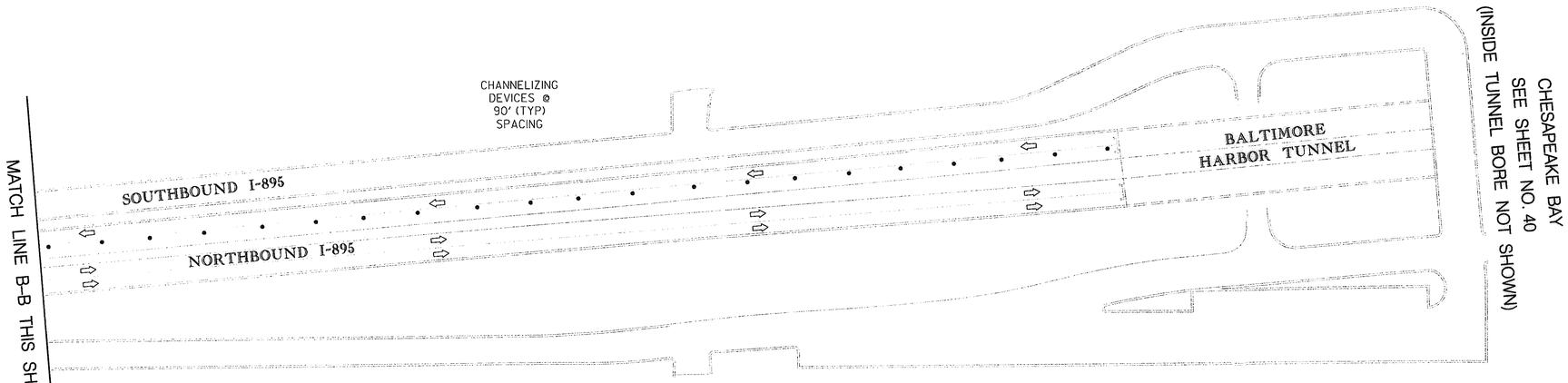
CONTRACT NO. HT-705-000-002R
DRAWING NO. MOT-15

DESIGNED BY JRL | DRAWN BY RLO | CHECKED BY AJM
CONST. REVIEW BY | DATE JANUARY, 2010 | SCALE NOT TO SCALE

SHEET NO. 38 OF 47



NOTE: NO WORK INSIDE TUNNEL BORE IS PERMITTED WITH TRAFFIC FLOWING IN THE SAME BORE



NOTE: NO WORK INSIDE TUNNEL BORE IS PERMITTED WITH TRAFFIC FLOWING IN THE SAME BORE

NOTES:

1. AT A MINIMUM, THE FOLLOWING MSHA TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS (TTCTA) SHALL BE USED FOR THE WORK SHOWN ON THIS PLAN: MD 104.00-01 - MD 104.00-18, AND MD 104.04-11.
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3. SEE SHEET 46 FOR MOT PHASING SCHEDULE.
4. CONTRACTOR IS RESPONSIBLE FOR RIGHT AND LEFT LANE CLOSURES WITH DRAGS.
5. MAXIMUM WIDTH OF BUCKET TRUCK IS 11' FOR WORK COMPLETED WITHIN RIGHT OR LEFT LANE CLOSURES.
6. CONTRACTOR SHALL INSTALL CONES INSIDE TUNNEL BORE SET BACK 3' FROM CENTER LINE.
7. CONES INSIDE TUNNEL BORE MUST BE REMOVED EACH DAY BY CONTRACTOR AND CANNOT BE STORED INSIDE TUNNEL.
8. CONES INSIDE TUNNEL MUST BE MONITORED BY CONTRACTOR AT ALL TIMES.

MAINTENANCE OF TRAFFIC LEGEND

- WORK THIS PHASE
- TRAFFIC FLOW ARROW
- TYPE III BARRICADE
- EXISTING MEDIAN TRAFFIC BARRIER
- CHANNELIZING DEVICES
- ARROW PANEL
- SIGN SUPPORT

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ADDENDUMS & REVISIONS

NO.	DESCRIPTION	BY	DATE

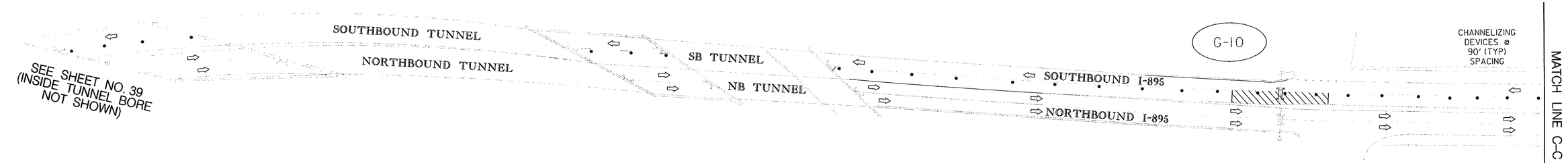
BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE

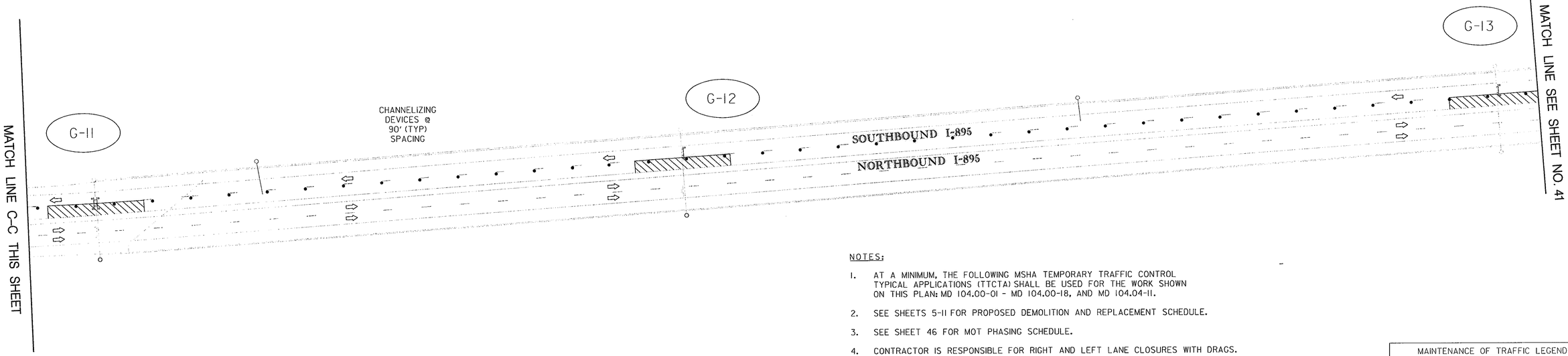
BHT MOT - PHASE 3A

DESIGNED BY JRL	DRAWN BY RLO	CHECKED BY AJM	
CONST. REVIEW BY	DATE JANUARY, 2010	SCALE NOT TO SCALE	

CONTRACT NO. HT-705-000-002R
DRAWING NO. MOT-16
SHEET NO. 39 OF 47

NOTE: NO WORK INSIDE TUNNEL BORE IS PERMITTED WITH TRAFFIC FLOWING IN THE SAME BORE





NOTES:

1. AT A MINIMUM, THE FOLLOWING MSHA TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS (TTCTA) SHALL BE USED FOR THE WORK SHOWN ON THIS PLAN: MD 104.00-01 - MD 104.00-18, AND MD 104.04-11.
2. SEE SHEETS 5-11 FOR PROPOSED DEMOLITION AND REPLACEMENT SCHEDULE.
3. SEE SHEET 46 FOR MOT PHASING SCHEDULE.
4. CONTRACTOR IS RESPONSIBLE FOR RIGHT AND LEFT LANE CLOSURES WITH DRAGS.
5. MAXIMUM WIDTH OF BUCKET TRUCK IS 11' FOR WORK COMPLETED WITHIN RIGHT OR LEFT LANE CLOSURES.
6. CONTRACTOR SHALL INSTALL CONES INSIDE TUNNEL BORE SET BACK 3' FROM CENTER LINE.
7. CONES INSIDE TUNNEL BORE MUST BE REMOVED BY CONTRACTOR EACH DAY AND CANNOT BE STORED INSIDE TUNNEL.
8. CONES INSIDE TUNNEL MUST BE MONITORED BY CONTRACTOR AT ALL TIMES.

MAINTENANCE OF TRAFFIC LEGEND

- WORK THIS PHASE
- TRAFFIC FLOW ARROW
- TYPE III BARRICADE
- EXISTING MEDIAN TRAFFIC BARRIER
- CHANNELIZING DEVICES
- ARROW PANEL
- SIGN SUPPORT

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ADDENDUMS & REVISIONS

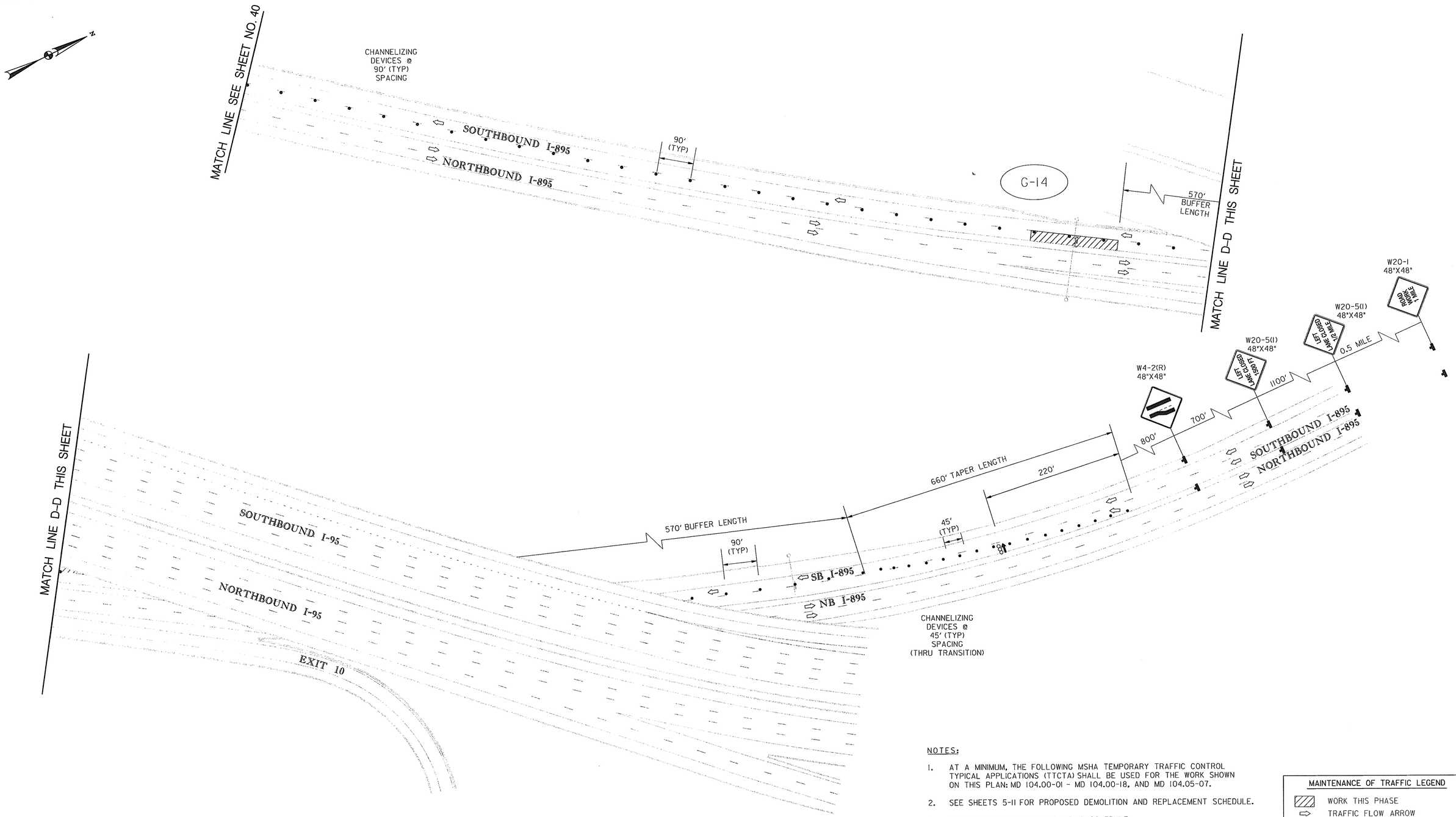
NO.	DESCRIPTION	BY	DATE

BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE

BHT MOT - PHASE 3A

DESIGNED BY JRL	DRAWN BY RLO	CHECKED BY AJM	
CONST. REVIEW BY	DATE JANUARY, 2010	SCALE NOT TO SCALE	

CONTRACT NO. HT-705-000-002R
DRAWING NO. MOT-17
SHEET NO. 40 OF 47



NOTES:

1. AT A MINIMUM, THE FOLLOWING MSHA TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS (TTCTA) SHALL BE USED FOR THE WORK SHOWN ON THIS PLAN: MD 104.00-01 - MD 104.00-18, AND MD 104.05-07.
2. SEE SHEETS 5-11 FOR PROPOSED DEMOLITION AND REPLACEMENT SCHEDULE.
3. SEE SHEET 46 FOR MOT PHASING SCHEDULE.
4. CONTRACTOR IS RESPONSIBLE FOR RIGHT AND LEFT LANE CLOSURES WITH DRAGS.
5. MAXIMUM WIDTH OF BUCKET TRUCK IS 11' FOR WORK COMPLETED WITHIN RIGHT OR LEFT LANE CLOSURES.

MAINTENANCE OF TRAFFIC LEGEND

- WORK THIS PHASE
- TRAFFIC FLOW ARROW
- TYPE III BARRICADE
- EXISTING MEDIAN TRAFFIC BARRIER
- CHANNELIZING DEVICES
- ARROW PANEL
- SIGN SUPPORT

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ADDENDUMS & REVISIONS

NO.	DESCRIPTION	BY	DATE

BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE

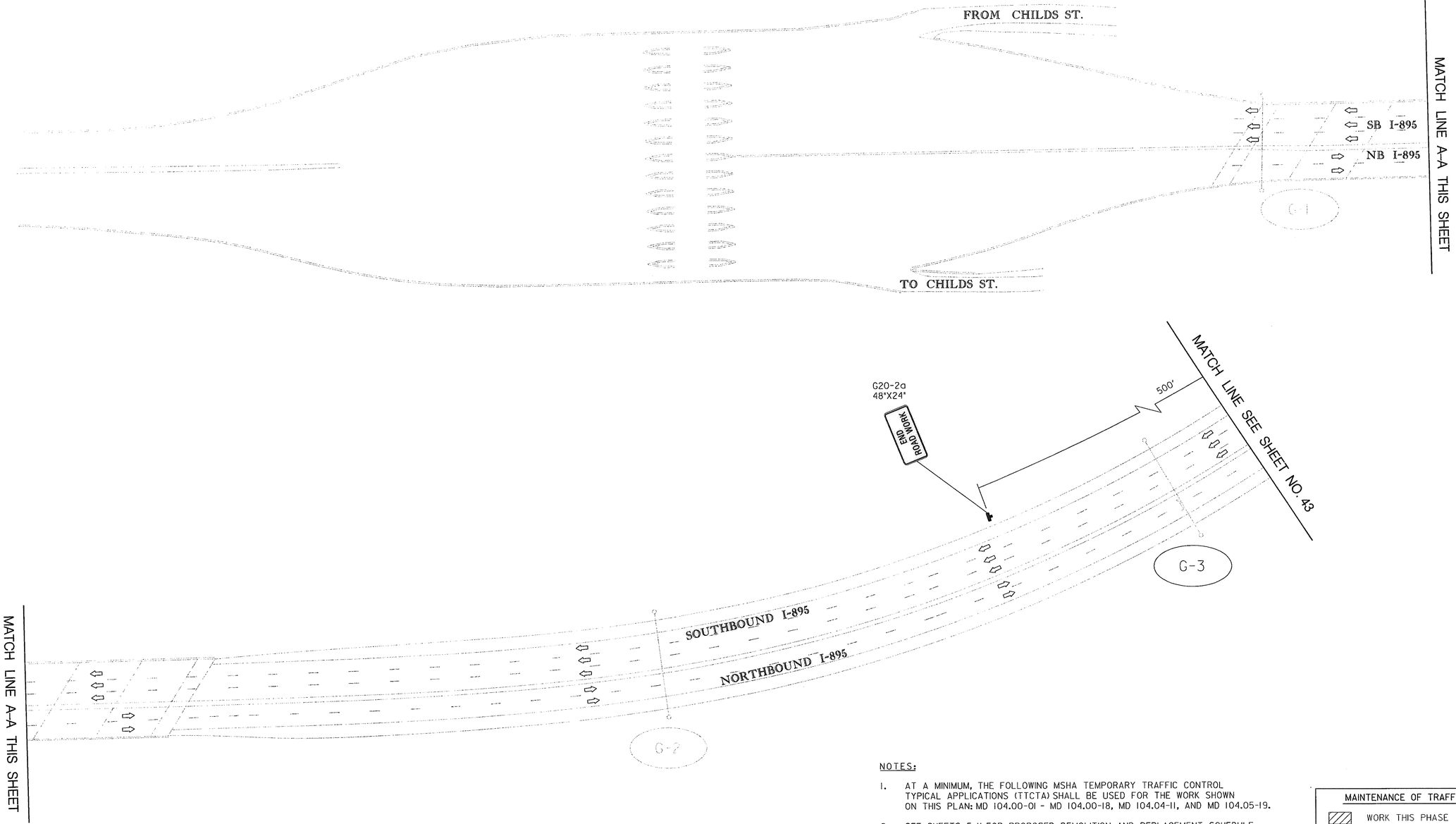
BHT MOT - PHASE 3A

DESIGNED BY JRL	DRAWN BY RLO	CHECKED BY AJM	SHEET NO. 41 OF 47
CONST. REVIEW BY	DATE JANUARY, 2010	SCALE NOT TO SCALE	

CONTRACT NO. HT-705-000-002R

DRAWING NO. MOT-18

NOTE: NO WORK INSIDE TUNNEL BORE IS PERMITTED WITH TRAFFIC FLOWING IN THE SAME BORE



NOTES:

1. AT A MINIMUM, THE FOLLOWING MSHA TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS (TTCTA) SHALL BE USED FOR THE WORK SHOWN ON THIS PLAN: MD 104.00-01 - MD 104.00-18, MD 104.04-11, AND MD 104.05-19.
2. SEE SHEETS 5-11 FOR PROPOSED DEMOLITION AND REPLACEMENT SCHEDULE.
3. SEE SHEET 46 FOR MOT PHASING SCHEDULE.
4. CONTRACTOR IS RESPONSIBLE FOR RIGHT AND LEFT LANE CLOSURES WITH DRAGS.
5. MAXIMUM WIDTH OF BUCKET TRUCK IS 11' FOR WORK COMPLETED WITHIN RIGHT OR LEFT LANE CLOSURES.

MAINTENANCE OF TRAFFIC LEGEND

- WORK THIS PHASE
- TRAFFIC FLOW ARROW
- TYPE III BARRICADE
- EXISTING MEDIAN TRAFFIC BARRIER
- CHANNELIZING DEVICES
- ARROW PANEL
- SIGN SUPPORT

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Maryland Transportation Authority
ENGINEERING DIVISION

ADDENDUMS & REVISIONS

NO.	DESCRIPTION	BY	DATE

BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE

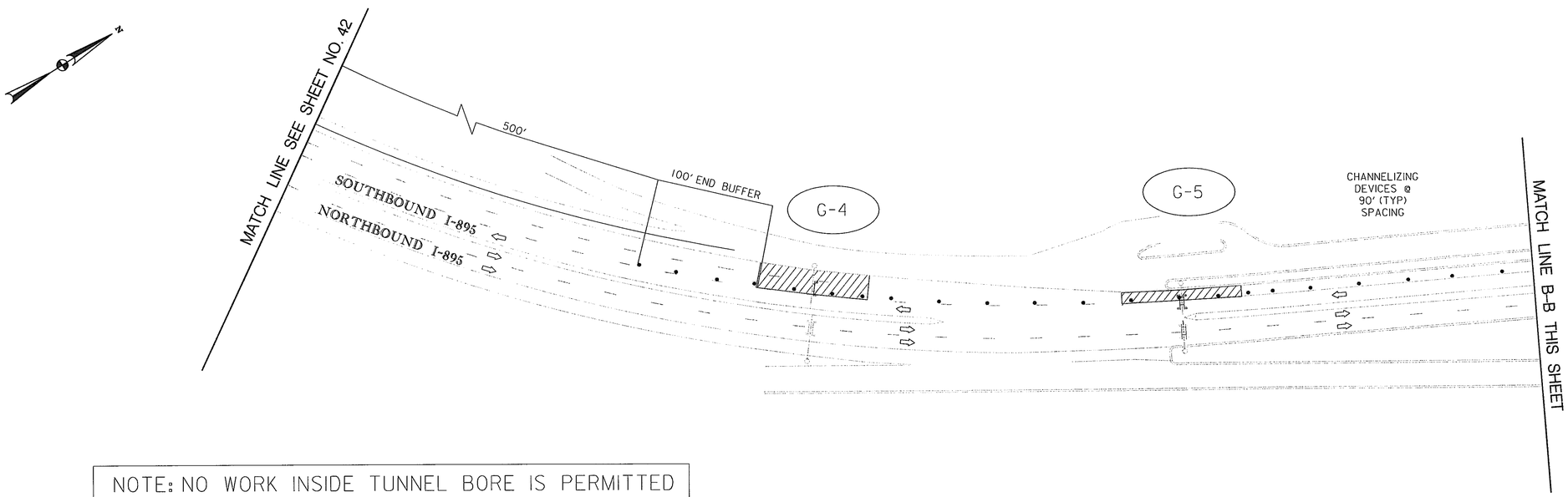
BHT MOT - PHASE 4

DESIGNED BY JRL	DRAWN BY RLO	CHECKED BY AJM	
CONST. REVIEW BY	DATE JANUARY, 2010	SCALE NOT TO SCALE	

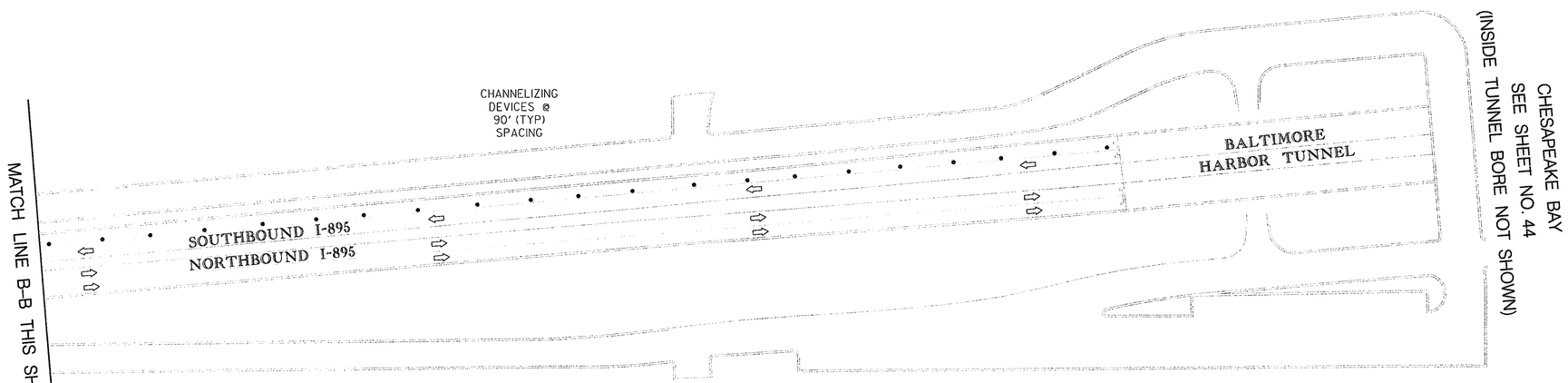
CONTRACT NO. HT-705-000-002R

DRAWING NO. MOT-19

SHEET NO. 42 OF 47



NOTE: NO WORK INSIDE TUNNEL BORE IS PERMITTED WITH TRAFFIC FLOWING IN THE SAME BORE



NOTE: NO WORK INSIDE TUNNEL BORE IS PERMITTED WITH TRAFFIC FLOWING IN THE SAME BORE

NOTES:

1. AT A MINIMUM, THE FOLLOWING MSHA TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS (TTCTA) SHALL BE USED FOR THE WORK SHOWN ON THIS PLAN: MD 104.00-01 - MD 104.00-18, AND MD 104.04-11.
2. SEE SHEETS 5-11 FOR PROPOSED DEMOLITION AND REPLACEMENT SCHEDULE.
3. SEE SHEET 46 FOR MOT PHASING SCHEDULE.
4. CONTRACTOR IS RESPONSIBLE FOR RIGHT AND LEFT LANE CLOSURES WITH DRAGS.
5. MAXIMUM WIDTH OF BUCKET TRUCK IS 11' FOR WORK COMPLETED WITHIN RIGHT OR LEFT LANE CLOSURES.
6. CONTRACTOR SHALL INSTALL CONES INSIDE TUNNEL BORE SET BACK 3' FROM CENTER LINE.
7. CONES INSIDE TUNNEL BORE MUST BE REMOVED BY CONTRACTOR EACH DAY AND CANNOT BE STORED INSIDE TUNNEL.
8. CONES INSIDE TUNNEL MUST BE MONITORED BY CONTRACTOR AT ALL TIMES.

MAINTENANCE OF TRAFFIC LEGEND

- WORK THIS PHASE
- TRAFFIC FLOW ARROW
- TYPE III BARRICADE
- EXISTING MEDIAN TRAFFIC BARRIER
- CHANNELIZING DEVICES
- ARROW PANEL
- SIGN SUPPORT

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ADDENDUMS & REVISIONS

NO.	DESCRIPTION	BY	DATE

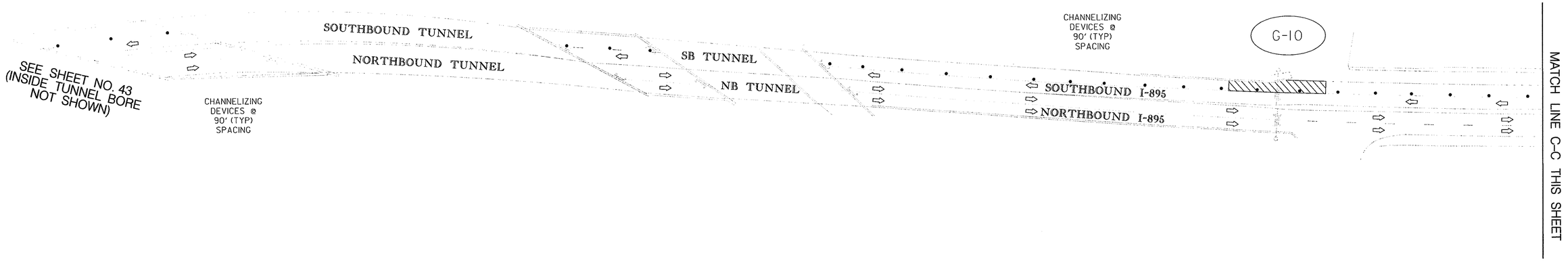
BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE

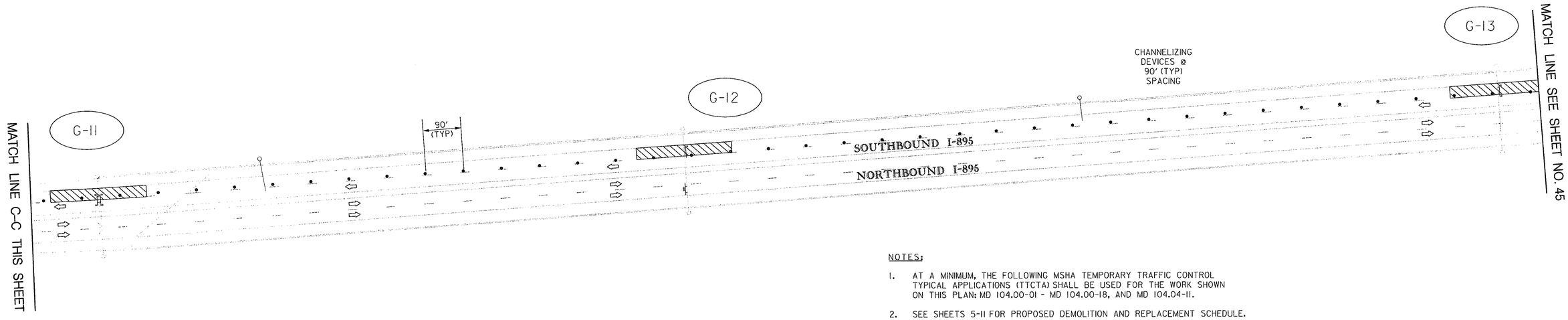
BHT MOT - PHASE 4

DESIGNED BY JRL	DRAWN BY RLO	CHECKED BY AJM	
CONST. REVIEW BY	DATE JANUARY, 2010	SCALE NOT TO SCALE	

CONTRACT NO. HT-705-000-002R
DRAWING NO. MOT-20
SHEET NO. 43 OF 47

NOTE: NO WORK INSIDE TUNNEL BORE IS PERMITTED WITH TRAFFIC FLOWING IN THE SAME BORE





NOTES:

1. AT A MINIMUM, THE FOLLOWING MSHA TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS (TTCTA) SHALL BE USED FOR THE WORK SHOWN ON THIS PLAN: MD 104.00-01 - MD 104.00-18, AND MD 104.04-11.
2. SEE SHEETS 5-11 FOR PROPOSED DEMOLITION AND REPLACEMENT SCHEDULE.
3. SEE SHEET 46 FOR MOT PHASING SCHEDULE.
4. CONTRACTOR IS RESPONSIBLE FOR RIGHT AND LEFT LANE CLOSURES WITH DRAGS.
5. MAXIMUM WIDTH OF BUCKET TRUCK IS 11' FOR WORK COMPLETED WITHIN RIGHT OR LEFT LANE CLOSURES.
6. CONTRACTOR SHALL INSTALL CONES INSIDE TUNNEL BORE SET BACK 3' FROM CENTER LINE.
7. CONES INSIDE TUNNEL BORE MUST BE REMOVED BY CONTRACTOR EACH DAY AND CANNOT BE STORED INSIDE TUNNEL.
8. CONES INSIDE TUNNEL MUST BE MONITORED BY CONTRACTOR AT ALL TIMES.

MAINTENANCE OF TRAFFIC LEGEND

- WORK THIS PHASE
- TRAFFIC FLOW ARROW
- TYPE III BARRICADE
- EXISTING MEDIAN TRAFFIC BARRIER
- CHANNELIZING DEVICES
- ARROW PANEL
- SIGN SUPPORT

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ADDENDUMS & REVISIONS			
NO.	DESCRIPTION	BY	DATE

BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE

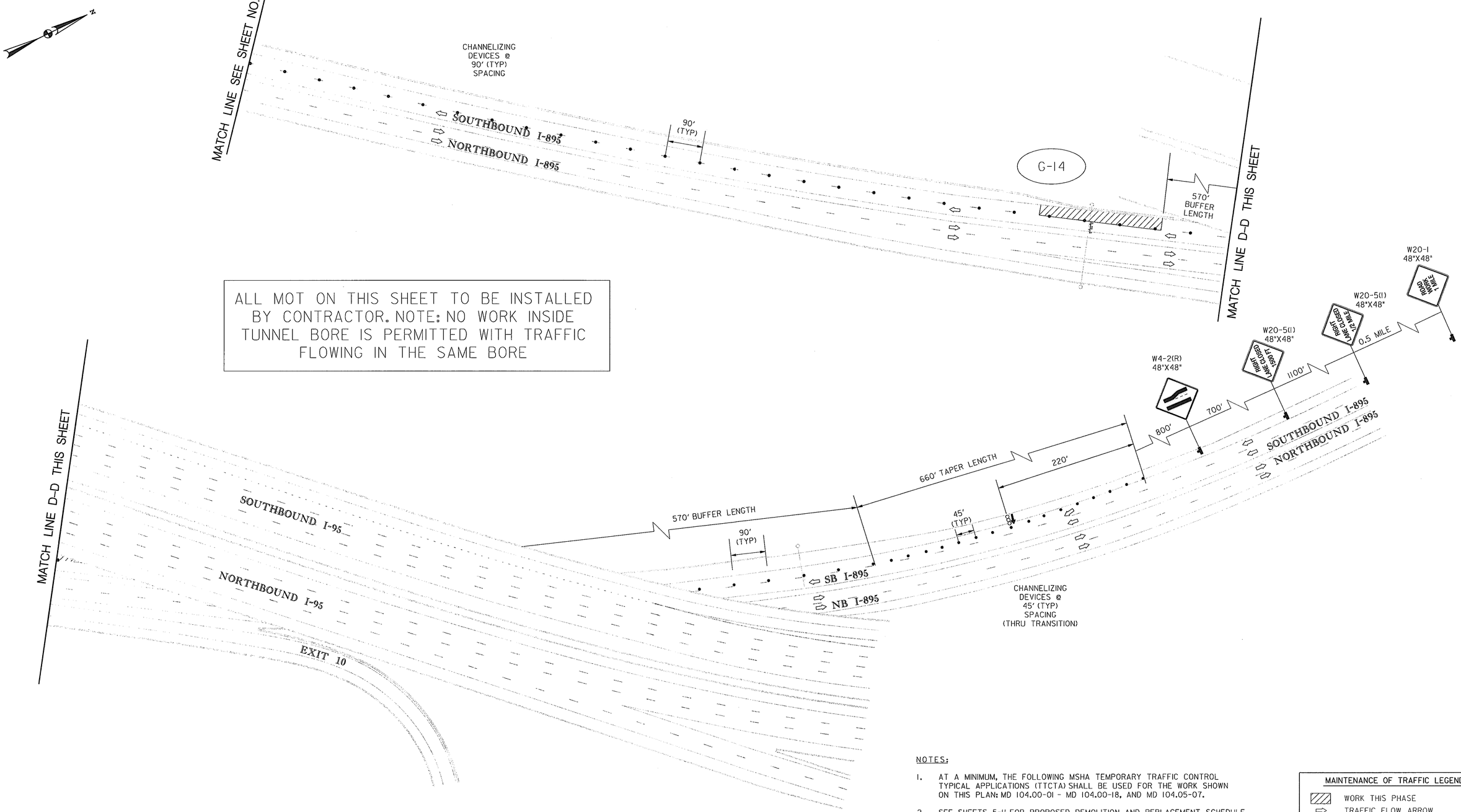
BHT MOT - PHASE 4

DESIGNED BY JRL	DRAWN BY RLO	CHECKED BY AJM	
CONST. REVIEW BY	DATE JANUARY, 2010	SCALE NOT TO SCALE	

CONTRACT NO. HT-705-000-002R

DRAWING NO. MOT-21

SHEET NO. 44 OF 47



ALL MOT ON THIS SHEET TO BE INSTALLED BY CONTRACTOR. NOTE: NO WORK INSIDE TUNNEL BORE IS PERMITTED WITH TRAFFIC FLOWING IN THE SAME BORE

NOTES:

1. AT A MINIMUM, THE FOLLOWING MSHA TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS (TTCTA) SHALL BE USED FOR THE WORK SHOWN ON THIS PLAN: MD 104.00-01 - MD 104.00-18, AND MD 104.05-07.
2. SEE SHEETS 5-11 FOR PROPOSED DEMOLITION AND REPLACEMENT SCHEDULE.
3. SEE SHEET 46 FOR MOT PHASING SCHEDULE.
4. CONTRACTOR IS RESPONSIBLE FOR RIGHT AND LEFT LANE CLOSURES WITH DRAGS.
5. MAXIMUM WIDTH OF BUCKET TRUCK IS 11' FOR WORK COMPLETED WITHIN RIGHT OR LEFT LANE CLOSURES.

MAINTENANCE OF TRAFFIC LEGEND

- WORK THIS PHASE
- TRAFFIC FLOW ARROW
- TYPE III BARRICADE
- EXISTING MEDIAN TRAFFIC BARRIER
- CHANNELIZING DEVICES
- ARROW PANEL
- SIGN SUPPORT

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Maryland Transportation Authority
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ADDENDUMS & REVISIONS			
NO.	DESCRIPTION	BY	DATE

BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE
BHT MOT - PHASE 4

CONTRACT NO. HT-705-000-002R
DRAWING NO. MOT-22

DESIGNED BY JRL | DRAWN BY RLO | CHECKED BY AJM
CONST. REVIEW BY | DATE JANUARY, 2010 | SCALE NOT TO SCALE

SHEET NO. 45 OF 47

MOT SCHEDULE FOR SIGN/SIGNAL DEMOLITION/REPLACEMENT

GANTRY/OVERPASS/TUNNEL	NORTHBOUND LANE 1		NORTHBOUND LANE 2		SOUTHBOUND LANE 3		SOUTHBOUND LANE 4	
	SIGNAL #	MOT PHASE	SIGNAL #	MOT PHASE	SIGNAL #	MOT PHASE	SIGNAL #	MOT PHASE
G-3	LCS 3 1 F VSL 3 1 F	MOT PHASE 2 MOT PHASE 2	LCS 3 2 F	MOT PHASE 1A				
G-4	LCS 4 1 F LCS 4 1 B	MOT PHASE 2 MOT PHASE 2	LCS 4 2 F LCS 4 2 B	MOT PHASE 1A MOT PHASE 1A	LCS 4 3 F	MOT PHASE 3A	LCS 4 4 F	MOT PHASE 4
G-5	LCS 5 1 F LCS 5 1 B	MOT PHASE 2 MOT PHASE 2	LCS 5 2 F LCS 5 2 B	MOT PHASE 1A MOT PHASE 1A	LCS 5 3 F LCS 5 3 B	MOT PHASE 3A MOT PHASE 3A	LCS 5 4 F LCS 5 4 B	MOT PHASE 4 MOT PHASE 4
TUNNEL SOUTH ENTRANCE	LCS 7 1 F VSL 7 1 F	MOT PHASE 1 MOT PHASE 1	LCS 7 2 F	MOT PHASE 1	LCS 7 3 B VSL 7 3 B	MOT PHASE 3 MOT PHASE 3	LCS 7 4 B	MOT PHASE 3
TUNNEL NORTH ENTRANCE	SLC 8 1 F	MOT PHASE 1	SLC 8 2 F	MOT PHASE 1	SLC 8 3 F	MOT PHASE 3	SLC 8 4 F	MOT PHASE 3
KEITH AVE OVERPASS	LCS 8 1 B	MOT PHASE 1	LCS 8 2 B	MOT PHASE 1	LCS 8 3 F	MOT PHASE 3	LCS 8 4 F	MOT PHASE 3
LELAND AVE OVERPASS (SOUTH SIDE)	LCS 8 1 F	MOT PHASE 1	LCS 8 2 F	MOT PHASE 1	SLC 8 3 B	MOT PHASE 3	SLC 8 4 B	MOT PHASE 3
LELAND AVE OVERPASS (NORTH SIDE)	LCS 9 1 B	MOT PHASE 1	LCS 9 2 B	MOT PHASE 1	LCS 9 3 F	MOT PHASE 3	LCS 9 4 F	MOT PHASE 3
G-10	LCS 10 1 F LCS 10 1 B	MOT PHASE 2 MOT PHASE 2	LCS 10 2 F LCS 10 2 B	MOT PHASE 1A MOT PHASE 1A	LCS 10 3 F LCS 10 3 B	MOT PHASE 3A MOT PHASE 3A	LCS 10 4 F LCS 10 4 B	MOT PHASE 4 MOT PHASE 4
G-11	LCS 11 1 F	MOT PHASE 2	LCS 11 2 F	MOT PHASE 1A	LCS 11 3 F LCS 11 3 B DMS 11 3 F	MOT PHASE 3A MOT PHASE 3A MOT PHASE 3A	LCS 11 4 F LCS 11 4 B	MOT PHASE 4 MOT PHASE 4
G-12	DMS 12 1 F	MOT PHASE 2	DMS 12 1 F	MOT PHASE 1A	LCS 12 3 F VSL 12 3 F	MOT PHASE 3A MOT PHASE 3A	LCS 12 4 F	MOT PHASE 4
G-13					LCS 13 3 F VSL 13 3 F	MOT PHASE 3A MOT PHASE 3A	LCS 13 4 F	MOT PHASE 4
G-14					LCS 14 3 F VSL 14 3 F	MOT PHASE 3A MOT PHASE 3A	LCS 14 4 F	MOT PHASE 4
INSIDE TUNNEL BORE	ALL PUCKS	MOT PHASE 1	ALL PUCKS	MOT PHASE 1	ALL PUCKS	MOT PHASE 3	ALL PUCKS	MOT PHASE 3

NOTES:

1. SEE SHEETS 24-45 FOR MOT PHASES I THROUGH 4.
2. NO WORK INSIDE TUNNEL BORE IS PERMITTED WITH TRAFFIC FLOWING IN THE SAME BORE (MOT PHASES IA, 2, 3A, AND 4).

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Maryland Transportation Authority
ENGINEERING DIVISION

ADDENDUMS & REVISIONS

NO.	DESCRIPTION	BY	DATE

BALTIMORE HARBOR TUNNEL LANE CONTROL
SIGNAL AND DYNAMIC MESSAGE SIGN
SYSTEM UPGRADE

MOT SCHEDULE

DESIGNED BY JRL | DRAWN BY RLO | CHECKED BY AJM
CONST. REVIEW BY | DATE JANUARY, 2010 | SCALE NOT TO SCALE

CONTRACT NO. HT-705-000-002R
DRAWING NO. MSC - 01
SHEET NO. 46 OF 47

ITEM NUMBER	1005	1006	1007	1008	1009	8001	8002	8003	8004	8005	8006	8007	8008	8009	8010	8011	8012	8013	8014	8015
ITEM TITLE	DRUMS FOR MAINTENANCE OF TRAFFIC (SECTION 104.12)	PROTECTION VEHICLE (SECTION 104.23)	PORTABLE VARIABLE MESSAGE SIGNS(S) ("PVMS") (SECTION 104.19)	ARROW PANEL ("AP") (SECTION 104.07)	CONES FOR MAINTENANCE OF TRAFFIC (SECTION 104.14)	REMOVAL OF EXISTING DMS AND CONTROLLERS	INSTALLATION OF NEW TYPE I MODIFIED DYNAMIC MESSAGE SIGNS WITH INTEGRATED CONTROLLERS	REMOVAL OF EXISTING LCS (3 MESSAGE)	REMOVE EXISTING ELECTRONIC SPEED LIMIT SIGNS	SUPPLY AND INSTALLATION OF NEW TYPE 1 LCS (18" CHARACTERS)	SUPPLY AND INSTALLATION OF NEW TYPE 2 LCS (18" CHARACTERS)	SUPPLY AND INSTALLATION OF NEW TYPE 4 LCS (24" CHARACTERS)	SUPPLY AND INSTALLATION OF NEW TYPE 5 LCS (24" CHARACTERS)	REMOVAL OF EXISTING SLC (EACH SECTION)	SUPPLY AND INSTALLATION OF NEW ONE SECTION SLC (8" LENS)	SUPPLY AND INSTALLATION OF NEW THREE SECTION SLC (8" LENS)	SUPPLY AND INSTALLATION OF TYPE A CABINET	FURNISH AND INSTALL NEW GRS CONDUIT	REFURBISH EXISTING FIELD EQUIPMENT CABINETS	SUPPLY AND INSTALLATION OF COLORED TRAFFIC DOT (PUCK)
UNIT	EACH	DAY	DAY	DAY	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	LINEAR FOOT	EACH	EACH
GANTRY 03								2	1		2								1	
GANTRY 04								6		1	5								1	
GANTRY 05								8		1	3	1	3						1	
GANTRY 07								4	2			1	3						1	
GANTRY 08								6		1	5			16	1	5			1	
GANTRY 09								4		1	3								1	
GANTRY 10								8		2	6								1	
GANTRY 11						1		6		1	5								1	
GANTRY 12						1	1	2	1		2								1	
GANTRY 13								2	1		2								1	
GANTRY 14								2	1		2						1			
BORES																				192
TOTALS	500	60	60	120	200	2	1	50	6	7	35	2	6	16	1	5	1	1405	10	192

NOTES:

1. REMOVAL OF EXISTING STRUCTURES AND SIGNS AT G-1, G-2, G-15 AND G-16 ARE COVERED IN PROJECT MA-709.

2. INSTALLATION OF NEW STRUCTURE AND SIGNS AT G-1, G-2 AND G-15 ARE COVERED IN PROJECT MA-709.

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ADDENDUMS & REVISIONS

NO.	DESCRIPTION	BY	DATE

BALTIMORE HARBOR TUNNEL LANE CONTROL SIGNAL AND DYNAMIC MESSAGE SIGN SYSTEM UPGRADE

QUANTITY TABULATION

DESIGNED BY WJH | DRAWN BY | CHECKED BY JWH
CONST. REVIEW BY | DATE JANUARY, 2010 | SCALE NOT TO SCALE

CONTRACT NO. HT-705-000-002R
DRAWING NO. TAB-01
SHEET NO. 47 OF 47