

RECONSTRUCTION OF HAYES MEMORIAL DRIVE & APPURTENANT WORK

COVER SHEET----- 1

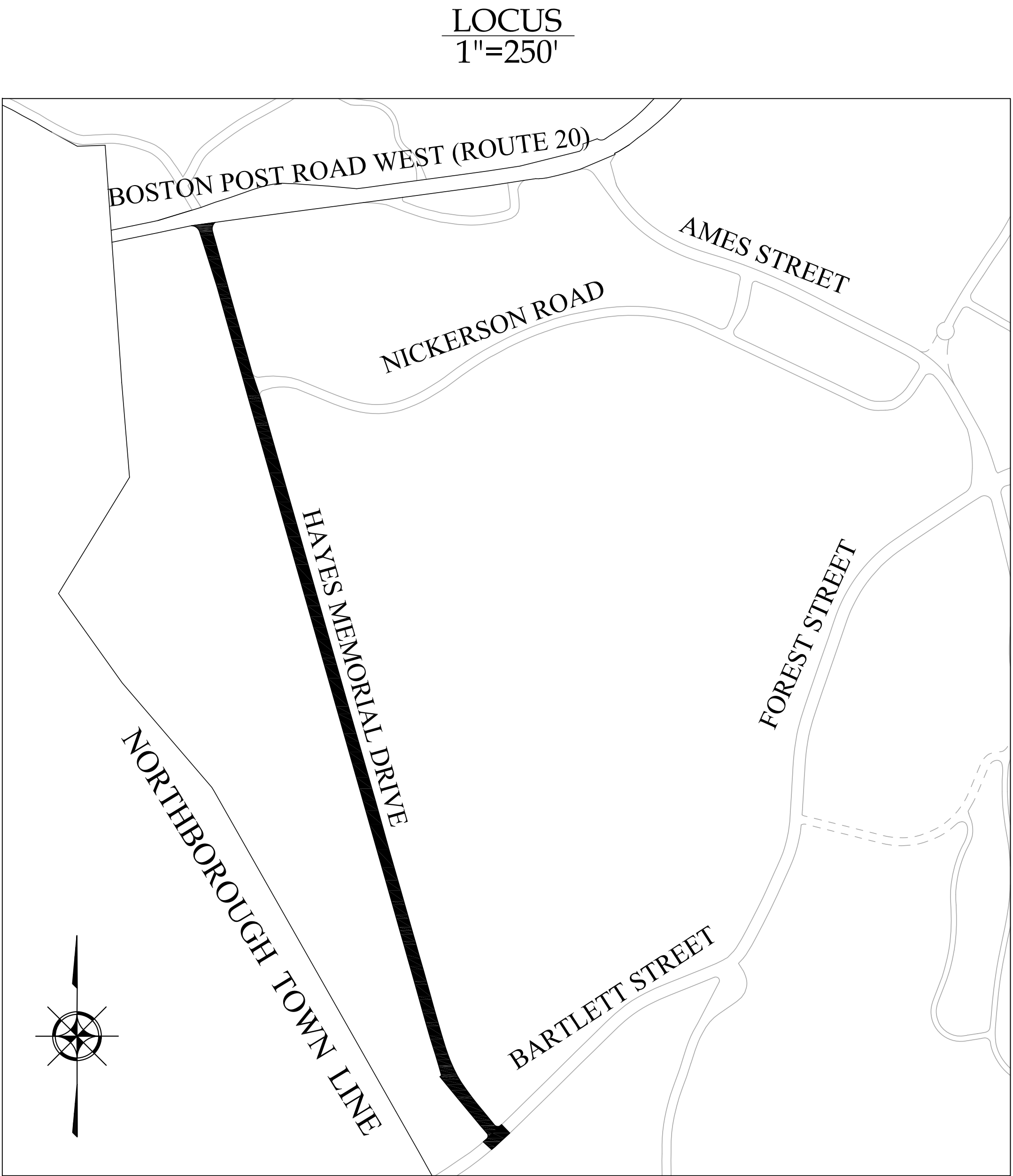
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PREPARED BY: City of Marlborough
Department of Public Works
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CONTRACT NO. ED 2023-09
MARCH 22, 2023

UNLESS OTHERWISE PROVIDED FOR IN THE PROJECT SPECIFICATIONS, THE FOLLOWING DOCUMENTS SHALL GOVERN THE CONSTRUCTION ON THIS PROJECT:

- THE 2023 MHD STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES...AS AMENDED
- THE 2006 PROJECT DEVELOPMENT & DESIGN GUIDE....AS AMENDED
- THE OCTOBER 2017 CONSTRUCTION STANDARD DETAILS HIGHWAY DIVISION AND ANY AMENDMENTS THERETO
- THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1)

RIGHT OF WAY	
EXISTING CONTOUR (MAJOR)	100
EXISTING CONTOUR (MINOR)	98
PROPOSED CONTOUR (MAJOR)	100
PROPOSED CONTOUR (MINOR)	98
PROPERTY LINE	P
EASEMENT LINE	
TREELINE	
CHAIN LINK FENCE	X
GAUDDRAIL	
WATER LINE	W
SEWER LINE	S
SEWER FORCE MAIN	FM
DRAIN LINE	D
UNDERGROUND ELECTRIC	UGE
TELECOMMUNICATIONS	T
OVERHEAD WIRES	OW
WETLAND BUFFER	
HYDRANT	
GAS VALVE	GV
WATER VALVE	WV
SANITARY SEWER MANHOLE	S
STORM SEWER MANHOLE	D
TELECOMMUNICATIONS MANHOLE	T
ELECTRIC MANHOLE	E
CATCH BASIN	
SIGN	
UTILITY POLE	
WATER SHUTOFF	
WATER MAIN CAP	
WATER MAIN TEE	
TREE	
SHRUB	
HANDHOLD	
F.E.D.	
IRON PIN (FND)	
GUY POLE	
TRAFFIC LIGHT	
SPOT ELEVATION (EXISTING)	100.50
SPOT ELEVATION (PROPOSED)	100.50
TOP/BOTTOM OF CURB	TC/BC
TOP/BOTTOM OF WALL	TW/BW
FLOW ARROW	
HATCHES:	
STRUCTURE	
RIPRAP	
CONCRETE	
WETLANDS	

ADJ= ADJUST

BIT= BITUMINOUS CONCRETE

CB= CATCH BASIN

CONC= CONCRETE

DMH= DRAIN MANHOLE

DWP= DETECTIBLE WARNING PANEL

DYCL= DOUBLE YELLOW CENTERLINE

GG= GAS GATE

EOP= EDGE OF PAVEMENT

EX= EXISTING

GGV= GAS GATE VALVE

GUY= GUY WIRE

HH= HAND HOLE

HMA= HOT MIX ASPHALT

HYD= HYDRANT

LCB= LAND COURT BOUND

OHV= OVERHEAD WIRE

PL= PROPERTY LINE

PROP= PROPOSED

R&R= REMOVE AND RESET

R&S= REMOVE AND STACK

ROW= RIGHT OF WAY

SMH= SEWER MANHOLE

SW= SIDEWALK

SWL= SINGLE WHITE LINE

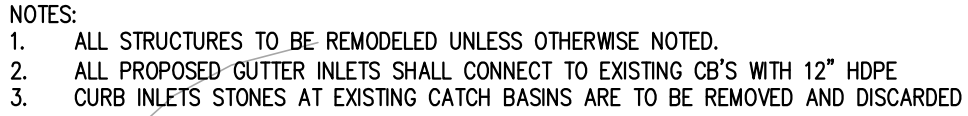
TCB= TRAFFIC CONTROL BOX

TYP= TYPICAL

UP= UTILITY POLE

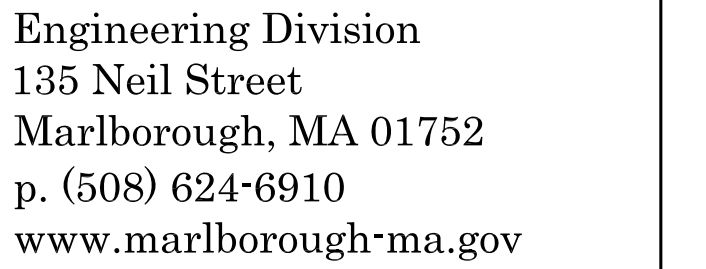
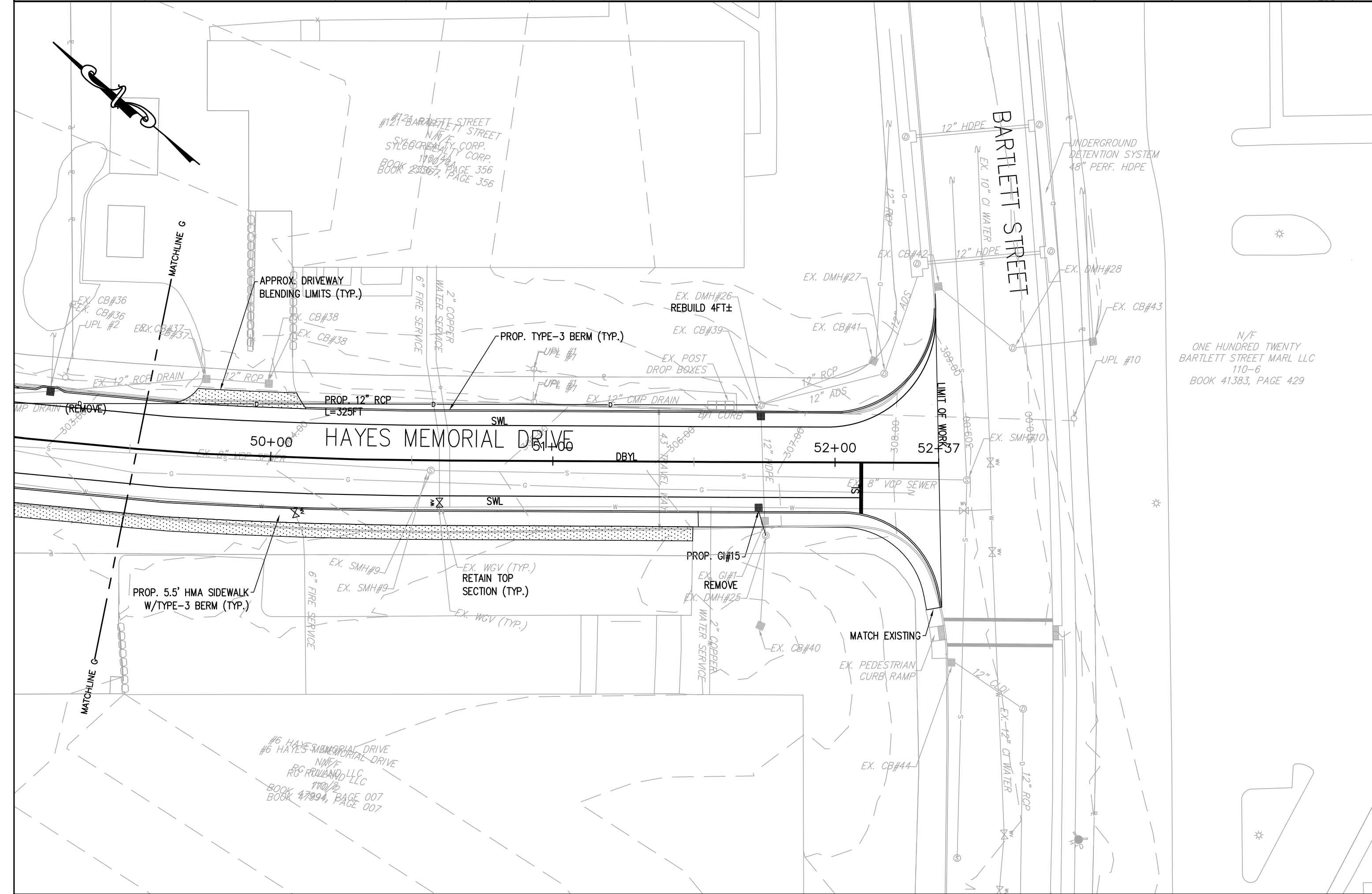
WCR= WHEELCHAIR RAMP

WGV= WATER GATE VALVE



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$$1'' = 30'$$



Drawn By: A.M Designed By: A.M Checked By: M.D Approved By: ID

Sheet Title:

CONSTRUCTION PLAN

Contract No: ED-2023-09	Sheet No.: 5
Date: 3/22/2023	
Scale: 1"=30'	

THE FOLLOWING DESCRIBES MATERIALS AND METHODS AS THEY PERTAIN TO ROAD OPENING WORK. ALL WORK SHALL CONFORM TO THE 1988 STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, AND ALL SUBSEQUENT SUPPLEMENTAL SPECIFICATIONS THERETO.

EXCAVATIONS IN THE STREET PAVEMENT AREAS SHALL BE CAREFULLY BACKFILLED WITH LAYERS OF SUITABLE GRAVEL. THE TWELVE (12) INCHES OF BEDDING MATERIAL AROUND PIPES SHALL BE SAND (M1.04.0) FOR WATER, 3" CRUSHED STONE (M2.01.0) FOR SEWER, GRAVEL BORROW - TYPE C (M1.03.0) FOR RCP DRAIN & TYPE D (M1.03.0) FOR CHDPE DRAIN OR AS SPECIFIED BY THE OWNER OF THE UTILITY AND APPROVED BY THE CITY OF MARLBOROUGH.

BACKFILL MATERIAL SHALL CONSIST OF CONTROLLED DENSITY FILL (CDF) - TYPE 1E OR 2E (M4.08.0) FOR ALL MAJOR ROADWAYS OF THE CITY OR AS DIRECTED BY THE COMMISSIONER OF PUBLIC WORKS. WHERE REQUIRED, CDF SHALL BE PLACED TO WITHIN A MINIMUM OF 5" FROM THE TOP OF THE EXISTING PAVEMENT OR AS DIRECTED BY THE CITY'S INSPECTOR. CDF SHALL BY TYPE 1E VERY FLOWABLE (EXCAVATABLE) OR TYPE 2E FLOWABLE (EXCAVATABLE) WITH A MAXIMUM STRENGTH OF 200 PSI AND 25-30% AIR. CDF (TYPE 1E AND 2E) SHALL BE EXCAVATABLE USING SIMPLE HAND TOOLS WHERE REQUIRED.

COMPACTION OF BACKFILL

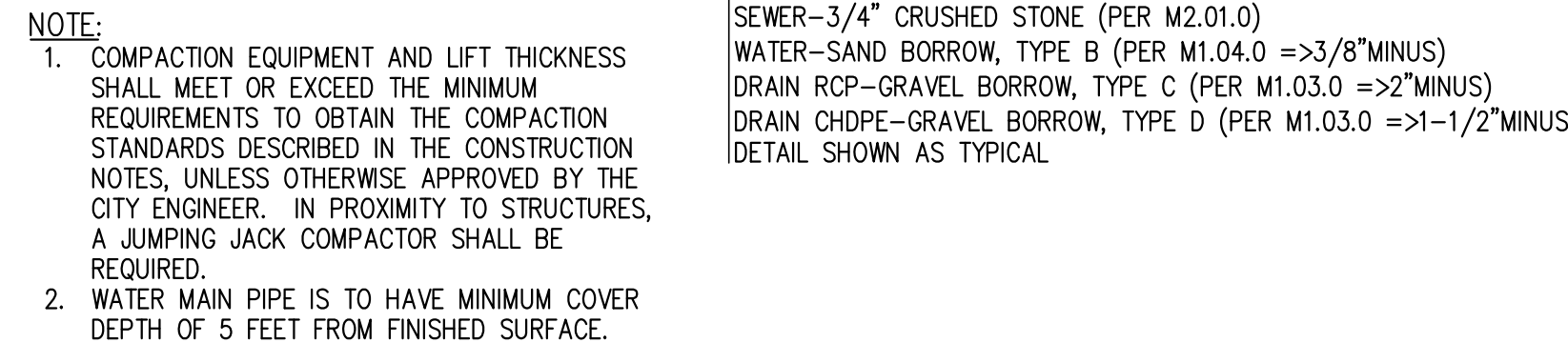
BACKFILL SHALL BE UNIFORMLY DISTRIBUTED IN SUCCESSIVE LAYERS, EACH LAYER BEING THOROUGHLY COMPACTED BEFORE THE SUCCEEDING LAYER IS PLACED. THE ENTIRE WIDTH OF THE TRENCH SHALL BACKFILLED AND MECHANICALLY TAMPED IN LIFT DEPTHS NOT GREATER THAN (6) INCHES. COMPACTION EQUIPMENT AND LIFT THICKNESS SHALL MEET OR EXCEED THE MINIMUM REQUIREMENTS TO OBTAIN THE COMPACTION STANDARDS UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER. THE TOP LAYER OF BACKFILL SHALL BE FOURTEEN (14) INCHES OF GRAVEL COMPACTED TO 97% OF MAXIMUM DENSITY.

PAVEMENT PLACED SHALL BE PLACED AND RAKED TO A UNIFORM SURFACE, ROLLED TO THE REQUIRED THICKNESS AND TO A GRADE THAT WILL MATCH THE EXISTING BITUMINOUS ROAD SURFACE. THE PERMITTEE SHALL MAINTAIN THE SURFACING AND SHALL PROMPTLY FILL WITH SIMILAR MATERIAL ANY DEPRESSION AND HOLES THAT MAY OCCUR SO AS TO KEEP THE SURFACING IN A SAFE AND SATISFACTORY CONDITION FOR TRAFFIC.

A TEMPORARY PAVEMENT SHALL BE PLACED ON THE SURFACE OF THE FILL AND THOROUGHLY COMPACTED. A TEMPORARY PAVEMENT SHALL BE HOT MIX ASPHALT NO LESS THAN THE EXISTING BASE COURSE OR A MINIMUM THREE (3) INCHES THICK (SEE EXCAVATION TRENCH DETAIL). IF PLATES ARE USED PRIOR TO TEMPORARY PAVING, THEY SHALL BE RAMPED TO MATCH THE EXISTING PAVEMENT. TEMPORARY PAVING OR STEEL PLATING SHALL IMMEDIATELY FOLLOW THE BACKFILLING OPERATION OR AS DIRECTED BY ENGINEER.

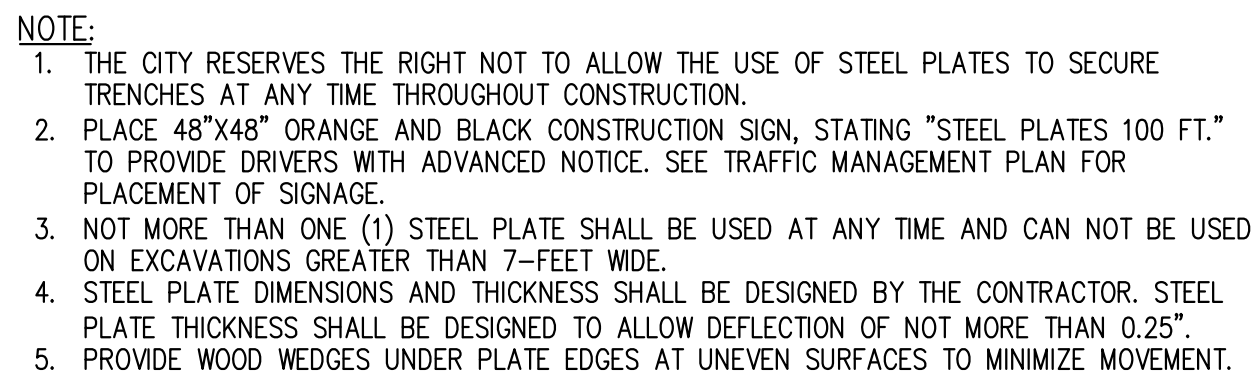
THE FINAL HOT MIX ASPHALT SURFACE SHALL NOT BE PLACED ANY EARLIER THAN 65 DAYS OR NO LATER THAN 90 DAYS FROM THE DATE OF COMPLETION OF THE TEMPORARY SURFACE WITHOUT APPROVAL FROM THE COMMISSIONER OF PUBLIC WORKS. THE TEMPORARY PAVEMENT SHALL BE MILLED TO A DEPTH OF ONE AND ONE-HALF (1 1/2) INCHES, TWELVE (12) INCHES OUTSIDE OF THE TEMPORARY PAVING LIMITS. PAVEMENT LIMITS JOINTS ARE TO BE SEALED WITH HOT APPLIED HMA CRACK SEALER, PER M3.05.4. IN SOME INSTANCES, FOR PROJECTS BEYOND A SIMPLE TRENCH EXCAVATION ADDITIONAL PAVEMENT DETAILS AND RESURFACING REQUIREMENTS MAY BE INCLUDED AS A SPECIAL CONDITION IN THE PERMITS.

ALL EXCAVATIONS MUST BE PROPERLY SLOPED, SHORED, OR SHIELDED UNLESS THEY ARE MADE ENTIRELY IN STABLE ROCK, OR LESS THAN (5) FEET DEEP AND DECLARED SAFE AFTER AN INSPECTION BY A COMPETENT PERSON.



TEMPORARY TRENCH PAVING
TYPICAL SECTION

N.T.S.



TEMPORARY TRENCH PAVING
TYPICAL SECTION
N.T.S.

[illegible]

Project Title:

RECONSTRUCTION OF
HAYES MEMORIAL DRIVE
AND
APPURTENANT WORK

Contract No: ED-2023-09	Sheet No. 6
Date: 3/22/2023	
Scale: N.T.S.	

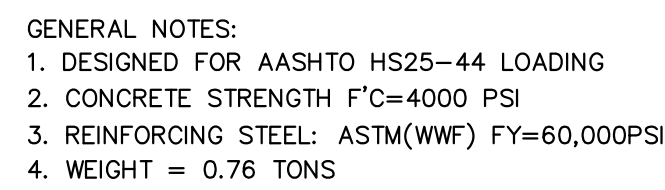


Diagram illustrating the cross-section of a street and sidewalk, showing the transition from the high side to the low side.

The diagram includes the following labels and dimensions:

- DRIVEWAY OPENING**: The width of the opening, labeled as 12 .
- BACK OF SIDEWALK**: The boundary of the sidewalk on the low side.
- TRANSITION HIGH SIDE**: The boundary of the high side.
- TRANSITION LOW SIDE**: The boundary of the low side.
- EDGE OF STREET PAVEMENT**: The boundary of the street pavement.
- Cross Slope**: The slope of the pavement, labeled as $\frac{3}{16}" \text{ PER FT. } \times$.
- Width**: The width of the sidewalk, labeled as $W(FT.)$.
- Ratio**: The ratio of the slope, labeled as $1:12$.
- PLAN VIEW**: The overall view of the street cross-section.

Diagram illustrating a driveway opening cross-section. The diagram shows a transition from a sidewalk to a driveway. Key dimensions and labels include:

- ELEVATION AT BACK OF SIDEWALK**: Indicated by an arrow pointing to the top left of the sidewalk.
- 12**: Dimension for the sidewalk width.
- DRIVEWAY OPENING**: Dimension for the width of the driveway opening.
- 3" PER FT.**: Slope dimension for the driveway.
- 1**: Dimension for the curb height.
- 6" REVEAL**: Dimension for the reveal at the bottom of the curb.
- 3/4" REVEAL MAX.**: Dimension for the maximum reveal at the transition.
- 6 FEET MIN.**: Dimension for the minimum transition length.
- ELEVATION AT TOP OF CURBING**: Indicated by an arrow pointing to the top of the curb.
- TRANSITION (1/4" (ft))**: Label for the transition section.
- SECTION A - A**: Section line label.
- ELEVATION AT BOTTOM OF CURBING**: Indicated by an arrow pointing to the bottom of the curb.

Table below the diagram:

PROFILE GRADE	TRANSITION LENGTH
%	G (ft)
0	6.0
1	7.0
2	8.0
3	9.5
4	11.5
5+	15.0 MAX.

1" REBAR FOR BAG REMOVAL FROM CATCH BASIN

DUMP STRAPS (2) EACH

EXPANSION RESTRAINT

3" NYLON ROPE

2" FLAT WASHERS

BAG DETAIL

CATCH BASIN GRATE

SILT SACK

CATCH BASIN FRAME

A cross-sectional diagram of a silt fence installed on a slope. The fence is constructed from a vertical wooden stake driven into the ground, with silt fence fabric attached to it. The fabric is buried 1 foot under the ground surface. A 2-inch by 6-inch wooden stake is placed 10 feet on center (O.C.) from the fence. A silt sock, filled with brown/composted material, is placed at the base of the fence. The area to be protected is indicated by a dashed line and a hatched area. Arrows indicate the direction of water flow from the protected area towards the fence.

Labels in the diagram include:

- SILT FENCE FABRIC WITH 4" STAKE (1' BURY)
- 2"x2"x6" WOODEN STAKES PLACED 10' O.C.
- SILT SOCK
- BROWN/PLACED COMPOST
- WATER FLOW
- AREA TO BE PROTECTED

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