COMMONWEALTH OF MASSACHUSETTS DEPARTMENT OF CONSERVATION AND RECREATION DIVISION OF PLANNING AND ENGINEERING

MASS CENTRAL RAIL TRAIL
IN THE TOWNS OF HUDSON, STOW, MARLBOROUGH & SUDBURY
MASSACHUSETTS
MIDDLESEX COUNTY

THESE PLANS ARE SUPPLEMENTED BY THE OCTOBER 2017 CONSTRUCTION STANDARD DETAILS, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK.

DCR CONTRACT NO. P19-3295-D1A

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SHEET NO.

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TRAFFIC SIGN SUMMARY

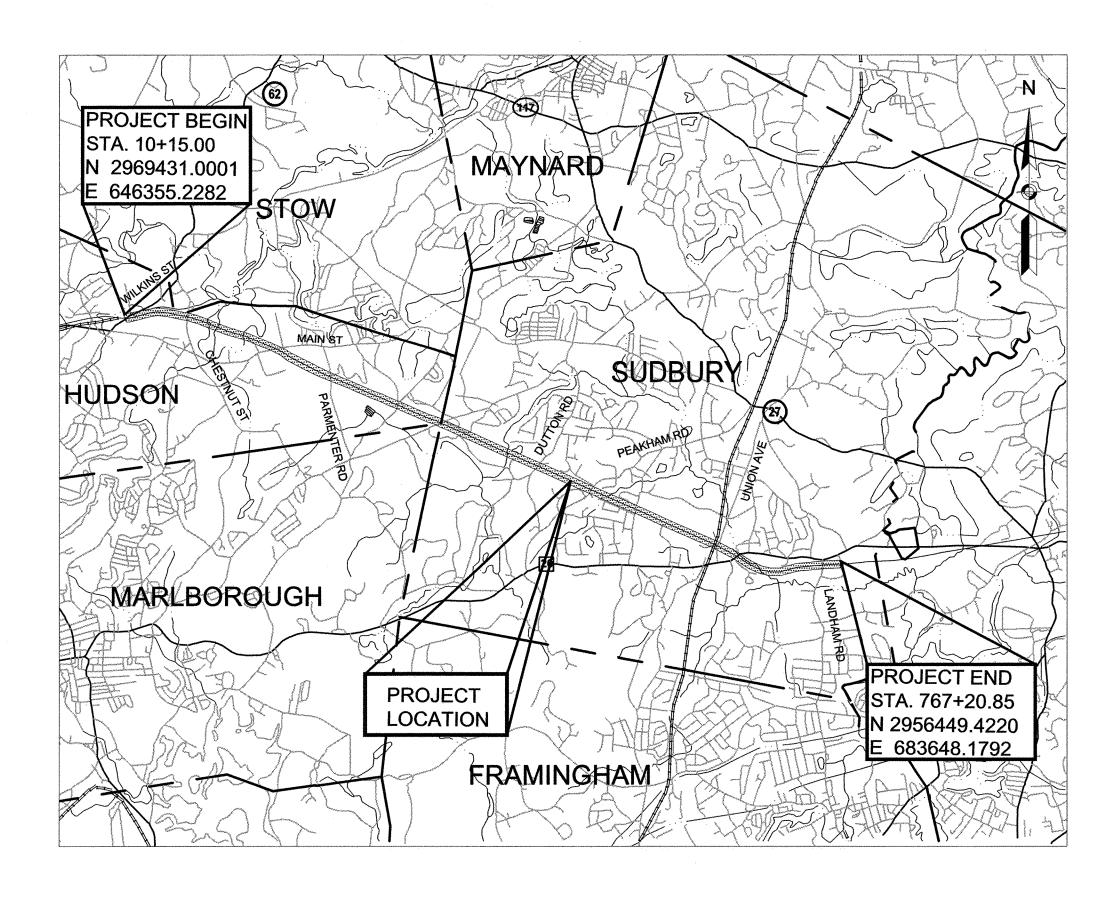
D-01- D-08

CONSTRUCTION DETAILS

(D-01 NOT INCLUDED)

(SHEETS GW-01 & GW-02 NOT INCLUDED)

(NOT INCLUDED)



CHARLES D. BAKER, GOVERNOR KARYN E. POLITO, LT. GOVERNOR

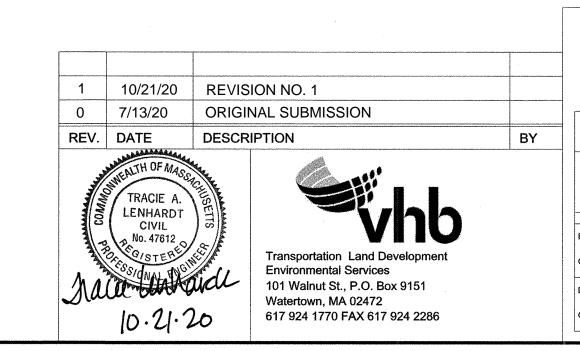
KATHLEEN A. THEOHARIDES, SECRETARY
EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS

JIM MONTGOMERY, INTERIM COMMISSIONER
DEPARTMENT OF CONSERVATION & RECREATION

0 2000 4000 6000 8000 SCALE: 1" = 2000'

LENGTH OF PROJECT = 40,410.06 FEET = 7.653 MILES

SUDBURY STORMWATER PERMIT PLANS NOT APPROVED FOR CONSTRUCTION



COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF CONSERVATION AND RECREATION
DIVISION OF PLANNING AND ENGINEERING

MASS CENTRAL RAIL TRAIL - WAYSIDE

MASS CENTRAL RAIL TRAIL HUDSON, STOW, MARLBOROUGH & SUDBURY, MA

DESIGNER:JCR CHECKED:SHK	TITLE SHEET	SHEET NO.	
DRAWN: JCR	CONT. P19-3295-D1A	SCALE: AS NOTED	G-01
CHECKED: TAL	ACC. XXXXXXX	DATE: OCT 2020	1 OF 1

GENERAL S'	YMBOLS		4 D D D E \ /	IA TIONIO
EXISTING	PROPOSED	DESCRIPTION	— ABBREV	IATIONS
	JB	JERSEY BARRIER	<u>GENERAL</u>	
⊞ ⊕ ⊕ CB	□ GB	CATCH BASIN	AADT	ANNUAL AVERAGE DAILY TRAFFIC
		CATCH BASIN CURB INLET	ABAN	ABANDON
© FP	⊚ FP	FLAG POLE	ADD	ADDROVIMATE
G GP	G GP	GAS PUMP	APPROX. A.C.	APPROXIMATE ASPHALT CONCRETE
□ MB	□ MB	MAIL BOX	ACCM PIPE	ASPHALT COATED CORRUGATED METAL PIPE
		POST SQUARE	BIT.	BITUMINOUS
0	0	POST CIRCULAR	ВС	BOTTOM OF CURB
⊕ WELL	⊕ WELL	WELL	BD.	BOUND
• EHH O	□ EHH O	ELECTRIC HANDHOLE FENCE GATE POST	BL	BASELINE
o GG	o GG	GAS GATE	BLDG	BUILDING
BHL #	BHL#	BORING HOLE	BM	BENCHMARK BY OTHERS
→ MW #	→ MW #	MONITORING WELL	BO BOS	BOTTOM OF SLOPE
■ TP #	TP #	TEST PIT	BR.	BRIDGE
φ.	P	HYDRANT	СВ	CATCH BASIN
*	*	LIGHT POLE	CBCI	CATCH BASIN WITH CURB INLET
■CB ■CB/DH		CONCRETE BOUND/DRILL HOLE	CC	CEMENT CONCRETE
		GPS POINT	CCM	CEMENT CONCRETE MASONRY
© D	© (•)	CABLE MANHOLE DRAINAGE MANHOLE	CEM	CEMENT
E	⑤ ⑥	ELECTRIC MANHOLE	CI CIP	CURB INLET CAST IRON PIPE
©	©	GAS MANHOLE	CLF	CHAIN LINK FENCE
M	<u>(M)</u>	MISC MANHOLE	CL	CENTERLINE
S	S	SEWER MANHOLE	CMP	CORRUGATED METAL PIPE
T	T	TELEPHONE MANHOLE	CSP	CORRUGATED STEEL PIPE
W	W	WATER MANHOLE	CO.	COUNTY
MHB	■ MHB	MASSACHUSETTS HIGHWAY BOUND	CONC	CONCRETE
- MON		MONUMENT	CONT	CONTINUOUS
□ SB ■ TB		STONE BOUND TOWN OR CITY BOUND	CONST	CONSTRUCTION
■ 1B		TRAVERSE OR TRIANGULATION STATION	CR GR DHV	CROWN GRADE DESIGN HOURLY VOLUME
	→ TPL or GUY	TROLLEY POLE OR GUY POLE	DI	DROP INLET
o HTP	2 3. 33.	TRANSMISSION POLE	DIA	DIAMETER
-b- UFB	-&- UFB	UTILITY POLE W/ FIREBOX	DIP	DUCTILE IRON PIPE
-∳- UPDL	-∳- UPDL	UTILITY POLE WITH DOUBLE LIGHT	DW	STEADY DON'T WALK - PORTLAND ORANGE
-5- ULT	-&- ULT	UTILITY POLE W / 1 LIGHT	DWY	DRIVEWAY
-∽ UPL	-⊶ UPL	UTILITY POLE	ELEV (or EL.)	ELEVATION
0		BUSH	EMB	EMBANKMENT
•SIZE & TYPE		TREE	EOP EXIST (or EX)	EDGE OF PAVEMENT EXISTING
0		STUMP	EXC	EXCAVATION
₩ WF-X-XXX		SWAMP / MARSH WETLAND FLAG	F&C	FRAME AND COVER
• WG	• WG	WEILANDIEAG	F&G	FRAME AND GRATE
• PM	• PM	PARKING METER	FDN.	FOUNDATION
		- OVERHEAD CABLE/WIRE	FLDSTN	FIELDSTONE
		- CURBING	GAR	GARAGE
_100		- CONTOURS (ON-THE-GROUND SURVEY DATA)	GD	GROUND
<u></u>		- CONTOURS (PHOTOGRAMMETRIC DATA)	GG GI	GAS GATE GUTTER INLET
12" RCP _D		- UNDERGROUND DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER)	GIP	GALVANIZED IRON PIPE
4" HP 0		- UNDERGROUND ELECTRIC DUCT (DOUBLE LINE 24 INCH AND OVER) - UNDERGROUND GAS MAIN (DOUBLE LINE 24 INCH AND OVER)	GRAN	GRANITE
8" VCP S		- UNDERGROUND SEWER MAIN (DOUBLE LINE 24 INCH AND OVER)	GRAV	GRAVEL
		- UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AND OVER)	GRD	GUARD
8" C.I. W		- UNDERGROUND WATER MAIN (DOUBLE LINE 24 INCH AND OVER)	HDW	HEADWALL
00000000000		BALANCED STONE WALL	HMA	HOT MIX ASPHALT
		GUARD RAIL - STEEL POSTS	HOR HYD	HORIZONTAL HYDRANT
	~	- WOOD GUARD RAIL	INV	INVERT
X	x	- CHAIN LINK OR METAL FENCE - WOOD FENCE	JCT	JUNCTION
		- WOOD FENCE > TREE LINE	L	LENGTH OF CURVE
		- SAWCUT LINE	LB	LEACH BASIN
		TOP OR BOTTOM OF SLOPE	LP	LIGHT POLE
		- LIMIT OF EDGE OF PAVEMENT OR COLD PLANE AND OVERLAY	LST . –	LANDSCAPE TIMBER
		BANK OF RIVER OR STREAM	LT	LEFT
		BORDER OF WETLAND	MAX MB	MAXIMUM MAILBOX
100°BZ		100 FT WETLAND BUFFER	MH	MANHOLE
		200 FT RIVERFRONT AREA BUFFER	MHB	MASSACHUSETTS HIGHWAY BOUND
——————————————————————————————————————		APPROX 200 FT RIVERFRONT BUFFER 100 FT RIVERFRONT AREA BUFFER	MIN	MINIMUM
100'RA		APPROX 100 FT RIVERFRONT AREA BUFFER	NIC	NOT IN CONTRACT
AURA		AURA BUFFER	NO.	NUMBER
100BZ—AURA		100 FT AURA BUFFER	PC	POINT OF CURVATURE
100VPBZ		100 FT VERNAL POOL AREA BUFFER	PCC	POINT OF COMPOUND CURVATURE
		- STATE HIGHWAY LAYOUT/STATE OWNED LAND	P.G.L. Pl	PROFILE GRADE LINE POINT OF INTERSECTION
		TOWN OR CITY LAYOUT	POC	POINT OF INTERSECTION POINT ON CURVE
		- COUNTY LAYOUT	POT	POINT ON CORVE
		RAILROAD SIDELINE	PRC	POINT OF REVERSE CURVATURE
		TOWN OR CITY BOUNDARY LINE PROPERTY LINE OR ADDROYMATE PROPERTY LINE	PROJ	PROJECT
		PROPERTY LINE OR APPROXIMATE PROPERTY LINE - EASEMENT	PROP	PROPOSED
	· c:::::x:::::x:::::x	· EROSION CONTROL BARRIER	PSB PT	PLANTABLE SOIL BORROW POINT OF TANGENCY
			- 1	ELINITUE LANGENIUY

CHECK DAM

TRAVERSE OR TRIANGULATION STATION

SE BENCH W/ CONCRETE PAD

ADDDENIATIONS (cont.)

PT

PVC

PVI

PVT

PVMT

PAVEMENT

POINT OF VERTICAL CURVATURE

POINT OF VERTICAL TANGENCY

POINT OF VERTICAL INTERSECTION

POINT OF TANGENCY

GENERAL	<u>-</u>
PWW	PAVED WATER WAY
R	RADIUS OF CURVATURE
R&D	REMOVE AND DISPOSE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
RDWY	ROADWAY
REM	REMOVE
RET	RETAIN
RET WALL	RETAINING WALL
ROW	RIGHT OF WAY
RR	RAILROAD
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
RT	RIGHT
SB	STONE BOUND
SHLD	SHOULDER
SMH	SEWER MANHOLE
ST	STREET
STA	STATION
SSD	STOPPING SIGHT DISTANCE
SHLO	STATE HIGHWAY LAYOUT LINE
SW	SIDEWALK
Т	TANGENT DISTANCE OF CURVE/TRUCK %
TAN	TANGENT
TEMP	TEMPORARY
TC	TOP OF CURB
TMA	TELEPHONE MAST ARM
TOS	TOP OF SLOPE
TYP	TYPICAL
UP	UTILITY POLE
VAR	VARIES
VERT	VERTICAL
VC	VERTICAL CURVE
WCR	WHEEL CHAIR RAMP
WG	WATER GATE
WIP	WROUGHT IRON PIPE
WM	WATER METER/WATER MAIN
X-SECT	CROSS SECTION

PAVEMENT MARKINGS SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
	SL	STOP LINE
	cw	CROSSWALK
	SWL	SOLID WHITE LINE
	SYL	SOLID YELLOW LINE
	BWL	BROKEN WHITE LINE
	BYL	BROKEN YELLOW LINE
	<u>DWL</u>	DOTTED WHITE LINE
	<u>DYL</u>	DOTTED YELLOW LINE
	DWLEx	DOTTED WHITE LINE EXTENSION
	DYLEx	DOTTED YELLOW LINE EXTENSION
	DBWL	DOUBLE WHITE LINE
	DBYL	DOUBLE YELLOW LINE

GENERAL NOTES:

- 1. THE PROPERTY LINES SHOWN ON THIS PLAN OF THE PARCELS AT 44 FOREST AVENUE IN HUDSON, 163 BOSTON POST ROAD IN SUDBURY AND THE FORMER RAILROAD RIGHT-OF-WAY ARE BASED UPON AN ACTUAL FIELD SURVEY CONDUCTED BY VHB, INC. IN 2015 AND FROM DEEDS AND PLANS OF RECORD.
- 2. THE EXISTING CONDITIONS SHOWN ON THIS PLAN WERE DEVELOPED FROM A COMBINED EFFORT OF AERIAL PHOTOGRAMMETRIC MAPPING BY EASTERN TOPOGRAPHICS, INC., BASED ON AERIAL PHOTOGRAPHS TAKEN ON FEBRUARY 22, 2013, AND AUGMENTED BY AN ON-THE-GROUND SURVEY PERFORMED BY VHB DURING 2015 AND 2017.
- 3. THE HORIZONTAL CONTROL IS BASED ON THE MASSACHUSETTS MAINLAND STATE PLANE COORDINATE SYSTEM AND THE NATIONAL GEODETIC SURVEY (NAD83). ALL ELEVATION IS US FEET, REFERENCED TO THE NORTH AMERICA VERTICAL DATUM OF 1988 (NAVD88).
- 4. THE CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND GRADES IN THE FIELD BEFORE COMMENCING WORK AND PROMPTLY NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
- 3. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE BASED ON FIELD OBSERVATIONS AND INFORMATION OF RECORD. THEY HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
- 4. THE DELINEATED WETLANDS SHOWN ON THIS PLAN WERE FLAGGED BY THE VHB ENVIRONMENTAL DEPARTMENT AND FIELD SURVEYED BY THE VHB SURVEY DEPARTMENT IN SEPTEMBER AND OCTOBER 2017 AND WERE UPDATED IN MAY 2018 (SUDBURY ONLY). IN HUDSON, ADDITIONAL WETLANDS WERE DELINEATED AND SURVEYED BY VHB IN JANUARY 2019.
- 5. THE APPROXIMATE WETLANDS AND STREAMS, AND THEIR ASSOCIATED BUFFERS AND RIVERFRONT AREAS, WHERE APPLICABLE, WERE TAKEN FROM AVAILABLE MASSGIS DATA. THESE WERE NOT FIELD DELINEATED OR FIELD VERIFIED.
- 6. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
- 7. THE CONTRACTOR SHALL ALTER THE MASONRY OF THE TOP SECTION OF ALL EXISTING DRAINAGE AND SEWER STRUCTURES AS NECESSARY FOR CHANGES IN GRADE, AND RESET ALL WATER AND DRAINAGE FRAMES, GRATES AND BOXES TO THE PROPOSED FINISH SURFACE GRADE. REQUIRED NEW MASONRY SHALL BE CLAY BRICK.
- 8. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES.
- 9. EXISTING UTILITY POLES WILL BE RELOCATED BY OTHERS IF REQUIRED.
- 10. TREES AND SHRUBS WITHIN THE LIMITS OF GRADING SHALL BE REMOVED ONLY UPON APPROVAL OF THE ENGINEER.
- 11. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT NO EXPENSE TO THE OWNER.
- 12. THE TERM "PROPOSED" (PROP) MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS OR, WHERE APPLICABLE, RE-USING EXISTING MATERIALS IDENTIFIED AS "REMOVE AND RESET" (R&R).
- 13. JOINTS BETWEEN NEW ASPHALT CONCRETE ROADWAY PAVEMENT AND SAWCUT EXISTING PAVEMENT SHALL BE SEALED WITH BITUMEN AND BACKSANDED.
- 14. EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE RETAINED UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
- 15. IF SUITABLE, ALL EXISTING GRANITE CURB & EDGING SHALL BE RE-USED IN THE PROPOSED WORK, EXCEPT CURVED STONES OF A DIFFERENT RADIUS THAN PROPOSED
- 16. ALL PROPOSED HOT MIX ASPHALT CURB SHALL BE MASSDOT TYPE 3 UNLESS STATED OTHERWISE ON THE PLANS.
- 17. ALL EXISTING STATE, COUNTY, CITY, AND TOWN LOCATION LINES AND PRIVATE PROPERTY LINES HAVE BEEN ESTABLISHED FROM AVAILABLE INFORMATION AND THEIR EXACT LOCATIONS ARE NOT GUARANTEED.
- 18. DISPOSAL OF ALL SURPLUS MATERIAL SHALL BE AS APPROVED BY THE ENGINEER AND
- 19. ALL EXISTING EROSION CONTROL BARRIER, CONSTRUCTION FENCING AND SILT SACKS SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION ACTIVITIES AND REMOVED AFTER CONSTRUCTION ACTIVITIES ARE COMPLETE.



Transportation Land Development

101 Walnut St., P.O. Box 9151

617 924 1770 FAX 617 924 2286

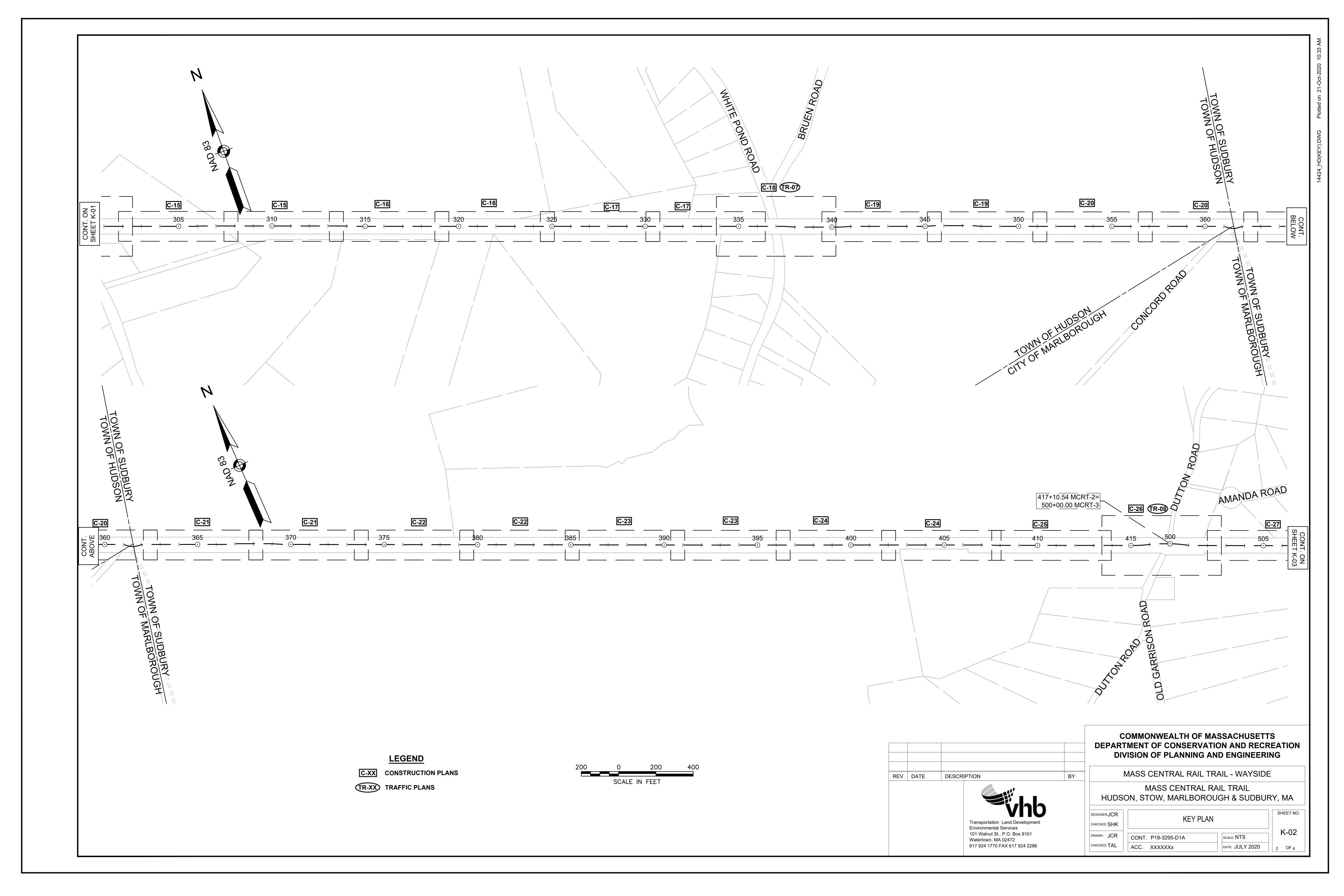
Environmental Services

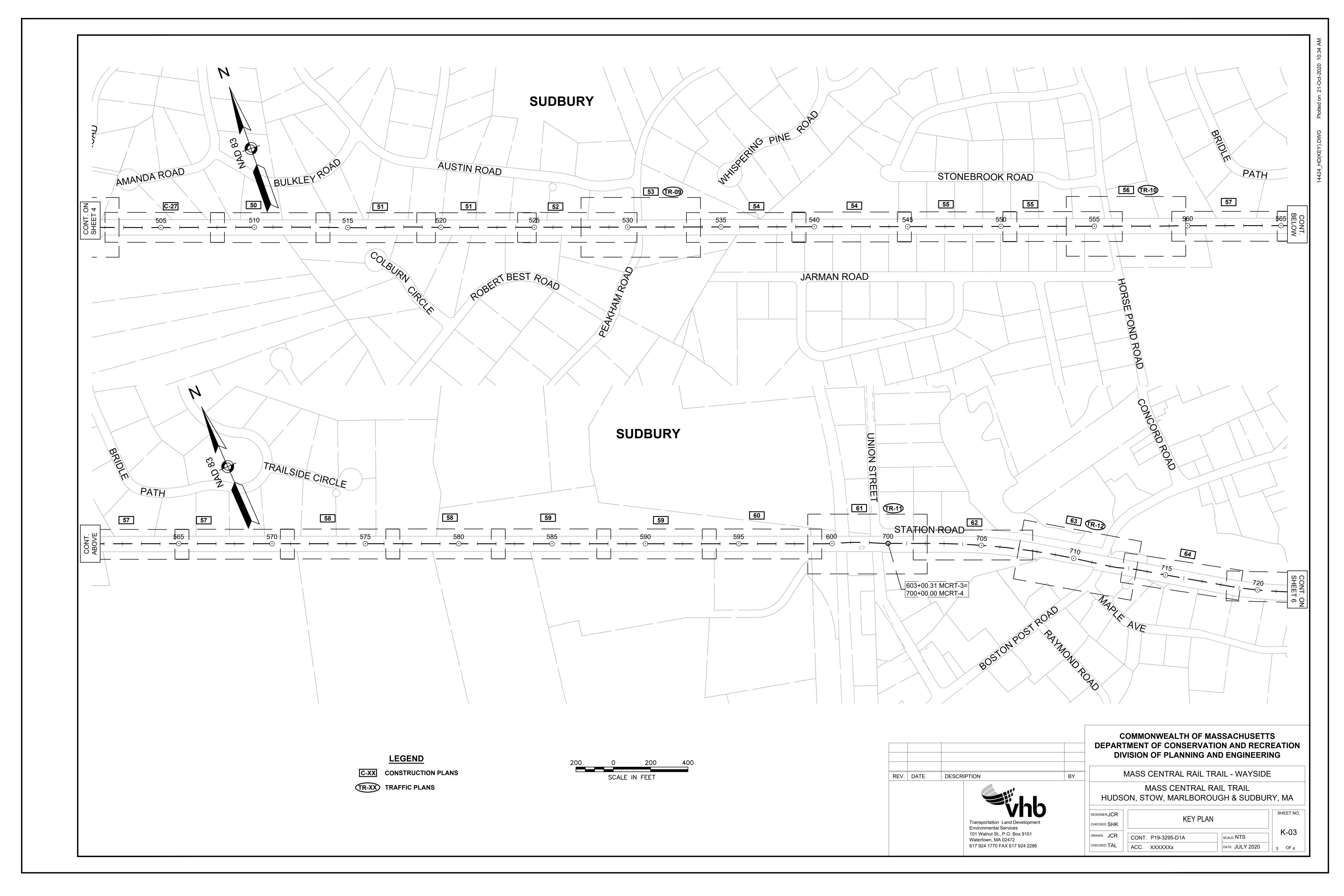
Watertown, MA 02472

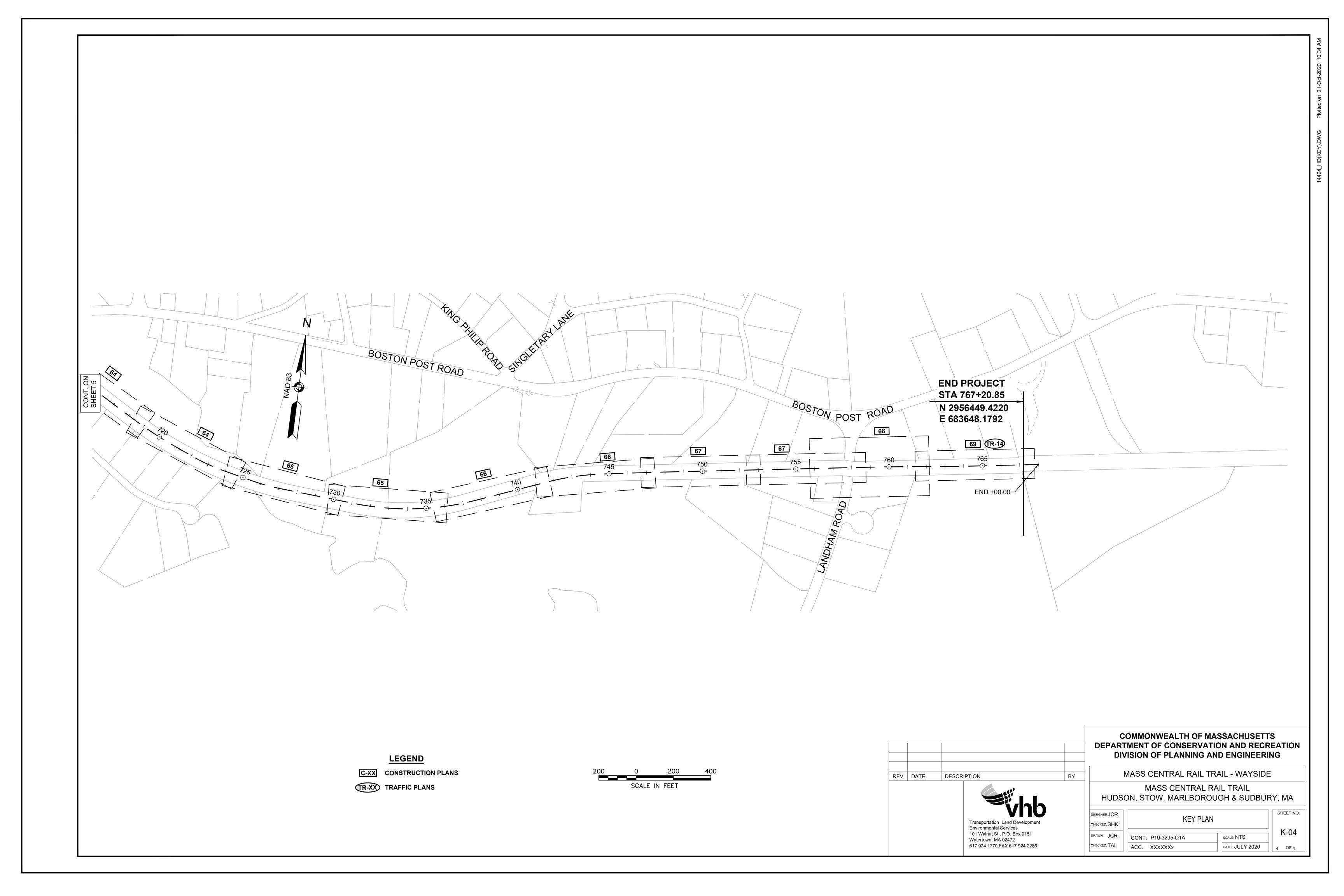
COMMONWEALTH OF MASSACHUSETTS DEPARTMENT OF CONSERVATION AND RECREATION **DIVISION OF PLANNING AND ENGINEERING**

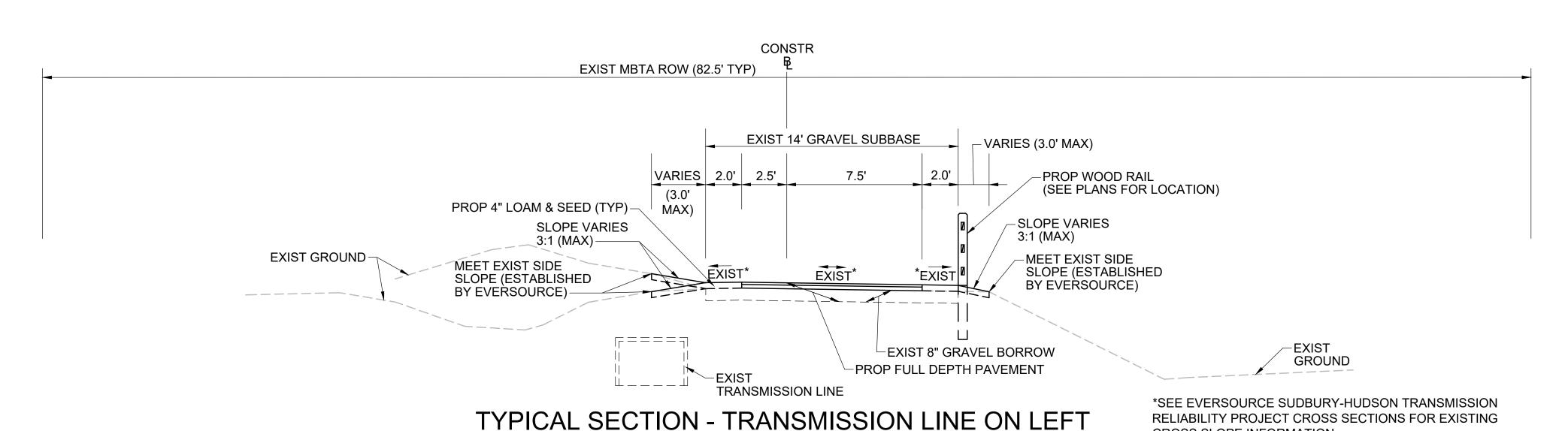
MASS CENTRAL RAIL TRAIL - WAYSIDE MASS CENTRAL RAIL TRAIL HUDSON STOW MARI BOROUGH & SUDBURY MA

DESIGNER:JCR	LEGEND ABBREVIATIONS & GENERAL NOTES		SHEET
CHECKED: SHK	LEGEND ADDREVIATION	3 & GLINLINAL NOTES	
DRAWN: JCR	CONT. P19-3295-D1A	SCALE: NTS	L-0
CHECKED: TAL	ACC. XXXXXXX	DATE: OCT 2020	1 OF









CONSTR EXIST MBTA ROW (82.5' TYP) VARIES (3.0' MAX)-EXIST 14' GRAVEL SUBBASE 2.5' 2.0' VARIES 2.0' 7.5' PROP WOOD RAIL (SEE PLANS FOR LOCATION) MAX) -SLOPE VARIES **SLOPE VARIES** 3:1 (MAX) 3:1 (MAX)--EXIST GROUND MEET EXIST SIDE SLOPE (ESTABLISHED *EXIST EXIST* EXIST* BY EVERSOURCE)--MEET EXIST SIDE SLOPE (ESTABLISHED BY EVERSOURCE) -PROP 4" LOAM & SEÉD (TYP) PROP FULL DEPTH PAVEMENT **EXIST EXIST 8" GRAVEL** GROUND-BORROW *SEE EVERSOURCE SUDBURY-HUDSON TRANSMISSION RELIABILITY PROJECT CROSS SECTIONS FOR EXISTING EXIST TRANSMISSION LINE-CROSS SLOPE INFORMATION TYPICAL SECTION - TRANSMISSION LINE ON RIGHT

PAVEMENT NOTES

PROPOSED PATH PAVEMENT

SURFACE: 1.5" SUPERPAVE SURFACE COURSE - 9.5 (SSC - 9.5)

INTERMEDIATE: 2.5" SUPERPAVE INTERMEDIATE COURSE - 19.0 (SIC - 19.0)

SUBBASE: 8" GRAVEL BORROW, TYPE b

NOTE:

FROM STA 100+00± TO STA 767+20± EXIST GRAVEL FROM EVERSOURCE ACCESS ROAD SHALL BE USED FOR SUBBASE MATERIAL.

PROPOSED CATTLE CROSSING PAVEMENT

SURFACE: 1.5" SUPERPAVE SURFACE COURSE - 9.5 (SSC - 9.5)

INTERMEDIATE:* 2.5" SUPERPAVE INTERMEDIATE COURSE - 19.0 (SIC - 19.0)

NOTE:

2.5" SUPERPAVE INTERMEDIATE COURSE TO BE INSTALLED AS PART OF EVERSOURCE SUDBURY-HUDSON

TRANSMISSION LINE RELIABILITY PROJECT.

PROPOSED CEMENT CONCRETE WHEELCHAIR RAMP

SURFACE: 6" CEMENT CONCRETE
AIR ENTRAINED 4000 PSI, 3/4", 610

SUBBASE: 8" GRAVEL BORROW, TYPE b

*NOTE:

EXIST GRAVEL FROM EVERSOURCE ACCESS ROAD SHALL

BE USED FOR SUBBASE MATERIAL.

PROPOSED CEMENT CONCRETE PULL OFF/TURN AROUND

SURFACE: 4" CEMENT CONCRETE

AIR ENTRAINED 4000 PSI, 3/4", 610

NOTE:

SUBBASE:

EXIST GRAVEL FROM EVERSOURCE ACCESS ROAD SHALL

BE USED FOR SUBBASE MATERIAL.

PROPOSED HOT MIX ASPHALT WALK

SURFACE: 1" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5)

8" GRAVEL BORROW, TYPE b

1.5" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5)

SUBBASE: 8" GRAVEL BORROW, TYPE b

NOTES:

RELIABILITY PROJECT CROSS SECTIONS FOR EXISTING

CROSS SLOPE INFORMATION

CROSS SLOPE INFORMATION

- 1. ALL HOT MIX ASPHALT SHALL BE PRODUCED WITH A WARM-MIX ASPHALT ADDITIVE.
- ALL HOT MIX ASPHALT PAVEMENTS SHALL BE CONSTRUCTED AND PRODUCED IN ACCORDANCE WITH SECTION 450 HOT MIX ASPHALT PAVEMENT.
- ASPHALT EMULSION FOR TACK COAT (RS-1H) SHALL BE SPRAY APPLIED FOR DOUBLE OVERLAP COVERAGE AT 0.05
 GALLONS PER SQUARE YARD OVER SMOOTH SURFACES.
- HMA JOINT SEALANT (ASPHALT RUBBER) SHALL BE APPLIED IN SURFACE COURSE AT ALL VERTICAL COLD JOINTS PRIOR TO PAVING.
- ALL HOT MIX ASPHALT WALKS SHALL BE MEASURED AND PAID FOR UNDER ITEM 702 OF STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.



Transportation Land Developmen

617 924 1770 FAX 617 924 2286

Environmental Services 101 Walnut St., P.O. Box 9151

Watertown, MA 02472

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF CONSERVATION AND RECREATION
DIVISION OF PLANNING AND ENGINEERING

MASS CENTRAL RAIL TRAIL - WAYSIDE

MASS CENTRAL RAIL TRAIL
HUDSON, STOW, MARLBOROUGH & SUDBURY, MA

DESIGNER:JCR
TYPICAL SECTIONS & PVMT NOTES

SHEET NO

DESIGNER: JCR
CHECKED: SHK

DRAWN: JCR
CHECKED: TAL

CHECKED: TAL

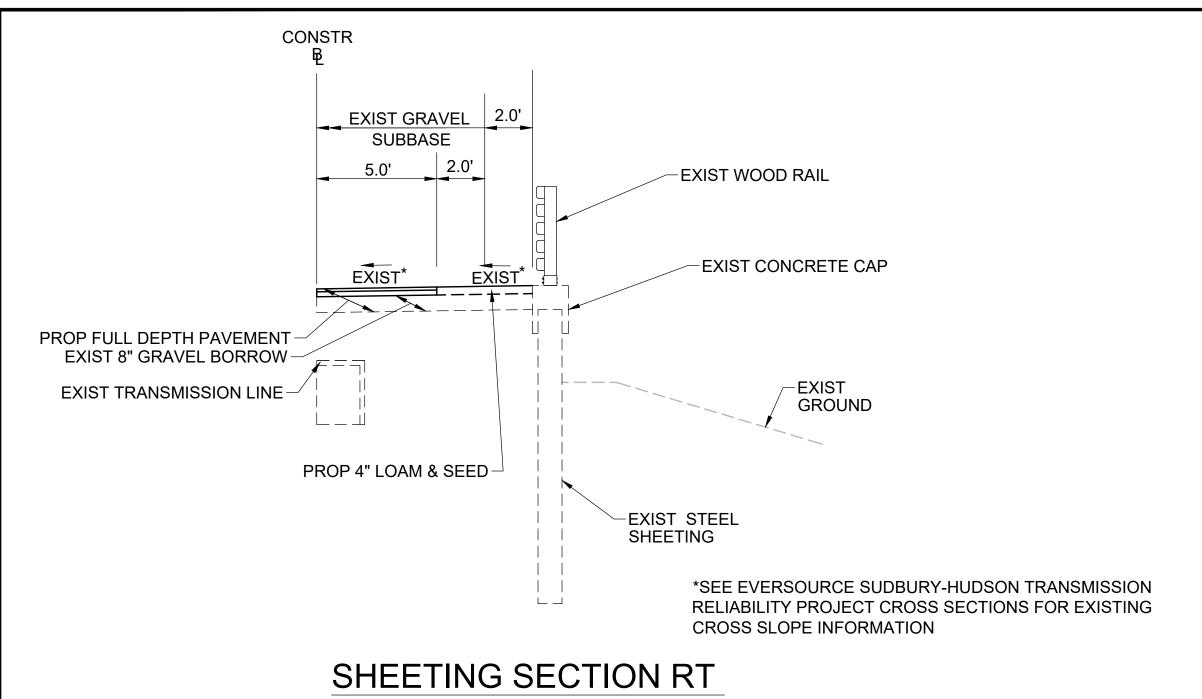
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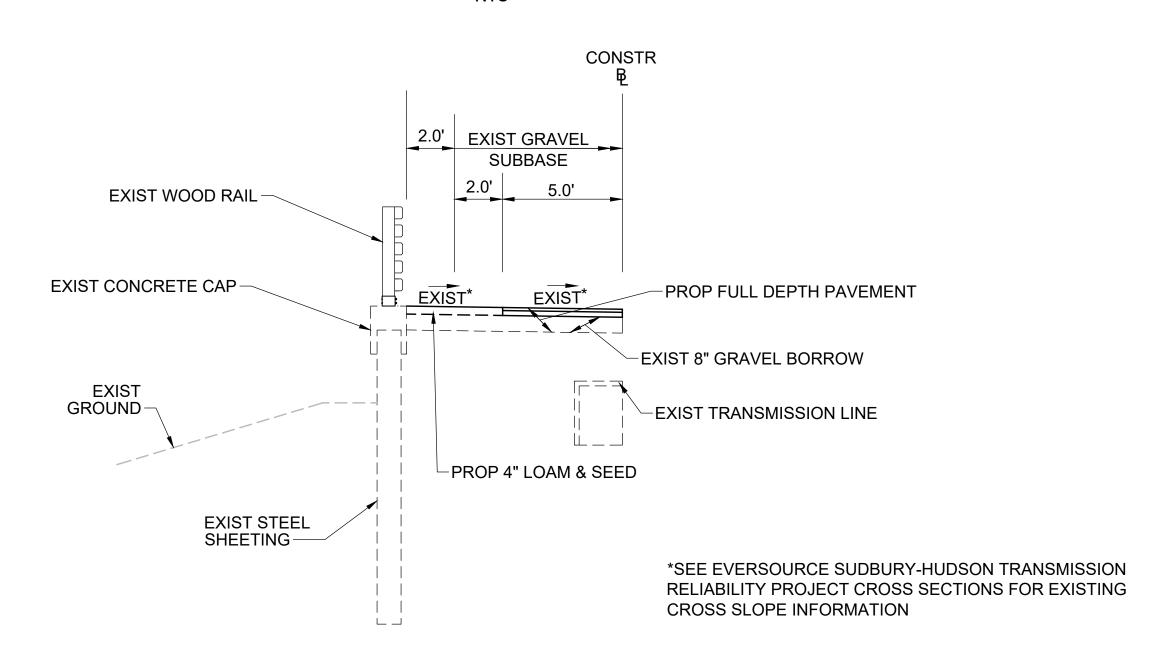
DATE: OCT 2020

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10 OF 2

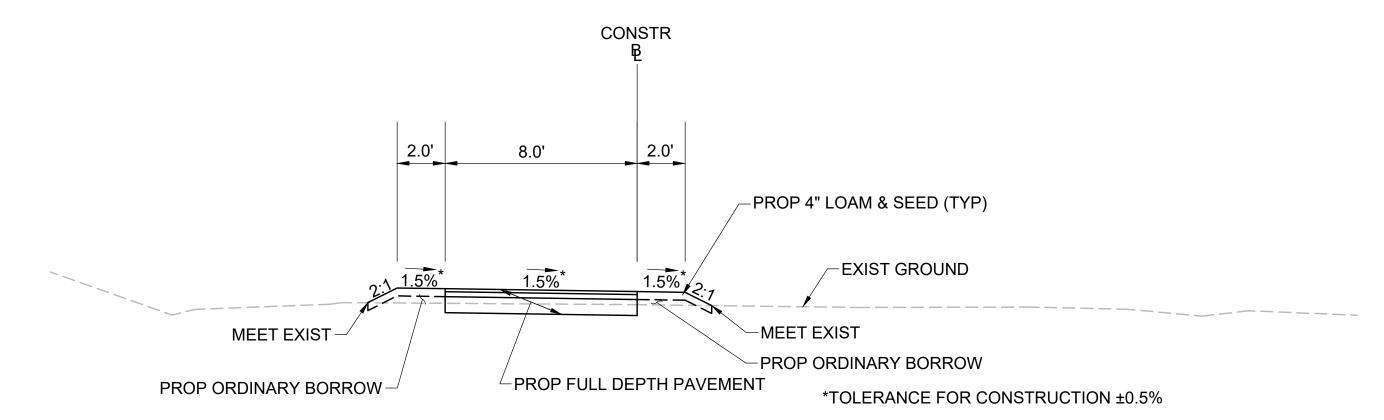


STA 148+25± TO STA 148+49±, STA 149+13± TO STA 149+75±, STA 399+91± TO STA 400+07±, STA 400+58± TO STA 401+25±, STA 724+73± TO STA 725+03±, STA 725+59± TO STA 725+96±, STA 731+00± TO STA 734+25±



SHEETING SECTION LT

STA 119+00± TO STA 119+38±, STA 119+52± TO STA 125+00±, STA 148+25± TO STA 148+49±, STA 149+13± TO STA 149+75±, STA 300+50± TO STA 400+07±, STA 400+58± TO STA 401+25±, STA 724+73± TO STA 725+03±, STA 725+59± TO STA 725+96±



TYPICAL SECTION - MCRT CONNECTION

STA 10+15± TO STA 12+40±

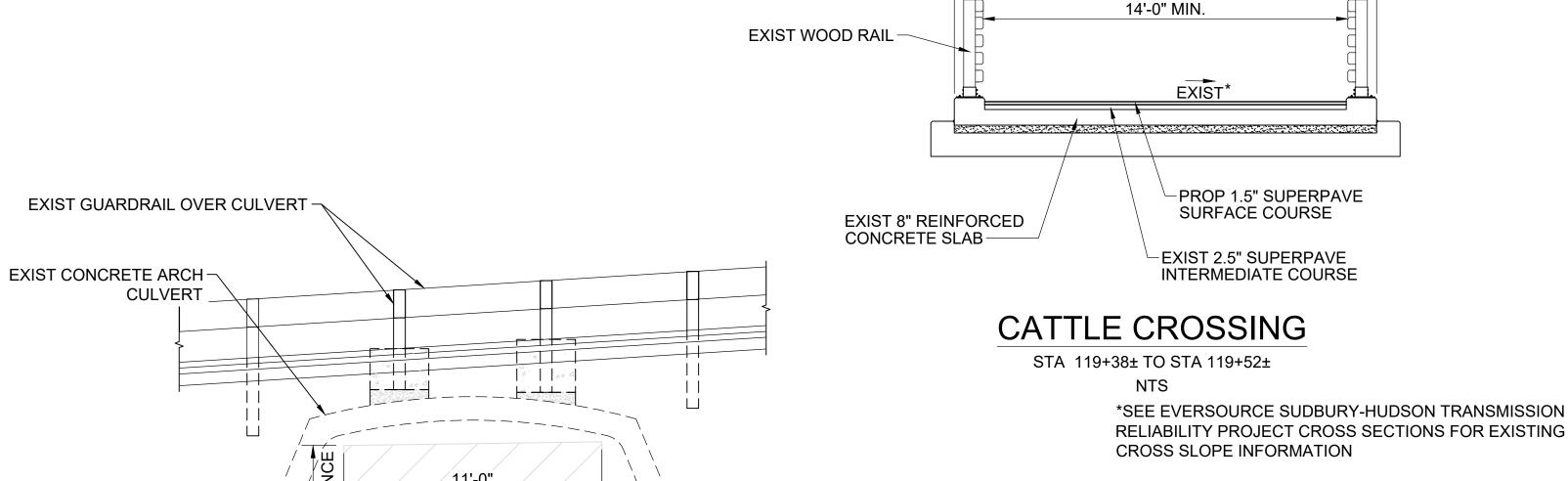
CEM CONC PULL OFF/TURN AROUND EXIST 8" GRAVEL BORROW-EXIST GROUND PROP 4" LOAM & SEED (TYP) EXIST MANHOLE OR HANDHOLE *TOLERANCE FOR CONSTRUCTION ±0.5% TYPICAL SECTION - PULL OFF/TURN AROUND

___ 1.0' LEVEL

PAVEMENT NOTES

*SEE SHEET TS-01

|18.0± (MATCH EXISTING CATTLE PASS STRUCTURE)



/11'-0" MIN. HORIZONTAL CLEARANCE CONSTR EXIST 8" GRAVEL BORROW **EXIST CONCRETE-**PEDESTAL WALL & FOOTING (TYP) EXIST* [----

EXIST 14' GRAVEL

ACCESS ROAD

EXIST TRANSMISSION LINE

CHESTNUT STREET CULVERT STA 132+44± TO STA 132+84±

*SEE EVERSOURCE SUDBURY-HUDSON TRANSMISSION RELIABILITY PROJECT CROSS SECTIONS FOR EXISTING **CROSS SLOPE INFORMATION**

BY REV. DATE DESCRIPTION

-PROP FULL DEPTH PAVEMENT

COMMONWEALTH OF MASSACHUSETTS DEPARTMENT OF CONSERVATION AND RECREATION **DIVISION OF PLANNING AND ENGINEERING**

MASS CENTRAL RAIL TRAIL - WAYSIDE MASS CENTRAL RAIL TRAIL HUDSON, STOW, MARLBOROUGH & SUDBURY, MA SHEET NO. DESIGNER:JCR TYPICAL SECTIONS & PVMT NOTES CHECKED: SHK

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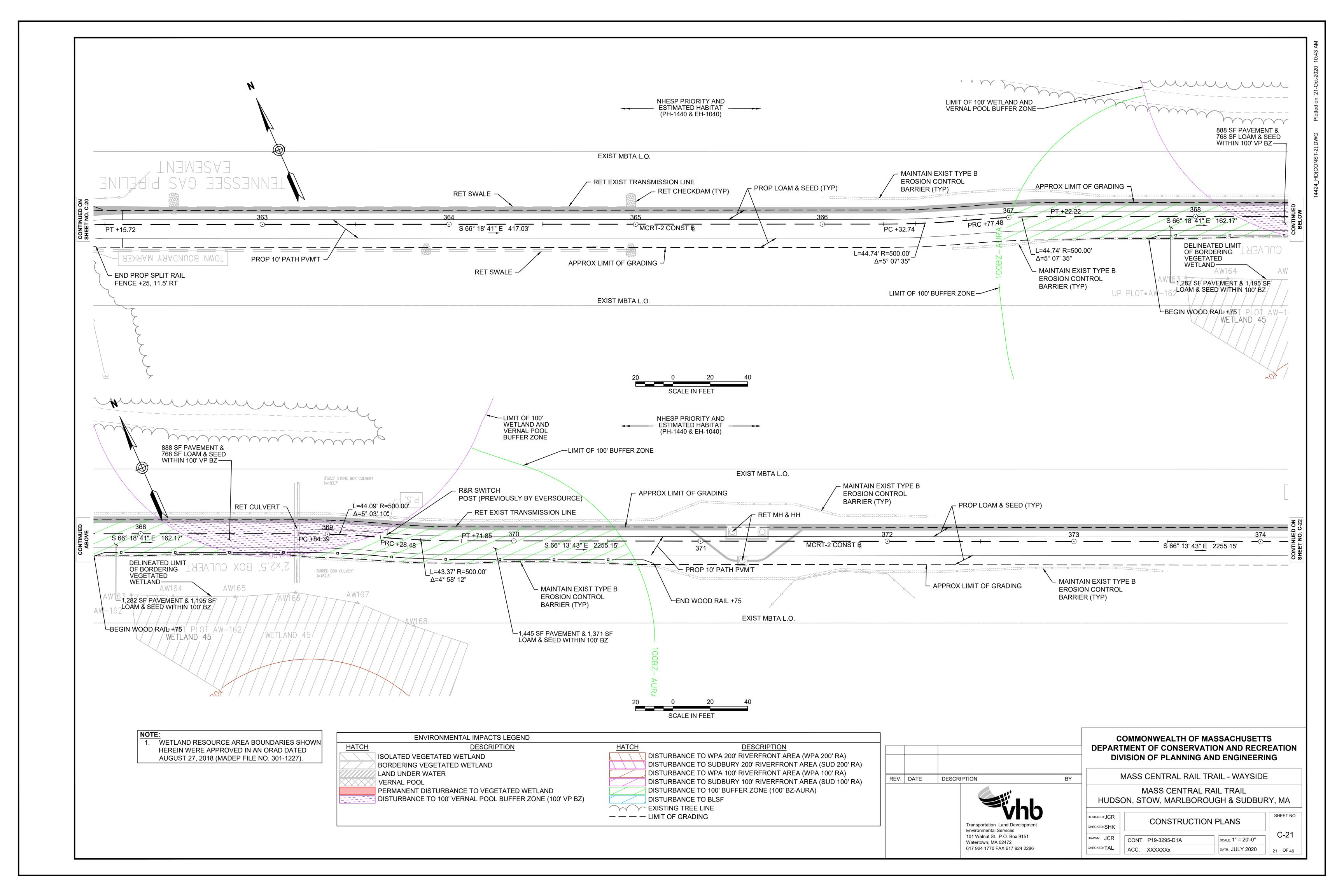
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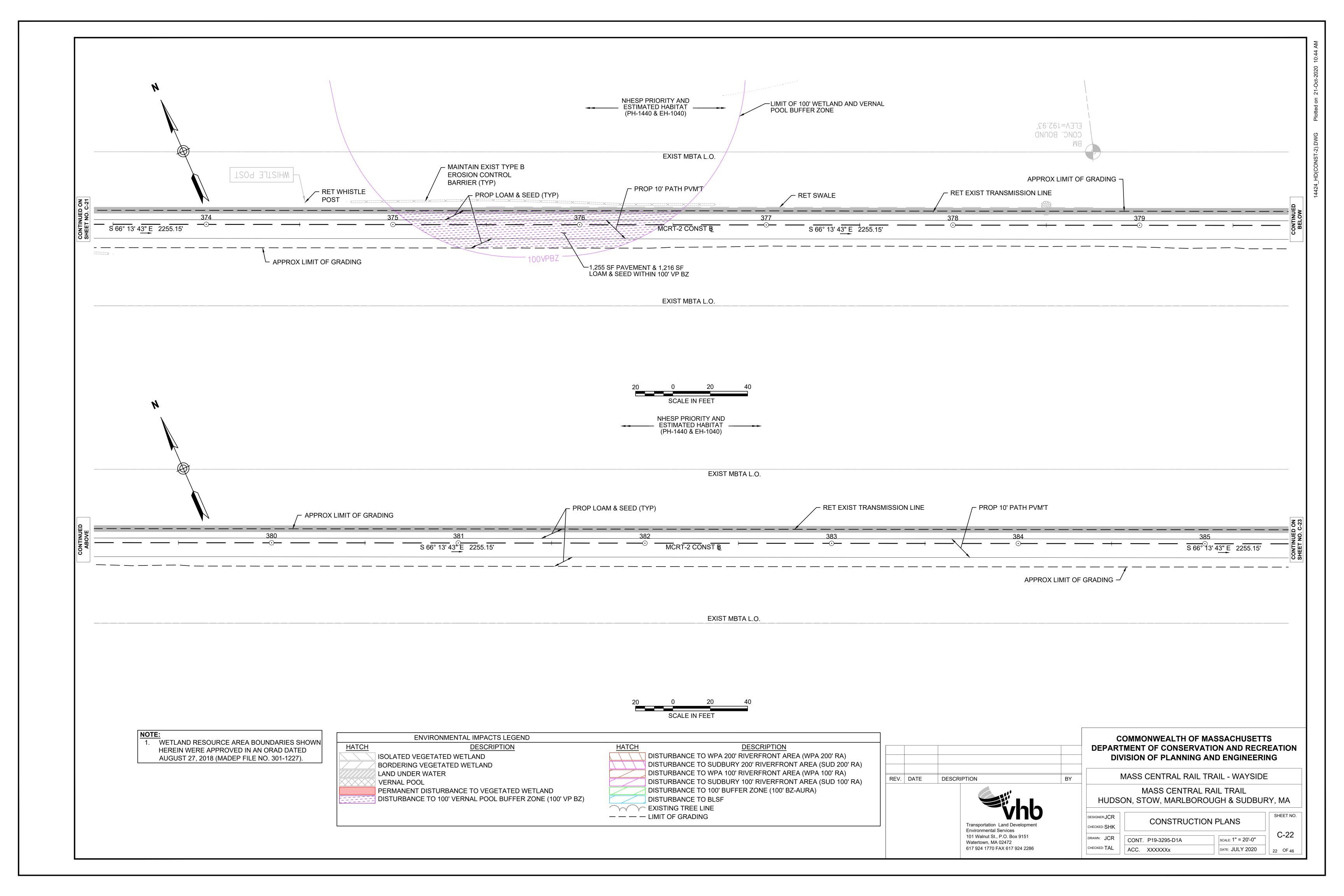
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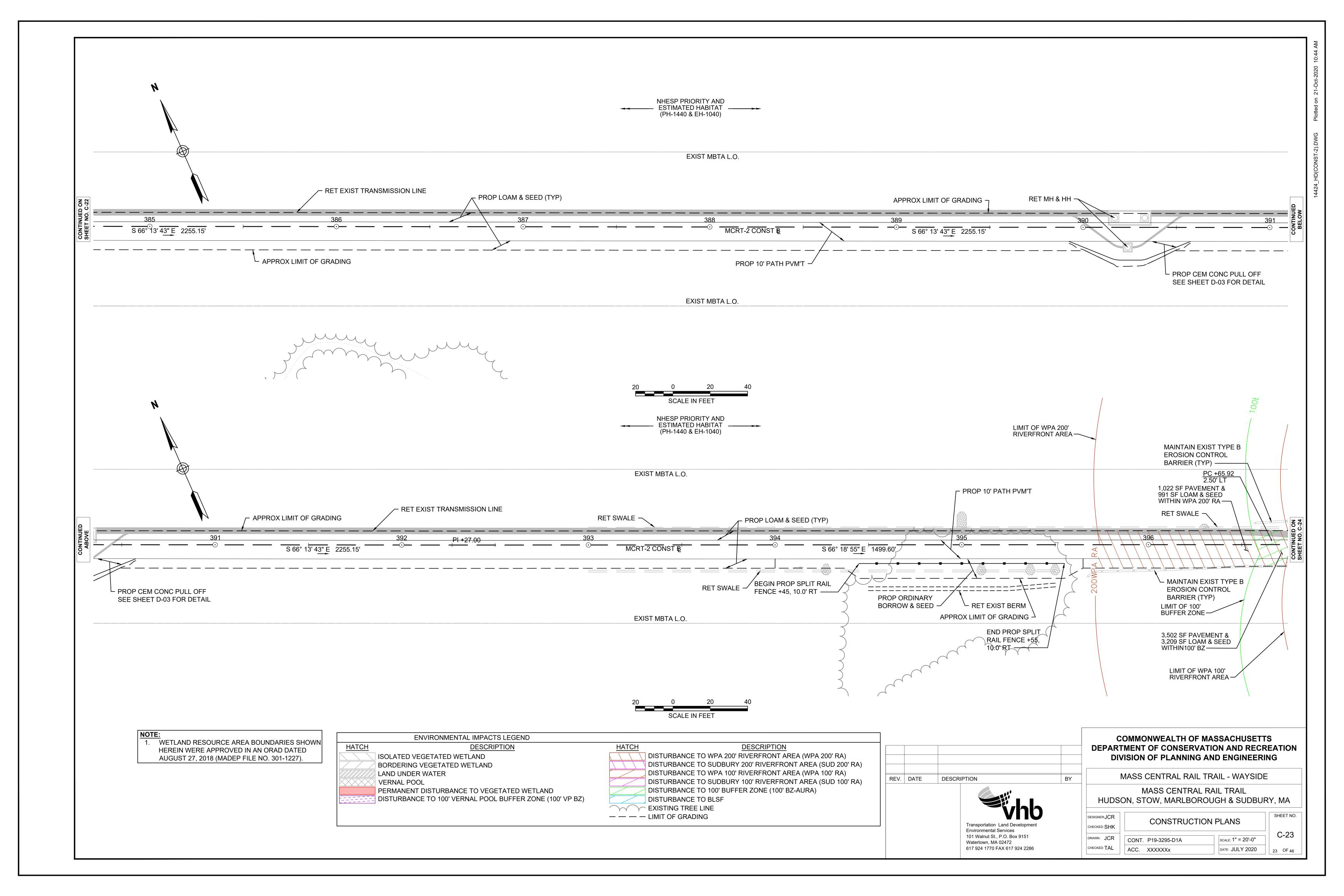
2 OF 2

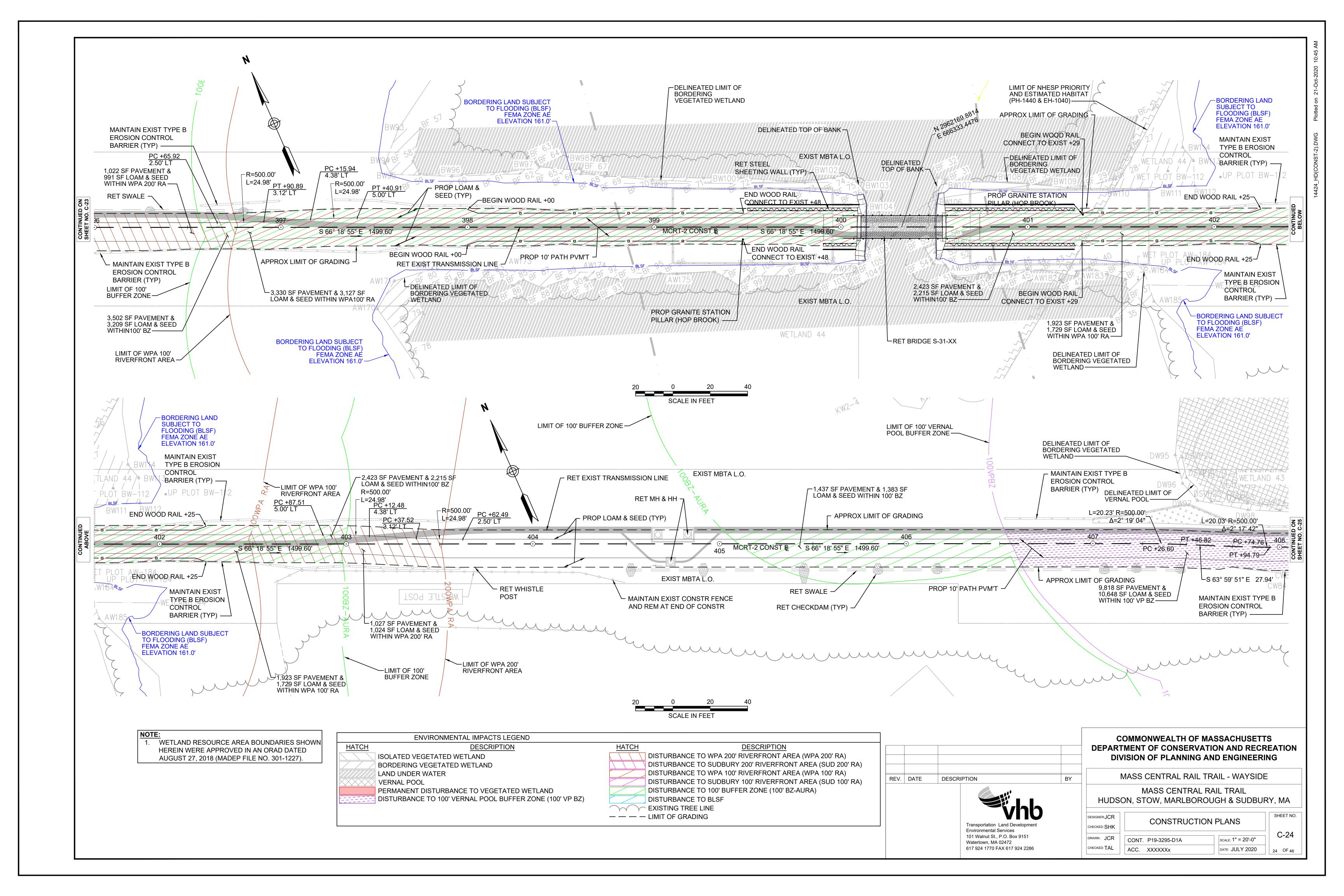
Transportation Land Development Environmental Services 101 Walnut St., P.O. Box 9151 Watertown, MA 02472

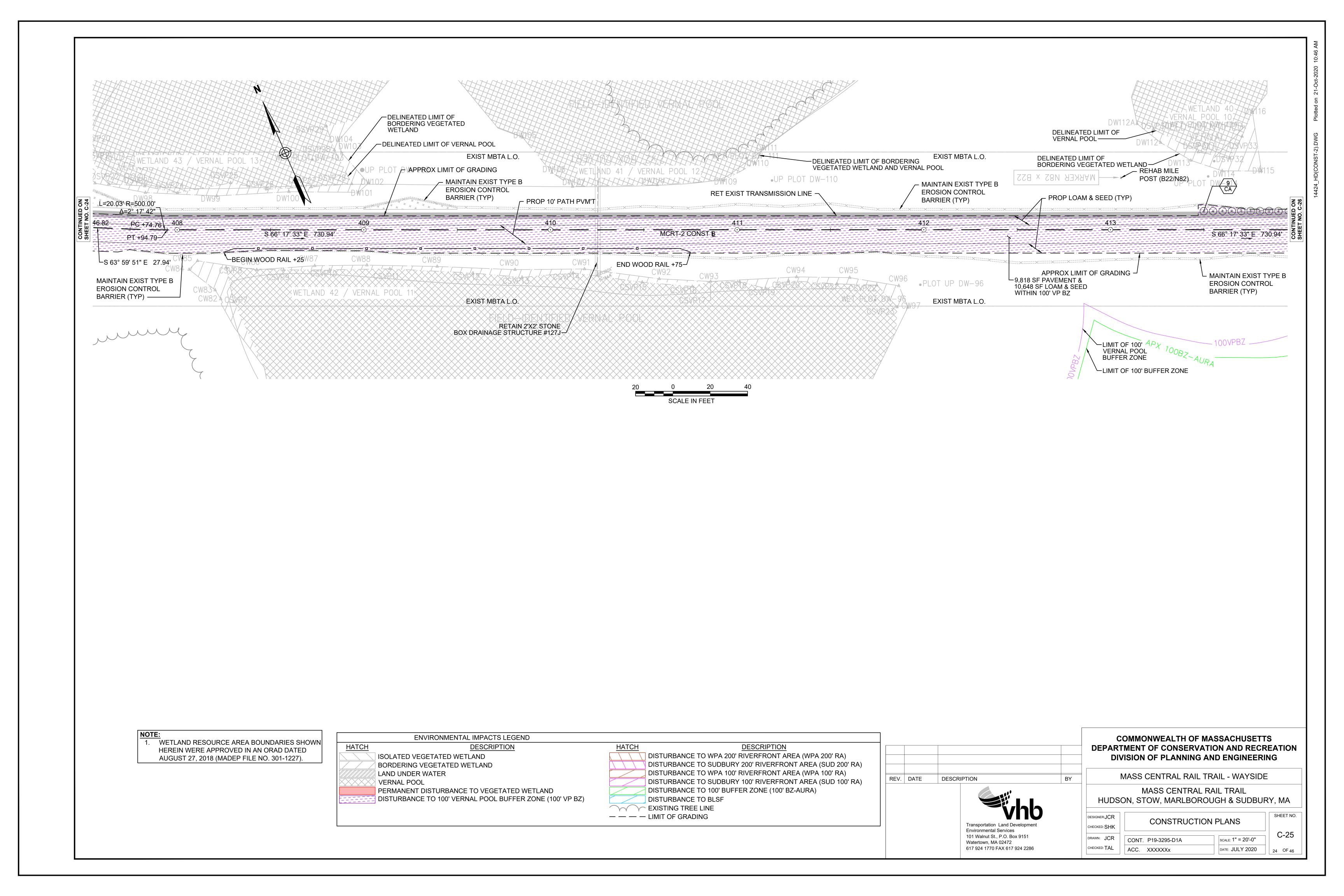
617 924 1770 FAX 617 924 2286

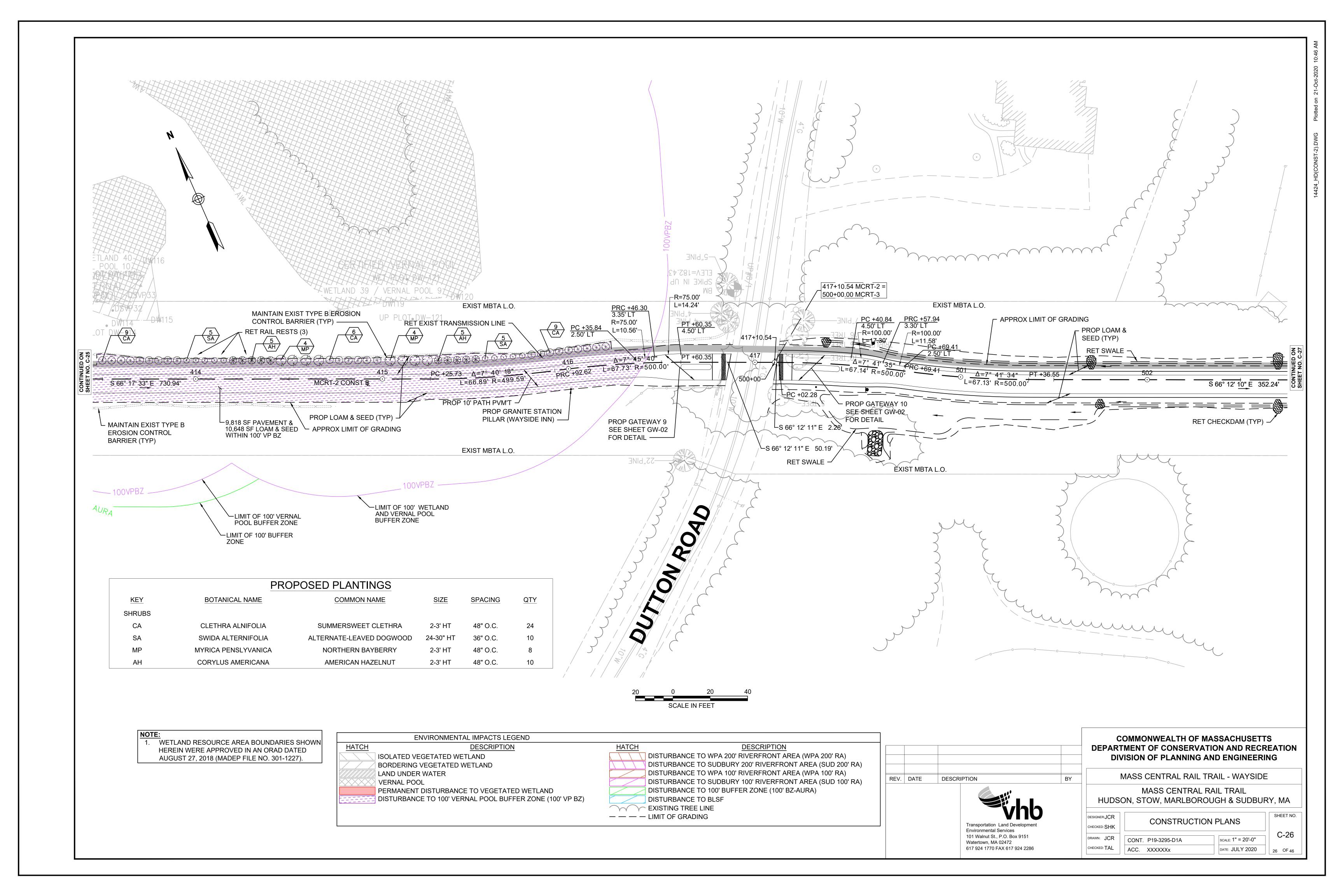


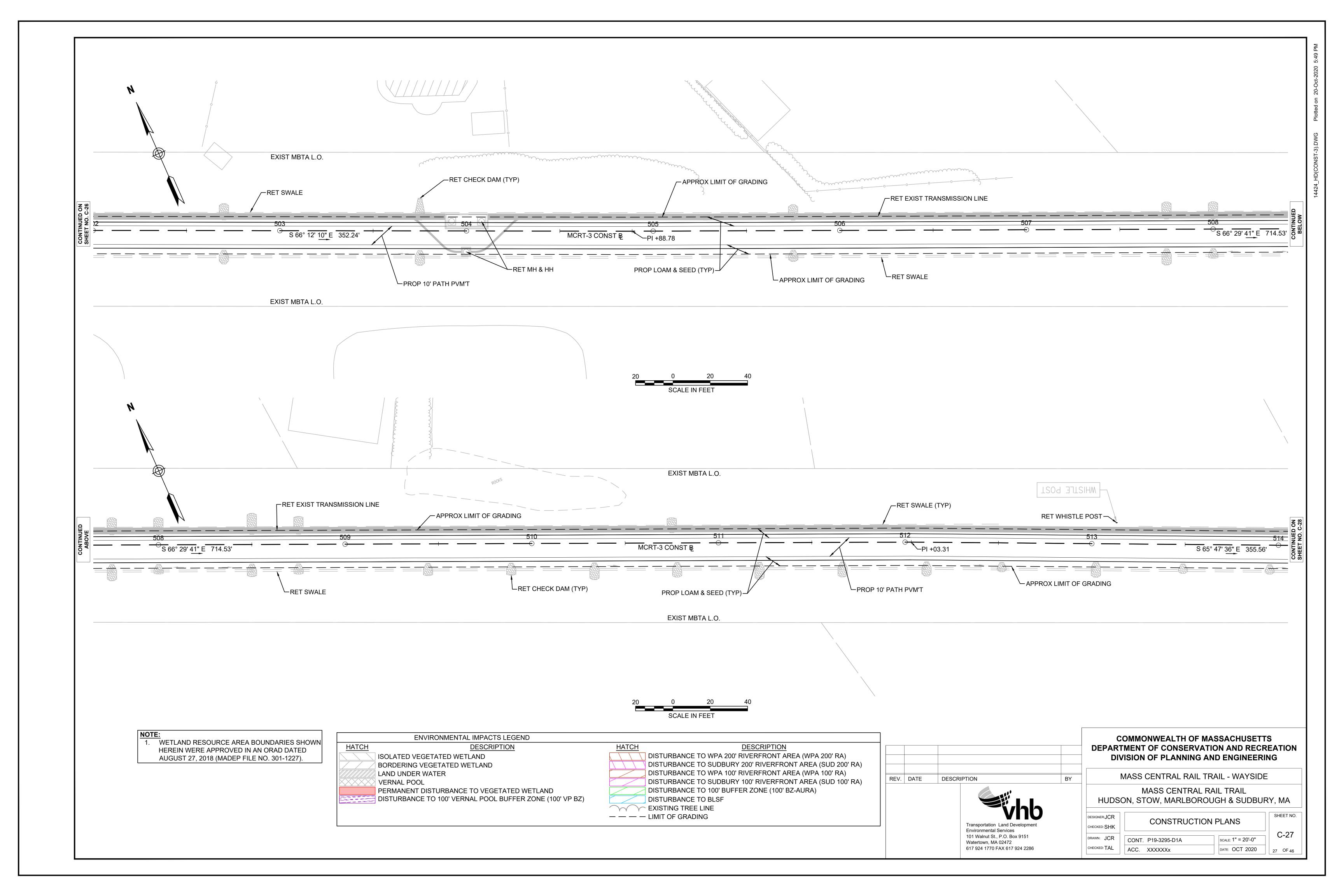


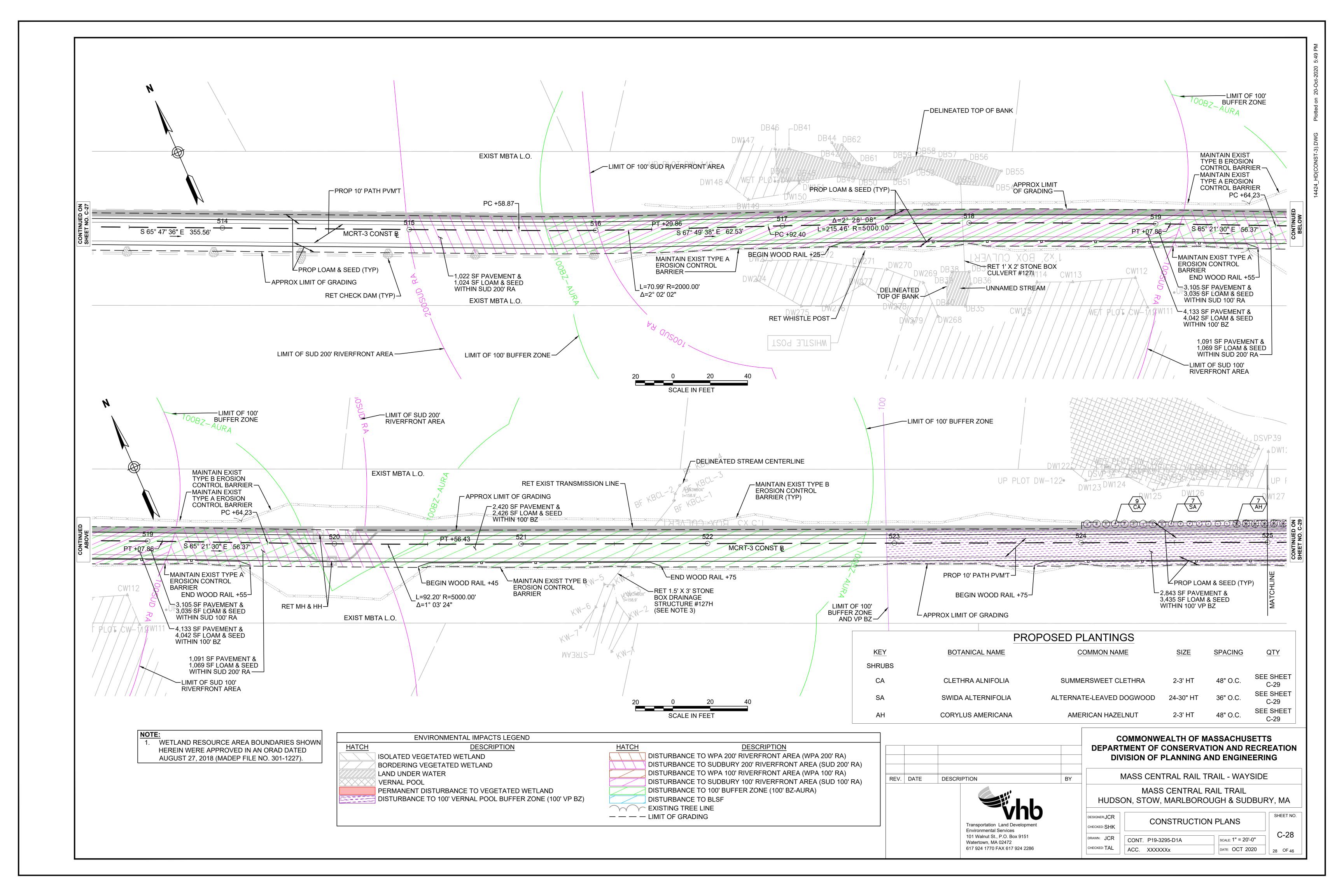


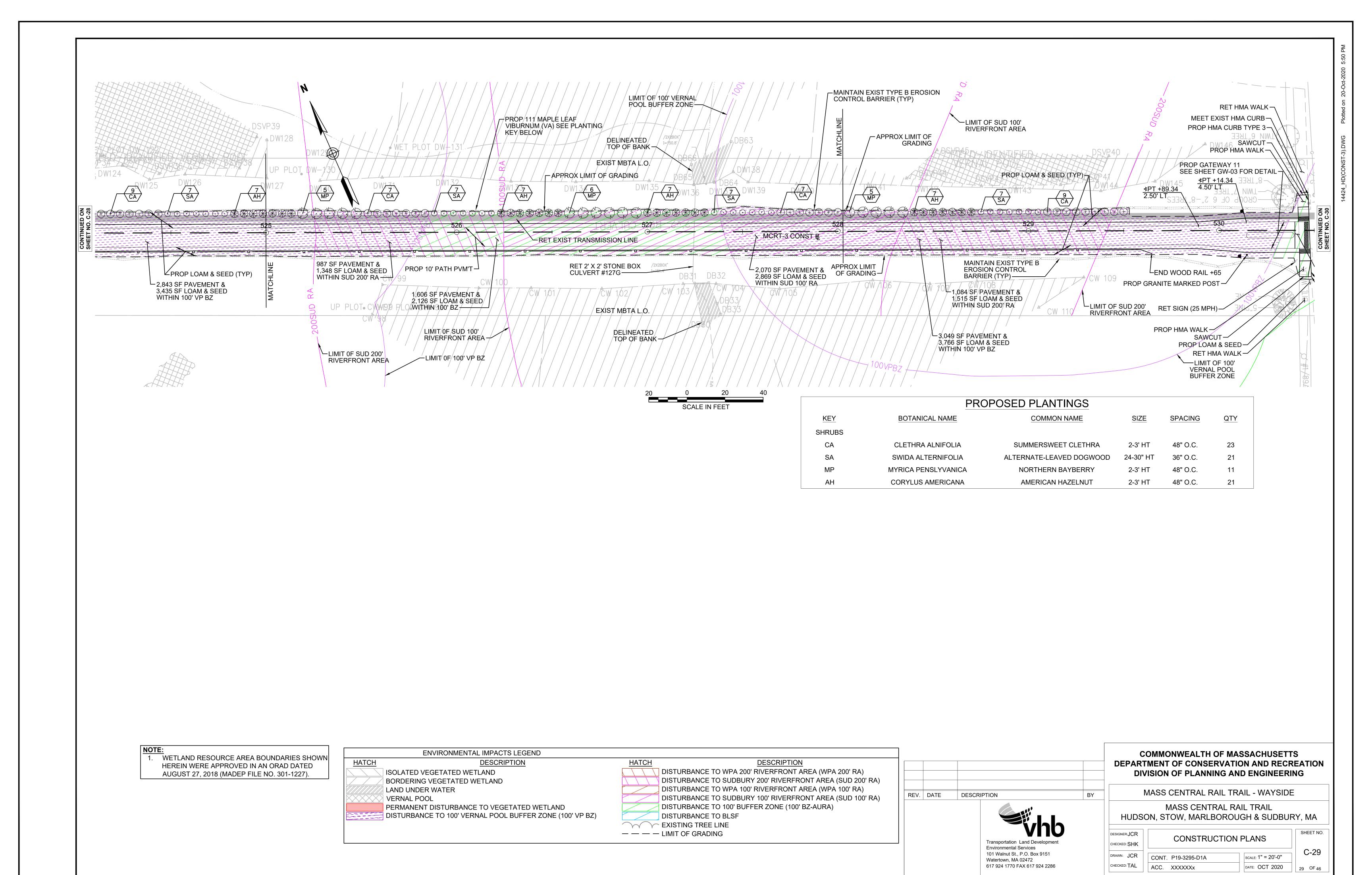


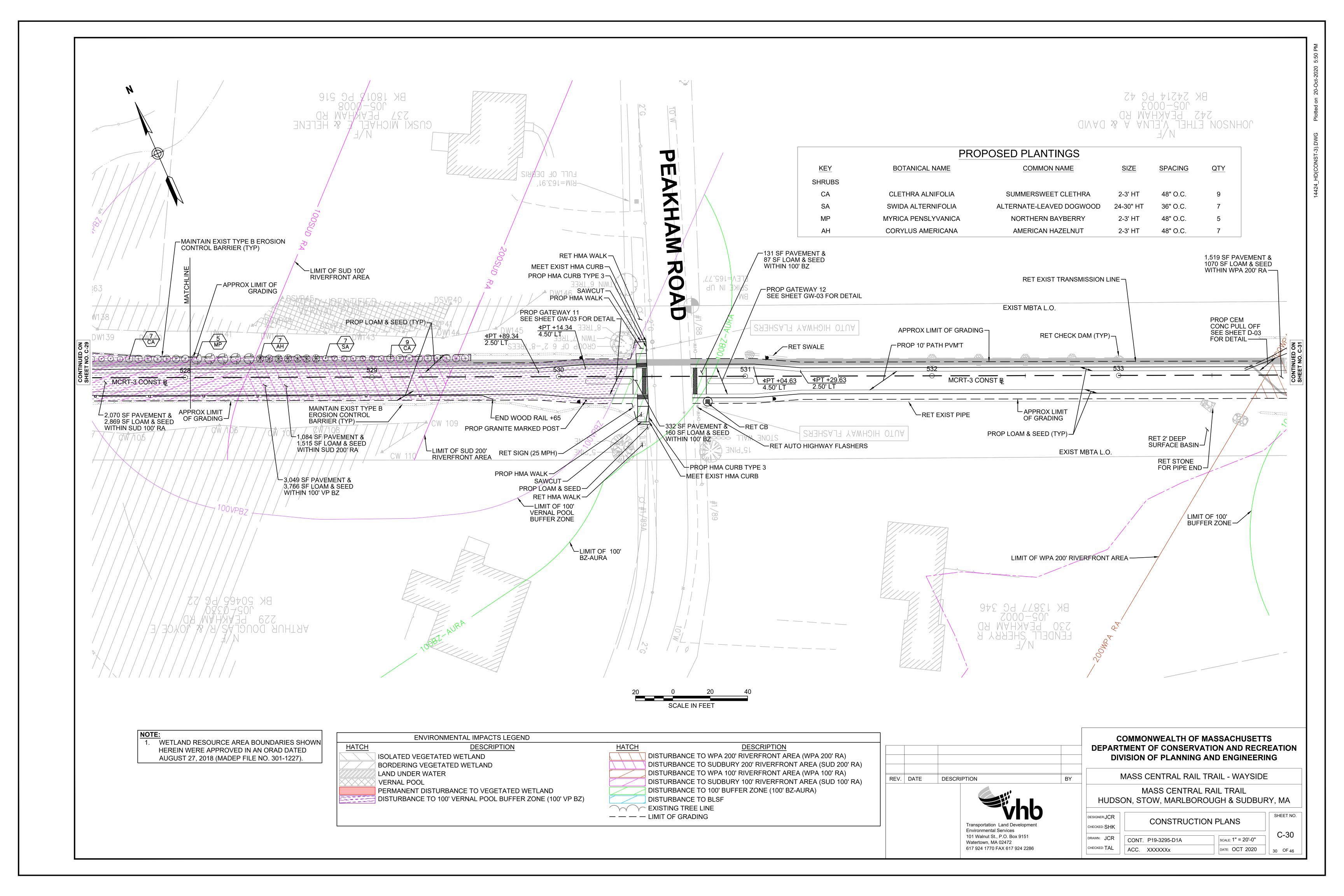


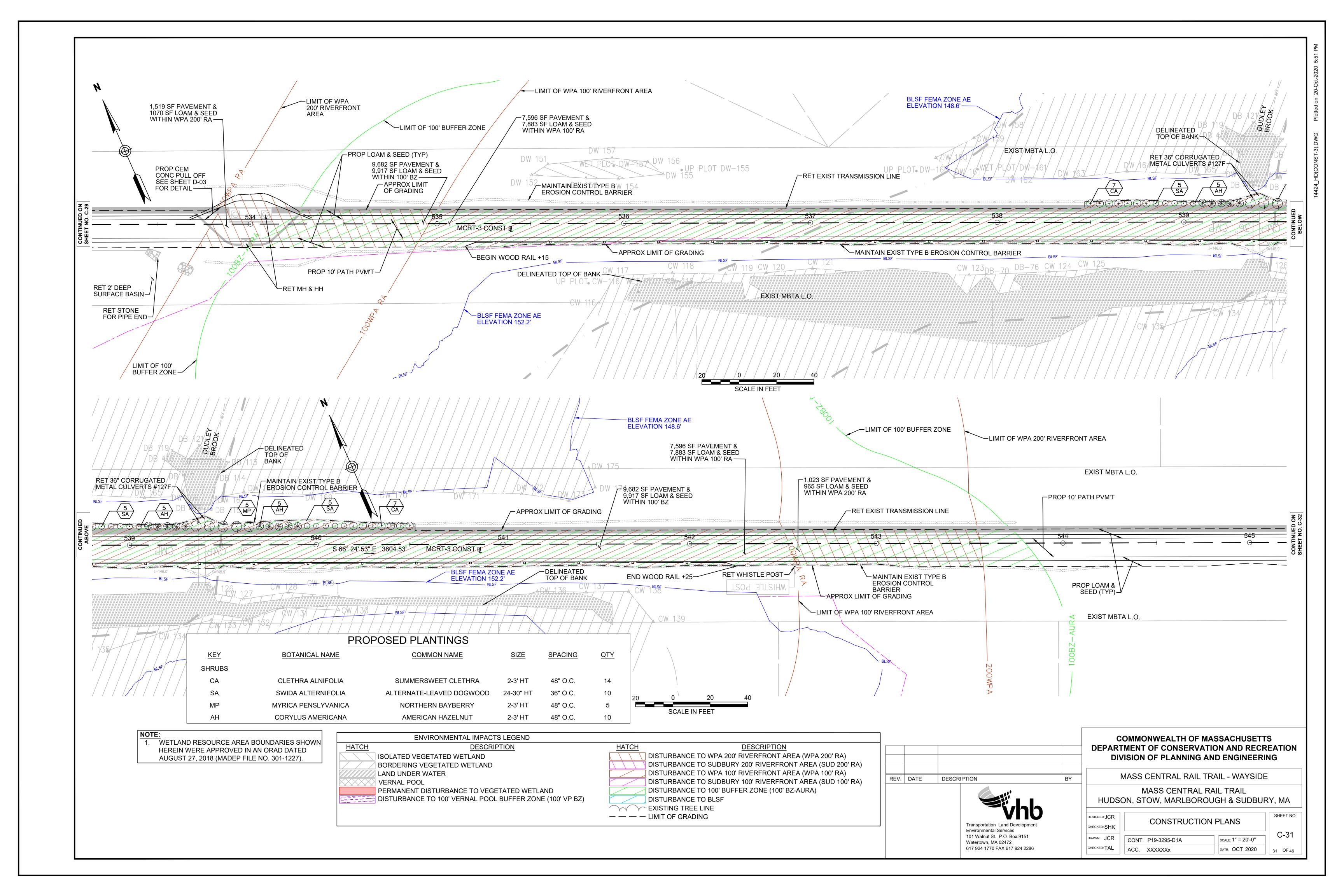


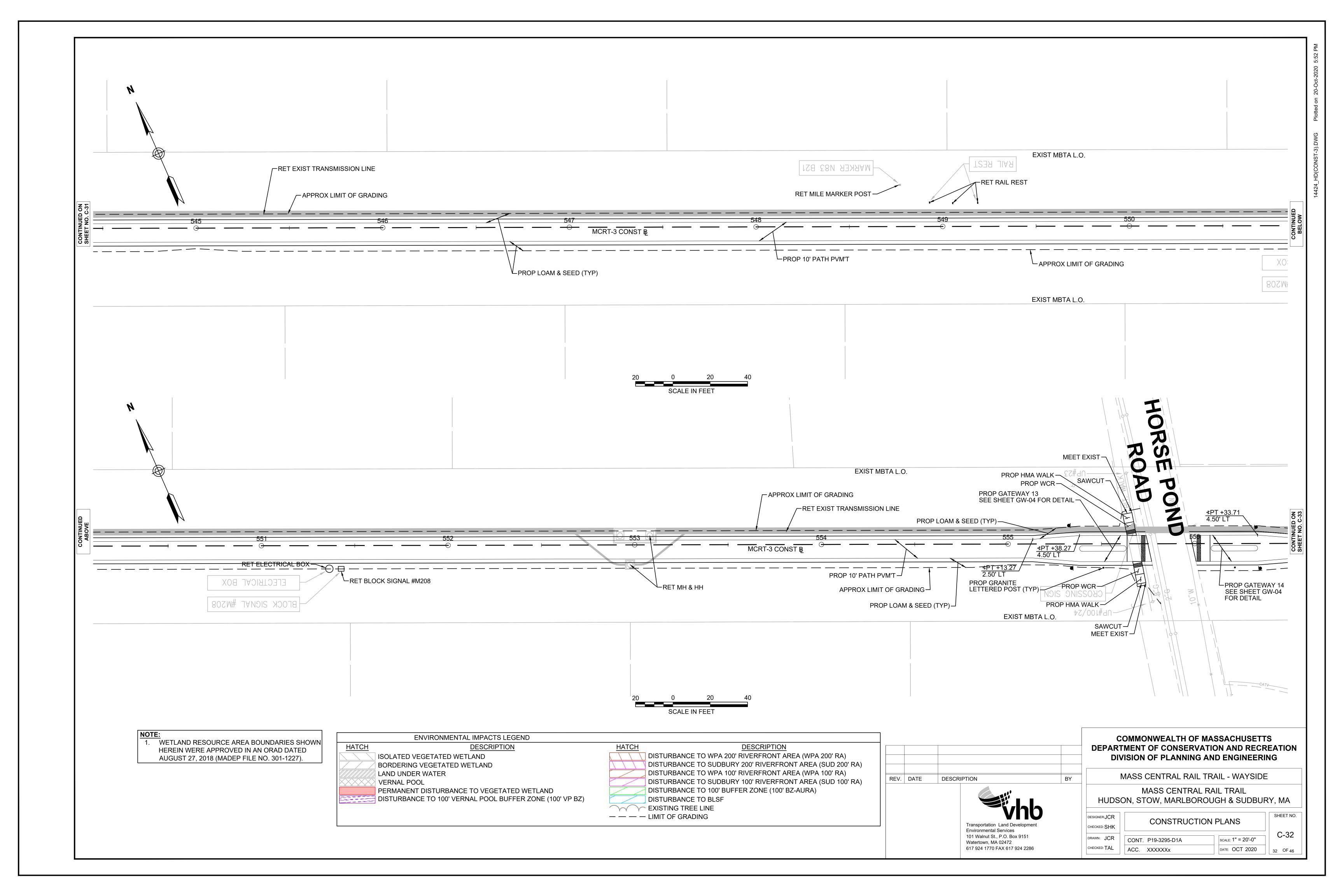


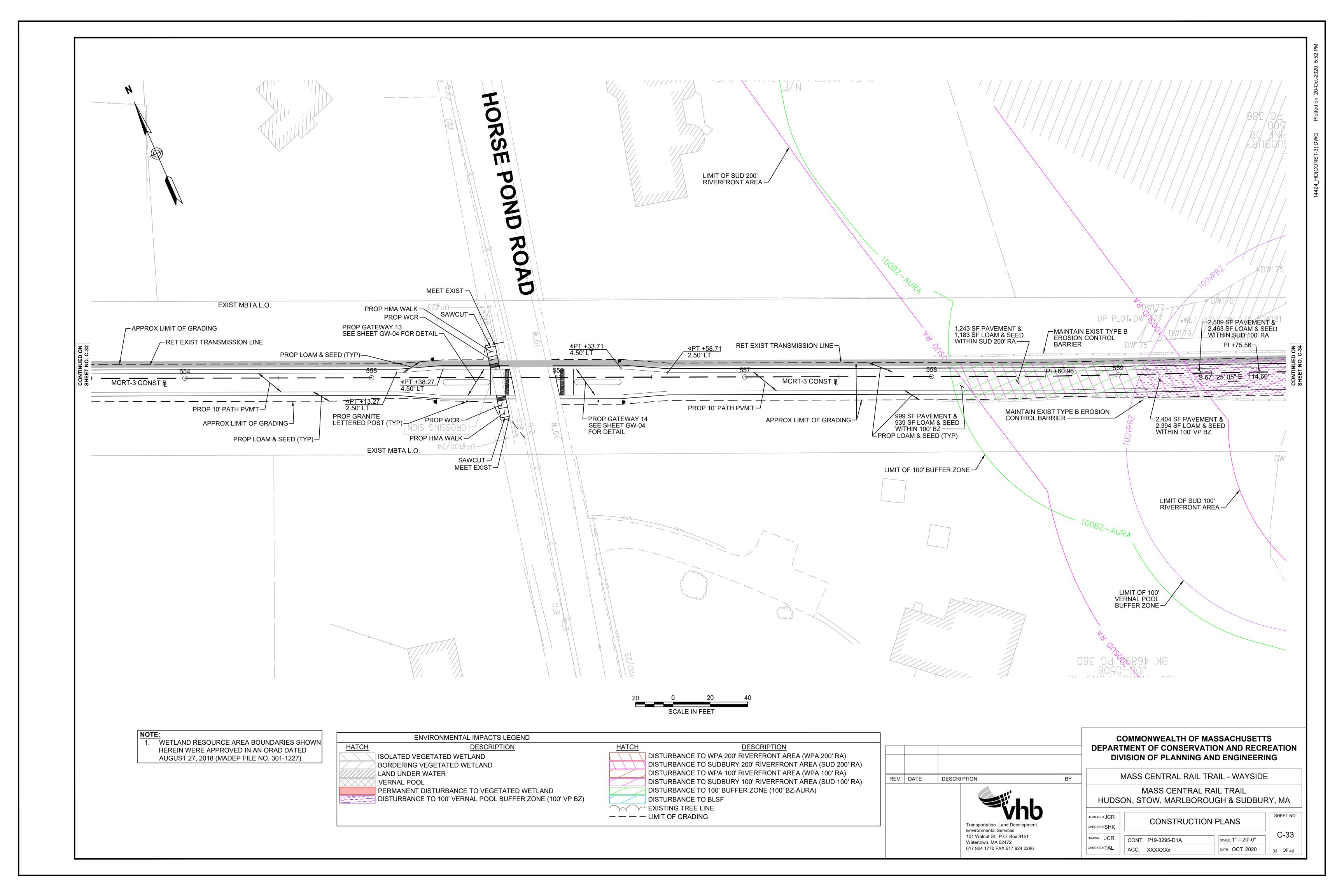


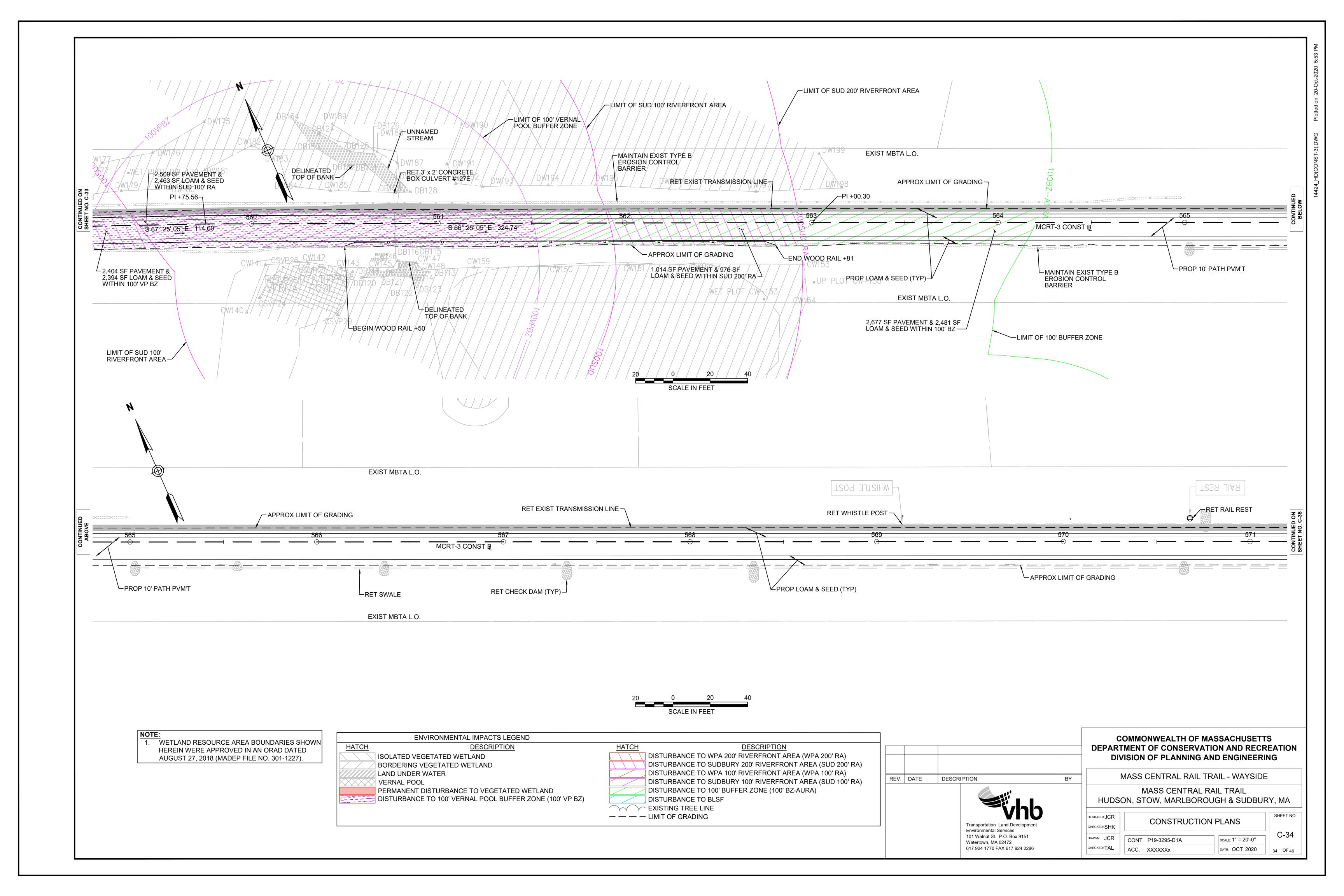


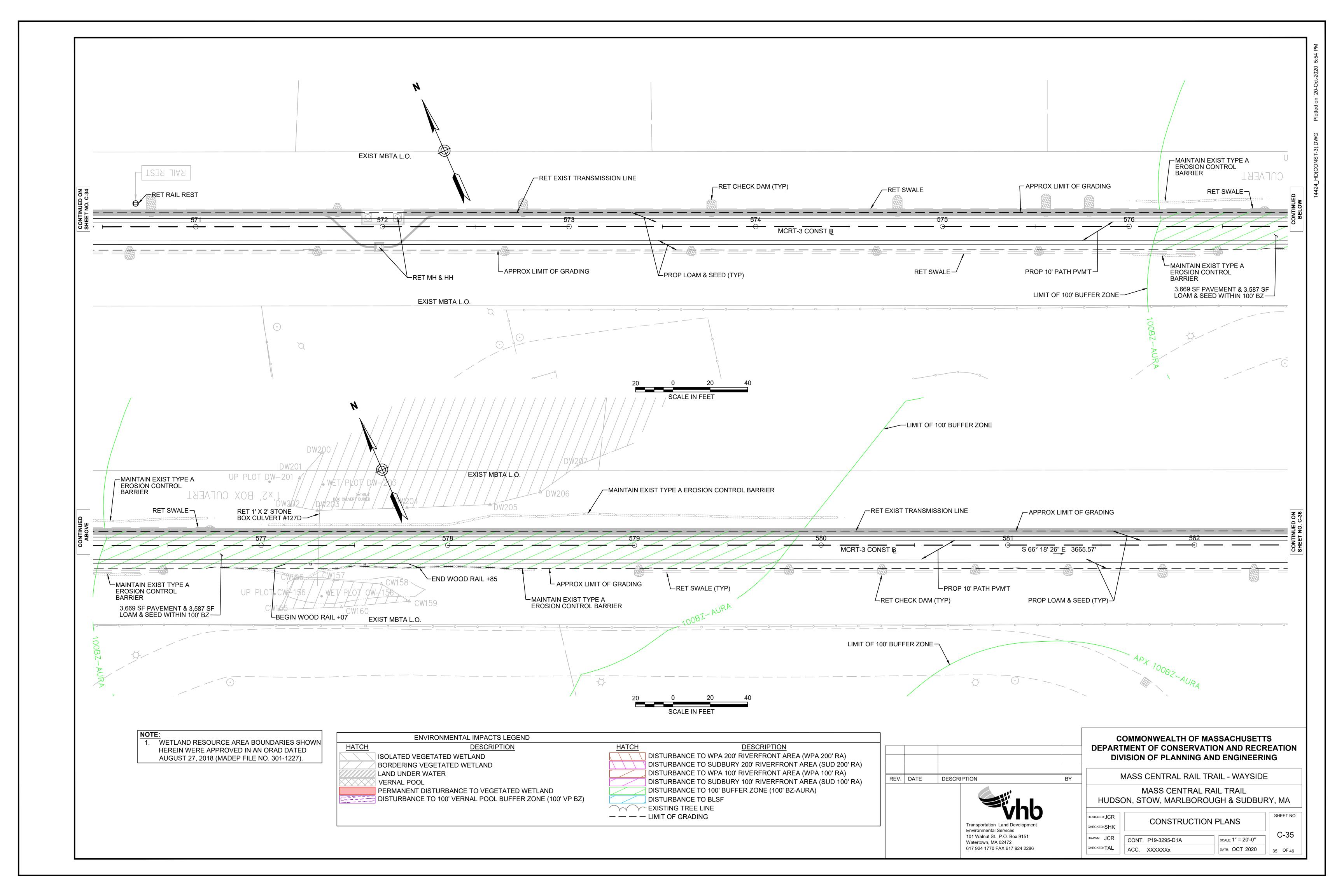


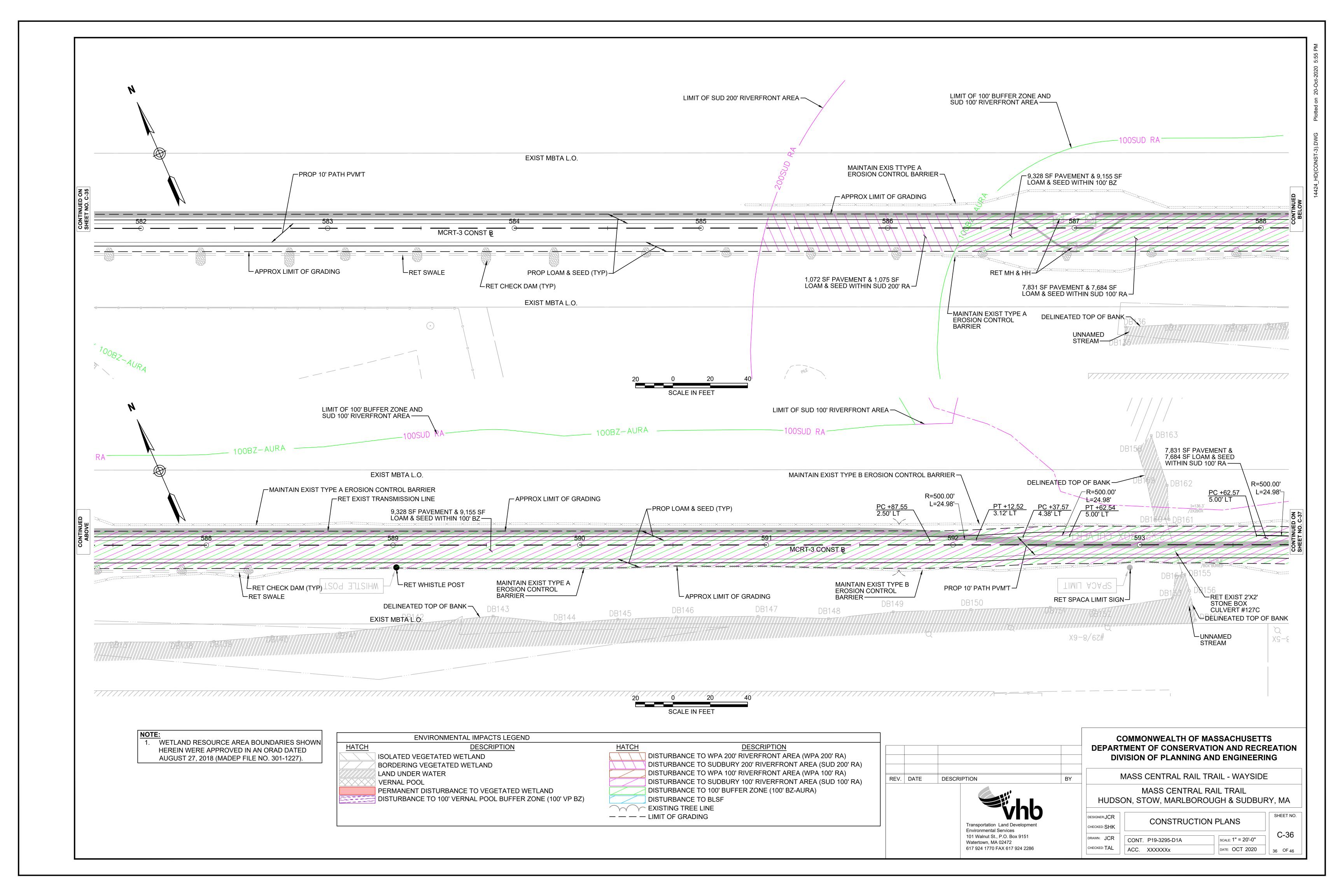


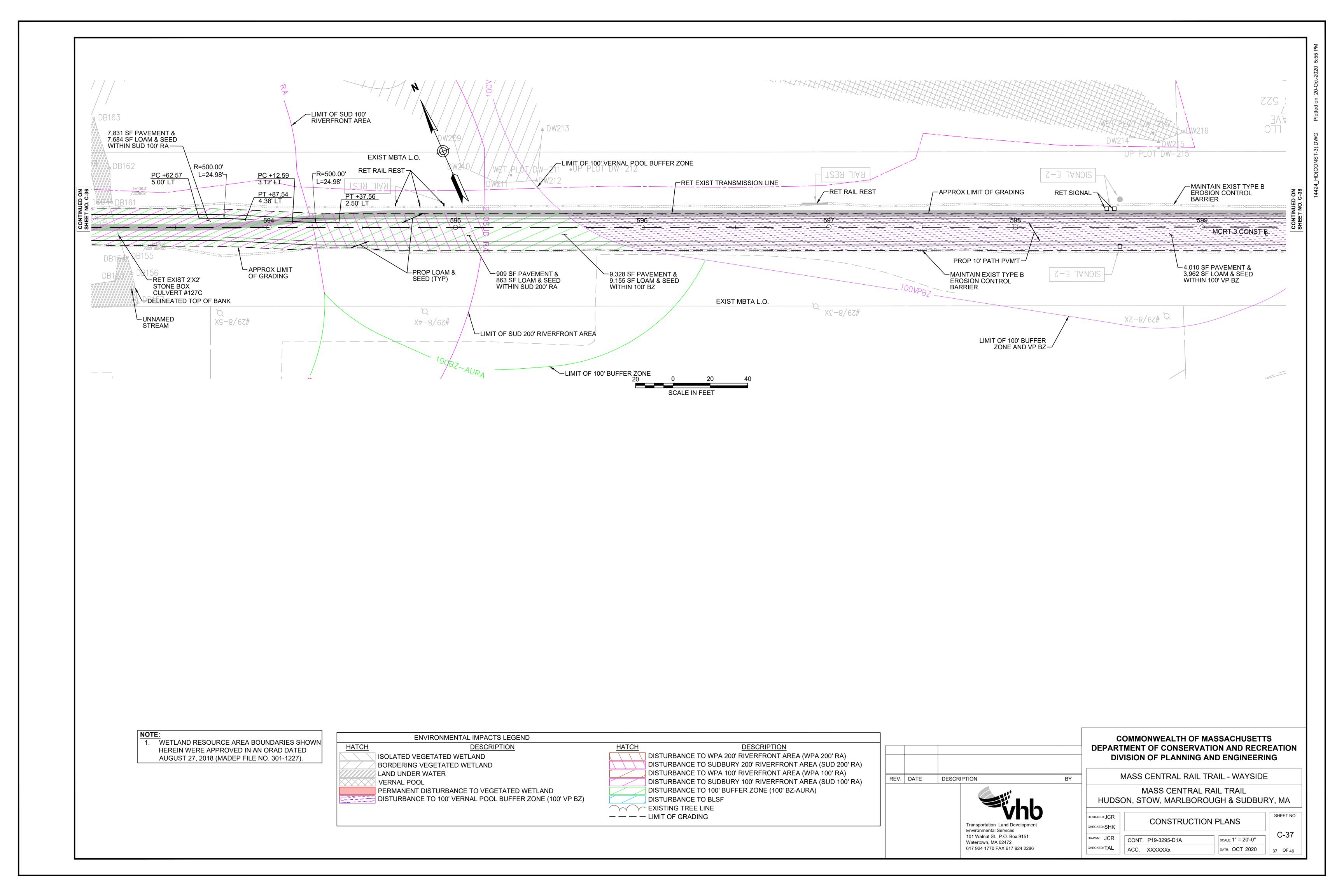


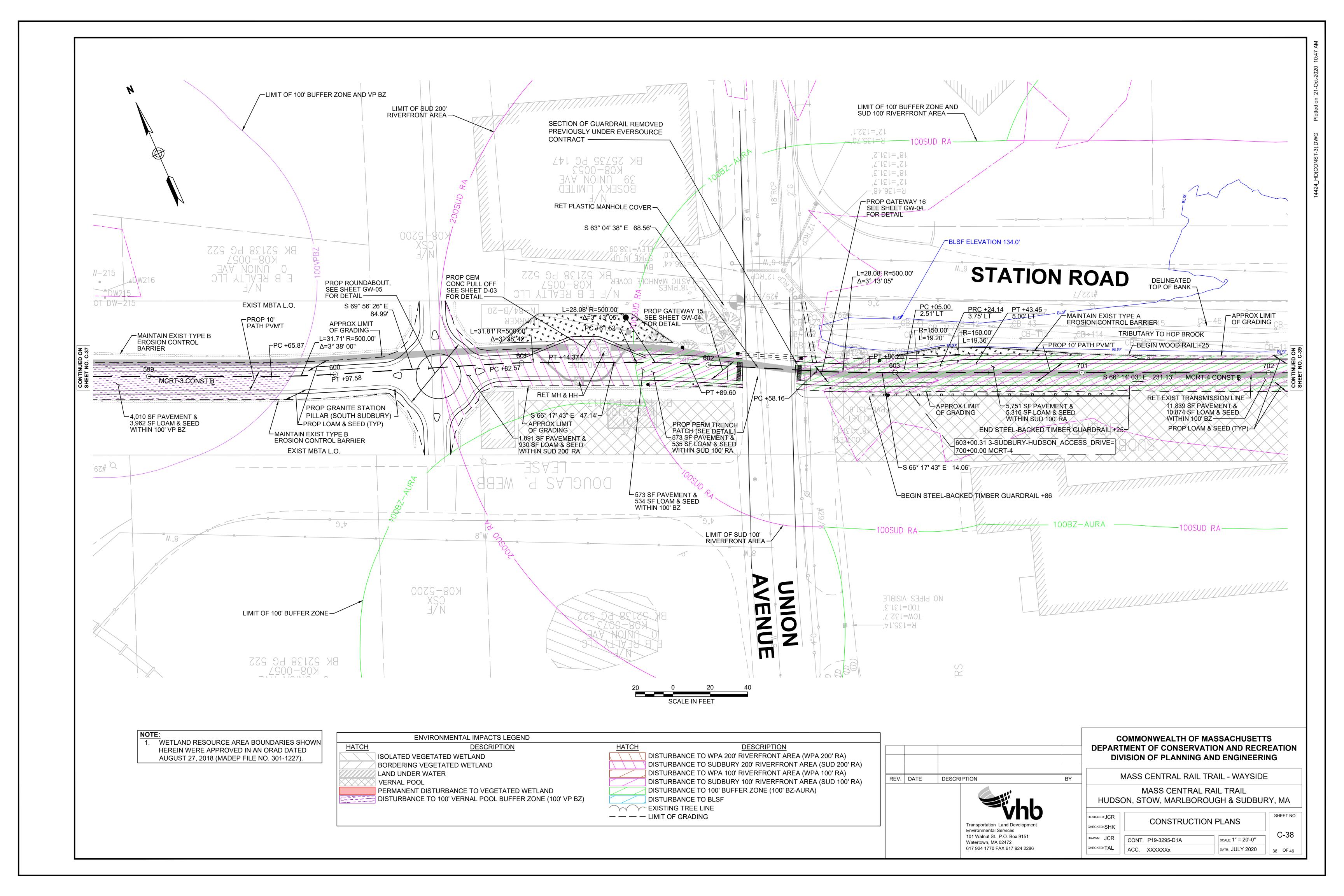


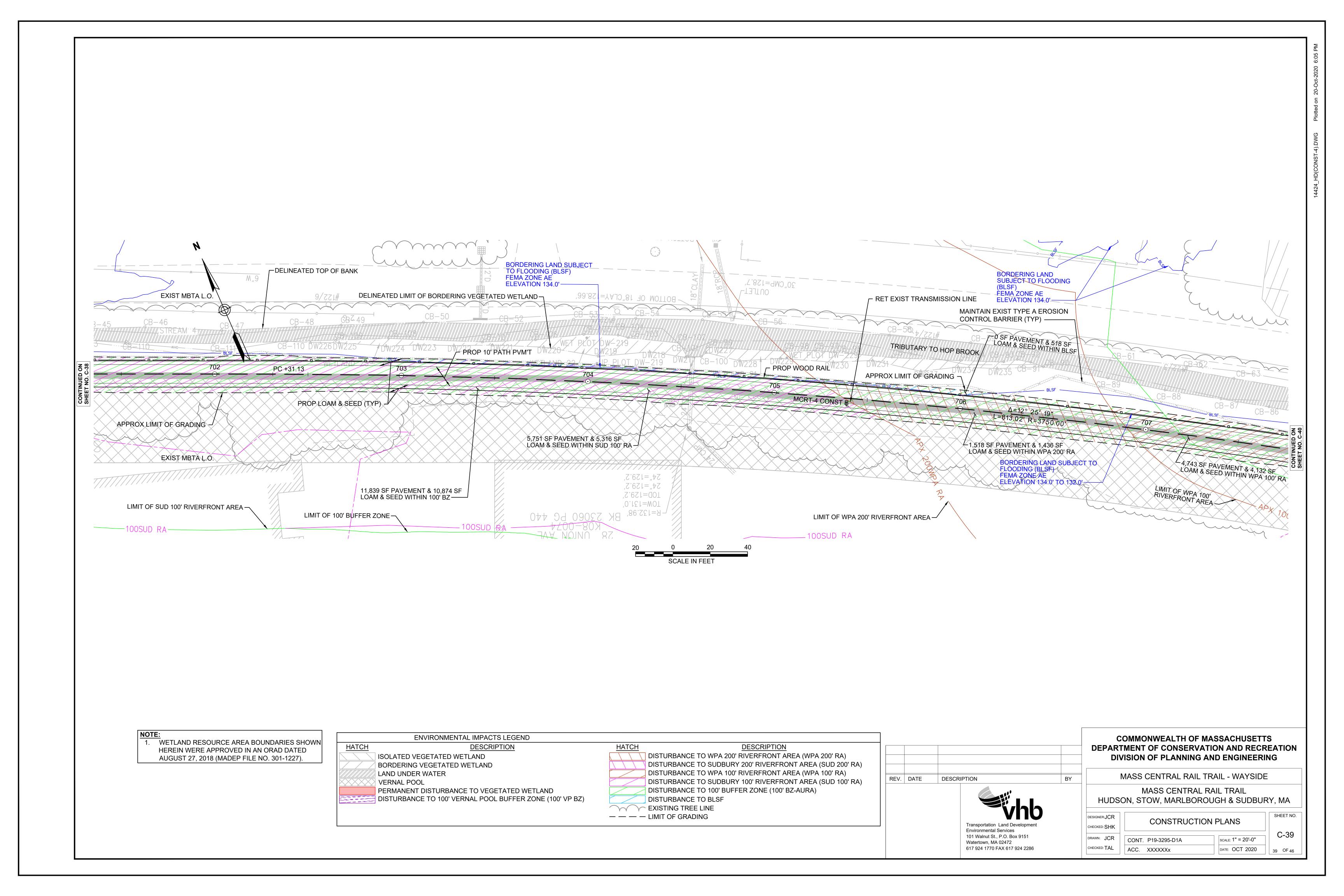


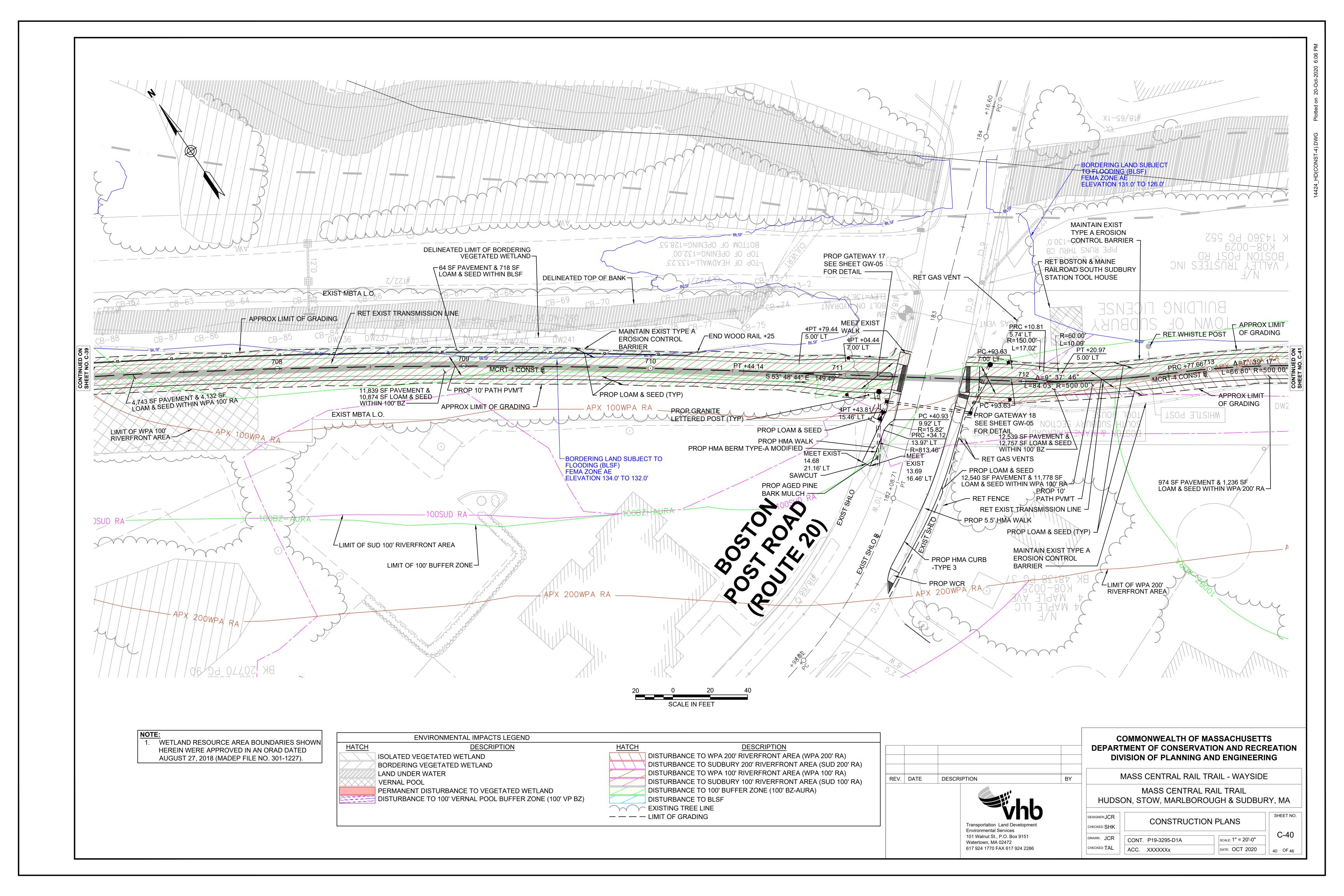


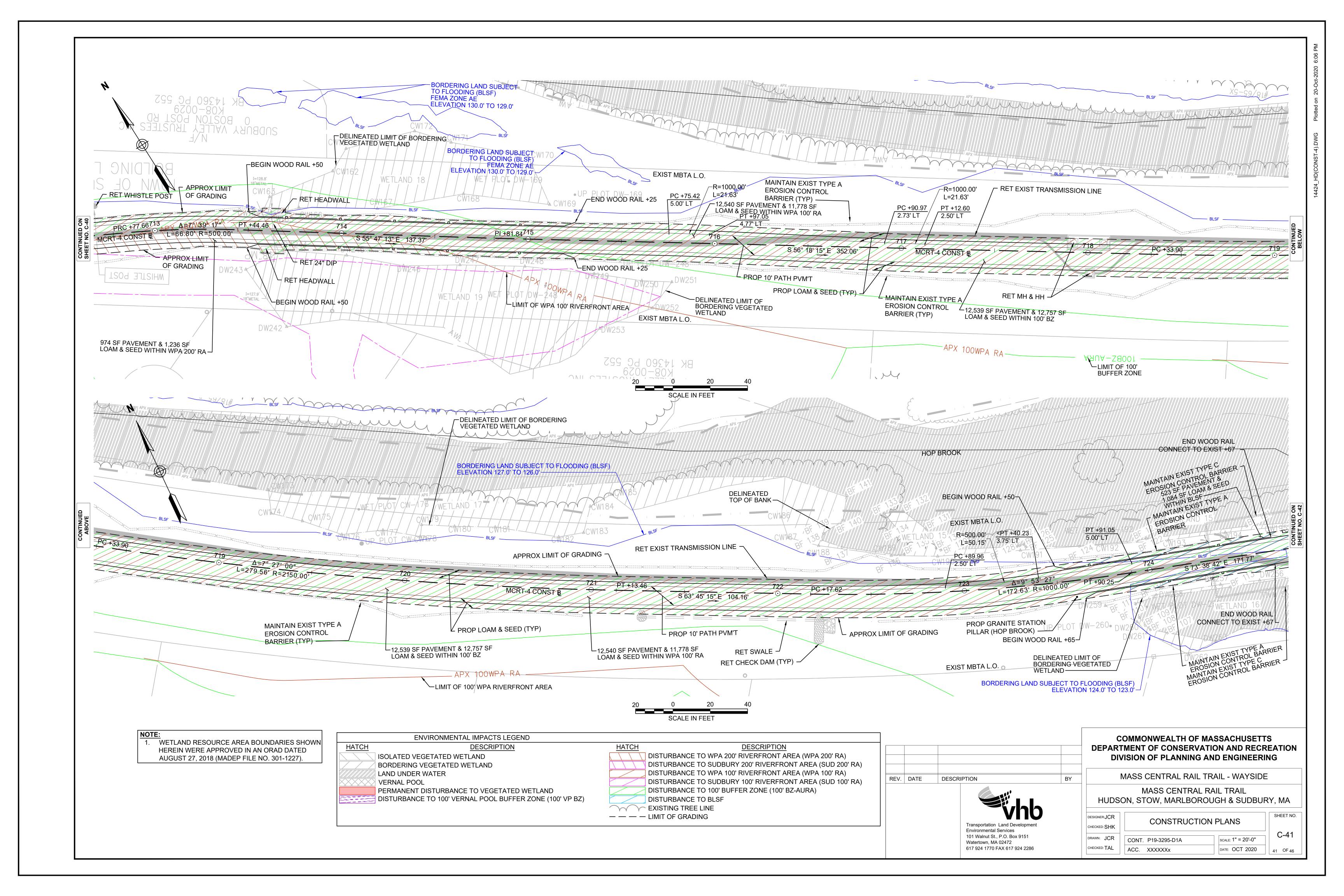


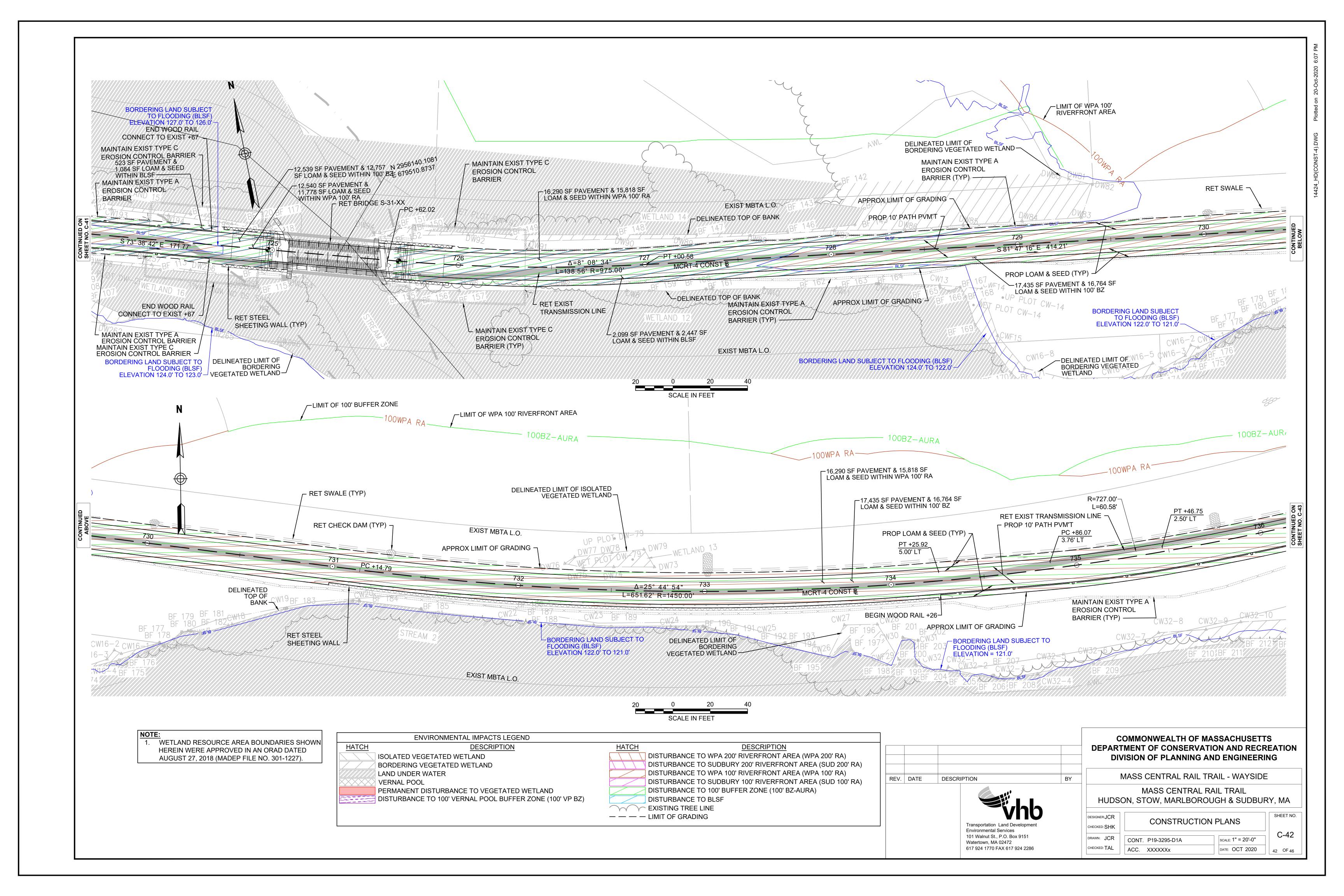


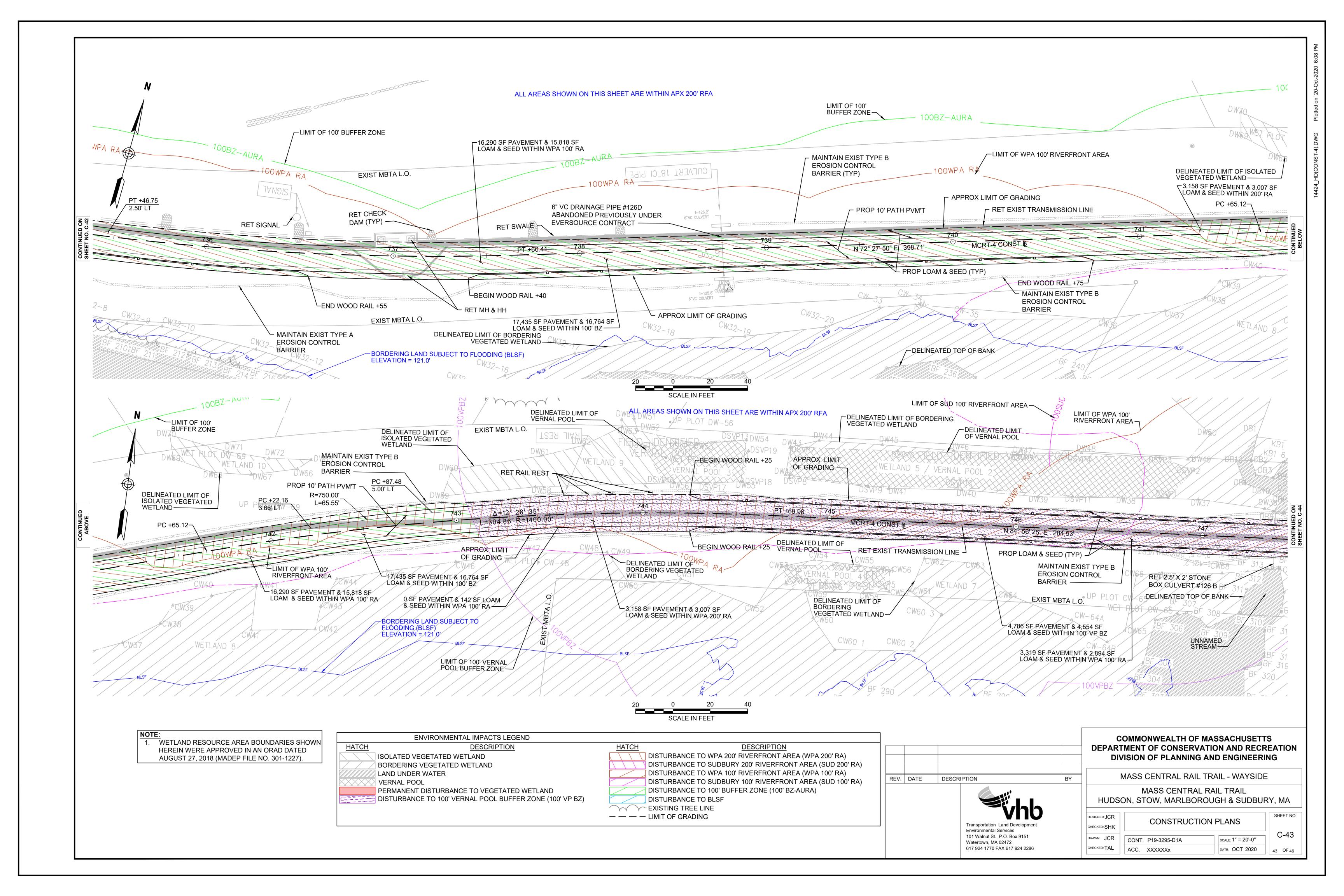


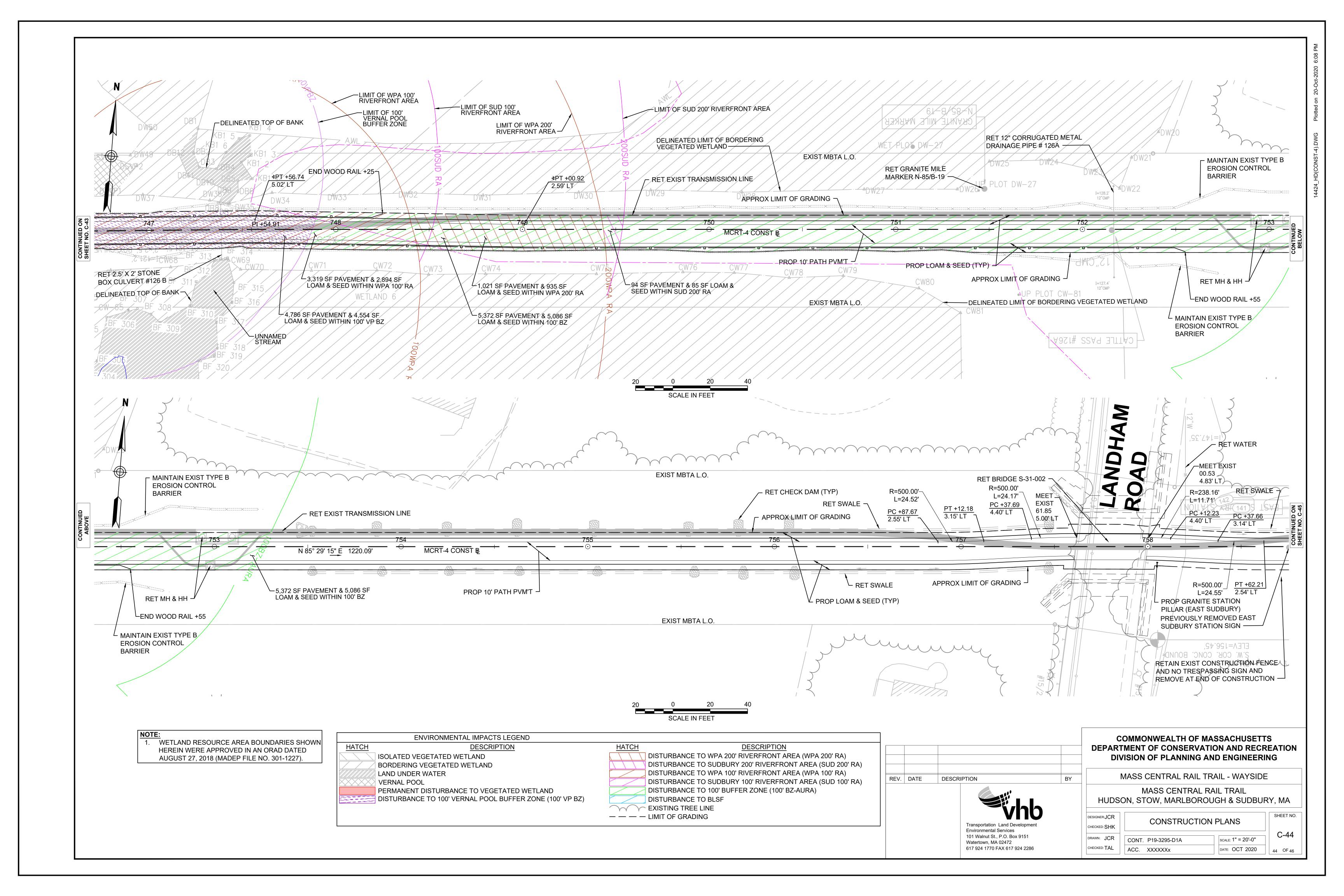


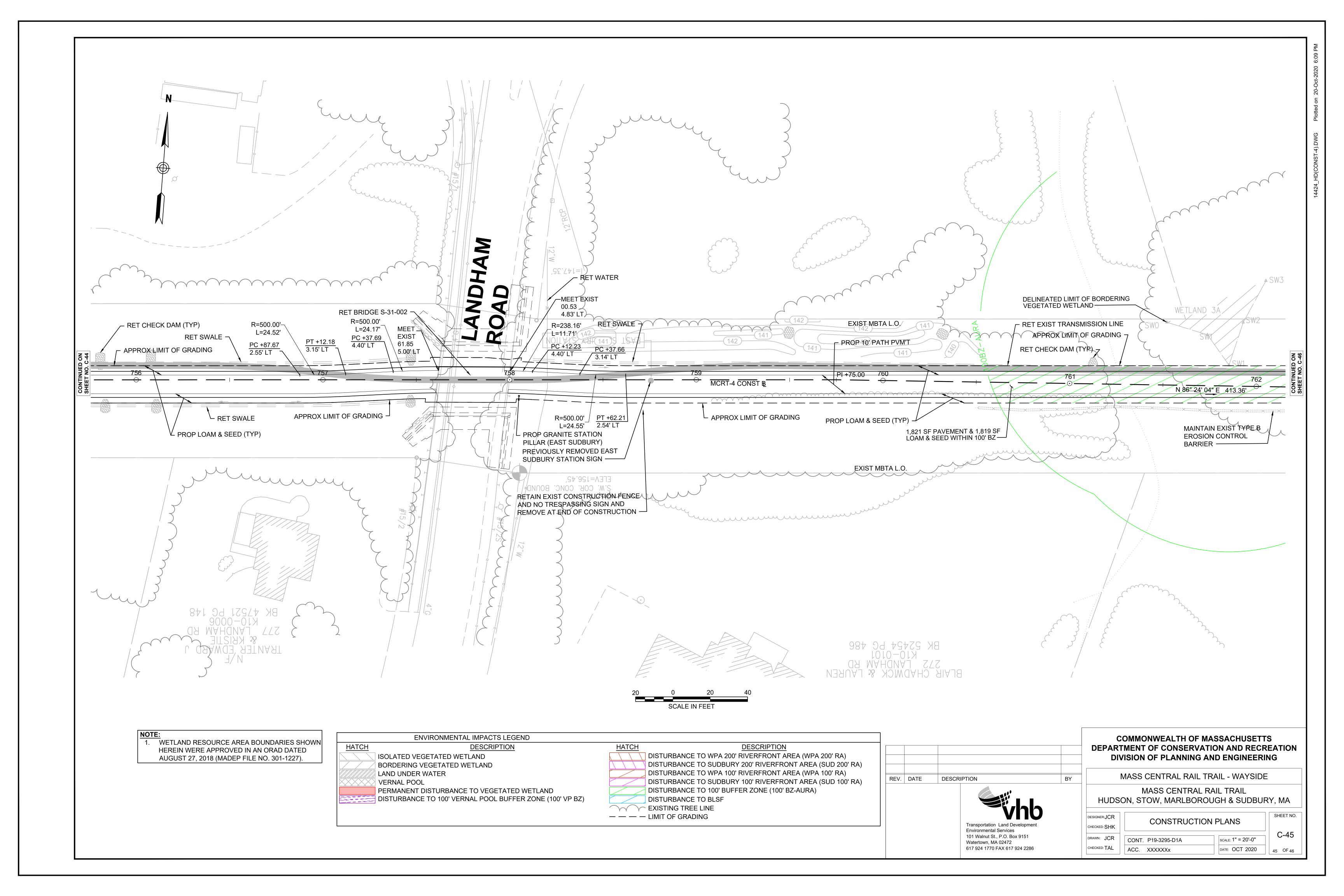


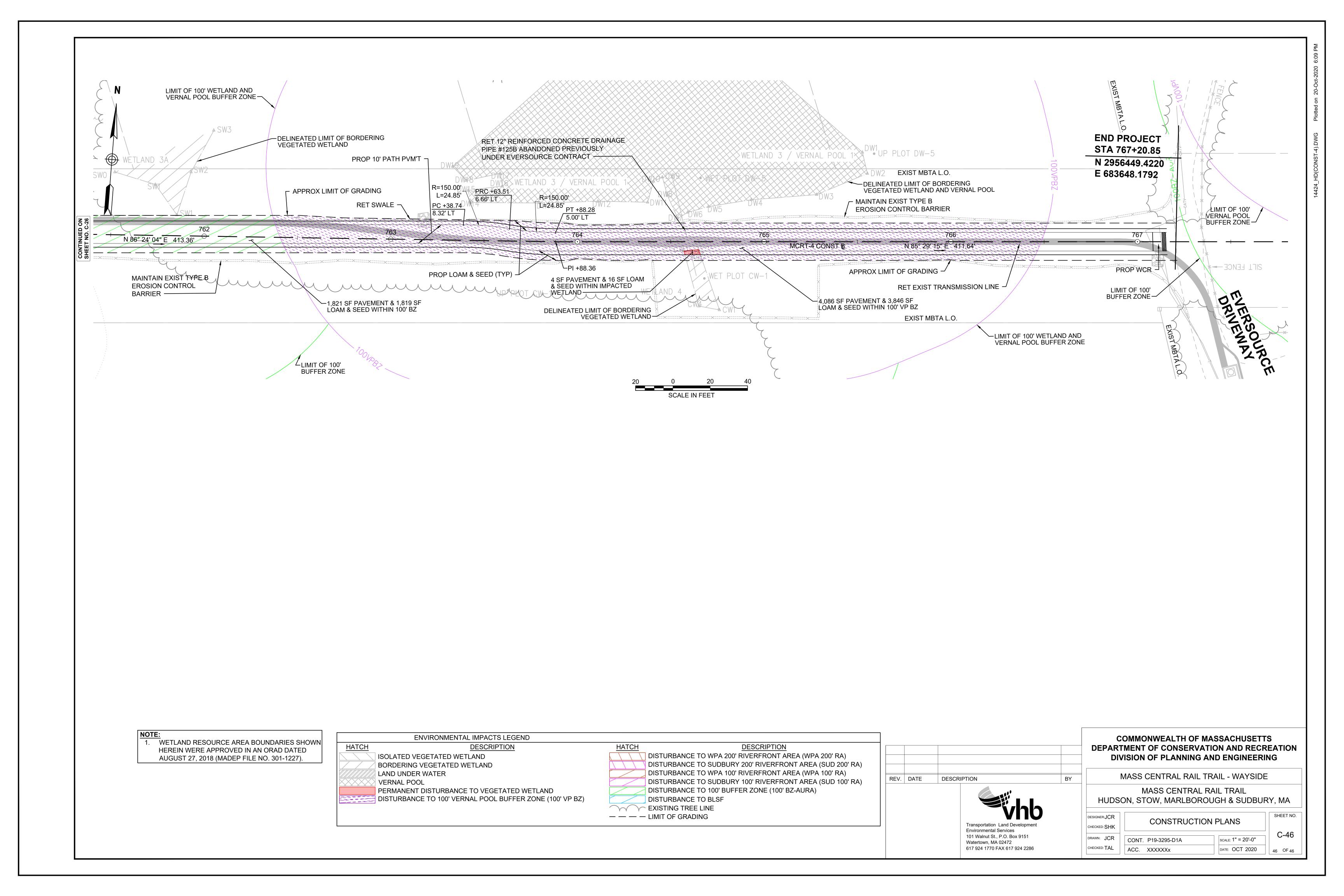


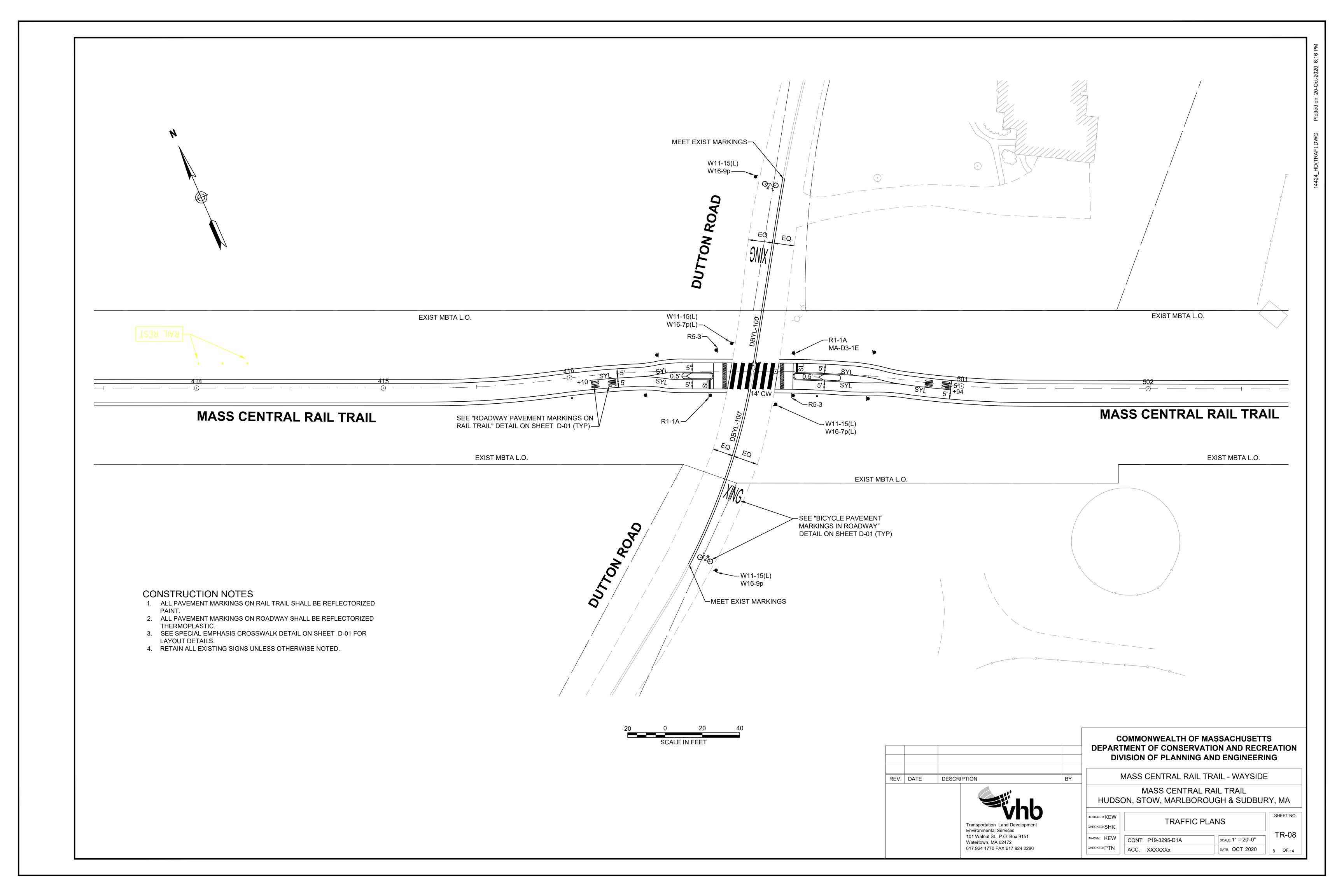


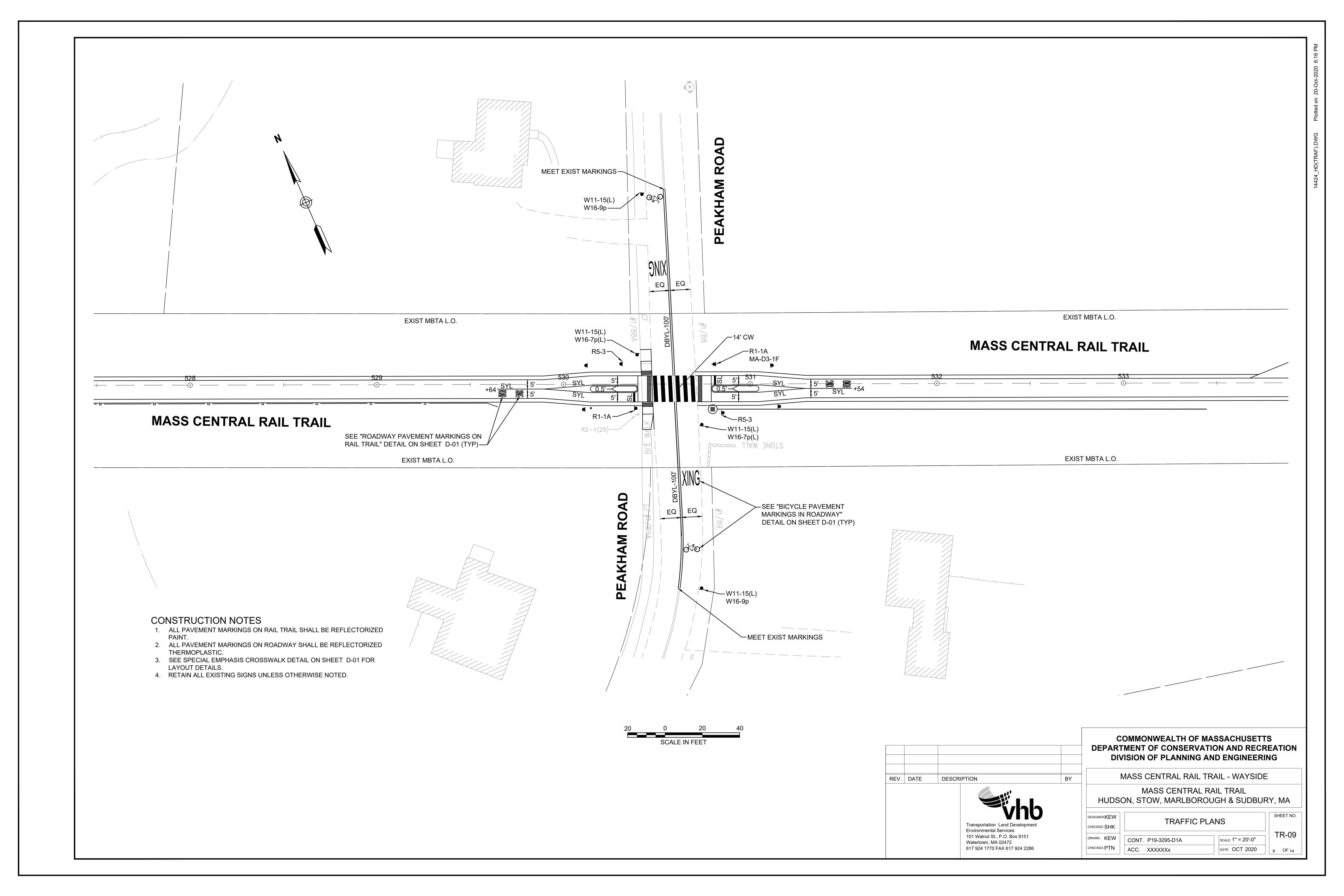


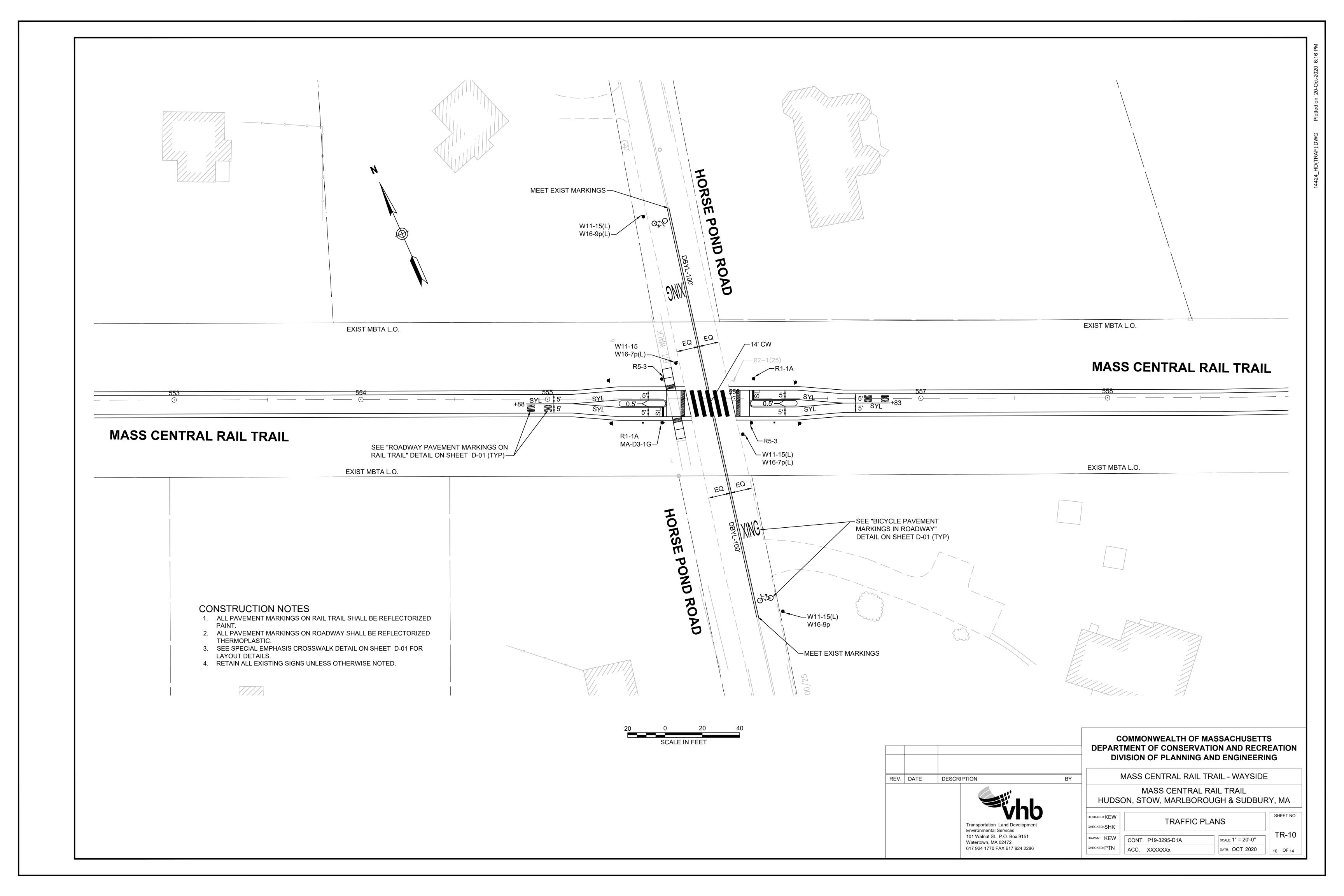


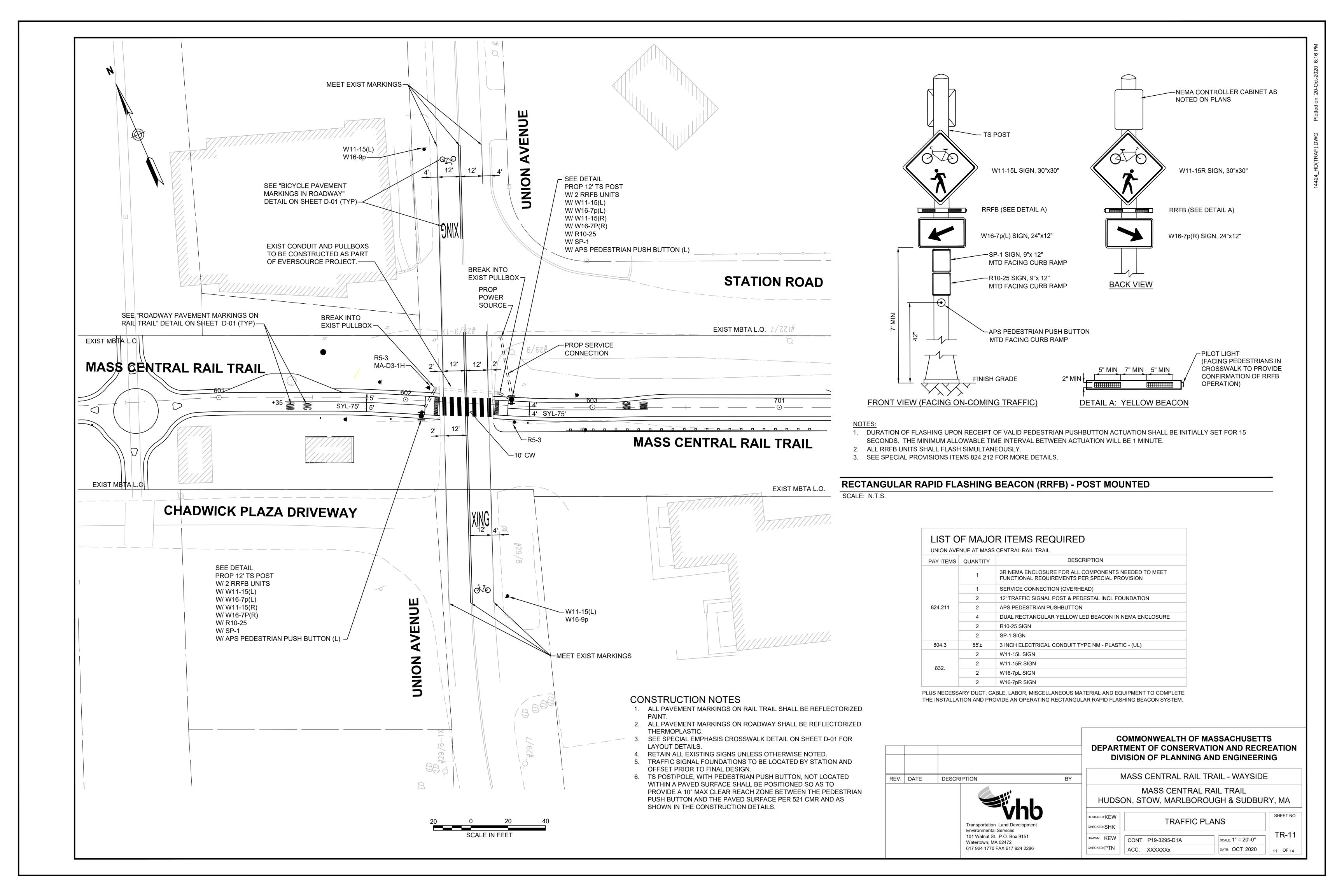


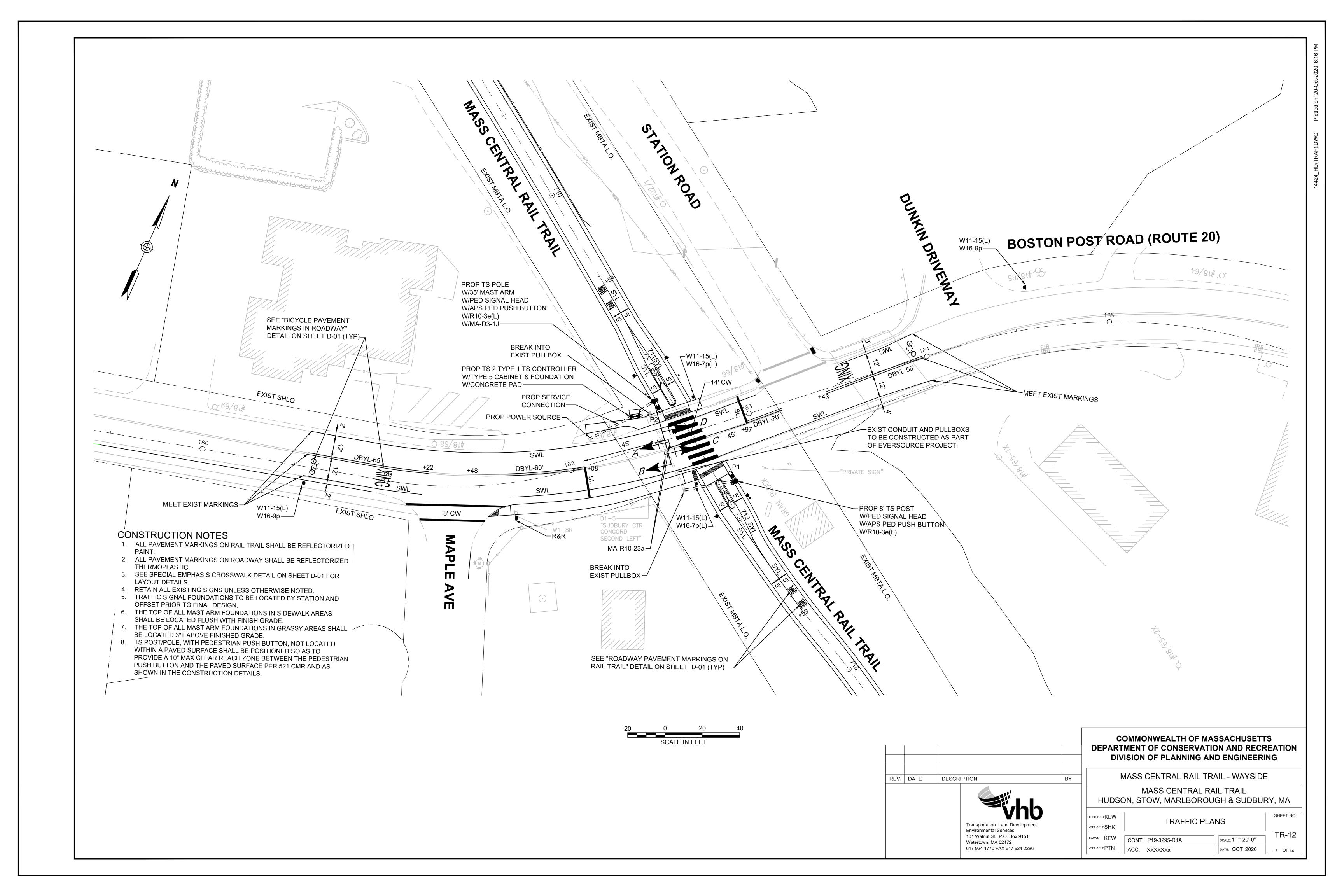












SEQUENCE AND TIMING FOR PRE-TIMED CONTROL (ISOLATED)

						•		,
APPROACH	DIRECTION	HOUSING	1	2	3	4	5	FLASH
RTE 20 (BOSTON POST RD)	EB	A,B	DARK	FY	Y	R	FR	FY
RTE 20 (BOSTON POST RD)	WB	C,D	DARK	FY	Y	R	FR	FY
DEDECTRIAN V INC	ND	D4 D0	DW	DW	DW	14/	FDW	OUT
PEDESTRIAN X-ING	NB	P1-P2	DW	DW	DW	W	FDW	OUT
			TIM	ING IN S	SECOND	S		
MINIMUM GREEN (INITIAL)			40	5				
PASSAGE TIME (VEHICLE)			_	_				
MAXIMUM 1			40	5				CONFLICT FLASH OPERATION ONLY
MAXIMUM 2			40	5				J. 0
STEADY YELLOW INTERVAL					4			CONFLICT
STEADY RED INTERVAL						7		NFL :RA
PEDESTRIAN WALK INTERVAL	_					7		CO
PEDESTRIAN CLEARANCE INT	ΓERVAL						15	
DETECTOR MEMORY			_		-	_		
RECALL			OFF		-	_		

NOTES:

- 1. AUTOMATIC FLASHING OPERATION PER 2009 M.U.T.C.D., AS AMENDED.
- 2. * UPON PEDESTRIAN PUSH BUTTON ACTUATION
- 3. FR = ALTERNATING FLASHING RED
 4. MAXIMUM 1 = NORMAL OPERATION
- 5. MAXIMUM 2 = NOT USED
- 6. STOP AND GO OPERATION FOR 24 HOURS PER DAY. FLASHING OPERATION FOR
- EMERGENCY ONLY.
- 7. DURING PEDESTRIAN INTERVAL, FDW THROUGH YELLOW OPERATION SHALL NOT BE IN EFFECT.

SEQUENCE & TIMING NOTES:

- IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT WILL NOT CHANGE DURING THE CLEARANCE INTERVAL.
- THE RIGHT OF WAY MAY BE ASSIGNED TO ANY PHASE OR ANY COMBINATION OF NON-CONFLICTING PHASES.
- IF CALLS EXIST ON ALL PHASES, THE ASSIGNMENT OF RIGHT OF WAY SHALL BE IN ACCORDANCE WITH THE PREFERENTIAL PHASE SEQUENCE.
- 4. IF THE ASSIGNED RIGHT-OF-WAY FOR ANY TRAFFIC MOVEMENT IS TO CHANGE DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATION FOR THAT MOVEMENT WILL DISPLAY THE APPROPRIATE CLEARANCE INTERVALS.
- 5. THE HYBRID BEACON SHALL OPERATE THROUGH NORMAL SEQUENCE WHEN ACTIVATED BY INFRARED CAMERA. DURATION OF HYBRID BEACON OPERATION UPON RECEIPT OF VALID INFRARED CAMERA ACTUATION SHALL BE AS SHOWN IN THE SEQUENCE & TIMING CHART.

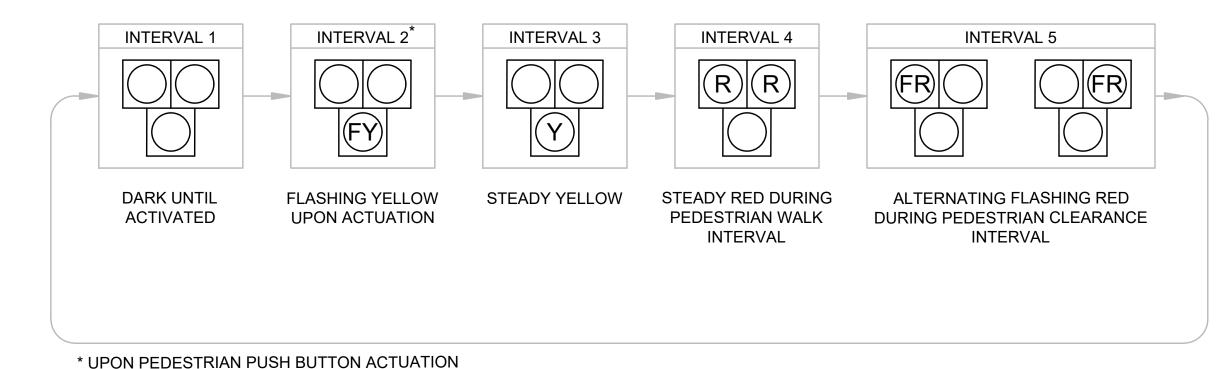
ALL 12" LENS

NOTES

- 1. ALL SIGNAL HEADS SHALL BE RIGID MOUNTED.
- 2. ALL SIGNAL HEADS SHALL BE EQUIPPED WITH 5"± NON-LOUVERED BACKPLATES. ALL
- BACKPLATES SHALL CONTAIN A 3" WIDE YELLOW REFLECTIVE BORDER.

 ALL SIGNAL HEADS SHALL BE FOLIPPED WITH TUNNEL VISORS
- ALL SIGNAL HEADS SHALL BE EQUIPPED WITH TUNNEL VISORS.
 ALL SIGNAL DISPLAYS SHALL BE EQUIPPED WITH L.E.D. MODULES.

HAWK (PEDESTRIAN) PHASE SEQUENCE



R = STEADY RED FR = FLASHING RED Y = STEADY YELLOW FY = FLASHING YELLOW

LIST C	F MAJO	R ITEMS REQUIRED		
BOSTON POST ROAD (ROUTE 20) AT MASS CENTRAL RAIL TRAIL				
PAY ITEM	QUANTITY	DESCRIPTION		
	1	8Ø TS 2 TYPE 1 CONTROLLER IN A TYPE 5 BASE MOUNTED CABINET INCLUDING FOUNDATION AND CONCRETE PAD		
	1	TS 35' MAST ARM TYPE 2, STEEL, INCL. FOUNDATION		
824.02	1	TS POST 8' STANDARD INCL. FOUNDATION		
824.02	4	SIGNAL HEAD, 3-SECTION, 12" LENSES (HAWK DISPLAY)		
	2	PEDESTRIAN SIGNAL HEAD (L.E.D.)		
	2	PEDESTRIAN PUSH BUTTON W/R10-3e(L) AND SIGN SADDLE		
	1	SERVICE CONNECTION (OVERHEAD)		
804.3	65'±	3 INCH ELECTRICAL CONDUIT TYPE NM - PLASTIC - (UL)		

PLUS NECESSARY DUCT, CABLE, LABOR, MISCELLANEOUS MATERIAL AND EQUIPMENT TO COMPLETE THE INSTALLATION AND PROVIDE AN OPERATING PEDESTRIAN HYBRID BEACON.



Watertown, MA 02472

617 924 1770 FAX 617 924 2286

COMMONWEALTH OF MASSACHUSETTS DEPARTMENT OF CONSERVATION AND RECREATION DIVISION OF PLANNING AND ENGINEERING

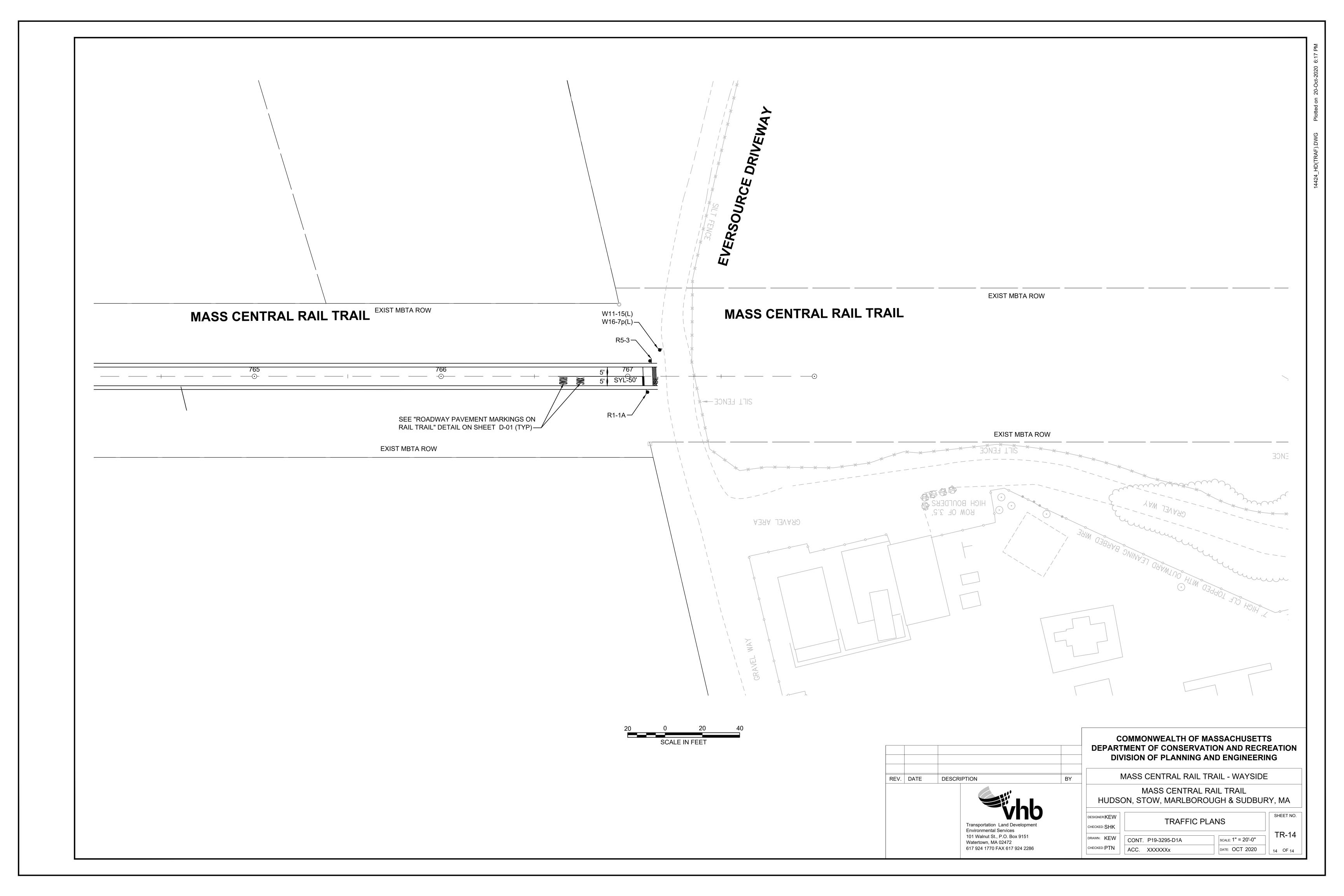
3Y		MASS CENTRAL RAIL TRAIL - WAYSIDE	
		MASS CENTRAL RAIL TRAIL	
	HUDS	ON, STOW, MARLBOROUGH & SUDBUR	ty, MA
	DESIGNER:KEW	TRAFFIC PLANS	SHEET NO.
	CHECKED: SHK		TR-13

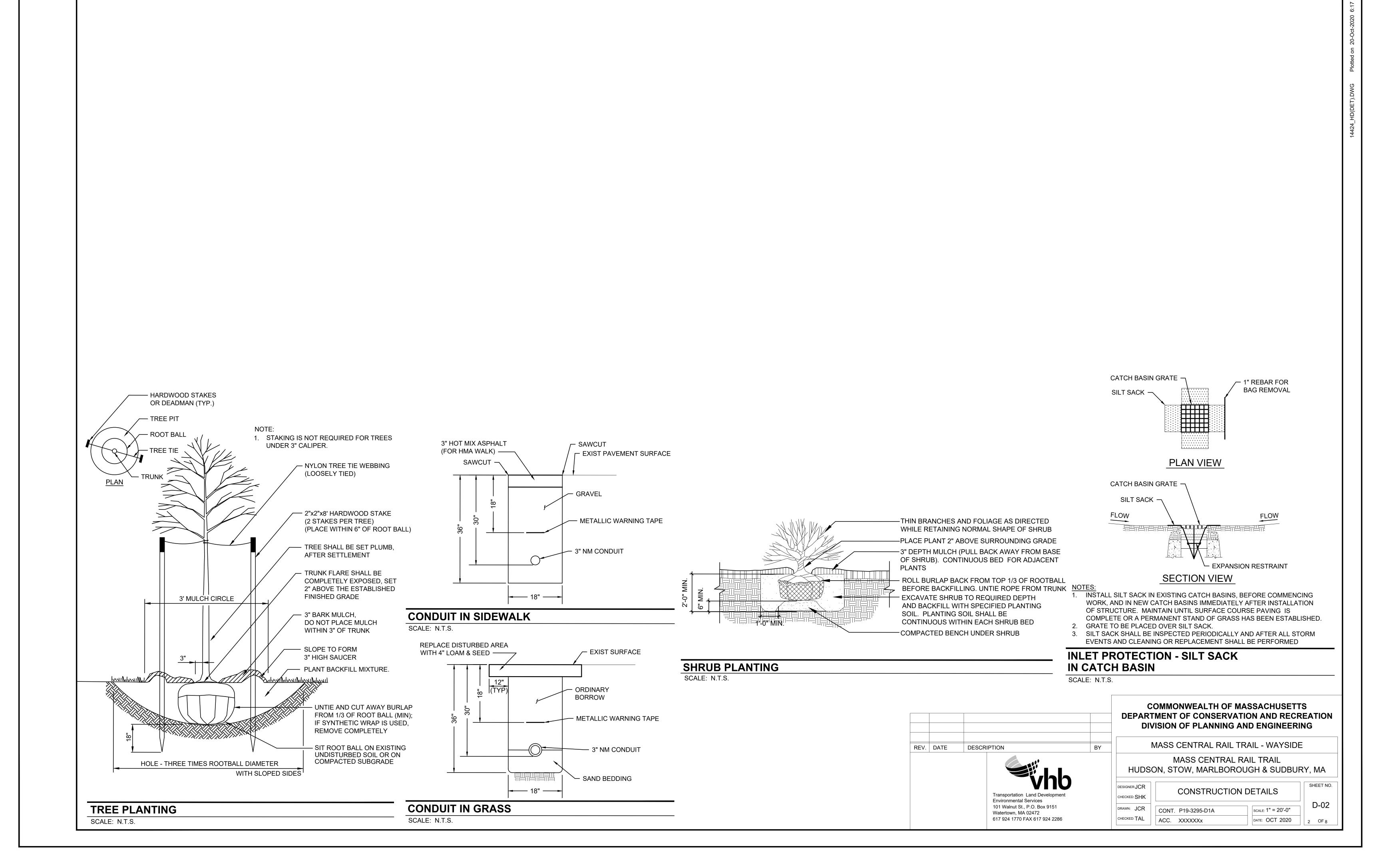
CONT. P19-3295-D1A

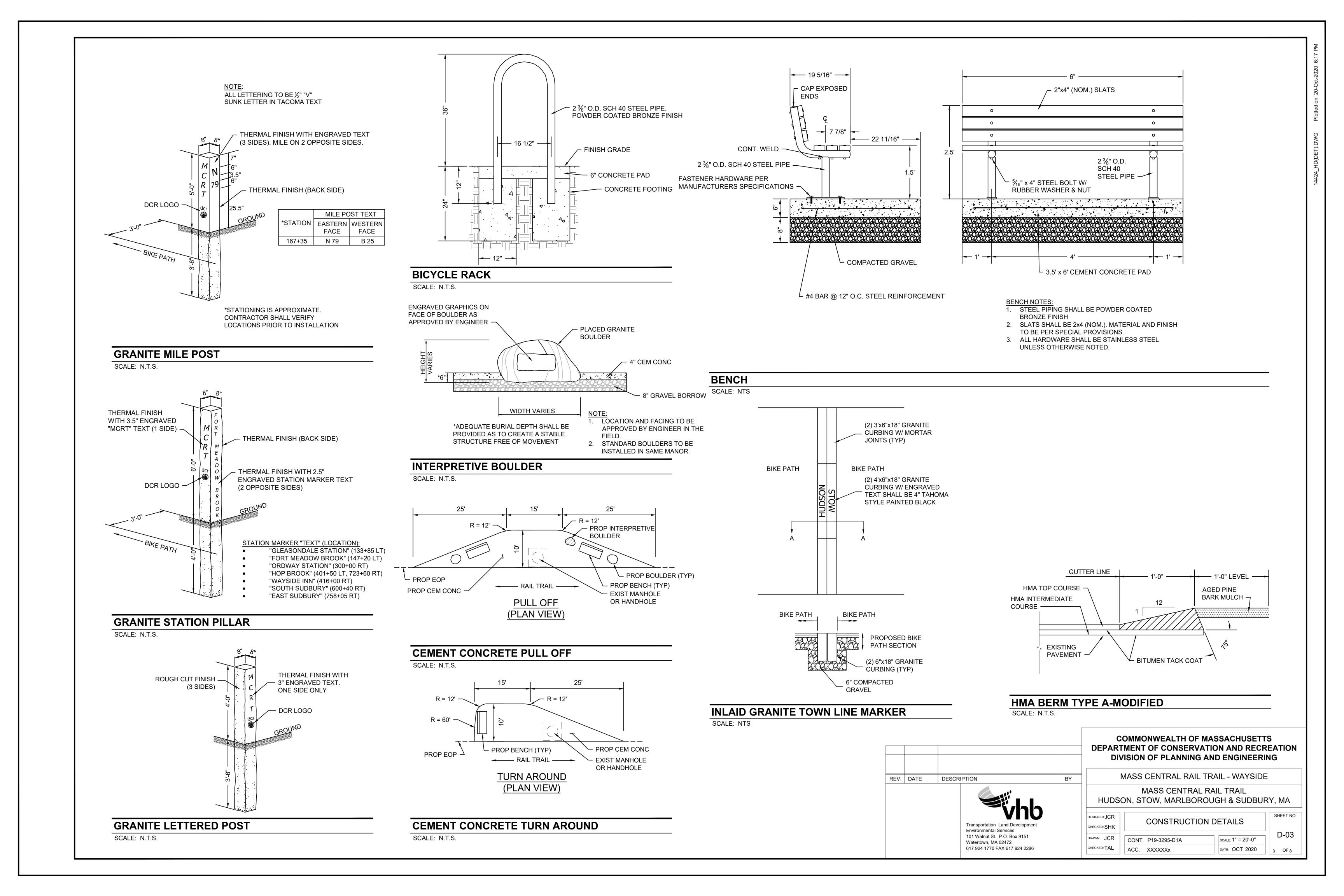
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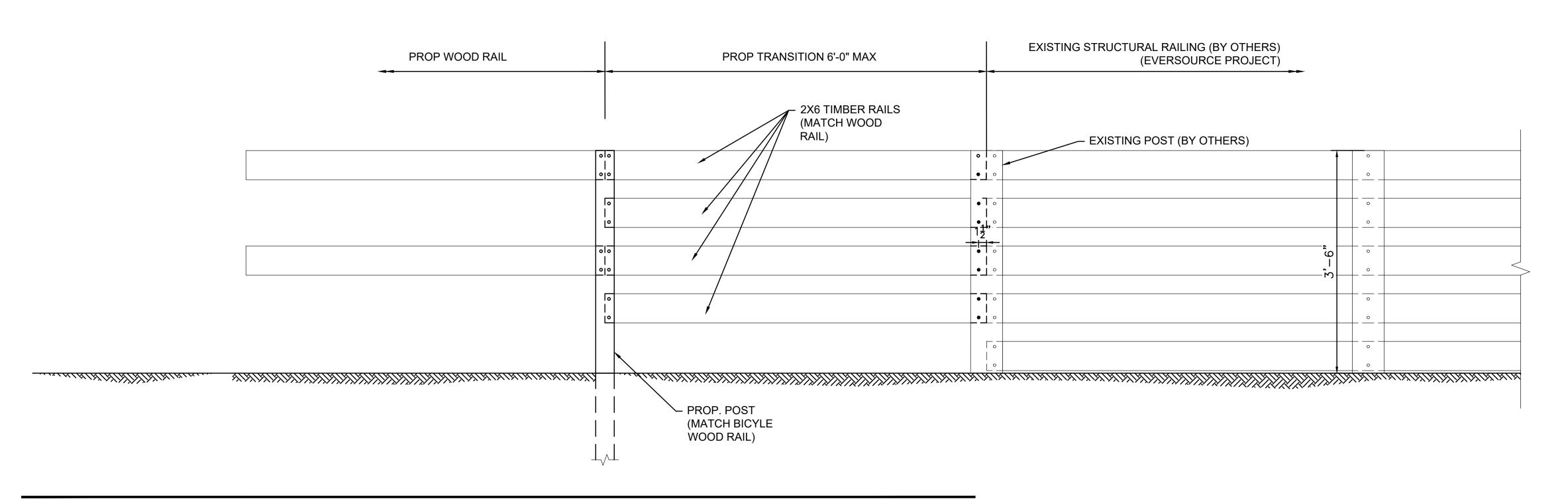
SCALE: 1" = 20'-0"

DATE: OCT 2020



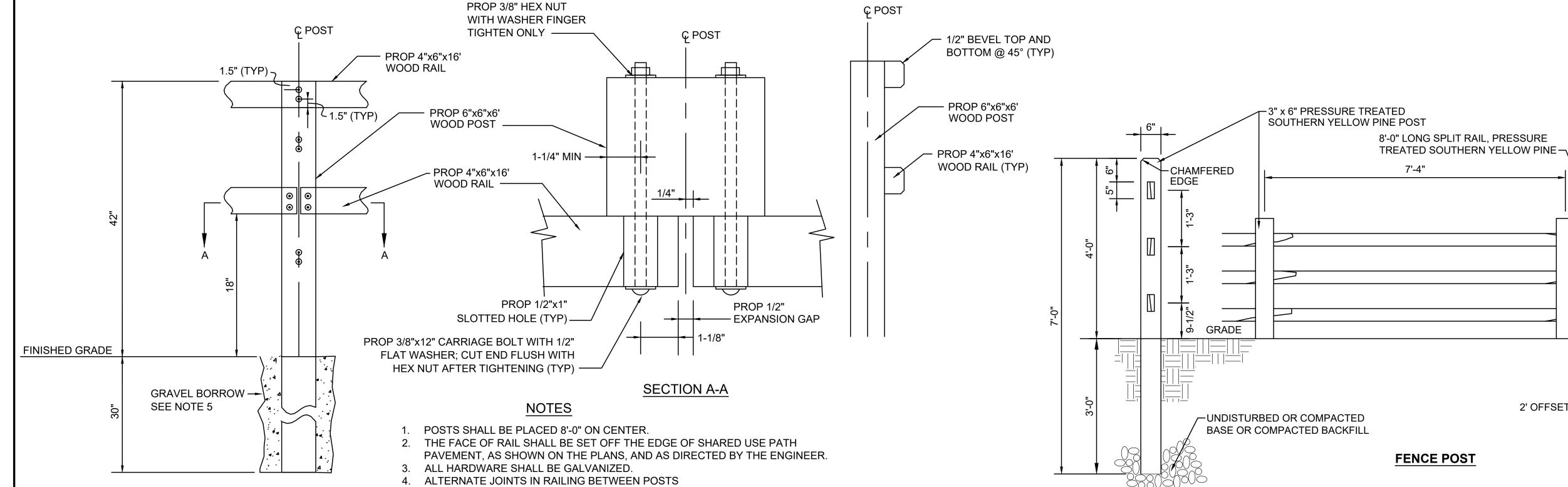






WOOD RAIL TRANSITION DETAIL AT EXISTING STRUCTURAL RAILING

SCALE: NTS



FIRST AND LAST SECTION OF A LINE OF

PATH ——

PLAN

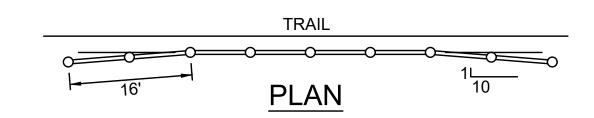
SPLIT RAIL FENCE SHALL BEGIN/END WITH A 2' OFFSET TAPER, EXCEPT WHERE FENCE CONNECTS TO OTHER FENCING.

SPLIT RAIL WOOD FENCE

SCALE: NTS

WOOD RAIL - ELEVATION AND SECTION VIEWS

SCALE: NTS



CONTRACTOR SHALL SET POST IN 4,000 PSI, 1-1/2IN, 565 CEMENT CONCRETE

6. BOLTS SHALL BE SIZED AND INSTALLED SO THAT THEY EXTEND NO MORE

THAN ONE ADDITIONAL NUT LENGTH BEYOND THE SECURED SURFACE.

FOR ALL POSTS UNABLE TO BE SET AT REQUIRED DEPTH.

WOOD RAIL TERMINAL END - PLAN VIEW

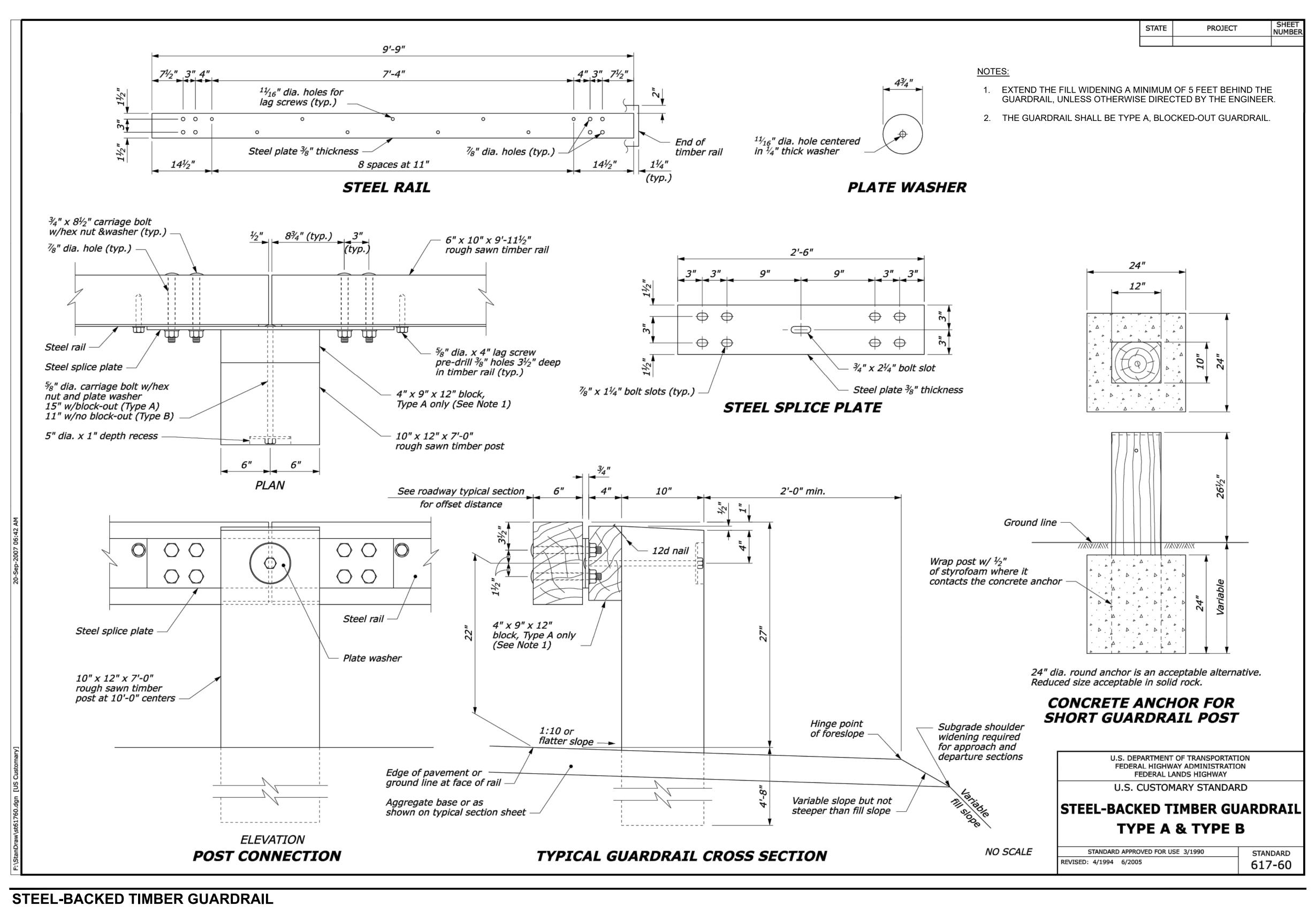
SCALE: NTS



COMMONWEALTH OF MASSACHUSETTS DEPARTMENT OF CONSERVATION AND RECREATION **DIVISION OF PLANNING AND ENGINEERING**

,	MASS CENTRAL RAIL TRAIL - WAYSIDE
	MASS CENTRAL RAIL TRAIL HUDSON, STOW, MARLBOROUGH & SUDBURY, MA
	DESIGNER:JCR SHEET NO.

			1 1
CHECKED: SHK	CONSTRUCTION DETAILS		
			D-04



SCALE: NTS

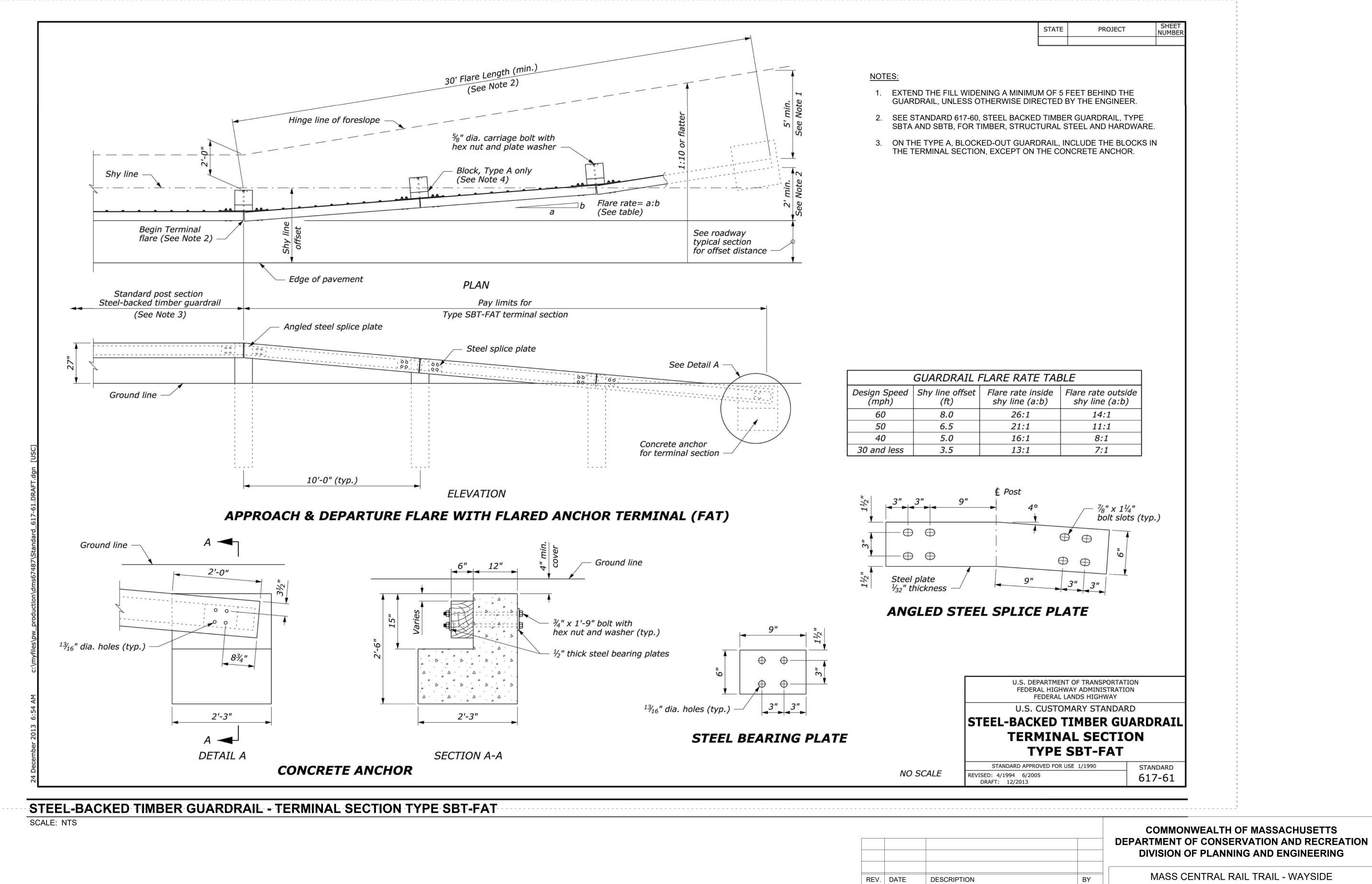


COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF CONSERVATION AND RECREATION
DIVISION OF PLANNING AND ENGINEERING

MASS CENTRAL RAIL TRAIL - WAYSIDE

MASS CENTRAL RAIL TRAIL
HUDSON, STOW, MARLBOROUGH & SUDBURY, MA

DESIGNER:JCR	CONSTRUCTIO	ON DETAILS	SHEET NO.
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Transportation Land Development

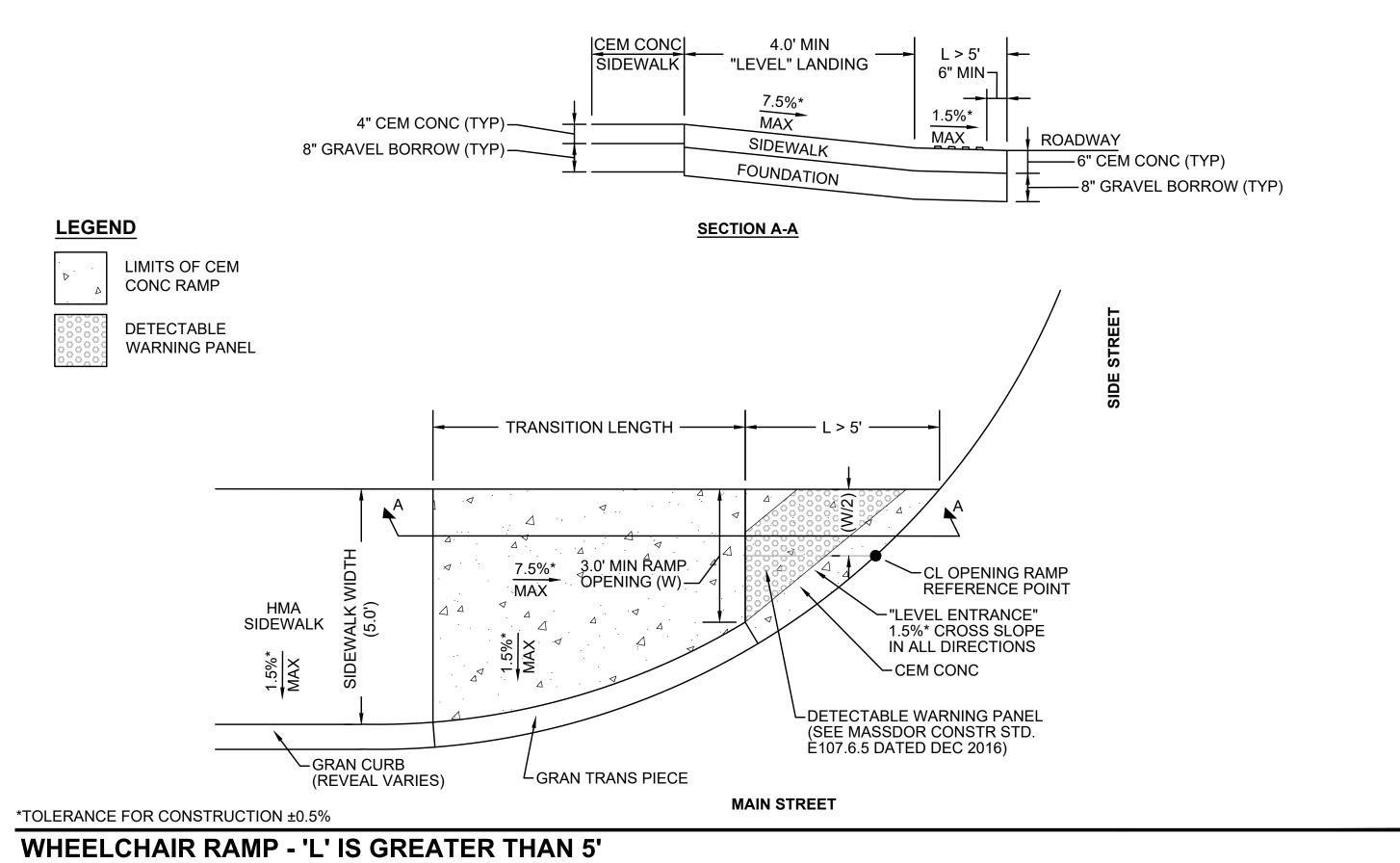
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Environmental Services 101 Walnut St., P.O. Box 9151 Watertown, MA 02472

DIVISION OF PLANNING AND ENGINEERING

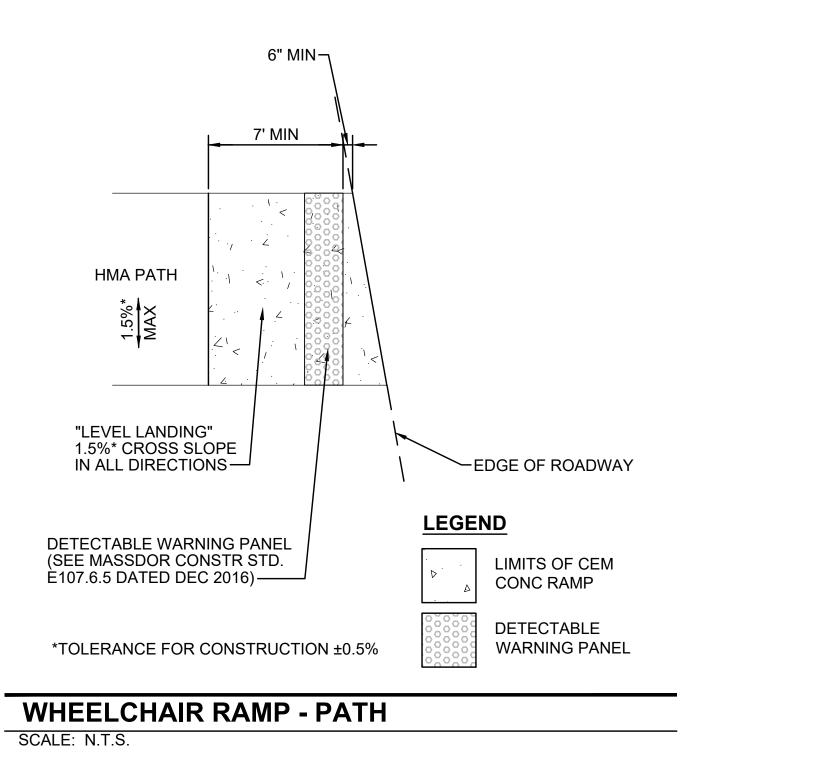
MASS CENTRAL RAIL TRAIL HUDSON, STOW, MARLBOROUGH & SUDBURY, MA

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			D-06
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SCALE: NTS



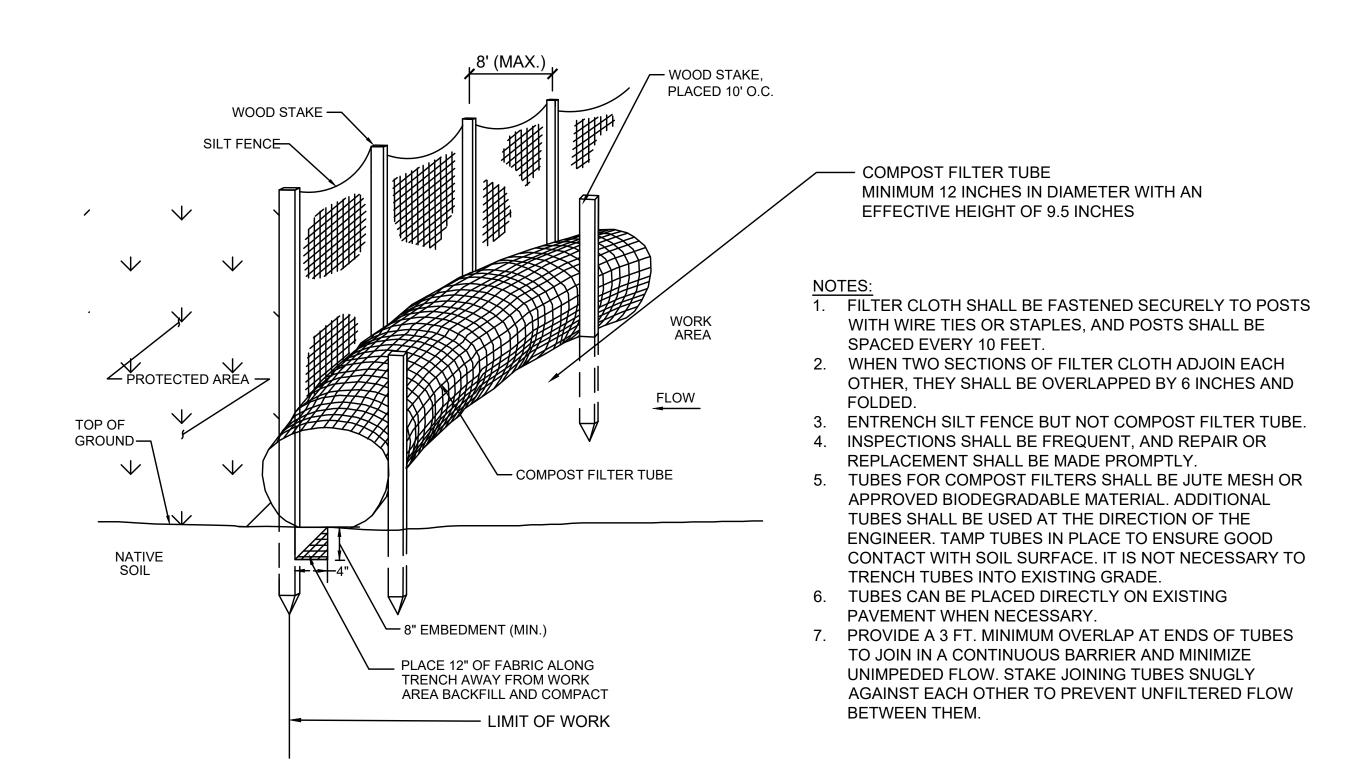
REV. DATE DESCRIPTION BY Transportation Land Development Environmental Services 101 Walnut St., P.O. Box 9151 Watertown, MA 02472

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COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF CONSERVATION AND RECREATION
DIVISION OF PLANNING AND ENGINEERING

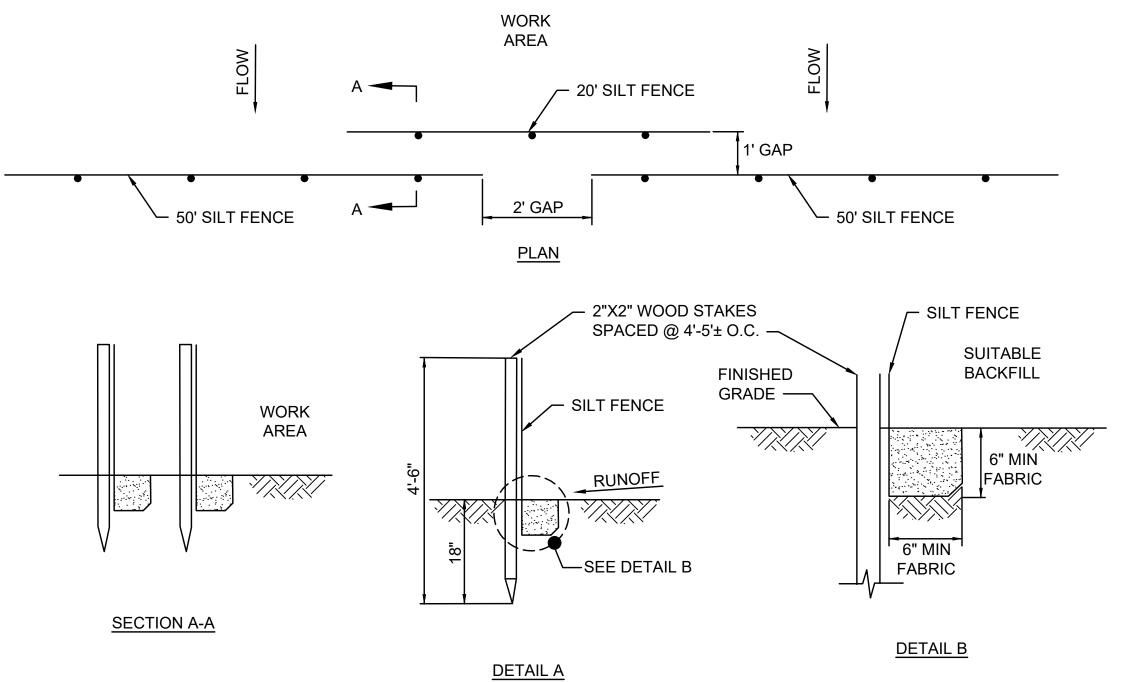
MASS CENTRAL RAIL TRAIL - WAYSIDE	
MASS CENTRAL RAIL TRAIL HUDSON, STOW, MARLBOROUGH & SUDBUR	Y MA
DESIGNER: ICR	SHEET NO.

11000			,
DESIGNER:JCR CHECKED: SHK	CONSTRUCTIO	N DETAILS	SHEET NO.
ONEONED OF IT			D-07
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COMPOST FILTER TUBE AND SILT FENCE DETAIL - TYPE A EROSION CONTROL BARRIER

SCALE: NTS



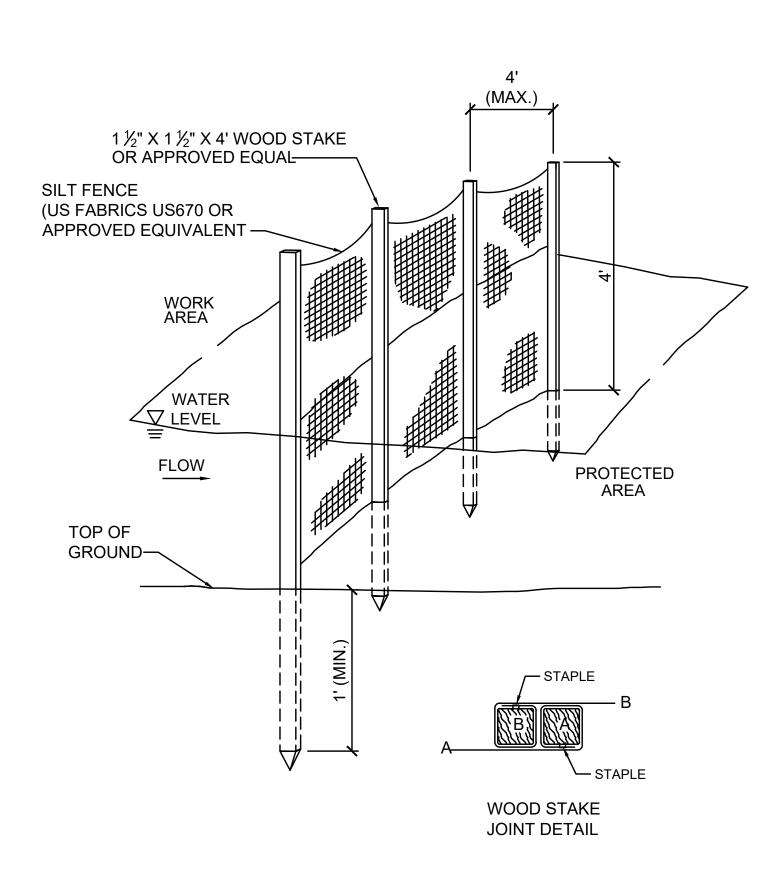
NOTES:

1. SYNCOPATED SILT FENCE SHALL BE USED WITHIN ALL PRIORITY HABITAT AREAS AND WITHIN 450' OF VERNAL POOLS.

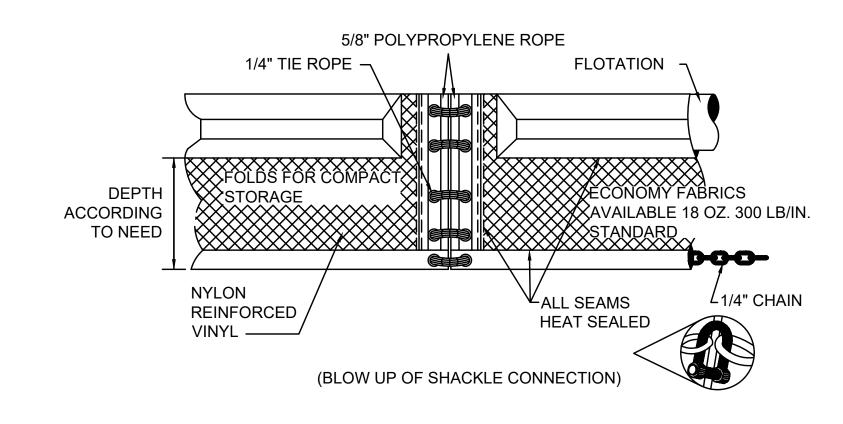
2. INSTALL GAP AFTER EVERY 50' OF EROSION CONTROL BARRIER.

SYNCOPATED SILT FENCE DETAIL - TYPE B EROSION CONTROL BARRIER

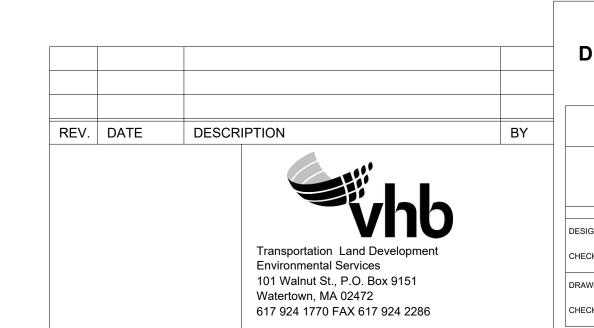
SCALE: N.T.S.



4' HIGH SILT FENCE BARRIER DETAIL - EROSION CONTROL BARRIER TYPE C (OPTION 1) SCALE: N.T.S.

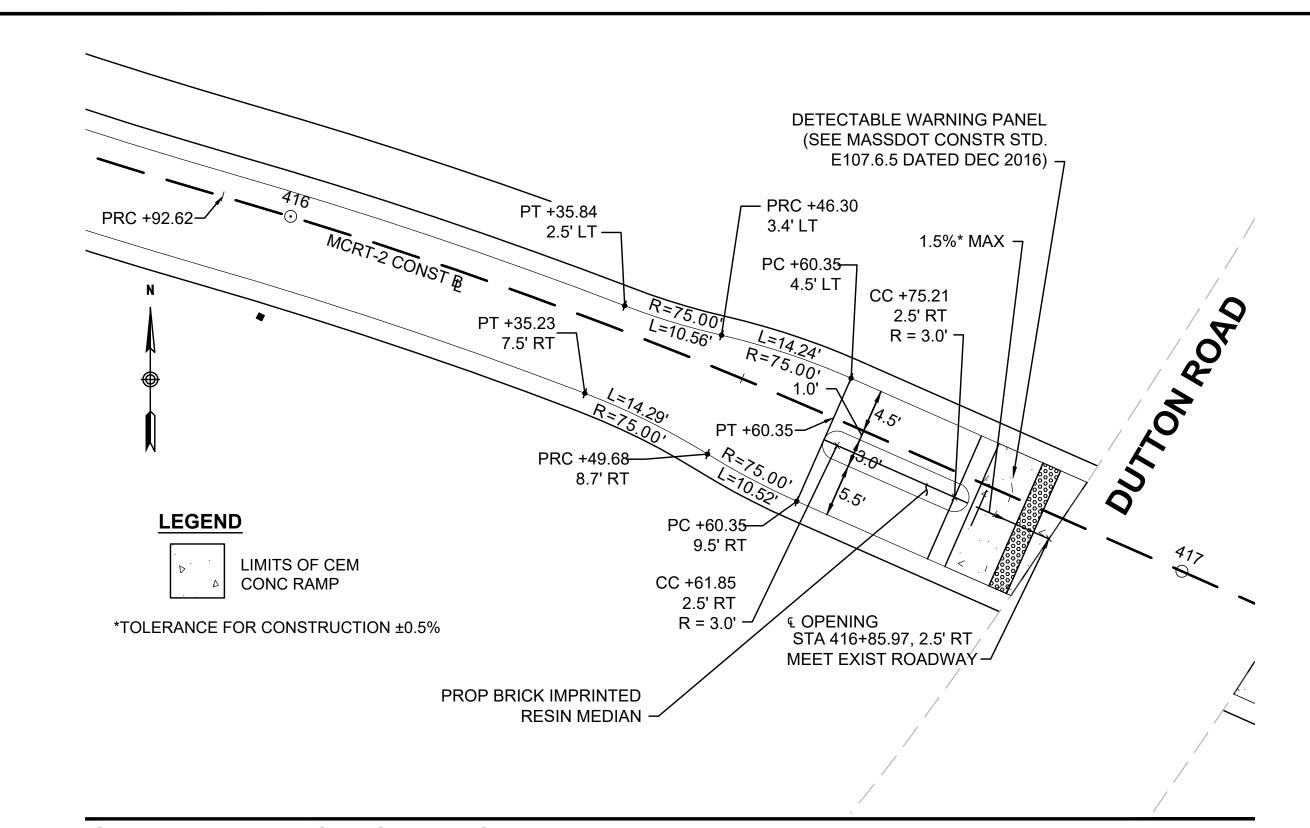


TURBIDITY CURTAIN DETAIL - EROSION CONTROL BARRIER TYPE C (OPTION 2) SCALE: N.T.S.



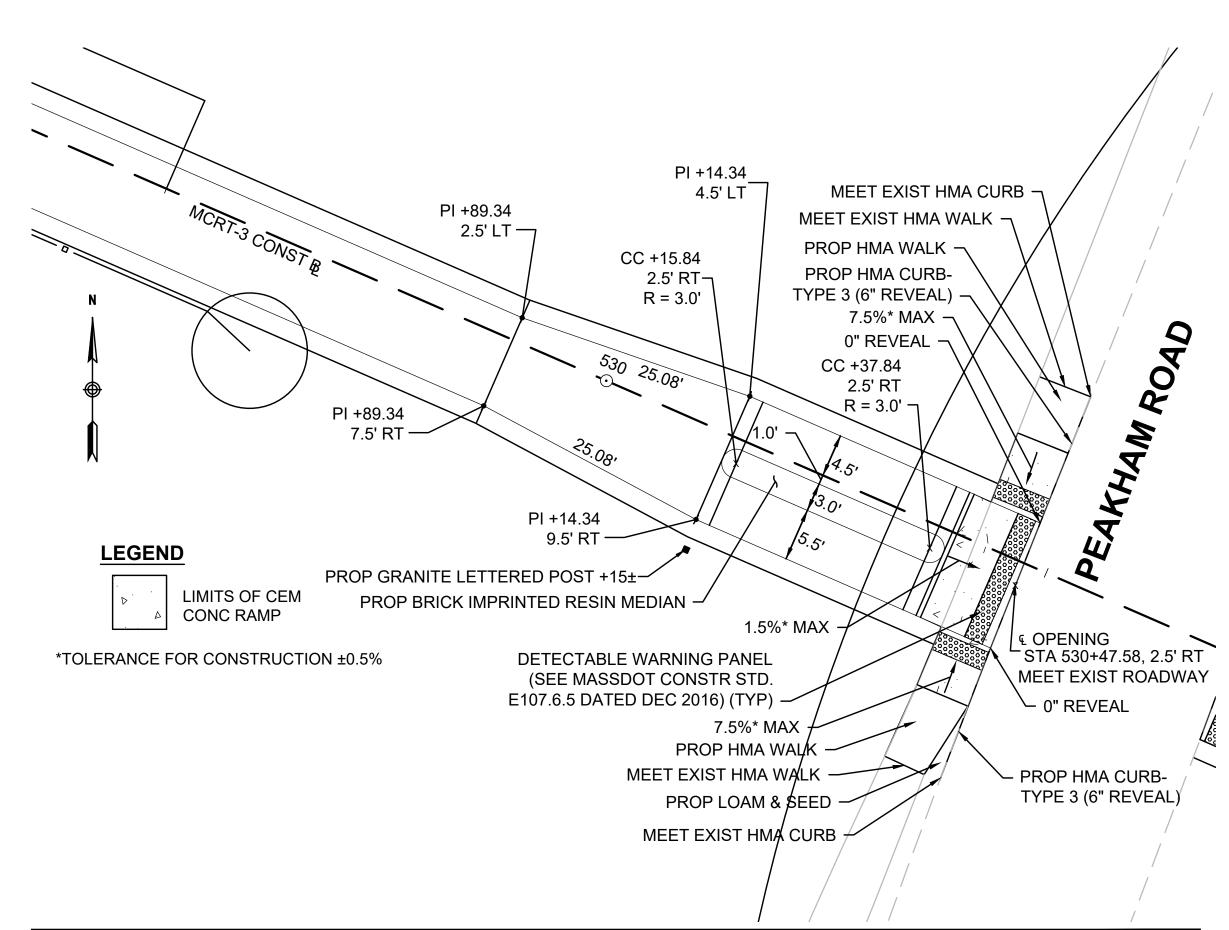
COMMONWEALTH OF MASSACHUSETTS DEPARTMENT OF CONSERVATION AND RECREATION DIVISION OF PLANNING AND ENGINEERING

Y		MASS CENTRAL RAIL TRAIL - WAYSIDE	
	HUDS	MASS CENTRAL RAIL TRAIL ON, STOW, MARLBOROUGH & SUDBUF	RY, MA
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	CHECKED: TAL	ACC. XXXXXXX DATE: OCT 2020	8 OF 8



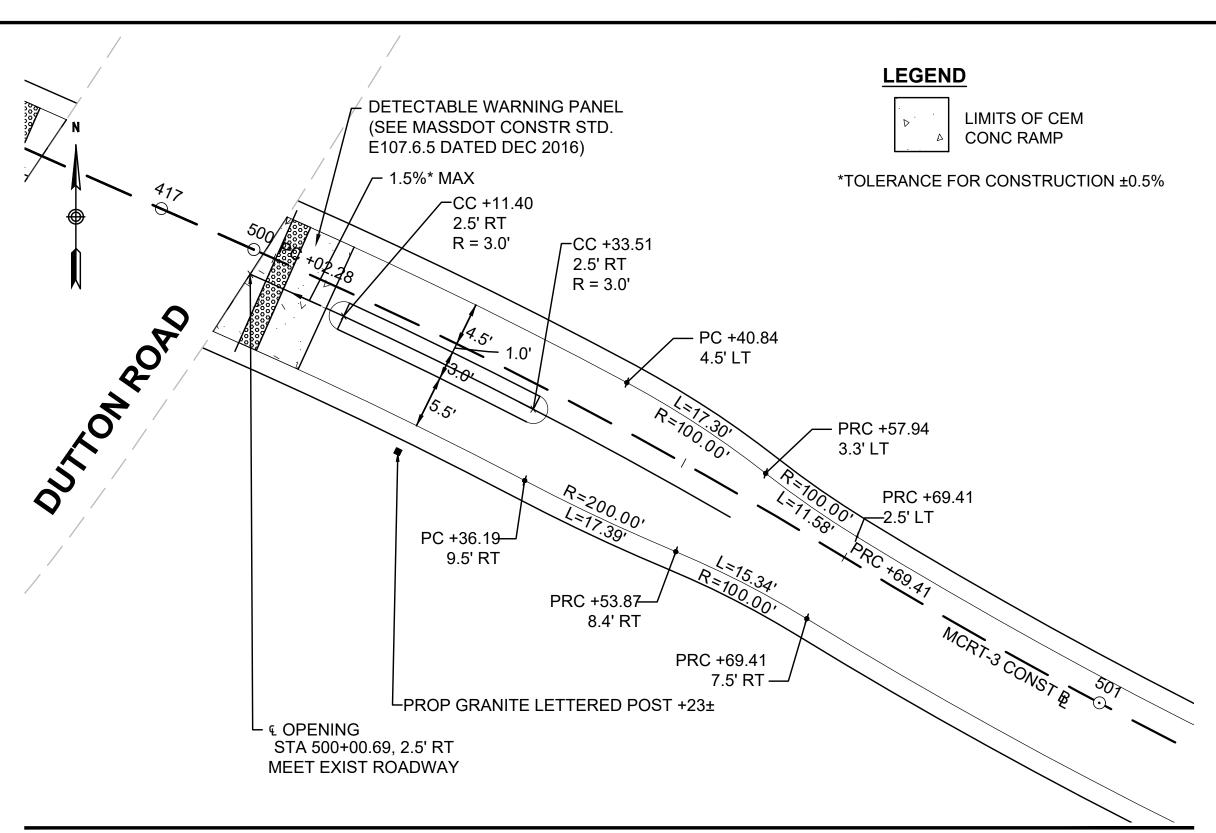
GATEWAY 9 - DUTTON ROAD (WEST)

SCALE: 1" = 10'



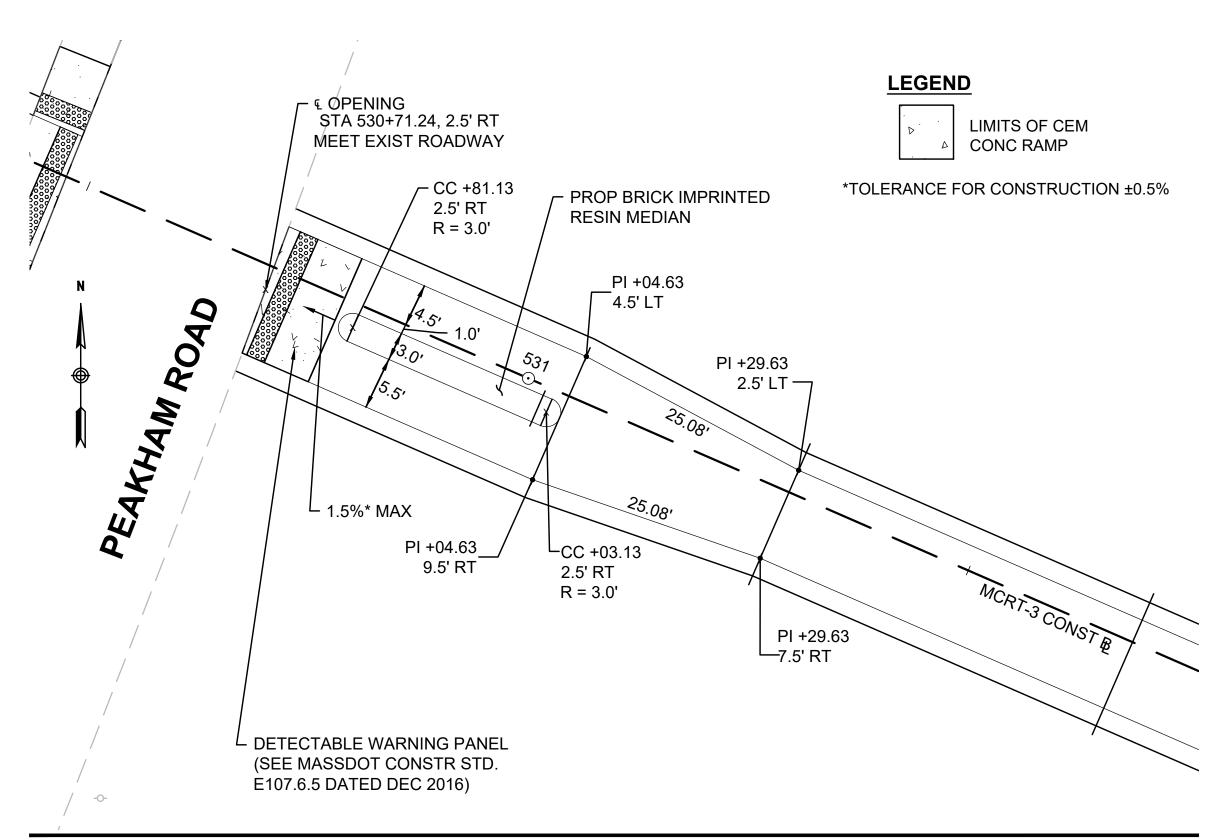
GATEWAY 11 - PEAKHAM ROAD (WEST)

SCALE: 1" = 10'



GATEWAY 10 - DUTTON ROAD (EAST)

SCALE: 1" = 10'



GATEWAY 12 - PEAKHAM ROAD (EAST)

SCALE: 1" = 10'



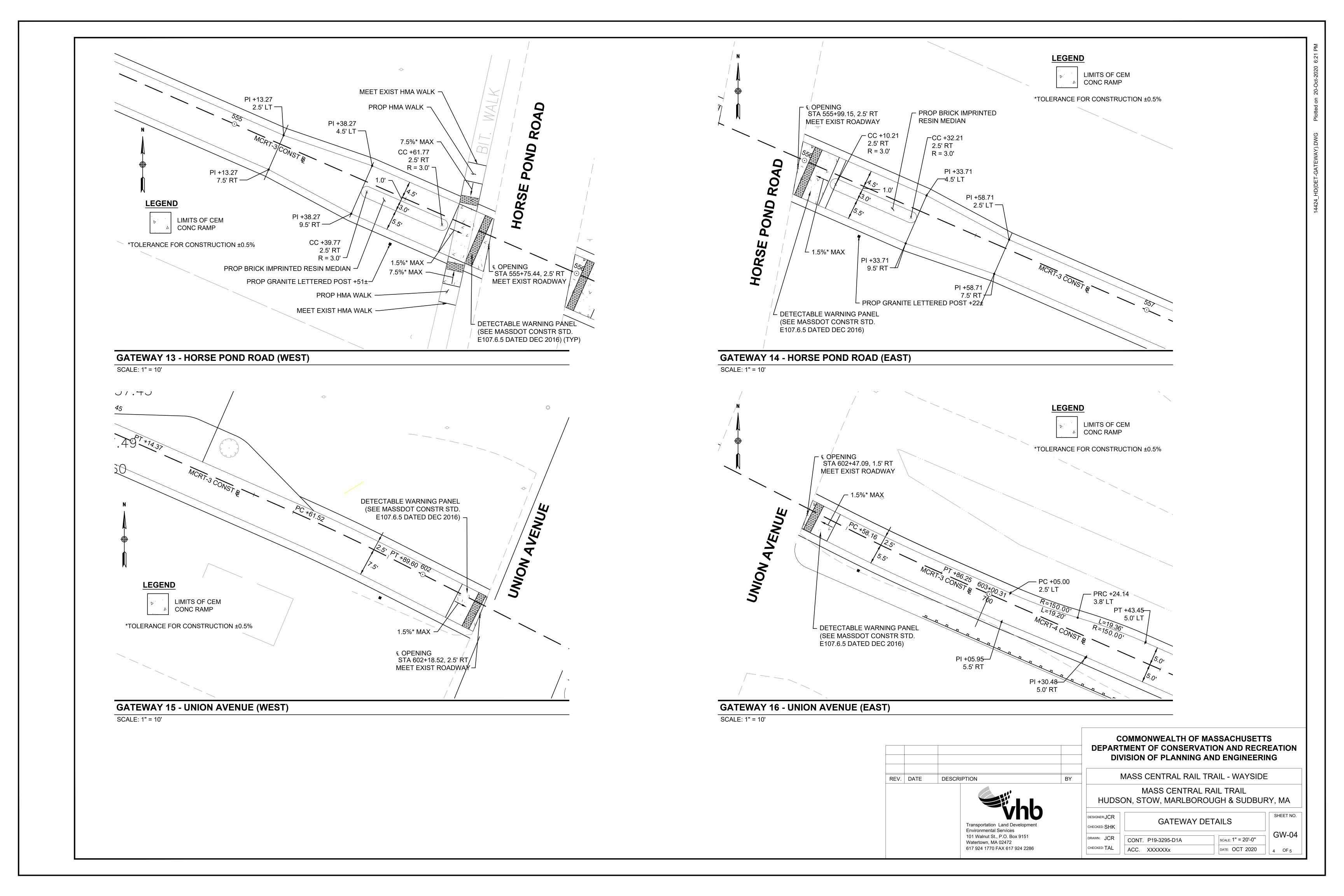
COMMONWEALTH OF MASSACHUSETTS DEPARTMENT OF CONSERVATION AND RECREATION DIVISION OF PLANNING AND ENGINEERING

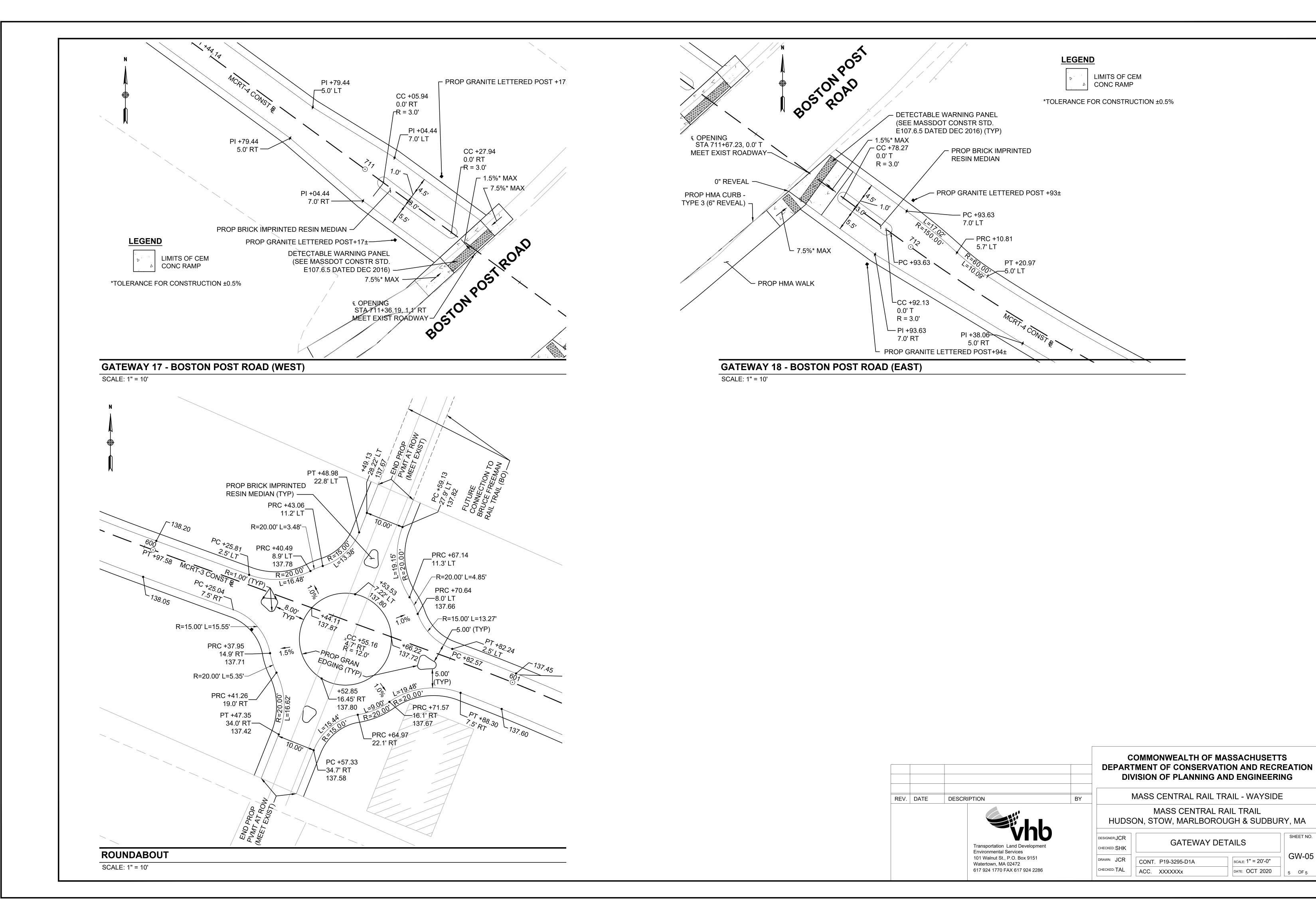
MASS CENTRAL RAIL TRAIL - WAYSIDE

MASS CENTRAL RAIL TRAIL
HUDSON, STOW, MARLBOROUGH & SUDBURY, MA

SHEET NO.

DESIGNER:JCR	GATEWAY	DETAILS	SHEET NO.
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DRAWN: JCR	CONT. P19-3295-D1A	SCALE: 1" = 20'-0"	GW-03
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SHEET NO.

GW-05

5 OF 5