MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

MONTAGUE
HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	FED. AID	1	69
PROJECT FILE NO.	604696		

TITLE & INDEX

ROADWAY RECONSTRUCTION PROJECT

HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE
BRIDGE NO. M-28-009 (BKB)

IN THE TOWN OF

MONTAGUE

FRANKLIN COUNTY

FEDERAL AID PROJECT NO.

THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES DATED 1988, AS AMENDED, THE SUPPLEMENTAL SPECIFICATIONS DATED JUNE 15, 2012, THE 2012 CONSTRUCTION STANDARD DETAILS, THE 1996 CONSTRUCTION AND TRAFFIC STANDARD DETAILS (AS RELATES TO TRAFFIC STANDARD DETAILS ONLY), THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS WITH MASSACHUSETTS AMENDMENTS AND THE STANDARD MUNICIPAL TRAFFIC CODE, 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, WILL GOVERN.

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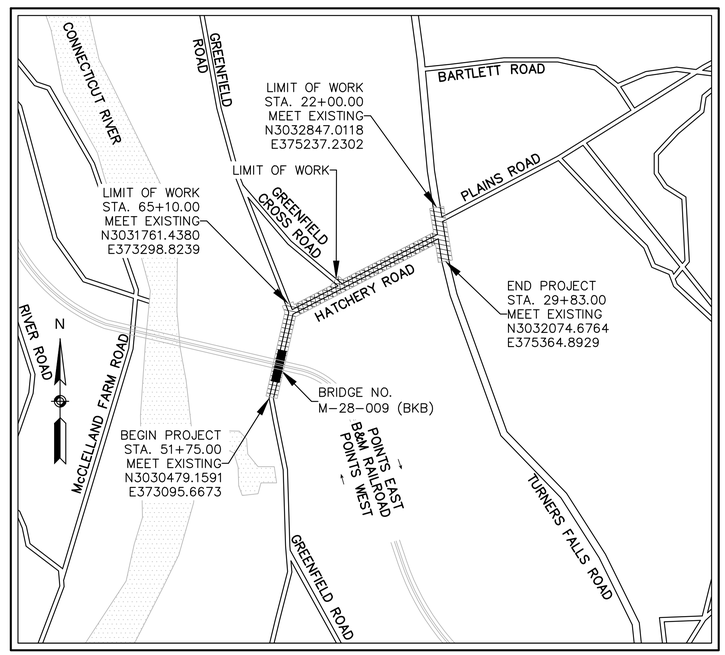


LOCATION MAP

HORIZONTAL SCALE
(IN FEET)

1000 0 1000 2000 3000 4000

LENGTH OF PROJECT = 4221.60 FEET = 0.800 MILES

DESIGN DESIGNATION

		HATCHERY ROAD	TURNERS FALLS ROAD
DESIGN SPEED:	-	35 MPH	55 MPH
ADT (2012):	-	1,220	4,440
ADT (2032):	-	1,490	5,410
K:	-	9.2%	8.8%
D:	-	68.4%	54.9%
T (PEAK HOUR):	-	0.0%	2.0%
T (AVERAGE DAY):	-	1.5%	2.0%
DHV:	-	138	477
DDHV:	-	94	94
FUNCTIONAL CLASSIFICATION:	-	RURAL MINOR COLLECTOR	RURAL MINOR COLLECTOR

25%
SUBMISSION

REVISED FEBRUARY 6, 2014

DATE	DESCRIPTION	REV #

massDOT
Massachusetts Department of Transportation
Highway Division

RECOMMENDED FOR APPROVAL

CHIEF ENGINEER **DATE**

GPI Greenman-Pedersen, Inc.
Engineers, Architects, Planners, Construction Engineers & Inspectors
181 Ballardvale Street, Suite 202, Wilmington, MA 01887
Tel: (978) 570-2999 Fax: (978) 658-3044
http://www.gpinet.com

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR **DATE**

APPROVED

DIVISION ADMINISTRATOR **DATE**

IN CHARGE OF JFO
DESIGNED BY JFO
DRAWN BY JDB
CHECKED BY GJH

Printed 2/6/2014

LEGEND

GENERAL SYMBOLS

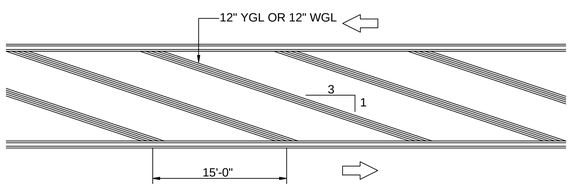
EXISTING	PROPOSED	
JB OR BRJB	JB OR BRJB	JERSEY BARRIER ON BRIDGE OR JERSEY BARRIER
CB	CB	CATCH BASIN
CI	CI	CURB INLET
	BUOY	BUOY
	FPL	FLAG POLE
		GAS PUMP
DI	DI	DROP INLET
MB	MB	MAIL BOX
GR	GRAN POST	GRANITE POST
PLN	PLANTER	PLANTER
PST	POST	POST
TBH	TBH	TELEPHONE BOOTH
VLT	VLT	VAULT
VLV	VLV	VALVE
WELL	WELL	WELL
EHH	EHH	ELECTRIC MANHOLE (HANDHOLE)
FCGA		GATE POST
FL	FL	FLOW LINE
GG		GAS GATE
BH	BH	BORING HOLE
		MONITORING WELL
	TEP	TEST PIT
HC	CONC. HDWL	CONCRETE HEADWALL
HH		HANDHOLE
HS	STONE DHWL	STONE HEADWALL
HYD	HYD	HYDRANT
LPL	LPL	LIGHT POLE
CO. BD.	CO. BD.	COUNTY BOUND
GPS		GPS POINT
CMH		CABLE MANHOLE
DMH	D	DRAINAGE MANHOLE
EMH		ELECTRIC MANHOLE
GMH		GAS MANHOLE
MMH		MISC MANHOLE
OMH		OTHER MANHOLE
SMH	S	SEWER MANHOLE
TMH		TELEPHONE MANHOLE
WMH		WATER MANHOLE
MHB	MHB	MHD BOUND
MON	MON	MONUMENT
SB	SB	STONE BOUND
TOWN OR CITY BD.	TOWN OR CITY BD.	TOWN OR CITY BOUND
	TSN	TRAVERSE OR TRIANGULATION STATION
TPL OR GUY	TPL OR GUY	TROLLEY POLE OR GUY POLE
TRNP		TRANS. POLE
UFB	UFB	UP W ITH FIREBOX
LPDL	LPDL	POLE WITH DOUBLE LIGHT
ULT	ULT	UP W ITH 1 LIGHT
UPL	UPL	UTILITY POLE
	BUSH	BUSH
	TREE	TREE
STUMP		STUMP
		SWAMP / MARSH
WG	WG	WATER GATE
FA	FA	FIRE ALARM BOX
PM	PM	PARKING METER
		ELECTRICAL GROUND
	GV	GATE VALVE
		RIP RAP
OHW	OHW	OVERHEAD CABLE
		DIRECT BURIAL CABLE
		CURBING
185	185	CONTOURS
		DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER)
		ELECTRIC DUCT " "
		GAS MAIN " "
		SEWER MAIN " "
		TELEPHONE DUCT " "
		WATER MAIN " "
		BALANCE STONE WALL
		CULVERT
		GUARD RAIL
		GUTTER LINE AT DRIVEWAYS
		CHAIN LINK FENCE
		STOCKADE FENCE

GENERAL SYMBOLS (CONT.)

EXISTING	PROPOSED	
		HAY BALES/SILT FENCE OR COMPOST FILTER TUBES
		RETAINING WALL
		TREE LINE OR LIMIT OF CLEARING AND GRUBBING
		SAWCUT LINE
		TOP OR BOTTOM OF SLOPE
		LIMIT OF EDGE OF PAVEMENT OR COLD PLANE & OVERLAY
		BANK OF RIVER OR STREAM
WF-#		BORDER OF WETLAND
		100 FT WETLAND OR 200 FT RIVERFRONT BUFFER
DATE OF LAYOUT		STATE HIGHWAY LAYOUT
DATE OF LAYOUT		TOWN OR CITY LAYOUT
DATE OF LAYOUT		COUNTY LAYOUT
R.R S/L		RAILROAD SIDELINE
		TOWN OR CITY BOUNDARY LINE
ℙ OR APPROX. ℙ		PROPERTY LINE OR APPROXIMATE PROPERTY LINE
		EASEMENT

PAVEMENT MARKINGS AND SIGNING SYMBOLS

EXISTING	PROPOSED	
		PAVEMENT ARROW - WHITE
ONLY	ONLY	LEGEND "ONLY" - WHITE
	SL	STOP LINE - 12"
	CW	CROSSWALK
	SWLL	SOLID WHITE LANE LINE
	BWLL	BROKEN WHITE LANE LINE (10' LINE, 30' SPACE TYP.)
	SWEL	SOLID WHITE EDGE LINE
	YGL	YELLOW GORE LINE - 12"
	DYCL	DOUBLE YELLOW CENTER LINE
	SWCHL	SOLID WHITE CHANNELIZATION LINE - 8"
	WGL	WHITE GORE LINE - 12"
	SYEL	SOLID YELLOW EDGE LINE
	BYCL	BROKEN YELLOW CENTER LINE (10' LINE, 30' SPACE TYP.)
	SYCL	SOLID YELLOW CENTER LINE
	DWLL	DOTTED WHITE LANE LINE - (2' LINE, 4' SPACE)
		DIRECTION OF TRAFFIC FLOW



GORE AREA DETAIL
NOT TO SCALE

NOTES

1. EXISTING CONDITIONS INFORMATION IS BASED ON SURVEY PROVIDED BY CULLINAN ENGINEERING DATED DECEMBER 22, 2006 AND NOVEMBER 17, 2010.
2. HORIZONTAL CONTROL IS BASED UPON VALUES PROVIDED BY MEANS OF GLOBAL POSITIONING SYSTEM METHODS, AND IS BASED UPON THE NORTH AMERICAN DATUM OF 1983, (NAD-83-96), MASSACHUSETTS STATE PLANE COORDINATE SYSTEM MAINLAND ZONE, FOR STATIONS STA A AND STA B AS PROVIDED BY MHD GEODETIC SURVEY. VERTICAL CONTROL IS BASED UPON THE NORTH AMERICAN VERTICAL DATUM OF 1988 AS PROVIDED FOR STATIONS STA A AND STA B.
3. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND 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 AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO LOCATE EXACTLY AND TO PRESERVE ANY AND ALL UNDERGROUND UTILITIES. CALL "DIG-SAFE" 1-888-DIGSAFE (344-7233) AT LEAST 72 HOURS BEFORE COMMENCING CONSTRUCTION.
4. WHERE AN EXISTING UNDERGROUND 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.
5. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES.
6. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATION, SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
7. THE TERM "PROPOSED" (PROP.) MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS, OR, WHERE APPLICABLE, RE-USING EXISTING MATERIALS IDENTIFIED AS "REMOVE & RESET" (R&R).
8. ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE RETAINED UNLESS NOTED OTHERWISE.
9. ALL PROPOSED PAVEMENT MARKINGS SHALL BE THERMOPLASTIC.
10. 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.
11. ALL TRANSVERSE JOINTS, AND ALL LONGITUDINAL JOINTS BETWEEN NEW SURFACE PAVEMENT AND EXISTING SURFACE PAVEMENT TO REMAIN SHALL BE COATED WITH A HOT POURED RUBBERIZED ASPHALT SEALANT MEETING THE REQUIREMENTS OF M3.05.0.
12. ALL DISTURBED AREAS NOT DESIGNATED TO BE PAVED SHALL HAVE LOAM BORROW PLACED AND SEEDED. THE LOAM BORROW SHALL HAVE A MINIMUM DEPTH OF 4 INCHES AND SHALL BE PLACED FLUSH WITH THE TOP OF THE ADJACENT CURB, EDGING, BERM OR PAVEMENT SURFACE.
13. PRIOR TO THE START OF ANY NEW UTILITY WORK, ALL ELEVATIONS OF EXISTING UTILITIES IN THOSE AREAS ARE TO BE VERIFIED. THE ENGINEER IS TO BE NOTIFIED IMMEDIATELY SHOULD ANY DISCREPANCIES OCCUR.
14. ALL CASTINGS SHALL BE SET FLUSH WITH FINISHED GRADE.
15. ALL GATE BOXES, SERVICE BOXES AND PUBLICLY OWNED MANHOLE FRAMES AND COVERS SHALL BE ADJUSTED TO GRADE BY THE CONTRACTOR.
16. THE CONTRACTOR SHALL TAKE EVERY PRECAUTION TO PROTECT ALL EXISTING TREES AND ROOTS THAT ARE NOT DESIGNATED FOR REMOVAL.
17. DRAINAGE ELEVATIONS ARE PROVIDED FOR DESIGN PURPOSES ONLY. THE CONTRACTOR SHALL VERIFY BY TEST PIT, THE LOCATIONS OF EXISTING UTILITIES WHICH MAY CONFLICT WITH THE PROPOSED DRAINAGE DESIGN. ANY FIELD ADJUSTMENTS REQUIRED WILL BE MADE AS APPROVED OR DIRECTED BY THE ENGINEER. ONLY AFTER THE CONTRACTOR VERIFIES ELEVATIONS FOR THE CONSTRUCTABILITY OF THE DRAINAGE SYSTEM SHALL ANY STRUCTURES BE ORDERED. ANY FIELD ADJUSTMENTS TO LINE & GRADE UP TO A DEPTH OF 5' SHALL BE INCLUDED IN THE COST OF THE PIPE. PIPE EXCAVATION GREATER THAN 5' WILL BE PAID UNDER CLASS B TRENCH EXCAVATION.

MONTAGUE
HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	FED. AID	2	69
PROJECT FILE NO.	604696		

LEGEND, ABBREVIATIONS & NOTES

ABBREVIATIONS

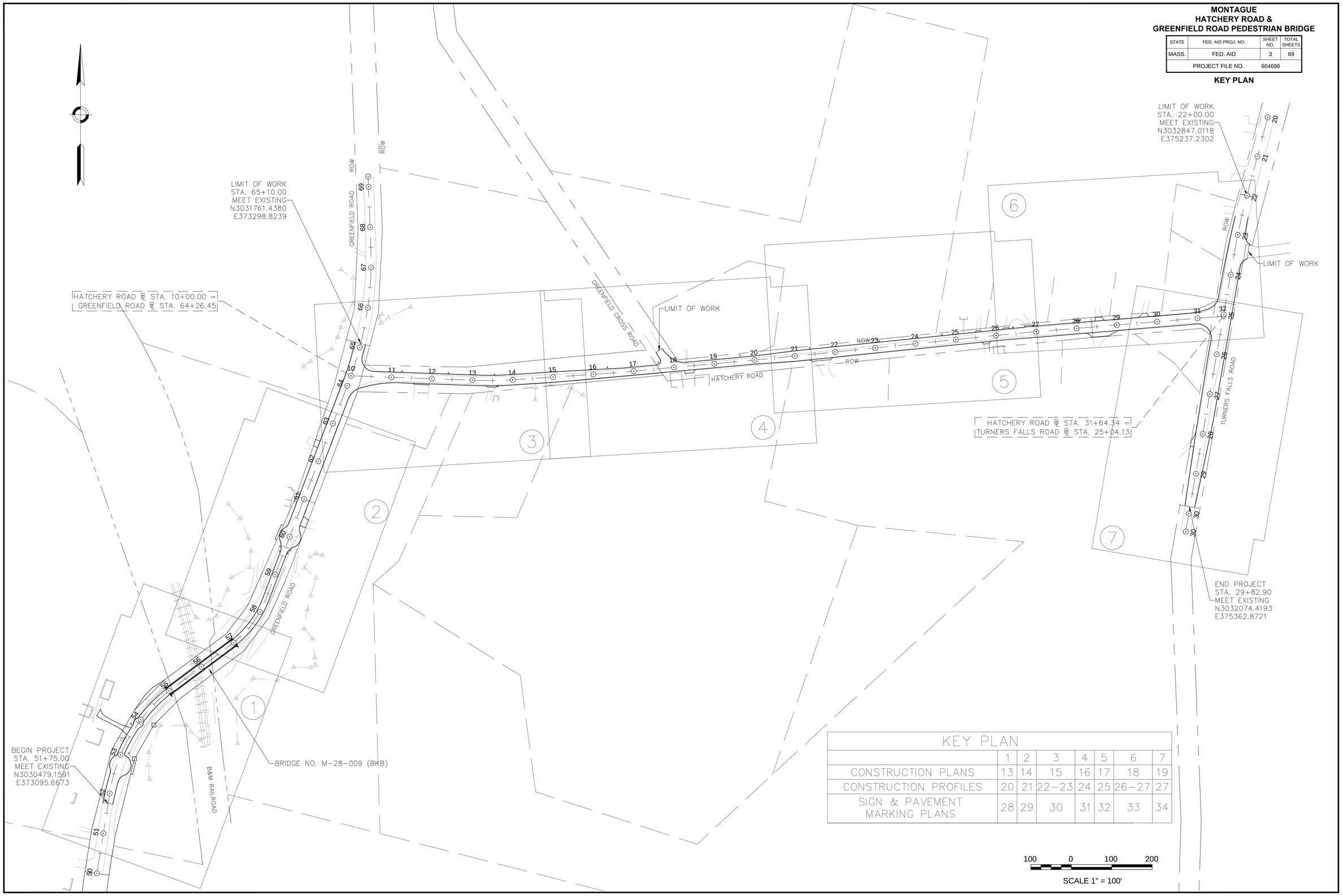
AADT	ANNUAL AVERAGE DAILY TRAFFIC
ABAN	ABANDON
ADJ	ADJUST
APPROX.	APPROXIMATE
A.C.	ASPHALT CONCRETE
ACCM PIPE	ASPHALT COATED CORRUGATED METAL PIPE
BIT.	BITUMINOUS
BC	BOTTOM OF CURB
BD.	BOUND
BL	BASELINE
BLDG	BUILDING
BM	BENCH MARK
BO	BY OTHERS
BOS	BOTTOM OF SLOPE
BR.	BRIDGE
CB	CATCH BASIN
CBCI	CATCH BASIN WITH CURB INLET
CC	CEMENT CONCRETE
CCM	CEMENT CONCRETE MASONRY
CEM	CEMENT
CI	CURB INLET
CIP	CAST IRON PIPE
CIT	CHANGE IN TYPE
CLF	CHAIN LINK FENCE
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CSP	CORRUGATED STEEL PIPE
CO.	COUNTY
CONC	CONCRETE
CONT	CONTINUOUS
CONST	CONSTRUCTION
CR GR	CROWN GRADE
DHV	DESIGN HOURLY VOLUME
DI	DROP INLET
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DMH	DRAIN MANHOLE
DW	STEADY DON'T WALK - PORTLAND ORANGE
DWY	DRIVEWAY
ELEV (OR EL.)	ELEVATION
EMB	EMBANKMENT
EOP	EDGE OF PAVEMENT
EXIST (OR EX)	EXISTING
EXC	EXCAVATION
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
FDN.	FOUNDATION
FLDSTN	FIELDSTONE
GAR	GARAGE
GD	GROUND
GG	GAS GATE
GI	GUTTER INLET
GIP	GALVANIZED IRON PIPE
GRAN	GRANITE
GRAV	GRAVEL
GRD	GUARD
HDW	HEADWALL
HMA	HOT MIX ASPHALT
HOR	HORIZONTAL
HYD	HYDRANT
INV	INVERT
JCT	JUNCTION
L	LENGTH OF CURVE
LB	LEACHING BASIN
LP	LIGHT POLE
LT	LEFT
MAX	MAXIMUM
MB	MAIL BOX
MH	MANHOLE
MHB	MASSACHUSETTS HIGHWAY BOUND
MIN	MINIMUM
NIC	NOT IN CONTRACT
NO.	NUMBER
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
P.G.L.	PROFILE GRADE LINE
PI	POINT OF INTERSECTION
POC	POINT ON CURVE
POT	POINT ON TANGENT
PRC	POINT OF REVERSE CURVATURE
PROJ	PROJECT
PROP	PROPOSED
PSB	PLANTABLE SOIL BORROW
PT	POINT OF TANGENCY
PVC	POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
PVMT	PAVEMENT
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
T	TANGENT DISTANCE OF CURVE/ TRUCK PERCENTAGE
TAN	TANGENT
TEMP	TEMPORARY
TC	TOP OF CURB
TOS	TOP OF SLOPE
TYP	TYPICAL
UP	UTILITY POLE
VAR	VARIES
VERT	VERTICAL
VC	VERTICAL CURVE
WCR	WHEELCHAIR RAMP
WG	WATER GATE
WIP	WROUGHT IRON PIPE
WM	WATER METER/WATER MAIN
X-SECT	CROSS SECTION

IN CHARGE OF JFO
DESIGNED BY JFO
DRAWN BY JDB
CHECKED BY GJH

MONTAGUE
HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	FED. AID	3	69
PROJECT FILE NO.		604696	

KEY PLAN



KEY PLAN							
	1	2	3	4	5	6	7
CONSTRUCTION PLANS	13	14	15	16	17	18	19
CONSTRUCTION PROFILES	20	21	22–23	24	25	26–27	27
SIGN & PAVEMENT MARKING PLANS	28	29	30	31	32	33	34

100 0 100 200

SCALE 1" = 100'

IN CHARGE OF JFO
DESIGNED BY JFO
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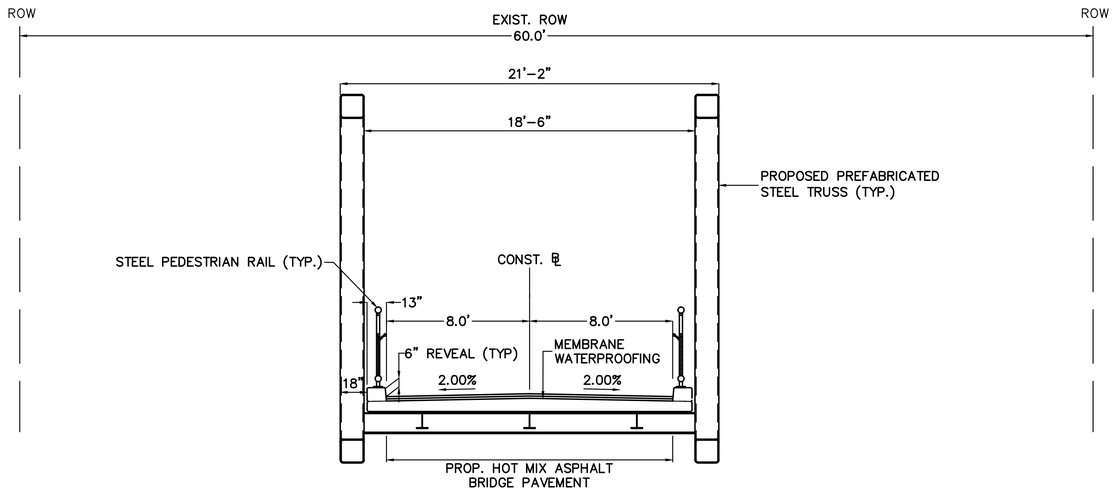
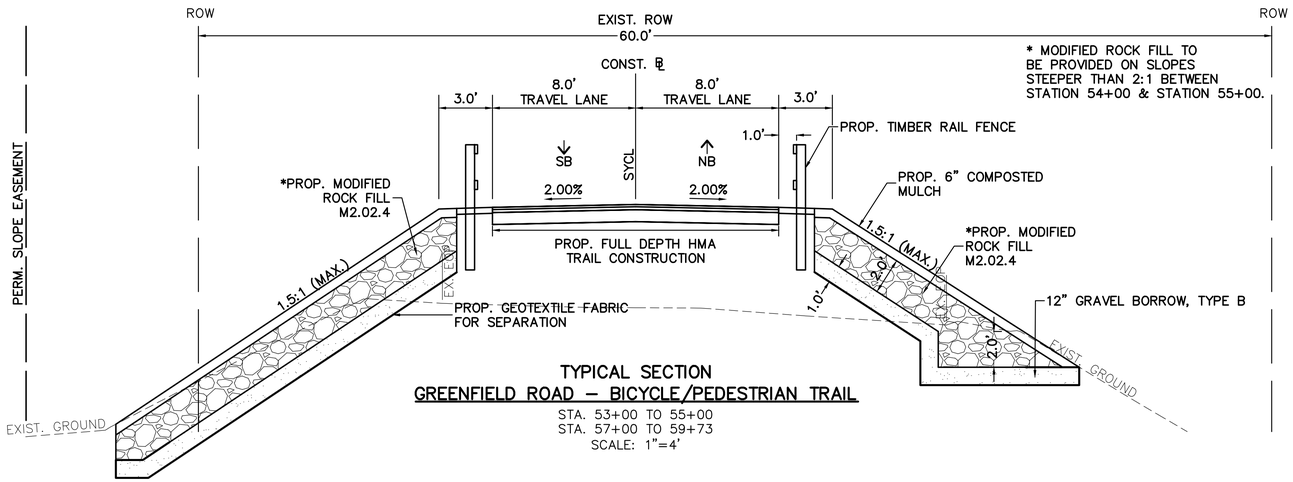
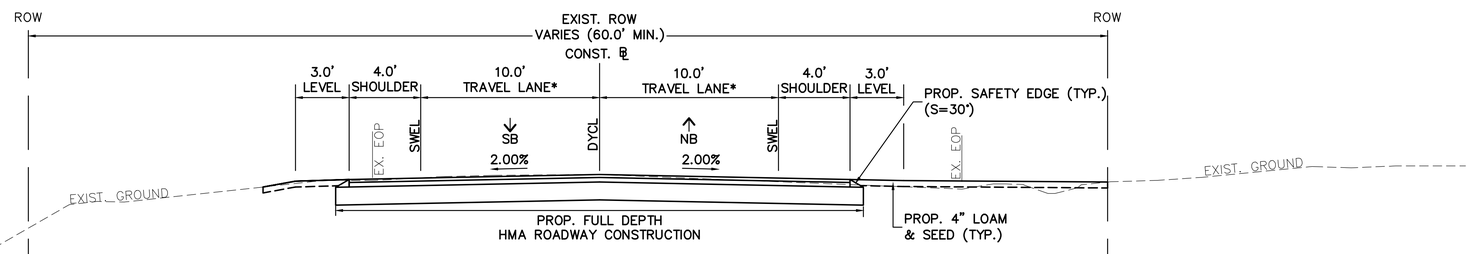


TYPICAL SECTION
GREENFIELD ROAD – BICYCLE/PEDESTRIAN BRIDGE
STA. 55+00 TO 57+00
SCALE: 1"=4'



TYPICAL SECTION
GREENFIELD ROAD – BICYCLE/PEDESTRIAN TRAIL
STA. 53+00 TO 55+00
STA. 57+00 TO 59+73
SCALE: 1"=4'



* PROP. CUL-DE-SAC
(LANE AND SHOULDER WIDTH VARIES)
STA. 52+50 TO 53+00
STA. 59+73 TO 60+26

TYPICAL SECTION
GREENFIELD ROAD
STA. 51+75 TO 53+00
STA. 59+73 TO 60+35
SCALE: 1"=4'

PAVEMENT NOTES

PROPOSED FULL DEPTH HMA ROADWAY CONSTRUCTION W/RECLAIMED SUBBASE

SURFACE COURSE: 5" HOT MIX ASPHALT PLACED IN TWO LAYERS;
2" SUPERPAVE SURFACE COURSE – 12.5 (SSC – 12.5) OVER
3" SUPERPAVE INTERMEDIATE COURSE – 19.0 (SIC – 19.0) OVER

SUBBASE: 12" RECLAIMED SUBBASE

PROPOSED FULL DEPTH HMA ROADWAY CONSTRUCTION

SURFACE COURSE: 5" HOT MIX ASPHALT PLACED IN TWO LAYERS;
2" SUPERPAVE SURFACE COURSE – 12.5 (SSC–12.5) OVER
3" SUPERPAVE INTERMEDIATE COURSE – 19 (SIC–19.0) OVER

SUBBASE: 4" DENSE GRADED CRUSHED STONE OVER
8" GRAVEL BORROW (TYPE B) (OR TO DEPTH OF EXISTING, GRAVEL SUBBASE COMPACTED IN PLACE, WHICHEVER IS GREATER)

PROPOSED PAVEMENT MILLING & HMA OVERLAY

SURFACE COURSE: 2" SUPERPAVE SURFACE COURSE – 12.5 (SSC 12.5)

SURFACE MILLING: (GREENFIELD ROAD) VAR. DEPTH (1 1/2" MIN.) PAVEMENT MILLING TO BE USED ON THE EXISTING PAVEMENT SURFACE TO ACHIEVE DESIRED CROSS–SLOPE

SURFACE MILLING: (TURNERS FALLS ROAD) 2" PAVEMENT MILLING TO BE USED ON THE EXISTING PAVEMENT SURFACE

TACK COAT: ASPHALT EMULSION FOR TACK COAT AT 0.07 G/SQ. YARD OVER MILLED SURFACES AND 0.05 G/ SQ YARD OVER TIGHT PAVED SURFACES PER SECTION 450.53

PROPOSED FULL DEPTH HOT MIX ASPHALT DRIVEWAYS

SURFACE COURSE: 3 1/2" HOT MIX ASPHALT PLACED IN TWO LAYERS;
1 1/2" SUPERPAVE SURFACE COURSE – 12.5 (SSC 12.5) OVER
2" SUPERPAVE INTERMEDIATE COURSE – 12.5 (SIC 12.5) OVER

SUBBASE: 8" GRAVEL BORROW (TYPE B)

PROPOSED FULL DEPTH HMA TRAIL CONSTRUCTION

SURFACE COURSE: 5" HOT MIX ASPHALT PLACED IN TWO LAYERS;
2" SUPERPAVE SURFACE COURSE – 12.5 (SSC 12.5) OVER
3" SUPERPAVE INTERMEDIATE COURSE – 19.0 (SIC 19.0) OVER

SUBBASE: 8" GRAVEL BORROW (TYPE B)

PROPOSED HOT MIX ASPHALT BRIDGE PAVEMENT

SURFACE COURSE: 3" HOT MIX ASPHALT PLACED IN TWO LAYERS;
1 1/2" SUPERPAVE BRIDGE SURFACE COURSE – 12.5 (SSC–B–12.5) OVER
1 1/2" SUPERPAVE BRIDGE PROTECTIVE COURSE – 12.5 (SPC–B–12.5)

PROPOSED HOT MIX ASPHALT WALK

SURFACE COURSE: 2 1/2" HOT MIX ASPHALT PLACED IN TWO LAYERS;
1 1/4" SUPERPAVE SURFACE COURSE – 12.5 (SSC–12.5) OVER
1 1/4" SUPERPAVE INTERMEDIATE COURSE – 12.5 (SIC–12.5) OVER

SUBBASE: 8" GRAVEL BORROW (TYPE B)

IN CHARGE OF JFO
DESIGNED BY JFO
DRAWN BY JDB
CHECKED BY GJH

MONTAGUE
HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE

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MASS.	FED. AID	5	69
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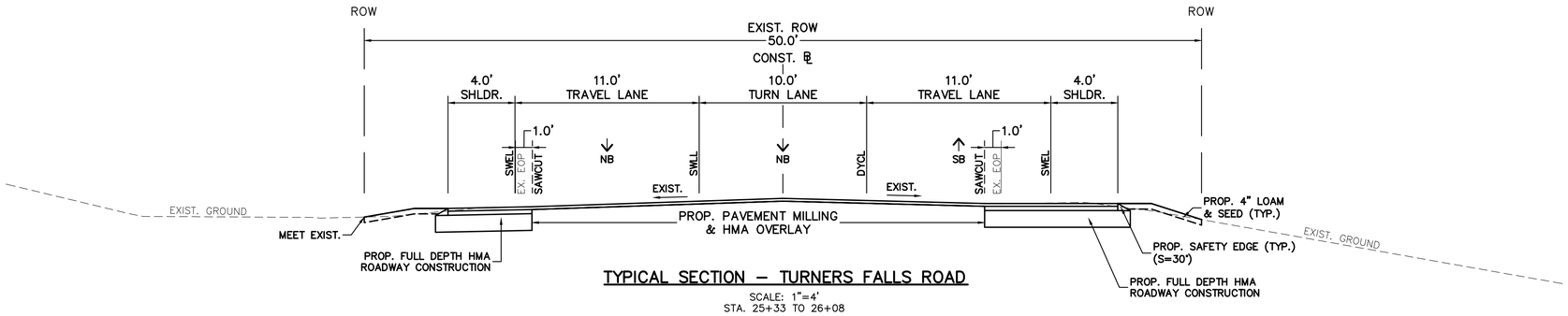
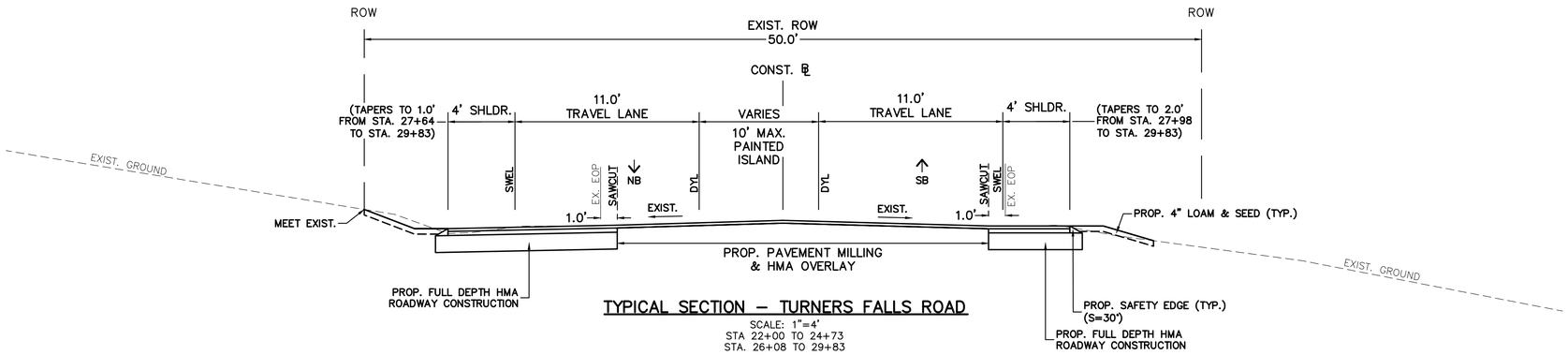
TYPICAL SECTIONS



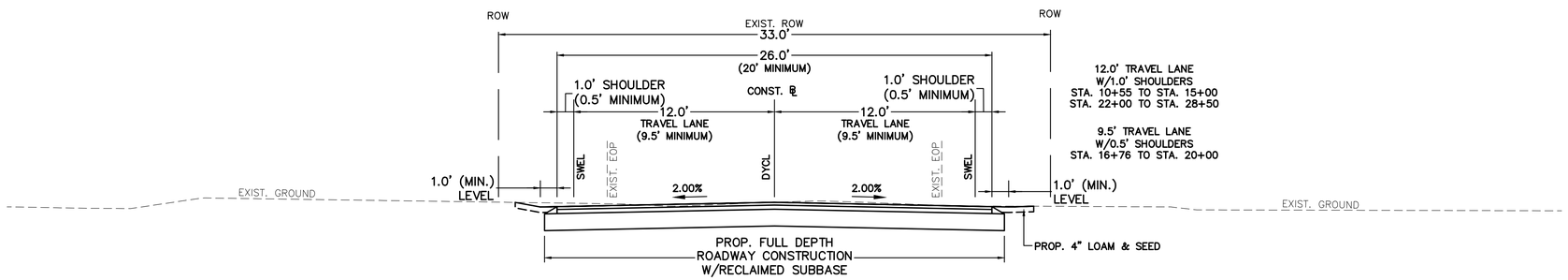
TYPICAL SECTION – TURNERS FALLS ROAD

SCALE: 1"=4'
STA. 25+33 TO 26+08

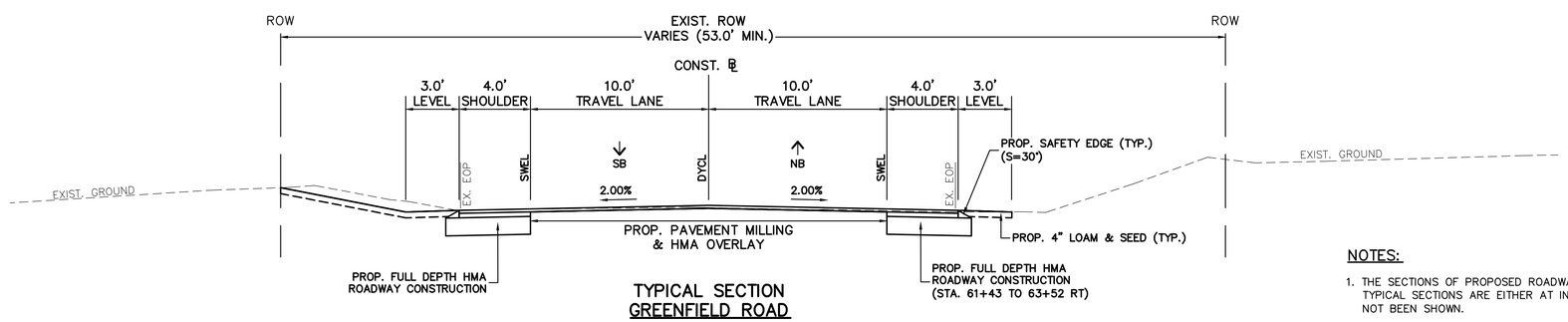


TYPICAL SECTION – TURNERS FALLS ROAD

SCALE: 1"=4'
STA 22+00 TO 24+73
STA. 26+08 TO 29+83



PROPOSED TYPICAL SECTION
HATCHERY ROAD



TYPICAL SECTION
GREENFIELD ROAD

STA. 60+35 TO 65+10
SCALE: 1"=4'

NOTES:

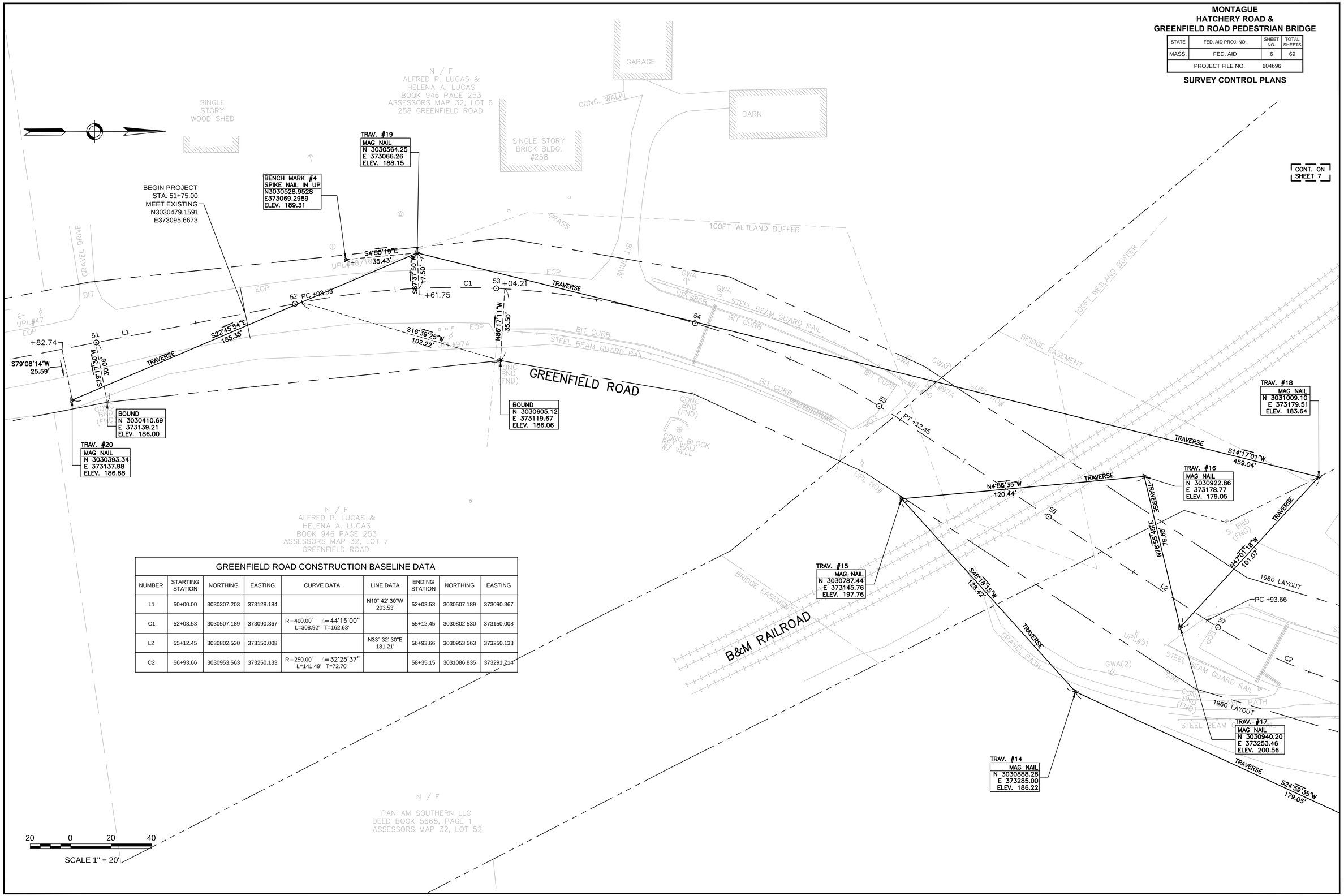
1. THE SECTIONS OF PROPOSED ROADWAY NOT COVERED IN THE RANGE OF STATIONS ASSOCIATED WITH THE TYPICAL SECTIONS ARE EITHER AT INTERSECTIONS OR ARE IN AREAS OF TRANSITION AND THEREFORE HAVE NOT BEEN SHOWN.

IN CHARGE OF JFO
DESIGNED BY JFO
DRAWN BY JDB
CHECKED BY GJH

MONTAGUE
HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	FED. AID	6	69
PROJECT FILE NO.	604696		

SURVEY CONTROL PLANS



GREENFIELD ROAD CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	50+00.00	3030307.203	373128.184		N10° 42' 30"W 203.53'	52+03.53	3030507.189	373090.367
C1	52+03.53	3030507.189	373090.367	R=400.00' Δ=44°15'00" L=308.92' T=162.63'		55+12.45	3030802.530	373150.008
L2	55+12.45	3030802.530	373150.008		N33° 32' 30"E 181.21'	56+93.66	3030953.563	373250.133
C2	56+93.66	3030953.563	373250.133	R=250.00' Δ=32°25'37" L=141.49' T=72.70'		58+35.15	3031086.835	373291.714

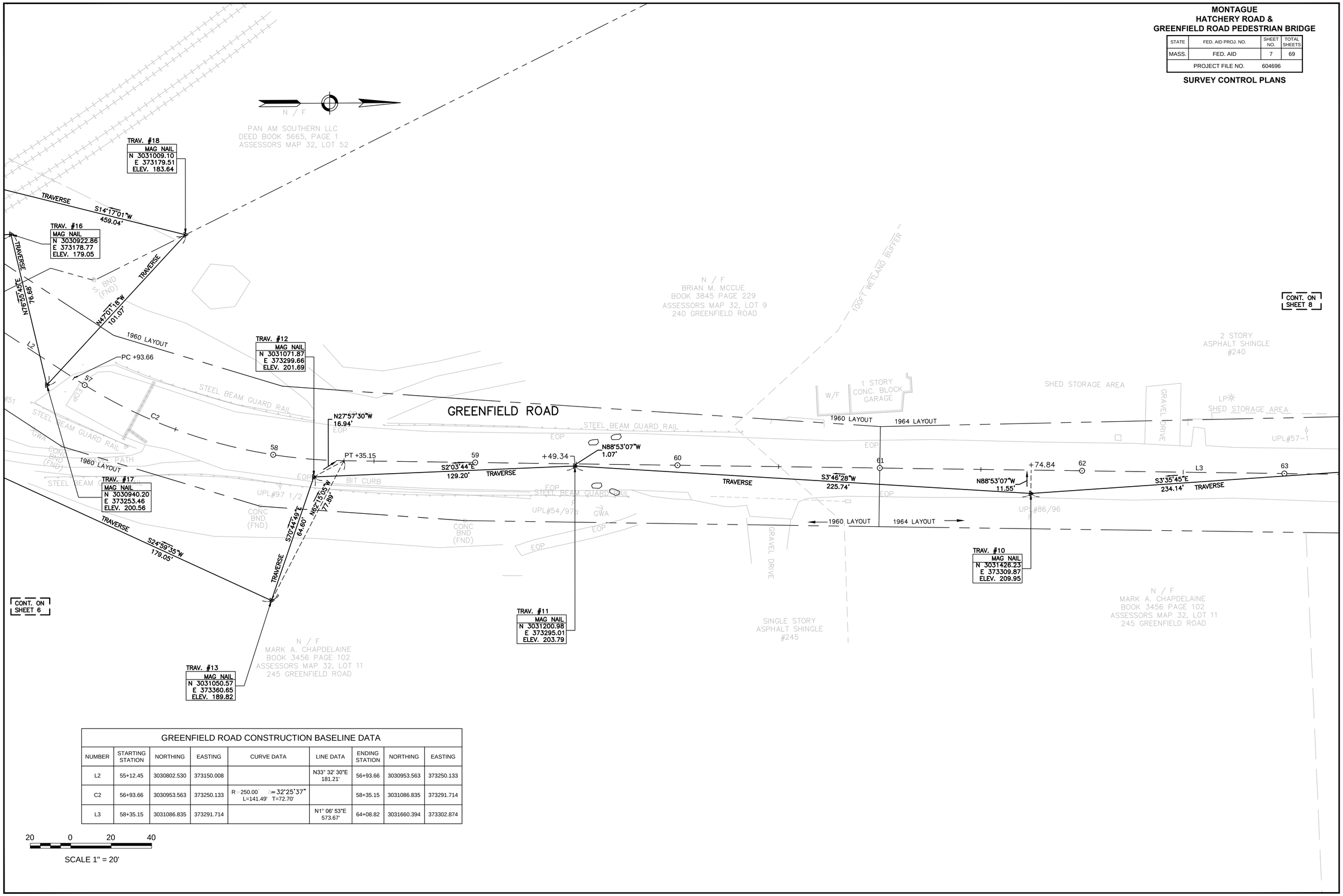
IN CHARGE OF JFO
DESIGNED BY JFO
DRAWN BY JDB
CHECKED BY GJH

Printed 2/6/2014

MONTAGUE
HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	FED. AID	7	69
PROJECT FILE NO.	604696		

SURVEY CONTROL PLANS



GREENFIELD ROAD CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L2	55+12.45	3030802.530	373150.008		N33° 32' 30"E 181.21'	56+93.66	3030953.563	373250.133
C2	56+93.66	3030953.563	373250.133	R=250.00' Δ=32°25'37" L=141.49' T=72.70'		58+35.15	3031086.835	373291.714
L3	58+35.15	3031086.835	373291.714		N1° 06' 53"E 573.67'	64+08.82	3031660.394	373302.874

20 0 20 40

SCALE 1" = 20'

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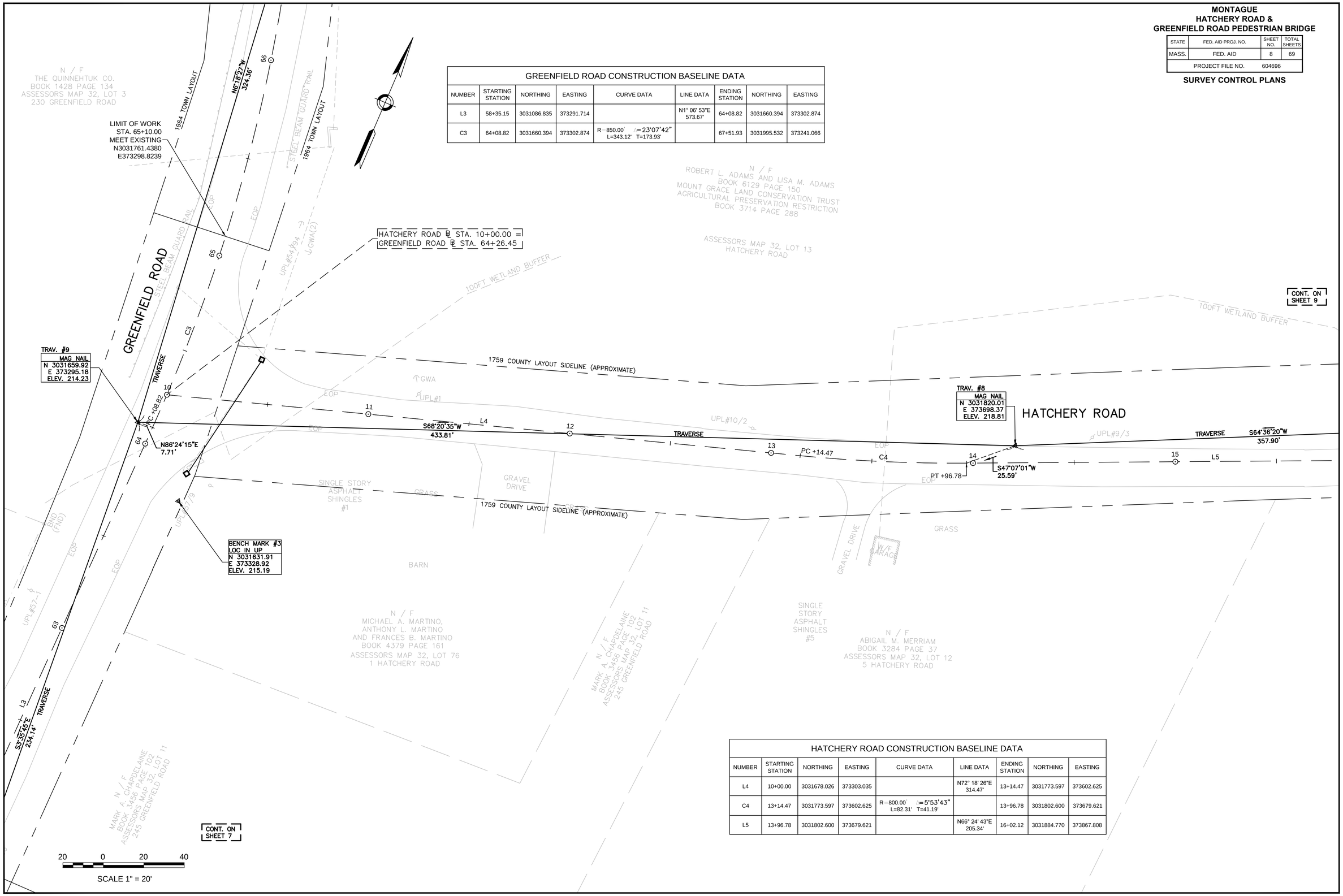
MONTAGUE
HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	FED. AID	8	69
PROJECT FILE NO.	604696		

SURVEY CONTROL PLANS



GREENFIELD ROAD CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L3	58+35.15	3031086.835	373291.714		N1° 06' 53"E 573.67'	64+08.82	3031660.394	373302.874
C3	64+08.82	3031660.394	373302.874	R=850.00' Δ=23°07'42" L=343.12' T=173.93'		67+51.93	3031995.532	373241.066

HATCHERY ROAD CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L4	10+00.00	3031678.026	373303.035		N72° 18' 26"E 314.47'	13+14.47	3031773.597	373602.625
C4	13+14.47	3031773.597	373602.625	R=800.00' Δ=5°53'43" L=82.31' T=41.19'		13+96.78	3031802.600	373679.621
L5	13+96.78	3031802.600	373679.621		N66° 24' 43"E 205.34'	16+02.12	3031884.770	373867.808

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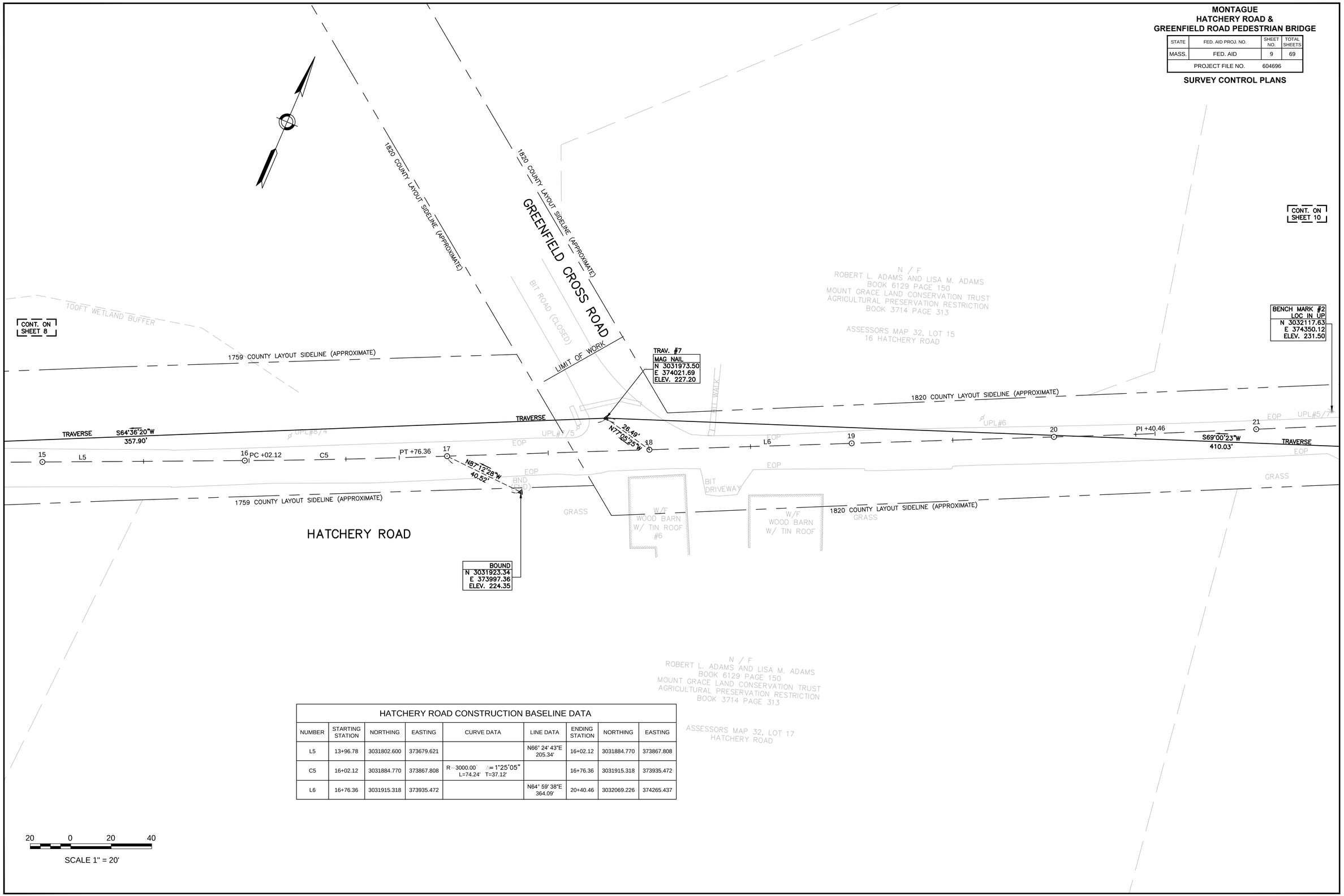
CHECKED BY GJH

Printed 2/6/2014

MONTAGUE
HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	FED. AID	9	69
PROJECT FILE NO.	604696		

SURVEY CONTROL PLANS



HATCHERY ROAD CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L5	13+96.78	3031802.600	373679.621		N66° 24' 43"E 205.34'	16+02.12	3031884.770	373867.808
C5	16+02.12	3031884.770	373867.808	R=3000.00' Δ=1°25'05" L=74.24' T=37.12'		16+76.36	3031915.318	373935.472
L6	16+76.36	3031915.318	373935.472		N64° 59' 38"E 364.09'	20+40.46	3032069.226	374265.437

20 0 20 40

SCALE 1" = 20'

IN CHARGE OF JFO
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CHECKED BY GJH

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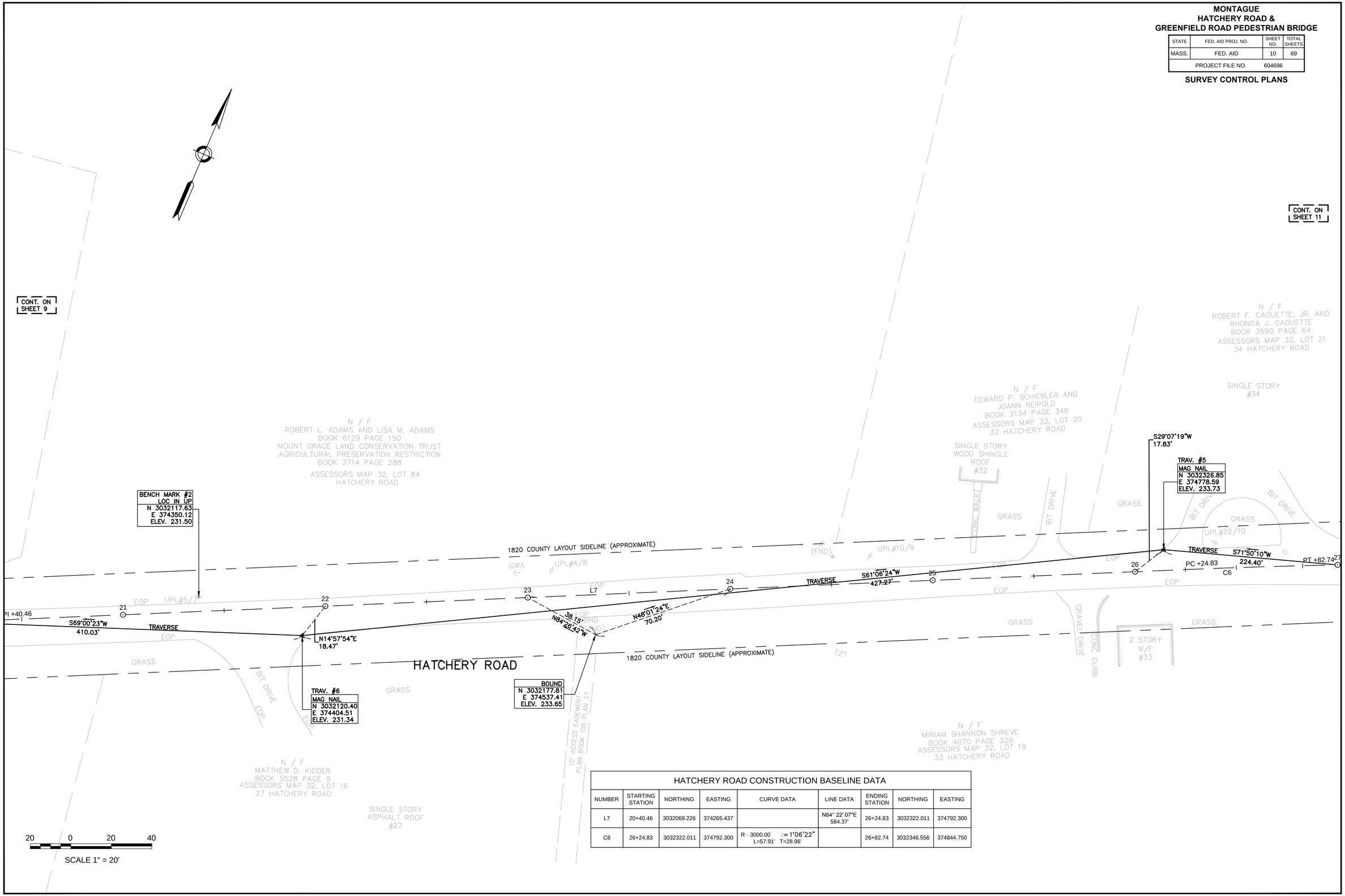
MONTAGUE
HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	FED. AID	10	69
PROJECT FILE NO.	604696		

SURVEY CONTROL PLANS



HATCHERY ROAD CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L7	20+40.46	3032069.226	374265.437		N64° 22' 07"E 584.37'	26+24.83	3032322.011	374792.300
C6	26+24.83	3032322.011	374792.300	R=3000.00' Δ=1°06'22" L=57.91' T=28.96'		26+82.74	3032346.556	374844.750

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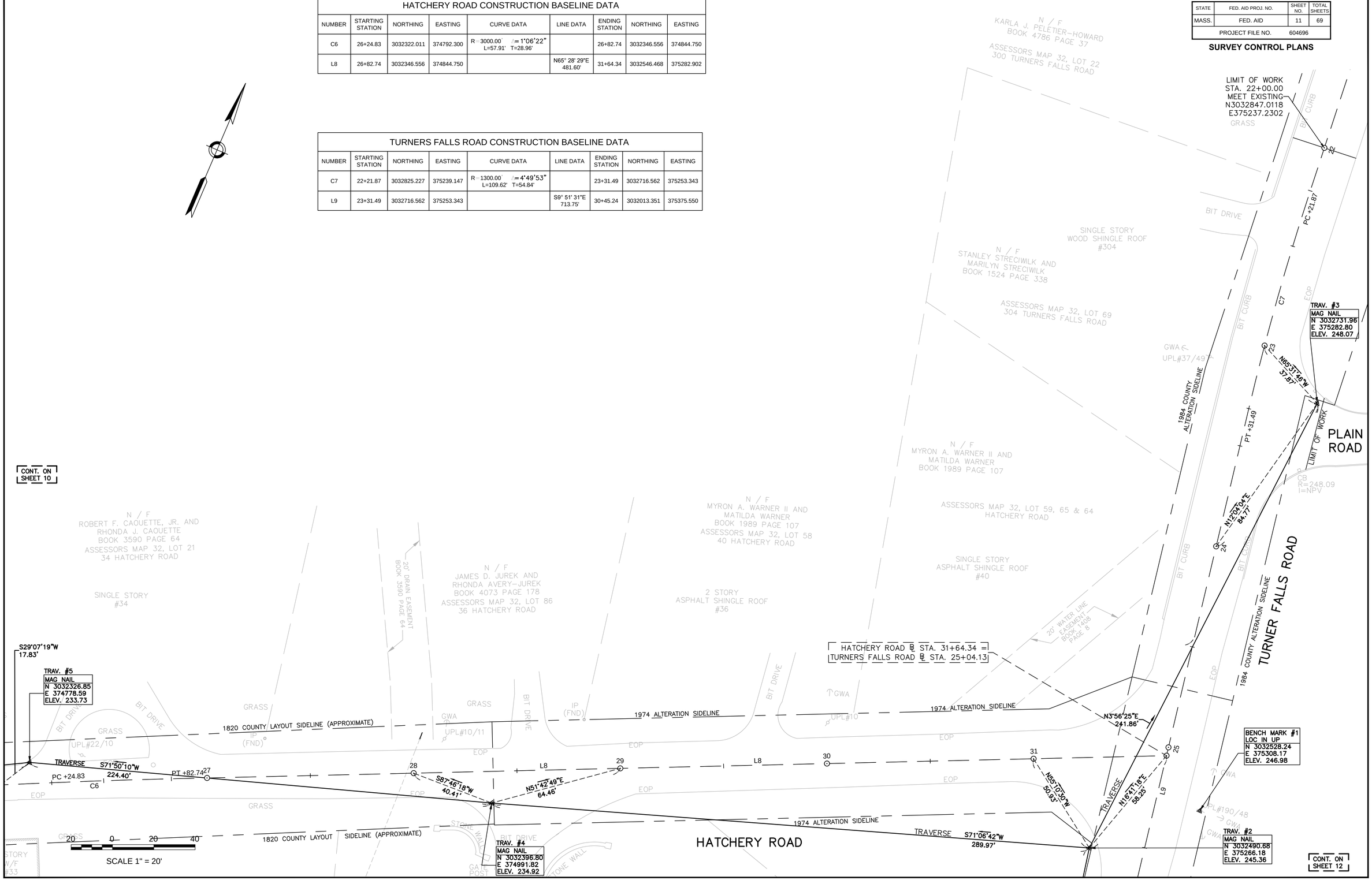
MONTAGUE
HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	FED. AID	11	69
PROJECT FILE NO.	604696		

SURVEY CONTROL PLANS

HATCHERY ROAD CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C6	26+24.83	3032322.011	374792.300	R=3000.00' Δ=1°06'22" L=57.91' T=28.96'		26+82.74	3032346.556	374844.750
L8	26+82.74	3032346.556	374844.750		N65° 28' 29"E 481.60'	31+64.34	3032546.468	375282.902

TURNERS FALLS ROAD CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C7	22+21.87	3032825.227	375239.147	R=1300.00' Δ=4°49'53" L=109.62' T=54.84'		23+31.49	3032716.562	375253.343
L9	23+31.49	3032716.562	375253.343		S9° 51' 31"E 713.75'	30+45.24	3032013.351	375375.550



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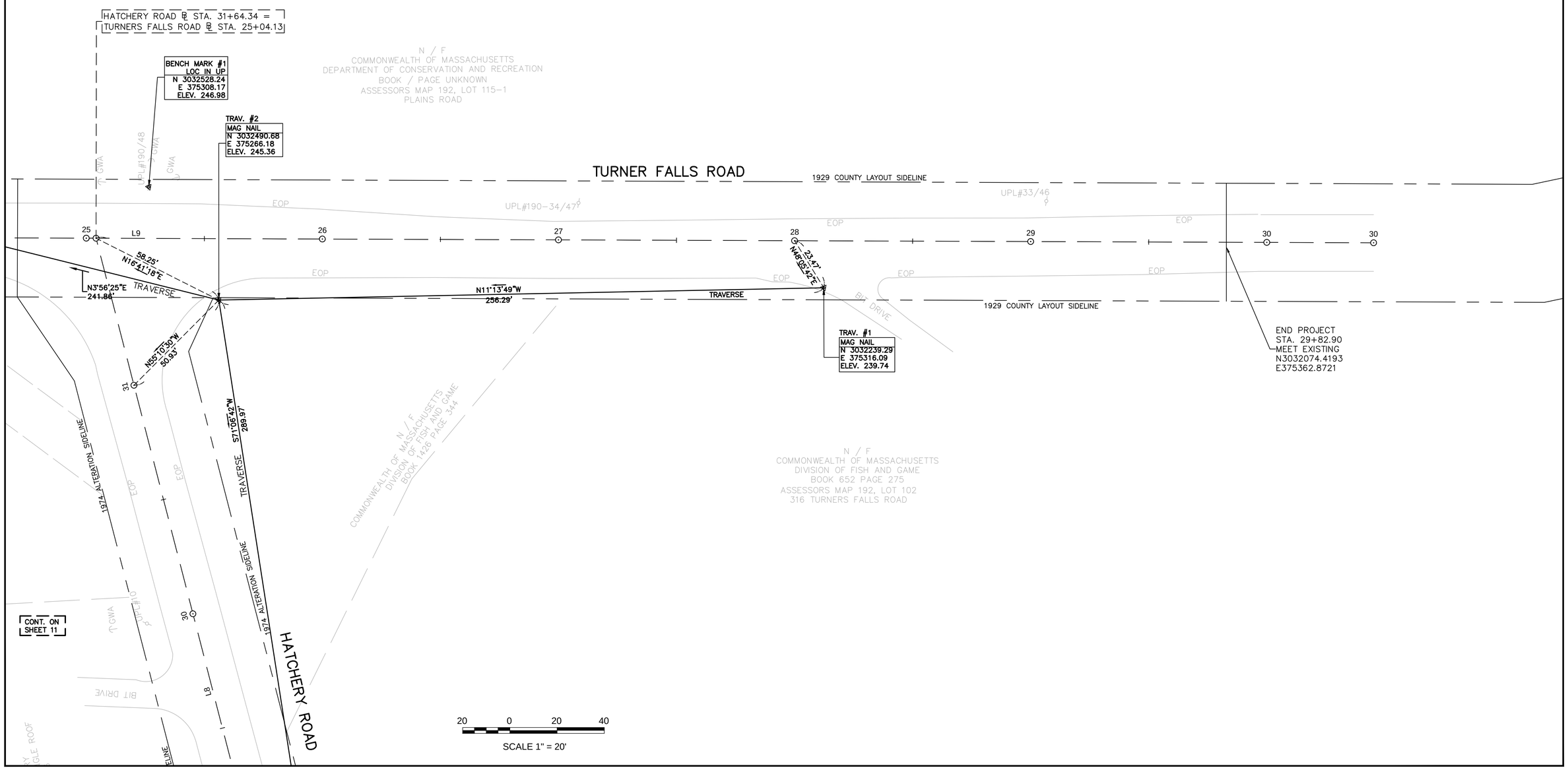
MONTAGUE
HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	FED. AID	12	69
PROJECT FILE NO.	604696		

SURVEY CONTROL PLANS

HATCHERY ROAD CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L8	26+82.74	3032346.556	374844.750		N65° 28' 29"E 481.60'	31+64.34	3032546.468	375282.902

TURNERS FALLS ROAD CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L9	23+31.49	3032716.562	375253.343		S9° 51' 31"E 713.75'	30+45.24	3032013.351	375375.550



IN CHARGE OF JFO
DESIGNED BY JFO
DRAWN BY JDB
CHECKED BY GJH

Printed 2/6/2014

HIGHWAY GUARD DETAILS

STA. 51+75, RT TO STA. 52+13, RT – ITEM 627.9
STA. 52+13, RT TO STA. 52+32, RT– ITEM 622.1
STA. 52+32, RT TO STA. 53+07, RT– ITEM 622.3
STA. 53+07, RT TO STA. 53+90, RT– ITEM 622.1
STA. 53+75, RT – ITEM 627.1

STA. 53+68, LT – ITEM 627.1
STA. 53+68, LT TO STA. 53+82, LT – ITEM 622.3
STA. 53+82, – ITEM 627.1

DRAINAGE DETAILS

SEE BELOW

WATER SUPPLY ALTERATIONS

NONE

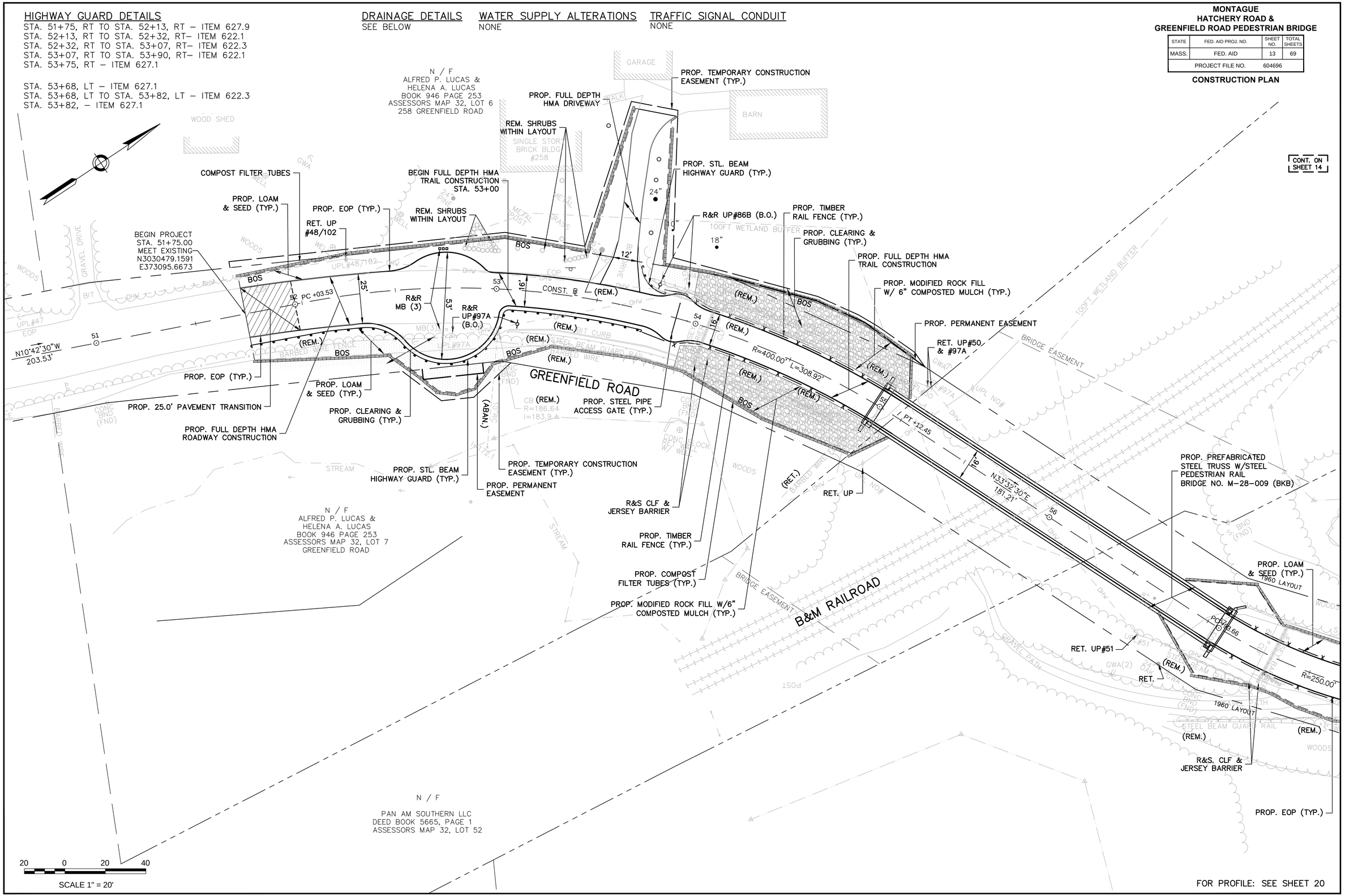
TRAFFIC SIGNAL CONDUIT

NONE

MONTAGUE
HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	FED. AID	13	69
PROJECT FILE NO.	604696		

CONSTRUCTION PLAN



IN CHARGE OF JFO
DESIGNED BY JFO
DRAWN BY JDB
CHECKED BY GJH

Printed 2/6/2014

HIGHWAY GUARD DETAILS
STA. 59+75, LT – ITEM 627.1
STA. 59+75, LT TO STA. 60+32, – ITEM 622.3
STA. 60+32, LT TO STA. 60+69, – ITEM 627.9

DRAINAGE DETAILS
SEE BELOW

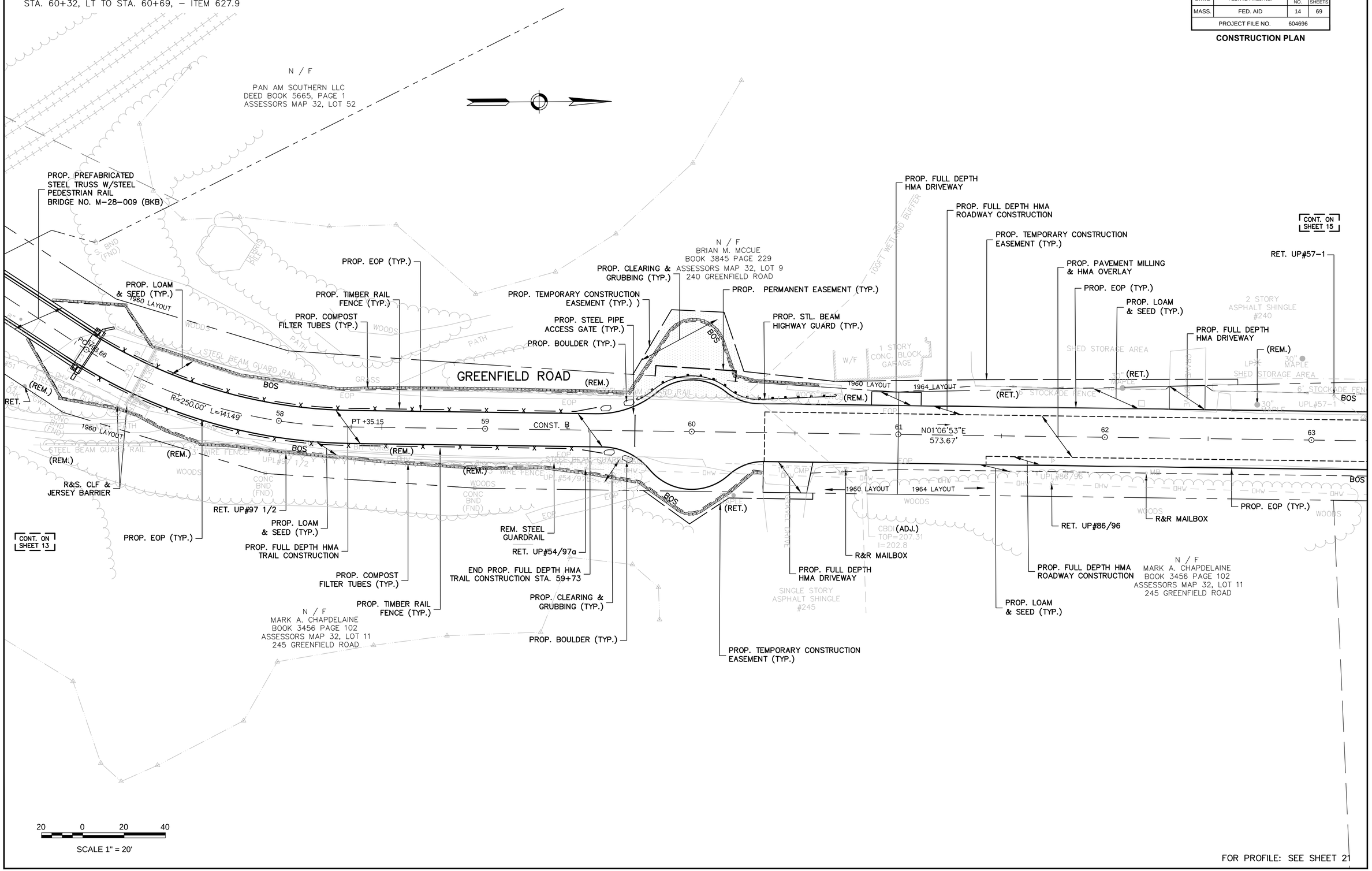
WATER SUPPLY ALTERATIONS
NONE

TRAFFIC SIGNAL CONDUIT
NONE

MONTAGUE
HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	FED. AID	14	69
PROJECT FILE NO.	604696		

CONSTRUCTION PLAN



FOR PROFILE: SEE SHEET 21

IN CHARGE OF JFO
DESIGNED BY JFO
DRAWN BY JDB
CHECKED BY GJH

Printed 2/6/2014

HIGHWAY GUARD DETAILS
NONE

DRAINAGE DETAILS
SEE BELOW

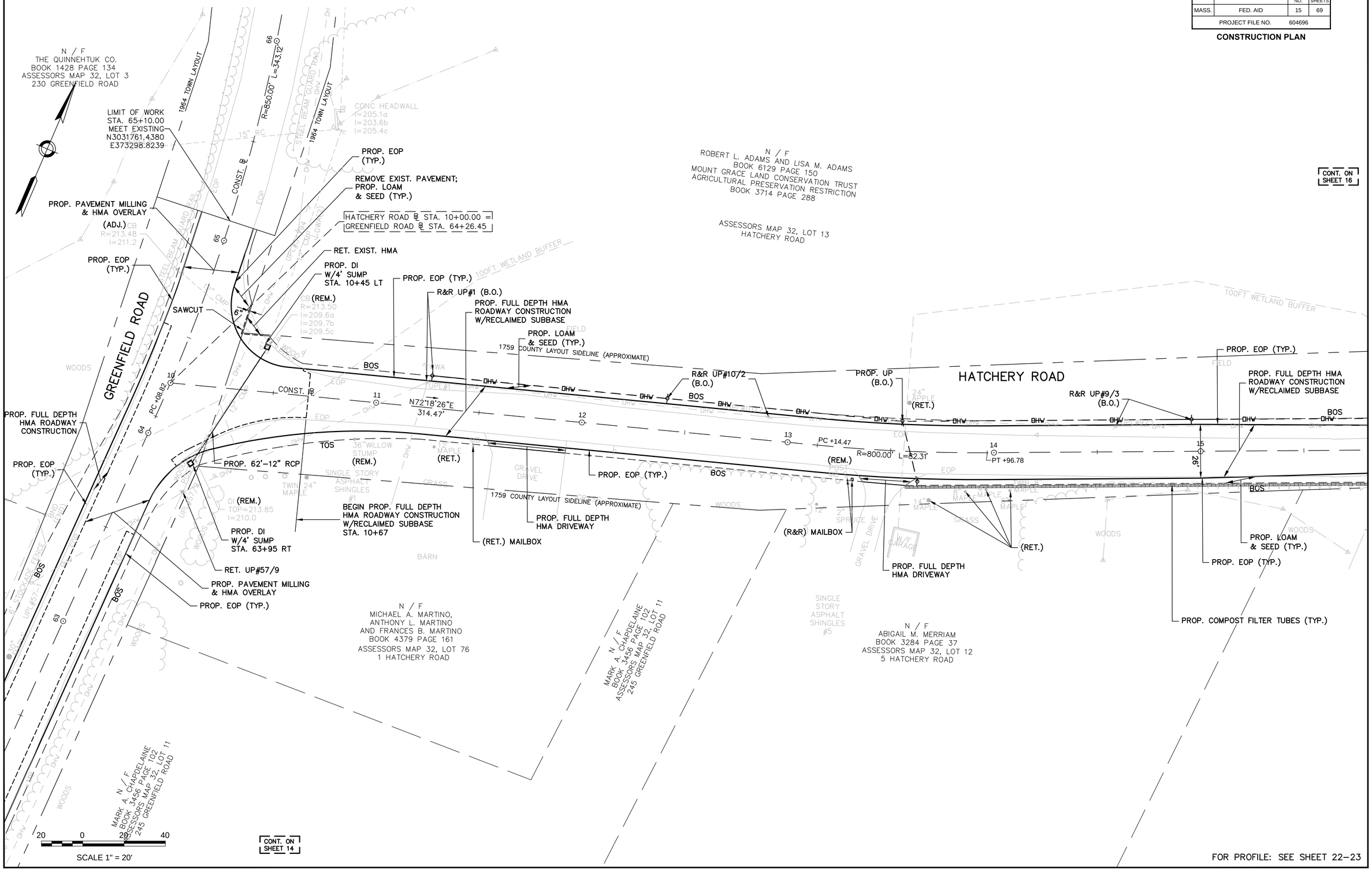
WATER SUPPLY ALTERATIONS
NONE

TRAFFIC SIGNAL CONDUIT
NONE

MONTAGUE
HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	FED. AID	15	69
PROJECT FILE NO.	604696		

CONSTRUCTION PLAN



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DRAWN BY JDB
CHECKED BY GJH

FOR PROFILE: SEE SHEET 22–23

Printed 2/6/2014

HIGHWAY GUARD DETAILS
SEE BELOW

DRAINAGE DETAILS
NONE

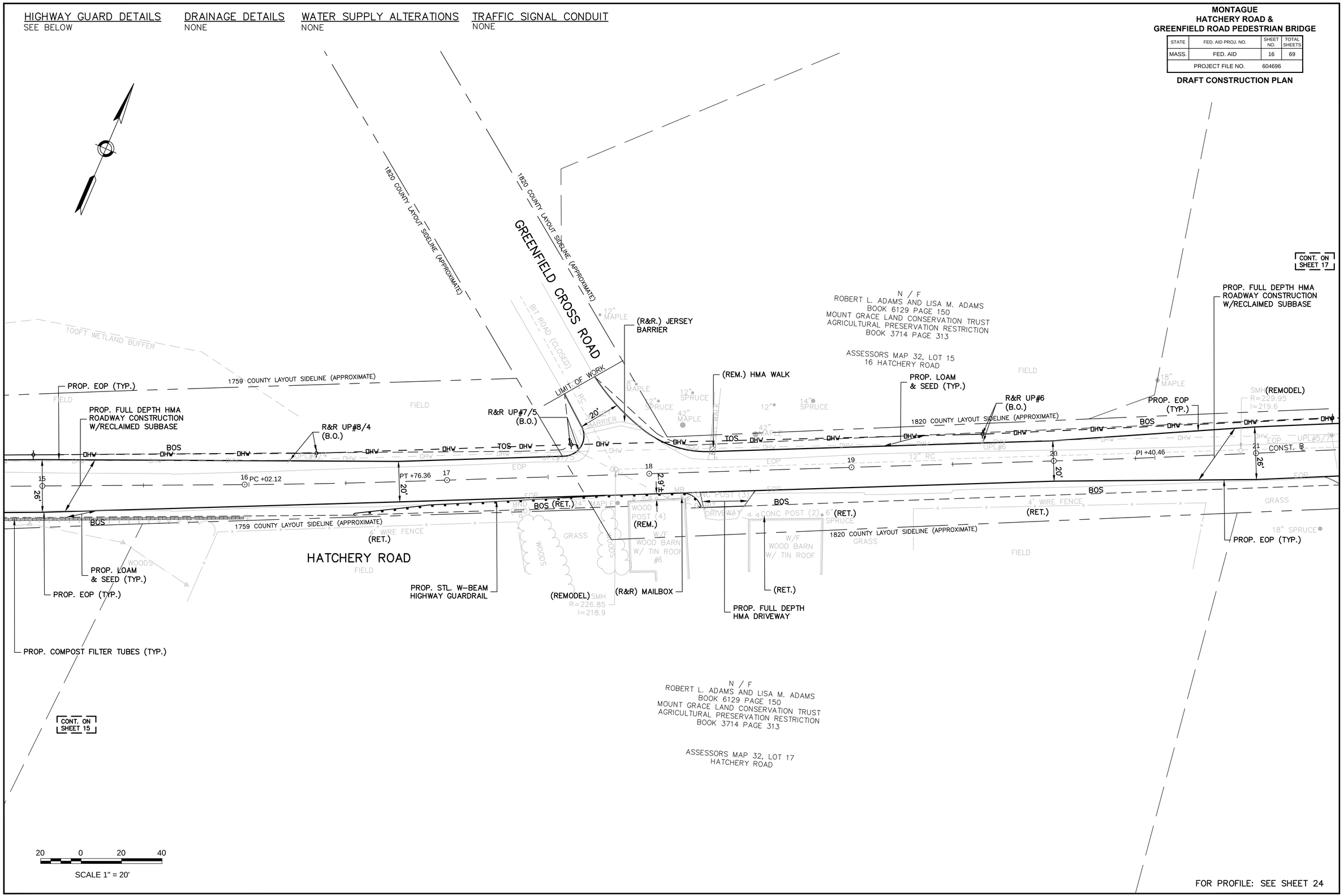
WATER SUPPLY ALTERATIONS
NONE

TRAFFIC SIGNAL CONDUIT
NONE

MONTAGUE
HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	FED. AID	16	69
PROJECT FILE NO.	604696		

DRAFT CONSTRUCTION PLAN



IN CHARGE OF JFO
DESIGNED BY JFO
DRAWN BY JDB
CHECKED BY GJH

Printed 2/6/2014

HIGHWAY GUARD DETAILS
NONE

DRAINAGE DETAILS
NONE

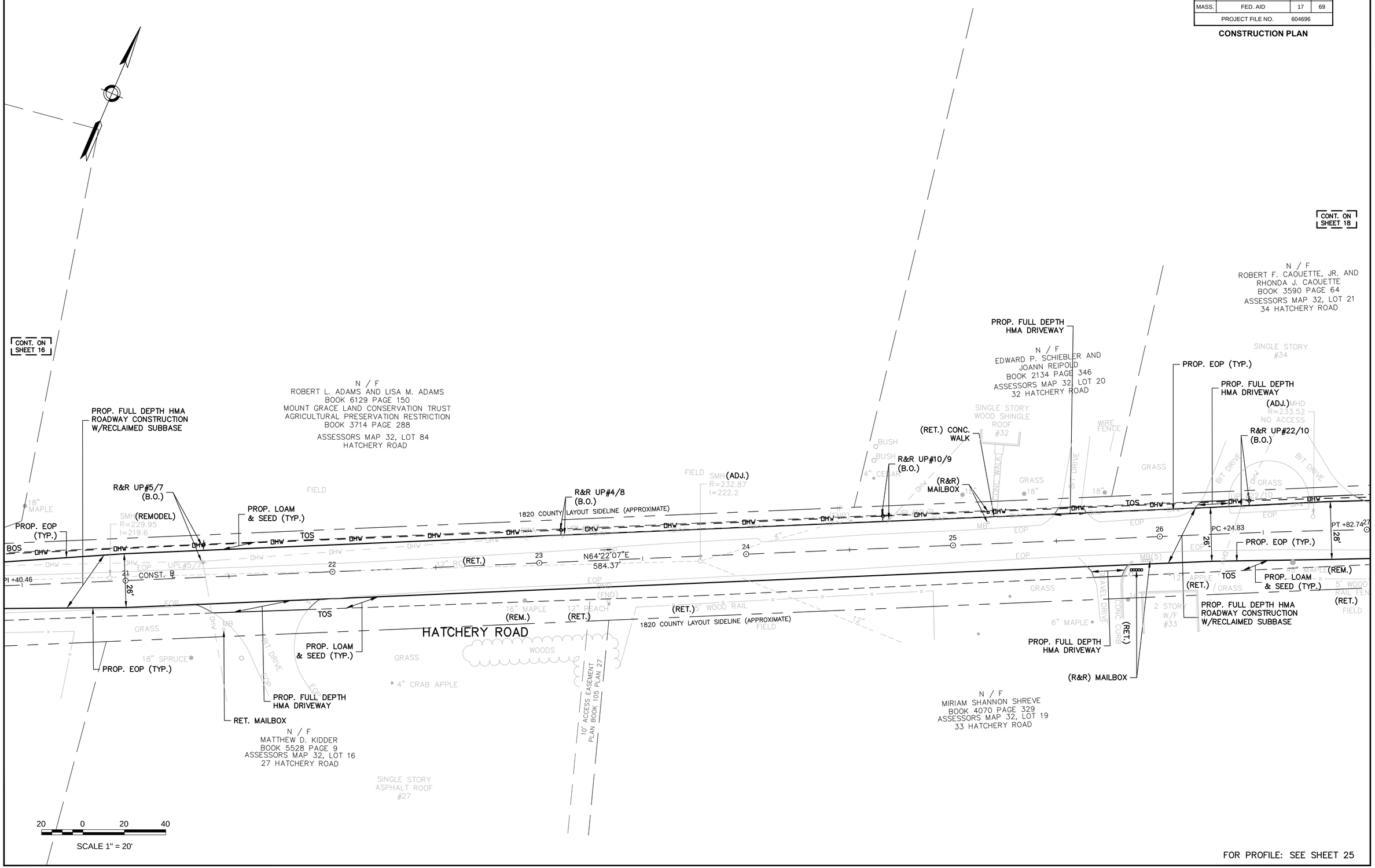
WATER SUPPLY ALTERATIONS
NONE

TRAFFIC SIGNAL CONDUIT
NONE

MONTAGUE
HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	FED. AID	17	69
PROJECT FILE NO.	604696		

CONSTRUCTION PLAN



FOR PROFILE: SEE SHEET 25

IN CHARGE OF JFO
DESIGNED BY JFO
DRAWN BY JDB
CHECKED BY GJH

Printed 2/6/2014

HIGHWAY GUARD DETAILS
SEE BELOW

DRAINAGE DETAILS
SEE BELOW

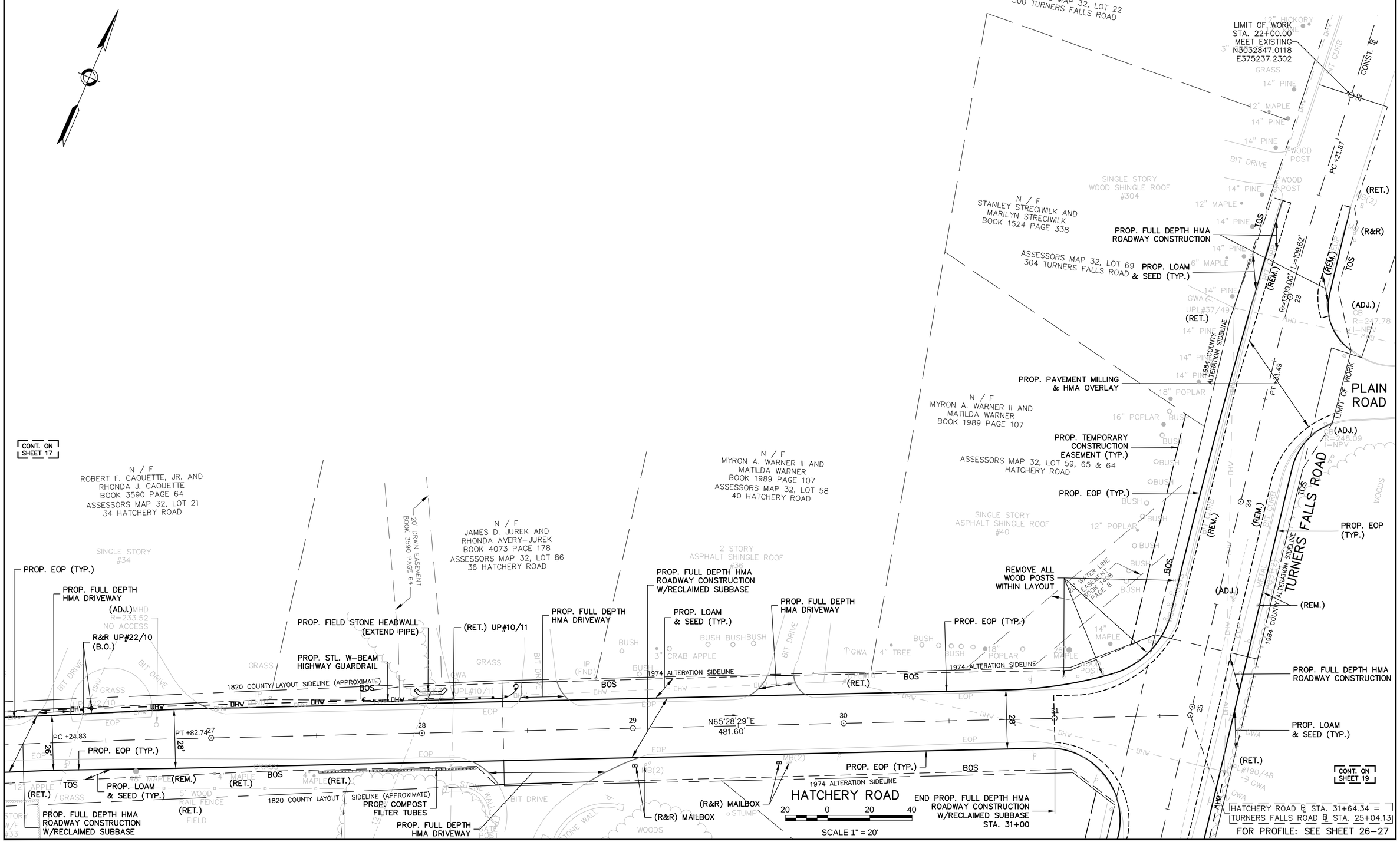
WATER SUPPLY ALTERATIONS
SEE BELOW

TRAFFIC SIGNAL CONDUIT
NONE

MONTAGUE
HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	FED. AID	18	69
PROJECT FILE NO.	604696		

CONSTRUCTION PLAN



Printed 2/6/2014

HIGHWAY GUARD DETAILS
NONE

DRAINAGE DETAILS
SEE BELOW

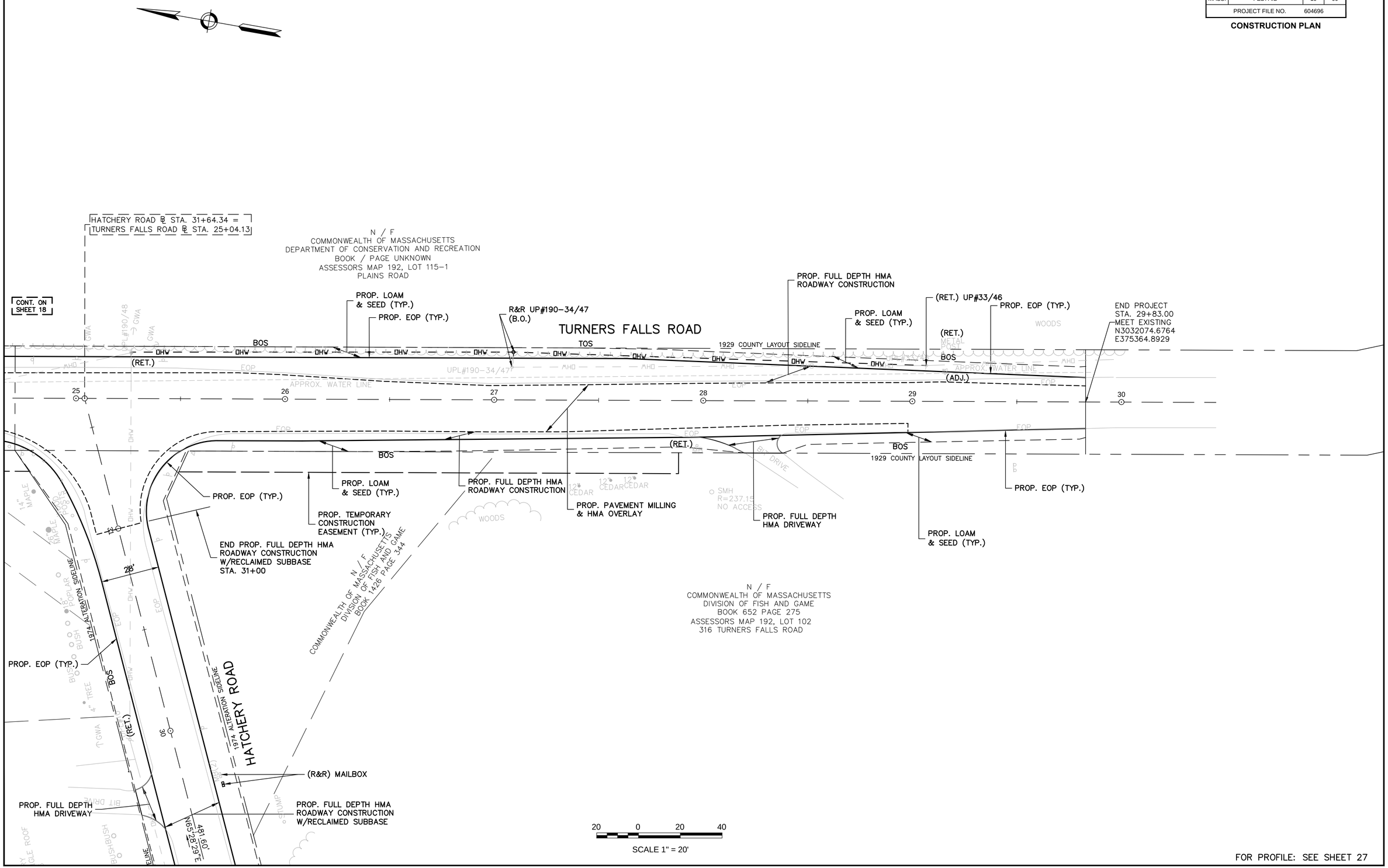
WATER SUPPLY ALTERATIONS
SEE BELOW

TRAFFIC SIGNAL CONDUIT
NONE

MONTAGUE
HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	FED. AID	19	69
PROJECT FILE NO.	604696		

CONSTRUCTION PLAN



IN CHARGE OF JFO
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FOR PROFILE: SEE SHEET 27

Printed 2/6/2014

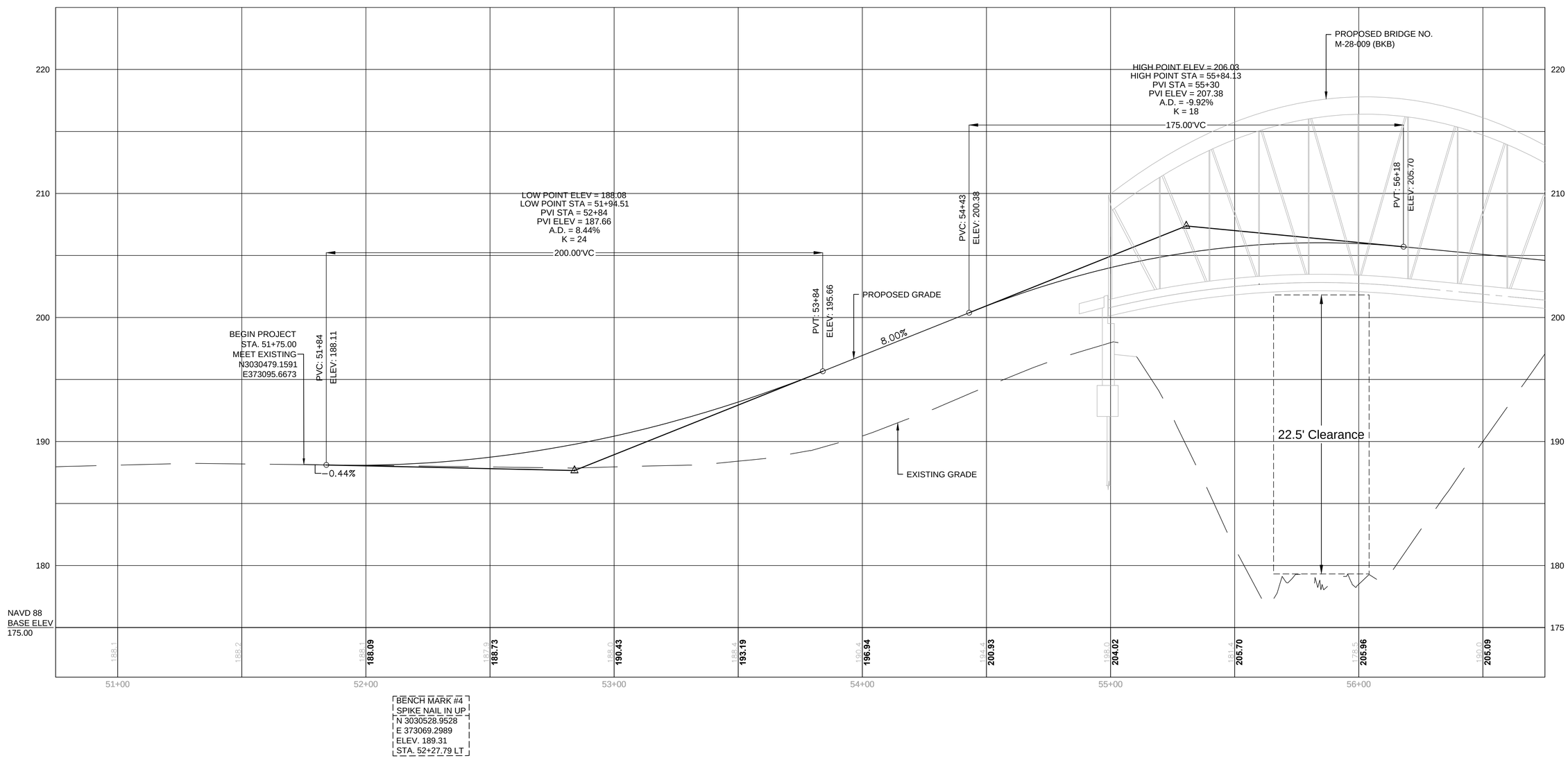
MONTAGUE
HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	FED. AID	20	69
PROJECT FILE NO.		604696	

CONSTRUCTION PROFILES

GREENFIELD ROAD

CONT. ON SHEET 21



BENCH MARK #4
SPIKE NAIL IN UP
N 3030528.9528
E 373069.2989
ELEV. 189.31
STA. 52+27.79 LT

VERTICAL SCALE
0 2 4 6 8 12 FEET
0 10 20 30 40 60 FEET
HORIZONTAL SCALE

IN CHARGE OF JFO
DESIGNED BY JFO
DRAWN BY JFO
CHECKED BY GJH

FOR CONSTRUCTION PLAN: SEE SHEET 13

MONTAGUE
HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE

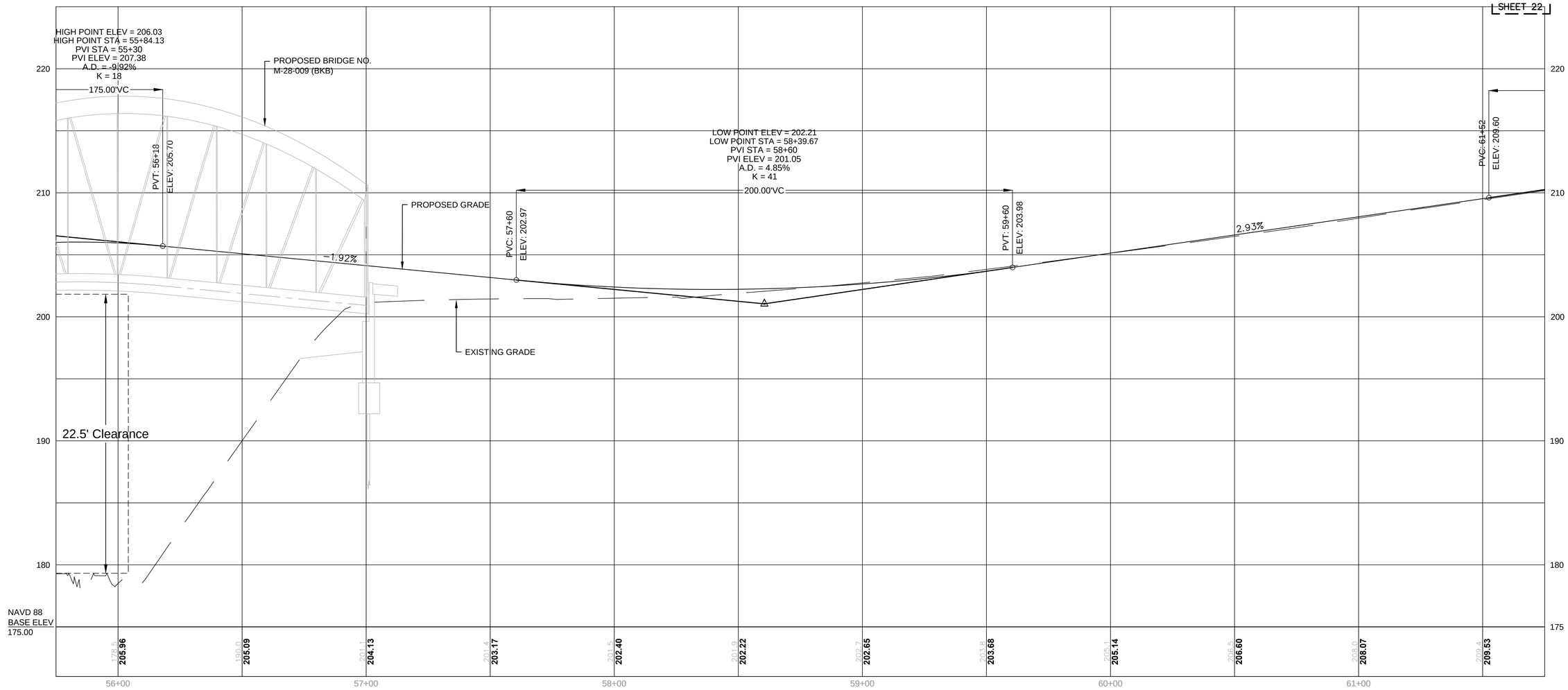
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	FED. AID	21	69
PROJECT FILE NO.	604696		

CONSTRUCTION PROFILES

GREENFIELD ROAD

CONT. ON SHEET 20

CONT. ON SHEET 22



VERTICAL SCALE
0 2 4 6 8 12 FEET
0 10 20 30 40 60 FEET
HORIZONTAL SCALE

IN CHARGE OF JFO
DESIGNED BY JFO
DRAWN BY JFO
CHECKED BY GJH

FOR CONSTRUCTION PLAN: SEE SHEET 14

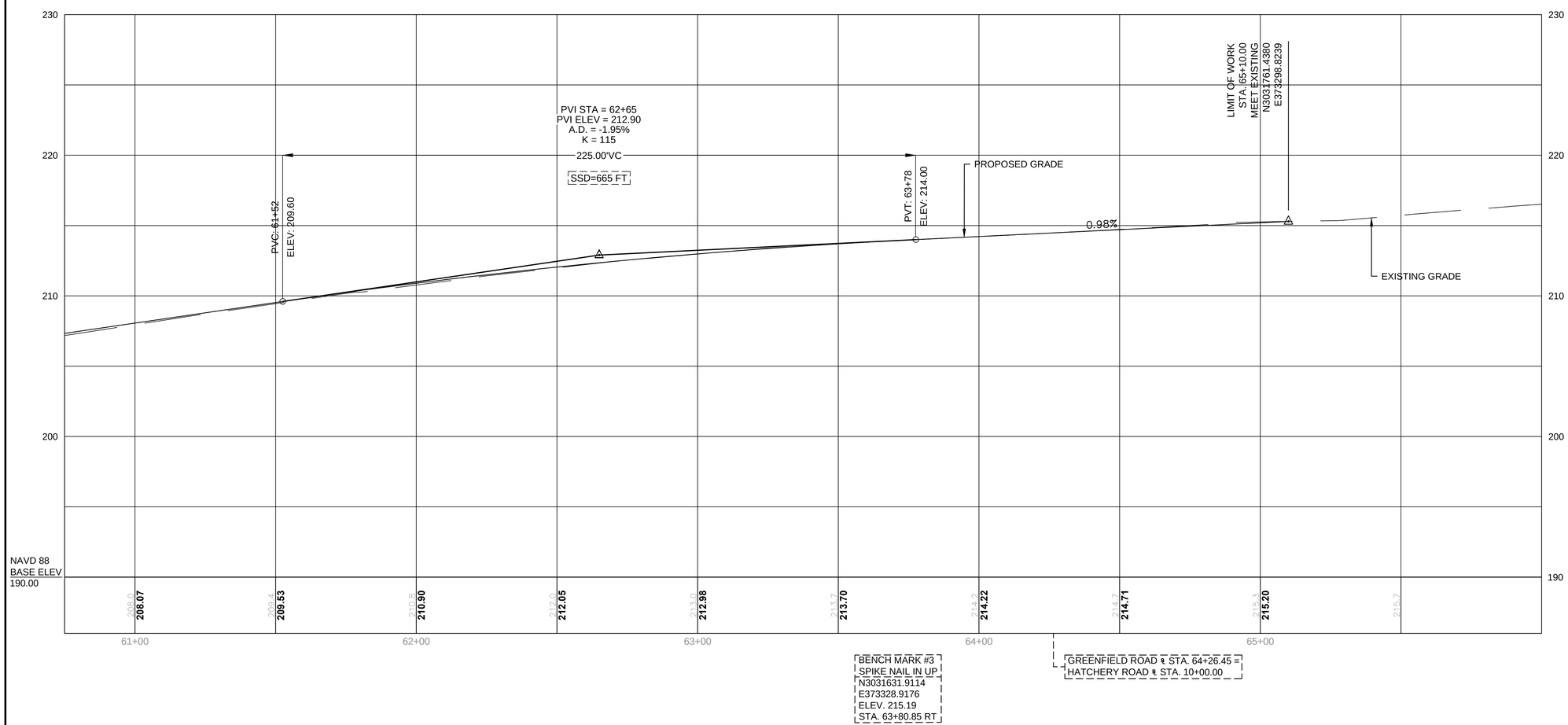
MONTAGUE
HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	FED. AID	22	69
PROJECT FILE NO.	604696		

CONSTRUCTION PROFILES

CONT. ON SHEET 21

GREENFIELD ROAD



VERTICAL SCALE
0 2 4 6 8 12 FEET
0 10 20 30 40 60 FEET
HORIZONTAL SCALE

IN CHARGE OF JFO
DESIGNED BY JFO
DRAWN BY JFO
CHECKED BY GJH

FOR CONSTRUCTION PLAN: SEE SHEET 15

MONTAGUE
HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE

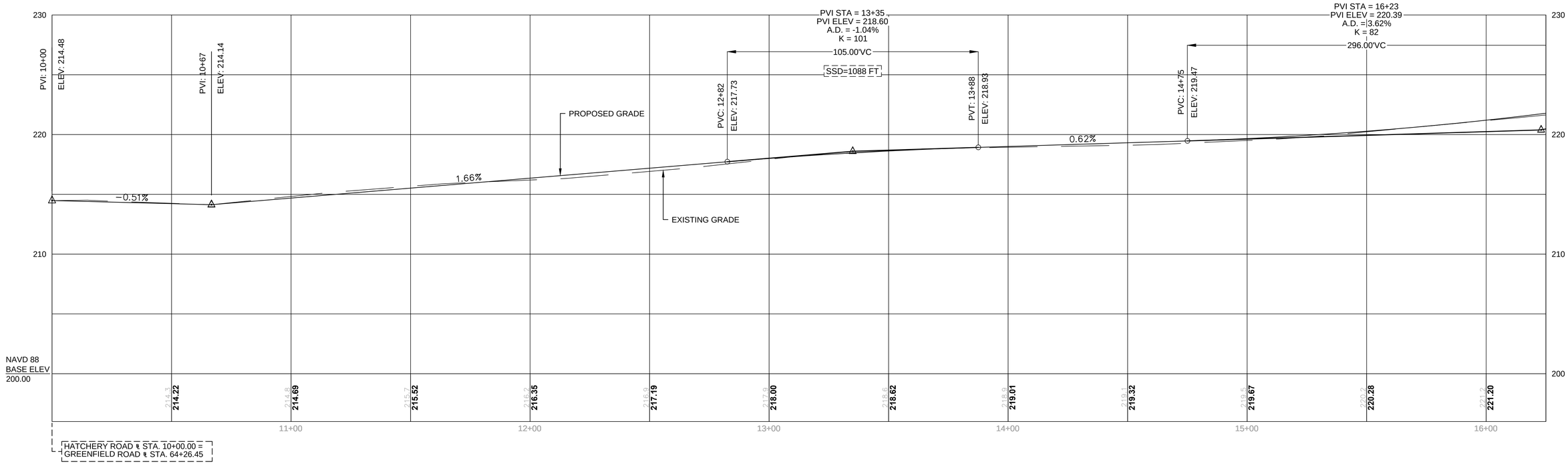
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	FED. AID	23	69
PROJECT FILE NO.	604696		

CONSTRUCTION PROFILES

CONT. ON SHEET 22

CONT. ON SHEET 24

HATCHERY ROAD



BENCH MARK #3
SPIKE NAIL IN UP
N3031631.9114
E373328.9176
ELEV. 215.19
STA. 10+10.64 RT

VERTICAL SCALE
0 2 4 6 8 12 FEET
0 10 20 30 40 60 FEET
HORIZONTAL SCALE

IN CHARGE OF JFO
DESIGNED BY JFO
DRAWN BY JFO
CHECKED BY GJH

FOR CONSTRUCTION PLAN: SEE SHEET 15

MONTAGUE
HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE

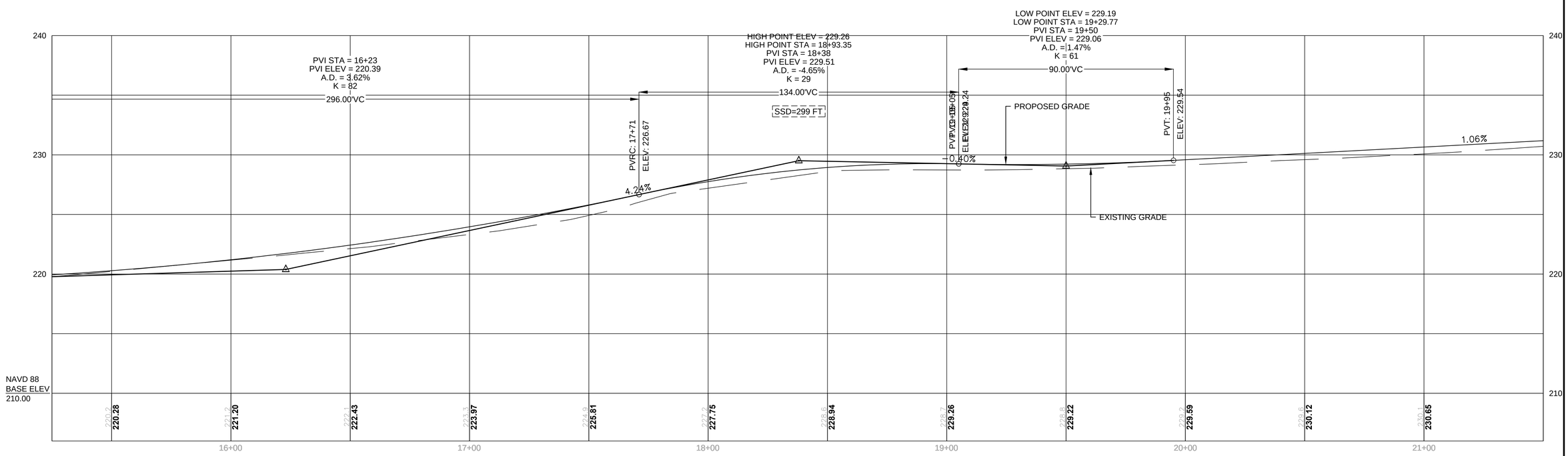
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	FED. AID	24	69
PROJECT FILE NO.	604696		

CONSTRUCTION PROFILES

CONT. ON SHEET 23

CONT. ON SHEET 25

HATCHERY ROAD



BENCH MARK #2
SPIKE NAIL IN UP
N3032117.6333
E374350.1148
ELEV. 231.50
STA. 21+37.73 LT

VERTICAL SCALE
0 2 4 6 8 12 FEET
0 10 20 30 40 60 FEET
HORIZONTAL SCALE

IN CHARGE OF JFO
DESIGNED BY JFO
DRAWN BY JFO
CHECKED BY GJH

FOR CONSTRUCTION PLAN: SEE SHEET 16

MONTAGUE
HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE

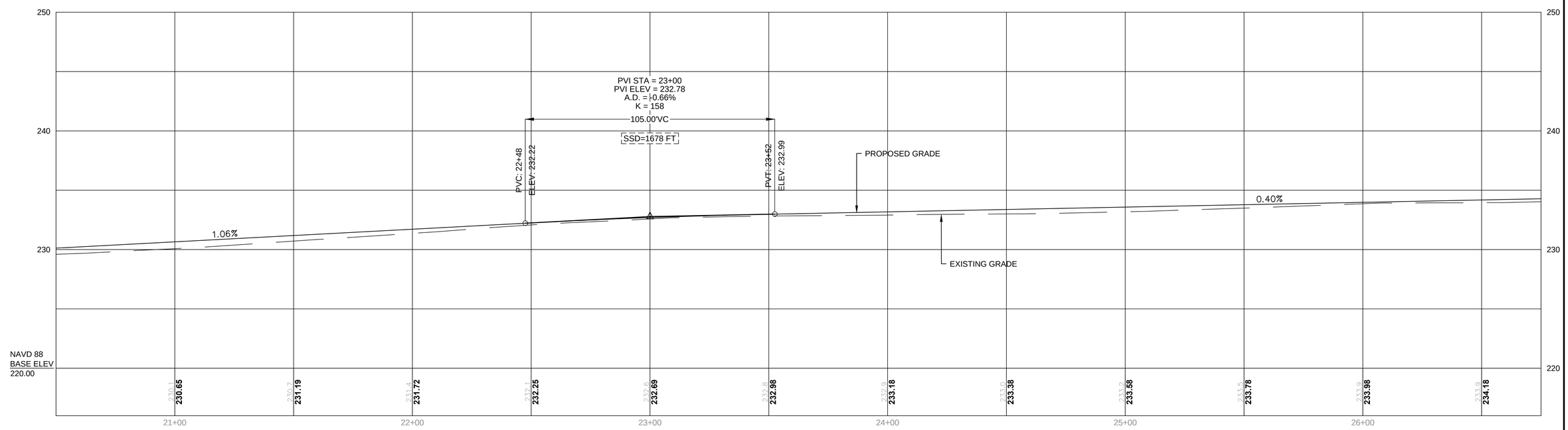
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	FED. AID	25	69
PROJECT FILE NO.	604696		

CONSTRUCTION PROFILES

CONT. ON SHEET 24

CONT. ON SHEET 26

HATCHERY ROAD



BENCH MARK #2
SPIKE NAIL IN UP
N3032117.6333
E374350.1148
ELEV. 231.50
STA. 21+37.73 LT

VERTICAL SCALE
0 2 4 6 8 12 FEET
0 10 20 30 40 60 FEET
HORIZONTAL SCALE

IN CHARGE OF JFO
DESIGNED BY JFO
DRAWN BY JFO
CHECKED BY GJH

FOR CONSTRUCTION PLAN: SEE SHEET 17

MONTAGUE
HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE

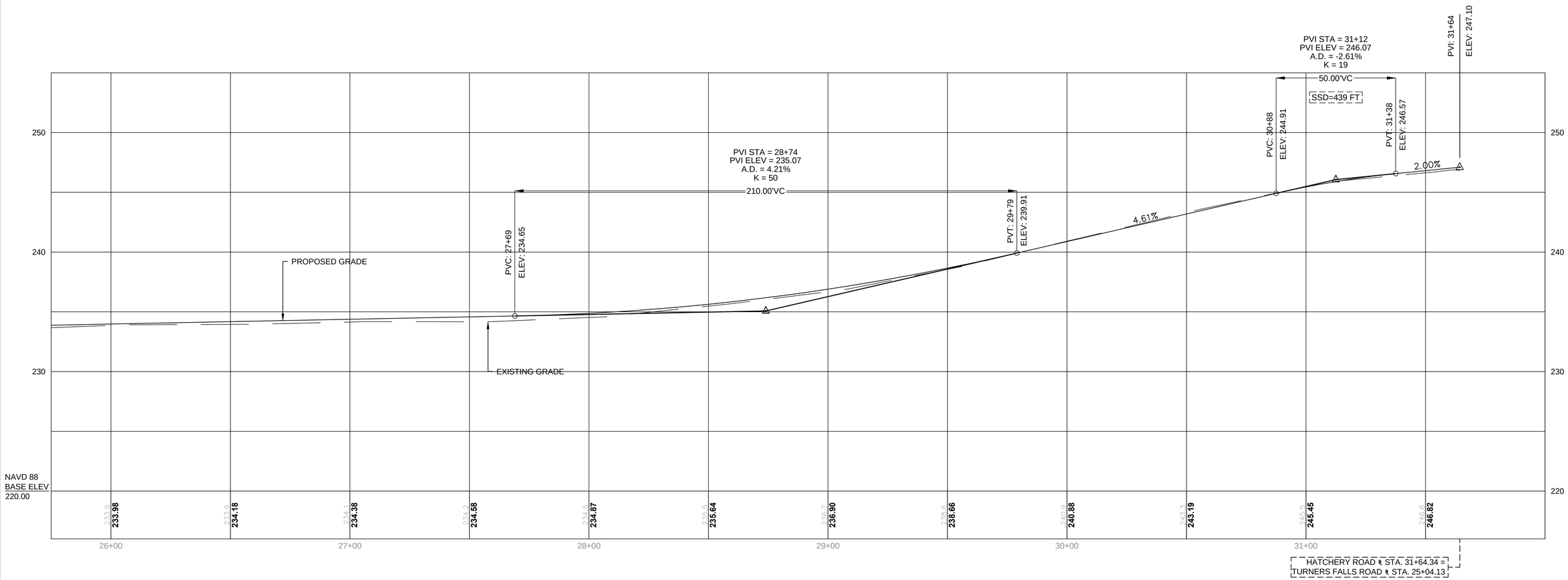
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	FED. AID	26	69
PROJECT FILE NO.		604696	

CONSTRUCTION PROFILES

CONT. ON SHEET 27

CONT. ON SHEET 25

HATCHERY ROAD



VERTICAL SCALE
0 2 4 6 8 12 FEET
0 10 20 30 40 60 FEET
HORIZONTAL SCALE

IN CHARGE OF JFO
DESIGNED BY JFO
DRAWN BY JFO
CHECKED BY GJH

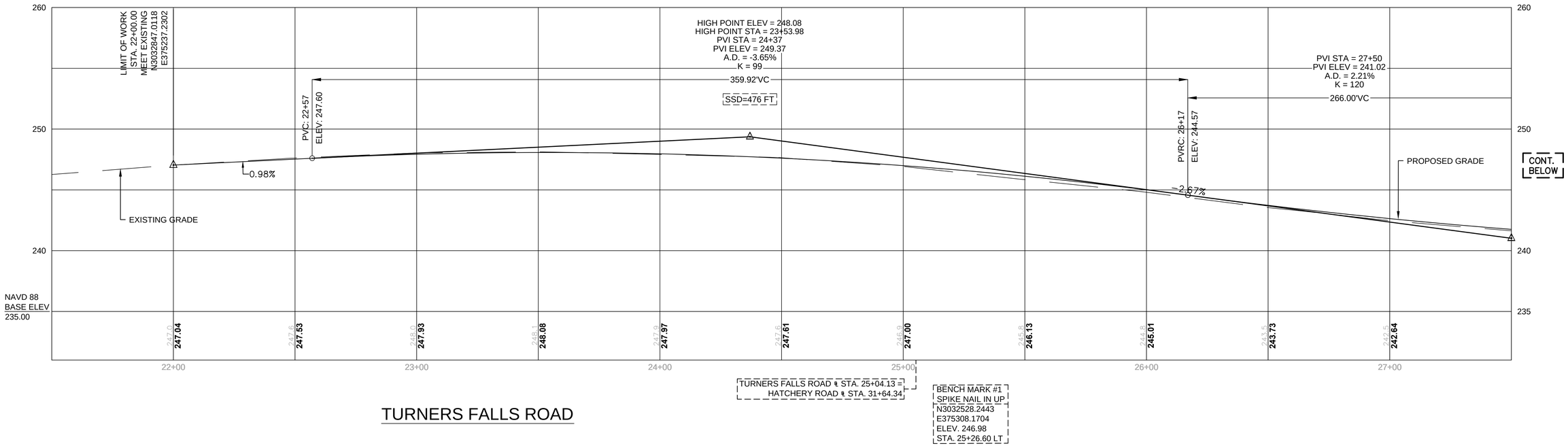
FOR CONSTRUCTION PLAN: SEE SHEET 18

MONTAGUE
HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE

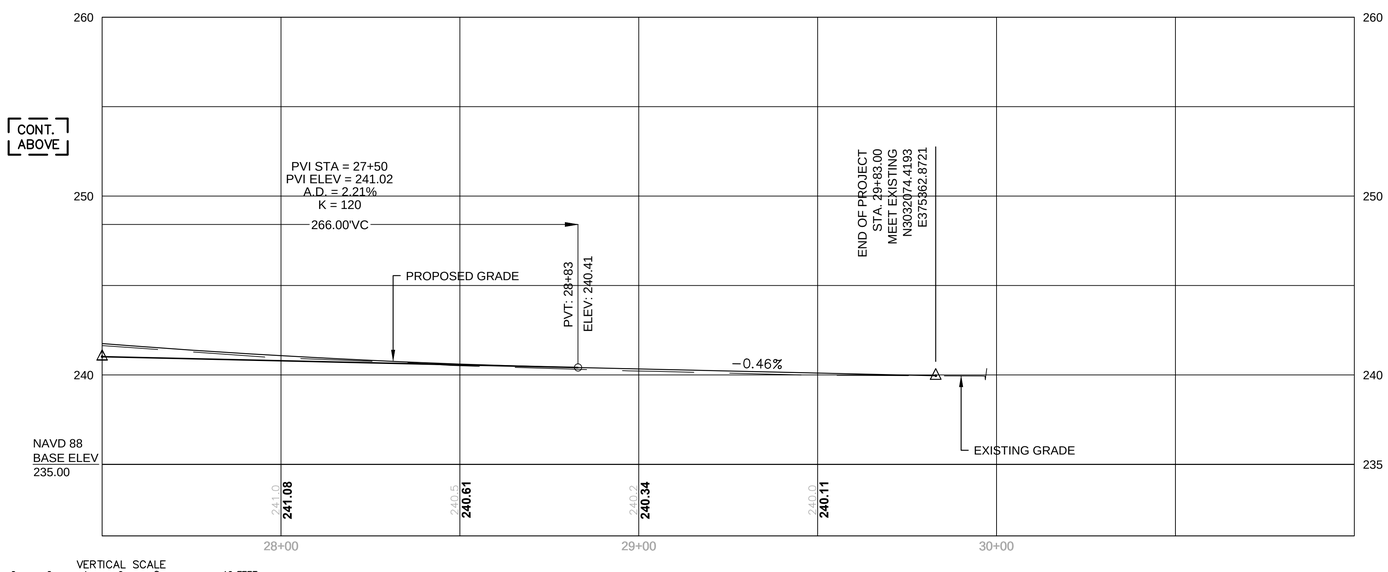
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	FED. AID	27	69
PROJECT FILE NO.	604696		

CONSTRUCTION PROFILES

TURNERS FALLS ROAD



TURNERS FALLS ROAD



VERTICAL SCALE
0 2 4 6 8 12 FEET
0 10 20 30 40 60 FEET
HORIZONTAL SCALE

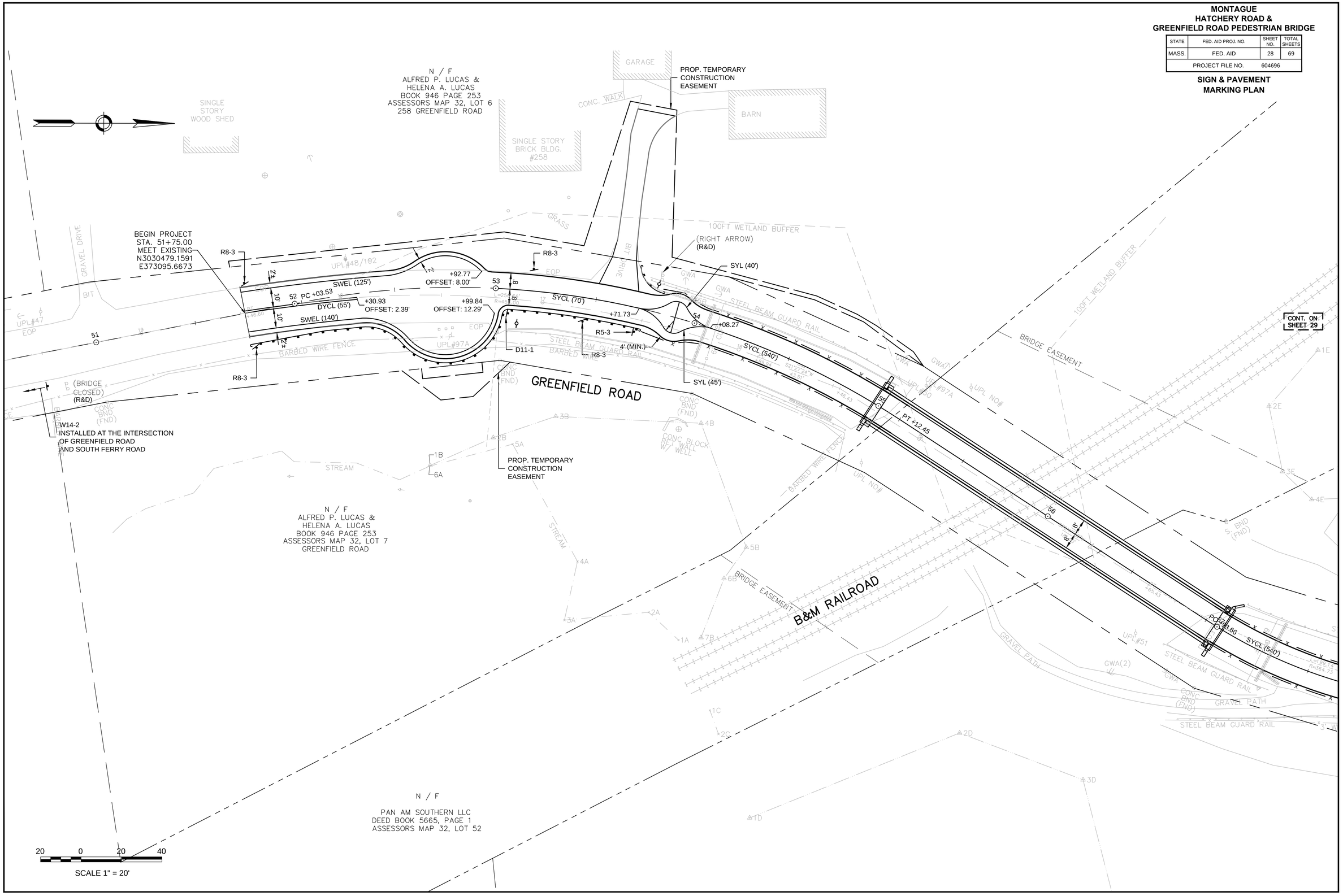
IN CHARGE OF JFO
DESIGNED BY JFO
DRAWN BY JFO
CHECKED BY GJH

FOR CONSTRUCTION PLAN: SEE SHEET 18 & 19

MONTAGUE
HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	FED. AID	28	69
PROJECT FILE NO.	604696		

SIGN & PAVEMENT MARKING PLAN



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CHECKED BY GJH

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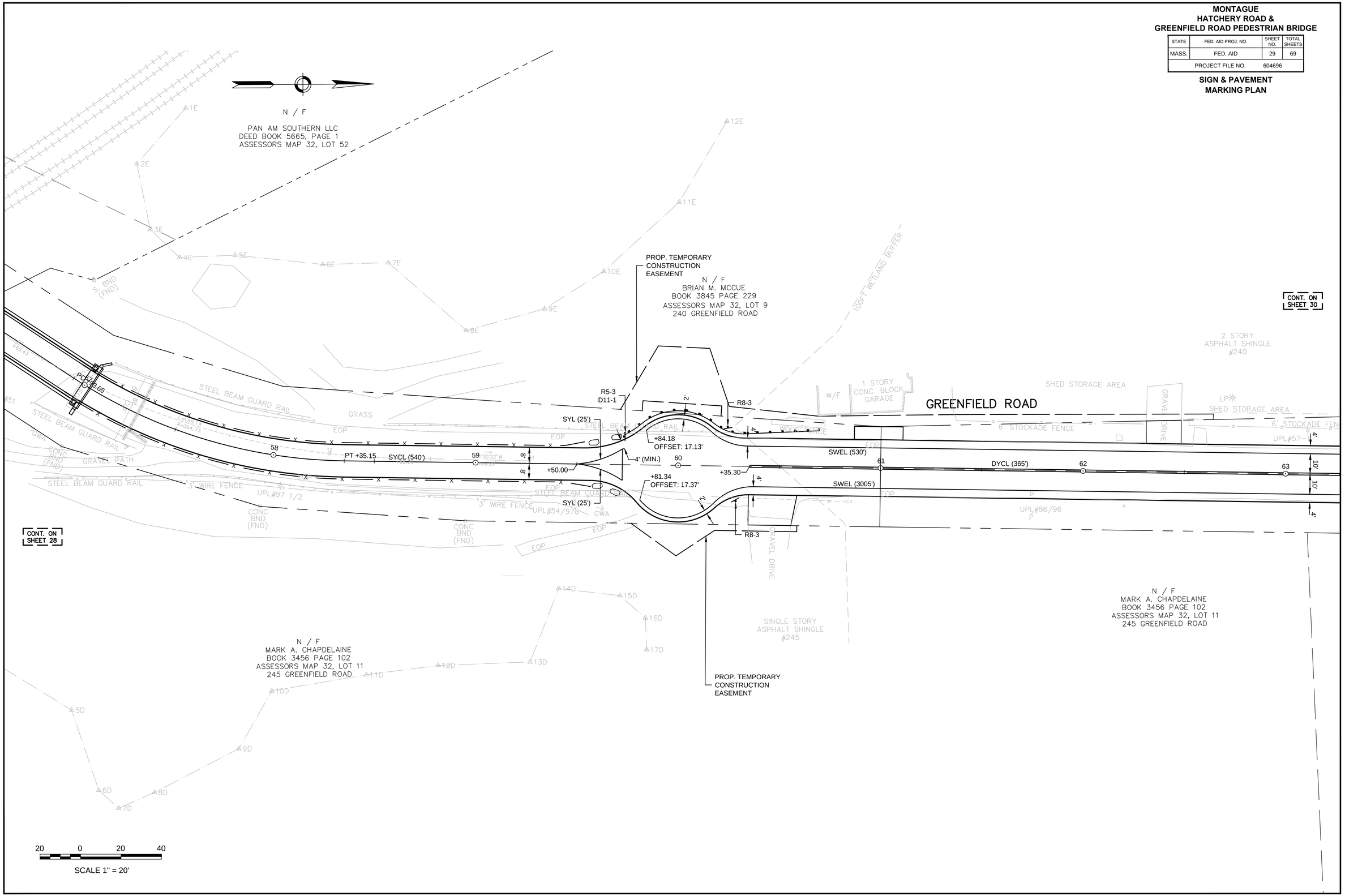
MONTAGUE
HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	FED. AID	29	69
PROJECT FILE NO.	604696		

SIGN & PAVEMENT MARKING PLAN



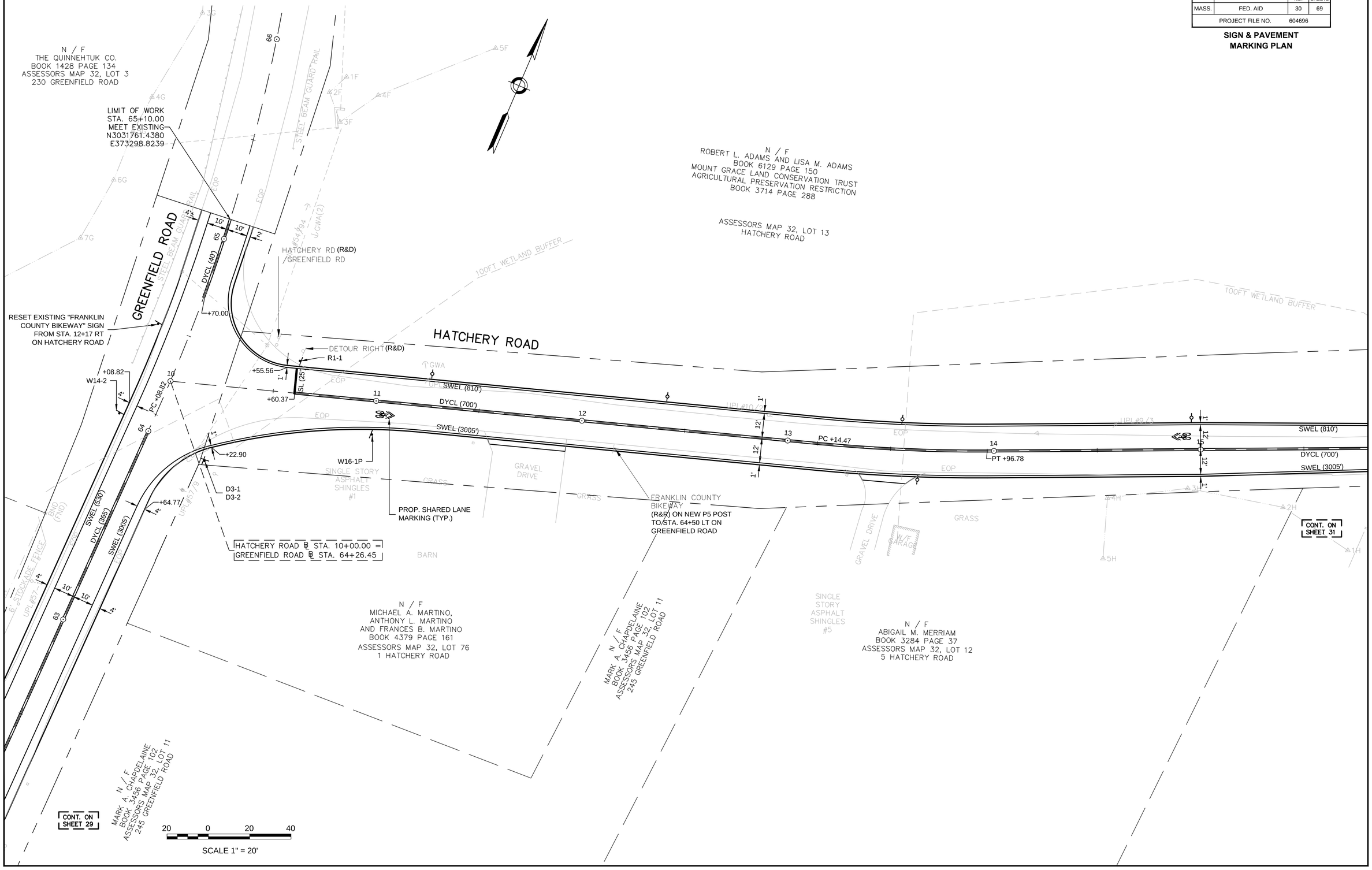
IN CHARGE OF JFO
DESIGNED BY JFO
DRAWN BY JDB
CHECKED BY GJH

Printed 2/6/2014

MONTAGUE
HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	FED. AID	30	69
PROJECT FILE NO.	604696		

SIGN & PAVEMENT MARKING PLAN



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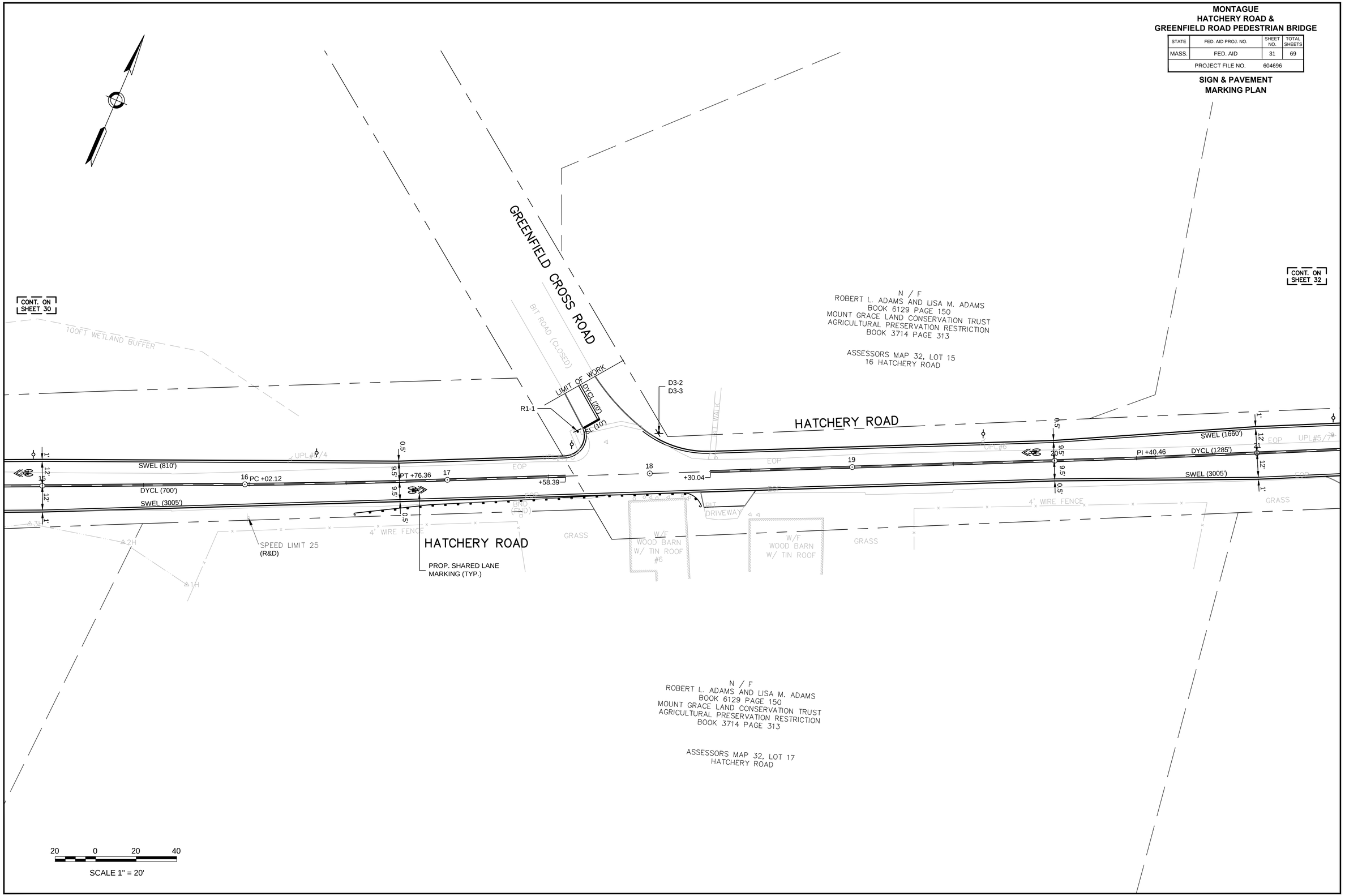
MONTAGUE
HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	FED. AID	31	69
PROJECT FILE NO.	604696		

SIGN & PAVEMENT MARKING PLAN



IN CHARGE OF JFO
DESIGNED BY JFO
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CHECKED BY GJH

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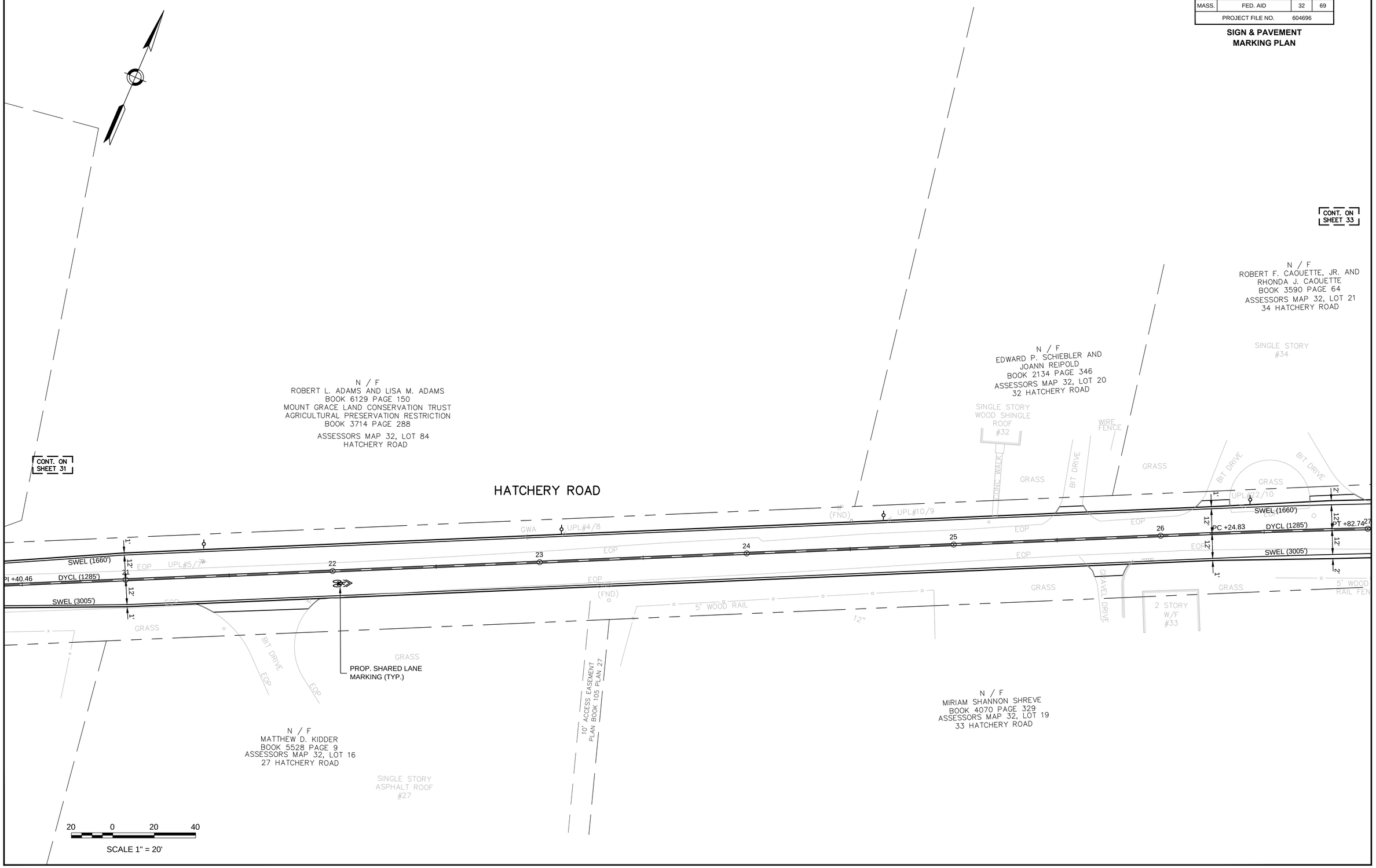
MONTAGUE
HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	FED. AID	32	69
PROJECT FILE NO.	604696		

SIGN & PAVEMENT MARKING PLAN



IN CHARGE OF JFO
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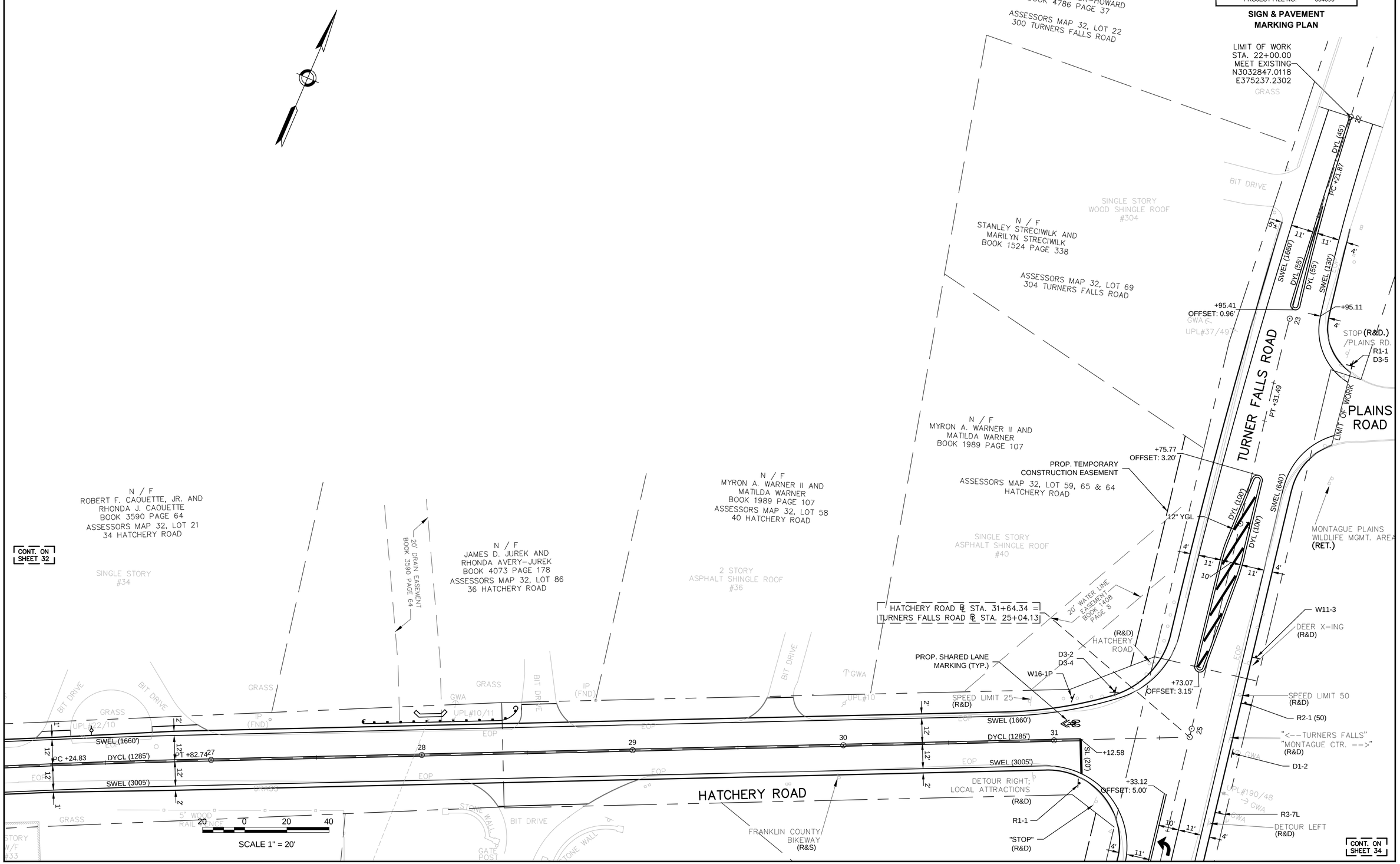
MONTAGUE
HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	FED. AID	33	69
PROJECT FILE NO.	604696		

SIGN & PAVEMENT MARKING PLAN



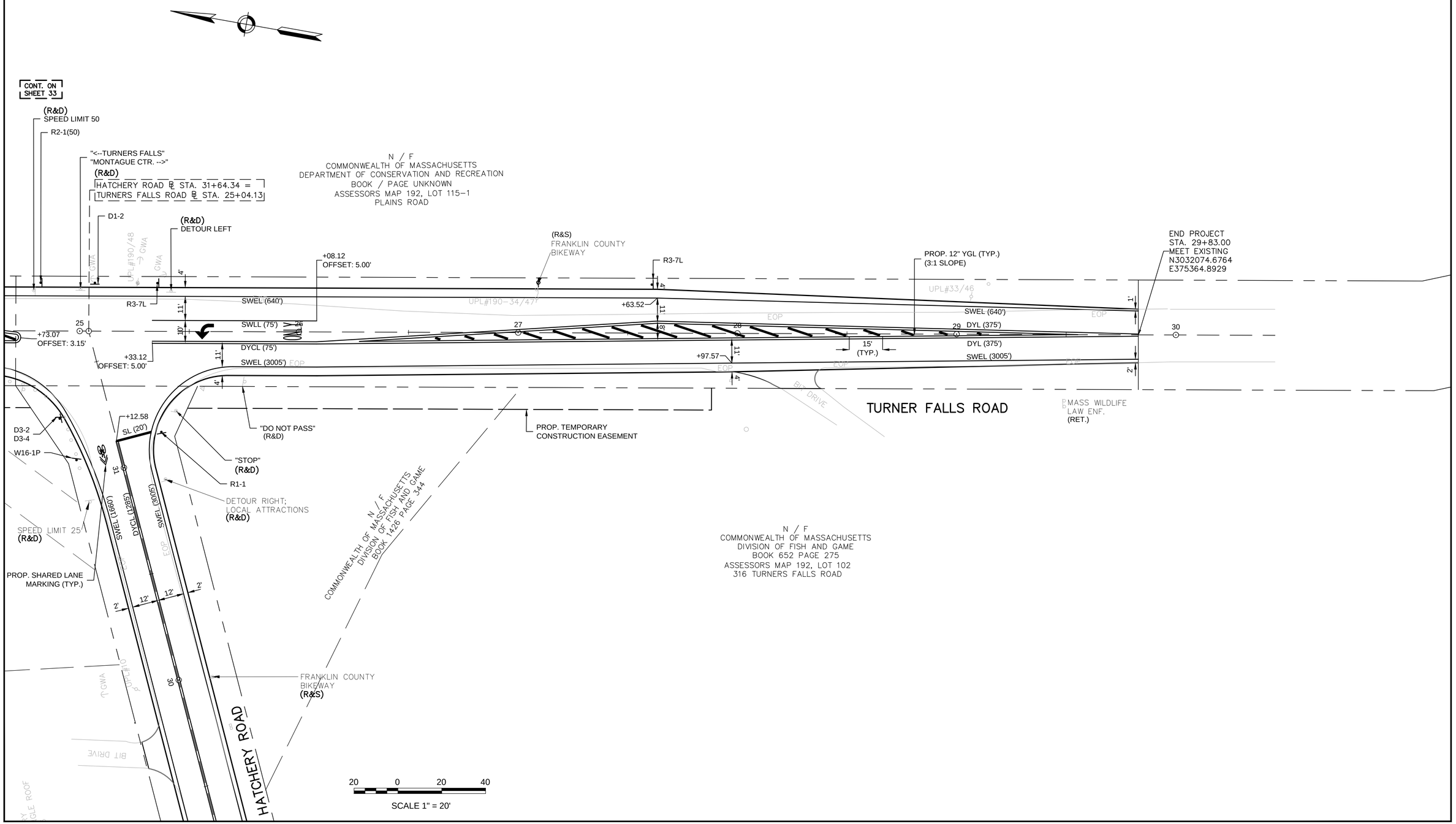
IN CHARGE OF JFO
DESIGNED BY JFO
DRAWN BY JDB
CHECKED BY GJH

Printed 2/6/2014

MONTAGUE
HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	FED. AID	34	69
PROJECT FILE NO.	604696		

SIGN & PAVEMENT MARKING PLAN



IN CHARGE OF	JFO
DESIGNED BY	JFO
DRAWN BY	JDB
CHECKED BY	GJH

Printed 2/6/2014

TRAFFIC SIGN SUMMARY

IDENTIFI-CATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)		NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA IN SQUARE FEET	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING		BACK-GROUND	LEGEND	BORDER			
R1-1	30"	30"	STOP	MUTCD STANDARD		3	MUTCD STANDARD			P5 (3 REQ'D)	5.13	15.39
R2-1(25)	24"	30"	SPEED LIMIT 25			2				P5 (2 REQ'D)	5.00	10.00
R2-1(50)	24"	30"	SPEED LIMIT 50			1				P5 (1 REQ'D)	5.00	5.00
R3-7L	30"	30"	LEFT LANE MUST TURN LEFT			2				P5 (2 REQ'D)	6.25	12.50
R5-3	24"	24"	NO MOTOR VEHICLES			2				P5 (1 REQ'D) 1 MNT. W/ D11-1	4.00	8.00
R8-3	24"	30"	NO PARKING			6				P5 (6 REQ'D)	5.00	30.00
D3-1 (PBS)	VAR.	12"	Greenfield Rd	6"C/4.5"C/4.5"C	3" 3"	1				MNT. W/ D3-2	PAY UNDER ITEM 874.	
D3-2 (PBS)	VAR.	12"	Hatchery Rd	6"C/4.5"C/4.5"C	3" 3"	3				P5 (3 REQ'D)	PAY UNDER ITEM 874.	
D3-3 (PBS)	VAR.	12"	Greenfield Cross Rd	6"C/4.5"C/4.5"C	3" 3"	1				MNT. W/ D3-2	PAY UNDER ITEM 874.	
D3-4 (PBS)	VAR.	12"	Turners Falls Rd	6"C/4.5"C/4.5"C	3" 3"	1				MNT. W/ D3-2	PAY UNDER ITEM 874.	
D3-5 (PBS)	VAR.	12"	Plain Rd	6"C/4.5"C/4.5"C	3" 3"	1				MNT. W/ R1-1	PAY UNDER ITEM 874.	
D1-2(SP)	48"	24"	⇦TURNERS FALLS MONTAGUE CTR⇨	4"B 4"B	6" 4" 6"	1				P5 (1 REQ'D)	8.00	8.00
D11-1	24"	18"	BIKE ROUTE	MUTCD STANDARD		2				P5 (2 REQ'D)	3.00	6.00
W11-3	30"	30"				1				P5 (1 REQ'D)	6.25	6.25
W14-2	30"	30"	NO OUTLET			2				P5 (2 REQ'D)	6.25	12.50

NOTES:

1. ALL WARNING, REGULATORY AND ROUTE MARKERS SHALL BE FABRICATED WITH HIGH INTENSITY ENCAPSULATED LENS REFLECTIVE SHEETING (SEE SECTION M9.30.0) TYPE III OR IV.
2. ALL SIGNS NOTED AS "(R&R)" SHALL BE MOUNTED ON NEW P5 POSTS OR AS OTHERWISE INDICATED.
3. ALL P5 POSTS SHALL BE TELESCOPIC SQUARE TYPE POSTS.
4. QUANTITIES OF SIGNS AND POSTS SHOWN ON THIS SHEET MAY DIFFER FROM THE PAVEMENT MARKING AND SIGNING PLAN. WHERE DIFFERENCES OCCUR, THE PAVEMENT MARKING AND SIGNING PLAN SHALL PREVAIL.
5. ALL STOP AND YIELD SIGNS PROPOSED IN THIS CONTRACT ARE SUBJECT TO FIELD INVESTIGATION BY THE DISTRICT OFFICE OF THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION TO JUSTIFY WARRANTS BEFORE INSTALLATION. NUMERICAL LIMITS AND JUSTIFICATION FOR THE LIMITS AND JUSTIFICATION FOR THE SPEED AND ADVISORY EXIT SPEED AND ADVISORY EXIT SPEED SIGNS SHALL BE OBTAINED FROM THE SPEED ZONING UNIT OF THE TRAFFIC DEPARTMENT BEFORE FABRICATION AND/OR ERECTION.
6. ALL BIKE ROUTE SIGN LEGENDS, SIZE, QUANTITY AND LOCATION TO BE FINALIZED AFTER REVIEW BY THE TOWN OF MONTAGUE AND THE FRANKLIN REGIONAL COUNCIL OF GOVERNMENTS.

IN CHARGE OF JFO
DESIGNED BY JFO
DRAWN BY JDB
CHECKED BY GJH

TRAFFIC CONTROL NOTES

GENERAL

1. ALL TRAFFIC MANAGEMENT AND WORK ZONE TRAFFIC CONTROL MEASURES SHALL CONFORM TO THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.), MASSDOT'S "STANDARD DETAILS AND DRAWINGS FOR THE DEVELOPMENT OF TEMPORARY TRAFFIC CONTROL PLANS", THE STANDARD SPECIFICATIONS, AND THE FOLLOWING NOTES.
2. THE TEMPORARY TRAFFIC CONTROL PLANS CONTAINED HEREIN ARE GIVEN AS A GUIDE FOR TYPICAL WORK ZONE TRAFFIC CONTROL APPLICATIONS FOR THE TYPES OF WORK ANTICIPATED FOR THIS PROJECT. THEY ARE NOT INTENDED TO COVER ALL POSSIBLE CONSTRUCTION OPERATIONS WHICH THE CONTRACTOR MAY CHOOSE TO EMPLOY. WORK ZONE TRAFFIC CONTROL FOR OTHER CONSTRUCTION OPERATIONS OR OTHER TRAFFIC SITUATIONS IF APPLICABLE SHALL BE IN ACCORDANCE WITH THE REFERENCES LISTED IN NOTE NO. 1 AND AS APPROVED OR DIRECTED BY THE ENGINEER.
3. LANE RESTRICTIONS MAY NOT REMAIN OVERNIGHT OR DURING NON-WORKING HOURS. AFTER EACH WORKING DAY, TRAFFIC CONTROL DEVICES THAT ARE NOT REQUIRED SHALL BE MOVED OFF THE ROADWAY OR FULL DEPTH CONSTRUCTION AREA AND PLACED SO AS NOT TO IMPEDE PEDESTRIAN AREAS, ABUTTER ACCESS OR CAUSE CONFUSION TO MOTORISTS. IN CERTAIN CIRCUMSTANCES, AND ONLY WITH THE APPROVAL OF THE ENGINEER, CAN LANE RESTRICTIONS REMAIN OVERNIGHT.
4. CONTRACTOR SHALL PROVIDE A SAFE TEMPORARY PEDESTRIAN ACCESS TO ALL ABUTTERS WHERE EXISTING SIDEWALKS OR OTHER PEDESTRIAN AREAS ARE AFFECTED BY CONSTRUCTION WORK. CONTRACTOR SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS, SUCH AS CONDUIT INSTALLATION, EXISTING PAVEMENT EXCAVATION, TEMPORARY DRIVEWAY PAVEMENT PLACEMENT AND SIMILAR OPERATIONS.
5. PLACE ALL CONSTRUCTION SIGNING, TRAFFIC CONTROL DEVICES AND TEMPORARY PAVEMENT MARKINGS FOR EACH PHASE PRIOR TO COMMENCEMENT OF CONSTRUCTION.
6. ONE (1) THRU TRAVEL LANE HAVING A MINIMUM WIDTH OF 11'-0" SHALL BE PROVIDED FOR BOTH DIRECTIONS (LANE MAY BE SHARED AND DIRECTION OF TRAVEL TO ALTERNATE UNDER POLICE OFFICER CONTROL) DURING ALL PHASES OF CONSTRUCTION AS SHOWN ON THE TEMPORARY TRAFFIC CONTROL PLANS, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. MINIMUM LANE WIDTH IS MEASURED FROM THE EDGE OF DRUMS OR MEDIAN BARRIER.
7. WHEN WORK INFRINGES UPON THE TRAVELED WAY, WORK SHALL BE RESTRICTED TO OFF-PEAK HOURS ONLY (**NORMALLY 9:00am TO 4:00pm, MONDAY TO FRIDAY**). THE CONTRACTOR SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF ROAD CLOSURE.
8. TAPER LENGTH FORMULAE FOR CHANNELIZATION DEVICES:
   ENGLISH UNITS:
   $L = W \times S$ FOR SPEED EQUAL TO OR GREATER THAN 45 M.P.H.
   $L = WS^2/60$ FOR SPEED EQUAL TO OR LESS THAN 40 M.P.H.
   WHERE: L = MIN. LENGTH OF TAPER, S = POSTED SPEED, W = OFFSET WIDTH.
9. ADVISORY SPEED LIMIT, IF USED, SHALL BE SET IN THE FIELD BY THE ENGINEER. W13-1 PLATES SHALL BE USED WHERE APPROPRIATE.
10. FLASHING ARROW PANEL SHALL BE SET IN "ARROW MODE" WHEN USED FOR ACTUAL LANE CLOSURES ONLY. FOR SHOULDER CLOSURES, BULBS TO BE ILLUMINATED IN A NON-DIRECTIONAL CAUTION CONFIGURATION TO AVOID UNNECESSARY LANE SHIFTS.
11. DISTANCES SHOWN ON THE TEMPORARY TRAFFIC CONTROL PLANS ARE A GUIDE ONLY, AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.

GRADE DIFFERENCES

12. WHERE THERE IS A LONGITUDINAL DIFFERENCE IN ELEVATION BETWEEN EXISTING PAVEMENT AND ADJACENT TRAVEL SURFACE (UNDER REPAIR OR RECONSTRUCTION), THE CONTRACTOR SHALL PATCH A TEMPORARY HMA WEDGE WITH A 12:1 (OR FLATTER) SLOPE FOR SMOOTH TRANSITION.
13. CROSS-SECTIONAL GRADE DIFFERENCES IN EXCESS OF 2" DURING NON-WORKING HOURS WILL REQUIRE DELINEATION BY USE OF REFLECTORIZED DRUMS.
14. CROSS-SECTIONAL GRADE DIFFERENCES IN EXCESS OF 4" DURING NON-WORKING HOURS. SHALL BE PROTECTED BY BACKFILLING WITH A WEDGE OF EARTHWORK TO BE COMPACTED AT 4:1 SLOPE AND WILL ALSO REQUIRE DELINEATION BY USE OF DRUMS.
15. A SLOPE OF 4:1 OR FLATTER MUST BE MAINTAINED AFTER WORKING HOURS DURING SUBBASE AND BASE COURSE INSTALLATION ALONG EDGE OF THE TRAVELWAY. A SLOPE OF 8:1 OR FLATTER MUST BE MAINTAINED ON ALL ABUTTER ACCESS DRIVES AND A SLOPE OF 12:1 OR FLATTER MUST BE MAINTAINED ON ALL SIDEWALKS.

CONSTRUCTION SIGNING

16. THE FIRST CONSTRUCTION SIGN IN A SERIES ON EACH APPROACH TO THE PROJECT SHALL BE FLUORESCENT ORANGE, HIGH PERFORMANCE (OR HIGH INTENSITY) SHEETING.
17. ALL CONSTRUCTION SIGNS SHALL BE BLACK LEGEND ON A REFLECTORIZED ORANGE BACKGROUND UNLESS OTHERWISE NOTED.
18. CONSTRUCTION SIGNING SHOWN ON THE ADVANCE SIGNING PLAN SHALL REMAIN IN PLACE FOR THE ENTIRE PROJECT DURATION, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
19. STANDARD ORANGE OR FLUORESCENT RED-ORANGE FLAGS (16"x16" MIN.) MAY BE ATTACHED TWO (2) EACH ON THE FIRST ADVANCE WARNING SIGN IN A GIVEN APPROACH. FLAGS SHALL NOT INTERFERE WITH A CLEAR VIEW OF THE SIGN FACE.
20. EXISTING GUIDE SIGNS SHALL BE TEMPORARILY RESET AS DIRECTED BY THE ENGINEER.
21. ALL SIGNS, INCLUDING EXISTING, THAT ARE NOT REPRESENTATIVE OF ACTUAL WORK CONDITIONS SHALL BE EITHER COVERED OR REMOVED WHEN NOT APPLICABLE.
22. IF USED, ALL W20-4 AND W20-5 SIGNS SHALL BE TAKEN DOWN OR COVERED AT THE CLOSE OF EACH DAY UNLESS LANE RESTRICTIONS ARE PERMITTED TO REMAIN OVERNIGHT IN ACCORDANCE WITH NOTE NO. 3 ABOVE.
23. USE W20-8 AND W20-7a SIGNS ONLY WHILE POLICE OR FLAGGERS ARE DIRECTING TRAFFIC. THEY SHALL BE TAKEN DOWN OR COVERED AT THE CLOSE OF EACH DAY OR WHEN NOT IN USE.

PAVEMENT MARKINGS

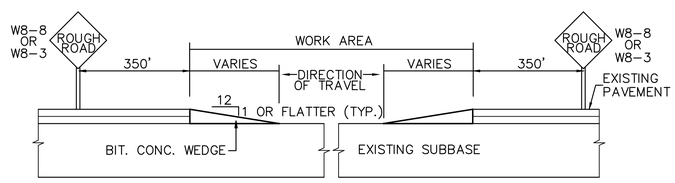
24. PAVEMENT MARKINGS WHICH ARE NO LONGER APPLICABLE SHALL BE REMOVED. APPLY TEMPORARY MARKINGS WHERE SHOWN ON THE TEMPORARY TRAFFIC CONTROL PLANS.
25. EXISTING PAVEMENT MARKINGS WHICH ARE IN CONFLICT WITH TEMPORARY TRAFFIC CONTROLS SHOULD BE COVERED TEMPORARILY WITH BLACKOUT TAPE, AS DIRECTED BY THE ENGINEER, FOR THE FULL DURATION OF THE PHASE IN PROGRESS. TEMPORARY PAINT OR REMOVABLE TAPE MARKINGS SHALL BE USED AS NECESSARY FOR ALL PHASES OF CONSTRUCTION.

CHANNELIZATION

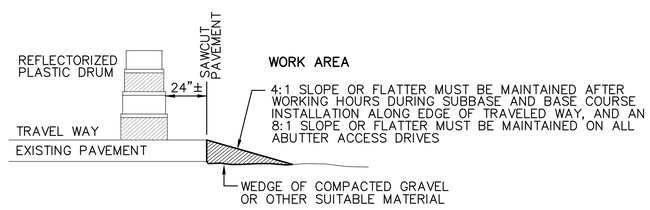
26. THE MAXIMUM SPACING BETWEEN CHANNELIZATION DEVICES (DRUMS OR CONES) SHALL BE APPROXIMATELY EQUAL IN FEET TO THE POSTED SPEED LIMIT. THE MINIMUM SPACING SHALL BE 20' O.C.
27. REFLECTORIZED CONES SHALL BE 36" HIGH.
28. FLASHING OR STEADY BURN WARNING LIGHTS SHALL ALSO BE USED ON BARRICADES, JERSEY BARRIERS OR WHERE DIRECTED BY THE ENGINEER.
29. PLASTIC DRUMS WITH SOME FORM OF LIGHTING DEVICE MOUNTED ON THEM MUST PASS THE CRITERIA SET FORTH IN NCHRP 350 "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES." IF THEY DO NOT MEET THESE CRITERIA, THEY MUST BE REMOVED FROM THE PROJECT.
30. SIGNS AND SIGN SUPPORT LOCATED ON OR NEAR THE TRAVELED WAY MUST PASS THE CRITERIA SET FORTH IN NCHRP 350 "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES." IF THEY DO NOT MEET THIS CRITERIA, THEY MUST BE REMOVED FROM THE PROJECT.

TRAFFIC MANAGEMENT LEGEND

- WORK AREA
- DIRECTION OF TRAVEL
- REFLECTORIZED DRUM OR CONE
- POLICE OFFICER CONTROL OR FLAGGER
- PORTABLE TYPE III BARRICADE (4' WIDE, MIN.)
- FLASHING ARROW BOARD (30"x 60" STD. SIZE WITH 13 LAMPS, MIN.)
- TEMPORARY CONCRETE BARRIER
- PORTABLE IMPACT ATTENUATOR
- PAVEMENT MARKINGS TO COVER OR REMOVE (SEE NOTE 24)



TEMPORARY RAMP



AFTER WORK HOURS TREATMENT
FOR LATERAL SLOPING

MONTAGUE
HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	FED. AID	36	69
PROJECT FILE NO.	604696		

TEMPORARY TRAFFIC CONTROL PLAN
SHEET 1 OF 2

CONSTRUCTION SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	TEXT	TEXT DIMENSIONS (INCHES) LETTER HEIGHT	TEXT DIMENSIONS (INCHES) VERTICAL SPACING	NUMBER OF SIGNS REQUIRED	COLOR BACK-GROUND	COLOR LEGEND	COLOR BORDER	UNIT AREA IN SQUARE FEET	AREA IN SQUARE FEET
W1-4L	30"	30"		MUTCD STANDARD		1	MUTCD STANDARD			6.25	6.25
W5-1	36"	36"	ROAD NARROWS			1				9.00	9.00
W8-3	36"	36"	PAVEMENT ENDS			2				9.00	18.00
W8-8	36"	36"	ROUGH ROAD			2				9.00	18.00
W13-1	24"	24"	25 M.P.H			2				4.00	8.00
W20-1 (AHEAD)	36"	36"	ROAD WORK AHEAD			5				9.00	45.00
W20-1 (1500')	36"	36"	ROAD WORK 1500 FT			5				9.00	45.00
W20-2c (AHEAD)	36"	36"	DETOUR AHEAD			4				9.00	36.00
W20-4	36"	36"	ONE LANE ROAD (XXX FT)			2				9.00	18.00
W20-7a	36"	36"				2				9.00	18.00
W20-8	36"	36"	POLICE OFFICER AHEAD			2				9.00	18.00
R2-10a	48"	36"	WORK ZONE SPEEDING FINES DOUBLED			5				12.00	60.00
R2-10e	36"	48"	END ROAD WORK / DOUBLE FINES END			5				12.00	60.00
R11-2	48"	30"	ROAD CLOSED			2				10.00	20.00
R11-2c	48"	30"	BRIDGE CLOSED			2				10.00	20.00
M4-8A	24"	18"	END DETOUR			2				3.00	6.00
M4-9L	30"	24"	DETOUR ←			4				5.00	20.00
M4-9R	30"	24"	DETOUR →			2				5.00	10.00
M4-9V	30"	24"	DETOUR ↑			1				5.00	5.00
SP-1	60"	36"	HATCHERY ROAD CLOSED USE DETOUR	6 6 6	4.5 4.5 4.5 4.5	4	WHITE H/I	BLACK H/I	BLACK H/I	15.00	60.00
SP-2	24"	12"	HATCHERY RD	6c	3.0 3.0	4	ORANGE H/I	BLACK H/I	BLACK H/I	8.00	32.00

TOTAL SQUARE FOOTAGE	532.25

IN CHARGE OF JFO
DESIGNED BY JFO
DRAWN BY JDB
CHECKED BY GJH

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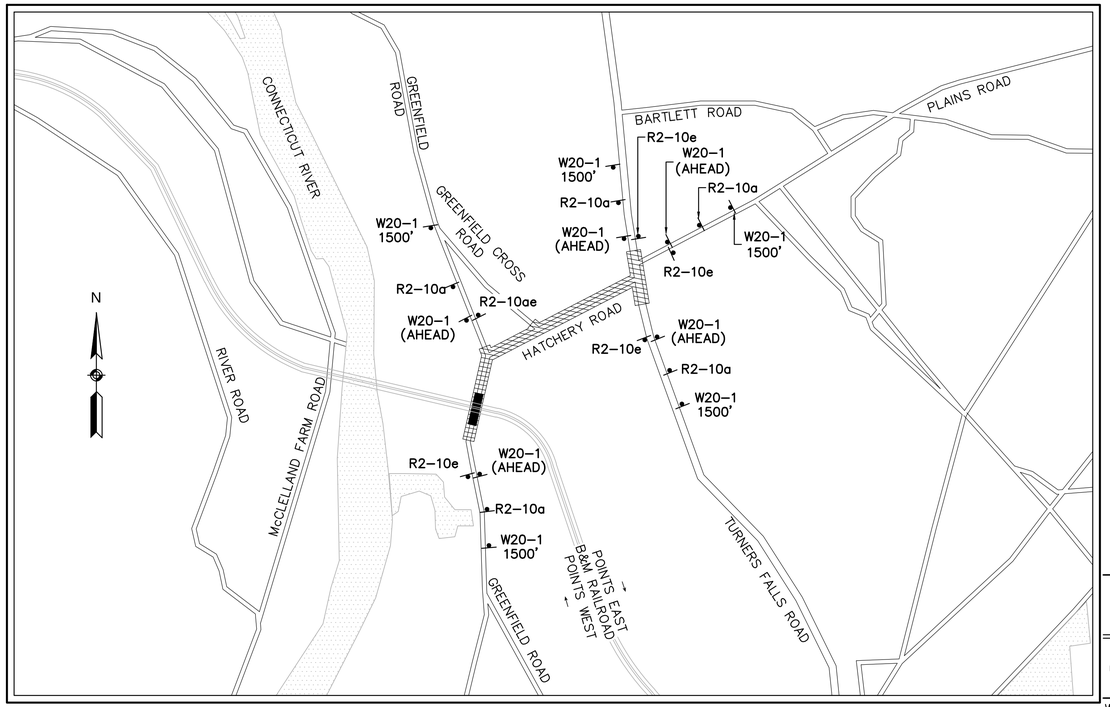
MONTAGUE
HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE

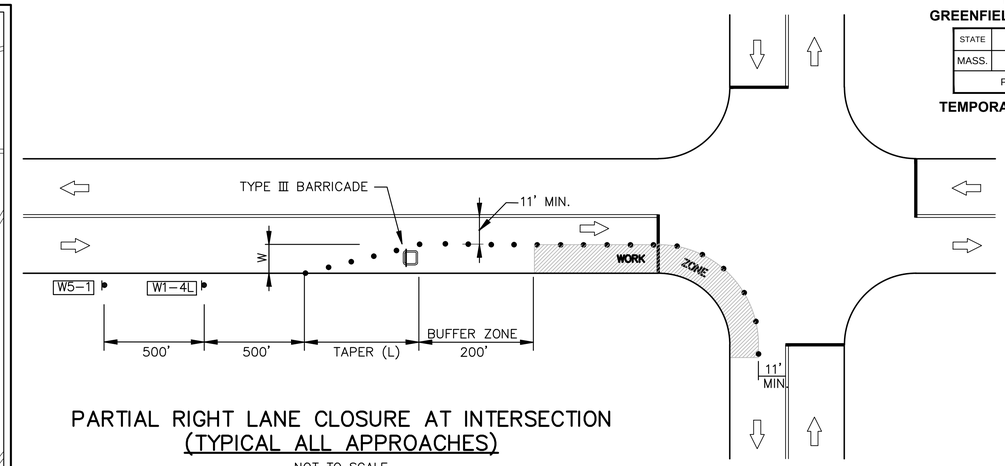
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	FED. AID	37	69
PROJECT FILE NO.	604696		

TEMPORARY TRAFFIC CONTROL PLAN
SHEET 2 OF 2



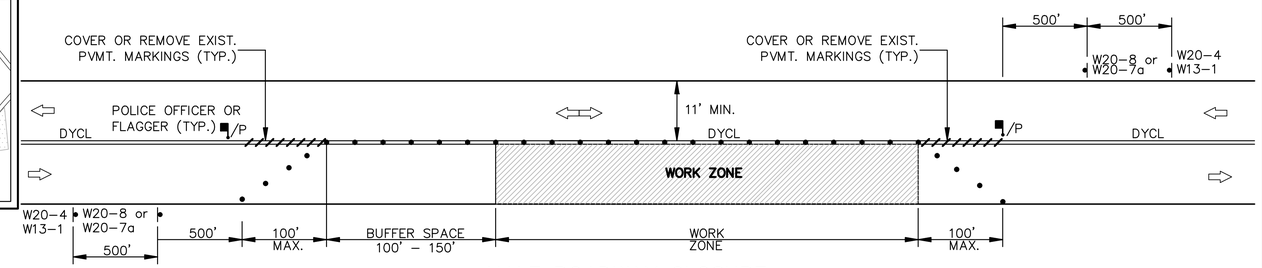
ADVANCE WARNING SIGN LOCATIONS

1"=1000'



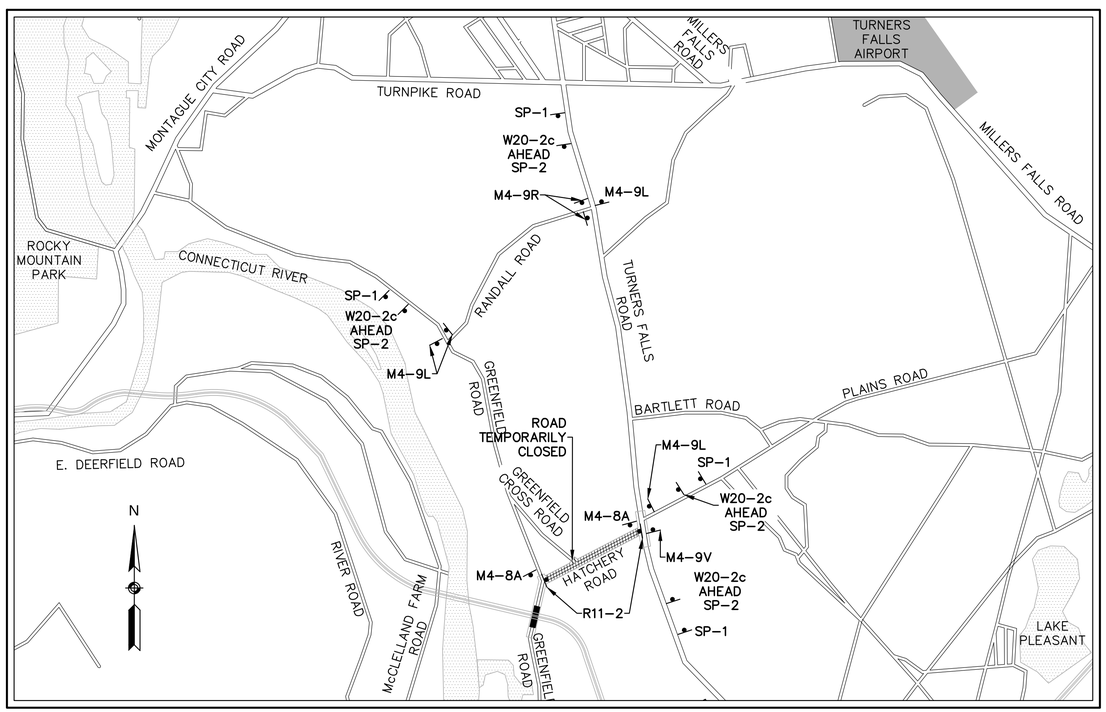
PARTIAL RIGHT LANE CLOSURE AT INTERSECTION
(TYPICAL ALL APPROACHES)

NOT TO SCALE



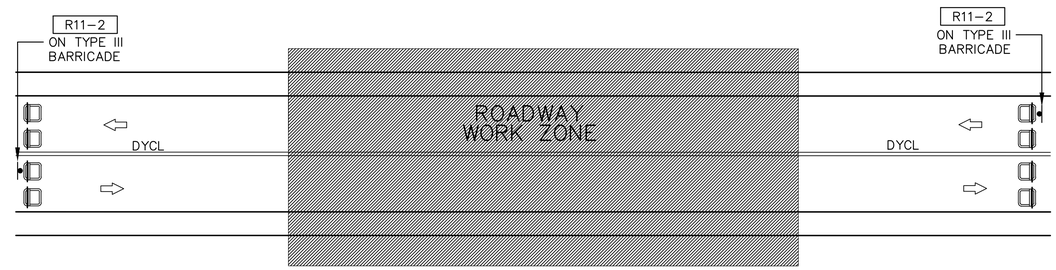
HALF ROADWAY CLOSURE

(RIGHT SIDE WORK ZONE – MIRROR IMAGE FOR LEFT SIDE WORK ZONE)
NOT TO SCALE



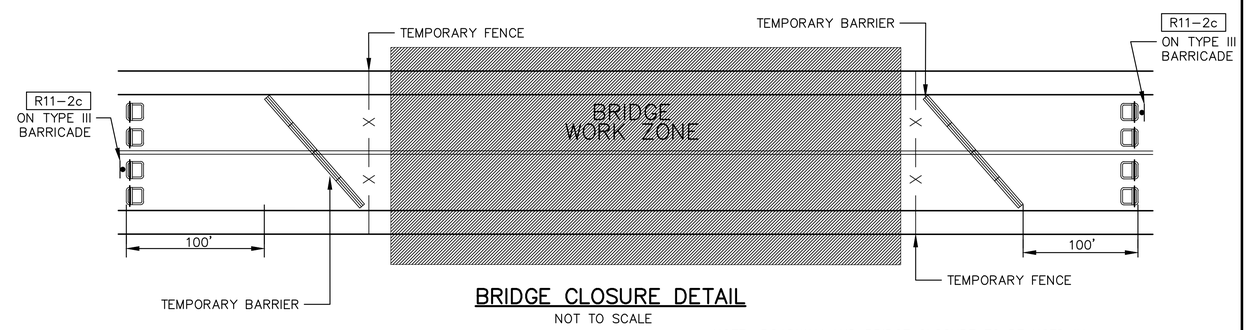
DETOUR PLAN

1"=1500'



ROADWAY CLOSURE DETAIL

NOT TO SCALE



BRIDGE CLOSURE DETAIL

NOT TO SCALE

NOTE: ROADWAY AND BRIDGE CLOSURE TO BE USED IN CONJUNCTION WITH PROPOSED LANE CLOSURE DETAILS DURING CONSTRUCTION STAGING AND AS DIRECTED BY THE ENGINEER.

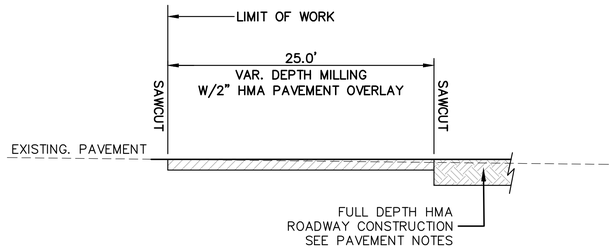
IN CHARGE OF JFO
DESIGNED BY JFO
DRAWN BY JDB
CHECKED BY GJH

Printed 2/6/2014

MONTAGUE
HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE

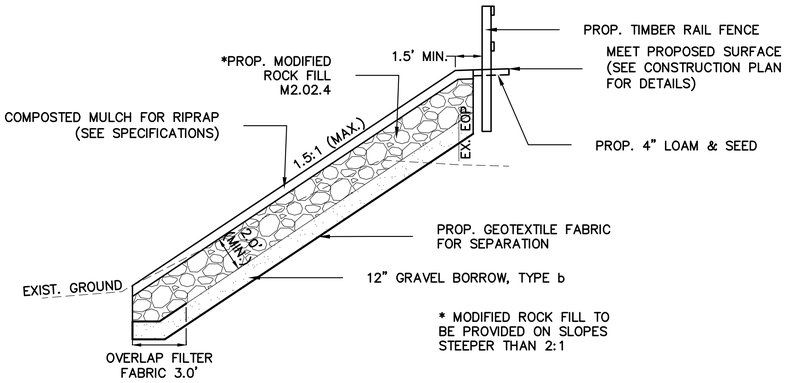
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	FED. AID	38	69
PROJECT FILE NO.	604696		

CONSTRUCTION DETAILS



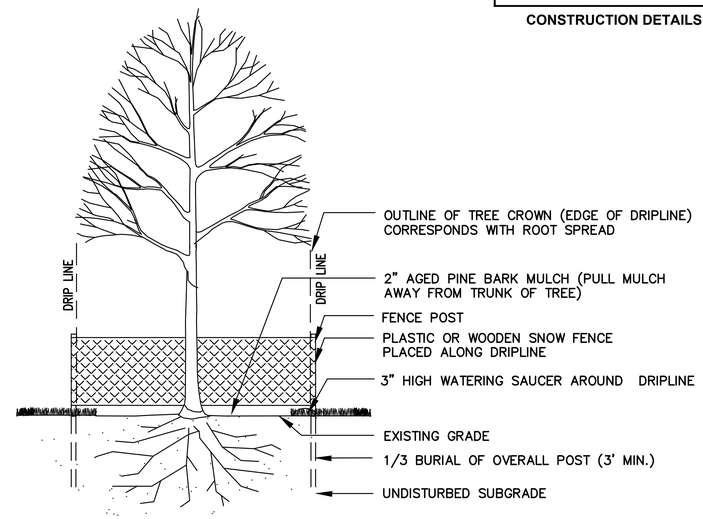
PAVEMENT TRANSITION

NOT TO SCALE



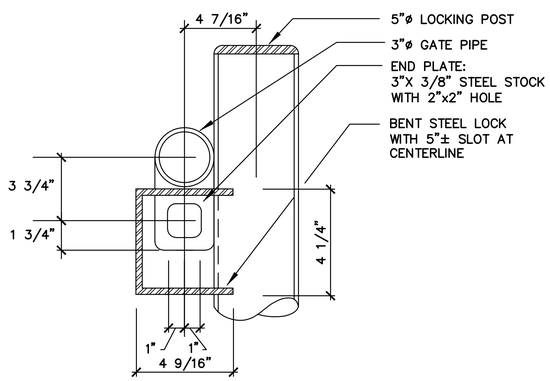
MODIFIED ROCK SLOPE DETAIL

NOT TO SCALE



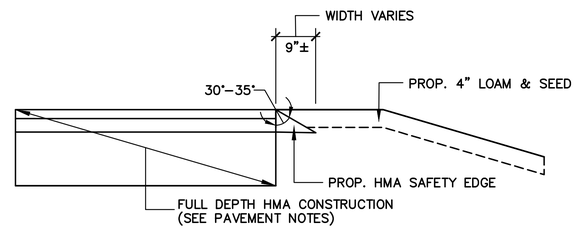
TREE PROTECTION

NOT TO SCALE



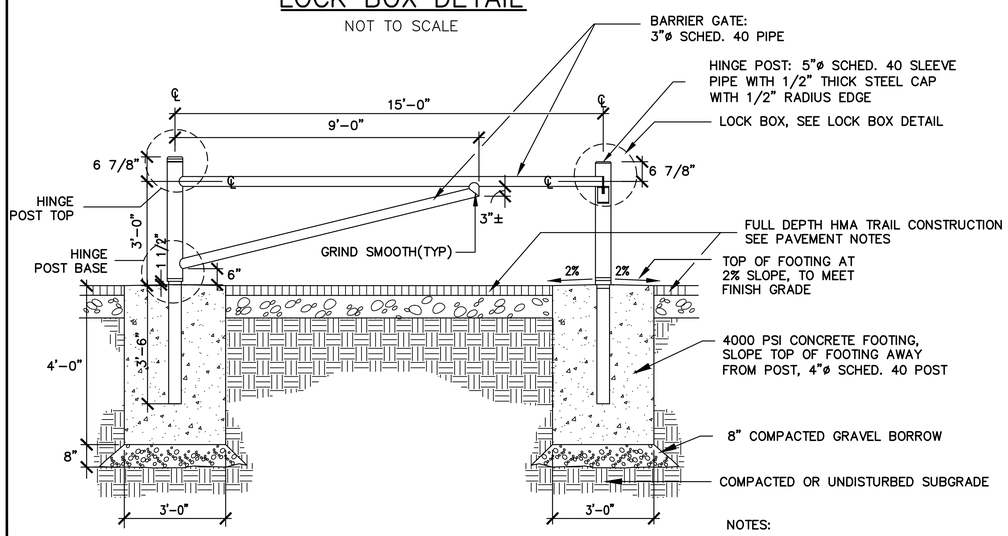
LOCK BOX DETAIL

NOT TO SCALE



SAFETY EDGE

NOT TO SCALE

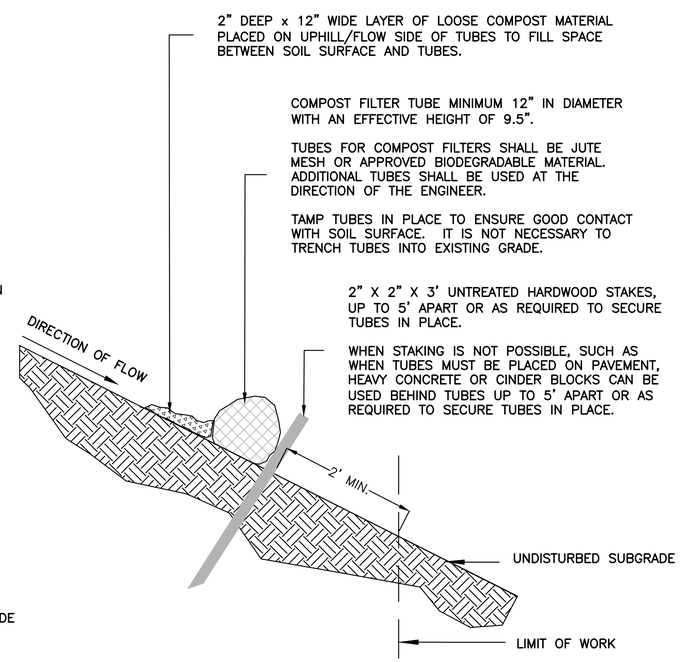


NOTES:

1. ALL STEEL SHALL BE GALVANIZED INSIDE AND OUT.
2. PROVIDE 1/2"ø WEEP HOLES AT WELDED CONNECTIONS (3 PLACES).
3. INSTALL BRASS BUSHINGS AFTER GALVANIZING.

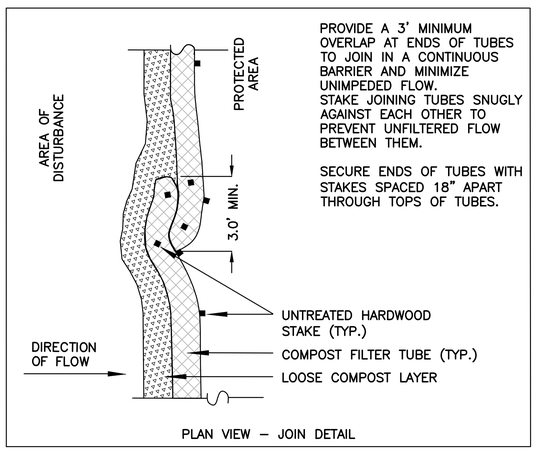
STEEL PIPE ACCESS GATE

NOT TO SCALE



GENERAL NOTES:

1. PROVIDE A MINIMUM TUBE DIAMETER OF 12" FOR SLOPES UP TO 50' IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPES OF 3H:1V MAY REQUIRE LARGER TUBE DIAMETER OR ADDITIONAL COURSING OF FILTER TUBES TO CREATE A FILTER BERM. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR SITUATIONS WITH LONGER OR STEEPER SLOPES.
2. INSTALL TUBES ALONG CONTOURS AND PERPENDICULAR TO SHEET OR CONCENTRATED FLOW.
3. DO NOT INSTALL IN PERENNIAL, EPHEMERAL OR INTERMITTENT STREAMS.
4. CONFIGURE TUBES AROUND EXISTING SITE FEATURES TO MINIMIZE SITE DISTURBANCE AND MAXIMIZE CAPTURE AREA OF STORMWATER RUN–OFF.



PROVIDE A 3' MINIMUM OVERLAP AT ENDS OF TUBES TO JOIN IN A CONTINUOUS BARRIER AND MINIMIZE UNIMPEDED FLOW. STAKE JOINING TUBES SNUGLY AGAINST EACH OTHER TO PREVENT UNFILTERED FLOW BETWEEN THEM.

SECURE ENDS OF TUBES WITH STAKES SPACED 18" APART THROUGH TOPS OF TUBES.

PLAN VIEW – JOIN DETAIL

COMPOST FILTER TUBE DETAIL

NOT TO SCALE

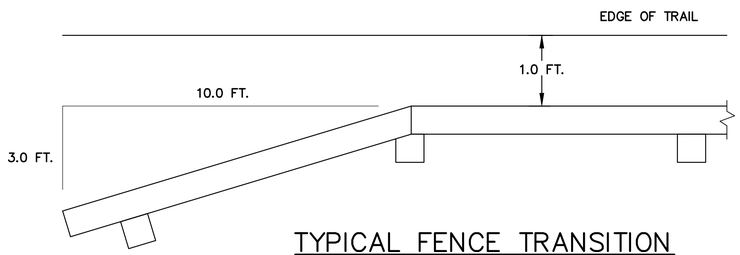
IN CHARGE OF JFO
DESIGNED BY JFO/JDB
DRAWN BY JFO/JDB
CHECKED BY GJH

Printed 2/6/2014

MONTAGUE
HATCHERY ROAD &
GREENFIELD ROAD PEDESTRIAN BRIDGE

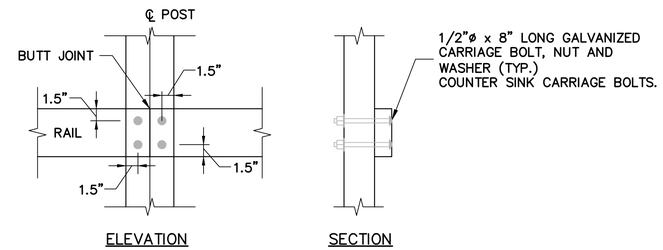
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	FED. AID	39	69
PROJECT FILE NO.	604696		

CONSTRUCTION DETAILS



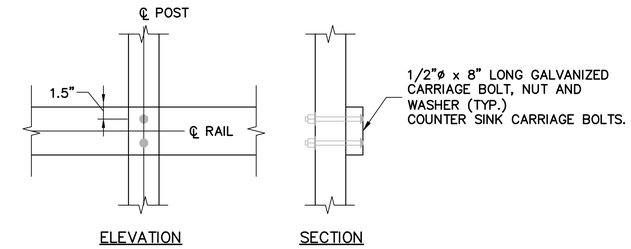
TYPICAL FENCE TRANSITION AT FENCE APROACHES

NOT TO SCALE



BUTT JOINT CONNECTION

NOT TO SCALE



INTERMEDIATE CONNECTION

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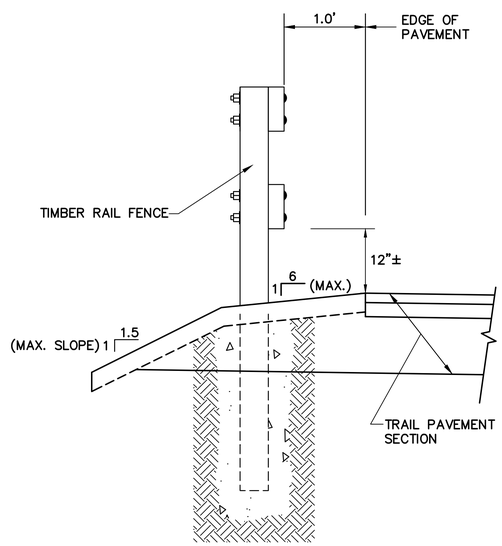
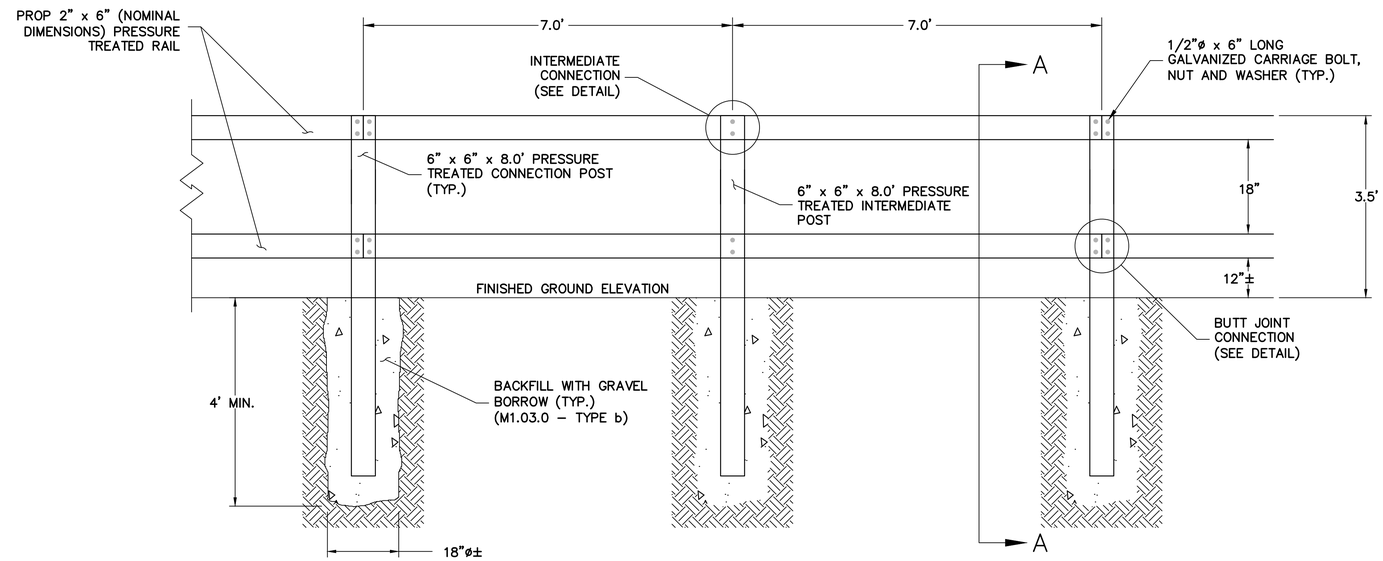


SECTION A–A

NOT TO SCALE



TIMBER RAIL FENCE ELEVATION

NOT TO SCALE
SEE PLANS FOR LOCATIONS

NOTE:
FOR RADII LESS THAN 165', USE CONNECTION POSTS SET AT 7.0' O.C. AND SHORTEN RAILS ACCORDINGLY.

SUGGESTED TIMBER RAIL FENCE CONSTRUCTION SEQUENCE

1. AUGER OR DIG POST HOLE TO REQUIRED DIMENSIONS.
2. BACKFILL BOTTOM 6"± OF HOLE WITH GRAVEL AND COMPACT THOROUGHLY.
3. SET POST AND HOLD PLUMB DURING BACKFILLING.
4. BACKFILL WITH GRAVEL IN 12" LIFTS. COMPACT EACH LIFT THOROUGHLY.
5. CLAMP RAILS TO POSTS AND FIELD DRILL BOLT HOLES.
6. SET BOLTS, WASHERS AND NUTS.
7. IF CCA PRESSURE TREATED LUMBER IS NOT READILY AVAILABLE AT THE TIME OF CONSTRUCTION OR IT IS DEEMED ENVIRONMENTALLY UNACCEPTABLE FOR COMMERCIAL USES BY THE EPA, USE ACQ PRESSURE TREATED LUMBER.

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