

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION

PLAN AND PROFILE OF BRUCE FREEMAN RAIL TRAIL

IN THE TOWN OF
SUDBURY
MIDDLESEX COUNTY

FEDERAL AID PROJECT NO. TBD

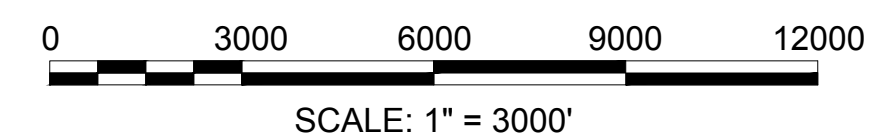
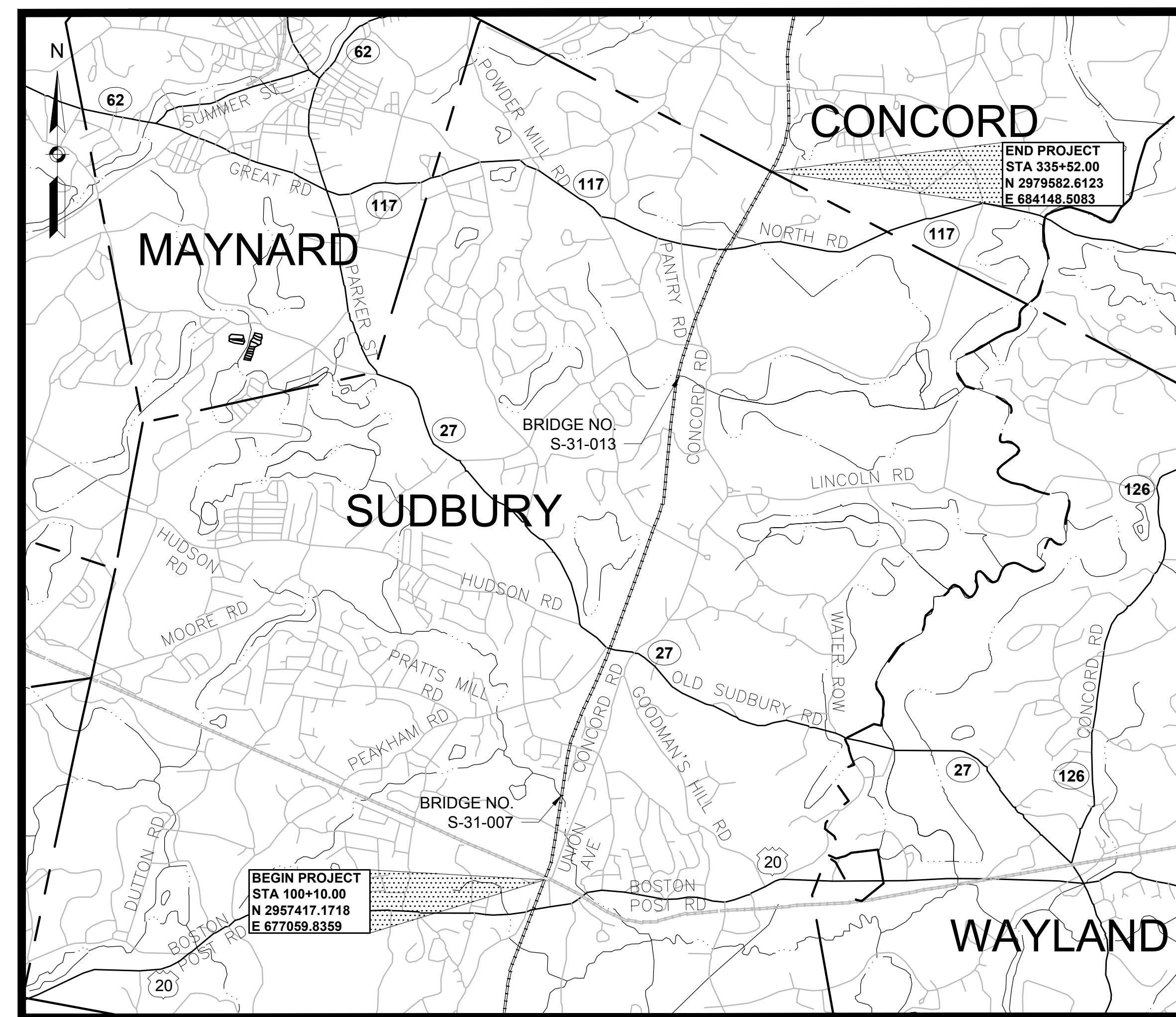
25% SUBMITTAL

| SUDBURY BRUCE FREEMAN RAIL TRAIL | | | |
|-------------------------------------|--------------------|-----------|--------------|
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
| MA | TBD | 01 | 123 |
| PROJECT FILE NO. | | 608164 | |

TITLE SHEET & INDEX

THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES DATED 1988, THE SUPPLEMENTAL SPECIFICATIONS DATED JULY 1, 2015, THE 2016 CONSTRUCTION STANDARD DETAILS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, THE 1996 CONSTRUCTION AND TRAFFIC STANDARD DETAILS (AS RELATED TO TRAFFIC STANDARD DETAILS ONLY), THE LATEST MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS WITH MASSACHUSETTS AMENDMENTS, 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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LENGTH OF PROJECT = 23,542.00 FEET = 4.459 MILES

DESIGN DESIGNATION (BRUCE FREEMAN RAIL TRAIL)

DESIGN SPEED 18-20 MPH*
* 18 MPH FOR GRADES LESS THAN 2%, 20 MPH FOR GRADES BETWEEN 2% & 4%

| DATE | DESCRIPTION | REV # |
|------|-------------|-------|
| | | |
| | | |
| | | |

| | | |
|---|--------------------------|-----------------------|
| DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION APPROVED: | | |
| | RECOMMENDED FOR APPROVAL | |
| | CHIEF ENGINEER | DATE |
| | APPROVED | |
| DIVISION ADMINISTRATOR | DATE | HIGHWAY ADMINISTRATOR |
| | | DATE |

**SUDBURY
BRUCE FREEMAN RAIL TRAIL**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|--------------------|-----------|--------------|
| MA | TBD | 02 | 131 |
| PROJECT FILE NO. | | 608164 | |

GENERAL NOTES

GENERAL ABBREVIATIONS

| | |
|---------------|--------------------------------------|
| 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 | BENCHMARK |
| BO | BY OTHERS |
| BOS | BOTTOM OF SLOPE |
| BR. | BRIDGE |
| CC | CEMENT CONCRETE |
| CCM | CEMENT CONCRETE MASONRY |
| CEM | CEMENT |
| CI | CURB INLET |
| CLF | CHAIN LINK FENCE |
| CL | CENTERLINE |
| CO. | COUNTY |
| CONC | CONCRETE |
| CONT | CONTINUOUS / CONTINUED |
| CONST | CONSTRUCTION |
| CR GR | CROWN GRADE |
| DIA | DIAMETER |
| DWY | DRIVEWAY |
| ELEV (or EL.) | ELEVATION |
| EMB | EMBANKMENT |
| EOP | EDGE OF PAVEMENT |
| EQ | EQUAL |
| EXIST (or EX) | EXISTING |
| EXC | EXCAVATION |
| FDN. | FOUNDATION |
| FDP | FULL DEPTH PAVEMENT |
| FLDSTN | FIELDSTONE |
| GAR | GARAGE |
| GD | GROUND |
| GRAN | GRANITE |
| GRAV | GRAVEL |
| GRD | GUARD |
| HMA | HOT MIX ASPHALT |
| HOR | HORIZONTAL |
| HWY | HIGHWAY |
| JCT | JUNCTION |
| LOAM | LOAM BORROW |
| LSA | LANDSCAPED AREA |
| LT | LEFT |
| MAHWL | MEAN AVERAGE HIGH WATER LINE |
| MAX | MAXIMUM |
| MB | MAILBOX |
| MHB | MASSACHUSETTS HIGHWAY BOUND |
| MIN | MINIMUM |
| MOD | MODIFIED |
| MSE | MECHANICALLY STABILIZED EARTH |
| NERR | NEW ENGLAND RAILROAD |
| NIC | NOT IN CONTRACT |
| NO. | NUMBER |
| NTS | NOT TO SCALE |
| O.C. | ON CENTER |
| O.D. | OUTSIDE DIAMETER |
| P.G.L. | PROFILE GRADE LINE |
| PREV | PREVIOUS/PREVIOUSLY |
| PROJ | PROJECT |
| PROP | PROPOSED |
| PSB | PLANTABLE SOIL BORROW |
| PVMT | PAVEMENT |
| R&D | REMOVE AND DISCARD |
| R&R | REMOVE AND RESET |
| R&S | REMOVE AND STACK |
| RD | ROAD |
| RDWY | ROADWAY |
| REB | REBUILD |
| REM | REMOVE |
| REMOD | REMODEL |
| RET | RETAIN |
| RET WALL | RETAINING WALL |
| ROW | RIGHT OF WAY |
| RR | RAILROAD |
| RT | RIGHT |
| SB | STONE BOUND |
| SHLD | SHOULDER |
| SHLO/S.H.L.O. | STATE HIGHWAY LAYOUT LINE |

GENERAL ABBREVIATIONS (CONT)

| | |
|--------|----------------------|
| ST | STREET |
| STA | STATION |
| STD | STANDARD |
| SW | SIDEWALK |
| TEMP | TEMPORARY |
| TC | TOP OF CURB |
| TOS | TOP OF SLOPE |
| TRANS | TRANSITION |
| TRM | TURF REINFORCING MAT |
| TYP | TYPICAL |
| VAR | VARIES |
| VERT | VERTICAL |
| WCR | WHEEL CHAIR RAMP |
| WP | WORKING POINT |
| X-SECT | CROSS SECTION |

UTILITY ABBREVIATIONS

| | |
|-------|--------------------------------|
| CB | CATCH BASIN |
| CBCI | CATCH BASIN WITH CURB INLET |
| CIP | CAST IRON PIPE |
| CIT | CHANGE IN TYPE |
| CMP | CORRUGATED METAL PIPE |
| CSP | CORRUGATED STEEL PIPE |
| DI | DROP INLET |
| DIP | DUCTILE IRON PIPE |
| FES | FLARED END SECTION |
| F&C | FRAME AND COVER |
| F&G | FRAME AND GRATE |
| GG | GAS GATE |
| GI | GUTTER INLET |
| GIP | GALVANIZED IRON PIPE |
| HDPE | HIGH DENSITY POLYETHYLENE PIPE |
| HDW | HEADWALL |
| HYD | HYDRANT |
| INV | INVERT |
| LB | LEACH BASIN |
| LP | LIGHT POLE |
| MH | MANHOLE |
| MW | MONITORING WELL |
| OHW | OVERHEAD WIRE |
| PVC | POLYVINYLCHLORIDE PIPE |
| PWW | PAVED WATER WAY |
| RCP | REINFORCED CONCRETE PIPE |
| SMH | SEWER MANHOLE |
| TSV&B | TAPPING SLEEVE VALVE & BOX |
| UP | UTILITY POLE |
| WG | WATER GATE |
| WIP | WROUGHT IRON PIPE |
| WM | WATER METER/WATER MAIN |

ALIGNMENT & GRADING ABBREVIATIONS

| | |
|-------|-----------------------------|
| CC | CENTER OF CURVE |
| HP | HIGH POINT |
| I.T. | INTERSECTION OF TANGENT |
| LP | LOW POINT |
| PC | POINT OF CURVATURE |
| PCC | POINT OF COMPOUND CURVATURE |
| PI | POINT OF INTERSECTION |
| PNT | POINT |
| POC | POINT ON CURVE |
| POT | POINT ON TANGENT |
| PRC | POINT OF REVERSE CURVATURE |
| PT | POINT OF TANGENCY |
| LPT | ANGLE POINT |
| R | RADIUS OF CURVATURE |
| T | TANGENT DISTANCE OF CURVE |
| TAN | TANGENT |
| 25.45 | SPOT ELEVATION |

PROFILE ABBREVIATIONS

| | |
|------|--|
| AD | ALGEBRAIC DIFFERENCE IN RATES OF GRADE |
| HSD | HORIZONTAL SIGHT DISTANCE |
| K | RATE OF VERTICAL CURVATURE |
| L | LENGTH OF CURVE |
| PVC | POINT OF VERTICAL CURVATURE |
| PVCC | POINT OF VERTICAL COMPOUND CURVATURE |
| PVI | POINT OF VERTICAL INTERSECTION |
| PVRC | POINT OF VERTICAL REVERSE CURVATURE |
| PVT | POINT OF VERTICAL TANGENCY |
| SSD | STOPPING SIGHT DISTANCE |
| VC | VERTICAL CURVE |

TRAFFIC SIGNAL

| | |
|--------|--------------------------------|
| CAB. | CABINET |
| CCVE | CLOSED CIRCUIT VIDEO EQUIPMENT |
| DW | STEADY DON'T WALK |
| FDW | FLASHING DON'T WALK |
| FR | FLASHING CIRCULAR RED |
| ←FR→ | FLASHING RED LEFT ARROW |
| →FR→ | FLASHING RED RIGHT ARROW |
| FY | FLASHING CIRCULAR YELLOW |
| ←FY→ | FLASHING YELLOW LEFT ARROW |
| →FY→ | FLASHING YELLOW RIGHT ARROW |
| G | STEADY CIRCULAR GREEN |
| ←G→ | STEADY GREEN LEFT ARROW |
| →G→ | STEADY GREEN RIGHT ARROW |
| GSL | STEADY GREEN SLASH LEFT ARROW |
| GSR | STEADY GREEN SLASH RIGHT ARROW |
| ↑G | STEADY GREEN VERTICAL ARROW |
| OL | OVERLAP |
| PED | PEDESTRIAN |
| PTZ | PAN, TILT, ZOOM |
| R | STEADY CIRCULAR RED |
| ←R→ | STEADY RED LEFT ARROW |
| →R→ | STEADY RED RIGHT ARROW |
| TR SIG | TRAFFIC SIGNAL |
| TSC | TRAFFIC SIGNAL CONDUIT |
| W | STEADY WALK |
| Y | STEADY CIRCULAR YELLOW |
| ←Y→ | STEADY YELLOW LEFT ARROW |
| →Y→ | STEADY YELLOW RIGHT ARROW |

GENERAL NOTES:

- EXISTING CONDITIONS AND TOPOGRAPHICAL INFORMATION FROM AN ACTUAL FIELD SURVEY CONDUCTED BY VHB, INC. IN DECEMBER 2015 THROUGH APRIL 2016.
- 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).
- THE CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND GRADES IN THE FIELD BEFORE COMMENCING WORK AND PROMPTLY NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
- 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 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.
- 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.
- THE CONTRACTOR SHALL VERIFY BY TEST PIT, THE LOCATIONS OF EXISTING UTILITIES WHICH MAY CONFLICT WITH PROPOSED CONDUIT AND SIGNAL EQUIPMENT. ANY FIELD ADJUSTMENTS REQUIRED WILL BE MADE AS APPROVED OR DIRECTED BY THE ENGINEER.
- 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.
- 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.
- THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES.
- EXISTING UTILITY POLES WILL BE RELOCATED BY OTHERS IF REQUIRED.
- TREES AND SHRUBS WITHIN THE LIMITS OF GRADING SHALL BE REMOVED ONLY UPON APPROVAL OF THE ENGINEER.
- 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.
- 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).
- JOINTS BETWEEN NEW ASPHALT CONCRETE ROADWAY PAVEMENT AND SAWCUT EXISTING PAVEMENT SHALL BE SEALED WITH BITUMEN AND BACKSANDS.
- AFTER MILLING OPERATIONS AND PRIOR TO PAVING THE SUPERPAVE INTERMEDIATE OR SURFACES COURSES THE ENGINEER SHALL EVALUATE THE MILLED SURFACE AND SHALL APPLY THE APPROPRIATE REPAIR METHOD IF REQUIRED.
- EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE RETAINED UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
- IF SUITABLE, ALL EXISTING GRANITE CURB & EDGING SHALL BE RE-USED IN THE PROPOSED WORK, EXCEPT CURVED STONES OF A DIFFERENT RADIUS THAN PROPOSED CURB.
- ALL PROPOSED HOT MIX ASPHALT CURB SHALL BE MASSDOT TYPE 3.
- 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.
- ALL PROPOSED BOUNDS SHALL BE PLACED BY A LICENSED PROFESSIONAL SURVEYOR. THE CONTRACTOR SHALL EXERCISE DUE CARE WHEN WORKING AROUND ALL PROPERTY BOUNDS WHICH ARE TO REMAIN. SHOULD ANY DAMAGE TO A BOUND RESULT FROM THE ACTIONS OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE THE BOUND REPLACED AND/OR REALIGNED BY A LICENSED PROFESSIONAL SURVEYOR AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST.
- DISPOSAL OF ALL SURPLUS MATERIAL SHALL BE AS APPROVED BY THE ENGINEER AND OWNER.
- LATERAL DRAIN PIPES SHALL BE INSTALLED WITH A PITCH OF 0.01 FOOT PER FOOT (MINIMUM) UNLESS NOTED OTHERWISE ON THE PLANS.

GENERAL SYMBOLS

| EXISTING | PROPOSED | DESCRIPTION |
|----------|----------|---|
| | | JERSEY BARRIER |
| | | CATCH BASIN |
| | | CATCH BASIN CURB INLET |
| | | FLAG POLE |
| | | GAS PUMP |
| | | MAIL BOX |
| | | POST SQUARE |
| | | POST CIRCULAR |
| | | WELL |
| | | ELECTRIC HANDHOLE |
| | | FENCE GATE POST |
| | | GAS GATE |
| | | BORING HOLE |
| | | MONITORING WELL |
| | | TEST PIT |
| | | HYDRANT |
| | | LIGHT POLE |
| | | COUNTY BOUND |
| | | GPS POINT |
| | | CABLE MANHOLE |
| | | DRAINAGE MANHOLE |
| | | ELECTRIC MANHOLE |
| | | GAS MANHOLE |
| | | MISC MANHOLE |
| | | SEWER MANHOLE |
| | | TELEPHONE MANHOLE |
| | | WATER MANHOLE |
| | | MASSACHUSETTS HIGHWAY BOUND |
| | | MONUMENT |
| | | STONE BOUND |
| | | TOWN OR CITY BOUND |
| | | TRAVERSE OR TRIANGULATION STATION |
| | | TROLLEY POLE OR GUY POLE |
| | | TRANSMISSION POLE |
| | | UTILITY POLE W/ FIREBOX |
| | | UTILITY POLE WITH DOUBLE LIGHT |
| | | UTILITY POLE W / 1 LIGHT |
| | | UTILITY POLE |
| | | BUSH |
| | | TREE |
| | | STUMP |
| | | SWAMP / MARSH |
| | | WATER GATE |
| | | PARKING METER |
| | | OVERHEAD CABLE/WIRE |
| | | CURBING |
| | | CONTOURS (ON-THE-GROUND SURVEY DATA) |
| | | CONTOURS (PHOTOGRAMMETRIC DATA) |
| | | UNDERGROUND DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER) |
| | | UNDERGROUND ELECTRIC DUCT (DOUBLE LINE 24 INCH AND OVER) |
| | | UNDERGROUND GAS MAIN (DOUBLE LINE 24 INCH AND OVER) |
| | | UNDERGROUND SEWER MAIN (DOUBLE LINE 24 INCH AND OVER) |
| | | UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AND OVER) |
| | | UNDERGROUND WATER MAIN (DOUBLE LINE 24 INCH AND OVER) |
| | | BALANCED STONE WALL |
| | | GUARD RAIL - STEEL POSTS |
| | | GUARD RAIL - WOOD POSTS |
| | | CHAIN LINK OR METAL FENCE |
| | | WOOD FENCE |
| | | EROSION CONTROL |
| | | DRAINAGE SWALE |
| | | TREE LINE |
| | | SAWCUT LINE |
| | | TOP OR BOTTOM OF SLOPE |
| | | LIMIT OF EDGE OF PAVEMENT OR COLD PLANE AND OVERLAY |
| | | BANK OF RIVER OR STREAM |
| | | BORDER OF WETLAND |
| | | 100 FT WETLAND BUFFER |
| | | 200 FT RIVERFRONT BUFFER |
| | | STATE HIGHWAY LAYOUT |
| | | TOWN OR CITY LAYOUT |
| | | COUNTY LAYOUT |
| | | RAILROAD SIDELINE |
| | | TOWN OR CITY BOUNDARY LINE |
| | | PROPERTY LINE OR APPROXIMATE PROPERTY LINE |
| | | EASEMENT |

TRAFFIC SYMBOLS

| EXISTING | PROPOSED | DESCRIPTION |
|----------|----------|--|
| | | CONTROLLER PHASE ACTUATED |
| | | TRAFFIC SIGNAL HEAD (SIZE AS NOTED) |
| | | WIRE LOOP DETECTOR (6' x 6' TYP UNLESS OTHERWISE SPECIFIED) |
| | | VIDEO DETECTION CAMERA |
| | | MICROWAVE DETECTOR |
| | | PEDESTRIAN PUSH BUTTON, SIGN (DIRECTIONAL ARROW AS SHOWN) AND SADDLE |
| | | EMERGENCY PREEMPTION CONFIRMATION STROBE LIGHT |
| | | VEHICULAR SIGNAL HEAD |
| | | VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED |
| | | FLASHING BEACON |
| | | PEDESTRIAN SIGNAL HEAD, (TYPE AS NOTED OR AS SPECIFIED) |
| | | RAILROAD SIGNAL |
| | | SIGNAL POST AND BASE (ALPHA-NUMERIC DESIGNATION NOTED) |
| | | MAST ARM, SHAFT AND BASE (ARM LENGTH AS NOTED) |
| | | HIGH MAST POLE OR TOWER |
| | | SIGN AND POST |
| | | SIGN AND POST (2 POSTS) |
| | | MAST ARM WITH LUMINAIRE |
| | | OPTICAL PRE-EMPTION DETECTOR |
| | | CONTROL CABINET, GROUND MOUNTED |
| | | CONTROL CABINET, POLE MOUNTED |
| | | FLASHING BEACON CONTROL AND METER PEDESTAL |
| | | LOAD CENTER ASSEMBLY |
| | | PULL BOX 12"x12" (OR AS NOTED) |
| | | ELECTRIC HANDHOLE 12"x24" (OR AS NOTED) |
| | | TRAFFIC SIGNAL CONDUIT |

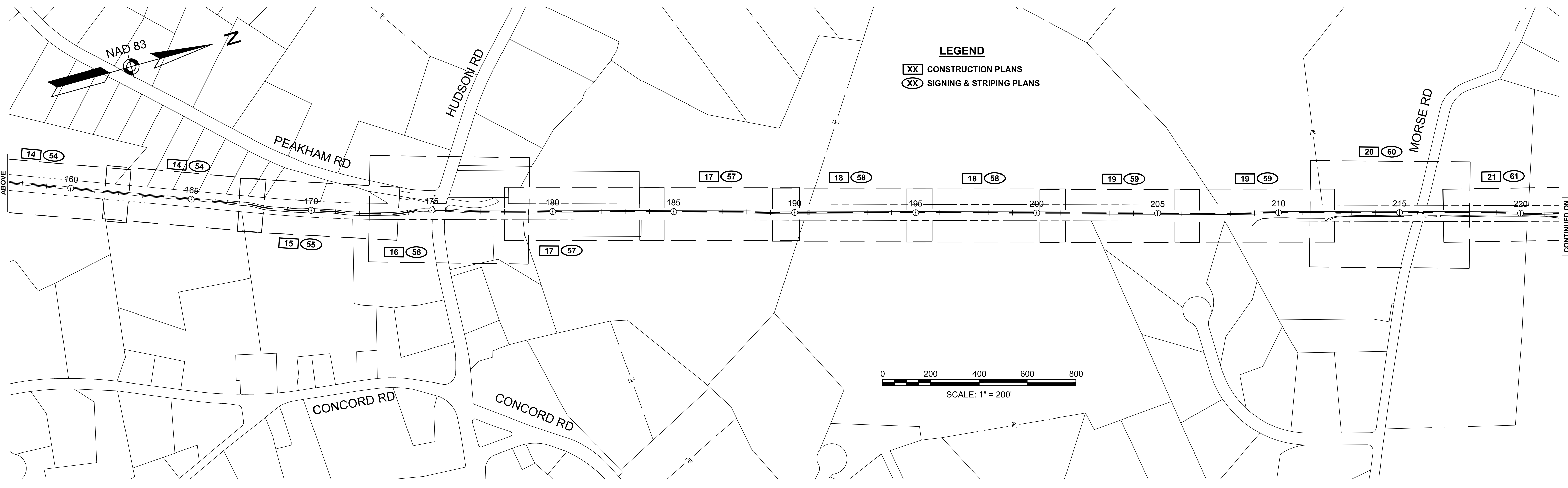
PAVEMENT MARKINGS SYMBOLS

| EXISTING | PROPOSED | DESCRIPTION |
|----------|----------|------------------------------|
| | | PAVEMENT ARROW - WHITE |
| | | LEGEND "ONLY" - WHITE |
| | | STOP LINE |
| | | CROSSWALK |
| | | SOLID WHITE LINE |
| | | SOLID YELLOW LINE |
| | | BROKEN WHITE LINE |
| | | BROKEN YELLOW LINE |
| | | DOTTED WHITE LINE |
| | | DOTTED YELLOW LINE |
| | | DOTTED WHITE LINE EXTENSION |
| | | DOTTED YELLOW LINE EXTENSION |
| | | DOUBLE WHITE LINE |
| | | DOUBLE YELLOW LINE |
| | | LONG DASHED YELLOW LINE |

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KEY PLAN & BORING LOCATIONS



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CONTINUED ON SHEET NO. 05

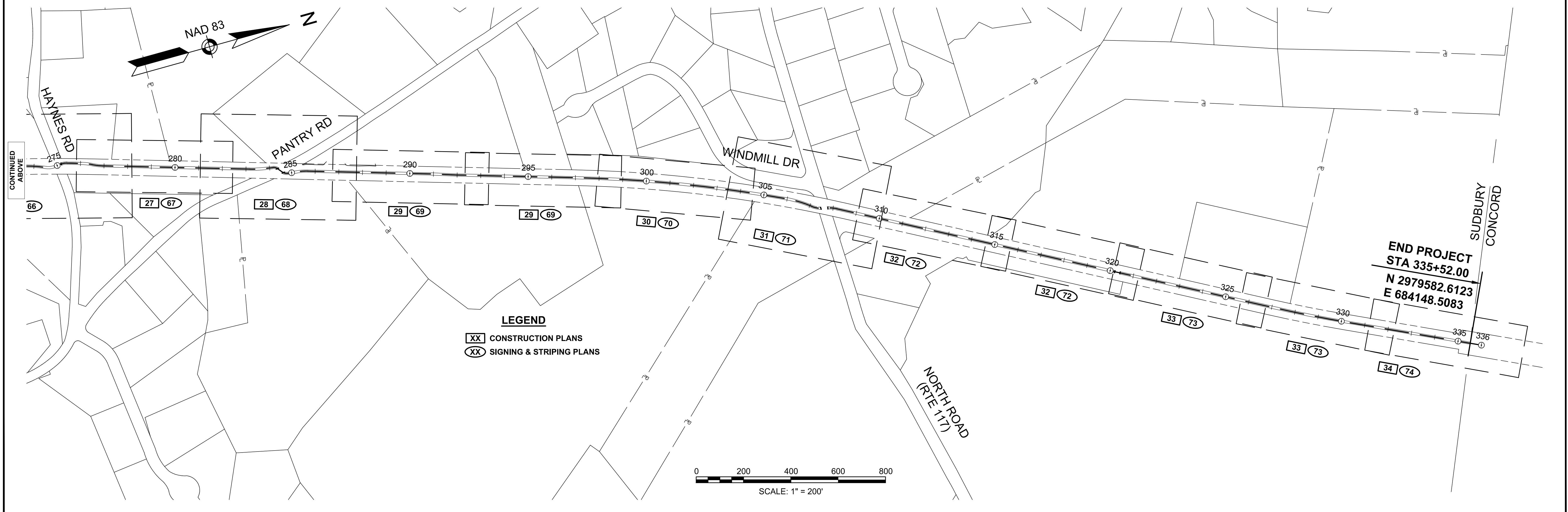
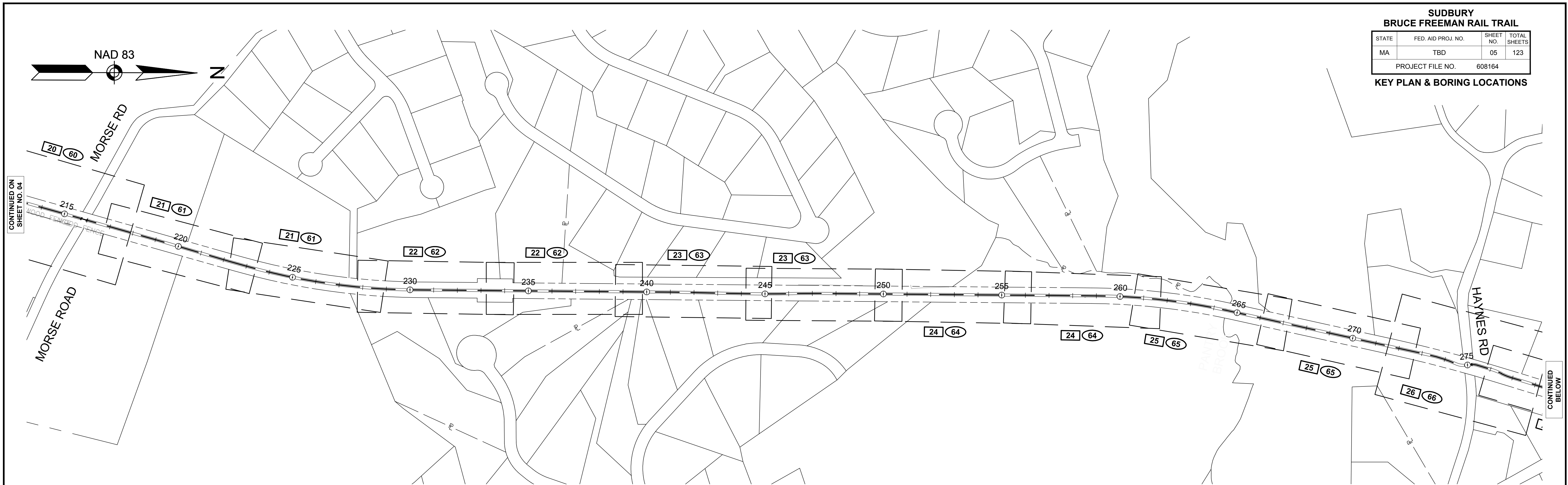
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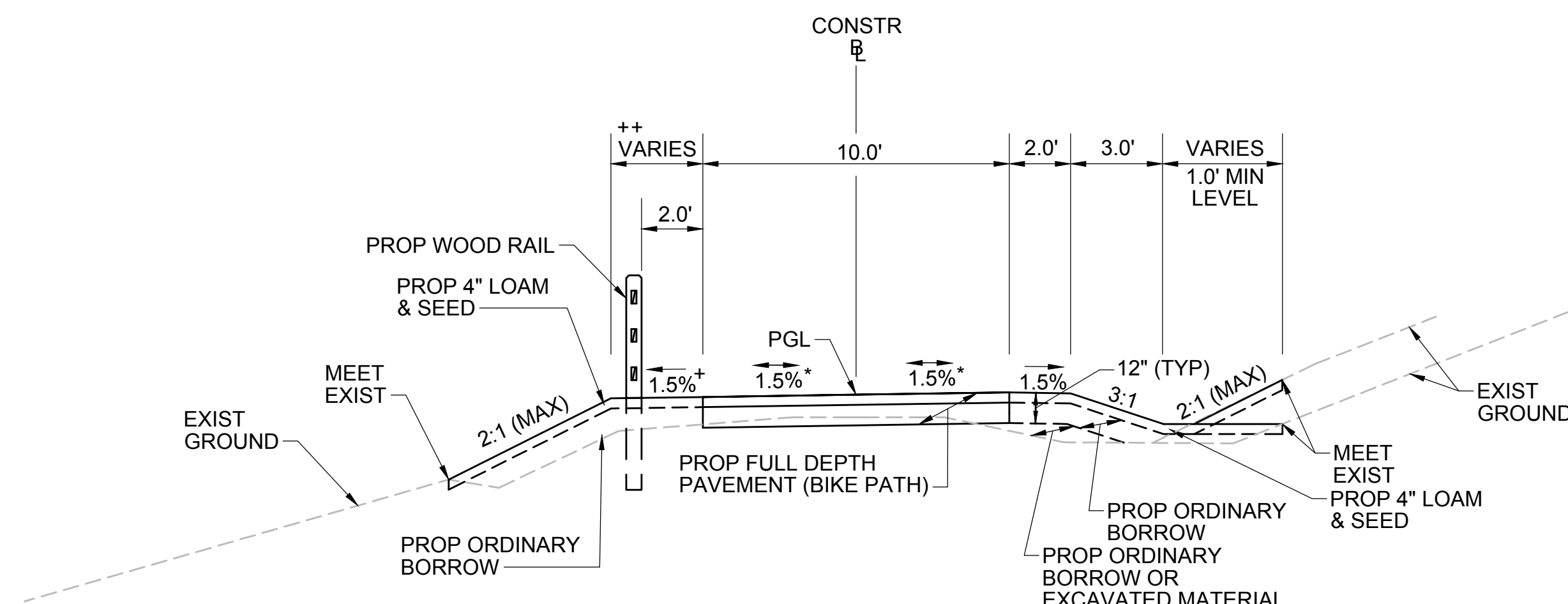
KEY PLAN & BORING LOCATIONS



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BRUCE FREEMAN RAIL TRAIL**

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TYPICAL SECTIONS

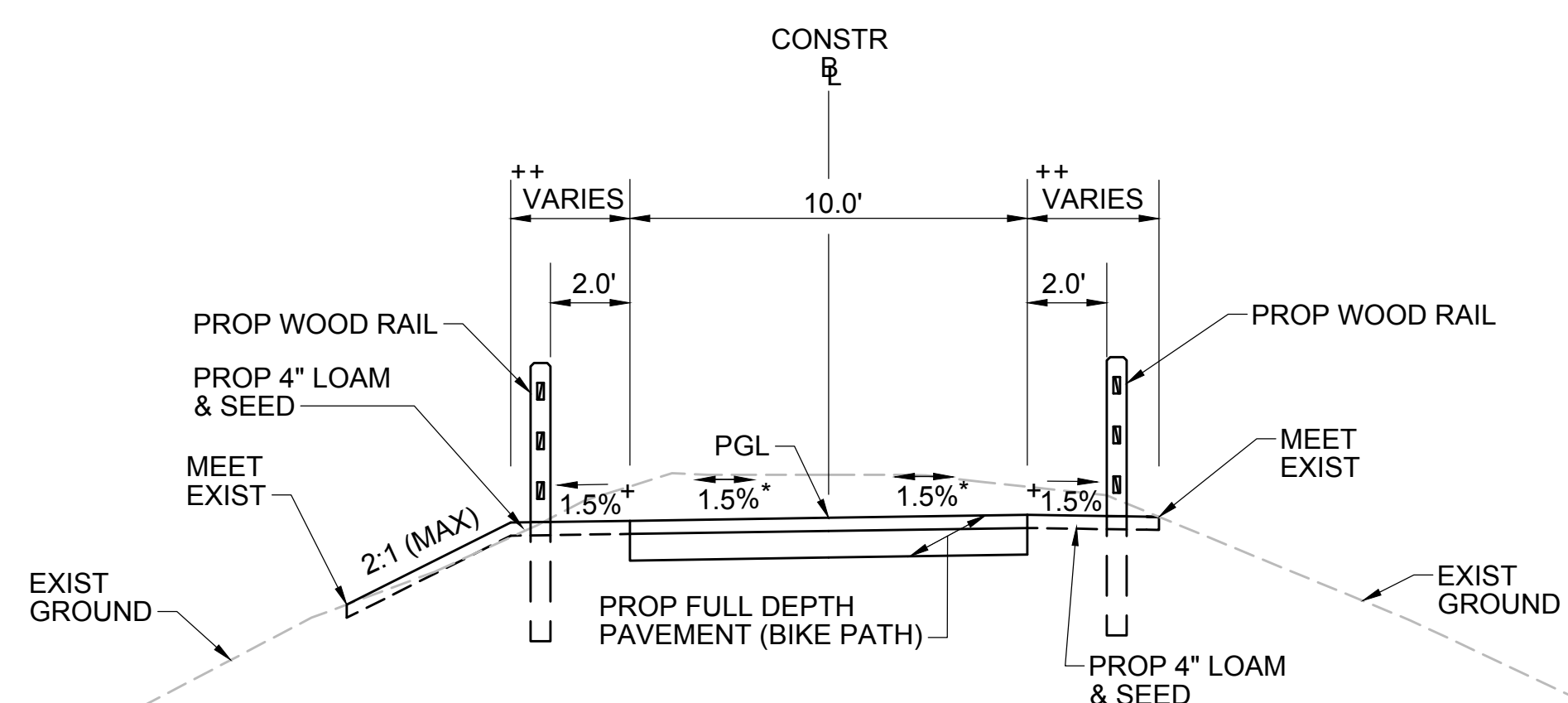


TYPICAL SECTION - SWALE RIGHT SIDE

STA 143+25± TO STA 145+25±
STA 151+00± TO STA 152+25±
STA 254+25± TO STA 257+25±
NTS

*TOLERANCE FOR CONSTRUCTION ±0.5%
+ SHOULDERS CAN BE UP TO 6:1 SLOPE TO AVOID CHASING SLOPES
++ 2.0' MIN TO IT FOR NO WOOD RAIL
3.0' MIN TO IT FOR WOOD RAIL

SEE CROSS SECTIONS FOR MORE INFORMATION



TYPICAL SECTION - CUT INTO EMBANKMENT

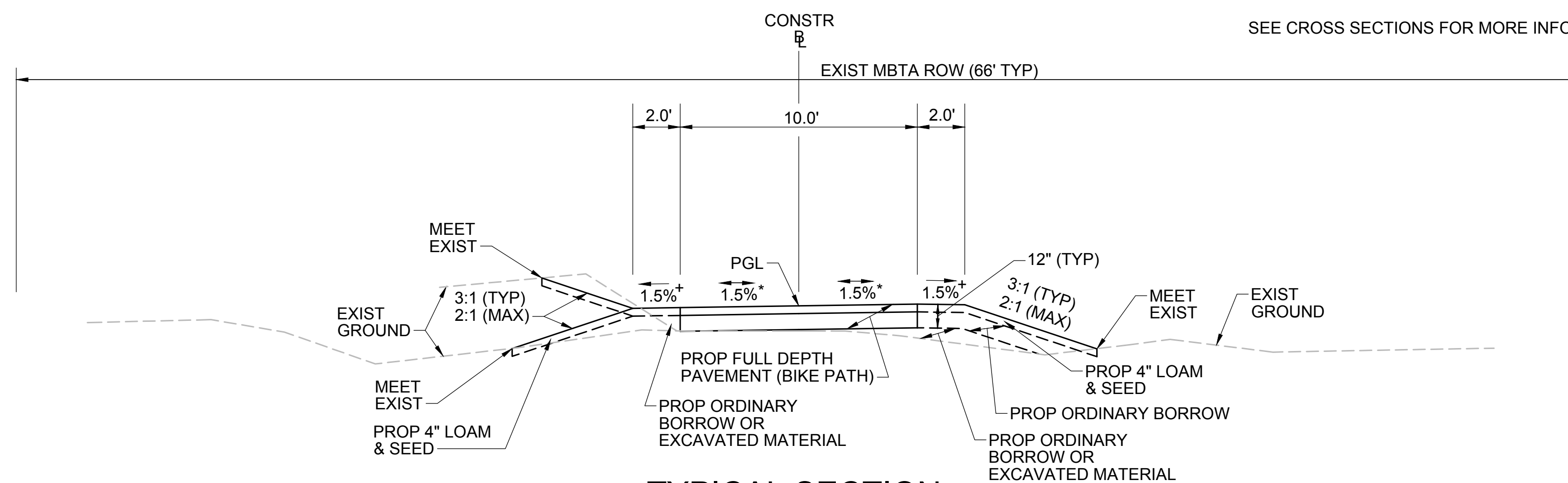
STA 104+75± TO STA 107+50±
STA 109+25± TO STA 111+25±
STA 118+75± TO STA 131+75±
STA 138+75± TO STA 141+25±
STA 158+25± TO STA 163+00±

STA 196+25± TO STA 199+75±
STA 221+50± TO STA 229+25±
STA 235+40± TO STA 249+25±
STA 260+75± TO STA 266+75±
STA 308+75± TO STA 316+25±

STA 321+25± TO STA 333+75±

*TOLERANCE FOR CONSTRUCTION ±0.5%
+ SHOULDERS CAN BE UP TO 6:1 SLOPE TO AVOID CHASING SLOPES
++ 2.0' MIN TO IT FOR NO WOOD RAIL
3.0' MIN TO IT FOR WOOD RAIL

SEE CROSS SECTIONS FOR MORE INFORMATION



TYPICAL SECTION

STA 100+10± TO STA 104+75±
STA 107+50± TO STA 109+25±
STA 111+25± TO STA 118+75±
STA 131+75± TO STA 138+75±
STA 141+25± TO STA 143+25±

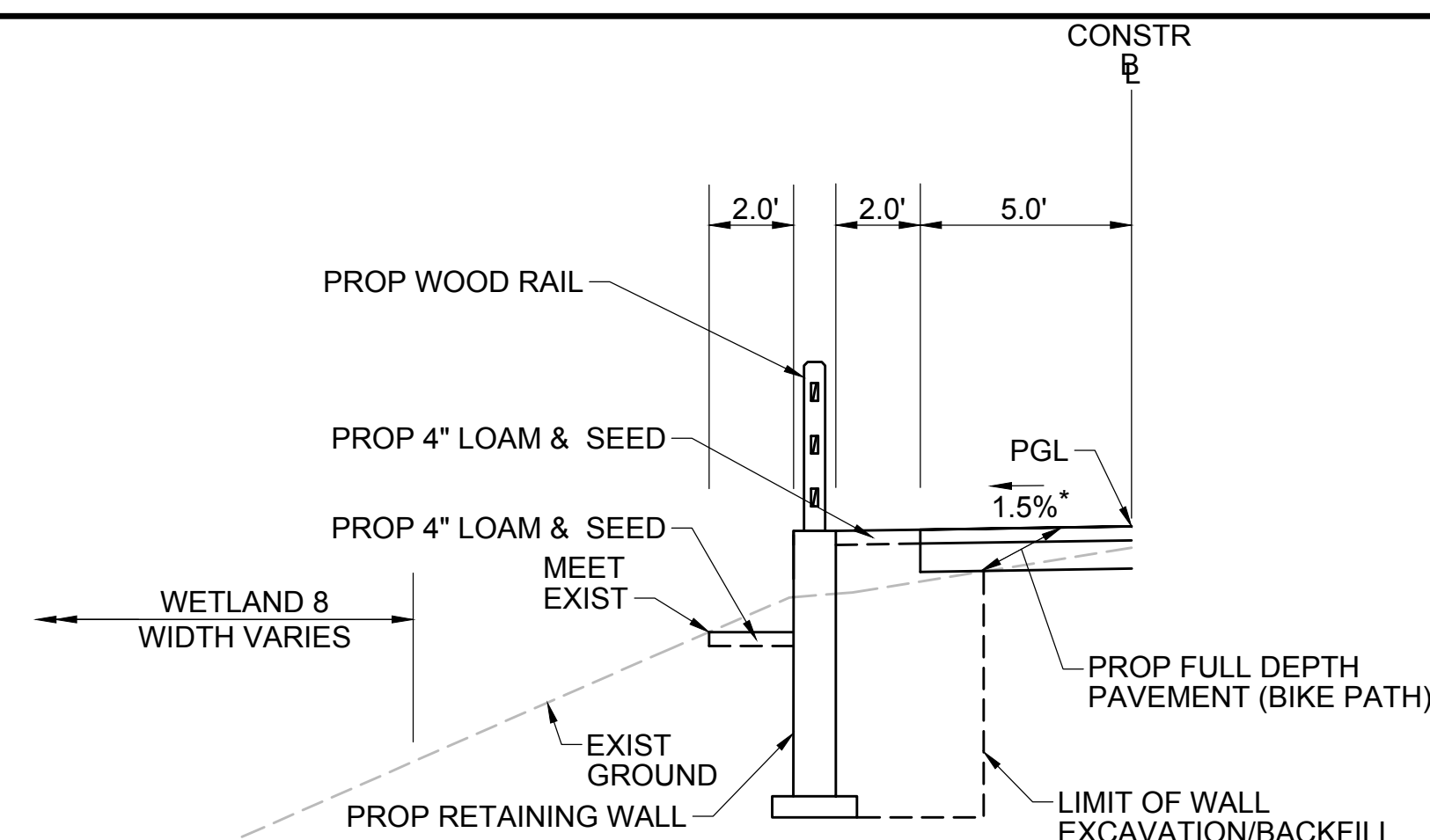
STA 152+25± TO STA 158+25±
STA 163+00± TO STA 163+75±
STA 164+75± TO STA 165+75±
STA 174+75± TO STA 184+75±
STA 191+25± TO STA 196+25±

STA 199+75± TO STA 221+50±
STA 249+25± TO STA 252+75±
STA 258+75± TO STA 260+75±
STA 270+25± TO STA 272+25±
STA 273+75± TO STA 285+25±

STA 307+46± TO STA 308+75±
STA 316+25± TO STA 321+25±
STA 333+75± TO STA 335+52±

*TOLERANCE FOR CONSTRUCTION ±0.5%
+ SHOULDERS CAN BE UP TO 6:1 SLOPE TO AVOID CHASING SLOPES

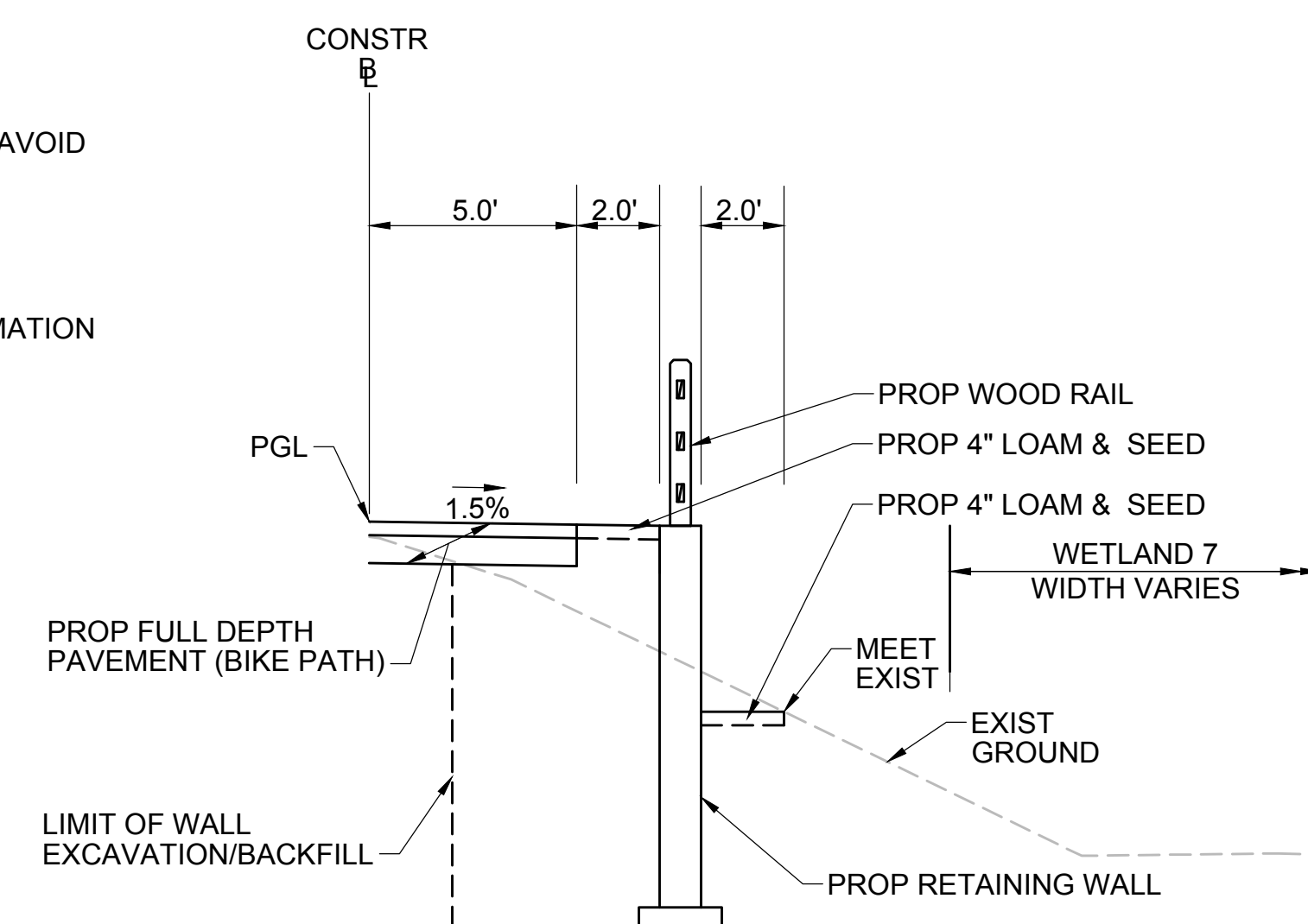
SEE CROSS SECTIONS FOR MORE INFORMATION



WALL SECTION LT

STA 283+89± TO STA 284+33±
NTS

*TOLERANCE FOR CONSTRUCTION ±0.5%



WALL SECTION RT

STA 284+62± TO STA 285+25±
NTS

*TOLERANCE FOR CONSTRUCTION ±0.5%

PAVEMENT NOTES

PROPOSED FULL DEPTH PAVEMENT (PATH)

SURFACE: 1.5" SUPERPAVE SURFACE COURSE - 9.5 (SSC - 9.5)
INTERMEDIATE: 2.5" SUPERPAVE INTERMEDIATE COURSE - 19.0 (SIC - 19.0)
SUBBASE: 4-8" GRAVEL BORROW, TYPE b
LEVELING COURSE AS A BASE OVER EXIST BALLAST OR CONCRETE SLAB

***NOTE:**

EXIST GRAVEL/BALLAST SUBGROUND MATERIAL DETERMINED BY THE ENGINEER TO BE SUITABLE SHALL REMAIN. THE DEPTH OF THE GRAVEL BORROW WILL BE AS REQUIRED BASED ON THE PROPOSED SUB-BASE ELEVATIONS.

AFTER REMOVAL OF STEEL RAILS AND WOOD TIMBER, ROUGH GRADE AND COMPACT SUBGROUND AREA. THEN PLACE AND COMPACT GRAVEL BORROW SUB-BASE MATERIAL IN MULTIPLE LIFTS.

PROPOSED CEMENT CONCRETE WHEELCHAIR RAMP

SURFACE: 6" CEMENT CONCRETE AIR ENTRAINED 4000 PSI, 3/4", 610 WITH 6"x6" WWM
SUBBASE: 8" GRAVEL BORROW, TYPE b

PROPOSED HOT MIX ASPHALT WALK

SURFACE: 1" SUPERPAVE SURFACE COURSE 9.5 (SSC - 9.5) OVER 1.5" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC - 12.5) OVER
SUBBASE: 8" GRAVEL BORROW, TYPE b

PROPOSED HOT MIX ASPHALT DRIVEWAY

SURFACE: 1.5" SUPERPAVE SURFACE COURSE 9.5 (SSC - 9.5) OVER 2" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC - 12.5) OVER
SUBBASE: 8" GRAVEL BORROW, TYPE b

PROPOSED FULL DEPTH PAVEMENT (PEAKHAM ROAD)

SURFACE: 1.75" SUPERPAVE SURFACE COURSE - 12.5 (SSC - 12.5)
INTERMEDIATE: 2.25" SUPERPAVE INTERMEDIATE COURSE - 19.0 (SIC - 19.0)
BASE: 3.25" SUPERPAVE BASE COURSE - 25.0 (SBC - 25.0)
SUBBASE: 12" GRAVEL BORROW, TYPE b

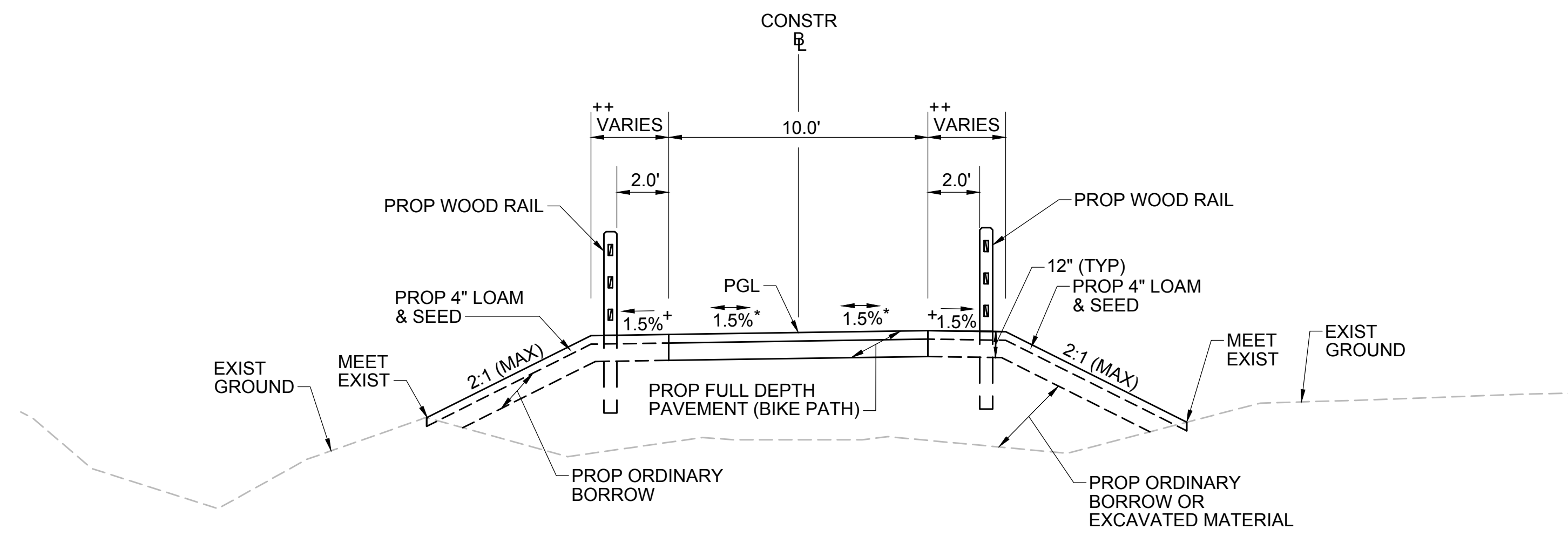
NOTES:

- ALL HOT MIX ASPHALT SHALL BE PRODUCED WITH A WARM-MIX ASPHALT ADDITIVE.
- ALL HOT MIX ASPHALT PAVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 450 QUALITY ASSURANCE FOR HMA AND SHALL BE PRODUCED IN ACCORDANCE WITH SECTION 455 SUPERPAVE HMA SPECIFICATIONS.
- 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.
- ALL HOT MIX ASPHALT DRIVEWAYS SHALL BE MEASURED AND PAID FOR UNDER ITEM 703 OF STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.

| SUDBURY BRUCE FREEMAN RAIL TRAIL | | | |
|-------------------------------------|--------------------|-----------|--------------|
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
| MA | TBD | 07 | 123 |
| PROJECT FILE NO. | | 608164 | |

PAVEMENT NOTES
SEE SHEET 06

TYPICAL SECTIONS

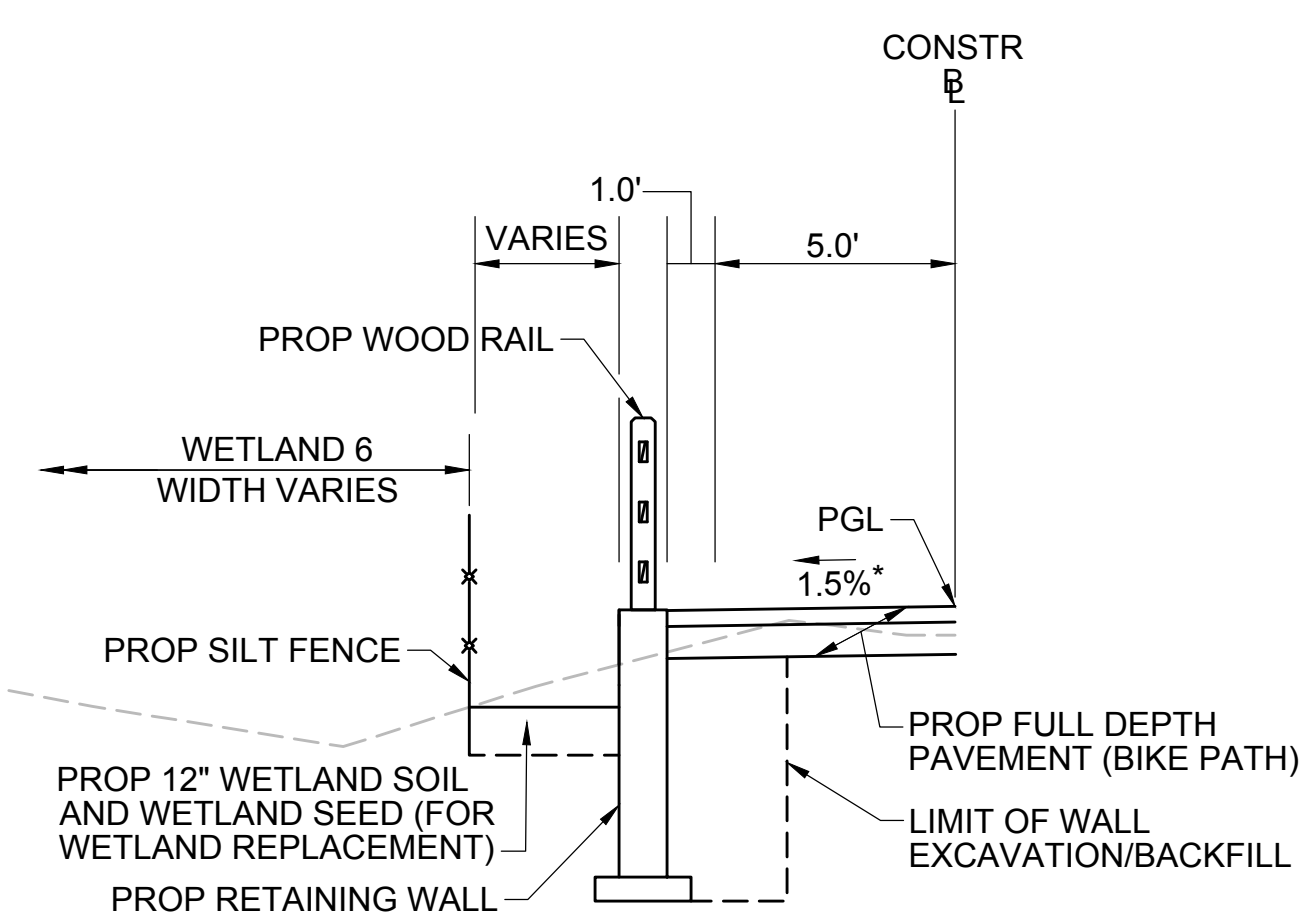


TYPICAL SECTION - WITH RAILING

STA 165+75± TO STA 166+50± STA 257+25± TO STA 258+75±
 STA 174+00± TO STA 174+75± STA 266+75± TO STA 270+25±
 STA 184+75± TO STA 191+25± STA 272+25± TO STA 273+75±
 STA 229+25± TO STA 231+75± STA 285+25± TO STA 292+00±

*TOLERANCE FOR CONSTRUCTION ±0.5%
 † SHOULDER CAN BE UP TO 6:1 SLOPE TO AVOID CHASING SLOPES
 ** 2.0' TO IT FOR NO WOOD RAIL
 3.0' TO IT FOR WOOD RAIL

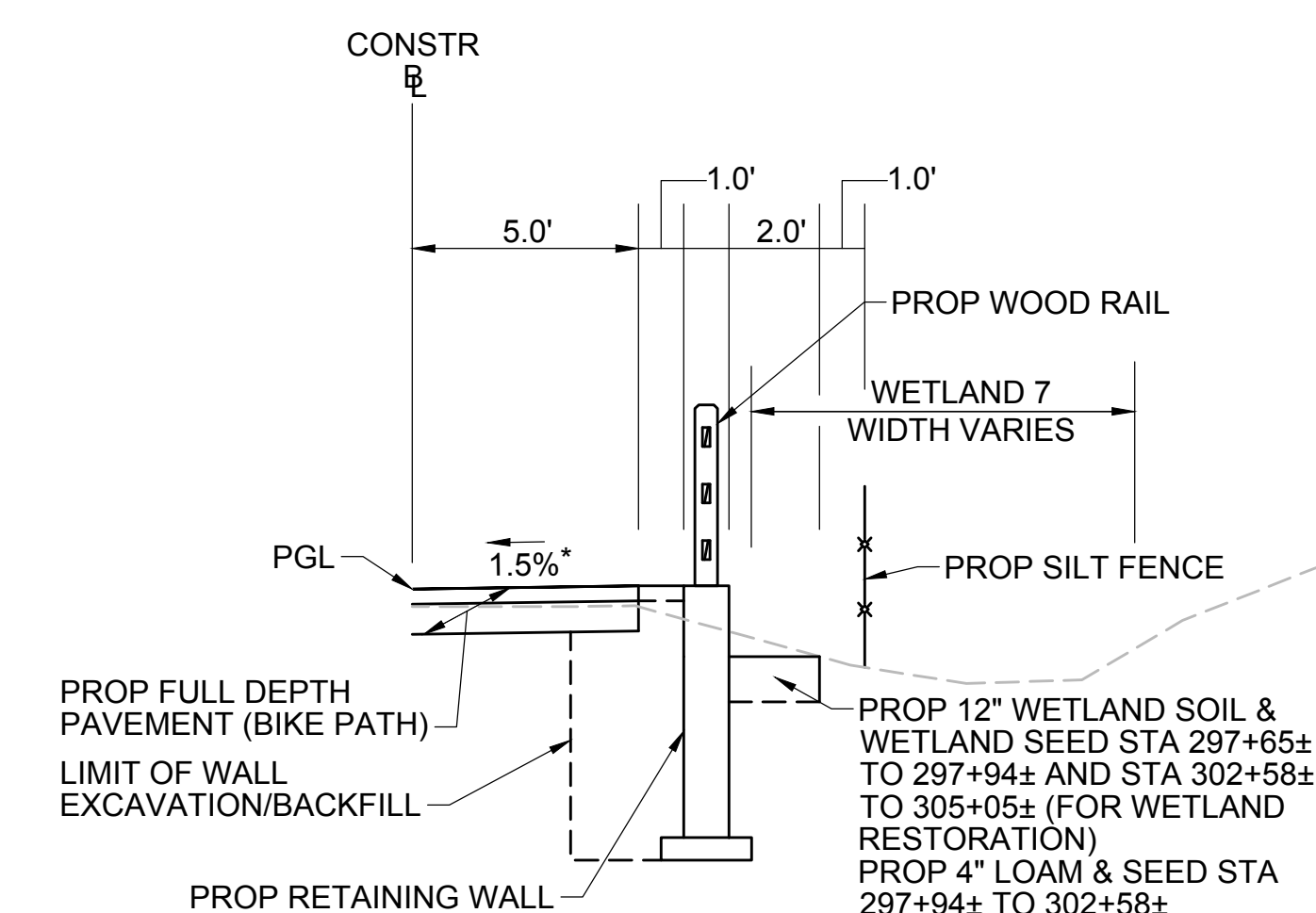
SEE CROSS SECTIONS FOR MORE INFORMATION



WALL SECTION LT - REDUCED WIDTH

STA 298+35± TO STA 302+95±

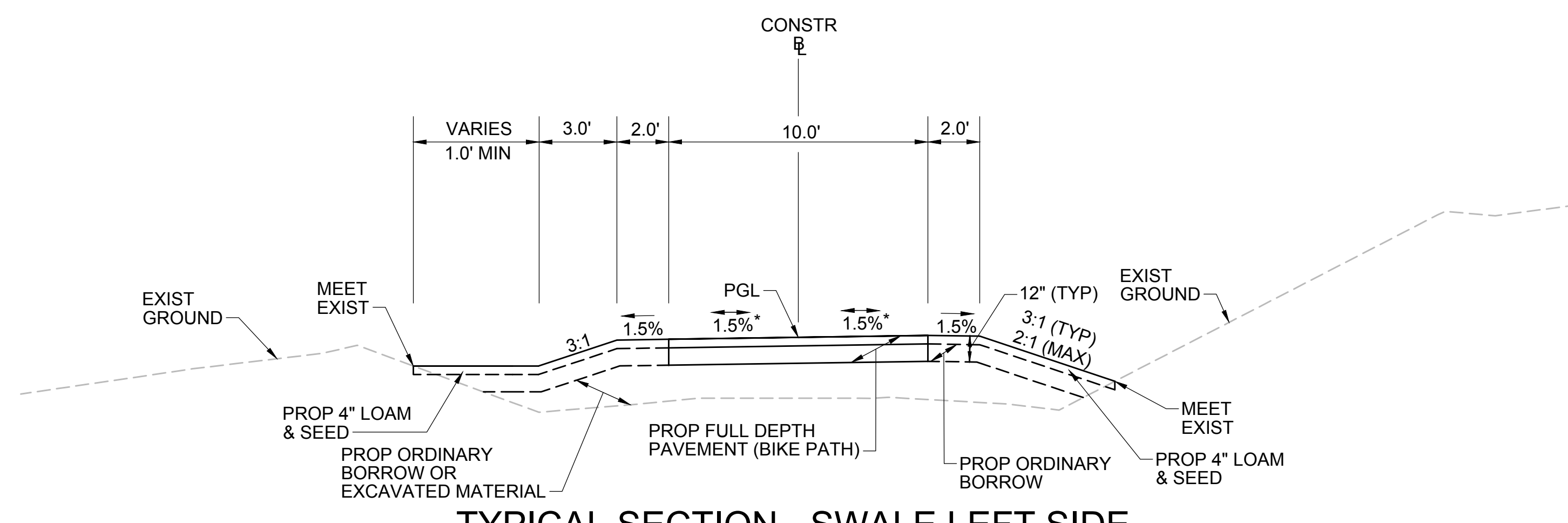
*TOLERANCE FOR CONSTRUCTION ±0.5%



WALL SECTION RT - REDUCED WIDTH

STA 294+65± TO STA 305+05±

*TOLERANCE FOR CONSTRUCTION ±0.5%

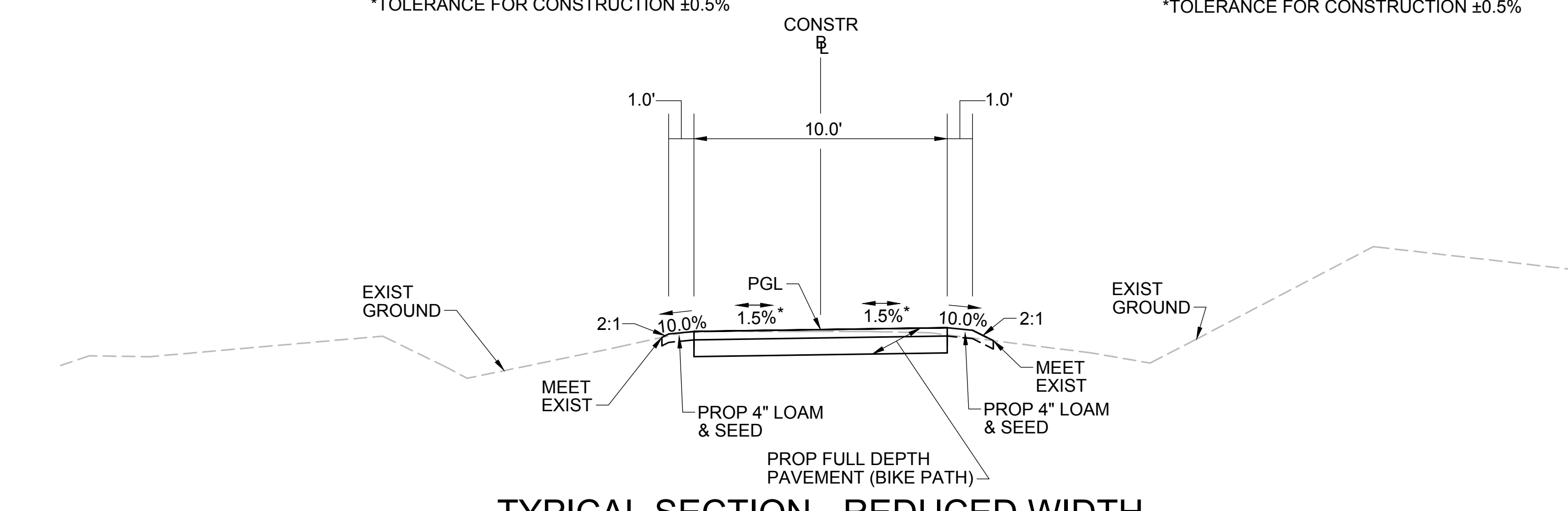


TYPICAL SECTION - SWALE LEFT SIDE

STA 163+75± TO STA 164+75±

*TOLERANCE FOR CONSTRUCTION ±0.5%

SEE CROSS SECTIONS FOR MORE INFORMATION

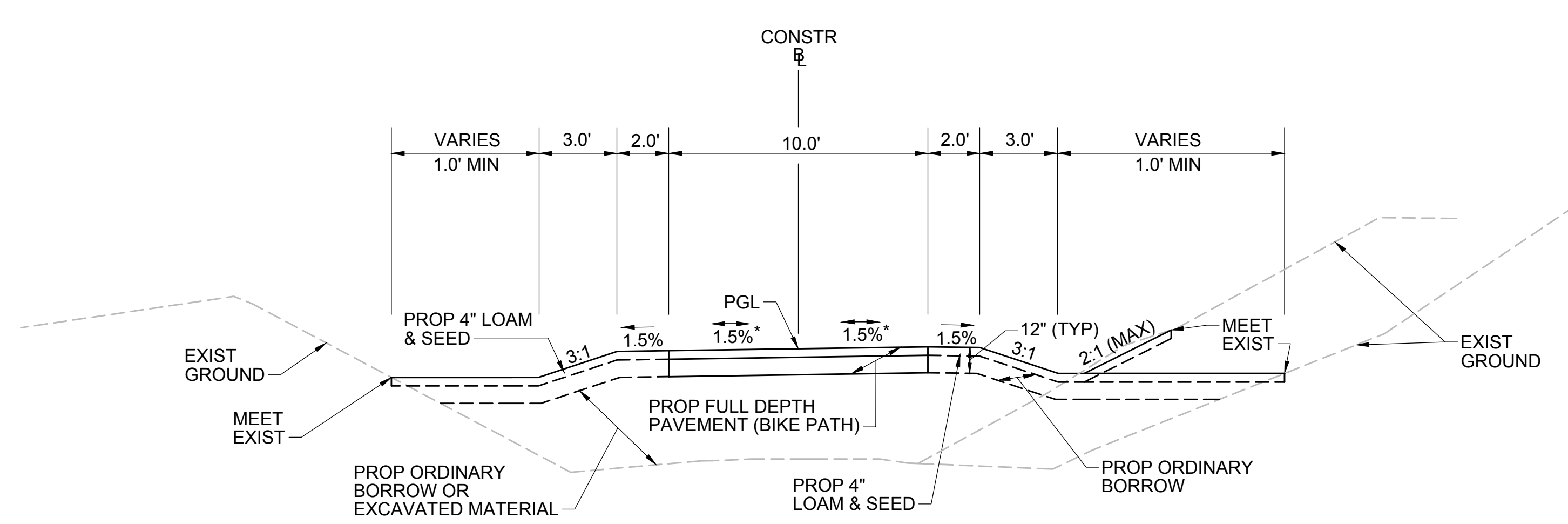


TYPICAL SECTION - REDUCED WIDTH

STA 292+00± TO STA 307+46±

*TOLERANCE FOR CONSTRUCTION ±0.5%

SEE CROSS SECTIONS FOR MORE INFORMATION

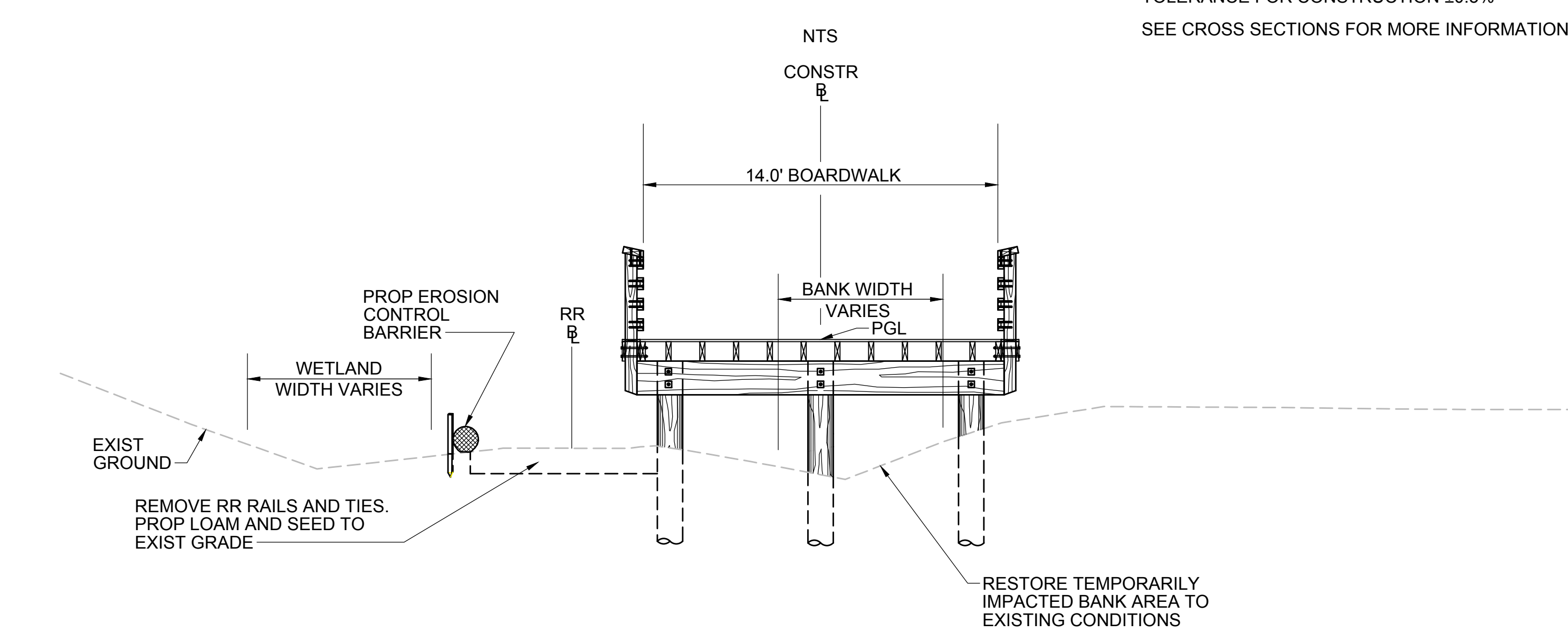


TYPICAL SECTION - SWALE BOTH SIDES

STA 145+25± TO STA 151+00±
 STA 231+75± TO STA 235+40±
 STA 252+75± TO STA 254+25±

*TOLERANCE FOR CONSTRUCTION ±0.5%

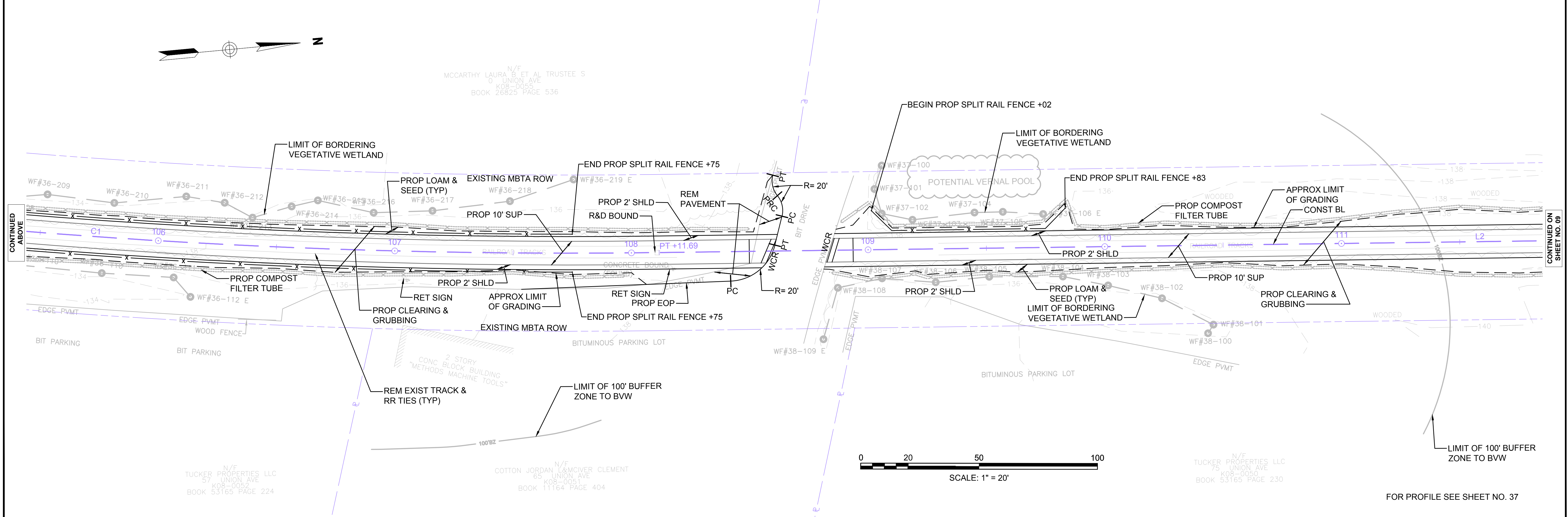
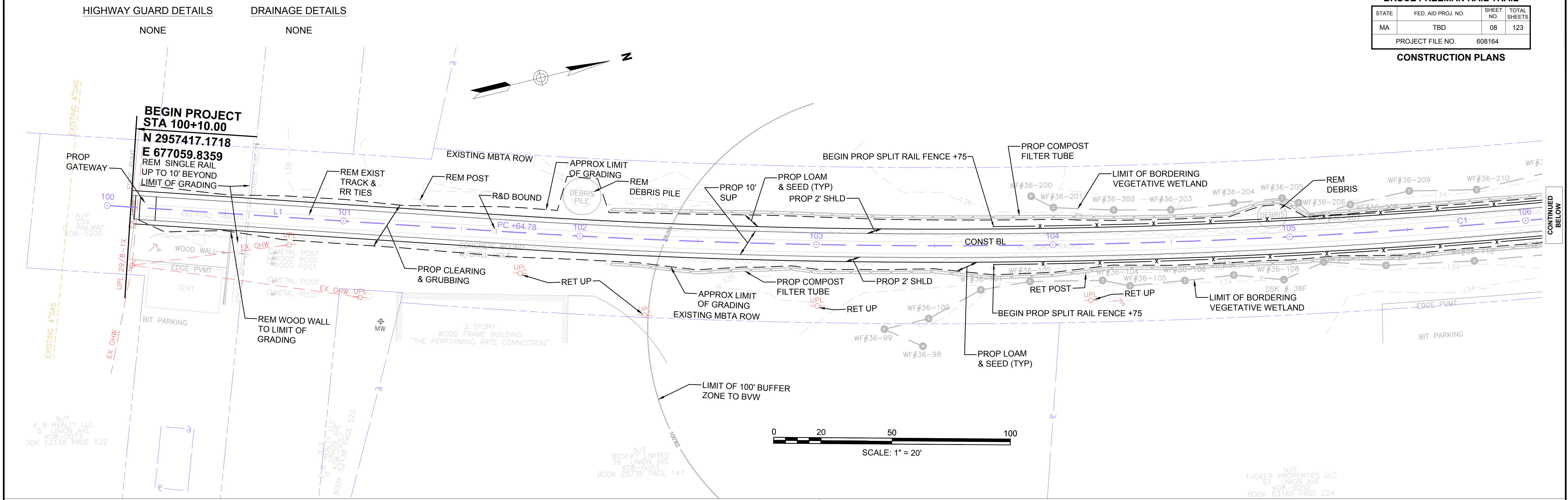
SEE CROSS SECTIONS FOR MORE INFORMATION



TYPICAL SECTION - BOARDWALK

STA 166+50± TO STA 174+00±

NTS



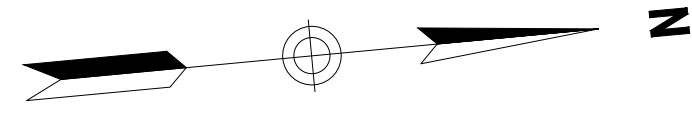
FOR PROFILE SEE SHEET NO. 37

HIGHWAY GUARD DETAILS

NONE

DRAINAGE DETAILS

NONE



| SUDBURY BRUCE FREEMAN RAIL TRAIL | | | |
|-------------------------------------|--------------------|-----------|--------------|
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
| MA | TBD | 09 | 123 |
| PROJECT FILE NO. | | 608164 | |
| CONSTRUCTION PLANS | | | |

N/F
MCIVER CLEMENT L TR
71 UNION AVE
K08-0057
BOOK 14385 PAGE 266

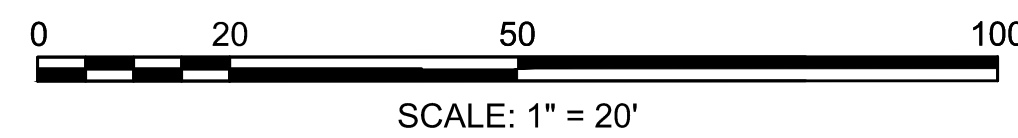
N/F
CAVICCHIO PAUL F JR
0 CODJER LN
J08-0501
BOOK 25172 PAGE 58

N/F
CAVICCHIO PAUL F JR
0 CODJER LN
J08-0502
BOOK 25172 PAGE 58

N/F
CAVICCHIO PAUL F JR
0 CODJER LN
J08-0503
BOOK 25172 PAGE 58

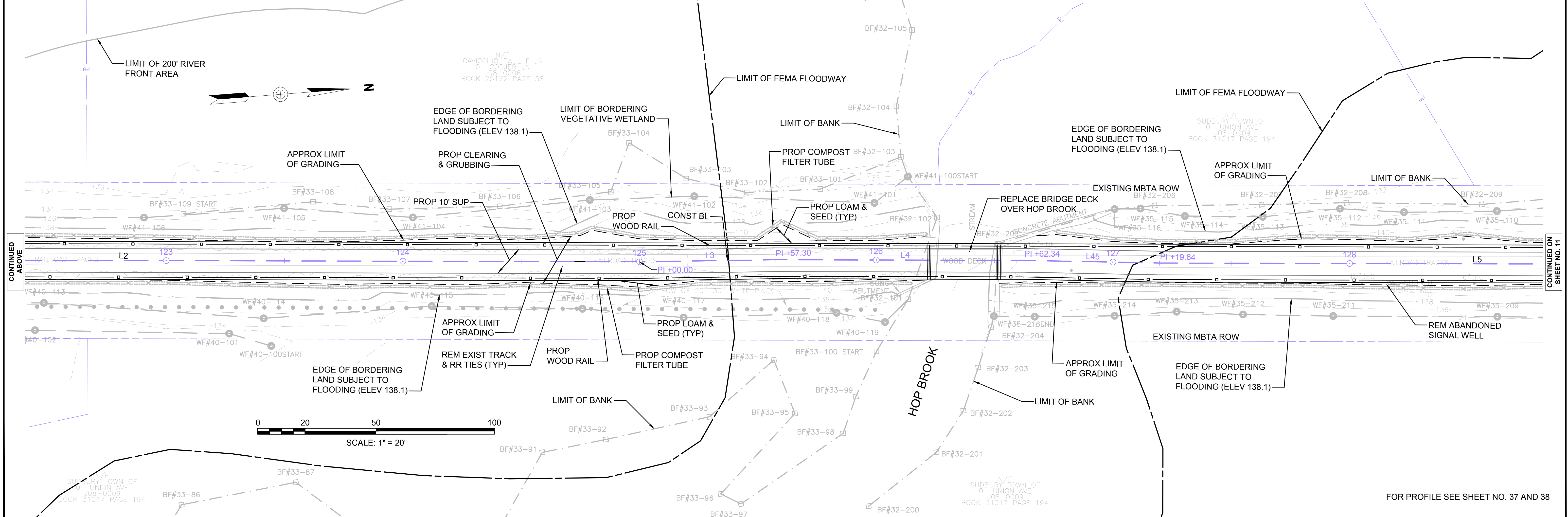
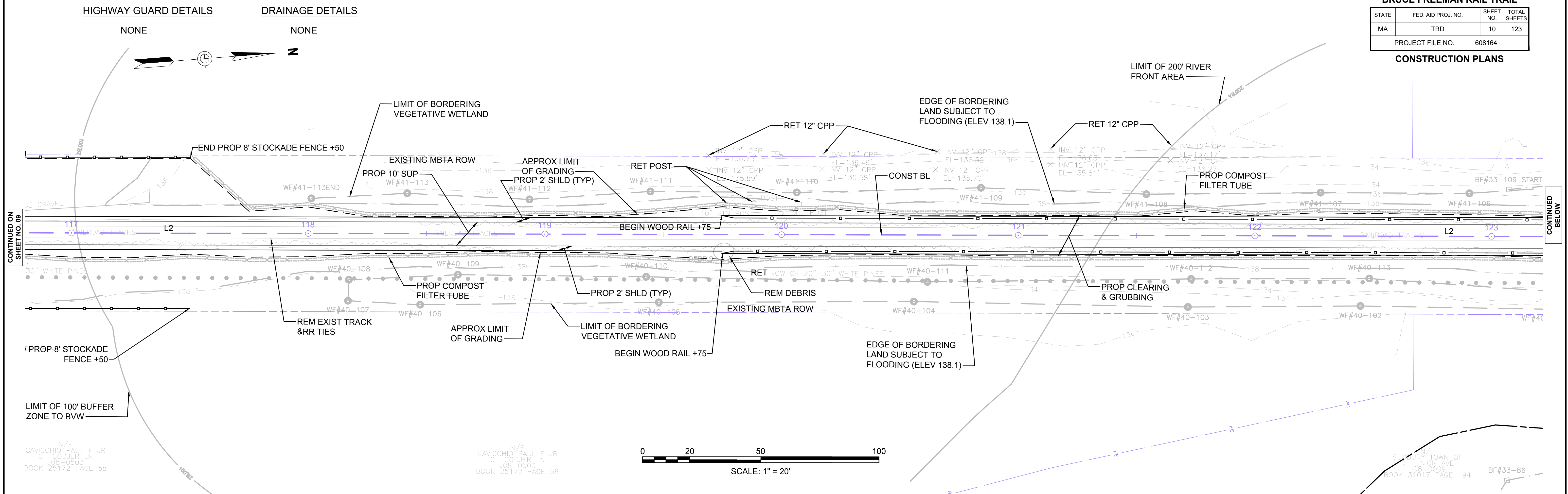
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CONTINUED ON SHEET NO. 10



FOR PROFILE SEE SHEET NO. 37

608164_HDGEN.DWG Plotted on 15-Sep-2017 1:43 PM



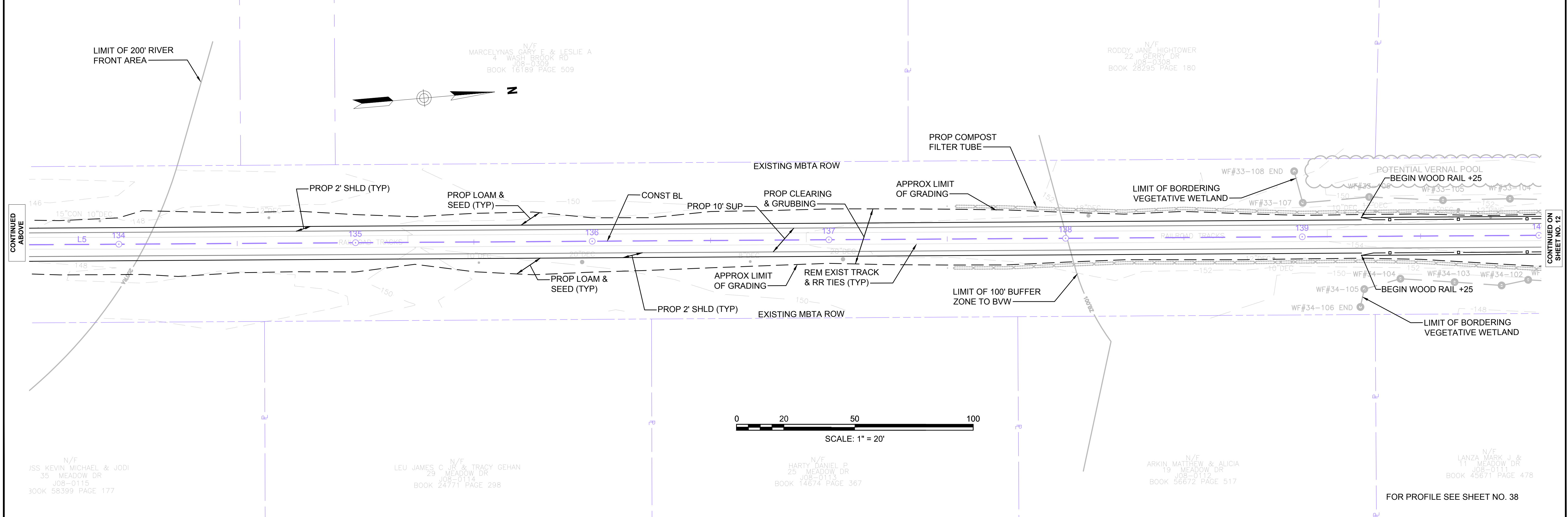
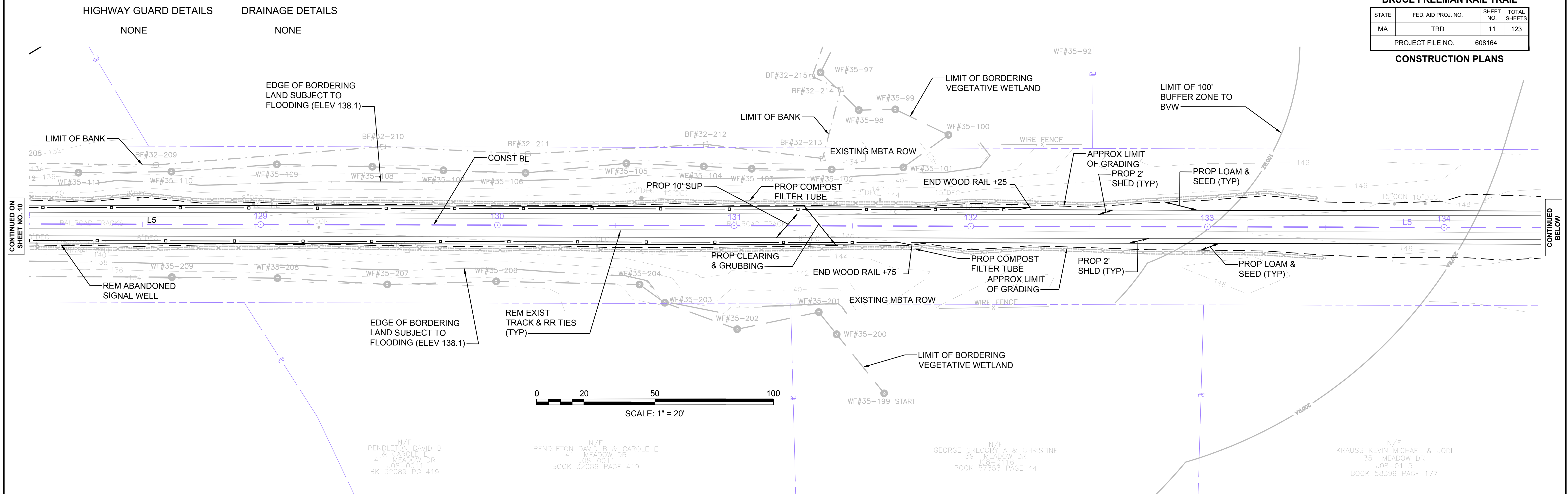
FOR PROFILE SEE SHEET NO. 37 AND 38

CONTINUED ON SHEET NO. 09

CONTINUED BELOW

CONTINUED ABOVE

CONTINUED ON SHEET NO. 11



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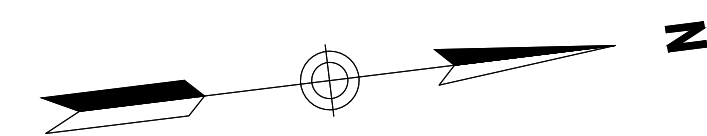
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HIGHWAY GUARD DETAILS
 NONE

TRAFFIC SIGNAL CONDUIT
 SEE SHEET 52

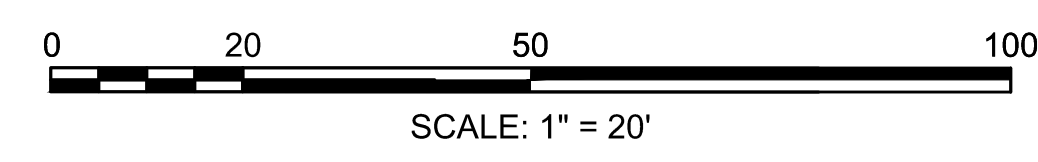
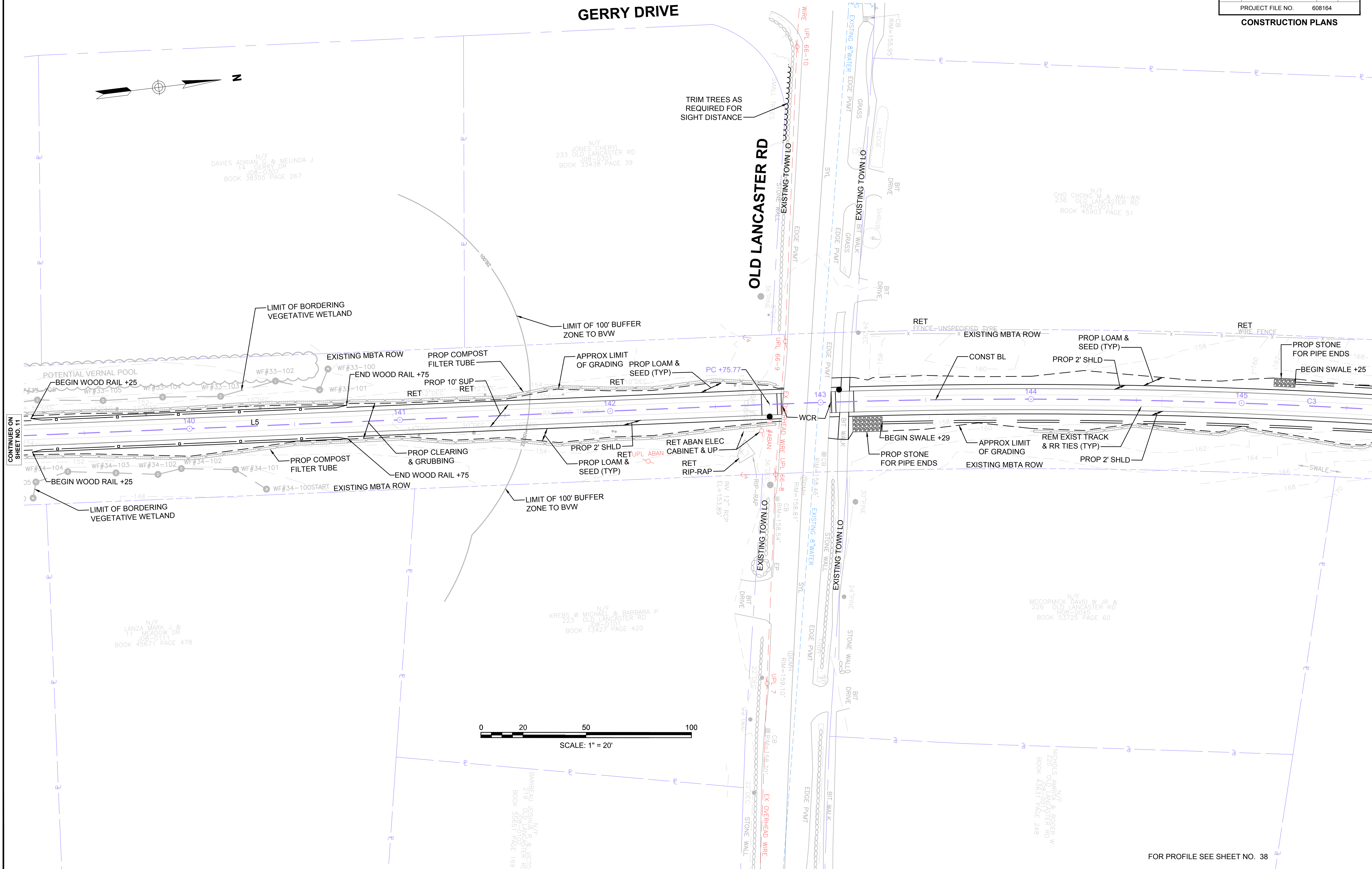
DRAINAGE DETAILS
 SEE BELOW

GERRY DRIVE



TRIM TREES AS
 REQUIRED FOR
 SIGHT DISTANCE

OLD LANCASTER RD



CONTINUED ON
 SHEET NO. 11

CONTINUED ON
 SHEET NO. 13

FOR PROFILE SEE SHEET NO. 38

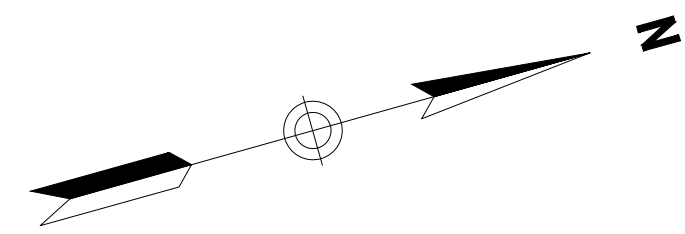
**SUDBURY
BRUCE FREEMAN RAIL TRAIL**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|-------|--------------------|-----------|--------------|
| MA | TBD | 13 | 123 |

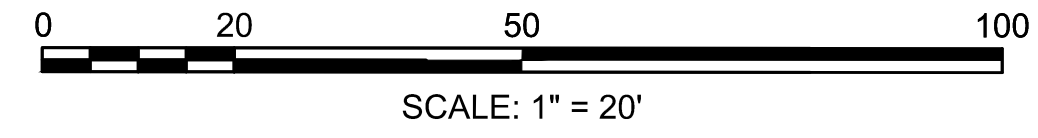
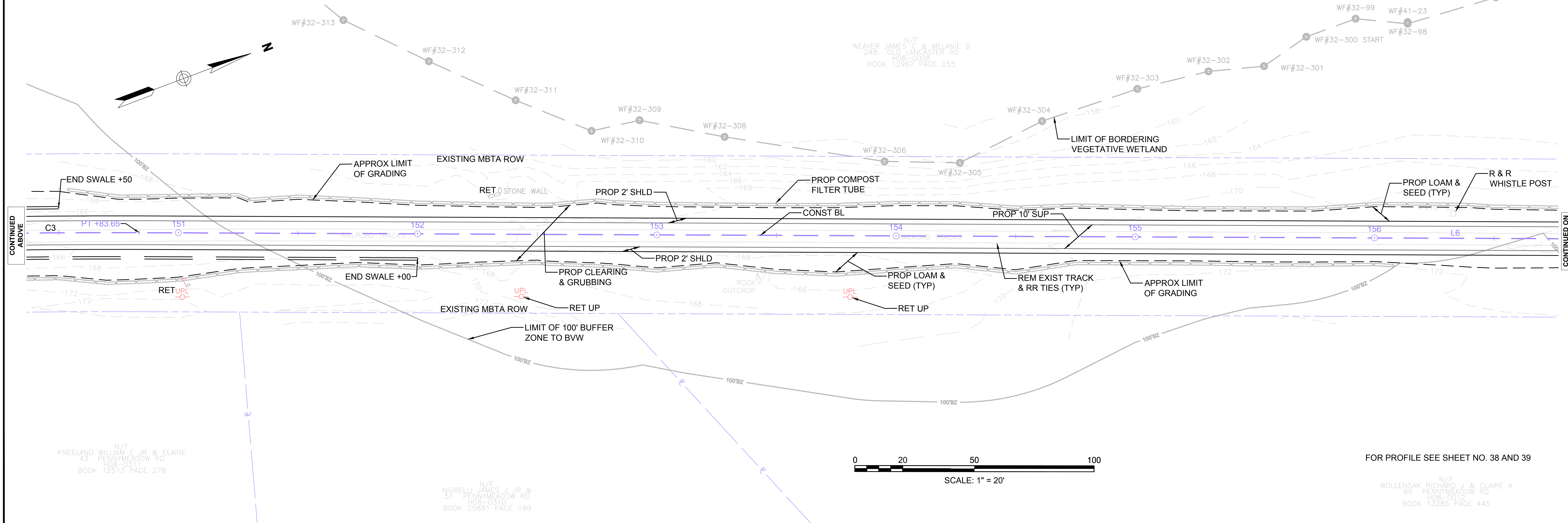
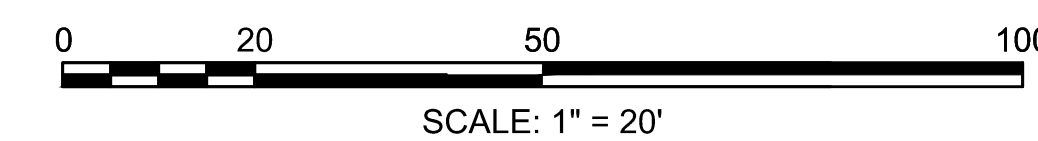
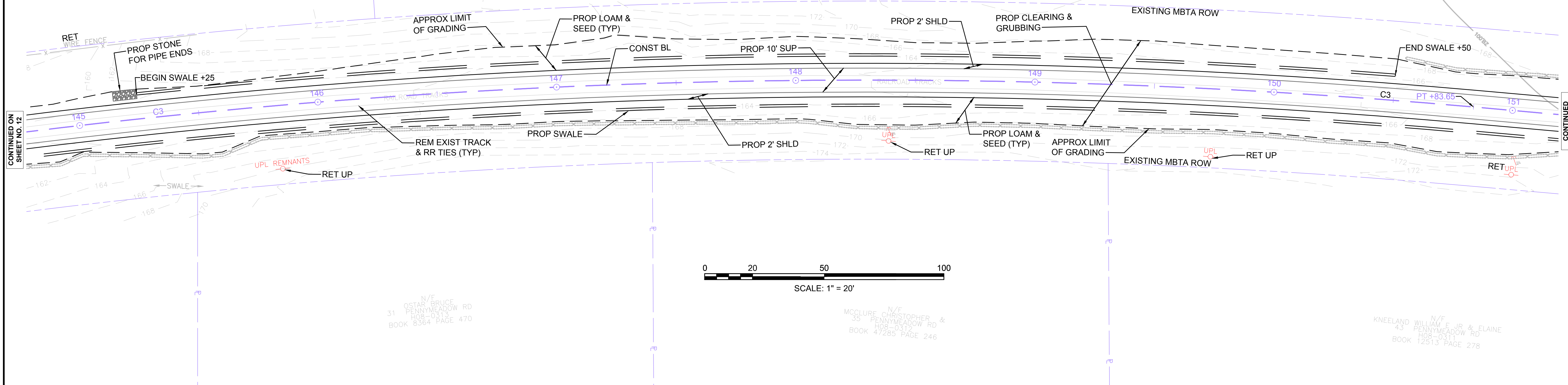
PROJECT FILE NO. 608164

CONSTRUCTION PLANS

HIGHWAY GUARD DETAILS: NONE
DRAINAGE DETAILS: SEE BELOW



LIMIT OF 100' BUFFER ZONE TO BVW



FOR PROFILE SEE SHEET NO. 38 AND 39

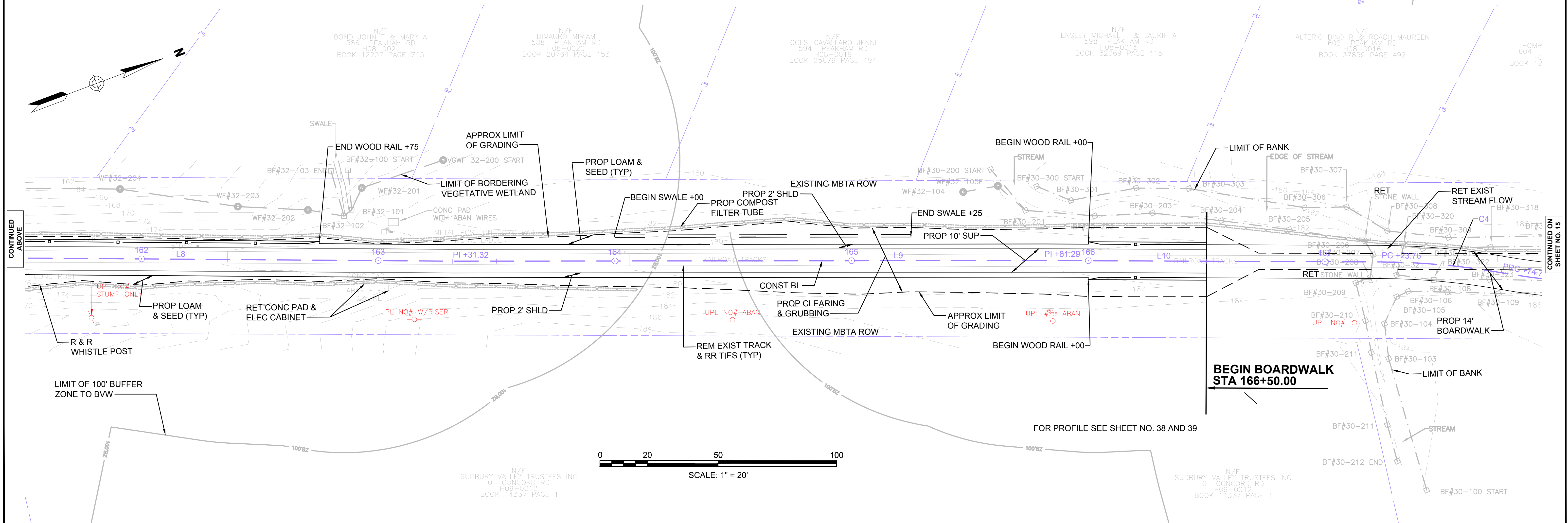
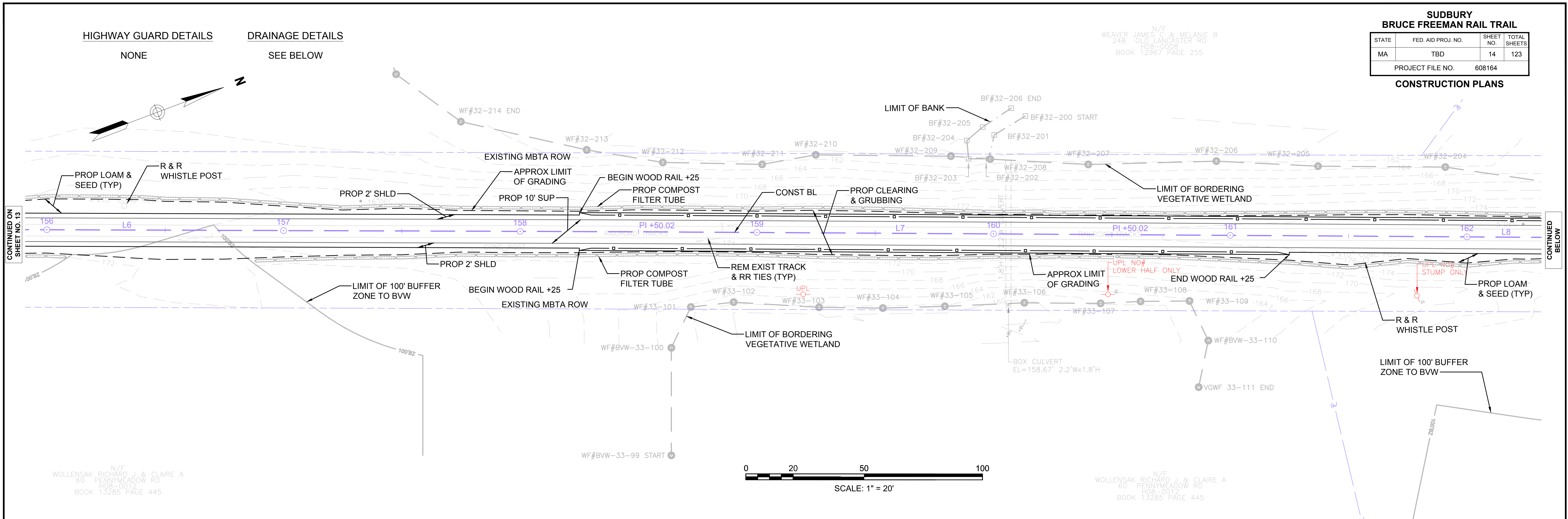
N/F WOLLENSAK RICHARD J & CLAIRE A
60 PENNYMEADOW RD
HOB-0012
BOOK 13285 PAGE 445

CONTINUED ON SHEET NO. 12

CONTINUED BELOW

CONTINUED ABOVE

CONTINUED ON SHEET NO. 14



HIGHWAY GUARD DETAILS
NONE

DRAINAGE DETAILS
SEE BELOW

N/F
WEAVER JAMES C & MELANIE B
248 OLD LANCASTER RD
H08-0009
BOOK 12967 PAGE 255

N/F
WOLLENSAK RICHARD J & CLAIRE A
60 PENNYMEADOW RD
H08-0012
BOOK 13285 PAGE 445

N/F
WOLLENSAK RICHARD J & CLAIRE A
60 PENNYMEADOW RD
H08-0012
BOOK 13285 PAGE 445

N/F
BOND JOHN T & MARY A
586 PEAKHAM RD
H08-0021
BOOK 12237 PAGE 715

N/F
DIMAURO MIRIAM
588 PEAKHAM RD
H08-0020
BOOK 20764 PAGE 453

N/F
GOLS-CAVALLARO JENNI
594 PEAKHAM RD
H08-0019
BOOK 25679 PAGE 494

N/F
ENSLEY MICHAEL T & LAURIE A
595 PEAKHAM RD
H08-0015
BOOK 32069 PAGE 415

N/F
ALTERIO DINO R & ROACH MAUREEN
602 PEAKHAM RD
H08-0016
BOOK 37859 PAGE 492

THOMP
604
HC
BOOK 12

N/F
SUDBURY VALLEY TRUSTEES INC
0 CONCORD RD
H09-0012
BOOK 14337 PAGE 1

N/F
SUDBURY VALLEY TRUSTEES INC
0 CONCORD RD
H09-0012
BOOK 14337 PAGE 1

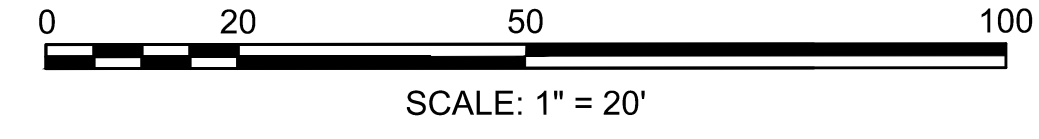
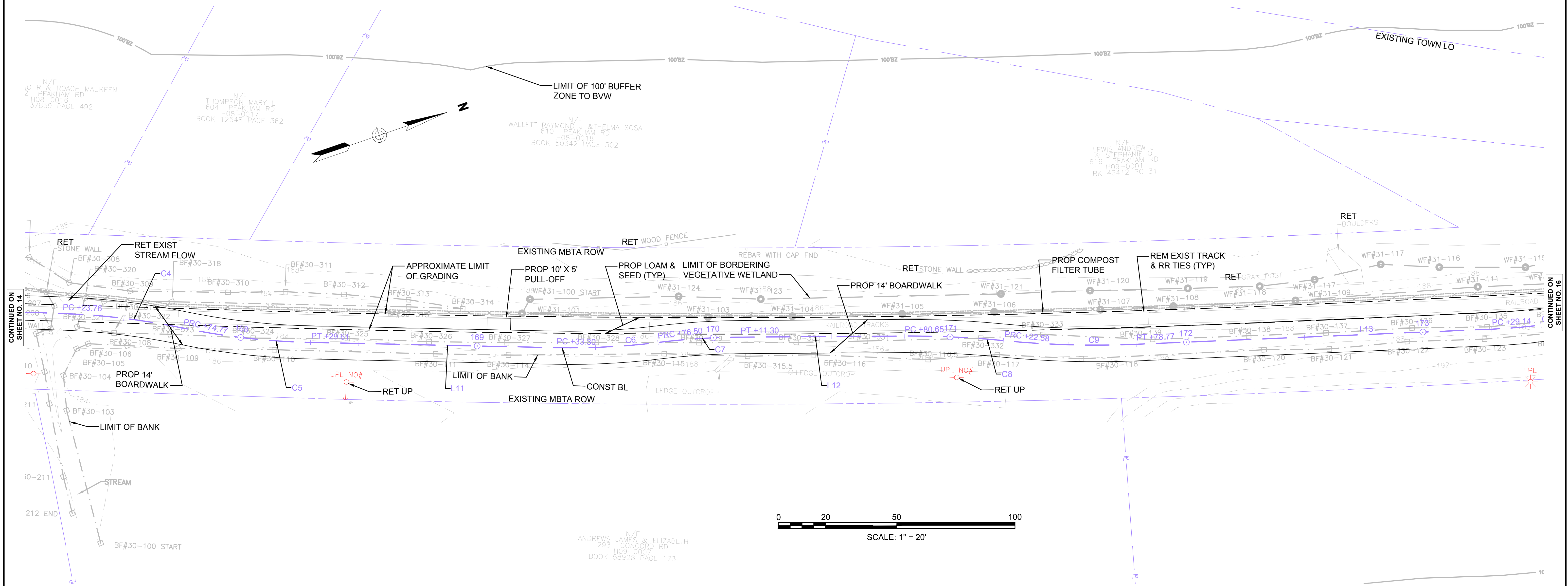
CONTINUED ON
SHEET NO. 13

CONTINUED
BELOW

CONTINUED
ABOVE

CONTINUED ON
SHEET NO. 15

HIGHWAY GUARD DETAILS NONE
DRAINAGE DETAILS NONE



CONTINUED ON SHEET NO. 14

CONTINUED ON SHEET NO. 16

N/F ANDREWS JAMES & ELIZABETH
293 CONCORD RD
H09-0007
BOOK 58928 PAGE 173

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

SEE SHEET 56

DRAINAGE DETAILS

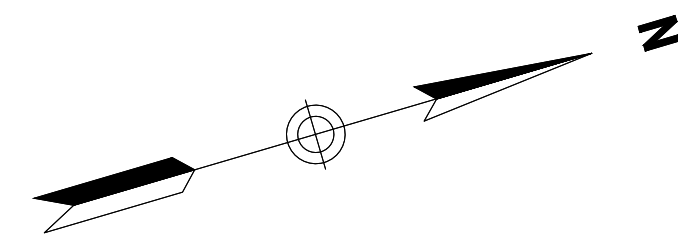
SEE BELOW

SUDBURY
BRUCE FREEMAN RAIL TRAIL

| STATE | FED AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|-------|-------------------|-----------|--------------|
| MA | TBD | 16 | 123 |

PROJECT FILE NO. 608164

CONSTRUCTION PLANS



N/F
MURI LINDA LOUISE
623 PEAKHAM RD
H09-0056
BOOK 12468 PAGE 519

N/F
TIGHE LAWRENCE W
40 HUDSON RD
G09-0001
BOOK 33228 PAGE 333

N/F
PENN CENTRAL TRANSPORTATION CO
HUDSON RD
G09-0012
BOOK 7074 PAGE 339

N/F
GILMARTIN MATTHEW S & MOLLY F
30 HUDSON RD
H09-0068
BOOK 42175 PAGE 386

N/F
GILMARTIN MATTHEW S & MOLLY F
30 HUDSON RD
H09-0068
BOOK 42175 PAGE 386



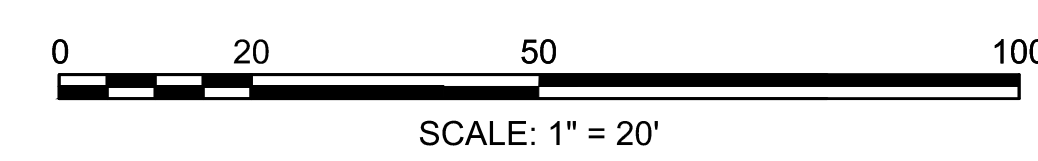
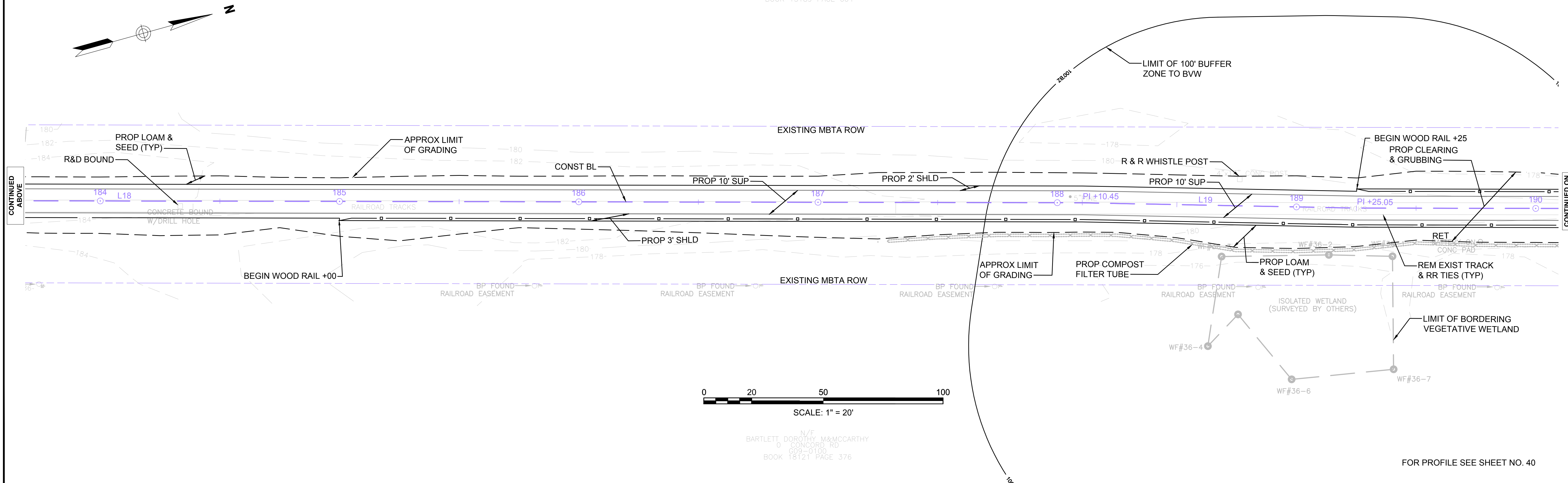
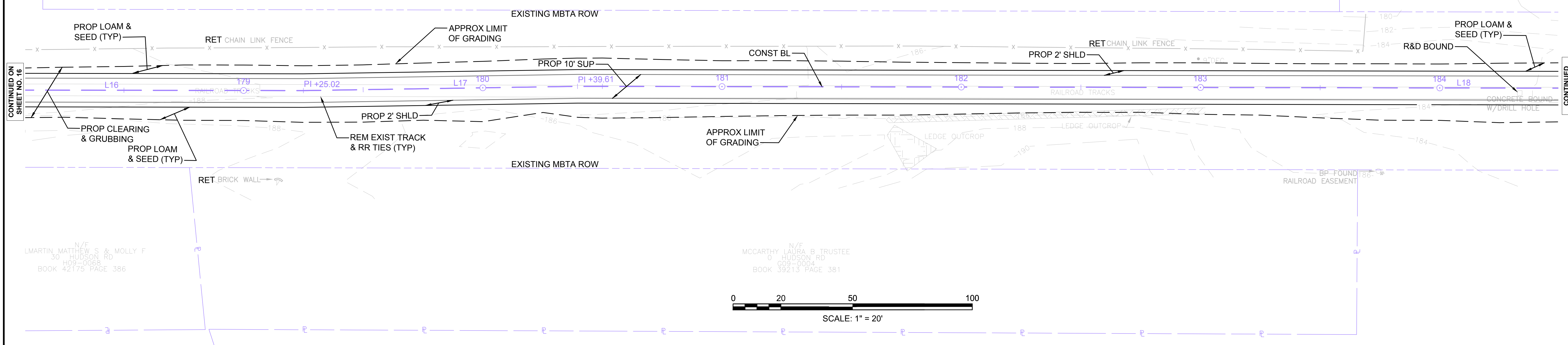
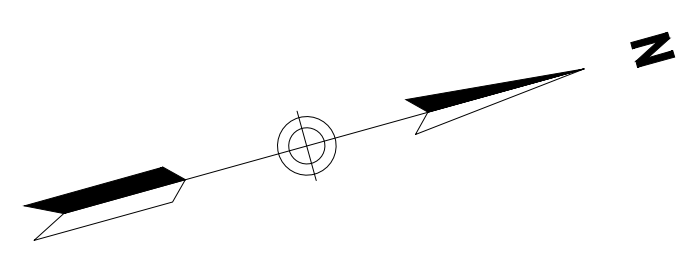
FOR PROFILE SEE SHEET NO. 40

CONTINUED ON
SHEET NO. 15

CONTINUED ON
SHEET NO. 17

608164_HDGEN.DWG Plotted on 15-Sep-2017 1:45 PM

HIGHWAY GUARD DETAILS NONE
 DRAINAGE DETAILS NONE



FOR PROFILE SEE SHEET NO. 40

CONTINUED ON SHEET NO. 16

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CONTINUED ABOVE

CONTINUED ON SHEET NO. 18

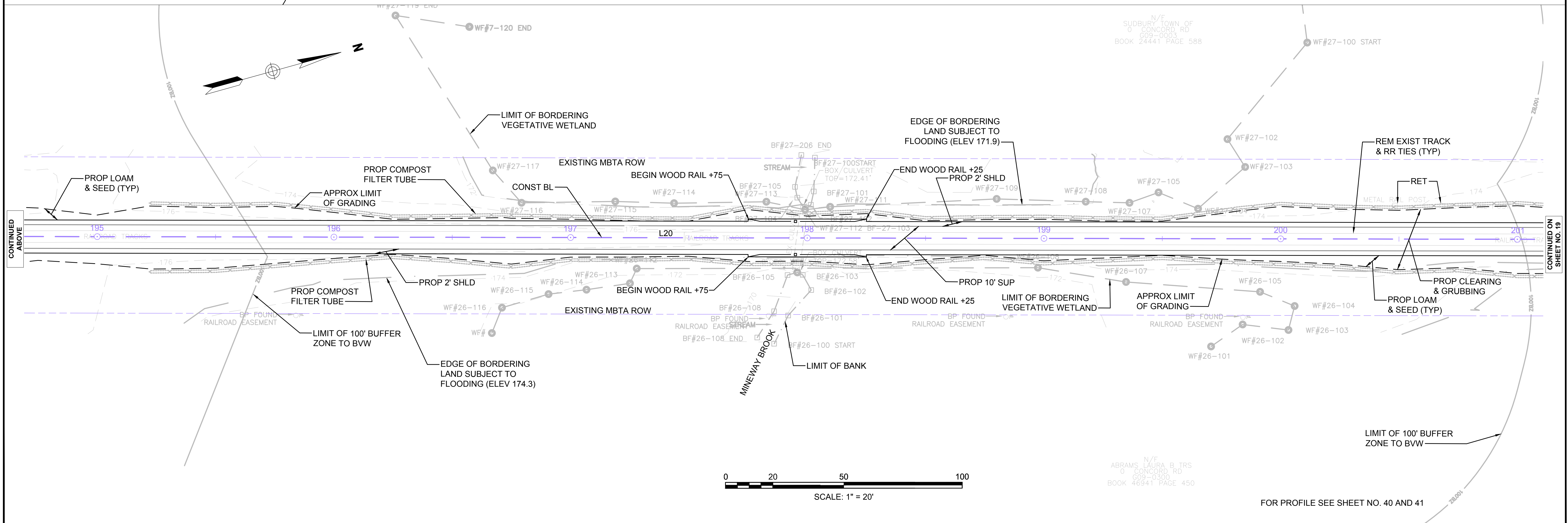
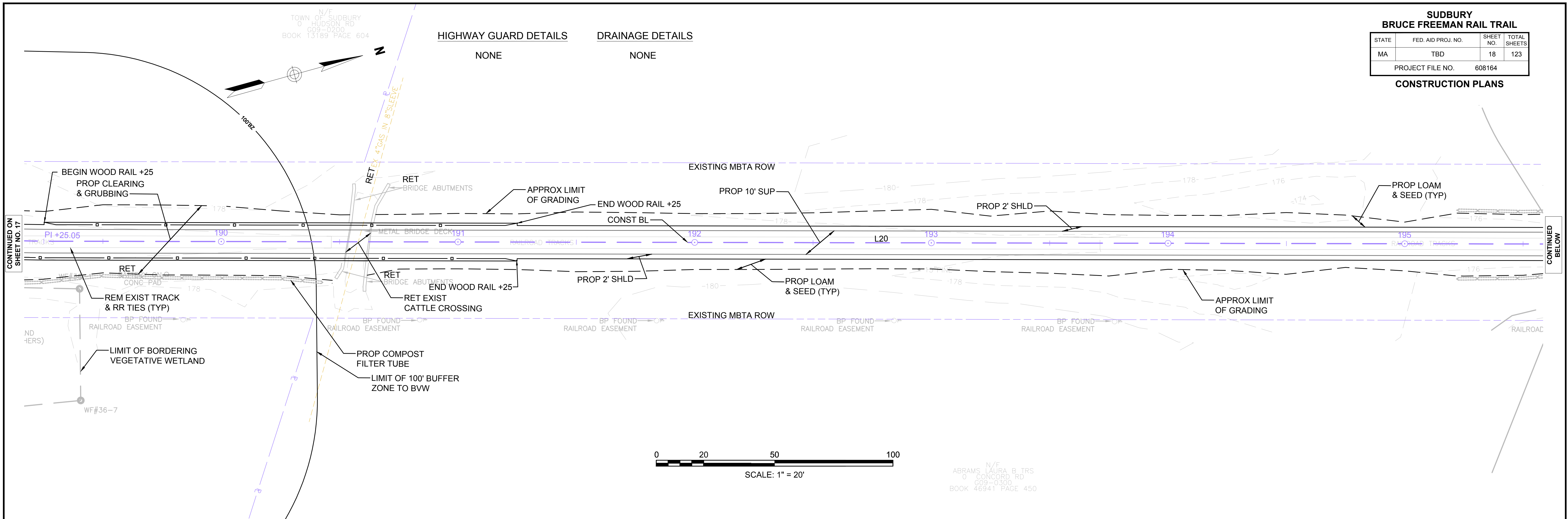
HIGHWAY GUARD DETAILS NONE
 DRAINAGE DETAILS NONE

N/F
 TOWN OF SUDBURY
 0 HUDSON RD
 099-0200
 BOOK 13189 PAGE 604

N/F
 SUDBURY TOWN OF
 0 CONCORD RD
 099-0003
 BOOK 24441 PAGE 588

N/F
 ABRAMS LAURA B TRS
 0 CONCORD RD
 099-0300
 BOOK 46941 PAGE 450

N/F
 ABRAMS LAURA B TRS
 0 CONCORD RD
 099-0300
 BOOK 46941 PAGE 450



FOR PROFILE SEE SHEET NO. 40 AND 41

CONTINUED ON SHEET NO. 17

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CONTINUED ABOVE

CONTINUED ON SHEET NO. 19

**SUDBURY
BRUCE FREEMAN RAIL TRAIL**

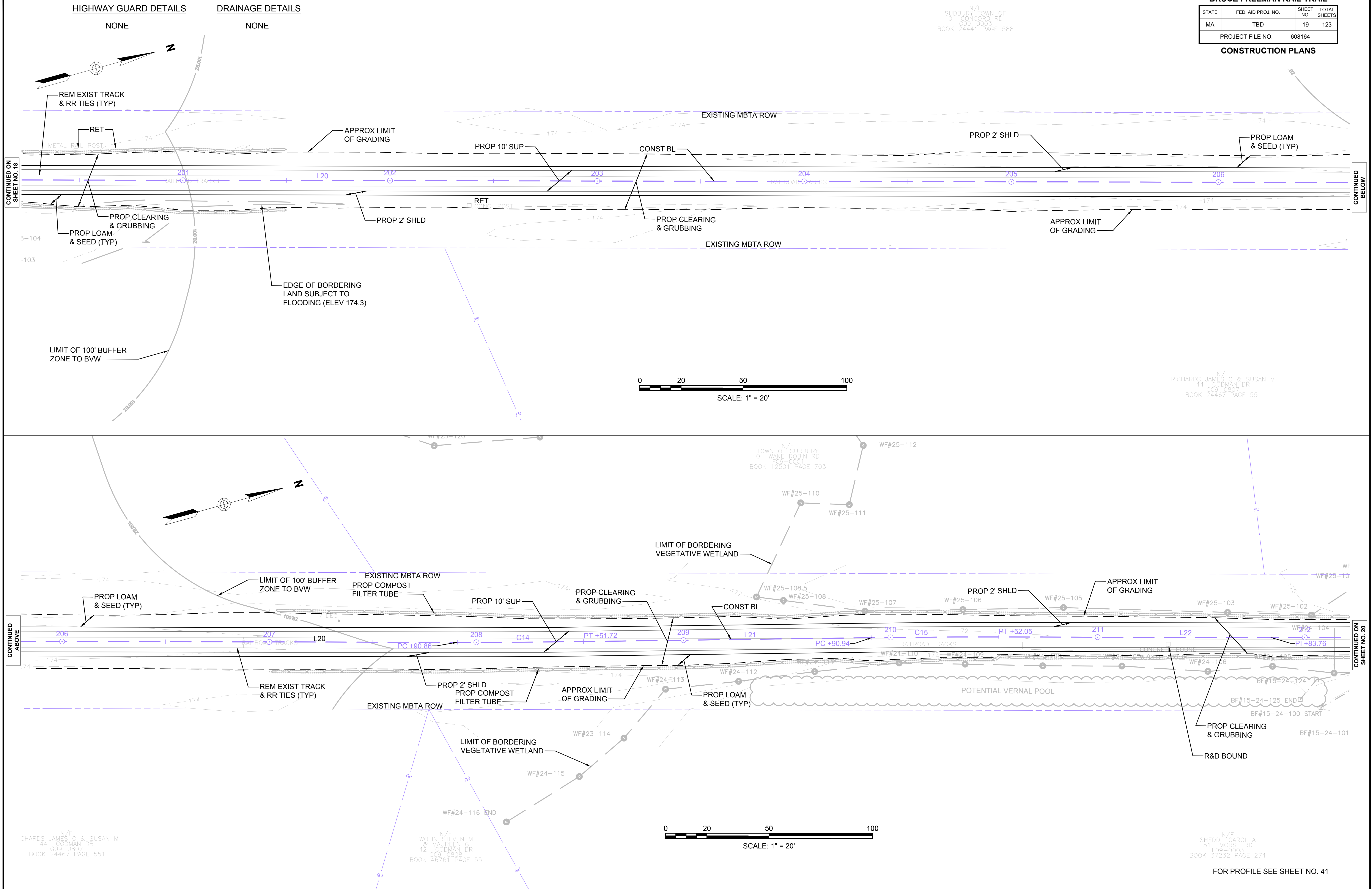
| STATE | FED AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|-------|-------------------|-----------|--------------|
| MA | TBD | 19 | 123 |

PROJECT FILE NO. 608164

CONSTRUCTION PLANS

N/F
SUDBURY TOWN OF
0 CONCORD RD
609-0803
BOOK 24441 PAGE 588

N/F
RICHARDS JAMES C & SUSAN M
44 CODMAN DR
609-0807
BOOK 24467 PAGE 551



CONTINUED ON
SHEET NO. 18

CONTINUED
BELOW

CONTINUED
ABOVE

CONTINUED ON
SHEET NO. 20

N/F
RICHARDS JAMES C & SUSAN M
44 CODMAN DR
609-0807
BOOK 24467 PAGE 551

N/F
WOLIN STEVEN M
& MAUREEN G
42 CODMAN DR
609-0808
BOOK 46761 PAGE 55

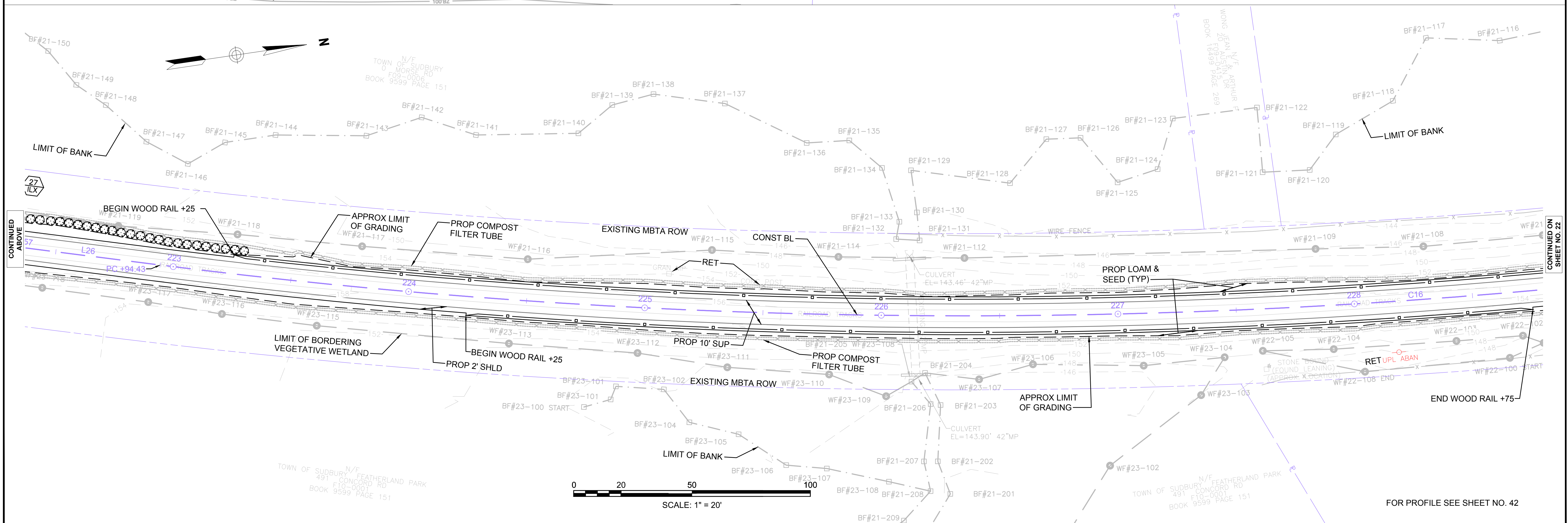
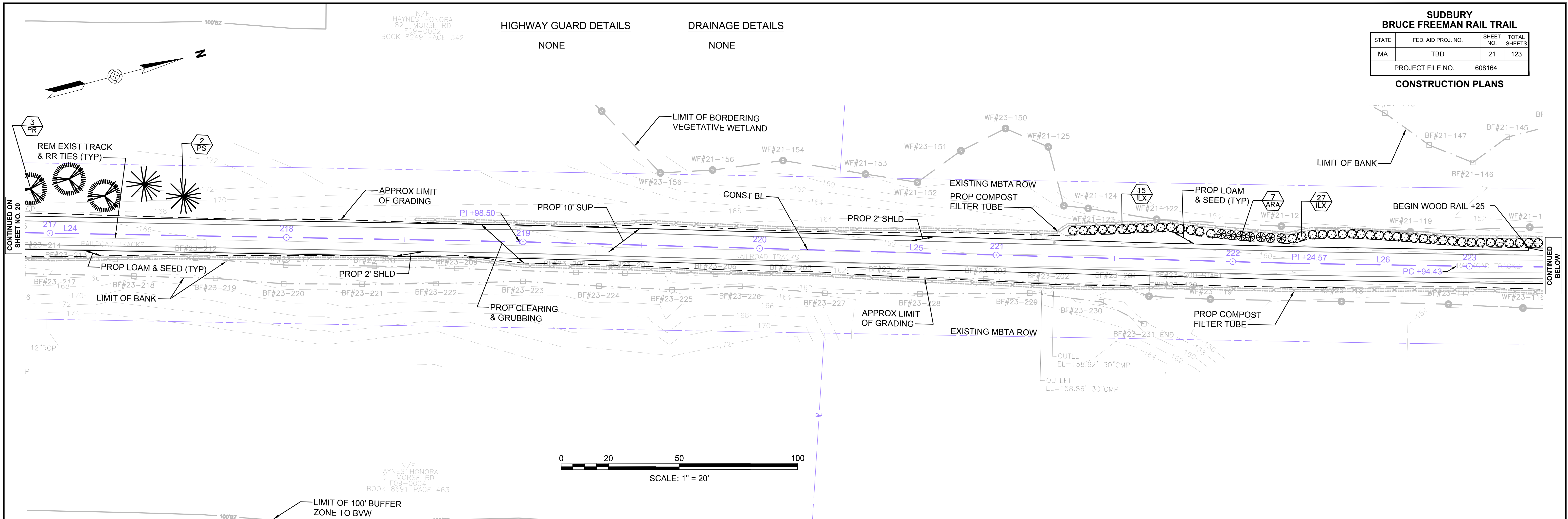
N/F
SHEDD CAROL A
51 MORSE RD
609-0803
BOOK 37232 PAGE 274

FOR PROFILE SEE SHEET NO. 41

SUDBURY
BRUCE FREEMAN RAIL TRAIL

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|-------|--------------------|-----------|--------------|
| MA | TBD | 21 | 123 |

PROJECT FILE NO. 608164
CONSTRUCTION PLANS



FOR PROFILE SEE SHEET NO. 42

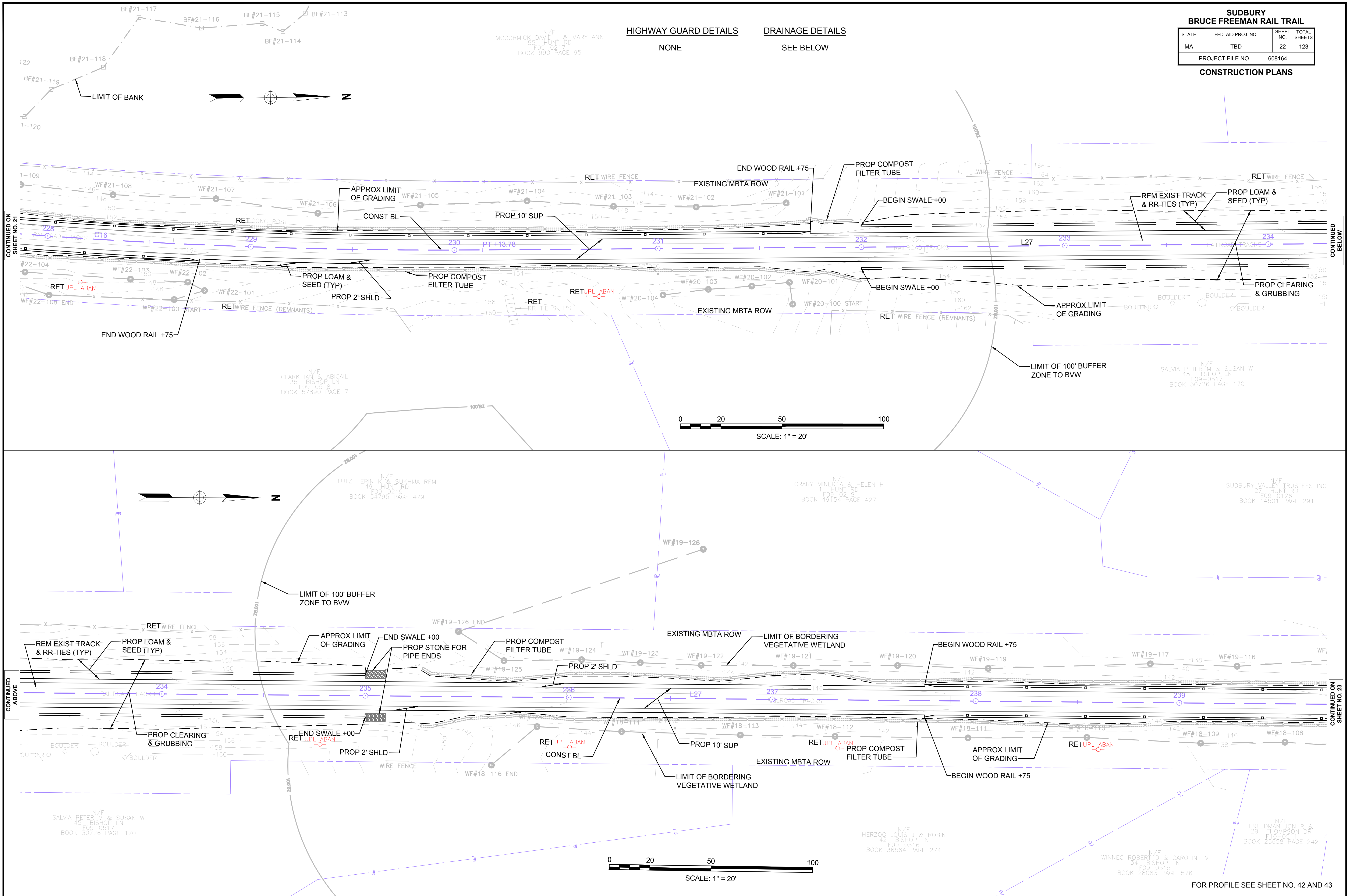
CONTINUED ON SHEET NO. 20

CONTINUED BELOW

CONTINUED ABOVE

CONTINUED ON SHEET NO. 22

HIGHWAY GUARD DETAILS NONE
 DRAINAGE DETAILS SEE BELOW



CONTINUED ON SHEET NO. 21

CONTINUED BELOW

CONTINUED ABOVE

CONTINUED ON SHEET NO. 23

FOR PROFILE SEE SHEET NO. 42 AND 43

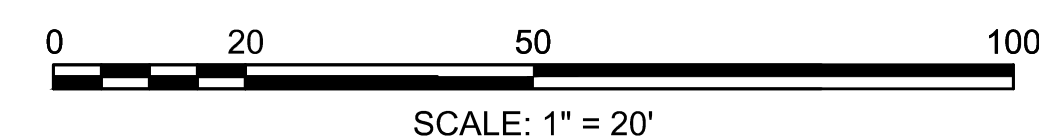
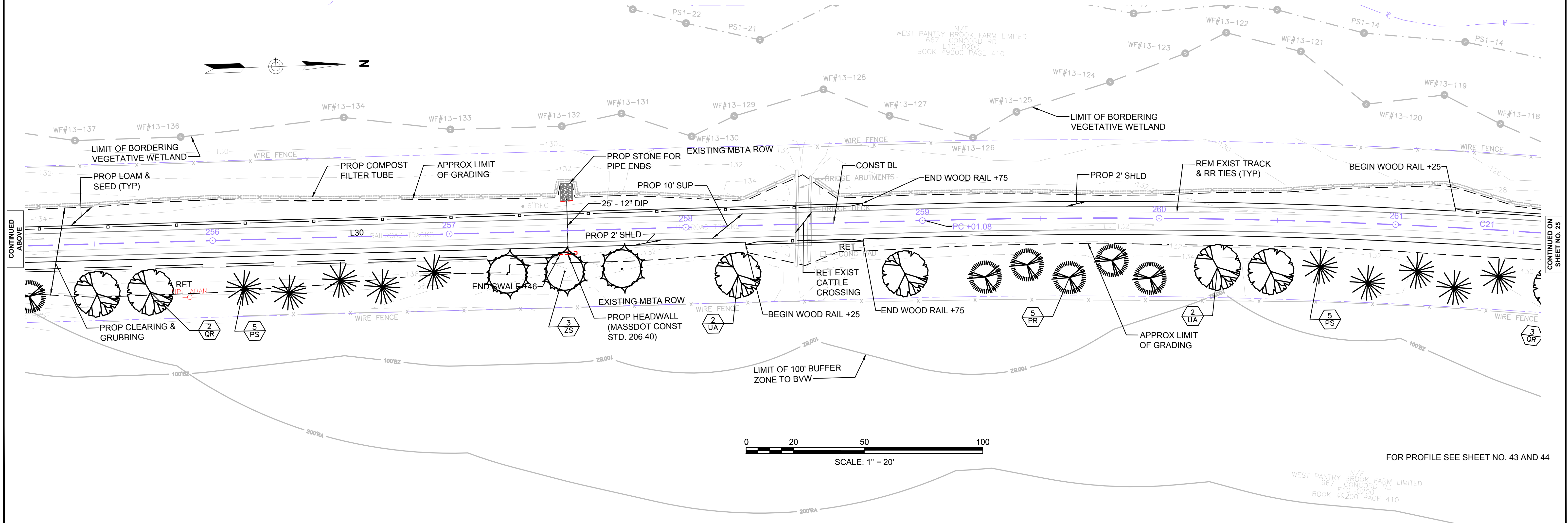
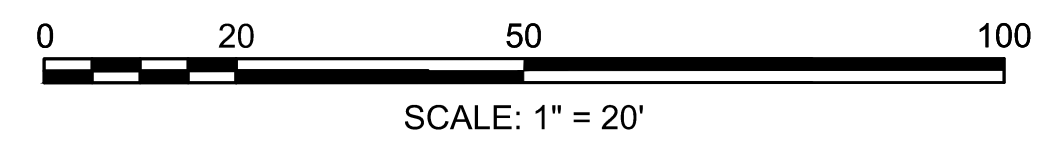
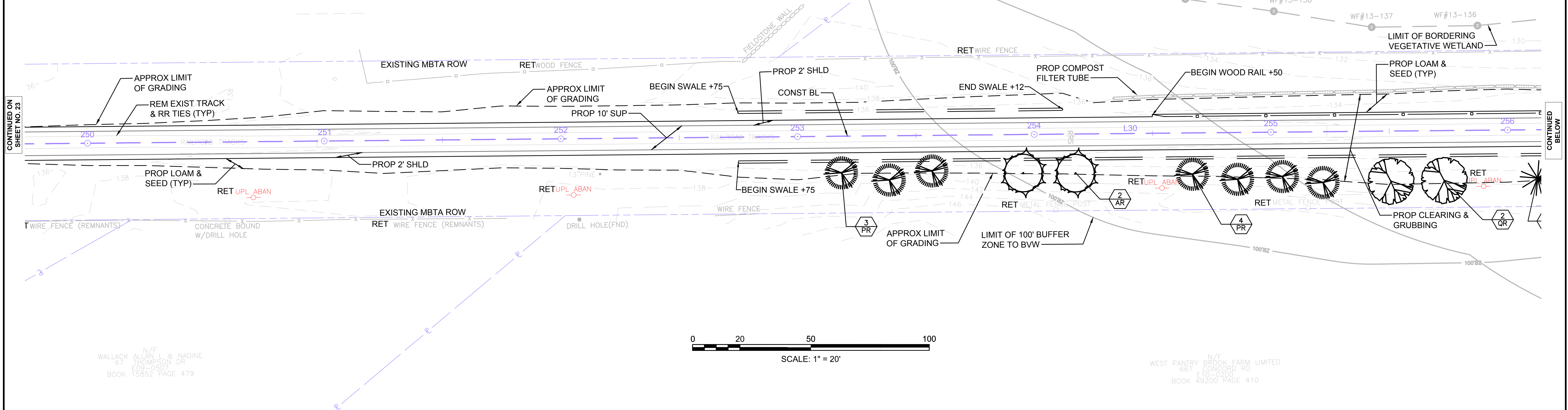
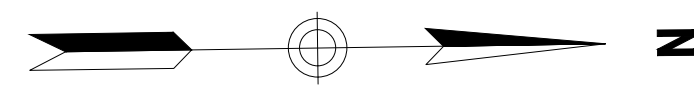
**SUDBURY
BRUCE FREEMAN RAIL TRAIL**

| STATE | FED AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|-------|-------------------|-----------|--------------|
| MA | TBD | 24 | 123 |

PROJECT FILE NO. 608164

CONSTRUCTION PLANS

HIGHWAY GUARD DETAILS: NONE
DRAINAGE DETAILS: SEE BELOW



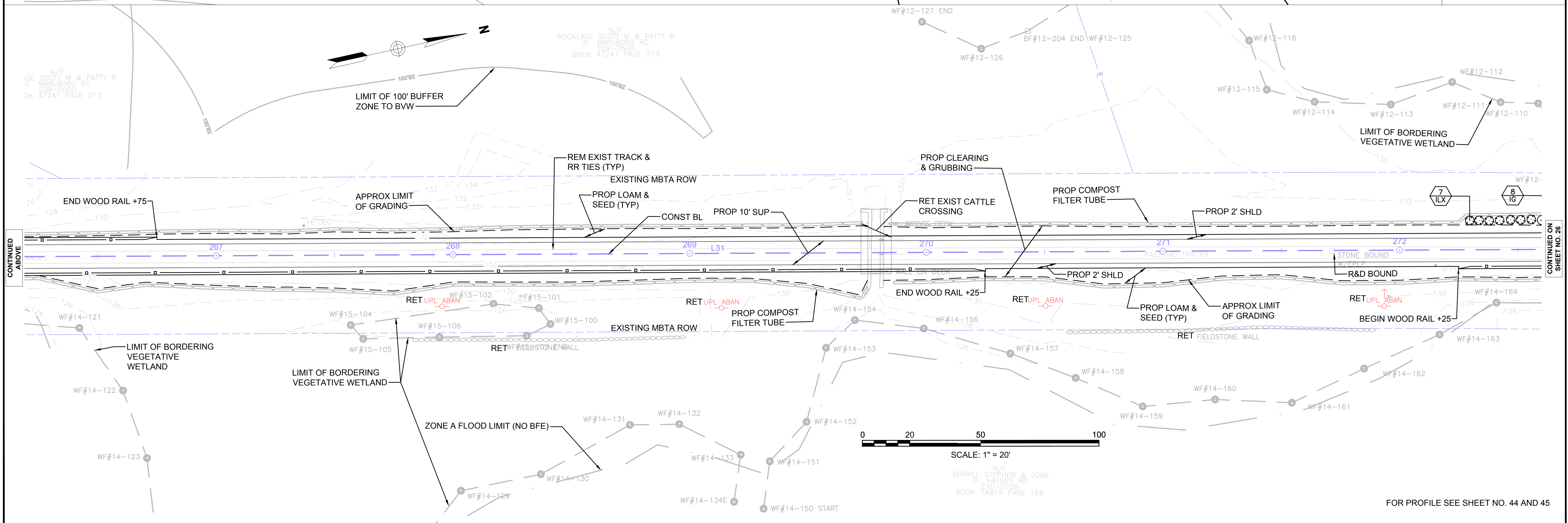
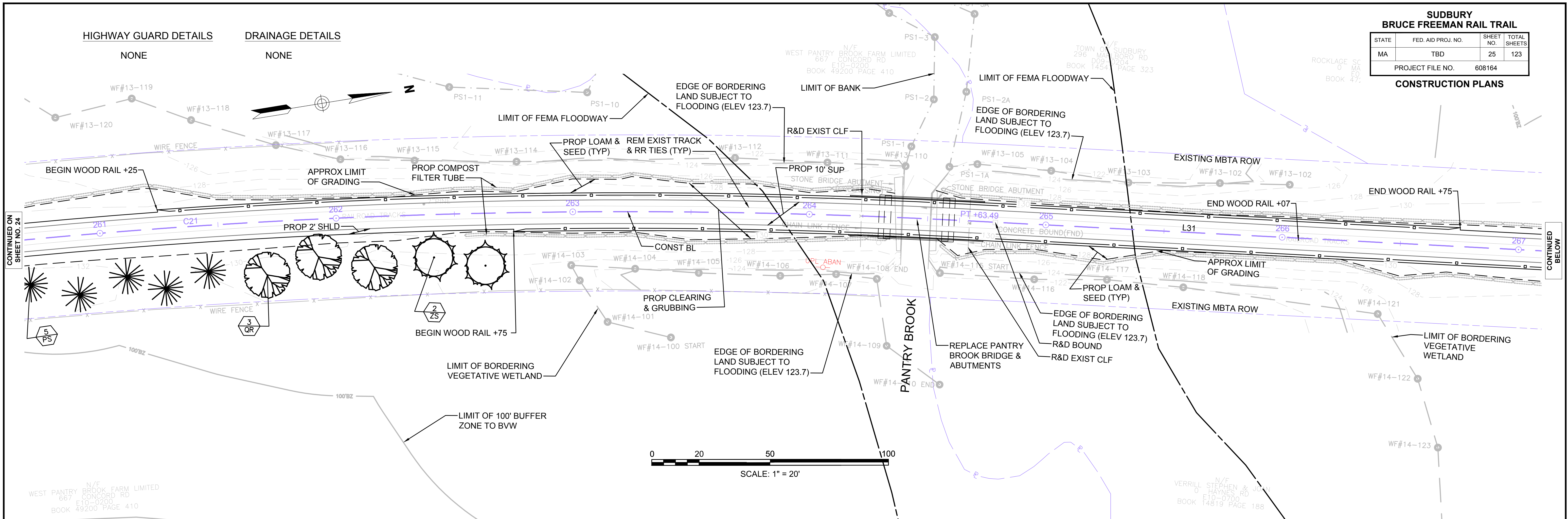
FOR PROFILE SEE SHEET NO. 43 AND 44

CONTINUED ON SHEET NO. 23

CONTINUED BELOW

CONTINUED ABOVE

CONTINUED ON SHEET NO. 25



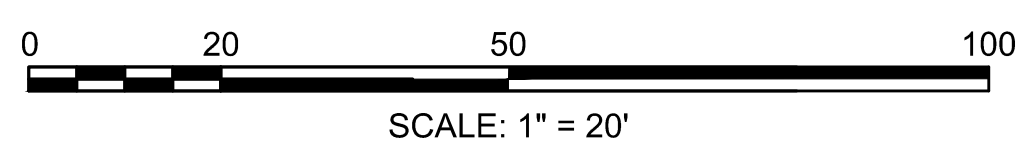
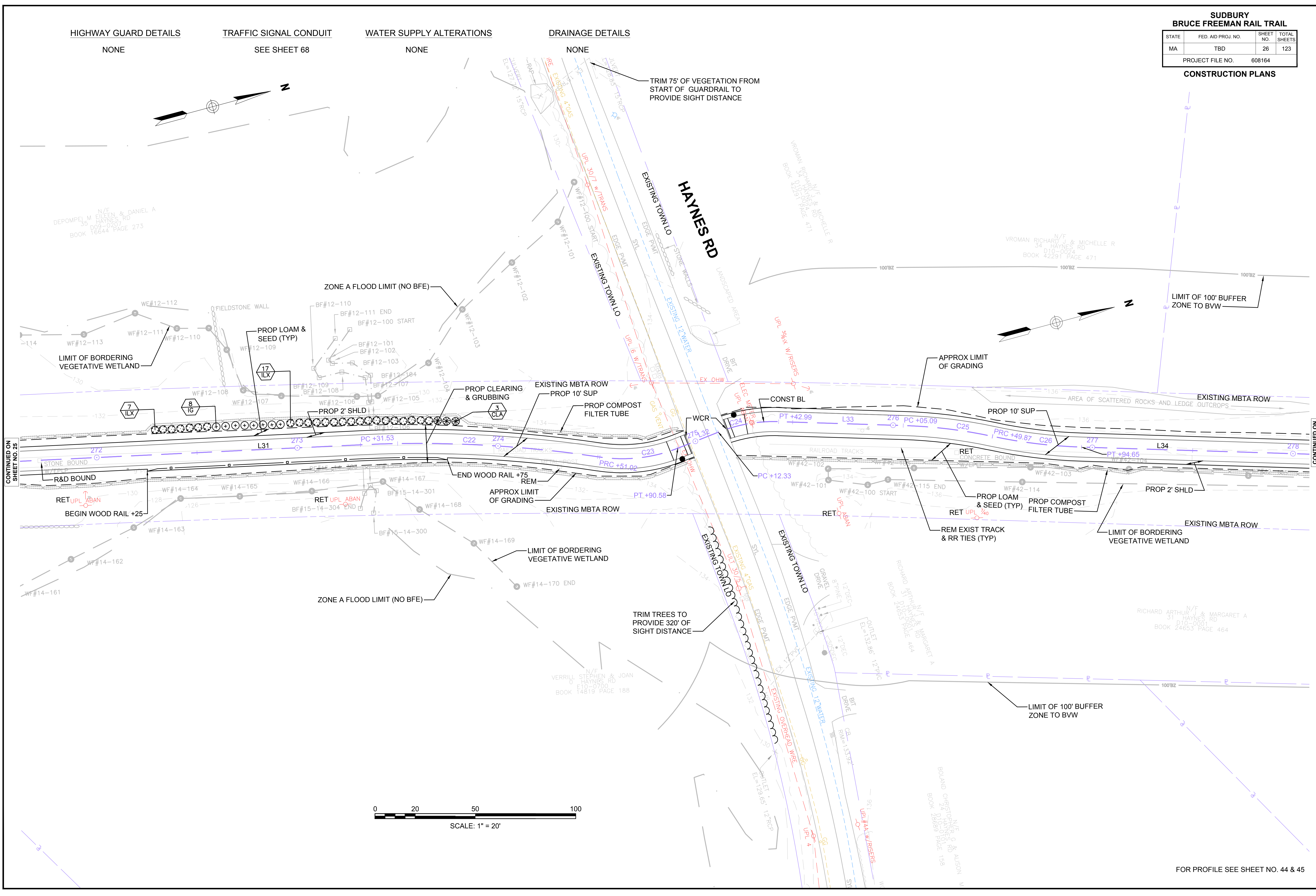
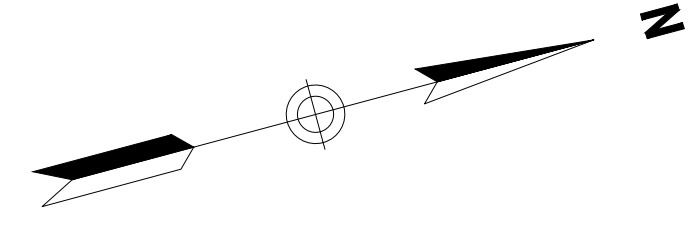
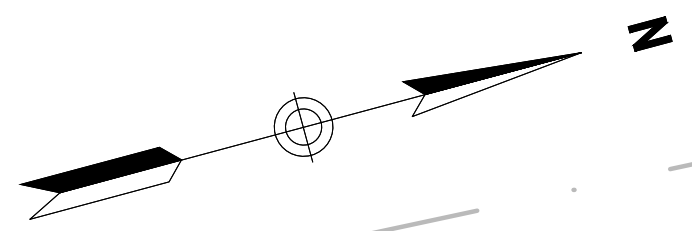
CONTINUED ON SHEET NO. 24

CONTINUED BELOW

CONTINUED ABOVE

CONTINUED ON SHEET NO. 26

HIGHWAY GUARD DETAILS NONE
 TRAFFIC SIGNAL CONDUIT SEE SHEET 68
 WATER SUPPLY ALTERATIONS NONE
 DRAINAGE DETAILS NONE

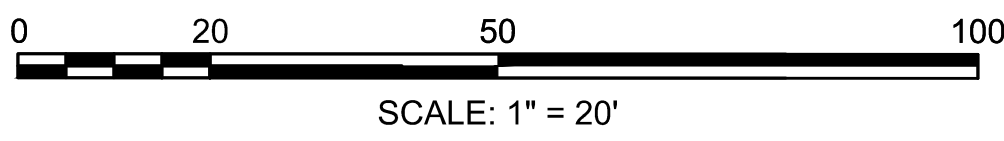
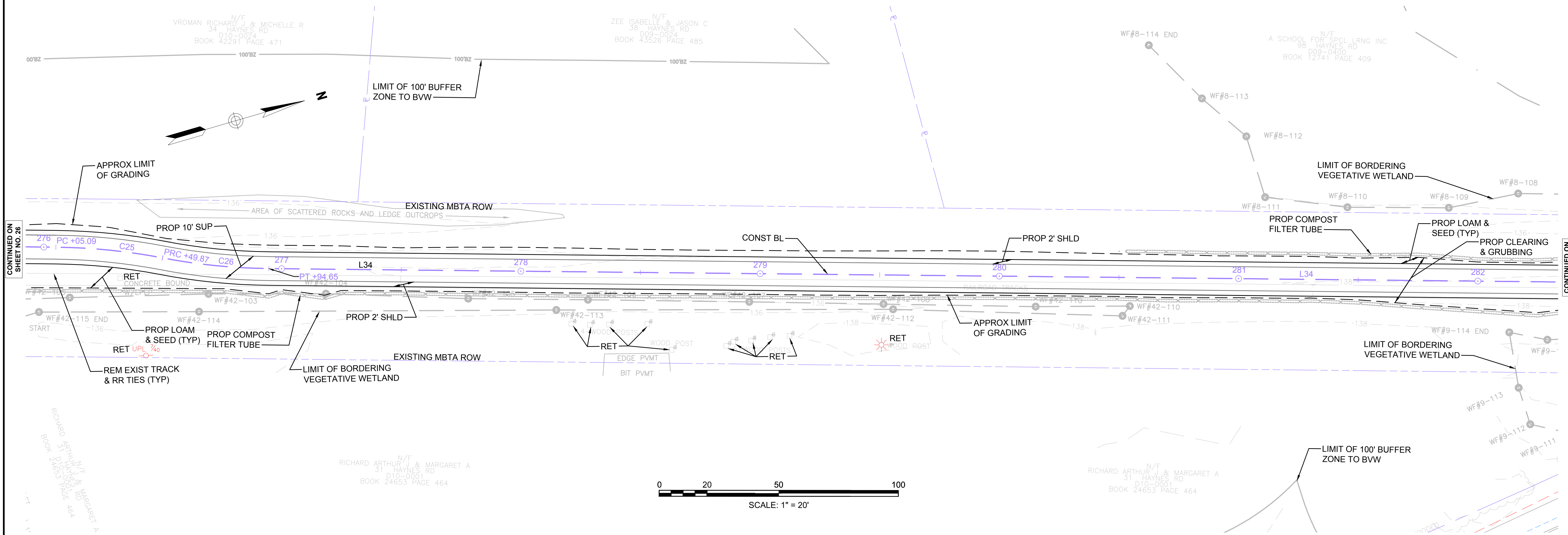


CONTINUED ON SHEET NO. 25

CONTINUED ON SHEET NO. 27

FOR PROFILE SEE SHEET NO. 44 & 45

HIGHWAY GUARD DETAILS NONE
DRAINAGE DETAILS NONE



CONTINUED ON SHEET NO. 26

CONTINUED ON SHEET NO. 28

RICHARD ARTHUR J & MARGARET A
31 HAYNES RD
D10-0001
BOOK 24653 PAGE 464

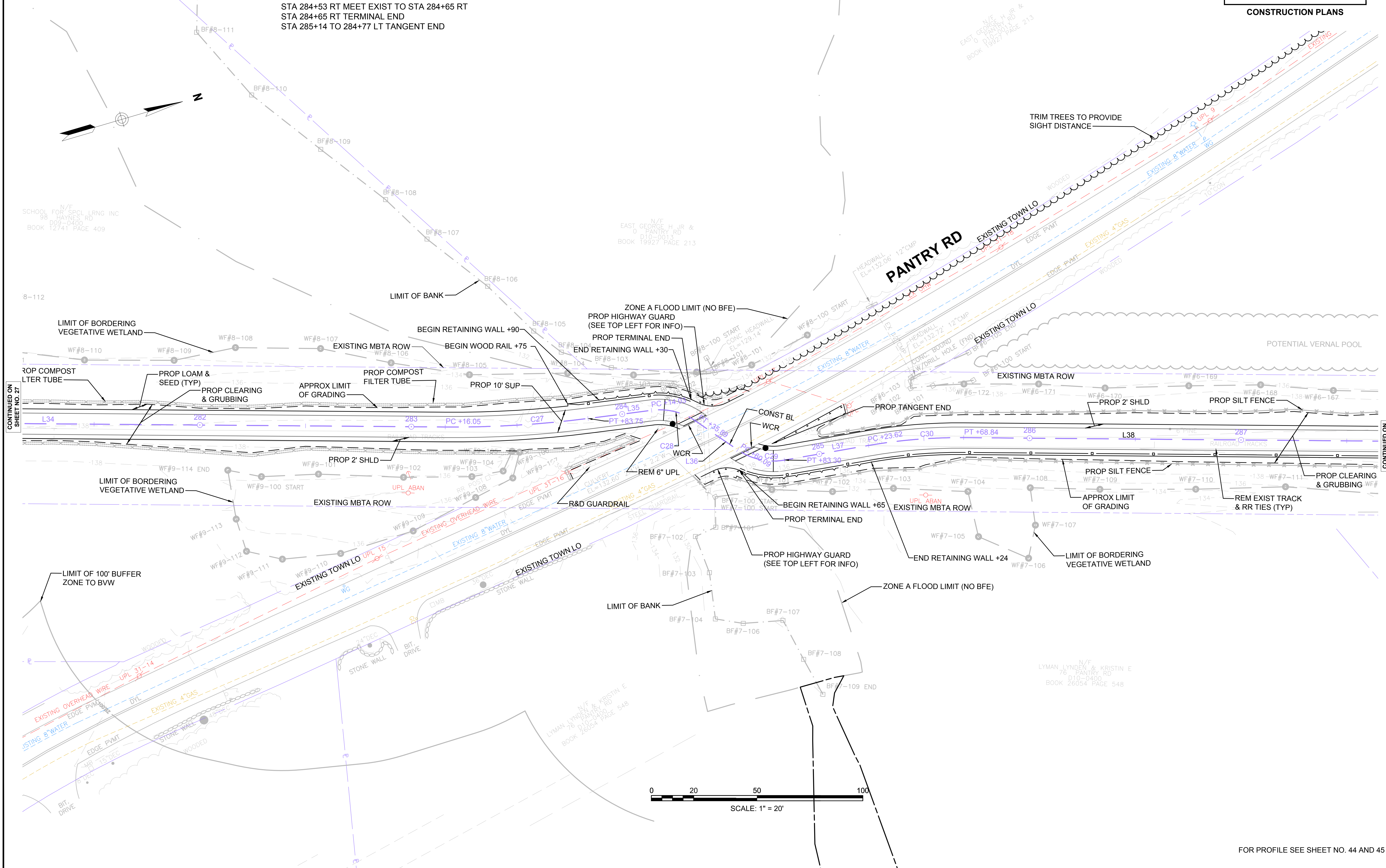
RICHARD ARTHUR J & MARGARET A
31 HAYNES RD
D10-0001
BOOK 24653 PAGE 464

RICHARD ARTHUR J & MARGARET A
31 HAYNES RD
D10-0001
BOOK 24653 PAGE 464

HIGHWAY GUARD DETAILS
 STA 284+30 LT TERMINAL END
 STA 284+30 TO STA 284+48 LT MEET EXIST
 STA 284+53 RT MEET EXIST TO STA 284+65 RT
 STA 284+65 RT TERMINAL END
 STA 285+14 TO 284+77 LT TANGENT END

TRAFFIC SIGNAL CONDUIT
 SEE SHEET 68

DRAINAGE DETAILS
 NONE



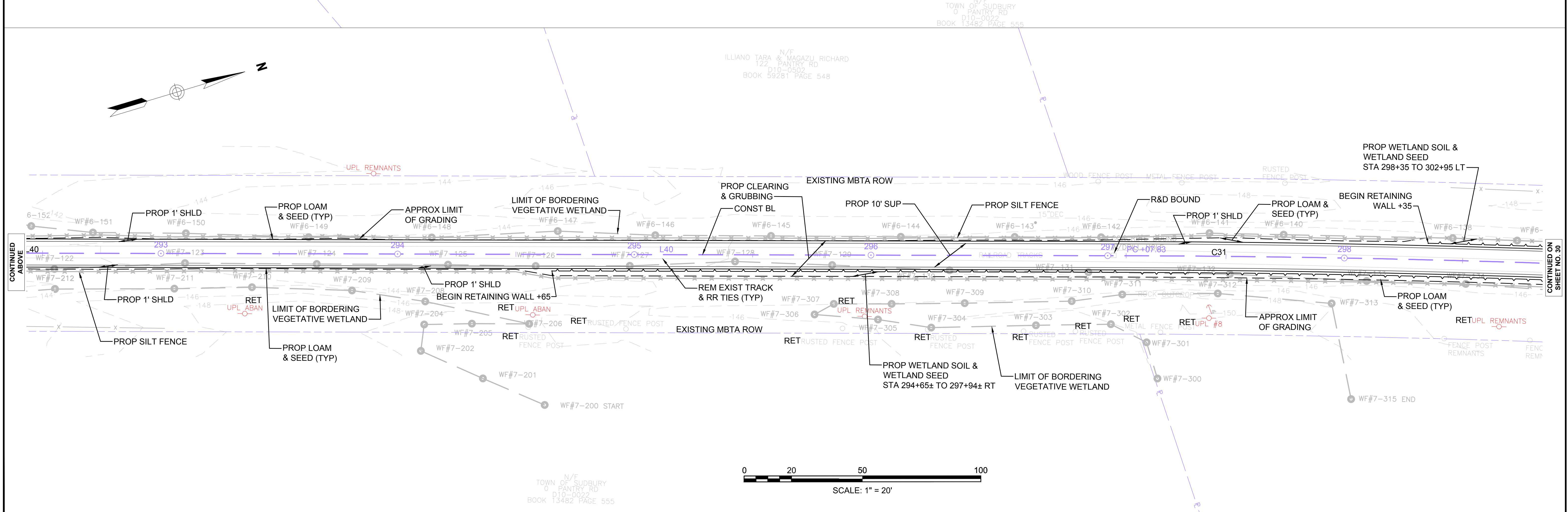
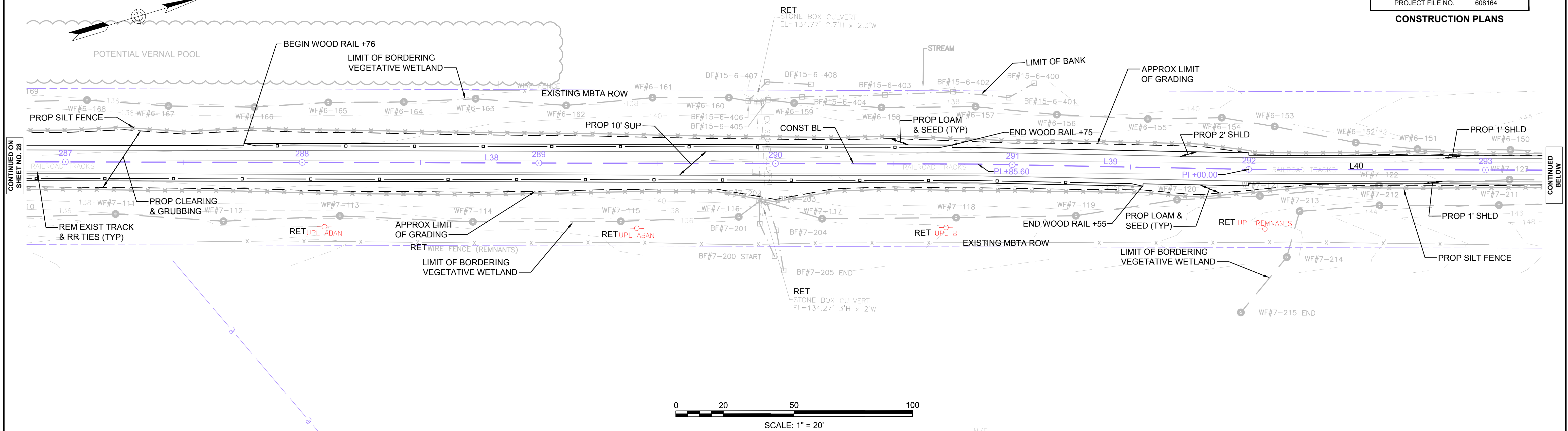
CONTINUED ON SHEET NO. 27

CONTINUED ON SHEET NO. 29



FOR PROFILE SEE SHEET NO. 44 AND 45

HIGHWAY GUARD DETAILS NONE
 DRAINAGE DETAILS NONE



CONTINUED ON SHEET NO. 28

CONTINUED BELOW

CONTINUED ABOVE

CONTINUED ON SHEET NO. 30

**SUDBURY
BRUCE FREEMAN RAIL TRAIL**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|-------|--------------------|-----------|--------------|
| MA | TBD | 30 | 123 |

PROJECT FILE NO. 608164

CONSTRUCTION PLANS

HIGHWAY GUARD DETAILS

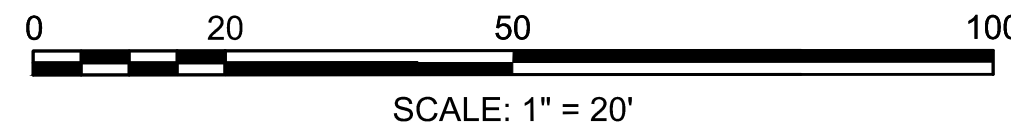
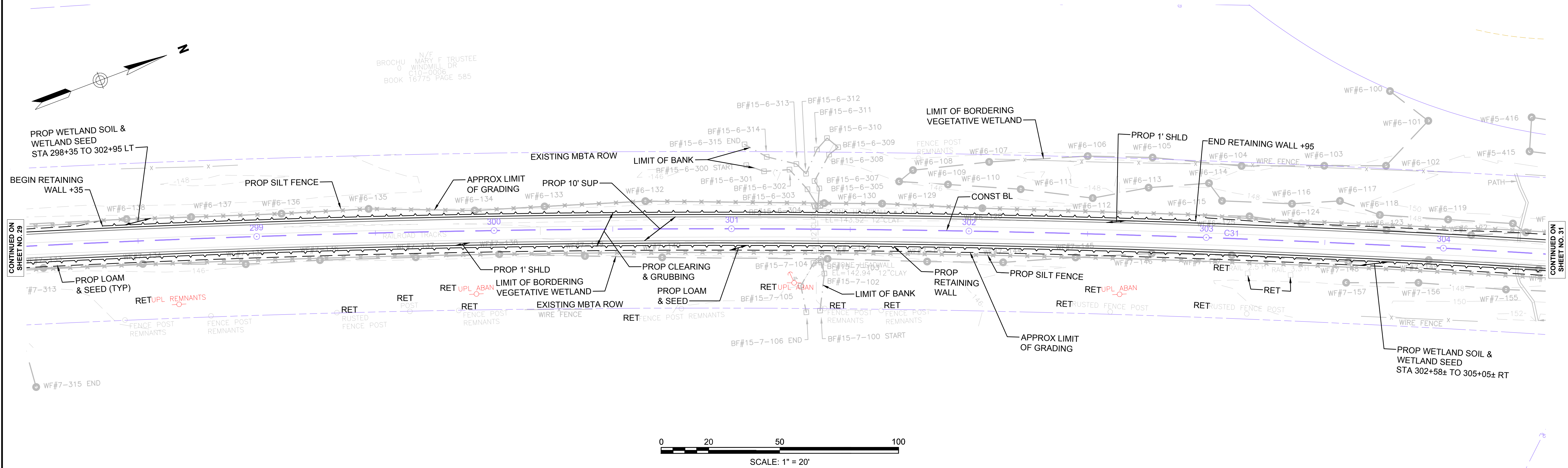
NONE

DRAINAGE DETAILS

NONE

N/E
BROCHU MARY F TRUSTEE
0 WINDMILL DR
C10-0006
BOOK 16775 PAGE 585

N/E
TOWN OF SUDBURY
211 NORTH RD
D10-0300
BOOK 12726 PAGE 603



CONTINUED ON SHEET NO. 29

CONTINUED ON SHEET NO. 31

FOR PROFILE SEE SHEET NO. 45 AND 46

SUDBURY
BRUCE FREEMAN RAIL TRAIL

| STATE | FED AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|-------|-------------------|-----------|--------------|
| MA | TBD | 31 | 123 |

PROJECT FILE NO. 608164

CONSTRUCTION PLANS

HIGHWAY GUARD DETAILS

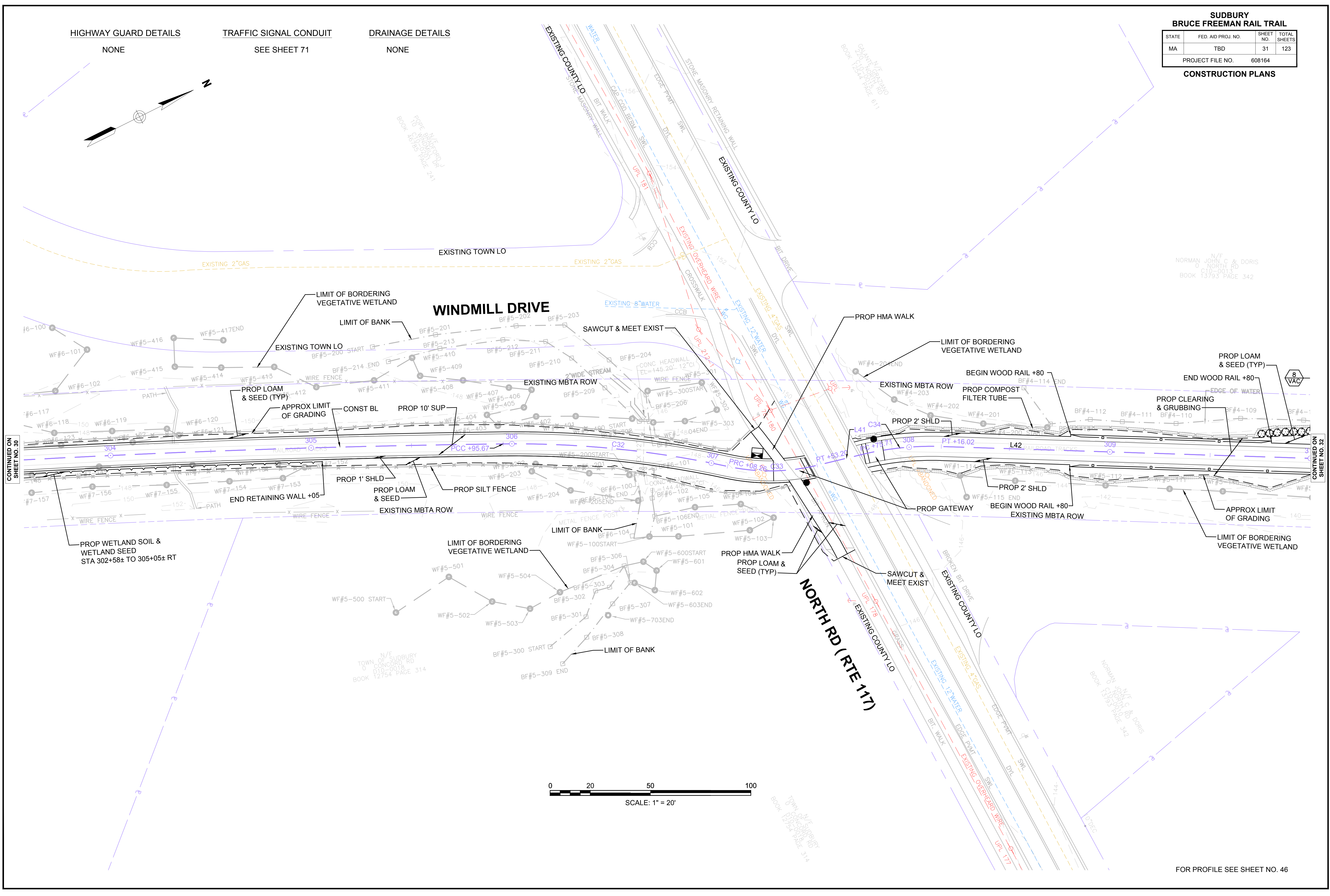
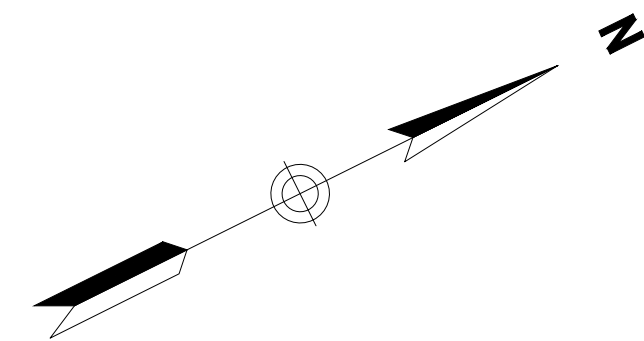
NONE

TRAFFIC SIGNAL CONDUIT

SEE SHEET 71

DRAINAGE DETAILS

NONE



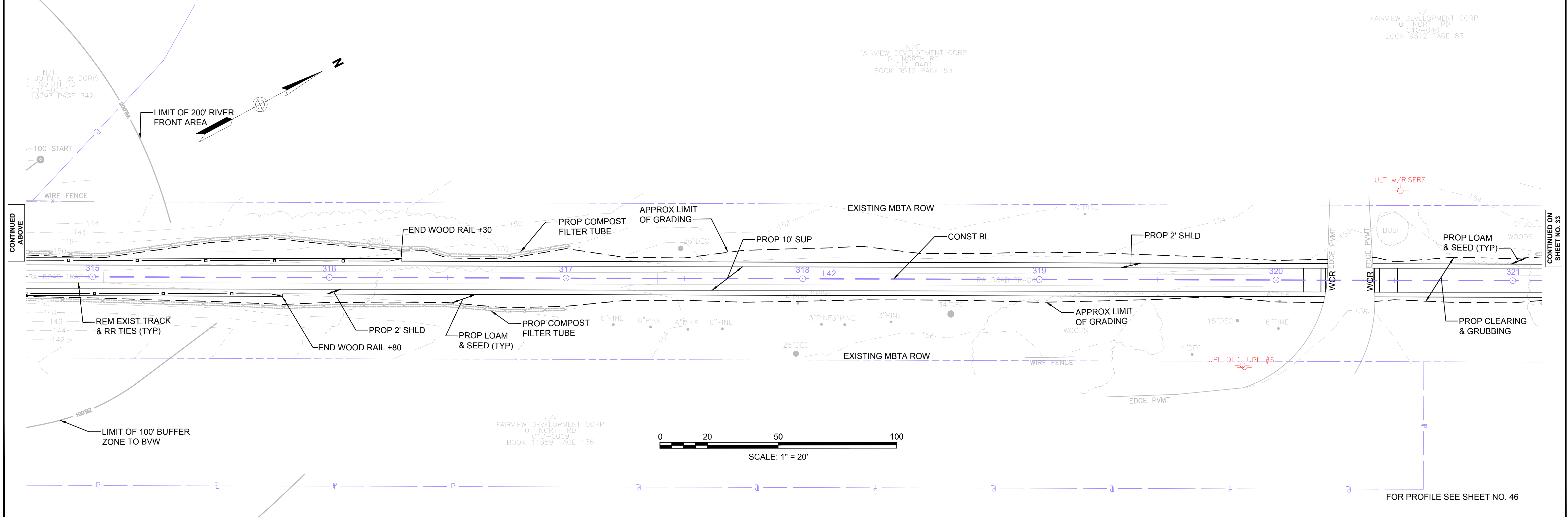
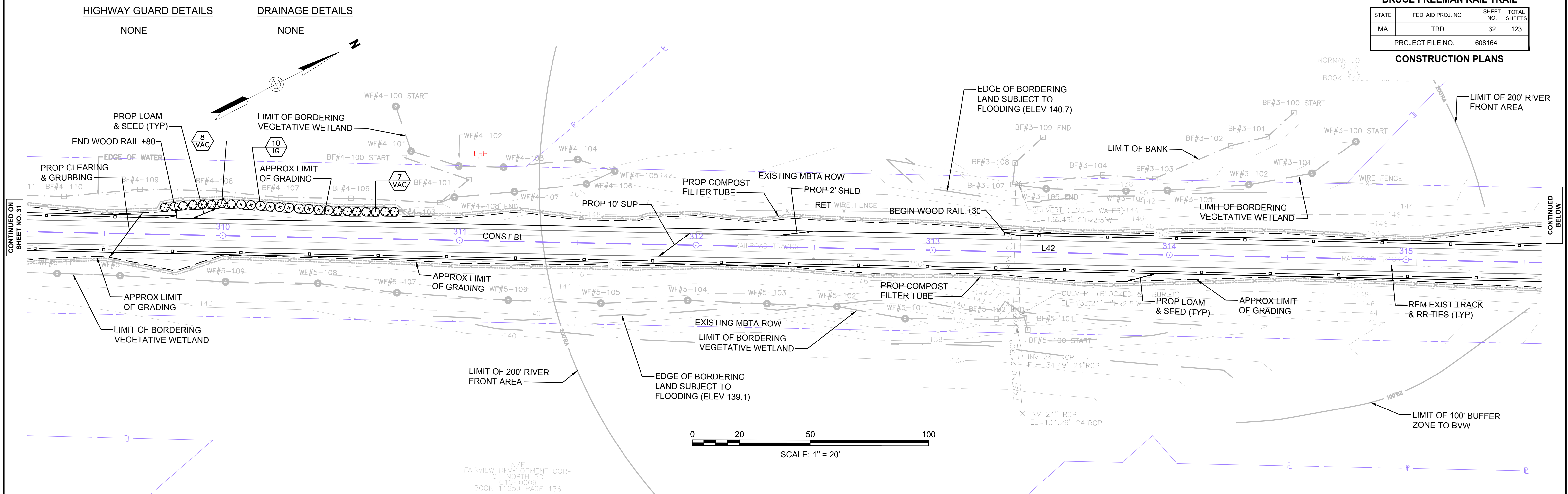
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CONTINUED ON SHEET NO. 32



FOR PROFILE SEE SHEET NO. 46

608164_HDGEN.DWG Plotted on 15-Sep-2017 1:50 PM



CONTINUED ON SHEET NO. 31

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CONTINUED ABOVE

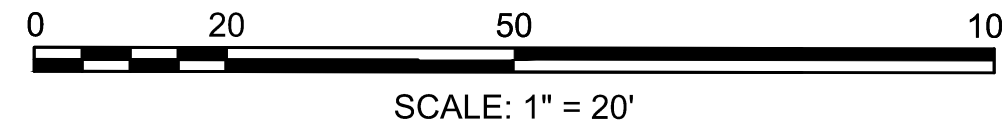
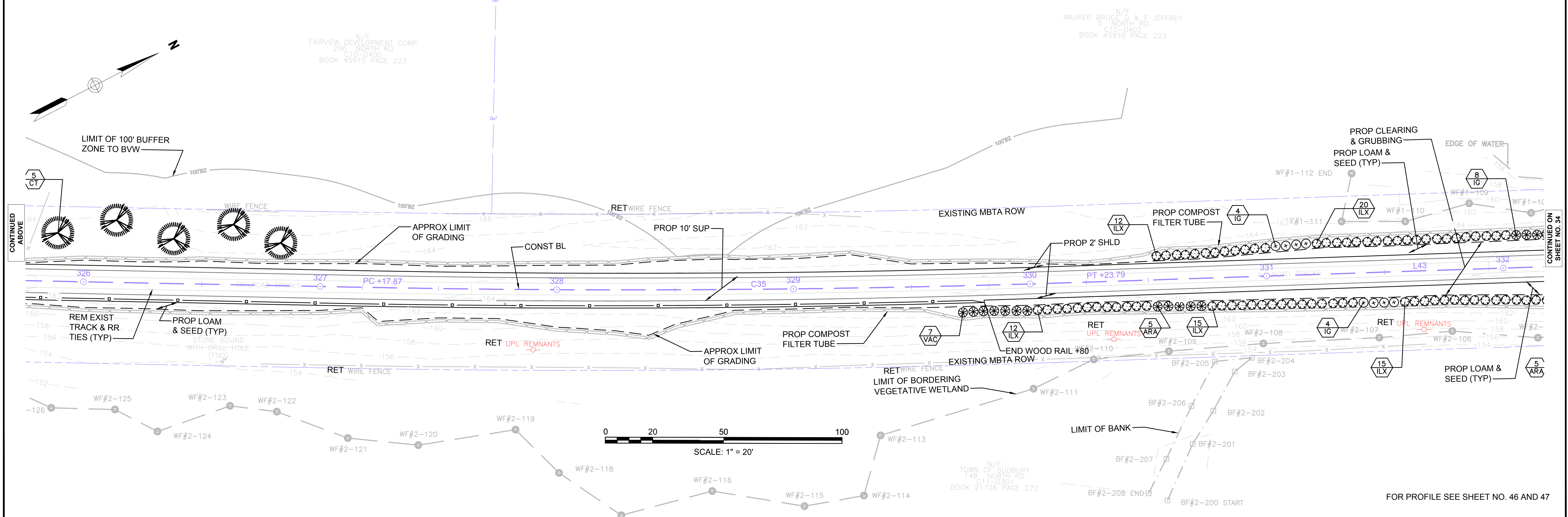
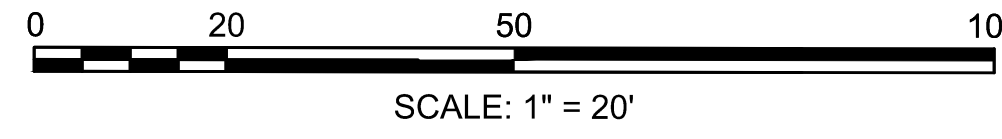
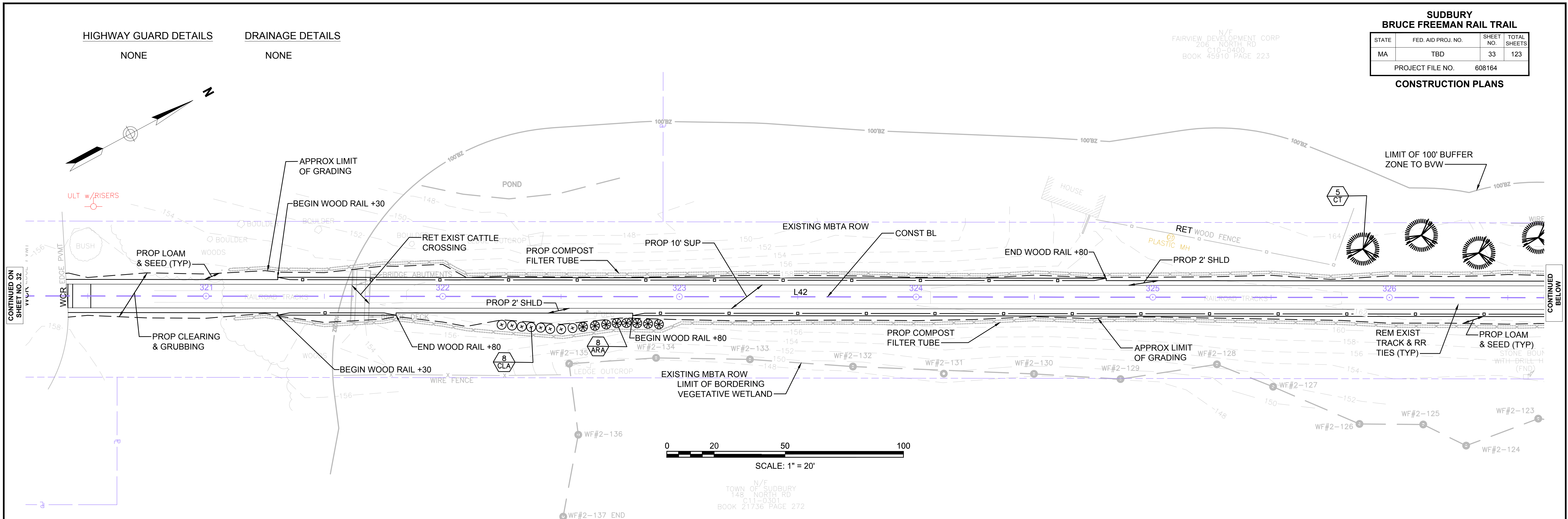
CONTINUED ON SHEET NO. 33

FOR PROFILE SEE SHEET NO. 46

N/E
 FAIRVIEW DEVELOPMENT CORP
 206 NORTH RD
 C10-0400
 BOOK 45910 PAGE 223

N/E
 MAURER BRUCE D & F JEFFREY
 0 NORTH RD
 C10-0402
 BOOK 45910 PAGE 223

N/E
 TOWN OF SUDBURY
 148 NORTH RD
 C11-0301
 BOOK 21736 PAGE 272



FOR PROFILE SEE SHEET NO. 46 AND 47

CONTINUED ON SHEET NO. 32

CONTINUED BELOW

CONTINUED ABOVE

CONTINUED ON SHEET NO. 34

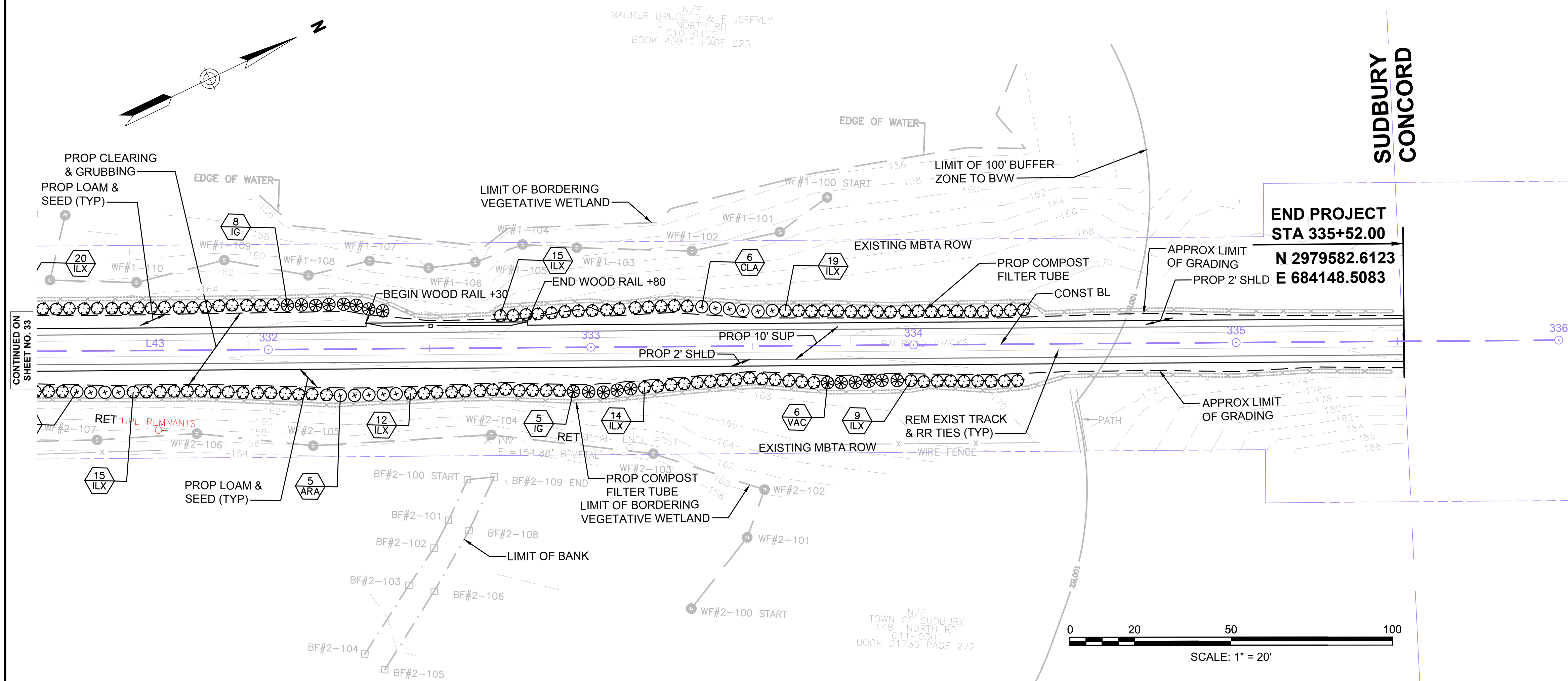
HIGHWAY GUARD DETAILS

DRAINAGE DETAILS

NONE

NONE

| SUDBURY BRUCE FREEMAN RAIL TRAIL | | | |
|-------------------------------------|--------------------|-----------|--------------|
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
| MA | TBD | 34 | 123 |
| PROJECT FILE NO. | | 608164 | |
| CONSTRUCTION PLANS | | | |



CONTINUED ON SHEET NO. 33

FOR PROFILE SEE SHEET NO. 47

608164_HDGEN.DWG Plotted on 15-Sep-2017 1:51 PM

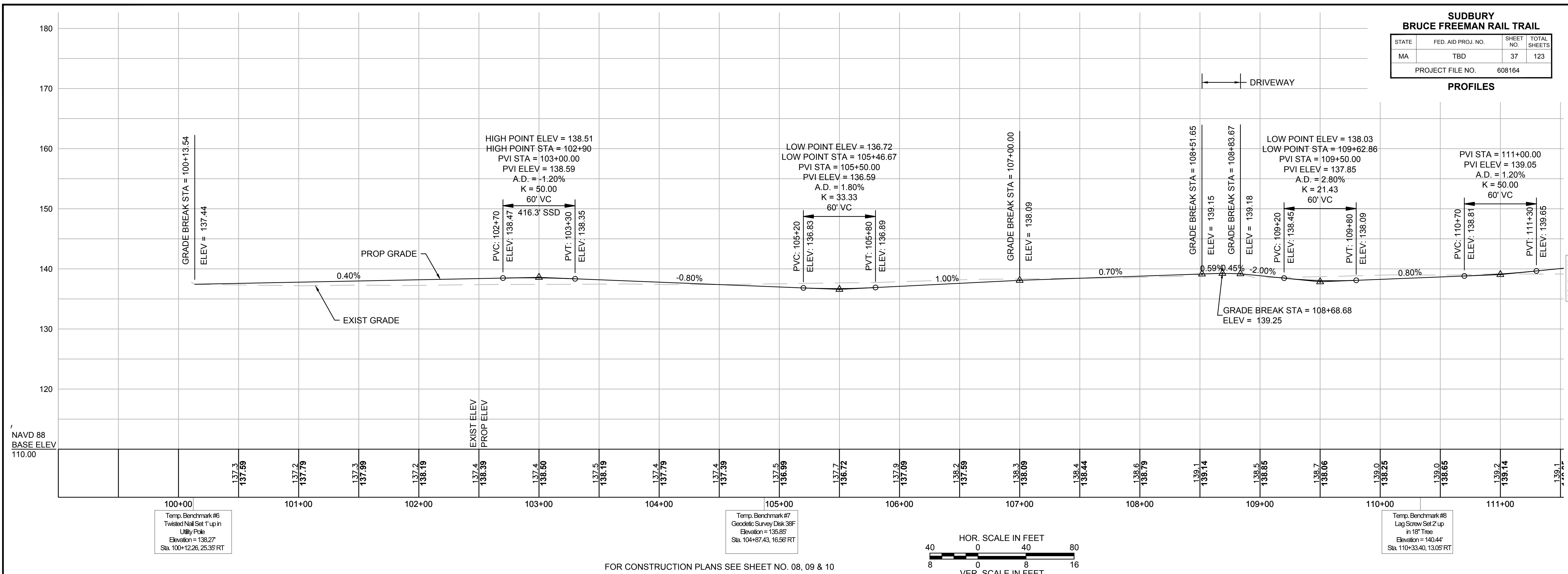
| PR-BFRT CONSTRUCTION BASELINE DATA | | | | | | | | |
|------------------------------------|------------------|--------------|-------------|---|------------------------|----------------|--------------|-------------|
| NUMBER | STARTING STATION | NORTHING | EASTING | CURVE DATA | LINE DATA | ENDING STATION | NORTHING | EASTING |
| L1 | 100+00.00 | 2957407.8807 | 677056.1380 | | N21°42'10"E 164.78' | 101+64.78 | 2957560.9793 | 677117.0715 |
| C1 | 101+64.78 | 2957560.9793 | 677117.0715 | R=2865.00' Δ=12°56'14" L=646.91' T=324.84' | | 108+11.69 | 2958183.8310 | 677286.6939 |
| L2 | 108+11.69 | 2958183.8310 | 677286.6939 | | N8°45'56"E 1688.31' | 125+00.00 | 2959852.4247 | 677543.9747 |
| L3 | 125+00.00 | 2959852.4247 | 677543.9747 | | N7°45'56"E 57.30' | 125+57.30 | 2959909.1979 | 677551.7168 |
| L4 | 125+57.30 | 2959909.1979 | 677551.7168 | | N8°45'56"E 105.05' | 126+62.34 | 2960013.0168 | 677567.7246 |
| L45 | 126+62.34 | 2960013.0168 | 677567.7246 | | N9°45'56"E 57.30' | 127+19.64 | 2960069.4852 | 677577.4433 |
| L5 | 127+19.64 | 2960069.4852 | 677577.4433 | | N8°45'56"E 1556.13' | 142+75.77 | 2961607.4408 | 677814.5810 |
| C3 | 142+75.77 | 2961607.4408 | 677814.5810 | R=2865.00' Δ=16°09'23" L=807.88' T=406.64' | | 150+83.65 | 2962378.1042 | 678047.8987 |
| L6 | 150+83.65 | 2962378.1042 | 678047.8987 | | N24°55'19"E 766.36' | 158+50.02 | 2963073.1056 | 678370.8299 |
| L7 | 158+50.02 | 2963073.1056 | 678370.8299 | | N25°03'54"E 200.00' | 160+50.02 | 2963254.2726 | 678455.5602 |
| L8 | 160+50.02 | 2963254.2726 | 678455.5602 | | N25°05'30"E 281.30' | 163+31.32 | 2963509.0238 | 678574.8486 |
| L9 | 163+31.32 | 2963509.0238 | 678574.8486 | | N24°36'59"E 249.97' | 165+81.29 | 2963736.2797 | 678678.9727 |
| L10 | 165+81.29 | 2963736.2797 | 678678.9727 | | N24°55'19"E 142.47' | 167+23.76 | 2963865.4836 | 678739.0070 |
| C4 | 167+23.76 | 2963865.4836 | 678739.0070 | R=300.00' Δ=9°44'33" L=51.01' T=25.57' | | 167+74.77 | 2963909.6990 | 678764.3223 |
| C5 | 167+74.77 | 2963909.6990 | 678764.3223 | R=300.00' Δ=10°28'26" L=54.84' T=27.50' | | 168+29.61 | 2963957.3984 | 678791.2295 |
| L11 | 168+29.61 | 2963957.3984 | 678791.2295 | | N24°11'25"E 103.68' | 169+33.30 | 2964051.9761 | 678833.7152 |
| C6 | 169+33.30 | 2964051.9761 | 678833.7152 | R=300.00' Δ=8°15'05" L=43.20' T=21.64' | | 169+76.50 | 2964092.5236 | 678848.5250 |
| C7 | 169+76.50 | 2964092.5236 | 678848.5250 | R=300.00' Δ=6°38'49" L=34.80' T=17.42' | | 170+11.30 | 2964125.3602 | 678860.0000 |
| L12 | 170+11.30 | 2964125.3602 | 678860.0000 | | N22°35'09"E 69.35' | 170+80.65 | 2964189.3904 | 678886.6345 |
| C8 | 170+80.65 | 2964189.3904 | 678886.6345 | R=400.00' Δ=6°00'21" L=41.93' T=20.98' | | 171+22.58 | 2964227.1884 | 678904.7350 |
| C9 | 171+22.58 | 2964227.1884 | 678904.7350 | R=400.00' Δ=8°02'53" L=56.19' T=28.14' | | 171+78.77 | 2964278.2466 | 678928.0761 |
| L13 | 171+78.77 | 2964278.2466 | 678928.0761 | | N20°32'36"E 150.38' | 173+29.14 | 2964419.0616 | 678980.8461 |
| C10 | 173+29.14 | 2964419.0616 | 678980.8461 | R=250.00' Δ=11°12'44" L=48.92' T=24.54' | | 173+78.07 | 2964466.2561 | 678993.4363 |
| L14 | 173+78.07 | 2964466.2561 | 678993.4363 | | N9°19'52"E 46.14' | 174+24.21 | 2964511.7897 | 679000.9180 |
| C11 | 174+24.21 | 2964511.7897 | 679000.9180 | R=250.00' Δ=10°28'32" L=45.71' T=22.92' | | 174+69.92 | 2964555.9666 | 679012.3995 |
| L15 | 174+69.92 | 2964555.9666 | 679012.3995 | | N19°48'24"E 84.11' | 175+54.03 | 2964635.1049 | 679040.9013 |
| C12 | 175+54.03 | 2964635.1049 | 679040.9013 | R=500.00' Δ=5°21'48" L=46.81' T=23.42' | | 176+00.84 | 2964678.3351 | 679058.7974 |
| C13 | 176+00.84 | 2964678.3351 | 679058.7974 | R=1050.00' Δ=5°22'01" L=98.36' T=49.21' | | 176+99.19 | 2964769.1794 | 679096.4013 |
| L16 | 176+99.19 | 2964769.1794 | 679096.4013 | | N19°48'11"E 225.82' | 179+25.02 | 2964981.6477 | 679172.9071 |
| L17 | 179+25.02 | 2964981.6477 | 679172.9071 | | N18°48'11"E 114.60' | 180+39.61 | 2965090.1293 | 679209.8436 |

| PR-BFRT CONSTRUCTION BASELINE DATA | | | | | | | | |
|------------------------------------|------------------|--------------|-------------|---|-------------------------|----------------|--------------|-------------|
| NUMBER | STARTING STATION | NORTHING | EASTING | CURVE DATA | LINE DATA | ENDING STATION | NORTHING | EASTING |
| L18 | 180+39.61 | 2965090.1293 | 679209.8436 | | N19°48'11"E 770.84' | 188+10.45 | 2965815.3843 | 679470.9943 |
| L19 | 188+10.45 | 2965815.3843 | 679470.9943 | | N20°48'11"E 114.60' | 189+25.05 | 2965922.5107 | 679511.6942 |
| L20 | 189+25.05 | 2965922.5107 | 679511.6942 | | N19°48'11"E 1865.81' | 207+90.86 | 2967677.9778 | 680143.8049 |
| C14 | 207+90.86 | 2967677.9778 | 680143.8049 | R=4000.00' Δ=0°52'18" L=60.86' T=30.43' | | 208+51.72 | 2967735.3948 | 680163.9876 |
| L21 | 208+51.72 | 2967735.3948 | 680163.9876 | | N18°55'52"E 139.23' | 209+90.94 | 2967867.0895 | 680209.1570 |
| C15 | 209+90.94 | 2967867.0895 | 680209.1570 | R=4000.00' Δ=0°52'31" L=61.11' T=30.55' | | 210+52.05 | 2967924.7387 | 680229.4233 |
| L22 | 210+52.05 | 2967924.7387 | 680229.4233 | | N19°48'24"E 131.71' | 211+83.76 | 2968048.6548 | 680274.0518 |
| L23 | 211+83.76 | 2968048.6548 | 680274.0518 | | N19°25'59"E 171.87' | 213+55.63 | 2968210.7359 | 680331.2351 |
| L24 | 213+55.63 | 2968210.7359 | 680331.2351 | | N19°49'56"E 542.87' | 218+98.50 | 2968721.4097 | 680515.4138 |
| L25 | 218+98.50 | 2968721.4097 | 680515.4138 | | N20°23'17"E 326.06' | 222+24.57 | 2969027.0476 | 680629.0063 |
| L26 | 222+24.57 | 2969027.0476 | 680629.0063 | | N19°45'40"E 69.86' | 222+94.43 | 2969092.7960 | 680652.6268 |
| C16 | 222+94.43 | 2969092.7960 | 680652.6268 | R=2700.00' Δ=15°15'54" L=719.35' T=361.82' | | 230+13.78 | 2969794.0107 | 680803.3198 |
| L27 | 230+13.78 | 2969794.0107 | 680803.3198 | | N4°29'46"E 1103.93' | 241+17.71 | 2970894.5467 | 680889.8569 |
| C17 | 241+17.71 | 2970894.5467 | 680889.8569 | R=5000.00' Δ=0°58'57" L=85.74' T=42.87' | | 242+03.45 | 2970979.9609 | 680897.3105 |
| L28 | 242+03.45 | 2970979.9609 | 680897.3105 | | N5°28'43"E 147.53' | 243+50.99 | 2971126.8203 | 680911.3959 |
| C18 | 243+50.99 | 2971126.8203 | 680911.3959 | R=5000.00' Δ=0°58'57" L=85.74' T=42.87' | | 244+36.73 | 2971212.2344 | 680918.8496 |
| C19 | 244+36.73 | 2971212.2344 | 680918.8496 | R=3000.00' Δ=1°26'00" L=75.05' T=37.53' | | 245+59.84 | 2971335.0298 | 680927.5635 |
| L29 | 245+59.84 | 2971335.0298 | 680927.5635 | | N3°03'45"E 72.33' | 246+32.17 | 2971407.2593 | 680931.4280 |
| C20 | 246+32.17 | 2971407.2593 | 680931.4280 | R=4000.00' Δ=1°26'00" L=100.07' T=50.04' | | 247+32.24 | 2971507.1115 | 680938.0239 |
| L30 | 247+32.24 | 2971507.1115 | 680938.0239 | | N4°29'46"E 1168.84' | 259+01.08 | 2972672.3571 | 681029.6492 |
| C21 | 259+01.08 | 2972672.3571 | 681029.6492 | R=2700.00' Δ=11°56'05" L=562.41' T=282.23' | | 264+63.49 | 2973224.4142 | 681131.6018 |
| L31 | 264+63.49 | 2973224.4142 | 681131.6018 | | N16°25'51"E 868.04' | 273+31.53 | 2974057.0028 | 681377.1308 |
| C22 | 273+31.53 | 2974057.0028 | 681377.1308 | R=600.00' Δ=11°24'39" L=119.49' T=59.94' | | 274+51.02 | 2974167.5053 | 681422.0822 |
| C23 | 274+51.02 | 2974167.5053 | 681422.0822 | R=75.00' Δ=30°13'13" L=39.56' T=20.25' | | 274+90.58 | 2974205.6454 | 681430.6994 |
| L32 | 274+90.58 | 2974205.6454 | 681430.6994 | | N2°22'44"W 21.75' | 275+12.33 | 2974227.3744 | 681429.7966 |
| C24 | 275+12.33 | 2974227.3744 | 681429.7966 | R=75.23' Δ=23°21'17" L=30.66' T=15.55' | | 275+42.99 | 2974257.4273 | 681434.7172 |
| L33 | 275+42.99 | 2974257.4273 | 681434.7172 | | N20°58'33"E 62.10' | 276+05.09 | 2974315.4077 | 681456.9457 |
| C25 | 276+05.09 | 2974315.4077 | 681456.9457 | R=250.00' Δ=10°15'47" L=44.78' T=22.45' | | 276+49.87 | 2974355.5662 | 681476.6256 |
| C26 | 276+49.87 | 2974355.5662 | 681476.6256 | R=250.00' Δ=10°15'47" L=44.78' T=22.45' | | 276+94.65 | 2974395.7247 | 681496.3054 |
| L34 | 276+94.65 | 2974395.7247 | 681496.3054 | | N20°58'33"E 621.40' | 283+16.05 | 2974975.9408 | 681718.7489 |

| PR-BFRT CONSTRUCTION BASELINE DATA | | | | | | | | |
|------------------------------------|------------------|--------------|-------------|---|-------------------------|----------------|--------------|-------------|
| NUMBER | STARTING STATION | NORTHING | EASTING | CURVE DATA | LINE DATA | ENDING STATION | NORTHING | EASTING |
| C27 | 283+16.05 | 2974975.9408 | 681718.7489 | R = 500.00' Δ= 7°45'30" L=67.70' T=33.90' | | 283+83.75 | 2975040.6029 | 681738.6375 |
| L35 | 283+83.75 | 2975040.6029 | 681738.6375 | | N13°13'03"E 30.28' | 284+14.03 | 2975070.0834 | 681745.5616 |
| C28 | 284+14.03 | 2975070.0834 | 681745.5616 | R = 30.00' Δ= 41°44'55" L=21.86' T=11.44' | | 284+35.89 | 2975087.7884 | 681757.5452 |
| L36 | 284+35.89 | 2975087.7884 | 681757.5452 | | N54°57'59"E 24.19' | 284+60.09 | 2975101.6773 | 681777.3558 |
| C29 | 284+60.09 | 2975101.6773 | 681777.3558 | R = 30.00' Δ= 44°19'57" L=23.21' T=12.22' | | 284+83.30 | 2975120.7058 | 681789.6189 |
| L37 | 284+83.30 | 2975120.7058 | 681789.6189 | | N10°38'02"E 40.32' | 285+23.62 | 2975160.3357 | 681797.0596 |
| C30 | 285+23.62 | 2975160.3357 | 681797.0596 | R = 250.00' Δ= 10°21'50" L=45.22' T=22.67' | | 285+68.84 | 2975203.7853 | 681809.3675 |
| L38 | 285+68.84 | 2975203.7853 | 681809.3675 | | N20°59'52"E 516.76' | 290+85.60 | 2975686.2302 | 681994.5380 |
| L39 | 290+85.60 | 2975686.2302 | 681994.5380 | | N21°59'52"E 114.40' | 292+00.00 | 2975792.3004 | 682037.3880 |
| L40 | 292+00.00 | 2975792.3004 | 682037.3880 | | N20°59'53"E 507.83' | 297+07.83 | 2976266.4051 | 682219.3611 |
| C31 | 297+07.83 | 2976266.4051 | 682219.3611 | R = 5730.00' Δ= 8°52'40" L=887.84' T=444.81' | | 305+95.67 | 2977067.3765 | 682600.3229 |
| C32 | 305+95.67 | 2977067.3765 | 682600.3229 | R = 500.00' Δ= 12°54'08" L=112.59' T=56.54' | | 307+08.26 | 2977157.8952 | 682666.8809 |
| C33 | 307+08.26 | 2977157.8952 | 682666.8809 | R = 100.00' Δ= 25°44'59" L=44.94' T=22.86' | | 307+53.20 | 2977196.5269 | 682689.0978 |
| L41 | 307+53.20 | 2977196.5269 | 682689.0978 | | N17°01'41"E 22.50' | 307+75.71 | 2977218.0413 | 682695.6870 |
| C34 | 307+75.71 | 2977218.0413 | 682695.6870 | R = 150.00' Δ= 15°24'02" L=40.32' T=20.28' | | 308+16.02 | 2977254.5527 | 682712.5024 |
| L42 | 308+16.02 | 2977254.5527 | 682712.5024 | | N32°25'44"E 1901.85' | 327+17.87 | 2978859.8261 | 683732.3720 |
| C35 | 327+17.87 | 2978859.8261 | 683732.3720 | R = 5730.00' Δ= 3°03'32" L=305.92' T=153.00' | | 330+23.79 | 2979122.2959 | 683889.4527 |
| L43 | 330+23.79 | 2979122.2959 | 683889.4527 | | N29°22'11"E 576.21' | 336+00.00 | 2979624.4429 | 684172.0497 |

| SUDBURY BRUCE FREEMAN RAIL TRAIL | | | |
|-------------------------------------|--------------------|-----------|--------------|
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
| MA | TBD | 37 | 123 |
| PROJECT FILE NO. | | 608164 | |

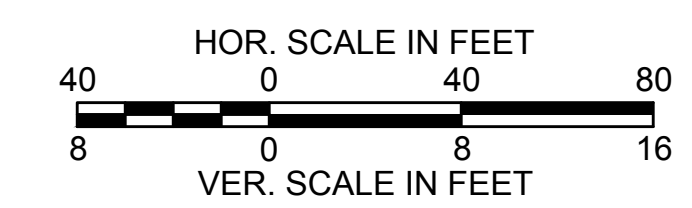
PROFILES



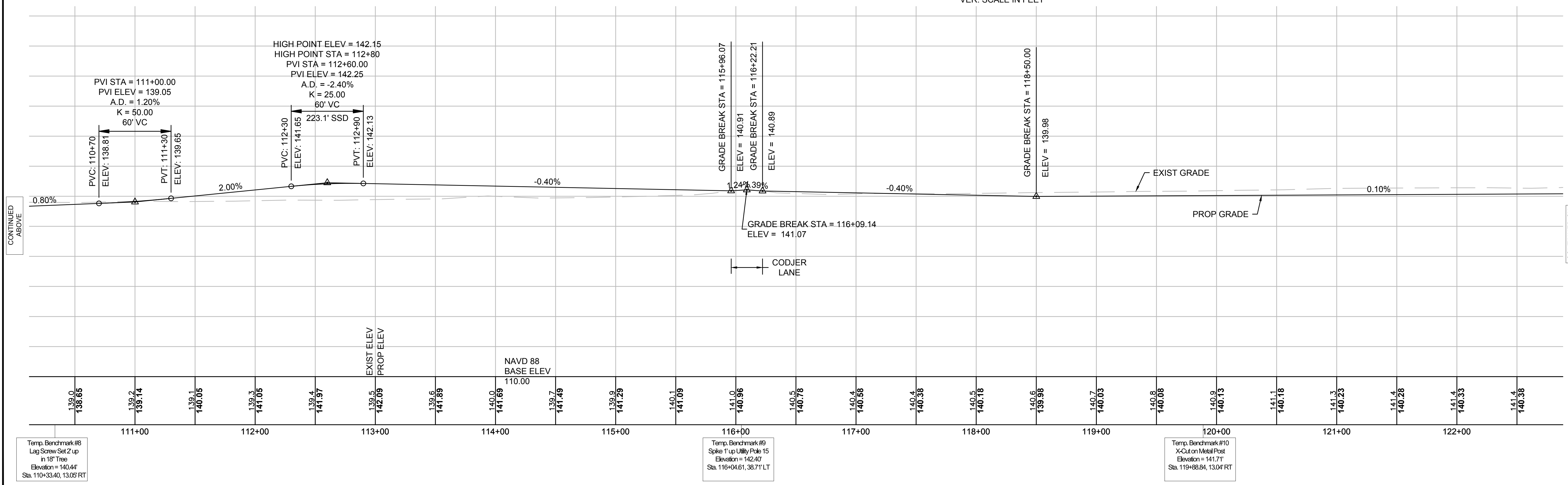
Temp. Benchmark #6
Twisted Nail Set 1' up in
Utility Pole
Elevation = 138.27'
Sta. 100+12.26, 25.35 RT

Temp. Benchmark #7
Geodetic Survey Disk 38F
Elevation = 136.85'
Sta. 104+87.43, 16.56 RT

Temp. Benchmark #8
Lag Screw Set 2' up
in 18" Tree
Elevation = 140.44'
Sta. 110+33.40, 13.05 RT



FOR CONSTRUCTION PLANS SEE SHEET NO. 08, 09 & 10



Temp. Benchmark #8
Lag Screw Set 2' up
in 18" Tree
Elevation = 140.44'
Sta. 110+33.40, 13.05 RT

Temp. Benchmark #9
Spike 1' up Utility Pole 15
Elevation = 142.40'
Sta. 116+04.61, 38.71 LT

Temp. Benchmark #10
X-Cut on Metal Post
Elevation = 141.71'
Sta. 119+88.84, 13.04 RT

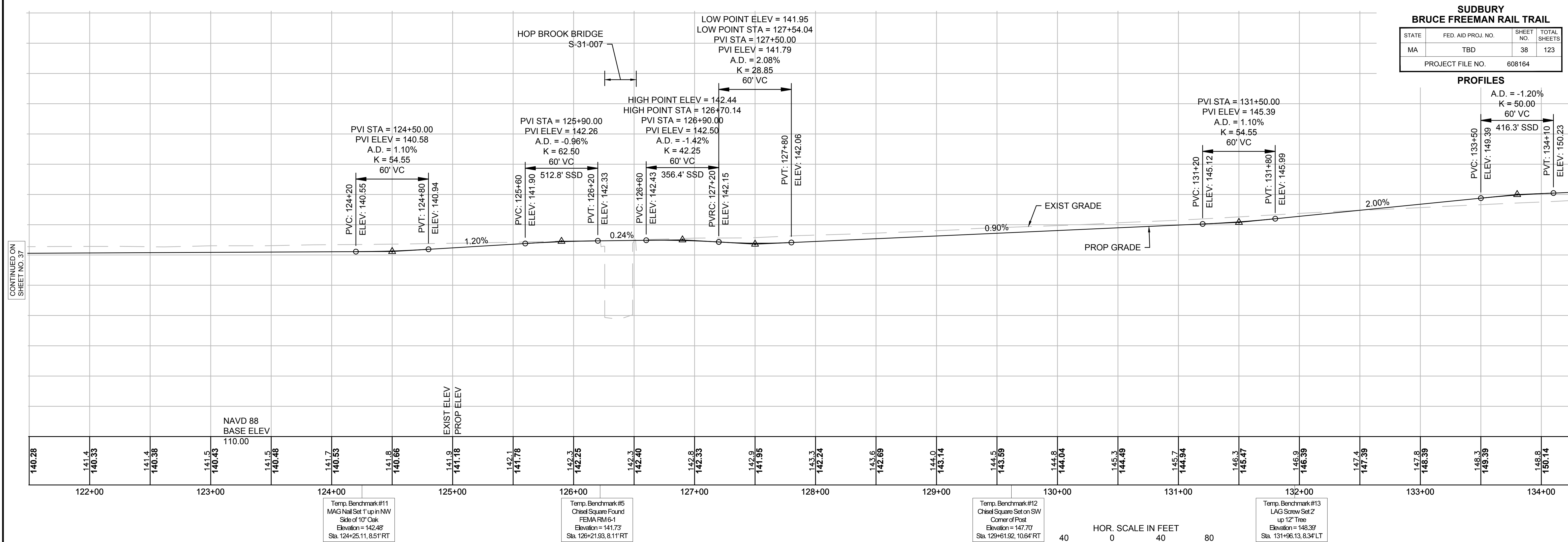
CONTINUED ABOVE

CONTINUED ON SHEET NO. 38

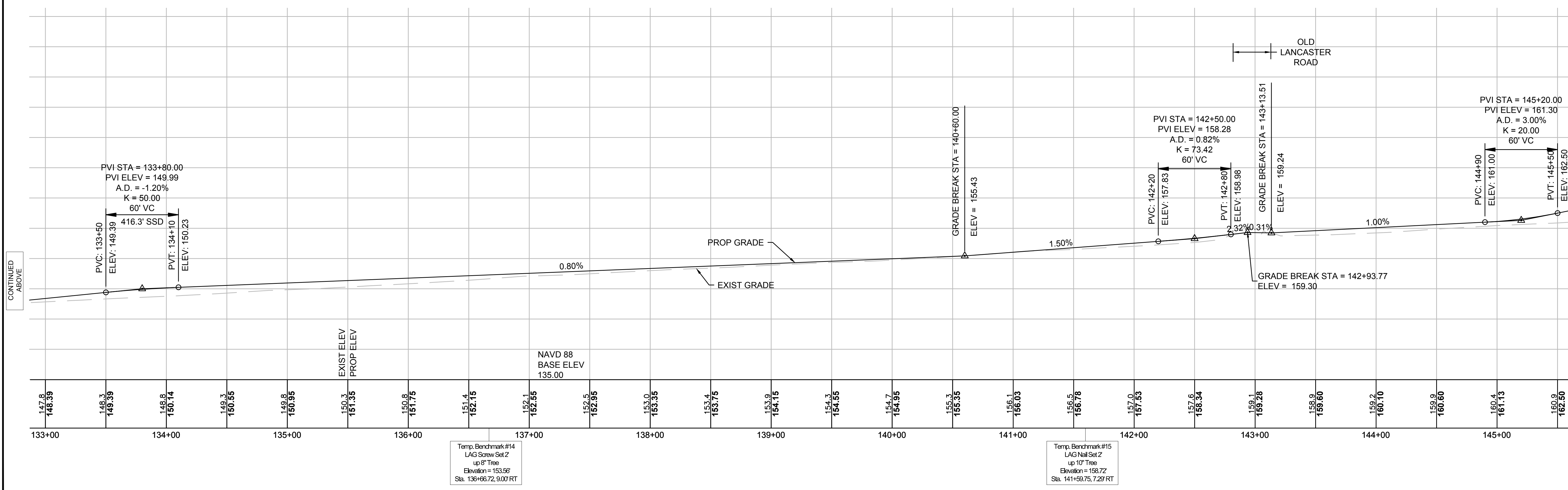
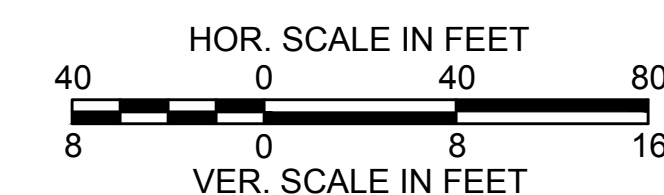
**SUDBURY
BRUCE FREEMAN RAIL TRAIL**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|--------------------|-----------|--------------|
| MA | TBD | 38 | 123 |
| PROJECT FILE NO. | | 608164 | |

PROFILES



FOR CONSTRUCTION PLANS SEE SHEET NO. 10, 11 & 12



CONTINUED ON
SHEET NO. 37

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BELOW

CONTINUED
ABOVE

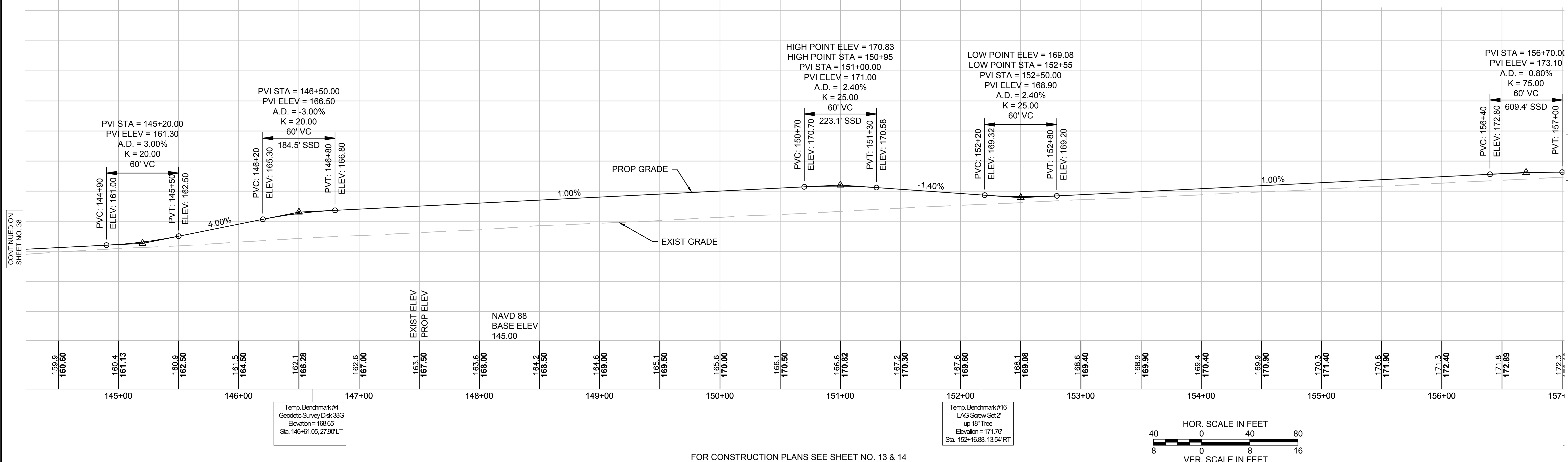
CONTINUED ON
SHEET NO. 39

**SUDBURY
BRUCE FREEMAN RAIL TRAIL**

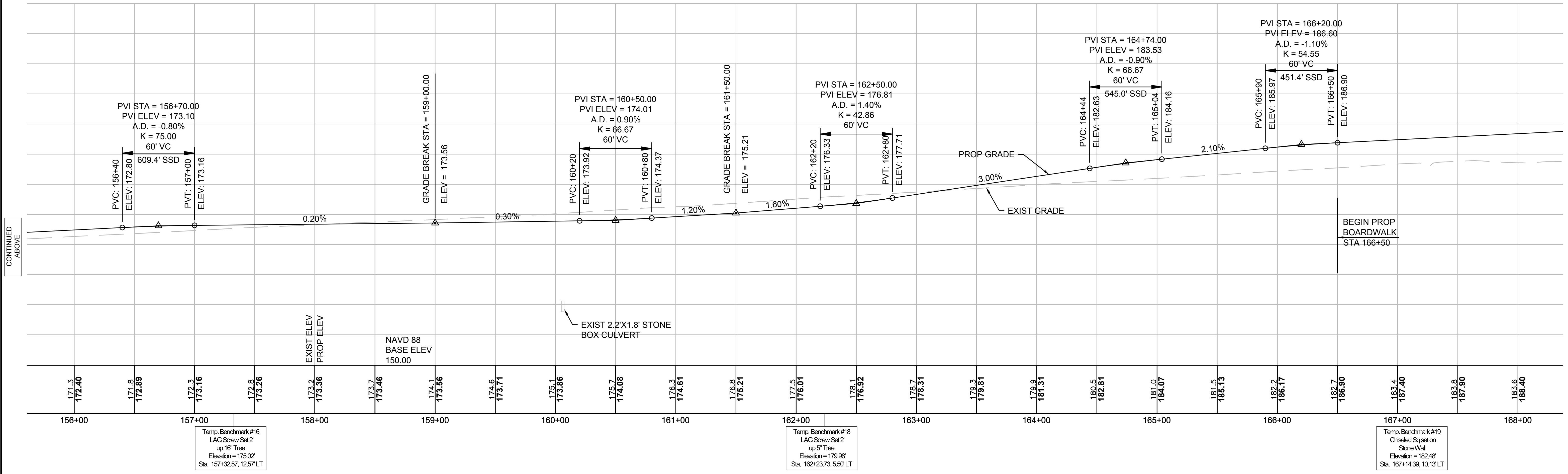
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|-------|--------------------|-----------|--------------|
| MA | TBD | 39 | 123 |

PROJECT FILE NO. 608164

PROFILES



FOR CONSTRUCTION PLANS SEE SHEET NO. 13 & 14



BEGIN PROP BOARDWALK STA 166+50

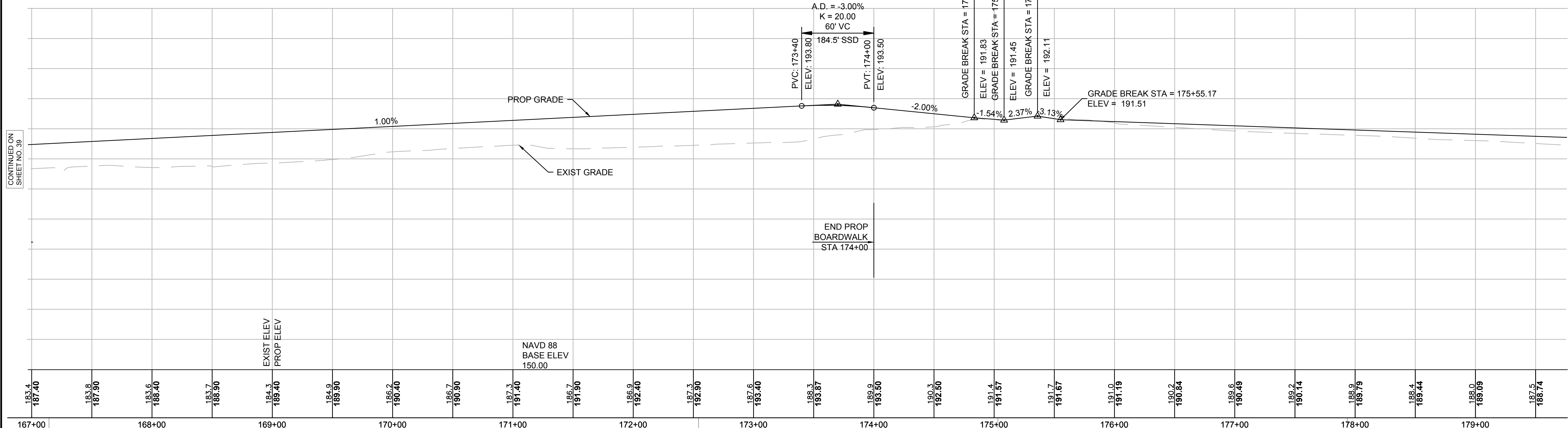
EXIST 2.2'X1.8' STONE BOX CULVERT

CONTINUED ON SHEET NO. 38

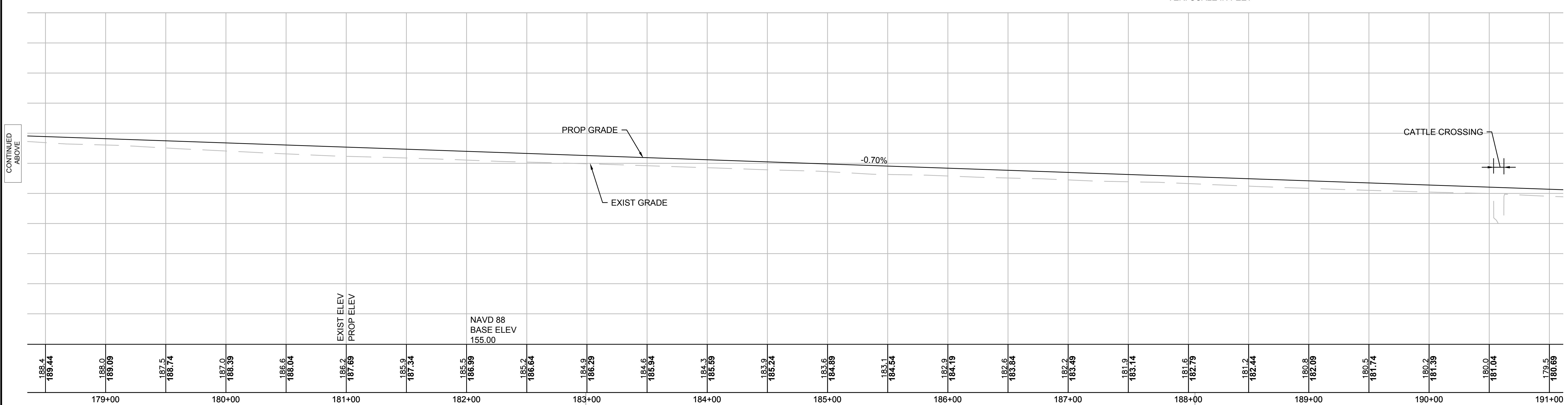
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CONTINUED ON SHEET NO. 40



| Station | Prop. Elev. | Exist. Elev. |
|---------|-------------|--------------|
| 167+00 | 187.40 | 187.40 |
| 168+00 | 188.40 | 188.40 |
| 169+00 | 189.40 | 189.40 |
| 170+00 | 190.40 | 190.40 |
| 171+00 | 191.40 | 191.40 |
| 172+00 | 192.40 | 192.40 |
| 173+00 | 193.40 | 193.40 |
| 174+00 | 193.50 | 193.50 |
| 175+00 | 191.57 | 191.57 |
| 176+00 | 191.67 | 191.67 |
| 177+00 | 190.49 | 190.49 |
| 178+00 | 189.79 | 189.79 |
| 179+00 | 188.74 | 188.74 |



| Station | Prop. Elev. | Exist. Elev. |
|---------|-------------|--------------|
| 179+00 | 189.44 | 189.44 |
| 180+00 | 188.39 | 188.39 |
| 181+00 | 187.69 | 187.69 |
| 182+00 | 186.64 | 186.64 |
| 183+00 | 185.69 | 185.69 |
| 184+00 | 184.69 | 184.69 |
| 185+00 | 183.64 | 183.64 |
| 186+00 | 182.49 | 182.49 |
| 187+00 | 181.14 | 181.14 |
| 188+00 | 180.09 | 180.09 |
| 189+00 | 179.5 | 179.5 |
| 190+00 | 181.39 | 181.39 |
| 191+00 | 180.89 | 180.89 |

CONTINUED ON SHEET NO. 39

CONTINUED BELOW

CONTINUED ABOVE

CONTINUED ON SHEET NO. 41

Temp. Benchmark #19
Checked Sq set on
Stone Wall
Elevation = 182.48
Sta. 167+14.39, 10.13' LT

Temp. Benchmark #20
Checked Sq set on
Boulder
Elevation = 190.04'
Sta. 172+54.34, 24.71' LT

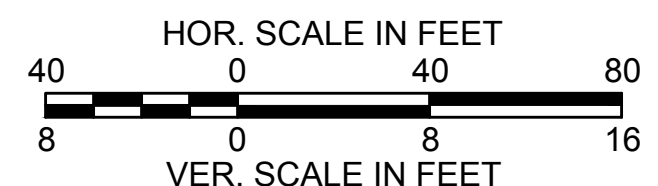
Temp. Benchmark #2246
Drill Hole set in Bolt Over
Fire Hydrant's Main Outlet
Elevation = 191.27'
Sta. 175+03.09, 35.32' RT

Temp. Benchmark #21
LAG Screw set 2'
up 10" Tree
Elevation = 190.30'
Sta. 177+93.51, 10.98' RT

Temp. Benchmark #22
LAG Screw set 2'
up 9" Tree
Elevation = 190.30'
Sta. 182+99.09, 11.95' LT

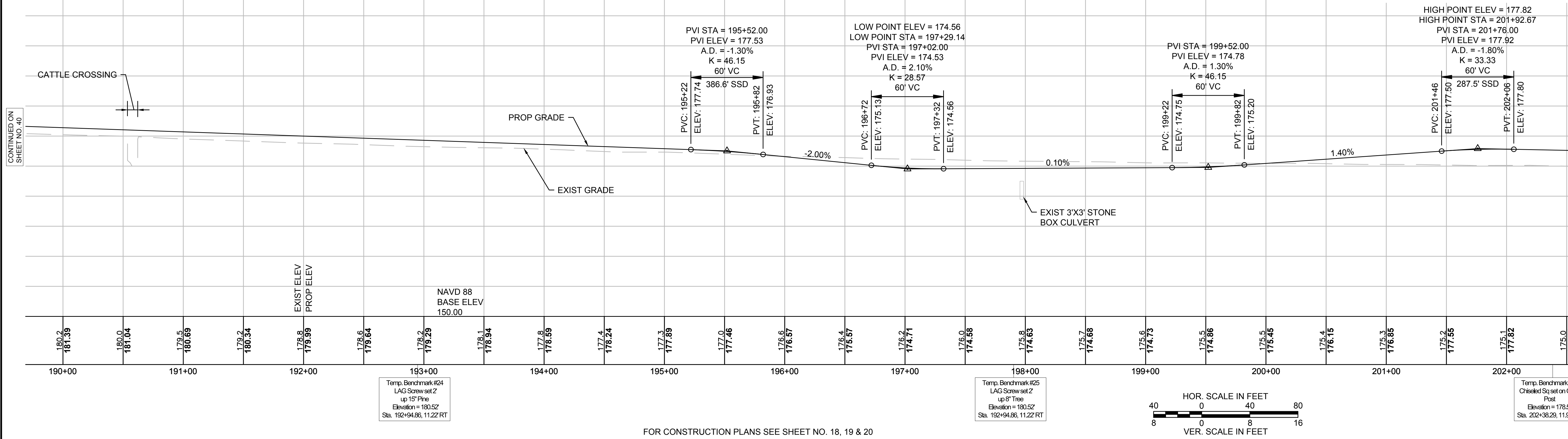
Temp. Benchmark #23
LAG Screw set 2'
up 5" Pine
Elevation = 183.80'
Sta. 188+05.41, 2.53' LT

FOR CONSTRUCTION PLANS SEE SHEET NO. 14, 15, 16 & 17

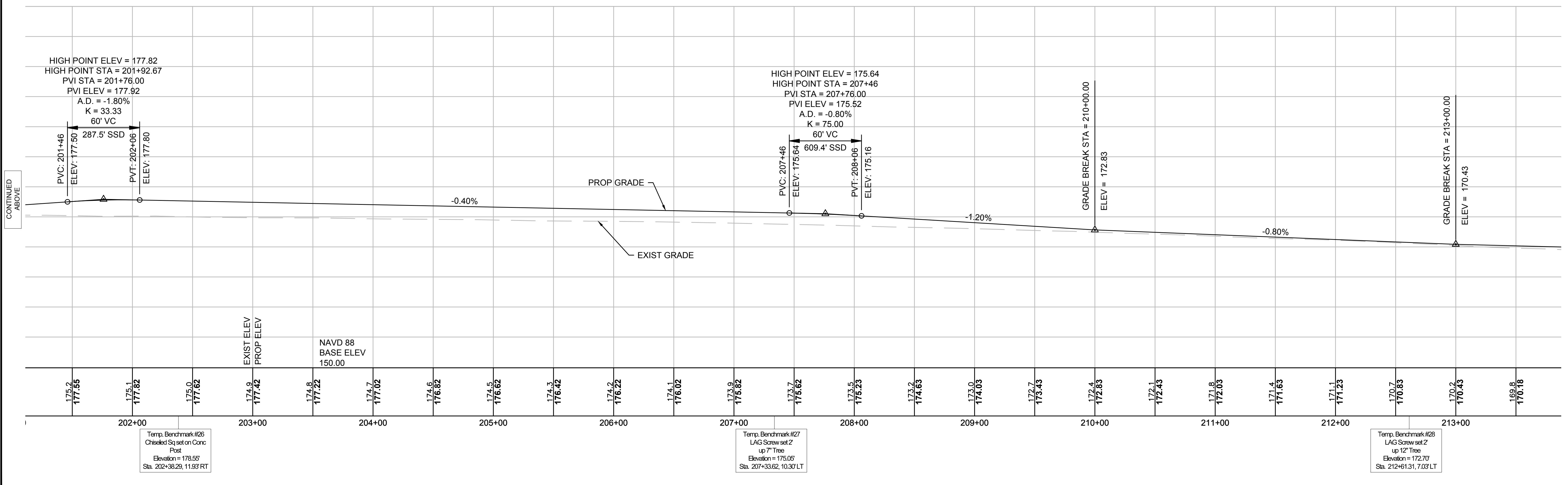


| SUDBURY BRUCE FREEMAN RAIL TRAIL | | | |
|-------------------------------------|--------------------|-----------|--------------|
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
| MA | TBD | 41 | 123 |
| PROJECT FILE NO. | | 608164 | |

PROFILES



FOR CONSTRUCTION PLANS SEE SHEET NO. 18, 19 & 20



CONTINUED ON SHEET NO. 40

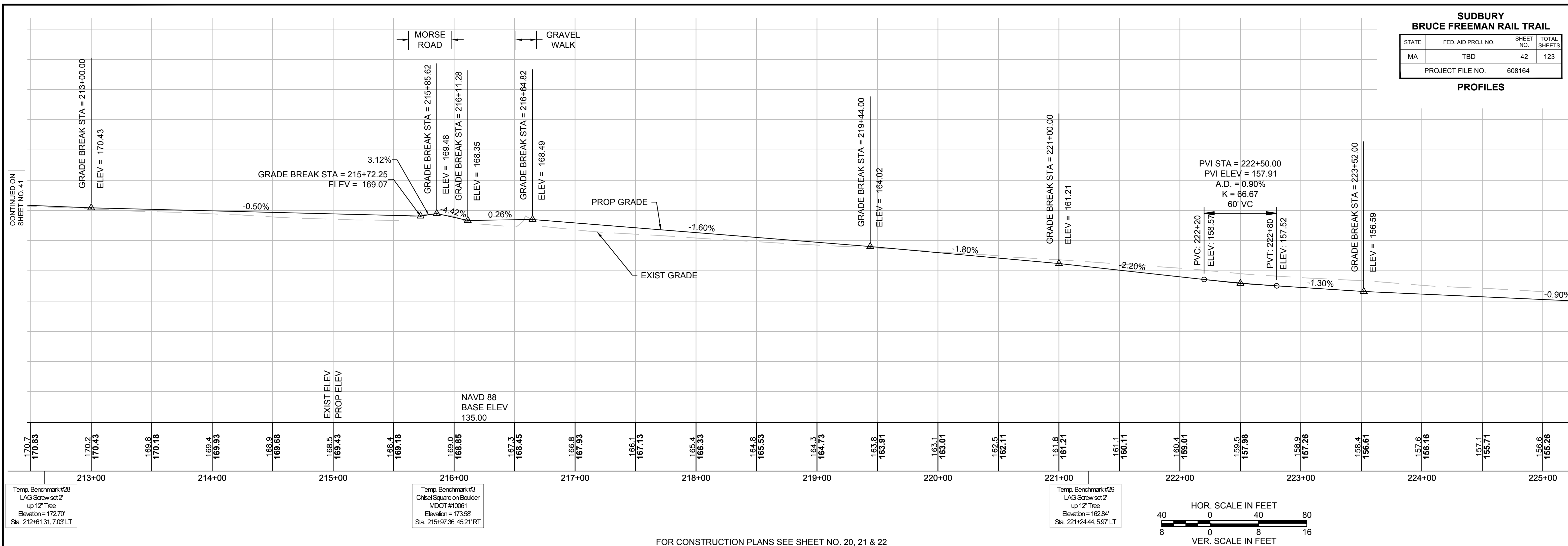
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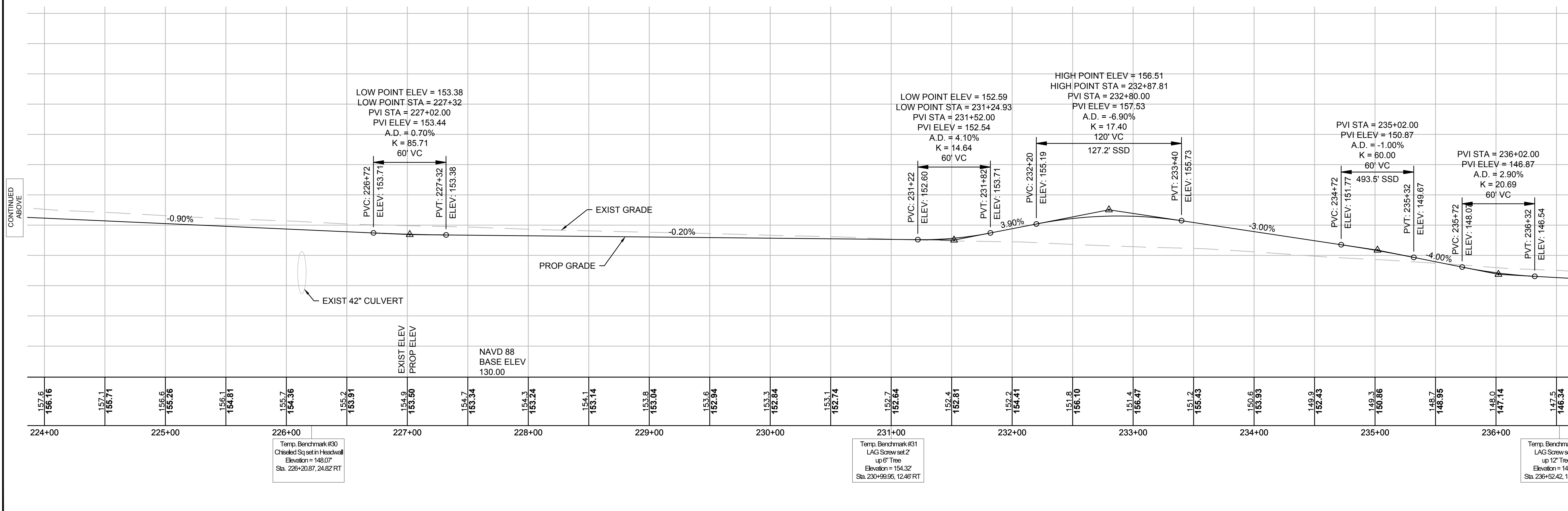
CONTINUED ON SHEET NO. 42

| SUDBURY BRUCE FREEMAN RAIL TRAIL | | | |
|-------------------------------------|--------------------|-----------|--------------|
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
| MA | TBD | 42 | 123 |
| PROJECT FILE NO. | | 608164 | |

PROFILES



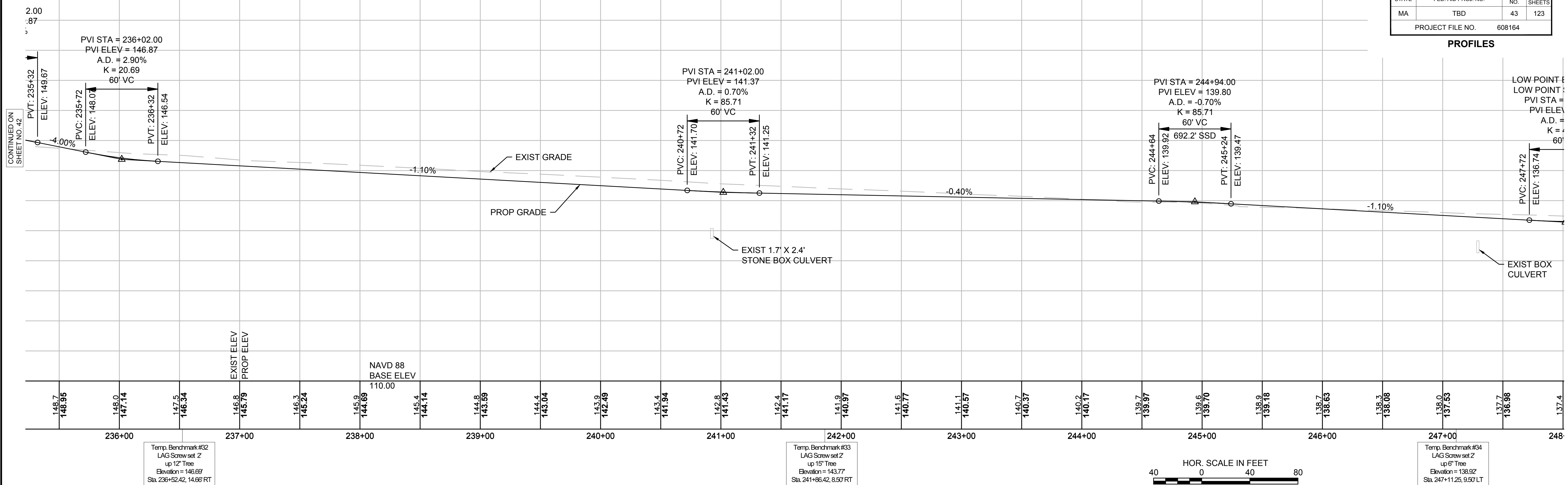
FOR CONSTRUCTION PLANS SEE SHEET NO. 20, 21 & 22



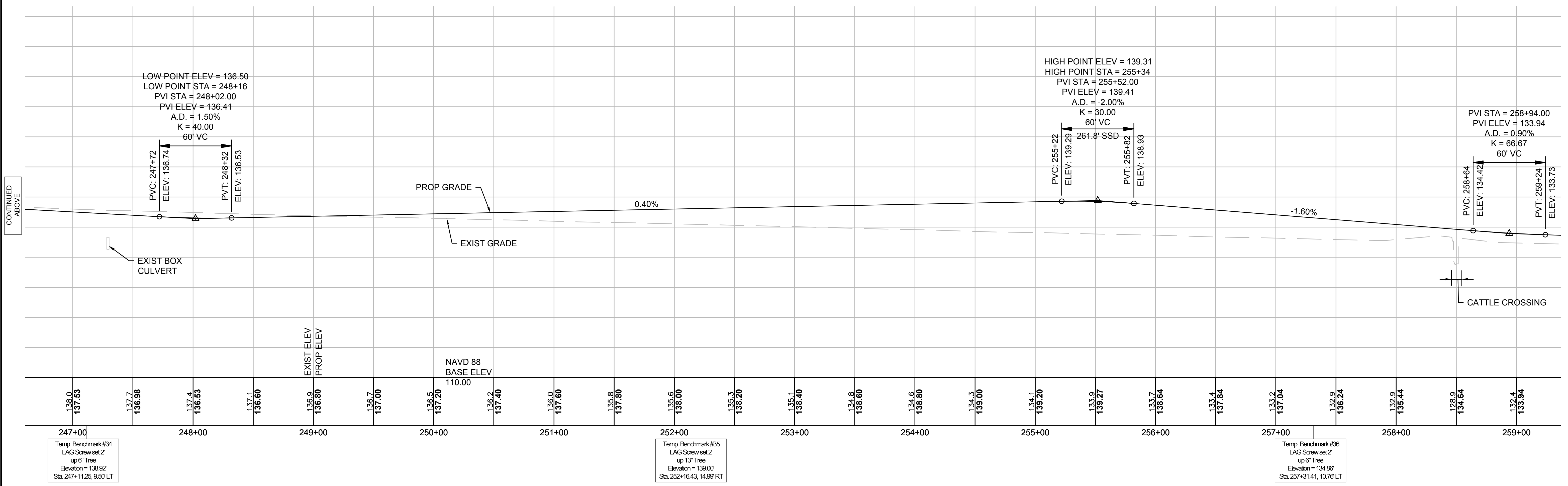
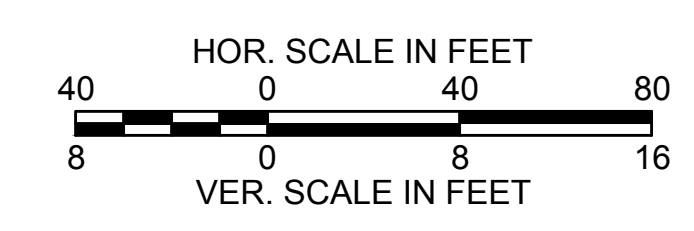
**SUDBURY
BRUCE FREEMAN RAIL TRAIL**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|--------------------|-----------|--------------|
| MA | TBD | 43 | 123 |
| PROJECT FILE NO. | | 608164 | |

PROFILES

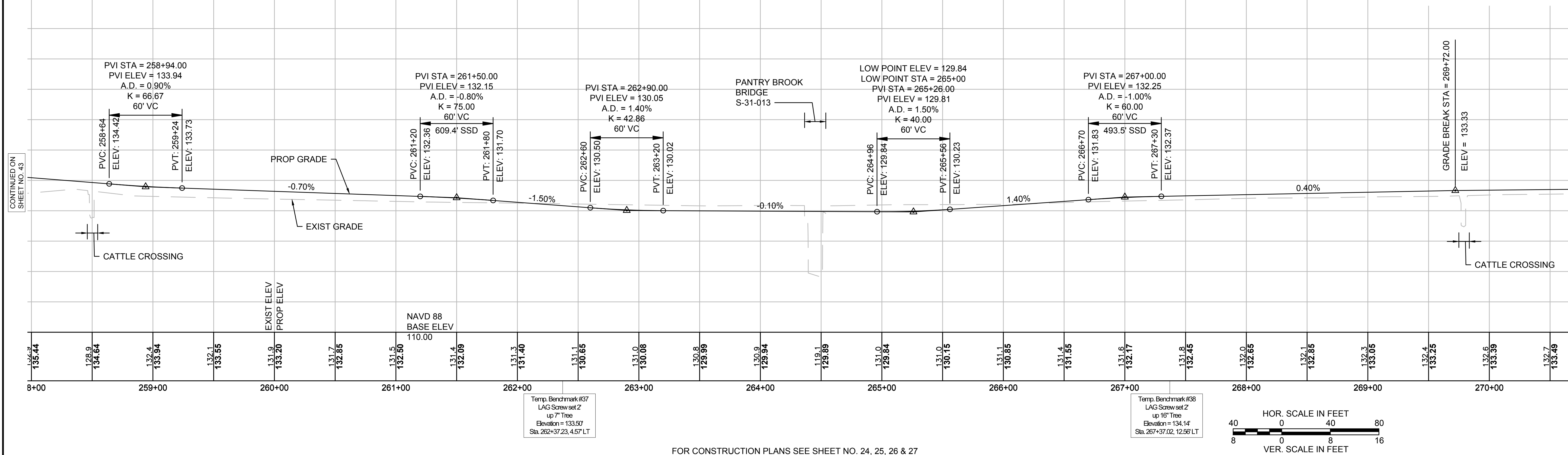


FOR CONSTRUCTION PLANS SEE SHEET NO. 22, 23 & 24

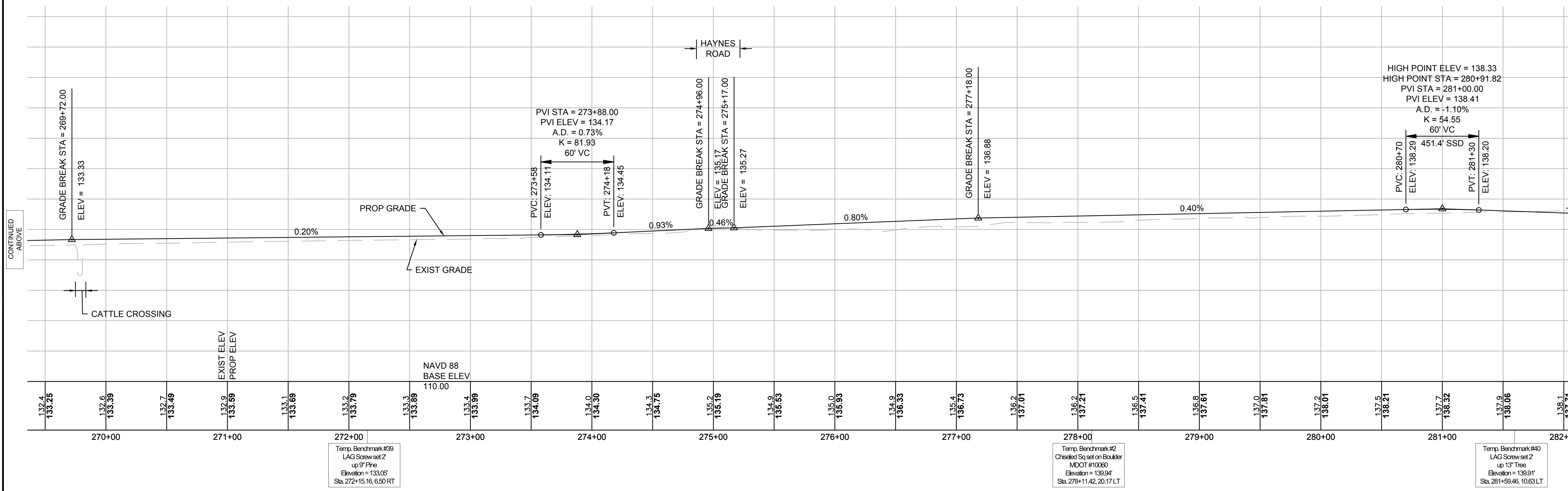


| SUDBURY BRUCE FREEMAN RAIL TRAIL | | | |
|-------------------------------------|--------------------|-----------|--------------|
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
| MA | TBD | 44 | 123 |
| PROJECT FILE NO. | | 608164 | |

PROFILES



FOR CONSTRUCTION PLANS SEE SHEET NO. 24, 25, 26 & 27



CONTINUED ON SHEET NO. 43

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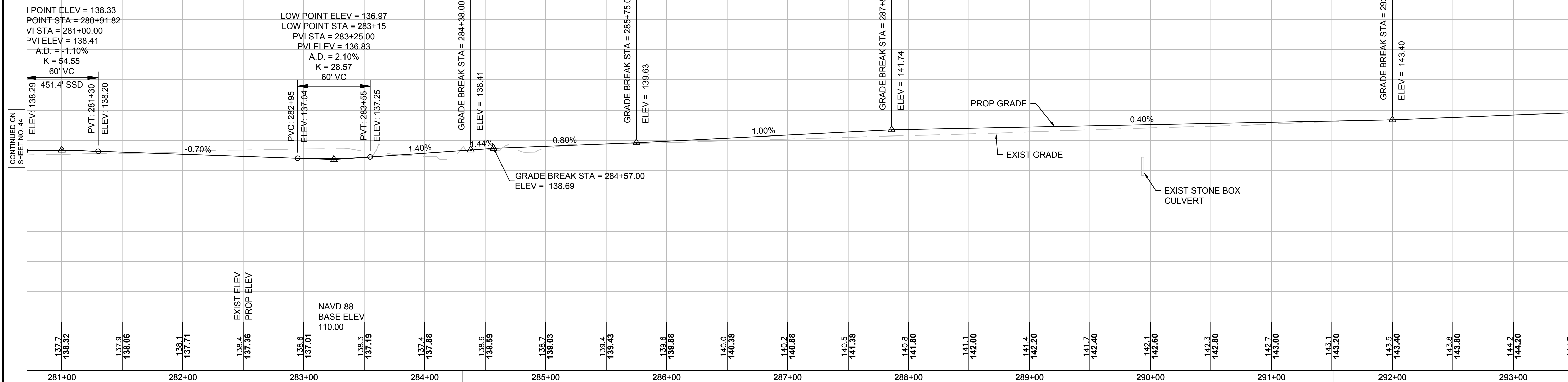
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CONTINUED ON SHEET NO. 46

**SUDBURY
BRUCE FREEMAN RAIL TRAIL**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|--------------------|-----------|--------------|
| MA | TBD | 45 | 123 |
| PROJECT FILE NO. | | 608164 | |

PROFILES

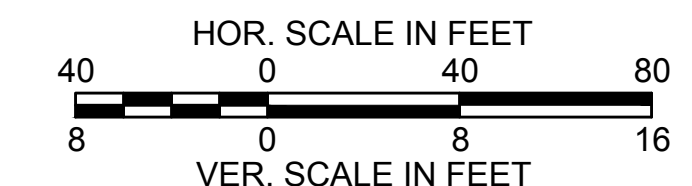


Temp. Benchmark #40
LAG Screw set 2
up 13" Tree
Elevation = 139.91'
Sta. 281+59.46, 1063 LT

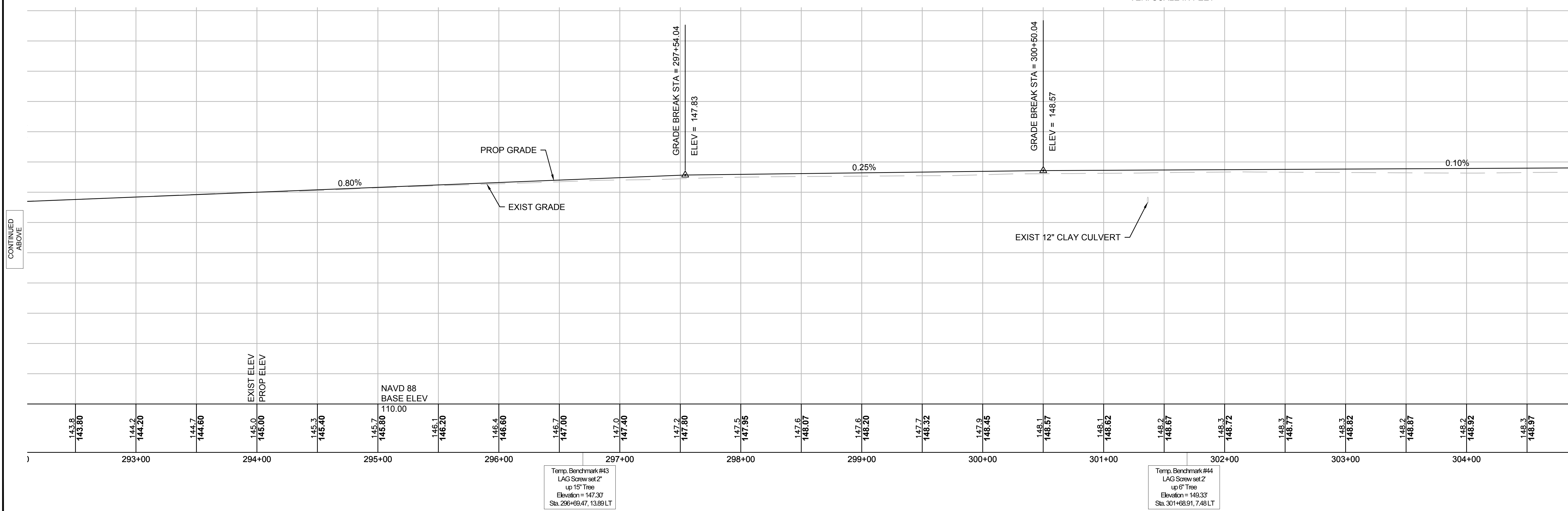
Temp. Benchmark #1
Chiseled Sp. set on Headwall
FEMAR M 23
Elevation = 133.07
Sta. 284+31.45, 23.17 LT

Temp. Benchmark #41
LAG Screw set 2
up 6" Pine
Elevation = 141.97
Sta. 286+66.39, 4.89 LT

Temp. Benchmark #42
LAG Screw set
2" up 18" Tree
Elevation = 144.98'
Sta. 291+51.08, 8.37 RT



FOR CONSTRUCTION PLANS SEE SHEET NO. 27, 28, 29 & 30



Temp. Benchmark #43
LAG Screw set 2
up 15" Tree
Elevation = 147.30
Sta. 296+69.47, 13.89 LT

Temp. Benchmark #44
LAG Screw set 2
up 6" Tree
Elevation = 149.33'
Sta. 301+68.91, 7.48 LT

CONTINUED ON
SHEET NO. 44

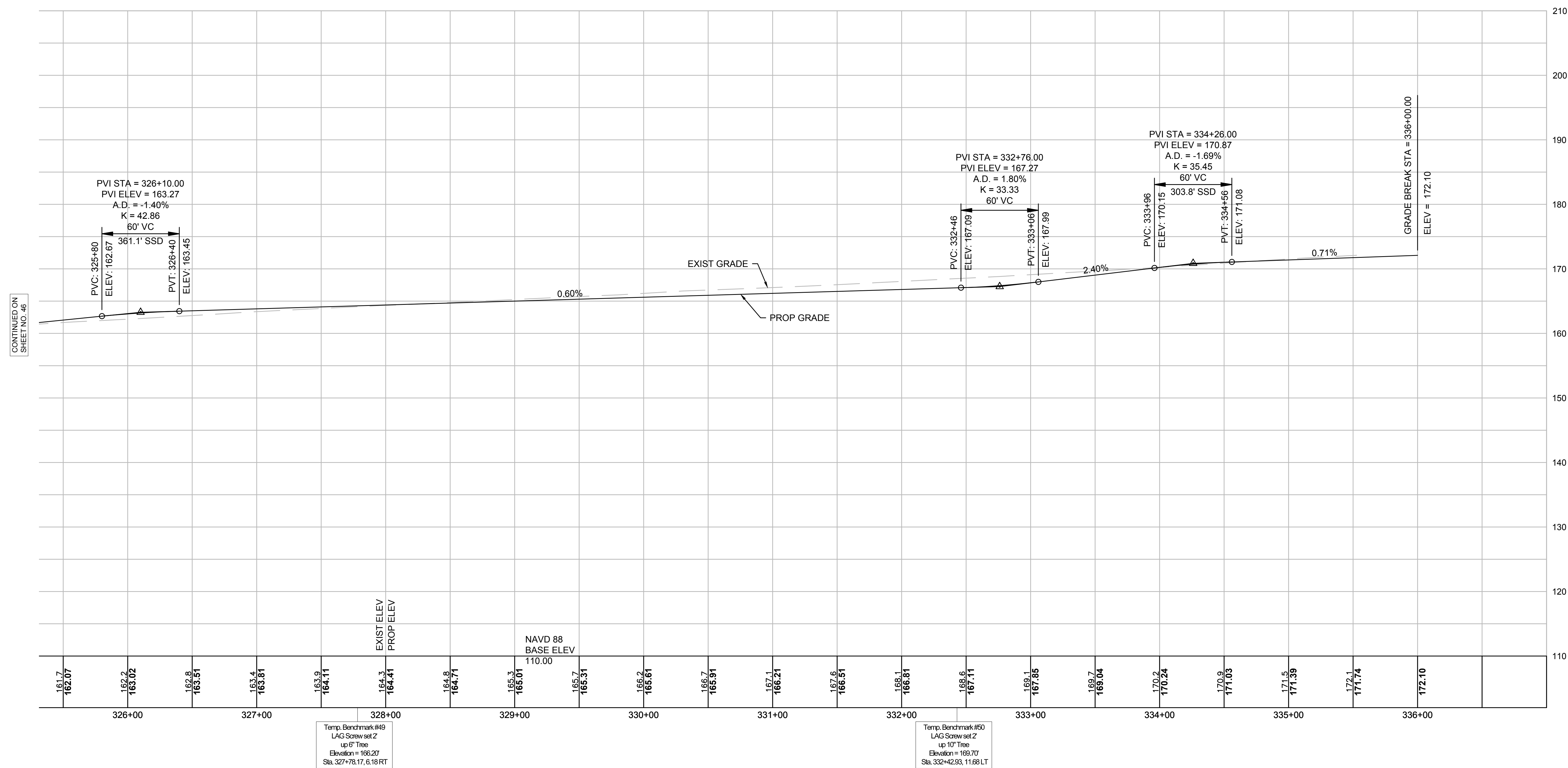
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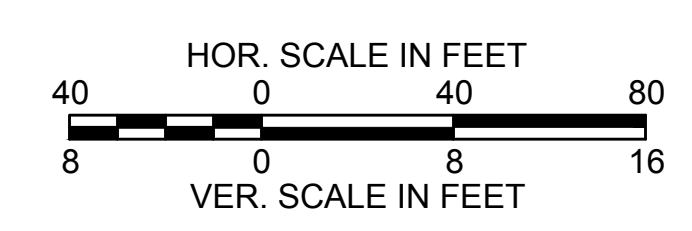
CONTINUED ON
SHEET NO. 46

| SUDBURY BRUCE FREEMAN RAIL TRAIL | | | |
|-------------------------------------|--------------------|-----------|--------------|
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
| MA | TBD | 47 | 123 |
| PROJECT FILE NO. | | 608164 | |

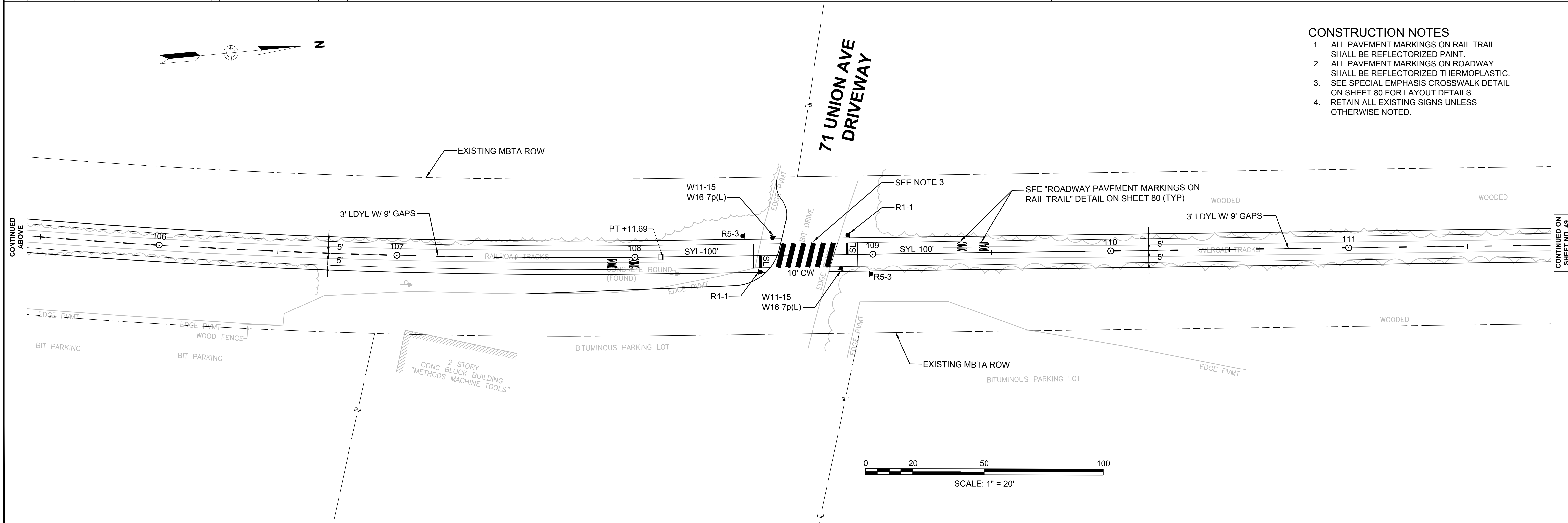
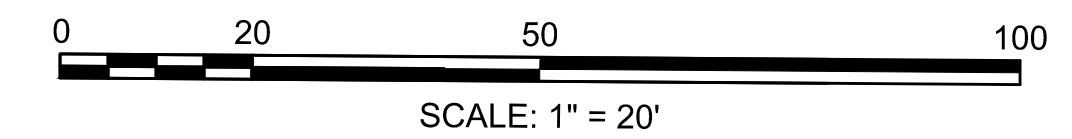
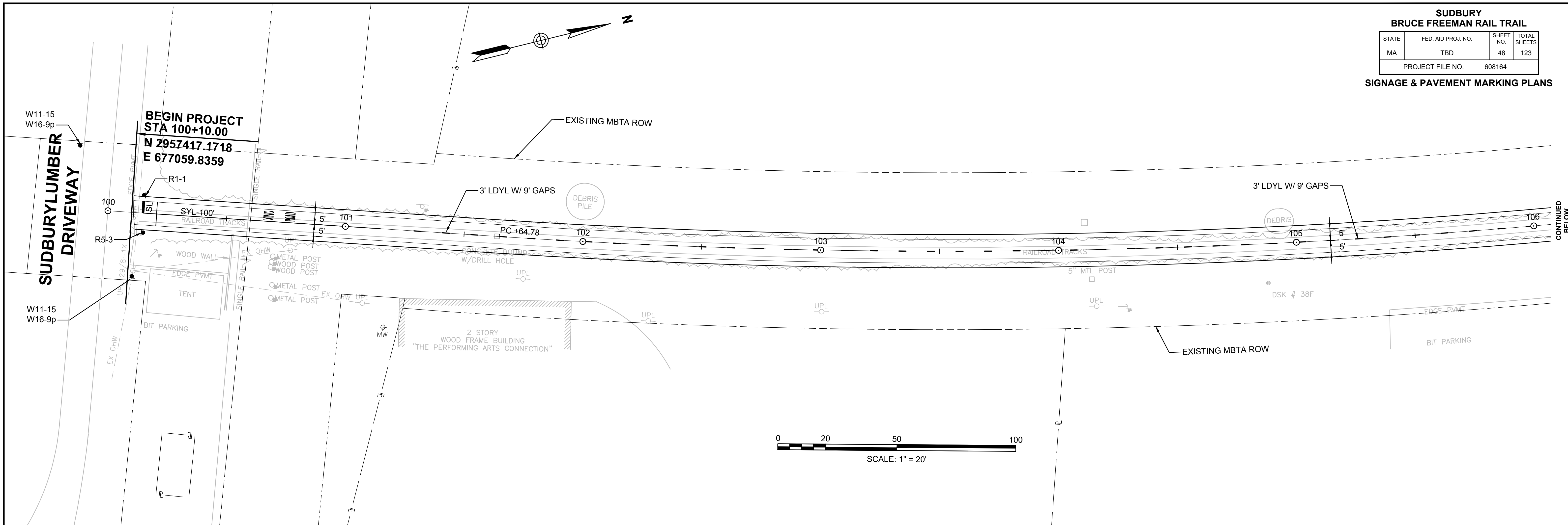
PROFILES



CONTINUED ON
SHEET NO. 46



FOR CONSTRUCTION PLANS SEE SHEET NO. 33 & 34



- CONSTRUCTION NOTES**
1. ALL PAVEMENT MARKINGS ON RAIL TRAIL SHALL BE REFLECTORIZED PAINT.
 2. ALL PAVEMENT MARKINGS ON ROADWAY SHALL BE REFLECTORIZED THERMOPLASTIC.
 3. SEE SPECIAL EMPHASIS CROSSWALK DETAIL ON SHEET 80 FOR LAYOUT DETAILS.
 4. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.

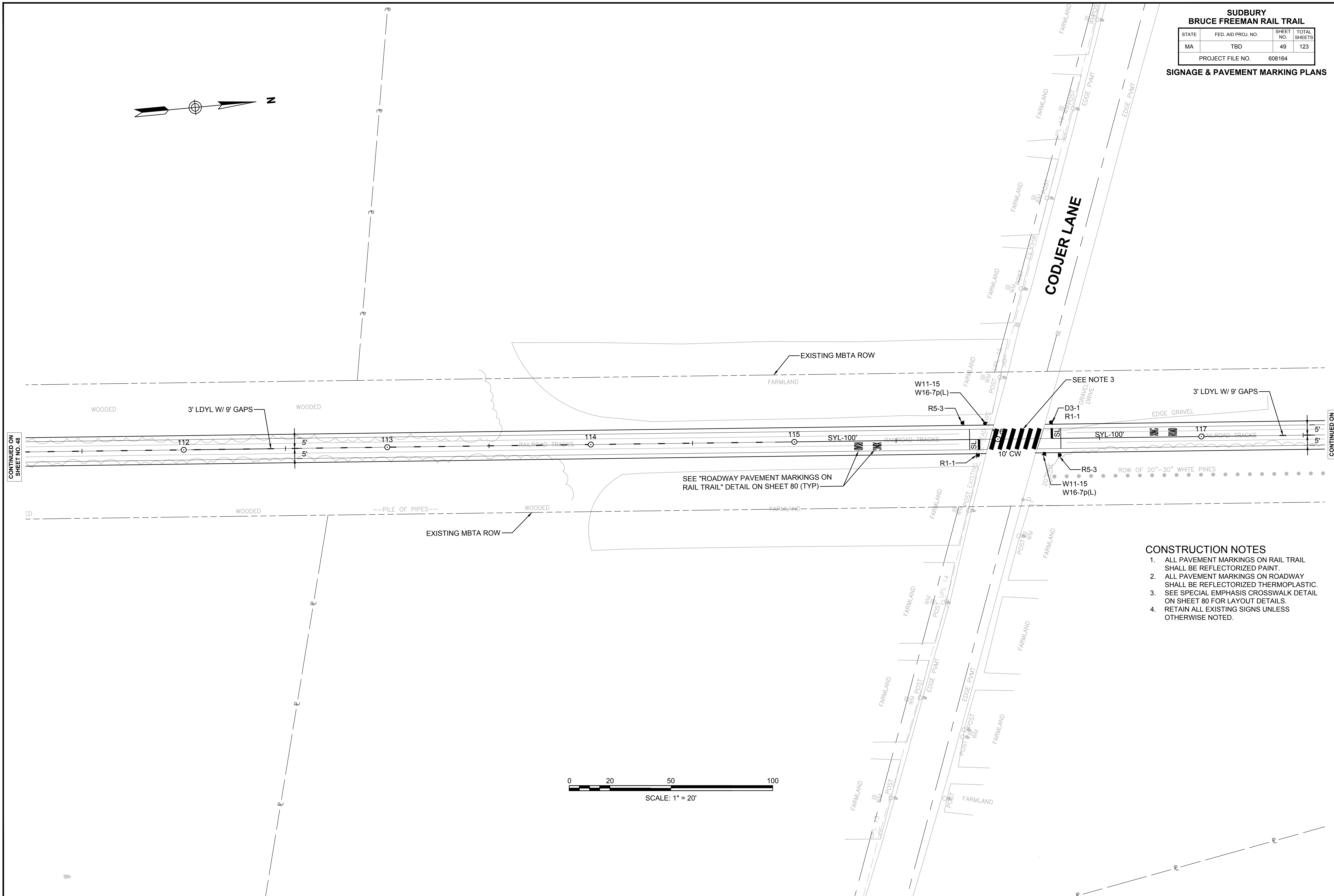
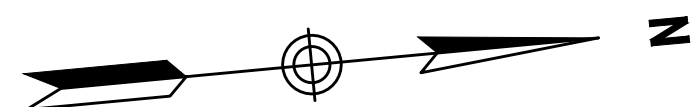
CONTINUED ABOVE

CONTINUED ON SHEET NO. 49

SUDBURY
BRUCE FREEMAN RAIL TRAIL

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|--------------------|-----------|--------------|
| MA | TBD | 49 | 123 |
| PROJECT FILE NO. | | 608164 | |

SIGNAGE & PAVEMENT MARKING PLANS

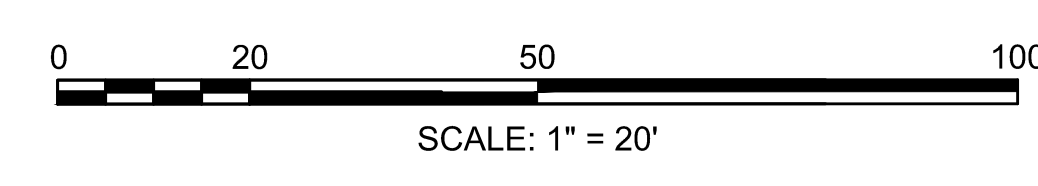


CONTINUED ON SHEET NO. 48

CONTINUED ON SHEET NO. 50

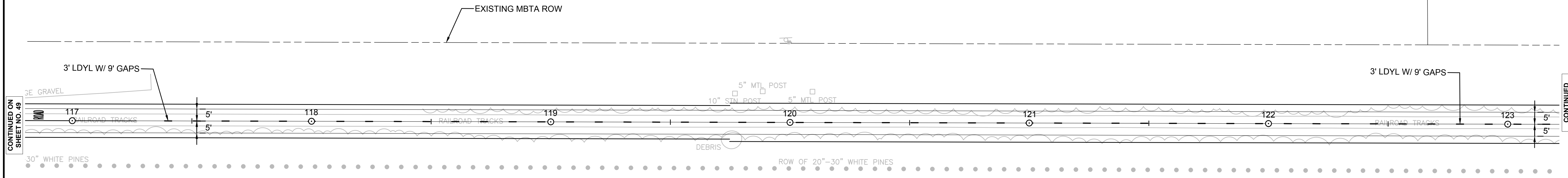
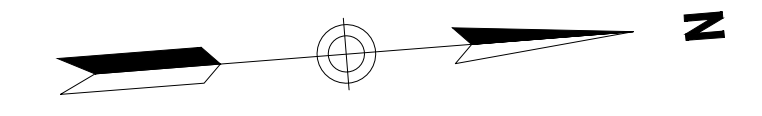
SEE "ROADWAY PAVEMENT MARKINGS ON RAIL TRAIL" DETAIL ON SHEET 80 (TYP)

- CONSTRUCTION NOTES**
1. ALL PAVEMENT MARKINGS ON RAIL TRAIL SHALL BE REFLECTORIZED PAINT.
 2. ALL PAVEMENT MARKINGS ON ROADWAY SHALL BE REFLECTORIZED THERMOPLASTIC.
 3. SEE SPECIAL EMPHASIS CROSSWALK DETAIL ON SHEET 80 FOR LAYOUT DETAILS.
 4. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.



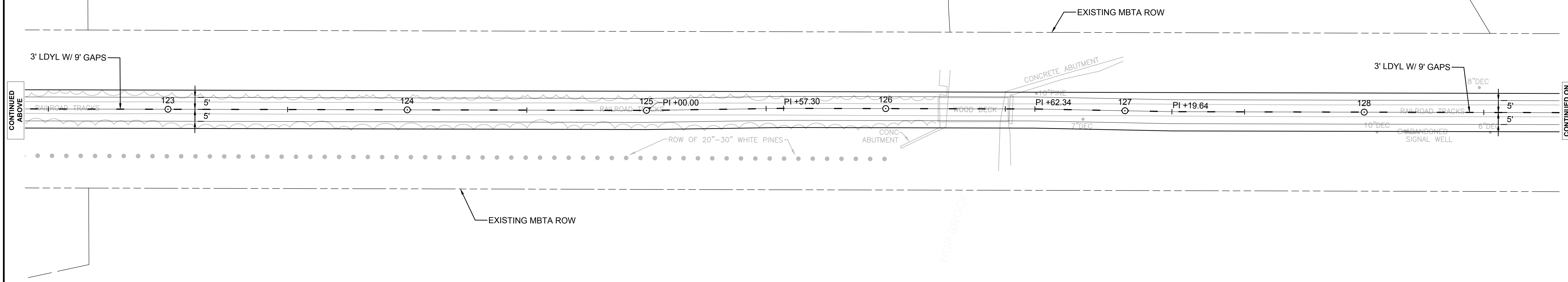
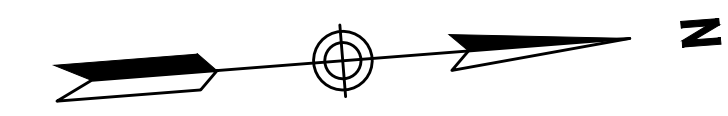
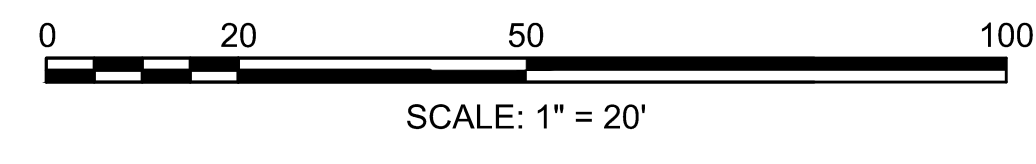
CONSTRUCTION NOTES

1. ALL PAVEMENT MARKINGS ON RAIL TRAIL SHALL BE REFLECTORIZED PAINT.
2. ALL PAVEMENT MARKINGS ON ROADWAY SHALL BE REFLECTORIZED THERMOPLASTIC.
3. SEE SPECIAL EMPHASIS CROSSWALK DETAIL ON SHEET 80 FOR LAYOUT DETAILS.
4. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.



CONTINUED ON SHEET NO. 49

CONTINUED BELOW



CONTINUED ABOVE

CONTINUED ON SHEET NO. 51



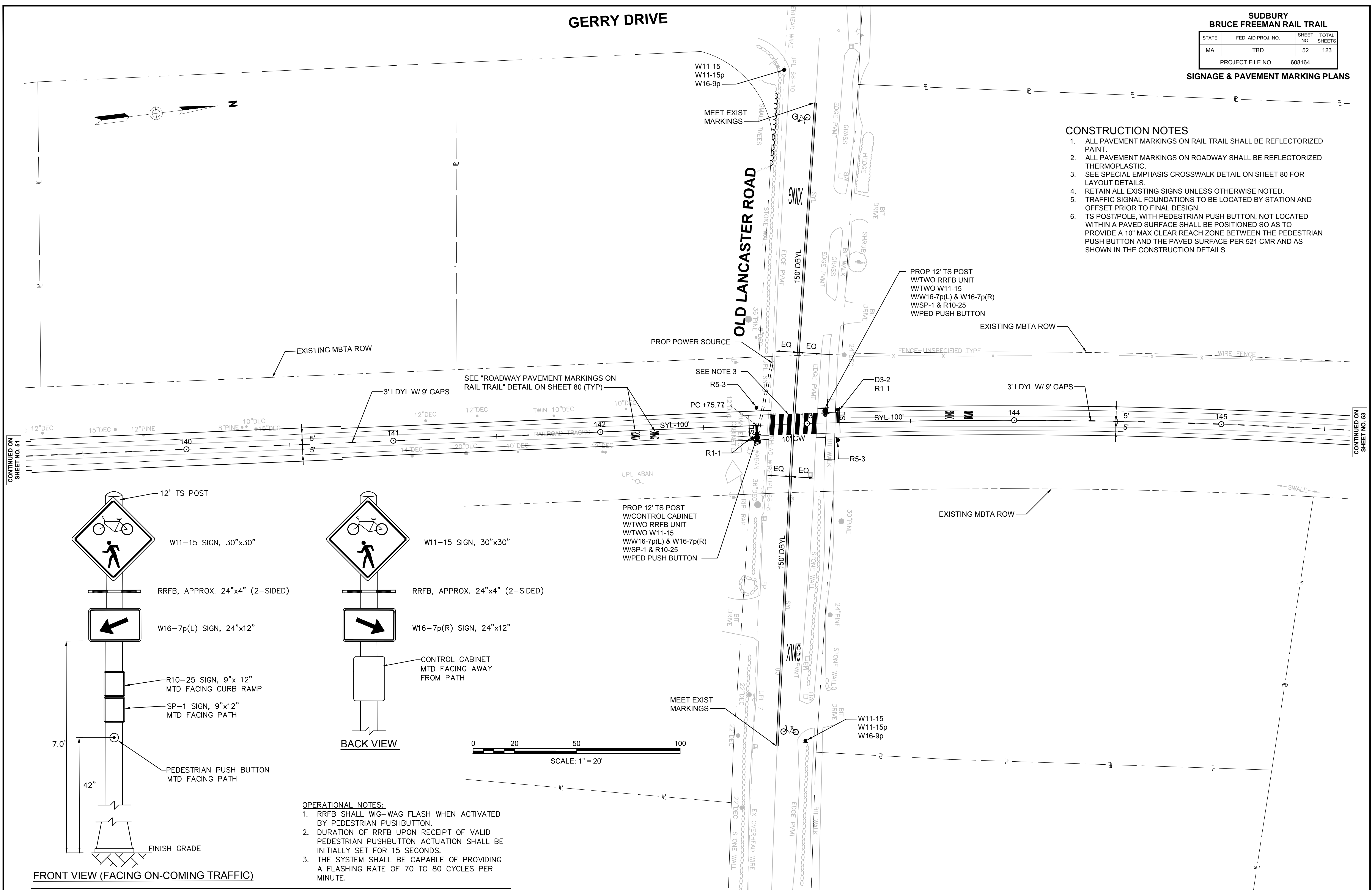
GERRY DRIVE

| SUDBURY BRUCE FREEMAN RAIL TRAIL | | | |
|-------------------------------------|--------------------|-----------|--------------|
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
| MA | TBD | 52 | 123 |
| PROJECT FILE NO. | | 608164 | |

SIGNAGE & PAVEMENT MARKING PLANS

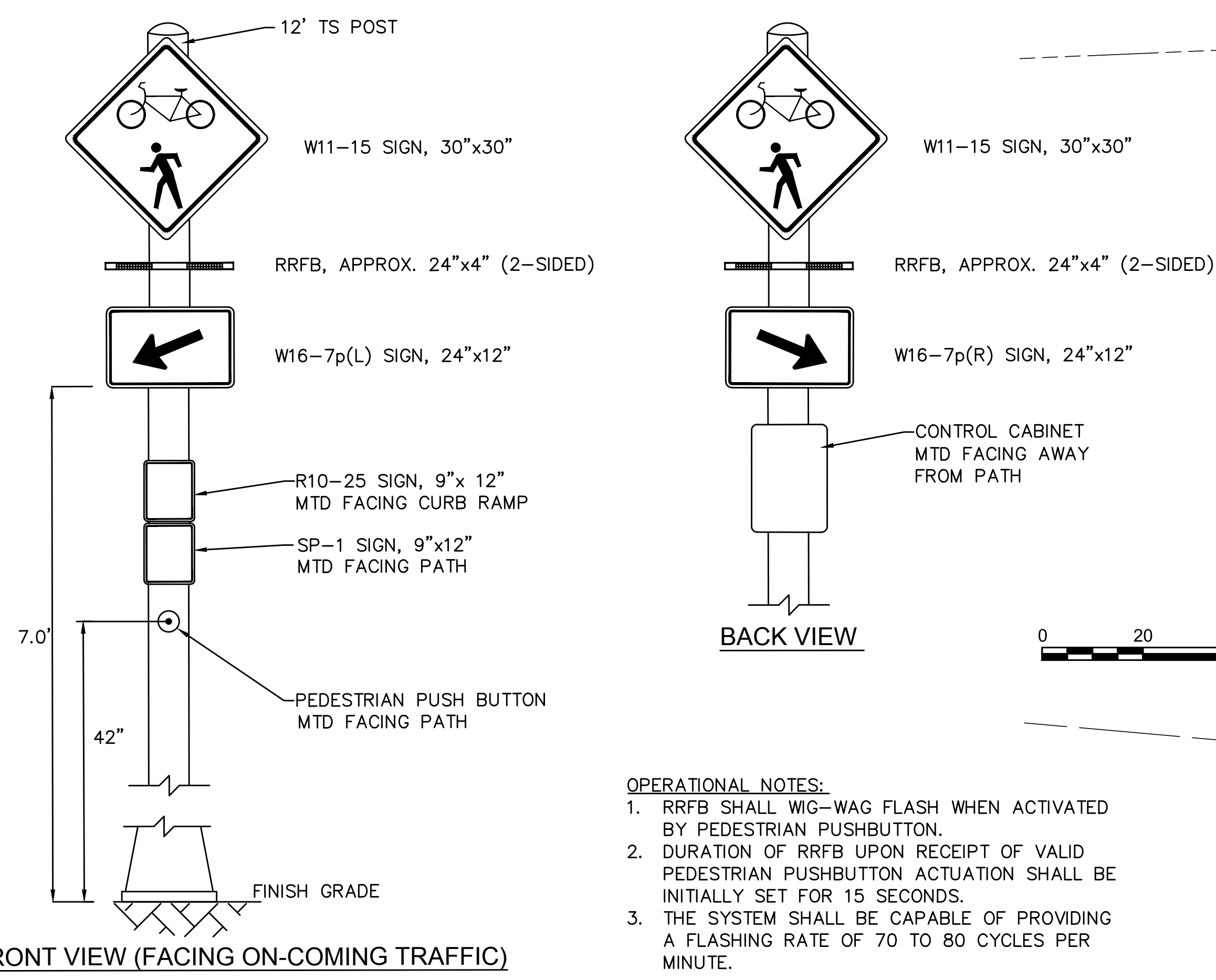
CONSTRUCTION NOTES

1. ALL PAVEMENT MARKINGS ON RAIL TRAIL SHALL BE REFLECTORIZED PAINT.
2. ALL PAVEMENT MARKINGS ON ROADWAY SHALL BE REFLECTORIZED THERMOPLASTIC.
3. SEE SPECIAL EMPHASIS CROSSWALK DETAIL ON SHEET 80 FOR LAYOUT DETAILS.
4. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.
5. TRAFFIC SIGNAL FOUNDATIONS TO BE LOCATED BY STATION AND OFFSET PRIOR TO FINAL DESIGN.
6. TS POST/POLE, WITH PEDESTRIAN PUSH BUTTON, NOT LOCATED WITHIN A PAVED SURFACE SHALL BE POSITIONED SO AS TO PROVIDE A 10' MAX CLEAR REACH ZONE BETWEEN THE PEDESTRIAN PUSH BUTTON AND THE PAVED SURFACE PER 521 CMR AND AS SHOWN IN THE CONSTRUCTION DETAILS.



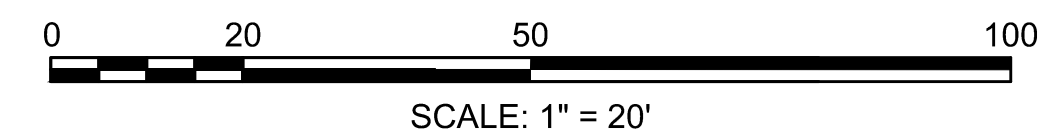
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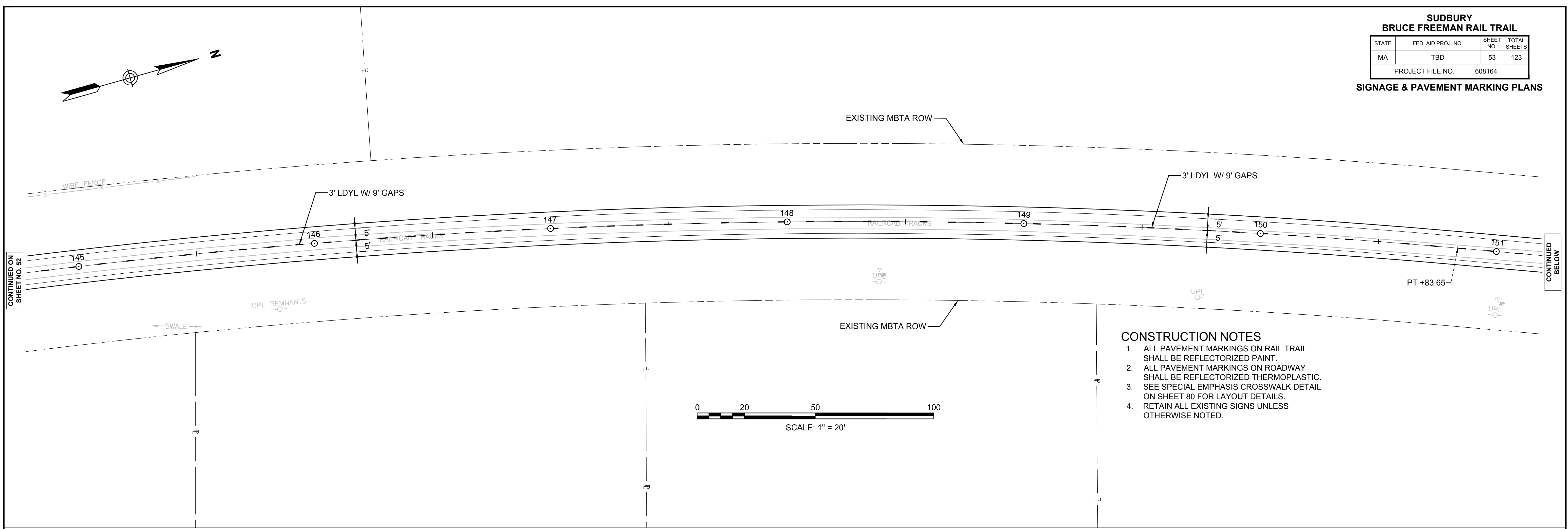
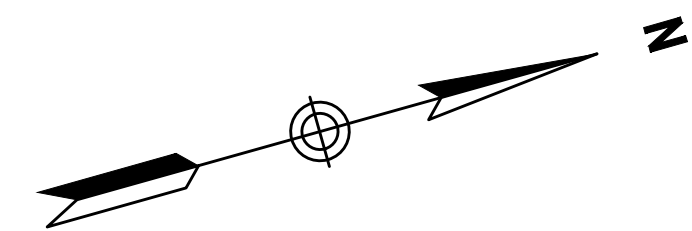
CONTINUED ON SHEET NO. 53



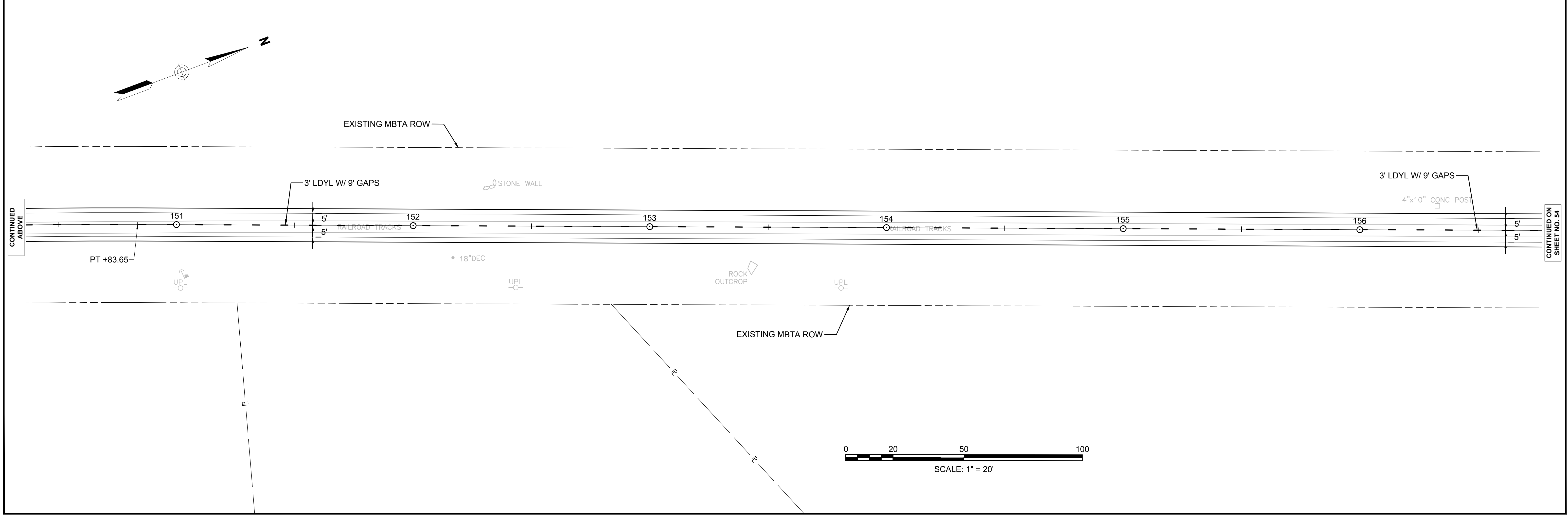
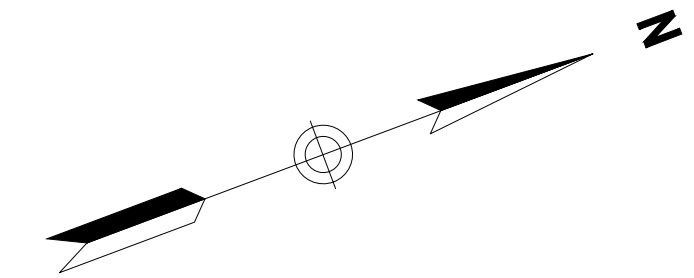
- OPERATIONAL NOTES:**
1. RRFB SHALL WIG-WAG FLASH WHEN ACTIVATED BY PEDESTRIAN PUSHBUTTON.
 2. DURATION OF RRFB UPON RECEIPT OF VALID PEDESTRIAN PUSHBUTTON ACTUATION SHALL BE INITIALLY SET FOR 15 SECONDS.
 3. THE SYSTEM SHALL BE CAPABLE OF PROVIDING A FLASHING RATE OF 70 TO 80 CYCLES PER MINUTE.

RECTANGULAR RAPID FLASHING BEACON (RRFB) - POST MOUNTED
SCALE: N.T.S.





- CONSTRUCTION NOTES**
1. ALL PAVEMENT MARKINGS ON RAIL TRAIL SHALL BE REFLECTORIZED PAINT.
 2. ALL PAVEMENT MARKINGS ON ROADWAY SHALL BE REFLECTORIZED THERMOPLASTIC.
 3. SEE SPECIAL EMPHASIS CROSSWALK DETAIL ON SHEET 80 FOR LAYOUT DETAILS.
 4. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.

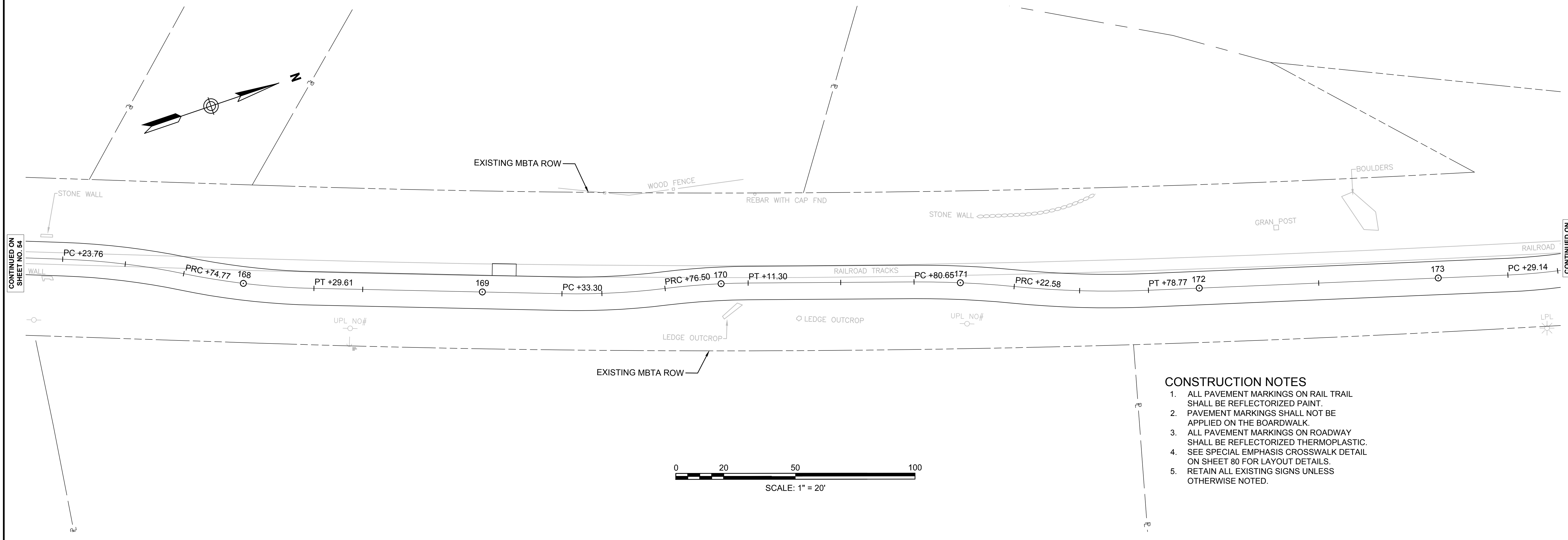


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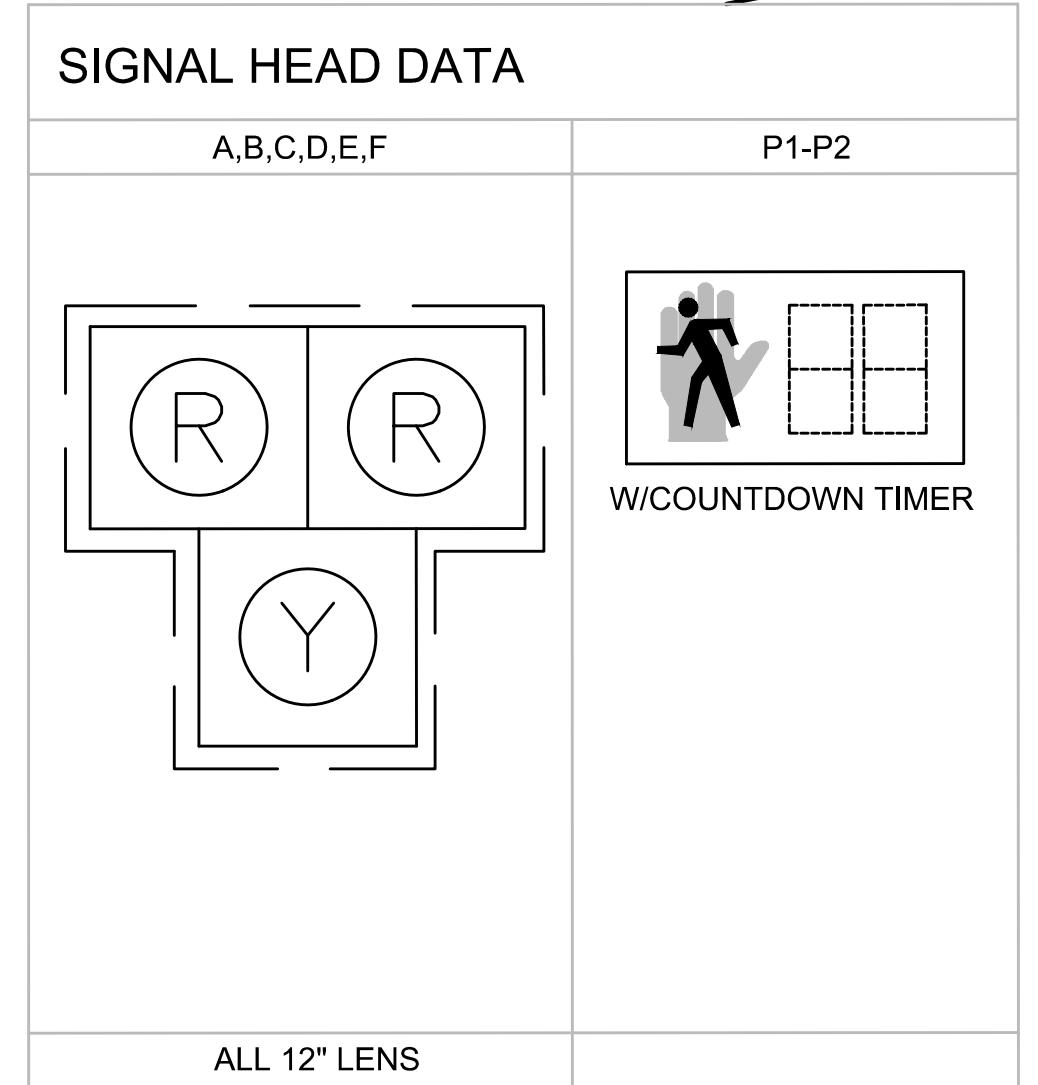
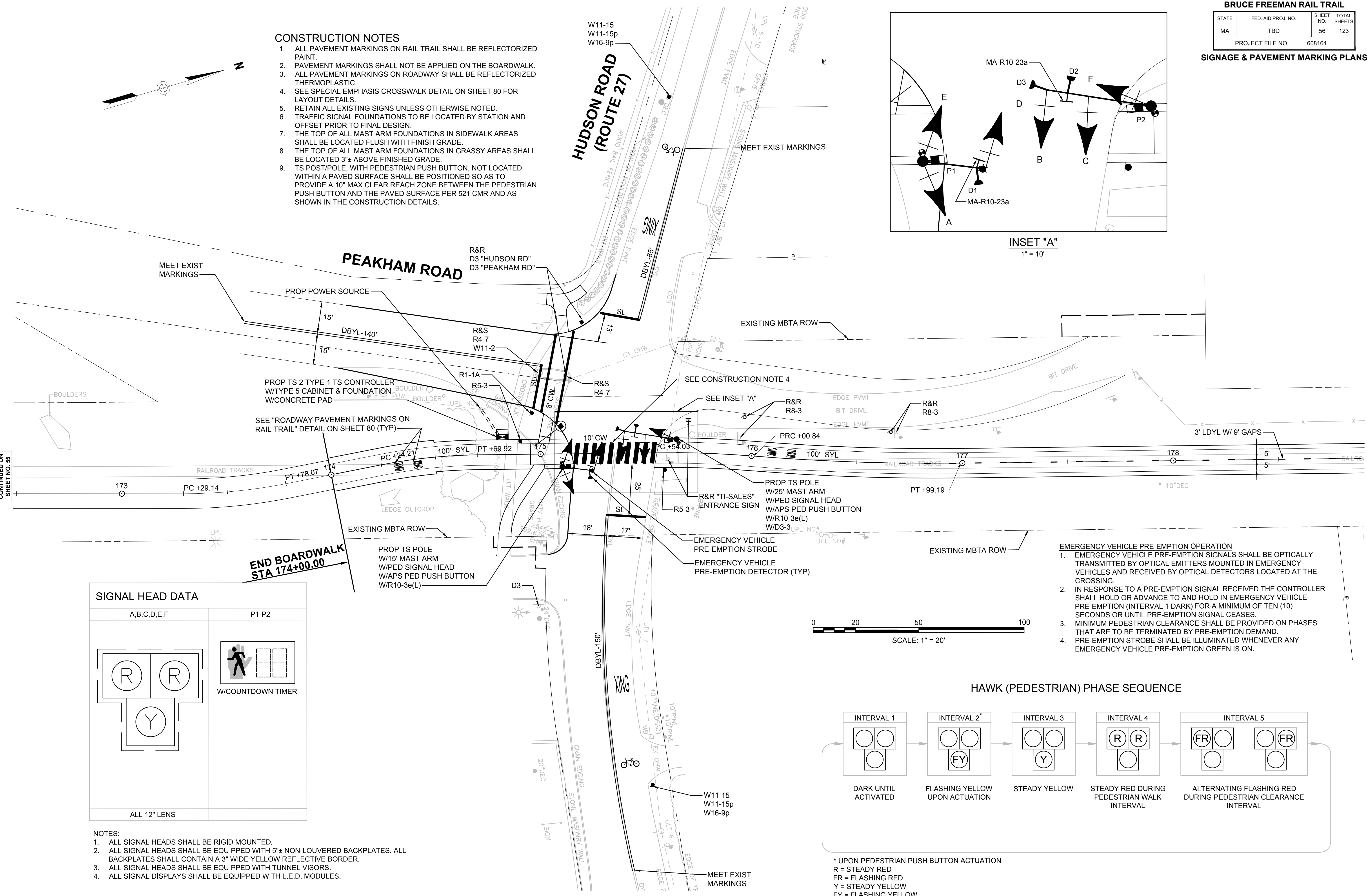
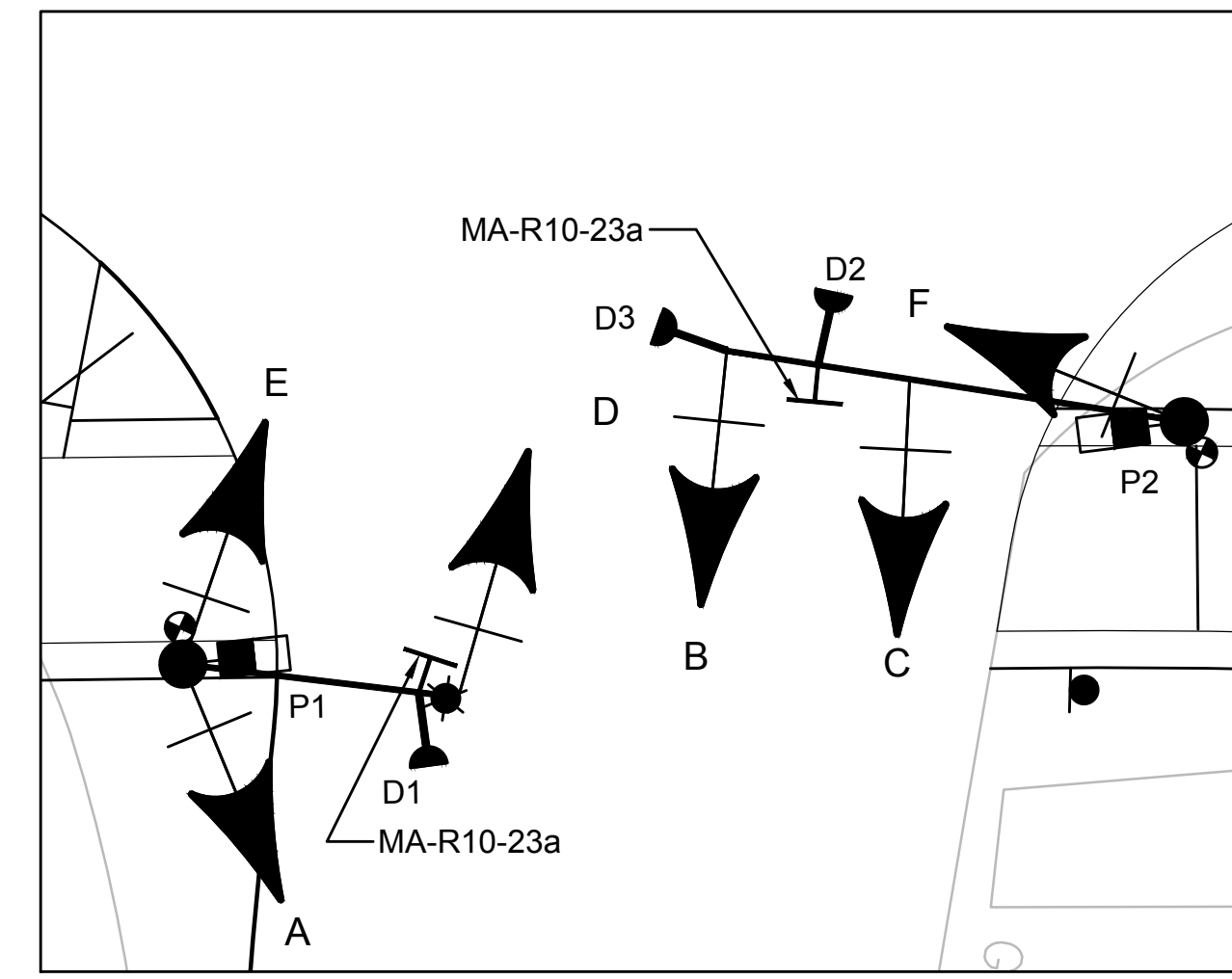


- CONSTRUCTION NOTES**
1. ALL PAVEMENT MARKINGS ON RAIL TRAIL SHALL BE REFLECTORIZED PAINT.
 2. PAVEMENT MARKINGS SHALL NOT BE APPLIED ON THE BOARDWALK.
 3. ALL PAVEMENT MARKINGS ON ROADWAY SHALL BE REFLECTORIZED THERMOPLASTIC.
 4. SEE SPECIAL EMPHASIS CROSSWALK DETAIL ON SHEET 80 FOR LAYOUT DETAILS.
 5. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.

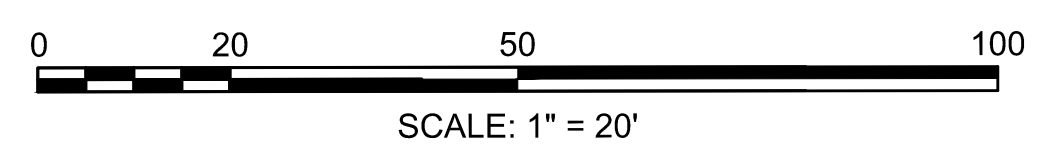
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- CONSTRUCTION NOTES**
- ALL PAVEMENT MARKINGS ON RAIL TRAIL SHALL BE REFLECTORIZED PAINT.
 - PAVEMENT MARKINGS SHALL NOT BE APPLIED ON THE BOARDWALK.
 - ALL PAVEMENT MARKINGS ON ROADWAY SHALL BE REFLECTORIZED THERMOPLASTIC.
 - SEE SPECIAL EMPHASIS CROSSWALK DETAIL ON SHEET 80 FOR LAYOUT DETAILS.
 - RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.
 - TRAFFIC SIGNAL FOUNDATIONS TO BE LOCATED BY STATION AND OFFSET PRIOR TO FINAL DESIGN.
 - THE TOP OF ALL MAST ARM FOUNDATIONS IN SIDEWALK AREAS SHALL BE LOCATED FLUSH WITH FINISH GRADE.
 - THE TOP OF ALL MAST ARM FOUNDATIONS IN GRASSY AREAS SHALL BE LOCATED 3"± ABOVE FINISHED GRADE.
 - TS POST/POLE, WITH PEDESTRIAN PUSH BUTTON, NOT LOCATED WITHIN A PAVED SURFACE SHALL BE POSITIONED SO AS TO PROVIDE A 10" MAX CLEAR REACH ZONE BETWEEN THE PEDESTRIAN PUSH BUTTON AND THE PAVED SURFACE PER 521 CMR AND AS SHOWN IN THE CONSTRUCTION DETAILS.

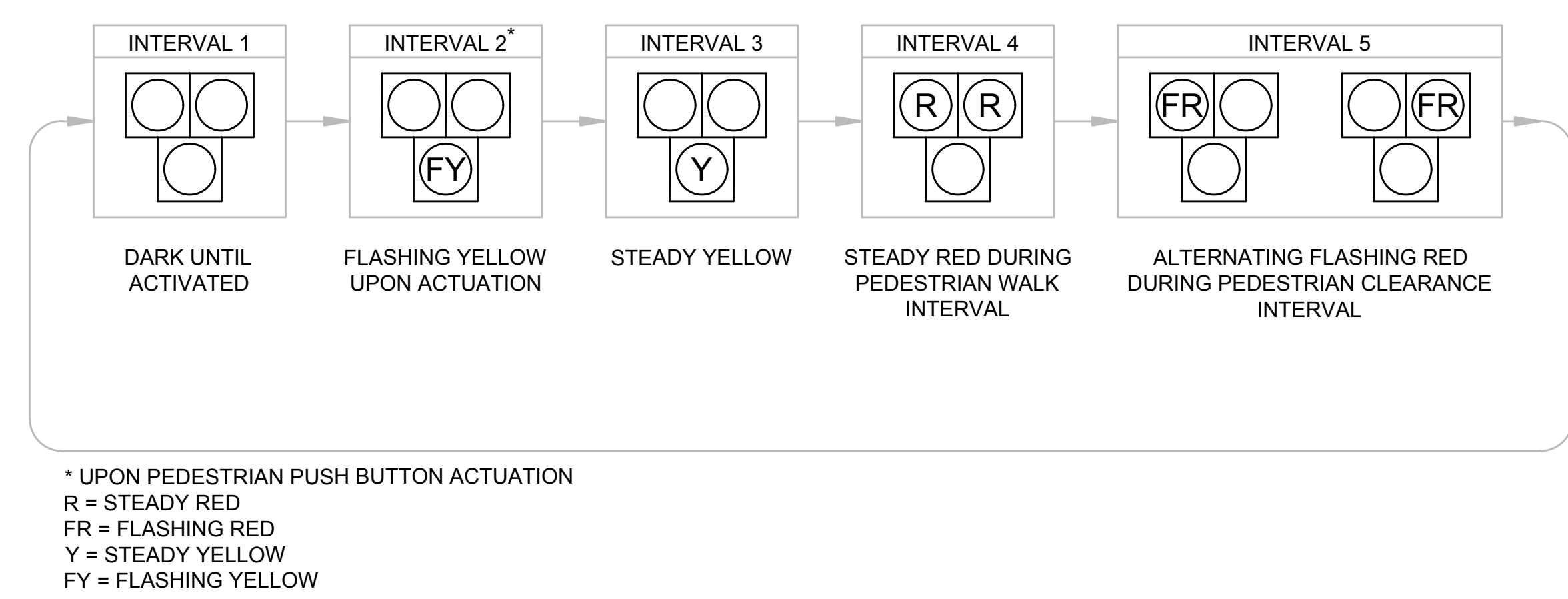


- NOTES:**
- ALL SIGNAL HEADS SHALL BE RIGID MOUNTED.
 - ALL SIGNAL HEADS SHALL BE EQUIPPED WITH 5"± NON-LOUVERED BACKPLATES. ALL BACKPLATES SHALL CONTAIN A 3" WIDE YELLOW REFLECTIVE BORDER.
 - ALL SIGNAL HEADS SHALL BE EQUIPPED WITH TUNNEL VISORS.
 - ALL SIGNAL DISPLAYS SHALL BE EQUIPPED WITH L.E.D. MODULES.



- EMERGENCY VEHICLE PRE-EMPTION OPERATION**
- EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE OPTICALLY TRANSMITTED BY OPTICAL EMITTERS MOUNTED IN EMERGENCY VEHICLES AND RECEIVED BY OPTICAL DETECTORS LOCATED AT THE CROSSING.
 - IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD IN EMERGENCY VEHICLE PRE-EMPTION (INTERVAL 1 DARK) FOR A MINIMUM OF TEN (10) SECONDS OR UNTIL PRE-EMPTION SIGNAL CEASES.
 - MINIMUM PEDESTRIAN CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
 - PRE-EMPTION STROBE SHALL BE ILLUMINATED WHENEVER ANY EMERGENCY VEHICLE PRE-EMPTION GREEN IS ON.

HAWK (PEDESTRIAN) PHASE SEQUENCE



CONTINUED ON SHEET NO. 55

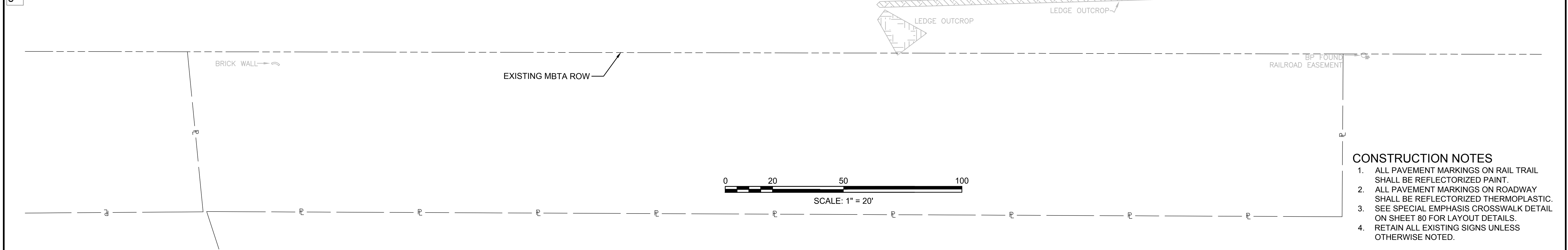
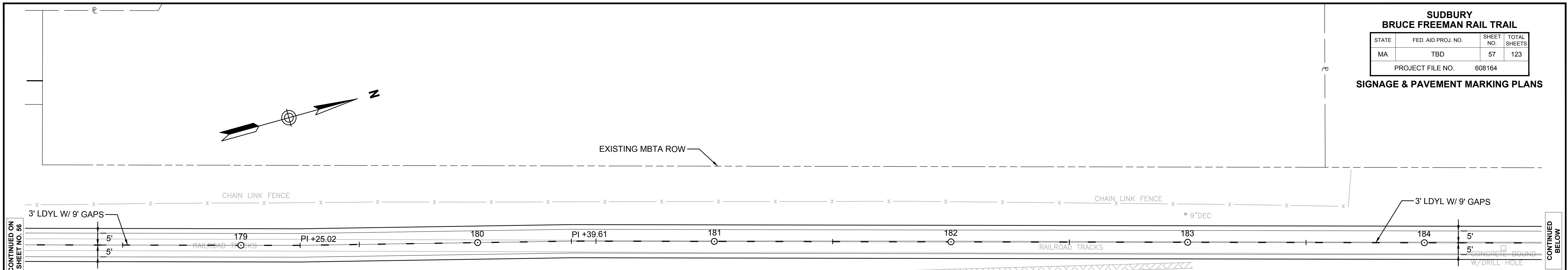
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**SUDBURY
BRUCE FREEMAN RAIL TRAIL**

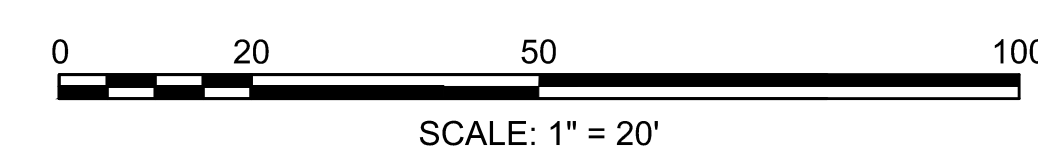
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|-------|--------------------|-----------|--------------|
| MA | TBD | 57 | 123 |

PROJECT FILE NO. 608164

SIGNAGE & PAVEMENT MARKING PLANS



- CONSTRUCTION NOTES**
1. ALL PAVEMENT MARKINGS ON RAIL TRAIL SHALL BE REFLECTORIZED PAINT.
 2. ALL PAVEMENT MARKINGS ON ROADWAY SHALL BE REFLECTORIZED THERMOPLASTIC.
 3. SEE SPECIAL EMPHASIS CROSSWALK DETAIL ON SHEET 80 FOR LAYOUT DETAILS.
 4. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.

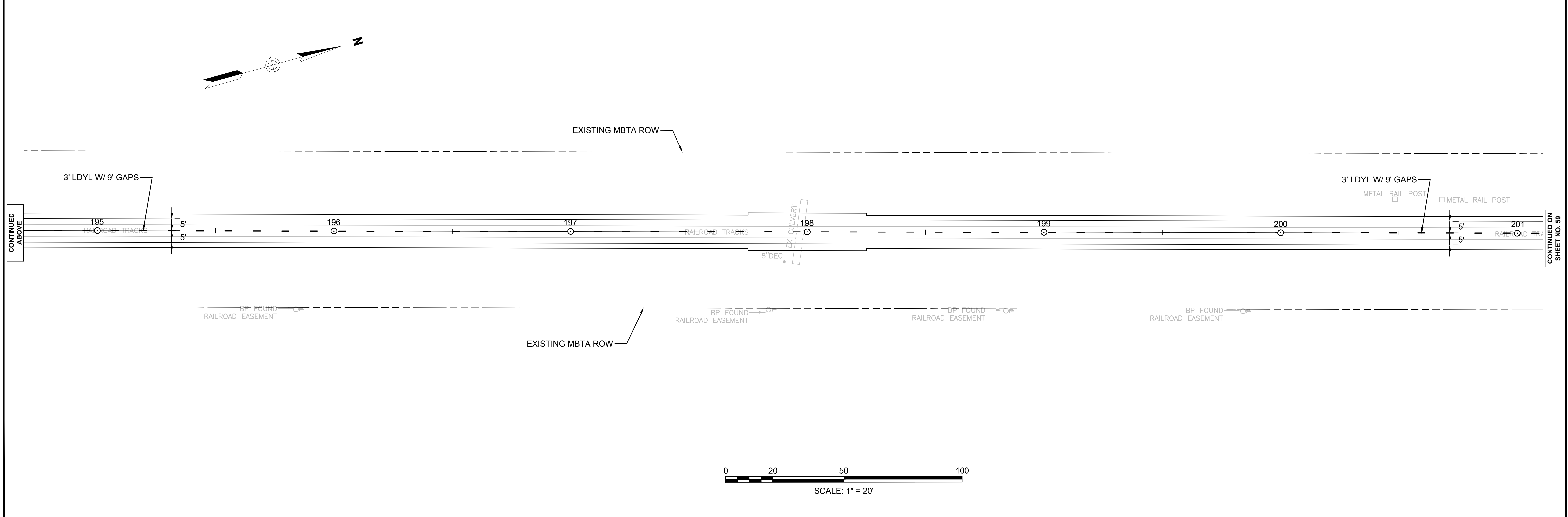
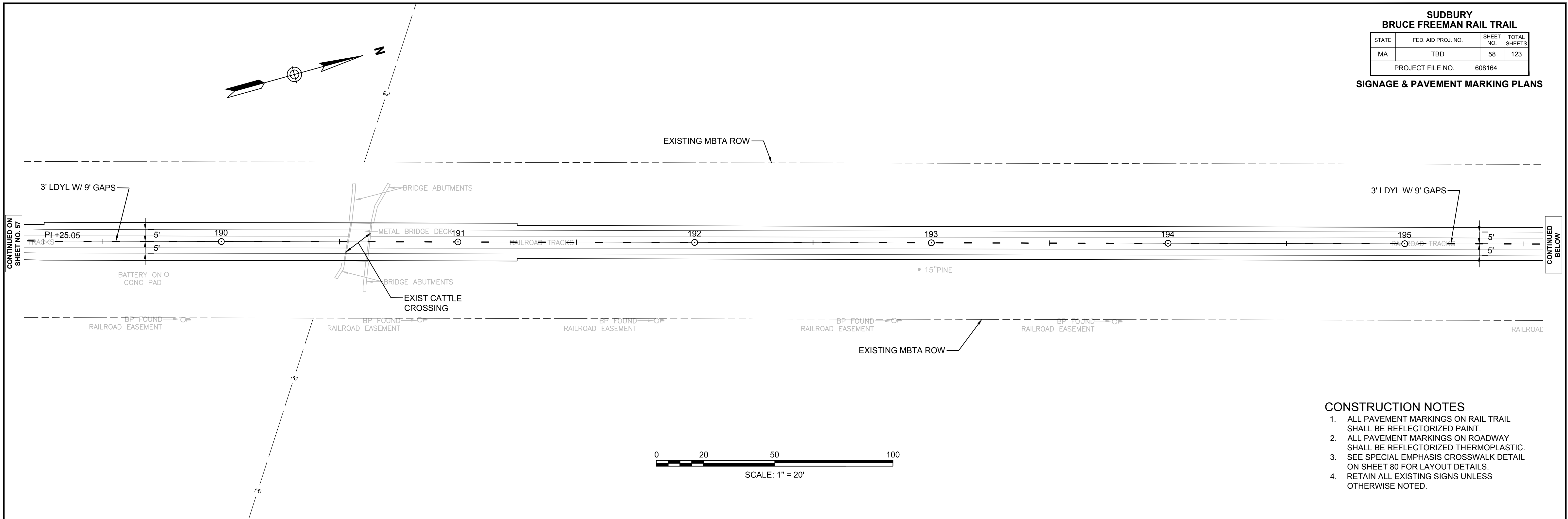


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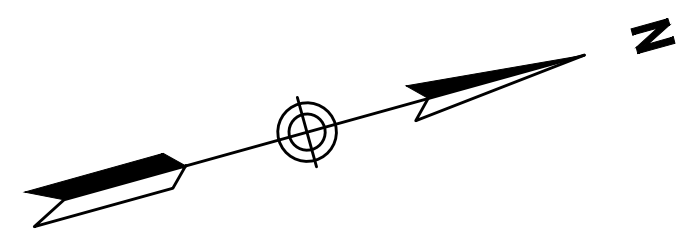
- CONSTRUCTION NOTES**
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 4. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.

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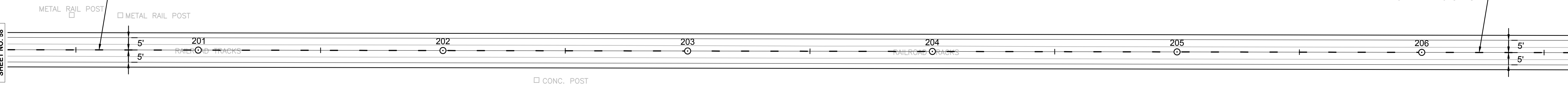
EXISTING MBTA ROW

3' LDYL W/ 9' GAPS

3' LDYL W/ 9' GAPS

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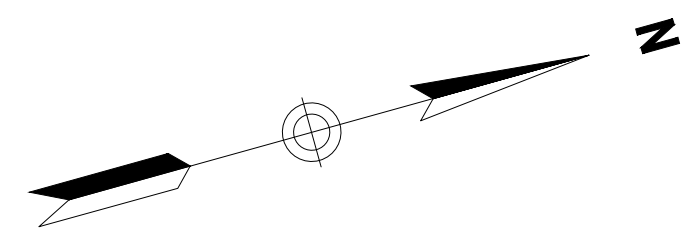
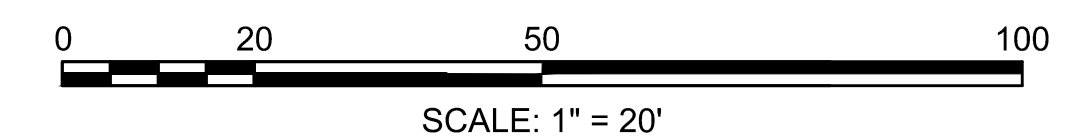
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EXISTING MBTA ROW

CONSTRUCTION NOTES

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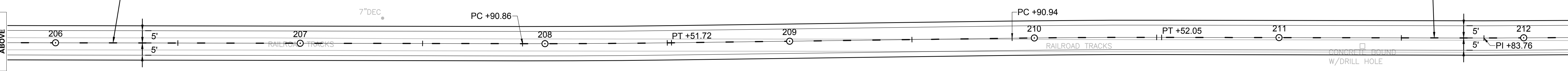
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3' LDYL W/ 9' GAPS

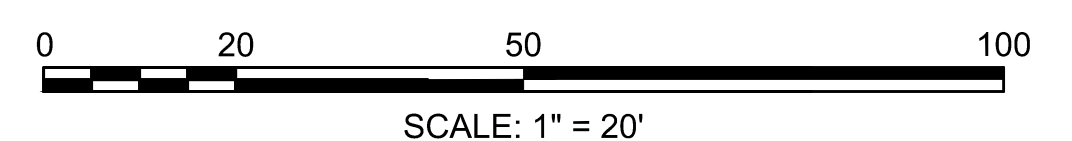
3' LDYL W/ 9' GAPS

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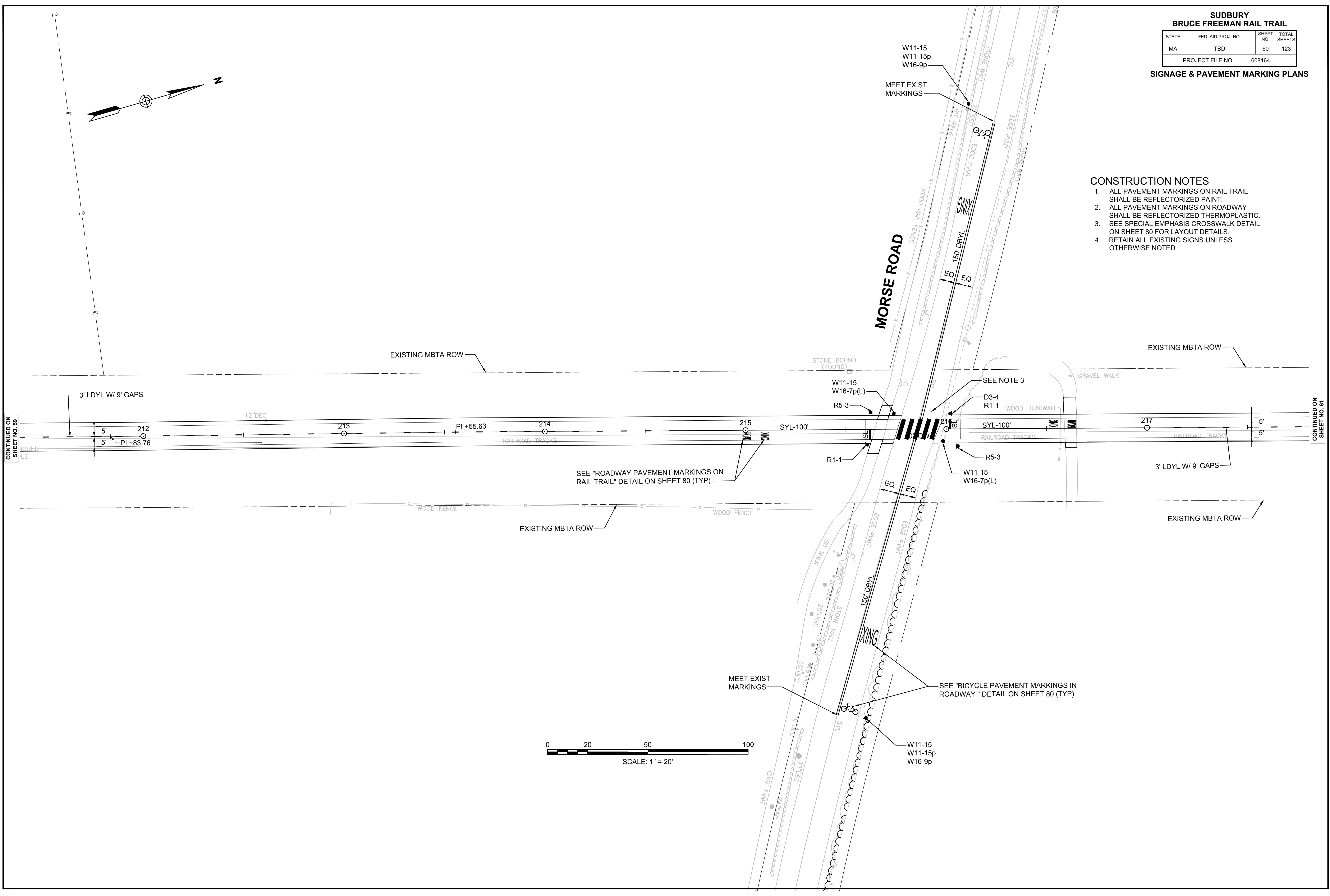
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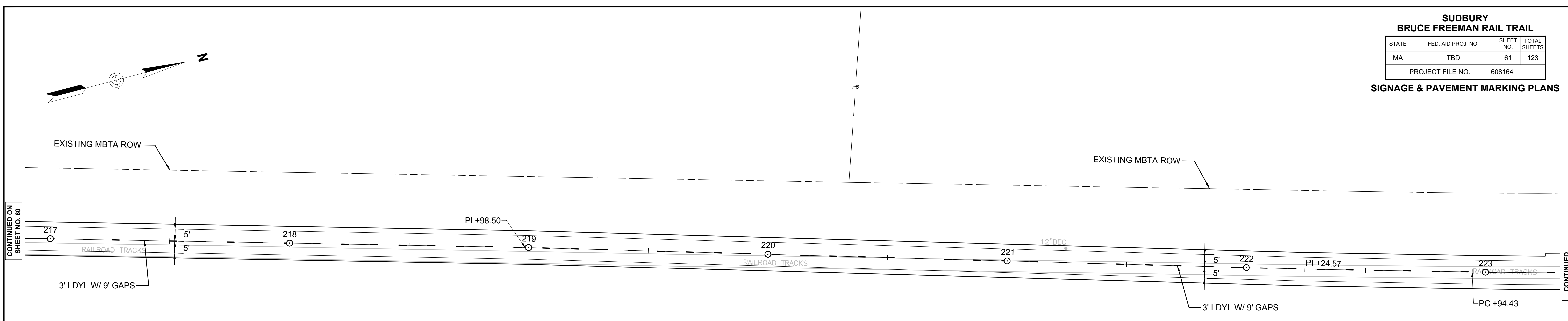
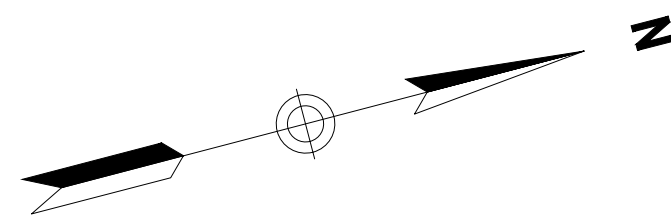


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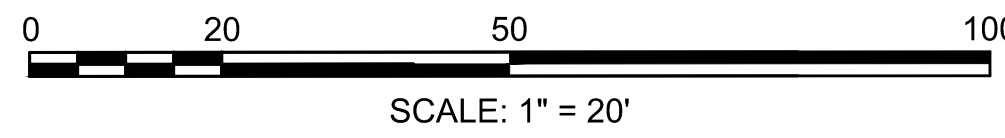
- CONSTRUCTION NOTES**
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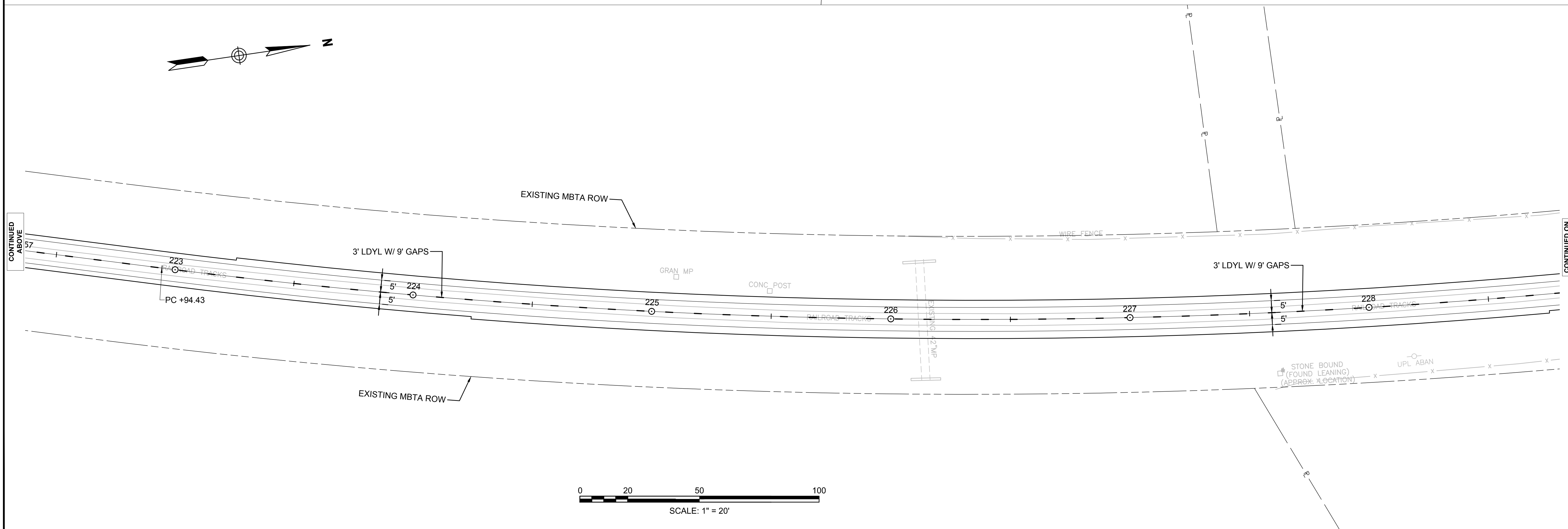
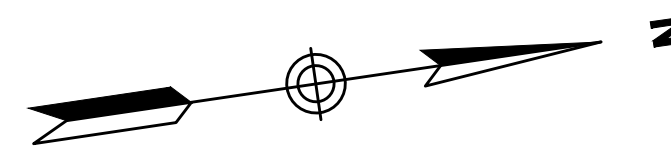
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CONSTRUCTION NOTES

1. ALL PAVEMENT MARKINGS ON RAIL TRAIL SHALL BE REFLECTORIZED PAINT.
2. ALL PAVEMENT MARKINGS ON ROADWAY SHALL BE REFLECTORIZED THERMOPLASTIC.
3. SEE SPECIAL EMPHASIS CROSSWALK DETAIL ON SHEET 80 FOR LAYOUT DETAILS.
4. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.



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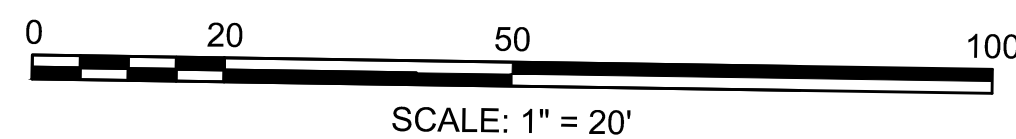
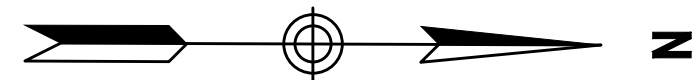
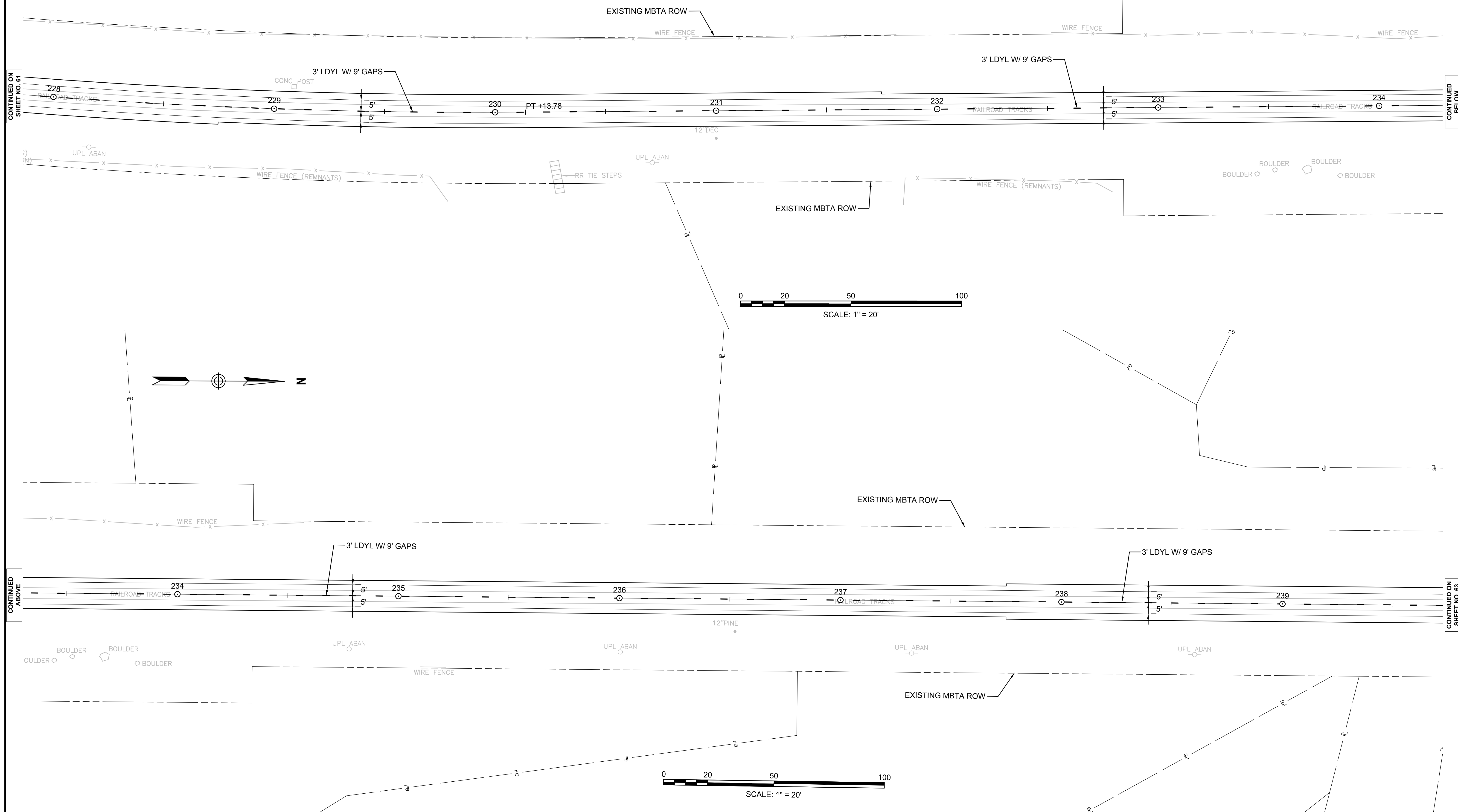
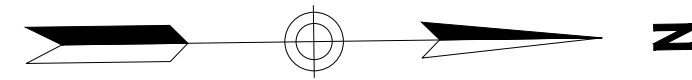
**SUDBURY
BRUCE FREEMAN RAIL TRAIL**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|--------------------|-----------|--------------|
| MA | TBD | 62 | 123 |
| PROJECT FILE NO. | | 608164 | |

SIGNAGE & PAVEMENT MARKING PLANS

CONSTRUCTION NOTES

1. ALL PAVEMENT MARKINGS ON RAIL TRAIL SHALL BE REFLECTORIZED PAINT.
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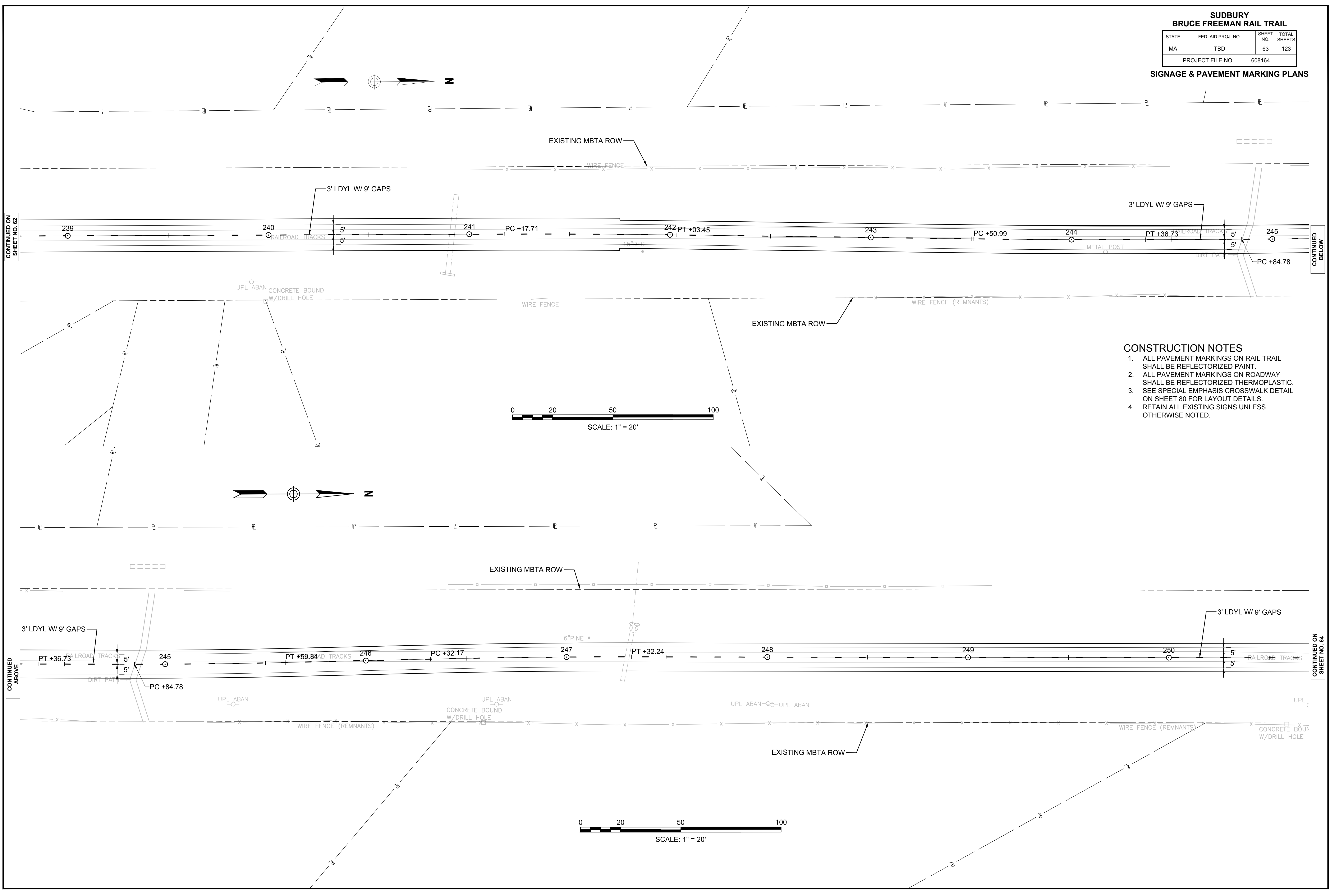


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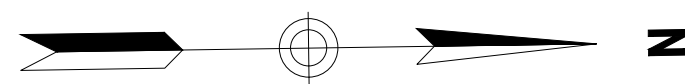
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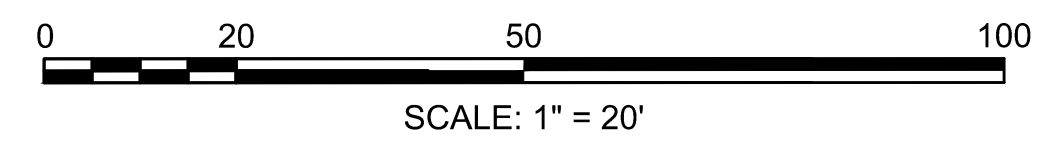
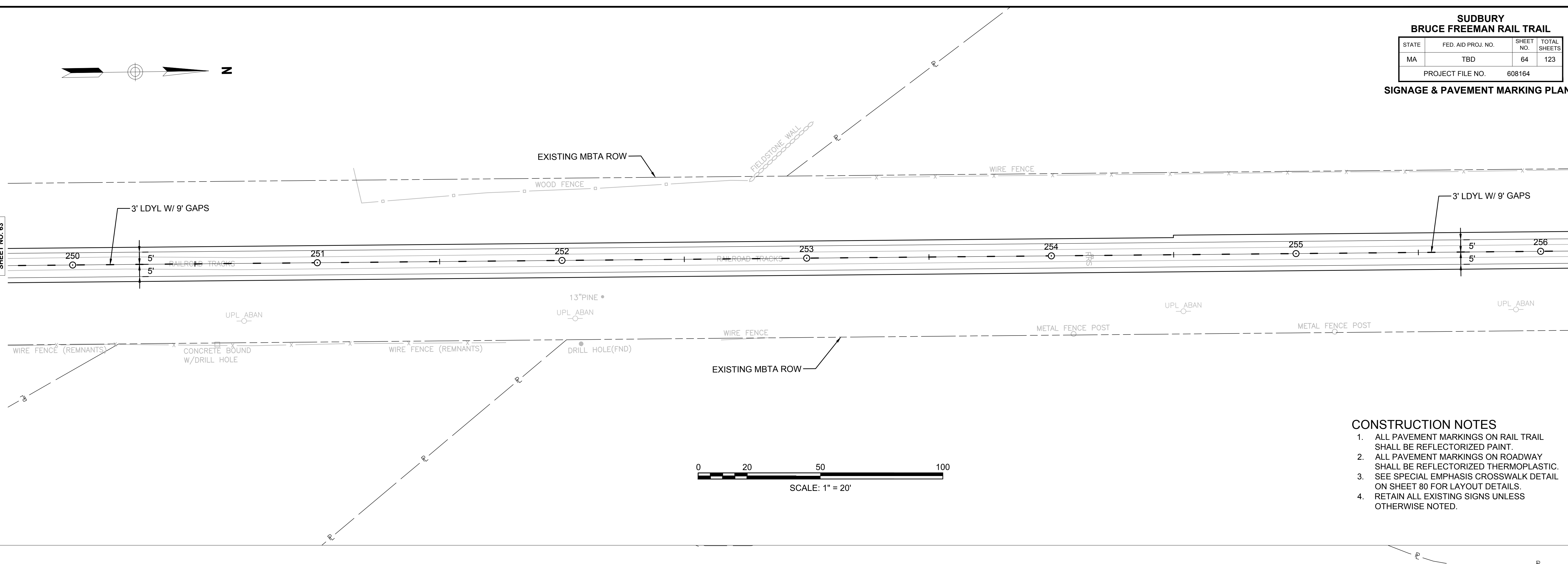


- CONSTRUCTION NOTES**
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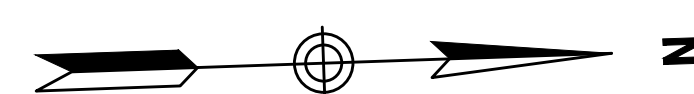


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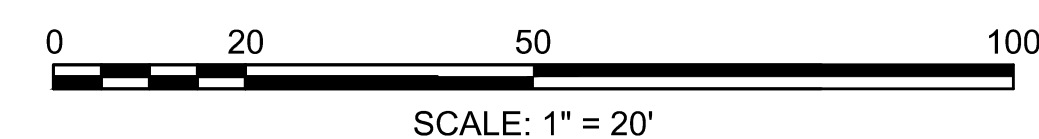
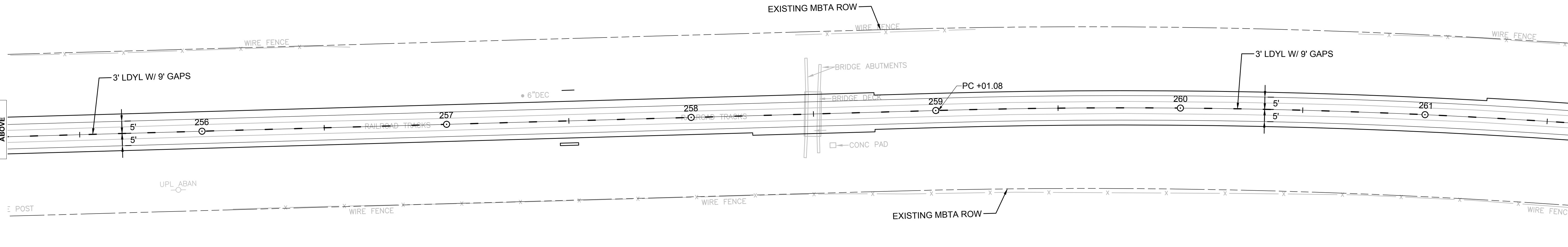


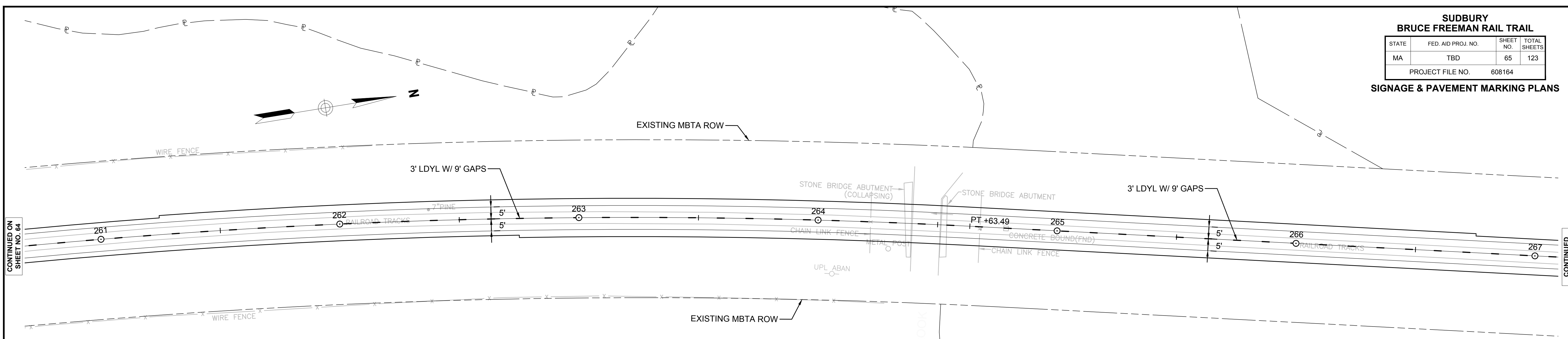
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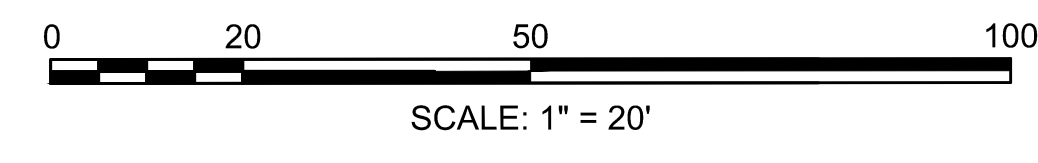
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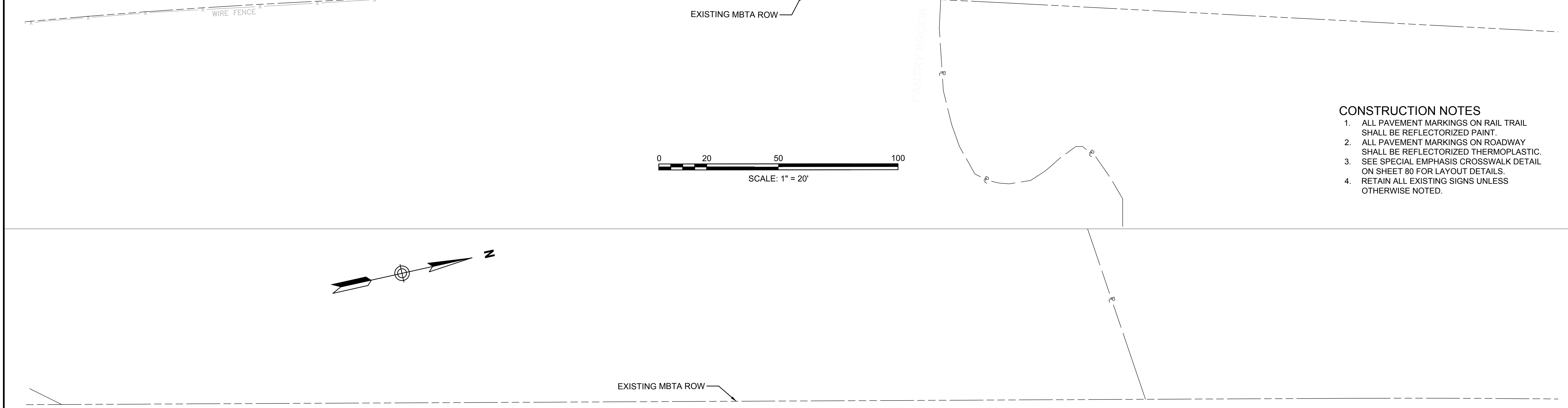


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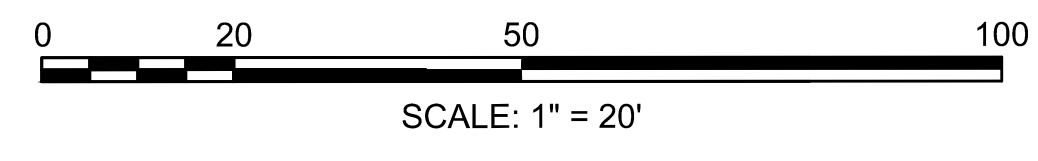


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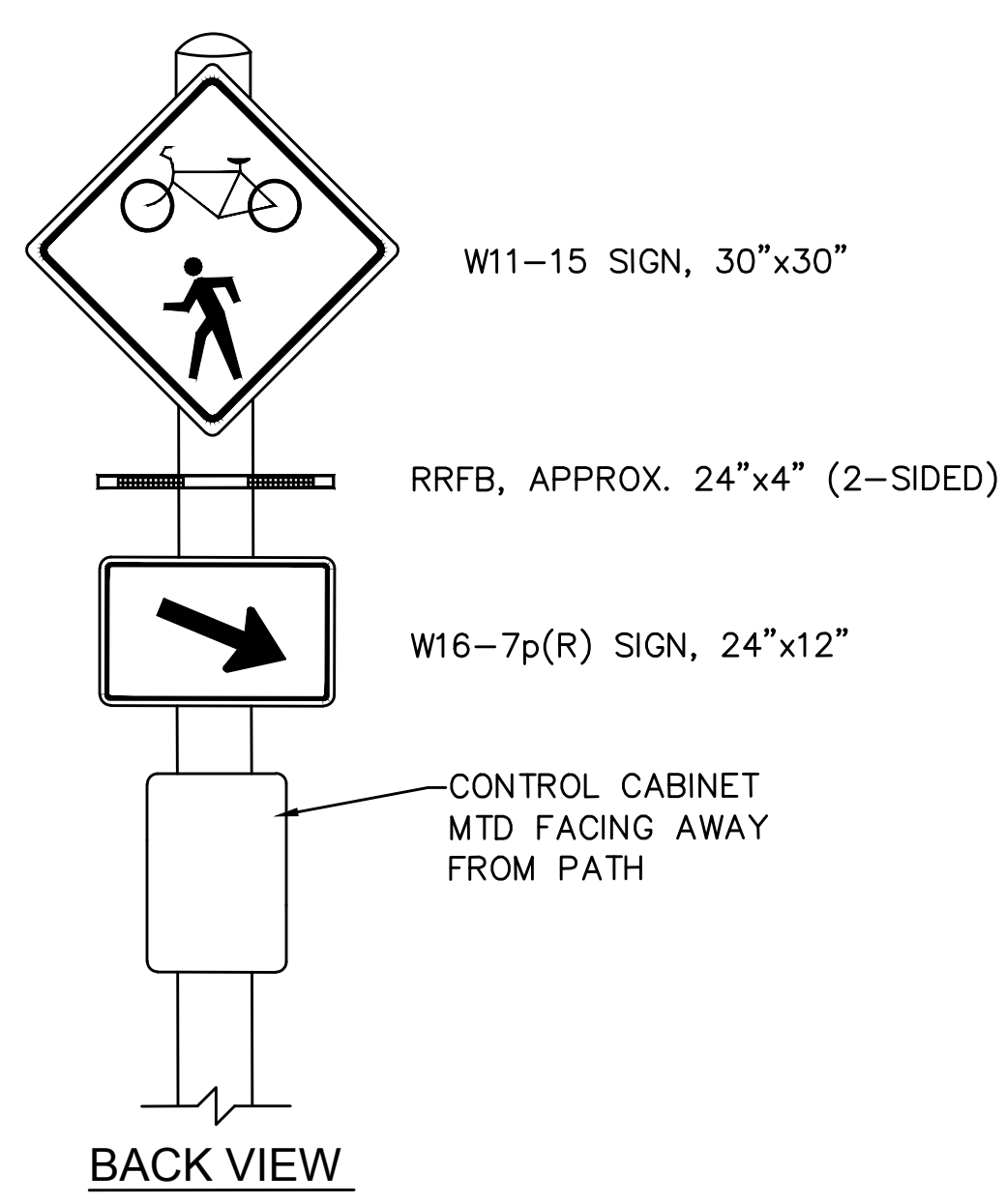
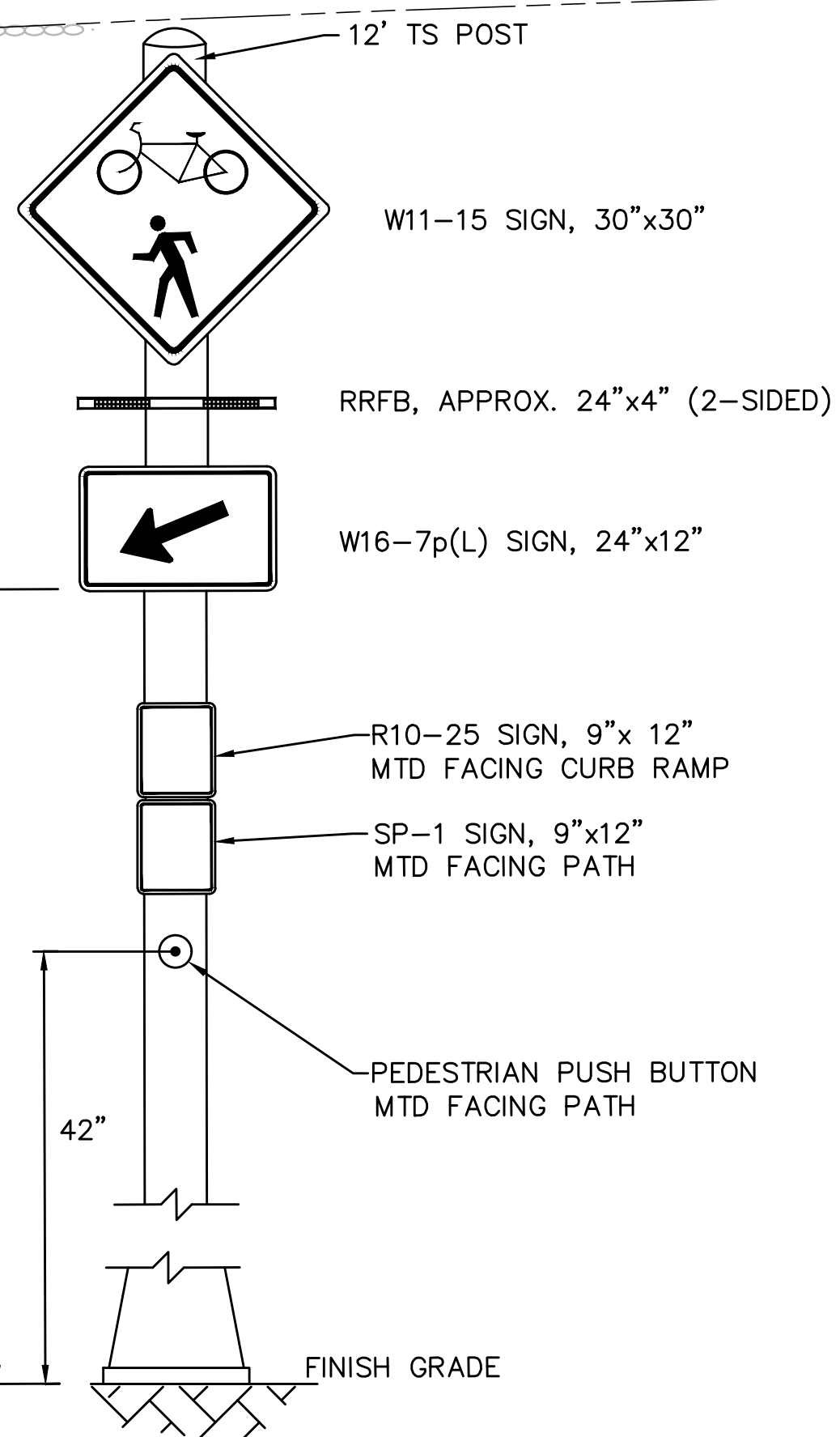
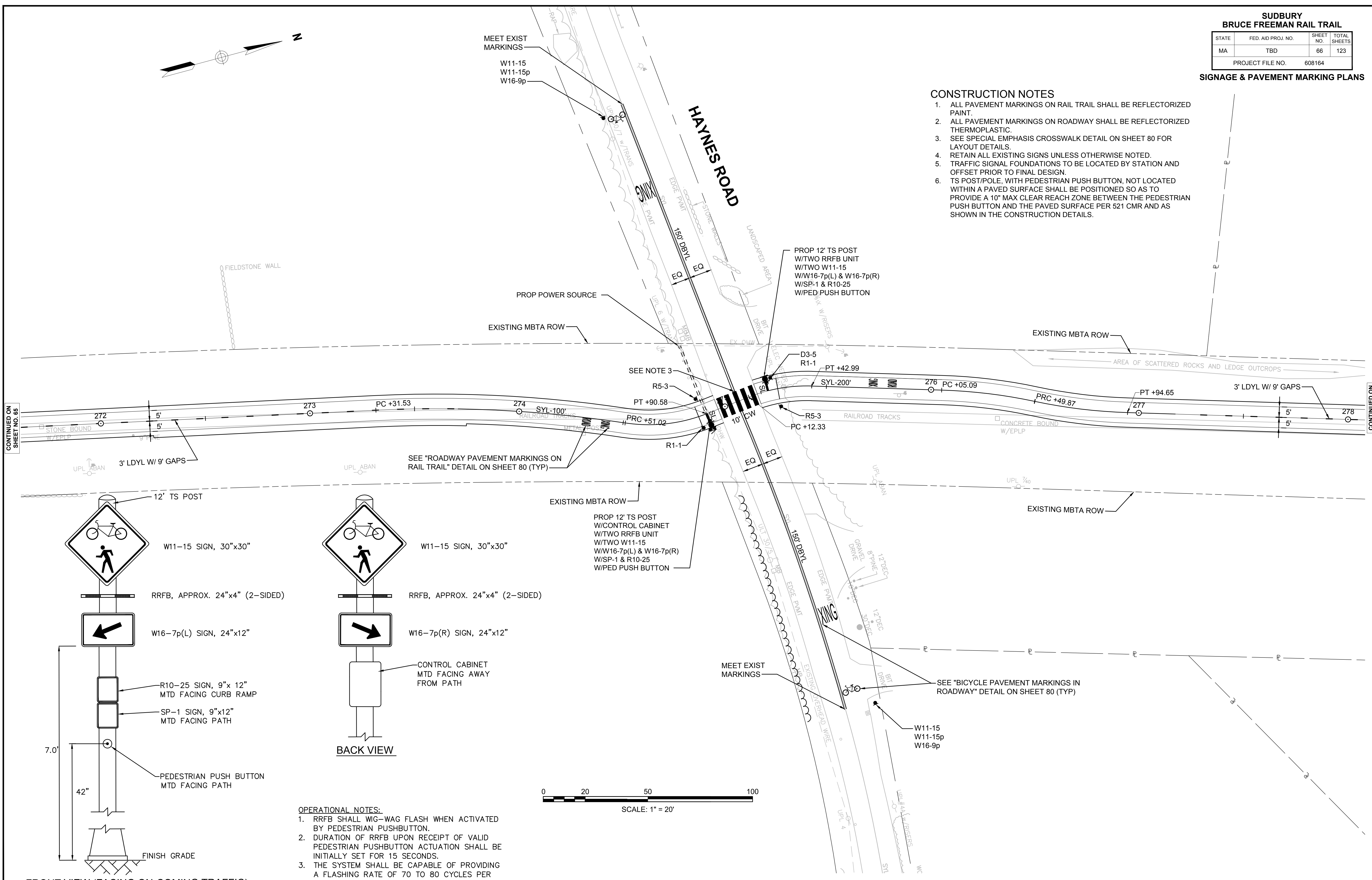


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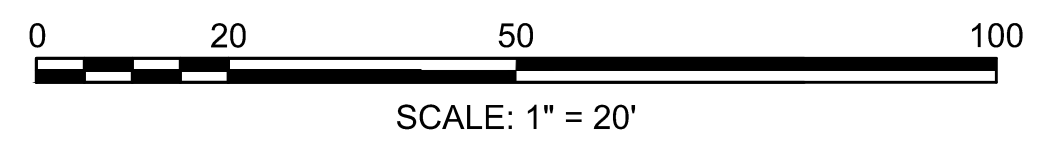
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- CONSTRUCTION NOTES**
1. ALL PAVEMENT MARKINGS ON RAIL TRAIL SHALL BE REFLECTORIZED PAINT.
 2. ALL PAVEMENT MARKINGS ON ROADWAY SHALL BE REFLECTORIZED THERMOPLASTIC.
 3. SEE SPECIAL EMPHASIS CROSSWALK DETAIL ON SHEET 80 FOR LAYOUT DETAILS.
 4. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.
 5. TRAFFIC SIGNAL FOUNDATIONS TO BE LOCATED BY STATION AND OFFSET PRIOR TO FINAL DESIGN.
 6. TS POST/POLE, WITH PEDESTRIAN PUSH BUTTON, NOT LOCATED WITHIN A PAVED SURFACE SHALL BE POSITIONED SO AS TO PROVIDE A 10" MAX CLEAR REACH ZONE BETWEEN THE PEDESTRIAN PUSH BUTTON AND THE PAVED SURFACE PER 521 CMR AND AS SHOWN IN THE CONSTRUCTION DETAILS.



- OPERATIONAL NOTES:**
1. RRFB SHALL WIG-WAG FLASH WHEN ACTIVATED BY PEDESTRIAN PUSHBUTTON.
 2. DURATION OF RRFB UPON RECEIPT OF VALID PEDESTRIAN PUSHBUTTON ACTUATION SHALL BE INITIALLY SET FOR 15 SECONDS.
 3. THE SYSTEM SHALL BE CAPABLE OF PROVIDING A FLASHING RATE OF 70 TO 80 CYCLES PER MINUTE.

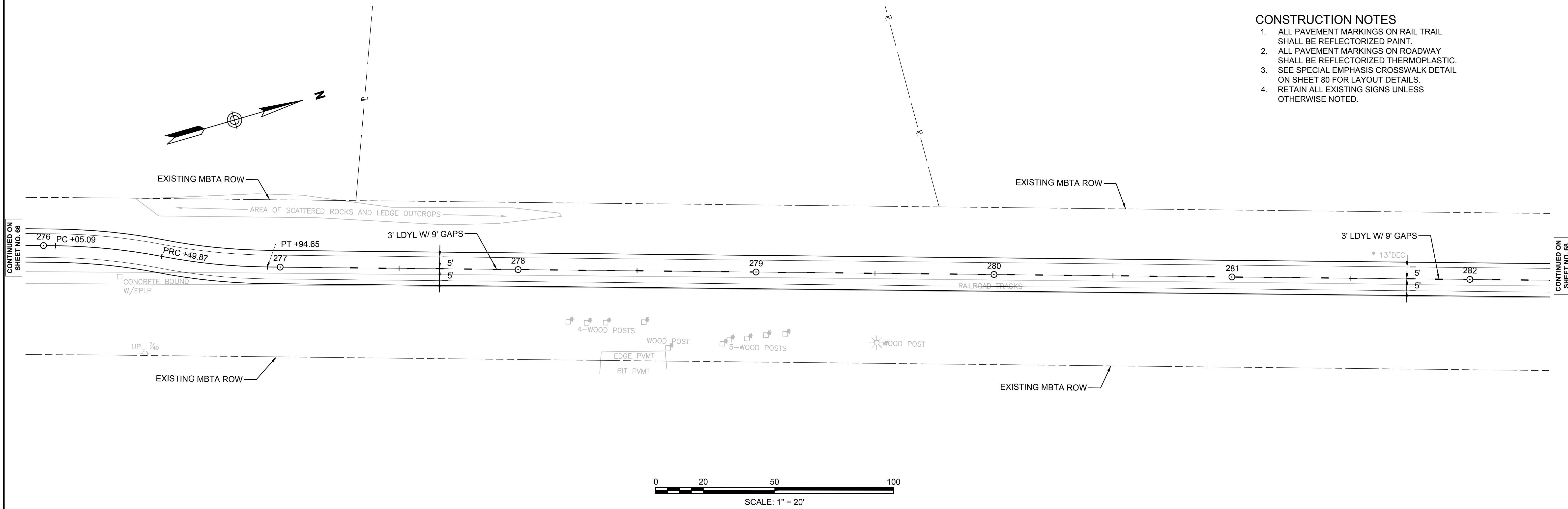


FRONT VIEW (FACING ON-COMING TRAFFIC)
RECTANGULAR RAPID FLASHING BEACON (RRFB) - POST MOUNTED
SCALE: N.T.S.

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CONTINUED ON SHEET NO. 67

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 4. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.



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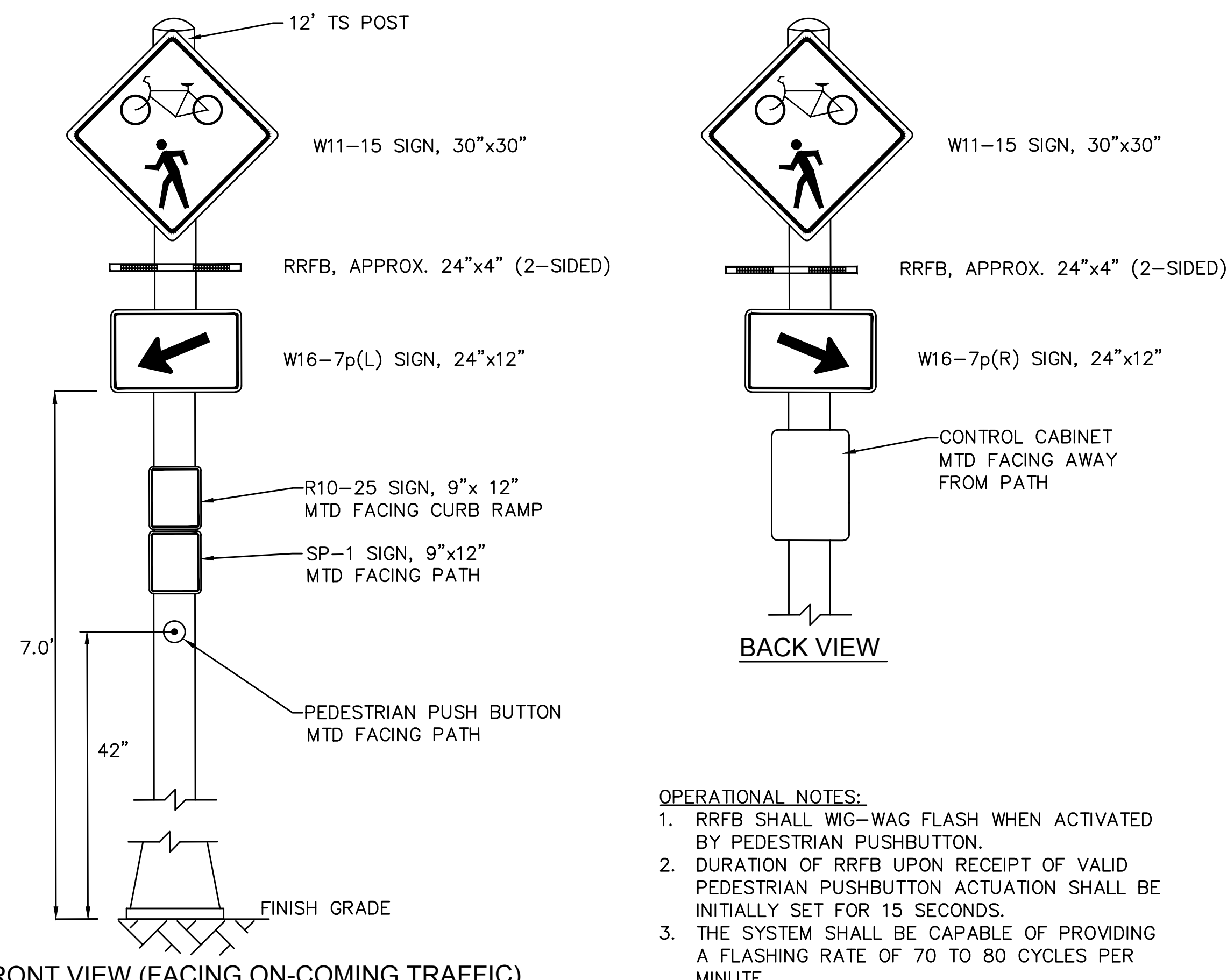
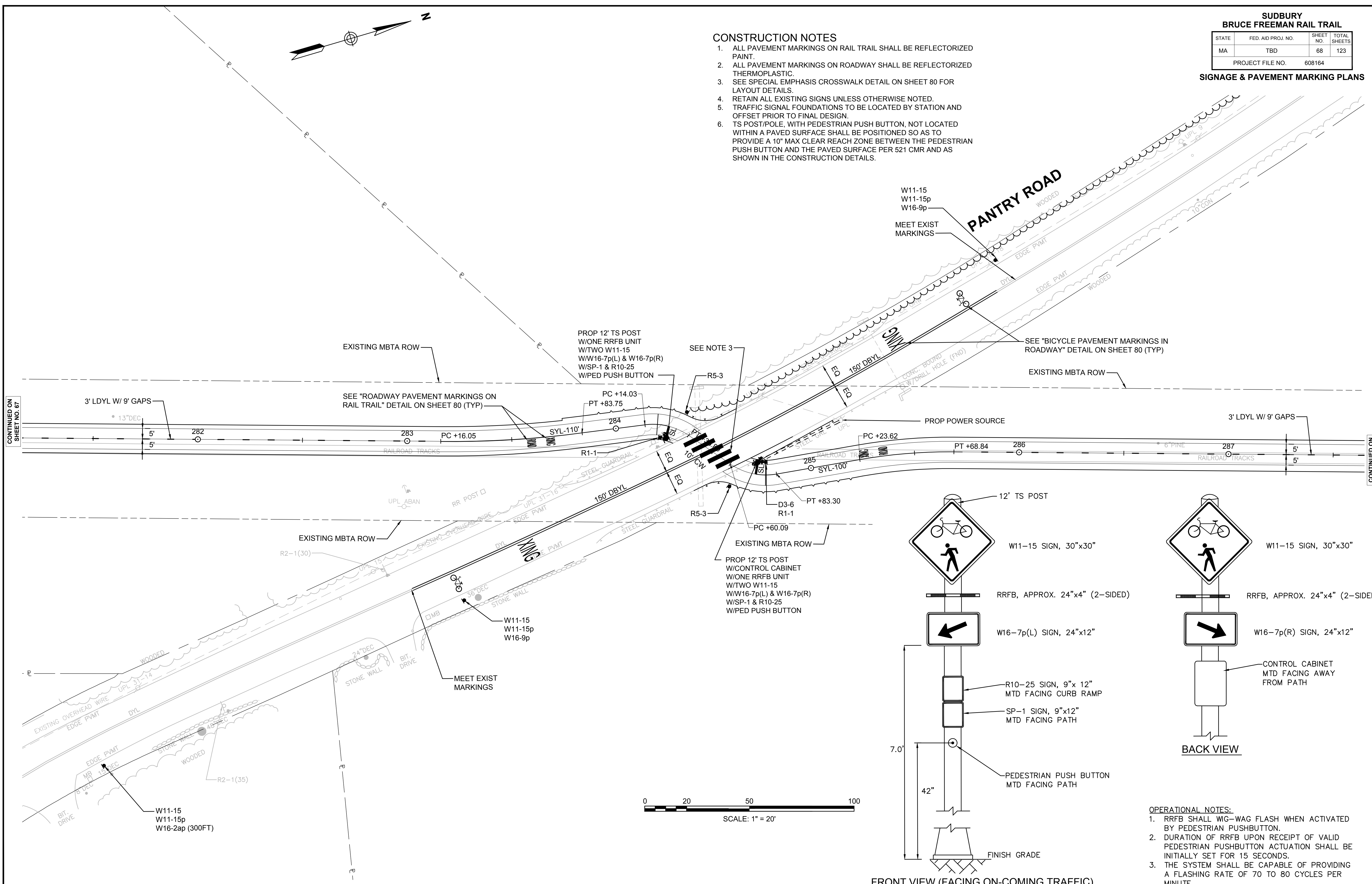
**SUDBURY
BRUCE FREEMAN RAIL TRAIL**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|--------------------|-----------|--------------|
| MA | TBD | 68 | 123 |
| PROJECT FILE NO. | | 608164 | |

SIGNAGE & PAVEMENT MARKING PLANS

CONSTRUCTION NOTES

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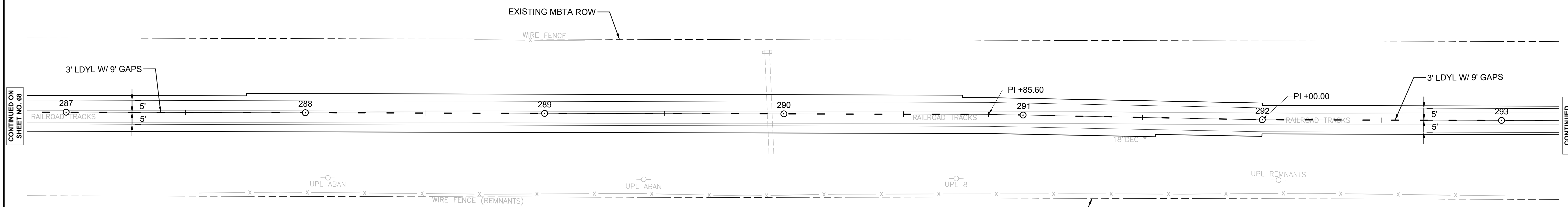
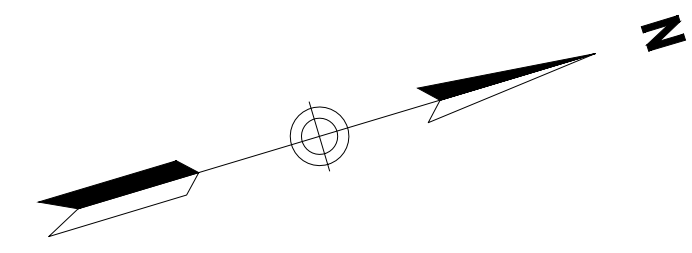


- OPERATIONAL NOTES:**
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 2. DURATION OF RRFB UPON RECEIPT OF VALID PEDESTRIAN PUSHBUTTON ACTUATION SHALL BE INITIALLY SET FOR 15 SECONDS.
 3. THE SYSTEM SHALL BE CAPABLE OF PROVIDING A FLASHING RATE OF 70 TO 80 CYCLES PER MINUTE.



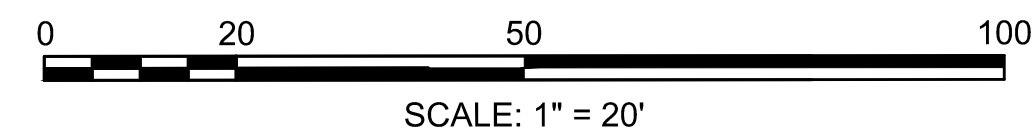
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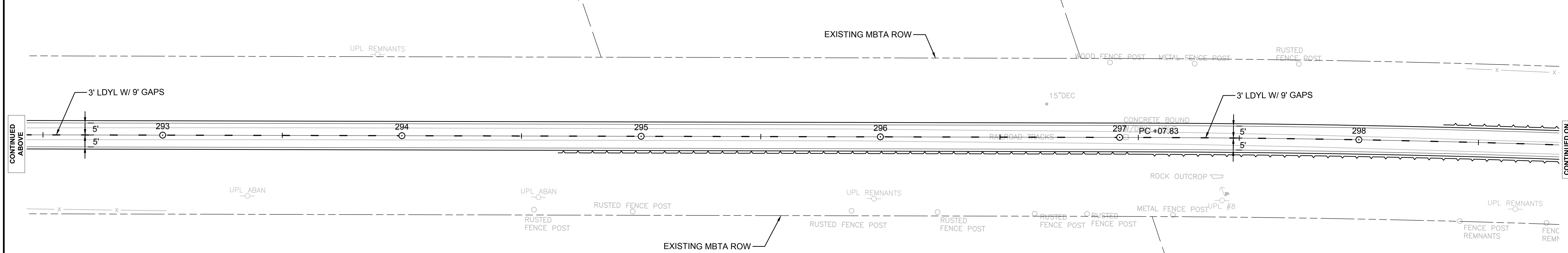
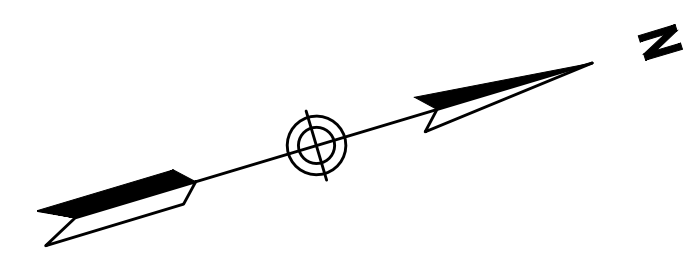


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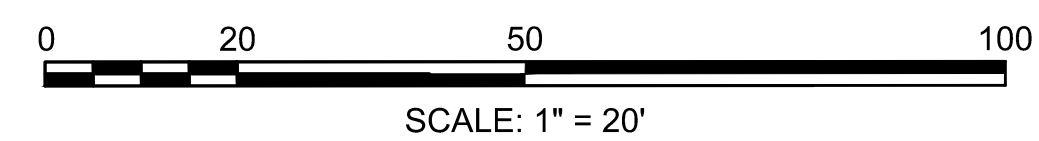


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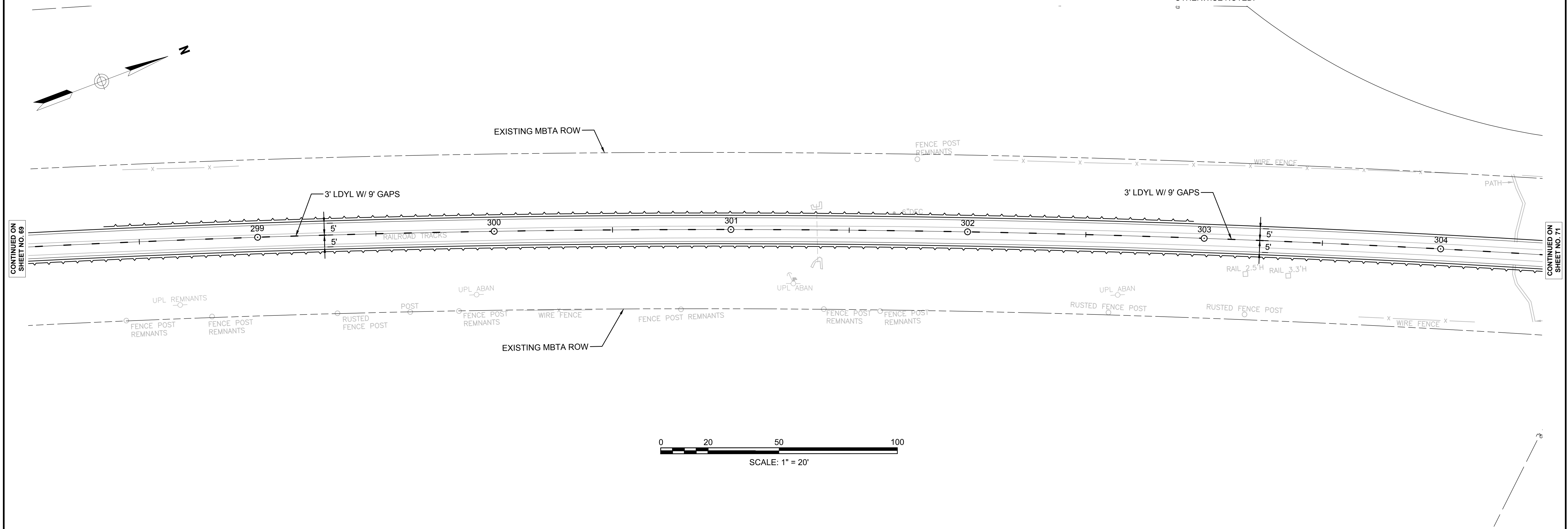
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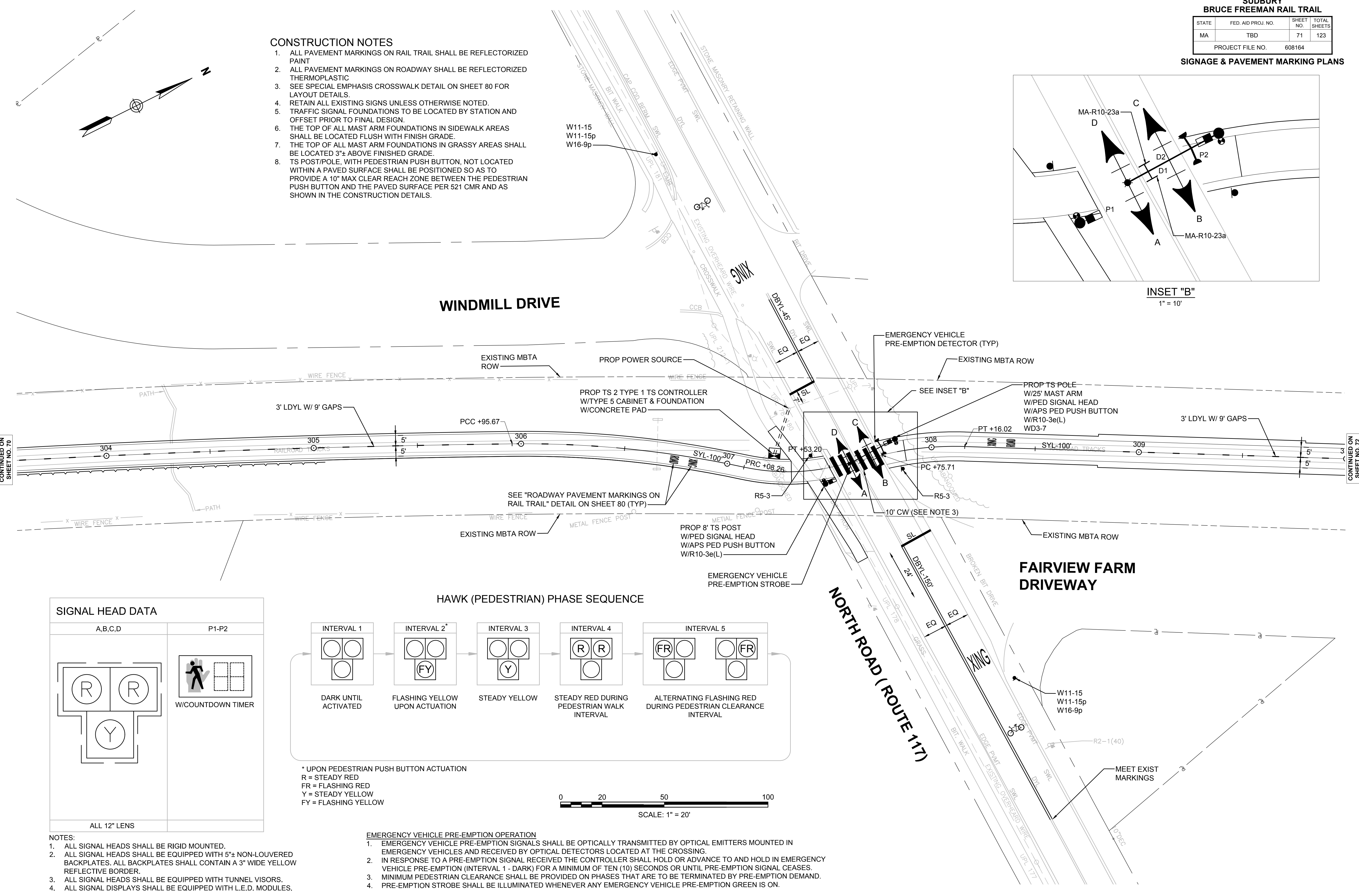
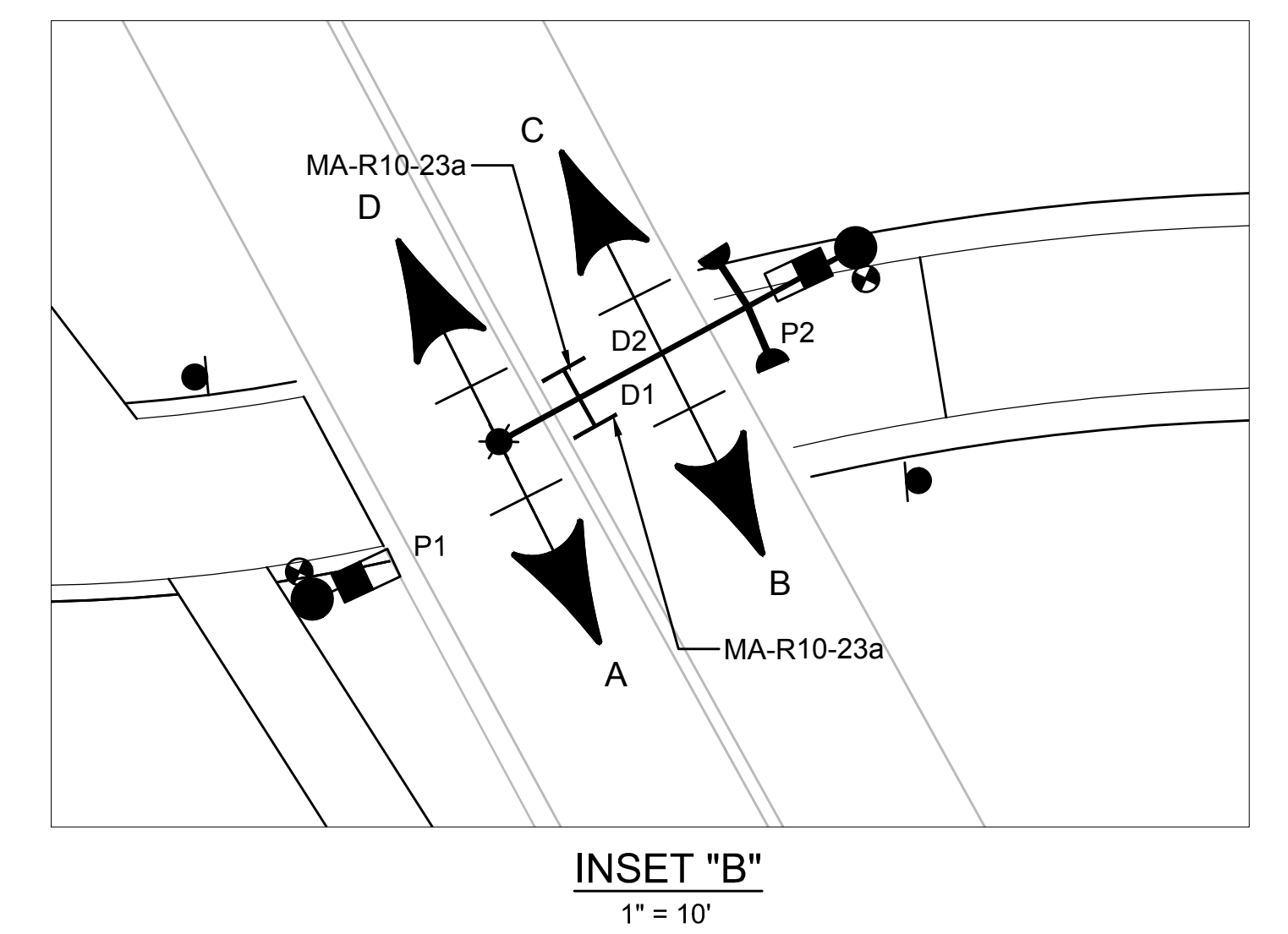


CONSTRUCTION NOTES

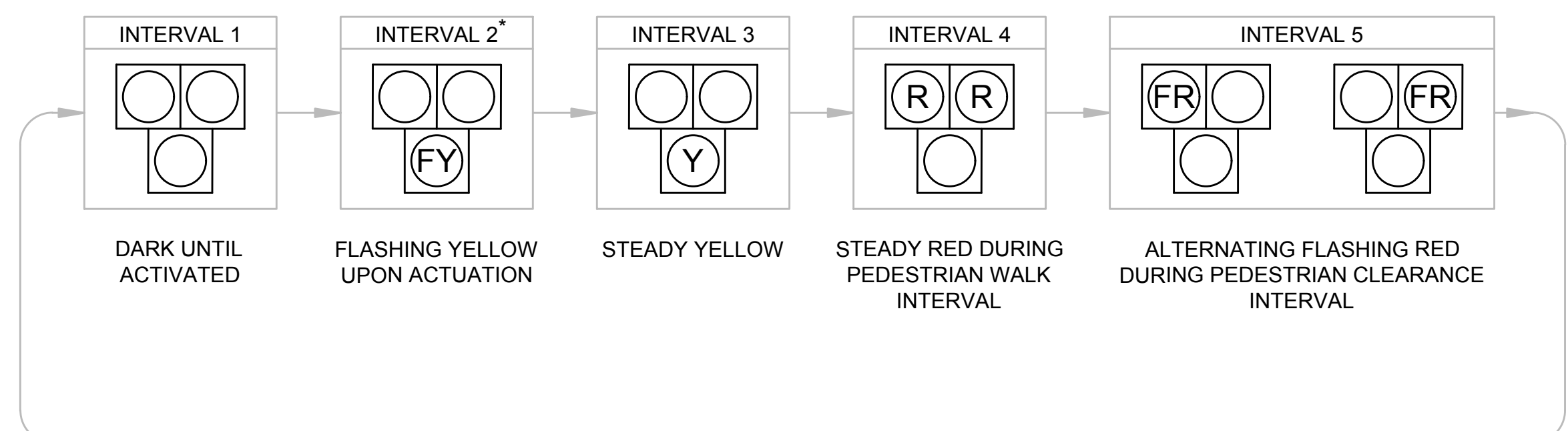
1. ALL PAVEMENT MARKINGS ON RAIL TRAIL SHALL BE REFLECTORIZED PAINT.
2. ALL PAVEMENT MARKINGS ON ROADWAY SHALL BE REFLECTORIZED THERMOPLASTIC.
3. SEE SPECIAL EMPHASIS CROSSWALK DETAIL ON SHEET 80 FOR LAYOUT DETAILS.
4. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.



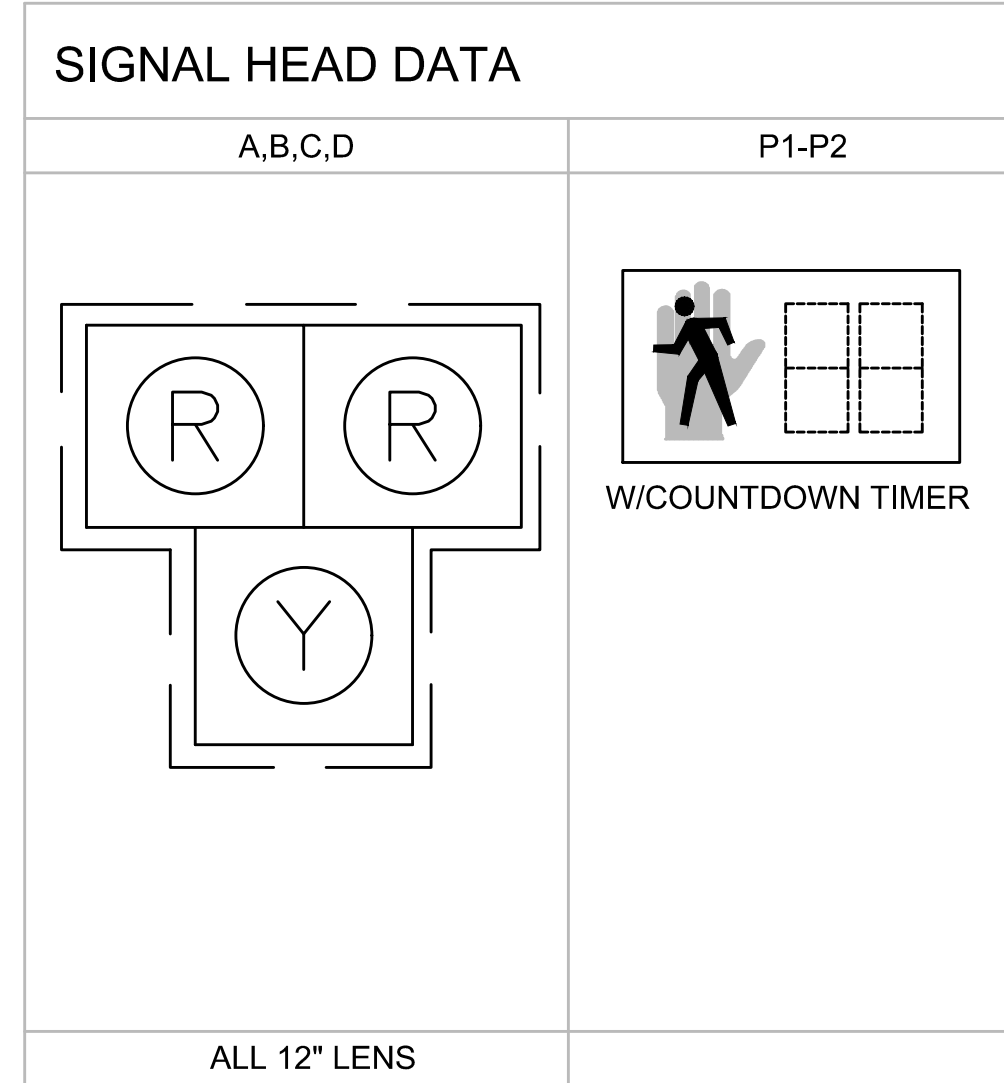
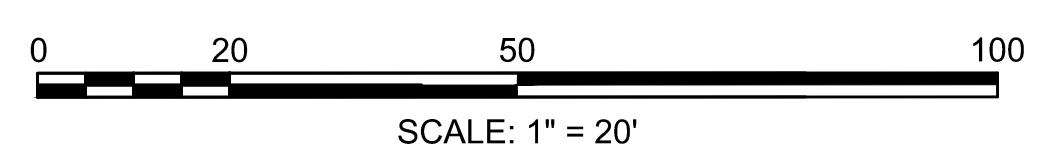
- CONSTRUCTION NOTES**
1. ALL PAVEMENT MARKINGS ON RAIL TRAIL SHALL BE REFLECTORIZED PAINT
 2. ALL PAVEMENT MARKINGS ON ROADWAY SHALL BE REFLECTORIZED THERMOPLASTIC
 3. SEE SPECIAL EMPHASIS CROSSWALK DETAIL ON SHEET 80 FOR LAYOUT DETAILS.
 4. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.
 5. TRAFFIC SIGNAL FOUNDATIONS TO BE LOCATED BY STATION AND OFFSET PRIOR TO FINAL DESIGN.
 6. THE TOP OF ALL MAST ARM FOUNDATIONS IN SIDEWALK AREAS SHALL BE LOCATED FLUSH WITH FINISH GRADE.
 7. THE TOP OF ALL MAST ARM FOUNDATIONS IN GRASSY AREAS SHALL BE LOCATED 3"± ABOVE FINISHED GRADE.
 8. TS POST/POLE, WITH PEDESTRIAN PUSH BUTTON, NOT LOCATED WITHIN A PAVED SURFACE SHALL BE POSITIONED SO AS TO PROVIDE A 10' MAX CLEAR REACH ZONE BETWEEN THE PEDESTRIAN PUSH BUTTON AND THE PAVED SURFACE PER 521 CMR AND AS SHOWN IN THE CONSTRUCTION DETAILS.



HAWK (PEDESTRIAN) PHASE SEQUENCE



* UPON PEDESTRIAN PUSH BUTTON ACTUATION
 R = STEADY RED
 FR = FLASHING RED
 Y = STEADY YELLOW
 FY = FLASHING YELLOW

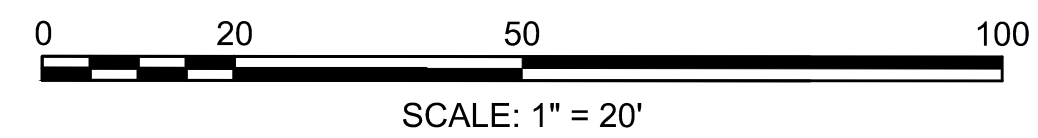
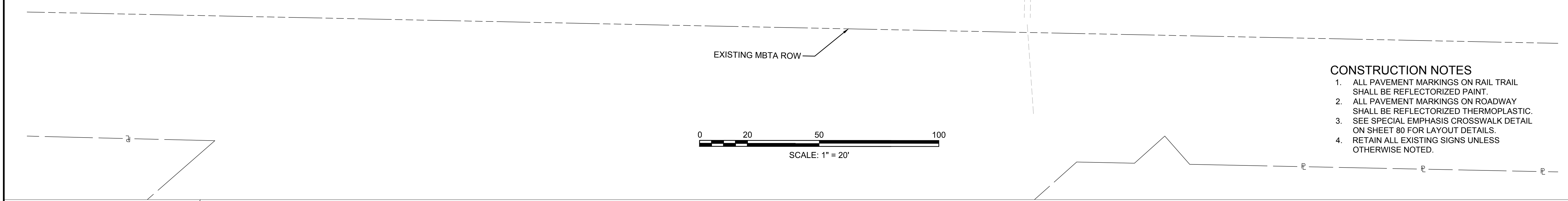
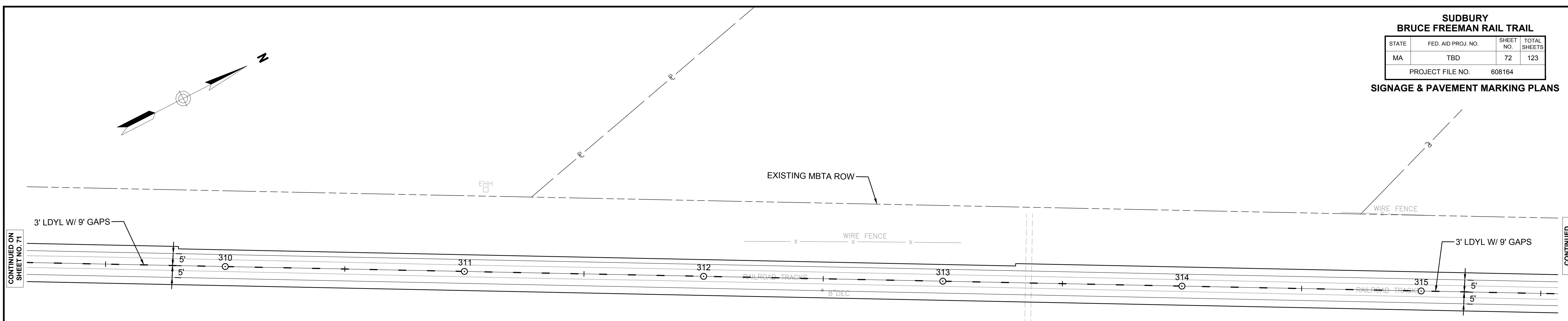


- NOTES:**
1. ALL SIGNAL HEADS SHALL BE RIGID MOUNTED.
 2. ALL SIGNAL HEADS SHALL BE EQUIPPED WITH 5"± NON-LOUVERED BACKPLATES. ALL BACKPLATES SHALL CONTAIN A 3" WIDE YELLOW REFLECTIVE BORDER.
 3. ALL SIGNAL HEADS SHALL BE EQUIPPED WITH TUNNEL VISORS.
 4. ALL SIGNAL DISPLAYS SHALL BE EQUIPPED WITH L.E.D. MODULES.

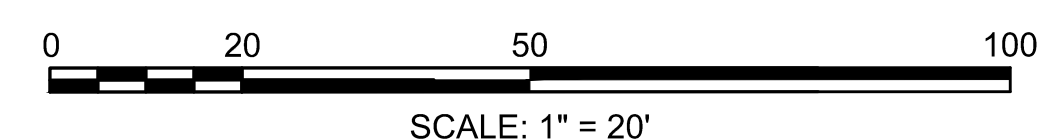
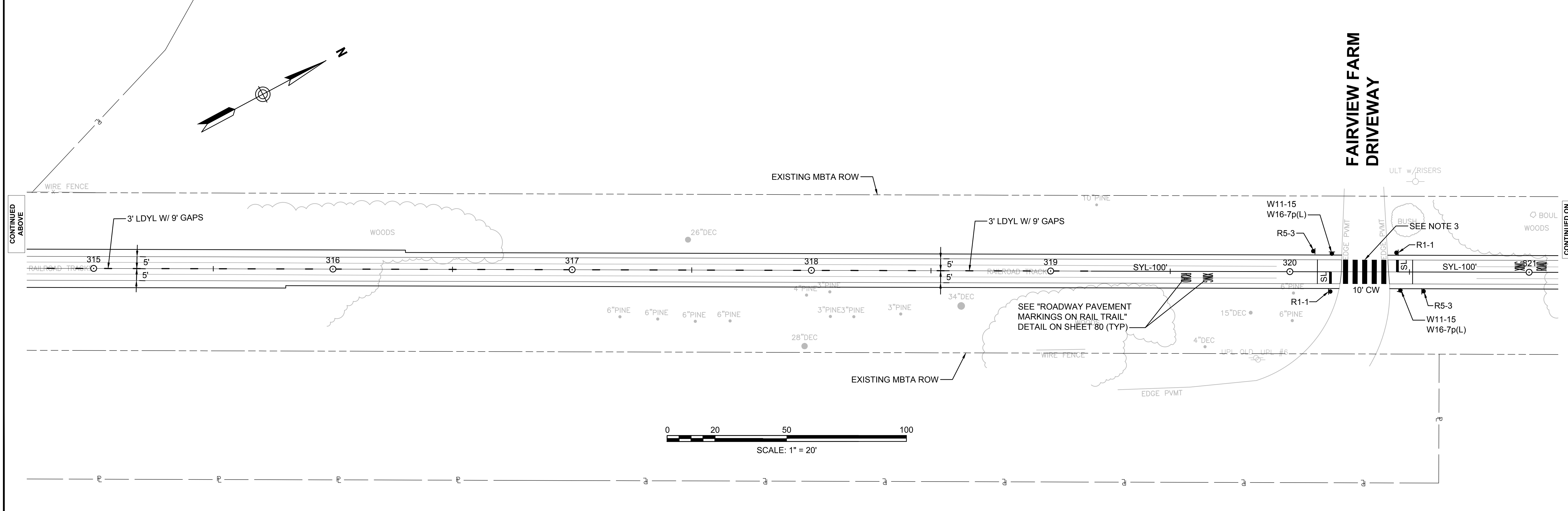
- EMERGENCY VEHICLE PRE-EMPTION OPERATION**
1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE OPTICALLY TRANSMITTED BY OPTICAL EMITTERS MOUNTED IN EMERGENCY VEHICLES AND RECEIVED BY OPTICAL DETECTORS LOCATED AT THE CROSSING.
 2. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD IN EMERGENCY VEHICLE PRE-EMPTION (INTERVAL 1 - DARK) FOR A MINIMUM OF TEN (10) SECONDS OR UNTIL PRE-EMPTION SIGNAL CEASES.
 3. MINIMUM PEDESTRIAN CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
 4. PRE-EMPTION STROBE SHALL BE ILLUMINATED WHENEVER ANY EMERGENCY VEHICLE PRE-EMPTION GREEN IS ON.

CONTINUED ON SHEET NO. 70

CONTINUED ON SHEET NO. 72



- CONSTRUCTION NOTES**
1. ALL PAVEMENT MARKINGS ON RAIL TRAIL SHALL BE REFLECTORIZED PAINT.
 2. ALL PAVEMENT MARKINGS ON ROADWAY SHALL BE REFLECTORIZED THERMOPLASTIC.
 3. SEE SPECIAL EMPHASIS CROSSWALK DETAIL ON SHEET 80 FOR LAYOUT DETAILS.
 4. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.



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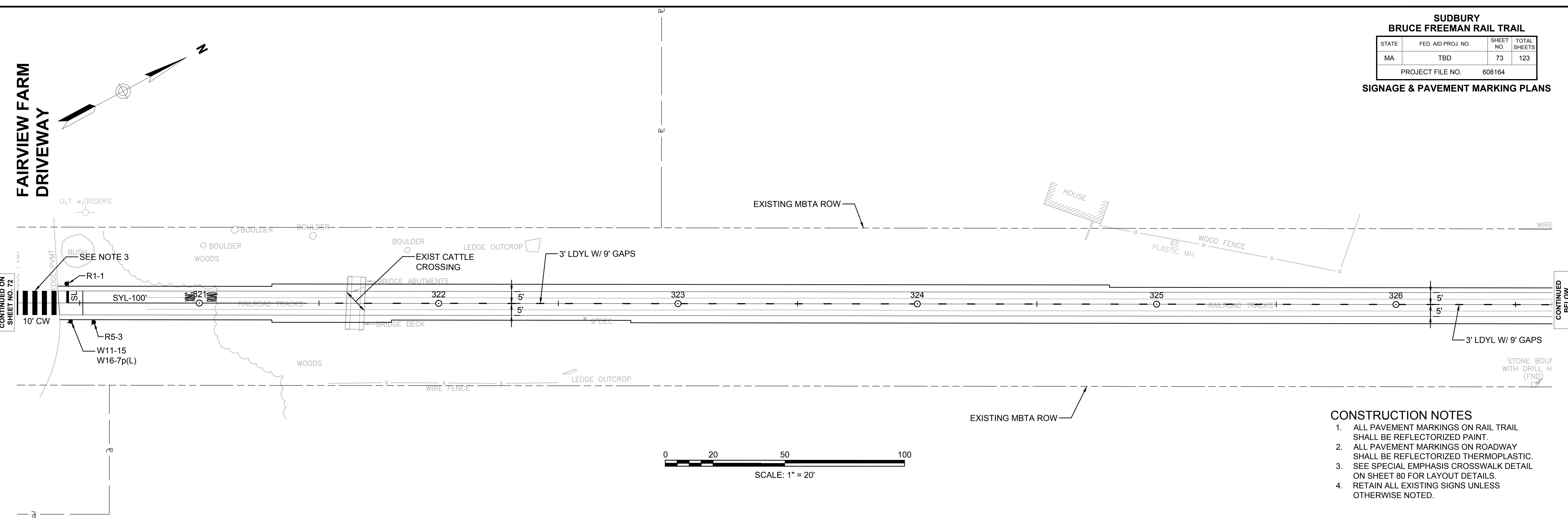
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FAIRVIEW FARM DRIVEWAY

FAIRVIEW FARM DRIVEWAY

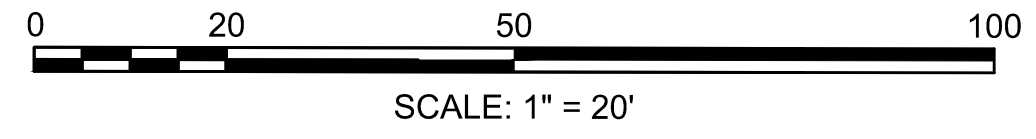
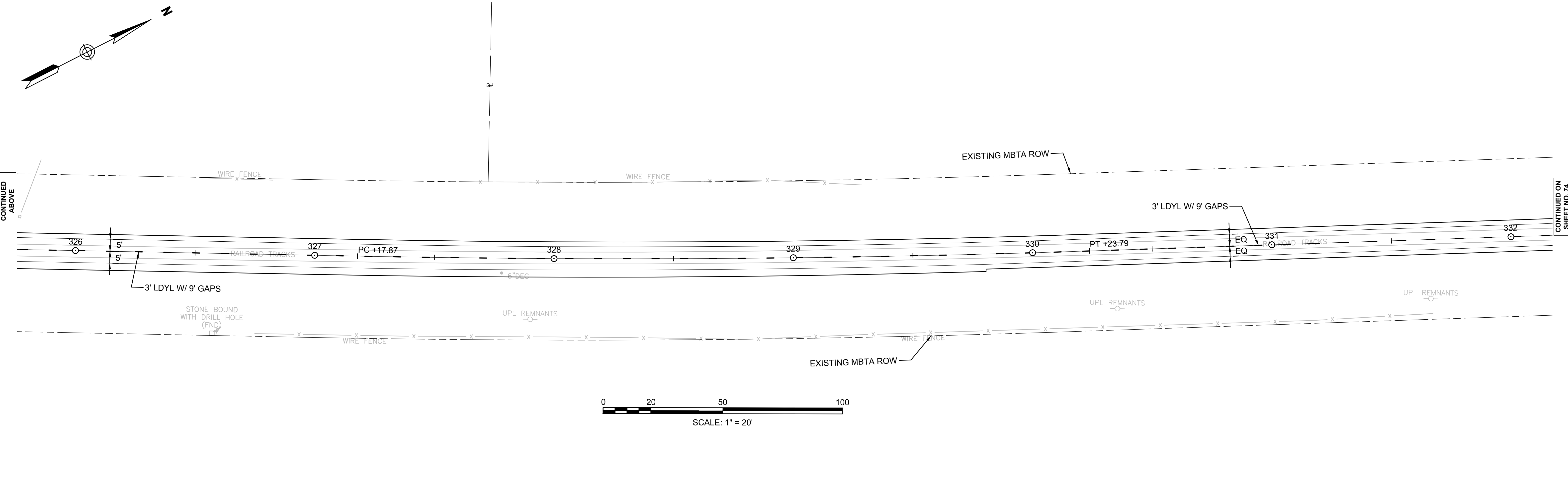
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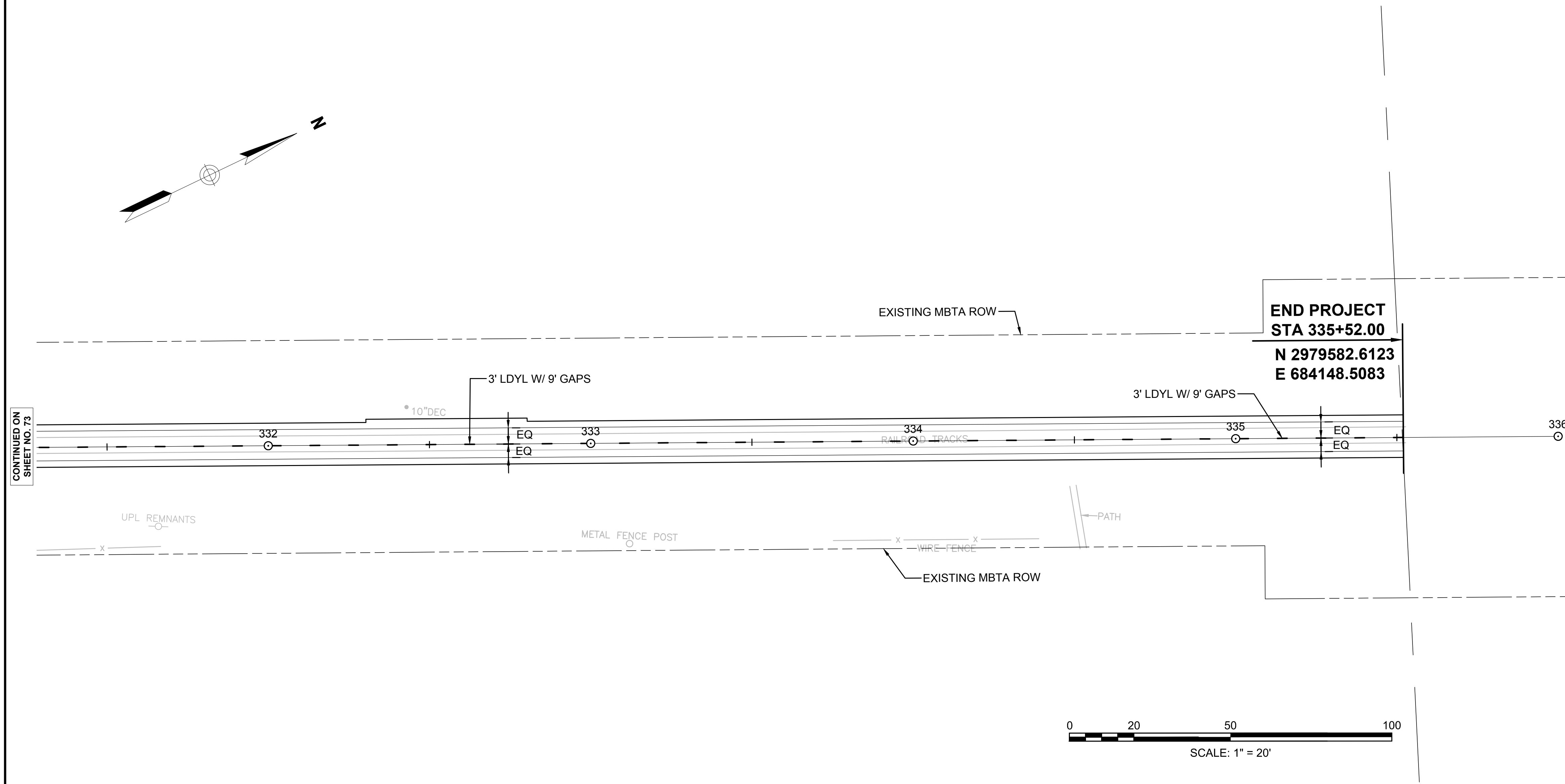


CONSTRUCTION NOTES




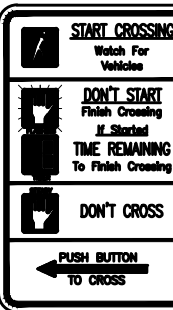








1. ALL PAVEMENT MARKINGS ON RAIL TRAIL SHALL BE REFLECTORIZED PAINT.
2. ALL PAVEMENT MARKINGS ON ROADWAY SHALL BE REFLECTORIZED THERMOPLASTIC.
3. SEE SPECIAL EMPHASIS CROSSWALK DETAIL ON SHEET 80 FOR LAYOUT DETAILS.
4. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.

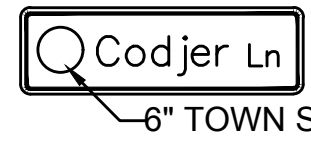








- CONSTRUCTION NOTES**
1. ALL PAVEMENT MARKINGS ON RAIL TRAIL SHALL BE REFLECTORIZED PAINT.
 2. ALL PAVEMENT MARKINGS ON ROADWAY SHALL BE REFLECTORIZED THERMOPLASTIC.
 3. SEE SPECIAL EMPHASIS CROSSWALK DETAIL ON SHEET 80 FOR LAYOUT DETAILS.
 4. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.



CONTINUED ON SHEET NO. 73

| TRAFFIC SIGN SUMMARY | | | | | | | | | | | | | | |
|-----------------------|--------------|--------|---|---|------------------|-----------------|--------------------------|--------------|--------------------|--------|--|-------------------------------|---|---------------------|
| IDENTIFICATION NUMBER | SIZE OF SIGN | | TEXT | TEXT DIMENSIONS (INCHES) | | | NUMBER OF SIGNS REQUIRED | BACK-GROUND | COLOR | | | POST SIZE AND NUMBER REQUIRED | UNIT AREA (S.F.) | AREA IN SQUARE FEET |
| | WIDTH | HEIGHT | | LETTER HEIGHT | VERTICAL SPACING | ARROW RTE. MKR. | | | LEGEND | BORDER | | | | |
| R1-1 | 18" | 18" |  | SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED | | | | RED | WHITE | WHITE | | | 1.86 | |
| R1-1A | 30" | 30" |  | | | | | RED | WHITE | WHITE | | | 5.18 | |
| R5-3 | 24" | 24" |  | | | | | WHITE | BLACK | BLACK | | | 4.00 | |
| R10-3e(L) | 9" | 15" |  | | | | | WHITE | WHITE/BLACK/ORANGE | BLACK | | | INCLUDED UNDER ITEMS 824.01 & 824.02 | |
| MA-R10-23a | 30" | 36" |  | AS PER MASSDOT STANDARD | | | | YELLOW/WHITE | BLACK | BLACK | | | 7.50 | |
| R10-25 | 12" | 9" |  | SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED | | | | WHITE | BLACK | BLACK | | | INCLUDED UNDER ITEMS 824.401, 824.402 & 824.403 | |
| W11-15 | 30" | 30" |  | | | | | YELLOW | BLACK | BLACK | | | 6.25 | |
| W11-15p | 24" | 18" |  | | | | | YELLOW | BLACK | BLACK | | | 3.00 | |
| W16-2ap | 24" | 12" |  | | | | | YELLOW | BLACK | BLACK | | | 2.00 | |
| W16-7p(L) | 24" | 12" |  | | | | | YELLOW | BLACK | BLACK | | | 2.00 | |
| W16-9p | 24" | 12" |  | | | | | YELLOW | BLACK | BLACK | | | 2.00 | |
| SP-1 | 9" | 12" |  | 1"C | 1.5" | | | YELLOW | BLACK | BLACK | | | INCLUDED UNDER ITEMS 824.401, 824.402 & 824.403 | |
| | | | | 1"C | 1" | | | | | | | | | |
| | | | | 1"C | 1" | N/A | | | | | | | | |
| | | | | 1"C | 1" | | | | | | | | | |
| | | | | 1"C | 1" | | | | | | | | | |
| | | | | 1"C | 1.5" | | | | | | | | | |

| TRAFFIC SIGN SUMMARY | | | | | | | | | | | | | | |
|-----------------------|--------------|--------|--|--------------------------|------------------|-----------------|--------------------------|-------------|--------|--------|--|-------------------------------|-------------------------|---------------------|
| IDENTIFICATION NUMBER | SIZE OF SIGN | | TEXT | TEXT DIMENSIONS (INCHES) | | | NUMBER OF SIGNS REQUIRED | BACK-GROUND | COLOR | | | POST SIZE AND NUMBER REQUIRED | UNIT AREA (S.F.) | AREA IN SQUARE FEET |
| | WIDTH | HEIGHT | | LETTER HEIGHT | VERTICAL SPACING | ARROW RTE. MKR. | | | LEGEND | BORDER | | | | |
| D3-1 | | 12" |  | 6"4.5" | 3" | N/A | | GREEN | WHITE | WHITE | | | INCLUDED UNDER ITEM 874 | |
| D3-2 | | 12" |  | 6"4.5" | 3" | N/A | | GREEN | WHITE | WHITE | | | INCLUDED UNDER ITEM 874 | |
| D3-3 | | 12" |  | 6"4.5" | 3" | N/A | | GREEN | WHITE | WHITE | | | INCLUDED UNDER ITEM 874 | |
| D3-4 | | 12" |  | 6"4.5" | 3" | N/A | | GREEN | WHITE | WHITE | | | INCLUDED UNDER ITEM 874 | |
| D3-5 | | 12" |  | 6"4.5" | 3" | N/A | | GREEN | WHITE | WHITE | | | INCLUDED UNDER ITEM 874 | |
| D3-6 | | 12" |  | 6"4.5" | 3" | N/A | | GREEN | WHITE | WHITE | | | INCLUDED UNDER ITEM 874 | |
| D3-7 | | 12" |  | 6"4.5" | 3" | N/A | | GREEN | WHITE | WHITE | | | INCLUDED UNDER ITEM 874 | |

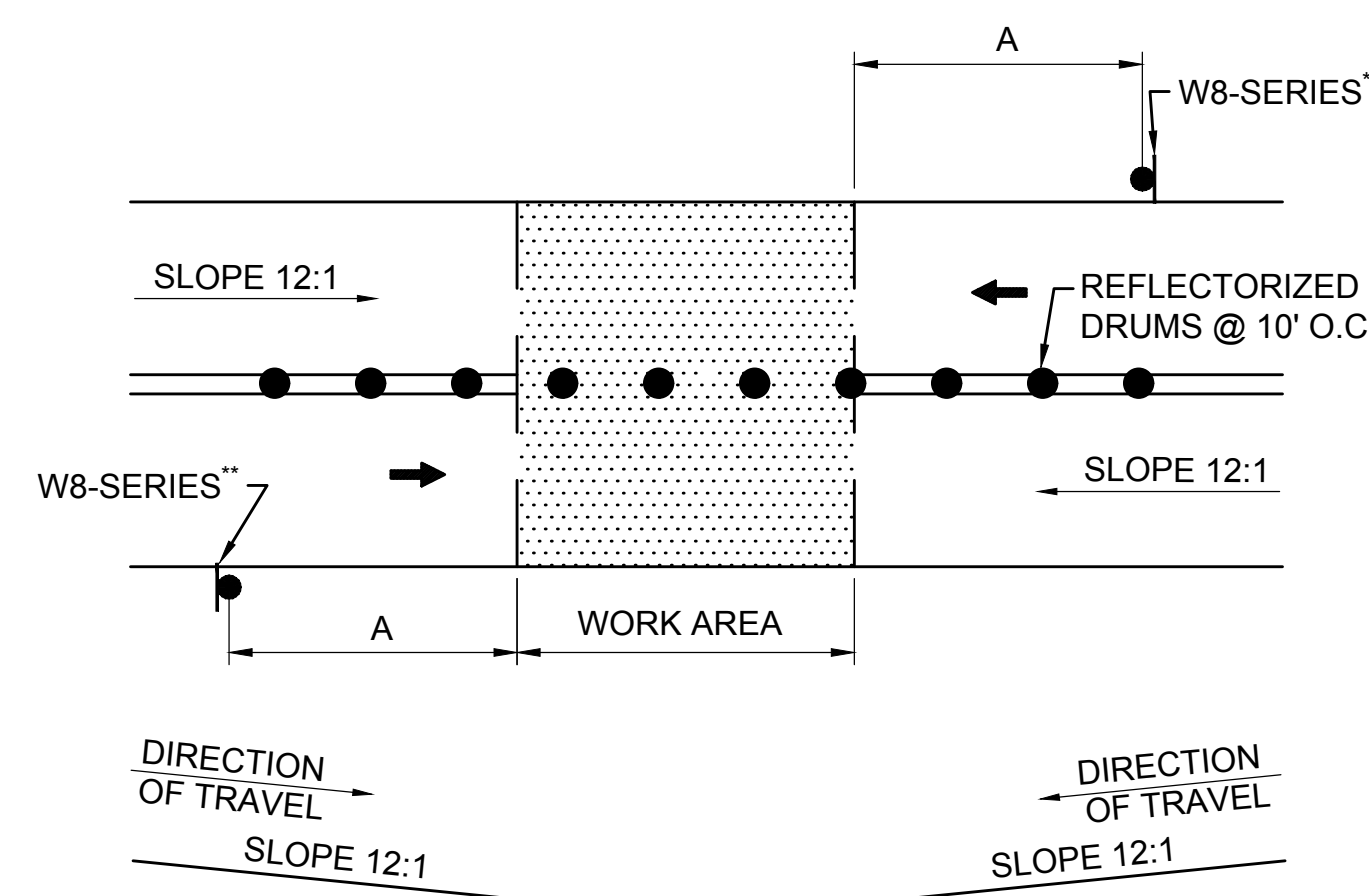
NOTES:
1. HIGH INTENSITY REFLECTIVE SHEETING SHALL BE USED FOR ALL SIGNS. SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION" FOR TEXT DIMENSIONS, AS AMENDED; THE 1977 MASSHIGHWAY DEPARTMENT CONSTRUCTION AND TRAFFIC STANDARD DETAILS, AS AMENDED, FOR SIGNS AND SUPPORTS; AND THE MASSHIGHWAY DEPARTMENT SIGN LISTINGS 1993 EDITION, AS AMENDED.

GENERAL NOTES

- ALL CONSTRUCTION SIGNING, TEMPORARY TRAFFIC CONTROL DEVICES, AND ROADSIDE ELEMENTS SHALL CONFORM WITH THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AS AMENDED, THE MASSDOT STANDARD DETAILS AND DRAWINGS FOR THE DEVELOPMENT OF TEMPORARY TRAFFIC CONTROL PLANS, THE LATEST REVISIONS OF THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, (AASHTO) ROADSIDE DESIGN GUIDE, AASHTO POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS, AND NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM (NCHRP) REPORT 350 OR THE AASHTO MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
- ALL TEMPORARY PEDESTRIAN PATHWAYS SHALL COMPLY FULLY WITH ALL REQUIREMENTS OF THE MUTCD AND ALL APPLICABLE MASSACHUSETTS ARCHITECTURAL ACCESS BOARD (MAAB) AND AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG) AND PUBLIC RIGHTS-OF WAY ACCESSIBILITY GUIDELINES (PROWAG).
- ALL DRUMS OUTSIDE TAPERS SHALL BE SET AT 20' ON CENTER MAX. UNLESS OTHERWISE NOTED OR ADJUSTED BY THE ENGINEER.
- ALL DRUMS SHALL BE APPROXIMATELY PLACED AND MOVED AS NECESSARY TO MAINTAIN ADEQUATE ABUTTER ACCESS AT ALL TIMES. WORK MAY REQUIRE ADDITIONAL SIGNS, DRUMS AND OTHER TRAFFIC CONTROL DEVICES, GRADING AND TEMPORARY PAVEMENT FOR PASSAGE OF PEDESTRIAN, VEHICULAR AND EMERGENCY TRAFFIC THROUGH THE WORK AREAS, BOTH DURING AND AFTER WORKING HOURS, TO MAINTAIN SUCH ACCESS.
- THE FIRST 10 DRUMS ON TAPERS SHALL BE REFLECTORIZED DRUMS WITH SEQUENTIAL FLASHING WARNING LIGHTS.
- REFLECTORIZED CONES SHALL BE A MINIMUM OF 36 INCHES IN HEIGHT.
- CONES MAY BE USED IN LIEU OF DRUMS OUTSIDE OF TAPER AREAS.
- THE CONTRACTOR SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OR RESTRICTION OF ACCESS.
- NO WORK SHALL OCCUR WITHIN THE PUBLIC WAY ON STATE RECOGNIZED HOLIDAYS UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- FOR RESTORATIVE WORK ON LOCAL ROADWAYS, A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION ON TWO WAY STREETS SHALL BE MAINTAINED AT ALL TIMES, EXCEPT THAT DURING WORKING HOURS, TRAFFIC MAY BE REDUCED TO ONE LANE UNDER POLICE CONTROL FOR SHORT TIME PERIODS WHEN REQUIRED FOR THE WORK, AS SHOWN UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- FOR DROP-OFFS 4" OR LESS WITHIN THE CLEAR ZONE: CONDITION MAY BE MITIGATED WITH W8-9 (LOW SHOULDER) SIGN OR TEMPORARY CHANNELIZATION DEVICES. FOR DROP-OFFS GREATER THAN 4" BUT NO MORE THAN 12", DETERMINE WHETHER IT IS MORE COST EFFECTIVE TO INSTALL BOTH TEMPORARY CHANNELIZATION DEVICES AND A 1V:4H (MIN) TO 1V:6H (DESIRED) WEDGE OR TO SHIELD IT. FOR DROP-OFFS GREATER THAN 12" BUT NO MORE THAN 24", DETERMINE WHETHER IT IS MORE COST EFFECTIVE TO MAINTAIN AN ADDITIONAL 5' OF SHOULDER WIDTH AND INSTALL BOTH TEMPORARY CHANNELIZATION DEVICES AND A 1V:6H (DESIRE) WEDGE OR TO SHIELD IT. FOR DROP-OFFS 24" OR GREATER USE BARRIER IN ACCORDANCE WITH MASSDOT WORK ZONE POSITIVE PROTECTION GUIDELINES.
- CONTRACTOR SHALL STAGE WORK SUCH THAT A DROP-OFF OF NO MORE THAN 12" AT THE END OF EACH WORK DAY EXISTS WITHIN THE CLEAR ZONE AT ANY TIME AND ENSURE DROP-OFF IS MITIGATED WITHOUT BARRIER PER NOTE 11.
- CONSTRUCTION CLEAR ZONE SHALL BE IN ACCORDANCE WITH MASSDOT BOSTON TRAFFIC GUIDELINES AS FOLLOWS:
4' IF POSTED SPEED IS LESS THAN 35 MPH
8' IF POSTED SPEED IS 35 MPH
15' IF POSTED SPEED IS 40 MPH
- 11' MINIMUM LANE WIDTHS SHALL BE MAINTAINED UNLESS OTHERWISE NOTED.
- NON-ESSENTIAL TRAFFIC CONTROL DEVICES AND SIGNS SHALL BE COVERED OR REMOVED DURING NON-WORKING HOURS WHEN NOT IN USE.
- SIGNS INSTALLED ON PORTABLE STANDS REQUIRE 12 INCH MINIMUM MOUNTING HEIGHT FROM THE ROADWAY SURFACE TO THE BOTTOM OF THE SIGN.
- SIGNS INSTALLED ON PORTABLE STANDS PLACED AMONG CHANNELIZATION DEVICES REQUIRE A 36 INCH MINIMUM MOUNTING HEIGHT FROM THE ROADWAY SURFACE TO THE BOTTOM OF THE SIGN.
- SIGNS MOUNTED ON P5 POSTS REQUIRE A MINIMUM 84 INCH MOUNTING HEIGHT FROM THE ROADWAY OR SIDEWALK SURFACE TO THE BOTTOM OF THE SIGN.
- ALL SIGNS SHALL BE MOUNTED ON THEIR OWN NCHRP 350 AND/OR MASH CRASH TESTED SIGN SUPPORTS AND INSTALLED IN ACCORDANCE WITH THE MUTCD.
- ADVISORY SPEED PLAQUES (W13-1p(XX)) SHALL BE USED AS SHOWN AND AS REQUESTED BY THE ENGINEER. POSTED ADVISORY SPEED SHALL BE AS APPROVED BY THE APPROPRIATE AGENCY WITH JURISDICTION OVER THE ROADWAY ON WHICH THE SIGN WILL BE MOUNTED.
- MA-W20-7b SIGNS SHALL BE REPLACED BY W20-7 SIGNS WHEN FLAGGERS ARE USED IN LIEU OF POLICE OFFICER DETAILS.
- CONTRACTOR SHALL SECURE WORK AREAS TO PREVENT UNAUTHORIZED ACCESS AT ALL TIMES.
- THERE IS NO DESIGNATED BICYCLE LANE ON THE ROADWAY WITHIN THE PROJECT LIMITS. BICYCLES ARE EXPECTED TO SHARE THE ROAD WITH GENERAL VEHICULAR TRAFFIC.
- WORK HOURS SHALL BE 7AM TO 3PM MONDAY THRU FRIDAY UNLESS OTHERWISE APPROVED BY MASSDOT AND THE TOWN. NO WORK SHALL OCCUR WITHIN THE PUBLIC WAY DURING PEAK PERIODS (MONDAY THRU FRIDAY, 7AM-9AM AND 4PM-6PM) UNLESS OTHERWISE APPROVED IN WRITING BY THE TOWN OF SUDBURY. NO LANE CLOSURES SHALL BE PERMITTED ON HUDSON ROAD (ROUTE 27) OR NORTH ROAD (ROUTE 117) EXCEPT DURING OVERNIGHT HOURS (8PM TO 6AM). NO WORK SHALL BE PERMITTED ON SATURDAY OR SUNDAY WITHOUT PRIOR WRITTEN APPROVAL FROM THE TOWN OF SUDBURY.
- ILLUMINATION REQUIRED FOR NIGHTTIME WORK APPROVED BY THE TOWN OF SUDBURY SHALL BE DIFFUSED LIGHTING AND IN ACCORDANCE WITH MASSDOT STANDARDS.
- CONTRACTOR SHALL PROVIDE PORTABLE CHANGE MESSAGE SIGNS (PCMS) A MINIMUM OF 14 DAYS PRIOR TO START OF CONSTRUCTION AT EACH ROADWAY CROSSING. PCMS LOCATION TO BE DETERMINED AT 75% SUBMITTAL.

SUGGESTED TEMPORARY TRAFFIC CONTROL SETUP APPLICATION

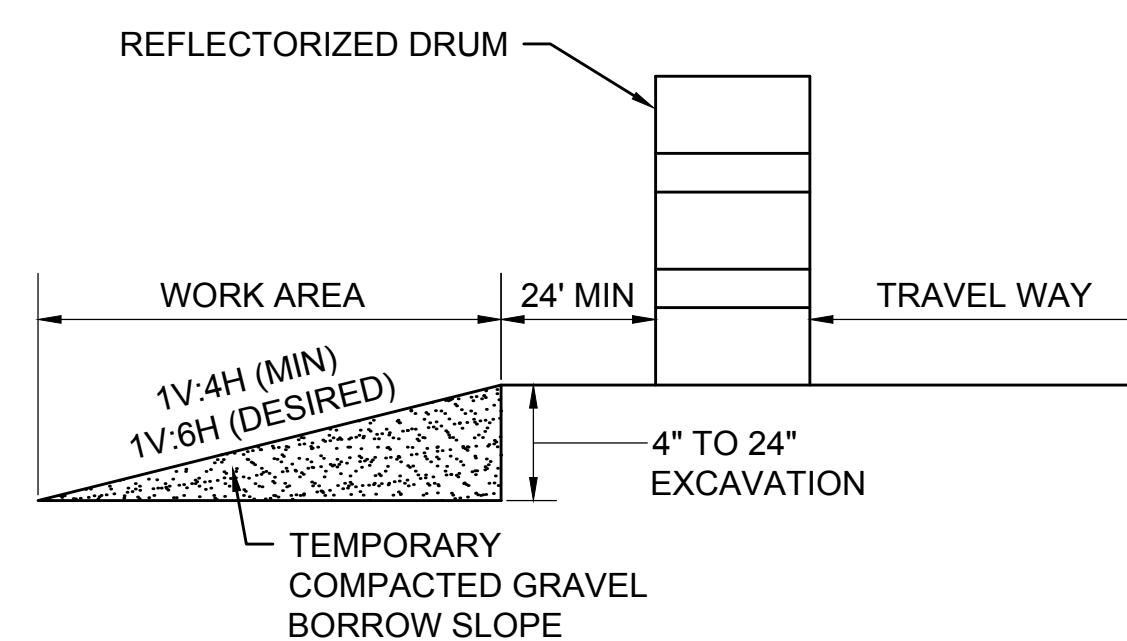
| LOCATION | TEMPORARY TRAFFIC CONTROL SETUPS |
|----------------------|---|
| SUDBURY LUMBER DWY | PRIVATE WAY: CONTRACTOR TO COORDINATE WITH PROPERTY OWNER |
| 71 UNION AVE DWY | PRIVATE WAY: CONTRACTOR TO COORDINATE WITH PROPERTY OWNER |
| CODJER LANE | TYPICAL TWO-WAY STREET LANE CLOSURE ALTERNATING TRAFFIC |
| OLD LANCASTER ROAD | TYPICAL TWO-WAY STREET LANE CLOSURE ALTERNATING TRAFFIC AND PEDESTRIAN BYPASS |
| HUDSON ROAD (RTE 27) | ALL SETUPS SHOWN ON SHEETS 77 AND 78 MAY BE USED ON HUDSON ROAD AND PEAKHAM ROAD |
| MORSE ROAD | TYPICAL TWO-WAY STREET LANE CLOSURE ALTERNATING TRAFFIC AND PEDESTRIAN BYPASS |
| HAYNES ROAD | TYPICAL TWO-WAY STREET LANE CLOSURE ALTERNATING TRAFFIC AND PEDESTRIAN BYPASS |
| PANTRY ROAD | TYPICAL TWO-WAY STREET LANE CLOSURE ALTERNATING TRAFFIC AND PEDESTRIAN BYPASS |
| NORTH ROAD (RTE 117) | TYPICAL TWO-WAY STREET LANE SHIFT, TYPICAL TWO-WAY STREET LANE CLOSURE ALTERNATING TRAFFIC, AND PEDESTRIAN BYPASS |
| FAIRVIEW FARMS DWY | PRIVATE WAY: CONTRACTOR TO COORDINATE WITH PROPERTY OWNER |



- NOTES:
- SQUARE OFF THE FULL WIDTH OF THE ROADWAY AT THE END OF WORK DAY
 - ** CONTRACTOR SHALL INSTALL W8-1, W8-3, OR W8-8 SIGN, AS APPROPRIATE, ON ALL ROADWAYS IN ADVANCE OF THE TRANSITION UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

TEMPORARY PAVEMENT TRANSITION

SCALE: NTS



- NOTE:
- CONTRACTOR SHALL INSTALL W8-9 SIGN ON ALL ROADWAYS 350 FT IN ADVANCE OF THE START OF DROP-OFF CONDITION.

TYPICAL ROADWAY DROP-OFF PROTECTION

SCALE: NTS

SUDBURY BRUCE FREEMAN RAIL TRAIL

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|--------------------|-----------|--------------|
| MA | TBD | 76 | 123 |
| PROJECT FILE NO. | | 608164 | |

TEMPORARY TRAFFIC CONTROL PLANS GENERAL NOTES AND LEGEND

LEGEND

| | |
|-----|--|
| | FLAGGER |
| | POLICE OFFICER |
| | TRAFFIC SIGNAL |
| | REFLECTORIZED DRUM |
| | REFLECTORIZED DRUM WITH SEQUENTIAL FLASHING WARNING LIGHT (SEE NOTE 5) |
| | TEMPORARY CONSTRUCTION SIGN |
| | TRAFFIC CONE |
| | TYPE III BARRICADE |
| | PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) |
| | WORK AREA (PUBLIC ACCESS RESTRICTED) |
| | TRAFFIC FLOW |
| | PEDESTRIAN ROUTE |
| | CONSTRUCTION FENCE |
| | PEDESTRIAN CHANNELIZATION DEVICE |
| NTS | NOT TO SCALE |

ADVANCE SIGN SPACING

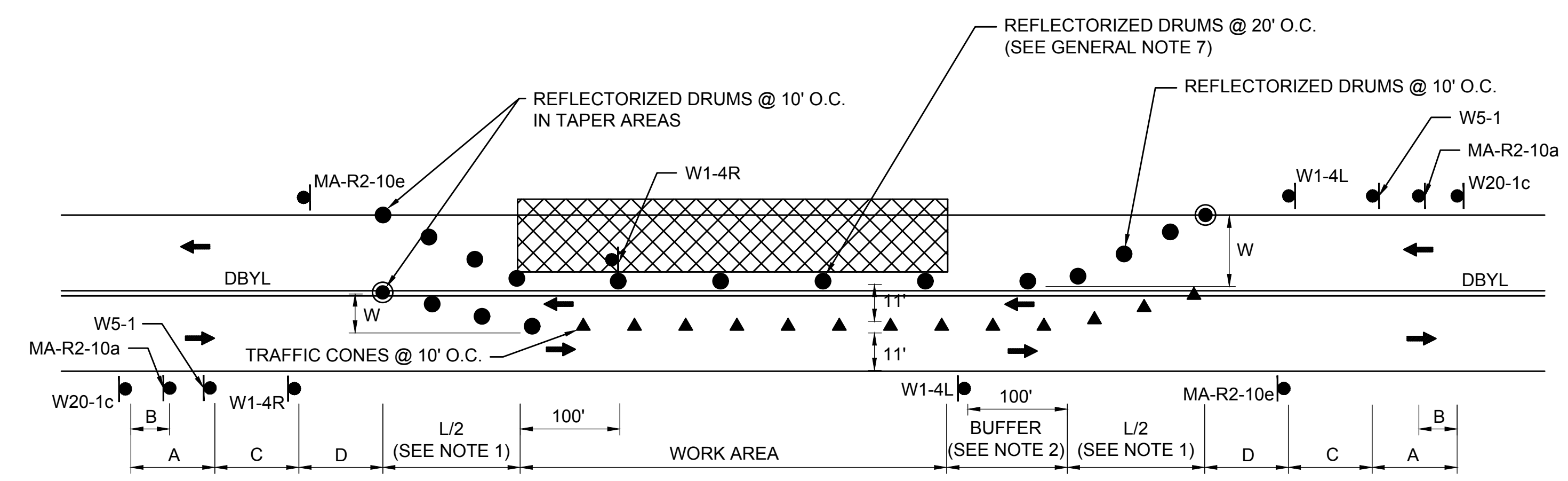
| ROADWAY | DISTANCE BETWEEN SIGNS (FEET) | | | |
|--------------|-------------------------------|-----|-----|-----|
| | A | B | C | D |
| ALL ROADWAYS | 350 | 150 | 350 | 350 |

BUFFER SPACING

| SPEED (MPH) | DISTANCE (FEET) |
|-------------|-----------------|
| 15 | 80 |
| 20 | 115 |
| 25 | 155 |
| 30 | 200 |
| 35 | 250 |
| 40 | 305 |
| 45 | 360 |

LANE TAPER LENGTH FORMULAS

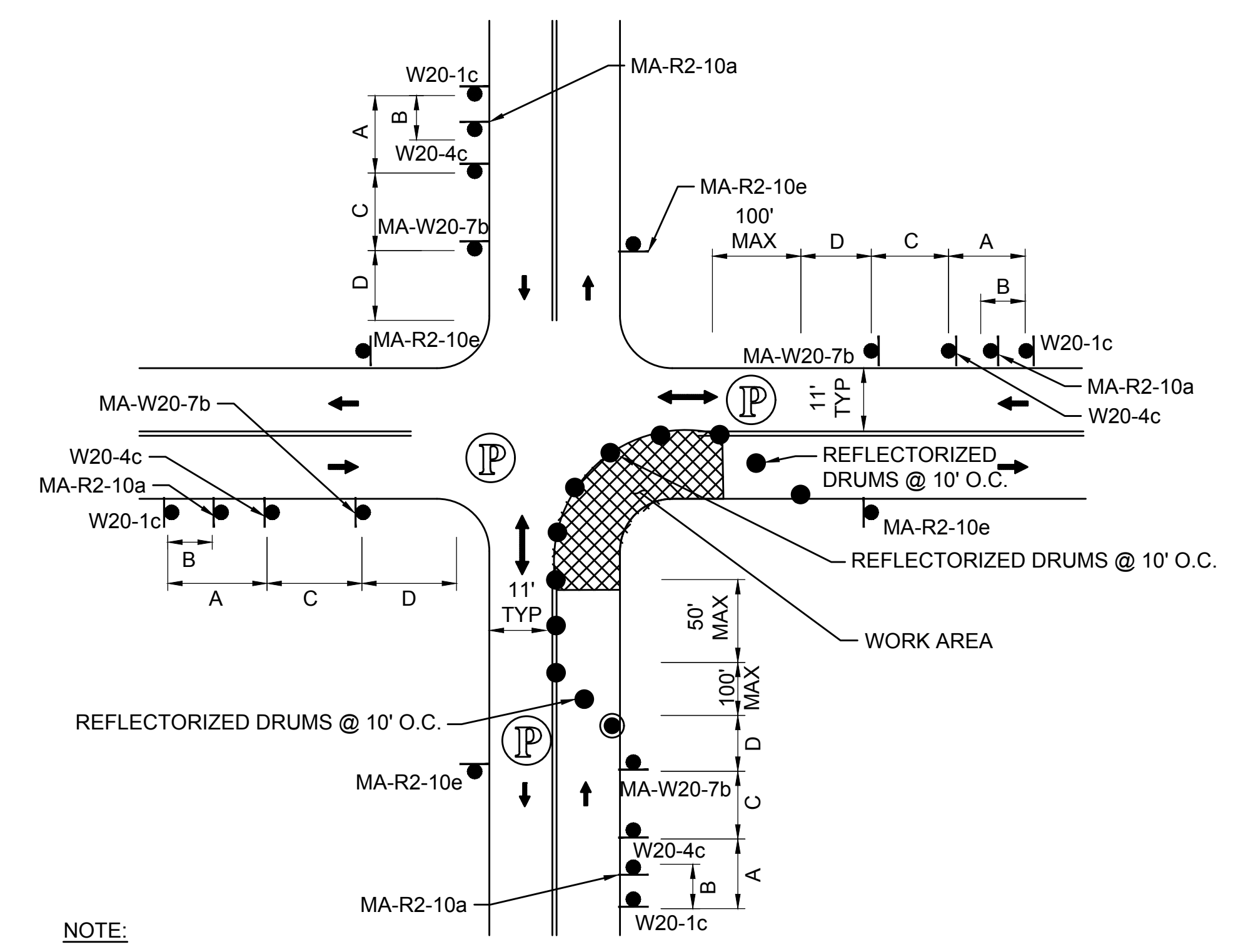
| L = TAPER LENGTH IN FEET | |
|--|---------------------|
| W = WIDTH OF ROADWAY TO BE SHIFTED OR REDIRECTED IN FEET | |
| S = POSTED SPEED LIMIT IN MPH | |
| POSTED SPEED | |
| 40 MPH OR LESS | GREATER THAN 40 MPH |
| $L = \frac{WS^2}{60}$ | L = WS |



- NOTES:**
1. SEE TAPER LENGTH FORMULA ON TTCP GENERAL NOTES & LEGEND SHEET.
 2. SEE BUFFER SPACING CHART ON TTCP GENERAL NOTES & LEGEND SHEET.
 3. REFER TO ADVANCE SIGN SPACING TABLE ON TTCP GENERAL NOTES & LEGEND SHEET.

TYPICAL TWO-WAY STREET LANE SHIFT

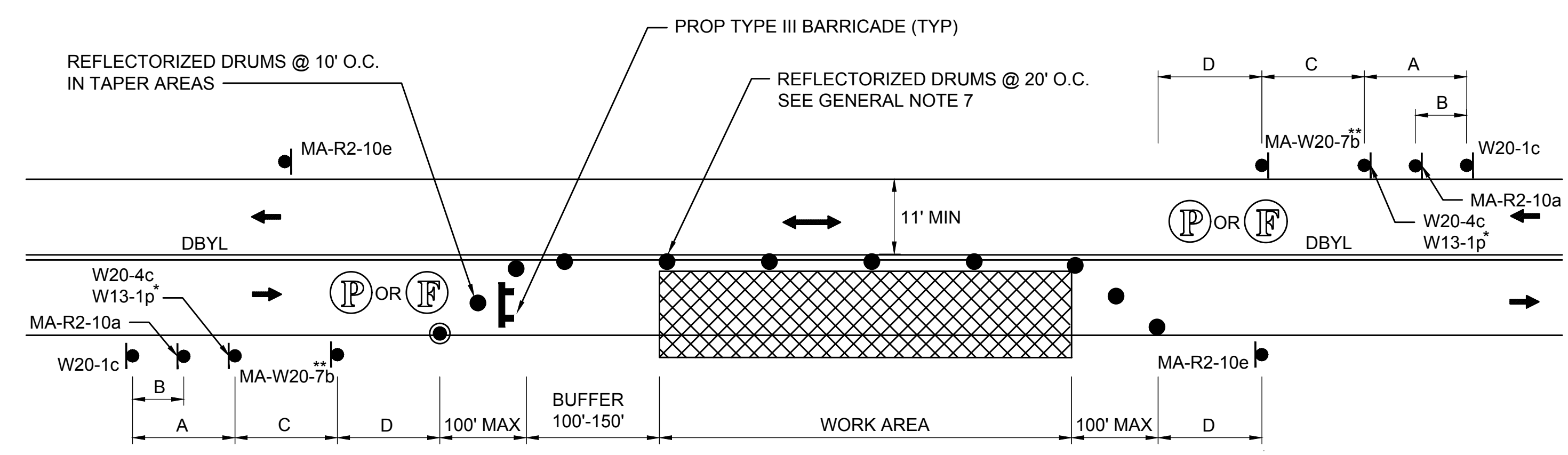
SCALE: NTS



- NOTE:**
1. ADVANCE WARNING SIGN PLACEMENT TO BE ADJUSTED AS NECESSARY.

ONE LANE BI-DIRECTIONAL TRAFFIC AT INTERSECTIONS

SCALE: NTS



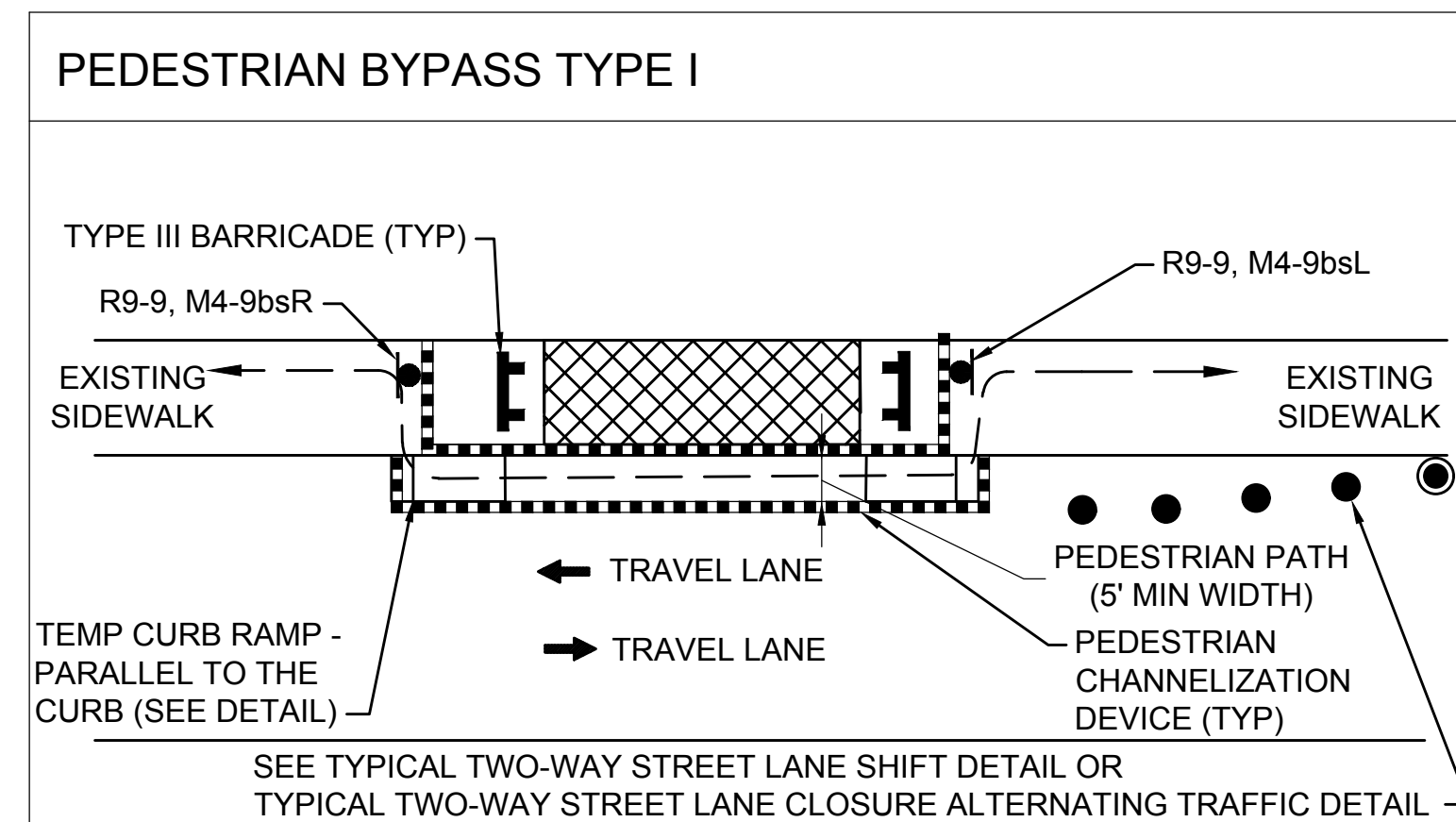
- NOTES:**
1. REFER TO ADVANCE SIGN SPACING TABLE ON TTCP GENERAL NOTES & LEGEND SHEET.
 2. * SEE NOTE 20 ON TTCP GENERAL NOTES & LEGEND SHEET.
 3. ** SEE NOTE 21 ON TTCP GENERAL NOTES & LEGEND SHEET.

TYPICAL TWO-WAY STREET LANE CLOSURE ALTERNATING TRAFFIC

SCALE: NTS

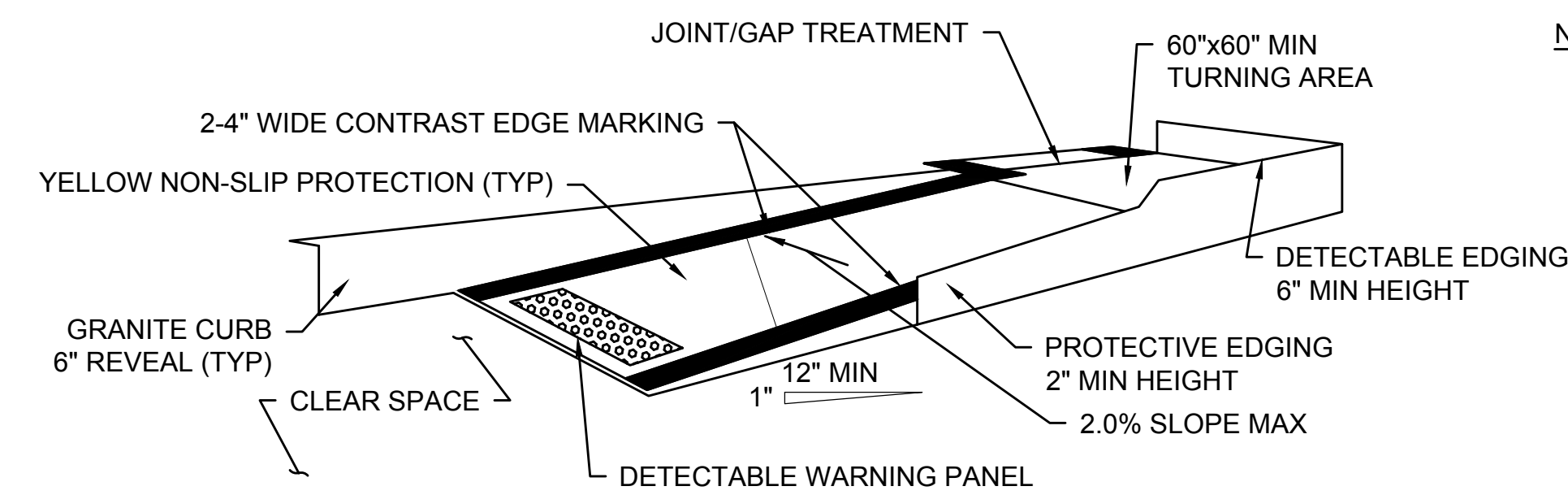
NOTES:

1. ADDITIONAL ADVANCE WARNING SIGNS MAY BE NECESSARY AS DETERMINED BY THE ENGINEER.
2. CONTROLS FOR PEDESTRIAN TRAFFIC ONLY ARE SHOWN. VEHICULAR TRAFFIC SHALL BE MAINTAINED AS SHOWN ELSEWHERE.
3. STREET LIGHTING SHOULD BE CONSIDERED WHEN LOCATING CONTROL DEVICES.
4. ← → INDICATES DIRECTION OF PEDESTRIAN TRAVEL.
5. PROPOSED TEMPORARY CROSSWALKS SHALL BE 12" WIDE SURFACE APPLIED TAPE OR REFLECTORIZED PAINT AS DIRECTED BY THE ENGINEER.
6. ALL TEMPORARY PEDESTRIAN PATHWAYS SHALL COMPLY FULLY WITH ALL REQUIREMENTS OF THE MUTCD AND ALL APPLICABLE MAAB AND ADAAG REQUIREMENTS.
7. CONTRACTOR SHALL MAINTAIN AS WIDE OF A PEDESTRIAN ACCESS AS POSSIBLE AT ALL TIMES. EXCEPT WHERE NECESSARY, THE CONTRACTOR MAY TEMPORARILY REDUCE PEDESTRIAN PATHWAYS TO 4 FEET IN WIDTH (EXCLUDING CURB) FOR NO MORE THAN 200 LINEAR FEET AT A TIME IN ACCORDANCE WITH ALL STANDARDS.
8. TEMPORARY WHEELCHAIR RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH MASSDOT, MAAB, AND ADAAG REQUIREMENTS.

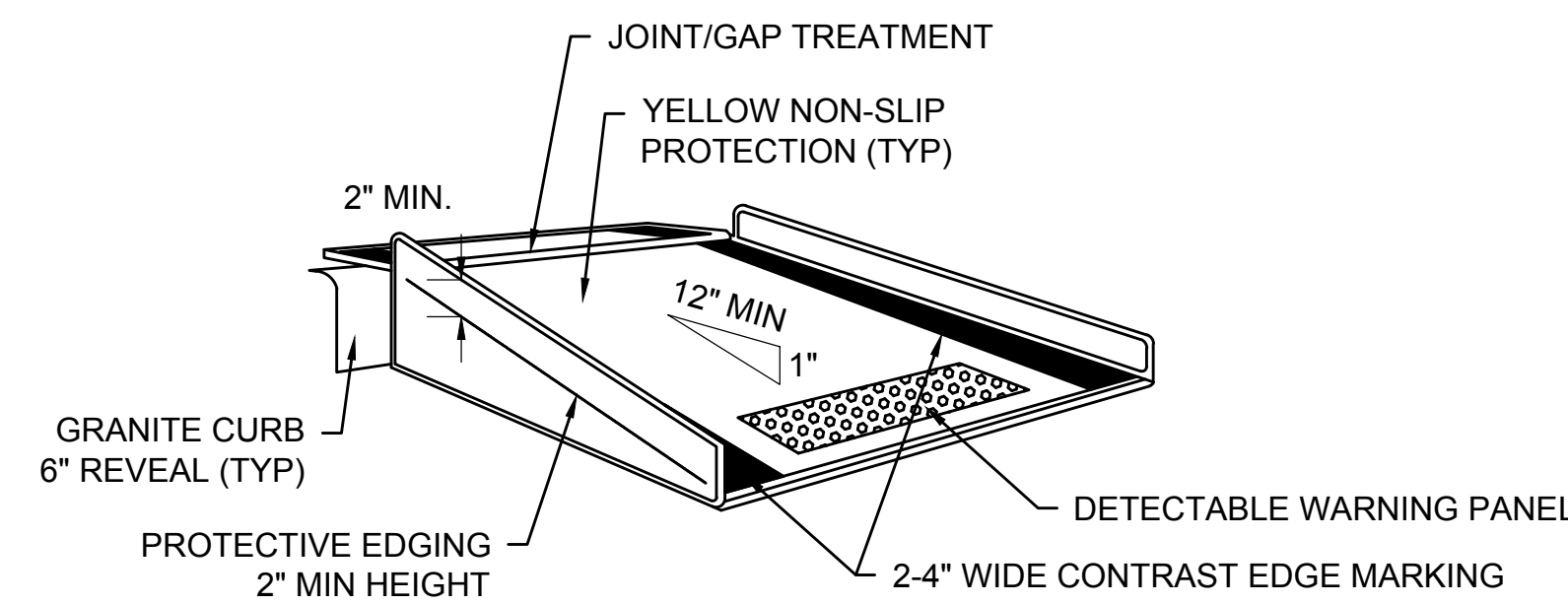


PEDESTRIAN BYPASS DETAIL

SCALE: NTS



TEMPORARY CURB RAMP-PARALLEL TO CURB



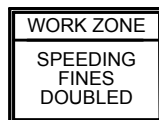
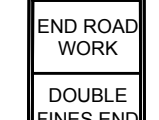







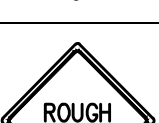

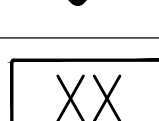

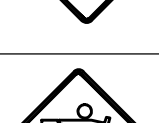

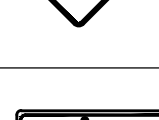

TEMPORARY CURB RAMP-PERPENDICULAR TO CURB

TEMPORARY CURB RAMPS

SCALE: NTS

NOTES:

1. CURB RAMPS SHALL BE 60" MINIMUM WIDTH WITH A FIRM, STABLE AND NON-SLIP SURFACE.
2. PROTECTIVE EDGING WITH A 2" MINIMUM HEIGHT SHALL BE INSTALLED WHEN THE CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN THE CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.
3. DETECTABLE EDGING WITH 6" MINIMUM HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
4. THE CURB RAMP WALKWAY AND LANDING AREA SURFACE SHALL BE OF A SOLID CONTINUOUS CONTRASTING COLOR ABUTTING UP TO THE EXISTING SIDEWALK.
5. CURB RAMPS AND LANDINGS SHOULD HAVE A 1:50 (2%) MAX CROSS-SLOPE.
6. CLEAR SPACE OF 48"x48" MINIMUM SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
7. WATER FLOW IN THE GUTTER SYSTEM SHALL HAVE MINIMAL RESTRICTION.
8. LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 0.5" WIDTH.
9. CHANGES BETWEEN SURFACE HEIGHTS SHOULD NOT EXCEED 0.5" LATERAL EDGES SHOULD BE VERTICAL UP TO 0.25" HIGH, AND BEVELED AT 1:2 BETWEEN 0.25" AND 0.5" HEIGHT.
10. IF A TEMPORARY PEDESTRIAN RAMP LEADS TO A CROSSWALK, THEN A DETECTABLE WARNING PAD MUST BE ADHERED TO THE BASE OF THE RAMP. IF IT LEADS TO A PROTECTED PEDESTRIAN BYPASS THAT DOES NOT CONFLICT WITH VEHICULAR TRAFFIC, THEN A PAD SHALL NOT BE INSTALLED ON THE RAMP.

| TEMPORARY TRAFFIC CONTROL SIGN SUMMARY | | | | | | | | | |
|--|--------------|--------|---|---|------------------|-----------------|---------------------------------------|--------|--------|
| IDENTIFICATION NUMBER | SIZE OF SIGN | | TEXT | TEXT DIMENSIONS (INCHES) | | | COLOR | | |
| | WIDTH | HEIGHT | | LETTER HEIGHT | VERTICAL SPACING | ARROW RTE. MKR. | BACK-GROUND | LEGEND | BORDER |
| MA-R2-10a | 48" | 36" |  | AS PER MASSDOT STANDARD | | | FLUOR-ESCENT ORANGE | BLACK | BLACK |
| MA-R2-10e | 36" | 48" |  | ↓ | | | WHITE FLUOR-ESCENT ORANGE WHITE | BLACK | BLACK |
| R9-9 | 24" | 12" |  | SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED | | | WHITE | BLACK | BLACK |
| W20-1c | 36" | 36" |  | | | | FLUOR-ESCENT ORANGE | BLACK | BLACK |
| W1-4L | 36" | 36" |  | | | | FLUOR-ESCENT ORANGE | BLACK | BLACK |
| W1-4R | 36" | 36" |  | | | | FLUOR-ESCENT ORANGE | BLACK | BLACK |
| W5-1 | 36" | 36" |  | | | | FLUOR-ESCENT ORANGE | BLACK | BLACK |
| W8-1 | 36" | 36" |  | | | | FLUOR-ESCENT ORANGE | BLACK | BLACK |
| W8-3 | 36" | 36" |  | | | | FLUOR-ESCENT ORANGE | BLACK | BLACK |
| W8-8 | 36" | 36" |  | | | | FLUOR-ESCENT ORANGE | BLACK | BLACK |
| W8-9 | 36" | 36" |  | | | | FLUOR-ESCENT ORANGE | BLACK | BLACK |
| W13-1p(xx) | 24" | 24" |  | | | | FLUOR-ESCENT ORANGE | BLACK | BLACK |
| W20-4c | 36" | 36" |  | | | | FLUOR-ESCENT ORANGE | BLACK | BLACK |
| W20-7 | 36" | 36" |  | | | ↓ | FLUOR-ESCENT ORANGE | BLACK | BLACK |
| MA-W20-7b | 36" | 36" |  | AS PER MASSDOT STANDARD | | | FLUOR-ESCENT ORANGE | BLACK | BLACK |
| M4-9bsL | 30" | 24" |  | SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED | | | FLUOR-ESCENT ORANGE | BLACK | BLACK |
| M4-9bsR | 30" | 24" |  | ↓ | | | FLUOR-ESCENT ORANGE | BLACK | BLACK |

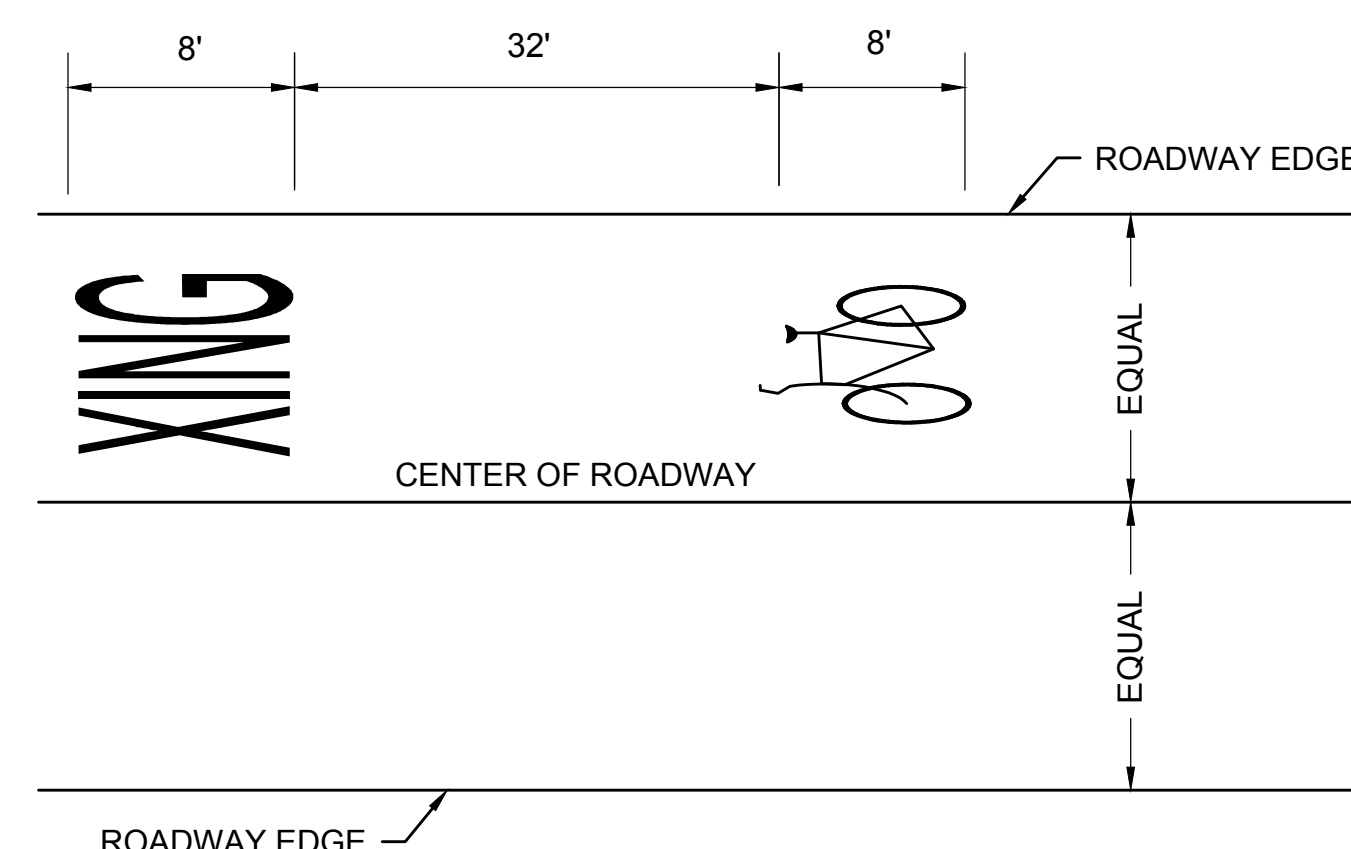
- NOTES:**
- HIGH INTENSITY REFLECTIVE SHEETING SHALL BE USED FOR ALL SIGNS. SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION" FOR TEXT DIMENSIONS, AS AMENDED; THE 1977 MASSHIGHWAY DEPARTMENT CONSTRUCTION AND TRAFFIC STANDARD DETAILS, AS AMENDED, FOR SIGNS AND SUPPORTS; THE MASSHIGHWAY DEPARTMENT SIGN LISTINGS 1993 EDITION, AS AMENDED; THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR MOUNTING REQUIREMENTS; AND THE 2017 MASSDOT STANDARD SIGNS BOOK, AS AMENDED.
 - ALL SIGNS SHOWN GRAPHICALLY FOR INFORMATION ONLY. SIGN VENDOR SHALL FABRICATE ALL SIGNS IN ACCORDANCE WITH THE APPLICABLE STANDARDS.

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|--------------------|-----------|--------------|
| MA | TBD | 80 | 123 |
| PROJECT FILE NO. | | 608164 | |

CONSTRUCTION DETAILS

PROPOSED PLANTINGS

| KEY | BOTANICAL NAME | COMMON NAME | SIZE |
|------------------------|--------------------------------|---------------------|--------------|
| SHADE TREES | | | |
| AR | ACER RUBRUM 'OCTOBER GLORY' | OCTOBER GLORY MAPLE | 2-2 1/2" CAL |
| ZS | ZELKOVA SERRATA 'GREEN VASE' | GREEN VASE ZELKOVA | 2-2 1/2" CAL |
| QR | QUERCUS RUBRA | NORTHERN RED OAK | 2-2 1/2" CAL |
| UA | ULMUS AMERICANA 'VALLEY FORGE' | AMERICAN ELM | 2-2 1/2" CAL |
| EVERGREEN TREES | | | |
| CT | THUJA OCCIDENTALIS | EASTERN WHITE CEDAR | 5-6' HT |
| PR | PINUS RESINOSA | RED PINE | 5-6' HT |
| PS | PINUS STROBUS | EASTERN WHITE PINE | 5-6' HT |
| SHRUBS | | | |
| IG | ILEX GLABRA | INKBERRY | 2-3' HT |
| ARA | ARONIA ARBUTIFOLIA | RED CHOKEBERRY | 3-4' HT B&B |
| CLA | CLETHRA ALNIFOLIA | SUMMERSWEET | 18-24" HT |
| ILX | ILEX VERTICILLATA | WINTERBERRY | 18-24" HT |
| VAC | VACCINIUM CORYMBOSUM | HIGHBUSH BLUEBERRY | 18-24" HT |



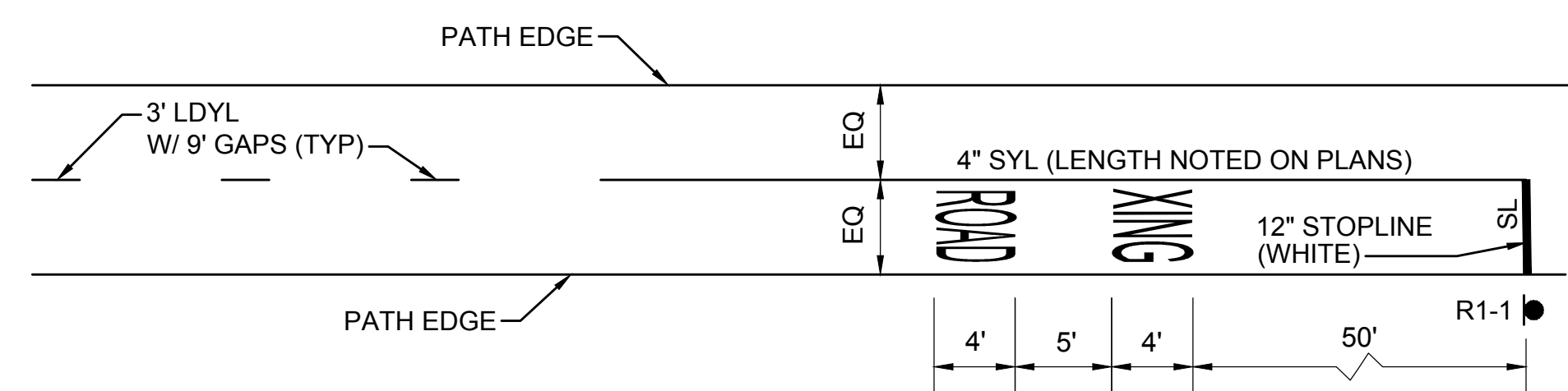
- NOTES:
- PAVEMENT MARKINGS AS PER MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
 - PAVEMENT MARKINGS SHALL BE REFLECTORIZED THERMOPLASTIC.

BICYCLE PAVEMENT MARKINGS IN ROADWAY

SCALE: N.T.S.

PROPOSED PLANTING SCHEDULE

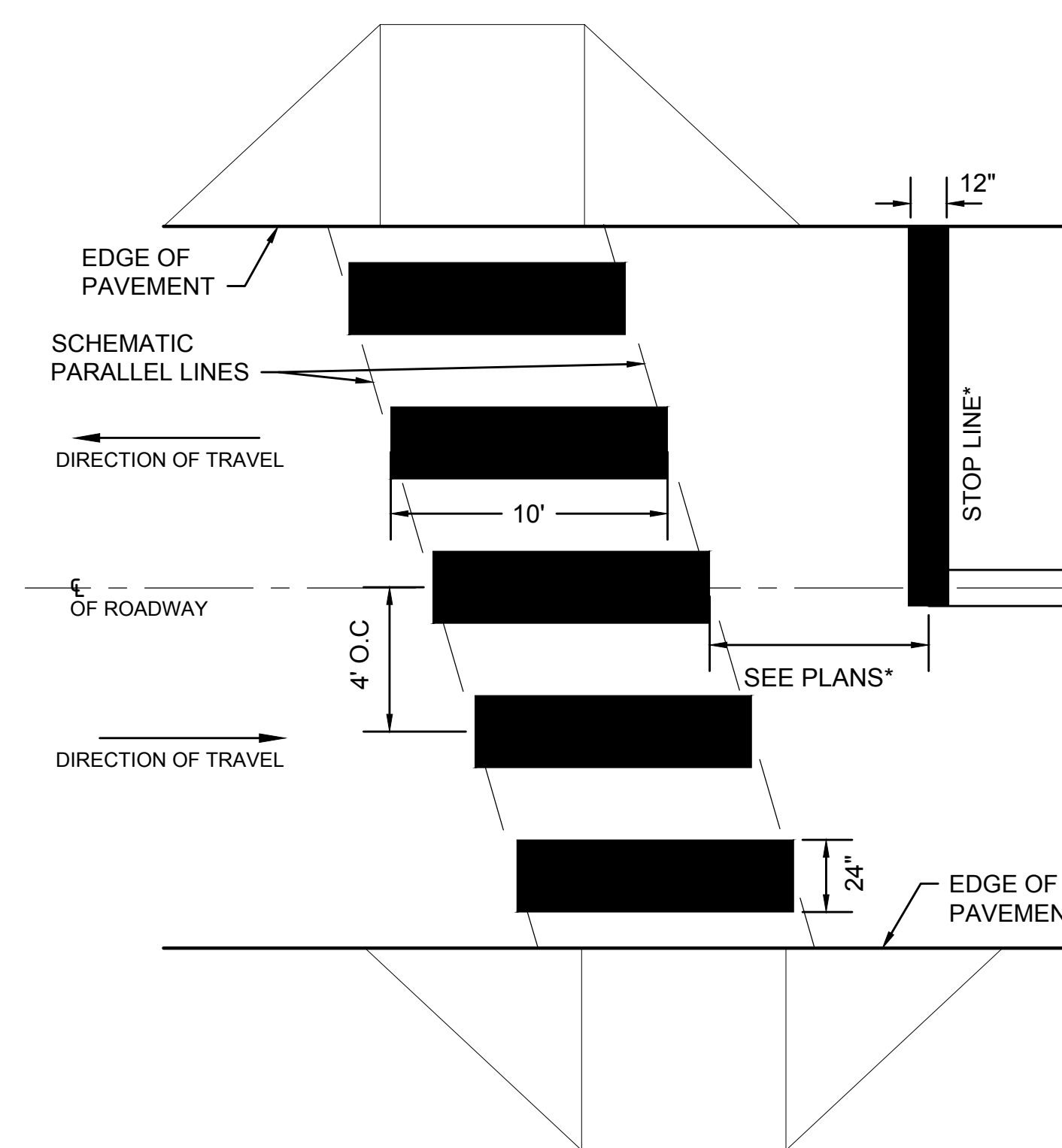
SCALE: N.T.S.



- NOTES:
- PAVEMENT MARKINGS AS PER MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
 - PAVEMENT MARKINGS SHALL BE REFLECTIVE PAINT.

ROADWAY PAVEMENT MARKINGS ON RAIL TRAIL

SCALE: N.T.S.



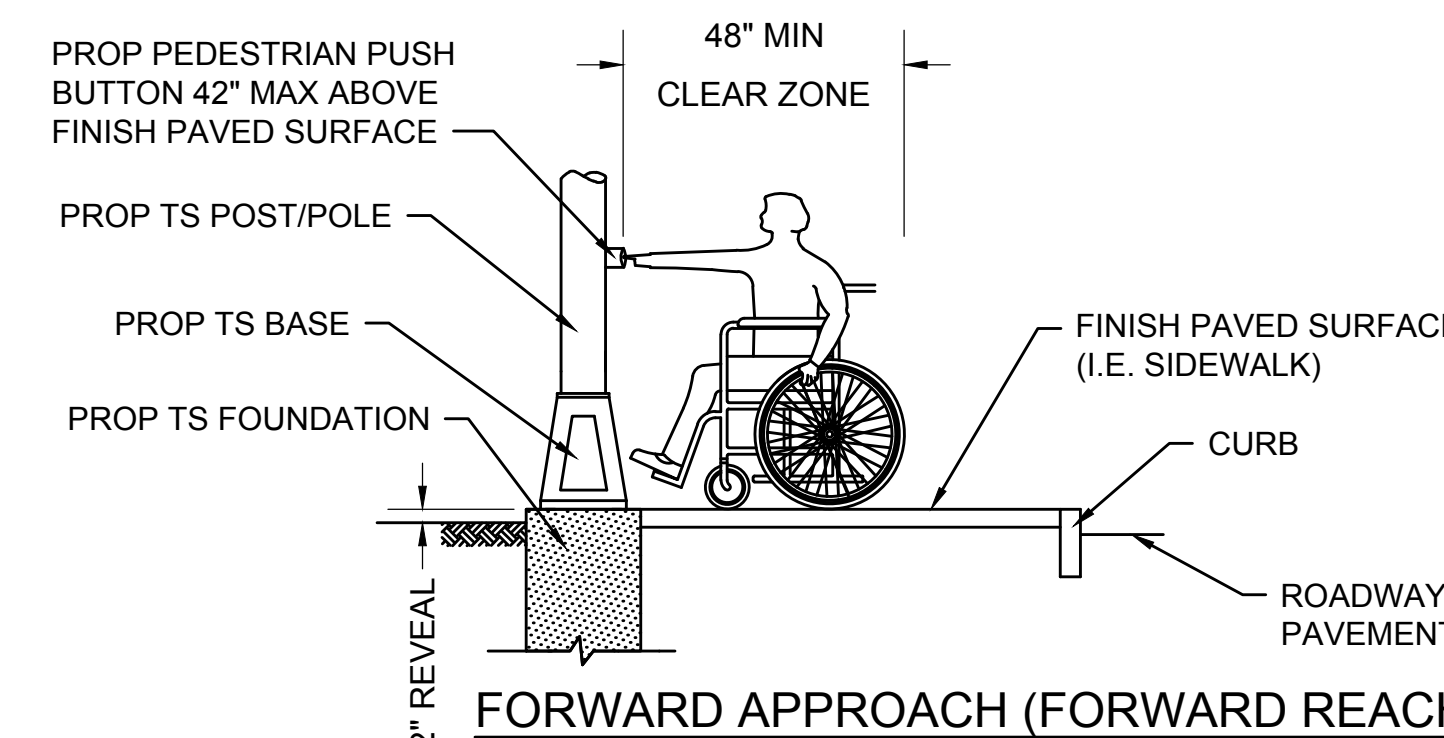
- NOTES:
- ALL EXISTING CROSSWALK MARKINGS SHALL BE FULLY ERADICATED BY APPROVED METHOD PRIOR TO THE APPLICATION OF PROPOSED MARKINGS.
 - ALL 12" THERMOPLASTIC LINES SHALL BE APPLIED IN ONE APPLICATION, NO COMBINATION OF LINES (TWO - 6" LINES) WILL BE ACCEPTED. ALL 24" THERMOPLASTIC LINES SHALL BE APPLIED IN NO MORE THAN TWO APPLICATIONS, NO COMBINATION OF GREATER THAN TWO (I.E. THREE 8" LINES) WILL BE APPLIED.
 - LAYOUT OF CROSSWALKS SHALL BE ORIENTATED IN THE DIRECTION OF TRAVEL AND LOCATED OUTSIDE OF THE WHEEL PATH OF VEHICLES. LAYOUT SHALL BE APPROVED BY THE ENGINEER PRIOR TO APPLICATION OF THERMOPLASTIC.
 - ALL CROSSWALKS INSTALLED SHALL CONFORM TO THE RELEVANT PROVISIONS OF THE MASSACHUSETTS HIGHWAY DEPARTMENT "STANDARD SPECIFICATION FOR HIGHWAY AND BRIDGES" DATED 1988, SECTION 860 FOR REFLECTORIZED LINE (THERMO-PLASTIC) & MATERIAL M7.01.20, LATEST REVISIONS.
 - * WHERE NOTED ON THE PLANS.

SPECIAL EMPHASIS CROSSWALK

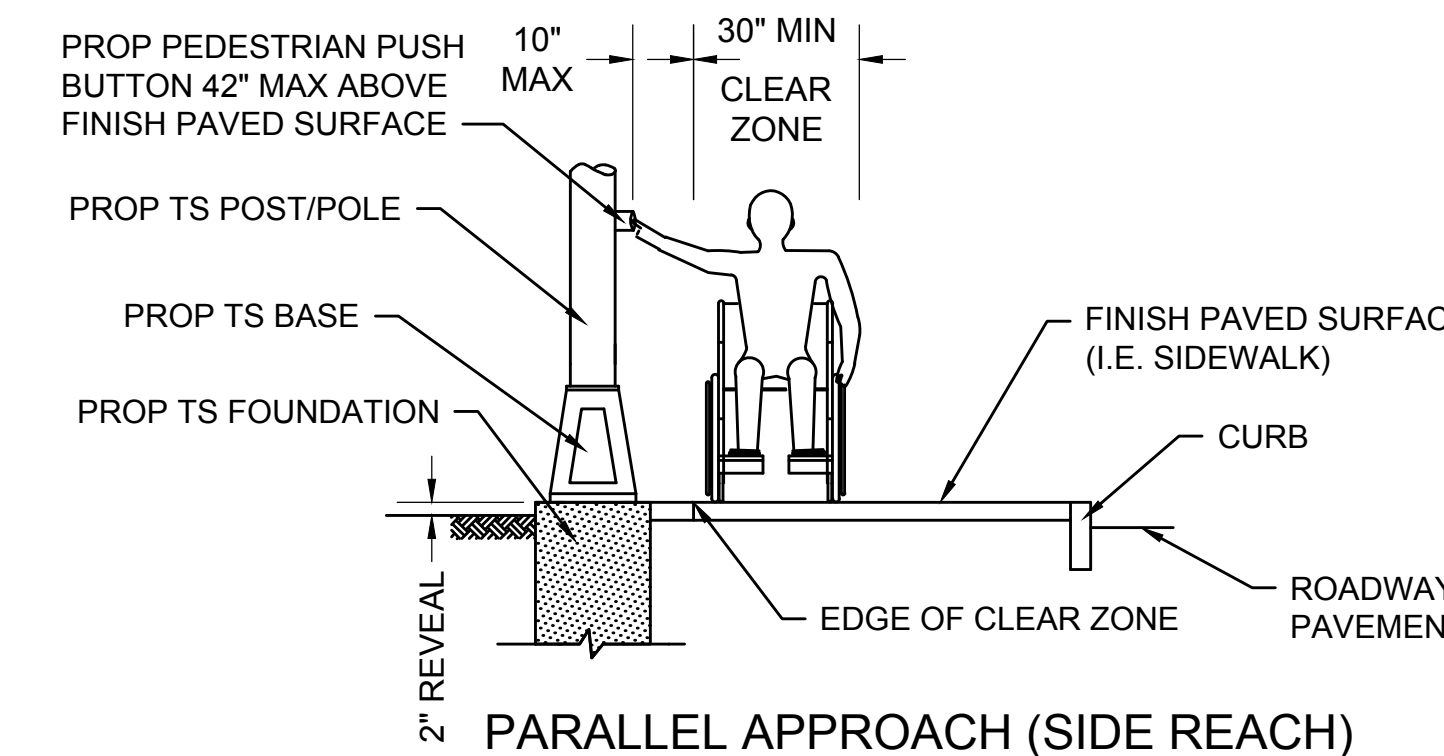
SCALE: N.T.S.

DWG: PM-28

DATE: MAY 2017



- NOTE:
- A CLEAR GROUND SPACE SHALL CONSIST OF A STABLE AND FIRM AREA, COMPLYING WITH 521 CMR 6.5 (FORWARD REACH) OR 521 CMR 6.6 (SIDE REACH) AND SHALL BE PROVIDED AT EACH OF THE PEDESTRIAN PUSH BUTTONS.
- WHERE A FORWARD APPROACH IS PROVIDED, PEDESTRIAN PUSH BUTTONS SHALL ABUT AND BE CENTERED ON THE CLEAR GROUND SPACE.
 - WHERE A PARALLEL APPROACH IS PROVIDED, PEDESTRIAN PUSH BUTTONS SHALL BE WITHIN TEN INCHES (10") HORIZONTALLY OF AND CENTERED ON THE CLEAR GROUND SPACE.



PEDESTRIAN PUSH BUTTON CLEAR ZONE

SCALE: N.T.S.

DWG: PM-10

DATE: APRIL 2013