



**US Army Corps
of Engineers®**
New England District
696 Virginia Road
Concord, MA 01742-2751

PUBLIC NOTICE

Comment Period Begins: November 23, 2021
Comment Period Ends: December 23, 2021
File Number: NAE-2014-02586
In Reply Refer To: Dan Vasconcelos
Phone: (978) 318-8653
E-mail: daniel.b.vasconcelos@usace.army.mil

The District Engineer has received a permit application to conduct work in waters of the United States from the Massachusetts Department of Transportation (MassDOT) – Highway Division, 10 Park Plaza, Boston, Massachusetts 02116. This work is proposed in the French River, Little River, Texas Pond, nine unnamed intermittent streams, and associated vegetated wetlands along an approximately 3.2 mile long stretch of Route 20 in Charlton and Oxford, Massachusetts, from the intersection with Richardson Corner Road in Charlton to the intersection with Route 12 in Oxford. The site coordinates are: Latitude 42.167587°N, Longitude 71.893884°W.

The work includes the discharge of fill material into waters of the United States, including 58,476 square feet (1.3 acres) of permanent impacts to vegetated wetlands, 27,765 square feet (0.6 acres) of temporary impacts to vegetated wetlands, 16,612 square feet (0.4 acres) of permanent stream impacts, and 1,150 square feet (0.03 acres) of temporary stream impacts, resulting from improvements to the roadway corridor. The purpose of this project is to improve safety, geometry, and traffic operations within the project corridor. The proposed work includes the following components:

- Widening of Route 20 to provide two, 11' wide lanes with 2' median shoulders and 4' curbside shoulders in each direction (plus ten 12' wide emergency pull-off areas)
- Realignment of Oxbow Road and reconstruction of its intersection with Route 20
- Construction of a shared-use path along the north side of the road between Route 12 and Oxbow Road
- Construction of a sidewalk along the south side of the road between Routes 12 and 56
- Replacement of the bridges over the Little River and French River, including installation of scour protection
- Replacement of seven existing cross culverts conveying intermittent streams/wetland flow

Permanent Section 404 impacts associated with this project would result primarily from roadway widening, realignment, and associated retaining wall construction, as well as bridge and culvert replacement, including installation of scour countermeasures. Temporary Section 404 impacts would result primarily from temporary work zones and construction access, as well as cofferdams and dewatering within streams.

The work is shown on the enclosed plans entitled "ROUTE 20 RECONSTRUCTION PROJECT MASSACHUSETTS DEPARTMENT OF TRANSPORTATION ROUTE 20 (BRIDGE NO. C-06-023) (BRIDGE NO. O-06-002) IN THE TOWNS OF CHARLTON – OXFORD WORCESTER COUNTY MASSACHUSETTS ACOE SECTION 404 PERMIT PLANS", on 59 sheets, and dated "NOVEMBER 2021".

The project has been designed to avoid and minimize impacts to waters of the United States, including wetlands, through the use of various best management practices, including the installation of erosion and

sedimentation controls at the project limits, and the use of steeper slopes (with guardrails) or retaining walls adjacent to wetlands to limit grading and encroachment into wetland areas. As mitigation for unavoidable impacts, the applicant proposes offsite preservation of a 42-acre parcel in Charlton and Oxford containing a mix of upland and wetland habitats, as well as the creation of a 1.61-acre wetland area within the larger preservation parcel.

AUTHORITY

Permits are required pursuant to:

- ☐ Section 10 of the Rivers and Harbors Act of 1899
- ☒ Section 404 of the Clean Water Act
- ☐ Section 103 of the Marine Protection, Research and Sanctuaries Act.

The decision whether to issue a permit will be based on an evaluation of the probable impact of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which may reasonably accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered, including the cumulative effects thereof; among those are: conservation, economics, aesthetics, general environmental concerns, wetlands, cultural value, fish and wildlife values, flood hazards, flood plain value, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food production and, in general, the needs and welfare of the people.

The U.S. Army Corps of Engineers, New England District (Corps), is soliciting comments from the public; Federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. The Corps will consider all comments received to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Where the activity involves the discharge of dredged or fill material into waters of the United States or the transportation of dredged material for the purpose of disposing it in ocean waters, the evaluation of the impact of the activity in the public interest will also include application of the guidelines promulgated by the Administrator, U.S Environmental Protection Agency, under authority of Section 404(b) of the Clean Water Act, and/or Section 103 of the Marine Protection Research and Sanctuaries Act of 1972, as amended.

NATIONAL HISTORIC PRESERVATION ACT

The Federal Highway Administration (FHWA) is the lead federal agency responsible for coordination pursuant to Section 106 of the National Historic Preservation Act. MassDOT has concluded coordination with the State Historic Preservation Officer (SHPO) and relevant Tribal Historic Preservation Officers (THPOs) on behalf of the FHWA. Although FHWA has taken the lead on this consultation, based on his initial review, the District Engineer has determined that little likelihood exists for the proposed work to impinge upon properties with cultural or Native American significance, or listed in, or eligible for listing in, the National Register of Historic Places. The Corps will continue review and consultation as required to fulfil the requirements of the National

Historic Preservation Act as part of the permit review process.

ENDANGERED SPECIES CONSULTATION

FHWA is the lead federal agency responsible for coordination pursuant to Section 7 of the Endangered Species Act. Although FHWA is the lead federal agency, the Corps has reviewed the application for the potential impact on Federally-listed threatened or endangered species and their designated critical habitat pursuant to section 7 of the Endangered Species Act as amended. It is our preliminary determination that the proposed activity for which authorization is being sought is designed, situated or will be operated/used in such a manner that it is not likely to adversely affect a listed species or their critical habitat. FHWA is coordinating with the U.S. Fish and Wildlife Service on listed species under their jurisdiction and the ESA consultation will be concluded prior to the final decision.

OTHER GOVERNMENT AUTHORIZATIONS

The following authorizations have been applied for, or have been, or will be obtained:

- (X) Permit, license or assent from State.
- (X) Permit from local wetland agency or conservation commission.
- (X) Water Quality Certification in accordance with Section 401 of the Clean Water Act.

COMMENTS

In order to properly evaluate the proposal, we are seeking public comment. Anyone wishing to comment is encouraged to do so. Comments should be submitted in writing by the above date. If you have any questions, please contact Dan Vasconcelos at (978) 318-8653, (800) 343-4789 or (800) 362-4367, if calling from within Massachusetts.

Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider the application. Requests for a public hearing shall specifically state the reasons for holding a public hearing. The Corps holds public hearings for the purpose of obtaining public comments when that is the best means for understanding a wide variety of concerns from a diverse segment of the public.

The initial determinations made herein will be reviewed in light of facts submitted in response to this notice. All comments will be considered a matter of public record. Copies of letters of objection will be forwarded to the applicant who will normally be requested to contact objectors directly in an effort to reach an understanding.

THIS NOTICE IS NOT AN AUTHORIZATION TO DO ANY WORK.

Paul Maniccia

Paul M. Maniccia
Chief, Permits and Enforcement Branch
Regulatory Division

CENAE-R
FILE NO. NAE-2014-02585

If you would prefer not to continue receiving Public Notices by email, please contact Ms. Tina Chaisson at (978) 318-8058 or e-mail her at bettina.m.chaisson@usace.army.mil. You may also check here () and return this portion of the Public Notice to: Bettina Chaisson, Regulatory Division, U.S. Army Corps of Engineers, 696 Virginia Road, Concord, MA 01742-2751.

NAME: _____

ADDRESS: _____

PHONE: _____

ROUTE 20 RECONSTRUCTION PROJECT

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION

ROUTE 20

(BRIDGE NO. C-06-023)

(BRIDGE NO. O-06-002)

IN THE TOWNS OF

CHARLTON - OXFORD

WORCESTER COUNTY

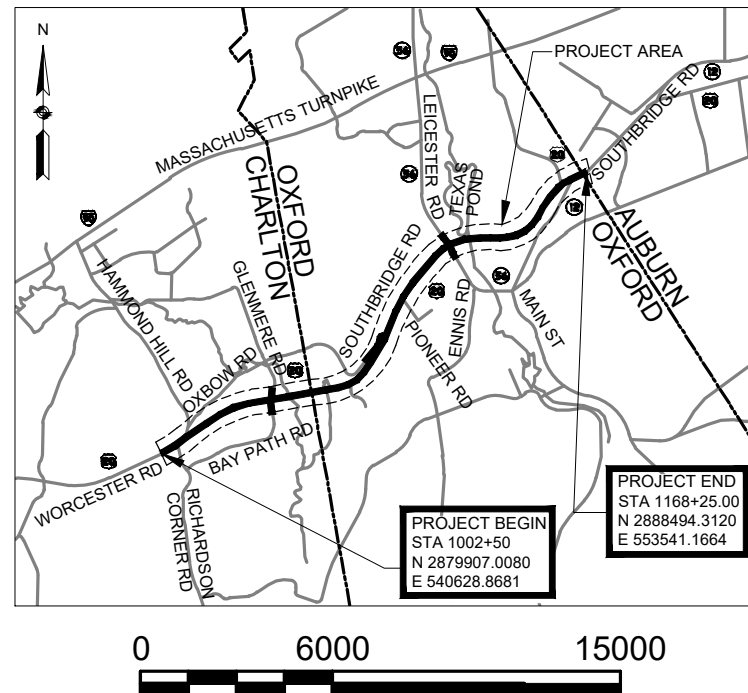
MASSACHUSETTS

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ACOE SECTION 404 PERMIT PLANS



SCALE: 1 = 6000'

NOVEMBER 2021

GENERAL NOTES

- COORDINATES, IN U.S. SURVEY FEET, ARE REFERENCED TO THE NORTH AMERICAN DATUM OF 1983, (NAD 83/2011), EPOCH 2010.00
- ELEVATIONS, IN U.S. SURVEY FEET, ARE REFERENCED TO THE NORTH AMERICAN DATUM OF 1988 (NAVD 88)

ABBREVIATIONS

APPROX.	APPROXIMATE	PT	POINT OF TANGENT
BL	BASELINE	RCP	REINFORCED CONCRETE PIPE
BVW	BORDERING VEGETATED WETLAND	ROW	RIGHT OF WAY
CONST.	CONSTRUCTION	SHLO	STATE HIGHWAY LAYOUT LINE
EB	EAST BOUND	STA	STATION
LF	LINEAR FOOT	TYP	TYPICAL
OHW	ORDINARY HIGH WATER	VW	VEGETATED WETLAND
NO.	NUMBER	WB	WEST BOUND
PC	POINT OF CURVATURE	WW	WATERWAY
PI	POINT OF INTERSECTION		

LEGEND

EXISTING	PROPOSED	DESCRIPTION
CB	CB	CATCH BASIN
GP	GP	GAS PUMP
MB	MB	MAIL BOX
WELL	WELL	WELL
EHH	EHH	ELECTRIC HANDHOLE
GG	GG	GAS GATE
HYDRANT	HYDRANT	HYDRANT
C	C	CABLE MANHOLE
D	D	DRAINAGE MANHOLE
E	E	ELECTRIC MANHOLE
G	G	GAS MANHOLE
M	M	MISC MANHOLE
S	S	SEWER MANHOLE
T	T	TELEPHONE MANHOLE
W	W	WATER MANHOLE
MHB	MHB	MASSACHUSETTS HIGHWAY BOUND
MON		MONUMENT
SB		STONE BOUND
TB		TOWN OR TOWN BOUND
TRAVERSE OR TRIANGULATION STATION		TRAVERSE OR TRIANGULATION STATION
TPL or GUY	TPL or GUY	TROLLEY POLE OR GUY POLE

EXISTING	PROPOSED	DESCRIPTION
UPL	UPL	UTILITY POLE
		BUSH
		TREE
		STUMP
WG	WG	WATER GATE
		WETLAND FLAG
		OVERHEAD CABLE/WIRE
		CURBING
		BALANCED STONE WALL
		GUARD RAIL - STEEL POSTS
		BR-2 BRIDGE RAIL
		CHAIN LINK OR METAL FENCE
		WOOD FENCE
		EROSION CONTROL
		TREE LINE
		TOP OR BOTTOM OF SLOPE
		PROPOSED RETAINING WALL
OHW		ORDINARY HIGH WATER
VW		VEGETATED WETLAND
		STATE HIGHWAY LAYOUT
		TOWN OR TOWN LAYOUT
		COUNTY LAYOUT
		TOWN OR TOWN BOUNDARY LINE
		APPROXIMATE PROPERTY LINE
		100-YEAR FLOODWAY BOUNDARY
		VEGETATED WETLANDS
		WATERWAYS
		PROPOSED MODIFIED ROCKFILL
		PROPOSED CONSERVATION PARCEL
		PROPOSED WETLAND REPLICATION AREA
		PROPOSED WW REALIGNMENT
		PERMANENT IMPACT (LOSS) TO WW = 422 LF
		PERMANENT IMPACT TO WW = 423 LF
		PERMANENT IMPACT TO WW = 1,430 LF WITH IN-KIND RESTORATION
		TEMPORARY IMPACT TO WW = 85 LF
		PERMANENT IMPACT TO VW = 58,476 SF
		TEMPORARY IMPACT TO VW = 27,765 SF



PROJECT TITLE

MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

GENERAL NOTES, LEGEND,
AND ABBREVIATION

DATE

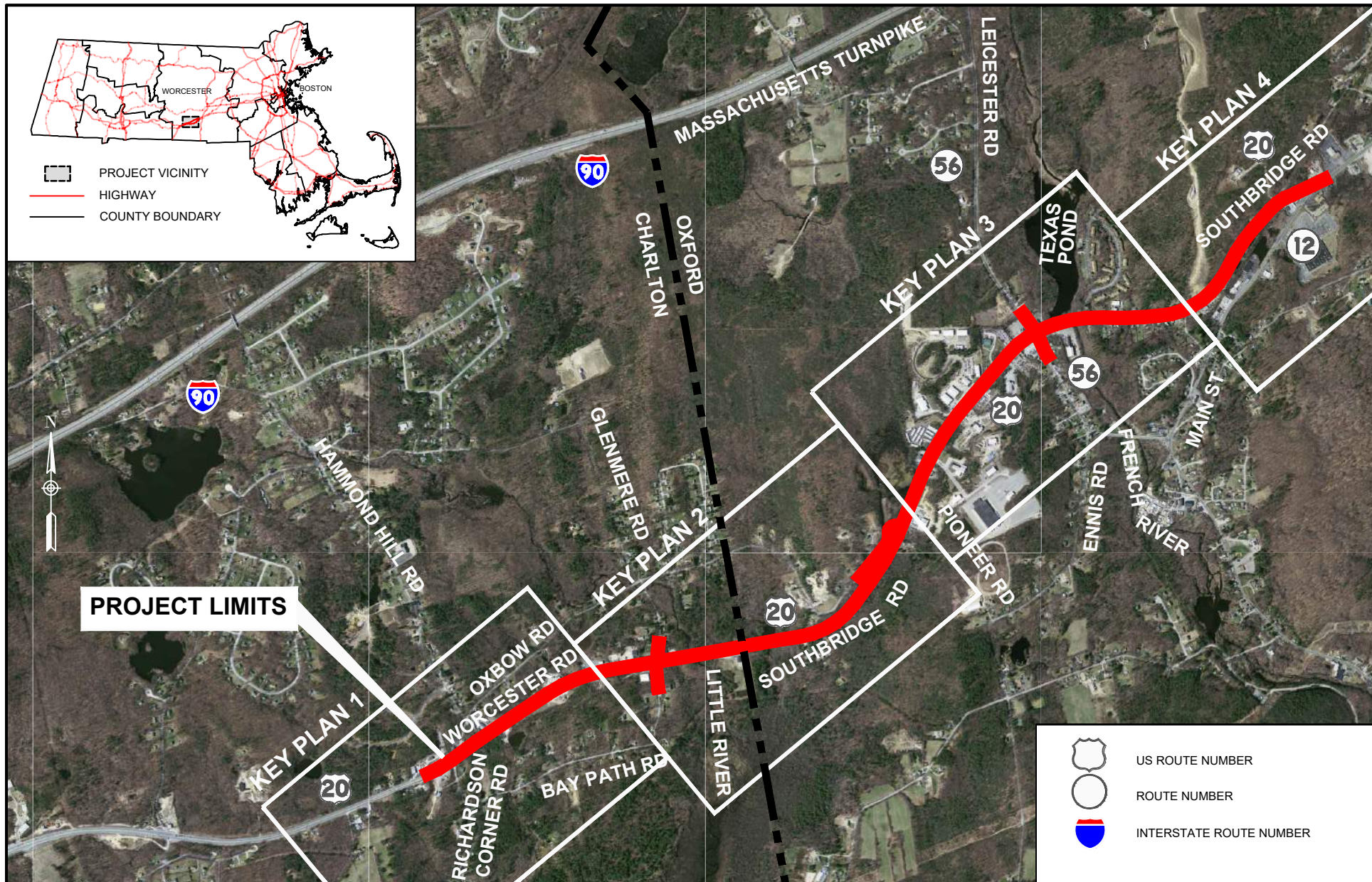
NOVEMBER 2021

SHEET#

2

TOTAL SHEETS

59



PROJECT TITLE

MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20



SCALE: 1 = 2000'

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

VICINITY MAP

DATE

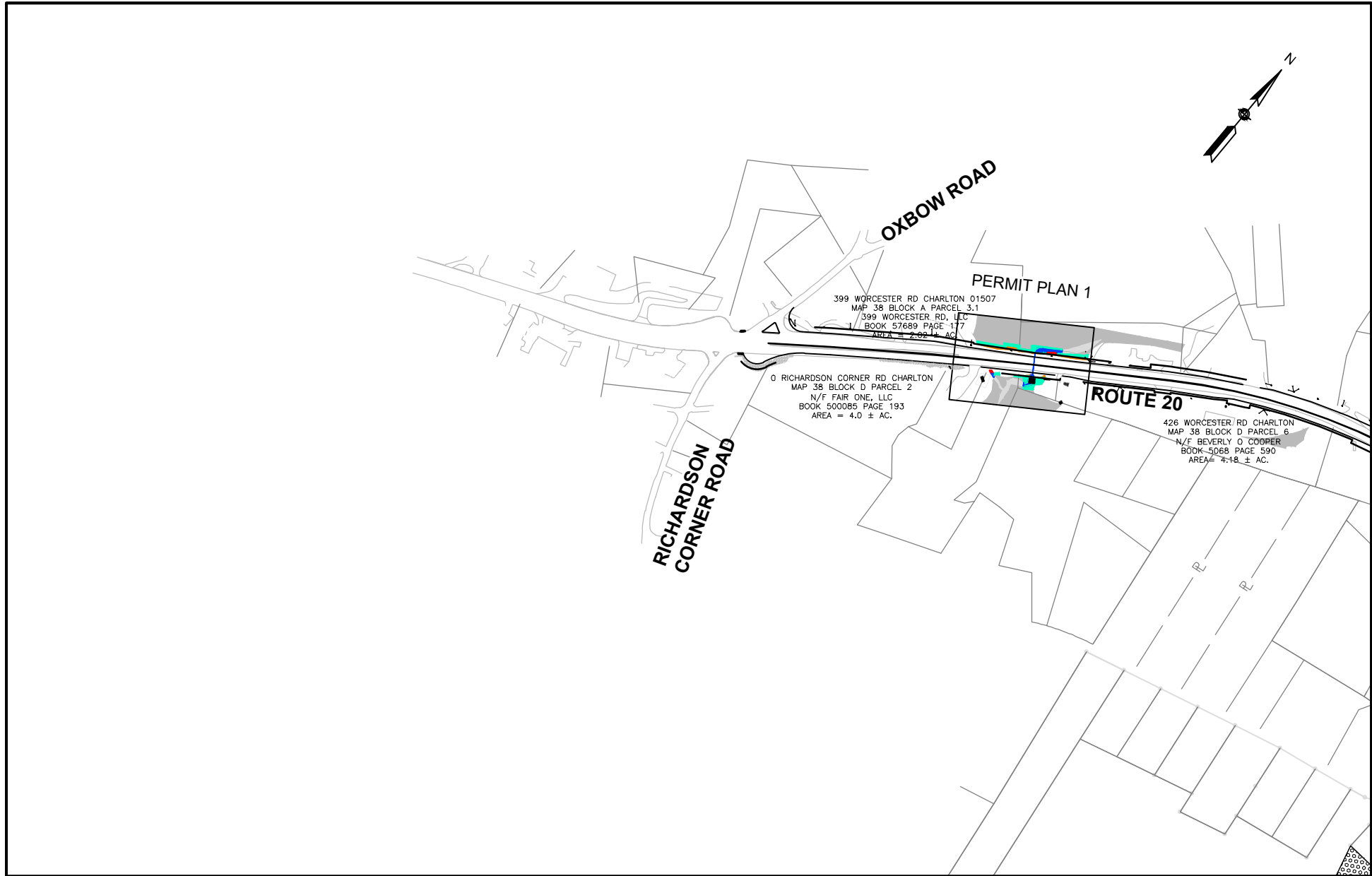
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SHEET#

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TOTAL SHEETS

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PROJECT TITLE

MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20



SCALE: 1 = 500'

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

KEY PLAN 1

DATE

NOVEMBER 2021

SHEET#

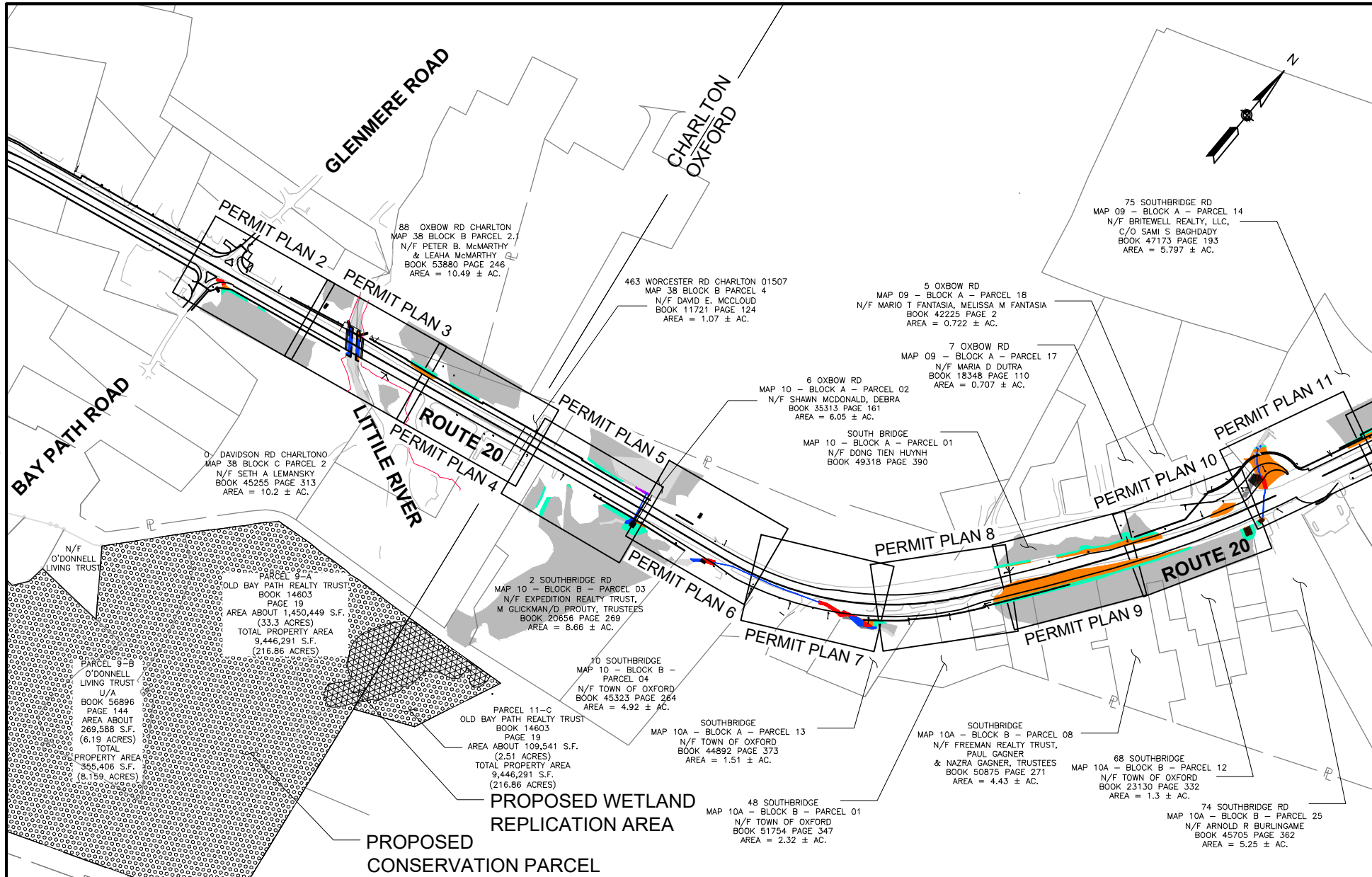
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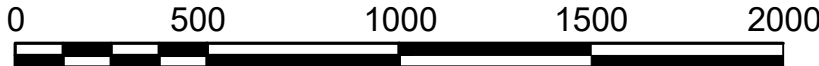
MATCH LINE SEE KEY PLAN 1

MATCH LINE SEE KEY PLAN 3



PROJECT TITLE

MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20



SCALE: 1" = 500'

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

KEY PLAN 2

DATE

NOVEMBER 2021

SHEET#

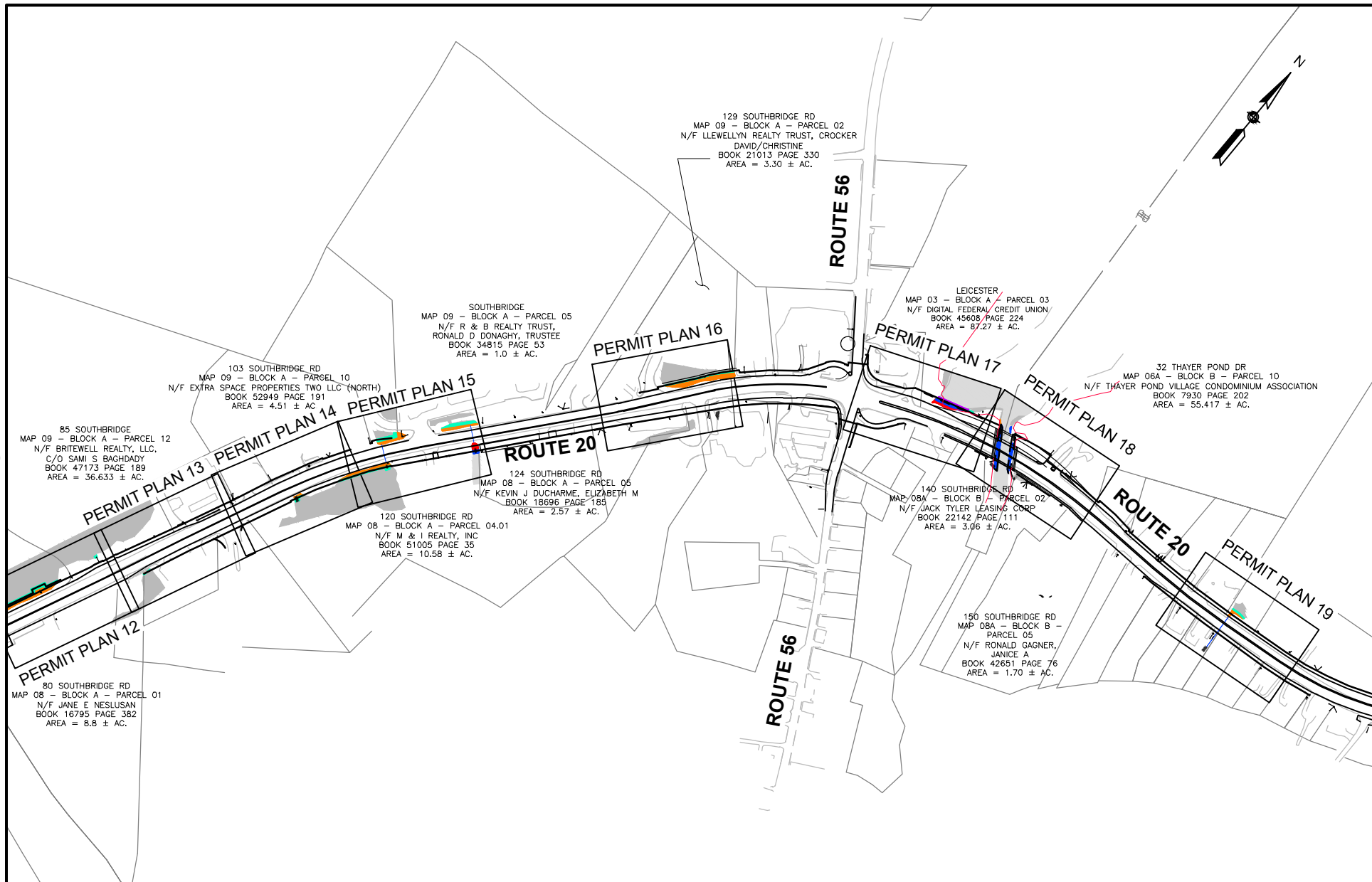
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TOTAL SHEETS

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MATCH LINE SEE KEY PLAN 2

MATCH LINE SEE KEY PLAN 4



PROJECT TITLE

MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20



SCALE: 1 = 500'

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

KEY PLAN 3

DATE

NOVEMBER 2021

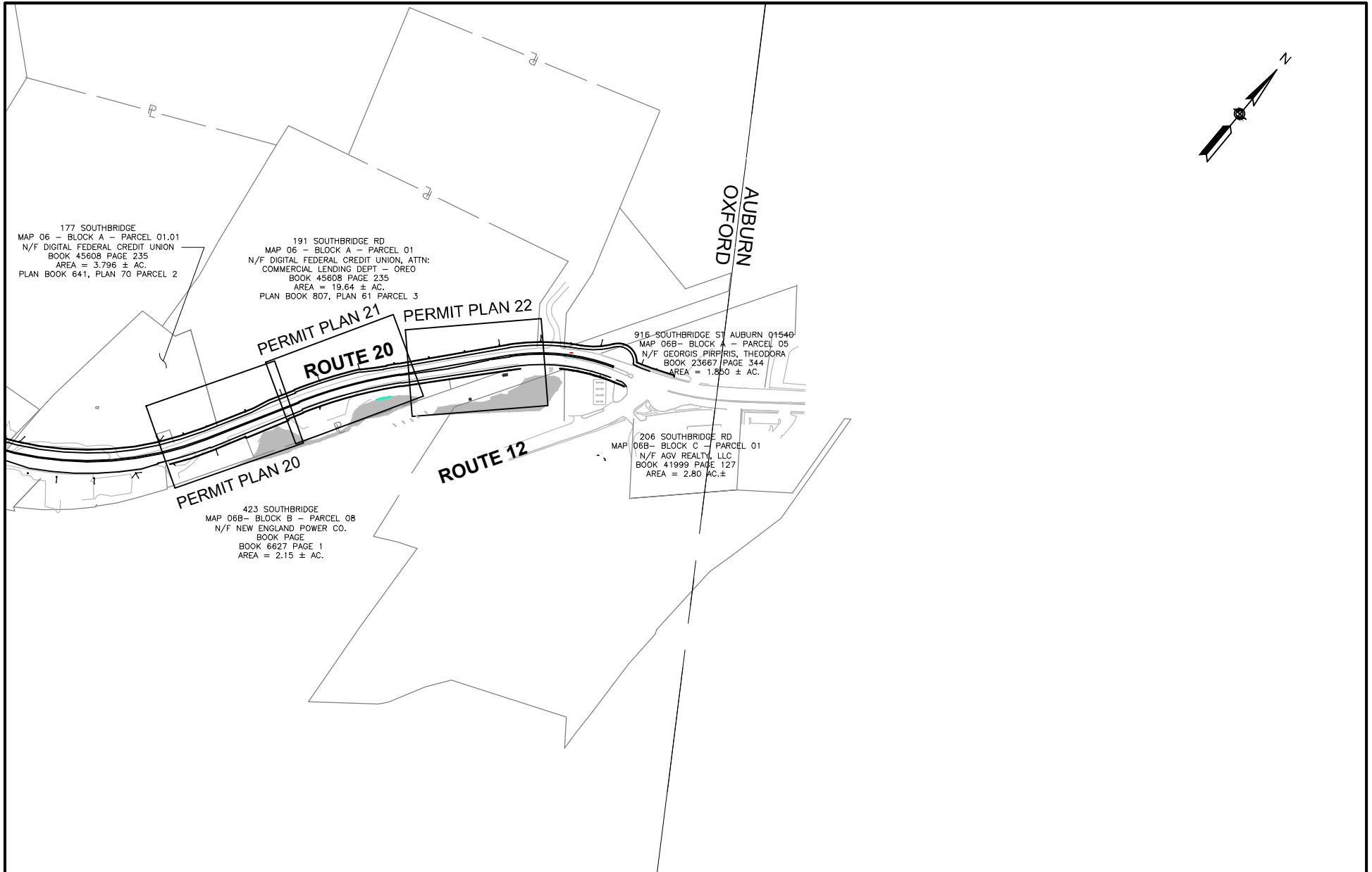
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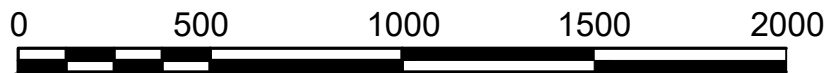
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MATCH LINE SEE KEY PLAN 3



PROJECT TITLE

MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20



SCALE: 1 = 500'

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

KEY PLAN 4

DATE

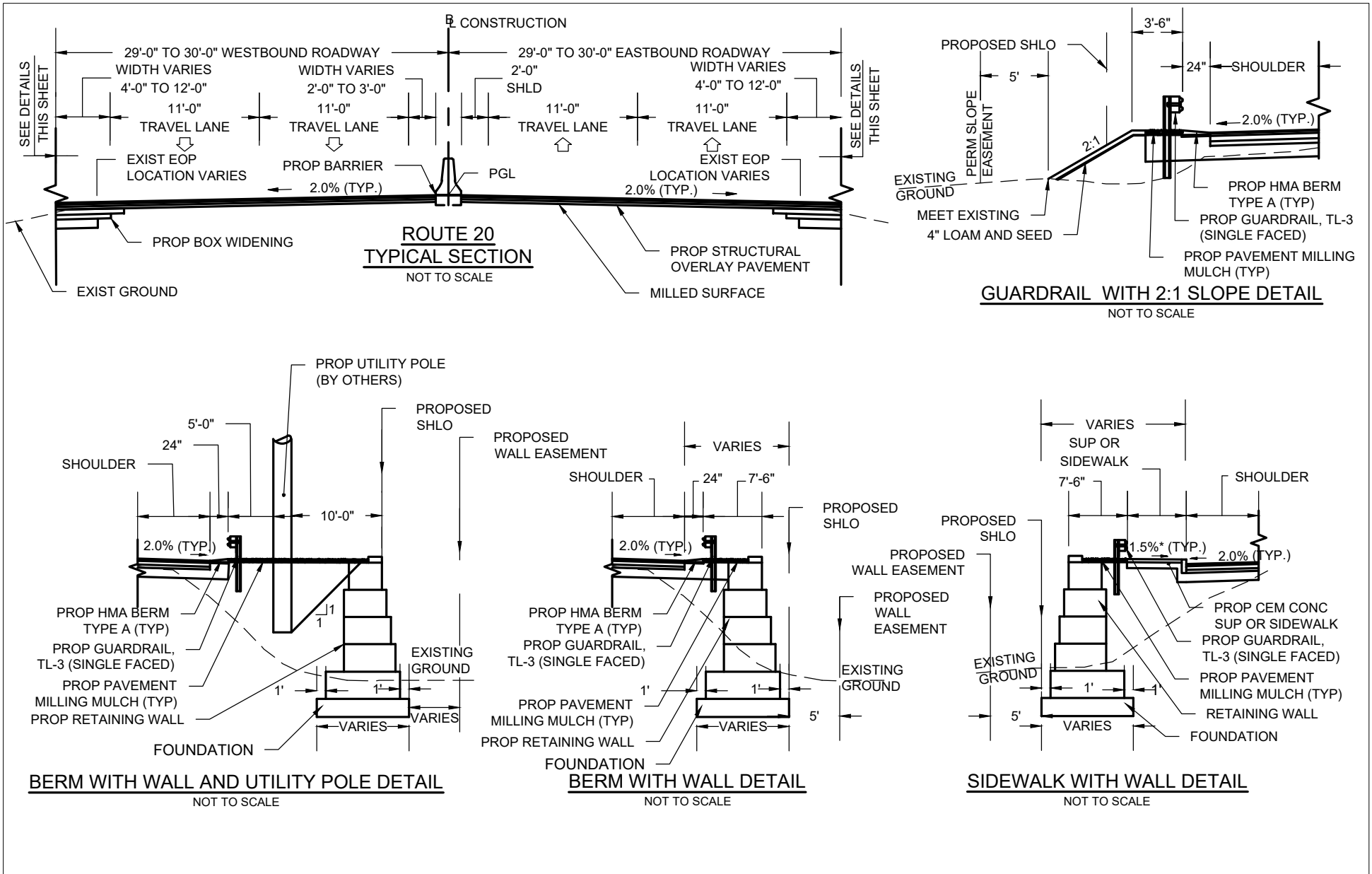
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TOTAL SHEETS

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PROJECT TITLE

MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

TYPICAL SECTIONS

DATE

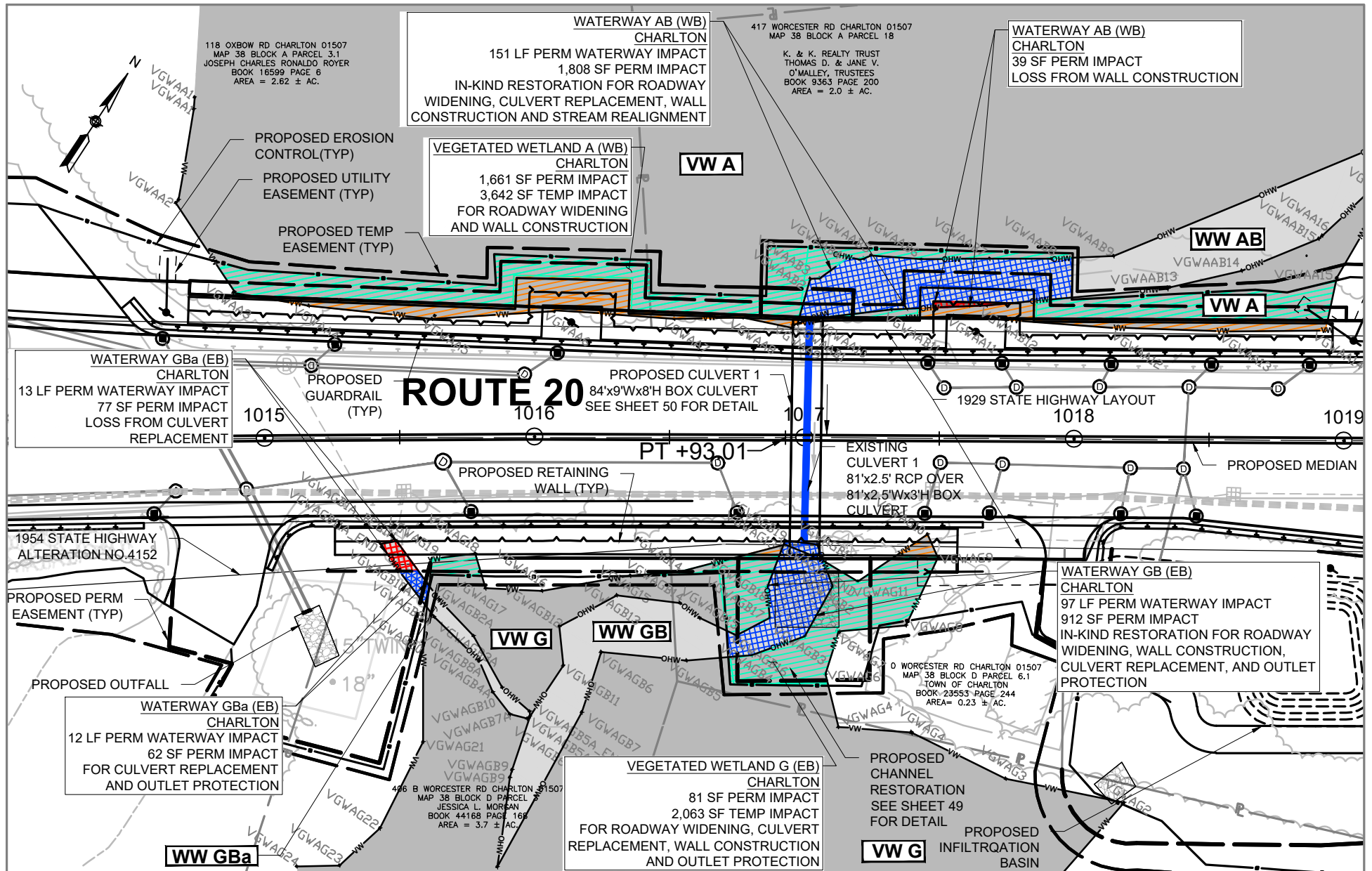
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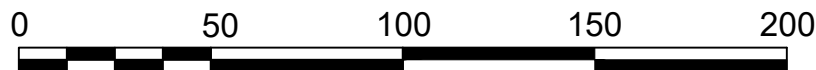
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PROJECT TITLE

MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20



SCALE: 1 = 50'

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

PERMIT PLAN - 1

DATE

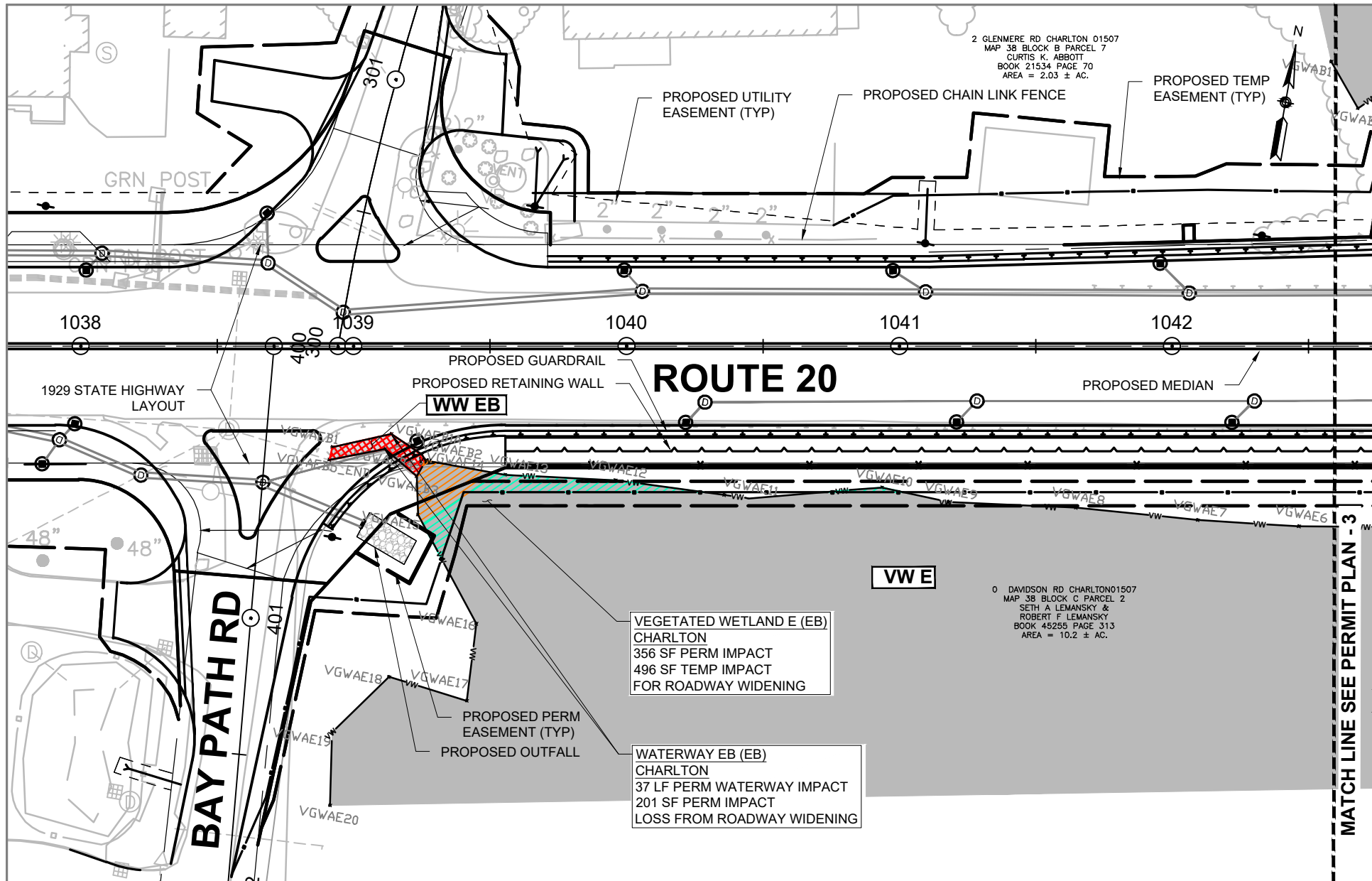
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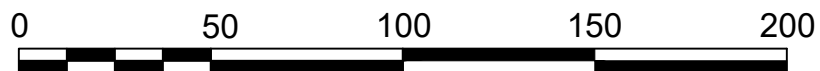
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PROJECT TITLE

**MASSDOT PROJECT 602659
 RECONSTRUCTION OF ROUTE 20**



SCALE: 1 = 50'

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

PERMIT PLAN - 2

DATE

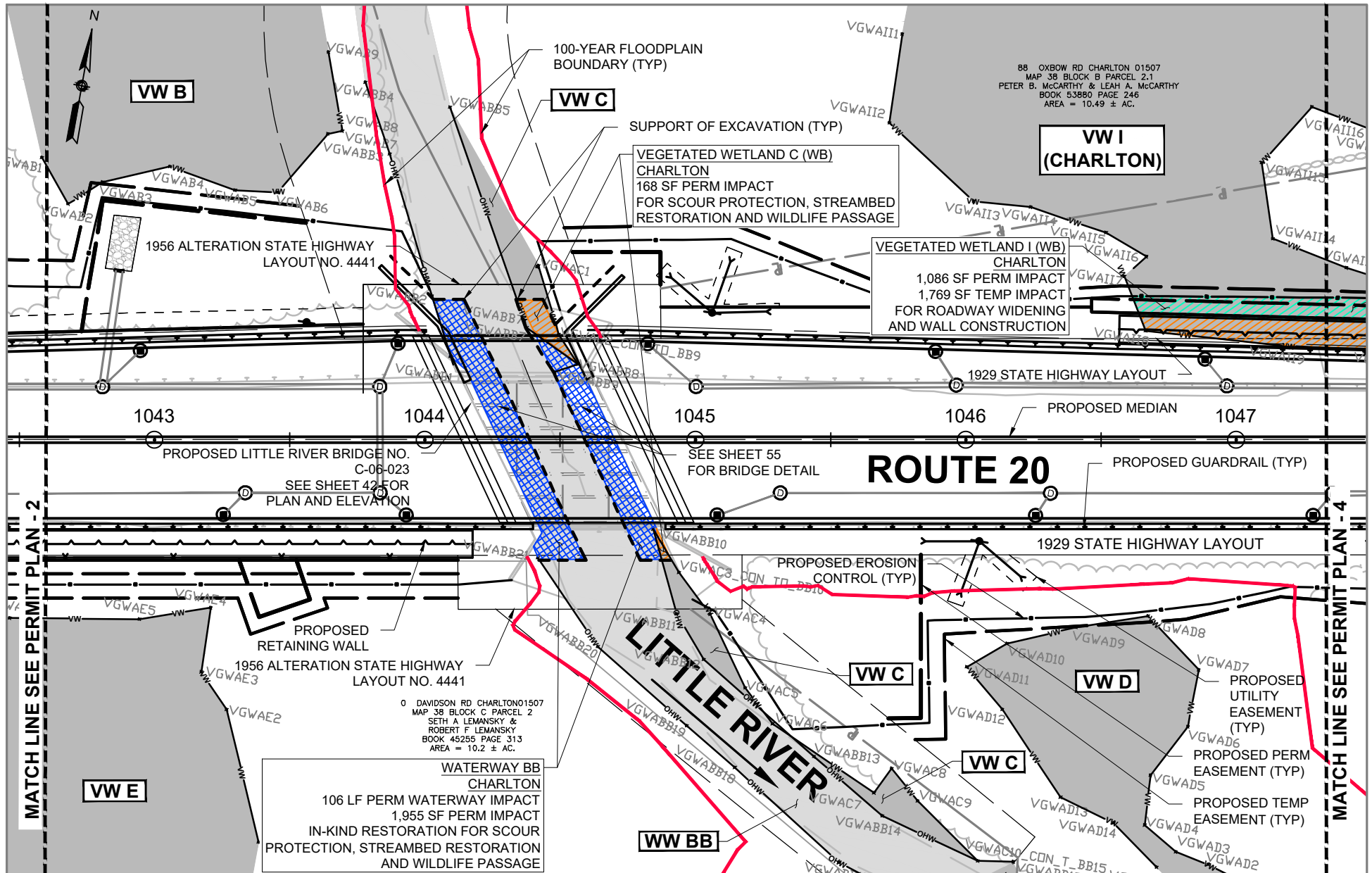
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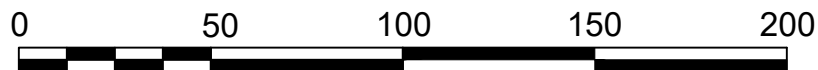
TOTAL SHEETS

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PROJECT TITLE

MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20



SCALE: 1 = 50'

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

PERMIT PLAN - 3

DATE

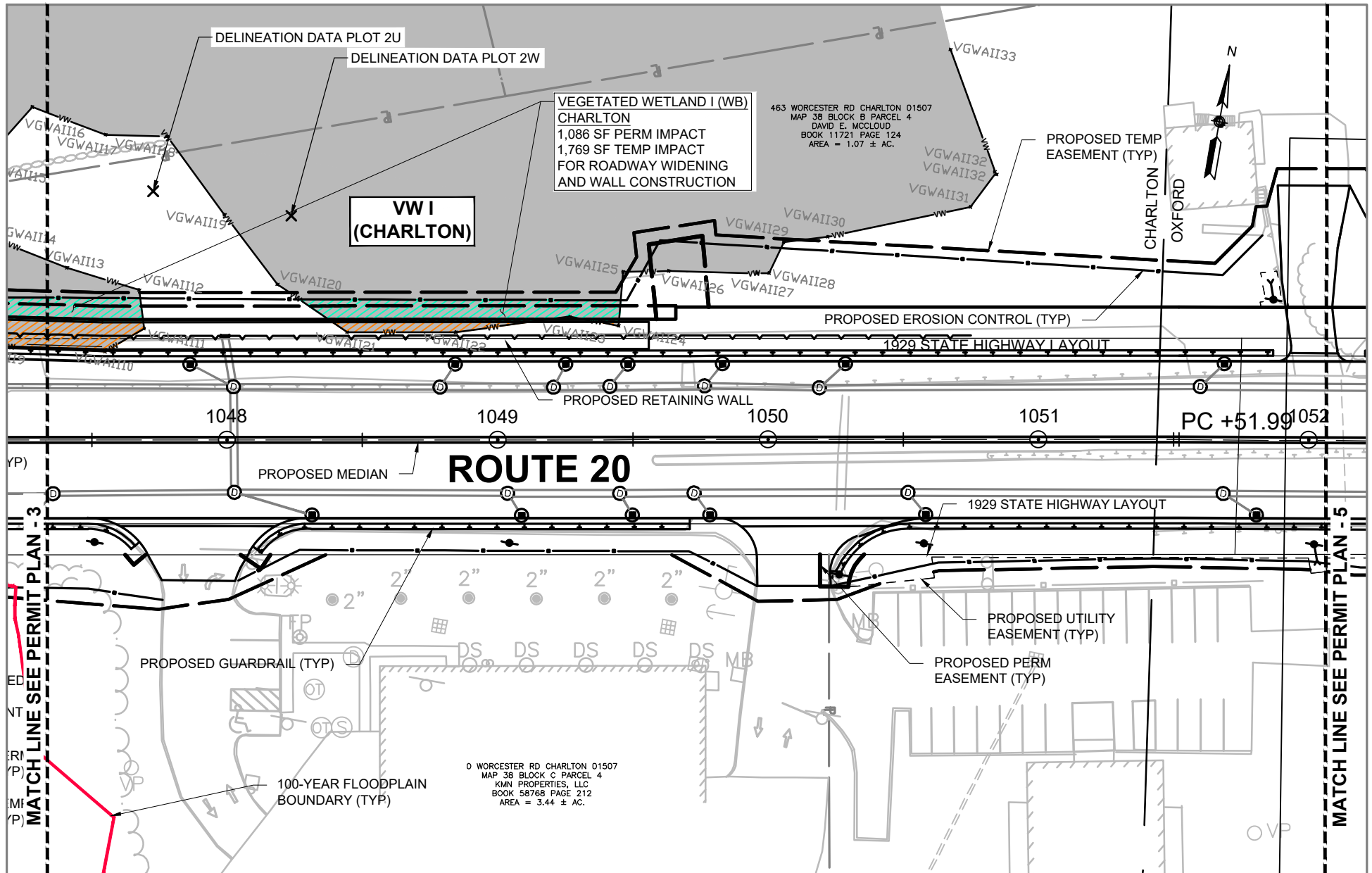
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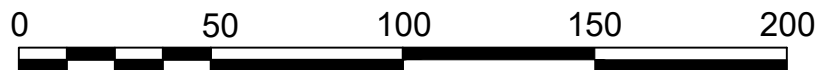
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PROJECT TITLE

**MASSDOT PROJECT 602659
 RECONSTRUCTION OF ROUTE 20**



SCALE: 1 = 50'

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

PERMIT PLAN - 4

DATE

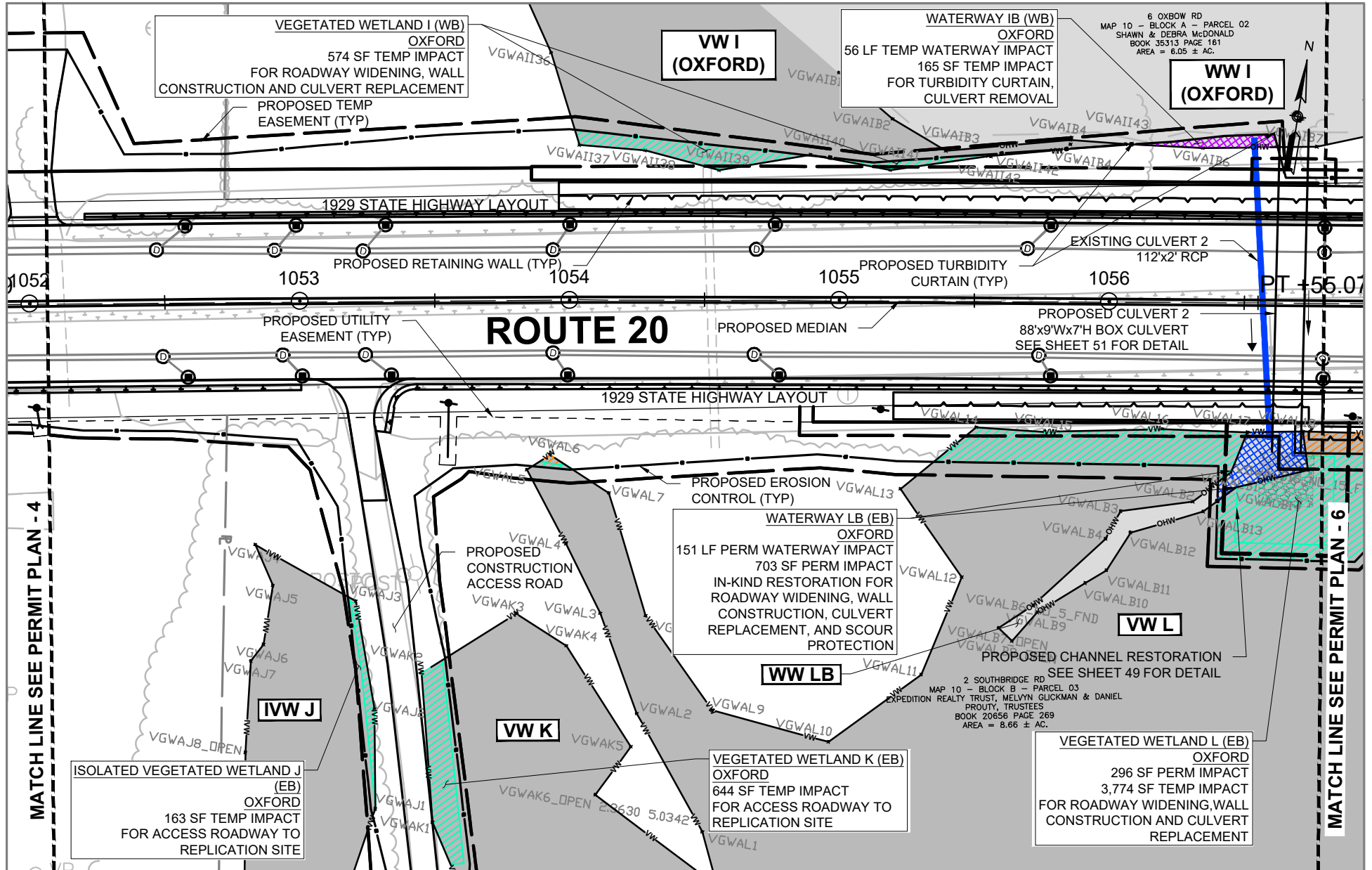
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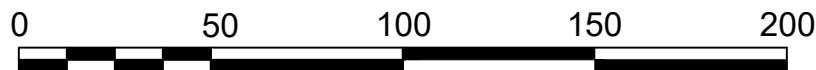
TOTAL SHEETS

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PROJECT TITLE

**MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20**



SCALE: 1 = 50'

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

PERMIT PLAN - 5

DATE

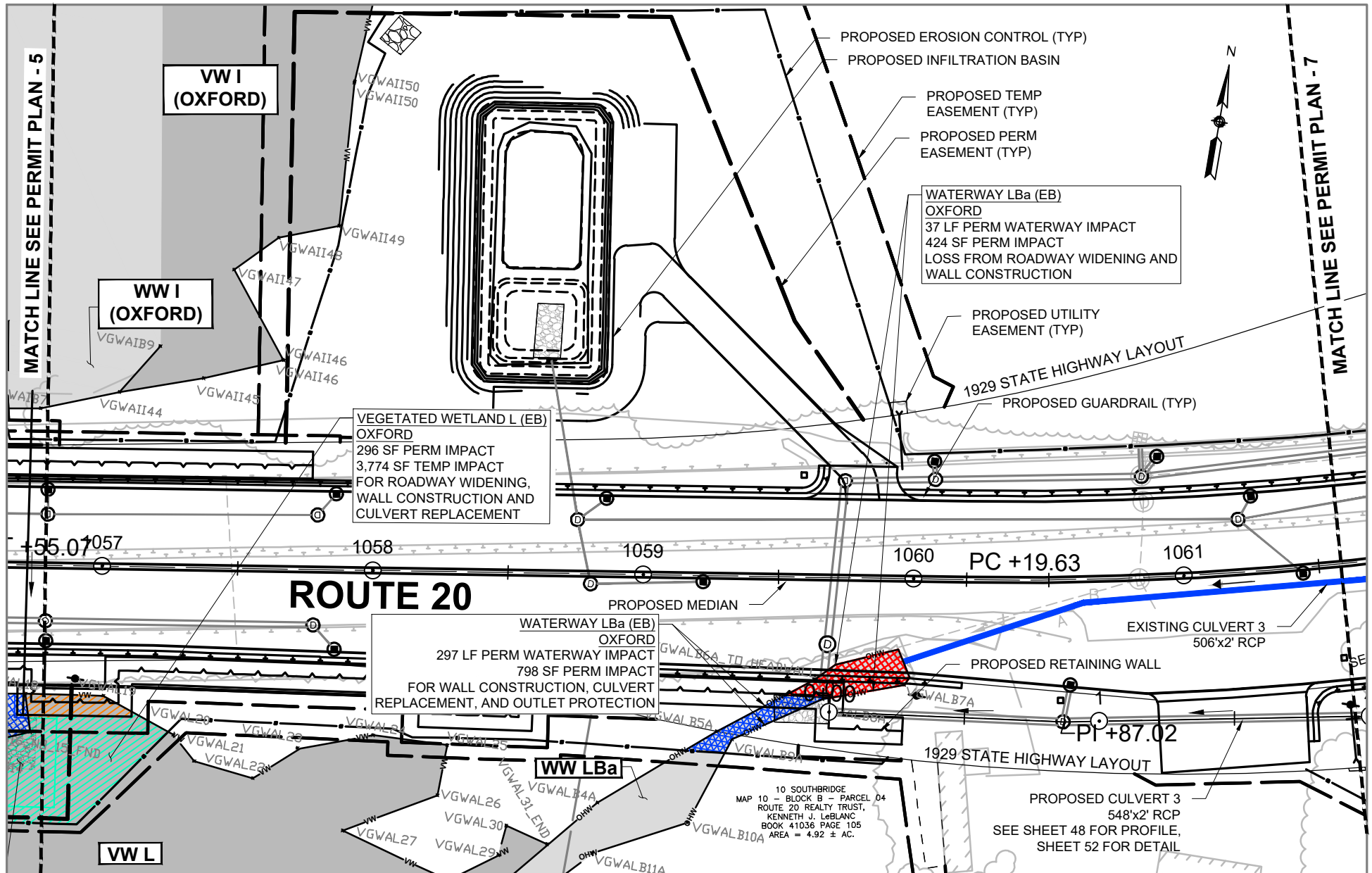
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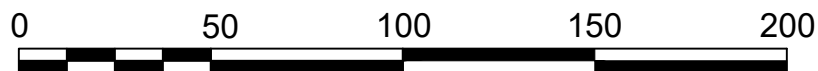
TOTAL SHEETS

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PROJECT TITLE

**MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20**



SCALE: 1 = 50'

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

PERMIT PLAN - 6

DATE

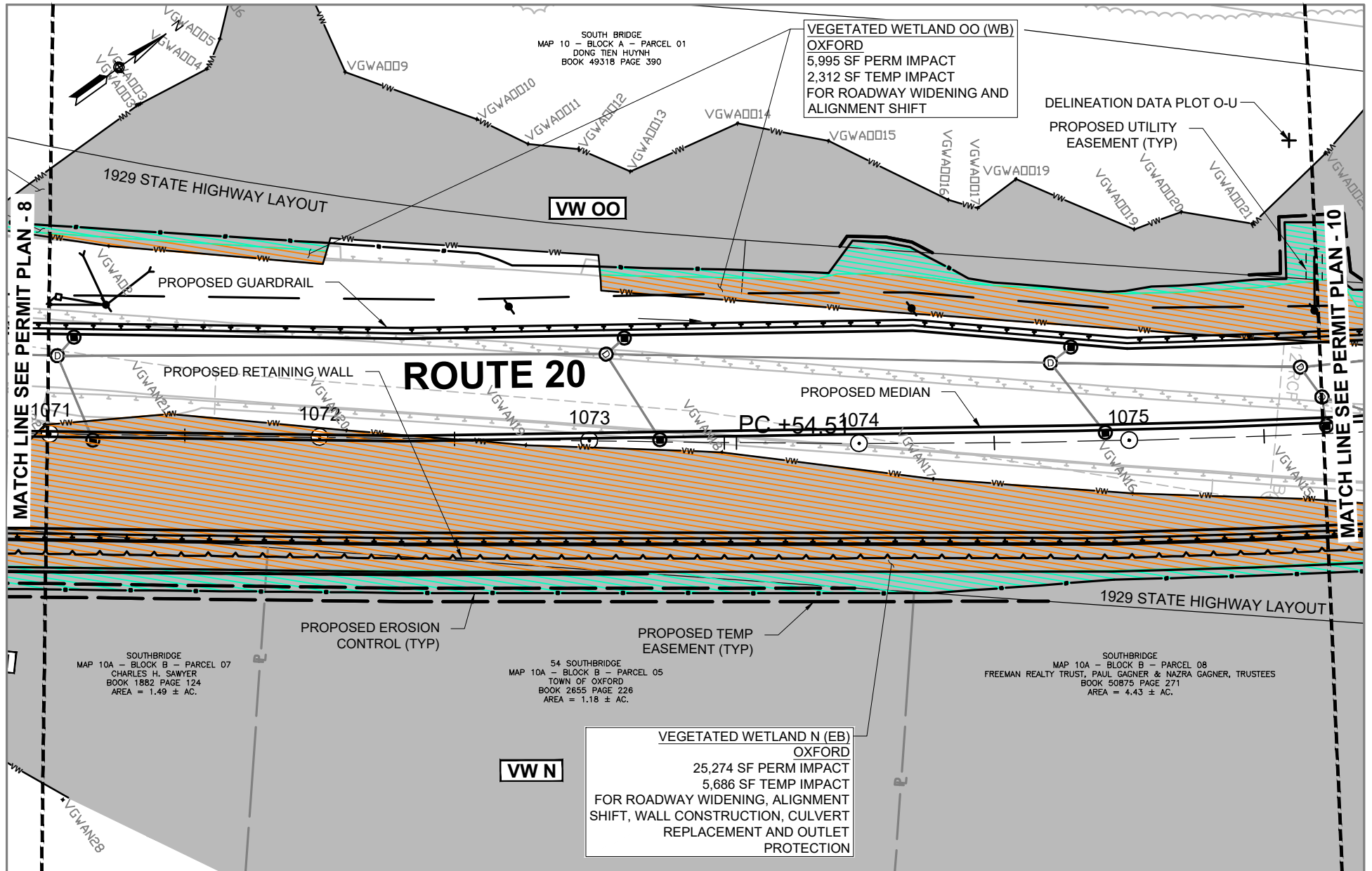
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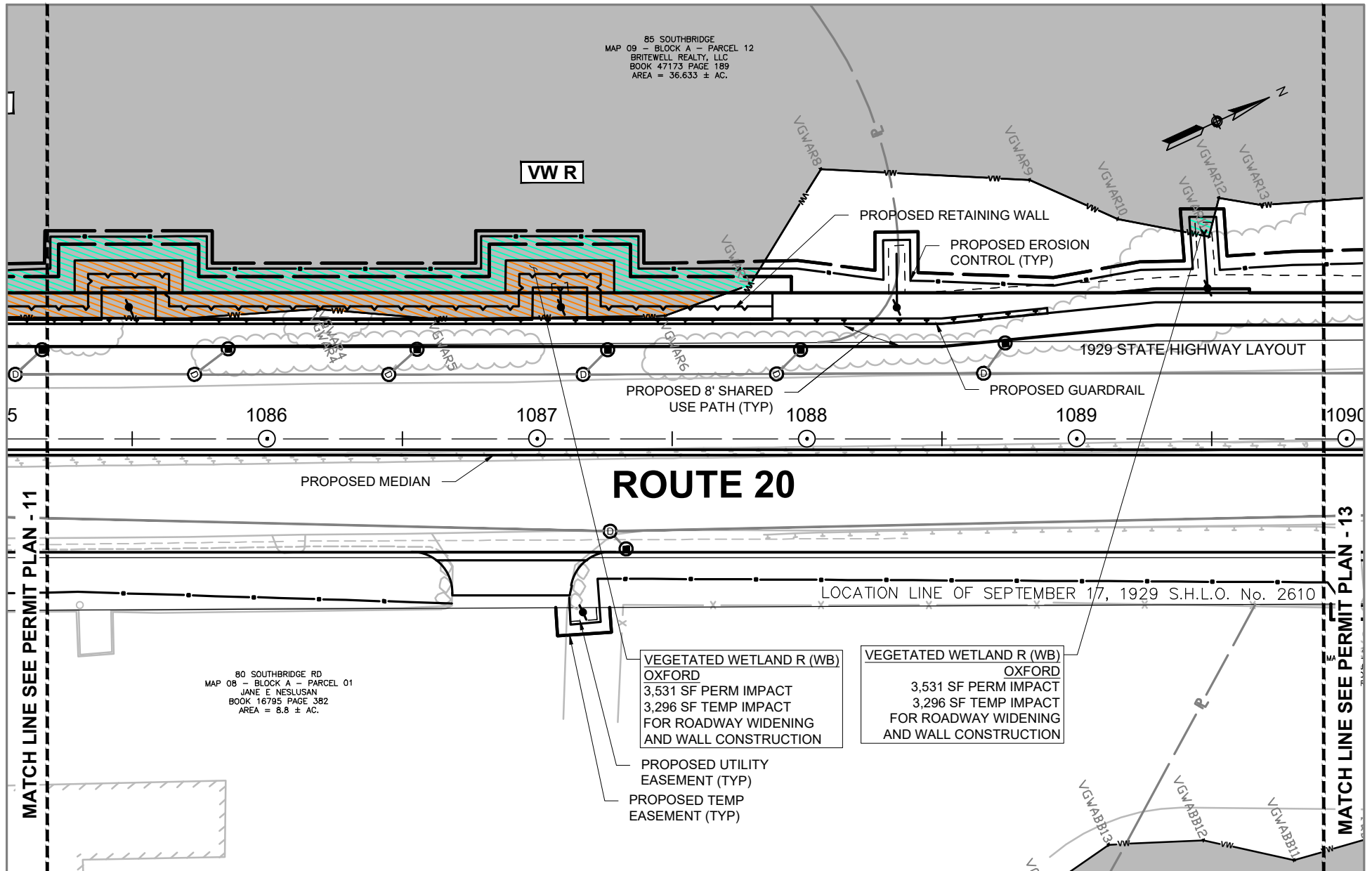
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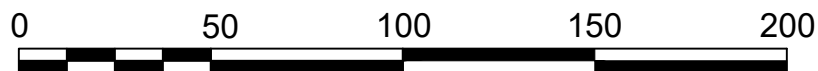
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PROJECT TITLE

MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20



SCALE: 1 = 50'

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

PERMIT PLAN - 12

DATE

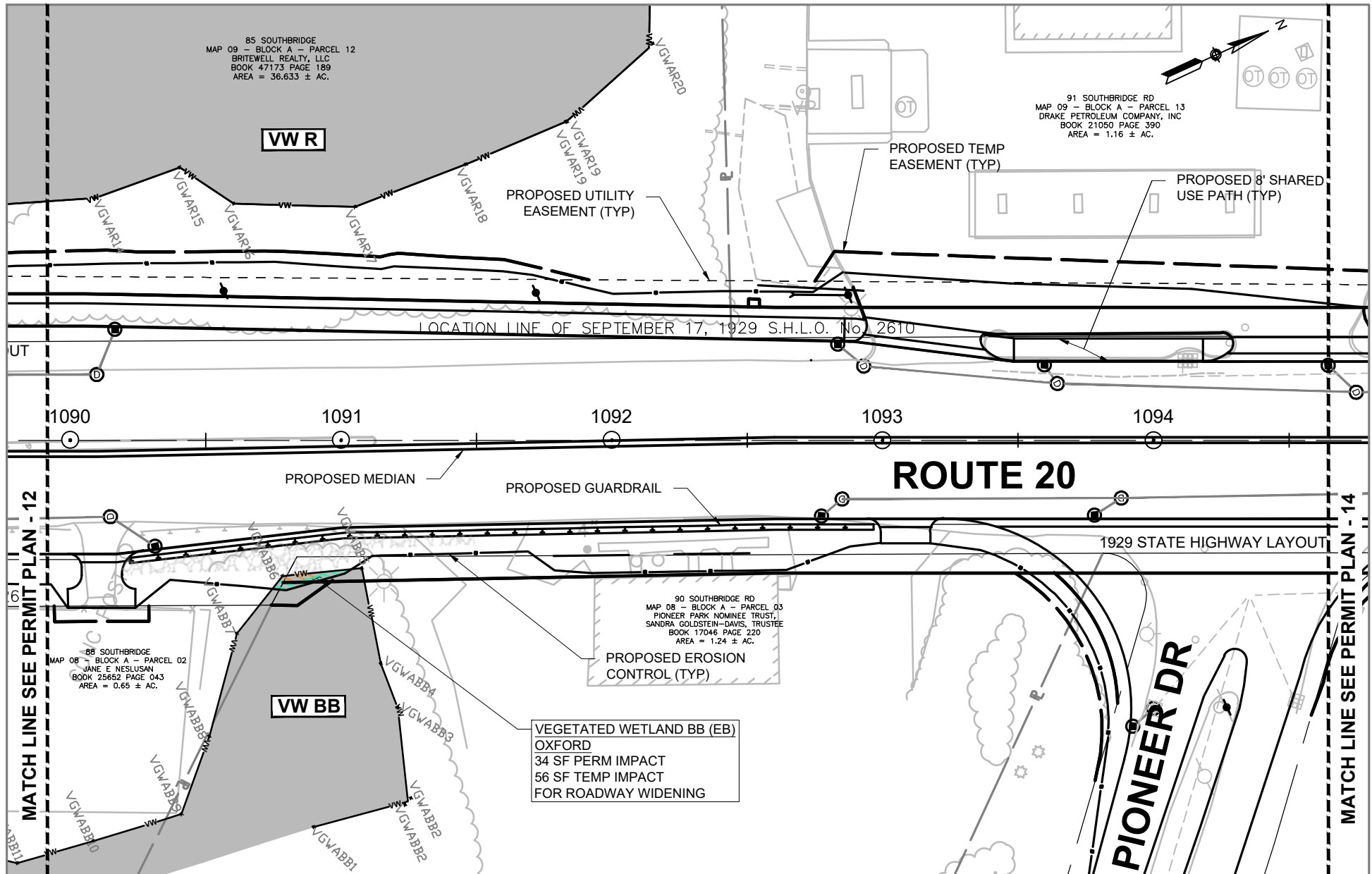
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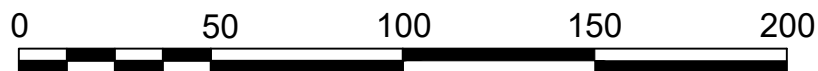
TOTAL SHEETS

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PROJECT TITLE

**MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20**



SCALE: 1 = 50'

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

PERMIT PLAN - 13

DATE

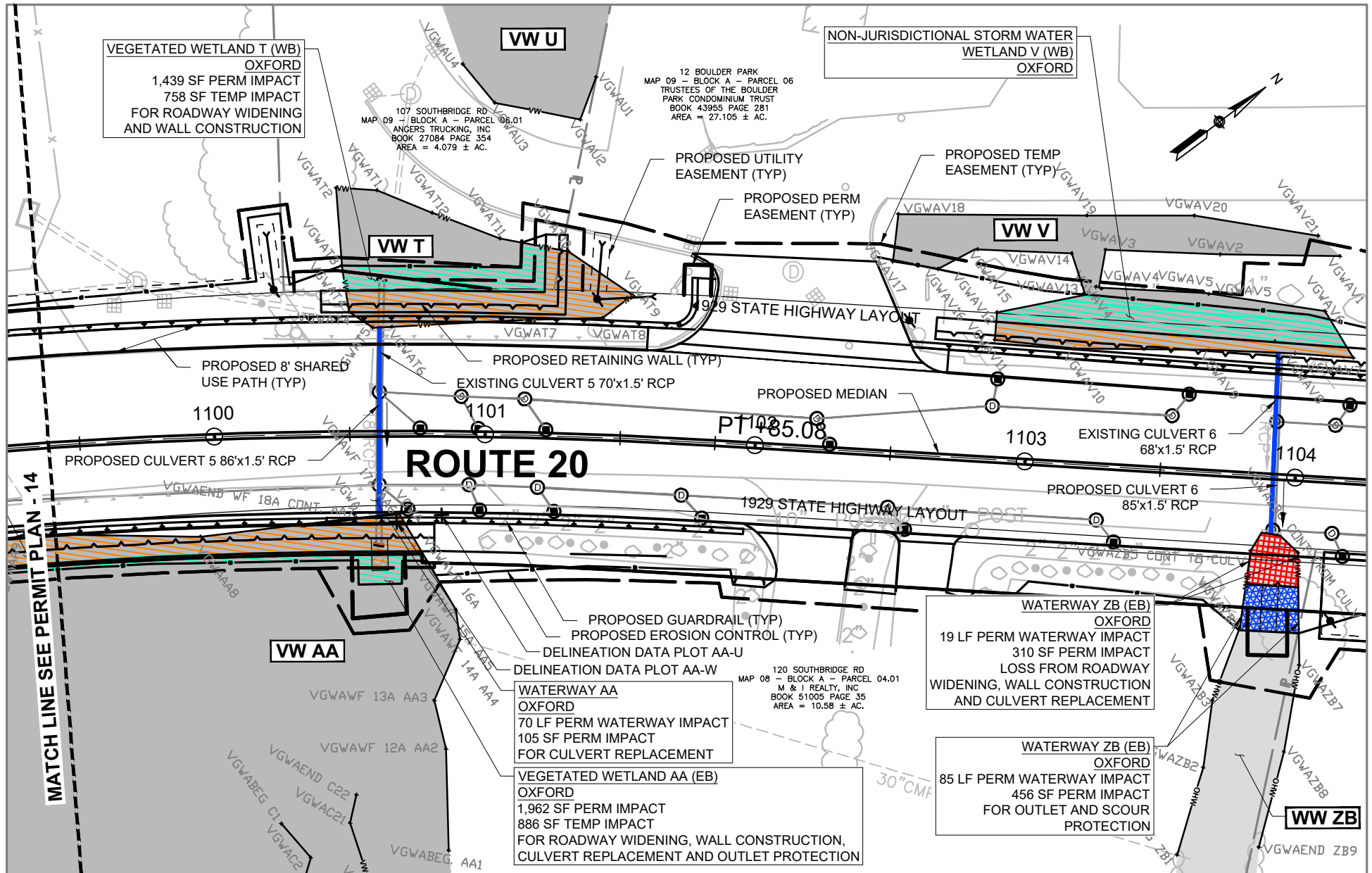
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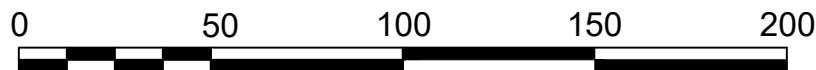
TOTAL SHEETS

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PROJECT TITLE

MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20



SCALE: 1" = 50'

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

PERMIT PLAN - 15

DATE

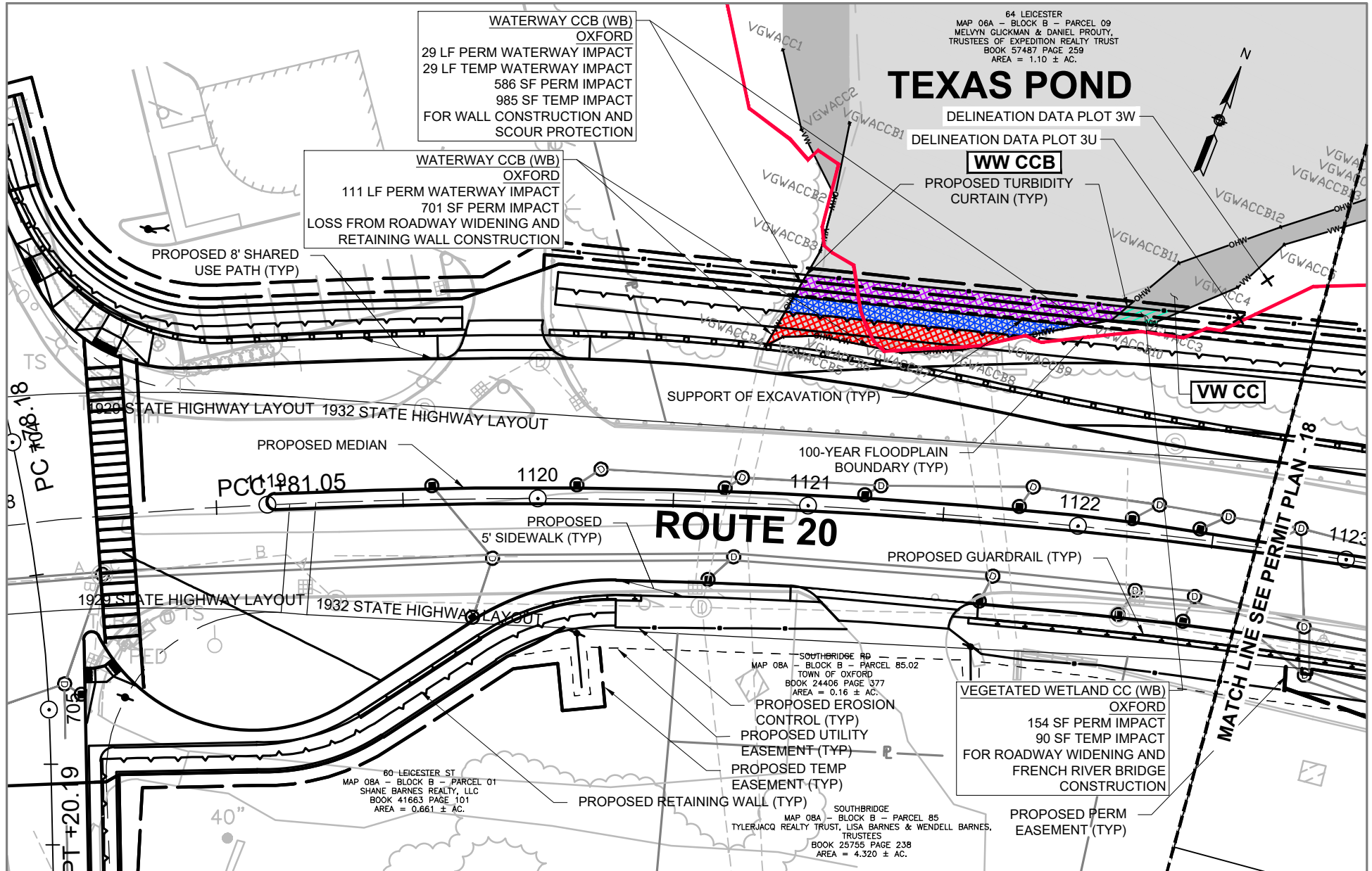
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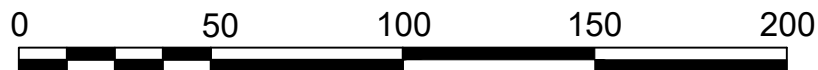
TOTAL SHEETS

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**MASSDOT PROJECT 602659
 RECONSTRUCTION OF ROUTE 20**



SCALE: 1 = 50'

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

PERMIT PLAN - 17

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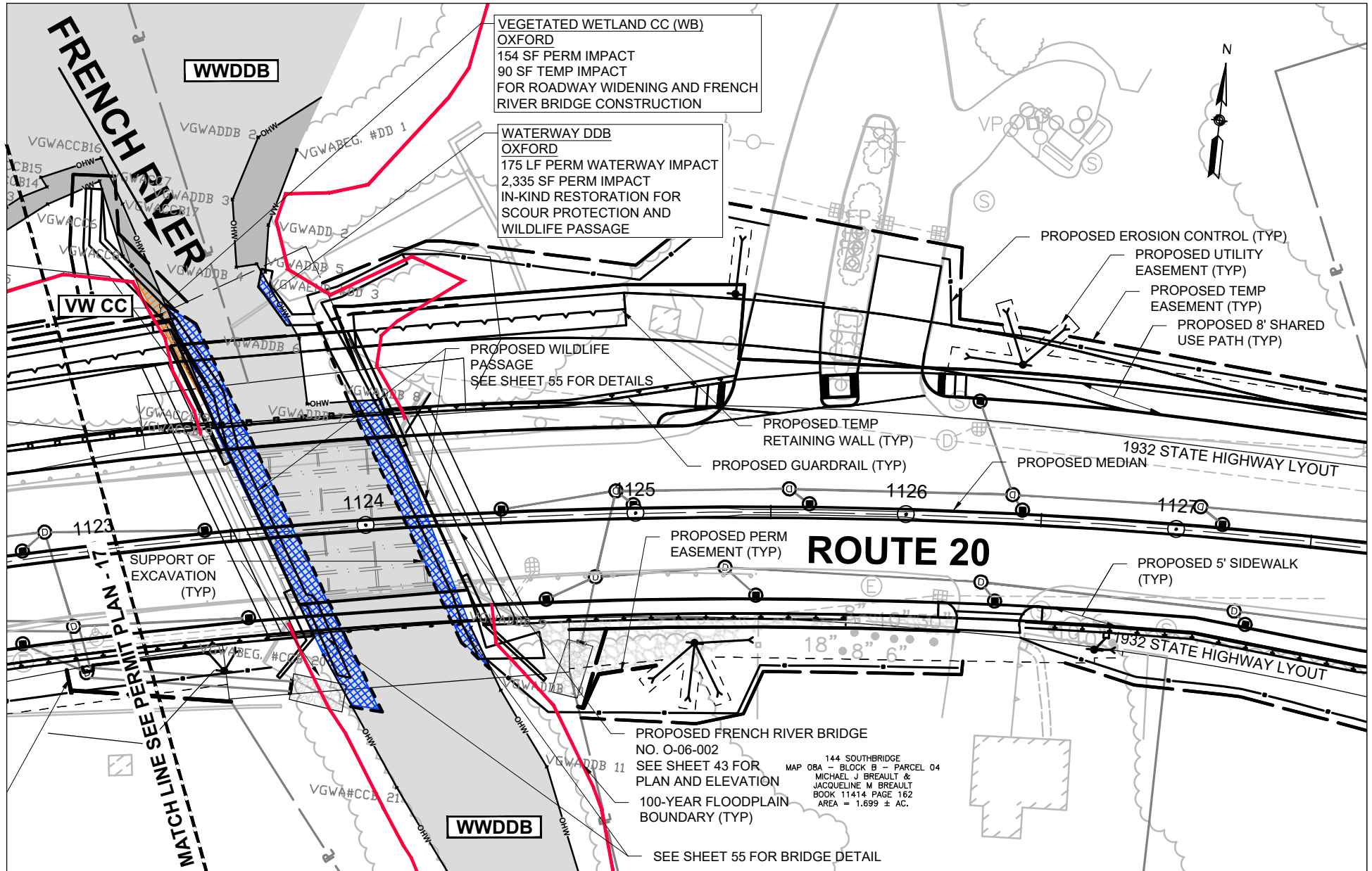
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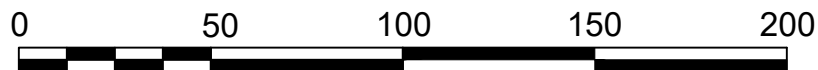
TOTAL SHEETS

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PROJECT TITLE

MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20



SCALE: 1 = 50'

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

PERMIT PLAN - 18

DATE

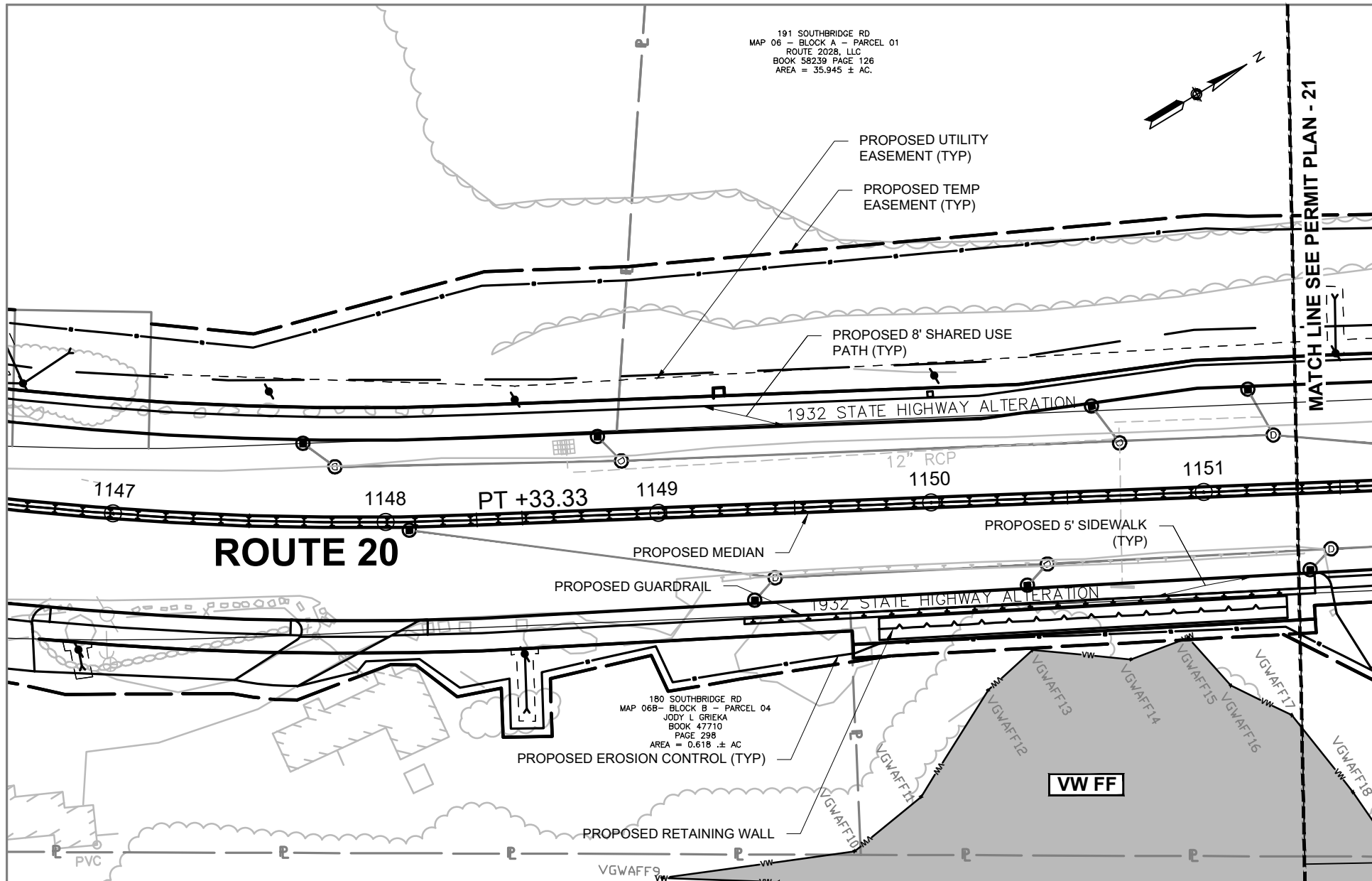
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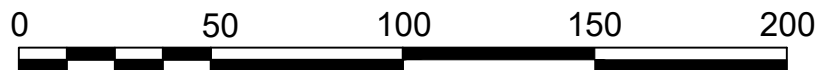
TOTAL SHEETS

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PROJECT TITLE

**MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20**



SCALE: 1 = 50'

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

PERMIT PLAN - 20

DATE

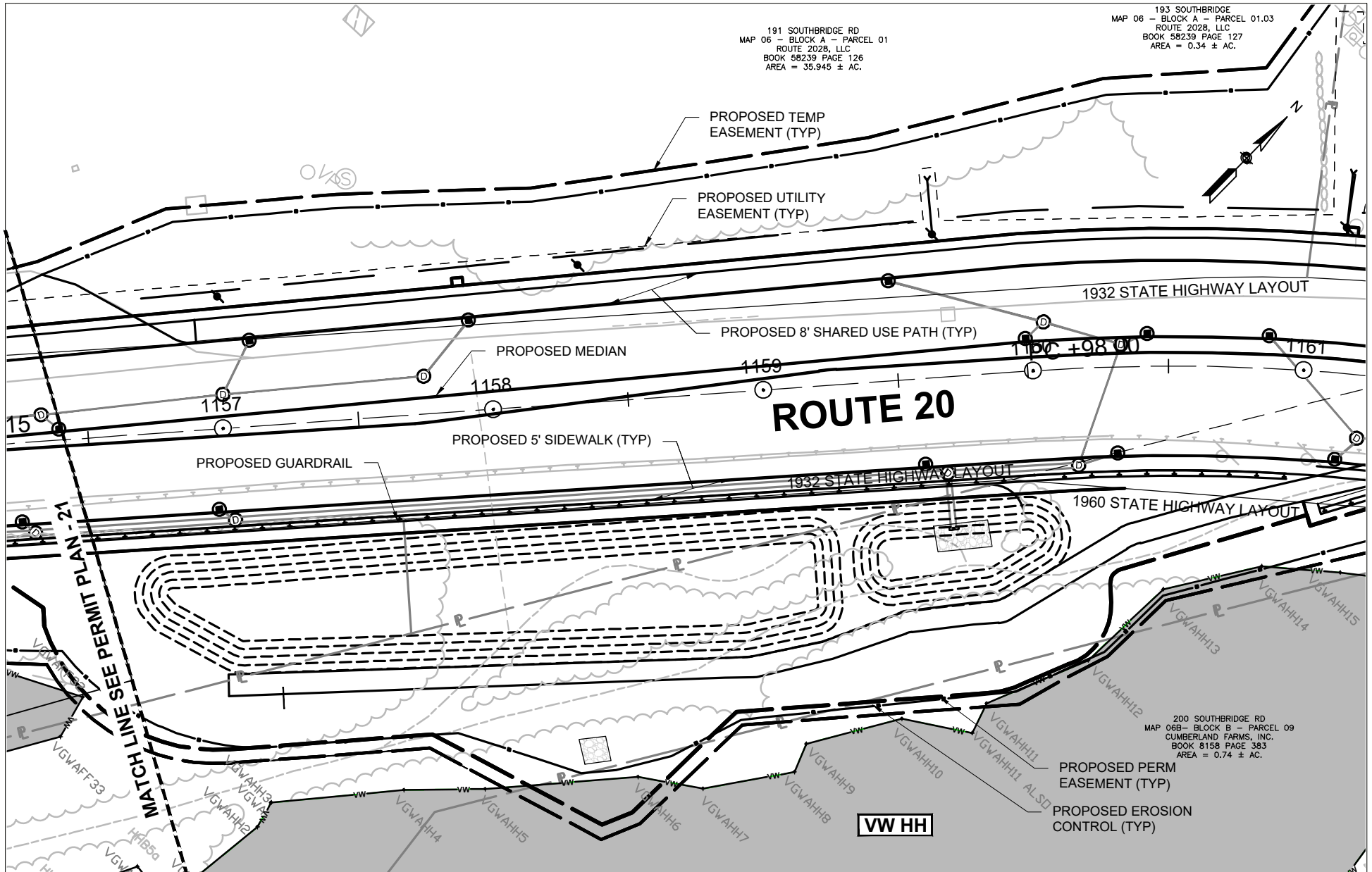
NOVEMBER 2021

SHEET#

28

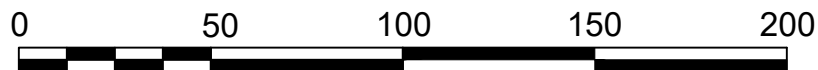
TOTAL SHEETS

59



PROJECT TITLE

**MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20**



SCALE: 1 = 50'

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

PERMIT PLAN - 22

DATE

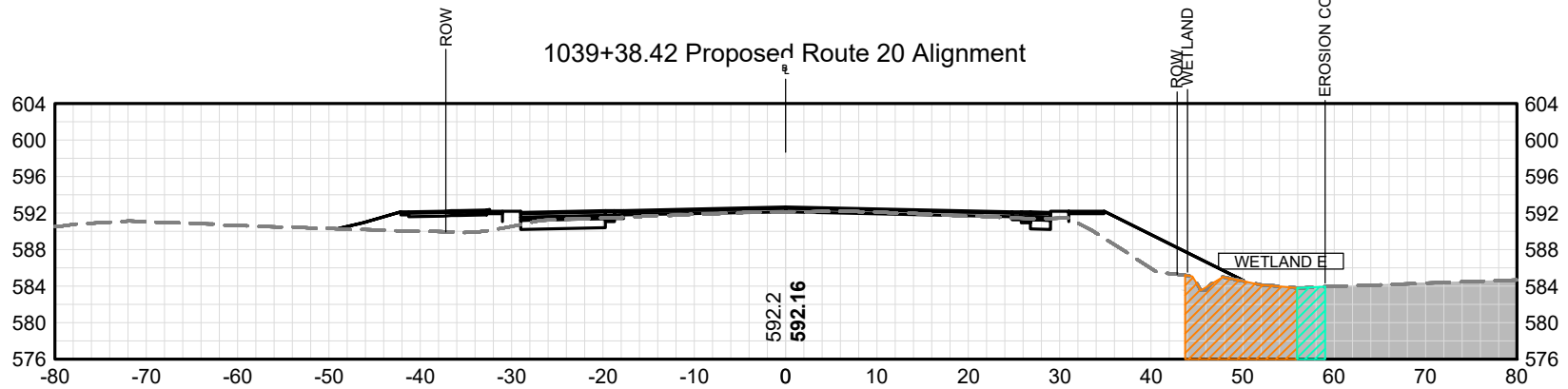
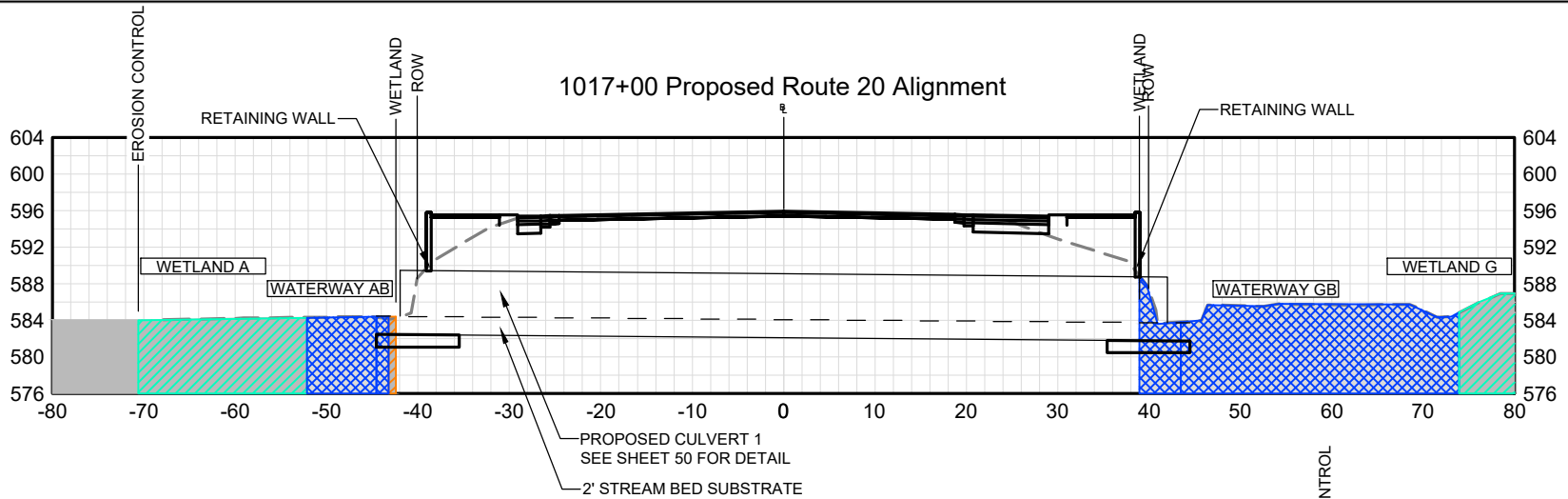
NOVEMBER 2021

SHEET#

30

TOTAL SHEETS

59



- EXISTING ROADWAY
- PROPOSED ROADWAY
- VEGETATED WETLANDS
- WATERWAYS
- TEMPORARY IMPACT TO WATERWAYS
- TEMPORARY IMPACT TO WETLANDS
- PERMANENT IMPACT TO WATERWAYS (IN-KIND RESTORATION)
- PERMANENT IMPACT TO WETLANDS
- PERMANENT IMPACT TO WATERWAYS
- PERMANENT IMPACT (LOSS) TO WW

NOTES:
COLOR IS INTENDED TO CONVEY HORIZONTAL EXTENT OF IMPACTS AND NOT INTENDED TO DEPICT AN IMPACT DEPTH.



PROJECT TITLE

MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20



SCALE: 1 = 20'

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

CROSS SECTION - 1

DATE

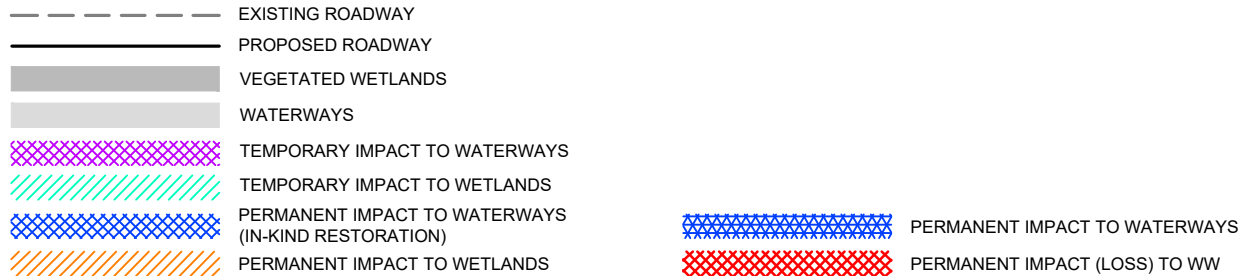
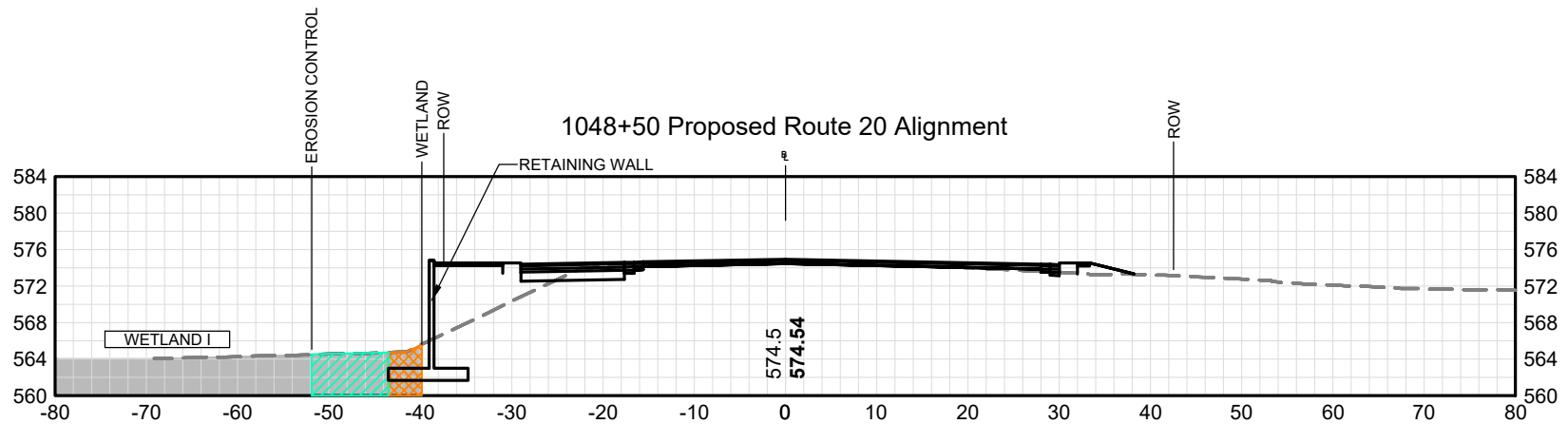
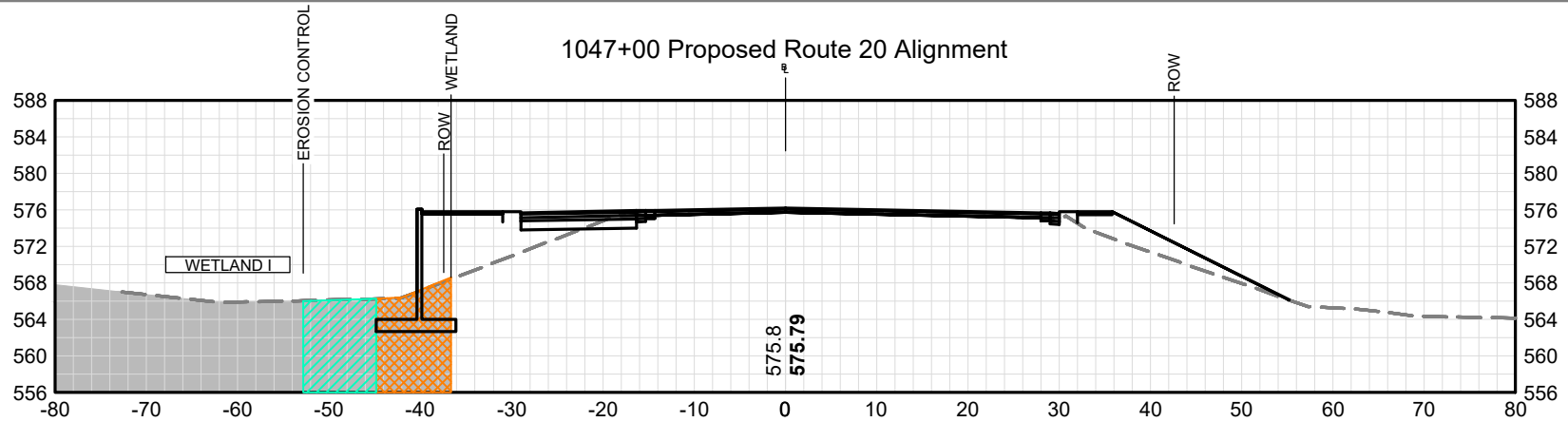
NOVEMBER 2021

SHEET#

31

TOTAL SHEETS

59

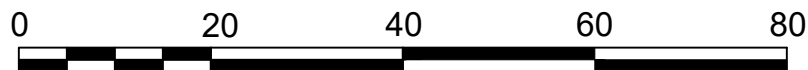


NOTES:
COLOR IS INTENDED TO CONVEY HORIZONTAL
EXTENT OF IMPACTS AND NOT INTENDED TO
DEPICT AN IMPACT DEPTH.



PROJECT TITLE

MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20



SCALE: 1 = 20'

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

CROSS SECTION - 2

DATE

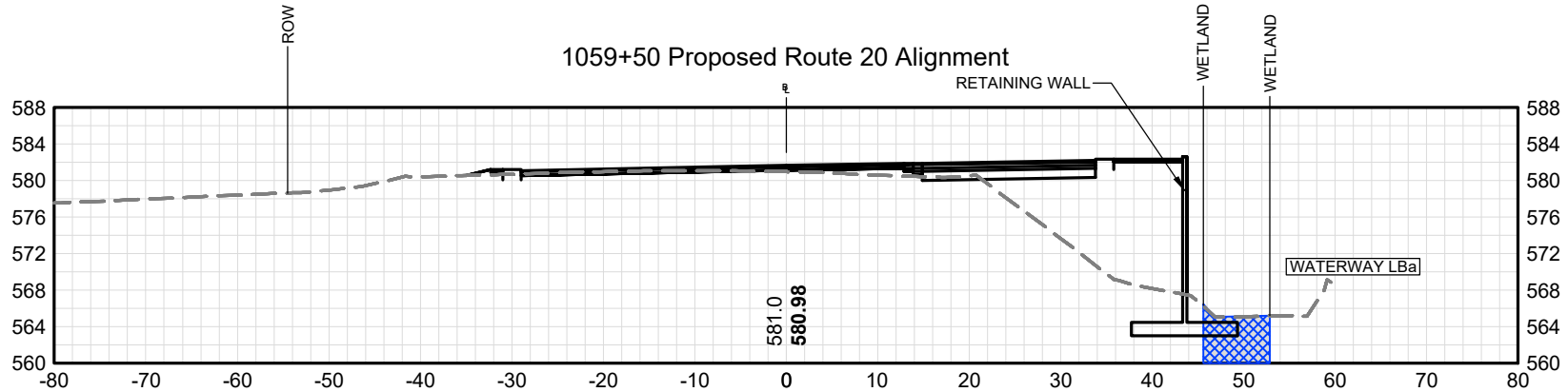
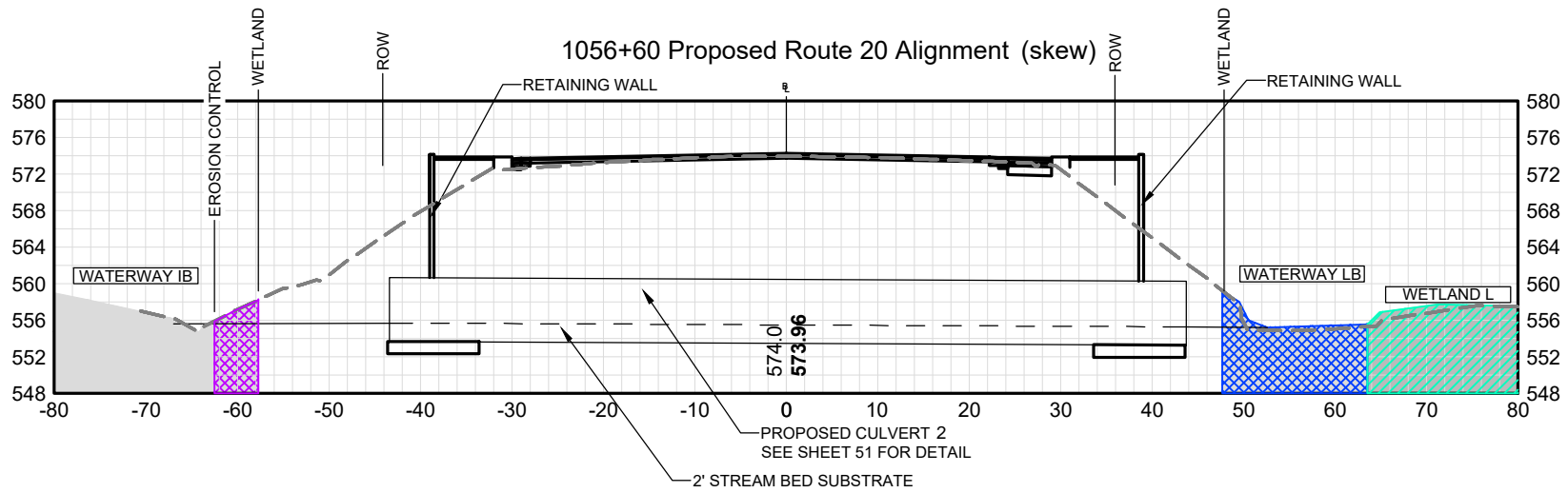
NOVEMBER 2021

SHEET#

32

TOTAL SHEETS

59



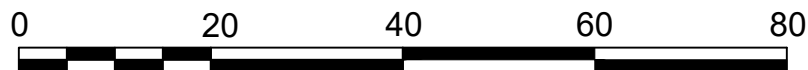
- | | | | |
|-----|---|---|---|
| --- | EXISTING ROADWAY | | |
| --- | PROPOSED ROADWAY | | |
| ■ | VEGETATED WETLANDS | | |
| ■ | WATERWAYS | | |
| ■ | TEMPORARY IMPACT TO WATERWAYS | ■ | PERMANENT IMPACT TO WATERWAYS |
| ■ | TEMPORARY IMPACT TO WETLANDS | ■ | PERMANENT IMPACT TO WATERWAYS (IN-KIND RESTORATION) |
| ■ | PERMANENT IMPACT TO WATERWAYS (IN-KIND RESTORATION) | ■ | PERMANENT IMPACT (LOSS) TO WW |
| ■ | PERMANENT IMPACT TO WETLANDS | | |

NOTES:
COLOR IS INTENDED TO CONVEY HORIZONTAL
EXTENT OF IMPACTS AND NOT INTENDED TO
DEPICT AN IMPACT DEPTH.



PROJECT TITLE

MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20



SCALE: 1 = 20'

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

CROSS SECTION - 3

DATE

NOVEMBER 2021

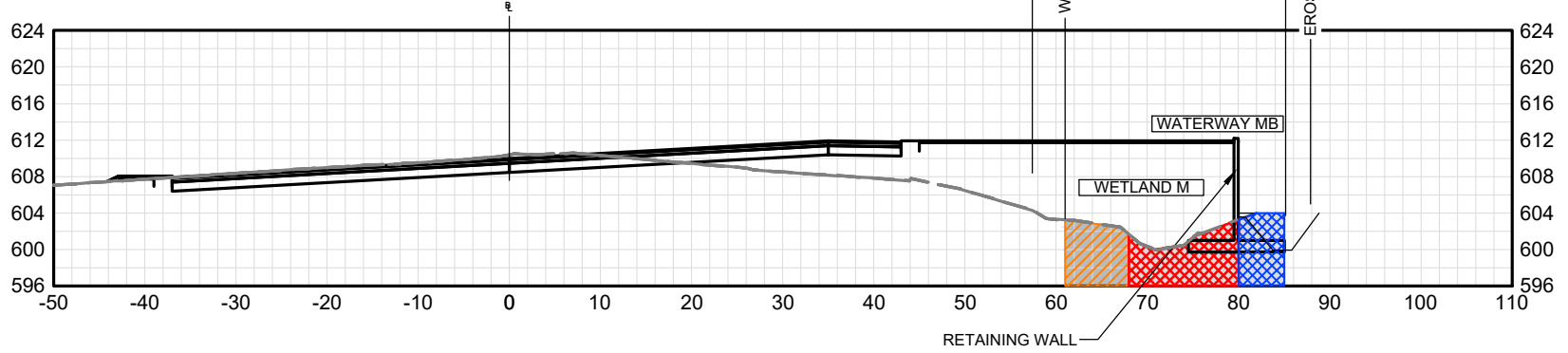
SHEET#

33

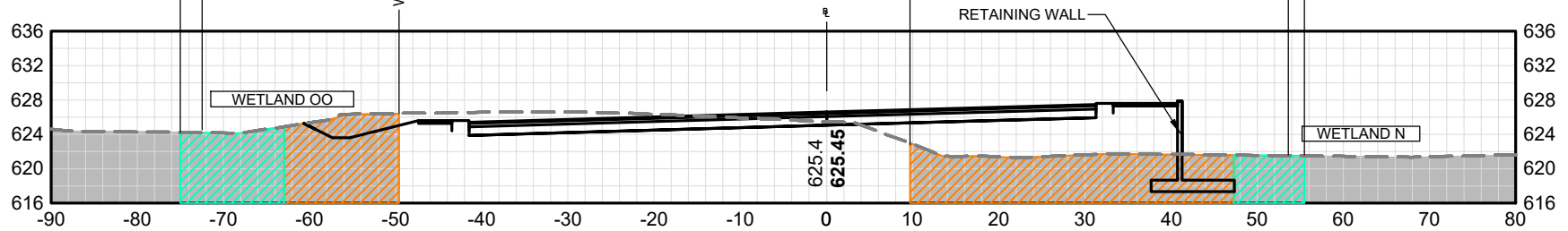
TOTAL SHEETS

59

1065+85 Proposed Route 20 Alignment



1074+00 Proposed Route 20 Alignment



- EXISTING ROADWAY
- PROPOSED ROADWAY
- VEGETATED WETLANDS
- WATERWAYS
- TEMPORARY IMPACT TO WATERWAYS
- TEMPORARY IMPACT TO WETLANDS
- PERMANENT IMPACT TO WATERWAYS (IN-KIND RESTORATION)
- PERMANENT IMPACT TO WETLANDS
- PERMANENT IMPACT TO WATERWAYS
- PERMANENT IMPACT (LOSS) TO WW

NOTES:
COLOR IS INTENDED TO CONVEY HORIZONTAL
EXTENT OF IMPACTS AND NOT INTENDED TO
DEPICT AN IMPACT DEPTH.



PROJECT TITLE

MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20



SCALE: 1 = 20'

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

CROSS SECTION - 4

DATE

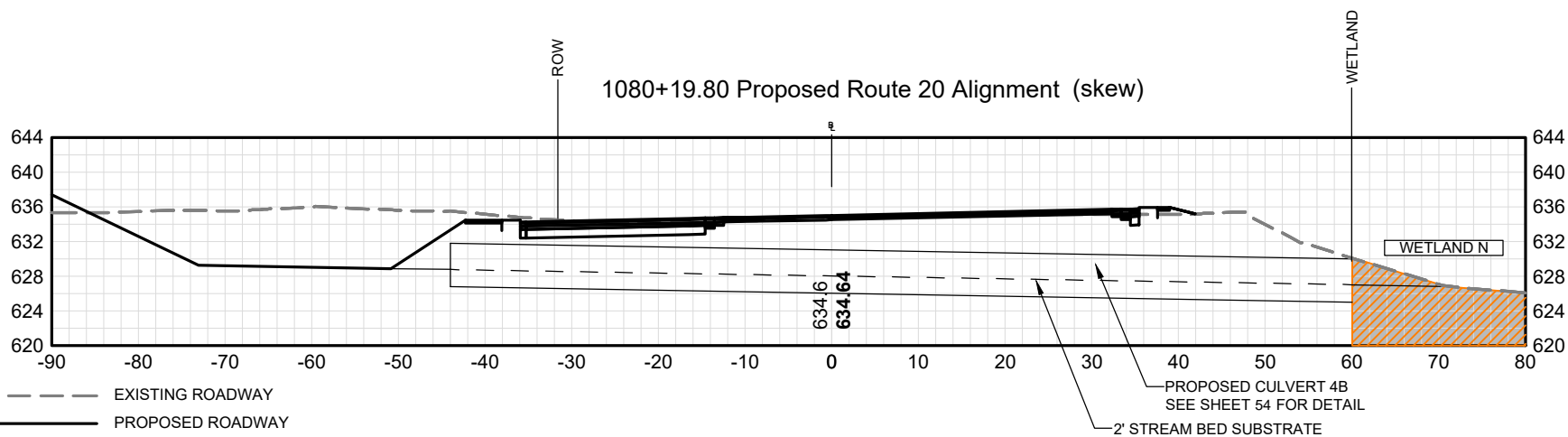
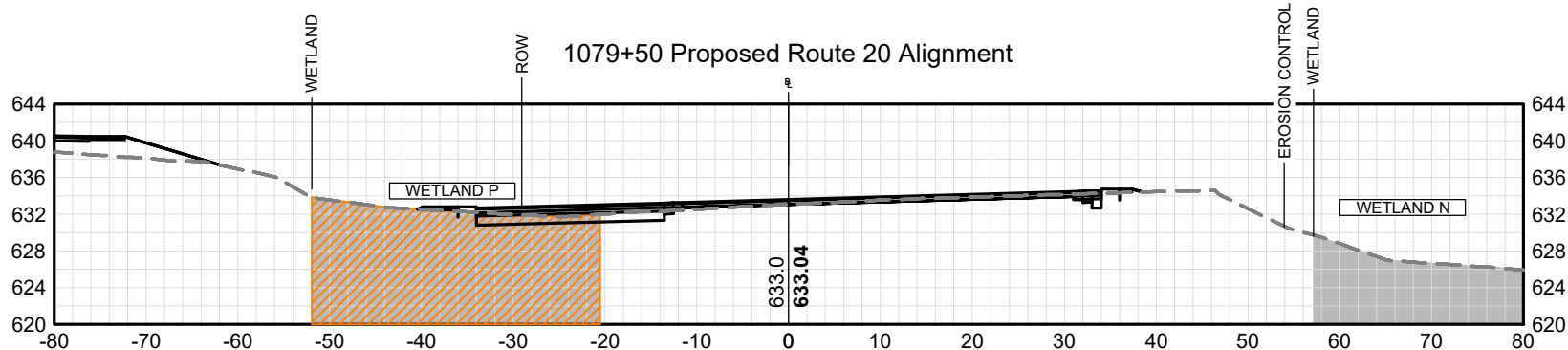
NOVEMBER 2021

SHEET#

34

TOTAL SHEETS

59



- EXISTING ROADWAY
- PROPOSED ROADWAY
- VEGETATED WETLANDS
- WATERWAYS
- ▨ TEMPORARY IMPACT TO WATERWAYS
- ▨ TEMPORARY IMPACT TO WETLANDS
- ▨ PERMANENT IMPACT TO WATERWAYS (IN-KIND RESTORATION)
- ▨ PERMANENT IMPACT TO WETLANDS
- ▨ PERMANENT IMPACT TO WATERWAYS
- ▨ PERMANENT IMPACT (LOSS) TO WW

NOTES:
 COLOR IS INTENDED TO CONVEY HORIZONTAL
 EXTENT OF IMPACTS AND NOT INTENDED TO
 DEPICT AN IMPACT DEPTH.



PROJECT TITLE

**MASSDOT PROJECT 602659
 RECONSTRUCTION OF ROUTE 20**



SCALE: 1 = 20'

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

CROSS SECTION -5

DATE

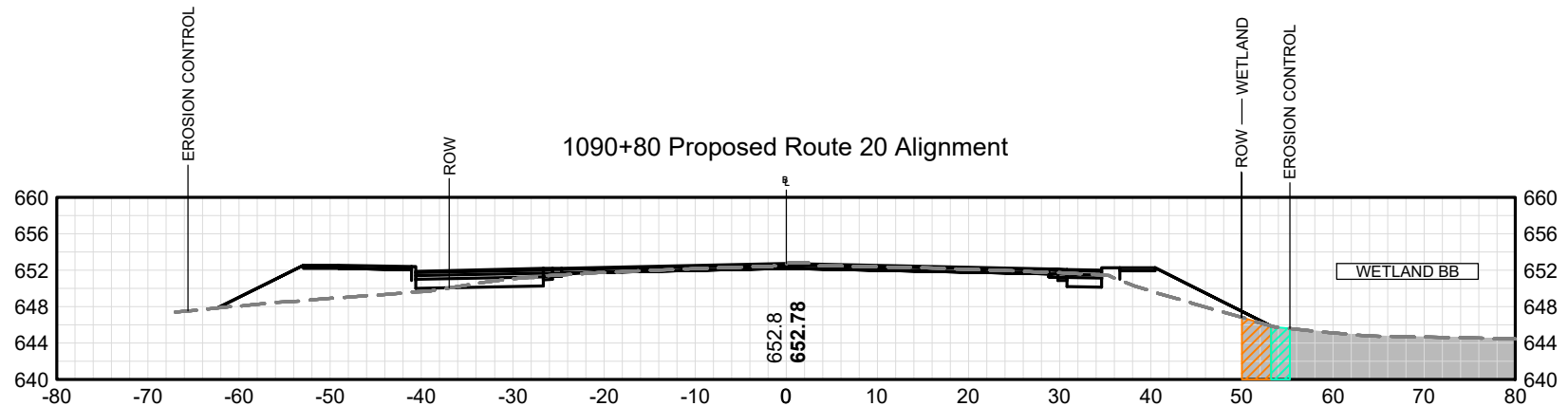
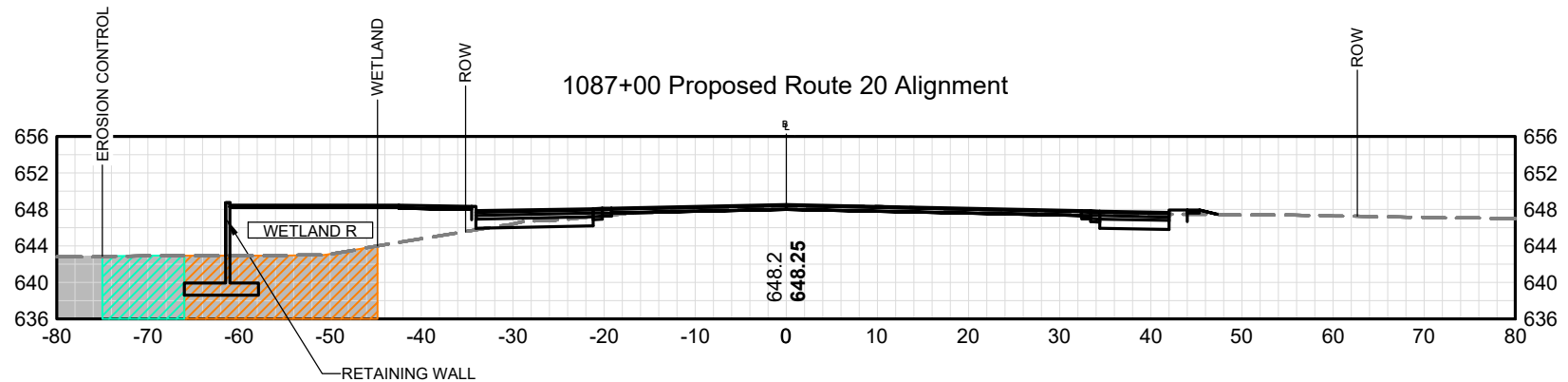
NOVEMBER 2021

SHEET#

35

TOTAL SHEETS

59



- EXISTING ROADWAY
- PROPOSED ROADWAY
- VEGETATED WETLANDS
- WATERWAYS
- TEMPORARY IMPACT TO WATERWAYS
- TEMPORARY IMPACT TO WETLANDS
- PERMANENT IMPACT TO WATERWAYS (IN-KIND RESTORATION)
- PERMANENT IMPACT TO WETLANDS
- PERMANENT IMPACT TO WATERWAYS
- PERMANENT IMPACT (LOSS) TO WW

NOTES:
COLOR IS INTENDED TO CONVEY HORIZONTAL
EXTENT OF IMPACTS AND NOT INTENDED TO
DEPICT AN IMPACT DEPTH.



PROJECT TITLE

MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20



SCALE: 1 = 20'

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

CROSS SECTION -6

DATE

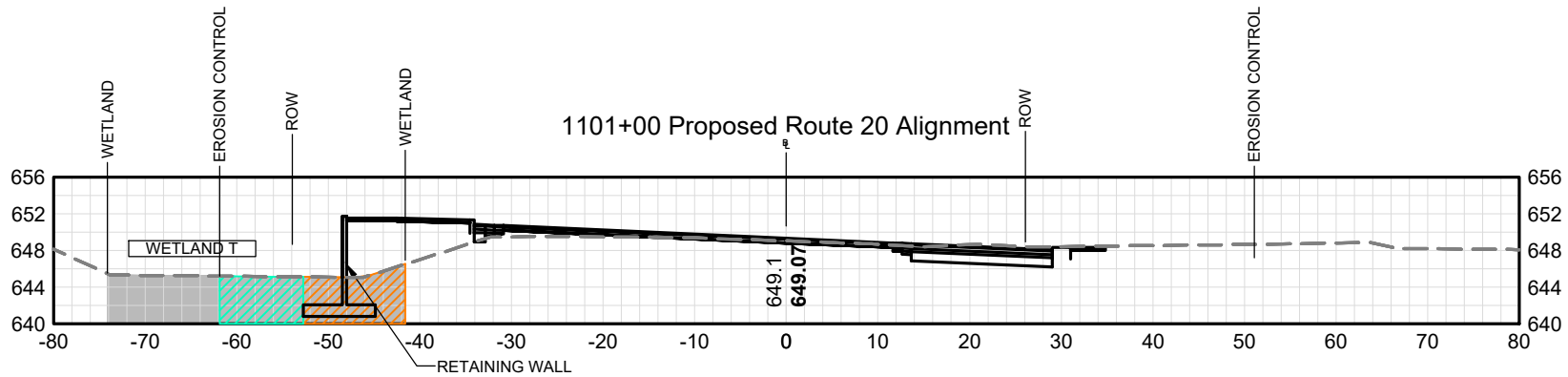
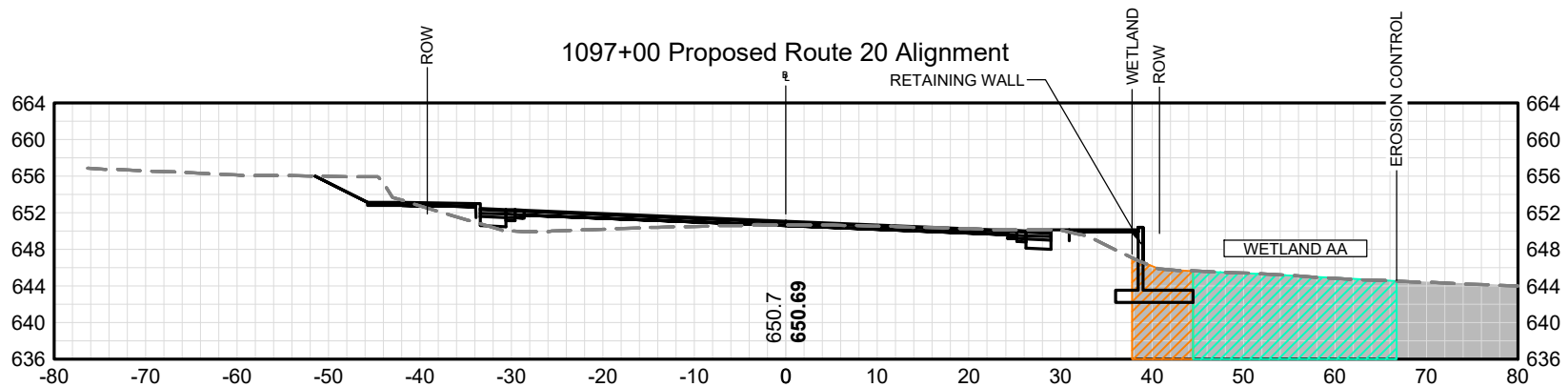
NOVEMBER 2021

SHEET#

36

TOTAL SHEETS

59



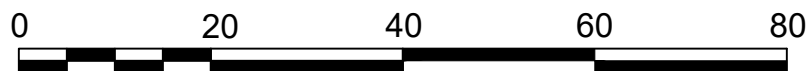
- | | | | |
|-----|-------------------------------|---|---|
| --- | EXISTING ROADWAY | | |
| — | PROPOSED ROADWAY | | |
| ■ | VEGETATED WETLANDS | | |
| ■ | WATERWAYS | | |
| ▨ | TEMPORARY IMPACT TO WATERWAYS | ▨ | PERMANENT IMPACT TO WATERWAYS |
| ▨ | TEMPORARY IMPACT TO WETLANDS | ▨ | PERMANENT IMPACT TO WATERWAYS (IN-KIND RESTORATION) |
| ▨ | PERMANENT IMPACT TO WATERWAYS | ▨ | PERMANENT IMPACT TO WETLANDS |
| ▨ | PERMANENT IMPACT TO WETLANDS | ▨ | PERMANENT IMPACT (LOSS) TO WW |

NOTES:
COLOR IS INTENDED TO CONVEY HORIZONTAL
EXTENT OF IMPACTS AND NOT INTENDED TO
DEPICT AN IMPACT DEPTH.



PROJECT TITLE

MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20



SCALE: 1 = 20'

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

CROSS SECTION -7

DATE

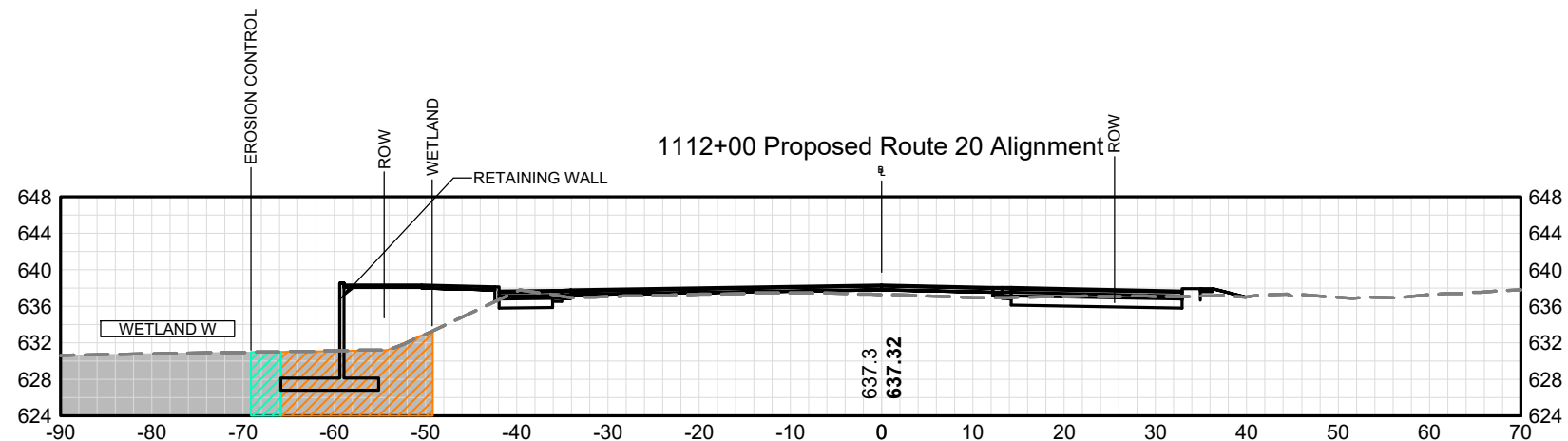
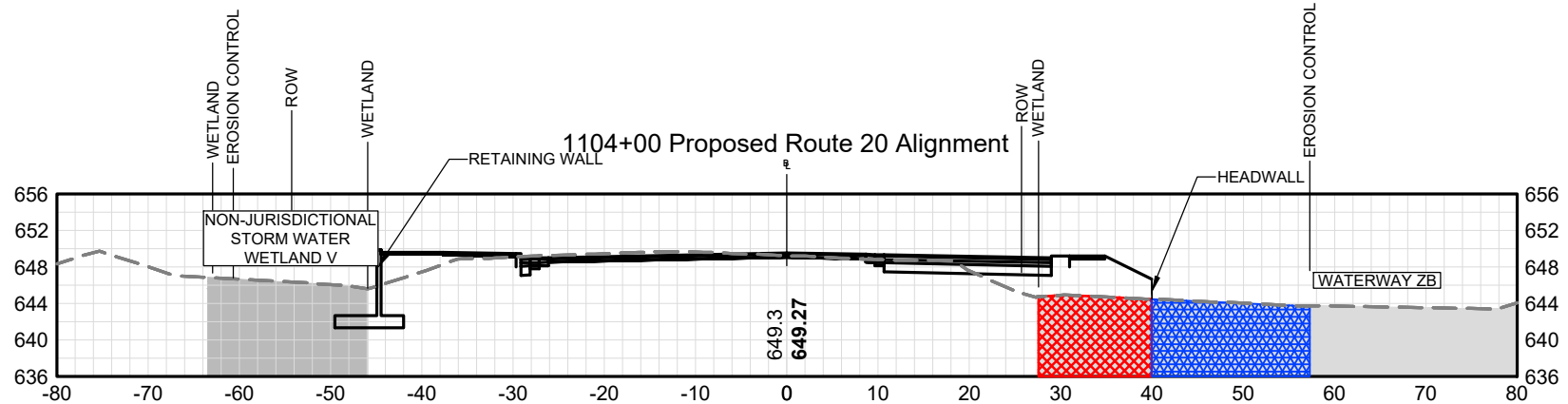
NOVEMBER 2021

SHEET#

37

TOTAL SHEETS

59



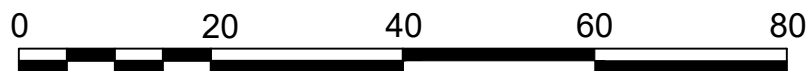
- EXISTING ROADWAY
- PROPOSED ROADWAY
- VEGETATED WETLANDS
- WATERWAYS
- TEMPORARY IMPACT TO WATERWAYS
- TEMPORARY IMPACT TO WETLANDS
- PERMANENT IMPACT TO WATERWAYS (IN-KIND RESTORATION)
- PERMANENT IMPACT TO WETLANDS
- PERMANENT IMPACT TO WATERWAYS
- PERMANENT IMPACT (LOSS) TO WW

NOTES:
COLOR IS INTENDED TO CONVEY HORIZONTAL
EXTENT OF IMPACTS AND NOT INTENDED TO
DEPICT AN IMPACT DEPTH.



PROJECT TITLE

MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20



SCALE: 1 = 20'

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

CROSS SECTION -8

DATE

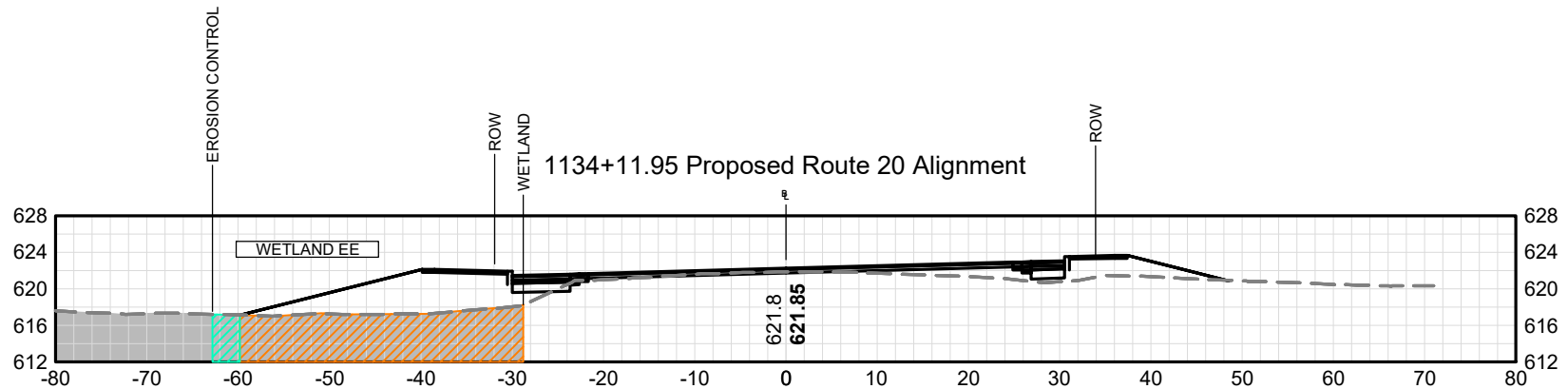
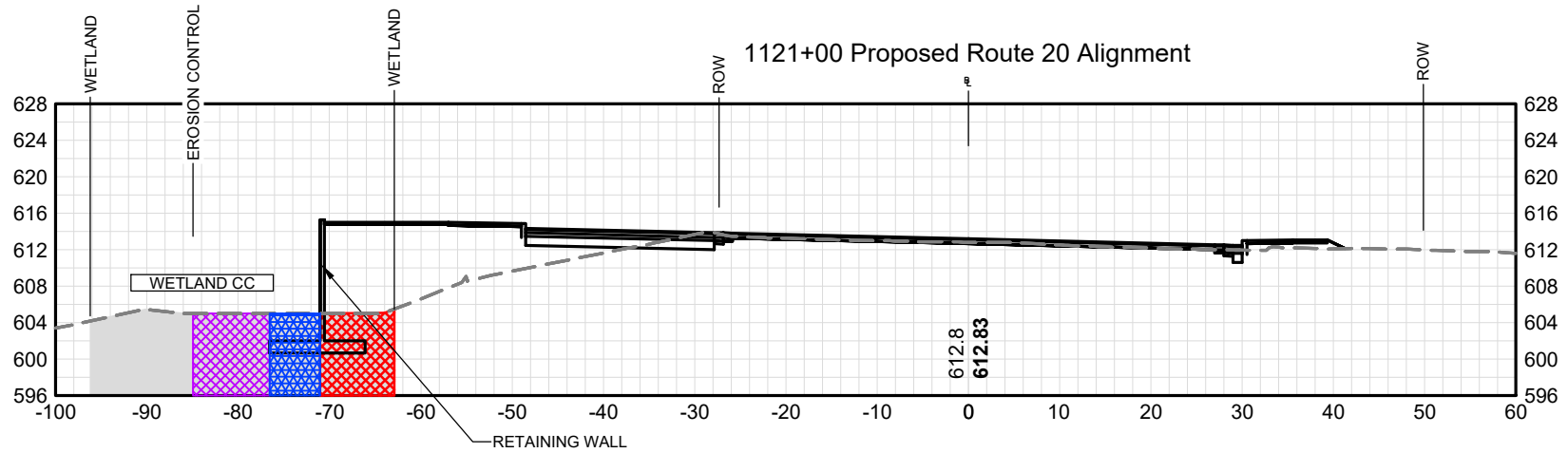
NOVEMBER 2021

SHEET#

38

TOTAL SHEETS

59



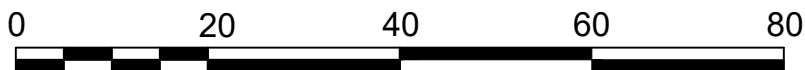
- | | | | |
|-----|---|---|---|
| --- | EXISTING ROADWAY | | |
| — | PROPOSED ROADWAY | | |
| ■ | VEGETATED WETLANDS | | |
| ■ | WATERWAYS | | |
| ■ | TEMPORARY IMPACT TO WATERWAYS | ■ | PERMANENT IMPACT TO WATERWAYS |
| ■ | TEMPORARY IMPACT TO WETLANDS | ■ | PERMANENT IMPACT TO WATERWAYS (IN-KIND RESTORATION) |
| ■ | PERMANENT IMPACT TO WATERWAYS (IN-KIND RESTORATION) | ■ | PERMANENT IMPACT (LOSS) TO WW |
| ■ | PERMANENT IMPACT TO WETLANDS | | |

NOTES:
COLOR IS INTENDED TO CONVEY HORIZONTAL
EXTENT OF IMPACTS AND NOT INTENDED TO
DEPICT AN IMPACT DEPTH.



PROJECT TITLE

MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20



SCALE: 1 = 20'

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

CROSS SECTION -9

DATE

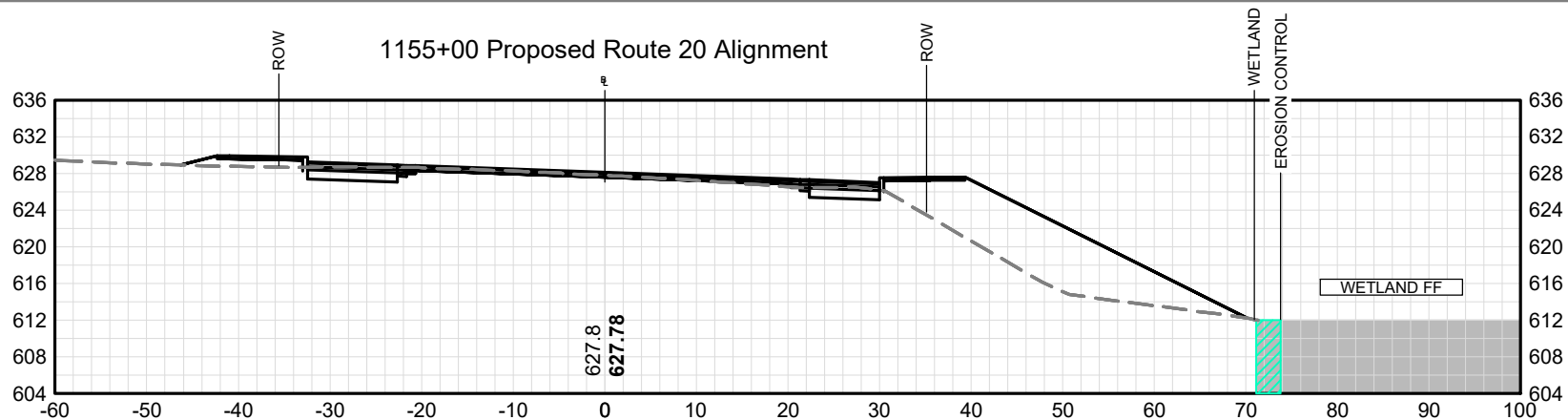
NOVEMBER 2021

SHEET#

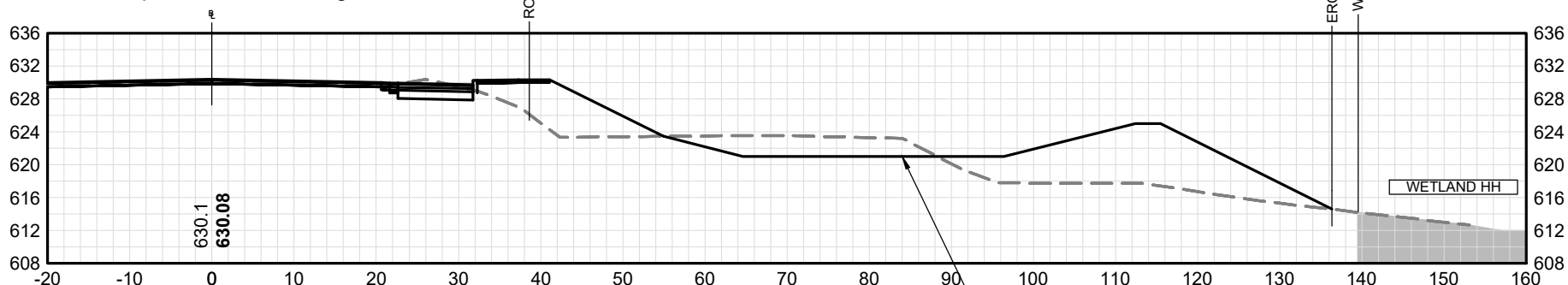
39

TOTAL SHEETS

59



1158+30 Proposed Route 20 Alignment



- EXISTING ROADWAY
- PROPOSED ROADWAY
- VEGETATED WETLANDS
- WATERWAYS
- TEMPORARY IMPACT TO WATERWAYS
- TEMPORARY IMPACT TO WETLANDS
- PERMANENT IMPACT TO WATERWAYS (IN-KIND RESTORATION)
- PERMANENT IMPACT TO WETLANDS
- PERMANENT IMPACT TO WATERWAYS
- PERMANENT IMPACT (LOSS) TO WW

NOTES:
COLOR IS INTENDED TO CONVEY HORIZONTAL
EXTENT OF IMPACTS AND NOT INTENDED TO
DEPICT AN IMPACT DEPTH.



PROJECT TITLE

MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20



SCALE: 1 = 20'

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

CROSS SECTION -10

DATE

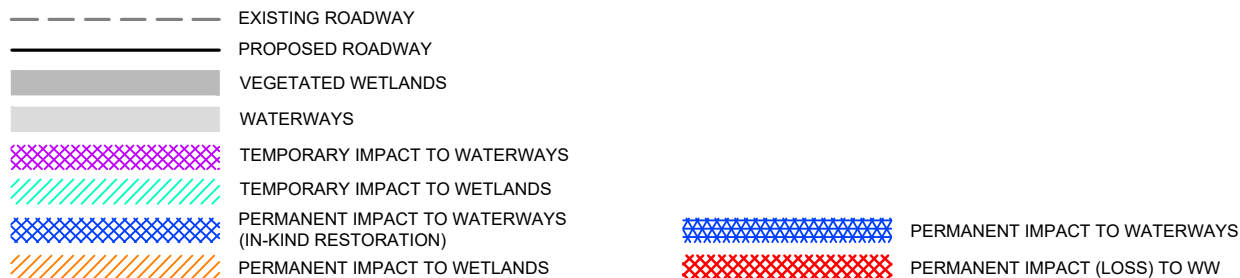
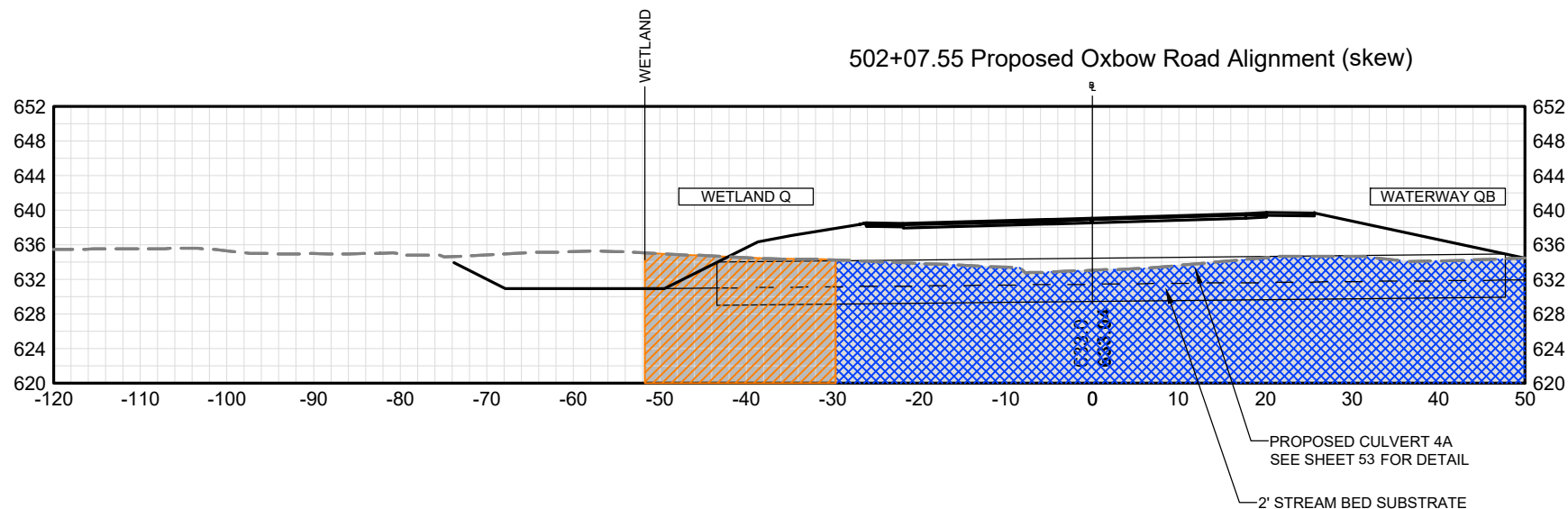
NOVEMBER 2021

SHEET#

40

TOTAL SHEETS

59

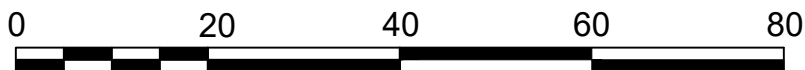


NOTES:
COLOR IS INTENDED TO CONVEY HORIZONTAL
EXTENT OF IMPACTS AND NOT INTENDED TO
DEPICT AN IMPACT DEPTH.



PROJECT TITLE

**MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20**



SCALE: 1 = 20'

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

CROSS SECTION -11

DATE

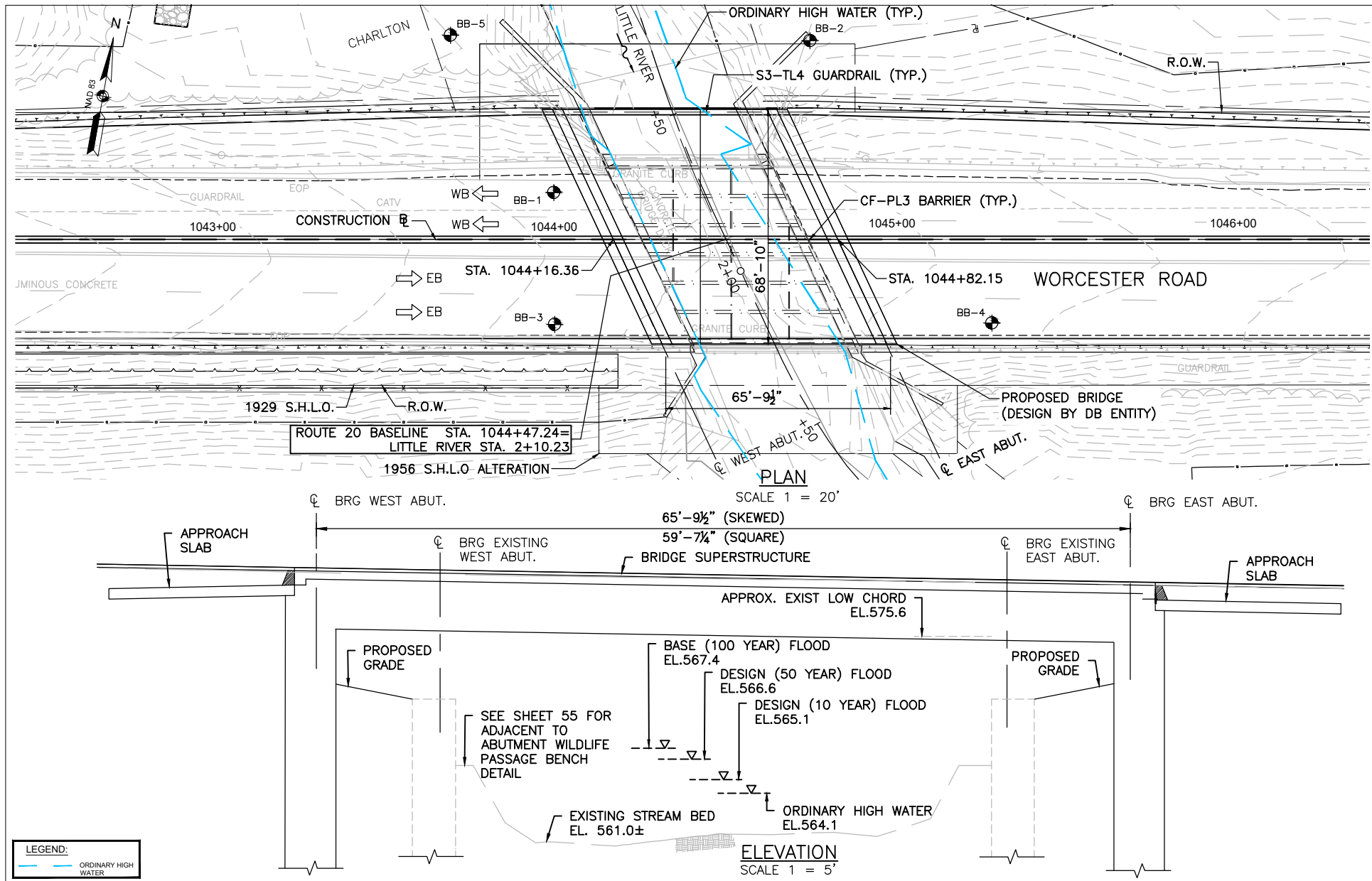
NOVEMBER 2021

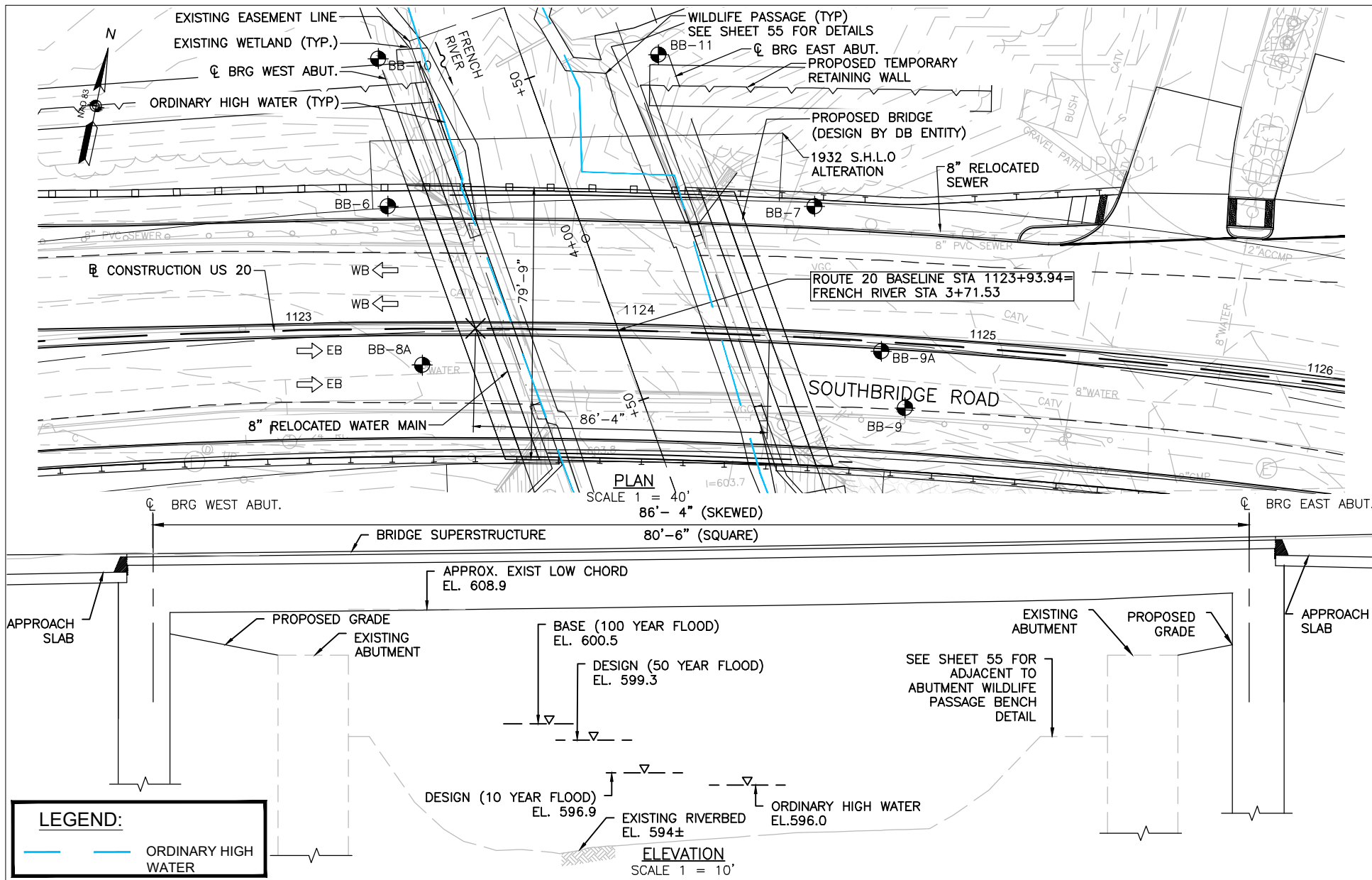
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41

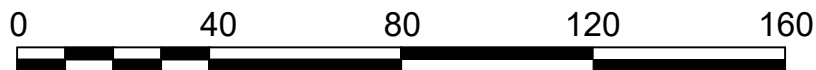
TOTAL SHEETS

59





PROJECT TITLE
**MASSDOT PROJECT 602659
 RECONSTRUCTION OF ROUTE 20**



SCALE: 1" = 40'

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

**FRENCH RIVER BRIDGE
 PLAN & ELEVATION**

DATE

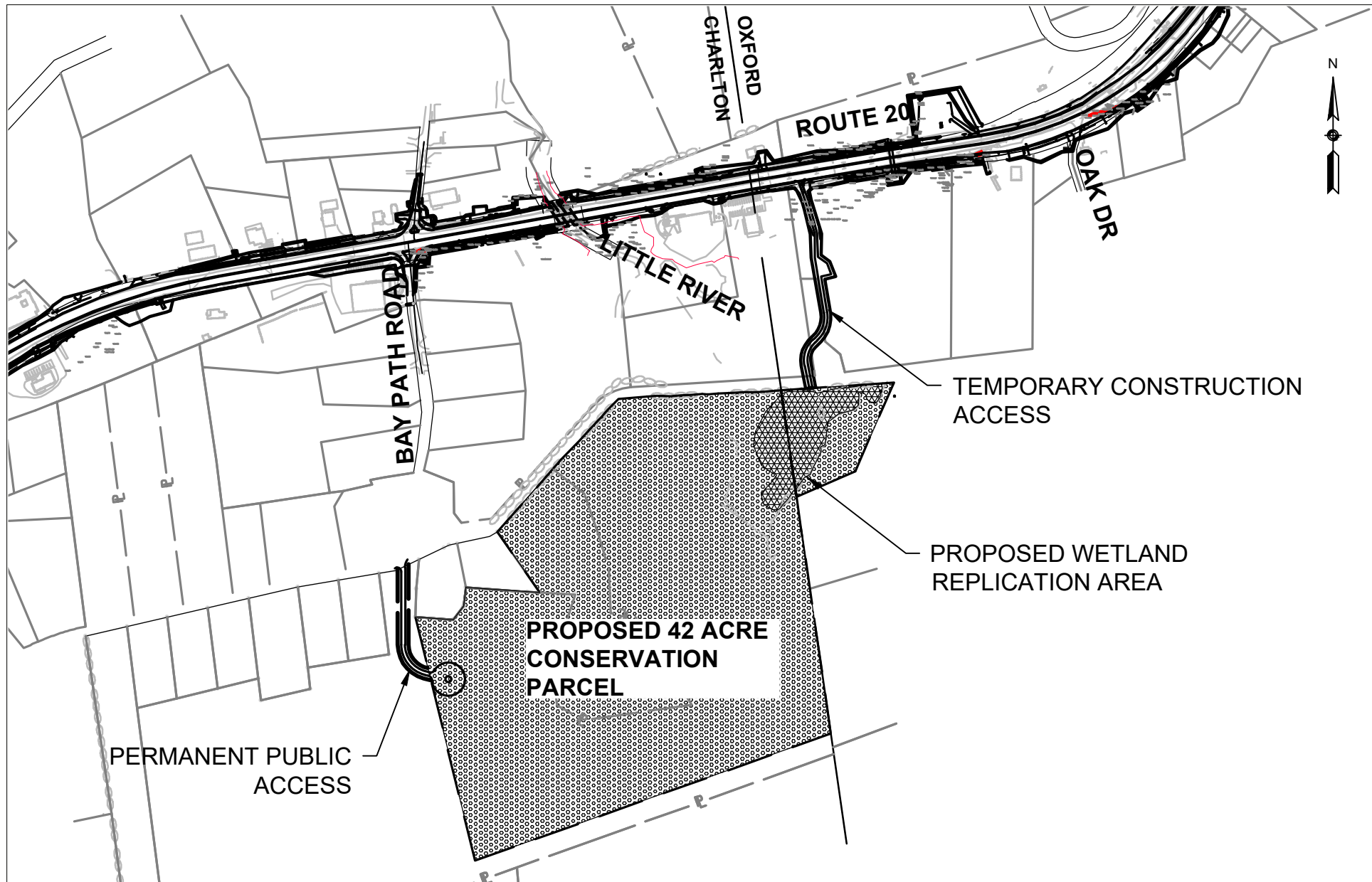
NOVEMBER 2021

SHEET#

43

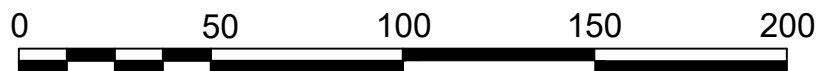
TOTAL SHEETS

59



PROJECT TITLE

**MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20**



SCALE: 1 = 500'

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

CONSERVATION PARCEL

DATE

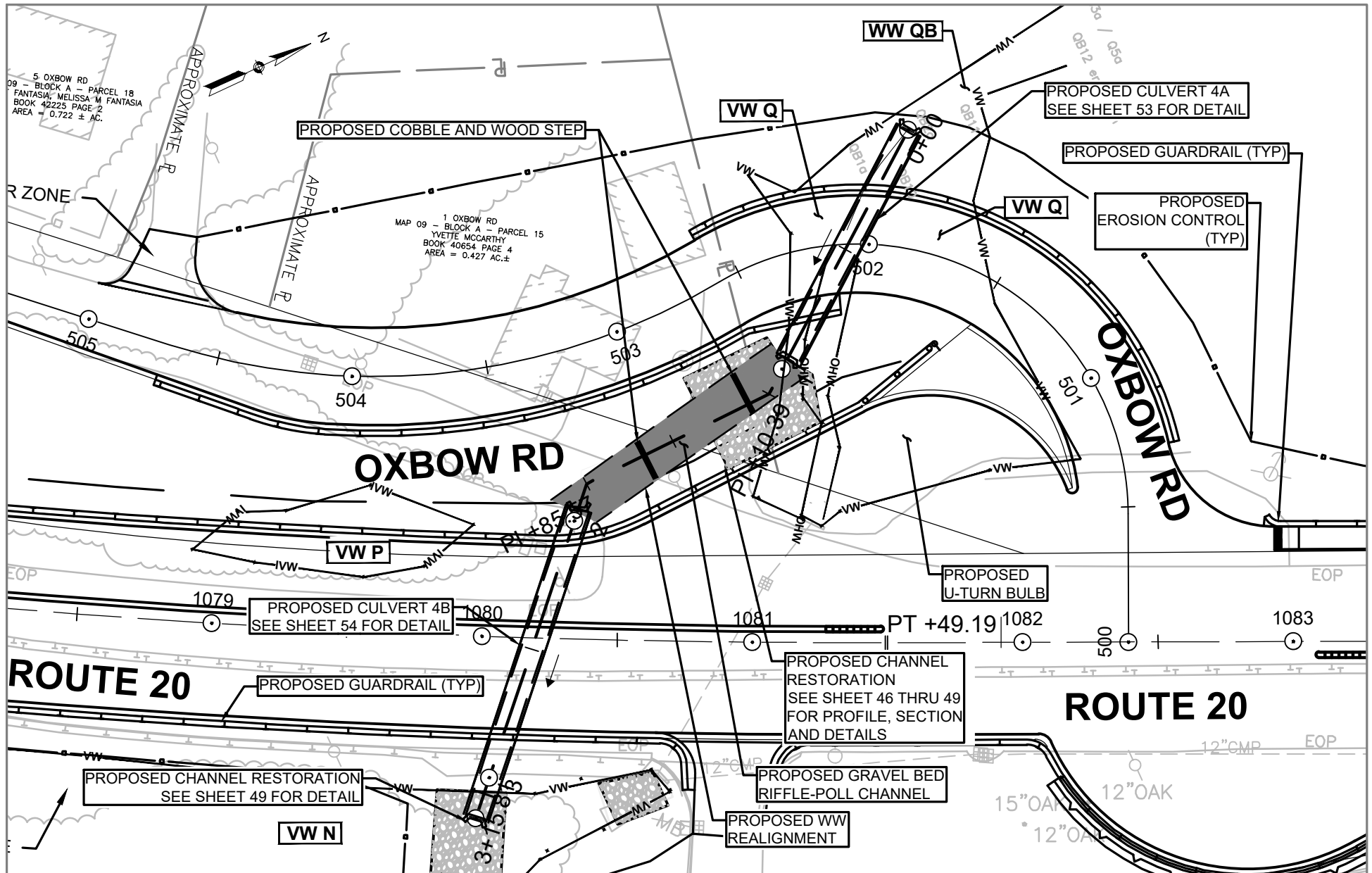
NOVEMBER 2021

SHEET#

44

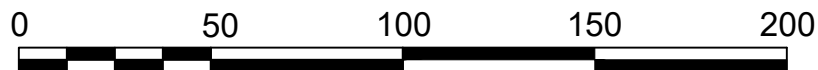
TOTAL SHEETS

59



PROJECT TITLE

MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20



SCALE: 1" = 50'

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

STREAM RESTORATION
PLAN

DATE

NOVEMBER 2021

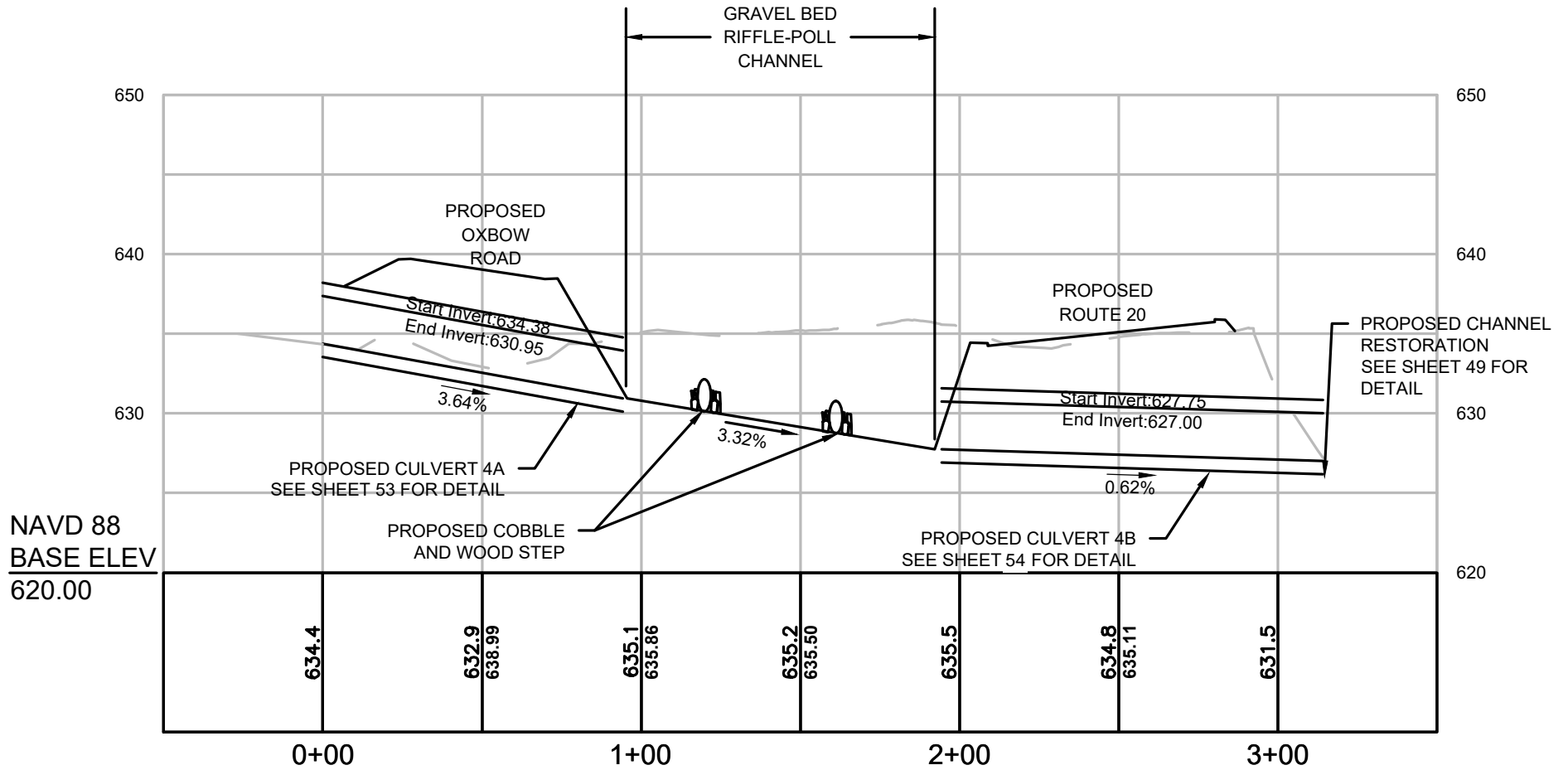
SHEET#

45

TOTAL SHEETS

59

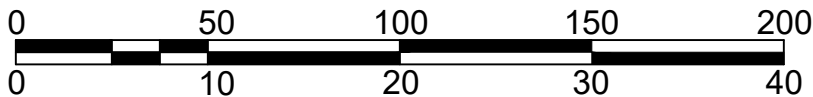
SWALE



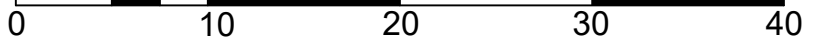
PROJECT TITLE

MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20

HOR. SCALE IN FEET



VER. SCALE IN FEET



PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

STREAM RESTORATION
PROFILE

DATE

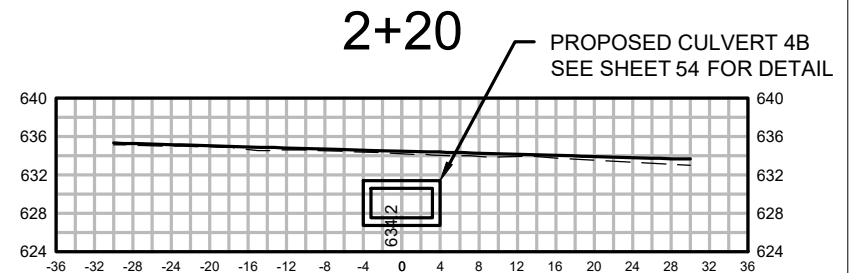
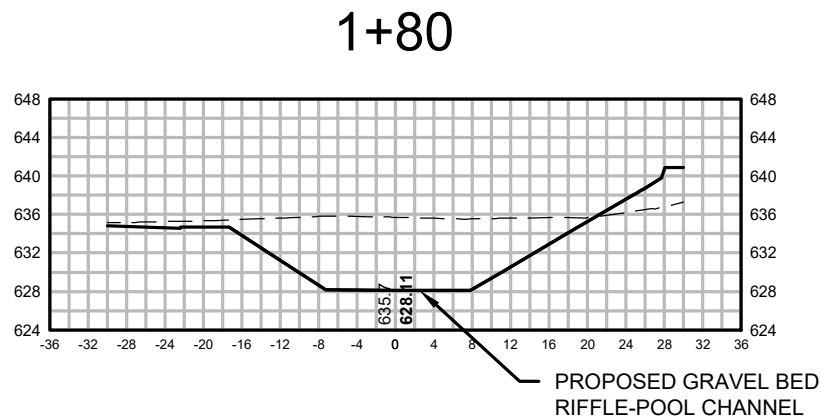
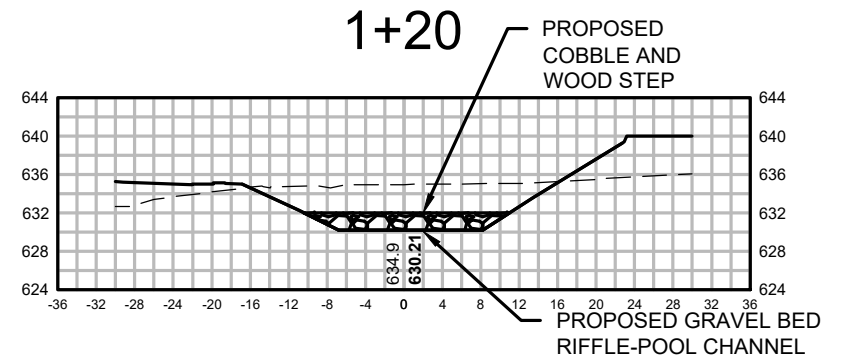
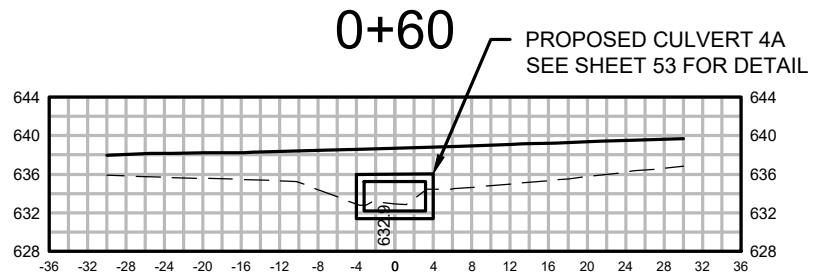
NOVEMBER 2021

SHEET#

46

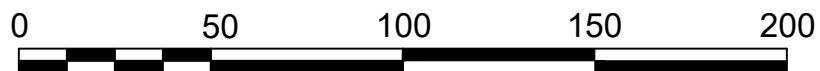
TOTAL SHEETS

59



PROJECT TITLE

MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20



SCALE: 1" = 20'

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

STREAM RESTORATION
SECTIONS

DATE

NOVEMBER 2021

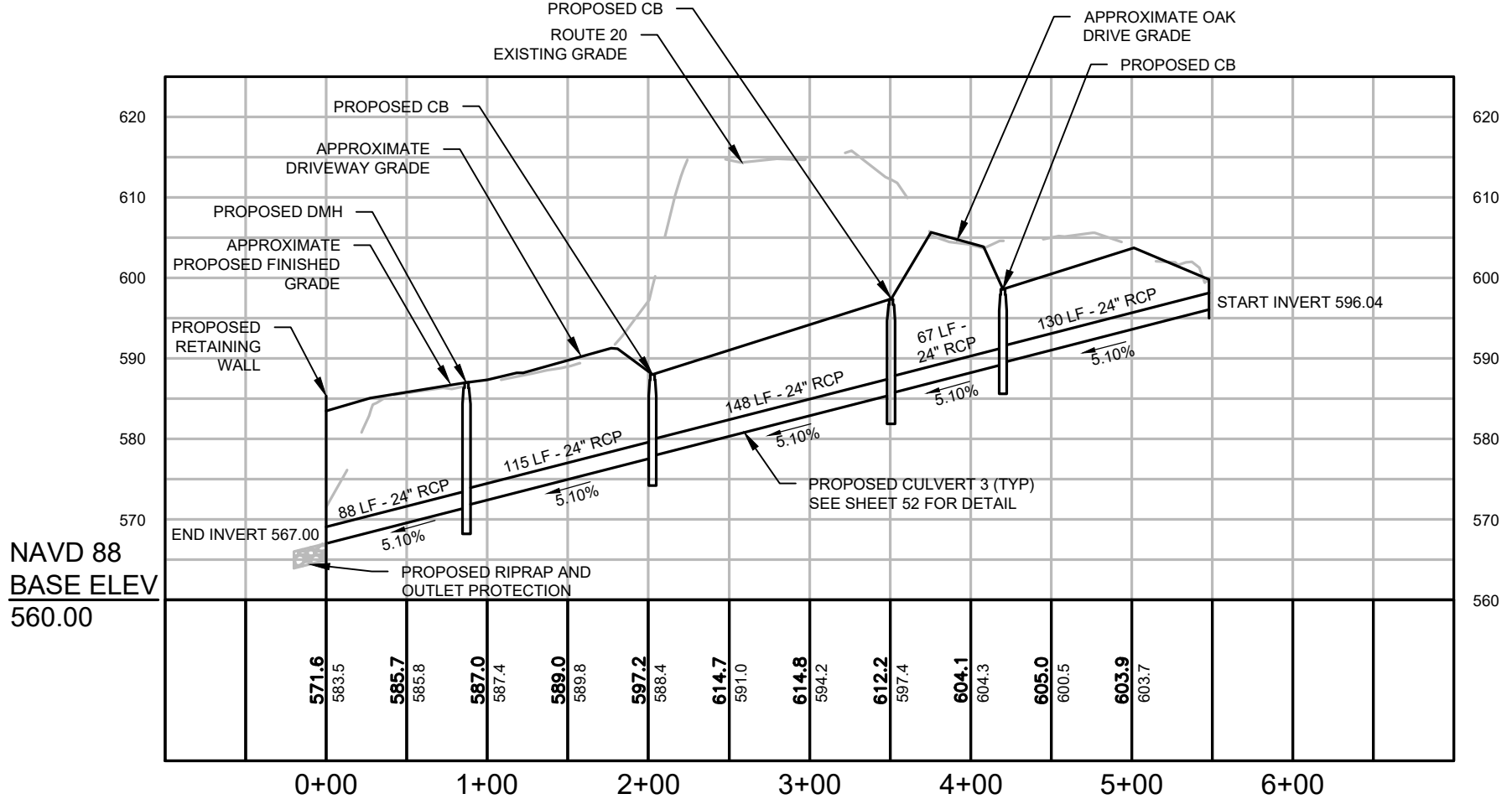
SHEET#

47

TOTAL SHEETS

59

CULVERT 3



NAVD 88
BASE ELEV
560.00



PROJECT TITLE

**MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20**

HOR. SCALE IN FEET

0 100 200 300 400

0 20 40 60 80

VER. SCALE IN FEET

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

CULVERT 3 PROFILE

DATE

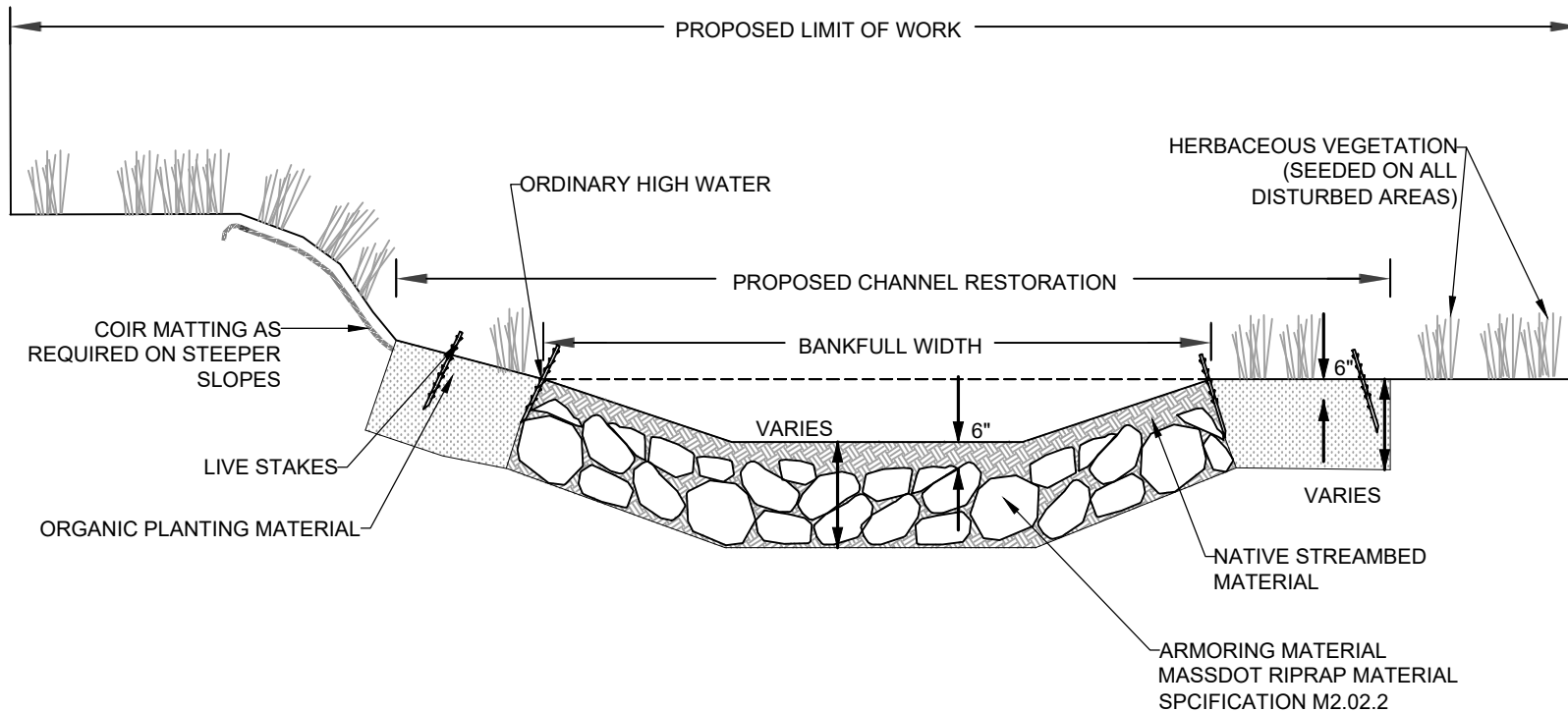
NOVEMBER 2021

SHEET#

48

TOTAL SHEETS

59



TYPICAL CHANNEL RESTORATION CROSS SECTION

NOT TO SCALE



PROJECT TITLE

MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

STREAMBED/BANK
RESTORATION DETAIL

DATE

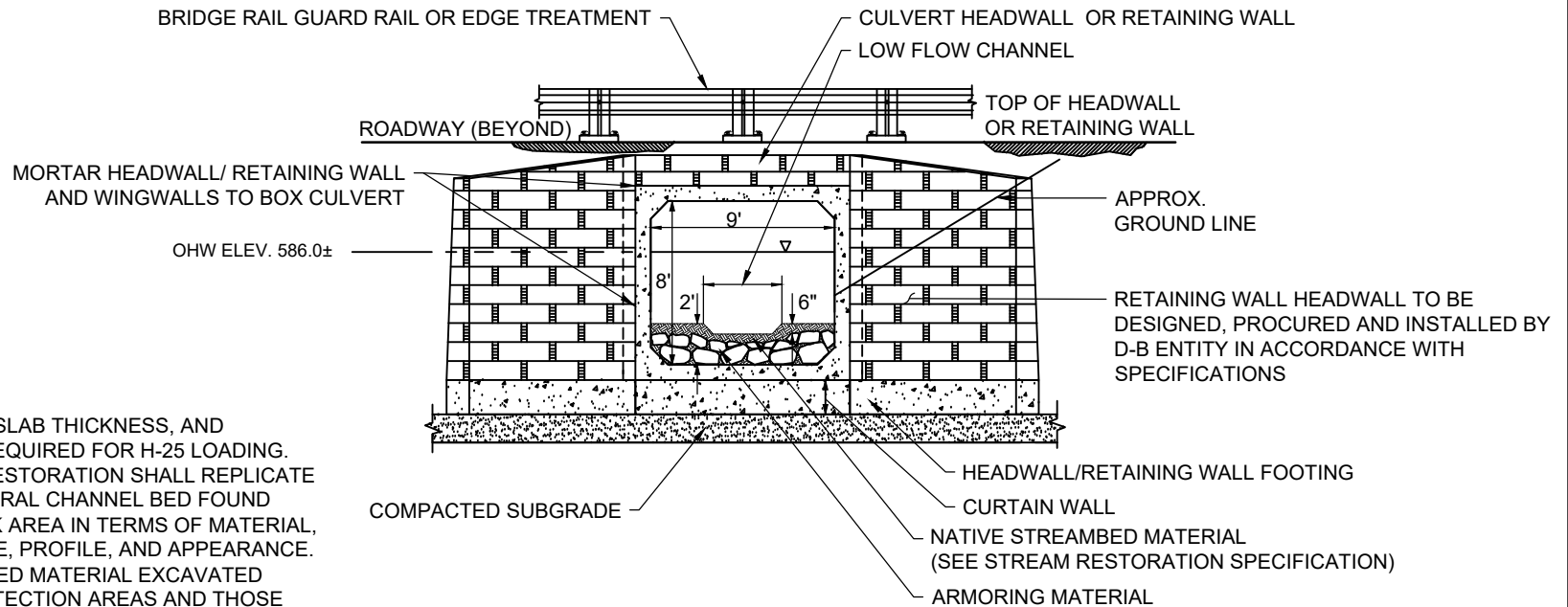
NOVEMBER 2021

SHEET#

49

TOTAL SHEETS

59



NOTES:

1. WALL, FLOOR, TOP SLAB THICKNESS, AND REINFORCING AS REQUIRED FOR H-25 LOADING.
2. THE STREAMBED RESTORATION SHALL REPLICATE THE EXISTING NATURAL CHANNEL BED FOUND OUTSIDE THE WORK AREA IN TERMS OF MATERIAL, ROUGHNESS, SHAPE, PROFILE, AND APPEARANCE.
3. EXISTING STREAMBED MATERIAL EXCAVATED FROM OUTLET PROTECTION AREAS AND THOSE LOCATIONS OF PERMANENT WATERWAY IMPACTS SHALL BE STOCKPILED TO FACILITATE REINSTALLATION AND REPLICATION OF THE NATURAL STREAMBED. THE EXCAVATED STREAMBED MATERIAL SHALL BE REUSED TO FILL THE VOIDS IN THE PROPOSED ARMORING MATERIAL.
4. ADDITIONAL STREAMBED MATERIAL SHALL BE LOCALLY SOURCED AND MATCH THE COMPOSITION OF THE EXISTING NATIVE RIVERBED.
5. THE PROPOSED CULVERT AND STREAMBED RESTORATION IS REQUIRED TO COMPLY WITH ALL ENVIRONMENTAL PERMITS ISSUED FOR THE PROJECT.

CULVERT 1 CROSS SECTION

NOT TO SCALE



PROJECT TITLE

**MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20**

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

CULVERT DETAIL - 1

DATE

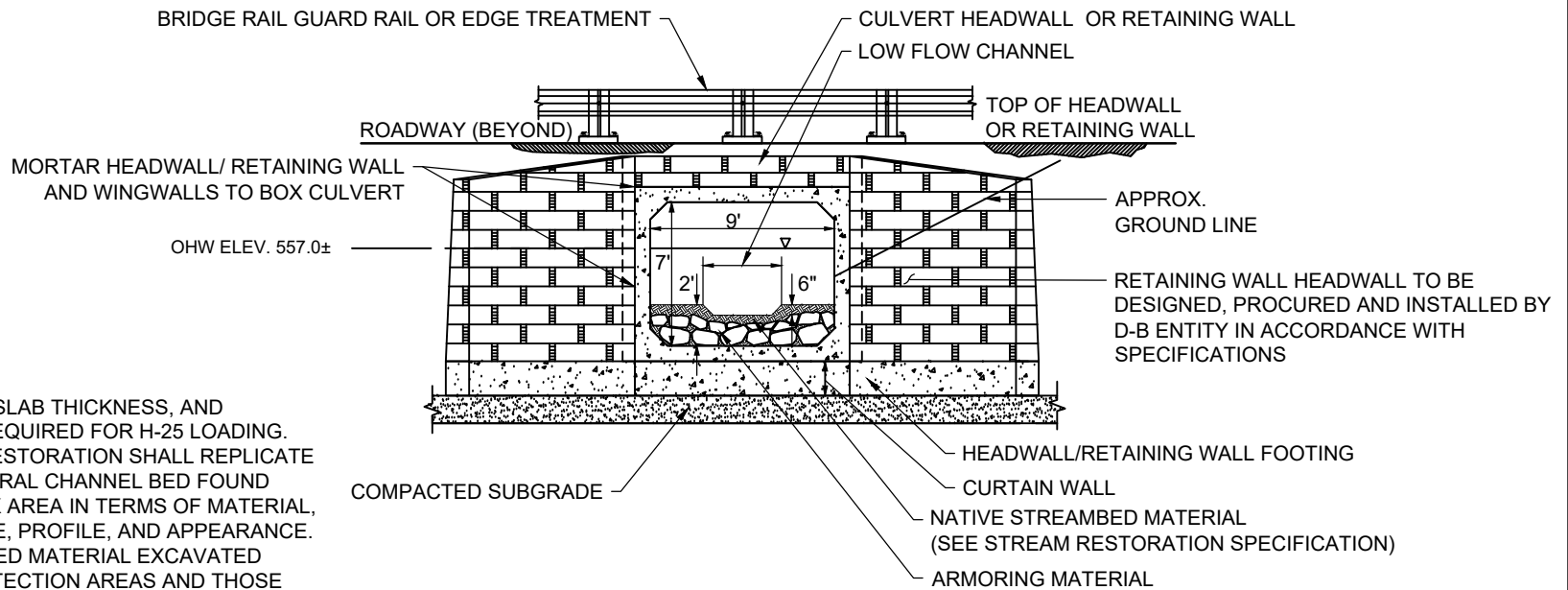
NOVEMBER 2021

SHEET#

50

TOTAL SHEETS

59



NOTES:

1. WALL, FLOOR, TOP SLAB THICKNESS, AND REINFORCING AS REQUIRED FOR H-25 LOADING.
2. THE STREAMBED RESTORATION SHALL REPLICATE THE EXISTING NATURAL CHANNEL BED FOUND OUTSIDE THE WORK AREA IN TERMS OF MATERIAL, ROUGHNESS, SHAPE, PROFILE, AND APPEARANCE.
3. EXISTING STREAMBED MATERIAL EXCAVATED FROM OUTLET PROTECTION AREAS AND THOSE LOCATIONS OF PERMANENT WATERWAY IMPACTS SHALL BE STOCKPILED TO FACILITATE REINSTALLATION AND REPLICATION OF THE NATURAL STREAMBED. THE EXCAVATED STREAMBED MATERIAL SHALL BE REUSED TO FILL THE VOIDS IN THE PROPOSED ARMORING MATERIAL.
4. ADDITIONAL STREAMBED MATERIAL SHALL BE LOCALLY SOURCED AND MATCH THE COMPOSITION OF THE EXISTING NATIVE RIVERBED.
5. THE PROPOSED CULVERT AND STREAMBED RESTORATION IS REQUIRED TO COMPLY WITH ALL ENVIRONMENTAL PERMITS ISSUED FOR THE PROJECT.

CULVERT 2 CROSS SECTION

NOT TO SCALE



PROJECT TITLE

**MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20**

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

CULVERT DETAIL - 2

DATE

NOVEMBER 2021

SHEET#

51

TOTAL SHEETS

59

BRIDGE RAIL GUARD RAIL OR EDGE TREATMENT

ROADWAY

RETAINING WALL

OHW ELEV. 568.26±

TOP OF HEADWALL

APPROX.
GROUND LINE

CULVERT HEADWALL TO BE
DESIGNED, PROCURED
AND INSTALLED BY D-B
ENTITY IN ACCORDANCE
WITH SPECIFICATIONS

HEADWALL/RETAINING WALL FOOTING

CURTAIN WALL

COMPACTED SUBGRADE

NOTES:

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4. THE PROPOSED CULVERT AND STREAMBED RESTORATION IS REQUIRED TO COMPLY WITH ALL ENVIRONMENTAL PERMITS ISSUED FOR THE PROJECT.

CULVERT 3 CROSS SECTION AT OUTLET

NOT TO SCALE



PROJECT TITLE

**MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20**

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

CULVERT DETAIL - 3

DATE

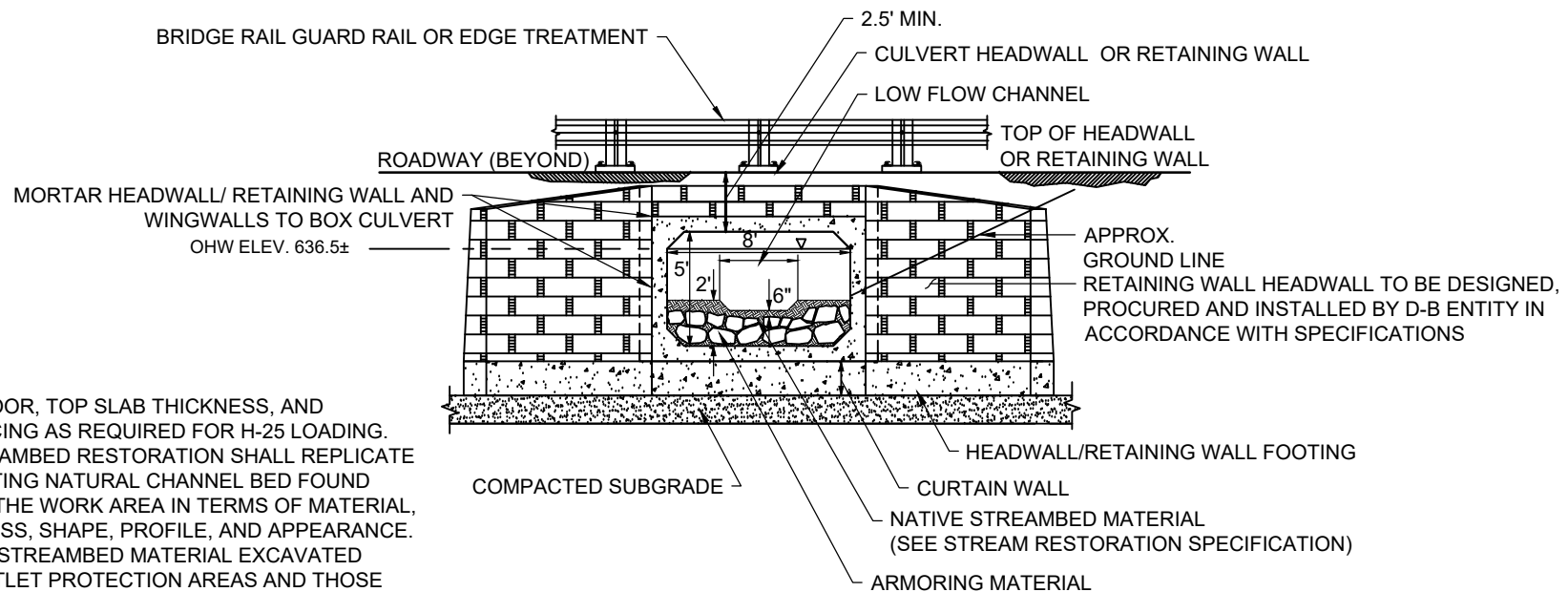
NOVEMBER 2021

SHEET#

52

TOTAL SHEETS

59



NOTES:

1. WALL, FLOOR, TOP SLAB THICKNESS, AND REINFORCING AS REQUIRED FOR H-25 LOADING.
2. THE STREAMBED RESTORATION SHALL REPLICATE THE EXISTING NATURAL CHANNEL BED FOUND OUTSIDE THE WORK AREA IN TERMS OF MATERIAL, ROUGHNESS, SHAPE, PROFILE, AND APPEARANCE.
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CULVERT 4A CROSS SECTION

NOT TO SCALE



PROJECT TITLE

MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

CULVERT DETAIL - 4

DATE

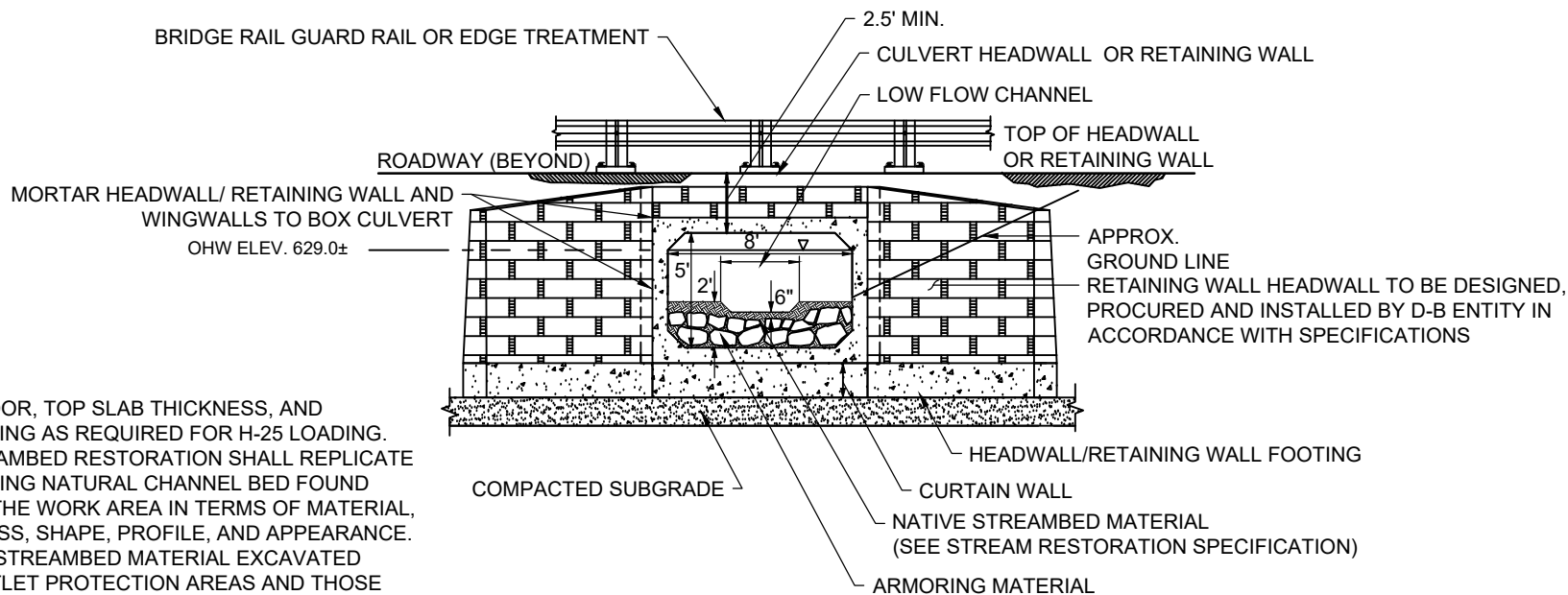
NOVEMBER 2021

SHEET#

53

TOTAL SHEETS

59



NOTES:

1. WALL, FLOOR, TOP SLAB THICKNESS, AND REINFORCING AS REQUIRED FOR H-25 LOADING.
2. THE STREAMBED RESTORATION SHALL REPLICATE THE EXISTING NATURAL CHANNEL BED FOUND OUTSIDE THE WORK AREA IN TERMS OF MATERIAL, ROUGHNESS, SHAPE, PROFILE, AND APPEARANCE.
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5. THE PROPOSED CULVERT AND STREAMBED RESTORATION IS REQUIRED TO COMPLY WITH ALL ENVIRONMENTAL PERMITS ISSUED FOR THE PROJECT.

CULVERT 4B CROSS SECTION

NOT TO SCALE



PROJECT TITLE

MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

CULVERT DETAIL - 5

DATE

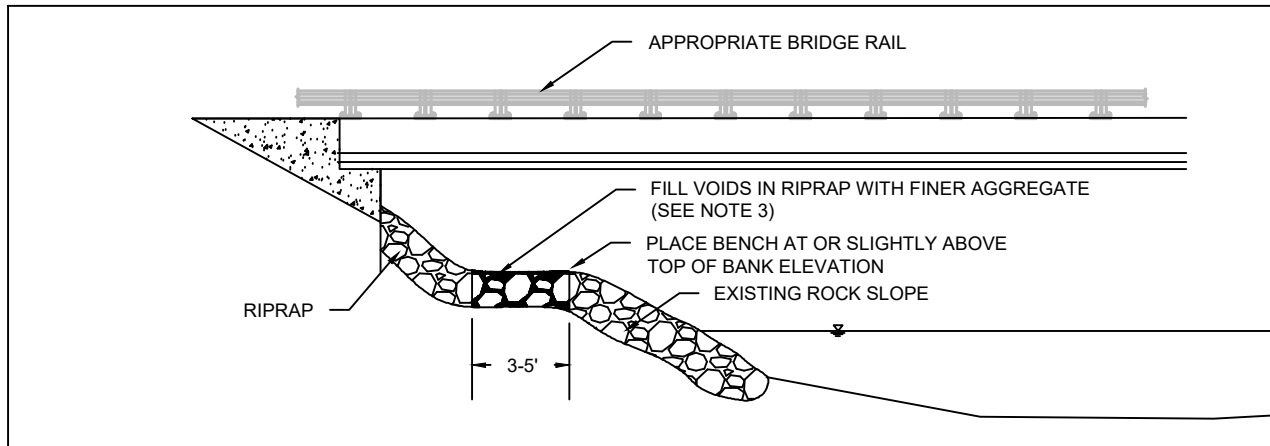
NOVEMBER 2021

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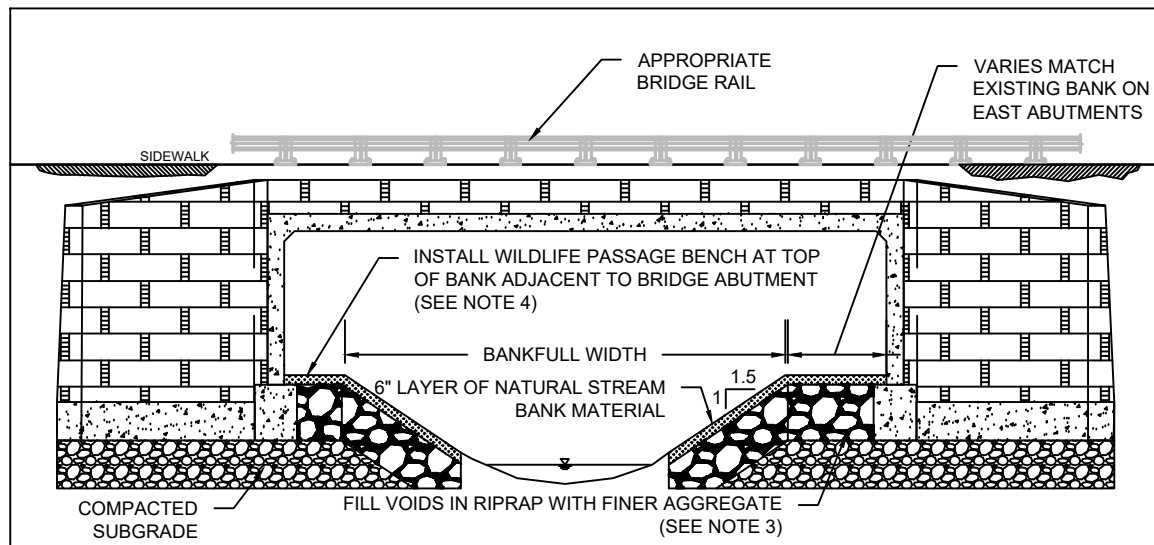
54

TOTAL SHEETS

59



ELEVATION PROFILE: MID-SLOPE WILDLIFE PASSAGE BENCH



ELEVATION PROFILE: ADJACENT TO ABUTMENT WILDLIFE PASSAGE BENCH

NOTES:

1. THIS IS A CONCEPTUAL DRAWING INTENDED TO ILLUSTRATE TYPICAL BANK DESIGNS.
2. ALL MATERIALS, DIMENSIONS, AND OTHER NOTATIONS SHOWN ON THIS DRAWING ARE FOR ILLUSTRATIVE PURPOSES. THE D-B ENTITY SHALL DETERMINE ACTUAL MATERIALS, DIMENSIONS, AND OTHER INFORMATION PERTINENT TO THE PROJECT LOCATION, CONDITIONS, AND SELECTED STRUCTURE COMPONENTS.
3. AGGREGATE USED TO FILL VOIDS IN RIPRAP CAN BE UNIFORM MIX OF GRAVEL, COBBLES, AND SMALL BOULDERS TO CONSTRUCT A WALKABLE SLOPE THAT REPLICATES A NATURAL BANK PROFILE.
4. WILDLIFE PASSAGE BENCH CONSTRUCTED OF NATURAL GRAVEL, COBBLE AND BOULDER MATERIAL IN ACCORDANCE WITH STREAMBED RESTORATION SPECIFICATIONS. THE BENCH SHALL BE A 6" THICK LAYER OF NATURAL BANK MATERIAL, AND SHALL PROVIDE A WALKABLE SLOPE THAT REPLICATES A NATURAL BANK PROFILE.



PROJECT TITLE

MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

BRIDGE DETAIL

DATE

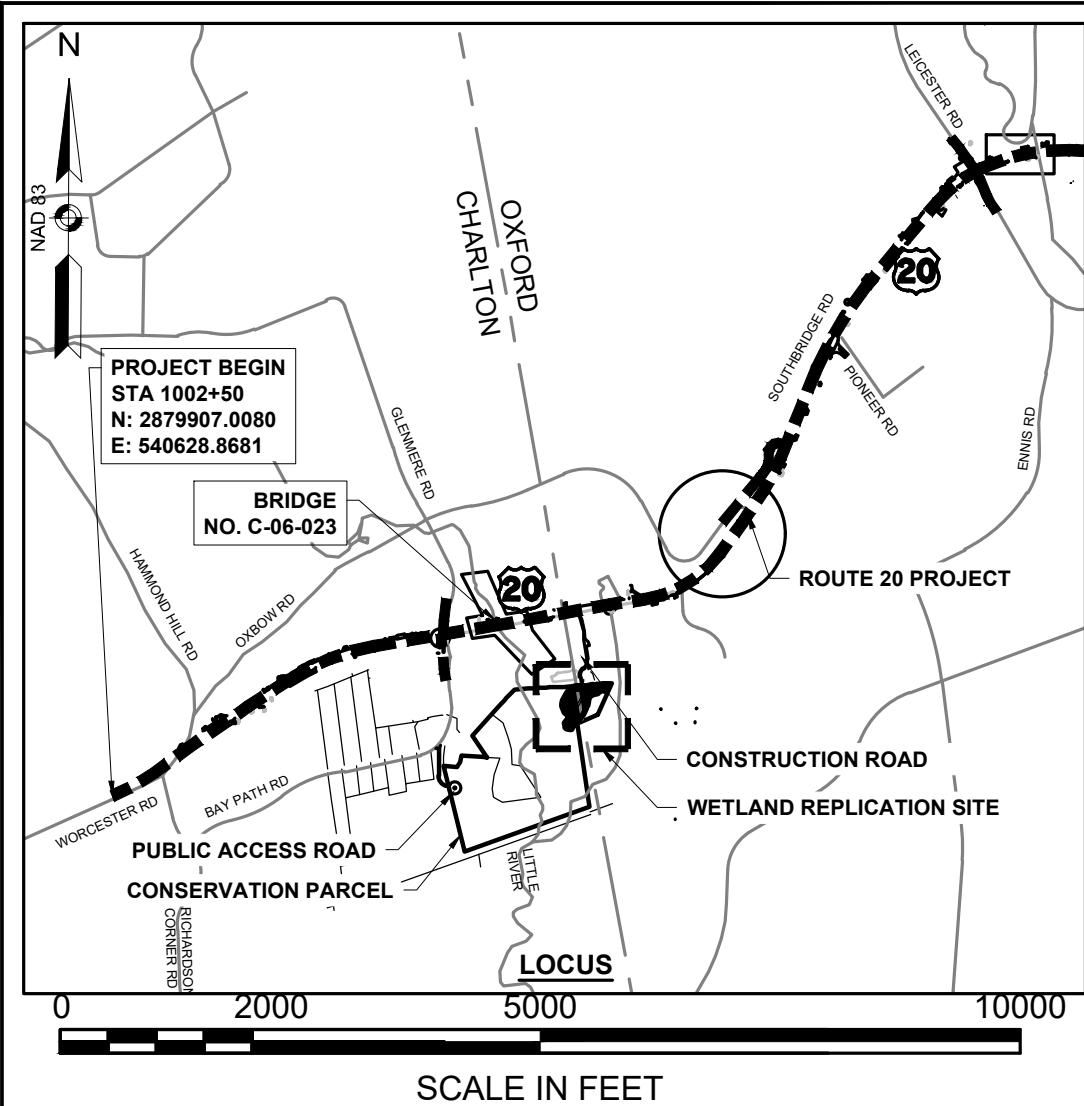
NOVEMBER 2021

SHEET#

55

TOTAL SHEETS

59



PLANTING SCHEDULES

WETLAND PLANTINGS					
SCIENTIFIC NAME	COMMON NAME	WETLAND INDICATOR	SIZE	QUANTITY	PLACEMENT RELATIVE TO MICRO-TOPOGRAPHY
<i>Vaccinium corymbosum</i>	Highbush blueberry	FACW	24" +	80	MID, HIGH
<i>Ilex verticillata</i>	Winterberry	FACW	36" +	80	LOW, MID
<i>Sambucus nigra ssp. canadensis</i>	Elderberry	FACW	36" +	50	MID
<i>Hamamelis virginiana</i>	Witchhazel	FACU	36" +	30	HIGH
<i>Viburnum dentatum</i>	Arrowwood	FAC	36" +	60	MID, HIGH
<i>Clethra alnifolia</i>	Sweet pepperbush	FAC	24" +	60	HIGH
<i>Lyonia ligustrina</i>	Maleberry	FACW	24" +	80	HIGH
<i>Rhododendron viscosum</i>	Swamp azalea	FACW	36" +	40	MID
<i>Cephalanthus occidentalis</i>	Buttonbush	OBL	36" +	100	LOWER
<i>Amelanchier canadensis</i>	Serviceberry	FAC	36" +	40	HIGH
<i>Viburnum lentago</i>	Nannyberry	FAC	36" +	50	HIGH
<i>Alnus incana ssp. rugosa</i>	Speckled alder	FACW	36" +	50	MID
<i>Spiraea alba (latifolia)</i>	Meadowsweet	FACW	24" +	80	MID


- GENERAL NOTES**
- ALL PLANTING AND GRADING WILL OCCUR UNDER THE SUPERVISION OF A QUALIFIED WETLAND MITIGATION SPECIALIST.
 - MITIGATION SITE AND TEMPORARY ACCESS ARE SUBJECT TO TURTLE PROTECTION REQUIREMENTS. TURTLE EXCLUSION FENCE TO BE INSTALLED PRIOR TO CONSTRUCTION PER THE CONSERVATION MANAGEMENT PLAN.
 - EROSION CONTROLS WILL BE ESTABLISHED AT THE PERIMETER OF THE WORK AREA PRIOR TO ANY EARTH WORK, USING APPROVED CONTROL METHODS.
 - ALL SUITABLE TOPSOIL LACKING INVASIVE PLANT SPECIES SHALL BE REMOVED AND STOCKPILED FOR REAPPLICATION ON THE DISTURBED UPLAND SLOPES.
 - PREVENTATIVE MEASURES MUST BE TAKEN TO MINIMIZE COLONIZATION BY INVASIVE SPECIES, INCLUDING CLEANING EQUIPMENT TIRES AND TRACKS BY WASHING PRIOR TO ENTRY TO THE WETLAND REPLICATION SITE TO REMOVE UNDESIRABLE SEEDS OR PLANT MATERIALS.
 - SUBGRADES SHALL BE INSPECTED BY THE WETLAND MITIGATION SPECIALIST PRIOR TO TOPSOILING.
 - TOPSOIL SHALL BE APPLIED AS NEEDED TO ACHIEVE A COMPACTED TOPSOIL DEPTH OF 12 INCHES IN THE WETLAND AND 6 INCHES IN THE DISTURBED UPLAND SLOPES. ACQUIRED TOPSOIL SHALL BE NATURAL, FERTILE, FRIABLE SANDY LOAM SOIL WITH A MINIMUM OF 20% ORGANIC MATTER (BY WEIGHT) IN THE WETLAND, AND 3% ORGANIC MATTER ON THE GRADED UPLAND SLOPE. THE TOPSOIL SHALL BE TYPICAL OF PRODUCTIVE SOILS IN THE VICINITY, WITHOUT ROCKS, GRAVEL, TRASH DEBRIS, INVASIVE PLANT SEEDS OR ROOTS, OR OTHER OBJECTIONABLE MATTER. TOPSOIL FOR THE UPLAND SLOPES MAY INCLUDE SALVAGED TOPSOIL FROM THE ORIGINAL SLOPE PROVIDED IT IS FREE OF INVASIVE SPECIES. TOPSOIL SHALL NOT BE DELIVERED OR SPREAD IN A FROZEN OR MUDDY CONDITION.
 - TOPSOIL SOURCE AND ANALYTICAL RESULTS SHALL BE PROVIDED TO THE WETLAND MITIGATION SPECIALIST FOR INSPECTION AND APPROVAL PRIOR TO STOCKPILING NEAR SITE, OR PLACEMENT IN REPLICATION AREAS.
 - FINAL GRADES SHALL BE INSPECTED BY THE WETLAND MITIGATION SPECIALIST PRIOR TO PLANTING AND SEEDING. FINISHED SOIL SURFACES IN THE WETLAND SHALL BE LEFT IRREGULAR TO SIMULATE NATURAL CONDITIONS.
 - 4% COVER OF COARSE WOODY DEBRIS FROM NATURAL AND NON-INVASIVE SOURCES TO BE PLACED IN WETLAND AREA.
 - EXISTING GROUNDWATER MONITORING WELLS TO BE REMOVED AND DISPOSED. TWO PIEZOMETER GROUNDWATER MONITORING WELLS SHALL BE INSTALLED AFTER TOPSOIL PLACEMENT AND BEFORE PLANTING.
 - PLANT MATERIALS AND SEED SHALL BE ORDERED IN ADVANCE FROM A REPUTABLE NURSERY IN THE NORTHEAST AND INSPECTED UPON ARRIVAL BY THE WETLAND MITIGATION SPECIALIST. PLANTS THAT ARE IN POOR HEALTH, UNDERSIZED, OR INFESTED WITH PESTS WILL BE REJECTED AND REPLACED BY THE CONTRACTOR. SUBSTITUTION OF SPECIES OR SIZE MUST BE PRE-APPROVED BY THE WETLAND MITIGATION SPECIALIST.
 - PLANT MATERIAL SCHEDULE PROVIDED, BUT LOCATIONS ARE TO BE ADJUSTED BASED UPON OBSERVED CONDITIONS IN THE FIELD.
 - CONTAINER PLANTS SHALL BE INSTALLED BETWEEN APRIL 1- MAY 31, OR AUGUST 15-OCTOBER 1. PLANTING AT OTHER TIMES OF THE YEAR WILL BE AT RECOMMENDATIONS OF THE NURSERY SUPPLIER AND AT THE CONTRACTOR RISK. IRRIGATION OF PLANT MATERIAL IN THE SUMMER MAY BE NECESSARY AND IS THE RESPONSIBILITY OF THE CONTRACTOR.
 - THE CONTRACTOR IS RESPONSIBLE FOR STORAGE AND CARE OF PLANTS AND SEED FROM DELIVERY THROUGHOUT INSTALLATION AND FOR TWO YEARS FOLLOWING PLANTING AND SEEDING. PLANTS THAT DIE DURING THIS PERIOD SHALL BE REPLACED BY THE CONTRACTOR AND POORLY ESTABLISHED AREAS SHALL BE RE-SEEDDED.
 - TREES AND SHRUBS SHALL BE CONTAINER GROWN AND INSTALLED FOLLOWING THE SPACING IN THE PLANTING SCHEDULE. ONE SLOW-RELEASE FERTILIZER TABLES, AS RECOMMENDED BY THE NURSERY SHALL BE PLACED IN THE PLANTING HOLE OF EACH TREE AND SHRUB.
 - GENERAL SPACING OF WETLAND PLANTS SHALL BE AS INDICATED IN THE PLANT SCHEDULE. HOWEVER, PLANTS SHALL NOT BE SPACED EVENLY THROUGHOUT THE WETLAND AREA, RATHER PLANTS SHALL BE ARRANGED IN RANDOM GROUPINGS OR MASSING AS DIRECTED BY THE ENGINEER AND THE WETLAND MITIGATION SPECIALIST. SPACING MAY BE ADJUSTED IN THE FIELD AS DIRECTED BY THE WETLAND MITIGATION SPECIALIST.
 - SEEDS SHALL BE BROADCAST AT THE PRESCRIBED RATES IN THE WETLAND AND THE DISTURBED UPLAND SLOPES AFTER COMPLETION OF THE WOODY PLANTINGS AND MULCHED WITH STRAW OR PAPER MULCH AND STABILIZED WITH A TACKIFIER.
 - COARSE BARK MULCH SHALL BE APPLIED TO THE BASE OF EACH TREE OR SHRUB AFTER PLANTING TO A DEPTH OF 2 INCHES. BARK MULCH SHALL BE PLACED TO AVOID CONTACT WITH THE STEM OF THE TREE OR SHRUB.
 - INVASIVE PLANT SITE ASSESSMENT AND MANAGEMENT PLAN FOR THE MITIGATION SITE SHALL BE IMPLEMENTED IMMEDIATELY WITH THE INITIATION OF CONSTRUCTION AND SHALL CONTINUE THROUGHOUT THE LONG-TERM MONITORING PERIOD FOR THE PROJECT.
 - UPON COMPLETION OF THE MITIGATION AND ACHIEVING VEGETATION-STABILIZED GROUND SURFACES, THE CONSTRUCTION EROSION CONTROLS SHALL BE REMOVED AT THE DIRECTION OF THE WETLAND MITIGATION SPECIALIST.

UPLAND PLANTINGS				
SCIENTIFIC NAME	COMMON NAME	WETLAND INDICATOR	SIZE	QUANTITY
<i>Pinus rigida</i>	Pitch pine	FACU	48"	10
<i>Sassafras albidum</i>	Sassafras	FACU	48"	10
<i>Carya ovata</i>	Shagbark hickory	FACU	48"	5
<i>Prunus virginiana</i>	Chokecherry	FACU	48"	5
<i>Corylus americana</i>	American hazelnut	FACU	24"	60
<i>Corylus cornuta</i>	Beaked hazelnut	FACU	24"	60
<i>Kalmia latifolia</i>	Mountain laurel	FACU	24"	30
<i>Morella pensylvanica</i>	Bayberry	FAC	24"	30

WETLAND SEED MIX [25 POUNDS/ACRE] 40 POUNDS	
SCIENTIFIC NAME	COMMON NAME
<i>Carex vulpinoidea</i>	Fox Sedge
<i>Carex lurida</i>	Lurid Sedge
<i>Carex scoparia</i>	Blunt Broom Sedge
<i>Poa palustris</i>	Fowl Bluegrass
<i>Carex lupulina</i>	Hop Sedge
<i>Scirpus atrovirens</i>	Green Bulrush
<i>Eleocharis palustris</i>	Creeping Spike Rush
<i>Carex crinita</i>	Fringed Sedge
<i>Verbena hastata</i>	Blue Vervain

<i>Juncus effusus</i>	Soft Rush
<i>Aster puniceus</i>	Swamp Aster
<i>Eupatorium maculatum</i>	Spotted Joe Pye Weed
<i>Glyceria canadensis</i>	Rattlesnake Grass
<i>Iris versicolor</i>	Blueflag
<i>Asclepias incarnata</i>	Swamp Milkweed
<i>Mimulus ringens</i>	Square-stemmed Monkey Flower

UPLAND SEED MIX [20 POUNDS/ACRE] 10 POUNDS	
SCIENTIFIC NAME	COMMON NAME
<i>Elymus virginicus</i>	Virginia Wild Rye
<i>Festuca rubra</i>	Creeping red Fescue
<i>Sorghastrum nutans 'NE-54'</i>	Indiangrass 'NE-54'
<i>Panicum virgatum</i>	Switch Grass 'Shelter/Trailblazer'
<i>Andropogon gerardii</i>	Big Bluestem
<i>Schizachyrium scoparium</i>	Little Bluestem 'Camper'
<i>Panicum clandestinum</i>	Deer Tongue
<i>Chamaecrista fasciculata</i>	Partridge Pea
<i>Verbena hastata</i>	Blue Vervain
<i>Aster laevis</i>	Smooth Aster
<i>Aster novae-angliae</i>	New England Aster
<i>Solidago juncea</i>	Early Goldenrod



PROJECT TITLE

MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20

PROJECT LOCATION:

CHARLTON - OXFORD

SHEET TITLE

WETLAND REPLICATION
LOCUS, GENERAL NOTES,
AND PLANTING SCHEDULES

DATE

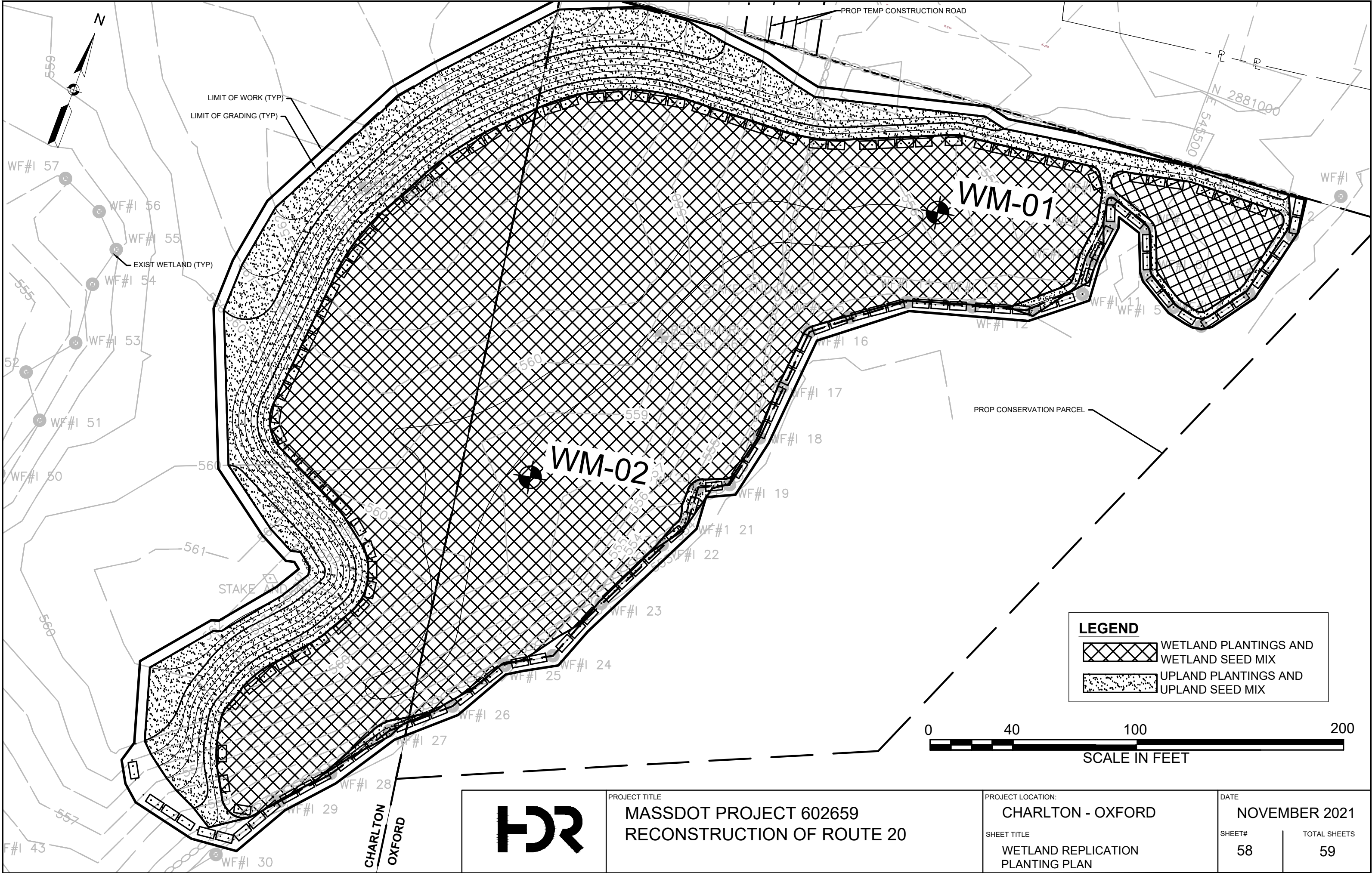
NOVEMBER 2021

SHEET#

56

TOTAL SHEETS

59

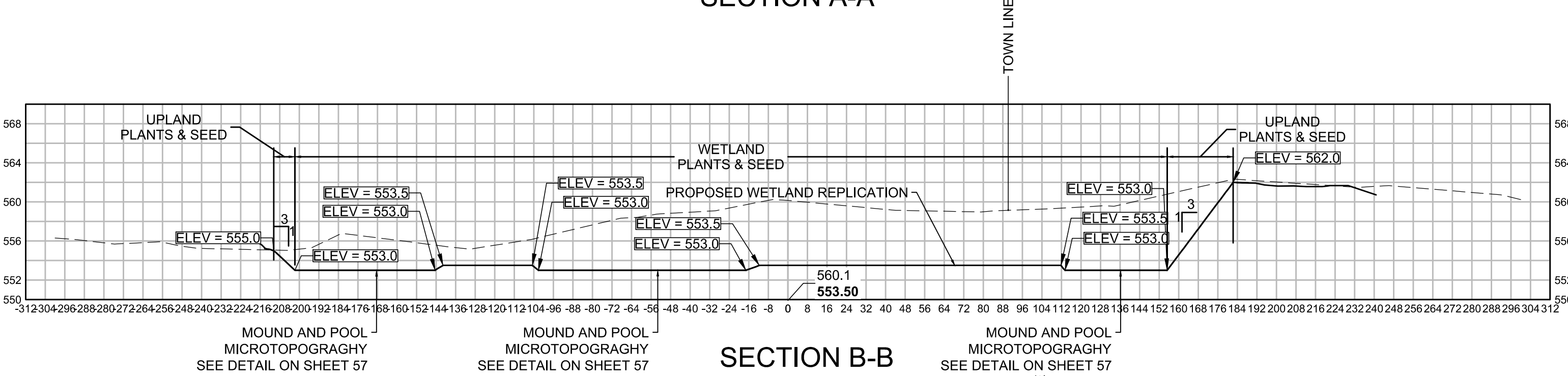


PROJECT TITLE
MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20

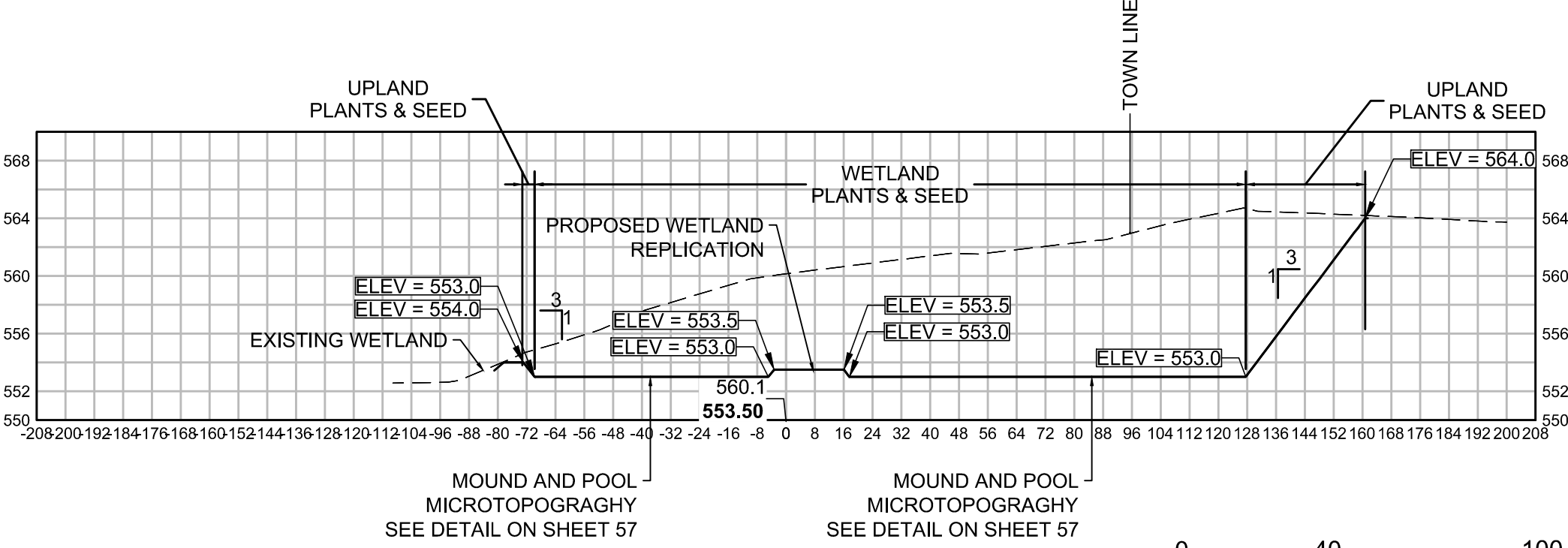
PROJECT LOCATION:
CHARLTON - OXFORD
SHEET TITLE
WETLAND REPLICATION
PLANTING PLAN

DATE NOVEMBER 2021	
SHEET# 58	TOTAL SHEETS 59

SECTION A-A

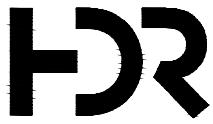


SECTION B-B



LEGEND

---	EXISTING GRADE
—	PROPOSED REPLICATION GRADE



PROJECT TITLE
MASSDOT PROJECT 602659
RECONSTRUCTION OF ROUTE 20

PROJECT LOCATION:
CHARLTON - OXFORD
SHEET TITLE
WETLAND REPLICATION
SECTIONS

DATE NOVEMBER 2021	
SHEET# 59	TOTAL SHEETS 59