

DOCUMENT A00831

ARMY CORPS OF ENGINEERS

GENERAL PERMIT

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Regulatory Division
Transportation & Utility Section
File Number: NAE-2025-01420

Kevin Thompson
MassDOT – Highway Division
10 Park Plaza
Boston, Massachusetts 02116
Via Email: kevin.s.thompson@dot.state.ma.us

Dan Nason
Town of Harvard, DPW
47 Depot Road
Harvard, Massachusetts 01451
Via Email: dnason@harvard-ma.gov

Dear Mr. Thompson and Mr. Nason:

This letter is in response to the application you submitted to the U.S. Army Corps of Engineers (USACE), New England District on June 9, 2025, for a Department of the Army general permit verification. We have assigned this project file number NAE-2025-01420, which you should reference in all correspondence with this office.

Proposed work includes the permanent discharge of fill material within 423 square feet below the Ordinary High Water (OHW) mark of two unnamed intermittent streams and within 2,688 square feet of wetlands associated with the removal of an existing 30” corrugated metal pipe (CMP), replacement of an existing 30” CMP with a new 48” reinforced concrete arch pipe (RCP), extension of an existing 36” RCP, roadway reconstruction, construction of a shared use path, and installation of rip-rap scour protection. The work also includes the temporary discharge of fill within 482 square feet below the OHW mark of two unnamed intermittent streams and within 14 square feet of wetlands associated with temporary construction access and temporary erosion controls along Ayer Road and Gebo Lane in Harvard, Massachusetts. The work is shown on the enclosed plans titled “MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION PLAN OF AYER ROAD (ROUTE 110/111) IN THE TOWN OF HARVARD WORCESTER COUNTY PCN SUBMITTAL,” on 27 sheets with drawing updates dated 7/17/2025.

Based on the information you have provided, we verify that the activity is authorized under General Permit 23 (Linear Transportation Projects and Wetland/Stream Crossings) of the June 2, 2023, federal permit known as the Massachusetts General

Permits (GPs). If the extent of the project area and/or nature of the authorized impacts to waters are modified, a revised application must be submitted to this office for written approval before work is initiated. You can find a copy of these permits at:

<https://www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/>.

Any deviation from the terms and conditions of the permit, or your submitted plans, may subject the permittee to the enforcement provisions of our regulations. Therefore, in the event changes to this project are contemplated, it is recommended you coordinate with this office prior to proceeding with the work. This office must approve any changes before you undertake them. You must perform this work in compliance with the terms and conditions of the GPs listed above, and also in compliance with the following special conditions:

Project Specific Special Conditions:

1. The permittee shall complete and return the enclosed Work-Start Notification Form to this office at least two weeks prior to the anticipated construction start date.
2. The permittee shall complete and return the enclosed Completion Certification Form to this office at least one month following the completion of the authorized work.
3. All construction shall be completed in accordance with the limits of construction and construction sequences detailed on the enclosed plans titled "MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION PLAN OF AYER ROAD (ROUTE 110/111) IN THE TOWN OF HARVARD WORCESTER COUNTY PCN SUBMITTAL" on 27 sheets with drawing updates dated 7/17/2025. If there are changes to the plans or construction methods for work within or adjacent to waters of the U.S., the permittee shall contact USACE to discuss modification of this authorization. USACE must approve any changes before they are undertaken.
4. If the authorized work is not complete before the Tricolored bat or Monarch Butterfly is listed under the Endangered Species Act (ESA), FHWA shall contact USACE and initiate ESA Section 7 consultation for these species.

This GP verification and any associated authorizations does not preclude the necessity to obtain any other federal, state, or local permits, licenses, and/or certifications, which may be required.

If you have any questions related to this verification or have issues accessing documents referenced in this letter, please contact Kevin Newton, Project Manager at (978)-318-8044, or by email at kevin.m.newton@usace.army.mil and cenae-r-tu@usace.army.mil.

This agency continually strives to improve our customer service. To better serve you, please complete the Customer Service Survey located at:
<https://regulatory.ops.usace.army.mil/customer-service-survey/>.

Sincerely,

A handwritten signature in black ink that reads "Kara Hellige". The signature is written in a cursive, flowing style.

For, Ryan Malterud
Deputy Chief, Regulatory Division

Enclosures

cc (w/enclosures):

Nathan Margason, US EPA (via Margason.Nathan@epa.gov)

Haley Miller, US EPA (via miller.haley@epa.gov)

Pete Engle, TEC (via pengle@theengineeringcorp.com)

Heidi Davis, MassDEP (via Heidi.davis@mass.gov)

Tyler Lewis, MassDEP (via Tyler.lewis@mass.gov)

Work-Start Notification Form

File Number: NAE-2025-01420 State: Massachusetts County: Worcester

Permittee: Massachusetts DOT / Town of Harvard

Date Verification Issued: 8/13/2025

Project Manager: Kevin Newton

At least two weeks prior to commencing the activity authorized by this permit, sign this certification and return it to the following address:

US ARMY CORPS OF ENGINEERS

New England District

Attn: Kevin Newton

696 Virginia Road

Concord , MA 01742

or

kevin.m.newton@usace.army.mil and cenae-r-tu@usace.army.mil

(978)-318-8044

Please note that your permitted activity is subject to a compliance inspection by a U. S. Army Corps of Engineers (USACE) representative. Failure to comply with any terms or conditions of this authorization may result in the USACE suspending, modifying or revoking the authorization and/or issuing a Class I administrative penalty, or initiating other appropriate legal action.

The people (e.g. contractor) listed below will do the work, and they understand the permit's conditions and limitations.

Contractor Name/Contractor Firm: _____

Business Address: _____

Contractor Phone and Email: _____

Proposed Construction Dates: Start: _____ Finish: _____

Signature of Permittee

Date

<p>U.S. Army Corps of Engineers (USACE)</p> <p>CERTIFICATION OF COMPLIANCE WITH DEPARTMENT OF THE ARMY PERMIT</p> <p>For use of this form, see Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act of 1899, and Section 103 of the Marine Protection, Research, and Sanctuaries Act; the proponent agency is CECW-COR.</p>	<p><i>Form Approved -</i></p> <p>OMB No. 0710-0003</p> <p>Expires 2027-10-31</p>
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The Agency Disclosure Notice (ADN)

The Public reporting burden for this collection of information, 0710-0003, is estimated to average 10 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

PURPOSE: This form is used by recipients of U.S. Army Corps of Engineer Regulatory permits to certify compliance with the permit terms and conditions.

Your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with this permit, you are subject to permit suspension, modification, or revocation.

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the U.S. Army Corps of Engineers, [New England District Office](#).

The certification can be submitted by email at cenae-r-tu@usace.army.mil or by mail at the below address:

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the U.S. Army Corps of Engineers, [New England District Office](#).

U.S. Army Corps of Engineers
New England District
Regulatory Division
696 Virginia Road
Concord, MA 01742-2751

COMPLETED BY THE CORPS

Corps Action Number:	NAE-2025-01420
Permit Type:	Massachusetts General Permit 23
General Permit Number and Name (if applicable):	
Name of Permittee:	Massachusetts DOT and Town of Harvard
Project Name:	Ayer Road Improvements
Project Location (physical address):	Ayer Road (Route 110), Harvard, Massachusetts

PERMITTEE'S CERTIFICATION

Date Work Started: _____

Date Work Completed: _____

Enclose photographs showing the completed project (if available).

I _____ hereby certify that the work authorized by the above referenced permit has been completed in accordance with all of the permit terms and conditions, and that any required compensatory mitigation has been completed in accordance with the permit conditions.

Name	Date	Signature
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MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION

PLAN OF AYER ROAD (ROUTE 110/111)

IN THE TOWN OF
HARVARD
WORCESTER COUNTY

PCN SUBMITTAL

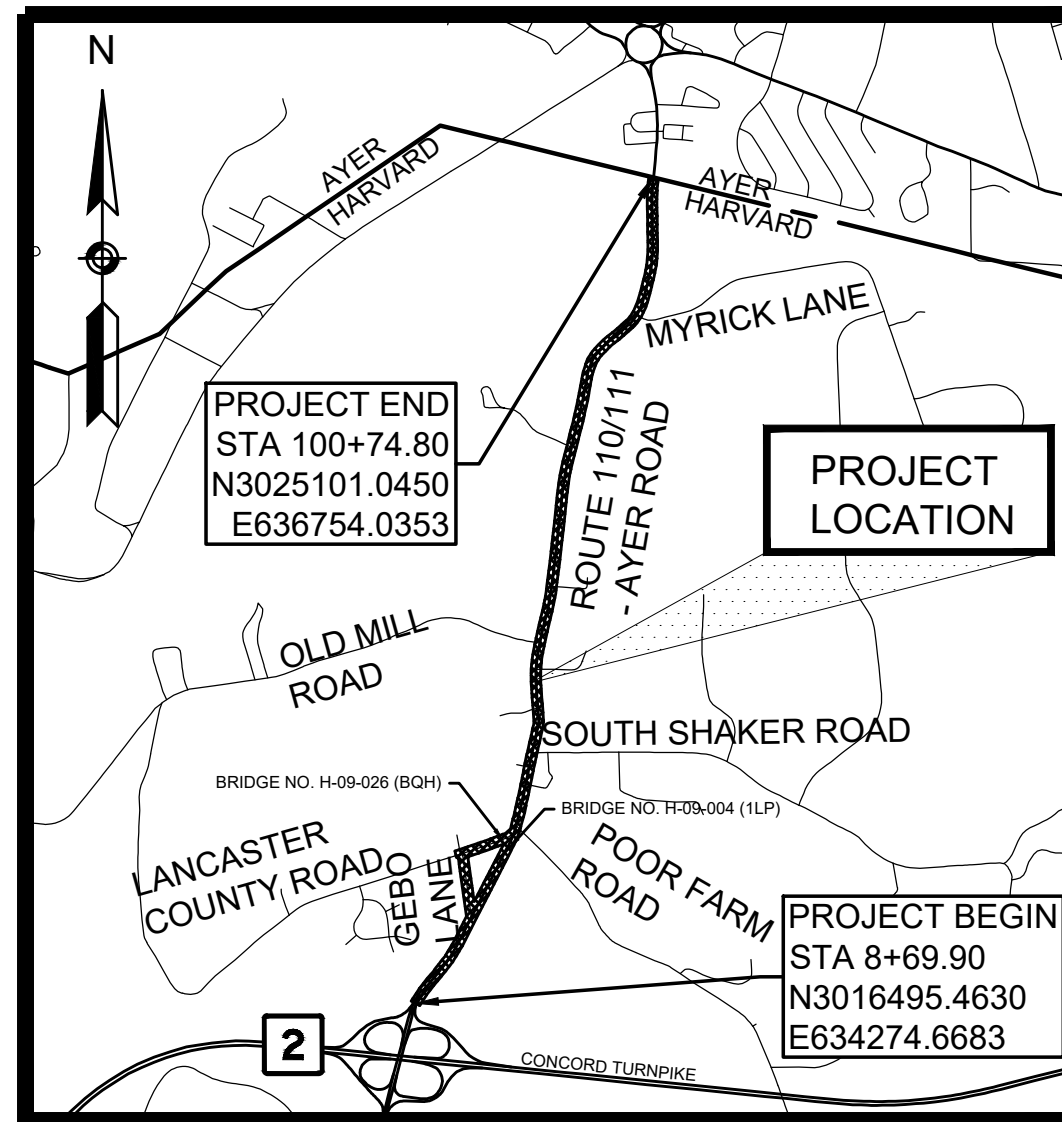
**HARVARD
AYER ROAD (ROUTE 110/111)**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	1	27
PROJECT FILE NO.		609213	

PCN TITLE SHEET

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET & INDEX
2-3	LEGEND & ABBREVIATIONS
4-5	KEY PLAN
6-12	EXISTING CONDITIONS PLANS
13-19	PCN PLANS
20-27	CONSTRUCTION DETAILS



LENGTH OF PROJECT = 9,204.90 FEET = 1.743 MILES



Peter C. Engle

07/17/2025

7/17/25	PCN	-
DATE	DESCRIPTION	REV #



282 Merrimack St 2nd Floor Lawrence, MA 01843 978-794-1792	311 Main Street 2nd Floor Worcester, MA 01608 508-868-5104	169 Ocean Blvd, Unit 3 PO Box 249 Hampton, NH 03842 603-601-8154
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www.TheEngineeringCorp.com

GENERAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		JERSEY BARRIER
		CATCH BASIN OR GUTTER INLET
		CATCH BASIN OR GUTTER INLET W/ 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
		TREE PROTECTION
		TROLLEY POLE OR GUY POLE
		TRANSMISSION POLE
		UTILITY POLE W/ FIREBOX
		UTILITY POLE WITH DOUBLE LIGHT
		UTILITY POLE W / 1 LIGHT

GENERAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		UTILITY POLE
		BUSH
		TREE
		STUMP
		SWAMP / MARSH
		WATER GATE
		WATER SHUTOFF/CURB STOP
		PARKING METER
		OVERHEAD CABLE/WIRE
		CURBING
		CONTOURS (ON-THE-GROUND SURVEY DATA)
		CONTOURS (PHOTOGRAMMETRIC DATA)
		UNDERGROUND DRAIN PIPE (DOUBLE LINE 24 INCH AND OVEI
		UNDERGROUND ELECTRIC DUCT (DOUBLE LINE 24 INCH AND
		UNDERGROUND GAS MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND SEWER MAIN (DOUBLE LINE 24 INCH AND OV
		UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AN
		UNDERGROUND WATER MAIN (DOUBLE LINE 24 INCH AND OVI
		BALANCED STONE WALL
		GUARD RAIL - STEEL POSTS
		GUARD RAIL - WOOD POSTS
		CHAIN LINK OR METAL FENCE
		WOOD FENCE
		SEDIMENT CONTROL BARRIER
		TREE LINE
		EDGE OF PAVEMENT
		SAWCUT LINE
		TOP OR BOTTOM OF SLOPE
		LIMIT OF EDGE OF MICROMILLING 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
		TOWN OR CITY BOUNDARY LINE
		PROPERTY LINE OR APPROXIMATE PROPERTY LINE
		EASEMENT

**HARVARD
AYER ROAD (ROUTE 110/111)**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	2	27
PROJECT FILE NO.		609213	

PCN LEGEND

ABBREVIATIONS

GENERAL

ABAN	ABANDON
ADJ	ADJUST
APPROX.	APPROXIMATE
A.C.	ASPHALT CONCRETE
ACCM PIPE	ASPHALT COATED CORRUGATED METAL PIPE
AP	ANGLE POINT
BIT.	BITUMINOUS
BC	BOTTOM OF CURB
BD.	BOUND
BL	BASELINE
BLDG	BUILDING
BM	BENCHMARK
BO	BY OTHERS
BOS	BOTTOM OF SLOPE
BR.	BRIDGE
BVW	BORDERING VEGETATED WETLANDS
CB	CATCH BASIN
CBCI	CATCH BASIN WITH CURB INLET
CC	CEMENT CONCRETE
CCM	CEMENT CONCRETE MASONRY
CEM	CEMENT
CI	CURB INLET
CIP	CAST IRON PIPE
CLF	CHAIN LINK FENCE
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CSP	CORRUGATED STEEL PIPE
CO.	COUNTY
CONC	CONCRETE
CONT	CONTINUOUS
CONST	CONSTRUCTION
DI	DROP INLET
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DWP	DETECTABLE WARNING PANEL
DWY	DRIVEWAY
ELEV (or EL.)	ELEVATION
EMB	EMBANKMENT
EOP	EDGE OF PAVEMENT
EXIST (or EX)	EXISTING
EXC	EXCAVATION
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
FDN.	FOUNDATION
FLDSTN	FIELDSTONE

ABBREVIATIONS (cont.)

GENERAL

GAR	GARAGE
GC	GRANITE CURB
GCC	GRANITE CURB CORNER
GD	GROUND
GG	GAS GATE
GI	GUTTER INLET
GRAN	GRANITE
GRAV	GRAVEL
GRD	GUARD
HDWL	HEADWALL
HMA	HOT MIX ASPHALT
HOR	HORIZONTAL
HYD	HYDRANT
INT	INTERMITTENT
INV	INVERT
JCT	JUNCTION
L	LENGTH OF CURVE
LB	LEACH BASIN
LOG	LIMIT OF GRADING
LP	LIGHT POLE / LOW POINT
LSA	LANDSCAPE AREA
L&S	LOAM AND SEED
LT	LEFT
LUW	LAND UNDER WATER
MAX	MAXIMUM
MB	MAILBOX
MH	MANHOLE
MHB	MASSACHUSETTS HIGHWAY BOUND
MIN	MINIMUM
NO.	NUMBER
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PCR	PEDESTRIAN CURB RAMP
PROJ	PROJECT
PROP	PROPOSED
PUE	PUBLIC UTILITY EASEMENT
PVMT	PAVEMENT
PWW	PAVED WATERWAY
R&D	REMOVE AND DISPOSE
RCP	REINFORCED CONCRETE PIPE
RCAP	REINFORCED CONCRETE ARCH PIPE
RD	ROAD
RDWY	ROADWAY
REM	REMOVE
REP	REPLICATION

**HARVARD
AYER ROAD (ROUTE 110/111)**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	3	27
PROJECT FILE NO.		609213	



PCN ABBREVIATIONS

ABBREVIATIONS (cont.)

GENERAL

RET	RETAIN
RET WALL	RETAINING WALL
ROW	RIGHT OF WAY
RR	RAILROAD
RRFB	RECTANGULAR RAPID FLASHING BEACON
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
RT	RIGHT
SB	STONE BOUND
SGE	SLOPED GRANITE EDGING
SHLD	SHOULDER
SHLO	STATE HIGHWAY LAYOUT LINE
SMH	SEWER MANHOLE
ST	STREET
STA	STATION
SSD	STOPPING SIGHT DISTANCE
SUP	SHARED USE PATH
SW	SIDEWALK
T	TANGENT DISTANCE OF CURVE/TRUCK %
TAN	TANGENT
TEMP	TEMPORARY
TC	TOP OF CURB
TOS	TOP OF SLOPE
TYP	TYPICAL
UPL	UTILITY POLE
VAR	VARIES
VERT	VERTICAL
VC	VERTICAL CURVE
WCR	WHEEL CHAIR RAMP
WG	WATER GATE
WIP	WROUGHT IRON PIPE
WM	WATER METER/WATER MAIN
X-SECT	CROSS SECTION

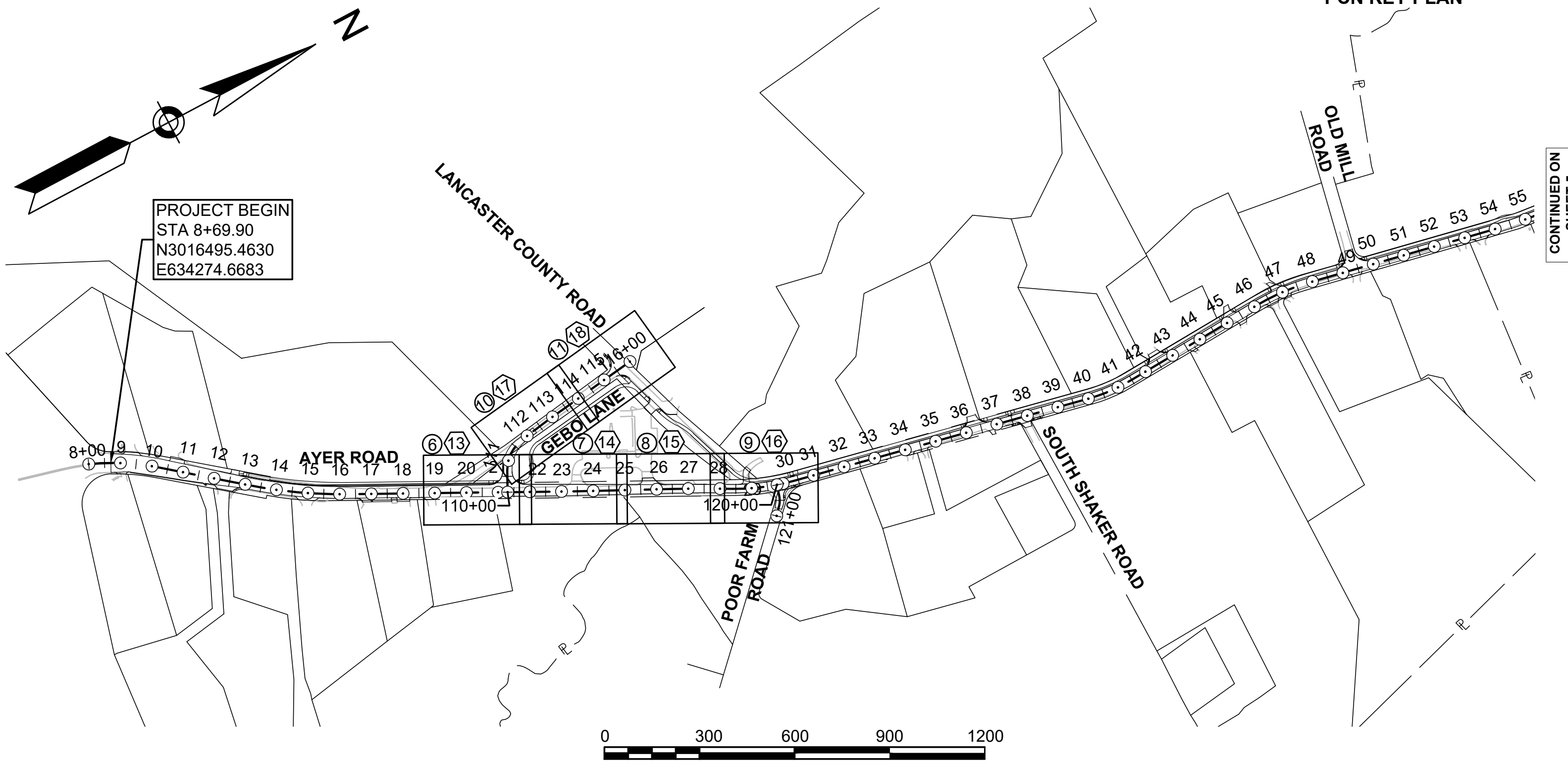
LEGEND

	EXISTING CONDITIONS PLANS
	PCN PLANS

**HARVARD
AYER ROAD (ROUTE 110/111)**

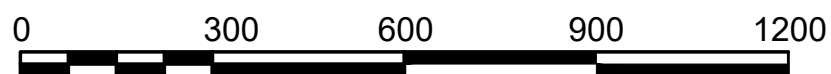
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	4	27
PROJECT FILE NO.		609213	

PCN KEY PLAN





PROJECT BEGIN
STA 8+69.90
N3016495.4630
E634274.6683

CONTINUED ON
SHEET 5



SCALE: 1" = 300'

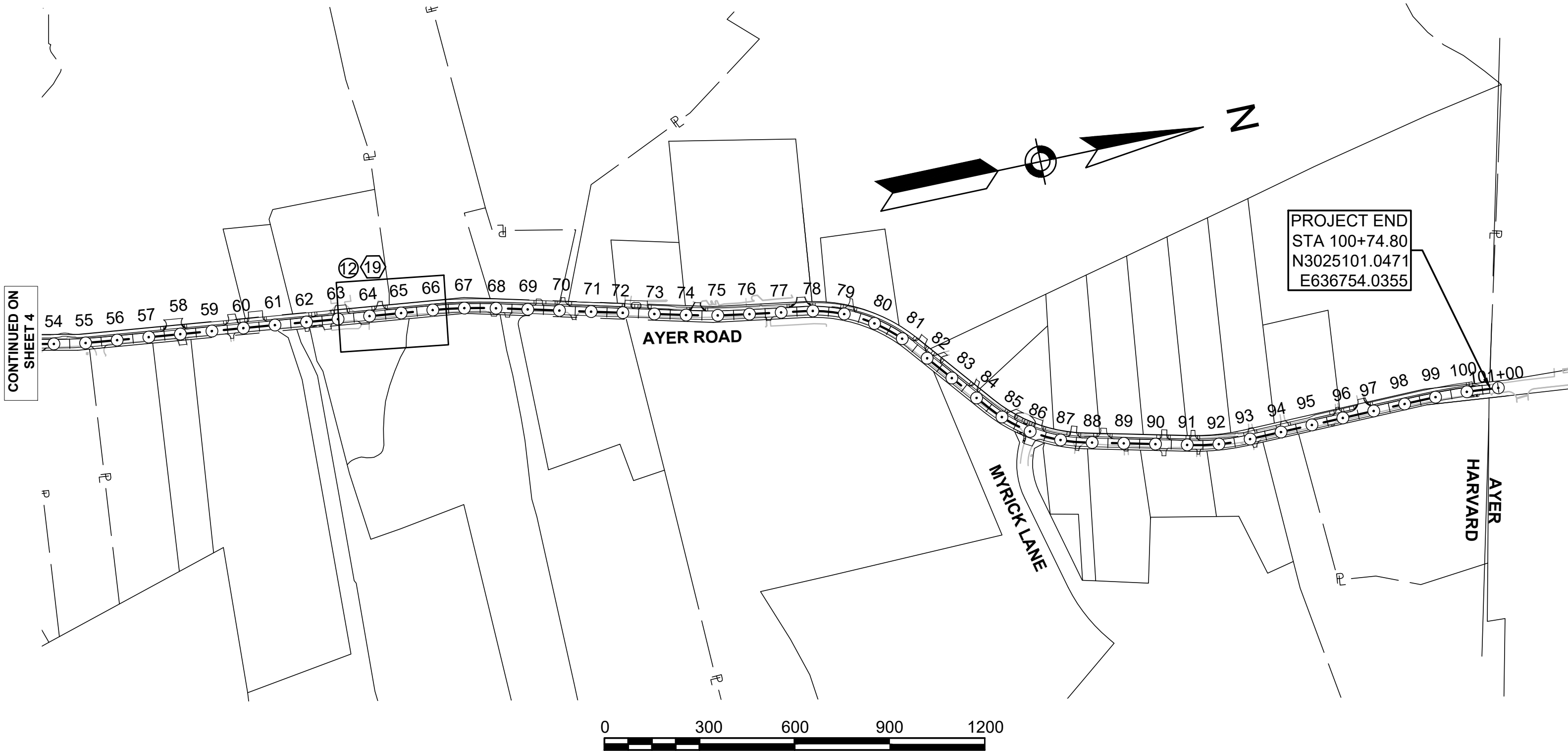
LEGEND

	EXISTING CONDITIONS PLANS
	PCN PLANS

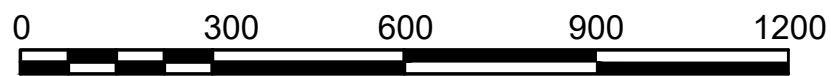
**HARVARD
AYER ROAD (ROUTE 110/111)**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	5	27
PROJECT FILE NO.		609213	

PCN KEY PLAN



CONTINUED ON SHEET 4

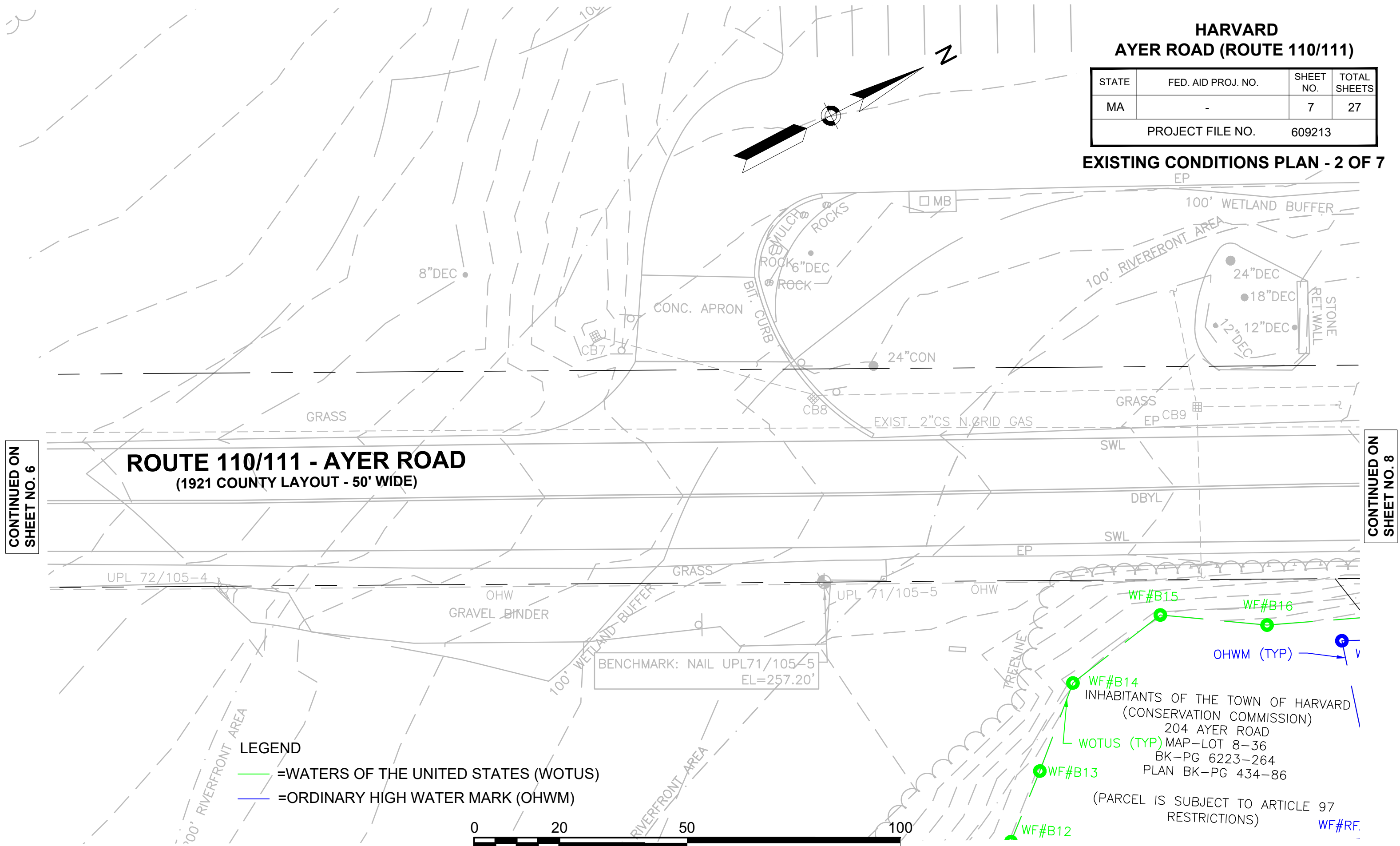


SCALE: 1" = 300'

HARVARD AYER ROAD (ROUTE 110/111)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	7	27
PROJECT FILE NO.		609213	

EXISTING CONDITIONS PLAN - 2 OF 7



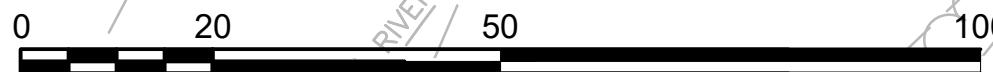
CONTINUED ON
SHEET NO. 6

CONTINUED ON
SHEET NO. 8

ROUTE 110/111 - AYER ROAD (1921 COUNTY LAYOUT - 50' WIDE)

LEGEND

- =WATERS OF THE UNITED STATES (WOTUS)
- =ORDINARY HIGH WATER MARK (OHWM)



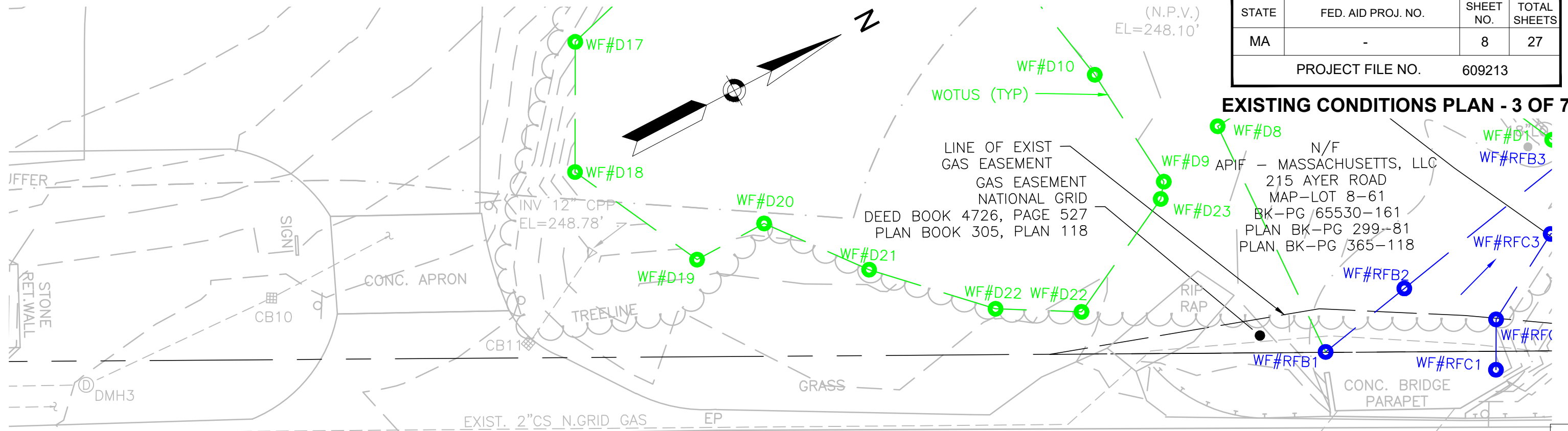
SCALE: 1" = 20'

INHABITANTS OF THE TOWN OF HARVARD
(CONSERVATION COMMISSION)
204 AYER ROAD
WOTUS (TYP) MAP-LOT 8-36
BK-PG 6223-264
PLAN BK-PG 434-86
(PARCEL IS SUBJECT TO ARTICLE 97
RESTRICTIONS)

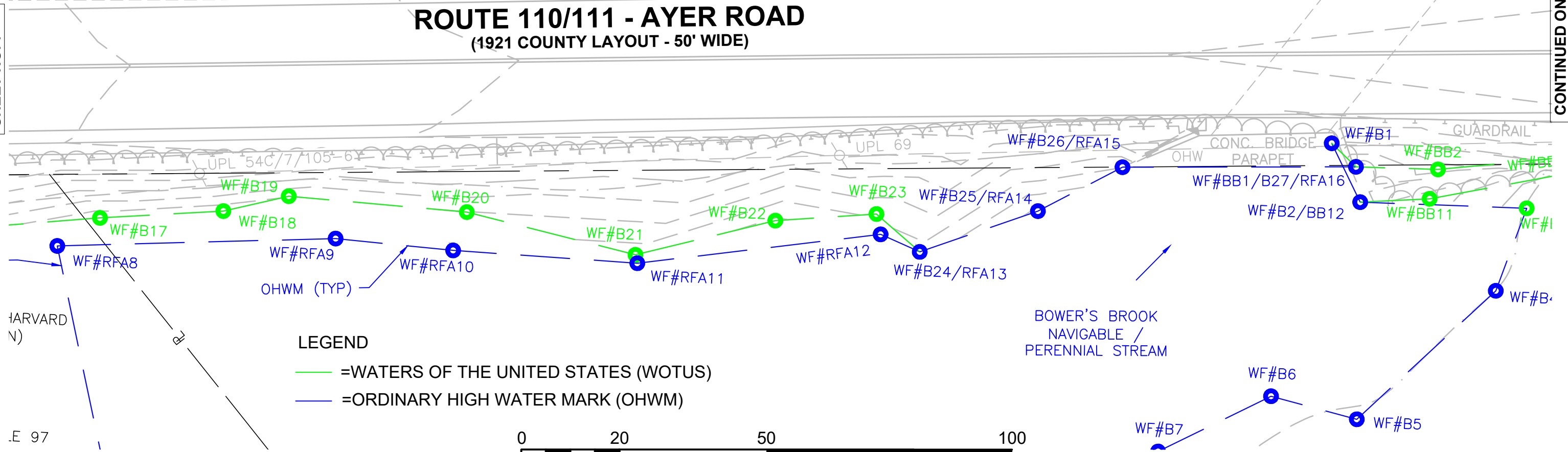
HARVARD AYER ROAD (ROUTE 110/111)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	8	27
PROJECT FILE NO.		609213	

EXISTING CONDITIONS PLAN - 3 OF 7



ROUTE 110/111 - AYER ROAD (1921 COUNTY LAYOUT - 50' WIDE)



LEGEND

- = WATERS OF THE UNITED STATES (WOTUS)
- = ORDINARY HIGH WATER MARK (OHWM)



SCALE: 1" = 20'

CONTINUED ON SHEET NO. 7

CONTINUED ON SHEET NO. 9

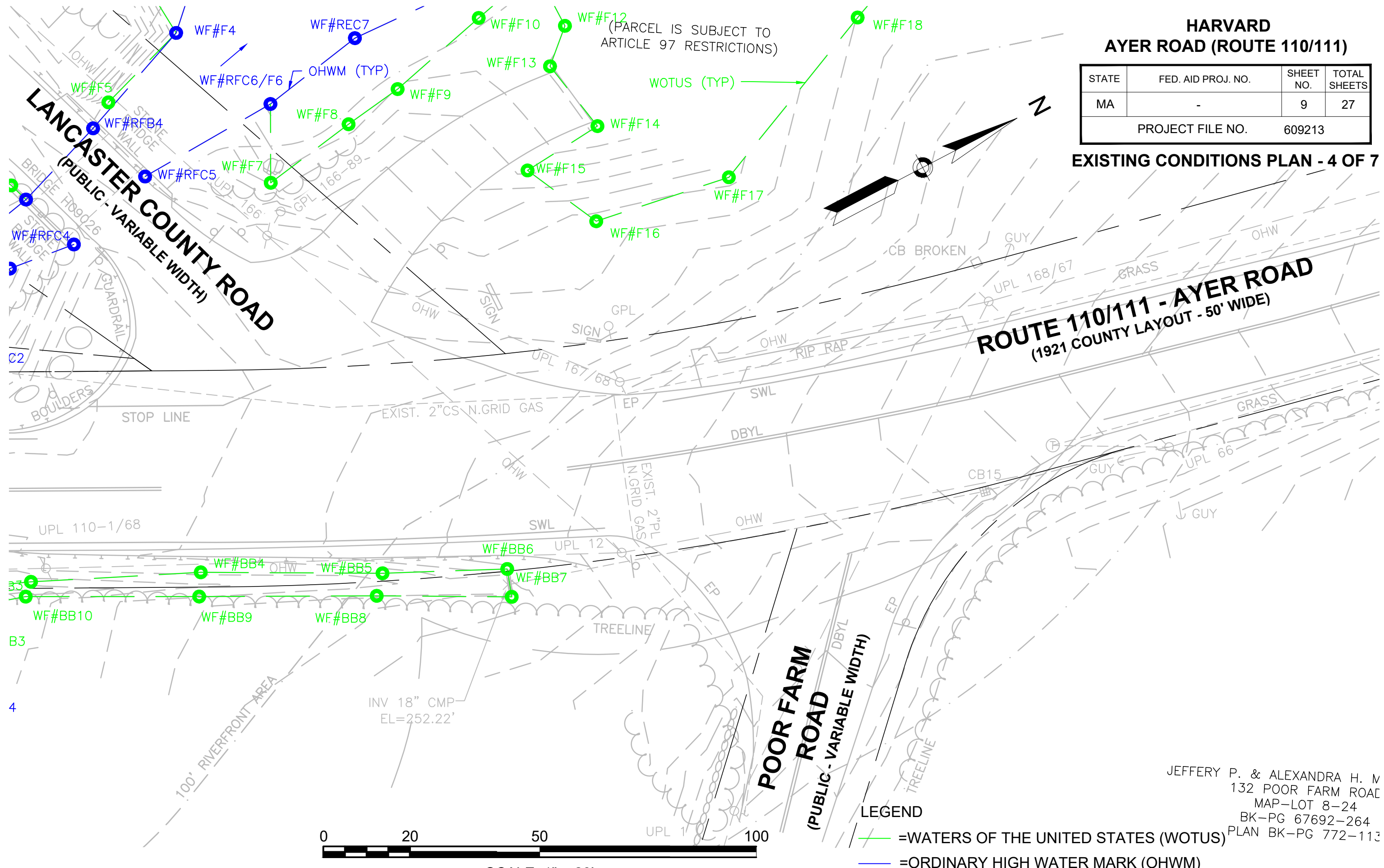
HARVARD
(N)

E 97

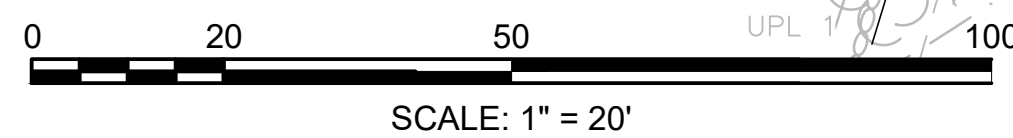
HARVARD AYER ROAD (ROUTE 110/111)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	9	27
PROJECT FILE NO.		609213	

EXISTING CONDITIONS PLAN - 4 OF 7



CONTINUED ON
SHEET NO. 8



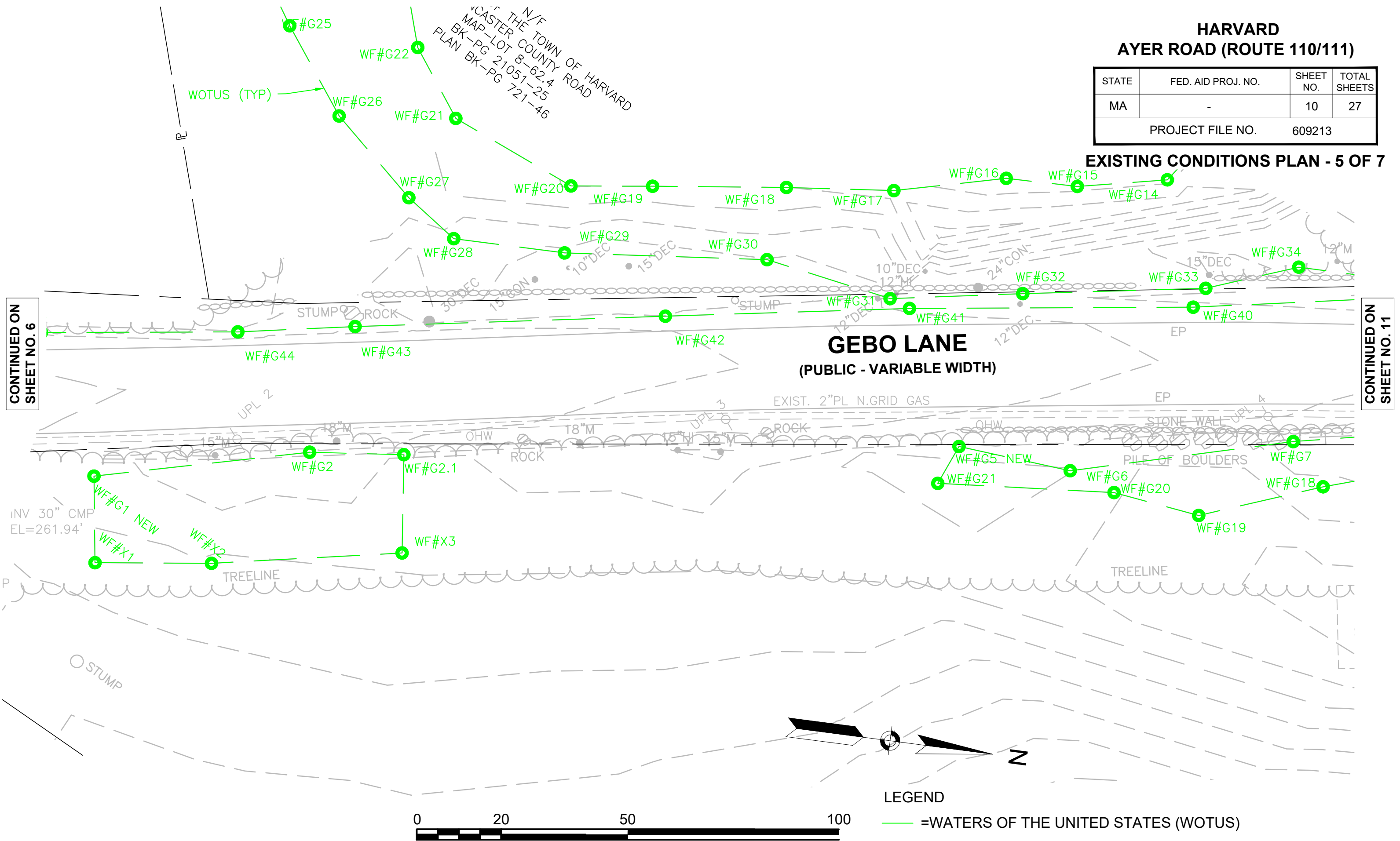
- LEGEND
- = WATERS OF THE UNITED STATES (WOTUS)
 - = ORDINARY HIGH WATER MARK (OHWM)

JEFFERY P. & ALEXANDRA H. M
132 POOR FARM ROAD
MAP - LOT 8-24
BK - PG 67692-264
PLAN BK - PG 772-113

HARVARD AYER ROAD (ROUTE 110/111)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	10	27
PROJECT FILE NO.		609213	

EXISTING CONDITIONS PLAN - 5 OF 7



CONTINUED ON SHEET NO. 6

CONTINUED ON SHEET NO. 11

LEGEND

- = WATERS OF THE UNITED STATES (WOTUS)
- = ORDINARY HIGH WATER MARK (OHWM)

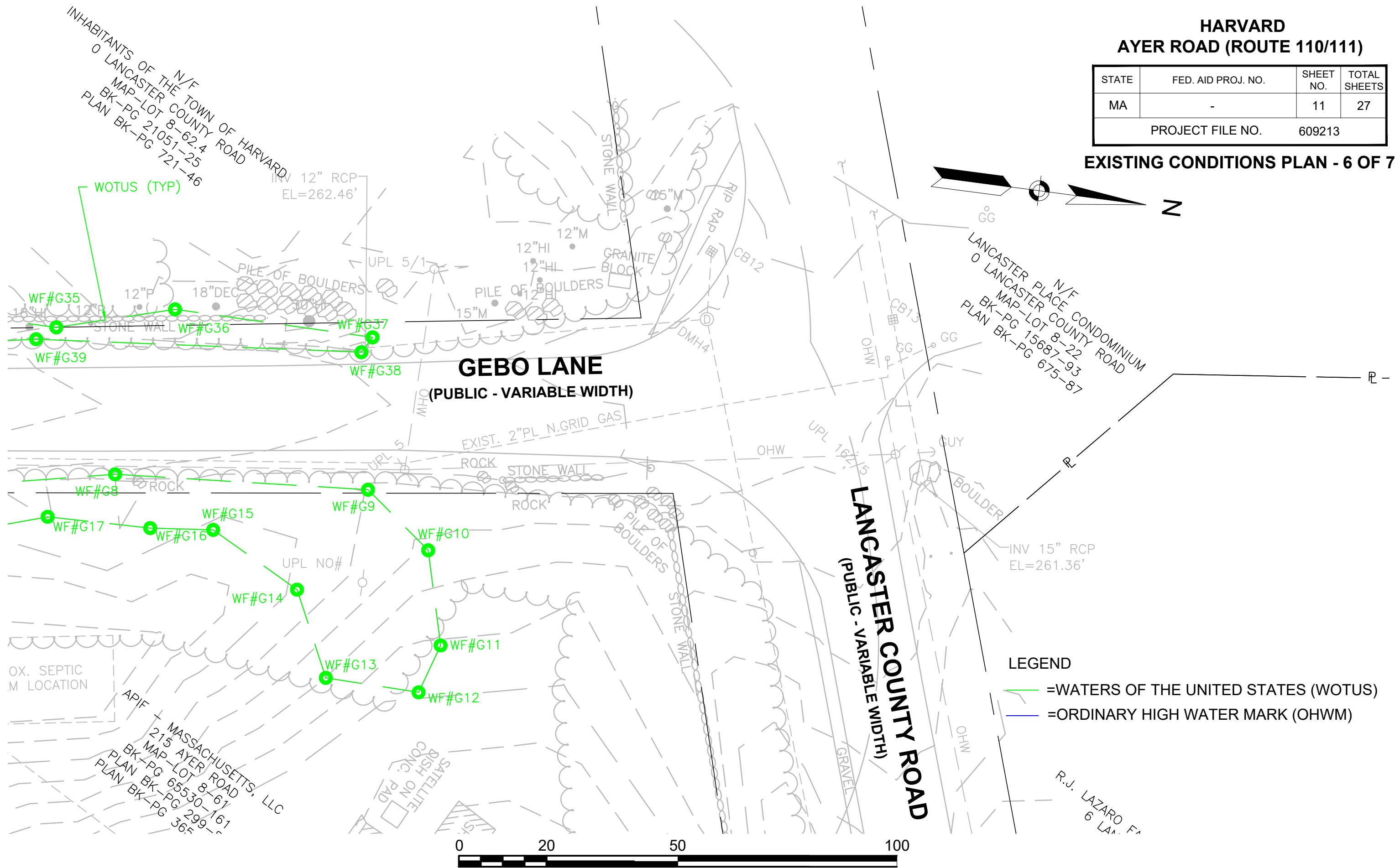
SCALE: 1" = 20'

HARVARD AYER ROAD (ROUTE 110/111)

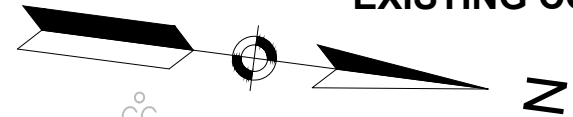
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	11	27
PROJECT FILE NO.		609213	

EXISTING CONDITIONS PLAN - 6 OF 7

CONTINUED ON
SHEET NO. 10



INHABITANTS OF THE TOWN OF HARVARD
 0 LANCASTER COUNTY ROAD
 MAP-LOT 8-62.4
 BK-PG 21051-25
 PLAN BK-PG 721-46



GEBBO LANE
 (PUBLIC - VARIABLE WIDTH)

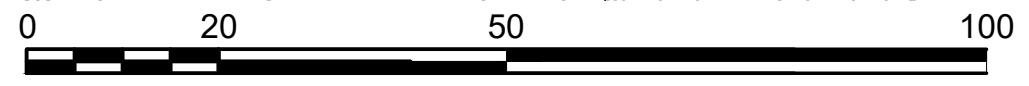
LANCASTER COUNTY ROAD
 (PUBLIC - VARIABLE WIDTH)

LEGEND
 — =WATERS OF THE UNITED STATES (WOTUS)
 — =ORDINARY HIGH WATER MARK (OHWM)

OX. SEPTIC M LOCATION
 AP/F
 MASSACHUSETTS, LLC
 215 AYER ROAD
 MAP-LOT 8-67
 BK-PG 65530-161
 PLAN BK-PG 299-36

SATELLITE CONC. ON PAD

R.J. LAZARO F
 6 LA



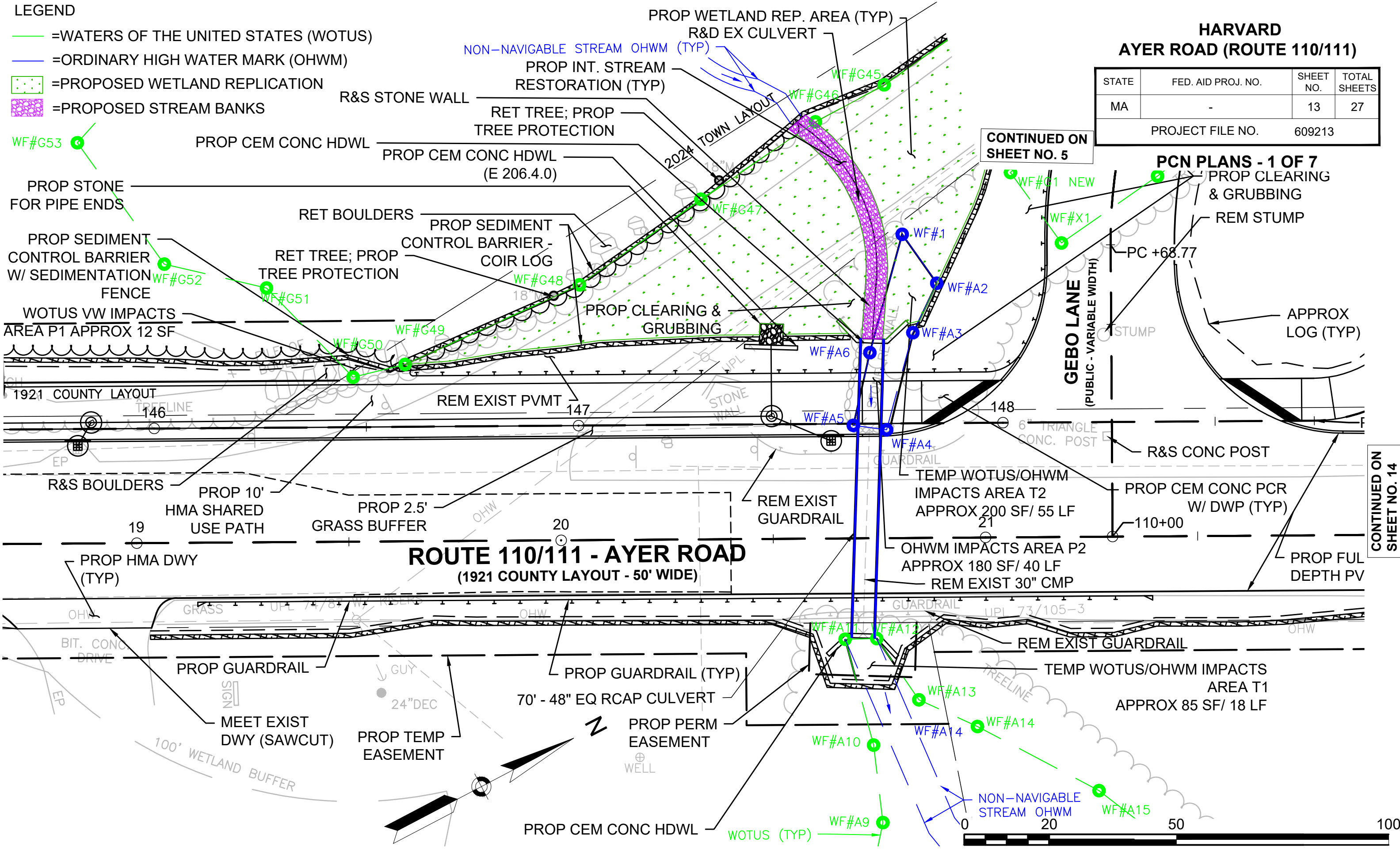
SCALE: 1" = 20'

LEGEND

- =WATERS OF THE UNITED STATES (WOTUS)
- =ORDINARY HIGH WATER MARK (OHWM)
- =PROPOSED WETLAND REPLICATION
- =PROPOSED STREAM BANKS

**HARVARD
AYER ROAD (ROUTE 110/111)**

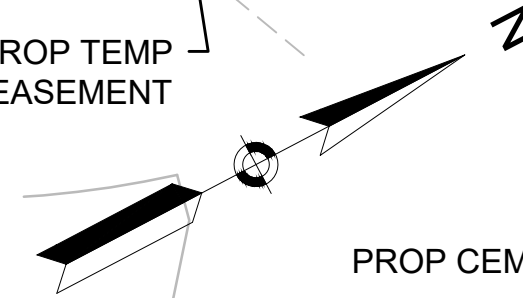
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	13	27
PROJECT FILE NO.		609213	



CONTINUED ON SHEET NO. 5

CONTINUED ON SHEET NO. 14

**ROUTE 110/111 - AYER ROAD
(1921 COUNTY LAYOUT - 50' WIDE)**

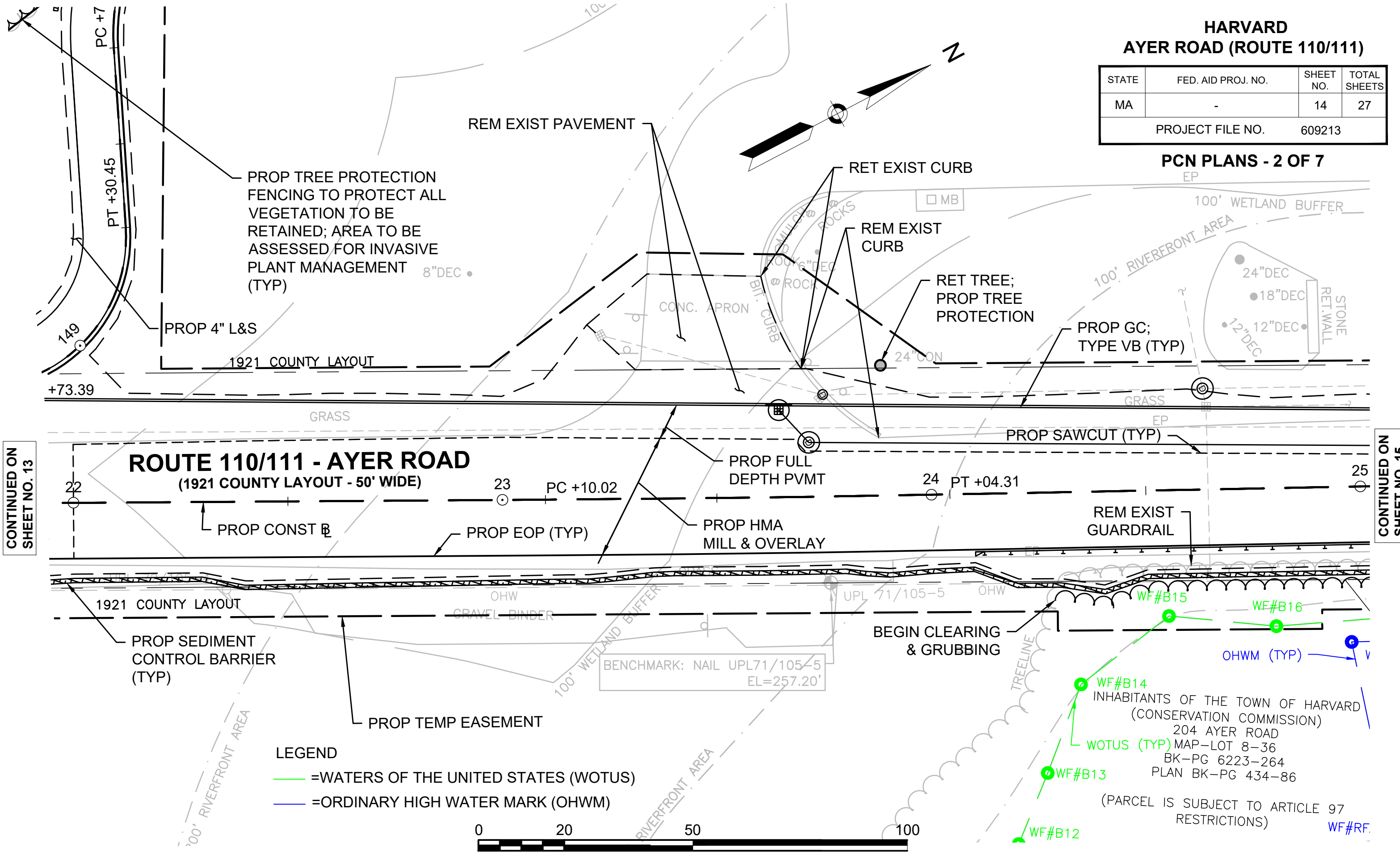


SCALE: 1" = 20'

HARVARD AYER ROAD (ROUTE 110/111)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	14	27
PROJECT FILE NO.		609213	

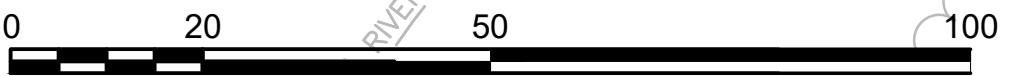
PCN PLANS - 2 OF 7



CONTINUED ON SHEET NO. 13

CONTINUED ON SHEET NO. 15

- LEGEND**
- =WATERS OF THE UNITED STATES (WOTUS)
 - =ORDINARY HIGH WATER MARK (OHWM)



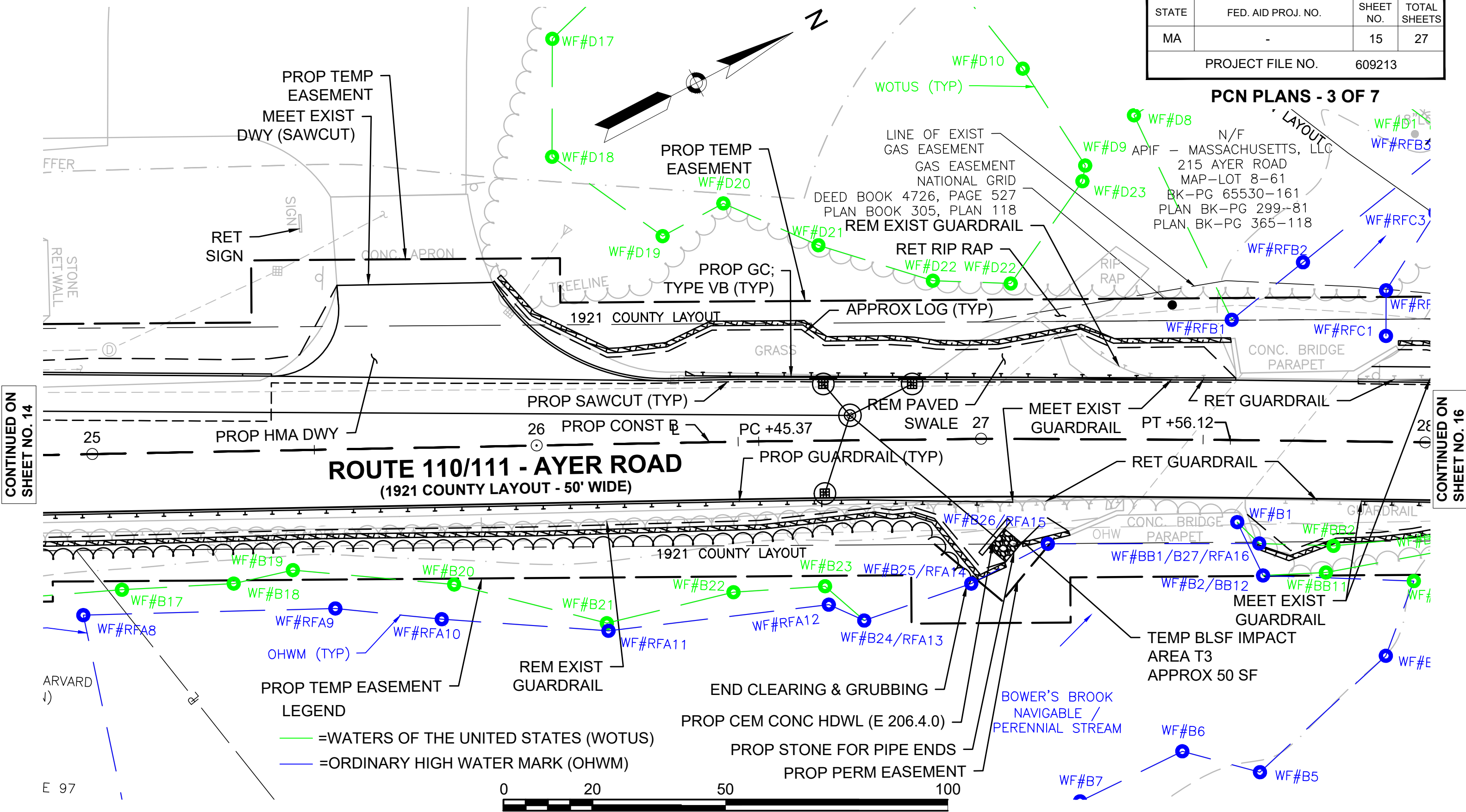
SCALE: 1" = 20'

INHABITANTS OF THE TOWN OF HARVARD
(CONSERVATION COMMISSION)
204 AYER ROAD
WOTUS (TYP) MAP-LOT 8-36
BK-PG 6223-264
PLAN BK-PG 434-86
(PARCEL IS SUBJECT TO ARTICLE 97 RESTRICTIONS)

HARVARD AYER ROAD (ROUTE 110/111)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	15	27
PROJECT FILE NO.		609213	

PCN PLANS - 3 OF 7



CONTINUED ON SHEET NO. 14

CONTINUED ON SHEET NO. 16

LEGEND

- = WATERS OF THE UNITED STATES (WOTUS)
- = ORDINARY HIGH WATER MARK (OHWM)

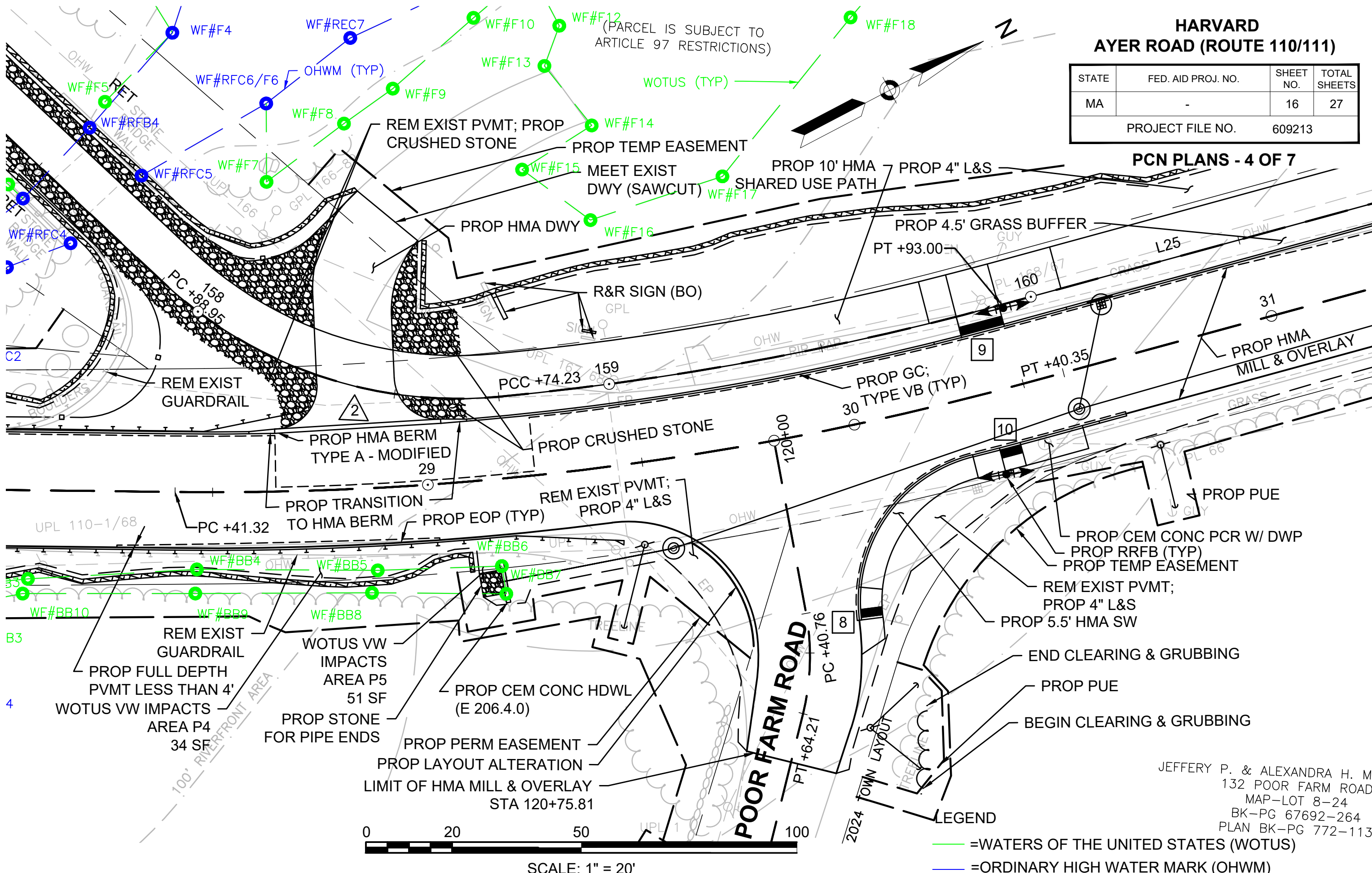


SCALE: 1" = 20'

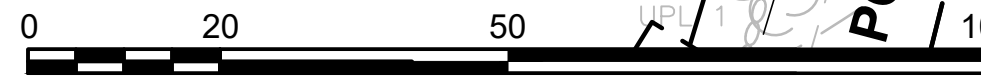
HARVARD AYER ROAD (ROUTE 110/111)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	16	27
PROJECT FILE NO.		609213	

PCN PLANS - 4 OF 7



CONTINUED ON
SHEET NO. 15



SCALE: 1" = 20'

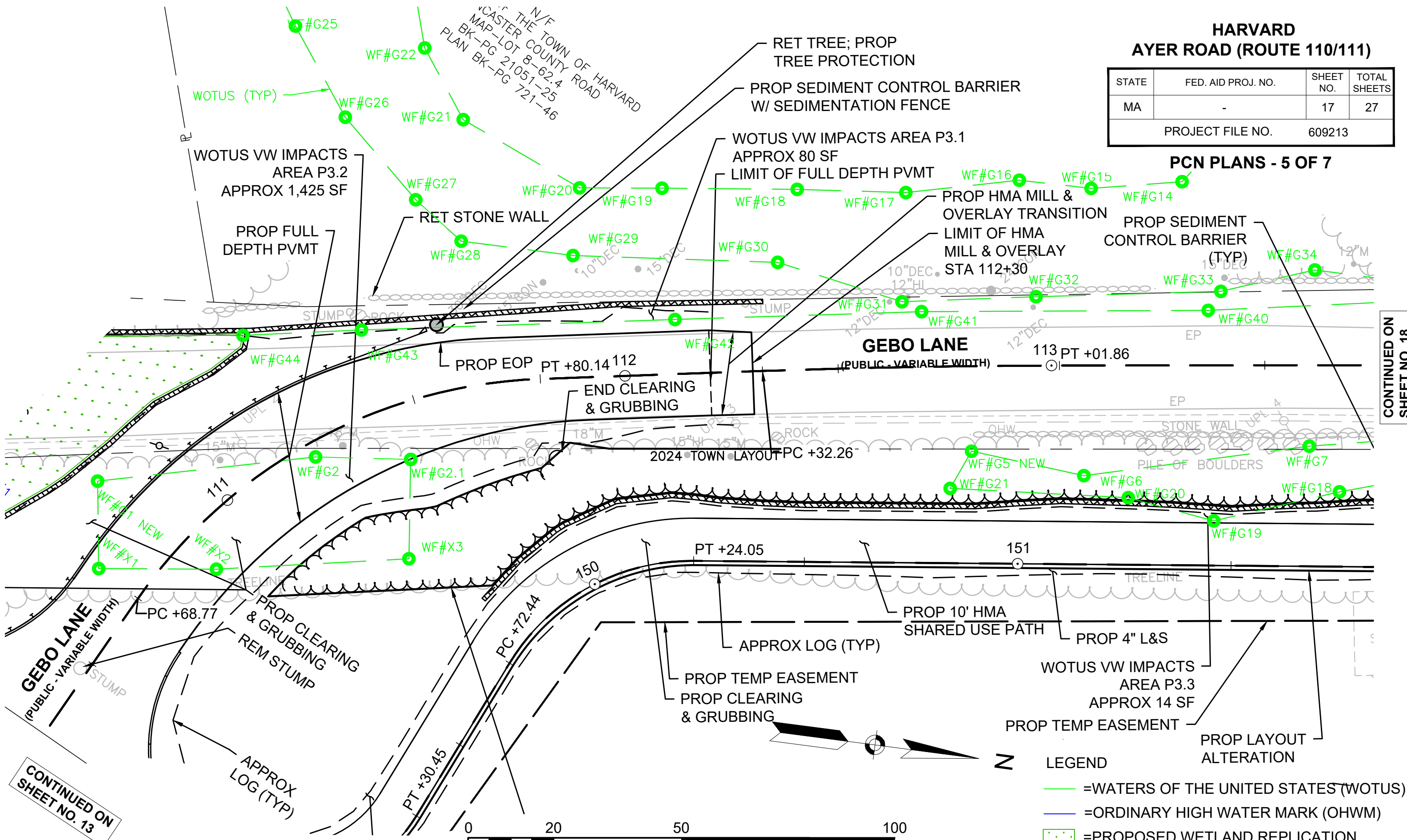
- LEGEND
- = WATERS OF THE UNITED STATES (WOTUS)
 - = ORDINARY HIGH WATER MARK (OHWM)

JEFFERY P. & ALEXANDRA H. MC
 132 POOR FARM ROAD
 MAP-LOT 8-24
 BK-PG 67692-264
 PLAN BK-PG 772-113

HARVARD AYER ROAD (ROUTE 110/111)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	17	27
PROJECT FILE NO.		609213	

PCN PLANS - 5 OF 7



CONTINUED ON SHEET NO. 13

CONTINUED ON SHEET NO. 18

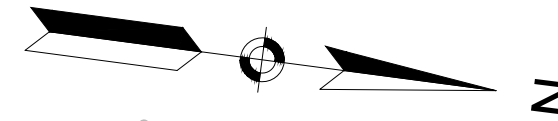
- LEGEND**
- = WATERS OF THE UNITED STATES (WOTUS)
 - = ORDINARY HIGH WATER MARK (OHWM)
 - = PROPOSED WETLAND REPLICATION
 - = PROPOSED STREAM BANKS

SCALE: 1" = 20'

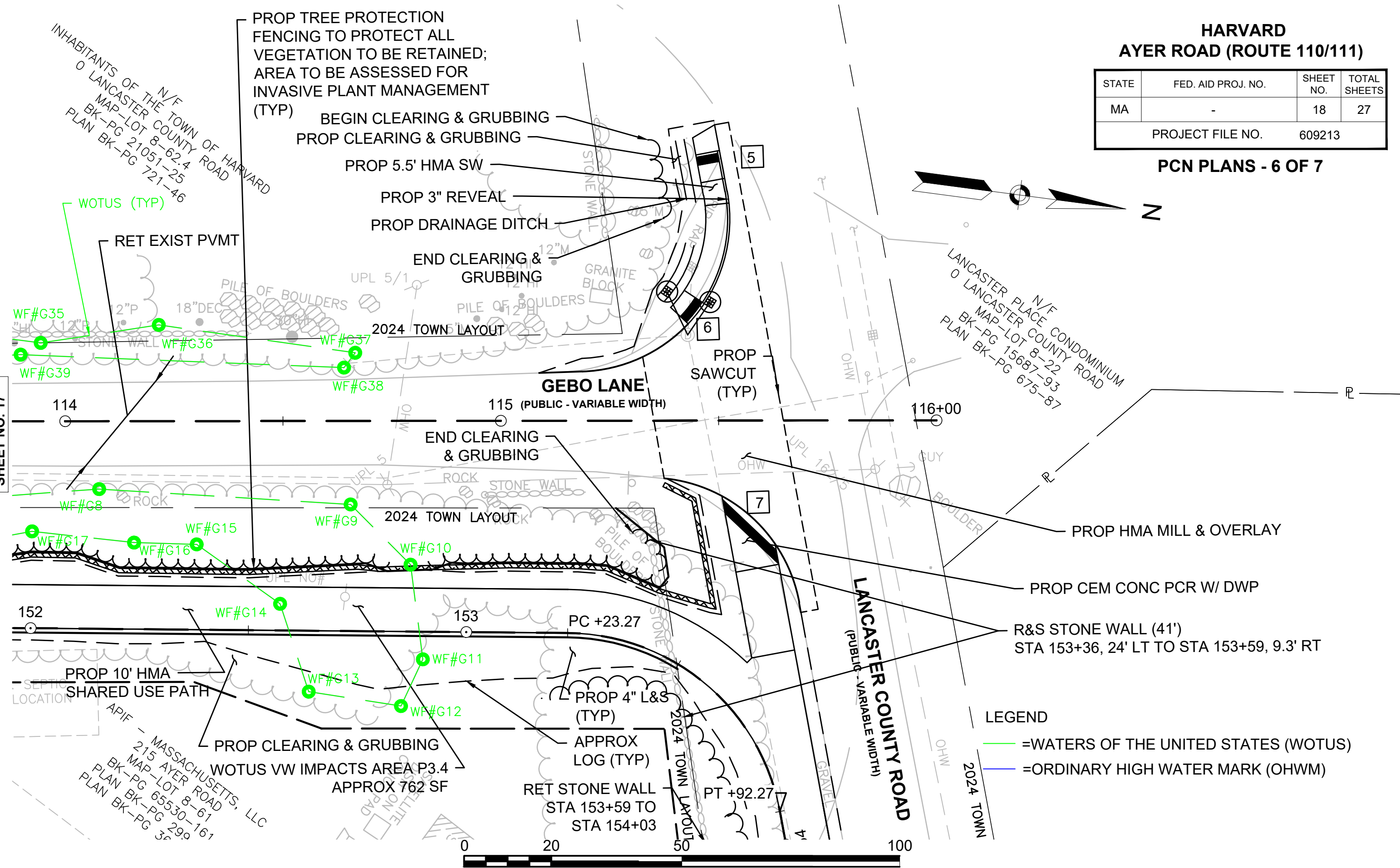
**HARVARD
AYER ROAD (ROUTE 110/111)**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	18	27
PROJECT FILE NO.		609213	

PCN PLANS - 6 OF 7



CONTINUED ON SHEET NO. 17



INHABITANTS OF THE TOWN OF HARVARD
0 LANCASTER COUNTY ROAD
MAP-LOT 8-62.4
BK-PG 21051-25
PLAN BK-PG 721-46

N/F CONDOMINIUM
LANCASTER PLACE
0 LANCASTER COUNTY ROAD
MAP-LOT 8-22
BK-PG 15687-93
PLAN BK-PG 675-87

MASSACHUSETTS, LLC
215 AYER ROAD
MAP-LOT 8-61
BK-PG 65530-167
PLAN BK-PG 299
36

LEGEND
— =WATERS OF THE UNITED STATES (WOTUS)
— =ORDINARY HIGH WATER MARK (OHWM)

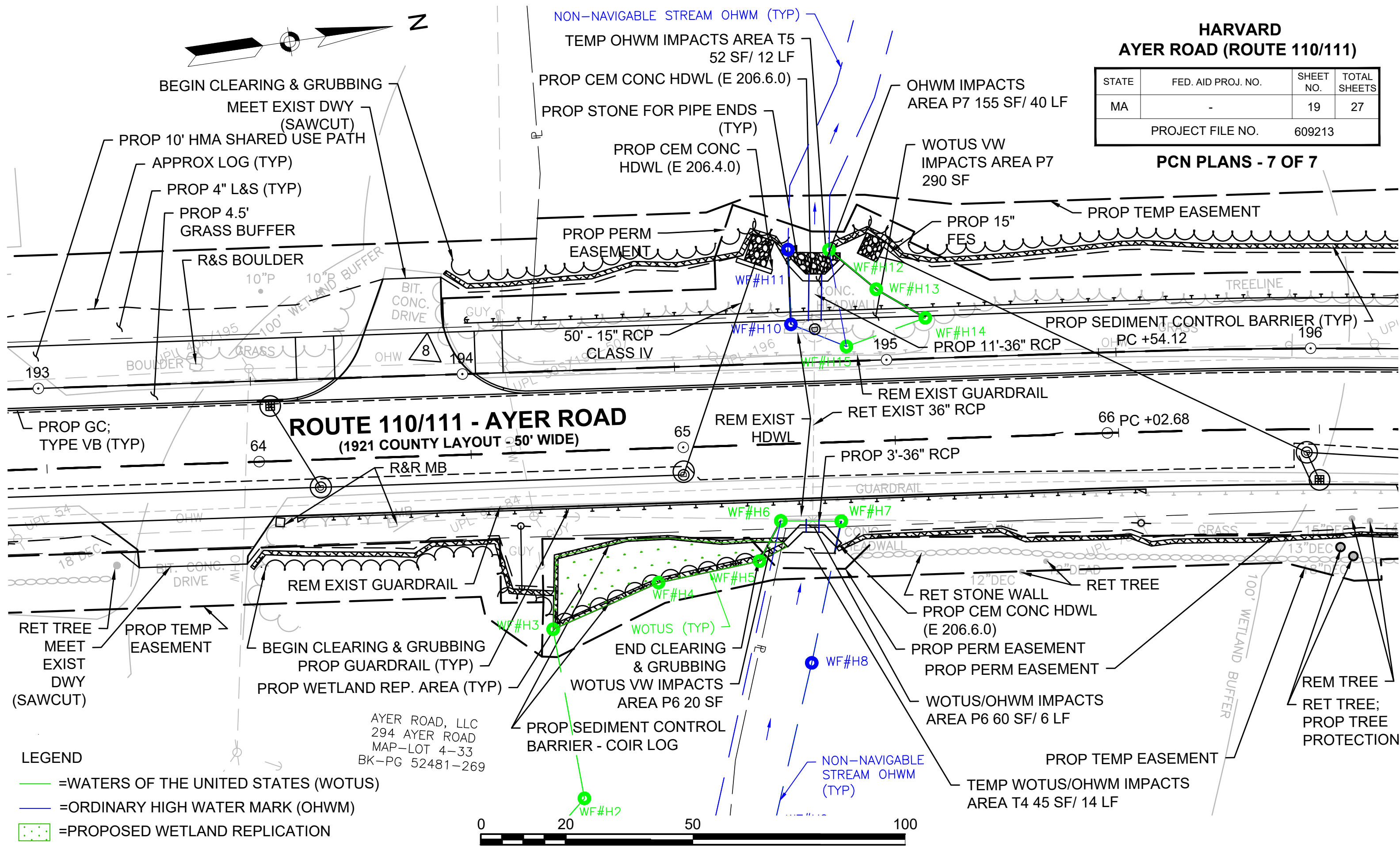


SCALE: 1" = 20'

HARVARD AYER ROAD (ROUTE 110/111)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	19	27
PROJECT FILE NO.		609213	

PCN PLANS - 7 OF 7



- LEGEND**
- =WATERS OF THE UNITED STATES (WOTUS)
 - =ORDINARY HIGH WATER MARK (OHWM)
 - =PROPOSED WETLAND REPLICATION
 - =PROPOSED STREAM BANKS

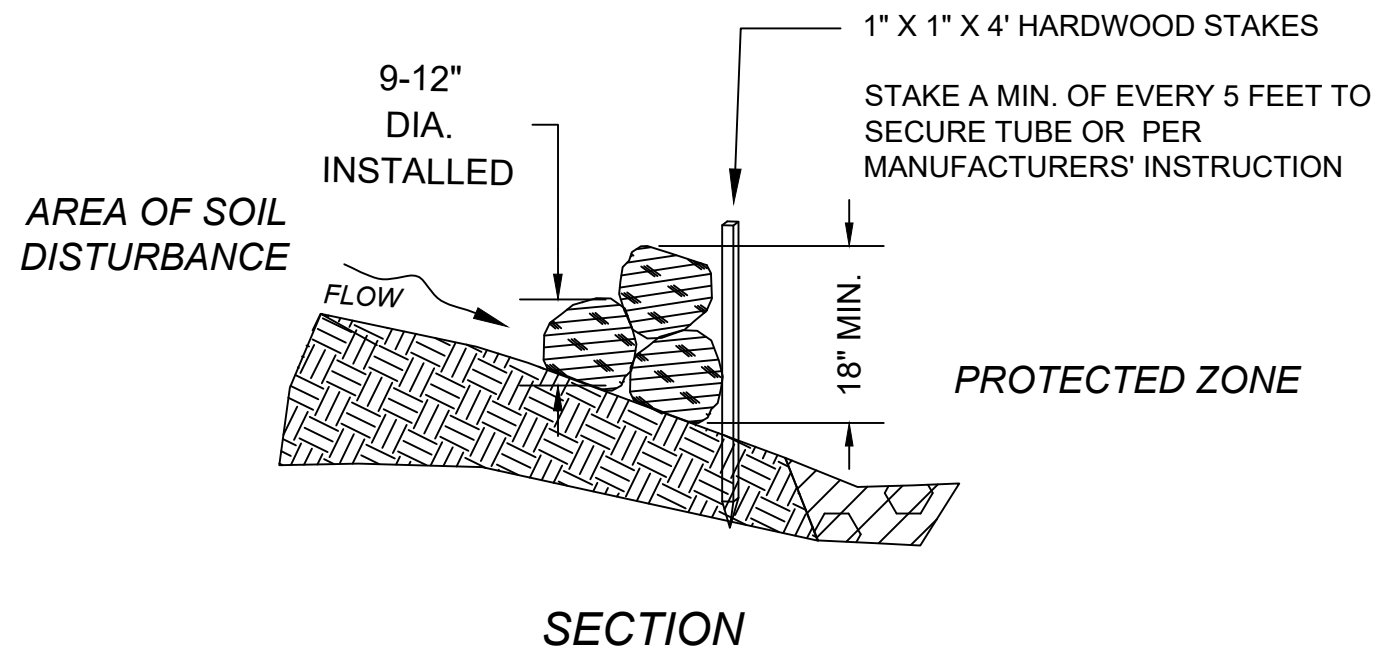
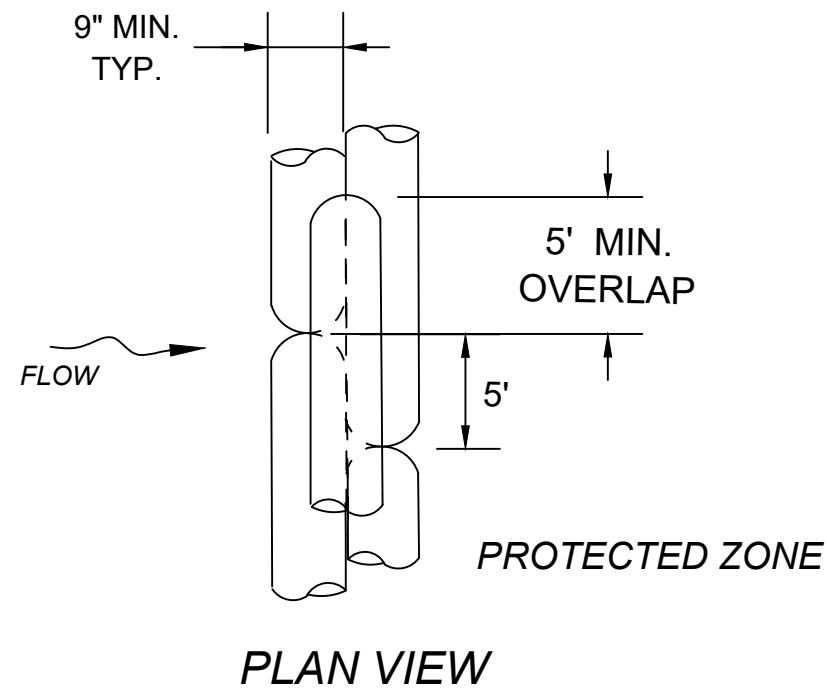


SCALE: 1" = 20'

**HARVARD
AYER ROAD (ROUTE 110/111)**

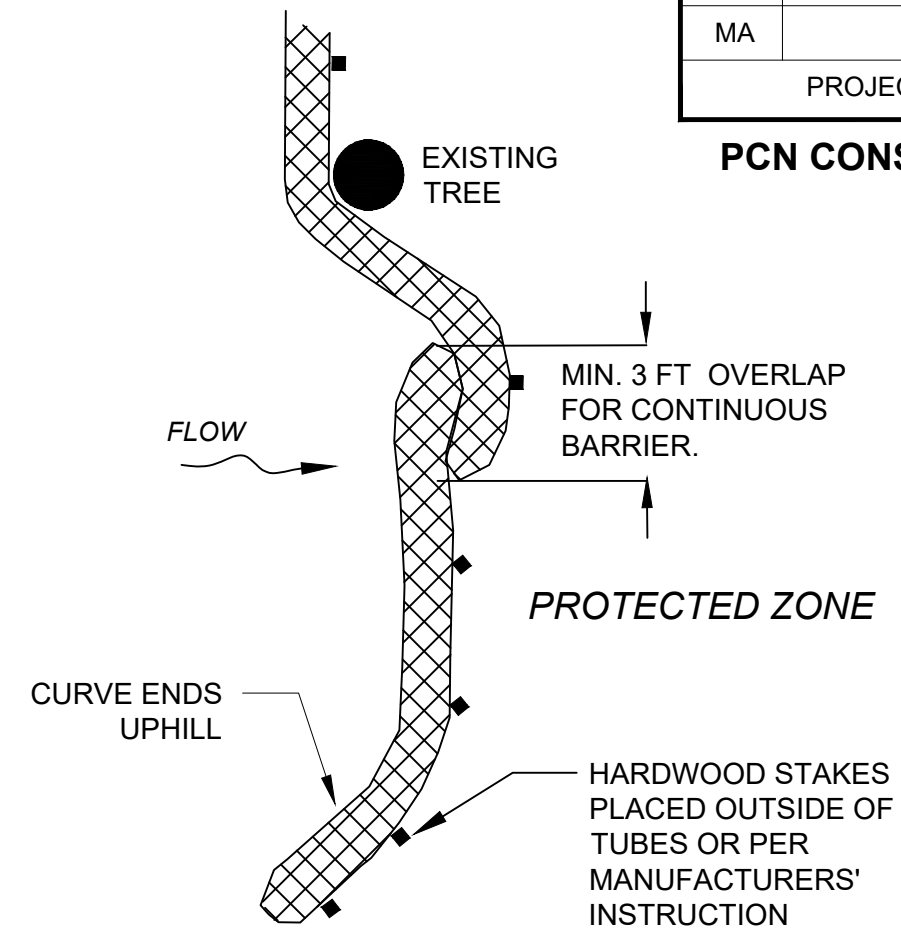
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	20	27
PROJECT FILE NO.		609213	

PCN CONSTRUCTION DETAILS



COMPOST FILTER TUBE BERM (SLOPES 2:1 OR STEEPER)

NOT TO SCALE



PLACE TUBE ALONG CONTOURS AND PERPENDICULAR TO FLOW.

PLACE AS CLOSE TO LIMIT OF SOIL DISTURBANCE AS POSSIBLE

ADJUST LOCATION AS REQUIRED FOR OPTIMUM EFFECTIVENESS. DO NOT INSTALL IN WATERWAYS.

PLACE STAKES AS NEEDED TO SECURE TUBES IN PLACE.

PLAN VIEW

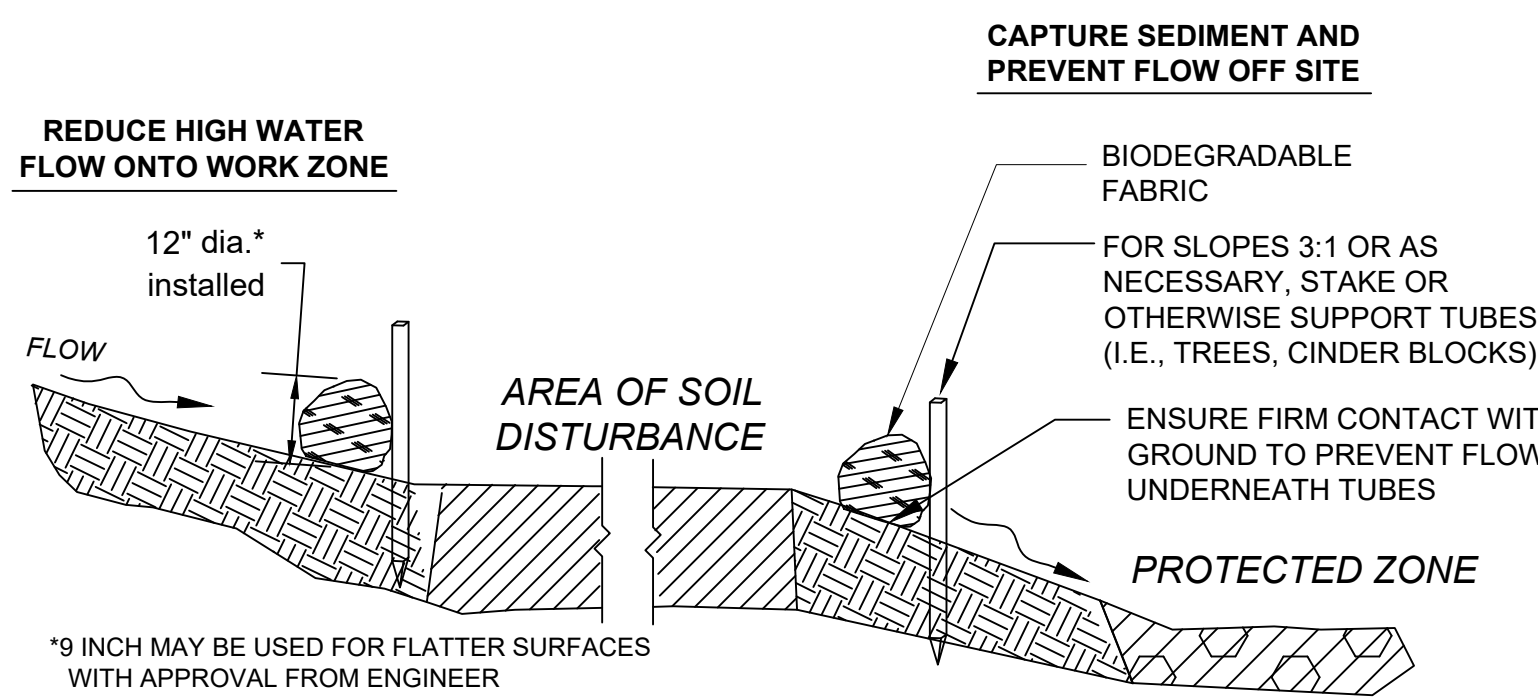
COMPOST FILTER TUBE

NOT TO SCALE

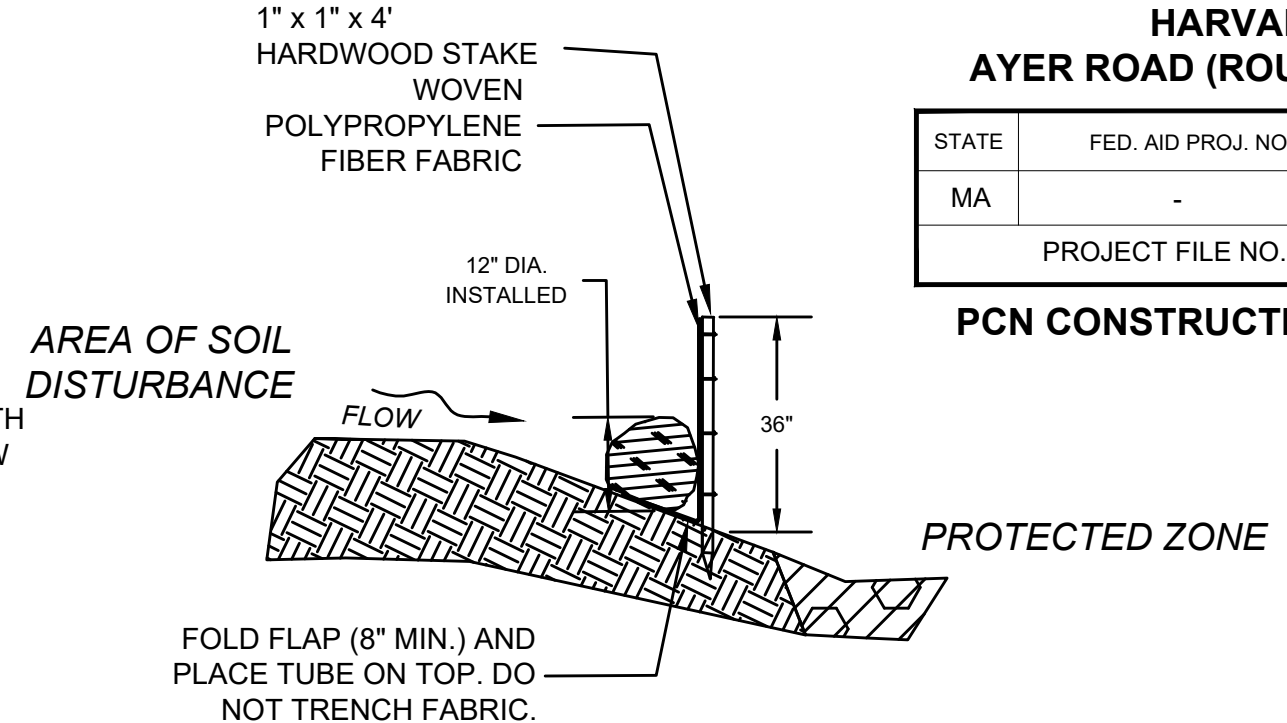
**HARVARD
AYER ROAD (ROUTE 110/111)**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	21	27
PROJECT FILE NO.		609213	

PCN CONSTRUCTION DETAILS



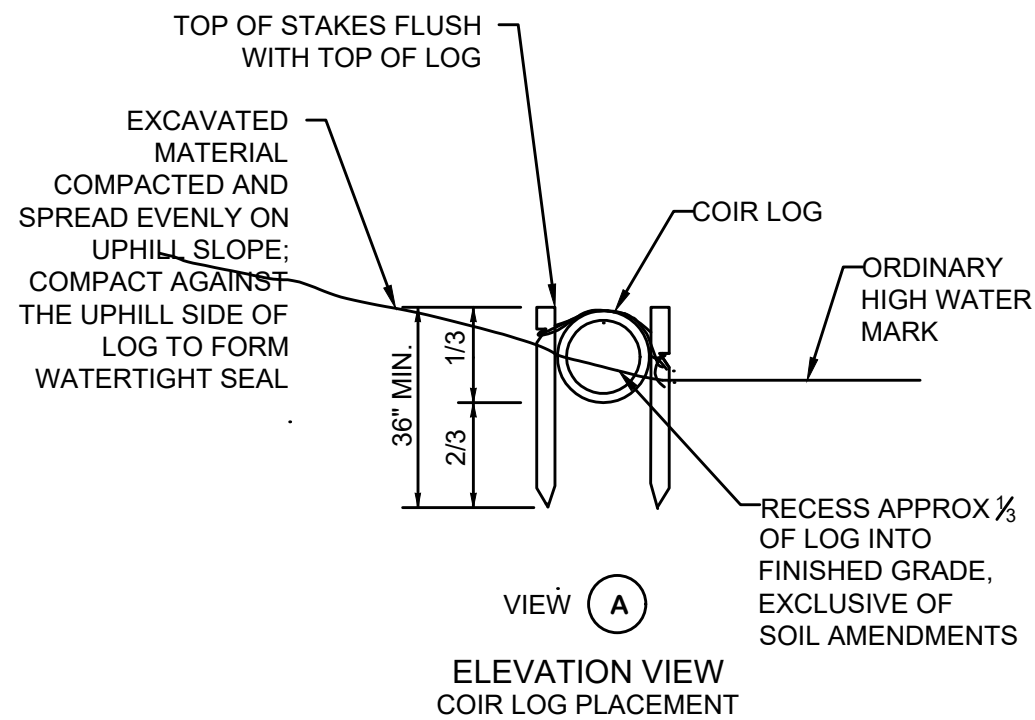
SECTION



SECTION

SEDIMENT BARRIER - COMPOST FILTER TUBES

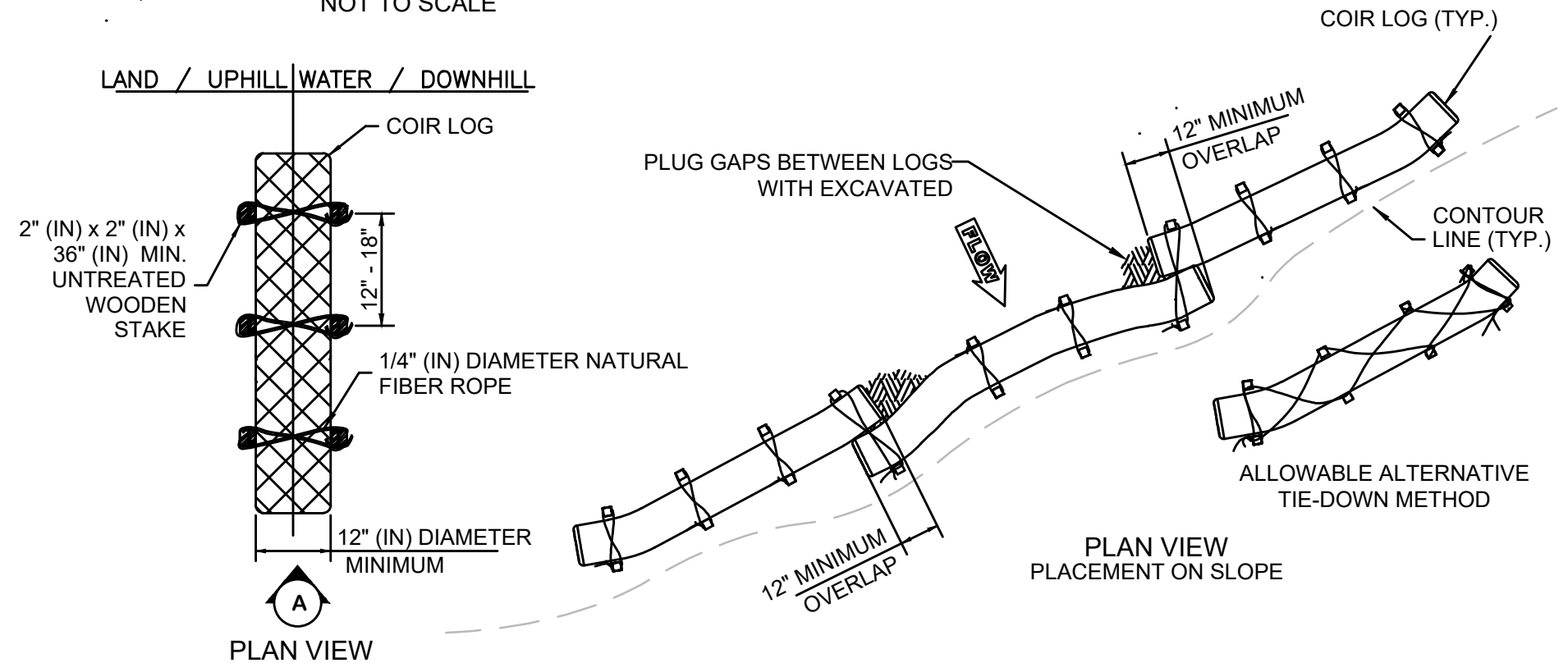
NOT TO SCALE



ELEVATION VIEW
COIR LOG PLACEMENT

COMPOST FILTER TUBE & SEDIMENTATION FENCE

NOT TO SCALE



PLAN VIEW

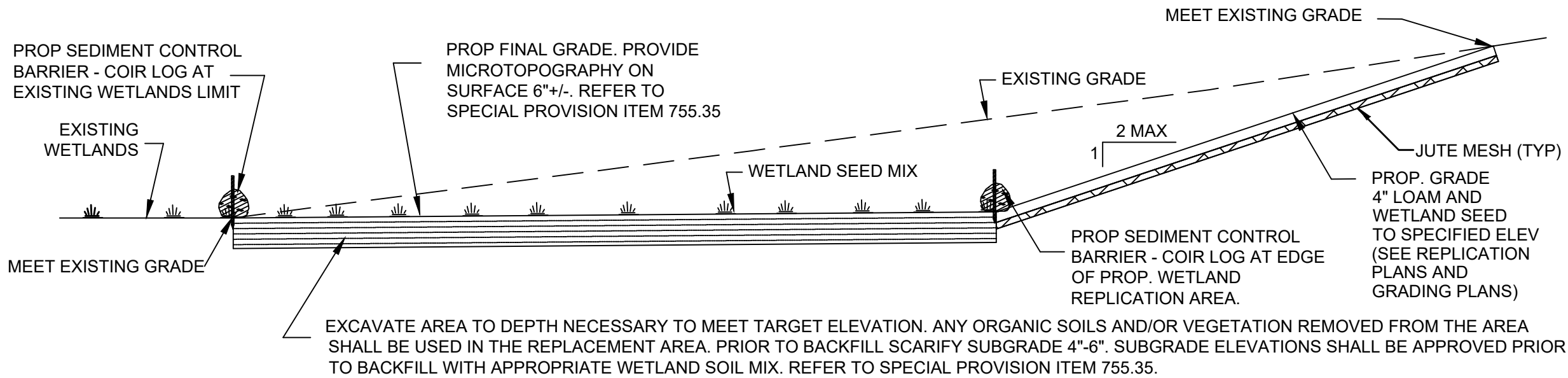
SEDIMENT CONTROL BARRIER - COIR LOG

NOT TO SCALE

**HARVARD
AYER ROAD (ROUTE 110/111)**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	22	27
PROJECT FILE NO.		609213	

PCN CONSTRUCTION DETAILS

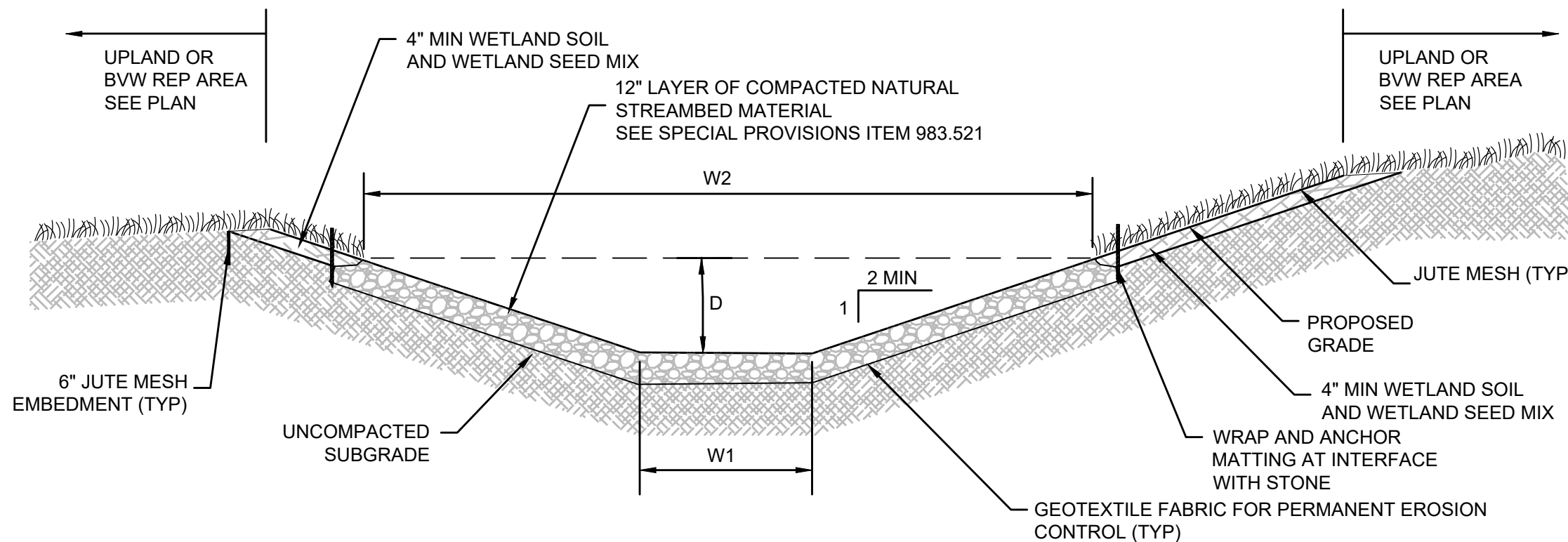


NOTES:

1. THE REPLICATION AREA SHALL BE PROVIDED IN A MANNER WHICH IS CONSISTENT WITH ALL OTHER GENERAL PERFORMANCE STANDARDS FOR EACH RESOURCE AREA IN PART III OF 310 CMR 10.00.
2. REFER TO SPECIAL PROVISION ITEMS 755.35, 755.75, 755.76.
3. ALL DISTURBED WETLAND AREAS SHALL BE TREATED WITH WETLAND SEED - RIPARIAN MIXTURE.

TYPICAL SECTION AT WETLAND REPLICATION AREA

NOT TO SCALE



NOTES:

1. REFER TO SPECIAL PROVISION ITEM 983.521.
2. MATCH EXISTING GRADES UNLESS OTHERWISE NOTED.
3. 12" DIA COIR LOGS MAY BE KEYED INTO BANK ON OUTSIDE BENDS OF STREAM CHANNEL TO PROTECT AGAINST UNDERCUTTING OF RESTORED BANKS.

TYPICAL SECTION AT INT. STREAM RESTORATION AREA

NOT TO SCALE

**HARVARD
AYER ROAD (ROUTE 110/111)**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	23	27
PROJECT FILE NO.		609213	

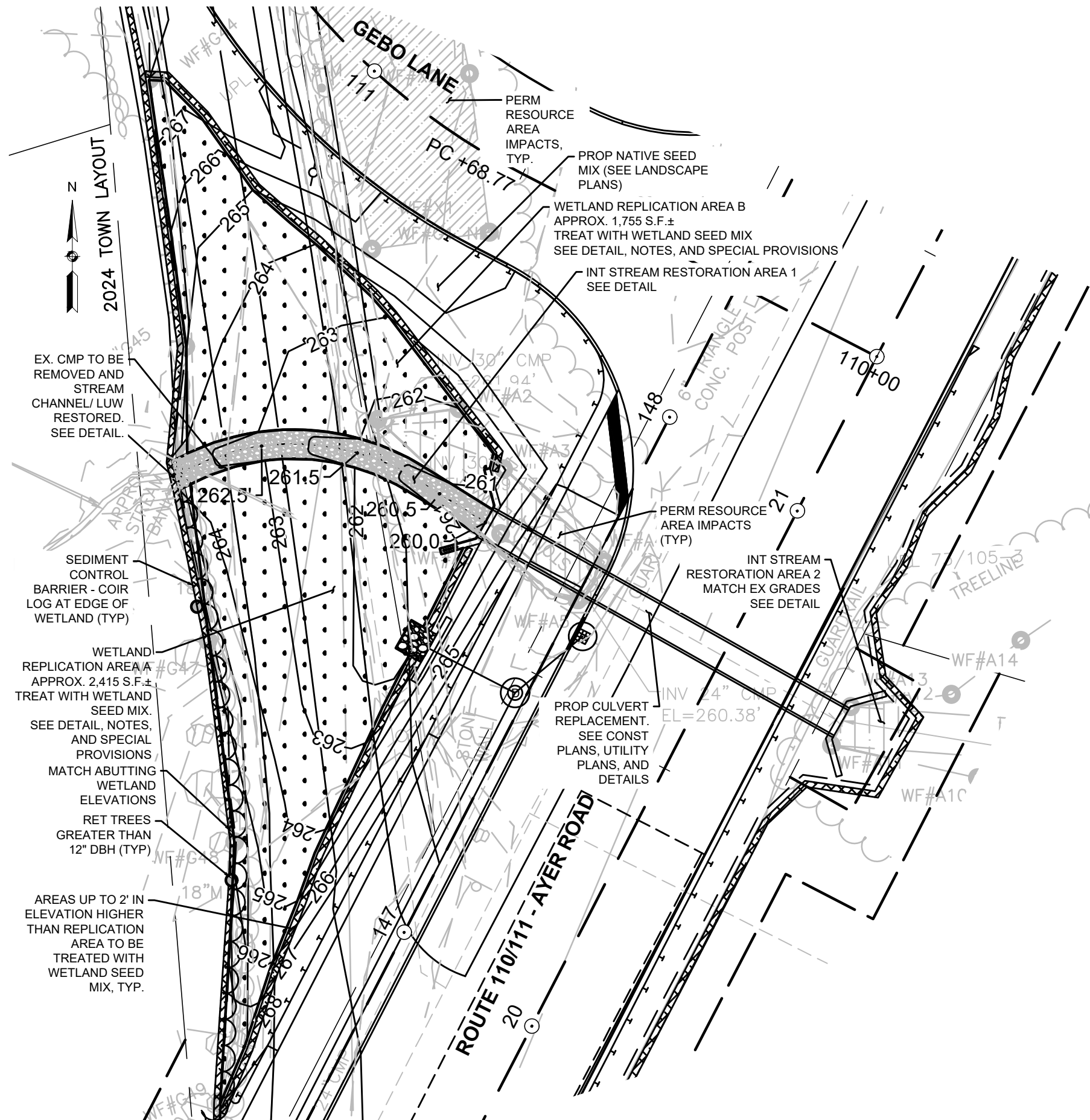
PCN CONSTRUCTION DETAILS

RESOURCE AREA MITIGATION		
AREA	WOTUS	MITIGATION
REP A	FRESHWATER WETLANDS	2,415 SF
REP B	FRESHWATER WETLANDS	1,755 SF
REP C	FRESHWATER WETLANDS	554 SF
REST 1	NON NAVIGABLE STREAM BED	638 SF*
REST 1	NON NAVIGABLE STREAM OHWM	256 LF*
REST 2	NON NAVIGABLE STREAM BED	85 SF
REST 2	NON NAVIGABLE STREAM OHWM	18 LF
REST 3	NON NAVIGABLE STREAM BED	80 SF**
REST 3	NON NAVIGABLE STREAM OHWM	42 LF**
REST 4	NON NAVIGABLE STREAM BED	52 SF
REST 4	NON NAVIGABLE STREAM OHWM	12 LF

*RESTORATION AREA 1 MITIGATION INCLUDES WOTUS/OHWM ASSOCIATED WITH CULVERT 1 REPLACEMENT

**RESTORATION AREA 3 MITIGATION INCLUDES WOTUS/OHWM ASSOCIATED WITH CULVERT 2 EXTENSION

STREAM RESTORATION AREA TABLE			
AREA	D	W1	W2
1	6"	36"	60"
2	6"	36"	60"
3	12"	18"	66"
4	12"	18"	66"



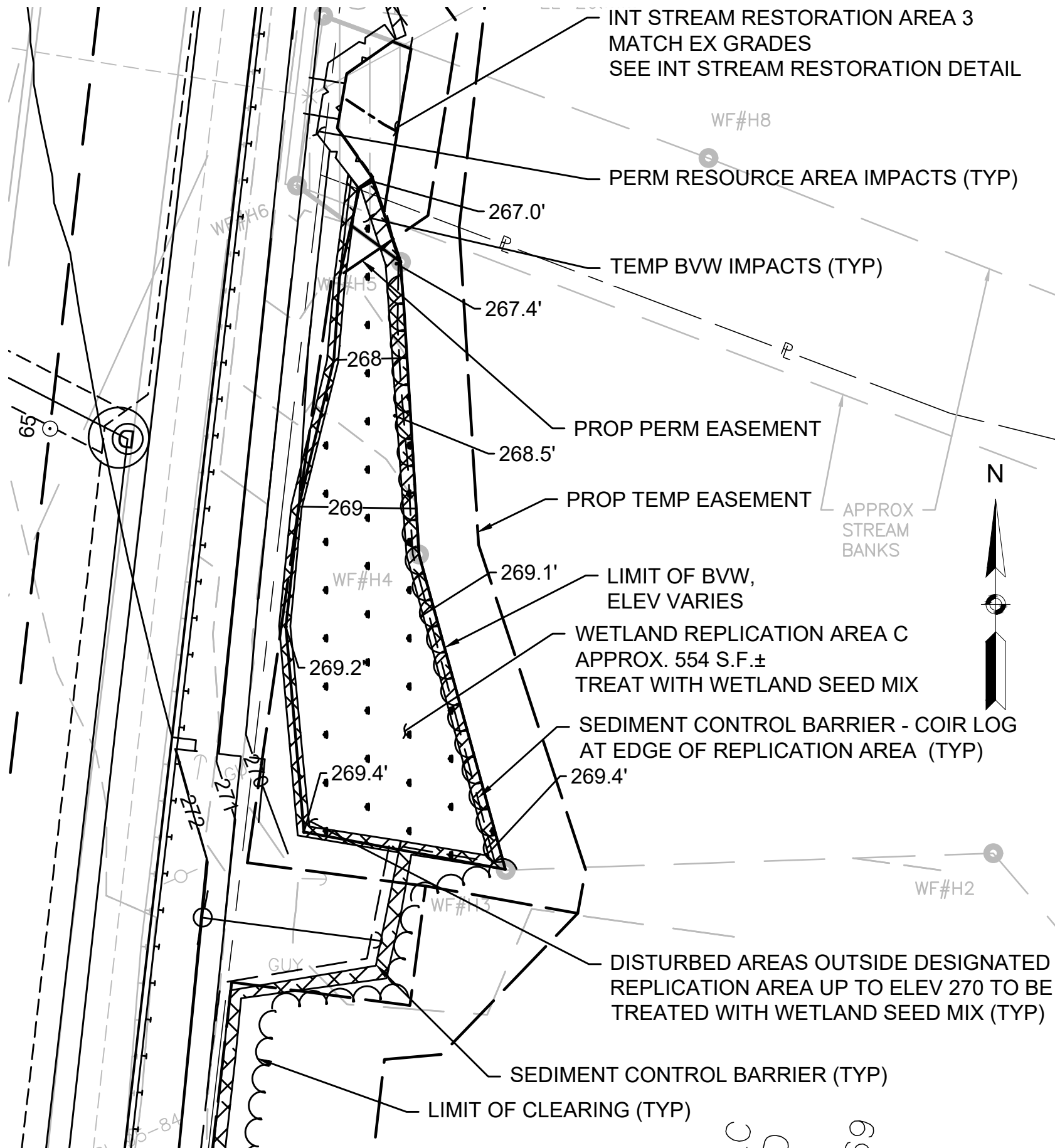
**WETLAND REPLICATION AREAS A (STA 19+64 TO 20+71 LT) & B (STA 20+61 TO 21+15 LT)
INT. STREAM RESTORATION AREAS 1 (STA 20+55 TO 20+76 LT) & 2 (STA 20+67 TO 20+78 RT)**

SCALE: 1"=20'

**HARVARD
AYER ROAD (ROUTE 110/111)**

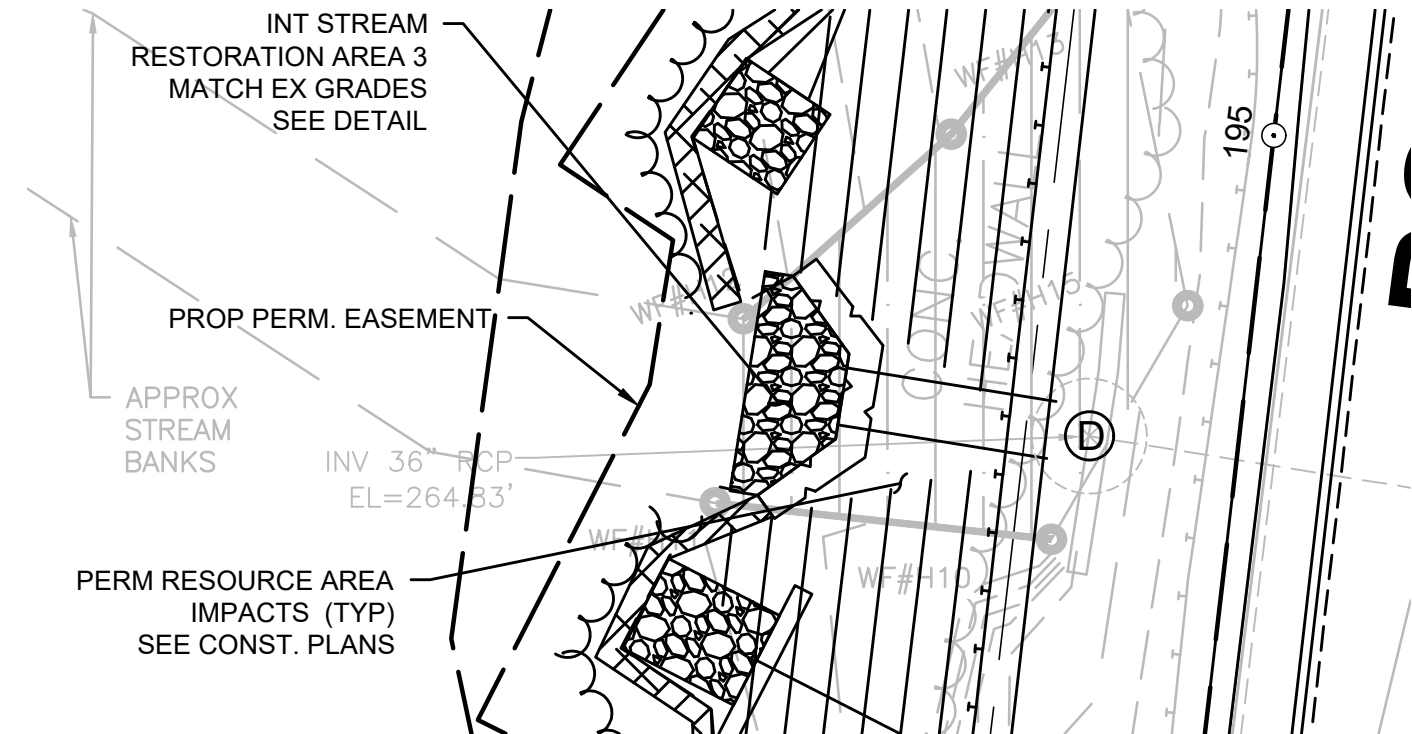
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	24	27
PROJECT FILE NO.		609213	

PCN CONSTRUCTION DETAILS



**WETLAND REPLICATION AREA C (STA 64+68 TO 65+19 RT)
INT. STREAM RESTORATION AREA 3 (STA 65+17 TO 65+35 RT)**

SCALE: 1"=10'



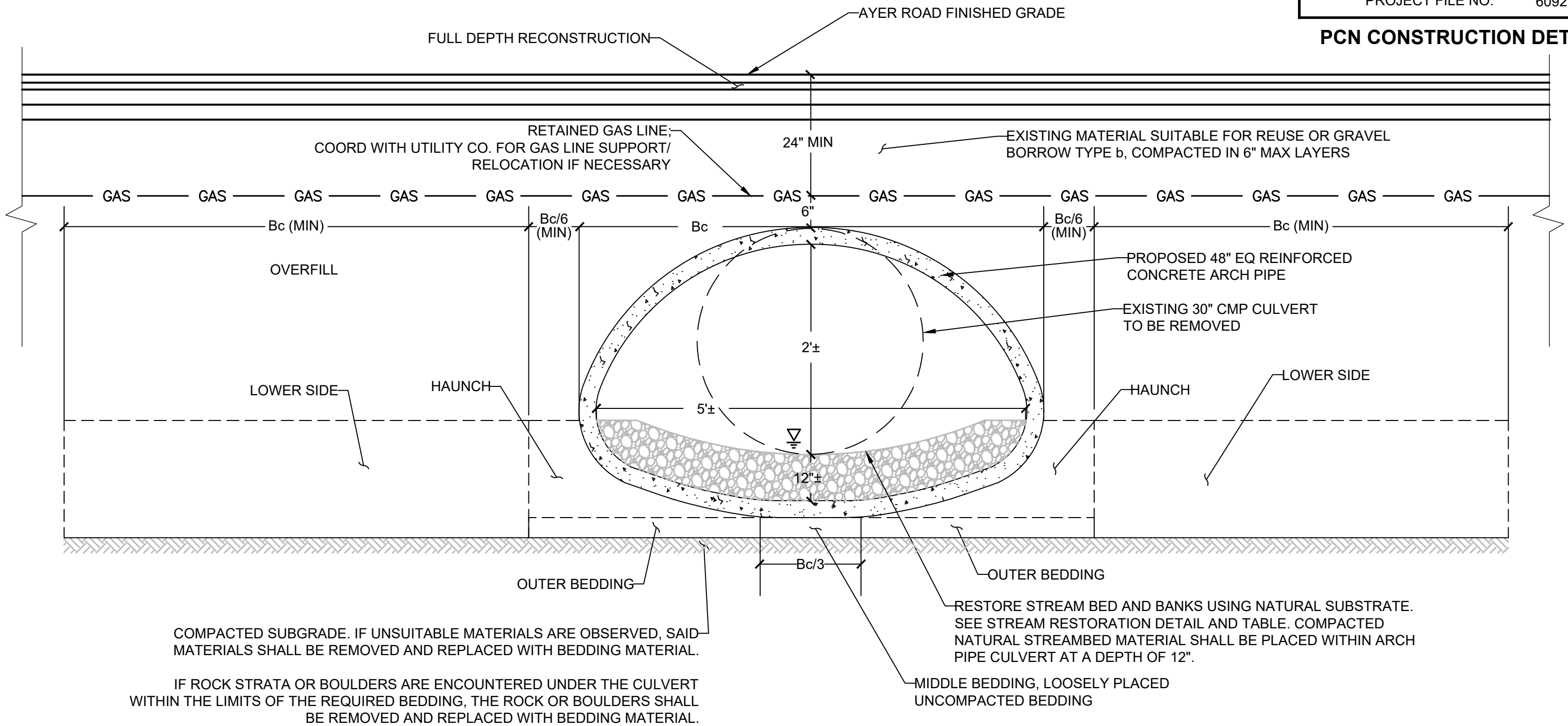
INT. STREAM RESTORATION AREA 4 (STA 65+27 TO 65+38 LT)

SCALE: 1"=10'

**HARVARD
AYER ROAD (ROUTE 110/111)**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	25	27
PROJECT FILE NO.		609213	

PCN CONSTRUCTION DETAILS



REINFORCED CONCRETE ARCH PIPE

N.T.S.

**AYER ROAD AT GEBO LANE CULVERT REPLACEMENT
(STA 20+72)**

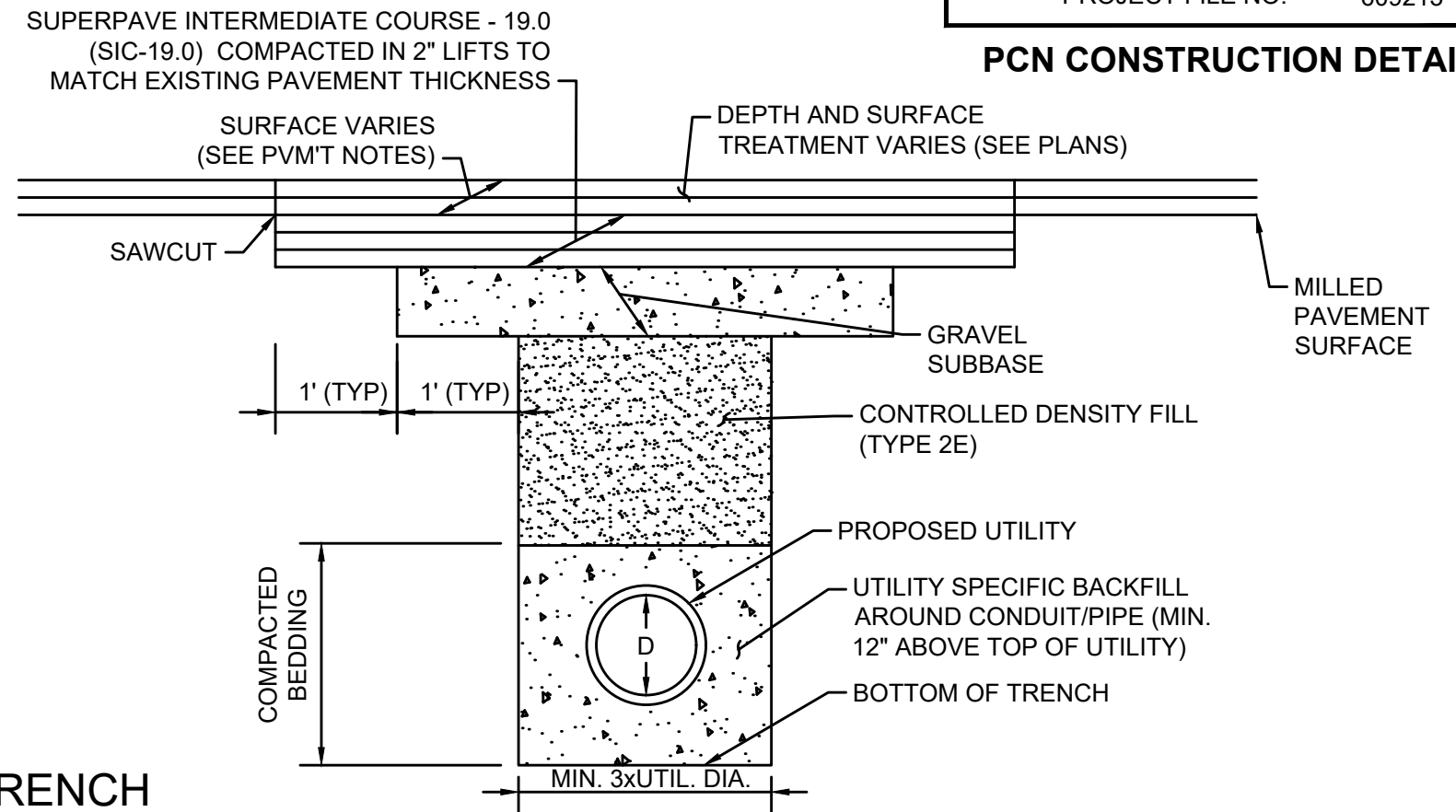
**HARVARD
AYER ROAD (ROUTE 110/111)**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	26	27
PROJECT FILE NO.		609213	

NOTES:

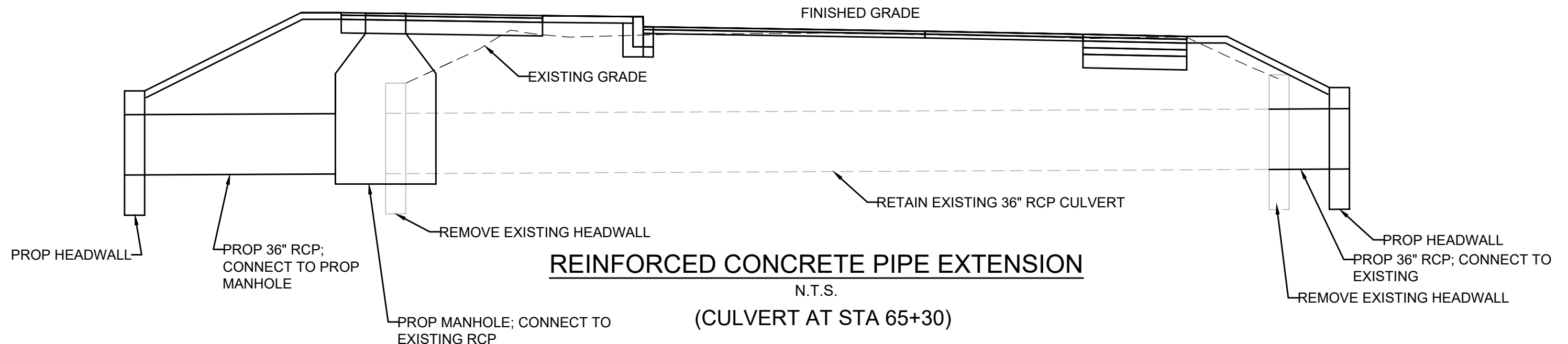
- IF A TEMPORARY PATCH IS TO BE USED, THE CDF SHALL BE PLACED TO THE ELEVATION OF THE ADJOINING SUBGRADE, THEN GRAVEL SHALL BE PLACED AND COMPACTED TO WITHIN 3 1/2 INCHES OF THE FINISHED GRADE. THE LAST 3 1/2 INCHES SHALL BE HOT MIX ASPHALT PLACED IN TWO LAYERS: 1 1/2" SURFACE COURSE OVER 2" INTERMEDIATE COURSE.
- MATERIAL WHICH MEETS THE SPECIFICATION FOR GRAVEL BORROW TYPE C (M1.03.0 TYPE C), PLACED AND COMPACTED IN LAYERS NO GREATER THAN 6", MAY BE USED IN PLACE OF THE CDF WITH APPROVAL FROM THE DISTRICT HIGHWAY DIRECTOR.
- THE EXPOSED EDGES OF ALL LONGITUDINAL AND TRANSVERSE SAW CUT JOINTS SHALL BE TREATED WITH HOT POURED RUBBERIZED ASPHALT JOINT SEALANT MEETING MASSDOT SPECIFICATIONS.
- YELLOW METAL FOIL MARKING TYPE SHALL BE PLACED 18" OVER THE CONDUIT (METAL MARKING TAPE/WIRE SHOULD BE USED FOR NON-METALLIC CONDUIT).
- FOR ROADS WITH AN EXISTING CEMENT CONCRETE BASE, A REINFORCED, HIGH EARLY STRENGTH AIR ENTRAINED, CLASS "F" CEMENT CONCRETE SLAB SHALL BE CAST IN PLACE TO MEET THE EXISTING PAVEMENT. SPECIFIC JOINT DETAILS WITH THE EXISTING PAVEMENT SHALL BE APPROVED DEPENDENT ON THE EXISTING SITE CONDITIONS.
- ALL TRENCH DIMENSIONS SHALL BE IN ACCORDANCE WITH SUB-SECTION 140.80 OF THE MASSDOT STANDARDS AND SPECIFICATIONS FOR HIGHWAYS AND BRIDGES

PCN CONSTRUCTION DETAILS



UTILITY TRENCH

N.T.S.



REINFORCED CONCRETE PIPE EXTENSION

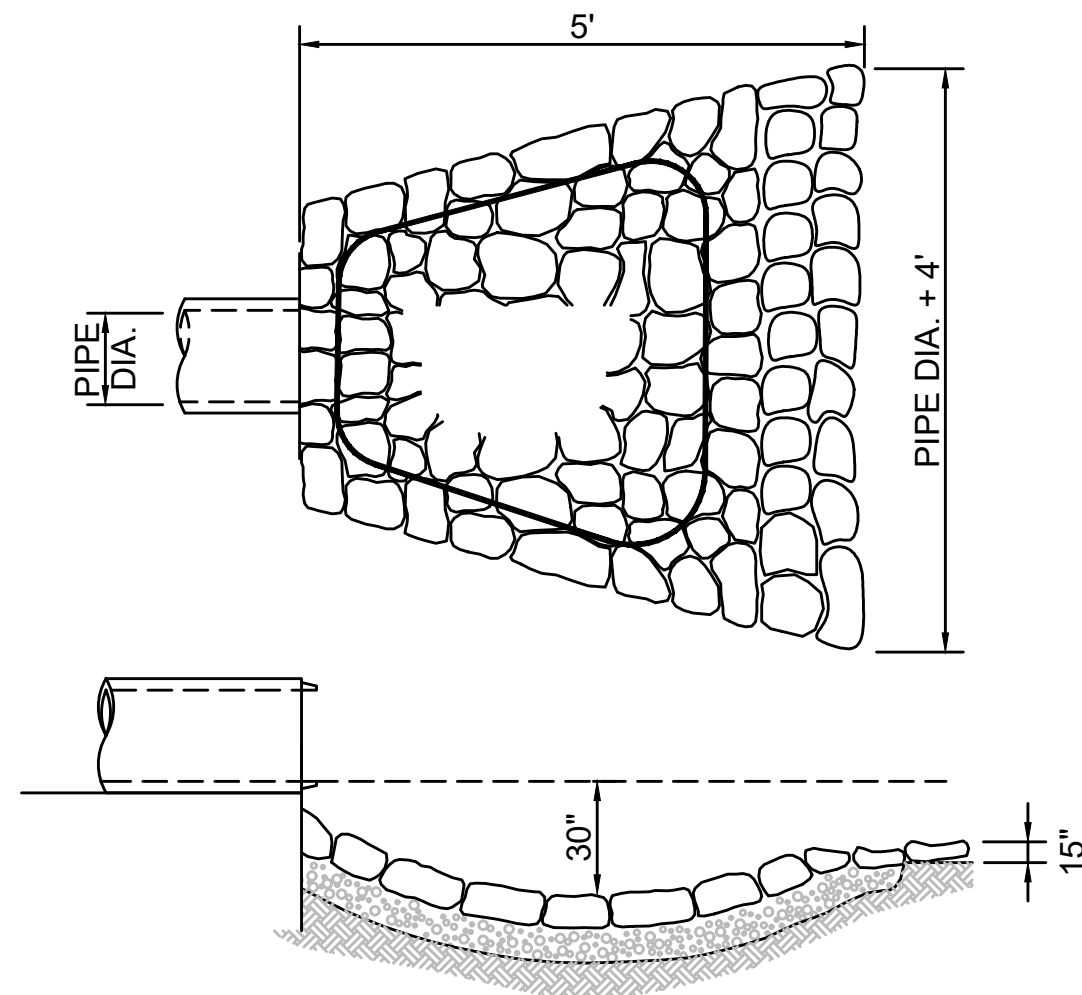
N.T.S.

(CULVERT AT STA 65+30)

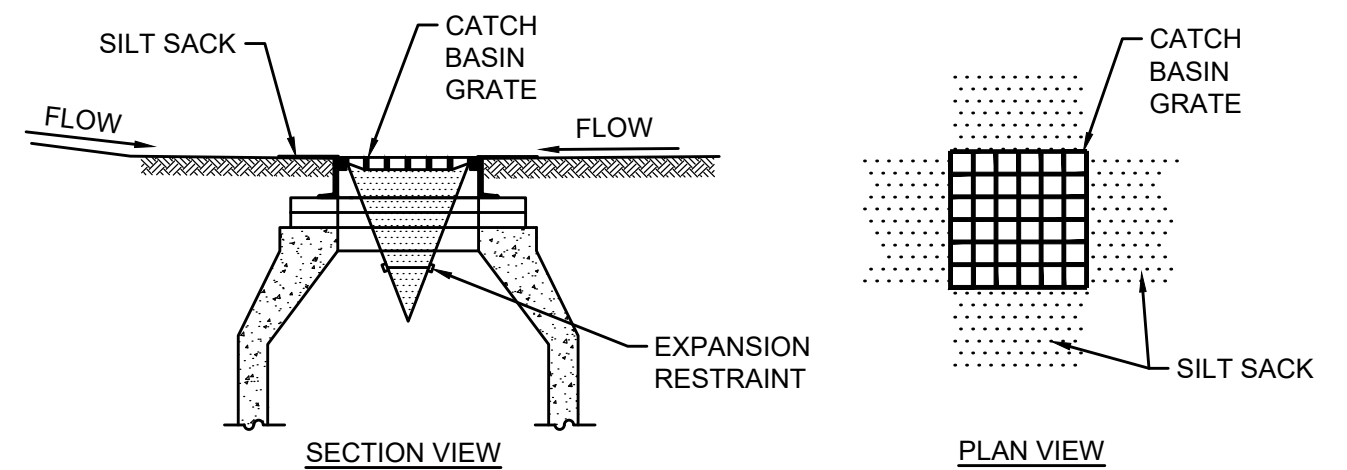
**HARVARD
AYER ROAD (ROUTE 110/111)**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	27	27
PROJECT FILE NO.		609213	

PCN CONSTRUCTION DETAILS



STONE FOR PIPE ENDS
N.T.S.



NOTES:

1. INSTALL SILT SACK IN EXISTING CATCH BASINS BEFORE COMMENCING WORK, AND IN NEW CATCH BASINS IMMEDIATELY AFTER INSTALLATION OF STRUCTURE. MAINTAIN UNTIL INTERMEDIATE COURSE PAVING IS COMPLETE OR A PERMANENT STAND OF GRASS HAS BEEN ESTABLISHED.
2. GRATE TO BE PLACED OVER SILT SACK.
3. SILT SACK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS AND CLEANING OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED.

INLET PROTECTION SILT SACK IN CATCH BASIN
N.T.S.