MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

PLAN AND PROFILE OF

IYANNOUGH RD (RTE 28) AND YARMOUTH RD

IN THE CITY/TOWN OF

BARNSTABLE

BARNSTABLE COUNTY

FEDERAL AID PROJECT NO. TAP/HSI/CMQ/STP/NFP(N/I)-0035(043)

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(N/I)-0035(043)	1	231
PROJECT FILE NO.	606272		

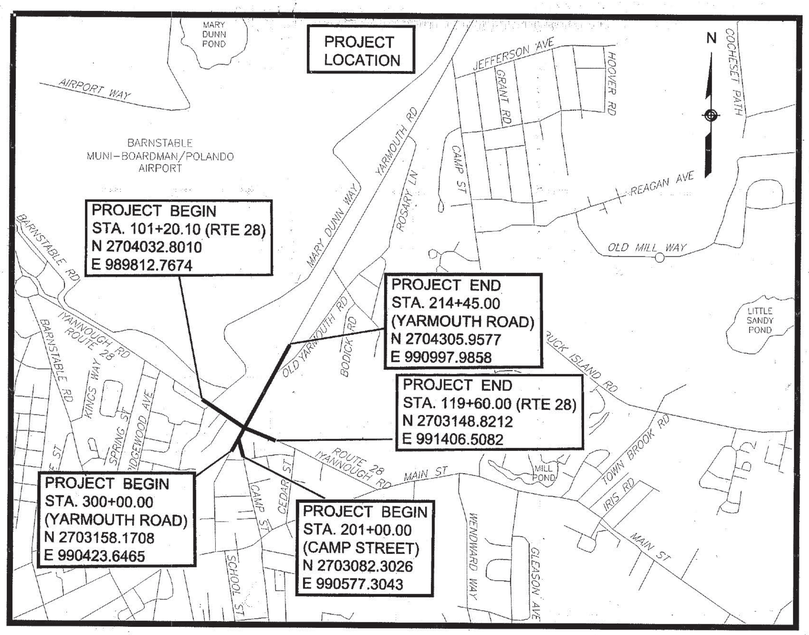
TITLE SHEET & INDEX

606272_HD01(TITLE).DWG Plotted on 20-May-2021 9:22 AM

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

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET & INDEX
2	GENERAL NOTES, LEGEND AND ABBREVIATIONS
3	KEY PLAN (20 SCALE)
4-5	KEY PLAN (40 SCALE)
6-8	BORING LOGS
9-12	TYPICAL SECTIONS
13-16	CONSTRUCTION BASELINE TIES
17-22	CONSTRUCTION PLANS
23-26	PROFILES - ROUTE 28
27-31	PROFILES - SIDE STREETS
32-37	CURB TIE & GRADING PLANS
38-44	DRAINAGE PLANS
45-46	DRAINAGE STRUCTURE TABLES
47-49	DRAINAGE DETAILS
50-55	WATER PLANS
56-58	WATER DETAILS
59-66	SEWER PLANS
67-74	SEWER PROFILES
75-77	SEWER DETAILS
78-86	PAVEMENT MARKING & SIGNING PLANS
87-88	SIGN SUMMARY SHEETS
89-91	TRAFFIC SIGNAL PLANS
92-146	TEMPORARY TRAFFIC CONTROL PLANS
147-154	TEMPORARY TRAFFIC SIGNAL PLANS
155	SUBSURFACE UTILITY ENGINEERING
156-166	UTILITY PLANS
167-177	UTILITY DETAILS
178	UTILITY STRUCTURE TABLE
179-185	LIGHTING PLANS
186-191	LIGHTING DETAILS
192-194	WHEELCHAIR RAMP AND DRIVEWAY SCHEDULES
195	CONSTRUCTION DETAILS
196-218	CROSS SECTIONS - ROUTE 28
219-231	CROSS SECTIONS - SIDE STREETS



0 1000 2000 3000 4000

SCALE 1" = 1000

LENGTH OF PROJECT = 3345.60 FEET = .634 MILES
ROUTE 28 - 1839.90 FEET
YARMOUTH ROAD - 160.70 FEET
CAMP STREET/YARMOUTH ROAD - 1345.00 FEET

DESIGN DESIGNATION (ROUTE 28)

DESIGN SPEED	40 MPH
ADT (2012)	26,200
ADT (2032)	30,200
K	9.1%
D	50%
T (PEAK HOUR)	2.8%
T (AVERAGE DAY)	4.0%
DHV	2,750
DDHV	1,375
FUNCTIONAL CLASSIFICATION	URBAN PRINCIPAL ARTERIAL

DESIGN DESIGNATION (CAMP STREET)

DESIGN SPEED	30 MPH
ADT (2012)	2,900
ADT (2032)	3,400
K	13.0%
D	81%
T (PEAK HOUR)	4.3%
T (AVERAGE DAY)	4.9%
DHV	440
DDHV	360
FUNCTIONAL CLASSIFICATION	URBAN MINOR ARTERIAL

DESIGN DESIGNATION (YARMOUTH ROAD NORTH OF ROUTE 28)

DESIGN SPEED	30 MPH
ADT (2012)	18,500
ADT (2032)	22,500
K	9.6%
D	51%
T (PEAK HOUR)	2.9%
T (AVERAGE DAY)	4.6%
DHV	2,160
DDHV	1,110
FUNCTIONAL CLASSIFICATION	URBAN PRINCIPAL ARTERIAL

DESIGN DESIGNATION (YARMOUTH ROAD SOUTH OF ROUTE 28)

DESIGN SPEED	30 MPH
ADT (2012)	4,000
ADT (2032)	4,800
K	10.3%
D	52%
T (PEAK HOUR)	2.1%
T (AVERAGE DAY)	3.7%
DHV	495
DDHV	260
FUNCTIONAL CLASSIFICATION	URBAN MINOR ARTERIAL

DATE	DESCRIPTION	REV #

COMMONWEALTH OF MASSACHUSETTS
LEONID A. VELICHANSKIY
CIVIL
No. 38349
REGISTERED PROFESSIONAL ENGINEER

5/20/21

TranSystems
101 ARCH STREET, SUITE 301, BOSTON, MA 02110, (857) 453-5450

MassDOT Massachusetts Department of Transportation Highway Division

RECOMMENDED FOR APPROVAL

Thomas A. DiPaolo, P.E. 5/24/21
for CHIEF ENGINEER — DATE

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR — DATE

APPROVED

HIGHWAY ADMINISTRATOR — DATE

GENERAL NOTES

1. THE EXISTING CONDITIONS SHOWN ON THIS PLAN ARE FROM AN ON-THE-GROUND INSTRUMENT SURVEY BY BAY COLONY GROUP. FOXBOROUGH, MA; AUGUST 2012 AND SUPPLEMENTAL SURVEY BY GREEN INTERNATIONAL AFFILIATES, WESTFORD, MASSACHUSETTS, AUGUST 2014 AND JANUARY 2017.
2. **PROJECT CONTROL AS RECEIVED FROM MASSDOT WAS ESTABLISHED BY CCR ASSOCIATES, INC. 40 MEARS AVENUE QUINCY, MA UNDER PREVIOUS CONTRACT WITH MASSDOT AND IS NOT BASED ON NAD83. THERE IS NO DIRECT CONVERSION FROM THE PROJECT COORDINATE SYSTEM TO NAD83 AND GPS CANNOT BE USED FOR CONSTRUCTION LAYOUT AND/OR ADDITIONAL SURVEY ACTIVITIES UNLESS LOCALIZATION TO CONTROL SHOWN ON PLANS IS APPLIED.**
3. THE LOCATIONS OF EXISTING UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK.
4. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
5. THE CONTRACTOR SHALL ALTER THE MASONRY OF THE TOP SECTION OF ALL EXISTING DRAINAGE STRUCTURES AS NECESSARY FOR CHANGES IN GRADE, AND RESET ALL DRAINAGE FRAMES AND GRATES TO THE PROPOSED FINISH SURFACE GRADE, REQUIRED NEW MASONRY SHALL BE CLAY BRICK CONFORMING TO M4.05.2.
6. EXISTING UTILITY POLES WILL BE RELOCATED BY OTHERS.
7. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY CONSTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL CONDITION.
8. THE TERM "PROPOSED" (PROP) MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS OR, WHERE APPLICABLE, RE-USING EXISTING MATERIALS IDENTIFIED AS "REMOVE AND RESET" (R&R)
9. JOINTS BETWEEN NEW HOT MIX ASPHALT ROADWAY AND SAWCUT EXISTING PAVEMENT SHALL BE CONSTRUCTED TO SUPERPAVE SPECIFICATIONS.
10. ALL LATERAL DRAIN PIPES SHALL BE INSTALLED WITH A PITCH OF 0.01 FOOT PER FOOT (0.005 MINIMUM) UNLESS NOTED OTHERWISE ON THE DRAWINGS.
11. ALL EXISTING STATE, COUNTY, CITY, AND TOWN LOCATIONS LINES AND PRIVATE PROPERTY LINES HAVE BEEN ESTABLISHED FROM AVAILABLE INFORMATION AND THEIR EXACT LOCATIONS ARE NOT GUARANTEED.
12. THE CONTRACTOR IS REQUIRED TO CONTACT DIGSAFE AND OBTAIN A VALID DIGSAFE NUMBER A MINIMUM OF 72 HOURS PRIOR TO ANY GROUND DISTURBANCE. THE CITY OF BARNSTABLE AND MASSDOT ARE NOT MEMBERS OF DIGSAFE AND MUST BE CONTACTED INDIVIDUALLY TO MARK OUT FACILITIES.
13. SIGNS TO BE REMOVED AND RESET SHALL BE FURNISHED WITH A NEW SIGN POST (P5) IF EXISTING POST IS OLD OR DAMAGED AS DETERMINED BY THE ENGINEER.
14. DRAINAGE ELEVATIONS ARE PROVIDED FOR DESIGN PURPOSES ONLY. THE CONTRACTOR SHALL VERIFY BY TEST PIT, THE LOCATIONS OF EXISTING UTILITIES WHICH MAY CONFLICT WITH THE PROPOSED DRAINAGE DESIGN. ANY FIELD ADJUSTMENTS REQUIRED WILL BE MADE AS APPROVED OR DIRECTED BY THE ENGINEER. ONLY AFTER THE CONTRACTOR VERIFIES ELEVATIONS FOR THE CONSTRUCTABILITY OF THE DRAINAGE SYSTEM SHALL ANY STRUCTURES BE ORDERED. ANY FIELD ADJUSTMENTS TO THE LINE AND GRADE UP TO A DEPTH OF 5 FEET SHALL BE INCLUDED IN THE COST OF THE PIPE. PIPE EXCAVATION GREATER THE 5 FEET WILL BE PAID UNDER CLASS B TRENCH EXCAVATION.

TRAFFIC SIGNAL

CAB.	CABINET
CCVE	CLOSED CIRCUIT VIDEO EQUIPMENT
DW	STEADY DON'T WALK
FDW	FLASHING DON'T WALK
FR	FLASHING CIRCULAR RED
FRL	FLASHING RED LEFT ARROW
FRR	FLASHING RED RIGHT ARROW
FY	FLASHING CIRCULAR AMBER
FYL	FLASHING AMBER LEFT ARROW
FYR	FLASHING AMBER RIGHT ARROW
G	STEADY CIRCULAR GREEN
GL	STEADY GREEN LEFT ARROW
GR	STEADY GREEN RIGHT ARROW
GSL	STEADY GREEN SLASH LEFT ARROW
GSR	STEADY GREEN SLASH RIGHT ARROW
GV	STEADY GREEN VERTICAL ARROW
OL	OVERLAP
PED	PEDESTRIAN
PTZ	PAN, TILE, ZOOM
R	STEADY CIRCULAR RED
RL	STEADY RED LEFT ARROW
RR	STEADY RED RIGHT ARROW
TR SIG	TRAFFIC SIGNAL
TSC	TRAFFIC SIGNAL CONDUIT
W	STEADY WALK
Y	STEADY CIRCULAR AMBER
YL	STEADY AMBER LEFT ARROW

GENERAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
CB	CB	CATCH BASIN
		CATCH BASIN CURB INLET
	X	WHEELCHAIR RAMP DESIGNATION
	DX	DRIVEWAY DESIGNATION
FP	FP	FLAG POLE
GP	GP	GAS PUMP
MB	MB	MAIL BOX
		ELECTRIC HANDHOLE
		FENCE GATE POST
GG	GG	GAS GATE
BHL #	BHL #	BORING HOLE
MW #	MW #	MONITORING WELL
TP #	TP #	TEST PIT
		HYDRANT
		LIGHT POLE
CO.BD.		COUNTY BOUND
C	C	CABLE MANHOLE
D	D	DRAINAGE MANHOLE
E	E	ELECTRIC MANHOLE
G	G	GAS MANHOLE
S	S	SEWER MANHOLE
T	T	TELEPHONE MANHOLE
W	W	WATER MANHOLE
MHB	MHB	MASSACHUSETTS HIGHWAY BOUND
SB		STONE BOUND
TB		TOWN OR CITY BOUND
△		TRAVERSE OR TRIANGULATION STATION
TPL or GUY	TPL or GUY	TROLLEY POLE OR GUY POLE
UFB	UFB	UTILITY POLE W/ FIREBOX
UPDL	UPDL	UTILITY POLE WITH DOUBLE LIGHT
ULT	ULT	UTILITY POLE W / 1 LIGHT
UPL	UPL	UTILITY POLE
		BUSH
SIZE & TYPE		TREE
		STUMP
WG	WG	WATER GATE
		OVERHEAD CABLE/WIRE
		CURBING
		UNDERGROUND DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND ELECTRIC DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND GAS MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND SEWER MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND WATER MAIN (DOUBLE LINE 24 INCH AND OVER)
x	x	CHAIN LINK OR METAL FENCE
		WOOD FENCE
		HAY BALES/SILT FENCE
		TREE LINE OR LIMIT OF CLEARING AND GRUBBING
		SAWCUT LINE
		TOP OR BOTTOM OF SLOPE
		LIMIT OF EDGE OF PAVEMENT OR COLD PLANE AND OVERLAY
		BORDER OF WETLAND
		100 FT WETLAND BUFFER
		STATE HIGHWAY LAYOUT
		TOWN OR CITY LAYOUT
		COUNTY LAYOUT
		RAILROAD SIDELINE
		TOWN OR CITY BOUNDARY LINE
		PROPERTY LINE OR APPROXIMATE PROPERTY LINE
		EASEMENT

PAVEMENT MARKINGS SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT ARROW - WHITE
ONLY	ONLY	LEGEND "ONLY" - WHITE
	SL	STOP LINE
	CW	CROSSWALK
	SWL	SOLID WHITE LINE
	SYL	SOLID YELLOW LINE
	SYGL	SOLID YELLOW GORE LINE
	BWL	BROKEN WHITE LINE (10' LINE, 30' SPACE)
	BYL	BROKEN YELLOW LINE (3' LINE, 9' SPACE) (SHARED USE PATH)
	DWL	DOTTED WHITE LINE (2' LINE, 6' SPACE)
	DYL	DOTTED YELLOW LINE (2' LINE, 6' SPACE)
	DWLEx	DOTTED WHITE LINE EXTENSION (2' LINE, 6' SPACE)
	DYLEx	DOTTED YELLOW LINE EXTENSION (2' LINE, 6' SPACE)
	DWCL	DOUBLE WHITE CENTER LINE
	DBYL	DOUBLE YELLOW CENTER LINE

ABBREVIATIONS

GENERAL

AADT	ANNUAL AVERAGE DAILY TRAFFIC
ABAN	ABANDON
AC	ASBESTOS CEMENT
ADJ	ADJUST
APPROX.	APPROXIMATE
ACCM PIPE	ASPHALT COATED CORRUGATED METAL PIPE
BIT.	BITUMINOUS
BC	BOTTOM OF CURB
BD.	BOUND
BL	BASELINE
BLDG	BUILDING
BM	BENCHMARK
BO	BY OTHERS
BOS	BOTTOM OF SLOPE
CB	CATCH BASIN
CBCI	CATCH BASIN WITH CURB INLET
CC	CEMENT CONCRETE
CEM	CEMENT
CI	CURB INLET
CIP	CAST IRON PIPE
CIT	CHANGE IN TYPE
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CO.	COUNTY
CONC	CONCRETE
CONST	CONSTRUCTION
CS	CURB STOP
DHV	DESIGN HOURLY VOLUME
DIA	DIAMETER
DI	DUCTILE IRON PIPE OR DROP INLET
DWY	DRIVEWAY
ELEV (or EL.)	ELEVATION
EOP	EDGE OF PAVEMENT
EXIST (or EX)	EXISTING
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
G	GAS
GG	GAS GATE
GI	GUTTER INLET
GRAN	GRANITE
GRAV	GRAVEL
HDW	HEADWALL
HL	HIGHWAY LIGHTING
HMA	HOT MIX ASPHALT
HOR	HORIZONTAL
HS	HIGHWAY SIGNS
HYD	HYDRANT
INV	INVERT
L	LENGTH OF CURVE
LB	LEACH BASIN
LP	LIGHT POLE
LT	LEFT
MAX	MAXIMUM
MB	MAILBOX
MH	MANHOLE
MHB	MASSACHUSETTS HIGHWAY BOUND
MIN	MINIMUM
NIC	NOT IN CONTRACT
NO.	NUMBER
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PE	POLYETHYLENE PIPE
P.G.L.	PROFILE GRADE LINE
PI	POINT OF INTERSECTION
PL	PLASTIC PIPE
POC	POINT ON CURVE
PRC	POINT OF REVERSE CURVATURE
PROJ	PROJECT
PROP	PROPOSED
PT	POINT OF TANGENCY
PUE	PUBLIC UTILITY EASEMENT
PVC	POINT OF VERTICAL CURVATURE OR POLYVINYL CHLORIDE PIPE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
PVMT	PAVEMENT
PWW	PAVED WATER WAY
R	RADIUS OF CURVATURE
R&D	REMOVE AND DISPOSE
RCP	REINFORCED CONCRETE PIPE
RDWY	ROADWAY
REM	REMOVE
RET	RETAIN
ROW	RIGHT OF WAY
RR	RAILROAD
R&R	REMOVE AND RESET

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	2	231
PROJECT FILE NO.	606272		

GENERAL NOTES, LEGEND AND ABBREVIATIONS

ABBREVIATIONS (cont.)

GENERAL

R&S	REMOVE AND STACK
RT	RIGHT
SB	STONE BOUND
SB	STONE BOUND
SHLD	SHOULDER
SMH	SEWER MANHOLE
ST	STREET
STA	STATION
SSD	STOPPING SIGHT DISTANCE
SHLO	STATE HIGHWAY LAYOUT LINE
SUE	SUBSURFACE UTILITY ENGINEERING
SW	SIDEWALK
T	TANGENT DISTANCE OF CURVE/TRUCK %
TAN	TANGENT
TEMP	TEMPORARY
TC	TOP OF CURB
TOS	TOP OF SLOPE
TYP	TYPICAL
UP	UTILITY POLE
VAR	VARIES
VERT	VERTICAL
VC	VERTICAL CURVE
WCR	WHEEL CHAIR RAMP
WG	WATER GATE
X-SECT	CROSS SECTION

TRAFFIC SYMBOLS

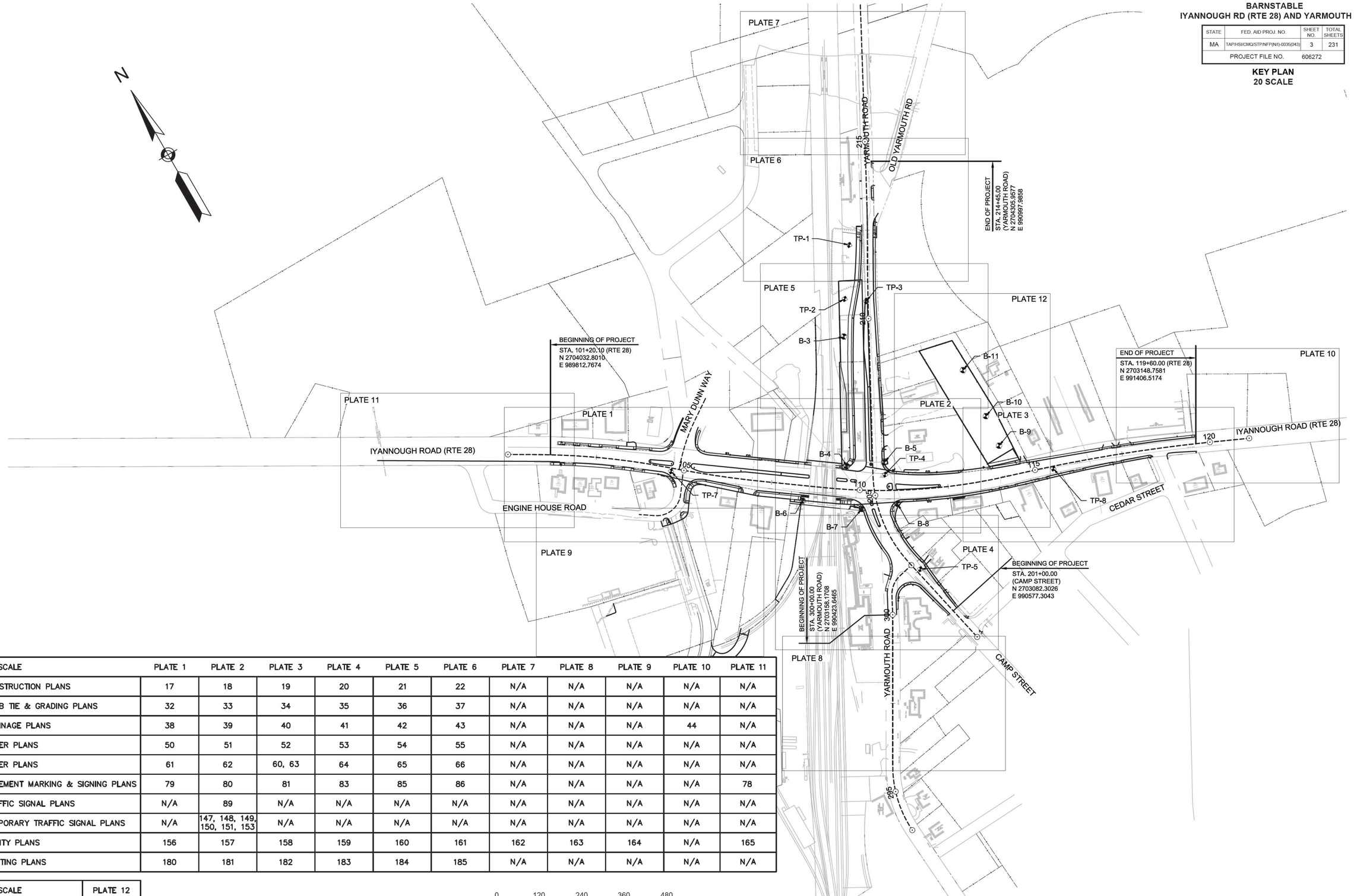
EXISTING	PROPOSED	DESCRIPTION
∅1	∅1	CONTROLLER PHASE ACTUATED
		TRAFFIC SIGNAL HEAD (SIZE AS NOTED)
		WIRE LOOP DETECTOR (6' x 6' TYP UNLESS OTHERWISE SPECIFIED)
		VIDEO DETECTION CAMERA
		MICROWAVE DETECTOR
		PEDESTRIAN PUSH BUTTON, SIGN (DIRECTIONAL ARROW AS SHOWN) AND SADDLE
		EMERGENCY PREEMPTION CONFIRMATION STROBE LIGHT
		EMERGENCY PREEMPTION OPTICAL DETECTOR
		VEHICULAR SIGNAL HEAD
		VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED
		FLASHING BEACON
		PEDESTRIAN SIGNAL HEAD, (TYPE AS NOTED OR AS SPECIFIED)
RRSG	RRSG	RAILROAD SIGNAL
OR		SIGNAL POST AND BASE (ALPHA-NUMERIC DESIGNATION NOTED)
	20'	MAST ARM, SHAFT AND BASE (ARM LENGTH AS NOTED)
		HIGH MAST POLE OR TOWER
		SIGN AND POST
		SIGN AND POST (2 POSTS)
	20'	MAST ARM WITH LUMINAIRE
		OPTICAL PRE-EMPTION DETECTOR
		CONTROL CABINET, GROUND MOUNTED
		CONTROL CABINET, POLE MOUNTED
		FLASHING BEACON CONTROL AND METER PEDESTAL
		LOAD CENTER ASSEMBLY
		PULL BOX 12"x12" (OR AS NOTED)
		ELECTRIC HANDHOLE 12"x24" (OR AS NOTED)
		TRAFFIC SIGNAL CONDUIT

606272_HD02(LEGEND).DWG Plotted on 24-Nov-2020 12:06 PM

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	3	231
PROJECT FILE NO.	606272		

KEY PLAN
20 SCALE



20 SCALE	PLATE 1	PLATE 2	PLATE 3	PLATE 4	PLATE 5	PLATE 6	PLATE 7	PLATE 8	PLATE 9	PLATE 10	PLATE 11
CONSTRUCTION PLANS	17	18	19	20	21	22	N/A	N/A	N/A	N/A	N/A
CURB TIE & GRADING PLANS	32	33	34	35	36	37	N/A	N/A	N/A	N/A	N/A
DRAINAGE PLANS	38	39	40	41	42	43	N/A	N/A	N/A	44	N/A
WATER PLANS	50	51	52	53	54	55	N/A	N/A	N/A	N/A	N/A
SEWER PLANS	61	62	60, 63	64	65	66	N/A	N/A	N/A	N/A	N/A
PAVEMENT MARKING & SIGNING PLANS	79	80	81	83	85	86	N/A	N/A	N/A	N/A	78
TRAFFIC SIGNAL PLANS	N/A	89	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TEMPORARY TRAFFIC SIGNAL PLANS	N/A	147, 148, 149, 150, 151, 153	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
UTILITY PLANS	156	157	158	159	160	161	162	163	164	N/A	165
LIGHTING PLANS	180	181	182	183	184	185	N/A	N/A	N/A	N/A	N/A

20 SCALE	PLATE 12
SEWER PLANS	59

0 120 240 360 480
SCALE: 1" = 120'

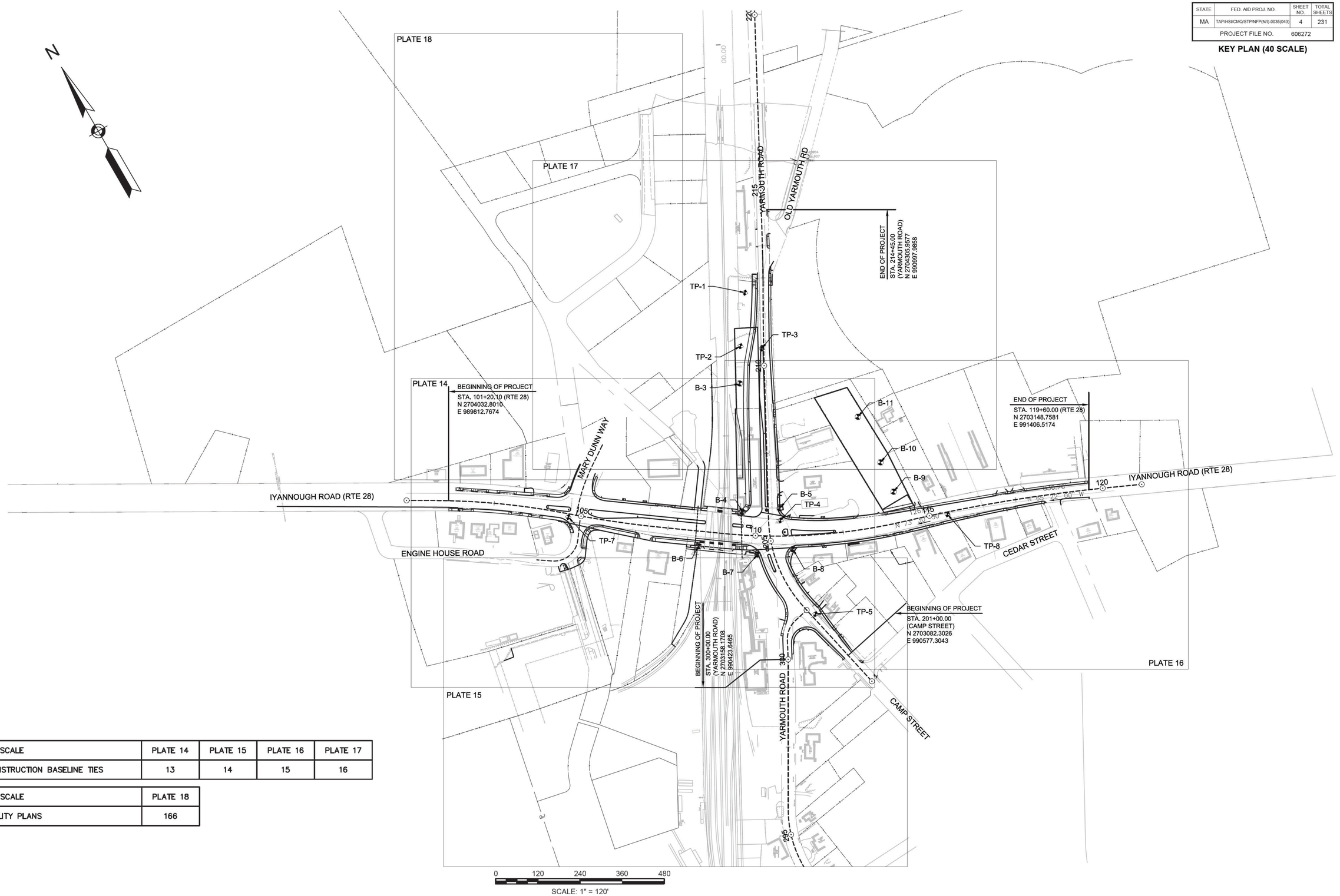
606272_H003(KEY PLAN).DWG Plotted on 29-Mar-2021 2:17 PM

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	4	231
PROJECT FILE NO.	606272		

KEY PLAN (40 SCALE)

606272_H003(KEY PLAN).DWG Plotted on 24-Nov-2020 11:22 AM



40 SCALE	PLATE 14	PLATE 15	PLATE 16	PLATE 17
CONSTRUCTION BASELINE TIES	13	14	15	16

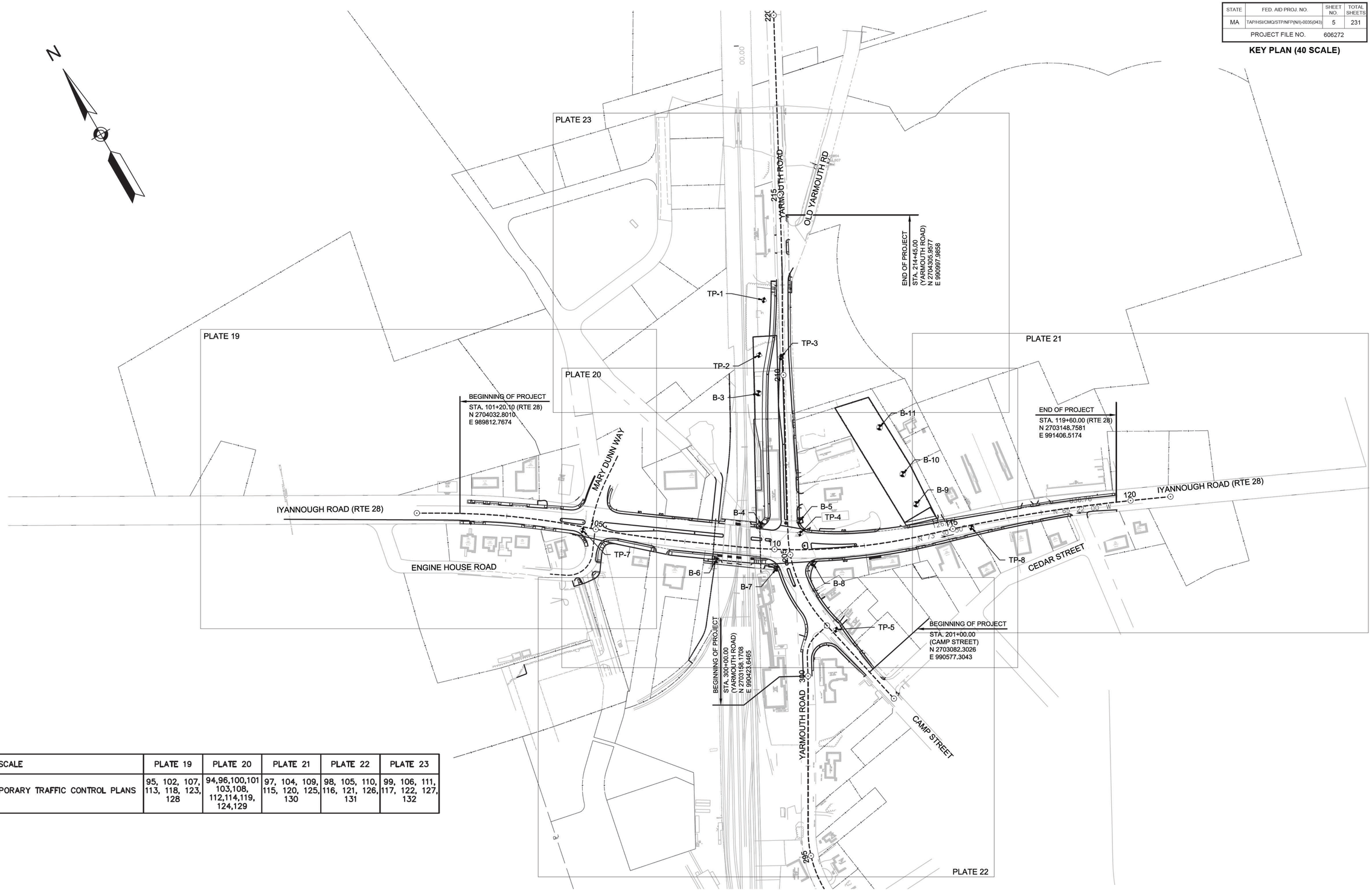
40 SCALE	PLATE 18
UTILITY PLANS	166

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	5	231
PROJECT FILE NO. 606272			

KEY PLAN (40 SCALE)

606272_H003(KEY PLAN).DWG Plotted on 24-Nov-2020 11:17 AM



40 SCALE	PLATE 19	PLATE 20	PLATE 21	PLATE 22	PLATE 23
TEMPORARY TRAFFIC CONTROL PLANS	95, 102, 107, 113, 118, 123, 128	94,96,100,101 103,108, 112,114,119, 124,129	97, 104, 109, 115, 120, 125, 130	98, 105, 110, 116, 121, 126, 131	99, 106, 111, 117, 122, 127, 132

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	6	231
PROJECT FILE NO.	606272		

BORING LOGS

606272_HDD3(BORING PLAN).DWG Plotted on 30-Oct-2020 12:26 PM

TEST PIT TP-1

PROJECT	Route 28 at Yarmouth Road Intersection Barnstable, Massachusetts MassDOT Project No. 606272
TEST PIT NO.	TP-1
SHEET	1 of 2
FILE NO.	89381.00
CHKD BY	Kurt Jelinek
Engineer	Patrick Clarke
Contractor	New England Boring
Operator	Matt Van Deusen
Weather	Partly Cloudy, 70°s
Make	Kobelco
Model	35SR Mini Excavator
Capacity	~1/8 Cubic Yards
Reach	~11.5 feet
Ground El.	~32.5
Datum	NAVD88
Time Start	7:15
Date	8/12/2016

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	TOPSOIL	Dark brown, fine to medium SAND, little Silt, trace fine Gravel, very few roots, dry (TOPSOIL).	E	-	Loamy Sand
2	SUBSOIL 0.5'	G-1) Light brown, fine to medium SAND, trace fine to coarse Gravel, trace Silt, very few cobbles, very few roots, dry (SUBSOIL).			Sand
3	1.7'	G-2) Light Brown, fine to coarse GRAVEL, some fine to coarse Sand, trace Silt, very few cobbles, dry (FILL). Debris including cinder blocks and concrete noted in the vicinity of the test pit location. [Laboratory Testing Performed - Particle Size Analysis (Sieve Only - USDA): Gravel = 66%, Sand = 29%, Silt & Clay = 5%]			Extremely Gravelly, Loamy Sand
4	FILL				
5	5'				
6	GRAVELLY SAND	Light brown, fine to coarse SAND, some fine to coarse Gravel, trace Silt, dry.			Gravelly Sand
7					
8					
9	9'				
10		Test pit terminated at a depth of approximately 9 feet below ground surface.			
11					
12					
13					
14					
15					

Notes: 1.) Test pit backfilled with excavated soils and compacted with excavator bucket at ground surface.
2.) Ground surface elevation interpolated from provided plans and should be considered approximate.

WATER SYMBOLS: Groundwater; Estimated Seasonal High Groundwater

~10' × ~3' N

BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED	
0-10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT TP-2

PROJECT	Route 28 at Yarmouth Road Intersection Barnstable, Massachusetts MassDOT Project No. 606272
TEST PIT NO.	TP-2
SHEET	1 of 2
FILE NO.	89381.00
CHKD BY	Kurt Jelinek
Engineer	Patrick Clarke
Contractor	New England Boring
Operator	Matt Van Deusen
Weather	Partly Cloudy, 70°s
Make	Kobelco
Model	35SR Mini Excavator
Capacity	~1/8 Cubic Yards
Reach	~11.5 feet
Ground El.	~34
Datum	NAVD88
Time Start	7:50
Date	8/12/2016

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	TOPSOIL/FILL	Gray/brown, fine to medium SAND and fine to coarse Gravel, trace Silt, very few roots (TOPSOIL and BALLAST FILL).	E	-	Very Gravelly Sand
2	0.5'				
3	FILL	G-1) Light brown, fine to coarse GRAVEL and fine to coarse Sand, trace Silt, very few cobbles, very few roots, dry (FILL).			
4	4'				
5	6.2' ▽				Gravelly Sand
6	GRAVELLY SAND	G-2) Light brown with orange/red staining at approximately 6.2 feet below ground surface, medium to coarse SAND, some fine to coarse Gravel, trace Silt, dry. [Laboratory Testing Performed - Particle Size Analysis (Sieve Only - USDA): Gravel = 29%, Sand = 69%, Silt & Clay = 2%]			
7					
8					
9	9'				
10		Test pit terminated at a depth of approximately 9 feet below ground surface.			
11					
12					
13					
14					
15					

Notes: 1.) Test pit backfilled with excavated soils and compacted with excavator bucket at ground surface.
2.) Ground surface elevation interpolated from provided plans and should be considered approximate.

WATER SYMBOLS: Groundwater; Estimated Seasonal High Groundwater

~6.5' × ~3' N

BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED	
0-10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT TP-3

PROJECT	Route 28 & Yarmouth Road, Barnstable, MA MassDOT Project No. 606272
TEST PIT NO.	TP-3
SHEET	1 of 1
FILE NO.	89381.00
CHKD BY	P. Clarke
Engineer	Z. Morris
Contractor	New England Boring
Operator	Billy Walsh
Weather	Cloudy, 60°
Make	Vacmasters
Model	System 4000
Ground El.	33.5
Datum	NAVD88
Time Start	10:30
Date	10/3/2016

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA
1	ASPHALT 1.1'	7" WEARING COURSE 6" BINDER COURSE	M	-	-
2	FILL	Light brown, fine to coarse SAND, some fine to coarse Gravel, trace Silt, moist (FILL).	E	-	Very Gravelly Sand
3					
4	SAND	Light brown/tan, fine to coarse SAND, little fine to coarse Gravel, trace Silt, moist.			Gravelly Sand
5					
6		Test pit terminated at approximately 6 feet below ground surface.			
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes: 1.) Test pit backfilled with excavated soils and sand. Pavement was restored with asphalt cold patch.
2.) Ground El. interpolated from provided plans and should be considered approximate.

WATER SYMBOLS: Groundwater; Estimated Seasonal High Groundwater

BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED	
0-10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT TP-4

PROJECT	Route 28 & Yarmouth Road, Barnstable, MA MassDOT Project No. 606272
TEST PIT NO.	TP-4
SHEET	1 of 1
FILE NO.	89381.00
CHKD BY	P. Clarke
Engineer	Z. Morris
Contractor	New England Boring
Operator	Billy Walsh
Weather	Sunny, 70°
Make	Vacmasters
Model	System 4000
Ground El.	34.5
Datum	NAVD88
Time Start	10:30
Date	10/4/2016

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA
1	ASPHALT	6" WEARING COURSE 2.5" BINDER COURSE	M	-	-
2	0.7'		E	-	Very Gravelly, Loamy Sand
3	FILL	Brown, fine to coarse SAND and fine to coarse Gravel, little silt, moist (FILL). An approximately 12" diameter water main encountered at depth of approximately 4'-7" below ground surface.			
4					
5	~12"	Test pit terminated at approximately 4.6 feet below ground surface.			
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes: 1.) Test pit backfilled with excavated soils and sand. Pavement was restored with asphalt cold patch.
2.) Ground El. interpolated from provided plans and should be considered approximate.

WATER SYMBOLS: Groundwater; Estimated Seasonal High Groundwater

BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED	
0-10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT TP-5

PROJECT	Route 28 & Yarmouth Road, Barnstable, MA MassDOT Project No. 606272
TEST PIT NO.	TP-5
SHEET	1 of 1
FILE NO.	89381.00
CHKD BY	P. Clarke
Engineer	Z. Morris
Contractor	New England Boring
Operator	Billy Walsh
Weather	Cloudy, 60°
Make	Vacmasters
Model	System 4000
Ground El.	34
Datum	NAVD88
Time Start	12:30
Date	10/3/2016

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA
1	ASPHALT	6" WEARING COURSE 2" BINDER COURSE	M	-	-
2	FILL 0.7'	Dark brown, fine to coarse SAND, some fine to coarse Gravel, trace Silt, moist (FILL).	E	-	Very Gravelly Sand
3	1.5'	Light brown, fine to coarse SAND, some fine to coarse Gravel, trace Silt, moist. [Laboratory Testing Performed: Representative sample obtained between depths of approximately 0.7 feet and 4.5 feet below ground surface - Modified Proctor Compaction Test - Maximum Dry Unit Weight = 132.6 pcf, Optimum Moisture Content = 7.8%, 2-Point California Bearing Ratio]			Sand
4	2.5'				
5	SAND				
6		Tan/light brown, fine to coarse SAND, trace fine gravel, trace Silt, moist.			
7		Test pit terminated at approximately 6 feet below ground surface.			
8					
9					
10					
11					
12					
13					
14					
15					

Notes: 1.) Test pit backfilled with excavated soils and sand. Pavement was restored with asphalt cold patch.
2.) Ground El. interpolated from provided plans and should be considered approximate.

WATER SYMBOLS: Groundwater; Estimated Seasonal High Groundwater

BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED	
0-10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT TP-7

PROJECT	Route 28 & Yarmouth Road, Barnstable, MA MassDOT Project No. 606272
TEST PIT NO.	TP-7
SHEET	1 of 1
FILE NO.	89381.00
CHKD BY	P. Clarke
Engineer	Z. Morris
Contractor	New England Boring
Operator	Billy Walsh
Weather	Sunny, 65°
Make	Vacmasters
Model	System 4000
Ground El.	34.5
Datum	NAVD88
Time Start	8:30
Date	10/4/2016

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA
1	ASPHALT	6" WEARING COURSE 2" BINDER COURSE	M	-	-
2	0.7'		E	-	Very Gravelly, Cobbly, Sand
3	FILL	Brown, fine to coarse SAND, some fine to coarse Gravel, trace Silt, few cobbles, moist (FILL).			
4					
5	SAND	Light brown/tan, fine to coarse SAND, little fine to coarse Gravel, trace Silt, moist.	E	N/A	Gravelly Sand
6					
7		Test pit terminated at approximately 6 feet below ground surface.			
8					
9					
10					
11					
12					
13					
14					
15					

Notes: 1.) Test pit backfilled with excavated soils and sand. Pavement was restored with asphalt cold patch.
2.) Ground El. interpolated from provided plans and should be considered approximate.

WATER SYMBOLS: Groundwater; Estimated Seasonal High Groundwater

BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED	
0-10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT TP-8

PROJECT	Route 28 & Yarmouth Road, Barnstable, MA MassDOT Project No. 606272
TEST PIT NO.	TP-8
SHEET	1 of 1
FILE NO.	89381.00
CHKD BY	P. Clarke
Engineer	Z. Morris
Contractor	New England Boring
Operator	Billy Walsh
Weather	Sunny, 75°
Make	Vacmasters
Model	System 4000
Ground El.	27
Datum	NAVD88
Time Start	2:00
Date	10/3/2016

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA
1	ASPHALT	5" WEARING COURSE 6" FORMER WEARING COURSES (Two 3" Layers)	M	-	-
2	FILL 1.1'	2" BINDER COURSE Light brown, fine to coarse SAND, some fine to coarse Gravel, trace Silt, moist (FILL).	E	-	Very Gravelly Sand
3					
4	SAND	Tan/light brown, fine to medium SAND, trace fine Gravel, trace Silt, moist.			Sand
5					
6		Tan/light brown, fine to coarse SAND, trace fine Gravel, trace Silt, few cobbles, moist.			Cobbly Sand
7		Test pit terminated at approximately 6 feet below ground surface.			
8					
9					
10					
11					
12					
13					
14					
15					

Notes: 1.) Test pit backfilled with excavated soils and sand. Pavement was restored with asphalt cold patch.
2.) Ground El. interpolated from provided plans and should be considered approximate.

WATER SYMBOLS: Groundwater; Estimated Seasonal High Groundwater

BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED	
0-10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT TP-8

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	7	231
PROJECT FILE NO. 606272			

BORING LOGS

606272_HDD3(BORING PLAN).DWG Plotted on 30-Dec-2020 12:28 PM

BORING B-1

BORING LOG

Boring No.: B-1
Boring Location: See Boring Location Plan

Project: MassDOT Route 28 & Yarmouth Road
Location: Barnstable, MA
Nobis Project No.: 89381.00
Checked by: P. Clarke
Date Start: September 28, 2016
Date Finish: September 28, 2016

Contractor: New England Boring Contractors
Driller: Gary Twombly Jr.
Nobis Rep.: Z. Morris
Rig Type / Model: Truck / CME 75
Hammer Type: Automatic Hammer
Hammer Hoist: Automatic
Ground Surface Elev.:
Datum: NAVD88

Type	Drilling Method: Casing	Sampler: Split-Spoon
Size ID (in.)	4	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▼ 09/28/16	11:30	15	29	31	20 min

Depth (ft.)	Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	NOTES
0	S-1	20	0-2	4			0.5 / TOPSOIL/ SUBSOIL / 0.7	S-1A (8"): 8" TOPSOIL & SUBSOIL.	
1				6				S-1B (12"): Medium dense, tan, fine to coarse SAND, little fine Gravel, trace Silt. dry. (FILL).	
2				7					
3				6					
4									
5	S-2	14	4-6	12			FILL	S-2: Very dense, brown, fine to coarse SAND, some fine Gravel, trace Silt. wet. (FILL). [Laboratory Testing Performed, Grain Size Analysis (Sieve Only): Gravel = 31.7%, Sand = 59.7%, Silt & Clay = 8.6%].	
6				26					
7				28					
8				28					
9							/ 9.0		
10	S-3	11	9-11	9				S-3: Medium dense, light brown, fine to coarse SAND, trace Silt. wet.	
11				9					
12				11					
13				10					
14									
15	S-4	11	14-16	7	▼			S-4: Medium dense, light brown/tan, fine to coarse SAND, trace fine Gravel, trace Silt. wet.	
16				8					
17				11					
18				13					
19							SAND		
20	S-5	10	19-21	11				S-5: Medium dense, light brown/tan, fine to coarse SAND, little fine Gravel, trace Silt. wet.	
21				14					
22				12					
23				12					
24									
25	S-6	0	24-26	6				S-6: Medium dense, light brown/tan, fine to coarse SAND, trace fine Gravel, trace Silt. wet. No recovery in 1-3/8" ID split-spoon. Sample subsequently obtained from 3" ID split-spoon.	
26				7					
27				6					
28				9					
29							SAND		
30	S-7	7	29-31	5				S-7: Medium dense, light brown, fine to coarse SAND, trace fine Gravel, trace Silt. wet.	
31				5					
32				5					
33				7			/ 31.0		
34								Boring terminated at 31 feet.	

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:
1) Water introduced to borehole during drilling process.
2) Borehole backfilled to ground surface with drill cuttings and sand.

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between strata; transitions may be gradual.

Page No. 2 of 2

BORING B-2

BORING LOG

Boring No.: B-2
Boring Location: See Boring Location Plan

Project: MassDOT Route 28 & Yarmouth Road
Location: Barnstable, MA
Nobis Project No.: 89381.00
Checked by: P. Clarke
Date Start: September 28, 2016
Date Finish: September 28, 2016

Contractor: New England Boring Contractors
Driller: Gary Twombly Jr.
Nobis Rep.: Z. Morris
Rig Type / Model: Truck / CME 75
Hammer Type: Automatic Hammer
Hammer Hoist: Automatic
Ground Surface Elev.:
Datum: NAVD88

Type	Drilling Method: Casing	Sampler: Split-Spoon
Size ID (in.)	4	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▼ 09/28/16	15:00	17	29	31	30 min

Depth (ft.)	Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	NOTES
0	S-1	14	0-2	7			0.5 / TOPSOIL/ SUBSOIL / 0.7	S-1A (8"): 8" TOPSOIL & SUBSOIL.	
1				5				S-1B (6"): Medium dense, light brown, fine to coarse SAND, some fine to coarse Gravel, trace Silt. dry. (FILL).	
2				7					
3				7					
4							FILL	S-2: Dense, light brown, fine to coarse SAND, some fine to coarse Gravel, trace Silt. moist. (FILL).	
5	S-2	12	4-6	12					
6				20					
7				26					
8				29					
9							/ 8.0		
10	S-3	9	9-11	13				Strata change inferred at a depth of approximately 8 feet below ground surface based on observed change in drilling action. S-3: Medium dense, light brown, fine to coarse SAND, trace fine Gravel, trace Silt. wet.	
11				11					
12				12					
13				9					
14									
15	S-4	8	14-16	10	▼			S-4: Medium dense, light brown, fine to coarse SAND, little fine Gravel, trace Silt. wet. [Laboratory Testing Performed, Grain Size Analysis (Sieve Only): Gravel = 11.9%, Sand = 83.4%, Silt & Clay = 4.7%].	
16				11					
17				12					
18				13					
19							SAND		
20	S-5	6	19-21	8				S-5: Medium dense, light brown, fine to coarse SAND, some fine Gravel, trace Silt. wet.	
21				8					
22				8					
23									
24									
25	S-6	6	24-26	21				S-6: Medium dense, light brown, fine to coarse SAND, trace fine Gravel, trace Silt. wet.	
26				11					
27				5					
28				3					
29							SAND		
30	S-7	8	29-31	19				S-7: Medium dense, tan, fine to coarse SAND, trace fine Gravel, trace Silt. wet.	
31				7					
32				5					
33				5			/ 31.0		
34								Boring terminated at 31 feet.	

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:
1) Water introduced to borehole during drilling process.
2) Borehole backfilled to ground surface with drill cuttings and sand.

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between strata; transitions may be gradual.

Page No. 2 of 2

BORING B-3

BORING LOG

Boring No.: B-3
Boring Location: See Boring Location Plan
N: 2703907.73 E: 990697.10

Project: MassDOT Route 28 & Yarmouth Road
Location: Barnstable, MA
Nobis Project No.: 89381.00
Checked by: P. Clarke
Date Start: September 29, 2016
Date Finish: September 29, 2016

Contractor: New England Boring Contractors
Driller: Gary Twombly Jr.
Nobis Rep.: Z. Morris
Rig Type / Model: Truck / CME 75
Hammer Type: Automatic Hammer
Hammer Hoist: Automatic
Ground Surface Elev.: (+/-) 34
Datum: NAVD88

Type	Drilling Method: Hollow Stem Auger	Sampler: Split-Spoon
Size ID (in.)	2-1/4	1-3/8
Advancement	Augered	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
09/29/16	10:00	Not Encountered			

Depth (ft.)	Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	NOTES
0	S-1	13	0-2	6			33.7 / 0.3 ASPHALT	3.5" ASPHALT.	
1				4				S-1: Loose, brown/dark brown, fine to coarse SAND, trace fine Gravel, trace Silt, bits of asphalt at top of spoon. moist. (FILL). USDA Textural Classification = Gravelly Sand.	
2				3					
3				2			FILL		
4							30.0 / 4.0		
5	S-2	12	4-6	3				S-2: Medium dense, brown/tan, fine to coarse SAND and fine to coarse Gravel, trace Silt. moist. USDA Textural Classification = Very Gravelly Sand. [Laboratory Testing Performed, Grain Size Analysis (Sieve and Hydrometer): Gravel = 39.5%, Sand = 53.0%, Silt & Clay = 7.5%].	
6				13					
7				16					
8				21					
9	S-3	8	6-8	19				S-3: Dense, tan/orange, fine to coarse GRAVEL and fine to coarse Sand, trace Silt. moist. USDA Textural Classification = Extremely Gravelly Sand. [Laboratory Testing Performed, Grain Size Analysis (Sieve Only): Gravel = 53.2%, Sand = 40.1%, Silt & Clay = 5.7%].	
10				20					
11				16			GRAVELLY SAND		
12				14					
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25	S-4	13	10-12	10			22.0 / 12.0	S-4: Medium dense, light brown/tan, fine to coarse SAND, some fine to coarse Gravel, trace Silt. moist. USDA Textural Classification = Very Gravelly Sand.	
26				9					
27				9					
28				7				Boring terminated at 12 feet.	

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:
1) Borehole backfilled to ground surface with drill cuttings and sand. Pavement was restored with asphalt cold patch.

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between strata; transitions may be gradual.

Page No. 1 of 1

BORING B-4

BORING LOG

Boring No.: B-4
Boring Location: See Boring Location Plan
N: 2703581.07 E: 990518.04

Project: MassDOT Route 28 & Yarmouth Road
Location: Barnstable, MA
Nobis Project No.: 89381.00
Checked by: P. Clarke
Date Start: September 29, 2016
Date Finish: September 29, 2016

Contractor: New England Boring Contractors
Driller: Gary Twombly Jr.
Nobis Rep.: Z. Morris
Rig Type / Model: Truck / CME 75
Hammer Type: Automatic Hammer
Hammer Hoist: Automatic
Ground Surface Elev.: (+/-) 34.5
Datum: NAVD88

Type	Drilling Method: Hollow Stem Auger	Sampler: Split-Spoon
Size ID (in.)	2-1/4	1-3/8
Advancement	Augered	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
09/29/16	12:00	Not Encountered			

Depth (ft.)	Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	NOTES
0	S-1	15	0-2	2			0.5 / TOPSOIL/ SUBSOIL / 33.8	S-1A (8"): 8" TOPSOIL & SUBSOIL.	
1				6				S-1B (7"): Medium dense, brown/dark brown, fine to coarse SAND, some fine to coarse Gravel, some Silt, trace wood/debris. moist. (FILL).	
2				6					
3				3			FILL		
4							29.5 / 5.0		
5	S-2	12	5-7	1				S-2: Loose, light brown/orange, fine to coarse SAND, some fine Gravel, trace Silt. moist.	
6				3					
7				9					
8									
9									
10	S-3	12	10-12	11				S-3: Medium dense, light brown/orange, fine to coarse SAND, some fine to coarse Gravel, trace Silt. moist.	
11				11					
12				8					
13				10					
14							SAND		
15									
16	S-4	17	15-17	6				S-4: Medium dense, light brown/tan, fine to coarse SAND, trace fine Gravel, trace Silt. moist. [Laboratory Testing Performed, Grain Size Analysis (Sieve Only): Gravel = 6.4%, Sand = 91.5%, Silt = 2.1%].	
17				9					
18				11					
19				11					
20									
21	S-5	16	20-22	5				S-5: Medium dense, light brown/tan, fine to coarse SAND, trace fine Gravel, trace Silt. moist/wet.	
22				8					
23				7					
24				7			12.5 / 22.0		
25								Boring terminated at 22 feet.	

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:
1) Borehole backfilled to ground surface with drill cuttings and sand.

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between strata; transitions may be gradual.

Page No. 1 of 1

BORING B-5

BORING LOG

Boring No.: B-5
Boring Location: See Boring Location Plan
N: 2703545.31 E: 990611.83

Project: MassDOT Route 28 & Yarmouth Road
Location: Barnstable, MA
Nobis Project No.: 89381.00
Checked by: P. Clarke
Date Start: September 29, 2016
Date Finish: September 29, 2016

Contractor: New England Boring Contractors
Driller: Gary Twombly Jr.
Nobis Rep.: Z. Morris
Rig Type / Model: Truck / CME 75
Hammer Type: Automatic Hammer
Hammer Hoist: Automatic
Ground Surface Elev.: (+/-) 34.5
Datum: NAVD88

Type	Drilling Method: Hollow Stem Auger	Sampler: Split-Spoon
Size ID (in.)	2-1/4	1-3/8
Advancement	Augered	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
09/29/16	14:00	Not Measured			

Depth (ft.)	Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	NOTES
0							0.0 / ASPHALT / 0.5	6" ASPHALT.	
1							0.5 / CONCRETE / 2.0	18" CONCRETE.	
2									
3	S-1	2	2-4	3				S-1: Loose, dark brown, fine to coarse SAND, some fine Gravel, little Silt, very few concrete fragments at top of split-spoon. wet. (FILL).	
4				2					
5				3					
6				3					
7	S-2	3	5-7	28				S-2: Medium dense, dark brown, fine to coarse SAND, some Silt, trace fine Gravel, several wood fragments. wet. (FILL).	
8				6					
9				5					
10				8			FILL		
11							24.5 / 10.0		
12	S-3	12	10-12	3				S-3: Medium dense, brown/light brown, fine to coarse SAND, some fine to coarse Gravel, trace Silt. wet. bottom 2" of sample dry. [Laboratory Testing Performed, Grain Size Analysis (Sieve Only): Gravel = 23.4%, Sand = 73.1%, Silt & Clay = 3.5%].	
13				5					
14				10					
15				8					
16	S-4	15	15-17	5				S-4: Medium dense, light brown/tan, fine to coarse SAND, little fine Gravel, trace Silt. moist.	
17				9					
18				11					
19				13					
20							SAND		
21	S-5	17	20-22	7				S-5: Medium dense, light brown/tan, fine to coarse SAND, some fine to coarse Gravel, trace Silt. moist.	
22				10					
23				15					
24				12					
25							12.5 / 22.0	Boring terminated at 22 feet.	

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:
1) Borehole backfilled to ground surface with drill cuttings and sand. Pavement was restored with asphalt cold patch.

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between strata; transitions may be gradual.

Page No. 1 of 1

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	8	231
PROJECT FILE NO. 606272			

BORING LOGS

Nobis Engineering a Sustainable Future

BORING LOG — B-6

Project: MassDOT Route 28 & Yarmouth Road
Location: Barnstable, MA
Nobis Project No.: 89381.00
Boring Location: See Boring Location Plan
N: 2703566.53 E: 990372.13
Checked by: P. Clarke
Date Start: September 30, 2016
Date Finish: September 30, 2016
Contractor: New England Boring Contractors
Driller: Gary Twombly Jr.
Nobis Rep.: Z. Morris
Rig Type / Model: Truck / CME 75
Hammer Type: Automatic Hammer
Hammer Hoist: Automatic
Ground Surface Elev.: (+/-) 35.5
Datum: NAVD88

Type	Drilling Method: Hollow Stem Auger	Sampler: Split-Spoon
Size ID (in.)	2-1/4	1-3/8
Advancement	Augered	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
09/30/16	11:15	Not Encountered			

Depth (ft.)	Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	NOTES
1	S-1	13	0-2	6 6 6 4				S-1: Medium dense, dark brown, fine to coarse SAND, little fine Gravel, trace Silt. moist. (FILL).	
2									
3							FILL		
4									
5							30.5 / 5.0		
6	S-2	17	5-7	6 10 11 10				S-2: Medium dense, orange/tan, fine to coarse SAND, some fine Gravel, trace Silt. moist.	
7									
8									
9									
10									
11	S-3	14	10-12	6 7 10 8				S-3: Medium dense, orange/tan, fine to coarse SAND, little fine Gravel, trace Silt. moist. [Laboratory Testing Performed, Grain Size Analysis (Sieve Only): Gravel = 12.8%, Sand = 84.3%, Silt & Clay = 2.9%].	
12									
13									
14							SAND		
15									
16	S-4	14	15-17	6 9 11 12				S-4: Medium dense, light brown/tan, fine to coarse SAND, trace fine Gravel, trace Silt. moist.	
17									
18									
19									
20									
21	S-5	16	20-22	8 11 13 10				S-5: Medium dense, light brown/tan with orange, fine to coarse SAND, trace Silt. moist.	
22							13.5 / 22.0	Boring terminated at 22 feet.	
23									
24									
25									

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:
1) Borehole backfilled to ground surface with drill cuttings and sand.

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

Page No. 1 of 1

BORING B-6

BORING LOG — B-7

Project: MassDOT Route 28 & Yarmouth Road
Location: Barnstable, MA
Nobis Project No.: 89381.00
Boring Location: See Boring Location Plan
N: 2703462.78 E: 990488.79
Checked by: P. Clarke
Date Start: September 30, 2016
Date Finish: September 30, 2016
Contractor: New England Boring Contractors
Driller: Gary Twombly Jr.
Nobis Rep.: Z. Morris
Rig Type / Model: Truck / CME 75
Hammer Type: Automatic Hammer
Hammer Hoist: Automatic
Ground Surface Elev.: (+/-) 35.5
Datum: NAVD88

Type	Drilling Method: Hollow Stem Auger	Sampler: Split-Spoon
Size ID (in.)	2-1/4	1-3/8
Advancement	Augered	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▼ 09/30/16	09:45	23.5		27	

Depth (ft.)	Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	NOTES
1	S-1	13	0-2	6 5 4 3			35.2 / 0.3 ASPHALT	3.5" ASPHALT.	
2								S-1: Loose, brown, fine to coarse SAND, some fine Gravel, some Silt. moist. (FILL).	
3							FILL		
4									
5							30.5 / 5.0		
6	S-2	9	5-7	4 4 4 7				S-2: Loose, tan/light brown, fine to coarse SAND, trace fine Gravel, trace Silt. moist.	
7									
8									
9									
10									
11	S-3	12	10-12	6 10 10 11				S-3: Medium dense, light brown, fine to coarse SAND, trace fine Gravel, trace Silt. moist.	
12									
13									
14							SAND		
15									
16	S-4	15	15-17	5 8 9 10				S-4: Medium dense, light brown, fine to coarse SAND, trace fine Gravel, trace Silt. moist.	
17									
18									
19									
20									
21	S-5	16	20-22	4 8 10 10				S-5: Medium dense, light brown, fine to medium SAND, trace fine Gravel, trace Silt. moist.	
22									
23									
24									
25	S-6	23	25-27	8 9 13 12			SAND 8.5 / 27.0	S-6: Medium dense, light brown, fine to coarse SAND, trace fine Gravel, trace Silt. wet.	
26									
27								Boring terminated at 27 feet.	
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									
41									
42									
43									
44									
45									
46									
47									
48									
49									
50									

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:
1) Borehole backfilled to ground surface with drill cuttings and sand. Pavement was restored with asphalt cold patch.

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

Page No. 2 of 2

BORING B-7

BORING LOG — B-8

Project: MassDOT Route 28 & Yarmouth Road
Location: Barnstable, MA
Nobis Project No.: 89381.00
Boring Location: See Boring Location Plan
N: 2703423.00 E: 990591.80
Checked by: P. Clarke
Date Start: September 29, 2016
Date Finish: September 29, 2016
Contractor: New England Boring Contractors
Driller: Gary Twombly Jr.
Nobis Rep.: Z. Morris
Rig Type / Model: Truck / CME 75
Hammer Type: Automatic Hammer
Hammer Hoist: Automatic
Ground Surface Elev.: (+/-) 34
Datum: NAVD88

Type	Drilling Method: Hollow Stem Auger	Sampler: Split-Spoon
Size ID (in.)	2-1/4	1-3/8
Advancement	Augered	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
09/29/16	15:25	Not Encountered			

Depth (ft.)	Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	NOTES
1	S-1	13	0-2	1 1 3 2			33.8 / 0.3 ASPHALT	3" ASPHALT.	
2								S-1: Very loose, dark brown, SILT, some fine Sand, some fine to coarse Gravel, few roots. moist. (FILL).	
3							FILL		
4							31.0 / 3.0		
5									
6	S-2	13	5-7	5 5 7 4				S-2: Medium dense, brown/tan, fine to medium SAND, trace fine Gravel, trace Silt. moist. [Laboratory Testing Performed, Grain Size Analysis (Sieve Only): Gravel = 9.5%, Sand = 86.2%, Silt & Clay = 4.3%].	
7									
8									
9									
10									
11	S-3	5	10-12	2 2 3 4				S-3: Loose, light brown/tan, fine to coarse SAND, trace fine Gravel, trace Silt. moist.	
12									
13									
14							SAND		
15									
16	S-4	15	15-17	4 11 13 14				S-4: Medium dense, light brown/tan, fine to coarse SAND, trace fine Gravel, trace Silt. moist.	
17									
18									
19									
20									
21	S-5	17	20-22	5 10 12 12				S-5A (6"): Medium dense, light brown/tan, fine to coarse SAND, trace fine Gravel, trace Silt. wet. S-5B (11"): Medium dense, brown/orange, fine to medium SAND, trace Silt. wet.	
22							12.0 / 22.0	Boring terminated at 22 feet.	
23									
24									
25									

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:
1) Borehole backfilled to ground surface with drill cuttings and sand. Pavement was restored with asphalt cold patch.

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

Page No. 1 of 1

BORING B-8

BORING LOG — B-9

Project: MassDOT Route 28 & Yarmouth Road
Location: Barnstable, MA
Nobis Project No.: 89381.00
Boring Location: See Boring Location Plan
N: 2703421.62 E: 990922.46
Checked by: K. Kocia
Date Start: February 9, 2018
Date Finish: February 9, 2018
Contractor: New England Boring Contractors
Driller: M. Ferrera
Nobis Rep.: P. Clarke
Rig Type / Model: ATV / Diedrich D-50
Hammer Type: Safety Hammer
Hammer Hoist: Rope & Cathead
Ground Surface Elev.: (+/-) 29.5
Datum: NAVD88

Type	Drilling Method: Hollow Stem Auger	Sampler: Split-Spoon
Size ID (in.)	2-1/4	1-3/8
Advancement	Augered	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▼ 02/19/18	10:30	17.5	15	17.5	5 minutes

Depth (ft.)	Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	NOTES
1	S-1	12	0-2	2 3 3			29.3 / 0.2 TOPSOIL	S-1A (4"): Loose, dark brown, fine to medium SAND and Silt. Several roots. dry. (TOPSOIL). [USDA: Sandy Loam].	
2							SUBSOIL 27.5 / 2.0	S-1B (5"): Loose, light brown, fine to coarse SAND, some Silt, Very few roots and wood fragments. dry. (SUBSOIL). [USDA: Sandy Loam].	
3	S-2	10	2-4	9 12 15				S-2: Medium dense, tan, fine to coarse GRAVEL and fine to coarse Sand, trace Silt. dry. [USDA: Very Gravelly Sand].	
4							GRAVEL & SAND (COARSE DEPOSITS)		
5	S-3	9	4-6	21 19 19				S-3: Dense, tan, fine to coarse GRAVEL and fine to coarse Sand, trace Silt. dry. [USDA: Very Gravelly Sand].	
6									
7	S-4	13	6-8	22 24 24				S-4: Dense, tan with orange staining, fine to coarse GRAVEL and fine to coarse Sand, trace Silt. Orange staining present between approximately 6" and 9" within split-spoon sample. dry. [USDA: Very Gravelly Sand].	
8									
9	S-5	9	8-10	12 15 19				S-5: Dense, tan to orange, fine to coarse SAND, little fine Gravel, trace Silt. dry. [Laboratory Testing Performed - Particle Size Analysis (Sieve Only); Gravel = 18.3%, Sand = 78.0%, Silt & Clay = 3.7%; USDA: Gravelly Sand].	
10									
11	S-6	12	10-12	22 20 18				S-6: Dense, tan to light gray, fine to coarse SAND, trace fine Gravel, trace Silt. dry. [USDA: Sand].	
12							SAND (COARSE DEPOSITS)		
13									
14									
15									
16	S-7	6	15-17	10 18 17 18				S-7: Dense, tan to light gray, fine to coarse SAND, some fine Gravel, trace Silt. moist. [USDA: Gravelly Sand].	
17									
18							GRAVELLY SAND (COARSE DEPOSITS)		
19									
20	S-8	15	19-21	8 7 8 8				S-8: Medium dense, tan to light gray, fine to coarse SAND and fine to coarse Gravel, trace Silt. wet. [USDA: Very Gravelly Sand].	
21							8.5 / 21.0	Boring terminated at 21 feet.	1
22									
23									
24									
25									

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:
1) Boring backfilled using drilling spoils.

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

Page No. 1 of 1

BORING B-9

BORING LOG — B-10

Project: MassDOT Route 28 & Yarmouth Road
Location: Barnstable, MA
Nobis Project No.: 89381.00
Boring Location: See Boring Location Plan
N: 2703512.57 E: 990932.02
Checked by: K. Kocia
Date Start: February 9, 2018
Date Finish: February 9, 2018
Contractor: New England Boring Contractors
Driller: M. Ferrera
Nobis Rep.: P. Clarke
Rig Type / Model: ATV / Diedrich D-50
Hammer Type: Safety Hammer
Hammer Hoist: Rope & Cathead
Ground Surface Elev.: (+/-) 28
Datum: NAVD88

Type	Drilling Method: Hollow Stem Auger	Sampler: Split-Spoon
Size ID (in.)	2-1/4	1-3/8
Advancement	Augered	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▼ 02/19/18	11:45	15.3	15	15.3	5 minutes

Depth (ft.)	Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	NOTES
1	S-1	10	0-2	3 4 4 7			27.8 / 0.4 TOPSOIL	S-1A (5"): Loose, dark brown, SILT, some fine to medium Sand, Few roots. dry. (TOPSOIL). [USDA: Silt Loam].	
2							SUBSOIL 26.0 / 2.0	S-1B (5"): Loose, light brown, fine to coarse SAND, some Silt, Very few roots. dry. (SUBSOIL). [USDA: Sandy Loam].	
3	S-2	10	2-4	8 10 11 12				S-2: Medium dense, tan, fine to coarse SAND and fine to coarse Gravel, trace Silt. dry. [USDA: Very Gravelly Sand].	
4	S-3	12	4-6	11 13 17 17			GRAVELLY SAND (COARSE DEPOSITS)	S-3: Dense, tan, fine to coarse SAND, some fine Gravel, trace Silt. dry. [USDA: Gravelly Sand].	
5									
6	S-4	12	6-8	20 20 17 17				S-4: Dense, tan with orange staining, fine to coarse SAND, some fine Gravel, trace Silt. Orange staining present between approximately 4" and 8" within split-spoon sample. dry. [Laboratory Testing Performed - Particle Size Analysis (Sieve Only); Gravel = 23.4%, Sand = 71.7%, Silt & Clay = 4.9%; USDA: Gravelly Sand].	
7									
8	S-5	12	8-10	6 15 18 16				S-5: Dense, tan with faint orange staining, fine to coarse SAND, some fine Gravel, trace Silt. dry. [USDA: Gravelly Sand].	
9									
10	S-6	10	10-12	11 10 10 18				S-6: Medium dense, tan to light gray, fine to coarse SAND, trace Silt. dry. [USDA: Sand].	
11							SAND (COARSE DEPOSITS)		
12									
13									
14									
15	S-7	10	15-17	9 10 10 11				S-7: Medium dense, tan to light gray, fine to coarse SAND, little fine Gravel, trace Silt. wet. [USDA: Gravelly Sand].	
16									
17							GRAVELLY SAND (COARSE DEPOSITS)		
18									
19									
20	S-8	24	19-21	11 10 12 12				S-8: Medium dense, tan to light gray, fine to coarse SAND, some fine to coarse Gravel, trace Silt. wet. [USDA: Gravelly Sand].	
21							7.0 / 21.0	Boring terminated at 21 feet.	1
22									
23									
24									
25									

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:
1) Boring backfilled using drilling spoils.

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

Page No. 1 of 1

BORING B-10

BORING LOG — B-11

Project: MassDOT Route 28 & Yarmouth Road
Location: Barnstable, MA
Nobis Project No.: 89381.00
Boring Location: See Boring Location Plan
N: 2703657.31 E: 990941.14
Checked by: K. Kocia
Date Start: February 9, 2018
Date Finish: February 9, 2018
Contractor: New England Boring Contractors
Driller: M. Ferrera
Nobis Rep.: P. Clarke
Rig Type / Model: ATV / Diedrich D-50
Hammer Type: Safety Hammer
Hammer Hoist: Rope & Cathead
Ground Surface Elev.: (+/-) 24
Datum: NAVD88

Type	Drilling Method: Hollow Stem Auger	Sampler: Split-Spoon
Size ID (in.)	2-1/4	1-3/8
Advancement	Augered	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▼ 02/19/18	13:30	11.8	15	15	5 minutes

Depth (ft.)	Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	NOTES
1	S-1	10	0-2	2 5 2 2			23.8 / 0.2 TOPSOIL	S-1A (2"): Loose, dark brown, fine to medium SAND and Silt. Several roots. dry. (TOPSOIL). [USDA: Sandy Loam].	
2							SUBSOIL	S-1B (8"): Loose, light brown, fine to coarse SAND, little fine to coarse Gravel, little Silt, Very few roots. moist. (SUBSOIL). [USDA: Gravelly, Loamy Sand].	
3	S-2	3	2-4	1 1 1 6				S-2: Very loose, light brown, fine to coarse SAND, some Silt. Very few roots. moist. (SUBSOIL). [USDA: Loamy Sand].	
4							20.0 / 4.0		
5	S-3	4	4-6	13 19 29 26				S-3: Dense, light brown, fine to coarse GRAVEL and fine to coarse Sand, trace Silt. dry. [USDA: Very Gravelly Sand].	
6							GRAVEL & SAND (COARSE DEPOSITS)		
7	S-4	2	6-8	10 10 24 27				S-4: Dense, light brown, fine to coarse SAND, little fine Gravel, trace Silt. dry. [USDA: Gravelly Sand].	
8									
9	S-5	5	8-10	20 11 27 26				S-5: Dense, tan to light brown with faint orange staining, fine to coarse SAND, trace Silt, trace fine Gravel. Faint orange staining present between approximately 2.5" and 3" within split-spoon sample. dry. [Laboratory Testing Performed - Particle Size Analysis (Sieve Only); Gravel = 1.7%, Sand = 95.6%, Silt & Clay = 2.7%; USDA: Sand].	
10									
11	S-6	2	10-12	29 22 18 16				S-6: Dense, light brown, fine to coarse GRAVEL, little fine to coarse Sand, trace Silt. dry. [USDA: Extremely Gravelly Sand].	
12									
13									
14									
15									
16	S-7	19	15-17	72 36 40 33				S-7: Very dense, gray, fine to coarse SAND, little fine Gravel, trace Silt. wet. [USDA: Sand].	
17									
18	S-8	10	17-19	- - - -			SAND (COARSE DEPOSITS)	S-8: Gray, fine to coarse SAND, trace fine Gravel, trace Silt. Sample obtained using 300-pound hammer. wet. [USDA: Sand].	
19							5.0 / 19.0		
20								Boring terminated at 19 feet.	1
21									
22									
23									
24									
25									

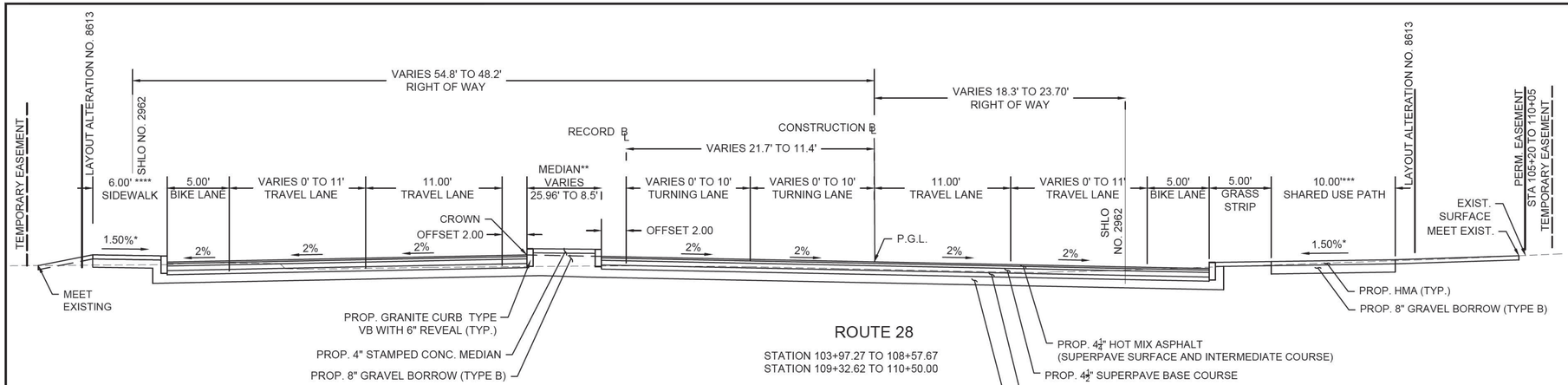
Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:
1) Boring backfilled using drilling spoils.

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

Page No. 1 of 1

BORING B-11

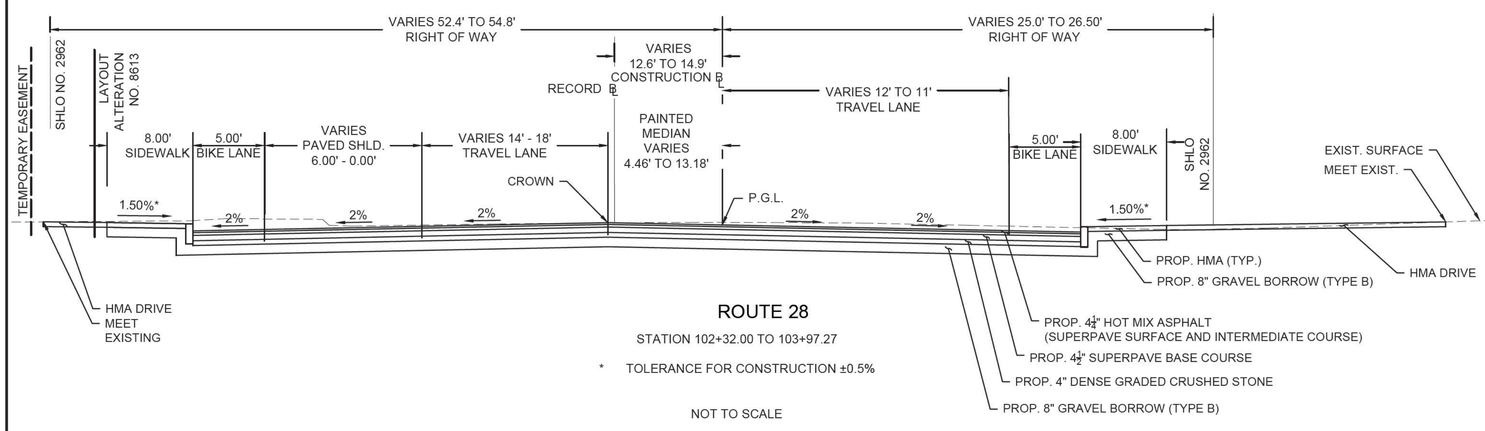


ROUTE 28

STATION 103+97.27 TO 108+57.67
STATION 109+32.62 TO 110+50.00

* TOLERANCE FOR CONSTRUCTION ±0.5%
** MEDIAN STA. 103+97.27 TO 104+66.51
STA 105+18.89 TO 108+54.59
STA 109+32.49 TO 109+87.82
*** 10' SHARED USE PATH BEGINS AT STA 105+18.31
**** 8' SIDEWALK AT STA 103+97.27 TO 104+57.09

NOT TO SCALE

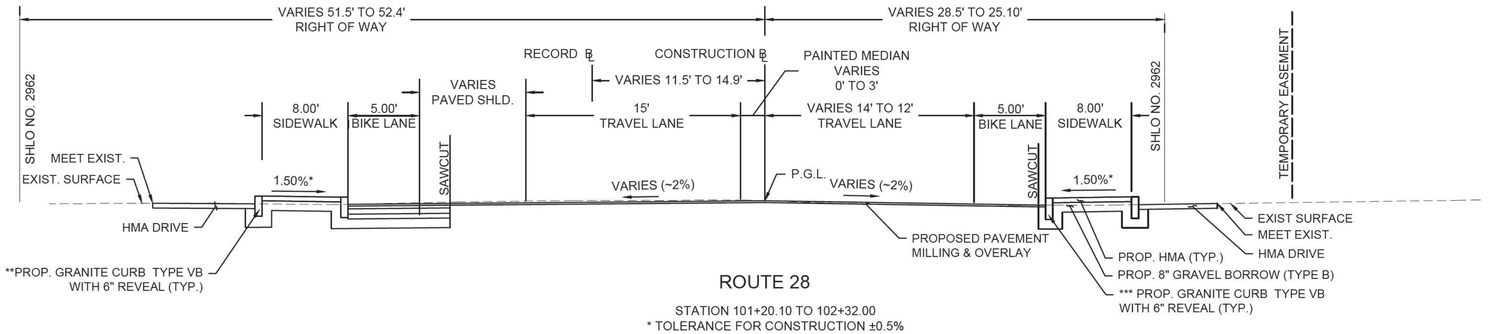


ROUTE 28

STATION 102+32.00 TO 103+97.27

* TOLERANCE FOR CONSTRUCTION ±0.5%

NOT TO SCALE



ROUTE 28

STATION 101+20.10 TO 102+32.00
* TOLERANCE FOR CONSTRUCTION ±0.5%
*** SEE CONSTRUCTION PLANS FOR LOCATIONS OF CURB AT BACK OF SIDEWALK

NOT TO SCALE

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	9	231
PROJECT FILE NO. 606272			

TYPICAL SECTIONS
SHEET 1 OF 4

PAVEMENT NOTES

PROPOSED FULL DEPTH CONSTRUCTION (MORE THAN 4.0 FEET WIDE)

SURFACE COURSE: 4 ¼ IN. SUPERPAVE PLACED IN TWO (2) LAYERS:
1 ¾ IN. SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5) OVER
2 ½ IN. SUPERPAVE INTERMEDIATE COURSE - 19.0 (SIC-19.0)

BASE COURSE: 4 ½ IN. SUPERPAVE BASE COURSE - 37.5 (SBC-37.5)

SUBBASE: 4 IN. DENSE GRADED CRUSHED STONE OVER
8 IN. GRAVEL BORROW (TYPE B)

TACK COAT: EXISTING ROADWAY WILL BE THOROUGHLY CLEANED PRIOR TO THE APPLICATION OF TACK COAT. ASPHALT EMULSION WILL BE APPLIED AT A RATE OF 0.06 TO 0.08 GAL/SY BETWEEN NEW PAVEMENT LAYERS AND AT A RATE OF 0.07 TO 0.09 GAL/SY FOR MILLED SURFACES

PROPOSED FULL DEPTH CONSTRUCTION (LESS THAN 4.0 FEET WIDE)

SURFACE COURSE: 4 ¼ IN. SUPERPAVE PLACED IN TWO (2) LAYERS:
1 ¾ IN. SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5) OVER
2 ½ IN. SUPERPAVE INTERMEDIATE COURSE - 19.0 (SIC-19.0)

BASE COURSE: 6 IN. HIGH EARLY STRENGTH CEM. CONC. BASE COURSE

SUBBASE: 8 IN. GRAVEL BORROW (TYPE B)

TACK COAT: EXISTING ROADWAY WILL BE THOROUGHLY CLEANED PRIOR TO THE APPLICATION OF TACK COAT. ASPHALT EMULSION WILL BE APPLIED AT A RATE OF 0.06 TO 0.08 GAL/SY BETWEEN NEW PAVEMENT LAYERS AND AT A RATE OF 0.07 TO 0.09 GAL/SY FOR MILLED SURFACES

PROPOSED MILL AND OVERLAY

SURFACE COURSE: 1 ½ IN. SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5) OVER VARIABLE DEPTH LEVELING COURSE - 9.5 (SSLC-9.5) OVER
1 ½ IN. PAVEMENT MICROMILLING

TACK COAT: EXISTING ROADWAY WILL BE THOROUGHLY CLEANED PRIOR TO THE APPLICATION OF TACK COAT. ASPHALT EMULSION WILL BE APPLIED AT A RATE OF 0.06 TO 0.08 GAL/SY BETWEEN NEW PAVEMENT LAYERS AND AT A RATE OF 0.07 GAL/SY TO 0.09 FOR MILLED SURFACES

PROPOSED TEMPORARY PAVEMENT

SURFACE: 4" HOT MIX ASPHALT

SUBBASE: 8" GRAVEL BORROW (TYPE B)

PROPOSED CEMENT CONCRETE WHEELCHAIR RAMP AND SIDEWALK

SURFACE: 4" CEMENT CONCRETE
AIR ENTRAINED 4000 PSI, ¾" 610

FOUNDATION: 8" GRAVEL BORROW (TYPE B)

PROPOSED DRIVEWAY AND SHARED USE PATH

SURFACE: 4 IN. SUPERPAVE PLACED IN TWO (2) LAYERS:
1 ½ IN. SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5) OVER
2 ½ IN. HOT MIX ASPHALT BOTTOM COURSE OVER

FOUNDATION: 8" GRAVEL BORROW (TYPE B)

PROPOSED HMA SIDEWALK

SURFACE: 3 IN. HOT MIX ASPHALT PLACED IN TWO (2) LAYERS:
1 ¼ HOT MIX ASPHALT TOP COURSE OVER
1 ¾ HOT MIX ASPHALT BOTTOM COURSE OVER

FOUNDATION: 8" GRAVEL BORROW (TYPE B)

PROPOSED STAMPED CEMENT CONCRETE MEDIAN

SURFACE: 4" STAMPED CEMENT CONCRETE

FOUNDATION: 8" GRAVEL BORROW (TYPE B)

NOTES:

1. THE SURFACE COURSE FOR EACH OF THE PAVEMENT SECTIONS SHALL BE PLACED IN ONE CONTINUOUS OPERATION.
2. HMA FOR PATCHING, ASPHALT EMULSION FOR TACK COAT AND HMA JOINT SEALANT SHALL BE USED IN ACCORDANCE WITH SECTION 450 QUALITY ASSURANCE OF HMA SPECIFICATION. ASPHALT EMULSION FOR TACK COAT SHALL BE APPLIED TO ALL SURFACES FOR 100% COVERAGE PRIOR TO PAVING WITH HMA.
3. HMA JOINT SEALANT SHALL BE APPLIED TO ALL PAVEMENT JOINTS.
4. TOLERANCES FOR CONSTRUCTION ± 0.5%
5. EXISTING GRAVEL SUBBASE MATERIAL THAT IS DETERMINED TO BE SUITABLE SHALL REMAIN IN PLACE AS DIRECTED BY THE ENGINEER.

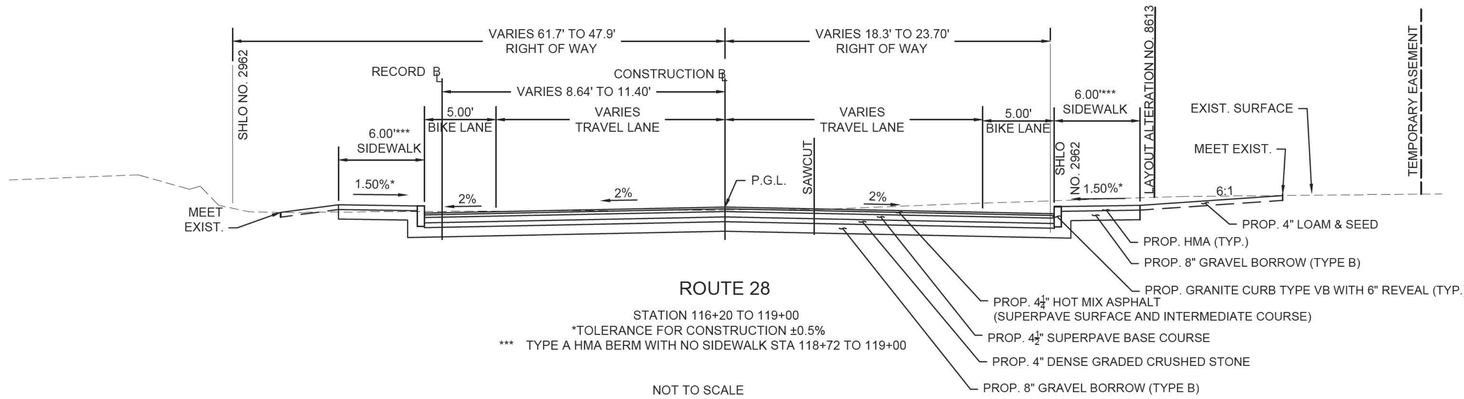
606272_HD04(TYPSEC).DWG Plotted on 18-May-2021 1:21 PM

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	10	231
PROJECT FILE NO. 606272			

TYPICAL SECTIONS
SHEET 2 OF 4

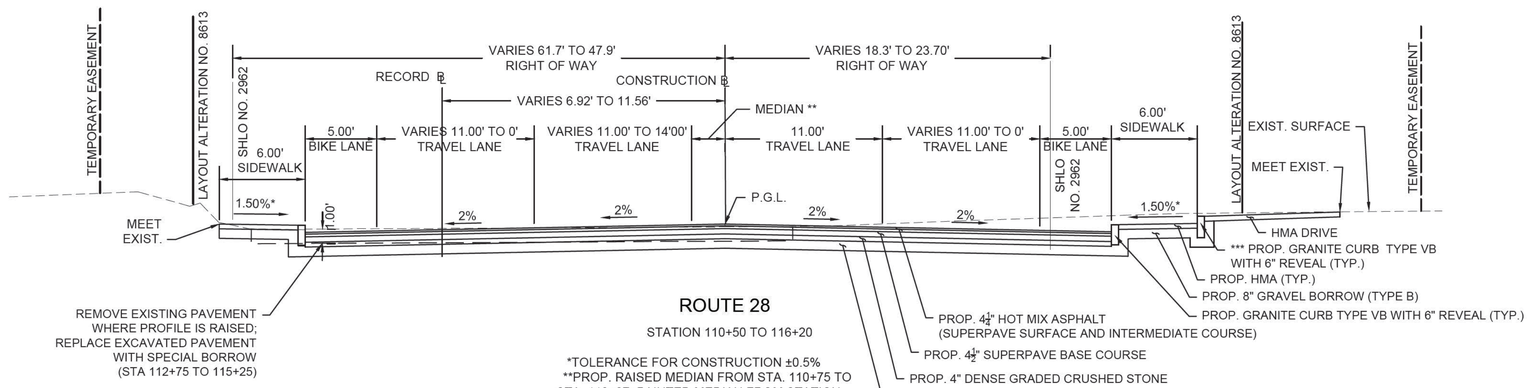
606272_HD04(TYPSEC).DWG Plotted on 24-Nov-2020 12:45 PM



ROUTE 28

STATION 116+20 TO 119+00
*TOLERANCE FOR CONSTRUCTION ±0.5%
*** TYPE A HMA BERM WITH NO SIDEWALK STA 118+72 TO 119+00

NOT TO SCALE

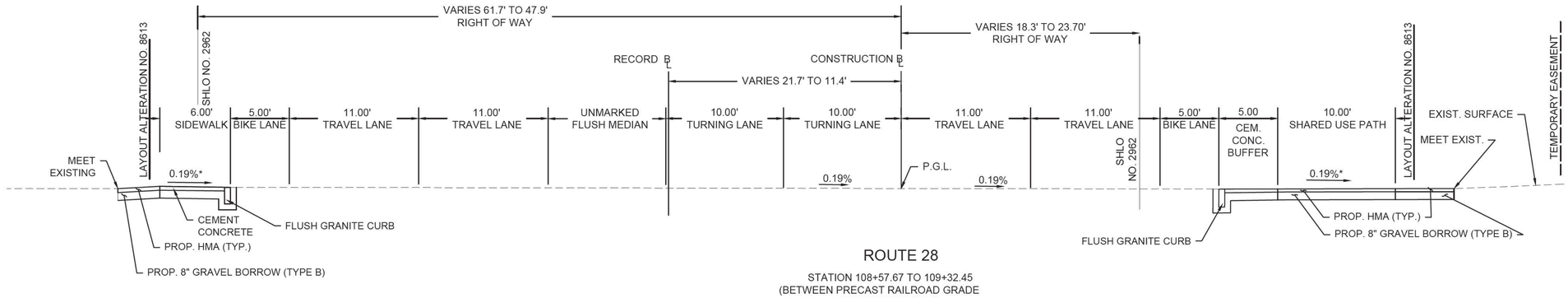


ROUTE 28

STATION 110+50 TO 116+20

*TOLERANCE FOR CONSTRUCTION ±0.5%
**PROP. RAISED MEDIAN FROM STA. 110+75 TO STA. 112+27; PAINTED MEDIAN FROM STATION 112+27 TO STA 114+03; NO MEDIAN FROM STA 114+03 TO STA 116+20
***SEE CONSTRUCTION PLANS FOR LOCATIONS OF CURB AT BACK OF SIDEWALK

NOT TO SCALE



ROUTE 28

STATION 108+57.67 TO 109+32.45
(BETWEEN PRECAST RAILROAD GRADE CROSSING PANELS)
* TOLERANCE FOR CONSTRUCTION ±0.5%

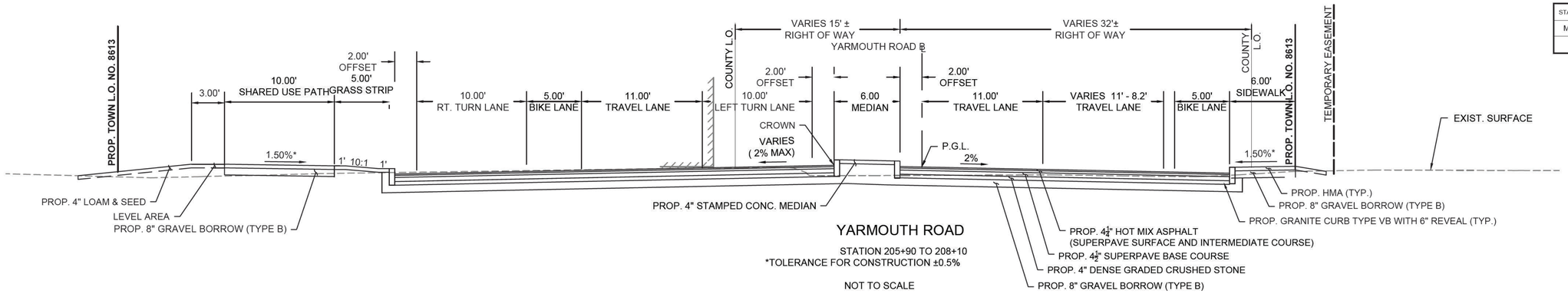
NOT TO SCALE

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	11	231
PROJECT FILE NO. 606272			

TYPICAL SECTIONS
SHEET 3 OF 4

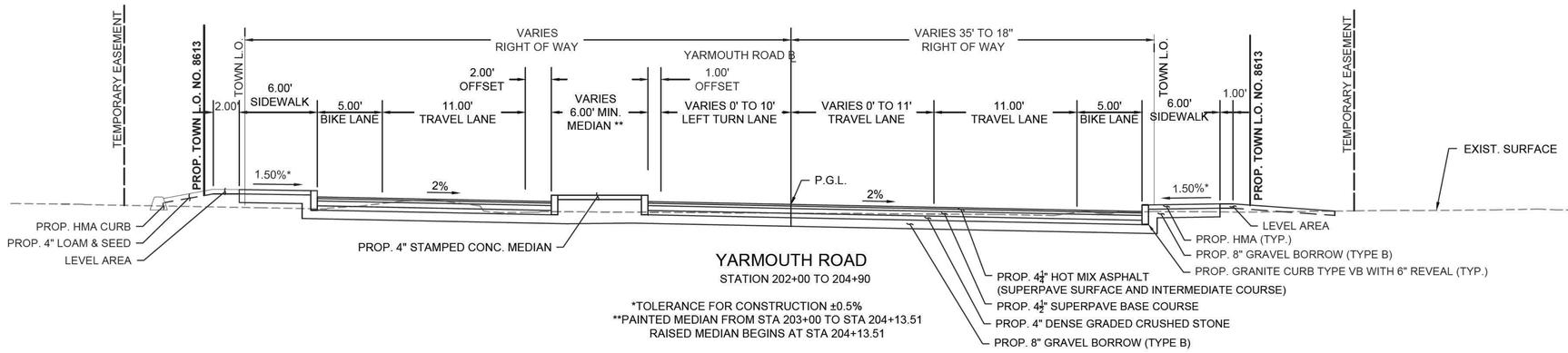
606272_HD04(TYPSEC).DWG Plotted on 9-Apr-2021 6:22 AM



YARMOUTH ROAD

STATION 205+90 TO 208+10
*TOLERANCE FOR CONSTRUCTION ±0.5%

NOT TO SCALE

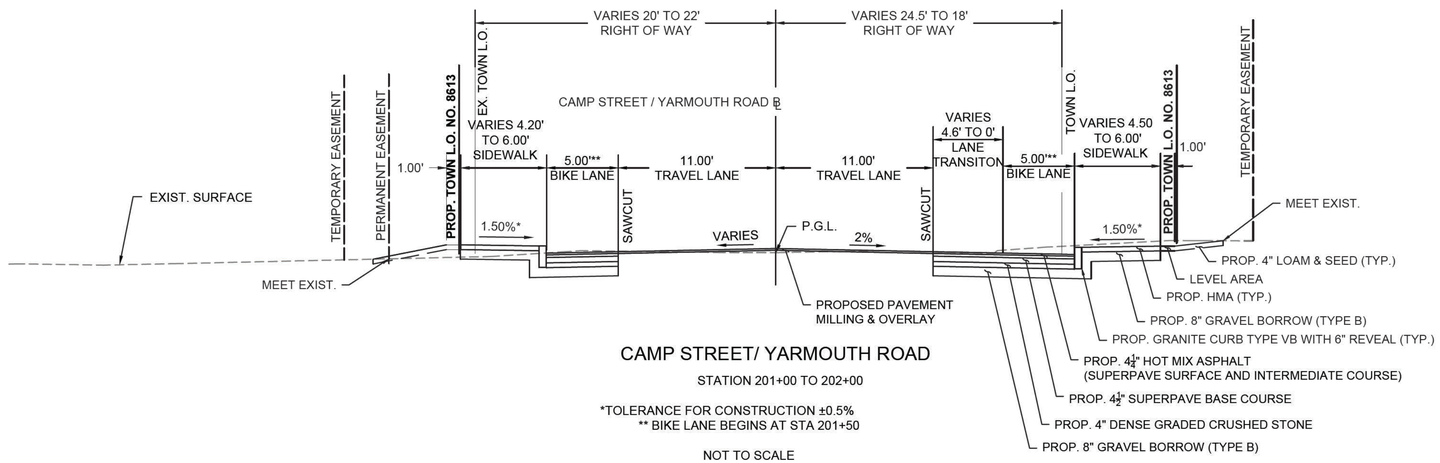


YARMOUTH ROAD

STATION 202+00 TO 204+90

*TOLERANCE FOR CONSTRUCTION ±0.5%
**PAINTED MEDIAN FROM STA 203+00 TO STA 204+13.51
RAISED MEDIAN BEGINS AT STA 204+13.51

NOT TO SCALE



CAMP STREET/ YARMOUTH ROAD

STATION 201+00 TO 202+00

*TOLERANCE FOR CONSTRUCTION ±0.5%
** BIKE LANE BEGINS AT STA 201+50

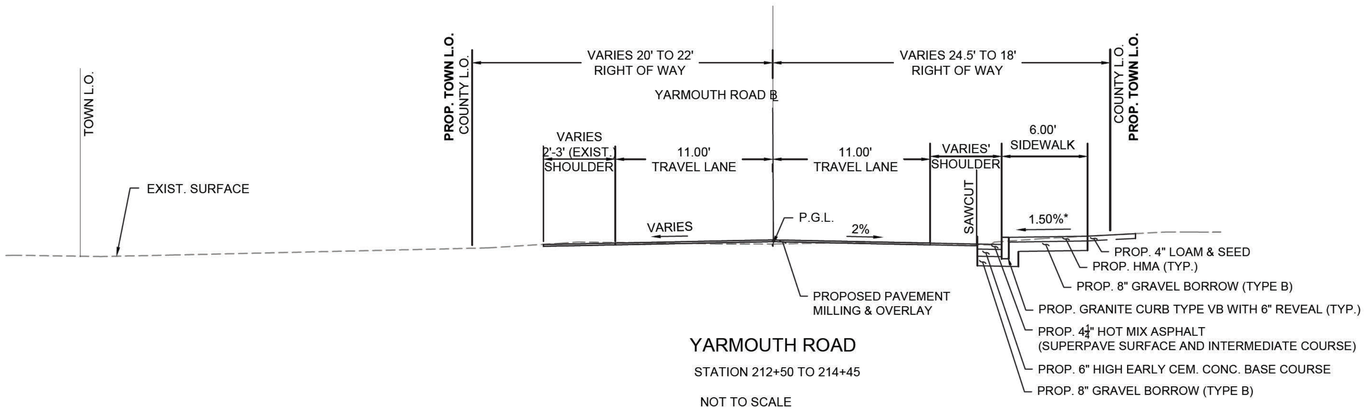
NOT TO SCALE

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	12	231
PROJECT FILE NO.	606272		

TYPICAL SECTIONS
SHEET 4 OF 4

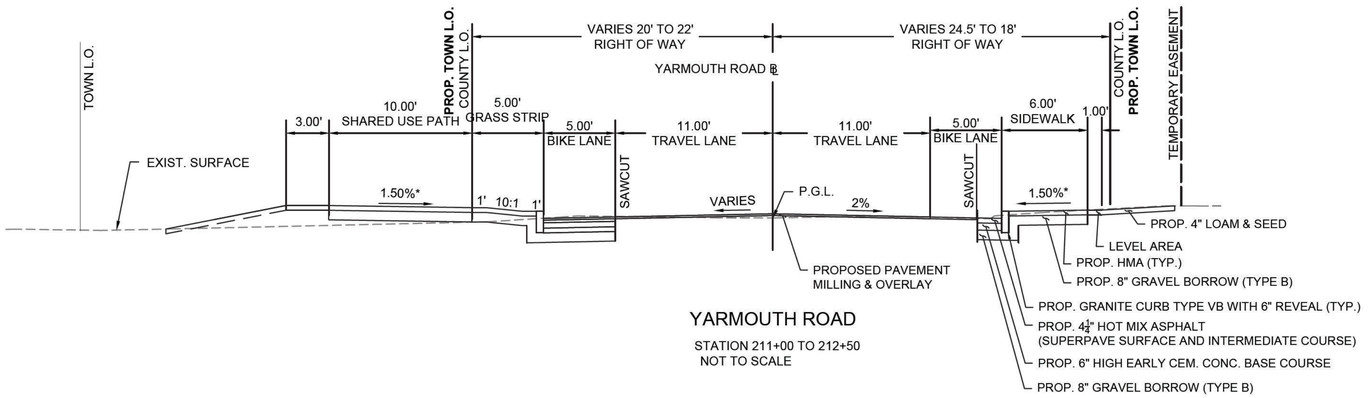
606272_HD04(TYPSEC).DWG Plotted on 24-Nov-2020 12:49 PM



YARMOUTH ROAD

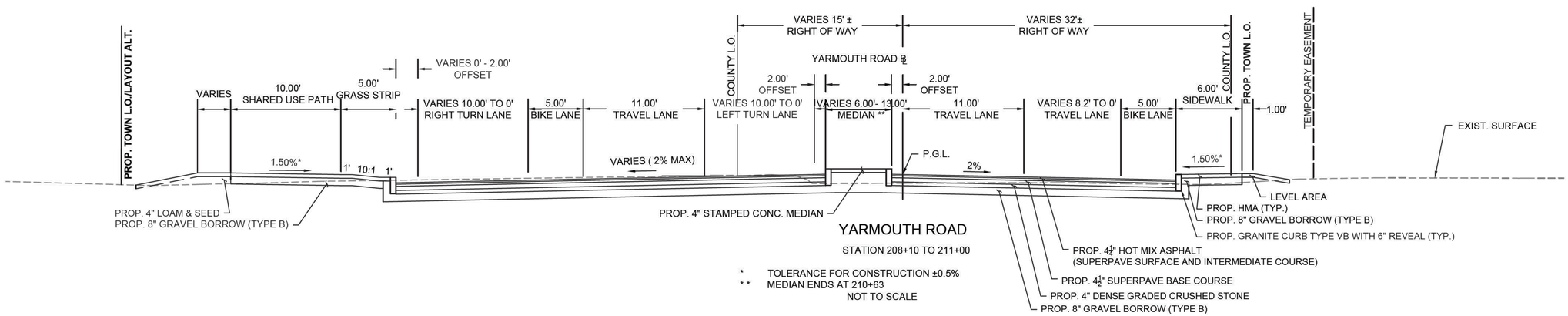
STATION 212+50 TO 214+45

NOT TO SCALE



YARMOUTH ROAD

STATION 211+00 TO 212+50
NOT TO SCALE



YARMOUTH ROAD

STATION 208+10 TO 211+00

* TOLERANCE FOR CONSTRUCTION ±0.5%
* * MEDIAN ENDS AT 210+63
NOT TO SCALE

ROUTE 28 CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	100+00.00	2704093.572	989709.175		S59°44'01"E 82.28'	100+82.28	2704052.101	989780.240
C1	100+82.28	2704052.101	989780.240	R=2000.00' Δ=10°42'48" L=373.97' T=187.53'		104+56.25	2703834.602	990083.782
C2	104+56.25	2703834.602	990083.782	R=3000.00' Δ=5°16'47" L=276.45' T=138.32'		107+32.70	2703663.175	990300.537
L2	107+32.70	2703663.175	990300.537		S54°18'00"E 168.51'	109+01.21	2703564.840	990437.384
C3	109+01.21	2703564.840	990437.384	R=1600.00' Δ=18°52'20" L=527.02' T=265.92'		114+28.22	2703332.686	990907.860
C4	114+28.22	2703332.686	990907.860	R=4500.00' Δ=7°31'16" L=590.71' T=295.78'		120+18.94	2703124.849	991460.349
L61	120+18.94	2703124.849	991460.349		S65°37'26"E 92.61'	121+11.55	2703086.626	991544.704

TRAVERSE DATA SEE NOTE 2				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
21	2703527.790	990610.901	34.870	MON - PK NAIL
28	2703431.635	990750.147	32.780	MON - PK NAIL
29	2703250.161	991099.698	25.620	MON - PK NAIL
30	2703850.863	990734.474		MON - PK NAIL
31	2704219.369	990976.011	30.602	MON - STAKE & NAIL
32	2702738.577	990172.363	35.013	MON - PK NAIL
33	2703066.671	990389.731	32.687	MON - PK NAIL
34	2703251.886	990494.002	33.584	MON - PK NAIL
35	2703562.992	990395.964	35.750	RC
36	2704099.512	990880.407	30.906	MON - PK NAIL
37	2704402.252	991029.382	31.716	MON - PK NAIL
39	2703828.566	990054.882	35.050	PK
40	2704030.556	989766.989	36.380	MON - PK NAIL
41	2703157.576	991334.164	20.840	MON - PK NAIL

RR TRAVERSE DATA		
POINT #	NORTHING	EASTING
53	2704180.000	990801.280
54	2704396.366	990921.128
55	2703959.779	990717.976
56	2703538.184	990438.014
57	2703349.026	990273.665

ENGINE HOUSE ROAD CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L8	500+00.00	2703761.362	989945.426		S55°53'10"E 44.67'	500+44.67	2703736.311	989982.407
C9	500+44.67	2703736.311	989982.407	R=68.00' Δ=87°44'09" L=104.13' T=65.36'		501+48.79	2703752.278	990075.292
L9	501+48.79	2703752.278	990075.292		N36°22'40"E 68.36'	502+17.15	2703807.316	990115.837

MARY DUNN WAY CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C10	400+00.00	2703814.967	990106.759	R=512.00' Δ=16°32'26" L=147.81' T=74.42'		401+47.81	2703914.077	990215.723
L10	401+47.81	2703914.077	990215.723		N55°58'06"E 67.48'	402+15.29	2703951.845	990271.650

NOTES:
1. PROJECT CONTROL AS RECEIVED FROM MASSDOT WAS ESTABLISHED BY CCR ASSOCIATES, INC. 40 MEARS AVENUE QUINCY, MA UNDER PREVIOUS CONTRACT WITH MASSDOT AND IS NOT BASED ON NAD83. THERE IS NO DIRECT CONVERSION FROM THE PROJECT COORDINATE SYSTEM TO NAD83 AND GPS CANNOT BE USED FOR CONSTRUCTION LAYOUT AND/OR ADDITIONAL SURVEY ACTIVITIES UNLESS LOCALIZATION TO CONTROL SHOWN ON PLANS IS APPLIED.
2. POINTS 31, 34, 35, 39 AND 40 COULD NOT BE LOCATED IN THE FIELD.

0 40 100 160
SCALE: 1" = 40'

CONTINUED ON SHEET NO. 16
CONTINUED ON SHEET NO. 15
CONTINUED ON SHEET NO. 14

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	13	231
PROJECT FILE NO. 606272			

CONSTRUCTION BASELINE TIES
SHEET 1 OF 4

606272_H005(BASELINE TIES).DWG Plotted on 11-Apr-2021 9:07 AM

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	14	231
PROJECT FILE NO.	606272		

CONSTRUCTION BASELINE TIES
SHEET 2 OF 4

CONTINUED ON SHEET NO. 13

MHD SURVEY 35
E: 990395.964
N: 2703562.992
ELEV 35.750
POINT NAME: RC

N40°59'08"E
250.58'
RR SURVEY TRAVERSE

PC +26.73

PT +99.98

RR SURVEY 57
E: 990273.665
N: 2703349.026
ELEV
POINT NAME:

MHD SURVEY 34
E: 990494.002
N: 2703251.886
ELEV 33.584
POINT NAME: MPKN

PT +15.67

PC +55.79

SURVEY TRAVERSE
S22°57'44"W
299.65'

PC +86.48

S13°11'08"E
9.00'
+15.67

202+75.12 YARMOUTH AND CAMP=
301+60.70 SOUTH YARMOUTH

YARMOUTH ROAD/
CAMP STREET CONST. B

CAMP STREET
(60' WIDE - TOWN WAY)

SURVEY TRAVERSE
N29°22'42"E
212.56'

MHD SURVEY 33
E: 990389.731
N: 2703066.671
ELEV 32.687
POINT NAME: SET PK

SOUTH YARMOUTH
CONST. B

SURVEY TRAVERSE
S33°31'31"W
999.57'

YARMOUTH ROAD
(40' WIDE - TOWN LAYOUT 2/23/1962)

MHD SURVEY 32
E: 990172.363
N: 2702738.577
ELEV 35.013
POINT NAME: SET PK

SEE NOTE 1

67
N: 2703524.686'
E: 989831.932'
EL: 34.172'
MAG

61
N: 2703430.223'
E: 989675.949'
EL: 36.742'
MAG

SOUTH YARMOUTH CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L6	300+00.00	2703158.171	990423.646		N27°48'31"E 55.79'	300+55.79	2703207.521	990449.675
C8	300+55.79	2703207.521	990449.675	R=70.00' Δ=49°00'21" L=59.87' T=31.91'		301+15.67	2703243.019	990495.624
L7	301+15.67	2703243.019	990495.624		N76°48'52"E 45.03'	301+60.70	2703253.292	990539.471

NOTES:
1. TWO NAILS WERE OBSERVED IN THE AREA OF POINT 32. CARE SHALL BE TAKEN TO USE THE CORRECT NAIL.

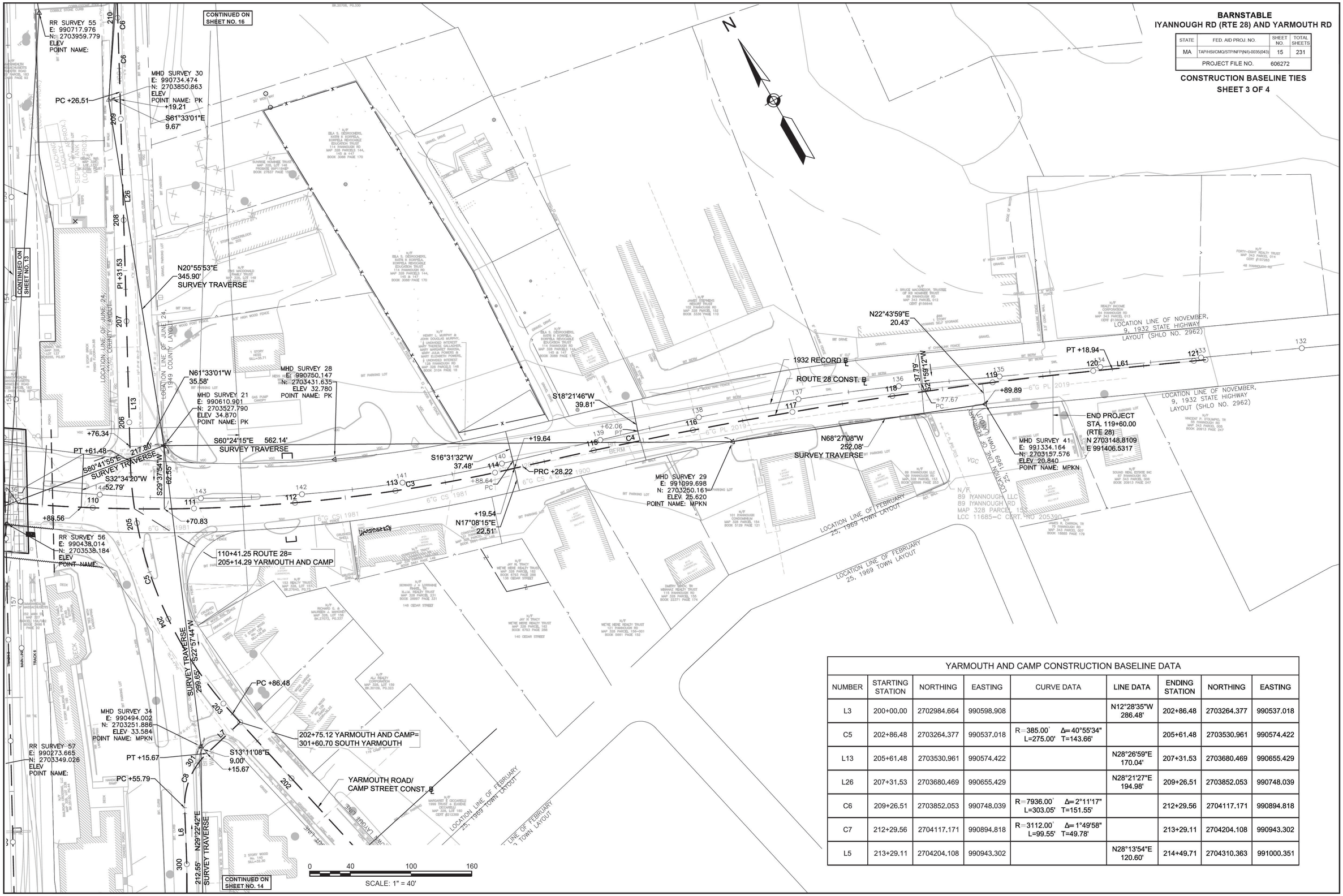
0 40 100 160
SCALE: 1" = 40'

606272_HD05(BASELINE TIES).DWG Plotted on 30-Oct-2020 11:00 AM

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(N/I)-0035(043)	15	231
PROJECT FILE NO.	606272		

CONSTRUCTION BASELINE TIES
SHEET 3 OF 4



YARMOUTH AND CAMP CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L3	200+00.00	2702984.664	990598.908		N12°28'35"W 286.48'	202+86.48	2703264.377	990537.018
C5	202+86.48	2703264.377	990537.018	R=385.00' Δ=40°55'34" L=275.00' T=143.66'		205+61.48	2703530.961	990574.422
L13	205+61.48	2703530.961	990574.422		N28°26'59"E 170.04'	207+31.53	2703680.469	990655.429
L26	207+31.53	2703680.469	990655.429		N28°21'27"E 194.98'	209+26.51	2703852.053	990748.039
C6	209+26.51	2703852.053	990748.039	R=7936.00' Δ=2°11'17" L=303.05' T=151.55'		212+29.56	2704117.171	990894.818
C7	212+29.56	2704117.171	990894.818	R=3112.00' Δ=1°49'58" L=99.55' T=49.78'		213+29.11	2704204.108	990943.302
L5	213+29.11	2704204.108	990943.302		N28°13'54"E 120.60'	214+49.71	2704310.363	991000.351

606272_HD05(BASELINE TIES).DWG Plotted on 30-Oct-2020 11:00 AM

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	16	231
PROJECT FILE NO. 606272			

CONSTRUCTION BASELINE TIES
SHEET 4 OF 4

606272_HD05(BASELINE TIES).DWG Plotted on 30-Oct-2020 11:00 AM

MHD SURVEY 37
E: 991029.382
N: 2704402.252
ELEV 31.716
POINT NAME: MPKN

MHD SURVEY 54
E: 990921.128
N: 2704396.366
ELEV
POINT NAME:

215

1973 TOWN LAYOUT LINE

1923 TOWN LAYOUT LINE

LOCATION LINE OF JUNE 24, 1949 COUNTY LAYOUT

LOCATION LINE OF JUNE 24, 1949 COUNTY LAYOUT

PI +49.71

N16°16'08"E
190.51'
SURVEY TRAVERSE

214

L5

SURVEY TRAVERSE
190.51'
N16°16'08"E

+58.03

N61°46'06"W
21.60'

MHD SURVEY 31
E: 990976.011
N: 2704219.369
ELEV 30.602
POINT NAME: STKN

PT +29.11

N28°58'58"E
247.34'
RR SURVEY TRAVERSE

213

C7

PRC +29.56

MHD SURVEY 36
E: 990880.407
N: 2704099.512
ELEV 30.906
POINT NAME: MPKN

RR SURVEY 53
E: 990801.280
N: 2704180.000
ELEV
POINT NAME:

212

YARMOUTH ROAD/
CAMP STREET CONST. ℄

N20°43'13"E
235.45'
RR SURVEY TRAVERSE

N33°14'34"E
440.61'
SURVEY TRAVERSE

211

RR SURVEY 55
E: 990717.976
N: 2703959.779
ELEV
POINT NAME:

210

C6

MHD SURVEY 30
E: 990734.474
N: 2703850.863
ELEV
POINT NAME: PK

PC +26.51

+19.21

S61°33'01"E
9.67'

209

N33°35'11"E
506.08'
RR SURVEY TRAVERSE

208

MARY DUNN WAY CONST. ℄

402

PI +31.53

N20°55'53"E
345.90'
SURVEY TRAVERSE

CONTINUED ON SHEET NO. 13

0 40 100 160

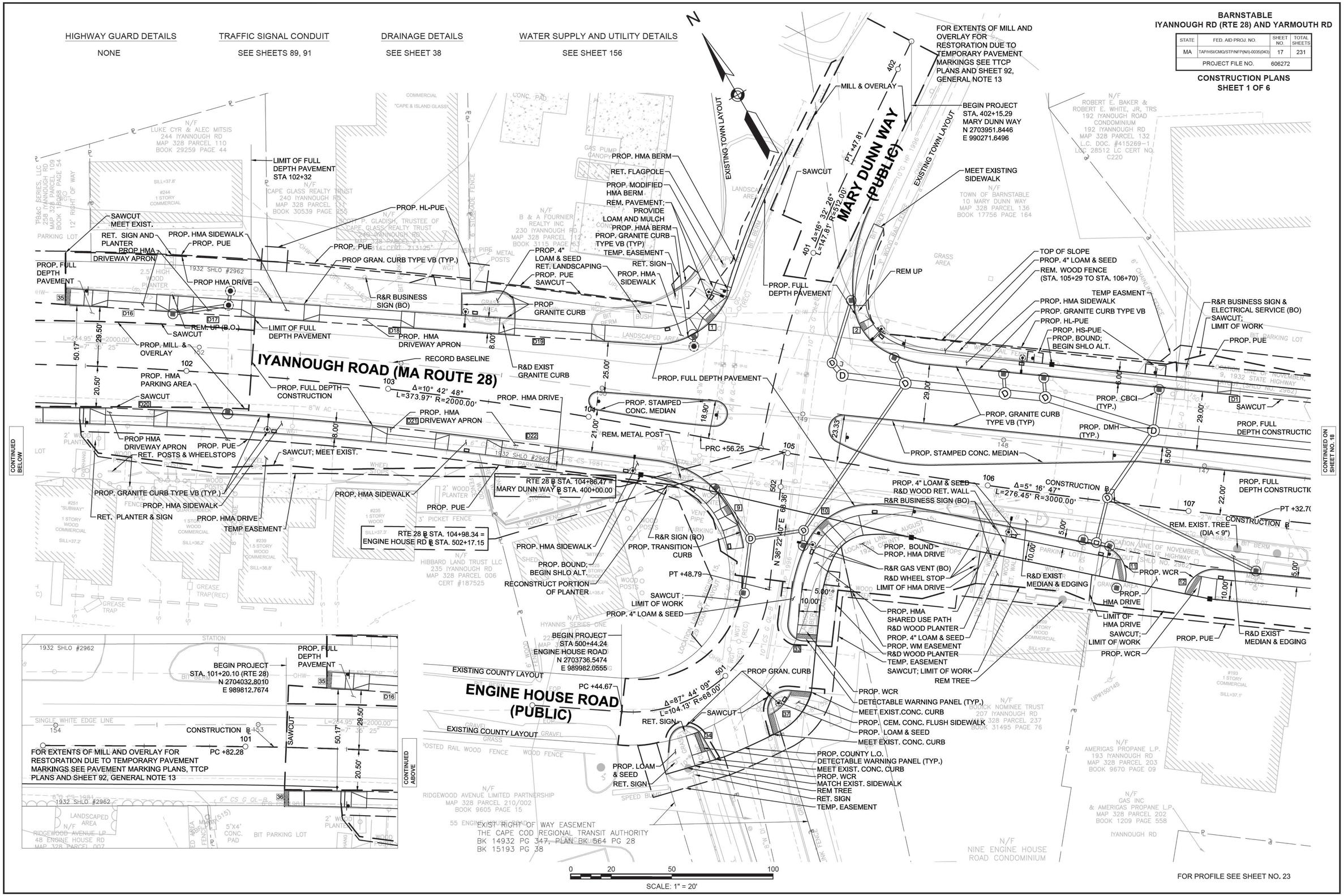
SCALE: 1" = 40'

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(N/I)-0035(043)	17	231
PROJECT FILE NO.	606272		

CONSTRUCTION PLANS
SHEET 1 OF 6

HIGHWAY GUARD DETAILS	TRAFFIC SIGNAL CONDUIT	DRAINAGE DETAILS	WATER SUPPLY AND UTILITY DETAILS
NONE	SEE SHEETS 89, 91	SEE SHEET 38	SEE SHEET 156



606272_HD05(CONSTRPLAN).DWG Plotted on 21-May-2021 8:07 AM

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

SEE SHEETS 89, 91

DRAINAGE DETAILS

SEE SHEET 39

WATER SUPPLY AND UTILITY DETAILS

SEE SHEET 157

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	18	231
PROJECT FILE NO. 606272			

CONSTRUCTION PLANS
SHEET 2 OF 6

606272_HD05(CONSTRPLAN).DWG Plotted on 10-Apr-2021 8:27 AM

CONTINUED ON SHEET NO. 21

CONTINUED ON SHEET NO. 17

CONTINUED ON SHEET NO. 19

CONTINUED ON SHEET NO. 20

YARMOUTH ROAD (TOWN WAY)

IYANNOUGH ROAD (MA ROUTE 28)

PROP. WM EASEMENT
MEET EXIST. DRIVE
TEMP. EASEMENT
REM ABANDONED TRACKS AND BUMPER
PROP. TOWN LAYOUT
PROP. TREE (TYP.)
PROP. STAMPED CEM. CONC. MEDIAN
PROP. 4" LOAM & SEED
PROP. 4" LOAM & SEED
PROP. HMA SHARED USE PATH
PROP. GRANITE CURB TYPE VB (TYP)
BUMPER TO BE REMOVED
PROP. DI
3' WIDE, 4" LOAM & SEED TO MEET EXISTING GROUND
PROP. HMA DRIVE
BOTTOM OF SLOPE
R&D SLOPED GRANITE EDGING
DEMOLISH EXIST. BUILDING
PROP. WCR (TYP.)
PROP. HL-PUE
R&S 5' CHAINLINK FENCE
PROP. HMA SW
TEMP. EASEMENT
R&R BUSINESS SIGN (B.O.)
PROP. HMA DRIVE APRON
PROP. PUE
PROP. CEM. CONC. SW
FLUSH GRANITE CURB
PROP. SHLO
PROP. LIGHTING HANDHOLE
PROP. LOAM & SEED
PROP. CEM. CONC. SW
PROP. HMA PAVEMENT
PROP. BOUND
SAWCUT
R&R GRANITE CURB
PROP. FULL DEPTH CONSTRUCTION
ASPHALTIC PLUG JOINT SEE DETAIL SHEET 195
PROP. GRANITE CURB TYPE VB (TYP)
PROP. FULL DEPTH CONSTRUCTION
PROP. STAMPED CONC. MEDIAN
PT +32.70
CONSTRUCTION
R&R BUSINESS SIGN (BO)
PROP. 4" LOAM & SEED
PROP. GRANITE CURB TYPE VB (TYP)
PROP. TRANS. CURB
PROP. WCR
PROP. BOLLARDS (5)
REM. EXIST. TREES (DIA.< 9")
R&D EXIST MEDIAN & EDGING
PROP. PUE
PROP. BOUND (TYP)
PROP. HMA SHARED USE PATH
PROP. HMA SURFACE
TEMP. EASEMENT
SAWCUT; LIMIT OF WORK
PROP. WM MAIN EASEMENT
PROP. 4" LOAM & SEED (OUTSIDE RR ROW)
PROP. RR SIDELINE
PROP. HMA SHARED USE PATH
LIMIT OF RAILROAD CROSSING No. 536-871R
RET. BALLAST WITHIN RR ROW
PROP. SHLO
PROP. PUE
PROP. 4" LOAM & SEED (OUTSIDE RR ROW)
PROP. BOUND; END TOWN LO ALT.
SAWCUT
SEE TRAFFIC SIGNAL PLAN FOR DISPOSITION OF TRAFFIC SIGNAL EQUIPMENT (TYP.)
PROP. BOUND
PROP. HL-PUE
PROP. STAMPED CONC. ISLAND
REM EXIST. TREE (DIA.<24")
PROP. STAMPED CEM. CONC. MEDIAN
PROP. HMA SW
PROP. HMA CURB
PROP. 4" LOAM & SEED
PROP. FULL DEPTH CONSTRUCTION
PROP. HMA SIDEWALK
PROP. GRANITE CURB TYPE VB (TYP)
PROP. TOWN LAYOUT
TEMP. EASEMENT
PROP. BOUND
R&R BUSINESS SIGN (BO)
REM PLANTER
PROP. HMA DRIVE APRON
PROP. HMA DWY
SAWCUT
PROP. PUE
R&D 3' WOOD POST FENCE
PROP. CEM CONC. PAD
REM 8" TREE
PROP. WM EASEMENT
PROP. WCR
RETAIN STOP SIGN, EXIT SIGN, LIGHT POLE
PROP. HMA DWY
SAWCUT
PROP. WCR
PROP. CBCI (TYP.)
PROP. 6' HMA SIDEWALK
PROP. BOUND
R&D EXIST. GRANITE CURB
PROP. BOUND
R&R TRAFFIC SIGN AND BASE (BO)
TOP OF SLOPE
BEGIN TOWN LO ALT.
CLOSE EXIST. DRIVE
PROP. GRAN. CURB TYPE VB (TYP.)
PROP. 4" LOAM & SEED
SAWCUT
PROP. HS EASEMENT
PROP. BOUND
TEMP. EASEMENT
PROP. HMA SW (TYP.)
PROP. WCR
PROP. SHLO
R&R GRANITE CURB
RET FP
PROP. HMA DRIVE
SAWCUT; LIMIT OF WORK
RET. ISLAND AND SIGN
PROP. HMA SW (TYP.)
PROP. GRANITE CURB TYPE VB (TYP)
PROP. FULL DEPTH CONSTRUCTION
R&D EXIST. MEDIAN & EDGING
R&R GRANITE CURB
PROP. GRANITE CURB TYPE VB (TYP)
RECORD BASELINE
Δ=18° 52' 20"
L=527.02' R=1600.00'
PROP. WHEEL STOPS
PROP. GRAN. CURB
REMOVE EXISTING PLANTER
PROP. BOUND
R&R BUSINESS SIGN (BO)
R&D GRANITE CURB
R&D EXIST. MEDIAN & EDGING
PROP. GRAN. CURB TYPE VB (TYP.)
PROP. STAMPED CONC. MEDIAN
CLOSE EXIST. DRIVE
PROP. SHLO
PROP. GRAN. CURB
PROP. BOUND
REPLACE CEM. CONC. RAMP & RAILING
PROP. 4" LOAM & SEED
TEMP. EASEMENT
PERM. UTILITY EASEMENT
PROP. HMA DRIVE
PROP. HMA DRIVE APRON
SAWCUT; LIMIT OF WORK
REMOVE 3' WOOD RAIL FENCE
PROP HL-PUE
RTE 28 @ STA. 110+41.25 = YARMOUTH RD @ STA. 205+14.29
R&R BUSINESS SIGN (BO)
PROP. HMA SURFACE
PROP 4" LOAM & SEED
SAWCUT
END TOWN LO ALT.
PROP. BOUND
PROP. HS EASEMENT
PROP. HMA SW
R&S WOOD RAIL FENCE
BOTTOM OF SLOPE
PROP. GRAN. CURB
PROP 4" LOAM & SEED
TEMP. EASEMENT
LIMIT OF WORK; MEET GRAVEL DRIVE
PROP. HMA DRIVE APRON
PROP. WHEEL STOPS
PROP. HMA SW (TYP.)
PROP. 4" LOAM & SEED
PROP. WCR (TYP.)
R&D EXIST. MEDIAN & EDGING
PROP. HMA DRIVE
PROP. HMA CURB
PROP. STAMPED CONC. MEDIAN
PROP. FULL DEPTH CONSTRUCTION
R&D EXIST. MEDIAN & EDGING
PROP. TRANS. CURB (0 TO 3" REVEAL)
R&R BUSINESS SIGN (BO)
PROP. 4" LOAM & SEED
ASPHALTIC PLUG JOINT SEE DETAIL SHEET 195
MILL & OVERLAY
PC =01.21
PT +61.48
PI +31.53
4" REVEAL
FLUSH GRANITE CURB
CONCRETE BUFFER
PROP. STAMPED CONC. MEDIAN
PROP. PUE
PROP. HMA SHED
PROP. HMA SHED
PROP. HMA SHED

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

NONE

DRAINAGE DETAILS

SEE SHEET 40

WATER SUPPLY AND UTILITY DETAILS

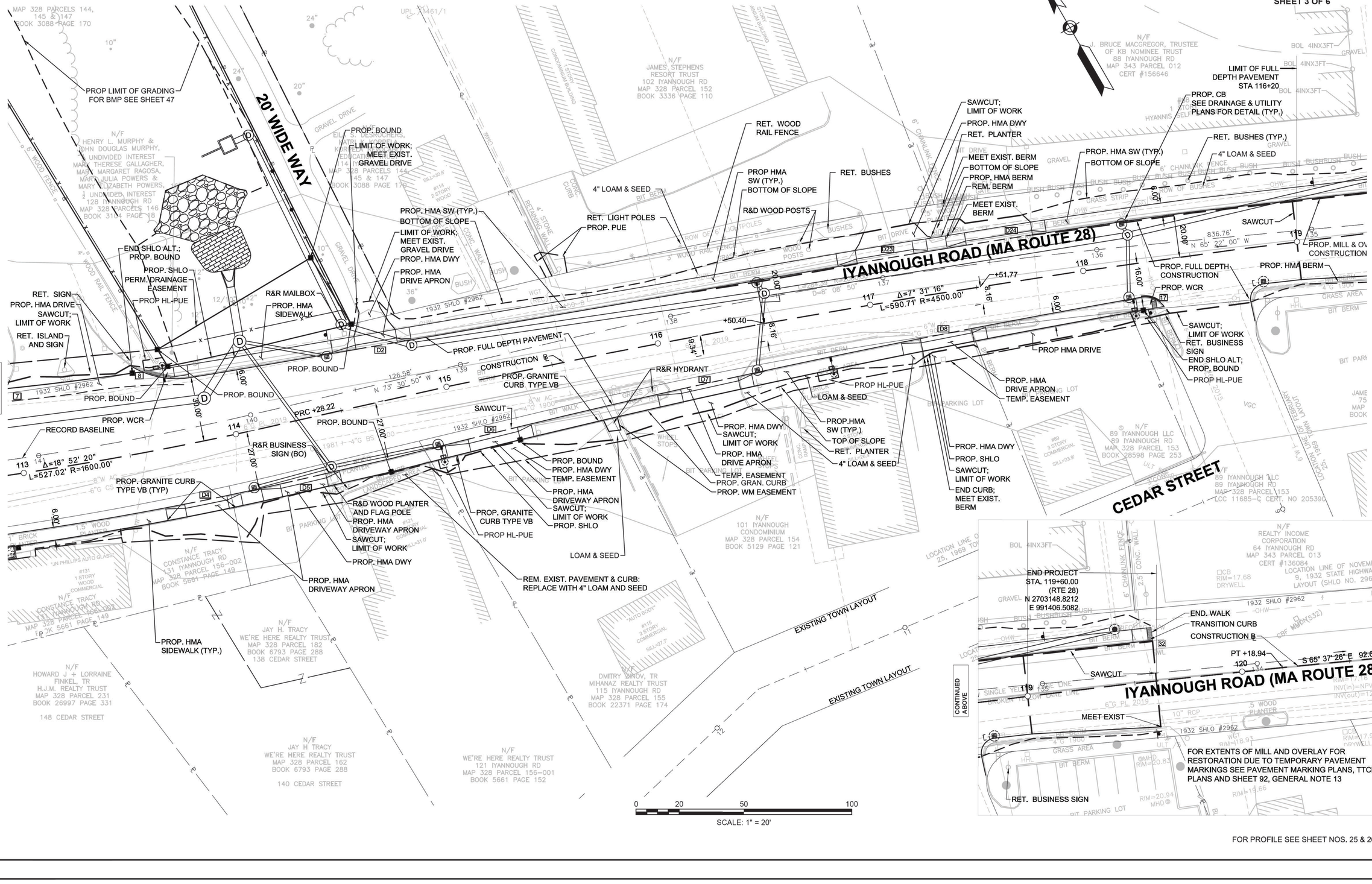
SEE SHEET 158

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	19	231
PROJECT FILE NO. 606272			

CONSTRUCTION PLANS
SHEET 3 OF 6

606272_HD05(CONSTRPLAN).DWG Plotted on 10-Apr-2021 8:31 AM



FOR PROFILE SEE SHEET NOS. 25 & 26

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	20	231
PROJECT FILE NO. 606272			

CONSTRUCTION PLANS
SHEET 4 OF 6

HIGHWAY GUARD DETAILS
NONE

TRAFFIC SIGNAL CONDUIT
NONE

DRAINAGE DETAILS
SEE SHEET 41

WATER SUPPLY AND UTILITY DETAILS
SEE SHEET 159

CONTINUED ON SHEET NO. 18

N

PROP. HL-PUE
PROP. STAMPED CEM. CONC. MEDIAN
PROP. HMA SW
PROP. HMA CURB
PROP. 4" LOAM & SEED
TEMP. EASEMENT
SAWCUT
CONSTRUCTION ℄
MEET EXIST. HMA CURB
BEGIN TOWN LO ALT.;
PROP BOUND
YARMOUTH RD / CAMP ST ℄ STA. 202+75.12 =
SOUTH YARMOUTH RD ℄ STA. 301+60.70
PROP. PUE
REM. TREE
PROP. WCR
PROP. 4" LOAM & SEED
R&R EXIST. GRANITE CURB
PROP. HMA DWY
SAWCUT; LIMIT OF WORK
TEMP. EASEMENT
PROP. FULL DEPTH PAVEMENT
LIMIT OF FULL DEPTH PAVEMENT STA. 300+45.90
PROP. MILL & OVERLAY
R&R BUSINESS SIGN
SAWCUT
CONSTRUCTION ℄
BEGIN PROJECT STA. 300+00.00 (YARMOUTH RD)
N 2703158.1708
E 990423.6465
PROP. MILL AND OVERLAY
PROP. BOUND
PROP. TOWN LO
PROP. 4" LOAM & SEED
PROP. WCR
BOTTOM OF SLOPE
PERM. UTILITY EASEMENT
REBUILD CONC. WALK IN KIND
PROP BOUND
TEMP. EASEMENT
BEGIN TOWN LO ALT.; PROP. BOUND
END TOWN LO ALT.; PROP BOUND
MEET EXISTING WALK
PROP. HMA SIDEWALK
PROP. FULL DEPTH WIDENING
MEET EXIST. WALK
PROP. PUE
SAWCUT
PROP. HS EASEMENT
PROP. HMA SW
R&S WOOD RAIL FENCE BOTTOM OF SLOPE
PROP. GRAN. CURB
PROP 4" LOAM & SEED
TEMP. EASEMENT
LIMIT OF WORK; MEET GRAVEL DRIVE
PROP. HMA DRIVE APRON
PROP. HMA SIDEWALK
REBUILD CONC. WALK IN KIND
EXIST. TREE TO REMAIN
PROP. HL-PUE
REM. EXIST. CONC. CURB
PROP. HS EASEMENT
TOP OF SLOPE
REM. EXIST. TREES (DIA.>24")
CLEARING AND GRUBBING
TEMP. EASEMENT
PROP. HMA DWY
SAWCUT; LIMIT OF WORK
PROP. HMA DRIVE APRON
LIMIT OF FULL DEPTH PAVEMENT STA. 202+00.00
R&D EXIST. MEDIAN & CURB
REM EXIST. TREES (DIA.<9")
R&R MAILBOX
PROP. BOUND
PC +86.48
TEMP. EASEMENT
PROP. HL-PUE
PROP. FULL DEPTH PAVEMENT
PROP HS EASEMENT
PT +15.67
R&R MEMORIAL MARKER
PROP. TOWN LO
PROP. GRAN. CURB
R&D EXIST. CONCRETE CURB
SAWCUT; LIMIT OF WORK
PROP. HMA DRIVE
PROP. HMA DRIVE APRON
PROP. HS EASEMENT
PROP. FULL DEPTH WIDENING
REM. TREE
SAWCUT
TOP OF SLOPE
PROP. HMA SIDEWALK
PROP BOUND; BEGIN TOWN LO 8613 (SECTION 2)
PROP. GRAN. CURB
MEET EXIST. WALK
R&D EXIST. GRANITE CURB
SAWCUT; MEET EXIST
PROP. MILL AND OVERLAY
PC +55.79
PROP. FULL DEPTH PAVEMENT
PROP. HMA DRIVE APRON
PROP. HS EASEMENT
PROP. FULL DEPTH WIDENING
REM. TREE
SAWCUT
TOP OF SLOPE
PROP. HMA SIDEWALK
PROP BOUND; BEGIN TOWN LO 8613 (SECTION 2)
PROP. GRAN. CURB
MEET EXIST. WALK
R&D EXIST. GRANITE CURB
SAWCUT; MEET EXIST
PROP. HMA SIDEWALK
PROP. FULL DEPTH WIDENING
MEET EXIST. WALK
PROP. PUE
L=275.00' Δ=40° 55' 34" R=385.00'
N 12°28'35" W 286.48'
38.00'
18.00'
6.00'
6.00'
6

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	21	231
PROJECT FILE NO. 606272			

CONSTRUCTION PLANS
SHEET 5 OF 6

606272_HD05(CONSTRPLAN).DWG Plotted on 10-Apr-2021 8:35 AM

HIGHWAY GUARD DETAILS
NONE

TRAFFIC SIGNAL CONDUIT
NONE

DRAINAGE DETAILS
SEE SHEET 42

WATER SUPPLY AND UTILITY DETAILS
SEE SHEET 160

CONTINUED ON SHEET NO. 22

PROP. 4" LOAM & SEED
PROP. BOUND; END TOWN LO ALT.
PROP. TOWN LO
PROP. MILL AND OVERLAY
SAWCUT
PROP. HMA SHARED USE PATH
PROP. HMA SW
LIMIT OF FULL DEPTH PAVEMENT STA. 211+00.00
TOP OF SLOPE
PROP BOTTOM OF SLOPE
REM. CURB
PROP GRANITE CURB TYPE VB (TYP.)
PROP. HMA SW
PROP BOTTOM OF SLOPE
PROP 4" LOAM & SEED
PROP. TREE (TYP.)
R&R GRANITE CURB
RET. SIGN
PROP. D-PUE
REM. PAVEMENT; REPLACE WITH 4" LOAM & SEED
PC +26.51
YARMOUTH ROAD (PUBLIC)
PROP. HMA DRIVE APRON
PROP. HMA DWY
20' WIDE WAY
REMOVE VENT
15.52'
PROP. BMP
SAWCUT; LIMIT OF WORK
PROP. GRAN. CURB
R&R GRANITE CURB
R&D GRANITE CURB
PROP. HMA DRIVE APRON
FULL DEPTH CONSTRUCTION
SAWCUT; LIMIT OF WORK
TEMP. EASEMENT
REM ABANDONED TRACKS AND BUMPER
PROP. 4" LOAM & SEED
PROP. GRANITE CURB TYPE VB (TYP)
PROP. 4" STAMPED CONC. MEDIAN
PROP. TOWN LAYOUT
10' HMA SHARED USE PATH
END TOWN LO ALT.; PROP. BOUND (TO BE INSTALLED FLUSH WITH SURFACE)
R&R GRANITE CURB
PROP. 4" LOAM & SEED
REM LEACHING FIELD AND SEPTIC TANK; BACKFILL WITH SUITABLE MATERIAL
DEMOLISH EXIST. BUILDING
PROP. GRAVEL DRIVE
PROP. HMA SIDEWALK
PROP. STAMPED CEM. CONC. MEDIAN
PROP. GRANITE CURB TYPE VB (TYP)

N/F TOWN OF BARNSTABLE MAP 328, LOT 142-2 BK.20708, PG.330
N/F COMMONWEALTH OF MASSACHUSETTS 5 YARMOUTH ROAD MAP 328, PARCEL 183 BOOK 3498 PAGE 92
N/F ATLANTIS IYANOUGH REALTY LLC 180 IYANNOUGH RD MAP 328 PARCEL 131 BOOK 25973 PAGE 311
N/F EILA S. DESROCHERS, KATRI H KORPELA KORPELA REVOCABLE EDUCATION TRUST 114 IYANNOUGH RD MAP 328 PARCELS 144, 145 & 147 BOOK 3088 PAGE 170
N/F SUNRISE NOMINEE TRUST MAP 328, LOT 148 PROBATE 99P1184EP BOOK 27837 PAGE 158
N/F D&S MACDONALD FAMILY TRUST

1 STORY CINDERBLOCK No. 202

0 20 50 100
SCALE: 1" = 20'

CONTINUED ON SHEET NO. 18

FOR PROFILE SEE SHEET NO. 29

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

NONE

DRAINAGE DETAILS

SEE SHEET 43

WATER SUPPLY AND UTILITY DETAILS

SEE SHEET 161

FOR EXTENTS OF MILL AND OVERLAY FOR RESTORATION
DUE TO TEMPORARY PAVEMENT MARKINGS SEE
TTCP PLANS AND SHEET 92, GENERAL NOTE 13

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	22	231
PROJECT FILE NO. 606272			

CONSTRUCTION PLANS
SHEET 6 OF 6

606272_HD05(CONSTRPLAN).DWG Plotted on 10-Apr-2021 8:37 AM

OLD YARMOUTH ROAD (TOWN WAY)

LIMIT OF MILL & OVERLAY STA 214+37

PROP. PUE

MEET EXIST. SIDEWALK

PROP. WCR

LIMIT OF MILL & OVERLAY STA 214+45

PI +49.71

N 28° 13' 54" E 120.60

END PROJECT STA. 214+45.00 (YARMOUTH ROAD) N 2704305.9577 E 930997.9858

PROP. MILL & OVERLAY

CONSTRUCTION B

PROP. WCR

PROP HMA SIDEWALK

PT +29.11

PROP. WCR

SAWCUT

PROP. BOUND

PROP. PUE

PROP. BOUND

MATCH EXIST

END CURB

PROP 4" LOAM & SEED

END. WALK

PROP. DRAINAGE EASEMENT

PROP 4" LOAM & SEED

Δ=1° 49' 58" L=99.55' R=3112.00'

COMPOST FILTER TUBE

PROP. WCR

PRC +29.56

R&R EXIST. GRANITE CURB

PROP. DRAINAGE EASEMENT

CLEARING AND GRUBBING

PROP. 4" LOAM & SEED

PROP. COUNTY LAYOUT

PROP. HMA SHARED USE PATH

FULL DEPTH WIDENING

10.00'

CONSTRUCTION B

PROP BOTTOM OF SLOPE

TEMP. EASEMENT

PROP HMA SIDEWALK

PROP. 4" LOAM & SEED

PROP. BOUND; END TOWN LO ALT.

PROP. TOWN LO

PROP. MILL AND OVERLAY

SAWCUT

Δ=2° 11' 17" L=273.05' R=7936.00'

N/F TOWN OF BARNSTABLE MAP 328, LOT 142-1 BK.20708, PG.330

N/F TOWN OF BARNSTABLE MAP 328, LOT 142-1 BK.19847, PG.223

N/F TOWN OF BARNSTABLE MAP 328, LOT 229 BK. 7454, PG.73

N/F COMMONWEALTH OF MASS. & TOWN OF YARMOUTH MAP 328 BOOK 3498 PAGE 92

N/F JOHN R + JAMES FRANCIS ROBICHAUD MAP 328, LOT 139 BK.21662, PG.298

1 STORY CONC. BLOCK No. 279 SILL=33.64 FF BASEMENT=22.43

WF#WF-13

WF#WF-12

WF#WF-11

WF#WF-10

0 20 50 100

SCALE: 1" = 20'

CONTINUED ON SHEET NO. 21

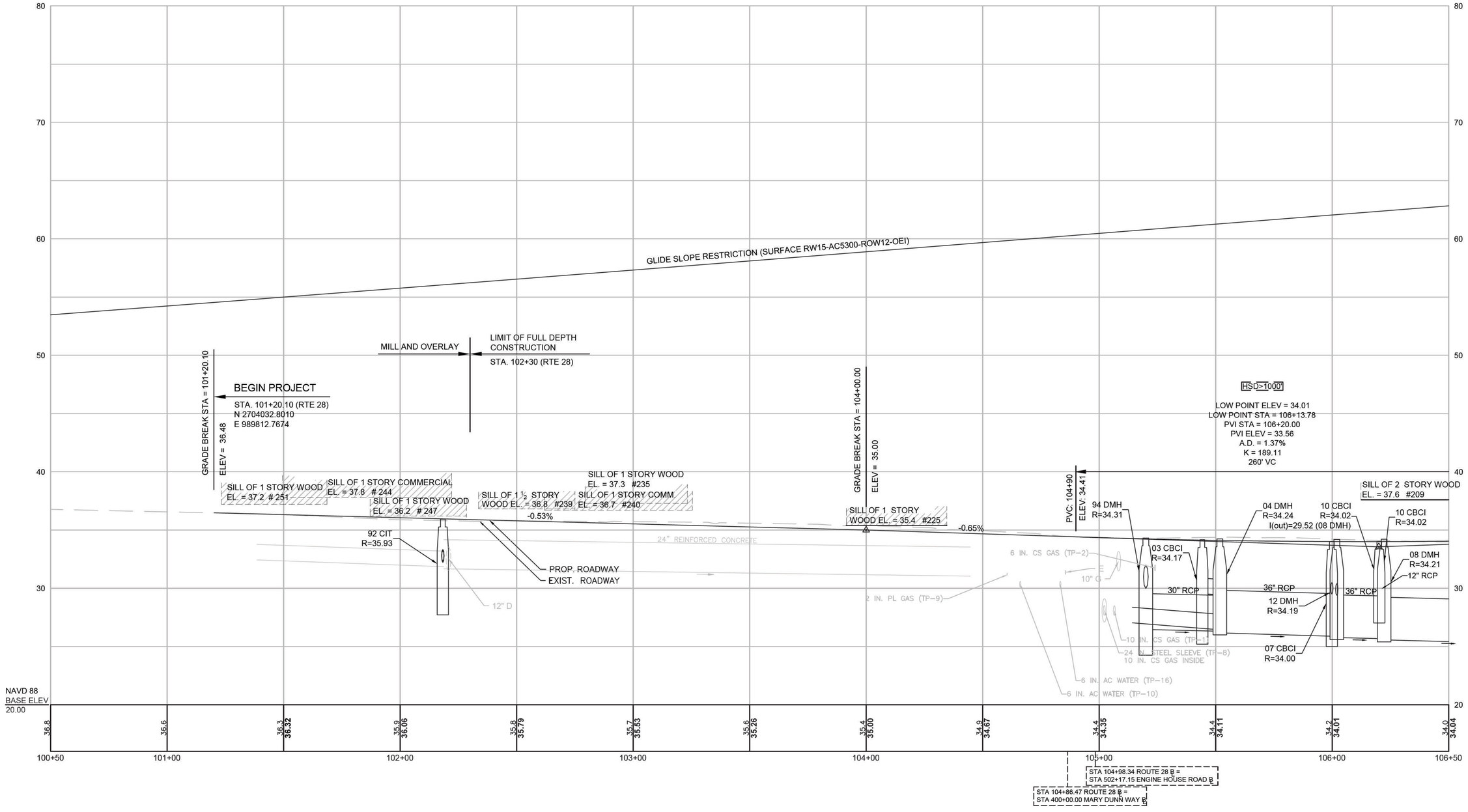
FOR PROFILE SEE SHEET NO. 29

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	23	231
PROJECT FILE NO. 606272			

PROFILES - ROUTE 28
SHEET 1 OF 4

606272_HD06(PROFILE).DWG Plotted on 30-Oct-2020 11:42 AM



HOR. SCALE IN FEET
20 0 20 40
VER. SCALE IN FEET
4 0 4 8

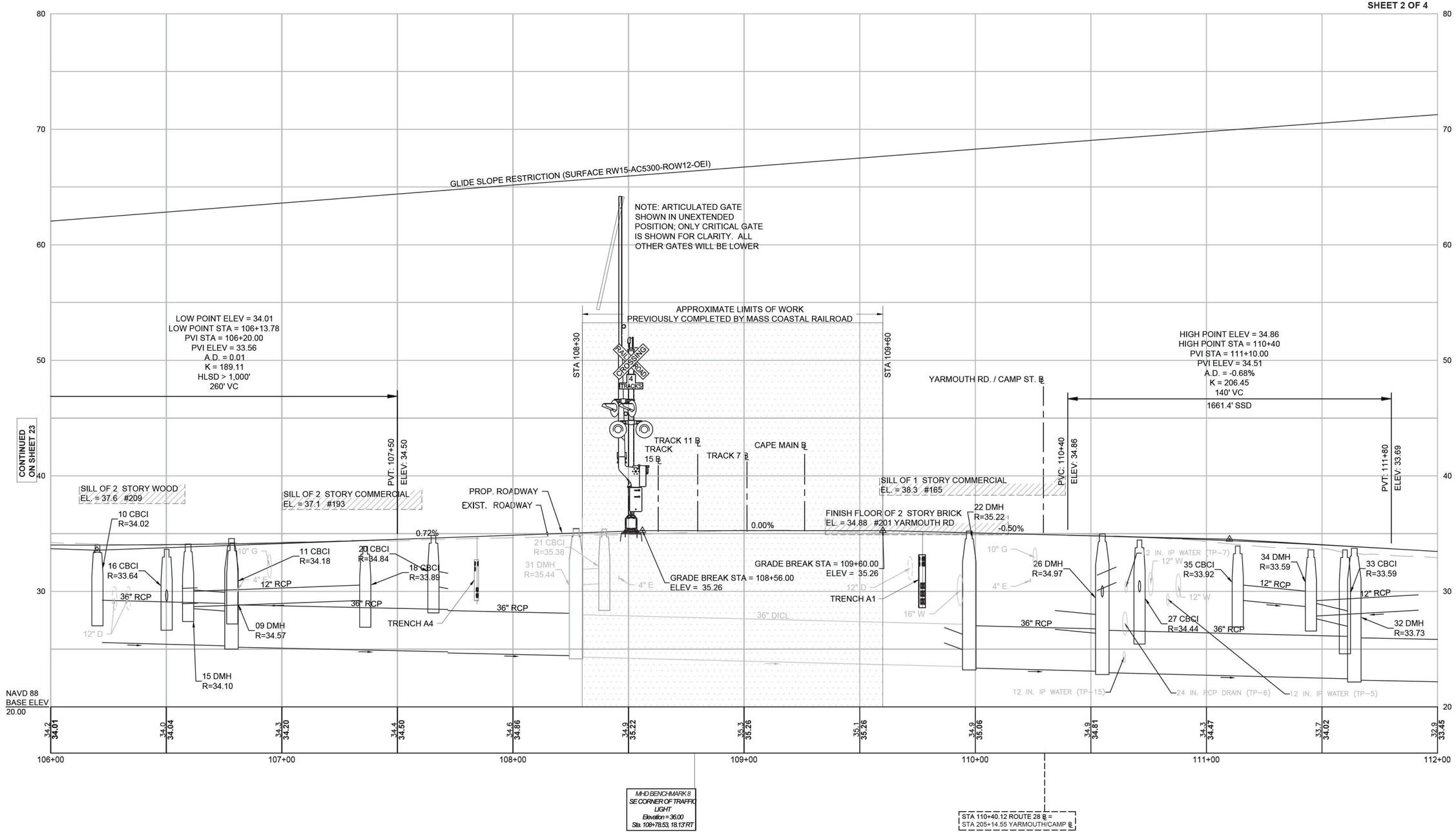
FOR CONSTRUCTION PLANS:
SEE SHEET NO. 17

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	24	231
PROJECT FILE NO. 606272			

PROFILES - ROUTE 28
SHEET 2 OF 4

606272_HD06(PROFILE).DWG Plotted on 29-Mar-2021 3:41 PM



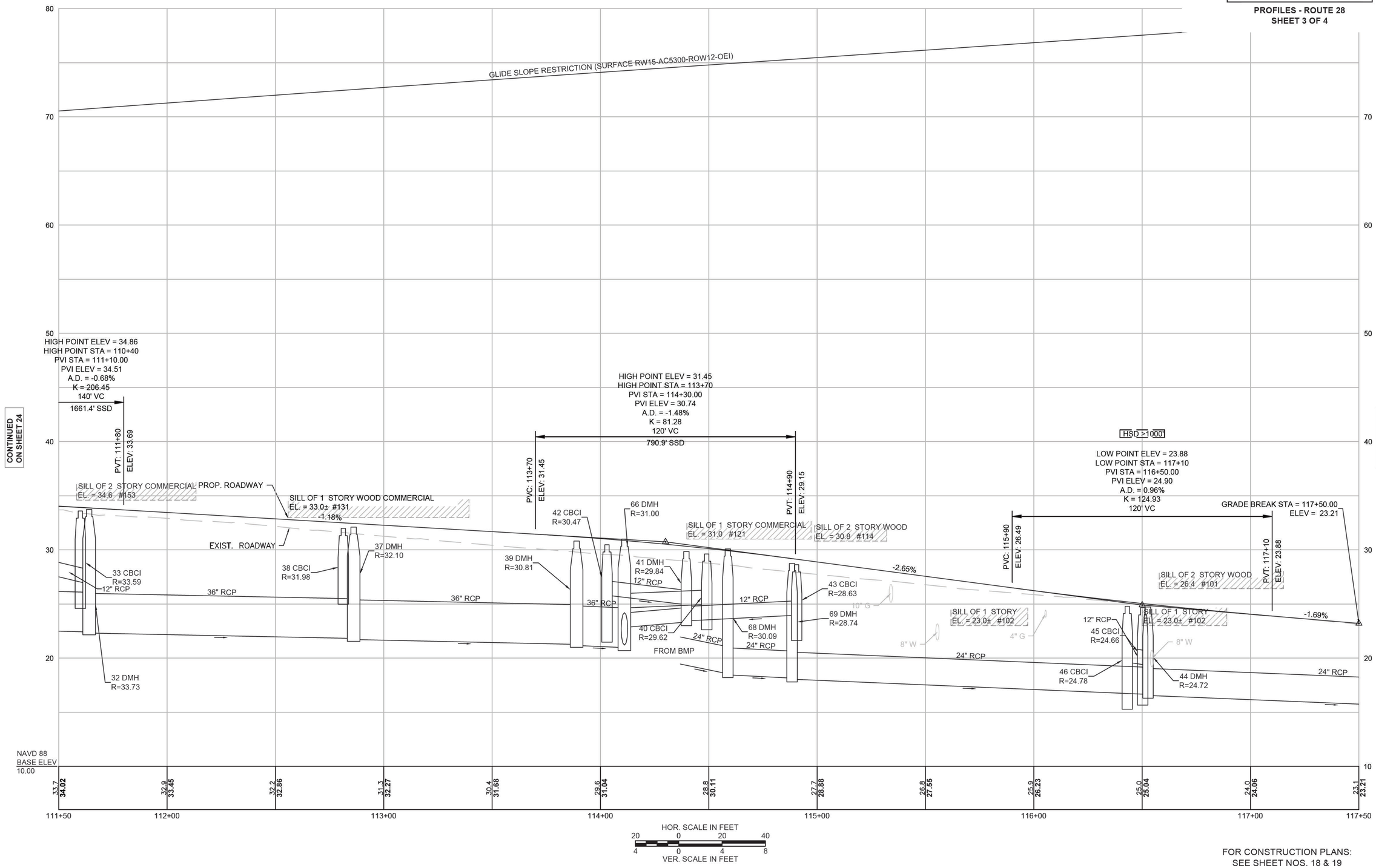
FOR CONSTRUCTION PLANS:
SEE SHEET NO. 17, 18

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	25	231
PROJECT FILE NO.	606272		

PROFILES - ROUTE 28
SHEET 3 OF 4

606272_HD06(PROFILE).DWG Plotted on 30-Oct-2020 11:43 AM



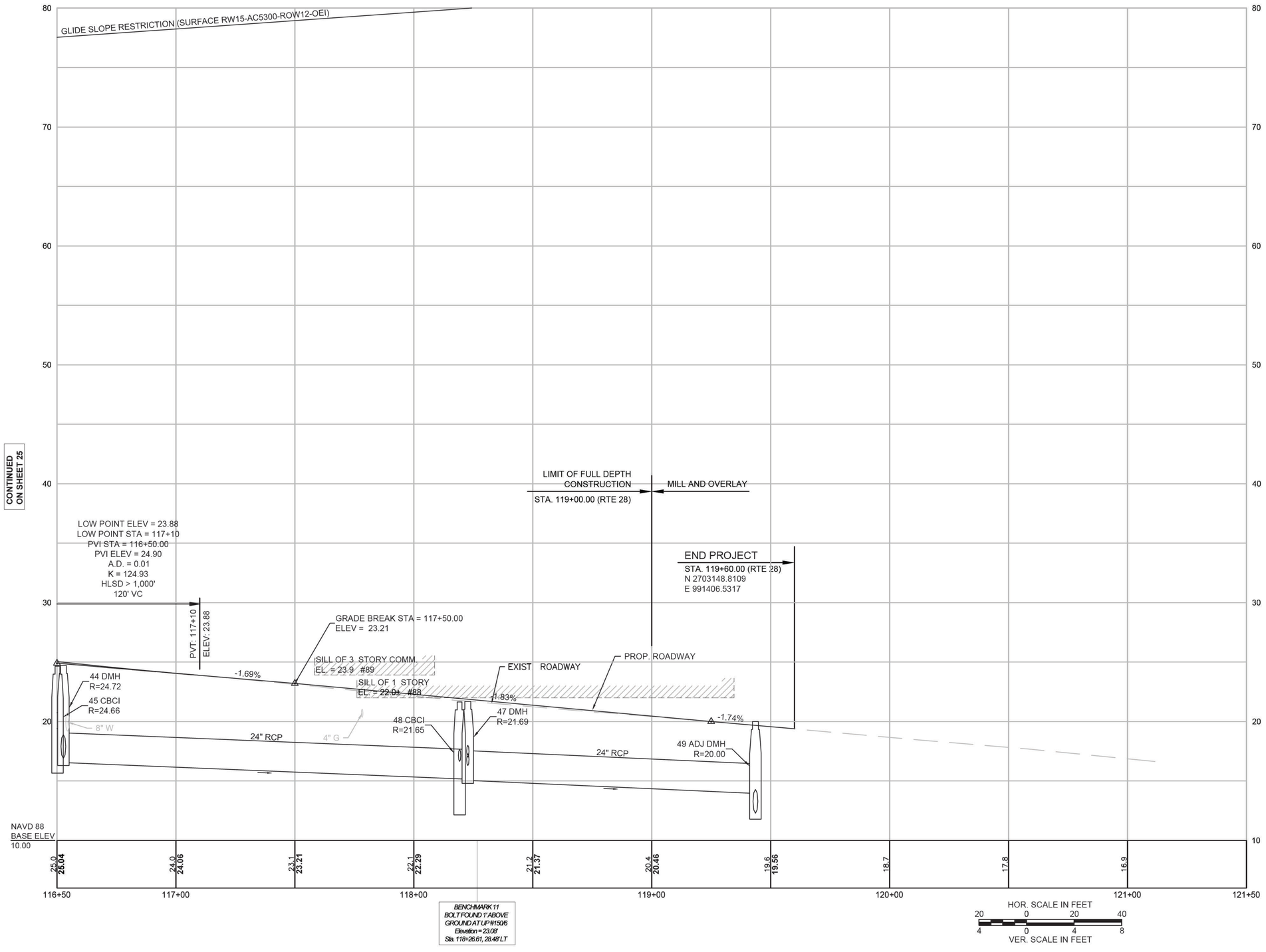
FOR CONSTRUCTION PLANS:
SEE SHEET NOS. 18 & 19

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	26	231
PROJECT FILE NO.	606272		

PROFILES - ROUTE 28
SHEET 4 OF 4

606272_HD06(PROFILE).DWG Plotted on 30-Oct-2020 11:43 AM



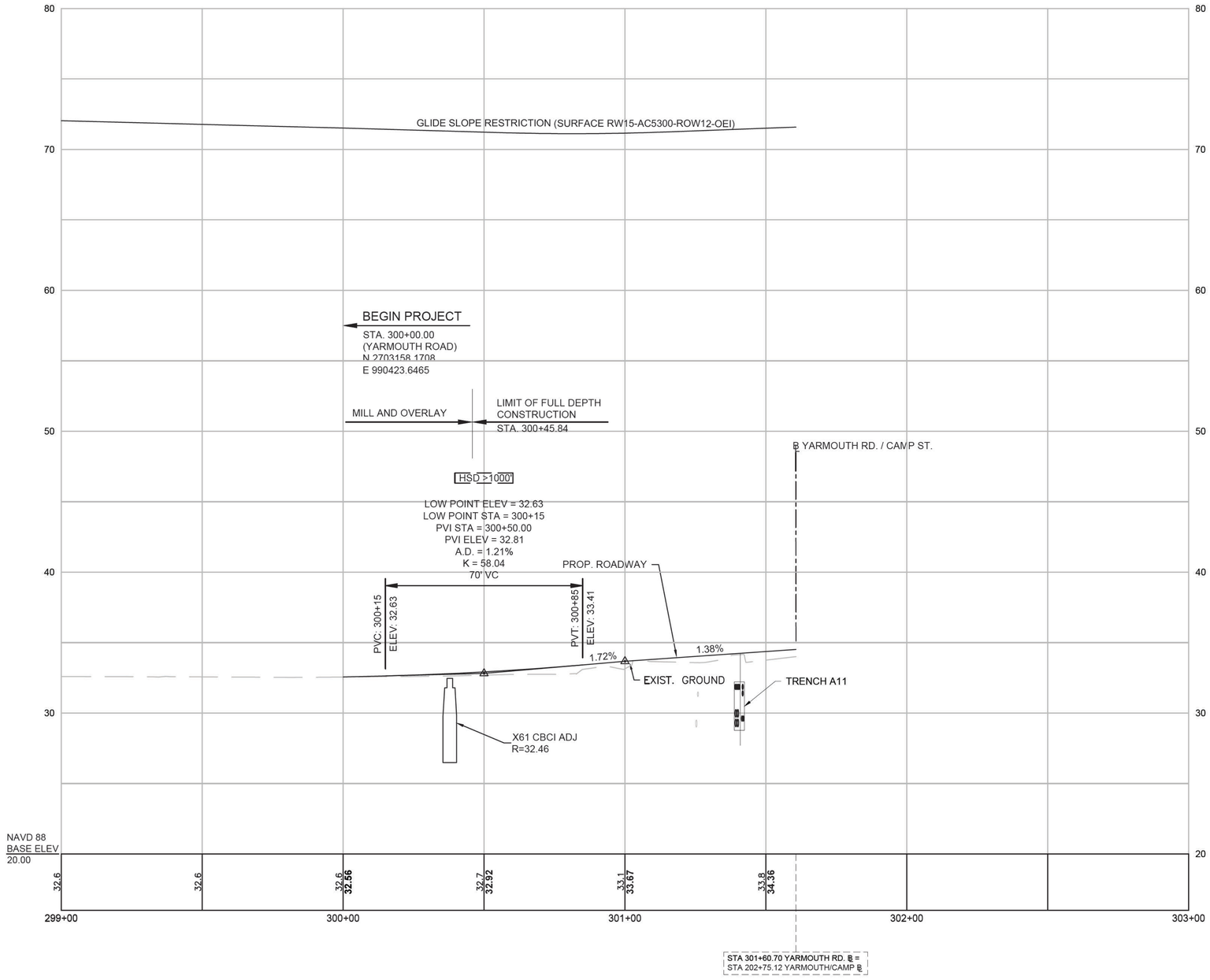
FOR CONSTRUCTION PLANS:
SEE SHEET NO. 19

SOUTH YARMOUTH

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	27	231
PROJECT FILE NO.	606272		

PROFILES - SIDE STREETS
SHEET 1 OF 5



HOR. SCALE IN FEET
20 0 20 40
4 0 4 8
VER. SCALE IN FEET

FOR CONSTRUCTION PLANS:
SEE SHEET NO. 20

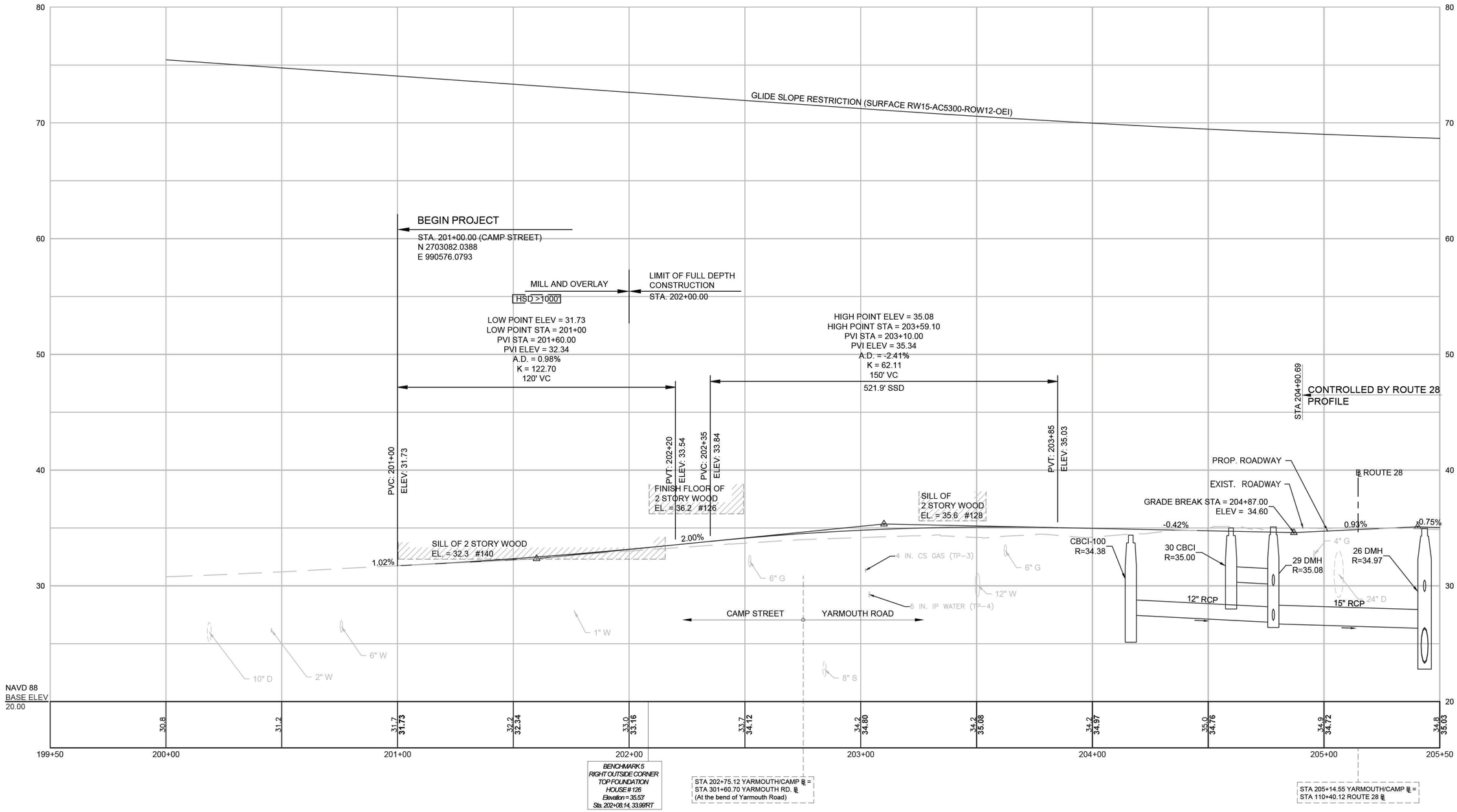
606272_HD06(PROFILE).DWG Plotted on 24-Nov-2020 3:52 PM

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	28	231
PROJECT FILE NO. 606272			

PROFILES - SIDE STREETS
SHEET 2 OF 5

606272_HD06(PROFILE).DWG Plotted on 24-Nov-2020 3:55 PM



HOR. SCALE IN FEET
20 0 20 40
VER. SCALE IN FEET
4 0 4 8

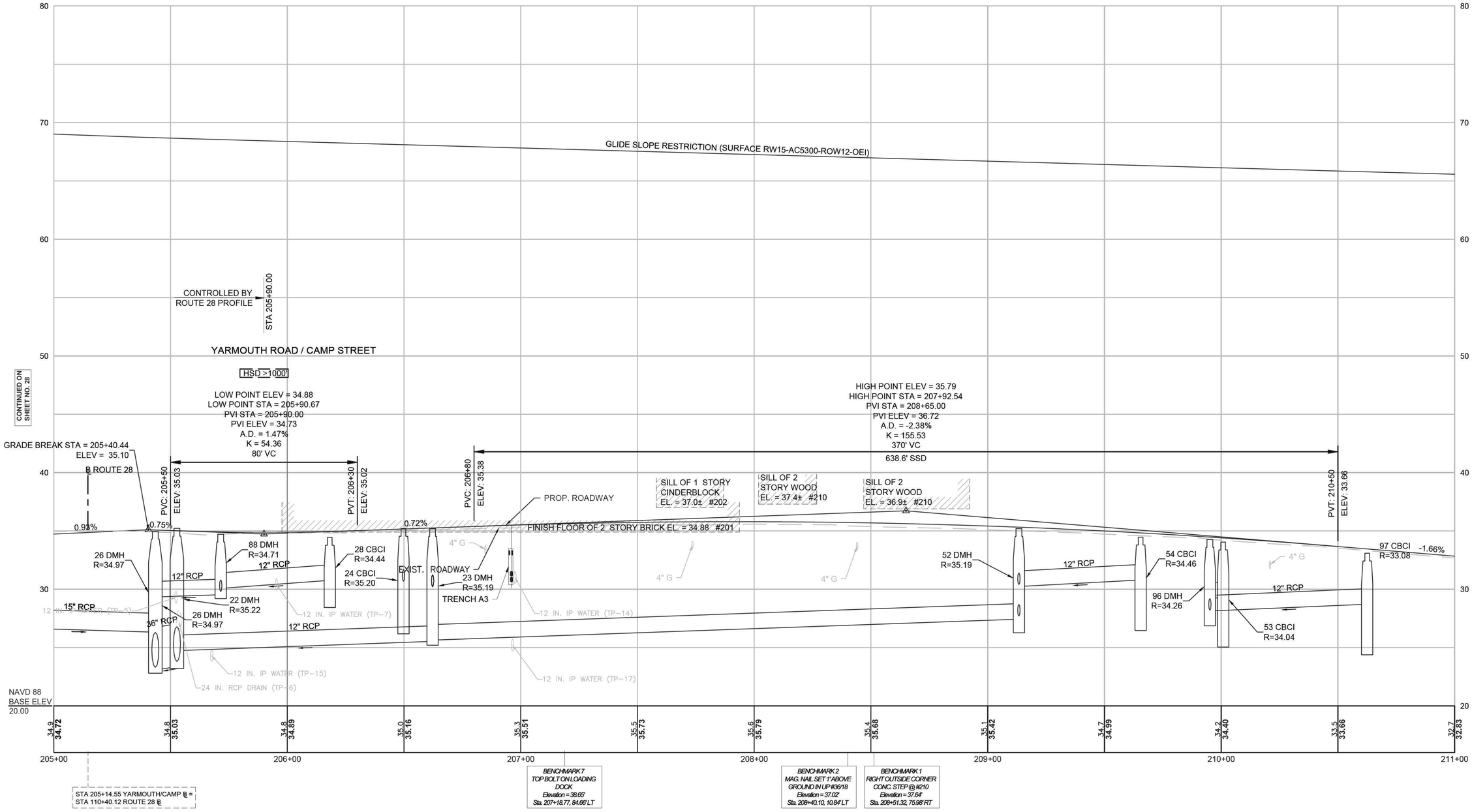
FOR CONSTRUCTION PLAN:
SEE SHEET NO. 18, 20

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	29	231
PROJECT FILE NO.	606272		

PROFILES - SIDE STREETS
SHEET 3 OF 5

606272_HD06(PROFILE).DWG Plotted on 24-Nov-2020 3:58 PM



FOR CONSTRUCTION PLANS:
SEE SHEET NOS. 18, 21

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	30	231
PROJECT FILE NO.	606272		

PROFILES - SIDE STREETS
SHEET 4 OF 5

606272_HD06(PROFILE).DWG Plotted on 24-Nov-2020 4:00 PM

CONTINUED ON SHEET NO. 29

80 / 70 / 60 / 50 / 40 / 30 / 20

GLIDE SLOPE RESTRICTION (SURFACE RW15-AC5300-ROW12-OEI)

LIMIT OF FULL DEPTH CONSTRUCTION
STA. 211+00.00

MILL AND OVERLAY

HSD >1000'

LOW POINT ELEV = 30.69
LOW POINT STA = 212+50
PVI STA = 211+90.00
PVI ELEV = 31.34
A.D. = 0.58%
K = 208.56
120' VC

HSD >1000'

LOW POINT ELEV = 29.99
LOW POINT STA = 213+45.65
PVI STA = 213+40.00
PVI ELEV = 29.72
A.D. = 1.96%
K = 56.15
110' VC

END PROJECT
STA. 214+45.00 (YARMOUTH ROAD)
N 2704305.9577
E 990997.9858

PVT: 210+50
ELEV: 33.66

PVC: 211+30
ELEV: 32.33

PVT: 212+50
ELEV: 30.69

PVC: 212+85
ELEV: 30.31

PVT: 213+95
ELEV: 30.20

-1.66%

-1.08%

0.88%

PROP. ROADWAY

EXIST. ROADWAY

4" TEL

4" G

4" G

12" D

74 LB
R=32.03

71 CBCI
R=30.66

72 CB
R=30.57

70 CBCI
R=30.65

TRENCH A8

76 CB
R=29.89

12 IN. IP WATER (TP-13)

12 IN. IP WATER (TP-11)

12 IN. IP WATER (TP-12)

NAVD 88
BASE ELEV
20.00

210+50	211+00	212+00	213+00	214+00	215+00	216+00	216+50
33.5 **33.66**	32.7 **32.83**	31.9 **32.01**	31.2 **31.29**	30.6 **30.69**	30.1 **30.17**	30.0 **29.99**	30.3 **30.25**	30.7	31.2	31.8	32.4

BENCHMARK 20
MAG. NAIL SET 1' ABOVE GROUND IN UP #3522
Elevation = 32.10'
Sta. 212+45.88, 14.17' LT

HOR. SCALE IN FEET
20 0 20 40
VER. SCALE IN FEET
4 0 4 8

FOR CONSTRUCTION PLANS:
SEE SHEET NOS. 21, 22

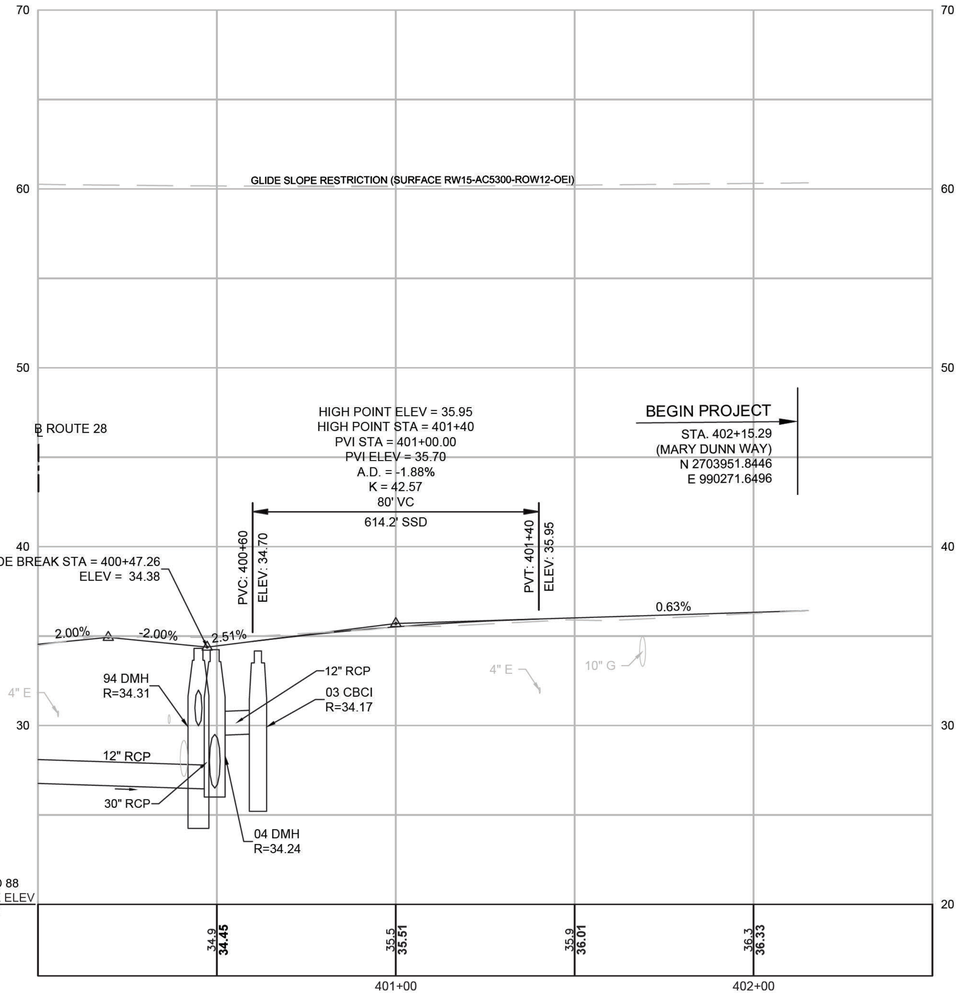
BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	31	231
PROJECT FILE NO.	606272		

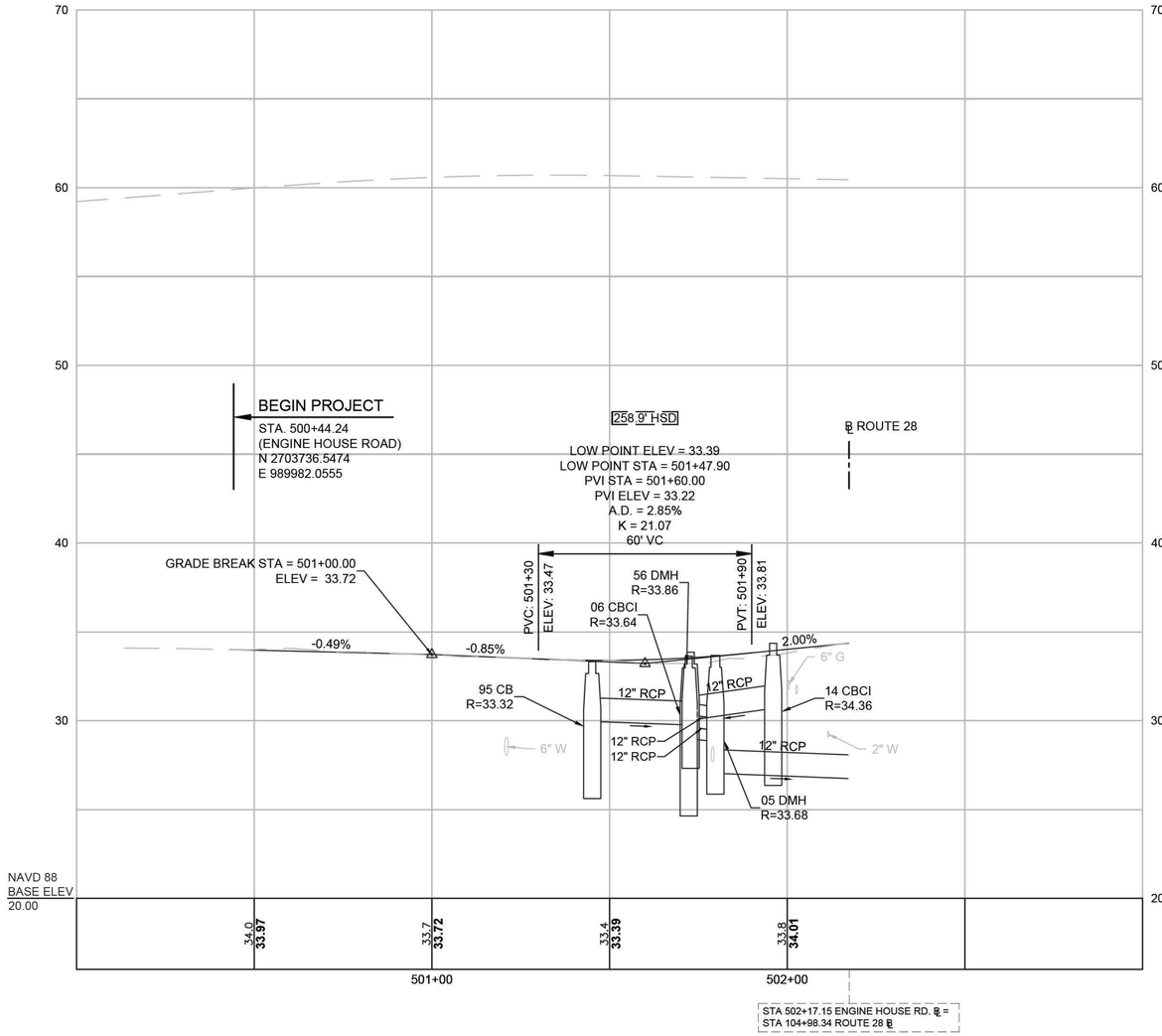
PROFILES - SIDE STREETS
SHEET 5 OF 5

606272_HD06(PROFILE).DWG Plotted on 24-Nov-2020 4:07 PM

MARY DUNN WAY



ENGINE HOUSE ROAD



HOR. SCALE IN FEET
20 0 20 40
4 0 4 8
VER. SCALE IN FEET

FOR CONSTRUCTION PLANS:
SEE SHEET NO. 20

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

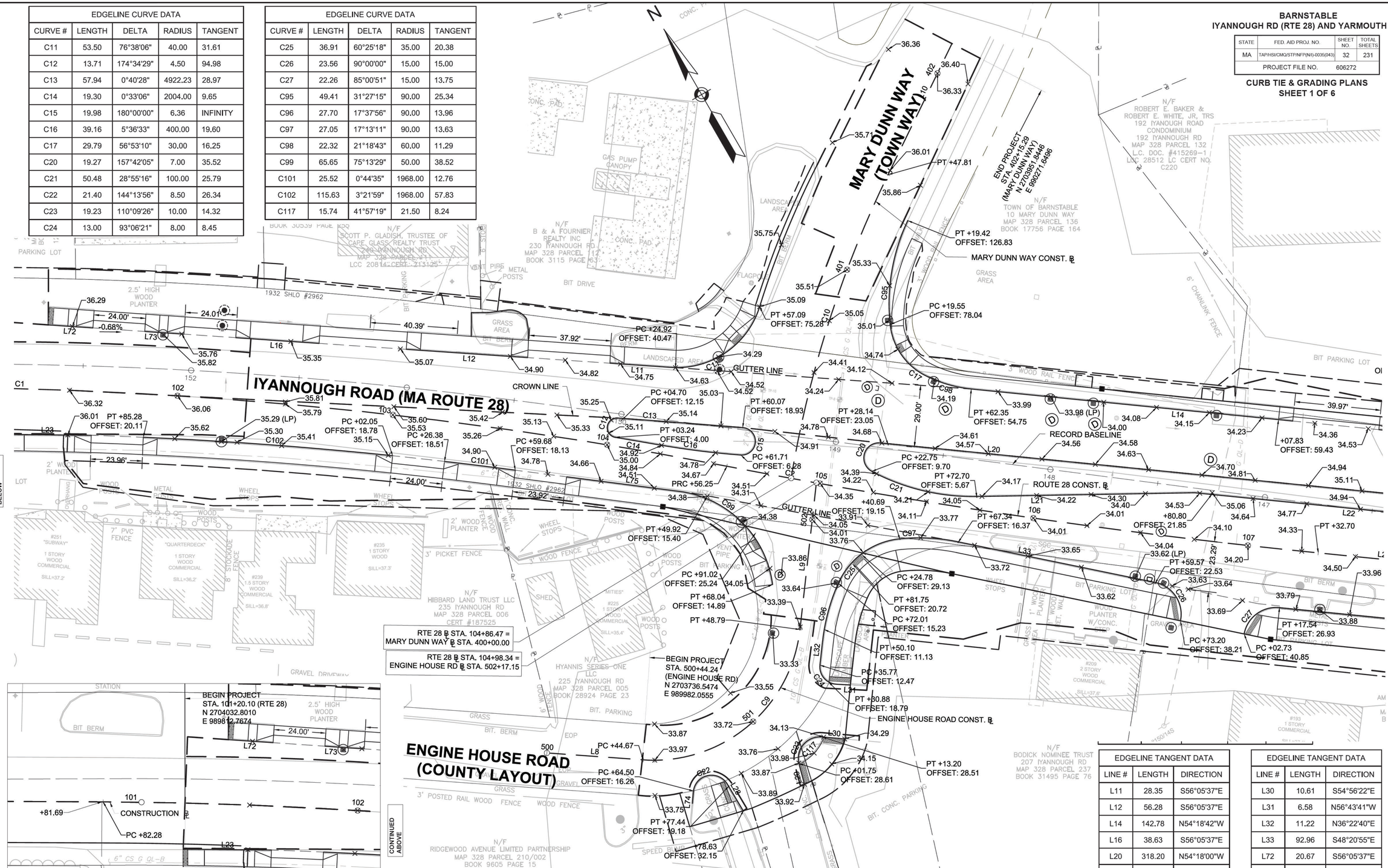
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	32	231
PROJECT FILE NO.	606272		

CURB TIE & GRADING PLANS
SHEET 1 OF 6

606272_HD07(CURB TIE).DWG Plotted on 10-Apr-2021 9:04 AM

EDGELINE CURVE DATA				
CURVE #	LENGTH	DELTA	RADIUS	TANGENT
C11	53.50	76°38'06"	40.00	31.61
C12	13.71	174°34'29"	4.50	94.98
C13	57.94	0°40'28"	4922.23	28.97
C14	19.30	0°33'06"	2004.00	9.65
C15	19.98	180°00'00"	6.36	INFINITY
C16	39.16	5°36'33"	400.00	19.60
C17	29.79	56°53'10"	30.00	16.25
C20	19.27	157°42'05"	7.00	35.52
C21	50.48	28°55'16"	100.00	25.79
C22	21.40	144°13'56"	8.50	26.34
C23	19.23	110°09'26"	10.00	14.32
C24	13.00	93°06'21"	8.00	8.45

EDGELINE CURVE DATA				
CURVE #	LENGTH	DELTA	RADIUS	TANGENT
C25	36.91	60°25'18"	35.00	20.38
C26	23.56	90°00'00"	15.00	15.00
C27	22.26	85°00'51"	15.00	13.75
C95	49.41	31°27'15"	90.00	25.34
C96	27.70	17°37'56"	90.00	13.96
C97	27.05	17°13'11"	90.00	13.63
C98	22.32	21°18'43"	60.00	11.29
C99	65.65	75°13'29"	50.00	38.52
C101	25.52	0°44'35"	1968.00	12.76
C102	115.63	3°21'59"	1968.00	57.83
C117	15.74	41°57'19"	21.50	8.24



EDGELINE TANGENT DATA		
LINE #	LENGTH	DIRECTION
L11	28.35	S56°05'37"E
L12	56.28	S56°05'37"E
L14	142.78	N54°18'42"W
L16	38.63	S56°05'37"E
L20	318.20	N54°18'00"W
L21	100.63	S60°59'43"E
L22	177.75	S54°18'00"E
L23	40.73	S59°23'35"E
L28	14.37	N0°47'23"W
L29	9.67	N14°54'11"E

EDGELINE TANGENT DATA		
LINE #	LENGTH	DIRECTION
L30	10.61	S54°56'22"E
L31	6.58	N56°43'41"W
L32	11.22	N36°22'40"E
L33	92.96	S48°20'55"E
L72	20.67	S56°05'37"E
L73	18.18	S56°05'37"E
L74	5.28	N34°58'41"E
L75	52.38	S52°38'30"E

EDGELINE CURVE DATA				
CURVE #	LENGTH	DELTA	RADIUS	TANGENT
C28	4.67	106°59'44"	2.50	3.38
C29	60.93	69°48'56"	50.00	34.89
C30	130.55	20°26'14"	366.00	65.98
C33	3.87	73°49'58"	3.00	2.25
C34	3.30	75°35'19"	2.50	1.94
C35	4.56	104°32'06"	2.50	3.23
C40	36.63	5°51'46"	358.00	18.33
C41	66.83	109°23'44"	35.00	49.43
C42	6.50	0°04'56"	4530.83	3.25
C43	46.06	1°37'20"	1627.00	23.03
C53	4.13	94°45'27"	2.50	2.72
C54	18.50	62°27'16"	16.97	10.29
C55	115.19	8°56'36"	738.00	57.71
C56	3.43	78°30'27"	2.50	2.04
C57	28.00	180°00'00"	8.91	INFINITY
C58	5.17	0°11'07"	1598.00	2.58
C59	120.28	8°59'05"	767.00	60.26
C60	120.00	4°18'09"	1598.00	60.03
C61	3.74	85°48'36"	2.50	2.32
C62	9.31	177°44'14"	3.00	151.91
C63	9.55	182°23'39"	3.00	143.57

EDGELINE CURVE DATA				
CURVE #	LENGTH	DELTA	RADIUS	TANGENT
C64	59.41	97°15'00"	35.00	39.73
C66	4.41	101°11'03"	2.50	3.04
C75	10.84	180°00'00"	3.45	INFINITY
C76	6.22	1°01'29"	348.00	3.11
C77	48.26	7°56'42"	348.00	24.17
C79	6.59	0°55'07"	411.00	3.30
C81	134.70	4°44'37"	1627.00	67.39
C82	68.22	2°24'08"	1627.00	34.11
C83	24.51	0°53'24"	1578.00	12.26
C84	50.77	83°06'45"	35.00	31.03
C85	25.14	84°43'04"	17.00	15.50
C86	26.00	124°56'19"	11.92	22.87
C89	10.02	180°30'36"	3.18	714.37
C104	38.27	1°20'51"	1627.00	19.13
C105	46.35	6°42'21"	396.00	23.20
C106	9.32	177°55'57"	3.00	166.26
C107	3.85	88°13'22"	2.50	2.42
C108	4.00	91°43'02"	2.50	2.58
C109	4.15	95°05'15"	2.50	2.73
C110	3.61	82°48'02"	2.50	2.20
C111	4.23	96°58'21"	2.50	2.82

EDGELINE TANGENT DATA		
LINE #	LENGTH	DIRECTION
L15	66.40	S54°18'00"E
L18	99.18	N35°57'08"E
L19	18.96	S54°18'00"E
L22	177.75	S54°18'00"E
L24	2.45	S28°30'01"W
L25	10.55	S54°18'00"E
L34	12.39	S54°18'00"E
L35	131.51	S28°26'59"W
L41	194.96	S28°21'27"W
L44	12.49	N24°12'26"E
L45	10.79	N24°12'26"E
L47	131.52	S28°26'59"W
L49	17.21	S54°18'00"E
L50	117.11	S28°26'59"W
L59	1.98	S60°16'05"E
L60	1.99	N60°16'05"W

EDGELINE TANGENT DATA		
LINE #	LENGTH	DIRECTION
L65	0.76	N28°26'59"E
L66	26.50	N28°26'59"E
L67	32.48	N28°26'59"E
L68	4.10	N28°26'59"E
L69	72.91	S26°07'33"W
L74	5.28	N34°58'41"E
L75	52.38	S52°38'30"E
L77	141.00	N54°18'00"W
L78	10.66	N54°34'10"W
L79	12.38	N54°34'10"W
L80	1.00	N59°46'23"W
L82	24.54	N54°18'00"W
L83	3.17	N28°43'38"E
L84	1.52	S28°30'01"W
L85	10.26	S55°09'01"E
L87	1.00	N59°46'23"W

EDGELINE CURVE DATA				
CURVE #	LENGTH	DELTA	RADIUS	TANGENT
C112	3.68	84°14'58"	2.50	2.26
C113	4.24	97°11'58"	2.50	2.84
C114	3.65	83°39'03"	2.50	2.24
C115	3.85	88°13'22"	2.50	2.42
C116	4.00	91°46'38"	2.50	2.58

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	33	231
PROJECT FILE NO.	606272		

CURB TIE & GRADING PLANS
SHEET 2 OF 6

606272_HD07(CURB TIE).DWG Plotted on 10-Apr-2021 9:08 AM

CONTINUED ON SHEET NO. 36
CONTINUED ON SHEET NO. 32
CONTINUED ON SHEET NO. 34
CONTINUED ON SHEET NO. 35

YARMOUTH ROAD (TOWN WAY)
IYANNOUGH ROAD (MA ROUTE 28)
SEE DETAIL TOP RIGHT
SEE DETAIL BOTTOM RIGHT
SEE DETAIL BOTTOM LEFT
SEE DETAIL BOTTOM CENTER
ROUTE 28 ℄ STA. 110+40.12 = YARMOUTH ROAD ℄ STA. 205+14.55
CONSTRUCTION
GUTTER LINE
CROWN LINE
PROP. SHLO
BIT PARKING LOT
BIT DRIVE
CONC. PAD
METAL POSTS
3' WOOD POST FENCE
6'G CS 1981
GRANITE CURB
LANDSCAPED AREA
SCALE: 1" = 20'

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

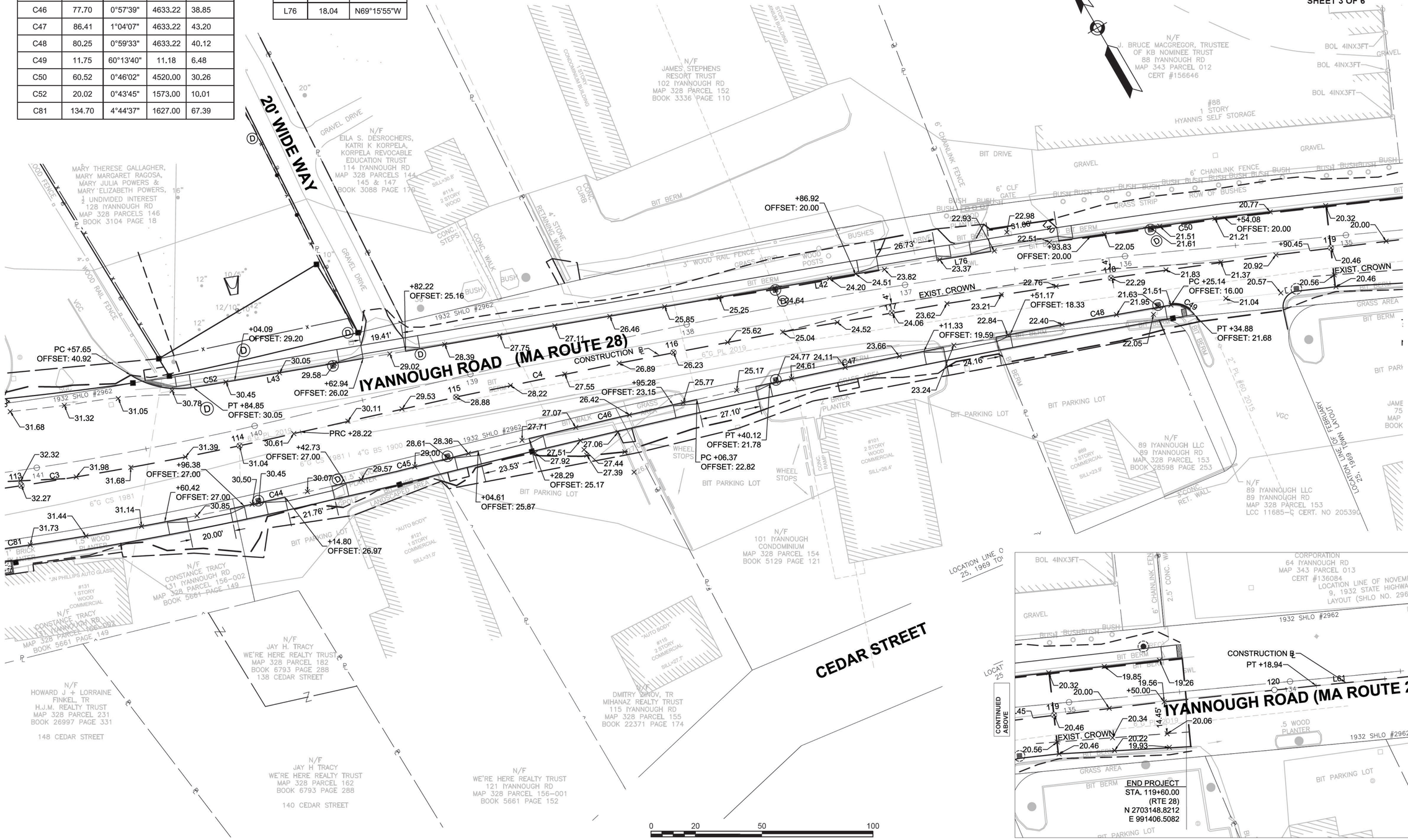
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	34	231
PROJECT FILE NO.	606272		

CURB TIE & GRADING PLANS
SHEET 3 OF 6

606272_HD07(CURB TIE).DWG Plotted on 10-Apr-2021 9:10 AM

EDGELINE CURVE DATA				
CURVE #	LENGTH	DELTA	RADIUS	TANGENT
C44	25.23	0°53'18"	1627.00	12.61
C45	38.06	0°28'14"	4633.22	19.03
C46	77.70	0°57'39"	4633.22	38.85
C47	86.41	1°04'07"	4633.22	43.20
C48	80.25	0°59'33"	4633.22	40.12
C49	11.75	60°13'40"	11.18	6.48
C50	60.52	0°46'02"	4520.00	30.26
C52	20.02	0°43'45"	1573.00	10.01
C81	134.70	4°44'37"	1627.00	67.39

EDGELINE TANGENT DATA		
LINE #	LENGTH	DIRECTION
L40	5.06	N17°53'03"W
L42	216.28	N69°44'41"W
L43	58.73	N69°44'41"W
L76	18.04	N69°15'55"W



0 20 50 100

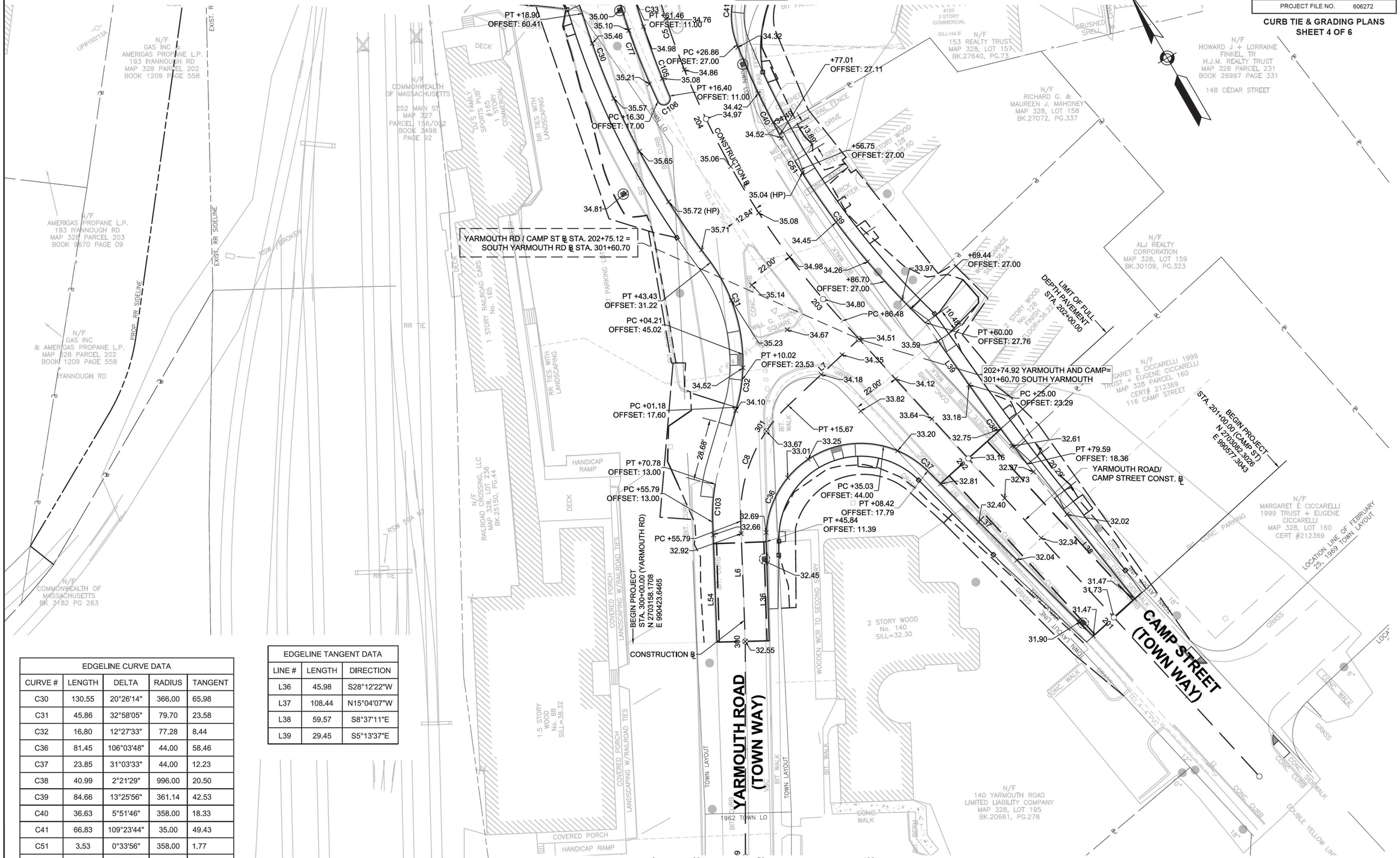
SCALE: 1" = 20'

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	35	231
PROJECT FILE NO.	606272		

CURB TIE & GRADING PLANS
SHEET 4 OF 6

606272_HD07(CURB TIE).DWG Plotted on 10-Apr-2021 9:12 AM

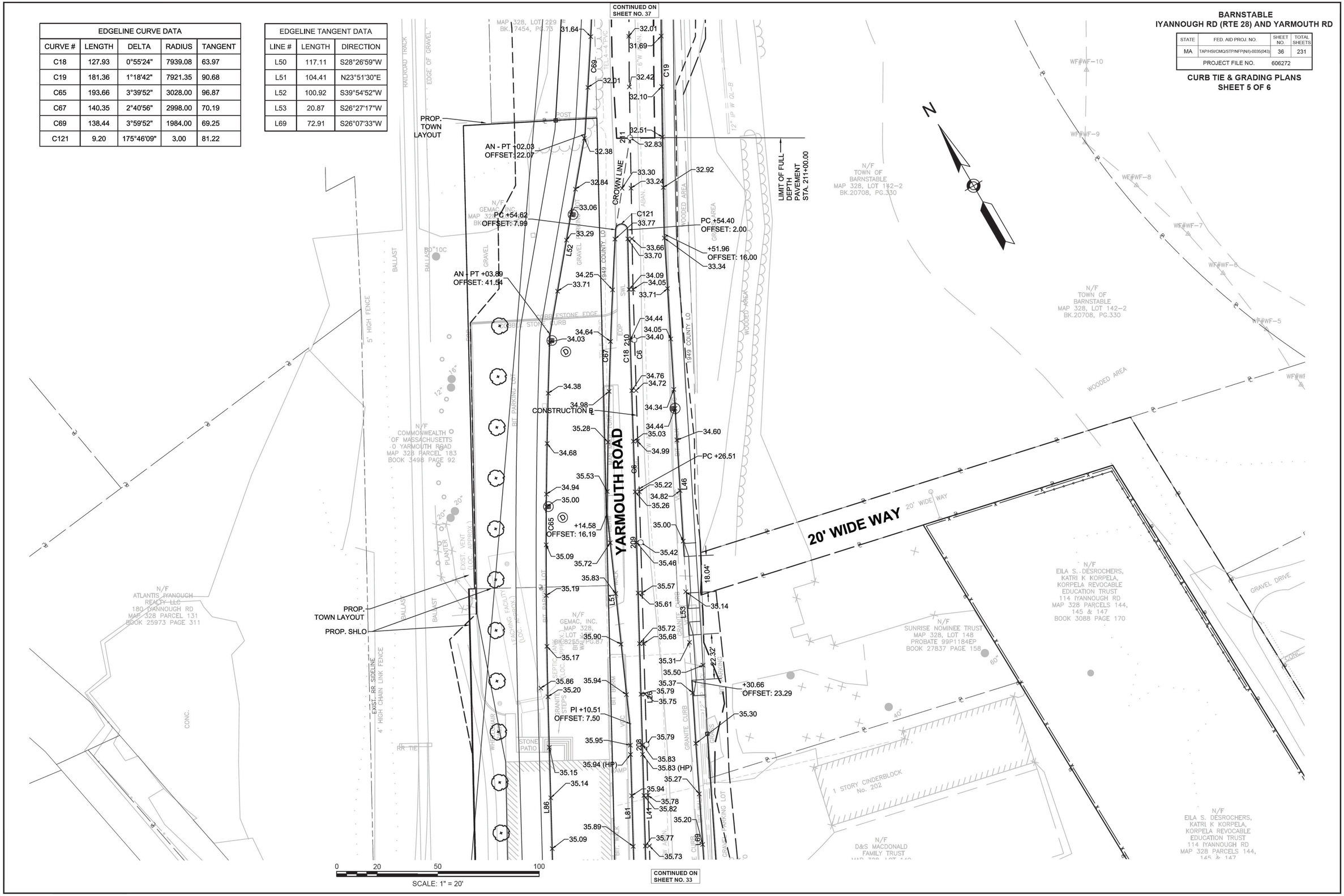


EDGELINE CURVE DATA				
CURVE #	LENGTH	DELTA	RADIUS	TANGENT
C30	130.55	20°26'14"	366.00	65.98
C31	45.86	32°58'05"	79.70	23.58
C32	16.80	12°27'33"	77.28	8.44
C36	81.45	106°03'48"	44.00	58.46
C37	23.85	31°03'33"	44.00	12.23
C38	40.99	2°21'29"	996.00	20.50
C39	84.66	13°25'56"	361.14	42.53
C40	36.63	5°51'46"	358.00	18.33
C41	66.83	109°23'44"	35.00	49.43
C51	3.53	0°33'56"	358.00	1.77
C77	48.26	7°56'42"	348.00	24.17
C103	17.77	12°16'01"	83.00	8.92

EDGELINE TANGENT DATA		
LINE #	LENGTH	DIRECTION
L36	45.98	S28°12'22"W
L37	108.44	N15°04'07"W
L38	59.57	S8°37'11"E
L39	29.45	S5°13'37"E

EDGELINE CURVE DATA				
CURVE #	LENGTH	DELTA	RADIUS	TANGENT
C18	127.93	0°55'24"	7939.08	63.97
C19	181.36	1°18'42"	7921.35	90.68
C65	193.66	3°39'52"	3028.00	96.87
C67	140.35	2°40'56"	2998.00	70.19
C69	138.44	3°59'52"	1984.00	69.25
C121	9.20	175°46'09"	3.00	81.22

EDGELINE TANGENT DATA		
LINE #	LENGTH	DIRECTION
L50	117.11	S28°26'59"W
L51	104.41	N23°51'30"E
L52	100.92	S39°54'52"W
L53	20.87	S26°27'17"W
L69	72.91	S26°07'33"W



BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(N/I)-0035(043)	36	231
PROJECT FILE NO.	606272		

CURB TIE & GRADING PLANS
SHEET 5 OF 6

606272_HD07(CURB TIE).DWG Plotted on 10-Apr-2021 9:14 AM

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	37	231
PROJECT FILE NO. 606272			

CURB TIE & GRADING PLANS
SHEET 6 OF 6

606272_HD07(CURB TIE).DWG Plotted on 10-Apr-2021 9:15 AM

EDGELINE CURVE DATA				
CURVE #	LENGTH	DELTA	RADIUS	TANGENT
C69	138.44	3°59'52"	1984.00	69.25
C71	21.13	30°16'10"	40.00	10.82
C72	10.06	96°02'19"	6.00	6.67
C73	9.99	95°23'53"	6.00	6.59
C74	14.38	22°29'48"	36.63	7.28

EDGELINE TANGENT DATA		
LINE #	LENGTH	DIRECTION
L48	29.81	N30°25'52"E
L55	16.50	N60°51'42"E
L56	29.69	N27°46'21"E
L57	3.40	S56°49'46"E

0 20 50 100
SCALE: 1" = 20'

CONTINUED ON SHEET NO. 36

TRAFFIC SIGNAL CONDUIT

SEE SHEETS 89 - 91

WATER SUPPLY ALTERATIONS

SEE SHEETS 50 - 58

DRAINAGE DETAILS

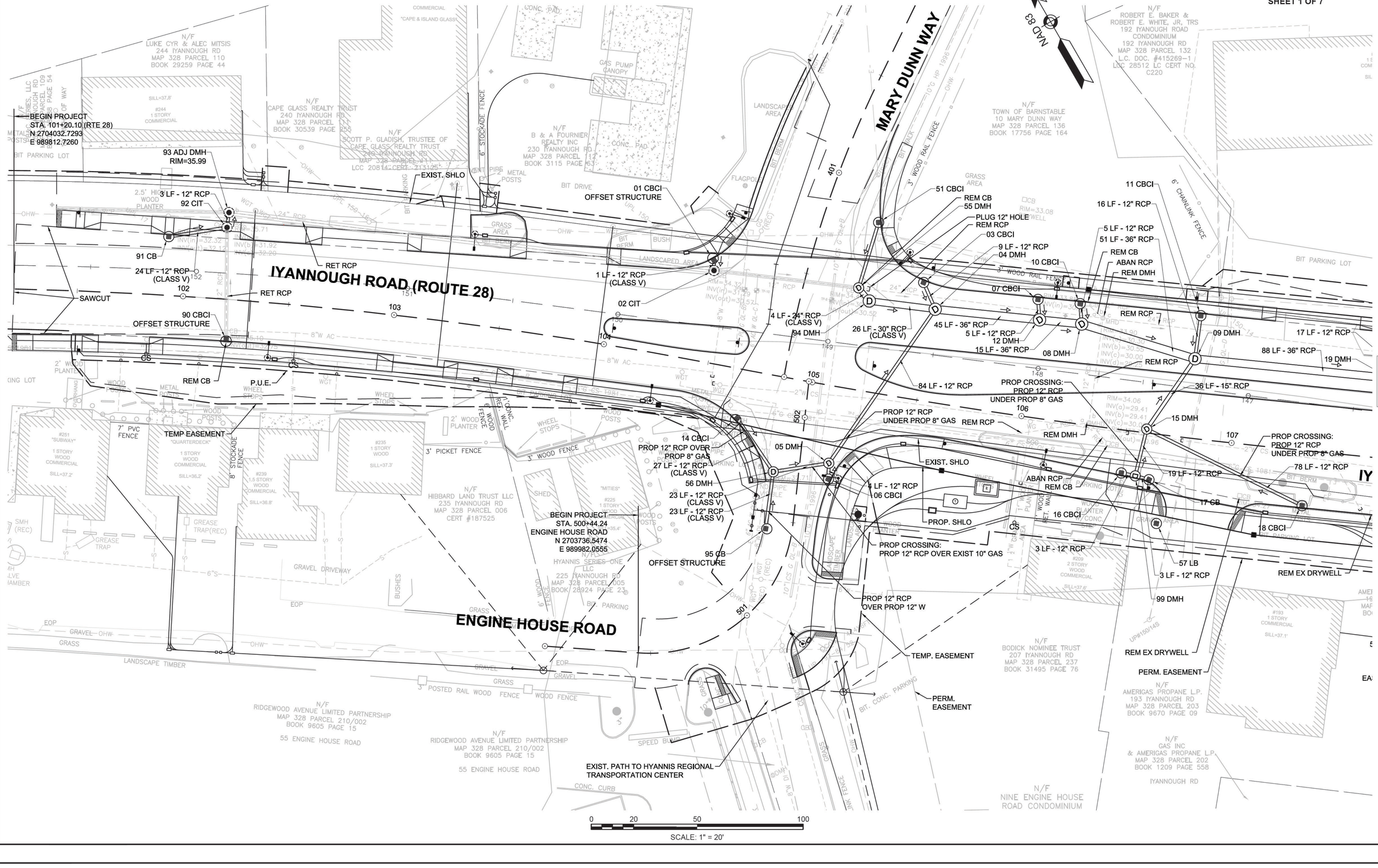
SEE BELOW

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	38	231
PROJECT FILE NO. 606272			

DRAINAGE PLANS
SHEET 1 OF 7

606272_DR(DRAINAGE PLAN).DWG Plotted on 3-Jun-2021 4:41 PM



TRAFFIC SIGNAL CONDUIT

SEE SHEETS 89 - 91

WATER SUPPLY ALTERATIONS

SEE SHEETS 50 - 58

DRAINAGE DETAILS

SEE BELOW

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	39	231
PROJECT FILE NO.	606272		

DRAINAGE PLANS
SHEET 2 OF 7

606272_DR(DRAINAGE PLAN).DWG Plotted on 3-Jun-2021 4:42 PM

CONTINUED ON SHEET NO. 42

CONTINUED ON SHEET NO. 38

CONTINUED ON SHEET NO. 40

CONTINUED ON SHEET NO. 41

NAD 83

YARMOUTH ROAD

IYANNOUGH ROAD (ROUTE 28)

247 LF - 12" RCP
25 CBCI
26 LF - 12" RCP
23 DMH
10 LF - 12" RCP
24 CBCI
106 LF - 12" RCP
PROP. SHLO
PERM. EASEMENT
REM RCP
PROP 36" RCP UNDER PROP 16" W
20 CBCI
17 LF - 12" RCP
88 LF - 36" RCP
19 DMH
31 DMH
51 LF - 36" RCP
21 CBCI
78 LF - 12" RCP
18 CBCI
REM EX DRYWELL
58 LB
TEMP. EASEMENT
PROP. SHLO
REM CB
REM CMP
REM DMH
22 DMH
68 LF - 15" RCP
PROP 15" RCP UNDER PROP 8" GAS
37 LF - 12" RCP
65 CB
13 CBCI
16 LF - 12" RCP
30 CBCI
REM EX DRYWELL
TEMP. EASEMENT
28 CBCI
PROP 12" RCP OVER WATER (SEE SHEET 51)
PROP 36" RCP UNDER PROP 8" GAS
52 LF - 36" RCP
88 DMH
14 LF - 12" RCP (CLASS V)
27 CBCI
23 LF - 12" RCP
26 DMH
ABAN RCP
PROP 36" RCP UNDER WATER (SEE SHEET 51)
35 CBCI
53 LF - 12" RCP
34 DMH
6 LF - 12" RCP
29 DMH
69 LF - 12" RCP
CBCI-100
TEMP. EASEMENT, TYP
RET EX DRYWELL
TEMP. EASEMENT
PROP 12" RCP UNDER PROP 8" GAS
36 CBCI
REM DRYWELL
43 LF - 12" RCP
RET DRYWELL
28 LF - 12" RCP
33 CBCI
6 LF - 12" RCP
REM RCP
REM CB
REM DMH
38 CBCI
6 LF - 12" RCP
37 DMH
97 LF - 36" RCP
115 LF - 36" RCP
32 DMH
102 LF - 36" RCP
ABAN RCP
RECORD BASELINE
RET DRYWELL
REM DRYWELL

#192 1 STORY COMMERCIAL SILL=38.46

N/F ATLANTIS IYANOUGH REALTY LLC 180 IYANNOUGH RD MAP 328 PARCEL 131 BOOK 25973 PAGE 311

N/F COMMONWEALTH OF MASSACHUSETTS 0 YARMOUTH ROAD MAP 328 PARCEL 183 BOOK 3498 PAGE 92

N/F DEMARCO MAP 328, LOT 137 BK.8255, PG.87

N/F AMERIGAS PROPANE LP 193 IYANNOUGH RD MAP 328 PARCEL 201 BOOK 9670 PAGE 67

N/F GAS INC & AMERIGAS PROPANE L.P. 193 IYANNOUGH RD MAP 328 PARCEL 202 BOOK 1209 PAGE 558

N/F COMMONWEALTH OF MASSACHUSETTS 252 MAIN ST MAP 327 PARCEL 156/002 BOOK 3498 PAGE 92

N/F D&S MACDONALD FAMILY TRUST MAP 328, LOT 149 BK.6527, PG.149

N/F HESS RETAIL STORES LLC MAP 328, LOT 151 BK.28253, PG.164

1 STORY HESS SILL=35.71

N/F 153 REALTY TRUST MAP 328, LOT 157 BK.27640, PG.73

N/F RICHARD G. & MAUREEN J. MAHONEY MAP 328, LOT 158 BK.27072, PG.337

N/F HOWARD J + LORRAINE FINKEL, TR H.J.M. REALTY TRUST MAP 328 PARCEL 231 BOOK 26997 PAGE 331 148 CEDAR STREET

N/F CONSTANCE TRACY 137 IYANNOUGH RD MAP 328 PARCEL 149 BOOK 5661 PAGE 149

N/F EILA S. DESROCHERS, KATRUK KORPELA, KORPELA REVOCABLE EDUCATION TRUST 171 IYANNOUGH RD MAP 328 PARCELS 144, 145 & 147 BOOK 3088 PAGE 170

"DJ'S FAMILY" SPORTS PUB #165 1 STORY COMMERCIAL

#193 1 STORY COMMERCIAL SILL=37.1'

#153 2 STORY COMMERCIAL SILL=34.6'

#131 1 STORY WOOD COMMERCIAL

PUFFERBELLIES SIGN

GAS PUMP CANOPY

METAL POSTS

BIT PARKING LOT

BIT DRIVE

GRANITE CURB

BIT WALK

BALLAST

3" METAL RAIL

RAMP

6.5' HIGH WOOD FENCE

5' CHAINLINK FENCE

3' WOOD RAIL FENCE

4' WOOD RAIL FENCE

6' WOOD RAIL FENCE

8' CHAINLINK FENCE

PLANTER WITH WOOD POST

GRAVEL PARKING LI

SMART AUTO

CONC. PAD

LANDSCAPED AREA

GRASS AREA

FLAGPOLE

RR TIES WITH LANDSCAPING

WOOD RAIL FENCE

GRAVEL DRIVE

SCALE: 1" = 20'

0 20 50 100

TRAFFIC SIGNAL CONDUIT

SEE SHEETS 89 - 91

WATER SUPPLY ALTERATIONS

SEE SHEETS 50 - 58

DRAINAGE DETAILS

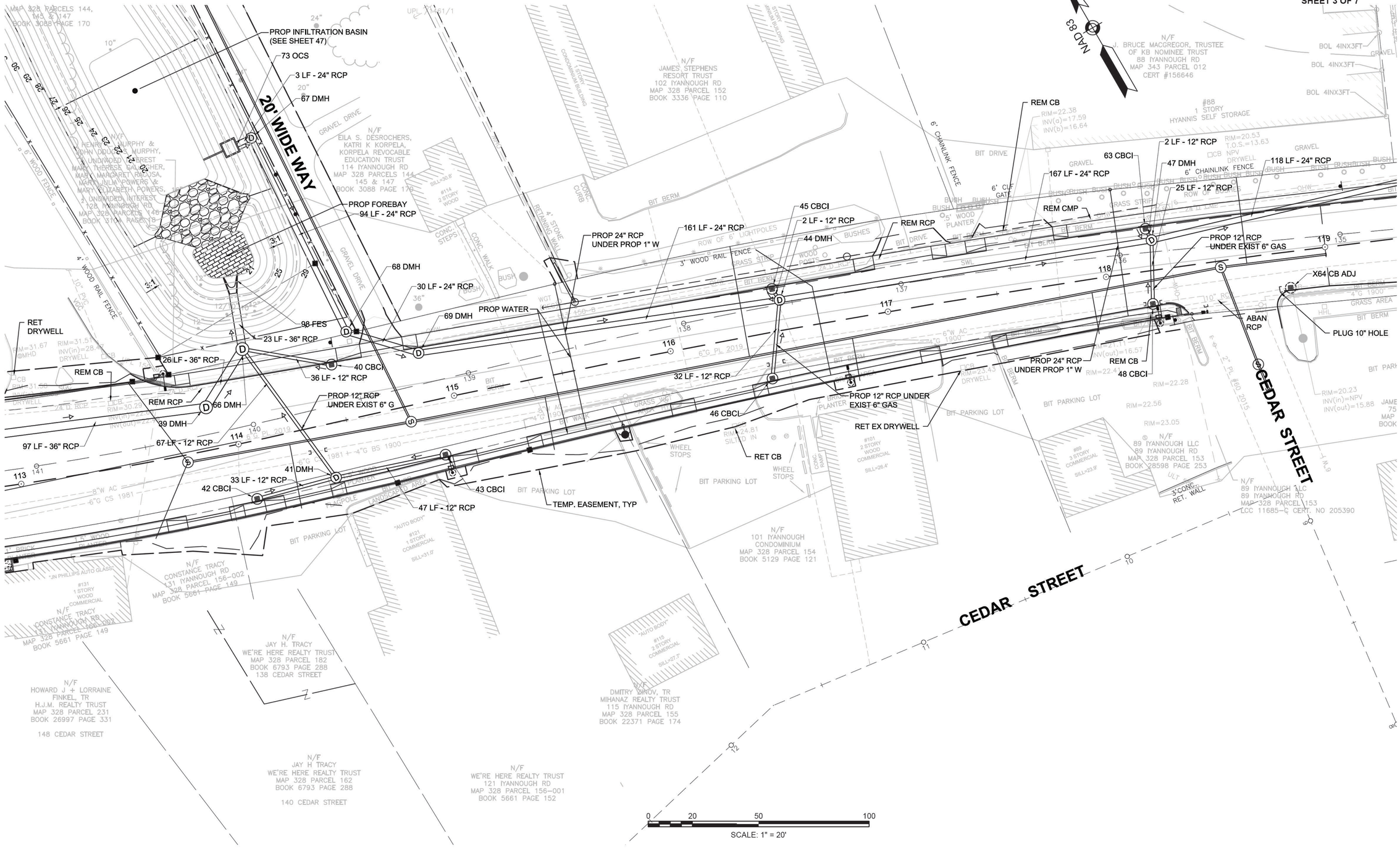
SEE BELOW

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	40	231
PROJECT FILE NO.	606272		

DRAINAGE PLANS
SHEET 3 OF 7

606272_DR(DRAINAGE PLAN).DWG Plotted on 3-Jun-2021 4:44 PM



TRAFFIC SIGNAL CONDUIT

SEE SHEETS 89 - 91

WATER SUPPLY ALTERATIONS

SEE SHEETS 50 - 58

DRAINAGE DETAILS

SEE BELOW

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	41	231
PROJECT FILE NO. 606272			

DRAINAGE PLANS
SHEET 4 OF 7

606272_DR(DRAINAGE PLAN).DWG Plotted on 3-Jun-2021 4:45 PM

CONTINUED ON SHEET NO. 39

TEMP. EASEMENT

N/F GAS INC & AMERIGAS PROPANE L.P. 193 IYANNOUGH RD MAP 328 PARCEL 202 BOOK 1209 PAGE 558

N/F AMERIGAS PROPANE L.P. 193 IYANNOUGH RD MAP 328 PARCEL 203 BOOK 9570 PAGE 09

N/F GAS INC & AMERIGAS PROPANE L.P. MAP 328 PARCEL 202 BOOK 1209 PAGE 558

IYANNOUGH RD

N/F COMMONWEALTH OF MASSACHUSETTS BK 3182 PG 263

N/F COMMONWEALTH OF MASSACHUSETTS 252 MAIN ST MAP 327 PARCEL 156/002 BOOK 3498 PAGE 92

"LOUIS FAMILY" SPORTS PUB #165 1 STORY COMMERCIAL

1 STORY RAILROAD CARS No. 165

RR TIES WITH LANDSCAPING

REM EX DRYWELL

TEMP. EASEMENT, TYP

60 LB

ADJ. SMH

ADJ. SMH

BEGIN PROJECT
STA. 300+00.00 (YARMOUTH RD)
N 2703158.1708
E 990423.6465

N/F RAILROAD CROSSING, LLC MAP 328, LOT 238 BK.25150, PG.44

COVERED PORCH

LANDSCAPING W/RAILROAD TIES

1.5 STORY WOOD No. 88 SILL=38.32

HANDICAP RAMP

YARMOUTH ROAD

CBCI-100

TEMP. EASEMENT, TYP

153 REALTY TRUST MAP 328, LOT 157 BK.27640, PG.73

N/F RICHARD G. & MAUREEN J. MAHONEY MAP 328, LOT 158 BK.27072, PG.337

2 STORY WOOD No. 128 SILL=35.60

WOOD RAIL FENCE

TRAVEL DRIVE

ADJ. SMH

N/F HOWARD J + LORRAINE FINKEL, TR H.J.M. REALTY TRUST MAP 328 PARCEL 231 BOOK 26997 PAGE 331

148 CEDAR STREET

N/F ALJ REALTY CORPORATION MAP 328, LOT 159 BK.30109, PG.323

1 WOOD GARAGE SILL=36.54

2 STORY WOOD No. 126 FINISH FLOOR=36.22

N/F MARGARET E CICCARELLI 1999 TRUST + EUGENE CICCARELLI MAP 328 PARCEL 160 CERT# 212369 116 CAMP STREET

TEMP. EASEMENT

BEGIN PROJECT
STA. 201+00.00 (CAMP ST)
N 2703082.3026
E 990577.3043

N/F MARGARET E CICCARELLI 1999 TRUST + EUGENE CICCARELLI MAP 328, LOT 160 CERT #212369

TEMP. EASEMENT, TYP

X61 CBCI ADJ

2 STORY WOOD No. 140 SILL=32.30

X62 CBCI ADJ

CAMP STREET

N/F 140 YARMOUTH ROAD LIMITED LIABILITY COMPANY MAP 328, LOT 195 BK.20661, PG.278

NAD 83

0 20 50 100

SCALE: 1" = 20'

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	42	231
PROJECT FILE NO. 606272			

DRAINAGE PLANS
SHEET 5 OF 7

606272_DR(DRAINAGE PLAN).DWG Plotted on 3-Jun-2021 4:46 PM

TRAFFIC SIGNAL CONDUIT
SEE SHEETS 89 - 91

WATER SUPPLY ALTERATIONS
SEE SHEETS 50 - 58

DRAINAGE DETAILS
SEE BELOW

CONTINUED ON SHEET NO. 43

YARMOUTH ROAD

REM EX DRYWELL
97 CBCI
64 LF - 12" RCP
53 CBCI
96 DMH
5 LF - 12" RCP
REM EX DRYWELL
78 LF - 12" RCP
PROP 12" RCP OVER PROP 8" GAS
89 CBCI
5 LF - 12" RCP
52 DMH
54 CBCI OFFSET STRUCTURE
PROP 12" RCP OVER WATER (SEE SHEET 54)
73 LF - 12" RCP (CLASS V)
PROP INFILTRATION BASIN
20' WIDE WAY
TEMP. EASEMENT, TYP
EXIST RAILROAD SIDELINE
PROP. TOWN LAYOUT
REM EX DRYWELL
DEMOLISH EX BUILDING

N/F TOWN OF BARNSTABLE MAP 328, LOT 142-2 BK.20708, PG.330

N/F COMMONWEALTH OF MASSACHUSETTS 40 YARMOUTH ROAD MAP 328, PARCEL 183 BOOK 3498 PAGE 92

N/F ATLANTIS IYANOUGH REALTY LLC 180 IYANNOUGH RD MAP 328 PARCEL 131 BOOK 25973 PAGE 311

N/F CRMAC, INC. MAP 328, LOT 137 BK.8255, PG.87

N/F SUNRISE NOMINEE TRUST MAP 328, LOT 148 PROBATE 99P1184EP BOOK 27837 PAGE 158

N/F EILA S. DESROCHERS, KATRI H. KORPELA, KORPELA REVOCABLE EDUCATION TRUST 174 IYANNOUGH RD MAP 328 PARCELS 144, 145 & 147 BOOK 3088 PAGE 180

N/F D&S MACDONALD FAMILY TRUST

1 STORY CINDERBLOCK No. 202

CONTINUED ON SHEET NO. 39

NAD 83

0 20 50 100
SCALE: 1" = 20'

TRAFFIC SIGNAL CONDUIT

SEE SHEETS 89 - 91

WATER SUPPLY ALTERATIONS

SEE SHEETS 50 - 58

DRAINAGE DETAILS

SEE BELOW

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	43	231
PROJECT FILE NO. 606272			

DRAINAGE PLANS
SHEET 6 OF 7

606272_DR(DRAINAGE PLAN).DWG Plotted on 3-Jun-2021 4:48 PM

N

NAD 83

END PROJECT
STA. 214+50.00 (YARMOUTH ROAD)
N 2704310.3629
E 9991000.3510

YARMOUTH ROAD

OLD YARMOUTH ROAD

80 CBCI

17 LF - 12" RCP (CLASS V)

PROP 12" RCP OVER EXIST 6" W

PROP 12" RCP OVER PROP 8" GAS

77 CB

17 LF - 12" RCP (CLASS V)

78 DMH

8 LF - 12" RCP (CLASS V)

PROP 12" RCP OVER PROP 8" GAS

PROP 15" RCP OVER PROP 8" GAS

76 CB

79 CBCI

REM CB

32 LF - 15" RCP (CLASS V)

REM CB

REM CMP

48 LF - 15" RCP

75 DMH

ABAN RCP

REM DMH

REM CMP

REM DMH

REM CMP

82 CB

4 LF - 12" RCP

86 CB CIT

10 LF - 12" RCP

81 CB

REM 54' EXIST 12" CMP

41 LF - 15" RCP

CUT AND CAP 12" CMP

PROP 15" RCP OVER PROP 8" GAS

PROP 15" RCP OVER WATER (SEE SHEET 55)

PROP 12" RCP OVER PROP 8" GAS

72 CB
DEEP SUMP CB WITH HOOD AND FRAME AND COVER

71 LF - 12" RCP (CLASS V)

27 LF - 12" RCP

74 LB WITH HOOD
8 FT DIA.
2 FT CRUSHED STONE AROUND

83 CB
DEEP SUMP CB WITH HOOD AND FRAME AND COVER

15 LF - 15" RCP

ABAN 66' EXIST 12" CMP

84 LB WITH HOOD
8 FT DIA.
2 FT CRUSHED STONE AROUND

PROP 12" RCP OVER WATER (SEE SHEET 55)

76 LF - 15" RCP

ABAN. EXIST 12" OUTFALL (INV.=22.35)

PERM. EASEMENT

4 LF - 12" RCP (CLASS V)

70 CBCI

87 FES 15"
INV. = 24.25

400 FT RADIUS FROM WELL

100 FT WETLAND BUFFER

SPLASH PAD (SEE SHEET 49)

71 CBCI
OFFSET STRUCTURE

27 LF - 12" RCP (CLASS V)

COMPOST FILTER TUBE

N/F
TOWN OF
BARNSTABLE
MAP 328, LOT 142-1
BK.20708, PG.330

N/F
TOWN OF
BARNSTABLE
MAP 328, LOT 142-1
BK.19847, PG.223

N/F
COMMONWEALTH
OF MASSACHUSETTS
0 YARMOUTH ROAD
MAP 328 PARCEL 183
BOOK 3498 PAGE 92

N/F
TOWN OF
BARNSTABLE
MAP 328, LOT 229
BK.17454, PG.73

4' CHAINLINK FENCE

HIGH CHAIN LINK FENCE

CONCRETE LOADING DOCK

CONC. STEPS

BIT PARKING LOT

WOODED AREA

GRASS AREA

GRAVEL

EDGE OF GRAVEL

RAILROAD TRACK

0 20 50 100

SCALE: 1" = 20'

CONTINUED ON SHEET NO. 42

TRAFFIC SIGNAL CONDUIT

SEE SHEETS 89 - 91

WATER SUPPLY ALTERATIONS

SEE SHEETS 50 - 58

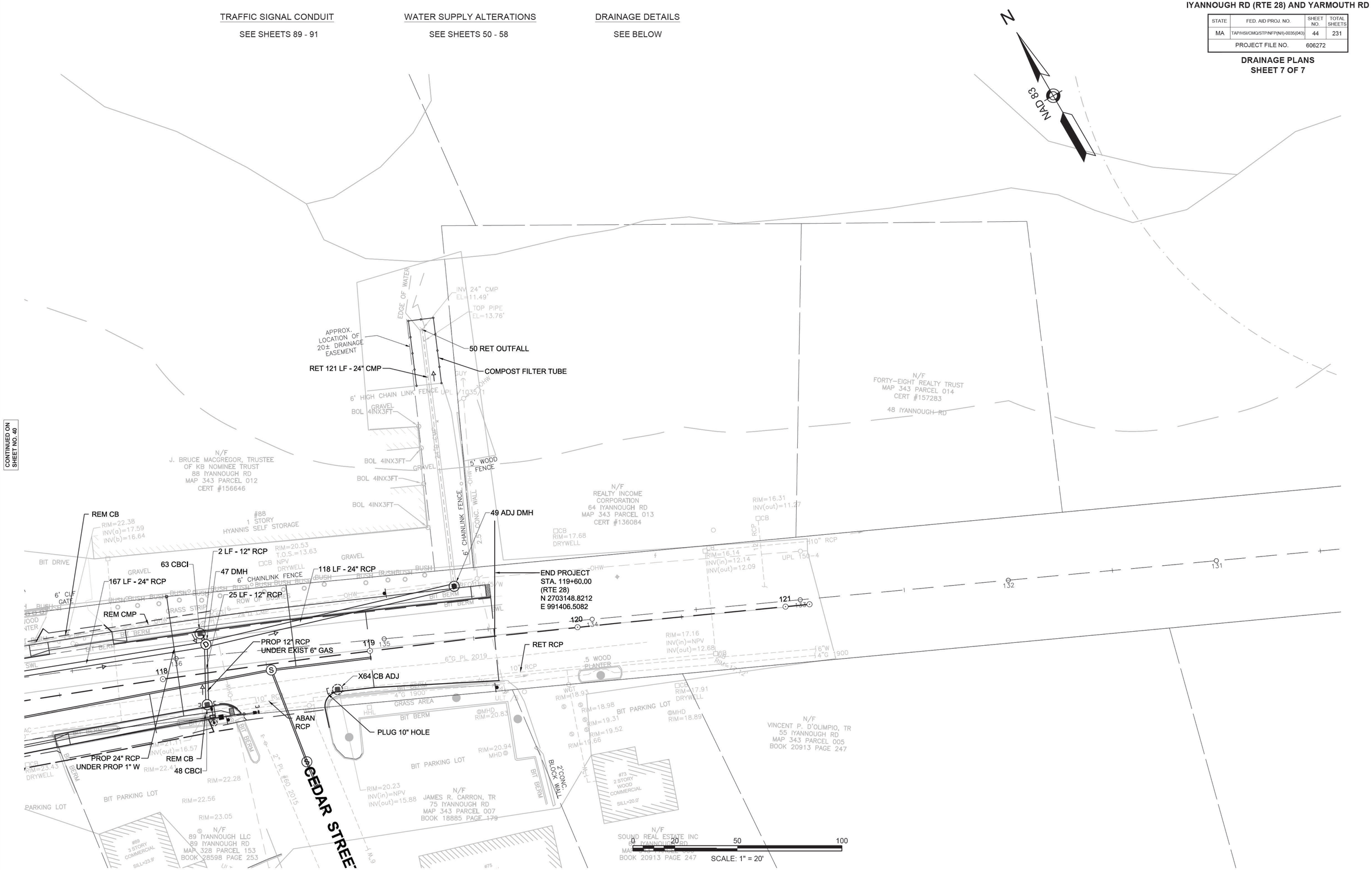
DRAINAGE DETAILS

SEE BELOW

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(N/I)-0035(043)	44	231
PROJECT FILE NO.	606272		

DRAINAGE PLANS
SHEET 7 OF 7



606272_DR(DRAINAGE PLAN).DWG Plotted on 3-Jun-2021 4:49 PM

STRUCTURE TABLE NOTES:

1. ALL PROPOSED CATCH BASINS AND CATCH BASIN CURB INLETS, UNLESS OTHERWISE NOTED, ARE MASSDOT CONSTRUCTION STANDARD DRAWING NUMBER E. 201.4.0
2. DRAWING NUMBER E. 201.4.0 SHOWING A DEEP SUMP CATCH STRUCTURE DEPTH EQUAL TO 7.5 FEET IS REVISED TO 7.5 FEET MINIMUM. THE SUMP DEPTH SHALL BE A MINIMUM DEPTH OF 4 FT TO MEET WATER QUALITY STANDARDS.
3. BASELINE STATIONS, OFFSETS, AND RIMS FOR CATCH BASINS (CB), CATCH BASIN CURB INLETS (CBCI), DRAIN MANHOLES (DMH), DROP INLETS (D.I.) AND LEACHING BASINS (LB) REFER TO THE CENTER OF THE STRUCTURE.
4. BASELINE STATIONS AND OFFSETS FOR FLARED END SECTIONS (FES) REFER TO THE CENTER END OF THE STRUCTURE FURTHEST FROM THE PIPE.
5. MANHOLES WITH A 5 FOOT INSIDE DIAMETER ARE PAID FOR UNDER ITEM 202.1 MANHOLE - 5 FT DIAMETER
6. LEACHING BASINS WITH AN 8 FOOT INSIDE DIAMETER ARE PAID FOR UNDER ITEM 205.1 LEACHING BASIN - 8 FT DIAMETER
7. STRUCTURES 72 CB AND 83 CB SHALL EACH INCLUDE A HOOD. THE HOOD IS LOCATED ON THE PIPE WITH THE LOWEST INVERT.
8. STRUCTURES 21 CBCI AND 31 DMH WERE INSTALLED BY PREVIOUS CONTRACTOR IN MARCH 2021 (BO).
9. DMH 22 SHALL CONNECT TO 36 INCH CEMENT LINED CONCRETE PIPE INSTALLED BY CONTRACTOR IN MARCH 2021 (BO). EXISTING 36 INCH CEMENT LINED CONCRETE PIPE INCLUDES MASONRY PLUG. MASONRY PLUG SHALL BE REMOVED.

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	45	231
PROJECT FILE NO.	606272		

DRAINAGE STRUCTURE TABLES
SHEET 1 OF 2

DRAINAGE STRUCTURE TABLE

NAME	BASELINE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
01 CBCI	ROUTE 28	104+43.77	48.13 L	34.32		I=30.90' (02 CIT)	OFFSET STRUCTURE
02 CIT	ROUTE 28	104+44.67	43.31 L	34.50	I=30.85' (01 CBCI) I=31.29' (93 ADJ DMH)	I=30.57' (55 DMH)	
03 CBCI	ROUTE 28	105+44.27	55.31 L	34.17		I=29.70' (04 DMH)	
04 DMH	ROUTE 28	105+51.80	43.71 L	34.24	I=26.60' (94 DMH) I=29.60' (03 CBCI) I=26.60' (05 DMH)	I=26.50' (12 DMH)	5' DIA.
05 DMH	ROUTE 28	105+14.23	36.27 R	33.68	I=29.00' (06 CBCI) I=29.60' (56 DMH)	I=27.20' (04 DMH)	
06 CBCI	ROUTE 28	105+15.31	43.72 R	33.64		I=29.14' (05 DMH)	
07 CBCI	ROUTE 28	105+99.86	55.62 L	34.00		I=29.50' (12 DMH)	
08 DMH	ROUTE 28	106+22.28	47.00 L	34.21	I=26.00' (12 DMH) I=29.40' (10 CBCI)	I=25.90' (09 DMH)	5' DIA.
09 DMH	ROUTE 28	106+78.21	37.51 L	34.57	I=25.60' (08 DMH) I=28.43' (15 DMH) I=29.50' (11 CBCI)	I=25.50' (19 DMH)	5' DIA.
10 CBCI	ROUTE 28	106+20.22	56.44 L	34.02		I=29.52' (08 DMH)	
11 CBCI	ROUTE 28	106+78.56	58.04 L	34.18		I=29.68' (09 DMH)	
12 DMH	ROUTE 28	106+01.99	46.20 L	34.19	I=26.20' (04 DMH) I=29.40' (07 CBCI)	I=26.10' (08 DMH)	5' DIA.
13 CBCI	ROUTE 28	109+94.92	30.97 R	34.90		I=28.00' (29 DMH)	
14 CBCI	ROUTE 28	104+68.30	23.17 R	34.36		I=30.86' (56 DMH)	OFFSET STRUCTURE
15 DMH	ROUTE 28	106+59.44	1.79 L	34.10	I=29.13' (99 DMH) I=28.82' (18 CBCI)	I=28.72' (09 DMH)	
16 CBCI	ROUTE 28	106+50.16	20.26 R	33.64		I=29.14' (99 DMH)	
17 CB	ROUTE 28	106+63.43	21.78 R	33.64		I=29.14' (99 DMH)	
18 CBCI	ROUTE 28	107+36.06	26.00 R	33.89		I=29.39' (15 DMH)	
19 DMH	ROUTE 28	107+71.79	38.00 L	35.19	I=25.10' (09 DMH) I=30.40' (20 CBCI)	I=25.00' (31 DMH)	5' DIA.
20 CBCI	ROUTE 28	107+65.58	58.50 L	34.84		I=30.64' (19 DMH)	
21 CBCI	ROUTE 28	108+39.49	31.50 L	35.38		I=30.85' (31 DMH)	
22 DMH	ROUTE 28	109+97.42	35.17 L	35.22	I=23.80' (31 DMH) I=24.90' (23 DMH)	I=23.70' (26 DMH)	5' DIA.
23 DMH	YARMOUTH AND CAMP	206+62.22	41.00 L	35.19	I=30.25' (24 CBCI) I=30.20' (25 CBCI) I=25.80' (52 DMH)	I=25.70' (22 DMH)	
24 CBCI	YARMOUTH AND CAMP	206+49.73	47.00 L	35.20		I=30.68' (23 DMH)	
25 CBCI	YARMOUTH AND CAMP	206+91.27	47.00 L	34.95		I=30.44' (23 DMH)	
26 DMH	ROUTE 28	110+54.98	30.33 L	34.97	I=23.40' (22 DMH) I=26.50' (29 DMH) I=29.50' (88 DMH)	I=23.30' (32 DMH)	5' DIA.
27 CBCI	ROUTE 28	110+71.08	59.93 L	34.44		I=29.94' (88 DMH)	
28 CBCI	YARMOUTH AND CAMP	206+18.17	25.41 R	34.44		I=30.93' (88 DMH)	OFFSET STRUCTURE
29 DMH	ROUTE 28	110+34.59	39.12 R	35.08	I=30.30' (30 CBCI) I=27.00' (13 CBCI) I=30.00' (65 CB) I=27.00' (CBCI-100)	I=26.90' (26 DMH)	
30 CBCI	ROUTE 28	110+35.62	58.64 R	35.00		I=30.50' (29 DMH)	
31 DMH	ROUTE 28	108+27.31	38.00 L	35.44	I=24.75' (19 DMH) I=30.70' (21 CBCI)	I=24.65' (22 DMH)	5' DIA.

DRAINAGE STRUCTURE TABLE

NAME	BASELINE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
32 DMH	ROUTE 28	111+64.01	30.29 L	33.73	I=22.75' (26 DMH) I=28.90' (33 CBCI) I=27.00' (34 DMH)	I=22.65' (37 DMH)	5' DIA.
33 CBCI	ROUTE 28	111+59.96	40.17 L	33.59		I=29.09' (32 DMH)	
34 DMH	ROUTE 28	111+45.24	24.10 R	33.59	I=28.80' (35 CBCI) I=28.00' (36 CBCI)	I=27.90' (32 DMH)	
35 CBCI	YARMOUTH AND CAMP	204+70.34	66.49 R	33.92		I=29.42' (34 DMH)	
36 CBCI	ROUTE 28	111+91.69	25.97 R	33.03		I=28.53' (34 DMH)	
37 DMH	ROUTE 28	112+86.07	23.87 L	32.10	I=22.15' (32 DMH) I=27.40' (38 CBCI)	I=22.05' (39 DMH)	5' DIA.
38 CBCI	ROUTE 28	112+81.31	33.60 L	31.98		I=27.48' (37 DMH)	
39 DMH	ROUTE 28	113+88.99	19.36 L	30.81	I=21.60' (37 DMH)	I=21.50' (66 DMH)	5' DIA.
40 CBCI	ROUTE 28	114+49.03	25.77 L	29.62		I=25.12' (66 DMH)	
41 DMH	ROUTE 28	114+39.62	24.50 R	29.84	I=25.10' (42 CBCI) I=23.60' (43 CBCI)	I=23.50' (66 DMH)	
42 CBCI	ROUTE 28	114+03	26.00 R	30.47		I=25.97' (41 DMH)	
43 CBCI	ROUTE 28	114+90.49	25.29 R	28.63		I=24.13' (41 DMH)	
44 DMH	ROUTE 28	116+52.68	13.69 L	24.72	I=16.90' (69 DMH) I=20.00' (45 CBCI) I=19.50' (46 CBCI)	I=16.80' (47 DMH)	
45 CBCI	ROUTE 28	116+50.22	19.22 L	24.66		I=20.16' (44 DMH)	
46 CBCI	ROUTE 28	116+43.13	20.69 R	24.78		I=19.78' (44 DMH)	
47 DMH	ROUTE 28	118+22.71	13.50 L	21.69	I=15.40' (44 DMH) I=16.30' (48 CBCI) I=17.00' (63 CBCI)	I=15.30' (49 ADJ DMH)	
48 CBCI	ROUTE 28	118+19.26	15.17 R	21.65		I=16.65' (47 DMH)	
49 ADJ DMH	ROUTE 28	119+43.60	25.88 L	20.00	I=14.20' (47 DMH)	I=12.29' (50 RET OUTFALL)	
50 RET OUTFALL	ROUTE 28	119+42.51	149.77 L	(N/A)	I=11.49' (49 ADJ DMH)		RET
51 CBCI	ROUTE 28	105+18.01	79.74 L	35.01		I=31.01' (55 DMH)	
52 DMH	YARMOUTH AND CAMP	209+13.35	38.15 L	35.19	I=30.40' (54 CBCI) I=27.70' (96 DMH) I=30.40' (89 CBCI)	I=27.60' (23 DMH)	
53 CBCI	YARMOUTH AND CAMP	210+00.85	40.73 L	34.04		I=29.54' (96 DMH)	
54 CBCI	YARMOUTH AND CAMP	209+65.51	18.04 R	34.46		I=30.96' (52 DMH)	OFFSET STRUCTURE
55 DMH	ROUTE 28	105+13.91	47.71 L	34.23	I=30.23' (51 CBCI) I=30.62' (02 CIT)	I=30.13' (94 DMH)	
56 DMH	ROUTE 28	104+89.48	44.88 R	33.86	I=30.20' (14 CBCI) I=29.92' (95 CB)	I=29.82' (05 DMH)	
57 LB	ROUTE 28	106+69.32	41.87 R	35.14			E 205.2.0 (4 FT DIA.) 1 FT CRUSHED STONE AROUND
58 LB	ROUTE 28	107+94.79	55.55 R	35.91			E 205.2.0 (4 FT DIA.) 1 FT CRUSHED STONE AROUND
60 LB	ROUTE 28	110+38.29	143.80 R	34.91			E 205.2.0 (4 FT DIA.) 1 FT CRUSHED STONE AROUND
63 CBCI	ROUTE 28	118+20.70	19.00 L	21.63		I=17.13' (47 DMH)	
65 CB	ROUTE 28	110+31.86	29.63 R	34.66		I=30.12' (29 DMH)	
66 DMH	ROUTE 28	114+11.04	41.67 L	31.00	I=21.30' (39 DMH) I=24.80' (40 CBCI) I=23.00' (41 DMH)	I=21.20' (98 FES)	5' DIA.

606272_DR(DRAINAGE TABLE).DWG Plotted on 9-Apr-2021 11:07 AM

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	46	231
PROJECT FILE NO.	606272		

DRAINAGE STRUCTURE TABLES
SHEET 2 OF 2

606272_DR(DRAINAGE TABLE).DWG Plotted on 9-Apr-2021 11:09 AM

DRAINAGE STRUCTURE TABLE

NAME	BASELINE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
67 DMH	ROUTE 28	114+36.85	133.88 L	28.00	I=19.80' (73 OCS)	I=19.70' (68 DMH)	
68 DMH	ROUTE 28	114+58.78	38.83 L	30.09	I=18.80' (67 DMH)	I=18.70' (69 DMH)	
69 DMH	ROUTE 28	114+88.42	22.27 L	28.74	I=18.40' (68 DMH)	I=18.30' (44 DMH)	
70 CBCI	YARMOUTH AND CAMP	212+27.05	15.08 L	30.65		I=26.65' (72 CB)	
71 CBCI	YARMOUTH AND CAMP	212+26.86	14.94 R	30.66		I=27.15' (72 CB)	OFFSET STRUCTURE
72 CB	YARMOUTH AND CAMP	212+35.05	14.52 L	30.57	I=26.60' (70 CBCI) I=26.60' (71 CBCI)	I=24.70' (74 LB) I=26.50' (75 DMH)	DEEP SUMP CB WITH HOOD AND FRAME AND COVER
73 OCS	ROUTE 28	114+30.15	132.47 L	25.83		I=19.90' (67 DMH)	OCS
74 LB	YARMOUTH AND CAMP	212+21.46	44.19 L	31.50	I=24.50' (72 CB)		8 FT DIA. 2 FT CRUSHED STONE AROUND
75 DMH	YARMOUTH AND CAMP	213+10.74	13.00 L	29.81	I=25.75' (72 CB) I=25.75' (78 DMH)	I=25.65' (86 CB CIT)	
76 CB	YARMOUTH AND CAMP	213+45.36	12.18 L	29.89		I=26.36' (78 DMH)	
77 CB	YARMOUTH AND CAMP	213+63.36	12.18 L	29.96		I=26.46' (78 DMH)	
78 DMH	YARMOUTH AND CAMP	213+45.36	0.00	29.99	I=25.99' (77 CB) I=25.99' (80 CBCI) I=25.99' (76 CB) I=25.99' (79 CBCI)	I=25.89' (75 DMH)	5' DIA.
79 CBCI	YARMOUTH AND CAMP	213+45.36	12.59 R	29.66		I=26.16' (78 DMH)	
80 CBCI	YARMOUTH AND CAMP	213+62.57	12.42 R	29.90		I=26.25' (78 DMH)	
81 CB	YARMOUTH AND CAMP	212+91.97	26.60 R	29.50		I=26.00' (86 CB CIT)	
82 CB	YARMOUTH AND CAMP	213+07.40	37.54 R	29.10		I=25.60' (86 CB CIT)	
83 CB	YARMOUTH AND CAMP	212+59.23	54.39 R	28.09	I=25.00' (86 CB CIT)	I=24.90' (87 FES) I=22.75' (84 LB)	DEEP SUMP CB WITH HOOD AND FRAME AND COVER
84 LB	YARMOUTH AND CAMP	212+40.83	51.74 R	27.50	I=22.50' (83 CB)		8 FT DIA. 2 FT CRUSHED STONE AROUND
86 CB CIT	YARMOUTH AND CAMP	212+99.87	37.86 R	28.61	I=25.40' (82 CB) I=25.40' (75 DMH) I=25.40' (81 CB)	I=25.30' (83 CB)	
87 FES	YARMOUTH AND CAMP	211+80.38	84.19 R	(N/A)	I=24.25' (83 CB)		
88 DMH	ROUTE 28	110+52.77	57.47 L	34.71	I=30.24' (28 CBCI) I=29.80' (27 CBCI)	I=29.70' (26 DMH)	
89 CBCI	YARMOUTH AND CAMP	209+18.94	45.05 L	35.01		I=30.51' (52 DMH)	
90 CBCI	ROUTE 28	102+21.81	18.69 R	35.33		I=32.75' (92 CIT)	OFFSET STRUCTURE
91 CB	ROUTE 28	101+91.62	27.71 L	35.81		I=32.51' (92 CIT)	
92 CIT	ROUTE 28	102+18.35	33.80 L	35.93	I=32.32' (91 CB) I=32.32' (90 CBCI)	I=32.22' (93 ADJ DMH)	
93 ADJ DMH	ROUTE 28	102+18.77	40.91 L	35.99	I=32.20' (92 CIT) I=32.02' (X99)	I=31.92' (02 CIT)	
94 DMH	ROUTE 28	105+20.03	42.45 L	34.31	I=29.98' (55 DMH)	I=26.75' (04 DMH)	5' DIA.
95 CB	ROUTE 28	104+90.73	71.91 R	33.32		I=30.12' (56 DMH)	OFFSET STRUCTURE
96 DMH	YARMOUTH AND CAMP	209+95.16	33.99 L	34.26	I=28.30' (97 CBCI) I=29.30' (53 CBCI)	I=28.20' (52 DMH)	
97 CBCI	YARMOUTH AND CAMP	210+62.53	28.78 L	33.08		I=28.88' (96 DMH)	
98 FES	ROUTE 28	114+12.94	75.12 L	(N/A)	I=21.00' (66 DMH)		36-INCH FES

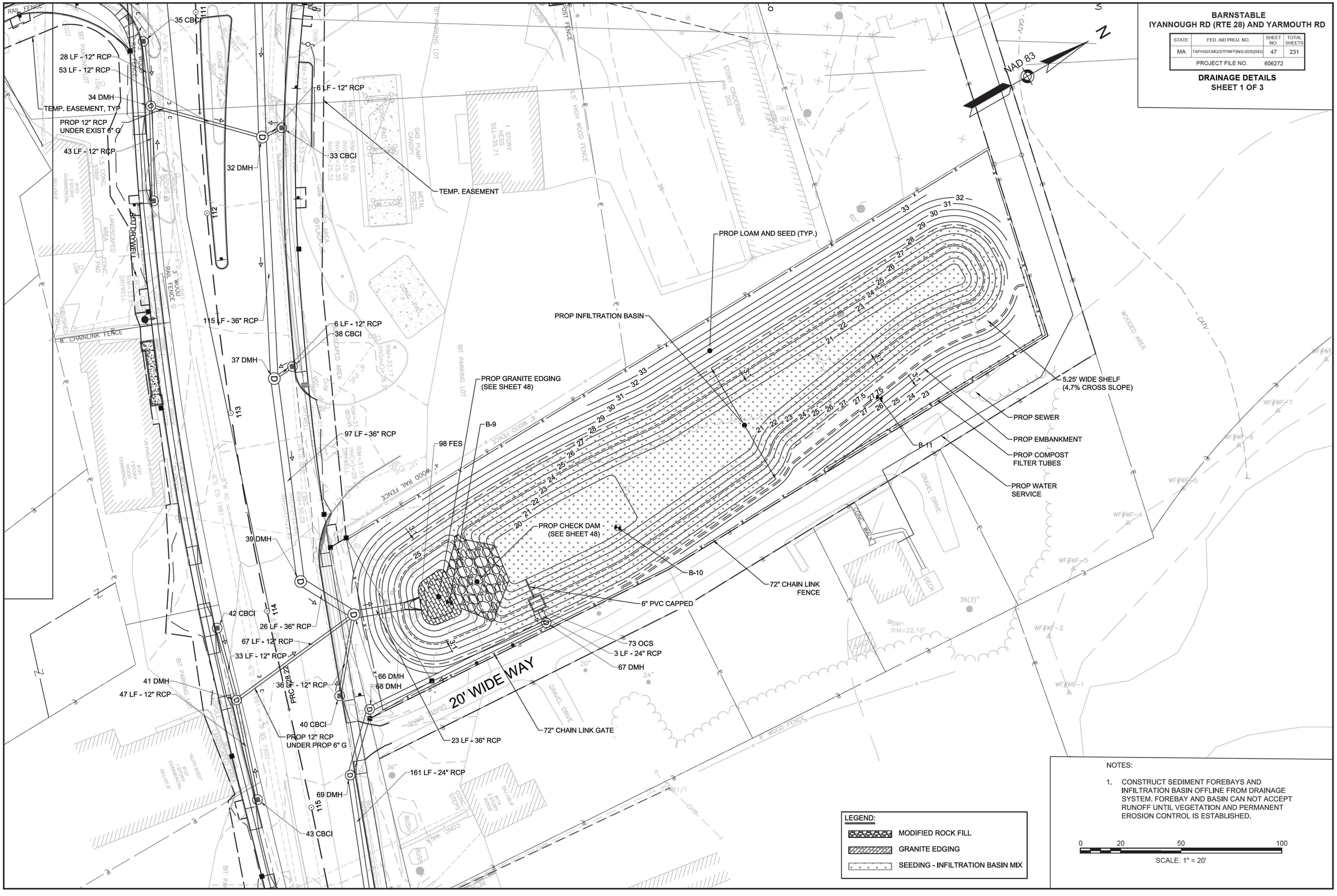
DRAINAGE STRUCTURE TABLE

NAME	BASELINE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
99 DMH	ROUTE 28	106+56.81	20.78 R	33.64	I=29.09' (17 CB) I=29.09' (16 CBCI)	I=29.30' (15 DMH)	
CBCI-100	ROUTE 28	110+90.20	83.71 R	34.38		I=27.63' (29 DMH)	
X61 CBCI ADJ	SOUTH YARMOUTH	300+37.88	10.39 R	32.46			
X62 CBCI ADJ	YARMOUTH AND CAMP	201+07.66	12.23 L	31.57			
X64 CB ADJ	ROUTE 28	118+82.25	16.35 R	20.46			

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(N/I)-0035(043)	47	231
PROJECT FILE NO.	606272		

DRAINAGE DETAILS
SHEET 1 OF 3



LEGEND:

- MODIFIED ROCK FILL
- GRANITE EDGING
- SEEDING - INFILTRATION BASIN MIX

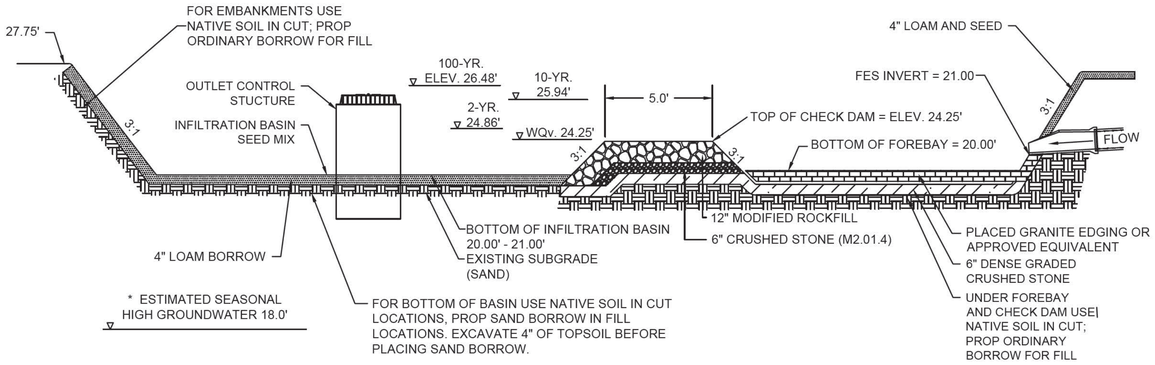
NOTES:

1. CONSTRUCT SEDIMENT FOREBAYS AND INFILTRATION BASIN OFFLINE FROM DRAINAGE SYSTEM. FOREBAY AND BASIN CAN NOT ACCEPT RUNOFF UNTIL VEGETATION AND PERMANENT EROSION CONTROL IS ESTABLISHED.

0 20 50 100

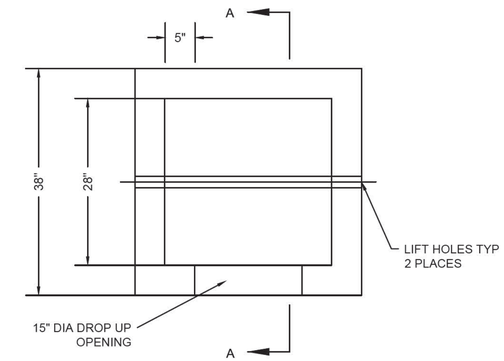
SCALE: 1" = 20'

606272_DR(DRAINAGE BASIN).DWG Plotted on 30-Oct-2020 9:31 AM

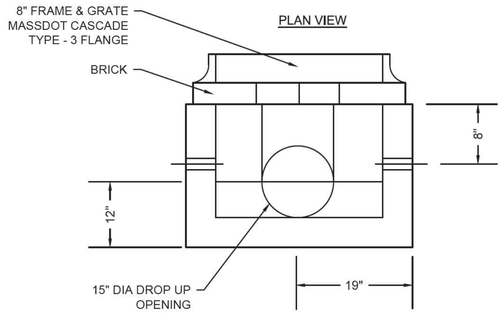


* ESTIMATED SEASONAL HIGH GROUNDWATER IS ESTABLISHED BASED ON OBSERVED GROUNDWATER ELEVATIONS FROM BORINGS, B-9, B-10, AND B-11. THE FRIMPTER METHOD WAS APPLIED TO OBSERVED GROUNDWATER ELEVATIONS TO ESTABLISH ESTIMATED SEASONAL HIGH GROUNDWATER.

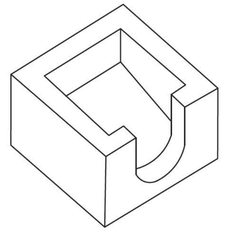
INFILTRATION BASIN SCHEMATIC CROSS-SECTION NTS



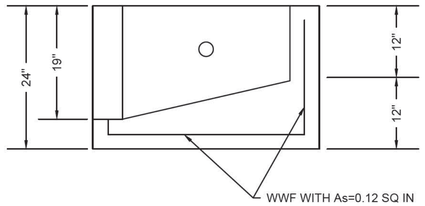
PLAN VIEW



ELEVATION



ISOMETRIC



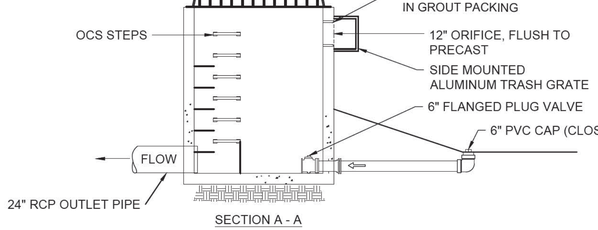
SECTION A-A

NOTES:

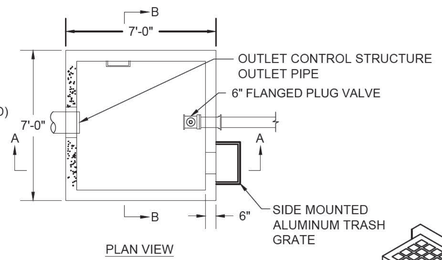
1. DESIGNED FOR AASHTO HS25-44 LOADING.
2. CONCRETE STRENGTH f c=4000 PSI
3. REINFORCING STEEL: ASTM A185 (wwf) fy=60,000 PSI
4. CURB INLETS ARE REQUIRED WHEN GUTTER INLETS ARE INSTALLED AGAINST CURBING.

SPECIAL GUTTER INLET

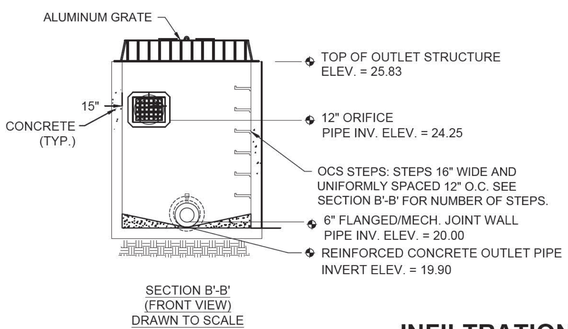
NOT TO SCALE



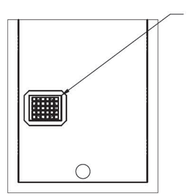
SECTION A - A



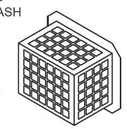
PLAN VIEW



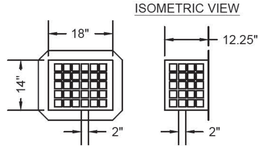
SECTION B'-B'
(FRONT VIEW)
DRAWN TO SCALE



FRONT VIEW



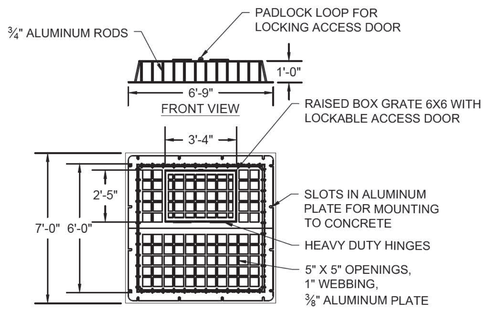
ISOMETRIC VIEW



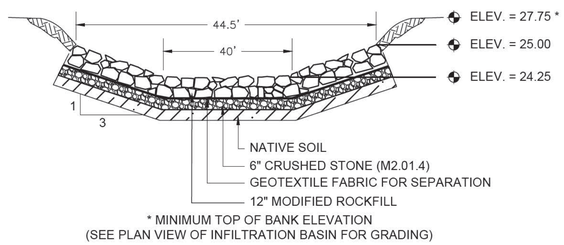
FRONT VIEW SIDE VIEW

ALUMINUM TRASH GRATE

INFILTRATION BASIN OUTLET CONTROL STRUCTURE NTS

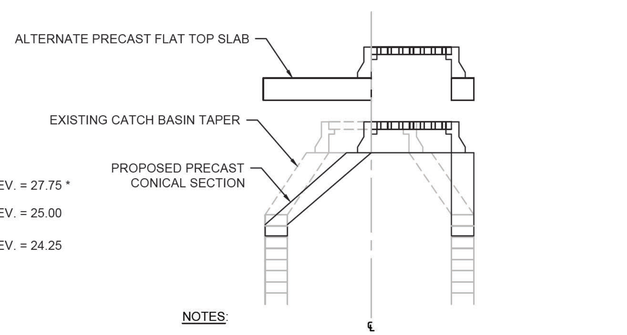


PLAN VIEW
ALUMINUM GRATE



* MINIMUM TOP OF BANK ELEVATION
(SEE PLAN VIEW OF INFILTRATION BASIN FOR GRADING)

CHECK DAM NTS



NOTES:

1. BASED ON ACTUAL FIELD CONDITIONS, THE CONTRACTOR SHALL DETERMINE WHICH STYLE OF TOP SECTION TO USE.

DRAINAGE STRUCTURE REMODEL NTS

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	48	231
PROJECT FILE NO. 606272			

DRAINAGE DETAILS
SHEET 2 OF 3

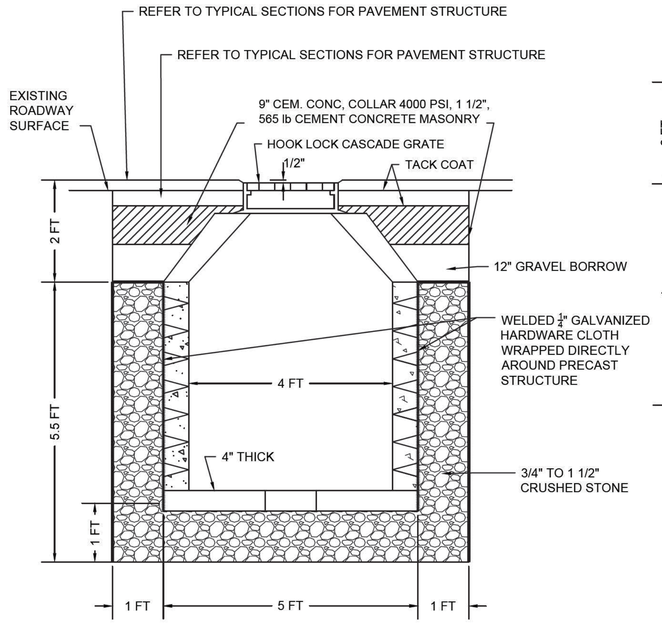
606272_HD5(DRAINAGE DETAILS).DWG Plotted on 30-Oct-2020 9:35 AM

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	49	231
PROJECT FILE NO.	606272		

DRAINAGE DETAILS
SHEET 3 OF 3

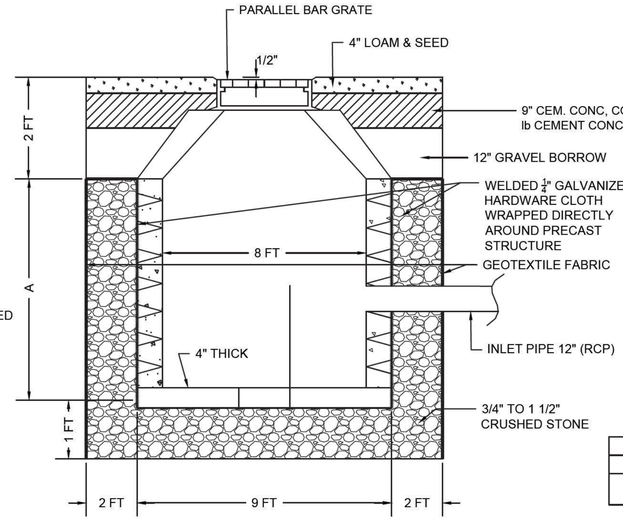
606272_HD5(DRAINAGE DETAILS).DWG Plotted on 30-Oct-2020 9:37 AM



NOTES:
1. CEMENT CONCRETE FOR LEACHING BASIN SHALL BE 4000 PSI, 1 1/2", 565 lb.
2. IF REINFORCED/PRECAST, WALL THICKNESS = 5" MIN.

SECTION VIEW

LEACHING BASIN - 4 FT DIA
NTS



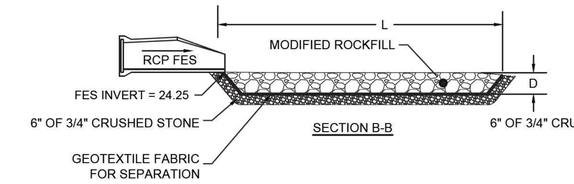
NOTES:
1. CEMENT CONCRETE FOR LEACHING BASIN SHALL BE 4000 PSI, 1 1/2", 565 lb.
2. IF CONCRETE BLOCK, WALL THICKNESS = 6"
3. IF REINFORCED/PRECAST, WALL THICKNESS = 5" MIN.

SECTION VIEW

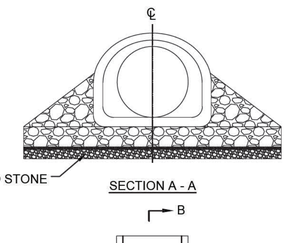
NAME	A
LB 74	8'
LB 84	8'

TABLE

LEACHING BASIN - 8 FT DIA
NTS



SECTION B-B

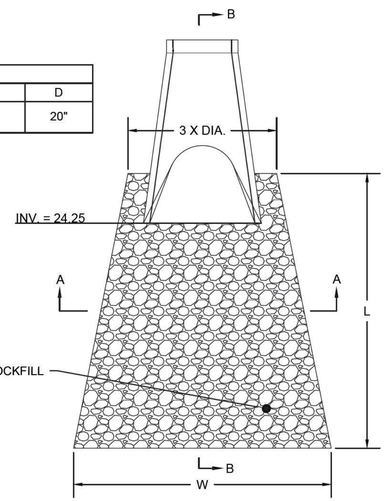


SECTION A - A

SPLASH PAD DIMENSIONS TABLE							
BASELINE	STATION	OFFSET	OUTFALL	PIPE SIZE	L	W	D
YARMOUTH AND CAMP	211+81.09	84.48 RT	87 FES	15"	5'	7'	20"

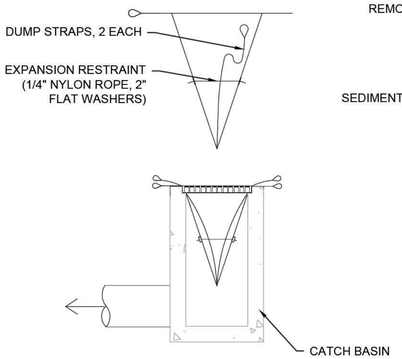
NOTE: FOREBAY BOTTOMS ARE LINED WITH GRANITE EDGING.

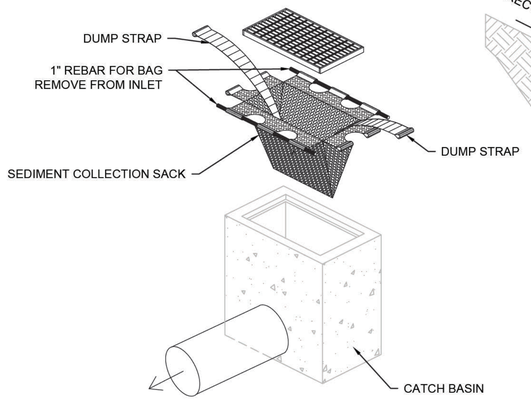
TABLE



PLAN VIEW

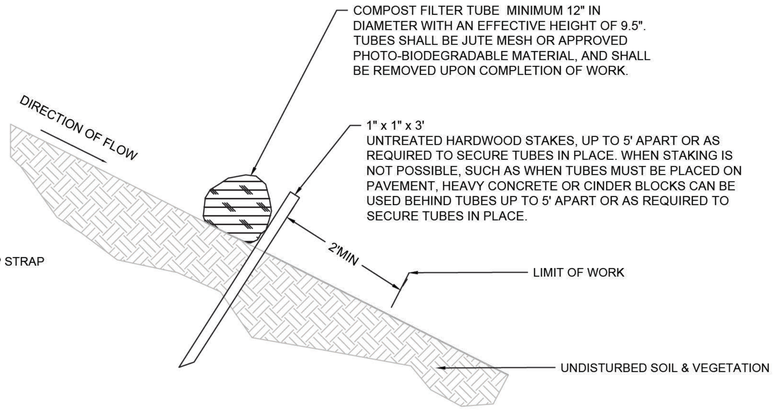
SPLASH PAD
NTS



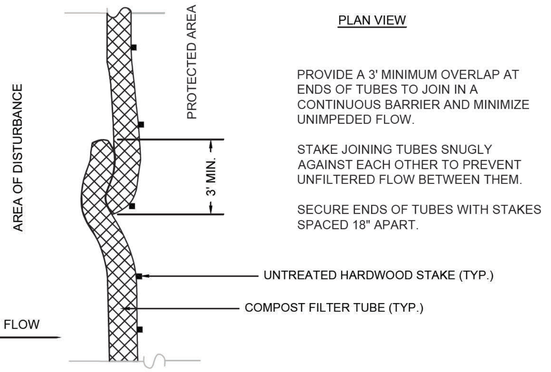


INSTALLATION DETAIL

SILT SACK
NTS



SECTION VIEW



PROVIDE A 3' MINIMUM OVERLAP AT ENDS OF TUBES TO JOIN IN A CONTINUOUS BARRIER AND MINIMIZE UNIMPEDED FLOW.

STAKE JOINING TUBES SNUGLY AGAINST EACH OTHER TO PREVENT UNFILTERED FLOW BETWEEN THEM.

SECURE ENDS OF TUBES WITH STAKES SPACED 18" APART.

PLAN VIEW - JOIN DETAIL

NOTES:
1. CONFIGURE TUBES AROUND EXISTING SITE FEATURES TO MINIMIZE SITE DISTURBANCE AND MAXIMIZE CAPTURE AREA OF STORMWATER RUNOFF.
2. TUBES MAY BE PLACED ON THE UPHILL SIDE OF WELL-ANCHORED, STATIONARY FEATURES, SUCH AS EXISTING TREES OR HEADWALLS, IN LIEU OF STAKING.
3. SLOPES LONGER THAN 50 FT. MAY REQUIRE TUBE DIAMETER GREATER THAN 12 IN. REFER TO MANUFACTURER RECOMMENDATIONS FOR SLOPES LONGER THAN 50 FT.
4. TUBE LOCATION MAY BE SHIFTED TO ADJUST TO EXISTING LANDSCAPE FEATURES, AND SHALL PROTECT UNDISTURBED AREA TO THE MAXIMUM EXTENT PRACTICABLE.
5. DO NOT INSTALL IN PERENNIAL, EPHEMERAL, OR INTERMITTENT STREAMS.
6. ADDITIONAL TUBES OR STAKING SHALL BE USED AT THE DIRECTION OF THE ENGINEER OR ENVIRONMENTAL MONITOR.
7. TYPE AND LOCATION OF EROSION CONTROL TO BE CONFIRMED WITH RESPECTIVE CONSERVATION PRIOR TO PROCUREMENT OR INSTALLATION.
8. INSTALLATION PROCEDURE TO BE SIMILAR FOR ALL TYPES.

COMPOST FILTER TUBE
NTS

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	50	231
PROJECT FILE NO.	606272		

WATER PLANS
SHEET 1 OF 6

606272_WT(WATER PLANS).DWG Plotted on 12-Apr-2021 10:06 AM

N

NAD 83

BEGIN PROJECT
STA. 101+20.10 (RTE 28)
N 2704032.7293
E 989812.7260

PROP 1" PE PIPE SERVICE CONNECTION, 1" CORPORATION COCK, 1" CURB STOP AND SERVICE BOX CONNECT TO EXISTING SERVICE *

PERM. EASEMENT

PROP 1" PE PIPE SERVICE CONNECTION, 1" CORPORATION COCK, 1" CURB STOP AND SERVICE BOX CONNECT TO EXISTING SERVICE. R&R CS TO AVOID ELECTRIC *

PERM. EASEMENT

PROP 1" PE PIPE SERVICE CONNECTION, 1" CORPORATION COCK, 1" CURB STOP AND SERVICE BOX CONNECT TO EXISTING SERVICE *

EXIST. SHLO

PROP 8" COUPLING (CONNECTION TO AC) *

PROP 3 FT - 8" DI *

PROP 12 FT - 8" DI *

ABAN 8" AC

PROP 317 FT - 8" DI *

PROP 8" DI FITTINGS, 45° BENDS (2) *

CURB STOP R&R (2) *

RET. WG

PROP 6 INCH PLUG. FROM SUE INVESTIGATION (TP-10), EXISTING PIPE IS 6" AND NOT 8" AS DEPICTED IN SURVEY

ABAN WATER LINE BASED ON SUE (SEE NOTE 1 ON SHEET 50)

ABAN WATER LINE BASED ON RECORD INFORMATION (SEE NOTE 1 ON SHEET 50)

PLUG EXIST 2" W

PROP 8" DI FITTING, 22.5° BEND *

ABAN. WG

PROP 36 FT - 8" DI *

ABAN. WG

PROP 8X8 TEE *

PROP 8" DI FITTING, 45° BEND *

PROP 8" DI FITTING, 22.5° BEND *

PROP DI FITTING, 12 X 8 REDUCER *

PROP 23 FT - 8" DI *

12" GATE AND GATE BOX *

PROP 12X12 TEE *

PROP DI FITTING, 12 X 8 REDUCER *

8" GATE AND GATE BOX *

PROP 8" COUPLING (CONNECTION TO AC) *

12" GATE AND GATE BOX *

UTILITY CROSSINGS: PROP 12" WATER MAIN UNDER EXIST 10" GAS (SEE NOTE 3 ON SHEET 156)

PROP. TOWN LAYOUT

PROP 8" COUPLING (CONNECTION TO AC) *

PROP 1 FT - 8" DI *

PROP 22 FT - 8" DI *

PROP 80 FT - 8" DI *

TEMP. EASEMENT

PROP 29 FT - 8" DI *

PROP 8" DI FITTINGS, 45° BENDS (2) *

PROP 29 FT - 8" DI WITH 4 DI FITTINGS (3 - 22.5°BENDS, 1 - 11.25° BEND) WITH PROP POLYETHYLENE ENCASEMENT. PROP 29 FT - 8" DI SEGMENT OF PIPE SHALL HAVE 8.5 FT OF COVER. THIS WILL ALLOW FOR 12" VERTICAL SEPARATION FROM FUTURE 30" RCP DRAIN PIPE AND CROSSING UNDER EXISTING 12" DRAIN PIPE. *

TEMP. EASEMENT

ABAN 2" CS

REM AND PLUG EXIST 2" W

PROP 51 FT - 8" DI *

ABAN WG

PROP 36 FT - 8" DI *

EXIST. SHLO

R&R HYDRANT

PROP. SHLO

PROP 23 FT - 8" DI *

REM AND PLUG EXIST 1 ½" W

ABAN WG

PROP 12" DI FITTINGS, 22.5° BENDS (2) *

PROP BOLLARD

PERM. EASEMENT

UTILITY CROSSINGS: PROP 12" WATER MAIN UNDER PROP ELECTRIC, TELEPHONE, CATV

PROP 3 FT - 6" DI

PROP 6 INCH GATE AND GATE BOX

PROP 12 X 6 TEE

PROP BOLLARD

TEMP. EASEMENT

PROP 2" PE PIPE SERVICE CONNECTION, 2" CORPORATION COCK, 2" CURB STOP AND SERVICE BOX AT THE PROPERTY LINE. *

EXIST UTILITY EASEMENT

PROP. SHLO

PERM. EASEMENT

PROP 337 FT - 12" DI *

PROP 12" DI FITTINGS, 22.5° BENDS (2) *

TEMP. EASEMENT

CONTINUED ON SHEET 51

IYANNOUGH ROAD (ROUTE 28)

ENGINE HOUSE ROAD

MARY DUNN

PT +47.81

N/F LUKE CYR & ALEC MITSIS 244 IYANNOUGH RD MAP 328 PARCEL 110 BOOK 29259 PAGE 44

N/F PBAC STREET LLC 258 IYANNOUGH RD MAP 328 PARCEL 109 BOOK 31145 PAGE 54

N/F CAPE GLASS REALTY TRUST 240 IYANNOUGH RD MAP 328 PARCEL 111 BOOK 30539 PAGE 255

N/F SCOTT P. GLADISH, TRUSTEE OF CAPE GLASS REALTY TRUST 249 IYANNOUGH RD MAP 328 PARCEL 111 LCC 20814 CERT. 213125

N/F B & A FOURNIER REALTY INC 230 IYANNOUGH RD MAP 328 PARCEL 112 BOOK 3115 PAGE 63

N/F TOWN OF BARNSTABLE 10 MARY DUNN WAY MAP 328 PARCEL 136 BOOK 17756 PAGE 164

N/F ROBERT E. BAKER & ROBERT E. WHITE, JR, TRS 192 IYANNOUGH ROAD CONDOMINIUM 192 IYANNOUGH RD MAP 328 PARCEL 132 L.C. DOC. #415269-1 LCC 28512 LC CERT NO. C220

N/F HIBBARD LAND TRUST LLC 235 IYANNOUGH RD MAP 328 PARCEL 006 CERT #187525

N/F HYANNIS SERIES ONE LLC 225 IYANNOUGH RD MAP 328 PARCEL 005 BOOK 28924 PAGE 23

N/F RIDGEWOOD AVENUE LIMITED PARTNERSHIP MAP 328 PARCEL 210/002 BOOK 9605 PAGE 15 55 ENGINE HOUSE ROAD

N/F BODICK NOMINEE TRUST 207 IYANNOUGH RD MAP 328 PARCEL 237 BOOK 31495 PAGE 76

N/F AMERIGAS PROPANE L.P. 193 IYANNOUGH RD MAP 328 PARCEL 203 BOOK 9670 PAGE 09

N/F GAS INC & AMERIGAS PROPANE L.P. MAP 328 PARCEL 202 BOOK 1209 PAGE 558 IYANNOUGH RD

NINE ENGINE HOUSE ROAD CONDOMINIUM MAP 328 PARCEL 204

WATER NOTES:

1. SUE INFORMATION IS ACTUAL FIELD LOCATION AND SUPERSEDES THE RECORD LOCATION FOR EACH RESPECTIVE UTILITY.
2. PORTIONS OF THE PROPOSED WATER SYSTEM ARE NON-PARTICIPATING ITEMS. THESE PORTIONS OF THE SYSTEM HAVE BEEN IDENTIFIED WITH AN " * " SYMBOL.

0 20 50 100

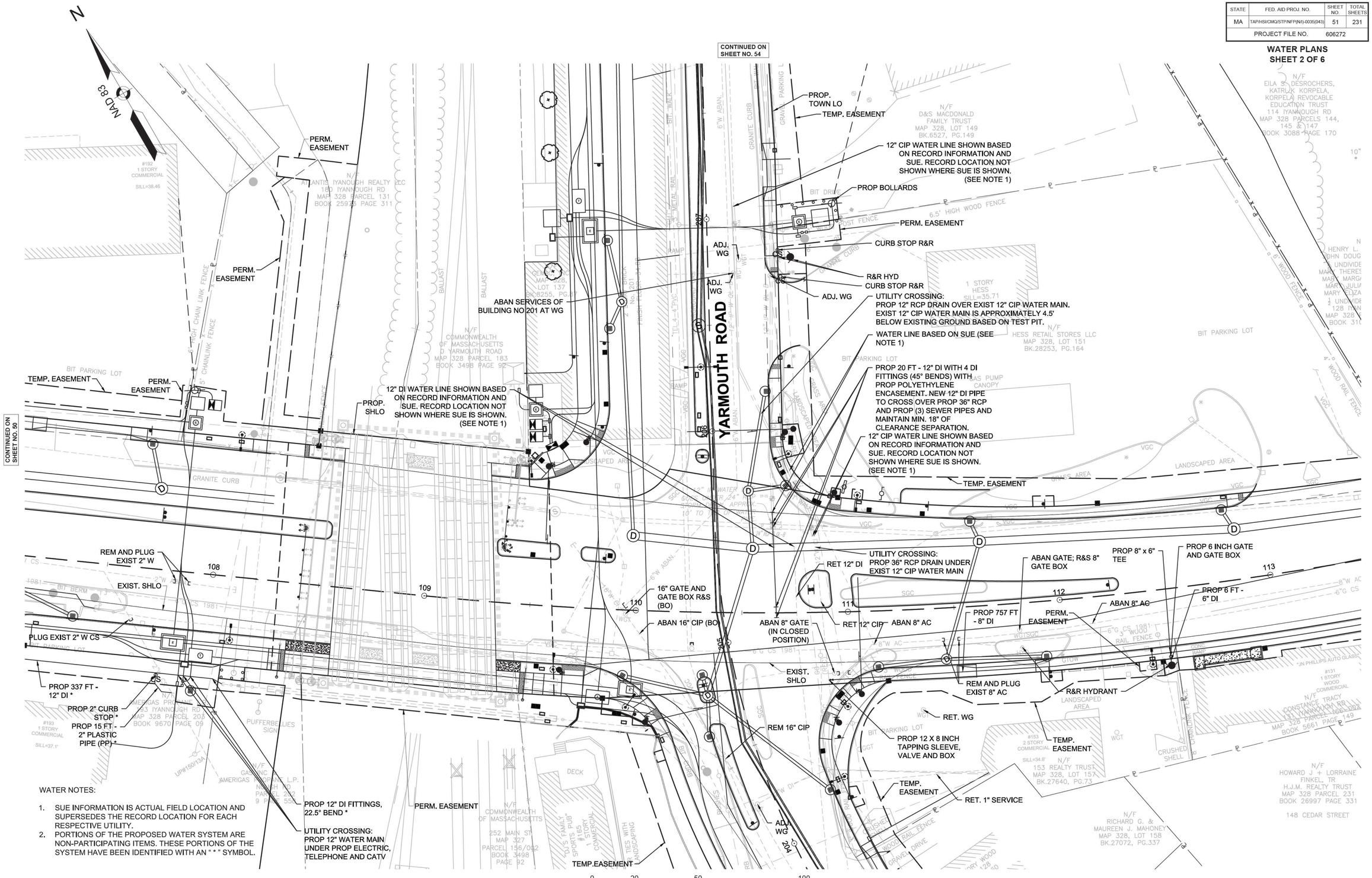
SCALE: 1" = 20'

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	51	231
PROJECT FILE NO. 606272			

WATER PLANS
SHEET 2 OF 6

606272_WT(WATER PLANS).DWG Plotted on 12-Apr-2021 10:29 AM



WATER NOTES:

1. SUE INFORMATION IS ACTUAL FIELD LOCATION AND SUPERSEDES THE RECORD LOCATION FOR EACH RESPECTIVE UTILITY.
2. PORTIONS OF THE PROPOSED WATER SYSTEM ARE NON-PARTICIPATING ITEMS. THESE PORTIONS OF THE SYSTEM HAVE BEEN IDENTIFIED WITH AN " * " SYMBOL.

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	52	231
PROJECT FILE NO. 606272			

WATER PLANS
SHEET 3 OF 6

606272_WT(WATER PLANS).DWG Plotted on 30-Nov-2020 12:28 PM

N

NAD 83

IYANNOUGH ROAD (ROUTE 28)

CEDAR STREET

CONTINUED ON SHEET NO. 51

CONTINUED BELOW

CONTINUED ABOVE

PERM. EASEMENT

PROP 1" PE PIPE SERVICE CONNECTION, 1" CORPORATION COCK, 1" CURB STOP AND SERVICE BOX CONNECT TO EXISTING SERVICE.

PROP 1" PE PIPE SERVICE CONNECTION, 1" CORPORATION COCK, 1" CURB STOP AND SERVICE BOX CONNECT TO EXISTING SERVICE. PLACE CS AT PROPERTY LINE.

FIELD LOCATE EXISTING SERVICE R&S EXISTING CURB STOP AND BOX PROP 2" PE PIPE SERVICE, 2" CORPORATION, 2" CURB STOP AND SERVICE BOX CONNECT TO EXISTING SERVICE

R&S WG

ADJ. WG

RET. HH

ABAN 6" AC

PROP 757 FT - 8" DI

CAP EXIST 6" WATER, REM PORTION OF CONFLICT WITH PROP CB

PROP 8" DI FITTINGS, 22.5° BENDS (2)

8" GATE VALVE AND BOX

PROP DI FITTING 8X6 REDUCER

PROP 6" PLUG

PROP 6" COUPLING (CONNECTION TO AC)

R&S GATE BOX; ABAN 6" GATE

HYDRANT R&S

ABAN GATE; R&S 8" GATE BOX

REM AND PLUG EXIST 8" W

PERM. EASEMENT

PROP HYDRANT ASSEMBLY 8X6 TEE 6" GATE AND GATE BOX HYDRANT

REM AND PLUG EXIST 8" W

TEMP. EASEMENT

PROP. SHLO

END PROJECT STA. 119+60.00 (RTE 28) N2703148.8212 E 991406.5082

N/F HENRY L. MURPHY JOHN DOUGLAS MURPHY 1/2 UNDIVIDED INTEREST MARY THERESE GALLAGHER, MARY MARGARET RAGOSA, MARY JULIA POWERS & MARY ELIZABETH POWERS, 1/2 UNDIVIDED INTEREST 128 IYANNOUGH RD MAP 328 PARCELS 146 BOOK 3108 PAGE 18

N/F EILA S. DESROCHERS, KATRI K KORPELA, KORPELA REVOCABLE EDUCATION TRUST 114 IYANNOUGH RD MAP 328 PARCELS 144 145 & 147 BOOK 3088 PAGE 170

N/F JAMES STEPHENS RESORT TRUST 102 IYANNOUGH RD MAP 328 PARCEL 152 BOOK 3336 PAGE 110

N/F J. BRUCE MACGREGOR, TRUSTEE OF KB NOMINEE TRUST 88 IYANNOUGH RD MAP 343 PARCEL 012 CERT #156646

#88 1 STORY HYANNIS SELF STORAGE

N/F CONSTANCE TRACY 131 IYANNOUGH RD MAP 328 PARCEL 156-002 BOOK 5661 PAGE 149

N/F JAY H. TRACY WE'RE HERE REALTY TRUST MAP 328 PARCEL 182 BOOK 6793 PAGE 288 138 CEDAR STREET

N/F HOWARD J + LORRAINE FINKEL, TR H.J.M. REALTY TRUST MAP 328 PARCEL 231 BOOK 26997 PAGE 331

N/F JAY H TRACY 'RE HERE REALTY TRUST MAP 328 PARCEL 162 300K 6793 PAGE 288 140 CEDAR STREET

N/F WE'RE HERE REALTY TRUST 121 IYANNOUGH RD MAP 328 PARCEL 156-001 BOOK 5661 PAGE 152

N/F 101 IYANNOUGH CONDOMINIUM MAP 328 PARCEL 154 BOOK 5129 PAGE 121

N/F DMITRY ZHIOV, TR MIHANAZ REALTY TRUST 115 IYANNOUGH RD MAP 328 PARCEL 155 BOOK 22371 PAGE 174

N/F 89 IYANNOUGH LLC 89 IYANNOUGH RD MAP 328 PARCEL 153 BOOK 28598 PAGE 253

N/F REALTY INCOME CORPORATION 64 IYANNOUGH RD MAP 343 PARCEL 013 CERT #136084

WATER NOTES:

1. SUE INFORMATION IS ACTUAL FIELD LOCATION AND SUPERSEDES THE RECORD LOCATION FOR EACH RESPECTIVE UTILITY.
2. PORTIONS OF THE PROPOSED WATER SYSTEM ARE NON-PARTICIPATING ITEMS. THESE PORTIONS OF THE SYSTEM HAVE BEEN IDENTIFIED WITH AN " * " SYMBOL.

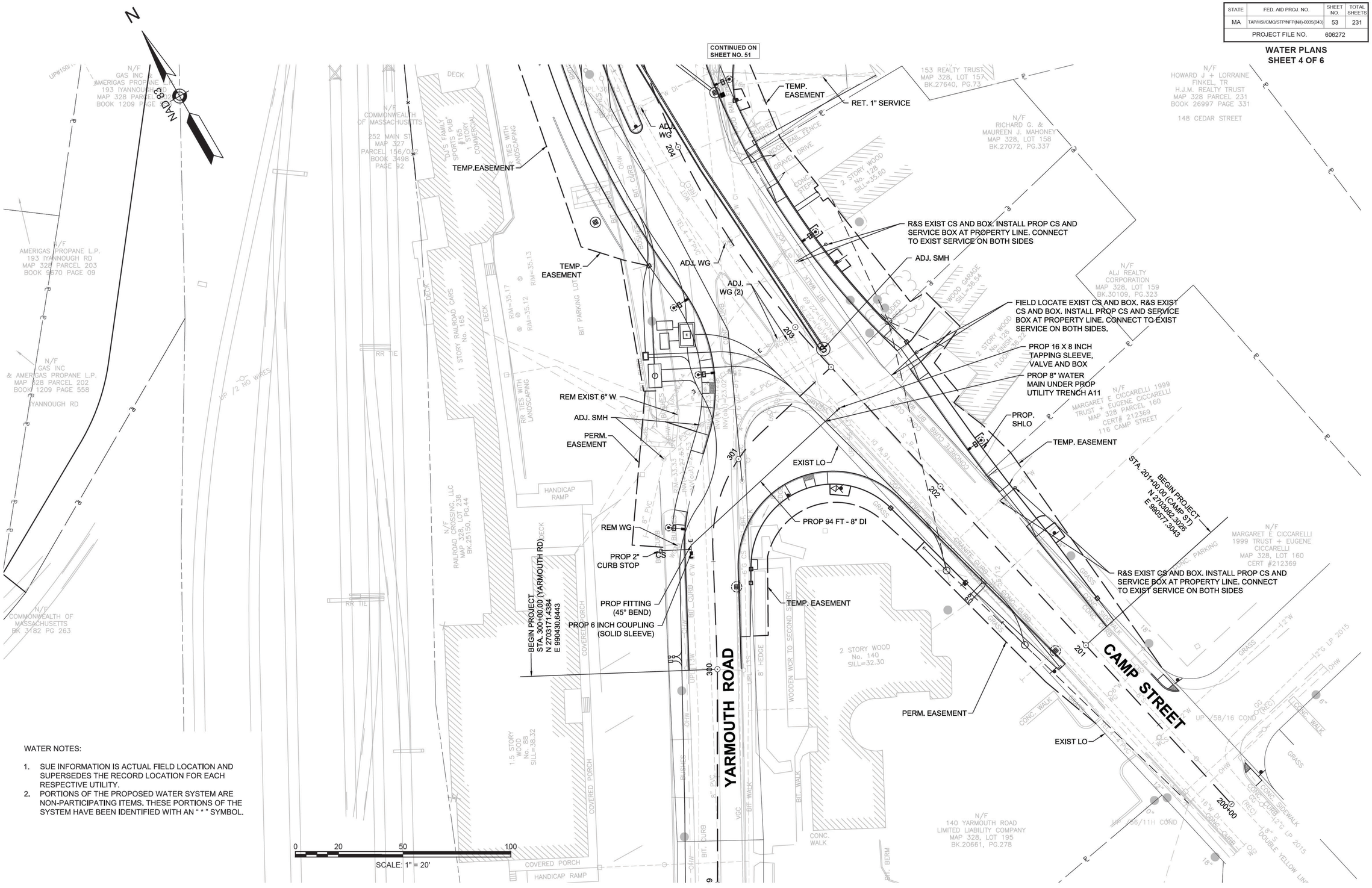
0 20 50 100

SCALE: 1" = 20'

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(N/I)-0035(043)	53	231
PROJECT FILE NO.	606272		

WATER PLANS
SHEET 4 OF 6



WATER NOTES:

1. SUE INFORMATION IS ACTUAL FIELD LOCATION AND SUPERSEDES THE RECORD LOCATION FOR EACH RESPECTIVE UTILITY.
2. PORTIONS OF THE PROPOSED WATER SYSTEM ARE NON-PARTICIPATING ITEMS. THESE PORTIONS OF THE SYSTEM HAVE BEEN IDENTIFIED WITH AN " * " SYMBOL.

606272_WT(WATER PLANS).DWG Plotted on 25-Nov-2020 8:40 AM

CONTINUED ON SHEET NO. 55

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	54	231
PROJECT FILE NO. 606272			

WATER PLANS
SHEET 5 OF 6

606272_WT(WATER PLANS).DWG Plotted on 25-Nov-2020 8:51 AM

N

NAD 83

WATER LINE BASED ON SUE (SEE NOTE 1)

12" DI WATER LINE SHOWN BASED ON RECORD INFORMATION AND SUE. RECORD LOCATION NOT SHOWN WHERE SUE IS SHOWN. (SEE NOTE 1)

WATER LINE BASED ON RECORD INFORMATION (SEE NOTE 1)

RET. HYDRANT

RET. WG

CAP EXIST ABAN 6" WATER, REM PORTION OF CONFLICT WITH PROP 12" RCP.

PROP 12 INCH COUPLING (SOLID SLEEVE)

PROP 28 FT - 12" DI WITH 4 DI FITTINGS (22.5° BENDS) WITH PROP POLYETHYLENE ENCASEMENT. NEW 12" DI PIPE TO CROSS UNDER PROP 12" RCP AND MAINTAIN MIN. 12" OF CLEARANCE SEPARATION.

PROP 12 INCH COUPLING (SOLID SLEEVE)

PROP 378 FT 2" PE PIPE SERVICE *

TEMP. EASEMENT

12" DI WATER LINE SHOWN BASED ON RECORD INFORMATION AND SUE. RECORD LOCATION NOT SHOWN WHERE SUE IS SHOWN. (SEE NOTE 1)

ADJ. WG

PROP. TOWN LO

TEMP. EASEMENT

PROP. RAILROAD SIDELINE

YARMOUTH ROAD

N/F TOWN OF BARNSTABLE MAP 328, LOT 142-2 BK.20708, PG.330

N/F GEMAC, INC. MAP 328, LOT 138 BK.8255, PG.87

N/F GEMAC, INC. MAP 328, LOT 137 BK.8255, PG.87

N/F COMMONWEALTH OF MASSACHUSETTS 4 YARMOUTH ROAD MAP 328 PARCEL 183 BOOK 3498 PAGE 92

N/F ATLANTIS IYANOUGH REALTY, LLC 180 IYANNOUGH RD MAP 328 PARCEL 131 BOOK 25973 PAGE 311

N/F SUNRISE NOMINEE TRUST MAP 328, LOT 148 PROBATE 99P1184EP BOOK 27837 PAGE 158

N/F EILA S. DESROCHERS, KATRI K KORPELA, KORPELA REVOCABLE EDUCATION TRUST 114 IYANNOUGH RD MAP 328 PARCELS 144, 145 & 147 BOOK 3088 PAGE 170

N/F EILA S. DESROCHERS, KATRI K KORPELA, KORPELA REVOCABLE EDUCATION TRUST 114 IYANNOUGH RD MAP 328 PARCELS 144,

N/F D&S MACDONALD FAMILY TRUST

1 STORY CINDERBLOCK No. 202

WATER NOTES:

1. SUE INFORMATION IS ACTUAL FIELD LOCATION AND SUPERSEDES THE RECORD LOCATION FOR EACH RESPECTIVE UTILITY.
2. PORTIONS OF THE PROPOSED WATER SYSTEM ARE NON-PARTICIPATING ITEMS. THESE PORTIONS OF THE SYSTEM HAVE BEEN IDENTIFIED WITH AN " * " SYMBOL.

0 20 50 100
SCALE: 1" = 20'

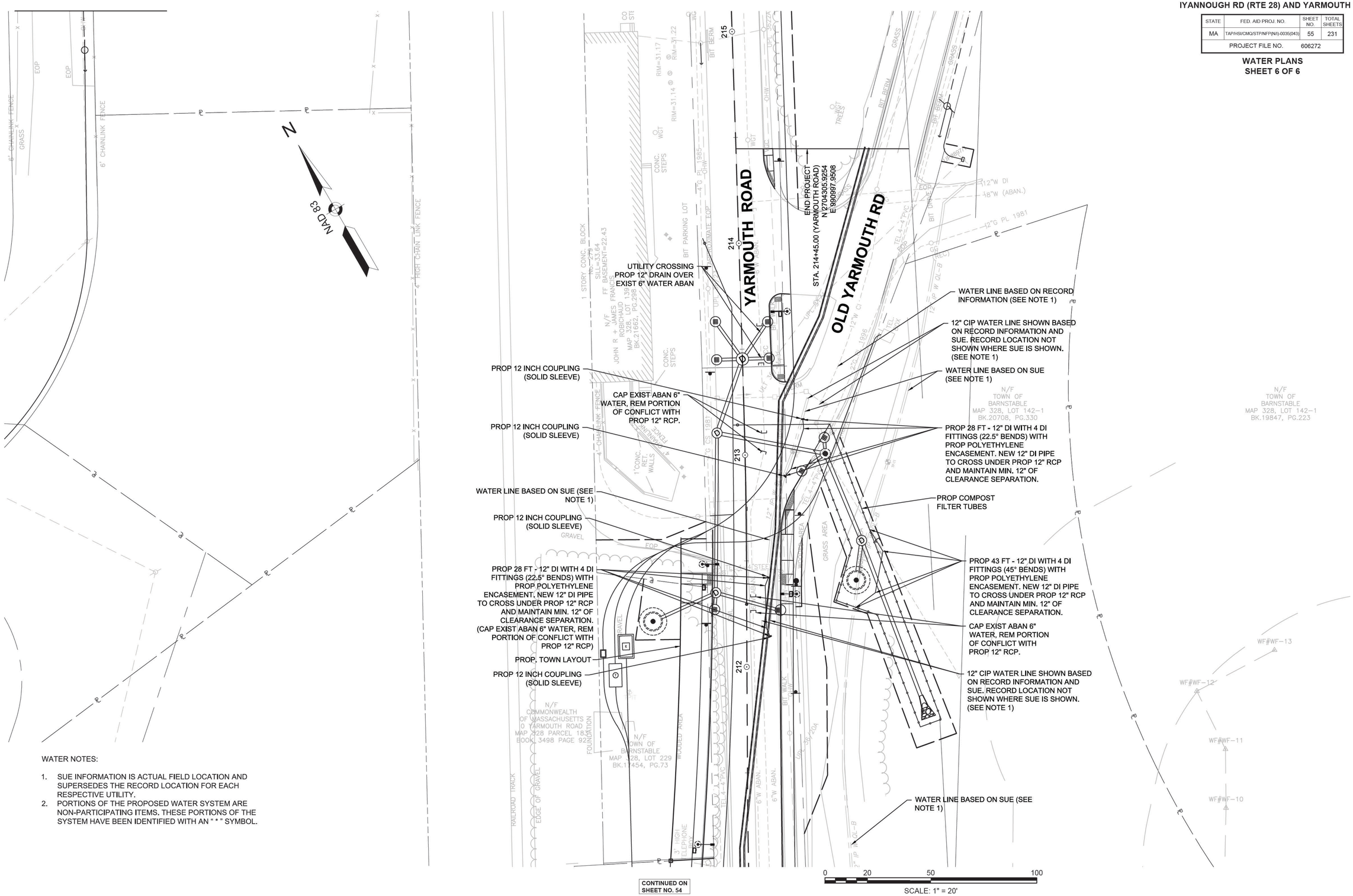
CONTINUED ON SHEET NO. 51

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	55	231
PROJECT FILE NO. 606272			

WATER PLANS
SHEET 6 OF 6

606272_WT(WATER PLANS).DWG Plotted on 25-Nov-2020 9:02 AM

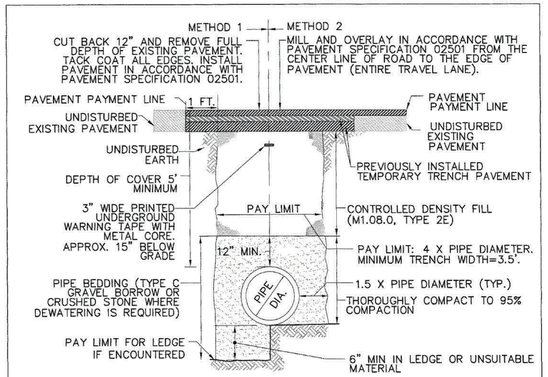


WATER NOTES:

1. SUE INFORMATION IS ACTUAL FIELD LOCATION AND SUPERSEDES THE RECORD LOCATION FOR EACH RESPECTIVE UTILITY.
2. PORTIONS OF THE PROPOSED WATER SYSTEM ARE NON-PARTICIPATING ITEMS. THESE PORTIONS OF THE SYSTEM HAVE BEEN IDENTIFIED WITH AN " * " SYMBOL.

CONTINUED ON SHEET NO. 54

606272_WT(WATER DETAILS).DWG Plotted on 29-Oct-2020 1:18 PM



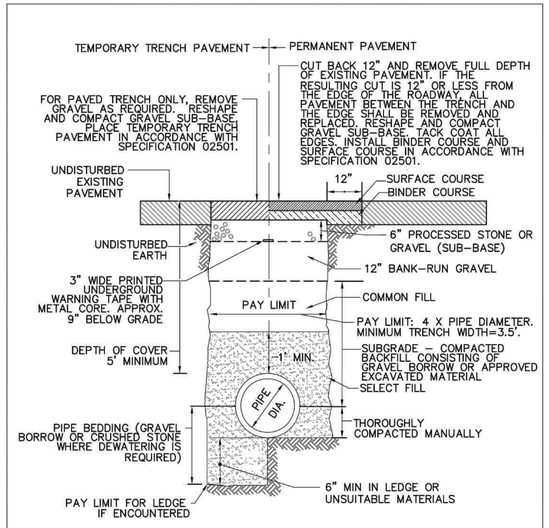
NOTES:

1. ALL WORK SHALL BE DONE IN STRICT CONFORMANCE WITH MASSDOT, HIGHWAY DIVISION PERMIT.
2. THE PAVEMENT SHALL BE SAW CUT TO TRENCH WIDTH AS SHOWN ABOVE. CONTRACTOR SHALL THEN EXCAVATE AND INSTALL THE WATER MAIN.
3. TRENCH SHALL BE BACKFILLED UP TO THE DEPTH REQUIRED FOR PAVEMENT.
4. TRENCH SHALL BE PLATED AND RAMPED WITH HOT-MIX ASPHALT AND LEFT OVERNIGHT.
5. THE EDGES OF THE TRENCH SHALL BE CUT BACK 12 INCHES AND THE FULL DEPTH OF EXISTING PAVEMENT REMOVED. EXISTING GRAVEL SHALL BE RESHAPED AND COMPACTED TO ACCEPT NEW PAVEMENT.
6. ALL VERTICAL EDGES OF EXISTING PAVEMENT SHALL BE PAINTED WITH A LIGHT COAT OF RS-1 ASPHALT EMULSION.
7. PAVEMENT SHALL BE MACHINE PLACED IN THREE COURSES AS SPECIFIED IN SECTION 02501.
8. THE ENTIRE TRAVEL LANE THAT THE WATER MAIN TRENCH IS WITHIN SHALL BE MILLED AND PAVED A DEPTH OF 2".
9. FOR SMALL TRENCH PATCHES (< 5 SY), TEMPORARY TRENCH PAVEMENT IN CONJUNCTION WITH INFRARED HEAT TREATMENT OF THE SEAMS WILL BE REQUIRED.
10. EXISTING GRAVEL SHALL BE RESHAPED AND COMPACTED TO ACCEPT NEW PAVEMENT.

DETAIL NO.: 1

SCALE:N.T.S.	REVISION
NO.:	1
DATE:	MARCH 2014

TOWN OF BARNSTABLE
DPW WATER SUPPLY DIVISION
HYANNIS WATER SYSTEM
MASS DOT ROADWAY TRENCH



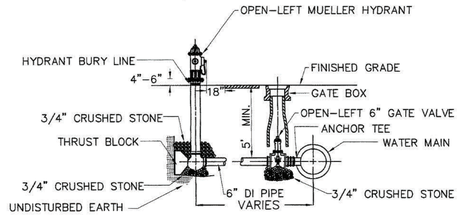
NOTE:

1. ANY GRASS AREAS DISTURBED SHALL BE GRADED, LOAMED TO A DEPTH OF 4 INCHES AND SEEDED, WHERE NO GRASS OCCURS USE 6" PROCESSED GRAVEL.
2. THE SUB-BASE LAYER SHALL BE 6" OF DENSE GRADED MATERIAL CONSISTING OF PROCESSED STONE OR GRAVEL OVER A 12" LAYER OF BANK RUN GRAVEL. EXISTING MATERIAL MAY BE SUBSTITUTED FOR THE 12" IMPORTED GRAVEL LAYER IF APPROVED BY THE ENGINEER.

DETAIL NO.: 2

SCALE:N.T.S.	REVISION
NO.:	1
DATE:	MARCH 2014

TOWN OF BARNSTABLE
DPW WATER SUPPLY DIVISION
HYANNIS WATER SYSTEM
NON-MASS DOT ROADWAY TRENCH



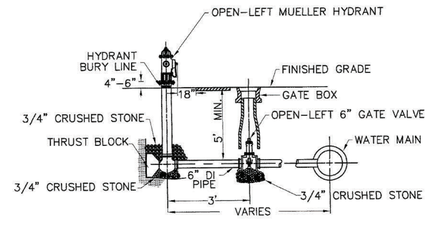
NOTES:

1. ALL HYDRANT, VALVE, AND TEE JOINTS SHALL BE RESTRAINED WITH MECHANICAL JOINTS.
2. DEPTH OF HYDRANT BURY SHALL SUIT INSTALLED DEPTH OF COVER OVER WATER MAIN. INSTALL RISERS AS NECESSARY AT NO ADDITIONAL COST TO THE OWNER.
3. FOR SIDEWALK LOCATIONS, INSTALL HYDRANT BARREL SO THAT STEAMER NOZZLE IS 18" OFF OF THE BACK OF THE SIDE WALK.
4. THERE SHALL BE NO OBSTRUCTIONS WITHIN 3 FEET OF THE HYDRANT.

DETAIL NO.: 3

SCALE:N.T.S.	REVISION
NO.:	1
DATE:	MARCH 2014

TOWN OF BARNSTABLE
DPW WATER SUPPLY DIVISION
HYANNIS WATER SYSTEM
SHORT SIDE HYDRANT ASSEMBLY



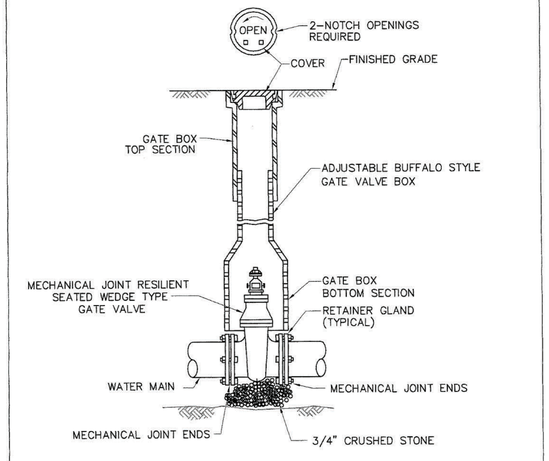
NOTES:

1. ALL HYDRANT, VALVE, AND TEE JOINTS SHALL BE RESTRAINED WITH MECHANICAL JOINTS AND LOCKING GASKETS ON PUSH-ON PIPE JOINTS.
2. DEPTH OF HYDRANT BURY SHALL SUIT INSTALLED DEPTH OF COVER OVER WATER MAIN. INSTALL RISERS AS NECESSARY AT NO ADDITIONAL COST TO THE OWNER.
3. HYDRANT SHUT OFF VALVE SHALL BE 3' FROM HYDRANT.
4. FOR SIDEWALK LOCATIONS, INSTALL HYDRANT BARREL SO THAT STEAMER NOZZLE IS 18" OFF OF THE BACK OF THE SIDE WALK.
5. THERE SHALL BE NO OBSTRUCTIONS WITHIN 3 FEET OF THE HYDRANT.

DETAIL NO.: 4

SCALE:N.T.S.	REVISION
NO.:	1
DATE:	MARCH 2014

TOWN OF BARNSTABLE
DPW WATER SUPPLY DIVISION
HYANNIS WATER SYSTEM
LONG SIDE HYDRANT ASSEMBLY



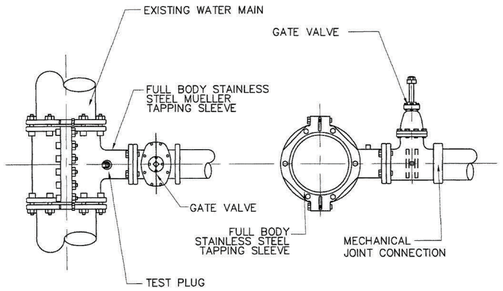
NOTE:

1. GATE VALVE SHALL BE MODEL A-2360, OPEN-LEFT, AS MANUFACTURED BY MUELLER.

DETAIL NO.: 6

SCALE:N.T.S.	REVISION
NO.:	1
DATE:	MARCH 2014

TOWN OF BARNSTABLE
DPW WATER SUPPLY DIVISION
HYANNIS WATER SYSTEM
GATE VALVE AND VALVE BOX



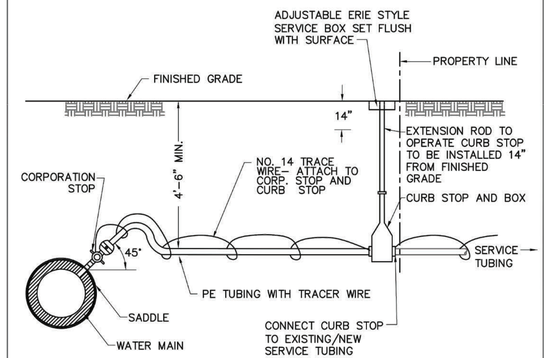
NOTE:

1. GATE VALVE FOR TAPPING SLEEVE SHALL BE MJxFL, MODEL T-2360, OPEN-LEFT, AS MANUFACTURED BY MUELLER.

DETAIL NO.: 7

SCALE:N.T.S.	REVISION
NO.:	1
DATE:	MARCH 2014

TOWN OF BARNSTABLE
DPW WATER SUPPLY DIVISION
HYANNIS WATER SYSTEM
TAPPING SLEEVE AND GATE VALVE



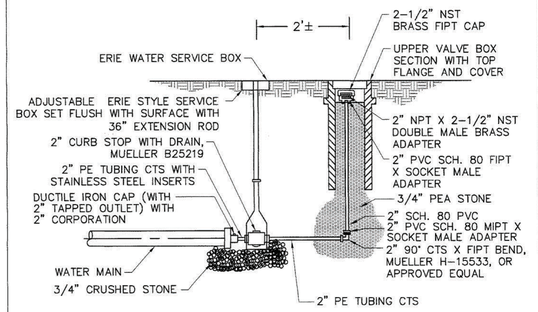
NOTES:

1. ALL JOINTS SHALL BE COMPRESSION TYPE.
2. PE TUBING SHALL BE BACKFILLED WITH SAND BY HAND TO 6" ABOVE TUBING.
3. A SADDLE WILL BE REQUIRED UNLESS THE DIRECT TAP IS FOR A 1" CORPORATION ON A DUCTILE-IRON WATER MAIN 12" IN DIAMETER OR LARGER.
4. WATER SERVICES SHALL BE INSULATED IN ALL AREAS WHERE THERE IS LESS THAN 4 FEET OF COVER.
5. CURB STOP SHALL BE INSTALLED AT THE PROPERTY LINE.
6. ALL WATER SERVICE BRASS SHALL BE NO LEAD, WITH "NL" CAST ON THE BODY.
7. CORPORATION STOPS SHALL BE FORD FB1000 OR MUELLER H-15008 (H-25008 FOR 2" TAPS).
8. CURB STOPS SHALL BE MUELLER H-15209 (H-25209 FOR 2" SERVICES), WITHOUT A DRAIN.

DETAIL NO.: 8

SCALE:N.T.S.	REVISION
NO.:	1
DATE:	MARCH 2014

TOWN OF BARNSTABLE
DPW WATER SUPPLY DIVISION
HYANNIS WATER SYSTEM
TYPICAL SERVICE CONNECTION



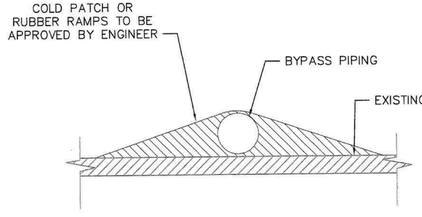
NOTES:

1. PE TUBING SHALL BE BACKFILLED WITH SAND BY HAND TO 6" ABOVE TUBING.
2. ALL JOINTS AND FITTINGS SHALL BE RESTRAINED AS SET FORTH IN THE SPECIFICATIONS.
3. SOCKET CONNECTIONS SHALL BE GLUED OR SECURED WITH A COMPRESSION COUPLING.

DETAIL NO.: 9

SCALE:N.T.S.	REVISION
NO.:	1
DATE:	MARCH 2014

TOWN OF BARNSTABLE
DPW WATER SUPPLY DIVISION
HYANNIS WATER SYSTEM
2" BLOW OFF



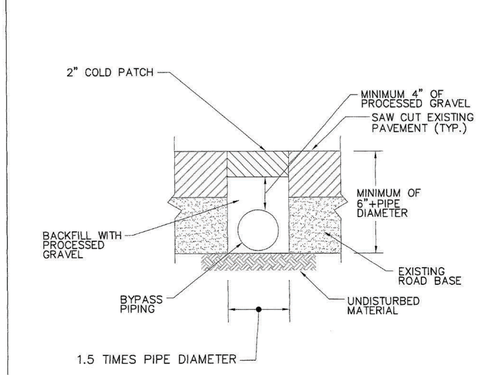
NOTES:

1. CONTRACTOR SHALL PROVIDE ADEQUATE COLD PATCH RAMPS TO ENSURE THAT RESIDENT'S VEHICLES CAN CROSS OVER WITHOUT DAMAGING THEIR VEHICLE.
2. RAMPS SHALL BE REPAIRED IMMEDIATELY WHEN REQUESTED BY THE ENGINEER.

DETAIL NO.: 10

SCALE:N.T.S.	REVISION
NO.:	1
DATE:	MARCH 2014

TOWN OF BARNSTABLE
DPW WATER SUPPLY DIVISION
HYANNIS WATER SYSTEM
BYPASS PIPING CROSSING DRIVEWAY



DETAIL NO.: 11

SCALE:N.T.S.	REVISION
NO.:	1
DATE:	MARCH 2014

TOWN OF BARNSTABLE
DPW WATER SUPPLY DIVISION
HYANNIS WATER SYSTEM
BYPASS PIPING CROSSING ROADWAY

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	58	231
PROJECT FILE NO. 606272			

WATER DETAILS
SHEET 3 OF 3

606272_WT(WATER DETAILS).DWG Plotted on 29-Oct-2020 1:19 PM

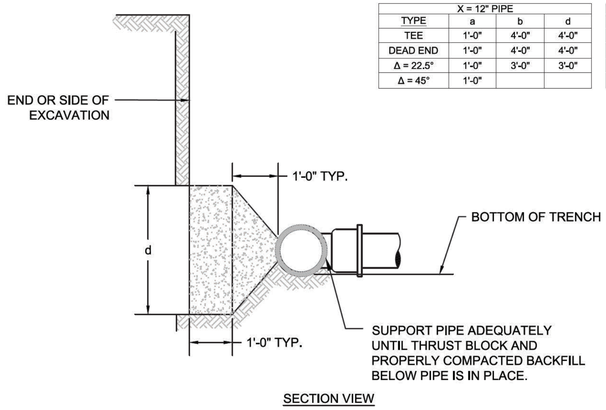
TABLE

X = 6" PIPE			
TYPE	a	b	d
TEE	1'-0"	3'-0"	3'-0"
DEAD END	1'-0"	3'-0"	3'-0"
Δ = 22.5°	1'-0"		
Δ = 45°	1'-0"		

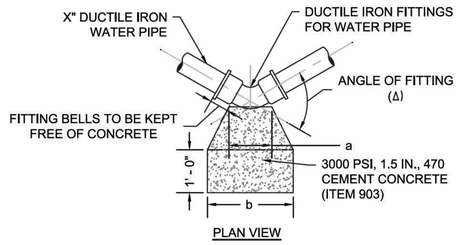
X = 8" PIPE			
TYPE	a	b	d
TEE	1'-0"	3'-0"	3'-0"
DEAD END	1'-0"	3'-0"	3'-0"
Δ = 22.5°	1'-0"	2'-0"	2'-0"
Δ = 45°	1'-0"	2'-0"	2'-0"

X = 12" PIPE			
TYPE	a	b	d
TEE	1'-0"	4'-0"	4'-0"
DEAD END	1'-0"	4'-0"	4'-0"
Δ = 22.5°	1'-0"	3'-0"	3'-0"
Δ = 45°	1'-0"		

X = 16" PIPE			
TYPE	a	b	d
TEE	1'-6"	6'-0"	6'-0"
DEAD END	1'-6"	6'-0"	6'-0"
Δ = 22.5°	1'-6"	4'-0"	4'-0"
Δ = 45°	1'-6"	6'-0"	6'-0"



SECTION VIEW



PLAN VIEW

THRUST BLOCK DETAIL

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(N/I)-0035(043)	59	231
PROJECT FILE NO. 606272			

SEWER PLANS
GRAVITY PLANS
SHEET 1 OF 2

NAD 83

SEWER STRUCTURE TABLE						
NAME	BASELINE	STATION	OFFSET	RIM ELEVATION	INVERT IN	INVERT OUT
SMH 1	Route 28	114+01.84	271.44 L	23.08		16.39
SMH 2	Route 28	114+29.90	200.55 L	25.80	16.05	15.95
SMH 3	Route 28	114+78.48	7.36 R	29.30	15.01 20.60	14.91
SMH 4	Route 28	118+52	3.00 R	21.28	10.63 10.63	10.53
SMH A	Route 28	113+75.95	3.38 R	31.31		21.06
SMH B	Route 28	118+63.04	48.80 R	21.54	10.94	10.84

NOTES: SEE ALSO PROFILE ON SHEET 67 FOR INVERT INFORMATION.

SMH 1
SMH 2
SMH 3
SMH A
SMH B
SMH 4
14 LF - 6" PVC SERVICE CONNECTION
L=71', S=0.45%, 8" PVC
L=210', S=0.44%, 8" PVC
PROP CROSSING: 8" SEWER UNDER 24" DRAIN
PROP CROSSING: 8" SEWER UNDER 12" DRAIN
PROP SEWER CONNECTION UNDER PROP 12" RCP
PRC +28.22
L=99', S=0.45%, 8" PVC
30 LF - 6" PVC SERVICE CONNECTION
37 LF - 6" PVC SERVICE CONNECTION
47 LF - 6" PVC SERVICE CONNECTION
PROP CROSSING: 6" PVC SEWER OVER 36" RCP DRAIN
PROP OUTLET CONTROL STRUCTURE
INFILTRATION BASIN
PROP CHECK DAM
PROP SHLO
TEMP. EASEMENT
PERM. EASEMENT
43 CBCI
42 CBCI
40 CBCI
41 DMH
39 DMH
69 DMH
68 DMH
66 DMH
98 FES
IYANNOUGH ROAD (ROUTE 28)

0 20 50 100
SCALE: 1" = 20'

606272_UTIGRAVITY SEWER PLANS).DWG Plotted on 25-Nov-2020 11:38 AM

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	60	231
PROJECT FILE NO. 606272			

SEWER PLANS
GRAVITY PLANS
SHEET 2 OF 2

606272_UTGRAVITY SEWER PLANS).DWG Plotted on 25-Nov-2020 12:00 PM

IYANNOUGH ROAD (ROUTE 28)
CEDAR STREET
CEDAR STREET
L=210', S=0.44%, 8" PVC
L=99', S=0.45%, 8" PVC
L=369', S=1.15%, 8" PVC
L=45', S=0.45%, 8" PVC
PRC +28.22
69 DMH
44 DMH
47 DMH
49 ADJ DMH
45 CBCI
46 CBCI
48 CBCI
63 CBCI
SMH 3
SMH 4
SMH B
PROP. SHLO
PROP 113 LF - 15" PVC
PROP 47 LF - 8" PVC
PROP 10 LF - 8" PVC
PLUGGED & CAPPED
PLUGGED & CAPPED
PROPOSED SERVICE UNDER 24" RCP
PROP SERVCE UNDER 24" RCP
51 LF - 6" PVC SERVICE CONNECTION
40 LF - 6" PVC SERVICE CONNECTION
20 LF - 6" PVC SERVICE CONNECTION
22 LF - 6" PVC SERVICE CONNECTION
25 LF - 6" PVC SERVICE CONNECTION
32 LF - 6" PVC SERVICE CONNECTION
PROP CROSSING: 8" SEWER UNDER 24" DRAIN
PROP CROSSING: 8" SEWER UNDER 12" DRAIN
PROP CROSSING: 8" SEWER UNDER 12" DRAIN
PROP CROSSING: 8" SEWER UNDER GAS MAIN
PROP CROSSING: 8" SEWER UNDER 12" DRAIN
CONTINUED ON SHEET NO. 59
LOCATION LINE OF FEBRUARY 25, 1969 TOWN LAYOUT
LOCATION LINE OF FEBRUARY 25, 1969 TOWN LAYOUT
N/F JAMES STEPHENS RESORT TRUST 102 IYANNOUGH RD MAP 328 PARCEL 152 BOOK 3336 PAGE 110
N/F EILEEN DESROCHERS, KATRI K KORPELA, KORPELA REVOCABLE EDUCATION TRUST 114 IYANNOUGH RD MAP 328 PARCELS 144, 145 & 147 BOOK 3088 PAGE 170
N/F J. BRUCE MACGREGOR, TRUSTEE OF KB NOMINEE TRUST 88 IYANNOUGH RD MAP 343 PARCEL 012 CERT #156646
N/F REALTY IN(CORPORA 64 IYANNOU MAP 343 PAR CERT #13 LO
N/F JAMES R. CARRON, TR 75 IYANNOUGH RD MAP 343 PARCEL 007 BOOK 18885 PAGE 179
N/F JAMES R. CARRON, TR 75 IYANNOUGH RD MAP 343 PARCEL 007 BOOK 18885 PAGE 179
N/F 89 IYANNOUGH LLC 89 IYANNOUGH RD MAP 328 PARCEL 153 BOOK 28598 PAGE 253
N/F 101 IYANNOUGH CONDOMINIUM MAP 328 PARCEL 154 BOOK 5129 PAGE 121
N/F DMITRY ZHOV, TR MIHANAZ REALTY TRUST 115 IYANNOUGH RD MAP 328 PARCEL 155 BOOK 22371 PAGE 174
N/F JAY H. TRACY WE'RE HERE REALTY TRUST MAP 328 PARCEL 182 BOOK 6793 PAGE 288 138 CEDAR STREET
N/F JAY H TRACY WE'RE HERE REALTY TRUST MAP 328 PARCEL 162 BOOK 6793 PAGE 288 140 CEDAR STREET
N/F WE'RE HERE REALTY TRUST 121 IYANNOUGH RD MAP 328 PARCEL 156-001 BOOK 5661 PAGE 152
#88 1 STORY HYANNIS SELF STORAGE
#114 2 STORY WOOD
#121 1 STORY COMMERCIAL SILL=31.0'
#101 2 STORY WOOD COMMERCIAL SILL=26.4'
#89 3 STORY COMMERCIAL SILL=23.9'
#75 2 STORY WOOD COMMERCIAL SILL=23.9'
#115 2 STORY COMMERCIAL SILL=27.7'
"AUTO BODY"
3 STORY CONDOMINIUM BUILDING
4 STONE RETAINING WALL
5' WOOD PLANTER
BRICK PLANTER
WOOD POSTS
CONC. STEPS
CONC. WALK
CONC. CURB
WHEEL STOPS
FLAGPOLE
LANDSCAPED AREA
GRAVEL DRIVE
BIT DRIVE
BIT BERM
BIT WALK
BIT PARKING LOT
GRAVEL
SWL
WGT
OHW
2.5' CONC. WALL
3' CONC. RET. WALL
2' CONC. BLOCK WALL
6"G PL 2019
6"W AC 1900
4"G 1900
2" PL #60 2019
6"W PL 2019
BOL 4INX3FT
MAD 83
0 20 50 100
SCALE: 1" = 20'

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	61	231
PROJECT FILE NO. 606272			

SEWER PLANS
FORCE MAIN PLANS
SHEET 1 OF 6

606272_UT(SEWER PLANS).DWG Plotted on 24-Nov-2020 5:05 PM

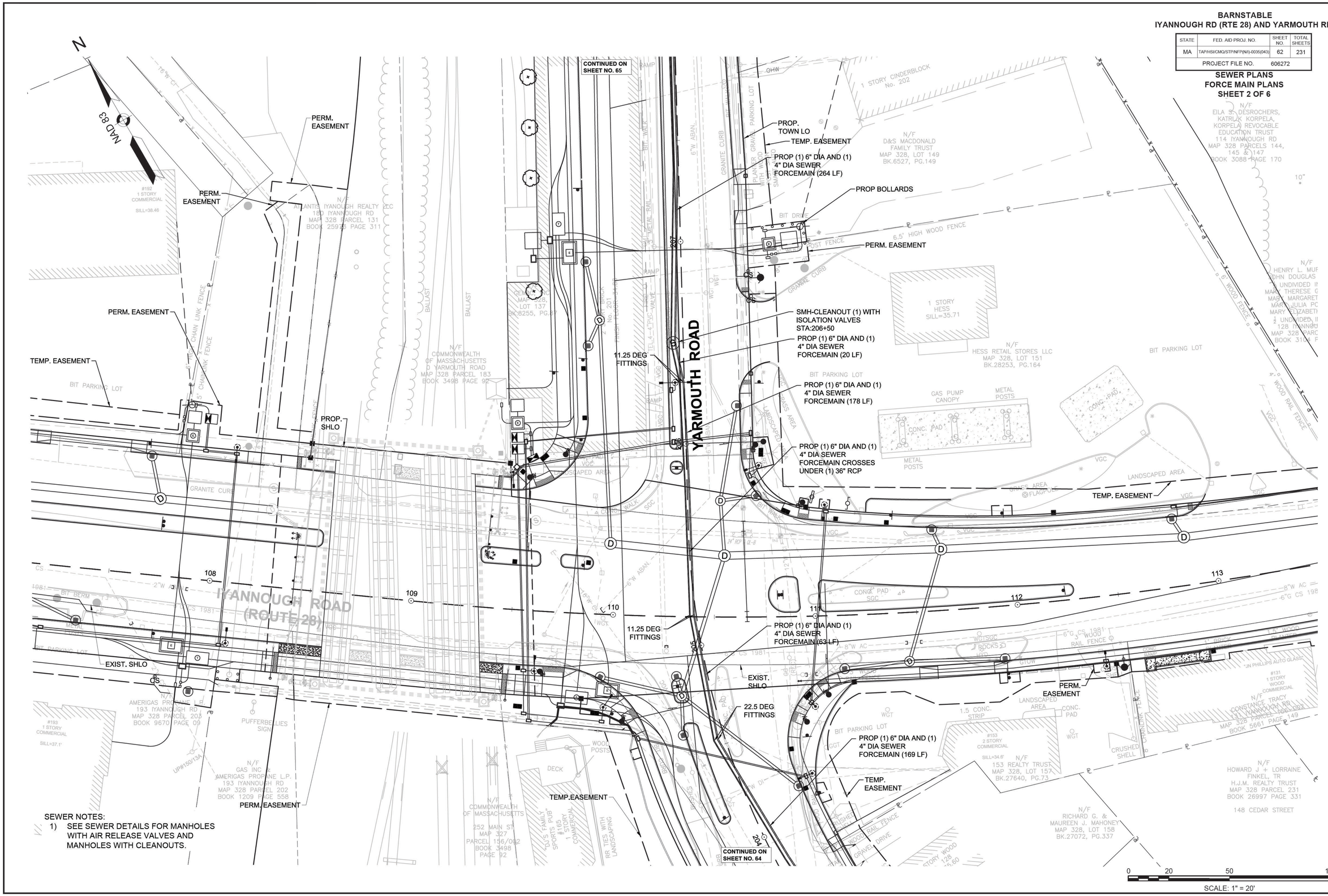
THIS SHEET INTENTIONALLY LEFT BLANK.

THIS SHEET INTENTIONALLY LEFT BLANK.

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(N/I)-0035(043)	62	231
PROJECT FILE NO.	606272		

SEWER PLANS
FORCE MAIN PLANS
SHEET 2 OF 6



SEWER NOTES:
1) SEE SEWER DETAILS FOR MANHOLES WITH AIR RELEASE VALVES AND MANHOLES WITH CLEANOUTS.

606272_UT(SEWER PLANS).DWG Plotted on 12-Apr-2021 10:51 AM

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	63	231
PROJECT FILE NO. 606272			

SEWER PLANS
FORCE MAIN PLANS
SHEET 3 OF 6

606272_UT(SEWER PLANS).DWG Plotted on 24-Nov-2020 4:45 PM

THIS SHEET INTENTIONALLY LEFT BLANK.

THIS SHEET INTENTIONALLY LEFT BLANK.

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(N/I)-0035(043)	64	231
PROJECT FILE NO. 606272			

SEWER PLANS
FORCE MAIN PLANS
SHEET 4 OF 6

606272_UT(SEWER PLANS).DWG Plotted on 24-Nov-2020 5:19 PM

N

NAD 83

CONTINUED ON SHEET NO. 62

TEMP. EASEMENT

TEMP. EASEMENT

PROP (1) 6" DIA AND (1) 4" DIA PVC DR18 SEWER FORCEMAIN (169 LF)

REPLACE 4' DIA SMH WITH A 5' DIA SMH MANHOLE SMH (1) STA:202+83.7

ADJ. SMH

PERM. EASEMENT

PROP. SHLD

TEMP. EASEMENT

EXIST LO

TEMP. EASEMENT

PERM. EASEMENT

EXIST LO

BEGIN PROJECT
STA. 300+00.00 (YARMOUTH RD)
N 2703171.4384
E 990430.6443

BEGIN PROJECT
STA. 201+00.00 (CAMP ST)
N 2703082.3026
E 990577.3043

YARMOUTH ROAD

CAMP STREET

N/F GAS INC & AMERIGAS PROPANE L.P. 193 IYANNOUGH RD MAP 328 PARCEL 202 BOOK 1209 PAGE 558

N/F AMERIGAS PROPANE L.P. 193 IYANNOUGH RD MAP 328 PARCEL 203 BOOK 9570 PAGE 09

N/F GAS INC & AMERIGAS PROPANE L.P. MAP 328 PARCEL 202 BOOK 1209 PAGE 558

IYANNOUGH RD

N/F COMMONWEALTH OF MASSACHUSETTS BK 3182 PG 263

N/F COMMONWEALTH OF MASSACHUSETTS 252 MAIN ST MAP 327 PARCEL 156/002 BOOK 3498 PAGE 92

"LOUIS FAMILY" SPORTS PUB #165 1 STORY COMMERCIAL

1 STORY RAILROAD CARS No. 165

N/F RAILROAD CROSSING, LLC MAP 328, LOT 238 BK.25150, PG.44

HANDICAP RAMP

COVERED PORCH

LANDSCAPING W/RAILROAD TIES

1.5 STORY WOOD No. 88 SILL=38.32

2 STORY WOOD No. 140 SILL=32.30

WOODEN WCR TO SECOND STORY

8' HEDGE

#153 2 STORY COMMERCIAL SILL=34.6'

N/F 153 REALTY TRUST MAP 328, LOT 157 BK.27640, PG.73

HOWARD J + LORRAINE FINKEL, TR H.J.M. REALTY TRUST MAP 328 PARCEL 231 BOOK 26997 PAGE 331

148 CEDAR STREET

N/F RICHARD G. & MAUREEN J. MAHONEY MAP 328, LOT 158 BK.27072, PG.337

2 STORY WOOD No. 128 SILL=35.60

1 STORY WOOD GARAGE SILL=36.5

2 STORY WOOD No. 126 FINISH FLOOR=36.22

N/F ALJ REALTY CORPORATION MAP 328, LOT 159 BK.30109, PG.323

N/F MARGARET E CICCARELLI 1999 TRUST + EUGENE CICCARELLI MAP 328 PARCEL 160 CERT# 212369 116 CAMP STREET

N/F MARGARET E CICCARELLI 1999 TRUST + EUGENE CICCARELLI MAP 328, LOT 160 CERT #212369

N/F 140 YARMOUTH ROAD LIMITED LIABILITY COMPANY MAP 328, LOT 195 BK.20661, PG.278

0 20 50 100

SCALE: 1" = 20'

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	65	231
PROJECT FILE NO. 606272			

SEWER PLANS
FORCE MAIN PLANS
SHEET 5 OF 6

606272_UT(SEWER PLANS).DWG Plotted on 3-Jun-2021 5:50 PM

N

NAD 83

CONTINUED ON SHEET NO. 66

PROP (1) 6" DIA AND (1) 4" DIA PVC DR18 SEWER FORCEMAIN (413 LF)

SANITARY SEWER FORCEMAIN AIR RELEASE STRUCTURE STA:209+13.8 RIM= F.G.

PROP VENT 4" SCH80 PVC RISER.

TEMP. EASEMENT

PROP (1) 6" DIA AND (1) 4" DIA PVC DR18 SEWER FORCEMAIN (264 LF)

PROP. TOWN LO

TEMP. EASEMENT

PROP. RAILROAD SIDELINE

CONTINUED ON SHEET NO. 62

YARMOUTH ROAD

N/F TOWN OF BARNSTABLE MAP 328, LOT 142-2 BK.20708, PG.330

N/F GEMAC, INC. MAP 328, LOT 138 BK.8255, PG.87

N/F COMMONWEALTH OF MASSACHUSETTS 40 YARMOUTH ROAD MAP 328 PARCEL 183 BOOK 3498 PAGE 92

N/F ATLANTIS IYANOUGH REALTY LLC 180 IYANNOUGH RD MAP 328 PARCEL 131 BOOK 25973 PAGE 311

N/F GEMAC, INC. MAP 328, LOT 137 BK.8255, PG.87

N/F SUNRISE NOMINEE TRUST MAP 328, LOT 148 PROBATE 99P1184EP BOOK 27837 PAGE 158

N/F EILA S. DESROCHERS, KATRI K) KORPELA KORPELA REVOCABLE EDUCATION TRUST 114 IYANNOUGH RD MAP 328 PARCELS 144, 145 & 147 BOOK 3088 PAGE 170

N/F D&S MACDONALD FAMILY TRUST

0 20 50 100

SCALE: 1" = 20'

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	66	231
PROJECT FILE NO. 606272			

SEWER PLANS
FORCE MAIN PLANS
SHEET 6 OF 6

606272_UT(SEWER PLANS).DWG Plotted on 3-Jun-2021 5:54 PM

FORCEMAIN PLUGS AND CAPS (START OF PROP FORCEMAINS)

END PROJECT
STA. 214+45.00 (YARMOUTH ROAD)
N 2704305.9254
E 990997.9508

YARMOUTH ROAD

OLD YARMOUTH RD

11.25 DEG FITTINGS

PROP (1) 6" DIA AND (1) 4" DIA PVC DR18 SEWER FORCEMAIN (83 LF)

PROP (1) 6" DIA AND (1) 4" DIA PVC DR18 SEWER FORCEMAIN (44 LF)

22.5 DEG FITTINGS

PROP (1) 6" DIA AND (1) 4" DIA SEWER FORCEMAIN CROSSES UNDER (1) 12" DRAINAGE PIPE AND ELECTRIC TRENCH

PROP COMPOST FILTER TUBES

PROP (1) 6" DIA AND (1) 4" DIA PVC DR18 SEWER FORCEMAIN (413 LF)

PROP. TOWN LAYOUT

214
213
212
211

1 STORY CONC. BLOCK
No. 279
SILL=33.64
FF BASEMENT=22.43

N/F
JOHN R + JAMES FRANCIS
ROBICHAUD
MAP 328, LOT 139
BK.21662, PG.298

N/F
COMMONWEALTH
OF MASSACHUSETTS
0 YARMOUTH ROAD
MAP 328 PARCEL 182
BOOK 3498 PAGE 92

N/F
TOWN OF
BARNSTABLE
MAP 328, LOT 229
BK.17454, PG.73

N/F
TOWN OF
BARNSTABLE
MAP 328, LOT 142-1
BK.20708, PG.330

N/F
TOWN OF
BARNSTABLE
MAP 328, LOT 142-1
BK.19847, PG.223

CONTINUED ON SHEET NO. 65

WF#WF-13
WF#WF-12
WF#WF-11
WF#WF-10
WF#WF-9

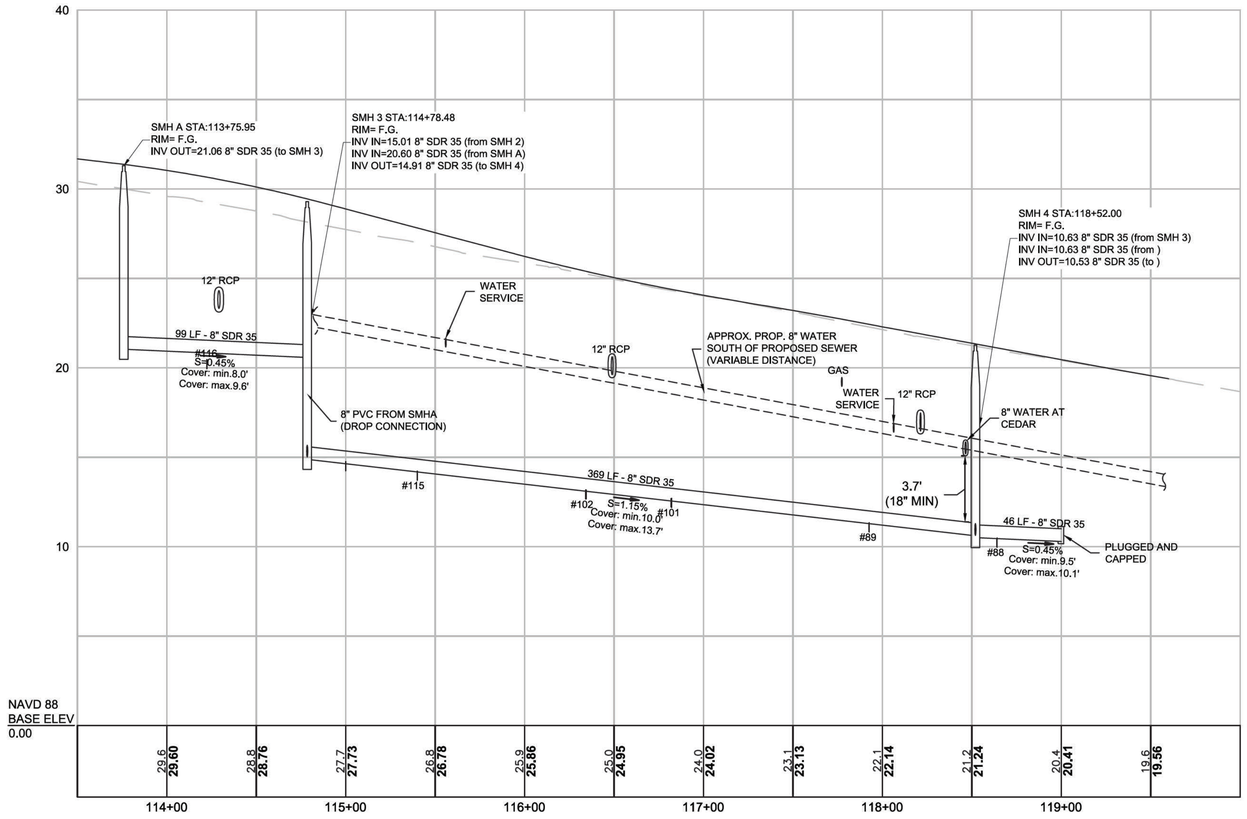
0 20 50 100
SCALE: 1" = 20'

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

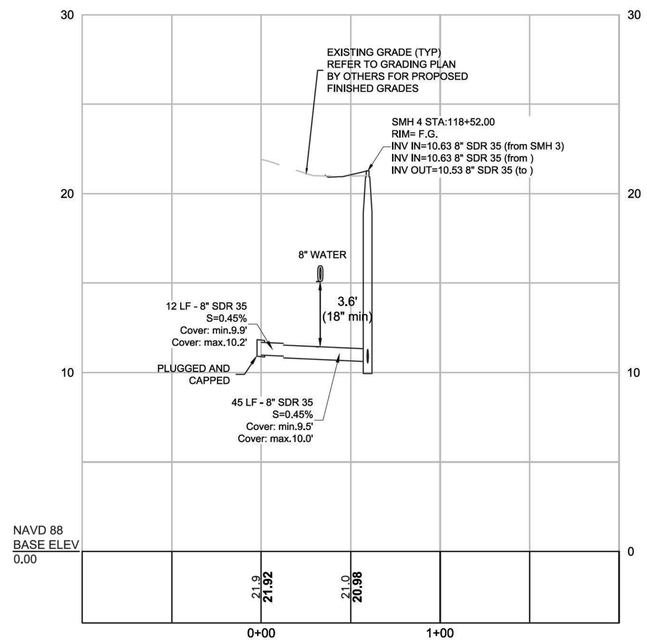
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	67	231
PROJECT FILE NO.	606272		

SEWER PROFILES
GRAVITY PROFILE
SHEET 1 OF 1

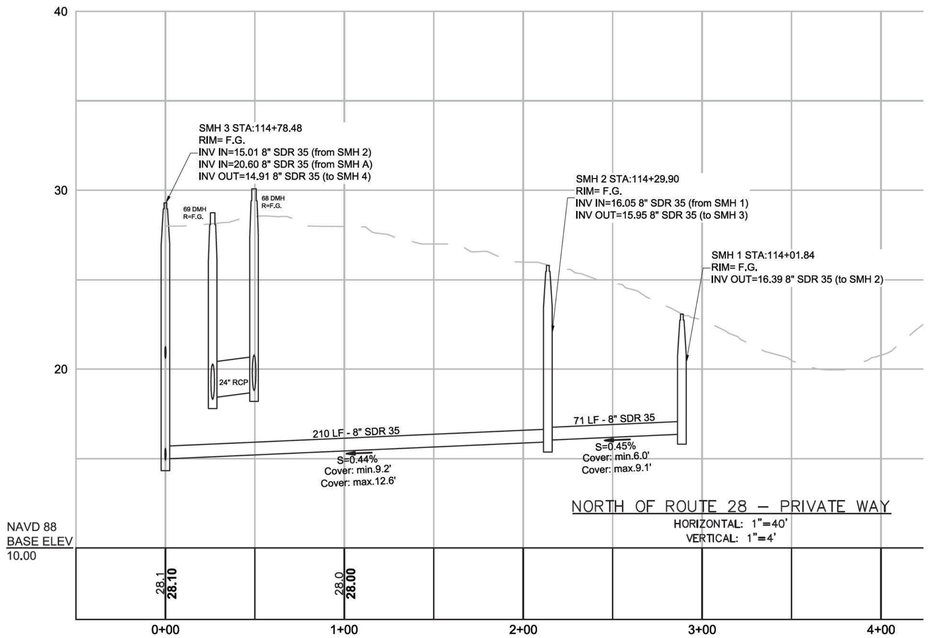
606272_UTIGRAVITY SEWER PLANS).DWG Plotted on 25-Nov-2020 1:11 PM



ROUTE 28
HORIZONTAL: 1"=40'
VERTICAL: 1"=4'



CEDAR STREET TO ROUTE 28
HORIZONTAL: 1"=40'
VERTICAL: 1"=4'



NORTH OF ROUTE 28 – PRIVATE WAY
HORIZONTAL: 1"=40'
VERTICAL: 1"=4'

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	68	231
PROJECT FILE NO.	606272		

SEWER PLANS
FORCE MAIN PROFILES
ROUTE 28
SHEET 1 OF 4

606272_UT(SEWER PROFILE).DWG Plotted on 25-Nov-2020 1:53 PM

THIS SHEET INTENTIONALLY LEFT BLANK.

THIS SHEET INTENTIONALLY LEFT BLANK.

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	69	231
PROJECT FILE NO.	606272		

SEWER PLANS
FORCE MAIN PROFILES
ROUTE 28
SHEET 2 OF 4

606272_LIT(SEWER PROFILE).DWG Plotted on 25-Nov-2020 2:00 PM

THIS SHEET INTENTIONALLY LEFT BLANK.

THIS SHEET INTENTIONALLY LEFT BLANK.

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	70	231
PROJECT FILE NO. 606272			

SEWER PLANS
FORCE MAIN PROFILES
ROUTE 28
SHEET 3 OF 4

606272_LIT(SEWER PROFILE).DWG Plotted on 25-Nov-2020 2:02 PM

THIS SHEET INTENTIONALLY LEFT BLANK.

THIS SHEET INTENTIONALLY LEFT BLANK.

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	71	231
PROJECT FILE NO. 606272			

SEWER PLANS
FORCE MAIN PROFILES
ROUTE 28
SHEET 4 OF 4

606272_LIT(SEWER PROFILE).DWG Plotted on 25-Nov-2020 2:10 PM

THIS SHEET INTENTIONALLY LEFT BLANK.

THIS SHEET INTENTIONALLY LEFT BLANK.

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	72	231
PROJECT FILE NO. 606272			

SEWER PLANS
FORCE MAIN PROFILES
YARMOUTH ROAD
SHEET 1 OF 3

606272_UT(SEWER PROFILE).DWG Plotted on 25-Nov-2020 10:00 AM

NORMAL CROWN | 202+25 | SUPERELEVATION TRANSITION | 203+00 | 2% SUPERELEVATION

GLIDE SLOPE RESTRICTION (SURFACE RW15-AC5300-ROW12-OEI)

BEGIN PROJECT
STA. 201+00.00 (CAMP STREET)
N 2703082.0388
E 990576.0793

MILL AND OVERLAY
HSD >1000'

LIMIT OF FULL DEPTH CONSTRUCTION
STA. 202+00.00

LOW POINT ELEV = 31.73
LOW POINT STA = 201+00
PVI STA = 201+60.00
PVI ELEV = 32.34
A.D. = 0.98%
K = 122.70
120' VC

HIGH POINT ELEV = 35.08
HIGH POINT STA = 203+59.10
PVI STA = 203+10.00
PVI ELEV = 35.34
A.D: = -2.41%
K = 62.11
150' VC
521.9' SSD

CONTINUED ON SHEET NO. 73

STA 204+90.69
CONTROLLED BY ROUTE 28 PROFILE

PVC: 201+00
ELEV: 31.73

PVT: 202+20
ELEV: 33.54

PVC: 202+35
ELEV: 33.84

PVT: 203+85
ELEV: 35.03

REPLACE 4' DIA SMH WITH A 5' DIA SMH MANHOLE
SMH (1) STA:202+83.7
RIM= F.G.
Ex. INV(in)=22.79
Ex. INV(out)=22.69

SILL OF 2 STORY WOOD
EL. = 32.3 #140

1.02%

2.00%

FINISH FLOOR OF 2 STORY WOOD
EL. = 36.2 #126

SILL OF 2 STORY WOOD
EL. = 35.6 #128

PROP. ROADWAY
EXIST. ROADWAY
℄ ROUTE 28
GRADE BREAK STA = 204+87.00
ELEV = 34.60
-0.42%
0.93%
0.75%

CBCI-100
R=34.38

30 CBCI
R=35.00

12" RCP

6" G
4" G (TP-3)
6" W (TP-4)
12" W
6" G
4" G
24" D
1" W
6" W
10" D
2" W

CAMP STREET
YARMOUTH ROAD

EX. 8" PVC
INV IN=22.69
INV IN=23.0

PROP (1) 6" DIA and (1) 4" DIA PVC
DR 18 FORCE MAINS W/
CONTINUOUS SLOPE (0.5% MIN.)

NAVD 88
BASE ELEV
15.00

30.8	31.2	31.7 **31.73**	32.2 **32.34**	33.0 **33.16**	33.7 **34.12**	34.2 **34.80**	34.2 **35.08**	34.2 **34.97**	35.0 **34.76**	34.9 **34.72**	34.8 **35.03**

199+50 200+00 201+00 202+00 203+00 204+00 205+00 205+50

BENCHMARK 5
RIGHT OUTSIDE CORNER
TOP FOUNDATION
HOUSE # 126
Elevation = 35.53'
Sta. 202+08.14, 33.99RT

STA 202+75.12 YARMOUTH/CAMP ℄ =
STA 301+60.70 YARMOUTH RD. ℄
(At the bend of Yarmouth Road)

STA 205+14.55 YARMOUTH/CAMP ℄ =
STA 110+40.12 ROUTE 28 ℄

HOR. SCALE IN FEET
20 0 20 40
4 0 4 8
VER. SCALE IN FEET

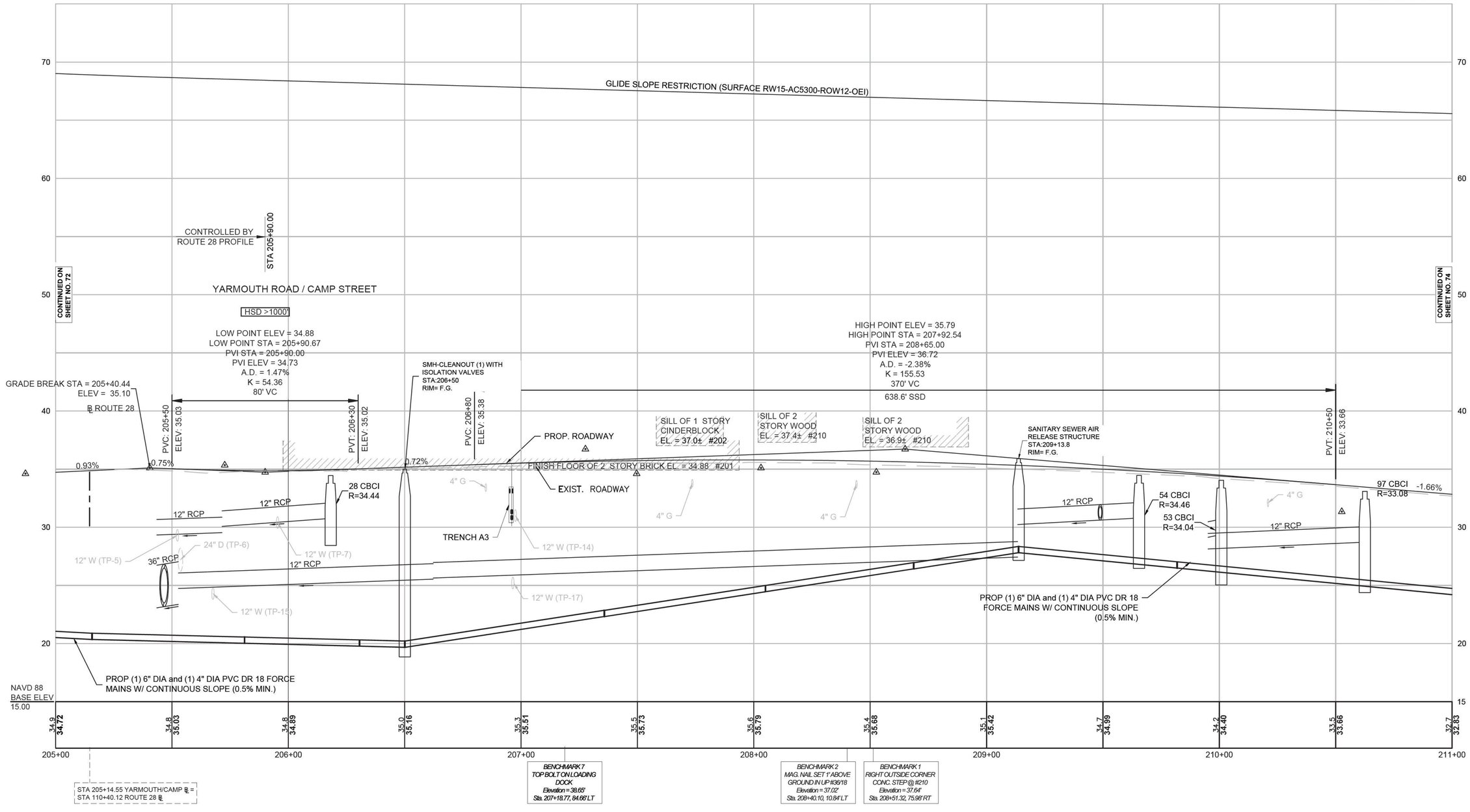
FOR CONSTRUCTION PLAN:
SEE SHEET NO. 18, 20

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	73	231
PROJECT FILE NO.	606272		

SEWER PLANS
FORCE MAIN PROFILES
YARMOUTH ROAD
SHEET 2 OF 3

606272_UT(SEWER PROFILE).DWG Plotted on 25-Nov-2020 2:28 PM



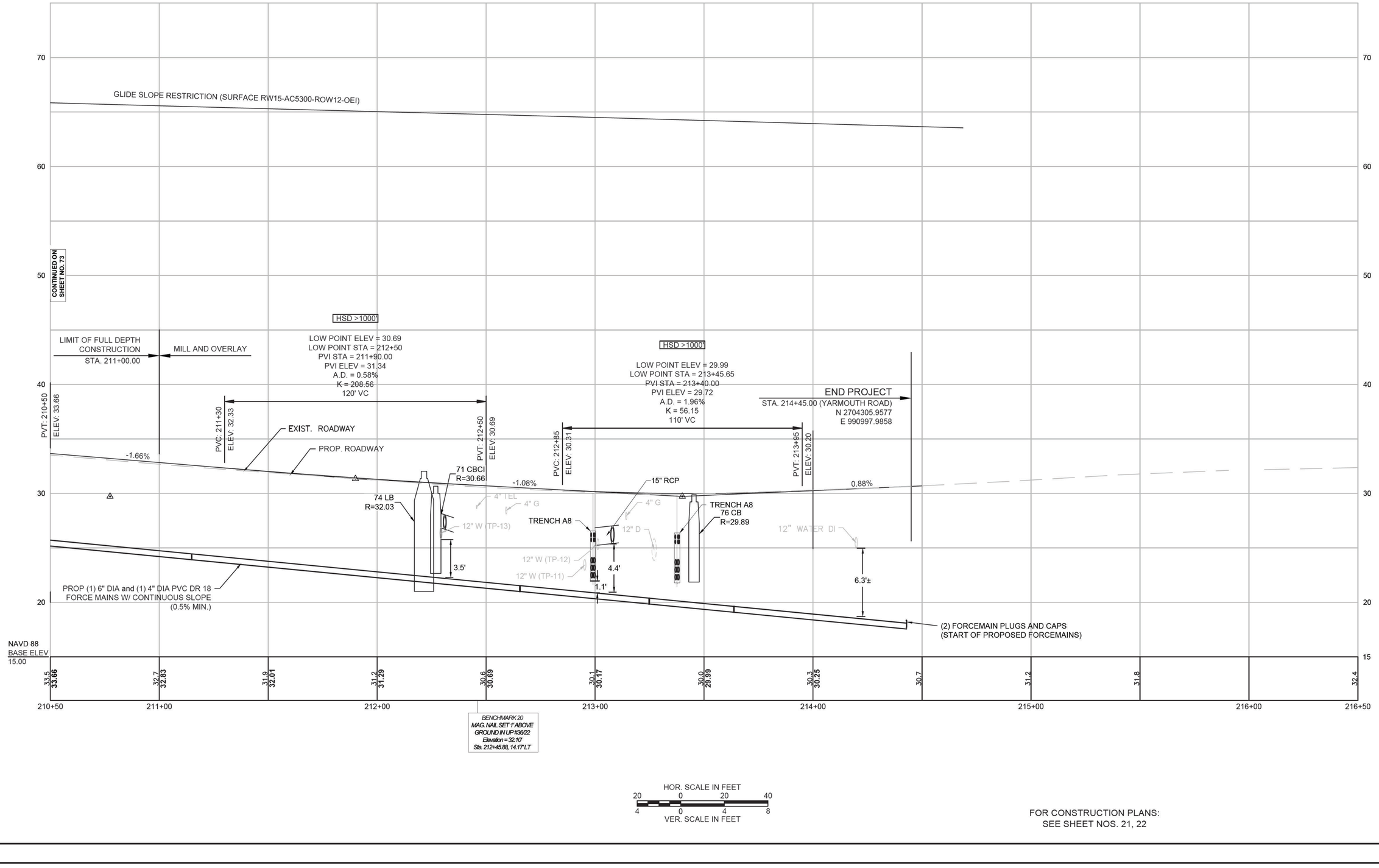
FOR CONSTRUCTION PLANS:
SEE SHEET NOS. 18, 21

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	74	231
PROJECT FILE NO. 606272			

SEWER PLANS
FORCE MAIN PROFILES
YARMOUTH ROAD
SHEET 3 OF 3

606272_UT(SEWER PROFILE).DWG Plotted on 25-Nov-2020 2:30 PM



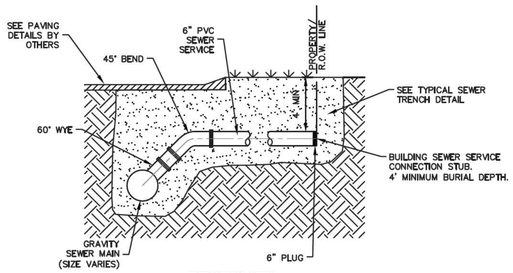
FOR CONSTRUCTION PLANS:
SEE SHEET NOS. 21, 22

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

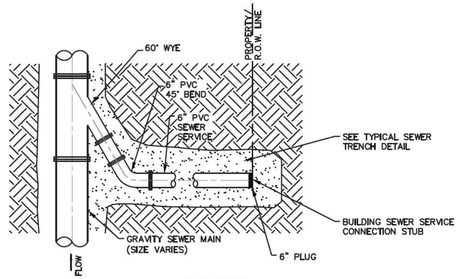
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	75	231
PROJECT FILE NO.	606272		

SEWER DETAILS
GRAVITY DETAILS
SHEET 1 OF 1

606272_UTIGRAVITY SEWER PLANS).DWG Plotted on 25-Nov-2020 1:30 PM

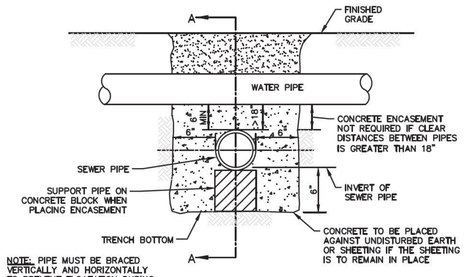


ELEVATION VIEW

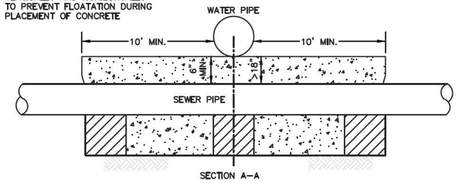


PLAN VIEW

NOTES:
1. ALL LATERAL PIPING, BENDS, ETC. SHALL BE 6" SDR-35 PVC WITH MINIMUM DEPTH OF BURIAL SHALL BE 48".
2. PROVIDE GREEN SEWER MARKING TAPE 18" ABOVE SEWER PIPE.
3. PIPE BEDDING SHALL BE 3/4" TO 1-1/2" CRUSHED STONE. REFER TO TYPICAL SEWER TRENCH DETAIL.



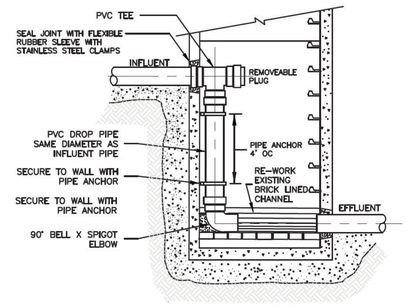
NOTE: PIPE MUST BE BRACED VERTICALLY AND HORIZONTALLY TO PREVENT FLOATATION DURING PLACEMENT OF CONCRETE

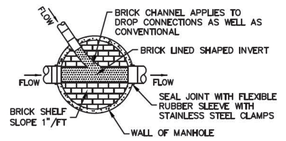


SECTION A–A

NOTE: A MINIMUM 10' HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN WATER AND SEWER PIPES. WHERE WATER PIPES CROSS SEWER PIPES, THE SEWER PIPE SHALL BE LOCATED WITH A MINIMUM VERTICAL CLEARANCE OF 18" BELOW THE WATER PIPE. THE SEWER PIPE JOINTS SHALL BE LOCATED AS FAR AWAY FROM THE UTILITY PIPE AS POSSIBLE. WHEN THE SEWER PIPE CANNOT MEET THE REQUIREMENT, THE SEWER PIPE SHALL BE ENCASED IN 6" OF CONCRETE FOR 10' ON EITHER SIDE OF THE CROSSING, OR BY OTHER MEANS IF APPROVED BY THE ENGINEER/TOWN.

CONCRETE ENCASEMENT AT UTILITY CROSSING DETAIL
(NOT TO SCALE)

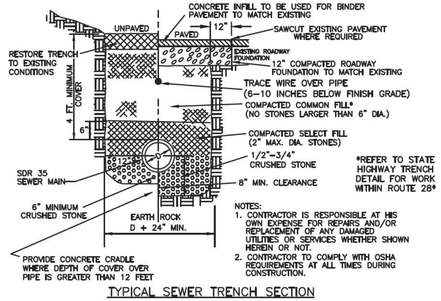




SEWER MANHOLE BRICK CHANNEL DETAIL
(NOT TO SCALE)

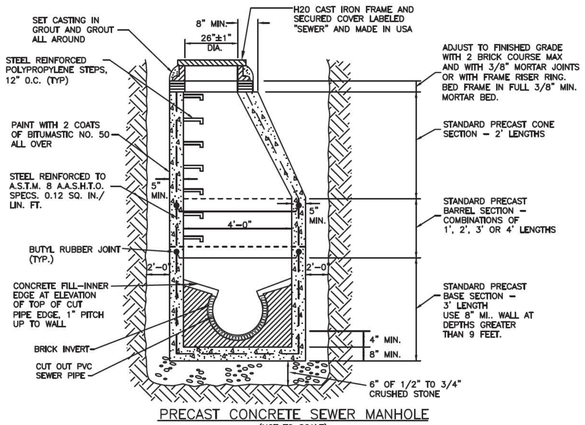
SEWER CONSTRUCTION NOTES:

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL EXISTING CONDITIONS PRIOR TO THE START OF WORK. THE EXISTING INFORMATION IS NOT GUARANTEED TO BE CORRECT, AND THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF OMITTED OR INACCURATE INFORMATION.
2. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH MASSACHUSETTS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, AS CURRENTLY AMENDED, UNLESS OTHERWISE NOTED. IF THERE ARE CONFLICTS IN ANY OF THE SPECIFICATIONS OR PROJECT DOCUMENTS, THE HIGHER STANDARD SHALL APPLY. ALL WORK UNDER THESE DOCUMENTS SHALL ALSO CONFORM TO ALL CODES AND STANDARDS, AS CURRENTLY AMENDED, WHICH ARE APPLICABLE TO THIS PROJECT. ALL WORK SHALL FURTHER CONFORM TO SPECIFIC REQUIREMENTS, SPECIFICATIONS, ORDINANCES AND INTERPRETATIONS OF LOCAL AUTHORITIES HAVE JURISDICTION OVER THE PROJECT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL QUANTITY ESTIMATES AND VERIFYING, TO HIS OWN SATISFACTION, THAT ALL QUANTITIES ARE ACCURATE FOR ALL CONSTRUCTION MATERIALS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THAT THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS DO NOT CONFLICT WITH ANY KNOWN EXISTING INFORMATION OR OTHER PROPOSED IMPROVEMENTS. IF ANY CONFLICTS ARE DISCOVERED, THE CONTRACTOR MUST NOTIFY THE ENGINEER IMMEDIATELY UPON DISCOVERY AND AT LEAST 72 HOURS PRIOR TO INSTALLATION OF ANY PORTION OF THE AFFECTED WORK.
5. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED, WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
6. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY DIGSAFE, THE TOWN OF BARNSTABLE DPW, AND ALL UTILITY COMPANIES A MINIMUM OF 72 HOURS (EXCLUDING SATURDAYS, SUNDAYS AND HOLIDAYS) PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES FOR LOCATION OF ALL UNDERGROUND UTILITIES AND UTILITY COMPANY AND DPW APPROVALS.
7. RIM ELEVATIONS ARE APPROXIMATE. FINAL RIM ELEVATIONS ARE TO BE SET FLUSH AND CONSISTENT WITH GRADING PLANS.
8. PIPE SLOPES ARE APPROXIMATE. CONTRACTOR TO HOLD INVERTS FOR CONSTRUCTION.
9. ANY CHANGES TO THIS PLAN MUST BE APPROVED IN WRITING BY THE ENGINEER. ELEVATION INFORMATION MUST NOT BE CHANGED WITHOUT WRITTEN PRIOR APPROVAL BY THE ENGINEER.
10. ALL PIPE MATERIAL SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. TESTING OF ALL LINES SHALL BE PERFORMED PER APPLICABLE CODES AND RESULTS PROVIDED TO THE ENGINEER/OWNERS.
11. THE CONTRACTOR SHALL BE RESPONSIBLE TO NOTIFY THE INSPECTOR/RESIDENT PROJECT REPRESENTATIVE, AT LEAST 48 HOURS IN ADVANCE OF AN INSPECTION.
12. THE CONTRACTOR SHALL CONTACT THE TOWN OF BARNSTABLE DPW TO SCHEDULE A PRE-CONSTRUCTION MEETING AT LEAST TWO (2) WEEKS PRIOR TO COMMENCING CONSTRUCTION.
13. THE CONTRACTOR SHALL MAKE SUBMITTALS TO THE TOWN OF BARNSTABLE DPW FOR APPROVAL BEFORE ANY FABRICATION OR DELIVERY OF PRODUCTS OR MATERIALS.
14. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE REPLACED IN KINDS. SURFACES NOT OTHERWISE TREATED SHALL BE STABILIZED AS LAWNS. ALL LAWN AREAS SHALL HAVE A MODIFIED LOAM BORROW PLACED, SEEDED, FERTILIZED, LIMED AND MULCHED UNTIL GRASS STAND IS ESTABLISHED AND SURFACE IS STABILIZED. THE MODIFIED LOAM BORROW SHALL HAVE A MINIMUM DEPTH OF 6" AND SHALL BE PLACED FLUSH WITH THE TOP OF ADJACENT CURB, EDGING, OR OTHER SURFACE.
15. 12" MINIMUM VERTICAL CLEARANCE SHALL BE MAINTAINED BETWEEN ALL UTILITY CROSSINGS, EXCEPT AS OTHERWISE NOTED. IF THIS CANNOT BE ACCOMPLISHED, CONTACT THE ENGINEER TO REVIEW.
16. A MINIMUM 10' HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN WATER AND SEWER PIPES. WHERE WATER PIPES CROSS SEWER PIPES, THE SEWER PIPE SHALL BE INSTALLED WITH A MINIMUM VERTICAL CLEARANCE OF 18" BELOW THE WATER PIPE. THE SEWER PIPE JOINTS SHALL BE LOCATED EQUIDISTANT AND AS FAR AWAY FROM THE WATER PIPE AS POSSIBLE. WHEN IT IS IMPOSSIBLE TO ACHIEVE HORIZONTAL AND/OR VERTICAL SEPARATION AS STIPULATED ABOVE, THE SEWER PIPE AT THE CROSSING LOCATION SHALL BE CONSTRUCTED USING ONE FULL 20' PIPE LENGTH CENTERED ON THE CROSSING TO PROVIDE 10 FEET DISTANCE FROM THE JOINTS TO THE WATER PIPE. THE SEWER PIPES SHALL THEN BE ENCASED AS SHOWN IN THE "CONCRETE ENCASEMENT AT UTILITY CROSSING DETAIL" FOR 10 FEET EITHER SIDE OF THE CROSSING. THE JOINTS SHALL BE LOCATED AS FAR AWAY FROM THE CROSSING AS POSSIBLE. THE SEWER PIPE SHALL BE PRESSURE TESTED TO ENSURE IT IS WATERTIGHT.
17. ALL GRAVITY SEWERS SHALL BE SDR-35 PVC. MINIMUM SLOPES SHALL BE PER TR-16. IF LESS THAN 4' OF COVER IS PROVIDED OVER A GRAVITY SEWER, THE SEWER LINE SHALL BE INSULATED AGAINST FREEZING.
18. ALL FORCE MAINS SHALL BE PVC AWWA C-900 PVC DR 18. MINIMUM SLOPES SHALL BE 0.5%.
19. FORCE MAIN INSTALLATION REQUIRES THRUST BLOCKS TO BE INSTALLED AT ALL BENDS, ENDS OF LINE, VALVES OR OTHER THRUST POINTS. CONCRETE THRUST BLOCKS AS REQUIRED, CONCRETE SHALL BE 1 PART CEMENT TO 2 PARTS SAND AND 4 PARTS COARSE AGGREGATE. CONCRETE CLASS "C" WITH A 28 DAY COMPRESSION STRENGTH OF 2000 PSI MINIMUM AGGREGATE SIZE OF 1-1/2". THRUST BLOCKS SIZED PER SPECIFICATIONS. ALTERNATELY PRECAST THRUST BLOCKS TO DIVISION SPECIFICATIONS MAY BE UTILIZED.
20. BUILDING SEWER CONNECTION SHALL BE PROVIDED FOR EACH ADJACENT LOT AS SHOWN ON THE PLANS. EACH BUILDING SEWER CONNECTION SHALL BE 6" SDR-35 PVC AND SHALL BE INSTALLED WITH A MINIMUM SLOPE OF 1.5%. THE BUILDING SEWER CONNECTION SHALL BE INSTALLED TO THE RIGHT-OF-WAY LINE AND SHALL BE PLUGGED. MINIMUM BURIAL DEPTH OF 4 FEET SHALL BE MAINTAINED OVER THE BUILDING SEWER. DEPTH OF SEWER CONNECTION SHALL BE ADJUSTED AS NECESSARY TO AVOID CONFLICTS WITH AND PROVIDED NECESSARY SEPARATION FROM ADJACENT UTILITIES. CHIMNEYS SHALL BE INSTALLED WHEN THE SEWER MAIN IS GREATER THAN OR EQUAL TO 12 FEET DEEP OR WHEN THE DROP BETWEEN THE BUILDING CONNECTION AND THE MAIN IS GREATER THAN OR EQUAL TO 3 FEET. ACCURATE AS-BUILT RECORDS OF THE LOCATION OF ALL STUBS, CHIMNEYS, SEWER CONNECTION, BENDS, ETC. SHALL BE RECORDED AND PROVIDED TO THE TOWN OF BARNSTABLE DPW.
21. ALL UTILITY CROSSINGS MUST BE SUPPORTED.
22. UNLESS OTHERWISE INDICATED, CONCRETE USED FOR PIPE ANCHOR BLOCKS, CROSSING ENCASEMENTS, ETC. SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS.

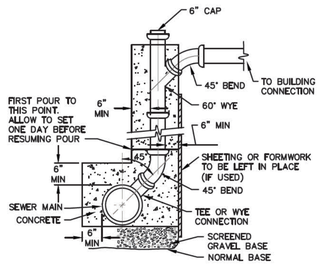


NOTES:
1. CONTRACTOR IS RESPONSIBLE AT HIS OWN EXPENSE FOR REPAIRS AND/OR REPLACEMENT OF ANY DAMAGED UTILITIES OR SERVICES WHETHER SHOWN HEREIN OR NOT.
2. CONTRACTOR TO COMPLY WITH OSHA REQUIREMENTS AT ALL TIMES DURING CONSTRUCTION.

TYPICAL SEWER TRENCH SECTION
(NOT TO SCALE)

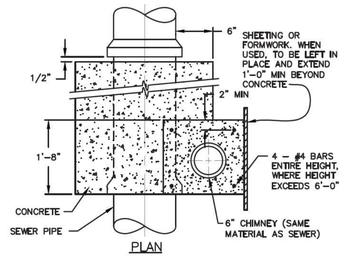


PRECAST CONCRETE SEWER MANHOLE
(NOT TO SCALE)



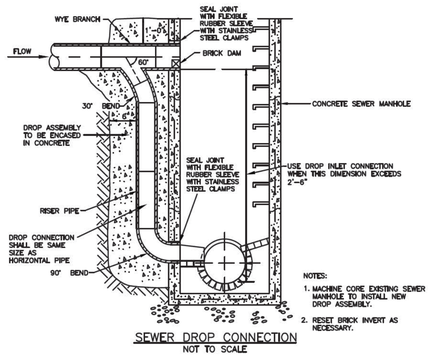
SECTION

CHIMNEY DETAIL
NOT TO SCALE



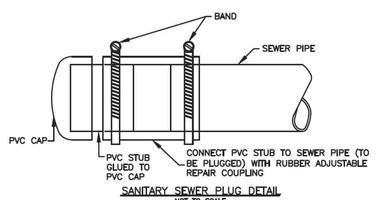
PLAN

NOTES:
1. ALL CHIMNEY PIPING SHALL BE 6" SDR-35 PVC.
2. CHIMNEYS SHALL BE INSTALLED WHEN THE SEWER MAIN IS GREATER THAN OR EQUAL TO 12 FEET DEEP OR WHEN THE DROP BETWEEN THE BUILDING CONNECTION AND THE MAIN IS GREATER THAN OR EQUAL TO 3 FEET.
3. PROVIDE H20 RATED ROADWAY BOX WITH COVER LABELED "SEWER" TO FINISHED GRADE TO ALLOW ACCESS TO CHIMNEY PLUG.

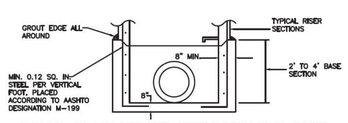


NOTES:
1. MACHINE CORE EXISTING SEWER MANHOLE TO INSTALL NEW DROP ASSEMBLY.
2. RESET BRICK INVERT AS NECESSARY.

SEWER DROP CONNECTION
NOT TO SCALE



SANITARY SEWER PLUG DETAIL
NOT TO SCALE



BASE DETAIL FOR MANHOLE GREATER THAN 9' IN DEPTH
NOT TO SCALE

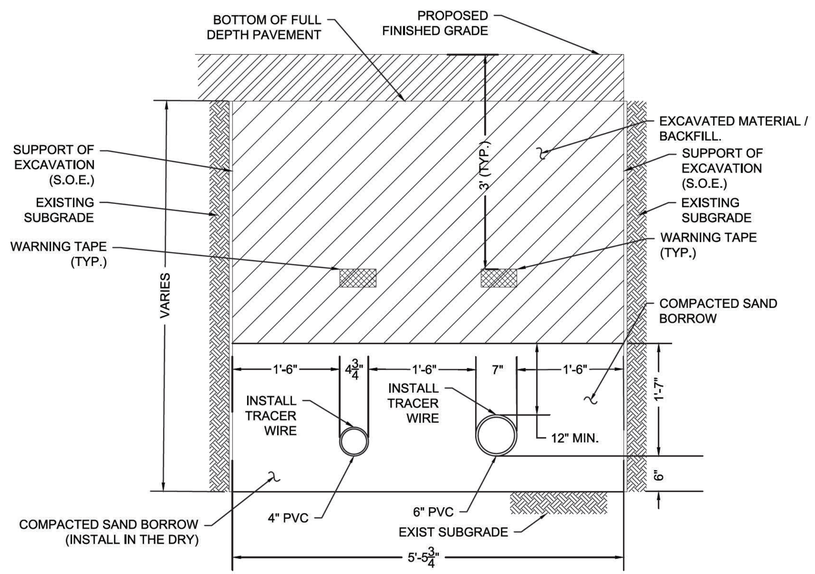
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	76	231
PROJECT FILE NO. 606272			

SEWER DETAILS
FORCE MAIN DETAILS
SHEET 1 OF 2

606272_UT(SEWER FORCE MAIN DETAILS).DWG Plotted on 24-Nov-2020 9:48 PM

SEWER FORCE MAIN TABLE		
	4 INCH SEWER FORCE MAIN	6 INCH SEWER FORCE MAIN
PIPE MATERIAL	PVC	PVC
NOMINAL DIAMETER (INCHES)	4	6
DIMENSION RATIO	DR 18	DR 18
OUTSIDE DIAMETER (IN)	4.80	6.90
INSIDE DIAMETER (IN)	4.23	6.09

SEWER FORCE MAIN TABLES



NOTES:

1. EXCAVATED MATERIAL FROM THE BOTTOM OF ROADWAY EXCAVATION (BOTTOM OF FULL DEPTH PAVEMENT) TO THE BOTTOM OF TRENCH, LESS THAN 5 FEET IS PAID FOR BY CLASS B TRENCH EXCAVATION.

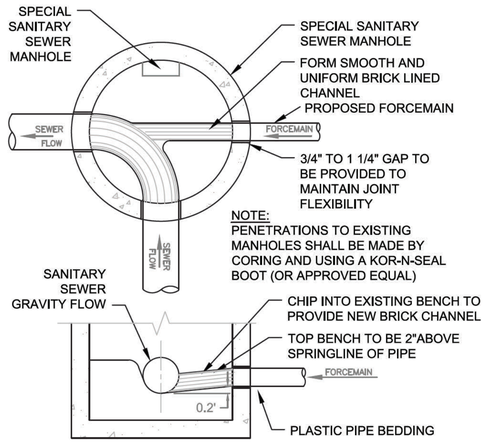
SEWER FORCEMAIN TRENCH FOR 4" AND 6" PVC
YARMOUTH ROAD

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	77	231
PROJECT FILE NO.	606272		

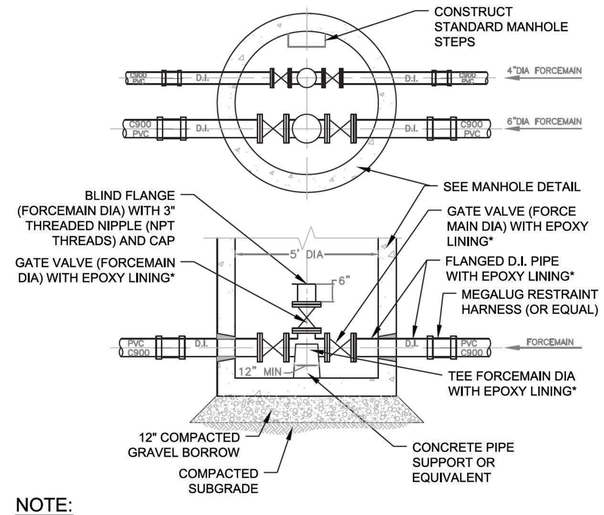
SEWER DETAILS
FORCE MAIN DETAILS
SHEET 2 OF 2

606272_UT\SEWER FORCE MAIN DETAILS).DWG Plotted on 24-Nov-2020 9:54 PM



SPECIAL SANITARY SEWER MANHOLE (FORCEMAIN DISCHARGE TO GRAVITY SEWER)

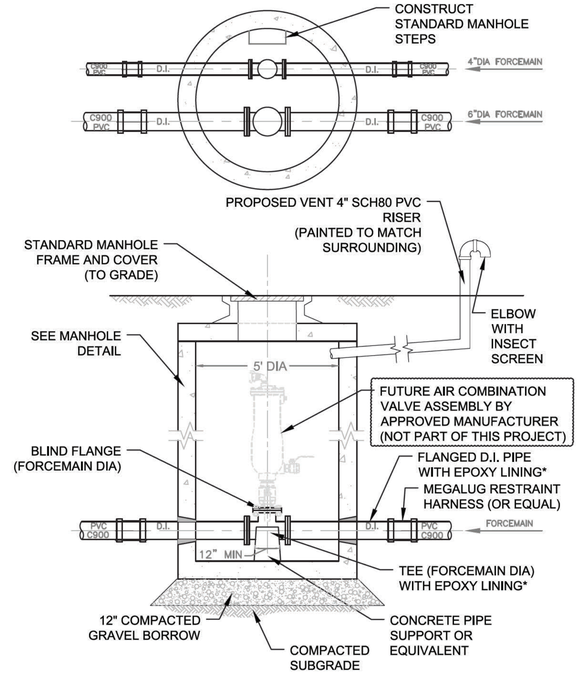
(N.T.S.)



NOTE:
1. ALL MANHOLE MATERIALS TO BE SHOWN ON TYPICAL PRECAST MANHOLE DETAIL
2. FOR DUAL FORCEMAINS, PROVIDE SEPERATE CLEANOUTS IN THE SAME MANHOLE. NO INTERCONNECTION OF DUAL FORCEMAIN PIPING WILL BE ALLOWED
3. EPOXY LINING* =PROTECTO 401 CERAMIC EPOXY LINING BY USPIPE (OR APPROVED EQUAL)

SANITARY SEWER FORCEMAIN CLEANOUT

(N.T.S.)



NOTE:
1. ALL MANHOLE MATERIALS TO BE SHOWN ON TYPICAL PRECAST MANHOLE DETAIL
2. FOR DUAL FORCEMAINS, PROVIDE AIR VALVES IN THE SAME MANHOLE. NO INTERCONNECTION OF DUAL FORCEMAIN PIPING WILL BE ALLOWED
3. EPOXY LINING* =PROTECTO 401 CERAMIC EPOXY LINING BY USPIPE (OR APPROVED EQUAL)
4. AIR COMBINATION VALVE WILL BE INSTALL IN THE FUTURE AND IS NOT PART OF THIS CONTRACT.

SANITARY SEWER AIR RELEASE STRUCTURE

(N.T.S.)

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

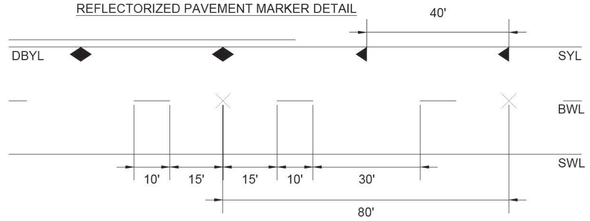
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	78	231
PROJECT FILE NO.	606272		

PAVEMENT MARKING & SIGNING PLANS
SHEET 1 OF 9

606272_HD09(PVMTMARKINGS).DWG Plotted on 9-Apr-2021 2:44 PM

N

REFLECTORIZED PAVEMENT MARKER DETAIL



REFLECTORIZED MARKERS SLOTTED IN PAVEMENT:

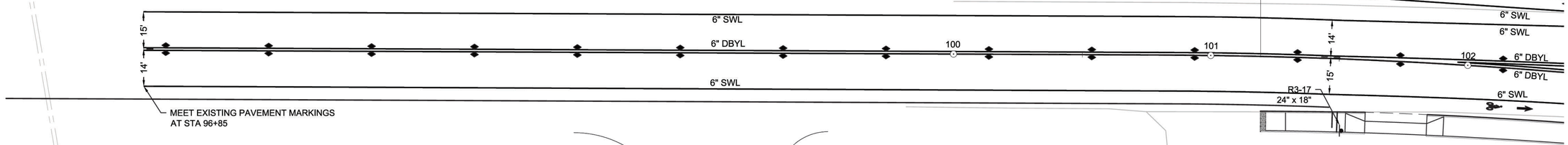
- ONE-WAY WHITE
- ONE-WAY YELLOW
- TWO-WAY YELLOW/YELLOW

(2) 8-5/8" PTC STEEL E OL--B
TO NANTUCKET

BIT BERM

BIT PARKING LOT

R3-17
24" x 18"
R3-17bP
24" x 8"



BIT PARKING LOT

CONTINUED ON SHEET NO. 79

NOTES:

1. ALL EXISTING SIGNS AND SIGN SUPPORTS WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND STACKED UNLESS OTHERWISE NOTED.
2. MATCH EXISTING PAVEMENT MARKINGS WITH NEW MARKINGS (DBYL, SWL, ETC) WHERE NECESSARY, OR AS DIRECTED BY THE ENGINEER.
3. PAVEMENT MARKINGS ACROSS THE RAILROAD GRADE CROSSING CONCRETE PANELS SHALL BE PREFORMED (ITEMS 864.061 AND 864.062).

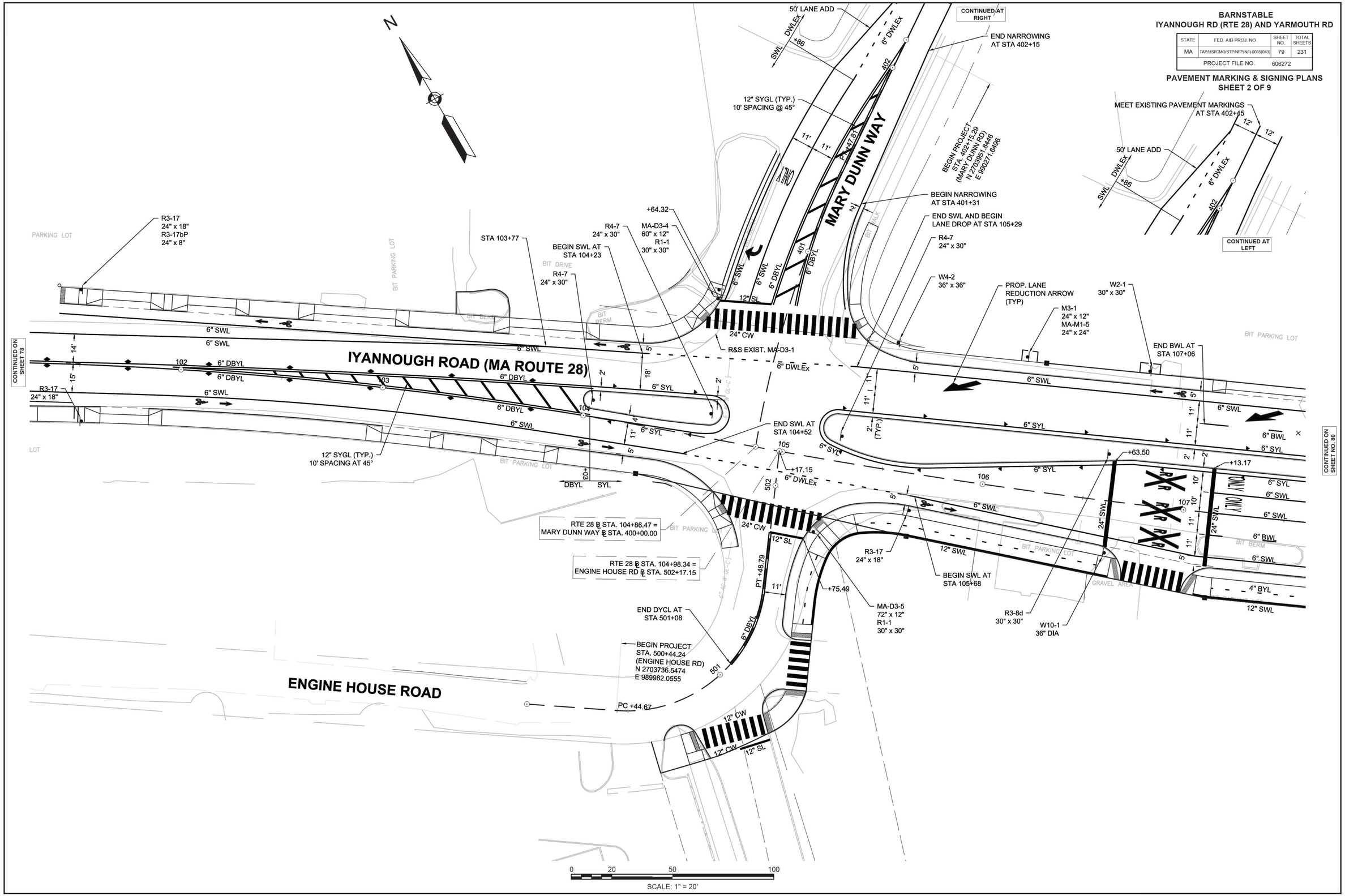
0 20 50 100

SCALE: 1" = 20'

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(N/I)-0035(043)	79	231
PROJECT FILE NO.	606272		

PAVEMENT MARKING & SIGNING PLANS
SHEET 2 OF 9



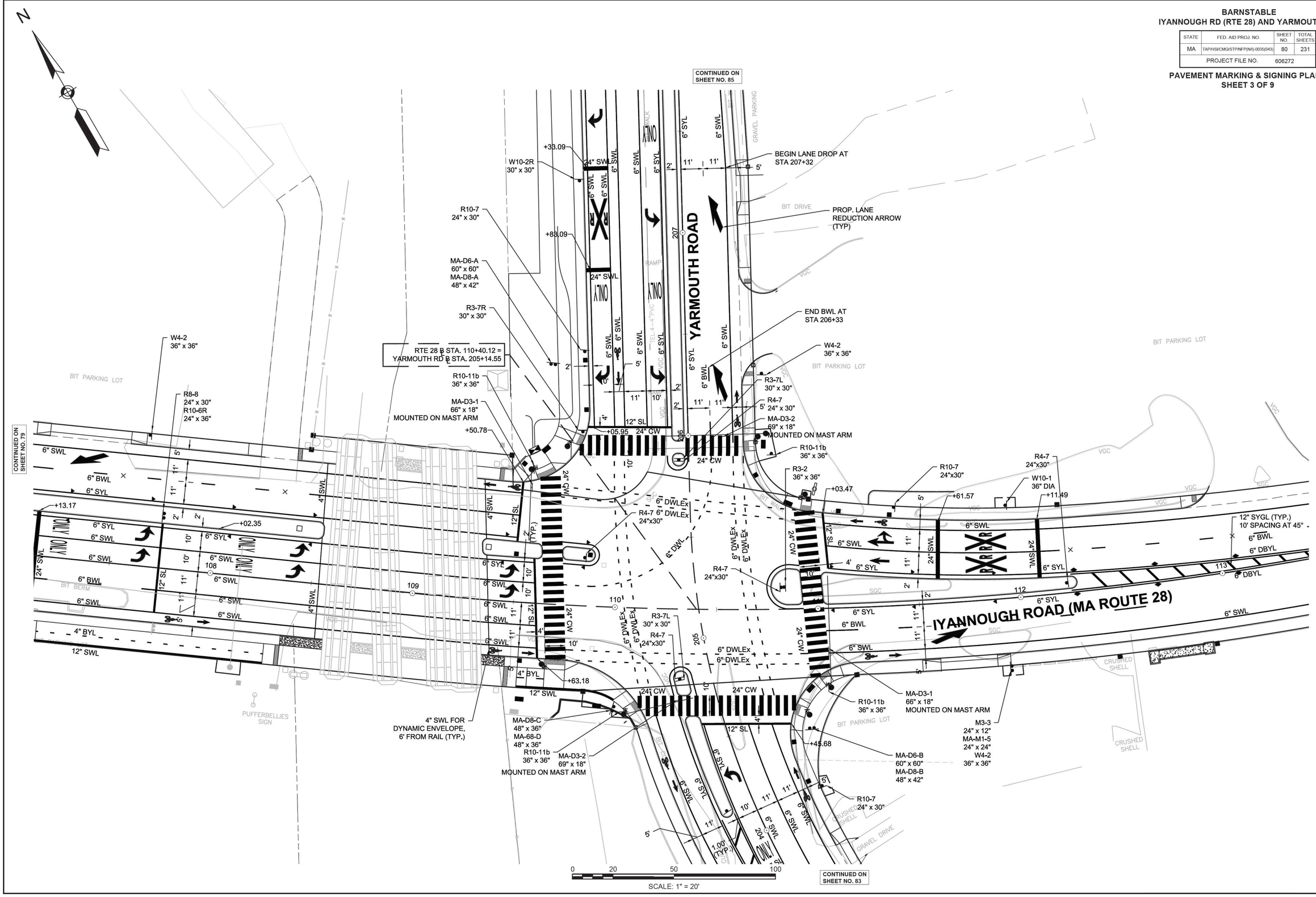
606272_HD09(PVMTMARKINGS).DWG Plotted on 9-Apr-2021 2:44 PM

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	80	231
PROJECT FILE NO.	606272		

PAVEMENT MARKING & SIGNING PLANS
SHEET 3 OF 9

606272_HDG9(PVMTMARKINGS).DWG Plotted on 9-Apr-2021 2:44 PM



BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	81	231
PROJECT FILE NO.	606272		

PAVEMENT MARKING & SIGNING PLANS
SHEET 4 OF 9

606272_HDD9(PVMTMARKINGS).DWG Plotted on 9-Apr-2021 2:45 PM

N

IYANNOUGH ROAD (MA ROUTE 28)

CEDAR STREET

CONTINUED ON SHEET NO. 80

CONTINUED ON SHEET NO. 82

END BWL AT STA 114+03

M4-5
24" x 12"
M1-4
24" x 24"
M5-1R
21" x 15"

12" SYGL (TYP.)
10' SPACING AT 45°

6" BWL

6" DBYL

6" SWL

6" DBYL

6" SWL

PROP. LANE REDUCTION ARROW (TYP)

BEGIN LANE DROP AT STA 114+66

END DBYL AT STA 118+32

R3-17
24" x 18"
R3-17aP
24" x 8"

BEGIN DBYL AT STA 118+77

6" SWL

6" DBYL

BEGIN 5' WIDTH STA 118+54

6" SWL

END LANE DROP AT STA 118+21

6" DWLEx

R3-17
24" x 18"
R3-17bP
24" x 8"

RETAIN EXIST. MA-D3-1

GRAVEL DRIVE

GRAVEL

BIT DRIVE

BIT BERM

CONC. CURB

CONC. STEPS

CONC. WALK

BIT WALK

BIT PARKING LOT

VGC

BIT PARK

0 20 50 100

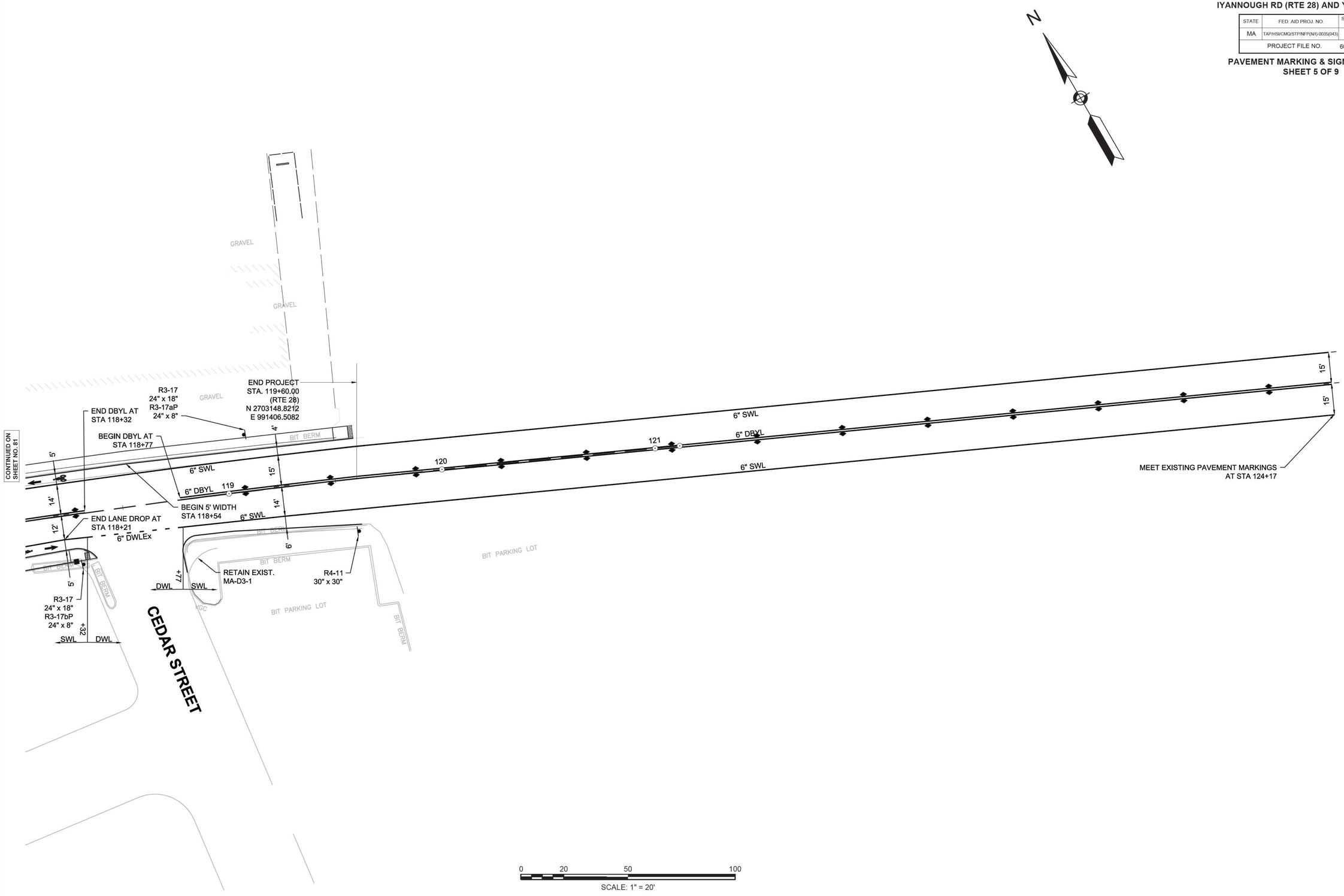
SCALE: 1" = 20'

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	82	231
PROJECT FILE NO.	606272		

PAVEMENT MARKING & SIGNING PLANS
SHEET 5 OF 9

606272_HD09(PVMTMARKINGS).DWG Plotted on 9-Apr-2021 2:45 PM

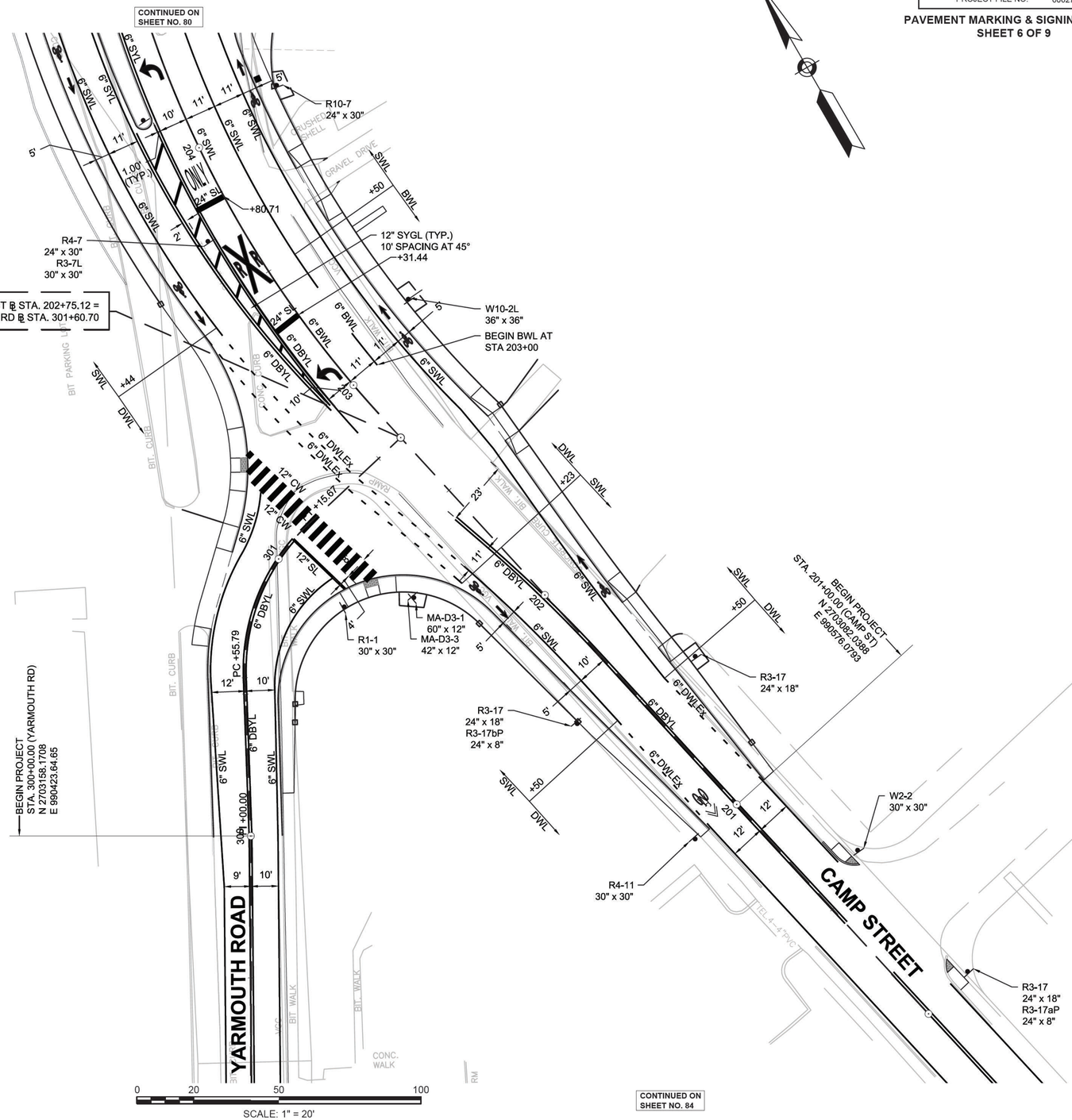


BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	83	231
PROJECT FILE NO.	606272		

PAVEMENT MARKING & SIGNING PLANS
SHEET 6 OF 9

606272_HDD9(PVMTMARKINGS).DWG Plotted on 9-Apr-2021 2:45 PM

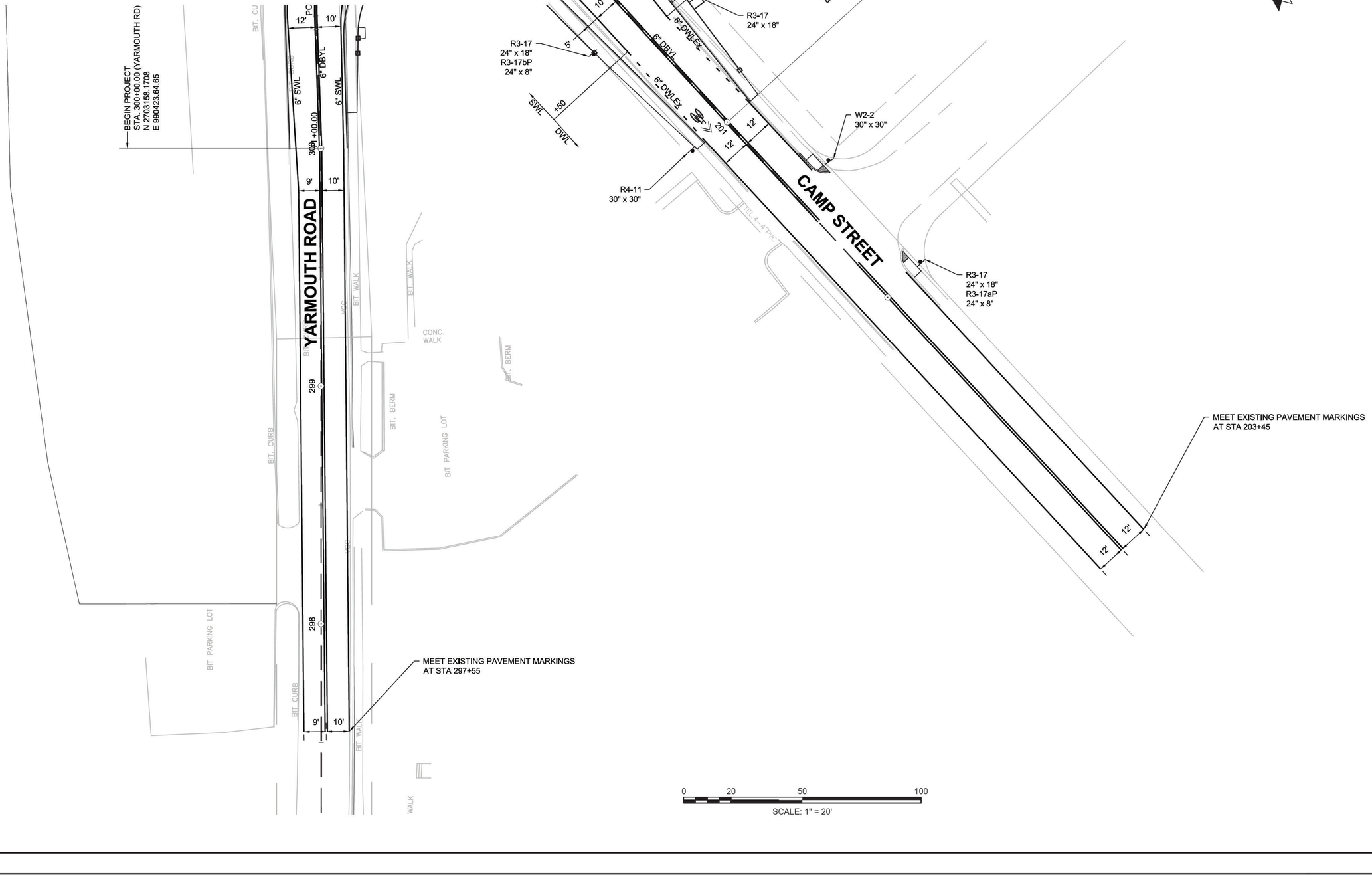


BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	84	231
PROJECT FILE NO.	606272		

PAVEMENT MARKING & SIGNING PLANS
SHEET 7 OF 9

606272_HDG9(PVMTMARKINGS).DWG Plotted on 9-Apr-2021 2:45 PM

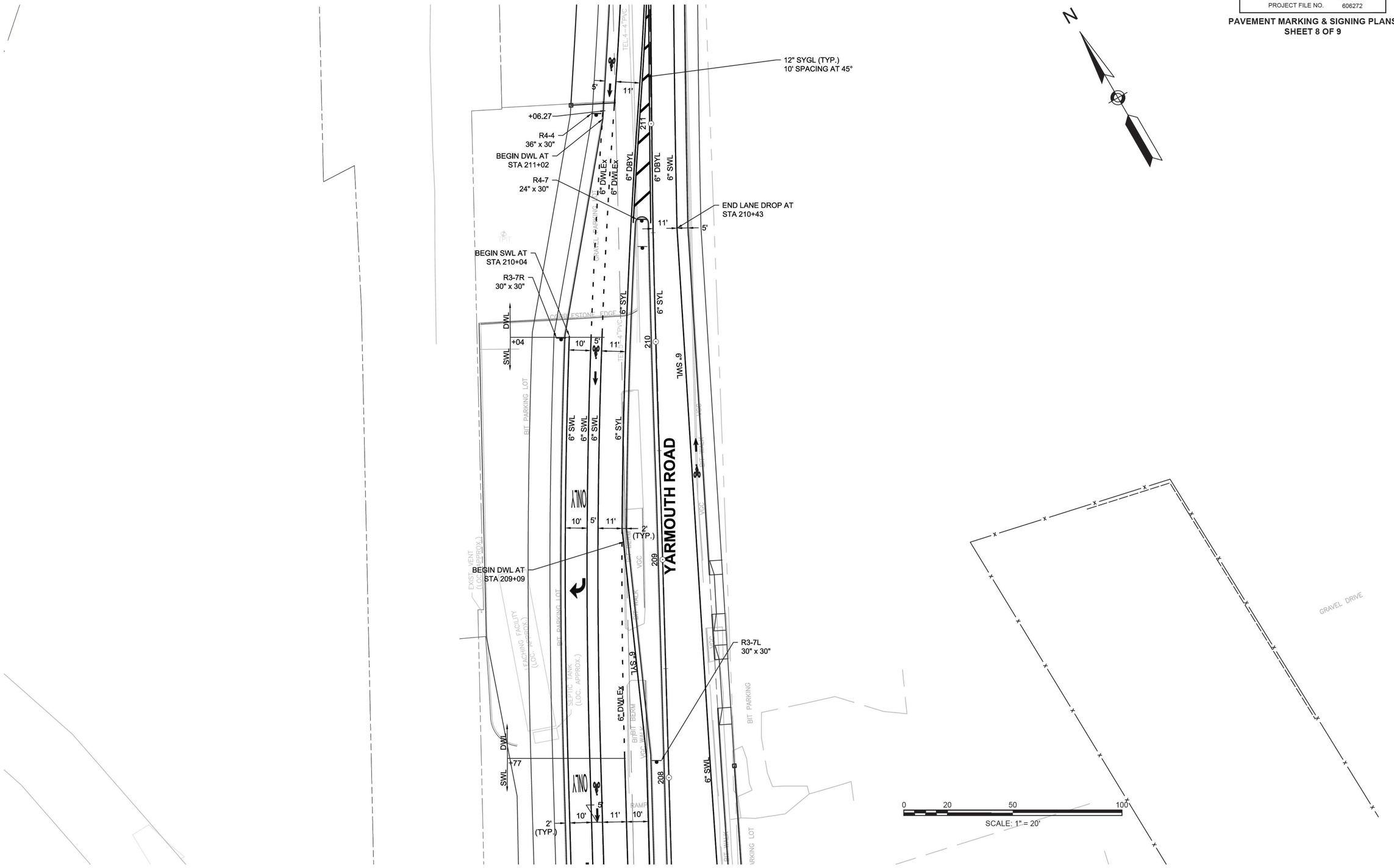


BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	85	231
PROJECT FILE NO.	606272		

PAVEMENT MARKING & SIGNING PLANS
SHEET 8 OF 9

CONTINUED ON SHEET NO. 86



CONTINUED ON SHEET NO. 80

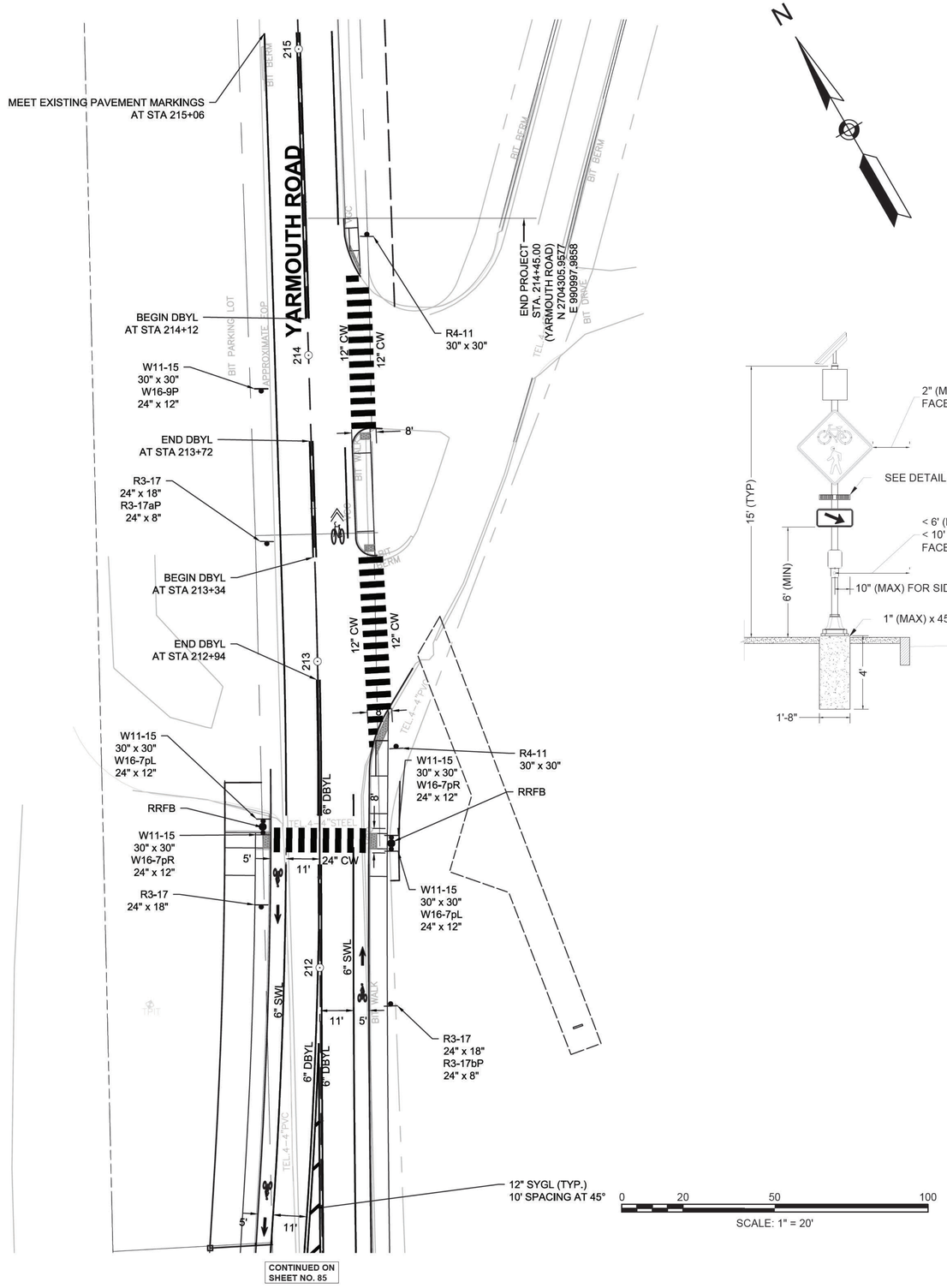
606272_HDD9(PVMTMARKINGS).DWG Plotted on 9-Apr-2021 2:45 PM

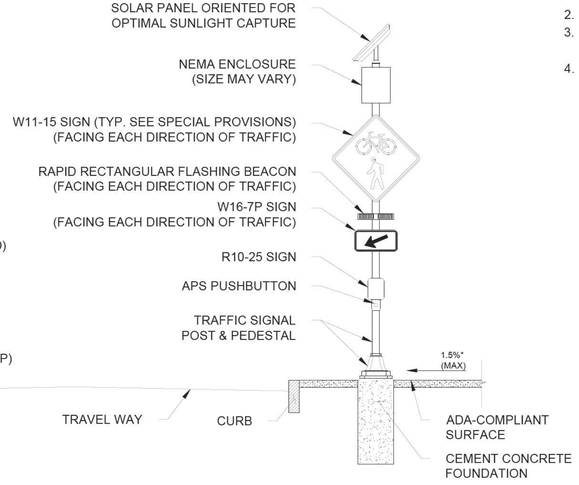
BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	86	231
PROJECT FILE NO.	606272		

PAVEMENT MARKING & SIGNING PLANS
SHEET 9 OF 9

606272_HD09(PVMTMARKINGS).DWG Plotted on 9-Apr-2021 2:46 PM





NOTES:

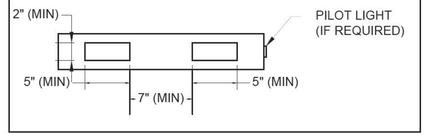
1. CROSSWALK AND ADA-COMPLIANT RAMPS NOT SHOWN. SEE PLANS FOR LOCATIONS.
2. REFER TO THE SPECIAL PROVISIONS FOR SIGN DIMENSIONS.
3. ACCESS TO ALL PEDESTRIAN ACTUATED CONTROLS SHALL BE ADA/AAB COMPLIANT.
4. *0.5% CONSTRUCTION TOLERANCE FOR CROSS-SLOPE.

MAJOR ITEMS LIST

- 2 CEMENT CONCRETE FOUNDATIONS PER 812.30.1
- 2 15' TRAFFIC SIGNAL POSTS & PEDESTALS
- 2 APS PUSHBUTTON SYSTEMS
- 4 DUAL RECTANGULAR YELLOW LED BEACONS IN NEMA ENCLOSURES
- 2 R10-25 SIGNS
- 4 W11-15 SIGNS
- 2 W16-7PR SIGNS
- 2 W16-7PL SIGNS
- 2 SOLAR PANEL SYSTEMS
- 2 NEMA ENCLOSURES FOR ALL COMPONENTS NEEDED TO MEET FUNCTIONAL REQUIREMENTS PER SPECIAL PROVISIONS
- 2 BATTERY SYSTEMS

PLUS ALL MOUNTING AND SUPPORTING HARDWARE AND WIRING NECESSARY TO COMPLETE A WORKING SYSTEM.

DETAIL A: DUAL YELLOW BEACON



TRAFFIC SIGN SUMMARY

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	87	231
PROJECT FILE NO. 606272			

SIGN SUMMARY SHEETS
SHEET 1 OF 2

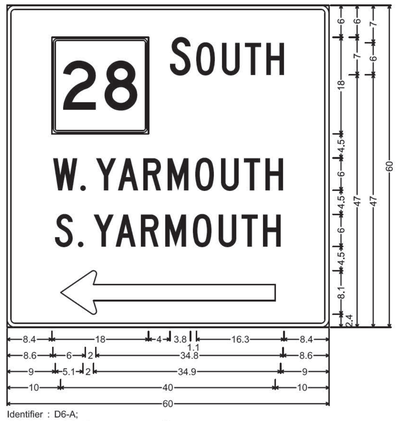
IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	TEXT	TEXT DIMENSIONS (INCHES) LETTER HEIGHT	TEXT DIMENSIONS (INCHES) VERTICAL SPACING	TEXT DIMENSIONS (INCHES) ARROW RTE. MKR.	NUMBER OF SIGNS REQUIRED	COLOR BACKGROUND	COLOR LEGEND	COLOR BORDER	POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
MA-D3-1	66"	18"	Yarmouth Rd	SEE SHEET 88 FOR DIMENSIONS			2	GREEN	WHITE	WHITE	MOUNTED ON MAST ARM	8.25	16.50
MA-D3-1	60"	12"	Yarmouth Rd	SEE SHEET 88 FOR DIMENSIONS			1	GREEN	WHITE	WHITE	-	5.00	5.00
MA-D3-2	69"	18"	Iyannough Rd	SEE SHEET 88 FOR DIMENSIONS			2	GREEN	WHITE	WHITE	-	8.63	17.25
MA-D3-3	42"	12"	Camp St	SEE SHEET 88 FOR DIMENSIONS			1	GREEN	WHITE	WHITE	-	3.50	3.50
MA-D3-4	66"	12"	Mary Dunn Way	SEE SHEET 88 FOR DIMENSIONS			1	GREEN	WHITE	WHITE	-	5.50	5.50
MA-D3-5	72"	12"	Engine House Rd	SEE SHEET 88 FOR DIMENSIONS			1	GREEN	WHITE	WHITE	-	6.00	6.00
MA-D3-5	60"	60"	28 SOUTH W. YARMOUTH S. YARMOUTH ←	SEE SHEET 88 FOR DIMENSIONS			1	GREEN	WHITE	WHITE	-	25.00	25.00
MA-D3-5	60"	60"	28 SOUTH W. YARMOUTH S. YARMOUTH →	SEE SHEET 88 FOR DIMENSIONS			1	GREEN	WHITE	WHITE	-	25.00	25.00
MA-D3-5	48"	42"	28 NORTH FALMOUTH →	SEE SHEET 88 FOR DIMENSIONS			1	GREEN	WHITE	WHITE	-	14.00	14.00
MA-D3-5	48"	42"	28 NORTH FALMOUTH ←	SEE SHEET 88 FOR DIMENSIONS			1	GREEN	WHITE	WHITE	-	14.00	14.00
MA-D3-5	48"	36"	TO 6 ←	SEE SHEET 88 FOR DIMENSIONS			1	GREEN	WHITE	WHITE	-	12.00	12.00
MA-D3-5	48"	36"	HYANNIS CENTER →	SEE SHEET 88 FOR DIMENSIONS			1	GREEN	WHITE	WHITE	-	12.00	12.00
MA-M1-5	24"	24"	28	SEE MASSDOT STANDARDS			2	WHITE	BLACK	BLACK	P-5 (1)	4.00	8.00
M1-4	24"	24"	6	SEE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS			1	WHITE	BLACK	BLACK	P-5 (1)	4.00	4.00
M3-1	24"	12"	NORTH				1	WHITE	BLACK	BLACK	MOUNT WITH M1-5	2.00	2.00
M3-3	24"	12"	SOUTH				1	WHITE	BLACK	BLACK	MOUNT WITH M1-5	2.00	2.00
M4-5	24"	12"	TO				1	WHITE	BLACK	BLACK	MOUNT WITH M1-4	2.00	2.00

IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	TEXT	TEXT DIMENSIONS (INCHES) LETTER HEIGHT	TEXT DIMENSIONS (INCHES) VERTICAL SPACING	TEXT DIMENSIONS (INCHES) ARROW RTE. MKR.	NUMBER OF SIGNS REQUIRED	COLOR BACKGROUND	COLOR LEGEND	COLOR BORDER	POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
M5-1R	21"	15"		SEE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS			1	WHITE	BLACK	BLACK	MOUNT WITH M1-4	2.19	2.19
R1-1	30"	30"	STOP				3	RED	WHITE	WHITE	P-5 (1)	6.25	18.75
R3-1 ACTIVATED BLANK-OUT	36"	36"					1	BLACK	WHITE / RED	BLACK	MOUNTED ON MAST ARM	9.00	9.00
R3-2 ACTIVATED BLANK-OUT	36"	36"					2	BLACK	WHITE/ RED	BLACK	MOUNTED ON MAST ARM	9.00	9.00
R3-2	36"	36"					1	WHITE	BLACK / RED	BLACK	MOUNT WITH R4-7	9.00	9.00
R3-7L	30"	30"	LEFT LANE MUST TURN LEFT				4	WHITE	BLACK	BLACK	P-5 (1) MOUNT WITH R4-7	6.25	25.00
R3-7R	30"	30"	RIGHT LANE MUST TURN RIGHT				2	WHITE	BLACK	BLACK	P-5 (1)	6.25	12.50
R3-8d	30"	30"	ONLY ONLY				1	WHITE	BLACK	BLACK	P-5 (1)	6.25	6.25
R3-17	24"	18"	BIKE LANE				14	BLACK / WHITE	WHITE / BLACK	BLACK	P-5 (1)	3.00	42.00
R3-17aP	24"	8"	AHEAD				4	WHITE	BLACK	BLACK	MOUNT WITH R3-17	1.33	5.33
R3-17bP	24"	8"	ENDS				5	WHITE	BLACK	BLACK	MOUNT WITH R3-17	1.33	6.67
R4-4	36"	30"	BEGIN RIGHT TURN LANE YIELD TO BIKES				1	WHITE	BLACK	BLACK	P-5 (1)	7.50	7.50
R4-7	24"	30"					10	WHITE	BLACK	BLACK	P-5 (1)	5.00	50.00
R4-11	30"	30"	MAY USE FULL LANE				4	WHITE	BLACK	BLACK	P-5 (1)	6.25	25.00

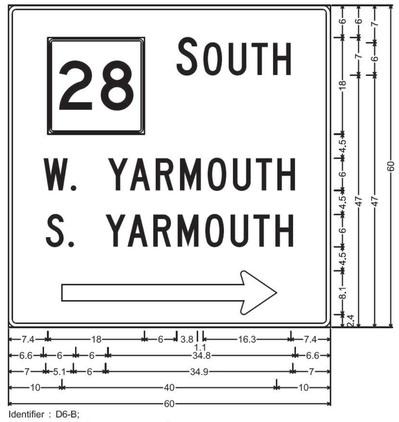
606272_HD10(SIGN SUMMARY).DWG Plotted on 9-Apr-2021 1:12 PM

TRAFFIC SIGN SUMMARY

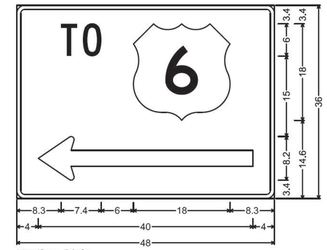
IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	TEXT	TEXT DIMENSIONS (INCHES) LETTER HEIGHT	TEXT DIMENSIONS (INCHES) VERTICAL SPACING	TEXT DIMENSIONS (INCHES) ARROW RTE. MKR.	NUMBER OF SIGNS REQUIRED	COLOR BACK-GROUND	COLOR LEGEND	COLOR BORDER	POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
R8-8	24"	30"	DO NOT STOP ON TRACKS	SEE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS			3	WHITE	BLACK	BLACK	P-5 (1)	5.00	15.00
R10-6L	24"	36"	STOP HERE ON RED				1	WHITE	BLACK	BLACK	MOUNT WITH R8-8	6.00	6.00
R10-6R	24"	36"	STOP HERE ON RED				1	WHITE	BLACK	BLACK	MOUNT WITH R8-8	6.00	6.00
R10-7	24"	30"	DO NOT BLOCK INTERSECTION				3	WHITE	BLACK	BLACK	P-5 (1)	5.00	15.00
R10-11b	24"	24"	NO TURN ON RED				4	WHITE	BLACK	BLACK	MOUNTED ON MAST ARM POST	4.00	16.00
W2-1	30"	30"					1	YELLOW	BLACK	BLACK	P-5 (1)	6.25	6.25
W2-2	30"	30"					1	YELLOW	BLACK	BLACK	P-5 (1)	6.25	6.25
W4-2	36"	36"					4	YELLOW	BLACK	BLACK	P-5 (1) MOUNT WITH MA-M1-5	9.00	36.00
W10-1	36" DIA		R R				2	YELLOW	BLACK	BLACK	P-5 (1)	7.07	14.14
W10-2L	30"	30"					1	YELLOW	BLACK	BLACK	P-5 (1)	6.25	6.25
W10-2R	30"	30"					1	YELLOW	BLACK	BLACK	P-5 (1)	6.25	6.25
W11-15	30"	30"					1	YELLOW	BLACK	BLACK	P-5 (1)	6.25	6.25
W16-9P	24"	12"	AHEAD				1	YELLOW	BLACK	BLACK	MOUNT WITH W11-15	2.00	2.00



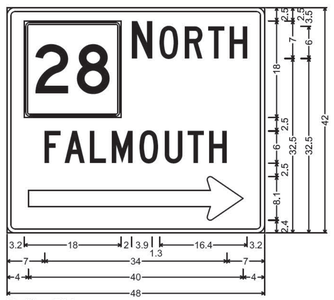
Identifier : D6-A;
1.5" Radius, 0.8" Border, White on Green;
State Highway 28 M1-5; [SOUTH] C; [W. YARMOUTH] C;
[S. YARMOUTH] C; Standard Arrow Custom 40.0" X 8.1" 180°;



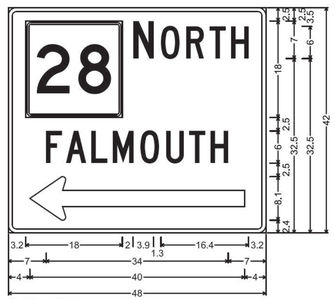
Identifier : D6-B;
1.5" Radius, 0.8" Border, White on Green;
State Highway 28 M1-5; [SOUTH] C; [W. YARMOUTH] C;
[S. YARMOUTH] C; Standard Arrow Custom 40.0" X 8.1" 0°;



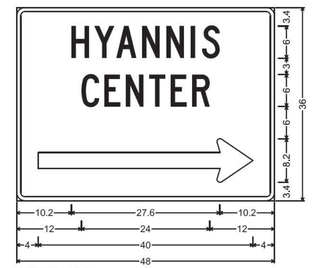
Identifier : D8-C;
1.5" Radius, 0.8" Border, White on Green;
[TO] C; State Highway 6 M1-5;
Standard Arrow Custom 40.0" X 8.1" 180°;



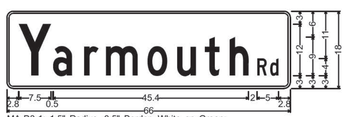
Identifier : D8-A;
1.5" Radius, 0.8" Border, White on Green;
State Highway 28 M1-5; [NORTH] C; [FALMOUTH] C;
Standard Arrow Custom 40.0" X 8.1" 0°;



Identifier : D8-B;
1.5" Radius, 0.8" Border, White on Green;
State Highway 28 M1-5; [NORTH] C; [FALMOUTH] C;
Standard Arrow Custom 40.0" X 8.1" 180°;



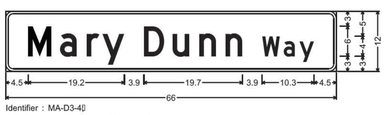
Identifier : D8-D;
1.5" Radius, 0.8" Border, White on Green;
[HYANNIS] C; [CENTER] C;
Standard Arrow Custom 40.0" X 8.1" 0°;



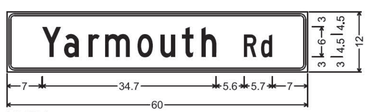
MA-D3-1; 1.5" Radius, 0.5" Border, White on Green;
[Y] C 50% spacing; [armouth] C; [Rd] C;



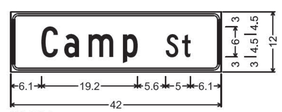
MA-D3-2; 1.5" Radius, 0.5" Border, White on Green;
[I] C 50% spacing; [yannough] C; [Rd] C;



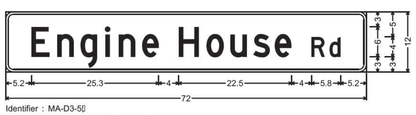
Identifier : MA-D3-4;
1.5" Radius, 0.5" Border, White on Green;
[Mary Dunn] D; [Way] D;



MA-D3-1;
1.5" Radius, 0.4" Border, 0.4" Indent, White on Green;
[Yarmouth Rd] C;



MA-D3-3;
1.5" Radius, 0.4" Border, 0.4" Indent, White on Green;
[Camp St] C;



Identifier : MA-D3-5;
1.5" Radius, 0.5" Border, White on Green;
[Engine House] D 85% spacing; [Rd] D;

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	88	231
PROJECT FILE NO.	606272		

SIGN SUMMARY SHEETS
SHEET 2 OF 2

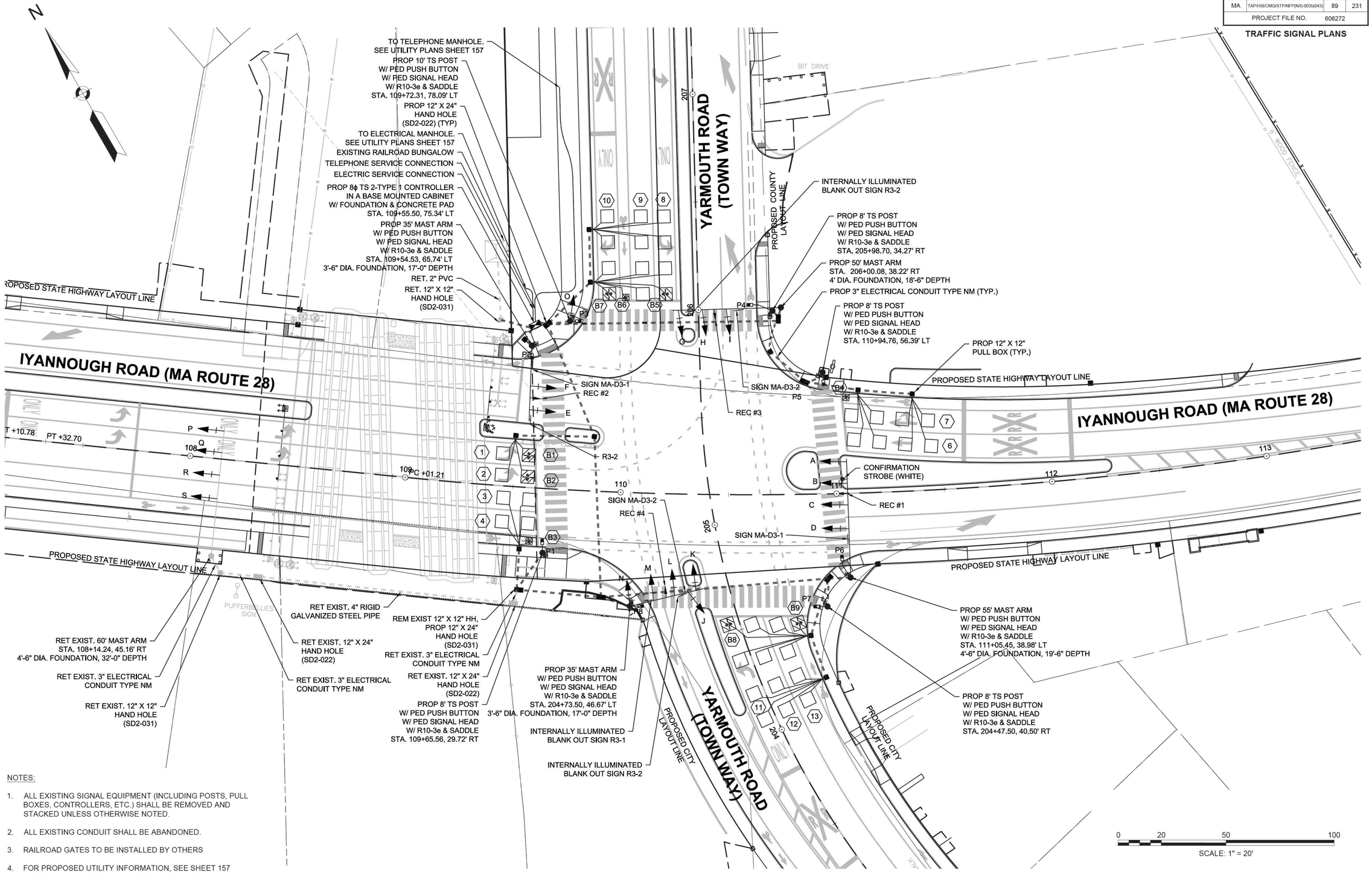
606272_HD10(SIGN SUMMARY).DWG Plotted on 9-Apr-2021 1:13 PM

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(M/I)-0035(043)	89	231
PROJECT FILE NO.	606272		

TRAFFIC SIGNAL PLANS

606272_TR(TRAFFIC SIGNAL).DWG Plotted on 4-Jun-2021 9:25 AM



NOTES:

1. ALL EXISTING SIGNAL EQUIPMENT (INCLUDING POSTS, PULL BOXES, CONTROLLERS, ETC.) SHALL BE REMOVED AND STACKED UNLESS OTHERWISE NOTED.
2. ALL EXISTING CONDUIT SHALL BE ABANDONED.
3. RAILROAD GATES TO BE INSTALLED BY OTHERS
4. FOR PROPOSED UTILITY INFORMATION, SEE SHEET 157
5. PROPOSED PAVEMENT MARKINGS ARE GRAYED OUT FOR CLARITY. FOR PROPOSED PAVEMENT MARKINGS, SEE SHEET 80

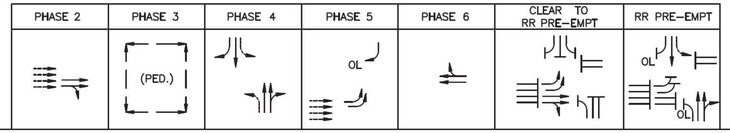
BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(M1)-0035(043)	90	231
PROJECT FILE NO.	606272		

TRAFFIC SIGNAL PLANS
TRAFFIC SIGNAL DATA

606272_TR(TRAFFIC SIGNAL).DWG Plotted on 4-Jun-2021 9:23 AM





SEQUENCE AND TIMING FOR FULL ACTUATED CONTROL (ISOLATED)

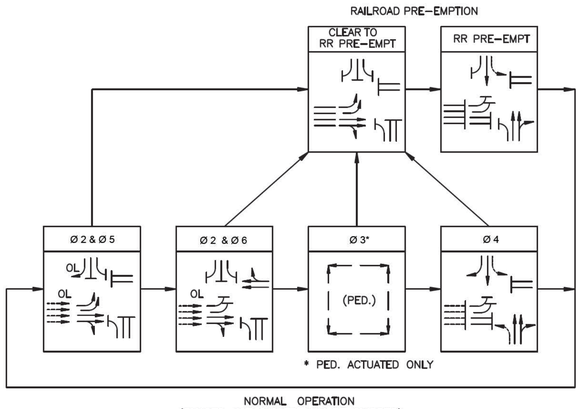
STREET	DIRECTION	HOUSINGS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	FLASH OPER.
ROUTE 28 (IYANNOUGH ROAD)	SB	A,B	RL	RL	RL	RL	RL	RL	RL	RL	RL	GL	YL	RL	RL	RL	RL	GL	GL	YL	RL	RL	RL	RL	FRL
ROUTE 28 (IYANNOUGH ROAD)	SB	C,D	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	G	G	Y	R	R	R	R	FY
ROUTE 28 (IYANNOUGH ROAD)	SB	P,Q,R,S	G	Y	R	R	R	R	R	R	R	G	Y	R	R	R	R	Y	R	R	R	R	R	R	FR
ROUTE 28 (IYANNOUGH ROAD)	NB	E	R	R	R	R	R	R	R	R	R	R	R	R	GA	Y	R	R	R	R	R	R	R	R	FY
ROUTE 28 (IYANNOUGH ROAD)	NB	F	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	FY
YARMOUTH ROAD	EB	G,J	RL	RL	RL	RL	RL	RL	FYL	YL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	FRL
YARMOUTH ROAD	EB	H,I	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	R	G	Y	R	FR
YARMOUTH ROAD	WB	K	RL	RL	RL	RL	RL	RL	FYL	YL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	FYL	YL	RL	FRL
YARMOUTH ROAD	WB	L,M	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	R	G	Y	R	FR
YARMOUTH ROAD	WB	N,O	RR	RR	RR	RR	RR	RR	FYR	YR④	RR④	GR	YR	RR④	RR	RR	RR	RR	RR	RR	RR	RR	RR	RR	FR
PEDESTRIAN	ALL	P1–P8	DW	DW	DW	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	OUT
YARMOUTH ROAD	EB	R3–2	OUT	OUT	OUT	OUT	OUT	OUT	OUT	OUT	OUT	OUT	OUT	OUT	OUT	OUT	OUT	ON	ON	ON	ON	ON	ON	ON	OUT
YARMOUTH ROAD	WB	R3–1	OUT	OUT	OUT	OUT	OUT	OUT	OUT	OUT	OUT	OUT	OUT	OUT	OUT	OUT	OUT	ON	ON	ON	ON	ON	ON	ON	OUT
TIMING IN SECONDS																									
MINIMUM GREEN (INITIAL)			10						10			10			10										EMERGENCY ONLY
PASSAGE TIME (VEHICLE)			2						2			2			2				33			HOLD*			
MAXIMUM 1			45						25			22			20										
MAXIMUM 2																									
YELLOW CLEARANCE				4						4			4			4		4		4			4		
RED CLEARANCE					3						3			3			2				2.5			2.5	
WALK (W)						7																			
PEDESTRIAN CLEARANCE							22	4																	
RECALL			SOFT			OFF			OFF			OFF			SOFT			OFF				OFF			
MEMORY			NON–LOCK			–			NON–LOCK			NON–LOCK			NON–LOCK			–				–			

④ TO DISPLAY FYR IF PHASE 4 IS NEXT ④ TO REMAIN FYR IF PHASE 5 IS NEXT * SEE RAILROAD PRE-EMPTION OPERATION NOTE 1

TRAFFIC SIGNAL NOTES:

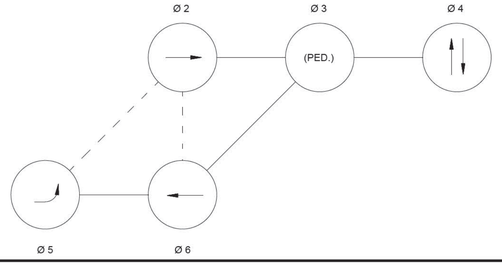
1. PEDESTRIAN CLEARANCE TIMES SPAN FDW AND DW.
2. IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENTS WILL NOT CHANGE DURING THE CLEARANCE INTERVAL.
3. IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO CHANGE DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT WILL DISPLAY THE APPROPRIATE CLEARANCE INTERVALS.
4. THE SIGNAL SHALL PROVIDE STOP AND GO OPERATION 24 HOURS A DAY. FLASHING OPERATION SHALL BE FOR EMERGENCY ONLY.

PREFERENTIAL PHASING SEQUENCE



NORMAL OPERATION
(PHASES NOT CALLED MAY BE SKIPPED)

NEMA DUAL RING PHASING NOTES:



1. PHASES ASSOCIATED BY A SOLID LINE SHALL NOT OPERATE CONCURRENTLY.
2. PHASES ASSOCIATED BY A DASHED LINE MAY OPERATE CONCURRENTLY.
3. THROUGH MOVEMENTS MAY INCLUDE RIGHT TURNS.
4. IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT SHALL NOT CHANGE DURING THE CHANGE INTERVAL(S) UNLESS OTHERWISE NOTED.

	MAJOR ITEMS REQUIRED	
PAY ITEM	QUANTITY	ITEM
816.01	1	CONTROLLER TYPE 8ϕ, TS2–TYPE 1 CAB., FDN., & CONC. PAD
	1	SERVICE CONNECTION UNDERGROUND
	4	8' TRAFFIC SIGNAL POST, BASE & FDN.
	1	10' TRAFFIC SIGNAL POST, BASE & FDN.
	2	35' MAST ARM/POLE ASSEMBLY, BASE & FDN.
	1	50' MAST ARM/POLE ASSEMBLY, BASE & FDN.
	1	55' MAST ARM/POLE ASSEMBLY, BASE & FDN.
	13	1 WAY, 3 SECTION SIGNAL HOUSING (12" LENS)
	2	1 WAY, 4 SECTION SIGNAL HOUSING (12" LENS)
	7	COUNTDOWN PEDESTRIAN SIGNAL HEAD (16" LED)
	4	12" LENS FOR PRE–SIGNAL
	8	PEDESTRIAN PUSH BUTTON APS TYPE, SIGN & SADDLE
	6	DUAL CHANNEL LOOP DETECTOR AMPLIFIER (RACK MOUNTED)
	35	WIRE LOOP DETECTOR
	9	BICYCLE LOOP DETECTOR
	1	RAILROAD PREEMPTION RELAY
	4	EMERGENCY PRE–EMPTION DETECTOR (SINGLE CHANNEL)
	1	EMERGENCY PRE–EMPTION PHASE SELECTOR (FOUR CHANNEL)
	1	CONFIRMATION STROBE (WHITE)
	1	TELEPHONE MODEM
804.3	665	3 INCH ELECTRICAL CONDUIT TYPE NM – PLASTIC –(UL)
811.31	11	PULL BOX 12X12 INCHES
811.23	6	12X24 INCH HANDHOLE
824.62	3	INTERNALLY ILLUMINATED BLANK OUT SIGN
		Provide Accessible Pedestrian Signal (APS) Pushbuttons plus all
		necessary duct, cable, labor, miscellaneous material and equipment to
		complete the installation per MassDOT Standards and latest Specifications

EMERGENCY VEHICLE PRE-EMPTION OPERATION:

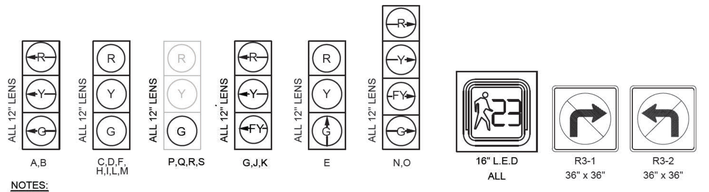
1. EMERGENCY VEHICLE PRE-EMPTION SHALL BE ACTUATED BY AN OPTICAL SIGNAL FROM AN OPTICAL EMITTER MOUNTED ON AN EMERGENCY VEHICLE AND RECEIVED BY AN OPTICAL RECEIVER LOCATED AT INTERSECTION. A SEPARATE RECEIVER IS REQUIRED BY EACH DETECTED APPROACH.
2. PRE-EMPTION SIGNALS FROM MULTIPLE APPROACHES SHALL BE SERVICED ON A FIRST DETECTED FIRST SERVED BASIS. RAILROAD PRE-EMPTION SHALL HAVE PRIORITY OVER EMERGENCY VEHICLES.
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL RECEIVER, THE CONTROLLER SHALL TIME THE CLEARANCE INTERVALS OF THE ACTIVE PHASE (IF DIFFERENT FROM THAT TO BE SERVICED) AND ADVANCE TO AND/OR HOLD IN EMERGENCY VEHICLE PRE-EMPTION PHASE GREEN INTERVAL UNTIL PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN CLEAR AND SIMILARLY SERVICE OTHER EMERGENCY VEHICLE PRE-EMPTION SEQUENCES IN THE ORDER RECEIVED (IF RECEIVED) OTHERWISE, RESUME NORMAL PREFERENTIAL PHASE SEQUENCE.
4. MINIMUM GREENS AND NORMAL VEHICLE CLEARANCES SHALL BE PROVIDED ON PHASES THAT ARE TERMINATED BY PRE-EMPTION DEMAND.
5. THE PREEMPT STROBE SHALL BE ILLUMINATED WHENEVER ANY PREEMPT IS ON.
6. ACTUAL TIMING FOR PRE-EMPTION SHALL BE DETERMINED IN THE FIELD IN COORDINATION WITH THE FIRE DEPARTMENT AND SHALL BE APPROVED BY MASSDOT PRIOR TO OPERATION.
7. DETECTOR PRIORITIES 1 AND 2 SHALL BE RESERVED FOR RAILROAD PRE-EMPTION.

LOOP DETECTOR DATA

SEE PLAN SHEET-LOOP DETECTOR DETAILS FOR LOOP CONSTRUCTION. SPLICING, DETAILS & NOTES. DELAY TIME EFFECTIVE ONLY DURING CALLED Ø RED. TIME IN SEC.

DETECTOR NUMBER	AMPLIFIER NUMBER	CHANNEL NUMBER	LOOP SIZE	NUM. OF TURNS	Ø CALLED	Ø EXT.	MODE A=PULSE B=PRES.	DELAY TIME	EXT. TIME
1	1	1	6'X6'	3	Ø5	Ø5	B	-	-
2	1	1	6'X6'	3	Ø5	Ø5	B	-	-
B1	2	1	6'X6'	TYPE D-2	Ø5	Ø5	B	-	-
B2	2	1	6'X6'	TYPE D-2	Ø5	Ø5	B	-	-
3	1	2	6'X6'	3	Ø2	Ø2	B	-	-
4	1	2	6'X6'	3	Ø2	Ø2	B	-	-
B3	2	2	3'X6'	TYPE Q-BL	Ø2	Ø2	B	-	-
6	3	1	6'X6'	3	Ø6	Ø6	B	-	-
7	3	1	6'X6'	3	Ø6	Ø6	B	-	-
B4	4	1	3'X6'	TYPE Q-BL	Ø6	Ø6	B	-	-
8	5	1	6'X6'	3	Ø4	Ø4	B	-	-
9	5	1	6'X6'	3	Ø4	Ø4	B	-	-
10	5	1	6'X6'	3	Ø5 + Ø4	Ø5 + Ø4	B	-	-
B5	6	1	6'X6'	TYPE D-2	Ø4	Ø4	B	-	-
B6	6	1	3'X6'	TYPE Q-BL	Ø4	Ø4	B	-	-
B7	6	1	6'X6'	TYPE D-2	Ø5 + Ø4	Ø5 + Ø4	B	-	-
11	5	2	6'X6'	3	Ø4	Ø4	B	-	-
12	5	2	6'X6'	3	Ø4	Ø4	B	-	-
13	5	2	6'X6'	3	Ø4	Ø4	B	-	-
B8	6	2	6'X6'	TYPE D-2	Ø4	Ø4	B	-	-
B9	6	2	3'X6'	TYPE Q-BL	Ø4	Ø4	B	-	-

SIGNAL IDENTIFICATION



NOTES:

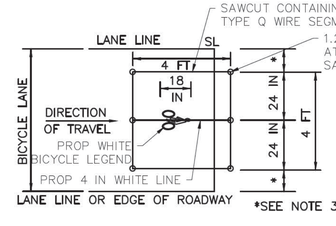
1. ALL SIGNALS SHALL HAVE CUT AWAY VISORS.
2. ALL SIGNALS SHALL HAVE 12" LED WITH 5" LOUVERED BACKPLATES.
3. ALL BACKPLATES SHALL HAVE A 3" YELLOW RETROREFLECTIVE BORDER.
4. FOR SIGNAL HEAD P, Q, R, AND S, CHANGE FLASHING YELLOW INDICATIONS ON EXISTING SIGNAL HEADS FOR STEADY GREEN INDICATIONS.

EMERGENCY PRE-EMPTION DATA

APPROACH	DETECTOR	PHASE CALL
ROUTE 28 (EB)	REC #1, PRIORITY 3	Ø2 & Ø5
ROUTE 28 (WB)	REC #2, PRIORITY 4	Ø6
YARMOUTH RD (SB)	REC #4, PRIORITY 5	Ø4
YARMOUTH RD (NB)	REC #3, PRIORITY 6	Ø4

RAILROAD PRE-EMPTION OPERATION:

1. HOLD TIME VARIABLE DEPENDING ON LENGTH AND SPEED OF TRAIN.
2. UPON ACTUATION OF THE RAILROAD PRE-EMPTION, THE ACTIVE PHASE SHALL TERMINATE IMMEDIATELY IN ACCORDANCE WITH THE CLEARANCE INTERVALS. THOSE HEADS THAT ARE TO BE GREEN DURING THE RAILROAD PRE-EMPTION CLEARANCE PHASE, IF ALREADY GREEN, SHALL REMAIN GREEN. R3-1 AND R3-2 BLANK OUT SIGNS ARE ACTIVATED ONCE THEIR ASSOCIATED PHASE IS RED.
3. IF PRE-EMPTION OCCURS DURING PHASES 2 OR 5, ADVANCE TO INTERVAL 16. IF PRE-EMPTION OCCURS DURING PHASES, 4, OR 6, ADVANCE TO INTERVAL 20 AFTER CLEARING THE ACTIVE PHASE.
4. IF PRE-EMPTION OCCURS DURING PHASE 3, PHASE 3 SHALL TERMINATE IMMEDIATELY IN ACCORDANCE WITH PEDESTRIAN CLEARANCE INTERVALS AND ADVANCE TO INTERVAL 17 ONCE THE PEDESTRIAN CLEARANCE HAS TIMED OUT.
5. RAILROAD PRE-EMPTION SHALL HAVE PRIORITY OVER EMERGENCY VEHICLE PRE-EMPTION.
6. THE RAILROAD FLASHING BEACONS SHALL BE ACTIVATED IMMEDIATELY UPON RECEIPT OF TRAIN ACTUATION.
7. DURING PRE-EMPTION, LIMITED SERVICE FOR EASTBOUND AND WESTBOUND MOVEMENTS ON YARMOUTH ROAD. ALL OTHER VEHICULAR SIGNALS DISPLAY SOLID RED. PEDESTRIAN SIGNALS SHOW SOLID "DON'T WALK". R3-1 AND R3-2 BLANK OUT SIGNS ARE DISPLAYED.
8. TRAIN LEAVES TRACK CIRCUIT. LIMITED SERVICE YARMOUTH ROAD VEHICULAR SIGNALS SHOWING GREEN GO TO YELLOW CLEARANCE. ALL OTHER VEHICULAR SIGNALS DISPLAY SOLID RED. PEDESTRIAN SIGNALS SHOW SOLID "DON'T WALK". R3-1 AND R3-2 BLANK OUT SIGNS ARE DISPLAYED.
9. UPON TERMINATION OF THE RAILROAD PRE-EMPTION PHASE, THE CONTROLLER SHALL RESUME OPERATION IN PHASES 2 AND 5. R3-1 AND R3-2 BLANK OUT SIGNS ARE EXTINGUISHED.
10. A MINIMUM OF 60 SECONDS SHALL BE PROVIDED FROM WHEN THE RAILROAD CIRCUIT ACTIVATES THE WARNING DEVICES TO WHEN THE GATE ARMS BEGIN TO LOWER.



Q–BL DETECTOR NOTES:

1. REFER TO BICYCLE LOOP DETECTOR DETAIL SHEET FOR ADDITIONAL NOTES AND CONSTRUCTION DETAILS.
2. DETAIL IS GRAPHICAL WITH NO SCALE.
3. OFFSETS FROM LANE LINE EQUAL UNLESS OTHERWISE NOTED. SEE PLANS.

TYPE Q–BL DETECTOR–STANDARD QUADRUPOLE WITH STANDARD PAVEMENT MARKINGS

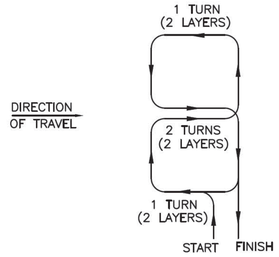
BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	91	231
PROJECT FILE NO.	606272		

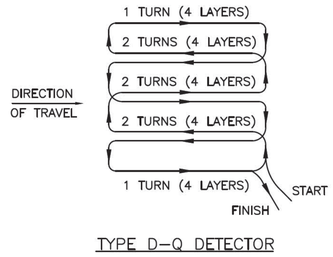
TRAFFIC SIGNAL PLANS
BICYCLE LOOP DETECTOR

606272_TR(TRAFFIC SIGNAL).DWG Plotted on 9-Apr-2021 1:14 PM

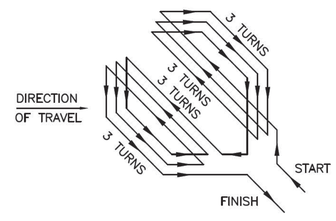
WINDING DETAILS



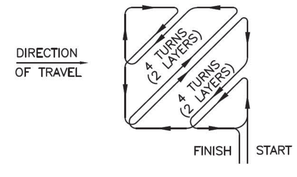
TYPE Q DETECTOR



TYPE D–Q DETECTOR

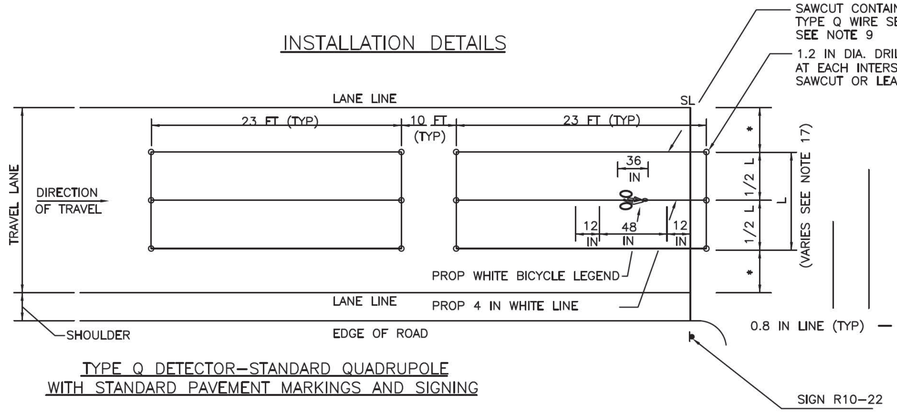


TYPE D–1 DETECTOR



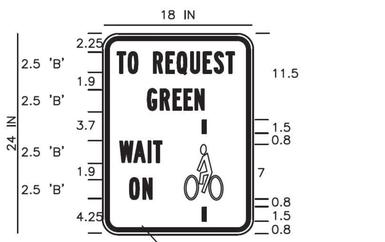
TYPE D–2 DETECTOR

INSTALLATION DETAILS



TYPE Q DETECTOR–STANDARD QUADRUPOLE
WITH STANDARD PAVEMENT MARKINGS AND SIGNING

SIGN R10–22

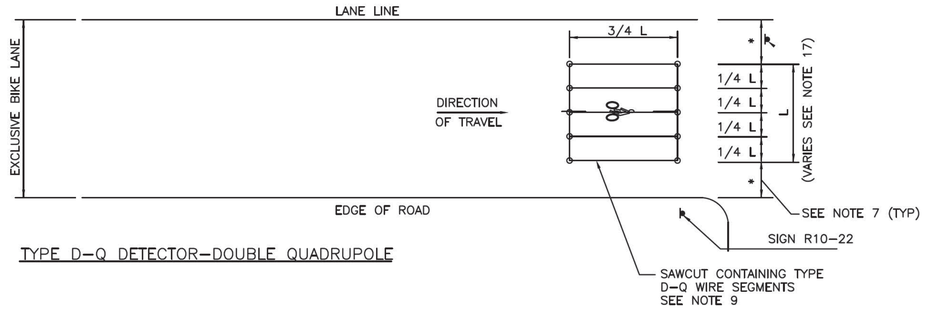


SIGN BORDER:
R=1.5, TH=0.5, INS=.38

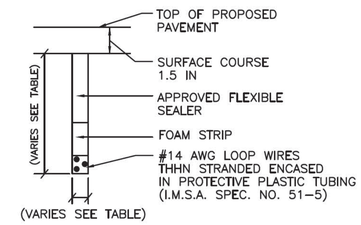
WHITE BACKGROUND
BLACK LEGEND AND LINES

NOTE: ALL SIGN DIMENSIONS IN INCHES

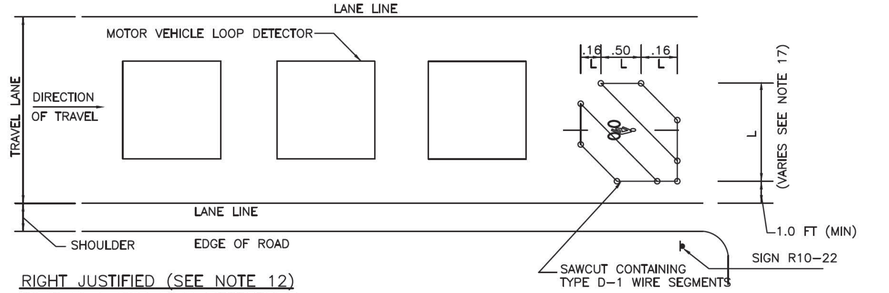
NOTE: SIGN PANEL NOT SHOWN TO SCALE



TYPE D–Q DETECTOR–DOUBLE QUADRUPOLE

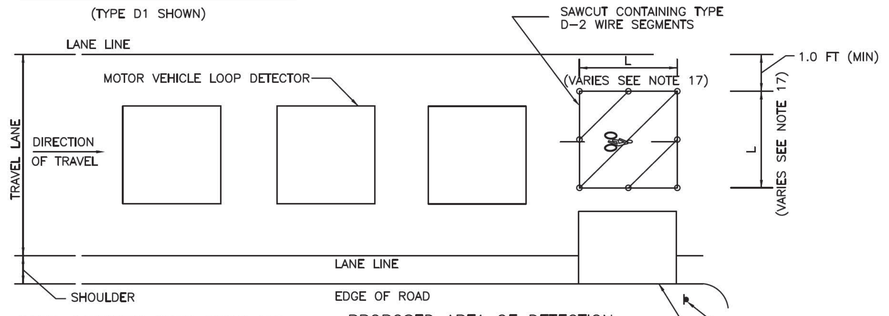


SECTION THRU LOOP DETECTOR



RIGHT JUSTIFIED (SEE NOTE 12)
TYPE D–1 AND D–2 DETECTORS

(TYPE D1 SHOWN)



LEFT JUSTIFIED (SEE NOTE 13)
TYPE D–1 AND D–2 DETECTORS

(TYPE D2 SHOWN)

PROPOSED AREA OF DETECTION

A LARGER AREA OF DETECTION MAY BE REQUIRED BASED ON FIELD CONDITIONS AND SHALL BE DETERMINED BY THE DESIGNER.

SAWCUT SLOT DEPTH GUIDE		
TURNS OF WIRE	SLOT SIZE	
	DEPTH (IN)	WIDTH (IN)
1	1.5	0.5
2	1.5	0.5
3	1.5	0.5
4	2.0	0.5
5	2.0	0.5
6	2.0	0.5
7	2.0	0.5
8	2.0	0.5

BICYCLE LOOP DETECTOR DETAILS

NOTES:

1. REFER TO VEHICLE LOOP DETECTOR DETAIL SHEET FOR ADDITIONAL NOTES AND CONSTRUCTION DETAILS.
2. ALL DETAILS ARE GRAPHICAL WITH NO SCALE.
3. THE NUMBER, SIZE, LOCATION AND LENGTH OF DETECTION AREA VARIES AND SHALL BE DETERMINED BY THE DESIGNER. REFER TO TRAFFIC SIGNAL PLAN.
4. BICYCLE LOOPS SHALL BE CONNECTED TO SEPARATE LOOP DETECTOR AMPLIFIERS CAPABLE OF HIGHER LEVELS OF SENSITIVITY.
5. BICYCLE LOOPS SHALL BE INSTALLED IN THE BASE COURSE OF EXISTING PAVEMENT. THE EXISTING PAVEMENT SHALL BE COLD PLANED TO THE BASE COURSE AND SAWCUT FOR LOOP INSTALLATION.
6. SIGNS AND PAVEMENT MARKINGS SHALL BE INSTALLED FOR ALL BICYCLE DETECTORS TO INFORM CYCLISTS OF THE DETECTION AREA.
7. OFFSETS FROM LANE LINE EQUAL UNLESS OTHERWISE NOTED. SEE PLANS.
8. TYPE Q DETECTORS SHALL BE WIRED IN A FIGURE EIGHT PATTERN WITH A DOUBLE LAYER DESIGN ("2–4–2") WITH 2 TURNS IN THE PERIMETER SLOTS AND 4 TURNS IN THE CENTER SLOT AS SHOWN IN THE WINDING DETAIL.
9. BICYCLES WILL BE DETECTED WITHIN 4 IN. OF THE INTERIOR LONGITUDINAL LOOP WIRES FOR TYPE Q AND D–Q DETECTORS.
10. PROVIDE 3 TURNS FOR TYPE D–1 DETECTORS.
11. INSTALL 2 LAYERS OF WIRE WOUND IN THE SAME DIRECTION IN BOTH LAYERS FOR TYPE D–2 DETECTORS. THE RESULT IS 4 TURNS IN EACH DIAGONAL.
12. RIGHT JUSTIFIED LOOP DETECTORS SHALL BE CONSIDERED FOR THE FOLLOWING CONDITIONS:
    a) BICYCLE STOPPING ON THE RIGHT SIDE OF A THRU TRAVEL LANE.
    b) BICYCLE STOPPING ON THE RIGHT SIDE OF AN EXCLUSIVE LEFT TURN LANE.
13. LEFT JUSTIFIED LOOP DETECTORS SHALL BE CONSIDERED FOR THE FOLLOWING CONDITIONS:
    a) BICYCLE STOPPING ON THE LEFT SIDE OF A SHARED LEFT/THRU LANE.
    b) BICYCLE STOPPING JUST TO THE RIGHT OF THE CENTERLINE WHEN TURNING LEFT ON A TWO–LANE ROADWAY.
14. RECTANGULAR LOOP DETECTORS SHALL BE CONSIDERED FOR BICYCLES STOPPING ON EITHER THE LEFT OR RIGHT SIDE OF A TWO–LANE ROADWAY. THE MINIMUM OFFSET FROM LANE LINE OR CURB LINE SHALL BE 1.0 FT.
15. PAVEMENT CORES OR TEST PITS MAY BE REQUIRED TO DETERMINE THE DEPTH OF EXISTING PAVEMENT AND CONFIRM THAT THE DETECTION OPTION CHOSEN AND CORRESPONDING WINDING PATTERN CAN BE ACCOMMODATED.
16. THESE DETAILS APPLY TO BICYCLE LOOPS INSTALLED IN ROADWAYS. PUSH BUTTON ACTUATION SHALL BE CONSIDERED FOR RECREATIONAL BIKE PATHS.
17. THE MINIMUM DIMENSION FOR L SHALL BE 6 FT MIN. FOR DETECTORS TYPE D–Q, D–1 & D–2. FINAL DIMENSIONS SHALL BE DETERMINED BY THE DESIGN ENGINEER.

GENERAL CONSTRUCTION NOTES:

1. ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND ALL REVISIONS, UNLESS SUPERSEDED BY THESE PLANS.
2. TEMPORARY CONSTRUCTION SIGNING, BARRICADES AND ALL OTHER WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE REMOVED OR COVERED WHEN THEY ARE NOT REQUIRED FOR TRAFFIC CONTROL.
3. SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR A TRAVELED WAY, CHANNELIZING DEVICES, BARRIERS, AND IMPACT ATTENUATORS SHALL PASS THE CRITERIA SET FORTH IN THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
4. IF THERE IS A DROP-OFF WITH A DEPTH OF GREATER THAN 4 INCHES WITHIN A 15' CLEAR ZONE FROM THE EDGE OF THE TRAVELED WAY, GRAVEL SHALL BE USED TO CREATE A SLOPE NO STEEPER THAN 4:1.
5. THE DESIGN SPEED IS 40 MPH ALONG ROUTE 28 AND 30 MPH ALONG YARMOUTH ROAD AND CAMP STREET. ALONG ROUTE 28, THE MAXIMUM REFLECTORIZED DRUM SPACING SHALL BE 40 FEET (CENTER-TO-CENTER) AND THE MINIMUM BUFFER LENGTH SHALL BE 305 FEET. ALONG YARMOUTH ROAD AND CAMP STREET, THE MAXIMUM REFLECTORIZED DRUM SPACING SHALL BE 30 FEET (CENTER-TO-CENTER) AND THE MINIMUM BUFFER LENGTH SHALL BE 200 FEET. THESE MINIMUM DISTANCES SHALL BE MAINTAINED UNLESS A LOWER SPEED IS APPROVED BY THE RESIDENT ENGINEER AND ADVISORY SPEED PLAQUES ARE IMPLEMENTED.
6. LANE SHALL BE NO LESS THAN 10 FEET WIDE UNLESS OTHERWISE NOTED.
7. THE FIRST TEN PLASTIC DRUMS IN A TAPER SHALL BE MOUNTED WITH TYPE A LIGHTS.
8. CONTRACTOR SHALL NOTIFY ALL ADJACENT OWNERS A MINIMUM OF 3 BUSINESS DAYS IN ADVANCE OF ANY WORK IN THE DRIVEWAYS, SIDEWALK CLOSURES OR PARKING RESTRICTIONS.
9. ACCESS TO ABUTTING PROPERTIES SHALL BE MAINTAINED AT ALL TIMES. FOR DRIVEWAY ACCESS DETAILS, SEE SHEET 146.
10. CONTRACTOR SHALL COORDINATE WITH ALL PROPERTY OWNERS AND DETERMINE ACCOMMODATIONS NECESSARY TO MAINTAIN PEDESTRIAN ACCESS TO ALL HOMES AND BUSINESSES. FOR SIDEWALK CONSTRUCTION STAGING AT DRIVEWAYS, SEE SHEET 146.
11. ANY FIXED OBJECTS SHALL BE AT LEAST 9 FEET FROM THE CENTERLINE OF ANY OPERATIONAL RAILROAD TRACKS AND PERSONNEL OR EQUIPMENT SHALL BE AT LEAST 15 FEET FROM THE CENTERLINE OF ANY OPERATIONAL RAILROAD TRACKS.
12. THE PROPOSED SHARED USE PATH SHALL NOT BE CONSTRUCTED UNTIL STAGE 4, AS THESE AREAS WILL BE TEMPORARILY WIDENED FOR ROADWAY TRAFFIC.
13. THE CONTRACTOR SHALL MILL AND OVERLAY ALL ROADWAY WITHIN THE LIMITS OF TEMPORARY PAVEMENT MARKINGS.
14. ALL UTILITY SERVICES SHALL REMAIN OPERATIONAL THROUGHOUT CONSTRUCTION. TEMPORARY UTILITY OUTAGES SHALL NOT BE ALLOWED WITHOUT PRIOR APPROVAL BY THE ENGINEER AND SHALL BE COORDINATED WITH RESPECTIVE UTILITY COMPANY. CONTRACTOR SHALL NOTIFY ABUTTERS A MINIMUM OF 3 BUSINESS DAYS IN ADVANCE OF ANY OUTAGES.
15. ALL TRENCH EXCAVATION AREAS SHALL BE BACKFILLED OR COVERED WITH STEEL PLATES OUTSIDE OF WORK HOURS.
16. PRIOR TO THE BEGINNING OF CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT A CONSTRUCTION STAGING PLAN FOR APPROVAL BY THE ENGINEER, MASSDOT RAIL AND TRANSIT DIVISION AND MASS COASTAL RAILROAD (MCRR).
17. RAILROAD OPERATION SHALL BE MAINTAINED DURING CONSTRUCTION EXCEPT WHEN EXPLICITLY ALLOWED BY MASSDOT RAIL AND TRANSIT DIVISION AND MASS COASTAL RAILROAD (MCRR).
18. THE CONTRACTOR AND ITS SUBCONTRACTORS SHALL REQUIRE MCRR RAIL WORKER PROTECTION (RWP) TRAINING.
19. MCRR WILL SUPPLY ONE FULL TIME EMPLOYEE IN CHARGE (EIC) AND ADDITIONAL PERSONNEL AS REQUIRED FOR THE DURATION OF CONTRACTOR AND/OR SUBCONTRACTOR'S WORK WITHIN OR FOULING THE RAILROAD RIGHT-OF WAY.

PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) NOTES:

1. PCMS WITH TWO-PHASE MESSAGES SHALL HAVE A CYCLE OF 8 SECONDS WITH EACH MESSAGE DISPLAYED FOR 4 SECONDS.
2. PCMS #1 AND #2 SHALL BE INSTALLED ON ROUTE 28 NORTHBOUND AND SOUTHBOUND RESPECTIVELY. PCMS #3 SHALL BE INSTALLED ON ROUTE 132 SOUTHBOUND. PCMS #4 SHALL BE INSTALLED ON YARMOUTH ROAD SOUTHBOUND. THESE PCMS SHALL PROVIDE ADVANCED WARNING OF CONSTRUCTION AND SHALL BE IN PLACE 1 WEEK IN ADVANCE OF THE BEGINNING OF CONSTRUCTION.
3. IF A DATE RANGE, DESIGNATED "X/X-X/X" BELOW, WILL EXCEED THE LINE LENGTH OF THE PCMS (MAXIMUM OF 8 CHARACTERS), THE START DATE OF CONSTRUCTION MAY BE USED INSTEAD.
4. PCMS #1, #2 AND #3 SHALL ALSO BE IN PLACE DURING ROUTE 28 CLOSURE. FOR MESSAGES DURING ROUTE 28 DETOUR SEE SHEETS 134 AND 136.

PCMS #1, #2, #3, #4

ADVANCED WARNING

ROAD WORK X/X-X/X
ROUTE 28 AT YARMOUTH

CONSTRUCTION STAGING NOTES:

STAGE 1: CONSTRUCTION ON SOUTH SIDE OF ROUTE 28 AND WEST SIDE OF YARMOUTH ROAD AND CAMP STREET - FALL 2021 - FALL 2022

SUMMER OF 2022: CONSTRUCTION BETWEEN MEMORIAL DAY AND LABOR DAY IS ALLOWED BETWEEN 10PM AND 5AM ONLY. FOR TRAFFIC SETUP OUTSIDE OF THESE HOURS WHILE IN STAGE 1, SEE SHEETS 102-106.

STAGE 1A: ROADWAY PREPARATION WORK AND KAM APPLIANCE DEMOLITION

1. INSTALL BOLLARDS AROUND EXISTING PRE-SIGNAL.
2. REMOVE MEDIAN ISLANDS AND CONSTRUCT TEMPORARY WIDENING. INSTALL TEMPORARY PAVEMENT. ANY WORK REQUIRING A REDUCTION IN THE NUMBER OF LANES SHALL BE LIMITED TO NIGHT TIME BETWEEN 9:00 PM AND 5:00 AM. MAINTAIN A MINIMUM OF ONE LANE IN EACH DIRECTION ON ROUTE 28, YARMOUTH ROAD AND CAMP STREET DURING THESE HOURS. THE EXISTING TRAFFIC PATTERN SHALL BE RESTORED OUTSIDE OF THESE HOURS. TRAFFIC SIGNALS SHALL BE PUT ON FLASHING OPERATION. TRAFFIC AT THE ROUTE 28/YARMOUTH ROAD AND YARMOUTH ROAD/CAMP STREET INTERSECTIONS SHALL BE CONTROLLED BY UNIFORMED POLICE OFFICERS THROUGHOUT DURATION OF THIS WORK.
3. DEMOLISH EXISTING KAM APPLIANCE BUILDING. CLOSE THE RIGHT LANE ON YARMOUTH ROAD SOUTHBOUND DURING WORK HOURS. CONES MAY BE USED INSTEAD OF DRUMS. ALL CONES SHALL BE A MINIMUM OF 36" TALL. REMOVE CONES OR DRUMS AND REOPEN RIGHT LANE WHEN DEMOLITION IS COMPLETED. KAM APPLIANCES IS EXPECTED TO BE VACATED BY JANUARY 1, 2022. ANY WORK IN THIS OR LATER STAGES REQUIRING THE PROPERTY TO BE DEMOLISHED SHALL NOT BE STARTED UNTIL DEMOLITION HAS BEEN COMPLETED.
4. INSTALL TEMPORARY SIGNAL. FOR TEMPORARY SIGNAL LAYOUT, SHEET SHEET 147.

STAGE 1B: CONSTRUCTION OF UTILITIES AND PROPOSED ROADWAY ON SOUTH SIDE OF ROUTE 28, WEST SIDE OF YARMOUTH ROAD NORTH OF ROUTE 28, AND YARMOUTH ROAD / CAMP STREET SOUTH OF ROUTE 28

1. INSTALL UTILITIES (ELECTRIC, TELEPHONE, CATV, TRAFFIC, GAS, WATER, GRAVITY SEWER, DRAINAGE) WITHIN THE WORK AREAS SHOWN. INSTALL TEMPORARY RESTRAINED BARRIER AND THE NECESSARY SUPPORT OF EXCAVATION WHILE UTILITY TRENCH IS OPEN. FOR UTILITY PLANS, SEE SHEETS 156-166.
2. MAINTAIN ROADWAY DRAINAGE. SEE SHEET 133 FOR TEMPORARY DRAINAGE CONNECTIONS.
3. CONSTRUCT PROPOSED FULL DEPTH ROADWAY PAVEMENT UP TO AND INCLUDING INTERMEDIATE COURSE, AND TEMPORARY PAVEMENT IN THE AREA OF FUTURE GRASS BUFFER AND SIDEWALK. DO NOT INSTALL FINAL SURFACE COURSE. MAINTAIN ACCESS TO ABUTTERS. FOR WORK AT DRIVEWAYS, SEE SHEET 146.
4. FOR TEMPORARY TRAFFIC SIGNAL PLAN, SEE SHEET 147.
5. NIGHT WORK: CONSTRUCT INTERSECTION OF ENGINE HOUSE ROAD WITH ROUTE 28. CONSTRUCTION SHALL BE LIMITED TO NIGHTTIME HOURS BETWEEN 9:00 PM AND 5:00 AM. ONE LANE OF ALTERNATING TRAFFIC SHALL BE MAINTAINED AT ALL TIMES THROUGH THE WORK AREA. AT THE END OF NIGHTTIME WORK SHIFTS, INSTALL STEEL PLATES AS NECESSARY AND REOPEN THE ENTIRE WIDTH OF ENGINE HOUSE ROAD. UPON COMPLETION INSTALL PROPOSED FULL DEPTH PAVEMENT EXCEPT SURFACE COURSE.

STAGE 1C: CONTINUE CONSTRUCTION OF YARMOUTH ROAD / CAMP STREET SOUTH OF ROUTE 28

1. RELOCATE YARMOUTH ROAD TRAFFIC SOUTH OF ROUTE 28 ONTO NEWLY CONSTRUCTED PAVEMENT.
2. COMPLETE EAST SIDE OF YARMOUTH ROAD SOUTH OF ROUTE 28 AND CONTINUE CONSTRUCTION OF YARMOUTH ROAD/CAMP STREET INTERSECTION. INSTALL PORTIONS OF PROPOSED 4" AND 6" SEWER FORCE MAINS WITHIN THE WORK AREA SHOWN. INSTALL TEMPORARY LIMITED DEFLECTION BARRIER AND THE NECESSARY SUPPORT OF EXCAVATION WHILE THE UTILITY TRENCH IS OPEN. INSTALL PROPOSED FULL DEPTH PAVEMENT EXCEPT FINAL SURFACE COURSE. MAINTAIN ACCESS TO ABUTTERS.
3. NIGHT WORK: COMPLETE CONSTRUCTION OF CAMP STREET. CONSTRUCTION SHALL BE LIMITED TO NIGHTTIME HOURS BETWEEN 9:00 PM AND 5:00 AM. UNIFORMED POLICE OFFICERS SHALL ACCOMMODATE ONE LANE OF ALTERNATING TRAFFIC THROUGH THE WORK AREA. AT THE END OF EACH WORK SHIFT, INSTALL STEEL PLATES AS NECESSARY BEFORE REOPENING THE ROADWAY TO TWO LANES OF TRAFFIC. UPON COMPLETION, INSTALL PROPOSED FULL DEPTH PAVEMENT EXCEPT FINAL SURFACE COURSE.

STAGE 1D: CONTINUE CONSTRUCTION OF YARMOUTH ROAD / CAMP STREET SOUTH OF ROUTE 28

1. COMPLETE CONSTRUCTION OF WEST SIDE OF YARMOUTH ROAD SOUTH OF ROUTE 28 AND YARMOUTH ROAD/CAMP STREET INTERSECTION. INSTALL PROPOSED FULL DEPTH PAVEMENT EXCEPT FINAL SURFACE COURSE. MAINTAIN ACCESS TO ABUTTERS.

STAGE 2: CONSTRUCTION OF CENTER PORTION OF ROUTE 28 - FALL 2022 - SPRING 2023

1. PRIOR TO THE BEGINNING OF STAGE 2, THE EXISTING RAILROAD GATE ASSEMBLY SHALL BE REMOVED (BY OTHERS).
2. CONSTRUCT CENTER PORTION OF ROUTE 28. DO NOT INSTALL RAISED MEDIAN ISLANDS. WHERE BARRIER CANNOT BE PROTECTED WITH IMPACT ATTENUATORS, INSTALL SAND-FILLED CRASH CUSHIONS PER MANUFACTURER'S RECOMMENDATIONS. INSTALL PROPOSED FULL DEPTH PAVEMENT EXCEPT FINAL SURFACE COURSE. INSTALL TEMPORARY PAVEMENT IN THE AREAS OF PROPOSED MEDIAN ISLANDS.
3. MAINTAIN ROADWAY DRAINAGE. SEE SHEET 133 FOR TEMPORARY DRAINAGE CONNECTIONS.
4. MAINTAIN ACCESS TO ABUTTERS.
5. FOR TEMPORARY SIGNAL PLANS, SEE SHEET 149.

STAGE 2A: CONSTRUCTION OF SEWER FORCE MAINS AND FULL DEPTH PAVEMENT AT ROUTE 28/YARMOUTH ROAD INTERSECTION (WEEKEND NIGHTS)

1. THE WORK SHOWN IN THIS STAGE SHALL NOT OCCUR BETWEEN MEMORIAL DAY AND LABOR DAY. THE WORK SHOWN IN THIS STAGE SHALL OCCUR DURING WEEKEND NIGHTS BETWEEN 9:00 PM AND 5:00 AM ON FRIDAY, SATURDAY, AND SUNDAY NIGHTS BETWEEN LABOR DAY AND MEMORIAL DAY. THE STAGE 2 TRAFFIC PATTERN SHALL BE RESTORED OUTSIDE OF THESE HOURS.
2. CLOSE ROUTE 28 AND YARMOUTH ROAD TO TRAFFIC AND IMPLEMENT ROADWAY DETOURS AS SHOWN ON SHEETS 134-137
3. INSTALL PROPOSED 4" AND 6" SEWER FORCE MAINS ALONG YARMOUTH ROAD AT THE ROUTE 28/YARMOUTH ROAD INTERSECTION. INSTALL PROPOSED FULL DEPTH PAVEMENT EXCEPT FINAL SURFACE IN THE AREAS SHOWN. AT THE END OF THIS WORK, INSTALL STEEL PLATES AS NECESSARY, RESTORE TRAFFIC SIGNAL OPERATION AND OPEN TO TRAFFIC DURING THE DAY.

STAGE 3: CONSTRUCTION ON NORTH SIDE OF ROUTE 28 AND EAST SIDE OF YARMOUTH ROAD NORTH OF ROUTE 28 - SPRING 2023 - SPRING 2024

SUMMER OF 2023: CONSTRUCTION BETWEEN MEMORIAL DAY AND LABOR DAY IS ALLOWED BETWEEN 10PM AND 5AM ONLY. FOR TRAFFIC SETUP OUTSIDE OF THESE HOURS WHILE IN STAGE 3, SEE SHEETS 102-106.

STAGE 3A: CONSTRUCTION OF UTILITIES AND PROPOSED ROADWAY ON NORTH SIDE OF ROUTE 28 AND EAST SIDE OF YARMOUTH ROAD NORTH OF ROUTE 28

1. INSTALL UTILITIES (ELECTRIC, TELEPHONE, CATV, TRAFFIC, GAS, WATER, SEWER FORCE MAIN, DRAINAGE) WITHIN THE WORK AREAS SHOWN. INSTALL TEMPORARY LIMITED DEFLECTION BARRIER AND THE NECESSARY SUPPORT OF EXCAVATION WHILE UTILITY TRENCHES ARE OPEN. WHERE BARRIER CANNOT BE PROTECTED WITH IMPACT ATTENUATORS, INSTALL SAND-FILLED CRASH CUSHIONS PER MANUFACTURER'S RECOMMENDATIONS. FOR UTILITY PLANS, SEE SHEETS 156-166.
2. CONSTRUCT INFILTRATION BASIN NORTH OF ROUTE 28 AND PROPOSED GRAVITY SEWER ADJACENT TO THE BASIN.
3. MAINTAIN ROADWAY DRAINAGE. SEE SHEET 133 FOR TEMPORARY DRAINAGE CONNECTIONS.
4. CONSTRUCT PROPOSED FULL DEPTH ROADWAY PAVEMENT UP TO AND INCLUDING INTERMEDIATE COURSE, AND TEMPORARY PAVEMENT IN THE AREAS OF FUTURE GRASS BUFFER, SIDEWALK AND RAISED MEDIAN ISLAND. DO NOT INSTALL FINAL SURFACE COURSE. MAINTAIN ACCESS TO ABUTTERS, SEE SHEET 146 FOR DETAILS.
5. FOR TEMPORARY TRAFFIC SIGNAL PLAN, SEE SHEET 150.
6. NIGHT WORK: CONSTRUCT NORTHEAST CORNER OF PROPOSED ROUTE 28/YARMOUTH ROAD INTERSECTION. CONSTRUCTION SHALL BE LIMITED TO NIGHTTIME HOURS BETWEEN 9:00 PM AND 5:00 AM. TRAFFIC SIGNALS SHALL BE PUT ON FLASHING OPERATION AND TRAFFIC SHALL BE CONTROLLED BY UNIFORMED POLICE OFFICERS THROUGHOUT DURATION OF NIGHT WORK. AT THE END OF THIS WORK INSTALL STEEL PLATES AS NECESSARY, RESTORE TRAFFIC SIGNAL OPERATION AND OPEN TO TRAFFIC DURING THE DAY.
7. NIGHT WORK: CONSTRUCT INTERSECTION OF MARY DUNN WAY WITH ROUTE 28. CONSTRUCTION SHALL BE LIMITED TO NIGHTTIME HOURS BETWEEN 9:00 PM AND 5:00 AM. ONE LANE OF ALTERNATING TRAFFIC SHALL BE MAINTAINED AT ALL TIMES THROUGH THE WORK AREA. AT THE END OF NIGHTTIME WORK SHIFTS, INSTALL STEEL PLATES AS NECESSARY AND REOPEN THE ENTIRE WIDTH OF MARY DUNN WAY. UPON COMPLETION INSTALL PROPOSED FULL DEPTH PAVEMENT EXCEPT SURFACE COURSE.
8. WEEKEND WORK (LABOR DAY TO MEMORIAL DAY ONLY): INSTALL PROPOSED 4" AND 6" SEWER FORCE MAIN ACROSS OLD YARMOUTH ROAD. CLOSE AND DETOUR OLD YARMOUTH ROAD. THE WORK SHALL OCCUR DURING WEEKEND NIGHTS BETWEEN 9:00 PM AND 5:00 AM ON FRIDAY, SATURDAY, AND SUNDAY NIGHTS. FOR DETOUR, SEE SHEET 138.
9. FINALIZE ALL DRAINAGE CONNECTIONS AND REROUTE STORMWATER RUNOFF VIA THE INFILTRATION BASIN.

STAGE 3B: CONSTRUCTION OF NORTHWEST CORNER OF ROUTE 28/YARMOUTH ROAD INTERSECTION (NIGHT WORK):

1. RELOCATE YARMOUTH ROAD TRAFFIC, NORTH OF ROUTE 28, ONTO NEWLY CONSTRUCTED PAVEMENT.

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(M/I)-0035(043)	92	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS

2. CONSTRUCT NORTHWEST CORNER OF PROPOSED ROUTE 28/YARMOUTH ROAD INTERSECTION. CONSTRUCTION SHALL BE LIMITED TO NIGHTTIME HOURS BETWEEN 9:00 PM AND 5:00 AM. TRAFFIC SIGNALS SHALL BE PUT ON FLASHING OPERATION AND TRAFFIC SHALL BE CONTROLLED BY UNIFORMED POLICE OFFICERS THROUGHOUT DURATION OF NIGHT WORK. AT THE END OF THIS WORK INSTALL STEEL PLATES AS NECESSARY, RESTORE TRAFFIC SIGNAL OPERATION AND OPEN TO TRAFFIC DURING THE DAY.

STAGE 4: CONSTRUCTION OF CURB, MEDIAN ISLANDS, SIDEWALKS, SIGNALS, LIGHTING AND FINAL PAVEMENT - SUMMER 2024 - FALL 2024

SUMMER OF 2024: CONSTRUCTION BETWEEN MEMORIAL DAY AND LABOR DAY IS ALLOWED BETWEEN 10PM AND 5AM ONLY. FOR TRAFFIC SETUP OUTSIDE OF THESE HOURS WHILE IN STAGE 4, SEE SHEETS 123-127.

1. FOR DAYTIME CONSTRUCTION MAINTAIN THE FOLLOWING MINIMUM LANE CONFIGURATION:
   - ROUTE 28 EB AT YARMOUTH ROAD: 1 LEFT TURN LANE, 2 GENERAL PURPOSE LANES
   - ROUTE 28 WB AT YARMOUTH ROAD: 2 GENERAL PURPOSE LANES
   - YARMOUTH ROAD NB AT ROUTE 28: 1 LEFT TURN LANE, 1 GENERAL PURPOSE LANE
   - YARMOUTH ROAD SB AT YARMOUTH ROAD: 1 RIGHT TURN LANE, 1 GENERAL PURPOSE LANE
   - YARMOUTH ROAD AT CAMP STREET: 1 LANE IN EACH DIRECTION
   - CAMP STREET AT YARMOUTH ROAD: 1 LANE IN EACH DIRECTION

   IF LANE CLOSURES ARE REQUIRED, WORK SHOULD BE LIMITED TO NIGHTTIME HOURS BETWEEN 9:00 PM AND 5:00 AM.
2. WORK BY OTHERS: ACTIVATE ALL NEW UNDERGROUND UTILITIES AND REMOVE TEMPORARY UTILITY POLES AND OVERHEAD WIRES.
3. INSTALL PROPOSED TRAFFIC SIGNAL EQUIPMENT AND ROADWAY LIGHTING.
4. INSTALL TRAFFIC SIGNAL LOOP DETECTORS AND ACTIVATE PROPOSED TRAFFIC SIGNALS.
5. CONSTRUCT PROPOSED SIDEWALKS, SHARED USE PATH AND RAISED MEDIAN ISLANDS.
6. INSTALL REMAINING RAILROAD GATES, FLASHERS, AND GATE ARMS (BY OTHERS)
7. INSTALL PROPOSED LANDSCAPING INCLUDING AREAS OF LOAM AND SEED AND TREES.
8. INSTALL ASPHALTIC PLUG JOINTS ALONG OUTER CONCRETE RAILROAD PANELS.
9. INSTALL FINAL PAVEMENT SURFACE COURSE, PAVEMENT MARKINGS, AND SIGNS.

606272_TR(TTCP NOTES).DWG Plotted on 9-Apr-2021 5:21 PM

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(M)-0035(043)	93	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
ADVANCE SIGNAGE

606272_TR(TTCP ADVANCED SIGNAGE).DWG Plotted on 9-Apr-2021 2:52 PM

N

END ROAD WORK / DOUBLE FINES END — MA-R2-10e 36" x 48"

ROAD WORK AHEAD — W20-1 36" x 36"

WORK ZONE / SPEEDING FINES DOUBLED — MA-R2-10a 48" x 36"

250'

2000' FROM LIMIT OF WORK

1700' FROM LIMIT OF WORK

50'

500' FROM LIMIT OF WORK

400' FROM ENGINE HOUSE ROAD

1200' FROM LIMIT OF WORK

IYANNOUGH ROAD (MA ROUTE 28)

ENGINE HOUSE ROAD

MAIN STREET

YARMOUTH ROAD

OLD YARMOUTH ROAD

0 100 200 300 400

SCALE: 1" = 100'

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	94	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
STAGE 1A

LEGEND:

- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- TEMPORARY PAVEMENT
- S — TEMPORARY TRAFFIC SIGNAL
- P — POLICE DETAIL

NOTE:
WHEN SOUTHBOUND RIGHT TURN LANE IS CLOSED, COVER THE EXISTING RIGHT TURN SIGNAL

MA-W30-8L
36" x 36"
LOCATED 500' BEFORE LANE CLOSURE
SQUEEZE LEFT

DEMOLISH KAM APPLIANCE BUILDING
(EXPECTED VACANCY: 1/1/2022)

TEMP REFLECTORIZED DRUM AT 20' SPACING

TEMP SWL

TEMP FENCE

W4-2L
36" x 36"

12" TEMP SL

INSTALL BOLLARDS

EXIST. RAILROAD GATE ASSEMBLY TO BE REMOVED (BO) AND REINSTALLED IN STAGE 4. FOUNDATION TO REMAIN

R5-10C MOUNTED ON TYPE III BARRICADE

TEMP REFLECTORIZED DRUM AT 20' SPACING (TYP.)

TEMP REFLECTORIZED DRUM AT 20' SPACING (TYP.)

MARY DUNN WAY

YARMOUTH ROAD

IYANNOUGH ROAD (MA ROUTE 28)

CAMP STREET

0 40 100 160

SCALE: 1" = 40'

606272_TR\TTCP STAGE 1A).DWG Plotted on 9-Apr-2021 2:52 PM

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	95	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
STAGE 1B
(INCLUDES NIGHT WORK)

606272_TR(TTCP STAGE 1B).DWG Plotted on 9-Apr-2021 2:52 PM

LEGEND:

- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- TEMPORARY PAVEMENT
- S TEMPORARY TRAFFIC SIGNAL

W5-1
36" x 36"
ROAD NARROWS

W1-4L
36" x 36"

XX M.P.H.
W13-1P
18" x 18"

TEMP REFLECTORIZED DRUM
AT 20' SPACING (TYP.)

W1-4L
36" x 36"

6" TEMP SWL

6" TEMP DBYL

IYANNOUGH ROAD (MA ROUTE 28)

MARY DUNN WAY

ENGINE HOUSE ROAD

101 102 103 104 105 106 401 402 501 502

10' 10'

500' 500' 214' LANE SHIFT
L/2=WS^2/60/2
L/2=(16)(40^2)/60/2

305' BUFFER

100' TAPER

200' BUFFER

CONTINUED ON SHEET NO. 96

0 40 100 160
SCALE: 1" = 40'

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	96	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
STAGE 1B
(INCLUDES NIGHT WORK)

606272_TR(TTCP STAGE 1B).DWG Plotted on 9-Apr-2021 2:52 PM

LEGEND:

- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- TEMPORARY PAVEMENT
- S TEMPORARY TRAFFIC SIGNAL

CONTINUED ON SHEET NO. 95

CONTINUED ON SHEET NO. 99

CONTINUED ON SHEET NO. 97

CONTINUED ON SHEET NO. 98

6" TEMP SWL
6" TEMP DBYL
6" TEMP SWL
6" TEMP DBYL
W4-2R 36" x 36"
R3-7R 30" x 30" RIGHT LANE MUST TURN RIGHT
ADJ. EXIST. CB
12" TEMP SL
6" TEMP SWL
12" TEMP SL
6" TEMP SWL
100' TAPER
12" TEMP SL
6" TEMP SWL
TEMP REFLECTORIZED DRUM AT 20' SPACING
R5-10C MOUNTED ON TYPE III BARRICADE
INSTALL TEMP CB-2 CONNECT TO EXISTING DMH WITH 12" RCP
6" TEMP SWL
12" TEMP SL
6" TEMP DWL
W4-2R 36" x 36"
TEMP IMPACT ATTENUATOR (TL-2) END TEMP. BARRIER - LIMITED DEFLECTION (TL-2), AT STA 113+47
W1-4R 36" x 36"
500'
200' BUFFER
100'
W5-1 36" x 36" ROAD NARROWS
STOP R1-1 30" x 30"
6" TEMP SWL
TEMP REFLECTORIZED DRUM AT 20' SPACING (TYP.)
6" TEMP DBYL
12" TEMP SL
6" TEMP DBYL
6" TEMP SWL
6" TEMP DBYL
6" TEMP DBYL
6" TEMP SWL
6" TEMP SWL
6" TEMP DBYL

NOTES:
MAINTAIN AREA TO ABUTTERS. FOR BARRIER DETAIL AT DRIVEWAYS, SEE SHEET 146

0 40 100 160
SCALE: 1" = 40'

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	97	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
STAGE 1B
(INCLUDES NIGHT WORK)

LEGEND:

- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- TEMPORARY PAVEMENT
- S TEMPORARY TRAFFIC SIGNAL

N

TEMP IMPACT ATTENUATOR (TL-2)
END TEMP. BARRIER - LIMITED DEFLECTION (TL-2), AT STA 119+31

TEMP REFLECTORIZED DRUM AT 20' SPACING (TYP.)

6" TEMP DBYL

IYANNOUGH ROAD (MA ROUTE 28)

6" TEMP SWL

TEMP. BARRIER - LIMITED DEFLECTION (TL-2)

500'

W1-4R
36" x 36"

MEET EXISTING PAVEMENT MARKINGS AT STA 120+45

500'

W1-4R
36" x 36"

XX M.P.H.
W13-1P
18" x 18"

120' LANE SHIFT
L/2=WS^2/60/2
L/2=(9)(40^2)/60/2

114 115 116 117 118 119 120 121

CONTINUED ON SHEET NO 96

NOTES:
MAINTAIN AREA TO ABUTTERS. FOR BARRIER DETAIL AT DRIVEWAYS, SEE SHEET 146

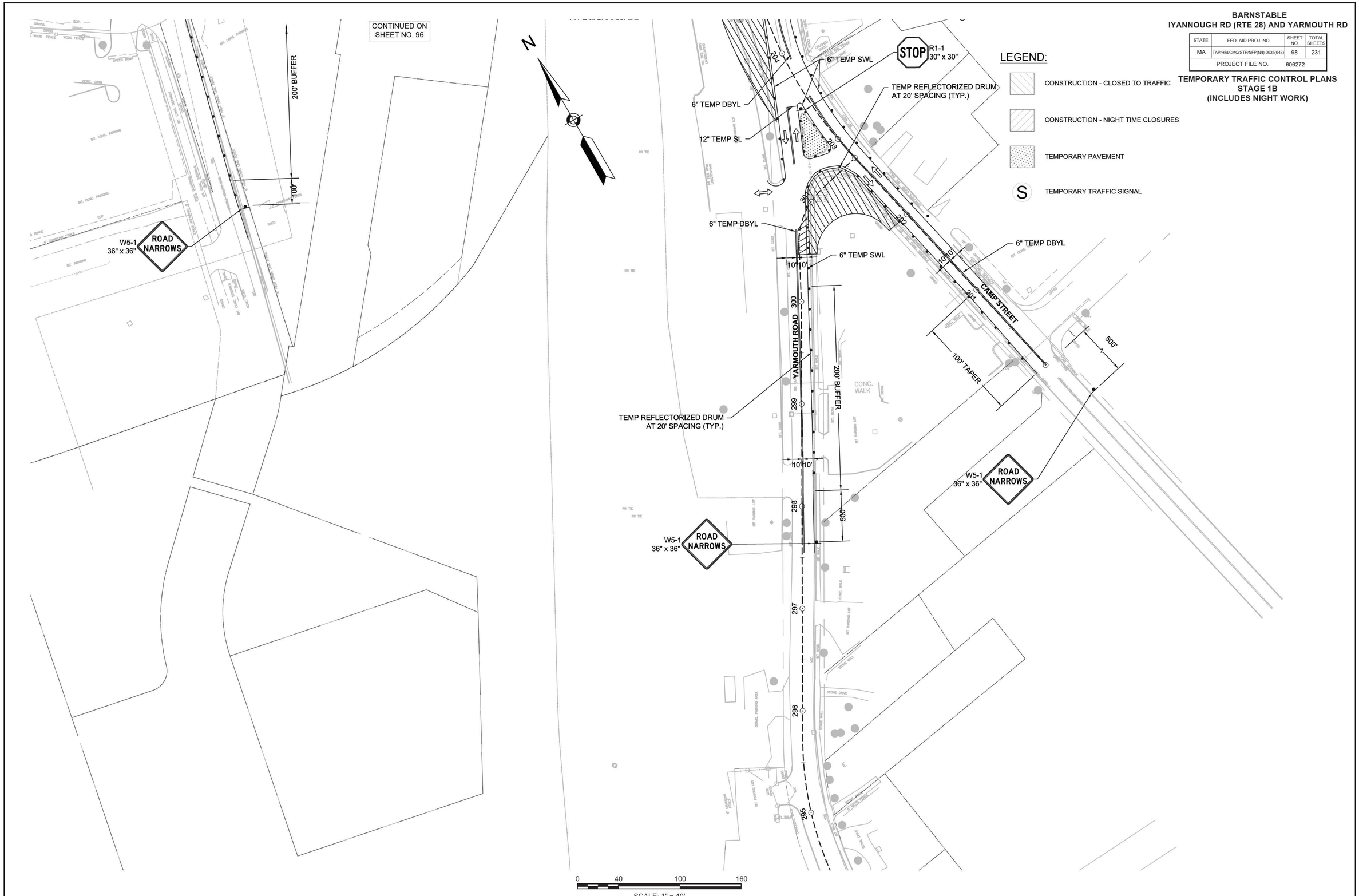
0 40 100 160
SCALE: 1" = 40'

606272_TR(TTCP STAGE 1B).DWG Plotted on 9-Apr-2021 2:52 PM

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(N/I)-0035(043)	98	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
STAGE 1B
(INCLUDES NIGHT WORK)



606272_TR(TTCP STAGE 1B).DWG Plotted on 9-Apr-2021 2:52 PM

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	99	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
STAGE 1B
(INCLUDES NIGHT WORK)

LEGEND:

- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- TEMPORARY PAVEMENT
- S TEMPORARY TRAFFIC SIGNAL

N

W1-4L
36" x 36"

XX M.P.H. W13-1P
18" x 18"

ROAD NARROWS W5-1
36" x 36"

500'

500'

L/2=WS^2/60/2
L/2=(4)(30^2)/60/2

30' LANE SHIFT

200' BUFFER

YARMOUTH ROAD

OLD YARMOUTH ROAD

MARY DUNN WAY

10' 10'

TEMP REFLECTORIZED DRUM
AT 20' SPACING (TYP.)

6" TEMP SWL

6" TEMP DBYL

217 216 215 214 213 212 211 210 209

CONTINUED ON
SHEET NO. 96

0 40 100 160

SCALE: 1" = 40'

606272_TR(TTCP STAGE 1B).DWG Plotted on 9-Apr-2021 2:53 PM

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	100	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
STAGE 1C
(INCLUDES NIGHT WORK)

606272_TR(TTCP STAGE 1C).DWG Plotted on 9-Apr-2021 2:53 PM

LEGEND:

- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- TEMPORARY PAVEMENT
- S TEMPORARY TRAFFIC SIGNAL

N

CONTINUED ON SHEET NO. 95

CONTINUED ON SHEET NO. 99

CONTINUED ON SHEET NO. 97

CONTINUED ON SHEET NO. 98

MARY DUNN WAY

YARMOUTH ROAD

IYANNOUGH ROAD (MA ROUTE 28)

6" TEMP SWL

6" TEMP DBYL

12" TEMP SL

6" TEMP DWL

W4-2R 36" x 36"

R3-7R 30" x 30" — RIGHT LANE MUST TURN RIGHT

TEMP REFLECTORIZED DRUM AT 20' SPACING (TYP.)

RET. EXIST. CB

RET. TEMP CB-1

RET. TEMP CB-2

R5-10C MOUNTED ON TYPE III BARRICADE

100' TAPER

200' BUFFER

100'

500'

W5-1 36" x 36" — ROAD NARROWS

TEMP IMPACT ATTENUATOR (TL-2) END TEMP BARRIER - LIMITED DEFLECTION (TL-2), AT STA 204+56

TEMP IMPACT ATTENUATOR (TL-2) END TEMP. BARRIER - LIMITED DEFLECTION (TL-2), AT STA 202+57

TEMP. BARRIER - LIMITED DEFLECTION (TL-2)

L/2=WS*2*60/2
L/2= (24)(25*2)/60/2
120' LANE SHIFT

155' BUFFER

R1-1 30" x 30" — STOP

W1-4R 36" x 36"

TEMP IMPACT ATTENUATOR (TL-2) END TEMP. BARRIER - LIMITED DEFLECTION (TL-2), AT STA 113+47

W1-4L 36" x 36" 500' IN ADVANCE OF BUFFER

0 40 100 160

SCALE: 1" = 40'

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	101	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
STAGE 1D
(INCLUDES NIGHT WORK)

606272_TR(TTCP STAGE 1D).DWG Plotted on 9-Apr-2021 5:22 PM

LEGEND:

- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- TEMPORARY PAVEMENT
- S TEMPORARY TRAFFIC SIGNAL

N

CONTINUED ON SHEET NO. 95

CONTINUED ON SHEET NO. 99

CONTINUED ON SHEET NO. 97

CONTINUED ON SHEET NO. 98

MARY DUNN WAY

YARMOUTH ROAD

IYANNOUGH ROAD (MA ROUTE 28)

TEMP SWL

6" TEMP DBYL

6" TEMP SWL

6" TEMP DWL

12" TEMP SL

W4-2R 36" x 36"

R3-7R 30" x 30" RIGHT LANE MUST TURN RIGHT

RET. EXIST. CB

100' TAPER

RET. TEMP CB-1

RET. TEMP CB-2

R5-10C MOUNTED ON TYPE III BARRICADE

200' BUFFER

W5-1 36" x 36" ROAD NARROWS

W1-4R 36" x 36"

TEMP IMPACT ATTENUATOR (TL-2)
END TEMP. BARRIER - LIMITED DEFLECTION
(TL-2), AT STA 113+47

R1-1 30" x 30" STOP

500'

0 40 100 160

SCALE: 1" = 40'

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	102	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
SUMMER 2023

606272_TR(TTCP SUMMER 2) DWG Plotted on 9-Apr-2021 2:55 PM

N

LEGEND:

- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- TEMPORARY PAVEMENT
- S TEMPORARY TRAFFIC SIGNAL

W1-4L
36" x 36"

6" TEMP SWL

6" TEMP DBYL

6" TEMP SWL

6" TEMP DBYL

6" TEMP DWL

6" TEMP SWL

IYANNOUGH ROAD (MA ROUTE 28)

MARY DUNN WAY

ENGINE HOUSE ROAD

101 102 103 104 105 106 401 402 501 502

14' 15'

CONTINUED ON SHEET NO. 103

0 40 100 160

SCALE: 1" = 40'

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	103	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
SUMMER 2023

606272_TR(TTCP SUMMER 2) DWG Plotted on 9-Apr-2021 2:55 PM

LEGEND:

- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- TEMPORARY PAVEMENT
- S TEMPORARY TRAFFIC SIGNAL

N

CONTINUED ON SHEET NO. 102

CONTINUED ON SHEET NO. 106

CONTINUED ON SHEET NO. 104

CONTINUED ON SHEET NO. 105

MARY DUNN WAY

YARMOUTH ROAD

IYANNOUGH ROAD (MA ROUTE 28)

6" TEMP SWL
6" TEMP DBYL
6" TEMP DWL
12" TEMP SL
W4-2R 36" x 36"
R3-7R 30" x 30" RIGHT LANE MUST TURN RIGHT
W1-4R 36" x 36"
R1-1 30" x 30" STOP

0 40 100 160
SCALE: 1" = 40'

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	104	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
SUMMER 2023

LEGEND:

- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- TEMPORARY PAVEMENT
- S TEMPORARY TRAFFIC SIGNAL



606272_TR(TTCP SUMMER 2) DWG Plotted on 9-Apr-2021 2:55 PM

CONTINUED ON SHEET NO. 103

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	105	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
SUMMER 2023

LEGEND:

- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- TEMPORARY PAVEMENT
- S — TEMPORARY TRAFFIC SIGNAL

6" TEMP DBYL
6" TEMP SWL
12" TEMP SL
STOP R1-1 30" x 30"
6" TEMP DBYL
6" TEMP SWL
YARMOUTH ROAD
CAMP STREET
200' BUFFER
100' TAPER
500'
500'
W5-1 36" x 36" ROAD NARROWS
W5-1 36" x 36" ROAD NARROWS
201
202
203
301
300
299
298
297
296
295
10'
10'

0 40 100 160
SCALE: 1" = 40'

606272_TR(TTCP SUMMER 2) DWG Plotted on 9-Apr-2021 2:55 PM

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	106	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
SUMMER 2023

606272_TR(TTCP SUMMER 2) DWG Plotted on 9-Apr-2021 2:55 PM

LEGEND:

- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- TEMPORARY PAVEMENT
- (S) TEMPORARY TRAFFIC SIGNAL



BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	107	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
STAGE 2

LEGEND:

- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- TEMPORARY PAVEMENT
- S TEMPORARY TRAFFIC SIGNAL

N

W5-1
36" x 36"
ROAD NARROWS

MA-W30-8R
36" x 36"
SQUEEZE RIGHT

XX M.P.H. W13-1P
18" x 18"

L/2=WS^2/60/2
L/2=(4)(40^2)/60/2

80' | 55' LANE SHIFT | 305' BUFFER

500' | 500'

R4-7
24" x 30"

R3-2
30" x 30"

6" TEMP SYL

6" TEMP SWL

6" TEMP SWL

6" TEMP SYL

TEMP REFLECTORIZED
DRUM AT 20' SPACING (TYP.)

6" TEMP DWL

R3-2
30" x 30"

TEMP CB-1

6" TEMP SWL

MARY DUNN WAY

IYANNOUGH ROAD (MA ROUTE 28)

ENGINE HOUSE ROAD

101 102 103 104 105 106 401 402 501 502

10' | 12'

CONTINUED ON SHEET NO. 108

0 40 100 160
SCALE: 1" = 40'

606272_TR(TTCP STAGE 2).DWG Plotted on 9-Apr-2021 5:22 PM

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	108	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
STAGE 2

LEGEND:

- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- TEMPORARY PAVEMENT
- S TEMPORARY TRAFFIC SIGNAL

N

606272_TR(TTCP STAGE 2).DWG Plotted on 9-Apr-2021 5:22 PM

CONTINUED ON SHEET NO. 107

CONTINUED ON SHEET NO. 111

CONTINUED ON SHEET NO. 109

CONTINUED ON SHEET NO. 110

MARY DUNN WAY

YARMOUTH ROAD

IYANNOUGH ROAD

R3-2 30" x 30"

W4-2L 36" x 36"

R3-7R 30" x 30"

RIGHT LANE MUST TURN RIGHT

W4-2R 36" x 36"

R1-1 30" x 30"

STOP

6" TEMP SYL

6" TEMP SWL

6" TEMP DBYL

6" TEMP DWL

12" TEMP SL

RET. EXIST. CB

TEMP CB-1

TEMP CB-2

TEMP IMPACT ATTENUATOR (TL-2)

BEGIN TEMP BARRIER - LIMITED DEFLECTION (TL-2), AT STA 107+93

END TEMP BARRIER - LIMITED DEFLECTION (TL-2), AT STA 108+51

R5-10C MOUNTED ON TYPE III BARRICADE

INSTALL TEMP 24" RCP

INSTALL PROP. DMH

INSTALL TEMP 24" RCP

INSTALL TEMP DMH-1

TEMP REFLECTORIZED DRUM AT 20' SPACING (TYP.)

CONNECT INTO EXISTING CB

0 40 100 160

SCALE: 1" = 40'

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	109	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
STAGE 2

LEGEND:

- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- TEMPORARY PAVEMENT
- S TEMPORARY TRAFFIC SIGNAL

N

INSTALL PROP. DMH
INSTALL TEMP 24" RCP
INSTALL TEMP DMH-1
TEMP REFLECTORIZED DRUM AT 20' SPACING (TYP.)
6" TEMP SYL
6" TEMP SWL

IYANNOUGH ROAD (MA ROUTE 28)

L/2=WS^2/60/2
L/2=(7)(40^2)/60/2

94' LANE SHIFT
80'
305' BUFFER

W5-1 36" x 36" ROAD NARROWS
MA-W30-8R 36" x 36" SQUEEZE RIGHT
W13-1P 18" x 18" XX M.P.H.
500'
500'

R4-7 24" x 30"

10'
10'

114 115 116 117 118 119 120 121

CONTINUED ON SHEET NO. 108

0 40 100 160
SCALE: 1" = 40'

606272_TR(TTCP STAGE 2).DWG Plotted on 9-Apr-2021 5:22 PM

CONTINUED ON SHEET NO. 108

W5-1 36" x 36" ROAD NARROWS

6" TEMP DBYL

6" TEMP SWL

TEMP REFLECTORIZED DRUM AT 20' SPACING (TYP.)

12" TEMP SL

STOP R1-1 30" x 30"

6" TEMP DBYL

6" TEMP SWL

YARMOUTH ROAD

CAMP STREET

CONC. WALK

W5-1 36" x 36" ROAD NARROWS

W5-1 36" x 36" ROAD NARROWS

0 40 100 160

SCALE: 1" = 40'

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	110	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
STAGE 2

LEGEND:

- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- TEMPORARY PAVEMENT
- S TEMPORARY TRAFFIC SIGNAL

606272_TR(TTCP STAGE 2).DWG Plotted on 9-Apr-2021 5:23 PM

LEGEND:

- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- TEMPORARY PAVEMENT
- S — TEMPORARY TRAFFIC SIGNAL

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	111	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
STAGE 2

N

6' CHAINLINK FENCE
6' CLF GATE
6' CHAINLINK FENCE
6' CHAINLINK FENCE
6' CHAINLINK FENCE
6' CHAINLINK FENCE
4' CHAINLINK FENCE
5' HIGH FENCE
GRAVEL
GRAVEL
GRAVEL
EDGE OF GRAVEL
CONC. WALL
EDGE OF PAVEMENT
EDGE OF PAVEMENT
EDGE OF PAVEMENT

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	112	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
STAGE 2A

CONTINUED ON SHEET NO. 111

LEGEND:

- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- TEMPORARY PAVEMENT
- S — TEMPORARY TRAFFIC SIGNAL

N

TEMP IMPACT ATTENUATOR (TL-2)
END TEMP. BARRIER - LIMITED DEFLECTION
(TL-2), AT STA 104+15

MARY DUNN WAY

YARMOUTH ROAD

IYANNOUGH ROAD

TYPE III BARRICADE (TYP.)
WITH R11-2
48"x30"

TEMP REFLECTORIZED
DRUM AT 20' SPACING (TYP.)

TEMP IMPACT ATTENUATOR (TL-2)
BEGIN TEMP BARRIER - LIMITED DEFLECTION
(TL-2), AT STA 107+93

END TEMP BARRIER - LIMITED DEFLECTION
(TL-2), AT STA 108+51

R5-10C MOUNTED ON
TYPE III BARRICADE

CONTINUED ON SHEET NO. 107

CONTINUED ON SHEET NO. 109

CONTINUED ON SHEET NO. 110

0 40 100 160
SCALE: 1" = 40'

606272_TR(TTCP STAGE 2A).DWG Plotted on 9-Apr-2021 2:56 PM

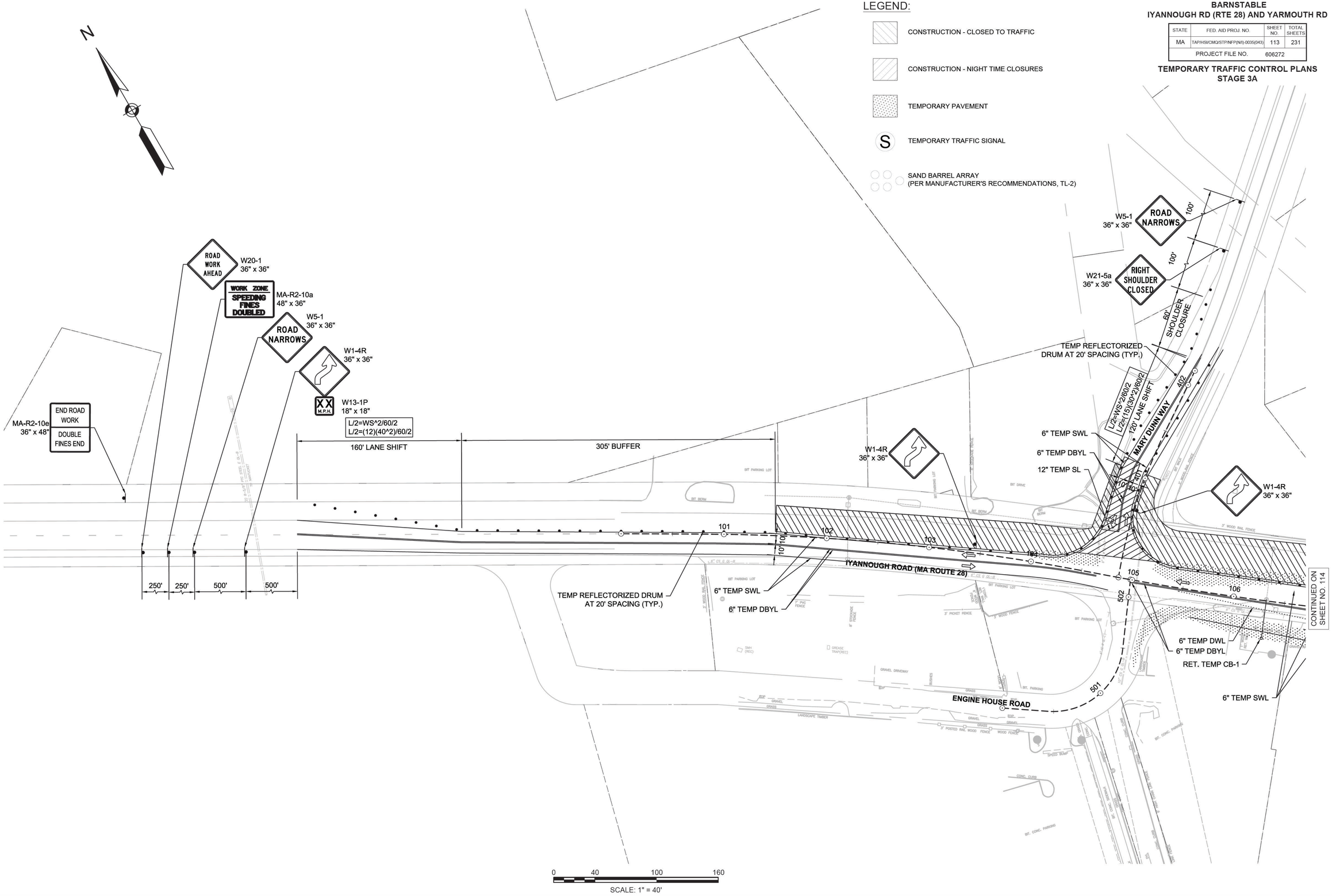
BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(N/I)-0035(043)	113	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
STAGE 3A

LEGEND:

- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- TEMPORARY PAVEMENT
- S TEMPORARY TRAFFIC SIGNAL
- SAND BARREL ARRAY (PER MANUFACTURER'S RECOMMENDATIONS, TL-2)



606272_TR(TTCP STAGE 3A).DWG Plotted on 9-Apr-2021 2:56 PM

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	114	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
STAGE 3A

LEGEND:

- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- TEMPORARY PAVEMENT
- S — TEMPORARY TRAFFIC SIGNAL
- SAND BARREL ARRAY (PER MANUFACTURER'S RECOMMENDATIONS, TL-2)

CONTINUED ON SHEET NO. 117

CONTINUED ON SHEET NO. 113

W5-1 36" x 36" ROAD NARROWS 100'

W21-5a 36" x 36" RIGHT SHOULDER CLOSED 100'

60' SHOULDER CLOSURE

TEMP REFLECTORIZED DRUM AT 20' SPACING (TYP.)

LZ=WS^2/60/2
LZ=(15)(30^2)/60/2
120' LANE SHIFT

MARY DUNN WAY

6" TEMP SWL
6" TEMP DBYL
12" TEMP SL

W1-4R 36" x 36"

W4-2L 36" x 36"

6" TEMP SWL
6" TEMP DBYL

R3-7R 30" x 30" RIGHT LANE MUST TURN RIGHT

YARMOUTH ROAD

W1-4R 36" x 36"

W4-2R 36" x 36"

INSTALL TEMP 24" RCP
INSTALL PROP. DMH
INSTALL TEMP 24" RCP
INSTALL TEMP DMH-1

12" TEMP SL
RET. EXIST. CB
SAND BARRELS (TYP.)
CONNECT INTO EXISTING CB

IYANNOUGH ROAD (MA ROUTE 28)

6" TEMP DBYL
TEMP. BARRIER - LIMITED DEFLECTION (TL-2)
6" TEMP SWL

6" TEMP DWL
6" TEMP DBYL
RET. TEMP CB-1
12" TEMP SL
6" TEMP DBYL
6" TEMP SWL

RET. TEMP CB-2
12" TEMP SL
6" TEMP DWL
6" TEMP SWL
12" TEMP SL

6" TEMP SWL
6" TEMP DBYL

STOP R1-1 30" x 30"

12" TEMP SL

6" TEMP DBYL
6" TEMP SWL

CONTINUED ON SHEET NO. 115

CONTINUED ON SHEET NO. 116

0 40 100 160
SCALE: 1" = 40'

606272_TR(TTCP STAGE 3A).DWG Plotted on 9-Apr-2021 2:57 PM

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	115	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
STAGE 3A

LEGEND:

- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- TEMPORARY PAVEMENT
- S — TEMPORARY TRAFFIC SIGNAL
- SAND BARREL ARRAY (PER MANUFACTURER'S RECOMMENDATIONS, TL-2)

N

W1-4L
36" x 36"

INSTALL PROP. DMH
INSTALL TEMP 24" RCP
INSTALL TEMP DMH-1

TEMP IMPACT ATTENUATOR (TL-2)
END TEMP. BARRIER - LIMITED DEFLECTION (TL-2), AT STA 119+91

305' BUFFER

W1-4L
36" x 36"

W13-1P
18" x 18"

XX
M.P.H.

W5-1
36" x 36"

ROAD NARROWS

L/2=WS^2/60/2
L/2=(14)(40^2)/60/2

187' LANE SHIFT

500'

500'

110

IYANNOUGH ROAD (MA ROUTE 28)

114 115 116 117 118 119 120 121

6" TEMP DBYL

TEMP. BARRIER - LIMITED DEFLECTION (TL-2)

6" TEMP SWL

TEMP REFLECTORIZED DRUM AT 20' SPACING (TYP.)

500'

CONTINUED ON SHEET NO. 114

0 40 100 160

SCALE: 1" = 40'

606272_TR(TTCP STAGE 3A).DWG Plotted on 9-Apr-2021 2:57 PM

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	116	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
STAGE 3A

CONTINUED ON SHEET NO. 114

N

LEGEND:

- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- TEMPORARY PAVEMENT
- S — TEMPORARY TRAFFIC SIGNAL
- SAND BARREL ARRAY (PER MANUFACTURER'S RECOMMENDATIONS, TL-2)

W1-4R 36" x 36" ROAD NARROWS

6" TEMP DBYL

6" TEMP SWL

12" TEMP SL

STOP R1-1 30" x 30"

6" TEMP DBYL

6" TEMP SWL

YARMOUTH ROAD

CAMP STREET

TEMP REFLECTORIZED DRUM AT 20' SPACING (TYP.)

200' BUFFER

L/2=WS*2/60/2
L/2=(6)(30*2)/60/2

45' LANE SHIFT

500'

500'

MA-R2-10e 36" x 48" END ROAD WORK / DOUBLE FINES END

W5-1 36" x 36" ROAD NARROWS

W1-4L 36" x 36"

W5-1 36" x 36" ROAD NARROWS

0 40 100 160

SCALE: 1" = 40'

606272_TR(TTCP STAGE 3A).DWG Plotted on 9-Apr-2021 2:59 PM

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	117	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
STAGE 3A

606272_TR(TTCP STAGE 3A).DWG Plotted on 9-Apr-2021 2:59 PM

N

LEGEND:

- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- TEMPORARY PAVEMENT
- S — TEMPORARY TRAFFIC SIGNAL
- SAND BARREL ARRAY (PER MANUFACTURER'S RECOMMENDATIONS, TL-2)

W1-4R 36" x 36"

W13-1P 18" x 18"

XX M.P.H.

ROAD NARROWS W5-1 36" x 36"

500'

500'

217

216

215

214

213

212

211

210

209

208

YARMOUTH ROAD

OLD YARMOUTH ROAD

CLOSURE OF OLD YARMOUTH ROAD FOR FORCE MAIN INSTALLATION (WEEKEND WORK)

TEMP. BARRIER - LIMITED DEFLECTION (TL-2)

TEMP REFLECTORIZED DRUM AT 20' SPACING (TYP.)

L/2=WS^2/60/2
L/2=(28)(25^2)/60/2

196' LANE SHIFT (146' MIN)

11'

6" TEMP SWL

6" TEMP DBYL

CONTINUED ON SHEET NO. 114

0 40 100 160

SCALE: 1" = 40'

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	118	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
STAGE 3B
(NIGHT WORK)

606272_TR(TTCP STAGE 3B).DWG Plotted on 9-Apr-2021 3:00 PM

LEGEND:

- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- TEMPORARY PAVEMENT
- S TEMPORARY TRAFFIC SIGNAL

W20-1
36" x 36"
ROAD WORK AHEAD

MA-R2-10a
48" x 36"
WORK ZONE SPEEDING FINES DOUBLED

W5-1
36" x 36"
ROAD NARROWS

W1-4R
36" x 36"

W13-1P
18" x 18"
XX M.P.H.

MA-R2-10e
36" x 48"
END ROAD WORK
DOUBLE FINES END

L/2=WS^2/60/2
L/2=(12)(40^2)/60/2

160' LANE SHIFT

305' BUFFER

250' 250' 500' 500'

W5-1
36" x 36"
ROAD NARROWS

100'

W21-5a
36" x 36"
RIGHT SHOULDER CLOSED

100'

60' SHOULDER CLOSURE

L/2=WS^2/60/2
L/2=(15)(30^2)/60/2

120' LANE SHIFT

MARY DUNN WAY

402'

6" TEMP SWL
6" TEMP DBYL
12" TEMP SL

401'

W1-4R
36" x 36"

W1-4R
36" x 36"

101 102 103 104 105 106

10' 10'

IYANNOUGH ROAD (MA ROUTE 28)

TEMP REFLECTORIZED DRUM AT 20' SPACING (TYP.)

6" TEMP SWL
6" TEMP DBYL

502

6" TEMP DWL
6" TEMP DBYL
RET. TEMP CB-1

6" TEMP SWL

501

ENGINE HOUSE ROAD

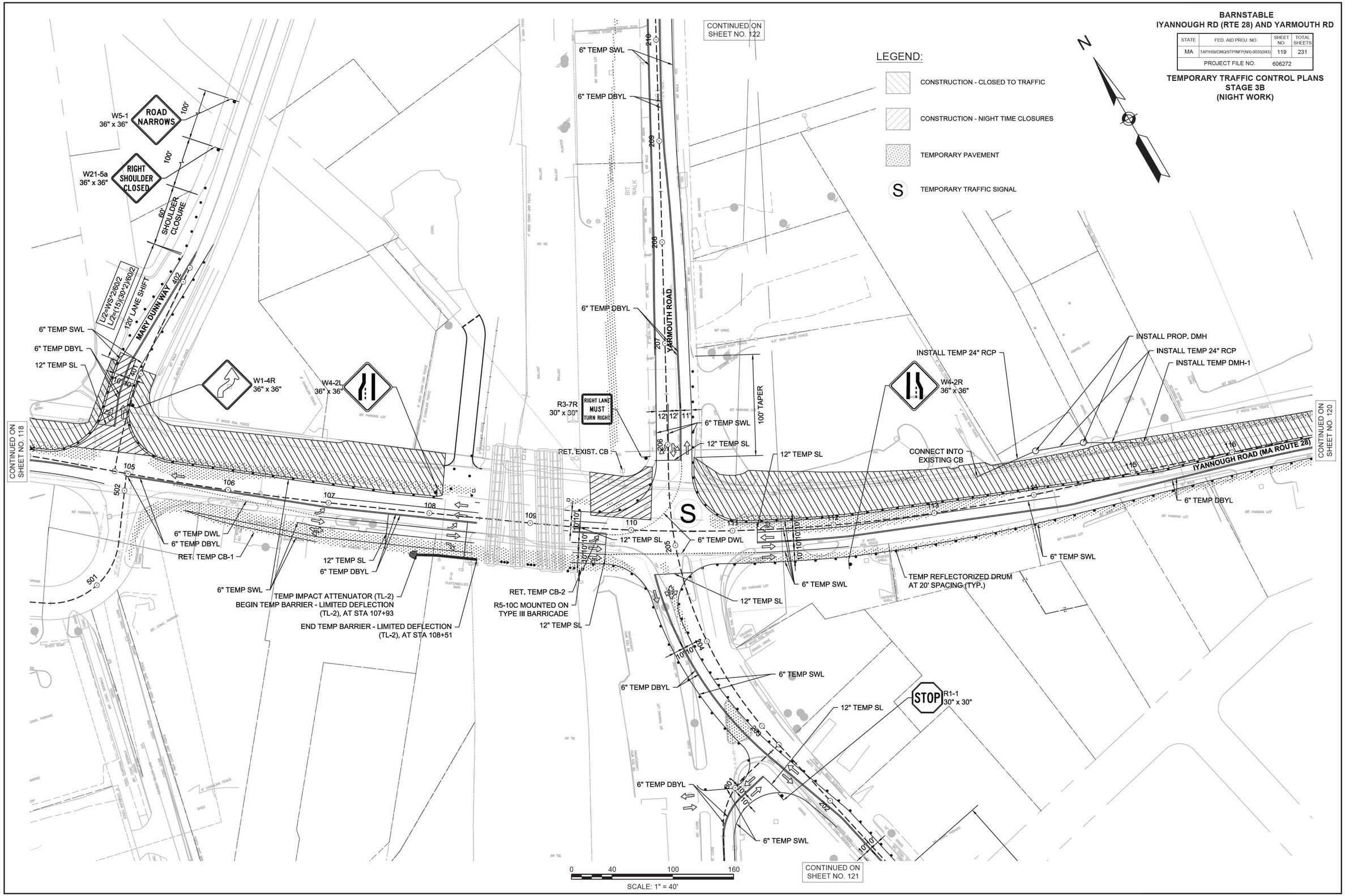
CONTINUED ON SHEET NO. 119

0 40 100 160
SCALE: 1" = 40'

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(N/I)-0035(043)	119	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
STAGE 3B
(NIGHT WORK)



606272_TR(TTCP STAGE 3B).DWG Plotted on 9-Apr-2021 3:00 PM

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	120	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
STAGE 3B
(NIGHT WORK)

606272_TR(TTCP STAGE 3B).DWG Plotted on 9-Apr-2021 3:00 PM

LEGEND:

- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- TEMPORARY PAVEMENT
- S — TEMPORARY TRAFFIC SIGNAL

W20-1 36" x 36" — ROAD WORK AHEAD
MA-R2-10a 48" x 36" — WORK ZONE SPEEDING FINES DOUBLED
W5-1 36" x 36" — ROAD NARROWS
W1-4L 36" x 36"
W13-1P 18" x 18" — XX M.P.H.
L/2=WS^2/60/2
L/2=(14)(40^2)/60/2
187' LANE SHIFT
500' 500' 250' 250'
305' BUFFER
W1-4L 36" x 36"
TEMP REFLECTORIZED DRUM AT 20' SPACING (TYP.)
INSTALL PROP. DMH
INSTALL TEMP 24" RCP
INSTALL TEMP DMH-1
IYANNOUGH ROAD (MA ROUTE 28)
114 115 116 117 118 119 120 121
6" TEMP DBYL
6" TEMP SWL
500'
END ROAD WORK / DOUBLE FINES END — MA-R2-10e 36" x 48"
CONTINUED ON SHEET NO. 119

0 40 100 160
SCALE: 1" = 40'

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	121	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
STAGE 3B
(NIGHT WORK)

CONTINUED ON SHEET NO. 119

N

W1-4R
36" x 36"
ROAD NARROWS

6" TEMP DBYL
6" TEMP SWL
12" TEMP SL
STOP R1-1
30" x 30"
6" TEMP DBYL
6" TEMP SWL
YARMOUTH ROAD
CAMP STREET
TEMP REFLECTORIZED DRUM
AT 20' SPACING (TYP.)
200' BUFFER
L/2=WS*2/60/2
L/2=(6)(30*2)/60/2
45'
LANE
SHIFT
500'
500'
W5-1
36" x 36"
ROAD NARROWS
W5-1
36" x 36"
ROAD NARROWS

LEGEND:

- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- TEMPORARY PAVEMENT
- S — TEMPORARY TRAFFIC SIGNAL

0 40 100 160
SCALE: 1" = 40'

606272_TR(TTCP STAGE 3B).DWG Plotted on 9-Apr-2021 3:00 PM

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	122	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
STAGE 3B
(NIGHT WORK)

LEGEND:

- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- TEMPORARY PAVEMENT
- S TEMPORARY TRAFFIC SIGNAL

N

YARMOUTH ROAD

OLD YARMOUTH ROAD

217
216
215
214
213
212
211
210
209

11'
11'

6" TEMP SWL

6" TEMP DBYL

W5-1
36" x 36"
ROAD NARROWS
100'

CONTINUED ON SHEET NO. 119

0 40 100 160
SCALE: 1" = 40'

606272_TR(TTCP STAGE 3B).DWG Plotted on 9-Apr-2021 3:00 PM

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	123	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
SUMMER 2024

606272_TR(TTCP SUMMER 3).DWG Plotted on 9-Apr-2021 3:01 PM

LEGEND:

- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- TEMPORARY PAVEMENT
- S — TEMPORARY TRAFFIC SIGNAL

N

IYANNOUGH ROAD (MA ROUTE 28)

MARY DUNN WAY

ENGINE HOUSE ROAD

101 102 103 104 105 106 401 402 501 502

14' 15' 11' 11' 11' 11' 5' 5'

6" TEMP SWL
6" TEMP DBYL
12" TEMP SYGL (TYP.)
6" TEMP SYCL
6" TEMP SWL
12" TEMP SL
6" TEMP SYL
6" TEMP SWL
6" TEMP BWL
6" TEMP SYL
6" TEMP SWL
6" TEMP SYL

CONTINUED ON SHEET NO. 124

0 40 100 160

SCALE: 1" = 40'

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	124	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
SUMMER 2024

606272_TR(TTCP SUMMER 3).DWG Plotted on 9-Apr-2021 3:01 PM

CONTINUED ON SHEET NO. 127

CONTINUED ON SHEET NO. 123

CONTINUED ON SHEET NO. 125

CONTINUED ON SHEET NO. 126

LEGEND:

- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- TEMPORARY PAVEMENT
- S TEMPORARY TRAFFIC SIGNAL

MARY DUNN WAY

YARMOUTH ROAD

IYANNOUGH ROAD (MA ROUTE 28)

W4-2R 36" x 36"

STOP R1-1 30" x 30"

SCALE: 1" = 40'

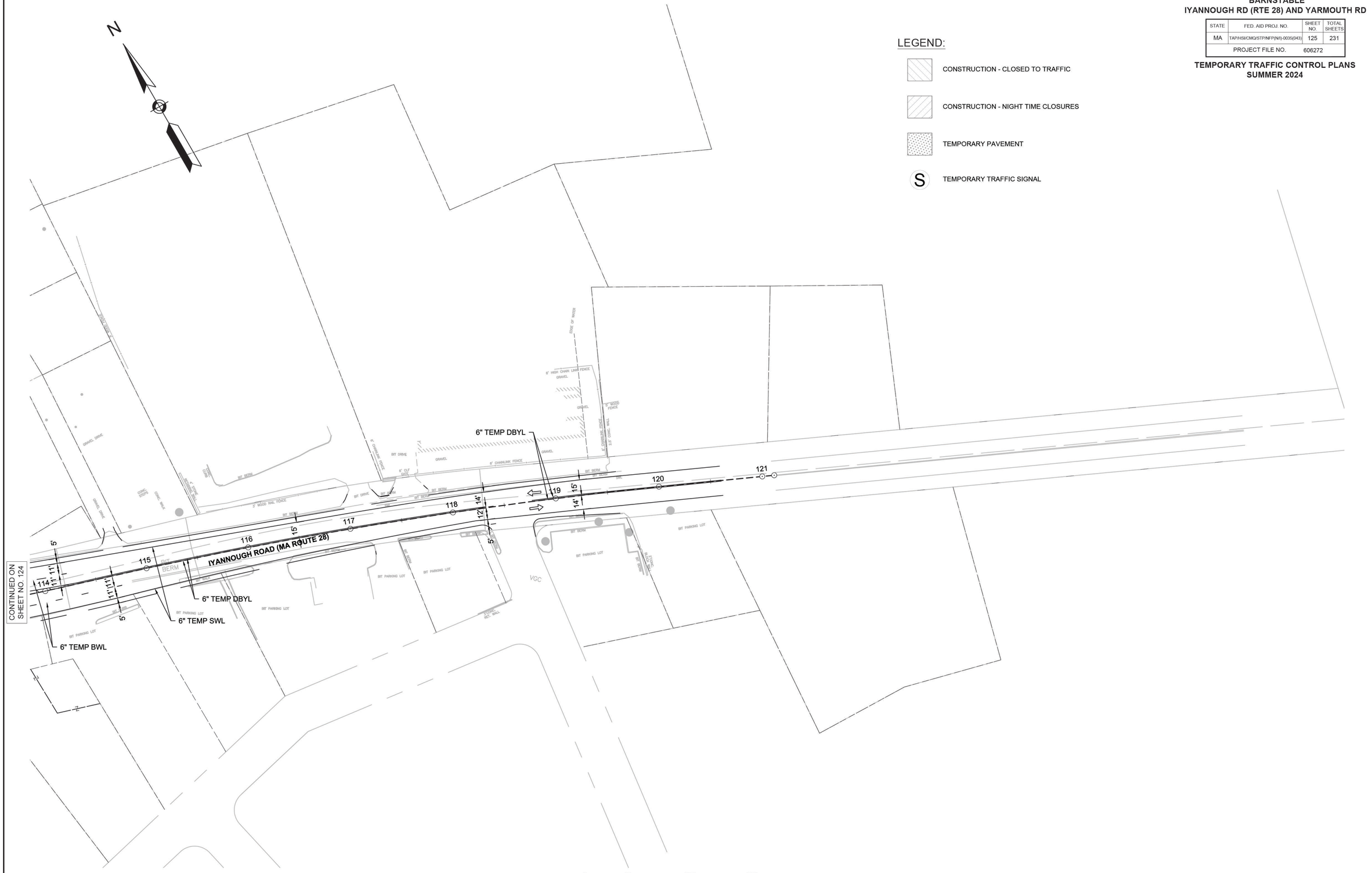
BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	125	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
SUMMER 2024

LEGEND:

- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- TEMPORARY PAVEMENT
- S TEMPORARY TRAFFIC SIGNAL

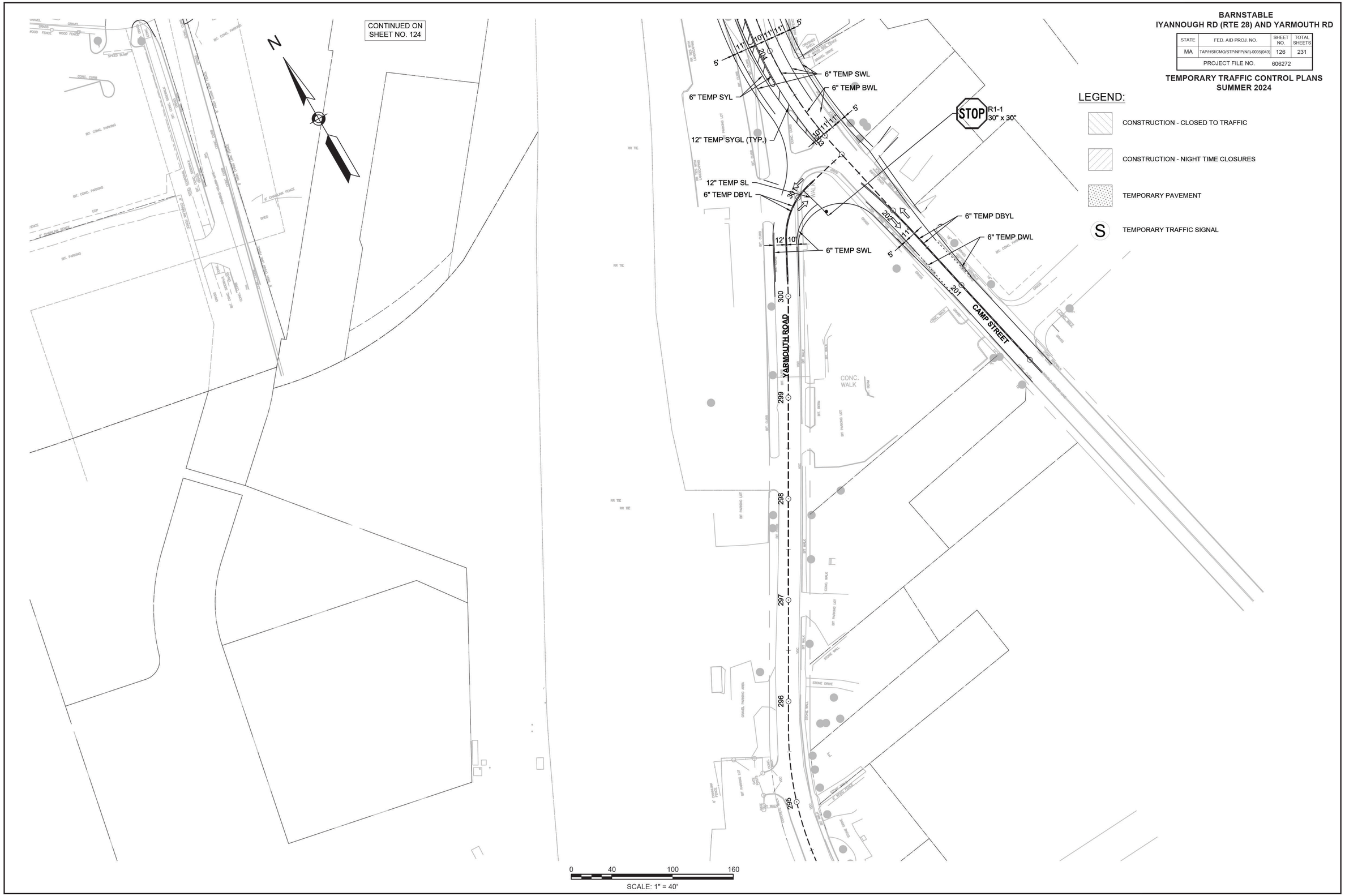


606272_TR(TTCP SUMMER 3).DWG Plotted on 9-Apr-2021 3:01 PM

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(N/I)-0035(043)	126	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
SUMMER 2024



LEGEND:

- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- TEMPORARY PAVEMENT
- S TEMPORARY TRAFFIC SIGNAL

606272_TR(TTCP SUMMER 3).DWG Plotted on 9-Apr-2021 3:01 PM

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

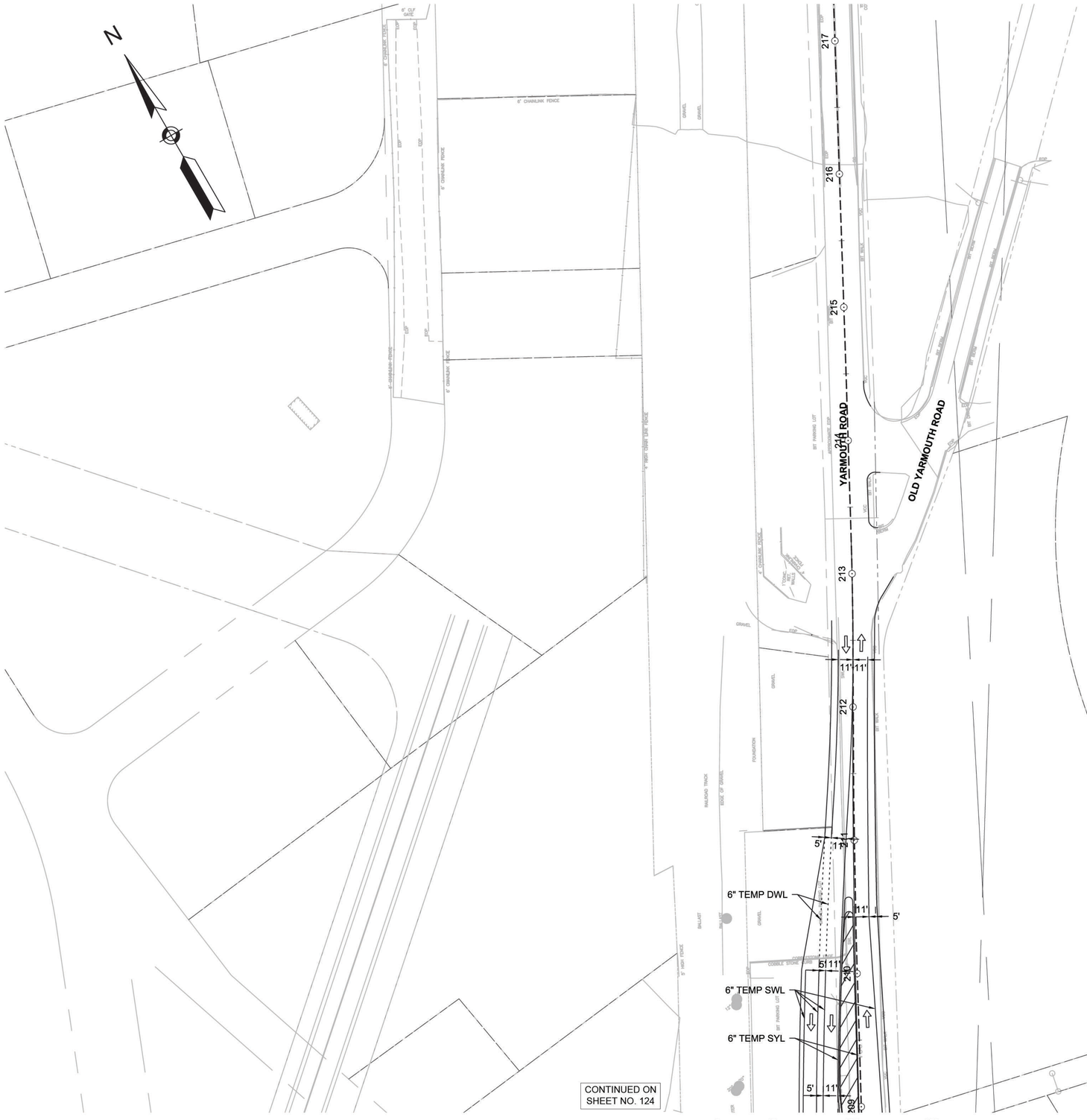
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	127	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
SUMMER 2024

606272_TR(TTCP SUMMER 3).DWG Plotted on 9-Apr-2021 3:01 PM

LEGEND:

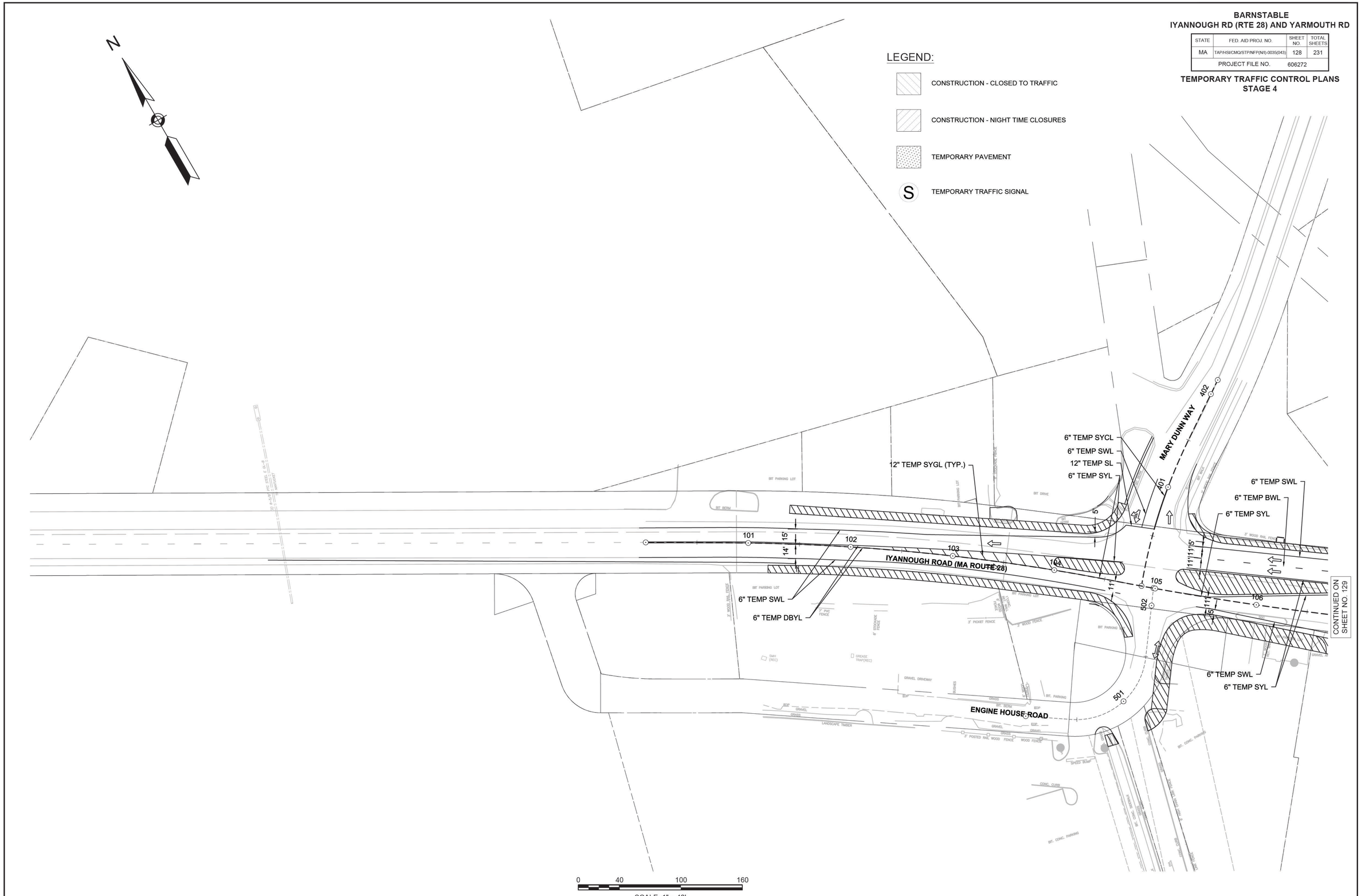
- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- TEMPORARY PAVEMENT
- S TEMPORARY TRAFFIC SIGNAL



BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(N/I)-0035(043)	128	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
STAGE 4



606272_TR(TTCP STAGE 4).DWG Plotted on 9-Apr-2021 5:29 PM

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	129	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
STAGE 4

606272_TR(TTCP STAGE 4).DWG Plotted on 9-Apr-2021 5:29 PM

CONTINUED ON SHEET NO. 132

LEGEND:

- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- TEMPORARY PAVEMENT
- S TEMPORARY TRAFFIC SIGNAL

CONTINUED ON SHEET NO. 128

CONTINUED ON SHEET NO. 130

CONTINUED ON SHEET NO. 131

MARY DUNN WAY

YARMOUTH ROAD

IYANNOUGH ROAD (MA ROUTE 28)

6" TEMP SYCL
6" TEMP SWL
12" TEMP SL
6" TEMP SYL
6" TEMP BWL
6" TEMP DBYL
6" TEMP DWL
12" TEMP SYGL (TYP.)
W4-2L 36" x 36"
W4-2R 36" x 36"
R5-10C MOUNTED ON TYPE III BARRICADE
STOP R1-1 30" x 30"
PT +15.67
PC +55.79

0 40 100 160
SCALE: 1" = 40'

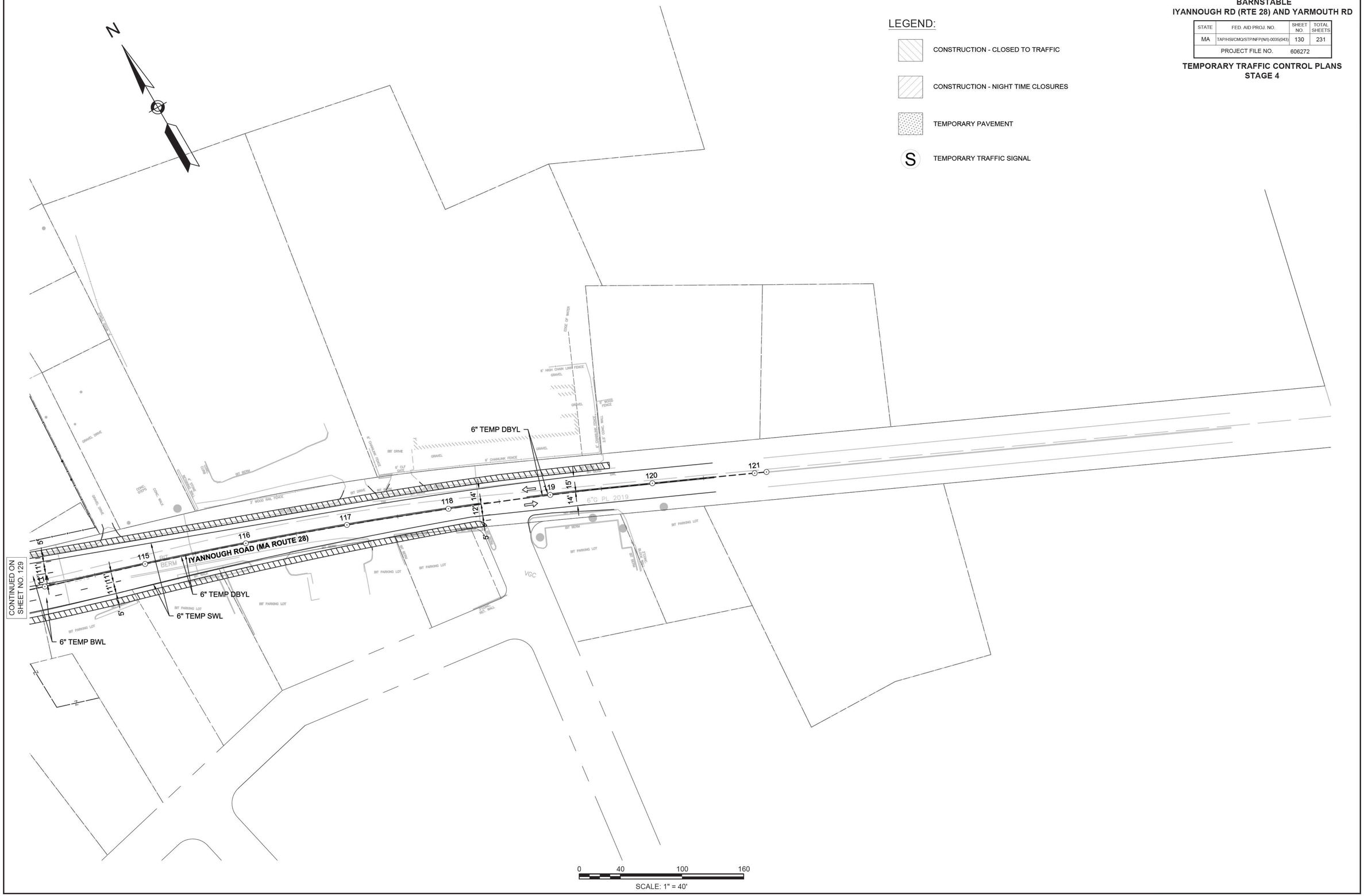
BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(N/I)-0035(043)	130	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
STAGE 4

LEGEND:

- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- TEMPORARY PAVEMENT
- S TEMPORARY TRAFFIC SIGNAL



606272_TR(TTCP STAGE 4).DWG Plotted on 9-Apr-2021 5:30 PM

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NII)-0035(043)	131	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
STAGE 4

CONTINUED ON SHEET NO. 129

N

6" TEMP SWL
6" TEMP BWL
6" TEMP SYL
12" TEMP SYGL (TYP.)
12" TEMP SL
6" TEMP DBYL
6" TEMP DBYL
6" TEMP DWL
6" TEMP SWL
STOP R1-1 30" x 30"
PT +15.67
PC +55.79
300 +00.00
PT +72.66
YARMOUTH ROAD
CAMP STREET
CONC. WALK
STONE WALL
STONE DRIVE
GRAVEL PARKING AREA
BIT. CONC. PARKING
BIT. PARKING LOT
BIT. CURB
BIT. EDGE
CONC. CURB
CONC. WALK
WOOD FENCE
CHAINLINK FENCE
SHED
SHED 80 sqft
SHED 240 sqft
SHED 360 sqft
SHED 1200 sqft
SHED 1600 sqft
SHED 2400 sqft
SHED 3600 sqft
SHED 4800 sqft
SHED 6400 sqft
SHED 8100 sqft
SHED 10000 sqft
SHED 12100 sqft
SHED 14400 sqft
SHED 16900 sqft
SHED 19600 sqft
SHED 22500 sqft
SHED 25600 sqft
SHED 28900 sqft
SHED 32400 sqft
SHED 36100 sqft
SHED 40000 sqft
SHED 44100 sqft
SHED 48400 sqft
SHED 52900 sqft
SHED 57600 sqft
SHED 62500 sqft
SHED 67600 sqft
SHED 72900 sqft
SHED 78400 sqft
SHED 84100 sqft
SHED 90000 sqft
SHED 96100 sqft
SHED 102400 sqft
SHED 108900 sqft
SHED 115600 sqft
SHED 122500 sqft
SHED 129600 sqft
SHED 136900 sqft
SHED 144400 sqft
SHED 152100 sqft
SHED 160000 sqft
SHED 168100 sqft
SHED 176400 sqft
SHED 184900 sqft
SHED 193600 sqft
SHED 202500 sqft
SHED 211600 sqft
SHED 220900 sqft
SHED 230400 sqft
SHED 240100 sqft
SHED 250000 sqft
SHED 260100 sqft
SHED 270400 sqft
SHED 280900 sqft
SHED 291600 sqft
SHED 302500 sqft
SHED 313600 sqft
SHED 324900 sqft
SHED 336400 sqft
SHED 348100 sqft
SHED 360000 sqft
SHED 372100 sqft
SHED 384400 sqft
SHED 396900 sqft
SHED 409600 sqft
SHED 422500 sqft
SHED 435600 sqft
SHED 448900 sqft
SHED 462400 sqft
SHED 476100 sqft
SHED 490000 sqft
SHED 504100 sqft
SHED 518400 sqft
SHED 532900 sqft
SHED 547600 sqft
SHED 562500 sqft
SHED 577600 sqft
SHED 592900 sqft
SHED 608400 sqft
SHED 624100 sqft
SHED 640000 sqft
SHED 656100 sqft
SHED 672400 sqft
SHED 688900 sqft
SHED 705600 sqft
SHED 722500 sqft
SHED 739600 sqft
SHED 756900 sqft
SHED 774400 sqft
SHED 792100 sqft
SHED 810000 sqft
SHED 828100 sqft
SHED 846400 sqft
SHED 864900 sqft
SHED 883600 sqft
SHED 902500 sqft
SHED 921600 sqft
SHED 940900 sqft
SHED 960400 sqft
SHED 980100 sqft
SHED 1000000 sqft
SHED 1020100 sqft
SHED 1040400 sqft
SHED 1060900 sqft
SHED 1081600 sqft
SHED 1102500 sqft
SHED 1123600 sqft
SHED 1144900 sqft
SHED 1166400 sqft
SHED 1188100 sqft
SHED 1210000 sqft
SHED 1232100 sqft
SHED 1254400 sqft
SHED 1276900 sqft
SHED 1299600 sqft
SHED 1322500 sqft
SHED 1345600 sqft
SHED 1368900 sqft
SHED 1392400 sqft
SHED 1416100 sqft
SHED 1440000 sqft
SHED 1464100 sqft
SHED 1488400 sqft
SHED 1512900 sqft
SHED 1537600 sqft
SHED 1562500 sqft
SHED 1587600 sqft
SHED 1612900 sqft
SHED 1638400 sqft
SHED 1664100 sqft
SHED 1690000 sqft
SHED 1716100 sqft
SHED 1742400 sqft
SHED 1768900 sqft
SHED 1795600 sqft
SHED 1822500 sqft
SHED 1849600 sqft
SHED 1876900 sqft
SHED 1904400 sqft
SHED 1932100 sqft
SHED 1960000 sqft
SHED 1988100 sqft
SHED 2016400 sqft
SHED 2044900 sqft
SHED 2073600 sqft
SHED 2102500 sqft
SHED 2131600 sqft
SHED 2160900 sqft
SHED 2190400 sqft
SHED 2220100 sqft
SHED 2250000 sqft
SHED 2280100 sqft
SHED 2310400 sqft
SHED 2340900 sqft
SHED 2371600 sqft
SHED 2402500 sqft
SHED 2433600 sqft
SHED 2464900 sqft
SHED 2496400 sqft
SHED 2528100 sqft
SHED 2560000 sqft
SHED 2592100 sqft
SHED 2624400 sqft
SHED 2656900 sqft
SHED 2689600 sqft
SHED 2722500 sqft
SHED 2755600 sqft
SHED 2788900 sqft
SHED 2822400 sqft
SHED 2856100 sqft
SHED 2890000 sqft
SHED 2924100 sqft
SHED 2958400 sqft
SHED 2992900 sqft
SHED 3027600 sqft
SHED 3062500 sqft
SHED 3097600 sqft
SHED 3132900 sqft
SHED 3168400 sqft
SHED 3204100 sqft
SHED 3240000 sqft
SHED 3276100 sqft
SHED 3312400 sqft
SHED 3348900 sqft
SHED 3385600 sqft
SHED 3422500 sqft
SHED 3459600 sqft
SHED 3496900 sqft
SHED 3534400 sqft
SHED 3572100 sqft
SHED 3610000 sqft
SHED 3648100 sqft
SHED 3686400 sqft
SHED 3724900 sqft
SHED 3763600 sqft
SHED 3802500 sqft
SHED 3841600 sqft
SHED 3880900 sqft
SHED 3920400 sqft
SHED 3960100 sqft
SHED 4000000 sqft
SHED 4040100 sqft
SHED 4080400 sqft
SHED 4120900 sqft
SHED 4161600 sqft
SHED 4202500 sqft
SHED 4243600 sqft
SHED 4284900 sqft
SHED 4326400 sqft
SHED 4368100 sqft
SHED 4410000 sqft
SHED 4452100 sqft
SHED 4494400 sqft
SHED 4536900 sqft
SHED 4579600 sqft
SHED 4622500 sqft
SHED 4665600 sqft
SHED 4708900 sqft
SHED 4752400 sqft
SHED 4796100 sqft
SHED 4840000 sqft
SHED 4884100 sqft
SHED 4928400 sqft
SHED 4972900 sqft
SHED 5017600 sqft
SHED 5062500 sqft
SHED 5107600 sqft
SHED 5152900 sqft
SHED 5198400 sqft
SHED 5244100 sqft
SHED 5290000 sqft
SHED 5336100 sqft
SHED 5382400 sqft
SHED 5428900 sqft
SHED 5475600 sqft
SHED 5522500 sqft
SHED 5569600 sqft
SHED 5616900 sqft
SHED 5664400 sqft
SHED 5712100 sqft
SHED 5760000 sqft
SHED 5808100 sqft
SHED 5856400 sqft
SHED 5904900 sqft
SHED 5953600 sqft
SHED 6002500 sqft
SHED 6051600 sqft
SHED 6100900 sqft
SHED 6150400 sqft
SHED 6200100 sqft
SHED 6250000 sqft
SHED 6300100 sqft
SHED 6350400 sqft
SHED 6400900 sqft
SHED 6451600 sqft
SHED 6502500 sqft
SHED 6553600 sqft
SHED 6604900 sqft
SHED 6656400 sqft
SHED 6708100 sqft
SHED 6760000 sqft
SHED 6812100 sqft
SHED 6864400 sqft
SHED 6916900 sqft
SHED 6969600 sqft
SHED 7022500 sqft
SHED 7075600 sqft
SHED 7128900 sqft
SHED 7182400 sqft
SHED 7236100 sqft
SHED 7290000 sqft
SHED 7344100 sqft
SHED 7398400 sqft
SHED 7452900 sqft
SHED 7507600 sqft
SHED 7562500 sqft
SHED 7617600 sqft
SHED 7672900 sqft
SHED 7728400 sqft
SHED 7784100 sqft
SHED 7840000 sqft
SHED 7896100 sqft
SHED 7952400 sqft
SHED 8008900 sqft
SHED 8065600 sqft
SHED 8122500 sqft
SHED 8179600 sqft
SHED 8236900 sqft
SHED 8294400 sqft
SHED 8352100 sqft
SHED 8410000 sqft
SHED 8468100 sqft
SHED 8526400 sqft
SHED 8584900 sqft
SHED 8643600 sqft
SHED 8702500 sqft
SHED 8761600 sqft
SHED 8820900 sqft
SHED 8880400 sqft
SHED 8940100 sqft
SHED 9000000 sqft
SHED 9060100 sqft
SHED 9120400 sqft
SHED 9180900 sqft
SHED 9241600 sqft
SHED 9302500 sqft
SHED 9363600 sqft
SHED 9424900 sqft
SHED 9486400 sqft
SHED 9548100 sqft
SHED 9610000 sqft
SHED 9672100 sqft
SHED 9734400 sqft
SHED 9796900 sqft
SHED 9859600 sqft
SHED 9922500 sqft
SHED 9985600 sqft
SHED 10048900 sqft
SHED 10112400 sqft
SHED 10176100 sqft
SHED 10240000 sqft
SHED 10304100 sqft
SHED 10368400 sqft
SHED 10432900 sqft
SHED 10497600 sqft
SHED 10562500 sqft
SHED 10627600 sqft
SHED 10692900 sqft
SHED 10758400 sqft
SHED 10824100 sqft
SHED 10890000 sqft
SHED 10956100 sqft
SHED 11022400 sqft
SHED 11088900 sqft
SHED 11155600 sqft
SHED 11222500 sqft
SHED 11289600 sqft
SHED 11356900 sqft
SHED 11424400 sqft
SHED 11492100 sqft
SHED 11560000 sqft
SHED 11628100 sqft
SHED 11696400 sqft
SHED 11764900 sqft
SHED 11833600 sqft
SHED 11902500 sqft
SHED 11971600 sqft
SHED 12040900 sqft
SHED 12110400 sqft
SHED 12180100 sqft
SHED 12250000 sqft
SHED 12320100 sqft
SHED 12390400 sqft
SHED 12460900 sqft
SHED 12531600 sqft
SHED 12602500 sqft
SHED 12673600 sqft
SHED 12744900 sqft
SHED 12816400 sqft
SHED 12888100 sqft
SHED 12960000 sqft
SHED 13032100 sqft
SHED 13104400 sqft
SHED 13176900 sqft
SHED 13249600 sqft
SHED 13322500 sqft
SHED 13395600 sqft
SHED 13468900 sqft
SHED 13542400 sqft
SHED 13616100 sqft
SHED 13690000 sqft
SHED 13764100 sqft
SHED 13838400 sqft
SHED 13912900 sqft
SHED 13987600 sqft
SHED 14062500 sqft
SHED 14137600 sqft
SHED 14212900 sqft
SHED 14288400 sqft
SHED 14364100 sqft
SHED 14440000 sqft
SHED 14516100 sqft
SHED 14592400 sqft
SHED 14668900 sqft
SHED 14745600 sqft
SHED 14822500 sqft
SHED 14899600 sqft
SHED 14976900 sqft
SHED 15054400 sqft
SHED 15132100 sqft
SHED 15210000 sqft
SHED 15288100 sqft
SHED 15366400 sqft
SHED 15444900 sqft
SHED 15523600 sqft
SHED 15602500 sqft
SHED 15681600 sqft
SHED 15760900 sqft
SHED 15840400 sqft
SHED 15920100 sqft
SHED 16000000 sqft
SHED 16080100 sqft
SHED 16160400 sqft
SHED 16240900 sqft
SHED 16321600 sqft
SHED 16402500 sqft
SHED 16483600 sqft
SHED 16564900 sqft
SHED 16646400 sqft
SHED 16728100 sqft
SHED 16810000 sqft
SHED 16892100 sqft
SHED 16974400 sqft
SHED 17056900 sqft
SHED 17139600 sqft
SHED 17222500 sqft
SHED 17305600 sqft
SHED 17388900 sqft
SHED 17472400 sqft
SHED 17556100 sqft
SHED 17640000 sqft
SHED 17724100 sqft
SHED 17808400 sqft
SHED 17892900 sqft
SHED 17977600 sqft
SHED 18062500 sqft
SHED 18147600 sqft
SHED 18232900 sqft
SHED 18318400 sqft
SHED 18404100 sqft
SHED 18490000 sqft
SHED 18576100 sqft
SHED 18662400 sqft
SHED 18748900 sqft
SHED 18835600 sqft
SHED 18922500 sqft
SHED 19009600 sqft
SHED 19096900 sqft
SHED 19184400 sqft
SHED 19272100 sqft
SHED 19360000 sqft
SHED 19448100 sqft
SHED 19536400 sqft
SHED 19624900 sqft
SHED 19713600 sqft
SHED 19802500 sqft
SHED 19891600 sqft
SHED 19980900 sqft
SHED 20070400 sqft
SHED 20160100 sqft
SHED 20250000 sqft
SHED 20340100 sqft
SHED 20430400 sqft
SHED 20520900 sqft
SHED 20611600 sqft
SHED 20702500 sqft
SHED 20793600 sqft
SHED 20884900 sqft
SHED 20976400 sqft
SHED 21068100 sqft
SHED 21160000 sqft
SHED 21252100 sqft
SHED 21344400 sqft
SHED 21436900 sqft
SHED 21529600 sqft
SHED 21622500 sqft
SHED 21715600 sqft
SHED 21808900 sqft
SHED 21902400 sqft
SHED 21996100 sqft
SHED 22090000 sqft
SHED 22184100 sqft
SHED 22278400 sqft
SHED 22372900 sqft
SHED 22467600 sqft
SHED 22562500 sqft
SHED 22657600 sqft
SHED 22752900 sqft
SHED 22848400 sqft
SHED 22944100 sqft
SHED 23040000 sqft
SHED 23136100 sqft
SHED 23232400 sqft
SHED 23328900 sqft
SHED 23425600 sqft
SHED 23522500 sqft
SHED 23619600 sqft
SHED 23716900 sqft
SHED 23814400 sqft
SHED 23912100 sqft
SHED 24010000 sqft
SHED 24108100 sqft
SHED 24206400 sqft
SHED 24304900 sqft
SHED 24403600 sqft
SHED 24502500 sqft
SHED 24601600 sqft
SHED 24700900 sqft
SHED 24800400 sqft
SHED 24900100 sqft
SHED 25000000 sqft
SHED 25100100 sqft
SHED 25200400 sqft
SHED 25300900 sqft
SHED 25401600 sqft
SHED 25502500 sqft
SHED 25603600 sqft
SHED 25704900 sqft
SHED 25806400 sqft
SHED 25908100 sqft
SHED 26010000 sqft
SHED 26112100 sqft
SHED 26214400 sqft
SHED 26316900 sqft
SHED 26419600 sqft
SHED 26522500 sqft
SHED 26625600 sqft
SHED 26728900 sqft
SHED 26832400 sqft
SHED 26936100 sqft
SHED 27040000 sqft
SHED 27144100 sqft
SHED 27248400 sqft
SHED 27352900 sqft
SHED 27457600 sqft
SHED 27562500 sqft
SHED 27667600 sqft
SHED 27772900 sqft
SHED 27878400 sqft
SHED 27984100 sqft
SHED 28090000 sqft
SHED 28196100 sqft
SHED 28302400 sqft
SHED 28408900 sqft
SHED 28515600 sqft
SHED 28622500 sqft
SHED 28729600 sqft
SHED 28836900 sqft
SHED 28944400 sqft
SHED 29052100 sqft
SHED 29160000 sqft
SHED 29268100 sqft
SHED 29376400 sqft
SHED 29484900 sqft
SHED 29593600 sqft
SHED 29702500 sqft
SHED 29811600 sqft
SHED 29920900 sqft
SHED 30030400 sqft
SHED 30140100 sqft
SHED 30250000 sqft
SHED 30360100 sqft
SHED 30470400 sqft
SHED 30580900 sqft
SHED 30691600 sqft
SHED 30802500 sqft
SHED 30913600 sqft
SHED 31024900 sqft
SHED 31136400 sqft
SHED 31248100 sqft
SHED 31360000 sqft
SHED 31472100 sqft
SHED 31584400 sqft
SHED 31696900 sqft
SHED 31809600 sqft
SHED 31922500 sqft
SHED 32035600 sqft
SHED 32148900 sqft
SHED 32262400 sqft
SHED 32376100 sqft
SHED 32490000 sqft
SHED 32604100 sqft
SHED 32718400 sqft
SHED 32832900 sqft
SHED 32947600 sqft
SHED 33062500 sqft
SHED 33177600 sqft
SHED 33292900 sqft
SHED 33408400 sqft
SHED 33524100 sqft
SHED 33640000 sqft
SHED 33756100 sqft
SHED 33872400 sqft
SHED 33988900 sqft
SHED 34105600 sqft
SHED 34222500 sqft
SHED 34339600 sqft
SHED 34456900 sqft
SHED 34574400 sqft
SHED 34692100 sqft
SHED 34810000 sqft
SHED 34928100 sqft
SHED 35046400 sqft
SHED 35164900 sqft
SHED 35283600 sqft
SHED 35402500 sqft
SHED 35521600 sqft
SHED 35640900 sqft
SHED 35760400 sqft
SHED 35880100 sqft
SHED 36000000 sqft
SHED 36120100 sqft
SHED 36240400 sqft
SHED 36360900 sqft
SHED 36481600 sqft
SHED 36602500 sqft
SHED 36723600 sqft
SHED 36844900 sqft
SHED 36966400 sqft
SHED 37088100 sqft
SHED 37210000 sqft
SHED 37332100 sqft
SHED 37454400 sqft
SHED 37576900 sqft
SHED 37699600 sqft
SHED 37822500 sqft
SHED 37945600 sqft
SHED 38068900 sqft
SHED 38192400 sqft
SHED 38316100 sqft
SHED 38440000 sqft
SHED 38564100 sqft
SHED 38688400 sqft
SHED 38812900 sqft
SHED 38937600 sqft
SHED 39062500 sqft
SHED 39187600 sqft
SHED 39312900 sqft
SHED 39438400 sqft
SHED 39564100 sqft
SHED 39690000 sqft
SHED 39816100 sqft
SHED 39942400 sqft
SHED 40068900 sqft
SHED 40195600 sqft
SHED 40322500 sqft
SHED 40449600 sqft
SHED 40576900 sqft
SHED 40704400 sqft
SHED 40832100 sqft
SHED 40960000 sqft
SHED 41088100 sqft
SHED 41216400 sqft
SHED 41344900 sqft
SHED 41473600 sqft
SHED 41602500 sqft
SHED 41731600 sqft
SHED 41860900 sqft
SHED 41990400 sqft
SHED 42120100 sqft
SHED 42250000 sqft
SHED 42380100 sqft
SHED 42510400 sqft
SHED 42640900 sqft
SHED 42771600 sqft
SHED 42902500 sqft
SHED 43033600 sqft
SHED 43164900 sqft
SHED 43296400 sqft
SHED 43428100 sqft
SHED 43560000 sqft
SHED 43692100 sqft
SHED 43824400 sqft
SHED 43956900 sqft
SHED 44089600 sqft
SHED 44222500 sqft
SHED 44355600 sqft
SHED 44488900 sqft
SHED 44622400 sqft
SHED 44756100 sqft
SHED 44890000 sqft
SHED 45024100 sqft
SHED 45158400 sqft
SHED 45292900 sqft
SHED 45427600 sqft
SHED 45562500 sqft
SHED 45697600 sqft
SHED 45832900 sqft
SHED 45968400 sqft
SHED 46104100 sqft
SHED 46240000 sqft
SHED 46376100 sqft
SHED 46512400 sqft
SHED 46648900 sqft
SHED 46785600 sqft
SHED 46922500 sqft
SHED 47059600 sqft
SHED 47196900 sqft
SHED 47334400 sqft
SHED 47472100 sqft
SHED 47610000 sqft
SHED 47748100 sqft
SHED 47886400 sqft
SHED 48024900 sqft
SHED 48163600 sqft
SHED 48302500 sqft
SHED 48441600 sqft
SHED 48580900 sqft
SHED 48720400 sqft
SHED 48860100 sqft
SHED 49000000 sqft
SHED 49140100 sqft
SHED 49280400 sqft
SHED 49420900 sqft
SHED 49561600 sqft
SHED 49702500 sqft
SHED 49843600 sqft
SHED 49984900 sqft
SHED 50126400 sqft
SHED 50268100 sqft
SHED 50410000 sqft
SHED 50552100 sqft
SHED 50694400 sqft
SHED 50836900 sqft
SHED 50979600 sqft
SHED 51122500 sqft
SHED 51265600 sqft
SHED 51408900 sqft
SHED 51552400 sqft
SHED 51696100 sqft
SHED 51840000 sqft
SHED 51984100 sqft
SHED 52128400 sqft
SHED 52272900 sqft
SHED 52417600 sqft
SHED 52562500 sqft
SHED 52707600 sqft
SHED 52852900 sqft
SHED 52998400 sqft
SHED 53144100 sqft
SHED 53290000 sqft
SHED 53436100 sqft
SHED 53582400 sqft
SHED 53728900 sqft
SHED 53875600 sqft
SHED 54022500 sqft
SHED 54169600 sqft
SHED 54316900 sqft
SHED 54464400 sqft
SHED 54612100 sqft
SHED 54760000 sqft
SHED 54908100 sqft
SHED 55056400 sqft
SHED 55204900 sqft
SHED 55353600 sqft
SHED 55502500 sqft
SHED 55651600 sqft
SHED 55800900 sqft
SHED 55950400 sqft
SHED 56100100 sqft
SHED 56250000 sqft
SHED 56400100 sqft
SHED 56550400 sqft
SHED 56700900 sqft
SHED 56851600 sqft
SHED 57002500 sqft
SHED 57153600 sqft
SHED 57304900 sqft
SHED 57456400 sqft
SHED 57608100 sqft
SHED 57760000 sqft
SHED 57912100 sqft
SHED 58064400 sqft
SHED 58216900 sqft
SHED 58369600 sqft
SHED 58522500 sqft
SHED 58675600 sqft
SHED 58828900 sqft
SHED 58982400 sqft
SHED 59136100 sqft
SHED 59290000 sqft
SHED 59444100 sqft
SHED 59598400 sqft
SHED 59752900 sqft
SHED 59907600 sqft
SHED 60062500 sqft
SHED 60217600 sqft
SHED 60372900 sqft
SHED 60528400 sqft
SHED 60684100 sqft
SHED 60840000 sqft
SHED 60996100 sqft
SHED 61152400 sqft
SHED 61308900 sqft
SHED 61465600 sqft
SHED 61622500 sqft
SHED 61779600 sqft
SHED 61936900 sqft
SHED 62094400 sqft
SHED 62252100 sqft
SHED 62410000 sqft
SHED 62568100 sqft
SHED 62726400 sqft
SHED 62884900 sqft
SHED 63043600 sqft
SHED 63202500 sqft
SHED 63361600 sqft
SHED 63520900 sqft
SHED 63680400 sqft
SHED 63840100 sqft
SHED 64000000 sqft
SHED 64160100 sqft
SHED 64320400 sqft
SHED 64480900 sqft
SHED 64641600 sqft
SHED 64802500 sqft
SHED 64963600 sqft
SHED 65124900 sqft
SHED 65286400 sqft
SHED 65448100 sqft
SHED 65610000 sqft
SHED 65772100 sqft
SHED 65934400 sqft
SHED 66096900 sqft
SHED 66259600 sqft
SHED 66422500 sqft
SHED 66585600 sqft
SHED 66748900 sqft
SHED 66912400 sqft
SHED 67076100 sqft
SHED 67240000 sqft
SHED 67404100 sqft
SHED 67568400 sqft
SHED 67732900 sqft
SHED 67897600 sqft
SHED 68062500 sqft
SHED 68227600 sqft
SHED 68392900 sqft
SHED 68558400 sqft
SHED 68724100 sqft
SHED 68890000 sqft
SHED 69056100 sqft
SHED 69222400 sqft
SHED 69388900 sqft
SHED 69555600 sqft
SHED 69722500 sqft
SHED 69889600 sqft
SHED 70056900 sqft
SHED 70224400 sqft
SHED 70392100 sqft
SHED 70560000 sqft
SHED 70728100 sqft
SHED 70896400 sqft
SHED 71064900 sqft
SHED 71233600 sqft
SHED 71402500 sqft
SHED 71571600 sqft
SHED 71740900 sqft
SHED 71910400 sqft
SHED 72080100 sqft
SHED 72250000 sqft
SHED 72420100 sqft
SHED 72590400 sqft
SHED 72760900 sqft
SHED 72931600 sqft
SHED 73102500 sqft
SHED 73273600 sqft
SHED 73444900 sqft
SHED 73616400 sqft
SHED 73788100 sqft
SHED 73960000 sqft
SHED 74132100 sqft
SHED 74304400 sqft
SHED 74476900 sqft
SHED 74649600 sqft
SHED 74822500 sqft
SHED 74995600 sqft
SHED 75168900 sqft
SHED 75342400 sqft
SHED 75516100 sqft
SHED 75690000 sqft
SHED 75864100 sqft
SHED 76038400 sqft
SHED 76212900 sqft
SHED 76387600 sqft
SHED 76562500 sqft
SHED 76737600 sqft
SHED 76912900 sqft
SHED 77088400 sqft
SHED 77264100 sqft
SHED 77440000 sqft
SHED 77616100 sqft
SHED 77792400 sqft
SHED 77968900 sqft
SHED 78145600 sqft
SHED 78322500 sqft
SHED 78499600 sqft
SHED 78676900 sqft
SHED 78854400 sqft
SHED 79032100 sqft
SHED 79210000 sqft
SHED 79388100 sqft
SHED 79566400 sqft
SHED 79744900 sqft
SHED 79923600 sqft
SHED 80102500 sqft
SHED 80281600 sqft
SHED 80460900 sqft
SHED 80640400 sqft
SHED 80820100 sqft
SHED 81000000 sqft
SHED 81180100 sqft
SHED 81360400 sqft
SHED 81540900 sqft
SHED 81721600 sqft
SHED 81902500 sqft
SHED 82083600 sqft
SHED 82264900 sqft
SHED 82446400 sqft
SHED 82628100 sqft
SHED 82810000 sqft
SHED 82992100 sqft
SHED 83174400 sqft
SHED 83356900 sqft
SHED 83539600 sqft
SHED 83722500 sqft
SHED 83905600 sqft
SHED 84088900 sqft
SHED 84272400 sqft
SHED 84456100 sqft
SHED 84640000 sqft
SHED 84824100 sqft
SHED 85008400 sqft
SHED 85192900 sqft
SHED 85377600 sqft
SHED 85562500 sqft
SHED 85747600 sqft
SHED 85932900 sqft
SHED 86118400 sqft
SHED 86304100 sqft
SHED 86490000 sqft
SHED 86676100 sqft
SHED 86862400 sqft
SHED 87048900 sqft
SHED 87235600 sqft
SHED 87422500 sqft
SHED 87609600 sqft
SHED 87796900 sqft
SHED 87984400 sqft
SHED 88172100 sqft
SHED 88360000 sqft
SHED 88548100 sqft
SHED 88736400 sqft
SHED 88924900 sqft
SHED 89113600 sqft
SHED 89302500 sqft
SHED 89491600 sqft
SHED 89680900 sqft
SHED 89870400 sqft
SHED 90060100 sqft
SHED 90250000 sqft
SHED 90440100 sqft
SHED 90630400 sqft
SHED 90820900 sqft
SHED 91011600 sqft
SHED 91202500 sqft
SHED 91393600 sqft
SHED 91584900 sqft
SHED 91776400 sqft
SHED 91968100 sqft
SHED 92160000 sqft
SHED 92352100 sqft
SHED 92544400 sqft
SHED 92736900 sqft
SHED 92929600 sqft
SHED 93122500 sqft
SHED 93315600 sqft
SHED 93508900 sqft
SHED 93702400 sqft
SHED 93896100 sqft
SHED 94090000 sqft
SHED 94284100 sqft
SHED 94478400 sqft
SHED 94672900 sqft
SHED 94867600 sqft
SHED 95062500 sqft
SHED 95257600 sqft
SHED 95452900 sqft
SHED 95648400 sqft
SHED 95844100 sqft
SHED 96040000 sqft
SHED 96236100 sqft
SHED 96432400 sqft
SHED 96628900 sqft
SHED 96825600 sqft
SHED 97022500 sqft
SHED 97219600 sqft
SHED 97416900 sqft
SHED 97614400 sqft
SHED 97812100 sqft
SHED 98010000 sqft
SHED 98208100 sqft
SHED 98406400 sqft
SHED 98604900 sqft
SHED 98803600 sqft
SHED 99002500 sqft
SHED 99201600 sqft
SHED 99400900 sqft
SHED 99600400 sqft
SHED 99800100 sqft
SHED 100000000 sqft



SCALE: 1" = 40'

LEGEND:

- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- TEMPORARY PAVEMENT
- S TEMPORARY TRAFFIC SIGNAL

606272_TR(TTCP STAGE 4).DWG Plotted on 9-Apr-2021 5:30 PM

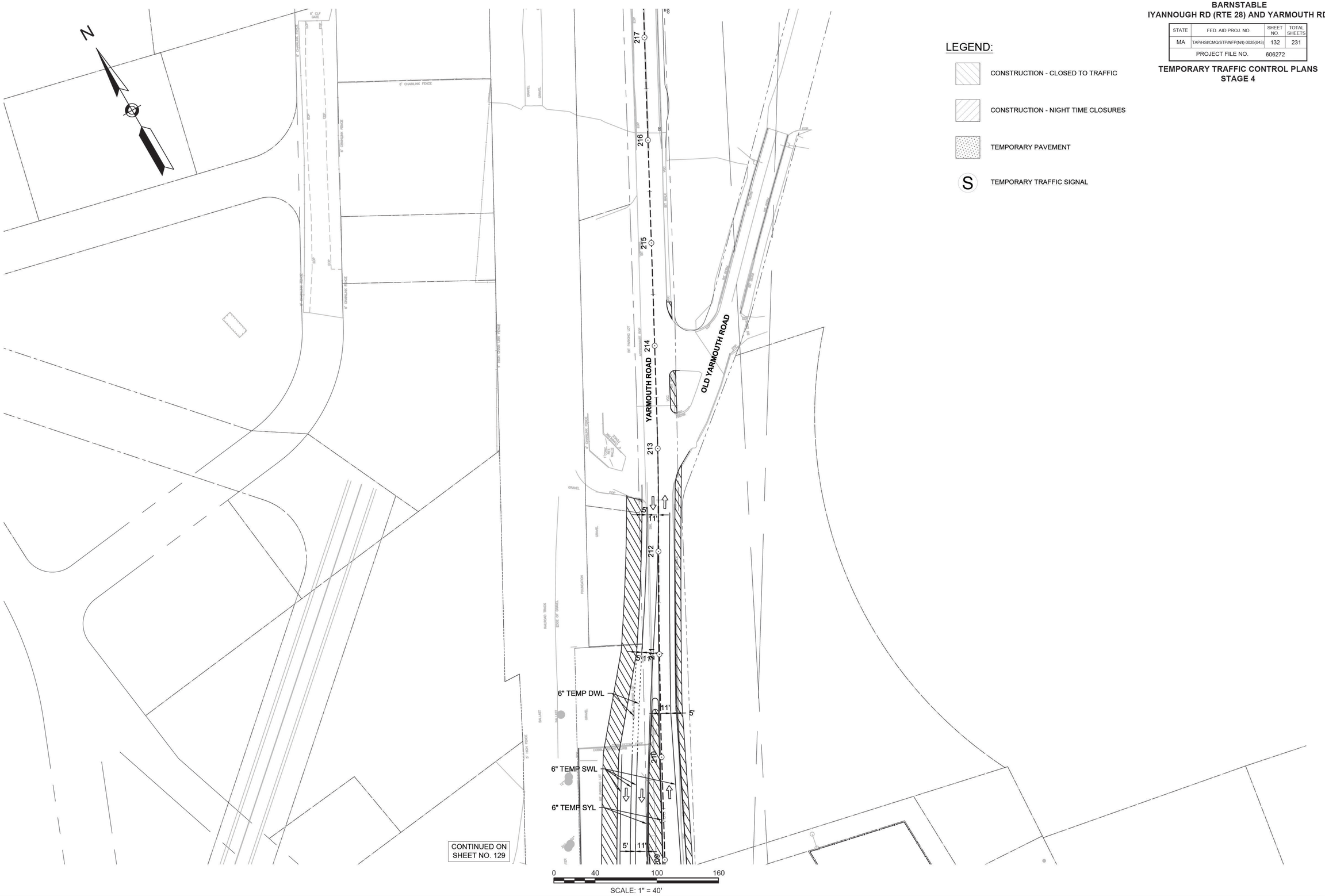
BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(N/I)-0035(043)	132	231
PROJECT FILE NO.		606272	

TEMPORARY TRAFFIC CONTROL PLANS
STAGE 4

LEGEND:

- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- TEMPORARY PAVEMENT
- S TEMPORARY TRAFFIC SIGNAL



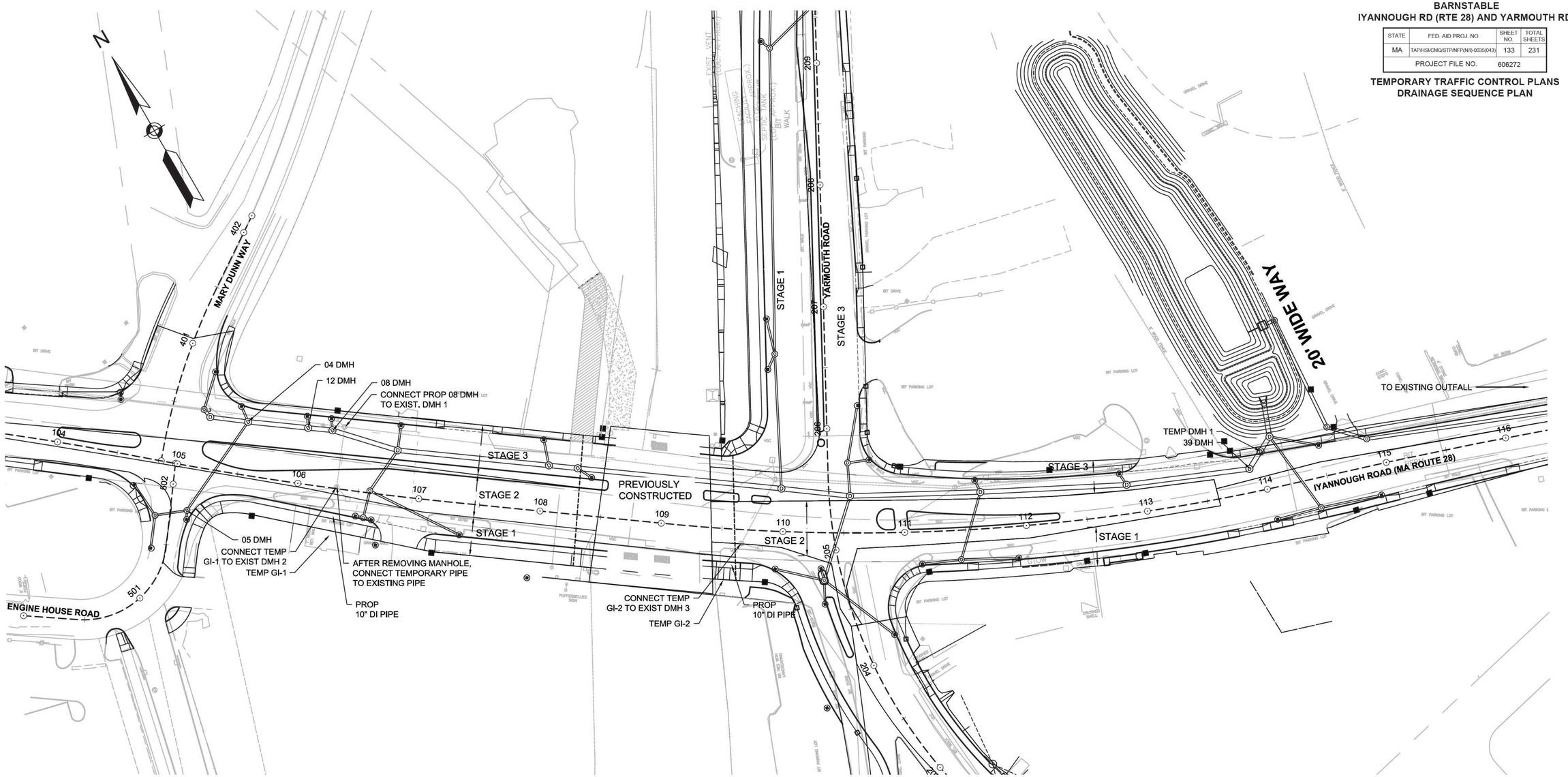
606272_TR(TTCP STAGE 4).DWG Plotted on 9-Apr-2021 5:30 PM

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(NI)-0035(043)	133	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
DRAINAGE SEQUENCE PLAN

606272_TR(TTCP DRAINAGE SEQUENCING).DWG Plotted on 9-Apr-2021 3:03 PM



ROUTE 28 SUGGESTED DRAINAGE SEQUENCING NOTES

STAGE 1
1. INSTALL TEMPORARY GI-1 AND GI-2 AND CONNECT TO EXISTING DMH'S 2 AND 3 AS SHOWN ABOVE.
2. INSTALL PERMANENT CATCH BASINS WITHIN STAGE 3 WORK ZONE.
3. INSTALL PERMANENT LATERAL PIPES FROM PERMANENT CATCH BASINS TO THE LIMITS OF STAGE 1 WORK ZONE.
4. PERMANENT DRAINAGE FOR ENGINE HOUSE ROAD WILL BE COMPLETED AND CONNECTED TO THE EXISTING SECTION OF TRUNK LINE.

STAGE 2
1. REMOVE EXIST. DMH 2 AND 3; INSTALL SECTION OF PIPE TO CONNECT TEMPORARY PIPE TO EXISTING PIPE IN LOCATION OF REMOVED MANHOLES.
2. CONSTRUCT SECTIONS OF LATERAL PIPES ACROSS THE STAGE 2 WORK ZONE, CONNECTING TO LATERAL PIPES INSTALLED IN STAGE 1.

STAGE 3
1. INSTALL PERMANENT TRUNK LINE (PIPES AND MANHOLES) FROM 08 DMH TO 39 DMH AT INFILTRATION BASIN AND FROM THE WESTERN PROJECT LIMIT TO 04 DMH.
2. INSTALL TEMP DMH 1 AT STA. 114 ± CONNECTING PROPOSED TRUNK LINE TO EXISTING TRUNK LINE. THIS DMH WILL SERVE AS A BYPASS OF THE INFILTRATION BASIN. THE ONLY OUTLET FROM THIS TEMP DMH WILL BE THE EXISTING TRUNK LINE.
3. INSTALL REMAINDER OF LATERAL PIPES FROM SOUTH SIDE DRAINAGE, CONNECTING TO PERMANENT MANHOLES.
4. BEGINNING AT THE UPSTREAM END OF THE TRUNK LINE, NEAR STATION 104+50, BEGIN CONSTRUCTING PERMANENT LATERAL CONNECTIONS FROM CATCH BASINS TO TRUNK LINE MANHOLES.
5. RUNOFF TO THE NEWLY ACTIVE CATCH BASIN WILL BE CONVEYED VIA THE PROPOSED TRUNK LINE THROUGH THE TEMPORARY MANHOLE DMH 1 AT STATION 114+00 THEN BYPASSING THE BMP VIA THE EXISTING TRUNK LINE TO THE EXISTING OUTFALL.
6. AS PERMANENT CATCH BASINS ARE BROUGHT ON LINE, REMOVE EXISTING TRUNK LINE, CATCH BASINS AND LATERAL PIPES THAT ARE NO LONGER RECEIVING FLOW.
7. CONTINUE PROCESS FROM UPSTREAM TO THE BMP.
8. WHEN CONSTRUCTION IS SUBSTANTIALLY COMPLETE, INSTALL PERMANENT CONNECTIONS TO INFILTRATION BASIN.
9. REMOVE ALL TEMPORARY DRAINAGE STRUCTURES.

0 40 100 160
SCALE: 1" = 40'

NOTES:

1. THIS PLAN DEPICTS THE DETOUR ROUTES FOR SOUTHBOUND ROUTE 28 AND EASTBOUND YARMOUTH ROAD TO ACCOMMODATE A FULL CLOSURE OF THE ROUTE 28/YARMOUTH INTERSECTION. FOR THE NORTHBOUND ROUTE 28 AND WESTBOUND YARMOUTH ROAD DETOURS, SEE SHEETS 136 - 137.
2. THIS DETOUR SHALL NOT BE IMPLEMENTED WITHOUT APPROVAL BY THE TOWN OF BARNSTABLE. DETOUR SHALL ONLY BE USED DURING WEEKEND NIGHTS BETWEEN 9:00 PM AND 5:00 AM ON FRIDAY, SATURDAY, AND SUNDAY NIGHTS BETWEEN LABOR DAY AND MEMORIAL DAY. ROUTE 28 SHALL BE REOPENED TO FULL CAPACITY BY 5:00 AM. THE DETOUR SHALL NOT OCCUR BETWEEN MEMORIAL DAY AND LABOR DAY.
3. ALL DETOUR SIGNS SHALL BE COVERED WHEN NOT IN USE.
4. FOR 1 WEEK IN ADVANCE OF THE ROAD CLOSURE, A PCMS BOARD SHALL BE PLACED IN EACH DIRECTION IN ADVANCE OF THE POINT OF CLOSURE AS WELL AS ON ROUTE 6 NORTHBOUND IN ADVANCE OF EXITS 72 AND 75. THE FOLLOWING 2-PHASE MESSAGE SHALL BE DISPLAYED, WITH EACH PHASE DISPLAYED FOR 4 SECONDS.
   PCMS #2, 3

RT 28 AT YARMOUTH CLOSING	X/X-X/X XAM-XAM

5. DURING THE ROADWAY CLOSURE, EACH PCMS BOARD SHALL DISPLAY THE FOLLOWING MESSAGE:
   PCMS #2, 3

RT 28 AT YARMOUTH CLOSED	FOLLOW DETOUR

CONTINUED ON SHEET NO. 135

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	134	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
ROUTE 28 NORTHBOUND AND
YARMOUTH ROAD EASTBOUND DETOUR

606272_TR(DETOUR).DWG Plotted on 9-Apr-2021 3:04 PM

PCMS #3
PCMS #2
ROAD CLOSURE
PLACE TYPE 3 BARRICADES ACROSS ROUTE 28 (TYP)
500'
1 MILE
BARNSTABLE RD
CENTER ST
MAIN ST
YARMOUTH ROAD
CAMP ST

0 300 750 1500
SCALE: 1" = 300'

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	135	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
ROUTE 28 NORTHBOUND AND
YARMOUTH ROAD EASTBOUND DETOUR

606272_TR(DETOUR).DWG Plotted on 9-Apr-2021 3:05 PM



CONTINUED ON SHEET NO. 137

NOTES:

1. THIS PLAN DEPICTS THE DETOUR ROUTES FOR NORTHBOUND ROUTE 28 AND WESTBOUND YARMOUTH ROAD TO ACCOMMODATE A FULL CLOSURE OF THE ROUTE 28/YARMOUTH INTERSECTION. FOR THE SOUTHBOUND ROUTE 28 AND EASTBOUND YARMOUTH ROAD DETOURS, SEE SHEETS 134 - 135.
2. THIS DETOUR SHALL NOT BE IMPLEMENTED WITHOUT APPROVAL BY THE TOWN OF BARNSTABLE. DETOUR SHALL ONLY BE USED DURING WEEKEND NIGHTS BETWEEN 9:00 PM AND 5:00 AM ON FRIDAY, SATURDAY, AND SUNDAY NIGHTS BETWEEN LABOR DAY AND MEMORIAL DAY. ROUTE 28 SHALL BE REOPENED TO FULL CAPACITY BY 5:00 AM. THE DETOUR SHALL NOT OCCUR BETWEEN MEMORIAL DAY AND LABOR DAY.
3. ALL DETOUR SIGNS SHALL BE COVERED WHEN NOT IN USE.
4. FOR 1 WEEK IN ADVANCE OF THE ROAD CLOSURE, A PCMS BOARD SHALL BE PLACED IN EACH DIRECTION IN ADVANCE OF THE POINT OF CLOSURE. THE FOLLOWING 2-PHASE MESSAGE SHALL BE DISPLAYED, WITH EACH PHASE DISPLAYED FOR 4 SECONDS.

PCMS #1		PCMS #4	
RT 28 AT YARMOUTH CLOSING	X/X-X/X XAM-XAM	YARMOUTH AT RT 28 CLOSING	X/X-X/X XAM-XAM

5. DURING THE ROADWAY CLOSURE, EACH PCMS BOARD SHALL DISPLAY THE FOLLOWING MESSAGE:

PCMS #1		PCMS #4	
RT 28 AT YARMOUTH CLOSED	FOLLOW DETOUR	YARMOUTH AT RT 28 CLOSED	FOLLOW DETOUR

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	136	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
ROUTE 28 SOUTHBOUND AND
YARMOUTH ROAD WESTBOUND DETOUR

606272_TR(DETOUR).DWG Plotted on 9-Apr-2021 3:06 PM

SCALE: 1" = 300'

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	137	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
ROUTE 28 SOUTHBOUND AND
YARMOUTH ROAD WESTBOUND DETOUR

606272_TR(DETOUR).DWG Plotted on 9-Apr-2021 3:06 PM

N

PCMS #4

ROAD CLOSED AHEAD
1 MILE

500'

DETOUR AHEAD

500'

DETOUR
YARMOUTH

500'

ROAD CLOSED
1 MILE AHEAD
LOCAL TRAFFIC ONLY
DETOUR

YARMOUTH RD

CAMP ST

0 300 750 1500
SCALE: 1" = 300'

CONTINUED ON SHEET NO. 136

NOTES:
1. THIS PLAN DEPICTS THE DETOUR ROUTES FOR NORTHBOUND AND SOUTHBOUND OLD YARMOUTH ROAD A CLOSURE OF THE SOUTHERN END OF OLD YARMOUTH ROAD AT YARMOUTH ROAD.
2. DETOUR SHALL ONLY BE USED DURING WEEKEND NIGHTS BETWEEN 9:00 PM AND 5:00 AM ON FRIDAY, SATURDAY, AND SUNDAY NIGHTS BETWEEN LABOR DAY AND MEMORIAL DAY. ROUTE 28 SHALL BE REOPENED TO FULL CAPACITY BY 5:00 AM.
3. ALL DETOUR SIGNS SHALL BE COVERED WHEN NOT IN USE.

N

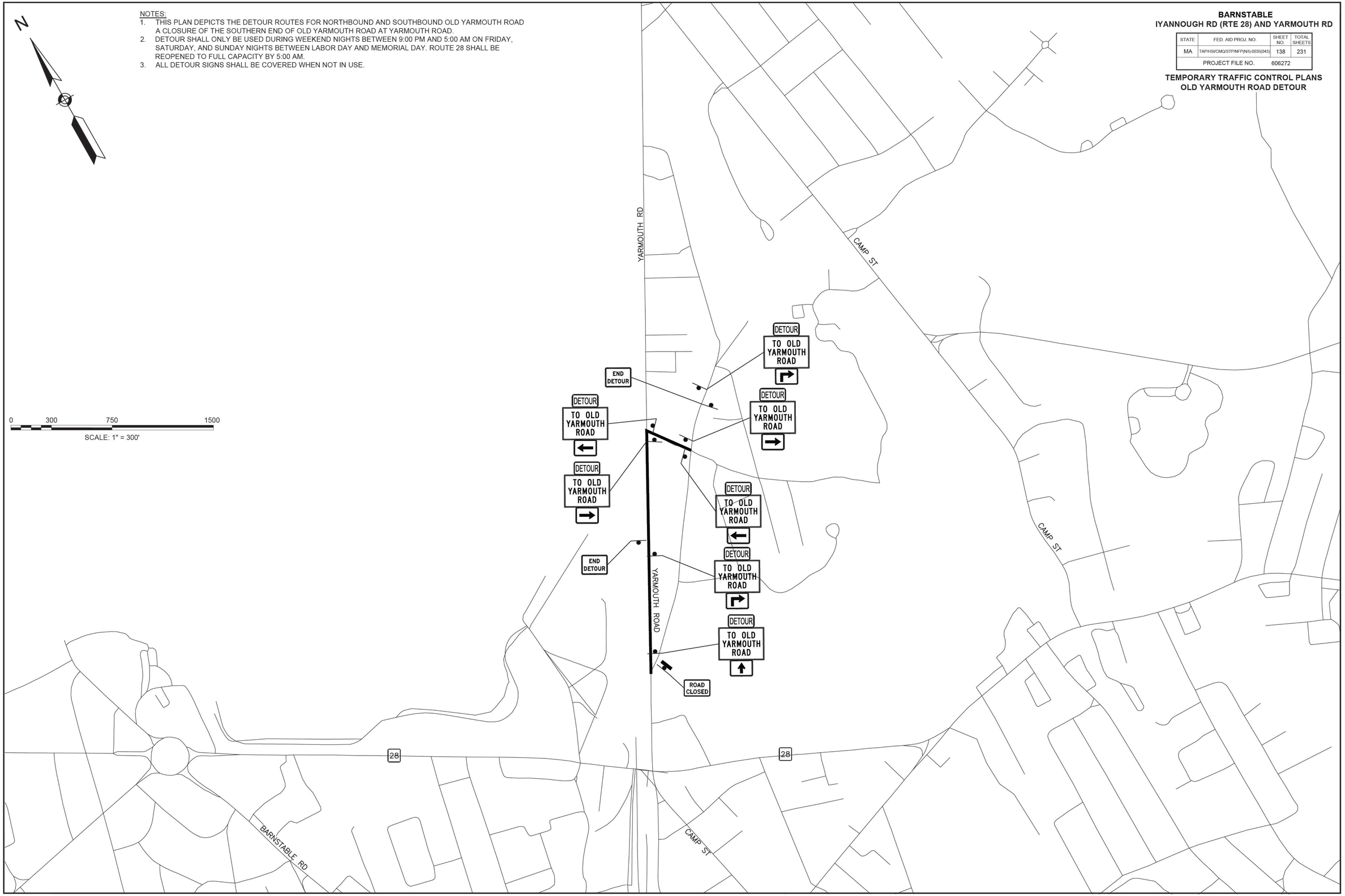
0 300 750 1500

SCALE: 1" = 300'

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	138	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
OLD YARMOUTH ROAD DETOUR



606272_TR(DETOUR).DWG Plotted on 9-Apr-2021 3:07 PM

TRAFFIC SIGN SUMMARY

IDENTIFI-CATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED												COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.	1A	1B	1C	1D	SM1	2	2A	3A	3B	SM2	4	DETAILS	TOTAL	BACK-GROUND	LEGEND	BORDER			
MA-R2-10a	48"	36"	WORK ZONE SPEEDING FINES DOUBLED	STANDARD AS PER MASSDOT			8	8	8	8	8	8	8	8	8	8	8	0	8	WHITE	BLACK	BLACK	P5 (2)	12.00	96.00
MA-R2-10e	36"	48"	END ROAD WORK / DOUBLE FINES END	STANDARD AS PER MASSDOT			8	8	8	8	8	8	8	8	8	8	8	0	8	WHITE	BLACK	BLACK	P5 (2)	12.00	96.00
MA-W4-7L	36"	36"	THRU TRAFFIC MERGE LEFT	STANDARD AS PER MASSDOT			0	0	0	0	0	0	0	0	0	0	0	1	1	FLUOR. ORANGE	BLACK	BLACK	P5 (1)	9.00	9.00
MA-W20-7b	36"	36"	POLICE OFFICER AHEAD	STANDARD AS PER MASSDOT			0	0	0	0	0	0	0	0	0	0	0	10	10	FLUOR. ORANGE	BLACK	BLACK	P5 (1)	9.00	90.00
MA-W30-8R	36"	36"	SQUEEZE RIGHT	STANDARD AS PER MASSDOT			0	0	0	0	0	2	0	0	0	0	0	0	2	FLUOR. ORANGE	BLACK	BLACK	P5 (1)	9.00	18.00
MA-W30-8L	36"	36"	SQUEEZE LEFT	STANDARD AS PER MASSDOT			1	0	0	0	0	0	0	0	0	0	0	0	1	FLUOR. ORANGE	BLACK	BLACK	P5 (1)	9.00	9.00
R1-1	30"	30"	STOP	SEE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS			0	1	1	1	1	1	0	1	1	1	1	0	1	RED	WHITE	BLACK	P5 (1)	6.25	6.25
R3-2	30"	30"					0	0	0	0	0	2	0	0	0	0	0	0	2	WHITE	BLACK	BLACK	P5 (1)	6.25	12.50
R3-7R	36"	36"	RIGHT LANE MUST TURN RIGHT				0	1	1	1	0	1	0	1	1	0	0	2	3	WHITE	BLACK	BLACK	P5 (1)	9.00	27.00
R4-7	24"	30"					0	0	0	0	0	2	0	0	0	0	0	4	6	WHITE	BLACK	BLACK	P5 (1)	5.00	30.00
R5-10C	24"	12"	PEDESTRIANS PROHIBITED				1	1	1	1	0	1	1	1	1	0	0	0	1	WHITE	BLACK	BLACK	MOUNTED ON TYPE III BARRICADE	5.00	5.00
R10-6	24"	36"	STOP HERE ON RED				0	0	1	1	0	0	0	0	0	0	0	0	1	WHITE	BLACK	BLACK	P5 (1)	5.00	5.00
R11-2	48"	30"	ROAD CLOSED				0	0	0	0	0	0	3	0	0	0	0	0	3	WHITE	BLACK	BLACK	MOUNTED ON TYPE III BARRICADE	10.00	30.00
W1-4L	36"	36"					0	2	0	0	1	1	0	3	3	0	0	1	4	FLUOR. ORANGE	BLACK	BLACK	P5 (1)	9.00	36.00

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	139	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
TEMPORARY SIGN SUMMARY SHEET

NOTES

1. HIGH INTENSITY REFLECTIVE SHEETING SHALL BE USED FOR ALL SIGNS. SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION" FOR TEXT DIMENSIONS, AS AMENDED; THE 1996 MASSDOT CONSTRUCTION AND TRAFFIC STANDARD DETAILS, AS AMENDED; THE MASSDOT SIGN LISTINGS 1993 EDITION, AS AMENDED; AND THE MASSDOT GUIDE SIGN POLICY FOR SECONDARY STATE HIGHWAYS, 2005 EDITION, AS AMENDED.
2. ALL CONSTRUCTION WARNING SIGNS SHALL HAVE FLUORESCENT ORANGE COLOR BACKGROUNDS UNLESS OTHERWISE NOTED.

606272_TRITTCP SIGN SUMMARY).DWG Plotted on 9-Apr-2021 3:07 PM

TRAFFIC SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED												COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.	1A	1B	1C	1D	SM1	2	2A	3A	3B	SM2	4	DETAILS	TOTAL	BACK-GROUND	LEGEND	BORDER			
W1-4R	36"	36"		SEE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS			0	2	1	1	1	0	0	5	4	0	0	0	5	FLUOR. ORANGE	BLACK	BLACK	P5 (1)	9.00	45.00
W4-2L	36"	36"					1	0	0	0	0	1	0	1	1	1	1	1	2	FLUOR. ORANGE	BLACK	BLACK	P5 (1)	9.00	18.00
W4-2R	36"	36"					0	2	2	2	2	1	0	1	1	1	1	2	4	FLUOR. ORANGE	BLACK	BLACK	P5 (1)	9.00	36.00
W5-1	36"	36"					0	5	1	1	2	5	0	7	6	0	0	5	12	FLUOR. ORANGE	BLACK	BLACK	P5 (1)	9.00	108.00
W13-1P	18"	18"					0	3	3	3	0	3	0	3	3	0	0	5	8	FLUOR. ORANGE	BLACK	BLACK	P5 (1)	2.25	18.00
W20-1	36"	36"					8	8	8	8	8	8	8	8	8	8	8	0	8	FLUOR. ORANGE	BLACK	BLACK	P5 (1)	9.00	72.00
W20-4	36"	36"					0	0	0	0	0	0	0	0	0	0	0	6	6	FLUOR. ORANGE	BLACK	BLACK	P5 (1)	9.00	54.00
W20-5L	36"	36"					0	0	0	0	0	0	0	0	0	0	0	3	3	FLUOR. ORANGE	BLACK	BLACK	P5 (1)	9.00	27.00
W20-5R	36"	36"					0	0	0	0	0	0	0	0	0	0	0	3	3	FLUOR. ORANGE	BLACK	BLACK	P5 (1)	9.00	27.00
W20-7	36"	36"					0	0	0	0	0	0	0	0	0	0	0	2	2	FLUOR. ORANGE	BLACK	BLACK	P5 (1)	9.00	18.00
W21-5a	36"	36"					0	0	0	5	0	1	0	1	1	0	0	1	6	FLUOR. ORANGE	BLACK	BLACK	P5 (1)	9.00	54.00

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	140	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
TEMPORARY SIGN SUMMARY SHEET

NOTES

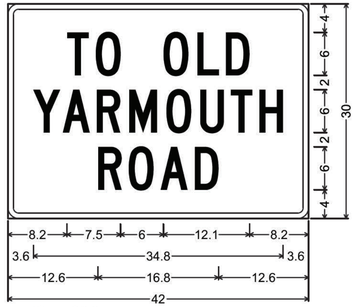
1. HIGH INTENSITY REFLECTIVE SHEETING SHALL BE USED FOR ALL SIGNS. SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION" FOR TEXT DIMENSIONS, AS AMENDED; THE 1996 MASSDOT CONSTRUCTION AND TRAFFIC STANDARD DETAILS, AS AMENDED; THE MASSDOT SIGN LISTINGS 1993 EDITION, AS AMENDED; AND THE MASSDOT GUIDE SIGN POLICY FOR SECONDARY STATE HIGHWAYS, 2005 EDITION, AS AMENDED.
2. ALL CONSTRUCTION WARNING SIGNS SHALL HAVE FLUORESCENT ORANGE COLOR BACKGROUNDS UNLESS OTHERWISE NOTED.

606272_TRITTCP SIGN SUMMARY).DWG Plotted on 9-Apr-2021 3:08 PM

TRAFFIC SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	TEXT	TEXT DIMENSIONS (INCHES) LETTER HEIGHT	TEXT DIMENSIONS (INCHES) VERTICAL SPACING	TEXT DIMENSIONS (INCHES) ARROW RTE. MKR.	NUMBER OF SIGNS REQUIRED YARMOUTH NB & ROUTE 28 EB	NUMBER OF SIGNS REQUIRED YARMOUTH SB & ROUTE 28 WB	NUMBER OF SIGNS REQUIRED OLD YARMOUTH	COLOR BACK-GROUND	COLOR LEGEND	COLOR BORDER	POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
M1-5	24"	24"	28	STANDARD AS PER MASSDOT			13	15	0	WHITE	BLACK	BLACK	-	4.00	112.00
M1-5	24"	24"	132	STANDARD AS PER MASSDOT			0	10	0	WHITE	BLACK	BLACK	-	4.00	40.00
M3-1	24"	12"	NORTH	SEE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS			0	15	0	WHITE	BLACK	BLACK	-	2.00	30.00
M3-3	24"	12"	SOUTH				13	0	0	WHITE	BLACK	BLACK	-	2.00	26.00
M4-5	24"	12"	TO				0	10	0	FLUOR. ORANGE	BLACK	BLACK	-	2.00	20.00
M4-8	24"	12"	DETOUR				20	23	7	FLUOR. ORANGE	BLACK	BLACK	-	2.00	86.00
M4-8a	24"	18"	END DETOUR				2	2	2	FLUOR. ORANGE	BLACK	BLACK	-	3.00	12.00
M5-1L	30"	21"					5	4	0	FLUOR. ORANGE	BLACK	BLACK	-	4.38	39.42
M5-1R	30"	21"					2	5	2	FLUOR. ORANGE	BLACK	BLACK	-	4.38	30.66
M5-3	30"	21"					2	4	0	FLUOR. ORANGE	BLACK	BLACK	-	4.38	26.28
M6-1L	30"	21"					5	1	2	FLUOR. ORANGE	BLACK	BLACK	-	4.38	26.28
M6-1R	30"	21"					0	5	2	FLUOR. ORANGE	BLACK	BLACK	-	4.38	21.90
M6-2R	30"	21"					3	2	0	FLUOR. ORANGE	BLACK	BLACK	-	4.38	21.90
M6-3	30"	21"					3	7	1	FLUOR. ORANGE	BLACK	BLACK	-	4.38	43.80
R6-1L	36"	12"	DETOUR				0	2	0	ORANGE	BLACK	BLACK	-	3.00	6.00
R6-1R	36"	12"	DETOUR				4	0	0	ORANGE	BLACK	BLACK	-	3.00	12.00
R11-2	48"	36"	ROAD CLOSED				2	2	0	WHITE	BLACK	BLACK	-	12.00	48.00
R11-3a	60"	30"	ROAD CLOSED X X MILE AHEAD LOCAL TRAFFIC ONLY				4	2	0	WHITE	BLACK	BLACK	-	12.50	75.00
SP-2	42"	30"	TO OLD YARMOUTH ROAD				0	0	7	ORANGE	BLACK	BLACK	-	8.75	61.25
W16-3a	30"	12"	1 MILE				2	2	0	WHITE	BLACK	BLACK	-	2.50	10.00
W16-8	30"	8"	YARMOUTH				9	5	0	WHITE	BLACK	BLACK	-	1.67	23.33
W20-2	36"	36"	DETOUR AHEAD				2	2	0	ORANGE	BLACK	BLACK	-	9.00	36.00
W20-3	36"	36"	ROAD CLOSED AHEAD				2	2	0	ORANGE	BLACK	BLACK	-	9.00	36.00

NOTES
1. HIGH INTENSITY REFLECTIVE SHEETING SHALL BE USED FOR ALL SIGNS. SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION" FOR TEXT DIMENSIONS, AS AMENDED; THE 1996 MASSDOT CONSTRUCTION AND TRAFFIC STANDARD DETAILS, AS AMENDED; THE MASSDOT SIGN LISTINGS 1993 EDITION, AS AMENDED; AND THE MASSDOT GUIDE SIGN POLICY FOR SECONDARY STATE HIGHWAYS, 2005 EDITION, AS AMENDED.
2. ALL CONSTRUCTION WARNING SIGNS SHALL HAVE FLUORESCENT ORANGE COLOR BACKGROUNDS UNLESS OTHERWISE NOTED.



Identifier : SP-2;
1.5" Radius, 0.8" Border, Black on Orange;
[TO OLD] C; [YARMOUTH] C; [ROAD] C;

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(N1)-0035(043)	141	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
DETOUR SIGN SUMMARY SHEET

606272_TR(TTCP SIGN SUMMARY).DWG Plotted on 9-Apr-2021 3:08 PM

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	142	231
PROJECT FILE NO.	606272		

606272_TR(TTCP DETAILS).DWG Plotted on 9-Apr-2021 3:08 PM

NOTES:

1. ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS, UNLESS SUPERCEDED BY THESE PLANS.
2. ALL SIGN LEGENDS, BORDERS, AND MOUNTING SHALL BE IN ACCORDANCE WITH THE MUTCD.
3. TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.
4. TEMPORARY CONSTRUCTION SIGNING, BARRICADES, AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE REMOVED FROM THE HIGHWAY OR COVERED WHEN THEY ARE NOT REQUIRED FOR CONTROL OF TRAFFIC.
5. SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY, CHANNELIZING DEVICES, BARRIERS, AND CRASH ATTENUATORS MUST PASS THE CRITERIA SET FORTH IN NCHRP REPORT 350, "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES" AND/OR "MANUAL FOR ASSESSING SAFETY HARDWARE" (MASH).
6. CONTRACTORS SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS, SUCH AS CONDUIT INSTALLATION, EXISTING PAVEMENT EXCAVATION, TEMPORARY DRIVEWAY PAVEMENT PLACEMENT, AND SIMILAR OPERATIONS.
7. THE FIRST TEN PLASTIC DRUMS OF A TAPER SHALL BE MOUNTED WITH TYPE A LIGHTS.
8. THE ADVISORY SPEED LIMIT, IF REQUIRED, SHALL BE DETERMINED BY THE ENGINEER.
9. DISTANCES ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.
10. MAXIMUM SPACING OF TRAFFIC DEVICES IN A TAPER (DRUMS OR CONES) IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.
11. MINIMUM LANE WIDTH IS TO BE 11 FEET (3.3m) UNLESS OTHERWISE SHOWN. MINIMUM LANE WIDTH TO BE MEASURED FROM THE EDGE OF DRUMS OR MEDIAN BARRIER.
12. ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS.

LEGEND:

- ● REFLECTORIZED PLASTIC DRUM OR 36" CONE
- P/F POLICE/FLAGGER DETAIL
- TYPE III BARRICADE
- CHANGEABLE MESSAGE SIGN
- ARROW BOARD
- WORK ZONE
- DIRECTION OF TRAFFIC
- IMPACT ATTENUATOR
- MEDIAN BARRIER
- MEDIAN BARRIER WITH WARNING LIGHTS
- WORK VEHICLE
- TRUCK MOUNTED ATTENUATOR
- TRAFFIC OR PEDESTRIAN SIGNAL
- SIGN

THE IDEAL CAPACITY OF A MAJOR HIGHWAY IS GENERALLY CONSIDERED TO BE 1900 PASSENGER CARS PER HOUR PER LANE (PCPHPL). IN WORK ZONES ON A MULTI-LANE DIVIDED HIGHWAY, THE FOLLOWING VOLUME GUIDELINES HAVE BEEN SUGGESTED:

MEASURED AVERAGE WORK ZONE CAPACITIES

NUMBER OF LANES		NUMBER OF STUDIES	AVERAGE CAPACITY	
NORMAL (EXISTING)	OPEN (TO TRAFFIC)		VPH	VPHPL
3	1	7	1,170	1,170
2	1	8	1,340	1,340
5	2	8	2,740	1,370
4	2	4	2,960	1,480
3	2	9	2,980	1,490
4	3	4	4,560	1,520

Source: Dudek, C., Notes on Work Zone Capacity and Level of Service. Texas Transportation Institute, Texas A&M University, College Station, Texas (1984)

BY OBTAINING HOURLY TRAFFIC COUNTS FOR A PARTICULAR ROADWAY (WITH A MINIMUM OF A 48-HOUR AUTOMATIC TRAFFIC RECORDER (ATR) COUNT), THIS WILL HELP TO DETERMINE AT WHAT TIMES OF THE DAY OR NIGHT A CERTAIN NUMBER OF LANES MAY BE CLOSED.

MASSDOT FIGURE GEN-1

SUGGESTED WORK ZONE WARNING SIGN SPACING

ROAD TYPE	DISTANCE BETWEEN SIGNS **		
	A	B	C
LOCAL OR LOW VOLUME ROADWAYS*	350 (100)	350 (100)	350 (100)
MOST OTHER ROADWAYS*	500 (150)	500 (150)	500 (150)
FREEWAYS AND EXPRESSWAYS*	1,000 (300)	1,500 (450)	2,640 (800)

* ROAD TYPE TO BE DETERMINED BY MASSDOT OFFICE OF TRANSPORTATION PLANNING.

** DISTANCES ARE SHOWN IN FEET (METERS). THE COLUMN HEADINGS A, B, AND C ARE THE DIMENSIONS SHOWN IN THE DETAIL/ TYPICAL SETUP FIGURES. THE A DIMENSION IS THE DISTANCE FROM THE TRANSITION OR POINT OF RESTRICTION TO THE FIRST SIGN. THE B DIMENSION IS THE DISTANCE BETWEEN THE FIRST AND SECOND SIGNS. THE C DIMENSION IS THE DISTANCE BETWEEN THE SECOND AND THIRD SIGNS. (THE "THIRD" SIGN IS THE FIRST ONE TYPICALLY ENCOUNTERED BY A DRIVER APPROACHING A TEMPORARY TRAFFIC CONTROL (TTC) ZONE.)

THE "THIRD" SIGN ABOVE IS TYPICALLY REFERRED TO AS AN "ADVANCE WARNING" SIGN ON THE TTCP SETUPS. THESE ADVANCE WARNING SIGNS ARE LOCATED PRIOR TO THE PROJECT LIMITS ON ALL APPROACHES (i.e. THE W20-1 SERIES (ROAD WORK XX FT) SIGNS), AND USUALLY REMAIN FOR THE DURATION OF THE PROJECT. ADDITIONAL SIGNS (i.e. "RIGHT LANE CLOSED 1 MILE" AND "LEFT LANE CLOSED 1 MILE") HAVE BEEN SHOWN IN SOME FIGURES AS EXAMPLES OF REINFORCEMENT SIGN PLACEMENT BUT ARE USED IN RARE OCCASIONS.

THE FIRST AND SECOND WARNING SIGNS ABOVE ARE REFERRED TO AS THE OPERATIONAL (DAY-TO-DAY) WORK ZONE SIGNS AND MAY BE MOVED DEPENDING ON WHERE THE SPECIFIC ROADWAY WORK FOR THAT DAY IS LOCATED.

R2-10a SIGNS SHALL BE PLACED BETWEEN THE SECOND AND THIRD SIGNS AS DESCRIBED ABOVE.

R2-10a, R2-10e, AND W20-1 SERIES SIGNS ARE TO BE INCLUDED ON ALL DETAILS/TYPICAL SETUPS.

Based on: Table 6C-1 MUTCD LATEST EDITION

STOPPING SIGHT DISTANCE AS A FUNCTION OF SPEED

SPEED* (km/h)	DISTANCE (m)
30	35
40	50
50	65
60	85
70	105
80	130
90	160
100	185
110	220
120	250

SPEED* (mph)	DISTANCE (ft)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730
75	820

*POSTED SPEED, OFF-PEAK 85TH-PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED

THESE VALUES MAY BE USED TO DETERMINE THE LENGTH OF LONGITUDINAL BUFFER SPACES.

THE DISTANCES IN THE ABOVE CHART REPRESENT THE MINIMAL VALUES FOR BUFFER SPACING.

Source: Table 6C-2 MUTCD LATEST EDITION

MASSDOT FIGURE GEN-2

CONVENTIONAL ROADWAY- A STREET OR HIGHWAY OTHER THAN A LOW-VOLUME ROAD, EXPRESSWAY, OR FREEWAY.

EXPRESSWAY- A DIVIDED HIGHWAY WITH PARTIAL CONTROL OF ACCESS.

FREEWAY- A DIVIDED HIGHWAY WITH FULL CONTROL OF ACCESS.

LOW-VOLUME ROAD- A FACILITY LYING OUTSIDE OF BUILT-UP AREAS OF CITIES, TOWNS, AND COMMUNITIES, AND IT SHALL HAVE A TRAFFIC VOLUME OF LESS THAN 400 AADT. IT SHALL NOT BE A FREEWAY, EXPRESSWAY, INTERCHANGE RAMP, FREEWAY SERVICE ROAD OR A ROAD ON A DESIGNATED STATE HIGHWAY SYSTEM.

Source: MUTCD LATEST EDITION

TAPER LENGTH CRITERIA FOR TEMPORARY TRAFFIC CONTROL ZONES

TYPE OF TAPER	TAPER LENGTH (L)*
MERGING TAPER	AT LEAST L
SHIFTING TAPER	AT LEAST 0.5L
SHOULDER TAPER	AT LEAST 0.33L
ONE-LANE, TWO-WAY TRAFFIC TAPER	50 FT MIN.(15 m) 100 FT(30 m) MAX.
DOWNSTREAM TAPER	50 FT MIN.(15 m) 100 FT MAX.(30 m) PER LANE

Source: Table 6C-3 MUTCD LATEST EDITION

FORMULAS FOR DETERMINING TAPER LENGTHS

SPEED LIMIT (S)	TAPER LENGTH (L) FEET
40 MPH OR LESS	$L = \frac{WS^2}{60}$
45 MPH OR MORE	$L = WS$

SPEED LIMIT (S)	TAPER LENGTH (L) Meters
60 KM/H OR LESS	$L = \frac{WS^2}{155}$
70 KM/H OR MORE	$L = \frac{WS}{1.6}$

WHERE: L = TAPER LENGTH IN FEET (METERS)

W = WIDTH OF OFFSET IN FEET (METERS)

S = POSTED SPEED LIMIT, OR OFF-PEAK 85TH-PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICAPATED OPERATING SPEED IN MPH (KM/H)

Source: Table 6C-4 MUTCD LATEST EDITION

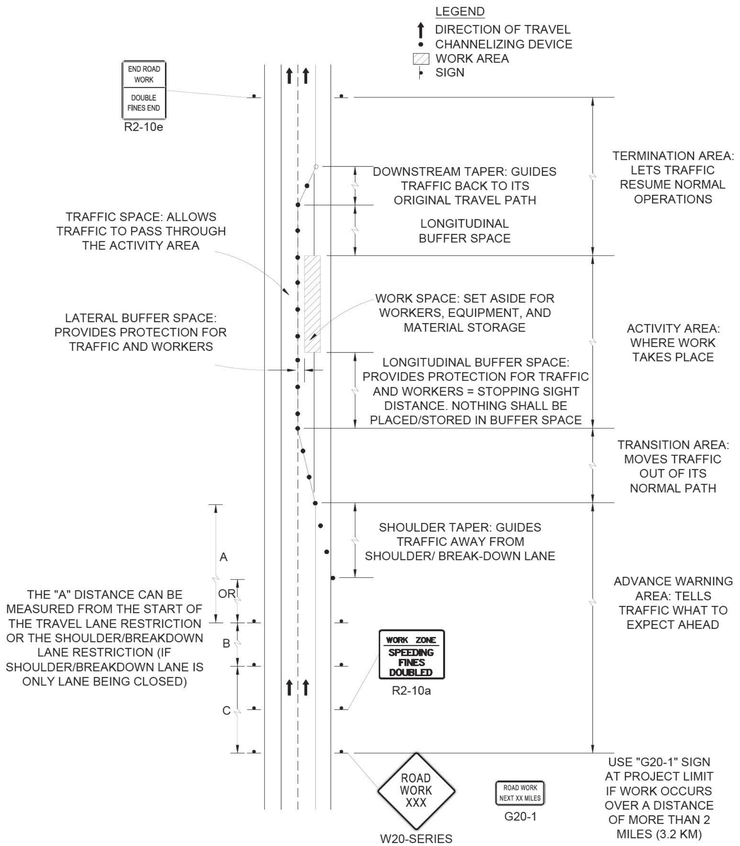
MASSDOT FIGURE GEN-3

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

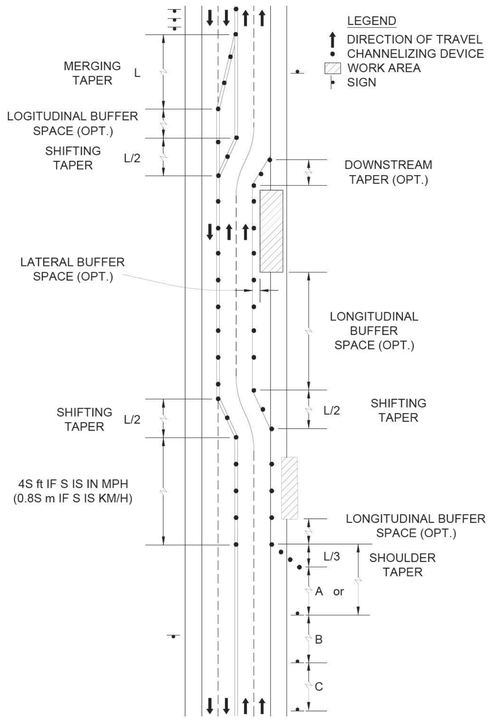
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	143	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS DETAILS

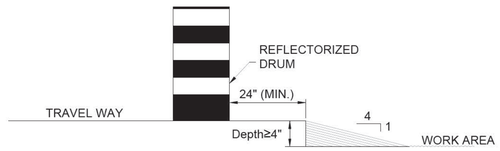
606272_TR(TTCP DETAILS).DWG Plotted on 9-Apr-2021 3:08 PM

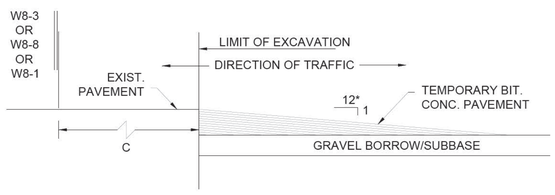


MASSDOT FIGURE GEN-4



MASSDOT FIGURE GEN-5



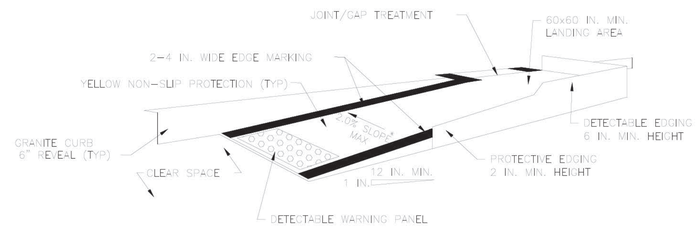


* - INCREASE SLOPE RATIO FOR HIGHER SPEEDS

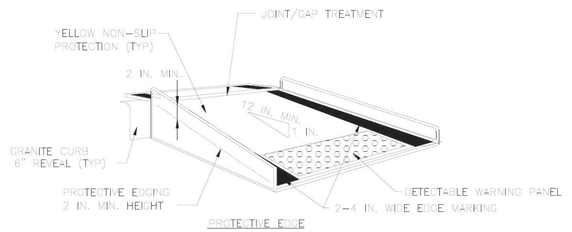
MASSDOT FIGURE GEN-6

NOTES:

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

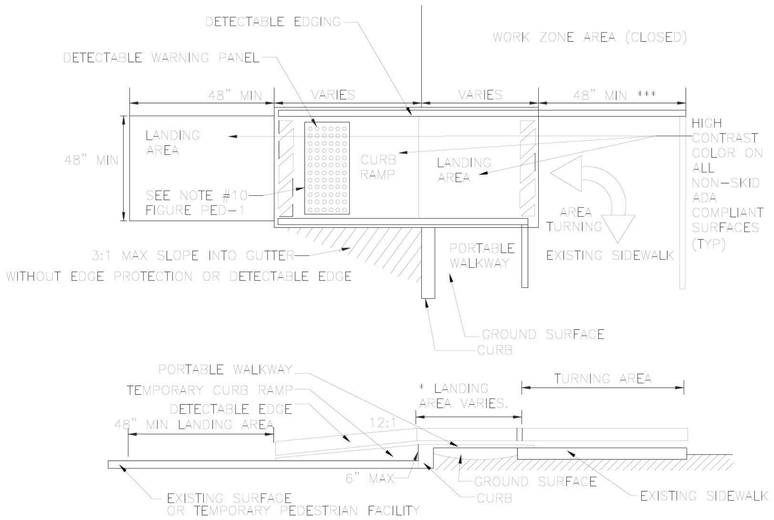


TEMPORARY CURB RAMP-PARALLEL TO CURB



TEMPORARY CURB RAMP-PERPENDICULAR TO CURB

MASSDOT FIGURE PED-1



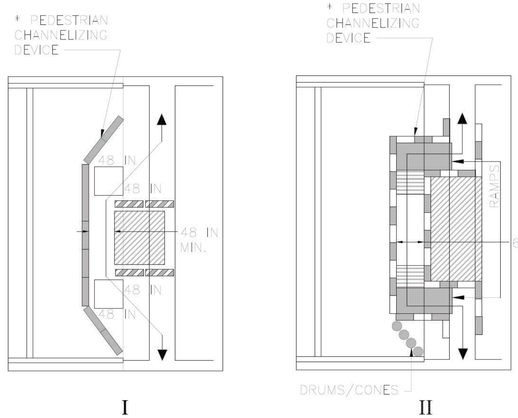
TEMPORARY CURB RAMP

* —LANDING AREA USED TO OVERLAP NON-ADA COMPLIANT SURFACES.

** —DETECTABLE EDGE REMOVED IF A CONTINUOUS SIDEWALK.

*** —60 IN. IF AN OBSTRUCTION IS AT BACK OF SIDEWALK.

MASSDOT FIGURE PED-2



- DETAIL I IS CONSIDERED AN EXAMPLE OF A SHORT TERM CLOSURE AND PEDESTRIAN ASSISTANCE (PERSONNEL) TO NAVIGATE AROUND THE CLOSURE/WORK AREA COULD BE CONSIDERED AS AN OPTION IN PLACE OF PROVIDING ADA/AAB DEVICES. DETAIL II IS CONSIDERED AN EXAMPLE OF A LONG TERM CLOSURE THAT WOULD REQUIRE ADDITIONAL ADA/AAB COMPLIANT DEVICES. IF A SIDEWALK CLOSURE OR RESTRICTION LASTS FOR MORE THAN ONE (1) WORK SHIFT THEN ADA/AAB COMPLIANCE SHALL BE FOLLOWED.
- WHEN EXISTING PEDESTRIAN FACILITIES ARE DISRUPTED, CLOSED, OR RELOCATED IN A TTC ZONE, TEMPORARY FACILITIES SHALL BE PROVIDED AND THEY SHALL BE DETECTABLE AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH THE FEATURES PRESENT IN THE EXISTING PEDESTRIAN FACILITY.
- A PEDESTRIAN CHANNELIZING DEVICE THAT IS DETECTABLE BY A PERSON WITH A VISUAL DISABILITY TRAVELING WITH THE AID OF A LONG CANE SHALL BE PLACED ACROSS THE FULL WIDTH OF THE CLOSED SIDEWALK.
- WHEN USED, TEMPORARY RAMPS SHALL COMPLY WITH AMERICANS WITH DISABILITIES ACT (SEE FIGURES PED-1 & PED-2).
- THE ALTERNATE PATHWAY SHOULD HAVE A SMOOTH CONTINUOUS HARD SURFACE FOR THE ENTIRE LENGTH OF THE TEMPORARY PEDESTRIAN FACILITY.
- THE TEMPORARY SIDEWALK SHOULD BE A MINIMUM OF 4 FEET WIDE. IF THE SIDEWALK EXCEEDS 200 FEET THEN A 5 FOOT BY 5 FOOT PASSING ZONE SHALL BE PROVIDED.
- THE PROTECTIVE REQUIREMENTS OF A TTC SITUATION HAVE PRIORITY IN DETERMINING THE NEED FOR TEMPORARY TRAFFIC BARRIERS AND THEIR USE IN THIS SITUATION SHOULD BE BASED ON ENGINEERING JUDGMENT.
- CONTROLS ONLY FOR PEDESTRIAN TRAFFIC ARE SHOWN; VEHICULAR TRAFFIC SHOULD BE HANDLED AS SHOWN ELSEWHERE. THESE DETAILS ARE USED IN CONJUNCTION WITH THE PROPOSED LANE CLOSURE DETAILS AND DURING CONSTRUCTION STAGING, AS DETERMINED BY THE ENGINEER.
- AUDIBLE INFORMATION DEVICES SHOULD BE CONSIDERED WHERE MIDBLOCK CLOSINGS AND CHANGED CROSSWALK AREAS CAUSE INADEQUATE COMMUNICATION TO BE PROVIDED TO PEDESTRIANS WHO HAVE VISUAL DISABILITIES.
- EXISTING AUDIBLE DEVICES NO LONGER APPLICABLE DUE TO CONSTRUCTION SHALL BE DISABLED.

AUDIBLE DEVICES

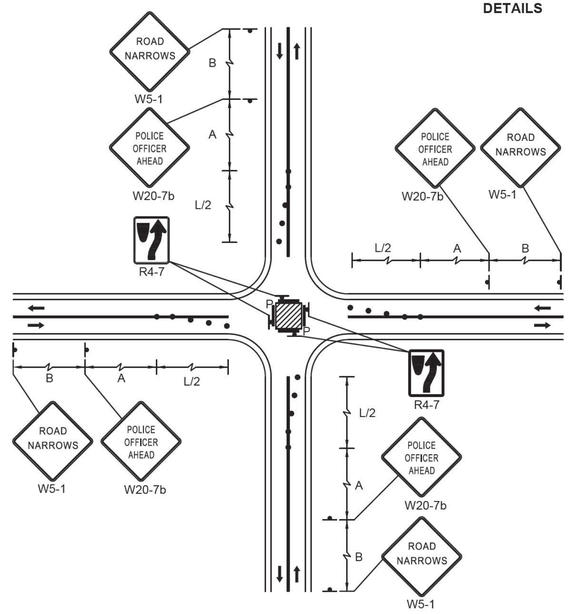
FOR LONG TERM SIDEWALK CLOSURES (AT A MINIMUM OVERNIGHT) A FORM OF SPEECH MESSAGING FOR PEDESTRIANS WITH VISUAL DISABILITIES SHALL BE PROVIDED. AUDIBLE INFORMATION DEVICES SUCH AS DETECTABLE BARRIERS OR BARRICADES AND OTHER PASSIVE PEDESTRIAN ACTIVATION (MOTION ACTIVATED) DEVICES SHOULD BE CONSIDERED FOR THESE CASES. THESE AUDIBLE DEVICES CAN BE MOUNTABLE OR STAND ALONE.

MASSDOT FIGURE PED-3

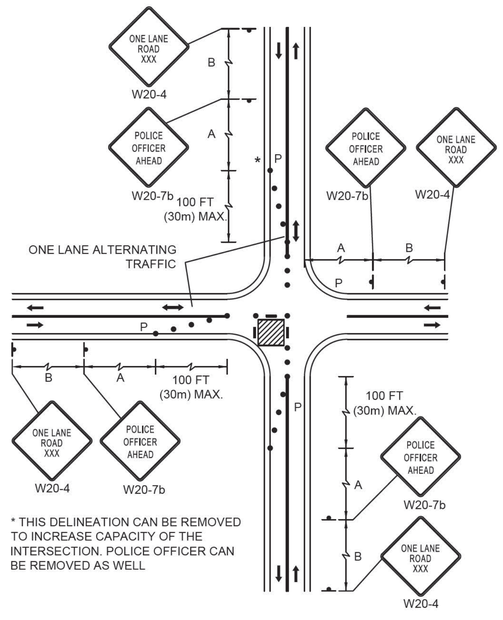
BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(N1)-0035(043)	144	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS DETAILS

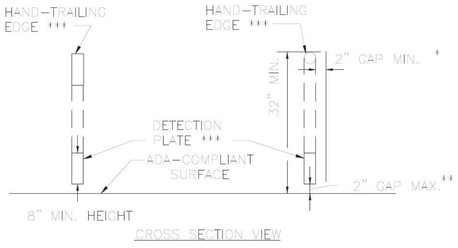


MASSDOT FIGURE INT-1



* THIS DELINEATION CAN BE REMOVED TO INCREASE CAPACITY OF THE INTERSECTION. POLICE OFFICER CAN BE REMOVED AS WELL

MASSDOT FIGURE INT-2



PEDESTRIAN CHANNELIZING DEVICE

NOTES:

* THERE SHALL BE A 2 INCH GAP BETWEEN THE HAND—TRAILING EDGE AND ITS SUPPORT.

** A MAXIMUM 2 INCH GAP BETWEEN THE BOTTOM OF THE BOTTOM RAIL AND THE SURFACE MAY BE USED TO PROVIDE DRAINAGE.

*** THE HAND—TRAILING EDGE AND DETECTION PLATE SHALL BE CONTINUOUS THROUGHOUT THE LENGTH OF THE PATH SUCH THAT A PEDESTRIAN USER WITH A LONG CANE CAN FOLLOW IT.

MASSDOT FIGURE PED-6

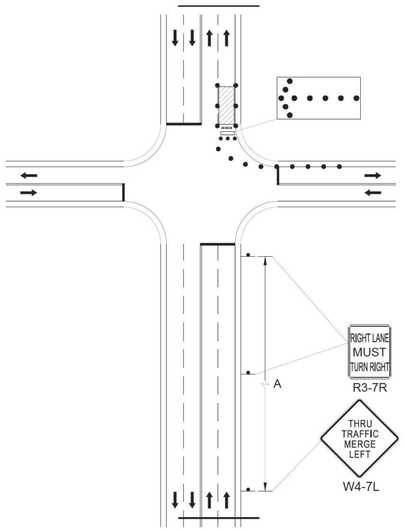
606272_TR(TTCP DETAILS).DWG Plotted on 9-Apr-2021 3:08 PM

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

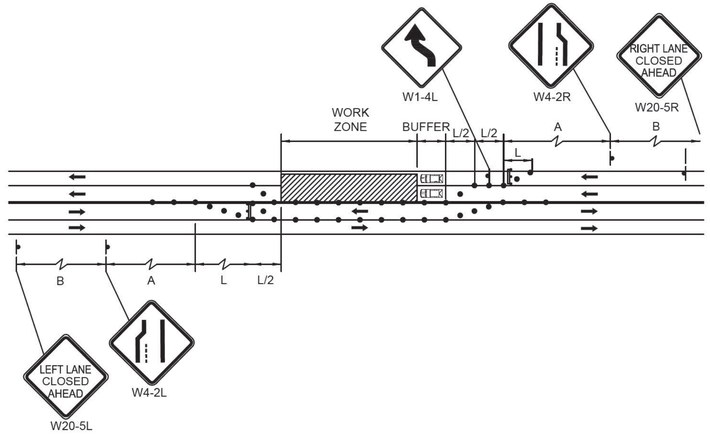
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/NFP(N1)-0035(043)	145	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS
DETAILS

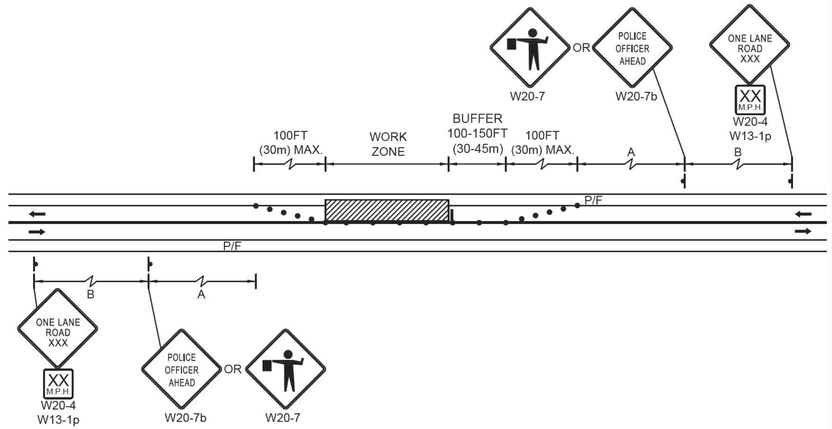
606272_TR(TTCP DETAILS).DWG Plotted on 9-Apr-2021 3:08 PM



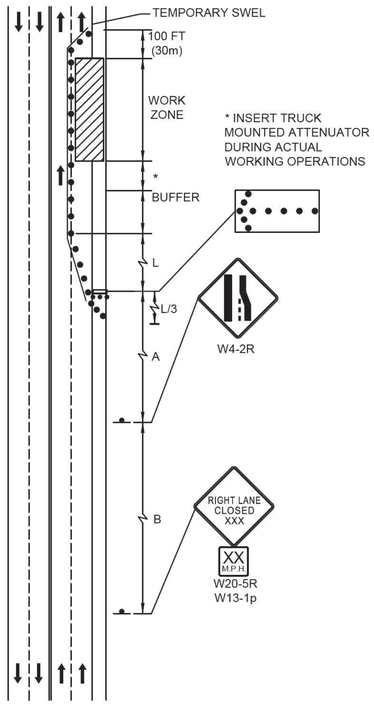
MASSDOT FIGURE INT-4



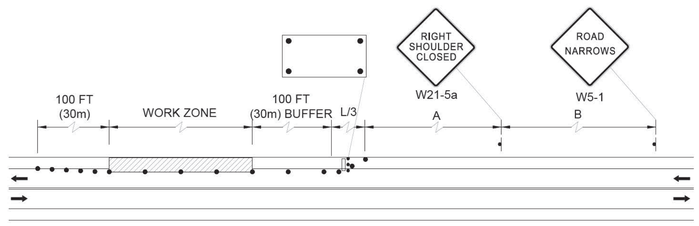
TWO LANE CLOSURE



MASSDOT FIGURE TLR-5



RIGHT LANE AND SHOULDER CLOSURE



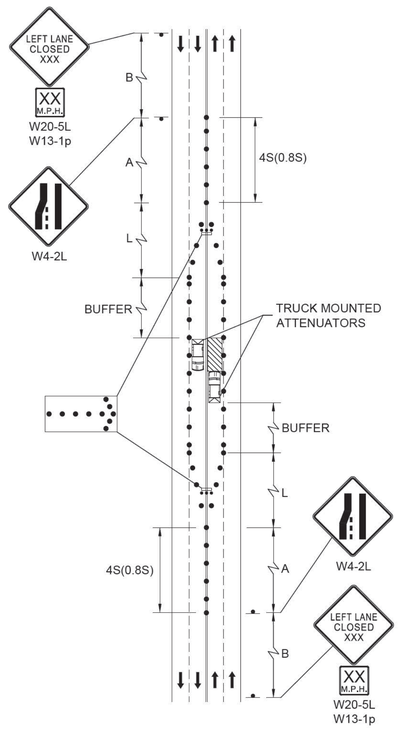
MASSDOT FIGURE TLR-1

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

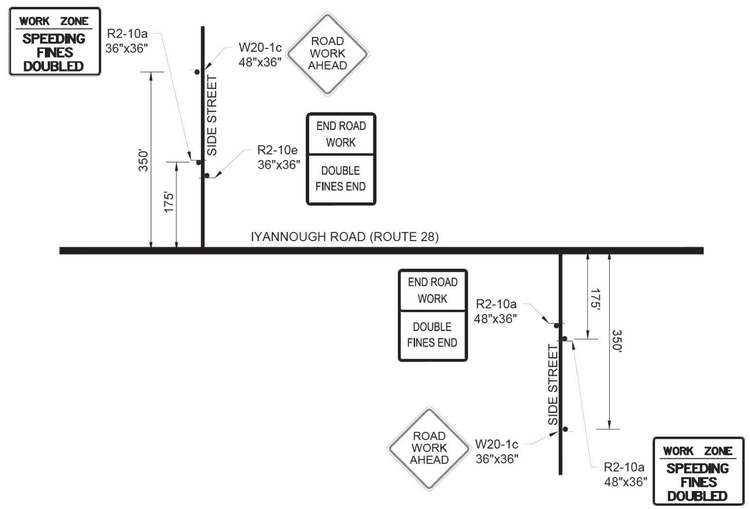
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	146	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC CONTROL PLANS DETAILS

606272_TR(TTCP DETAILS).DWG Plotted on 9-Apr-2021 3:08 PM

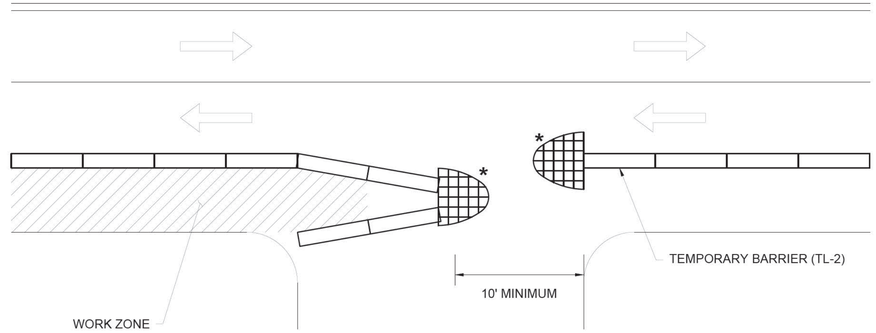


MASSDOT FIGURE MLR-1

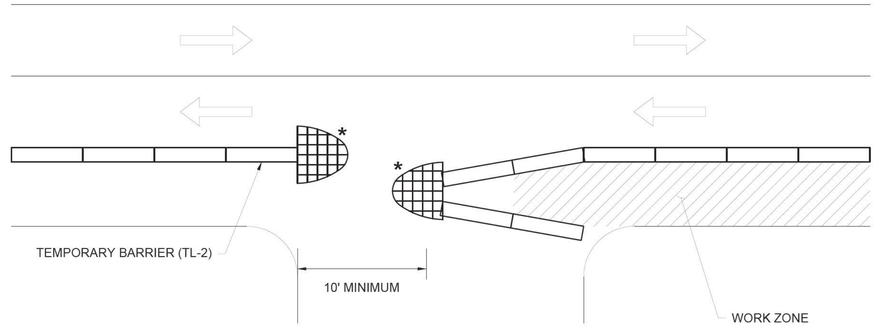


SIDE STREET ADVANCED SIGNING PLAN

DRIVEWAY STAGE A SETUP

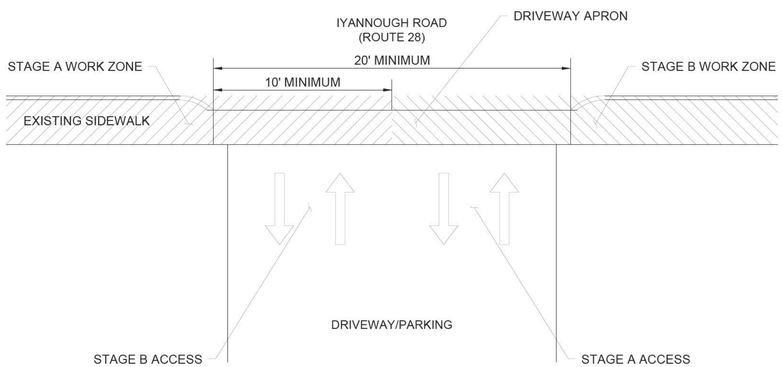


DRIVEWAY STAGE B SETUP

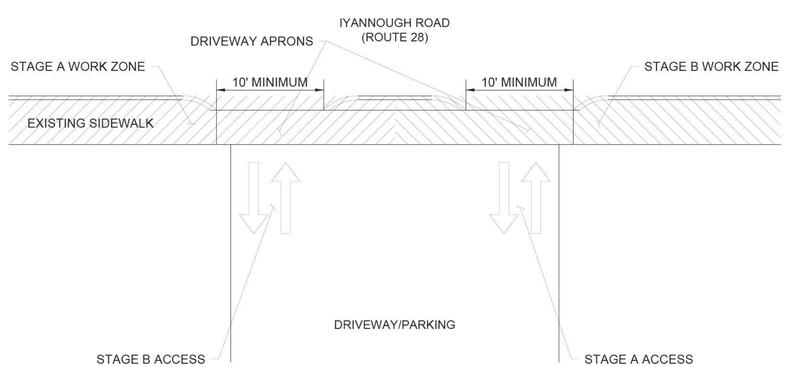


* TEMPORARY IMPACT ATTENUATORS (TL-2) SHALL BE USED WHERE SPACE ALLOWS
** GAP BETWEEN WORK ZONES SHALL BE COVERED THROUGH NIGHTTIME CLOSURES AND REOPENED TO TRAFFIC DURING DAYTIME HOURS

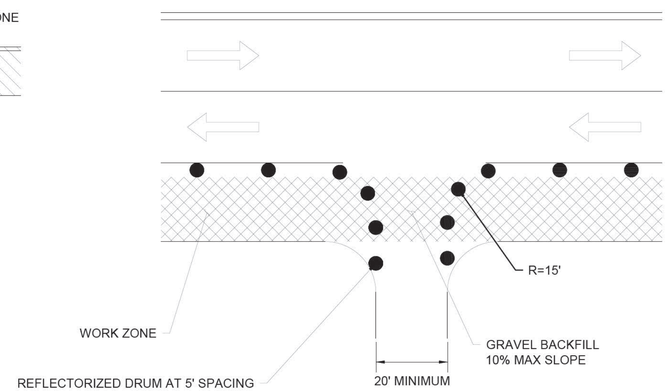
DRIVEWAY ACCESS IN AREAS OF LANE SHIFTS AND BUFFERS WITH BARRIER



SIDEWALK CONSTRUCTION AT LOCATIONS WITH ONE DRIVEWAY



SIDEWALK CONSTRUCTION AT LOCATIONS WITH MULTIPLE DRIVEWAYS



DRIVEWAY ACCESS IN AREAS OF LANE SHIFTS AND BUFFERS WITH DRUMS

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	147	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC SIGNAL PLANS
STAGE 1B & 1D

606272_TR(TEMP TRAFFIC SIGNAL).DWG Plotted on 9-Apr-2021 3:09 PM

LEGEND:

- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- COMPLETED CONSTRUCTION

IYANNOUGH ROAD (MA ROUTE 28)

YARMOUTH ROAD

CONDUIT FOR FUTURE TRAFFIC INSTALLED IN STAGE 4

TEMP SPAN WIRE POLE, W/ LUMINAIRE SPAN WIRE AND TETHER WIRE W/ VIDEO CAMERAS STA. 109+61, 65.6' LT

RAILROAD SIGNAL CONTROLLER

CONDUIT FOR FUTURE TELEPHONE INSTALLED IN STAGE 1

PROP SIGNAL CONTROLLER

TEMP UNDERGROUND SERVICE CONNECTION

PROP 3" ELECTRICAL CONDUIT TYPE NM (TYP)

PROP 12"x12" HANDHOLE (TYP)

INTERNALLY ILLUMINATED BLANK OUT SIGN R3-2

TEMP SPAN WIRE POLE, W/ LUMINAIRE SPAN WIRE AND TETHER WIRE STA. 110+67, 72.2' LT

VIDEO DETECTION ZONE IDENTIFICATION NUMBER

EXIST. RAILROAD GATE ASSEMBLY TO BE REMOVED (BO) AND REINSTALLED IN STAGE 4. FOUNDATION TO REMAIN

TEMP SPAN WIRE POLE, W/ LUMINAIRE SPAN WIRE AND TETHER WIRE STA. 109+91, 44.6' RT

TEMP 3" ELECTRICAL CONDUIT TYPE NM (TYP)

INTERNALLY ILLUMINATED BLANK OUT SIGN R3-1

TEMP SPAN WIRE POLE, W/ LUMINAIRE SPAN WIRE AND TETHER WIRE W/ VIDEO CAMERAS STA. 110+90, 63.1' RT

TEMP VIDEO DETECTION ZONE (TYP)

NOTES:
1. THIS TEMPORARY TRAFFIC SIGNAL LAYOUT PLAN APPLIES TO THE STAGE SUBSTAGES 1B AND 1D. STAGE 1B IS SHOWN ON THIS PLAN FOR ILLUSTRATION ONLY.
2. THE VIDEO DETECTION ZONES SHALL BE VERIFIED AND ADJUSTED AS NECESSARY WHEN TRANSITIONING BETWEEN STAGE 1 SUBSTAGES.
3. FOR TIMING PLAN DETAILS, SEE SHEET 152
4. CONTRACTOR SHALL MAINTAIN UNINTERRUPTED TRAFFIC SIGNAL OPERATION THROUGHOUT CONSTRUCTION. AT NO TIME SHALL SIGNALS BE TURNED OFF OR TURNED TO FLASHING MODE WITHOUT PRESENCE OF A UNIFORMED POLICE OFFICER.

0 20 50 100
SCALE: 1" = 20'

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	148	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC SIGNAL PLANS
STAGE 1C

606272_TR(TEMP TRAFFIC SIGNAL).DWG Plotted on 9-Apr-2021 3:09 PM

LEGEND:

- CONSTRUCTION - CLOSED TO TRAFFIC
- CONSTRUCTION - NIGHT TIME CLOSURES
- COMPLETED CONSTRUCTION

CONDUIT FOR FUTURE TRAFFIC INSTALLED IN STAGE 4
TEMP SPAN WIRE POLE, W/ LUMINAIRE SPAN WIRE AND TETHER WIRE W/ VIDEO CAMERAS STA. 109+61, 65.6' LT
RAILROAD SIGNAL CONTROLLER
CONDUIT FOR FUTURE TELEPHONE INSTALLED IN STAGE 1
PROP SIGNAL CONTROLLER
TEMP UNDERGROUND SERVICE CONNECTION
PROP 3" ELECTRICAL CONDUIT TYPE NM (TYP)
PROP 12"x12" HANDHOLE (TYP)
INTERNALLY ILLUMINATED BLANK OUT SIGN R3-2
TEMP SPAN WIRE POLE, W/ LUMINAIRE SPAN WIRE AND TETHER WIRE STA. 110+67, 72.2' LT
VIDEO DETECTION ZONE IDENTIFICATION NUMBER
EXIST. RAILROAD GATE ASSEMBLY TO BE REMOVED (BO) AND REINSTALLED IN STAGE 4. FOUNDATION TO REMAIN
TEMP SPAN WIRE POLE, W/ LUMINAIRE SPAN WIRE AND TETHER WIRE STA. 109+91, 44.6' RT
TEMP 3" ELECTRICAL CONDUIT TYPE NM (TYP)
INTERNALLY ILLUMINATED BLANK OUT SIGN R3-1
TEMP SPAN WIRE POLE, W/ LUMINAIRE SPAN WIRE AND TETHER WIRE W/ VIDEO CAMERAS STA. 110+90, 63.1' RT
TEMP VIDEO DETECTION ZONE (TYP)

NOTES:
1. THIS TEMPORARY TRAFFIC SIGNAL LAYOUT PLAN APPLIES TO THE STAGE SUBSTAGE 1C.
2. THE VIDEO DETECTION ZONES SHALL BE VERIFIED AND ADJUSTED AS NECESSARY WHEN TRANSITIONING BETWEEN STAGE 1 SUBSTAGES.
3. FOR TIMING PLAN DETAILS, SEE SHEET 152
4. CONTRACTOR SHALL MAINTAIN UNINTERRUPTED TRAFFIC SIGNAL OPERATION THROUGHOUT CONSTRUCTION. AT NO TIME SHALL SIGNALS BE TURNED OFF OR TURNED TO FLASHING MODE WITHOUT PRESENCE OF A UNIFORMED POLICE OFFICER.

0 20 50 100
SCALE: 1" = 20'

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	149	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC SIGNAL PLANS
STAGE 2

606272_TR(TEMP TRAFFIC SIGNAL).DWG Plotted on 9-Apr-2021 3:09 PM

IYANNOUGH ROAD (MA ROUTE 28)

YARMOUTH ROAD

CONDUIT FOR FUTURE TRAFFIC INSTALLED IN STAGE 4

TEMP SPAN WIRE POLE, W/ LUMINAIRE SPAN WIRE AND TETHER WIRE W/ VIDEO CAMERAS STA. 109+61, 65.6' LT

RAILROAD SIGNAL CONTROLLER

CONDUIT FOR FUTURE TELEPHONE INSTALLED IN STAGE 1

PROP SIGNAL CONTROLLER

TEMP UNDERGROUND SERVICE CONNECTION

PROP 3" ELECTRICAL CONDUIT TYPE NM (TYP)

PROP 12"x12" HANDHOLE (TYP)

INTERNALLY ILLUMINATED BLANK OUT SIGN R3-2

TEMP SPAN WIRE POLE, W/ LUMINAIRE SPAN WIRE AND TETHER WIRE STA. 110+67, 72.2' LT

EXIST. RAILROAD GATE ASSEMBLY TO BE REMOVED (BO) AND REINSTALLED IN STAGE 4. FOUNDATION TO REMAIN

VIDEO DETECTION ZONE IDENTIFICATION NUMBER

TEMP SPAN WIRE POLE, W/ LUMINAIRE SPAN WIRE AND TETHER WIRE STA. 109+91, 44.6' RT

TEMP 3" ELECTRICAL CONDUIT TYPE NM (TYP)

INTERNALLY ILLUMINATED BLANK OUT SIGN R3-1

TEMP SPAN WIRE POLE, W/ LUMINAIRE SPAN WIRE AND TETHER WIRE W/ VIDEO CAMERAS STA. 110+90, 63.1' RT

TEMP VIDEO DETECTION ZONE (TYP)

NOTES:
1. THIS TEMPORARY TRAFFIC SIGNAL LAYOUT PLAN APPLIES TO STAGE 2.
2. FOR TIMING PLAN DETAILS, SEE SHEET 152
3. CONTRACTOR SHALL MAINTAIN UNINTERRUPTED TRAFFIC SIGNAL OPERATION THROUGHOUT CONSTRUCTION. AT NO TIME SHALL SIGNALS BE TURNED OFF OR TURNED TO FLASHING MODE WITHOUT PRESENCE OF A UNIFORMED POLICE OFFICER.

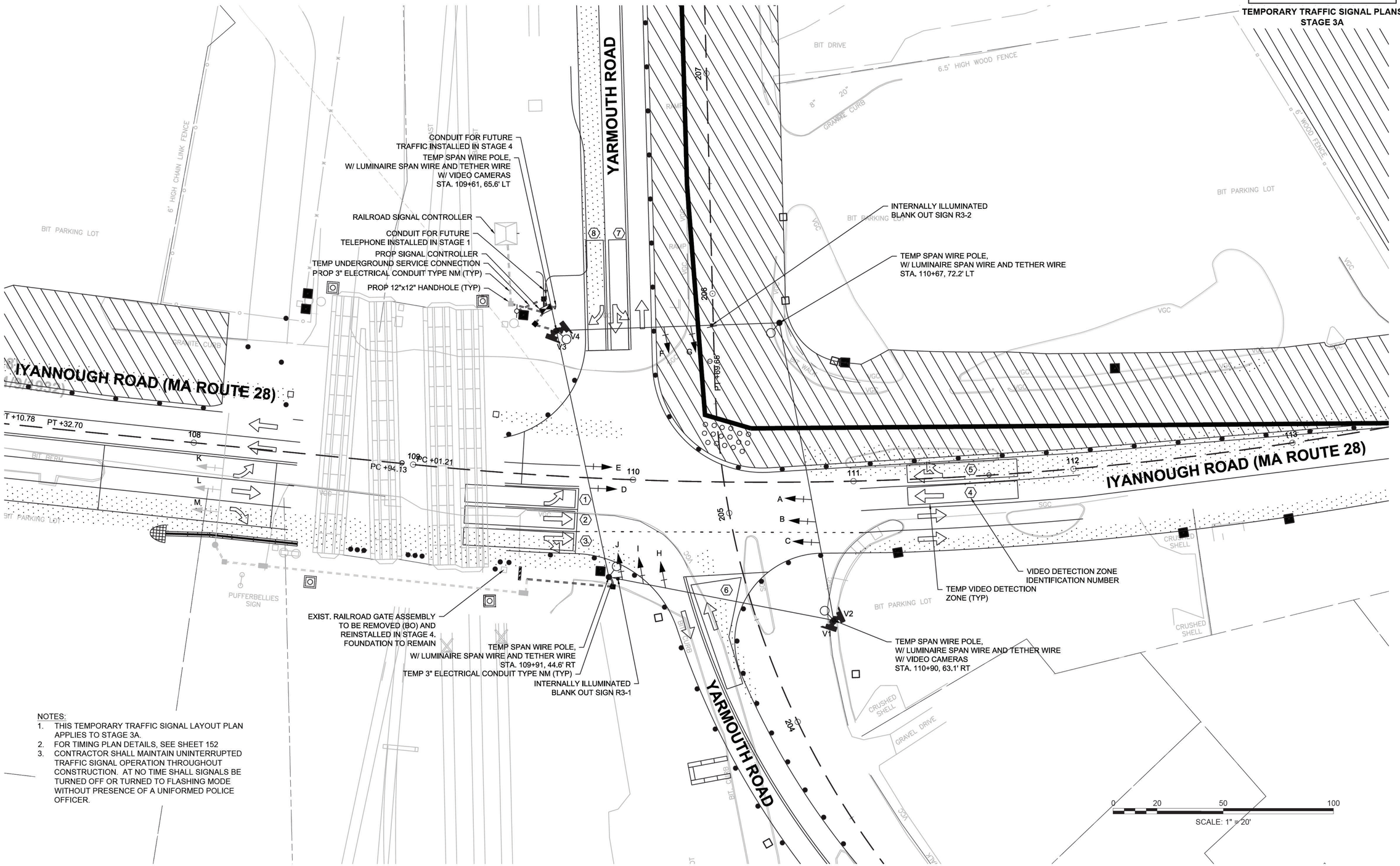
SCALE: 1" = 20'

BARNSTABLE
IYANNOUGH RD (RTE 28) AND YARMOUTH RD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TAP/HSI/CMQ/STP/INFP(NI)-0035(043)	150	231
PROJECT FILE NO.	606272		

TEMPORARY TRAFFIC SIGNAL PLANS
STAGE 3A

606272_TR(TEMP TRAFFIC SIGNAL).DWG Plotted on 9-Apr-2021 3:09 PM



NOTES:
1. THIS TEMPORARY TRAFFIC SIGNAL LAYOUT PLAN APPLIES TO STAGE 3A.
2. FOR TIMING PLAN DETAILS, SEE SHEET 152
3. CONTRACTOR SHALL MAINTAIN UNINTERRUPTED TRAFFIC SIGNAL OPERATION THROUGHOUT CONSTRUCTION. AT NO TIME SHALL SIGNALS BE TURNED OFF OR TURNED TO FLASHING MODE WITHOUT PRESENCE OF A UNIFORMED POLICE OFFICER.

0 20 50 100
SCALE: 1" = 20'