BARNSTABLE BEARSE'S WAY

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION

TITLE SHEET & INDEX

CMQ-0035(018)X

PROJECT FILE NO.

PLAN AND PROFILE OF

BEARSE'S WAY SHARED USE PATH

IN THE TOWN OF

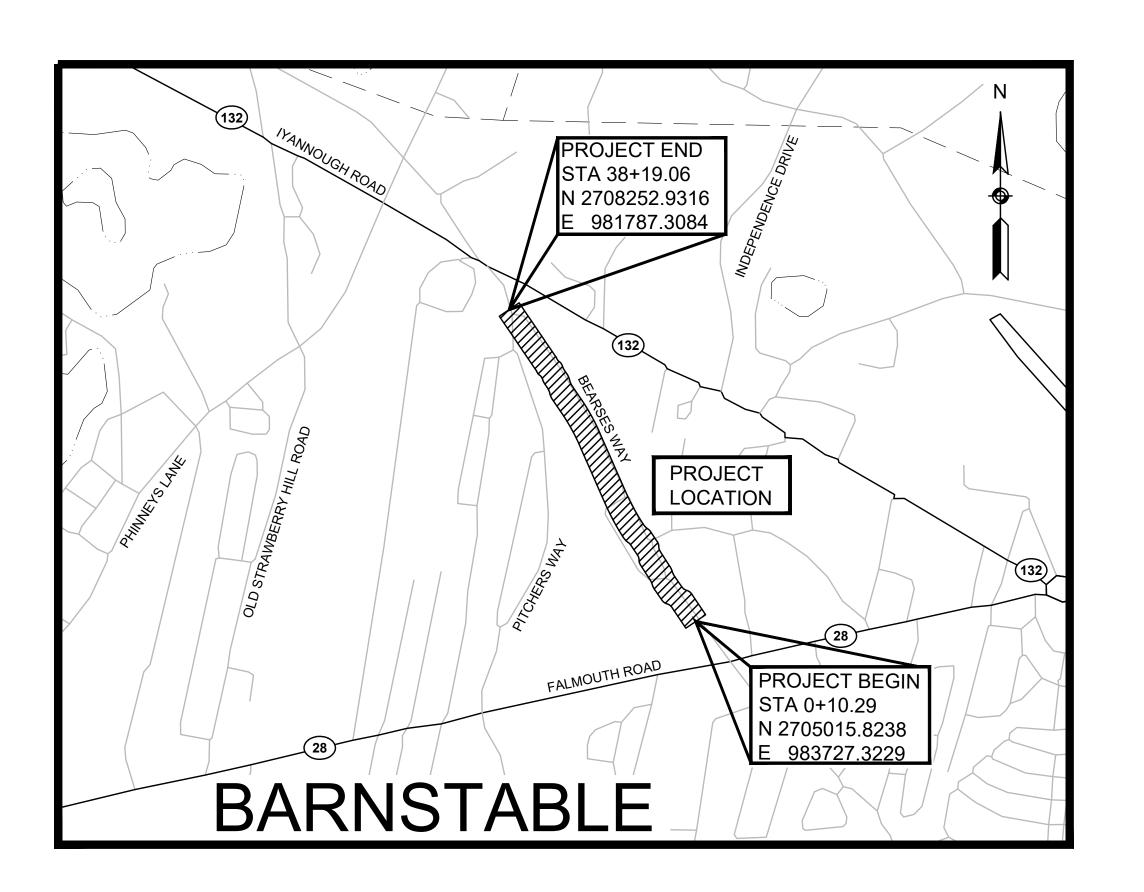
BARNSTABLE BARNSTABLE COUNTY

FEDERAL AID PROJECT NO. CMQ-0035(018)X

AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK.

INDEX

SHEET NO.	DESCRIPTION
01	TITLE SHEET & INDEX
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LENGTH OF PROJECT = 3,820 FEET = 0.72 MILES

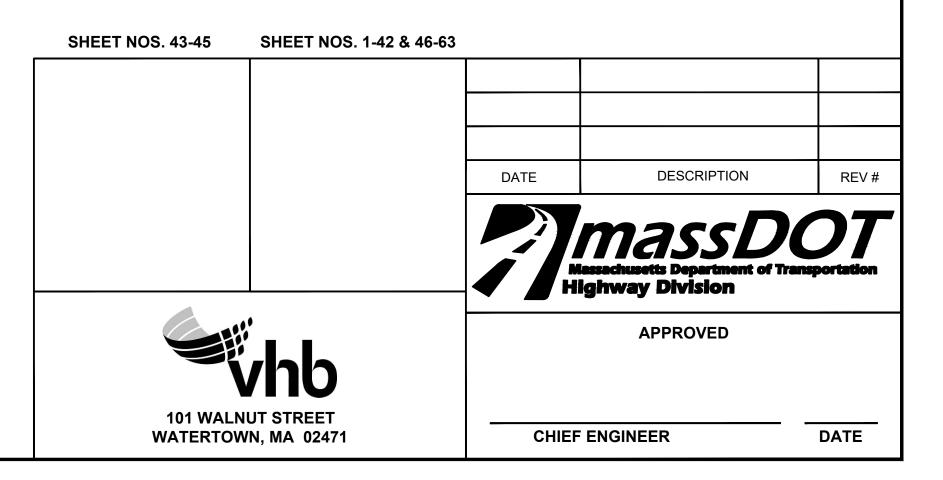
DESIGN DESIGNATION (BEARSE'S WAY SHARED USE PATH)

DESIGN SPEED

18-20 MPH

FUNCTIONAL CLASSIFICATION

SHARED USE PATH



BARNSTABLE	
EARSE'S WAY	

ATE	TE FED. AID PROJ. NO.		TOTAL SHEETS
lΑ	CMQ-0035(018)X	02	63
	PROJECT FILE NO. 6	09067	

LEGEND & ABBREVIATIONS

PAVEMENT MARKINGS SYMBOLS	
17WEMENT WATER COUNTY	

GENERAL SYMBOLS

EXISTING

⊞ ⊕ ⊕ CB

□ MB

- EHH

O GG

BHL #

→ MW #

TP #

MHB

MON

SB

TB

-b- UFB

→ UPDL

-6- ULT

•SIZE & TYPE

• WG • PM

—— P —— —

--- UP

PROPOSED

EHH

• GG

◆ BHL #

→ MW #

■ TP #

DESCRIPTION

CB CATCH BASIN

MAIL BOX

GAS GATE

TEST PIT **HYDRANT** LIGHT POLE

BORING HOLE

MONITORING WELL

CABLE MANHOLE

GAS MANHOLE

MISC MANHOLE

SEWER MANHOLE

WATER MANHOLE

MONUMENT

UTILITY POLE

WATER GATE

PARKING METER

BUSH

TREE

— — — OVERHEAD CABLE/WIRE

GUARD RAIL - STEEL POSTS GUARD RAIL - WOOD POSTS

----- ×----- CHAIN LINK OR METAL FENCE

· SEDIMENT CONTROL BARRIER

— — — TOP OR BOTTOM OF SLOPE

→ TPL or GUY → TPL or GUY TROLLEY POLE OR GUY POLE

→ UFB

→ UPDL

↓ ULT

WG

PM

BALANCED STONE WALL

TREE LINE

WOOD FENCE

— — — — SAWCUT LINE

STONE BOUND

TELEPHONE MANHOLE

TOWN OR CITY BOUND

UTILITY POLE W/ FIREBOX

UTILITY POLE W / 1 LIGHT

UTILITY POLE WITH DOUBLE LIGHT

MASSACHUSETTS HIGHWAY BOUND

TRAVERSE OR TRIANGULATION STATION

— CONTOURS (ON-THE-GROUND SURVEY DATA)

— — — LIMIT OF EDGE OF PAVEMENT OR COLD PLANE AND OVERLAY

PROPERTY LINE OR APPROXIMATE PROPERTY LINE

BANK OF RIVER OR STREAM

200 FT RIVERFRONT BUFFER

TOWN OR CITY BOUNDARY LINE

BORDER OF WETLAND

100 FT WETLAND BUFFER

— STATE HIGHWAY LAYOUT

— TOWN OR CITY LAYOUT

— COUNTY LAYOUT

-RAILROAD SIDELINE

UNDERGROUND DRAIN PIPE (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 WATER MAIN (DOUBLE LINE 24 INCH AND OVER)

UNDERGROUND ELECTRIC DUCT (DOUBLE LINE 24 INCH AND OVER)

UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AND OVER)

CONTOURS (PHOTOGRAMMETRIC DATA)

DRAINAGE MANHOLE

ELECTRIC MANHOLE

JERSEY BARRIER

CATCH BASIN CURB INLET

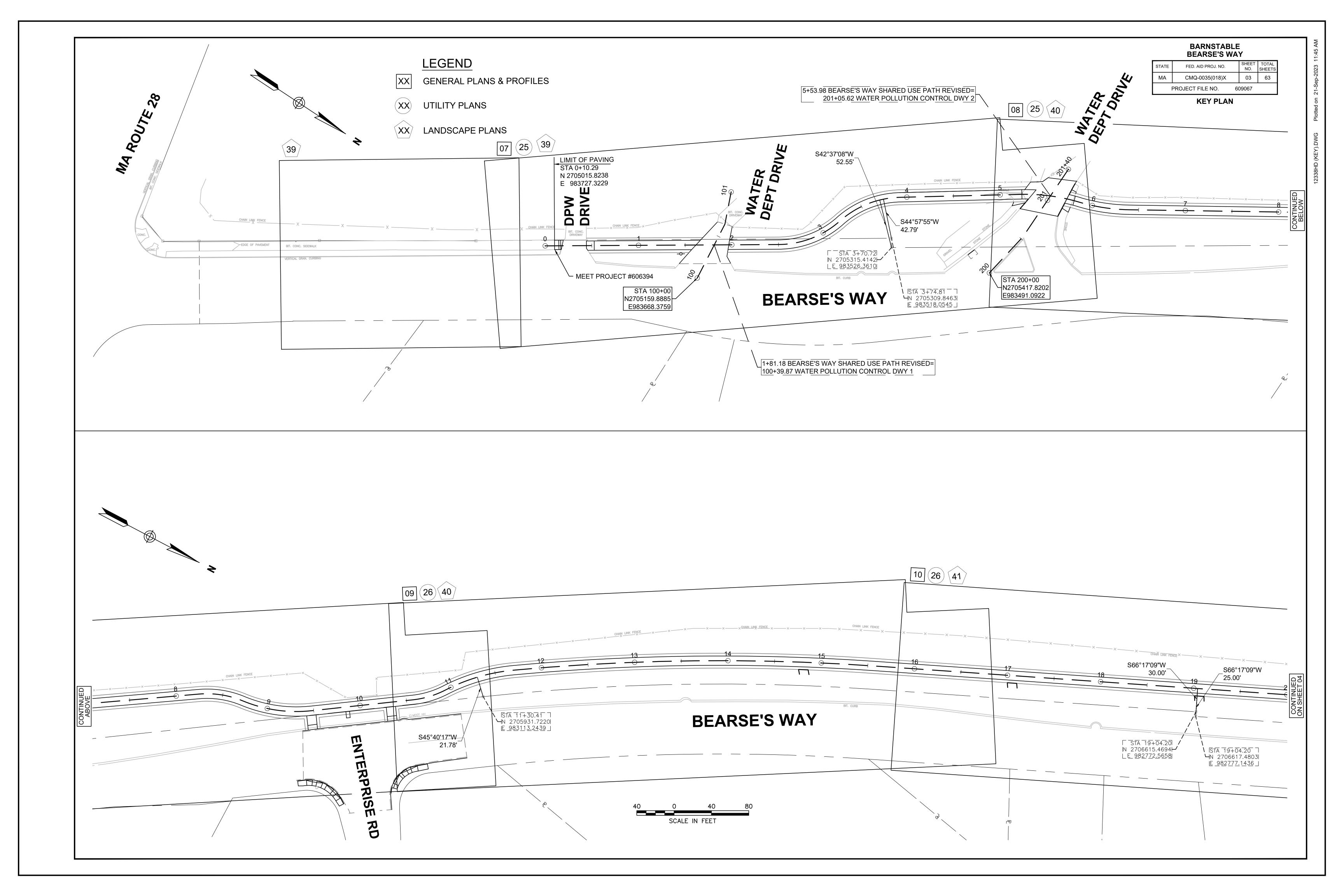
ELECTRIC HANDHOLE

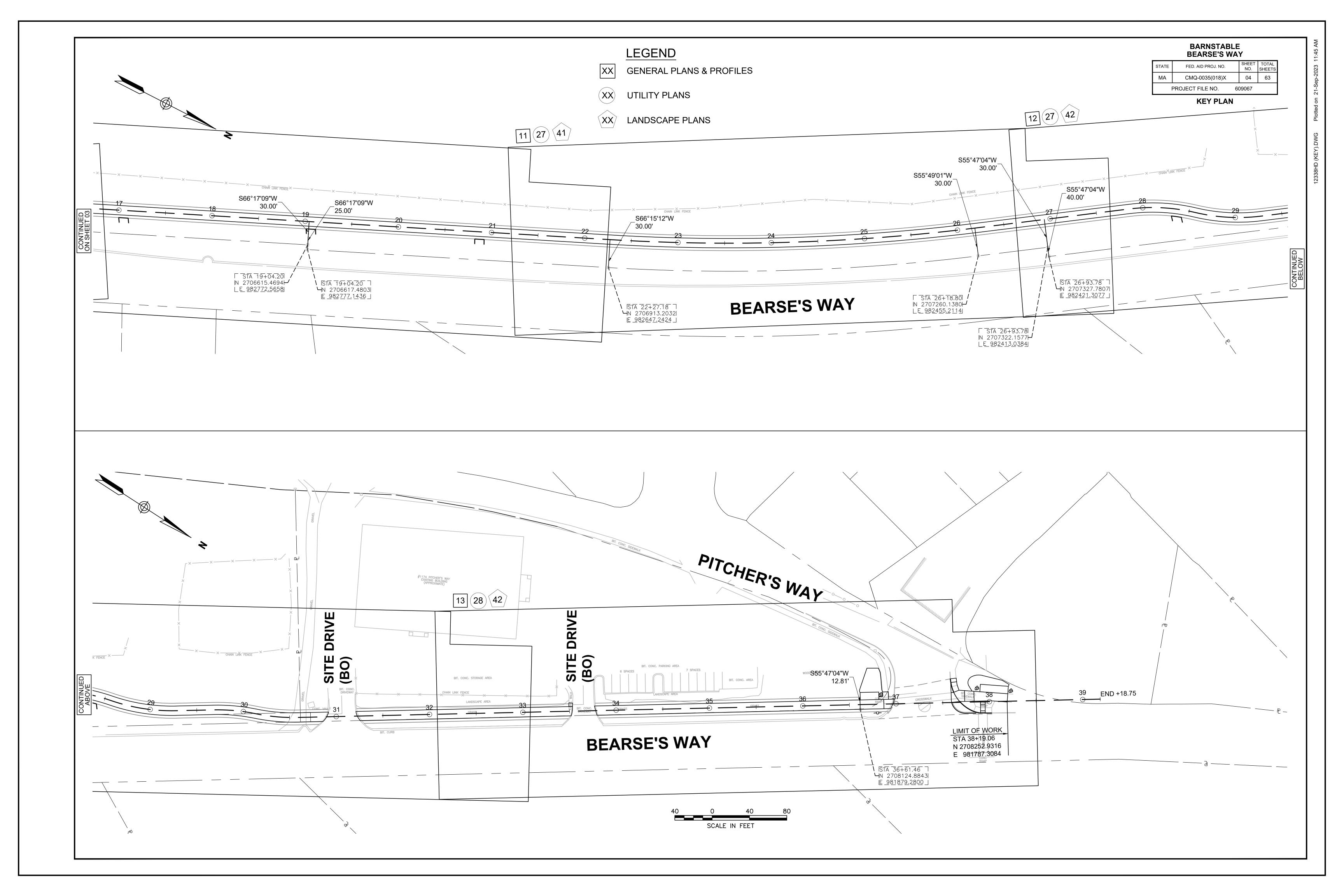
EXISTING	PROPOSED	DESCRIPTION
	←	PAVEMENT ARROW - WHITE
ONLY	ONLY	LEGEND "ONLY" - WHITE
	SL	STOP LINE (12" WIDTH)
	cw	CROSSWALK (SEE CONSTRUCTION DETAIL)
	SWL	SOLID WHITE LINE (6" WIDTH)
	SYL	SOLID YELLOW LINE (4" WIDTH)
	BWL	BROKEN WHITE LINE (6" WIDTH)
	BYL	BROKEN YELLOW LINE (6" WIDTH)
	<u>DWL</u>	DOTTED WHITE LINE (6" WIDTH)
	<u>DYL</u>	DOTTED YELLOW LINE (6" WIDTH)
	DWLex	DOTTED WHITE LINE EXTENSION (6" WIDTH)
	DYLex	DOTTED YELLOW LINE EXTENSION (6" WIDTH)
	DBWL	DOUBLE WHITE LINE (6" WIDTH)
	DBYL	DOUBLE YELLOW LINE (6" WIDTH)

ADDDEV//ATIO			
ABBREVIATIOI	NS		
GENERAL		<u>UTILITIES</u>	
ABAN	ABANDON	ACCMP	ASPHALT COATED CORRUGATED METAL PIPE
ADJ	ADJUST	CAP	CORRUGATED ALUMINUM PIPE
APPROX.	APPROXIMATE	CIP	CAST IRON PIPE
BIT.	BITUMINOUS	CIT	CHANGE IN TYPE
BM	BENCHMARK	COND	CONDUIT
BOS	BOTTOM OF SLOPE	DIP	DUCTILE IRON PIPE
(BO)	BY OTHERS	FES	FLARED END SECTION
СВ	CATCH BASIN	F&C	FRAME AND COVER
CBCI	CATCH BASIN WITH CURB INLET	F&G	FRAME AND GRATE
CBSC	CATCH BASIN SHALLOW COVER	HDPE	HIGH DENSITY POLYETHYLENE PIPE
CEM	CEMENT	HW	HEADWALL
CLF	CHAIN LINK FENCE	HYD	HYDRANT
CONC	CONCRETE	INV	INVERT
CONSTR	CONSTRUCTION	LP	LIGHT POLE
ELEV (or EL.)	ELEVATION	PVC	POLYVINYLCHLORIDE PIPE
EOP	EDGE OF PAVEMENT	PWW	PAVED WATER WAY
EXIST (or EX)	EXISTING	RCP	REINFORCED CONCRETE PIPE
F&C	FRAME AND COVER	TSV&B	TAPPING SLEEVE VALVE AND BOX
F&G	FRAME AND GRATE	UP	UTILITY POLE
FDN.	FOUNDATION		
FLDSTN	FIELDSTONE	ALIGNMENT A	AND GRADING
GRAN	GRANITE	CC	CENTER OF CURVE
HWY	HIGHWAY	HP	HIGH POINT
НМА	HOT MIX ASPHALT	LP	LOW POINT
LT	LEFT	PC	POINT OF CURVE
MAX	MAXIMUM	PI	POINT OF INTERSECTION
MB	MAILBOX	PNT	POINT
MHB	MASSACHUSETTS HIGHWAY BOUND	PCC	POINT OF COMPOUND CURVE
MIN	MINIMUM	PRC	POINT OF REVERSE CURVE
NIC	NOT IN CONTRACT	PT	POINT OF TANGENT
NTS	NOT TO SCALE	EL. 25.45—	
P.G.L.	PROFILE GRADE LINE	Y	SPOT ELEVATION
PROP	PROPOSED		
PVM'T	PAVEMENT	PROFILES	
REM	REMOVE	AD	ALGEBRAIC DIFFERENCE IN RATES OF GRADES
REMOD	REMODEL	ELEV	ELEVATION
RET	RETAIN	HSD	HORIZONTAL SIGHT DISTANCE
R&D	REMOVE AND DISCARD	K	RATE OF VERTICAL CURVATURE
R&R	REMOVE AND RESET	PVI	POINT OF VERTICAL INTERSECTION
R&S	REMOVE AND STACK	PVC	POINT OF VERTICAL CURVE
RT	RIGHT	PVT	POINT OF VERTICAL TANGENT
SB	STONE BOUND	PVRC	POINT OF VERTICAL REVERSE CURVE
STA	STATION	PVCC	POINT OF VERTICAL COMPOUND CURVER
		SSD	STOPPING SIGHT DISTANCE
TEMP	TEMPORARY TOP OF SLOPE	VC	VERTICAL CURVE
TOS		٧٥	VEITHOME GUITVE
TYP	TYPICAL		

GENERAL NOTES:

- 1. TOPOGRAPHICAL INFORMATION FROM A SURVEY PERFORMED BY THE TOWN OF BARNSTABLE IN 2013, SUPPLEMENTED BY THE TOWN IN 2016, 2017, & 2020 AND UPDATED BY VHB IN 2020. THE HORIZONTAL DATUM FOR THIS SURVEY IS THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 1983, MAINLAND ZONE. THE VERTICAL DATUM FOR THIS SURVEY IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
- 2. ON MAY 16, 2018, VHB PERSONNEL DELINEATED WETLAND RESOURCE AREAS IN THE VICINITY OF BEARSE'S WAY BETWEEN IYANNOUGH ROAD AND FALMOUTH ROAD (THE SITE) IN BARNSTABLE, MASSACHUSETTS.
- 3. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE CAUSED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. PRIOR TO ANY CONSTRUCTION, CONTACT DIG SAFE (I-800-344-7233) TO FIELD VERIFY LOCATION OF ALL UTILITIES.
- 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 WATER AND DRAINAGE FRAMES, GRATES AND BOXES TO THE PROPOSED FINISH SURFACE GRADE. REQUIRED NEW MASONRY SHALL BE CLAY BRICK CONFORMING TO M4.05.2.
- 6. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES.
- 7. TREES AND SHRUBS WITHIN THE LIMITS OF GRADING SHALL BE REMOVED ONLY UPON APPROVAL OF THE ENGINEER.
- 8. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT NO EXPENSE TO THE OWNER.
- 9. 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).
- 10. ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE RETAINED UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
- 11. ALL LATERAL DRAIN PIPES SHALL BE INSTALLED WITH A PITCH OF .01 FOOT PER FOOT (MINIMUM) UNLESS NOTED OTHERWISE ON THE DRAWINGS.
- 12. EXISTING GRANITE CURB SUITABLE FOR RE-USE SHALL BE RE-USED IN THE PROPOSED WORK. EXCEPT CURVED STONES OF A DIFFERENT RADIUS THAN PROPOSED CURB.
- 13. ALL EXISTING STATE, COUNTY, CITY, AND TOWN LOCATION LINES HAVE BEEN ESTABLISHED FROM AVAILABLE INFORMATION AND THEIR EXACT LOCATION ARE NOT GUARANTEED. PROPERTY LINES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN VERIFIED.
- 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 LINE & GRADE UP TO A DEPTH OF 5' SHALL BE INCLUDED IN THE COST OF THE PIPE. PIPE EXCAVATION GREATER THAN 5' WILL BE PAID UNDER CLASS B TRENCH EXCAVATION.





BARNSTABLE BEARSE'S WAY

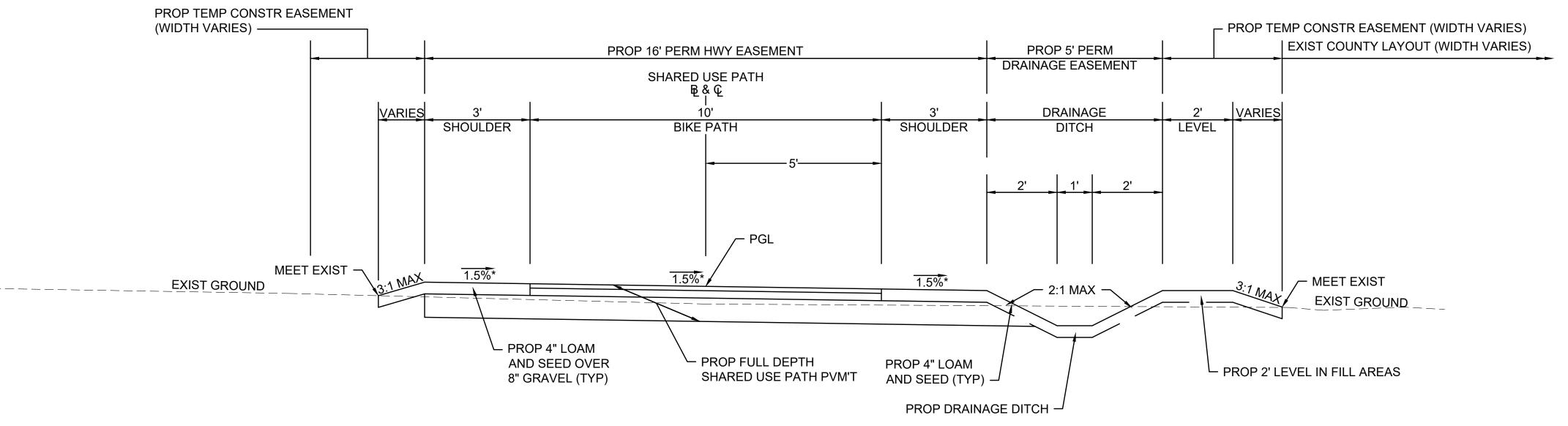
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ-0035(018)X	05	63
	PROJECT FILE NO. 6	09067	

CONSTRUCTION BASELINE DATA

	E	BEARSE'S WA	Y SHARED U	SE PATH REVISED CON	STRUCTION I	BASELINE	DATA	
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	0+00.00	2705004.9859	983729.6286		N33°50'04"W 250.00'	2+50.00	2705212.6516	983590.4283
C1	2+50.00	2705212.6516	983590.4283	R=100.00 [°] Δ=41°21'20" L=72.18' T=37.74'		3+22.18	2705253.6501	983532.9250
C2	3+22.18	2705253.6501	983532.9250	R=100.00 [°] Δ=40°17'23" L=70.32' T=36.68'		3+92.50	2705293.1133	983476.4716
L2	3+92.50	2705293.1133	983476.4716		N34°54'00"W 130.00'	5+22.50	2705399.7331	983402.0927
C3	5+22.50	2705399.7331	983402.0927	R=200.00 [°] Δ=17°56'29" L=62.63' T=31.57'		5+85.13	2705455.8259	983374.8200
C4	5+85.13	2705455.8259	983374.8200	R=200.00 [°] Δ=15°41'11" L=54.76' T=27.55'		6+39.88	2705505.3766	983351.9224
L3	6+39.88	2705505.3766	983351.9224		N32°38'43"W 184.57'	8+24.45	2705660.7882	983252.3599
C5	8+24.45	2705660.7882	983252.3599	R=100.00 [°] Δ=27°28'16" L=47.95' T=24.44'		8+72.40	2705705.7134	983236.9701
C6	8+72.40	2705705.7134	983236.9701	R=150.00 [°] Δ=28°39'37" L=75.03' T=38.32'		9+47.43	2705775.7049	983212.1790
L4	9+47.43	2705775.7049	983212.1790		N33°50'04"W 109.25'	10+56.68	2705866.4565	983151.3473
C7	10+56.68	2705866.4565	983151.3473	R=100.00 [°] Δ=21°04'39" L=36.79' T=18.60'		10+93.47	2705892.6040	983125.7658
C8	10+93.47	2705892.6040	983125.7658	R=200.00 [°] Δ=21°55'37" L=76.54' T=38.74'		11+70.01	2705947.3743	983072.9702
C9	11+70.01	2705947.3743	983072.9702	R=2400.00 [°] Δ=9°16'14" L=388.32' T=194.59'		15+58.34	2706288.7522	982888.7761
L5	15+58.34	2706288.7522	982888.7761		N23°42'51"W 667.63'	22+25.96	2706900.0088	982620.2715
C10	22+25.96	2706900.0088	982620.2715	R=2150.00' Δ=10°30'04" L=394.05' T=197.58'		26+20.02	2707244.2887	982429.7100
L6	26+20.02	2707244.2887	982429.7100		N34°12'56"W 165.71'	27+85.73	2707381.3202	982336.5295
C11	27+85.73	2707381.3202	982336.5295	R=200.00 [°] Δ=20°21'51" L=71.08' T=35.92'		28+56.81	2707445.9009	982307.7312
C12	28+56.81	2707445.9009	982307.7312	R=200.00 [°] Δ=20°21'51" L=71.08' T=35.92'		29+27.90	2707510.4816	982278.9330
L7	29+27.90	2707510.4816	982278.9330		N34°12'56"W 40.00'	29+67.90	2707543.5587	982256.4407
C13	29+67.90	2707543.5587	982256.4407	R=200.00 [°] Δ=12°57'37" L=45.24' T=22.72'		30+13.14	2707583.5155	982235.4315
C14	30+13.14	2707583.5155	982235.4315	R=200.00 [°] Δ=12°57'37" L=45.24' T=22.72'		30+58.38	2707623.4724	982214.4223
L8	30+58.38	2707623.4724	982214.4223		N34°12'56"W 860.37'	39+18.75	2708334.9370	981730.6313

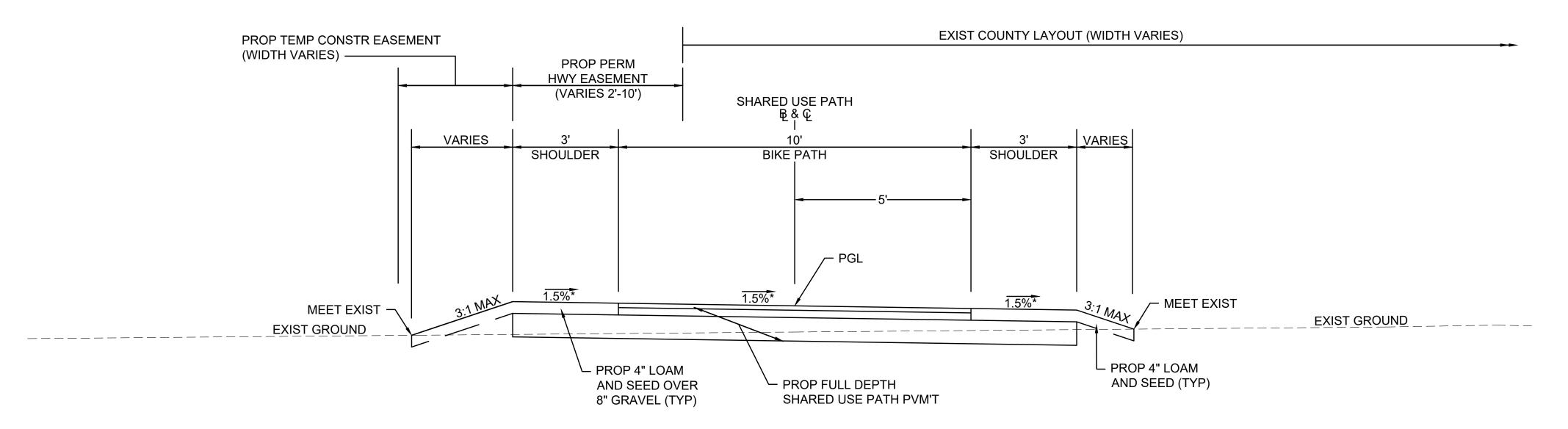
	WATER POLLUTION CONTROL DWY 1 CONSTRUCTION BASELINE DATA							
NUMBER STARTING STATION NORTHING EASTING CURVE DATA LINE DATA ENDING STATION NORTHING EASTING						EASTING		
L9	100+00.00	2705159.8885	983668.3759		S83°39'17"W 64.89'	100+64.89	2705152.7166	983603.8820
L10	100+64.89	2705152.7166	983603.8820		S67°25'17"W 35.11'	101+00.00	2705139.2367	983571.4643

	WATER POLLUTION CONTROL DWY 2 CONSTRUCTION BASELINE DATA							
NUMBER STARTING STATION NORTHING EASTING CURVE DATA LINE DATA ENDING STATION NORTHING EASTING					EASTING			
L11	200+00.00	2705417.8202	983491.0922		N80°36'04"W 52.97'	200+52.97	2705426.4707	983438.8325
L12	200+52.97	2705426.4707	983438.8325		N89°34'47"W 87.03'	201+40.00	2705427.1091	983351.8057



TYPICAL SHARED USE PATH SECTION - WITH DRAINAGE DITCH ON RIGHT

STA 2+88± TO STA 9+10± STA 11+11± TO STA 28+83± NTS * 0.5% TOLERANCE FOR CONSTRUCTION



TYPICAL SHARED USE PATH SECTION

STA 0+44± TO STA 2+88± STA 9+10± TO STA 11+11± STA 28+83± TO STA 38+21± NTS

* 0.5% TOLERANCE FOR CONSTRUCTION

PAVEMENT NOTES

PROPOSED PAVEMENT MILLING & OVERLAY

SURFACE: 1½" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5)

MILLING: 1½" PAVEMENT FINE MILLING

PROPOSED FULL DEPTH SHARED USE PATH (SUP) PAVEMENT

SURFACE: 1½" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5)

BASE: 2½" SUPERPAVE INTERMEDIATE COURSE - 19.0 (SIC-19.0)

++SUBBASE: 8" GRAVEL BORROW (TYPE b)

PROPOSED HOT MIX ASPHALT WALK

SURFACE: 1 ½" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5)

INTERMEDIATE: 1 3/4" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5)

++ SUBBASE: 8" GRAVEL BORROW (TYPE b)

PROPOSED HOT MIX ASPHALT DRIVEWAY

SURFACE: 1½" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5)

INTERMEDIATE: 2½" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5)

++SUBBASE: 8" GRAVEL BORROW (TYPE b)

PROPOSED CEMENT CONCRETE PEDESTRIAN CURB RAMP / SIDEWALK

SURFACE: 4" CEMENT CONCRETE

AIR ENTRAINED 4000 PSI, 3/4", 610

**SUBBASE: 8" GRAVEL BORROW (TYPE b)

PROPOSED STAMPED CEMENT CONCRETE TRUCK APRON

SURFACE: 8" STAMPED REINFORCED CEMENT CONCRETE

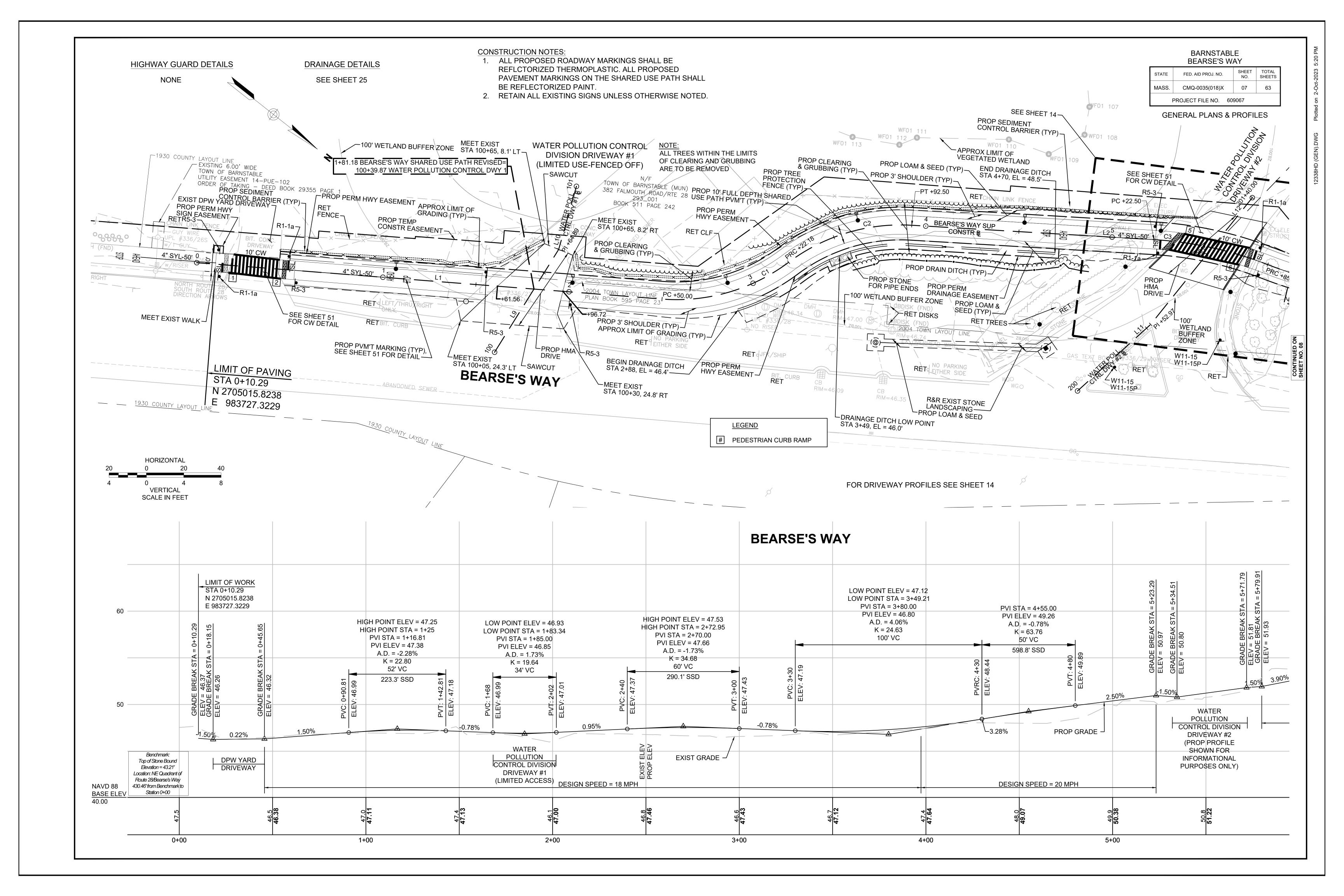
AIR ENTRAINED 4000 PSI, ¾", 610 (COLORED/STAMPED)

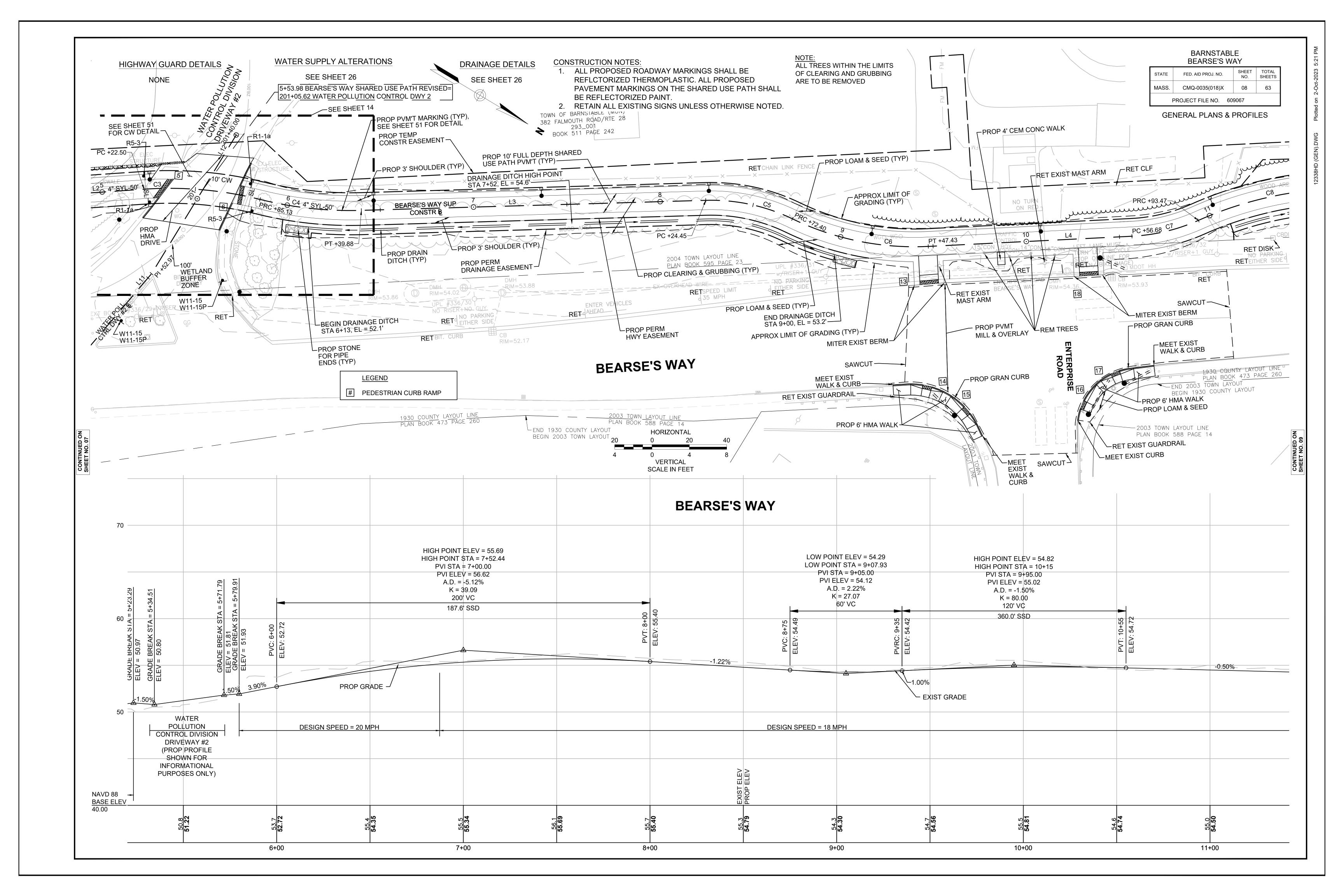
SUBBASE: 8" GRAVEL BORROW (TYPE b)

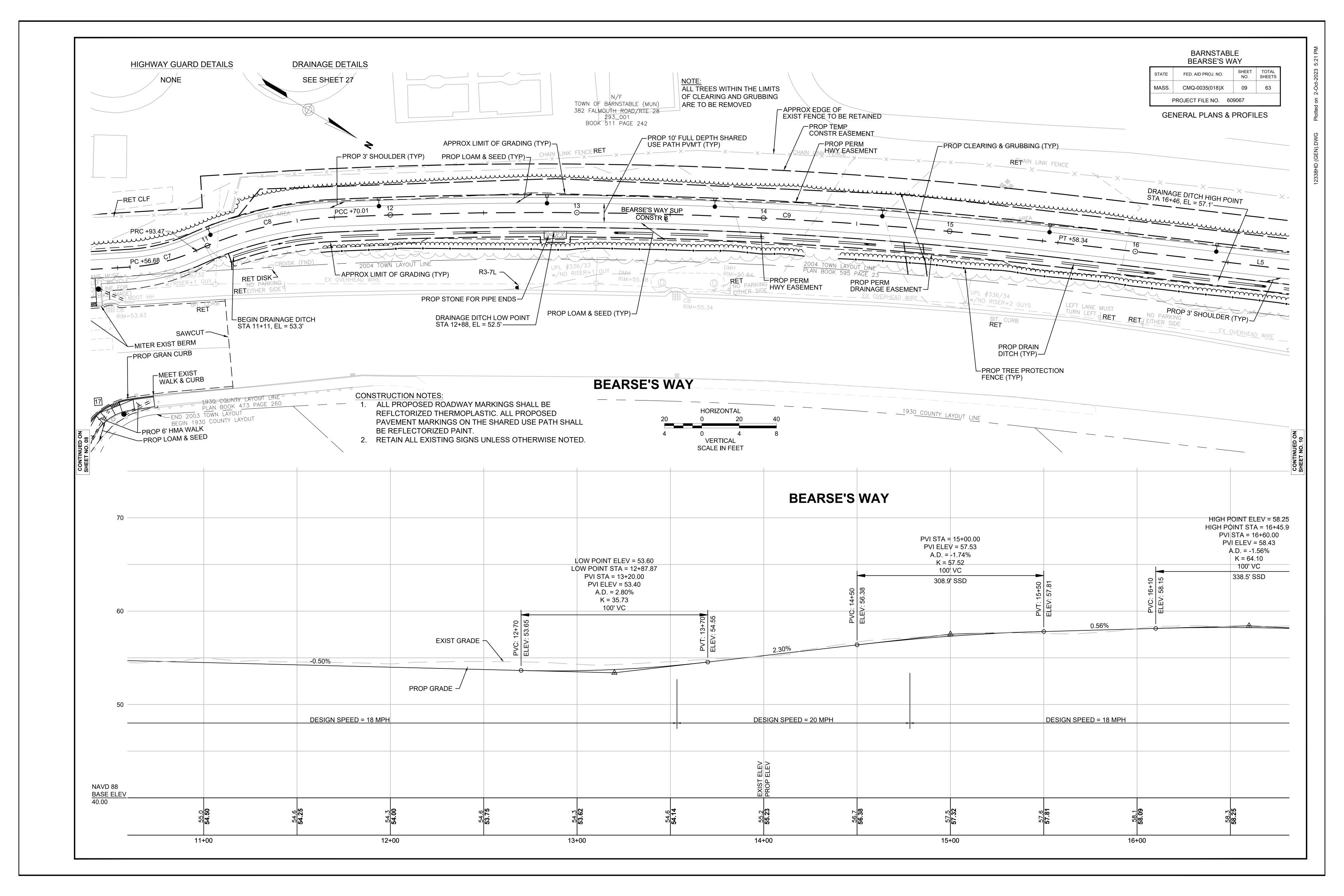
**
WHERE EXISTING GRAVEL IS FOUND TO BE SUITABLE, THE EXISTING GRAVEL MAY BE USED IN PROPOSED SUBBASE, AFTER APPROVAL BY THE ENGINEER.

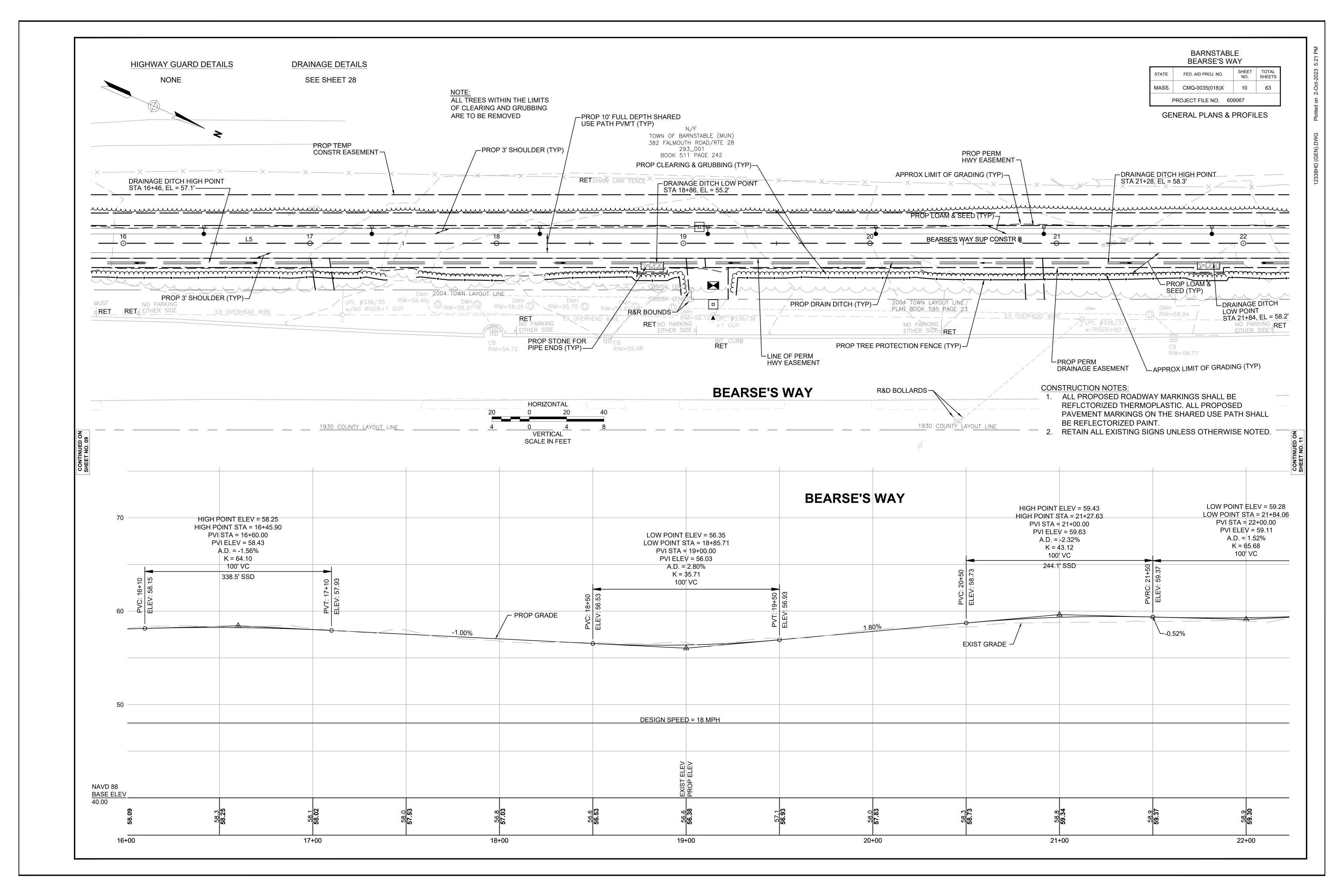
GENERAL NOTES:

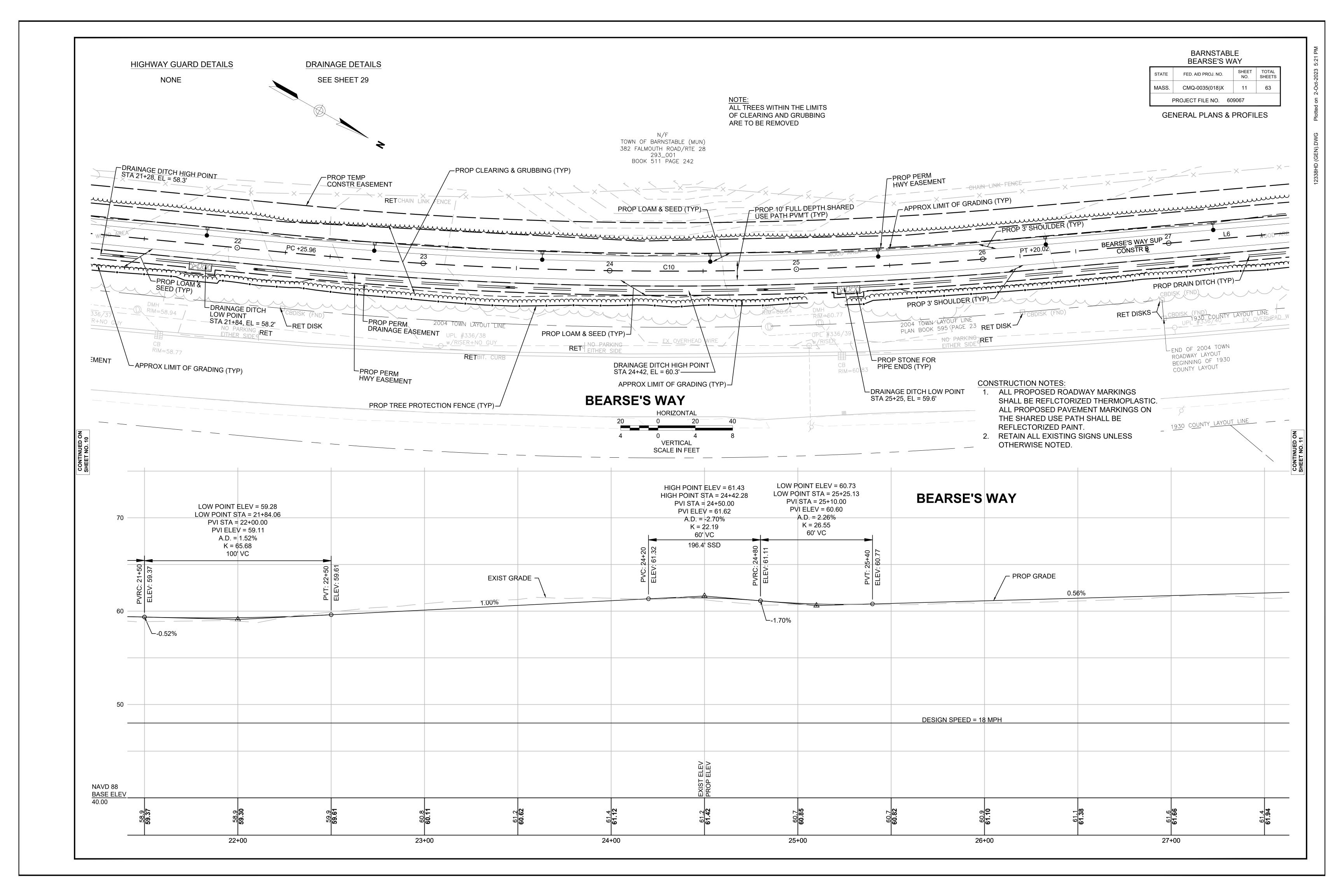
- 1. ALL HOT MIX ASPHALT PAVEMENTS SHALL BE PRODUCED IN ACCORDANCE WITH SECTION 450 OF THE STANDARD SPECIFICATIONS.
- ASPHALT EMULSION FOR TACK COAT (ITEM 452.) SHALL BE SPRAY APPLIED FOR TRIPLE OVERLAP COVERAGE AT 0.08 GAL/SY OVER MILLED SURFACES AND 0.07 GAL/SY OVER SMOOTH SURFACES.
- 3. HMA JOINT SEALANT (ITEM 453.) SHALL BE APPLIED IN SURFACE COURSE AT ALL VERTICAL COLD JOINTS PRIOR TO HMA PAVING.
- 4. ALL HOT MIX ASPHALT WALKS AND DRIVEWAYS SHALL BE ESTIMATED AND PAID FOR UNDER ITEM 702. OF THE STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.

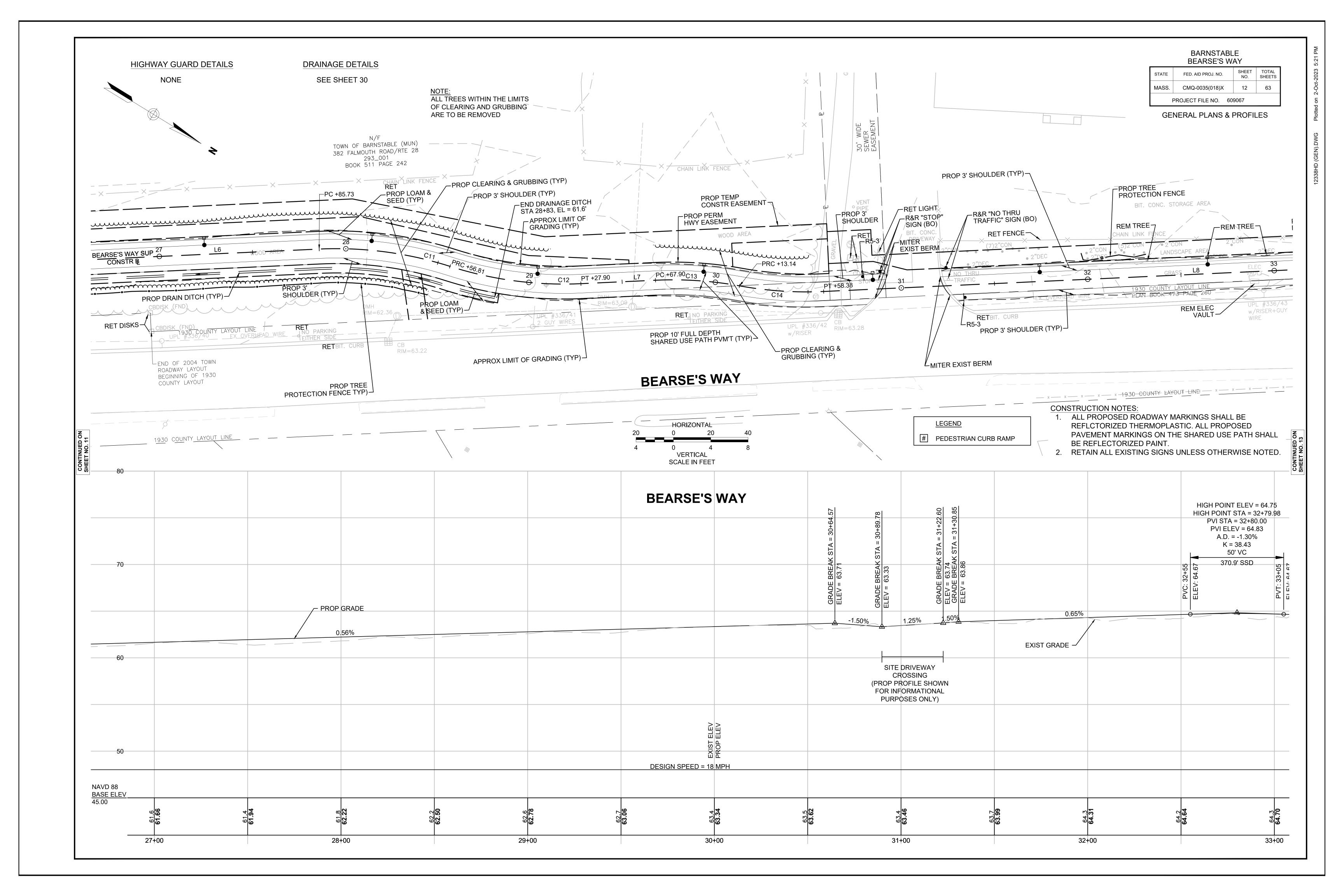


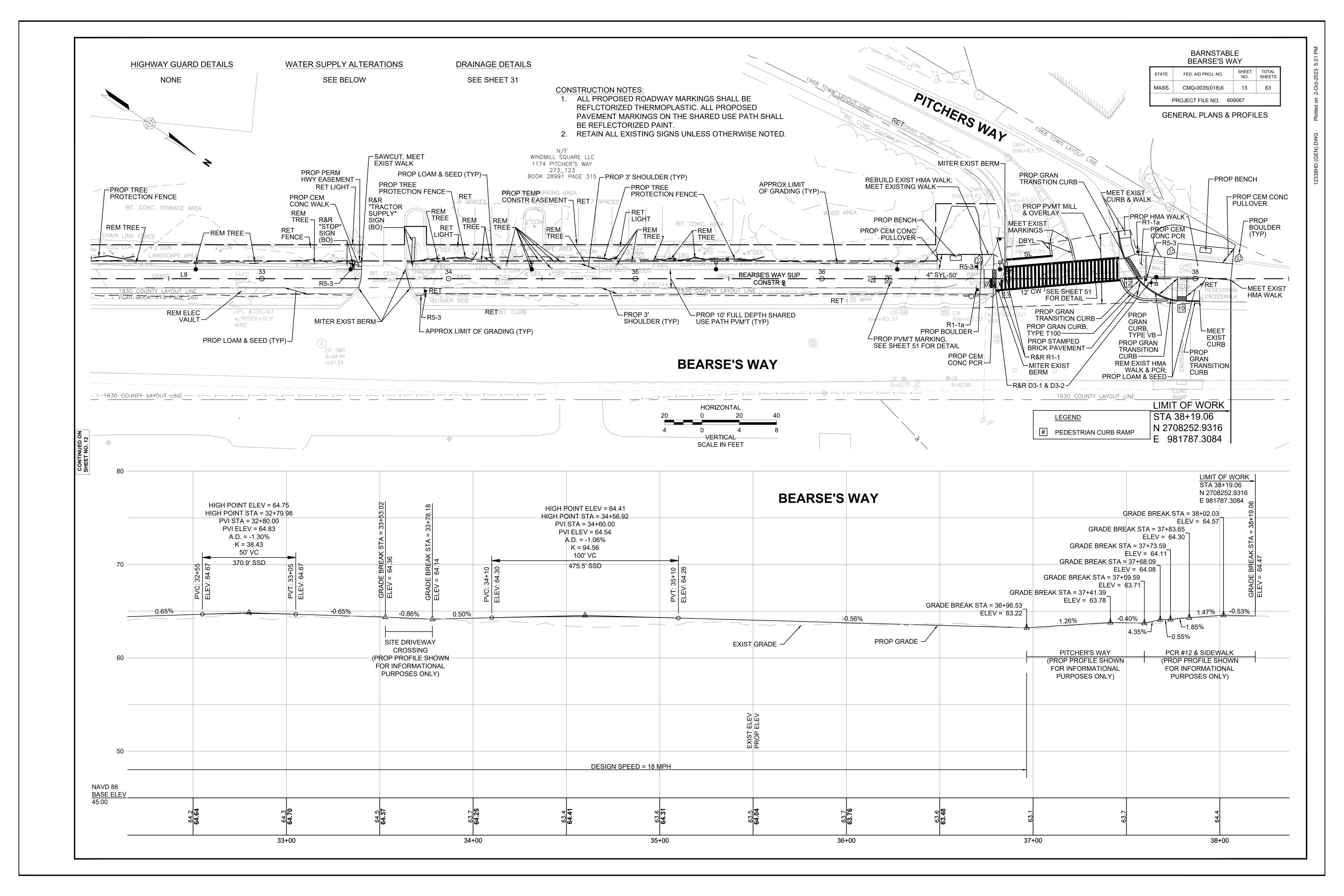


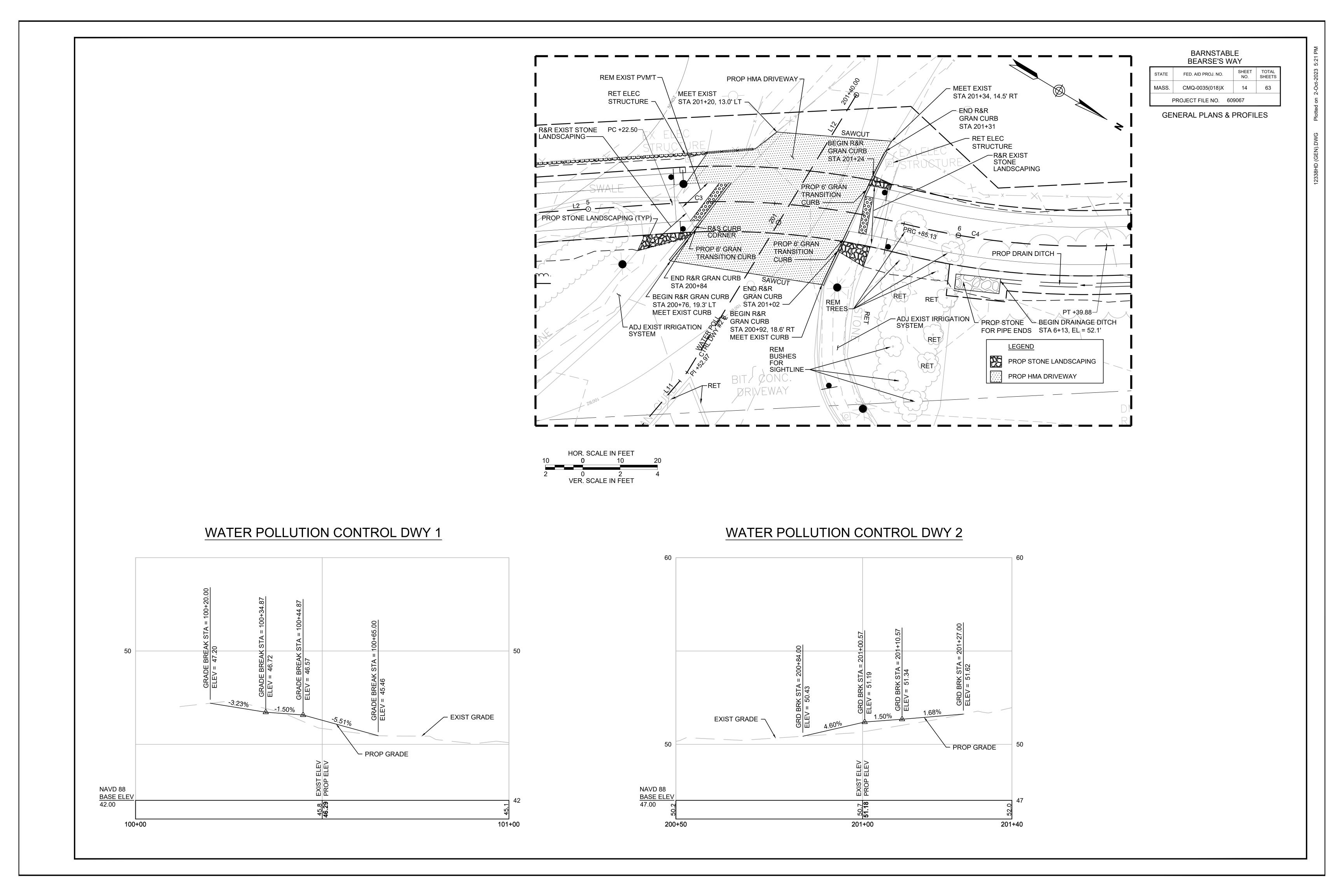


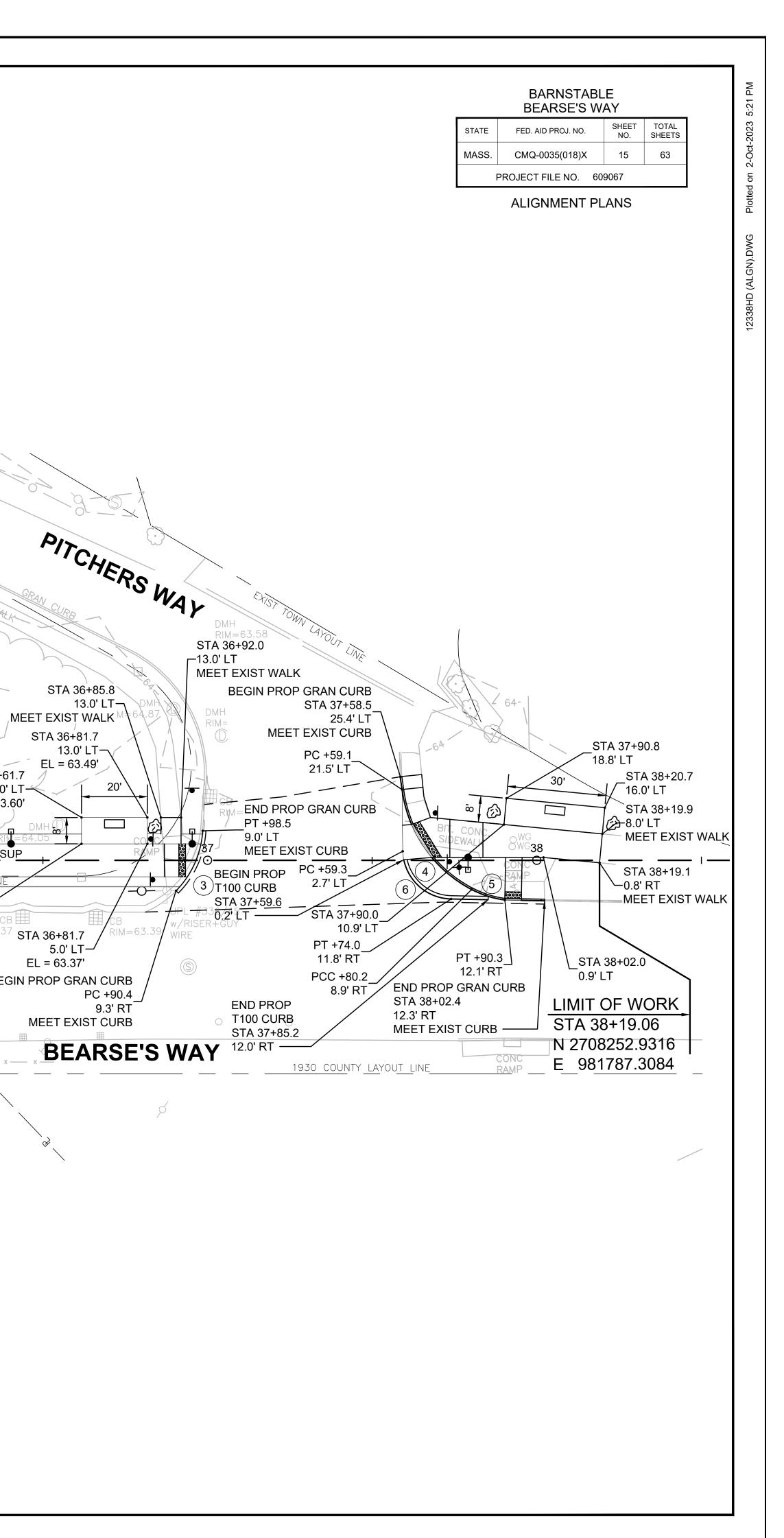












STA 36+85.8 13.0' LT-

13.0' LT-

MEET EXIST WALK

STA 36+81.7

EL = 63.49'

⁵⁷ STA 36+81.7

EL = 63.37'

BEGIN PROP GRAN CURB

5.0' LT—

MEET EXIST CURB

PC +90.4

9.3' RT

STA 36+61.7

BEARSE'S WAY SUP CONSTR ₽

EL = 63.60'

WOOD AREA

STA 36+61.7

EL = 63.49'

20.39 | 41°43'23"

38.47 | 55°05'55"

10.63 20°18'32"

22.76 | 86°57'19"

Curve Table

Curve # Radius Length

28.00

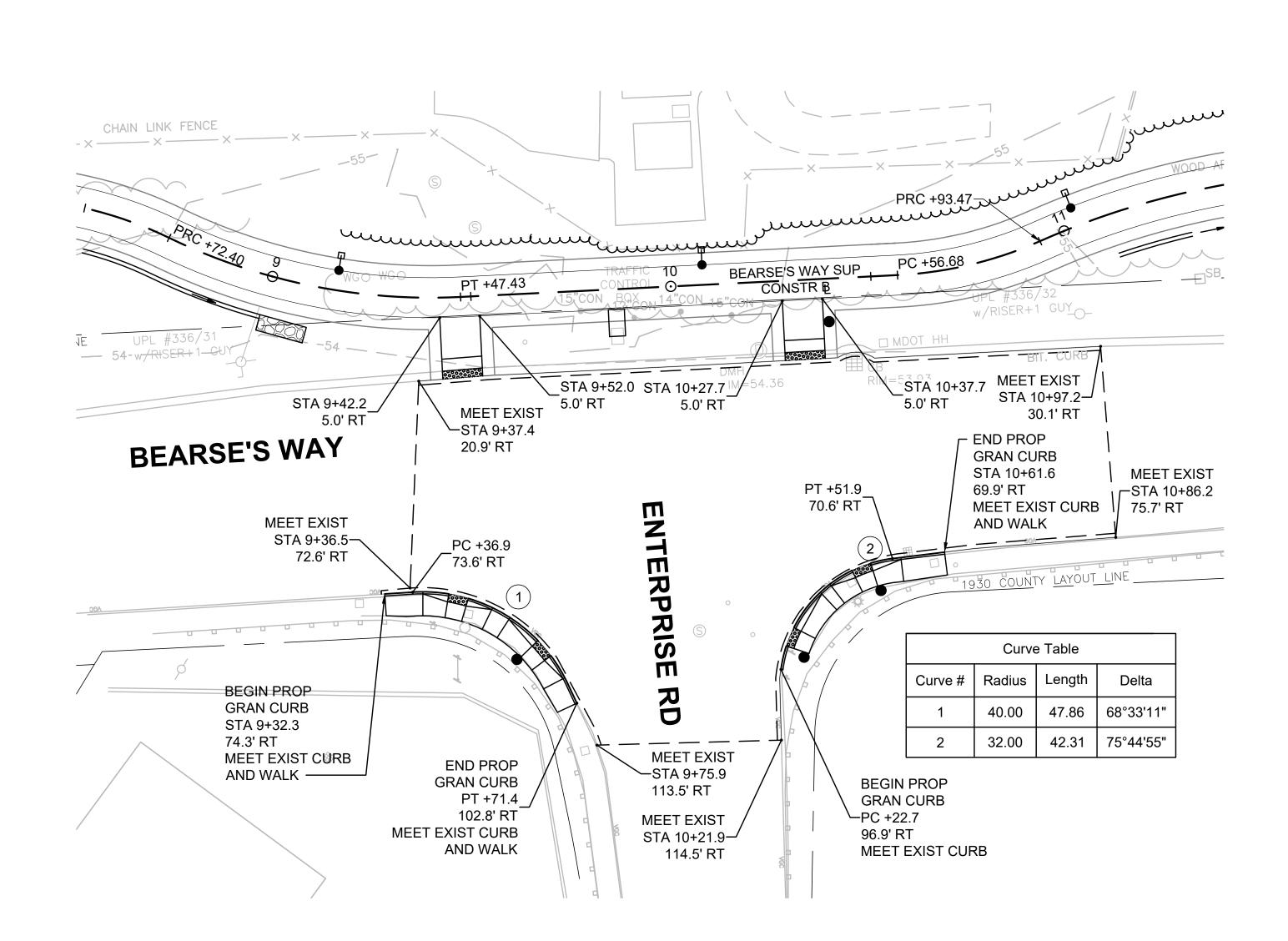
40.00

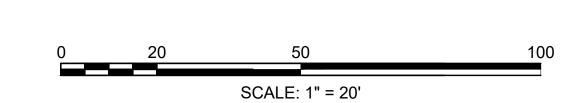
30.00

15.00

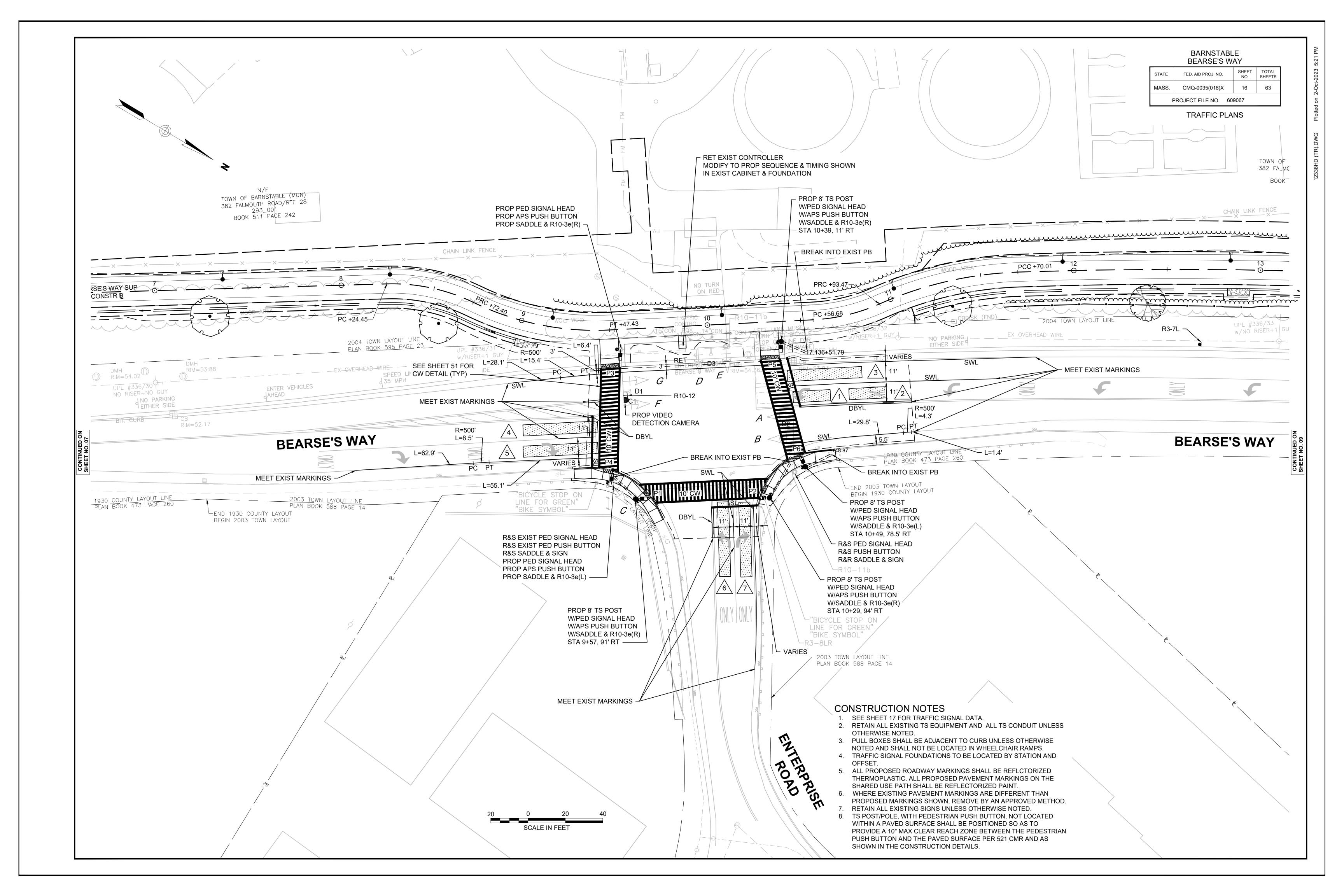
5.0' LT—

Delta





8"DEC



VEHICLE

PHASE

ASSIGNMENT

Ø1+Ø6

Ø2

MOVEMENT

	BARNSTABL BEARSE'S W	
Г		CLI

EXISTING PRE-EMPTION

PHASE

PHASING & PRIORITY

DETECTOR | PRE-EMPT

PRIORITY ASSIGNMENT

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS		
MASS.	CMQ-0035(018)X	17	63		
PROJECT FILE NO. 609067					

TRAFFIC PLANS

ø3

ø2

ø1

APPROACH	DIRECTION	HOUSING	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	FLASH
BEARSE'S WAY	EB	F	←G-F	R-Y-R	R	R	R	R										G	Y	R				R	R	R	R	R	R	FY
BEARSE'S WAY	EB	G	R	R	R	R	R	R										G	Y	R				R	R	R	R	R	R	FY
BEARSE'S WAY	WB	А	R	R	R	G	Y	R										R	R	R				R	R	R	R	R	R	FY
BEARSE'S WAY	WB	В	R	R	R	G	Y	R										R	R	R				R - G	R_{-Y}	R	R	R	R	FY
ENTERPRISE ROAD	SB	C,D	R	R	R	R	R	R										R	R	R				G	Y	R	R	R	R	FR
ENTERPRISE ROAD	SB	Е	R _G	R - Y	R	R	R	R										R	R	R				G	Y	R	R	R	R	FR
PEDESTRIAN X-ING	ALL	P1-P6	DW	DW	DW	DW	DW	DW										DW	DW	DW				DW	DW	DW	W	FDW	DW	OUT
														TIM	IING IN	SECO	NDS													
MINIMUM GREEN (INITIAL)			6			10												10						6						
PASSAGE TIME (VEHICLE)			2			2												2						2						_ \
MAXIMUM 1			16			40												40						30						ASH
MAXIMUM 2			16			40												40						30						50
YELLOW CLEARANCE				3.5			3.5												3.5						3				3	TO.
RED CLEARANCE					1.5			1.5												1.5						1			1	CONFLICT FLASH OPERATION ONLY
PEDESTRIAN WALK																											7			00 19
PEDESTRIAN CLEARANCE																												15		
DETECTOR MEMORY			N	 ON-LO	 CK	N/)N-L0(:K										N	 ON-LO	 CK				NC	 DN-L00	 CK		_		
RECALL			'	OFF		140	MIN	Z1 \										"	MIN					140	OFF			OFF		

ø4

ø5

ø6

ø7

ø8

ø9

SEQUENCE & TIMING NOTES:

INTERVALS.

THE CLEARANCE INTERVAL.

1. 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 WILL NOT CHANGE DURING

2. THE RIGHT OF WAY MAY BE ASSIGNED TO ANY PHASE OR ANY

3. IF CALLS EXIST ON ALL PHASES, THE ASSIGNMENT OF RIGHT OF WAY

4. IF THE ASSIGNED RIGHT-OF-WAY FOR ANY TRAFFIC MOVEMENT IS TO

THAT MOVEMENT WILL DISPLAY THE APPROPRIATE CLEARANCE

EMERGENCY VEHICLE PRE-EMPTION OPERATION

(D1 HIGHEST AND D4 LOWEST)

PHASES AS NECESSARY.

OPTICAL DETECTORS LOCATED AT EACH INTERSECTION.

EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE OPTICALLY TRANSMITTE

2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH

BY OPTICAL EMITTERS MOUNTED IN EMERGENCY VEHICLES AND RECEIVED BY

DETECTORS D1, D2, D3 OR D4 ASSIGNED DESCENDING PRIORITIES AS FOLLOWS:

3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY

OPTICAL DETECTOR D1 (OR D2, D3, D4) THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD IN EMERGENCY VEHICLE PRE-EMPTION PHASE #1 (OR #2, #3, #4) GREEN FOR A MINIMUM OF TEN (10) SECONDS OR UNTIL PRE-EMPTION

SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCES FOR THE ASSOCIATED PHASE(S) AS SHOWN IN THE SEQUENCE AND TIMING CHART AND SERVICE SUBSEQUENT EMERGENCY VEHICLE PRE-EMPTION

4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON

5. PRE-EMPTION STROBE SHALL BE ILLUMINATED WHENEVER ANY EMERGENCY

PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.

SHALL BE IN ACCORDANCE WITH THE PREFERENTIAL PHASE SEQUENCE.

CHANGE DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATION FOR

COMBINATION OF NON-CONFLICTING PHASES.

COORDINATION	ON DATA		COORDINATION PHASE SPLIT TIMES								
TIMING PLAN	CYCLE	OFFSET	ø1	ø2	ø3	ø4	ø5	ø6	ø7	ø8	ø9

P1-P6

W/COUNTDOWN TIMER

. AUTOMATIC FLASHING OPERATION PER 2009 M.U.T.C.D., AS AMENDED.

EXISTING/PROPOSED SIGNAL HEAD DATA

- 2. * UPON PEDESTRIAN PUSH BUTTON ACTUATION
- 3. OL = OVERLAP

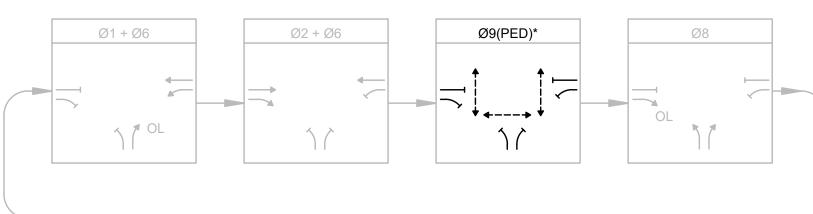
A,C,D,G

- 4. PERM = PERMISSIVE MAXIMUM 1 = NORMAL OPERATION
- 6. MAXIMUM 2 = MON-FRI, 7:00AM-9:00AM, 4:00PM-6:00PM, SATURDAY 11:00AM-2:00PM
- 7. STOP AND GO OPERATION FOR 24 HOURS PER DAY. FLASHING OPERATION FOR EMERGENCY ONLY. 8. DURING PEDESTRIAN INTERVAL, FDW THROUGH YELLOW OPERATION SHALL <u>NOT</u> BE IN EFFECT.

B,E

ALL 12" LENS

EXISTING/PROPOSED PREFERENTIAL PHASE SEQUENCE



* UPON PEDESTRIAN PUSH BUTTON ACTUATION

PROPO	PROPOSED VIDEO DETECTION DATA									
DETECTION ZONE	APPROACH/LANE	CAMERA	DELAY /EXT	CALL PHASE						
1	BEARSE'S WAY EB LEFT-TURN LANE (FRONT)	C1	0	Ø1						
2	BEARSE'S WAY EB LEFT-TURN LANE (BACK)	C1	0	Ø6						
3	BEARSE'S WAY EB THRU LANE	C1	0	Ø6						
4	BEARSE'S WAY WB THRU LANE	C1	0	Ø2						
5	BEARSE'S WAY WB RIGHT-TURN LANE	C1	0	Ø2						
6	ENTERPRISE RD LEFT-TURN LANE	C1	0	Ø8						
7	ENTERPRISE RD RIGHT-TURN LANE	C1	0	Ø8						

- 1. DELAY AND EXTENSION TIMINGS SHALL BE PROGRAMMED IN THE CONTROLLER
- 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SETTING PROPOSED DETECTION ZONES AS SHOWN ON THE PLANS, AND ADJUSTING/RE-ADJUSTING DETECTION ZONES IN THE PRESENCE OF THE ENGINEER.

OPC	SED VIDEO DET	ECTION	DATA	
CTION NE	APPROACH/LANE	CAMERA	DELAY /EXT	CALL PHASE
1	BEARSE'S WAY EB LEFT-TURN LANE (FRONT)	C1	0	Ø1
2	BEARSE'S WAY EB LEFT-TURN LANE (BACK)	C1	0	Ø6
3	BEARSE'S WAY EB THRU LANE	C1	0	Ø6
4	BEARSE'S WAY WB THRU LANE	C1	0	Ø2
5	BEARSE'S WAY WB RIGHT-TURN LANE	C1	0	Ø2
3	ENTERPRISE RD LEFT-TURN LANE	C1	0	Ø8
\	ENTERPRISE RD			

LIST C	F MAJO	R ITEMS REQUIRED
BEARSE'S	WAY AT ENTER	RPRISE ROAD
PAY ITEM	QUANTITY	DESCRIPTION
	1	MODIFY EXIST TS CONTROLLER (SIEMENS M50, REV 3.56C) AND CABINET ASSEMBLY TO PROPOSED TIMING AND PHASING SHOWN
	4	TS POST 8' STANDARD INCL. FOUNDATION
816.01	6	PEDESTRIAN SIGNAL HEAD W/COUNTDOWN TIMER
010.01	2	APS PEDESTRIAN PUSH BUTTON W/R10-3e(L) AND SIGN SADDLE
	4	APS PEDESTRIAN PUSH BUTTON W/R10-3e(R) AND SIGN SADDLE
	1	VIDEO DETECTION SYSTEM (1 CAMERA. VDP & CABLES)
	1	RECABLE INTERSECTION

PLUS NECESSARY DUCT, CABLE, LABOR, MISCELLANEOUS MATERIAL AND EQUIPMENT TO COMPLETE THE INSTALLATION AND PROVIDE AN OPERATING TRAFFIC CONTROL SIGNAL.

804.3 75'± 3" CONDUIT, SCHEDULE 80, TYPE NM

1. ALL PROP SIGNAL DISPLAYS SHALL BE EQUIPPED WITH L.E.D. MODULES.

BARNSTABLE BEARSE'S WAY

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ-0035(018)X	18	63
ı	PROJECT FILE NO. 60	9067	

SIGN SUMMARY

IDENTIFI-	SIZE C	F SIGN		TEXT DII	MENS	IONS (INCHES	NUMBER OF		COLOR		POST SIZE AND	UNIT	AREA IN
CATION NUMBER	WIDTH	HEIGHT	TEXT	LETTER HEIGHT		TICAL ARROV	SIGNS	BACK- GROUND		BORDER	NUMBER REQUIRED	AREA (S.F.)	SQUARE FEET
R1-1a	18"	18"	STOP	HIG	HWAY	STANDARD ' SIGNS, AS AMENDED	6	RED	WHITE	WHITE	P5-5	1.86	11.16
R3-7L	30"	30"	LEFT LANE MUST TURN LEFT				1	WHITE	BLACK	BLACK	P5-1	6.25	6.25
R5-3	24"	24"	NO MOTOR VEHICLES				12	WHITE	BLACK	BLACK	P5-11	4.00	48.00
R10-3e(L)	9"	15"	START CROSSING Wotch For Vehicles DON'T START Finish Crossing If Storded TIME REMAINING To Finish Crossing DON'T CROSS PUSH BUTTON TO CROSS				2	WHITE	WHITE/ BLACK/ ORANGE	BLACK	2 MTD ON TS POST/POLE	UN	AID IDER 816.01
R10-3e(R)	9"	15"	START CROSSING Wotch For Vehicles DON'T START Finish Crossing In Started The REMAINING To Finish Crossing DON'T CROSS PUSH BUTTON TO CROSS				4	WHITE	WHITE/ BLACK/ ORANGE	BLACK	4 MTD ON TS POST/POLE	UN	AID IDER 816.01
R10-12	24"	30"	LEFT TURN YIELD ON GREEN				1	WHITE	BLACK	BLACK	1 MTD ON MAST ARM	5.00	5.00
W11-15	30"	30"	To To				2	FLUORESCENT YELLOW- GREEN		BLACK	P5-2	6.25	12.50
W11-15P	24"	18"	TRAIL				2	YELLOW	BLACK	BLACK	2 MTD W/OTHERS	3.00	6.00

NOTE: HIGH INTENSITY REFLECTIVE SHEETING SHALL BE USED FOR ALL SIGNS. SEE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, FOR VERTICAL & LATERAL CLEARANCES.

GENERAL NOTES

- 1. ALL CONSTRUCTION SIGNING, TEMPORARY TRAFFIC CONTROL DEVICES, AND ROADSIDE ELEMENTS SHALL CONFORM WITH THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AS AMENDED, THE MASSDOT STANDARD DETAILS AND DRAWINGS FOR THE DEVELOPMENT OF TEMPORARY TRAFFIC CONTROL PLANS, THE LATEST REVISIONS OF THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, (AASHTO) ROADSIDE DESIGN GUIDE, AASHTO POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS, AND NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM (NCHRP) REPORT 350 OR THE AASHTO MANUAL FOR ASSESSING SAFETY HARDWIRE (MASH).
- 2. WORK HOURS SHALL BE 7:00AM TO 3:30PM UNLESS OTHERWISE APPROVED BY MASSDOT AND THE TOWN OF BARNSTABLE. NO WORK IMPACTING THE PUBLIC WAY SHALL BE ALLOWED BEFORE 7:00AM OR AFTER 3:30 PM. A MINIMUM OF ONE LANE IN EACH DIRECTION WILL BE MAINTAINED AT ALL TIMES (7:00 AM TO 3:30 PM) WITH THE EXCEPTION OF BRIEF PERIODS APPROVED BY THE TOWN OF BARNSTABLE.
- 3. NO WORK SHALL BE DONE BETWEEN MEMORIAL DAY AND LABOR DAY UNLESS OTHERWISE APPROVED BY THE ENGINEER. NO WORK SHALL OCCUR ON SATURDAYS, SUNDAYS, OR HOLIDAYS OR ON THE DAY BEFORE OR DAY AFTER A LONG WEEKEND THAT INVOLVED A HOLIDAY UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- 4. ALL TEMPORARY PEDESTRIAN PATHWAYS SHALL COMPLY FULLY WITH ALL REQUIREMENTS OF THE MUTCD AND ALL APPLICABLE MASSACHUSETTS ARCHITECTURAL ACCESS BOARD (MAAB) AND AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG) REQUIREMENTS AND PUBLIC RIGHTS-OF WAY ACCESSIBILITY GUIDELINES (PROWAG).
- 5. ALL DRUMS OUTSIDE TAPERS SHALL BE SET AT 20' ON CENTER MAX. UNLESS OTHERWISE NOTED OR ADJUSTED BY THE ENGINEER.
- 6. ALL DRUMS SHALL BE APPROXIMATELY PLACED AND MOVED AS NECESSARY TO MAINTAIN SAFE AND REASONABLE ABUTTER ACCESS. WORK MAY REQUIRE ADDITIONAL SIGNS, DRUMS AND OTHER TRAFFIC CONTROL DEVICES, GRADING AND TEMPORARY PAVEMENT FOR PASSAGE OF PEDESTRIAN, VEHICULAR AND EMERGENCY TRAFFIC THROUGH THE WORK AREAS, BOTH DURING AND AFTER WORKING HOURS, TO MAINTAIN SUCH ACCESS.
- 7. THE FIRST 10 DRUMS ON TAPERS SHALL BE REFLECTORIZED DRUMS WITH SEQUENTIAL FLASHING WARNING LIGHTS AND SHALL BE OPERATING, AT A MINIMUM, BETWEEN DUSK AND DAWN, WHEN TAPER IS DEPLOYED.
- 8. REFLECTORIZED CONES SHALL BE A MINIMUM OF 36 INCHES IN HEIGHT.
- 9. CONES MAY BE USED IN LIEU OF DRUMS OUTSIDE OF TAPER AREAS.
- 10. THE CONTRACTOR SHALL NOTIFY EACH ABUTTER AT LEAST 48 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OR RESTRICTION OF ACCESS.
- 11. CONSTRUCTION CLEAR ZONE SHALL BE IN ACCORDANCE WITH MASSDOT BOSTON TRAFFIC GUIDELINES AS FOLLOWS: 4' IF POSTED SPEED IS LESS THAN 35 MPH
- 8' IF POSTED SPEED IS 35 MPH
- 12. 11' MINIMUM LANE WIDTHS SHALL BE MAINTAINED UNLESS OTHERWISE NOTED.
- 13. NON-ESSENTIAL TRAFFIC CONTROL DEVICES AND SIGNS SHALL BE COVERED OR REMOVED DURING NON-WORKING HOURS WHEN NOT IN USE.
- 14. SIGNS INSTALLED ON PORTABLE STANDS REQUIRE 12 INCH MINIMUM MOUNTING HEIGHT FROM THE ROADWAY SURFACE TO THE BOTTOM OF THE SIGN.
- 15. SIGNS INSTALLED ON PORTABLE STANDS PLACED AMONG CHANNELIZATION DEVICES REQUIRE A 36 INCH MINIMUM MOUNTING HEIGHT FROM THE ROADWAY SURFACE TO THE BOTTOM OF THE SIGN.
- 16. ALL SIGNS SHALL BE MOUNTED ON THEIR OWN NCHRP 350 AND/OR MASH CRASH TESTED SIGN SUPPORTS AND INSTALLED IN ACCORDANCE WITH THE MUTCD.
- 17. CONTRACTOR SHALL SECURE WORK AREAS BY APPROPRIATE MEANS TO PREVENT UNAUTHORIZED ACCESS AT ALL TIMES.
- 18. THERE IS NO DESIGNATED BICYCLE LANE ON THE ROADWAY WITHIN THE PROJECT LIMITS. BICYCLES ARE EXPECTED TO SHARE THE ROAD WITH GENERAL VEHICULAR TRAFFIC.
- 19. CONTRACTOR SHALL COORDINATE WITH THE WATER POLLUTION CONTROL DIVISION REGARDING WORK IN THE VICINITY OF THE WATER POLLUTION CONTROL DIVISION DRIVEWAYS.
- 20. CONTRACTOR SHALL NOT ALLOW PEDESTRIAN ACCESS ON PARTIALLY BUILT SHARED-USE PATH UNTIL ALL THE PATH WITHIN THE PROJECT LIMITS IS FULLY BUILT AND ADA COMPLIANT AND AS APPROVED BY THE ENGINEER.

BUFFER SF	PACING
SPEED (MPH)	DISTANCE (FEET)
15	80
20	115
25	155
30	200
35	250

ADVANCE SIGN SPACING DISTANCE BETWEEN SIGNS (FEET)								
Α	В	C						
500	500	500						
350	350	350						
	A 500	A B 500						

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

LEGE	END
P	POLICE OFFICER
	TRAFFIC SIGNAL
•	REFLECTORIZED DRUM
	REFLECTORIZED DRUMS WITH SEQUENTIAL FLASHING WARNING LIGHTS (SEE NOTE 7)
•	TEMPORARY CONSTRUCTION SIGN
•	TRAFFIC CONE
	WORK AREA (PUBLIC ACCESS RESTRICTED)
	TRANSITION/BUFFER AREAS
+	TRAFFIC FLOW
TT	TYPE III BARRICADE
NTS	NOT TO SCALE

BARNSTABLE BEARSE'S WAY

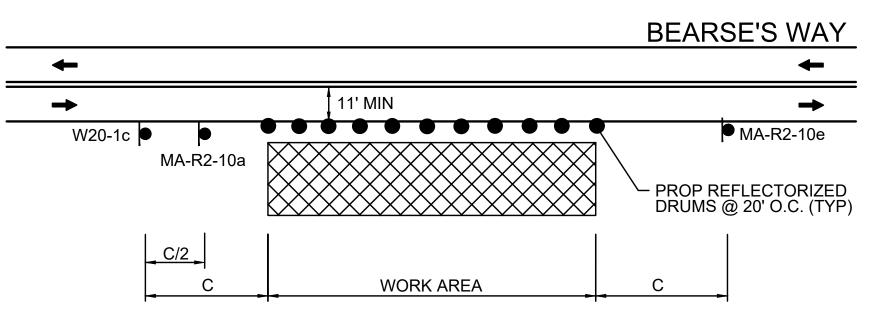
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS				
MASS.	CMQ-0035(018)X	19	63				
PROJECT FILE NO. 609067							

TEMPORARY TRAFFIC CONTROL PLANS
GENERAL NOTES, LEGEND, & SIGN SUMMARY

IDENTIFI-	SIZE OF SIGN			TEXT DIMEN	TEXT DIMENSIONS (INCHES)			COLOR		
CATION NUMBER	WIDTH	HEIGHT	TEXT		ERTICAL PACING	ARROW RTE. MKR.	BACK- GROUND	LEGEND	BORDER	
R1-1	30"	30"	STOP	SEE FHWA HIGHW 2004 EDITION	AY SIGN	S,	RED	WHITE	WHITE	
MA-R2-10a	48"	36"	WORK ZONE SPEEDING FINES DOUBLED			FLUOR- ESCENT ORANGE WHITE	BLACK	BLACK		
MA-R2-10e	36"	48"	END ROAD WORK DOUBLE FINES END		V		FLUOR- ESCENT ORANGE WHITE	BLACK	BLACK	
R4-7	24"	30"		SEE FHWA HIGHW 2004 EDITION	AY SIGN	S,	WHITE	BLACK	BLACK	
W1-4L	36"	36"					FLUOR- ESCENT ORANGE	BLACK	BLACK	
W1-4R	36"	36"					FLUOR- ESCENT ORANGE	BLACK	BLACK	
W5-1	36"	36"	ROAD				FLUOR- ESCENT ORANGE	BLACK	BLACK	
W16-8P(1)	30"	8"	ENTERPRISE RD				FLUOR- ESCENT ORANGE	BLACK	BLACK	
W16-8P(2)	30"	8"	BEARSE'S WAY				FLUOR- ESCENT ORANGE	BLACK	BLACK	
W20-1c	36"	36"	ROAD WORK AHEAD				FLUOR- ESCENT ORANGE	BLACK	BLACK	
W20-4c	36"	36"	ONE LANE ROAD AHEAD		V		FLUOR- ESCENT ORANGE	BLACK	BLACK	
MA-W20-7b	36"	36"	POLICE OFFICER AHEAD		MASSDO ANDARD	OT	FLUOR- ESCENT ORANGE	BLACK	BLACK	
MA-W24-2 (MOD)	36"	36"	LANE SHIFT AHEAD				FLUOR- ESCENT ORANGE	BLACK	BLACK	
MA-W30-8L	36"	36"	SQUEEZE LEFT				FLUOR- ESCENT ORANGE	BLACK	BLACK	
MA-W30-8R	36"	36"	SQUEEZE RIGHT				FLUOR- ESCENT ORANGE	BLACK	BLACK	

NOTES:

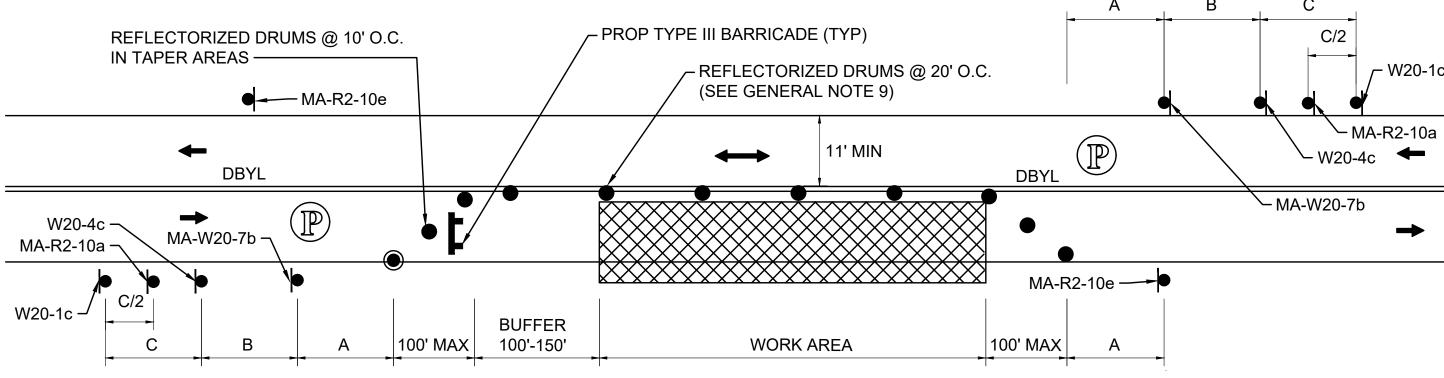
- 1. HIGH INTENSITY REFLECTIVE SHEETING SHALL BE USED FOR ALL SIGNS. SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION" FOR TEXT DIMENSIONS, AS AMENDED; THE 1977 MASSHIGHWAY DEPARTMENT CONSTRUCTION AND TRAFFIC STANDARD DETAILS, AS AMENDED, FOR SIGNS AND SUPPORTS; THE MASSHIGHWAY DEPARTMENT SIGN LISTINGS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



1. REFER TO ADVANCED SIGN SPACING TABLE ON SHEET 19.

TYPICAL WORK BEYOND THE SHOULDER

SCALE: NTS

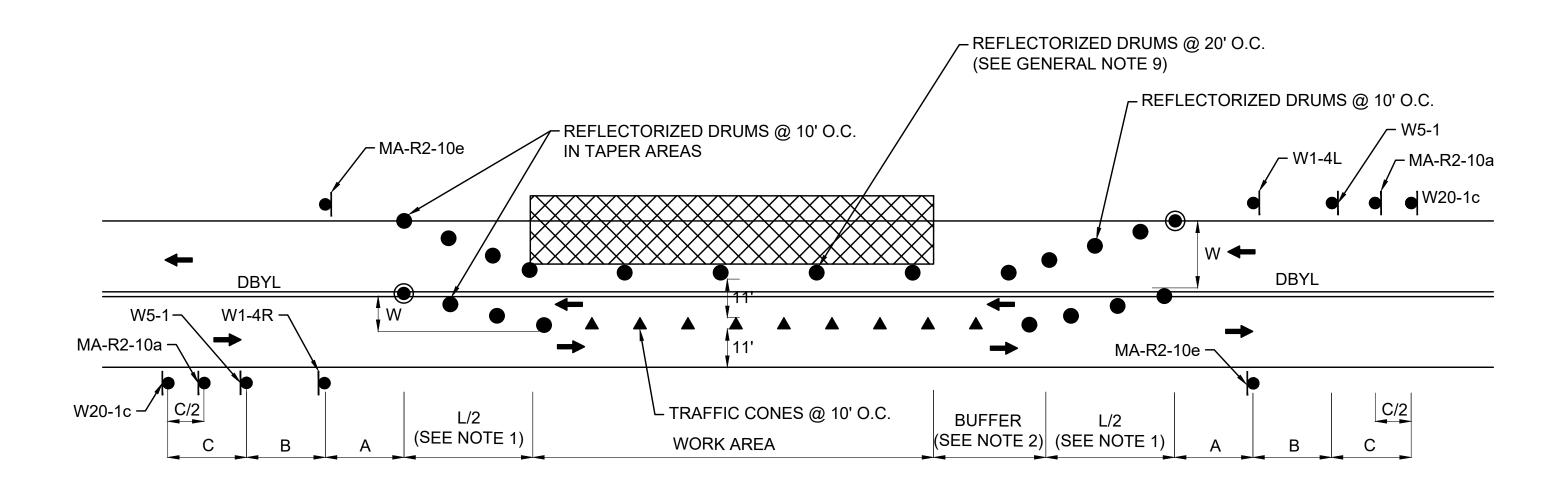


NOTES:

- 1. REFER TO ADVANCE SIGN SPACING TABLE ON SHEET 19.
- 2. AT THE END OF WORK SHIFT, CONTRACTOR TO RESTORE TRAFFIC BACK TO ORIGINAL CONDITION.

TYPICAL TWO-WAY STREET LANE CLOSURE ALTERNATING TRAFFIC

SCALE: NTS



NOTES:

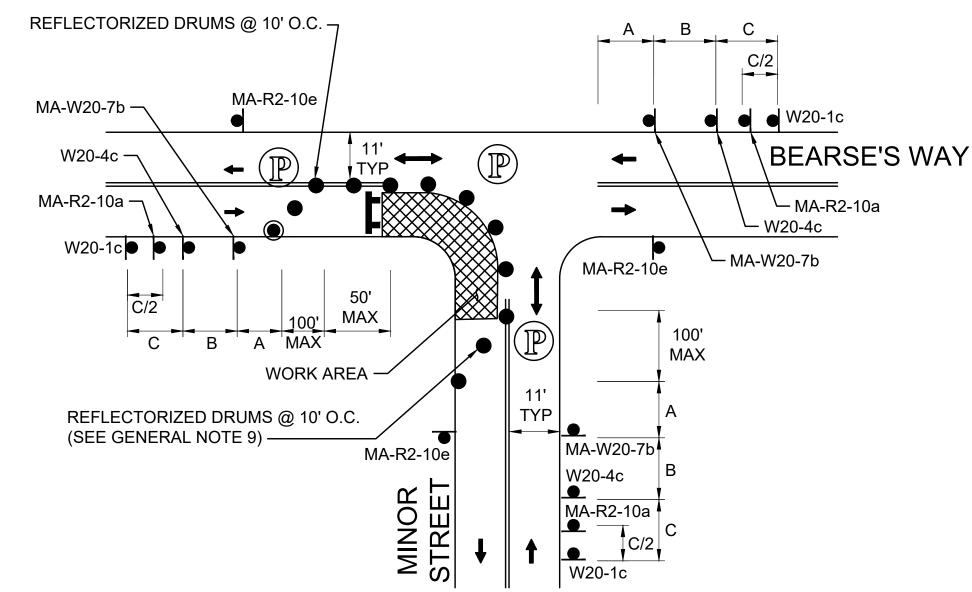
- 1. SEE TAPER LENGTH FORMULA ON SHEET 19.
- 2. SEE BUFFER SPACING CHART ON SHEET 19.
- 3. REFER TO ADVANCE SIGN SPACING TABLE ON SHEET 19.
- 4. AT THE END OF WORK SHIFT, CONTRACTOR TO RESTORE TRAFFIC BACK TO ORIGINAL CONDITION.

TYPICAL TWO-WAY STREET LANE SHIFT

SCALE: NTS

FED. AID PROJ. NO. CMQ-0035(018)X

TEMPORARY TRAFFIC CONTROL PLANS TYPICAL DETAILS (1 OF 2)

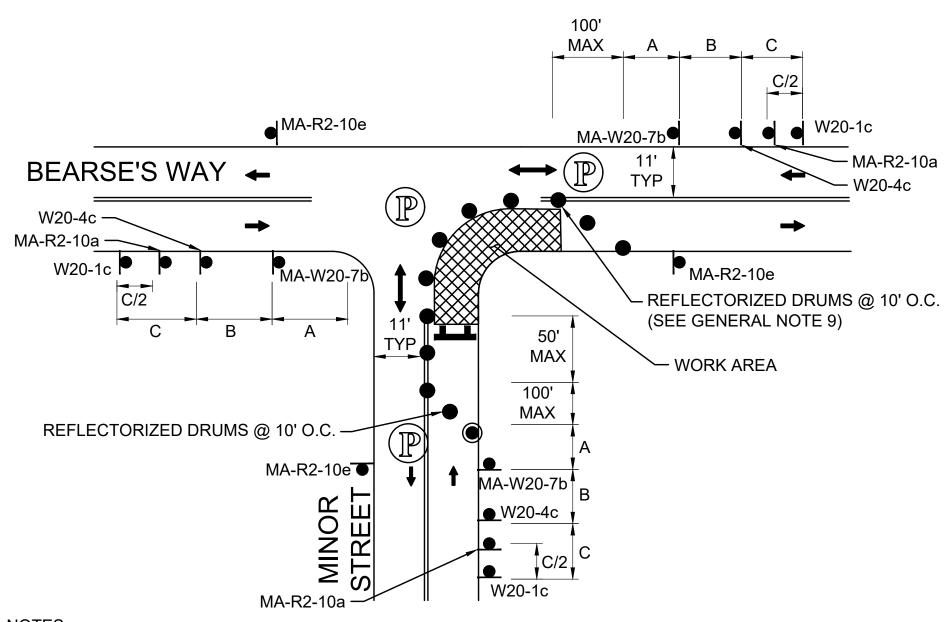


NOTES:

- 1. ADVANCE WARNING SIGN PLACEMENT TO BE ADJUSTED AS NECESSARY.
- 2. REFER TO ADVANCE SIGN SPACING TABLE ON SHEET 19.
- 3. AT THE END OF WORK SHIFT, CONTRACTOR TO RESTORE TRAFFIC BACK TO ORIGINAL CONDITION.

ONE LANE BI-DIRECTIONAL TRAFFIC AT-INTERSECTIONS - NEAR SIDE

SCALE: NTS



NOTES:

- 1. ADVANCE WARNING SIGN PLACEMENT TO BE ADJUSTED AS NECESSARY.
- 2. REFER TO ADVANCE SIGN SPACING TABLE ON SHEET 19.
- 3. AT THE END OF WORK SHIFT, CONTRACTOR TO RESTORE TRAFFIC BACK TO ORIGINAL CONDITION.

ONE LANE BI-DIRECTIONAL TRAFFIC AT INTERSECTIONS - FAR SIDE

WORK AREA

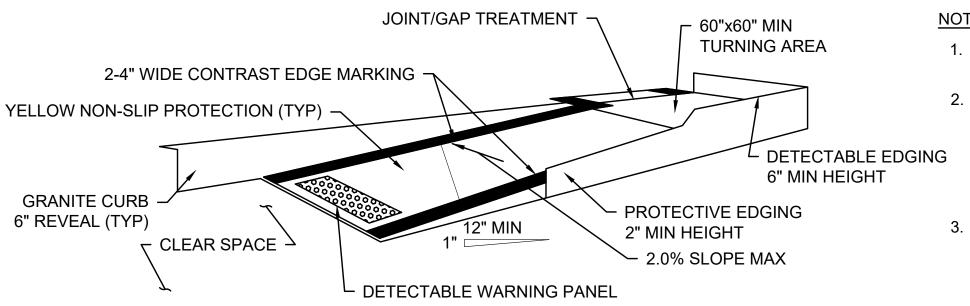
NOTES:

- 1. SEE TAPER LENGTH FORMULA ON SHEET 19.
- 2. SEE BUFFER SPACING CHART ON SHEET 19.
- 3. REFER TO ADVANCE SIGN SPACING TABLE ON SHEET 19.
- 4. AT THE END OF WORK SHIFT, CONTRACTOR TO RESTORE TRAFFIC AND PEDESTRIANS BACK TO ORIGINAL CONDITION.

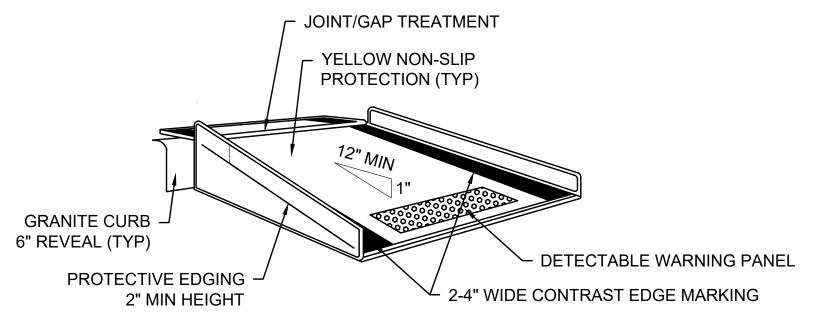
(SEE NOTE 1) NOTE 2)

TYPICAL TWO-WAY STREET CENTER WORK AREA

SCALE: NTS



TEMPORARY CURB RAMP-PARALLEL TO CURB



TEMPORARY CURB RAMP-PERPENDICULAR TO CURB

NOTES:

L/2 (SEE

NOTE 2) NOTE 1)

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

TEMPORARY CURB RAMPS

SCALE: NTS

BARNSTABLE **BEARSE'S WAY**

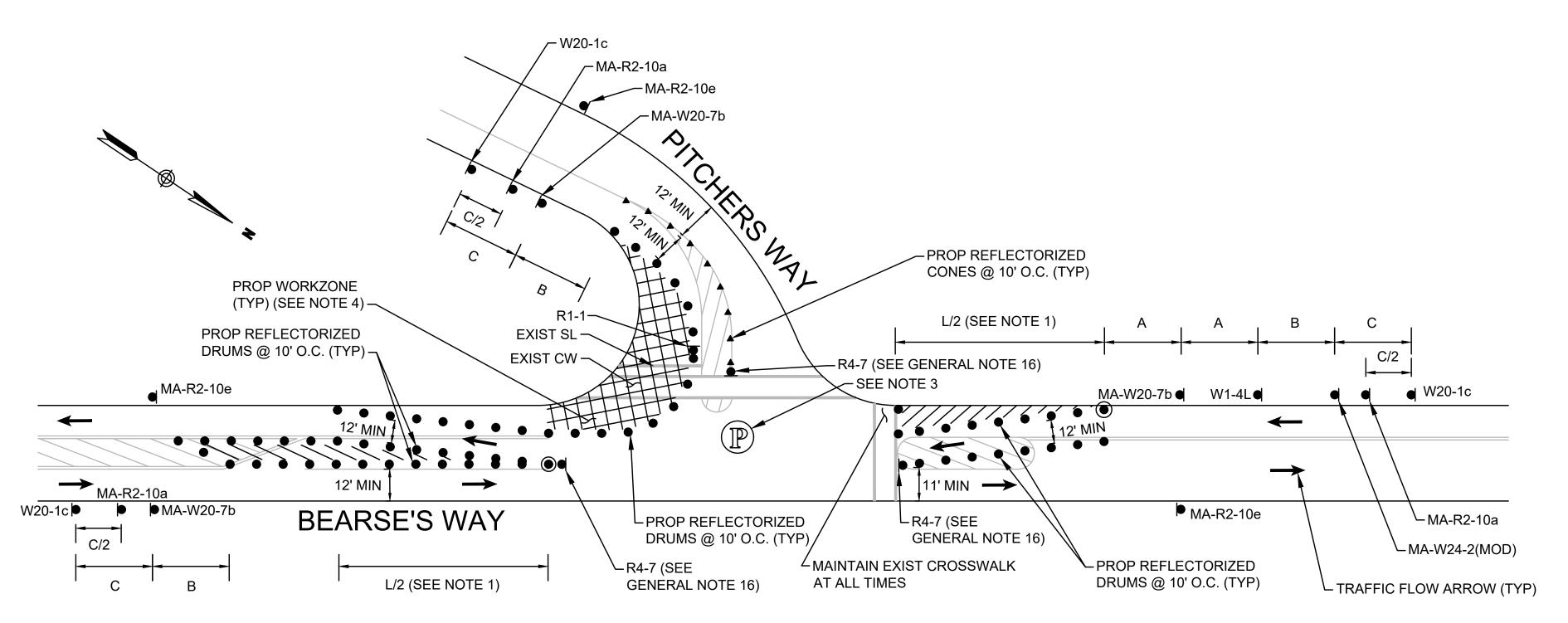
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS				
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PROJECT FILE NO. 609067							

TEMPORARY TRAFFIC CONTROL PLANS TYPICAL DETAILS (2 OF 2)



MASS.

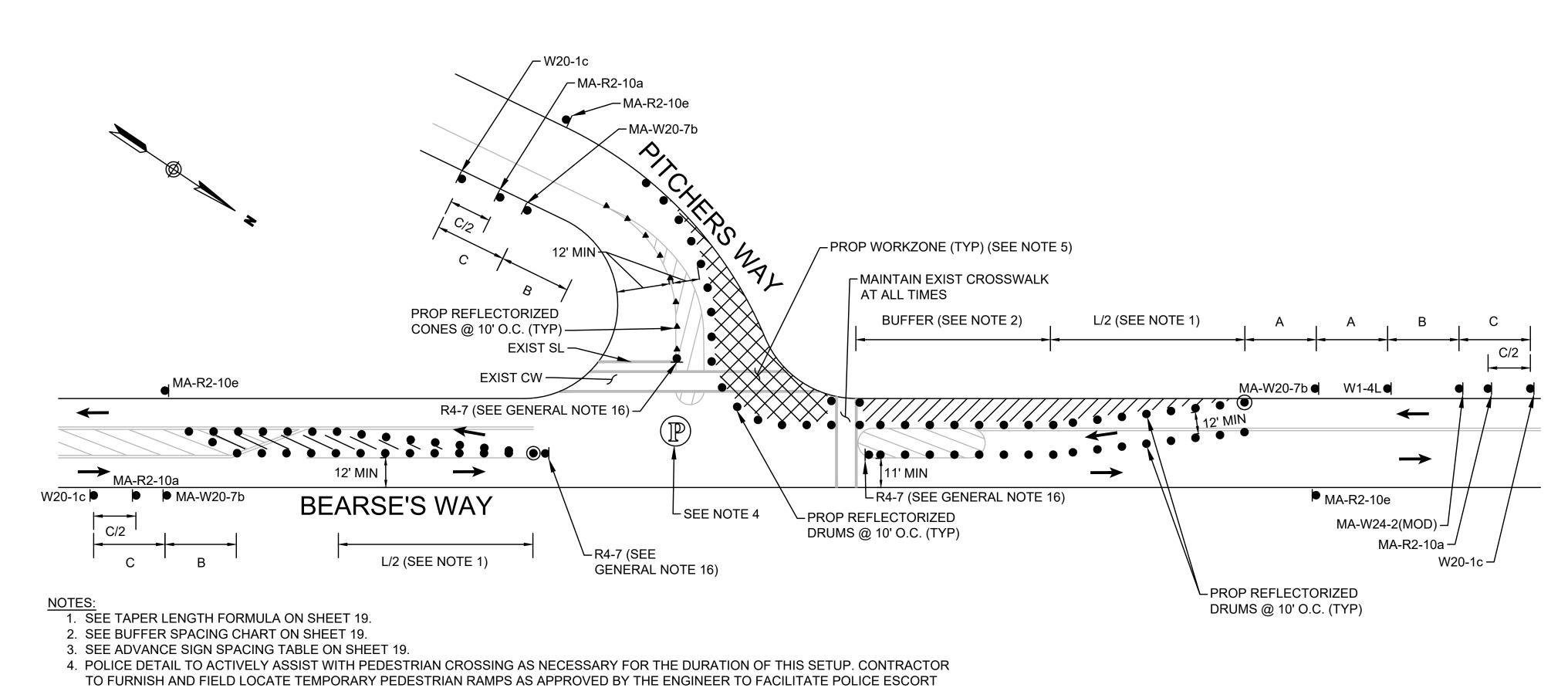
TEMPORARY TRAFFIC CONTROL PLANS WORK ZONE SETUP DETAIL BEARSE'S WAY AT PITCHERS WAY



- 1. SEE TAPER LENGTH FORMULA ON SHEET 19.
- 2. SEE ADVANCE SIGN SPACING TABLE ON SHEET 19.
- 3. POLICE DETAIL TO ACTIVELY ASSIST WITH PEDESTRIAN CROSSING AS NECESSARY FOR THE DURATION OF THIS SETUP. CONTRACTOR TO FURNISH AND FIELD LOCATE TEMPORARY PEDESTRIAN RAMPS AS APPROVED BY THE ENGINEER TO FACILITATE POLICE ESCORT FOR PEDESTRIANS AROUND THE WORK SITE. REFER TO TEMPORARY CURB RAMPS DETAIL ON SHEET 21.
- 4. AT THE END OF WORK SHIFT, CONTRACTOR TO RESTORE TRAFFIC AND PEDESTRIANS BACK TO ORIGINAL CONDITION.

BEARSE'S WAY AT PITCHERS WAY (SOUTH SIDE)

SCALE: NTS

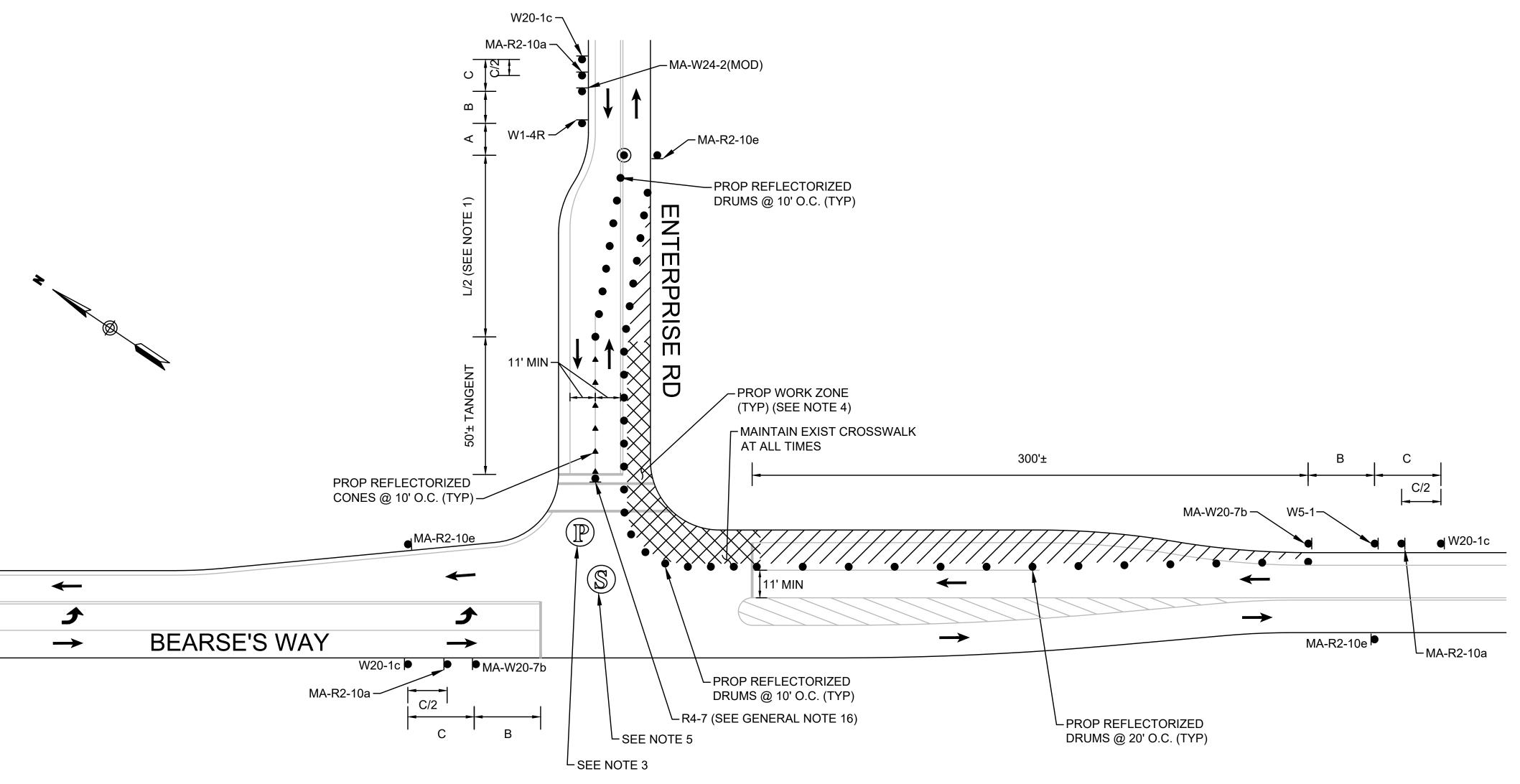


BEARSE'S WAY AT PITCHERS WAY (NORTH SIDE)

FOR PEDESTRIANS AROUND THE WORK SITE. REFER TO TEMPORARY CURB RAMPS DETAIL ON SHEET 21.

5. AT THE END OF WORK SHIFT, CONTRACTOR TO RESTORE TRAFFIC AND PEDESTRIANS BACK TO ORIGINAL CONDITION.

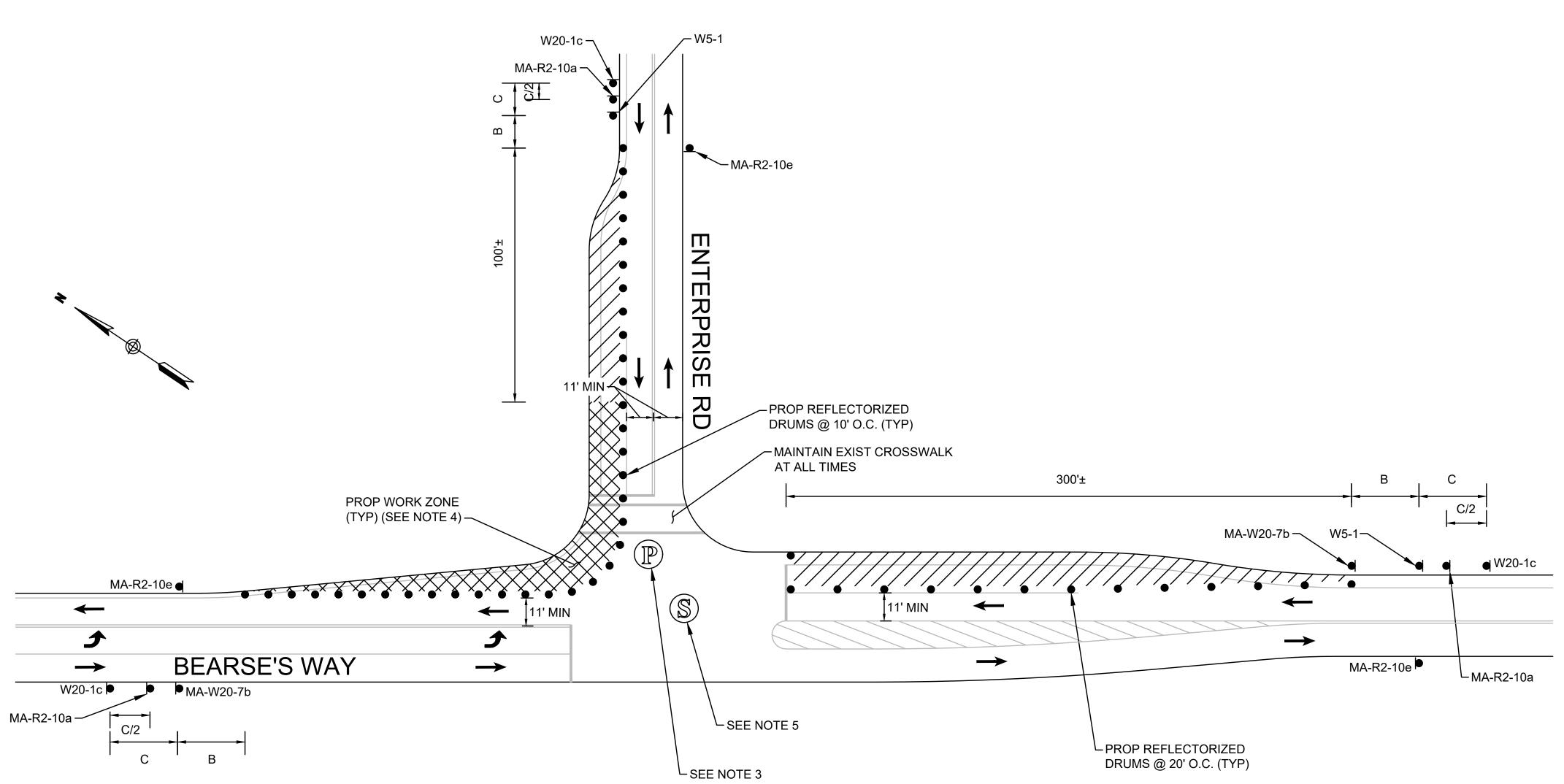
MASS.



- 1. SEE TAPER LENGTH FORMULA ON SHEET 19.
- 2. SEE ADVANCE SIGN SPACING TABLE ON SHEET 19.
- 3. POLICE DETAIL TO ACTIVELY ASSIST WITH PEDESTRIAN CROSSING AS NECESSARY FOR THE DURATION OF THIS SETUP. CONTRACTOR TO FURNISH AND FIELD LOCATE TEMPORARY PEDESTRIAN RAMPS AS APPROVED BY THE ENGINEER TO FACILITATE POLICE ESCORT FOR PEDESTRIANS AROUND THE WORK SITE. REFER TO TEMPORARY CURB RAMPS DETAIL ON SHEET 21.
- 4. AT THE END OF WORK SHIFT, CONTRACTOR TO RESTORE TRAFFIC AND PEDESTRIANS BACK TO ORIGINAL CONDITION.
- 5. MAINTAIN EXIST SIGNAL AT ALL TIMES.

BEARSE'S WAY AT ENTERPRISE RD (SOUTH SIDE)

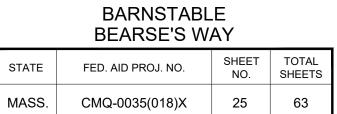
MASS.



- NOTES:

 1. SEE TAPER LENGTH FORMULA ON SHEET 19.
- 2. SEE ADVANCE SIGN SPACING TABLE ON SHEET 19.
- 3. POLICE DETAIL TO ACTIVELY ASSIST WITH PEDESTRIAN CROSSING AS NECESSARY FOR THE DURATION OF THIS SETUP. CONTRACTOR TO FURNISH AND FIELD LOCATE TEMPORARY PEDESTRIAN RAMPS AS APPROVED BY THE ENGINEER TO FACILITATE POLICE ESCORT FOR PEDESTRIANS AROUND THE WORK SITE.
- REFER TO TEMPORARY CURB RAMPS DETAIL ON SHEET 21.
- 4. AT THE END OF WORK SHIFT, CONTRACTOR TO RESTORE TRAFFIC AND PEDESTRIANS BACK TO ORIGINAL CONDITION.
- 5. MAINTAIN EXIST SIGNAL AT ALL TIMES.

BEARSE'S WAY AT ENTERPRISE RD (NORTH SIDE)



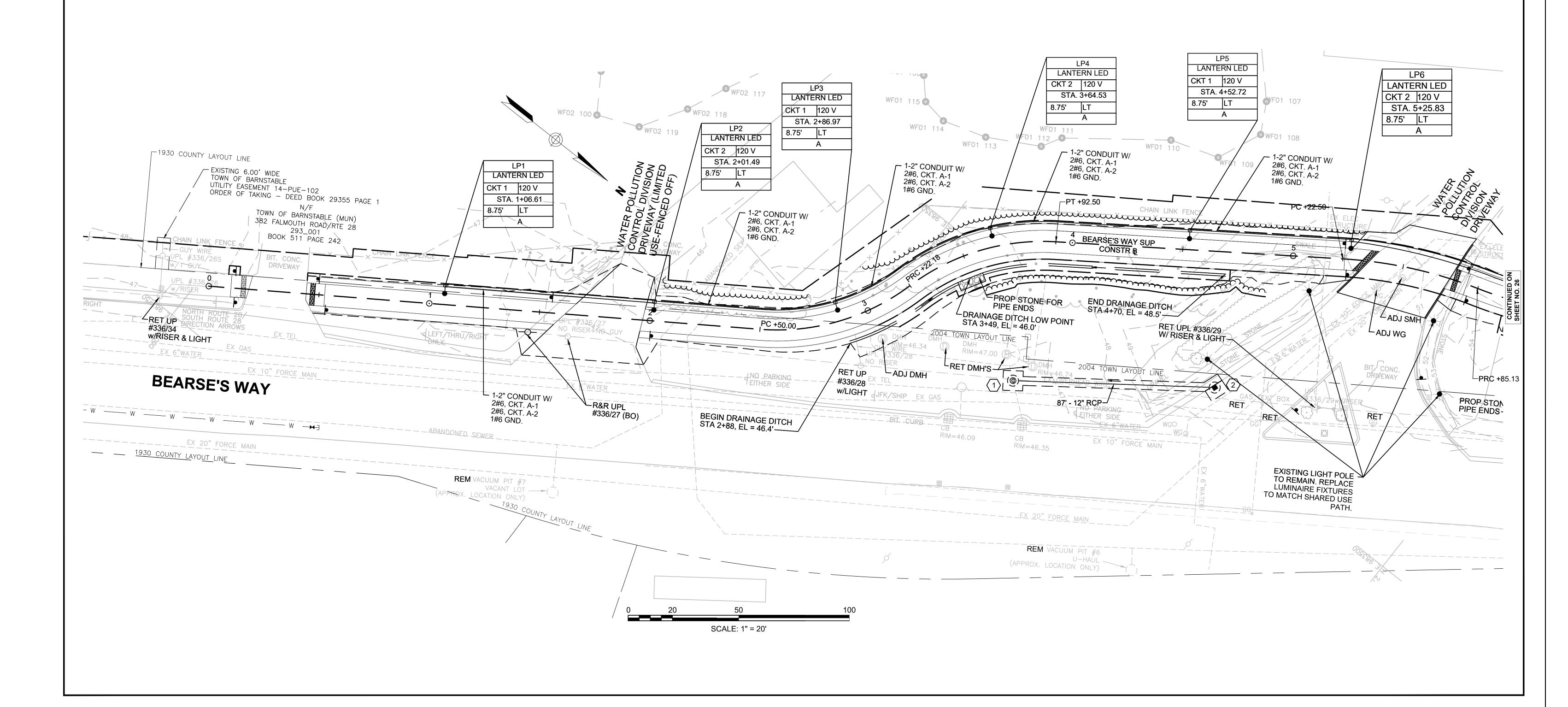
UTILITY PLANS

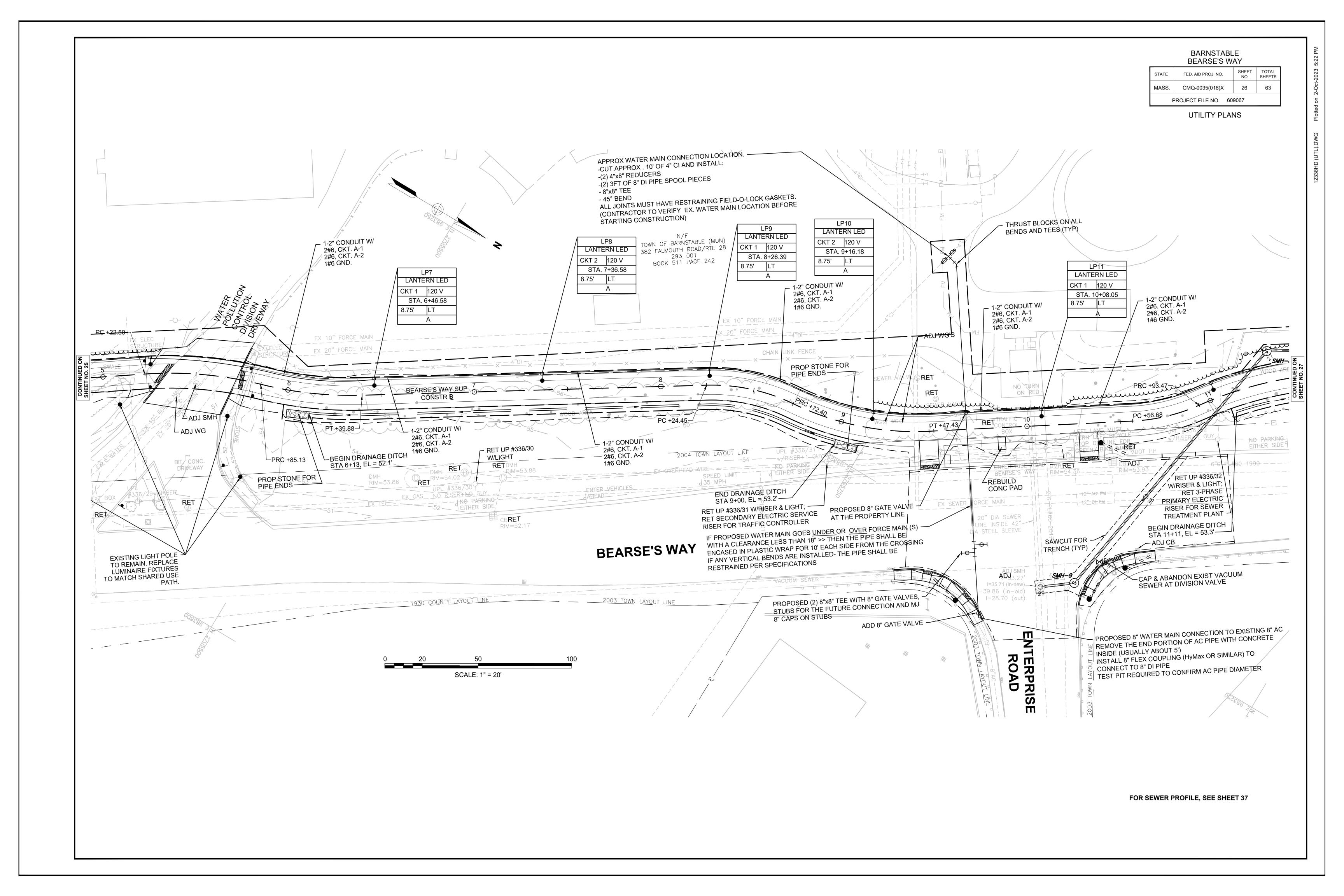
PROJECT FILE NO. 609067

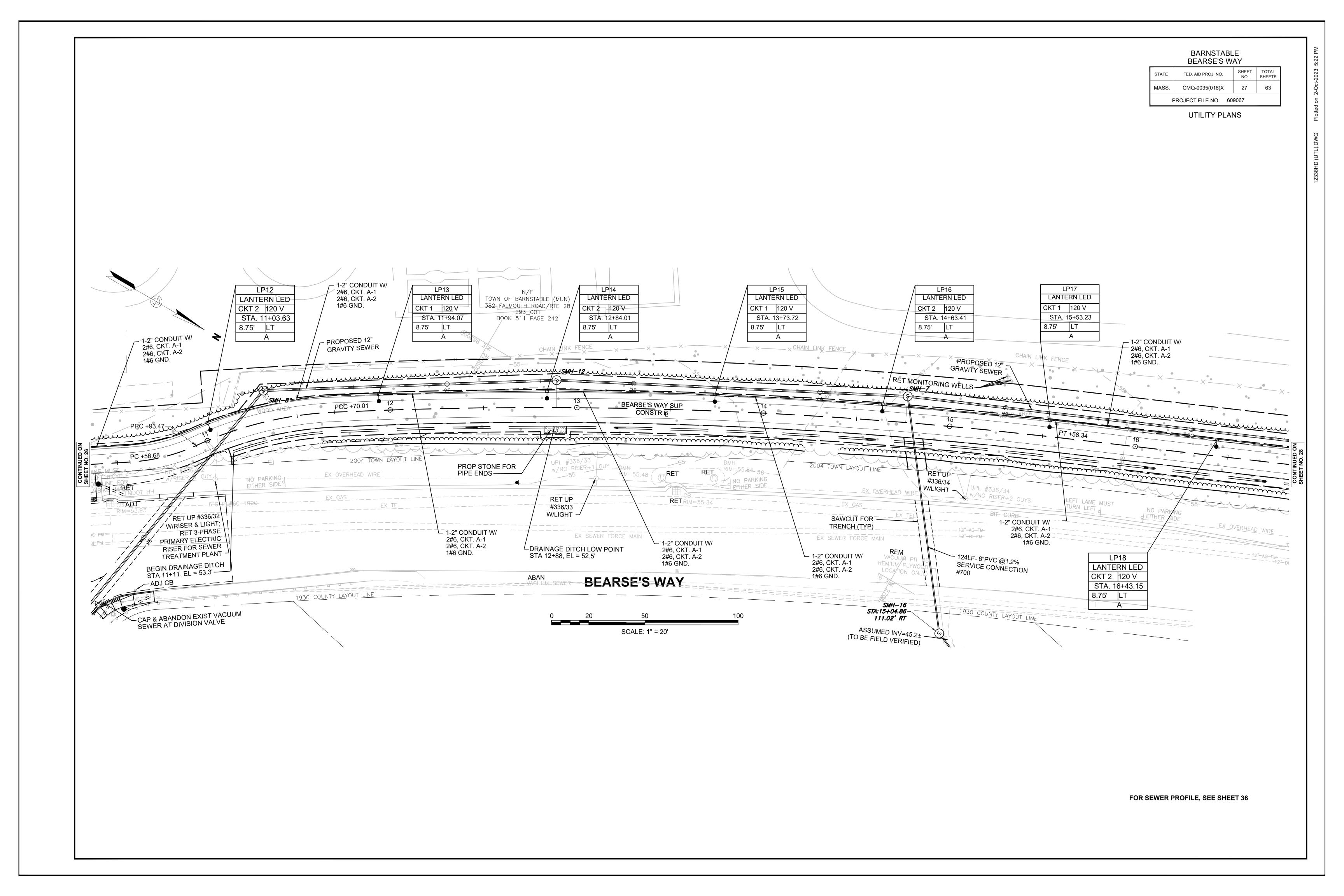
BEARSE'S WAY SUP DRAINAGE STRUCTURE DATA								
NO.	TYPE	STATION	RIM ELEV.	INV. IN	INV. OUT	REMARKS		
1	DMH	3+51.7 60.6 R	46.87	(2) 42.60	EX (3)			
2	CBCI	4+68.1 61.5 R	48.63		43.60			

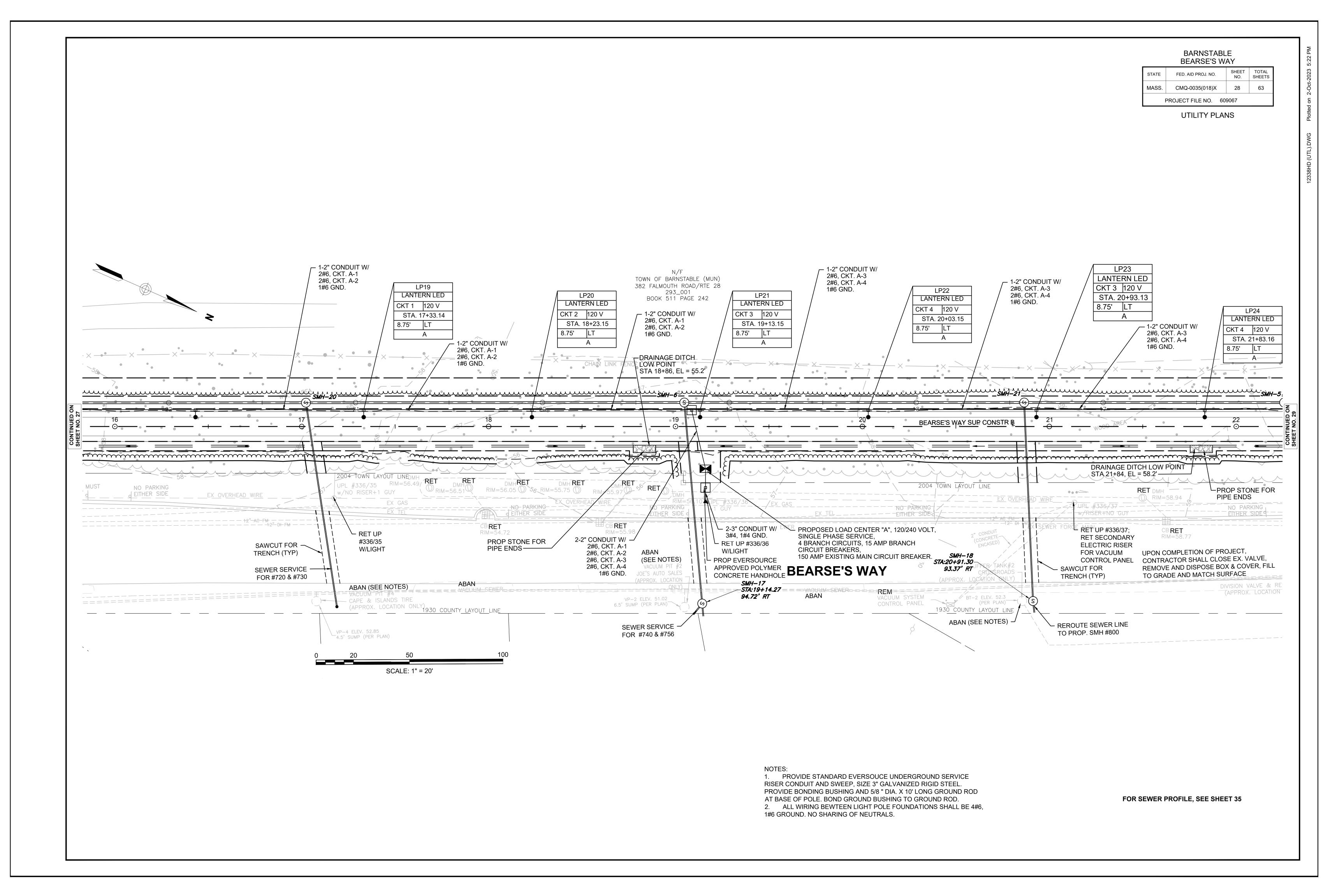
Calculation Summary								
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min	
Shared Use Path	Illuminance	Fc	1.09	3.5	0.1	N.A.	N.A.	

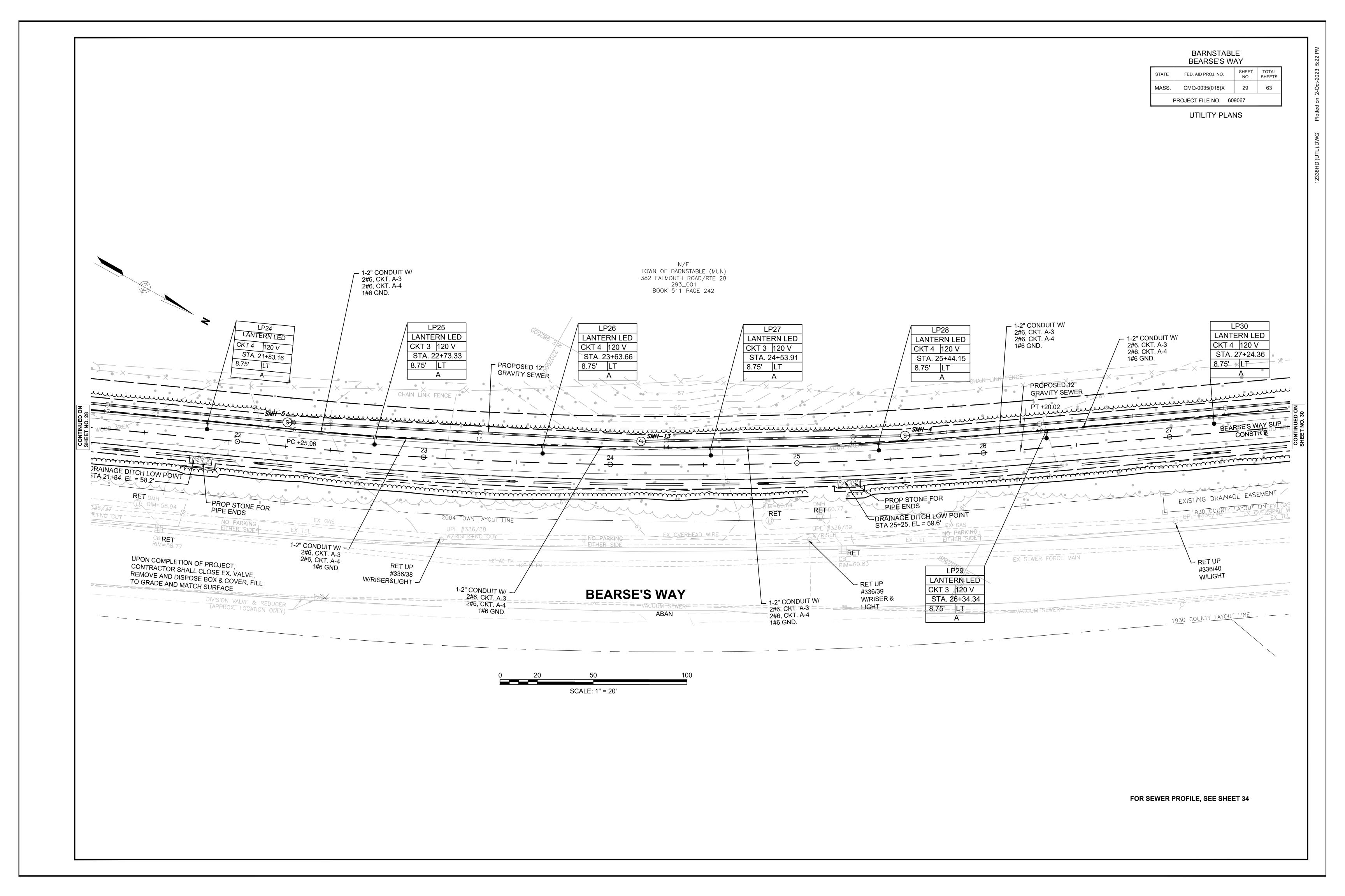
Luminaire Schedule									
Symbol	Qty	Label	Arrangement	Total Lamp Lumens	LLF	Description	Lum. Watts		
	44	rns-24w16led3k-t-le2+(Irp	SINGLE	N.A.	0.9	RNS-24W16LED3K-T-LE2	28		

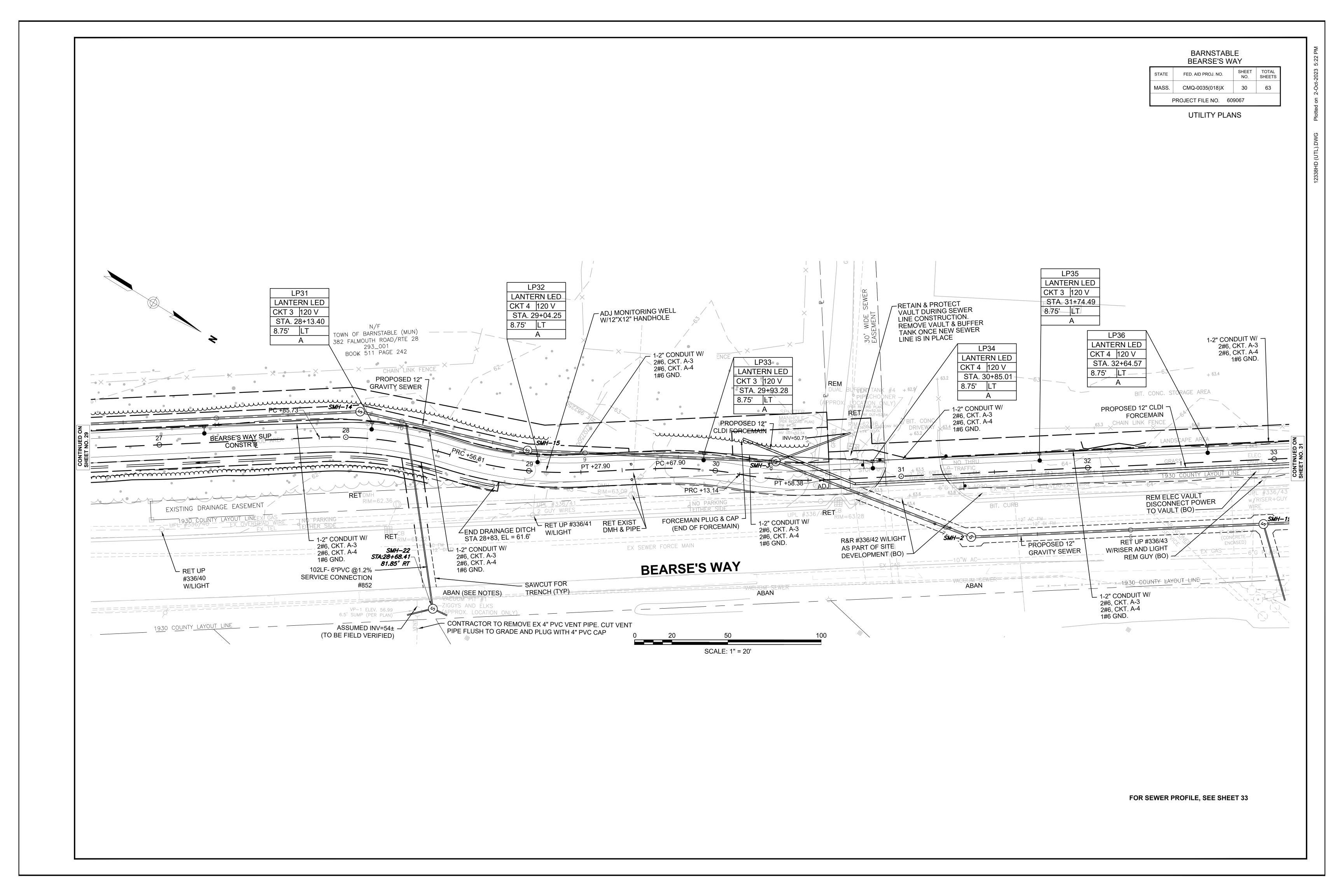


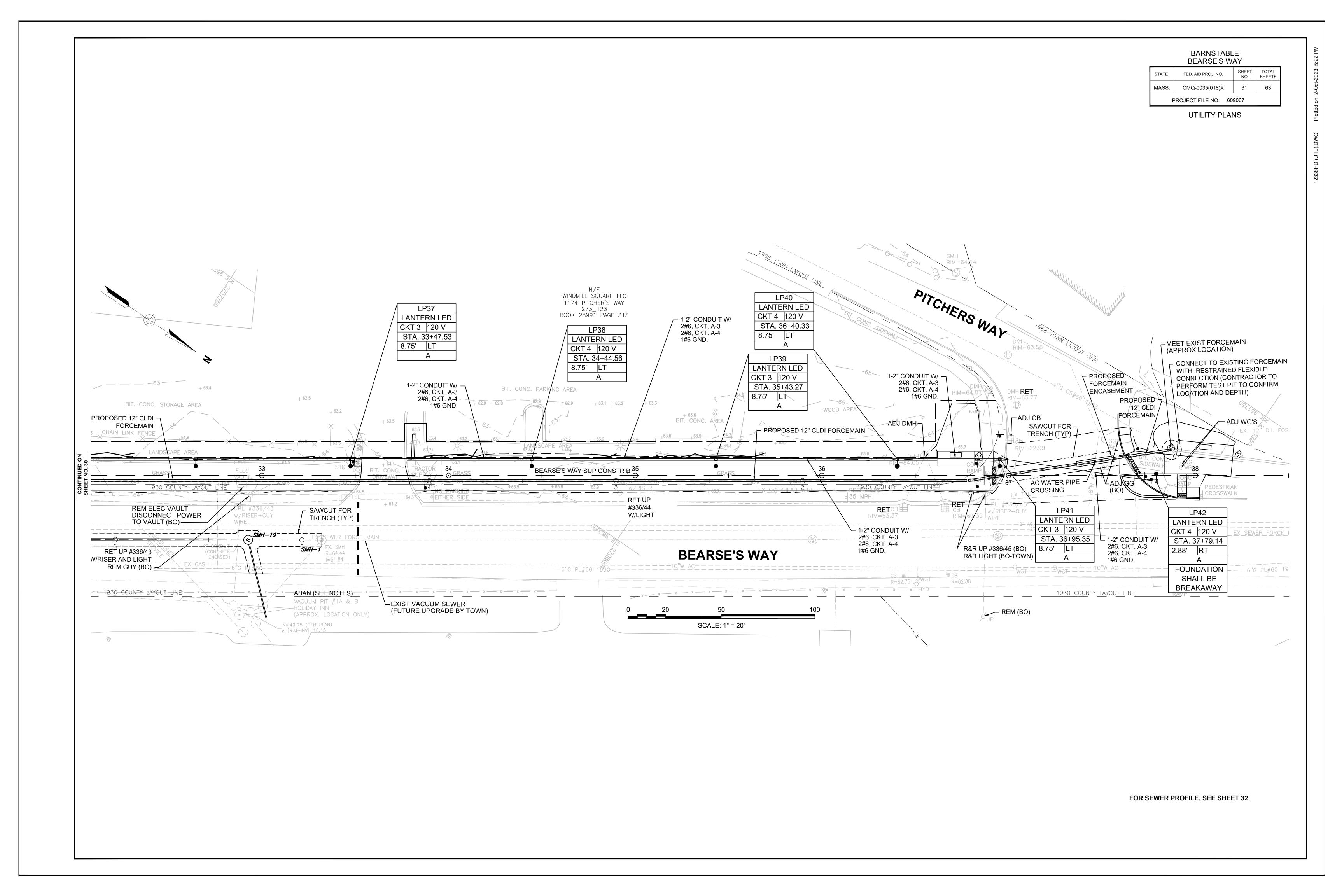




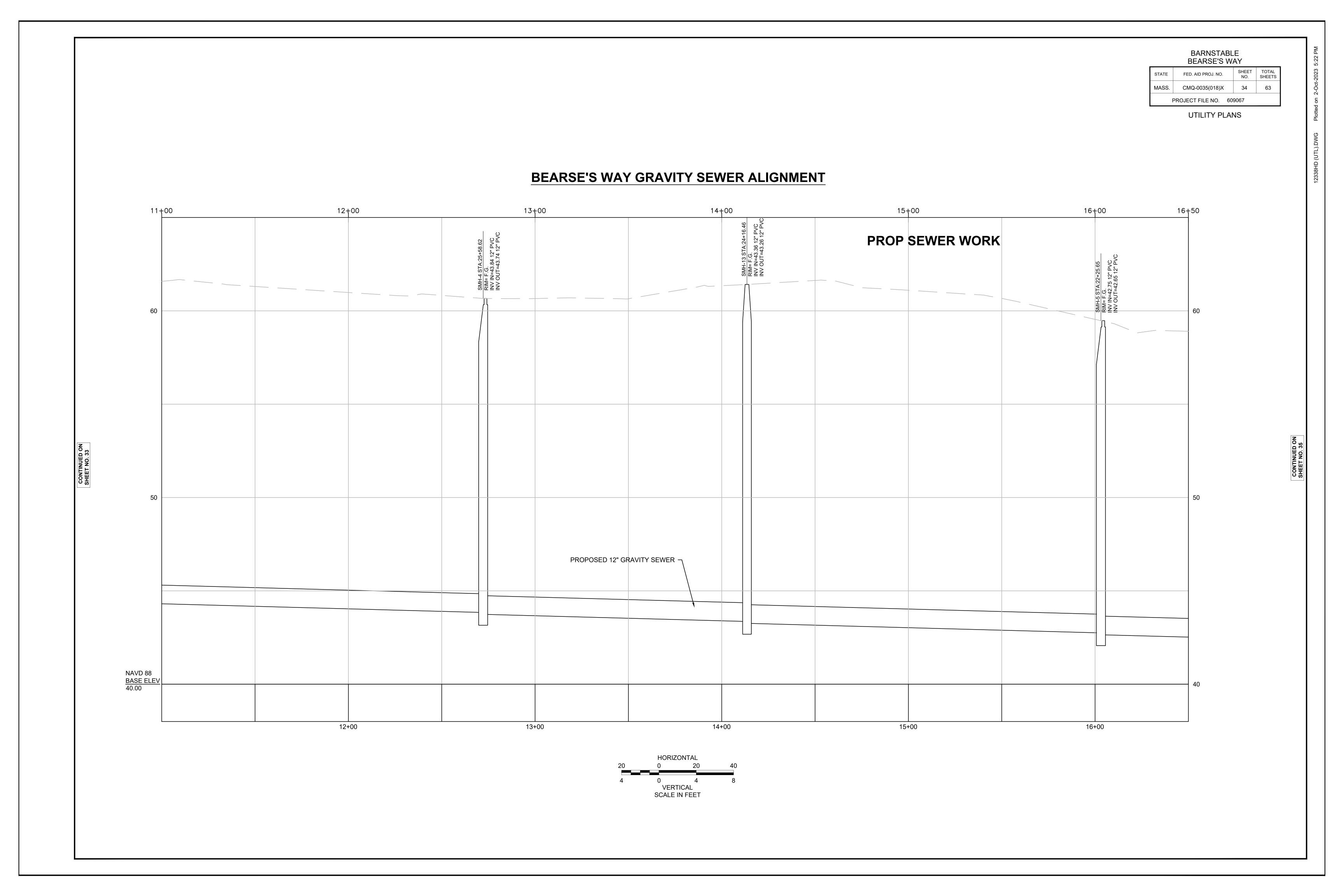




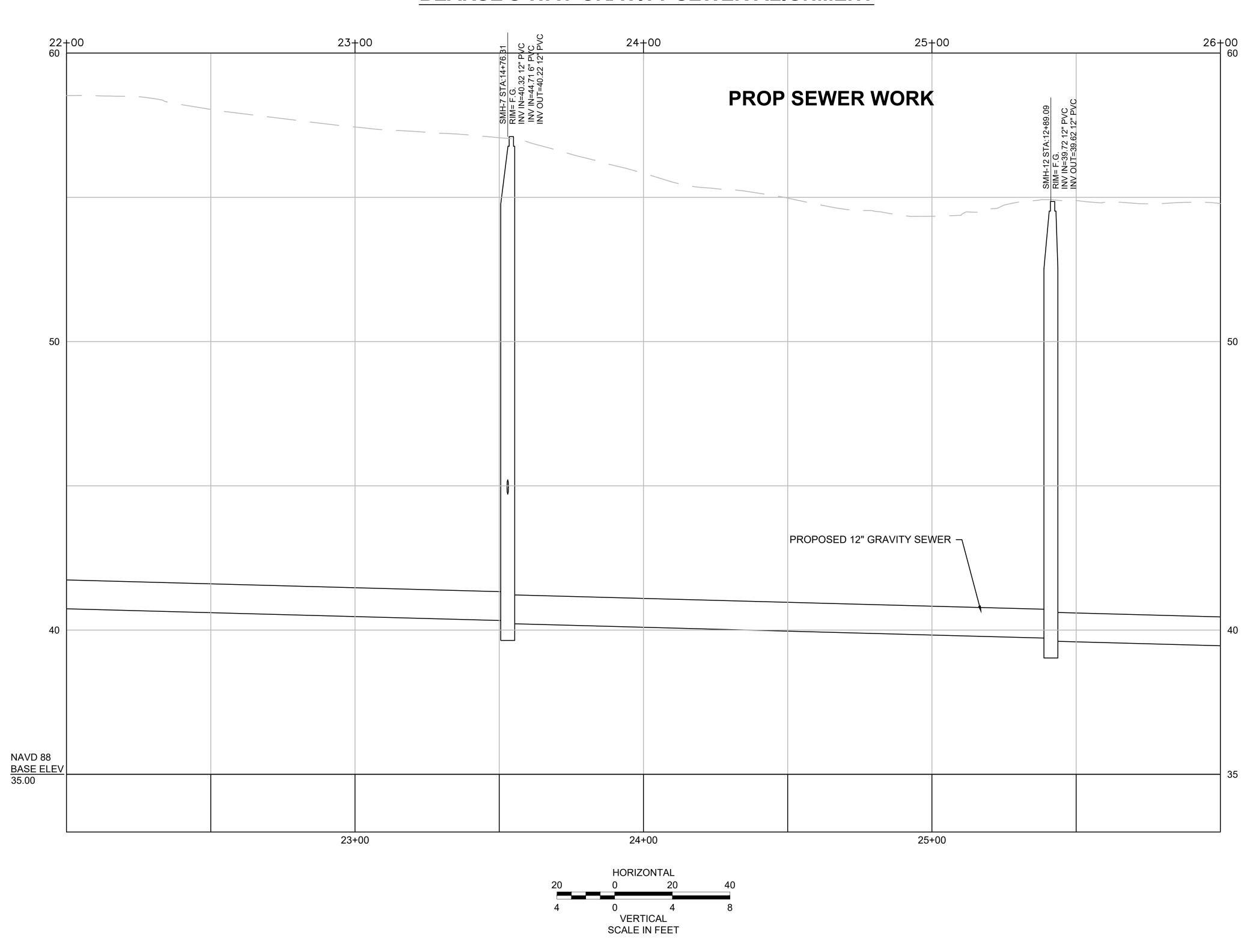




BARNSTABLE BEARSE'S WAY PROJECT FILE NO. 609067 UTILITY PLANS **BEARSE'S WAY GRAVITY SEWER ALIGNMENT** 0+00 1+,00 2+00 3+₁00 4+₁00 5+₀00 PROP SEWER WORK PROPOSED 12" SDR18 FORCEMAIN L=109' S=0.5% 12" CLDI Start Cover: 0.0' End Cover: 0.0' L=602' S=0.5% 12" CLDI Start Cover: 0.0' End Cover: 0.0' 50 PROPOSED 12" GRAVITY SEWER NAVD 88 BASE ELEV 45.00 0+00 1+00 2+00 3+00 4+00 5+00 VERTICAL SCALE IN FEET



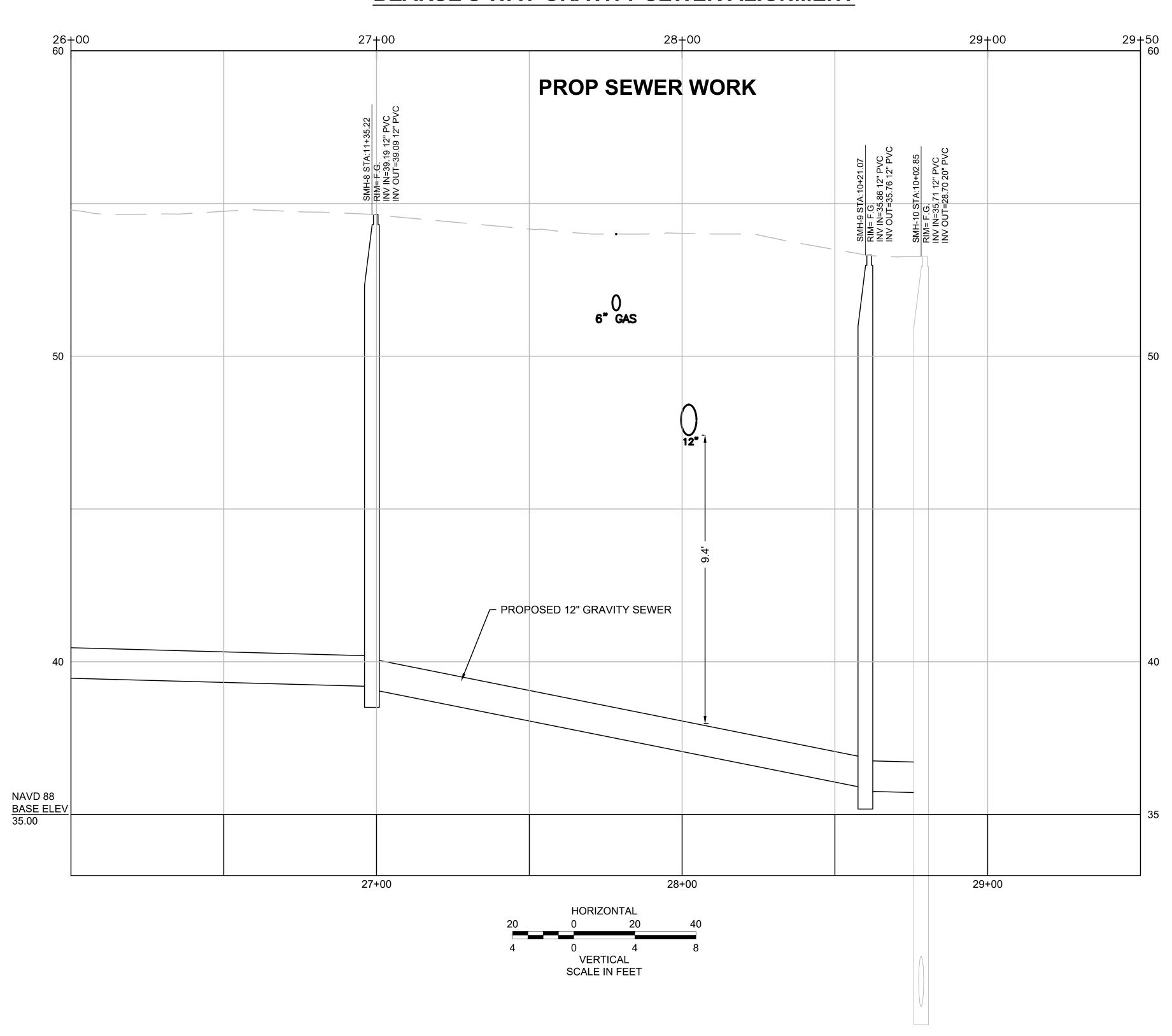
BEARSE'S WAY GRAVITY SEWER ALIGNMENT



STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CMQ-0035(018)X	37	63
ı	PROJECT FILE NO. 60	9067	

UTILITY PLANS

BEARSE'S WAY GRAVITY SEWER ALIGNMENT



- 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. THE LOCATION AND ELEVATION OF ANY EXISTING UTILITIES SHALL BE CONSIDERED APPROXIMATE AND MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY CONSTRUCTION. UNDERGROUND UTILITIES SHOWN ARE FROM FILED OBSERVATION AND THE BEST AVAILABLE RECORD INFORMATION ANO ARE NOT WARRANTED TO BE EXACT, NOR IS IT WARRANTED THAT ALL UNDERGROUND PIPES OR STRUCTURES ARE SHOWN. THE CONTRACTOR SHALL CONTACT THE RESPECTIVE UTILITY COMPANIES AND/OR DIG SAFE TO DETERMINE THE LOCATION, SIZE, MATERIALS AND ELEVATION OF ALL EXISTING UTILITIES, CONDUITS AND LINES. ADDITIONALLY, THE PLANS MAY NOT SHOW ALL WALKWAYS AND LANDSCAPE FEATURES.
- 6. 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.
- 7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY DIGSAFE, THE TOWN OF BARNSTABLE DPW, AND ALL UTILITY COMPANIES A MINIMUM OF 72 HOURS (EXLUDING SATURDAYS, SUNDAYS AND HOLIDAYS) PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES FOR LOCATION OF ALL UNDERGROUND UTILITIES AND UTILITY COMPANY AND DPW APPROVALS.
- 8. RIM ELEVATIONS ARE APPROXIMATE. FINAL RIM ELEVATIONS ARE TO BE SET FLUSH.
- 9. PIPE SLOPES ARE APPROXIMATE. CONTRACTOR TO HOLD INVERTS FOR CONSTRUCTION.
- 10. 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.
- 11. 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.
- 12. THE CONTRACTOR SHALL BE RESPONSIBLE TO NOTIFY THE INSPECTOR/RESIDENT PROJECT REPRESENTATIVE, AT LEAST 48 HOURS IN ADVANCE OF AN INSPECTION.
- 13. THE CONTRACTOR SHALL CONTACT THE TOWN OF BARNSTABLE DPW TO SCHEDULE A PRE-CONSTRUCTION MEETING AT LEAST TWO (2) WEEKS PRIOR TO COMMENCING CONSTRUCTION.
- 14. THE CONTRACTOR SHALL MAKE SUBMITTALS TO THE TOWN OF BARNSTABLE DPW FOR APPROVAL BEFORE ANY FABRICATION OR DELIVERY OF PRODUCTS OR MATERIALS.
- 15. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE REPLACED IN KIND. SURFACES NOT OTHERWISE TREATED SHALL BE STABILIZED AS LAWNS. ALL LAWN AREAS SHALL HAVE A MODIFIED LOAM BORROW PLACED, SEEDED, LIMED AND MULCHED UNTIL GRASS STAND IS ESTABLISHED AN SURFACE IS STABILIZED. THE MODIFIED LOAM BORROW SHALL HAVE A MINIMUM DEPTH OF 4" AND SHALL BE PLACED FLUSH WITH THE TOP OF ADJACENT CURB, EDGING, OR OTHER SURFACE.
- 16. 6" MINIMUM VERTICAL CLEARANCE SHALL BE MAINTAINED BETWEEN ALL UTILITY CROSSINGS, EXCEPT AS OTHERWISE NOTED. IF THIS CANNOT BE ACCOMPLISHED, CONTACT THE ENGINEER TO REVIEW.
- 17. 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 FOR 10 FEET EITHER SIDE OF THE CROSSING. THE JOINTS SHALL BE LOCATED AS FAR AWAY FROM THE CROSSING AS POSSIBLE. THE SEWER PIPES SHALL BE PRESSURE TESTED TO ENSURE IT IS WATERTIGHT.
- 18. 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.
- 19. FORCE MAIN SLOPE SHALL BE MIN 0.5%.
- 20. 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 3000 PSI MINIMUM AGGREGATE SIZE OF 1-1/2". THRUST BLOCKS SIZED PER SPECIFICATIONS. ALTERNATELY PRECAST THRUST BLOCKS TO DIVISION SPECIFICATIONS MAY BE UTILIZED.
- 21. BUILDING SEWER CONNECTION SHALL BE PROVIDED FOR EACH ADJACENT LOT AS SHOWN ON THE PLANS. EACH BUILDING SEWER CONNECTIONS SHALL BE 6" SDR-35 PVC AND SHALL BE INSTALLED WITH A MINIMUM SLOPE OF 1.2%. 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 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.
- 22. ALL UTILITY CROSSINGS MUST BE SUPPORTED.
- 23. 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.
- 24. ALL CONSTRUCTION MATERIAL, SHOP DRAWINGS AND MANUFACTURERS' DATA SHALL REQUIRE THE WRITTEN APPROVAL OF VHB OR THE TOWN OF BARNSTABLE DPW PRIOR TO FABRICATION AND INSTALLATION. VHB OR THE TOWN OF BARNSTABLE DPW IS NOT RESPONSIBLE FOR ANY WORK FOR WHICH SHOP DRAWINGS AND/OR CONSTRUCTION MATERIALS HAVE NOT BEEN APPROVED.

BARNSTABLE BEARSE'S WAY

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ-0035(018)X	38	63
	PROJECT FILE NO. 6	09067	

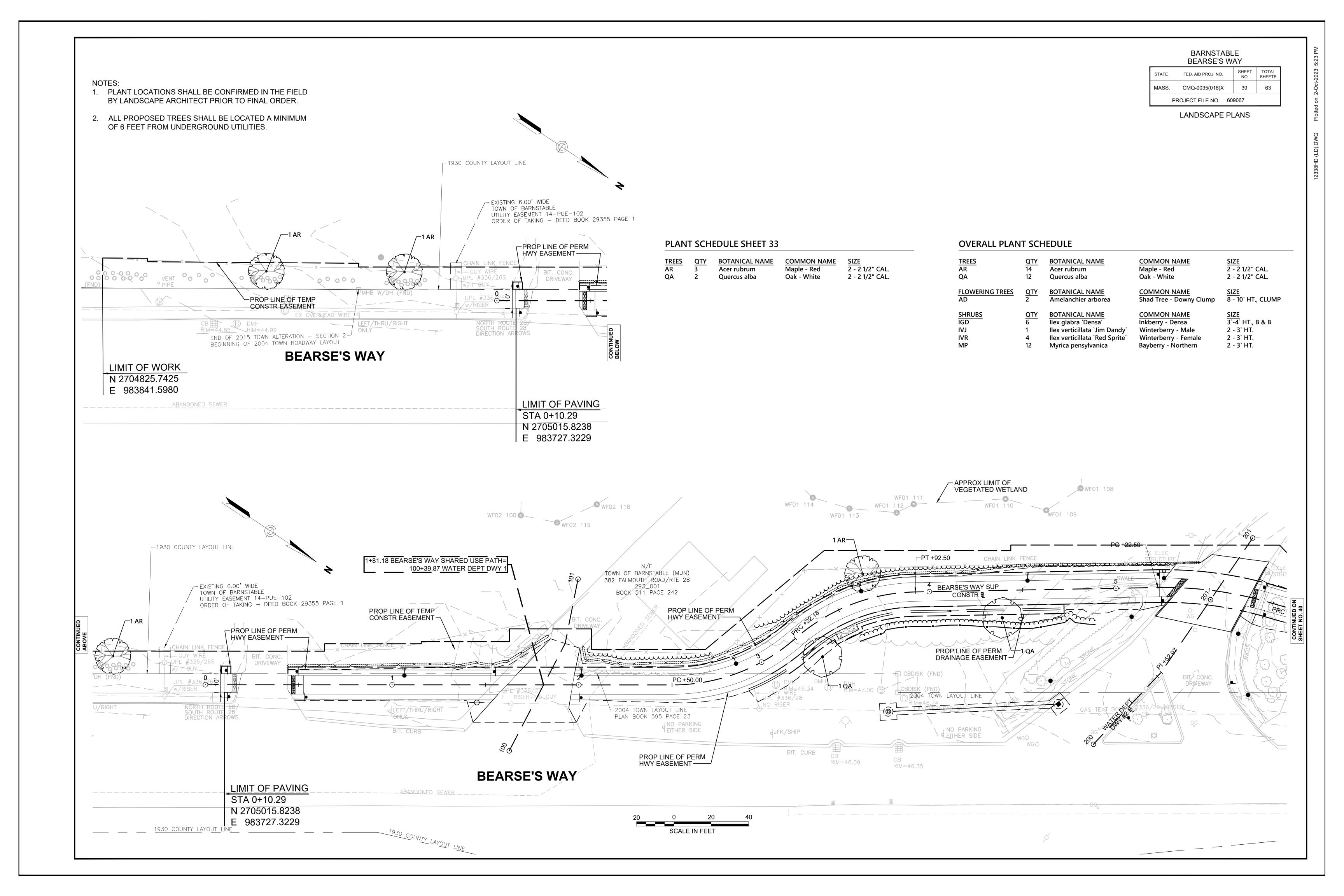
UTILITY NOTES

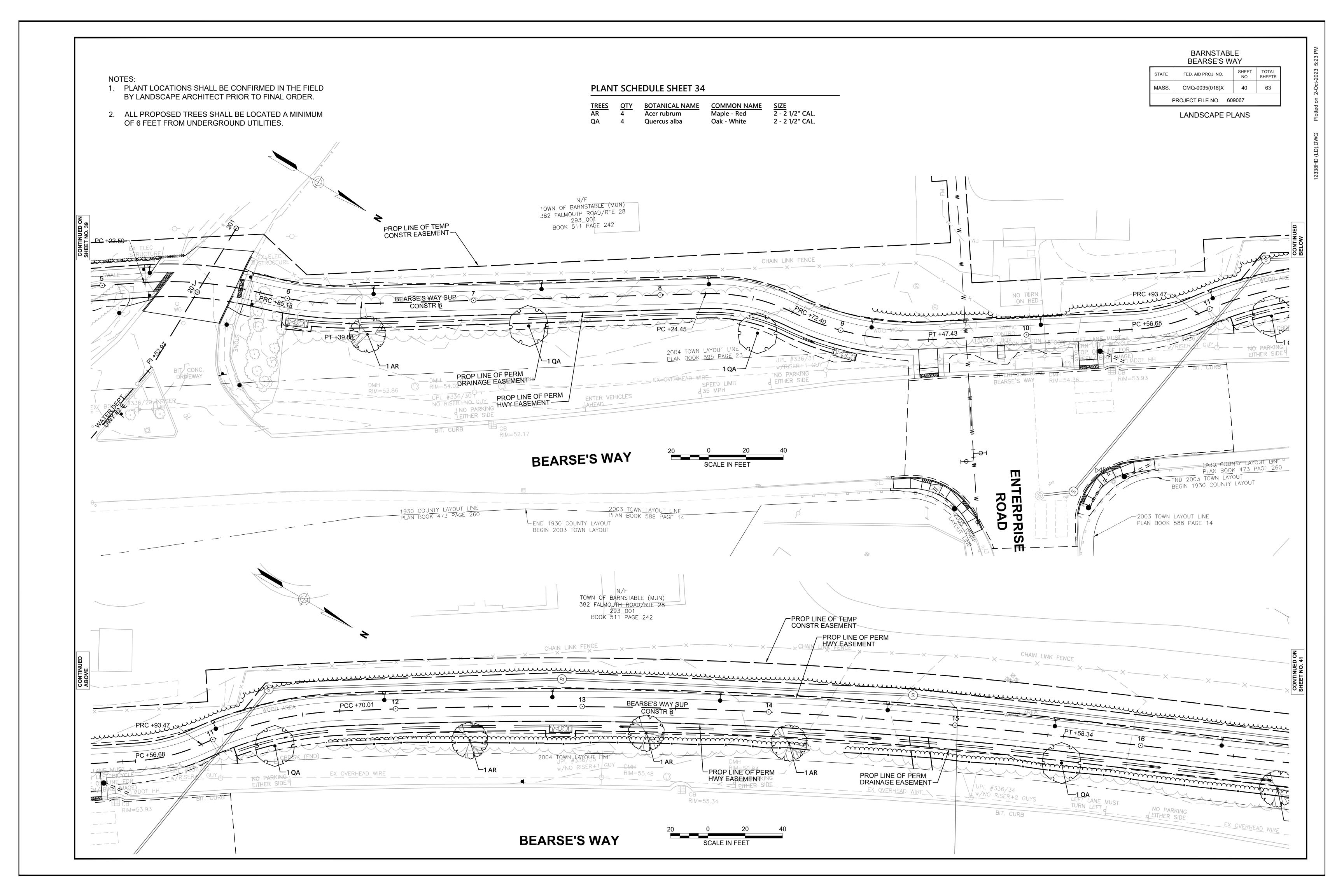
WATER MAIN NOTES:

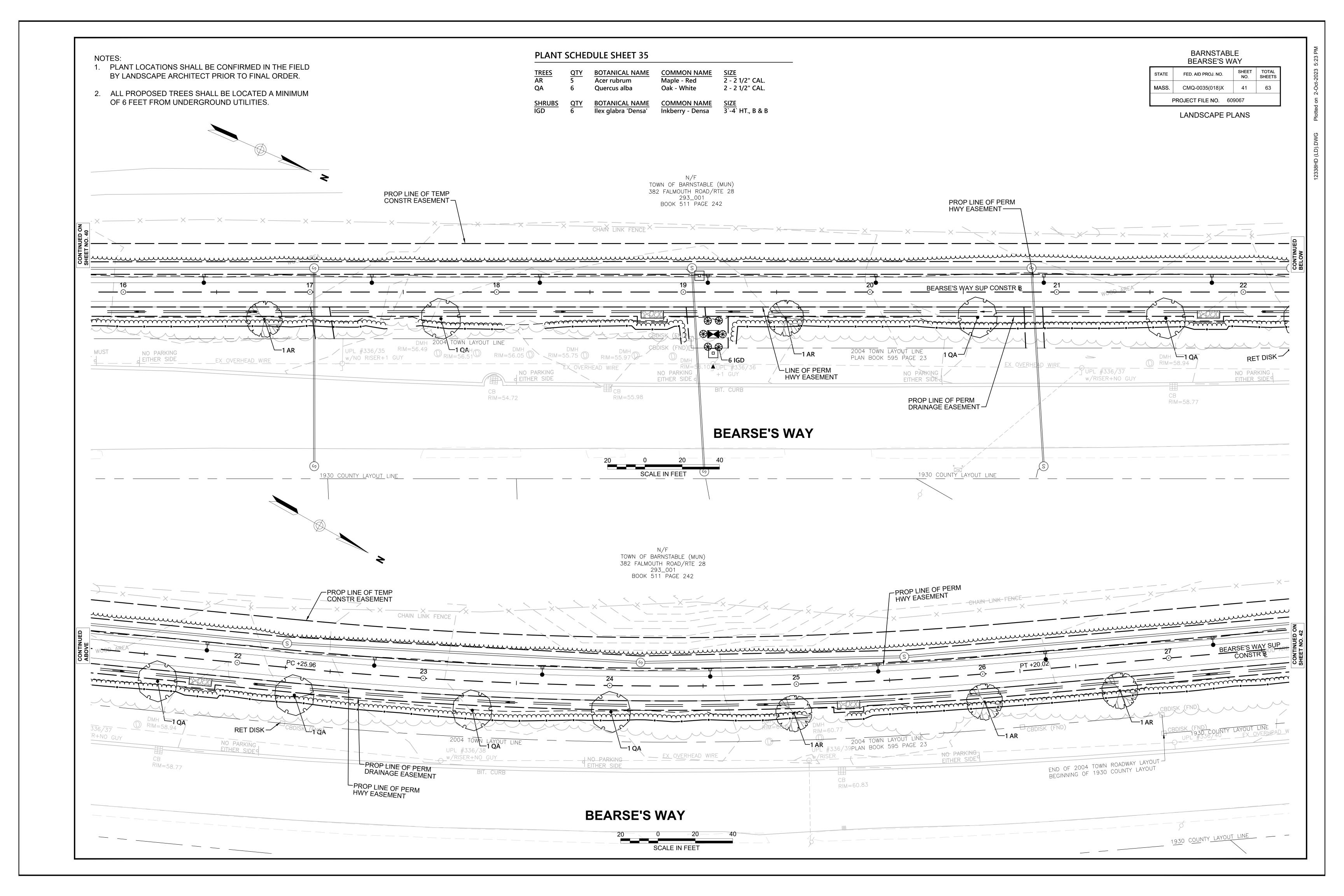
- THE CONTRACTOR SHALL MAKE EVERY EFFORT NOT TO DISTURB THE EXISTING WATER SYSTEM. NO ADDITIONAL PAYMENT SHALL BE MADE FOR DAMAGE CREATED FOR THE CONVENIENCE OF THE CONTRACTOR.
- 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEARING & GRUBBING TREES WHERE THEY CONFLICT WITH THE PROPOSED WATER MAIN INSTALLATION.
- 3. UNLESS OTHERWISE NOTED OR APPROVED BY THE ENGINEER, THE NEW WATER MAIN SHALL PASS UNDER EXISTING UTILITIES.
- 4. ALL WATER MAINS ARE TO BE LAID WITH A MINIMUM OF 5' -0" COVER.
- 5. ALL BENDS, TEE, CAPS AND HYDRANTS SHALL BE BACKED WITH CONCRETE THRUST BLOCKS AS INDICATED ON THE CONTRACT DRAWINGS. ALL BENDS, TEES, CAPS, VALVES AND MISCELLANEOUS FITTINGS SHALL BE RESTRAINED AS SPECIFIED.
- 6. CONTRACTOR SHALL USE A WATER TIGHT PLUG DURING THE WATER MAIN INSTALLATION. PLUG SHALL REMAIN IN PLACE AT ALL TIMES.
- 7. THE CONTRACTOR SHALL NOT CONNECT TO THE EXISTING WATER MAIN UNTIL THE NEW WATER MAIN HAS BEEN PRESSURE TESTED CHLORINATED AND APPROVED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- 8. THE CONTRACTOR SHALL PROVIDE ADDITIONAL TAPS IF REQUIRED FOR CHLORINATING AND HYDROSTATIC TESTING AT HIS EXPENSE. TAPS SHALL BE REMOVED AND THE WATER MAIN PLUGGED AFTER TESTING IS COMPLETE. CONTRACTOR SHALL FIELD MEASURE LOCATIONS OF PLUGS AND PROVIDE INFORMATION ON RECORD DRAWINGS.
- 9. ANY REQUIRED WATER SHUTOFF PERIODS SHALL BE COORDINATED AND APPROVED BY THE TOWN PRIOR TO ANY WATER WORK BEING PERFORMED.

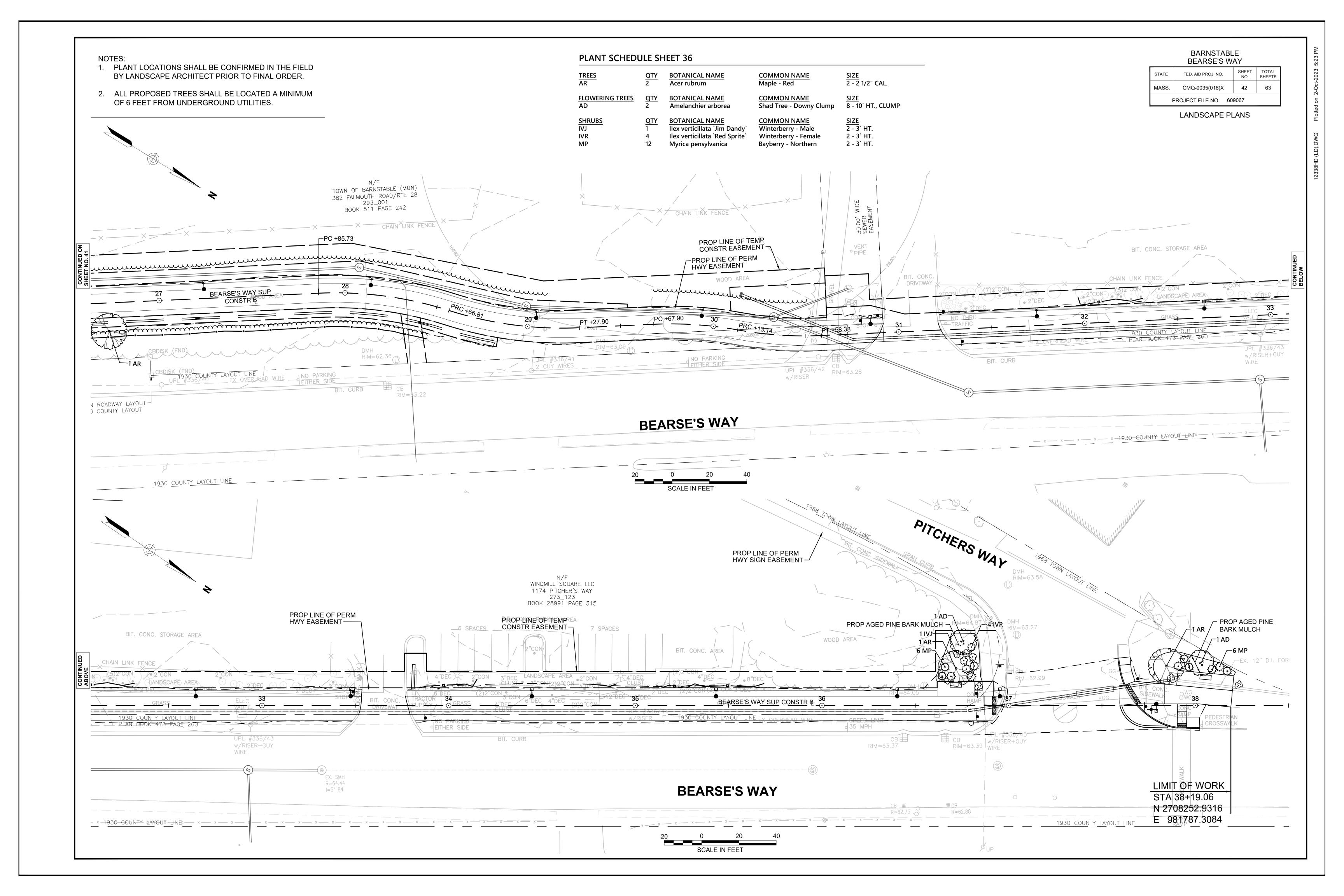
GENERAL NOTES:

- 1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE TOWN OF BARNSTABLE. ALL EXCAVATION AND RESTORATION SHALL MEET TOWN SPECIFICATIONS.
- 2. THE ENGINEER MAY DIRECT THE CONTRACTOR TO VARY THE PROPOSED WORK DURING CONSTRUCTION TO MEET EXISTING CONDITIONS.
- 3. STOCKPILES SHALL BE LOCATED AS NEEDED, WITHIN THE LIMIT OF WORK, IN AREAS OF MINIMAL IMPACT.
- 4. IF SEASON OR ADVERSE WEATHER CONDITIONS DO NOT ALLOW THE ESTABLISHMENT OF VEGETATION, TEMPORARY MULCHING WITH HAY, TACKFIELD WOOD CHIPS OR OTHER METHODS SHALL BE PROVIDED.
- 5. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES AND SHALL PROVIDE ALL NECESSARY CONTINUOUS BARRIERS OF SUFFICIENT TYPE, SIZE AND STRENGTH TO PREVENT ACCESS TO ALL OPEN EXCAVATIONS AT THE COMPLETION OF EACH WORK DAY.
- 6. THE CONTRACTOR AT HIS EXPENSE SHALL BRACE UTILITY POLES IF REQUIRED, AND REPAIR ANY DAMAGE TO EXISTING SIDEWALKS, CURBS, PAVING, SHRUBS, TREES, STONE WALLS, LAWNS, ETC. ALL EXCAVATED MATERIALS SHALL BE RETURNED TO EQUAL OR BETTER THAN PRIOR CONDITION BY THE CONTRACTOR.
- 7. ALL EXISTING CONCRETE AND ASPHALT PAVEMENT SHALL BE SAW-CUT PRIOR TO EXCAVATION IN ORDER TO PROVIDE UNIFORM ASPHALT REPLACEMENT.
- 8. CORINGS THROUGH WALL THICKNESSES 12-INCHES AND GREATER SHALL RECEIVE A DOUBLE MECHANICAL LINK SEAL.
- 9. CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING MAINTAINING AND RESTORING STAGING AREAS AT THEIR OWN EXPENSE.









GENERAL NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE MASSACHUSETTS STATE ELECTRICAL CODE 12.00 CMR, DOWNTOWN HYANNIS DESIGN & INFRASTRUCTURE, CAPE COD COMISSION AND LOCAL CODES. PAY FOR AND OBTAIN ALL PERMITS.

2. LIGHT FIXTURE MOUNTING HEIGHTS ARE FROM ROADWAY SURFACE TO CENTERLINE OF OPTICAL SOURCE, ±6". THE CONTRACTOR SHALL SELECT POST LENGTH TO ACHIEVE INDICATED MOUNTING

3. ALL MATERIAL SHALL BE NEW. ALL LIGHTING WORK SHALL CONFORM WITH SECTION 800 OF THE STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES. MASSACHUSETTS HIGHWAY DEPARTMENT. EXCEPT WHERE OTHERWISE INDICATED IN PLANS OR SPECIFICATIONS.

4. LIGHT POLE FOUNDATIONS SHALL CONFORM TO THE RELEVANT PROVISIONS OF SECTION 800 OF THE MASS HIGHWAY STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES EXCEPT AS INDICATED. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO CONSTRUCTION.

5. HANDHOLES SHALL BE SIZE 24"W X 13"L X36"D (NOMINAL) AND BE PRECAST CONCRETE WITH COMPOSITE, BOLT DOWN COVER. COVER SHALL READ "STREET LIGHTING". CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO CONSTRUCTION. LOCATE LONG DIMENSION PARALLEL TO SHARED USE PATH.

6. UNDERGROUND RACEWAY INSTALLATION SHALL CONFORM TO SECTION 800. ROADWAY CROSSING SHALL BE CONCRETE ENCASED PVC BURIED 36" BELOW TOP OF ROADWAY AND TERMINATE IN A HANDHOLE ON EACH SIDE OF CROSSING. ALL OTHER RACEWAYS SHALL BE BURIED A MINIMUM OF 30" BELOW TOP OF SIDEWALK.

7. LIGHT POLES 1-41 SHALL BE ANCHOR TYPE WITHOUT BREAKAWAY COUPLINGS. LIGHT POLE 42 SHALL BE ANCHOR TYPE WITH BREAKAWAY COUPLINGS.

8. ALL SPARE OR EMPTY RACEWAYS SHALL BE FURNISHED WITH A PULL ROPE.

9. LIGHT POLE BRACKET ARM AND BANNER ARM SHALL BE ORIENTED 90 DEGREES TO THE BASELINE OF ROADWAY, OR THE FACE OF THE CURB ON CURVED INTERSECTION. THE CONTRACTOR SHALL COORDINATE POLE BASE PLATE,

ANCHOR BOLT PATTERN. CONDUIT ENTRY, AND FOUNDATION PLACEMENT TO OBTAIN THE REQUIRED ORIENTATION. SUBMIT ORIENTATION SKETCHES FOR ALL POLES FOR APPROVAL.

10. SHOP DRAWINGS SHALL BE SUBMITTED FOR APPROVAL FOR ALL ELECTRICAL AND LIGHTING MATERIALS, EQUIPMENT, COMPONENTS AND TEST RESULTS AND SHALL INCLUDE MANUFACTURER'S PRODUCT CATALOG DATA.

11. FINAL POSITION OF LIGHT POLES OR HANDHOLES SHALL NOT BE LOCATED WITHIN THE TREE PLANTING AREAS. HANDHOLES SHALL NOT BE PLACED IN ROADWAYS, SIDEWALK ACCESSIBILITY RAMPS OR DRIVEWAYS.

12. WHERE REQUIRED TO AVOID EXISTING UTILITIES, THE CONTRACTOR SHALL BE PERMITTED IN THE FIELD TO ADJUST THE LOCATION OF LIGHT POLES UP TO 1'- 6" IN ANY DIRECTION THAT DOES NOT REDUCE THE OFFSET DISTANCE FROM THE FRONT FACE OF THE PROPOSED LIGHT POLE TO THE BACK EDGE OF THE SUP TO A DISTANCE LESS THAN 2 FEET PER SECTION 5.2.1 OF THE 2012 AASHTO GUIDE FOR THE DEVELOPMENT OF BICYCLE FACILITIES. ADJUSTMENTS BEYOND THESE LIMITS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

13. WHERE REQUIRED TO AVOID EXISTING UTILITIES, THE CONTRACTOR SHALL BE PERMITTED IN THE FIELD TO ADJUST THE LOCATION OF HANDHOLES UP TO 5'- 0" FROM THAT INDICATED, EXCEPT NO CLOSER TO THE EDGE OF SIDEWALK OR OUTSIDE RIGHT OF WAY OR EASEMENT.ADJUSTMENTS BEYOND THESE LIMITS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

14. WHERE CONDUIT INSTALLATION, ADJUSTED FOR EXISTING UTILITIES CANNOT BE SO INSTALLED TO MAINTAIN A MAXIMUM OF 270 DEGREES OF BENDS BETWEEN PULL POINTS (HANDHOLES OR POLE BASES), THE CONTRACTOR SHALL INSTALL AN INTERMEDIATE HANDHOLE.

15. LIGHTING CONTROL SHALL BE VIA A PHOTOCELL MOUNTED ON EACH LIGHT POLE, CONTROLLED DUSK TO DAWN.

16. SPLICES IN HANDHOLES SHALL BE AVOIDED AND ARE PERMITTED ONLY WHERE REQUIRED TO MAKE TAPS. THE NEUTRAL CONDUCTOR SHALL NOT BE SHARED BETWEEN CIRCUITS.

17. WHEN INSTALLING A COMPLETE LIGHTING SYSTEM, ALL NEW LIGHTING POSTS, LUMINAIRES, WIRING, AND ASSOCIATED EQUIPMENT MUST BE INSTALLED AND COMPLETELY OPERATIONAL PRIOR TO ANY DEACTIVATION AND REMOVAL OF EXISTING LIGHTING UNITS. UNDER NO CONDITIONS SHALL ANY AFFECTED AREA BE ALLOWED TO BE LEFT UNLIGHTED FOR ANY PERIOD OF TIME. IF THE EXISTING LIGHTING CANNOT REMAIN DURING CONSTRUCTION, THE CONTRACTOR MAY REQUEST IN WRITING TO INSTALL TEMPORARY LIGHTING IN THE AFFECTED AREA AT HIS OWN EXPENSE. THIS REQUEST SHALL INCLUDE LUMINAIRE TYPE, SPACING, WIRING CONFIGURATION, AND POWER SOURCE. IF THIS REQUEST IS APPROVED BY THE ENGINEER, THE CONTRACTOR MUST COMPLETELY INSTALL THE TEMPORARY LIGHTING BEFORE ANY DEACTIVATION OF EXISTING LIGHTS SHALL BE ALLOWED.

18. ORNAMENTAL LIGHT POLE - BRACKET ARM SHALL BE MANUFACTURER (OR APPROVED EQUAL):

- LUMEC "TRADITIONAL ALUMINUM POLE" MODEL "RA41"
- HADCO "306-POLE"
- BRIGHTSITES "I-SERIES" MODEL SLIM
- LUMEC "BRACKETS" MODEL "YR4"
- HADCO "ARM BRACKET" MODEL "HFP1410" HADCO "ARM BRACKET" MODEL "HFP410"
- 19. ORNAMENTAL BRACKET ARM/POST TOP LANTERN LUMINAIRE LED, TYPE "A" SHALL BE
- MANUFACTURER (OR APPROVED EQUAL): LUMEN "RENAISSANCE" LED LUMINAIRE "RNS20-24W16LED3K-T-LE2"
- HADCO "SWAN" LED LUMINAIRE "CXF4C-140-G1-1-730-11"
- HADCO "MEMPHIS TEARDROP" LED LUMINAIRE "MSPL2 P10 30K MVOLT SG4 QSM BK SS"

AVERAGE INITIAL INTENSITY

MAX. ILLUMINCATION

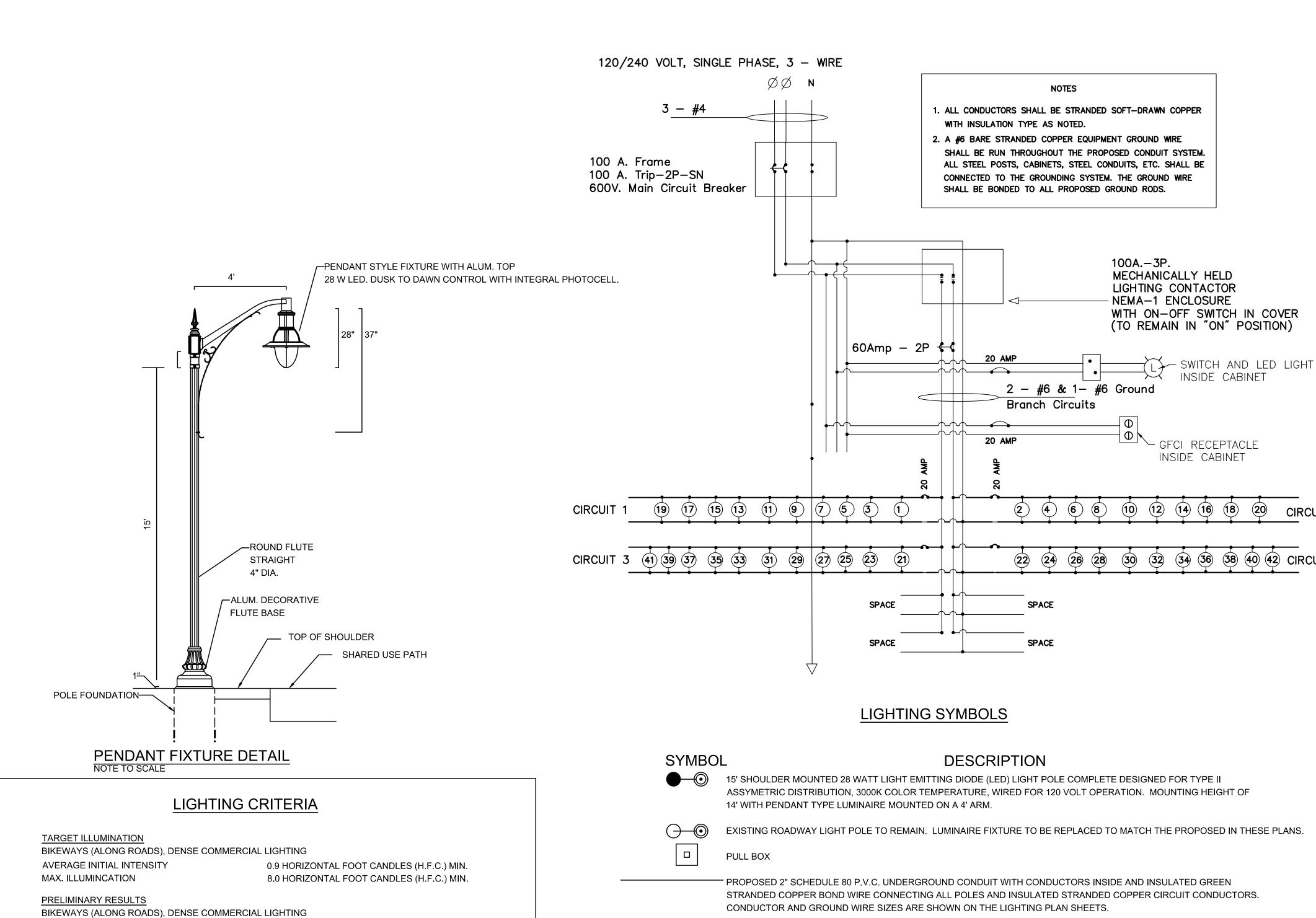
<u>LUMINAIRE USED</u>

1.19 HORIZONTAL FOOT CANDLES (H.F.C.) MIN.

3.5 HORIZONTAL FOOT CANDLES (H.F.C.) MIN.

28 WATT LED, TYPE II ASYMMETRICAL DISTRIBUTION B1-U2-G1

PHILIPS LUMEC RNS (SMALL)



BARNSTABLE	
BEARSE'S WAY	

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ-0035(018)X	44	63
ļ	PROJECT FILE NO. 60	09067	

LIGHTING DETAILS

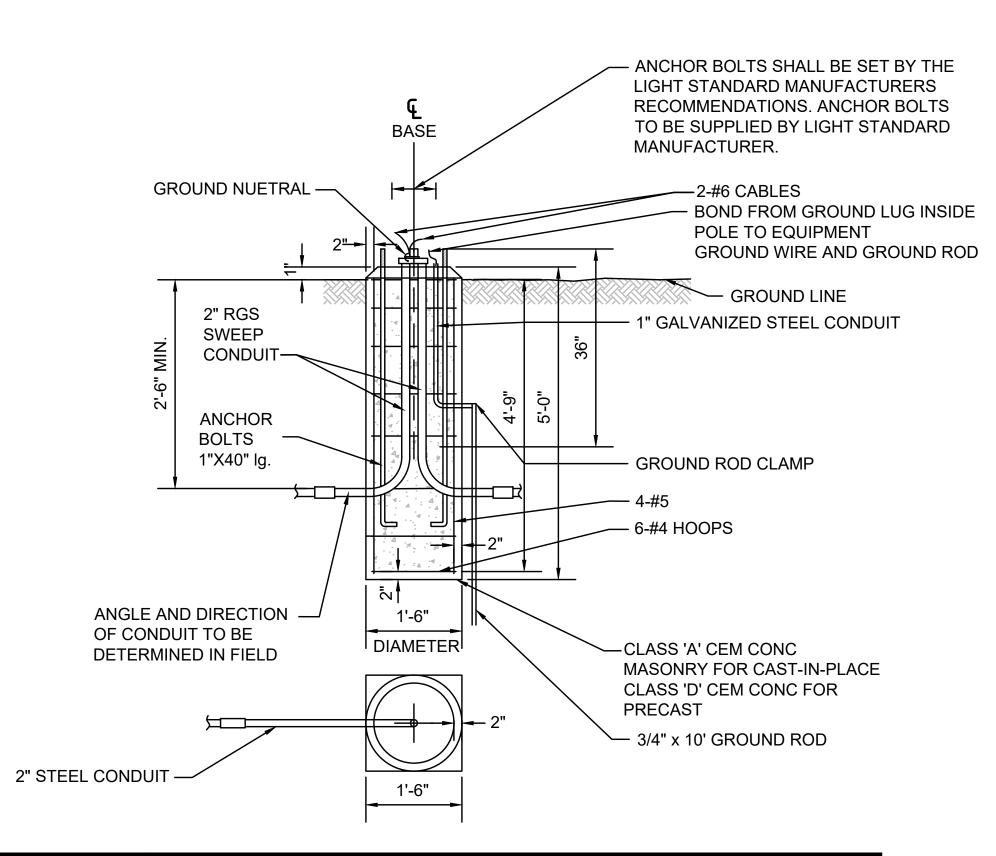
MOUNTING BOLT

BREAKAWAY COUPLING

AS REQUIRED (SUPPLIED BY THE MANUFACTURER)

CONNECT NEW LUMINAIRE TO

─ 3/4" x 10' COPPER **GROUND ROD**



LIGHT STANDARD FOUNDATION (ANCHOR BASE), PRECAST SCALE: NTS

CIRCUITS DESIGNATED COUPLING — - #6 COPPER GROUND CONDUCTOR 2" PVC —— 2" RGS — GROUND ROD & BONDER GROUND CONDUCTOR TO THE POLE 3/4" RGS CONDUIT FOR GROUND —— NOTES:

1. THREE LEVELING BOLTS TO BE PROVIDED, AS

ROADWAY LIGHTING POLE BREAKAWAY BASE

2. ALL HARDWARE TO BE STAINLESS STEEL.

REQUIRED BY MANUFACTURER. CONTRACTOR IS

RESPONSIBLE FOR COORDINATING PROPER FIXTURE

SCALE: N.T.S.

ORIENTATION.

GROUND LUG

ALUM. DECORATIVE

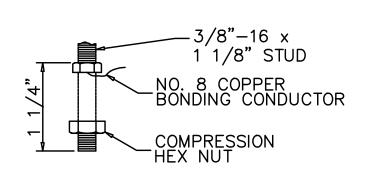
CONCRETE

FOUNDATION —

BONDED TO POLE —

FLUTE BASE —

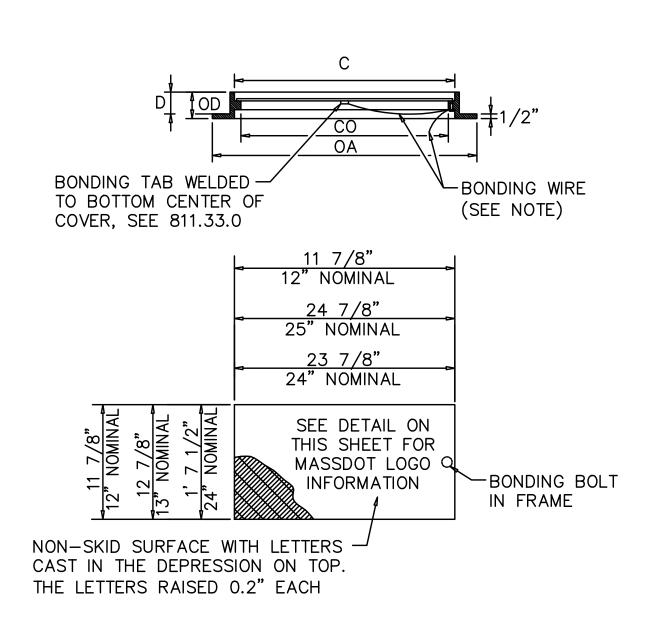
MA



NOTES:

- 1. BONDING POST CONNECTOR SHALL BE LONG STUD TYPE WHICH WILL ACCOMMODATE A DOUBLE CONDUCTOR INSTALLATION.
- 2. ATTACH 3 FOOT LENGTH OF NO.8 COPPER BONDING CONDUCTOR FROM BONDING POST CONNECTOR INSTALLED ON COVER TO BONDING POST CONNECTOR INSTALLED ON FRAME.
- 3. ATTACH FREE END OF BONDING CONDUCTOR ROUTED THROUGH CONDUIT SYSTEM TO BONDING POST CONNECTOR INSTALLED ON THE FRAME.
- 4. LUG SHALL BE EITHER COPPER OR BRASS.

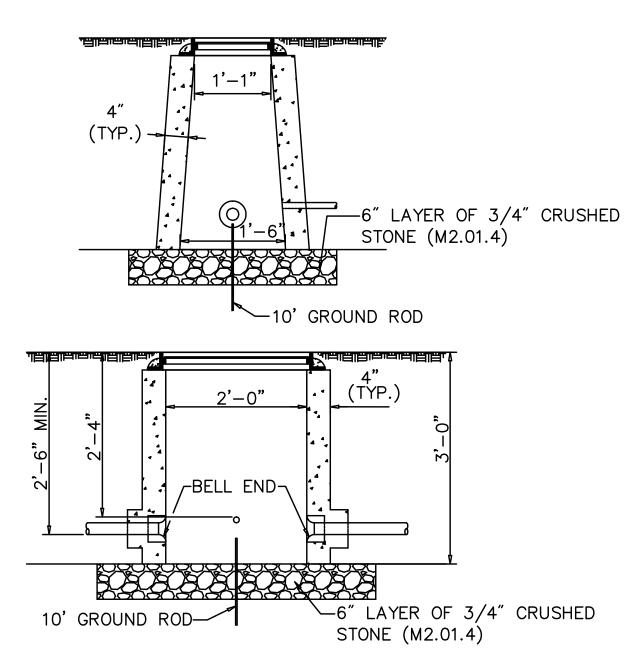
BONDING LUG N.T.S.



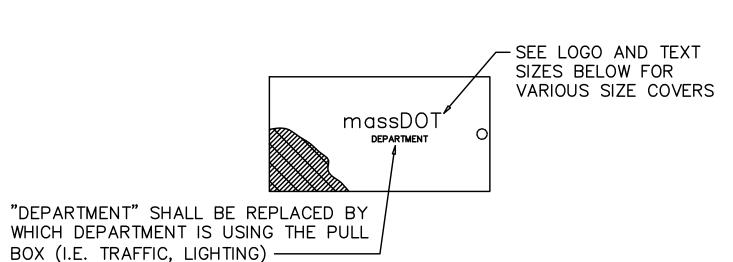
NOTE:
ATTACH 3 FEET OF NO. 8 BONDING WIRE FROM COVER TAB
TO BONDING BOLT ON FRAME. ATTACH SUFFICIENT LENGTH OF
NO. 8 BONDING WIRE FROM BONDING BOLT ON FRAME TO THE
BONDING WIRE ROUTED THROUGH THE PULL BOX.

SIZE OF COVER	COVER DEPTH	OVERALL DEPTH	CLEAR OPENING	OVERALL	APPROX. WEIGHT	STANDARD DRAWING
С	D	OD	CO	OA	W	
12" x 12"	1″	3½"	10 1/2" x 10 1/2"	17¼" × 17¼"	82 LB.	811.31.0
13" x 25"	4 1/"	3″	12" x 24"	00" 003/"	120 LB.	811.22.0
13 X Z3	1½"	5	12 X 24	20"x 29¾"	120 LB.	811.32.0
24" x 24"	1″	3″	22" x 22"	28½" × 28½"	190 LB.	811.23.0

PULL BOX FRAME AND COVER FOR NON ROADWAY
N.T.S.



24"x13"x36" ELECTRIC HANDHOLE N.T.S.

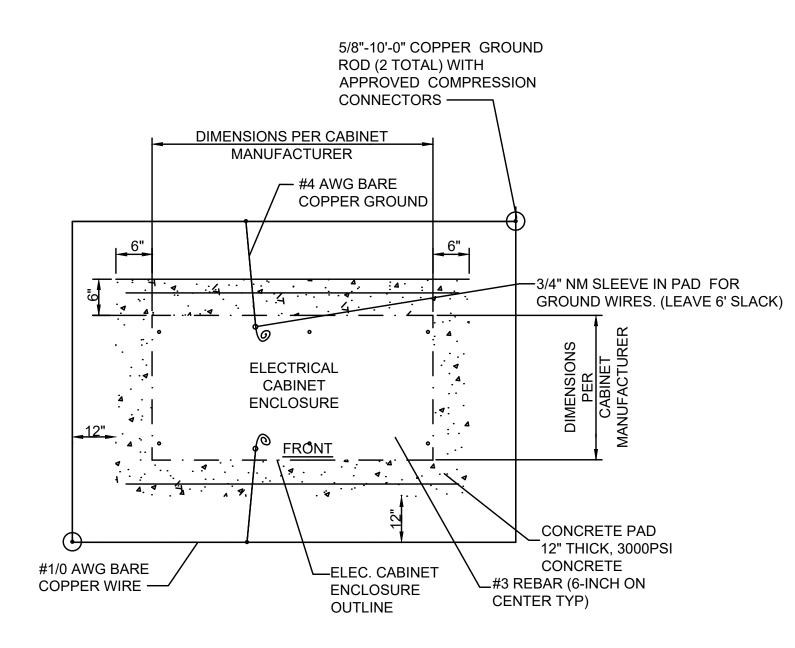


NOTE:

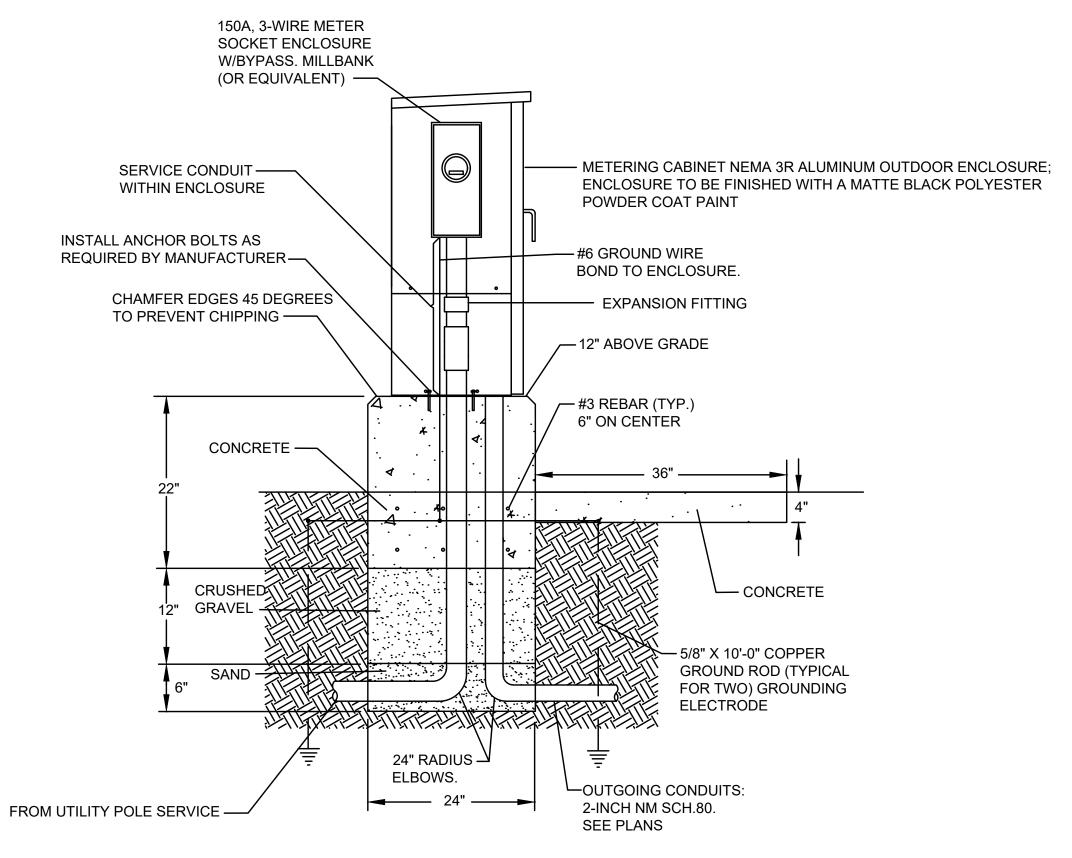
- LOGO AND TEXT SHALL BE CENTERED WITHIN THE COVER.
 LOGO AND TEXT SHALL BE RAISED 0.2 INCHES FROM THE COVER SURFACE.
- 3. LOGO AND TEXT SHALL BE ITALICIZED AND SHALL UTILIZE THE "ERAS DEMI" STYLE FONT.

SIZE OF COVER	MASSDOT LOGO	DEPARTMENT TEXT SIZE	STANDARD DRAWING
12" x 12"	9" WIDE x 1.3" HIGH	TRAFFIC: 3" WIDE x 0.5" HIGH LIGHTING: 3.5" WIDE x 0.5" HIGH	811.31.1
12" x 8"	6" WIDE x 0.85" HIGH	TRAFFIC: 2" WIDE x 0.35" HIGH LIGHTING: 2.25" WIDE x 0.35" HIGH	811.31.2 811.32.1
13" x 24"	13.25" WIDE x 2" HIGH	TRAFFIC: 3" WIDE x 0.5" HIGH LIGHTING: 3.5" WIDE x 0.5" HIGH	811.32.2
CIRCULAR (24", 26" OR 27.5" DIAMETER)	13.25" WIDE x 2" HIGH	TRAFFIC: 3" WIDE x 0.5" HIGH LIGHTING: 3.5" WIDE x 0.5" HIGH	

MASSDOT LOGO FOR HANDHOLE COVERS
N.T.S.

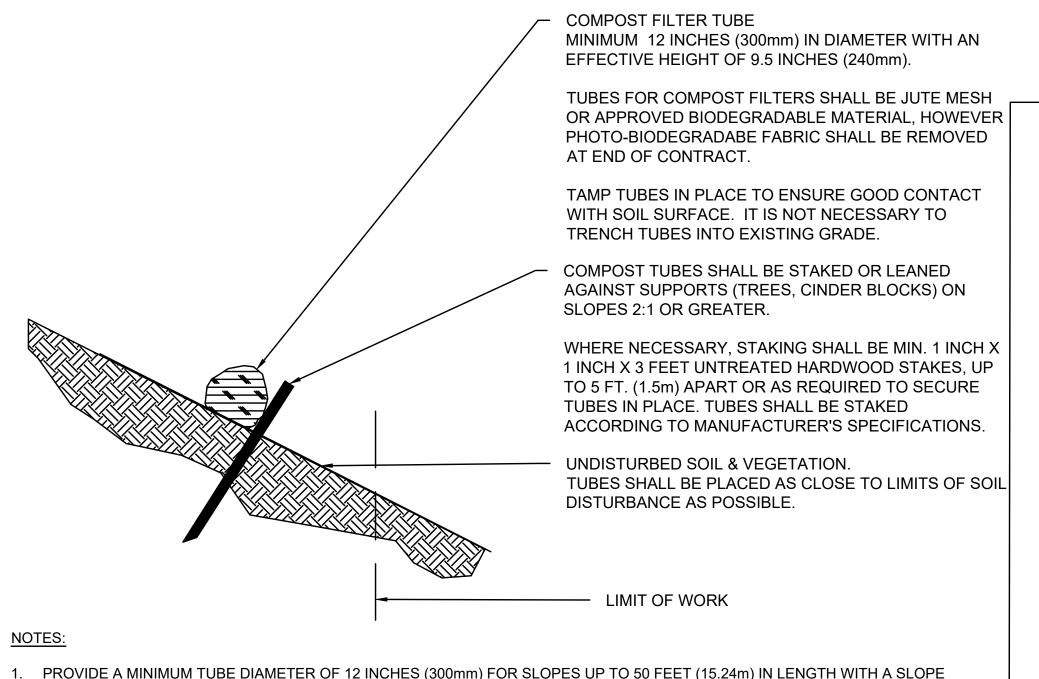


STREET LIGHTING CONTROLLER DETAIL
N.T.S.



STREET LIGHTING CONTROLLER INSTALLATION DETAIL
N.T.S.

SHEET TOTAL NO. SHEETS FED. AID PROJ. NO. CMQ-0035(018)X PROJECT FILE NO.



TUBES MAY BE PLACED ON THE

UPHILL SIDE OF

STATIONARY

TUBES MAY BE SLEEVED (ONE INSERTED INTO

ANOTHER) OR PROVIDE A 3 FT. (914mm) MINIMUM OVERLAP AT ENDS OF TUBES TO JOIN IN A

CONTINUOUS BARRIER.

UNTREATED HARDWOOD

STAKED (TYP)

STREAM

<u>PLAN</u>

EXISTING HEADWALL

OR OTHER OBSTACLE

3.0 FT. (914mm) MIN

WELL- ANCHORED,

FEATURES SUCH AS

EXISTING TREES IN

LIEU OF STAKING.

TUBES CAN BE

ON EXISTING

NECESSARY.

CURVE ENDS

DIVERSION OF

UNFILTERED RUN-OFF.

UPHILL TO

PREVENT

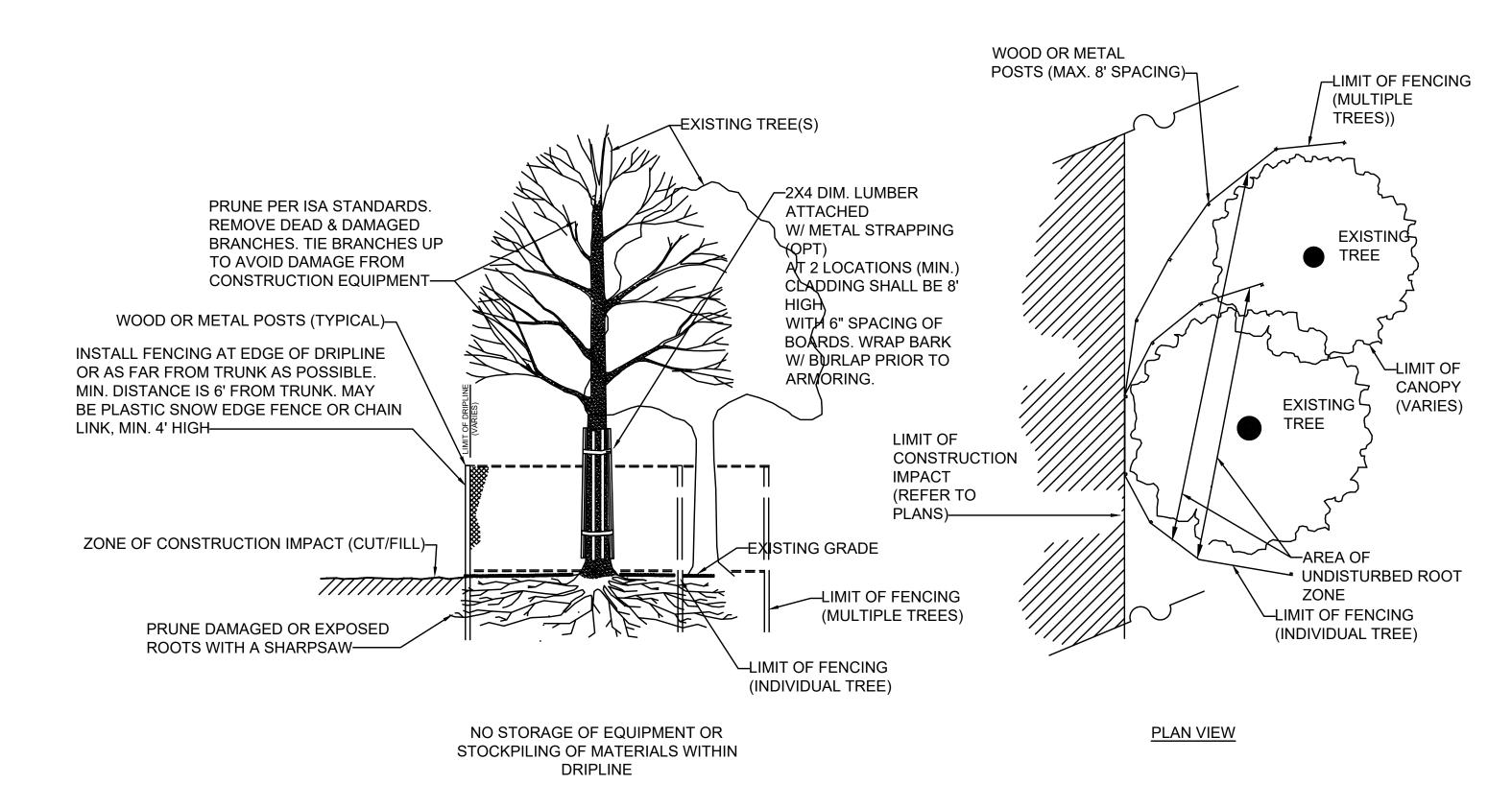
PLACED DIRECTLY

PAVEMENT WHEN

- 1. PROVIDE A MINIMUM TUBE DIAMETER OF 12 INCHES (300mm) FOR SLOPES UP TO 50 FEET (15.24m) IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPES OF 3H:1V MAY REQUIRE LARGER TUBE DIAMETER OR ADDITIONAL COURSING OF FILTER TUBES TO CREATE A FILTER BERM. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR SITUATIONS WITH LONGER OR STEEPER SLOPES.
- 2. INSTALL TUBES ALONG CONTOURS AND PERPENDICULAR TO SHEET OR CONCENTRATED FLOW.
- 3. TUBE LOCATION MAY BE SHIFTED TO ADJUST TO LANDSCAPE FEATURES, BUT SHALL PROTECT UNDISTURBED AREA AND VEGETATION TO MAXIMUM EXTENT POSSIBLE.
- 4. DO NOT INSTALL IN PERENNIAL, EPHEMERAL OR INTERMITTENT STREAMS.
- 5. ADDITIONAL TUBES SHALL BE USED AT THE DIRECTION OF THE ENGINEER.
- 6. ADDITIONAL STAKING SHALL BE USED AT THE DIRECTION OF THE ENGINEER.

SEDIMENT CONTROL BARRIER

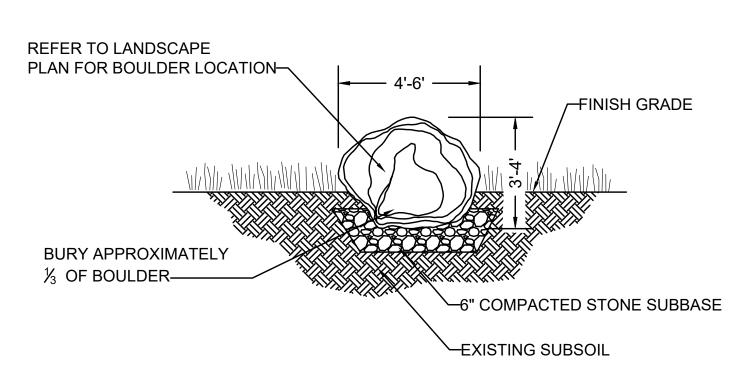
SCALE: N.T.S.



TREE PROTECTION OF EXISTING TREE(S)

TATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ-0035(018)X	47	63
	PROJECT FILE NO. 60	09067	

CONSTRUCTION DETAILS

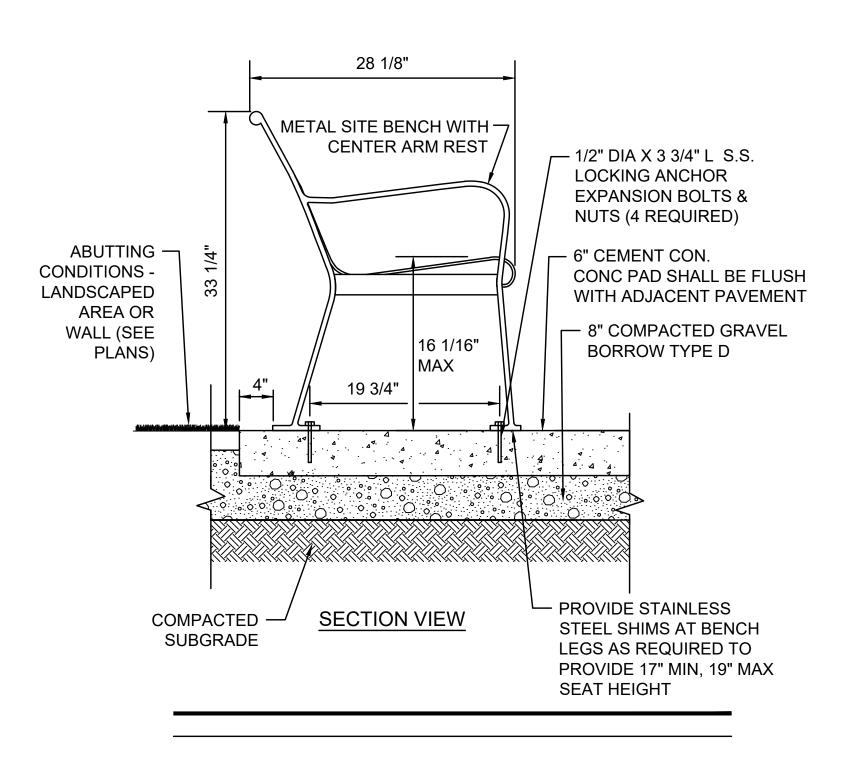


NOTES

- 1. GRANITE BOULDERS TO BE PLACED BY STRAPS OR CABLES WITH CARPET TO PREVENT SCARRING.
- 2. BOULDERS WITH EXCESSIVE SCARRING WILL BE REJECTED.
- 3. BOULDERS SHALL BE GLACIAL ERRATIC STONE.
- 4. BOULDERS TO BE 4-6' WIDE AND 3-4' HEIGHT.

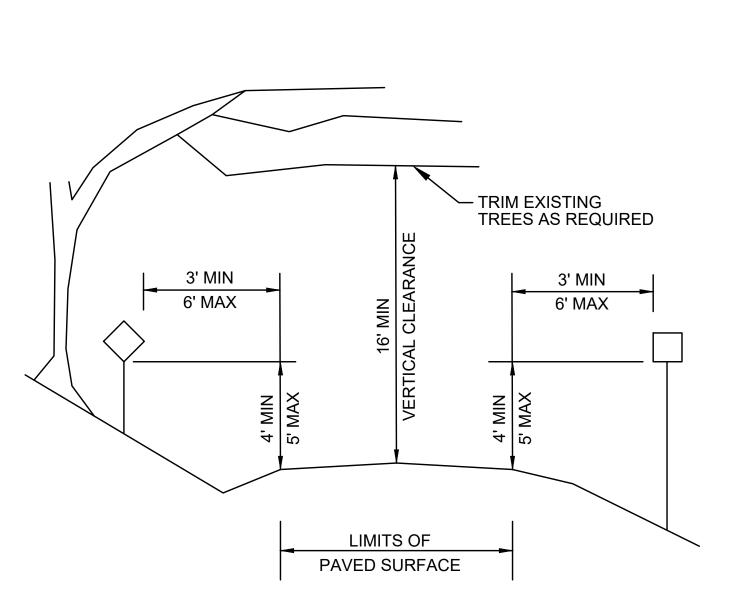
BOULDER INSTALLATION

SCALE: N.T.S.



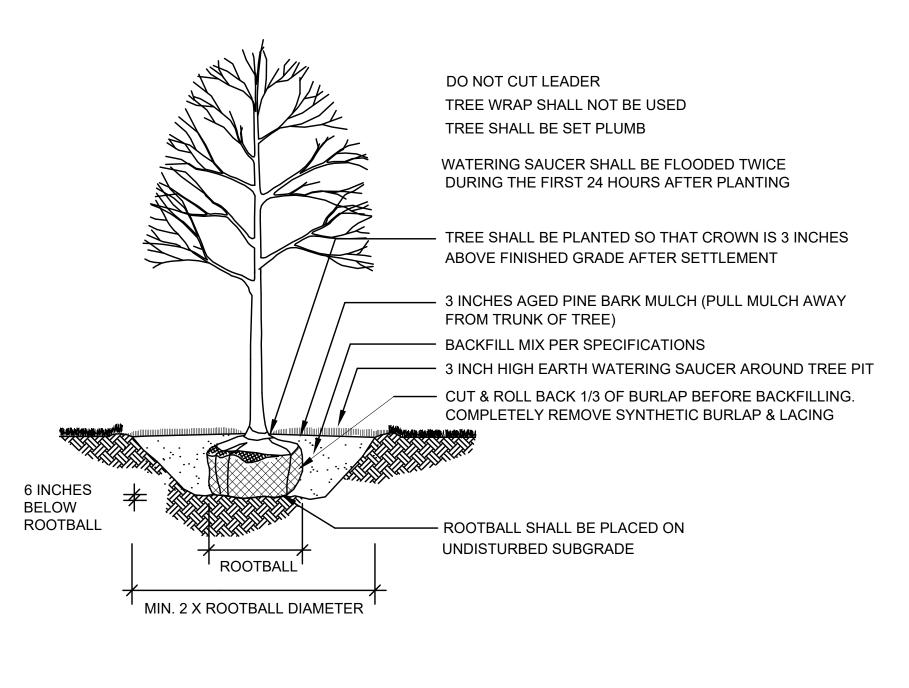
SITE BENCH

SCALE: N.T.S.



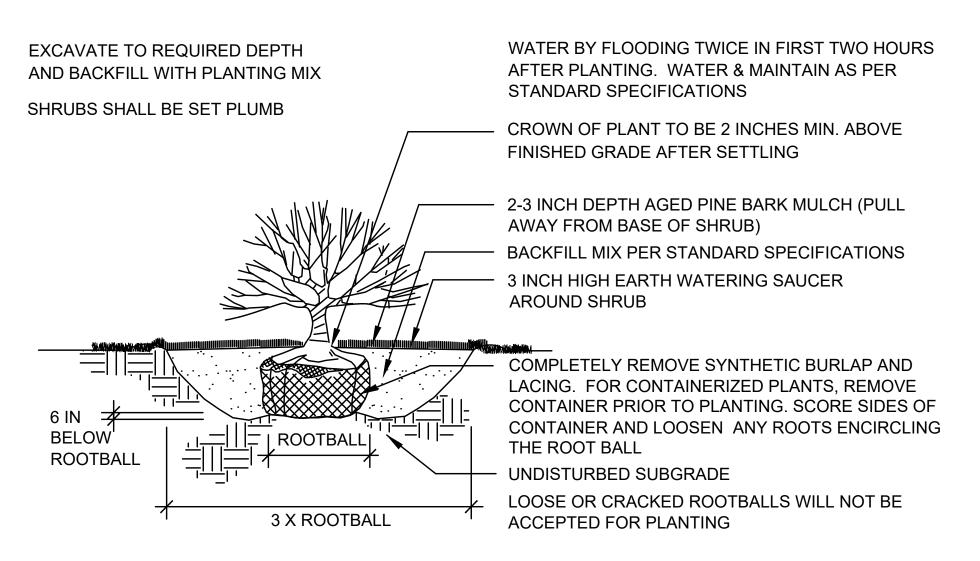
HORIZONTAL AND VERTICAL CLEARANCES

SCALE: N.T.S.



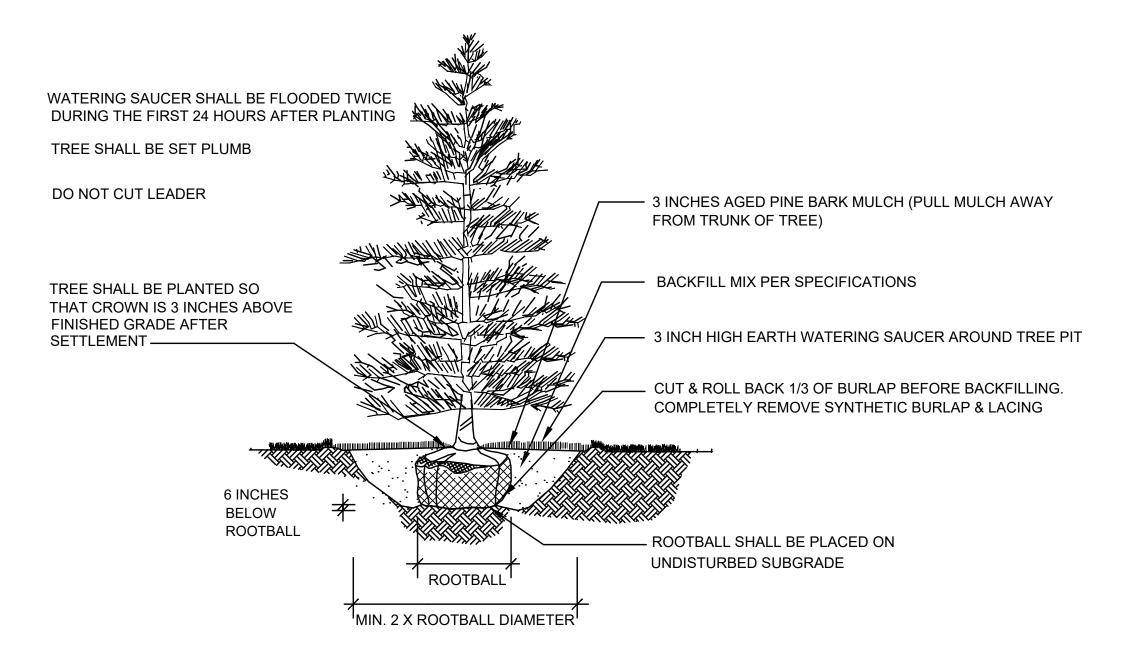
DECIDUOUS TREE PLANTING

NOT TO SCALE



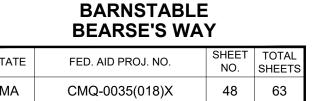
SHRUB PLANTING

FEB 28, 2013 NOT TO SCALE



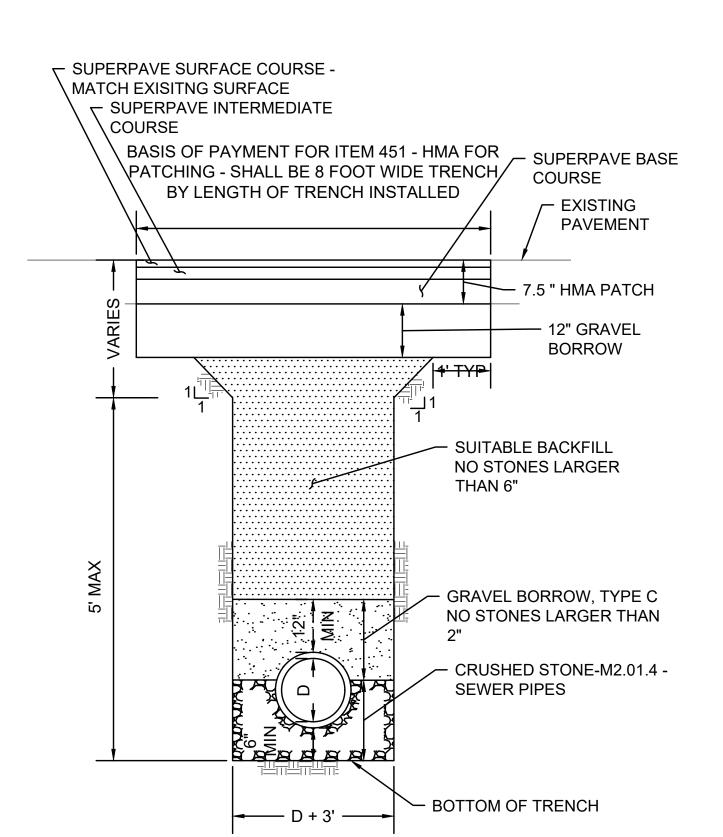
EVERGREEN TREE PLANTING

NOT TO SCALE



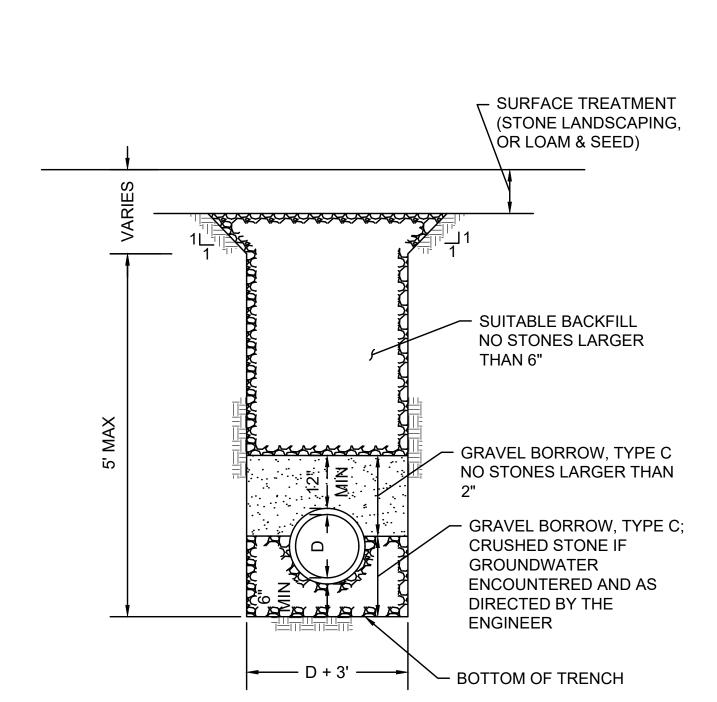
CONSTRUCTION DETAILS

PROJECT FILE NO.



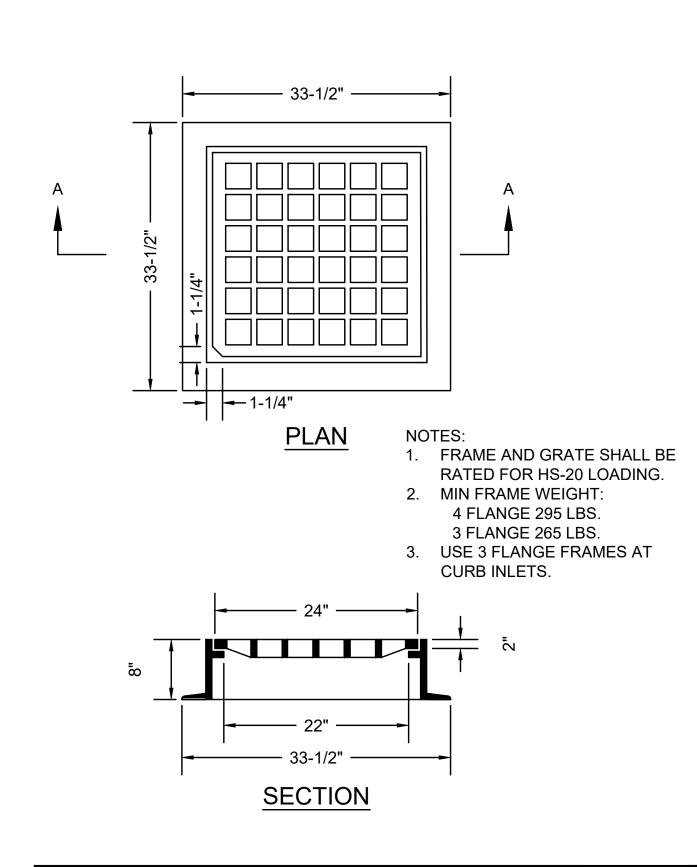
TRENCH DETAIL IN EXISTING PAVEMENT

SCALE: N.T.S.



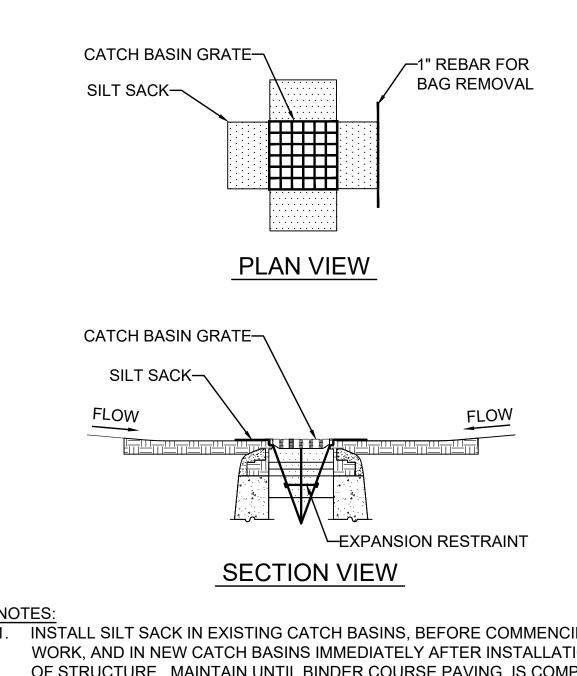
DRAINAGE TRENCH DETAIL

SCALE: N.T.S.



MUNICIPAL STANDARD CATCH BASIN FRAME & GRATE

SCALE: N.T.S.



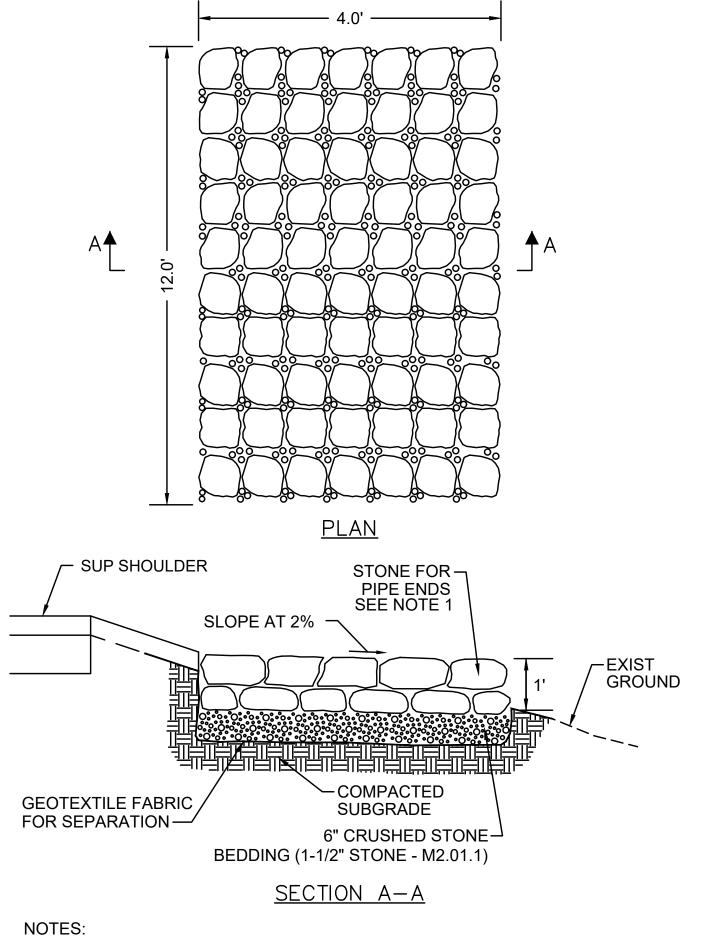
1. INSTALL SILT SACK IN EXISTING CATCH BASINS, BEFORE COMMENCING WORK, AND IN NEW CATCH BASINS IMMEDIATELY AFTER INSTALLATION OF STRUCTURE. MAINTAIN UNTIL BINDER COURSE PAVING IS COMPLETE OR A PERMANENT STAND OF GRASS HAS BEEN ESTABLISHED.

GRATE TO BE PLACED OVER SILT SACK.

3. SILT SACK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS AND CLEANING OR REPLACEMENT SHALL BE PERFORMED

INLET PROTECTION - SILT SACK IN CATCH BASIN

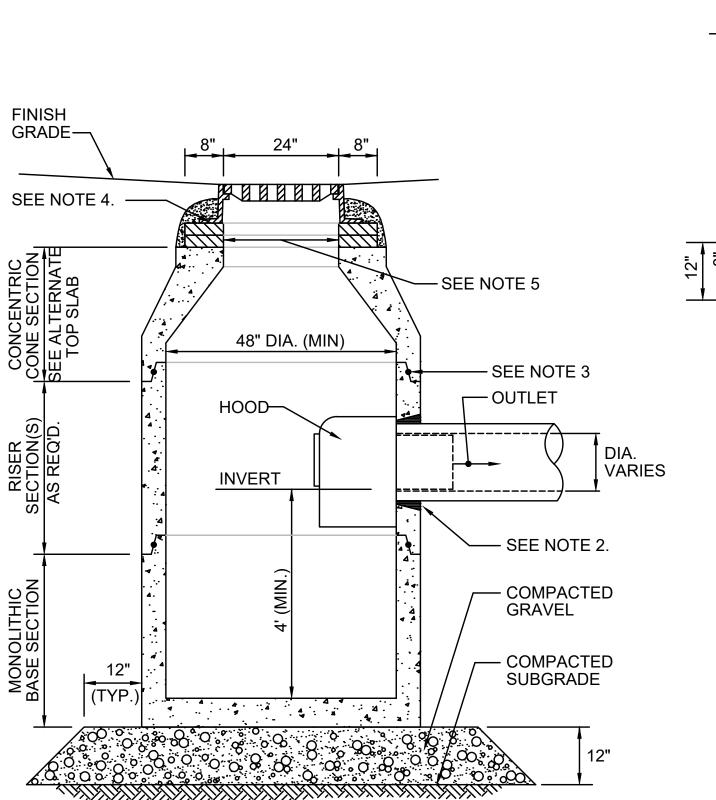
SCALE: N.T.S.

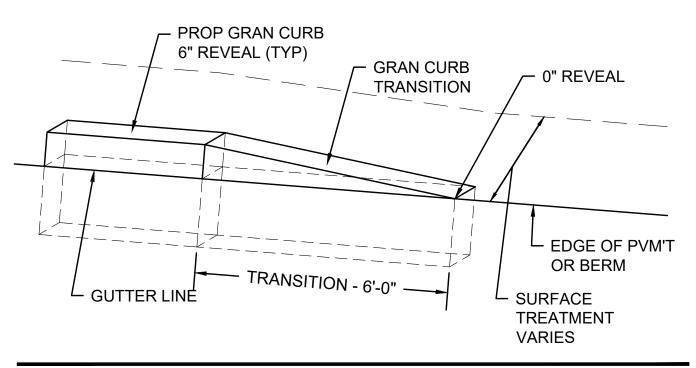


1. STONE SHALL BE ANGULAR, IN ACCORDANCE WITH SECTION M2.02.3.

STONE FOR PIPE ENDS AT DRAINAGE DITCH OUTLET

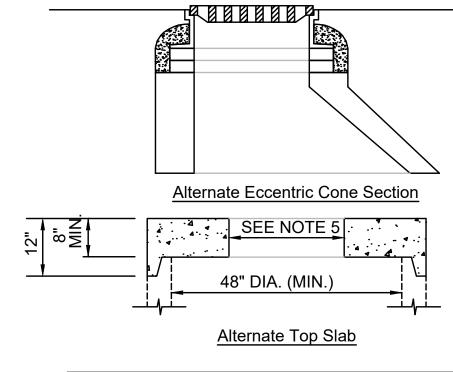
SCALE: N.T.S.





GRANITE CURB TRANSITION PIECE

SCALE: N.T.S.



Notes:

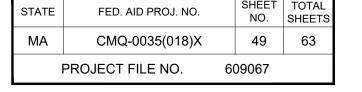
- 1. ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADING.
- 2. PROVIDE "V" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
- 3. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
- 4. CATCH BASIN FRAME AND GRATE SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM).
- 5. OPENING IN TOP SLAB SHALL BE 24"x27" FOR CATCH BASINS WITH CURB INLETS. OPENING SHALL BE 24"x24" AT ALL OTHER LOCATIONS.

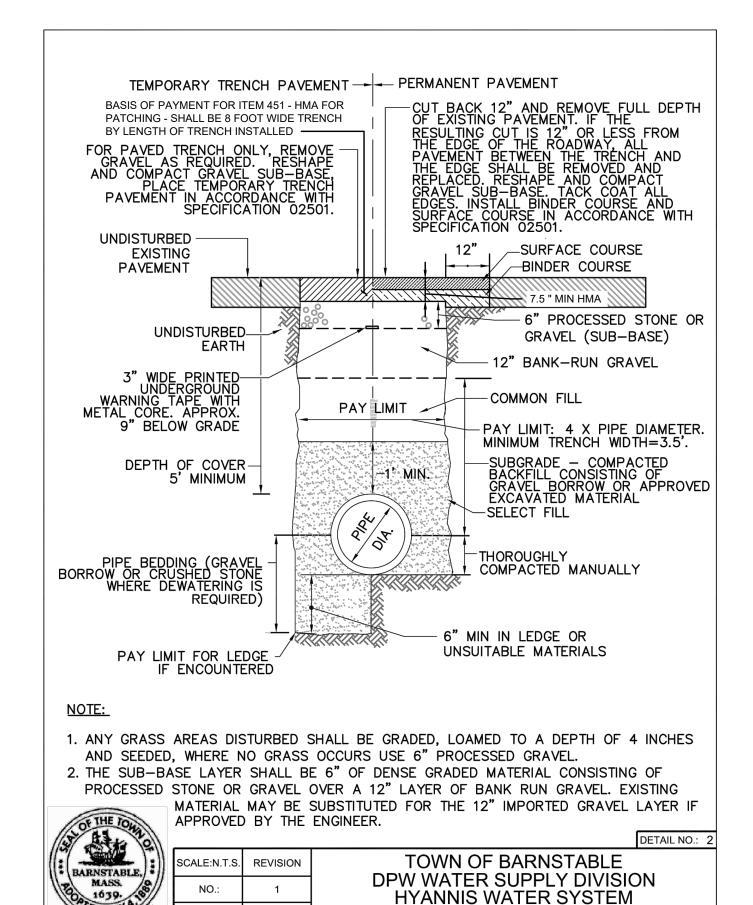
CATCH BASIN

BARNSTABLE BEARSE'S WAY

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ-0035(018)X	49	63
i	PROJECT FILE NO. 60	09067	

CONSTRUCTION DETAILS

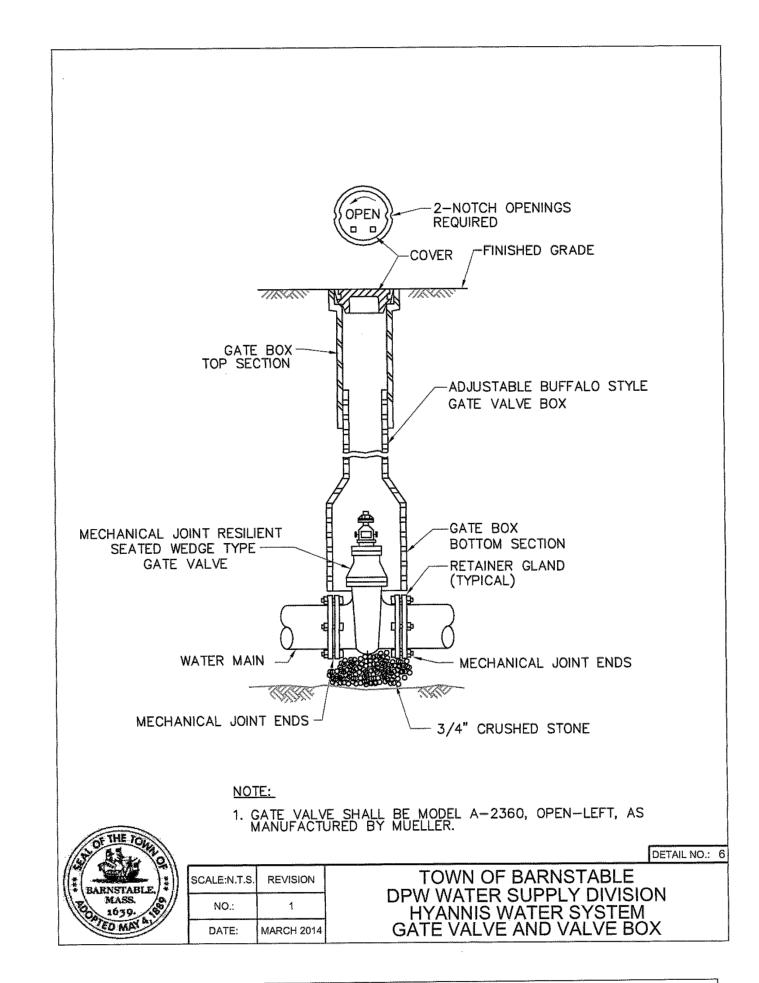


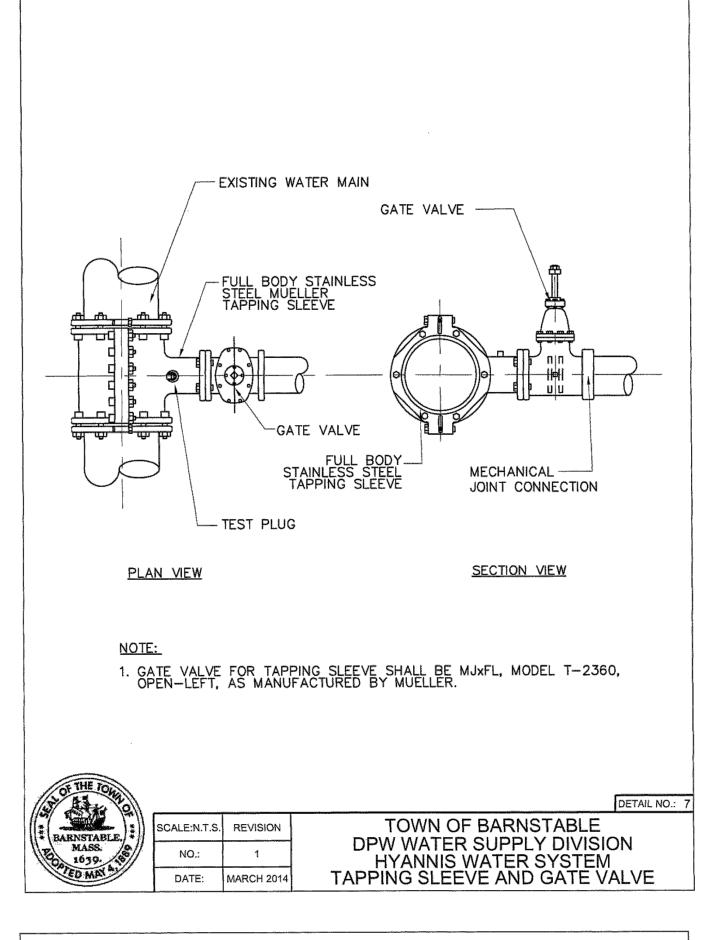


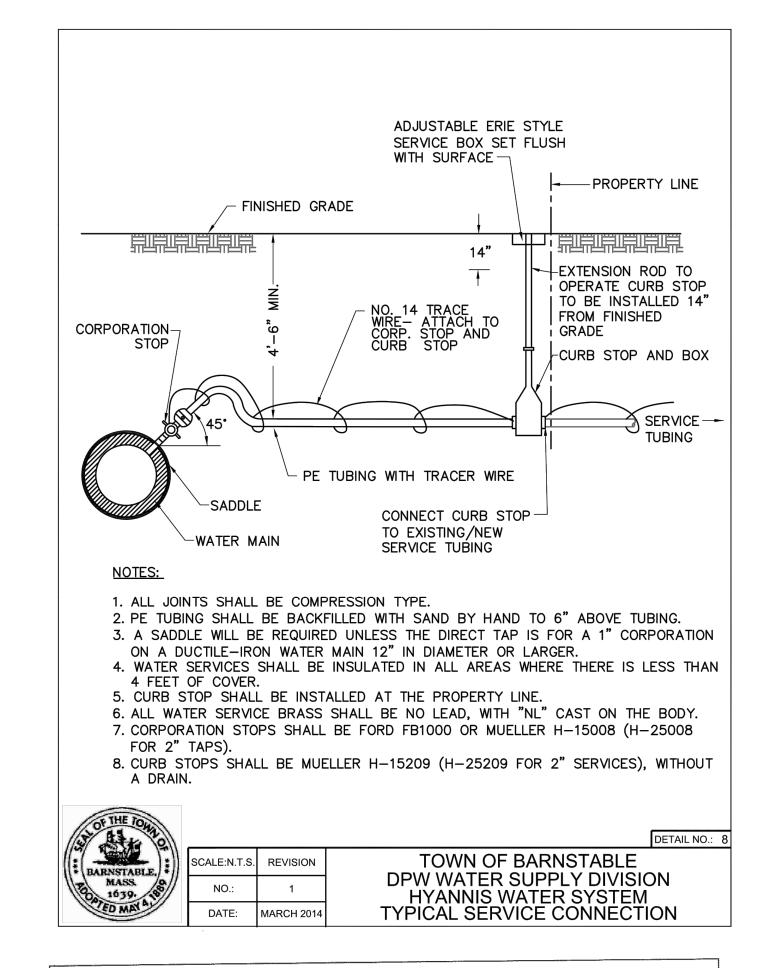
DATE:

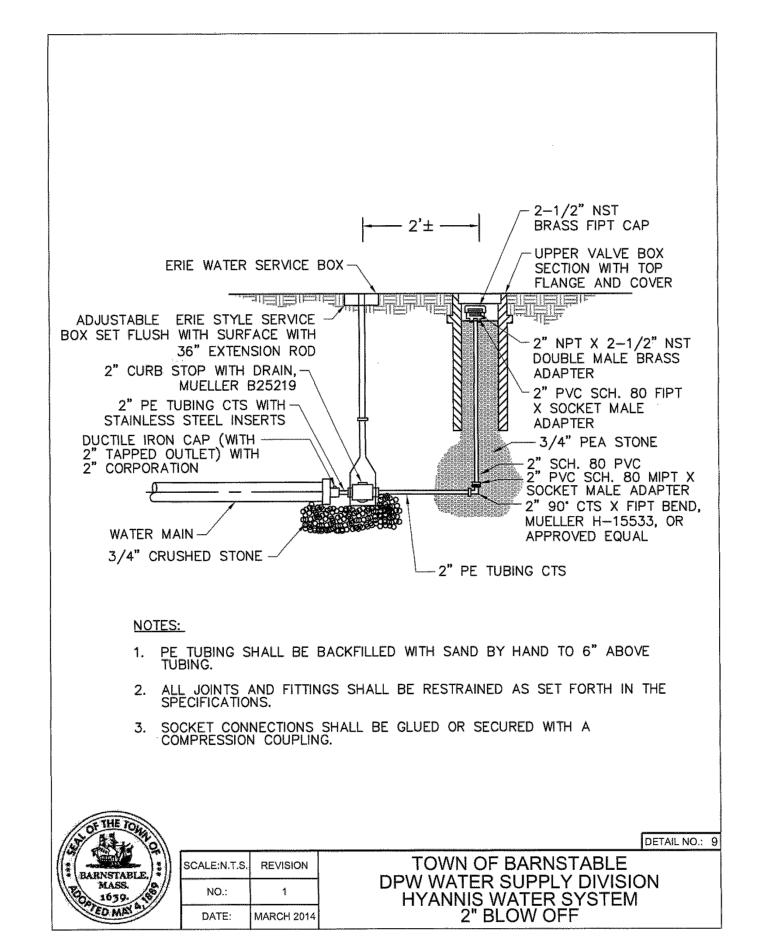
MARCH 2014

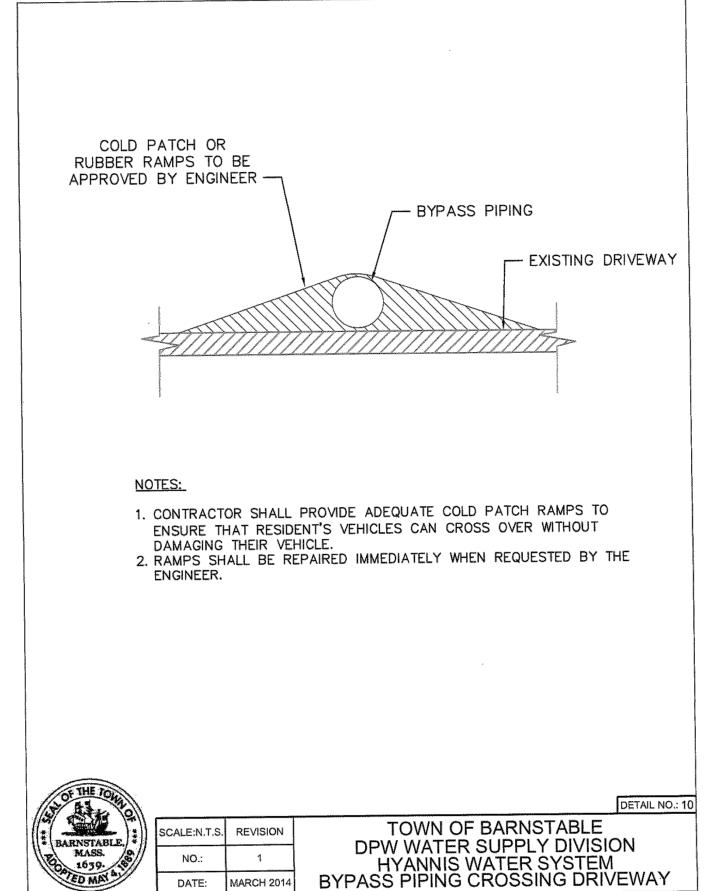
NON-MASS DOT ROADWAY TRENCH

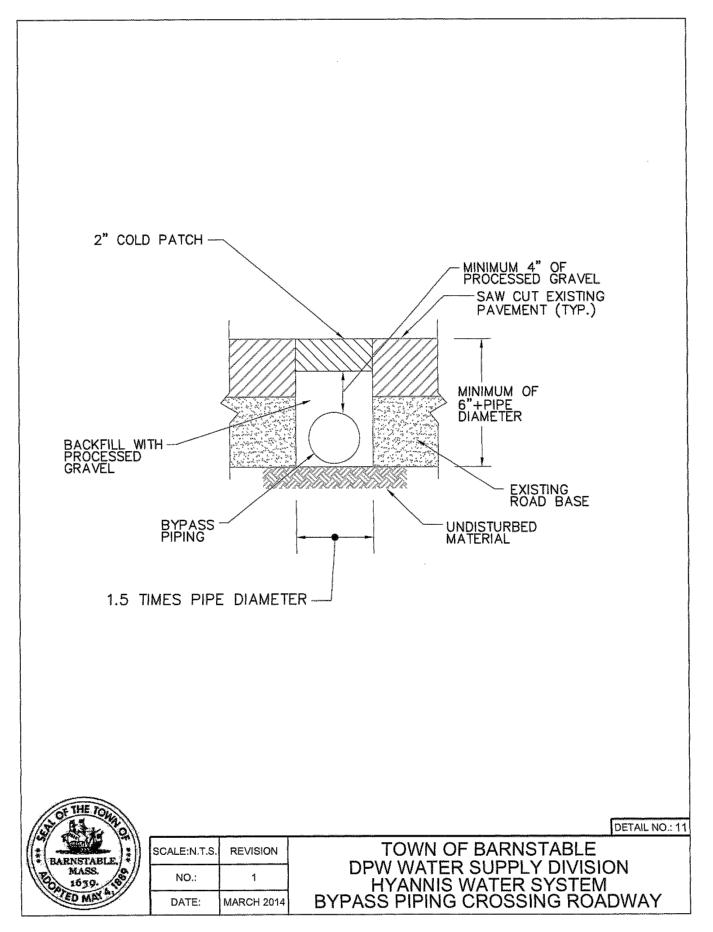


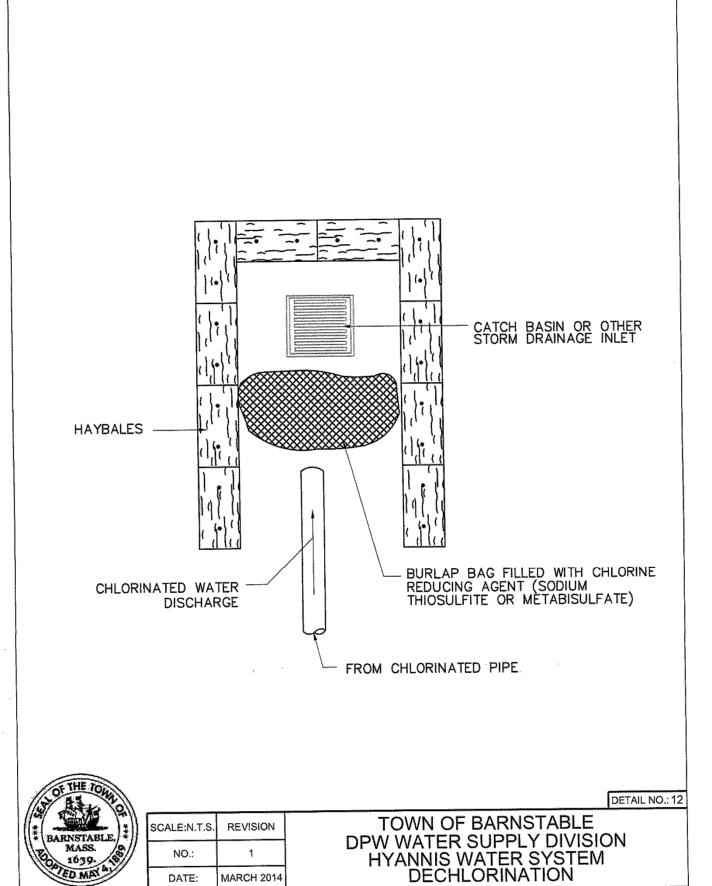


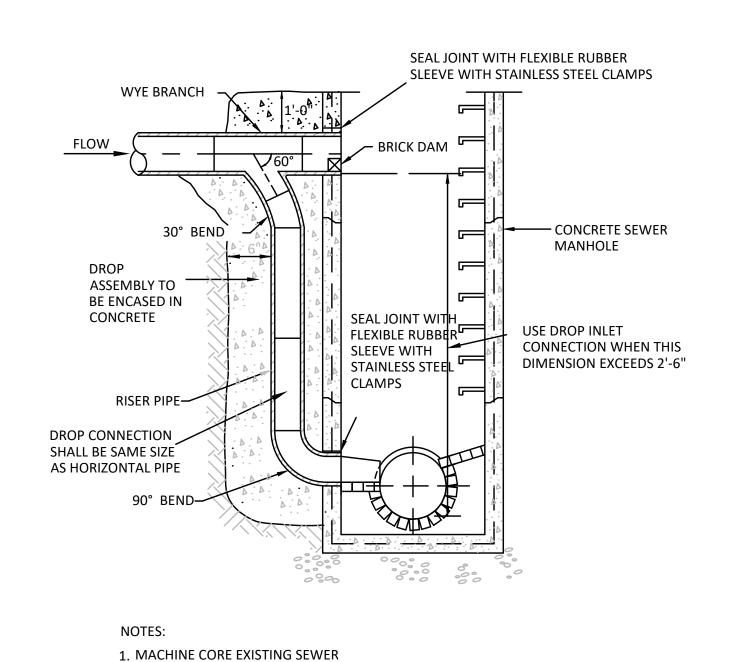








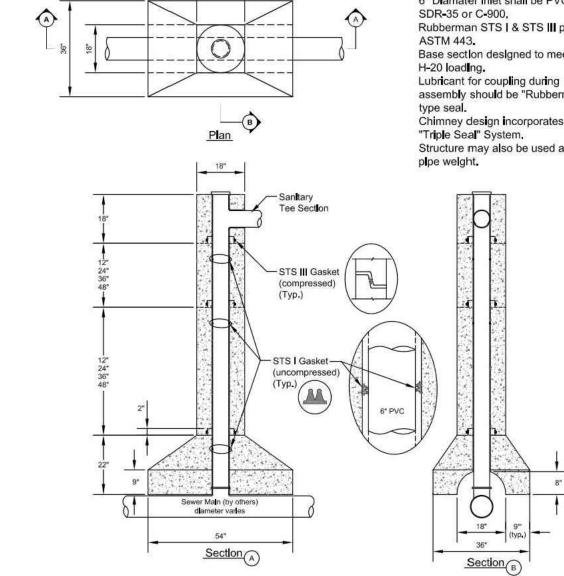


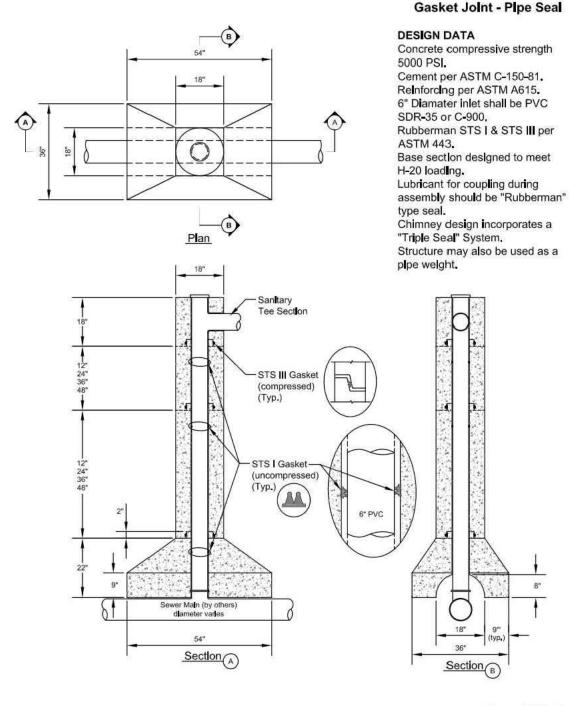


MANHOLE TO INSTALL NEW DROP

2. RESET BRICK INVERT AS NECESSARY.

SEWER DROP CONNECTION



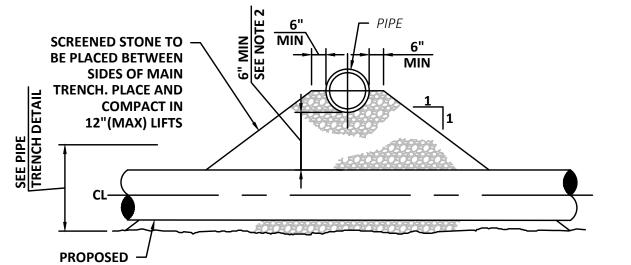


PRECAST CONCRETE

SEWER CHIMNEY

for Pipe Size 6" to 18'

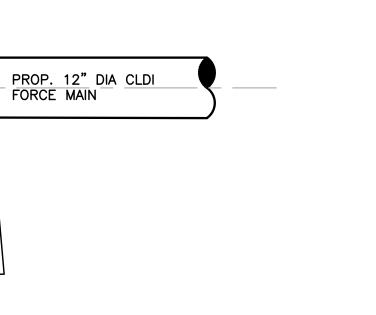




1. JOINTS ON EACH PIPE TO BE AS FAR FROM INTERSECTION AS POSSIBLE. 2. IF CROSSING WATER AND LESS THAN 18" OF SEPERATION, CONCRETE ENCASEMENT WILL BE REQUIRED RATHER THAN SCREENED STONE TO FACILITATE PROPER PIPE BEDDING AND COMPACTION AT ENGINEER'S DISCRETION. REFER TO EARTHWORK FOR ADDITIONAL INFORMATION.

PIPE CROSSING

SCALE: N.T.S.



FORCE MAIN CONNECTION

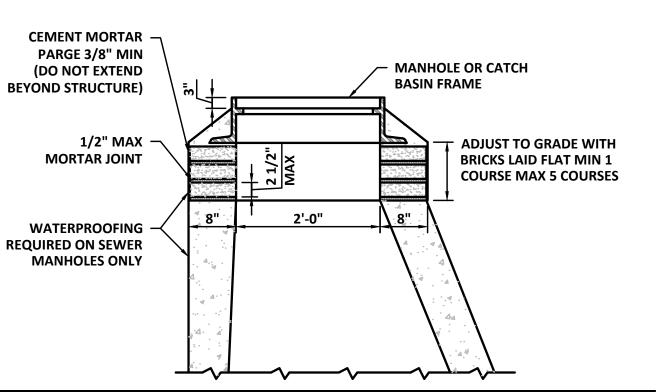
FITTINGS AS NECESSARY.

EX. 12" DIA D.I. FORCE MAIN

CONNECT PROPOSED FORCE MAIN TO EXISTING FORCE MAIN WITH RESTRAINED FLEXIBLE CONNECTION OR CONNECT WITH

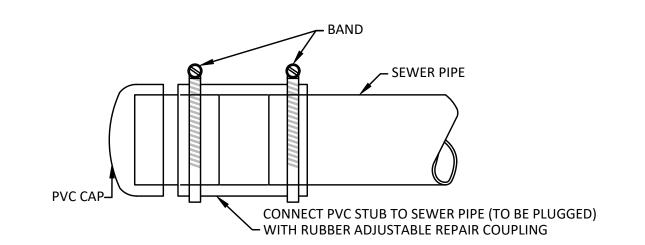
(CONTRACTOR TO PERFORM TEST PIT TO

CONFIRM LOCATION AND DEPTH) —



MANHOLE & CATCH BASIN FRAME INSTALLATION

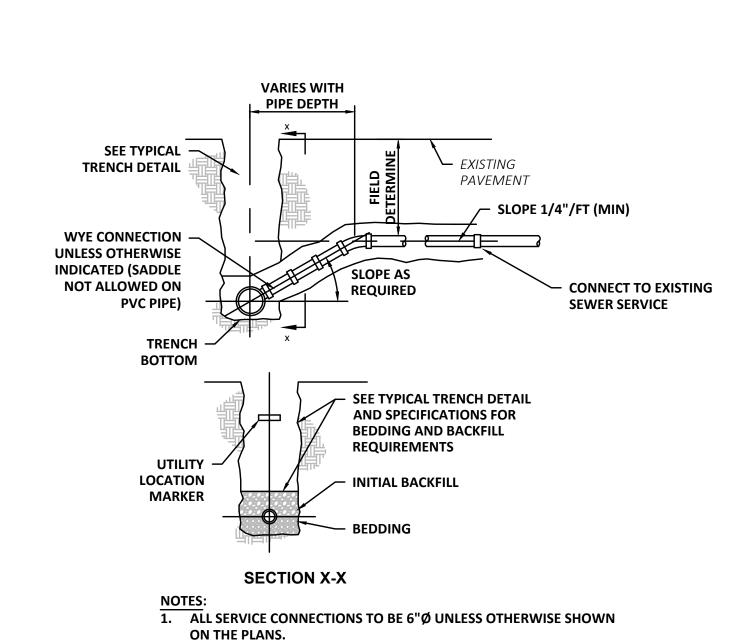
SCALE: N.T.S.

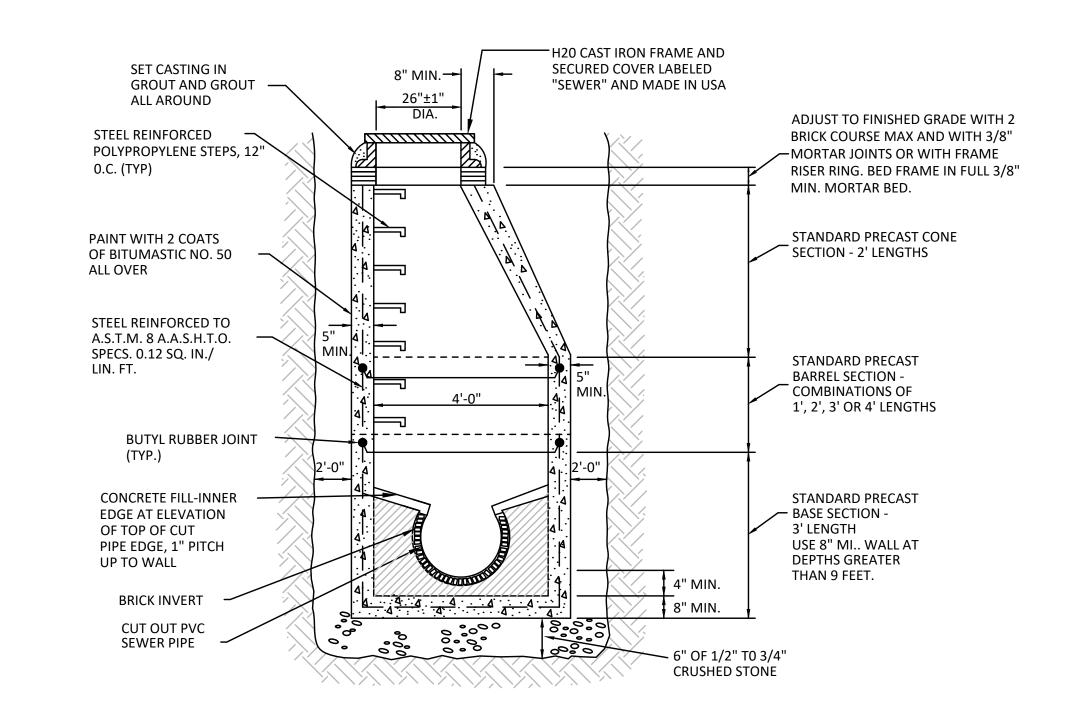


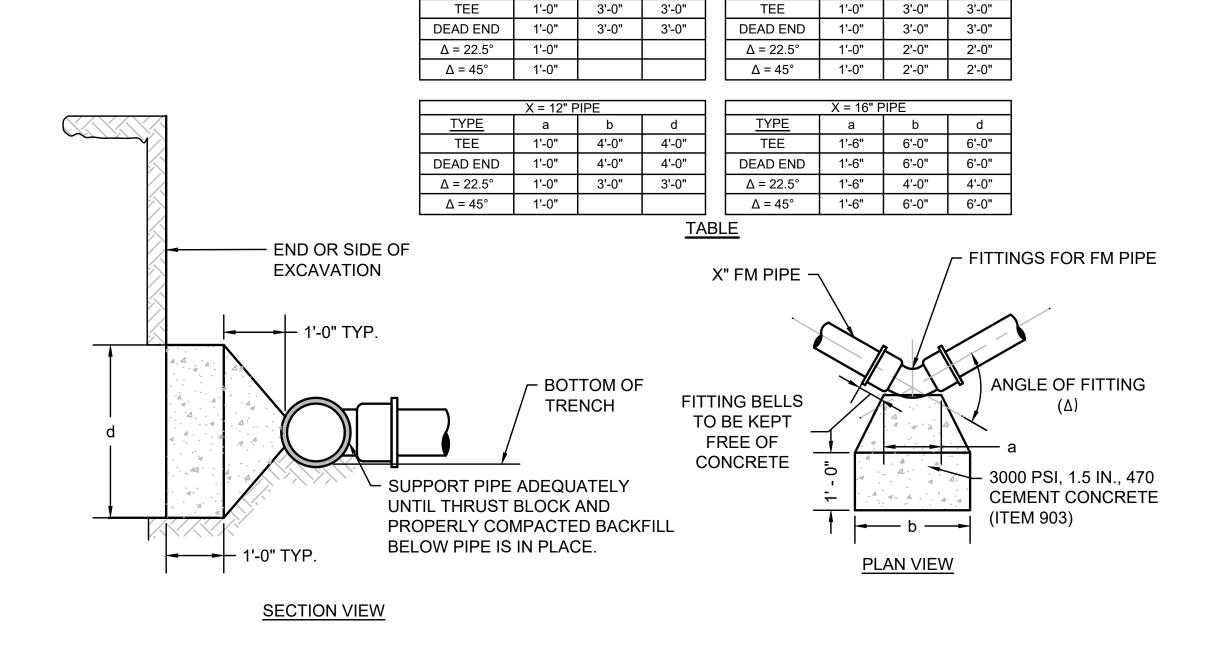
X = 8" PIPE

SANITARY SEWER PLUG DETAIL

a b







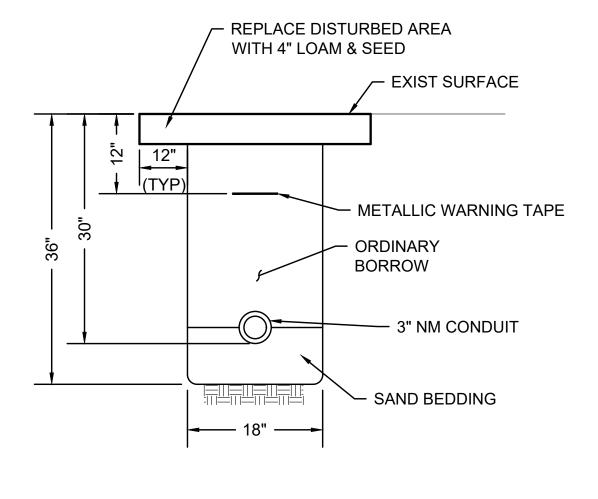
PRECAST CONCRETE SEWER MANHOLE

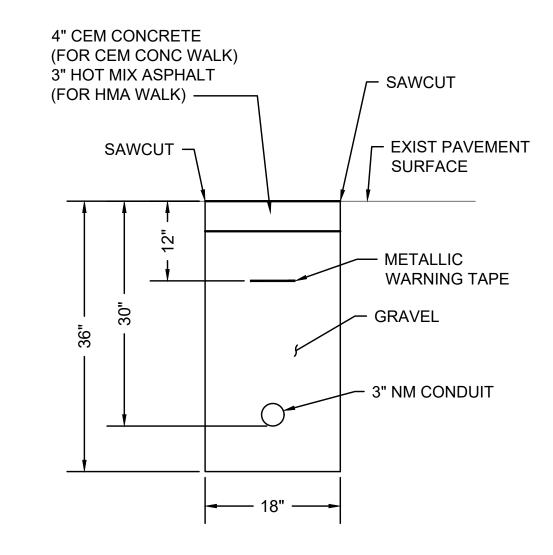
SCALE: NTS

THRUST BLOCK DETAIL

SCALE: NTS

SEWER SERVICE CONNECTION

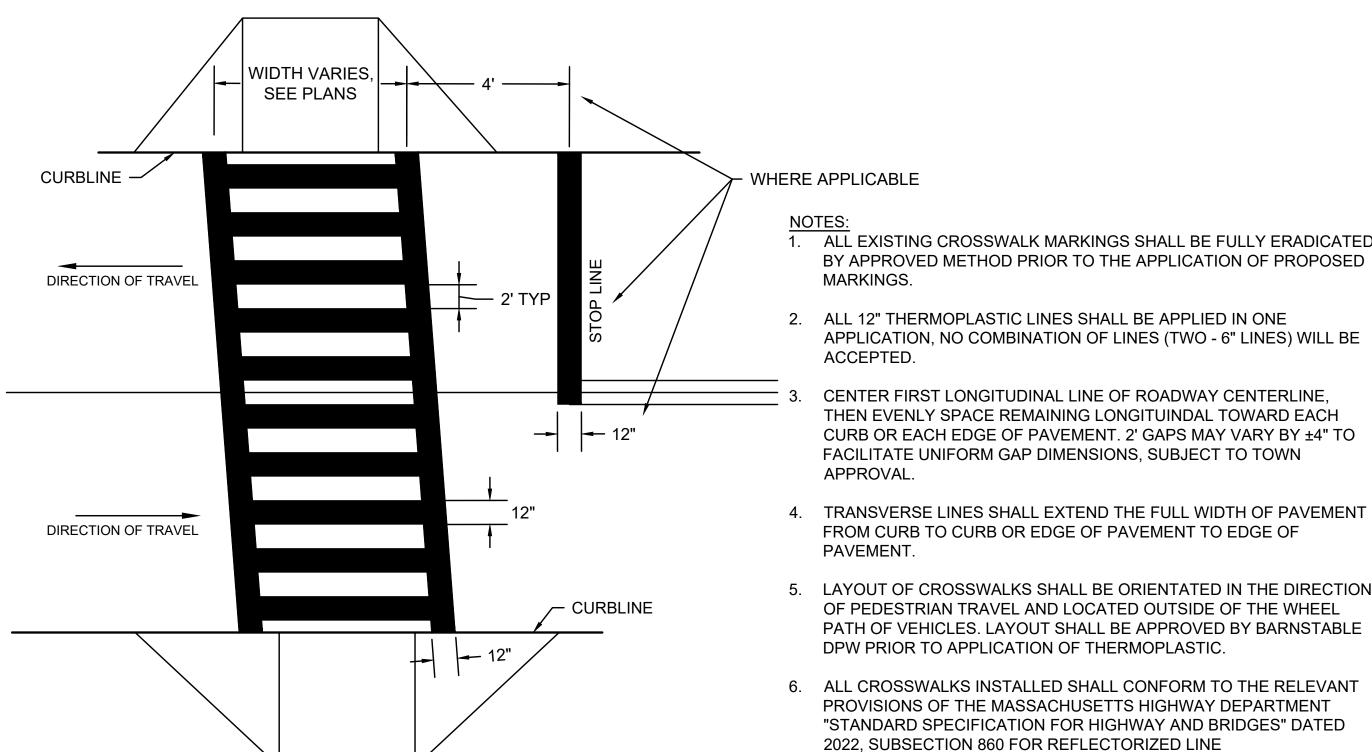




CONDUIT IN GRASS

SCALE: N.T.S.

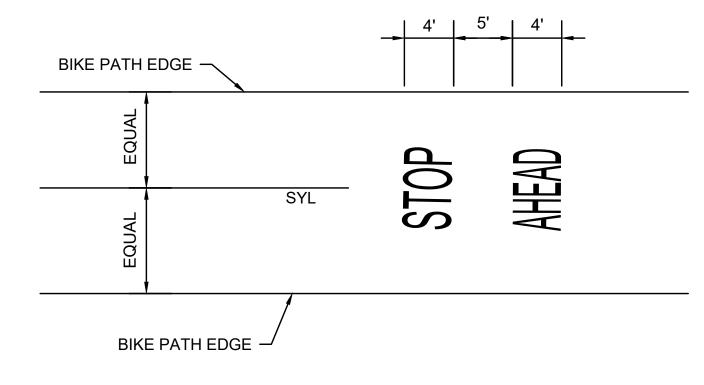
CONDUIT IN SIDEWALK



- 1. ALL EXISTING CROSSWALK MARKINGS SHALL BE FULLY ERADICATED
- 2. ALL 12" THERMOPLASTIC LINES SHALL BE APPLIED IN ONE APPLICATION, NO COMBINATION OF LINES (TWO - 6" LINES) WILL BE
- CENTER FIRST LONGITUDINAL LINE OF ROADWAY CENTERLINE, THEN EVENLY SPACE REMAINING LONGITUINDAL TOWARD EACH CURB OR EACH EDGE OF PAVEMENT. 2' GAPS MAY VARY BY ±4" TO FACILITATE UNIFORM GAP DIMENSIONS, SUBJECT TO TOWN APPROVAL.
- 4. TRANSVERSE LINES SHALL EXTEND THE FULL WIDTH OF PAVEMENT FROM CURB TO CURB OR EDGE OF PAVEMENT TO EDGE OF PAVEMENT.
- 5. LAYOUT OF CROSSWALKS SHALL BE ORIENTATED IN THE DIRECTION OF PEDESTRIAN TRAVEL AND LOCATED OUTSIDE OF THE WHEEL PATH OF VEHICLES. LAYOUT SHALL BE APPROVED BY BARNSTABLE DPW PRIOR TO APPLICATION OF THERMOPLASTIC.
- 6. ALL CROSSWALKS INSTALLED SHALL CONFORM TO THE RELEVANT PROVISIONS OF THE MASSACHUSETTS HIGHWAY DEPARTMENT "STANDARD SPECIFICATION FOR HIGHWAY AND BRIDGES" DATED 2022, SUBSECTION 860 FOR REFLECTORIZED LINE (THERMO-PLASTIC) & MATERIAL M7.01.03, LATEST REVISIONS.

LADDER-STYLE CROSSWALK - 12" WIDE LINES

SCALE: N.T.S.



- 1. PAVEMENT MARKINGS AS PER MANUAL ON UNIFORM
- TRAFFIC CONTROL DEVICES (MUTCD). 2. PAVEMENT MARKINGS SHALL BE REFLECTIVE PAINT.

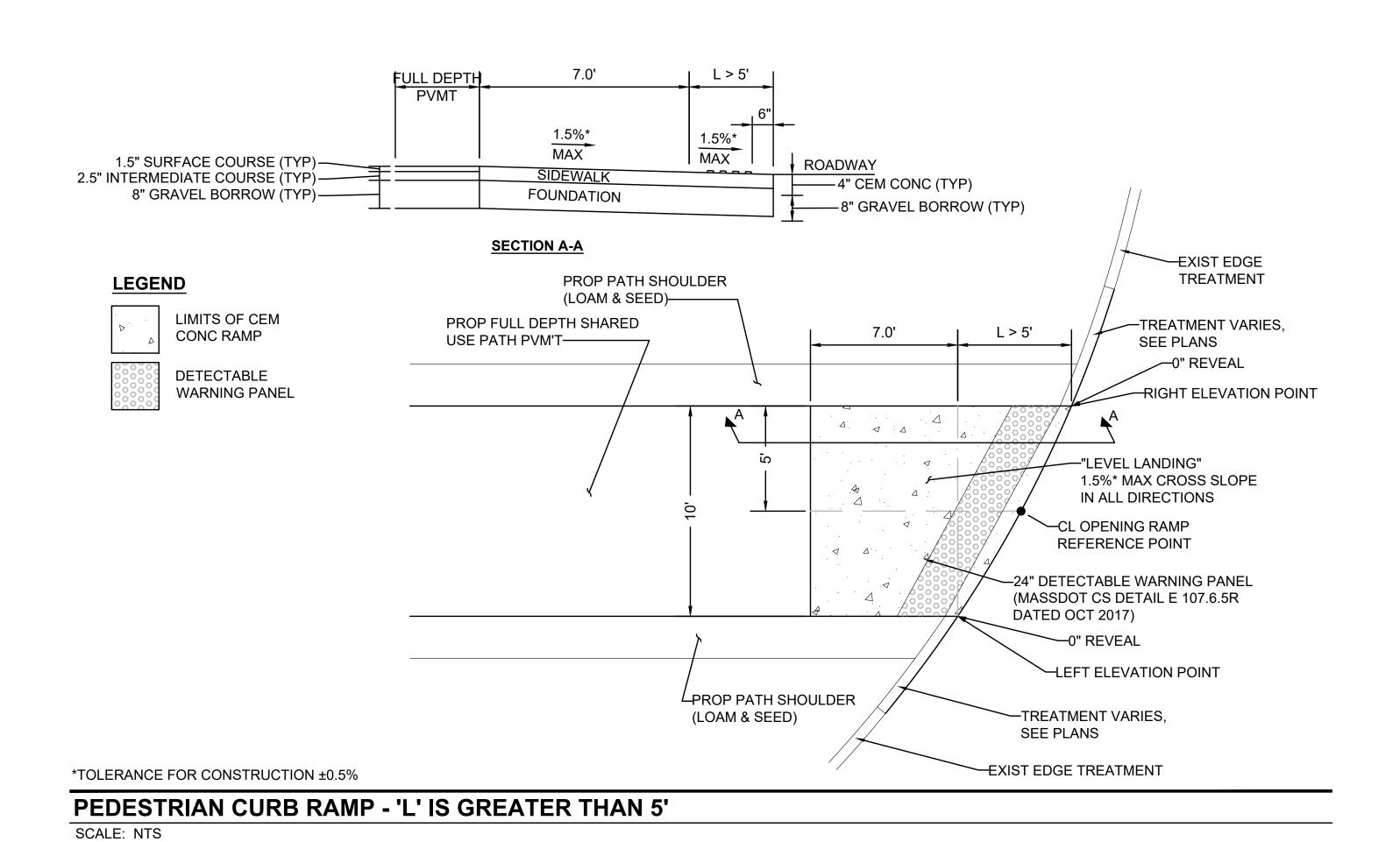
BIKE PATH MARKINGS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ-0035(018)X	52	63
	PROJECT FILE NO 6	 19067	

CONSTRUCTION DETAILS

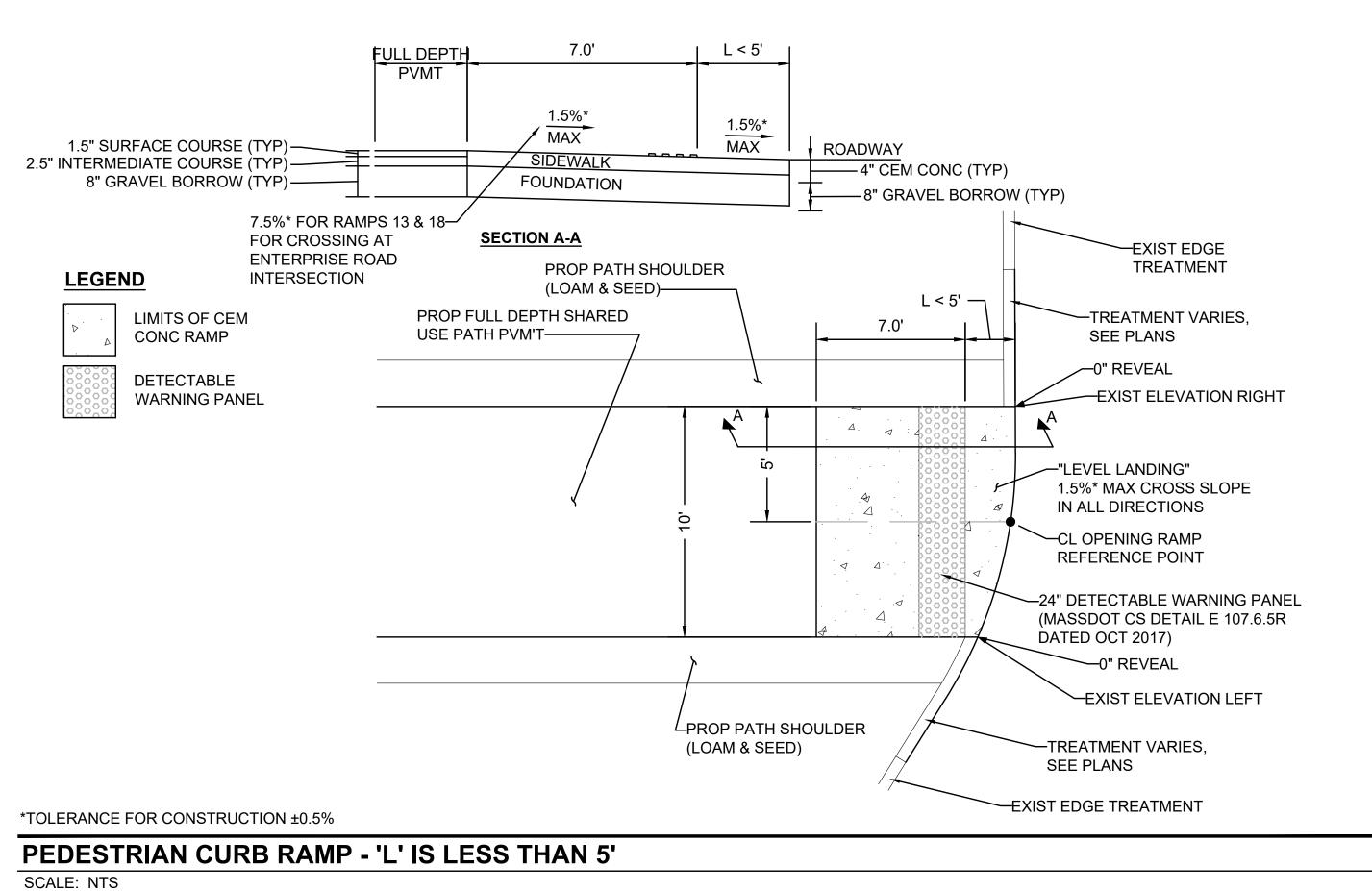
PEDESTRIAN CURB RAMP DATA														
	LOCATION	DRIVEWAY		LEFT	SIDE			RIGHT	SIDE		OPENING			
NO.	(REF POINT)	1	REVEAL	TRANS	EX ELEV	PROP ELEV	REVEAL	TRANS	EX ELEV	PROP ELEV	ELEV			
5	5+34.5 0.0' LT/RT	1.51%	6"	6'-0"	N/A	50.78	N/A	N/A	N/A	50.98	50.80			

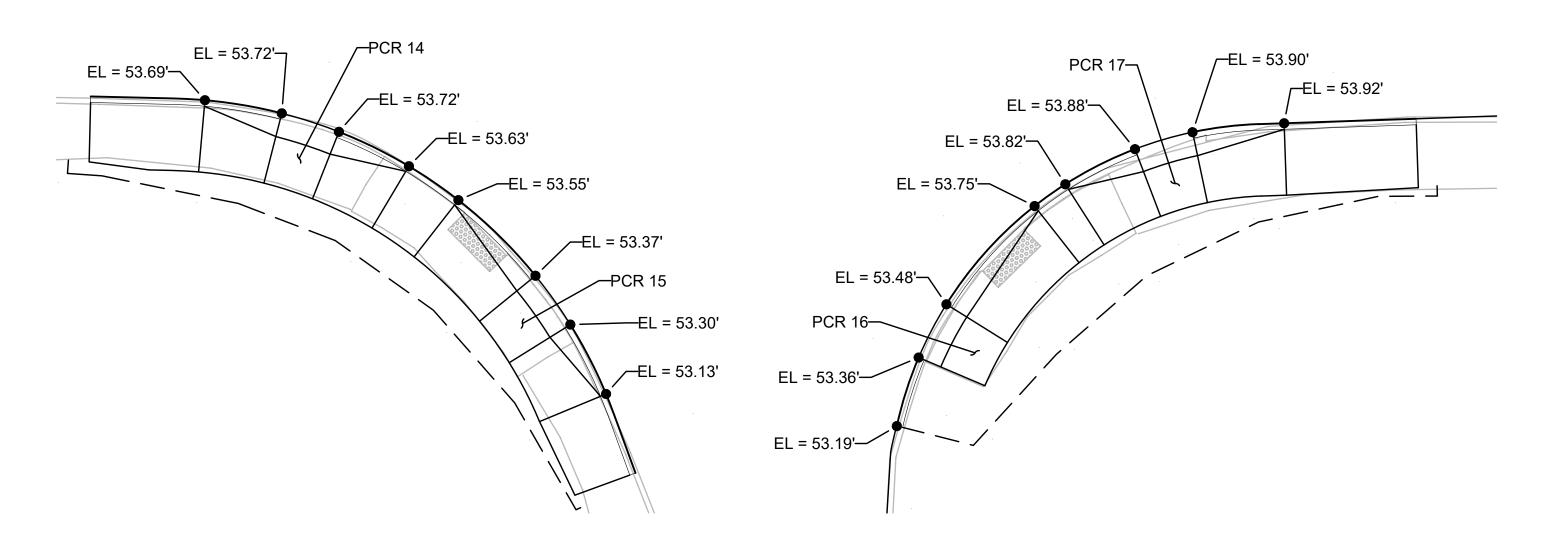
NOTE: NEGATIVE (-) ROADWAY GUTTER MAX DENOTES A LOW SIDE TRANSITION.



	PEDESTRIAN CURB RAMP DATA													
	LOCATION	DRIVEWAY		LEF1	SIDE			RIGH	ΓSIDE		OPENING			
NO. (REF POINT)	GUTTER	REVEAL	TRANS	EX ELEV	PROP ELEV	REVEAL	TRANS	EX ELEV	PROP ELEV	ELEV				
1	0+17.7 1.2' LT	0.44%	N/A	N/A	46.74	N/A	N/A	N/A	46.79	N/A	46.83			
2	0+44.2 0.0' LT/RT	0.66%	N/A	N/A	46.48	N/A	N/A	N/A	46.42	N/A	46.44			
6	5+71.8 0.0' LT/RT	2.00%	6"	6'-0"	N/A	51.90	6"	6'-0"	N/A	51.70	51.81			
11	36+96.5 0.0' LT/RT	2.20%	N/A	N/A	63.24	N/A	N/A	N/A	63.00	N/A	63.13			

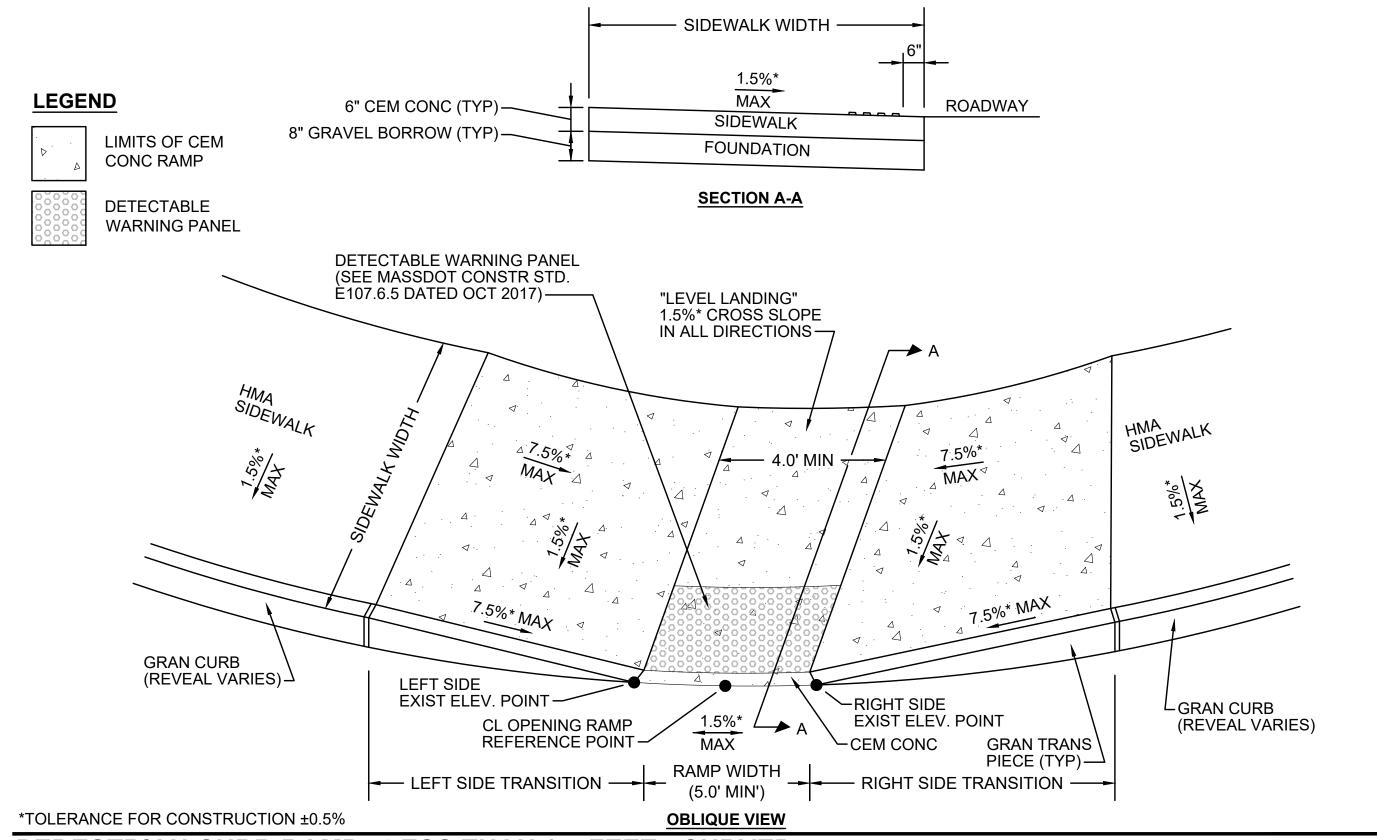
NOTE: NEGATIVE (-) ROADWAY GUTTER MAX DENOTES A LOW SIDE TRANSITION.





	PEDESTRIAN CURB RAMP DATA														
	LOCATION	SIDEWALK	RAMP	EXIST			SIDE			RIGHT	SIDE				
NO.	(REF POINT)	WIDTH	OPENING (W)	OPENING ELEV.	ROADWAY GUTTER	REVEAL	TRANS	EXIST ELEV.	ROADWAY GUTTER	REVEAL	TRANS	EXIST ELEV.			
14	9+44.5 74.6' RT	6'	5'	53.74	-1.22%	6"	6'-6"	53.72	-0.50%	6"	6'-6"	53.72			
15	9+64.0 88.6' RT	6'	5'	53.34	-2.45%	6"	6'-6"	53.30	1.88%	6"	9'-0"	53.37			
16	10+25.2 88.8' RT	6'	5'	53.42	2.52%	6"	11'-0"	53.48	-2.86%	6"	6'-0"	53.36			
17	10+44.0 72.2' RT	6'	5'	53.89	0.22%	6"	7'-8"	53.90	-1.40%	6"	6'-6"	53.88			

NOTE: NEGATIVE (-) ROADWAY GUTTER MAX DENOTES A LOW SIDE TRANSITION.

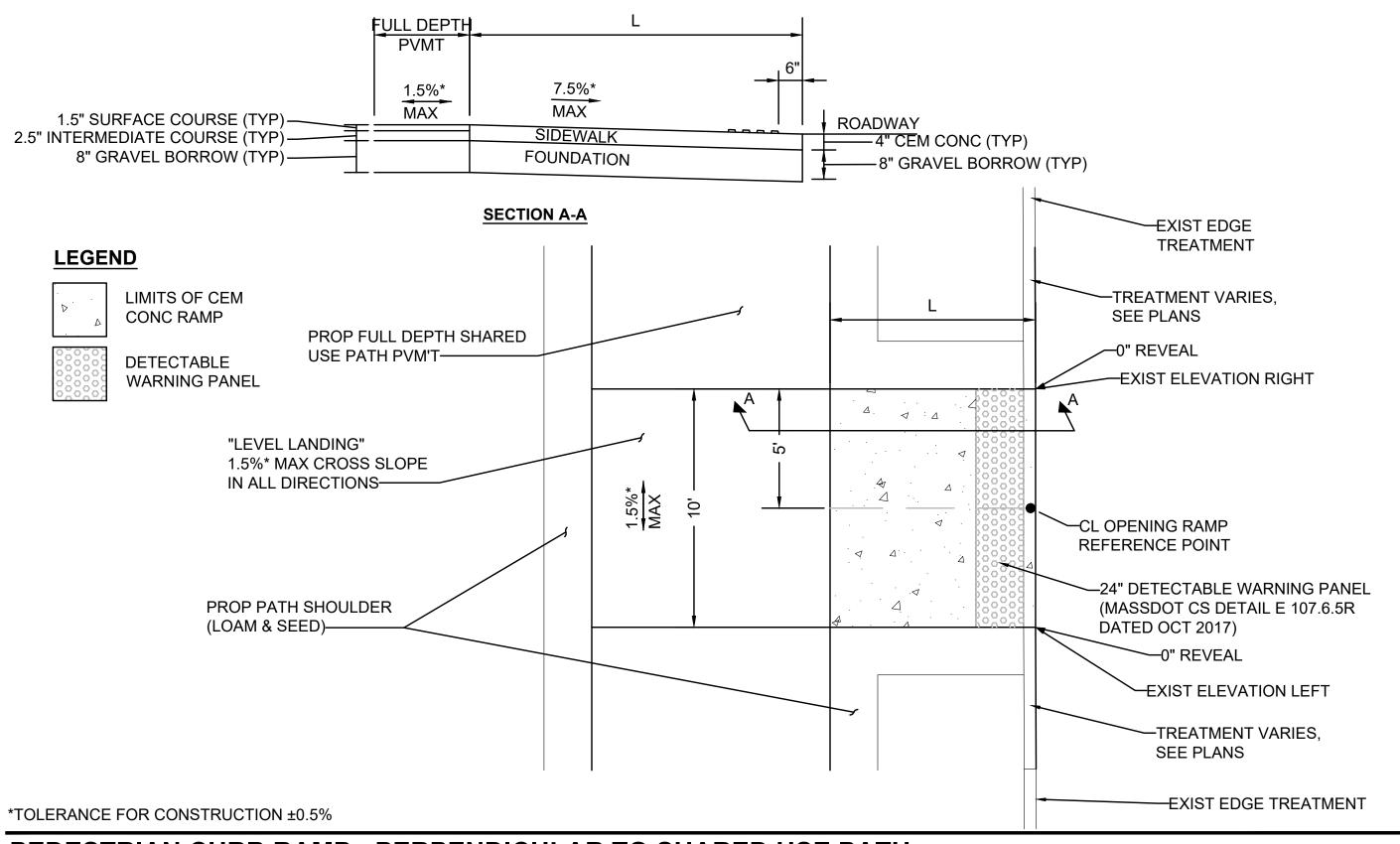


PEDESTRIAN CURB RAMP - LESS THAN 6.5 FEET - CURVED

SCALE: NTS

PEDESTRIAN CURB RAMP DATA											
NO.	LOCATION (REF POINT)	LEFT SIDE			RIGHT SIDE					OPENING	
		ROADWAY GUTTER	REVEAL	TRANS	EX ELEV	ROADWAY GUTTER	REVEAL	TRANS	EX ELEV] L	ELEV
13	9+47.03 20.17' RT	-0.70%	N/A	N/A	53.65	0.32%	N/A	N/A	53.73	15.17'	53.70
18	10+32.66 19.90' RT	-0.30%	N/A	N/A	53.90	0.47%	N/A	N/A	53.96	14.91'	53.95

NOTE: NEGATIVE (-) ROADWAY GUTTER MAX DENOTES A LOW SIDE TRANSITION.



PEDESTRIAN CURB RAMP - PERPENDICULAR TO SHARED USE PATH

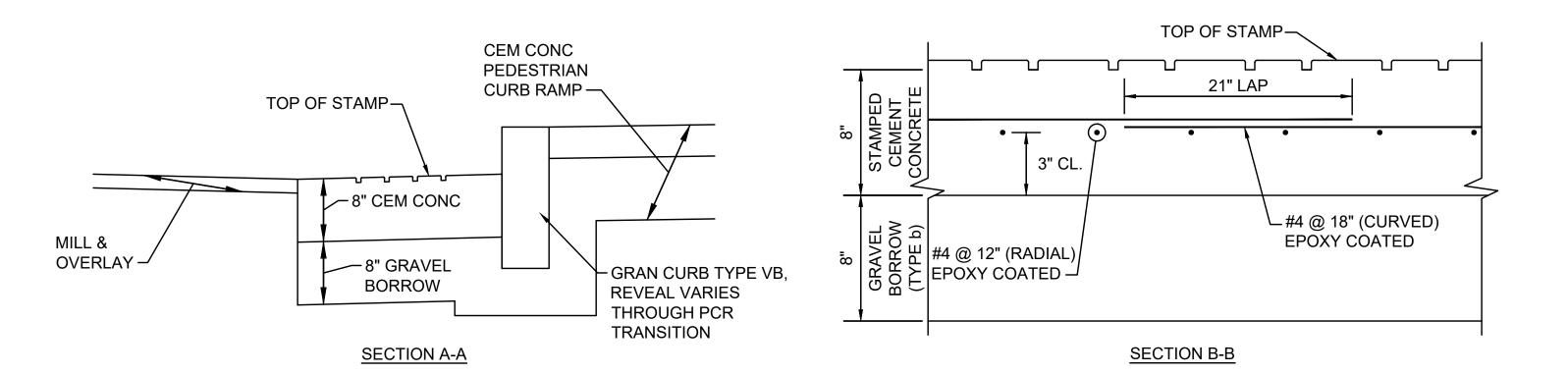
SCALE: NTS

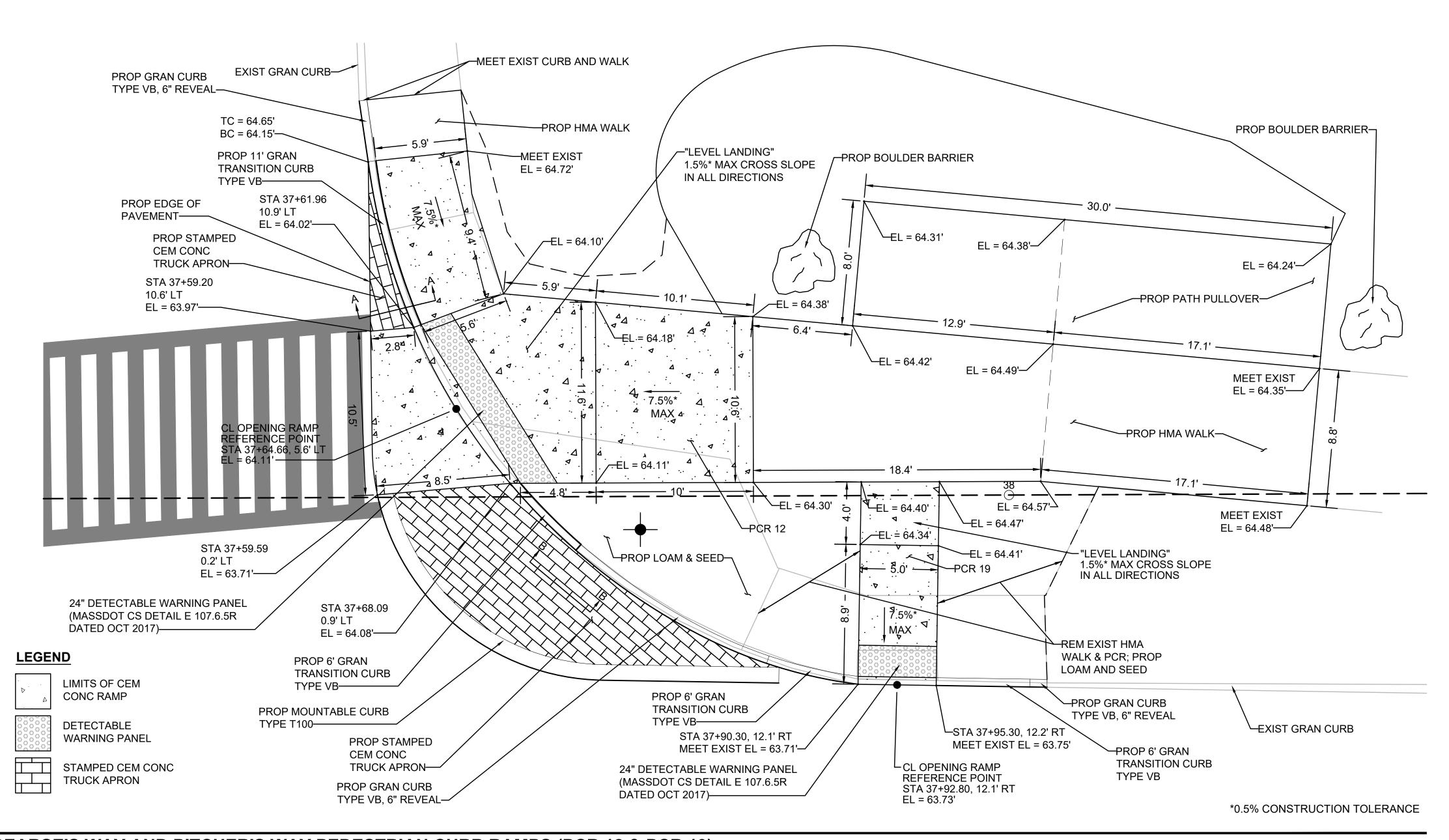
BARNSTABLE BEARSE'S WAY STATE FED. AID PROJ. NO. MA CMQ-0035(018)X 54 63 PROJECT FILE NO. 609067 **CONSTRUCTION DETAILS** EXIST GRAN CURB LIMITS OF CEM CONC RAMP 24" DETECTABLE WARNING PANEL (MASSDOT CS DETAIL E 107.6.5R DATED OCT 2017)——— R&R GRAN CURB—— PROP HMA DRIVE __24" DETECTABLE WARNING PANEL "LEVEL LANDING" (MASSDOT CS DETAIL E 107.6.5R 1.5%* MAX CROSS SLOPE DATED OCT 2017) **R&R STONE** IN ALL DIRECTIONS-LANDSCAPING-PROP FULL DEPTH SHARED PROP PATH SHOULDER USE PATH PVM'T (LOAM & SEED)— PROP 6' GRAN TRANSITION CURB-10' CW¬ STA 5+71.8— (LOAM & SEED)— R5-3 "LEVEL LANDING" _STA 5+34.5 1.5%* MAX CROSS SLOPE
IN ALL DIRECTIONS——— PROP 6' GRAN TRANSITION CURB PROP 6' GRAN TRANSITION CURB-R&R STONE PROP PATH SHOULDER R&R STONE PROP HMA DRIVE LANDSCAPING (LOAM & SEED)— LANDSCAPING--R&R GRAN CURB R&R GRAN CURB-LPROP PATH SHOULDER PROP FULL DEPTH SHARED (LOAM & SEED) USE PATH PVM'T----EXIST GRAN CURB *0.5% CONSTRUCTION TOLERANCE EXIST GRAN CURB-WATER POLLUTION CONTROL DIVISION AT GRADE CROSSING (PCR 5 & PCR 6) SCALE: 1" = 4'

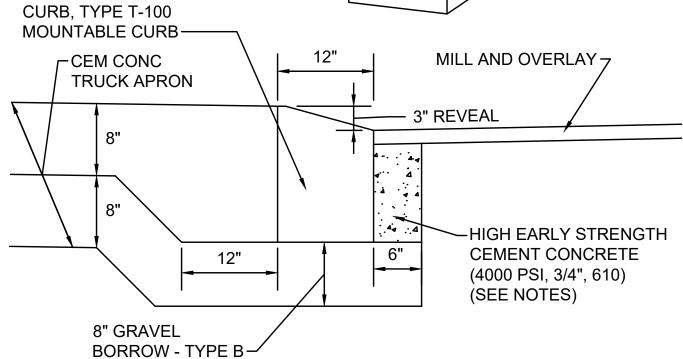
	BARNSTABLE BEARSE'S WA	='	
=	FED. AID PROJ. NO.	SHEET	TOT

ATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS		
Α	CMQ-0035(018)X	55	63		
	PROJECT FILE NO. 609067				

CONSTRUCTION DETAILS







NOTE:

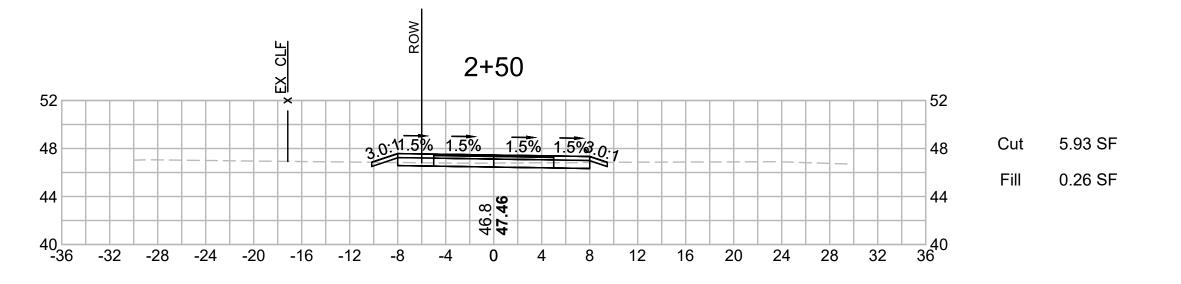
TRAVERSABLE GRANITE

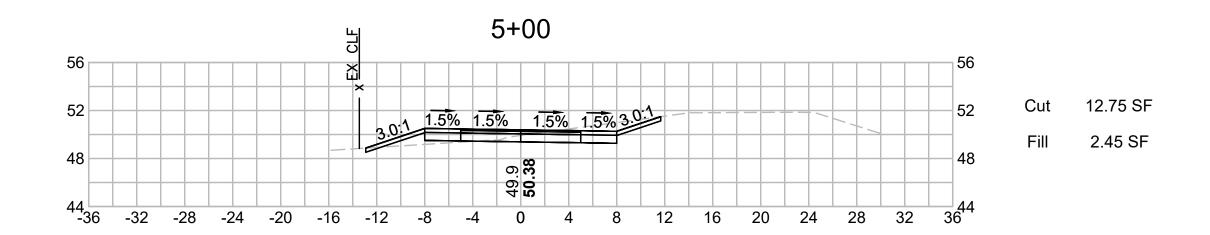
- CEMENT CONCRETE TO BE PLACED IF CURB IS INSTALLED AFTER HOT MIX ASPHALT.
- 2. CONCRETE SHALL BE INCLUDED IN PRICE BID FOR GRANITE CURB.

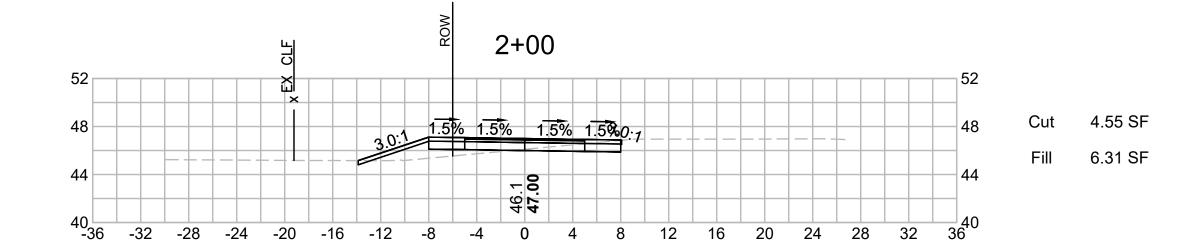
TYPE T-100 TRAVERSABLE GRANITE CURB

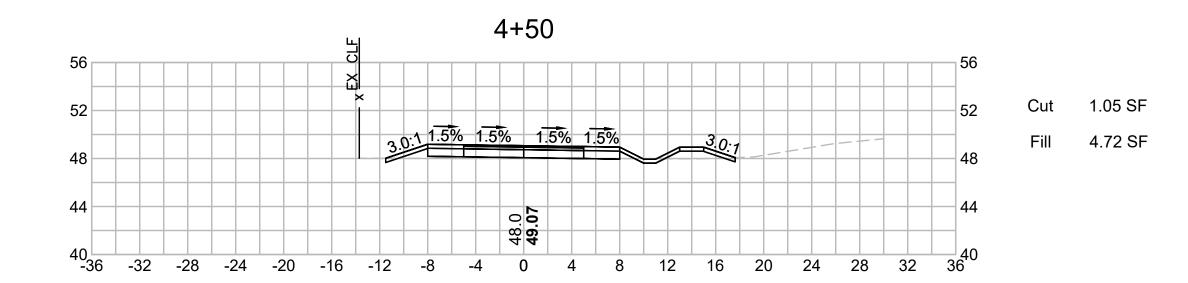
SCALE: NTS

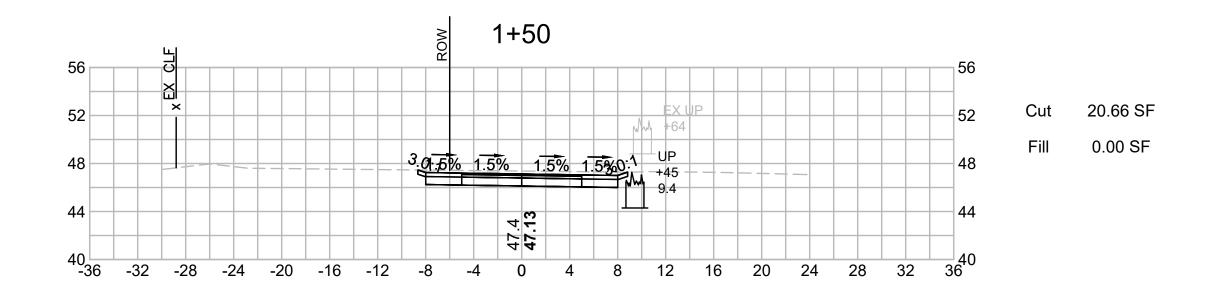
BEARSE'S WAY AND PITCHER'S WAY PEDESTRIAN CURB RAMPS (PCR 12 & PCR 19)

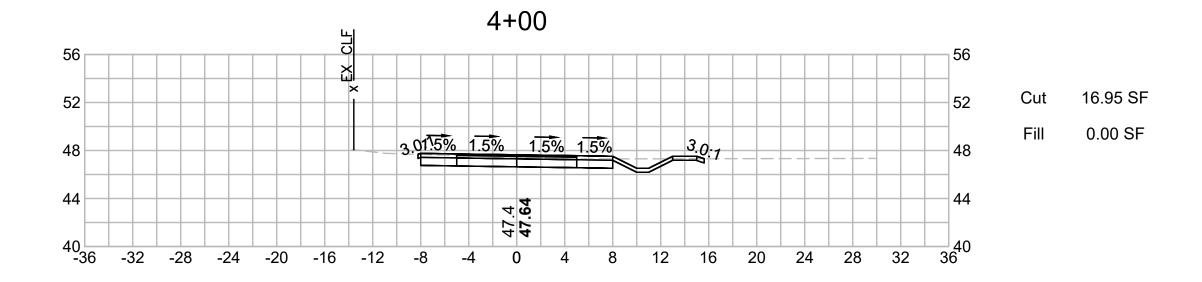


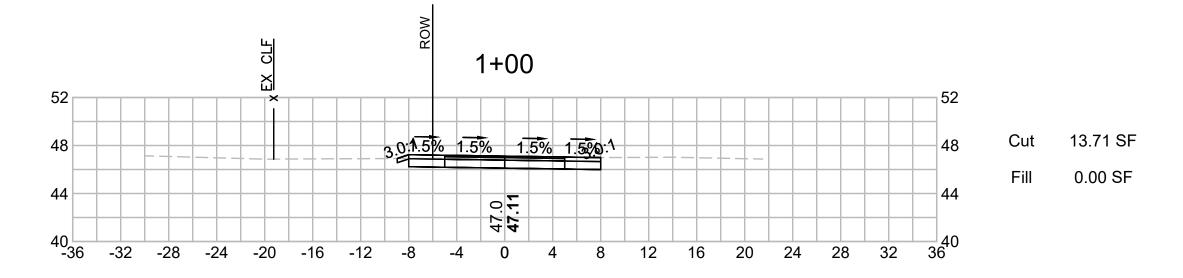


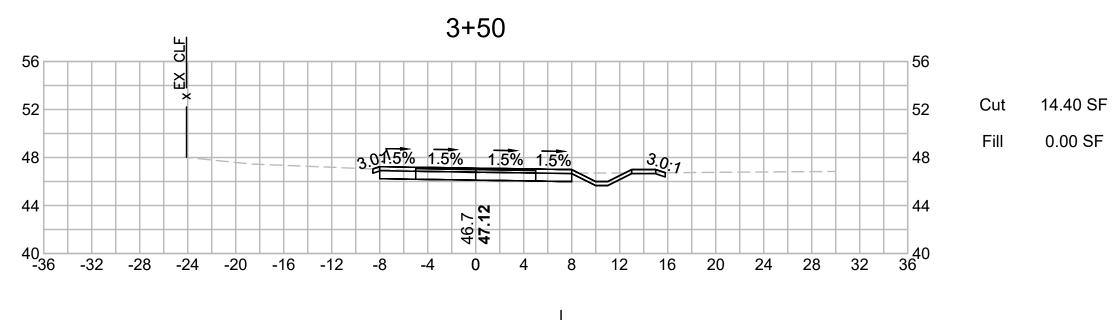


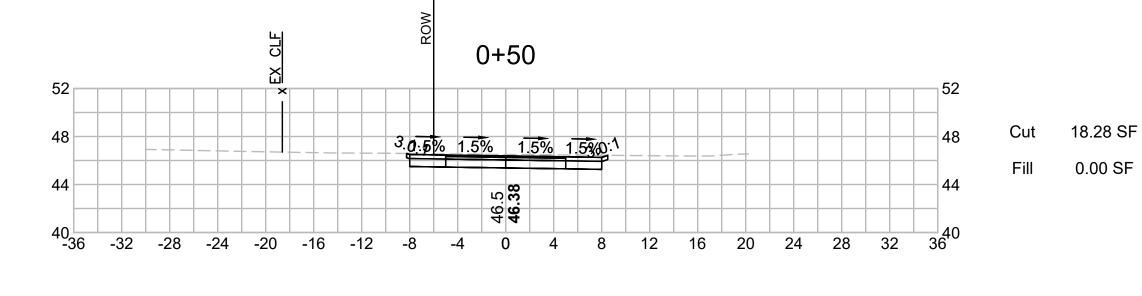


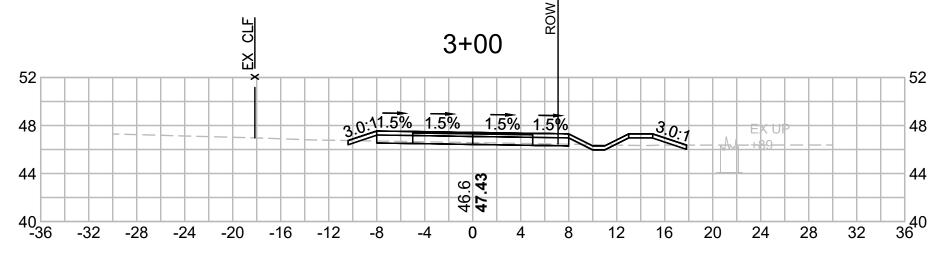


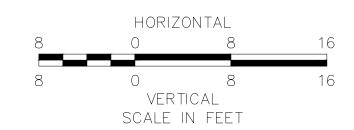


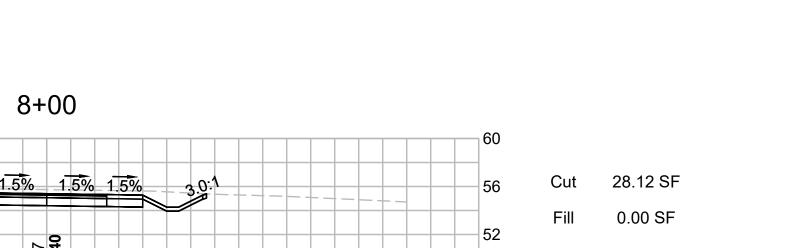


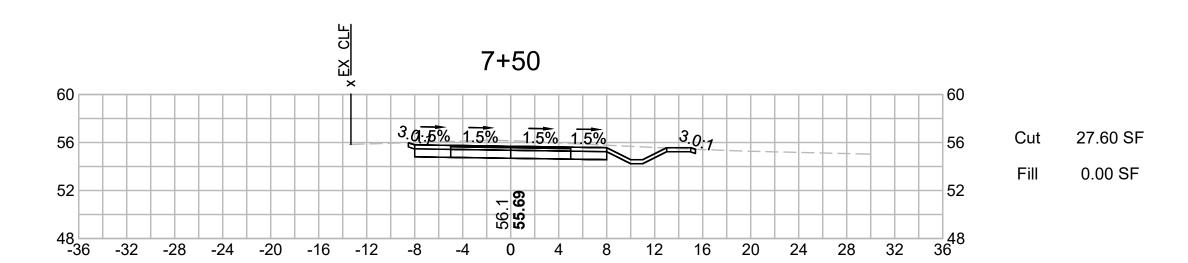




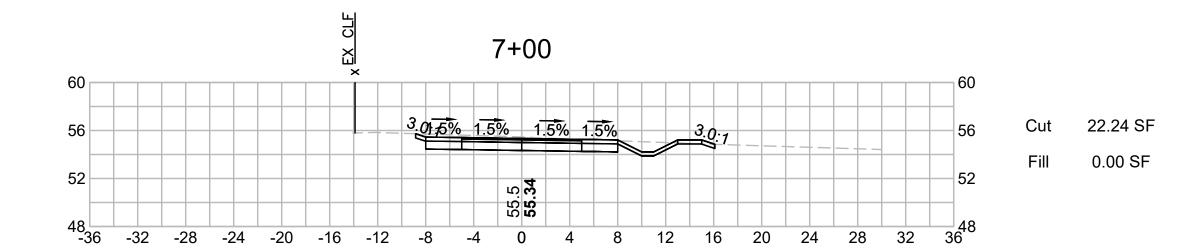


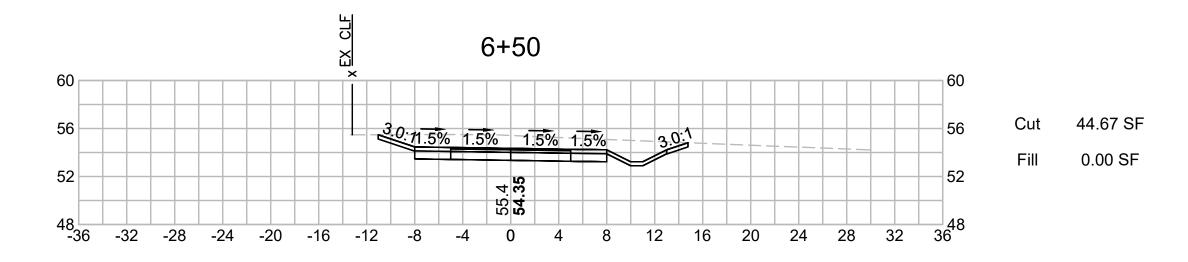


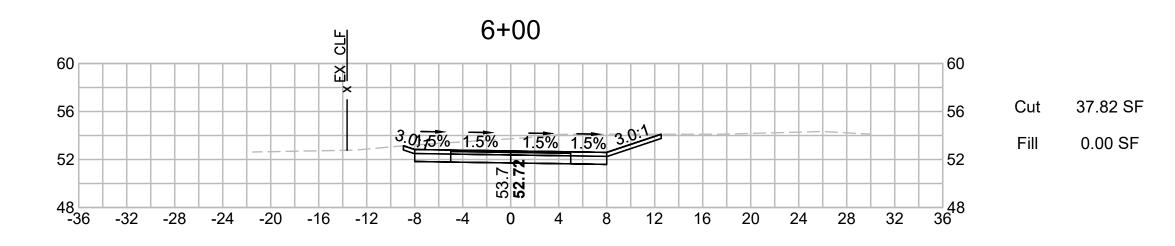


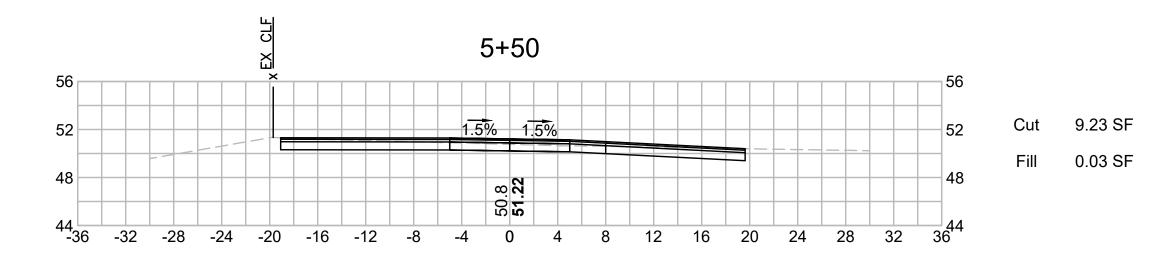


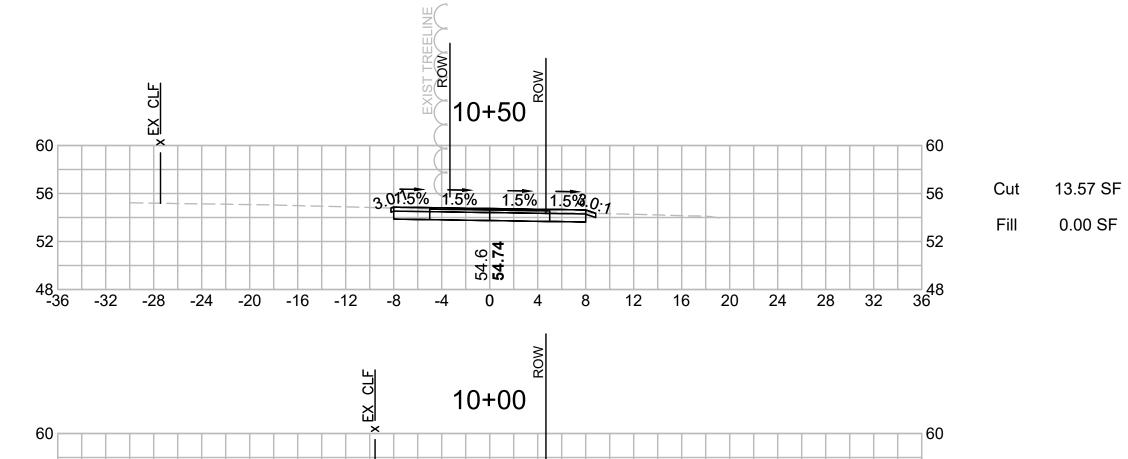
-32 -28 -24 -20 -16 -12 -8 -4 0 4 8 12 16 20 24 28 32



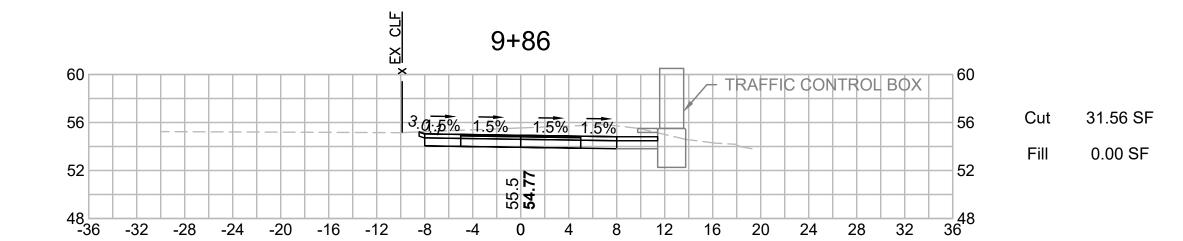




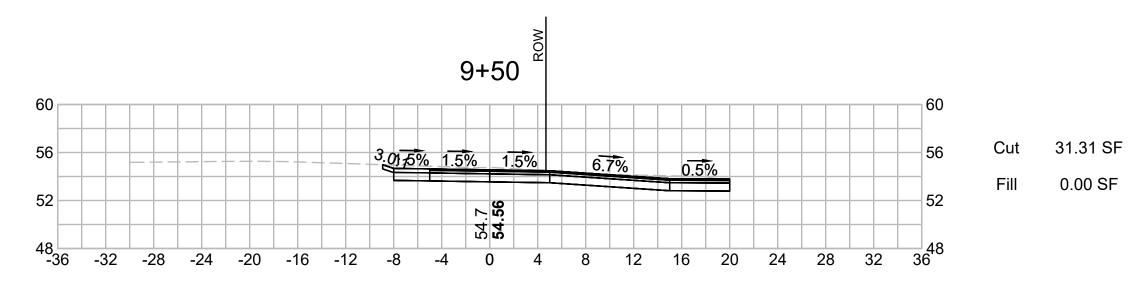


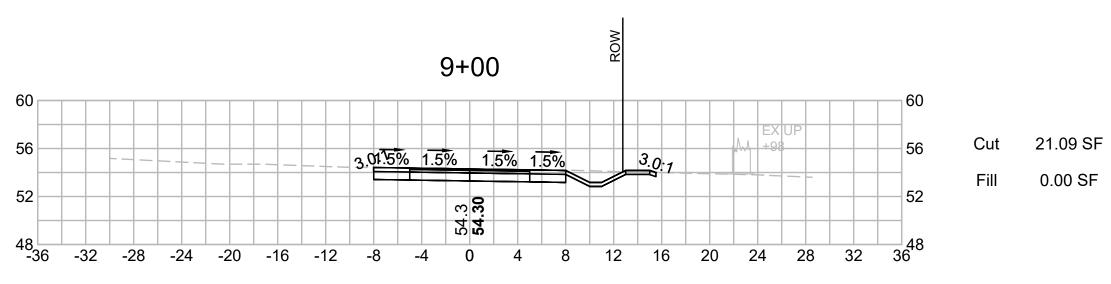


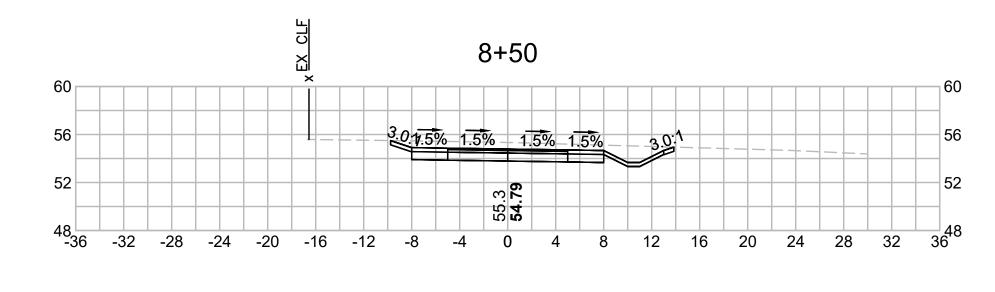
27.31 SF



-36 -32 -28 -24 -20 -16 -12 -8 -4 **0** 4 8 12 16 20 24 28 32

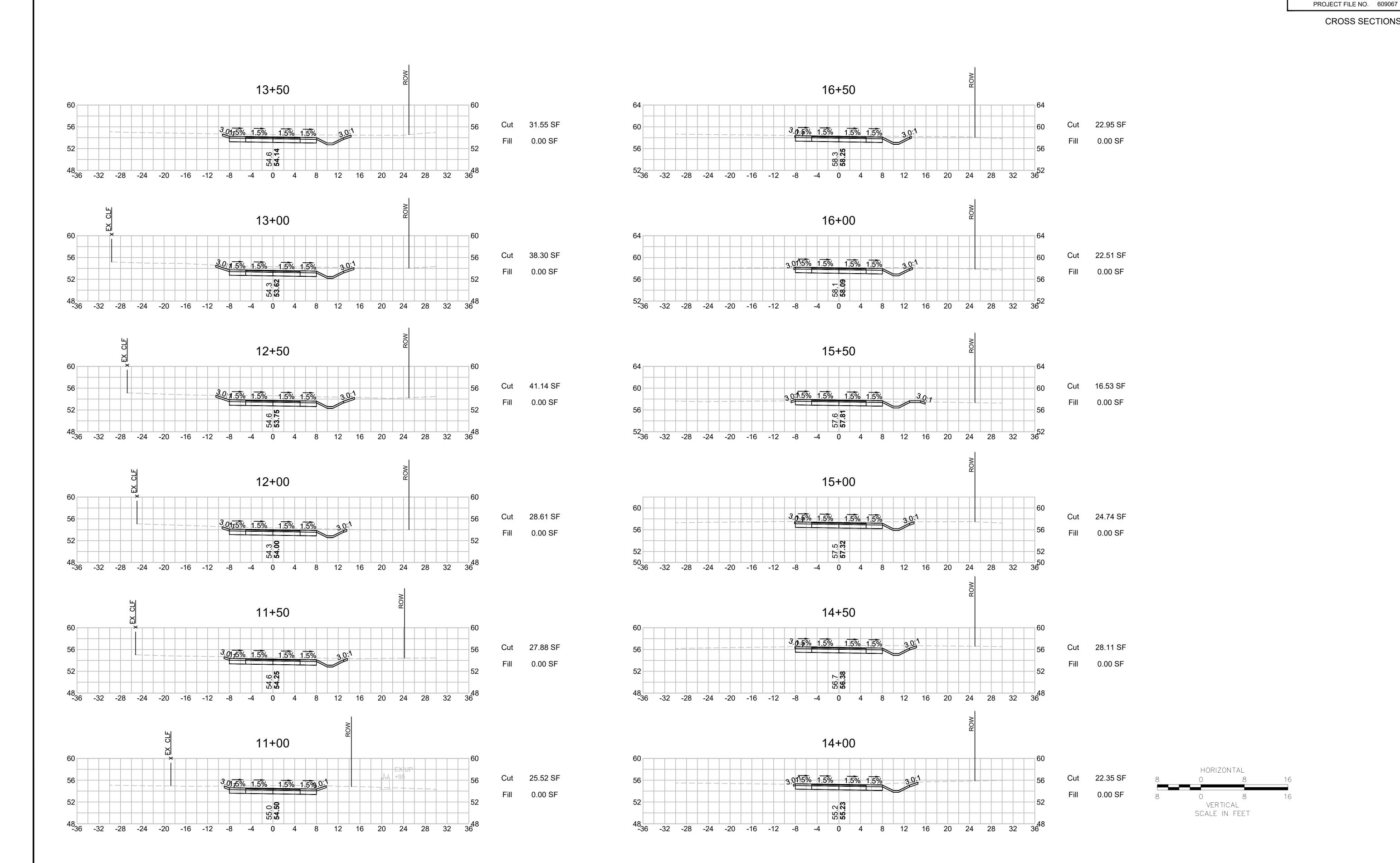


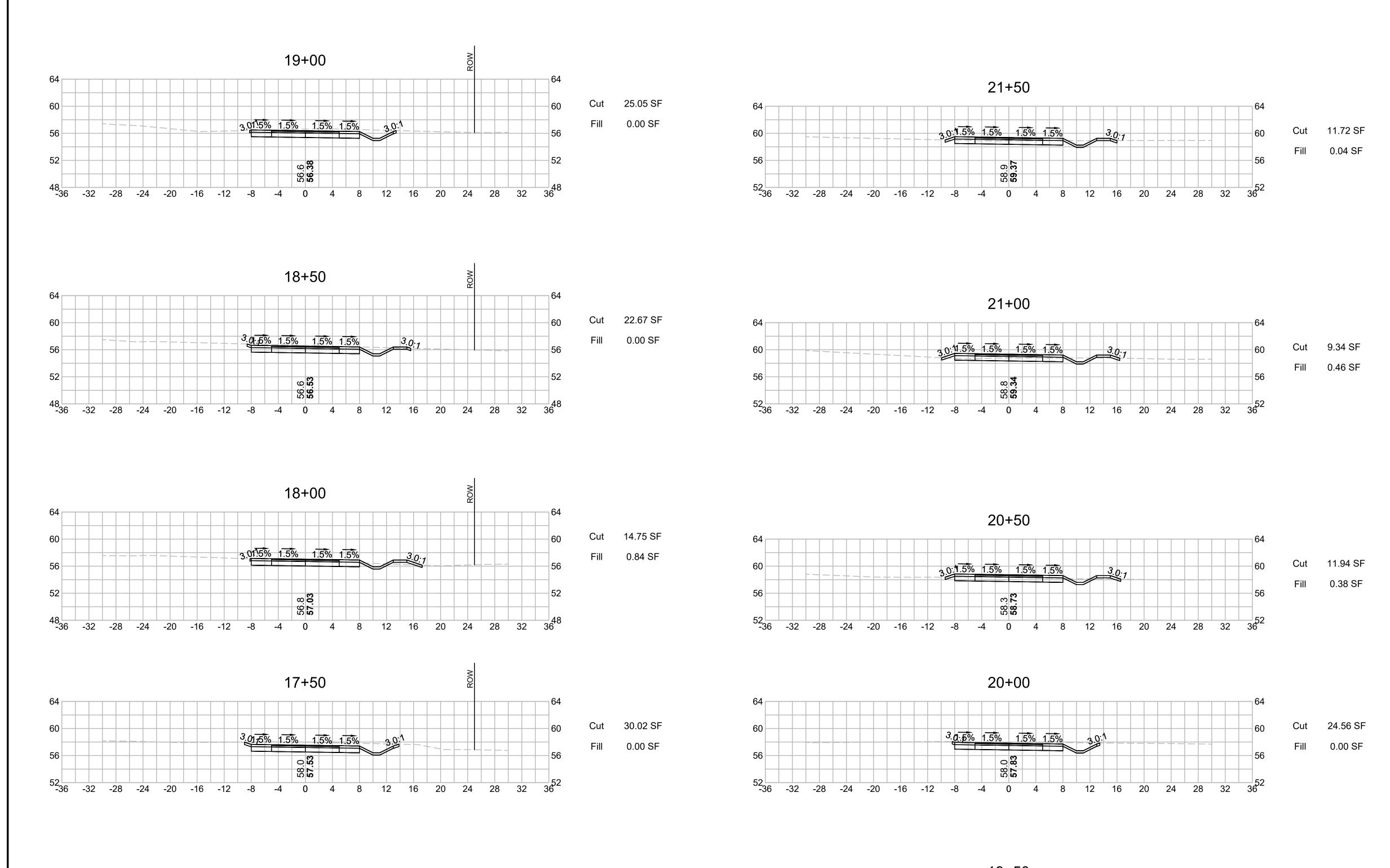


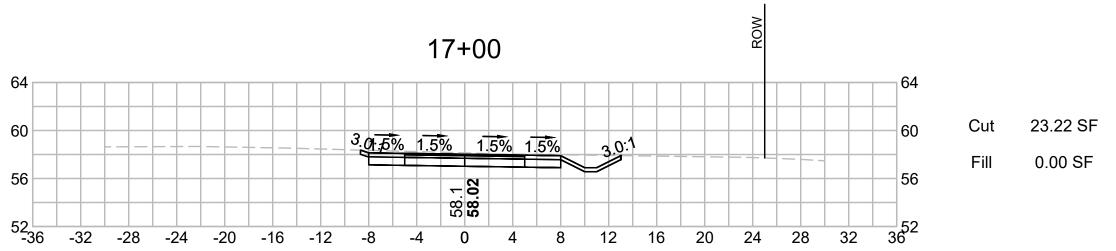


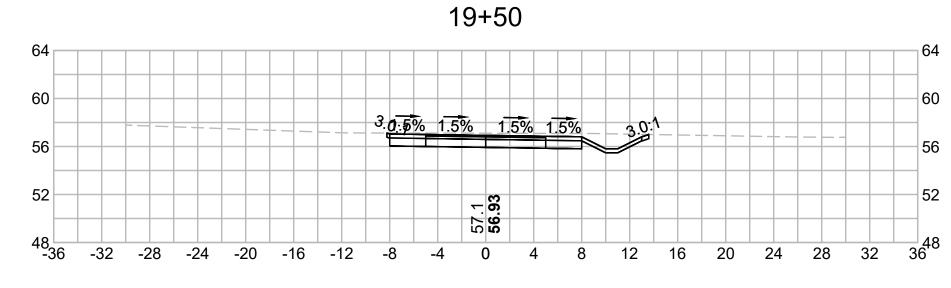
CROSS SECTIONS

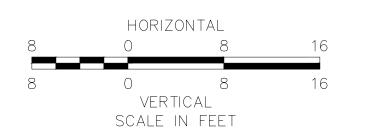
CMQ-0035(018)X



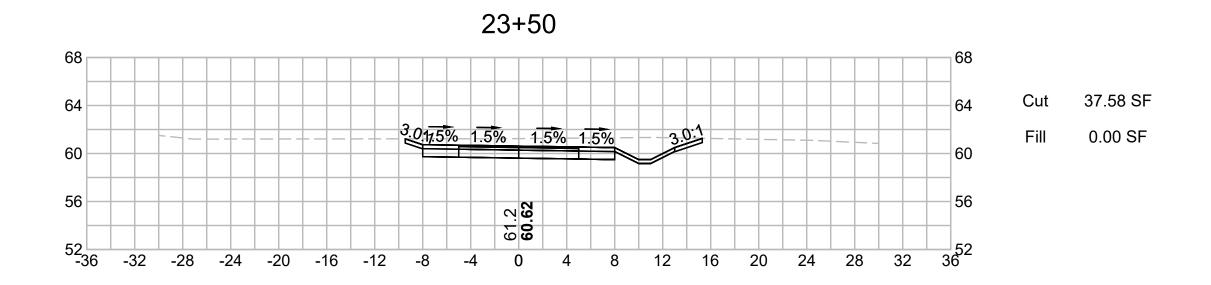


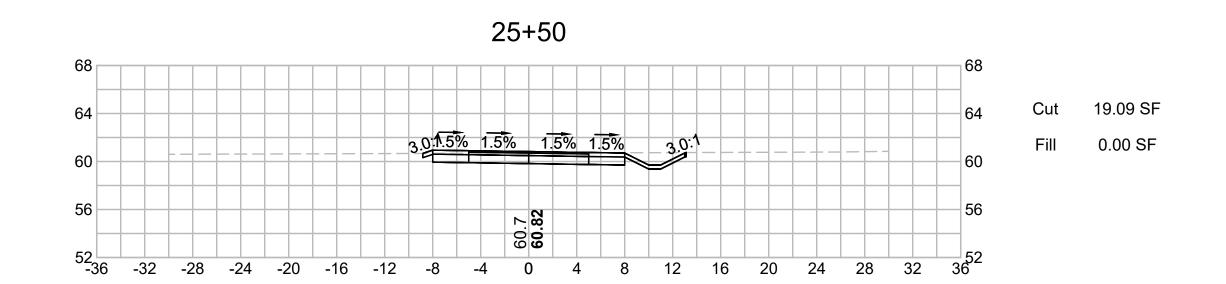


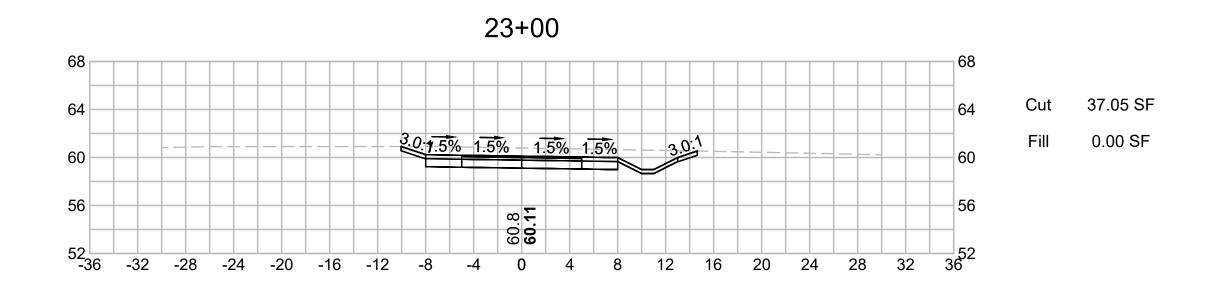


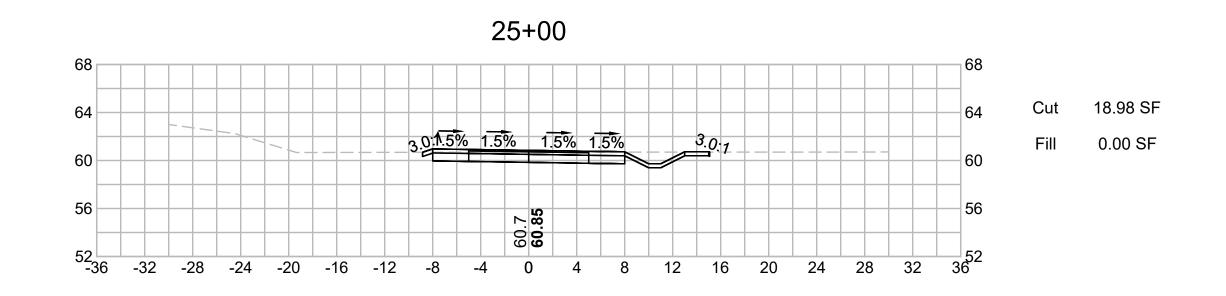


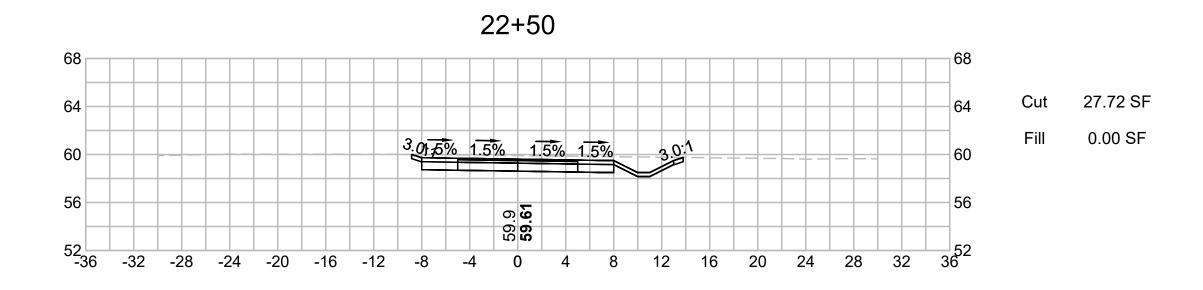
Cut 25.13 SF

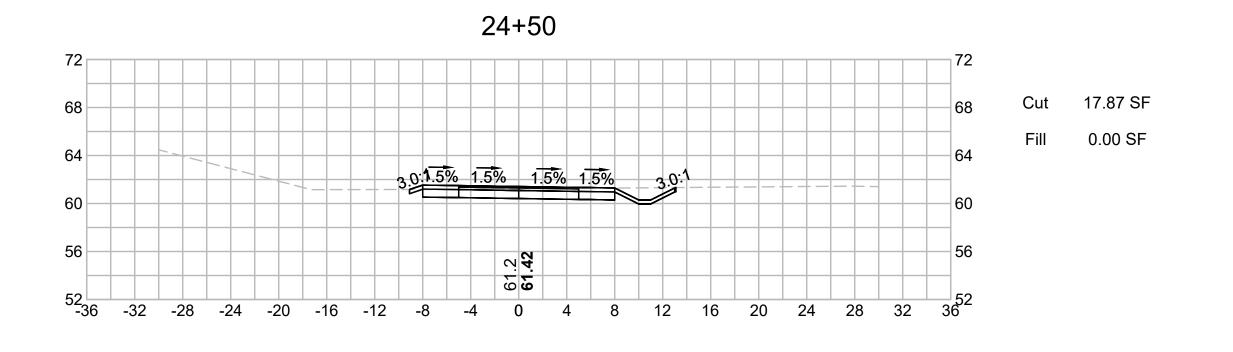


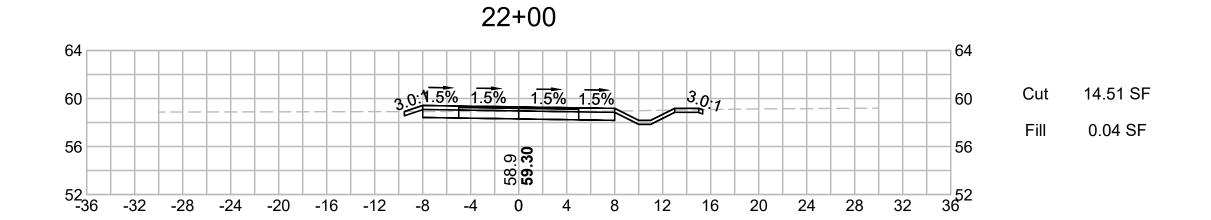


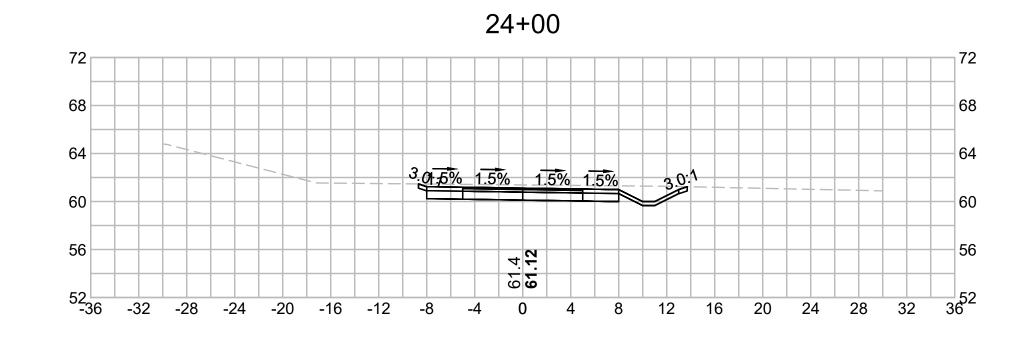


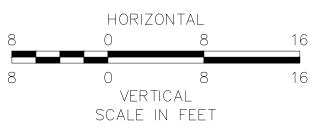






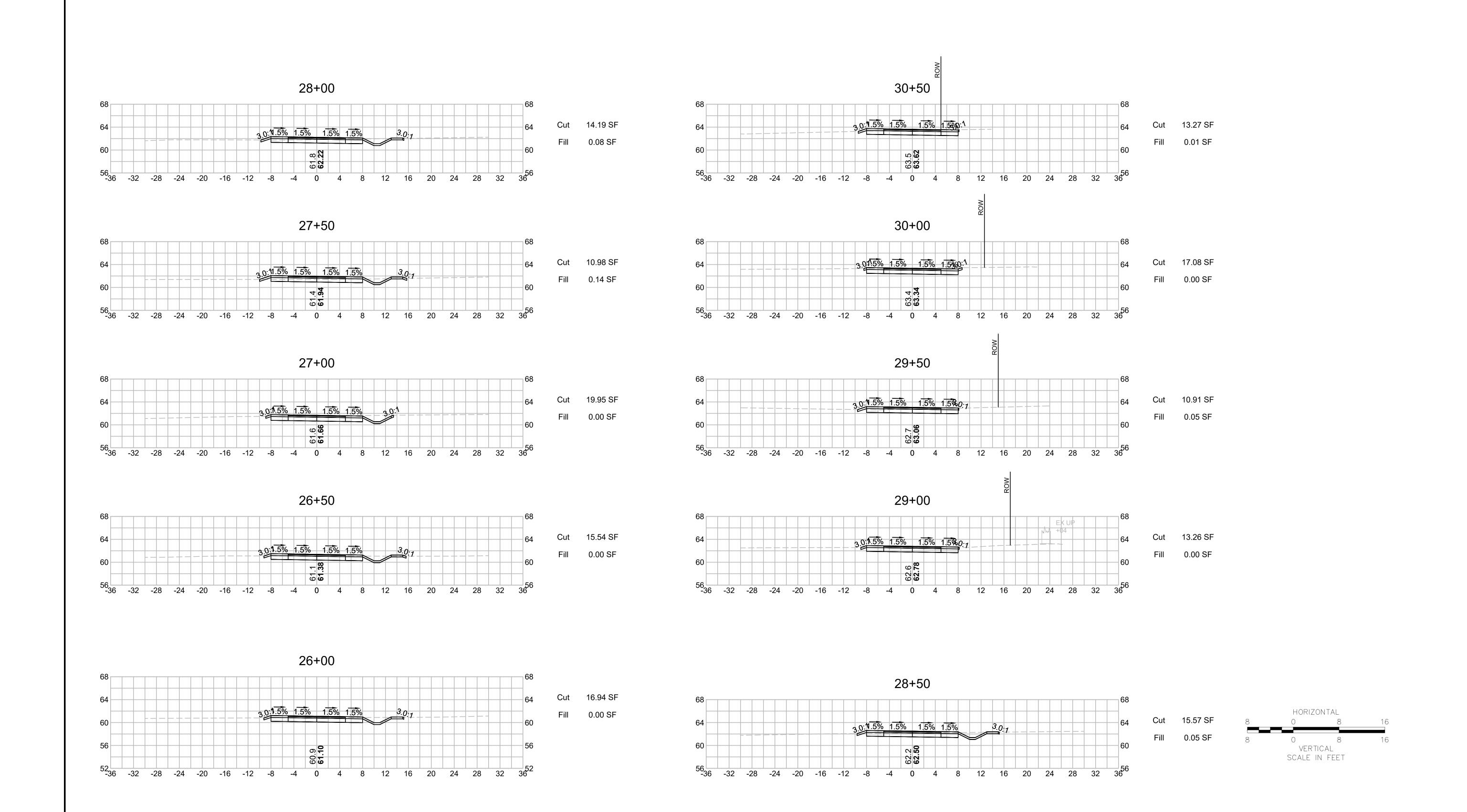






STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS			
MASS.	CMQ-0035(018)X	61	63			
PROJECT FILE NO. 609067						

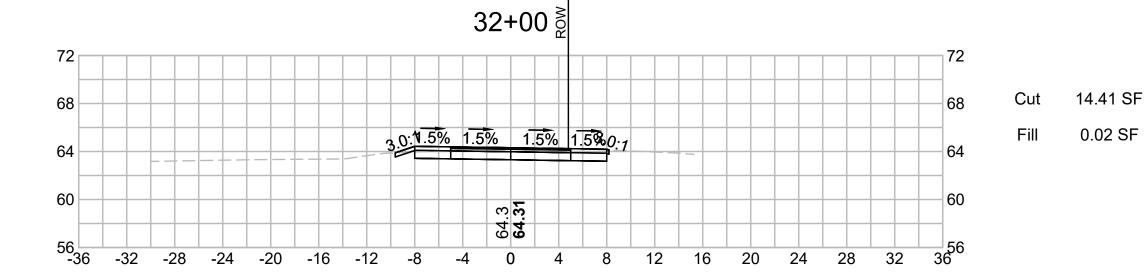
CROSS SECTIONS

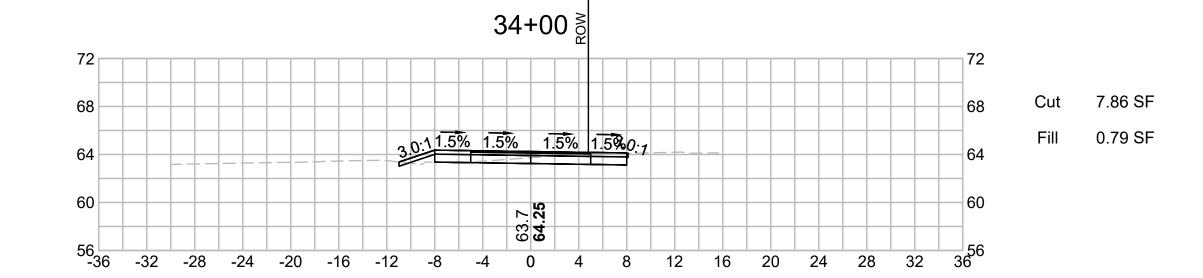


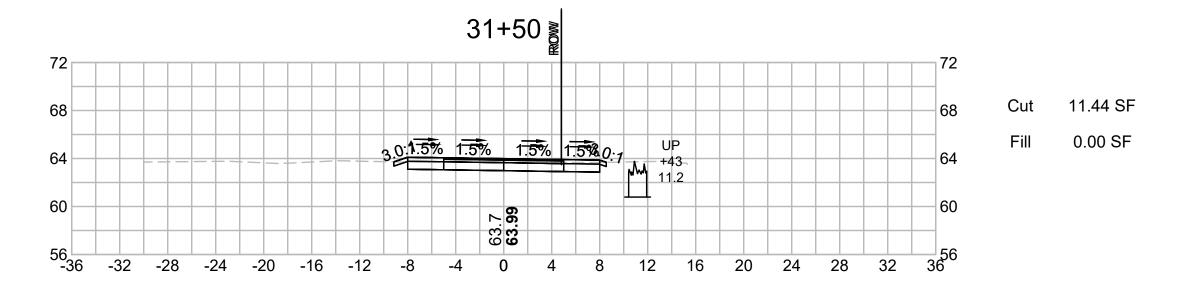
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS			
MASS.	CMQ-0035(018)X	62	63			
PROJECT FILE NO. 609067						

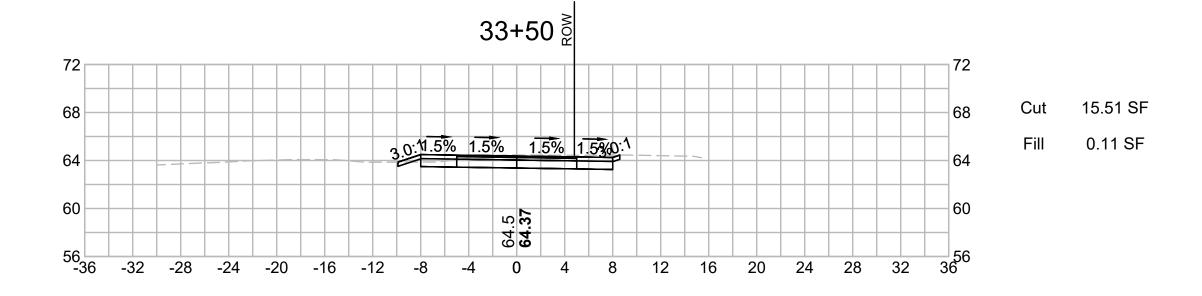
CROSS SECTIONS

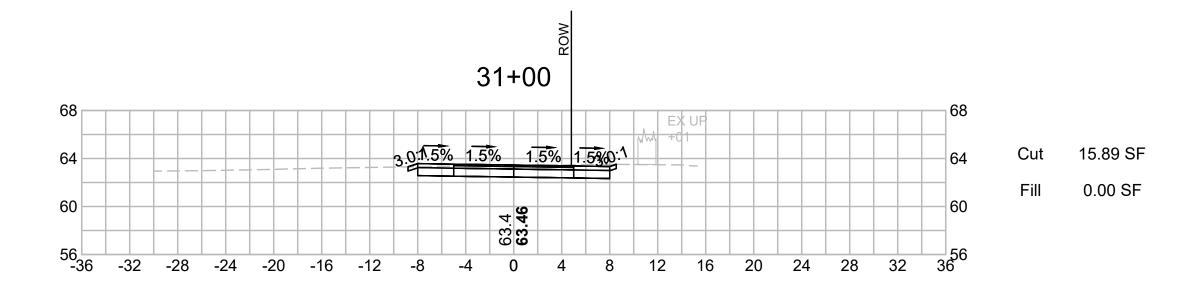


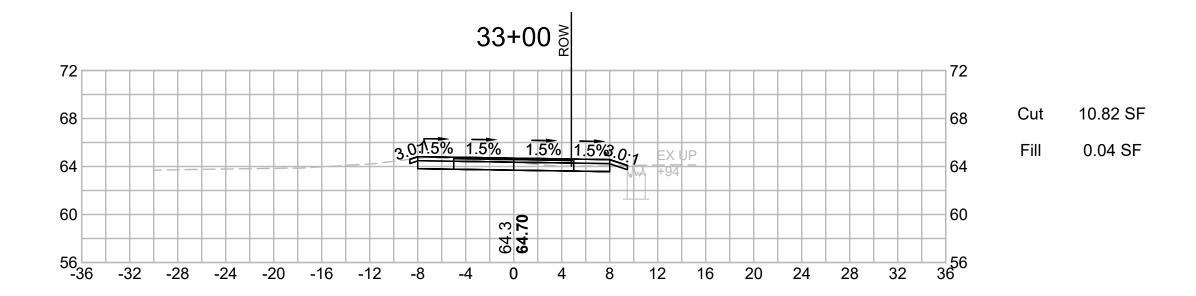


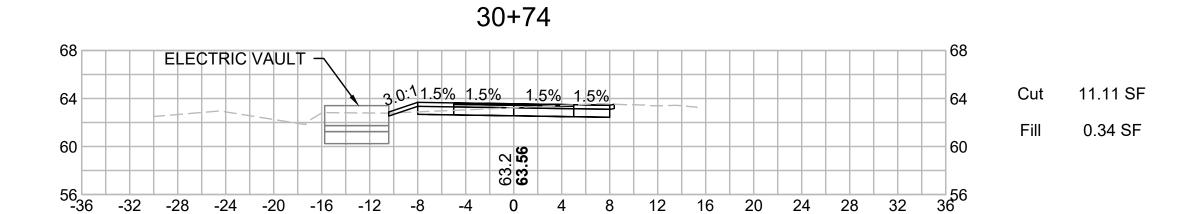


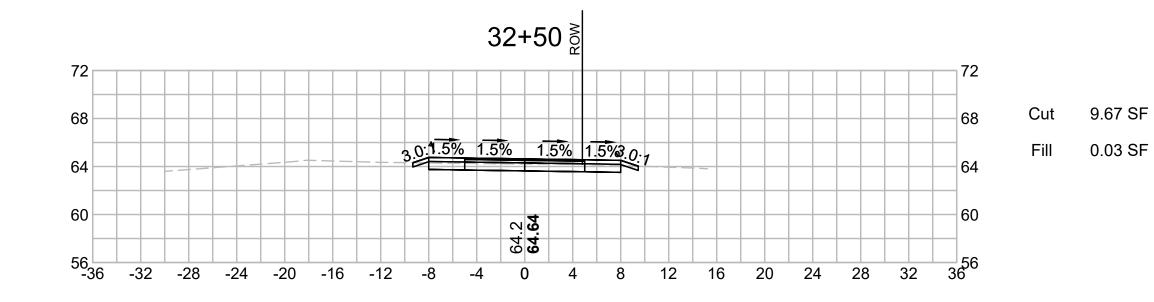


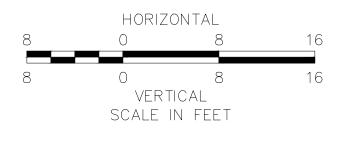


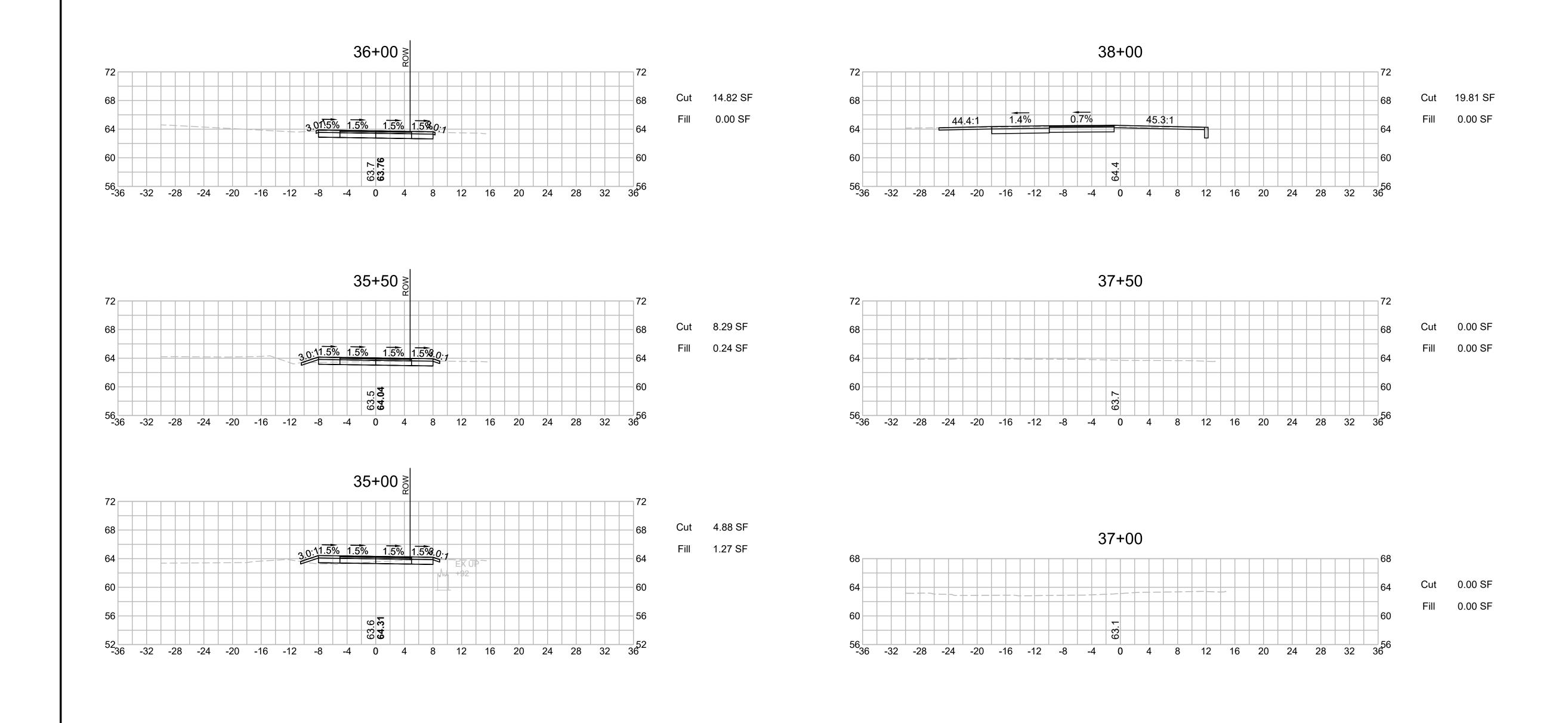












Cut 3.31 SF

 56

 -36
 -32
 -28
 -24
 -20
 -16
 -12
 -8
 -4
 0
 4
 8
 12
 16
 20
 24
 28
 32

36+50 ≥

-36 -32 -28 -24 -20 -16 -12 -8 -4 0 4 8 12 16 20 24 28 32

Cut 18.79 SF

Fill 0.00 SF