

BICYCLE AND PEDESTRIAN ACCOMMODATION IMPROVEMENTS ALONG CONWELL STREET PROVINCETOWN, MASSACHUSETTS

APRIL, 2018



PREPARED FOR:

TOWN OF PROVINCETOWN
DEPARTMENT OF PUBLIC WORKS
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ERIC L. LARSEN, DEPUTY DIRECTOR
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PREPARED BY:

ENVIRONMENTAL PARTNERS GROUP, INC.
1900 CROWN COLONY DRIVE, SUITE 402
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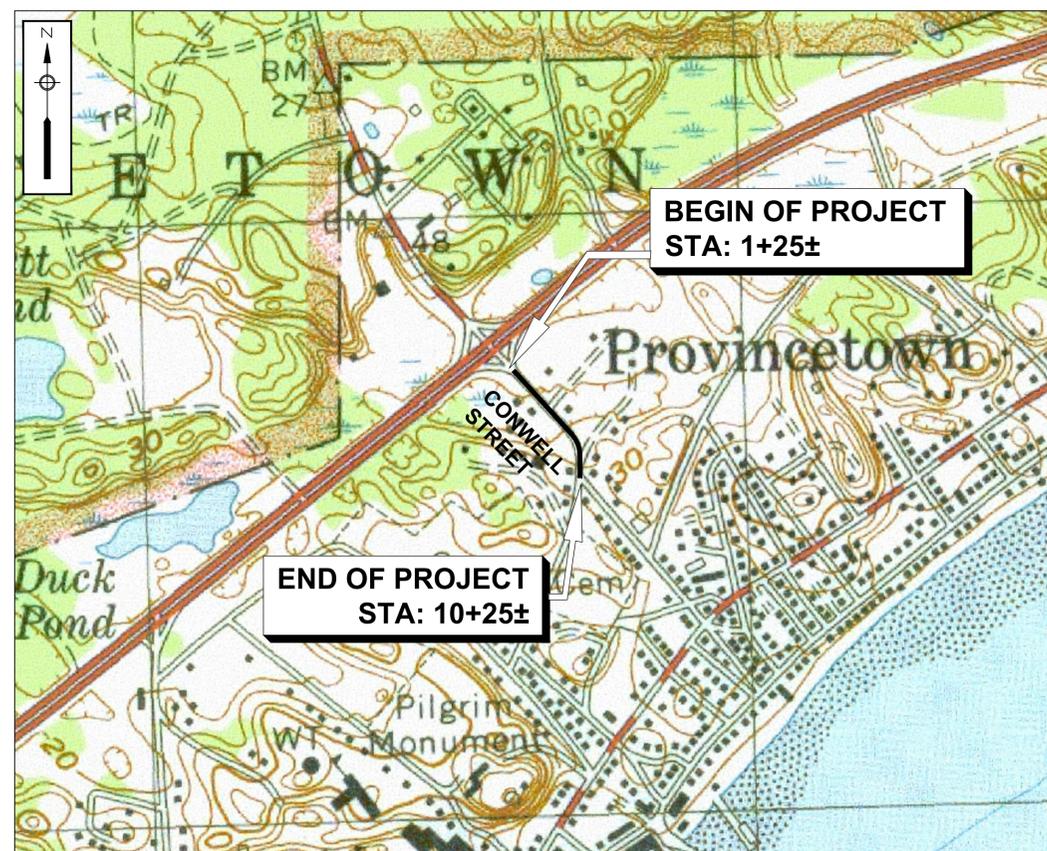
LIST OF DRAWINGS

SHEET NO.	DESCRIPTION
	TITLE SHEET
G-1	LEGENDS, GENERAL NOTES AND KEY PLAN
C-1	CONSTRUCTION PLAN AND PROFILE (STA. 1+00 TO STA. 6+50)
C-2	CONSTRUCTION AND PROFILE (STA. 6+50 TO STA. 11+00)
C-3	CURB TIE PLAN
C-4 - C-7	CONSTRUCTION DETAILS
TS-1	TRAFFIC SIGNS AND PAVEMENT MARKINGS PLAN
TS-2	TRAFFIC SIGN SUMMARY AND PAVEMENT MARKING DETAILS
TMP-1	TRAFFIC MANAGEMENT PLAN
CX-1 - CX-8	CROSS SECTIONS

DESIGN DESIGNATION

	CONWELL ST.
DESIGN SPEED	25 MPH
ADT* (2013)	7,495
ADT (2023)	7,770
K	8.9%
D	59% NB
T (PEAK HOUR)	N/A
T (AVERAGE DAY)	N/A
DHV	632
DDHV	373
FUNCTIONAL CLASSIFICATION	URBAN MINOR ARTERIAL

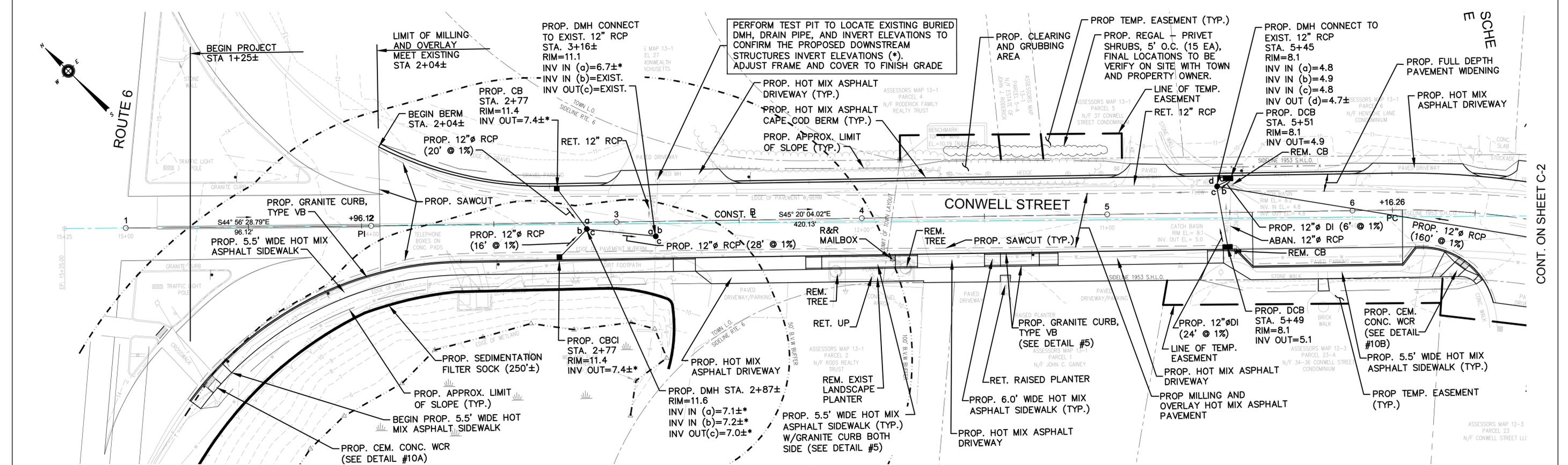
* RESOURCE: TRAFFIC VOLUME TAKEN FROM 2016 TRAFFIC COUNTING REPORT FOR CAPE COD MASSACHUSETTS BY CAPE COD COMMISSION



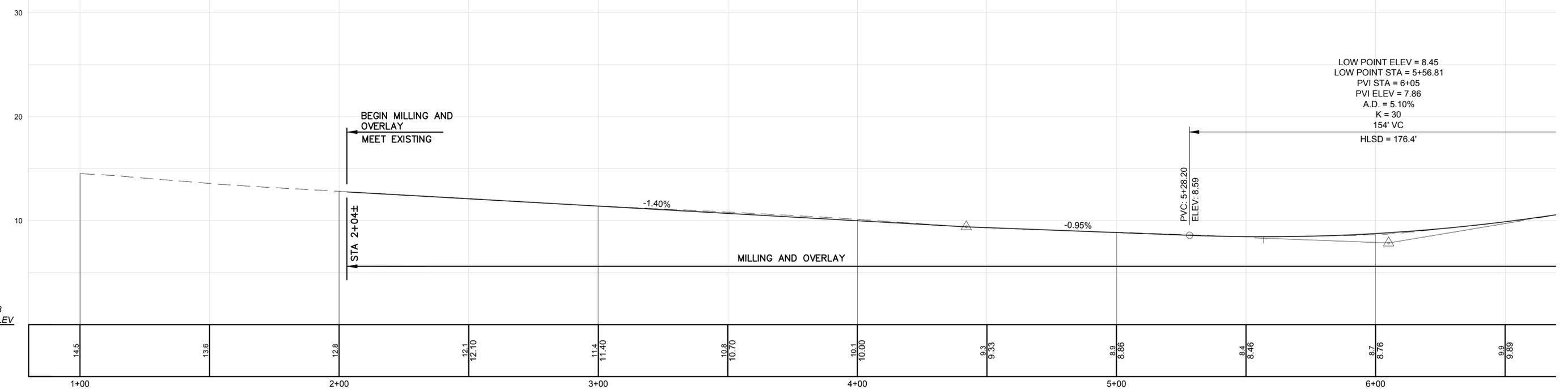
VICINITY MAP
1" = 500'

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ONLY

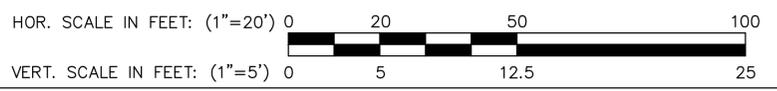
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PLAN
SCALE: 1" = 20'

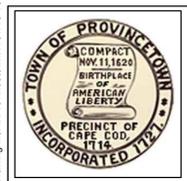


PROFILE
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 5'



Drawing file: I:\Provincetown\115115-1502 Conwell Street Bicycle Improvements\ACAD\Sheet\Permit Application - 100% Submission Comments Revisions\03 Construction Plan.dwg Plot Date: Apr 03, 2018 7:08pm

NAVD 88
BASE ELEV
0.00



MARK	DATE	DESCRIPTION

Scale	MARCH, 2018
Date	115-1502
Job No.	
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Approved by	

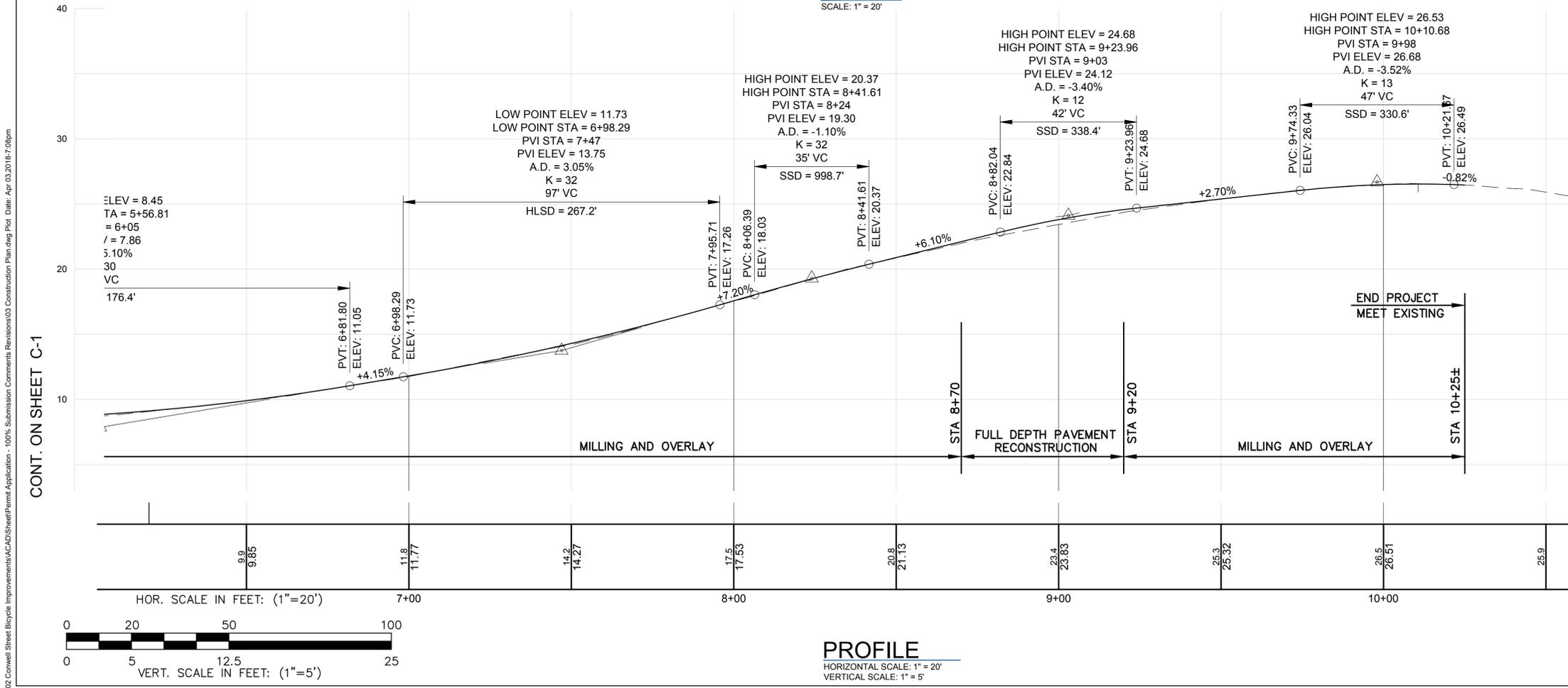
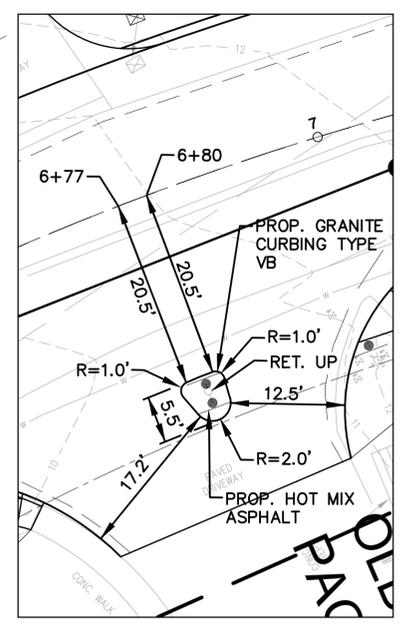
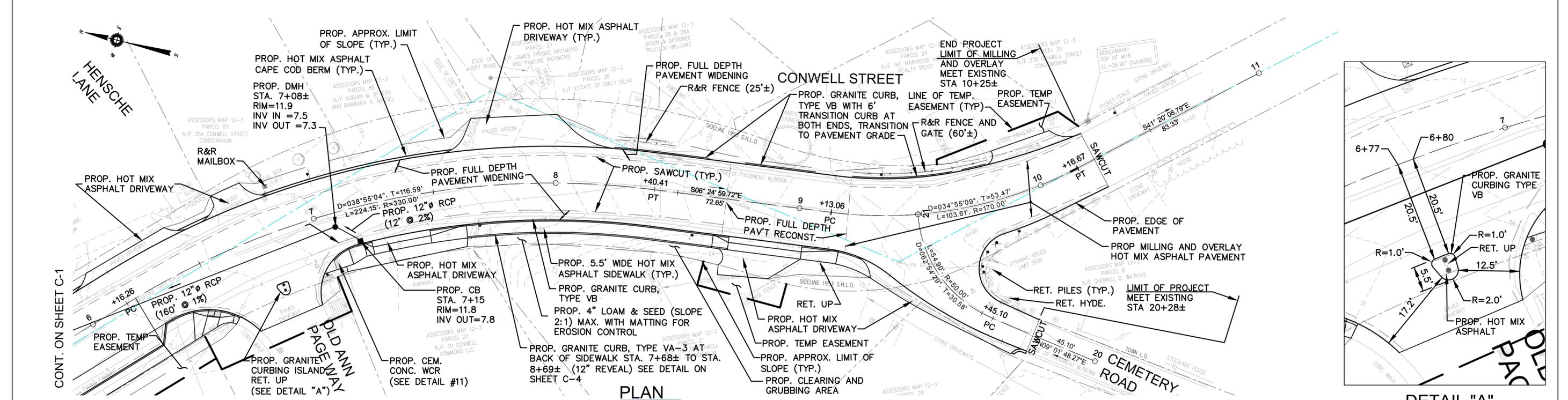
THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

BICYCLE AND PEDESTRIAN ACCOMMODATION IMPROVEMENTS ALONG CONWELL STREET
PROVINCETOWN, MASSACHUSETTS

CONSTRUCTION PLAN AND PROFILE (1 OF 2)
(STA. 1+00 TO STA. 6+50)

FOR PERMITTING ONLY

Sheet No. **C-1**



- GENERAL NOTES:**
- IT IS THE INTENT OF THE DESIGN TO PROVIDE A MINIMUM CONSTRUCTED SIDEWALK WIDTH FOR A PATH OF TRAVEL PAST ALL OBSTRUCTIONS OF 3'-0" CLEARANCE FOR HANDICAP ACCESSIBILITY (IN ACCORDANCE WITH THE LATEST A.D.A. AND MASSDOT REQUIREMENTS). THE CONTRACTOR SHALL VERIFY THAT ALL POTENTIAL OBSTRUCTIONS HAVE BEEN ADDRESSED IN THE PLANS INCLUDING BUT NOT LIMITED TO SIGNS, MAILBOXES, UTILITY POLES, AND HYDRANTS SO THEY ARE LOCATED TO PROVIDE THIS MINIMUM PATH OF TRAVEL CLEARANCE AND A MINIMUM 18" TYPICAL CLEARANCE TO THE FACE OF CURB OR 12" MIN. CLEARANCE WHERE 18" IS NOT FEASIBLE OR PRACTICAL. NO UTILITY POLES OR OBSTRUCTIONS ARE PERMITTED WITHIN WHEELCHAIR RAMPS.
 - BRICK RED DETECTABLE WARNING PANELS SHALL BE INSTALLED ON ALL WHEELCHAIR RAMPS AND SHALL COMPLY WITH CONSTRUCTION STANDARD E107.6.5. PAYMENT FOR DETECTABLE WARNING PANELS SHALL BE CONSIDERED INCIDENTAL TO THE CONSTRUCTION OF THE WHEELCHAIR RAMPS OR SIDEWALKS IN WHICH THEY ARE BEING INSTALLED.
 - THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL WHEELCHAIR RAMPS ARE CONSTRUCTED TO CONFORM TO AAB/ADA AND THE TOWN REQUIREMENTS.
 - DIMENSIONS AND LIMITS OF WORK ARE APPROXIMATE AND MAY BE ADJUSTED TO ADDRESS ON SITE CONSTRAINTS AS WARRANTED AND DIRECTED.
 - ALL EXISTING SIGNS SHALL BE REMOVED AND STACKED UNLESS OTHERWISE NOTED. SEE SIGNS AND PAVEMENT MARKINGS PLANS.
 - ALL PROPOSED PAVEMENT MARKINGS SHALL MEET EXISTING MARKINGS AT THE LIMITS OF WORK.
 - THE TERM "PROPOSED" (PROP.) MEANS WORK TO BE CONSTRUCTED HEREIN USING NEW MATERIALS OR WHERE APPLICABLE, REUSING EXISTING MATERIALS IDENTIFIED AS "REMOVE AND RESET" (R&R). ALL OTHER MATERIALS SHALL BE "REMOVED AND STACKED" (R&S) OR DISPOSED OF OFF SITE.
 - THE CONTRACTOR IS RESPONSIBLE TO PERFORM TEST PIT TO LOCATE THE EXISTING BURIED DRAINAGE MANHOLE AND DRAINAGE PIPE AT LOCATION NEAR STA. 3+18(LT) AND 5+45 (LT). ALSO, THE CONTRACTOR SHALL DETERMINE THE ACTUAL PROPOSED INVERT ELEVATIONS (*) FOR THE PROPOSED DOWNSTREAM STRUCTURES PRIOR ORDERING THE STRUCTURES.

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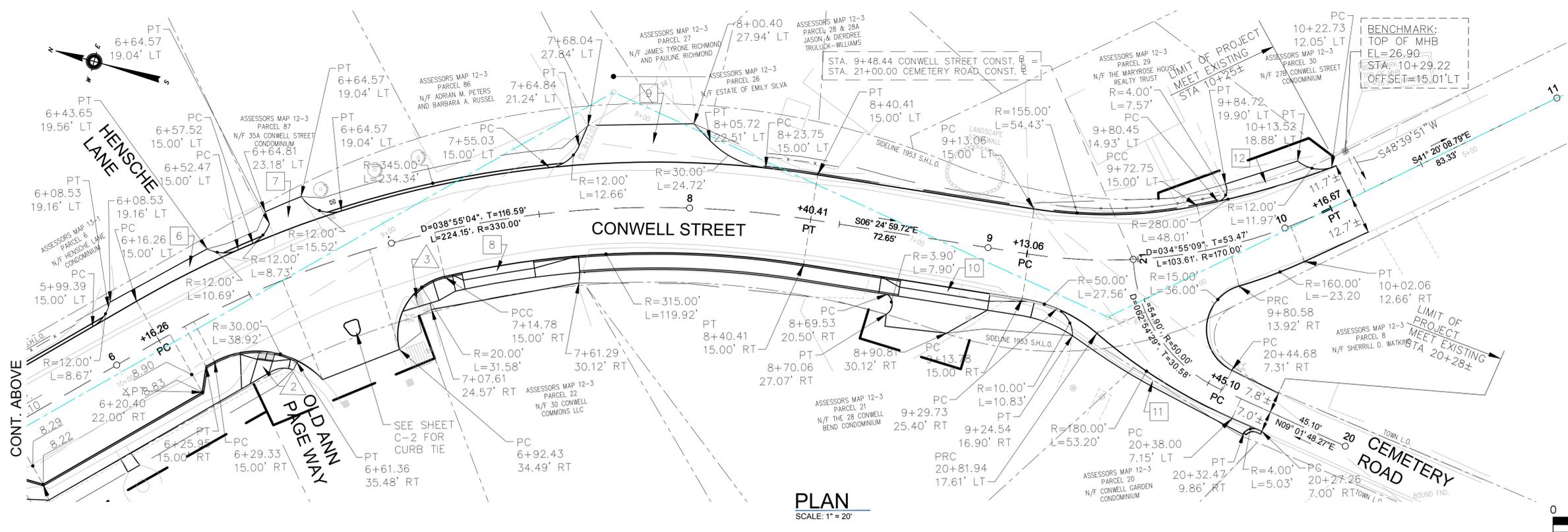
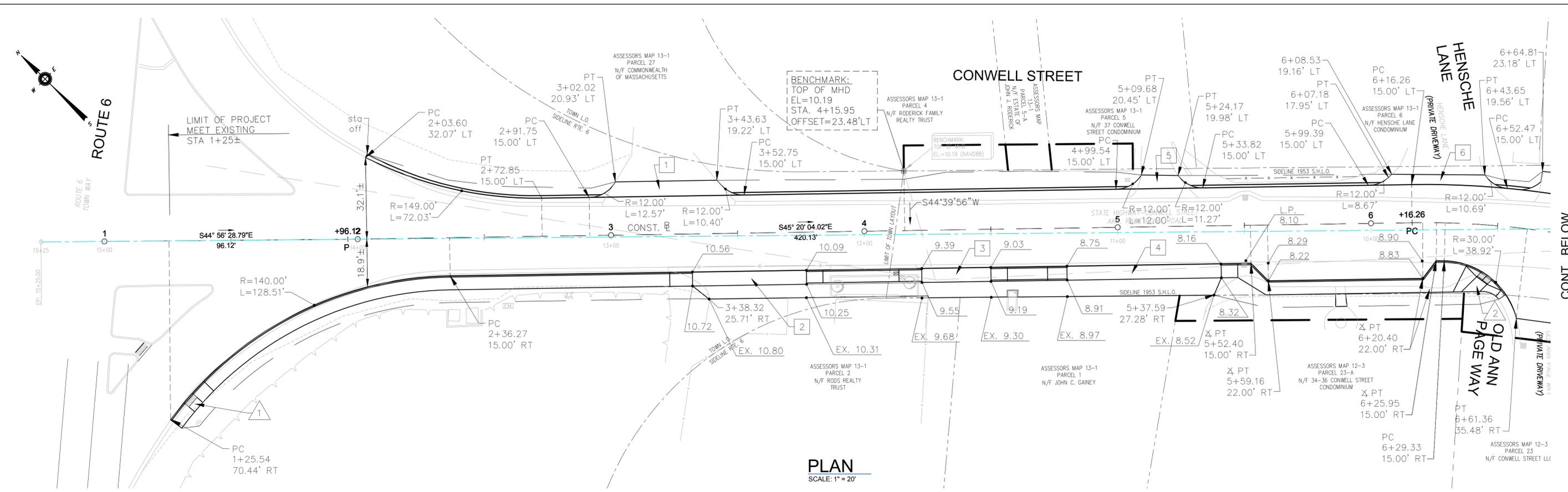
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BICYCLE AND PEDESTRIAN ACCOMMODATION IMPROVEMENTS ALONG CONWELL STREET PROVINCETOWN, MASSACHUSETTS

CONSTRUCTION PLAN AND PROFILE (2 OF 2)
(STA. 6+50 TO STA. 11+00)

FOR PERMITTING ONLY

Sheet No. **C-2**



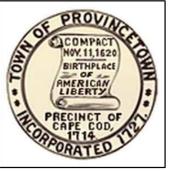
CONSTRUCTION BASELINE DATA	
DESCRIPTION	TANGENT/CURVE DATA
CONWELL STREET	
BEGIN 1+00.00	S44°56'28.79"E 96.12'
Δ PT 1+96.12	S45°20'04.02"E 420.13'
PC 6+16.26	R=330.00' T=116.59' L=224.15' Δ=38°55'04"
PT 8+40.41	S06°24'59.72"E 72.65'
PC 9+13.06	R=170.00' T=53.47' L=103.61' Δ=34°55'09"
PT 10+16.67	S41°20'08.79"E 83.33'
CEMETERY ROAD	
BEGIN 20+00.00	N09°48'27"E 45.10'
PC 20+45.10	R=50.00' T=30.58' L=54.90' Δ=62°54'29"
PT 21+00.00	

LEGEND

- XX.XX PROPOSED ELEVATION
- # WHEELCHAIR RAMP NUMBER REFERENCE TO WCR DETAILS ON SHEET C-6
- # DRIVEWAY NUMBER REFERENCE TO DWY DETAILS ON SHEET C-5

HOR. SCALE IN FEET: (1"=20')

Drawing file: I:\Provincetown\115115-1502 Conwell Street Bicycle Improvements\ACAD\Sheet\Permit Application - 100% Submission Comments Revisions\04 Curb Tie Plan.dwg Plot Date: Apr 03 2018 7:09pm



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Date	
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Approved by	JDF

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BICYCLE AND PEDESTRIAN ACCOMMODATION IMPROVEMENTS ALONG CONWELL STREET PROVINCETOWN, MASSACHUSETTS

CURB TIE PLAN

FOR PERMITTING ONLY
Sheet No. **C-3**

PAVEMENT NOTES:

PROPOSED MILL AND PAVEMENT OVERLAY

SURFACE: 1 3/4" HOT MIX ASPHALT PAVEMENT TOP COURSE MATERIAL
BITUMEN FOR TACK COAT (RS-1) AT 0.07 GAL./SQ. YD.

LEVEL COURSE: VARIOUS DEPTH HOT MIX ASPHALT PAVEMENT TOP COURSE MATERIAL
BITUMEN FOR TACK COAT (RS-1) AT 0.07 GAL./SQ. YD.

MILLING: COLD PLANE VARIABLE DEPTH TO MEET PROPOSED GRADING (MAX. 3")

PROPOSED FULL DEPTH PAVEMENT RECONSTRUCTION/WIDENING (OVER 3 FEET)

SURFACE: 3 1/2" HOT MIX ASPHALT PLACED IN TWO LAYERS: (1 1/2" TOP COURSE OVER 1 3/4" BINDER COURSE).

BASE: 3 1/2" HOT MIX ASPHALT BASE COURSE PLACED IN ONE LAYER.

FOUNDATION: 12" GRAVEL BORROW TYPE-b

BITUMEN FOR TACK COAT (RS-1) AT 0.05 GAL./SQ. YD. FOR SMOOTH PAVEMENT AT EACH COURSE

PROPOSED FULL DEPTH MINOR WIDENING (LESS THAN 3 FEET)

SURFACE: 3 1/2" HOT MIX ASPHALT PLACED IN TWO LAYERS: (1 1/2" TOP COURSE OVER 1 3/4" BINDER COURSE).

BASE: 6" HIGH EARLY STRENGTH CEMENT CONCRETE BASE COURSE MATERIAL

FOUNDATION: 12" GRAVEL BORROW TYPE-b

PROPOSED HOT MIX ASPHALT SIDEWALK

SURFACE: 2 1/2" HOT MIX ASPHALT PLACED IN TWO LAYERS, 1 1/2" TOP COURSE OVER 1 1/2" BINDER COURSE

SUBBASE: 8" GRAVEL BORROW - TYPE b

PROPOSED HOT MIX ASPHALT DRIVEWAY

SURFACE: 3 1/2" HOT MIX ASPHALT PLACED IN TWO LAYERS, 1 1/2" TOP COURSE OVER 2" BINDER COURSE

SUBBASE: 8" GRAVEL BORROW - TYPE b

PROPOSED CEMENT CONCRETE WALK/WHEELCHAIR RAMP

SURFACE: 4" CEMENT CONCRETE

SUBBASE: 8" GRAVEL BORROW - TYPE b

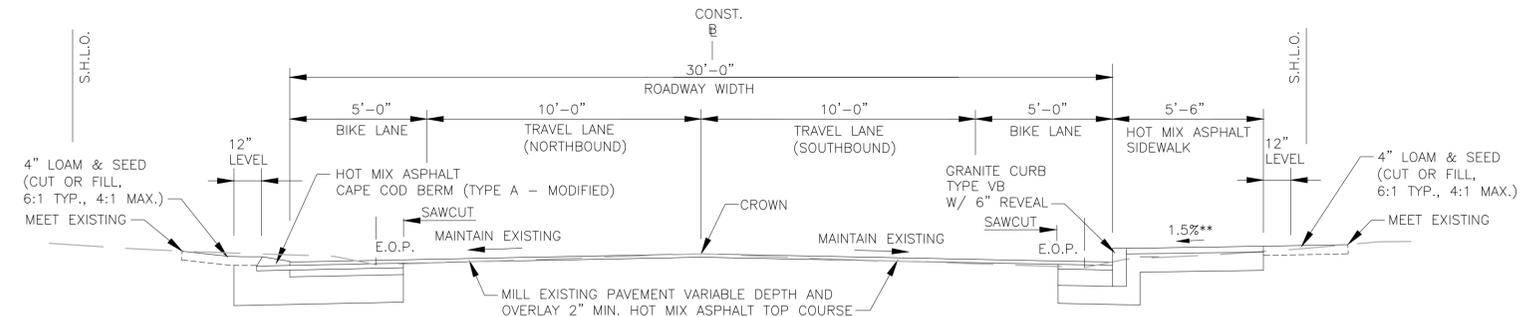
PROPOSED LOAM & SEED

SURFACE: 4" LOAM & SEED

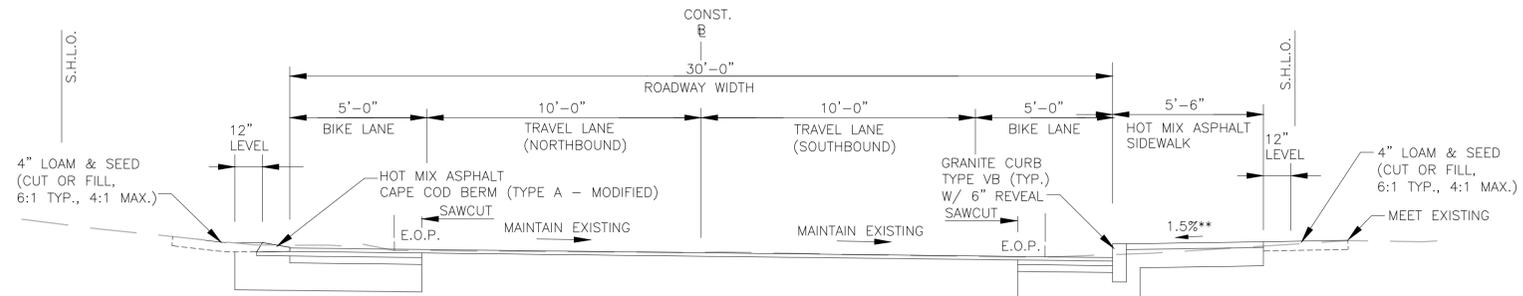
SUBBASE: VARIABLE DEPTH ORDINARY BORROW TO EXIST. GRAVEL

NOTE: * 0.5%± CONSTRUCTION TOLERANCE

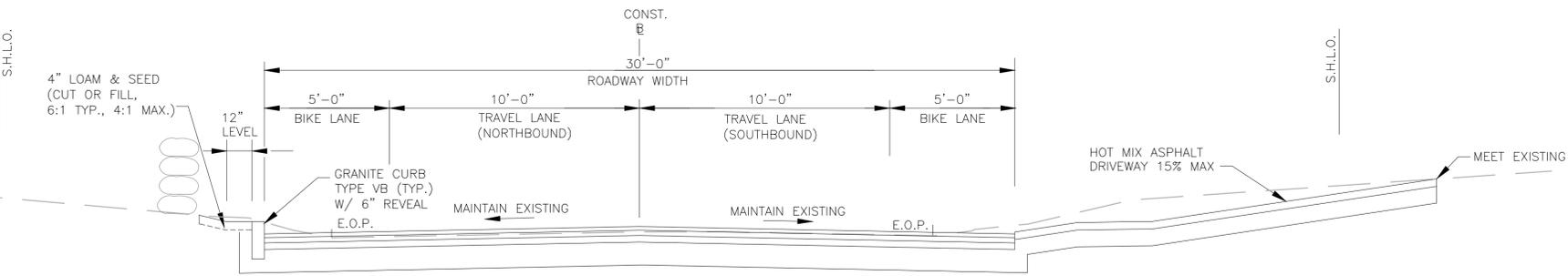
- NOTES:**
1. ALL SAW-CUTS IN DRIVEWAYS SHALL BE SEALED WITH A LIQUID ASPHALT SEALER.
 2. ANY UNSUITABLE SOILS WILL BE ADDRESSED WITH MASSDOT MATERIALS TESTING PROCEDURES BY THE ENGINEER AND REPLACED WITH SUITABLE SUBBASE AS DIRECTED BY THE ENGINEER.



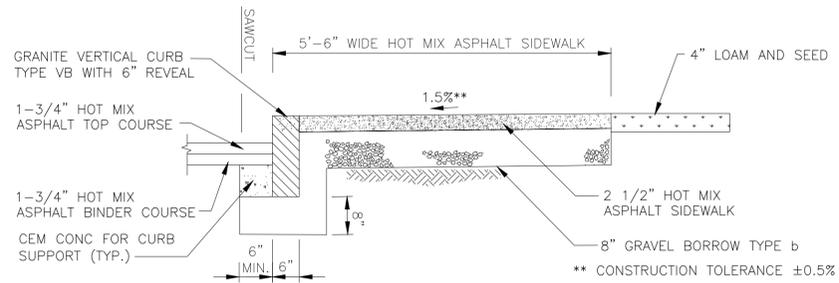
1 TYPICAL SECTION (CROWN)
(STA. 2+72 TO STA. 6+80±)
(STA. 8+15± TO STA. 8+70)
N.T.S.



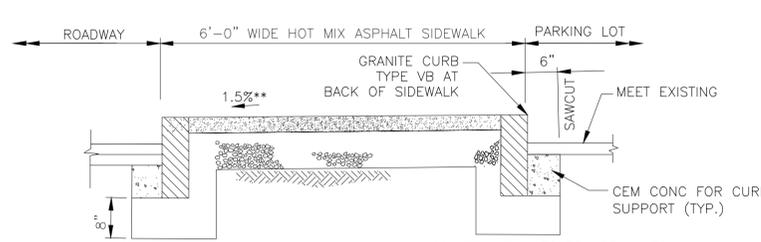
2 TYPICAL SECTION (SUPERELEVATION)
(STA. 6+80± TO STA. 8+15±)
N.T.S.



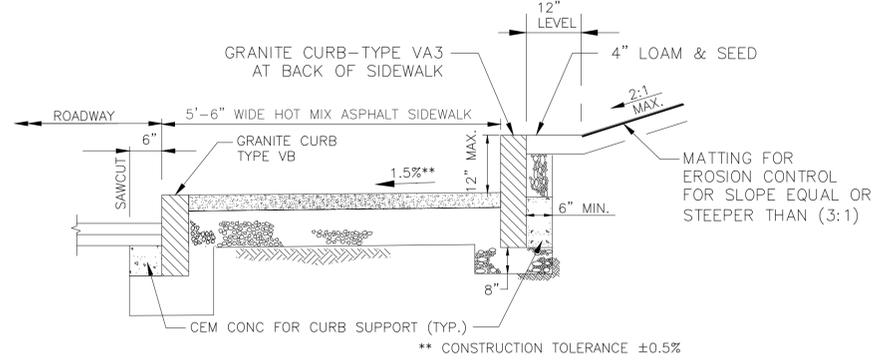
3 TYPICAL SECTION (FULL DEPTH RECONSTRUCTION)
(STA. 8+70 TO STA. 9+20)
N.T.S.



4 HOT MIX ASPHALT SIDEWALK DETAIL
N.T.S.



5 GRANITE CURBING AT BACK OF SIDEWALK
(STA. 4+50± TO STA. 4+80± AND STA. 3+76± TO STA. 4+22±)



6 RAISED GRANITE CURBING AT BACK OF SIDEWALK
(STA. 7+68± TO STA. 8+69±)
N.T.S.

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Scale	N.T.S.
Date	MARCH, 2018
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Approved by	JDF

BICYCLE AND PEDESTRIAN ACCOMMODATION IMPROVEMENTS ALONG CONWELL STREET PROVINCETOWN, MASSACHUSETTS

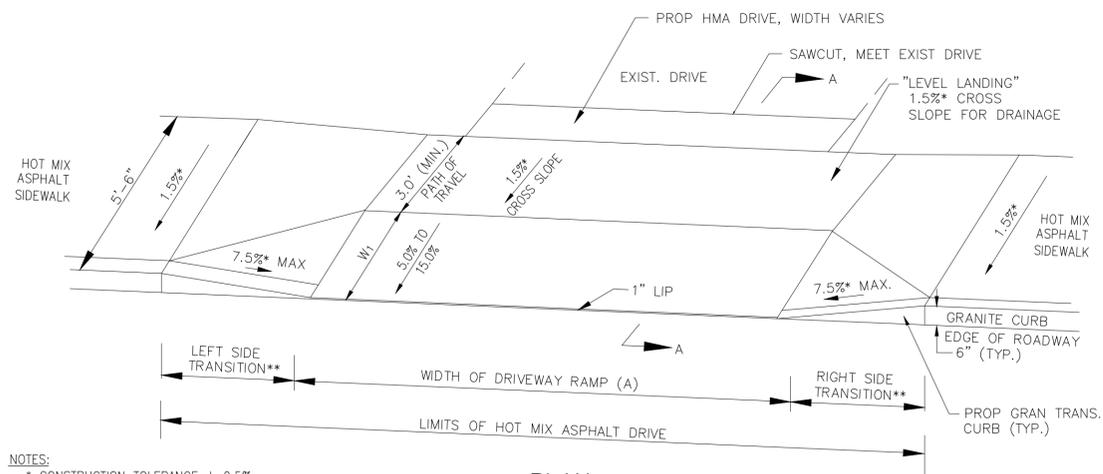
CONSTRUCTION DETAILS #1

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Sheet No. **C-4**

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- NOTES:**
- * CONSTRUCTION TOLERANCE ± 0.5%
 - ** TRANSITION CURB LENGTH
(FOR HIGH SIDE TRANSITION LENGTH, SEE MASSDOT STANDARD DETAIL E107.9.0. FOR LOW SIDE TRANSITION, W=6'-6")
 - SEE CONSTRUCTION STANDARD E107.7.0
 - *** 3" REVEAL

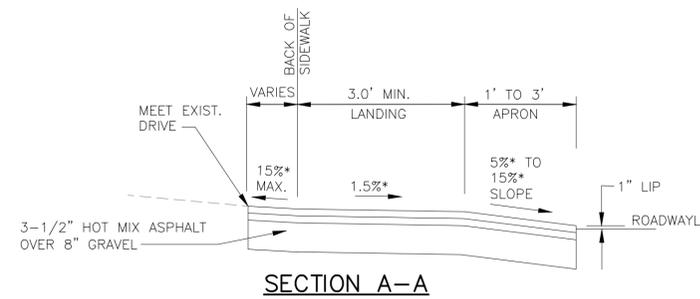
PLAN

7

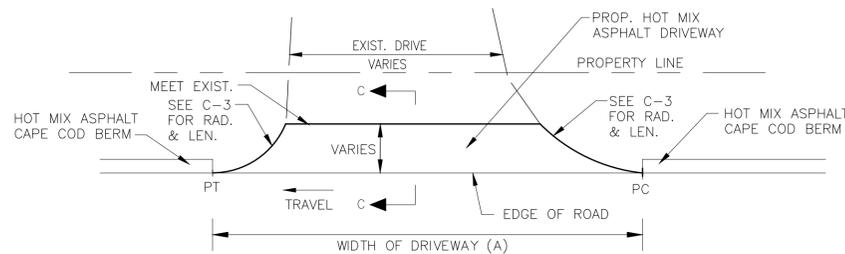
HOT MIX ASPHALT SIDEWALK THROUGH RESIDENTIAL DRIVEWAY

N.T.S.

DWY #	ALIGNMENT	DWY REFERENCE PT C		PATH OF TRAVEL	LENGTH OF RAMP (W1)	WIDTH OF DRIVEWAY RAMP (A)	ROADWAY GUTTER SLOPE (%)	TRANSITION LENGTH	
		STATION	OFFSET					LEFT	RIGHT
8	CONWELL STREET	7+33.53	15.00' RT	3.00'	2.50'	24.12'	5.67%	15.00'	3.25'***
10	CONWELL STREET	8+87.99	15.00' RT	3.00'	2.50'	30.00'	5.50%	15.00'	6.50'



SECTION A-A

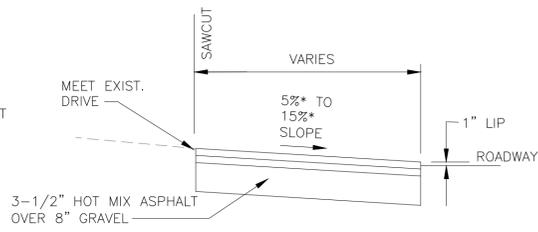


PLAN

8

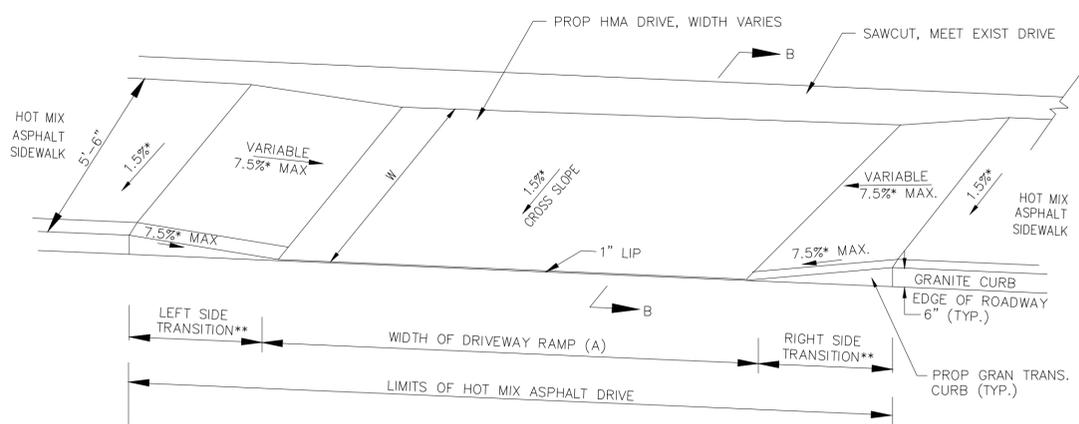
NON-SIDEWALK DRIVEWAY DETAIL

N.T.S.



SECTION C-C

DWY #	ALIGNMENT	DWY REFERENCE PT C		WIDTH OF DRIVEWAY RAMP (A)
		STATION	OFFSET	
1	CONWELL STREET	3+22.19	15.00' LT	61.20'
5	CONWELL STREET	5+16.68	15.00' LT	34.28'
6	CONWELL STREET	6+26.29	15.00' LT	54.86'
7	CONWELL STREET	6+72.48	15.00' LT	31.60'
9	CONWELL STREET	7+89.39	15.00' LT	71.71'
11	CEMETERY ROAD	20+61.92	8.86' RT	77.73'
12	CONWELL STREET	10+02.63	15.00' LT	39.74'

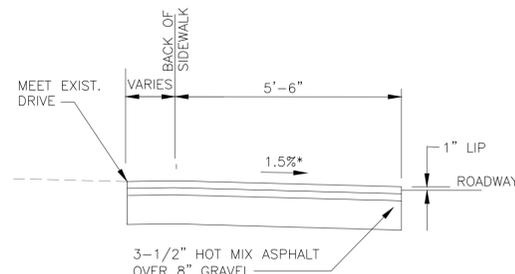


PLAN

9

HOT MIX ASPHALT SIDEWALK THROUGH WIDE DRIVEWAY

N.T.S.



SECTION B-B

DWY #	ALIGNMENT	DWY REFERENCE PT C		WIDTH OF SIDEWALK (W)	WIDTH OF DRIVEWAY RAMP (A)	ROADWAY GUTTER SLOPE (%)	TRANSITION LENGTH	
		STATION	OFFSET				LEFT	RIGHT
2	CONWELL STREET	3+54.42	15.00' RT	5.50'	45.00'	1.40%	6.50'	9.00'
3	CONWELL STREET	4+36.08	15.00' RT	5.50'	27.30'	1.40%	6.50'	9.00'
4	CONWELL STREET	5+10.18	15.00' RT	5.50'	60.90'	0.87%	6.50'	7.67'



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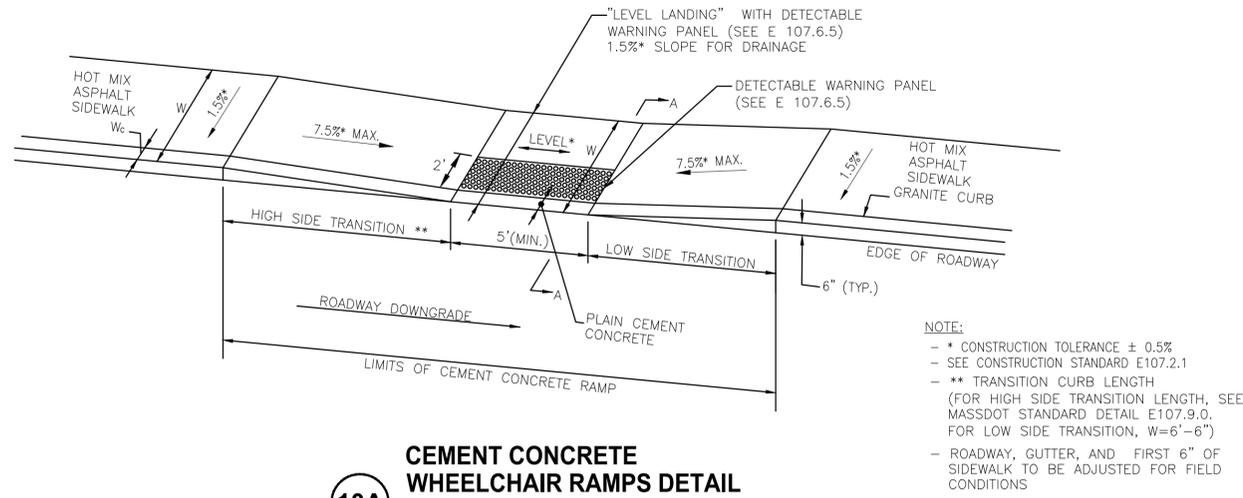
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BICYCLE AND PEDESTRIAN ACCOMMODATION IMPROVEMENTS ALONG CONWELL STREET PROVINCETOWN, MASSACHUSETTS

CONSTRUCTION DETAILS #2

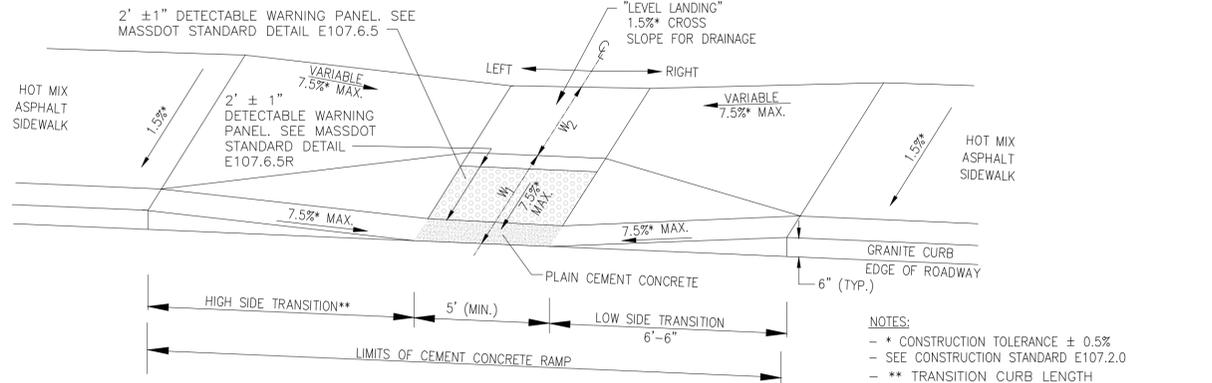
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Sheet No.

C-5



10A
CEMENT CONCRETE WHEELCHAIR RAMPS DETAIL
 N.T.S.

NOTE:
 - * CONSTRUCTION TOLERANCE ± 0.5%
 - SEE CONSTRUCTION STANDARD E107.2.1
 - ** TRANSITION CURB LENGTH (FOR HIGH SIDE TRANSITION LENGTH, SEE MASSDOT STANDARD DETAIL E107.9.0. FOR LOW SIDE TRANSITION, W=6'-6")
 - ROADWAY, GUTTER, AND FIRST 6" OF SIDEWALK TO BE ADJUSTED FOR FIELD CONDITIONS

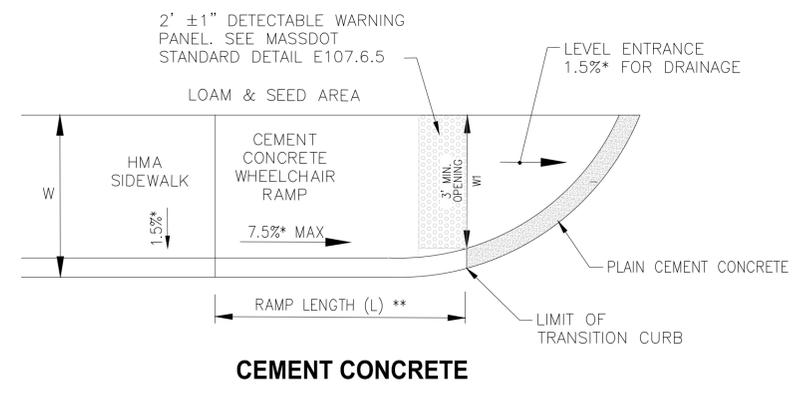


10B
CEMENT CONCRETE WHEELCHAIR RAMPS DETAIL
 N.T.S.

NOTES:
 - * CONSTRUCTION TOLERANCE ± 0.5%
 - SEE CONSTRUCTION STANDARD E107.2.0
 - ** TRANSITION CURB LENGTH (FOR HIGH SIDE TRANSITION LENGTH, SEE MASSDOT STANDARD DETAIL E107.9.0. FOR LOW SIDE TRANSITION, W=6'-6")
 - *** 3" REVEAL (MEET EXISTING REVEAL)

WCR #	ALIGNMENT	WCR REFERENCE PT C		WIDTH OF SIDEWALK (W)	WIDTH OF RAMP (MIN. 5.00')	ROADWAY GUTTER SLOPE (%)	TRANSITION LENGTH	
		STATION	OFFSET				LEFT	RIGHT
1	CONWELL STREET	1+32.96	62.60' RT	5.50'	5.00'	1.35%	6.50'	9.00'

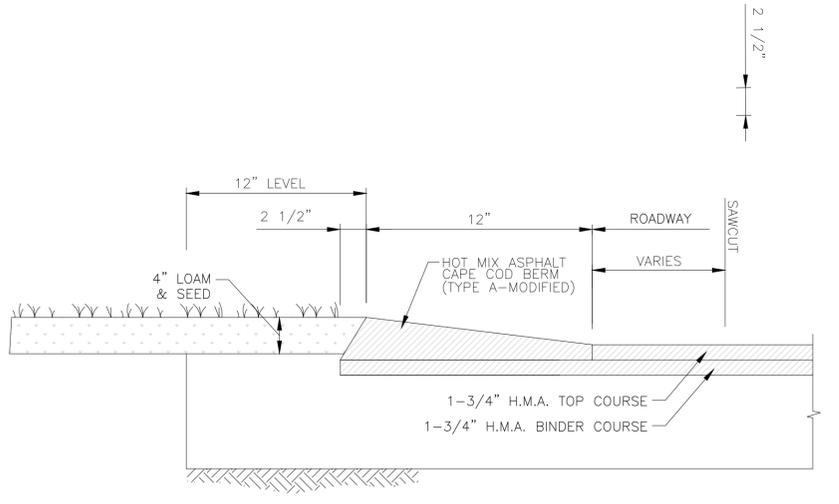
WCR #	ALIGNMENT	WCR REFERENCE PT C		PRIMARY RAMP (W ₁)	LEVEL LANDING DEPTH (W ₂)	WIDTH OF RAMP (MIN. 5.00')	ROADWAY GUTTER SLOPE (%)	TRANSITION LENGTH	
		STATION	OFFSET					LEFT	RIGHT
2	CONWELL STREET	6+47.43	19.79' RT	2.90'	6.24'	5.00'	2.75%	5.5'***	6.50'



11
ONE CONTINUOUS DIRECTION WHEELCHAIR RAMPS DETAIL
 N.T.S.

NOTES:
 - * CONSTRUCTION TOLERANCE ± 0.5%
 - SEE CONSTRUCTION STANDARD E107.6.0
 - ** TRANSITION CURB LENGTH (FOR HIGH SIDE TRANSITION LENGTH, SEE MASSDOT STANDARD DETAIL E107.9.0. FOR LOW SIDE TRANSITION, W=6'-6")
 - *** 3" REVEAL

WCR #	ALIGNMENT	WCR REFERENCE PT C		WIDTH OF SIDEWALK (W)	WIDTH OF OPENING (W ₁)	ROADWAY GUTTER SLOPE (%)	LENGTH OF RAMP (L)
		STATION	OFFSET				
3	CONWELL STREET	7+00.65	19.77' RT	6.87'	4.00'	5.70%	7.50'***



12
HOT MIX ASPHALT CAPE COD BERM (TYPE A MODIFIED)
 N.T.S.

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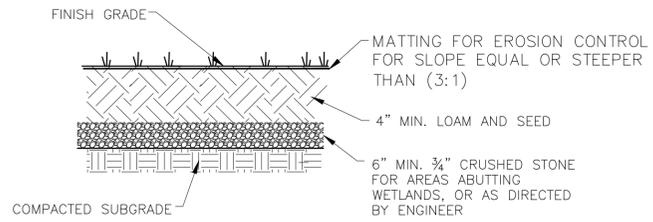
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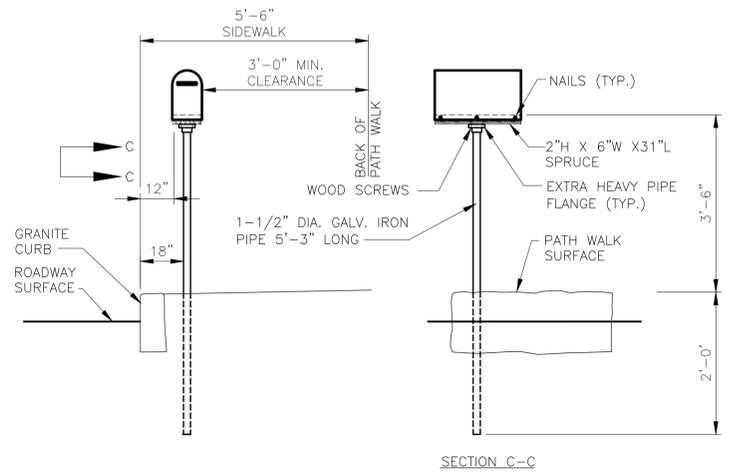
CONSTRUCTION DETAILS #3

FOR PERMITTING ONLY

Sheet No. **C-6**

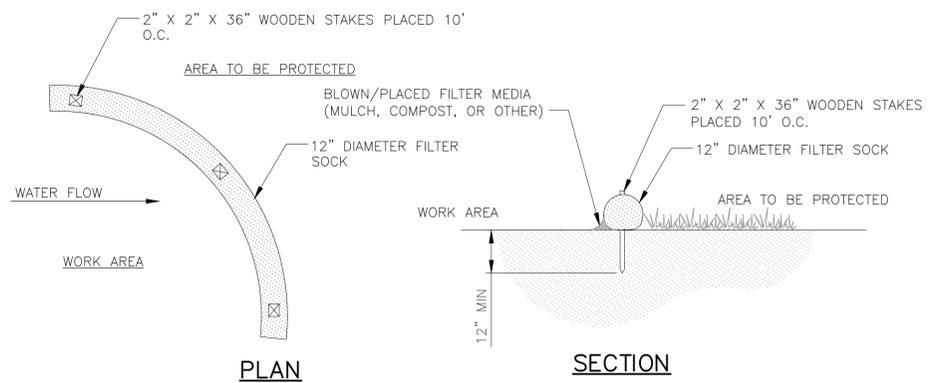


13 LOAM & SEED DETAIL
N.T.S.

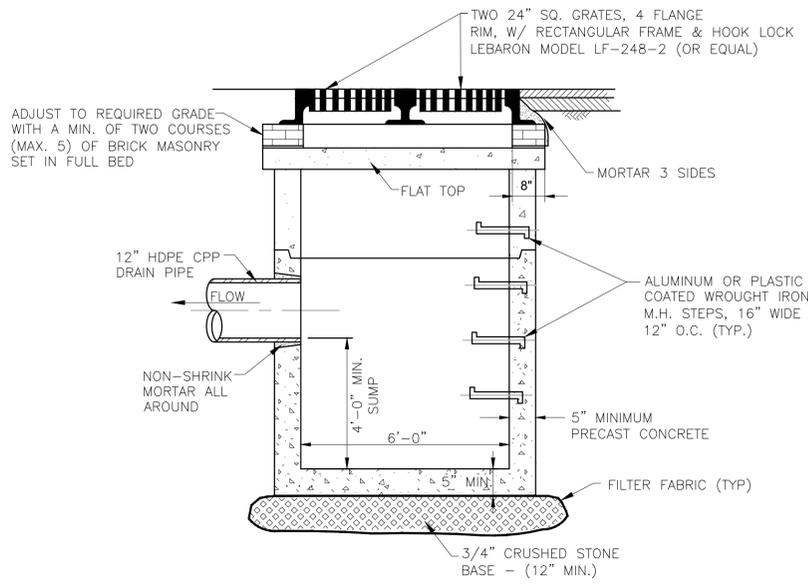


NOTES:
 - LUMBER TO BE PLANED ON ALL FOUR SIDES TO FULL 2" X 6" SIZE TO FIT BOTTOM OF MAIL BOXES.
 - TO SET 1-1/2" GALVANIZED POST, USE DRIVING POINT OF SAME SIZE, THEN TAMP POST INTO PLACE SO AS TO BE PLUMB BOTH WAYS.
 - ALL FITTINGS (PIPE FLANGES, PIPE, SCREWS, NAILS, ETC.) ARE TO BE GALVANIZED.
 - FOR DESCRIPTIONS, MATERIALS AND CONSTRUCTION METHODS SEE STANDARD CT DOT SPECIFICATIONS.
 - MAIL BOXES ON NARROW SIDEWALKS SHOULD BE SET BEHIND CURB AND PARALLEL TO IT WITH LETTER SLOT FACING TRAFFIC

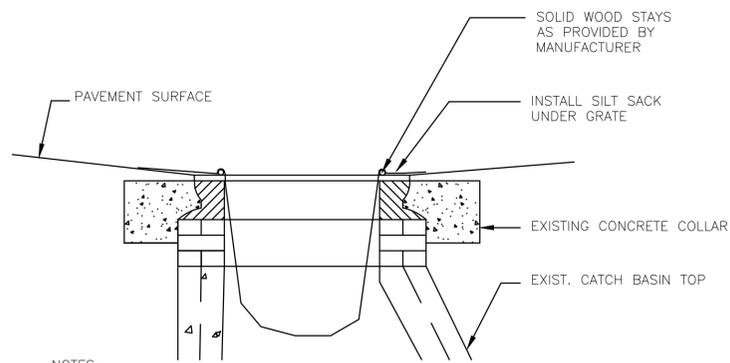
14 RURAL MAILBOX DETAIL ALONG PATH WALK
N.T.S.



15 12\"/>

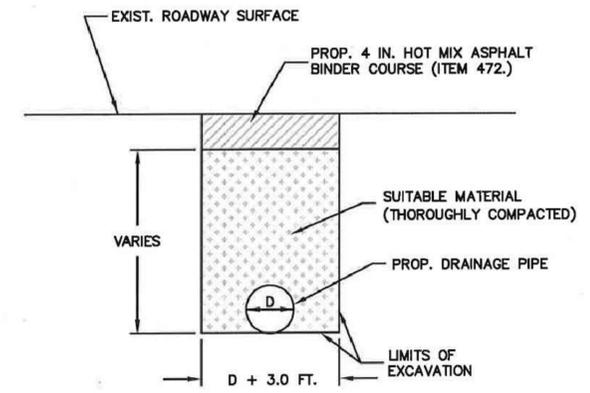


16 PRECAST CONCRETE DOUBLE CATCH BASIN
N.T.S.

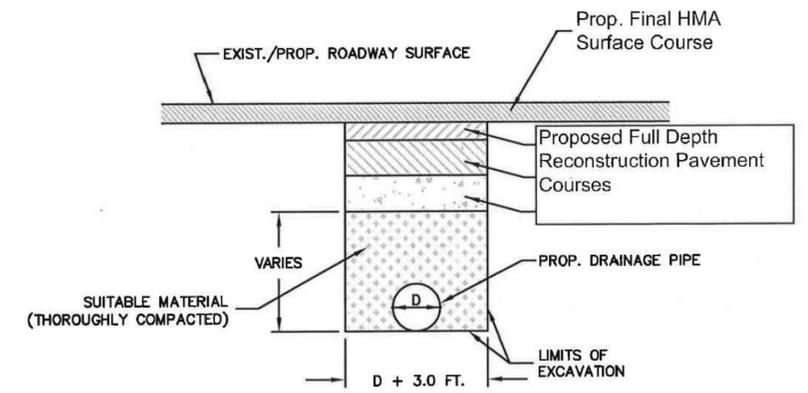


NOTES:
 - REMOVE ACCUMULATED SEDIMENTS AS REQUIRED TO MAINTAIN DRAINAGE.
 - INSPECT FABRIC EVERY WEEK DURING CONSTRUCTION.

17 SILT SACK
N.T.S.



TEMPORARY PATCH (FULL DEPTH ROADWAY RECONSTRUCTION)



PERMANENT PATCH (MILLING/OVERLAY)

18 PROPOSED DRAINAGE TRENCH IN ROADWAY
N.T.S.

Drawing file: I:\Provincetown\115115-1502 Conwell Street Bicycle Improvements\ACAD\Sheet\Permit Application - 100% Submission Comments Revisions\05 Detail Sheets.dwg Plot Date: Apr 03 2018 7:11pm



MARK	DATE	DESCRIPTION

Scale	N.T.S.
Date	MARCH, 2018
Job No.	115-1502
Designed by	BLH
Drawn by	BLH
Checked by	JDF
Approved by	JDF

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

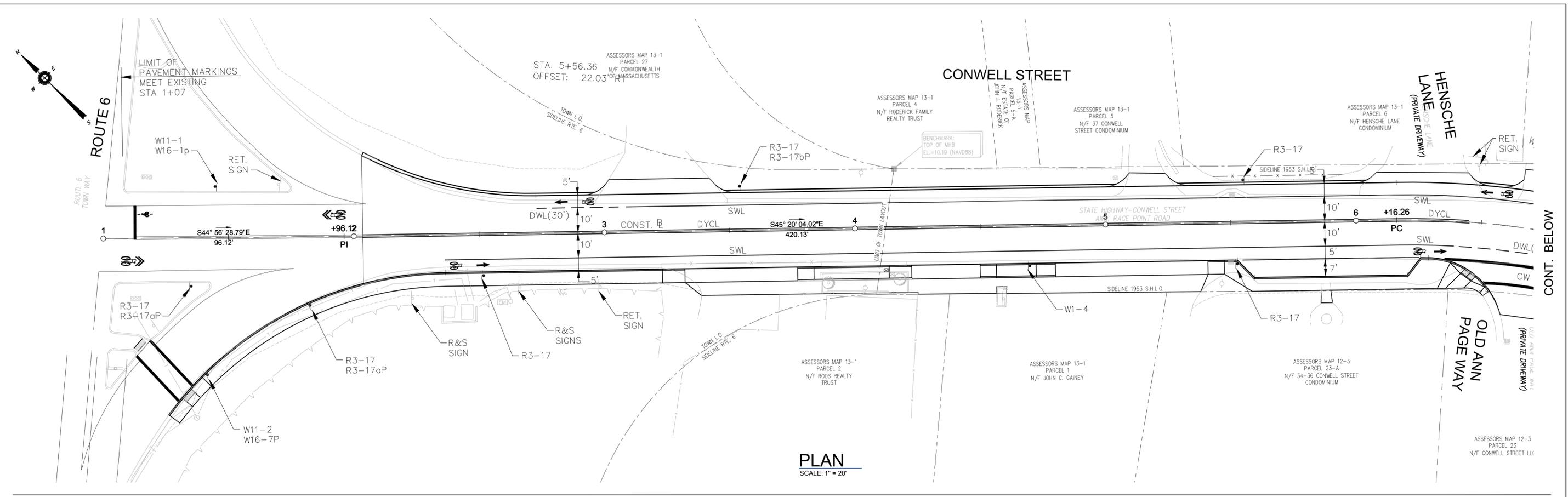
BICYCLE AND PEDESTRIAN ACCOMMODATION IMPROVEMENTS ALONG CONWELL STREET PROVINCETOWN, MASSACHUSETTS

CONSTRUCTION DETAIL #4

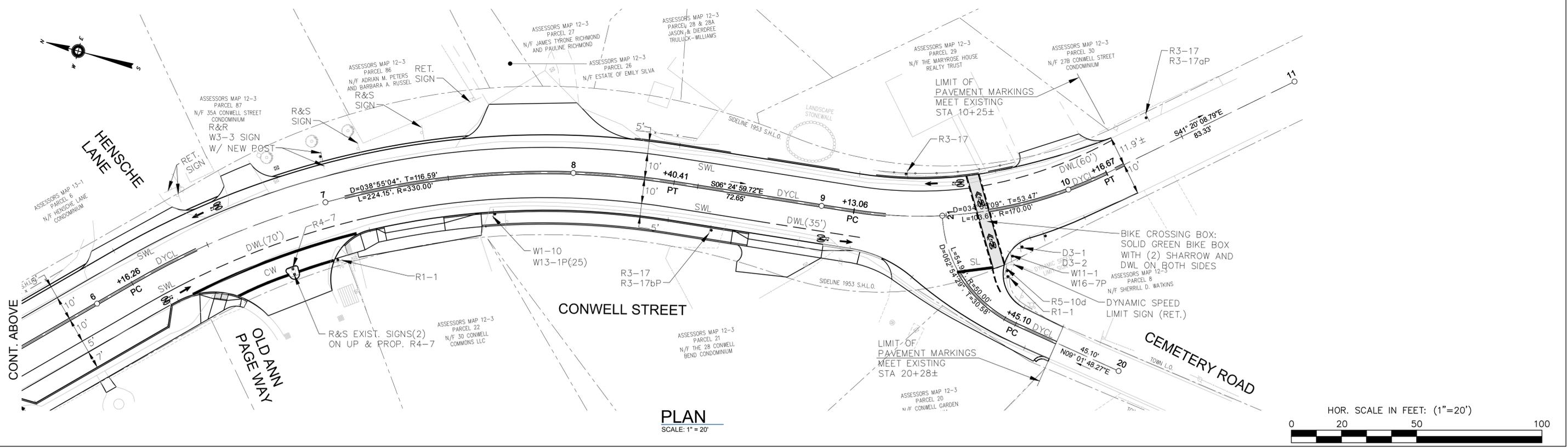
FOR PERMITTING ONLY

Sheet No. **C-7**

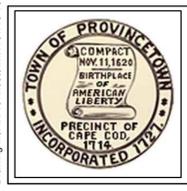
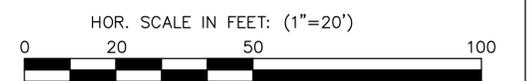
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PLAN
SCALE: 1" = 20'



PLAN
SCALE: 1" = 20'



MARK	DATE	DESCRIPTION

Scale: MARCH, 2018
 Date: MARCH, 2018
 Job No.: 115-1502
 Designed by: BLH
 Drawn by: BLH
 Checked by: JDF
 Approved by: JDF

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

BICYCLE AND PEDESTRIAN ACCOMMODATION IMPROVEMENTS ALONG CONWELL STREET PROVINCETOWN, MASSACHUSETTS

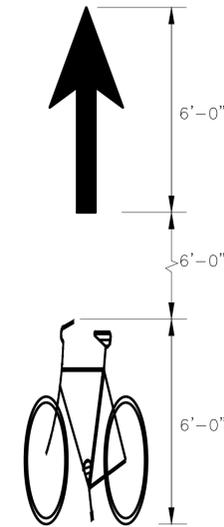
TRAFFIC SIGN AND PAVEMENT MARKINGS PLAN

FOR PERMITTING ONLY
 Sheet No. **TS-1**

TRAFFIC SIGN SUMMARY

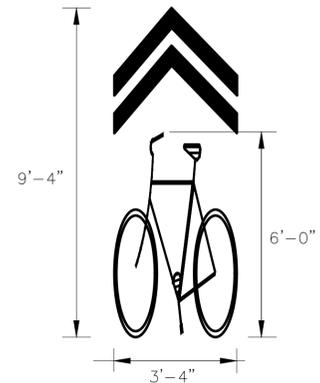
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	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING		BACK-GROUND	LEGEND	BORDER			
D3-1	VARIABLES	18	Conwell St	MUTCD STANDARD		1	MUTCD STANDARD			P5 (1)	EACH	EACH
D3-2	VARIABLES	18	Cemetery Rd			1				MOUNT W/D3-1 (1)	EACH	EACH
R1-1	30	30				2				P5 (2)	6.25	12.50
R3-17	30	24				9				P5 (9)	5.00	45.00
R3-17aP	24	8	AHEAD			3				MOUNT W/R3-17 (3)	1.33	3.99
R3-17bP	24	8	ENDS			2				MOUNT W/R3-17 (2)	1.33	2.66
R4-7	24	30				2				P5 (2)	5.00	10.00
R5-10d	30	36				1				P5 (1)	7.50	7.50
W1-4	30	30				1				P5 (1)	6.25	6.25
W1-10	30	30				1				P5 (1)	6.25	6.25
W3-3	-	-				R&R (1)				P5 (1)	-	-
W11-1	30	30				1				P5 (1)	6.25	6.25
W11-2	30	30				1				P5 (1)	6.25	6.25
W13-1P (25)	18	18	XX M.P.H.			1				MOUNT W/W1-10 (1)	2.25	2.25
W16-1P	18	24	SHARE THE ROAD			1				MOUNT W/W11-1 (1)	3.00	3.00
W16-7P	24	12				1				MOUNT W/W11-2 (1)	2.00	2.00

SEE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES 2009 EDITION FOR LATEST REVISIONS AND MASSACHUSETTS AMENDMENTS FOR LATEST SPECIFICATIONS ON TEXT DIMENSIONS AND COLOR.



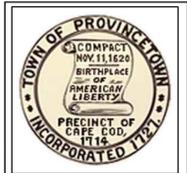
BICYCLE LANE MARKINGS
NOT TO SCALE

NOTE:
ALL BICYCLE LANE AND SHARROW SYMBOL PAVEMENT MARKINGS SHALL BE PAINT IN WHITE THERMOPLASTIC AND COMPLY TO THE LATEST M.U.T.C.D STANDARD.



SHARED LANE MARKINGS
NOT TO SCALE

Drawing file: I:\Provincetown\1151115-1502 Conwell Street Bicycle Improvements\ACAD\Sheet\Permit Application - 100% Submission Comments Revisions\06 Sign and Pavement Marking Plan.dwg Date: Apr 03 2018 7:12pm



MARK	DATE	DESCRIPTION

Scale
Date MARCH, 2018
Job No. 115-1502
Designed by BLH
Drawn by BLH
Checked by JDF
Approved by JDF

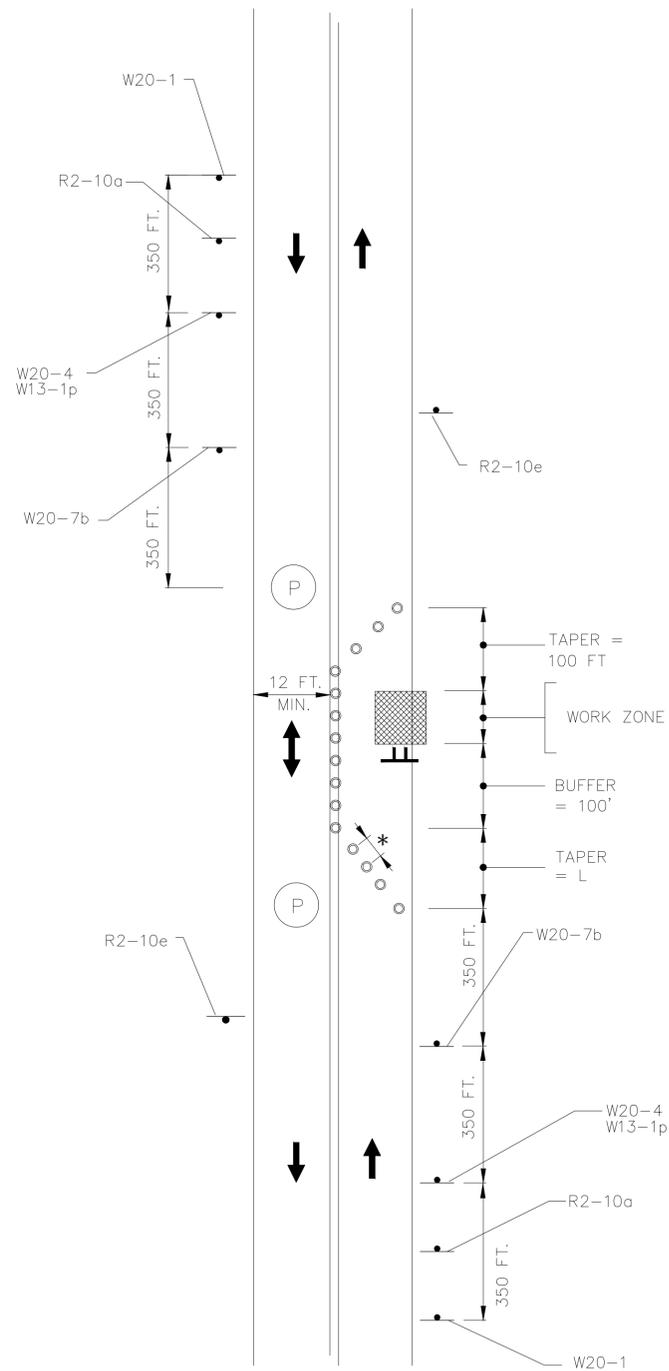
BICYCLE AND PEDESTRIAN ACCOMMODATION IMPROVEMENTS ALONG CONWELL STREET PROVINCETOWN, MASSACHUSETTS

SIGN SUMMARY AND PAVEMENT MARKING DETAILS

FOR PERMITTING ONLY
Sheet No. **TS-2**

GENERAL TRAFFIC MANAGEMENT NOTES:

- CONSTRUCTION WILL BE LIMITED TO 9:00 A.M. TO 3:30 P.M. MONDAY THROUGH FRIDAY.
- AT THE END OF EACH CONSTRUCTION DAY NO TRAFFIC CONTROL DEVICES SHALL REMAIN IN THE ROADWAY; ROADWAYS WILL BE PATCHED OR PLATED AND OPEN TO TRAVEL. AT THE END OF EACH WORK WEEK, EXCAVATIONS WILL BE BACKFILLED, COMPACTED AND PAVED AND TEMPORARY PAVEMENT MARKINGS PROVIDED WHERE APPROPRIATE.
- THE CONTRACTOR SHALL INSTALL AND MAINTAIN TRAFFIC CONTROL DEVICES AS NECESSARY AND IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND MASSDOT STANDARDS.
- TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.
- THE CONTRACTOR MUST MAINTAIN ACCESS AND EGRESS AT ALL TIMES TO ALL PROPERTIES AND ROADWAYS ABUTTING THE WORK ZONE UNLESS OTHERWISE APPROVED BY THE OWNER AND/OR ENGINEER.
- ALL DISTANCES MAY BE ADJUSTED TO FIT FIELD CONDITIONS, AS DIRECTED BY THE ENGINEER. MINIMUM DISTANCES HOWEVER SHOULD BE MAINTAINED WHERE INDICATED.
- MINIMUM LANE WIDTHS CONSIST OF THE CLEARANCE BETWEEN CHANNELIZING DEVICES SUCH AS DRUMS AND SHALL BE PROVIDED AT ALL TIMES.
- EXISTING PEDESTRIAN WALKWAYS WILL REMAIN OPEN AND CLEAR OF DEBRIS. PEDESTRIANS WILL BE PROTECTED FROM CONSTRUCTION USING THE APPROPRIATE SAFETY MEASURES AS DIRECTED BY THE ENGINEER. SUCH MEASURES WILL BE CONSIDERED INCIDENTAL TO THE PROJECT. IN LOCATIONS WHERE EXISTING PEDESTRIAN WALKWAYS HAVE BEEN IMPACTED BY CONSTRUCTION, THE ENTIRE WIDTH OF THE PEDESTRIAN WALKWAY IS TO BE RECONSTRUCTED IN KIND WITH A MINIMUM WIDTH OF 5 FEET EXCLUDING CURBING.
- MAXIMUM SPACING OF CHANNELIZING DEVICES IS EQUAL (IN FEET) TO THE SPEED LIMIT (MPH).
- CHANNELIZATION WILL BE ACCOMPLISHED THROUGH THE USE OF REFLECTORIZED PLASTIC DRUMS. PLASTIC DRUMS WITH ANY FORM OF LIGHTING DEVICE MOUNTED ON THEM MUST PASS THE CRITERIA AS SET FORTH IN NCHRP 350 "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES."
- THE FIRST FIVE PLASTIC DRUMS OF A TAPER SHALL BE MOUNTED WITH TYPE A LIGHTS.
- FLASHING WARNING LIGHTS AND/OR FLAGS MAY BE USED ON ADVANCE WARNING SIGNS AS DIRECTED BY THE ENGINEER. FLAGS SHALL BE A MINIMUM OF 16" X 16".
- ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORT.
- ALL TEMPORARY SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY MUST PASS THE CRITERIA SET FORTH IN THE NCHRP 350 REPORT "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES."
- ALL TEMPORARY TRAFFIC CONTROL DEVICES AND ADVANCE WARNING SIGNS SHALL BE REMOVED IMMEDIATELY WHEN NO LONGER NEEDED.



**TYPICAL TWO LANE ROAD/
ONE LANE ALTERNATING TRAFFIC**
NOT TO SCALE

LEGEND:

- REFLECTORIZED PLASTIC DRUM
- SIGN
- ▨ WORK ZONE
- ➔ DIRECTION OF TRAFFIC
- TT TYPE III PORTABLE BREAKAWAY BARRICADE
- P POLICE OFFICER

TAPER LENGTH

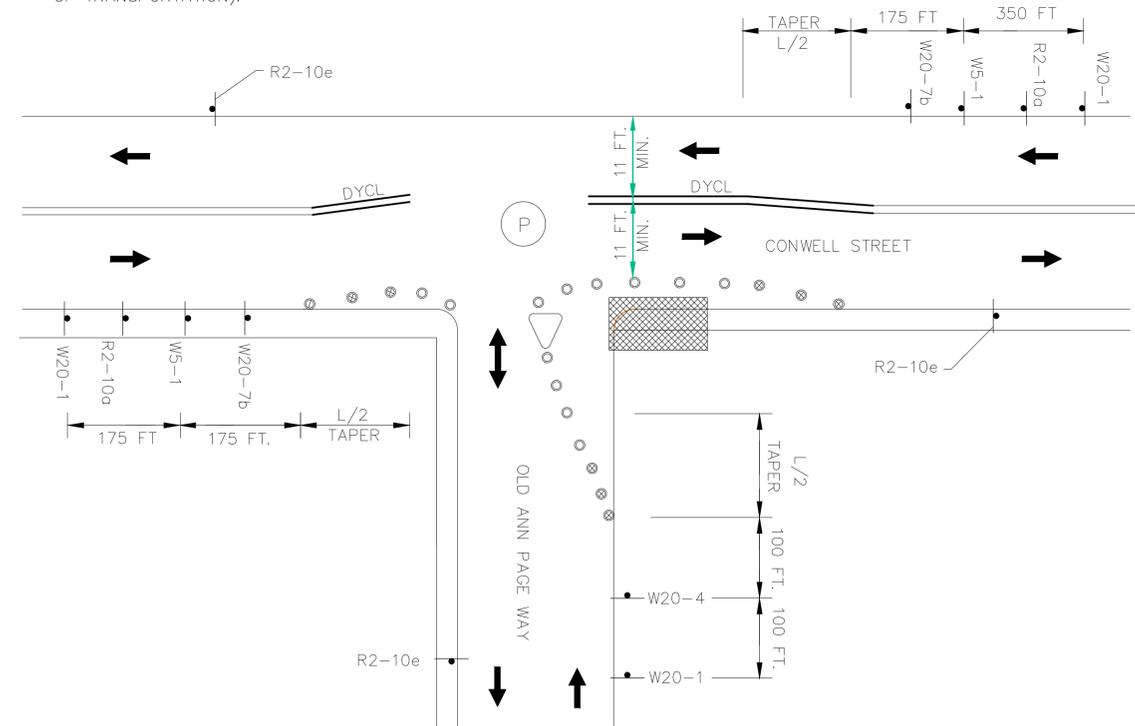
SPEED LIMIT	FORMULA
40 MPH OR LESS	$L = WS^2/60$
45 MPH OR MORE	$L = WS$

L = TAPER LENGTH IN FEET
W = WIDTH OF OFFSET IN FEET
S = POSTED SPEED OR OFF-PEAK 85TH PERCENTILE SPEED IN MPH

SIGN SUMMARY

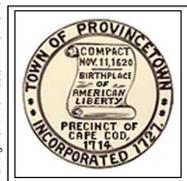
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R2-10e	36	48	END ROAD WORK DOUBLE FINES END	1	1	1	ORANGE	BLACK	BLACK	4.50
R2-10a	48	36	WORK ZONES SPEEDING FINES DOUBLED				ORANGE	BLACK	BLACK	12.00
							WHITE	BLACK	BLACK	
W5-1	36	36	ROAD NARROW	1	1	1	ORANGE	BLACK	BLACK	9.00
W13-1p	24	24	XX MPH	1	1	1	ORANGE	BLACK	BLACK	4.00
W20-1	36	36	ROAD WORK AHEAD	1	1	1	ORANGE	BLACK	BLACK	9.00
W20-4	36	36	ONE LANE ROAD XX FT	1	1	1	ORANGE	BLACK	BLACK	9.00
W20-7b	36	36	POLICE OFFICER AHEAD	1	1	1	ORANGE	BLACK	BLACK	9.00

① SEE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND "STANDARD HIGHWAY SIGNS" BY FEDERAL HIGHWAY ADMINISTRATION (LATEST EDITIONS) FOR SPECIFICATIONS ON TEXT DIMENSION AND COLOR. (SEE ALSO THE "MASSACHUSETTS AMENDMENTS TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES", AND "GUIDE SIGN POLICY FOR SECONDARY STATE HIGHWAYS" (LATEST EDITIONS) BY THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION).



PARTIAL RIGHT LANE CLOSURE AT INTERSECTION
NOT TO SCALE

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MARK	DATE	DESCRIPTION

Scale	
Date	MARCH, 2018
Job No.	115-1502
Designed by	BLH
Drawn by	BLH
Checked by	JDF
Approved by	JDF

BICYCLE AND PEDESTRIAN ACCOMMODATION IMPROVEMENTS ALONG CONWELL STREET PROVINCETOWN, MASSACHUSETTS

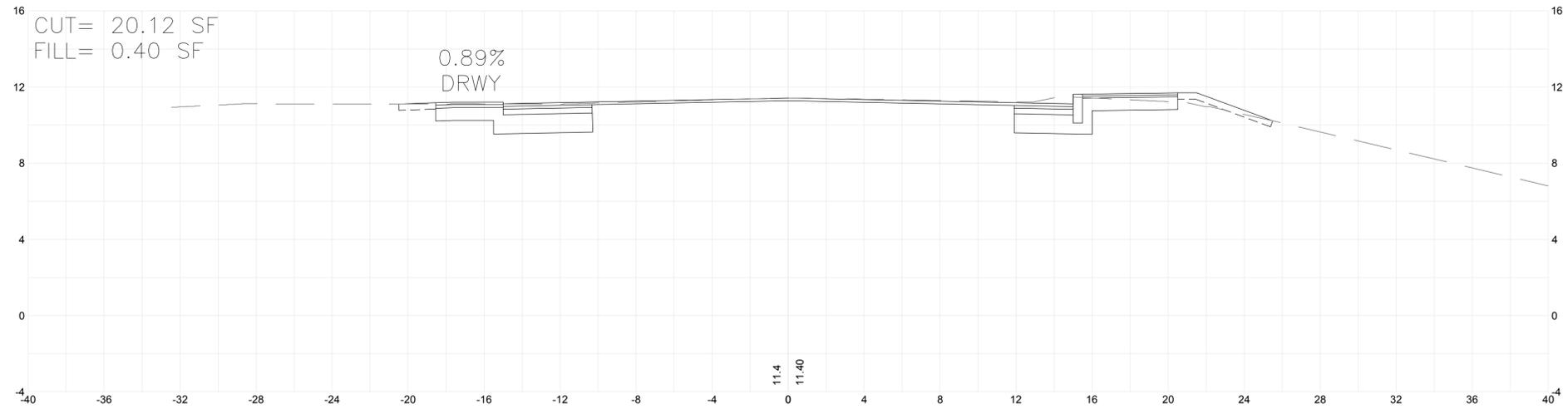
TRAFFIC MANAGEMENT PLAN

FOR PERMITTING ONLY

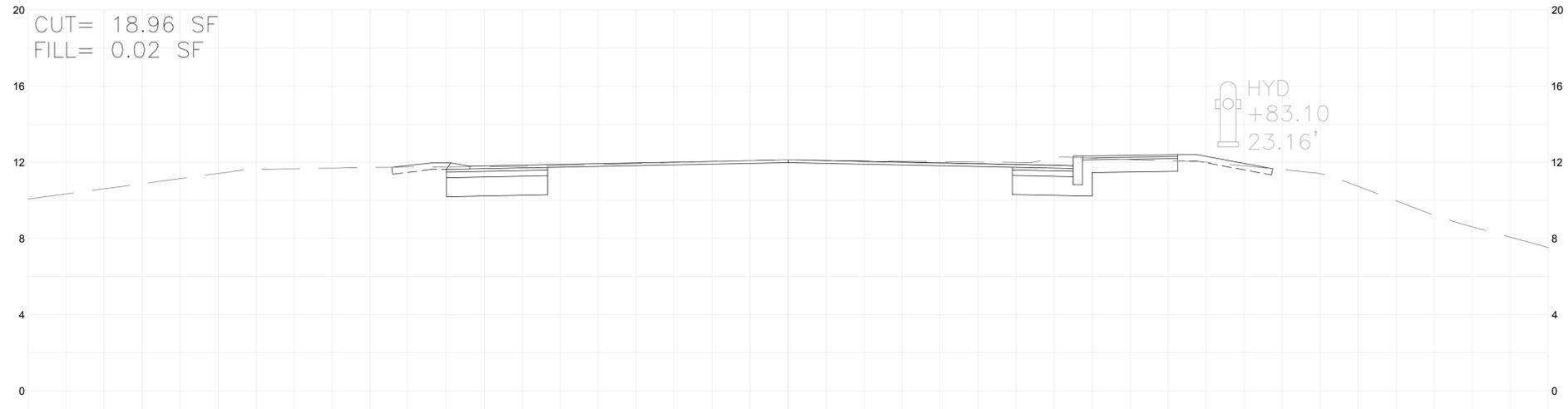
Sheet No.

TMP-1

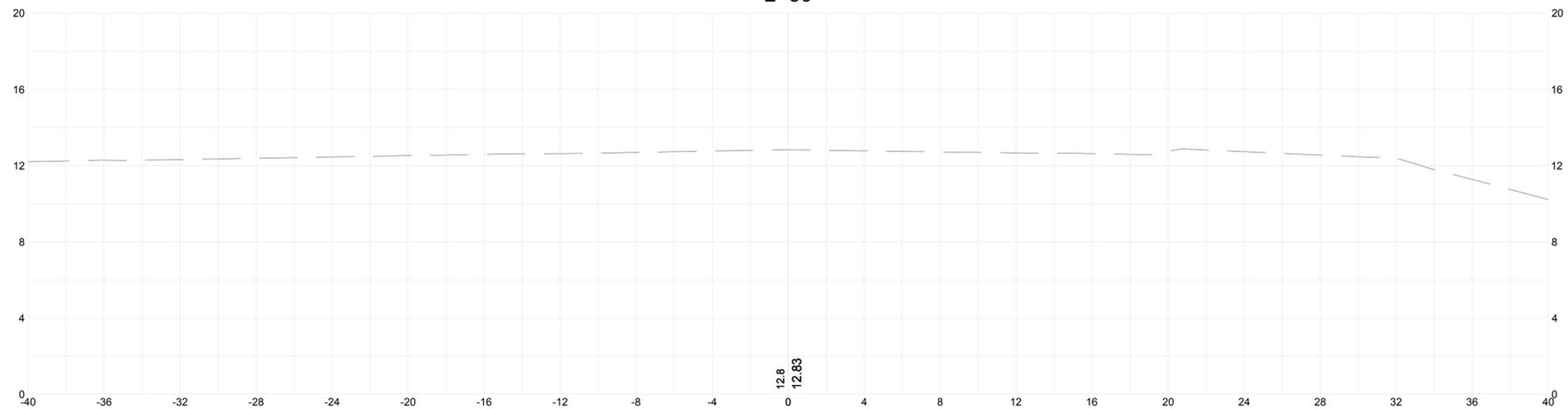
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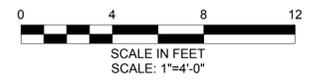
3+00



2+50



2+00



Scale	1"=4'-0"	
Date	MARCH, 2018	
Job No.	115-1502	
Designed by	BLH	
Drawn by	BLH	
Checked by	JDF	
Approved by	JDF	
MARK	DATE	DESCRIPTION

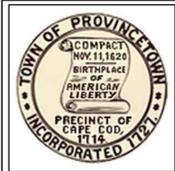
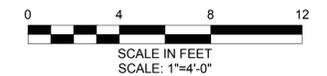
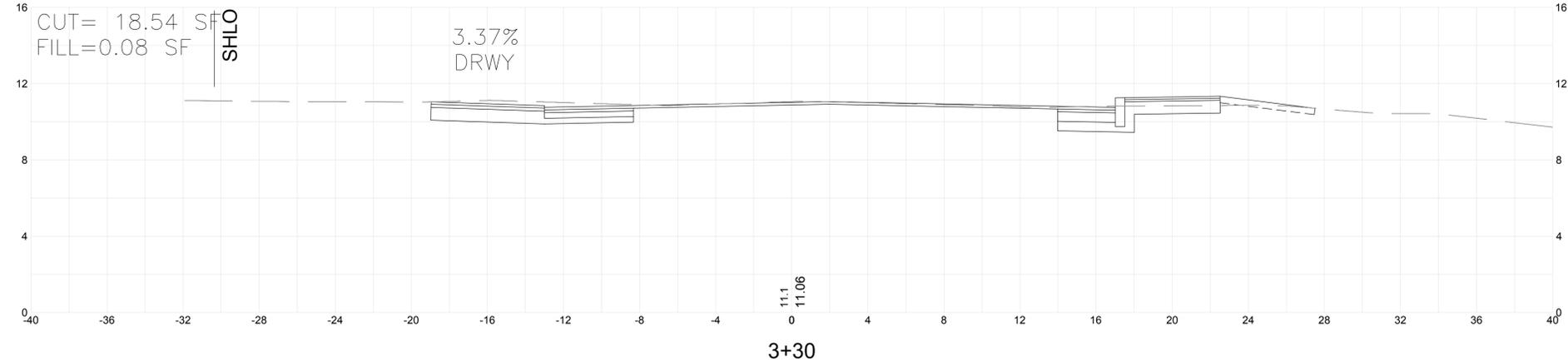
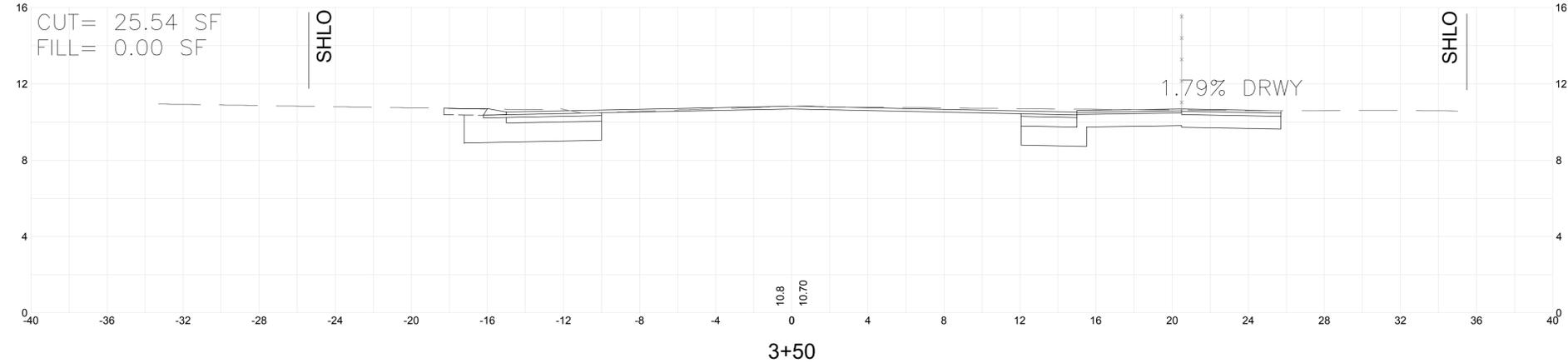
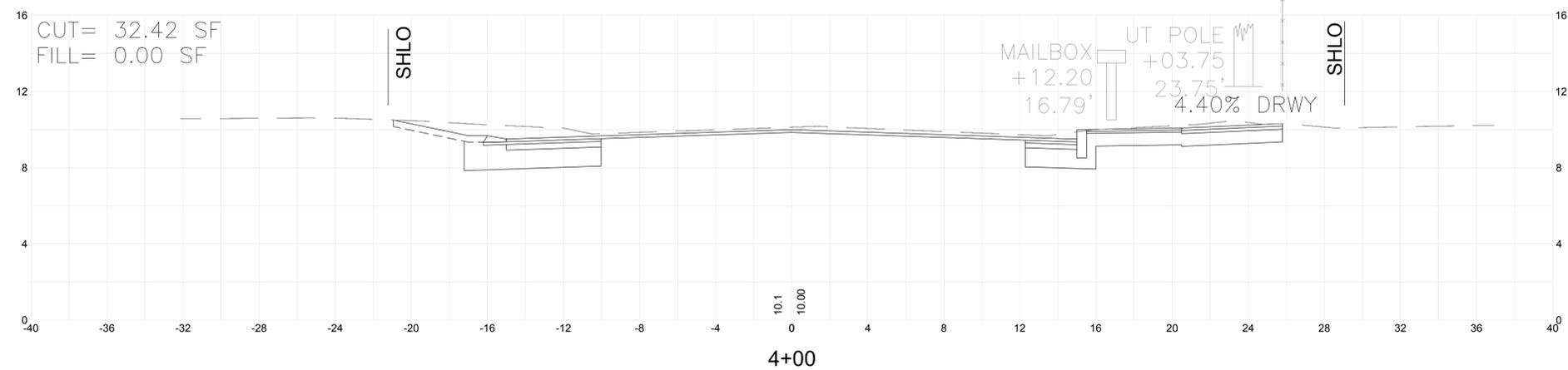
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BICYCLE AND PEDESTRIAN ACCOMMODATION IMPROVEMENTS ALONG CONWELL STREET PROVINCETOWN, MASSACHUSETTS

CROSS SECTIONS #1

FOR PERMITTING ONLY
Sheet No. **CX-1**

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Date	MARCH, 2018	
Job No.	115-1502	
Designed by	BLH	
Drawn by	BLH	
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MARK	DATE	DESCRIPTION

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BICYCLE AND PEDESTRIAN ACCOMMODATION IMPROVEMENTS ALONG CONWELL STREET PROVINCETOWN, MASSACHUSETTS

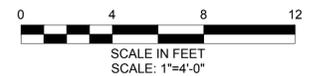
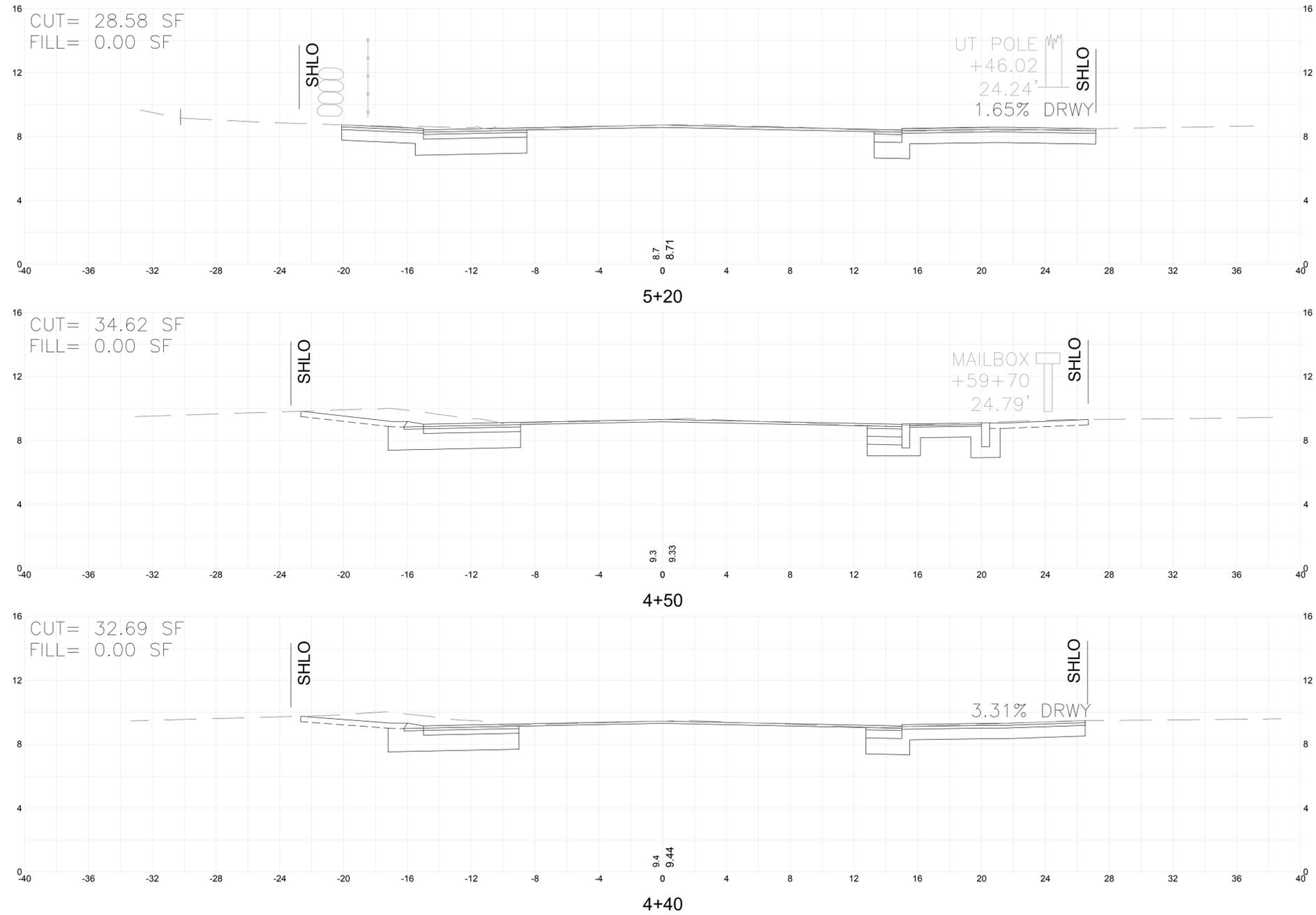
CROSS SECTIONS #2

FOR PERMITTING ONLY

Sheet No.

CX-2

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Date	MARCH, 2018	
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Designed by	BLH	
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MARK	DATE	DESCRIPTION

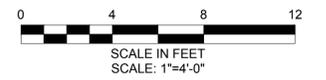
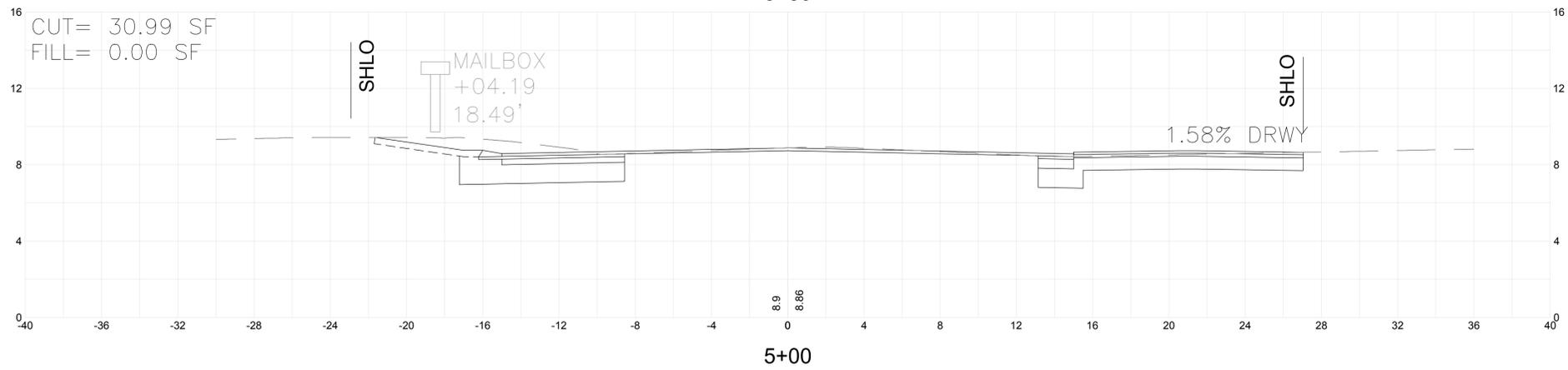
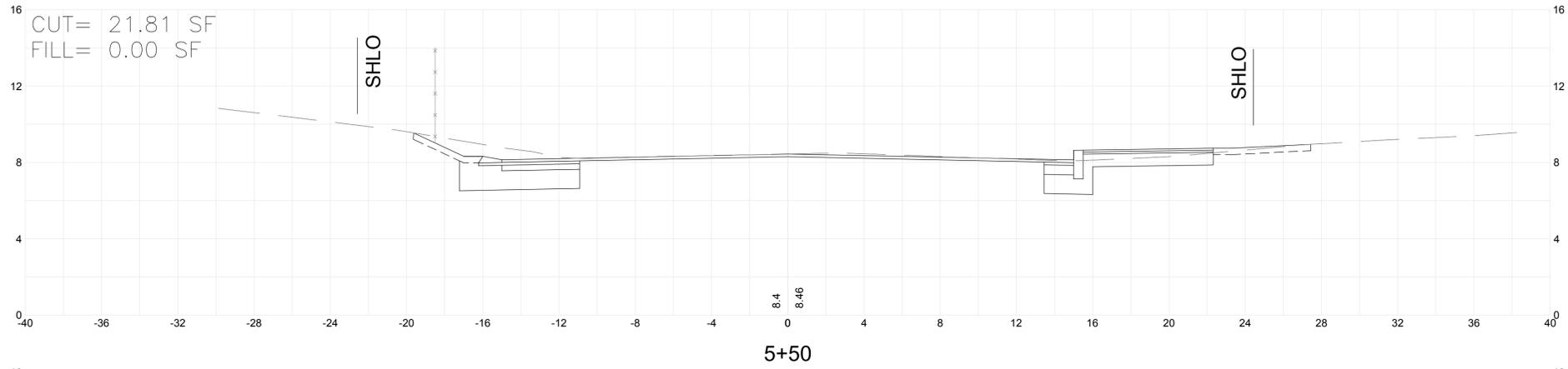
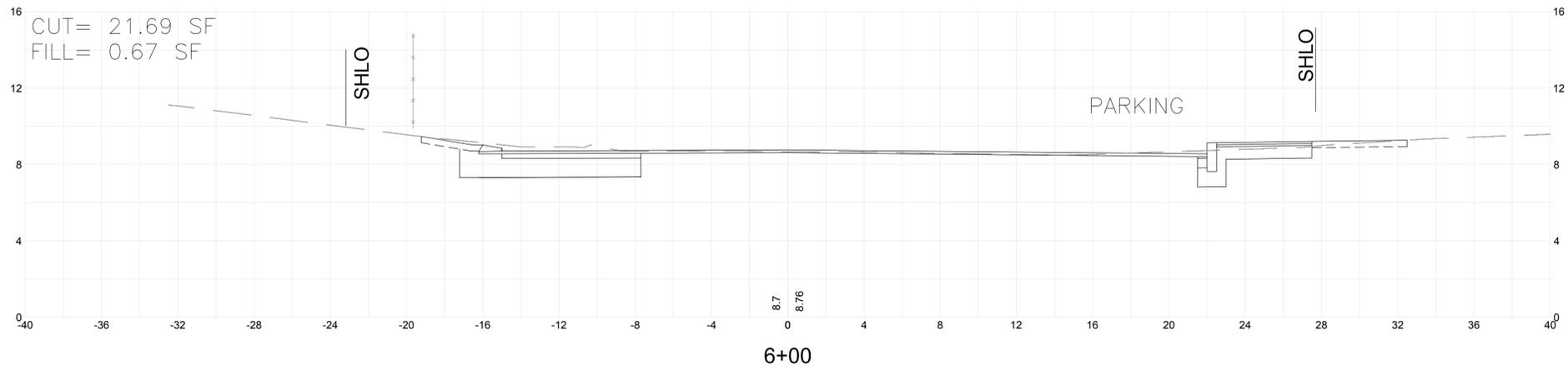
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BICYCLE AND PEDESTRIAN ACCOMMODATION IMPROVEMENTS ALONG CONWELL STREET PROVINCETOWN, MASSACHUSETTS

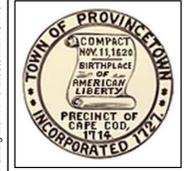
CROSS SECTIONS #3

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Sheet No.

CX-3



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Date	MARCH, 2018	
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Designed by	BLH	
Drawn by	BLH	
Checked by	JDF	
Approved by	JDF	
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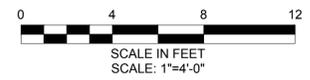
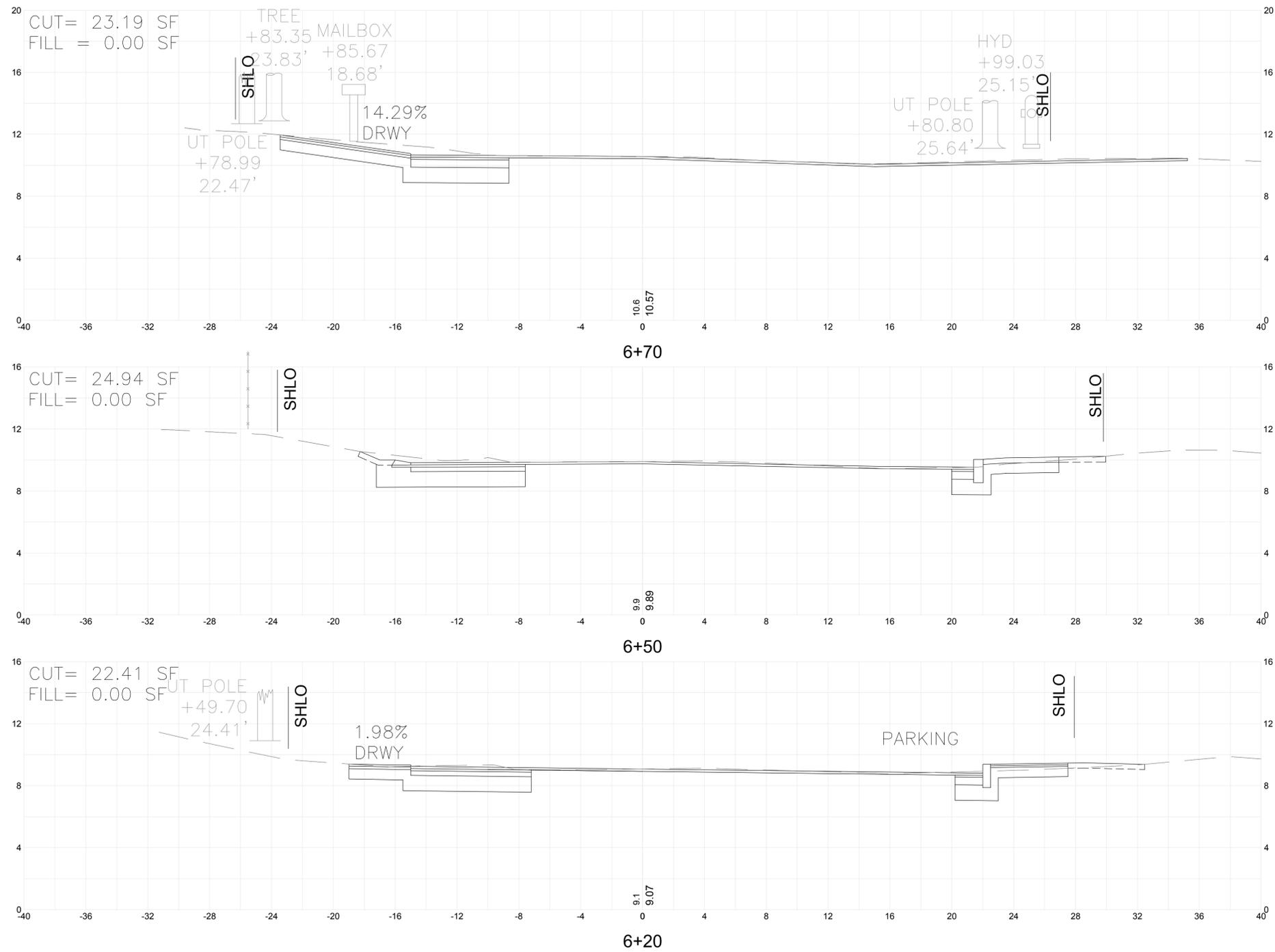
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BICYCLE AND PEDESTRIAN ACCOMMODATION IMPROVEMENTS ALONG CONWELL STREET PROVINCETOWN, MASSACHUSETTS

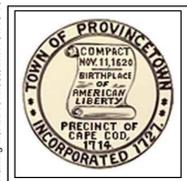
CROSS SECTIONS #4

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Sheet No. **CX-4**



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MARK	DATE	DESCRIPTION

BICYCLE AND PEDESTRIAN ACCOMMODATION IMPROVEMENTS ALONG CONWELL STREET PROVINCETOWN, MASSACHUSETTS

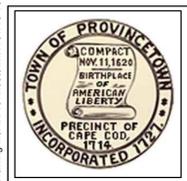
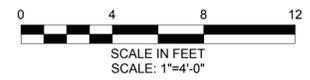
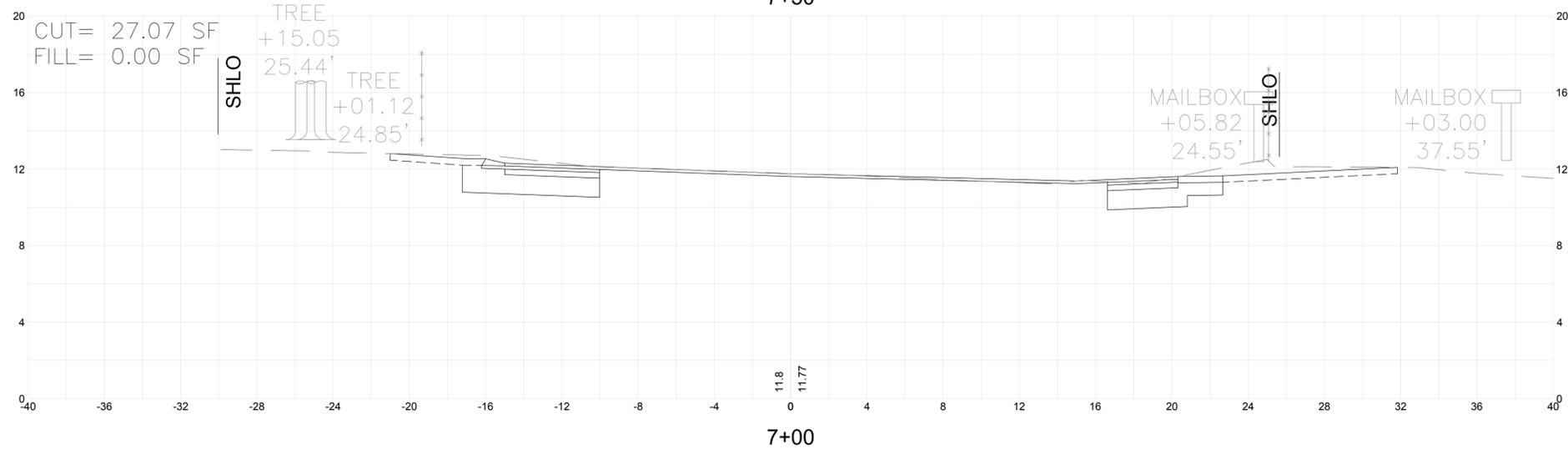
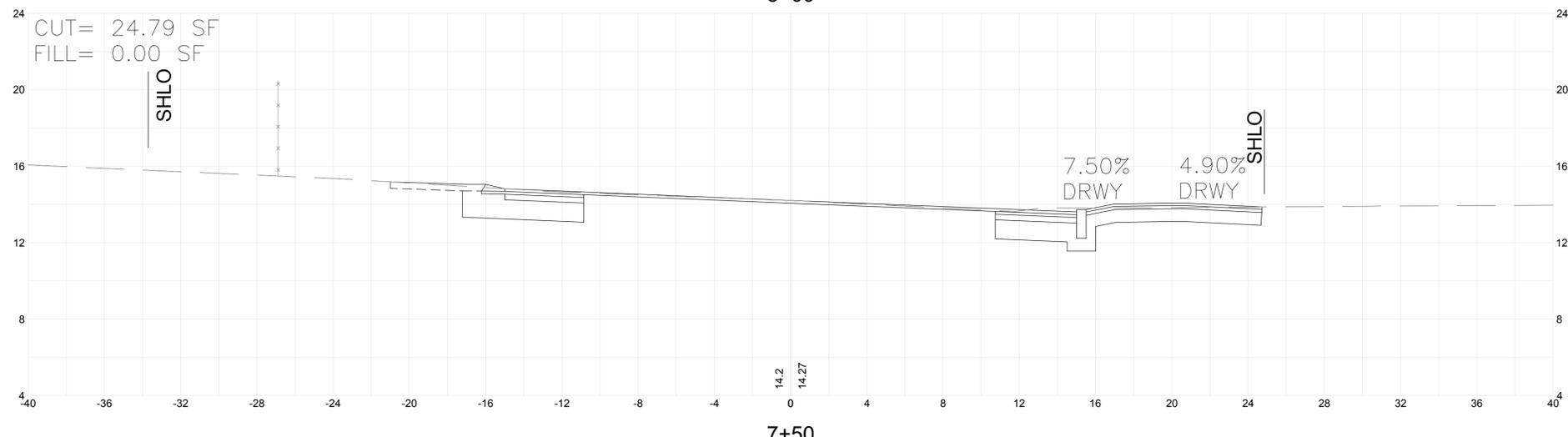
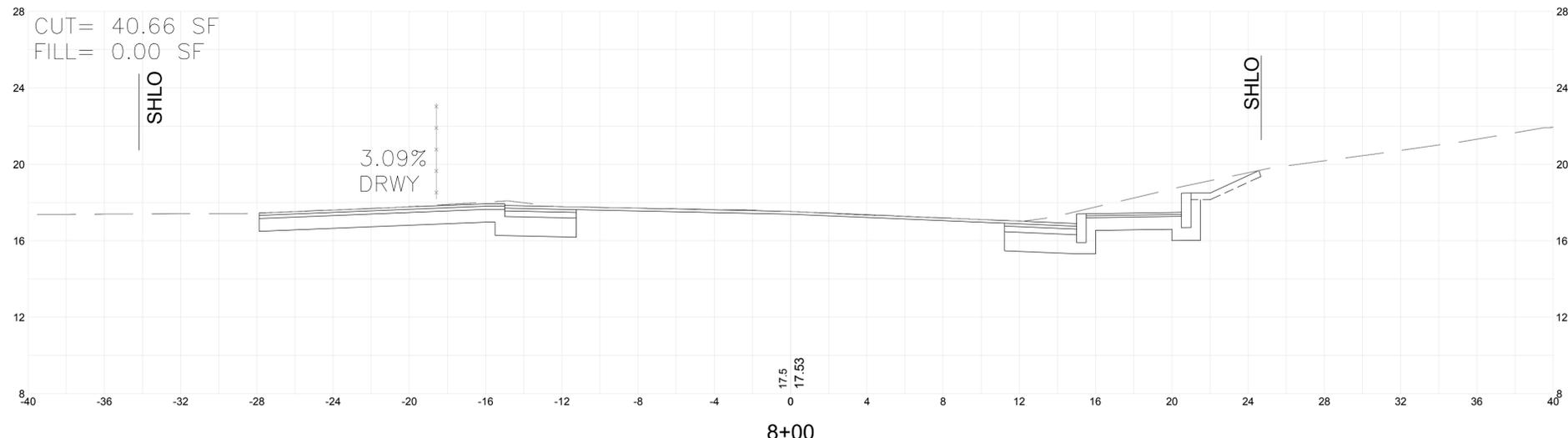
CROSS SECTIONS #5

FOR PERMITTING ONLY

Sheet No. **CX-5**

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MARK	DATE	DESCRIPTION

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 Date MARCH, 2018
 Job No. 115-1502
 Designed by BLH
 Drawn by BLH
 Checked by JDF
 Approved by JDF

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

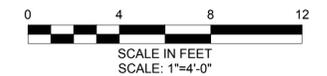
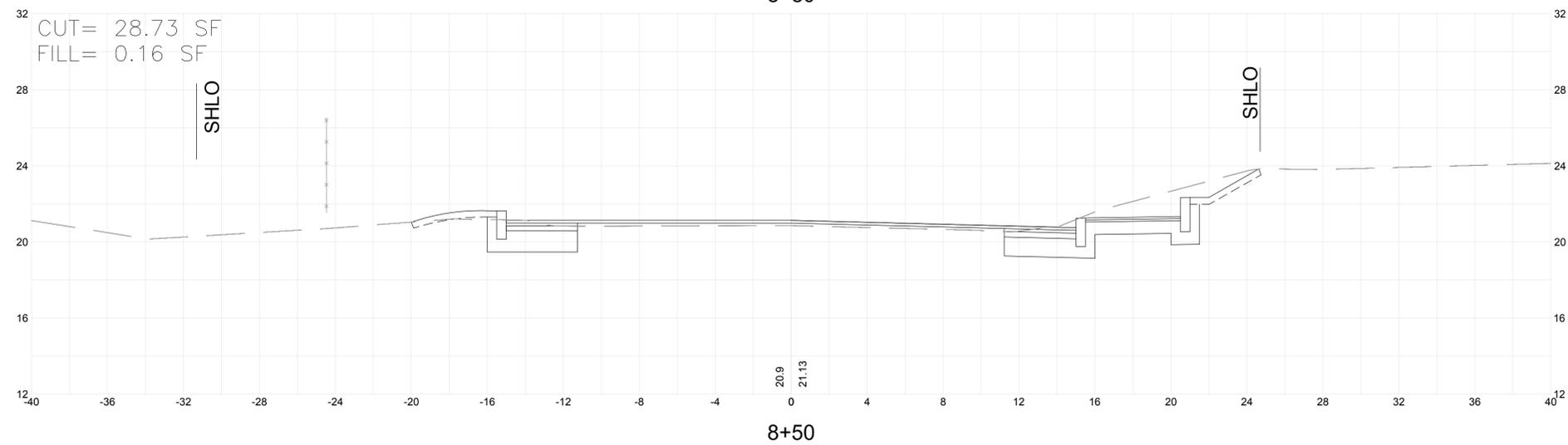
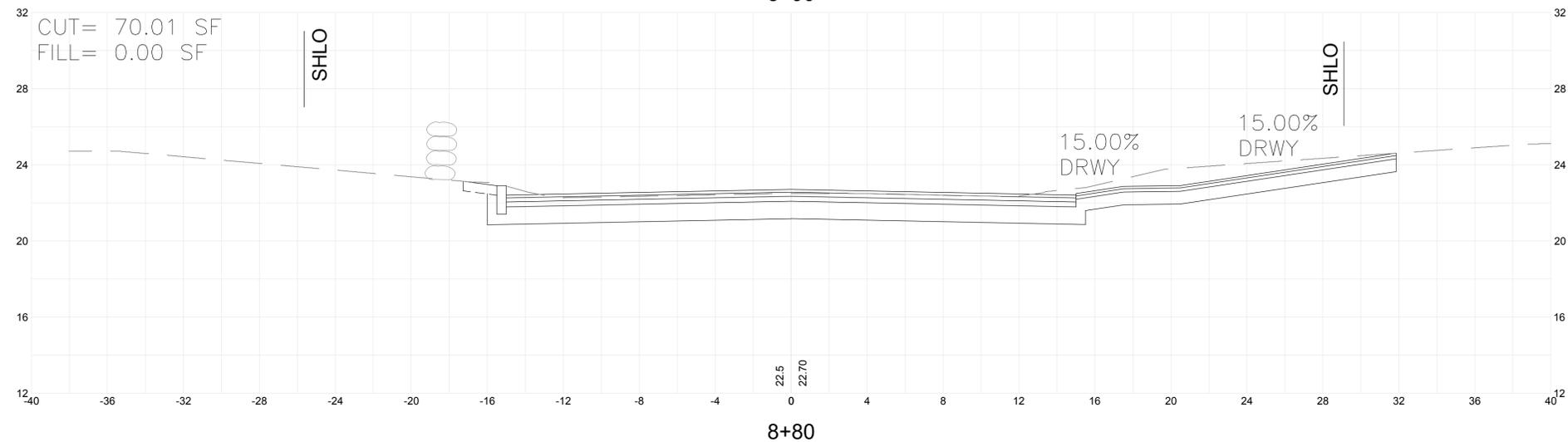
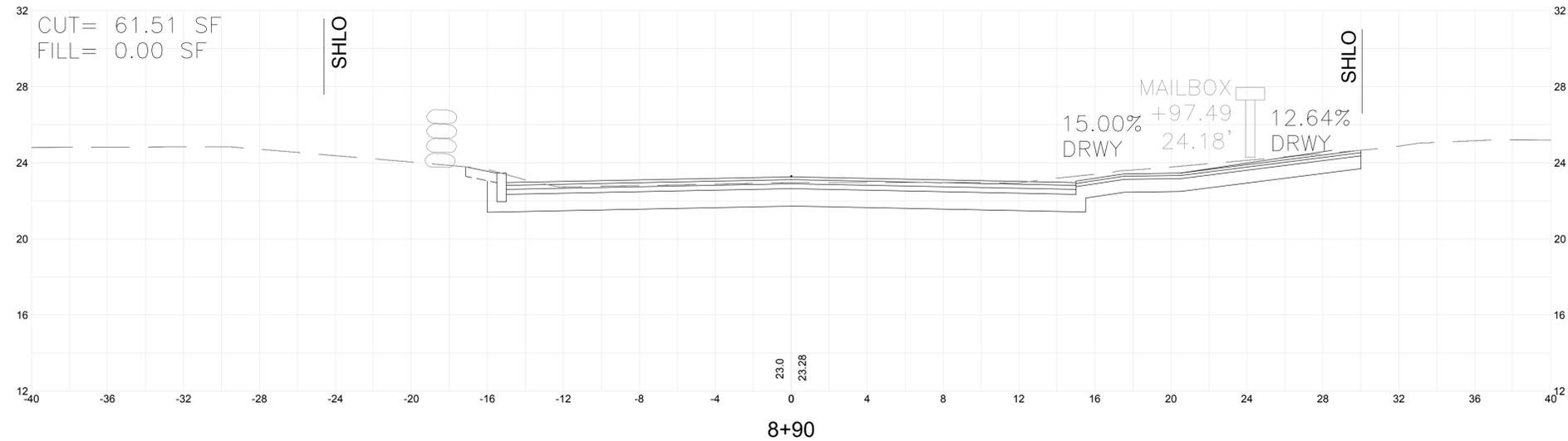
BICYCLE AND PEDESTRIAN ACCOMMODATION IMPROVEMENTS ALONG CONWELL STREET PROVINCETOWN, MASSACHUSETTS

CROSS SECTIONS #6

FOR PERMITTING ONLY

Sheet No. **CX-6**

Drawing file: I:\Provincetown\115115-1502 Conwell Street Bicycle Improvements\ACAD\Sheet\Permit Application - 100% Submission Comments Revisions\08 Cross Sections.dwg Plot Date: Apr 03, 2018 7:16pm



Scale	1"=4'-0"	
Date	MARCH, 2018	
Job No.	115-1502	
Designed by	BLH	
Drawn by	BLH	
Checked by	JDF	
Approved by	JDF	
MARK	DATE	DESCRIPTION

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

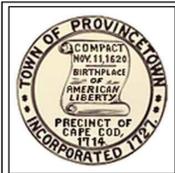
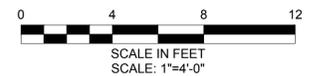
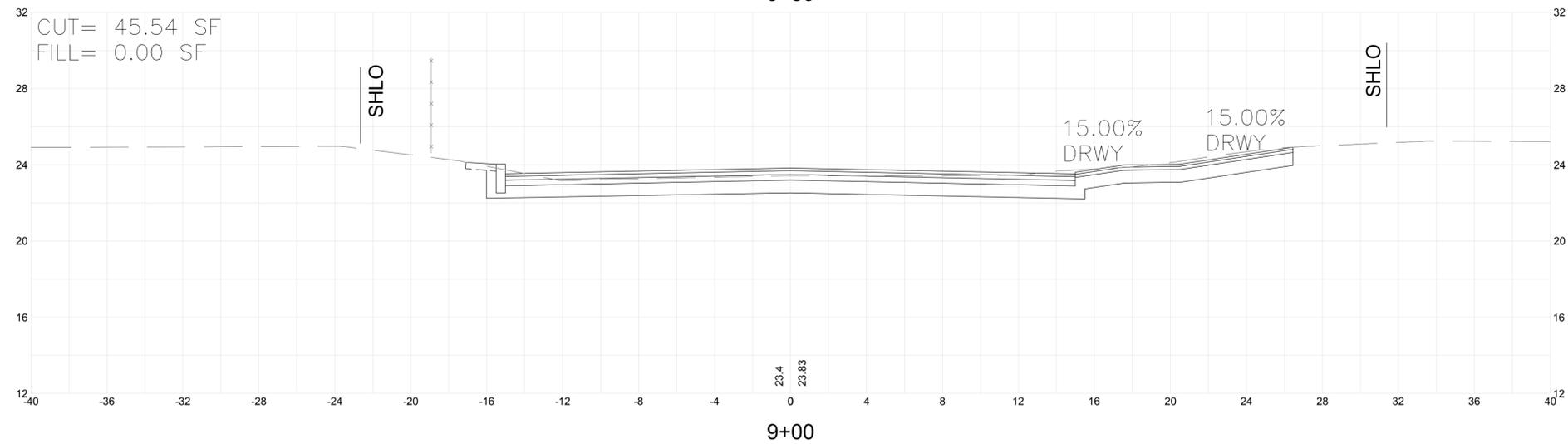
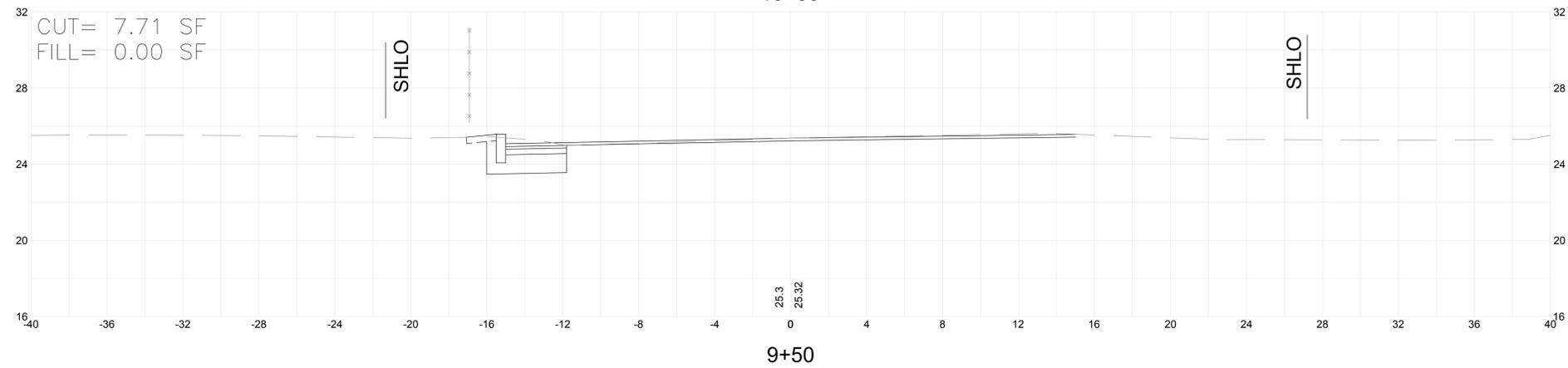
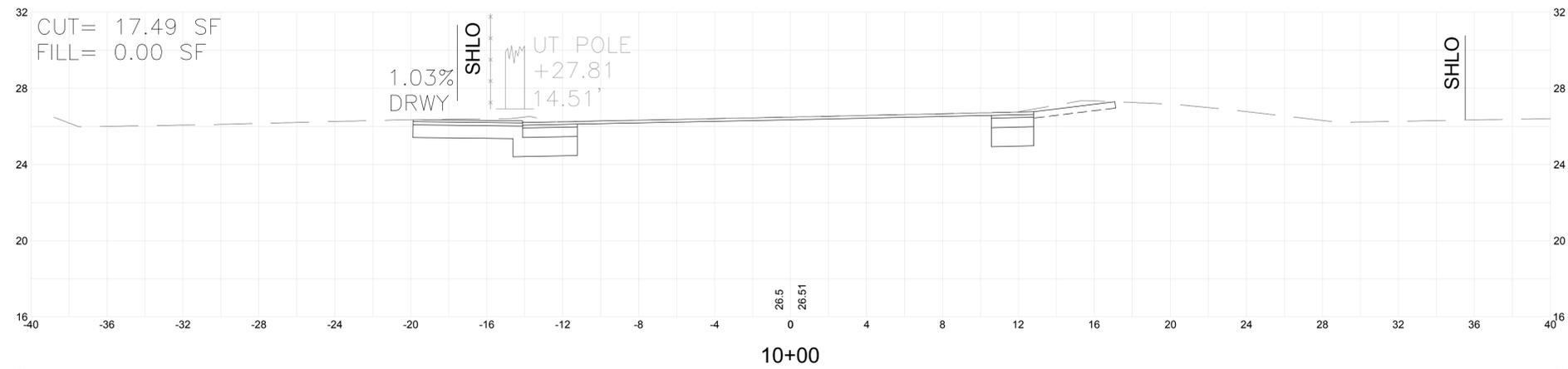
BICYCLE AND PEDESTRIAN ACCOMMODATION IMPROVEMENTS ALONG CONWELL STREET PROVINCETOWN, MASSACHUSETTS

CROSS SECTIONS #7

FOR PERMITTING ONLY
Sheet No.

CX-7

Drawing file: I:\Provincetown\115115-1502 Conwell Street Bicycle Improvements\ACAD\Sheet\Permit Application - 100% Submission Comments Revisions\08 Cross Sections.dwg Plot Date: Apr 03, 2018 7:16pm



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Scale	1"=4'-0"	
Date	MARCH, 2018	
Job No.	115-1502	
Designed by	BLH	
Drawn by	BLH	
Checked by	JDF	
Approved by	JDF	
MARK	DATE	DESCRIPTION

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

BICYCLE AND PEDESTRIAN ACCOMMODATION IMPROVEMENTS ALONG CONWELL STREET PROVINCETOWN, MASSACHUSETTS

CROSS SECTIONS #8

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Sheet No.

CX-8