

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION

ADAMS
QUALITY STREET/SOUTH WILLOW STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	1	24
PROJECT FILE NO.		610777	

TITLE SHEET & INDEX

PLAN AND PROFILE OF
QUALITY STREET/SOUTH WILLOW STREET
(BRIDGE NO. A-04-038)

IN THE TOWN OF
ADAMS
BERKSHIRE COUNTY

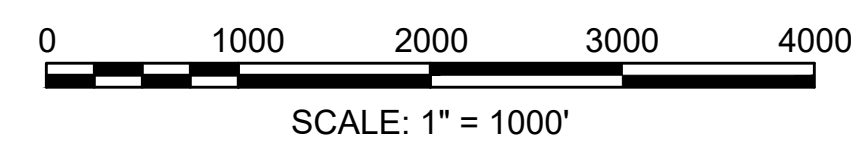
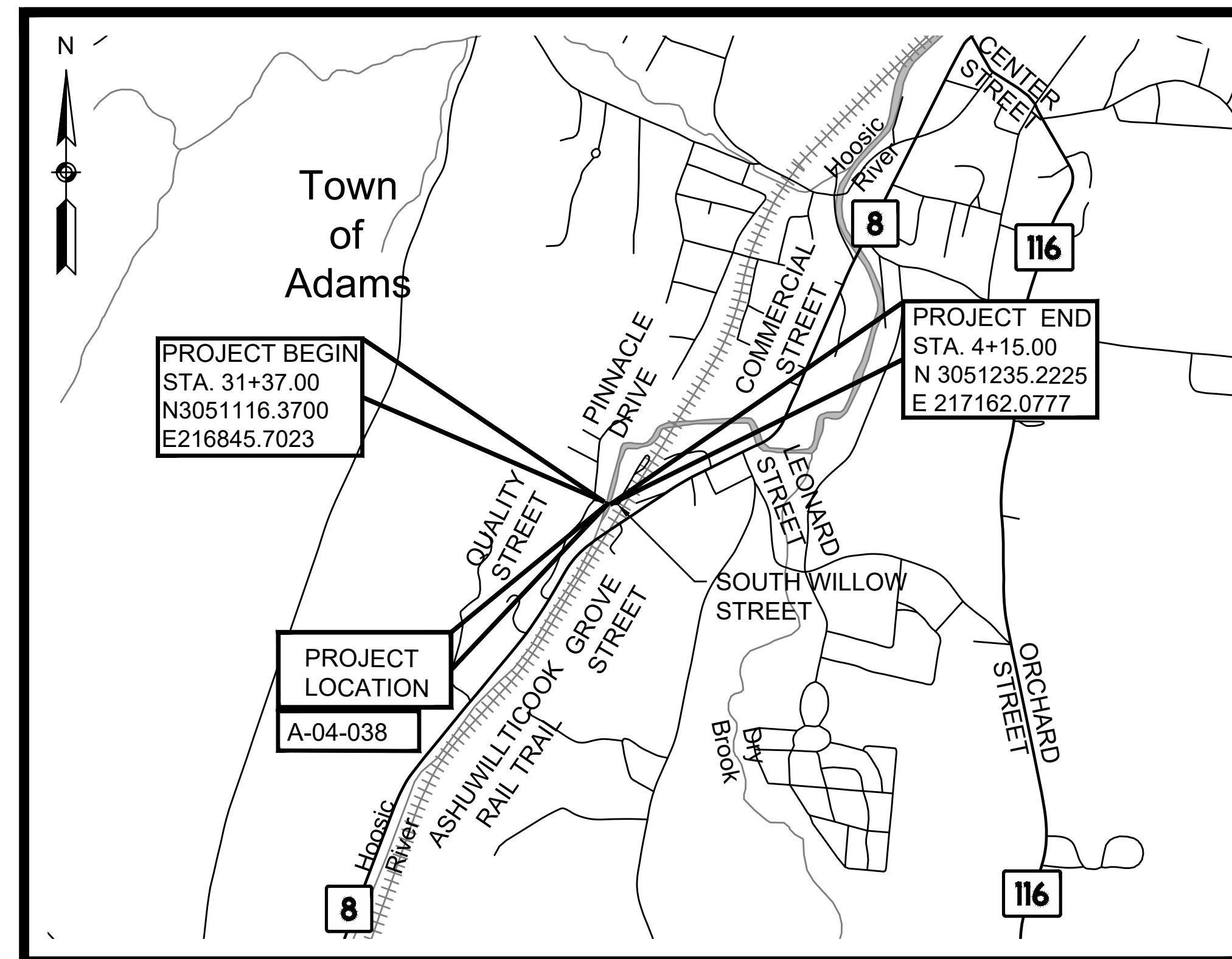
FEDERAL AID PROJECT NO. -

25% SUBMITTAL

THESE PLANS ARE SUPPLEMENTED BY THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS DATED 2022, THE SUPPLEMENTAL SPECIFICATIONS DATED JUNE 30, 2022, THE OCTOBER 2017 CONSTRUCTION STANDARD DETAILS, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK.

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LENGTH OF PROJECT = 417.68 FEET = 0.079 MILES

DESIGN DESIGNATION (QUALITY STREET/SOUTH WILLOW STREET)

DESIGN SPEED	20 MPH
ADT (2018)	129
ADT (2032)	160
T	1.0%
FUNCTIONAL CLASSIFICATION	LOCAL ROAD/URBAN LOCAL ROAD

	08/12/2022	25% SUBMITTAL	
	DATE	DESCRIPTION	REV #
		APPROVED	
		CHIEF ENGINEER	DATE

GENERAL SYMBOLS

Table with columns: EXISTING, PROPOSED, DESCRIPTION. Lists symbols for various utilities and structures like wells, manholes, catch basins, and utility poles.

ENVIRONMENTAL SYMBOLS

Table with columns: EXISTING, PROPOSED, DESCRIPTION. Lists symbols for wetland flags.

TRAFFIC SYMBOLS

Table with columns: EXISTING, PROPOSED, DESCRIPTION. Lists symbols for traffic signals, detectors, and signs.

PAVEMENT MARKINGS SYMBOLS

Table with columns: EXISTING, PROPOSED, DESCRIPTION. Lists symbols for pavement markings like arrows, stop lines, and crosswalks.

- 1. ALL EXISTING UTILITY CASTINGS THAT ARE TO REMAIN WITHIN AREAS TO BE REPAVED SHALL BE ADJUSTED TO LINE AND GRADE BY THE CONTRACTOR UNLESS OTHERWISE NOTED.

ABBREVIATIONS

Table with columns: GENERAL, DESCRIPTION. Lists abbreviations for traffic volume, materials, and construction terms.

ADAMS QUALITY STREET/SOUTH WILLOW STREET

Table with columns: STATE, FED. AID PROJ. NO., SHEET NO., TOTAL SHEETS. Shows project details for MA, project number 610777, sheet 2 of 24.

LEGEND & ABBREVIATIONS

ABBREVIATIONS (cont.)

Table with columns: GENERAL, DESCRIPTION. Continues the list of abbreviations for various engineering and construction terms.

TRAFFIC SIGNAL

Table with columns: CABINET, DESCRIPTION. Lists abbreviations for traffic signal configurations like 'FLASHING RED LEFT ARROW'.

PAVEMENT NOTES

ROADWAY

SURFACE: 1 1/2" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5) OVER ASPHALT EMULSION FOR TACK COAT OVER

INTERMEDIATE: 2 1/2" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5) OVER ASPHALT EMULSION FOR TACK COAT OVER

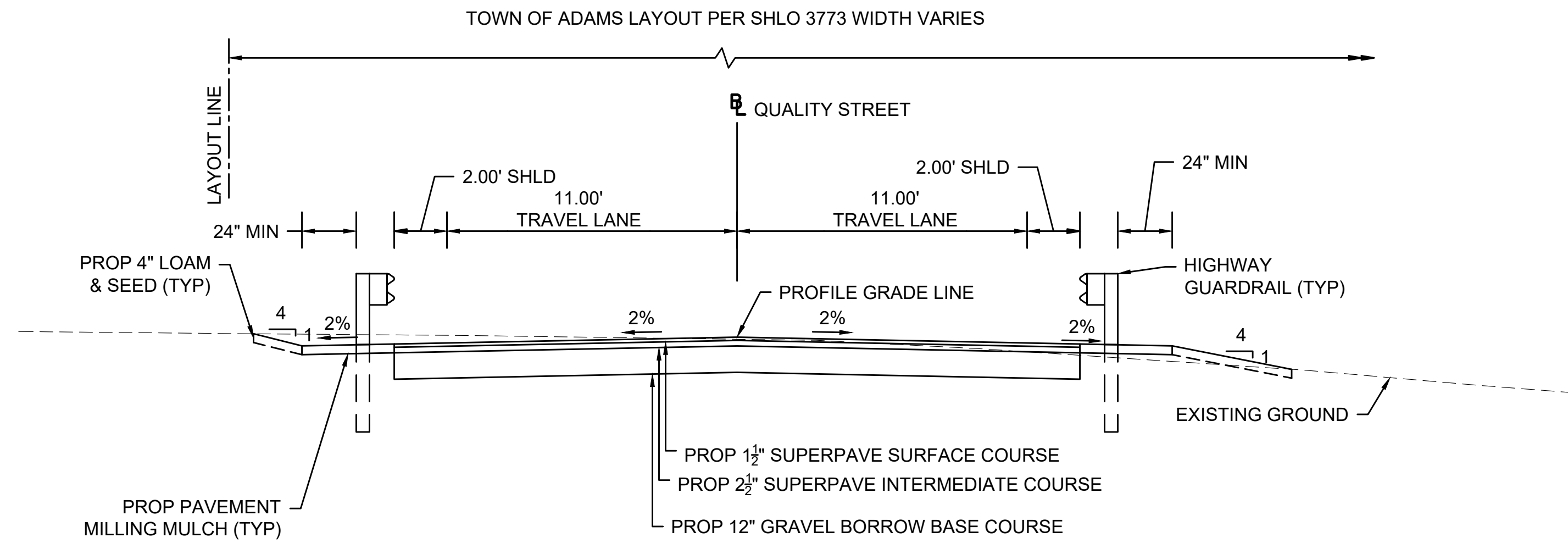
BASE: 12" GRAVEL BORROW (M1.02.0 TYPE b)

*NEW SUBBASE TO BE PLACED ONLY WHERE EXISTING SUBBASE MATERIAL FAILS TO MEET REQUIREMENTS OF M1.03.0 TYPE b AND AS DIRECTED BY THE ENGINEER

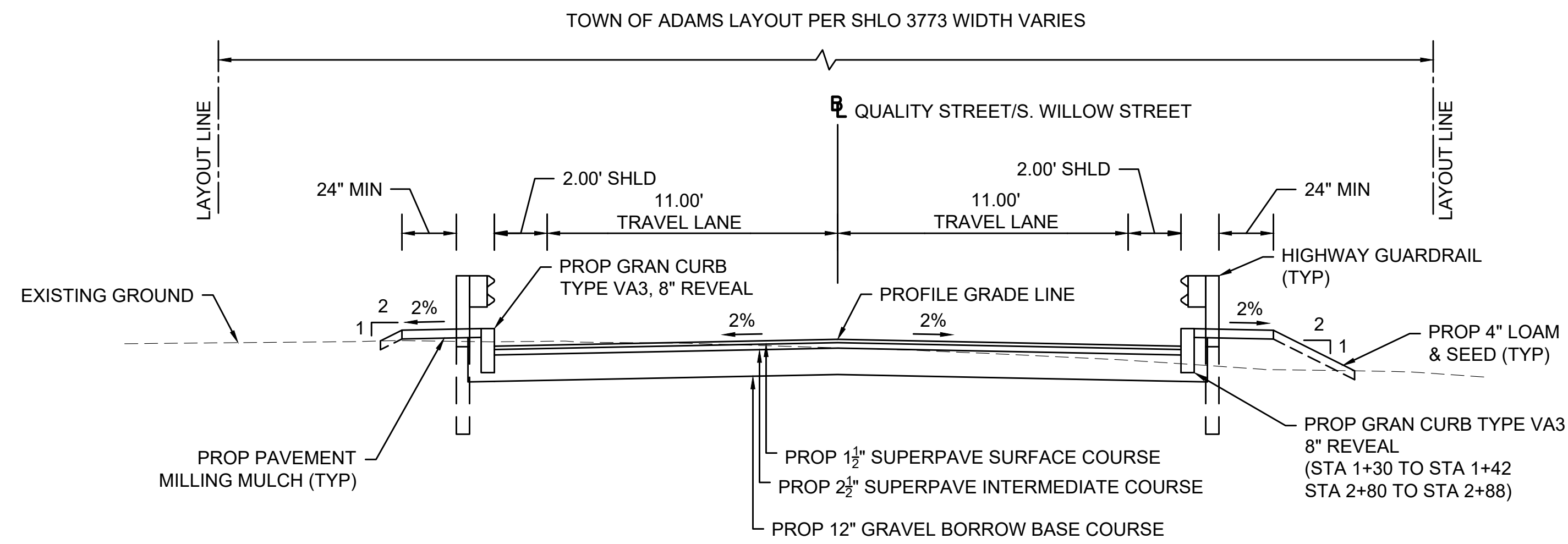
PROP RESURFACING OVERLAY TRANSITION AT LIMITS OF WORK

SURFACE: 1 1/2" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 (SSC-B-9.5) OVER ASPHALT EMULSION FOR TACK COAT OVER

1.5" PAVEMENT FINE MILLING



QUALITY STREET
SCALE: 1"=4'
STA 0+90 TO STA 1+30



QUALITY STREET/S. WILLOW STREET
SCALE: 1"=4'
STA 1+30 TO STA 1+42
STA 2+80 TO STA 3+00

PAVEMENT NOTES (CONT)

HOT MIX ASPHALT SIDEWALK

SURFACE : 1 1/4" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5) OVER ASPHALT EMULSION FOR TACK COAT OVER

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

SUBBASE : 8" GRAVEL BORROW (M1.02.0 TYPE b)

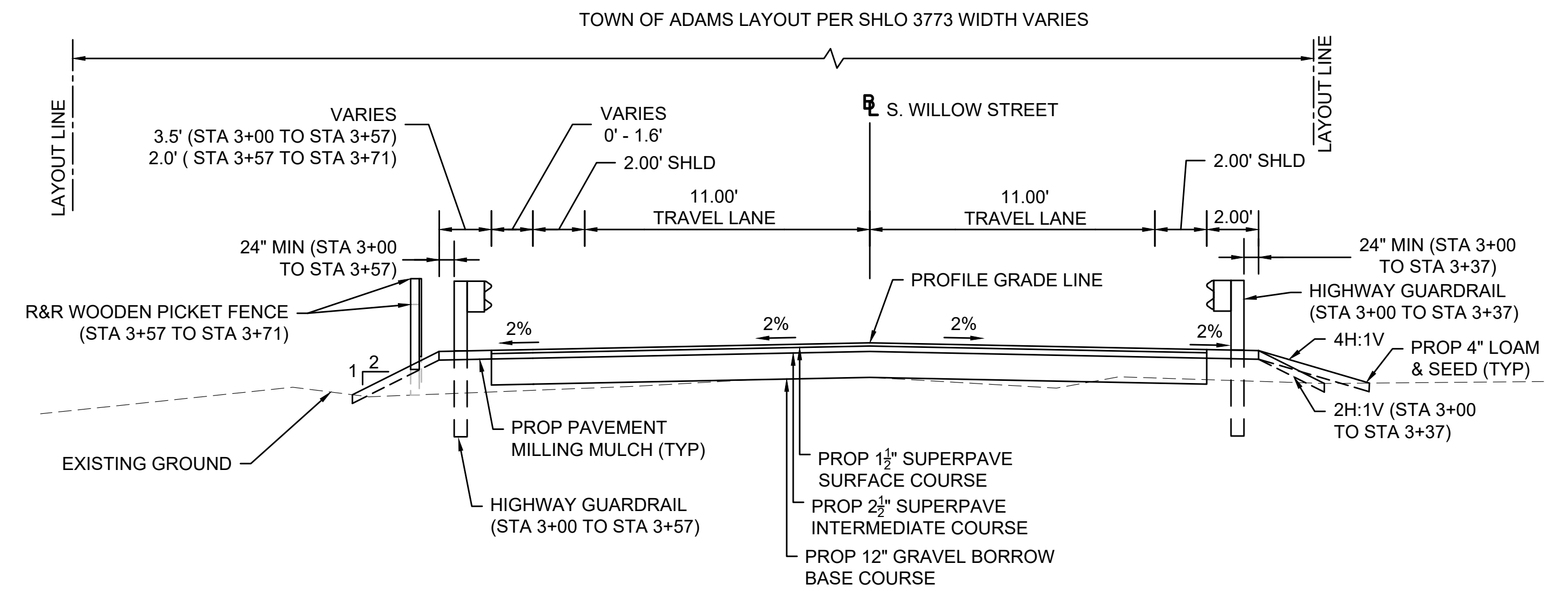
NOTES:

1. SEE STANDARD DETAIL E 104.1.0 FOR METHOD OF STEPPING SURFACE AND BASE COURSE LAYERS.
2. PREPARATION OF UNDERLYING SURFACE, ASPHALT EMULSION FOR TACK COAT, HMA FOR PATCHING, AND HMA JOINT SEALANT SHALL BE IN ACCORDANCE WITH SECTION 450.
3. ASPHALT EMULSION FOR TACK COAT SHALL MEET ALL REQUIREMENTS OUTLINED IN THE 2021 CONSTRUCTION SPECIFICATIONS FOR ANIONIC EMULSIFIED ASPHALT (SECTION M.03.1), AND SPRAYED FOR 95% UNIFORM COVERAGE PRIOR TO PAVING.
4. CONSTRUCTION TOLERANCE +/- 0.5%.

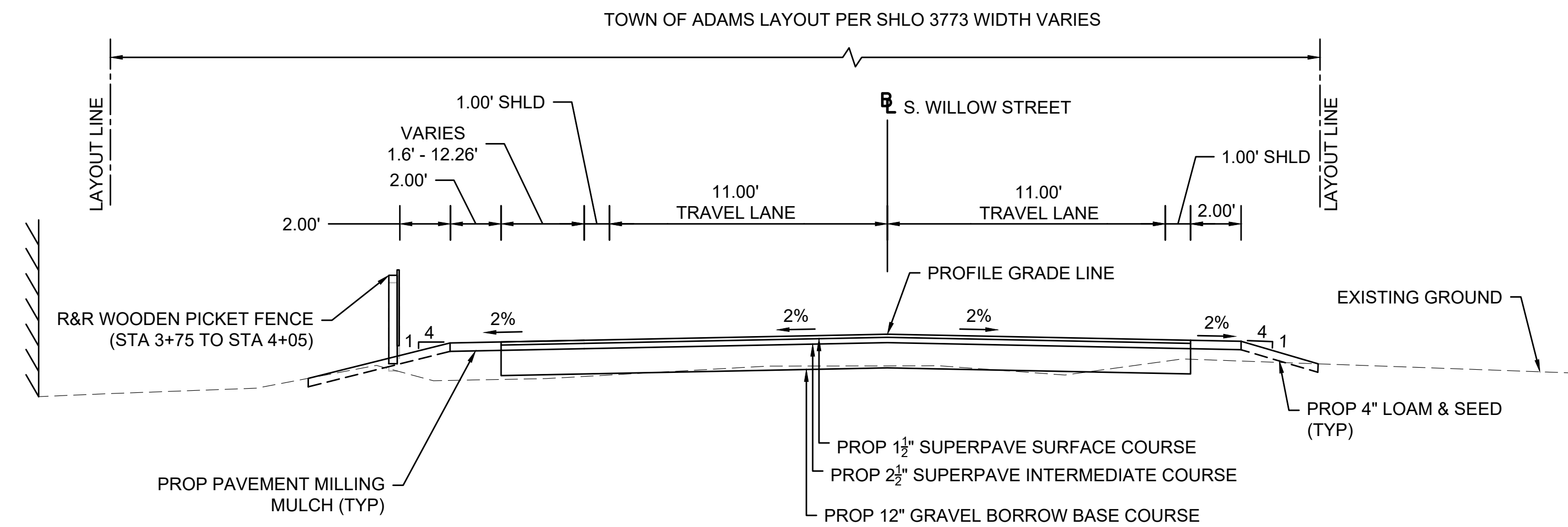
ADAMS
QUALITY STREET/SOUTH WILLOW STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	3	24
PROJECT FILE NO.		610777	

TYPICAL SECTIONS



S. WILLOW STREET
SCALE: 1"=4'
STA 3+00 TO STA 3+75



S. WILLOW STREET
SCALE: 1"=4'
STA 3+75 TO STA 4+15

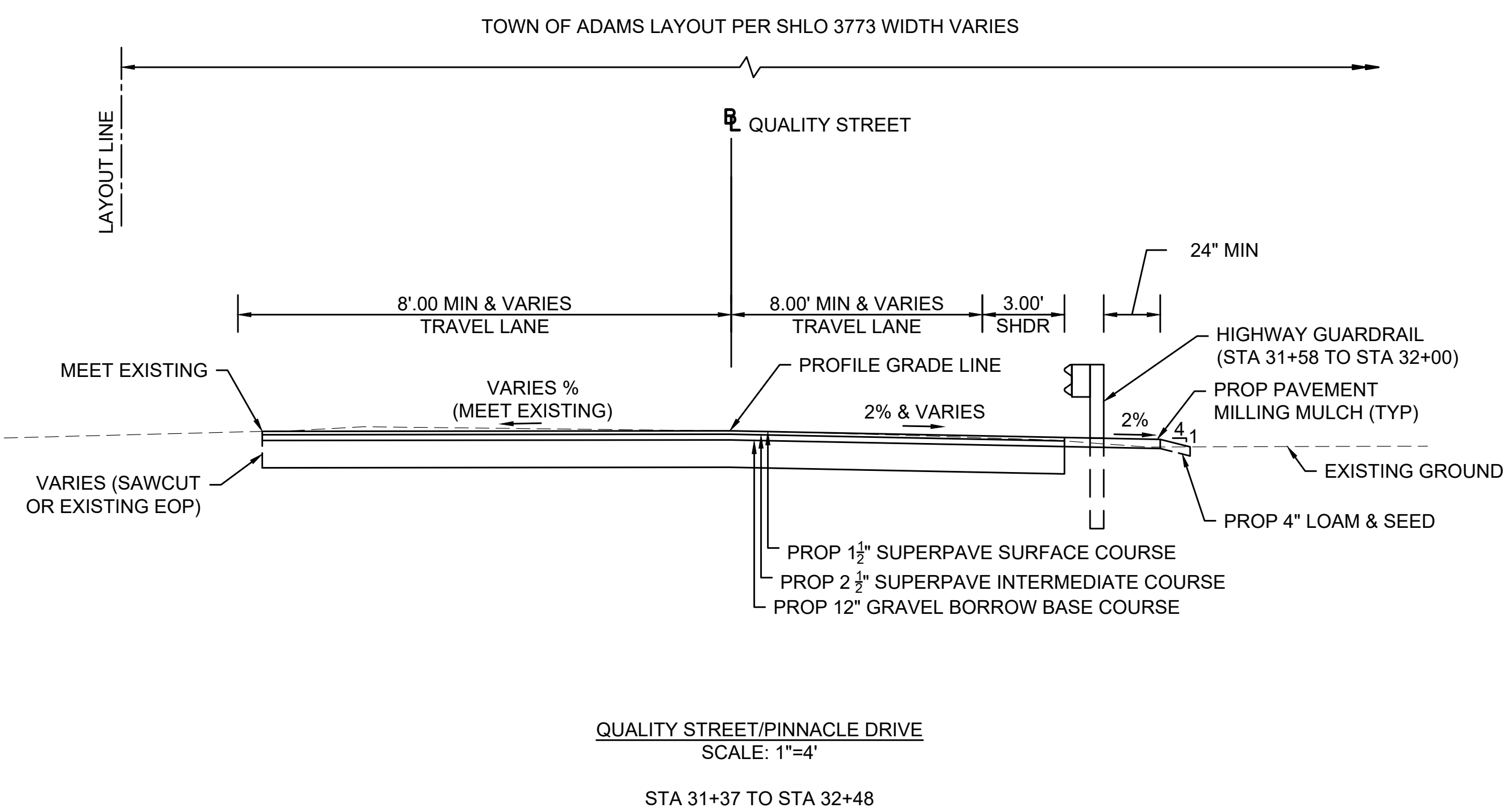
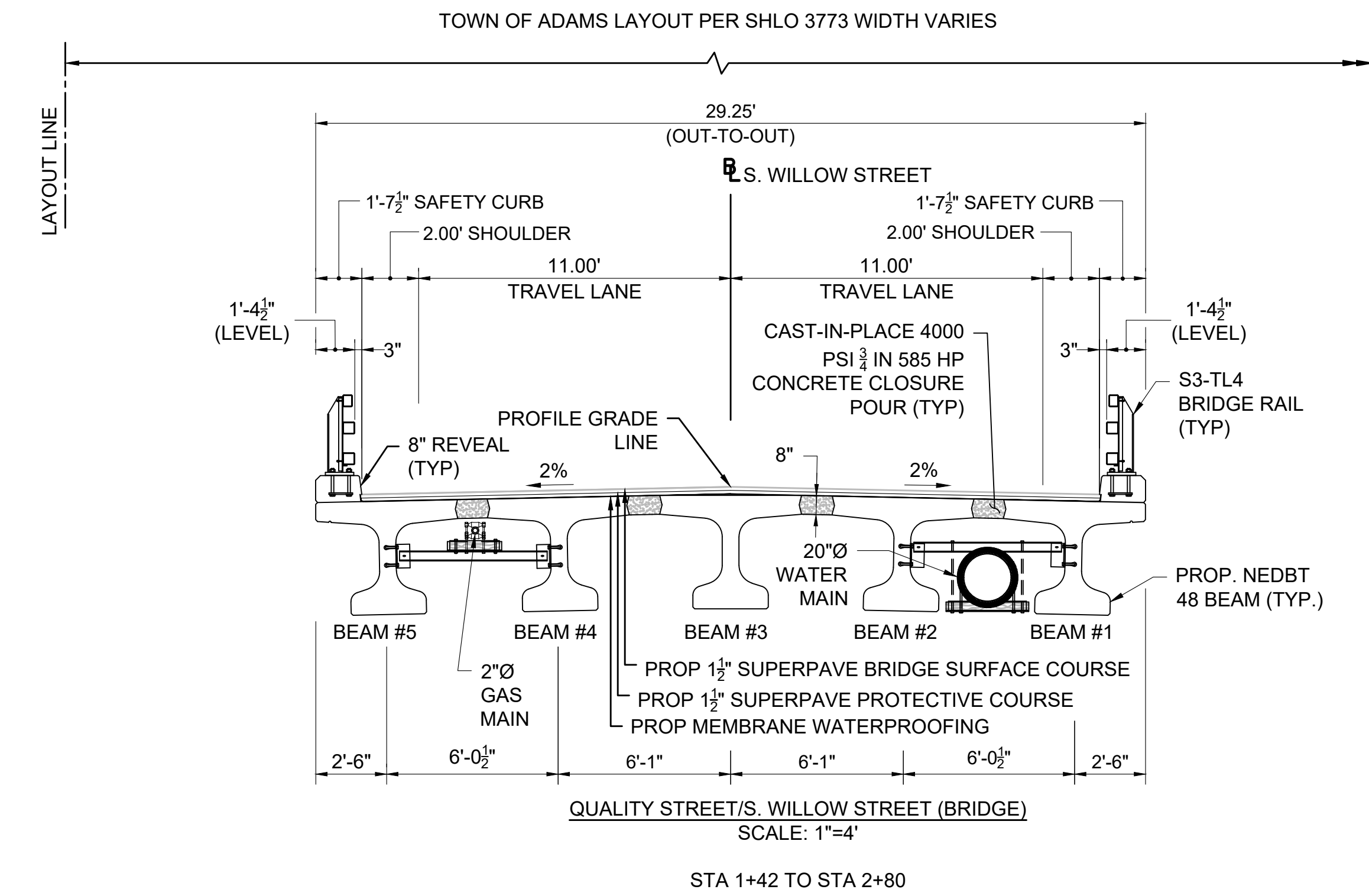
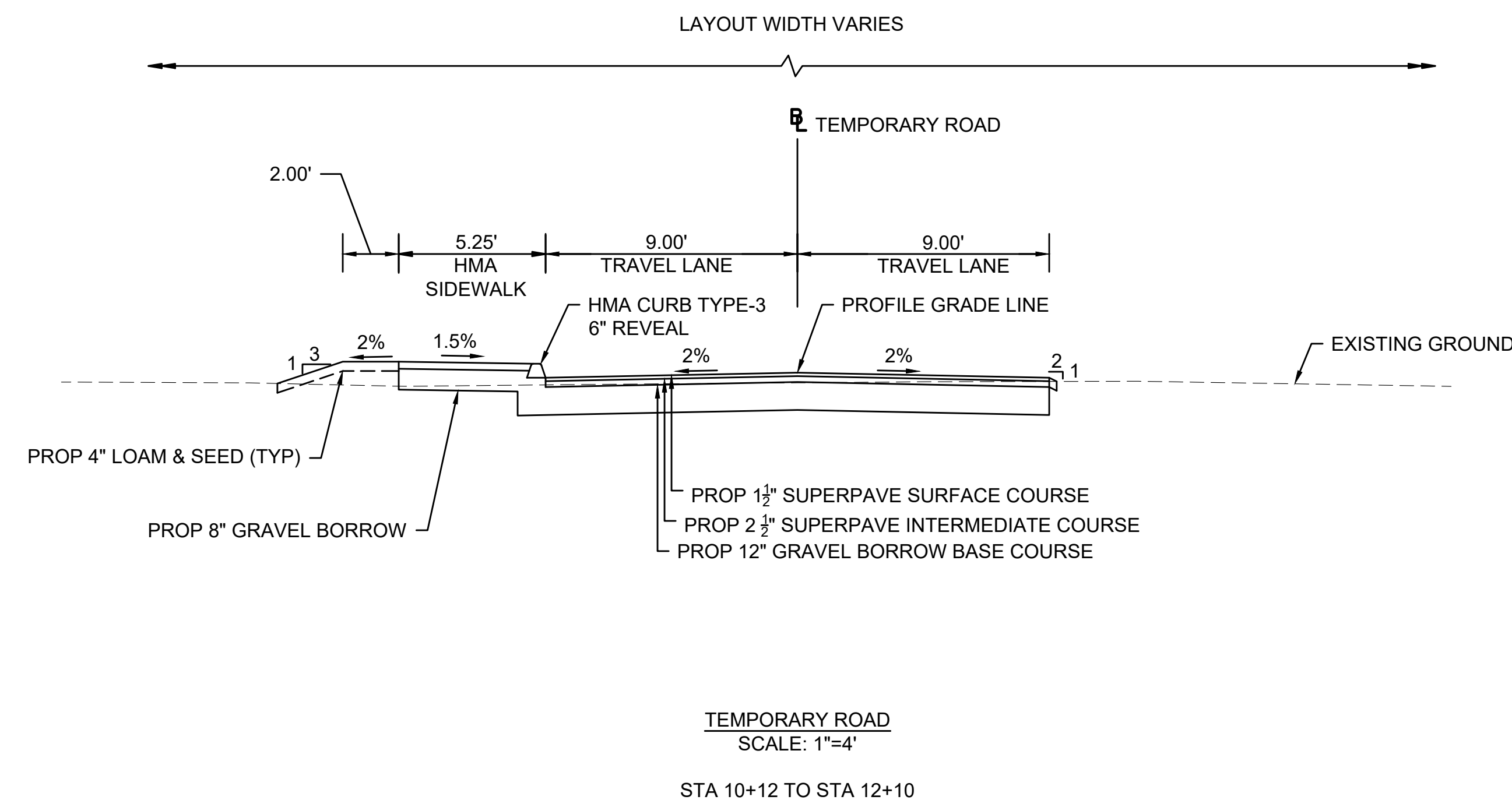
ADAMS
QUALITY STREET/SOUTH WILLOW STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	4	24
PROJECT FILE NO.		610777	

TYPICAL SECTIONS

PAVEMENT NOTES

SEE SHEET 3



HIGHWAY GUARD DETAILS
NONE

TRAFFIC SIGNAL CONDUIT
NONE

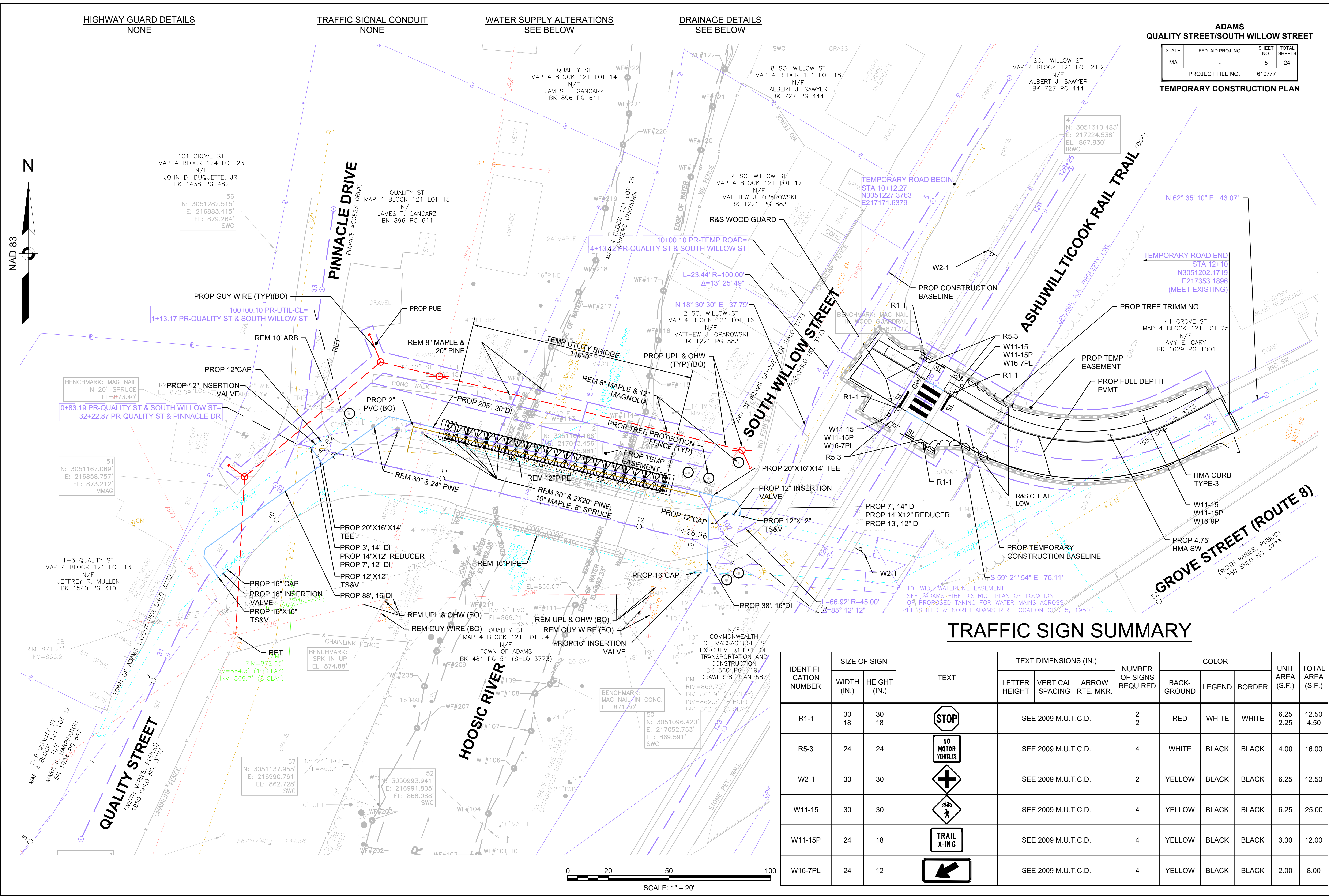
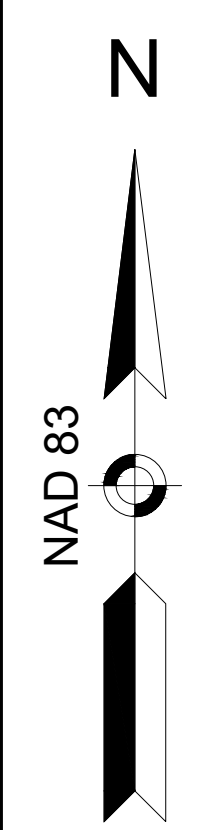
WATER SUPPLY ALTERATIONS
SEE BELOW

DRAINAGE DETAILS
SEE BELOW

ADAMS
QUALITY STREET/SOUTH WILLOW STREET

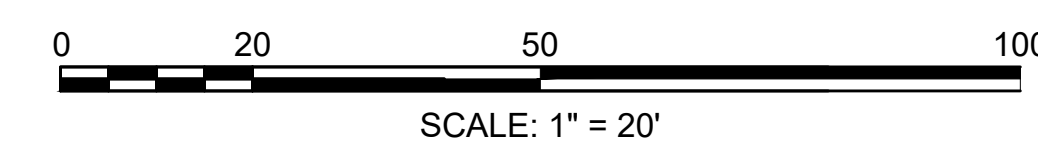
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA		5	24
PROJECT FILE NO.		610777	

TEMPORARY CONSTRUCTION PLAN



TRAFFIC SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (IN.)			NUMBER OF SIGNS REQUIRED	COLOR			UNIT AREA (S.F.)	TOTAL AREA (S.F.)
	WIDTH (IN.)	HEIGHT (IN.)		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER		
R1-1	30	30		SEE 2009 M.U.T.C.D.	2	RED	WHITE	WHITE	6.25	12.50	2.25	4.50
R5-3	24	24		SEE 2009 M.U.T.C.D.	4	WHITE	BLACK	BLACK	4.00	16.00		
W2-1	30	30		SEE 2009 M.U.T.C.D.	2	YELLOW	BLACK	BLACK	6.25	12.50		
W11-15	30	30		SEE 2009 M.U.T.C.D.	4	YELLOW	BLACK	BLACK	6.25	25.00		
W11-15P	24	18		SEE 2009 M.U.T.C.D.	4	YELLOW	BLACK	BLACK	3.00	12.00		
W16-7PL	24	12		SEE 2009 M.U.T.C.D.	4	YELLOW	BLACK	BLACK	2.00	8.00		



HIGHWAY GUARD DETAILS
 STA 31+58.24 TO STA 31+94.82, RT (TANGENT END, TL-2)
 STA 31+94.82 TO STA 1+13.55, RT (GUARDRAIL, TL-2)
 STA 1+13.55 TO STA 1+17.84, RT (GUARDRAIL, TL-2)
 STA 1+17.84 TO STA 1+49.09, RT (TRANSITION TO BRIDGE RAIL)
 STA 1+11.03 TO STA 1+20.40, LT (TRAILING ANCHORAGE)
 STA 1+20.40 TO STA 1+51.65, LT (TRANSITION TO BRIDGE RAIL)
 STA 2+74.98 TO STA 3+17.08, LT (TRANSITION TO BRIDGE RAIL)
 STA 3+17.08 TO STA 3+56.76, LT (TANGENT END, TL-2)
 STA 2+72.17 TO STA 2+97.52, RT (TRANSITION TO BRIDGE RAIL)
 STA 2+97.52 TO STA 3+29.69, RT (GUARDRAIL, TL-2)
 STA 3+29.69 TO STA 3+36.86, RT (TRAILING ANCHORAGE)

TRAFFIC SIGNAL CONDUIT
 NONE

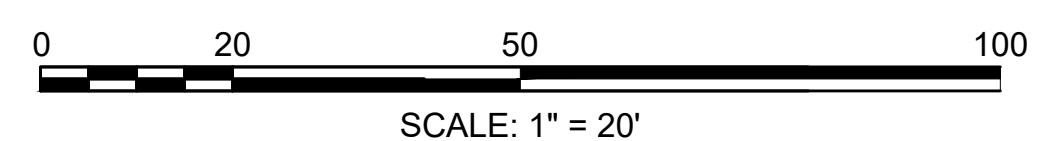
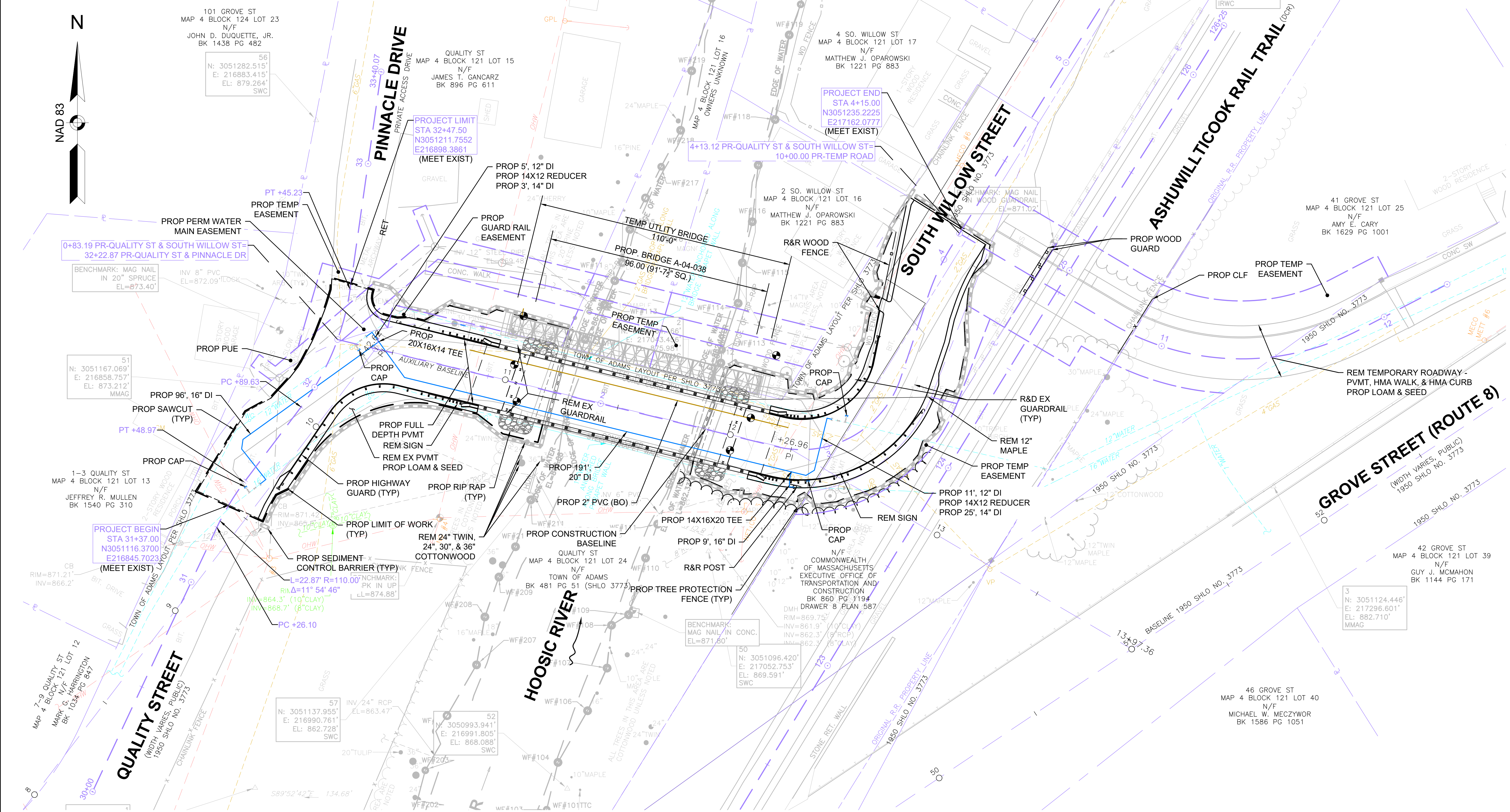
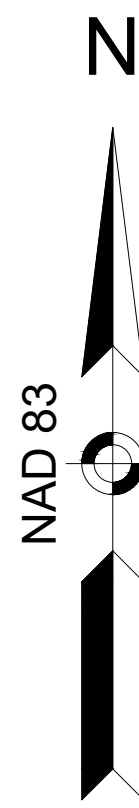
WATER SUPPLY ALTERATIONS
 SEE BELOW

DRAINAGE DETAILS
 NONE

**ADAMS
 QUALITY STREET/SOUTH WILLOW STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA		6	24

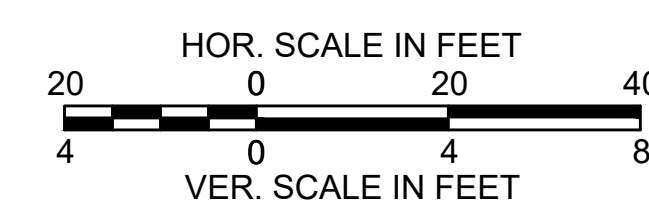
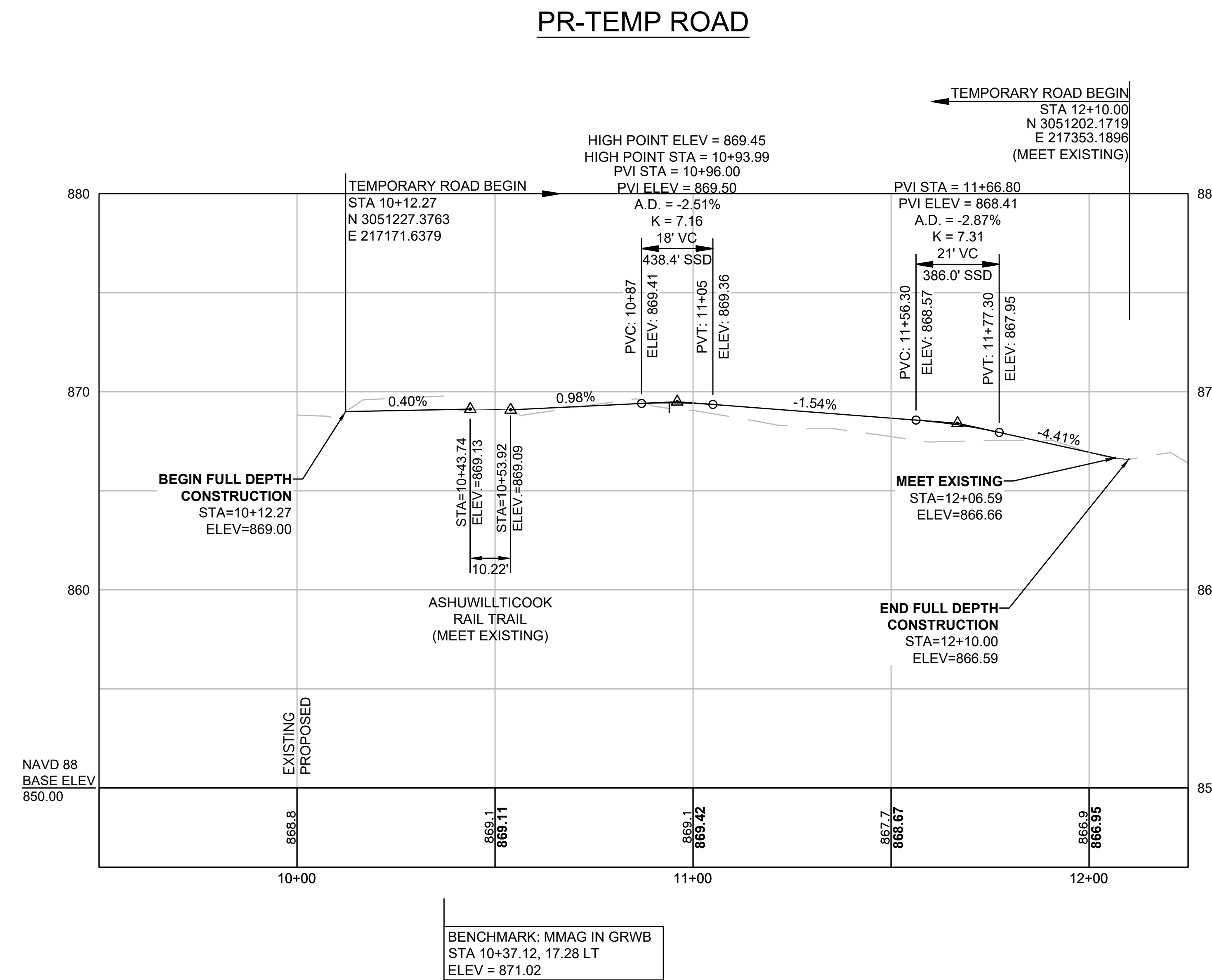
PROJECT FILE NO. 610777
CONSTRUCTION PLAN



ADAMS
QUALITY STREET/SOUTH WILLOW STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	7	24
PROJECT FILE NO.		610777	

TEMPORARY PROFILE



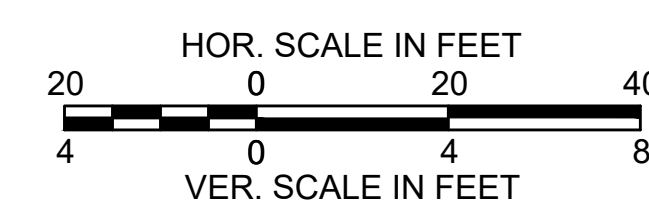
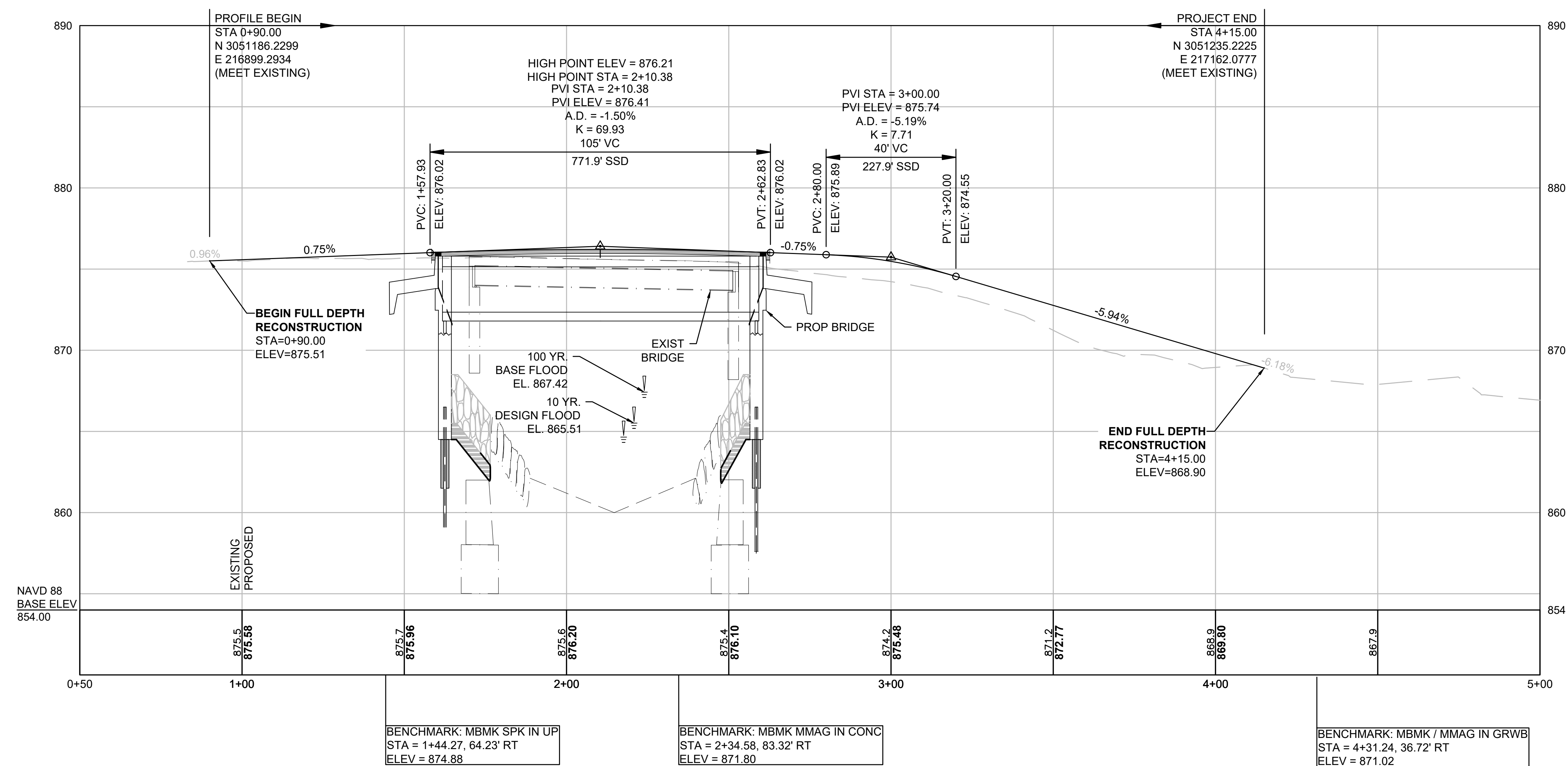
FOR TEMPORARY CONSTRUCTION PLAN:
SEE SHEET 5

**ADAMS
QUALITY STREET/SOUTH WILLOW STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	8	24
PROJECT FILE NO.		610777	

PROFILE

PR-QUALITY ST & SOUTH WILLOW ST

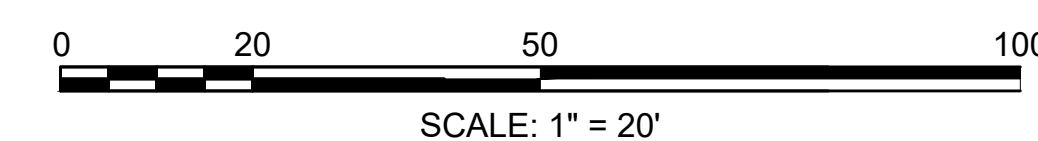
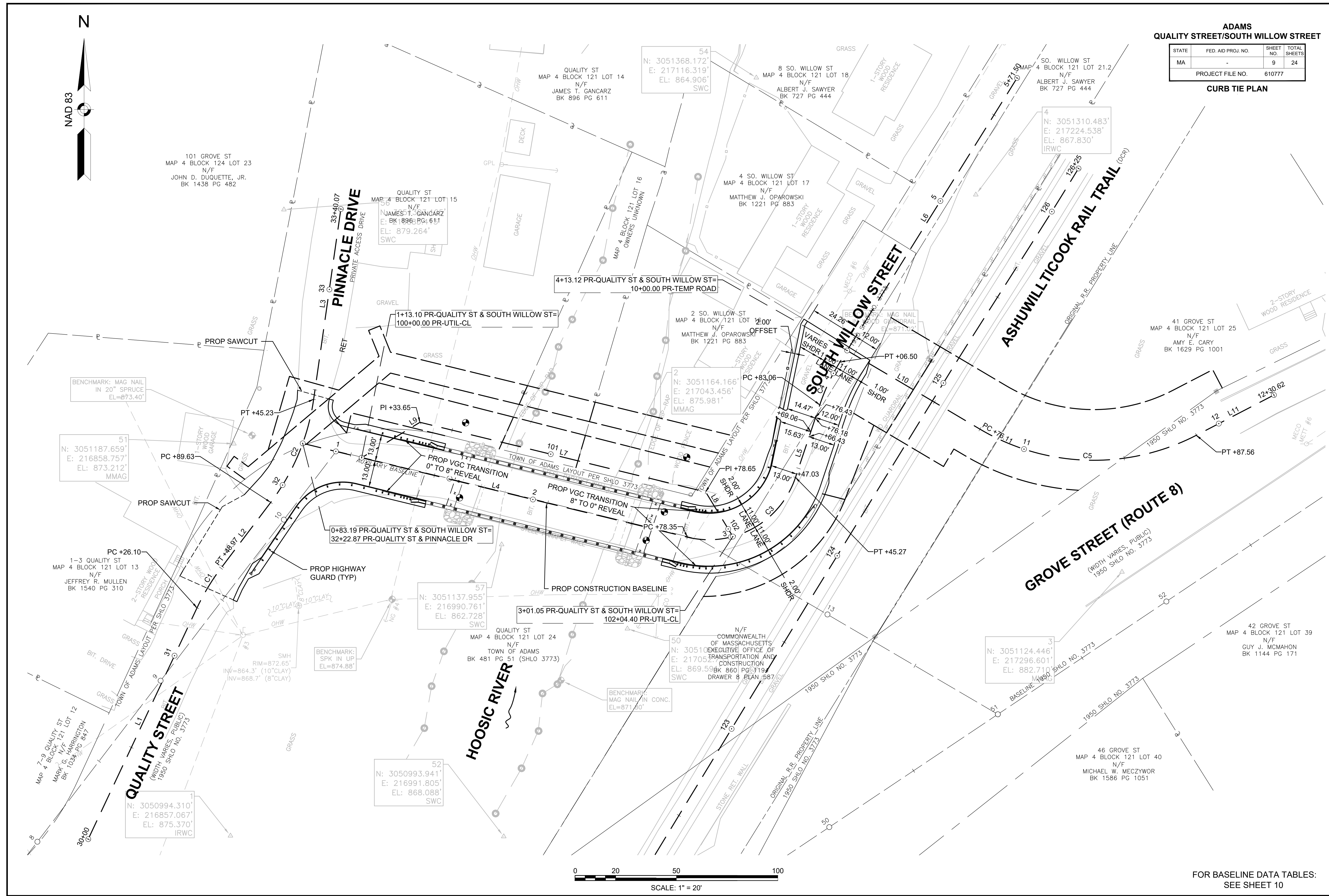
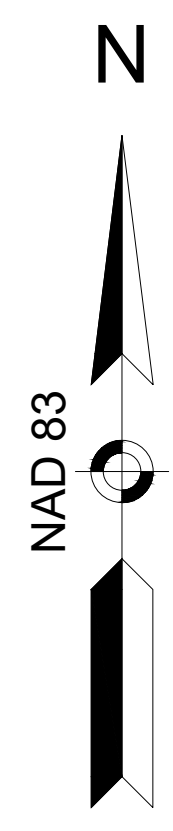


FOR CONSTRUCTION PLAN:
SEE SHEET NO. 6

**ADAMS
QUALITY STREET/SOUTH WILLOW STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA		9	24

PROJECT FILE NO. 610777
CURB TIE PLAN



FOR BASELINE DATA TABLES:
SEE SHEET 10

**ADAMS
QUALITY STREET/SOUTH WILLOW STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	10	24
PROJECT FILE NO.		610777	

BASELINE DATA TABLES

PR-QUALITY ST & PINNACLE DR CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	30+00.00	3050992.638	216786.929		N25°10'56"E 126.10'	31+26.10	3051106.751	216840.583
C1	31+26.10	3051106.751	216840.583	R = 110.00' Δ= 11°54'46" L=22.87' T=11.48'		31+48.97	3051126.291	216852.389
L2	31+48.97	3051126.291	216852.389		N37°05'42"E 40.66'	31+89.63	3051158.721	216876.911
C2	31+89.63	3051158.721	216876.911	R = 110.00' Δ= 28°57'45" L=55.60' T=28.41'		32+45.23	3051209.506	216898.065
L3	32+45.23	3051209.506	216898.065		N8°07'57"E 94.84'	33+40.07	3051303.392	216911.481

SURVEY TRAVERSE POINT DATA				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	3050994.310	216857.067	875.370	MTRV IRWC
2	3051164.166	217043.456	875.981	MTRV MMAG
3	3051124.446	217296.601	882.710	MTRV MMAG
4	3051310.483	217224.538	867.830	MTRV IRWC
50	3051096.420	217052.753	869.591	MTRV SWC
51	3051187.659	216858.757	873.212	MTRV MMAG
52	3050993.941	216991.805	868.088	MTRV SWC
54	3051368.172	217116.319	864.906	MTRV SWC
56	3051303.105	216883.415	879.264	MTRV SWC
57	3051137.955	216990.761	862.728	MTRV SWC

PR-QUALITY ST & SOUTH WILLOW ST CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L4	0+83.19	3051187.843	216892.681		S76°17'19"E 195.16'	2+78.35	3051141.584	217082.280
C3	2+78.35	3051141.584	217082.280	R = 45.00' Δ= 85°12'12" L=66.92' T=41.38'		3+45.27	3051171.016	217135.619
L5	3+45.27	3051171.016	217135.619		N18°30'30"E 37.79'	3+83.06	3051206.855	217147.617
C4	3+83.06	3051206.855	217147.617	R = 100.00' Δ= 13°25'49" L=23.44' T=11.77'		4+06.50	3051228.012	217157.583
L6	4+06.50	3051228.012	217157.583		N31°56'19"E 164.99'	5+71.50	3051368.027	217244.865

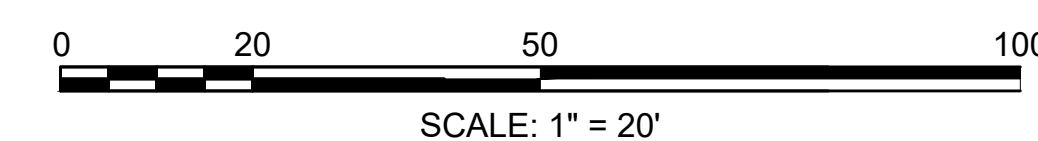
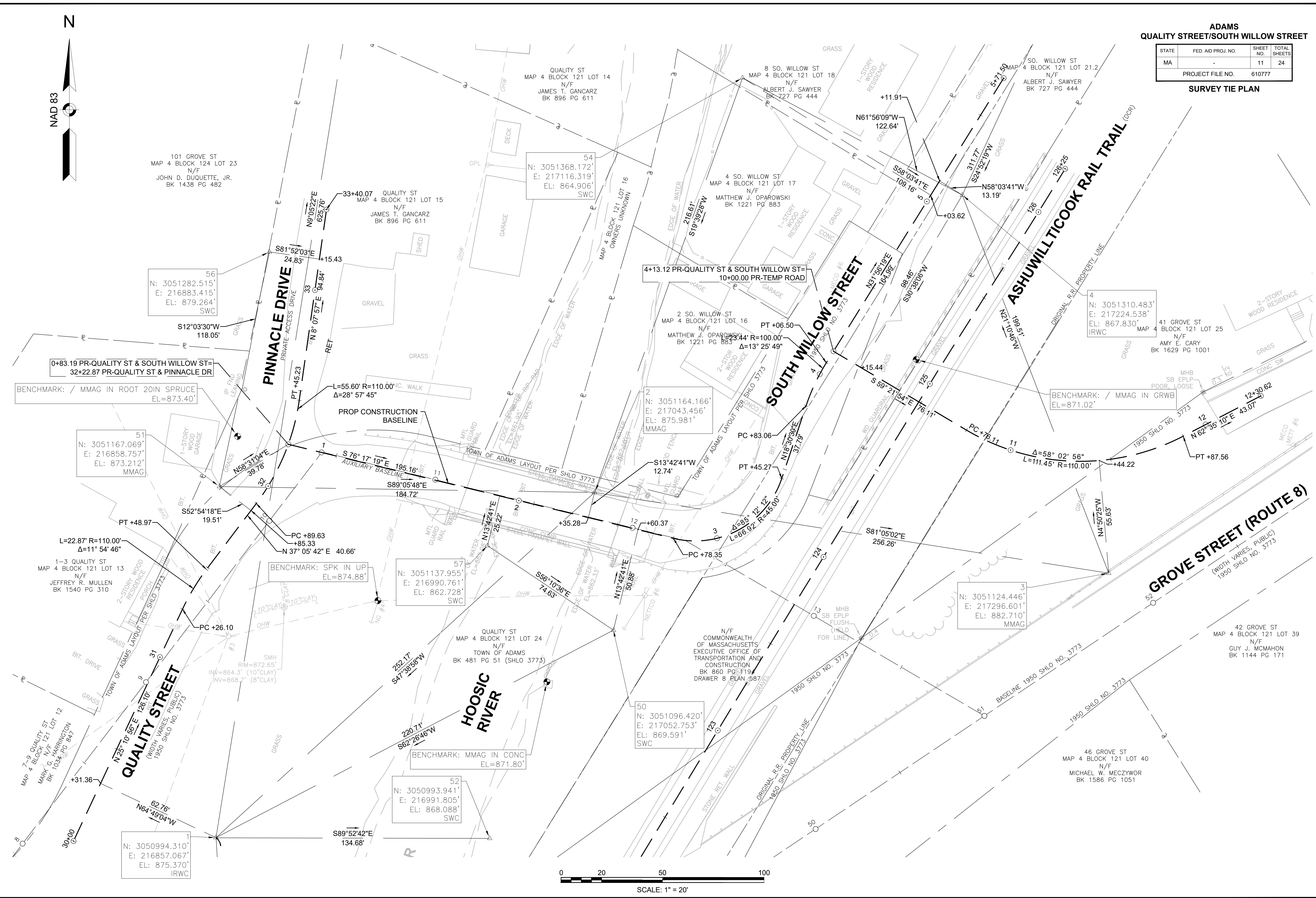
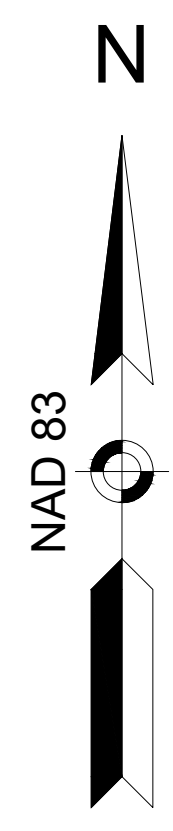
PR-UTIL-CL CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L9	100+00.00	3051180.754	216921.737		N58°42'18"E 33.65'	100+33.65	3051198.233	216950.491
L7	100+33.65	3051198.233	216950.491		S76°17'42"E 145.00'	101+78.65	3051163.879	217091.359
L8	101+78.65	3051163.879	217091.359		S31°17'19"E 25.75'	102+04.40	3051141.872	217104.734

PR-TEMP ROAD CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L10	10+00.00	3051233.627	217161.083		S59°21'54"E 76.11'	10+76.11	3051194.843	217226.573
C5	10+76.11	3051194.843	217226.573	R = 110.00' Δ= 58°02'56" L=111.45' T=61.04'		11+87.56	3051191.843	217333.271
L11	11+87.56	3051191.843	217333.271		N62°35'10"E 43.07'	12+30.62	3051211.671	217371.500

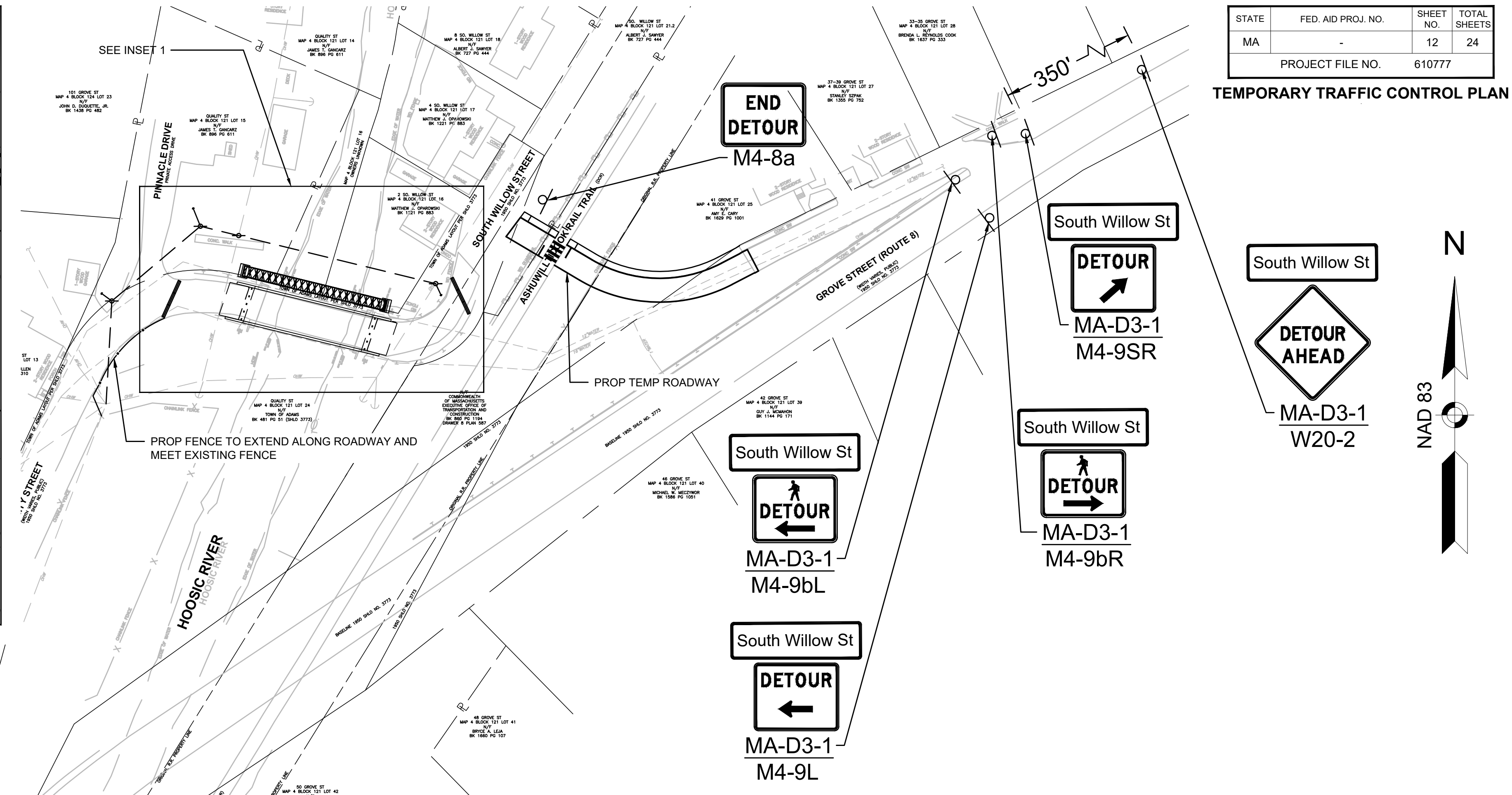
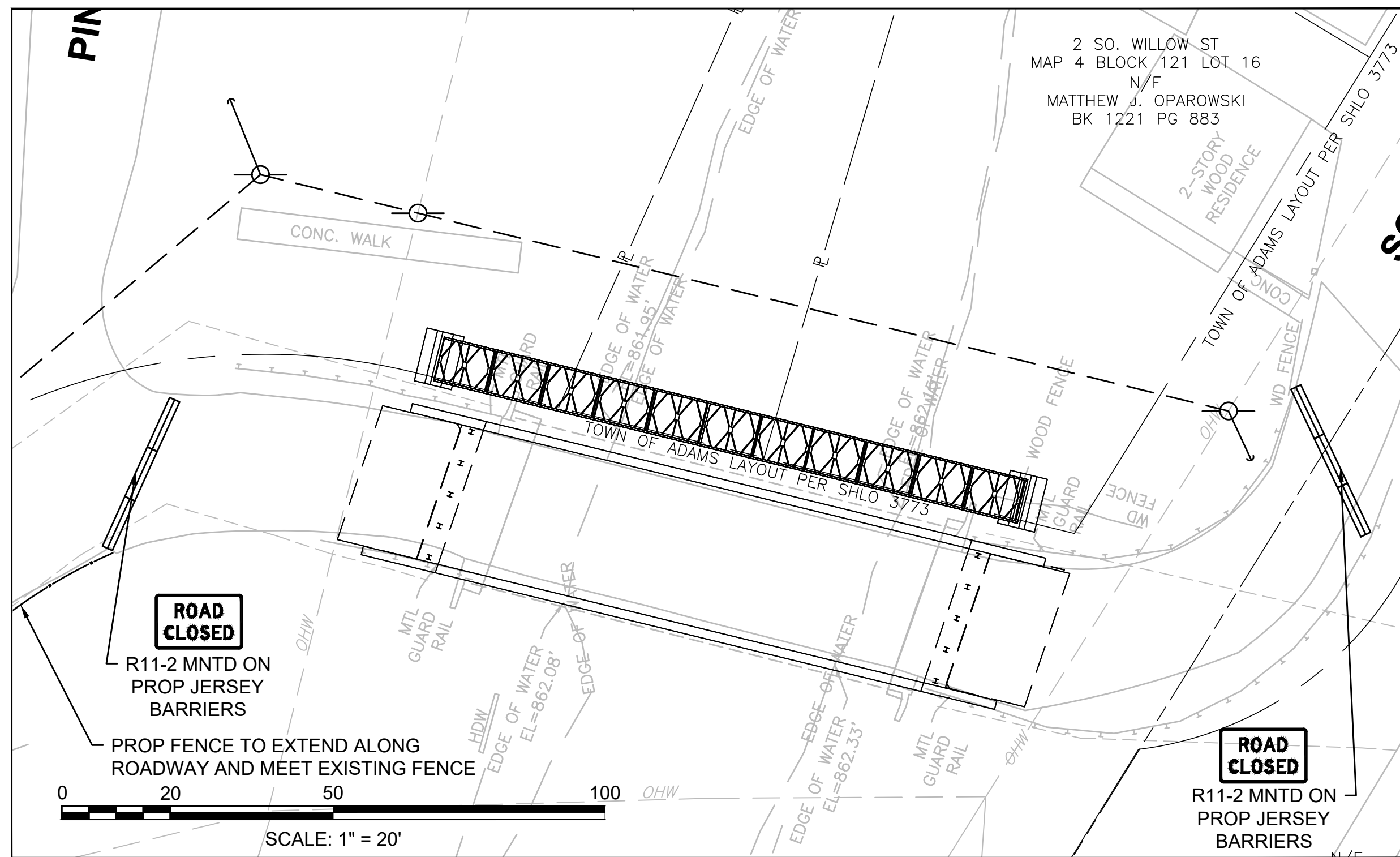
ADAMS
QUALITY STREET/SOUTH WILLOW STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA		11	24

PROJECT FILE NO. 610777
SURVEY TIE PLAN



INSET 1



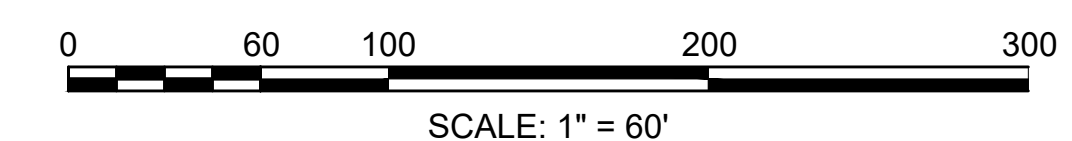
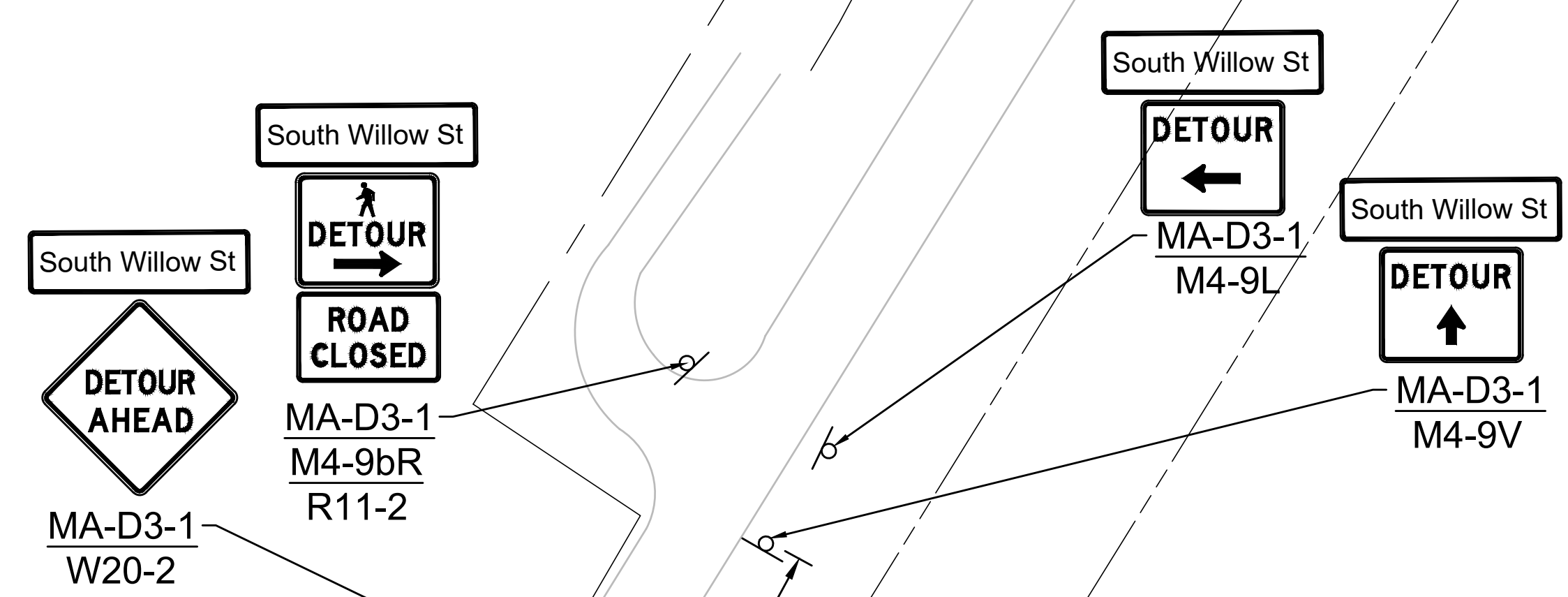
ADAMS
QUALITY STREET/SOUTH WILLOW STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA		12	24
PROJECT FILE NO.		610777	

TEMPORARY TRAFFIC CONTROL PLAN

TEMPORARY TRAFFIC CONTROL PLAN SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (IN.)			NUMBER OF SIGNS REQUIRED	COLOR			UNIT AREA (S.F.)	TOTAL AREA (S.F.)
	WIDTH (IN.)	HEIGHT (IN.)		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER		
MA-D3-1	66	12	South Willow St	6D/4D	3"	N/A	9	FLUORESCENT ORANGE	BLACK	BLACK	5.50	49.50
M4-8a	24	18	END DETOUR	SEE 2009 M.U.T.C.D.			1	FLUORESCENT ORANGE	BLACK	BLACK	3.00	3.00
M4-9 L/R	30	24	DETOUR	SEE 2009 M.U.T.C.D.			2	FLUORESCENT ORANGE	BLACK	BLACK	5.00	10.00
M4-9b L/R	30	24	DETOUR	SEE 2009 M.U.T.C.D.			3	FLUORESCENT ORANGE	BLACK	BLACK	5.00	15.00
M4-9SR	30	24	DETOUR	SEE 2009 M.U.T.C.D.			1	FLUORESCENT ORANGE	BLACK	BLACK	5.00	5.00
M4-9V	30	24	DETOUR	SEE 2009 M.U.T.C.D.			1	FLUORESCENT ORANGE	BLACK	BLACK	5.00	5.00
R11-2	48	30	ROAD CLOSED	SEE 2009 M.U.T.C.D.			3	FLUORESCENT ORANGE	BLACK	BLACK	10.00	30.00
W20-2	36	36	DETOUR AHEAD	SEE 2009 M.U.T.C.D.			2	FLUORESCENT ORANGE	BLACK	BLACK	9.00	18.00



NOTES:

1. ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS, UNLESS SUPERSEDED BY THESE PLANS.
2. ALL SIGN LEGENDS, BORDERS AND MOUNTING SHALL BE IN ACCORDANCE WITH THE MUTCD.
3. TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.
4. TEMPORARY CONSTRUCTION SIGNING, BARRICADES AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE REMOVED FROM THE HIGHWAY OR COVERED WHEN THEY ARE NOT REQUIRED FOR CONTROL OF TRAFFIC.
5. SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY, CHANNELIZING DEVICES, BARRIERS, AND CRASH ATTENUATOR MUST PASS THE CRITERIA SET FORTH IN NCHRP REPORT 350, "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES," AND/OR MASH "MANUAL FOR ASSESSING SAFETY HARDWARE."
6. CONTRACTORS SHALL NOTIFY EACH ADJUTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS, SUCH AS CONDUIT INSTALLATION, EXISTING PAVEMENT EXCAVATION, TEMPORARY DRIVEWAY PAVEMENT PLACEMENT AND SIMILAR OPERATIONS.
7. THE FIRST TEN PLASTIC DRUMS OF A TAPER SHALL BE MOUNTED WITH TYPE A SEQUENTIAL FLASHING LIGHTS.
8. THE ADVISORY SPEED LIMIT, IF REQUIRED, SHALL BE DETERMINED BY THE ENGINEER.
9. DISTANCES ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.
10. MAXIMUM SPACING OF TRAFFIC DEVICES IN A TAPER (DRUMS OR CONES) IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.
11. MINIMUM LANE WIDTH IS TO BE 11 FEET UNLESS OTHERWISE SHOWN. MINIMUM LANE WIDTH TO BE MEASURED FROM THE EDGE OF CHANNELIZING DEVICE OR BARRIER.
12. ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS.

LEGEND:

- REFLECTORIZED PLASTIC DRUM OR 36" CONE
- WORK ZONE
- WORK VEHICLE
- P/F POLICE/FLAGGER DETAIL
- DIRECTION OF TRAFFIC
- TRUCK MOUNTED ATTENUATOR
- TYPE III BARRICADE
- IMPACT ATTENUATOR
- TRAFFIC OR PEDESTRIAN SIGNAL
- CHANGEABLE MESSAGE SIGN
- MEDIAN BARRIER
- SIGN
- ARROW BOARD
- MEDIAN BARRIER WITH WARNING LIGHTS

THE IDEAL CAPACITY OF A MAJOR HIGHWAY IS GENERALLY CONSIDERED TO BE 1900 PASSENGER CARS PER HOUR PER LANE (PCPHPL). IN WORK ZONES ON A MULTI-LANE DIVIDED HIGHWAY, THE FOLLOWING VOLUME GUIDELINES HAVE BEEN SUGGESTED:

MEASURED AVERAGE WORK ZONE CAPACITIES

Number of Lanes NORMAL (existing)	Number of Lanes OPEN (to traffic)	Number of Studies	Average Capacity	
			VPH	VPHPL
3	1	7	1,170	1,170
2	1	8	1,340	1,340
5	2	8	2,740	1,370
4	2	4	2,960	1,480
3	2	9	2,980	1,490
4	3	4	4,560	1,520

Source: Dudek, C. Notes on Work Zone Capacity and Level of Service. Texas Transportation Institute, Texas A&M University, College Station, Texas (1994)

BY OBTAINING HOURLY TRAFFIC COUNTS FOR A PARTICULAR ROADWAY (WITH A MINIMUM OF A 48-HOUR AUTOMATIC TRAFFIC RECORDER (ATR) COUNT), THIS WILL HELP TO DETERMINE AT WHAT TIMES OF THE DAY OR NIGHT A CERTAIN NUMBER OF LANES MAY BE CLOSED.



Notes for Traffic Management

FIGURE Gen-1
GENERAL GUIDELINES

- CONVENTIONAL ROADWAY**- A STREET OR HIGHWAY OTHER THAN A LOW-VOLUME ROAD, EXPRESSWAY, OR FREEWAY.
- EXPRESSWAY**- A DIVIDED HIGHWAY WITH PARTIAL CONTROL OF ACCESS.
- FREEWAY**- A DIVIDED HIGHWAY WITH FULL CONTROL OF ACCESS.
- LOW-VOLUME ROAD**- A FACILITY LYING OUTSIDE OF BUILT-UP AREAS OF CITIES, TOWNS, AND COMMUNITIES, AND IT SHALL HAVE A TRAFFIC VOLUME OF LESS THAN 400 AADT. IT SHALL NOT BE A FREEWAY, EXPRESSWAY, INTERCHANGE RAMP, FREEWAY SERVICE ROAD, OR A ROAD ON A DESIGNATED STATE HIGHWAY SYSTEM.

Source: MUTCD LATEST EDITION

TAPER LENGTH CRITERIA FOR TEMPORARY TRAFFIC CONTROL ZONES

Type of Taper	Taper Length (L)*
MERGING TAPER	AT LEAST L
SHIFTING TAPER	AT LEAST 0.5L
SHOULDER TAPER	AT LEAST 0.33L
ONE-LANE, TWO-WAY TRAFFIC TAPER	50 FT MINIMUM 100 FT MAXIMUM
DOWNSTREAM TAPER	50 FT MINIMUM 100 FT PER LANE

Source: Table 6C-3 MUTCD LATEST EDITION

FORMULAS FOR DETERMINING TAPER LENGTHS

Speed Limit (S)	Taper Length (L) Feet
40 MPH OR LESS	$L = \frac{WS^2}{60}$
45 MPH OR MORE	$L = WS$

WHERE: L = TAPER LENGTH IN FEET

W = WIDTH OF OFFSET IN FEET

S = POSTED SPEED LIMIT, OR OFF-PEAK 85TH-PERCENTILE SPEED PRIOR TO

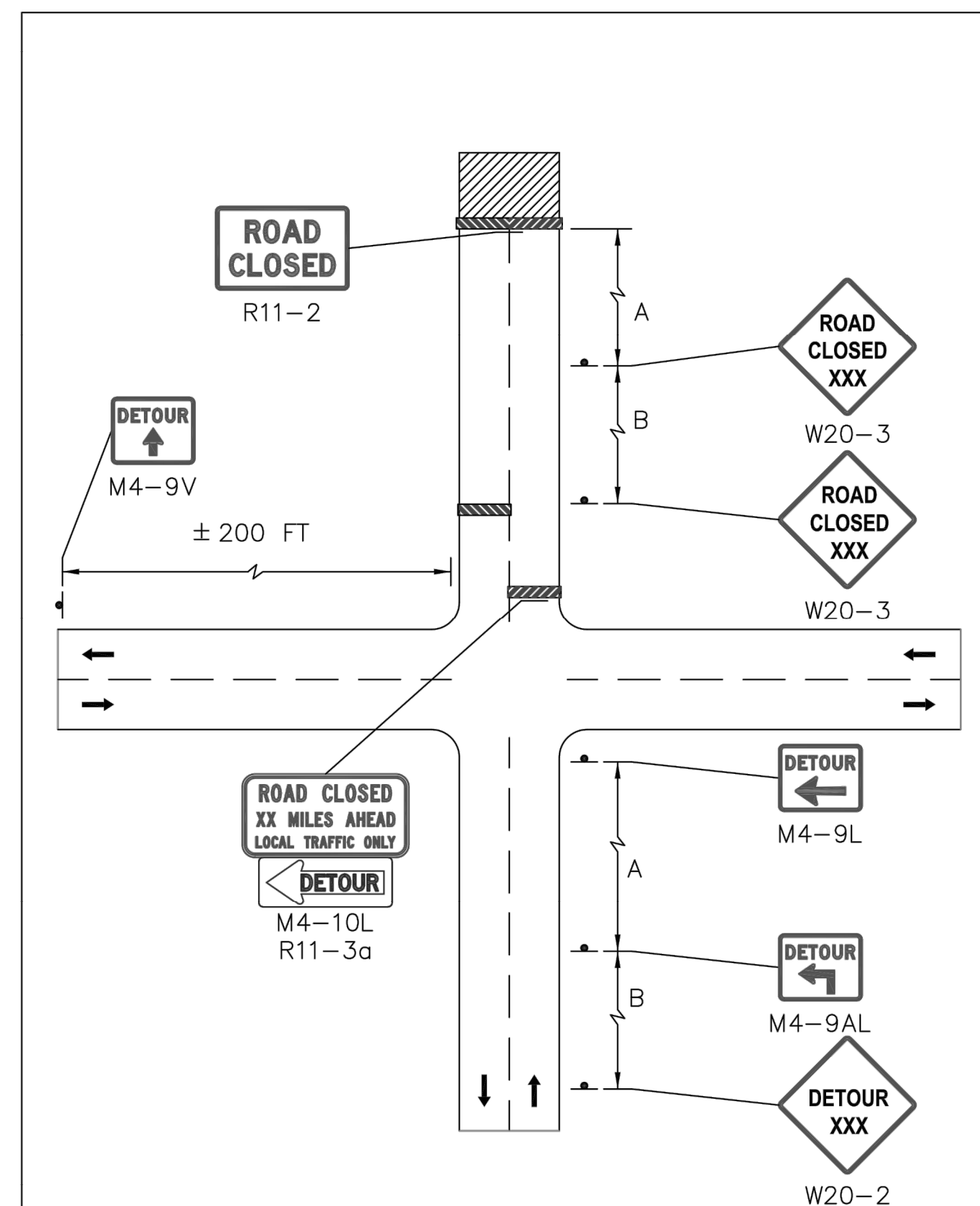
WORK STARTING, OR THE ANTICIPATED OPERATING SPEED IN MPH

Source: Table 6C-4 MUTCD LATEST EDITION



Notes for Traffic Management

FIGURE Gen-3
NOTES ON WORK ZONE DISTANCES



Standard Details and Drawings for the Development of Temporary Traffic Control Plans

FIGURE D-1
DETOUR ADVANCE SIGNING
NOT TO SCALE

SUGGESTED WORK ZONE WARNING SIGN SPACING

Road Type	Distance Between Signs**		
	A	B	C
LOCAL OR LOW VOLUME ROADWAYS*	350	350	350
MOST OTHER ROADWAYS*	500	500	500
FREEWAYS AND EXPRESSWAYS*	1,000	1,500	2,640

* ROAD TYPE TO BE DETERMINED BY MASSDOT OFFICE OF TRANSPORTATION PLANNING.

** DISTANCES ARE SHOWN IN FEET. THE COLUMN HEADINGS A, B, AND C ARE THE DIMENSIONS SHOWN IN THE DETAIL/ TYPICAL SETUP FIGURES. THE A DIMENSION IS THE DISTANCE FROM THE TRANSITION OR POINT OF RESTRICTION TO THE FIRST SIGN. THE B DIMENSION IS THE DISTANCE BETWEEN THE FIRST AND SECOND SIGNS. THE C DIMENSION IS THE DISTANCE BETWEEN THE SECOND AND THIRD SIGNS. (THE "THIRD" SIGN IS THE FIRST ONE TYPICALLY ENCOUNTERED BY A DRIVER APPROACHING A TEMPORARY TRAFFIC CONTROL (TTC) ZONE.)

THE "THIRD" SIGN ABOVE IS TYPICALLY REFERRED TO AS AN "ADVANCE WARNING" SIGN ON THE TTC SETUPS. THESE ADVANCE WARNING SIGNS ARE LOCATED PRIOR TO THE PROJECT LIMITS ON ALL APPROACHES (I.E. THE W20-1 SERIES (ROAD WORK XX FT) SIGNS), AND USUALLY REMAIN FOR THE DURATION OF THE PROJECT. ADDITIONAL SIGNS (I.E. "RIGHT LANE CLOSED 1 MILE" AND "LEFT LANE CLOSED 1 MILE") HAVE BEEN SHOWN IN SOME FIGURES AS EXAMPLES OF REINFORCEMENT SIGN PLACEMENT BUT ARE USED IN RARE OCCASIONS.

THE FIRST AND SECOND WARNING SIGNS ABOVE ARE REFERRED TO AS THE OPERATIONAL (DAY-TO-DAY) WORK ZONE SIGNS AND MAY BE MOVED DEPENDING ON WHERE THE SPECIFIC ROADWAY WORK FOR THAT DAY IS LOCATED.

MA-R2-10a SIGNS SHALL BE PLACED BETWEEN THE SECOND AND THIRD SIGNS AS DESCRIBED ABOVE.

MA-R2-10a, MA-R2-10e AND W20-1 SERIES SIGNS ARE TO BE INCLUDED ON ALL DETAILS/TYPICAL SETUPS.

Based on: Table 6C-1 MUTCD LATEST EDITION

STOPPING SIGHT DISTANCE AS A FUNCTION OF SPEED

SPEED* (mph)	DISTANCE (ft)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730
75	820

*POSTED SPEED, OFF-PEAK 85TH-PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED

THESE VALUES MAY BE USED TO DETERMINE THE LENGTH OF LONGITUDINAL BUFFER SPACES.

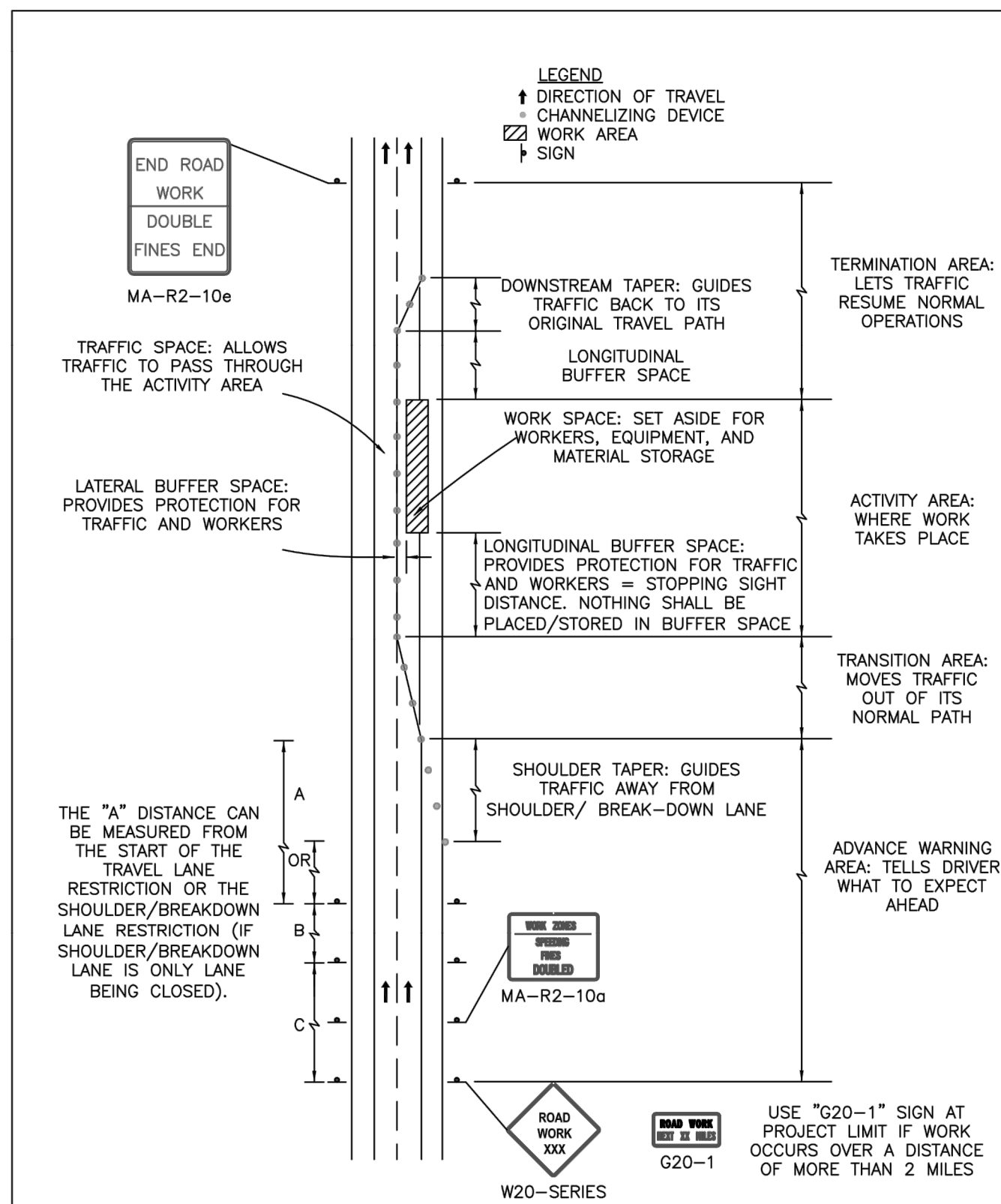
THE DISTANCES IN THE ABOVE CHART REPRESENT THE MINIMAL VALUES FOR BUFFER SPACING.

Source: Table 6C-2 MUTCD LATEST EDITION



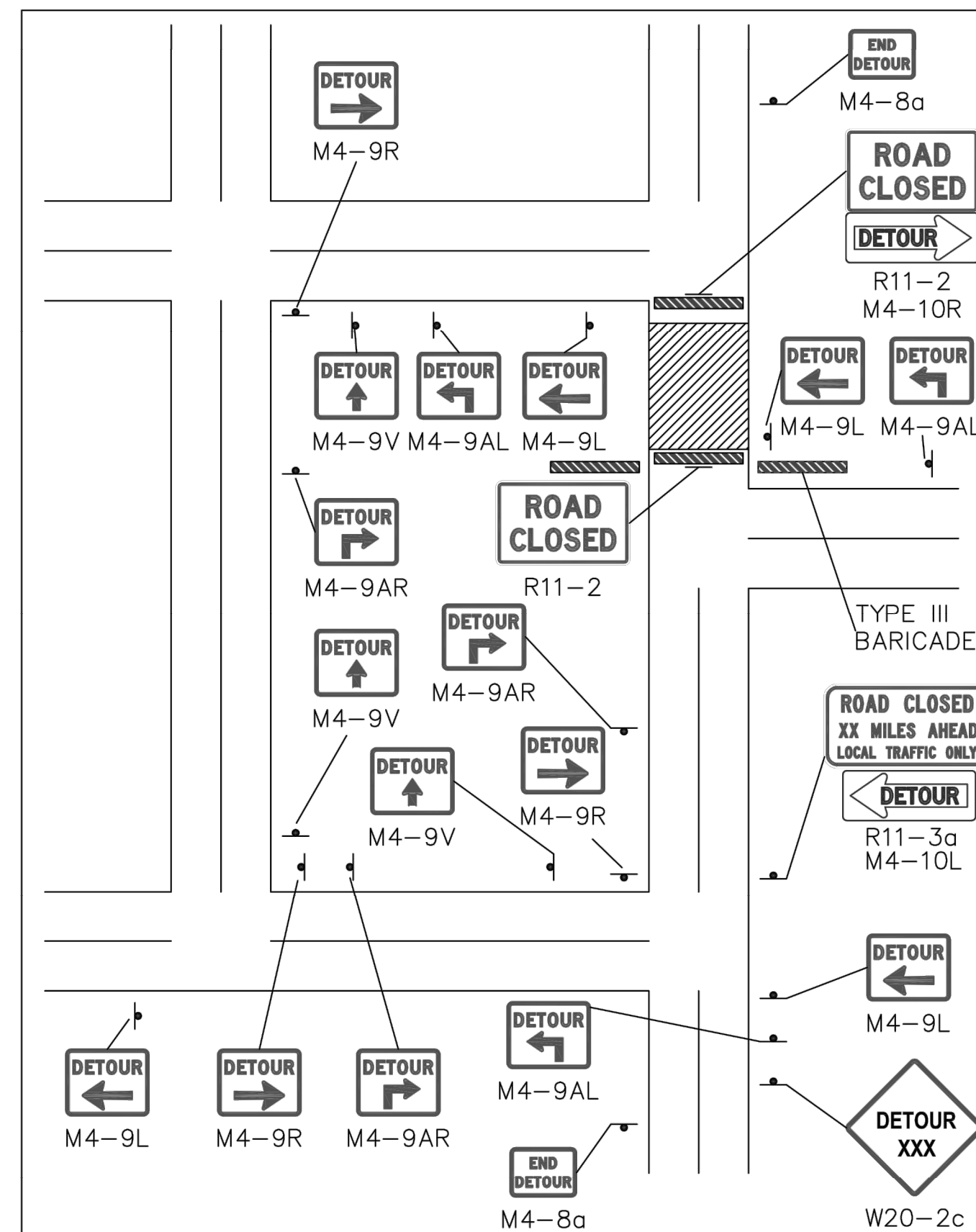
Notes for Traffic Management

FIGURE Gen-2
NOTES ON WORK ZONE DISTANCES



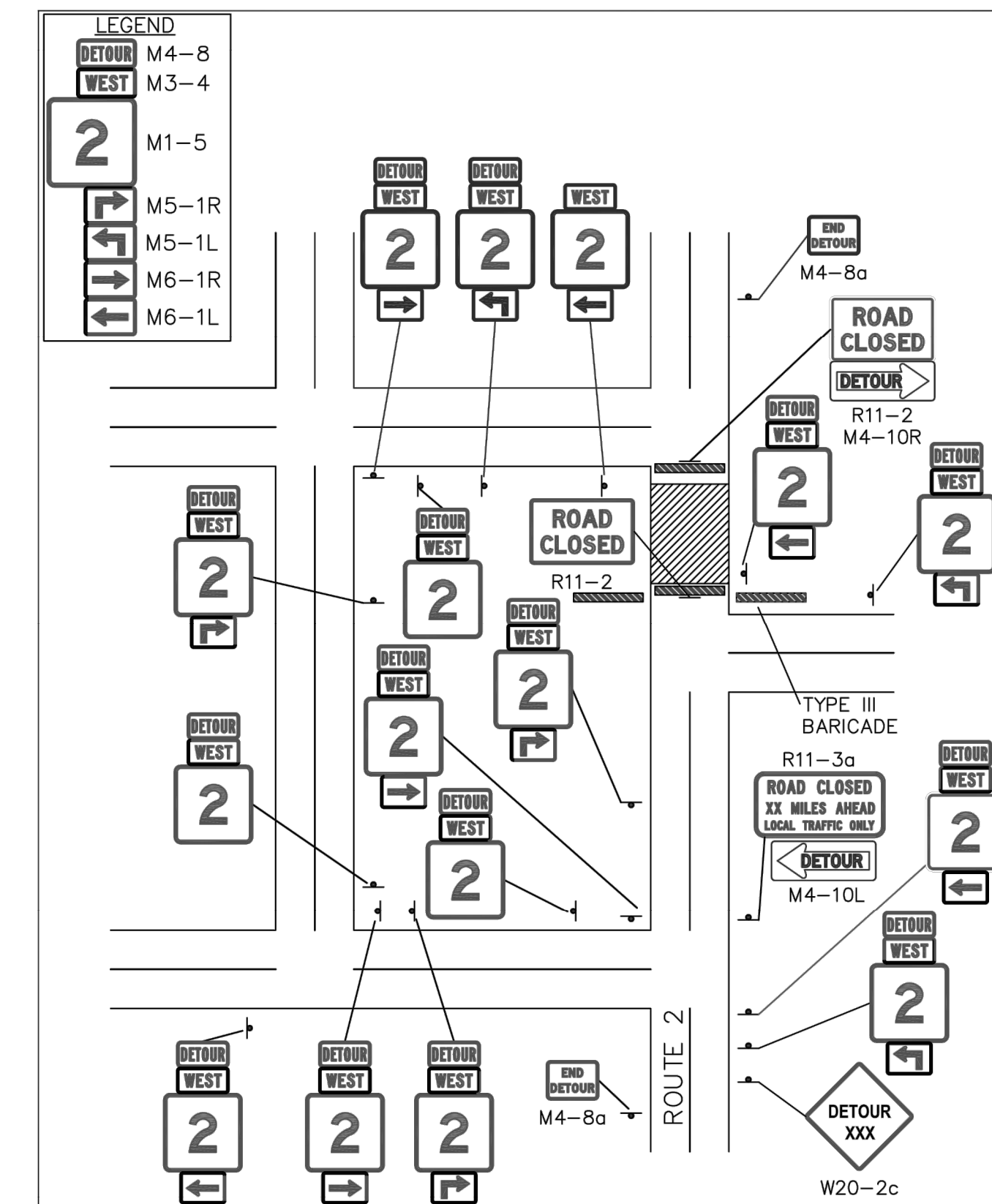
Standard Details and Drawings for the Development of Temporary Traffic Control Plans

FIGURE Gen-4
COMPONENT PARTS OF A TEMPORARY TRAFFIC CONTROL (TTC) ZONE
NOT TO SCALE



Standard Details and Drawings for the Development of Temporary Traffic Control Plans

FIGURE D-2
DETOUR
NOT TO SCALE



Standard Details and Drawings for the Development of Temporary Traffic Control Plans

FIGURE D-3
ROUTE WITH DETOUR
NOT TO SCALE

**ADAMS
QUALITY STREET/SOUTH WILLOW STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	13	24

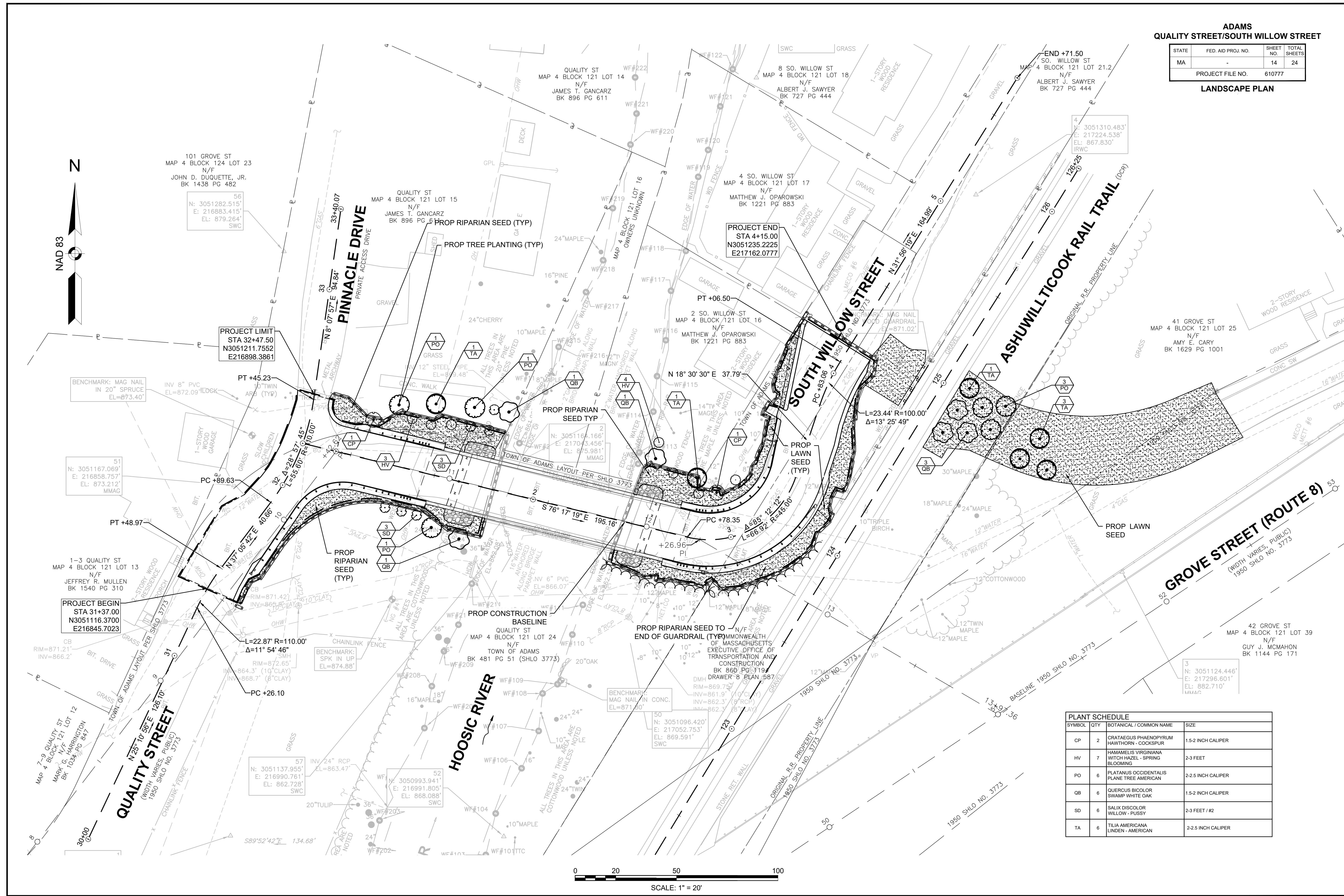
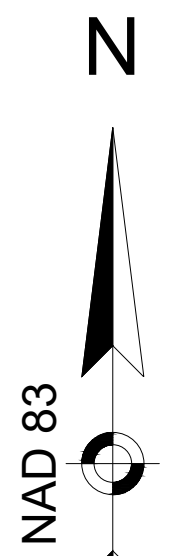
PROJECT FILE NO. 610777

TRAFFIC MANAGEMENT PLAN DETAILS

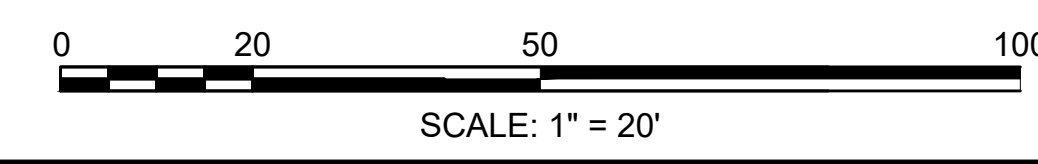
ADAMS
QUALITY STREET/SOUTH WILLOW STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA		14	24
PROJECT FILE NO.		610777	

LANDSCAPE PLAN



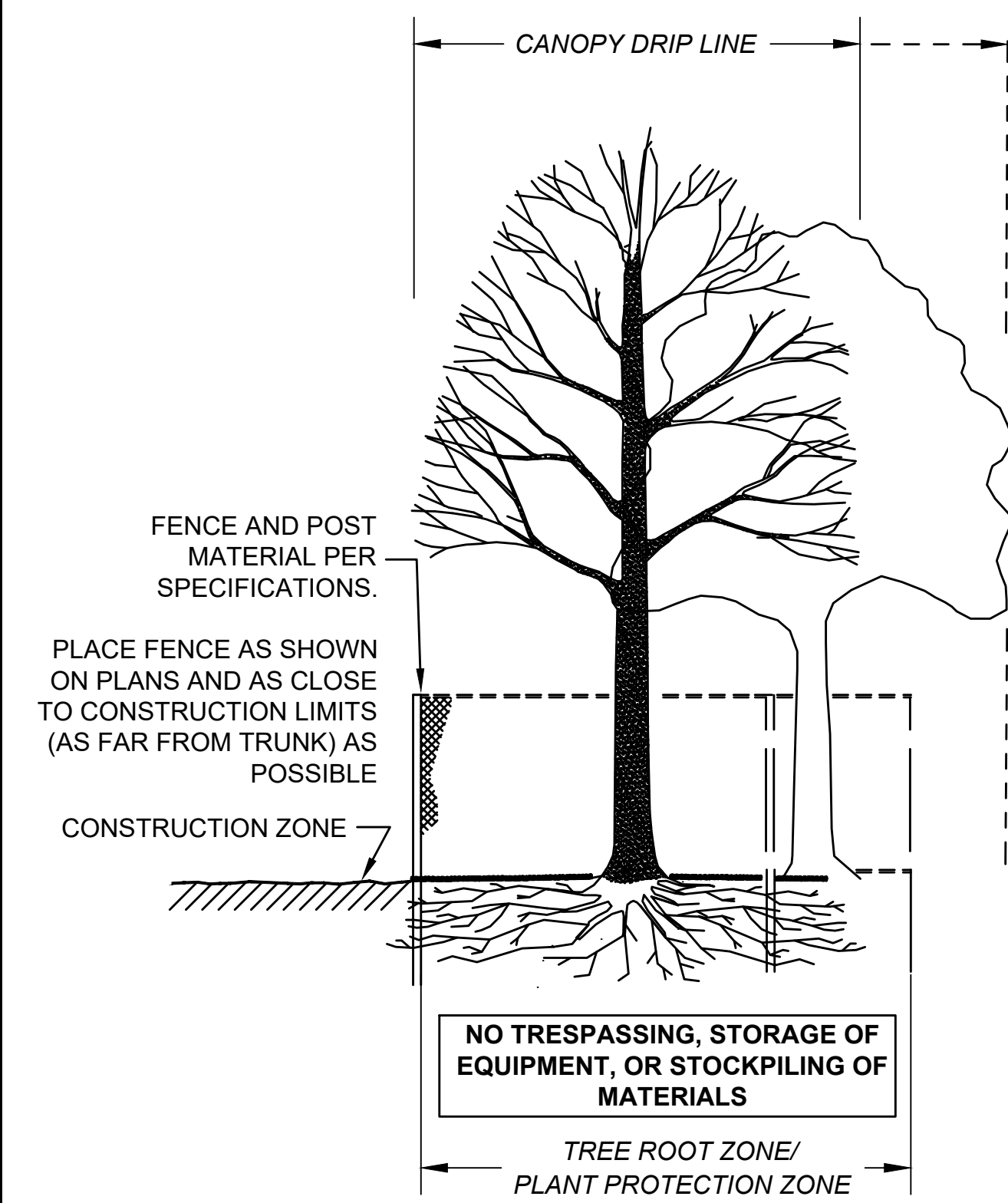
PLANT SCHEDULE			
SYMBOL	QTY	BOTANICAL / COMMON NAME	SIZE
CP	2	CRATAEGUS PHAENOPYRUM HAWTHORN - COCKSPUR	1.5-2 INCH CALIPER
HV	7	HAMMELIS VIRGINIANA WITCH HAZEL - SPRING BLOOMING	2-3 FEET
PO	6	PLATANUS OCCIDENTALIS PLANE TREE AMERICAN	2-2.5 INCH CALIPER
QB	6	QUERCUS BICOLOR SWAMP WHITE OAK	1.5-2 INCH CALIPER
SD	6	SALIX DISCOLOR WILLOW - PUSSY	2-3 FEET / #2
TA	6	TILIA AMERICANA LINDEN - AMERICAN	2-2.5 INCH CALIPER



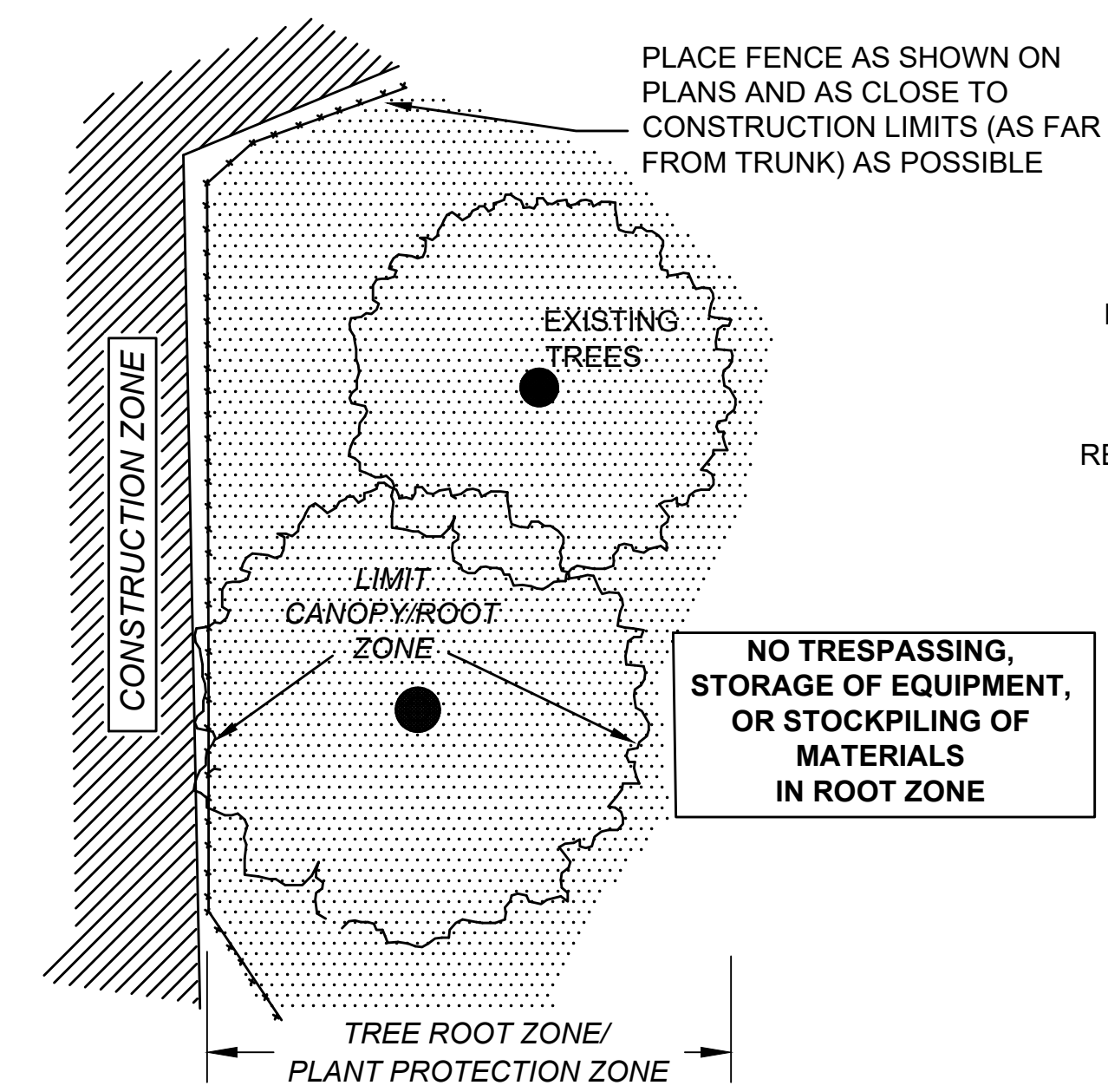
**ADAMS
QUALITY STREET/SOUTH WILLOW STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	15	24
PROJECT FILE NO.		610777	

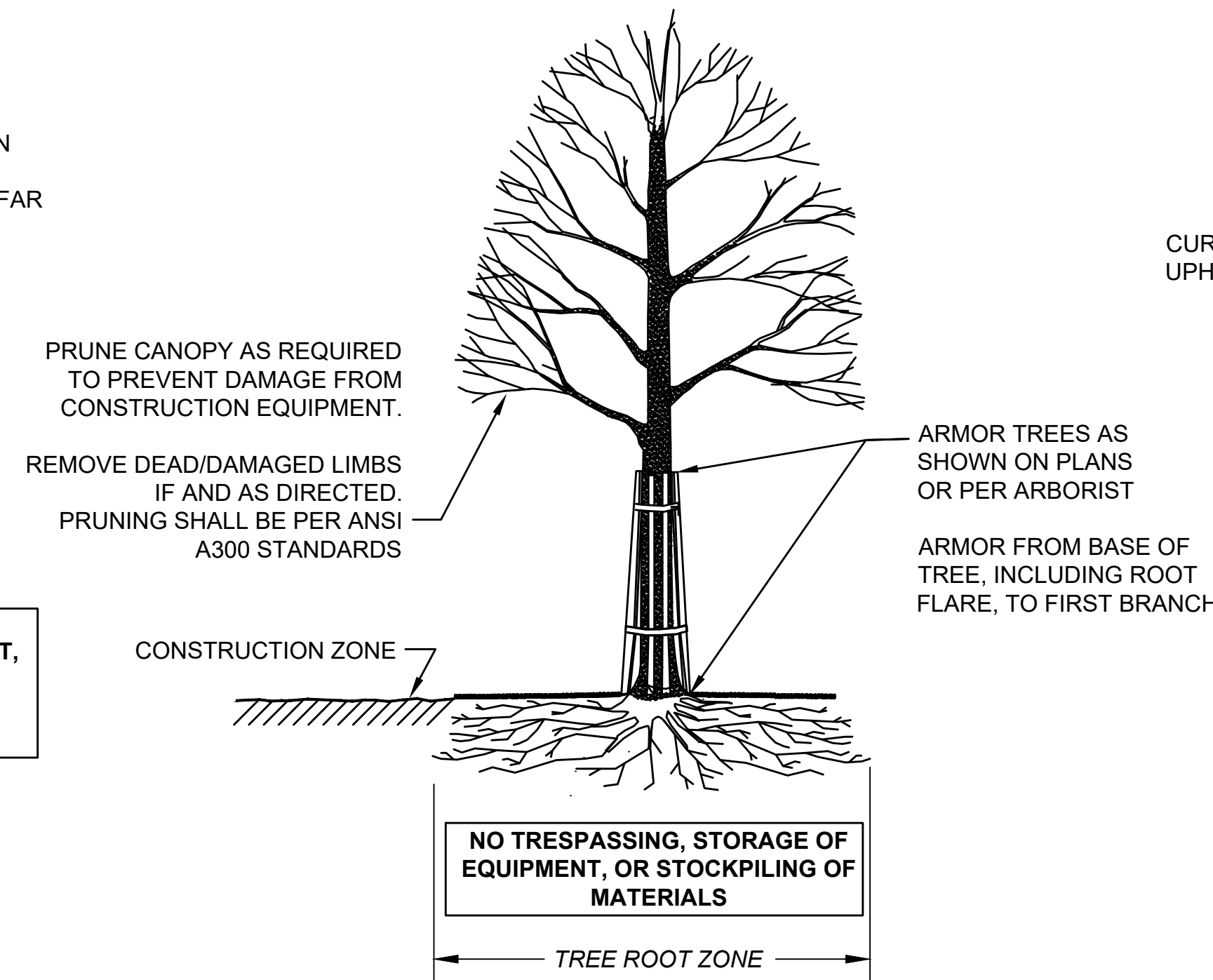
CONSTRUCTION DETAILS



SECTION - FENCE PROTECTION OF ROOT ZONE



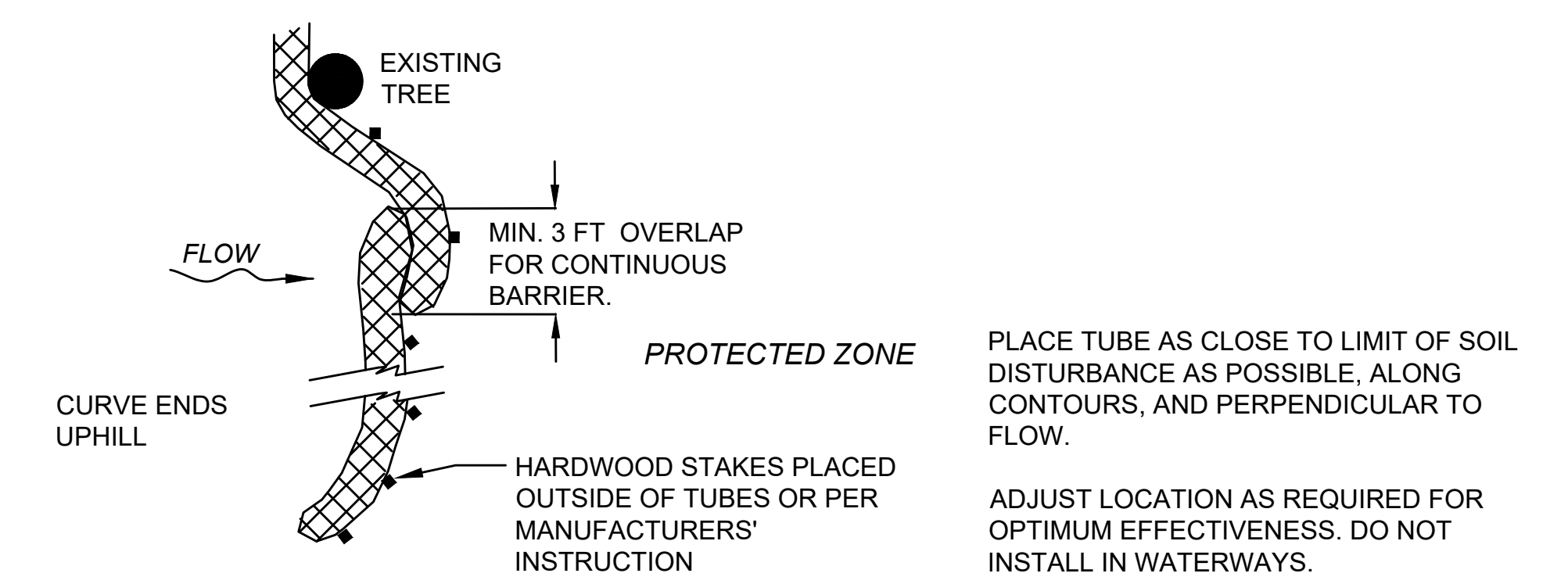
PLAN VIEW - FENCE PROTECTION OF ROOT ZONE



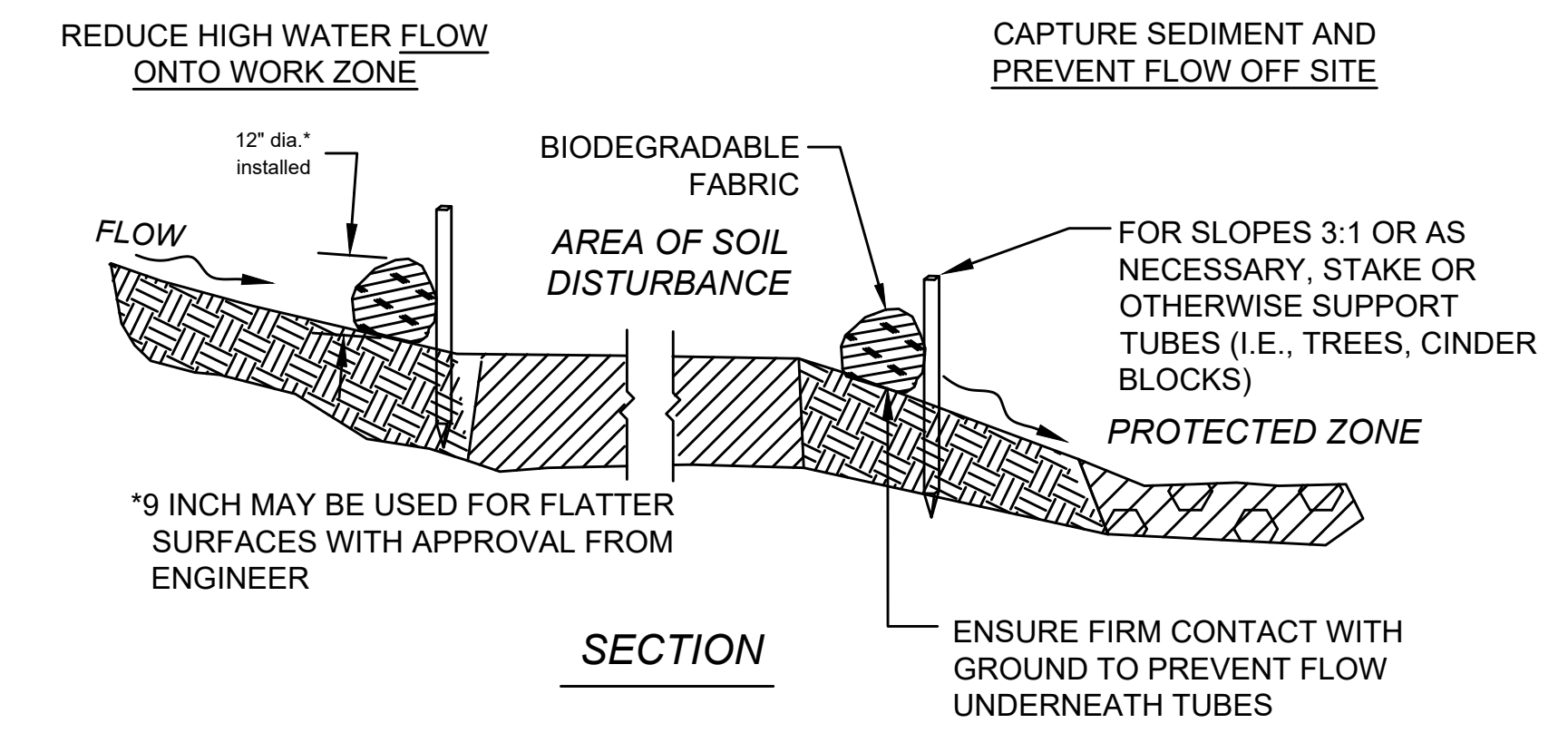
SECTION - TRUNK ARMORING & PRUNING

TREE PROTECTION - TRUNK

NOT TO SCALE



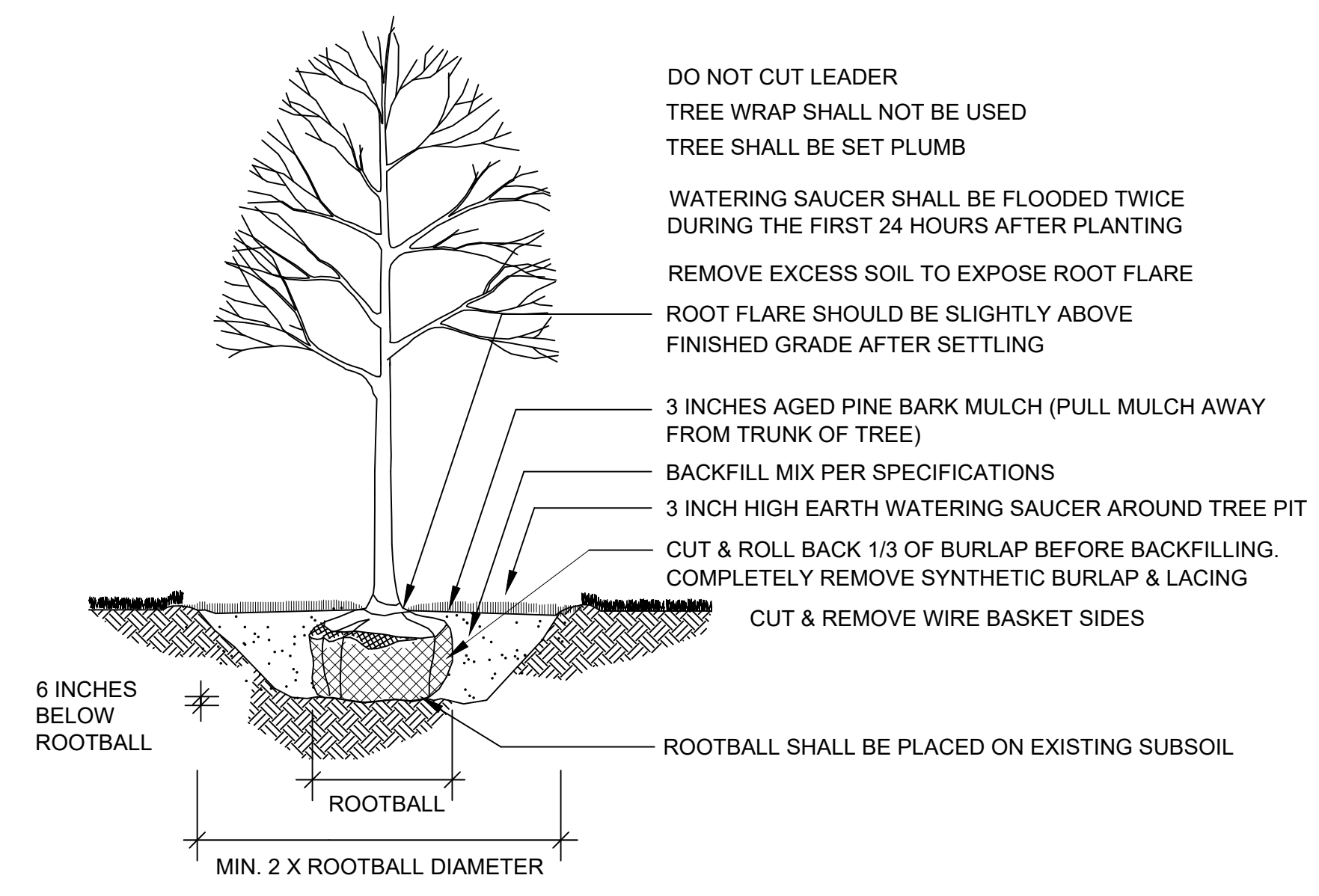
PLAN VIEW



SECTION

SEDIMENT BARRIER - COMPOST FILTER TUBE

NOT TO SCALE



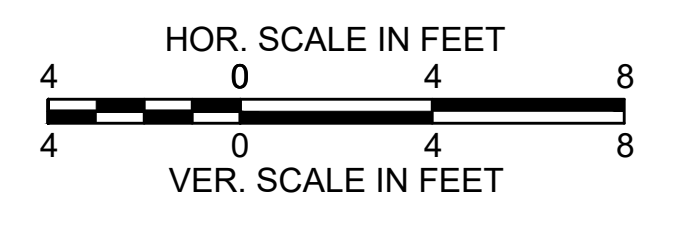
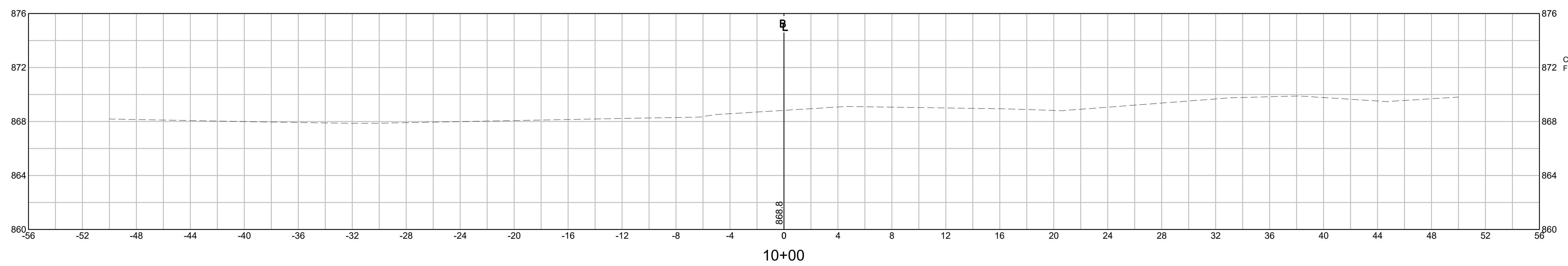
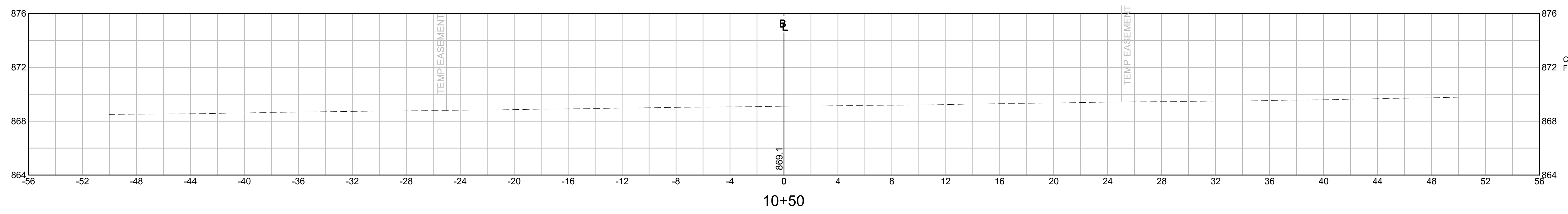
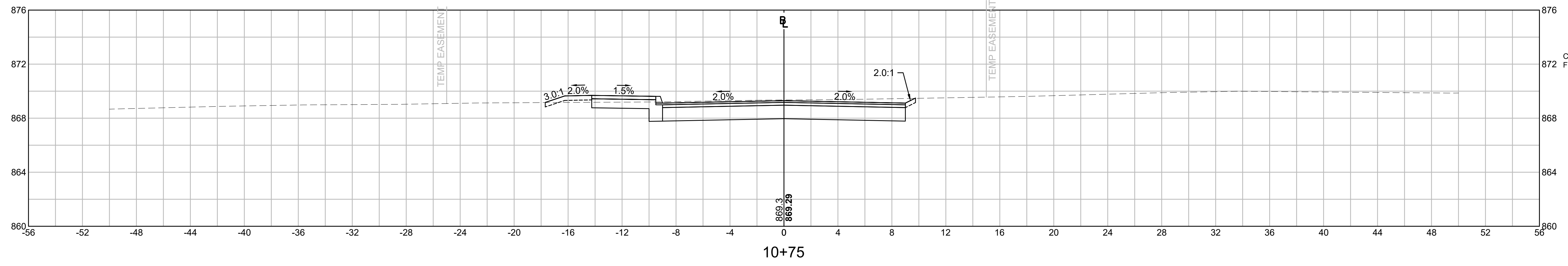
DECIDUOUS TREE PLANTING

NOT TO SCALE

**ADAMS
QUALITY STREET/SOUTH WILLOW STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	16	24
PROJECT FILE NO.		610777	

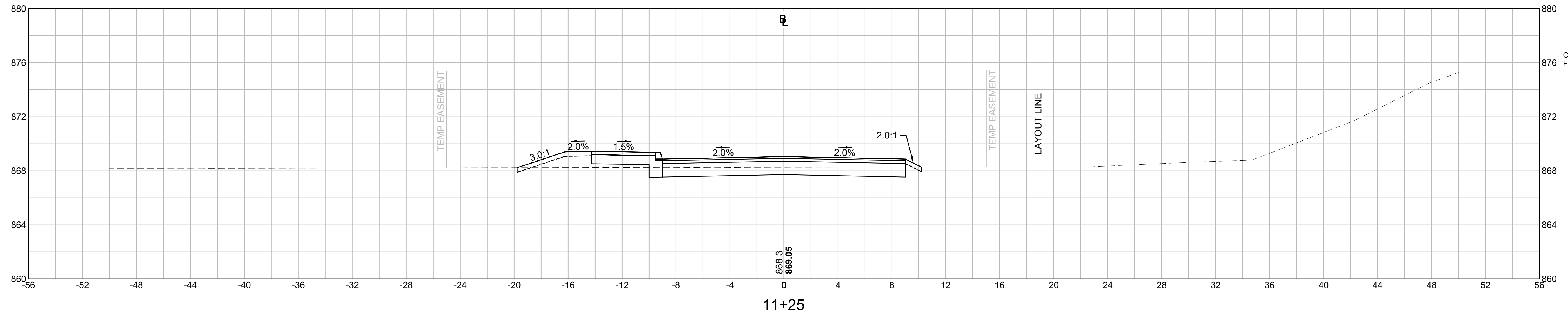
TEMPORARY CROSS SECTIONS



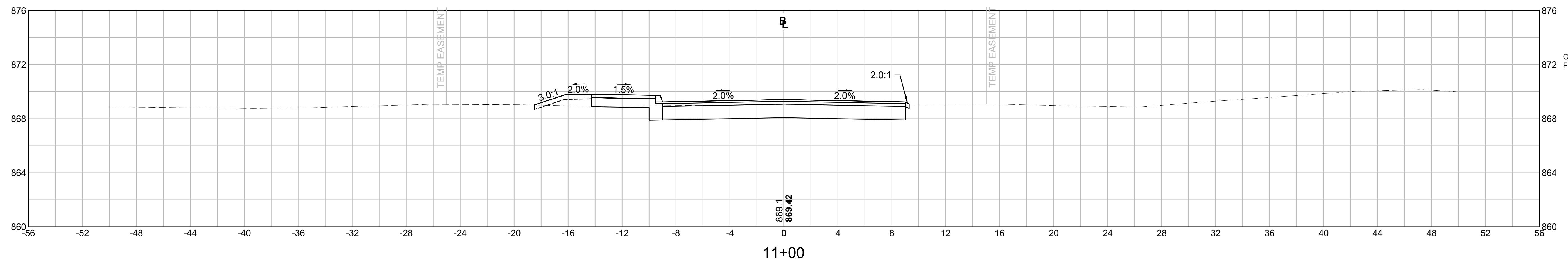
ADAMS
QUALITY STREET/SOUTH WILLOW STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	17	24
PROJECT FILE NO.		610777	

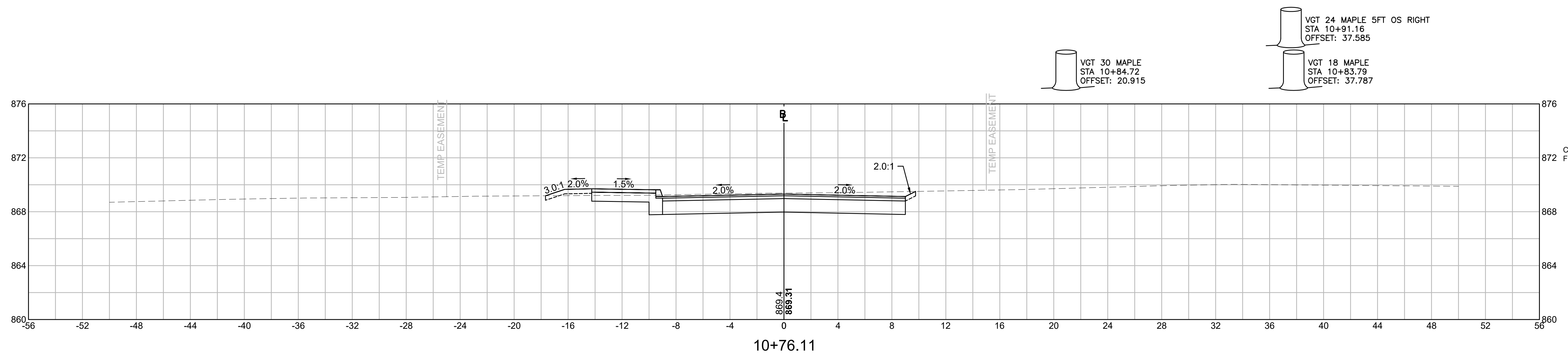
TEMPORARY CROSS SECTIONS



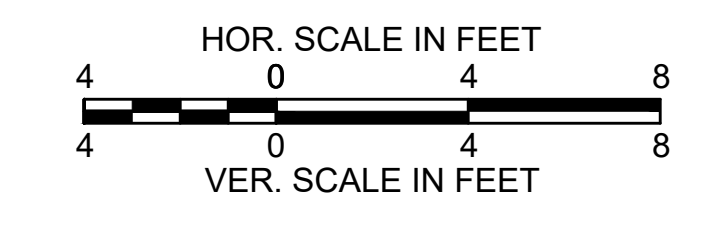
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CUT: 20.81 SF
 FILL: 1.39 SF



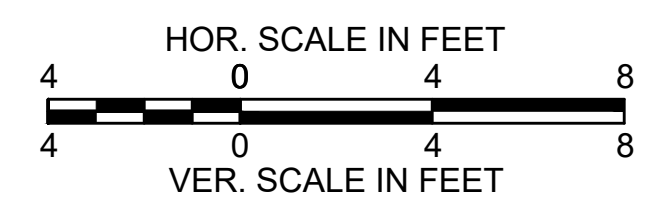
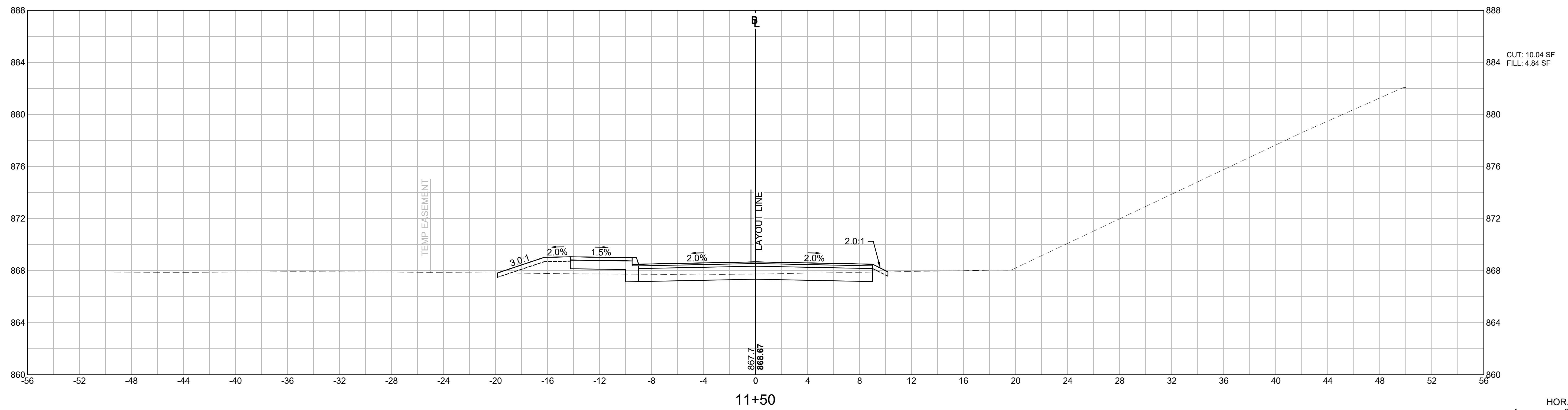
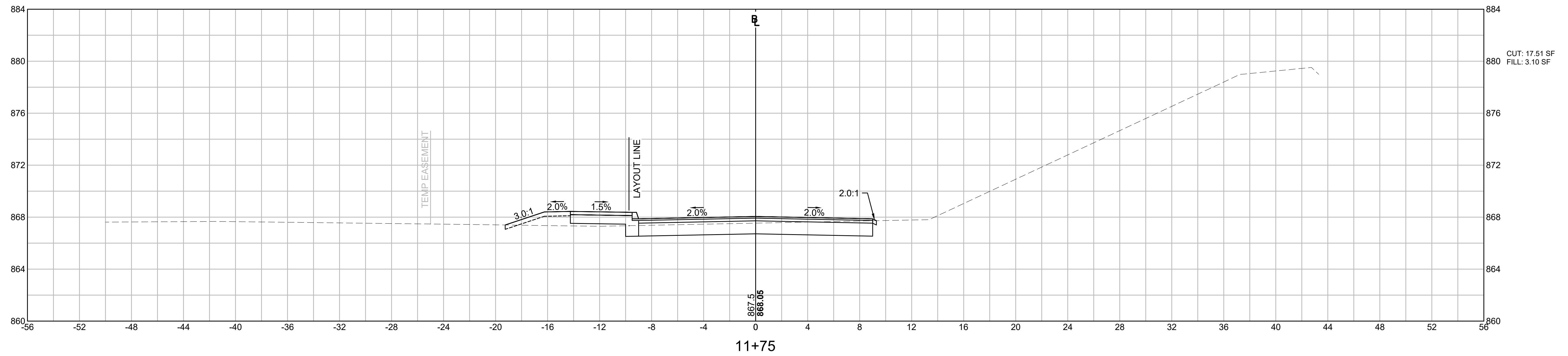
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**ADAMS
QUALITY STREET/SOUTH WILLOW STREET**

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MA	-	18	24
PROJECT FILE NO.		610777	

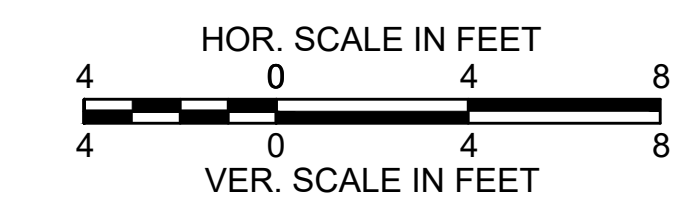
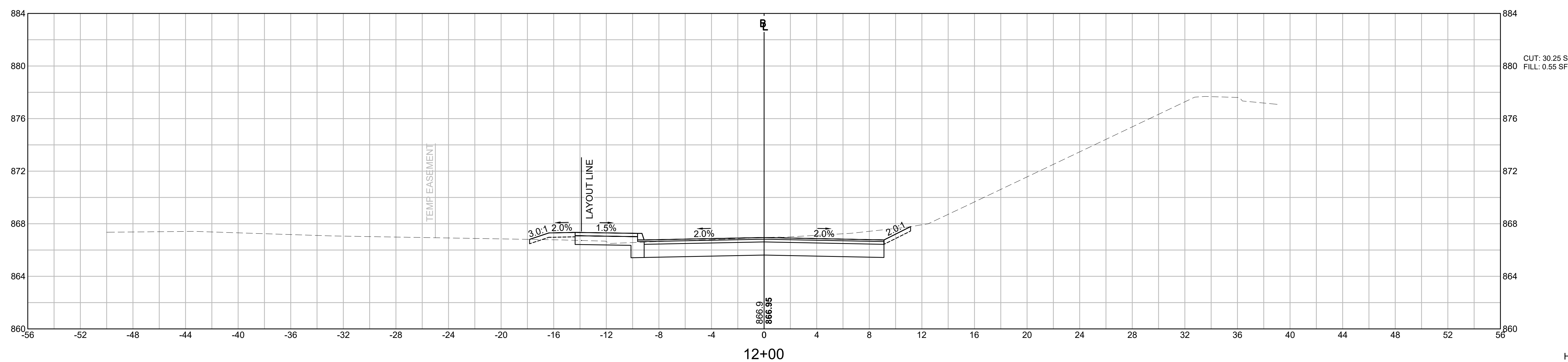
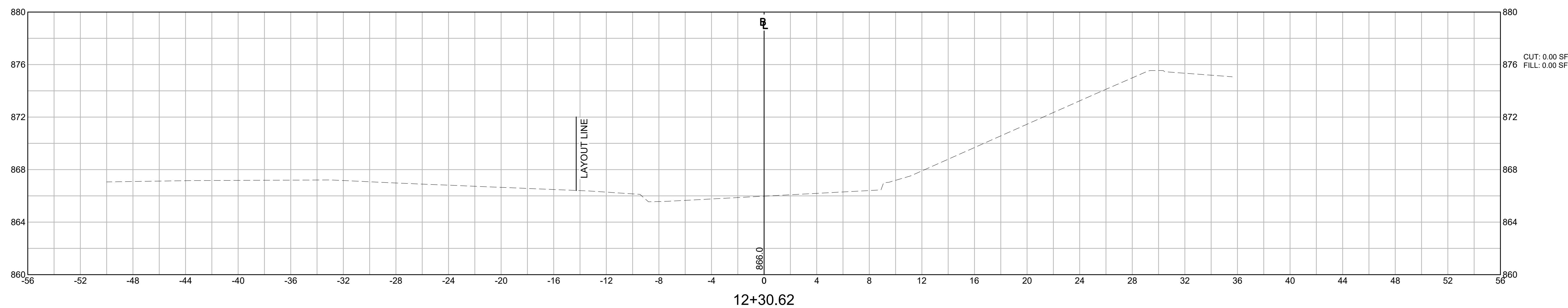
TEMPORARY CROSS SECTIONS



**ADAMS
QUALITY STREET/SOUTH WILLOW STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	19	24
PROJECT FILE NO.		610777	

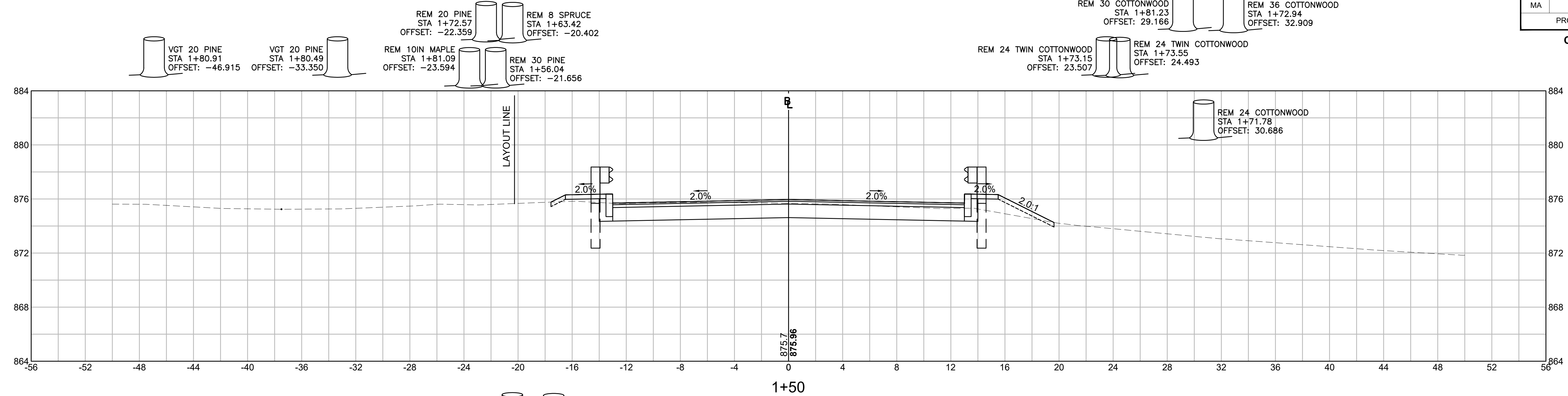
TEMPORARY CROSS SECTIONS



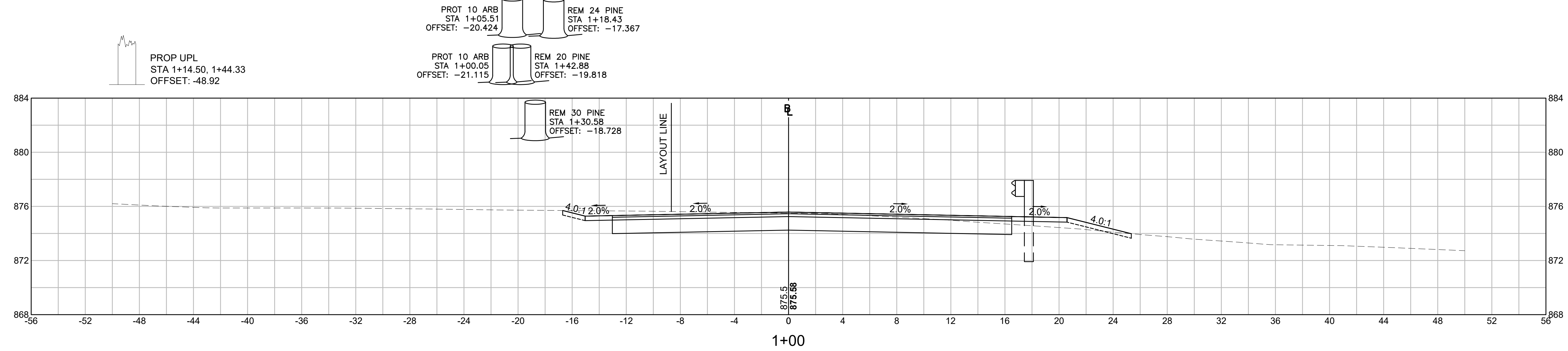
ADAMS
QUALITY STREET/SOUTH WILLOW STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	20	24
PROJECT FILE NO.		610777	

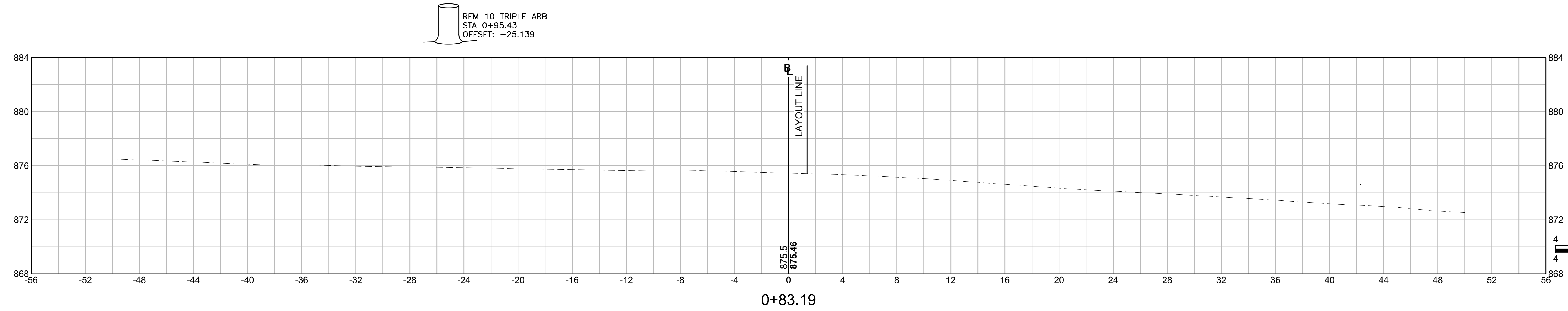
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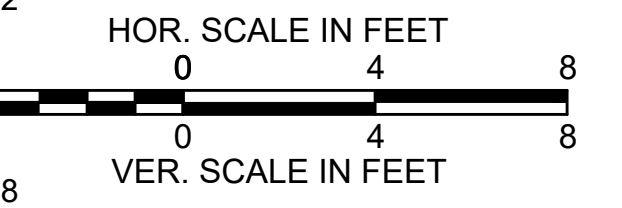
CUT: 31.32 SF
FILL: 3.37 SF



CUT: 42.36 SF
FILL: 1.97 SF



CUT: 0.00 SF
FILL: 0.00 SF



ADAMS
QUALITY STREET/SOUTH WILLOW STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	21	24
PROJECT FILE NO.		610777	

CROSS SECTIONS

REM 12 TWIN MAGNOLIA
 STA 2+59.63
 OFFSET: -48.355

PROT 14 MAPLE
 STA 2+75.16
 OFFSET: -31.794

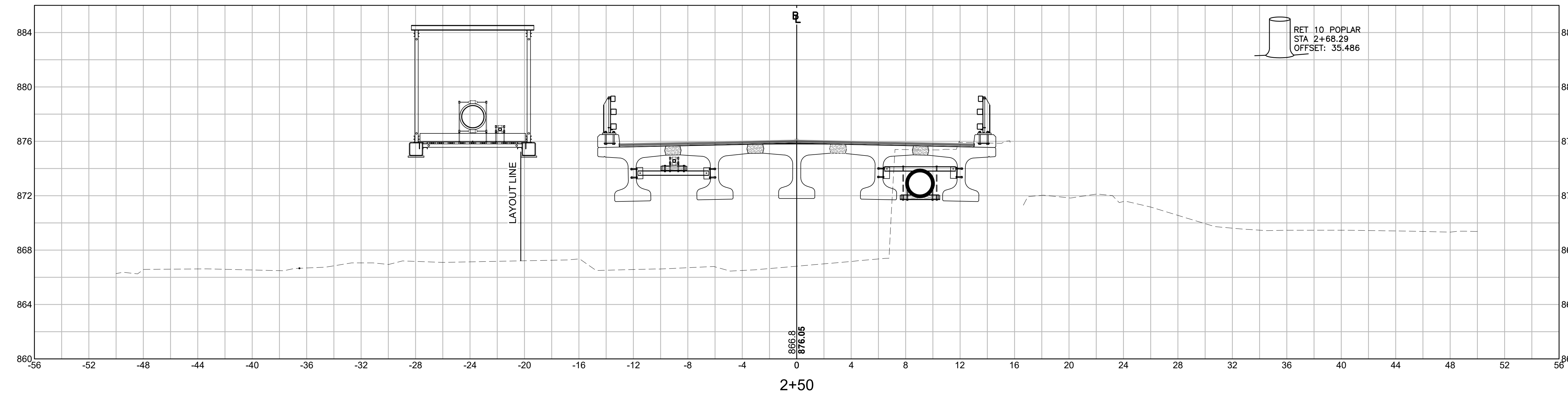
RET 8 POPLAR
 STA 2+69.67
 OFFSET: 35.539

RET 12 MAPLE
 STA 2+67.94
 OFFSET: 41.503

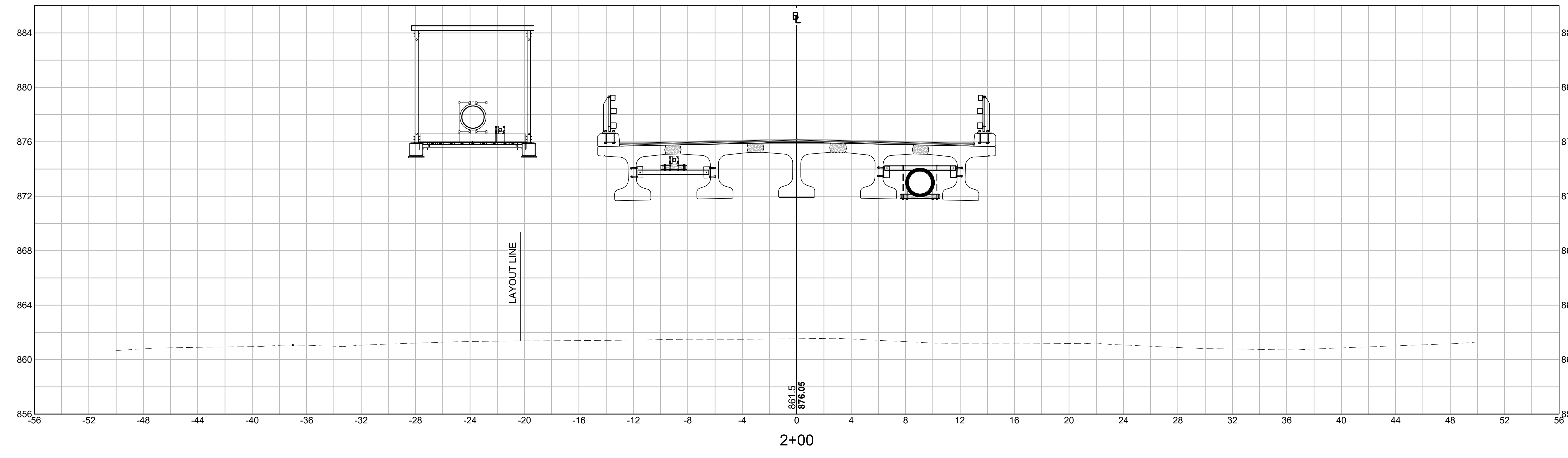
RET EX UP
 STA 2+71.33
 OFFSET: 30.634

RET 10 POPLAR
 STA 2+79.95
 OFFSET: 39.243

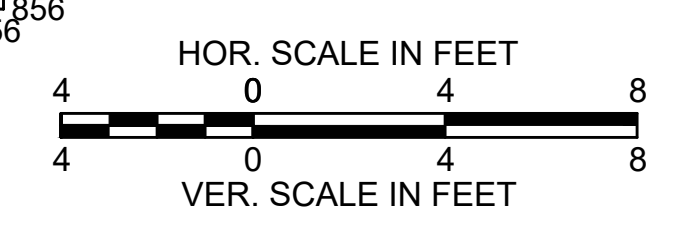
RET 8 POPLAR
 STA 2+67.57
 OFFSET: 48.527



CUT: 0.00 SF
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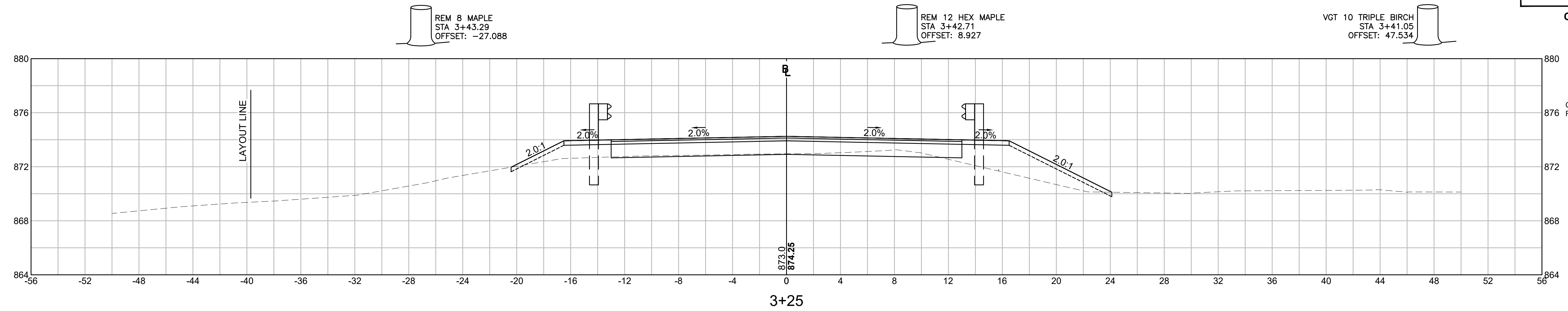
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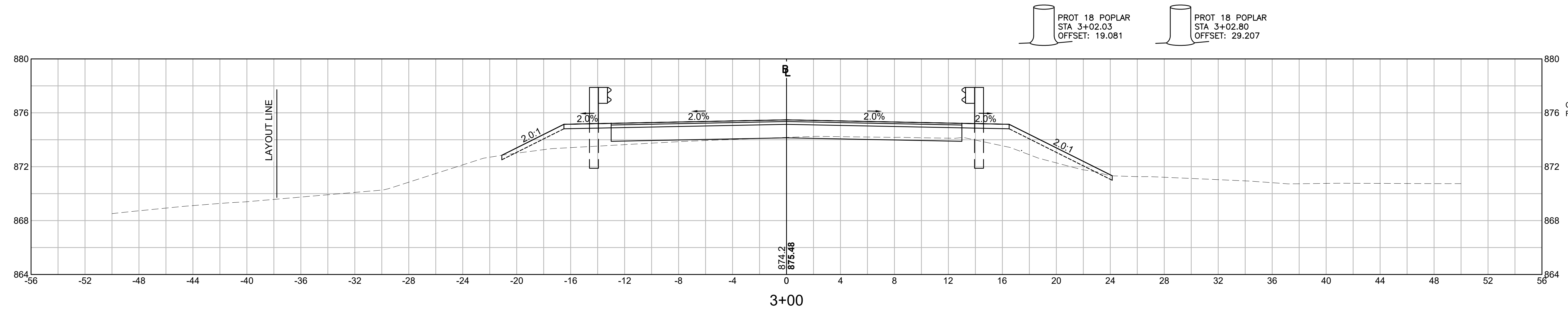
**ADAMS
QUALITY STREET/SOUTH WILLOW STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	22	24
PROJECT FILE NO.		610777	

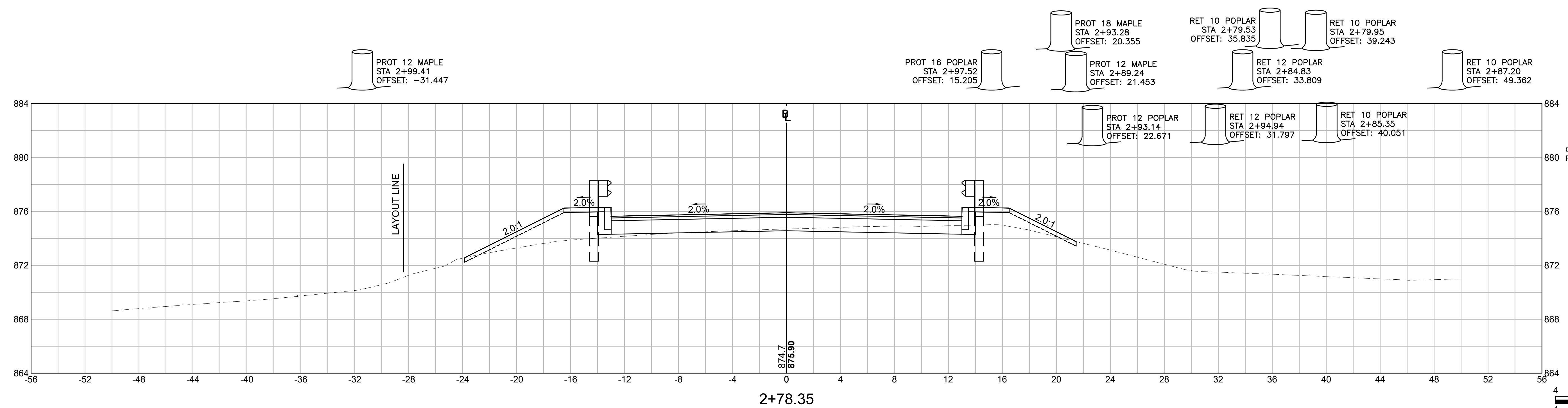
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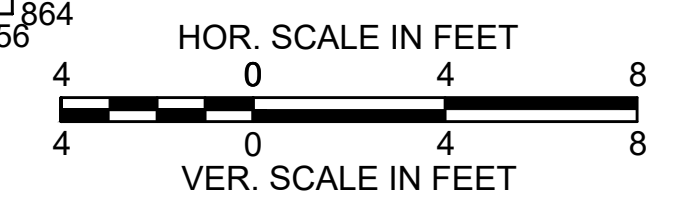
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CUT: 2.62 SF
FILL: 17.51 SF



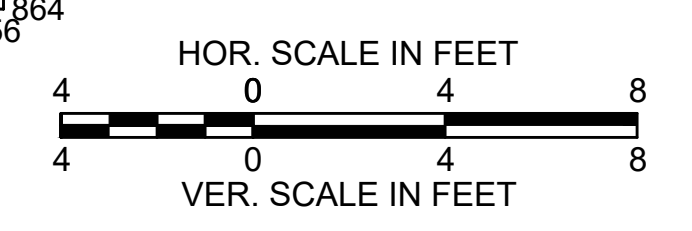
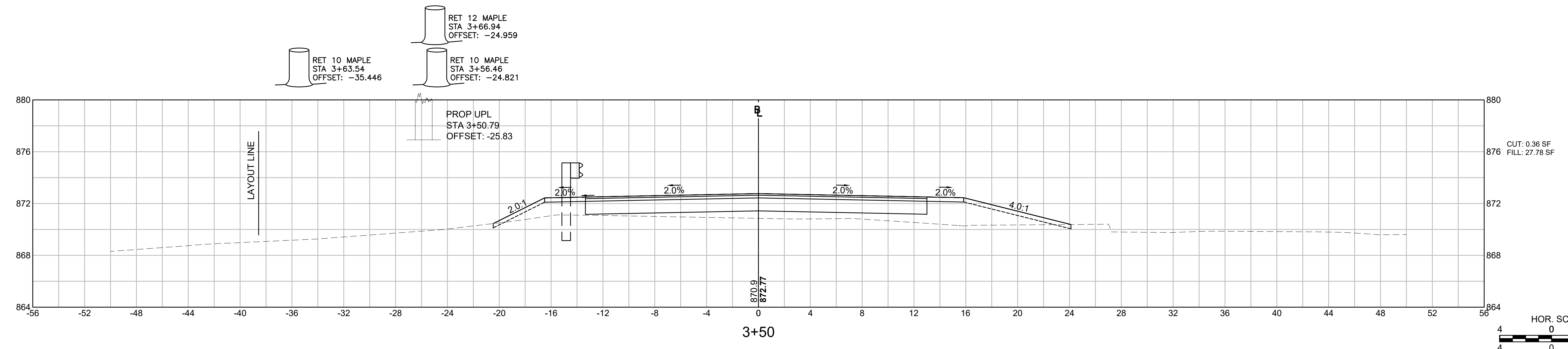
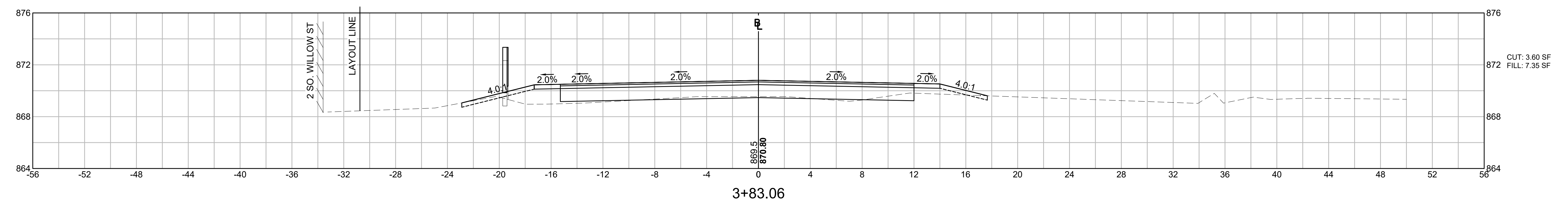
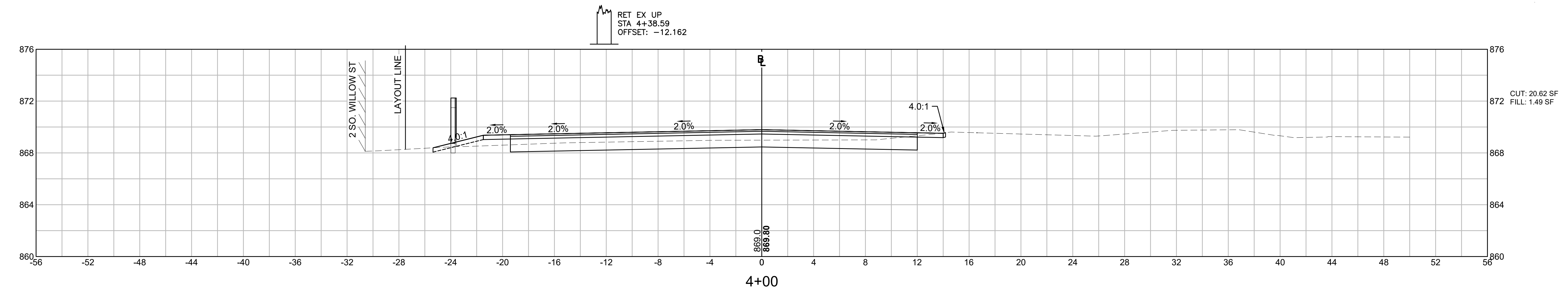
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ADAMS
QUALITY STREET/SOUTH WILLOW STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	23	24
PROJECT FILE NO.		610777	

CROSS SECTIONS



**ADAMS
QUALITY STREET/SOUTH WILLOW STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	24	24
PROJECT FILE NO.		610777	

CROSS SECTIONS

