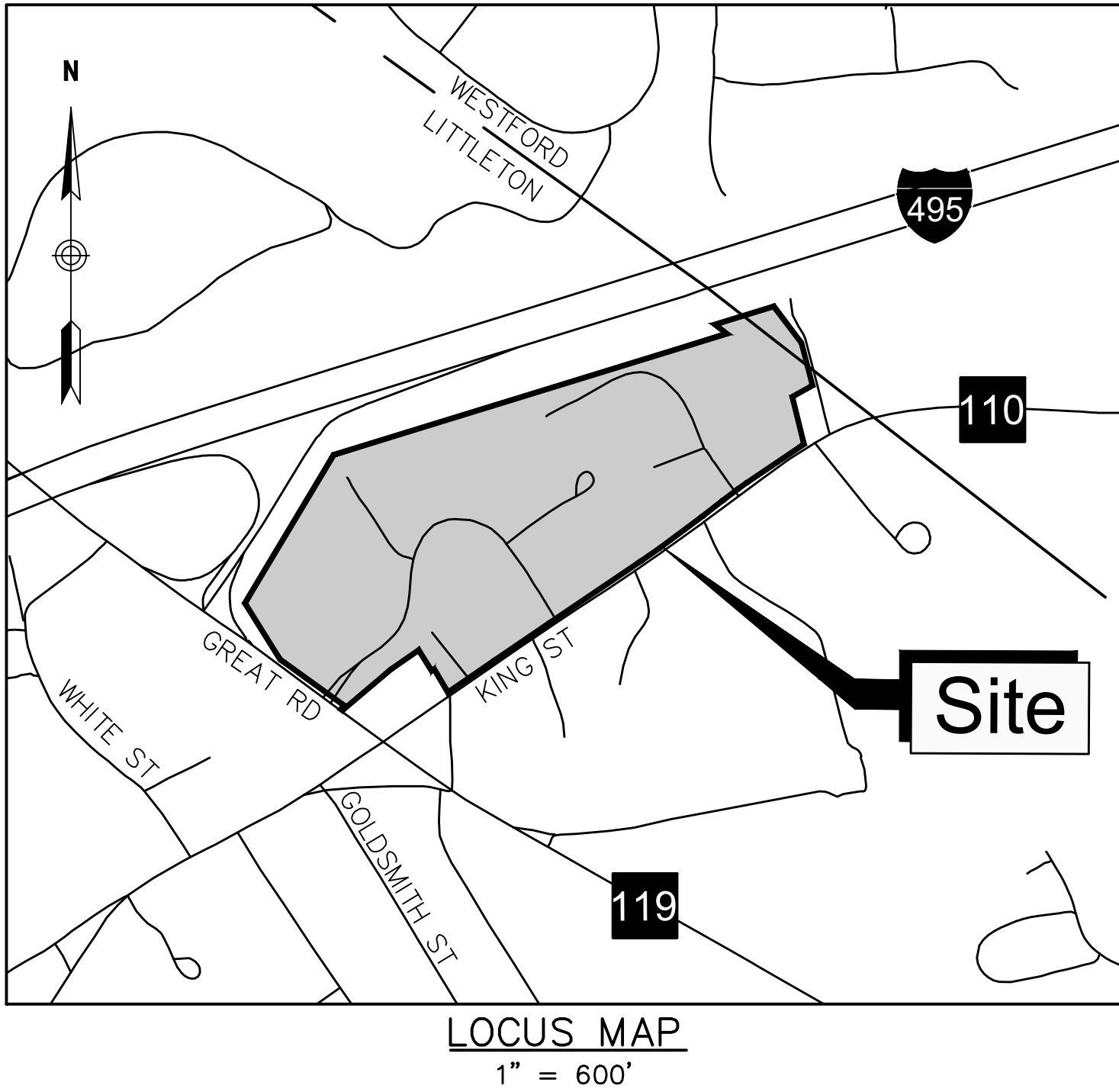


Subdivision Plans

King Street Commons

Definitive Subdivision Plan

550 King Street
Littleton, Massachusetts 01460



Index of Sheets		
No.	Drawing Title	Latest Issue
C-1	Title & Index Sheet	August 22, 2023
C-2	Legend & General Notes	August 22, 2023
C-3	Index Sheet	August 22, 2023
C-4	Layout Plan	August 22, 2023
C-5-8	Layout Plan A-D	August 22, 2023
C-9-16	Roadway Plan & Profile 1 - 8	August 22, 2023
C-17	Sanitary Sewer Tables	August 22, 2023
C-18	Storm Sewer Tables	August 22, 2023
C-19-22	Erosion & Sedimentation Control Plan A-D	August 22, 2023
C-23	Construction Phasing Plan	August 22, 2023
C-24	Construction Management Plan	August 22, 2023
C-25-29	Construction Details	August 22, 2023
C-30-56	Roadway Cross-Sections	August 22, 2023

Reference Plans Index		
No.	Drawing Title	Latest Issue
1	Definitive Subdivision Plan of Land	August 1, 2023

DRAWING TITLE

Title & Index Sheet

SUBDIVISION NAME & LOCATION

King Street Commons
550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER

Lupoli Companies
290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER

TEC

The Engineering Corp

TEC, Inc.
282 Merrimack Street, 2nd Floor
Lawrence, Massachusetts 01843
978.794.1792
www.TheEngineeringCorp.com
Lawrence | Hampton | Worcester

DESIGNED BY RJF DATE 8-22-23

CHECKED BY CPR SCALE AS NOTED

PROJECT NO. T1180

TEC CAD FILE T1180_COV

DRAWING NO. C-1

SHEET 1 OF 56

COMMONWEALTH OF MASSACHUSETTS

RICHARD J. FRIEBERG JR.

CIVIL

No. 47850

REGISTERED PROFESSIONAL ENGINEER

GENERAL NOTES

- CONTRACTOR SHALL NOTIFY DIG-SAFE (1-888-344-7233) AND THE LOCAL MUNICIPAL WATER & SEWER DEPT. AT LEAST 72 HOURS BEFORE EXCAVATING.
- CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. CONSTRUCTION ACTIVITIES SHALL BE IN ACCORDANCE WITH OSHA STANDARDS AND LOCAL REQUIREMENTS. A 6-FOOT TEMPORARY CHAINLINK FENCE SHALL BE PROVIDED AROUND ALL CONSTRUCTION ACTIVITIES. CONTRACTOR SHALL LEAVE NO UNSECURED OPEN EXCAVATIONS.
- HANDICAP ACCESSIBLE ROUTES, PARKING SPACES, RAMPS, SIDEWALKS AND WALKWAYS SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE FEDERAL AMERICANS WITH DISABILITIES ACT/ARCHITECTURAL ACCESS BOARD (AAB), AND WITH STATE AND LOCAL LAWS AND REGULATIONS (WHICHEVER ARE MORE STRINGENT).
- WORK WITHIN THE LOCAL RIGHT-OF-WAY SHALL CONFORM TO LOCAL MUNICIPAL STANDARDS. WORK WITHIN STATE RIGHT-OF-WAY SHALL CONFORM TO THE LATEST EDITION OF THE STATE HIGHWAY DEPARTMENT STANDARD SPECIFICATION FOR HIGHWAYS AND BRIDGES.
- UPON AWARD OF CONTRACT, CONTRACTOR SHALL MAKE NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN NECESSARY PERMITS, PAY FEES, AND POST BONDS ASSOCIATED WITH THE WORK INDICATED ON THE DRAWINGS, IN THE SPECIFICATIONS, AND IN THE CONTRACT DOCUMENTS. DO NOT CLOSE OR OBSTRUCT ROADWAYS, SIDEWALK, AND FIRE HYDRANTS, WITHOUT APPROPRIATE PERMITS.
- TRAFFIC SIGNAGE AND PAVEMENT MARKINGS SHALL CONFORM TO THE CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT NO ADDITIONAL COST TO THE OWNER.
- IN THE EVENT THAT SUSPECTED CONTAMINATED SOIL, GROUNDWATER, AND OTHER MEDIA ARE ENCOUNTERED DURING EXCAVATION AND CONSTRUCTION ACTIVITIES BASED ON VISUAL, OLFACTORY, OR OTHER EVIDENCE, THE CONTRACTOR SHALL STOP WORK IN THE VICINITY OF THE SUSPECT MATERIAL TO AVOID FURTHER SPREADING OF THE MATERIAL, AND SHALL NOTIFY THE OWNER IMMEDIATELY SO THAT THE APPROPRIATE TESTING AND SUBSEQUENT ACTION CAN BE TAKEN.
- CONTRACTOR SHALL PREVENT DUST, SEDIMENT, AND DEBRIS FROM EXITING THE SITE AND SHALL BE RESPONSIBLE FOR CLEANUP, REPAIRS AND CORRECTIVE ACTION IF SUCH OCCURS.
- CONTRACTOR SHALL CONTROL STORMWATER RUNOFF DURING CONSTRUCTION TO PREVENT ADVERSE IMPACTS TO OFF SITE AREAS, AND SHALL BE RESPONSIBLE TO REPAIR RESULTING DAMAGES, IF ANY, AT NO COST TO OWNER.
- CONTRACTOR TO FILE A NOTICE OF INTENT FOR COVERAGE UNDER THE CONSTRUCTION GENERAL PERMIT (CGP) AND PREPARE A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) PRIOR TO START OF CONSTRUCTION.
- CONTRACTOR SHALL PREPARE AND MAINTAIN SWPPP IN ACCORDANCE WITH THE US EPA CGP AND NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT REQUIREMENTS.

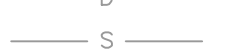
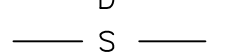
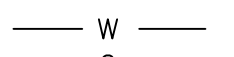
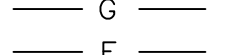
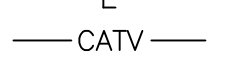
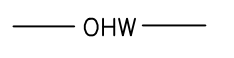
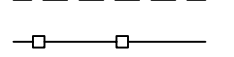
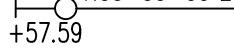
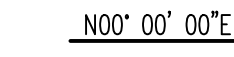
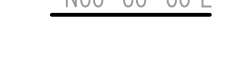
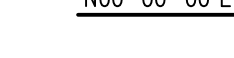
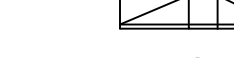
GRADING & DRAINAGE NOTES:

- THE LOCATIONS, SIZES, AND TYPES OF EXISTING UNDERGROUND UTILITIES ARE SHOWN AS AN APPROXIMATE REPRESENTATION ONLY. THE OWNER OR ITS REPRESENTATIVE(S) HAVE NOT INDEPENDENTLY VERIFIED THIS INFORMATION AS SHOWN ON THE PLANS. THE UTILITY INFORMATION SHOWN DOES NOT GUARANTEE THE ACTUAL EXISTENCE, SERVICEABILITY, OR OTHER DATA CONCERNING THE UTILITIES, NOR DOES IT GUARANTEE AGAINST THE POSSIBILITY THAT ADDITIONAL UTILITIES MAY BE PRESENT THAT ARE NOT SHOWN ON THE PLANS. PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION THE CONTRACTOR SHALL VERIFY AND DETERMINE THE EXACT LOCATION, SIZES, AND ELEVATION OF EXISTING UTILITIES.
- WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, OR EXISTING CONDITIONS DIFFER FROM THOSE SHOWN SUCH THAT THE WORK CANNOT BE COMPLETED AS INTENDED, THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED IN WRITING TO THE OWNER'S REPRESENTATIVE FOR THE RESOLUTION OF THE CONFLICT. FAILURE TO PROVIDE OR PERFORM THE ABOVE PRIOR TO PERFORMING ANY WORK SHALL NOT BE GROUNDS FOR EXTRA PAYMENTS TO THE CONTRACTOR.
- AT ALL LOCATIONS WHERE EXISTING CURBING OR PAVEMENT ABUTS NEW CONSTRUCTION, THE EDGE OF THE EXISTING CURB OR PAVEMENT SHALL BE SAW CUT TO A CLEAN, SMOOTH EDGE. BLEND NEW PAVEMENT, CURBS, AND EARTHWORK SMOOTHLY INTO EXISTING BY MATCHING LINES, GRADES, AND JOINTS.
- THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES, AS REQUIRED.
- ALL UTILITY COVERS, GRATES, ETC. SHALL BE ADJUSTED TO BE FLUSH WITH THE PAVEMENT FINISH GRADE UNLESS OTHERWISE NOTED.
- EXISTING TREES AND SHRUBS OUTSIDE THE LIMITS OF GRADING SHALL BE REMOVED ONLY UPON PRIOR APPROVAL OF THE OWNER.
- ALL SANITARY SEWER PIPE SHALL BE SDR-35 PVC UNLESS OTHERWISE NOTED.
- WATER LINE SHALL BE CLASS 52 CEMENT LINED DUCTILE IRON.
- ALL DRAINAGE PIPING SHALL BE HDPE UNLESS OTHERWISE NOTED
- INSULATE SANITARY PIPES WHERE INVERT DEPTH IS LESS THAN FIVE (5) FEET BELOW FINISHED GRADE.
- CONTRACTOR SHALL PROTECT ALL UNDERGROUND DRAINAGE, SEWER AND UTILITY FACILITIES FROM EXCESSIVE VEHICULAR LOADS DURING CONSTRUCTION. ANY DAMAGE TO THESE FACILITIES RESULTING FROM CONSTRUCTION LOADS WILL BE RESTORED TO ORIGINAL CONDITION (AT NO ADDITIONAL COST TO THE OWNER) BY THE CONTRACTOR.
- ALL WATER AND SEWER UTILITY WORK SHALL CONFORM TO LOCAL DPW, WATER DIVISION SPECIFICATIONS, DETAILS, RULES AND REGULATIONS AND HAVE FIVE (5) FEET OF MINIMUM COVER. GAS, ELECTRIC, AND TELEPHONE LOCATIONS AND ROUTING ARE SUBJECT TO REVIEW AND APPROVAL BY THE APPROPRIATE UTILITY COMPANIES.
- THE CONTRACTOR SHALL REMOVE ALL EROSION CONTROL BARRIERS AFTER REVEGETATION OF DISTURBED AREAS AND AFTER APPROVAL BY THE LOCAL APPROVING AUTHORITY.
- EXCAVATION REQUIRED IN THE PROXIMITY OF EXISTING UTILITY LINES SHALL BE DONE BY HAND. CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING UTILITY LINES OR STRUCTURES INCURRED DURING CONSTRUCTION OPERATIONS AT NO COST TO THE OWNER.
- THE CONTRACTOR SHALL SCHEDULE THEIR WORK TO ALLOW THE FINISHED SUBGRADE ELEVATIONS TO DRAIN PROPERLY WITHOUT PUDDLING. SPECIFICALLY, ALLOW WATER TO ESCAPE WHERE PROPOSED CURB MAY RETAIN RUNOFF PRIOR TO APPLICATION OF THE FINISH SUBGRADE AND/OR SURFACE PAVING.
- UNLESS OTHERWISE INDICATED, ABANDONED EXISTING UTILITY LINES SHALL BE CAPPED AND ABANDONED IN PLACE UNLESS THEY CONFLICT WITH PROPOSED IMPROVEMENTS, WHERE THEY SHALL THEN BE REMOVED. CAP REMAINING PORTIONS WHERE PARTIALLY REMOVED.
- MINIMUM MANHOLE DIAMETER IS 4'. CONTRACTOR SHALL VERIFY, THROUGH SHOP DRAWING SUBMITTALS TO THE ENGINEER, ACTUAL SIZES NEEDED TO ACCOMMODATE SPECIFIED PIPES.
- DETAILED UTILITY SURVEY AND PLAN SHALL BE PROVIDED PRIOR TO CONSTRUCTION.

PROPOSED CONSTRUCTION SEQUENCING

- SELECTIVELY REMOVE VEGETATION FOR COMPOST FILTER TUBE INSTALLATION;
- INSTALL COMPOST FILTER TUBE;
- INSTALL CONSTRUCTION FENCING AT LIMITS OF WORK, AND NO-DISTURB/TREE SAVE AREAS, IF ANY;
- STABILIZE CONSTRUCTION ENTRANCES;
- PREPARE CONSTRUCTION TRAILER/STAGING LOCATION;
- CONSTRUCT NEW SEDIMENT BASINS AS NECESSARY;
- STRIP AND STOCKPILE TOPSOIL AND PAVEMENT;
- TEMPORARILY STABILIZE TOPSOIL STOCKPILES (SEED AND SILT FENCE (GRASSED AREA) OR COMPOST FILTER TUBE OR STRAW BALES (PAVEMENT AREA) AROUND TOE OF SLOPE);
- CONDUCT EARTHWORK CUTS AND FILLS TO BRING SITE TO GRADE;
- CONSTRUCT UTILITIES (WATER, SEWER, STORM DRAIN, ETC.);
- CONSTRUCT DRIVEWAY/PARKING/SIDEWALK PAVEMENT AREAS THROUGH BINDER COURSE;
- FINISH GRADE LANDSCAPING AREAS;
- PERMANENTLY STABILIZE LANDSCAPING AREAS WITH SEED/LANDSCAPING;
- CONSTRUCT DRIVEWAY/PARKING AREAS THROUGH TOP COURSE; AND
- REMOVE ALL TEMPORARY SOIL EROSION AND SEDIMENT CONTROL MEASURES UPON PERMANENT SITE STABILIZATION AND APPROVAL BY THE ENGINEER AND TOWN OF LITTLETON.

GENERAL SYMBOLS

EXISTING	PROPOSED	
		CATCH BASIN
		DRAIN MANHOLE
		SEWER MANHOLE
		ELECTRIC MANHOLE
		TELEPHONE MANHOLE
		CABLE MANHOLE
		UNKNOWN MANHOLE
		HANDHOLE
		BOLLARD
		WATER GATE
		FIRE HYDRANT
		GAS GATE
		GAS VALVE
		STREET SIGN
		TRAFFIC SIGNAL
		LIGHT POLE
		UTILITY POLE
		TEST PIT
		EDGE OF PAVEMENT
		GRANITE CURB (TYPE VA 4)
		CONCRETE CURB (MONOLITHIC)
		CHAINLINK FENCE
		DRAINAGE LINE
		SEWER LINE
		WATER LINE
		GAS LINE
		UNDERGROUND ELECTRIC LINE
		CABLE/TELEVISION LINE
		OVERHEAD WIRE
		TREE LINE
		LIMIT OF WORK
		CONSTRUCTION FENCE
		ENTRANCE/EXIT DOOR
		BASELINE
		TOWN LAYOUT
		PROPERTY LINE
		HIGHWAY/PROPERTY BOUND (TYPE NOTED)
		WHEELCHAIR RAMP
		TREE (SIZE AND TYPE NOTED)

PAVEMENT MARKINGS AND SIGNING SYMBOLS

EXISTING	PROPOSED	
		CROSSWALK, 12" WHITE LINE (WIDTH NOTED)
		STOP LINE, 12" WHITE LINE 4' BEHIND CW (TYP.)
		SOLID WHITE LINE-4"
		DOUBLE YELLOW CENTER LINE- 2-4" LINES
		TRAFFIC FLOW SYMBOL

ABBREVIATIONS

GENERAL		UTILITIES	
ABAN	ABANDON	AD	AREA DRAIN
ADJ	ADJUST	CB	CATCH BASIN
APPROX	APPROXIMATE	CI	CAST IRON
BLDG	BUILDING	CLDI	CEMENT LINED DUCTILE IRON
BO	BY OTHERS	DCB	DOUBLE CATCH BASIN
BM	BENCHMARK	DMH	DRAINAGE MANHOLE
CC	CONCRETE CURB	GV	GAS VALVE
CEM	CEMENT	GT	GREASE TRAP
CONC	CONCRETE	HDPE	HIGH DENSITY POLYETHYLENE PIPE
COORD	COORDINATE	HYD	HYDRANT
DEMO	DEMOLISH	INV	INVERT ELEVATION
DIA	DIAMETER	PVC	POLYVINYL CHLORIDE PIPE
ELEC	ELECTRIC	OHW	OVER HEAD WIRE
ELEV	ELEVATION	SMH	SEWER MANHOLE
EXIST	EXISTING	WQU	WATER QUALITY UNIT
GAL	GALLON	WV	WATER VALVE
GC	GRANITE CURB		
HMA	HOT MIX ASPHALT		
LA	LANDSCAPED AREA		
LF	LINEAR FEET		
MAX	MAXIMUM		
MCC	MONOLITHIC CONCRETE CURB		
MIN	MINIMUM		
MTD	MOUNTED		
NTS	NOT TO SCALE		
PROP	PROPOSED		
PVMT	PAVEMENT		
R	RADIUS		
REM	REMOVE		
RET	RETAIN		
SW	SIDEWALK		
TYP	TYPICAL		
WCR	WHEELCHAIR RAMP		

DRAWING TITLE

Legend & General Notes

SUBDIVISION NAME & LOCATION

King Street Commons
550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER

Lupoli Companies
290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER

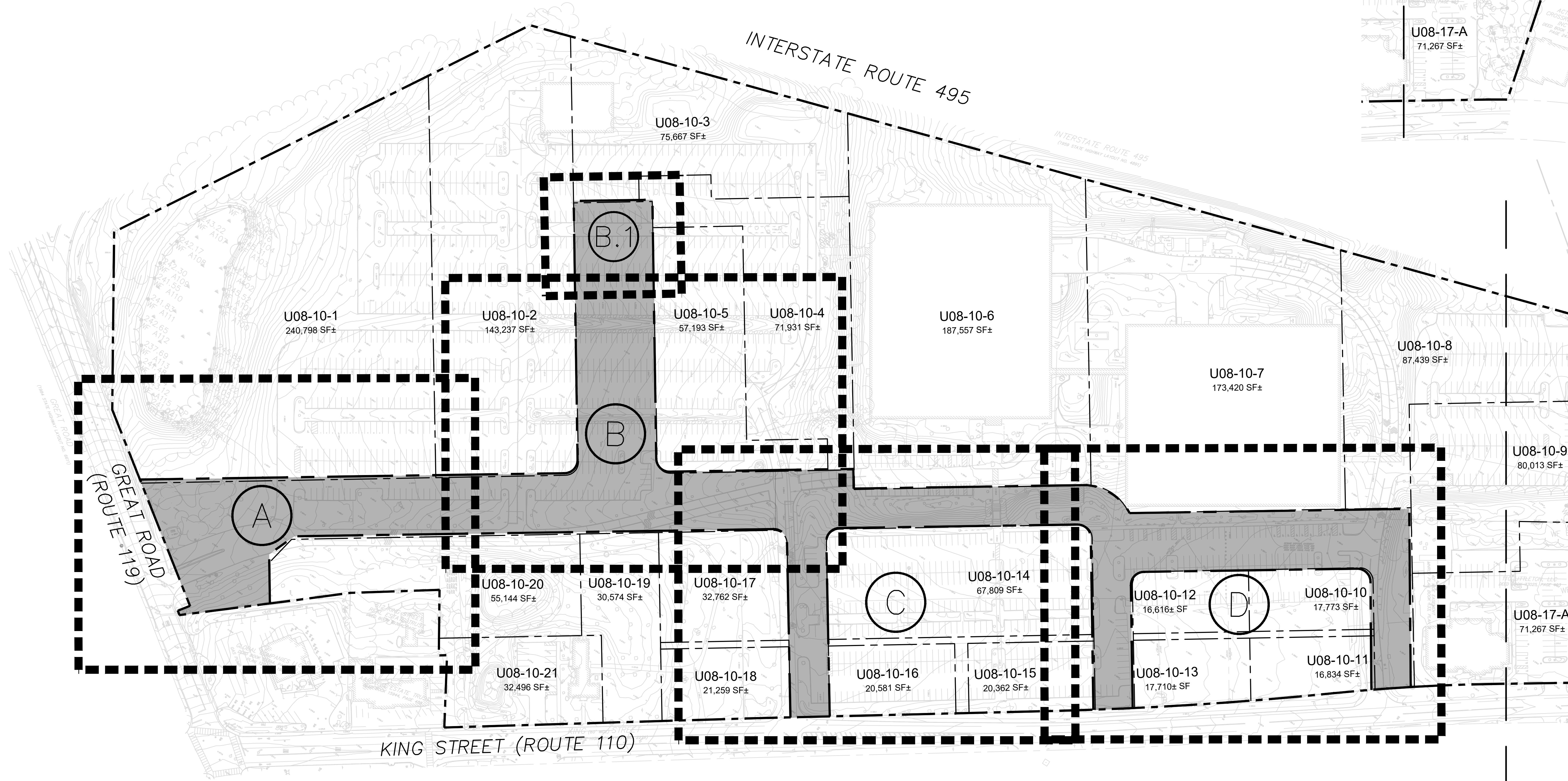
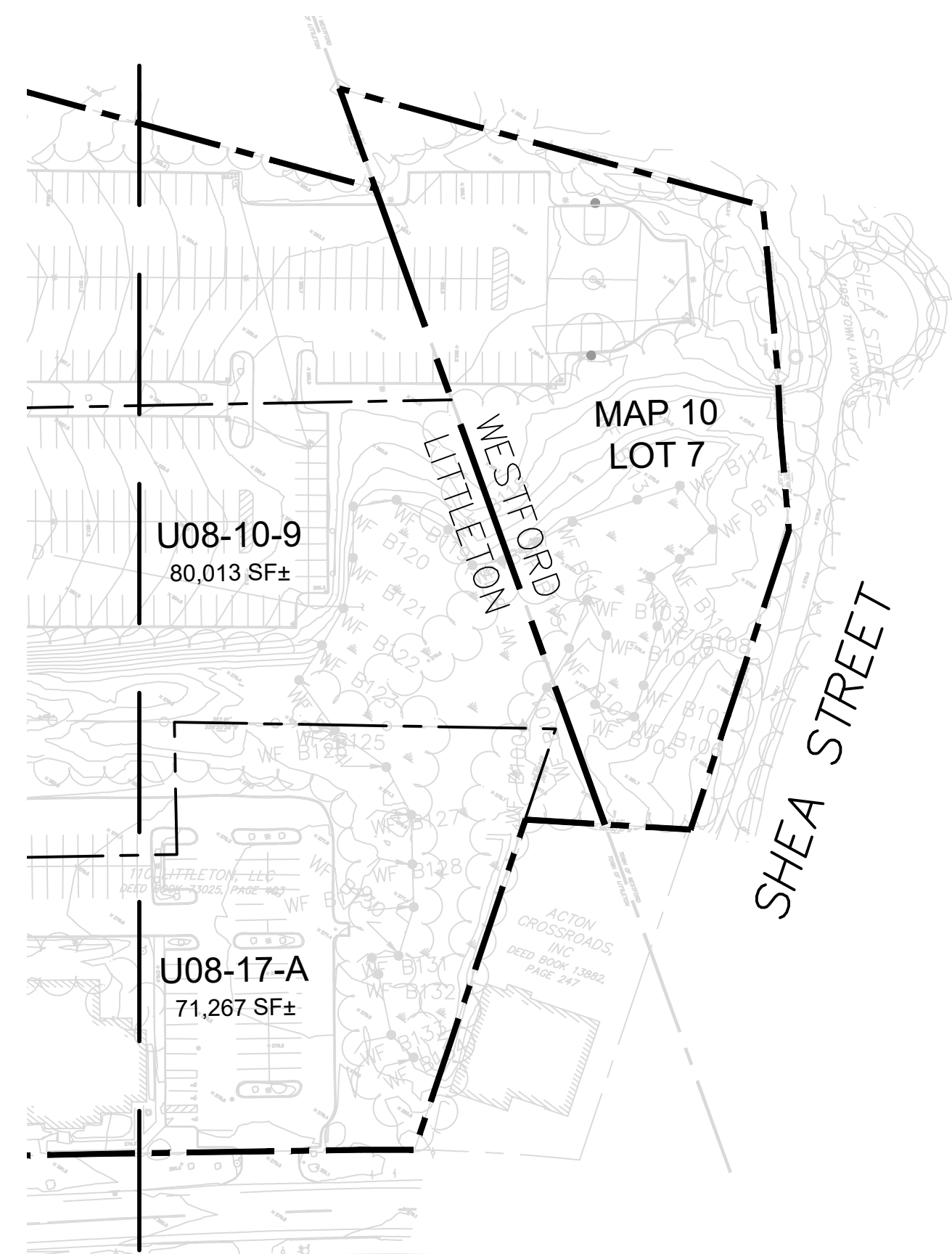
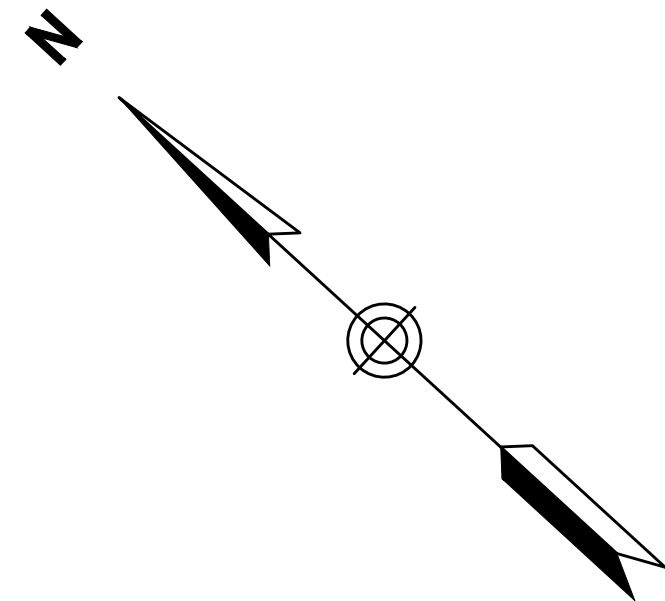


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PROJECT NO. T1180
TEC CAD FILE
T1180_INDEX
DRAWING NO. C-2
SHEET 2 OF 56





DRAWING TITLE
Index Sheet

SUBDIVISION NAME & LOCATION
King Street Commons
550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER
Lupoli Companies
290 Merrimack Street
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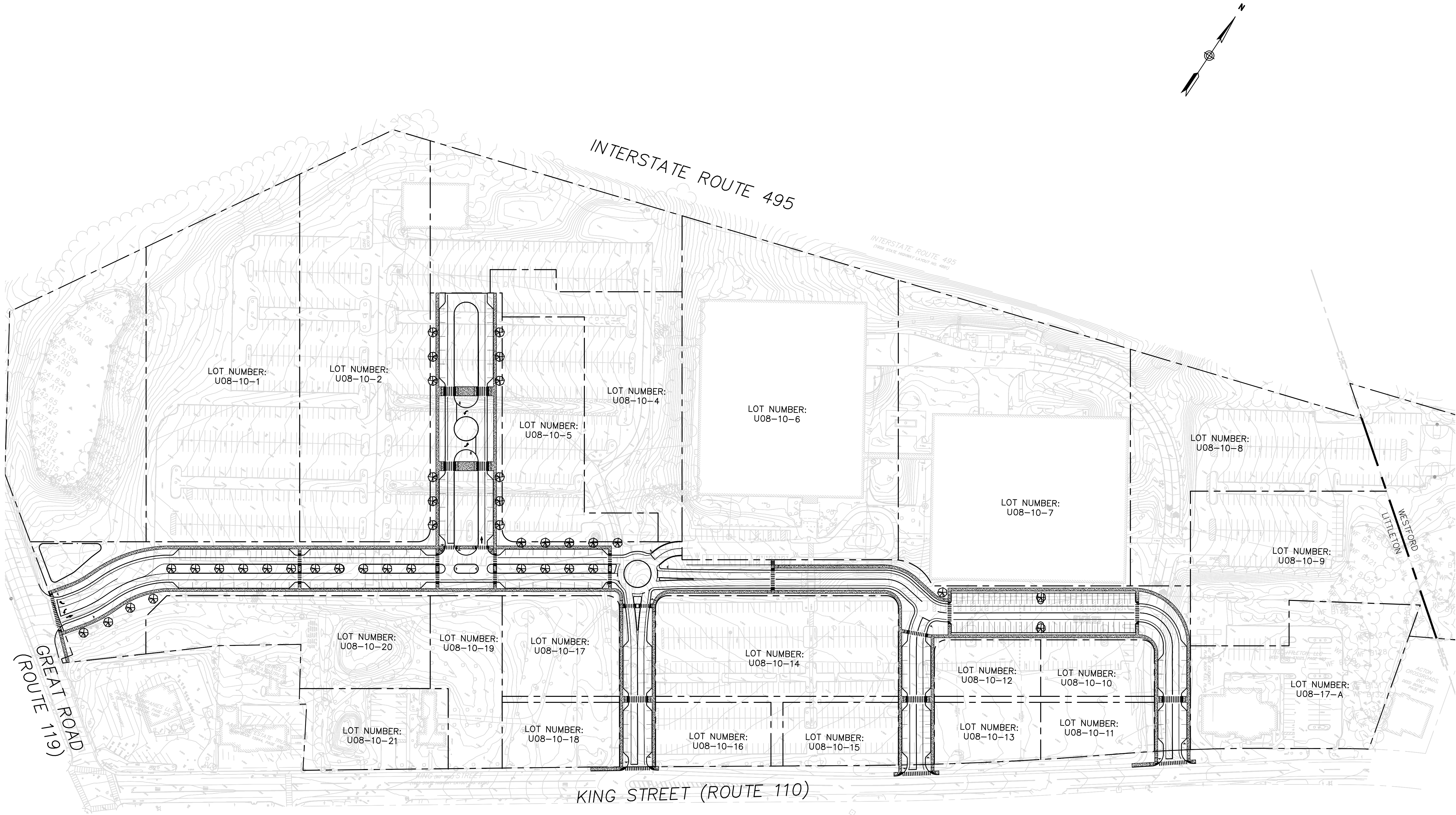
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T1180

TEC CAD FILE

T1180_INDEX

DRAWING NO.
C-3

SHEET 3 OF 56



DRAWING TITLE
Layout Plan

SUBDIVISION NAME & LOCATION
King Street Commons
550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER
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290 Merrimack Street
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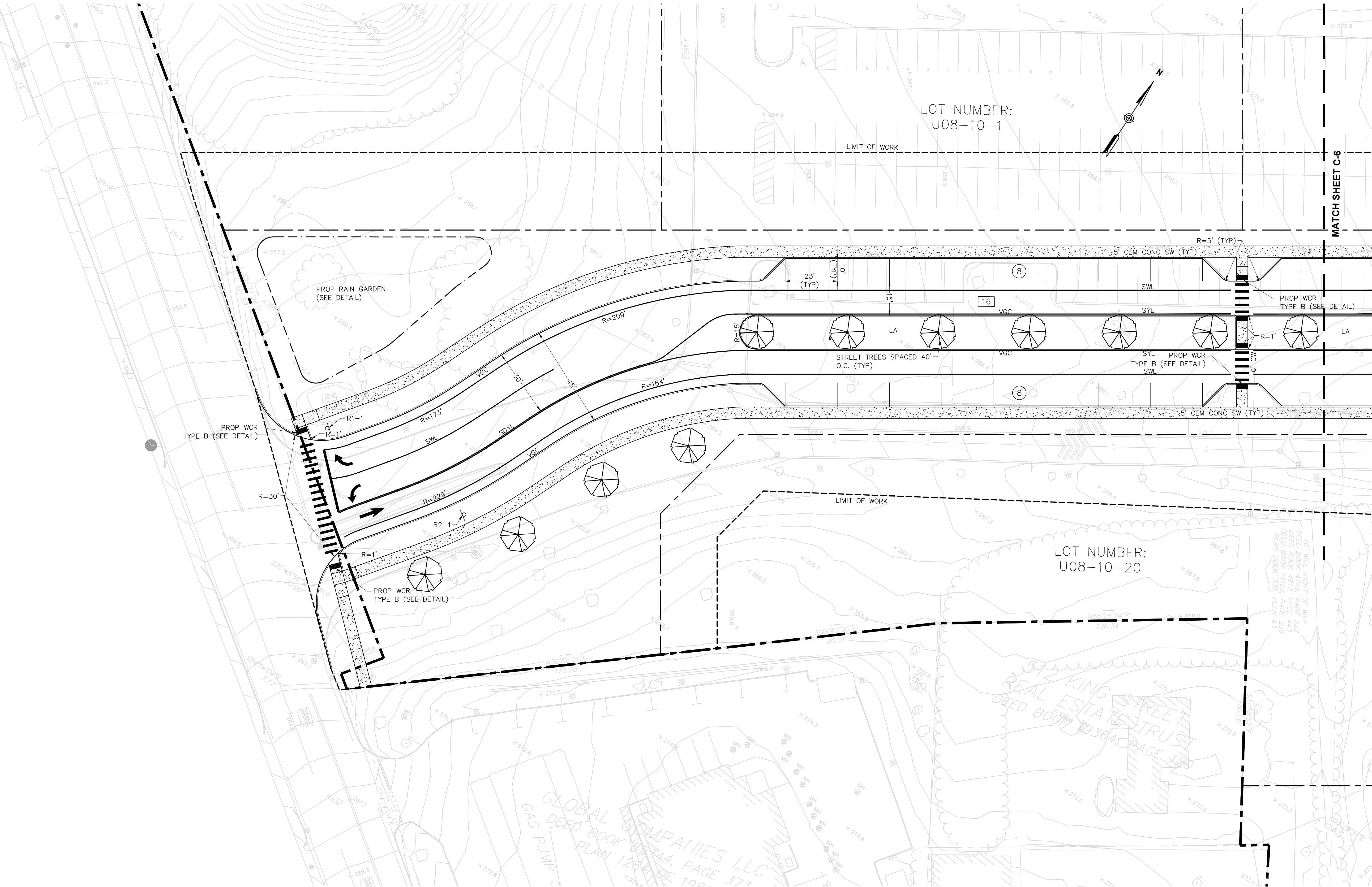
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T1180
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T1180_SITE
DRAWING NO.
C-4
SHEET 4 OF 56

- NOTES:
1. TOTAL ADA PARKING SPACES TO BE DETERMINED UPON FURTHER SITE DEVELOPMENT.
 2. A PAVED BUS WAITING AREA WILL BE PROVIDED IN ACCORDANCE WITH THE TOWN OF LITTLETON SUBDIVISION OF LAND REGULATIONS SECTION 43 C(2). THE LOCATION WILL BE DETERMINED UPON FURTHER DETERMINATION OF USE AND CONSTRUCTION OF THE SUBDIVISION LOTS.

PARKING TABLE		
PROPOSED PARKING	PARALLEL	HEAD-IN
	97	66
aisle width	15 FT	15 FT
stall width	10 FT	9 FT
stall length	23 FT	18 FT



DRAWING TITLE

Layout Plan A

SUBDIVISION NAME & LOCATION

King Street Commons
550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER

Lupoli Companies
290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER

TEC
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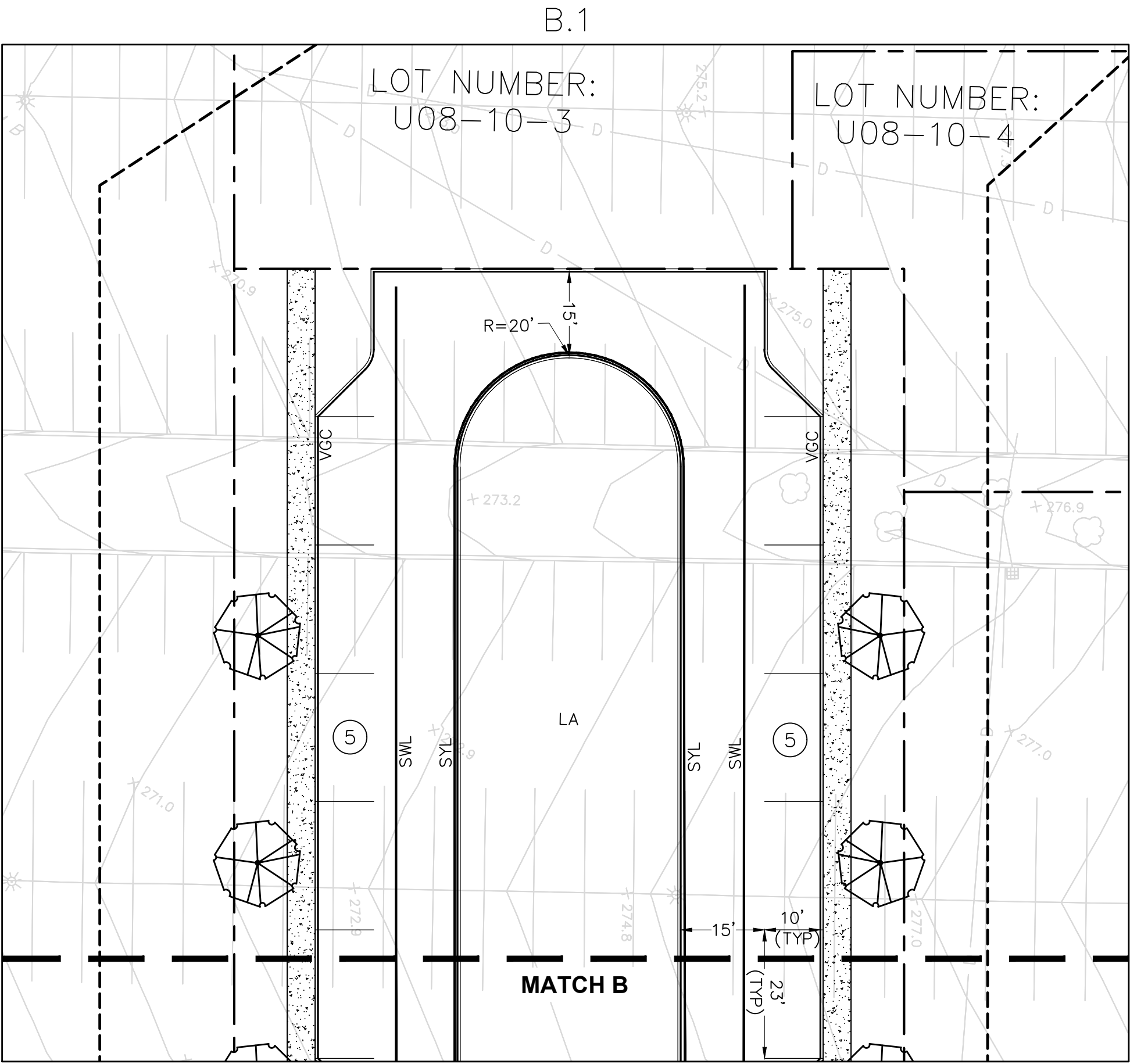
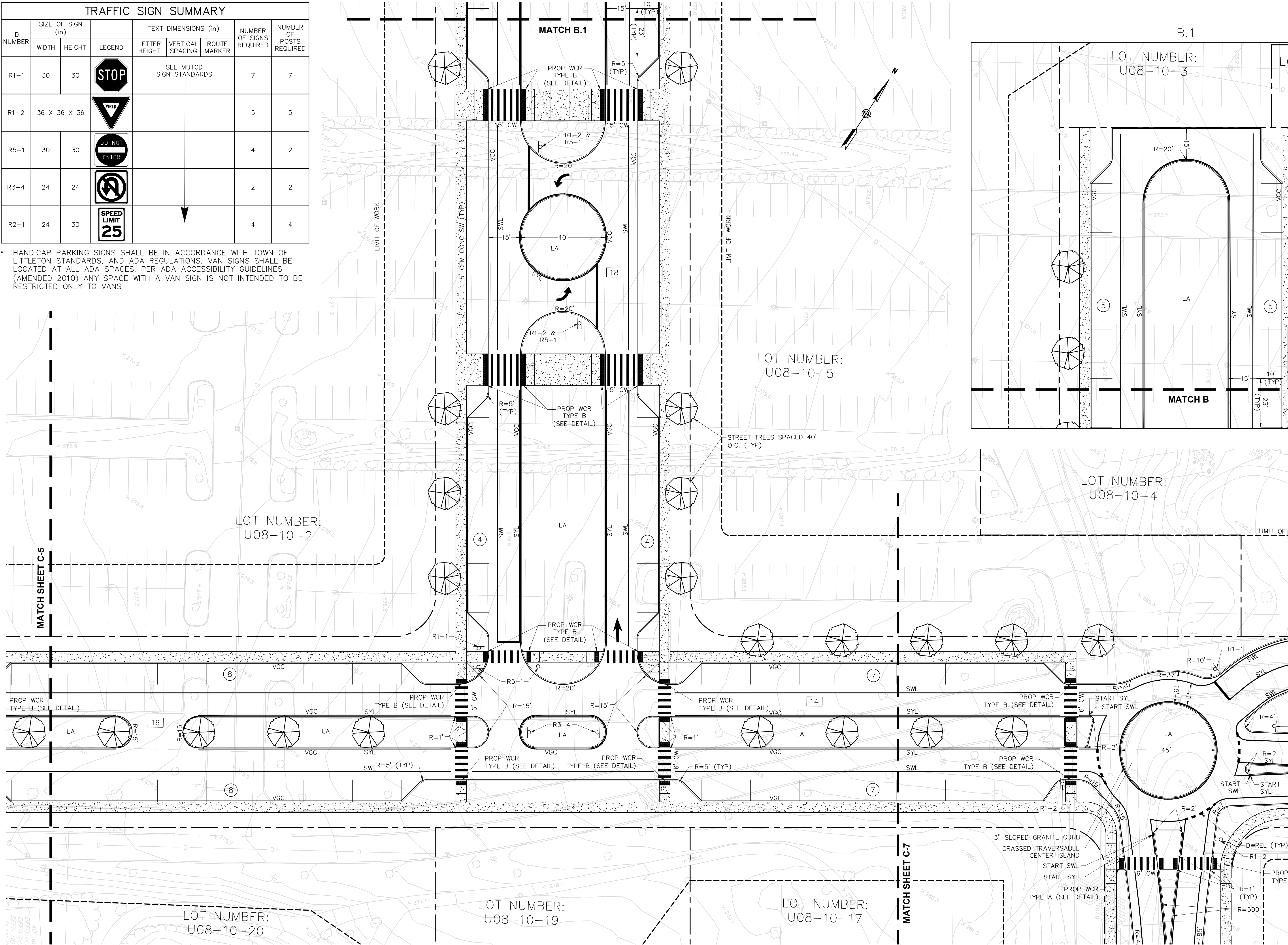
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T1180_SITE
DRAWING NO. **C-5**
SHEET 5 OF 56

TRAFFIC SIGN SUMMARY								
ID NUMBER	SIZE OF SIGN (in)			TEXT DIMENSIONS (in)			NUMBER OF SIGNS REQUIRED	NUMBER OF POSTS REQUIRED
	WIDTH	HEIGHT		LEGEND	LETTER HEIGHT	VERTICAL SPACING		
R1-1	30	30		SEE MUTCD SIGN STANDARDS			7	7
R1-2	36 X 36 X 36						5	5
R5-1	30	30					4	2
R3-4	24	24					2	2
R2-1	24	30					4	4

* HANDICAP PARKING SIGNS SHALL BE IN ACCORDANCE WITH TOWN OF LITTLETON STANDARDS, AND ADA REGULATIONS. VAN SIGNS SHALL BE LOCATED AT ALL ADA SPACES. PER ADA ACCESSIBILITY GUIDELINES (AMENDED 2010) ANY SPACE WITH A VAN SIGN IS NOT INTENDED TO BE RESTRICTED ONLY TO VANS



DRAWING TITLE
Layout Plan B

SUBDIVISION NAME & LOCATION
King Street Commons
550 King Street
Littleton, MA 01460

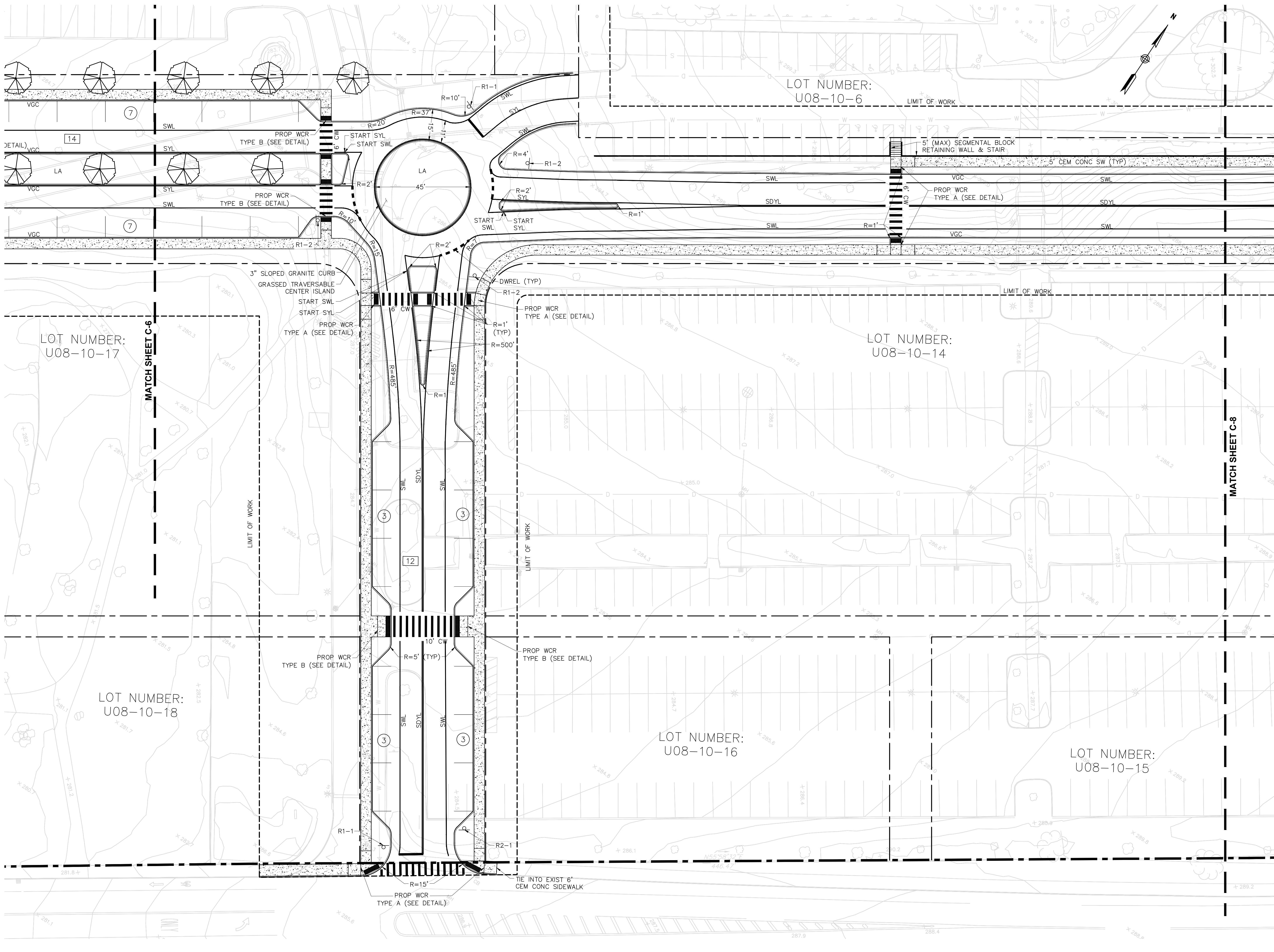
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290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER

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PROJECT NO. T1180
TEC CAD FILE
T1180_SITE
DRAWING NO. **C-6**
SHEET 6 OF 56



DRAWING TITLE
Layout Plan C

SUBDIVISION NAME & LOCATION
King Street Commons
550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER
Lupoli Companies
290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER

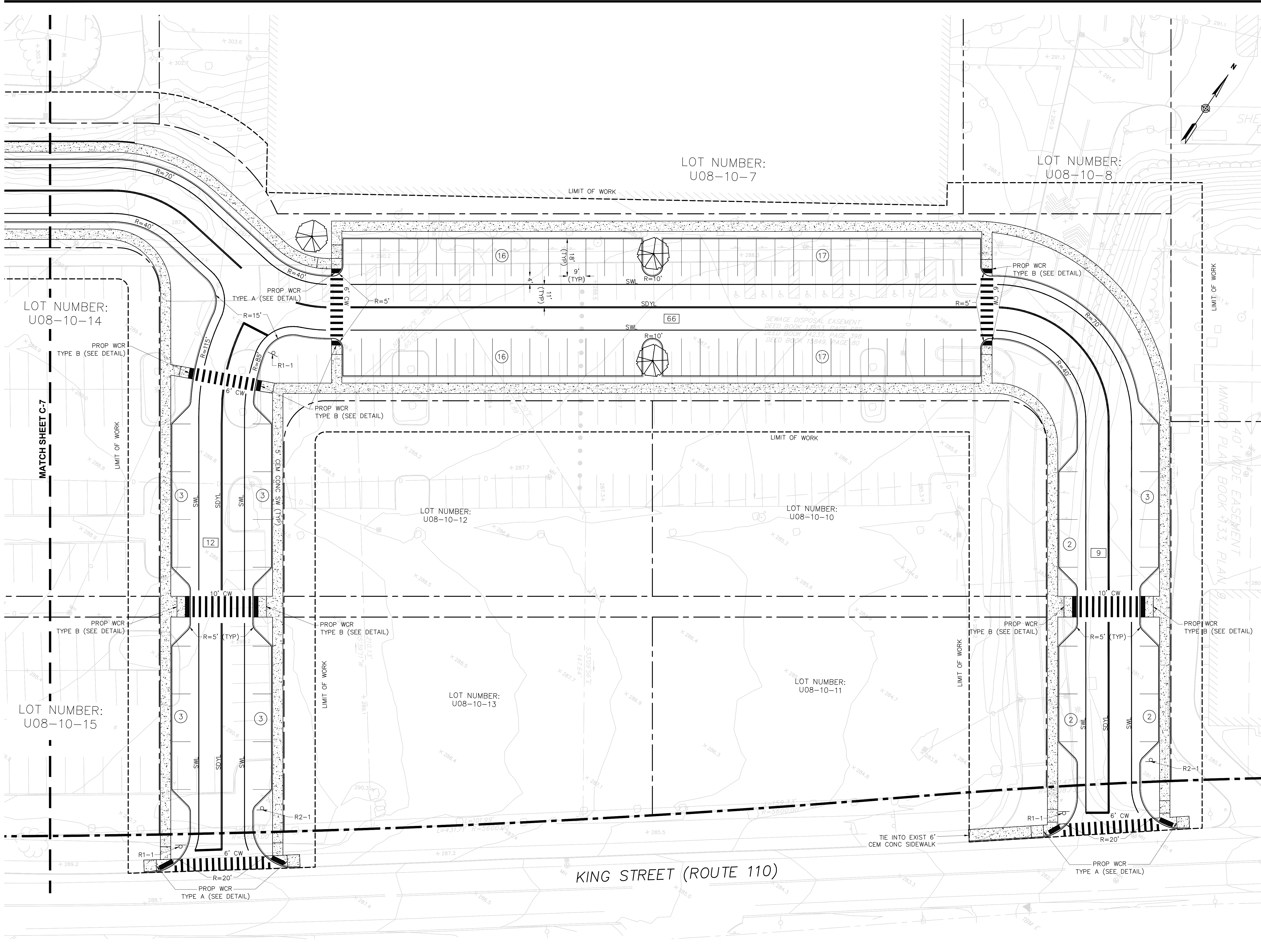
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PROJECT NO. T1180
TEC CAD FILE
T1180_SITE
DRAWING NO. **C-7**
SHEET 7 OF 56





DRAWING TITLE
Layout Plan D

SUBDIVISION NAME & LOCATION
King Street Commons
550 King Street
Littleton, MA 01460

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Lupoli Companies
290 Merrimack Street
Lawrence, MA 01840

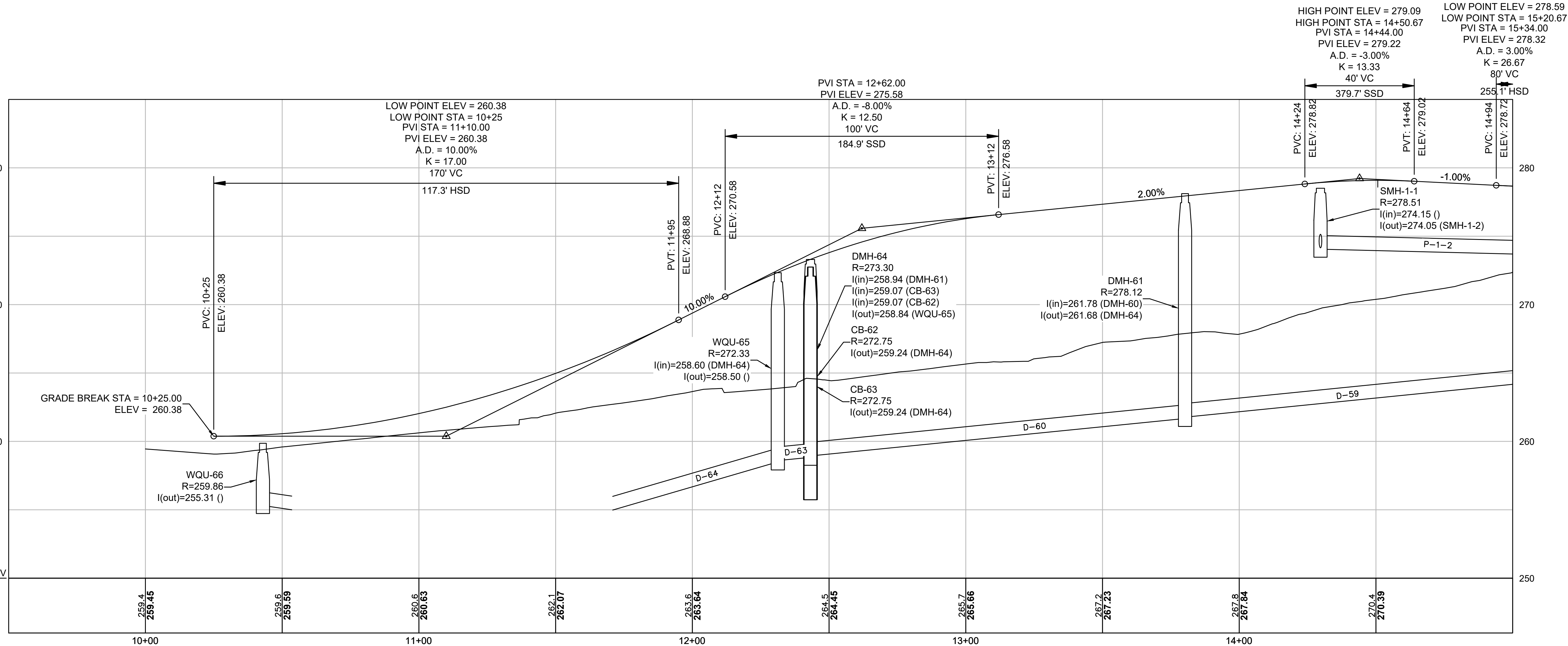
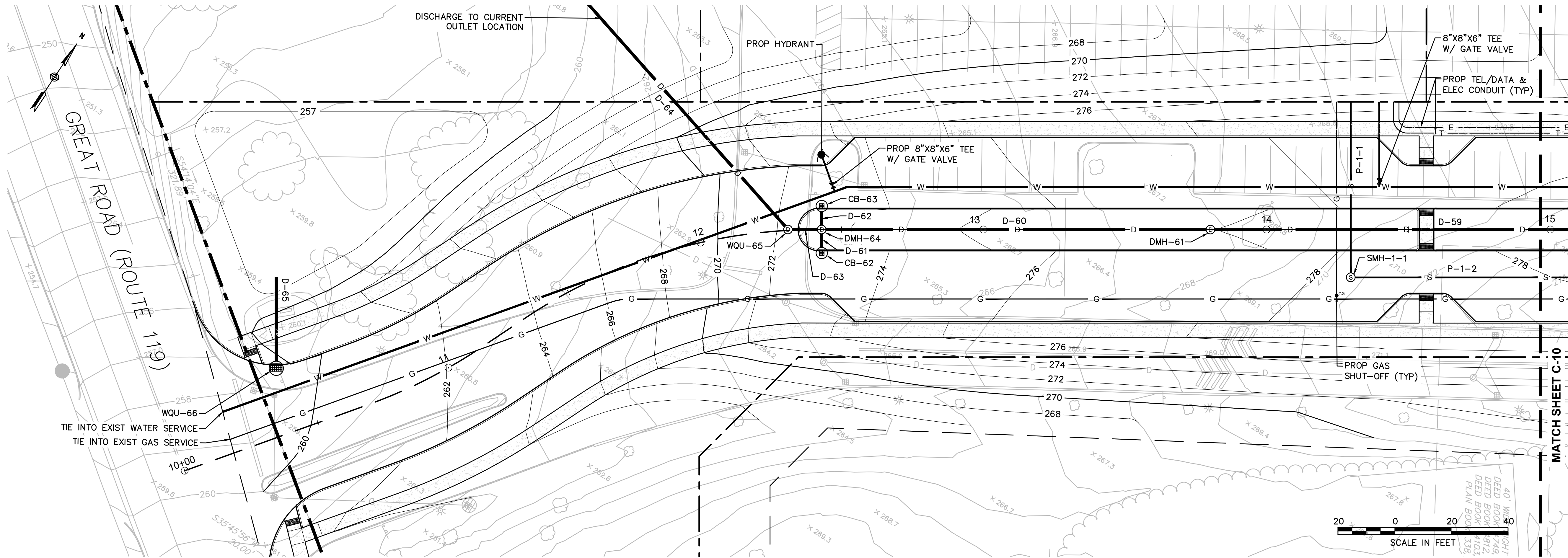
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TEC CAD FILE
T1180_SITE
DRAWING NO. **C-8**
SHEET 8 OF 56



DRAWING TITLE
**Roadway Plan &
Profile 1
Main Road**

SUBDIVISION NAME & LOCATION
**King Street
Commons**
550 King Street
Littleton, MA 01460

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Lupoli Companies
290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER



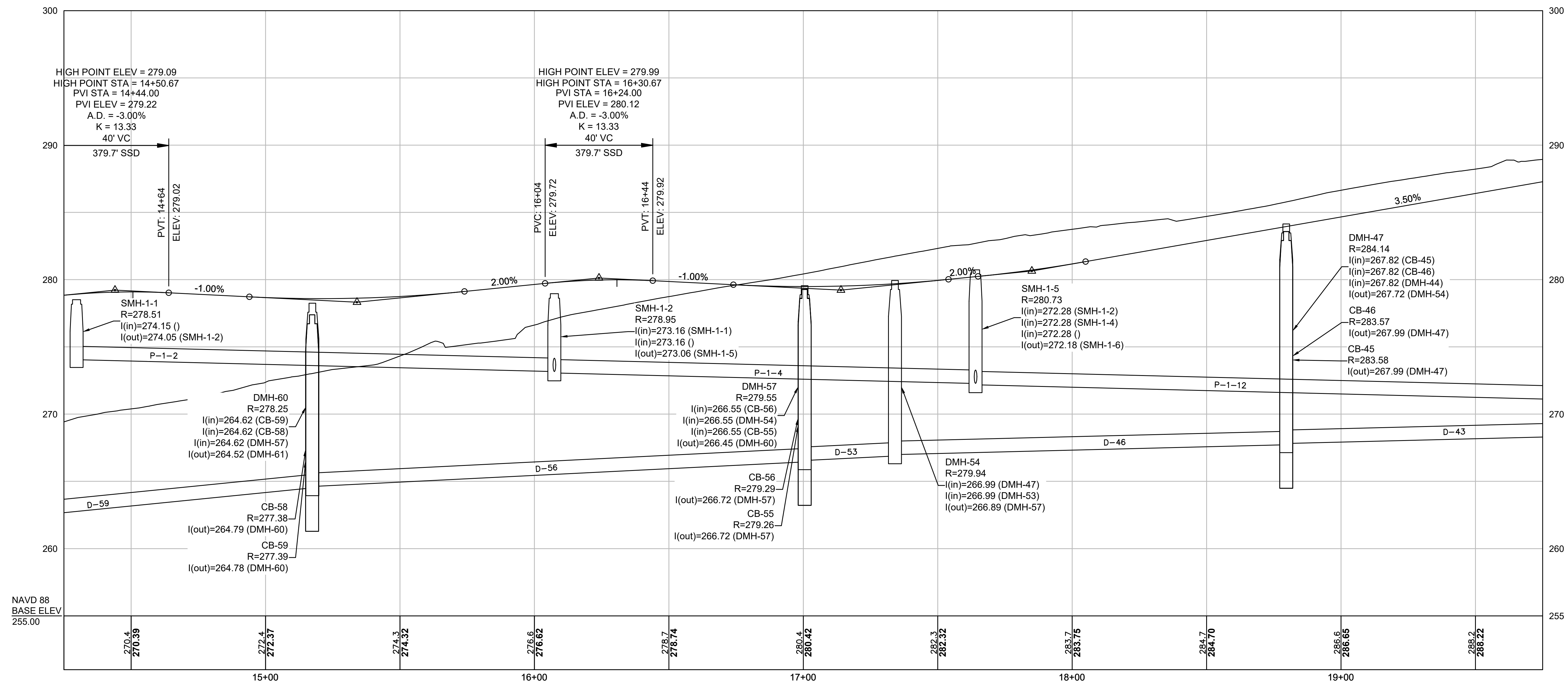
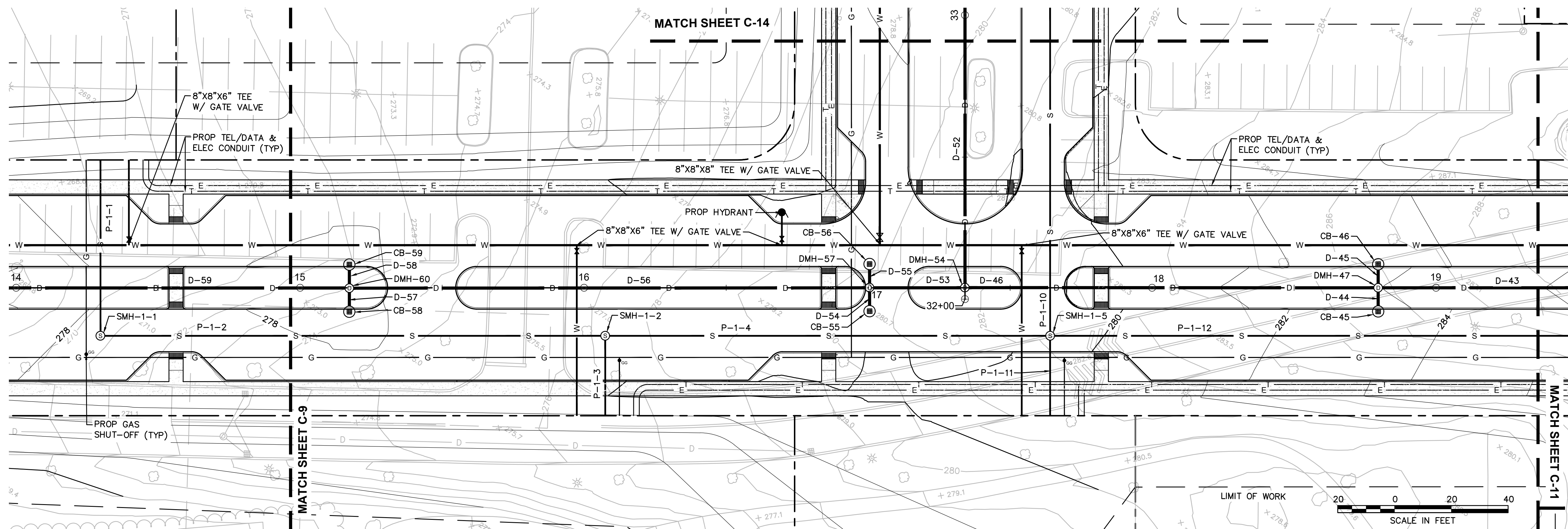
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T1180
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DRAWING NO.
C-9
SHEET 9 OF 56



DRAWING TITLE
**Roadway Plan &
Profile 2
Main Road**

SUBDIVISION NAME & LOCATION
**King Street
Commons
550 King Street
Littleton, MA 01460**

OWNER / APPLICANT / SUBDIVIDER
**Lupoli Companies
290 Merrimack Street
Lawrence, MA 01840**

DESIGNER / ENGINEER



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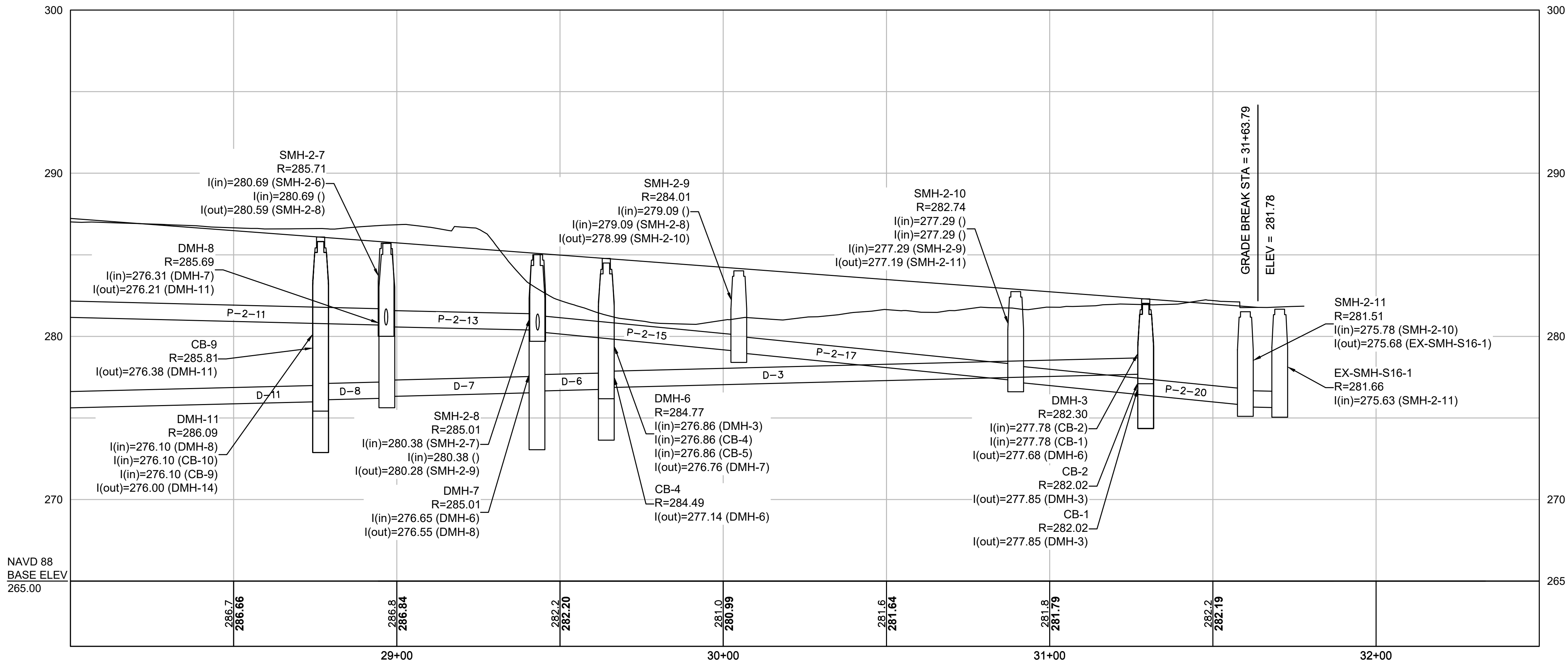
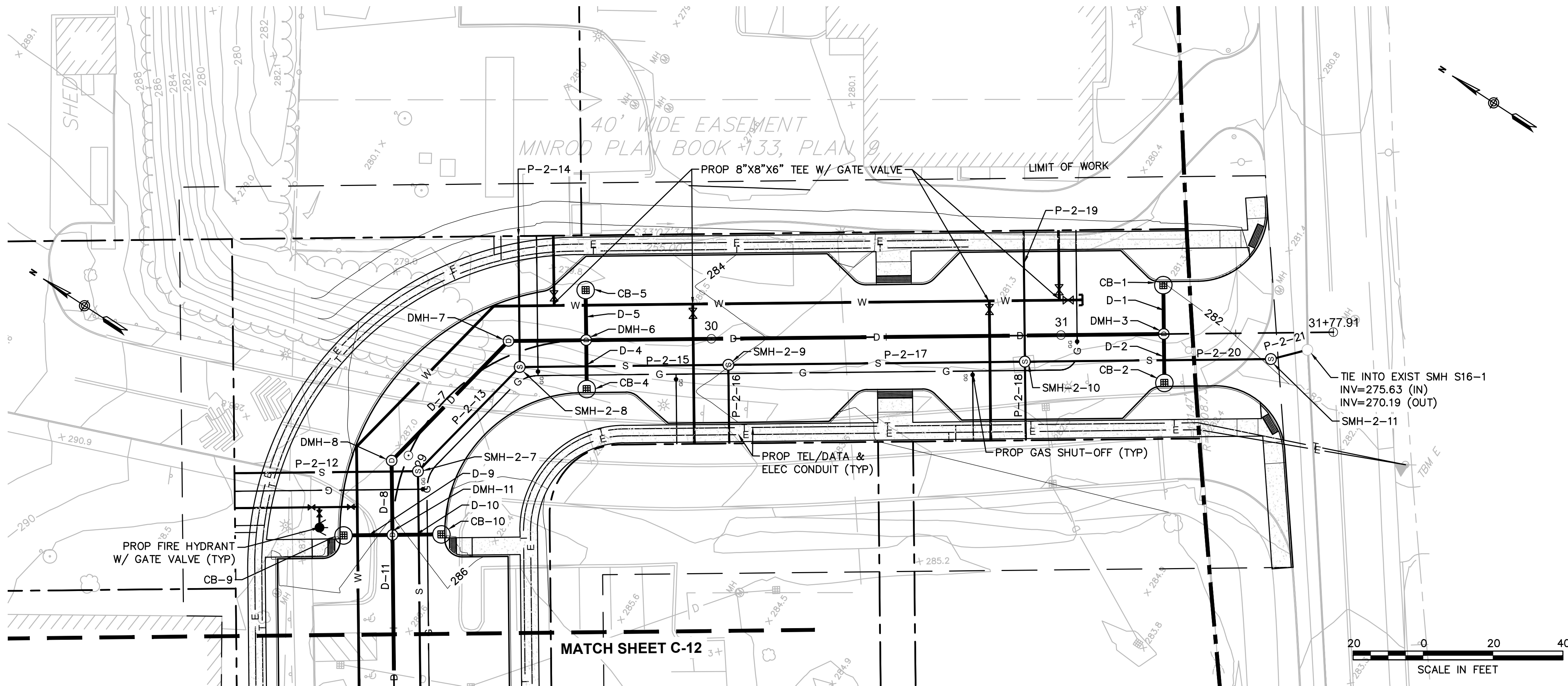


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T1180

TEC CAD FILE
T1180_PROFILE

DRAWING NO.
C-10

SHEET 10 OF 5



DRAWING TITLE
**Roadway Plan &
Profile 5
Main Road**

SUBDIVISION NAME & LOCATION
**King Street
Commons**
550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER
Lupoli Companies
290 Merrimack Street
Lawrence, MA 01840

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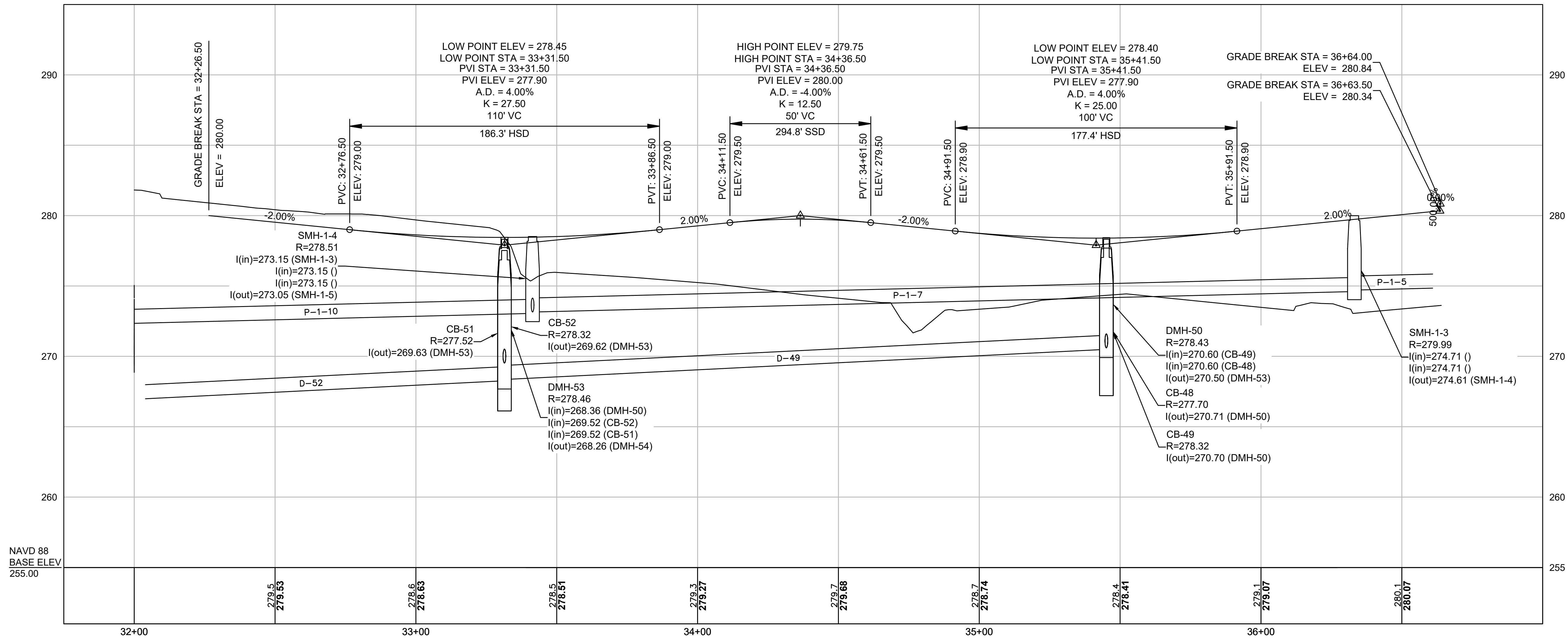
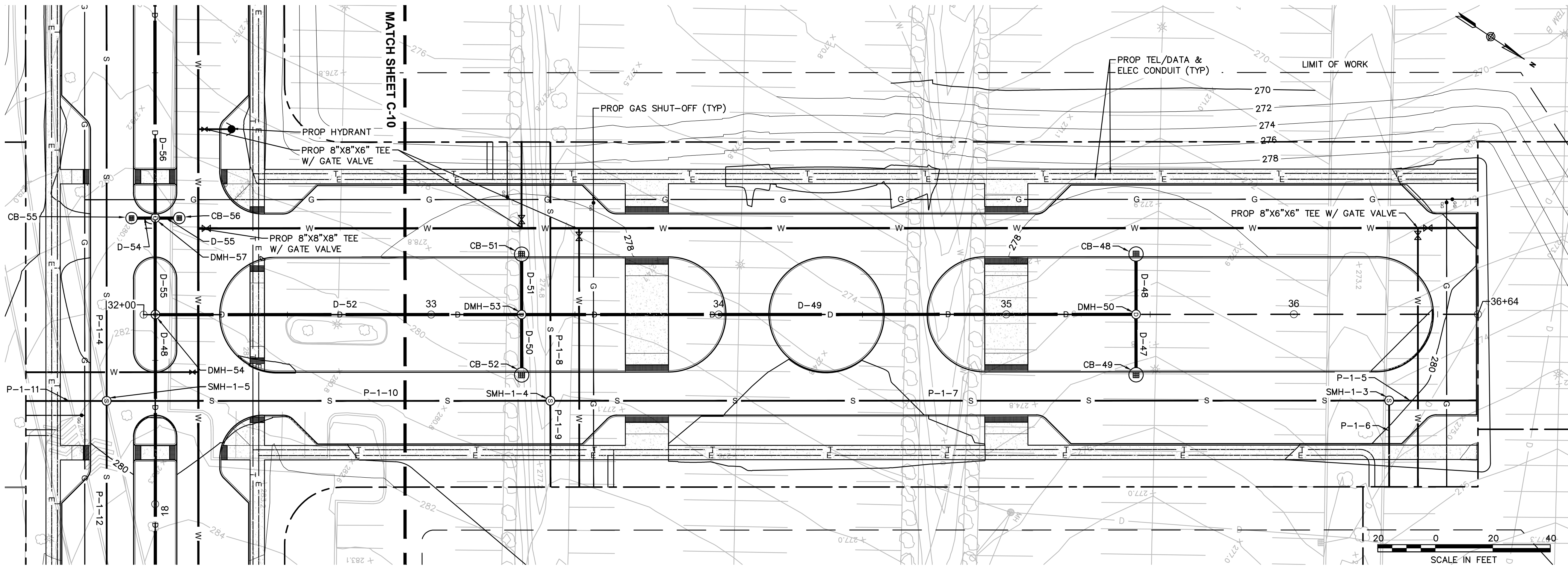
PROJECT NO.
T1180

TEC CAD FILE

T1180_PROFILE

DRAWING NO.
C-13

SHEET 13 OF 56



DRAWING TITLE
**Roadway Plan &
Profile 6
North Road**
SUBDIVISION NAME & LOCATION
**King Street
Commons**
550 King Street
Littleton, MA 01460
OWNER / APPLICANT / SUBDIVIDER
Lupoli Companies
290 Merrimack Street
Lawrence, MA 01840
DESIGNER / ENGINEER



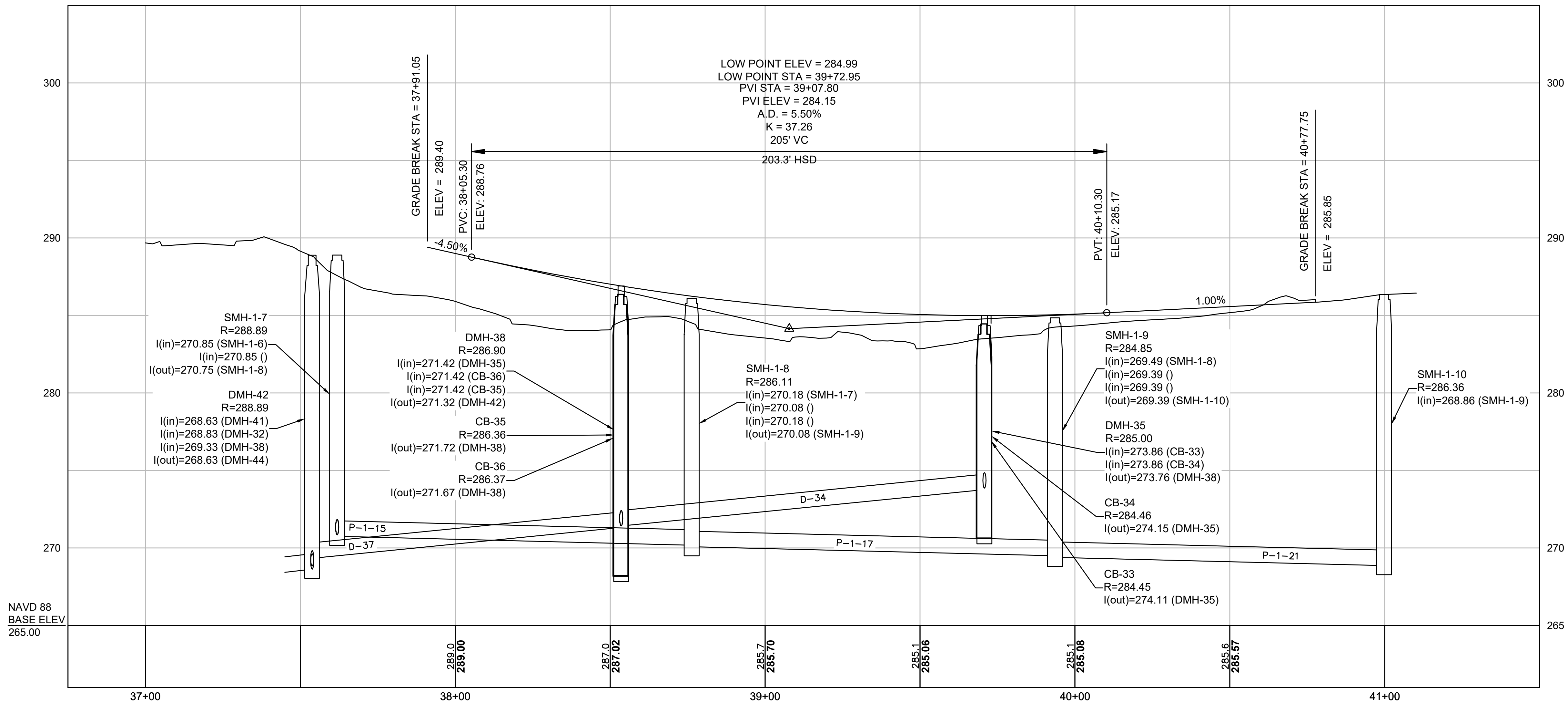
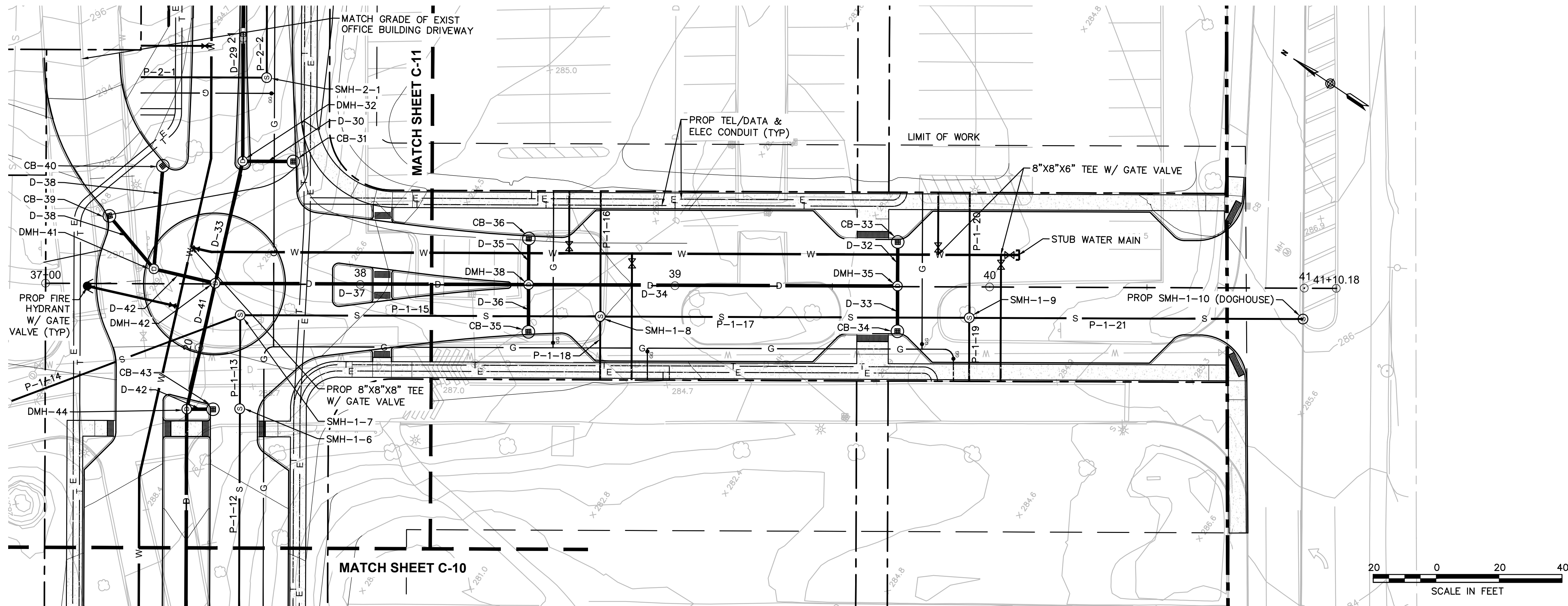
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DRAWING NO.
C-14
SHEET 14 OF 56



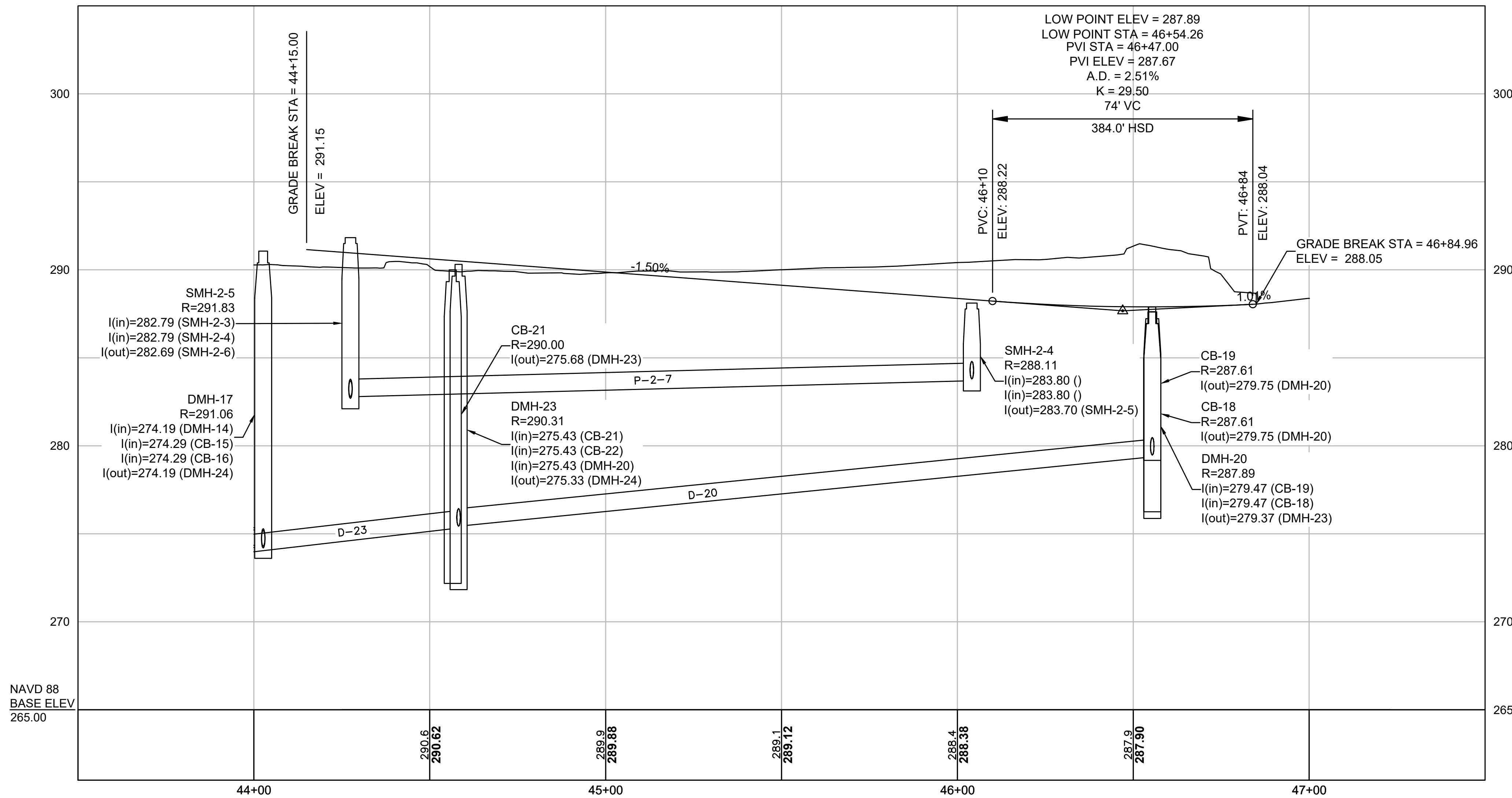
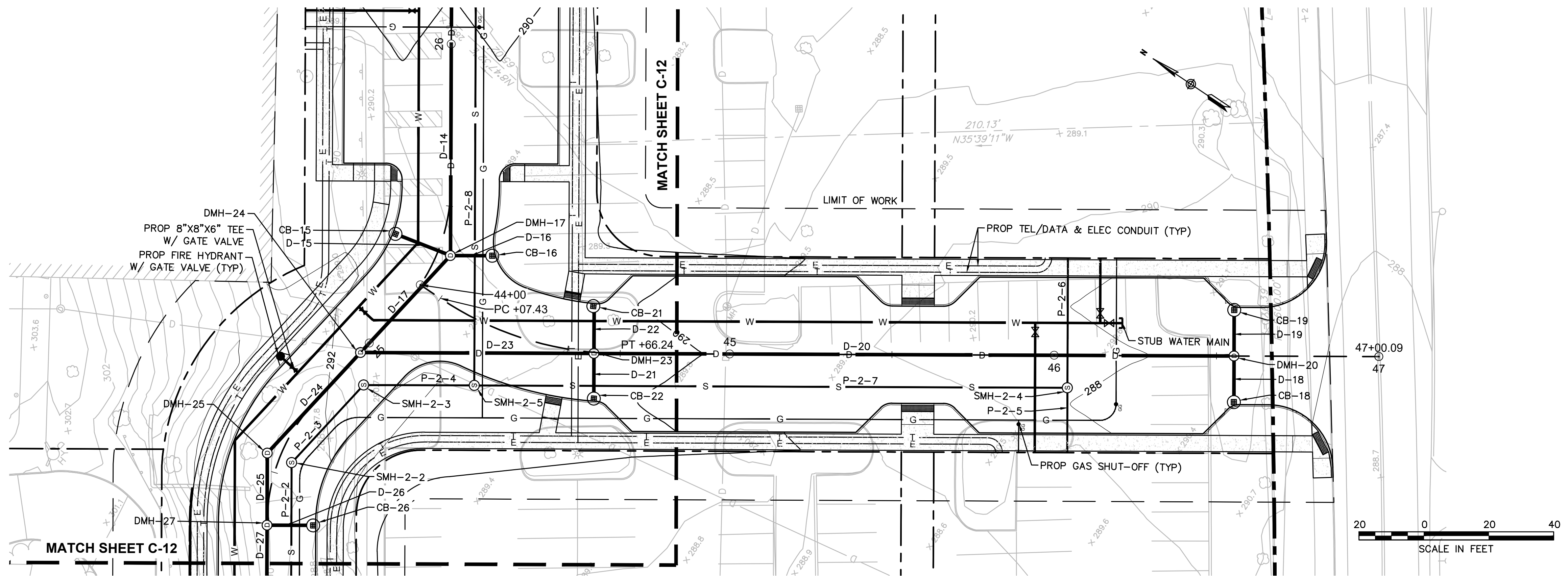
DRAWING TITLE
**Roadway Plan &
Profile 7
South Road #1**
SUBDIVISION NAME & LOCATION
**King Street
Commons**
550 King Street
Littleton, MA 01460
OWNER / APPLICANT / SUBDIVIDER
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290 Merrimack Street
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DRAWING NO.
C-15
SHEET 15 OF 56



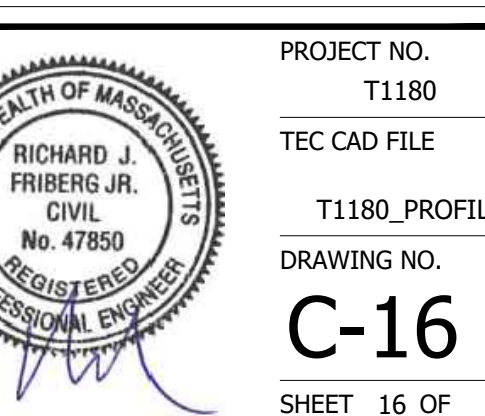
DRAWING TITLE
**Roadway Plan &
Profile 8
South Road #2**
SUBDIVISION NAME & LOCATION
**King Street
Commons**
550 King Street
Littleton, MA 01460
OWNER / APPLICANT / SUBDIVIDER
Lupoli Companies
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PROJECT NO. T1180
TEC CAD FILE
T1180_PROFILE
DRAWING NO. C-16
SHEET 16 OF 56



PHASE 1 SANITARY SEWER:

SEWER STRUCTURE DATA					
NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT
SMH-1-1	SMH-48	14+29.7 16.9' RT	278.51	I=274.15' ()	I=274.05' (SMH-1-2)
SMH-1-2	SMH-48	16+07.4 16.9' RT	278.95	I=273.16' (SMH-1-1) I=273.16' ()	I=273.06' (SMH-1-5)
SMH-1-3	SMH-48	36+33.2 30.1' RT	279.99	I=274.71' () I=274.71' ()	I=274.61' (SMH-1-4)
SMH-1-4	SMH-48	33+41.4 30.0' RT	278.51	I=273.15' (SMH-1-3) I=273.15' () I=273.15' ()	I=273.05' (SMH-1-5)
SMH-1-5	SMH-48	17+64.1 16.9' RT	280.73	I=272.28' (SMH-1-2) I=272.28' (SMH-1-4) I=272.28' ()	I=272.18' (SMH-1-6)
SMH-1-6	SMH-48	19+81.2 16.9' RT	287.15	I=271.09' (SMH-1-5)	I=270.99' (SMH-1-7)
SMH-1-7	SMH-48	20+13.1 10.2' RT	288.89	I=270.85' (SMH-1-6) I=270.85' ()	I=270.75' (SMH-1-8)
SMH-1-8	SMH-48	20+39.9 121.5' RT	286.11	I=270.18' (SMH-1-7) I=270.08' () I=270.18' ()	I=270.08' (SMH-1-9)
SMH-1-9	SMH-48	20+58.3 235.6' RT	284.85	I=269.49' (SMH-1-8) I=269.39' () I=269.39' ()	I=269.39' (SMH-1-10)
SMH-1-10	SMH-48	20+58.3 340.4' RT	286.36	I=268.86' (SMH-1-9)	

SEWER PIPE DATA				
PIPE	PIPE LOCATION	SIZE & TYPE	LENGTH	SLOPE
P-1-1	SMH-1-1 TO STA 14+30 TO 14+30	9" RCP	60 LF	0.005
P-1-2	SMH-1-1 TO SMH-1-2 STA 14+30 TO 16+07	12" RCP	174 LF	0.005
P-1-3	SMH-1-2 TO STA 16+07 TO 16+07	9" RCP	26 LF	0.005
P-1-4	SMH-1-2 TO SMH-1-5 STA 16+07 TO 17+64	12" RCP	153 LF	0.005
P-1-5	TO SMH-1-3 STA 36+61 TO 36+33	12" RCP	26 LF	0.005
P-1-6	TO SMH-1-3 STA 36+33 TO 36+33	9" RCP	28 LF	0.005
P-1-7	SMH-1-3 TO SMH-1-4 STA 36+33 TO 33+41	12" RCP	288 LF	0.005
P-1-8	SMH-1-4 TO STA 33+41 TO 33+41	9" RCP	88 LF	0.005
P-1-9	TO SMH-1-4 STA 33+41 TO 33+41	9" RCP	28 LF	0.005
P-1-10	SMH-1-4 TO SMH-1-5 STA 33+41 TO ???	12" RCP	150 LF	0.005
P-1-11	SMH-1-5 TO STA 17+64 TO 17+64	9" RCP	26 LF	0.005
P-1-12	SMH-1-5 TO SMH-1-6 STA 17+64 TO 19+81	12" RCP	213 LF	0.005
P-1-13	SMH-1-6 TO SMH-1-7 STA 19+81 TO 20+13	12" RCP	25 LF	0.005
P-1-14	TO SMH-1-7 STA 19+83 TO 20+13	9" RCP	75 LF	0.020
P-1-15	SMH-1-8 TO SMH-1-7 STA 38+76 TO 37+62	12" RCP	110 LF	0.005

SEWER PIPE DATA				
PIPE	PIPE LOCATION	SIZE & TYPE	LENGTH	SLOPE
P-1-16	SMH-1-8 TO STA 38+76 TO 38+76	9" RCP	38 LF	0.020
P-1-17	SMH-1-9 TO SMH-1-8 STA 39+94 TO 38+76	12" RCP	113 LF	0.005
P-1-18	TO SMH-1-8 STA 38+76 TO 38+76	9" RCP	18 LF	0.020
P-1-19	TO SMH-1-9 STA 39+94 TO 39+94	9" RCP	18 LF	0.020
P-1-20	SMH-1-9 TO STA 39+94 TO 39+94	9" RCP	38 LF	0.020
P-1-21	SMH-1-10 TO SMH-1-9 STA 41+00 TO 39+94	12" RCP	102 LF	0.005

PHASE 2 SANITARY SEWER:

SEWER STRUCTURE DATA					
NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT
EX-SMH-S16-1	SMH-48	31+70.5 5.0' RT	281.66	I=275.63' (SMH-2-11)	
SMH-2-1	SMH-48	20+87.4 7.5' RT	290.50	I=286.05' ()	I=285.15' (SMH-2-2)
SMH-2-2	SMH-48	24+54.7 4.1' RT	292.34	I=283.32' (SMH-2-1)	I=283.22' (SMH-2-3)
SMH-2-3	SMH-48	24+89.3 7.5' RT	291.75	I=283.06' (SMH-2-2)	I=282.96' (SMH-2-5)
SMH-2-4	SMH-48	46+04.1 10.0' RT	288.11	I=283.80' () I=283.80' ()	I=283.70' (SMH-2-5)
SMH-2-5	SMH-48	25+12.3 32.6' RT	291.83	I=282.79' (SMH-2-3) I=282.79' (SMH-2-4)	I=282.69' (SMH-2-6)
SMH-2-6	SMH-48	26+20.2 7.5' RT	289.79	I=282.06' (SMH-2-5) I=282.06' () I=282.06' ()	I=282.06' (SMH-2-7)
SMH-2-7	SMH-48	28+96.7 4.1' RT	285.71	I=280.69' (SMH-2-6) I=280.69' ()	I=280.59' (SMH-2-8)
SMH-2-8	SMH-48	29+43.1 4.2' RT	285.01	I=280.38' (SMH-2-7) I=280.38' ()	I=280.28' (SMH-2-9)
SMH-2-9	SMH-48	30+04.8 7.6' RT	284.01	I=279.09' () I=279.09' (SMH-2-8)	I=278.99' (SMH-2-10)
SMH-2-10	SMH-48	30+89.6 7.5' RT	282.74	I=277.29' () I=277.29' () I=277.29' (SMH-2-9)	I=277.19' (SMH-2-11)
SMH-2-11	SMH-48	31+60 7.6' RT	281.51	I=275.78' (SMH-2-10)	I=275.68' (EX-SMH-S16-1)

SEWER PIPE DATA				
PIPE	PIPE LOCATION	SIZE & TYPE	LENGTH	SLOPE
P-2-1	SMH-2-1 TO STA 20+87 TO 20+87	9" RCP	38 LF	-0.020
P-2-2	SMH-2-1 TO SMH-2-2 STA 20+87 TO 24+55	12" RCP	361 LF	0.005
P-2-3	SMH-2-2 TO SMH-2-3 STA 24+55 TO 24+89	12" RCP	29 LF	0.005
P-2-4	SMH-2-3 TO SMH-2-5 STA 24+89 TO 25+12	12" RCP	30 LF	0.005
P-2-5	SMH-2-4 TO STA 46+04 TO 46+04	9" RCP	18 LF	0.005
P-2-6	TO SMH-2-4 STA 46+04 TO 46+04	9" RCP	38 LF	0.005
P-2-7	SMH-2-4 TO SMH-2-5 STA 46+04 TO 44+27	12" RCP	179 LF	0.005
P-2-8	SMH-2-5 TO SMH-2-6 STA 25+12 TO 26+20	12" RCP	121 LF	0.005
P-2-9	TO SMH-2-6 STA 26+20 TO 26+20	9" RCP	50 LF	0.005
P-2-10	SMH-2-6 TO STA 26+20 TO 26+20	9" RCP	36 LF	0.005
P-2-11	SMH-2-6 TO SMH-2-7 STA 26+20 TO 28+97	12" RCP	271 LF	0.005
P-2-12	TO SMH-2-7 STA 28+87 TO 28+97	9" RCP	50 LF	0.005
P-2-13	SMH-2-7 TO SMH-2-8 STA 28+97 TO 29+43	12" RCP	38 LF	0.005
P-2-14	TO SMH-2-8 STA 29+52 TO 29+43	9" RCP	36 LF	0.005
P-2-15	SMH-2-8 TO SMH-2-9 STA 29+43 TO 30+05	12" RCP	56 LF	0.020

SEWER PIPE DATA				
PIPE	PIPE LOCATION	SIZE & TYPE	LENGTH	SLOPE
P-2-16	SMH-2-9 TO STA 30+05 TO 30+05	9" RCP	20 LF	0.005
P-2-17	SMH-2-9 TO SMH-2-10 STA 30+05 TO 30+90	12" RCP	81 LF	0.020
P-2-18	TO SMH-2-10 STA 30+90 TO 30+90	9" RCP	21 LF	0.005
P-2-19	TO SMH-2-10 STA 30+90 TO 30+90	9" RCP	36 LF	0.005
P-2-20	SMH-2-10 TO SMH-2-11 STA 30+90 TO 31+60	12" RCP	66 LF	0.020
P-2-21	SMH-2-11 TO EX-SMH-S16-1 STA 31+60 TO 31+70	12" RCP	7 LF	0.005

DRAWING TITLE

Sanitary Sewer
Tables

SUBDIVISION NAME & LOCATION

King Street
Commons
550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER

Lupoli Companies
290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER

TEC

The Engineering Corp

TEC, Inc.
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DRAWING NO.
C-17

SHEET 17 OF 56

COMMONWEALTH OF MASSACHUSETTS

RICHARD J. FRIBERG JR.

CIVIL

No. 47850

REGISTERED PROFESSIONAL ENGINEER

DRAINAGE STRUCTURE DATA					
NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT
CB-1	CB	31+29.4 -14.0' LT	282.02		I=277.85' (DMH-3)
CB-2	CB	31+29.4 14.0' RT	282.02		I=277.85' (DMH-3)
CB-4	CB	29+64.2 14.0' RT	284.49		I=277.14' (DMH-6)
CB-5	CB	29+64.2 -14.0' LT	566.33		I=277.14' (DMH-6)
CB-9	CB	28+76.6 -14.0' LT	285.81		I=276.38' (DMH-11)
CB-10	CB	28+76.6 14.0' RT	285.81		I=276.38' (DMH-11)
CB-12	CB	27+12.1 -14.0' LT	288.28		I=275.46' (DMH-14)
CB-13	CB	27+12.1 14.0' RT	288.28		I=275.46' (DMH-14)
CB-15	CB	25+35.8 -14.2' LT	290.93		I=274.65' (DMH-17)
CB-16	CB	25+39.4 16.2' RT	290.90		I=274.55' (DMH-17)
CB-18	CB	46+55.4 14.1' RT	287.61		I=279.75' (DMH-20)
CB-19	CB	46+55.4 -14.3' LT	287.61		I=279.75' (DMH-20)
CB-21	CB	44+56.5 -14.2' LT	290.00		I=275.68' (DMH-23)
CB-22	CB	44+59.2 14.2' RT	378.47		I=275.71' (DMH-23)
CB-26	CB	24+33.5 14.2' RT	292.30		I=273.54' (DMH-27)
CB-29	CB	21+81.7 14.2' RT	292.42		I=270.92' (DMH-30)
CB-31	CB	20+60.9 16.0' RT	289.90		I=269.75' (DMH-32)
CB-33	CB	39+70.5 -14.8' LT	284.45		I=274.11' (DMH-35)
CB-34	CB	39+70.7 14.1' RT	284.46		I=274.15' (DMH-35)
CB-35	CB	38+53.5 14.8' RT	286.36		I=271.72' (DMH-38)
CB-36	CB	38+53.3 -14.7' LT	286.37		I=271.67' (DMH-38)
CB-39	CB	20+33.9 -37.7' LT	289.00		I=269.57' (DMH-41)
CB-40	CB	20+53.4 -25.0' LT	289.56		I=269.79' (DMH-41)
CB-43	CB	19+80 8.4' RT	287.02		I=268.59' (DMH-44)
CB-45	CB	18+79.6 8.4' RT	283.58		I=267.99' (DMH-47)
CB-46	CB	18+79.6 -8.3' LT	283.57		I=267.99' (DMH-47)
CB-48	CB	35+45.1 -21.0' LT	277.70		I=270.71' (DMH-50)
CB-49	CB	35+45.1 21.0' RT	278.32		I=270.70' (DMH-50)
CB-51	CB	33+31.4 -21.0' LT	277.52		I=269.63' (DMH-53)
CB-52	CB	33+31.4 21.0' RT	278.32		I=269.62' (DMH-53)
CB-55	CB	17+00.5 8.3' RT	279.26		I=266.72' (DMH-57)
CB-56	CB	17+00.5 -8.4' LT	279.29		I=266.72' (DMH-57)
CB-58	CB	15+17.3 8.4' RT	277.38		I=264.79' (DMH-60)
CB-59	CB	15+17.3 -8.2' LT	277.39		I=264.78' (DMH-60)
CB-62	CB	12+43.3 8.3' RT	272.75		I=259.24' (DMH-64)

DRAINAGE STRUCTURE DATA					
NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT
CB-63	CB	12+43.1 -8.3' LT	272.75		I=259.24' (DMH-64)
DMH-3	DMH	31+29.4 0.0' LT	282.30	I=277.78' (CB-2) I=277.78' (CB-1)	I=277.68' (DMH-6)
DMH-6	DMH	29+64.2 0.0'	284.77	I=276.86' (DMH-3) I=276.86' (CB-4) I=276.86' (CB-5)	I=276.76' (DMH-7)
DMH-7	DMH	29+42.9 -3.9' LT	285.01	I=276.65' (DMH-6)	I=276.55' (DMH-8)
DMH-8	DMH	28+96.9 -3.9' LT	285.69	I=276.31' (DMH-7)	I=276.21' (DMH-11)
DMH-11	DMH	28+76.6 0.0'	286.09	I=276.10' (DMH-8) I=276.10' (CB-10) I=276.10' (CB-9)	I=276.00' (DMH-14)
DMH-14	DMH	27+12.1 0.0'	288.56	I=275.18' (CB-12) I=275.18' (DMH-11) I=275.18' (CB-13)	I=275.08' (DMH-17)
DMH-17	DMH	25+35.8 4.0' RT	291.06	I=274.19' (DMH-14) I=274.29' (CB-15) I=274.29' (CB-16)	I=274.19' (DMH-24)
DMH-20	DMH	46+55.4 -0.1' LT	287.89	I=279.47' (CB-19) I=279.47' (CB-18)	I=279.37' (DMH-23)
DMH-23	DMH	44+58.2 0.3' RT	290.31	I=275.43' (CB-21) I=275.43' (CB-22) I=275.43' (DMH-20)	I=275.33' (DMH-24)
DMH-24	DMH	24+96 0.0'	291.85	I=273.99' (DMH-17) I=273.89' (DMH-23)	I=273.89' (DMH-25)
DMH-25	DMH	24+54.8 -4.0' LT	292.50	I=273.68' (DMH-24)	I=273.58' (DMH-27)
DMH-27	DMH	24+33.5 0.0'	345.86	I=273.36' (DMH-25) I=273.26' (CB-26)	I=273.26' (DMH-30)
DMH-30	DMH	21+81.7 0.0' RT	292.70	I=270.74' (DMH-27) I=270.64' (CB-29)	I=270.64' (DMH-32)
DMH-32	DMH	20+60.9 0.0'	290.22	I=269.43' (CB-31) I=269.43' (DMH-30)	I=269.23' (DMH-42)
DMH-35	DMH	39+70.8 -0.2' LT	285.00	I=273.86' (CB-33) I=273.86' (CB-34)	I=273.76' (DMH-38)
DMH-38	DMH	38+53.6 -0.1' LT	286.90	I=271.42' (DMH-35) I=271.42' (CB-36) I=271.42' (CB-35)	I=271.32' (DMH-42)
DMH-41	DMH	20+20.9 -20.0' LT	288.88	I=269.13' (CB-40) I=269.13' (CB-39)	I=269.03' (DMH-42)
DMH-42	DMH	20+21.1 0.0'	288.89	I=268.63' (DMH-41) I=268.83' (DMH-32) I=269.33' (DMH-38)	I=268.63' (DMH-44)
DMH-44	DMH	19+80 0.0'	287.47	I=268.42' (CB-43) I=268.42' (DMH-42)	I=268.32' (DMH-47)
DMH-47	DMH	18+79.6 0.0'	284.14	I=267.82' (CB-45) I=267.82' (CB-46) I=267.82' (DMH-44)	I=267.72' (DMH-54)
DMH-50	DMH	35+45.1 0.0'	278.43	I=270.60' (CB-49) I=270.60' (CB-48)	I=270.50' (DMH-53)
DMH-53	DMH	33+31.4 0.0' RT	278.46	I=268.36' (DMH-50) I=269.52' (CB-52) I=269.52' (CB-51)	I=268.26' (DMH-54)
DMH-54	DMH	17+34.1 0.0'	279.94	I=266.99' (DMH-47) I=266.99' (DMH-53)	I=266.89' (DMH-57)
DMH-57	DMH	17+00.5 -0.1' LT	279.55	I=266.55' (CB-56) I=266.55' (DMH-54) I=266.55' (CB-55)	I=266.45' (DMH-60)
DMH-60	DMH	15+17.4 0.0'	278.25	I=264.62' (CB-59) I=264.62' (CB-58) I=264.62' (DMH-57)	I=264.52' (DMH-61)
DMH-61	DMH	13+80.2 0.0' RT	278.12	I=261.78' (DMH-60)	I=261.68' (DMH-64)
DMH-64	DMH	12+43.2 0.0'	273.30	I=258.94' (DMH-61) I=259.07' (CB-63) I=259.07' (CB-62)	I=258.84' (WQU-65)
WQU-65	DMH	12+31.3 -0.1' LT	272.33	I=258.60' (DMH-64)	I=258.50' ()

DRAINAGE PIPE DATA				
PIPE	PIPE LOCATION	SIZE & TYPE	LENGTH	SLOPE
D-1	CB-1 TO DMH-3 STA 31+29 TO 31+29	12" RCP	10 LF	0.005
D-2	CB-2 TO DMH-3 STA 31+29 TO 31+29	12" RCP	10 LF	0.005
D-3	DMH-3 TO DMH-6 STA 31+28 TO 29+64	12" RCP	161 LF	0.005
D-4	CB-4 TO DMH-6 STA 29+64 TO 29+64	12" RCP	10 LF	0.020
D-5	CB-5 TO DMH-6 STA 29+64 TO 29+64	12" RCP	10 LF	0.020
D-6	DMH-6 TO DMH-7 STA 29+64 TO 29+43	12" RCP	18 LF	0.005
D-7	DMH-7 TO DMH-8 STA 29+43 TO 28+97	12" RCP	44 LF	0.005
D-8	DMH-11 TO DMH-8 STA 28+77 TO 28+97	12" RCP	17 LF	0.005
D-9	DMH-11 TO CB-9 STA 28+77 TO 28+77	12" RCP	10 LF	0.020
D-10	CB-10 TO DMH-11 STA 28+77 TO 28+77	12" RCP	10 LF	0.020
D-11	DMH-11 TO DMH-14 STA 28+77 TO 27+12	12" RCP	161 LF	0.005
D-12	CB-12 TO DMH-14 STA 27+12 TO 27+12	12" RCP	10 LF	0.020
D-13	DMH-14 TO CB-13 STA 27+12 TO 27+12	12" RCP	10 LF	0.020
D-14	DMH-14 TO DMH-17 STA 27+12 TO 25+36	12" RCP	173 LF	0.005
D-15	CB-15 TO DMH-17 STA 25+36 TO 25+36	12" RCP	14 LF	0.020
D-16	DMH-17 TO CB-16 STA 25+36 TO 25+39	12" RCP	9 LF	0.020
D-17	DMH-17 TO DMH-24 STA 25+36 TO 24+96	12" RCP	37 LF	0.005
D-18	CB-18 TO DMH-20 STA 46+55 TO 46+55	12" RCP	10 LF	0.020
D-19	DMH-20 TO CB-19 STA 46+55 TO 46+55	12" RCP	10 LF	0.020
D-20	DMH-20 TO DMH-23 STA 46+55 TO 44+58	12" RCP	193 LF	0.020
D-21	DMH-23 TO CB-22 STA 44+58 TO 44+59	12" RCP	10 LF	0.020
D-22	CB-21 TO DMH-23 STA 44+57 TO 44+58	12" RCP	11 LF	0.020
D-23	DMH-24 TO DMH-23 STA ??? TO 44+58	12" RCP	68 LF	0.020
D-24	DMH-24 TO DMH-25 STA 24+96 TO 24+55	12" RCP	38 LF	0.005
D-25	DMH-25 TO DMH-27 STA 24+55 TO 24+34	12" RCP	18 LF	0.010
D-26	DMH-27 TO CB-26 STA 24+34 TO 24+34	12" RCP	10 LF	0.020
D-27	DMH-27 TO DMH-30 STA 24+34 TO 21+82	12" RCP	248 LF	0.010
D-28	DMH-30 TO CB-29 STA 21+82 TO 21+82	12" RCP	10 LF	0.020
D-29	DMH-32 TO DMH-30 STA 20+61 TO 21+82	12" RCP	117 LF	0.010
D-30	CB-31 TO DMH-32 STA 20+61 TO 20+61	12" RCP	12 LF	0.020

DRAINAGE STRUCTURE DATA					
NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT
WQU-66	DMH	10+43 -24.0' LT	259.86		I=255.31' ()

DRAINAGE PIPE DATA				
PIPE	PIPE LOCATION	SIZE & TYPE	LENGTH	SLOPE
D-31	DMH-42 TO DMH-32 STA 20+21 TO 20+61	12" RCP	36 LF	0.010
D-32	CB-33 TO DMH-35 STA 39+71 TO 39+71	12" RCP	11 LF	0.020
D-33	DMH-35 TO CB-34 STA 39+71 TO 39+71	12" RCP	10 LF	0.020
D-34	DMH-35 TO DMH-38 STA 39+71 TO 38+54	12" RCP	113 LF	0.020
D-35	CB-36 TO DMH-38 STA 38+54 TO 38+54	12" RCP	11 LF	0.020
D-36	DMH-38 TO CB-35 STA 38+54 TO 38+53	12" RCP	11 LF	0.020
D-37	DMH-38 TO DMH-42 STA 38+54 TO 37+54	12" RCP	96 LF	0.020
D-38	DMH-41 TO CB-40 STA 20+21 TO 20+53	12" RCP	29 LF	0.020
D-39	DMH-41 TO CB-39 STA 20+21 TO 20+34	12" RCP	18 LF	0.020
D-40	DMH-42 TO DMH-41 STA 20+21 TO 20+21	12" RCP	16 LF	0.020
D-41	DMH-44 TO DMH-42 STA 19+80 TO 20+21	12" RCP	37 LF	0.005
D-42	CB-43 TO DMH-44 STA 19+80 TO 19+80	12" RCP	4 LF	0.020
D-43	DMH-47 TO DMH-44 STA 18+80 TO 19+80	12" RCP	96 LF	0.005
D-44	CB-45 TO DMH-47 STA 18+80 TO 18+80	12" RCP	4 LF	0.020
D-45	CB-46 TO DMH-47 STA 18+80 TO 18+80	12" RCP	4 LF	0.020
D-46	DMH-47 TO DMH-54 STA 18+80 TO 17+34	12" RCP	142 LF	0.005
D-47	CB-49 TO DMH-50 STA 35+45 TO 35+45	12" RCP	17 LF	0.005
D-48	CB-48 TO DMH-50 STA 35+45 TO 35+45	12" RCP	17 LF	0.005
D-49	DMH-50 TO DMH-53 STA 35+45 TO 33+31	12" RCP	210 LF	0.010
D-50	CB-52 TO DMH-53 STA 33+31 TO 33+31	12" RCP	17 LF	0.005
D-51	CB-51 TO DMH-53 STA 33+31 TO 33+31	12" RCP	17 LF	0.005
D-52	DMH-54 TO DMH-53 STA 32+04 TO 33+31	12" RCP	123 LF	0.010
D-53	DMH-57 TO DMH-54 STA 17+00 TO 17+34	12" RCP	30 LF	0.010
D-54	CB-55 TO DMH-57 STA 17+01 TO 17+00	12" RCP	4 LF	0.020
D-55	CB-56 TO DMH-57 STA 17+00 TO 17+00	12" RCP	4 LF	0.020
D-56	DMH-57 TO DMH-60 STA 17+00 TO 15+17	12" RCP	179 LF	0.010
D-57	CB-58 TO DMH-60 STA 15+17 TO 15+17	12" RCP	4 LF	0.020
D-58	CB-59 TO DMH-60 STA 15+17 TO 15+17	12" RCP	4 LF	0.020
D-59	DMH-61 TO DMH-60 STA 13+80 TO 15+17	12" RCP	133 LF	0.020
D-60	DMH-61 TO DMH-64 STA 13+80 TO 12+43	12" RCP	133 LF	0.020

DRAINAGE PIPE DATA				
PIPE	PIPE LOCATION	SIZE & TYPE	LENGTH	SLOPE
D-65	WQU-66 TO STA 10+43 TO 10+54	12" RCP	29 LF	0.010

DRAWING TITLE

Storm Sewer Tables

SUBDIVISION NAME & LOCATION

King Street
Commons

550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER

Lupoli Companies
290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER



TEC, Inc.
282 Merrimack Street, 2nd Floor
Lawrence, Massachusetts 01843
978.794.1792

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DESIGNED BY RJF DATE 8-22-23
CHECKED BY CPR SCALE AS NOTED

PROJECT NO.
T1180

TEC CAD FILE

T1180_PROFILE

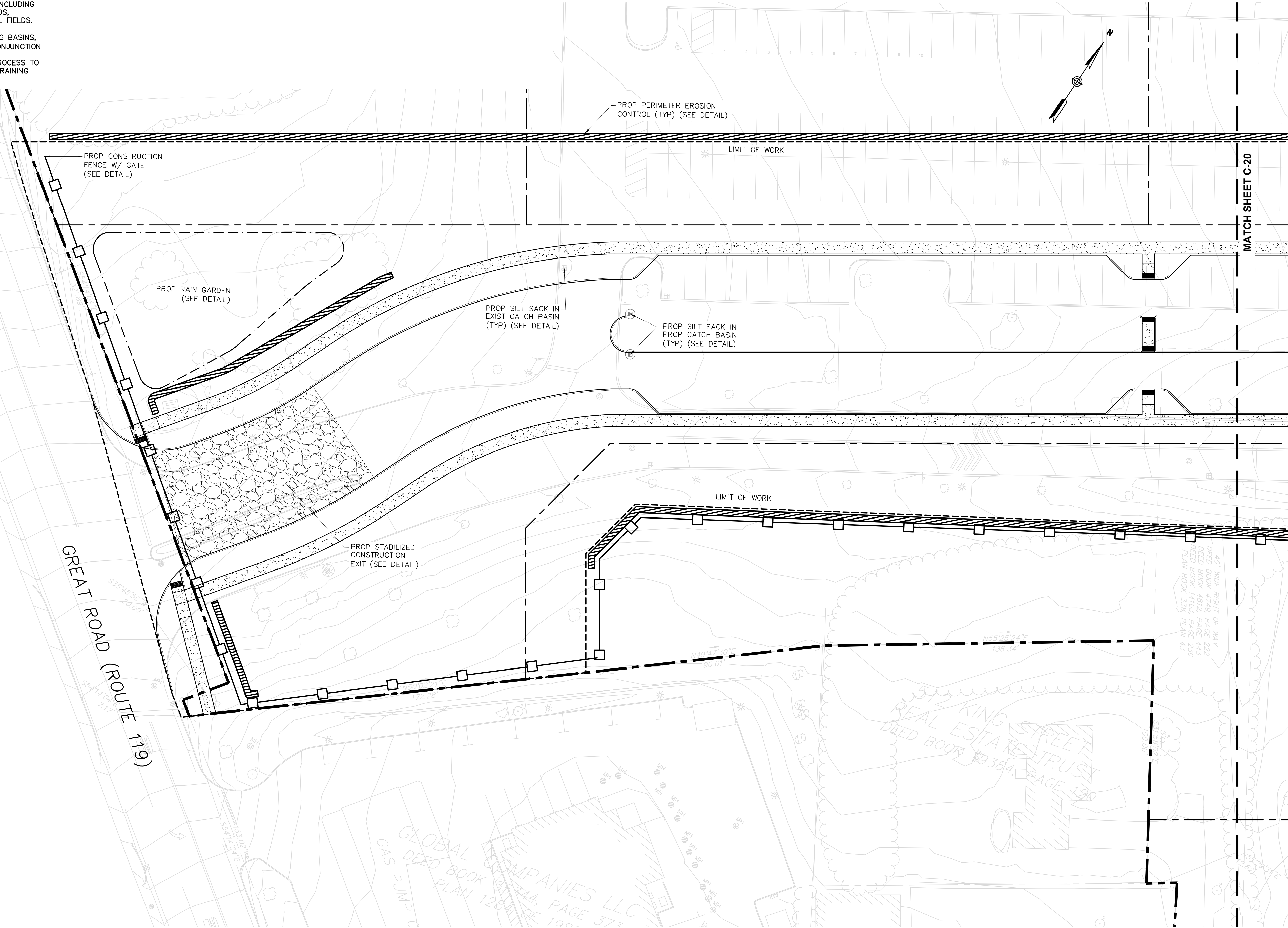
DRAWING NO.

C-18

SHEET 18 OF 56

NOTES:

1. LAND SHALL BE DEVELOPED IN INCREMENTS OF WORKABLE SIZE WHICH CAN BE COMPLETED DURING A SINGLE CONSTRUCTION SEASON. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE COORDINATED WITH THE SEQUENCE OF GRADING, DEVELOPMENT AND CONSTRUCTION OPERATIONS. CONTROL MEASURES SUCH AS HYDROSEEDING, BERMS, INTERCEPTOR DITCHES, MULCHING, TEMPORARY SODDING, TERRACES, AND SEDIMENT TRAPS SHALL BE PUT INTO EFFECT PRIOR TO THE COMMENCEMENT OF EACH INCREMENT OF THE DEVELOPMENT/CONSTRUCTION PROCESS.
2. VEGETATIVE COVER AND RUNOFF CHARACTERISTICS SHALL BE MAINTAINED AS CLOSE AS POSSIBLE TO CONDITIONS BEFORE DEVELOPMENT BY REDUCING CUT AND FILL AND OTHER CONSIDERATIONS.
3. WATER RESOURCES SHALL BE PROTECTED, INCLUDING BUT NOT LIMITED TO FLOODPLAINS, WETLANDS, AQUIFER RECHARGE AREAS, AND TOWN WELL FIELDS.
4. SEDIMENT BASINS (DEBRIS BASINS, DESILTING BASINS, OR SILT TRAPS) SHALL BE INSTALLED IN CONJUNCTION WITH THE INITIAL GRADING OPERATIONS AND MAINTAINED THROUGH THE DEVELOPMENT PROCESS TO REMOVE SEDIMENT FROM RUNOFF WATERS DRAINING FROM LAND UNDERGOING DEVELOPMENT.
5. THE APPLICANT IS REQUIRED TO CLEAN UP ANY SAND, DIRT, OR DEBRIS WHICH ERODES FROM THE SUBDIVISION ONTO ANY PUBLIC STREET OR PRIVATE PROPERTY, AND TO REMOVE SILT OR DEBRIS THAT ENTERS ANY EXISTING DRAINAGE SYSTEM INCLUDING CATCH BASIN SUMPS, PIPELINES, MANHOLES AND DITCHES WITHIN 24 HOURS OF BEING NOTED BY THE TOWN.
6. HAY BALES OR BOARD APPROVED EQUIVALENT MUST BE USED AROUND THE CATCH BASINS ON THE PROPOSED STREETS TO PROTECT THEM FROM THE ERODING SOILS AND PROVIDE A CHECK DAM TO SLOW RUNOFF DURING CONSTRUCTION.



DRAWING TITLE
Erosion & Sedimentation Control Plan A

SUBDIVISION NAME & LOCATION
King Street Commons
550 King Street
Littleton, MA 01460

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Lupoli Companies
290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER



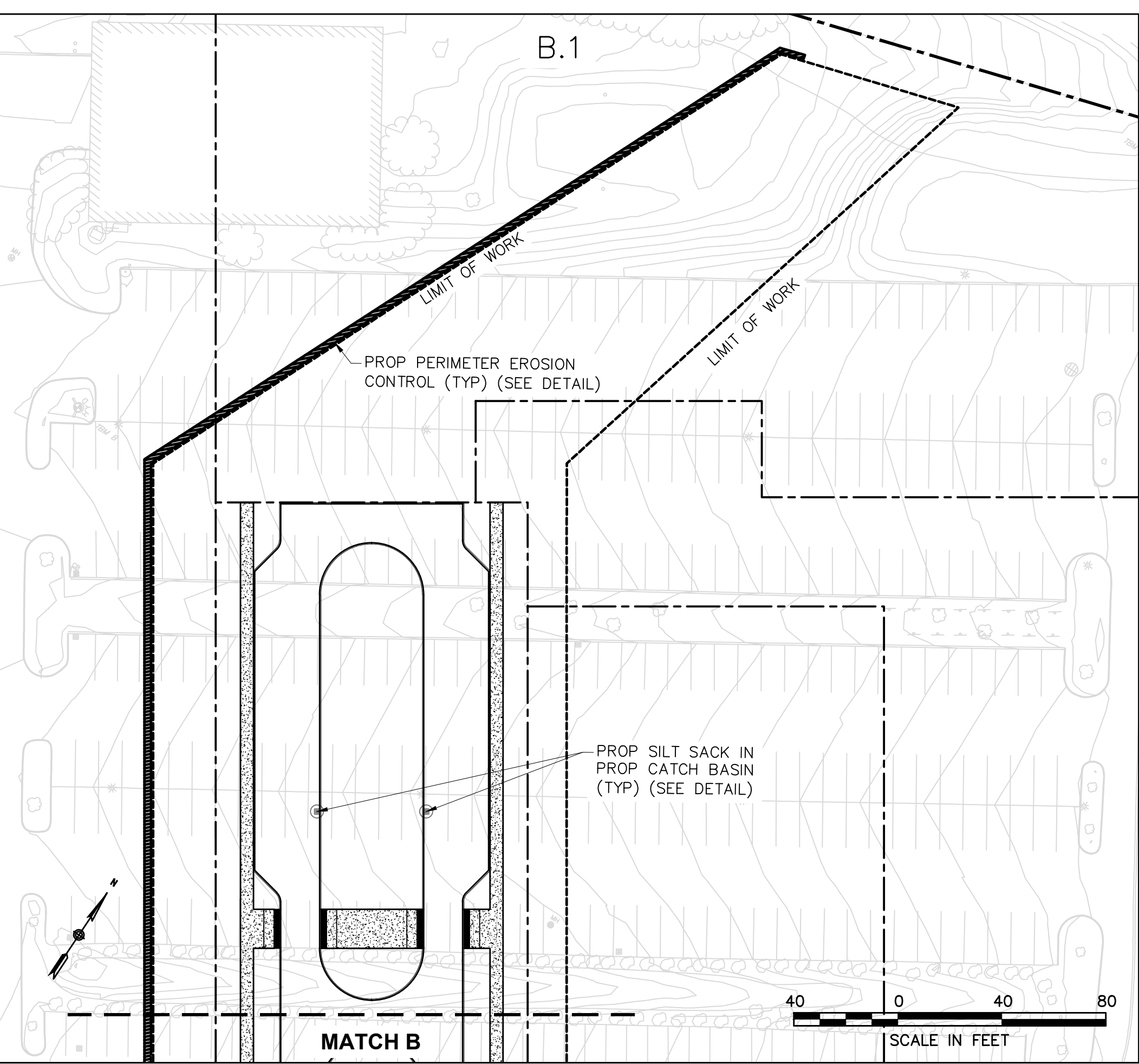
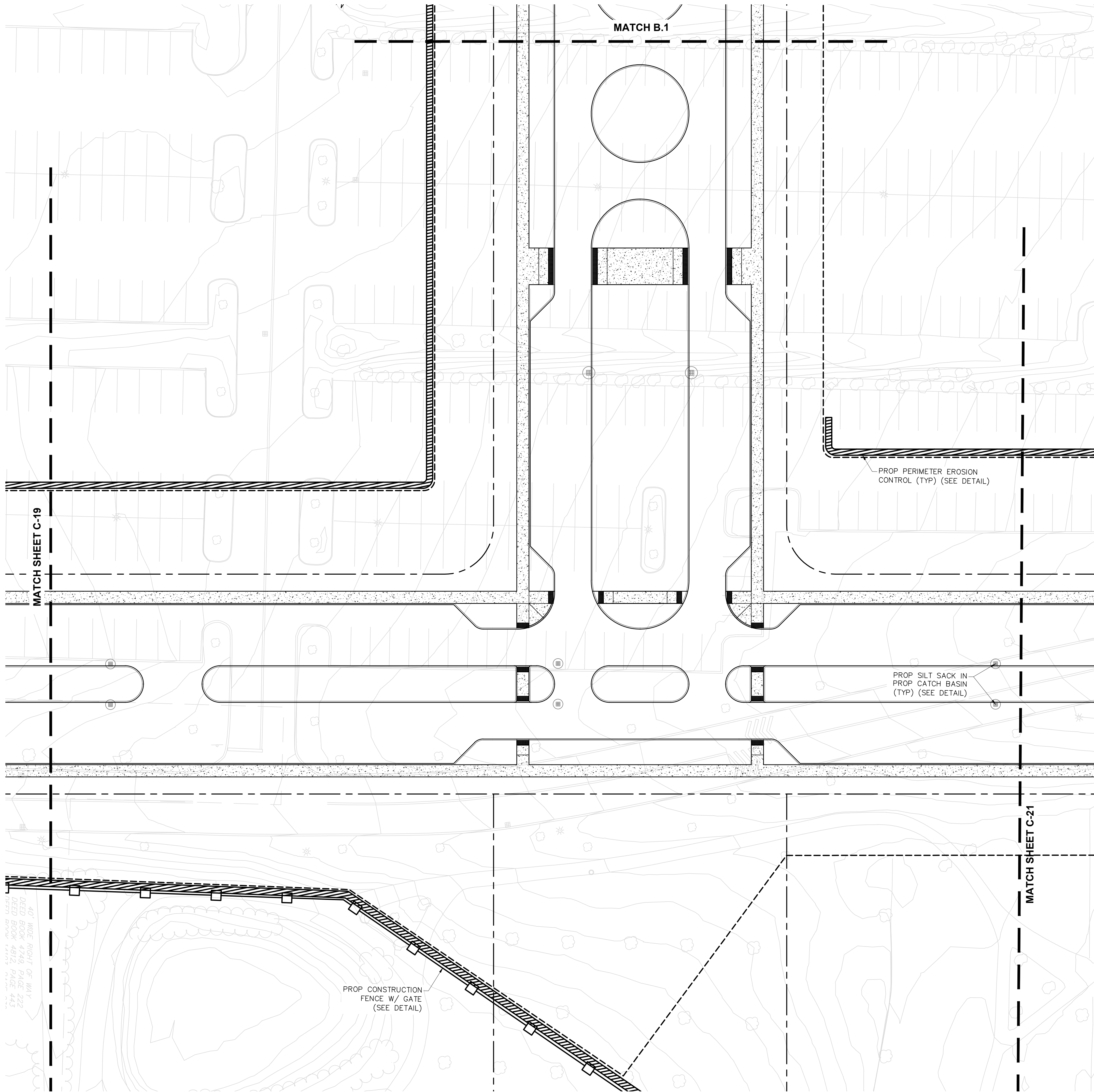
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C-19
SHEET 19 OF 56



DRAWING TITLE
Erosion & Sedimentation Control Plan B

SUBDIVISION NAME & LOCATION
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550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER
Lupoli Companies
290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER



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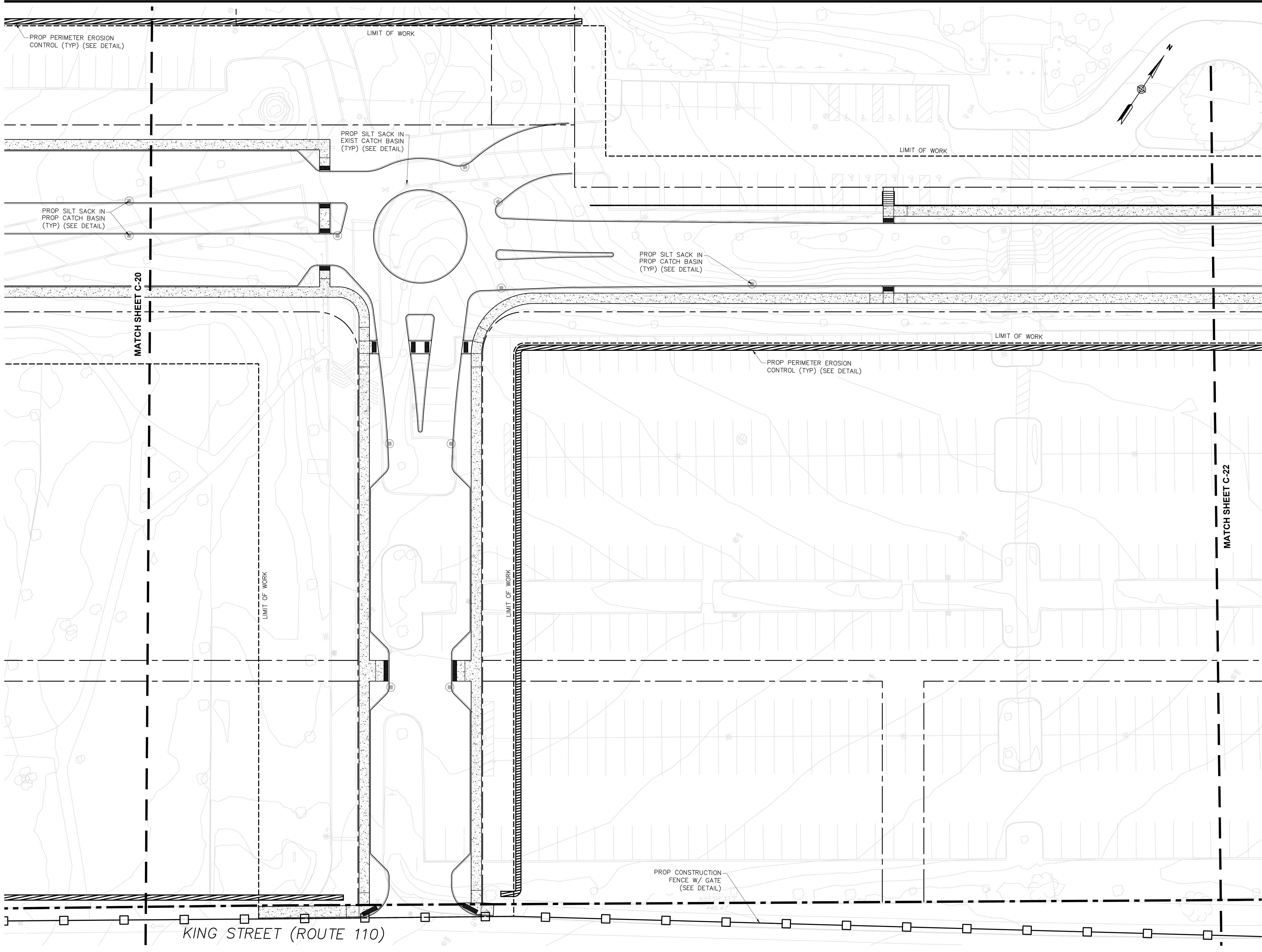
PROJECT NO.
T1180

TEC CAD FILE

T1180_ER

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C-20

SHEET 20 OF 56



DRAWING TITLE
Erosion & Sedimentation Control Plan C

SUBDIVISION NAME & LOCATION
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550 King Street
Littleton, MA 01460

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Lupoli Companies
290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER



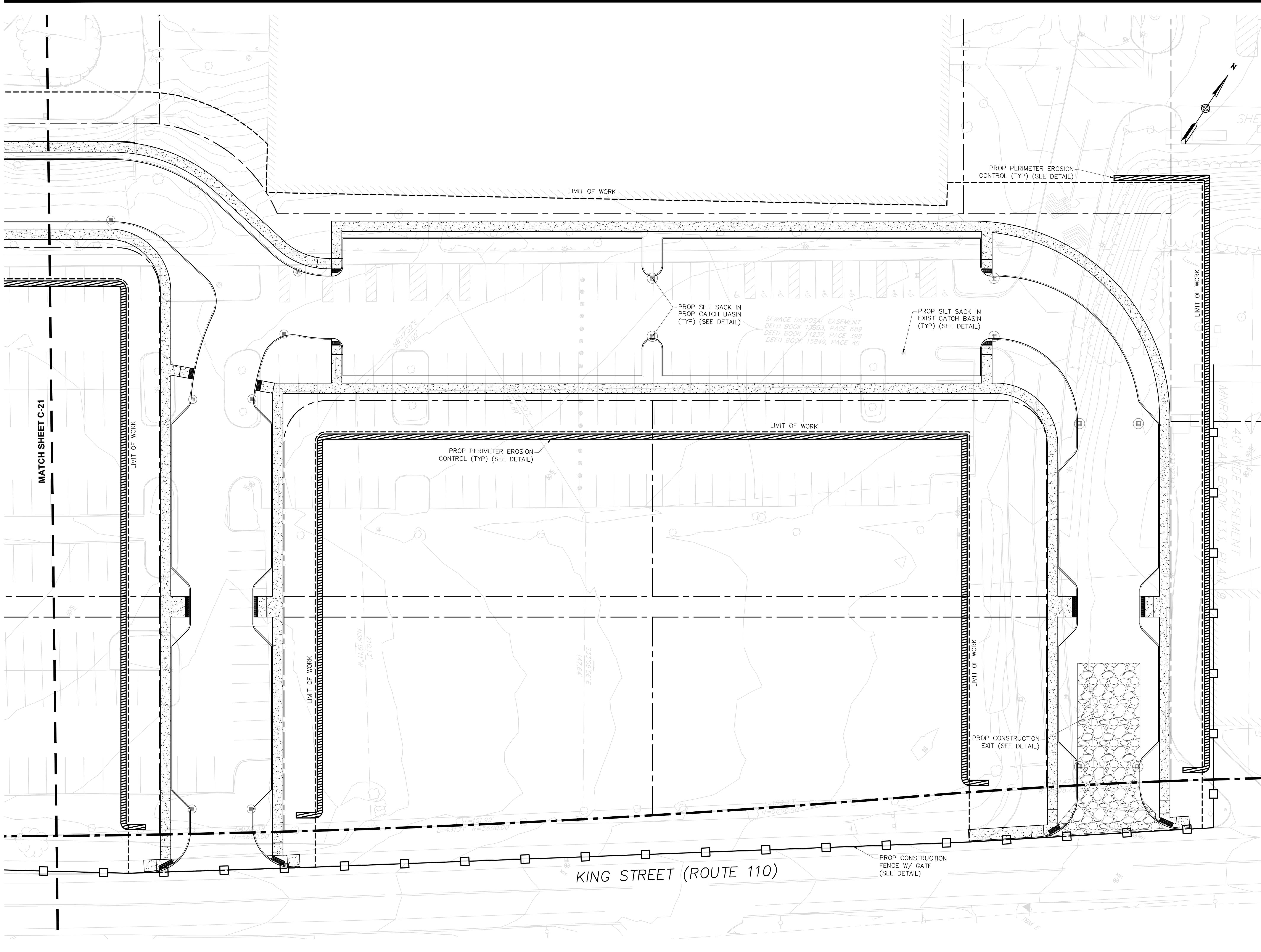
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SHEET 21 OF 56



DRAWING TITLE
Erosion & Sedimentation Control Plan D

SUBDIVISION NAME & LOCATION
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550 King Street
Littleton, MA 01460

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Lupoli Companies
290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER



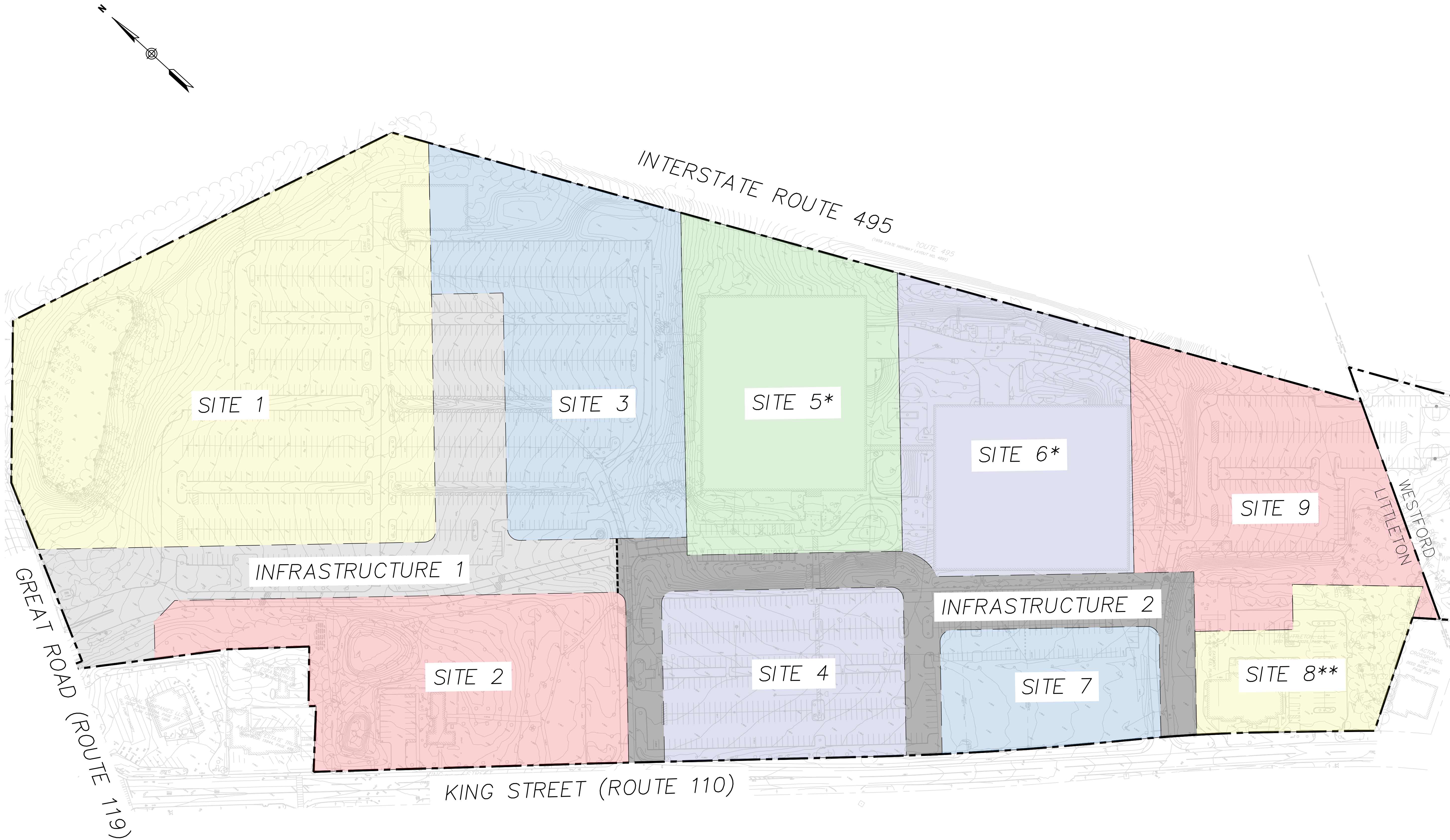
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C-22
SHEET 22 OF 56



- NOTES:
1. *DEVELOPMENT OF SITES 5 & 6, BOTH OF WHICH ARE CURRENTLY OCCUPIED BY OFFICE BUILDINGS, IS DEPENDENT UPON MARKET CONDITIONS.
 2. **SITE 8 TO BE INCORPORATED INTO PLANNED DEVELOPMENT UPON COMPLETION OF LAND PURCHASE.
 3. INFRASTRUCTURE PHASE 1 IS TO TIE THE PROPOSED ROAD INTO THE EXISTING AUMAN STREET.

DRAWING TITLE

Construction Phasing

SUBDIVISION NAME & LOCATION

King Street Commons
550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER

Lupoli Companies
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Lawrence, MA 01840

DESIGNER / ENGINEER



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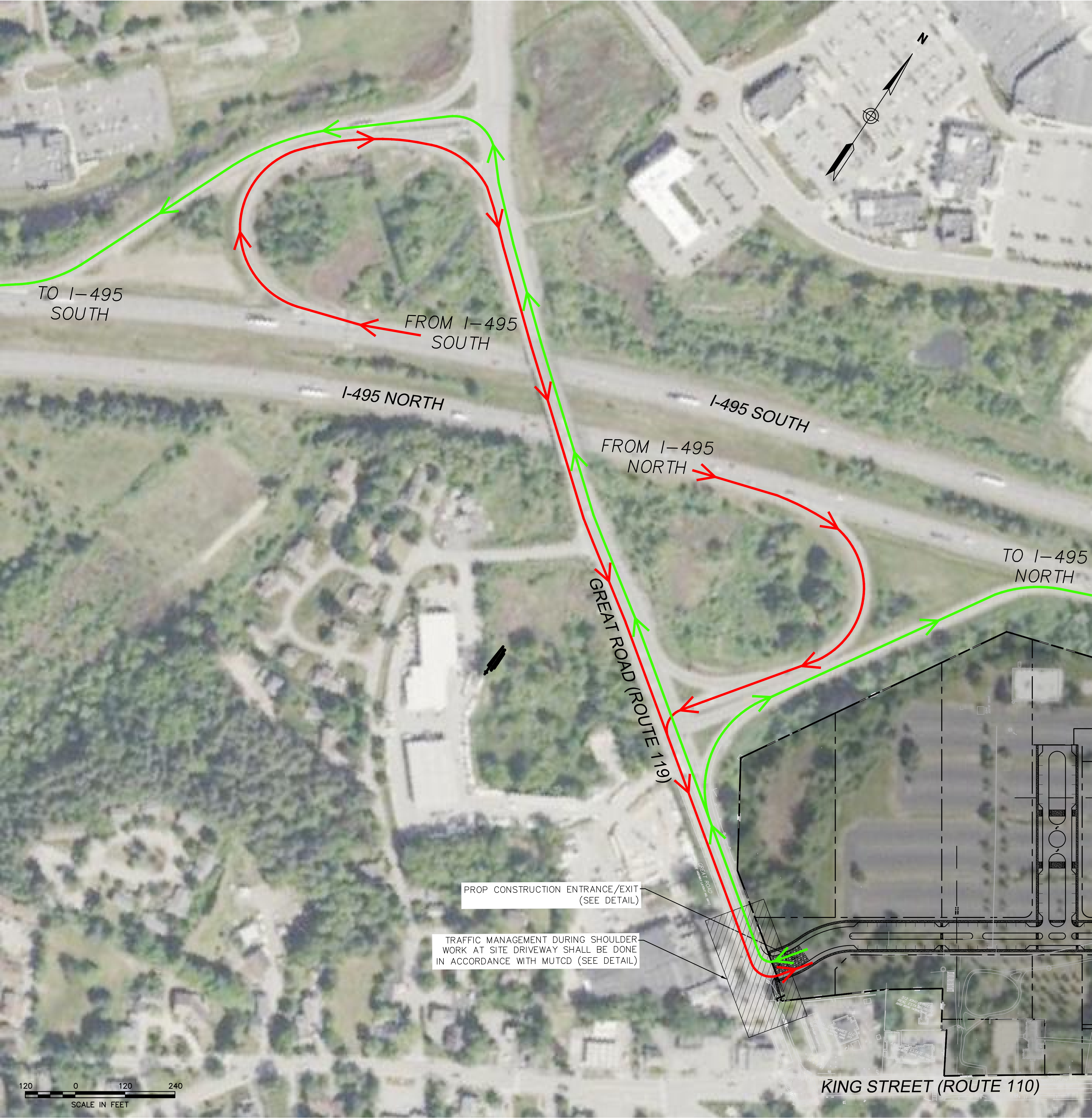
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T1180_PHASING	
DRAWING NO.	C-23
SHEET	23 OF 56





LEGEND

- TO THE SITE
- FROM THE SITE

- NOTES:
- CONSTRUCTION SHALL OCCUR MON-SAT BETWEEN 7:00 AM AND 7:00 PM WITH THE EXCEPTION OF HOLIDAYS. ALL HOURS OF CONSTRUCTION OPERATIONS SHALL BE IN ACCORDANCE WITH ALL STATE AND LOCAL REGULATIONS.
 - APPROPRIATE TRAFFIC MANAGEMENT METHODS ARE TO BE USED ON ALL PUBLIC ROADS TO ENSURE AND PROTECT THE SAFETY OF BOTH THE PUBLIC AND WORKERS DURING CONSTRUCTION OF THE SITE DRIVEWAYS. ALL TRAFFIC MANAGEMENT SHALL BE PERFORMED IN ACCORDANCE WITH MUTCD STANDARDS.
 - IF DETOURS ARE REQUIRED DURING CONSTRUCTION, ALL DETOUR ROUTES AND ASSOCIATED SIGNAGE SHALL BE SHOWN IN ACCORDANCE WITH MUTCD AND ARE SUBJECT TO APPROVAL BY THE FIRE DEPARTMENT AND POLICE DEPARTMENT.
 - TO MINIMIZE IMPACTS TO LOCAL ROADS, SCHOOLS, PARKS, RESIDENTS, AND ABUTTERS ALL TRUCK TRAFFIC SHALL BE ROUTED TO AND FROM THE ABUTTING I-495 FREEWAY AND TO AND FROM THE NEAREST SITE DRIVEWAY ON GREAT ROAD.
 - SITE ENTRANCE/EXIT SHALL BE STABILIZED THROUGHOUT CONSTRUCTION, SEE EROSION AND SEDIMENT CONTROL PLAN FOR DETAILS.

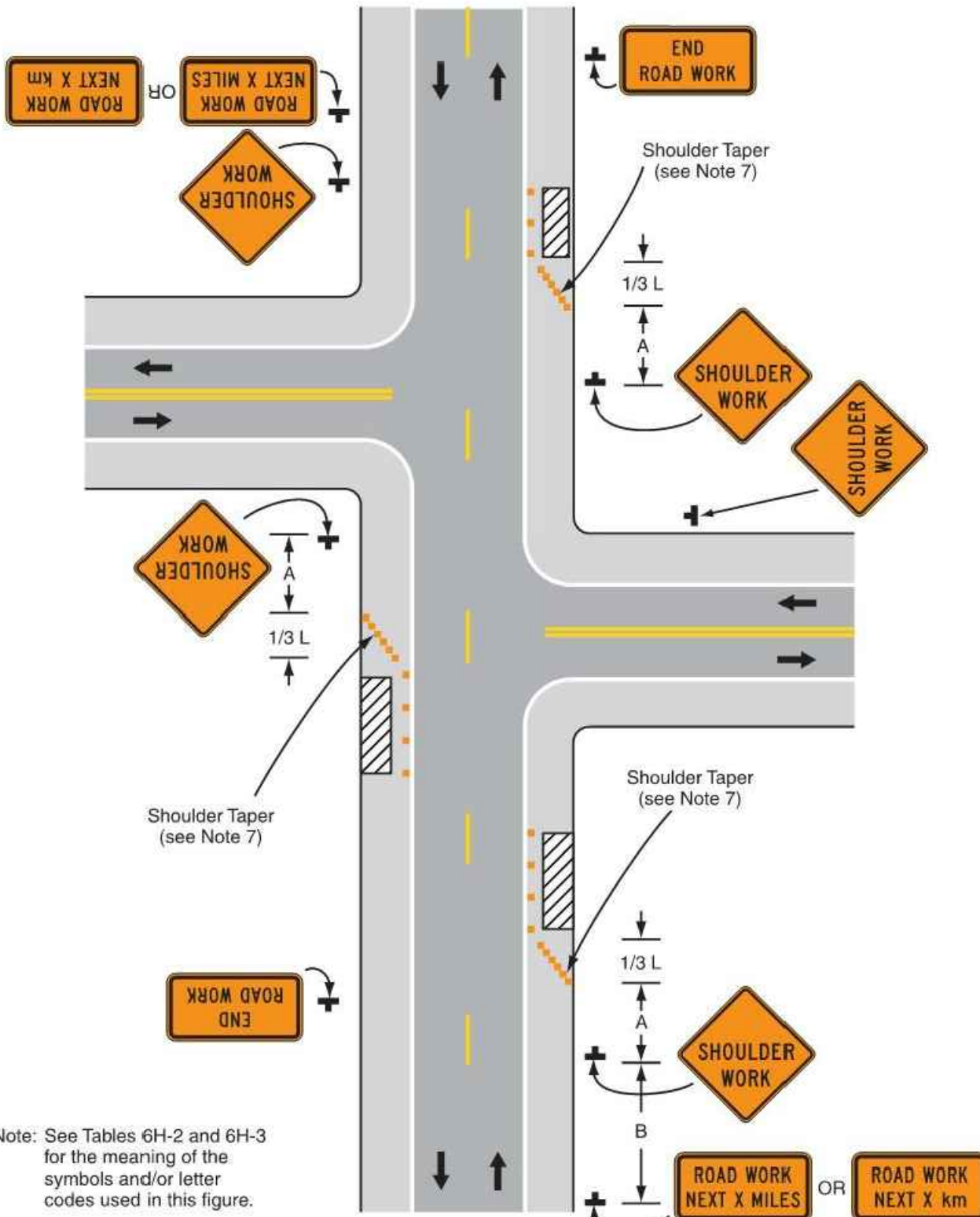
Page 6H-10 2003 Edition

Notes for Figure 6H-3—Typical Application 3
Work on Shoulders

- Guidance:
- A SHOULDER WORK sign should be placed on the left side of the roadway for a divided or one-way street only if the left shoulder is affected.
- Option:
- The Workers symbol signs may be used instead of SHOULDER WORK signs.
 - The SHOULDER WORK AHEAD sign on an intersecting roadway may be omitted where drivers emerging from that roadway will encounter another advance warning sign prior to this activity area.
 - For short-duration operations of 60 minutes or less, all signs and channelizing devices may be eliminated if a vehicle with activated high-intensity rotating, flashing, oscillating, or strobe lights is used.
 - Vehicle hazard warning signals may be used to supplement high-intensity rotating, flashing, oscillating, or strobe lights.
- Standard:
- Vehicle hazard warning signals shall not be used instead of the vehicle's high-intensity rotating, flashing, oscillating, or strobe lights.
 - When paved shoulders having a width of 2.4 m (8 ft) or more are closed, at least one advance warning sign shall be used. In addition, channelizing devices shall be used to close the shoulder in advance to delineate the beginning of the work space and direct vehicular traffic to remain within the traveled way.

2003 Edition Page 6H-11

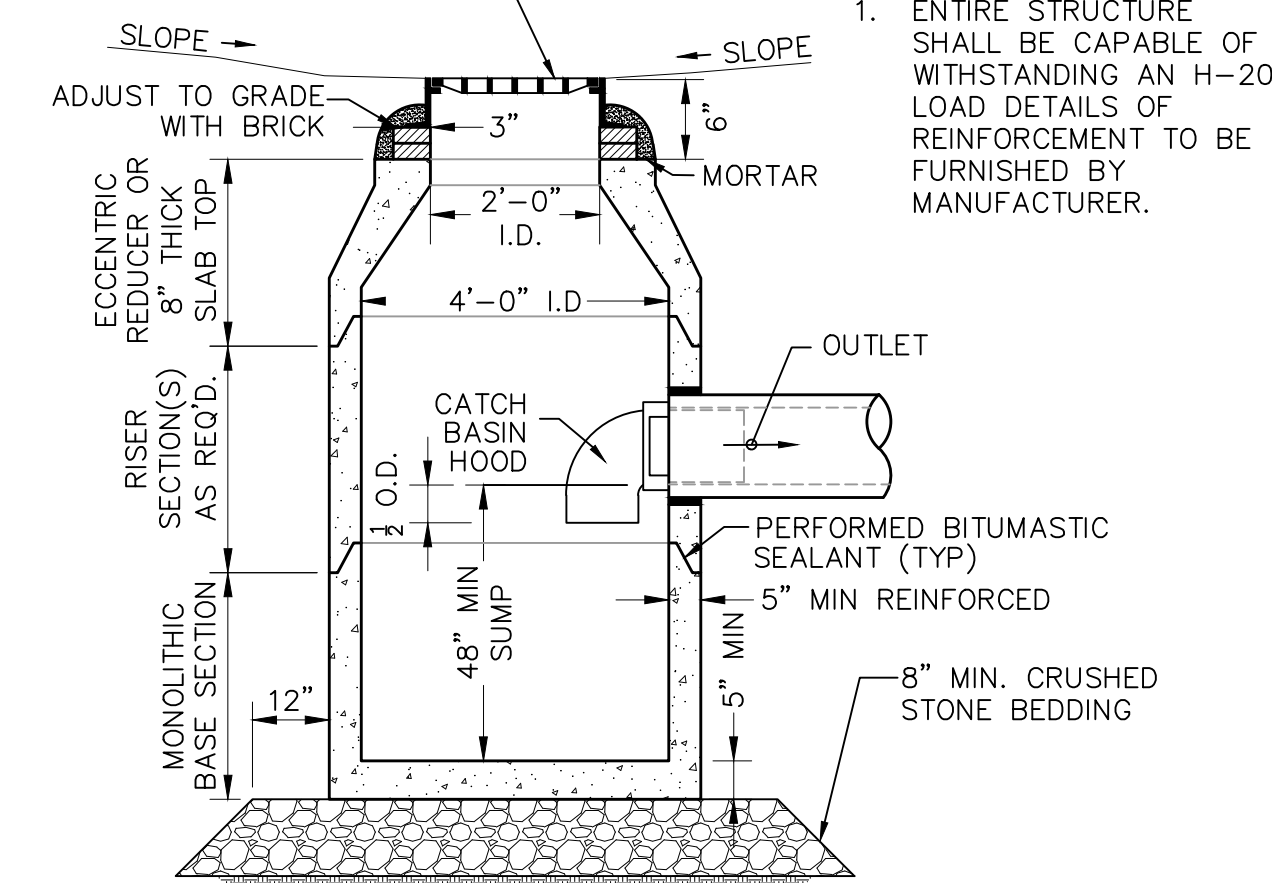
Figure 6H-3. Work on Shoulders (TA-3)



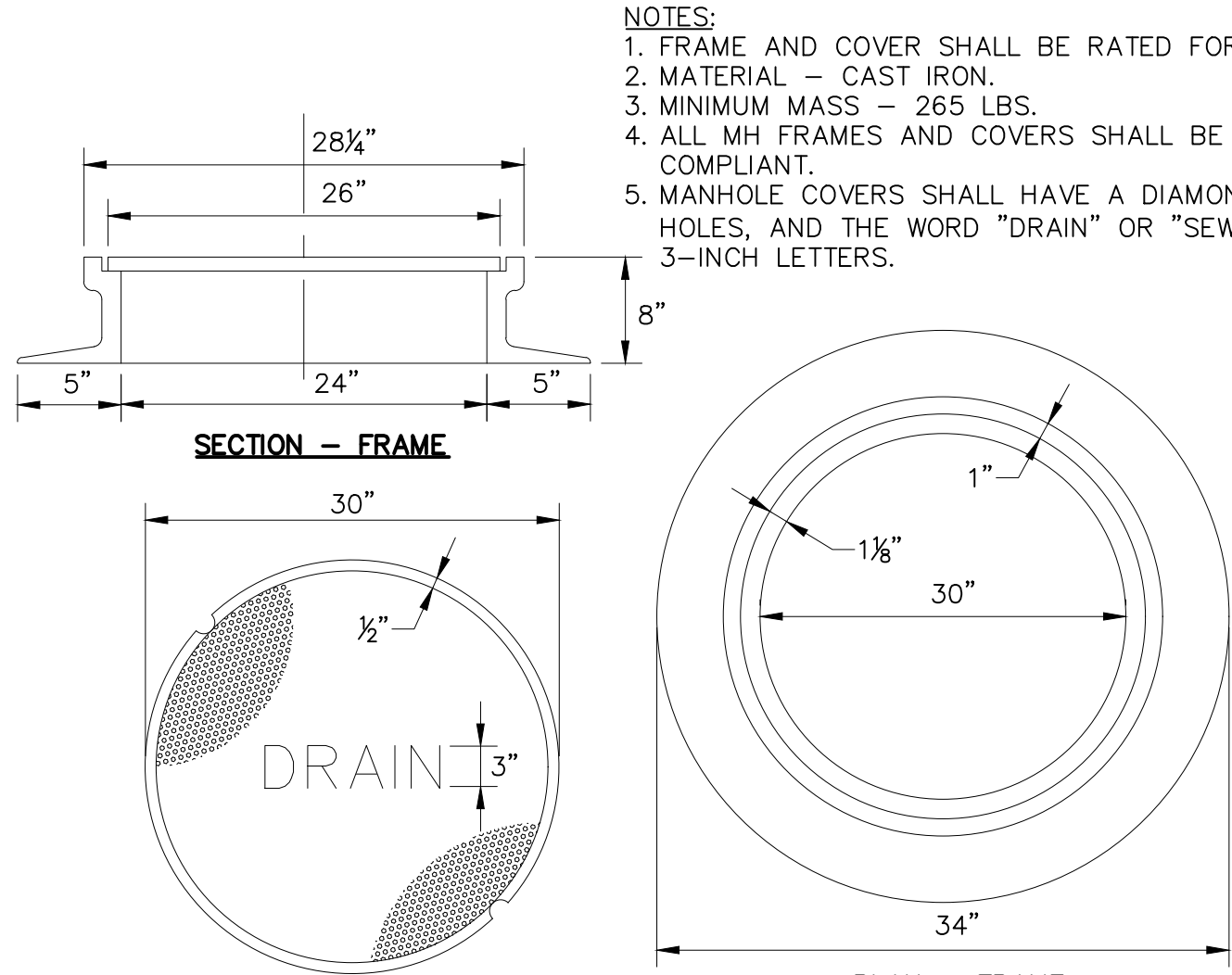
Typical Application 3

DRAWING TITLE
Construction Management Plan
SUBDIVISION NAME & LOCATION
King Street Commons
550 King Street
Littleton, MA 01460
OWNER / APPLICANT / SUBDIVIDER
Lupoli Companies
290 Merrimack Street
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SHEET 24 OF 56

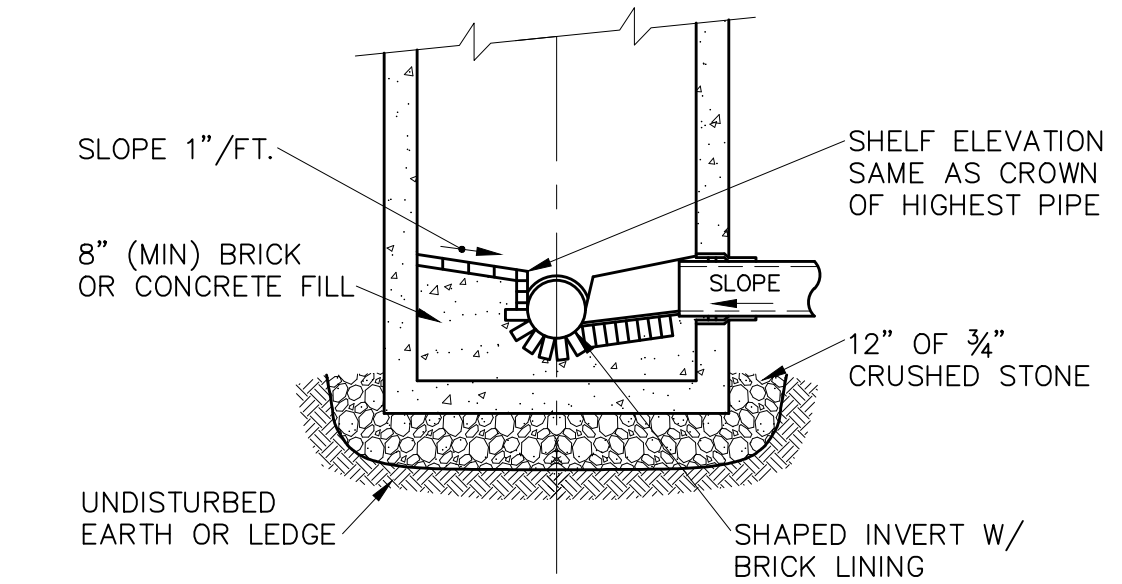
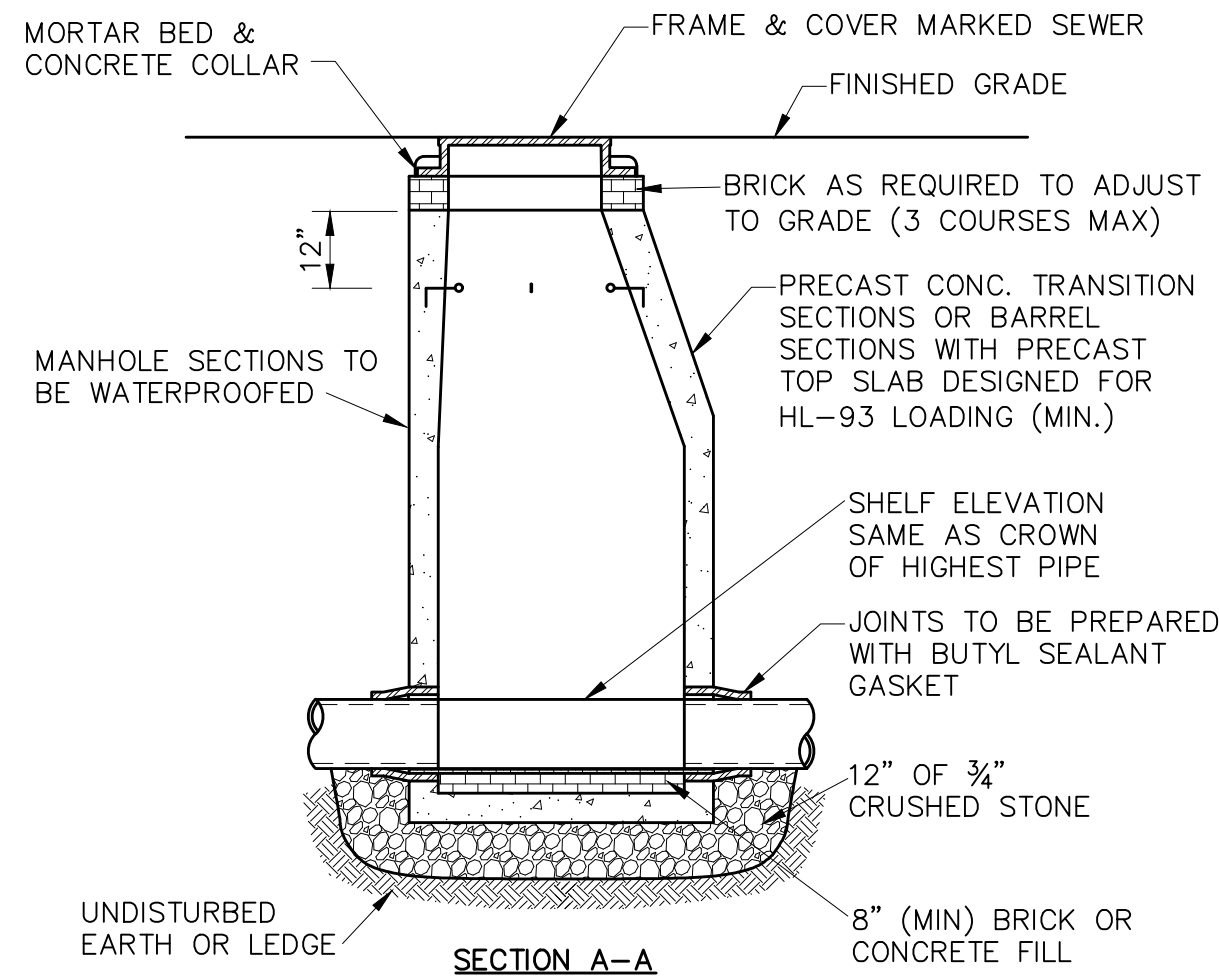
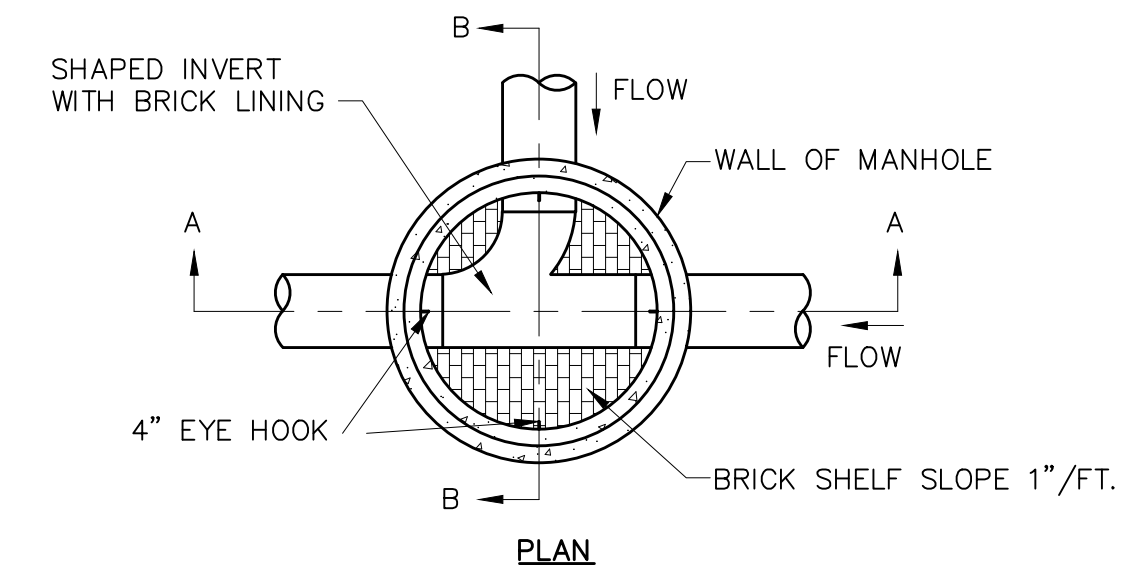
GRATE AND FRAME TO BE IN ACCORDANCE WITH MASSDOT GRATE AND FRAME SPECIFICATIONS. CAST IRON FRAME AND GRATE. HEIGHT OF FRAME TO BE 8 INCHES.



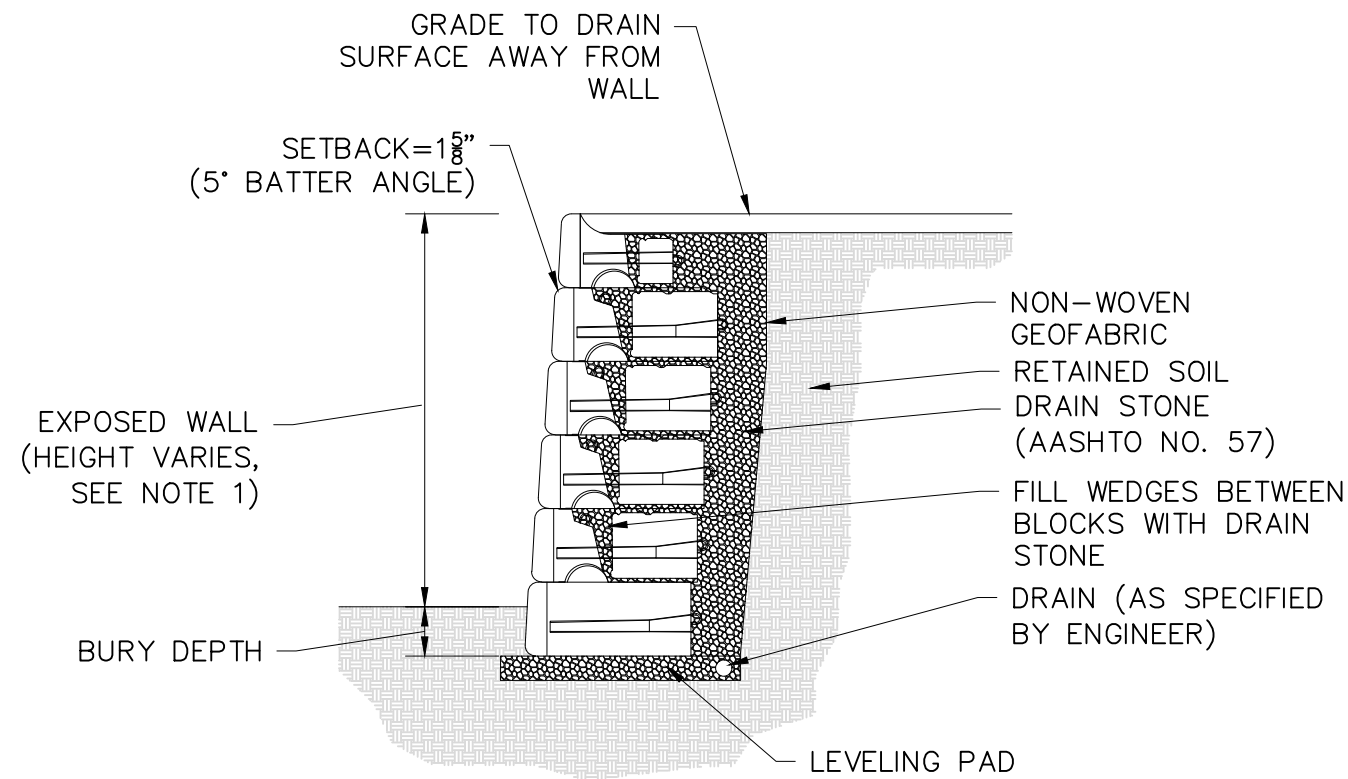
DEEP SUMP CATCH BASIN WITH HOOD
N.T.S.



MANHOLE FRAME & COVER
N.T.S.

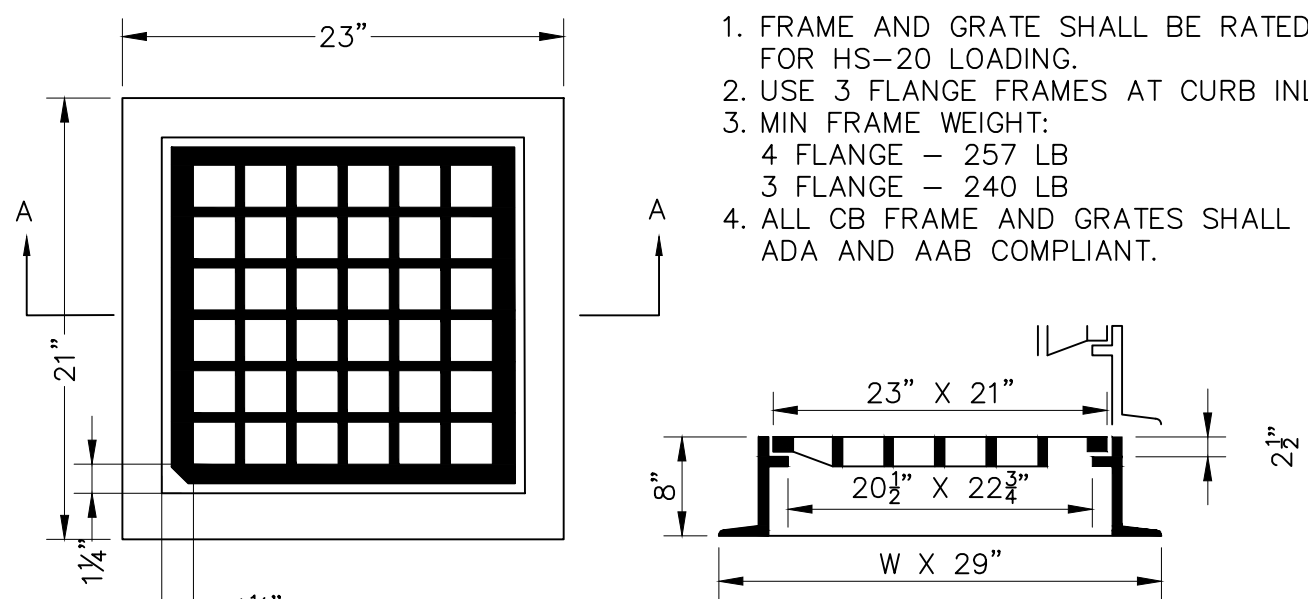


SEWER MANHOLE
N.T.S.

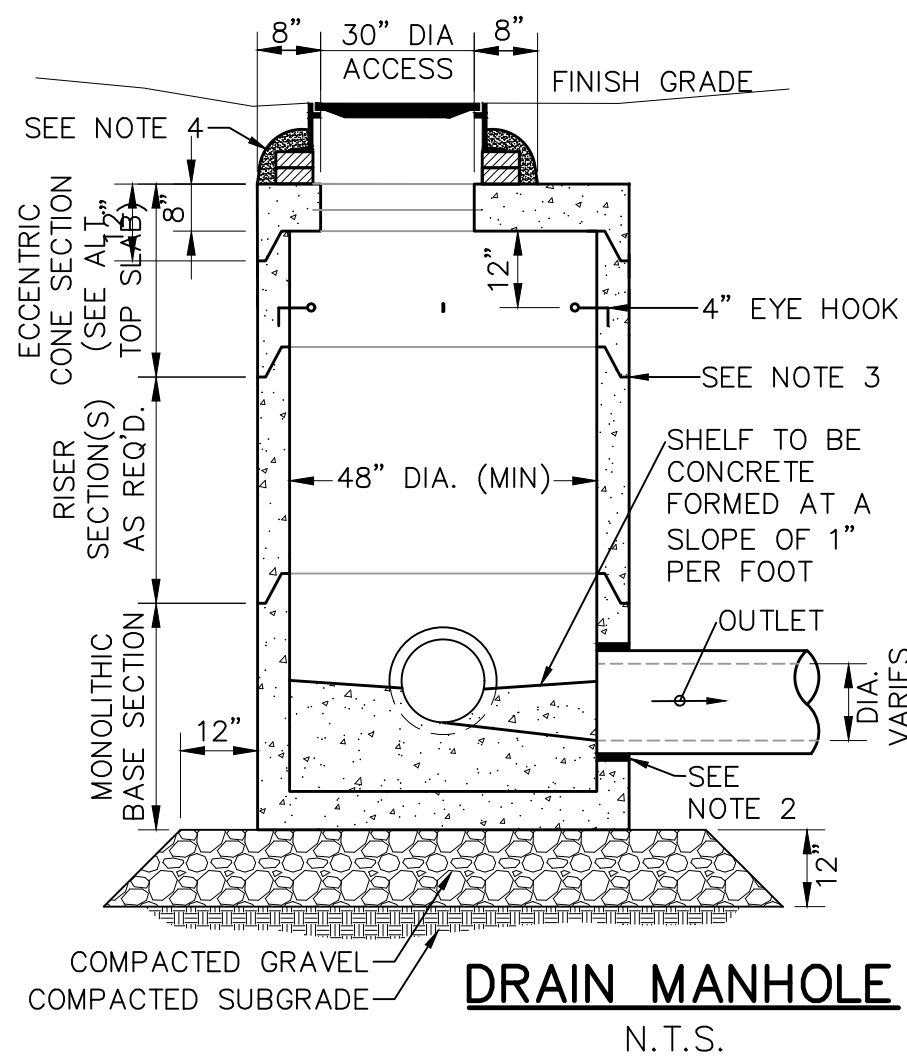


- NOTES:
1. WALL HEIGHTS OVER 4 FEET WILL REQUIRE A FINAL WALL DESIGN STAMPED BY A STRUCTURAL ENGINEER.
 2. FINAL WALL DESIGN TO BE SUBJECT TO THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER INCLUDING DESIGN ON LATERAL EARTH PRESSURES, GLOBAL STABILITY, FILL MATERIALS ADJACENT TO THE WALLS AND REQUIRED GEOGRID REINFORCEMENT.

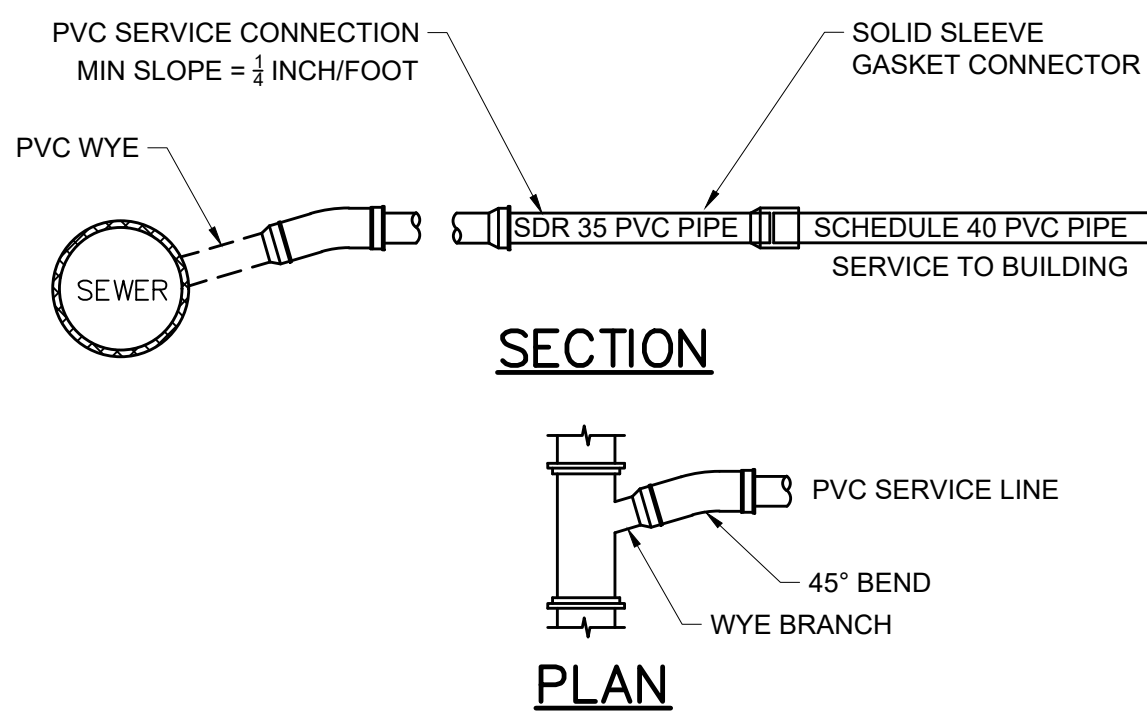
SEGMENTAL BLOCK RETAINING WALL
N.T.S.



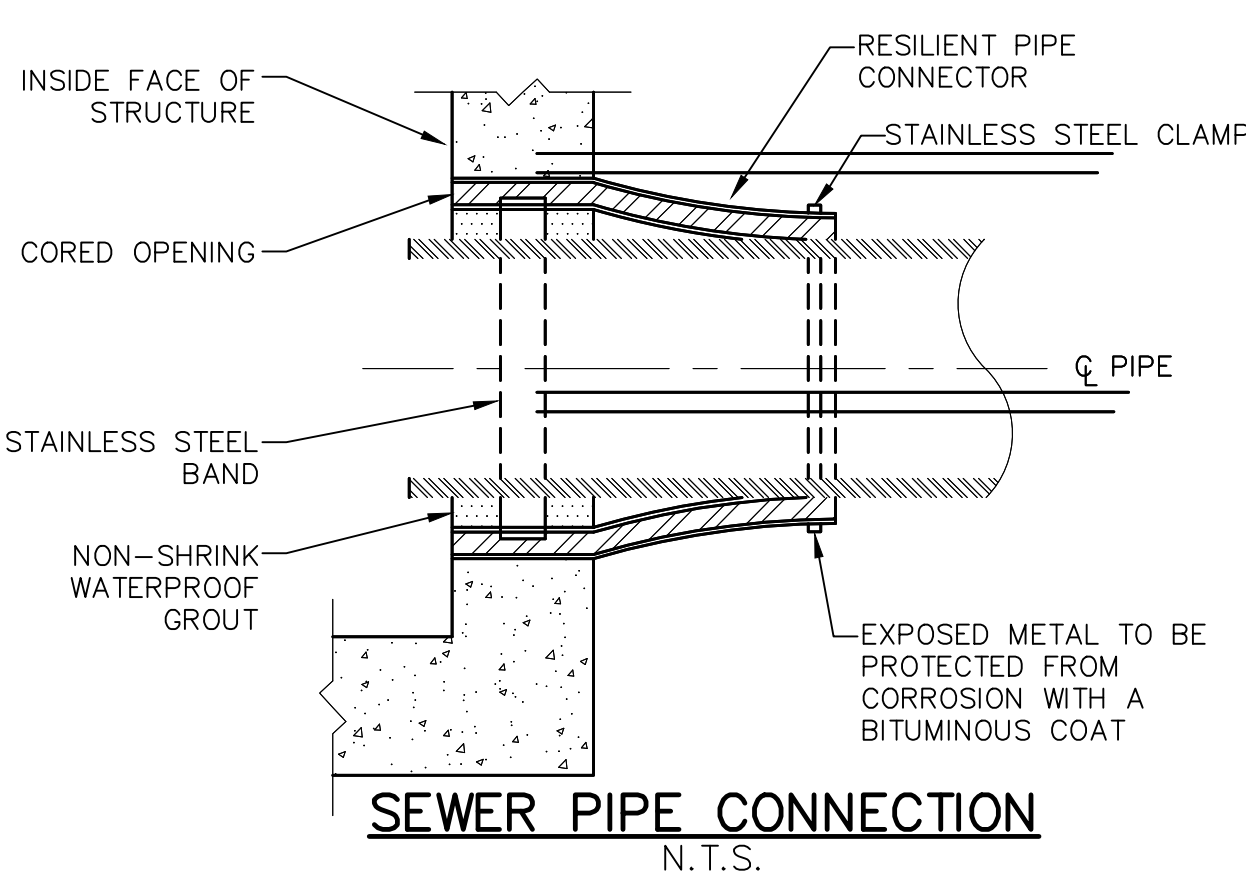
STANDARD CATCH BASIN FRAME WITH GALVANIZED STEEL OR CAST IRON GRATE
N.T.S.



DRAIN MANHOLE
N.T.S.



SEWER SERVICE
N.T.S.



SEWER PIPE CONNECTION
N.T.S.

DRAWING TITLE
Construction Details

SUBDIVISION NAME & LOCATION
King Street Commons
550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER
Lupoli Companies
290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER
TEC
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282 Merrimack Street, 2nd Floor
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DRAWING NO. C-25
SHEET 25 OF 56

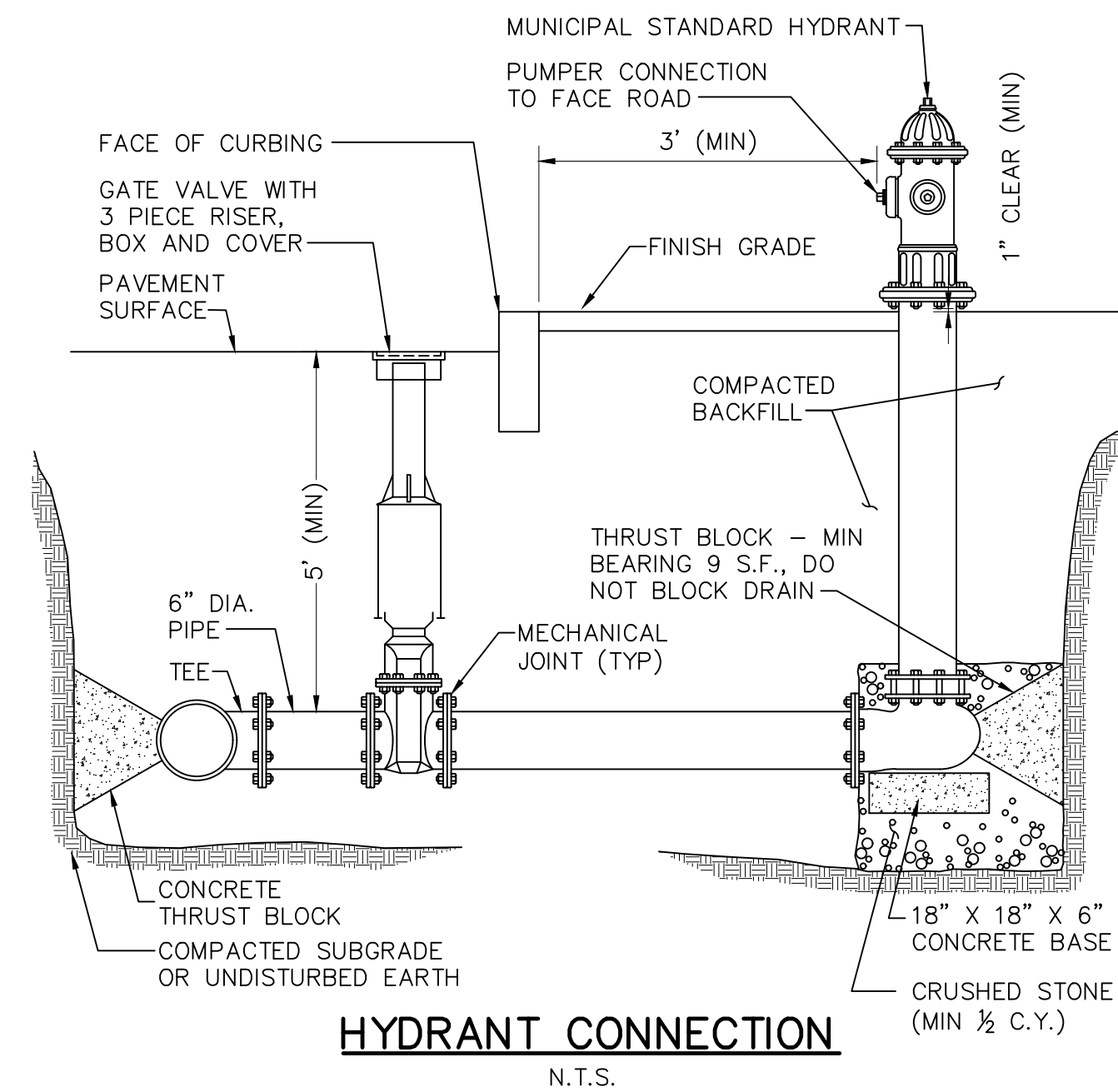
RICHARD J. FRIBERG JR.
CIVIL
No. 47850
REGISTERED PROFESSIONAL ENGINEER



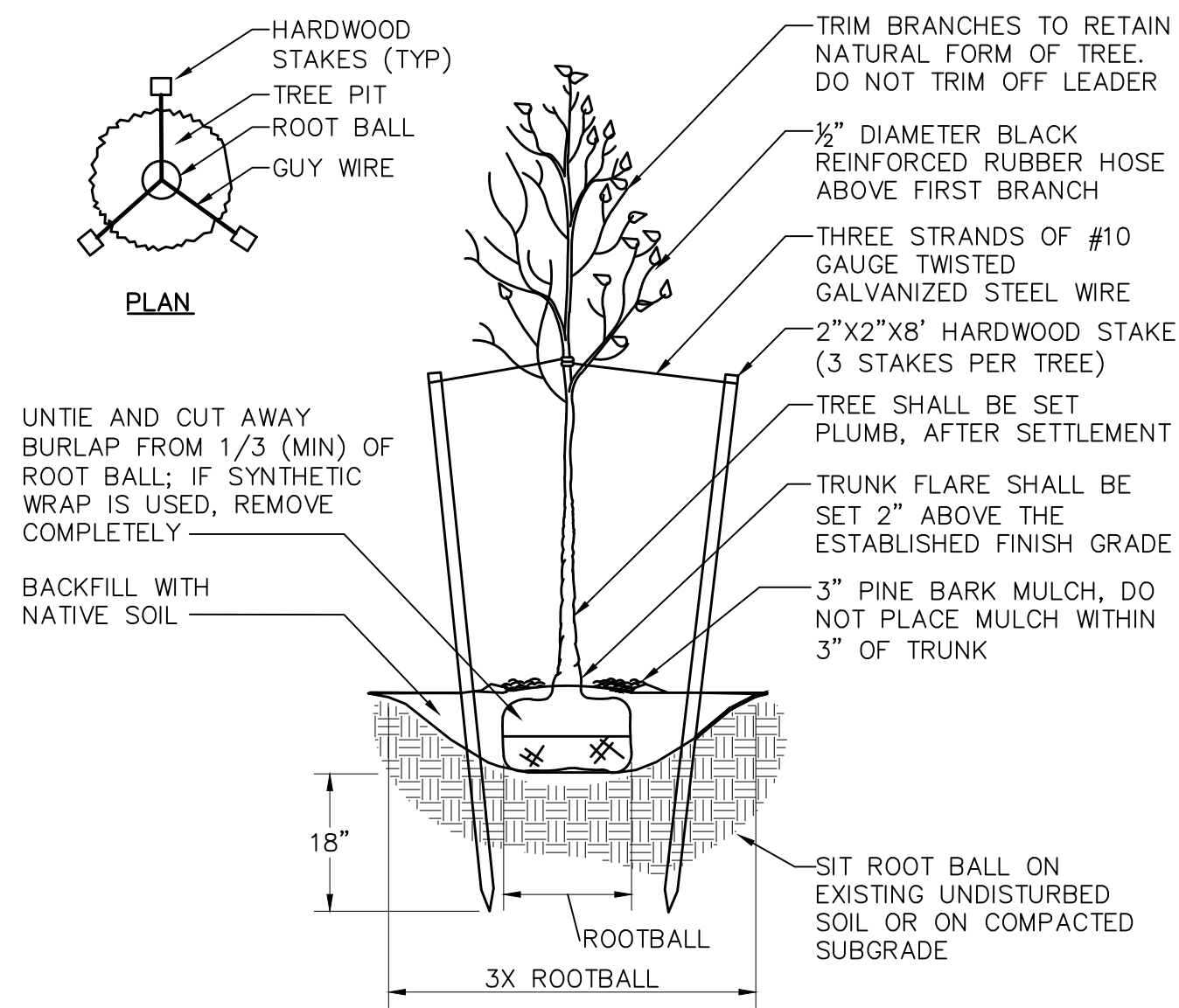
The diagram illustrates the sand cone test setup. The **PLAN** view shows a sand cone with diameter G and height H being poured into a hole in the soil. The **SECTION** view shows the sand cone being poured into a hole of diameter I and height J , with the surrounding soil labeled "UNDISTURBED SOIL".

N.T.S.

-
- PAVED/SIDEWALK AREA LANDSCAPED/GRASSED AREA
- CONTROLLED DENSITY FILL - EXCAVATABLE (OR GRAVEL BORROW FOR SIDEWALK AREA)
- EXIST PVM'T/SIDEWALK
- SAWCUT
- 1' (TYP)
- 36"
- 30"
- 24"
- SURFACE VARIES; SEE PVM'T/SIDEWALK DETAILS
- DEPTH AND SURFACE TREATMENT VARIES
- EXIST SURFACE
- COMMON FILL/ORDINARY BORROW
- YELLOW WARNING TAPE
- 3" NM CONDUIT
- SAND BEDDING
- 18"
- UNDISTURBED OR COMPACTED SUBGRADE
- CONDUIT TRENCH DETAIL**
- N.T.S.

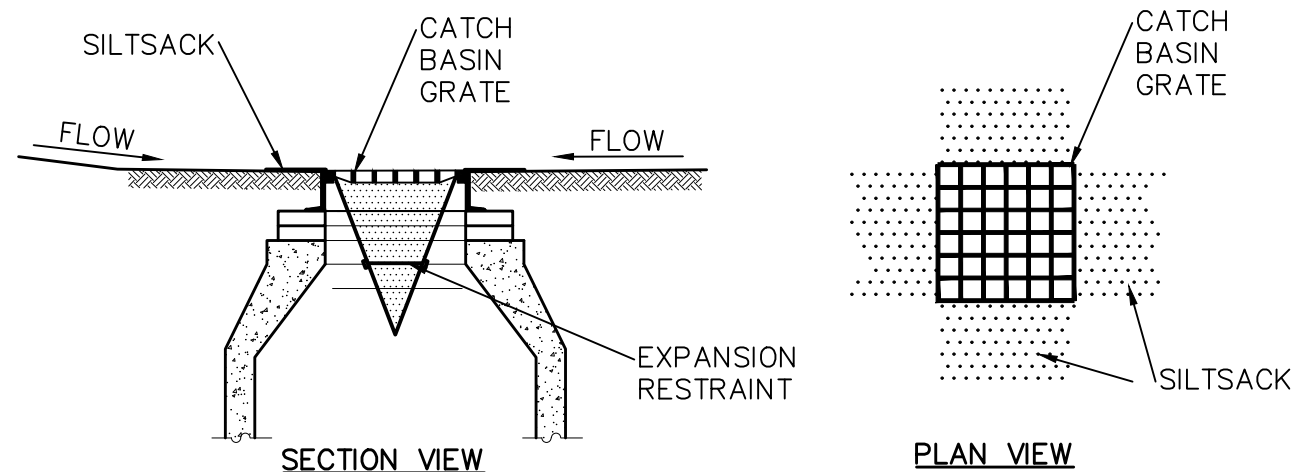



 DRAWING NO.
C-26
 SHEET 26 OF 50



TREE PLANTING

N.T.S.

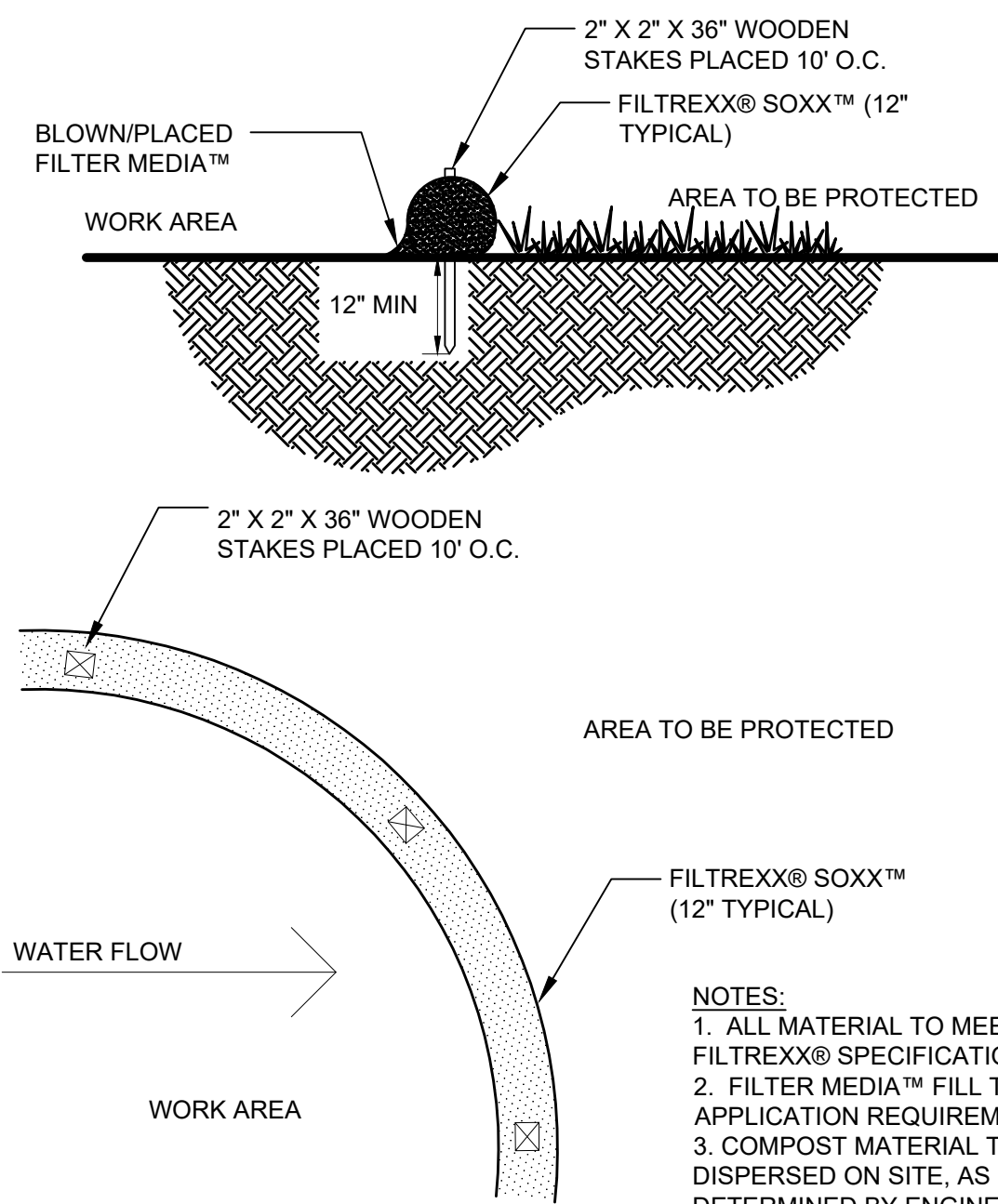


NOTES:

1. INSTALL SILTSACK 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.
2. GRATE TO BE PLACED OVER SILTSACK.
3. SILTSACK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS AND CLEANING OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED.

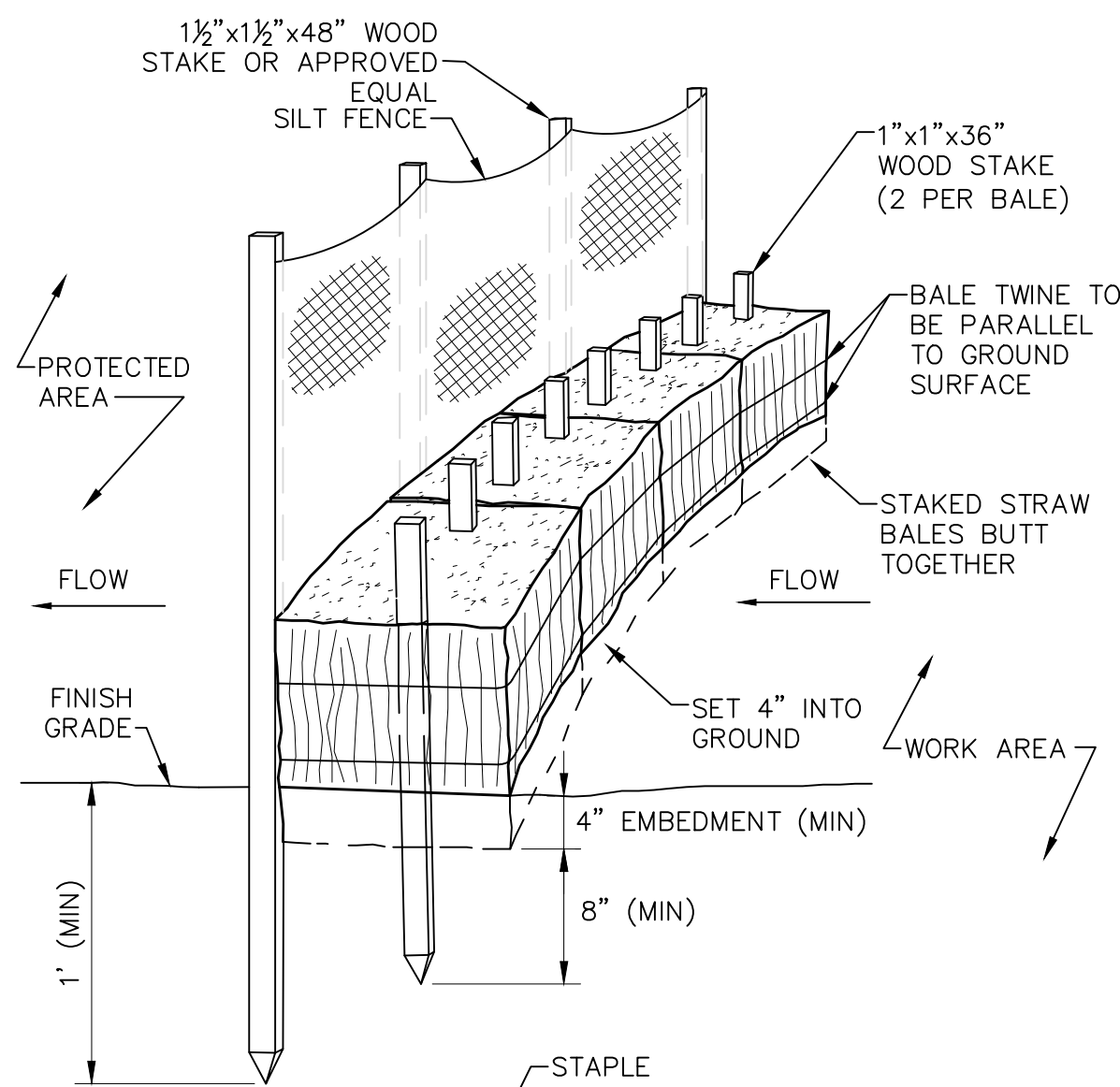
INLET PROTECTION – SILT SACK IN CATCH BASIN

N.T.S.



SILTSOXX PERIMETER EROSION BARRIER DETAIL

N.T.S.

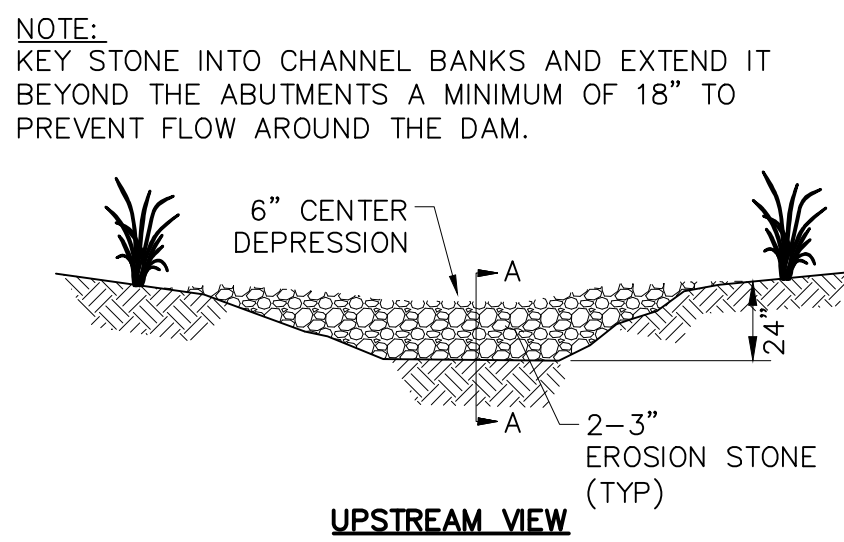


NOTES:

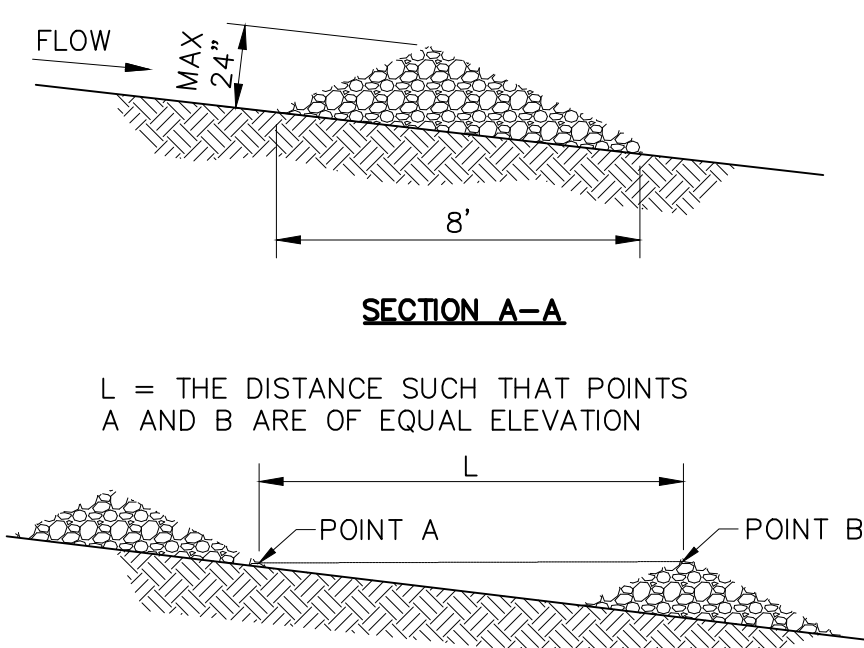
1. FILTER CLOTH SHALL BE FASTENED SECURELY TO POSTS WITH STAPLES. POSTS SHALL BE SPACED 8'-10' ON CENTER.
2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
3. ENTRENCH SILT FENCE BUT NOT HAY BALES.
4. INSPECTIONS SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED, OR WHEN SEDIMENT ACCUMULATES TO HALF THE HEIGHT OF FENCING.

EROSION CONTROL BARRIER

N.T.S.



UPSTREAM VIEW



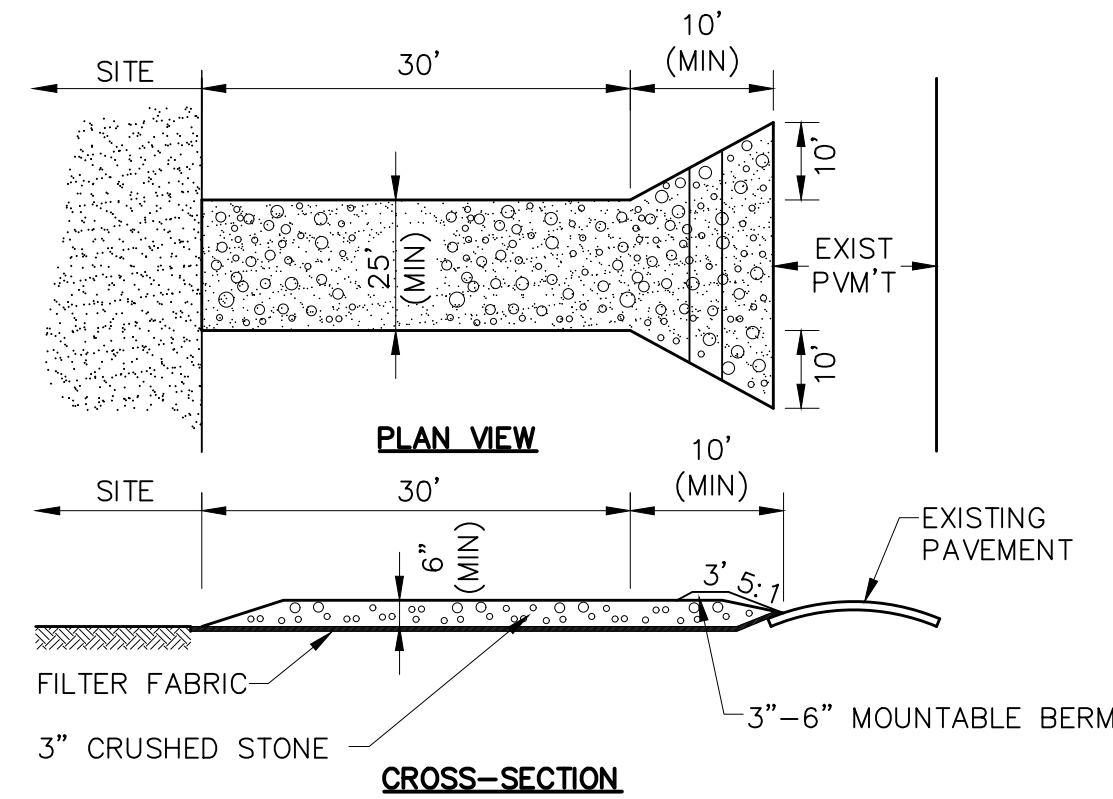
SECTION A-A

L = THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION

CHECK DAM SPACING

STONE CHECK DAM

N.T.S.

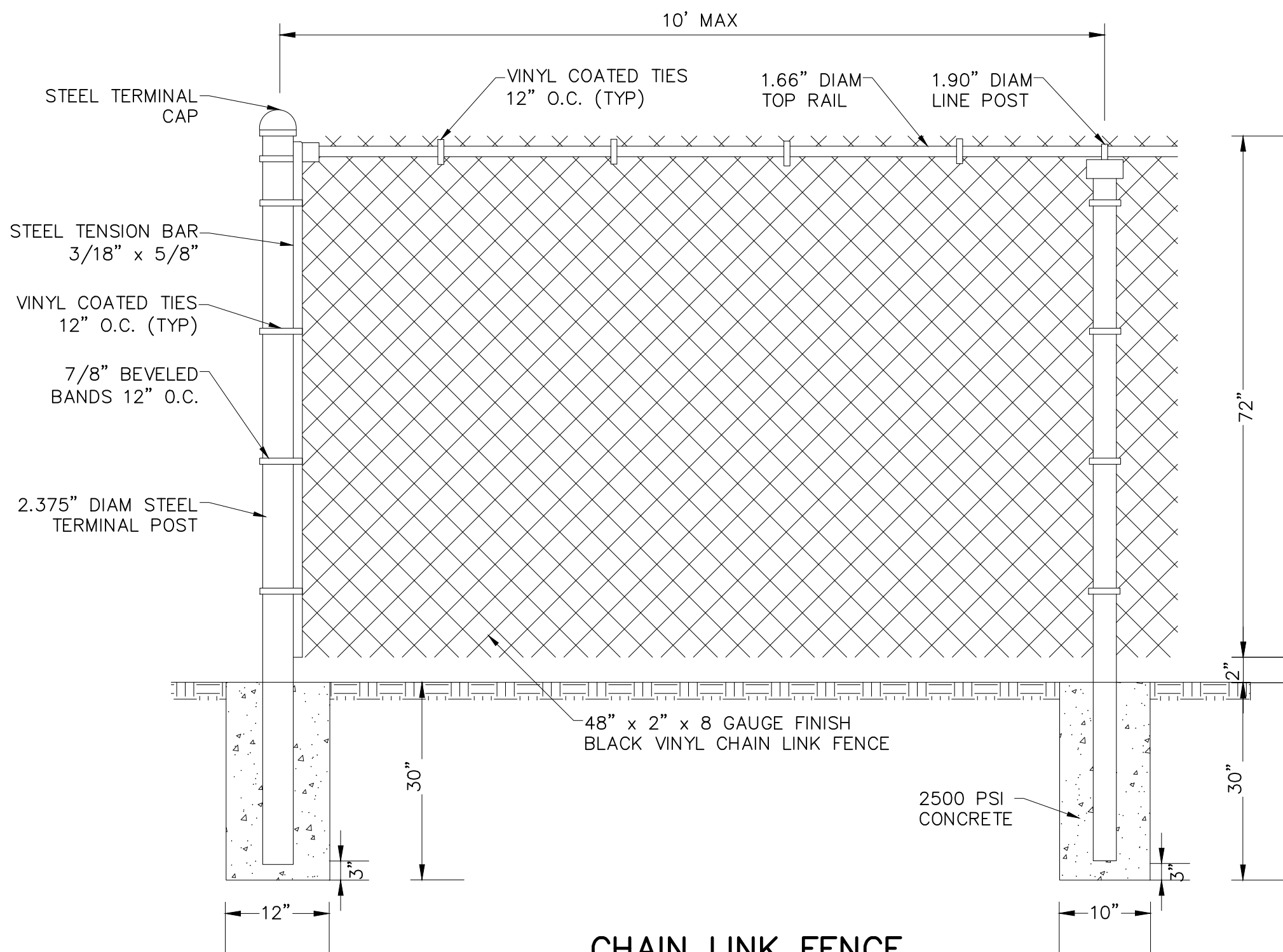


NOTES:

1. ENTRANCE WIDTH SHALL BE A TWENTY-FIVE (25) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
2. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH SHALL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY. BERM SHALL BE PERMITTED. PERIODIC INSPECTION AND MAINTENANCE SHALL BE PROVIDED AS NEEDED.
3. STABILIZED CONSTRUCTION EXIT SHALL BE REMOVED PRIOR TO FINAL FINISH MATERIALS BEING INSTALLED.

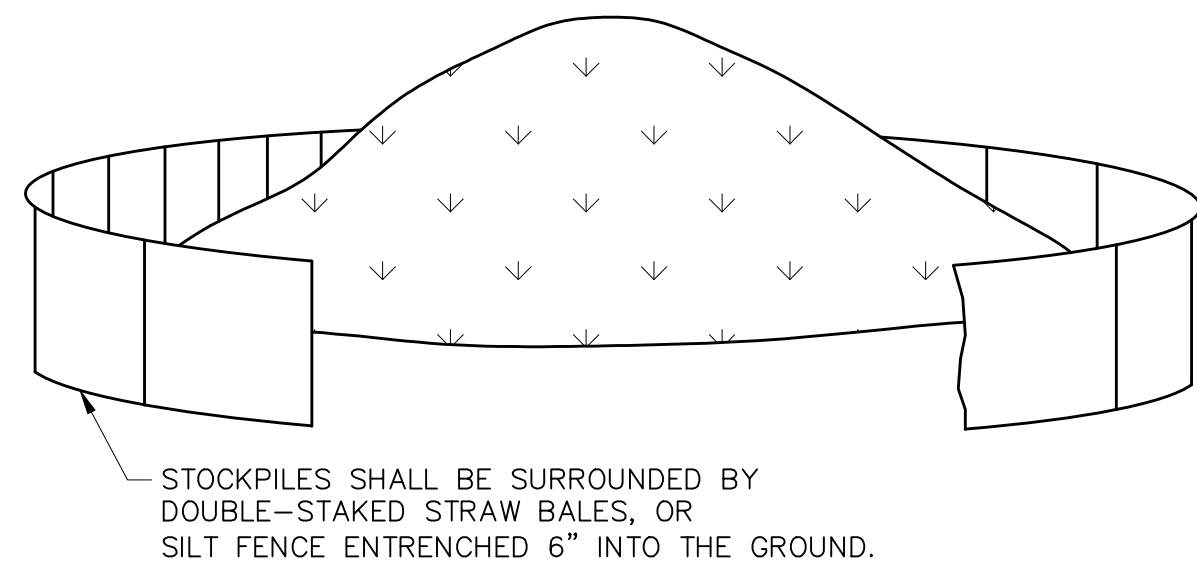
STABILIZED CONSTRUCTION EXIT

N.T.S.



CHAIN LINK FENCE

N.T.S.



SOIL STOCKPILE

N.T.S.

DRAWING TITLE

Construction Details

SUBDIVISION NAME & LOCATION

King Street
Commons
550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER

Lupoli Companies
290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER



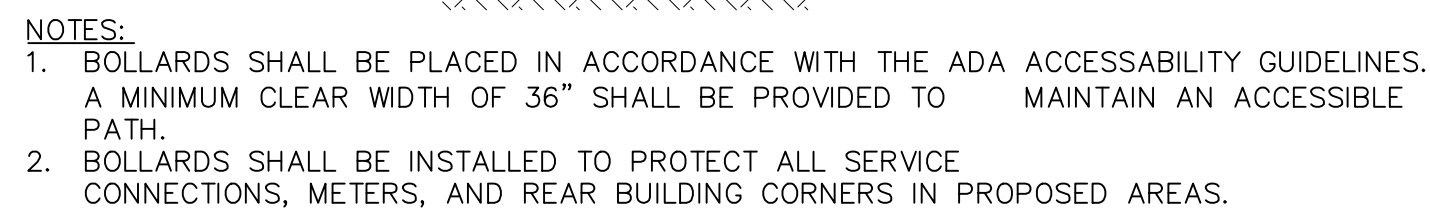
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Lawrence, Massachusetts 01843
978.794.1792

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DESIGNED BY RJF DATE 8-22-23
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TEC CAD FILE
T1180_DET
DRAWING NO.
C-27
SHEET 27 OF 56



BOLLARD
N.T.S.



HSL = HIGH SIDE TRANSITION LENGTH (SEE E 107.9.0)
W = SIDEWALK WIDTH
CC = CEMENT CONCRETE
* = TOLERANCE FOR CONSTRUCTION $\pm 0.5\%$

NOTES:

1. USABLE SIDEWALK WIDTH PER AAB = $W-6"$
2. USABLE SIDEWALK WIDTH PER AAB IS NOT TO BE LESS THAN 4'-0"
3. ROADWAY GUTTER SLOPE MEASURED IN UPSTATION DIRECTION
4. SEE E 107.6.5 FOR DETECTABLE WARNING PANEL DETAILS
5. SEE E 107.2.1 FOR ALL OTHER DETAILS

WHEEL CHAIR RAMP TYPE A
N.T.S.



1. ALL "12" PAINTED LINES SHALL BE APPLIED IN ONE APPLICATION, NO COMBINATION OF LINES (TWO OR MORE "12" LINES) WILL BE ACCEPTED.
2. LAYOUT OF CROSSWALKS SHALL BE APPROVED THE ENGINEER PRIOR TO APPLICATION OF PAINT.
3. ALL CROSSWALKS INSTALLED SHALL CONFORM TO THE RELEVANT PROVISIONS OF THE MASSACHUSETTS HIGHWAY DEPARTMENT "STANDARD SPECIFICATION FOR HIGHWAY AND BRIDGES" DATED 1988.
4. THE PAVEMENT MARKINGS FOR CROSSWALKS WITHIN THE PUBLIC WAY MAY VARY AND SHALL BE APPROVED BY THE CITY ENGINEER PRIOR TO THE APPLICATION OF PAINT.

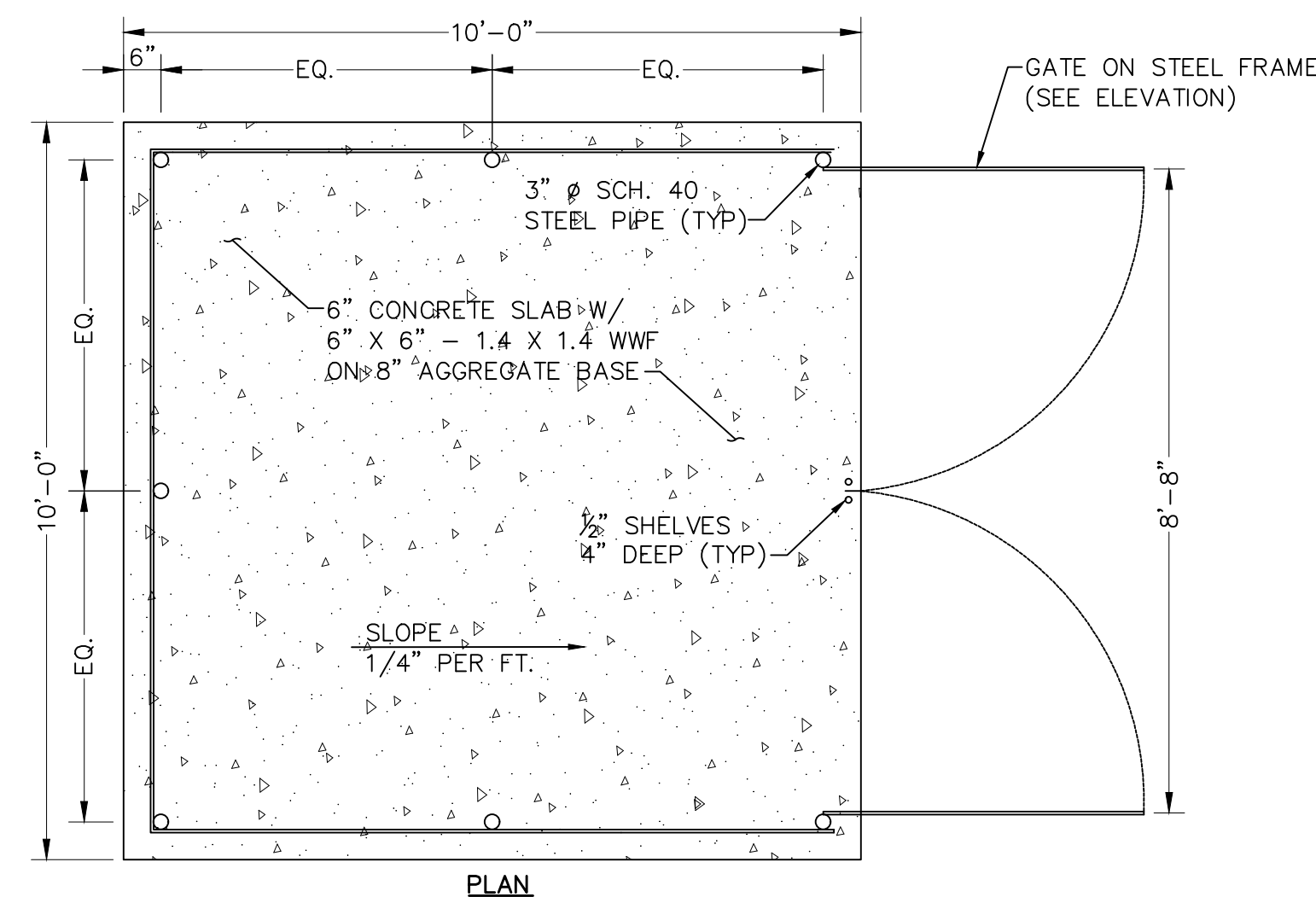
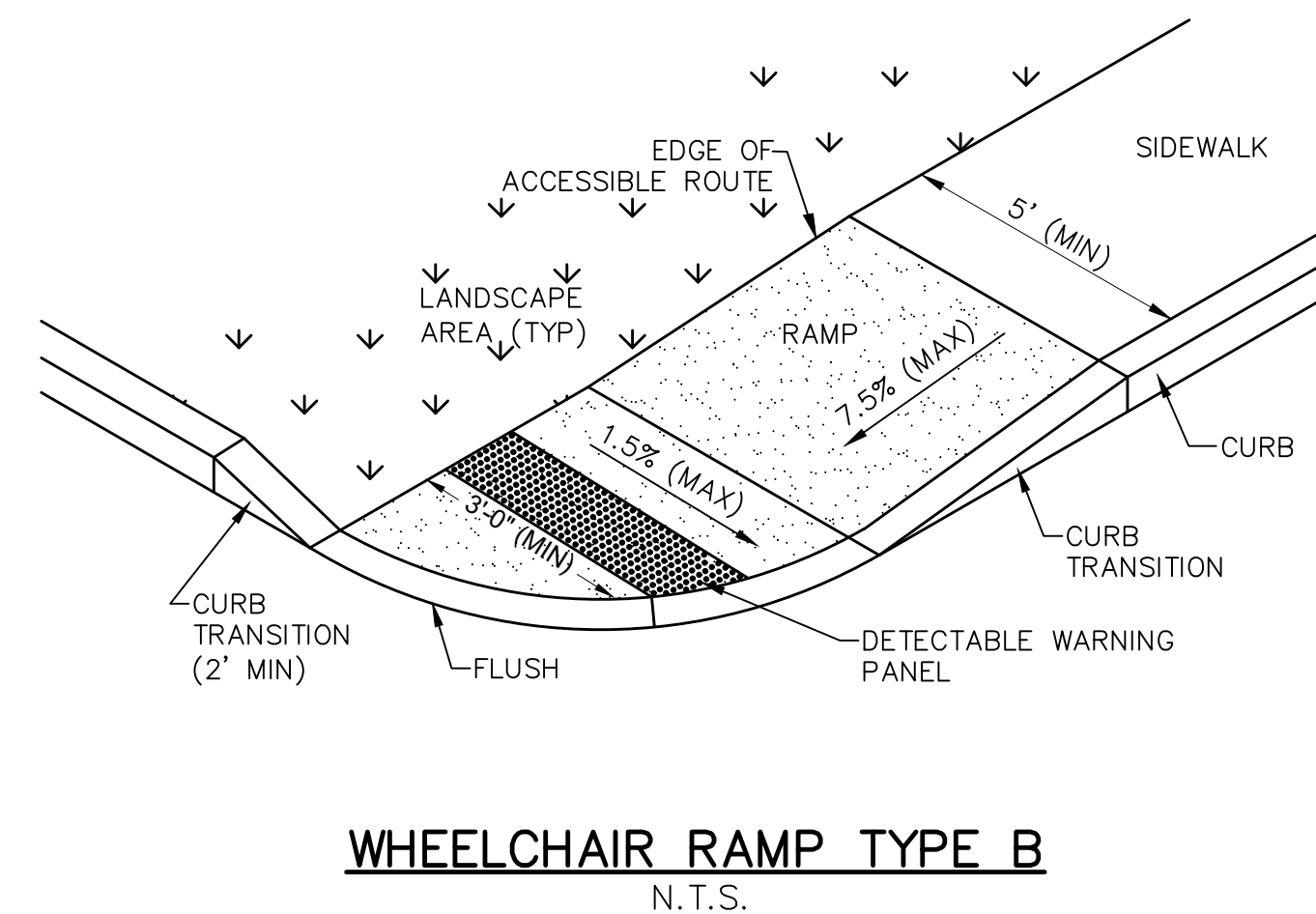
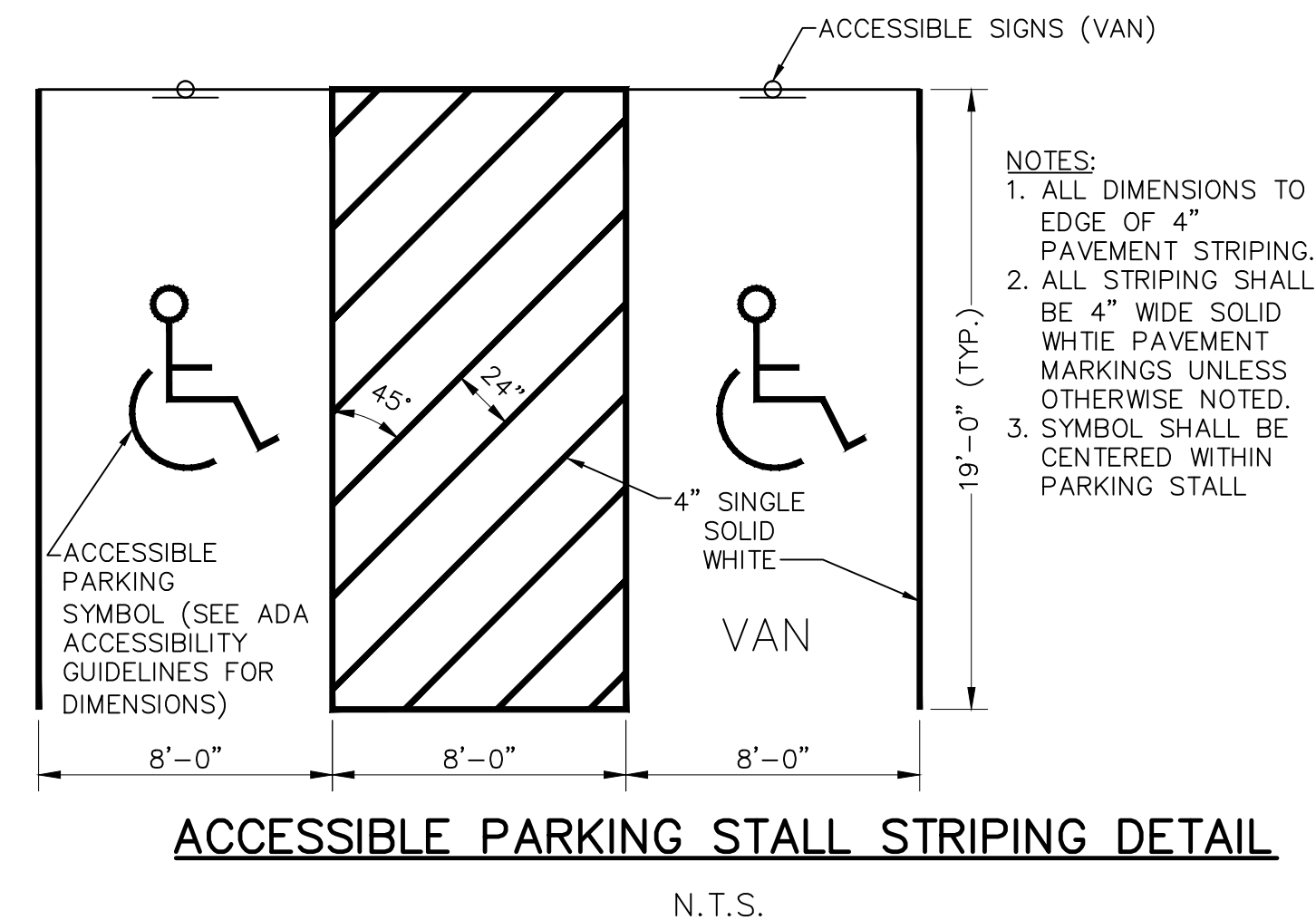
CROSSWALK PAVEMENT MARKING



NOTE:

1. NOMINAL OUTSIDE DIAMETER (N.O.D.) OF GATE FRAME AND BRACE TUBE TO BE 1.66" UP TO 6" IN WIDTH, AND 1.90" IF OVER 6' IN WIDTH.

DUMPSTER PAD AND ENCLOSURE



N.T.S.

DRAWING TITLE

Construction Details

SUBDIVISION NAME & LOCATION

King Street

Commons

550 King Street

Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER

Lupoli Companies
290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER



TEC, Inc.
282 Merrimack Street, 2nd Floor
Lawrence, Massachusetts 01843
978.794.1792

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DESIGNED BY	RJF	DATE	8-22-23
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PROJECT NO. 71122

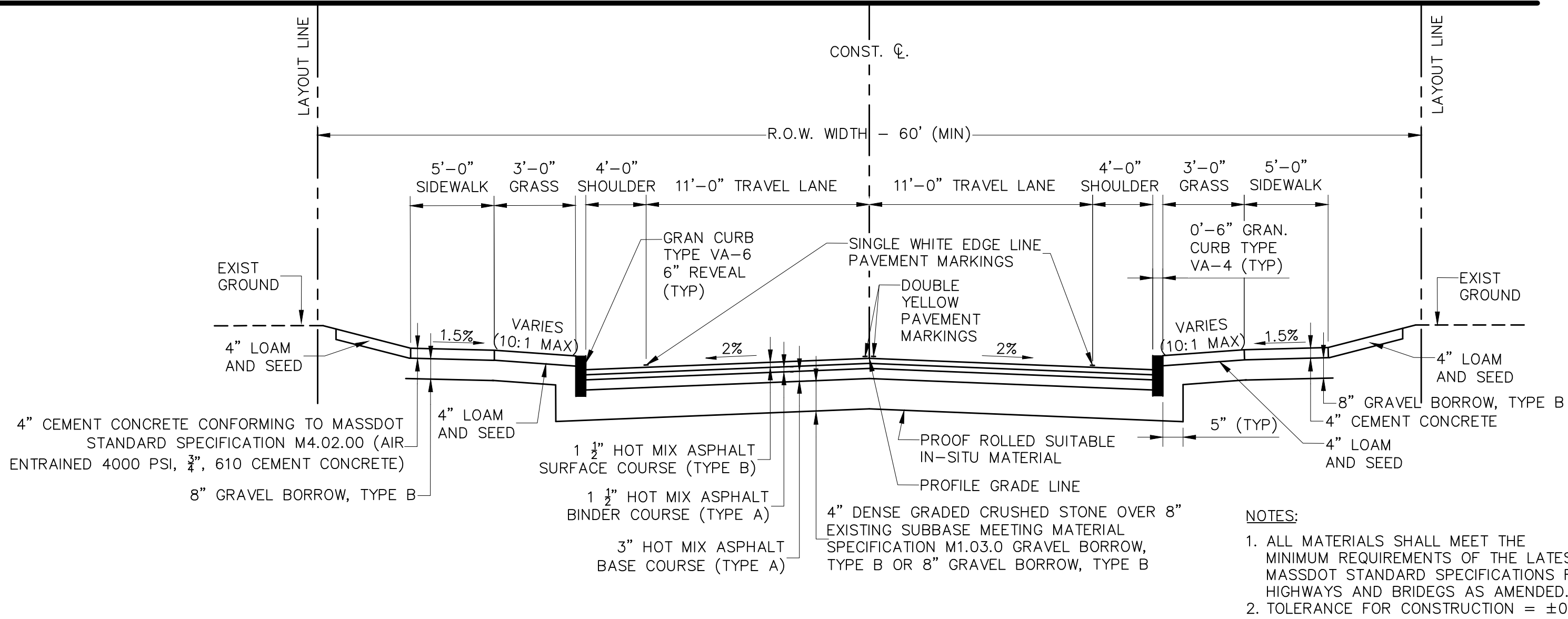
TEC CAD FILE

T1180_DET

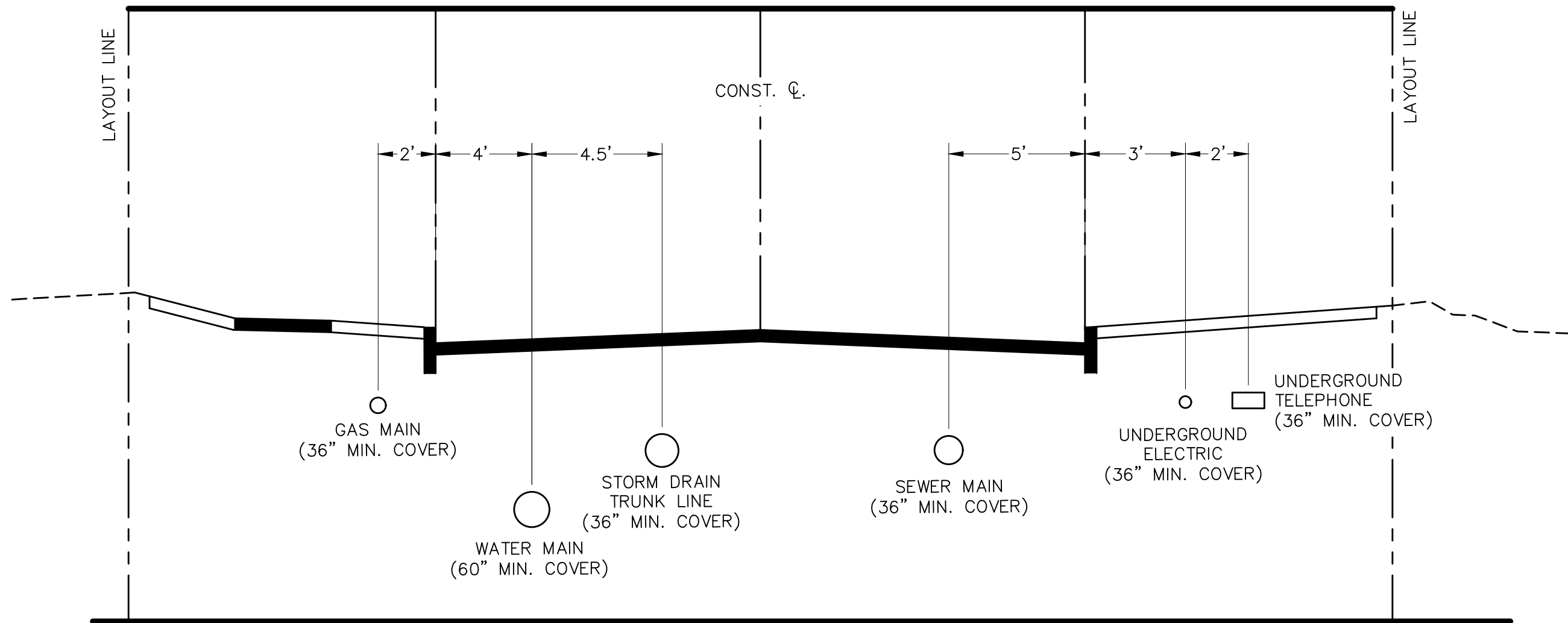
DRAWING NO.

C-28

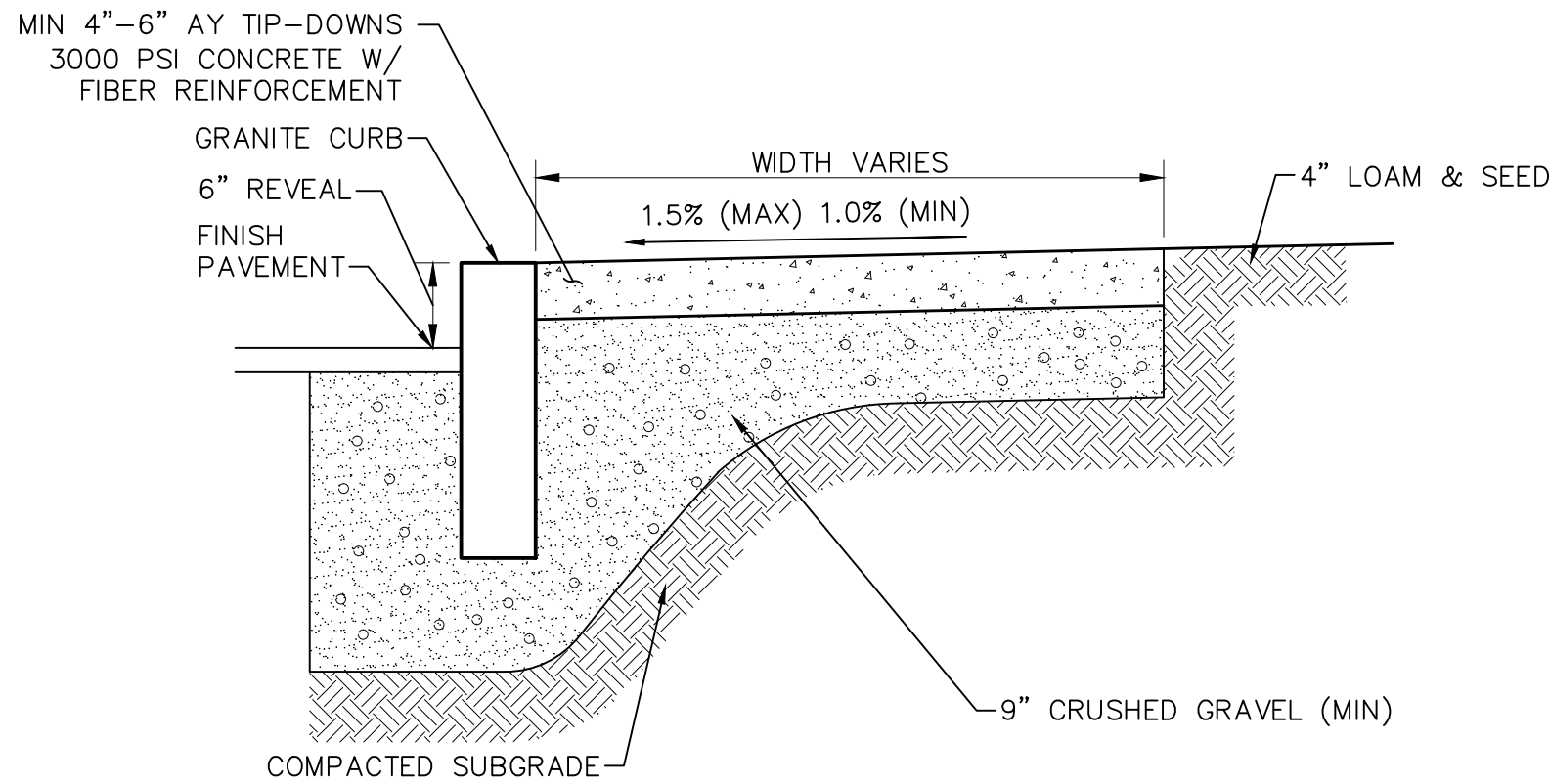
SHEET 28 OF 56



COLLECTOR ROAD TYPICAL SECTION
N.T.S.



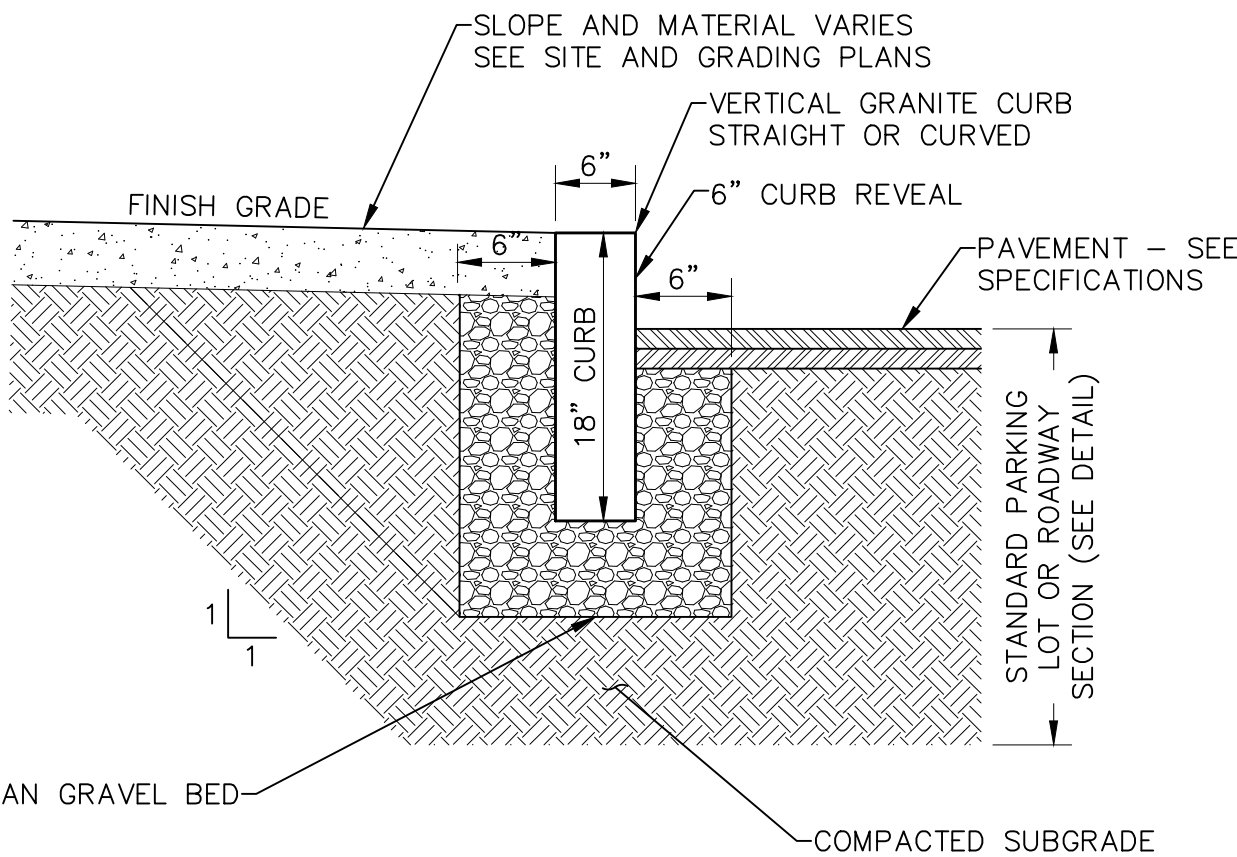
ROADWAY UTILITIES – TYPICAL SECTION
N.T.S.



- NOTES:
1. MATERIALS SHALL BE IN ACCORDANCE WITH THE TOWN OF LITTLETON STANDARDS SPECIFICATIONS.
 2. SIDEWALKS AND DRIVEWAY WIDTHS SHALL BE EQUAL TO EXISTING WIDTHS OR AS APPROVED AND SHALL SLOPE TO MATCH EXISTING ELEVATIONS.
 3. BASE FOR THE SIDEWALKS AND DRIVEWAYS SHALL BE 9-INCHES OF CRUSHED GRAVEL.
 4. DETECTABLE WARNING STRIPS SHALL BE CAST IRON.

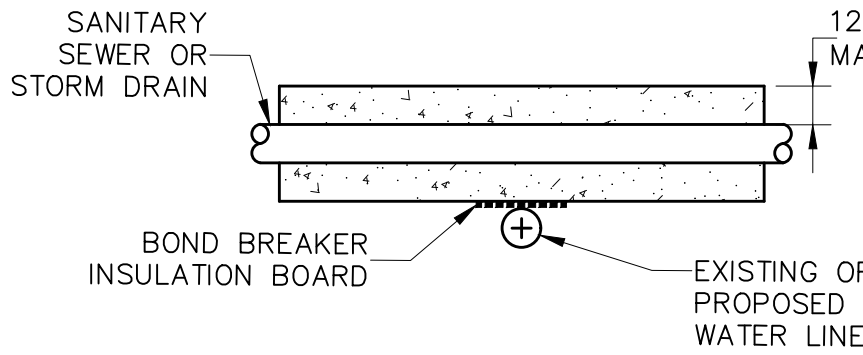
CONCRETE SIDEWALK
N.T.S.

RADIUS	MAX LENGTH
<21'	USE CURVED CURB
12'	3'
22'-28'	4'
29'-35'	5'
36'-42'	6'
43'-49'	7'
50'-56'	8'
57'-60'	9'
OVER 60'	10'

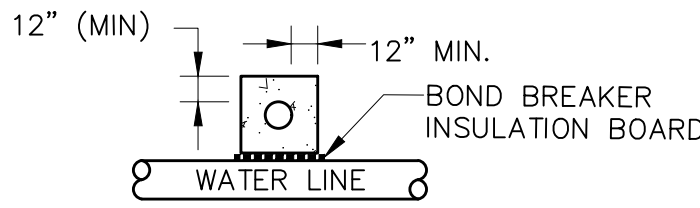


VERTICAL GRANITE CURB
N.T.S.

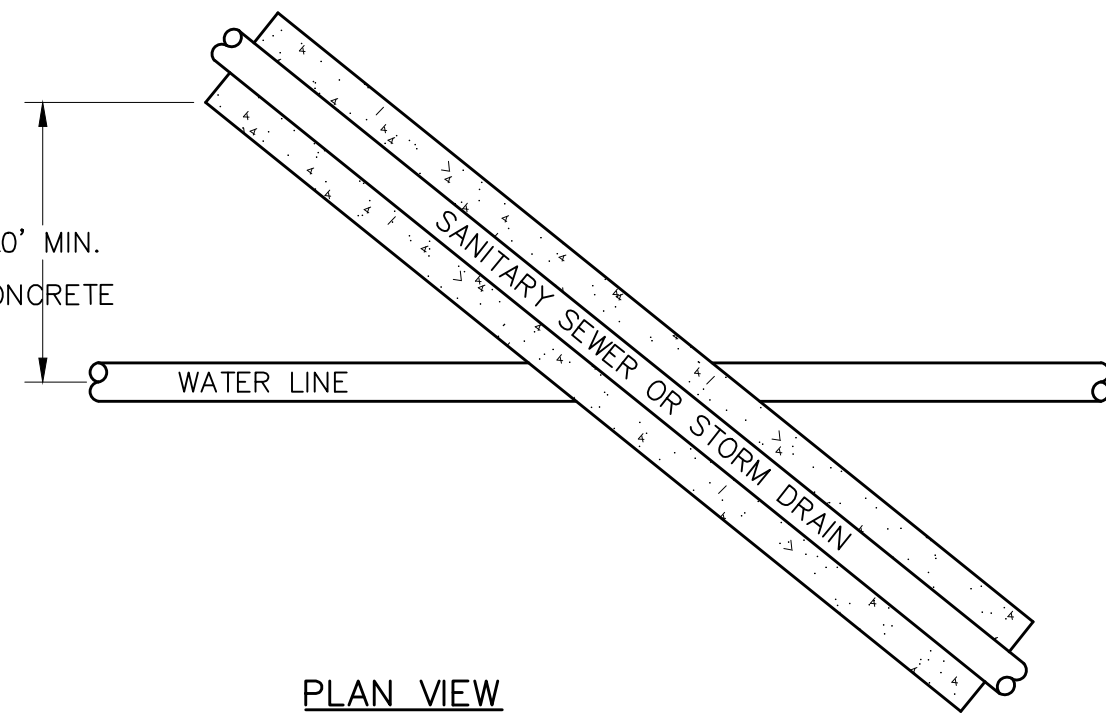
NOTE: REFER TO TOWN OF LITTLETON SUBDIVISION OF LAND REGULATIONS ARTICLE IV SECTION 249-85.E FOR ADDITIONAL REQUIREMENTS.



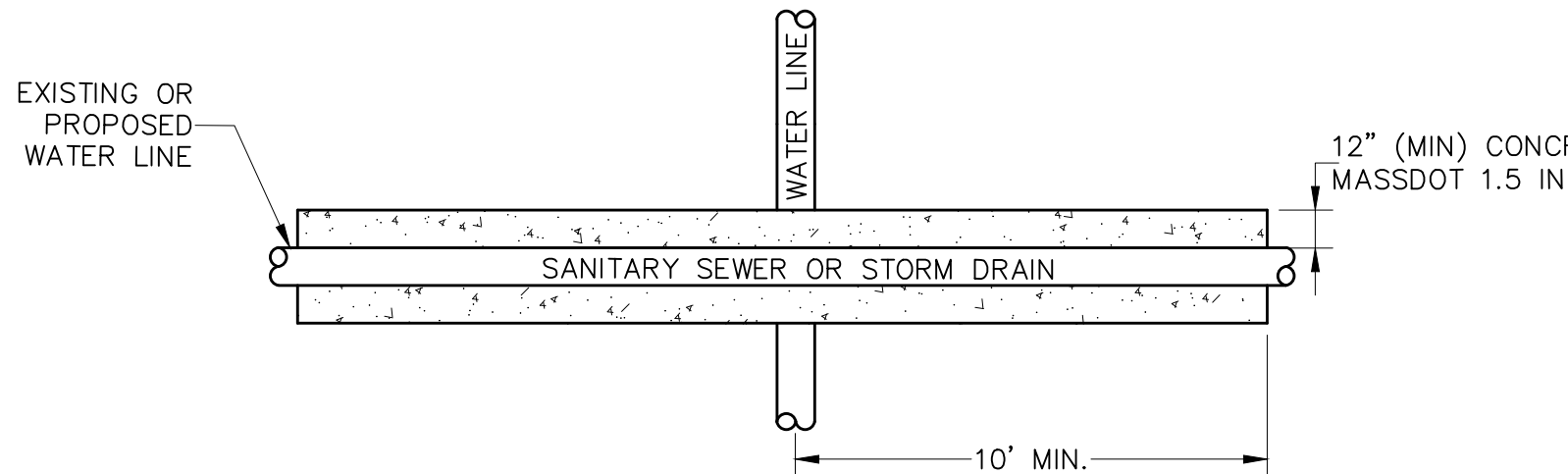
PROFILE



PROFILE

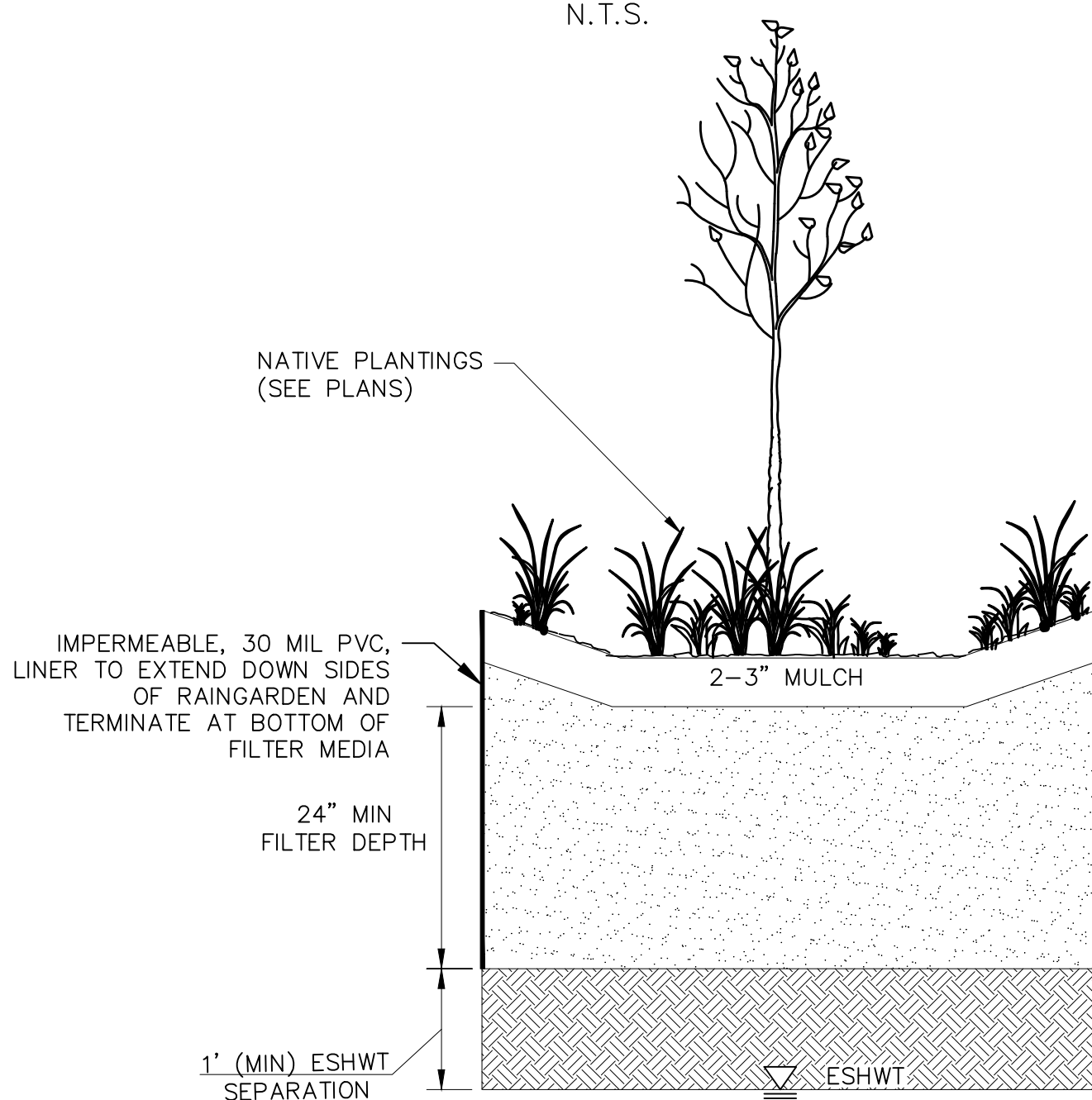


PLAN VIEW



PLAN VIEW

TYPICAL CONCRETE ENCASEMENT OF
SANITARY SEWERS OR STORM DRAINS
N.T.S.



RAINGARDEN DETAIL
N.T.S.

- NOTE:
1. DO NOT PLACE THE BIORETENTION SYSTEM INTO SERVICE UNTIL THE BMP HAS BEEN PLANTED AND ITS CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
 2. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO THE BIORETENTION AREA DURING ANY STAGE OF CONSTRUCTION.
 3. DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION COMPONENTS OF THE SYSTEM.
 4. THE FILTER MEDIA SHALL CONSIST OF 50% TO 55% BY VOLUME SAND THAT IS CERTIFIED BY ITS PRODUCER AS MEETING THE REQUIREMENTS FOR ASTM C-33 CONCRETE SAND, 20% TO 30% BY VOLUME OF LOAMY SAND TOPSOIL WITH 15% TO 25% FINES PASSING THE NUMBER 200 SIEVE, AND 20% TO 30% BY VOLUME MODERATELY FINE SHREDDED BARK OR WOOD FIBER MULCH WITH LESS THAN 5% PASSING THE NUMBER 200 SIEVE.

DRAWING TITLE

Construction
Details

SUBDIVISION NAME & LOCATION

King Street
Commons
550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER

Lupoli Companies
290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER



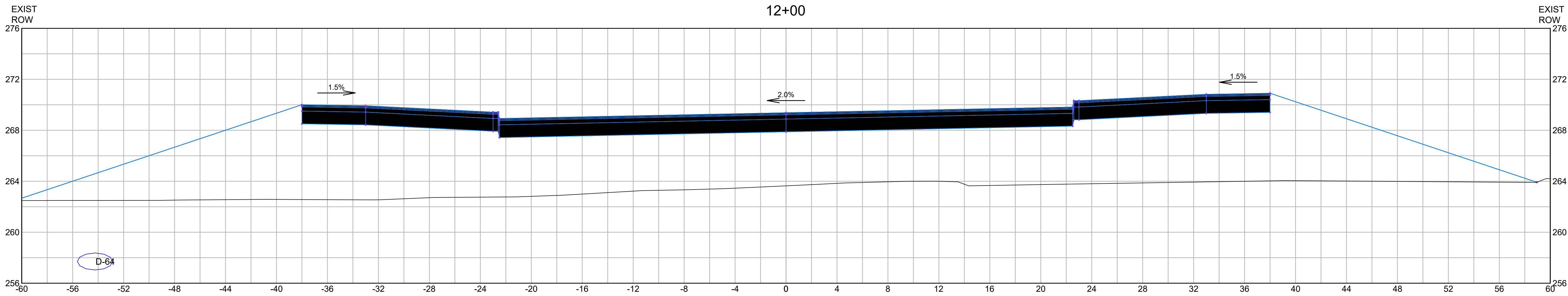
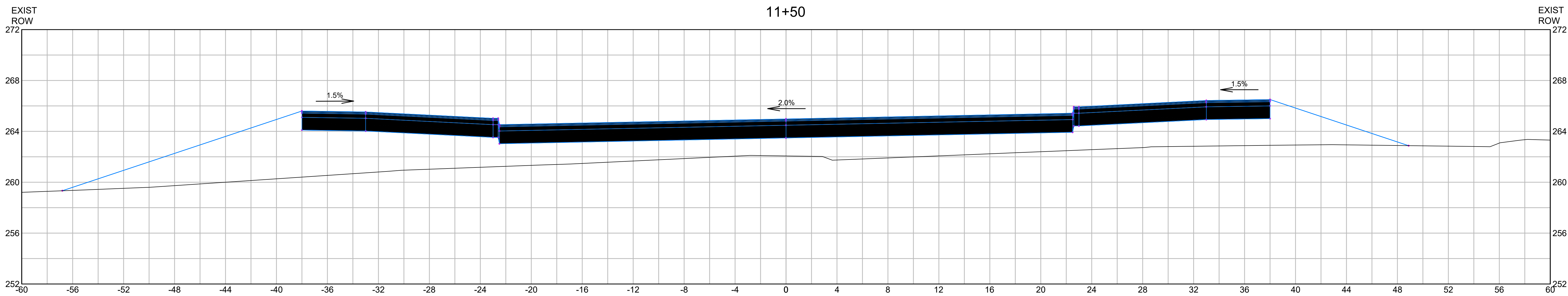
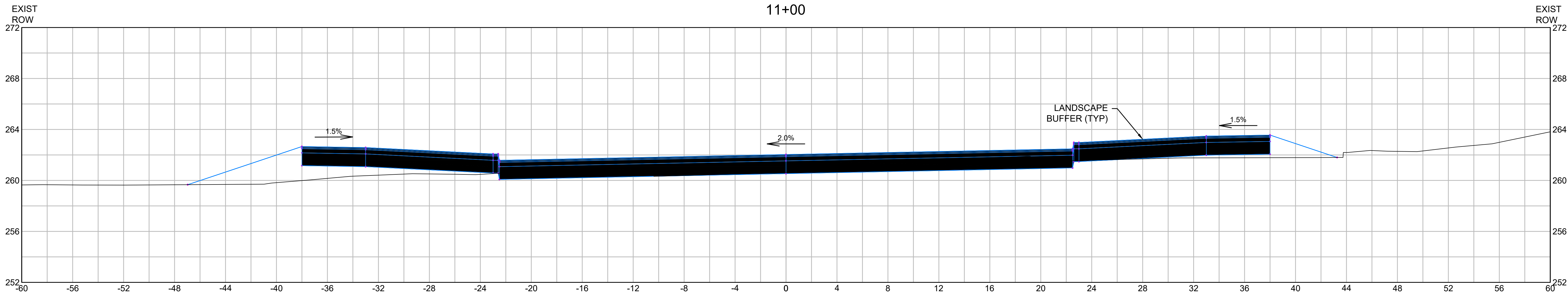
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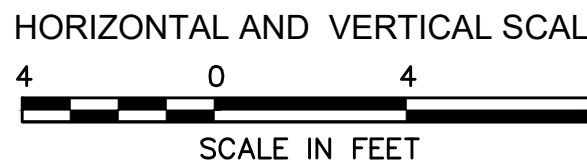
DESIGNED BY RJF DATE 8-22-23
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PROJECT NO.
T1180
TEC CAD FILE
T1180_DET
DRAWING NO.
C-29
SHEET 29 OF 56



- NOTES:
1. ALL LANDSCAPE BUFFERS TO BE A MAX OF 1:10 SLOPE.



DRAWING TITLE

Roadway Cross Sections

11+00 to 12+00

SUBDIVISION NAME & LOCATION

King Street Commons

550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER

Lupoli Companies

290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER

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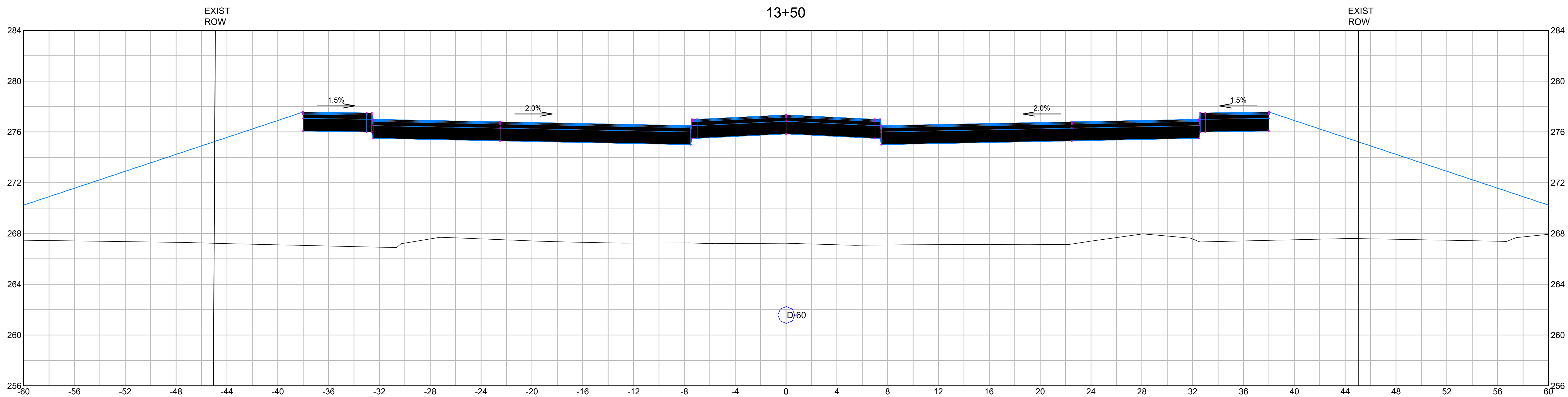
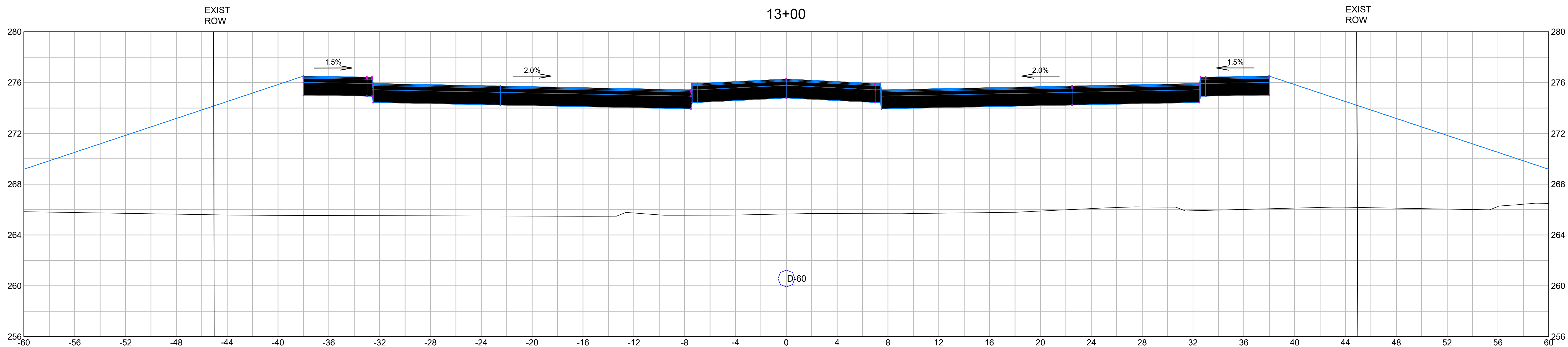
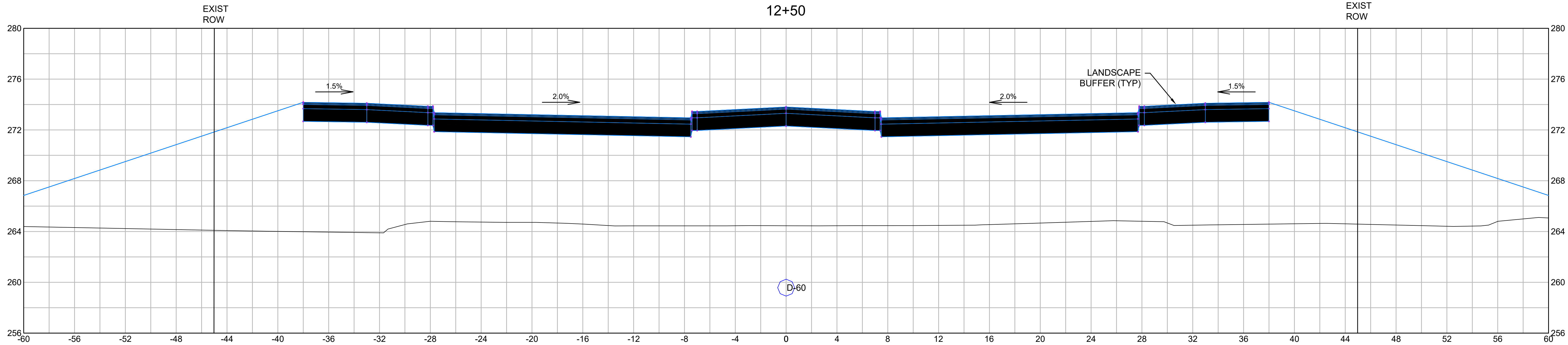
PROJECT NO.
T1180

TEC CAD FILE

T1180_SECTION

DRAWING NO.
C-30

SHEET 30 OF 56



HORIZONTAL AND VERTICAL SCALE

4 0 4 8

SCALE IN FEET

DRAWING TITLE

Roadway Cross Sections

12+50 to 13+50

SUBDIVISION NAME & LOCATION

King Street Commons

550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER

Lupoli Companies

290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER

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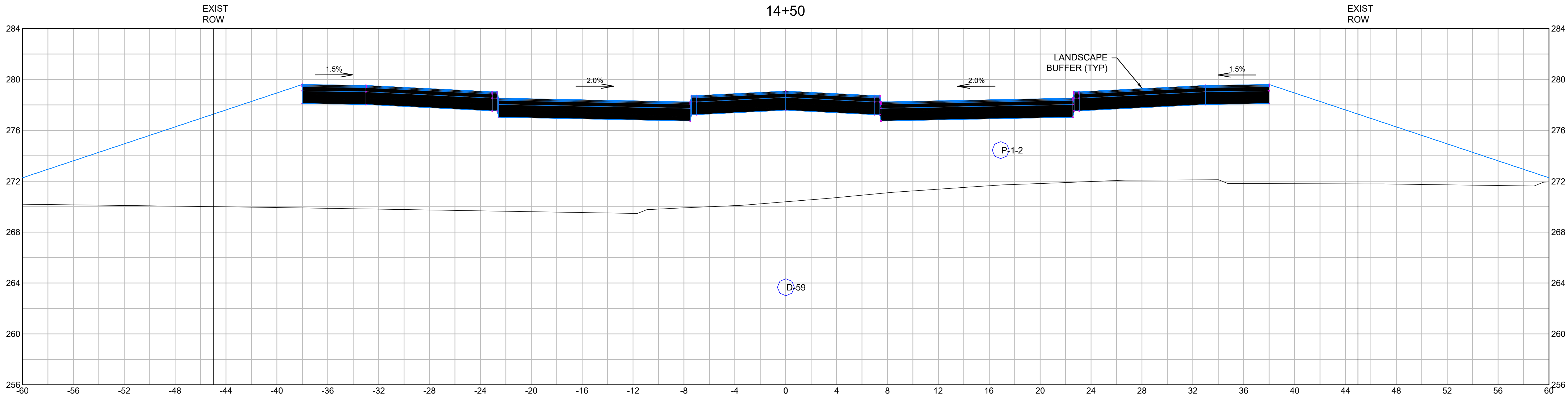
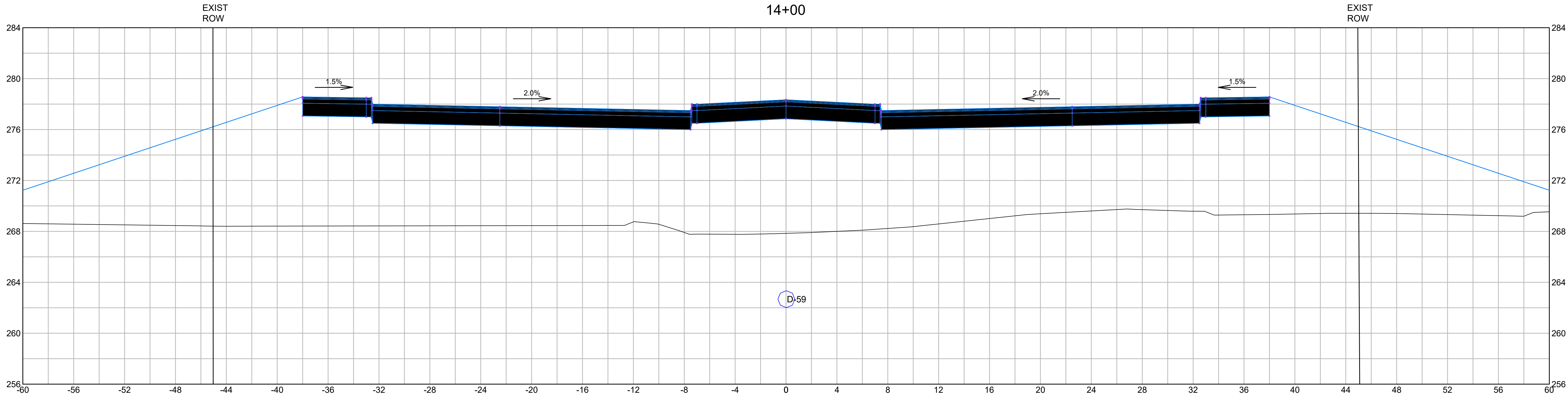
PROJECT NO.
T1180

TEC CAD FILE

T1180_SECTION

DRAWING NO.
C-31

SHEET 31 OF 56



HORIZONTAL AND VERTICAL SCALE

4 0 4 8

SCALE IN FEET

DRAWING TITLE

Roadway Cross Sections

14+00 to 14+50

SUBDIVISION NAME & LOCATION

King Street Commons

550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER

Lupoli Companies

290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER



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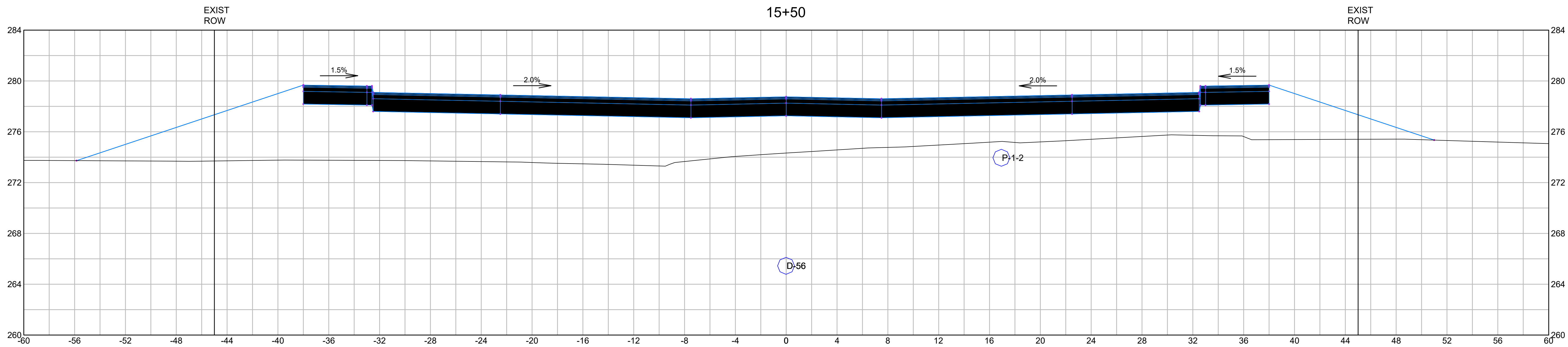
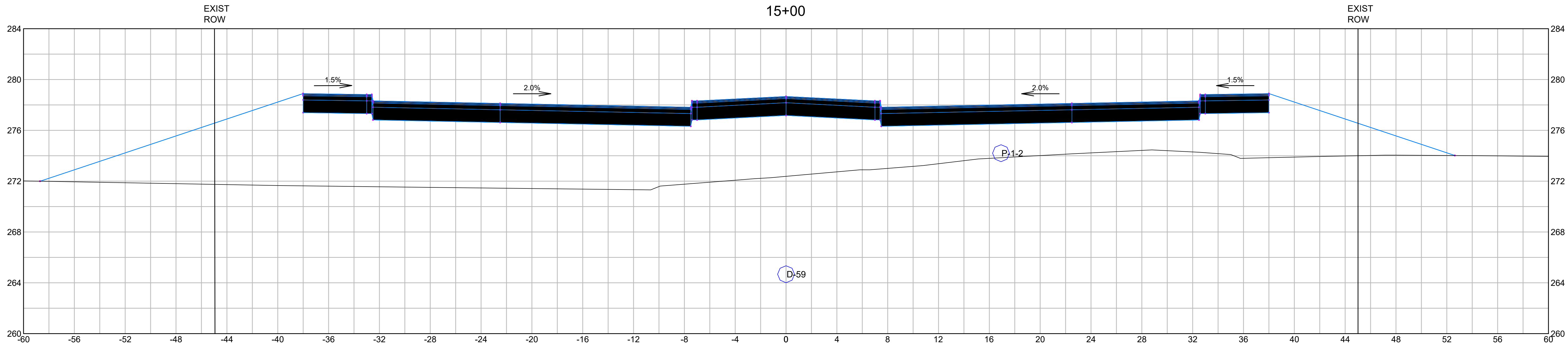
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TEC CAD FILE

T1180_SECTION

DRAWING NO.
C-32

SHEET 32 OF 56



HORIZONTAL AND VERTICAL SCALE
4 0 4 8
SCALE IN FEET

DRAWING TITLE
**Roadway Cross
Sections
15+00 to 15+50**
SUBDIVISION NAME & LOCATION
**King Street
Commons**
550 King Street
Littleton, MA 01460
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DESIGNER / ENGINEER

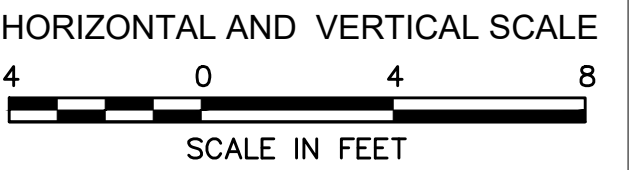
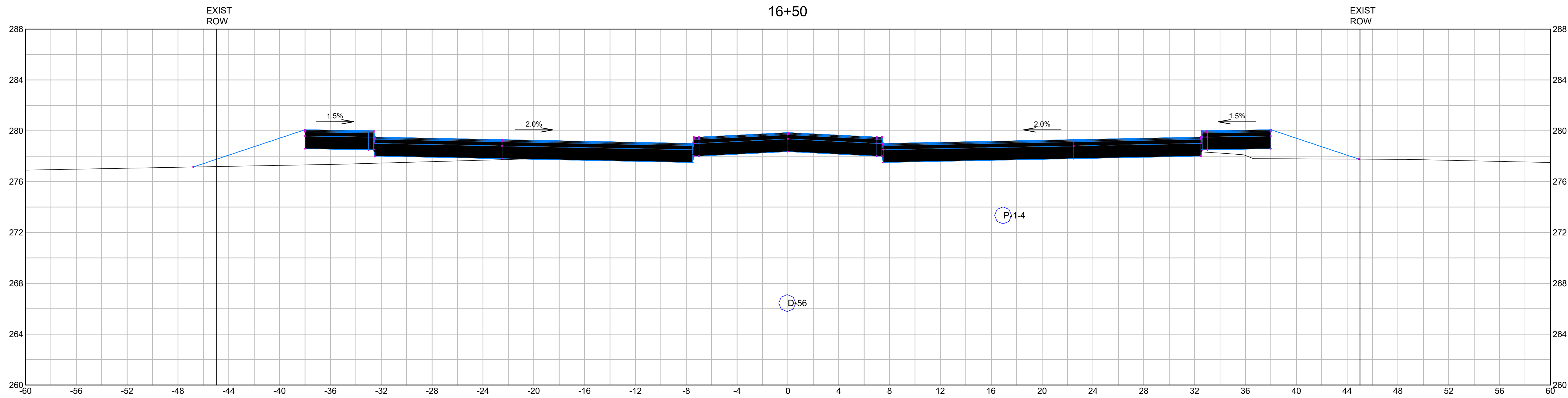
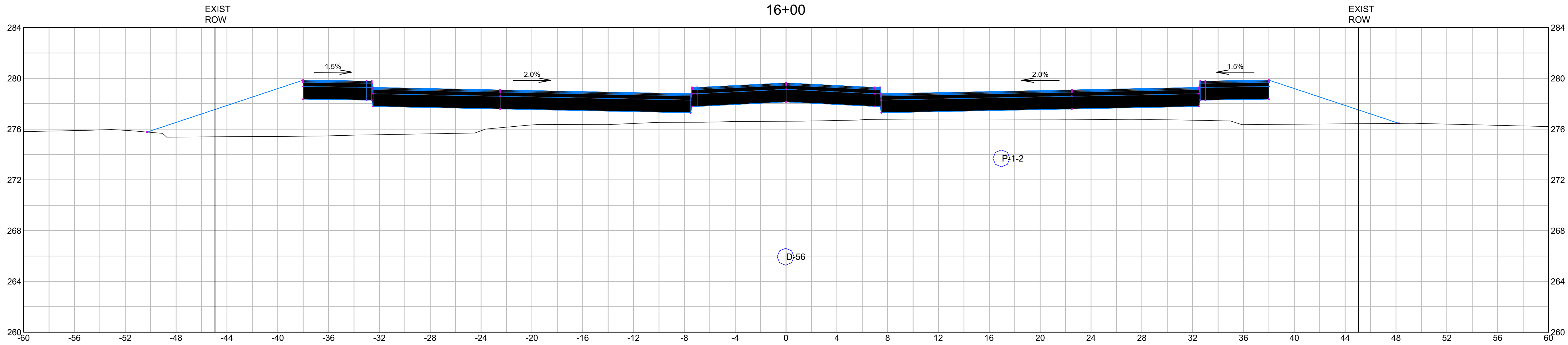


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DRAWING NO.
C-33
SHEET 33 OF 56



DRAWING TITLE
**Roadway Cross
Sections
16+00 to 16+50**

SUBDIVISION NAME & LOCATION
**King Street
Commons**
550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER
Lupoli Companies
290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER

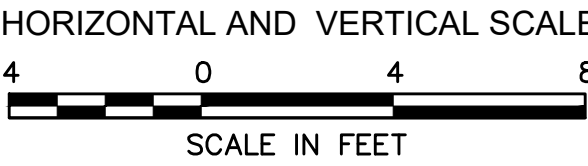
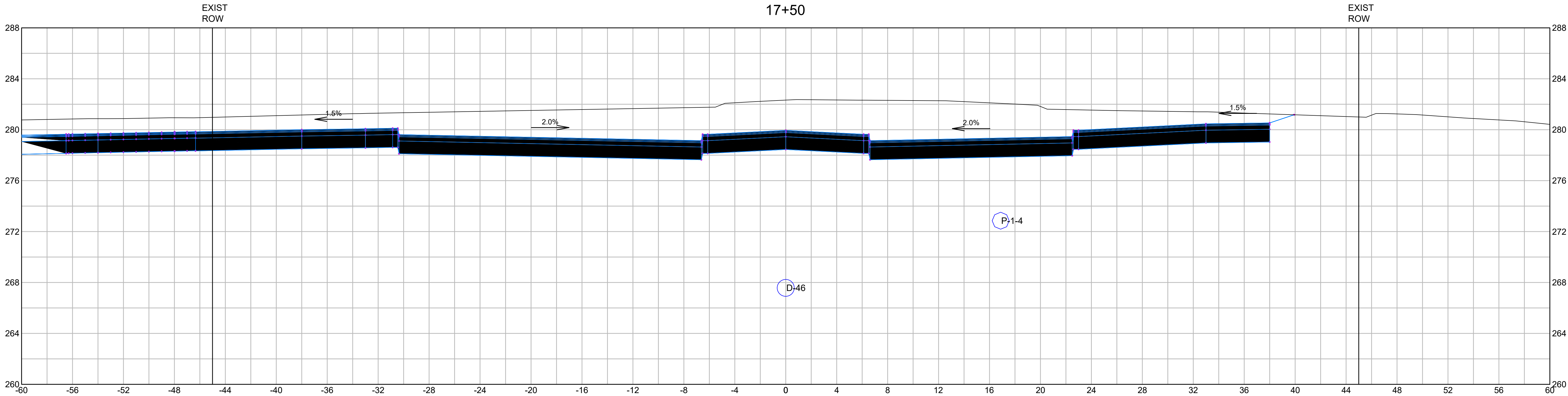
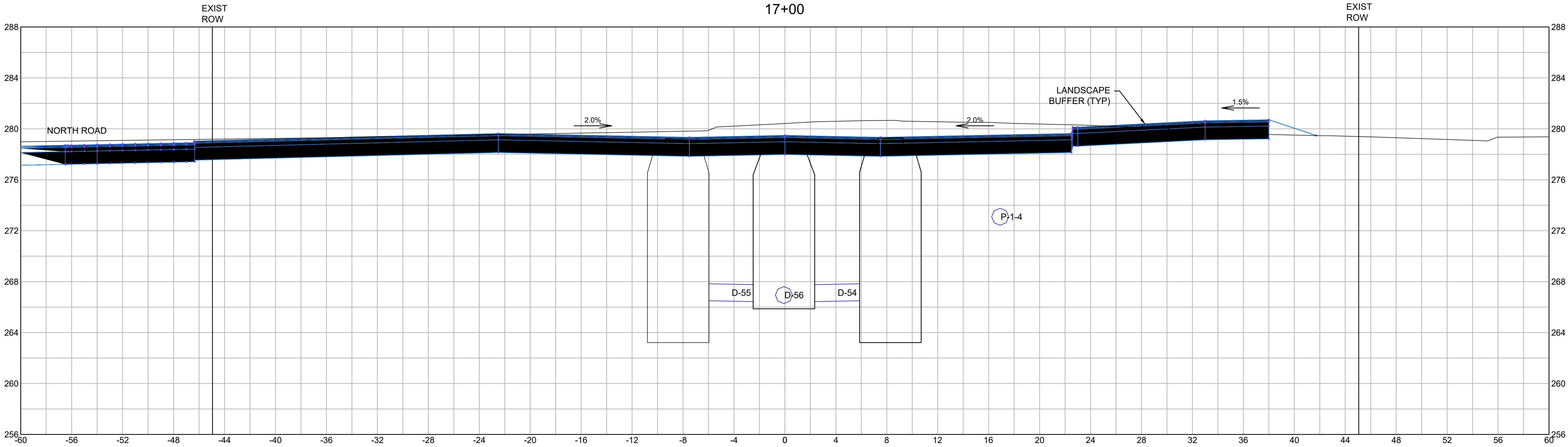
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PROJECT NO.
T1180
TEC CAD FILE
T1180_SECTION
DRAWING NO.
C-34
SHEET 34 OF 56

RICHARD J. FRIBERG JR.
CIVIL
No. 47850
REGISTERED
PROFESSIONAL ENGINEER



DRAWING TITLE
**Roadway Cross
Sections
17+00 to 17+50**

SUBDIVISION NAME & LOCATION
**King Street
Commons**
550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER
Lupoli Companies
290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER



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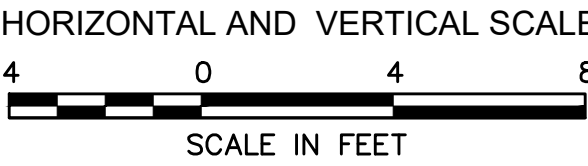
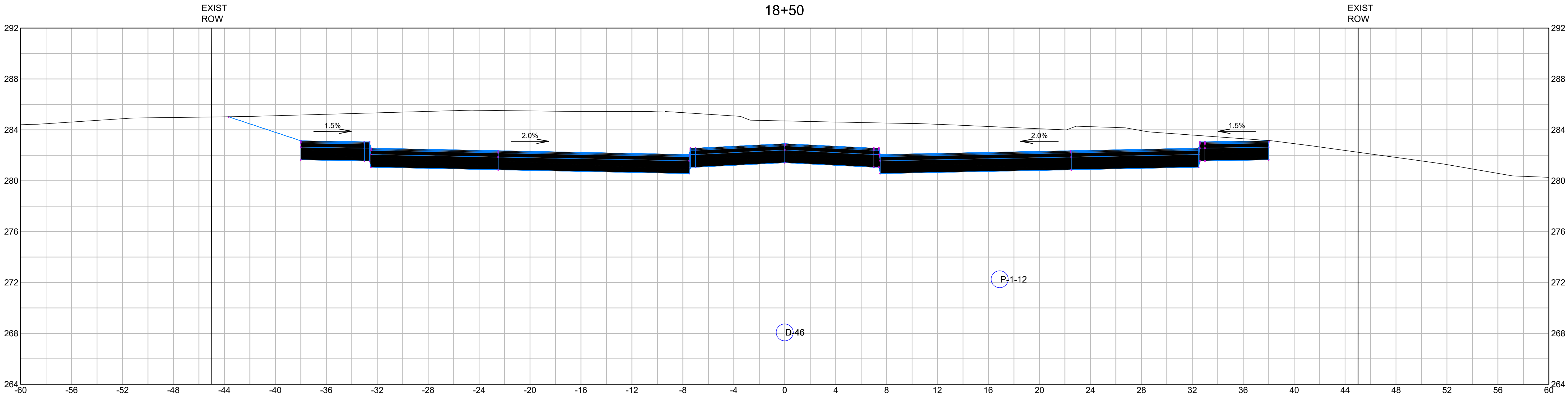
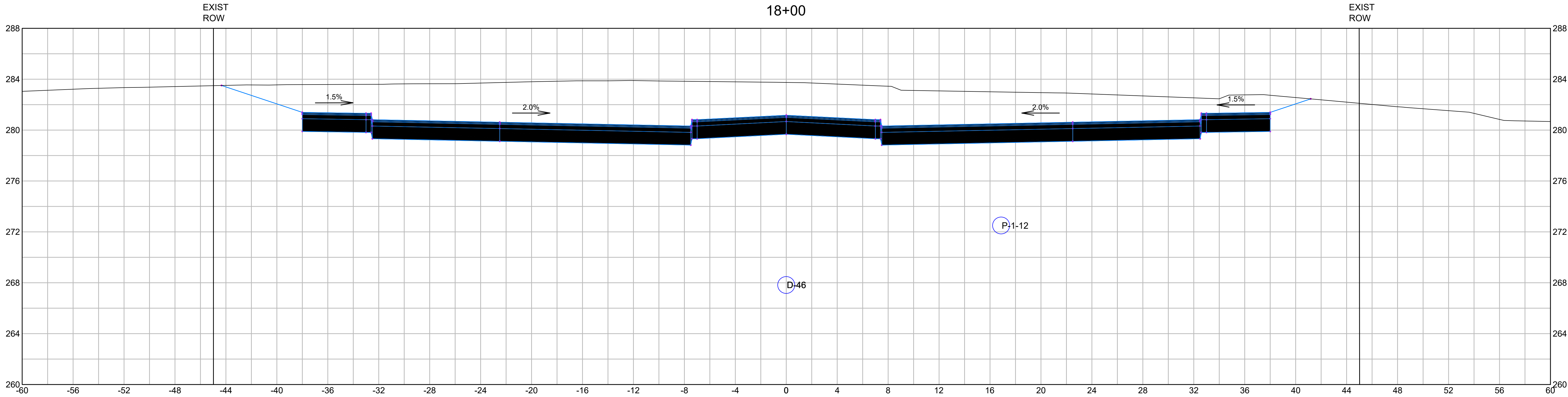
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T1180

TEC CAD FILE

T1180_SECTION

DRAWING NO.
C-35

SHEET 35 OF 56



DRAWING TITLE
**Roadway Cross
Sections
18+00 to 18+50**

SUBDIVISION NAME & LOCATION
**King Street
Commons**
550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER
Lupoli Companies
290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER



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DESIGNED BY RJF DATE 8-22-23
CHECKED BY CPR SCALE AS NOTED

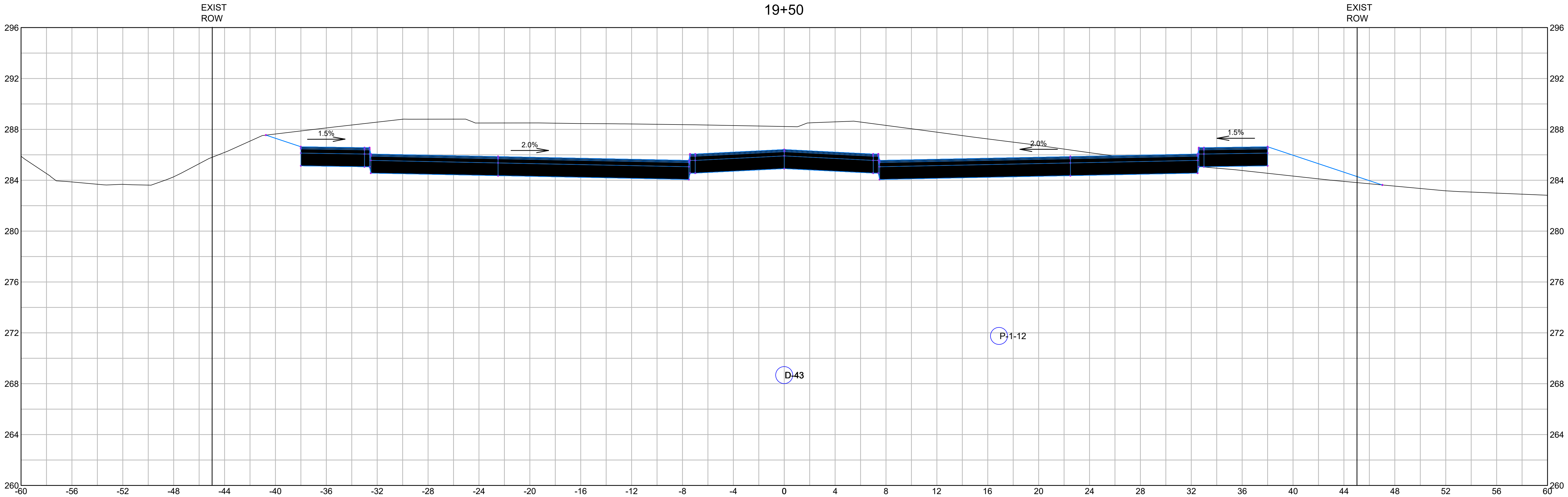
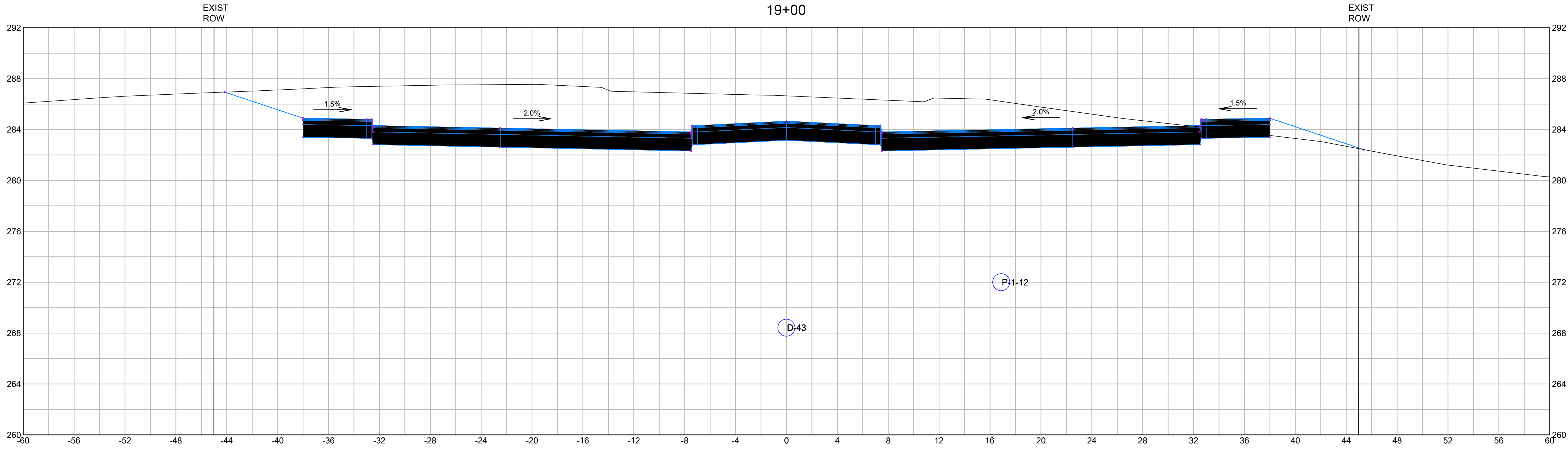
PROJECT NO.
T1180

TEC CAD FILE

T1180_SECTION

DRAWING NO.
C-36

SHEET 36 OF 56



HORIZONTAL AND VERTICAL SCALE

4 0 4 8

SCALE IN FEET

DRAWING TITLE

Roadway Cross Sections

19+00 to 19+50

SUBDIVISION NAME & LOCATION

King Street Commons

550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER

Lupoli Companies

290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER

TEC
The Engineering Corp

TEC, Inc.
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Lawrence, Massachusetts 01843
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DESIGNED BY RJF DATE 8-22-23

CHECKED BY CPR SCALE AS NOTED

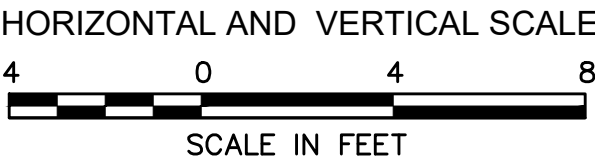
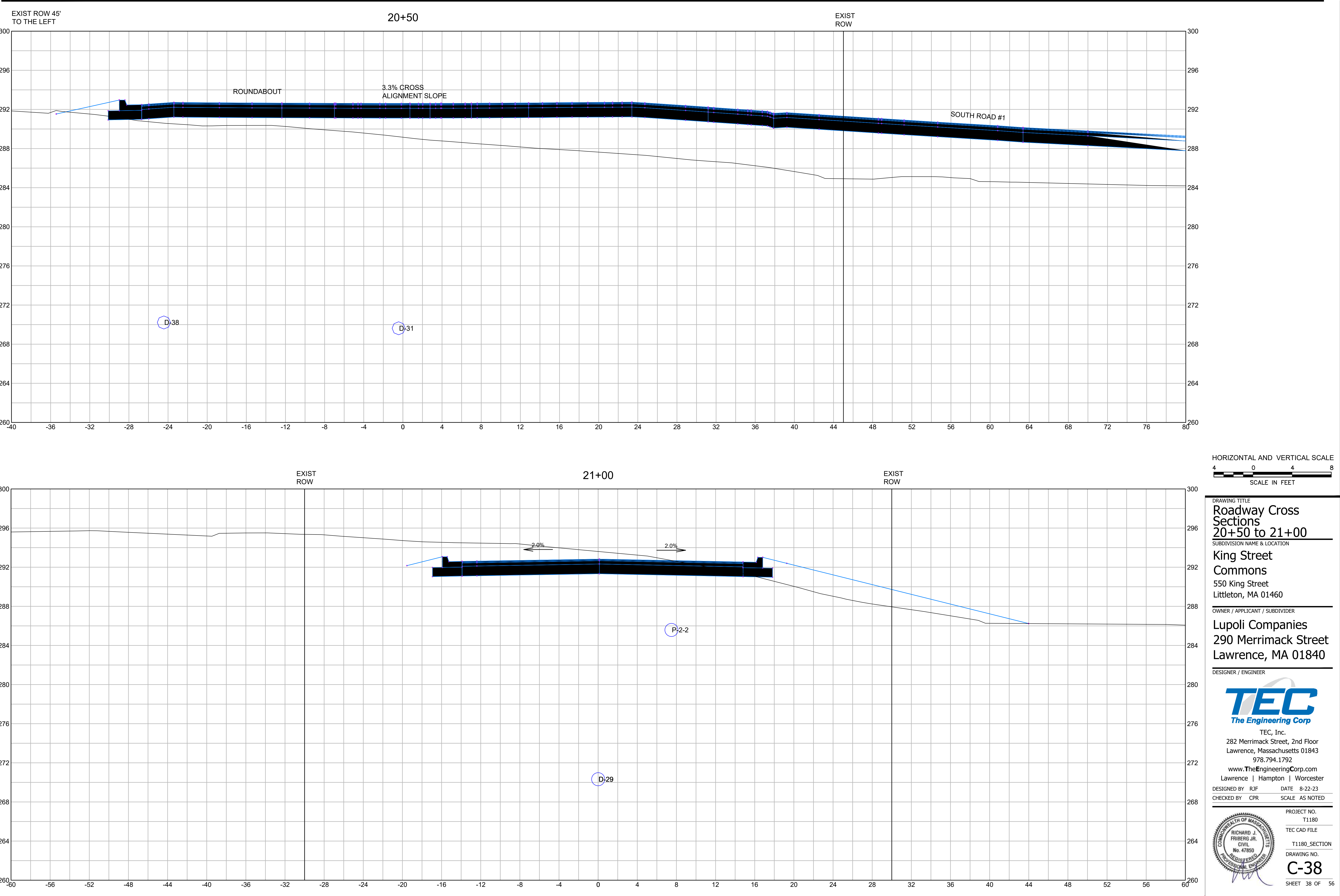
PROJECT NO.
T1180

TEC CAD FILE

T1180_SECTION

DRAWING NO.
C-37

SHEET 37 OF 56



DRAWING TITLE
**Roadway Cross
Sections**
20+50 to 21+00

SUBDIVISION NAME & LOCATION
**King Street
Commons**
550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER
Lupoli Companies
290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER

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DESIGNED BY RJF DATE 8-22-23
CHECKED BY CPR SCALE AS NOTED

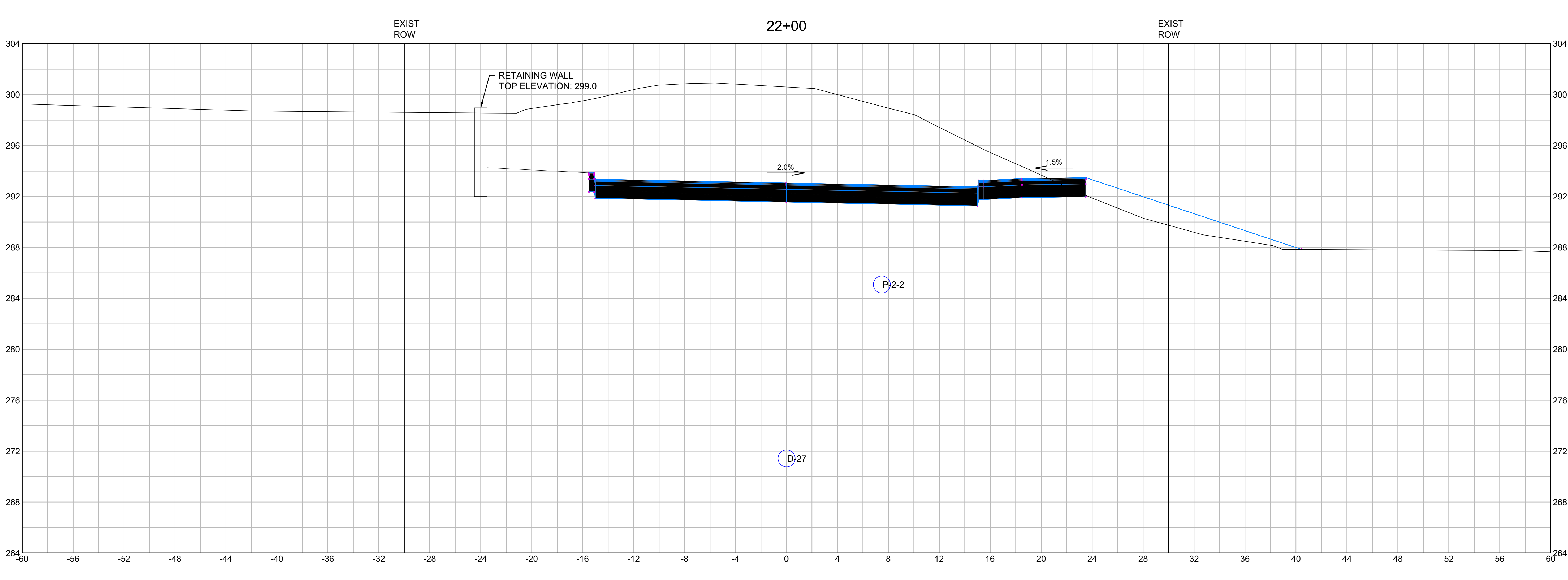
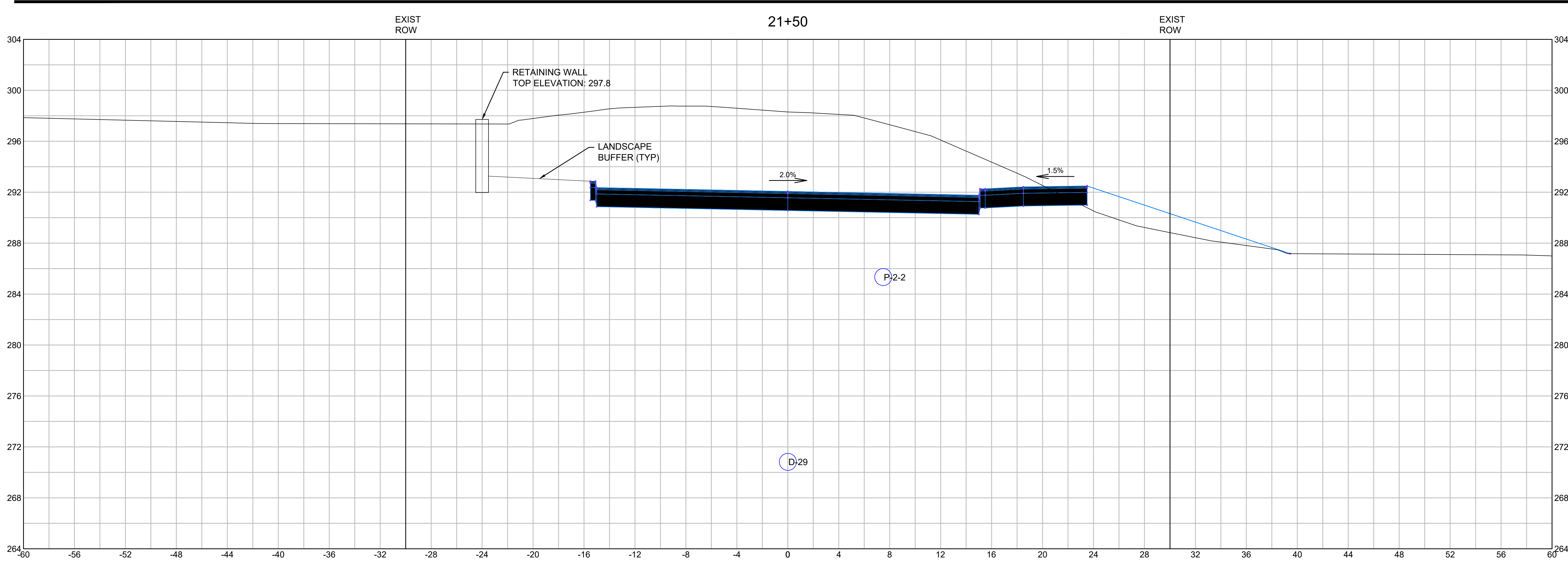
PROJECT NO.
T1180

TEC CAD FILE

T1180_SECTION

DRAWING NO.
C-38

SHEET 38 OF 56



HORIZONTAL AND VERTICAL SCALE

4 0 4 8

SCALE IN FEET

DRAWING TITLE

Roadway Cross Sections

21+50 to 22+00

SUBDIVISION NAME & LOCATION

King Street Commons

550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER

Lupoli Companies

290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER

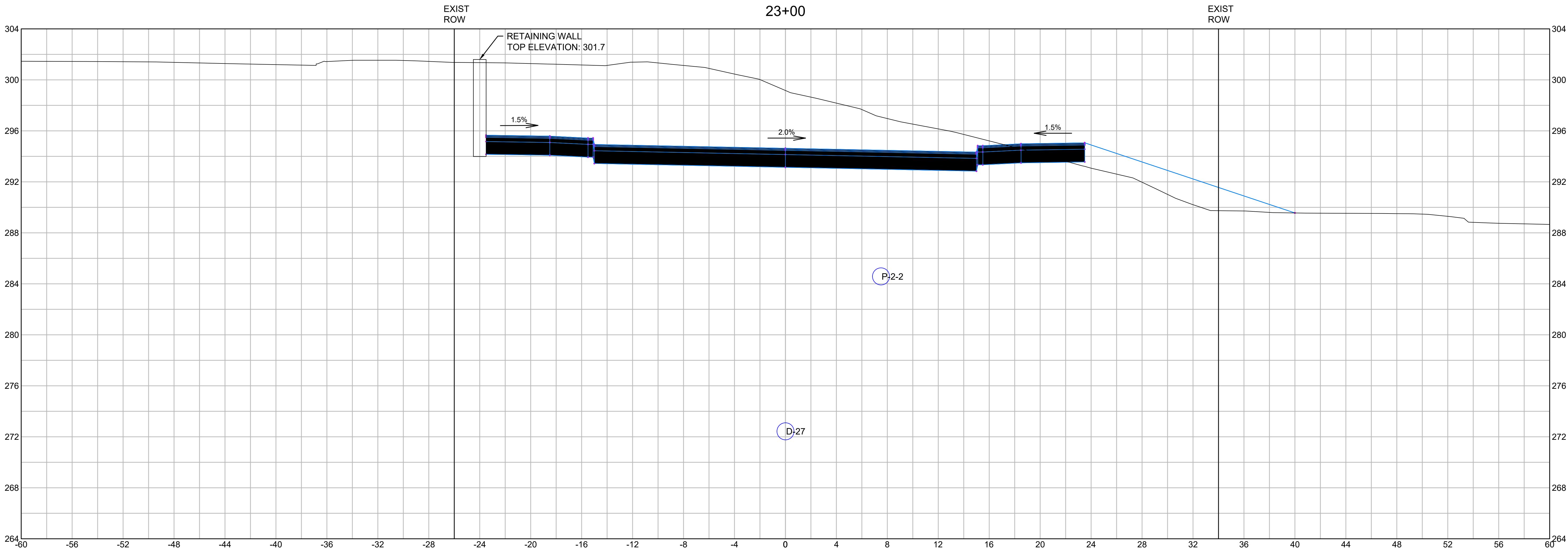
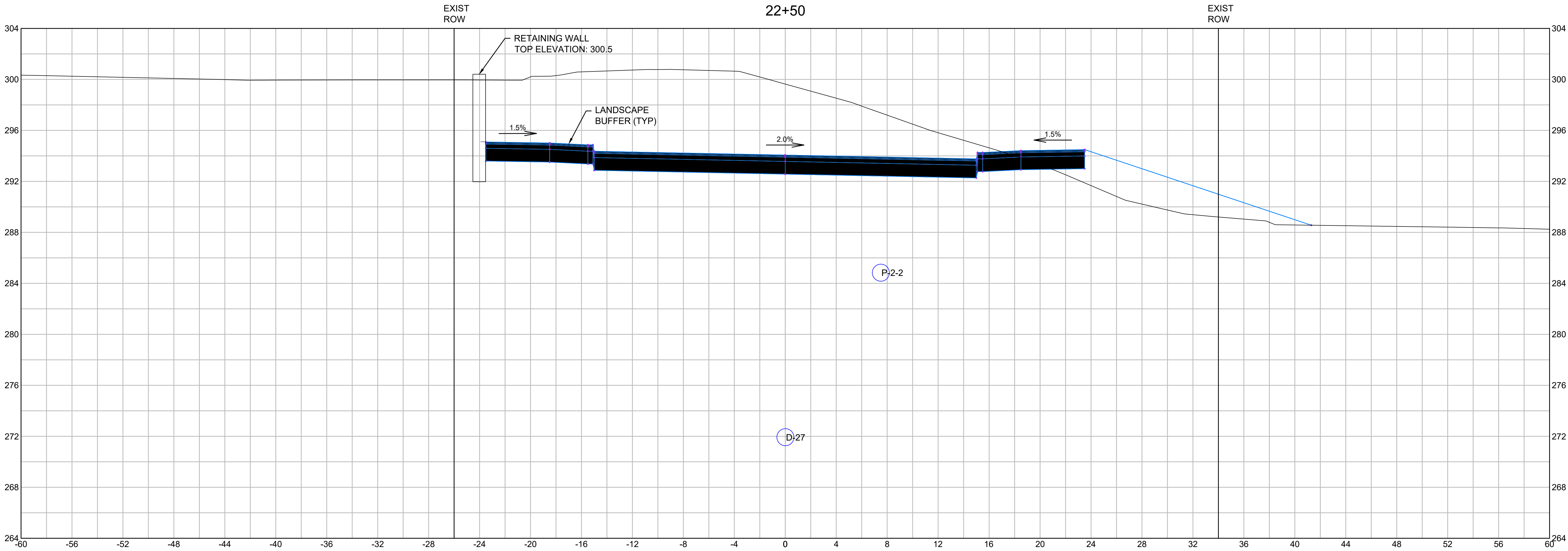
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DESIGNED BY RJF DATE 8-22-23
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PROJECT NO. T1180
TEC CAD FILE
T1180_SECTION
DRAWING NO. C-39
SHEET 39 OF 56

RICHARD J. FRIBERG JR.
CIVIL
No. 47850
REGISTERED PROFESSIONAL ENGINEER



HORIZONTAL AND VERTICAL SCALE

4 0 4 8

SCALE IN FEET

DRAWING TITLE

**Roadway Cross
Sections
22+50 to 23+00**

SUBDIVISION NAME & LOCATION

**King Street
Commons**
550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER

Lupoli Companies
290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER



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DESIGNED BY RJF DATE 8-22-23
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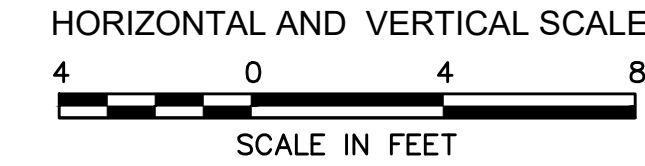
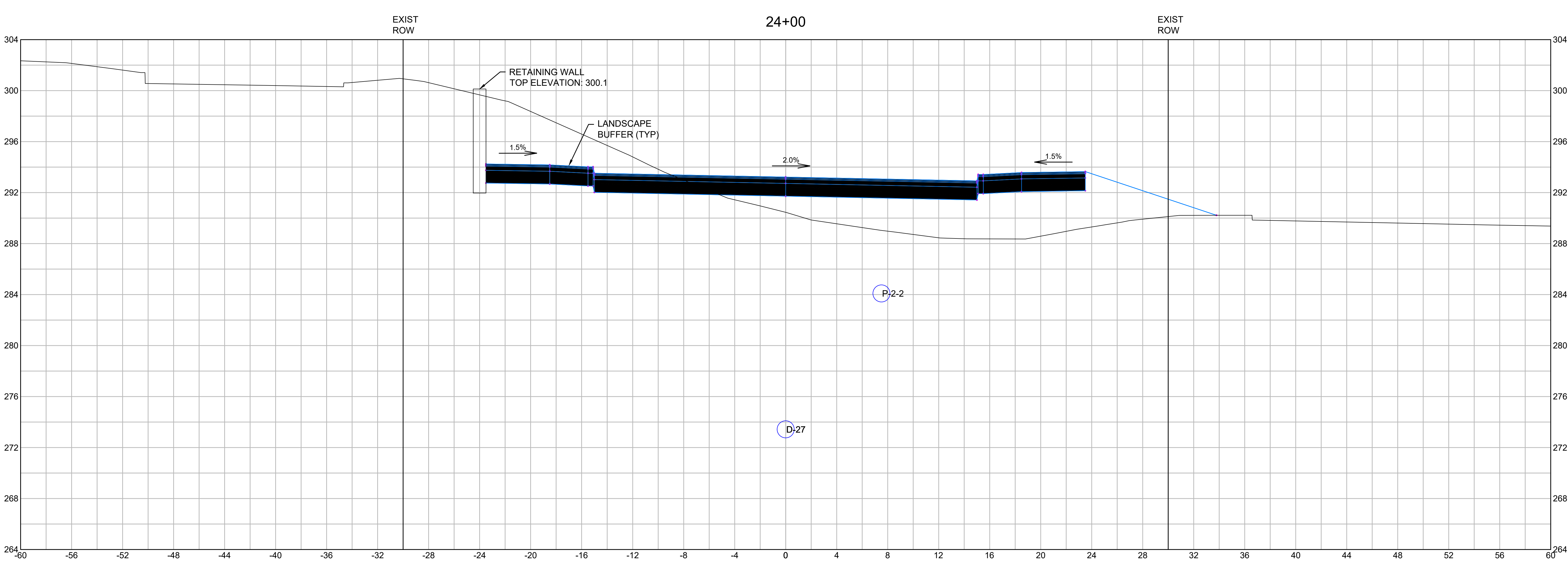
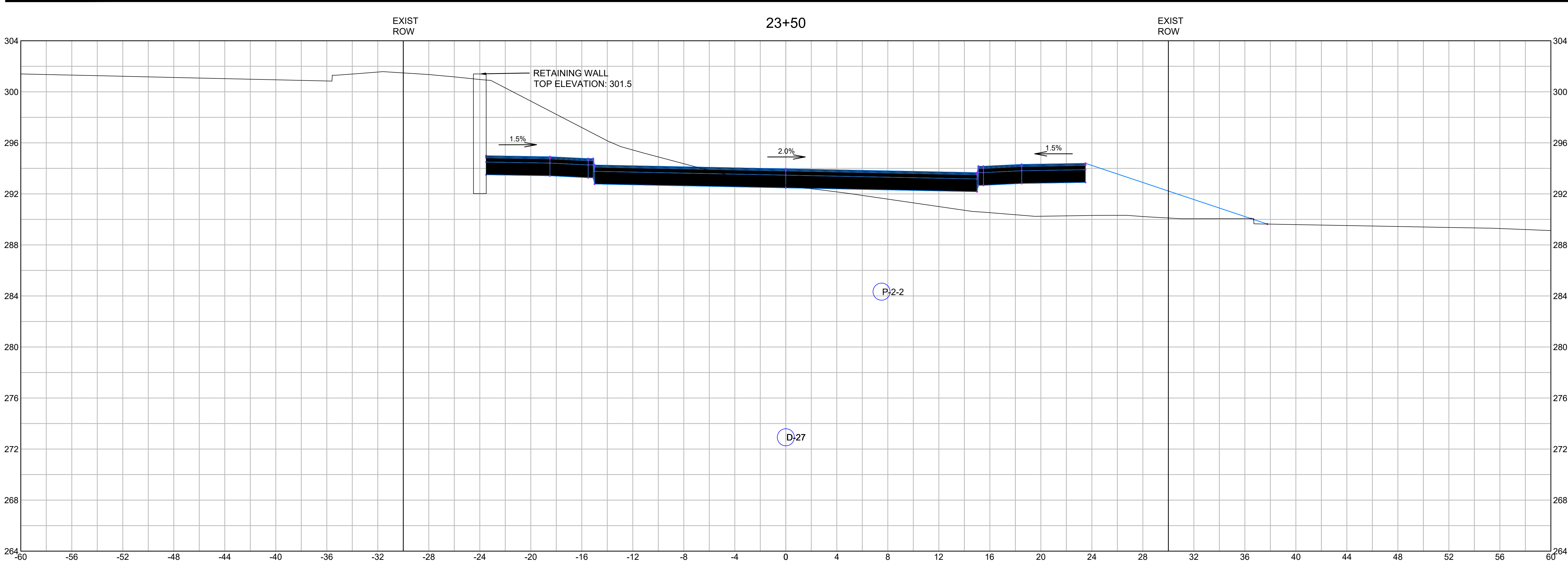
PROJECT NO.
T1180

TEC CAD FILE

T1180_SECTION

DRAWING NO.
C-40

SHEET 40 OF 56



DRAWING TITLE

**Roadway Cross
Sections
23+50 to 24+00**

SUBDIVISION NAME & LOCATION

**King Street
Commons**
550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER

Lupoli Companies
290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER

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DESIGNED BY RJF DATE 8-22-23
CHECKED BY CPR SCALE AS NOTED

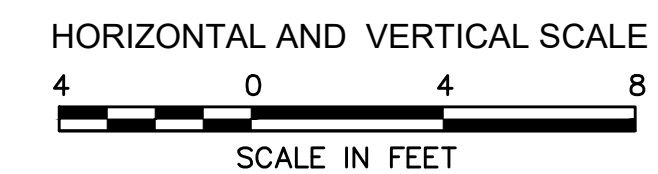
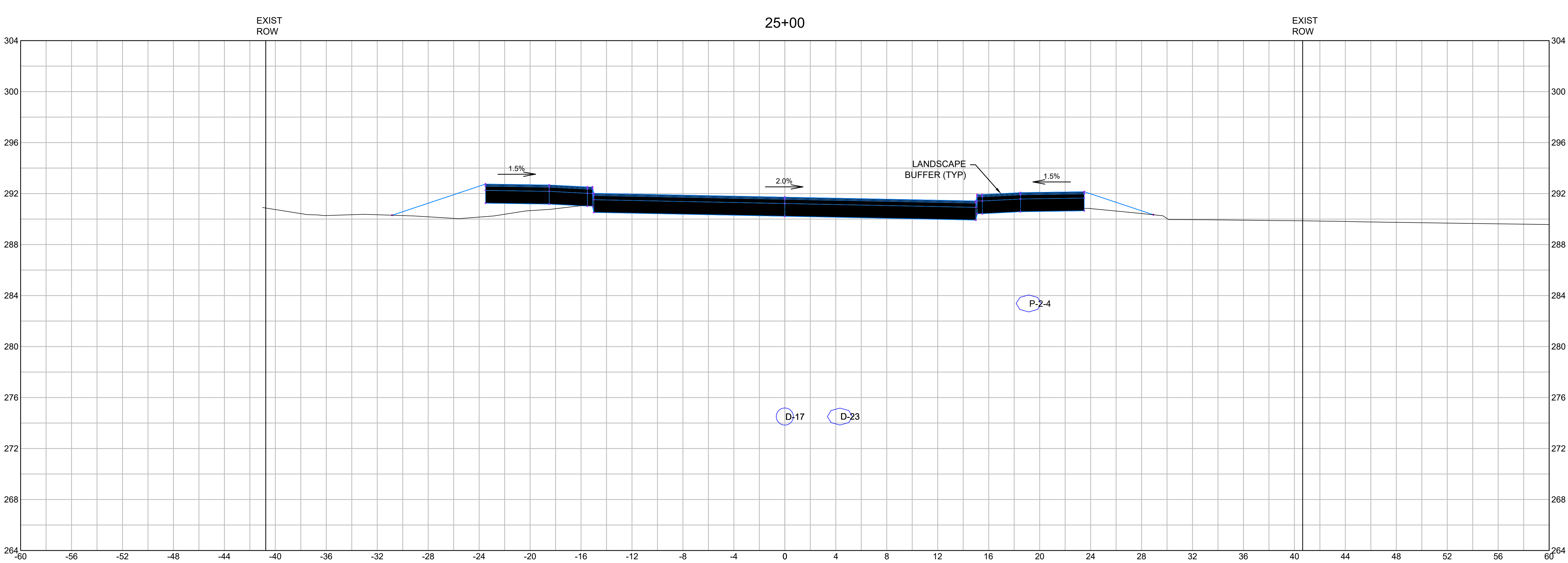
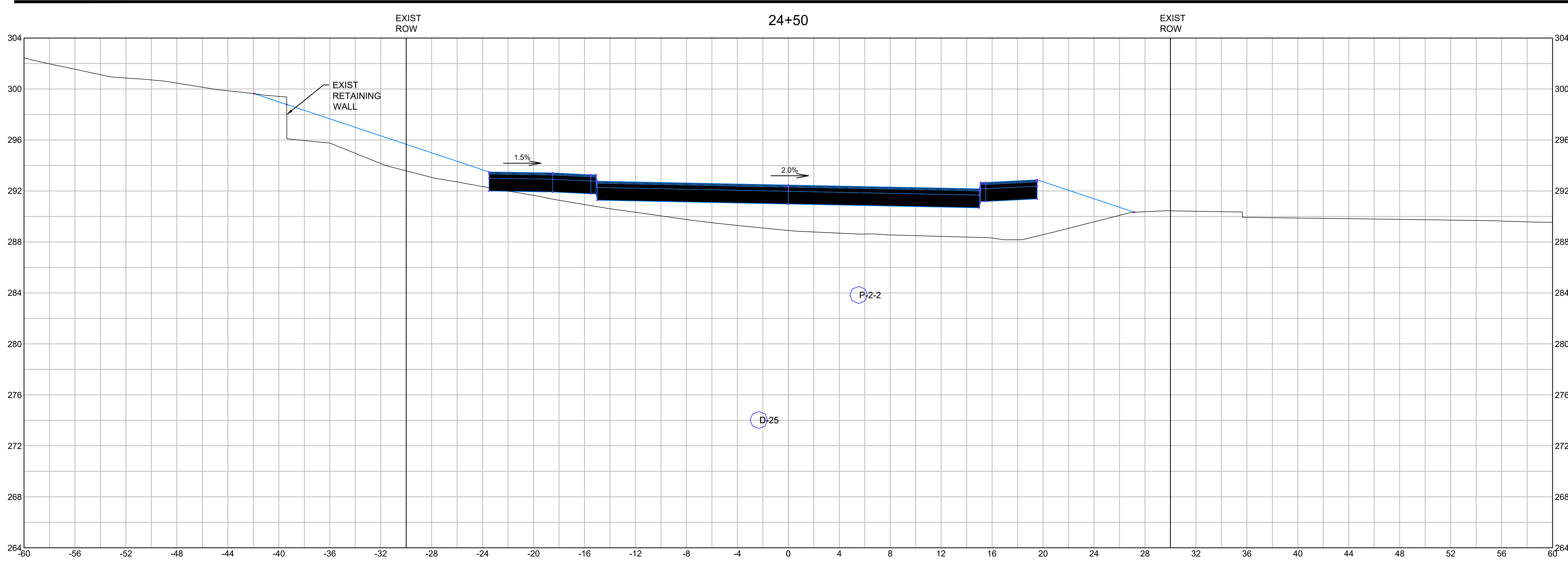
PROJECT NO.
T1180

TEC CAD FILE

T1180_SECTION

DRAWING NO.
C-41

SHEET 41 OF 56



DRAWING TITLE

Roadway Cross Sections

24+50 to 25+00

SUBDIVISION NAME & LOCATION

King Street Commons

550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER

Lupoli Companies

290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER

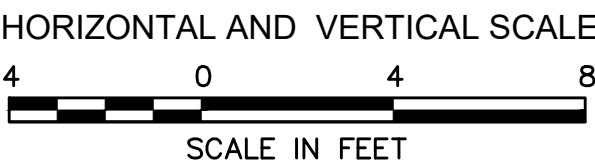
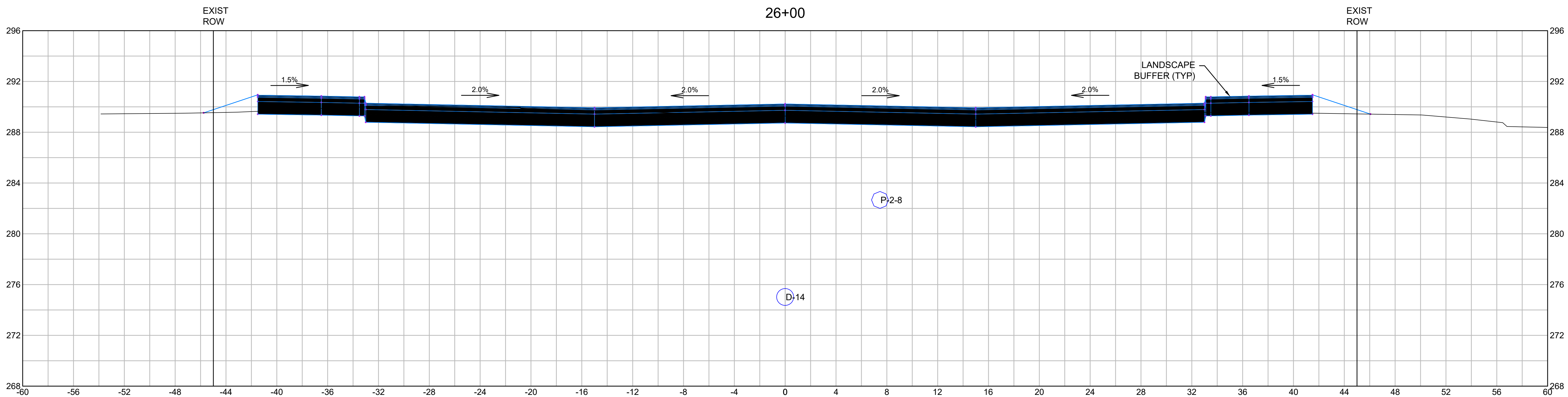
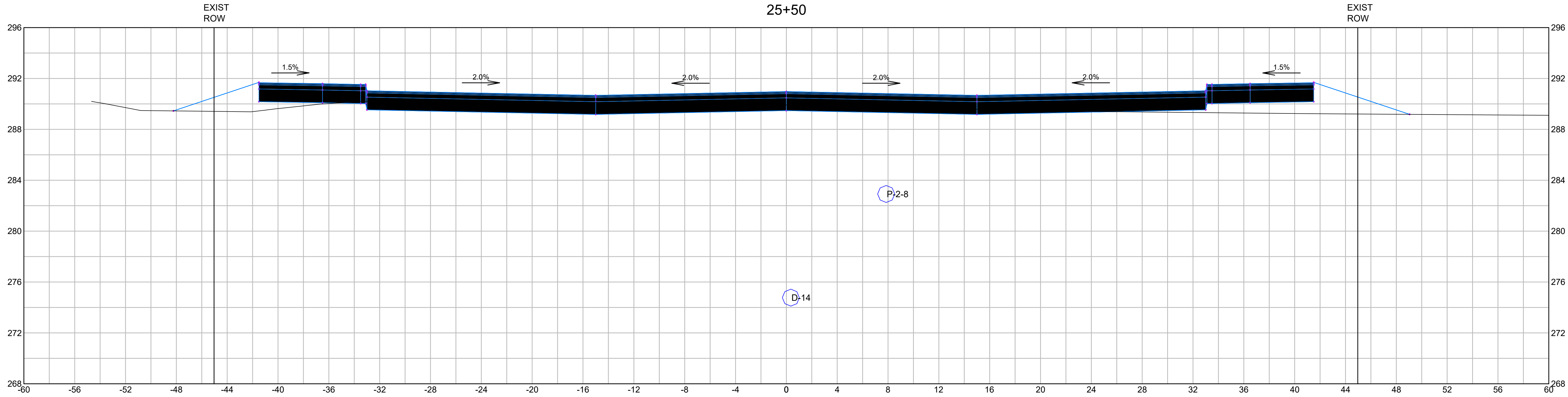
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DESIGNED BY RJF DATE 8-22-23
CHECKED BY CPR SCALE AS NOTED

PROJECT NO. T1180
TEC CAD FILE
T1180_SECTION
DRAWING NO. **C-42**
SHEET 42 OF 56

RICHARD J. FRIBERG JR.
CIVIL
No. 47850
PROFESSIONAL ENGINEER



DRAWING TITLE
Roadway Cross Sections
25+50 to 26+00

SUBDIVISION NAME & LOCATION
King Street Commons
550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER
Lupoli Companies
290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER



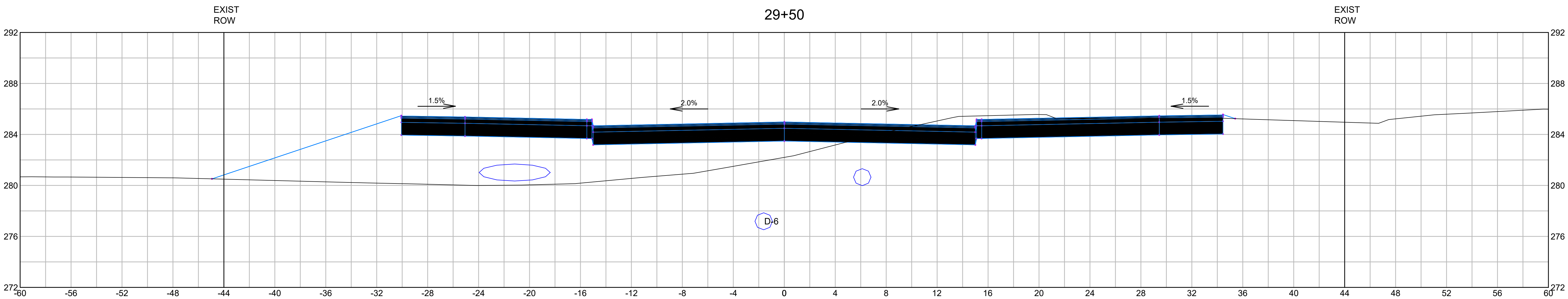
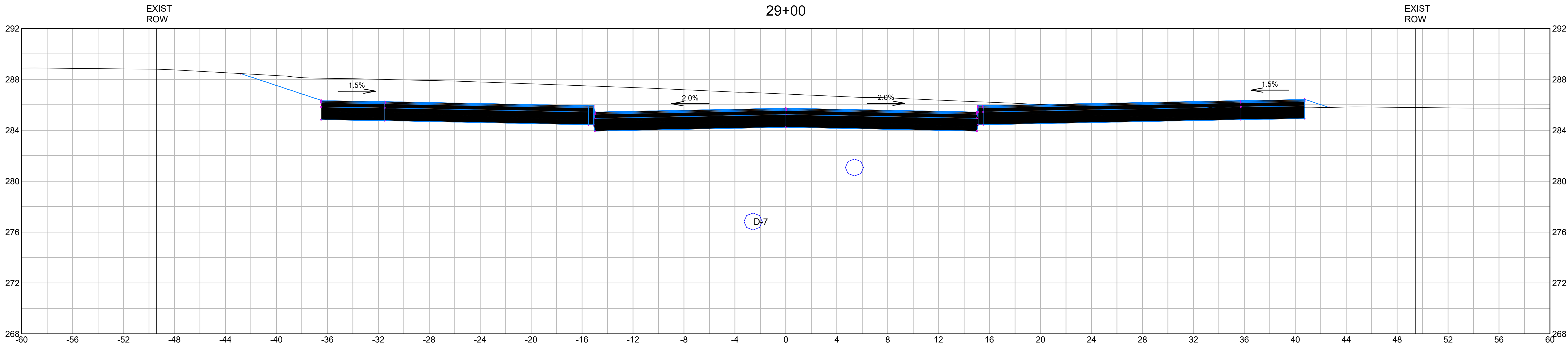
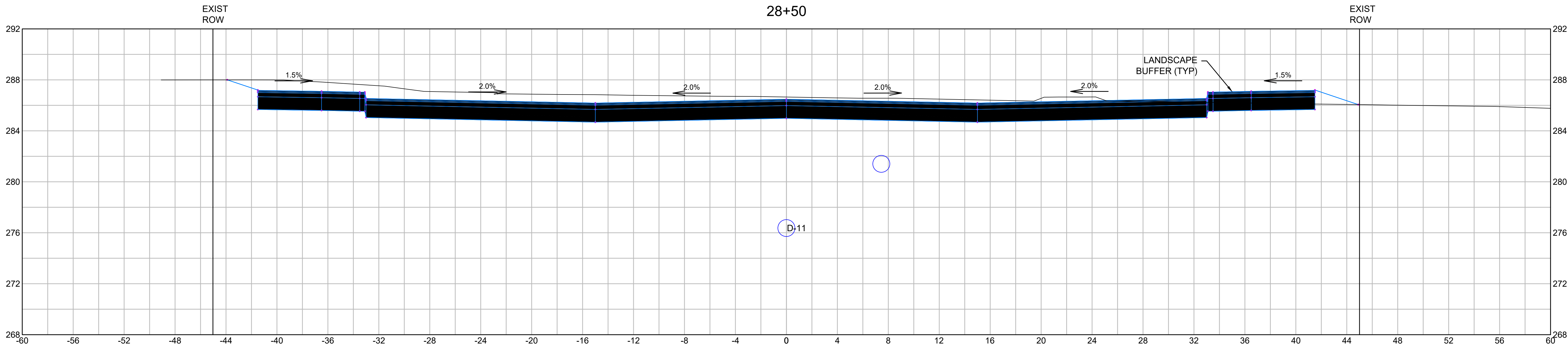
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DESIGNED BY RJF DATE 8-22-23
CHECKED BY CPR SCALE AS NOTED



PROJECT NO.
T1180
TEC CAD FILE
T1180_SECTION
DRAWING NO.
C-43
SHEET 43 OF 56



HORIZONTAL AND VERTICAL SCALE

4 0 4 8

SCALE IN FEET

DRAWING TITLE

Roadway Cross Sections

28+50 to 29+50

SUBDIVISION NAME & LOCATION

King Street Commons

550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER

Lupoli Companies

290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER

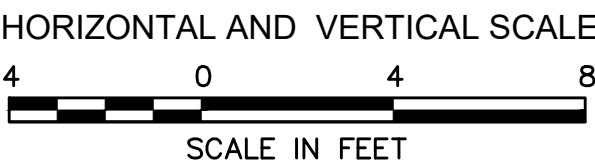
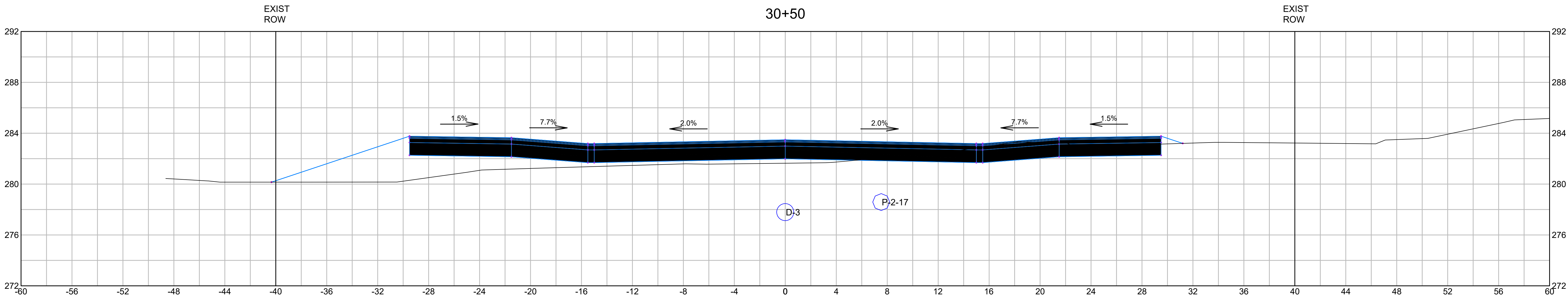
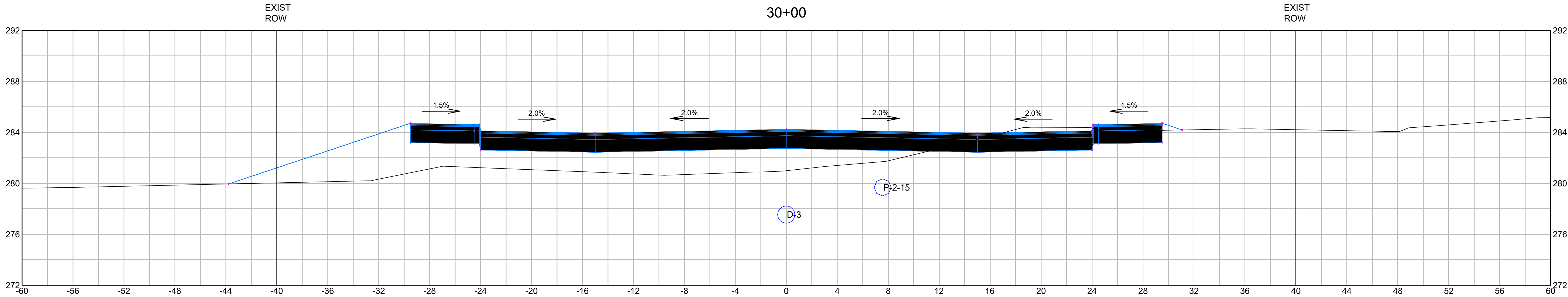
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DESIGNED BY RJF DATE 8-22-23
CHECKED BY CPR SCALE AS NOTED

PROJECT NO. T1180
TEC CAD FILE
T1180_SECTION
DRAWING NO. **C-46**
SHEET 46 OF 56

RICHARD J. FRIBERG JR.
CIVIL
No. 47850
PROFESSIONAL ENGINEER



DRAWING TITLE
**Roadway Cross
Sections
30+00 to 30+50**

SUBDIVISION NAME & LOCATION
**King Street
Commons**
550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER
Lupoli Companies
290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER

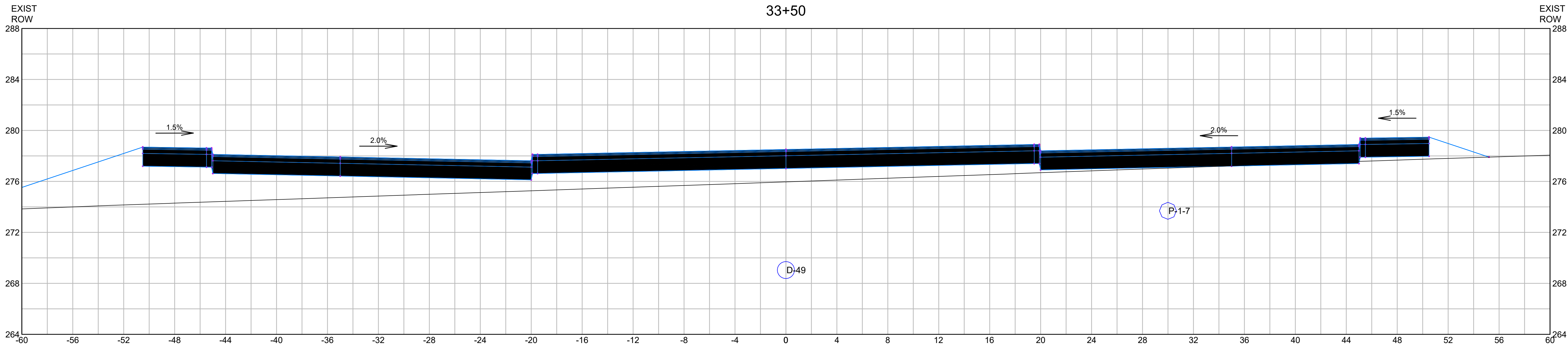
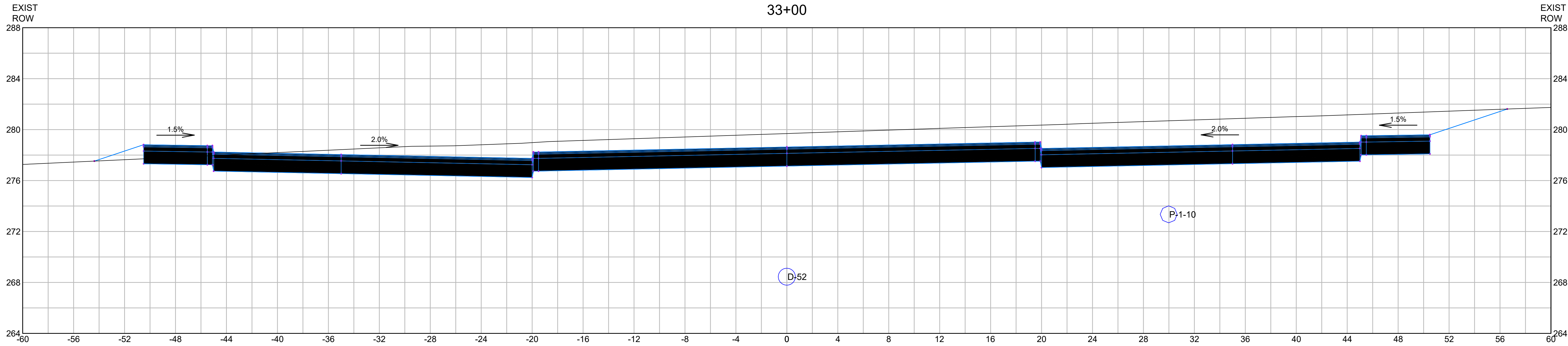
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DESIGNED BY RJF DATE 8-22-23
CHECKED BY CPR SCALE AS NOTED

PROJECT NO.
T1180
TEC CAD FILE
T1180_SECTION
DRAWING NO.
C-47
SHEET 47 OF 56

RICHARD J. FRIBERG JR.
CIVIL
No. 47850
REGISTERED
PROFESSIONAL ENGINEER



HORIZONTAL AND VERTICAL SCALE

4 0 4 8

SCALE IN FEET

DRAWING TITLE

Roadway Cross Sections

33+00 to 33+50

SUBDIVISION NAME & LOCATION

King Street Commons

550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER

Lupoli Companies

290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER



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DESIGNED BY RJF DATE 8-22-23
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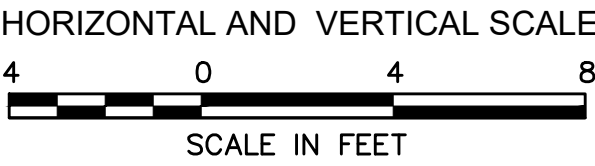
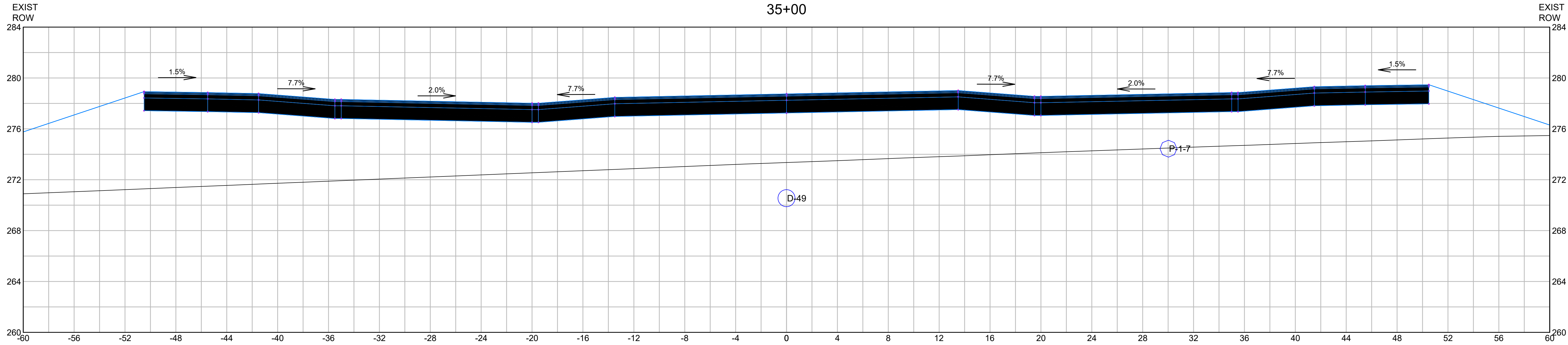
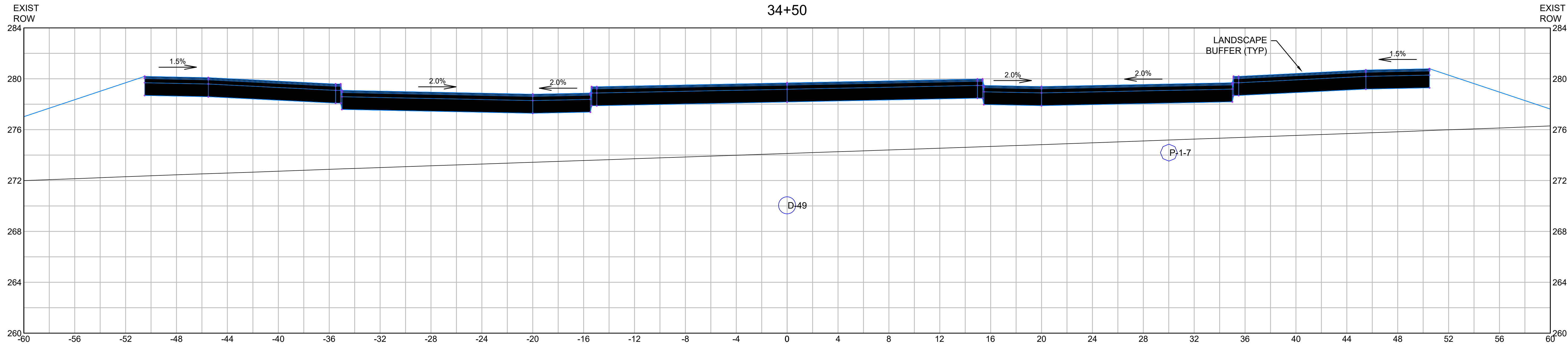
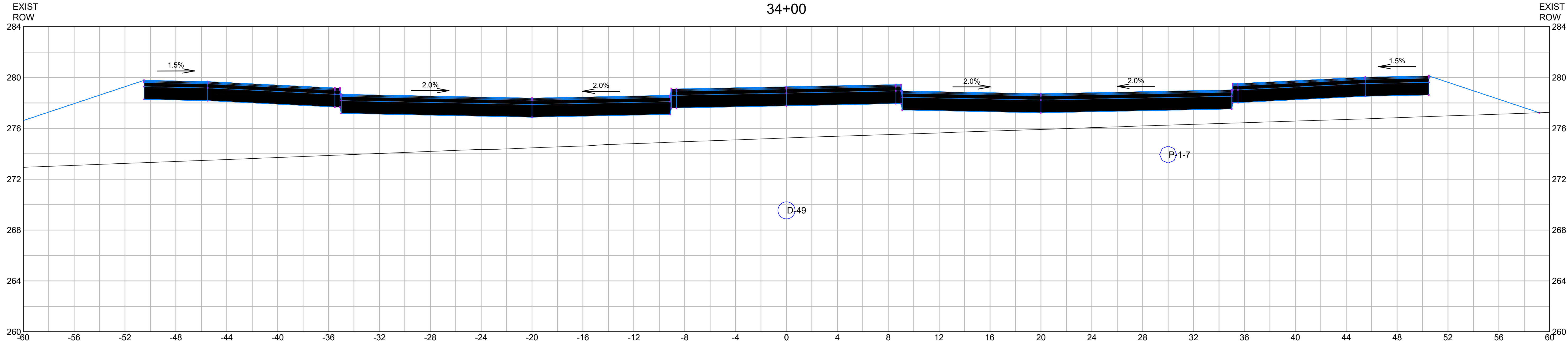
PROJECT NO.
T1180

TEC CAD FILE

T1180_SECTION

DRAWING NO.
C-48

SHEET 48 OF 56



DRAWING TITLE

Roadway Cross Sections

34+00 to 35+00

SUBDIVISION NAME & LOCATION

King Street Commons

550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER

Lupoli Companies

290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER

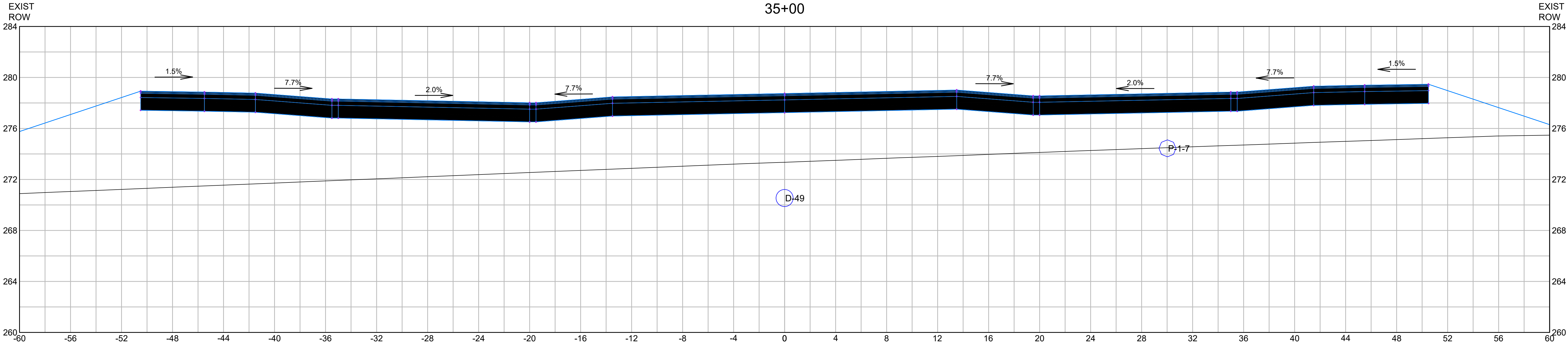
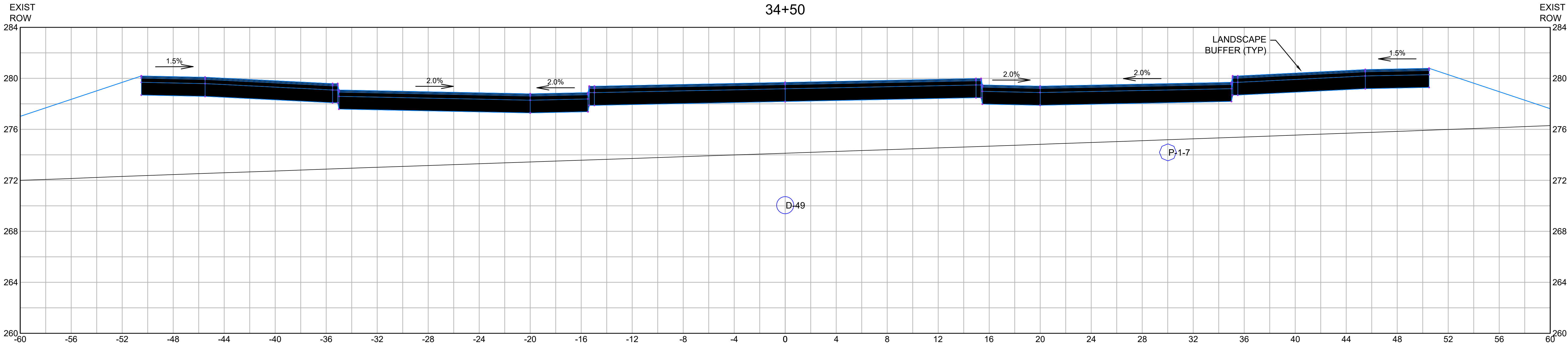
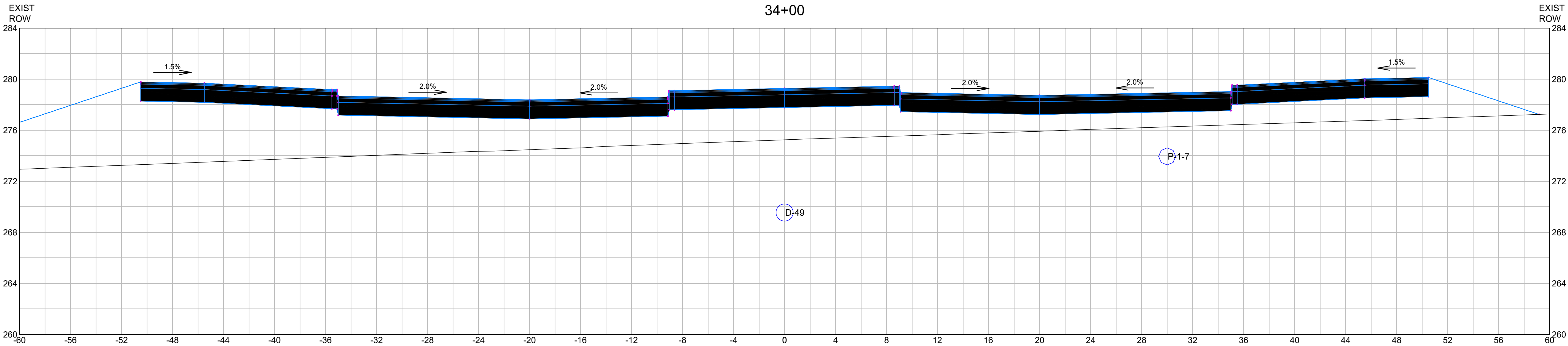
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Lawrence, Massachusetts 01843
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DESIGNED BY RJF DATE 8-22-23
CHECKED BY CPR SCALE AS NOTED

PROJECT NO. T1180
TEC CAD FILE
T1180_SECTION
DRAWING NO. **C-49**
SHEET 49 OF 56

RICHARD J. FRIBERG JR.
CIVIL
No. 47850
PROFESSIONAL ENGINEER



HORIZONTAL AND VERTICAL SCALE

4 0 4 8

SCALE IN FEET

DRAWING TITLE

Roadway Cross Sections

34+00 to 35+00

SUBDIVISION NAME & LOCATION

King Street Commons

550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER

Lupoli Companies

290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER

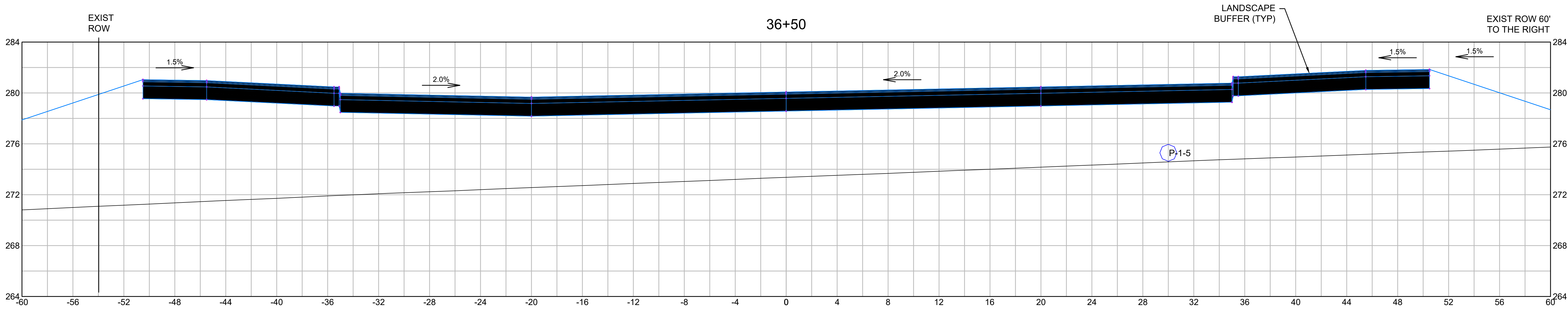
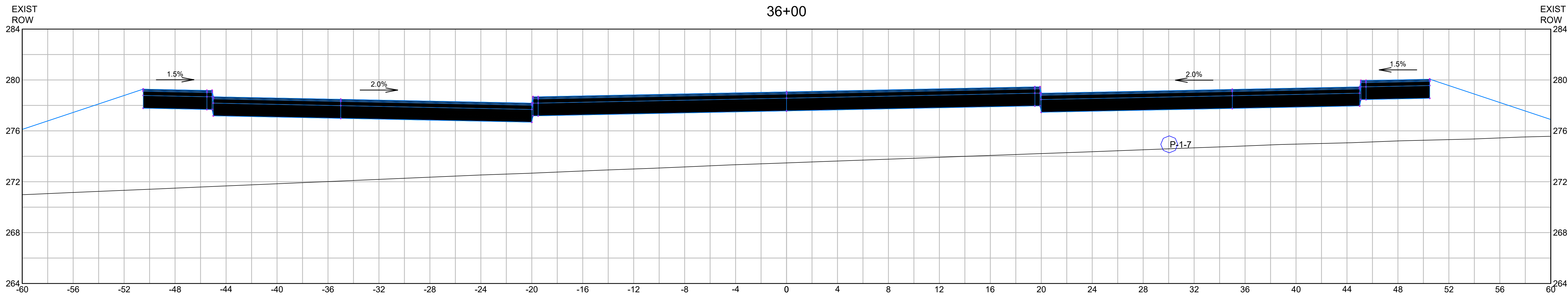
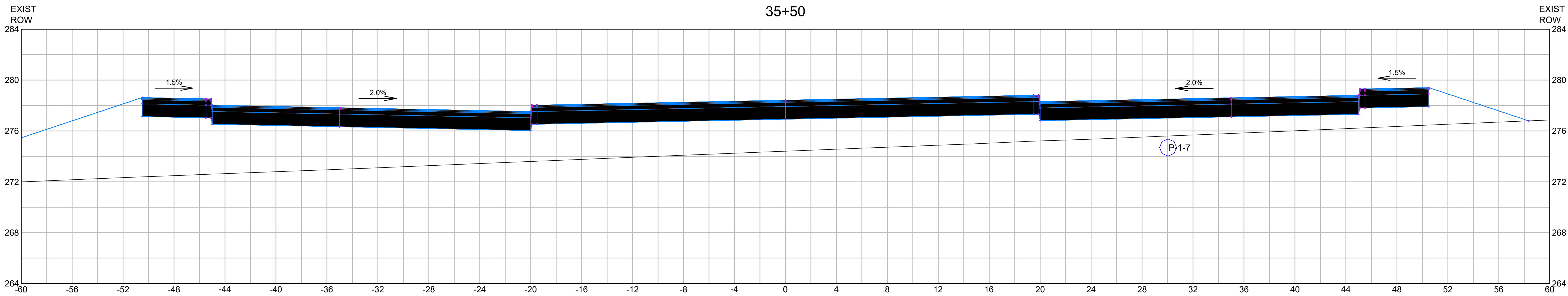
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DESIGNED BY RJF DATE 8-22-23
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PROJECT NO. T1180
TEC CAD FILE
T1180_SECTION
DRAWING NO. **C-50**
SHEET 50 OF 56

RICHARD J. FRIBERG JR.
CIVIL
No. 47850
PROFESSIONAL ENGINEER



HORIZONTAL AND VERTICAL SCALE

4 0 4 8

SCALE IN FEET

DRAWING TITLE

Roadway Cross Sections

35+50 to 36+50

SUBDIVISION NAME & LOCATION

King Street Commons

550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER

Lupoli Companies

290 Merrimack Street
Lawrence, MA 01840

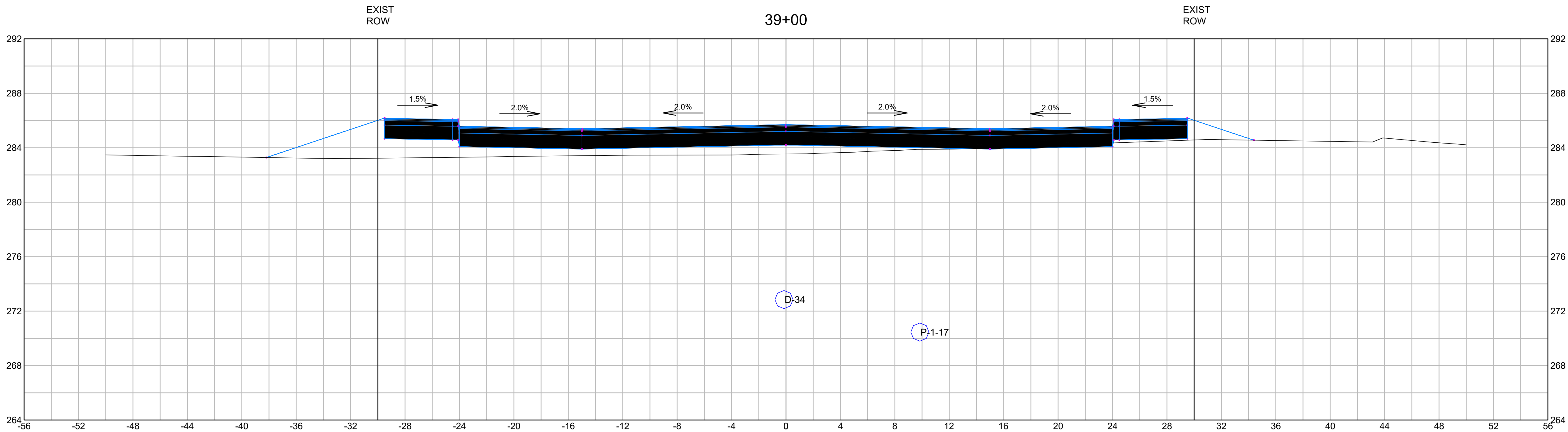
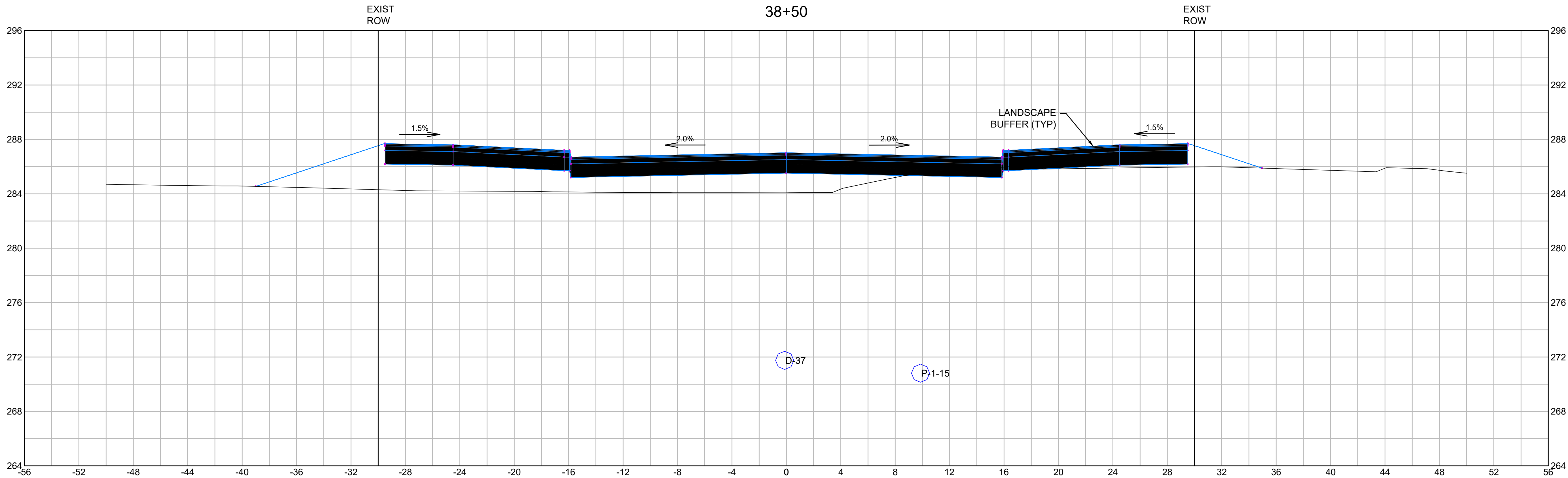
DESIGNER / ENGINEER

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Lawrence, Massachusetts 01843
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DESIGNED BY RJF DATE 8-22-23
CHECKED BY CPR SCALE AS NOTED

PROJECT NO. T1180
TEC CAD FILE
T1180_SECTION
DRAWING NO. **C-51**
SHEET 51 OF 56



HORIZONTAL AND VERTICAL SCALE

4 0 4 8

SCALE IN FEET

DRAWING TITLE
Roadway Cross Sections
38+50 to 39+00

SUBDIVISION NAME & LOCATION
King Street Commons
550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER
Lupoli Companies
290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER



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Lawrence, Massachusetts 01843
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DESIGNED BY RJF DATE 8-22-23
CHECKED BY CPR SCALE AS NOTED



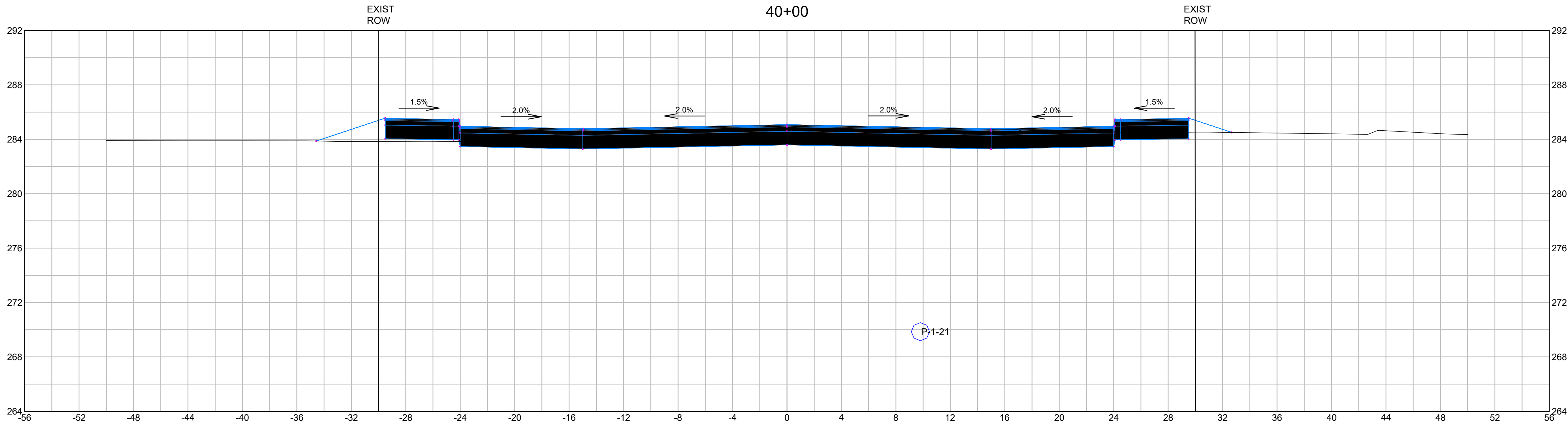
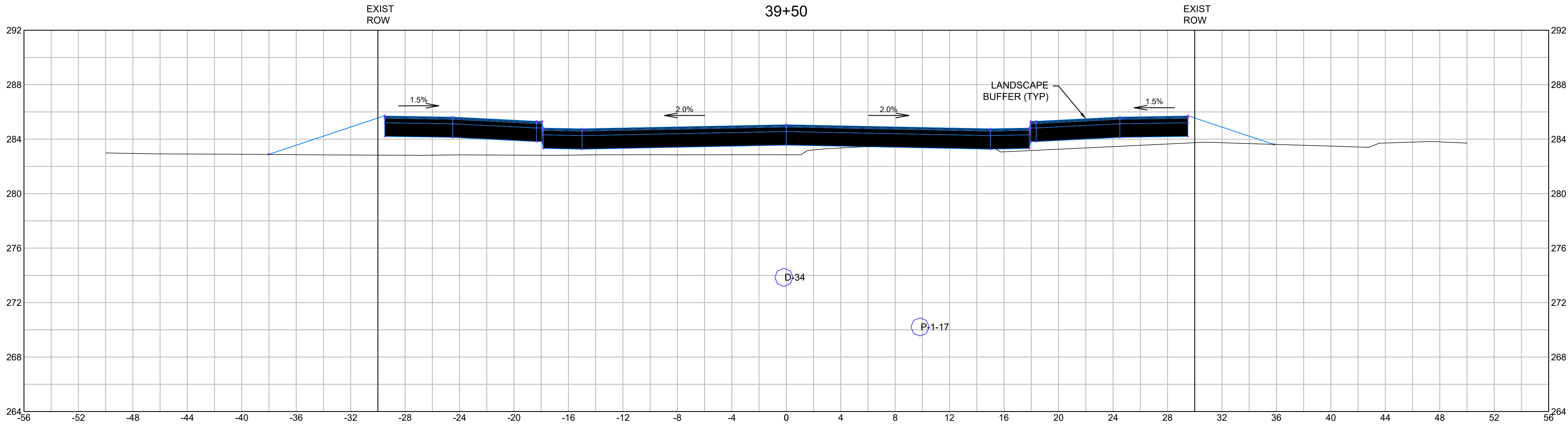
PROJECT NO.
T1180

TEC CAD FILE

T1180_SECTION

DRAWING NO.
C-52

SHEET 52 OF 56



HORIZONTAL AND VERTICAL SCALE

4 0 4 8

SCALE IN FEET

DRAWING TITLE

Roadway Cross Sections

39+50 to 40+00

SUBDIVISION NAME & LOCATION

King Street Commons

550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER

Lupoli Companies

290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER



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DESIGNED BY RJF DATE 8-22-23
CHECKED BY CPR SCALE AS NOTED



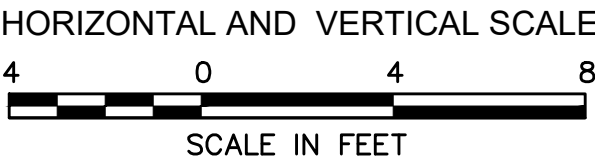
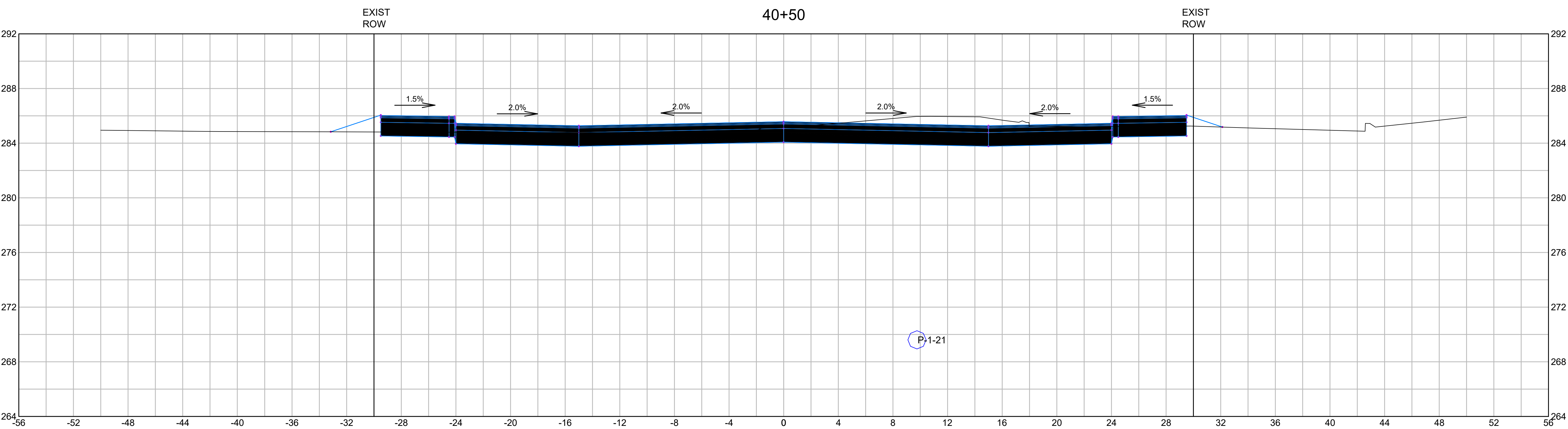
PROJECT NO.
T1180

TEC CAD FILE

T1180_SECTION

DRAWING NO.
C-53

SHEET 53 OF 56



DRAWING TITLE
Roadway Cross Sections
40+50

SUBDIVISION NAME & LOCATION
King Street Commons
550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER
Lupoli Companies
290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER
TEC
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TEC, Inc.
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Lawrence, Massachusetts 01843
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DESIGNED BY	RJF	DATE	8-22-23
CHECKED BY	CPR	SCALE	AS NOTED

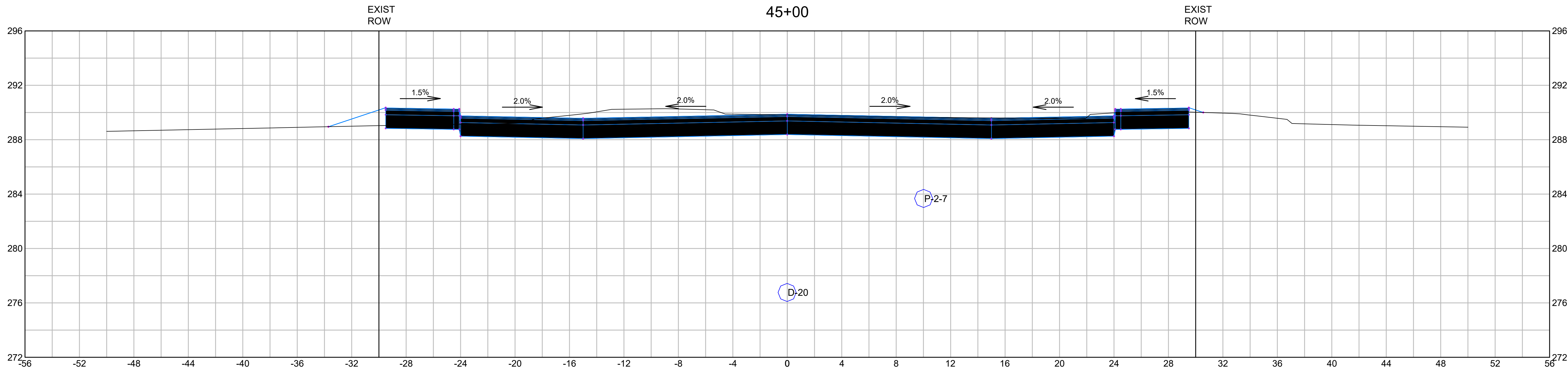
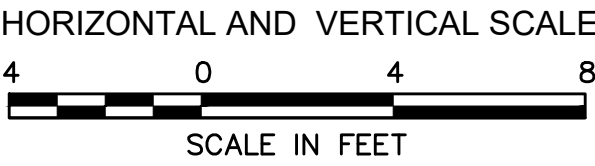
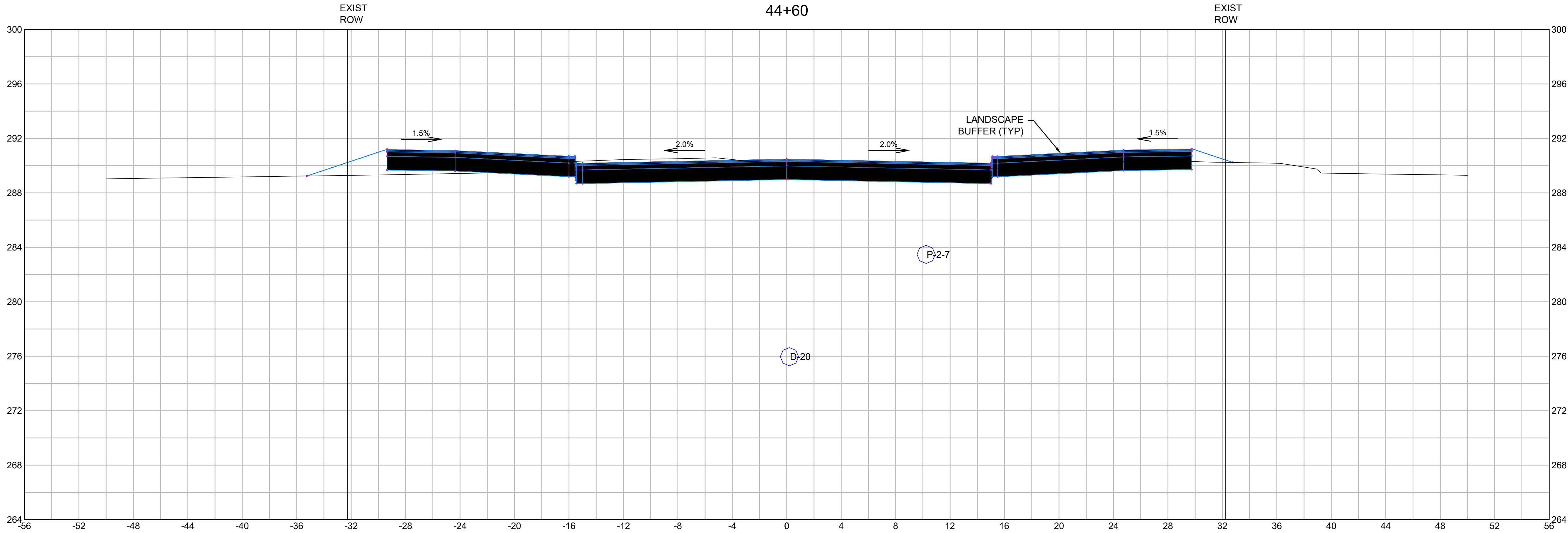
PROJECT NO.
T1180

TEC CAD FILE
T1180_SECTION

DRAWING NO.
C-54

SHEET 54 OF 56

Professional Engineer Seal:
COMMONWEALTH OF MASSACHUSETTS
RICHARD J. FRIEBERG JR.
CIVIL
No. 47850
REGISTERED PROFESSIONAL ENGINEER



DRAWING TITLE
Roadway Cross Sections
44+60 to 45+00

SUBDIVISION NAME & LOCATION
King Street Commons
550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER
Lupoli Companies
290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER



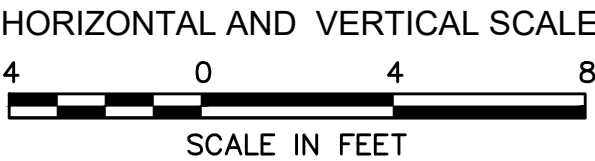
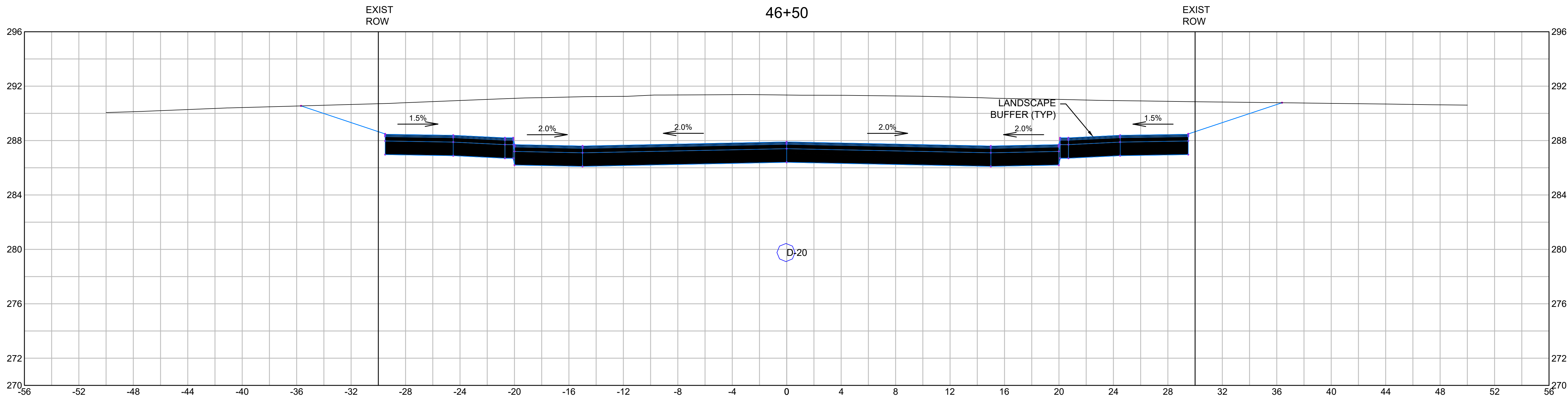
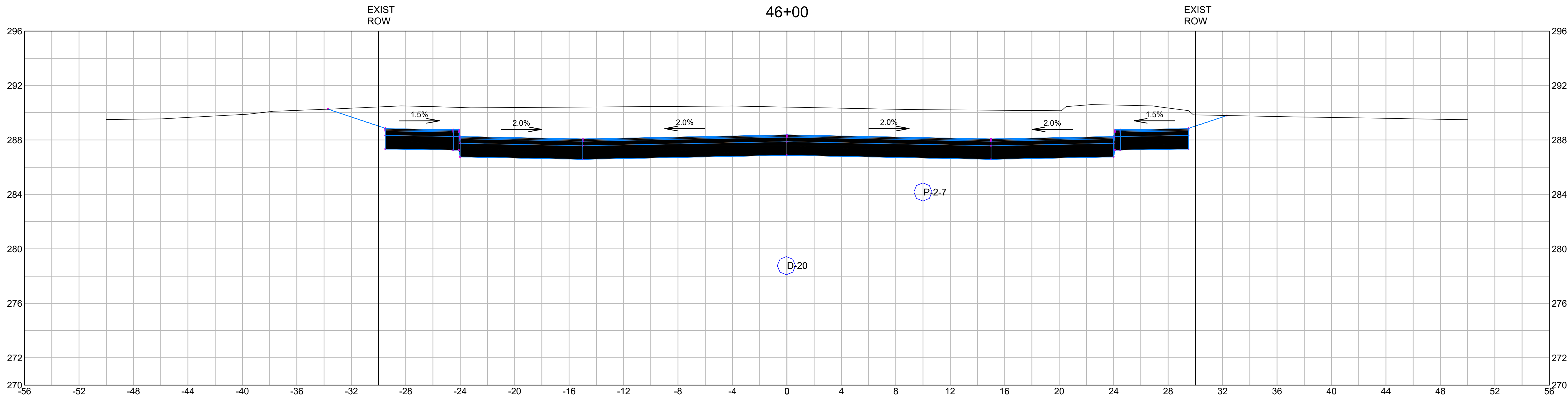
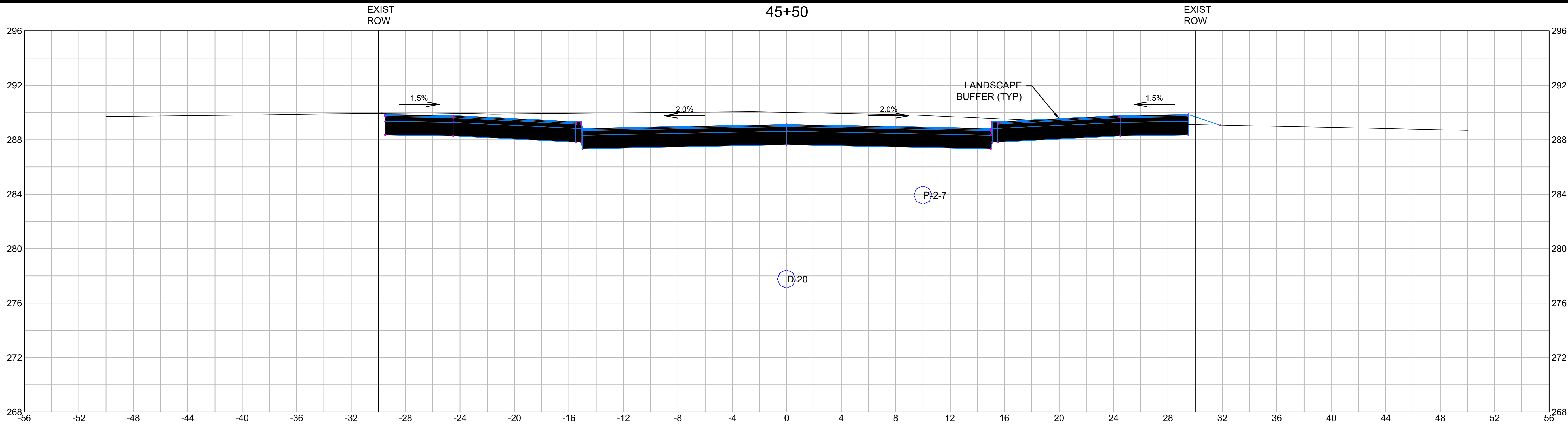
TEC, Inc.
282 Merrimack Street, 2nd Floor
Lawrence, Massachusetts 01843
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DESIGNED BY RJF DATE 8-22-23
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PROJECT NO.
T1180
TEC CAD FILE
T1180_SECTION
DRAWING NO.
C-55
SHEET 55 OF 56



DRAWING TITLE
**Roadway Cross
Sections
45+50 to 46+50**

SUBDIVISION NAME & LOCATION
**King Street
Commons**
550 King Street
Littleton, MA 01460

OWNER / APPLICANT / SUBDIVIDER
Lupoli Companies
290 Merrimack Street
Lawrence, MA 01840

DESIGNER / ENGINEER



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PROJECT NO.
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T1180_SECTION

DRAWING NO.
C-56

SHEET 56 OF 56