

SYMBOL LEGEND

	MONUMENT FOUND		WATER METER
	HORIZONTAL CONTROL POINT		WATER VALVE
	CALCULATED POINT		FIRE HYDRANT
	BENCHMARK		WATERSPRINKER
	SIGN		WATER HYDRANT
	STOP SIGN		TRAFFIC SIGNAL BOX
	MAILBOX		TRAFFIC MANHOLE
	POST		TRAFFIC SIGNAL
	MANHOLE LID		GAS VALVE
	ROOF DRAIN		GAS METER
	BORE HOLE		GAS TEST STATION
	LIGHT POLE WITH ARM		TELEPHONE PEDESTAL
	LIGHT POLE		HANDHOLE
	LIGHT POLE W/2' CONC BASE		SANITARY MANHOLE
	LIGHT POLE W/PARKING METER & 2' CONC BASE		SANITARY CLEAN OUT
	GUY POLE		TELEVISION (CABLE) PEDESTAL
	GUYANCHOR		AREA INLET
	UTILITY POLE		STORM MANHOLE
	ELECTRIC PEDESTAL		STORM SEWER CURB INLET
	ELECTRIC MANHOLE		VENT PIPE
	ELECTRIC METER		SHRUB
	DECIDUOUS TREE		EVERGREEN SHRUB
	EVERGREEN TREE		PARKING METER
	TREE STUMP		TREE REMOVAL
			LIGHT POLE
			FIBER OPTIC SERVICE BOX
			NEW WATER METER

LINE TYPE LEGEND

	LOT LINES / RIGHT-OF-WAY
	EASEMENT LINE
	SECTION LINE
	CENTER LINE OF ROAD
	CURB & GUTTER
	SANITARY SEWER
	SANITARY SEWER FORCE MAIN
	STORM SEWER SYSTEM
	UNDER GROUND CABLE TV (MIDCO CABLE)
	UNDER GROUND ELECTRIC (WESTAR)
	OVERHEAD ELECTRIC (WESTAR)
	UNDER GROUND TELEPHONE
	FIBER OPTICS
	WATER LINE
	GAS LINE (BLACK HILLS ENERGY)
	WOODEN FENCE
	CHAINLINK FENCE
	BARBED WIRE FENCE
	RETAINING WALL
	CONTOUR MAJOR
	CONTOUR MINOR
	LANDSCAPE EDGE
	SHRUB LINE
	NEW CURB & GUTTER
	CONSTRUCTION LIMITS
	NEW STORM SEWER SYSTEM
	CONSTRUCTION LIMITS

PAVEMENT LEGEND

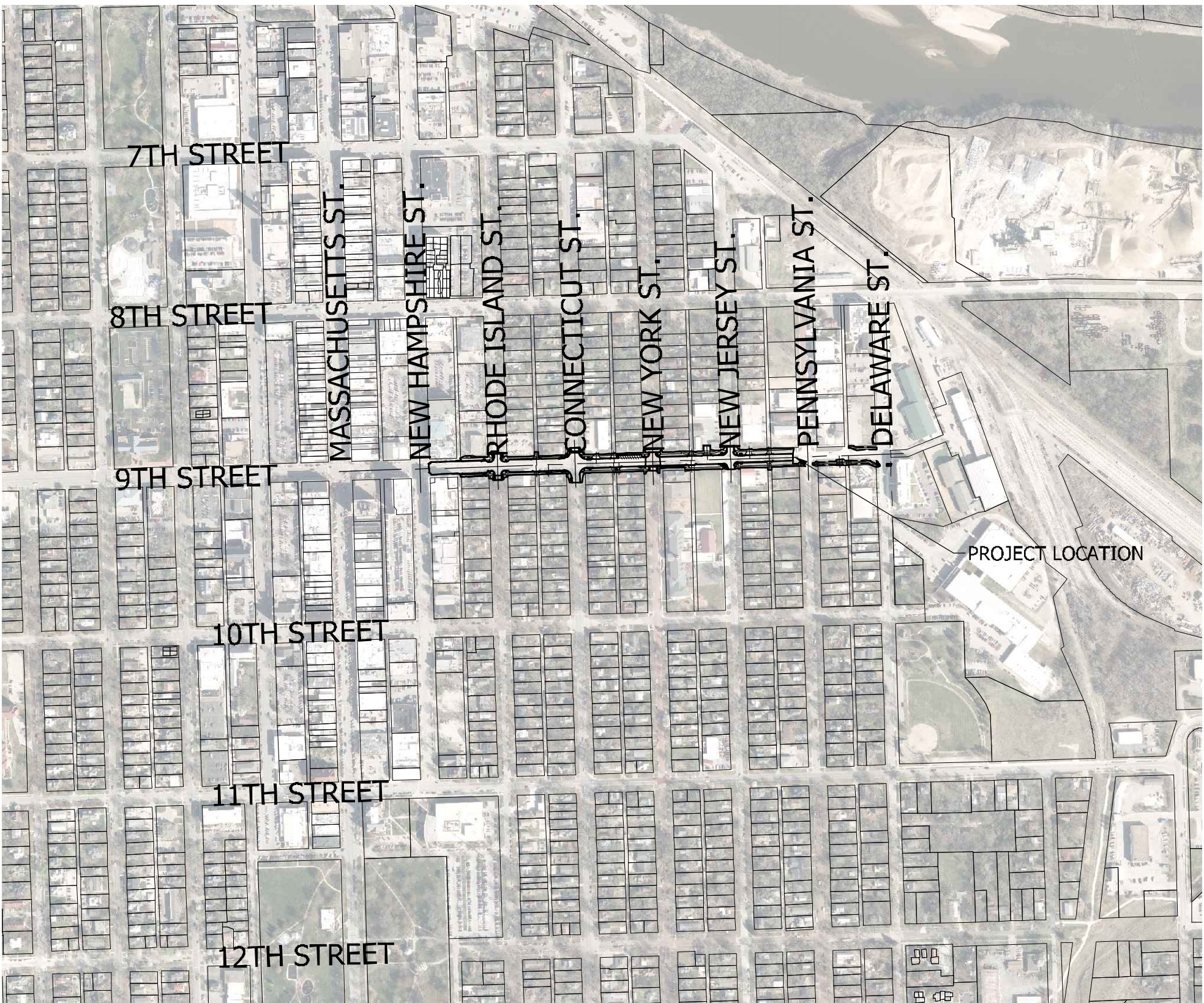
	8" CONCRETE PAVEMENT
	4" CONCRETE SIDEWALK
	RESET BRICK ON 7" CONCRETE PAVEMENT
	EXISTING PAVEMENT REMOVAL

E. 9TH STREET - NEW HAMPSHIRE ST. TO PENNSYLVANIA ST.
STREET, SIDEWALK, & STORM SEWER IMPROVEMENTS

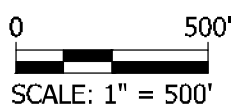
CITY OF LAWRENCE PUBLIC WORKS
ENGINEERING PROJECT NO. PW1502



City of Lawrence



LOCATION MAP



THESE PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH CITY OF LAWRENCE'S DESIGN GUIDELINES, STORM WATER DRAINAGE STANDARDS, AND THE UTILITIES DEPARTMENT GUIDELINES. THE CITY ENGINEER'S AND UTILITIES DEPARTMENT'S REVIEW IS ONLY FOR GENERAL CONFORMANCE WITH THESE STANDARDS. THE CITY AND/OR UTILITIES DEPARTMENT DID NOT VERIFY AND IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN, DIMENSIONS, ELEVATIONS, AND QUANTITIES. THE CITY OF LAWRENCE AND THE UTILITIES DEPARTMENT SHALL BE HELD HARMLESS FOR ERRORS AND OMISSIONS AS STATED HEREIN. THE DESIGN ENGINEER IS RESPONSIBLE FOR COMPLYING WITH ALL CITY AND UTILITIES DEPARTMENT STANDARDS AND GENERALLY ACCEPTED ENGINEERING DESIGN STANDARDS AND PRINCIPLES, INCLUDING ITEMS WHICH MAY HAVE BEEN INADVERTANTLY OVERLOOKED DURING THE CITY'S AND UTILITIES DEPARTMENT'S REVIEW. THESE PLANS ARE ACCEPTED FOR ONE YEAR FROM THE DATE OF APPROVAL, AFTER WHICH THEY BECOME VOID UNLESS CONSTRUCTION HAS BEEN COMPLETED AND APPROVED.

SHEET INDEX

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CITY ENGINEER

CITY OF LAWRENCE FIRE/MEDICAL

FIELD CHECK PLANS - 2017-11-10 (ADDRESSED COMMENTS)
PLANS FOR TRAFFIC COMMISSION MEETING 2018-02-05

SYMBOL LEGEND, LINE TYPE LEGEND,
SHEET INDEX, & LOCATION MAP

E. 9TH STREET - NEW HAMPSHIRE ST. TO PENNSYLVANIA ST.
STREET, SIDEWALK, & STORM SEWER IMPROVEMENTS
LAWRENCE, KANSAS

FIELD CHECK PLANS

DESIGNED BY:	JDM
DRAWN BY:	JDM
APPROVED BY:	BTA
DESIGN PROJ:	18811.001
CITY PROJ:	PW1502
SCALE:	AS NOTED
DATE:	JAN. 2018
DRAWING NO:	
SHEET NO:	1

GENERAL NOTES

1. ALL CONSTRUCTION SHALL COMPLY WITH KDOT AND CITY OF LAWRENCE STANDARD SPECIFICATIONS.
2. PRIVATE UTILITY SERVICE LINES, POLES, VALVE BOXES, METERS, ETC. MUST BE ADJUSTED AS NECESSARY, BY EACH RESPECTIVE UTILITY OWNER, PRIOR TO CONSTRUCTION, UNLESS THE PLANS SPECIFICALLY CALL FOR THEIR ADJUSTMENT BY THE CONTRACTOR. THE CONTRACTOR WILL BE REQUIRED TO WORK AROUND EXISTING UTILITIES WITHIN THE RIGHT-OF-WAY WHICH DO NOT CONFLICT WITH PROPOSED CONSTRUCTION. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL WATER AND SANITARY RELOCATIONS AND ADJUSTMENTS AND SHALL CONTACT THE LAWRENCE DEPARTMENT OF UTILITIES 10 WORKING DAYS PRIOR TO COMPLETING THE IMPROVEMENTS TO COORDINATE INSPECTIONS.
3. THE INFORMATION SHOWN IN THESE PLANS CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS BASED ON THE SURVEY COMPLETED IN APRIL 2015 AND IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. EXISTING UTILITIES AND THEIR LOCATIONS, AS SHOWN ON THE PLANS, REPRESENT THE BEST INFORMATION OBTAINABLE FOR DESIGN. LOCATION INFORMATION HAS BEEN OBTAINED FROM THE VARIOUS UTILITY COMPANIES AND IS EITHER FROM COMPANY RECORD DRAWINGS OR COMPANY PROVIDED FIELD LOCATIONS. THE PLANS LOCATIONS SHOWN ARE NOT GUARANTEED. ADDITIONAL EXISTING UTILITIES MAY ALSO BE ENCOUNTERED. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATIONS AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. THE CONTRACTOR MUST NOTIFY ALL UTILITIES 48 HOURS PRIOR TO ANY EXCAVATION.
4. NEW AND EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO THE SAME SLOPE AS ADJACENT SURFACES.
5. ALL SALVAGEABLE DRAIN PIPES, MANHOLE RINGS AND COVERS, INLET GRATES AND FRAMES SHALL BE CAREFULLY REMOVED AND STOCKPILED AT LOCATIONS WITHIN THE RIGHT-OF-WAY, AS DIRECTED BY THE ENGINEER. ALL SALVAGED ITEMS TO BE RETURNED TO THE CITY WILL BE TRANSPORTED OFF SITE BY CITY PERSONNEL..
6. ALL FENCE, LANDSCAPE TIMBERS, PRIVATE SIGNS AND OTHER MISCELLANEOUS IMPROVEMENTS WITHIN THE PROPOSED PROJECT LIMITS SHALL BE REMOVED AND SALVAGED TO THE OWNER. CONTRACTOR SHALL CAREFULLY REMOVE SAID IMPROVEMENTS AND PLACE THEM INSIDE THE RIGHT-OF-WAY. CONTRACTOR SHALL NOTIFY PROPERTY OWNER OF ITEMS REMOVED & STOCKPILED AND ALLOW THEM TO REMOVE SAID ITEMS.
7. ALL DISPOSAL SITES MUST BE APPROVED BY THE KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT. MATERIAL EITHER STOCKPILED OR DISPOSED OF IN A FLOOD PLAIN WOULD REQUIRE A KANSAS STATE BOARD OF AGRICULTURE PERMIT. ANY MATERIAL DUMPED IN WATERS OF THE UNITED STATES OR WETLANDS IS SUBJECT TO U.S. CORPS OF ENGINEERS PERMITTING REGULATIONS. ANY MATERIAL BURIED OR STOCKPILED BEYOND APPROVED CONSTRUCTION LIMITS WOULD REQUIRE ADDITIONAL ARCHEOLOGICAL INVESTIGATIONS UNLESS BURIED IN A PREVIOUSLY APPROVED BORROW LOCATION.
8. AT BORROW AREA LOCATIONS ADJACENT TO THE RIGHT-OF-WAY, UTILITY POLES MAY BE SET AT THE PERMANENT LOCATIONS PRIOR TO CONSTRUCTION AS APPROVED BY THE ENGINEER PROVIDED A MINIMUM VERTICAL CLEARANCE, IN ACCORDANCE WITH THE NATIONAL ELECTRICAL SAFETY CODE, IS OBTAINED. THE CONTRACTOR WILL BE REQUIRED TO WORK AROUND THESE POLES TO COMPLETE THE WORK.
9. ALL PAVEMENT AND SIDEWALKS TO BE REMOVED SHALL BE SAW CUT. ALL SAW CUTS SHALL BE FULL DEPTH. ANY PAVEMENT OR SIDEWALKS DAMAGED BEYOND THE ORIGINAL SAW CUT LIMITS (AS SHOWN ON THE PLAN OR DETERMINED IN THE FIELD) SHALL BE RE-SAWED TO PROVIDE AN EVEN JOINT AND REPLACED AT THE CONTRACTOR'S EXPENSE. THIS WORK SHALL NOT BE PAID FOR DIRECTLY; BUT SHALL BE CONSIDERED SUBSIDIARY TO PAVEMENT REMOVAL.
10. PAVEMENT AND SIDEWALK REMOVAL LIMITS SHOWN ARE APPROXIMATE AND MAY BE CHANGED DUE TO GRADE CONSIDERATIONS OR OTHER FIELD CONDITIONS, AS APPROVED BY ENGINEER.
11. PAVEMENT REMOVAL QUANTITIES INCLUDE PAVEMENT REMOVAL AREAS FOR STORM SEWER CROSSINGS, SIDEWALKS, & DRIVEWAYS.
12. CONTRACTOR SHALL MAINTAIN CONSTRUCTION LIMITS WITHIN THE EXISTING AND/ OR PROPOSED RIGHT-OF-WAYS AND EASEMENTS.
13. ALL MAILBOXES WITHIN THE CONSTRUCTION LIMITS SHALL BE REMOVED AND TEMPORARILY PLACED AT A LOCATION COORDINATED WITH THE LOCAL POST OFFICE. UPON COMPLETION OF CONSTRUCTION, ALL MAILBOXES SHALL BE RESET ON PERMANENT MAILBOX SUPPORTS ERECTED BY THE CONTRACTOR. MAILBOX SUPPORTS SHALL CONSIST OF A SINGLE 4-INCH BY 4-INCH OR 4 1/2 INCH DIAMETER WOODEN POST. MAILBOX SUPPORTS SHALL NOT BE SET IN CONCRETE. LOCATIONS SHALL BE COORDINATED WITH THE RESIDENT AND SHALL BE PLACED SUCH THAT THE MAILBOX FACE WILL BE 6-INCHES FROM THE FACE OF CURB AND THE BOTTOM OF THE BOX SHALL BE 3'-6" ABOVE THE ROADWAY SURFACE. MAILBOX SUPPORT ERECTION AND MAILBOX RELOCATION WILL BE PAID FOR UNDER "REMOVE AND RESET MAILBOX."
14. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND DISPOSAL OF ALL EXCESS BITUMINOUS MATERIAL.
15. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ASSURE THAT ACCESS TO ALL PROPERTIES BE PROVIDED DURING CONSTRUCTION OF THE PROJECT.
16. ALL TREES, HEDGE ROWS, AND SHRUBS NOT SHOWN TO BE REMOVED AND LOCATED BETWEEN THE CONSTRUCTION LIMITS AND THE RIGHT OF WAY OR EASEMENT LINE SHALL BE PROTECTED UNLESS DIRECTED BY THE ENGINEER TO BE REMOVED. ADDITIONAL CARE TO PROTECT ALL TREES AS POSSIBLE SHALL BE GIVEN WHEN WORKING AROUND TREES ADJACENT TO THE CONSTRUCTION LIMITS. REMOVAL OF ALL TREES LESS THAN 12" AND SHRUBS, NOT SHOWN WITH AN "X" TO BE REMOVED, SHALL BE SUBSIDIARY TO CLEARING AND GRUBBING. ALL TREES SHOWN WITH AN "X" SHALL BE REMOVED.
17. FOR NEW PLANTING, THE TOPSOIL SHALL HAVE 18-24" QUALITY LIVE SOIL AS BACKFILL IN RIGHT-OF-WAY PLANTING AREAS.
18. EXISTING PIPES THAT ARE ABANDONED IN PLACE SHALL BE PLUGGED AS SHOWN IN THE PLUGGING DETAIL ON THE MISCELLANEOUS DETAIL SHEET. PLUGGING SHALL BE CONSIDERED SUBSIDIARY TO OTHER BID ITEMS.
19. FLOWABLE FILL SHALL BE USED TO BACKFILL ALL TRENCHES LOCATED WITHIN 2 FEET OF PAVEMENT, CURB AND GUTTER, AND SIDEWALK. IN AN INSTANCE WHERE A PROPOSED UTILITY IS ABOVE THE EXISTING GROUND LINE OR HAS LESS THAN 3 FEET OF COVER OVER THE PROPOSED UTILITY, THE CONTRACTOR SHALL PLACE AND COMPACT THE FUTURE FILL TO A POINT AT LEAST 3 FEET ABOVE THE TOP OF THE PROPOSED UTILITY. ONCE THIS LEVEL IS REACHED, THE CONTRACTOR MAY TRENCH IN THE FUTURE UTILITY AND BACKFILL THIS PORTION OF THE TRENCH WITH FLOWABLE MORTAR PRIOR TO PROCEEDING WITH THE REMAINING EARTHEN COMPACTED EMBANKMENT FILL. FLOWABLE FILL WILL BE PAID FOR DIRECTLY BASED ON THE PLAN QUANTITY SHOWN IN THESE PLANS AND TABULATED ON THE SUMMARY OF QUANTITIES SHEETS. THE QUANTITIES ARE BASED ON TRENCH WIDTHS SHOWN ON THE STANDARD DETAILS. ANY ADDITIONAL FLOWABLE FILL REQUIRED DUE TO WIDER TRENCH WIDTHS IS THE RESPONSIBILITY OF THE CONTRACTOR.
20. LABOR, TOOLS, MATERIALS, AND EQUIPMENT REQUIRED TO TEMPORARILY PLUG OR BLOCK THE END OF PROPOSED STORM SEWER PIPE TO PREVENT BACKFILL MATERIAL FROM ENTERING SHALL BE SUBSIDIARY TO OTHER BID ITEMS.
21. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE FERTILIZED, SEEDED, AND MULCHED BY THE CONTRACTOR IN ACCORDANCE WITH THE CURRENT CITY OF LAWRENCE TECHNICAL SPECIFICATIONS, LATEST EDITION.
22. FOR SIDEWALKS AND CURB & GUTTER, ALL EXPOSED EDGES AND JOINT EDGES SHALL BE ROUNDED WITH AN EDGING TOOL HAVING A RADIUS OF 3/8 INCH. UNLESS APPROVED BY THE ENGINEER, ALL JOINTS SHALL BE FORMED BY MAKING A 1/4 INCH GROOVE 2 INCHES DEEP WHILE THE CONCRETE IS STILL PLASTIC ENOUGH TO BE WORKED BUT HARD ENOUGH SO IT WILL NOT SLUMP AFTER GROOVING.
23. THE CONTRACTOR MAY POUR THE CURB AND GUTTER MONOLITHICALLY WITH THE ADJACENT PAVEMENT.

24. ALL CONCRETE MATERIALS SHALL CONFORM TO THE SPECIFICATIONS OF THE KANSAS CITY METROPOLITAN MATERIALS BOARD (KCMMB) OR ALTERNATIVE MIXES AS APPROVED BY THE ENGINEER. COARSE AGGREGATES FOR ALL MIXES SHALL BE ENTIRELY GRANITE, QUARTZITE, OR TRAP ROCK.
25. THICKENING IS SUBSIDIARY TO OTHER SURFACE ITEMS. ALL NEW PAVEMENT ABUTTING EXISTING PAVEMENT SHALL COMPLY WITH THE THICKENED EDGE DETAIL ON THIS SHEET.
26. ALL SAWED AND EXPANSION JOINTS IN CONCRETE PAVEMENT AND VALLEY GUTTERS SHALL BE SEALED AS PER THE CITY OF LAWRENCE STANDARD SPECIFICATIONS LOCATED ON CITY'S WEB SITE (HTTP://WWW.LAWRENCEKS.ORG/PUBLIC_WORKS/SPECIFICATIONS).
27. WRITTEN DIMENSIONS SHALL PREVAIL OVER SCALED DIMENSIONS.
28. THE CONTRACTOR IS RESPONSIBLE FOR THE PROVISION OF ALL MATERIALS, TOOLS, EQUIPMENT AND LABOR NECESSARY TO CONTROL EROSION, SILTATION AND DISCHARGES OF FILL MATERIAL (SEDIMENT) INTO DOWNSTREAM SYSTEMS OR RECEIVING CHANNELS. THIS SHALL BE REQUIRED DURING ALL PHASES OF CONSTRUCTION AND UNTIL SUITABLE GROUND COVER IS ESTABLISHED FOR ALL DISTURBED AREAS. IF ANY METHOD OF CONTROL FAILS, THE CONTRACTOR SHALL NOTIFY THE CITY IMMEDIATELY, SO THAT THE CITY CAN REVIEW THE CONTRACTOR'S PROPOSED METHOD OF REPAIR.
29. THE CONTRACTOR SHALL CALL 1-800-DIG-SAFE PRIOR TO ANY PROJECT EXCAVATION. THE CONTRACTOR SHALL NOTIFY ALL UTILITIES 48 HOURS PRIOR TO ANY EXCAVATION.
30. CONTACT AFFECTED OWNERS/RESIDENTS A MINIMUM OF 48 HOURS PRIOR TO HALTING OF UTILITY SERVICES. UNDER NO CIRCUMSTANCE SHALL ANY UTILITY SERVICE BE DISCONTINUED FOR MORE THAN ONE (1) 12-HOUR PERIOD.
31. CONTRACTOR SHALL VERIFY ALL UTILITY DEPTHS AND LOCATIONS PRIOR TO CONSTRUCTION, AND COORDINATE ANY NECESSARY RELOCATIONS. ANY ADJUSTMENTS TO VALVE BOXES SHALL BE AT THE CONTRACTOR'S EXPENSE. UTILITIES DAMAGED THROUGH THE NEGLIGENCE OF THE CONTRACTOR TO OBTAIN THE LOCATION OF THE SAME SHALL BE REPAIRED AND REPLACED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE PROJECT.
32. ALL WATER REQUIRED FOR THE CONSTRUCTION OF THIS PROJECT SHALL BE PURCHASED FROM THE CITY OF LAWRENCE UTILITIES DEPARTMENT THROUGH THE USE OF A FIRE HYDRANT WATER METER. METERS CAN BE OBTAINED FROM THE UTILITY DEPARTMENT FOR A NOMINAL DEPOSIT, REFUNDABLE UPON THE RETURN OF THE METER.
33. CONSTRUCTION STAKING TO BE PROVIDED BY THE CONTRACTOR. SURVEY STAKES, BENCHMARKS, AND PROPERTY PINS DESTROYED BY THE CONSTRUCTION SHALL BE REPLACED AT CONTRACTOR'S EXPENSE.

CITY CODE: CHAPTER 18

18-107 TREE PROTECTION.
NO PERSON SHALL INTENTIONALLY DAMAGE, CUT, CARVE, TRANSPLANT, OR REMOVE ANY TREE, ATTACH ANY ROPE, WIRE, NAILS, ADVERTISING POSTER OR OTHER CONTRIVANCE TO ANY TREE, ALLOW ANY FIRE, GASEOUS LIQUID, SOLID SUBSTANCE WHICH IS HARMFUL TO SUCH TREES TO COME IN CONTACT WITH THEM. ALL TREES ON ANY STREET OR OTHER PUBLICLY OWNED PROPERTY NEAR ANY EXCAVATION OR CONSTRUCTION OF ANY BUILDING, STRUCTURE, OR STREET WORK, SHALL BE GUARDED WITH A GOOD SUBSTANTIAL FENCE, FRAME, OR BOX NOT LESS THAN FOUR (4) FEET HIGH AND EIGHT (8) FEET SQUARE OR AT A DISTANCE IN FEET FROM THE TREE EQUAL TO THE DIAMETER OF THE TRUNK IN INCHES (D.B.H.), WHICHEVER IS GREATER, AND ALL BUILDING MATERIAL, DIRT OR OTHER DEBRIS SHALL BE KEPT OUTSIDE THE BARRIER. NO PERSON SHALL EXCAVATE ANY DITCHES OR TRENCHES OR LAY ANY DRIVE OR WALK WITHIN A RADIUS OF TEN (10) FEET FROM ANY TREE WITHIN THE PUBLIC RIGHT-OF-WAY WITHOUT FIRST OBTAINING A PERMIT FROM THE DIRECTOR OF PARKS AND RECREATION OR HIS OR HER DESIGNEE. FOR THE INSTALLATION OR REPAIR OF ANY UNDERGROUND UTILITY WITHIN THE TEN (10) FOOT RADIUS, A PERMIT MAY BE ISSUED BY THE DIRECTOR OF PARKS AND RECREATION OR HIS OR HER DESIGNEE TO TUNNEL UNDER THE ROOT SYSTEM TO MINIMIZE TREE DAMAGE. NO PERSON SHALL DEPOSIT, PLACE, STORE OR MAINTAIN UPON ANY PUBLIC RIGHT-OF-WAY ANY STONE, BRICK, SAND, CONCRETE OR OTHER MATERIALS WHICH MAY IMPEDE THE FREE PASSAGE OF WATER, AIR AND FERTILIZER TO THE ROOTS OF ANY TREE GROWING THEREIN. (CODE 1979, 18-306; ORD. 5506)

18-201 LICENSE REQUIRED.
NO PERSON SHALL ENGAGE IN THE BUSINESS OF CUTTING, TRIMMING, PRUNING, REMOVING, SPRAYING OR OTHERWISE TREATING TREES, WITHIN THE CITY WITHOUT FIRST PROCURING A LICENSE THEREFOR FROM THE CITY CLERK. THE APPLICATION FOR SUCH LICENSE SHALL SPECIFY THE TYPES OF SERVICE FOR WHICH THE APPLICANT DESIRES TO BE LICENSED. NOTHING CONTAINED IN THIS ARTICLE SHALL BE CONSTRUED TO PREVENT THE OWNER OR OCCUPANT FROM PERFORMING WORK ON HIS OR HER OWN PROPERTY. (CODE 1979, 18-201)

ABBREVIATIONS

D/E	DRAINAGE EASEMENT
U/E	UTILITY EASEMENT
L/E	LANDSCAPE EASEMENT
R/W	RIGHT-OF-WAY
P/E	PEDESTRIAN EASEMENT
T/E	TEMPORARY CONSTRUCTION EASEMENT
W/E	WATERLINE EASEMENT
S/E	SANITARY SEWER EASEMENT
EX	EXISTING
RT	ALIGN OFFSET RIGHT SIDE
LT	ALIGN OFFSET LEFT SIDE
FG	FINISHED GRADE ELEVATION
TC	TOP OF CURB ELEVATION
TP	TOP OF PAVEMENT ELEVATION
DIP	DUCTILE IRON PIPE
ME	MATCH EXISTING ELEVATION
TW	TOP OF WALL ELEVATION
BW	BOTTOM OF WALL AT GRADE ELEVATION
EOA	EDGE OF ASPHALT PAVEMENT
WL	WATERLINE
UGG	UNDER GROUND GAS
UGT	UNDER GROUND TELEPHONE

LIST OF UTILITIES

1-800-344-7233	DIG SAFE (ONE CALL)		
1-785-832-3130	CITY OF LAWRENCE PUBLIC WORKS ENGINEERING	DAVID CRONIN	dcronin@lawrenceks.org
1-785-832-3034	CITY OF LAWRENCE TRAFFIC ENGINEERING	AMANDA SAHIN	asahin@lawrenceks.org
1-785-832-7801	CITY OF LAWRENCE WATER & WASTEWATER	ANDY ENSZ	aensz@lawrenceks.org
1-785-832-3142	CITY OF LAWRENCE STORMWATER ENGINEER	MATT BOND	mbond@lawrenceks.org
1-785-832-XXXX	CITY OF LAWRENCE RIGHT-OF-WAY MANAGER	CHAVIS NIOCE	cnioc@lawrenceks.org
1-785-832-3944	BLACK HILLS ENERGY (GAS)	CHUCK HOAG	chuck.hoag@blackhillscorp.com
1-785-865-4850	WESTAR ENERGY (ELECTRIC)	AARON SPREER	aaron.spreer@westarenergy.com
1-785-276-6140	AT&T (TELEPHONE)	CURTIS CALDERWOOD	cc6178@att.com
1-785-856-2335	MIDCO (CABLE TV)	RICHARD PARNELL	richard.parnell@midco.com
1-913-254-6330	ATMOS ENERGY (GAS)	KEVIN JONES	kevinjones@atmosenergy.com

QUANTITIES

ITEM	DESCRIPTION	QUANTITY	UNIT
1	CLEARING & GRUBBING	1	LSUM
2	DEMOLITION AND REMOVAL	1	LSUM
3	TREE REMOVAL	3	EACH
4	REMOVE AND RESET MAILBOX	0	EACH
5	PAVEMENT REMOVAL	0	SQYD
6	UNCLASSIFIED EXCAVATION	1,458	CUYD
7	EMBANKMENT	616	CUYD
8	CONCRETE CURB AND GUTTER COMBINED	3,142	LNFT
9	SIDEWALK (4")	1,920	SQYD
10	SIDEWALK RAMP (6")	1,570	SQYD
11	CONCRETE STEPS		EACH
12	6" AB-1 SUBGRADE		SQYD
13	7" CONCRETE PAVEMENT	118	SQYD
14	8" AGGREGATE BASE (AB-3)	8,750	SQYD
15	8" CONCRETE PAVEMENT (NRDJ)	8,282	SQYD
16	REMOVE AND REPLACE 6' WOOD FENCE	0	LNFT
17	REMOVE & REPLACE (4') CHAIN LINK FENCE	0	LNFT
18	6' X 3' STANDARD CURB INLET	4	EACH
19	6' X 4' STANDARD CURB INLET	13	EACH
20	KDOT TYPE 10 INLET	1	EACH
21	15" RCP, IN PLACE	669	LNFT
22	18" RCP, IN PLACE	110	LNFT
23	24" RCP, IN PLACE	230	LNFT
24	PIPE CONNECTION TO EXISTING STRUCTURE	9	EACH
25	FLOWABLE FILL (LOW STRENGTH)	5	CUYD
26	WATER METER RELOCATION	0	EACH
27	FIRE HYDRANT ASSEMBLY, IN PLACE	0	EACH
28	VALVE LTD ADJUSTMENT	0	EACH
29	STREET SERVICE CROSSING	0	EACH
30	WATER SERVICE RECONNECTION*	0	EACH
31	REMOVE AND SALVAGE LIMESTONE CURB	0	LNFT
32	REMOVE AND SALVAGE BRICK PAVERS	0	LNFT
33	SANITARY SERVICE RECONNECTION/RELOCATION	0	EACH
34	RIP RAP (TYPE A)(36")	0	SQYD
35	RIP RAP (TYPE A)(24")	0	SQYD
36	SILT FENCE	0	LNFT
37	CURB INLET PROTECTION	0	LNFT
38	TEMPORARY INLET SEDIMENT BARRIER (SILT FENCE)	0	LNFT
39	TEMPORARY SEEDING, FERTILIZING, AND MULCHING	0.7	ACRE
40	SEEDING, FERTILIZING, AND MULCHING	0.7	ACRE
41	LIGHTING	1	LSUM
42	LANDSCAPING	1	LSUM
43	CONTRACTOR CONSTRUCTION STAKING	1	LSUM
44	TEMPORARY TRAFFIC CONTROL	1	LSUM

NOTE: FLOWABLE FILL OF EXISTING STORM SEWER SHALL BE SUBSIDIARY TO THE BID ITEM DEMOLITION AND REMOVAL (LUMP SUM)

GENERAL NOTES, QUANTITIES, UTILITIES ABBREVIATIONS, & PAVEMENT LEGEND

E. 9TH STREET - NEW HAMPSHIRE ST. TO PENNSYLVANIA ST. STREET, SIDEWALK, & STORM SEWER IMPROVEMENTS LAWRENCE, KANSAS

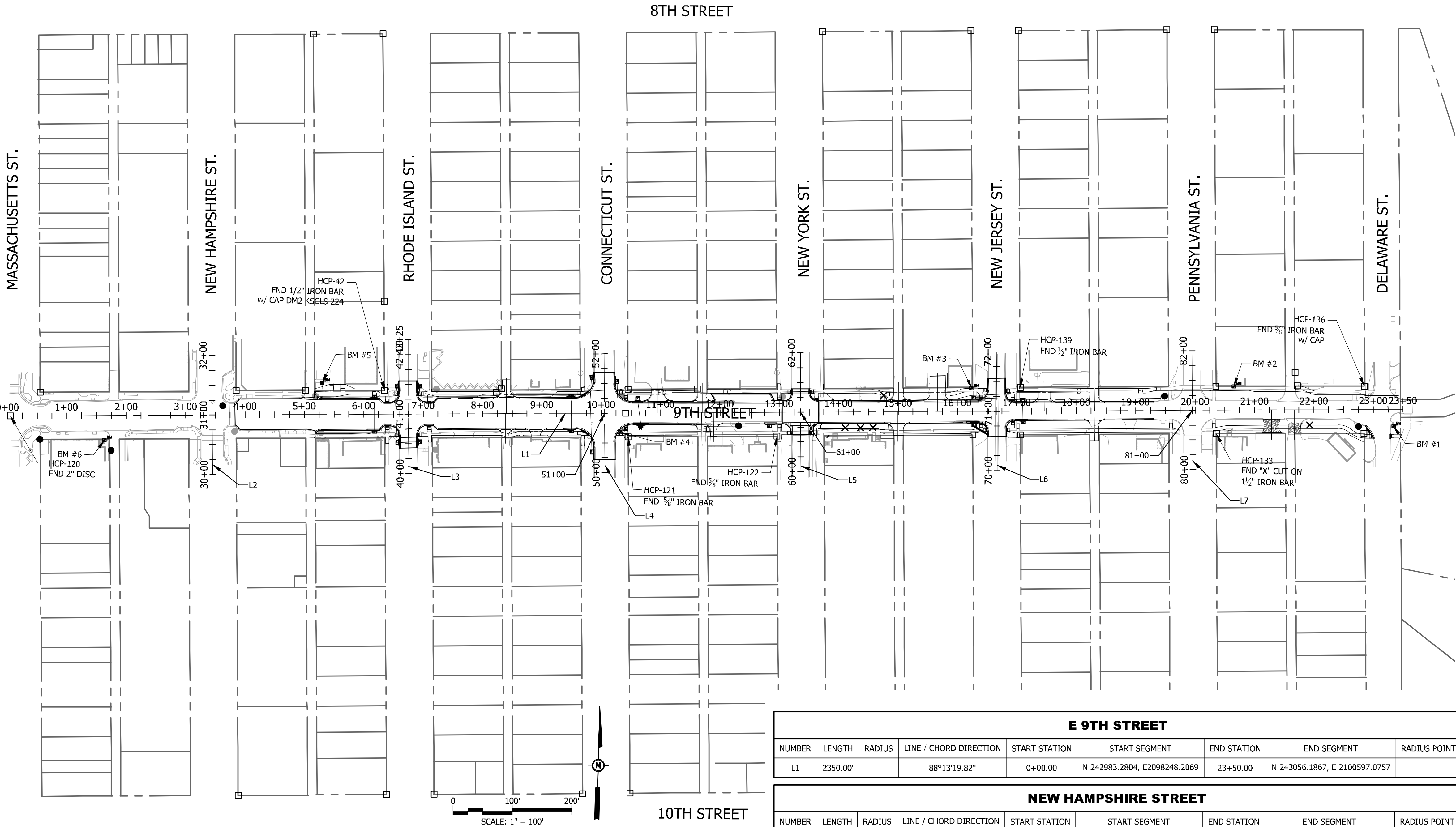
RED CHECK PLANS

DESIGNED BY:	JDM
DRAWN BY:	JDM
APPROVED BY:	BTA
DESIGN PROJ:	18811.001
CITY PROJ:	PW1502
SCALE:	AS NOTED
DATE:	JAN. 2018
DRAWING NO:	2
SHEET NO:	2 of 41

Bartlett & West

544 COLUMBIA DR. - LAWRENCE KS 66049
PHONE: 785.749.9452
www.bartlettwest.com

Drawing Name: W:\Proj\18200\18811\18811.001\AutoCad\Plan Set\18811.001C_Control.dwg Layout Name: Control Plotted By: JDM06688 Plotted on: 1/25/2018 4:02:48 PM
Last edit on: 1/25/2018 1:01 PM by: JDM06688



E 9TH STREET								
NUMBER	LENGTH	RADIUS	LINE / CHORD DIRECTION	START STATION	START SEGMENT	END STATION	END SEGMENT	RADIUS POINT
L1	2350.00'		88°13'19.82"	0+00.00	N 242983.2804, E2098248.2069	23+50.00	N 243056.1867, E 2100597.0757	

NEW HAMPSHIRE STREET								
NUMBER	LENGTH	RADIUS	LINE / CHORD DIRECTION	START STATION	START SEGMENT	END STATION	END SEGMENT	RADIUS POINT
L2	100.00'		358°03'57.59"	30+00.00	N 242894.0420, E2098596.4598	31+00.00	N 242993.9850, E 2098593.0849	

RHODE ISLAND STREET								
NUMBER	LENGTH	RADIUS	LINE / CHORD DIRECTION	START STATION	START SEGMENT	END STATION	END SEGMENT	RADIUS POINT
L3	100.00'		357°59'43.45"	40+00.00	N 242904.2855, E2098926.4671	41+00.00	N 243004.2243, E 2098922.9692	

CONNECTICUT STREET								
NUMBER	LENGTH	RADIUS	LINE / CHORD DIRECTION	START STATION	START SEGMENT	END STATION	END SEGMENT	RADIUS POINT
L4	100.00'		358°14'41.48"	50+00.00	N 242914.5211, E2099256.2610	51+00.00	N 243014.4742, E 2099253.1982	

NEW YORK STREET								
NUMBER	LENGTH	RADIUS	LINE / CHORD DIRECTION	START STATION	START SEGMENT	END STATION	END SEGMENT	RADIUS POINT
L5	100.00'		358°16'59.11"	60+00.00	N 242924.7585, E2099586.0839	61+00.00	N 243024.7136, E 2099583.0878	

NEW JERSEY STREET								
NUMBER	LENGTH	RADIUS	LINE / CHORD DIRECTION	START STATION	START SEGMENT	END STATION	END SEGMENT	RADIUS POINT
L6	84.50'		358°32'46.48"	70+00.00	N 242935.0127, E2099916.4707	70+84.50	N 243019.4875, E 2099914.3268	

PENNSYLVANIA STREET								
NUMBER	LENGTH	RADIUS	LINE / CHORD DIRECTION	START STATION	START SEGMENT	END STATION	END SEGMENT	RADIUS POINT
L7	100.00'		358°01'09.42"	80+00.00	N 242945.2518, E2100246.3111	81+00.00	N 243045.1921, E 2100242.8548	

GENERAL PROJECT INFORMATION

PROJECT 2:	KANSAS STATE PLAN COORDINATES, NORTH ZONE, US FOOT
SCALE FACTOR:	0.999936527/1.000063477
HORIZONTAL DATUM:	NAV 83
VERTICAL DATUM:	NAVD 88

PROJECT CONTROL

HCP-120	FND 2" DISC AT MIDDLE OF INTERSECTION E. 9TH AND MASSACHUSETTS N=242,983.43 E=2,098,253.24 ELEV=846.56
HCP-42	FND 1/2" IRON BAR w/ CAP DM2 KSCLS 224 NW QUADRANT OF RHODE ISLAND AND E. 9TH STREET N=243,043.09 E=2,098,881.54 ELEV=840.10
HCP-121	FND 5/8" IRON BAR PROPERTY CORNER AT SE QUADRANT OF CONNECTICUT AND E. 9TH STREET N=242,975.73 E=2,099,294.11 ELEV=834.90
HCP-122	FND 5/8" IRON BAR PROPERTY CORNER AT SW QUADRANT OF NEW JERSEY AND E. 9TH STREET N=242,983.24 E=2,099,544.64 ELEV=837.16
HCP-139	FND 1/2" IRON BAR PROPERTY CORNER AT NE QUADRANT OF NEW JERSEY AND E. 9TH STREET N=243,076.17 E=2,099,951.79 ELEV=835.18
HCP-133	FND "X" CUT ON 1 1/2" IRON BAR PROPERTY CORNER AT SE QUADRANT OF PENNSYLVANIA AND E. 9TH STREET N=243,006.94 E=2,100,283.87 ELEV=837.46
HCP-136	FND 5/8" IRON BAR w/ CAP NW PROPERTY CORNER AT DELAWARE AND E. 9TH STREET N=243,093.58 E=2,100,531.01 ELEV=825.01

BENCHMARK INFORMATION

BM #1	M368-A "L" CUT SOUTHEAST CORNER OF INLET 9TH STREET AND DELAWARE STREET. EL.=825.73
BM #2	M368-B "L" CUT SOUTHWEST CORNER OF RETAINING WALL ON THE NORTH SIDE OF 9TH STREET, 60' EAST OF THE CENTERLINE OF PENNSYLVANIA STREET. EL.=832.69
BM #3	M368-C "L" CUT SOUTHEAST CORNER SIGN BASE ON THE NORTH SIDE OF 9TH STREET, 42' WEST OF THE CENTERLINE OF NEW JERSEY STREET. EL.=837.96
BM #4	M368-D RAIL ROAD SPIKE IN WEST FACE OF POWER POLE ON THE SOUTH SIDE OF 9TH STREET 26' EAST OF THE CENTERLINE OF CONNECTICUT STREET EL.=835.18
BM #5	M368-E "L" CUT SIDEWALK, NORTHWEST CORN OF LANDSCAPE AREA, NORTH SIDE OF 9TH STREET AND 144' WEST OF THE CENTERLINE OF RHODE ISLAND STREET. EL.=841.81
BM #6	M368-F "L" CUT CORNER, SOUTH SIDE OF 9TH STREET ON THE NORTHEAST CORNER OF US BANK AT THE NORTHEAST CORNER OF THE BOTTOM STEP. EL.=846.66

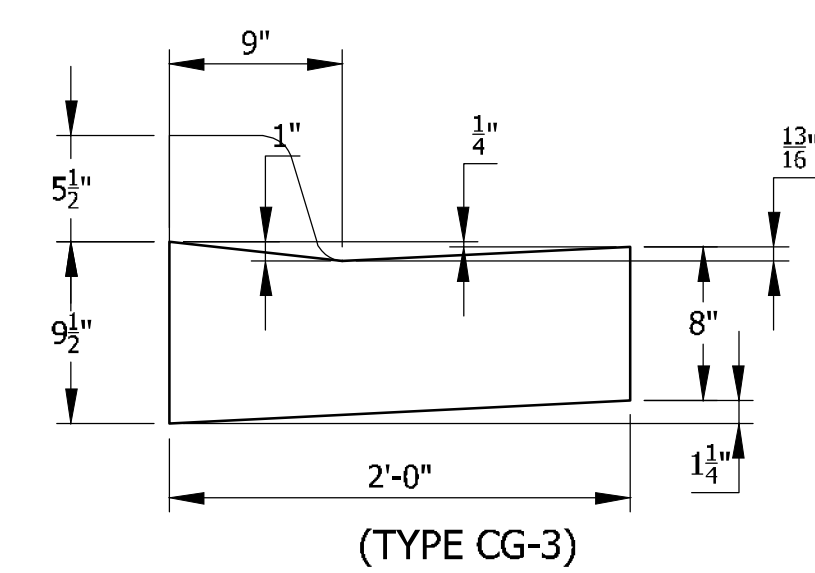
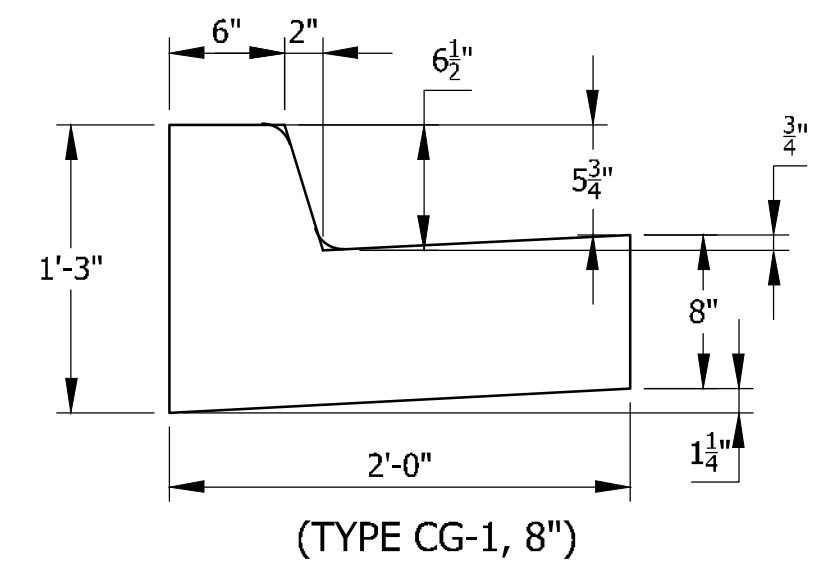
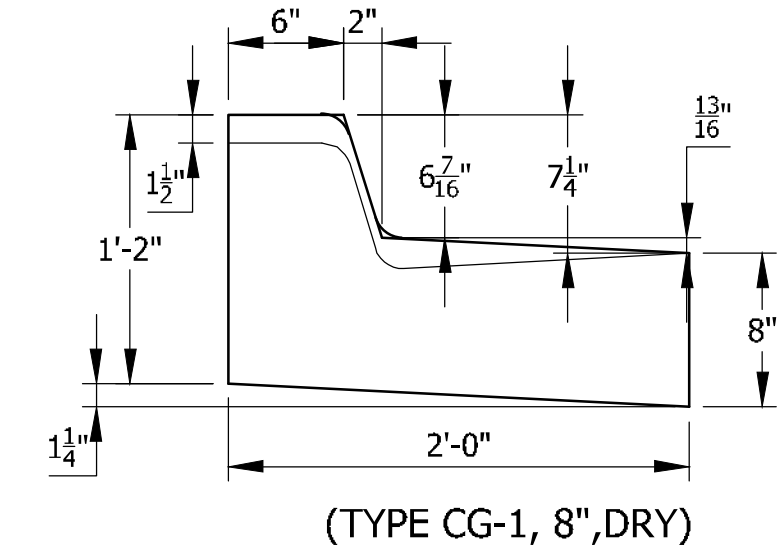
Bartlett & West

544 COLUMBIA DR. - LAWRENCE KS 66049
PHONE: 785.748.9452
www.bartlettwest.com

PROJECT CONTROL
ALIGNMENT DATA TABLE

FIELD CHECK PLANS

DESIGNED BY:	JDM
DRAWN BY:	JDM
APPROVED BY:	BTA
DESIGN PROJ:	18811.001
CITY PROJ:	PW1502
SCALE:	AS NOTED
DATE:	JAN. 2018
DRAWING NO:	3
SHEET NO:	3 of 41



Bartlett & West
544 COLUMBIA DR. - LAWRENCE KS 66049
PHONE: 785.749.9452
www.bartlettwest.com

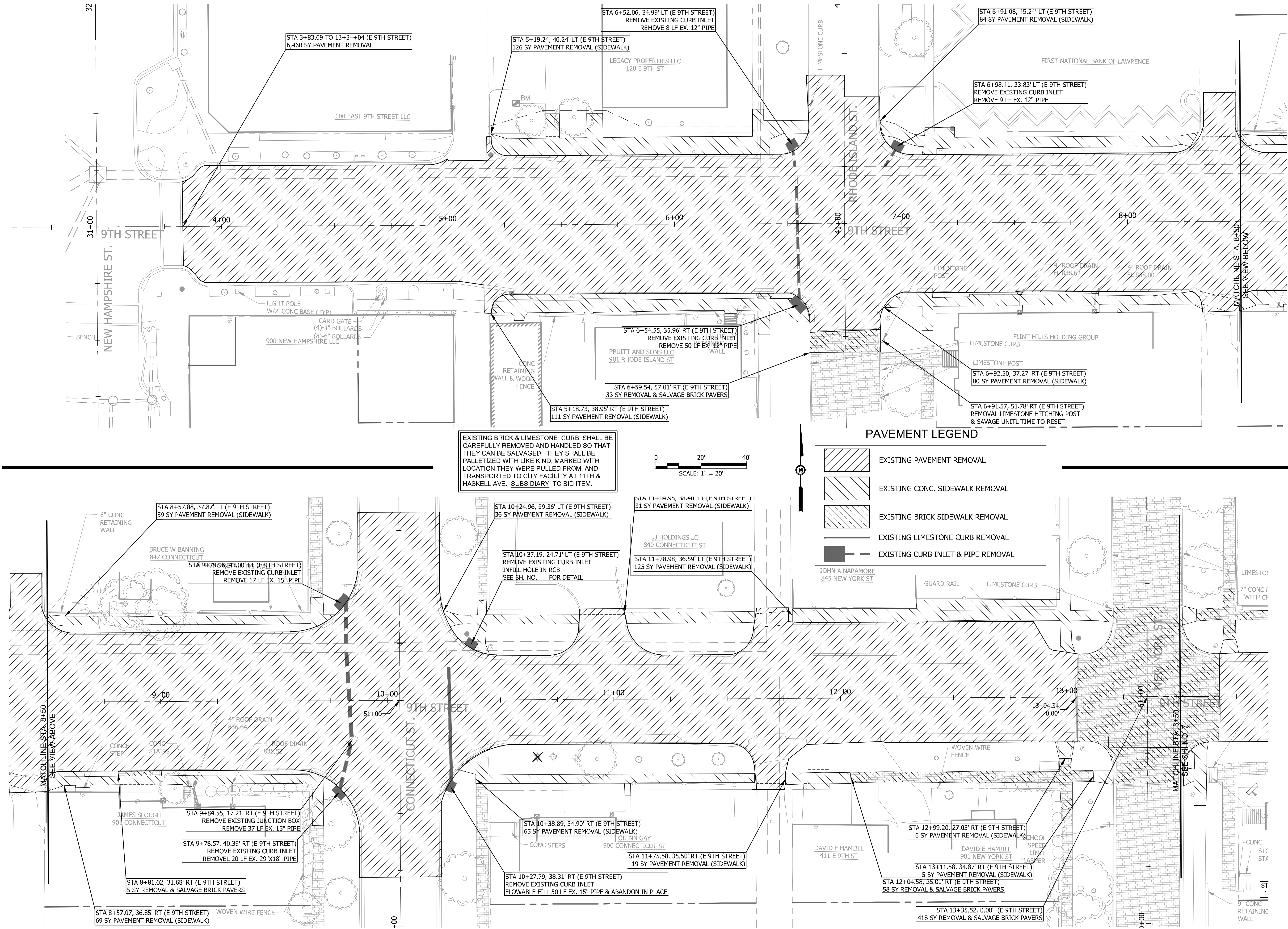
**E. 9TH STREET - NEW HAMPSHIRE ST. TO PENNSYLVANIA ST.
STREET, SIDEWALK, & STORM SEWER IMPROVEMENTS
LAWRENCE, KANSAS**

DESIGNED BY:	JDM
DRAWN BY:	JDM
APPROVED BY:	BTA
DESIGN PROJ:	18811.001
CITY PROJ:	PW1502
SCALE:	AS NOTED
DATE:	JAN. 2018
DRAWING NO:	4
SHEET NO:	

DRAINAGE AREA & STRUCTURE DATA																		
DRAIN AREA NO.	INLET LOCATION (STA)	C	Ti (min)	A (acres)	(C*A)	Q total (cfs)						STREET SLOPE (%)	WIDTH OF SPREAD (ft)				Inlet Length (ft)	
						1-Yr	2-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr		10-Yr	25-Yr	50-Yr	100-Yr	
1	16+45 Rt	0.51	10	1.38	0.70	2.7	3.2	3.8	4.3	5.5	6.6	7.6	1.0	11.1	12.2	13.1	13.8	6
2	16+30 Rt	0.51	9	0.28	0.14	0.6	0.7	0.8	0.9	1.2	1.4	1.6	2.9	4.9	5.4	5.8	6.1	6
3	16+30 Lt	0.51	7	0.35	0.18	0.8	0.9	1.1	1.2	1.5	1.9	2.1	2.9	5.5	6.0	6.5	6.8	6
4	17+00 Lt	0.51	5	0.08	0.04	0.2	0.2	0.3	0.3	0.4	0.5	0.5	0.6	4.3	4.7	5.1	5.3	6
5	17+00 Rt	0.51	10	1.79	0.91	3.5	4.1	5.0	5.6	7.1	8.6	9.9	0.6	13.5	14.9	16.0	16.9	6
6	19+45 Lt	0.51	5	0.21	0.11	0.5	0.6	0.7	0.8	1.0	1.2	1.4	0.6	6.3	6.9	7.4	7.8	6
7	19+45 Rt	0.51	12	3.37	1.72	6.1	7.2	8.7	9.8	12.6	15.2	17.4	0.6	16.8	18.5	19.9	21.0	6
10	6+45 Rt	0.51	9	1.84	0.94	3.7	4.4	5.3	5.9	7.6	9.2	10.5	0.6	13.9	15.2	16.4	17.3	6
11	6+45 Lt	0.51	8	0.65	0.33	1.4	1.6	1.9	2.2	2.8	3.3	3.8	0.6	9.4	10.3	11.1	11.7	6
12	6+55 Rt	0.51	9	1.31	0.67	2.7	3.1	3.8	4.2	5.4	6.5	7.5	1.3	10.5	11.5	12.4	13.0	6
13	6+55 Lt	0.51	15	2.21	1.13	3.6	4.3	5.2	5.9	7.5	9.1	10.4	0.9	12.8	14.0	15.1	15.9	6
14	6+90 Rt	0.51	14	0.94	0.48	1.6	1.9	2.3	2.6	3.3	4.0	4.6	2.0	7.9	8.7	9.4	9.9	6
15	6+90 Lt	0.51	6	0.67	0.34	1.5	1.8	2.1	2.4	3.0	3.7	4.2	1.0	8.8	9.7	10.4	11.0	6
16	9+55 Rt	0.51	13	1.77	0.90	3.1	3.7	4.4	5.0	6.4	7.7	8.8	1.2	11.3	12.5	13.4	14.2	6
17	9+55 Lt	0.51	14	2.16	1.10	3.7	4.3	5.2	5.9	7.6	9.2	10.5	1.2	12.1	13.3	14.3	15.1	6
18	9+80 Rt	0.51	10	1.88	0.96	3.7	4.3	5.2	5.9	7.5	9.1	10.4	1.0	12.5	13.7	14.8	15.6	6
19	9+80 Lt	0.51	12	0.72	0.37	1.3	1.5	1.9	2.1	2.7	3.2	3.7	0.6	9.3	10.2	11.0	11.6	6
20	10+25 Rt	0.51	9	0.96	0.96	3.8	4.5	5.4	6.1	7.8	9.4	10.7	1.0	12.7	13.9	15.0	15.8	6
21	10+25 Lt	0.51	5	0.52	0.27	1.2	1.4	1.7	1.9	2.5	3.0	3.4	0.6	9.0	9.8	10.6	11.1	6
22	10+55 Rt	0.51	9	0.68	0.35	1.4	1.6	1.9	2.2	2.8	3.4	3.9	0.6	9.4	10.4	11.2	11.8	6
23	13+70 Lt	0.51	5	0.15	0.08	0.4	0.4	0.5	0.6	0.7	0.9	1.0	1.0	5.0	5.5	5.9	6.2	6
24	12+85 Rt	0.51	7	0.67	0.34	1.5	1.7	2.1	2.3	2.9	3.6	4.1	1.0	8.7	9.6	10.3	10.8	6
25	13+70 Rt	0.51	10	2.19	1.12	4.3	5.0	6.1	6.8	8.7	10.5	12.1	1.0	13.3	14.6	15.7	16.5	6

PIPE DATA																																							
DRAIN AREA NO.	PIPE NAME	Σ AREA (ACRES)	C (COEFF)	k°C*A						T _i (min)	T _s (min)	T _c (min)	INTENSITY (in/hr)						Q pipe (cfs)				PIPE LENGTH(ft) @ SLOPE (%)		TRAVEL TIME T _t (min)	DIA (in)	RCP		POLYPROPYLENE										
				1-Yr	2-Yr	5-Yr	10-Yr	25-Yr	50-Yr				1-Yr	2-Yr	5-Yr	10-Yr	25-Yr	50-Yr	1-Yr	2-Yr	5-Yr	10-Yr	25-Yr	50-Yr			n	V _{full} (fps)	Q _{cap} (cfs)	Q _{c>Q₁₀}	Q _{c>Q₂₅}	Q _{c>Q₅₀}	DIA (in)	n	V _{full} (fps)	Q _{cap} (cfs)	Q _{c>Q₁₀}	Q _{c>Q₂₅}	Q _{c>Q₅₀}
201	201	95.61	0.51	48.8	48.8	48.8	48.8	53.6	58.5	15	0.1	15	3.22	3.80	4.62	5.21	6.06	6.73	157.0	185.3	225.3	254.0	325.0	393.8	50	@	3.00	0.0	48	0.013	19.9	249.5	NO	NO	NO	NO	NO	NO	
202	202	92.60	0.51	47.2	47.2	47.2	47.2	51.9	56.7	15	0.0	15	3.22	3.80	4.62	5.21	6.06	6.73	152.1	179.4	218.2	246.0	314.8	381.4	100	@	3.00	0.1	48	0.013	19.9	249.5	OK	NO	NO	NO	NO	NO	
24	24	3.01	0.51	1.5	1.5	1.5	1.5	1.7	1.8	10	0.1	10	3.84	4.50	5.43	6.11	7.10	7.87	5.9	6.9	8.3	9.4	12.0	14.5	150	@	0.60	0.5	18	0.013	4.6	8.2	OK	NO	NO	NO	NO	NO	NO
25	25	2.34	0.51	1.2	1.2	1.2	1.2	1.3	1.4	10	0.0	10	3.84	4.50	5.43	6.11	7.10	7.87	4.6	5.4	6.5	7.3	9.3	11.3	30	@	0.60	0.1	18	0.013	4.6	8.2	OK	NO	NO	NO	NO	NO	NO
23	23	0.15	0.51	0.1	0.1	0.1	0.1	0.1	0.1	5	0.0	5	4.63	5.40	6.48	7.26	8.41	9.31	0.4	0.4	0.5	0.6	0.7	0.9	30	@	0.60	0.1	15	0.013	4.1	5.0	OK	OK	OK	OK	OK	OK	OK
N/A	107	33.75	0.86	28.9	28.9	28.9	28.9	31.7	34.6	14	0.0	14	3.33	3.92	4.76	5.36	6.24	6.93	96.1	113.1	137.4	154.7	198.1	240.0	450	@	1.46	0.5	48	0.013	13.8	174.0	OK	NO	NO	NO	NO	NO	
10	10	1.84	0.51	0.9	0.9	0.9	0.9	1.0	1.1	9	0.0	9	3.98	4.66	5.62	6.32	7.34	8.13	3.7	4.4	5.3	5.9	7.6	9.2	30	@	0.60	0.1	15	0.013	4.1	5.0	OK	NO	NO	NO	NO	NO	NO
11	11	0.65	0.51	0.3	0.3	0.3	0.3	0.4	0.4	8	0.0	8	4.12	4.83	5.82	6.53	7.58	8.40	1.4	1.6	1.9	2.2	2.8	3.3	5	@	1.00	0.0	15	0.013	5.3	6.5	OK	OK	OK	OK	OK	OK	OK
14	14	0.94	0.51	0.5	0.5	0.5	0.5	0.6	0.6	14	0.0	14	3.33	3.92	4.76	5.36	6.24	6.93	1.6	1.9	2.3	2.6	3.3	4.0	30	@	1.00	0.1	15	0.013	5.3	6.5	OK	OK	OK	OK	OK	OK	OK
12	12	2.25	0.51	1.1	1.1	1.1	1.1	1.3	1.4	14	0.1	14	3.33	3.92	4.76	5.36	6.24	6.93	3.8	4.5	5.5	6.2	7.9	9.5	30	@	0.60	0.1	18	0.013	4.6	8.2	OK	OK	OK	OK	OK	OK	OK
13	13	2.21	0.51	1.1	1.1	1.1	1.1	1.2	1.4	15	0.0	15	3.22	3.80	4.62	5.21	6.06	6.73	3.6	4.3	5.2	5.9	7.5	9.1	30	@	1.00	0.1	15	0.013	5.3	6.5	OK	NO	NO	NO	NO	NO	NO
N/A	106	36.24	0.83	30.1	30.1	30.1	30.1	33.1	36.2	14	0.5	15	3.22	3.80	4.62	5.21	6.06	6.73	97.0	114.5	139.2	157.0	200.8	243.3	20	@	1.46	0.0	48	0.013	13.8	174.0	OK	NO	NO	NO	NO	NO	NO
N/A	105	40.70	0.80	32.4	32.4	32.4	32.4	35.6	38.9	15	0.0	15	3.22	3.80	4.62	5.21	6.06	6.73	104.3	123.1	149.7	168.8	216.0	261.7	30	@	1.46	0.0	48	0.013	13.8	174.0	OK	NO	NO	NO	NO	NO	NO
15	15	0.67	0.51	0.3	0.3	0.3	0.3	0.4	0.4	6	0.0	6	4.44	5.19	6.23	6.99	8.10	8.97	1.5	1.8	2.1	2.4	3.0	3.7	10	@	1.00	0.0	15	0.013	5.3	6.5	OK	OK	OK	OK	OK	OK	OK
N/A	104	41.37	0.79	32.7	32.7	32.7	32.7	36.0	39.3	15	0.0	15	3.22	3.80	4.62	5.21	6.06	6.73	105.4	124.4	151.3	170.6	218.3	264.4	30	@	1.46	0.0	48	0.013	13.8	174.0	OK	NO	NO	NO	NO	NO	NO
17	17	2.16	0.51	1.1	1.1	1.1	1.1	1.2	1.3	14	0.0	14	3.33	3.92	4.76	5.36	6.24	6.93	3.7	4.3	5.2	5.9	7.6	9.2	20	@	1.00	0.1	15	0.013	5.3	6.5	OK	NO	NO	NO	NO	NO	NO
16	16	1.77	0.51	0.9	0.9	0.9	0.9	1.0	1.1	13	0.0	13	3.45	4.05	4.91	5.53	6.43	7.14	3.1	3.7	4.4	5.0	6.4	7.7	30	@	1.00	0.1	15	0.013	5.3	6.5	OK	OK	OK	OK	OK	OK	OK
N/A	103	45.30	0.77	34.7	34.7	34.7	34.7	38.2	41.7	15	0.0	15	3.22	3.80	4.62	5.21	6.06	6.73	111.9	132.0	160.5	181.0	231.6	280.6	30	@	1.46	0.0	48	0.013	13.8	174.0	NO	NO	NO	NO	NO	NO	NO
18	18	1.88	0.51	1.0	1.0	1.0	1.0	1.1	1.2	10	0.0	10	3.84	4.50	5.43	6.11	7.10	7.87	3.7	4.3	5.2	5.9	7.5	9.1	30	@	1.00	0.1	15	0.013	5.3	6.5	OK	NO	NO	NO	NO	NO	NO
19	19	0.72	0.51	0.4	0.4	0.4	0.4	0.4	0.4	12	0.0	12	3.57	4.19	5.08	5.71	6.64	7.37	1.3	1.5	1.9	2.1	2.7	3.2	30	@	1.00	0.1	15	0.013	5.3	6.5	OK	OK	OK	OK	OK	OK	OK
N/A	102	47.90	0.75	36.1	36.1	36.1	36.1	39.7	43.3	15	0.0	15	3.22	3.80	4.62	5.21	6.06	6.73	116.2	137.1	166.7	187.9	240.5	291.3	30	@	1.46	0.0	48	0.013	13.8	174.0	NO	NO	NO	NO	NO	NO	NO
21	21	0.52	0.51	0.3	0.3	0.3	0.3	0.3	0.3	5	0.0	5	4.63	5.40	6.48	7.26	8.41	9.31	1.2	1.4	1.7	1.9	2.5	3.0	30	@	1.00	0.1	15	0.013	5.3	6.5	OK	OK	OK	OK	OK	OK	OK
22	22	0.68	0.51	0.3	0.3	0.3	0.3	0.4	0.4	9	0.0	9	3.98	4.66	5.62	6.32	7.34	8.13	1.4	1.6	1.9	2.2	2.8	3.4	30	@	1.00	0.1	15	0.013	5.3	6.5	OK	OK	OK	OK	OK	OK	OK
N/A	100	49.10	0.75	36.7	36.7	36.7	36.7	40.4	44.0	15	0.0	15	3.22	3.80	4.62	5.21	6.06	6.73	118.1	139.4	169.5	191.1	244.5	296.3	100	@	1.46	0.1	48	0.013	13.8	174.0	NO	NO	NO	NO	NO	NO	NO
N/A	200	144.71	0.59	85.4	85.4	85.4	85.4	94.0	102.5	15	0.1	15	3.22	3.80	4.62	5.21	6.06	6.73	275.1	324.7	394.7	445.2	569.6	690.0	500	@	1.00	0.6	66	0.013	14.2	336.7	NO	NO	NO	NO	NO	NO	NO
1	1	1.38	0.51	0.7	0.7	0.7	0.7	0.8	0.8	10	0.0	10	3.84	4.50	5.43	6.11	7.10	7.87	2.7	3.2	3.8	4.3	5.5	6.6	30	@	1.00	0.1	15	0.013	5.3	6.5	OK	OK	OK	OK	OK	OK	OK
2	2	1.66	0.51	0.8	0.8	0.8	0.8	0.9	1.0	10	0.1	10	3.84	4.50	5.43	6.11	7.10	7.87	3.3	3.8	4.6	5.2	6.6	8.0	30	@	1.00	0.1	15	0.013	5.3	6.5	OK	NO	NO	NO	NO	NO	NO
3	3	2.01	0.51	1.0	1.0	1.0	1.0	1.1	1.2	10	0.1	10	3.84	4.50	5.43	6.11	7.10	7.87	3.9	4.6	5.6	6.3	8.0	9.7	30	@	1.00	0.1	15	0.013	5.3	6.5	OK	NO	NO	NO	NO	NO	NO
5	5	1.79	0.51	0.9	0.9	0.9	0.9	1.0	1.1	10	0.1	10	3.84	4.50	5.43	6.11	7.10	7.87	3.5	4.1	5.0	5.6	7.1	8.6	30	@	1.00	0.1	15	0.013	5.3	6.5	OK	NO	NO	NO	NO	NO	NO
4	4	3.88	0.51	2.0	2.0	2.0	2.0	2.2	2.4	10	0.1	10	3.84	4.50	5.43	6.11	7.10	7.87	7.6	8.9	10.7	12.1	15.5	18.7	240	@	0.60	0.7	24	0.013	5.6	17.6	OK	OK	OK	OK	OK	OK	OK
7	7	3.37	0.51	1.7	1.7	1.7	1.7	1.9	2.1	12	0.0	12	3.57	4.19	5.08	5.71	6.64	7.37	6.1	7.2	8.7	9.8	12.6	15.2	30	@	1.00	0.1	18	0.013	6.0	10.5	OK	NO	NO	NO	NO	NO	NO
6	6	7.46	0.51	3.8	3.8	3.8	3.8	4.2	4.6	12	0.1	12	3.57	4.19	5.08	5.71	6.64	7.37	13.6	15.9	19.3	21.7	27.8	33.6	15	@	1.00	0.0	24	0.013	7.2	22.7	OK	NO	NO	NO	NO	NO	NO

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DEMOLITION PLAN
STA. 3+75 TO 13+50

E. 9TH STREET - NEW HAMPSHIRE ST. TO PENNSYLVANIA ST.
STREET, SIDEWALK, & STORM SEWER IMPROVEMENTS
LAWRENCE, KANSAS

FIELD CHECK PLANS

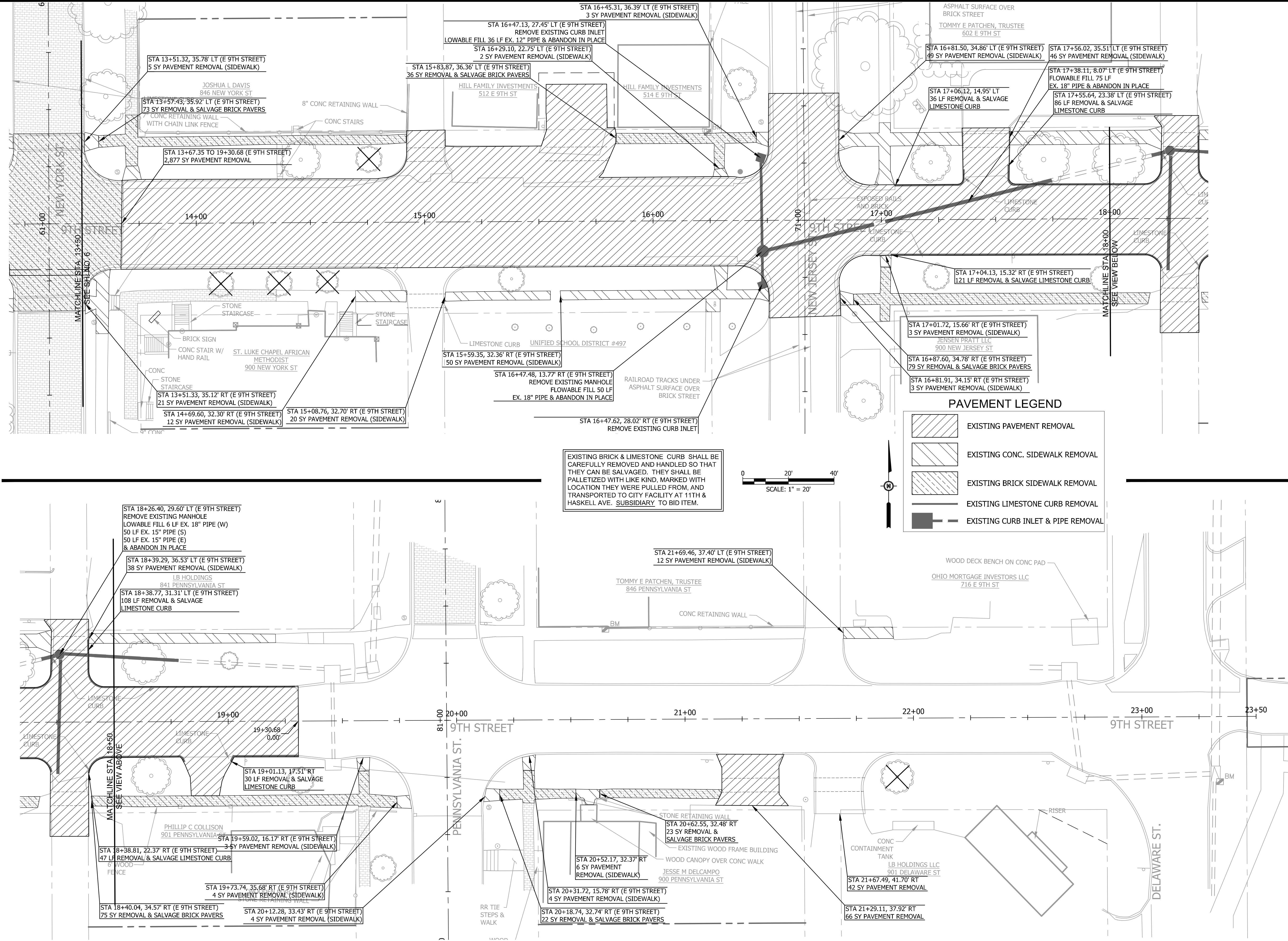
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APPROVED BY:	BTA
DESIGN PROJ:	18811.001
CITY PROJ:	PW1502
SCALE:	AS NOTED
DATE:	JAN. 2018
DRAWING NO:	6
SHEET NO:	6 of 41

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PHONE: 785.745.9452
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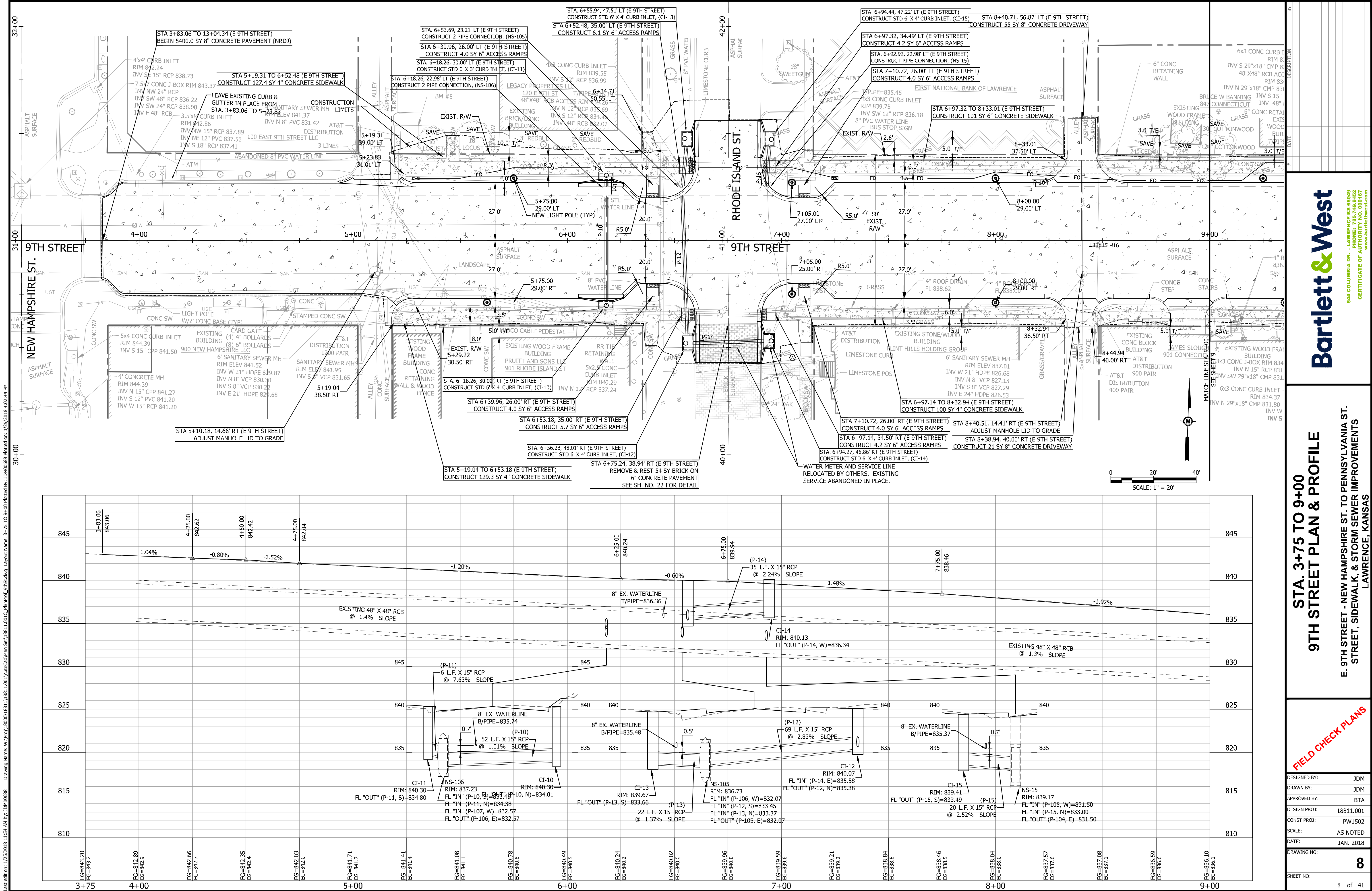
DEMOLITION PLAN
STA. 13+50 TO 23+50

E. 9TH STREET - NEW HAMPSHIRE ST. TO PENNSYLVANIA ST.
STREET, SIDEWALK, & STORM SEWER IMPROVEMENTS
LAWRENCE, KANSAS

FIELD CHECK PLANS

DESIGNED BY:	JDM
DRAWN BY:	JDM
APPROVED BY:	BTA
DESIGN PROJ:	18811.001
CITY PROJ:	PW1502
SCALE:	AS NOTED
DATE:	JAN. 2018
DRAWING NO:	7
SHEET NO:	7 of 41

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STA. 3+75 TO 9+00
9TH STREET PLAN & PROFILE
E. 9TH STREET - NEW HAMPSHIRE ST. TO PENNSYLVANIA ST.
STREET, SIDEWALK, & STORM SEWER IMPROVEMENTS
LAWRENCE, KANSAS

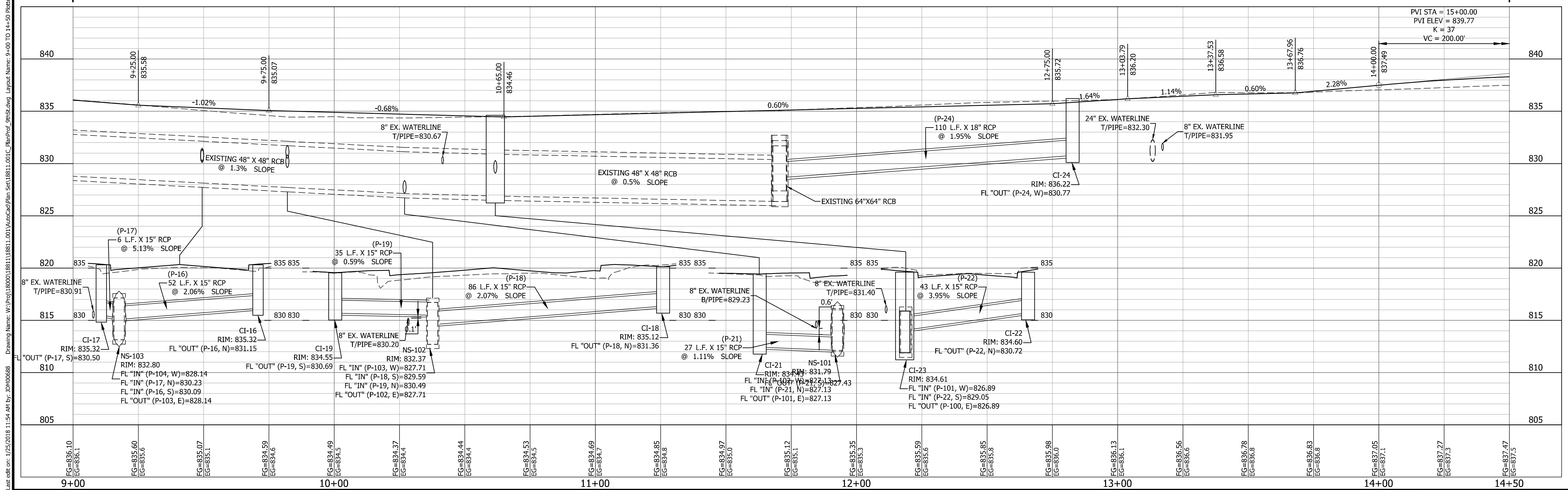
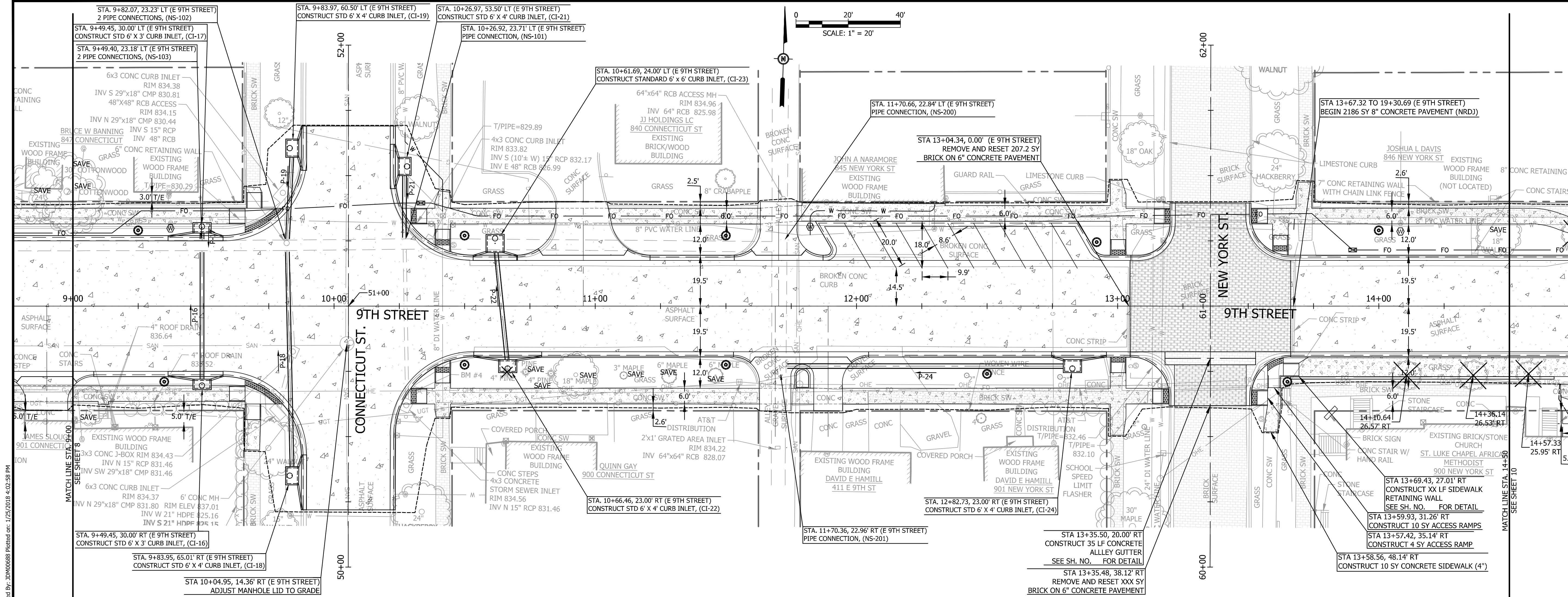
FIELD CHECK PLANS

DESIGNED BY:	JDM
DRAWN BY:	JDM
APPROVED BY:	BTA
DESIGN PROJ:	18811.001
CONST PROJ:	PW1502
SCALE:	AS NOTED
DATE:	JAN. 2018
DRAWING NO:	8
SHEET NO:	8 of 41

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DESCRIPTION

DATE

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STA. 9+00 TO 14+50

9TH STREET PLAN & PROFILE

E. 9TH STREET - NEW HAMPSHIRE ST. TO PENNSYLVANIA ST.

STREET, SIDEWALK, & STORM SEWER IMPROVEMENTS

LAWRENCE, KANSAS

DESIGNED BY: JDM

DRAWN BY: JDM

APPROVED BY: BTA

DESIGN PROJ: 18811.001

CONST PROJ: PW1502

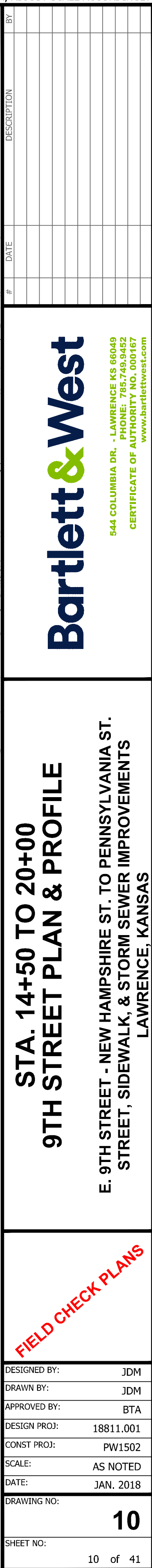
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DATE: JAN. 2018

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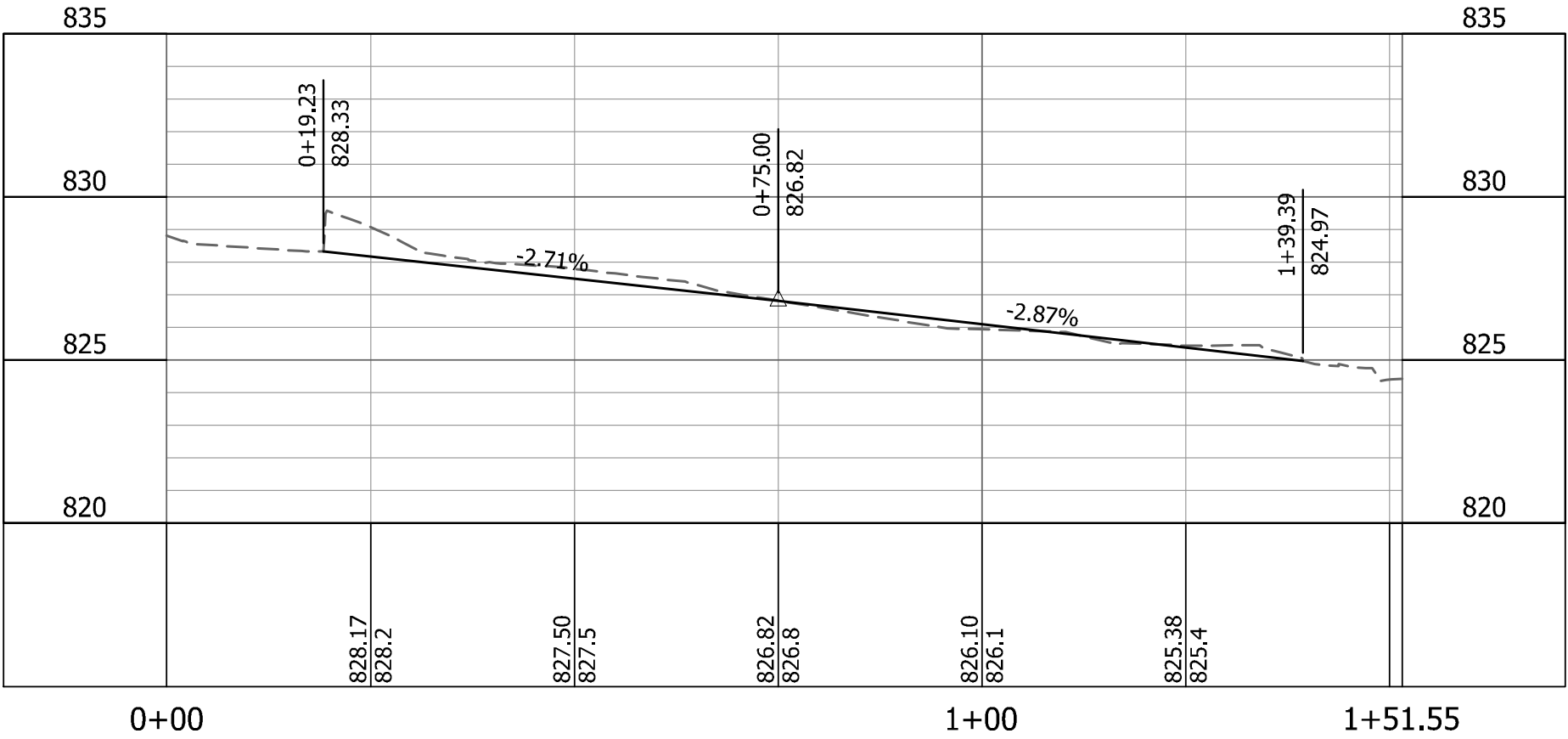
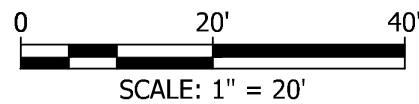
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STA. 14+50 TO 20+00
9TH STREET PLAN & PROFILE

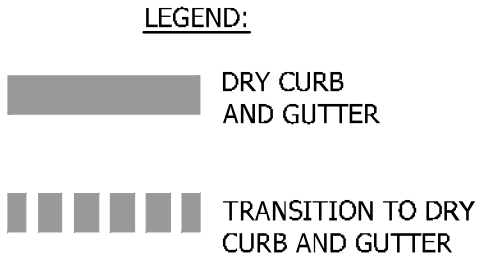
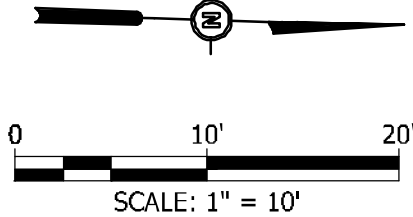
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DRAWN BY:	JDM
APPROVED BY:	BTB
DESIGN PROJ:	18811.001
CONST PROJ:	PW1502
SCALE:	AS NOTED
DATE:	JAN. 2018
DRAWING NO:	10
SHEET NO:	



FIELD CHECK PLANS

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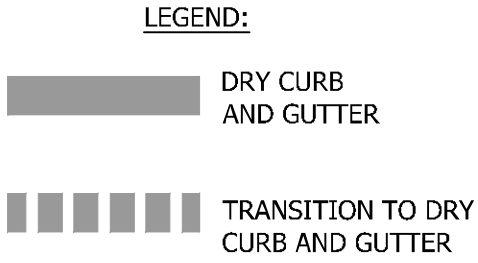


1. THE INTERSECTION OF ALL SLOPE LINES SHALL BE ROUNDED TO PROVIDE SMOOTH TRANSITIONS.
2. CONNECTIONS TO EXISTING PAVEMENT, CURB AND GUTTER AND SIDEWALKS SHALL BE MADE WITH GRADUAL TRANSITIONS WHILE MAINTAINING 0.5% SLOPE OR STEEPER. TRANSITION FROM PROPOSED CURB TO EXISTING CURB IN 'S', UNLESS A LONGER TRANSITION IS NEEDED TO MAINTAIN A 0.5% SLOPE.
3. TC ELEVATIONS SHOWN ARE FOR CURB & GUTTER TYPE CG-1 AND TYPE CG-1 DRY. CONTRACTOR SHALL ADJUST ELEVATIONS SHOWN TO ACCOUNT FOR CURB AND GUTTER ELEVATIONS AT SIDEWALK RAMP LOCATIONS AND DRIVES. GUTTER FLOWLINE ELEVATIONS ARE 0.54 FEET BELOW TC ELEVATIONS SEE CURB & GUTTER DETAIL, SH. NO. 4.

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FIELD CHECK PLANS

12 of 41



1. THE INTERSECTION OF ALL SLOPE LINES SHALL BE ROUNDED TO PROVIDE SMOOTH TRANSITIONS.
2. CONNECTIONS TO EXISTING PAVEMENT, CURB AND GUTTER AND SIDEWALKS SHALL BE MADE WITH GRADUAL TRANSITIONS WHILE MAINTAINING 0.5% SLOPE OR STEEPER. TRANSITION FROM PROPOSED CURB TO EXISTING CURB IN 'S', UNLESS A LONGER TRANSITION IS NEEDED TO MAINTAIN A 0.5% SLOPE.
3. TC ELEVATIONS SHOWN ARE FOR CURB & GUTTER TYPE CG-1 AND TYPE CG-1 DRY. CONTRACTOR SHALL ADJUST ELEVATIONS SHOWN TO ACCOUNT FOR CURB AND GUTTER ELEVATIONS AT SIDEWALK RAMP LOCATIONS AND DRIVES. GUTTER FLOWLINE ELEVATIONS ARE 0.54 FEET BELOW TC ELEVATIONS SEE CURB & GUTTER DETAIL, SH. NO. 4.

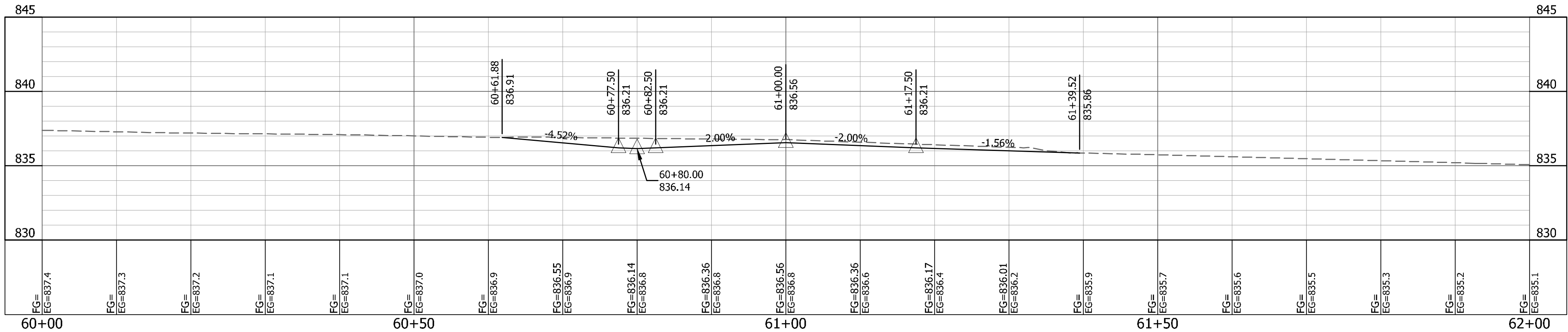
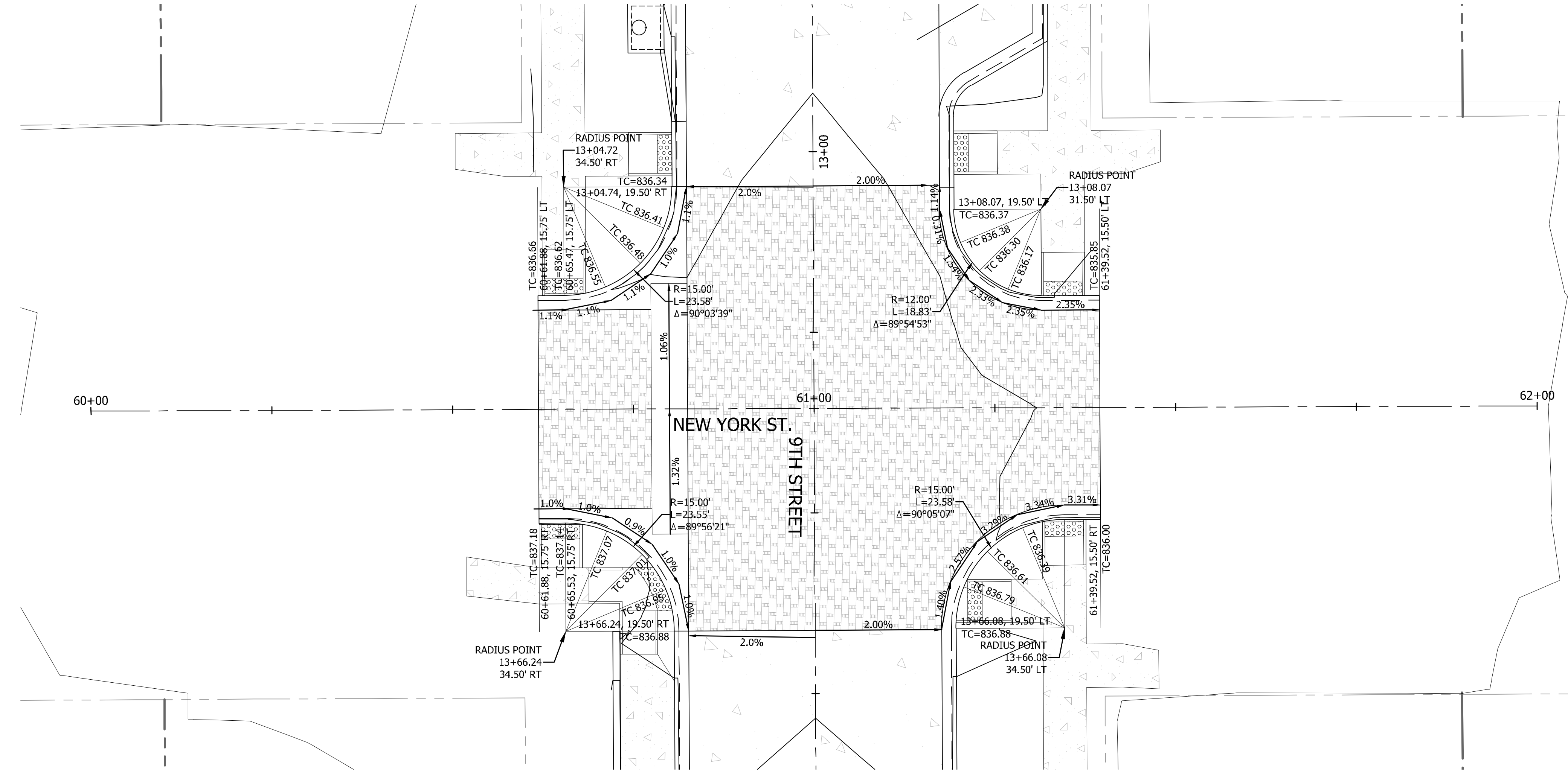
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STA. 50+00 TO 52+00
CONNECTICUT STREET PLAN & PROFILE

E. 9TH STREET - NEW HAMPSHIRE ST. TO PENNSYLVANIA ST.
STREET, SIDEWALK, & STORM SEWER IMPROVEMENTS

FIELD CHECK PLANS

DESIGNED BY:	JDM
DRAWN BY:	JDM
APPROVED BY:	BTB
DESIGN PROJ:	18811.001
CITY PROJ:	PW1502
SCALE:	AS NOTED
DATE:	JAN. 2018
DRAWING NO:	13
SHEET NO:	



LEGEND:

DRY CURB AND GUTTER

TRANSITION TO DRY CURB AND GUTTER

- INTERSECTION DETAIL NOTES:
- THE INTERSECTION OF ALL SLOPE LINES SHALL BE ROUNDED TO PROVIDE SMOOTH TRANSITIONS.
 - CONNECTIONS TO EXISTING PAVEMENT, CURB AND GUTTER AND SIDEWALKS SHALL BE MADE WITH GRADUAL TRANSITIONS WHILE MAINTAINING 0.5% SLOPE OR STEEPER. TRANSITION FROM PROPOSED CURB TO EXISTING CURB IN 5', UNLESS A LONGER TRANSITION IS NEEDED TO MAINTAIN A 0.5% SLOPE.
 - TC ELEVATIONS SHOWN ARE FOR CURB & GUTTER TYPE CG-1 AND TYPE CG-1 DRY. CONTRACTOR SHALL ADJUST ELEVATIONS SHOWN TO ACCOUNT FOR CURB AND GUTTER ELEVATIONS AT SIDEWALK RAMP LOCATIONS AND DRIVES. GUTTER FLOWLINE ELEVATIONS ARE 0.54 FEET BELOW TC ELEVATIONS SEE CURB & GUTTER DETAIL, SH. NO. 4.

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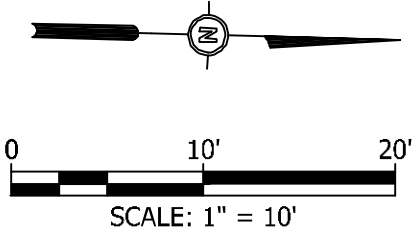
STA. 60+00 TO 62+00

NEW YORK STREET PLAN & PROFILE

**E. 9TH STREET - NEW HAMPSHIRE ST. TO PENNSYLVANIA ST.
STREET, SIDEWALK, & STORM SEWER IMPROVEMENTS
LAWRENCE, KANSAS**

FIELD CHECK PLANS

DESIGNED BY:	JDM
DRAWN BY:	JDM
APPROVED BY:	BTB
DESIGN PROJ:	18811.001
CITY PROJ:	PW1502
SCALE:	AS NOTED
DATE:	JAN. 2018
DRAWING NO:	14
SHEET NO:	14 of 41



 DRY CURB
AND GUTTER

TRANSITION TO DRY CURB AND GUTTER

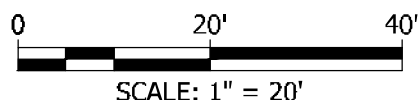
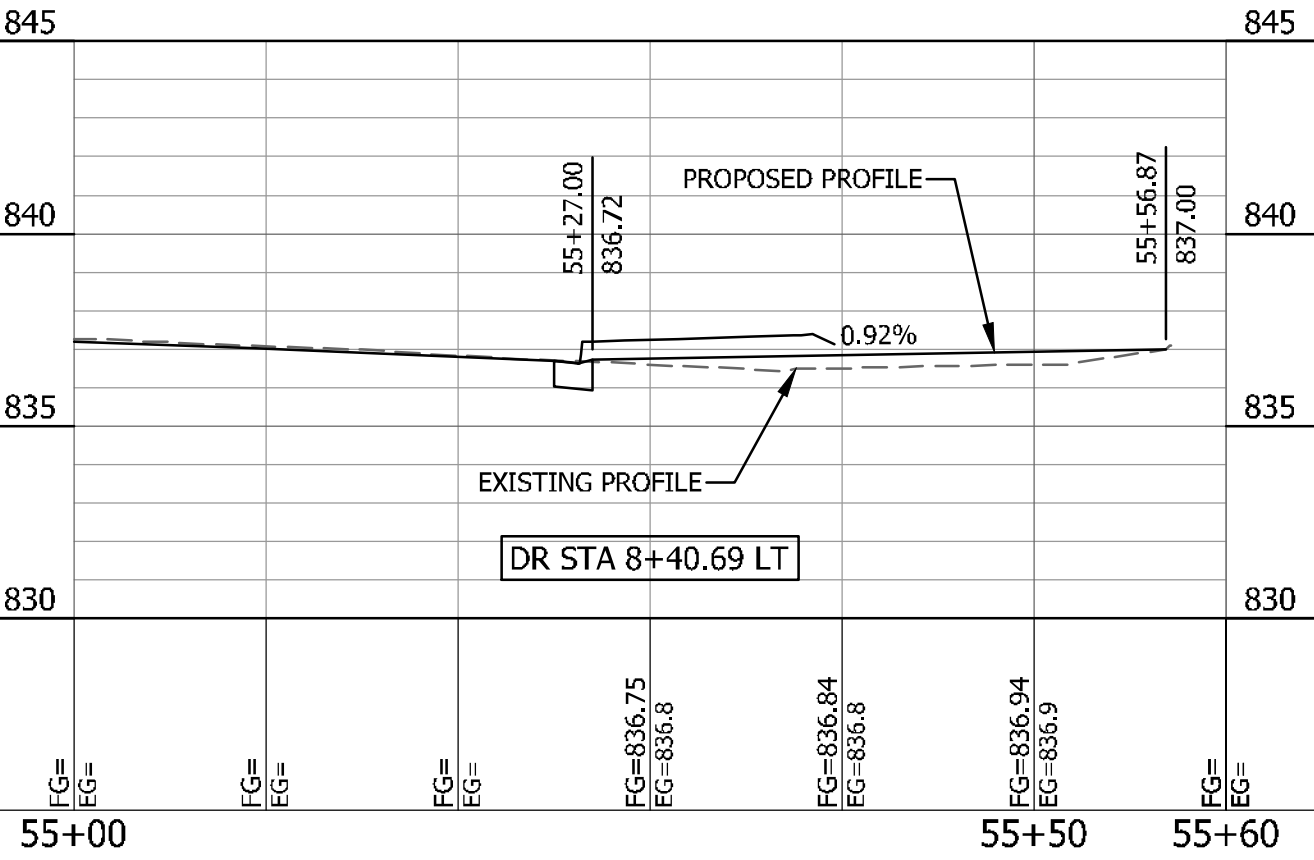
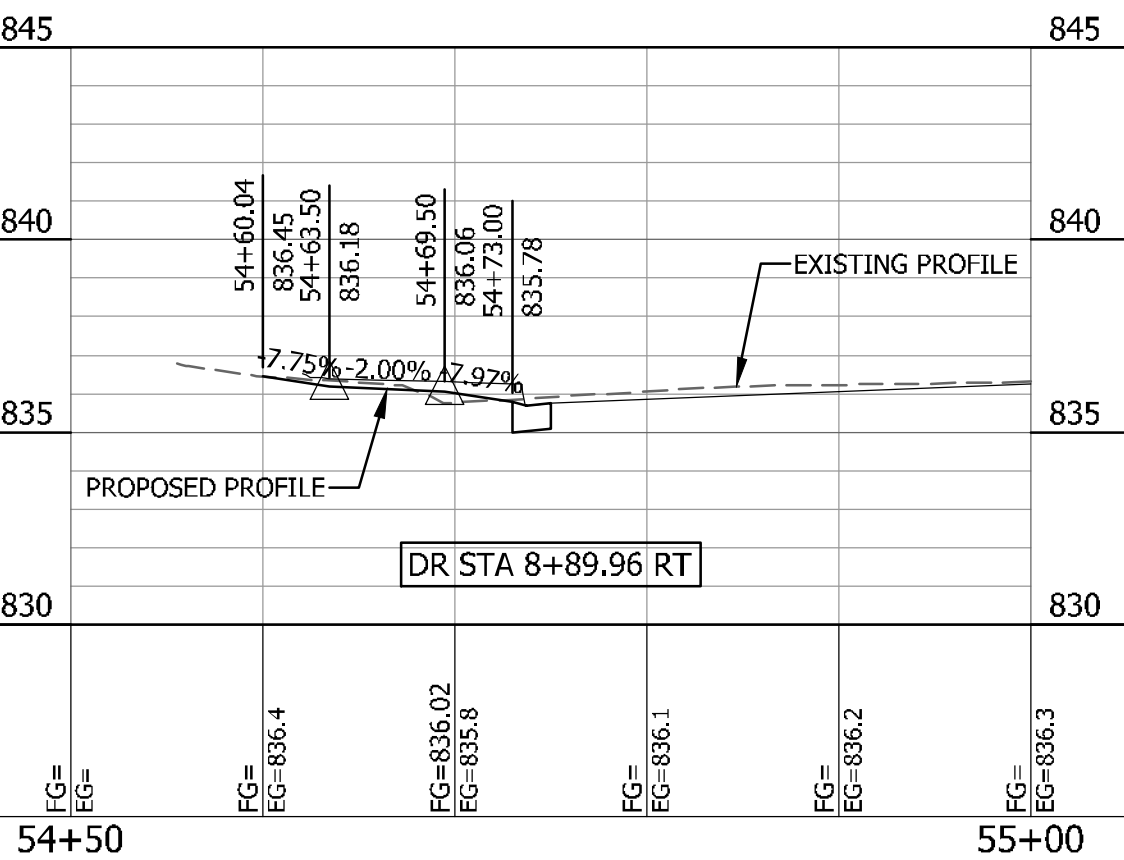
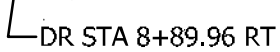
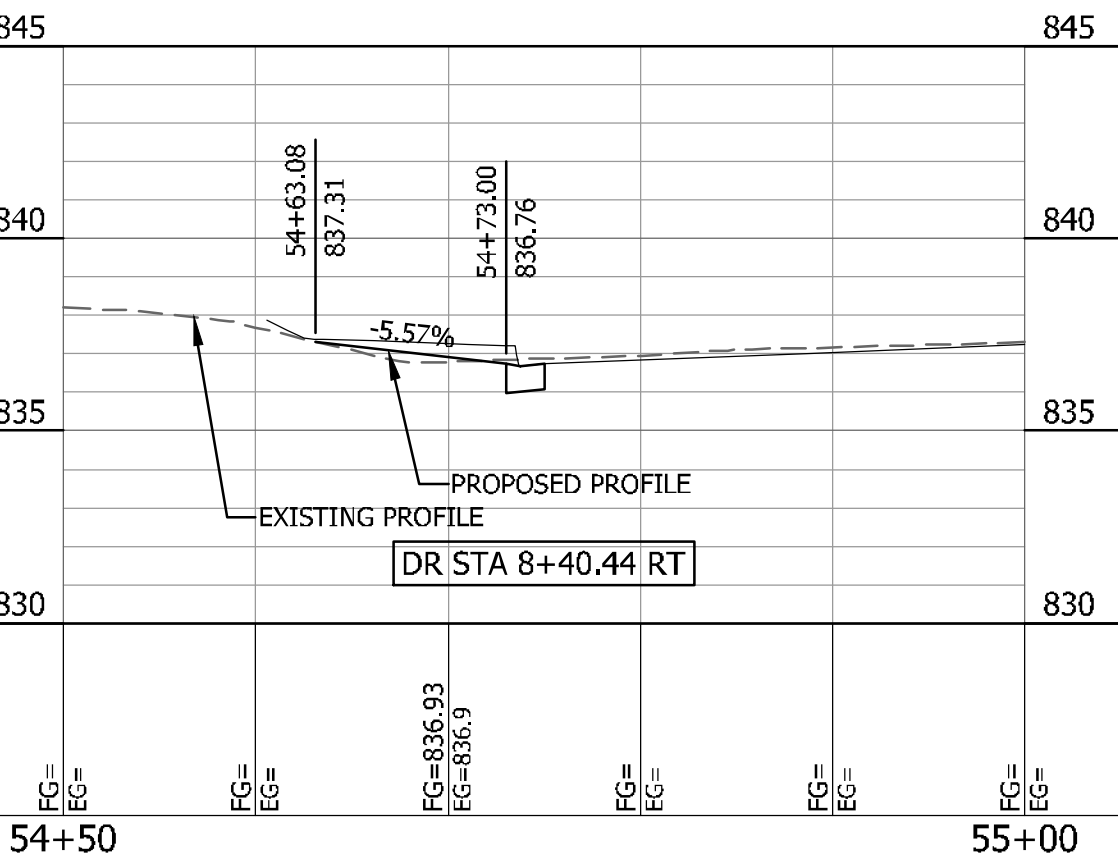
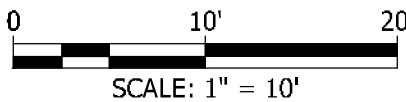
**STA. 70+00 TO 72+00
NEW JERSEY PLAN & PROFILE**

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[illegible]

1. THE INTERSECTION OF ALL SLOPE LINES SHALL BE ROUNDED TO PROVIDE SMOOTH TRANSITIONS.
2. CONNECTIONS TO EXISTING PAVEMENT, CURB AND GUTTER AND SIDEWALKS SHALL BE MADE WITH GRADUAL TRANSITIONS WHILE MAINTAINING 0.5% SLOPE OR STEEPER. TRANSITION FROM PROPOSED CURB TO EXISTING CURB IN 'S', UNLESS A LONGER TRANSITION IS NEEDED TO MAINTAIN A 0.5% SLOPE.
3. TC ELEVATIONS SHOWN ARE FOR CURB & GUTTER TYPE CG-1 AND TYPE CG-1 DRY. CONTRACTOR SHALL ADJUST ELEVATIONS SHOWN TO ACCOUNT FOR CURB AND GUTTER ELEVATIONS AT SIDEWALK RAMP LOCATIONS AND DRIVES. GUTTER FLOWLINE ELEVATIONS ARE 0.54 FEET BELOW TC ELEVATIONS SEE CURB & GUTTER DETAIL, SH. NO. 4.

DESIGNED BY:	JDM
DRAWN BY:	JDM
APPROVED BY:	BTA
DESIGN PROJ:	18811.001
CITY PROJ:	PW1502
SCALE:	AS NOTED
DATE:	JAN. 2018
DRAWING NO:	15
SHEET NO:	



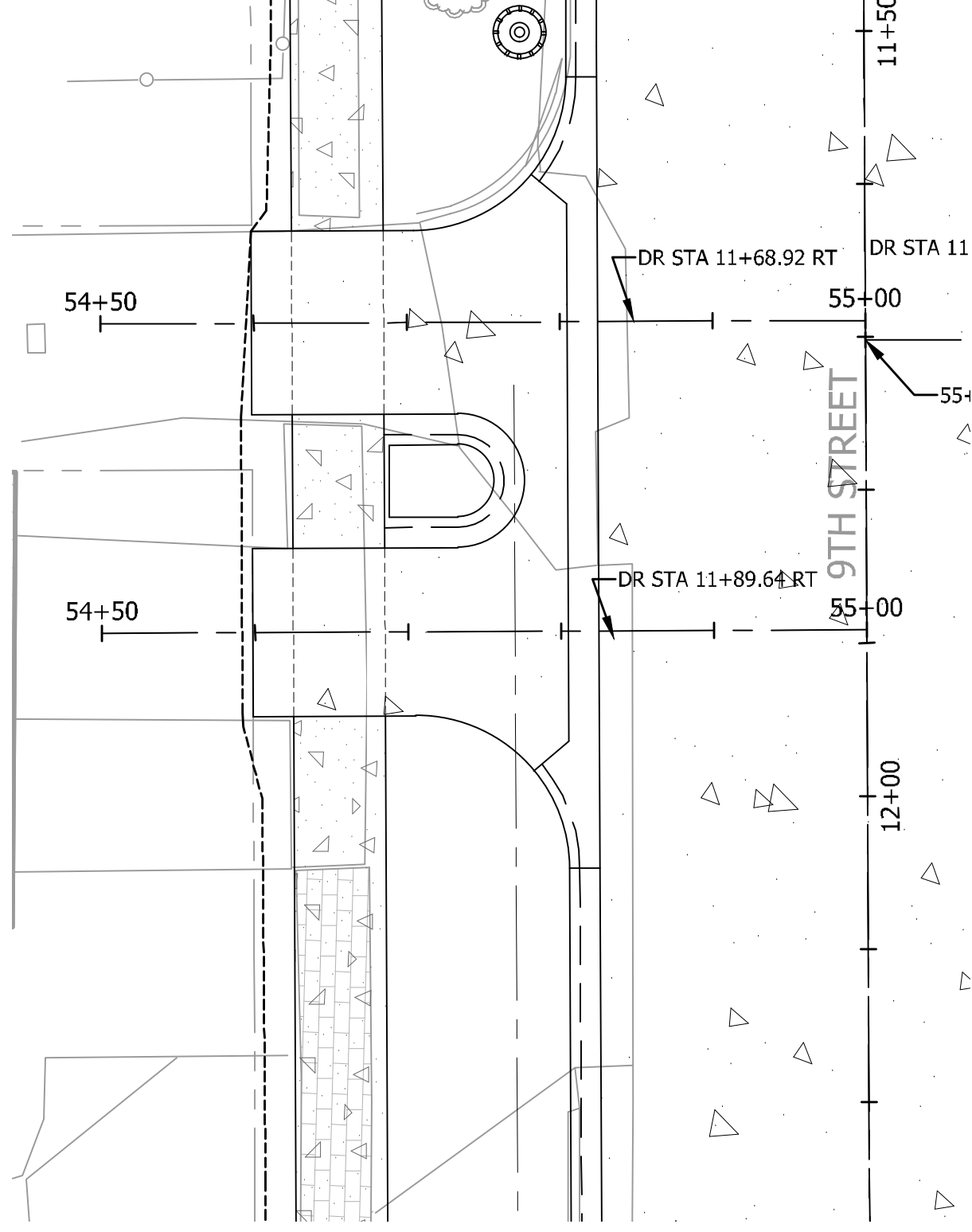
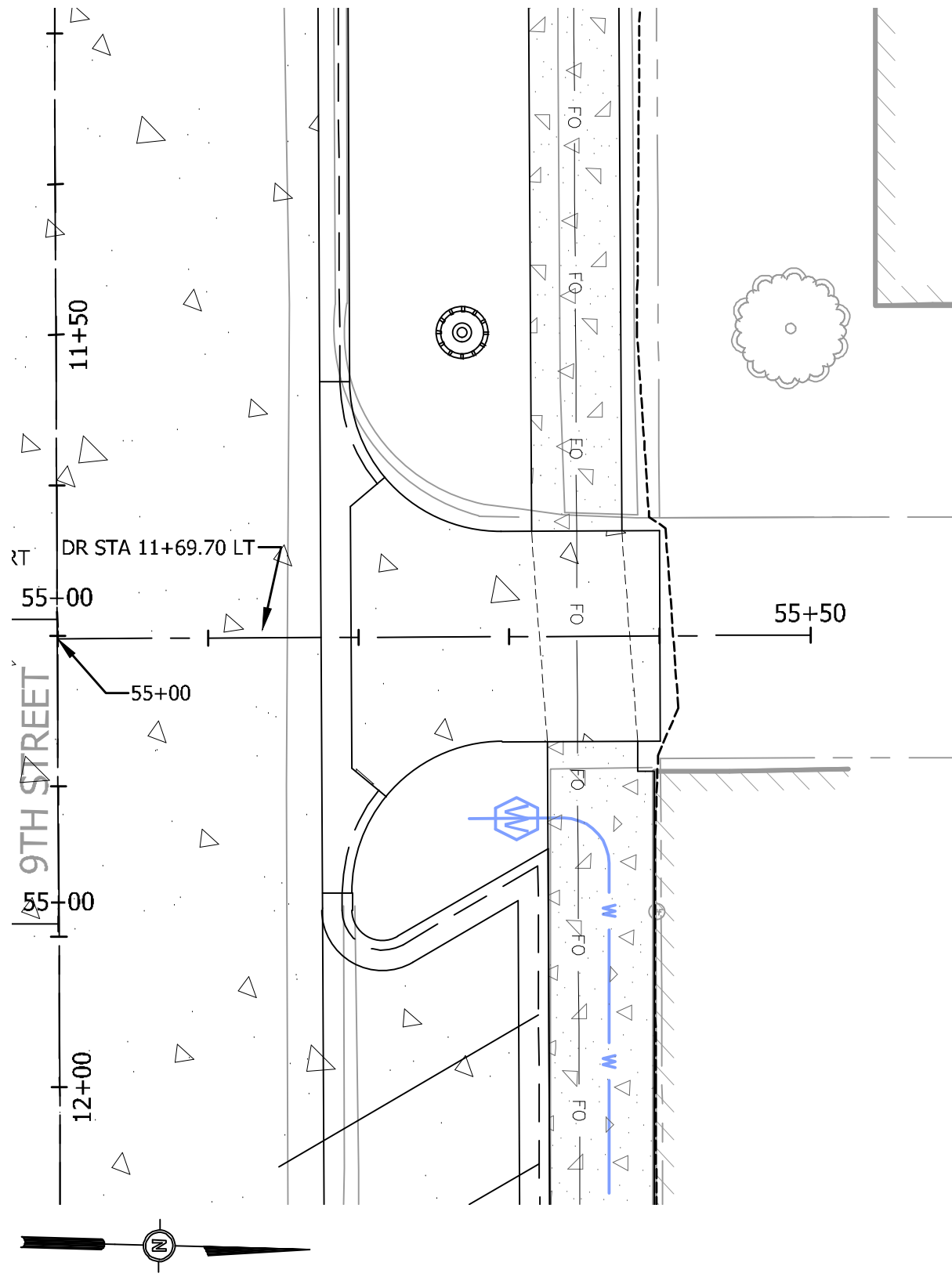
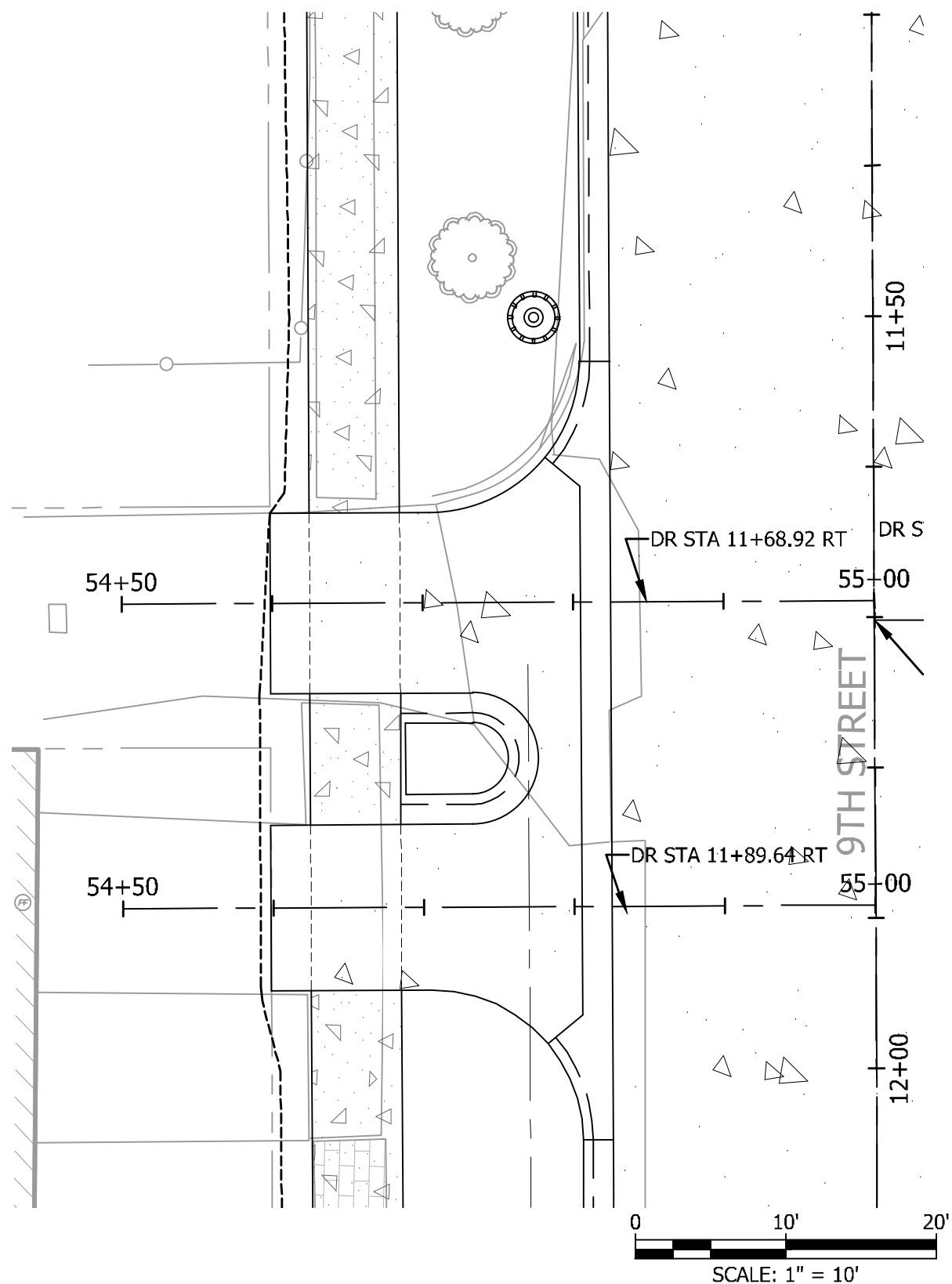
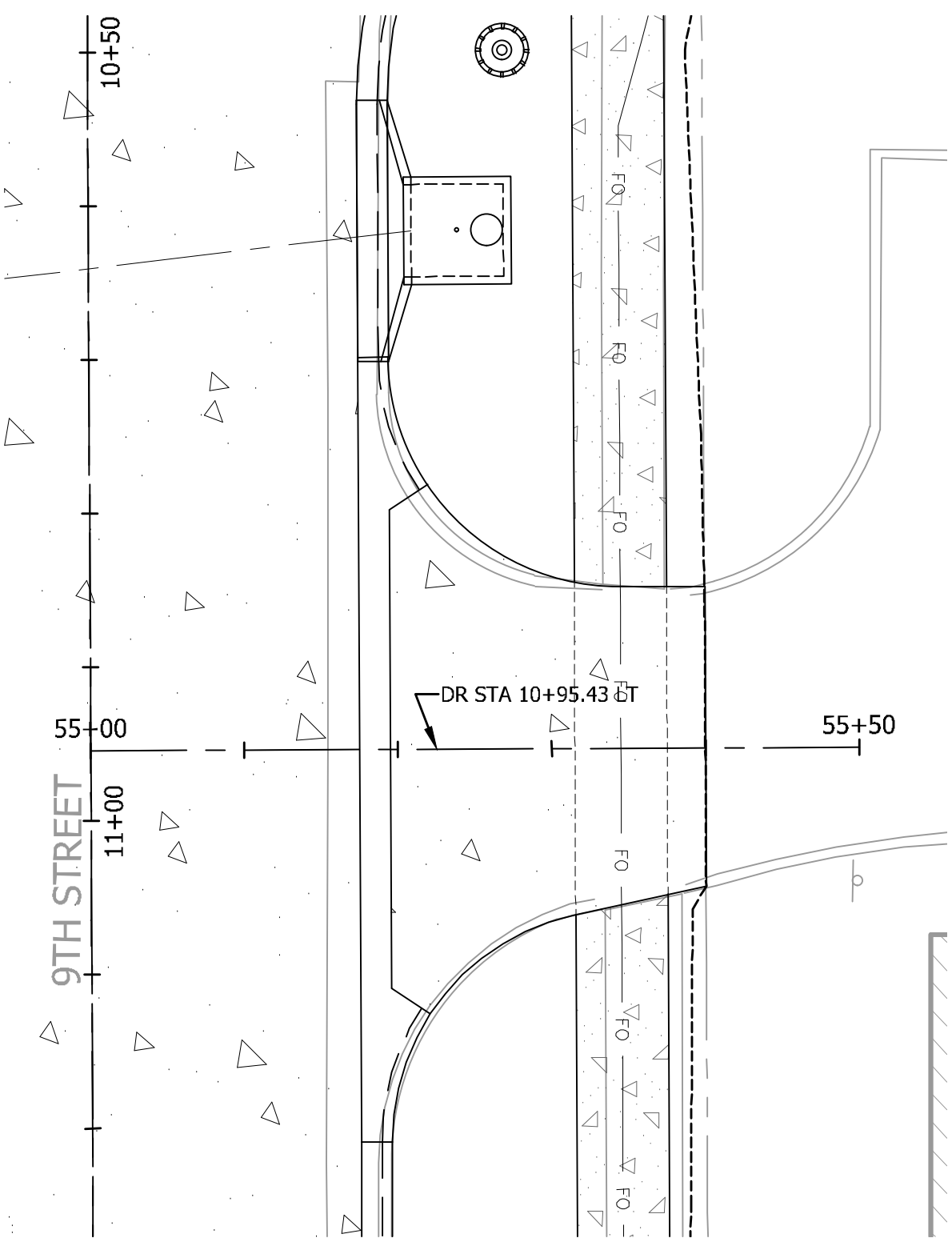
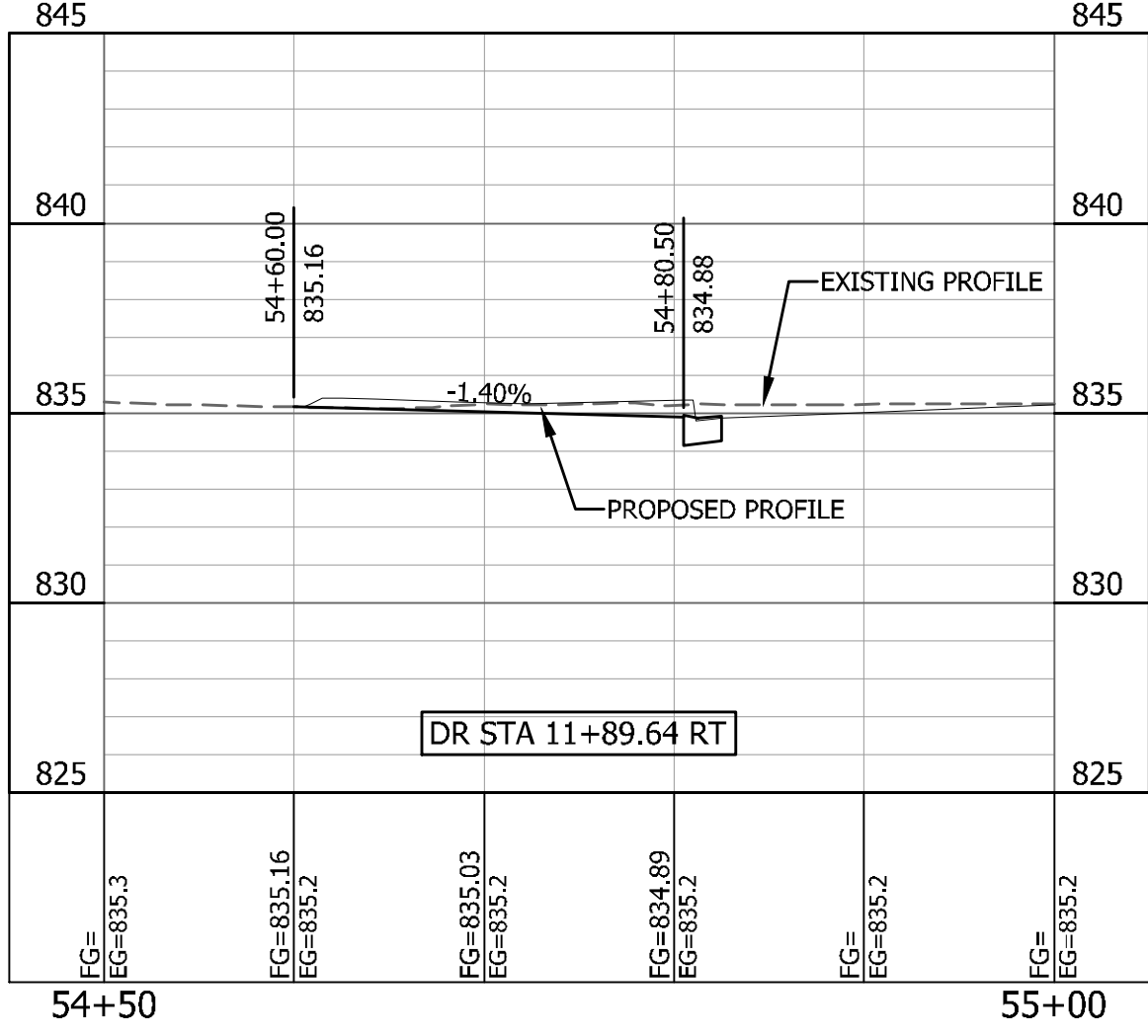
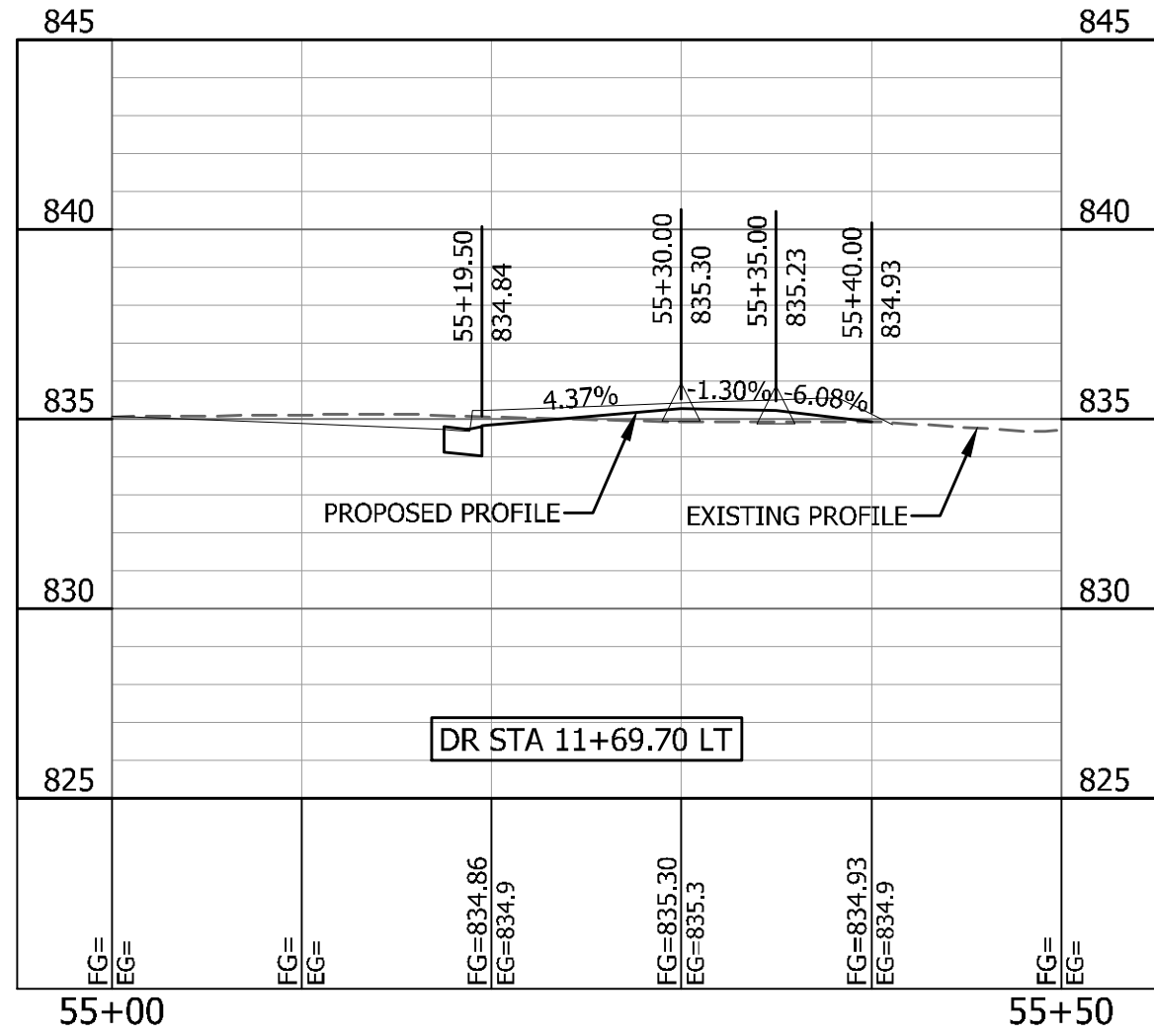
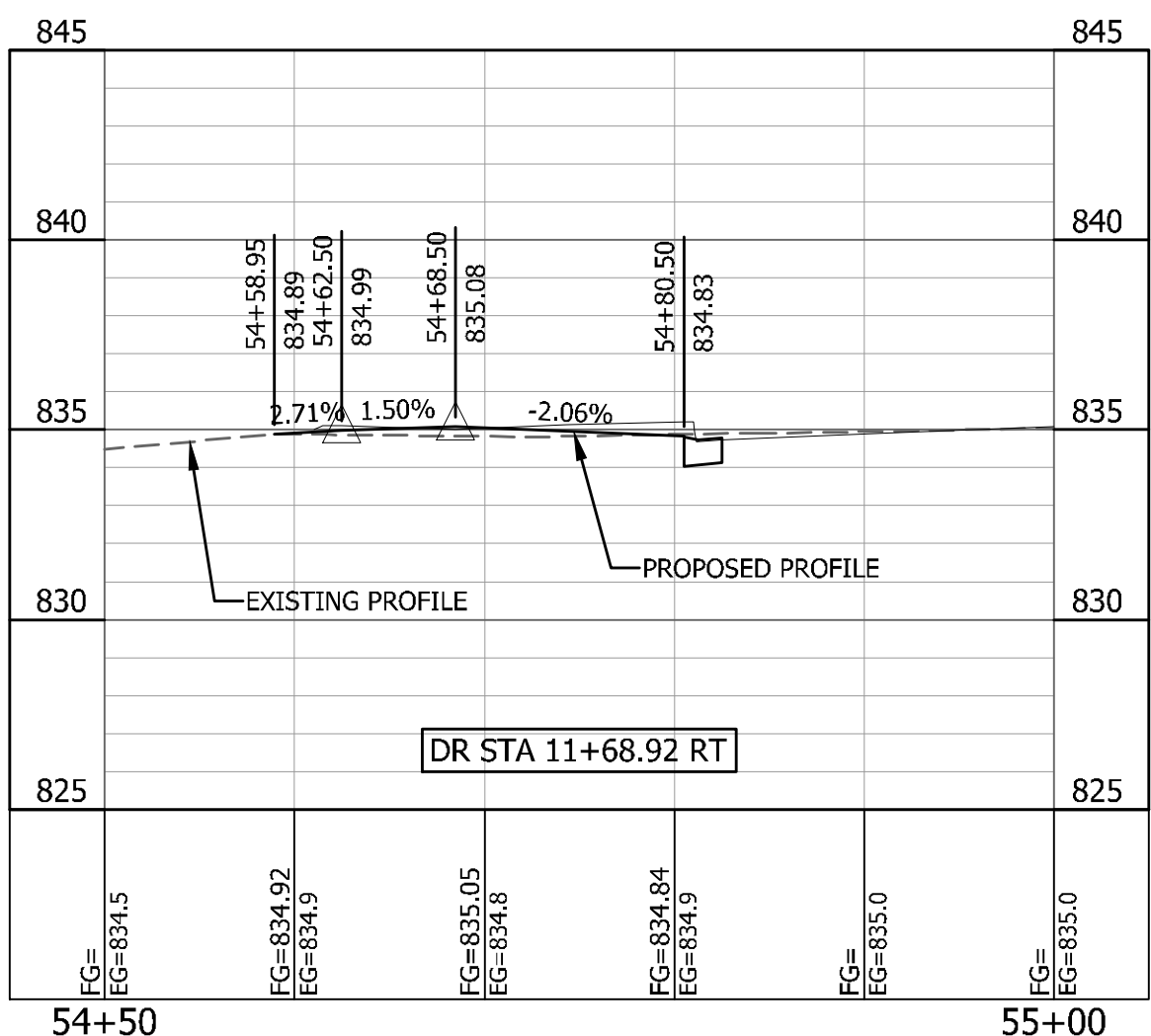
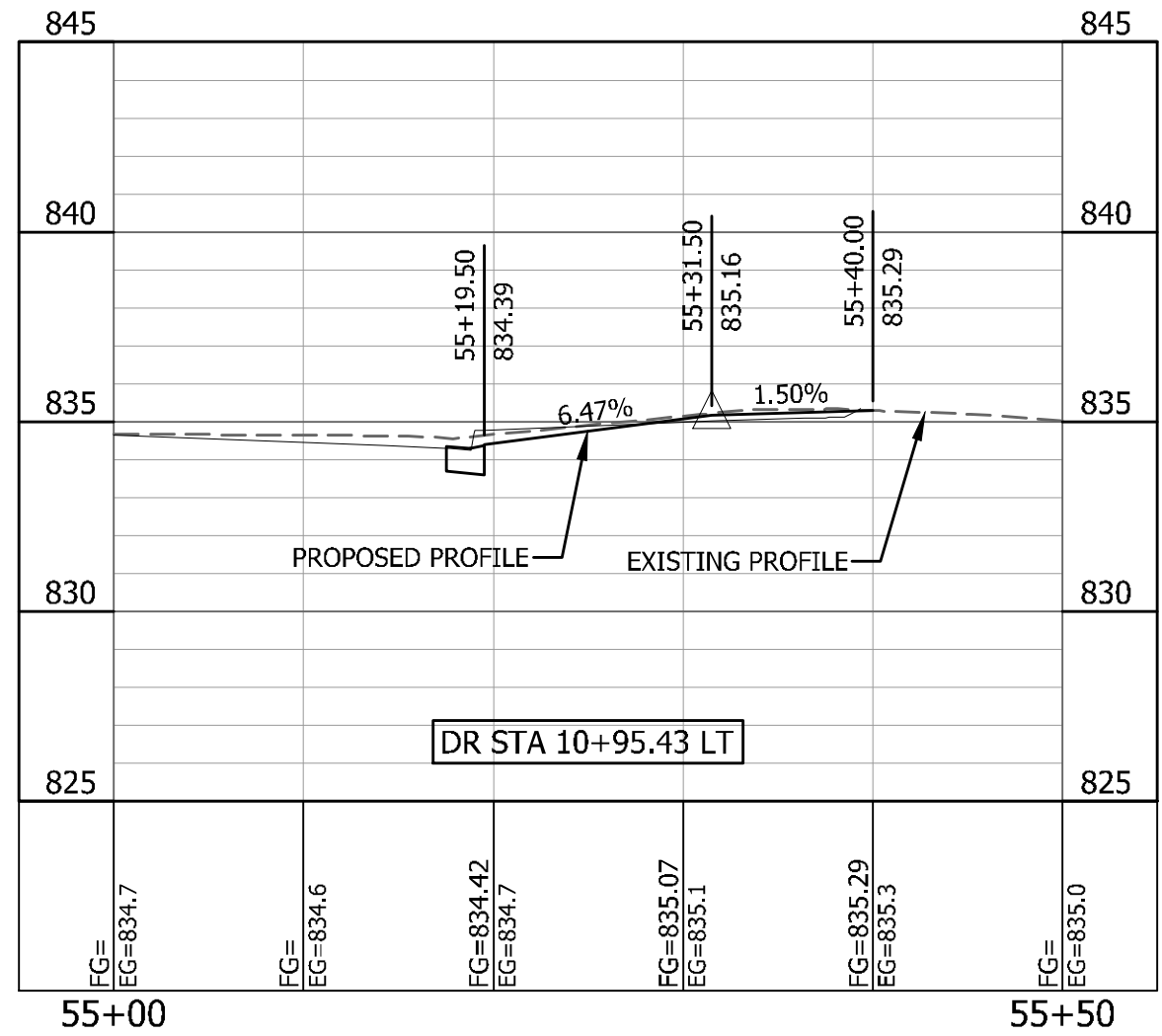
FIELD CHECK PLANS

DESIGNED BY:	JDM
DRAWN BY:	JDM
APPROVED BY:	BTA
DESIGN PROJ:	18811.001
CITY PROJ:	PW1502
SCALE:	AS NOTED
DATE:	JAN. 2018
DRAWING NO:	16
SHEET NO:	

DRIVEWAY PLAN & PROFILES
STA. 8+40.44 RT & 8+40.69 LT

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FIELD CHECK PLANS

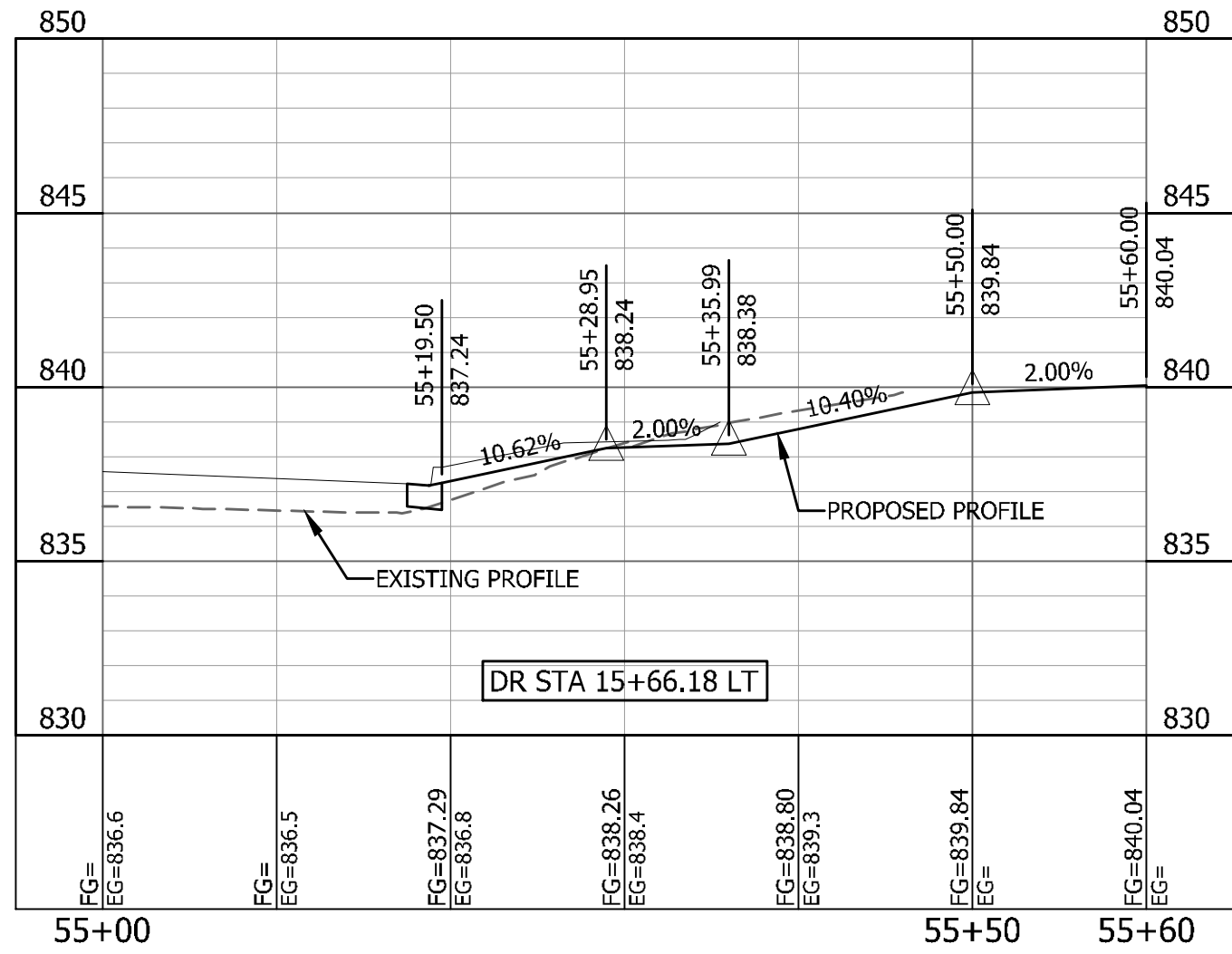
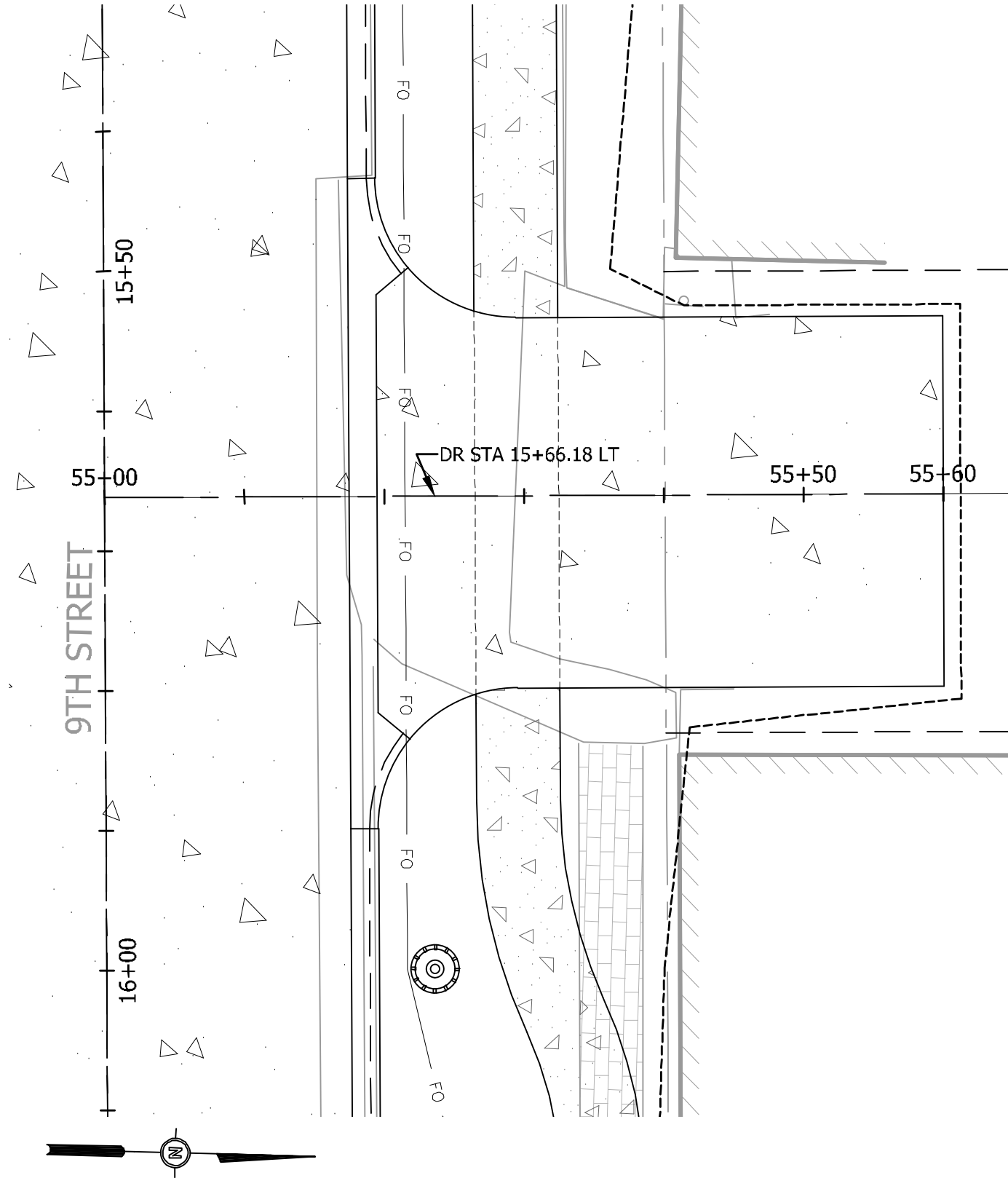
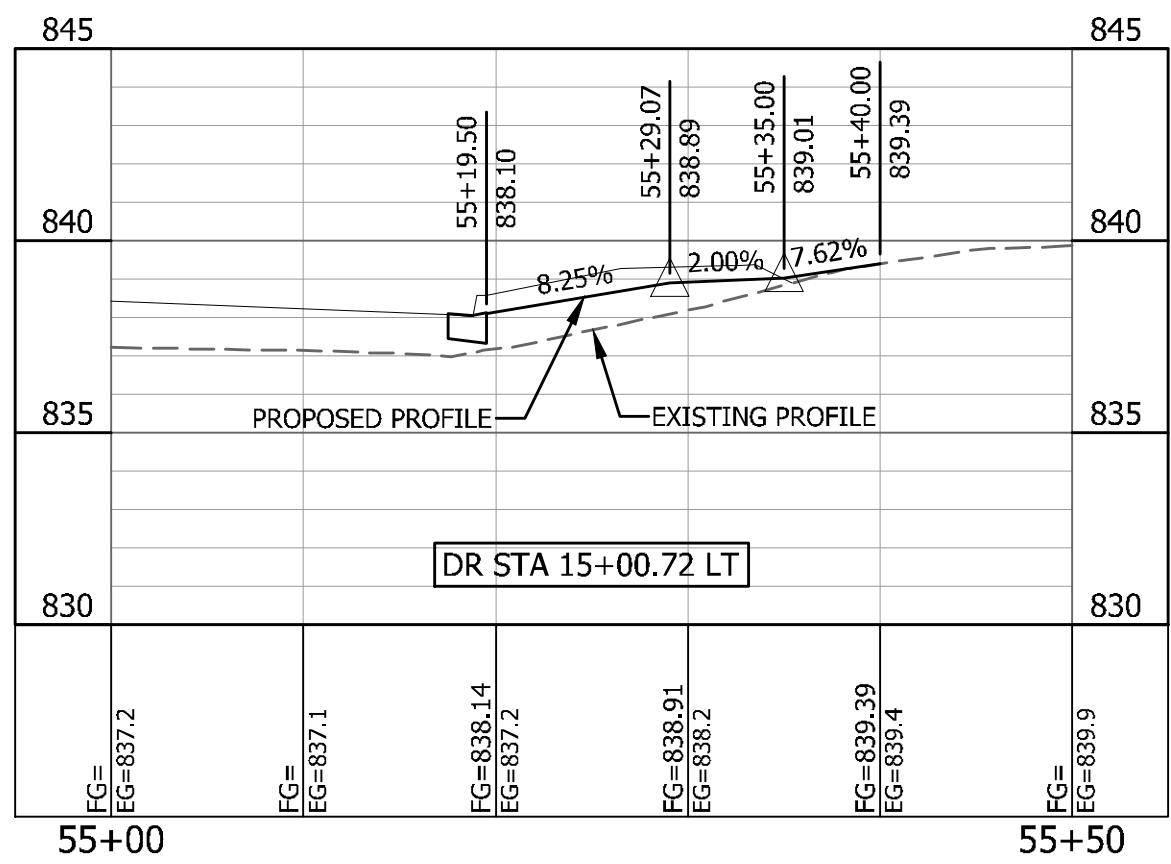
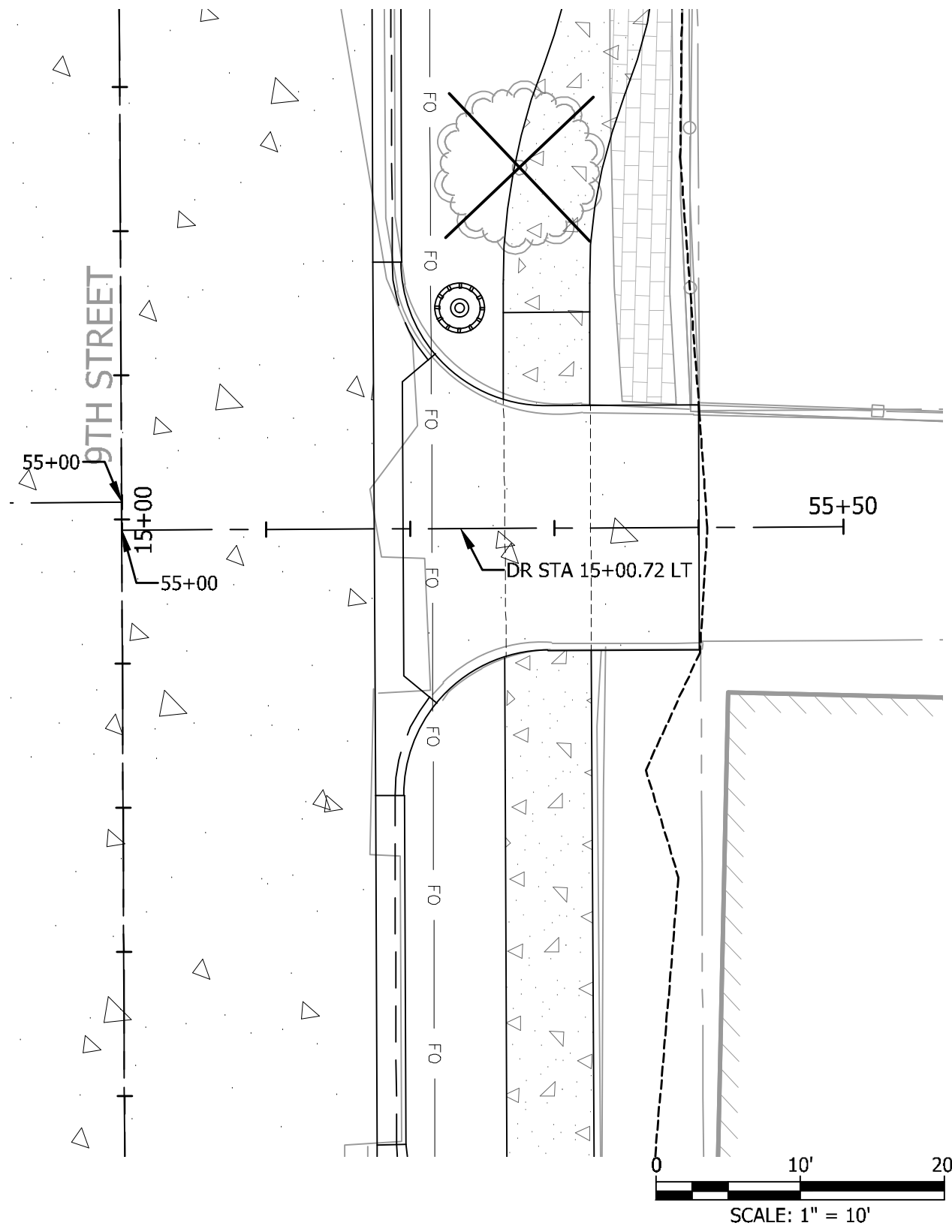
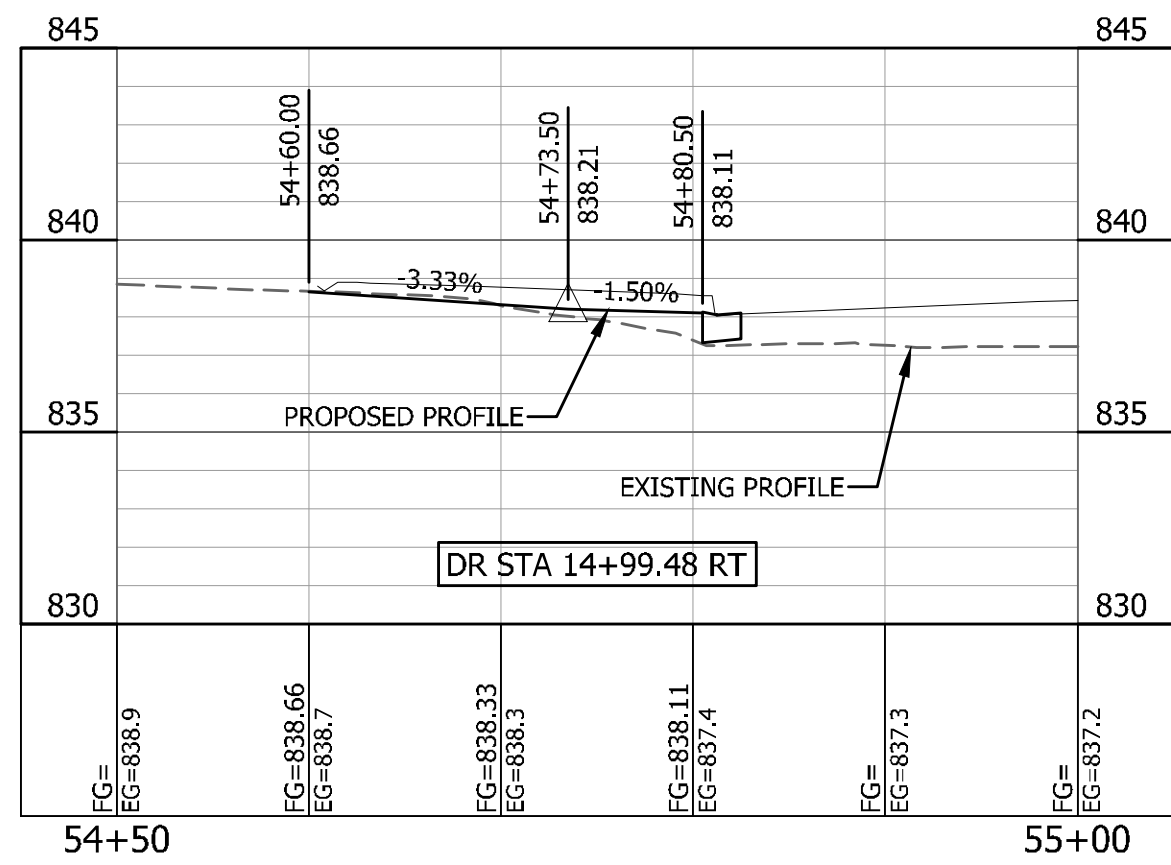
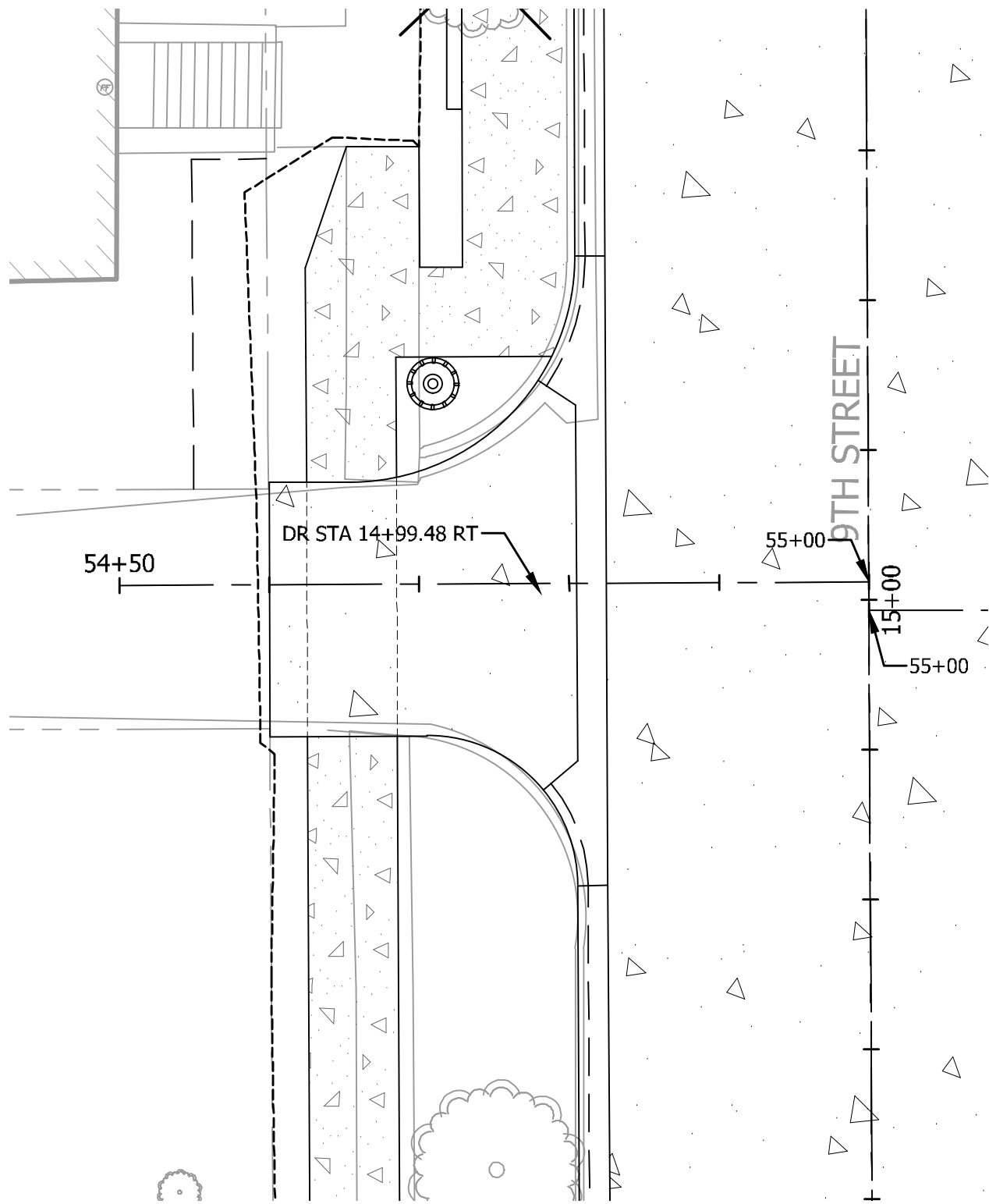
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DESIGN PROJ:	18811.001
CITY PROJ:	PW1502
SCALE:	AS NOTED
DATE:	JAN. 2018
DRAWING NO:	17
SHEET NO:	17 of 41

DRIVEWAY PLAN & PROFILE
STA. 10+95.43 LT TO 11+89.54

E. 9TH STREET - NEW HAMPSHIRE ST. TO PENNSYLVANIA ST.
STREET, SIDEWALK, & STORM SEWER IMPROVEMENTS
LAWRENCE, KANSAS

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 PHONE: 785.749.9452
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#	DATE	DESCRIPTION



FIELD CHECK PLANS

DESIGNED BY:	JDM
DRAWN BY:	JDM
APPROVED BY:	BTA
DESIGN PROJ:	18811.001
CITY PROJ:	PW1502
SCALE:	AS NOTED
DATE:	JAN. 2018
DRAWING NO:	18
SHEET NO:	

DRIVEWAY PLAN & PROFILE
STA. 14+99.48 RT TO 15+66.18 LT

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DESCRIPTION

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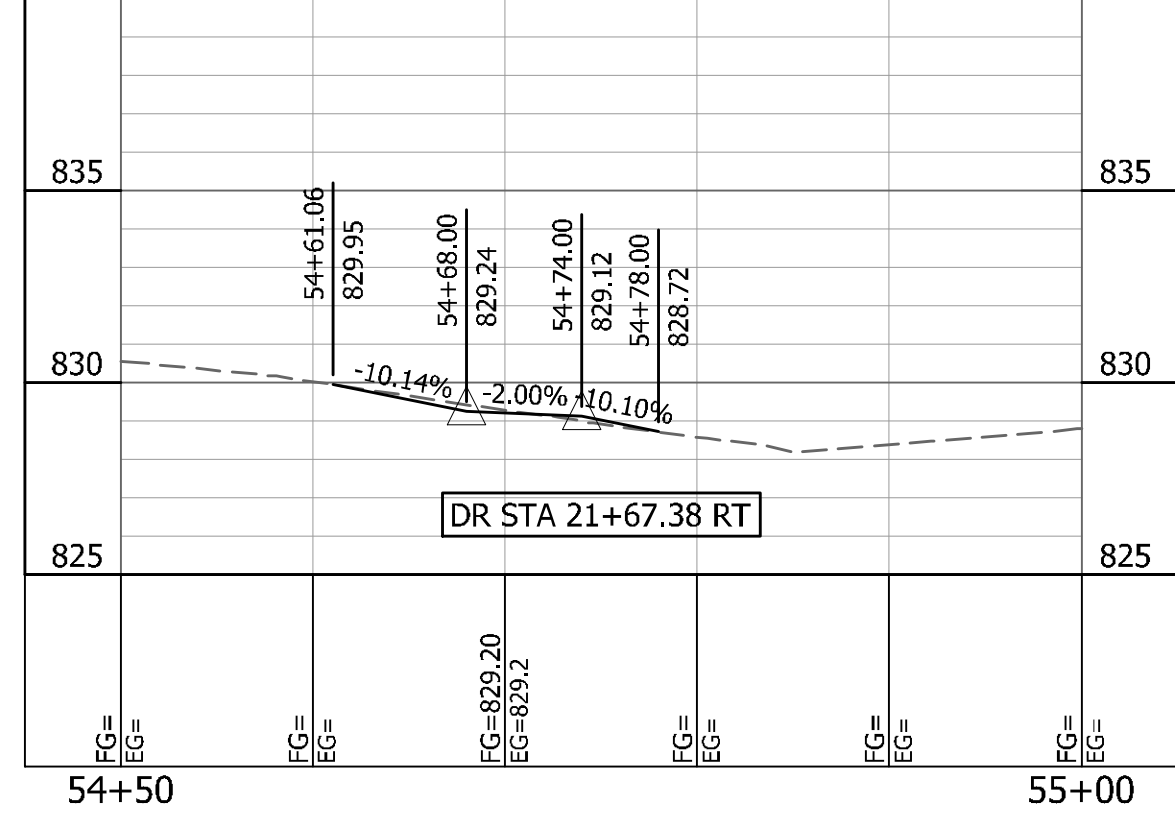
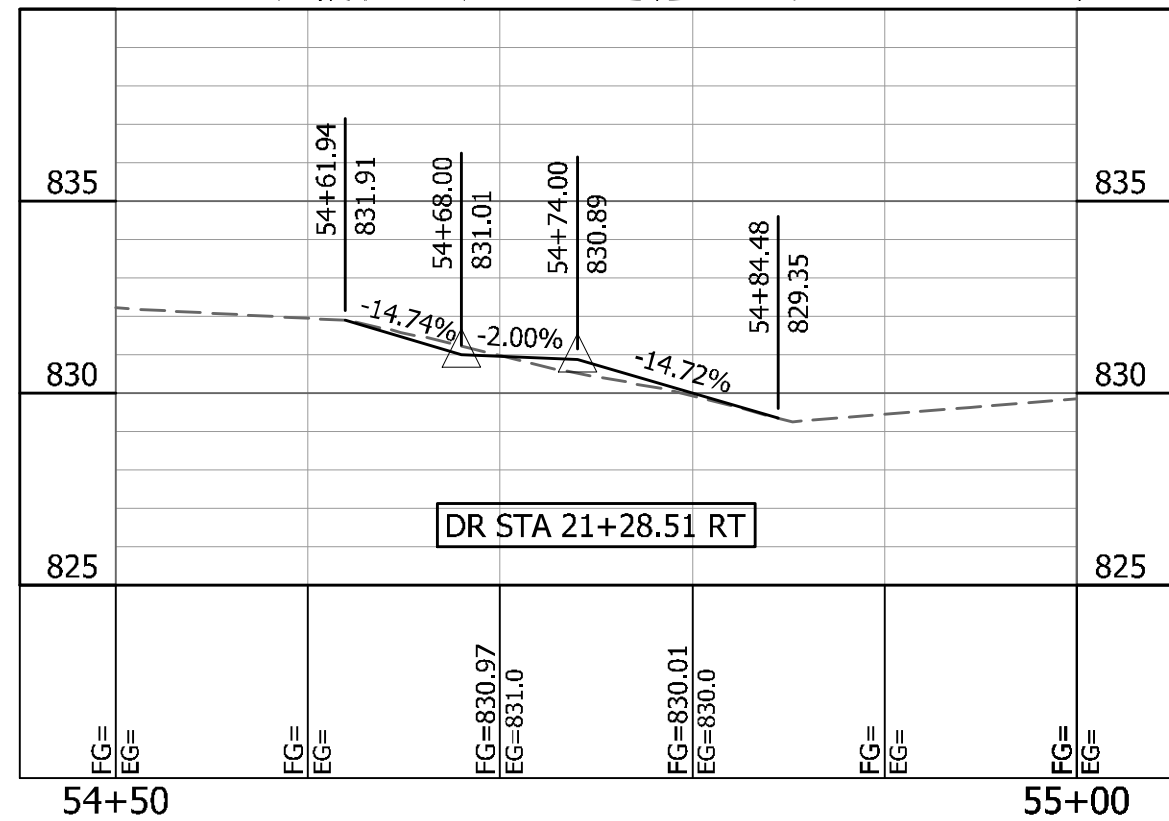
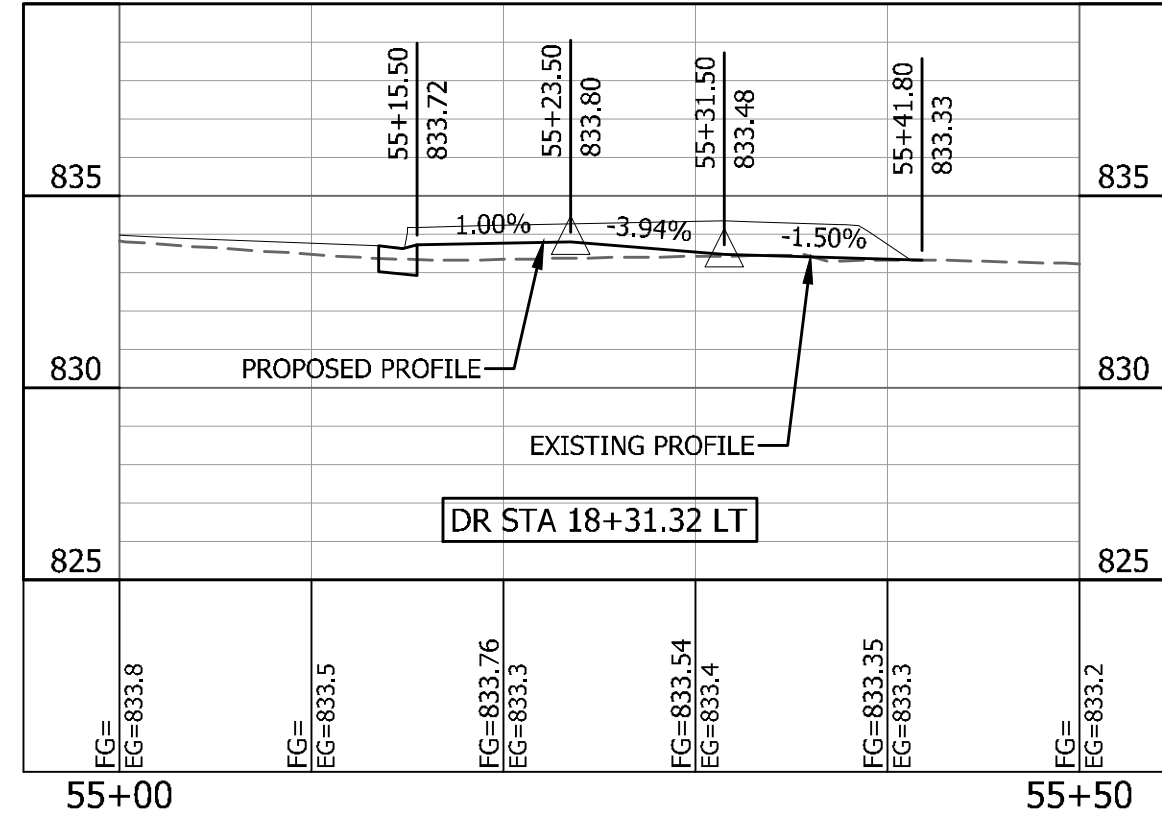
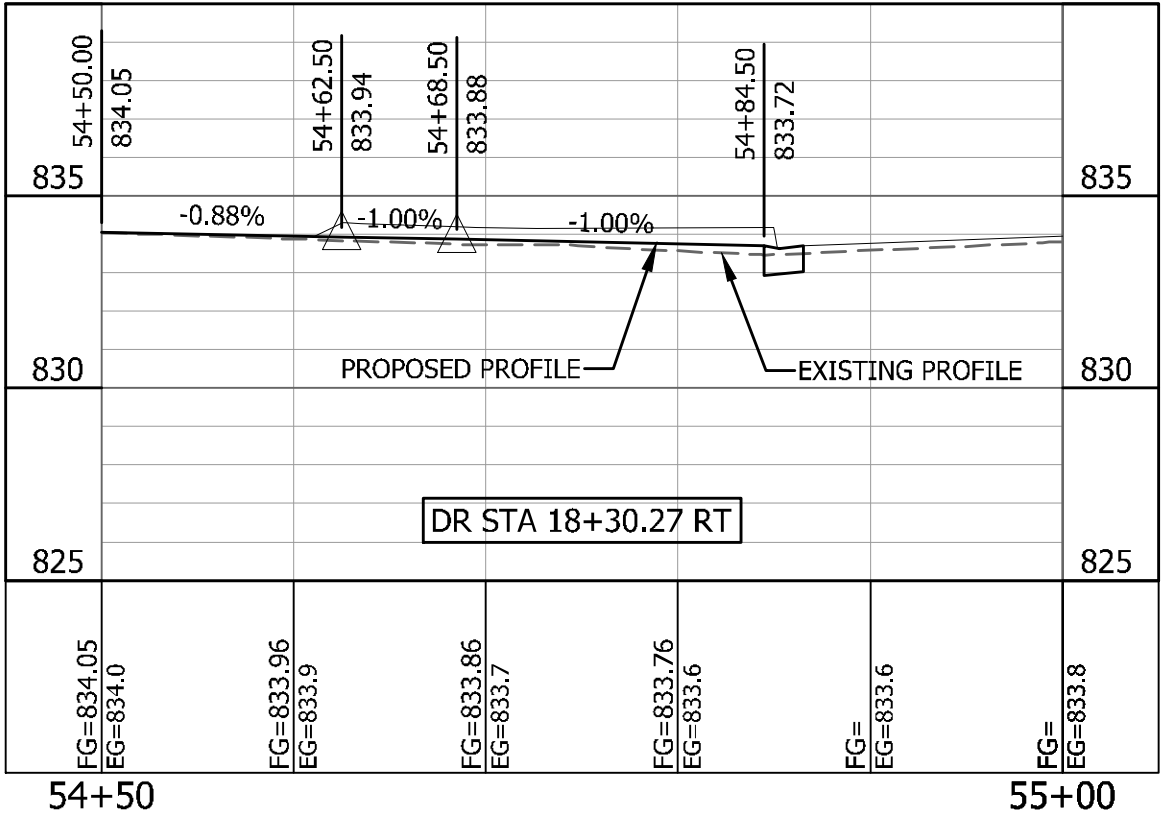
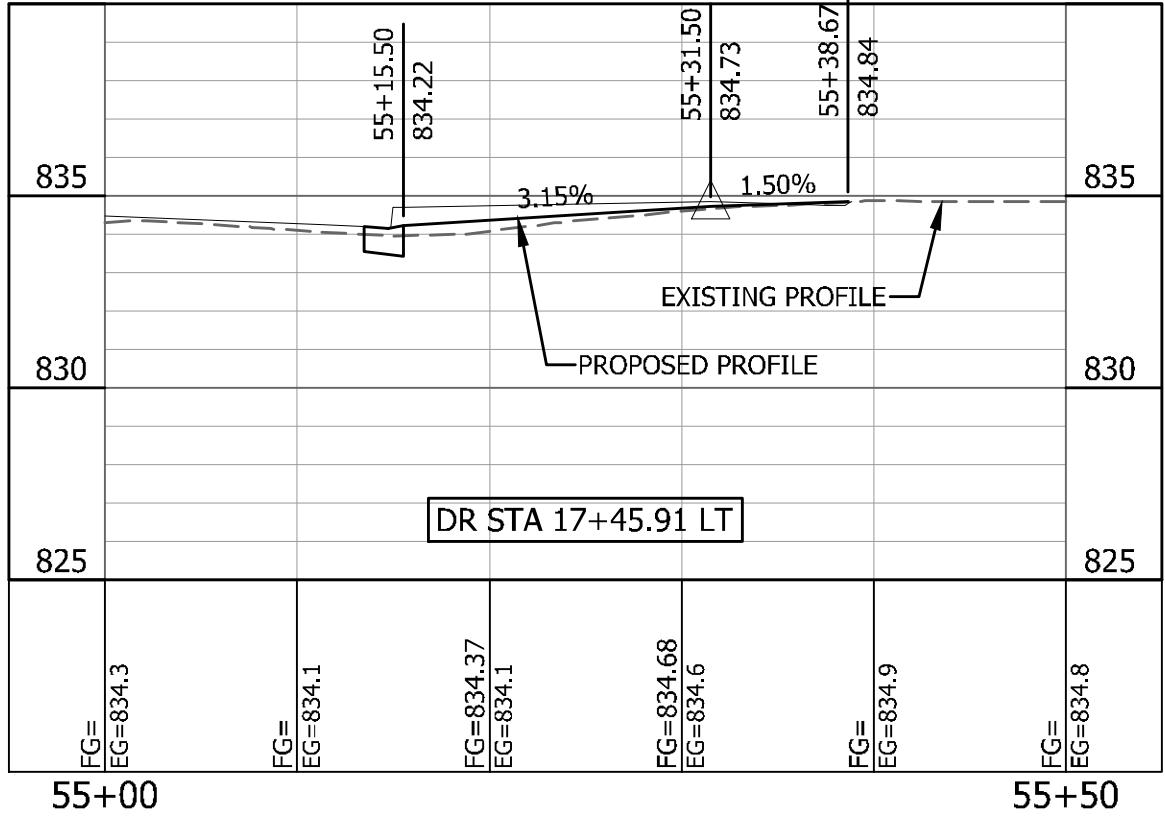
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18 of 41



**E. 9TH STREET - NEW HAMPSHIRE ST. TO PENNSYLVANIA ST.
STREET, SIDEWALK, & STORM SEWER IMPROVEMENTS
LAWRENCE, KANSAS**

FIELD CHECK PLANS

DESIGNED BY:	JDM
DRAWN BY:	JDM
APPROVED BY:	BTA
DESIGN PROJ:	18811.001
CITY PROJ:	PW1502
SCALE:	AS NOTED
DATE:	JAN. 2018

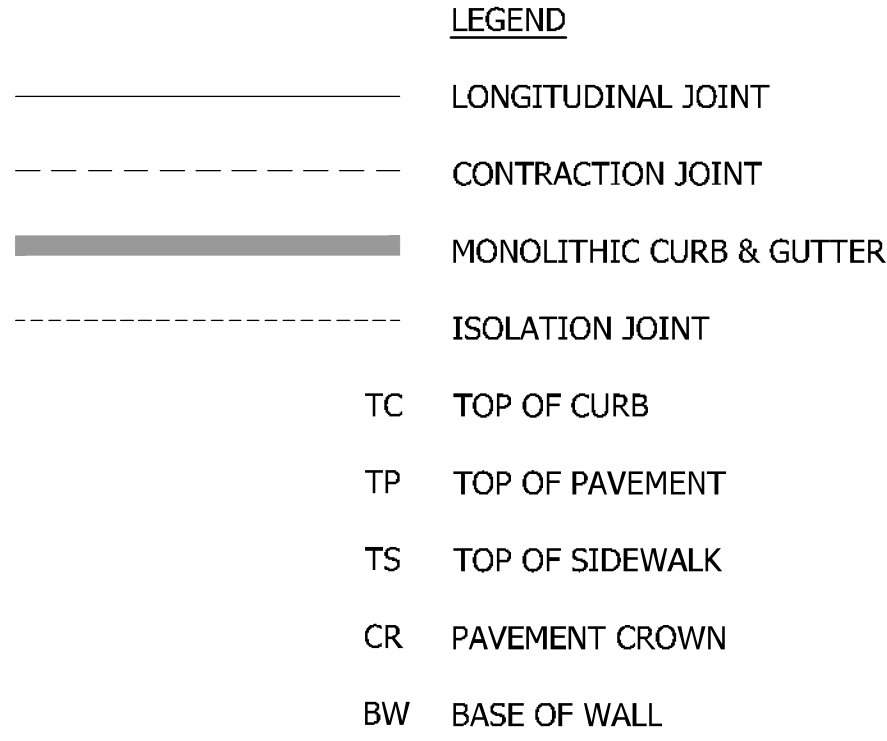
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19 of 41

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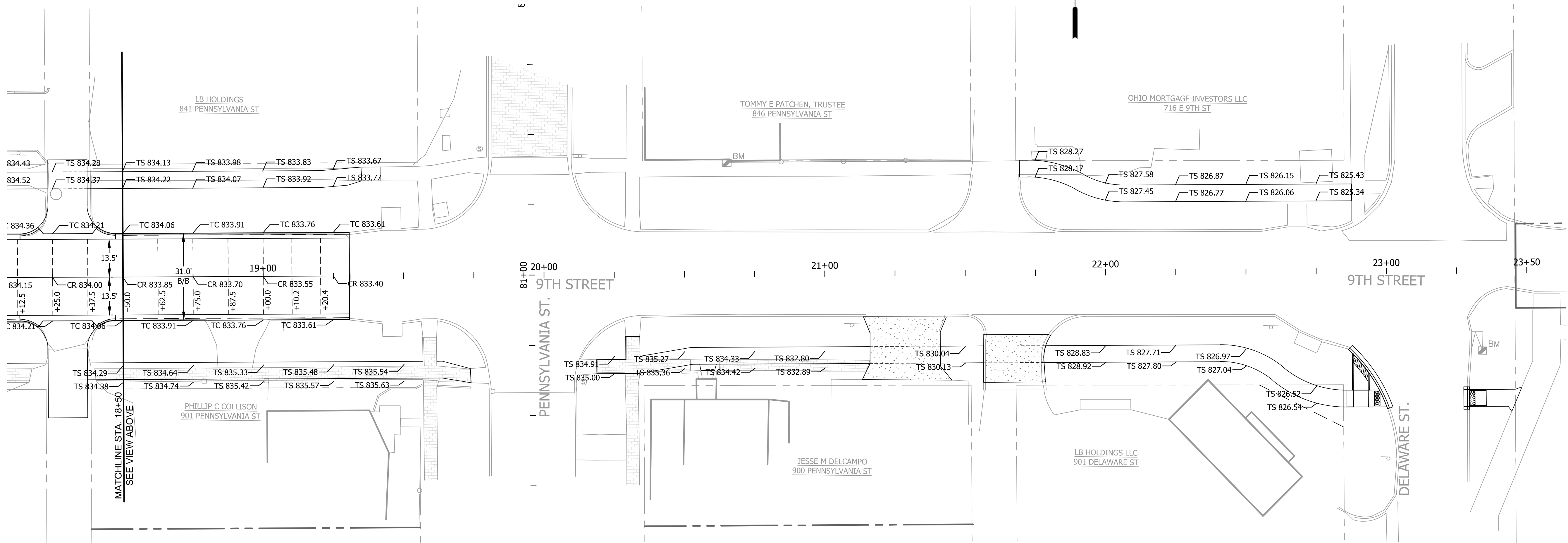
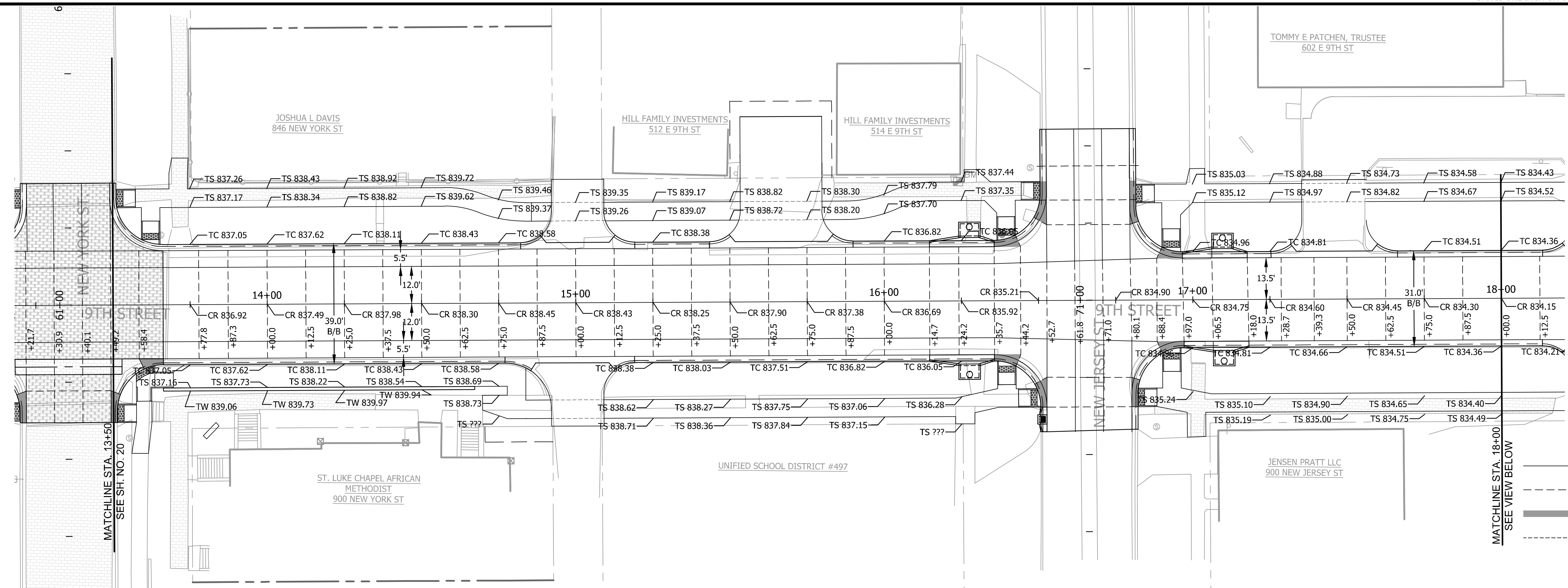


STA. 3+75 TO 8+50
PAVING AND JOINTING PLAN

E. 9TH STREET - NEW HAMPSHIRE ST. TO PENNSYLVANIA ST.
STREET, SIDEWALK, & STORM SEWER IMPROVEMENTS
LAWRENCE, KANSAS

Bartlett & West
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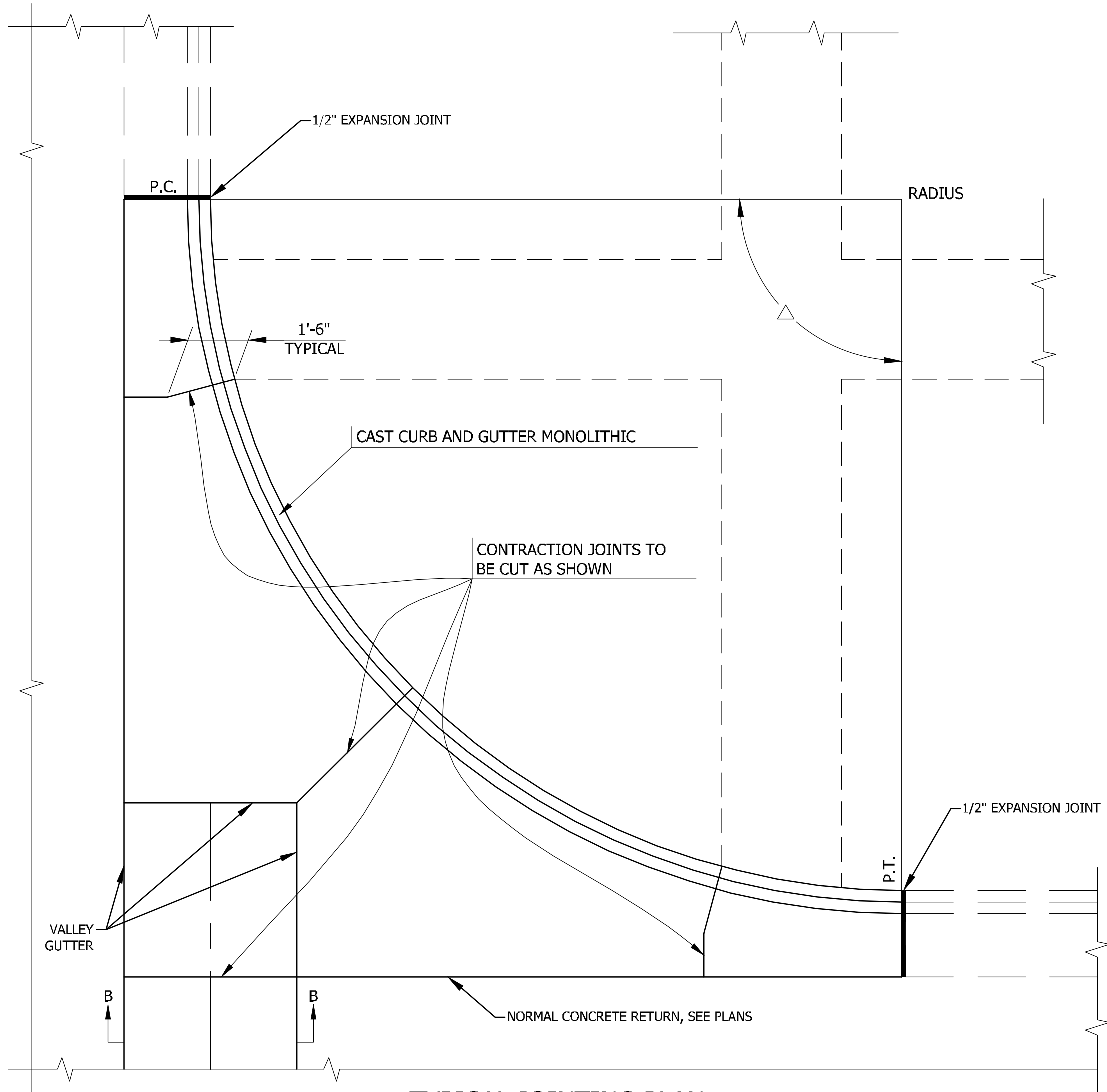
- | <u>LEGEND</u> | |
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| — | LONGITUDINAL JOINT |
| - - - | CONTRACTION JOINT |
| ■ | MONOLITHIC CURB & GUTTER |
| --- | ISOLATION JOINT |
| TC | TOP OF CURB |
| TP | TOP OF PAVEMENT |
| TS | TOP OF SIDEWALK |
| CR | PAVEMENT CROWN |
| BW | BASE OF WALL |

**STA. 13+50 TO 23+50
PAVING AND JOINTING PLAN**

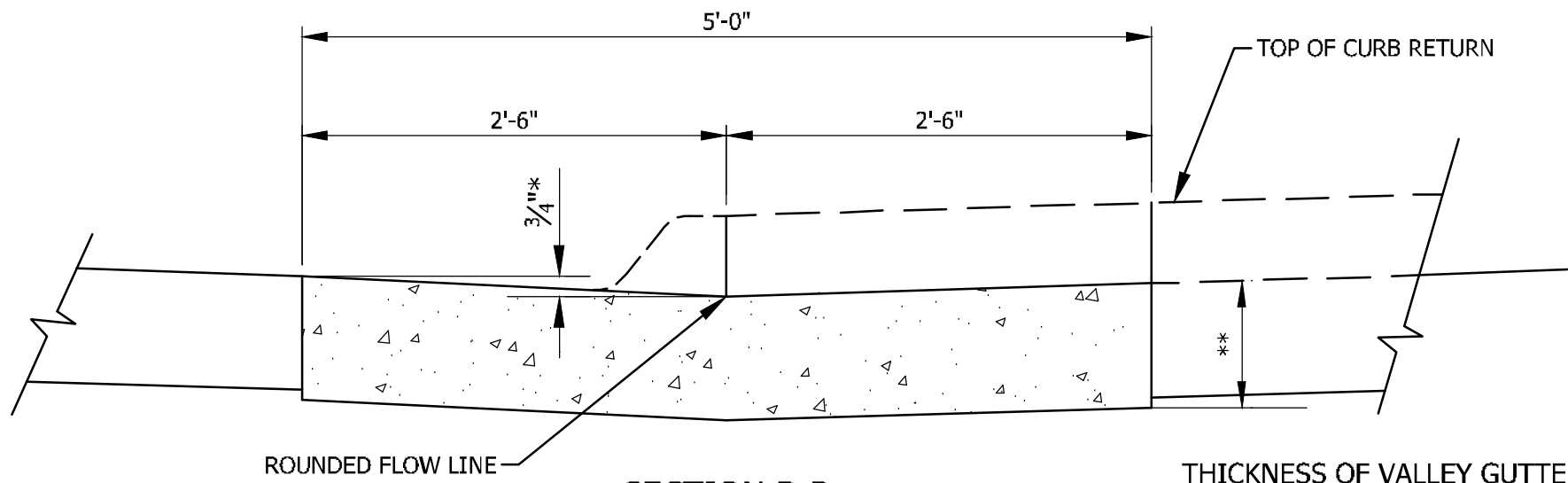
**STREET - NEW HAMPSHIRE ST. TO PENNSYLVANIA ST.
CROSSWALK, SIDEWALK, & STORM SEWER IMPROVEMENTS**

FIELD CHECK PLANS

DESIGNED BY:	JDM
DRAWN BY:	JDM
APPROVED BY:	BTA
DESIGN PROJ:	18811.001
CITY PROJ:	PW1502
SCALE:	AS NOTED
DATE:	JAN. 2018
DRAWING NO:	21
SHEET NO:	



TYPICAL JOINTING PLAN



SECTION B-B

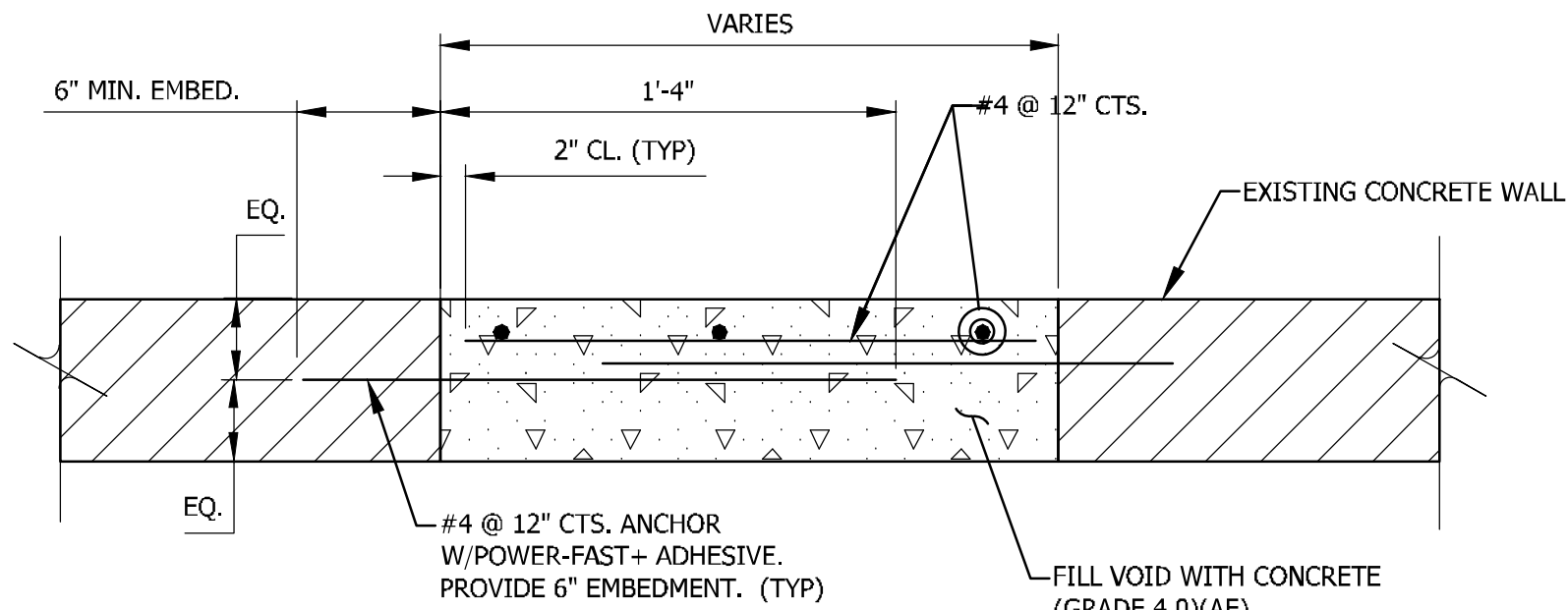
THICKNESS OF VALLEY GUTTER TO MATCH ABUTTING PAVEMENT THICKNESS OR 8" MINIMUM.

*DEPTH OF VALLEY GUTTER FLOWLINE MODIFIED FROM CITY STANDARD DETAIL DT-001.

VALLEY GUTTER DETAILS

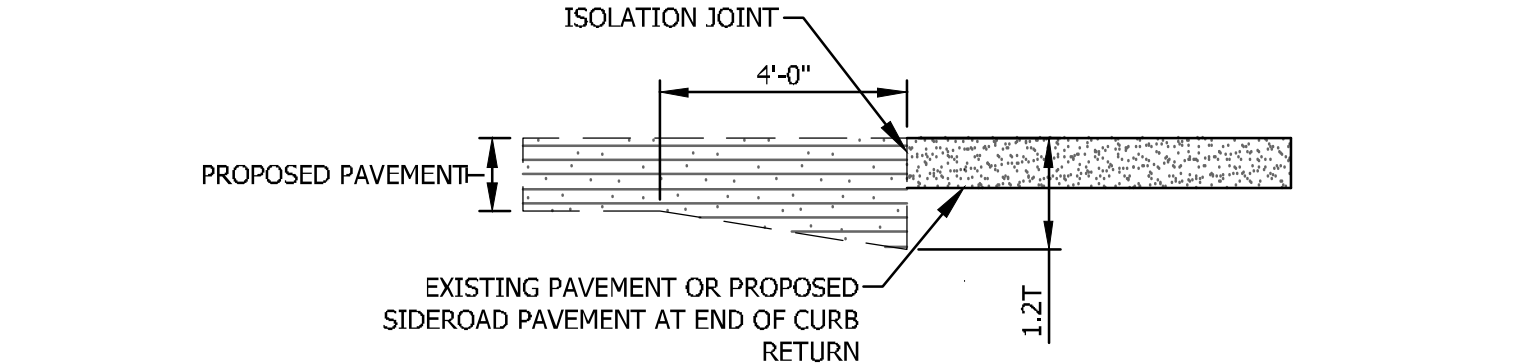
NOTES:

1. PAY LENGTH OF VALLEY GUTTER IS FROM P.C. TO P.C. ACROSS STREET INTERSECTION.
2. PAY WIDTH OF VALLEY GUTTER IS 5'.
3. PAY AREA OF VALLEY GUTTER IS PAY LENGTH X PAY WIDTH (SQ. YD.)
4. PAY CURB AND GUTTER FROM P.C. TO P.T. AROUND RADIAL.
5. NO ADDITIONAL PAYMENT FOR OTHER WORK AND MATERIALS REQUIRED TO COMPLETE RETURN AS DETAILED. SEE PLANS FOR TYPE OF RETURN TO BE CONSTRUCTED.
6. SAND IS NOT AN APPROVED FILL OR SUBGRADE MATERIAL.
7. WHERE VALLEY GUTTER ABUTS CONCRETE PAVEMENT, THE VALLEY GUTTER SECTION SHALL BE TIED TO THE CONCRETE PAVEMENT WITH 1/2" x 3'-0" DEFORMED TIE BARS AT 5'-0" CENTERS.
8. WHERE VALLEY GUTTER IS CONSTRUCTED ADJACENT TO NEW ASPHALT PAVEMENT, THE CONTRACTOR MAY, AT THEIR OPTION, CONSTRUCT A CONTINUOUS ASPHALT PAVEMENT SECTION THROUGH THE VALLEY GUTTER AREA, FOLLOWED BY SAWCUTTING AND REMOVING THE ASPHALT STRIP FOR CONSTRUCTION OF THE VALLEY GUTTER SECTION. NO PAY ADJUSTMENT SHALL BE MADE FROM PLAN QUANTITIES FOR THE ADDITIONAL ASPHALT PAVEMENT THAT IS REMOVED. SAWCUTS SHALL BE FULL DEPTH. THE SUBGRADE MUST MEET COMPACTION REQUIREMENTS IN THE REMOVAL AREA PRIOR TO PLACEMENT OF THE VALLEY GUTTER.



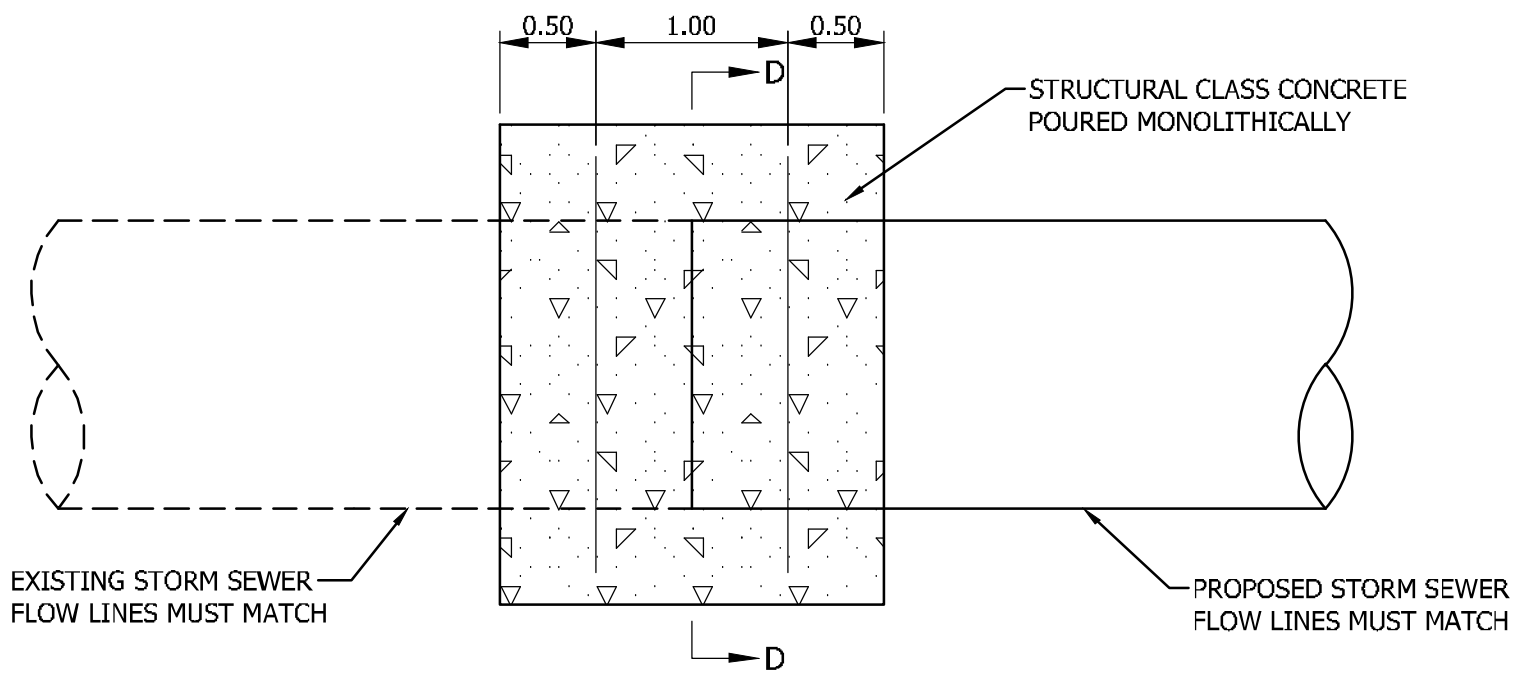
INFILL DETAIL @ PIPE REMOVAL LOCATIONS

NOTE: PIPE SHALL BE REMOVED IN A MANNER SUCH THAT THE INLET WALL IS NOT DAMAGED. SUBSIDIARY TO OTHER BID ITEMS.



THICKENED EDGE DETAIL AT ISOLATION JOINTS

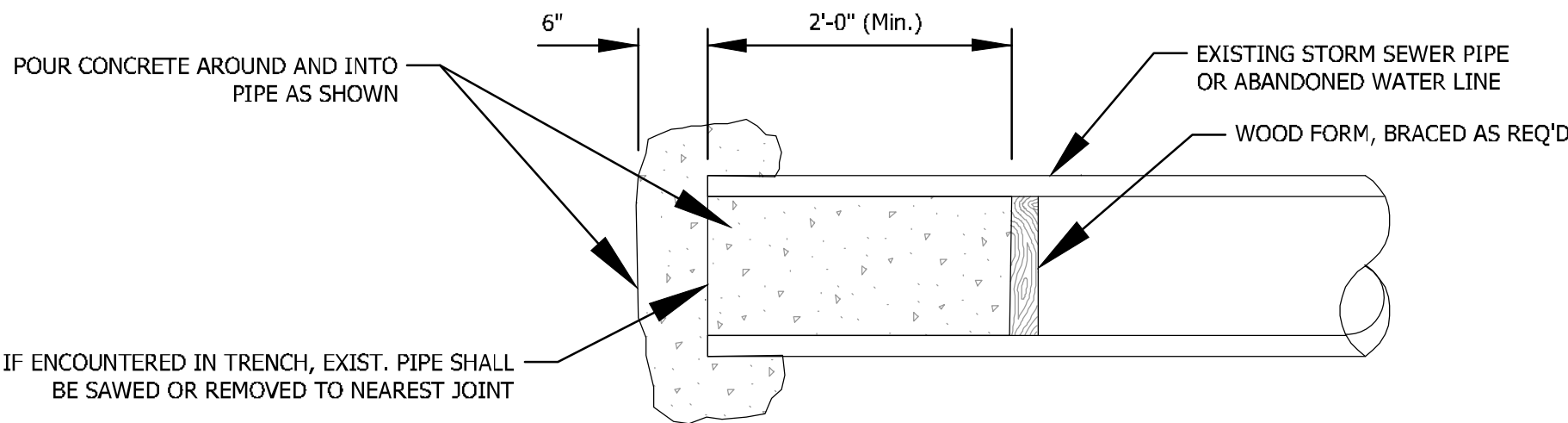
NOTE: THE THICKENED EDGE DETAIL SHALL BE USED AT ALL TIE-INS TO EXISTING PAVEMENT AND ALL ISOLATION JOINTS SHOWN AT THE END OF CURB RETURN OF THE SIDE ROAD.



SECTION D-D

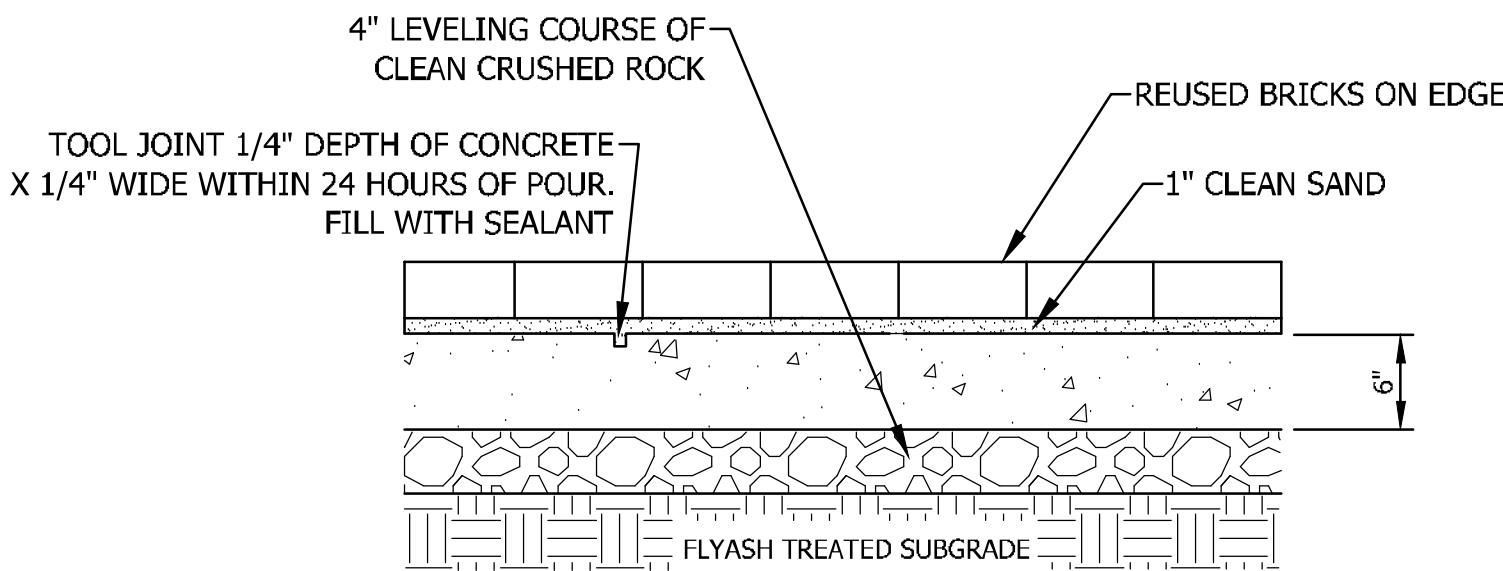
CONCRETE COLLAR DETAIL

NOTE: THIS DETAIL IS TO BE CONSTRUCTED AT ALL CONNECTIONS WITH EXISTING PIPES



NOTE: PLUGS SHALL BE WATER TIGHT

PLUGGING DETAIL



BRICK ON 6" NON-REINFORCED CONCRETE PAVEMENT

NTS

Bartlett & West

544 COLUMBIA DR. - LAWRENCE KS 66049
PHONE: 785.745.9452
www.bartlettwest.com

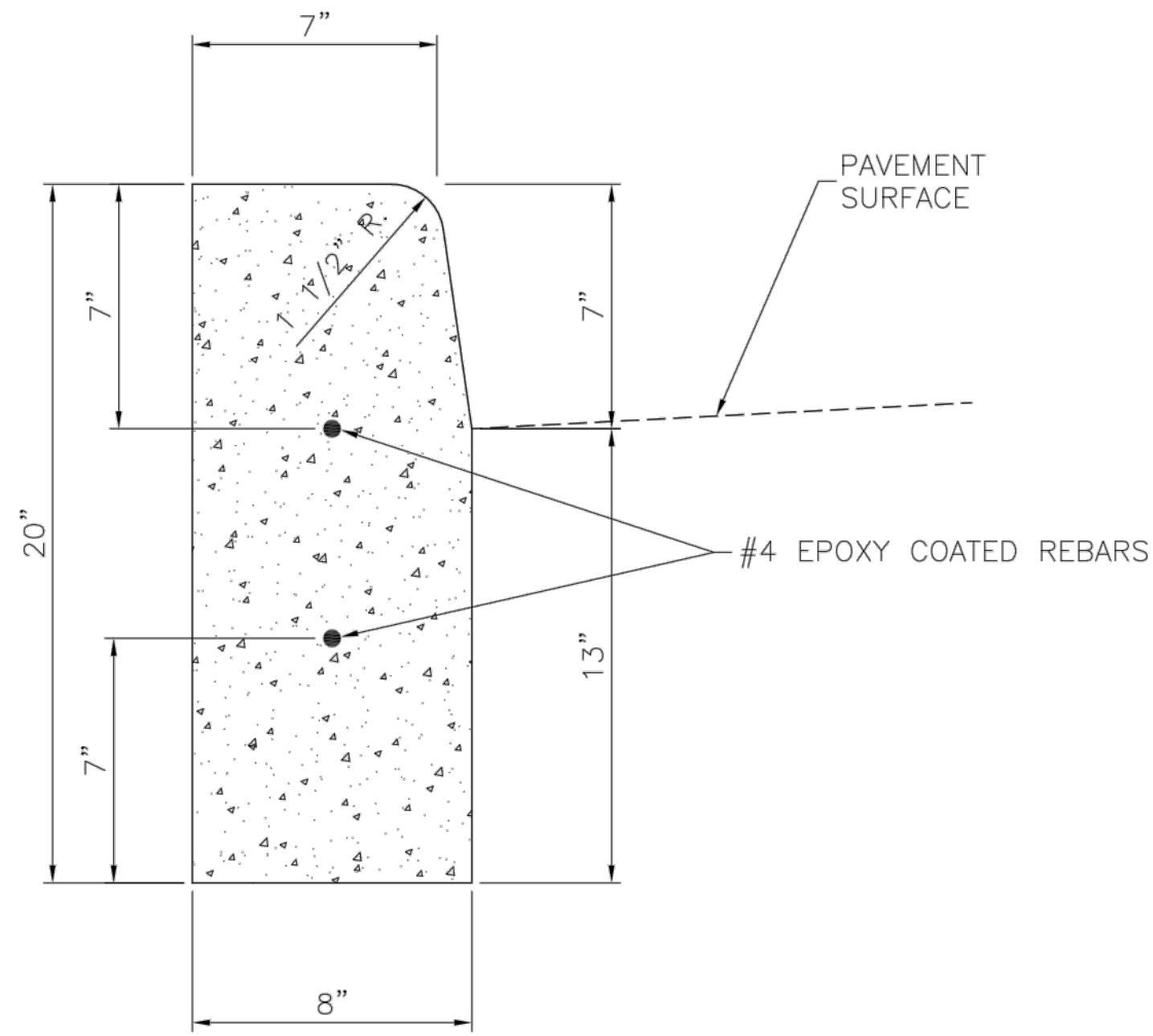
MISCELLANEOUS DETAILS
INFILL, PLUG, COLLAR, THICKENED

E. 9TH STREET - NEW HAMPSHIRE ST. TO PENNSYLVANIA ST.
STREET, SIDEWALK, & STORM SEWER IMPROVEMENTS
LAWRENCE, KANSAS

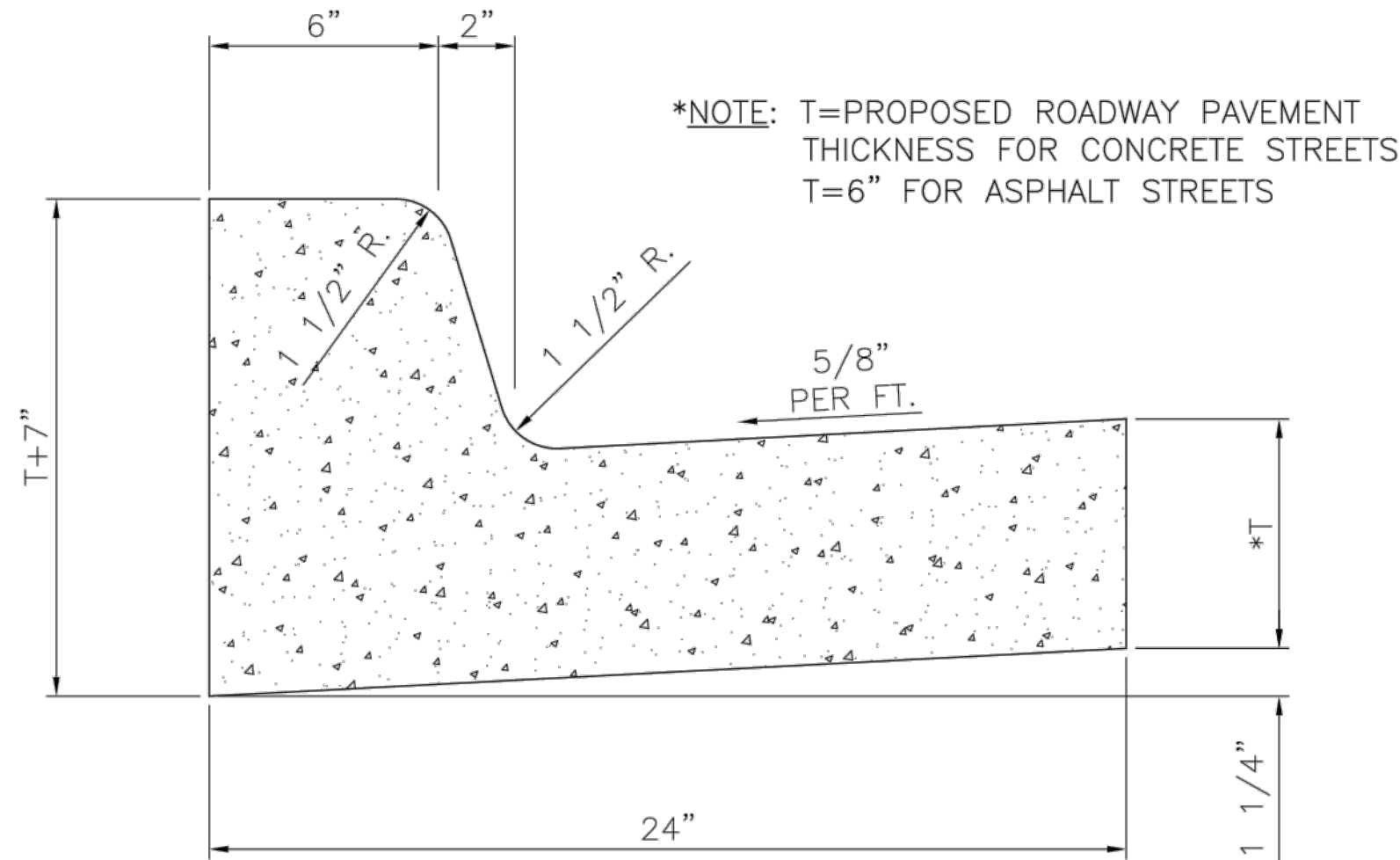
FIELD CHECK PLANS

DESIGNED BY:	JDM
DRAWN BY:	JDM
APPROVED BY:	BTA
DESIGN PROJ:	18811.001
CITY PROJ:	PW1502
SCALE:	AS NOTED
DATE:	JAN. 2018
DRAWING NO:	22
SHEET NO:	22 of 41

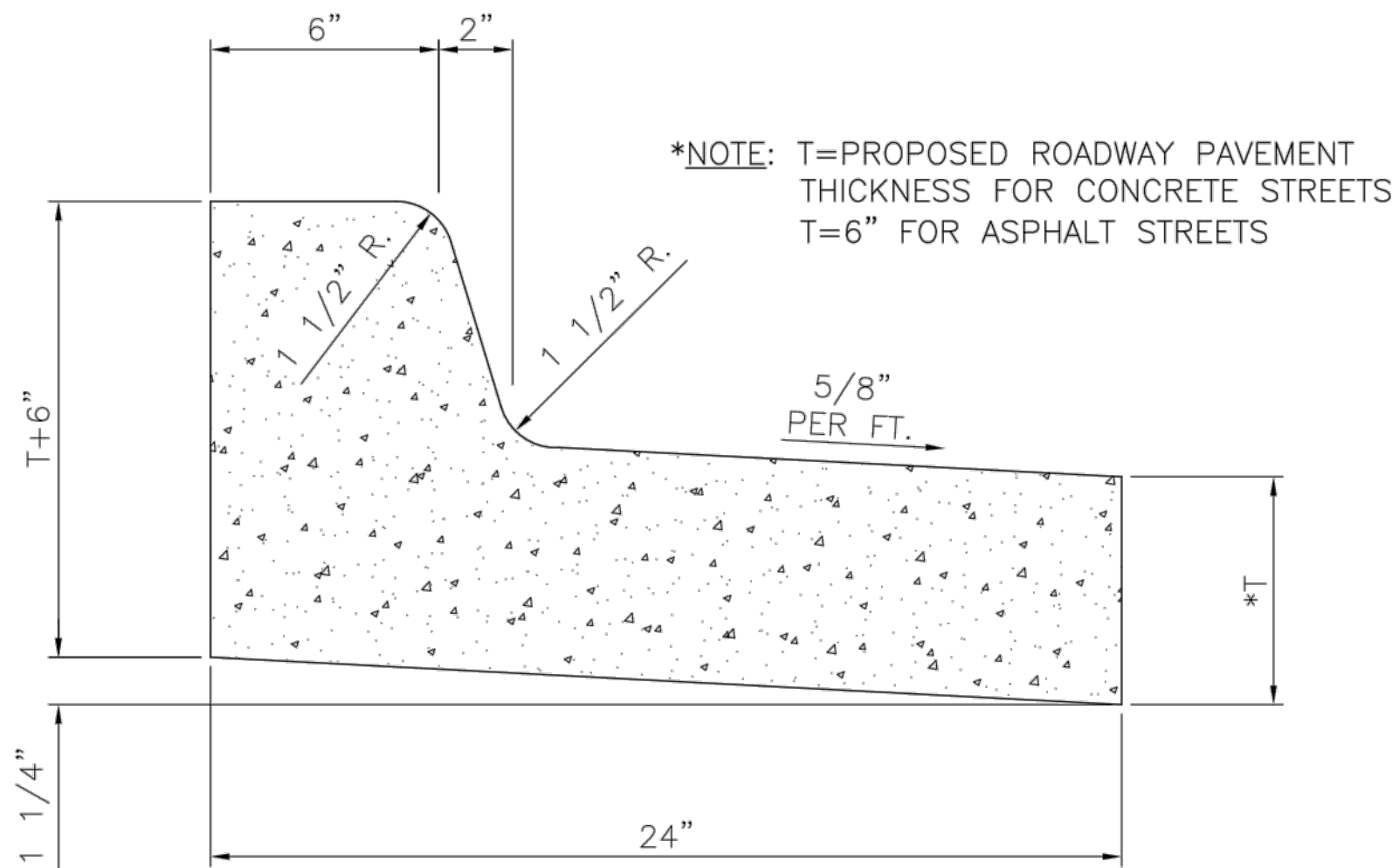
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Last edit on: 00/00/00



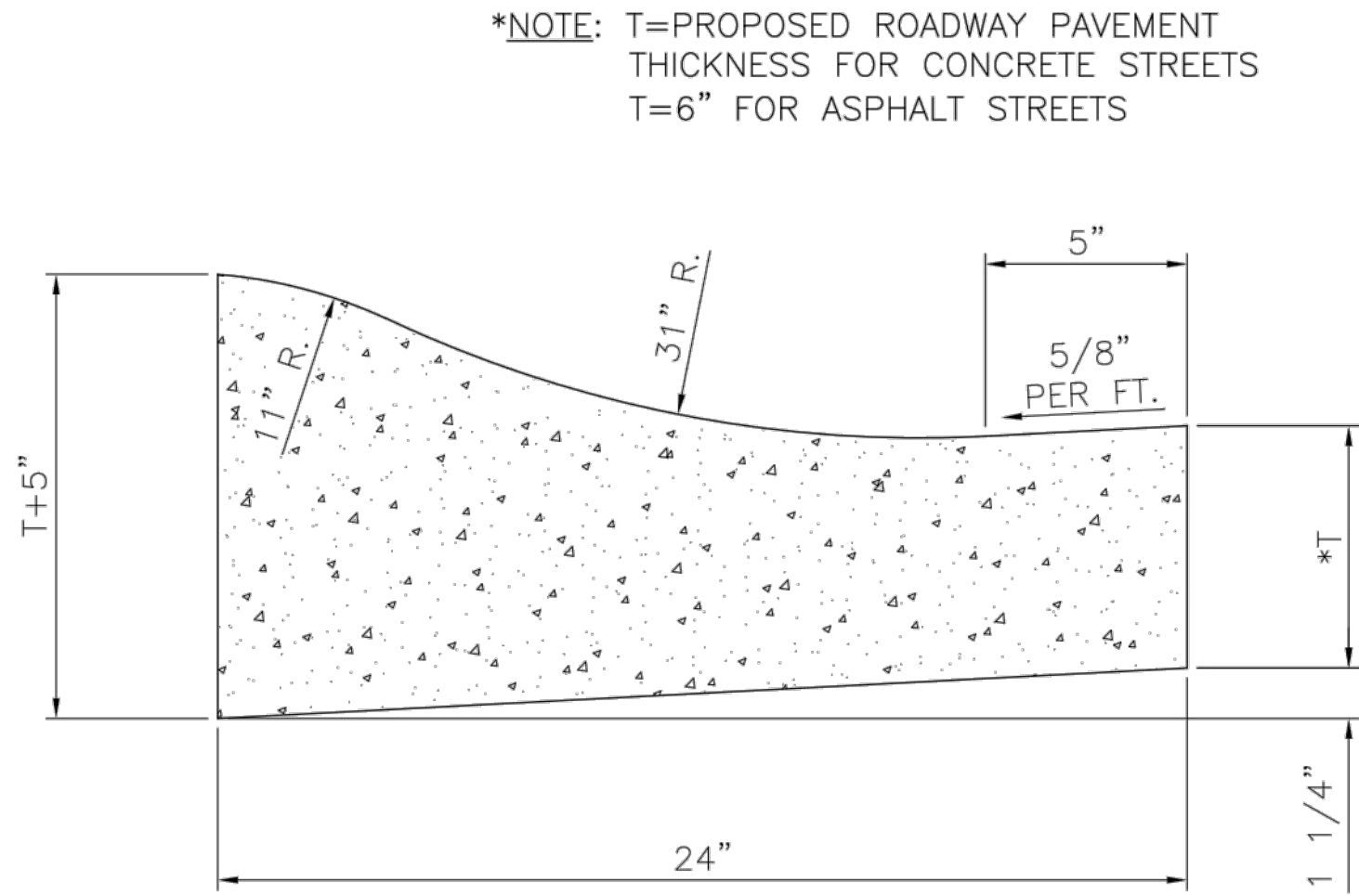
STRAIGHT CURB
(TYPE C-1)



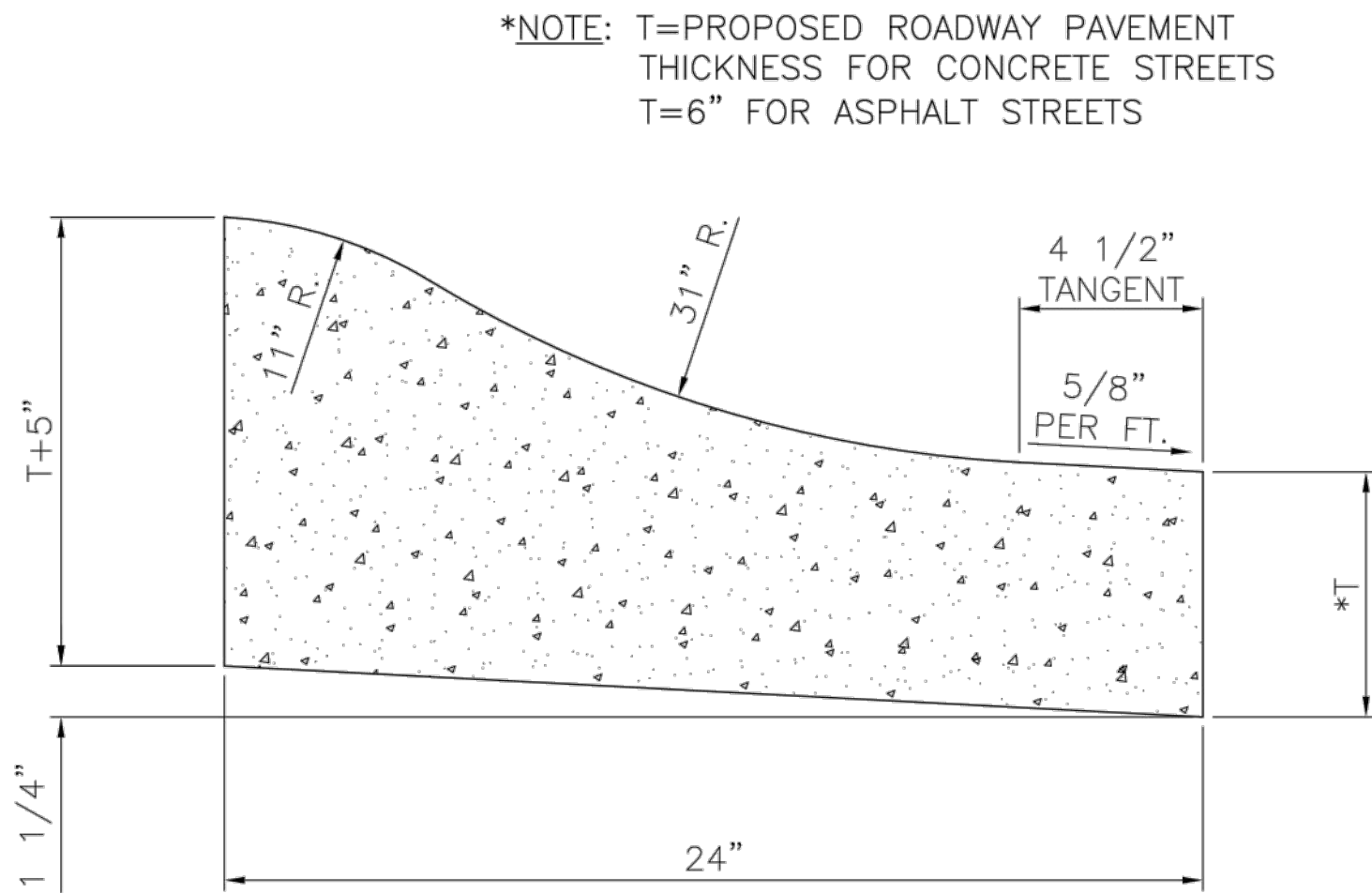
STRAIGHT BACK CURB AND
GUTTER
(TYPE CG-1)



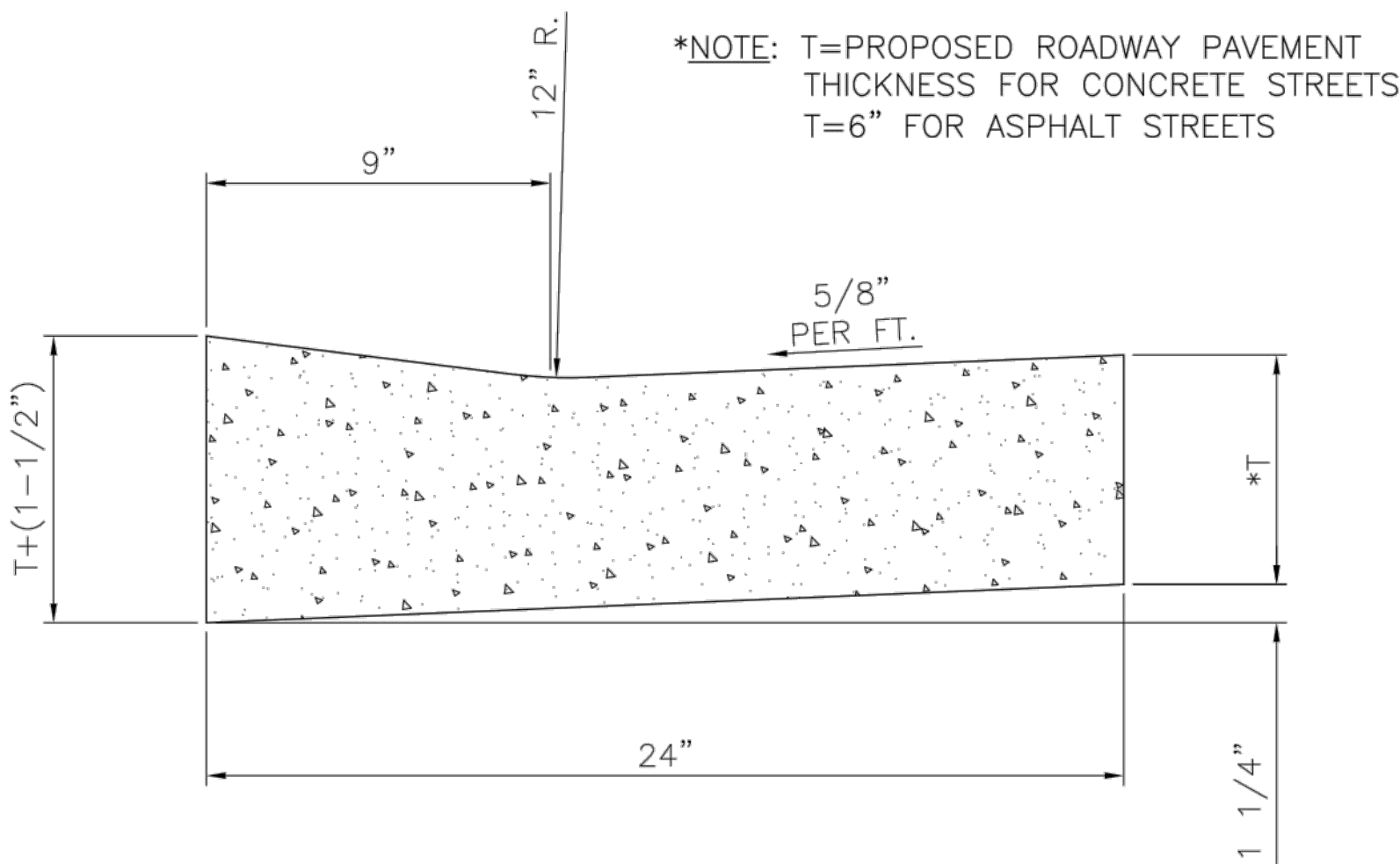
STRAIGHT BACK DRY CURB AND GUTTER
(TYPE CG-1, DRY)



ROLL BACK CURB AND GUTTER
(TYPE CG-2)



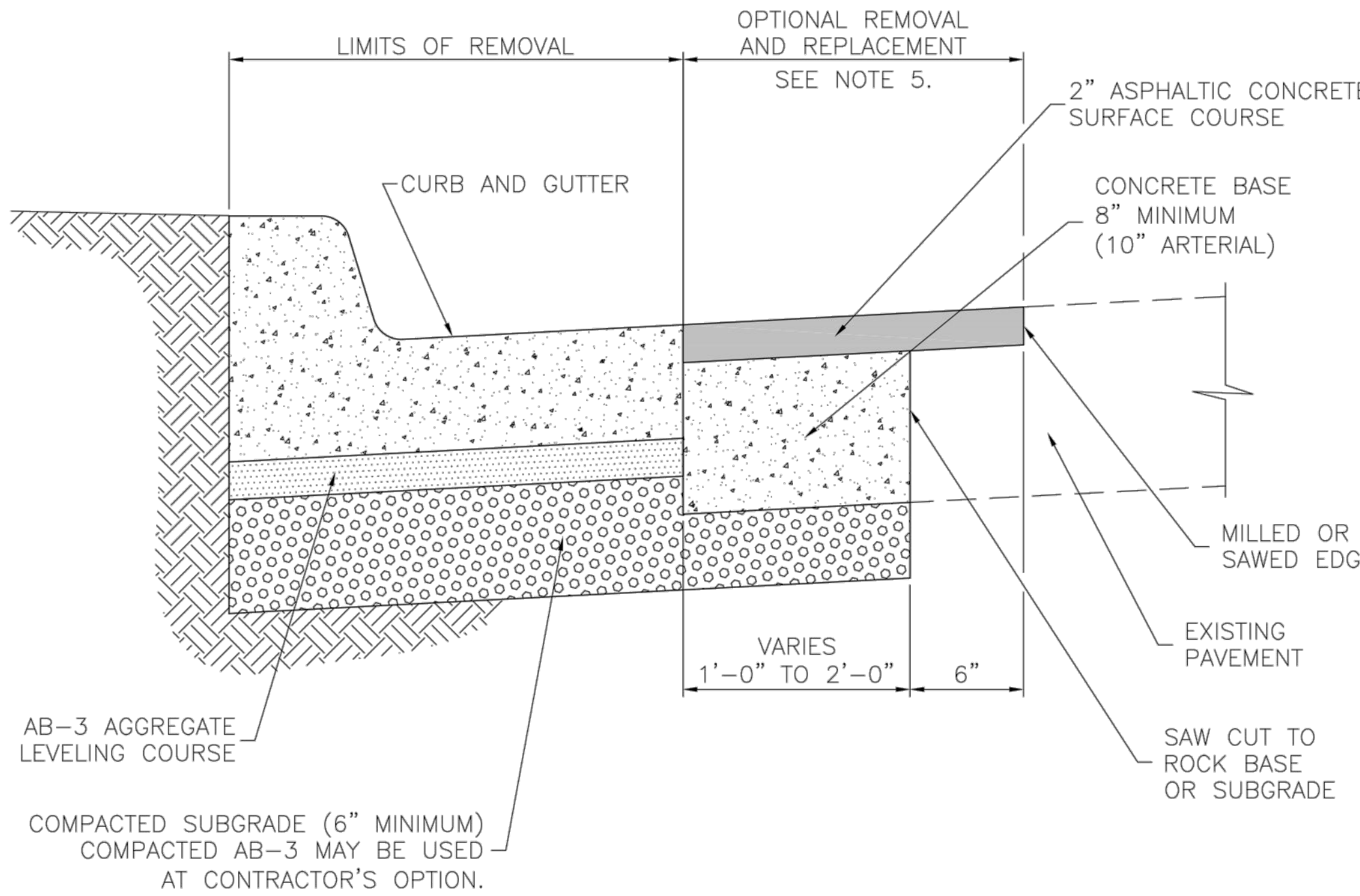
ROLL BACK CURB AND GUTTER
(TYPE CG-2, DRY)



CURB AND GUTTER THROUGH DRIVEWAYS AND ACCESS RAMPS
(TYPE CG-3)

CURB AND GUTTER GENERAL NOTES

1. TYPE CG-2 OR CG-2 DRY ROLL BACK CURB AND GUTTER MAY BE USED ONLY ON RESIDENTIAL STREETS. CURB CUTS FOR DRIVEWAYS ARE NOT REQUIRED WITH ROLL BACK CURB AND GUTTER.
2. INSTALL JOINTS IN ACCORDANCE WITH STANDARD SPECIFICATIONS.
3. CONCRETE SHALL CONFORM TO STANDARD SPECIFICATIONS, SECTION 2000.
4. ASPHALTIC CONCRETE SURFACE COURSE SHALL CONFORM TO STANDARD SPECIFICATIONS, SECTION 1300.
5. PAVEMENT REMOVAL AND REPLACEMENT BEYOND THE LIMITS OF CURB AND GUTTER REMOVAL IS AT THE CONTRACTOR'S OPTION AND COST.
6. ALL CURB JOINTS SHALL BE SAWED AND SEALED TO THE FLOWLINE WITH JOINT SEALING THAT CONFORMS TO THE STANDARD SPECIFICATIONS, SECTION 1400.



CURB REPLACEMENT DETAIL

(NOTE: TO BE USED ONLY WHEN EXISTING CURB AND GUTTER IS REMOVED AND REPLACED, BUT STREET PAVEMENT REMAINS IN PLACE)

2017 EDITION SHEET ____ OF ____

DATE	BY	REVISION
03-21-17	LJM	REPLACES ALL PREVIOUS VERSIONS OF CONCRETE CURB AND GUTTER DETAIL
02-22-16	LJM	REPLACES ALL PREVIOUS VERSIONS OF CONCRETE CURB AND GUTTER DETAIL
03-17-15	LJM	REPLACES ALL PREVIOUS VERSIONS OF CONCRETE CURB AND GUTTER DETAIL
03-17-15	LJM	NO.4 EPOXY COATED REBARS ADDED TO THE "STRAIGHT CURB" DETAIL
03-17-15	LJM	NOTE NO. 6 ADDED TO THE CURB AND GUTTER GENERAL NOTE



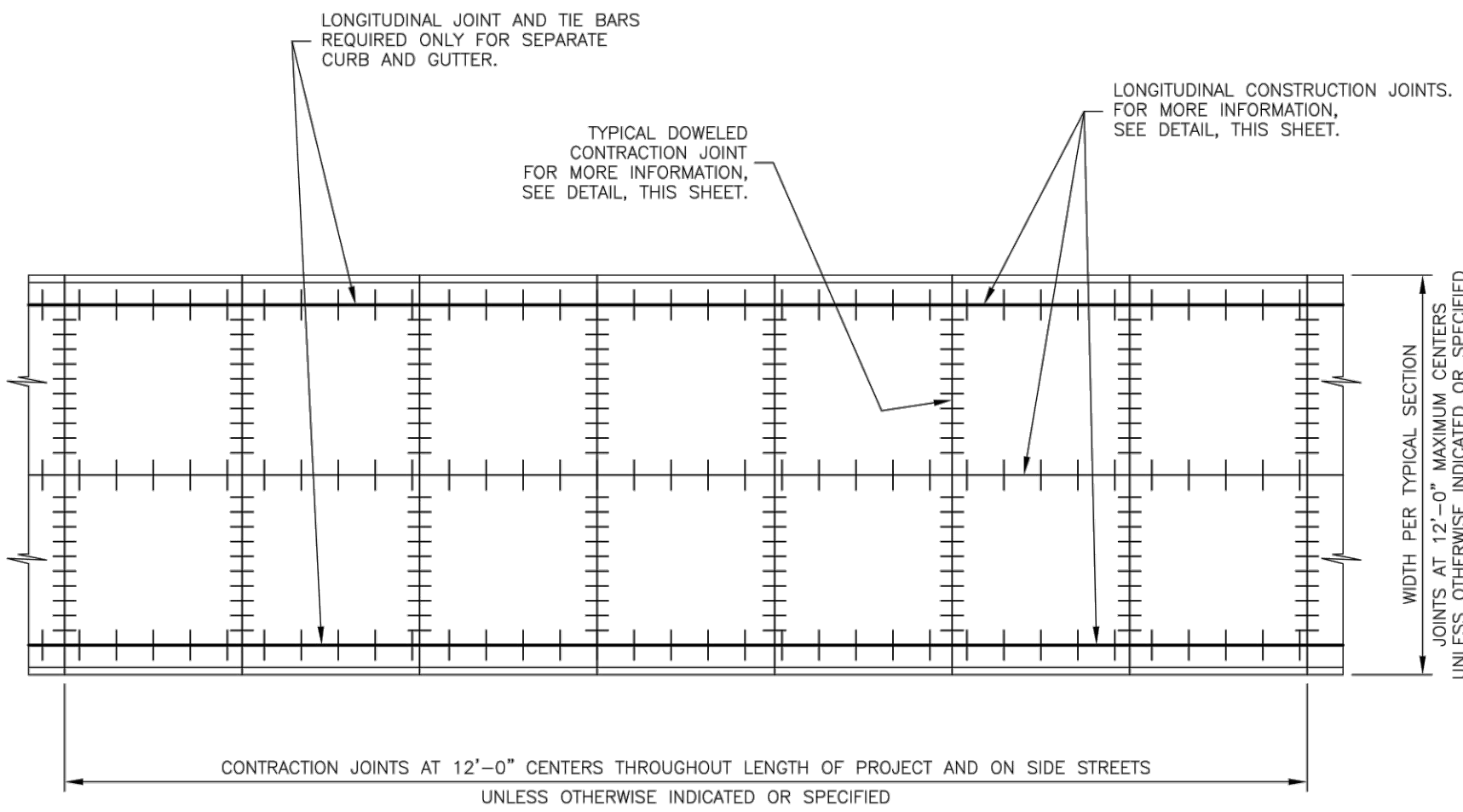
STANDARD DETAILS FOR
CONCRETE CURB AND GUTTER

DAVID P. CRONIN CITY ENGINEER THOMAS M. MARKUS CITY MANAGER

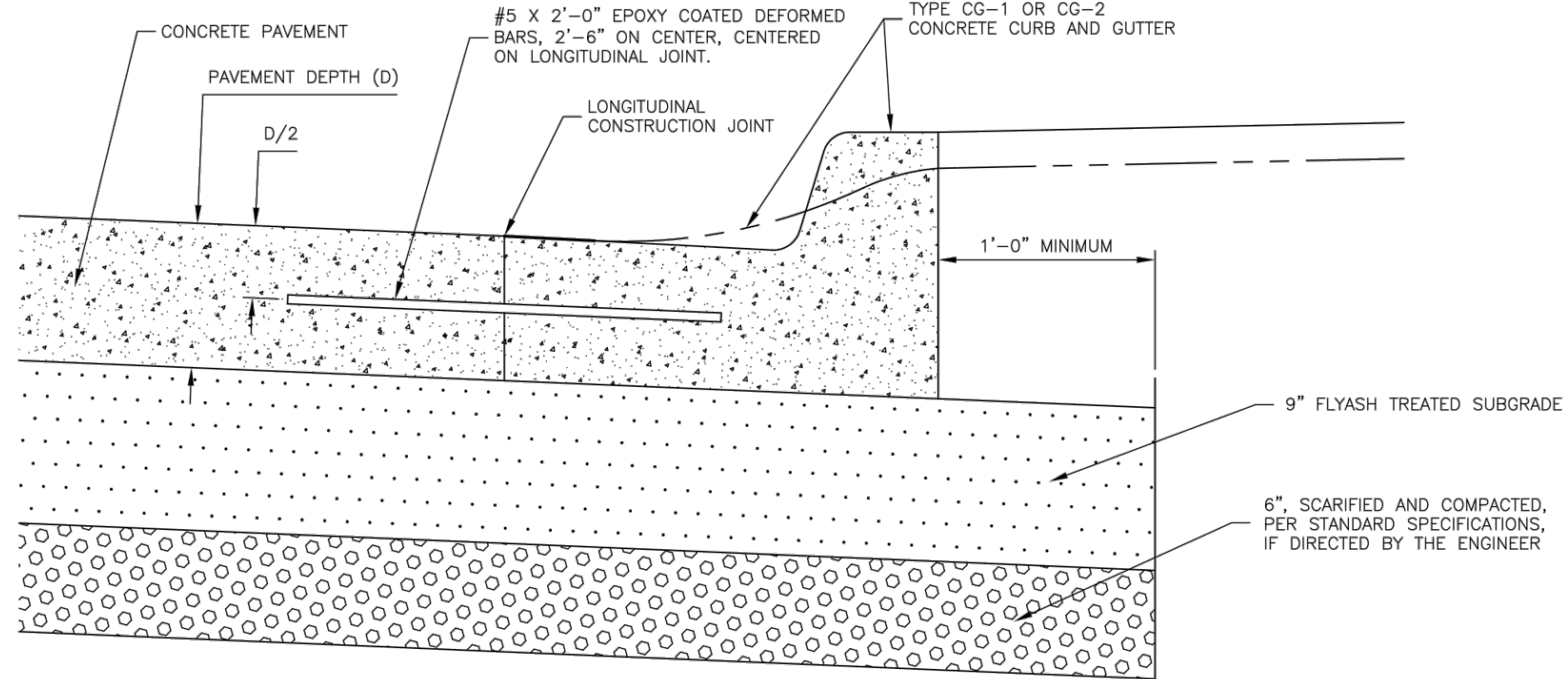
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Last edit on: 00/00/00

NOTES:

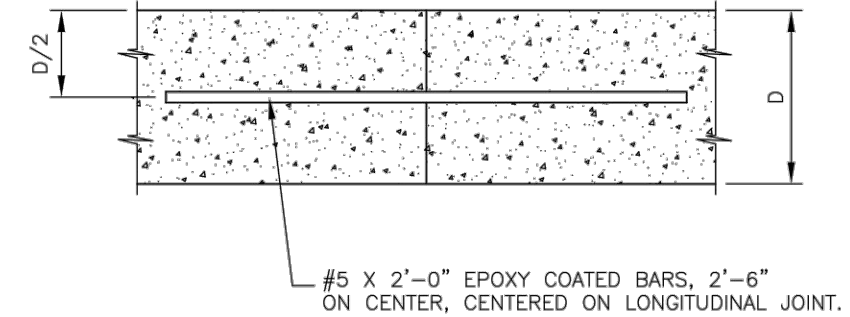
1. ALL BARS, REINFORCEMENT CHAIRS AND JOINT MATERIAL ARE SUBSIDIARY TO THE PRICE BID FOR PORTLAND CEMENT CONCRETE PAVEMENT.
2. CURB AND GUTTER ADJOINING PORTLAND CEMENT CONCRETE PAVEMENT MAY, AT THE CONTRACTOR'S OPTION, BE PLACED INTEGRAL WITH PAVEMENT OR SEPARATELY. IF PLACED SEPARATELY, SEE DETAIL, THIS SHEET.
3. PAVEMENT JOINTS SHALL BE CONTINUED THROUGH CURB AND GUTTER. JOINTS IN THE PAVEMENT AND CURB AND GUTTER SHALL BE SEALED IN ACCORDANCE WITH STANDARD SPECIFICATIONS.
4. ISOLATION JOINTS IN THE CURB AND GUTTER ARE TO BE PLACED OPPOSITE ISOLATION JOINTS IN THE PORTLAND CEMENT CONCRETE PAVEMENT.
5. ISOLATION JOINTS SHALL BE PLACED AT LOCATIONS INDICATED ON THE PROJECT PLANS OR AS DIRECTED BY THE CITY ENGINEER OR AN AUTHORIZED REPRESENTATIVE.



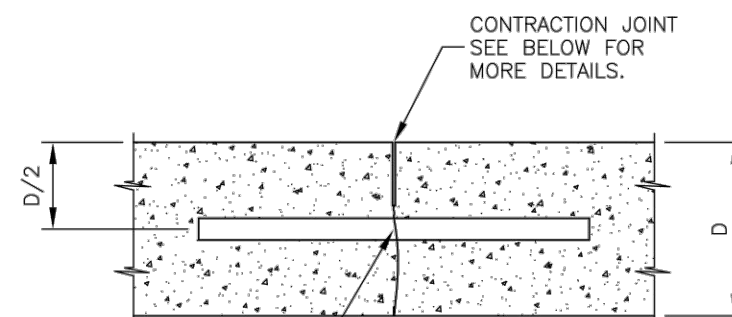
JOINT PLAN



SEPARATE CURB AND GUTTER



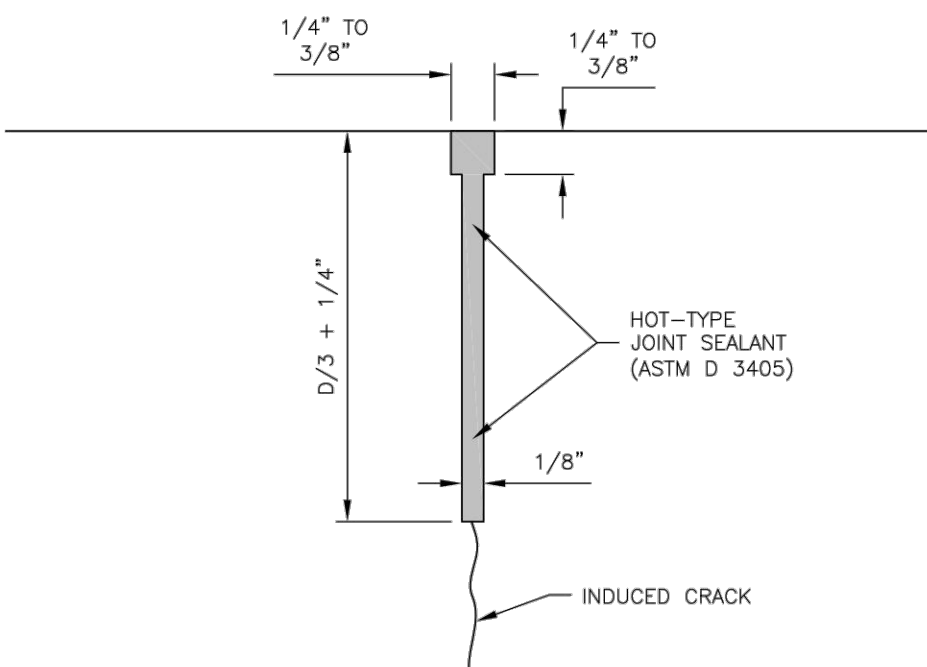
LONGITUDINAL CONSTRUCTION JOINT



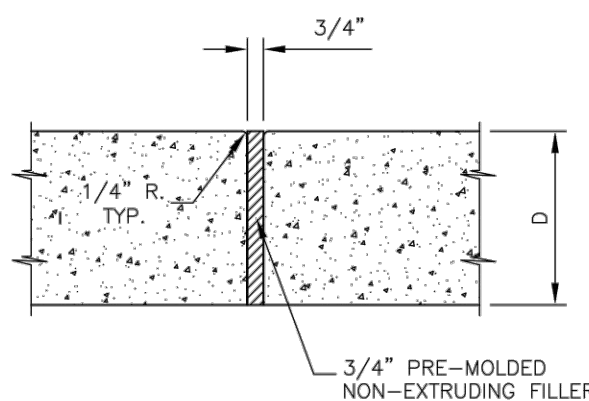
DOWEL SIZING CHART

BAR DIAMETER	PAVEMENT DEPTH (D)
1"	8"
1 1/4"	10"
1 1/2"	12"

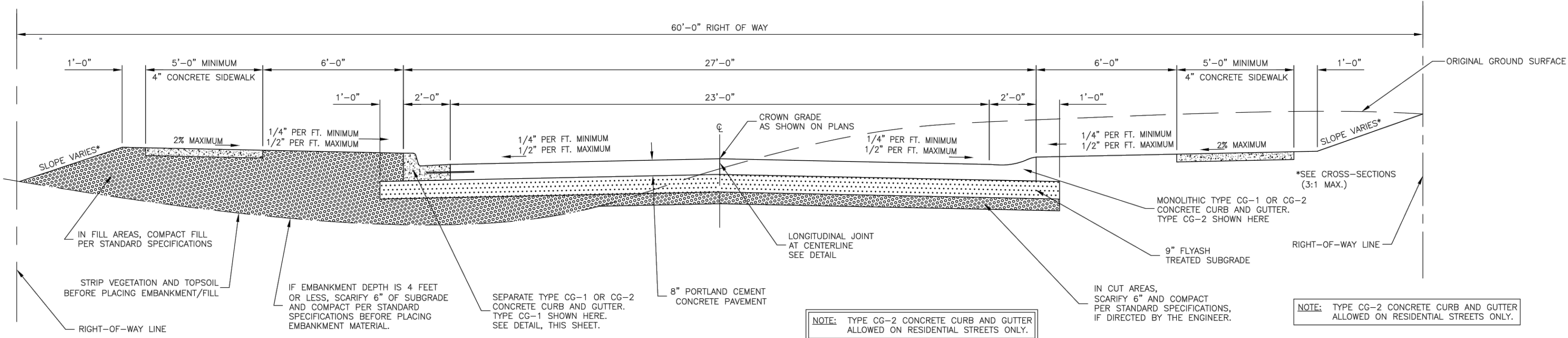
DOWELED CONTRACTION JOINT



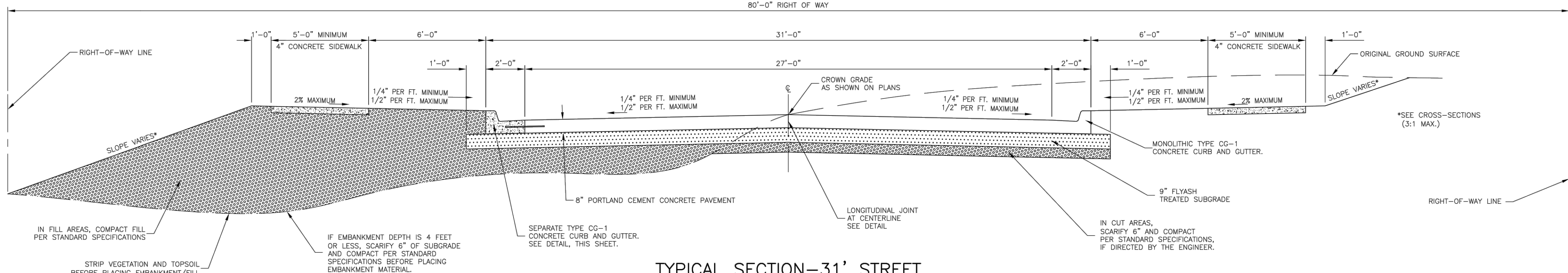
ENLARGED VIEW OF CONTRACTION JOINT



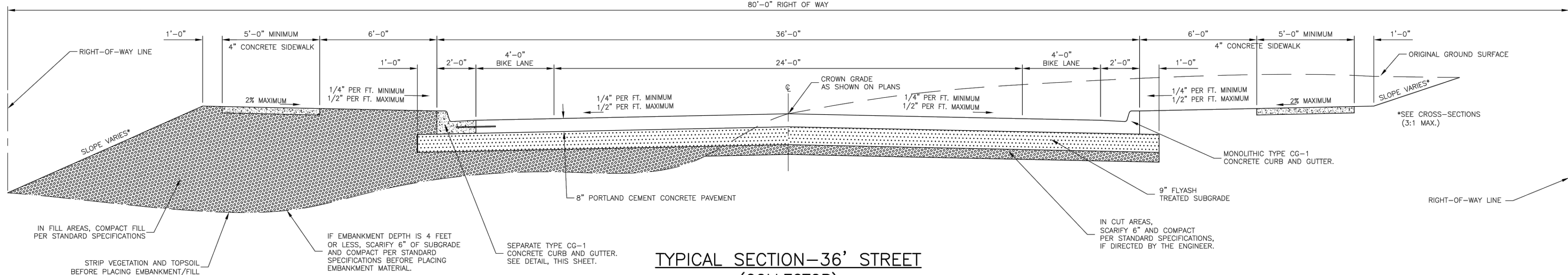
ISOLATION JOINT



TYPICAL SECTION-27' STREET (RESIDENTIAL)



TYPICAL SECTION-31' STREET (COLLECTOR)



TYPICAL SECTION-36' STREET (COLLECTOR)

2017 EDITION

SHEET _____ OF _____

DATE	BY	REVISION
03-21-17	LJM	REPLACES ALL PREVIOUS VERSIONS OF CONCRETE STREET DETAILS
02-22-16	LJM	REPLACES ALL PREVIOUS VERSIONS OF CONCRETE STREET DETAILS
03-17-15	LJM	REPLACES ALL PREVIOUS VERSIONS OF CONCRETE STREET DETAILS
03-17-15	LJM	BARS IN "SEPARATE CURB AND GUTTER" DETAIL REVISED
03-17-15	LJM	BARS IN "LONGITUDINAL CONSTRUCTION JOINT" DETAIL REVISED
03-17-15	LJM	PAVEMENT CROSS-SLOPE CHANGED



CITY OF LAWRENCE, KANSAS
ENGINEERING DIVISION OF PUBLIC WORKS

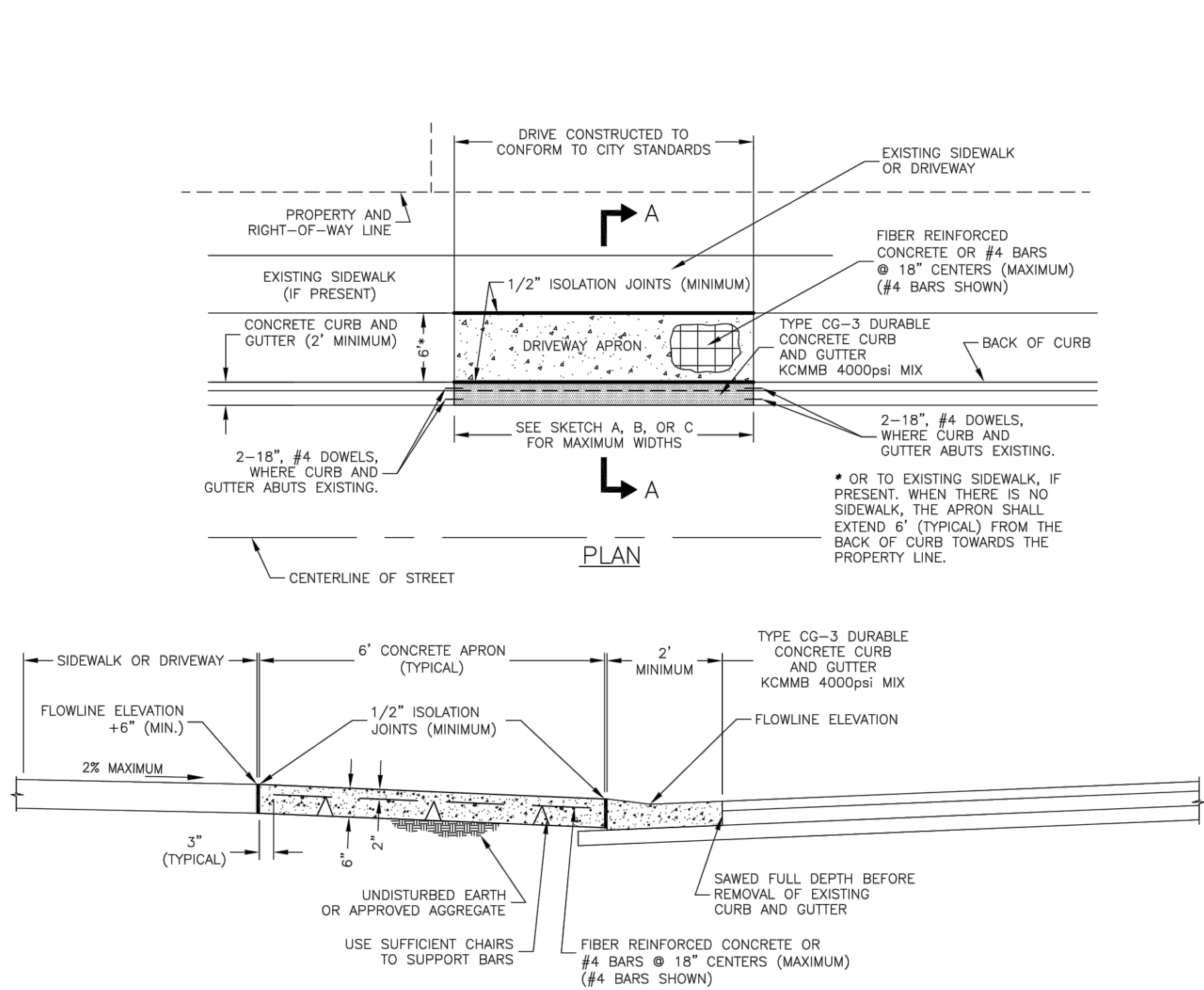


STANDARD DETAILS FOR
PORTLAND CEMENT CONCRETE STREETS

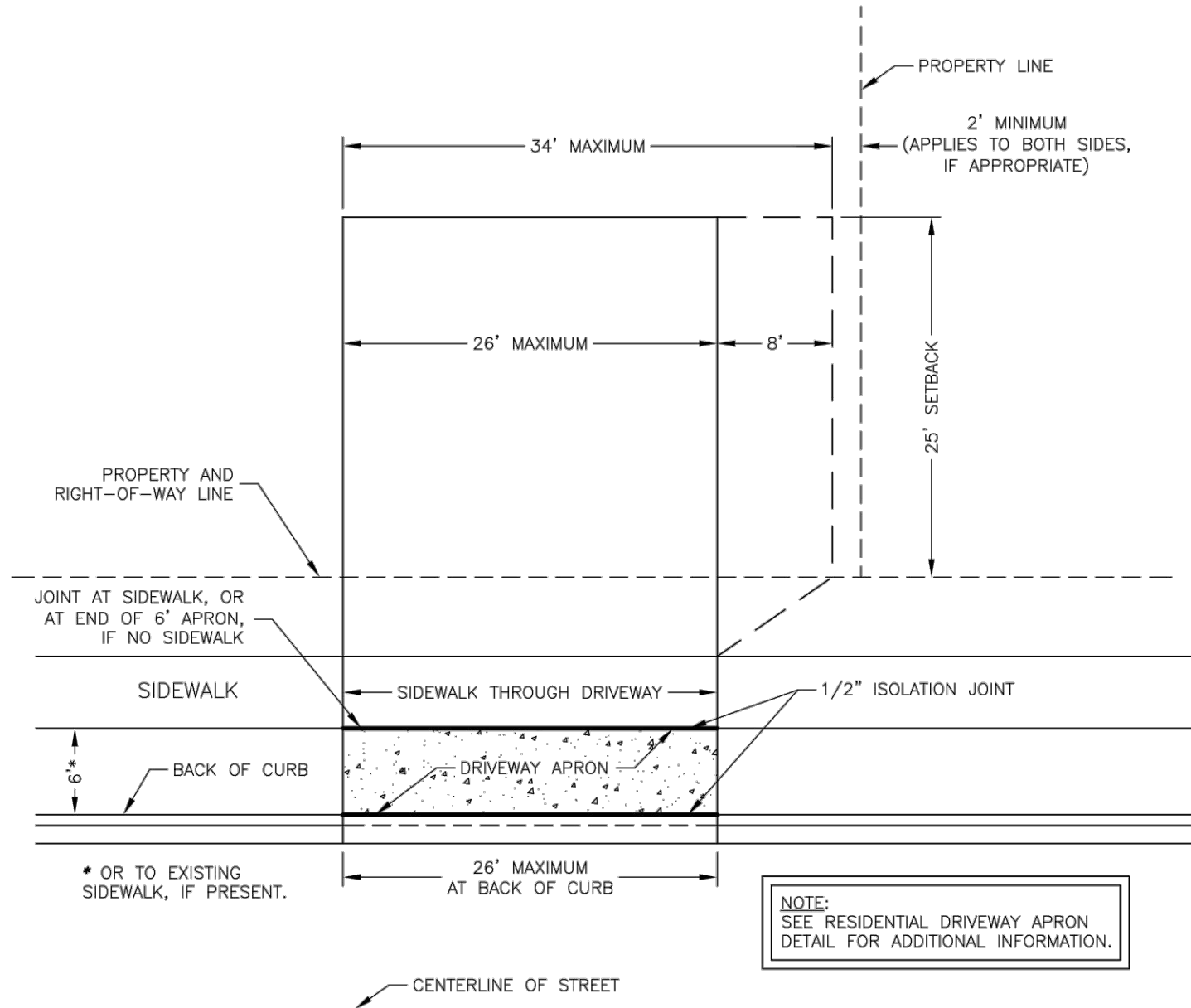
DAVID P. CRONIN
CITY ENGINEER

THOMAS M. MARKUS
CITY MANAGER

Drawing Name: W:\Proj\18000\18811\18811.001\AutoCad\Plan Set\18811.001C_Det-Std.dwg Layout Name: CONC-DRIVES Plotted By: JDM00688 Plotted on: 1/25/2018 4:08:31 PM
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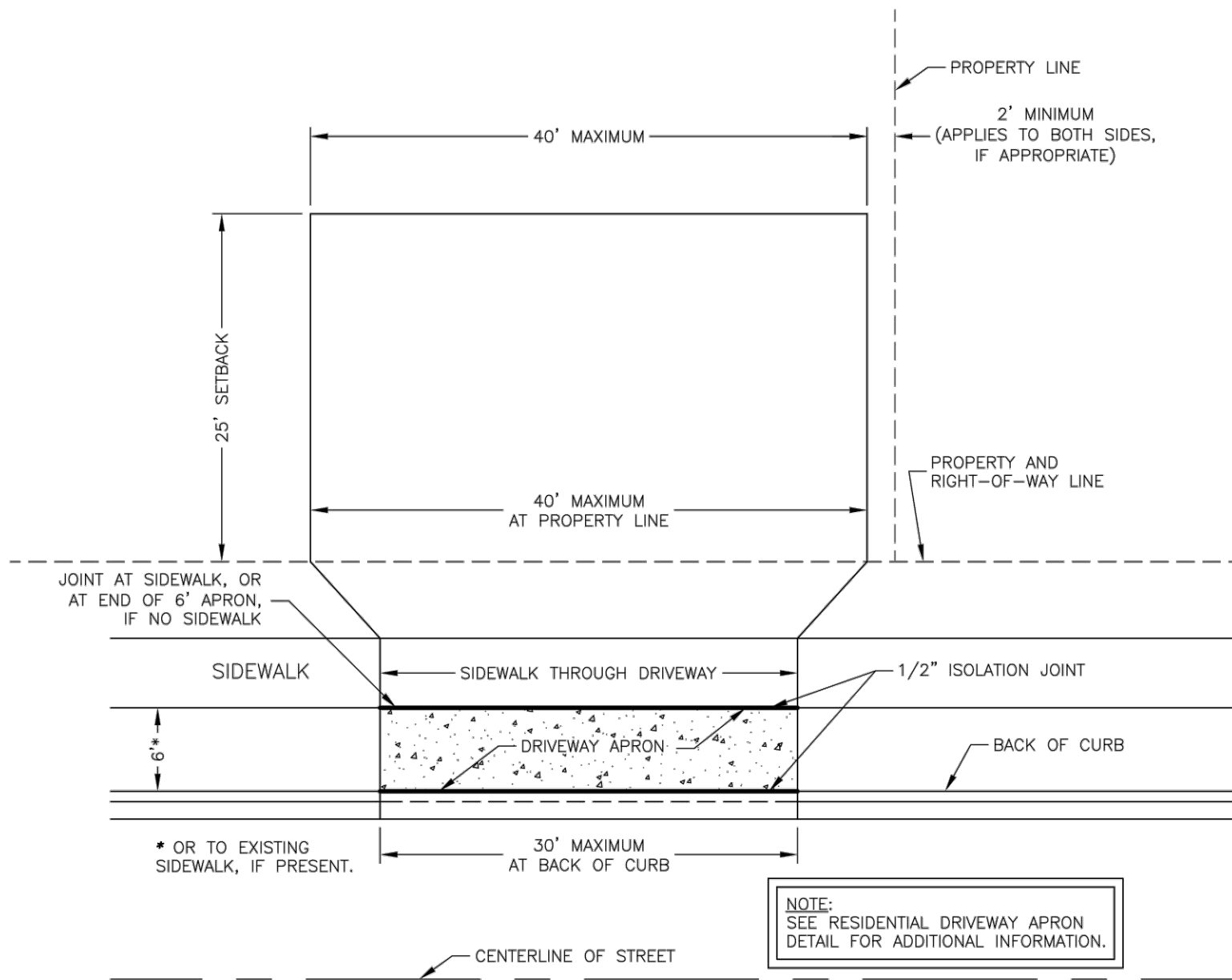


SECTION A-A
RESIDENTIAL DRIVEWAY APRON



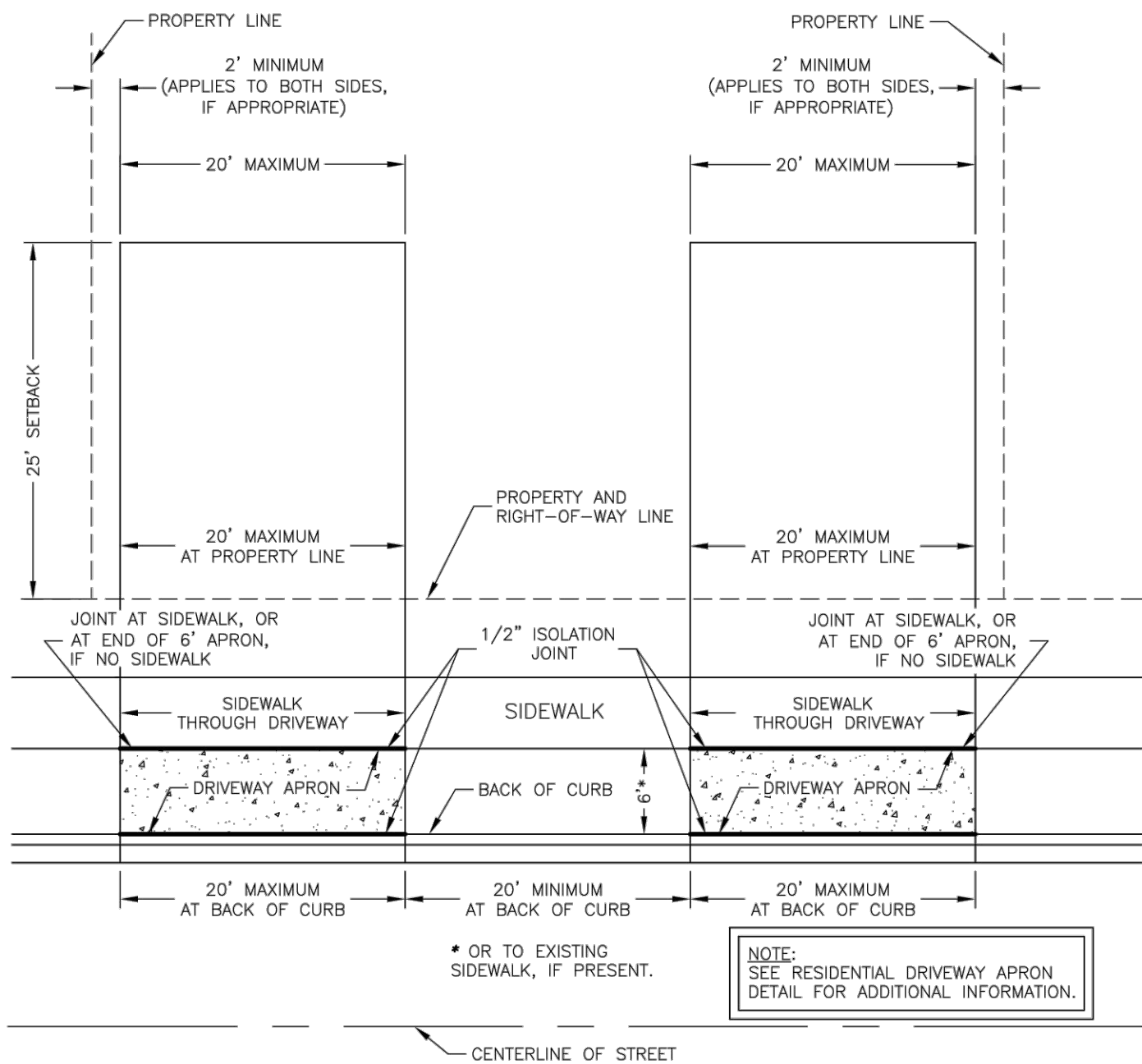
DRIVEWAY DETAIL FOR A SINGLE FAMILY HOME

SCALE : 1"=10'
(SKETCH A)
NOTE: DRIVEWAY APRON MAY BE FLARED, IF DESIRED; HOWEVER, THE MAXIMUM WIDTH AT THE CURB REMAINS AT 26 FEET.



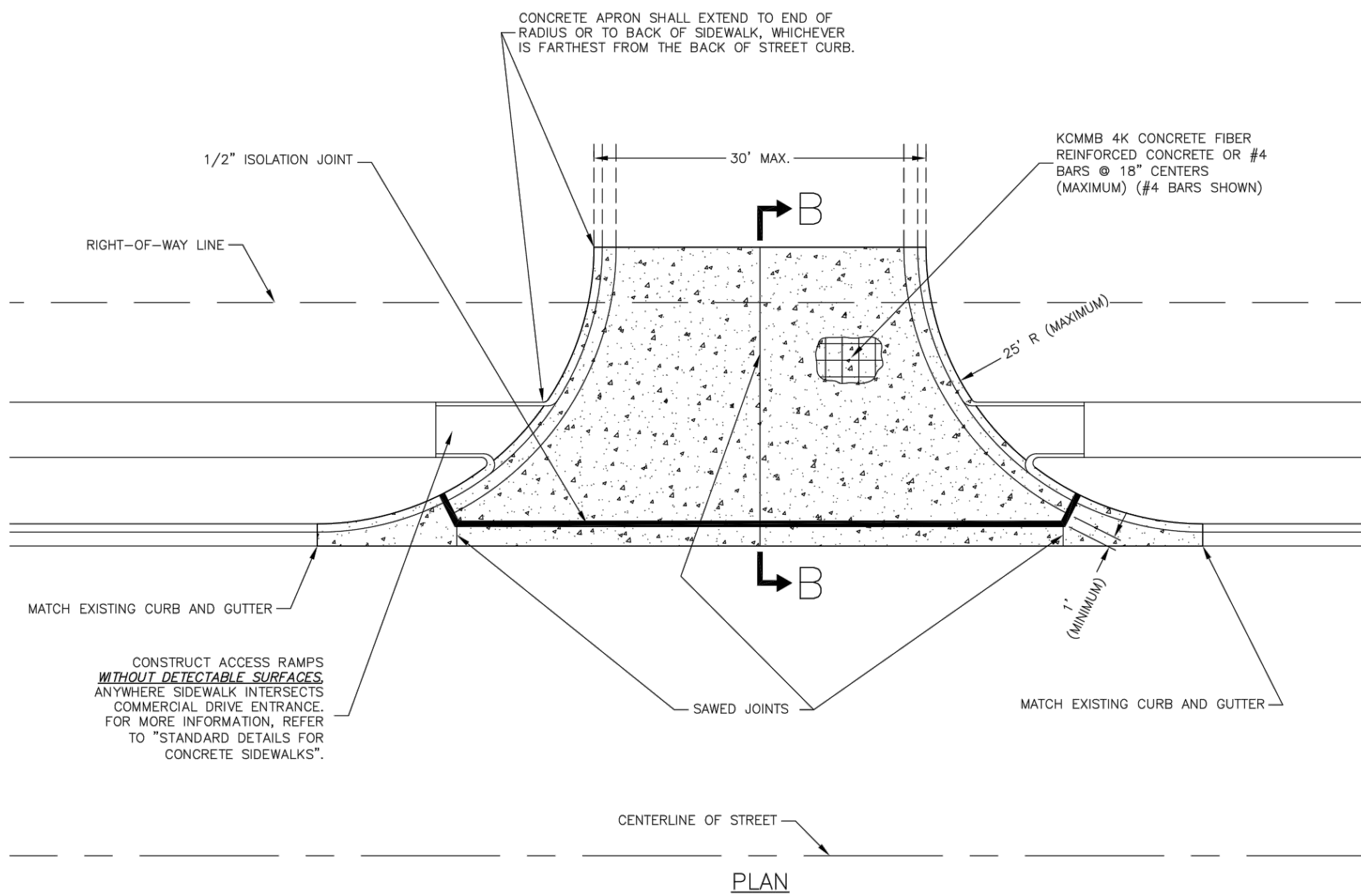
DRIVEWAY DETAIL FOR A DUPLEX WHERE 2-CAR GARAGES ARE SIDE BY SIDE

SCALE : 1"=10'
(SKETCH B)
NOTE: DRIVEWAY APRON MAY BE FLARED, IF DESIRED; HOWEVER, THE MAXIMUM WIDTH AT THE CURB REMAINS AT 30 FEET.



DRIVEWAY DETAIL FOR A DUPLEX WHERE 2-CAR GARAGES ARE SEPARATED

SCALE : 1"=10'
(SKETCH C)
NOTE: DRIVEWAY APRON MAY BE FLARED, IF DESIRED; HOWEVER, THE MAXIMUM WIDTH AT THE CURB REMAINS AT 20 FEET.



COMMERCIAL DRIVEWAY APRON

2017 EDITION

SHEET ____ OF ____

DATE	BY	REVISION
03-21-17	LJM	REPLACES ALL PREVIOUS VERSIONS OF CONCRETE DRIVEWAY DETAILS
02-22-16	LJM	REPLACES ALL PREVIOUS VERSIONS OF CONCRETE DRIVEWAY DETAILS
03-17-15	LJM	REPLACES ALL PREVIOUS VERSIONS OF CONCRETE DRIVEWAY DETAILS
03-17-15	LJM	MINIMUM THICKNESS OF COMMERCIAL DRIVEWAY APRON CHANGED TO 8"
03-17-15	LJM	KCMMB REQUIREMENT ADDED TO THE "COMMERCIAL DRIVEWAY" DETAILS



CITY OF LAWRENCE, KANSAS
ENGINEERING DIVISION OF PUBLIC WORKS

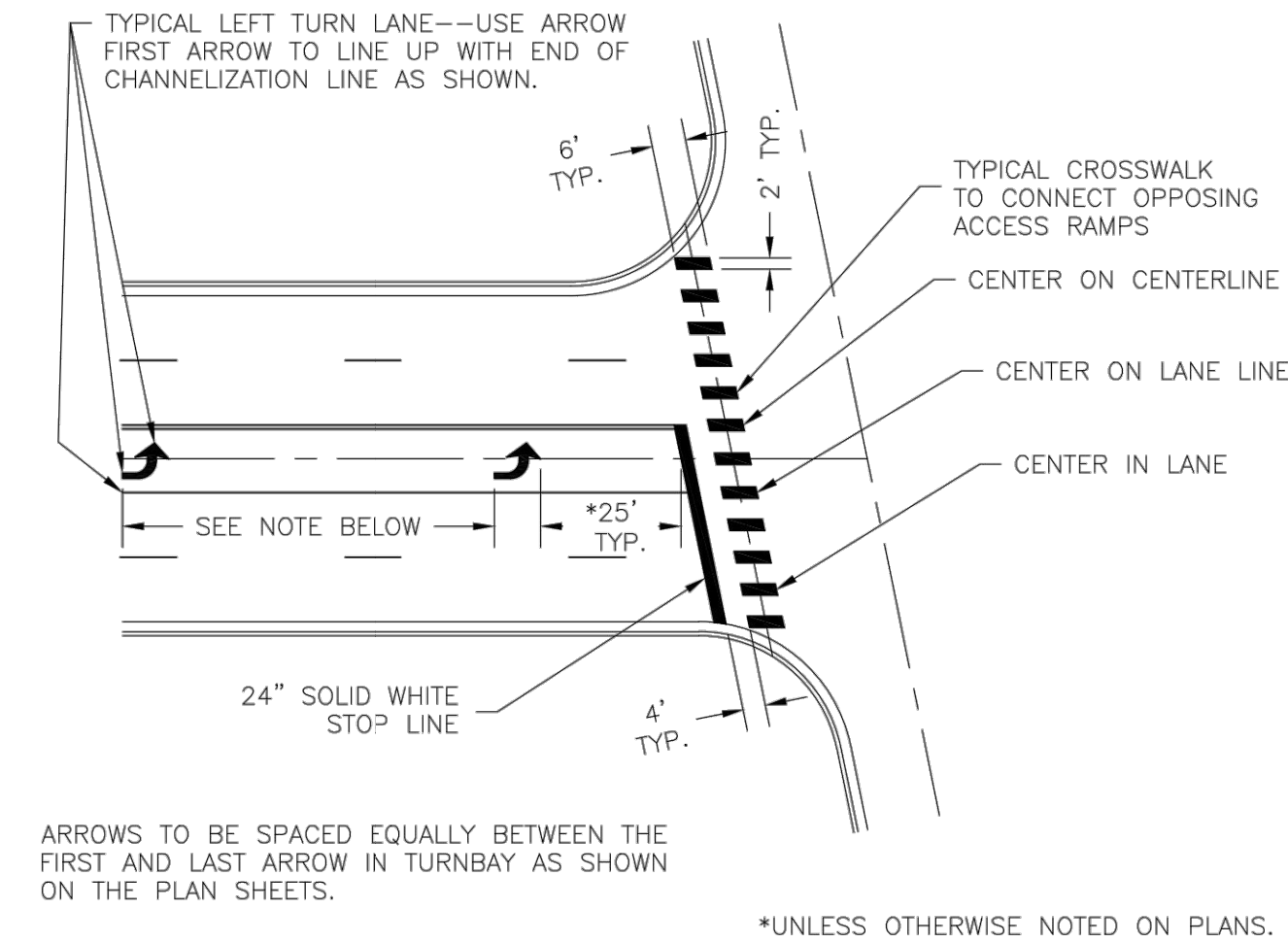


STANDARD DETAILS FOR
CONCRETE DRIVEWAYS

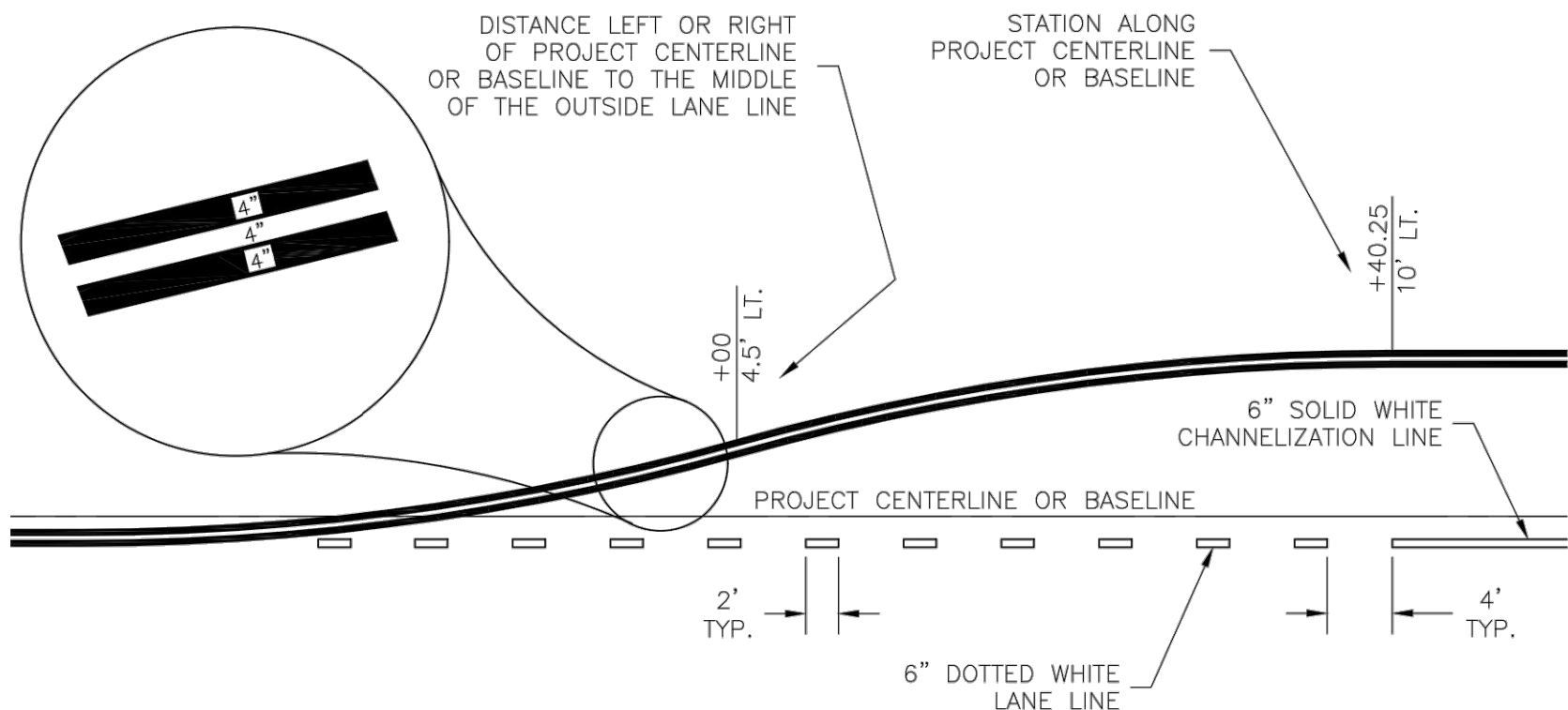
DAVID P. CRONIN
CITY ENGINEER

THOMAS M. MARKUS
CITY MANAGER

Drawing Name: W:\Proj\18000\18811\18811.001\AutoCad\Plan Set\18811.001\C_Det-Std.dwg Layout Name: PAVT-MARKINGS Plotted By: JDM0688 Plotted on: 1/25/2018 4:08:37 PM
Last edit on: 00/00/00



CROSSWALK DETAIL



CENTERLINE AND TURN-BAY DETAIL

BID ITEM

PAVEMENT MARKING (INTERSECTION GRADE) (WHITE) (+)
PAVEMENT MARKING (PATTERNED COLD PLASTIC) (*) (+)
PAVEMENT MARKING SYMBOL (PATTERNED COLD PLASTIC) (WHITE) (**)

* WHITE, OR * YELLOW
+ WIDTH
** TYPE

MATERIAL

ALL CROSSWALKS AND STOP LINES SHALL BE CONSTRUCTED USING WHITE INTERSECTION GRADE, COLD PLASTIC PAVEMENT MARKING MATERIAL 3 M #420, ATM #400, SWARCO DIR 35, OR AN APPROVED EQUAL, EXCEPT WHERE HEAT FUSED THERMOPLASTIC PAVEMENT MARKING IS DESIGNATED TO BE USED PER PLANS.

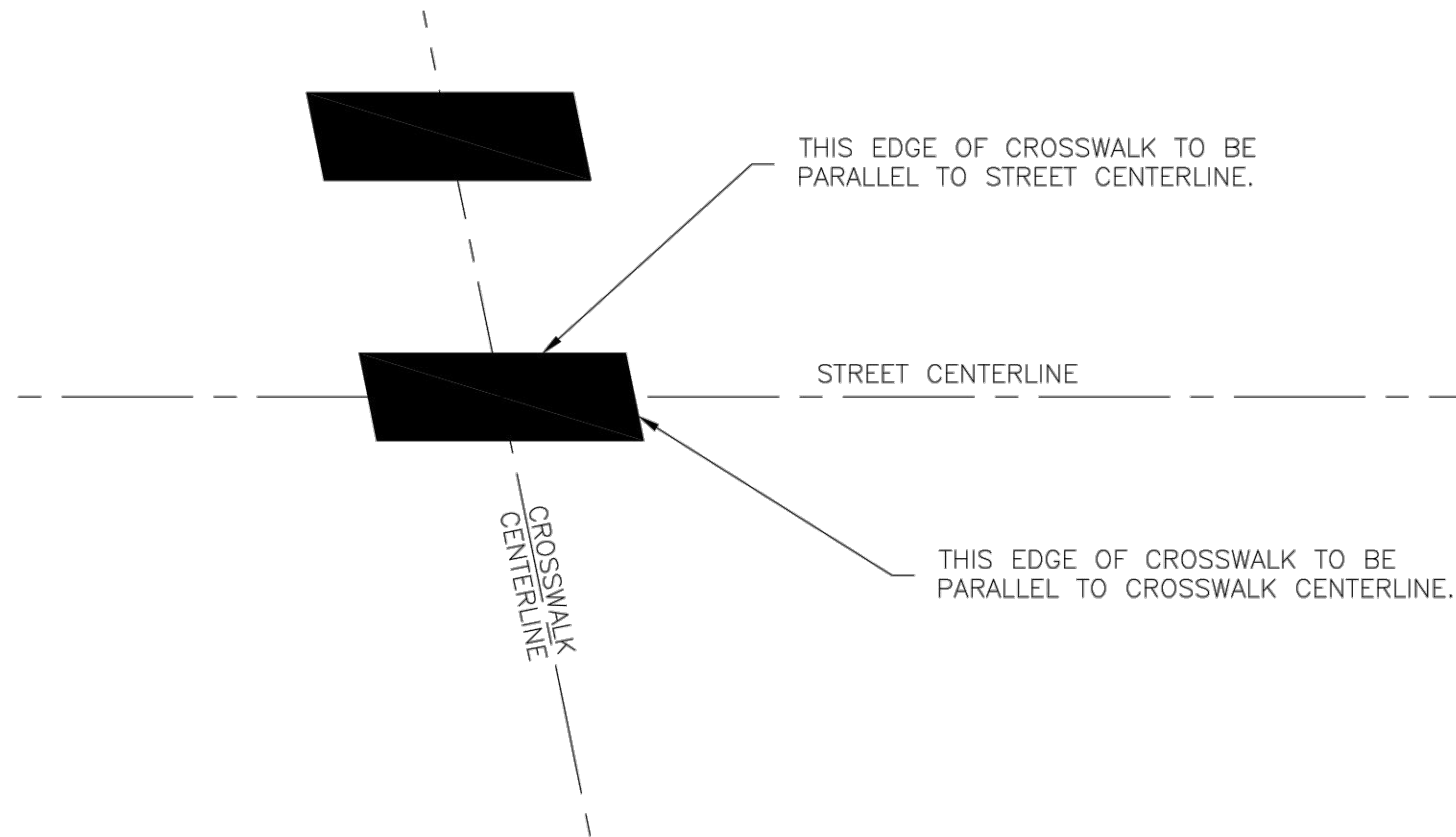
ALL PAVEMENT MARKING SYMBOLS AS SHOWN ON THE PLANS SHALL BE CONSTRUCTED USING WHITE PATTERNED COLD PLASTIC PAVEMENT MARKING MATERIAL IN ACCORDANCE WITH KANSAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, SECTION 834. FOR TURN ARROWS, NOTE THAT THE CONTRACTOR HAS THE OPTION TO USE HEAT FUSED, PREFORMED, THERMOPLASTIC PAVEMENT MARKING MATERIAL WHERE THE PAVING OPERATION CREATES A "COLD" LONGITUDINAL JOINT AT THE PROPOSED LOCATION OF AN ARROW.

ALL PAVEMENT MARKINGS SHOWN ON THE PLANS THAT ARE NOT CROSSWALKS, STOP LINES, OR SYMBOLS, SHALL BE CONSTRUCTED USING PATTERNED COLD PLASTIC PAVEMENT MARKING MATERIAL OF THE COLOR SPECIFIED IN ACCORDANCE WITH KANSAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, SECTION 834.

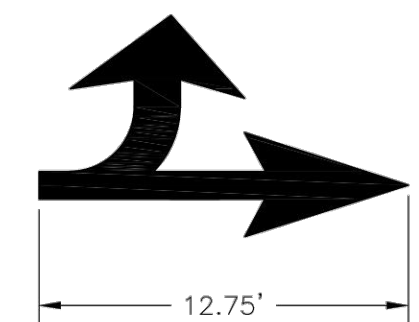
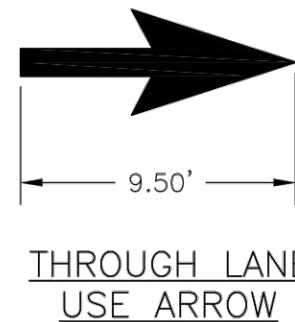
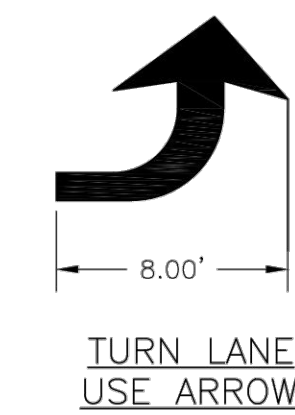
ALL HEAT FUSED PREFORMED THERMOPLASTIC PAVEMENT MARKINGS SHALL BE INSTALLED WITH GRINDED INSET PER CURRENT KDOT SPECIFICATIONS. ANY EXCESS EXISTING PAVEMENT MARKINGS THAT ARE TO BE REPLACED BY THERMOPLASTIC PAVEMENT MARKINGS, SHALL BE REMOVED BY A LIGHT GRINDING METHOD.

LAYOUT

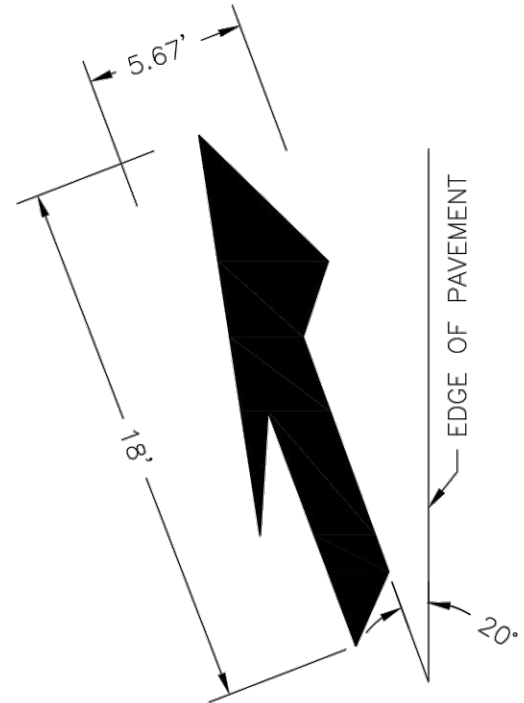
THE CONTRACTOR SHALL BE RESPONSIBLE FOR LAYOUT OF ALL PAVEMENT MARKINGS. THE CONTRACTOR SHALL OBTAIN THE APPROVAL OF THE ENGINEER PRIOR TO INSTALLATION OF THE PAVEMENT MARKINGS.



CROSSWALK BLOWUP DETAIL



TURN AND THROUGH LANE USE ARROW

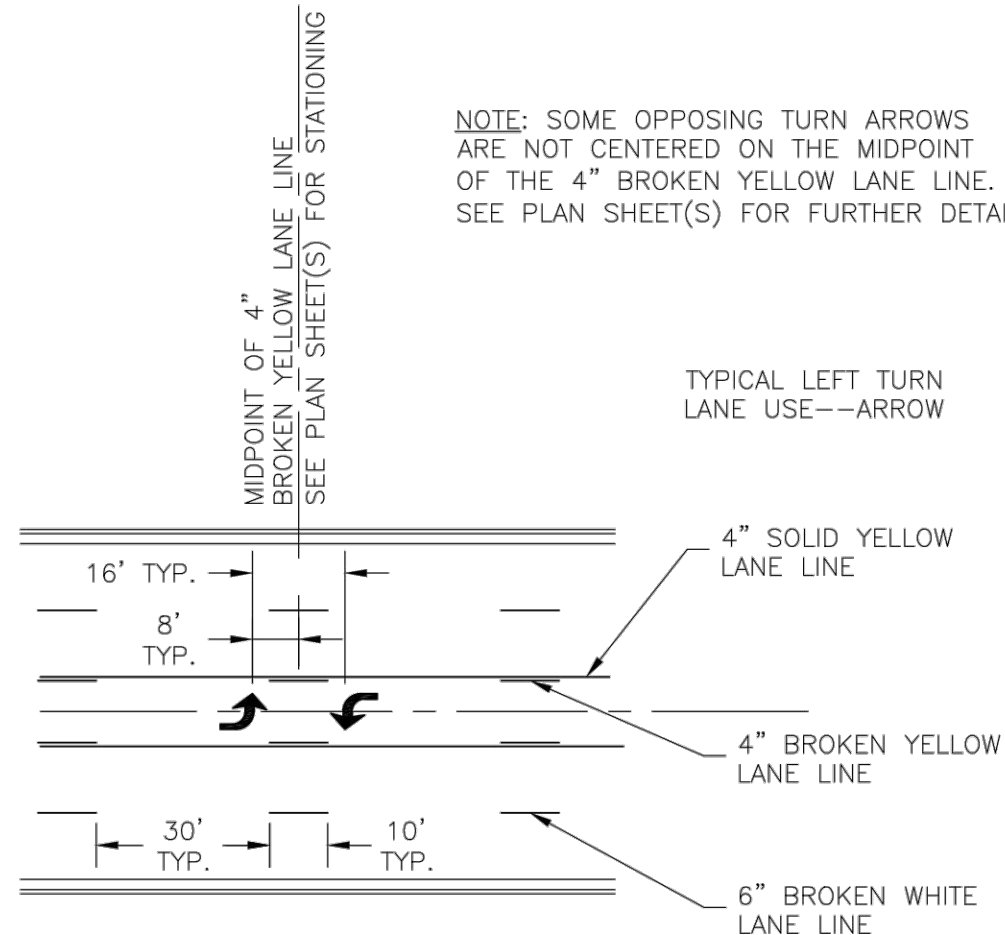


LANE REDUCTION ARROW

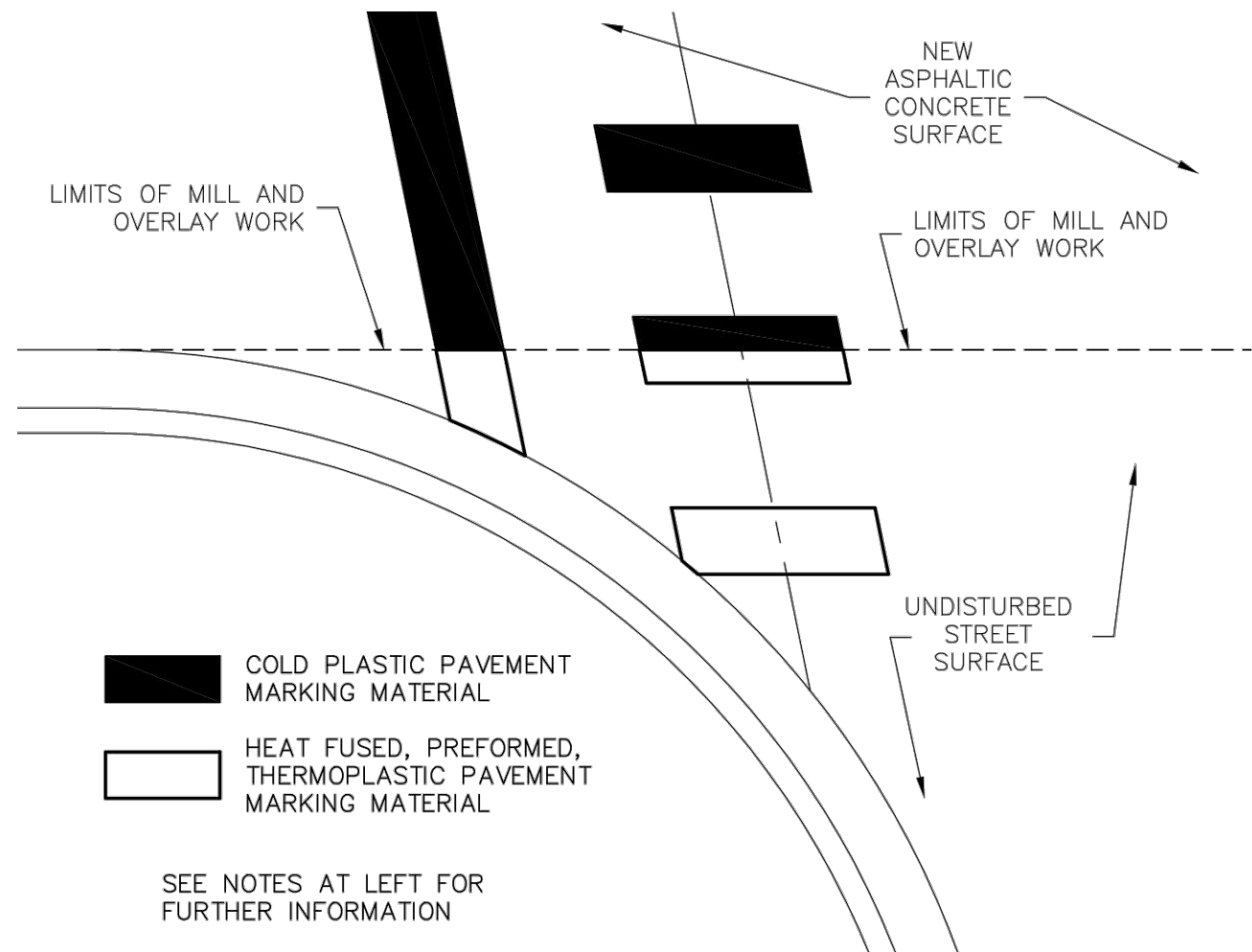
NOTES:

1. DIMENSIONS SHOWN ABOVE REFLECT TYPICAL SIZES USED FOR NORMAL INSTALLATIONS.
2. SIZES MAY BE REDUCED APPROXIMATELY ONE-THIRD FOR LOW-SPEED URBAN CONDITIONS.
3. LARGER SIZES MAY BE NEEDED FOR FREEWAYS, ABOVE AVERAGE SPEEDS, AND OTHER CRITICAL LOCATIONS.
4. A NARROW, ELONGATED ARROW DESIGN IS OPTIONAL. FOR PROPER PROPORTION, SEE THE PAVEMENT MARKINGS CHAPTER OF THE "STANDARD HIGHWAY SIGNS" BOOK (SEE SECTION 1A.11)

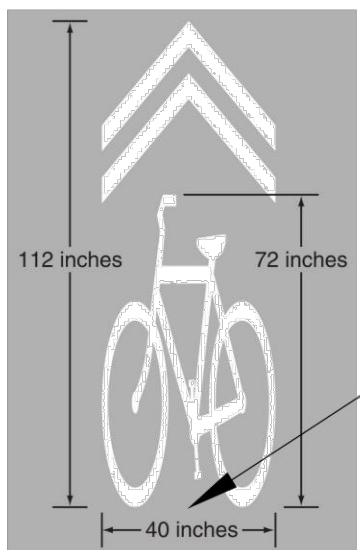
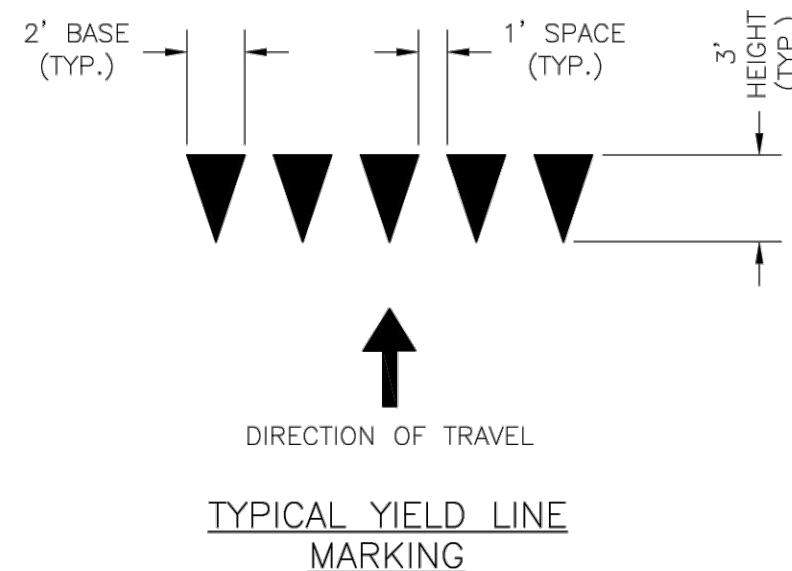
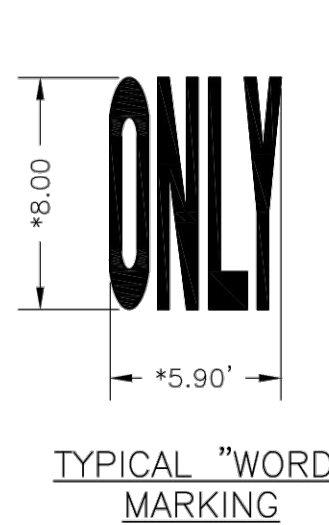
SYMBOL AND WORD MARKING DETAILS



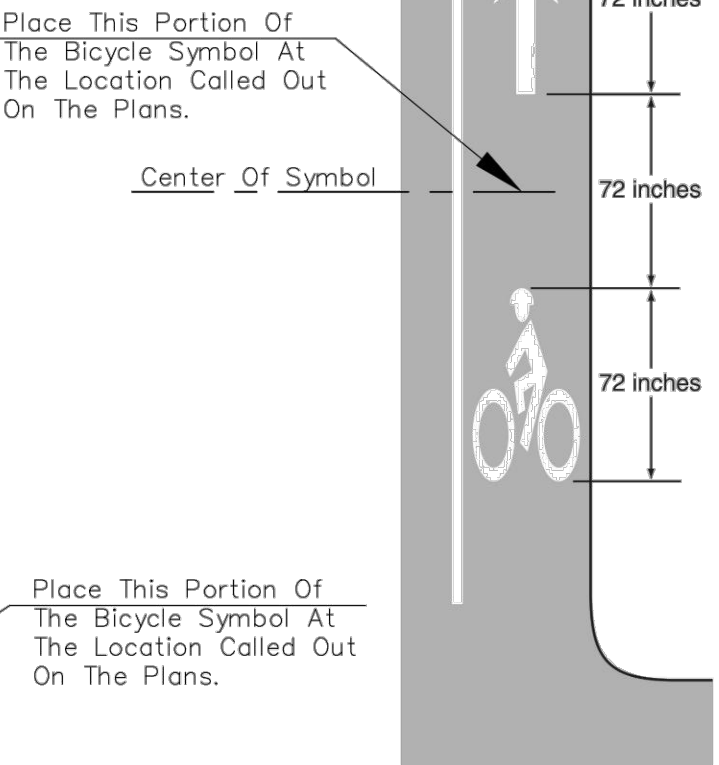
2-WAY LEFT-TURN LANE DETAIL



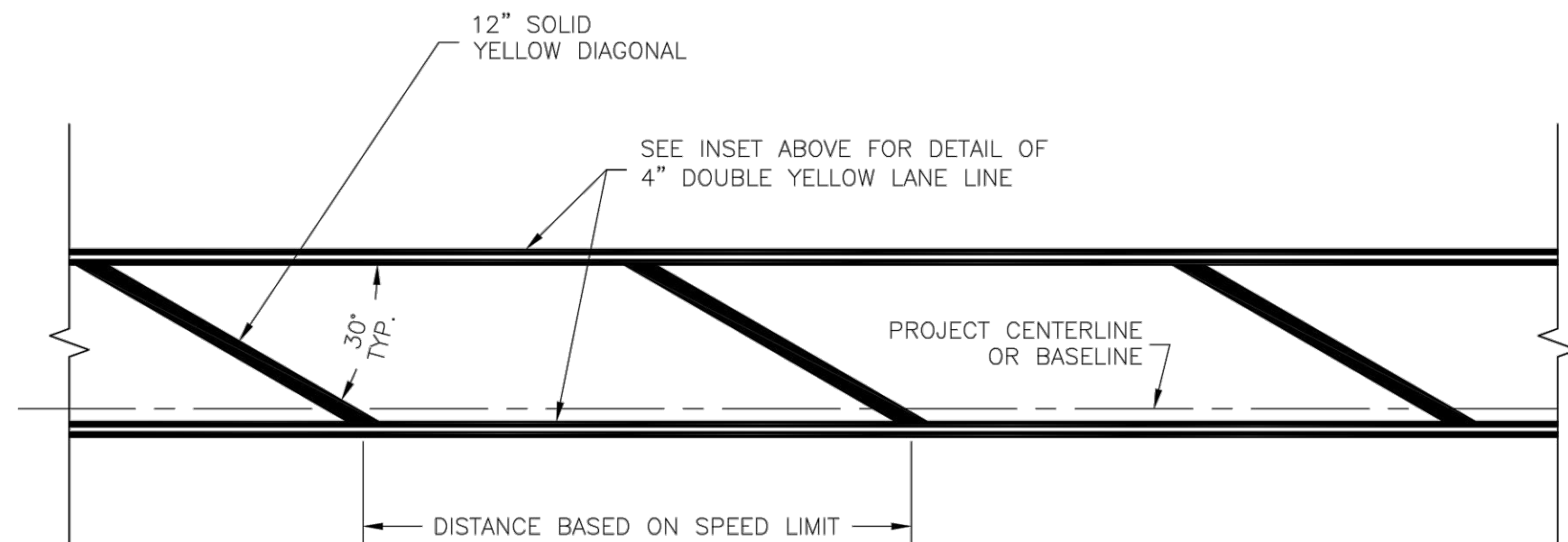
USES FOR COLD PLASTIC AND HEAT FUSED, PREFORMED, THERMOPLASTIC, PAVEMENT MARKING MATERIALS



TYPICAL SHARROW BICYCLIST SYMBOL



TYPICAL HELMETED BICYCLIST SYMBOL



STRIPED MEDIAN DETAIL

2017 EDITION

SHEET ____ OF ____

DATE	BY	REVISION
03-21-17	LJM	REPLACES ALL PREVIOUS VERSIONS OF PAVEMENT MARKING DETAILS
02-22-16	LJM	REPLACES ALL PREVIOUS VERSIONS OF PAVEMENT MARKING DETAILS
03-17-15	LJM	REPLACES ALL PREVIOUS VERSIONS OF PAVEMENT MARKING DETAILS
03-17-15	LJM	TYPICAL SHARROW BICYCLIST SYMBOL* DETAIL ADDED



CITY OF LAWRENCE, KANSAS
ENGINEERING DIVISION OF PUBLIC WORKS

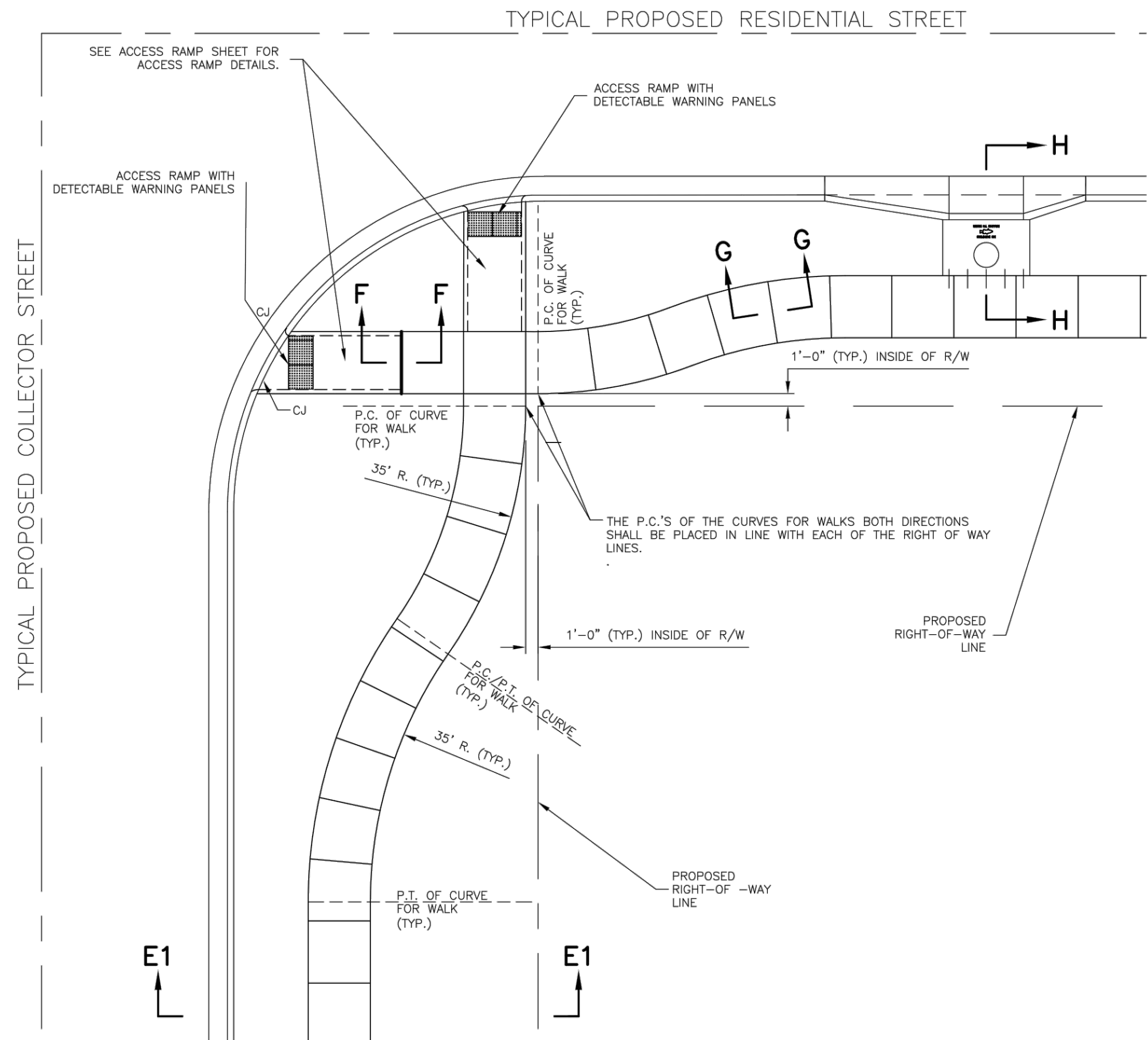


STANDARD DETAILS FOR
PAVEMENT MARKING

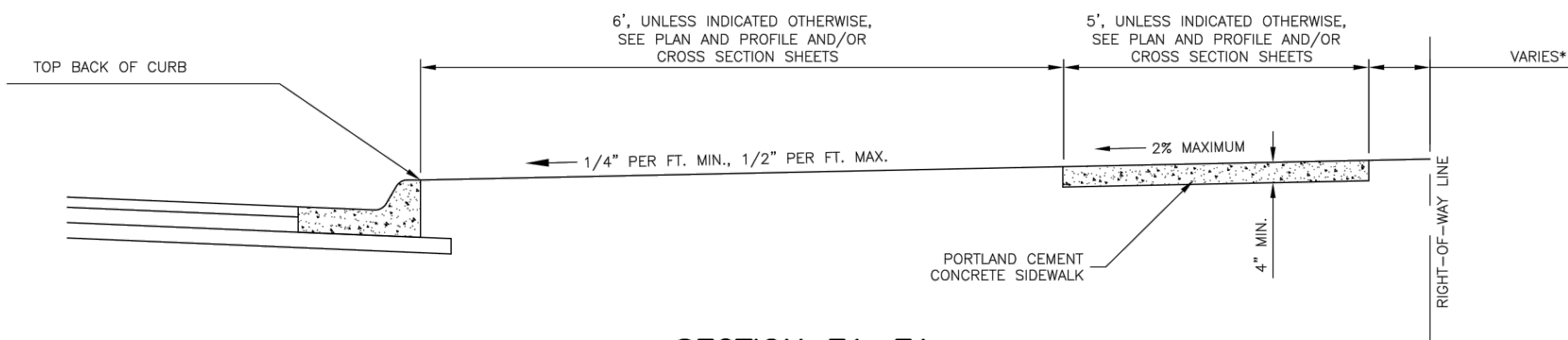
DAVID P. CRONIN
CITY ENGINEER

THOMAS M. MARKUS
CITY MANAGER

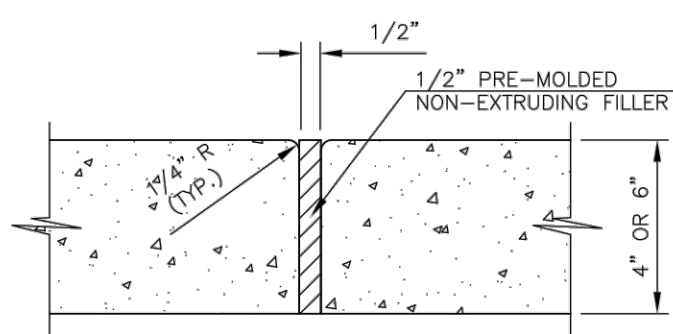
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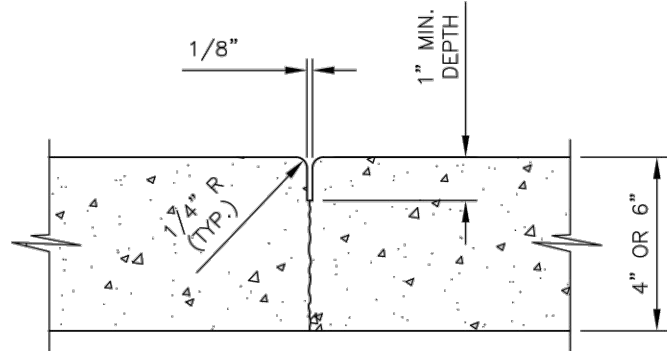
GENERAL SIDEWALK LAYOUT PLAN



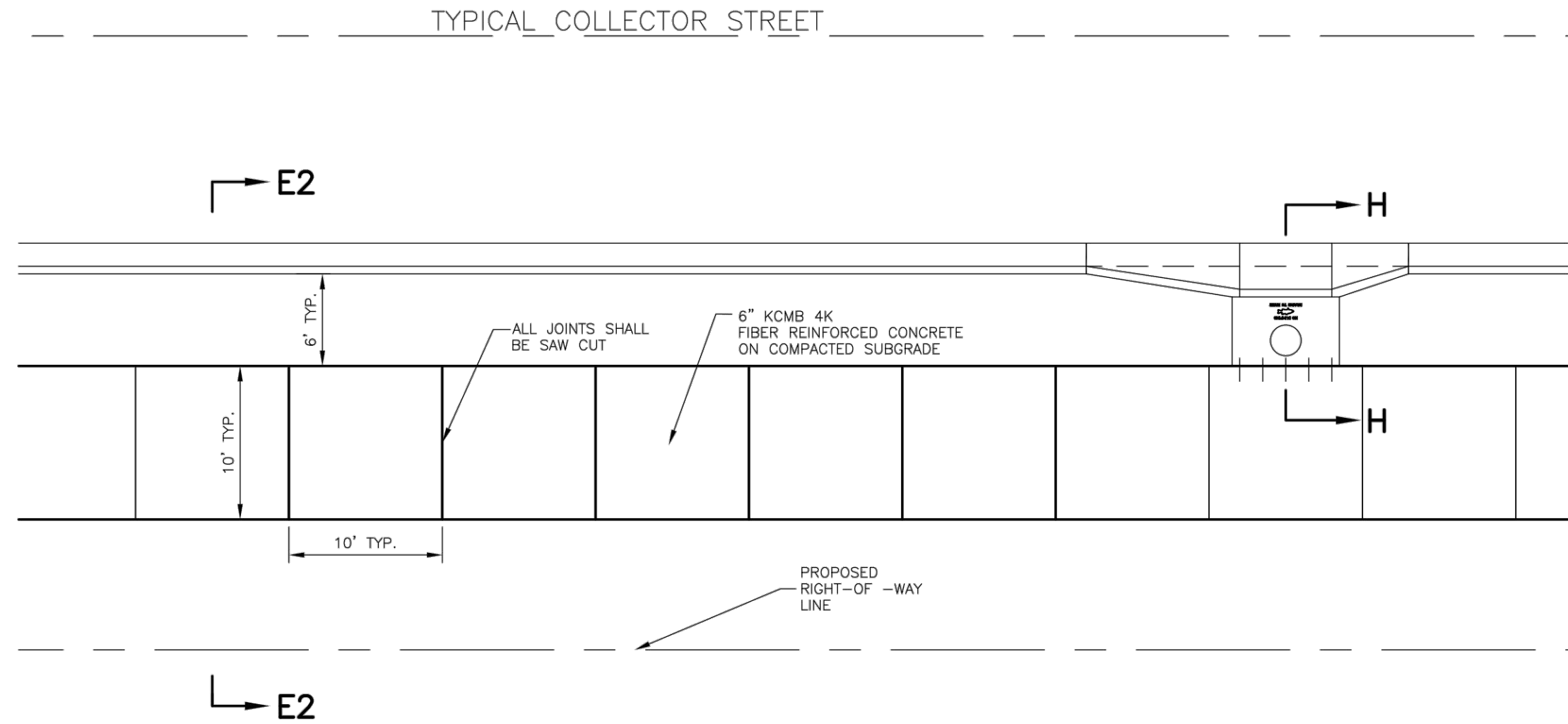
SECTION E1-E1



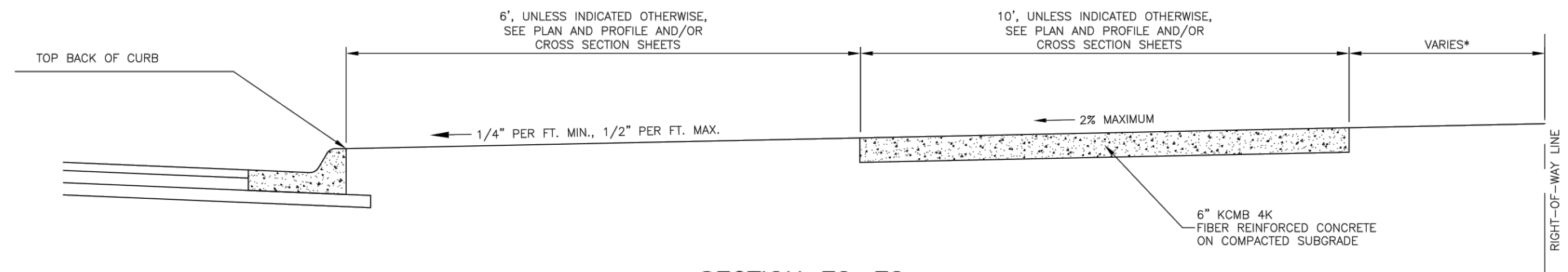
SECTION F-F
ISOLATION JOINT



SECTION G-G
CONTRACTION JOINT
(SAWED OR FORMED)



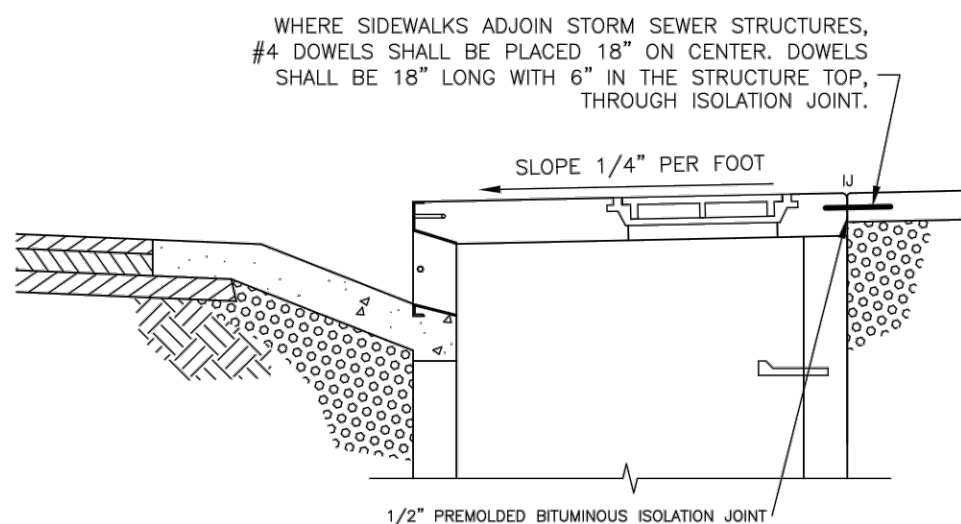
GENERAL SHARED USE PATH LAYOUT PLAN



SECTION E2-E2

SIDEWALK GENERAL NOTES

- CONSTRUCTION JOINTS SHALL BE PLACED IN 5'-0" WIDE SIDEWALKS AT A MINIMUM OF 5'-0" INTERVALS. WHEN OTHER WIDTHS OF SIDEWALK ARE USED, CONSTRUCTION JOINTS SHALL BE PLACED AS DIRECTED BY THE CITY ENGINEER OR AN AUTHORIZED REPRESENTATIVE.
- ISOLATION JOINTS SHALL BE PLACED AT ALL LOCATIONS WHERE SIDEWALK ABUTS EXISTING STRUCTURES AND AS DIRECTED BY THE CITY ENGINEER OR AN AUTHORIZED REPRESENTATIVE.
- ACCESS RAMPS SHALL BE CONSTRUCTED AT ALL LOCATIONS WHERE SIDEWALKS INTERSECT NEW STREET CONSTRUCTION AND AS OTHERWISE SHOWN ON THE PLANS.
- ALL SHARED USE PATH JOINTS SHALL BE SAW CUT.
- ALL SIDEWALKS AND RAMPS MUST BE CONSTRUCTED TO CURRENT ADA STANDARDS.



SECTION H-H
SIDEWALK TO INLET DOWELING DETAIL

2017 EDITION

SHEET _____ OF _____

DATE	BY	REVISION
03-21-17	LJM	REPLACES ALL PREVIOUS VERSIONS OF SIDEWALK DETAILS
02-22-16	LJM	REPLACES ALL PREVIOUS VERSIONS OF SIDEWALK DETAILS
03-20-08	LJM	REPLACES ALL PREVIOUS VERSIONS OF SIDEWALK DETAILS



CITY OF LAWRENCE, KANSAS
ENGINEERING DIVISION OF PUBLIC WORKS



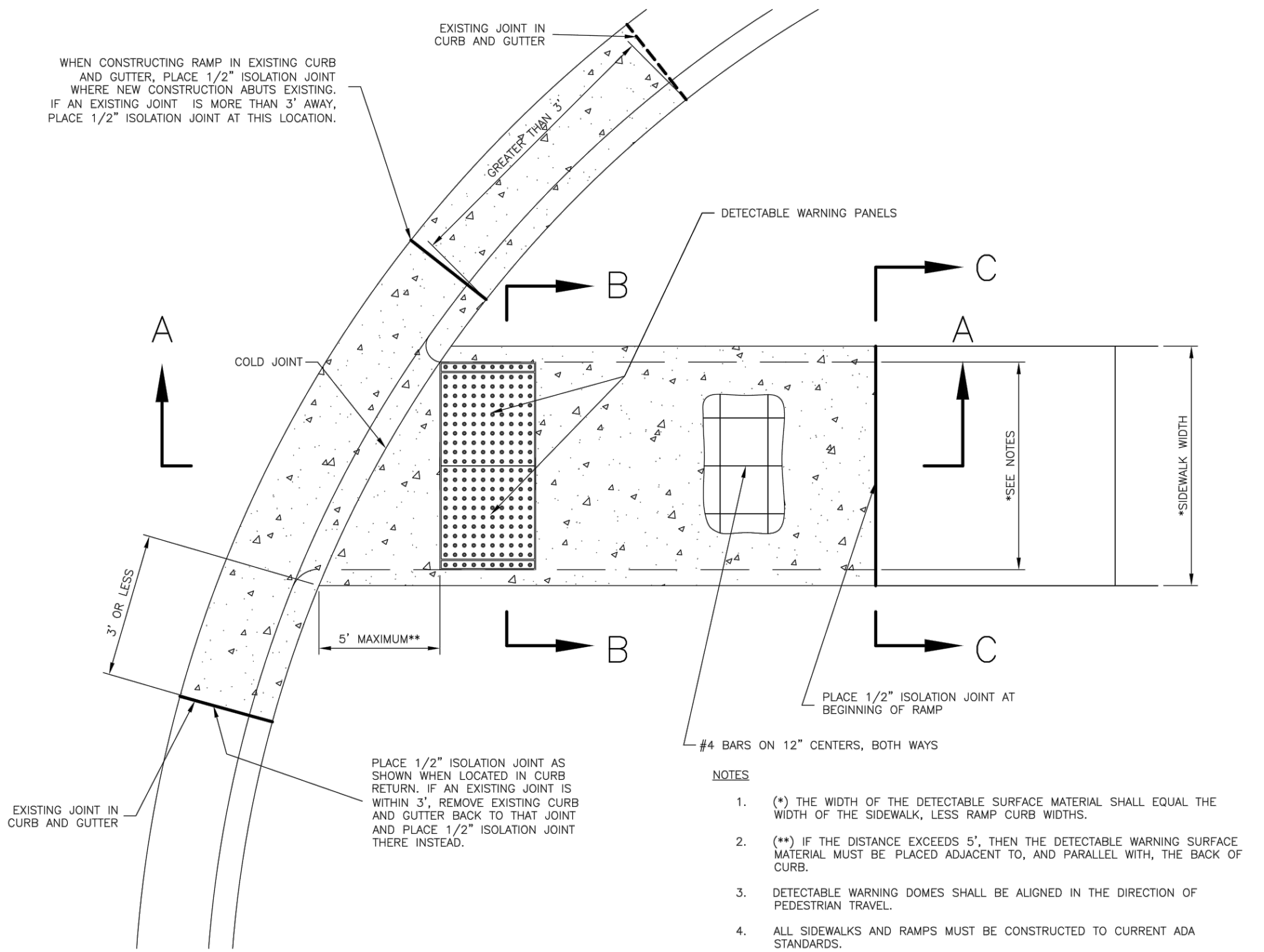
STANDARD DETAILS FOR
CONCRETE SIDEWALKS

1 OF 2

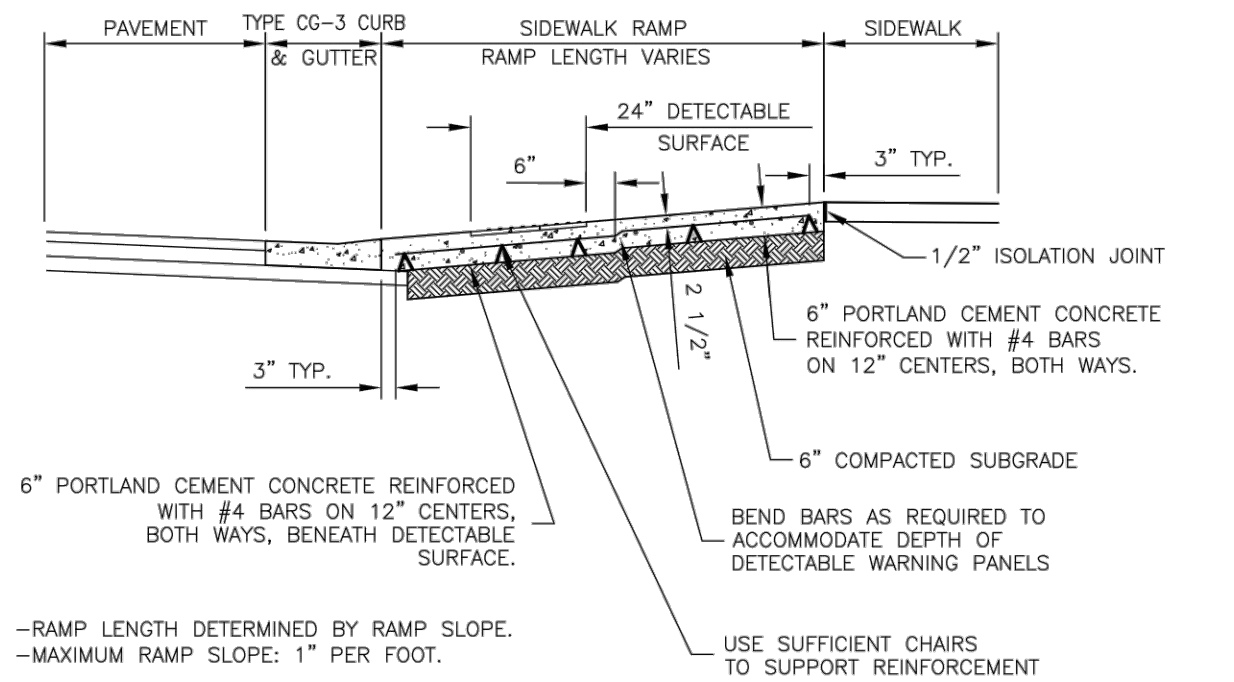
DAVID P. CRONIN
CITY ENGINEER

THOMAS M. MARKUS
CITY MANAGER

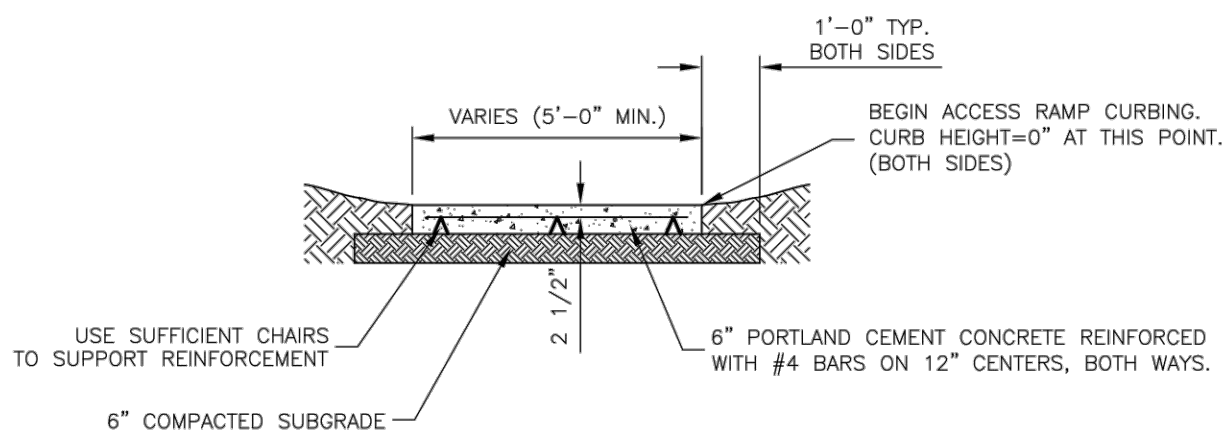
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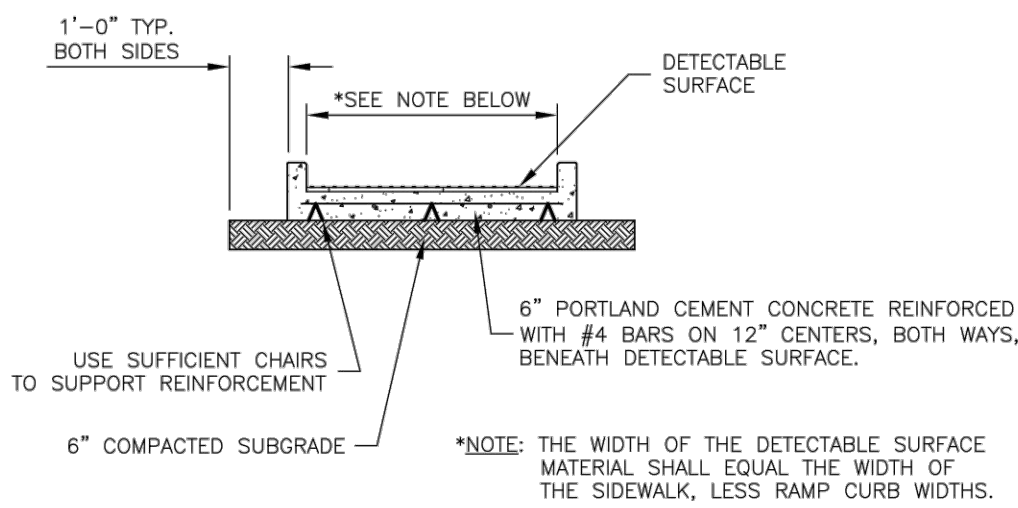
ACCESS RAMP PLAN



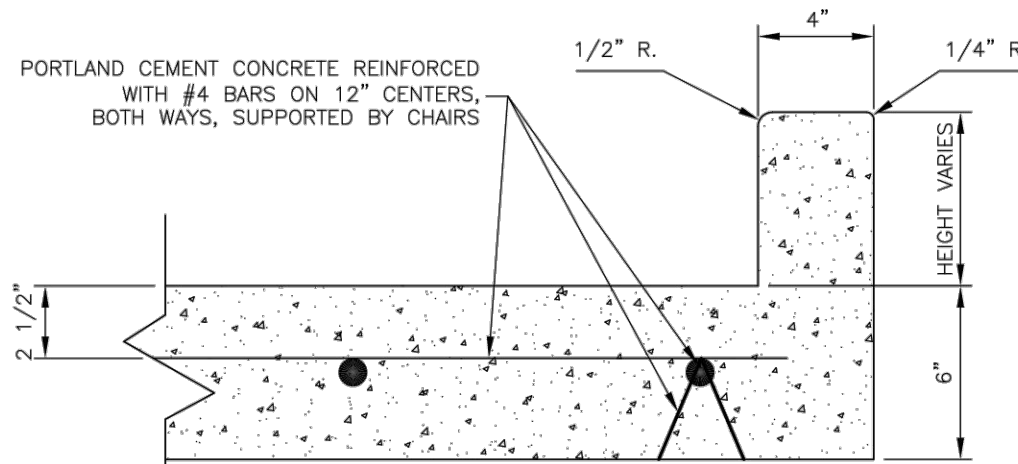
SECTION A-A



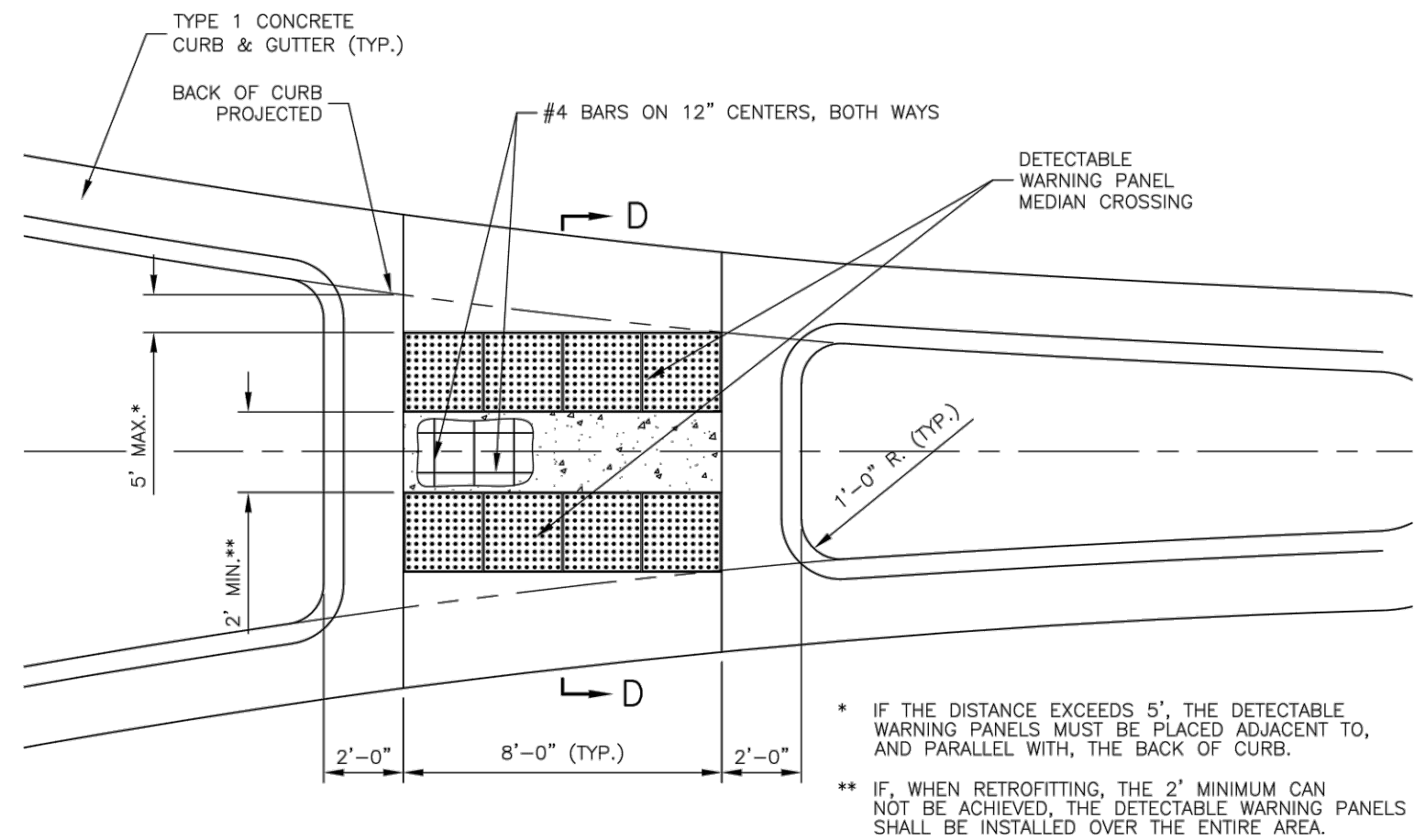
SECTION C-C



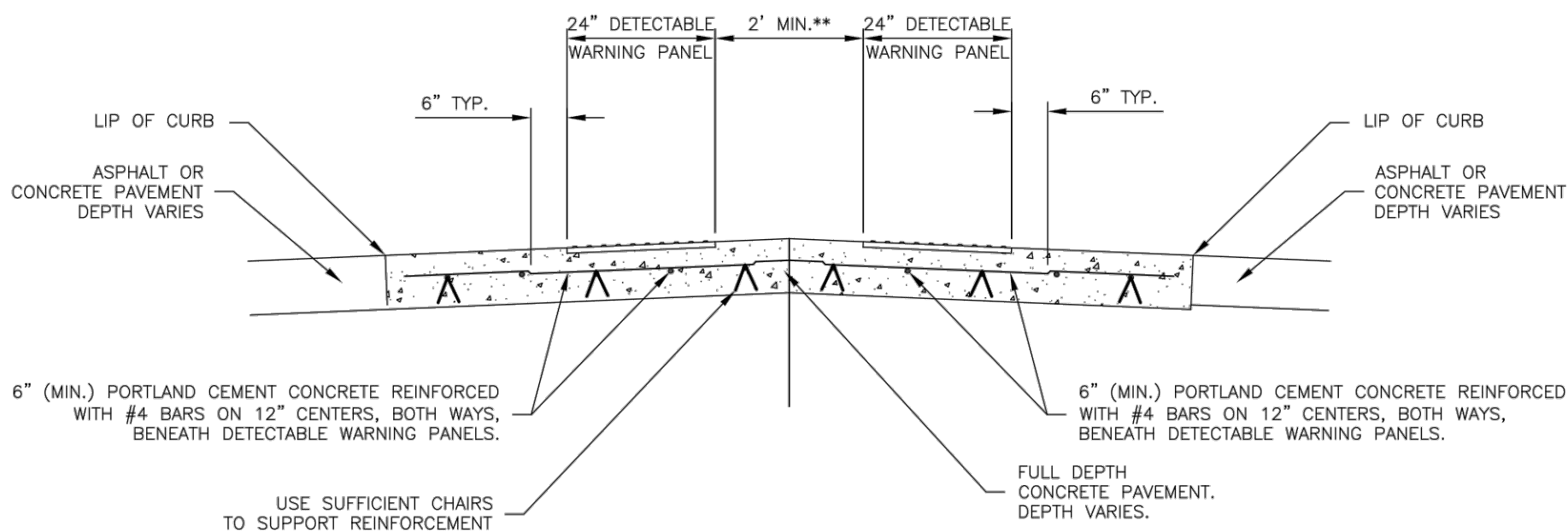
SECTION B-B



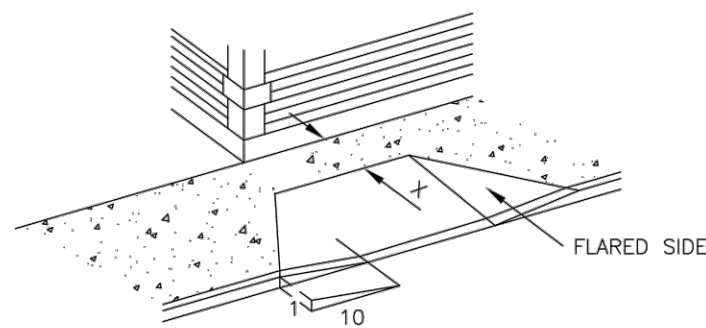
ACCESS RAMP CURB DETAIL



MEDIAN RAMP CROSSING PLAN



SECTION D-D



THIS FIGURE SHOWS A TYPICAL CURB RAMP, CUT INTO A WALKWAY PERPENDICULAR TO THE CURB FACE, WITH FLARED SIDES HAVING A MAXIMUM SLOPE OF 1:10. THE LANDING AT THE TOP, MEASURED FROM THE TOP OF THE RAMP TO THE EDGE OF THE WALKWAY OR CLOSEST OBSTRUCTION IS DENOTED AS "X". IF X, THE LANDING DEPTH AT THE TOP OF THE CURB RAMP IS LESS THAN 48", THEN THE SLOPE OF THE FLARED SIDE SHALL NOT EXCEED 1:12.

ACCESS RAMP WITH FLARED SIDES

2017 EDITION SHEET ____ OF ____

DATE	BY	REVISION
03-21-17	LJM	REPLACES ALL PREVIOUS VERSIONS OF SIDEWALK DETAILS
02-22-16	LJM	REPLACES ALL PREVIOUS VERSIONS OF SIDEWALK DETAILS
03-20-08	LJM	REPLACES ALL PREVIOUS VERSIONS OF SIDEWALK DETAILS



CITY OF LAWRENCE, KANSAS
ENGINEERING DIVISION OF PUBLIC WORKS



STANDARD DETAILS FOR
CONCRETE SIDEWALK ACCESS RAMPS

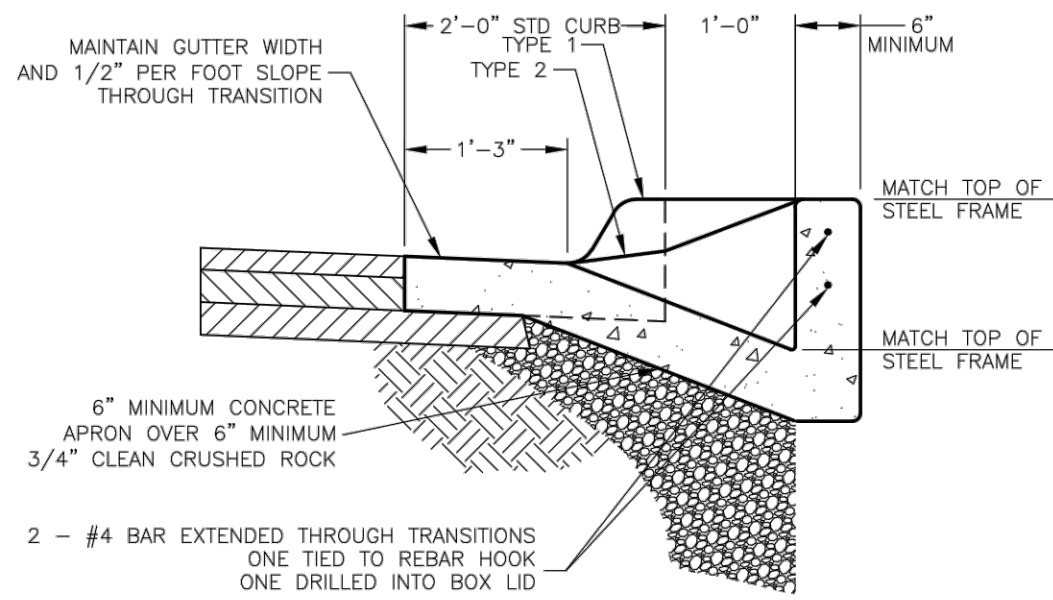
2 OF 2

DAVID P. CRONIN
CITY ENGINEER

THOMAS M. MARKUS
CITY MANAGER

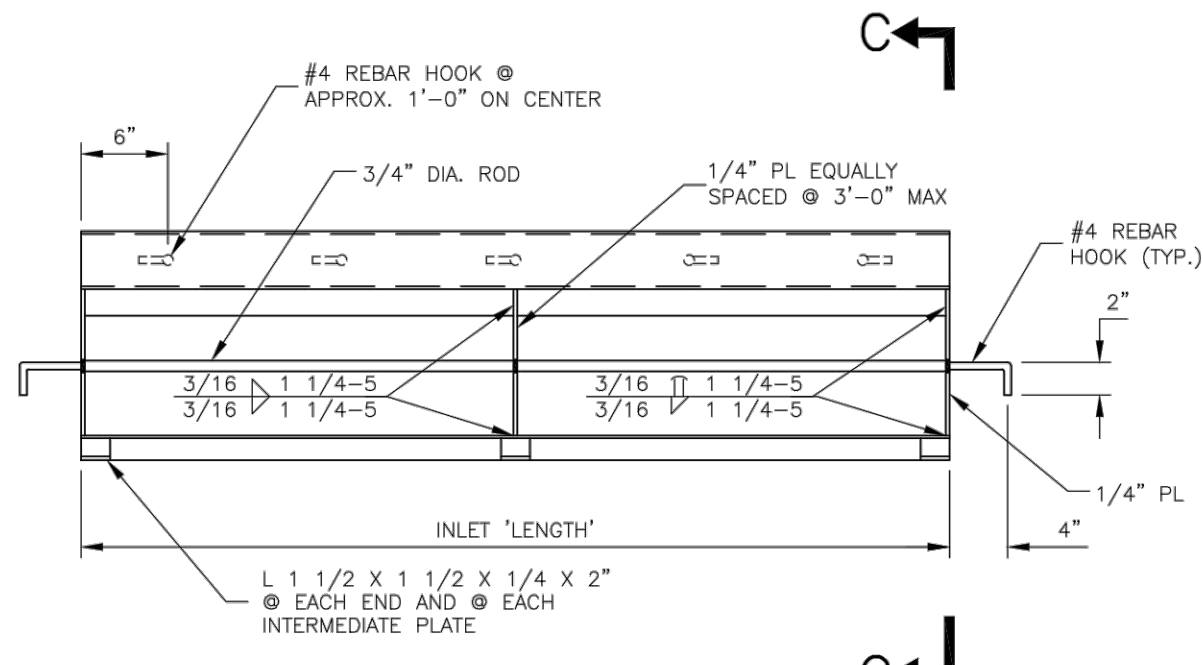
CURB INLET GENERAL NOTES

- STANDARD DRAWINGS SHALL APPLY ONLY TO STRUCTURES WITHIN THE FOLLOWING LIMITS:
A. INSIDE PLAN DIMENSIONS SHALL NOT EXCEED 40 SQUARE FEET.
B. WALL HEIGHT SHALL NOT EXCEED 10 VERTICAL FEET.
- THE MINIMUM WIDTH OF ALL STRUCTURES SHALL BE 4 FEET OR AS REQUIRED FOR PIPE CLEARANCE.
- STEPS ARE REQUIRED IN ALL STRUCTURES WITH WALL HEIGHT GREATER THAN 4 FEET.
- FRAMES, LIDS, CASTINGS, STEPS, INVERT, SUBSURFACE DRAINS, PIPE CONNECTIONS AND OTHER ITEMS SHOWN SHALL BE CONSIDERED SUBSIDIARY TO EACH STANDARD STRUCTURE.
- SUBSURFACE DRAINS ARE REQUIRED IN ALL STRUCTURES IN THE PUBLIC RIGHT-OF-WAY WITH WALL HEIGHT GREATER THAN 3 FEET. ONE DRAIN PER WALL SHALL BE INSTALLED ONLY IN WALLS WHICH ARE PERPENDICULAR TO THE STREET CENTERLINE.
- CURB INLETS WITH INSIDE PLAN DIMENSIONS EXCEEDING 25 SQUARE FEET SHALL HAVE TYPE II RING AND COVER. CURB INLETS IN PAVED AREAS SHALL HAVE TYPE II RING AND COVER.
- WHERE SIDEWALKS ADJOIN STORM SEWER STRUCTURES, #4 DOWELS SHALL BE PLACED 18" ON CENTER. DOWELS SHALL BE 18" LONG WITH 6" IN THE STRUCTURE TOP, THROUGH ISOLATION JOINT.
- CURB INLET DIMENSIONS SHALL BE STATED AS 'LENGTH' x 'WIDTH' ON ALL CONSTRUCTION NOTES.
- THE MINIMUM LENGTH OF CURB INLET OPENING SHALL BE 5 FEET.
- CURB INLET FRAME TOP CHANNEL SHALL BE FABRICATED FROM 0.15 MAX. CARBON, FORMING QUALITY, OR A36 HOT ROLLED STEEL PLATE.
- ALL FLAT PLATE AND RODS SHALL BE M1020 MERCHANT QUALITY OR A36 HOT ROLLED STEEL.
- ALL CURB INLET FRAME MATERIALS SHALL BE FREE FROM RUST AND MILL SCALE.
- ALL WELDING SHALL CONFORM TO THE PROVISIONS OF THE AWS "STRUCTURAL WELDING CODE."
- CURB INLET FRAMES SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION PER ASTM A123.
- CURB INLET FRAMES SHALL BE SLOPED TO MATCH THE STREET CENTERLINE GRADE.
- STAMPING TOOLS SHALL BE APPROVED PRIOR TO USE. A FULL SIZE FABRICATION PATTERN MAY BE OBTAINED FROM THE PUBLIC WORKS DEPARTMENT. FOR CAST-IN-PLACE INLETS, A STAMPING TOOL MAY BE BORROWED FROM THE DEPARTMENT PER AN APPROVED SCHEDULE.
- ALL DIMENSIONS AND SIDE SLOPES SHOWN WITHIN THE "TYPICAL TRENCH SECTION DETAILS" ARE TYPICAL. ANY DEVIATION FROM THESE DIMENSIONS MUST BE APPROVED BY THE PROJECT ENGINEER PRIOR TO BEGINNING THE TRENCHING WORK, OR AS SOON AS PRACTICABLE.
- FLOWABLE FILL QUANTITY IS CALCULATED BASED ON A TYPICAL TRENCH SIDE SLOPE OF 1:1. A SIDE SLOPE FLATTER THAN 1:1 (IF REQUIRED TO ENSURE STABILITY AND SAFETY OF THE TRENCHES) MUST BE APPROVED BY THE PROJECT ENGINEER IN THE FIELD PRIOR TO BEGINNING EXCAVATION FOR TRENCHES, OR AS SOON AS PRACTICABLE. THE INTENT IS TO KEEP THE FLOWABLE FILL QUANTITY TO A MINIMUM.
- FLOWABLE FILL SHALL BE PLACED TO BOTTOM OF THE PAVEMENT, STABILIZED BASE, OR GRANULAR BASE AS DIRECTED BY ENGINEER.
- CONCRETE FOR INVERT AND COLLARS SHALL MEET CITY SPECIFICATIONS SECTION 2000 - CONCRETE



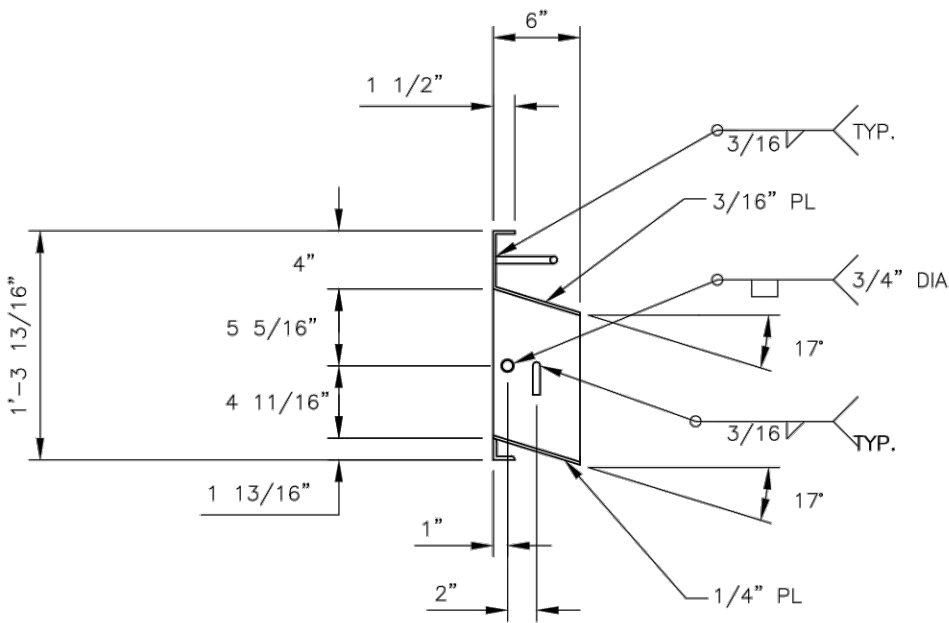
SECTION A-A

CURB TRANSITION

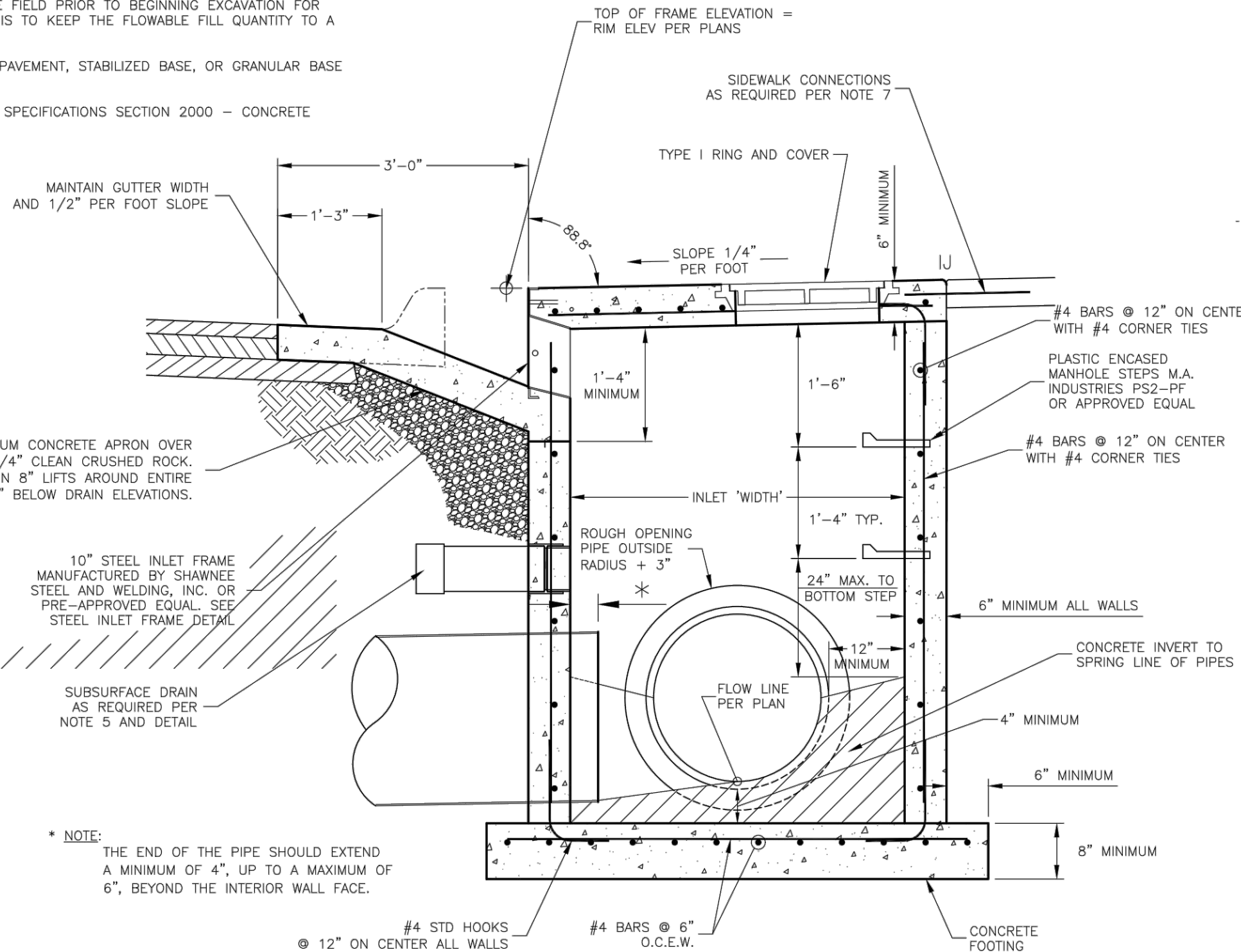


FRONT VIEW

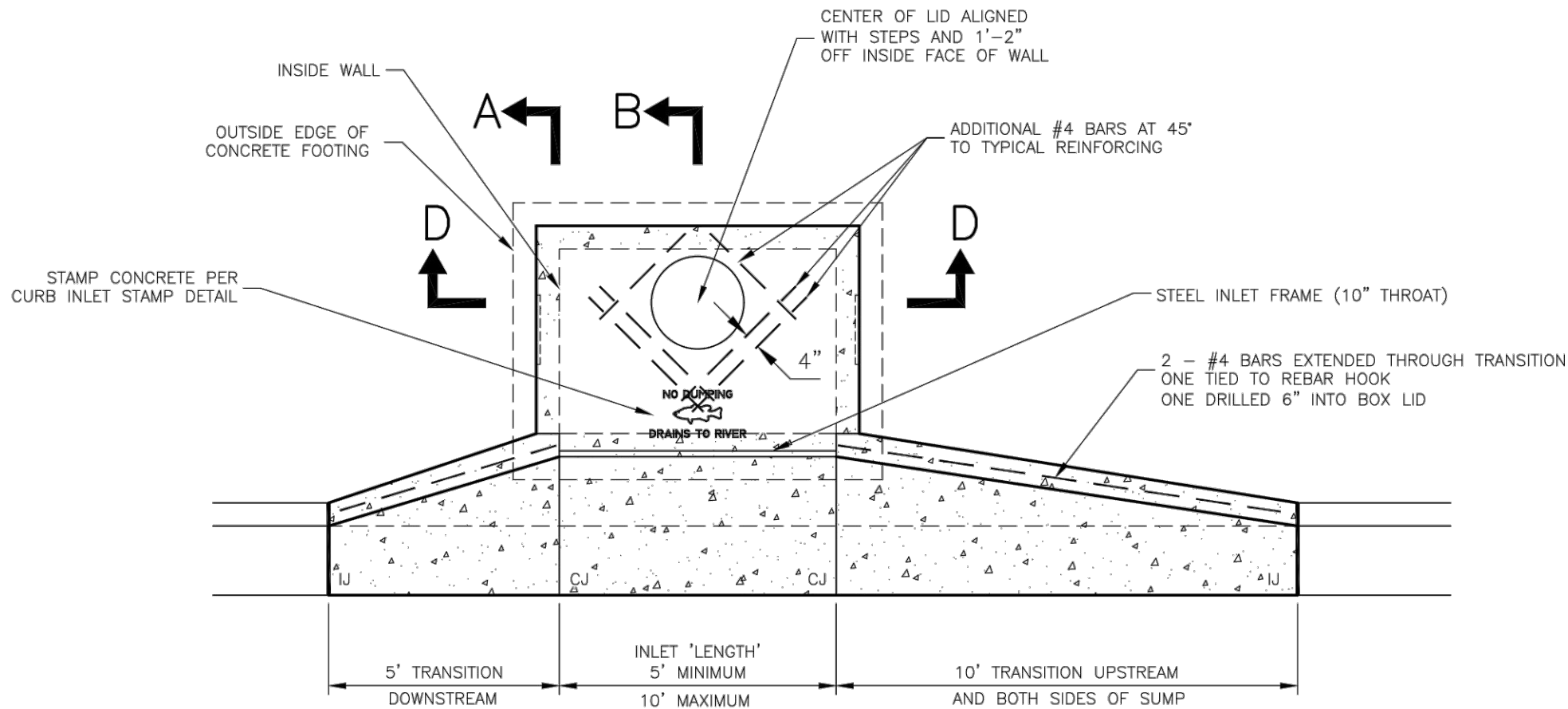
STEEL INLET FRAME



SECTION C-C

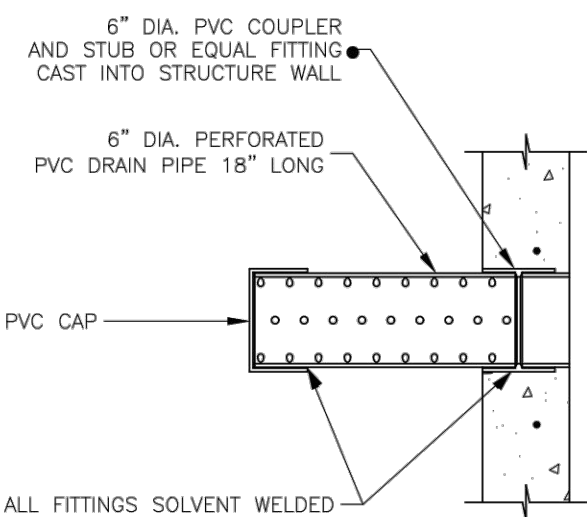


SECTION B-B



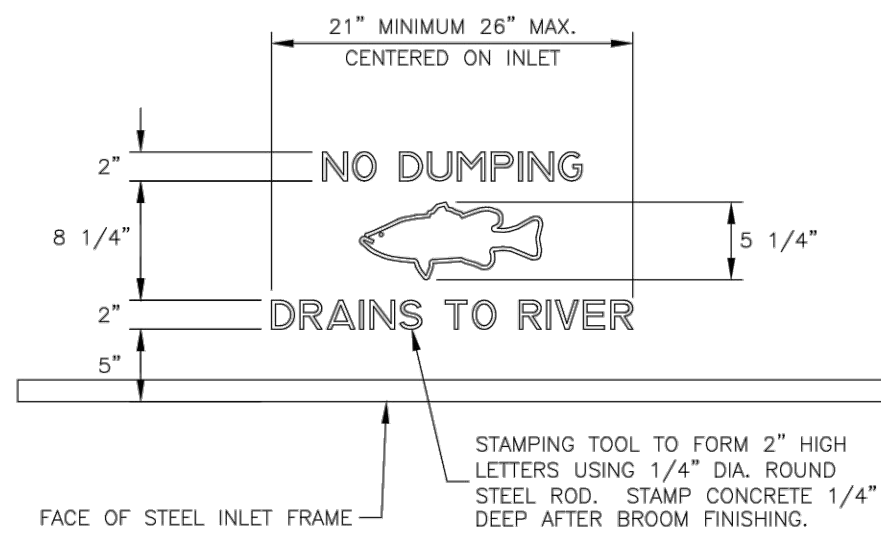
PLAN

STANDARD CURB INLET



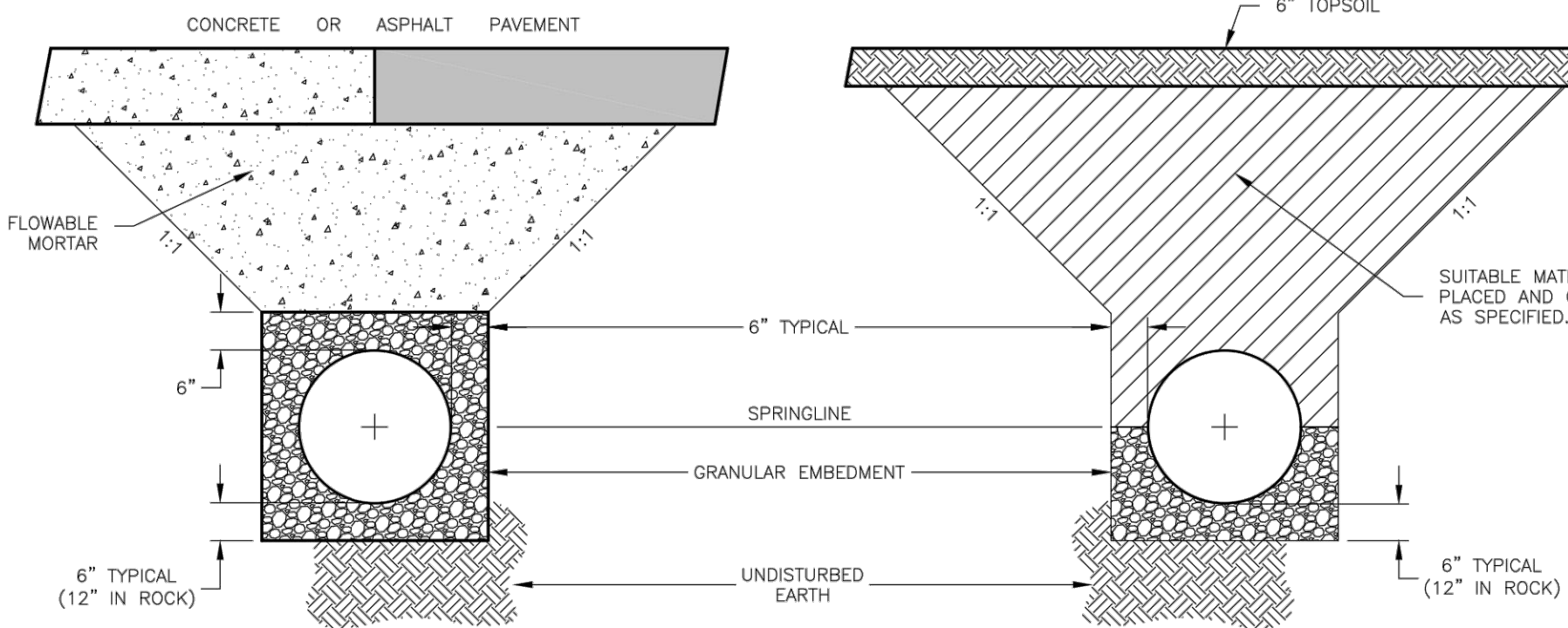
SECTION

SUBSURFACE DRAIN

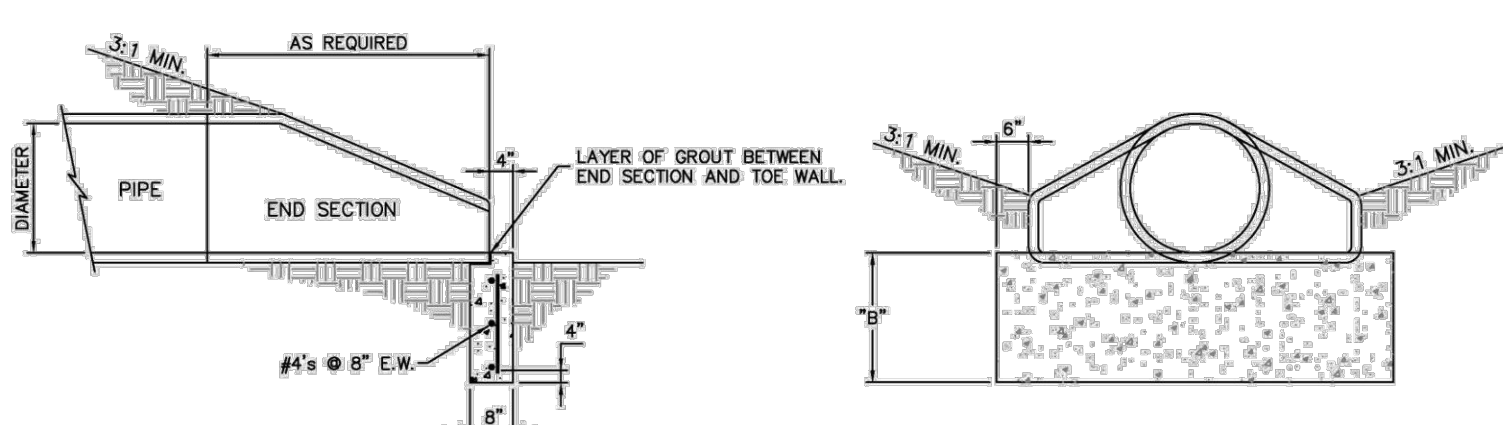


PLAN

CURB INLET STAMP



TYPICAL TRENCH SECTIONS



SIDE VIEW

FRONT VIEW

- NOTES:
- THE DEPTH OF THE TOE WALL SHALL BE PER TABLE. IF BEDROCK IS ENCOUNTERED A MINIMUM OF 12" INTO BEDROCK IS REQUIRED.
 - ALL CONCRETE SHALL BE KOMMB-4K.

TABLE		
TOE WALL DEPTH	PIPE DIAMETER	"B"
12" - 21"	18"	
24" - 48"	24"	
54" - 66"	36"	

STANDARD END SECTION

2017 EDITION

SHEET _____ OF _____

DATE	BY	REVISION
03-21-17	LJM	REPLACES ALL PREVIOUS VERSIONS OF STORM SEWER CURB INLET DETAILS
02-22-16	LJM	REPLACES ALL PREVIOUS VERSIONS OF STORM SEWER CURB INLET DETAILS
03-17-15	LJM	REPLACES ALL PREVIOUS VERSIONS OF STORM SEWER CURB INLET DETAILS
03-17-15	LJM	NOTE NO. 20 ADDED TO THE STORM SEWER CURB INLET GENERAL NOTES
03-17-15	LJM	CURB TRANSITION "SECTION A-A" REVISED
03-17-15	LJM	STANDARD CURB INLET "PLAN" VIEW REVISED



CITY OF LAWRENCE, KANSAS
ENGINEERING DIVISION OF PUBLIC WORKS



STANDARD DETAILS FOR
STORM SEWER CURB INLETS

1 OF 2

DAVID P. CRONIN
CITY ENGINEER

THOMAS M. MARKUS
CITY MANAGER

1. STANDARD DRAWINGS SHALL APPLY ONLY TO STRUCTURES WITHIN THE FOLLOWING LIMITS:
A. INSIDE PLAN DIMENSIONS SHALL NOT EXCEED 40 SQUARE FEET.
B. WALL HEIGHT SHALL NOT EXCEED 10 VERTICAL FEET.
2. THE MINIMUM WIDTH OF ALL STRUCTURES SHALL BE 4 FEET OR AS REQUIRED FOR POOL CLEARANCE.
3. STEPS ARE REQUIRED IN ALL STRUCTURES WITH WALL HEIGHT GREATER THAN 4 FEET.
4. FRAMES, LIDS, CASTINGS, STEPS, INVERT, SUBSURFACE DRAINS, PIPE CONNECTIONS AND OTHER ITEMS SHOWN SHALL BE CONSIDERED SUBSIDIARY TO EACH STANDARD STRUCTURE.
5. SUBSURFACE DRAINS ARE REQUIRED IN ALL STRUCTURES IN THE PUBLIC RIGHT-OF-WAY WITH WALL HEIGHT GREATER THAN 3 FEET. ONE DRAIN PER WALL SHALL BE INSTALLED ONLY IN WALLS WHICH ARE PERPENDICULAR TO THE STREET CENTERLINE.
6. JUNCTION BOXES WITH INSIDE PLAN DIMENSIONS EXCEEDING 25 SQUARE FEET SHALL HAVE TYPE II RING AND COVER. JUNCTION BOXES IN PAVED AREAS SHALL HAVE TYPE II RING AND COVER.
7. NO JUNCTION BOX TO BE LOCATED IN PAVEMENT WITHOUT APPROVAL OF THE CITY ENGINEER.
8. ALL FLAT PLATE AND RODS SHALL BE M1020 MERCHANT QUALITY OR A36 HOT ROLLED STEEL.
9. ALL WELDING SHALL CONFORM TO THE PROVISIONS OF THE AWS "STRUCTURAL WELDING CODE."
10. STAMPING TOOLS SHALL BE APPROVED PRIOR TO USE. A FULL SIZE FABRICATION PATTERN MAY BE OBTAINED FROM THE PUBLIC WORKS DEPARTMENT. FOR CAST-IN-PLACE INLETS, A STAMPING TOOL MAY BE BORROWED FROM THE DEPARTMENT PER AN APPROVED SCHEDULE.
11. ALL DIMENSIONS AND SIDE SLOPES SHOWN WITHIN THE "TYPICAL TRENCH SECTION DETAILS" ARE TYPICAL. ANY DEVIATION FROM THESE DIMENSIONS MUST BE APPROVED BY THE PROJECT ENGINEER PRIOR TO BEGINNING THE TRENCHING WORK, OR AS SOON AS PRACTICABLE.
12. FLOWABLE FILL QUANTITY IS CALCULATED BASED ON A TYPICAL TRENCH SIDE SLOPE OF 1:1. A SIDE SLOPE FLATTER THAN 1:1 (IF THE TRENCH IS NOT STABILIZED BY THE PRESENCE OF THE TRENCHES) MUST BE APPROVED BY THE PROJECT ENGINEER IN THE FIELD PRIOR TO BEGINNING EXCAVATION FOR TRENCHES, OR AS SOON AS PRACTICABLE. THE INTENT IS TO KEEP THE FLOWABLE FILL QUANTITY TO A MINIMUM.
13. FLOWABLE FILL SHALL BE PLACED TO BOTTOM OF THE PAVEMENT, STABILIZED BASE, OR GRANULAR BASE AS DIRECTED BY ENGINEER.
14. CONCRETE FOR INVERTS AND COLLARS SHALL MEET CITY SPECIFICATIONS SECTION 2000 - CONCRETE



* NOTE: THE END OF THE PIPE SHOULD EXTEND A MINIMUM OF 4", UP TO A MAXIMUM OF 6", BEYOND THE INTERIOR WALL FACE.

STANDARD JUNCTION BOX

SHEET _____ OF _____

DATE	BY	REVISION
03-21-17	LJM	REPLACES ALL PREVIOUS VERSIONS OF STORM SEWER JUNCTION BOX DETAILS
02-22-16	LJM	REPLACES ALL PREVIOUS VERSIONS OF STORM SEWER JUNCTION BOX DETAILS
03-17-15	LJM	REPLACES ALL PREVIOUS VERSIONS OF STORM SEWER JUNCTION BOX DETAILS
03-17-15	LJM	NOTE NO. 14 ADDED TO THE STORM SEWER JUNCTION BOX GENERAL NOTES



2 OF 2

DAVID P. CRONIN
CITY ENGINEER

THOMAS M. MARKUS
CITY MANAGER

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Last edit on: 00/00/00

Fiber Optic General Notes

- All material shall be from The City of Lawrence pre-approved materials list available at City Hall.
- All traffic control in conjunction with the fiber optic construction shall be in conformance with the Manual on Uniform Traffic Control Devices and the Lawrence Traffic Control Handbook for Street Maintenance and Construction Operations, latest revisions.
- The Contractor shall stake the locations for all service boxes to be installed. The stations and offsets provided are to the center of the fiber optic equipment. The contractor shall provide elevations. If obstructions are encountered during installation, the contractor will re-stake those locations affected by the obstruction. The city fiber optic inspector shall inspect the staking prior to any excavation/construction.
- The locations of existing underground utilities, if shown, are an approximate only and have not been independently verified. The Contractor shall be responsible for contacting all utility companies for locations of all underground lines prior to excavation and be fully responsible for any and all damages, which might occur as a result of the Contractor's failure to exactly locate and preserve any and all underground utilities.
- The City of Lawrence is on the One Call system. The contractor shall also call (785)832-3035 to obtain locates for streetlighting, traffic signals, and fiber optic conduits/cables.
- All cables in service boxes and poles shall be identified with color-coded tape as follows:

North Cable: Tape Color Code Blue
East Cable: Tape Color Code Yellow.
South Cable: Tape Color Code Purple
West Cable: Tape Color Code Red
- The contractor shall be responsible for removing existing equipment as noted and delivering all salvageable equipment to the City of Lawrence. The contractor shall contact the City of Lawrence Traffic Division to coordinate delivery (at least 24-hour advance notice shall be provided). All returned equipment shall be disassembled per the instructions of the Traffic Division of the City of Lawrence Department of Public Works (See this Sheet). The contractor shall be responsible for any damage or loss of salvageable equipment.
- Rock and shale may be encountered and thus the bid items shall reflect the extra work necessary to accomplish the installation. No additional payments ("extras") will be made for excavation of rock or shale and suitable backfill materials. All conduit trenches within rock/shale shall be backfilled with suitable material and properly compacted in accordance with the specifications.
- Conduit shall be bored (by approved methods) in those areas outside of the street improvement limits. No more than 3 (Three) conduits shall be pulled back through the same bore unless otherwise approved.
- Continuous HDPE, SCH 40 (orange) conduit (sized per plan) shall be installed between all service boxes prior to paving within the limits of the street improvements. Conduit splices between appurtenances shall not be allowed unless fusion couplings or other fusion methods are used. When more than 1 (One) conduit is installed, they shall be colored as follows: solid orange, orange with white stripe, orange with blue stripe.
- The conduit placement shall be coordinated with the paving operation, when applicable. Conduit installation and conduit connections shall be inspected and approved by the City inspector. The contractor shall pay any and all extra costs of installing conduits by alternate construction methods after pavement has been placed or for any damages to pavement that may occur during conduit installation. All trenches for conduit under proposed paved surfaces (drives, streets and sidewalks) shall be backfilled with flowable fill unless otherwise directed, to below the proposed pavement surface.
- The conduit shall be installed under underdrain pipe crossings and under the underdrain blankets. Refer to the street plans for underdrain pipe and blanket locations and appropriate details, if applicable.
- All fiber optic fusion splices shall be made at an existing service box made in the presence of the inspector for approval.
- The contractor shall take all precautions necessary to minimize the downtime of the existing systems to be modified. Any existing fiber optic system shall be maintained during construction as long as possible until the new system is installed and operating.
- Damage to any existing fiber optic equipment due to the construction shall be the responsibility of the contractor. The equipment shall be replaced or repaired (as directed by the City) with materials equal or better than the existing material.
- All existing fiber optic equipment is to be used in place (U.I.P.) unless otherwise noted in the plans.
- The contractor shall notify the City of Lawrence, Department of Public Works of the exact construction schedule so that inspection of the installation can be made.
- The contractor shall be responsible for any damage to existing underground sprinkler systems during construction. All affected pipes or fittings shall be restored to original condition and location with new materials similar to existing. All restoration work shall be acceptable to the engineer and property owner.
- All unpaved areas damaged during construction shall be restored to the original condition. Unless otherwise directed, grassy areas shall be re-sodded.
- Contractor shall use a polymer lubricating agent to facilitate conduit bores under paved streets. Failure to do so will result in a denial to retrieve bore head, in the case of loss, under any paved street by excavation methods.
- A 1c#10 AWG THHN/THWN stranded copper locating cable (red) shall be installed in all conduits.
- The ends of all conduit in service boxes shall be plugged with duct seal or spray foam.

Drop Fiber Cable Splice Details



Example How to Read These Charts

6-CT CABLE	1	2	3	4	5	6	Drop Cable & Cabinet Terminations Trunk Cable Fibers
72-CT CABLE		17	18	17	18		

← To the South To the North →

In this example, fibers 2 and 3 of the 6-CT drop cable get spliced to fibers 17 and 18 of the trunk cable heading to the south. Fibers 4 and 5 of the 6-CT drop cable get spliced to fibers 17 and 18 heading to the north. Fibers 1 and 6 of the drop cable do not get spliced to anything.

Cable Splice Details

Splice Notes

- For 12-CT Drop Cable, Do not terminate fibers 7 to 12.
- All fiber optic cable shall conform to the EIA/TIA color coding according to the TIA/EIA-598 specifications, optical fiber cable color coding.
- The fiber numbers shall be followed during splicing/terminating using this industry standard color coding scheme. Some fiber optic cable will vary by the number of fibers per buffer tube with either 6 or 12 fibers per buffer tube being the industry standard.

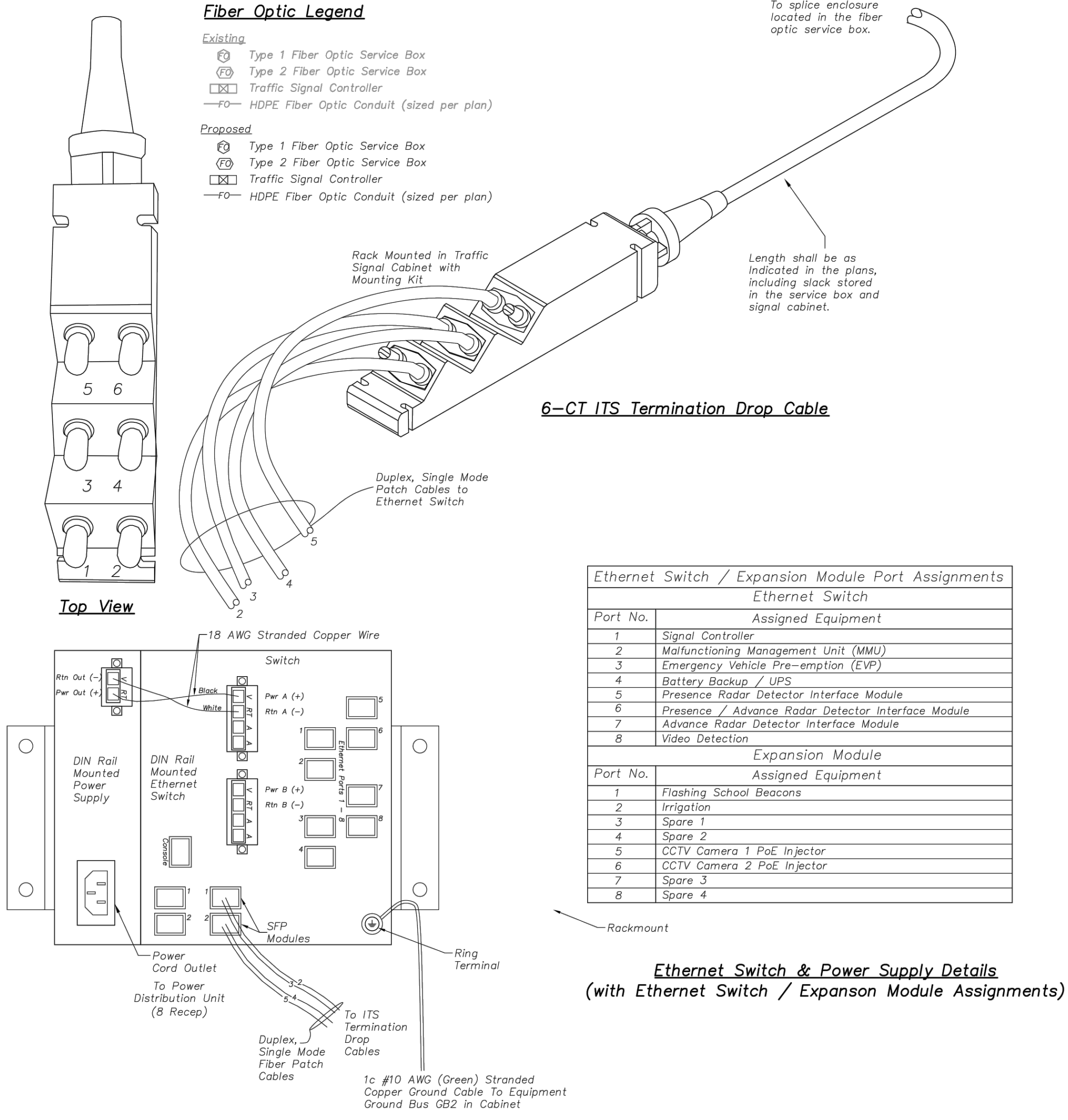
Fiber Optic Legend

Existing

- Type 1 Fiber Optic Service Box
- Type 2 Fiber Optic Service Box
- Traffic Signal Controller
- HDPE Fiber Optic Conduit (sized per plan)

Proposed

- Type 1 Fiber Optic Service Box
- Type 2 Fiber Optic Service Box
- Traffic Signal Controller
- HDPE Fiber Optic Conduit (sized per plan)



Ethernet Switch & Power Supply Details
(with Ethernet Switch / Expanson Module Assignments)

Instructions for Disassembly and Return of Salvaged Fiber Optic Equipment

The following is a list of fiber optic equipment which shall be salvaged and returned to the City of Lawrence, unless otherwise instructed by the inspector. The city maintains the first right of refusal of any of the equipment listed. The project inspector will make an on-site assessment to determine if the equipment should be salvaged or disposed. Any equipment that will not be salvaged shall become the property of the contractor.

- All Ethernet switches designated to be removed or replaced shall be removed from the signal cabinet and returned. All Ethernet switches mounted with a 19" rackmount kit and an AC power converter shall be returned with all items still attached to the rackmount kit. All cables shall be disconnected from the unit.
- All Ethernet video encoders shall be unplugged, all cables disconnected, and returned.
- All ITS Termination Drop Cables shall be disconnected at the splice enclosure located in the service box and removed from the conduit back to the control center cabinet. If the lead-in cable cannot be removed from the conduit without damaging, the item should be discarded. All patch cables shall be removed and discarded. The lead-in cable shall be neatly coiled and taped and termination caps re-installed before returning.
- All terminal servers shall be disconnected and returned.
- Splice enclosures not designated to be reused shall be removed and returned. Existing fiber optic cables shall be cut near the end of the enclosure. It is not necessary to open the enclosure and remove abandoned cable.
- All service boxes and lids shall be removed and returned if in good condition.

2017 EDITION

SHEET _____ OF _____

DATE	BY	REVISION
03-21-17	LJM	NEW STANDARD DETAIL



CITY OF LAWRENCE, KANSAS
ENGINEERING DIVISION OF PUBLIC WORKS

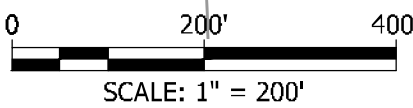


STANDARD DETAILS FOR
FIBER OPTIC SPLICING AND GENERAL NOTES

1 OF 4

DAVID P. CRONIN
CITY ENGINEER

THOMAS M. MARKUS
CITY MANAGER



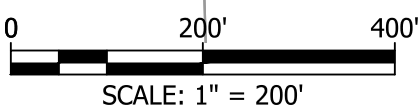
FIELD CHECK PLANS

32

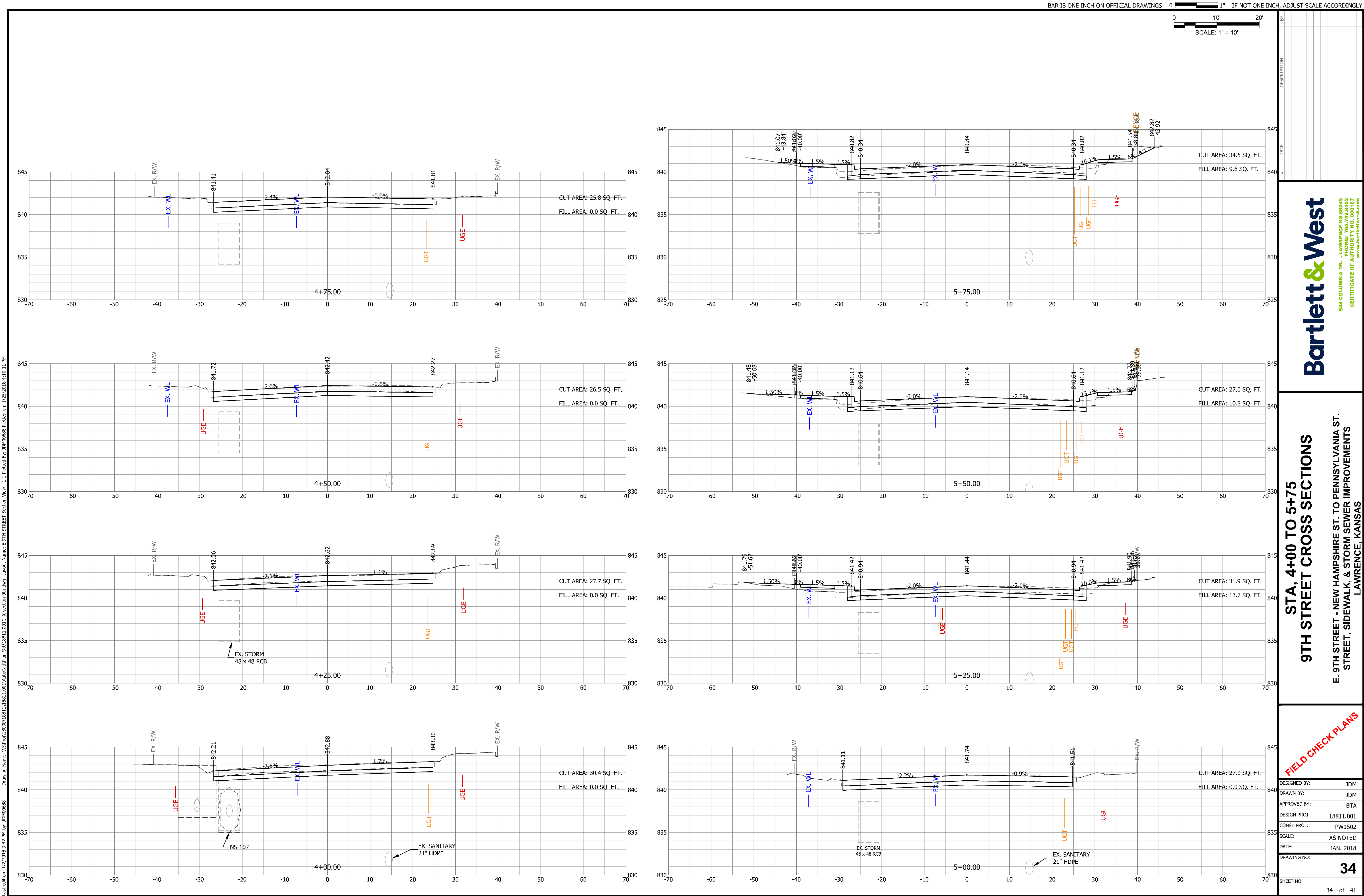
32 of 41

544 COLUMBIA DR. - LAWRENCE KS 66049
PHONE: 785.749.9452
www.bartlettwest.com

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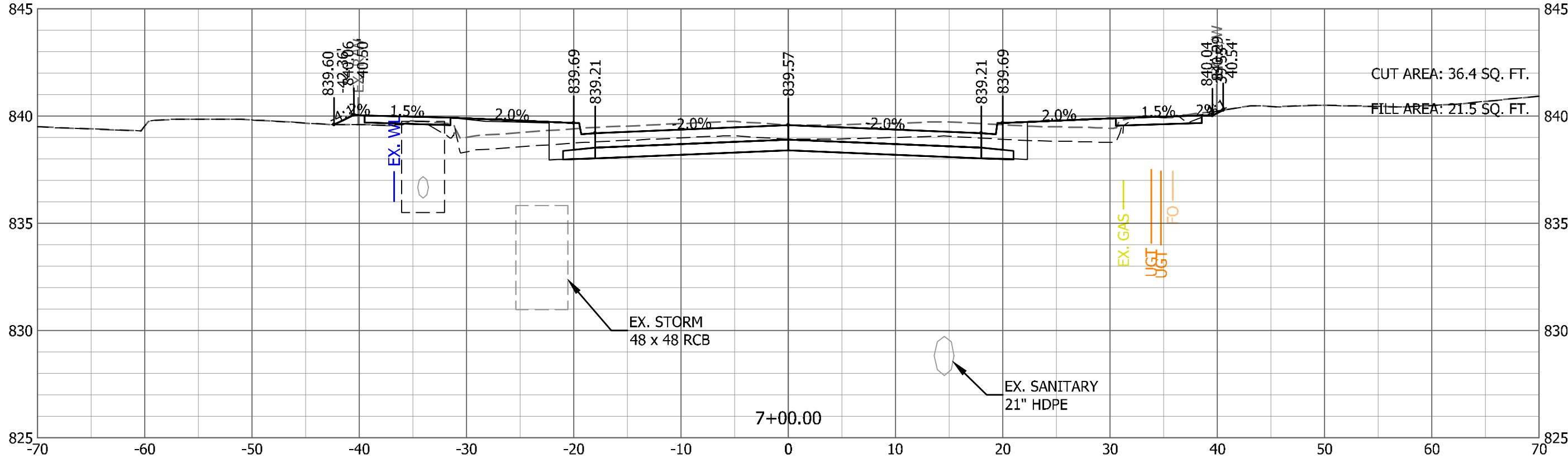
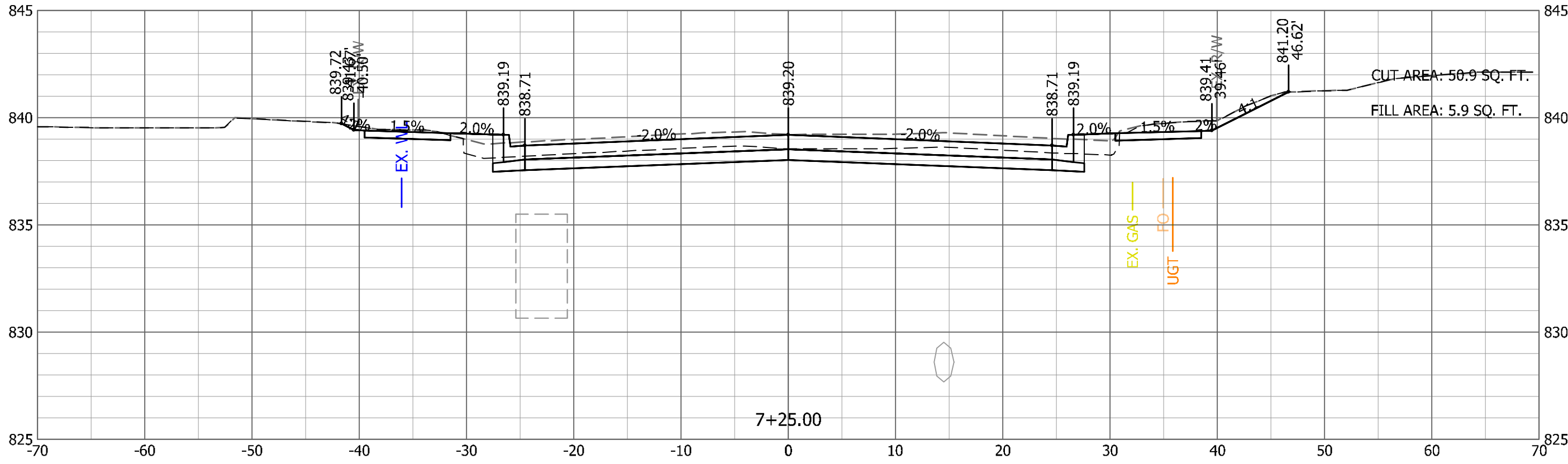
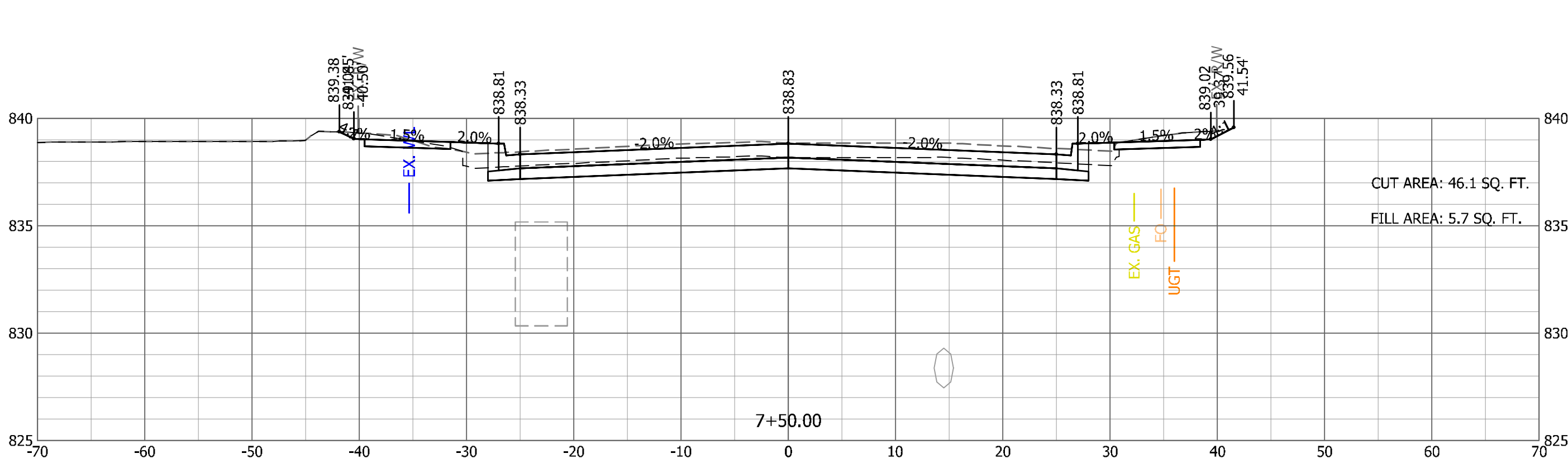
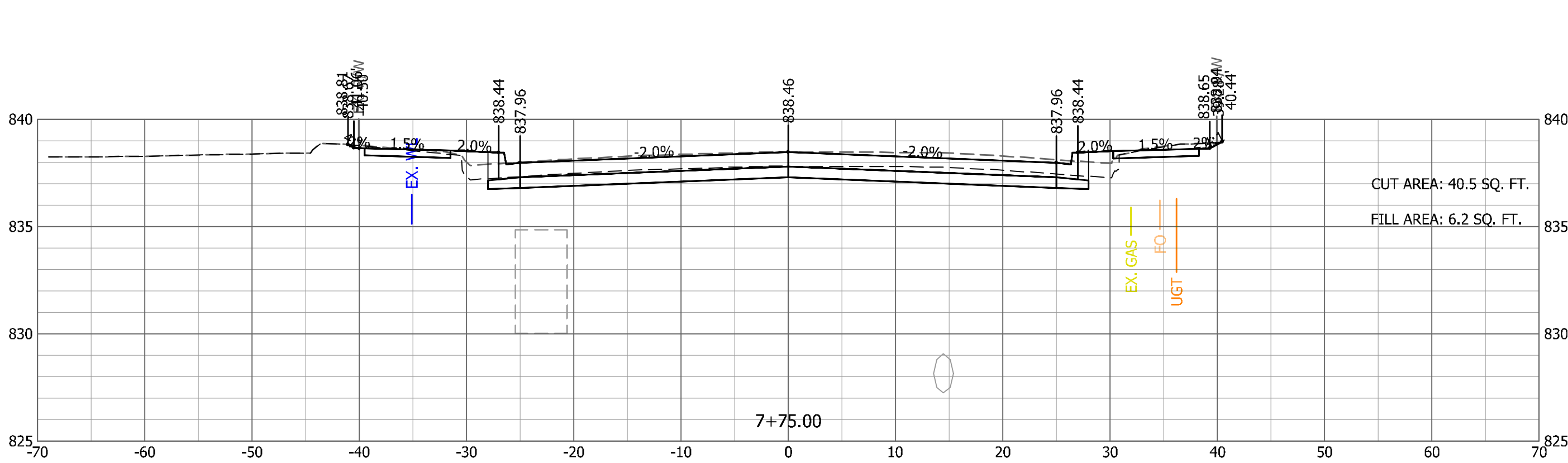
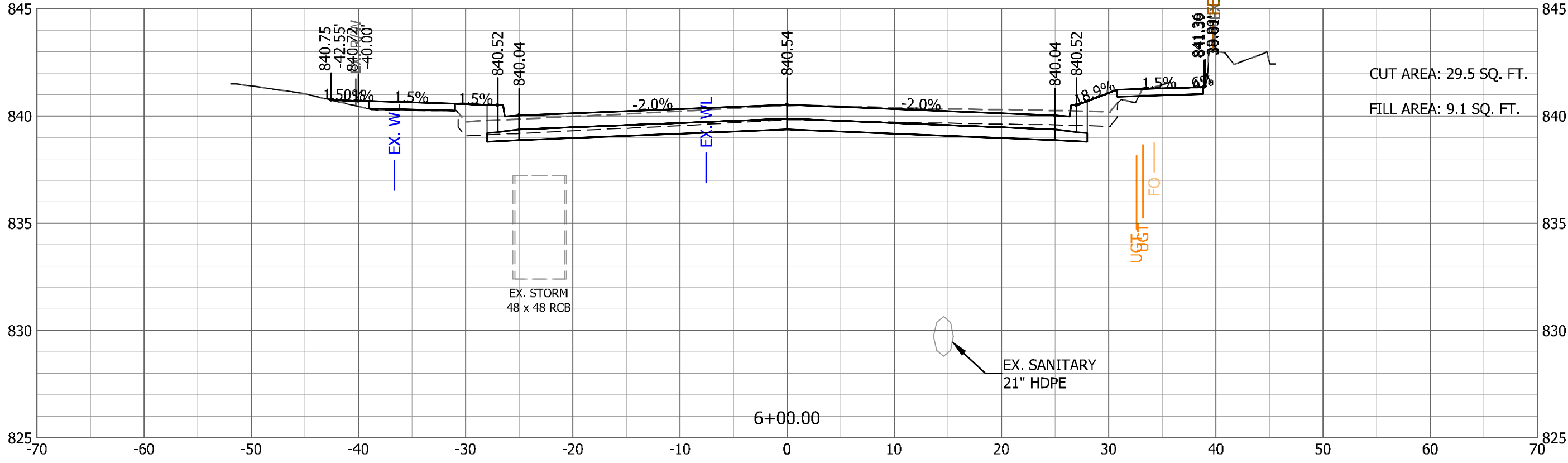
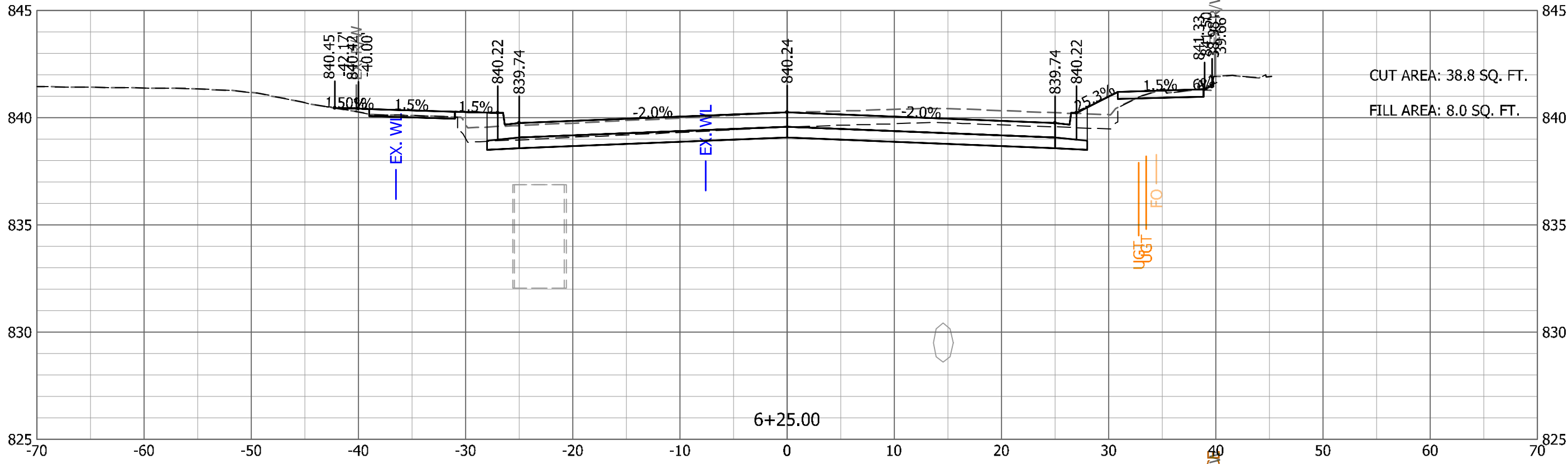
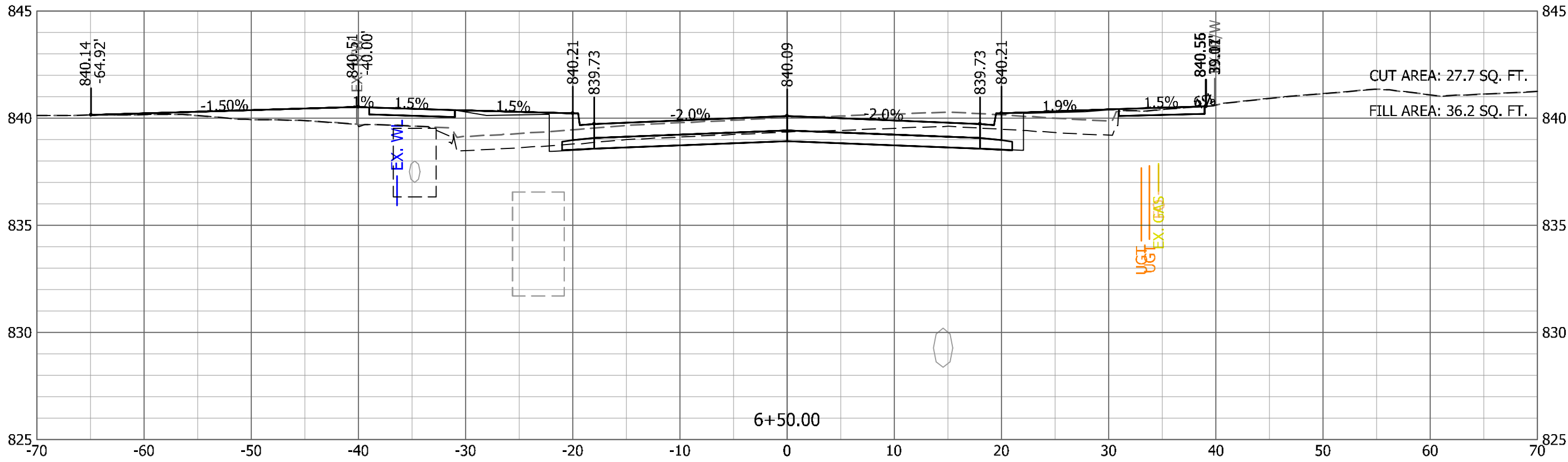
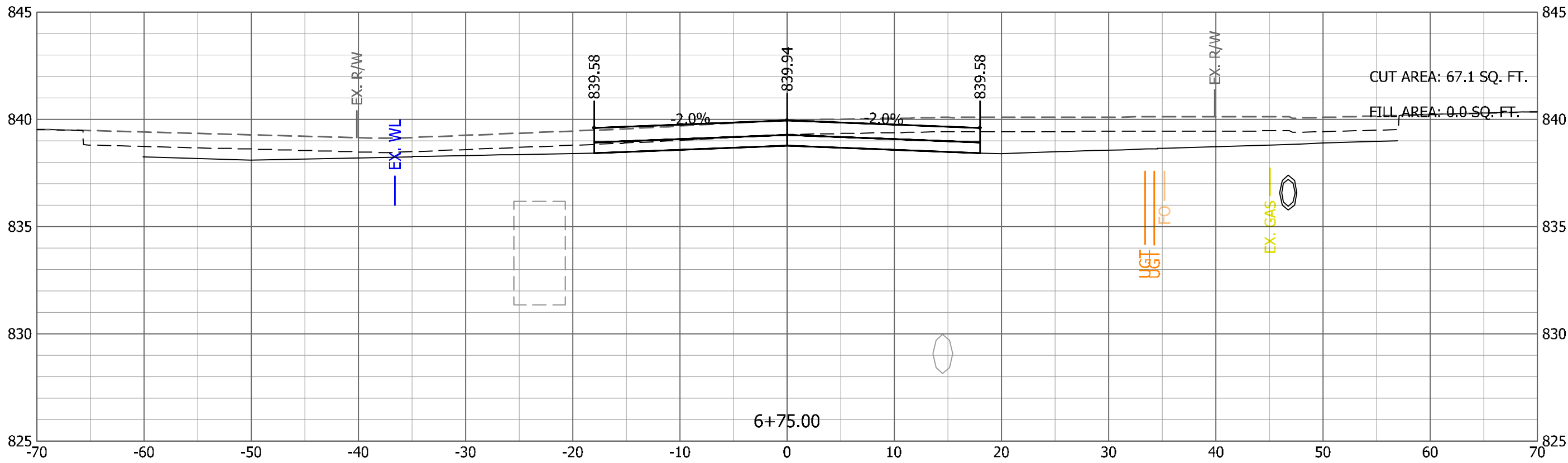
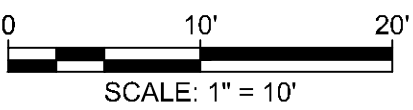


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Last edit on: 1/2/2018 3:42 PM by: JDM0688



Drawing Name: W:\Proj\18000\18811.001\AutoCad\Plan Set\18811.001C_X-section-9th.dwg Layout Name: E 9TH STREET-Section View - L2 Plotted By: JDM0688 Plotted on: 1/25/2018 4:10:19 PM
Last edit on: 1/2/2018 3:42 PM by: JDM0688

BAR IS ONE INCH ON OFFICIAL DRAWINGS. 0 1" IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.



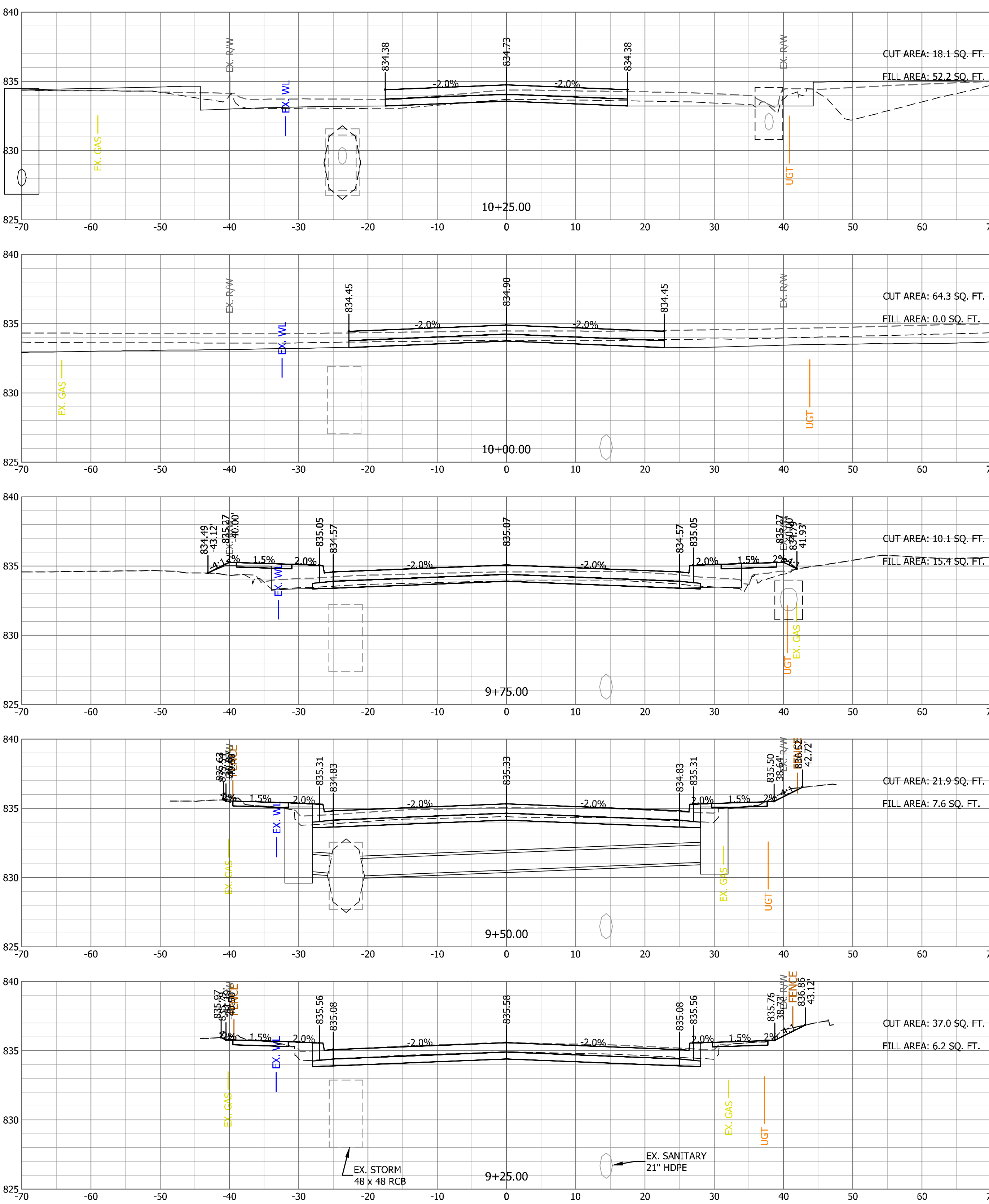
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STA. 6+00 TO 7+75
9TH STREET CROSS SECTIONS
E. 9TH STREET - NEW HAMPSHIRE ST. TO PENNSYLVANIA ST.
STREET, SIDEWALK, & STORM SEWER IMPROVEMENTS
LAWRENCE, KANSAS

FIELD CHECK PLANS

DESIGNED BY:	JDM
DRAWN BY:	JDM
APPROVED BY:	BTA
DESIGN PROJ:	18811.001
CONST PROJ:	PW1502
SCALE:	AS NOTED
DATE:	JAN. 2018
DRAWING NO:	
SHEET NO:	35

[illegible]

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STA. 8+00 TO 10+25
9TH STREET CROSS SECTIONS

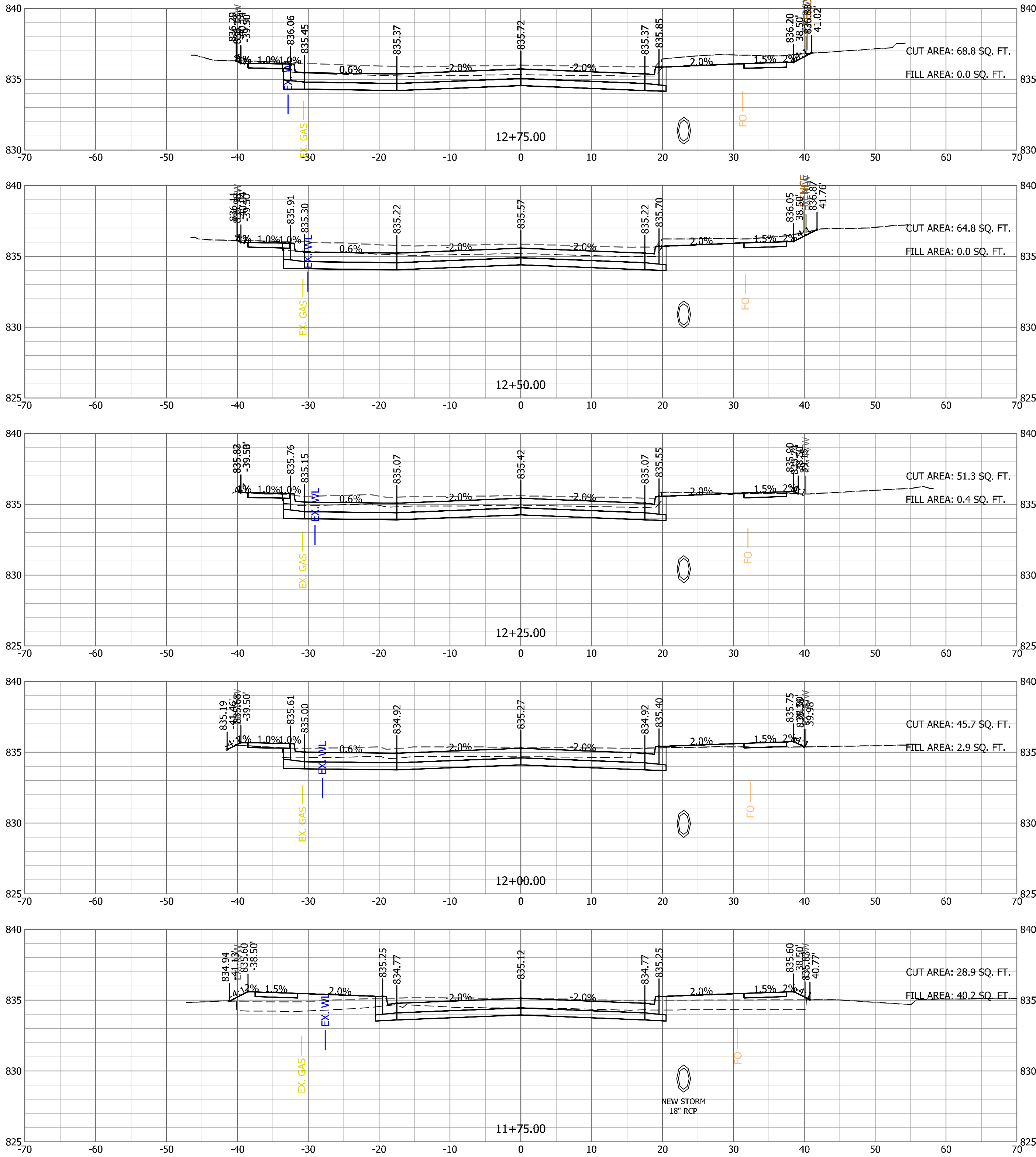
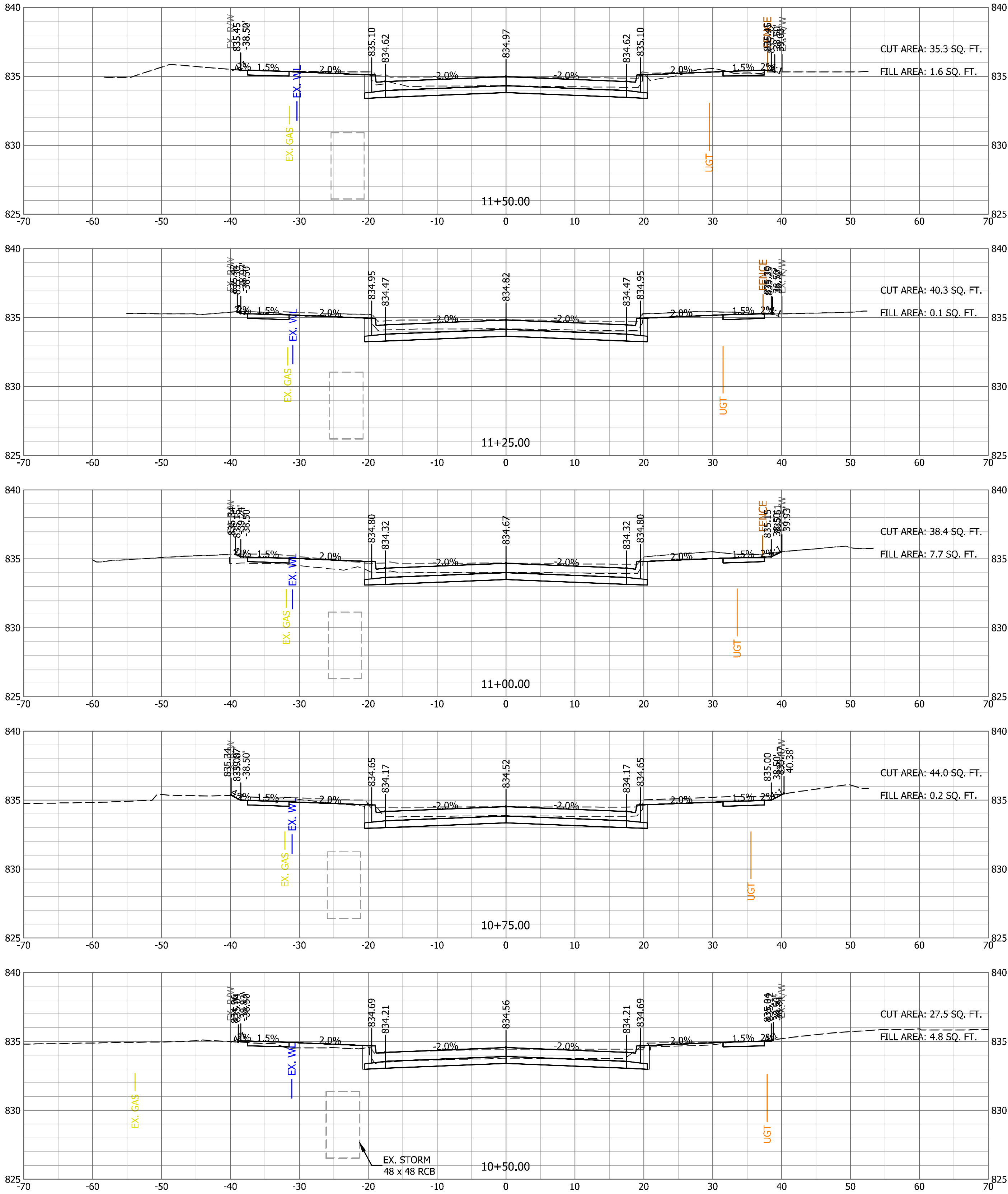
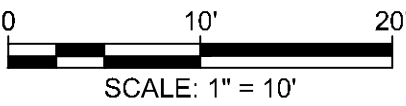
**E. 9TH STREET - NEW HAMPSHIRE ST. TO PENNSYLVANIA ST.
STREET, SIDEWALK, & STORM SEWER IMPROVEMENTS
LAWRENCE, KANSAS**

FIELD CHECK PLANS

DESIGNED BY:	JDM
DRAWN BY:	JDM
APPROVED BY:	BTA
DESIGN PROJ:	18811.001
CONST PROJ:	PW1502
SCALE:	AS NOTED
DATE:	JAN. 2018
DRAWING NO:	36
SHEET NO:	

Drawing Name: W:\Proj\18000\18811\18811.001\AutoCad\Plan Set\18811.001_C-section-9th.dwg Layout Name: E 9TH STREET-Section View - L4 Plotted By: JDM0688 Plotted on: 1/25/2018 4:10:36 PM
Last edit on: 1/2/2018 3:42 PM by: JDM0688

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DESIGNED BY: JDM

DRAWN BY: JDM

APPROVED BY: BTA

DESIGN PROJ: 18811.001

CONST PROJ: PW1502

SCALE: AS NOTED

DATE: JAN. 2018

DRAWING NO:

SHEET NO:

37

37 of 41

DESCRIPTION

DATE

#

STA. 10+50 TO 13+25

9TH STREET CROSS SECTIONS

E. 9TH STREET - NEW HAMPSHIRE ST. TO PENNSYLVANIA ST.

STREET, SIDEWALK, & STORM SEWER IMPROVEMENTS

LAWRENCE, KANSAS

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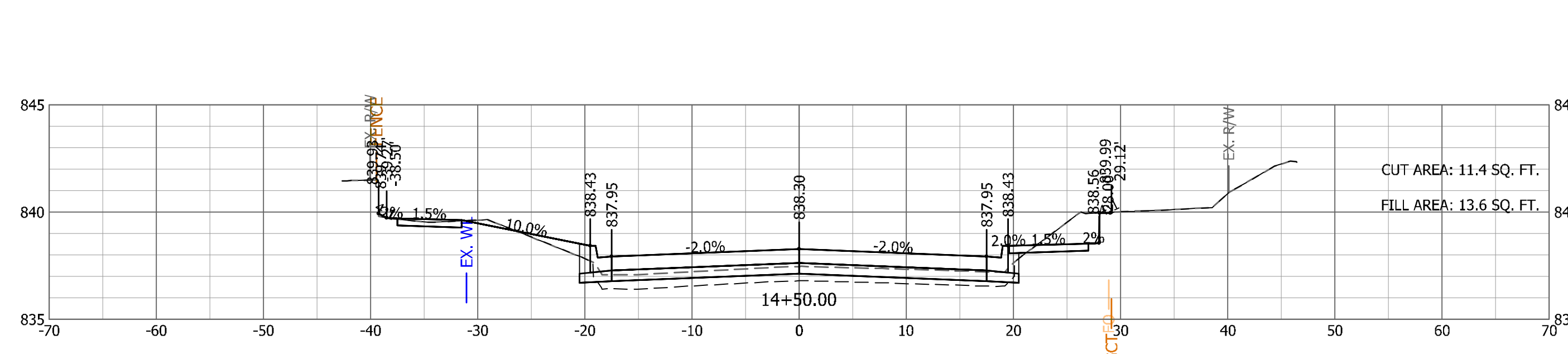
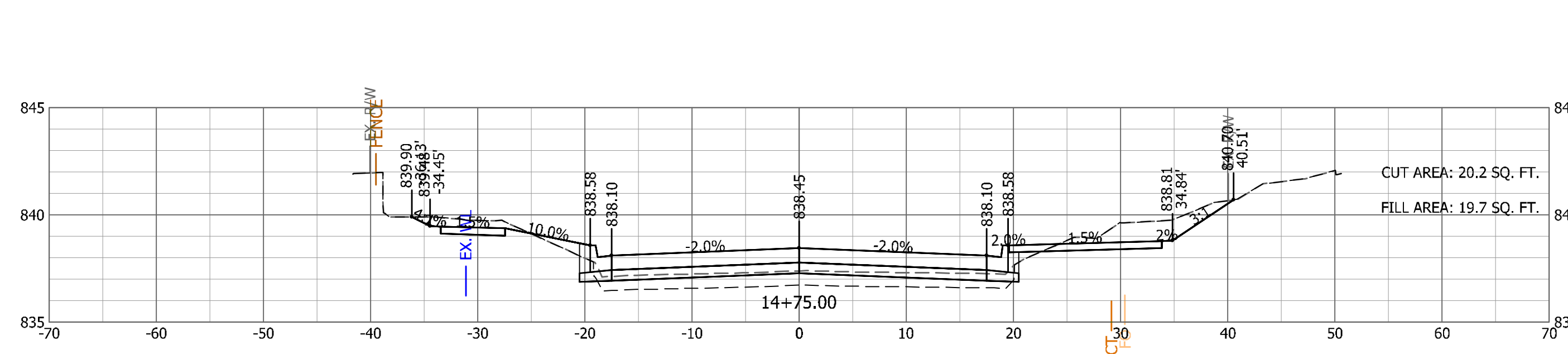
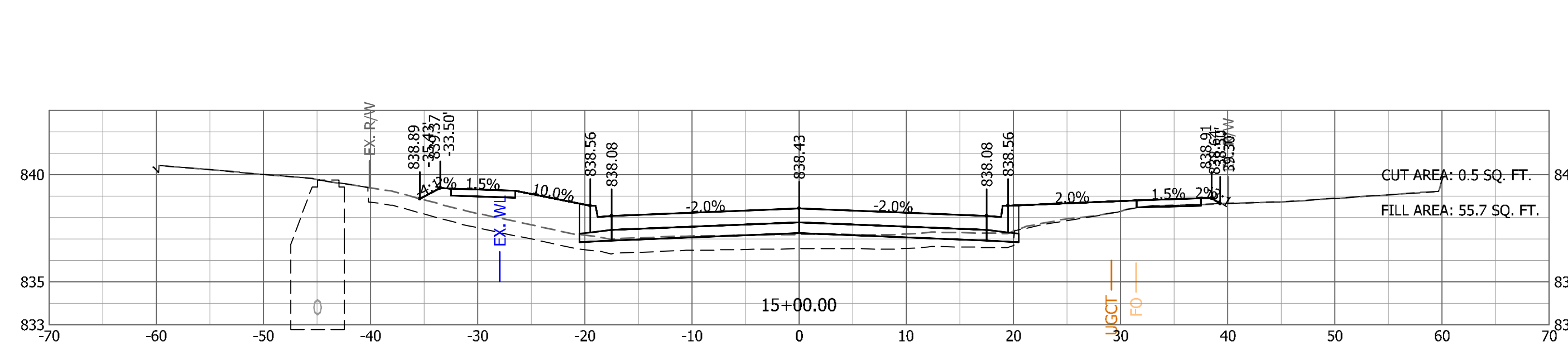
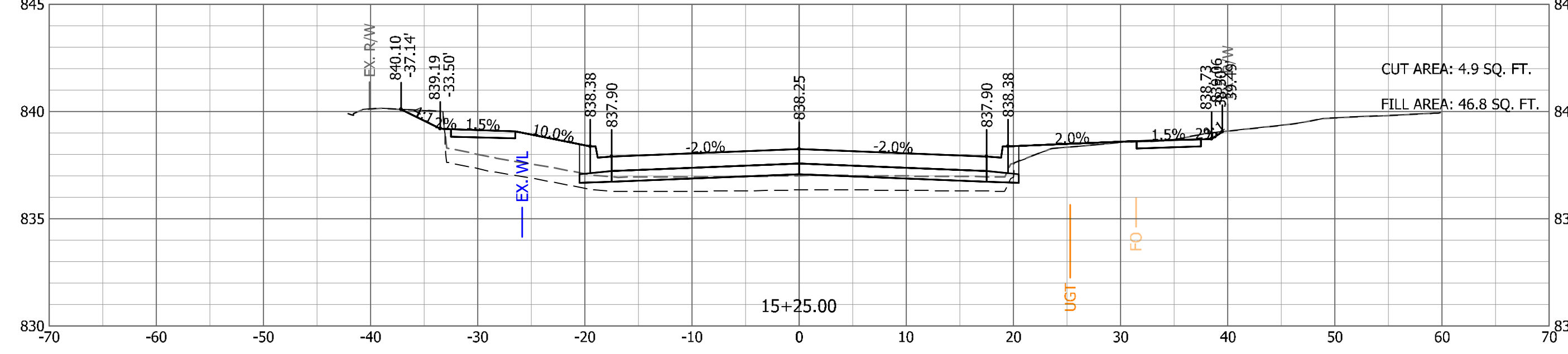
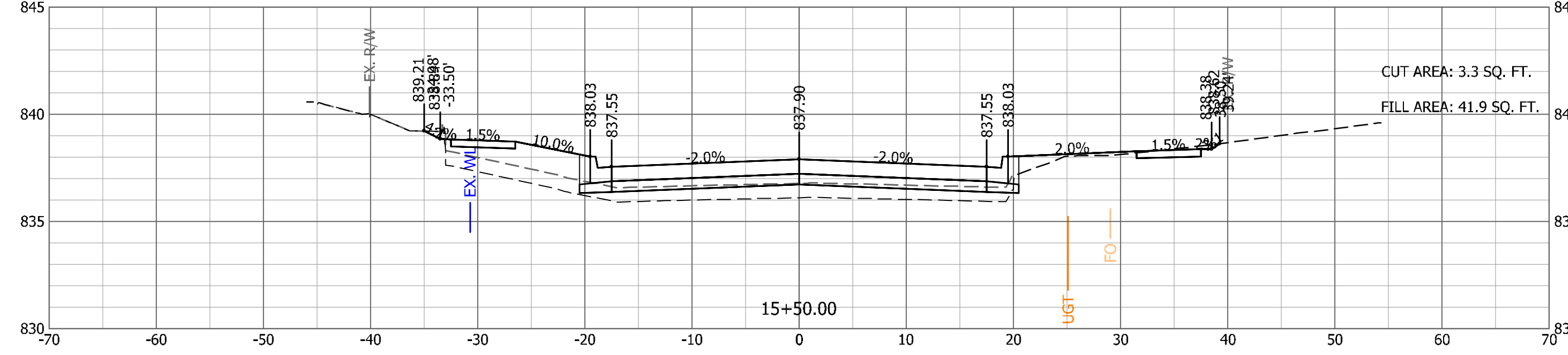
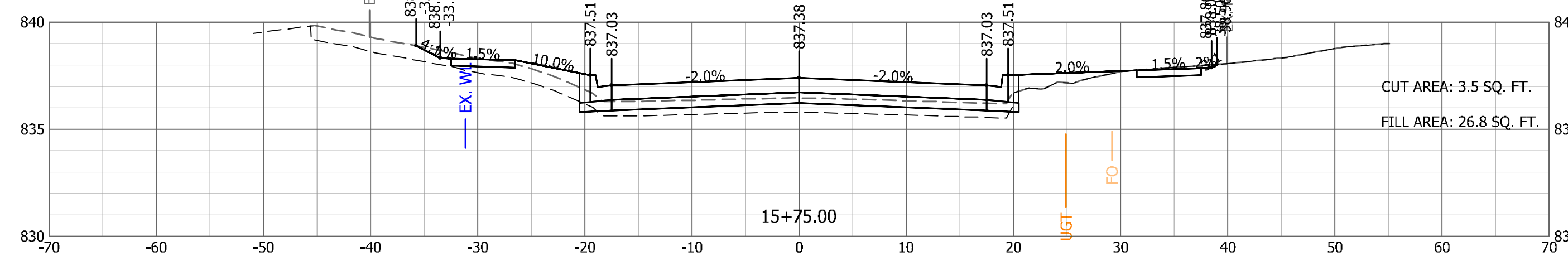
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FIELD CHECK PLANS

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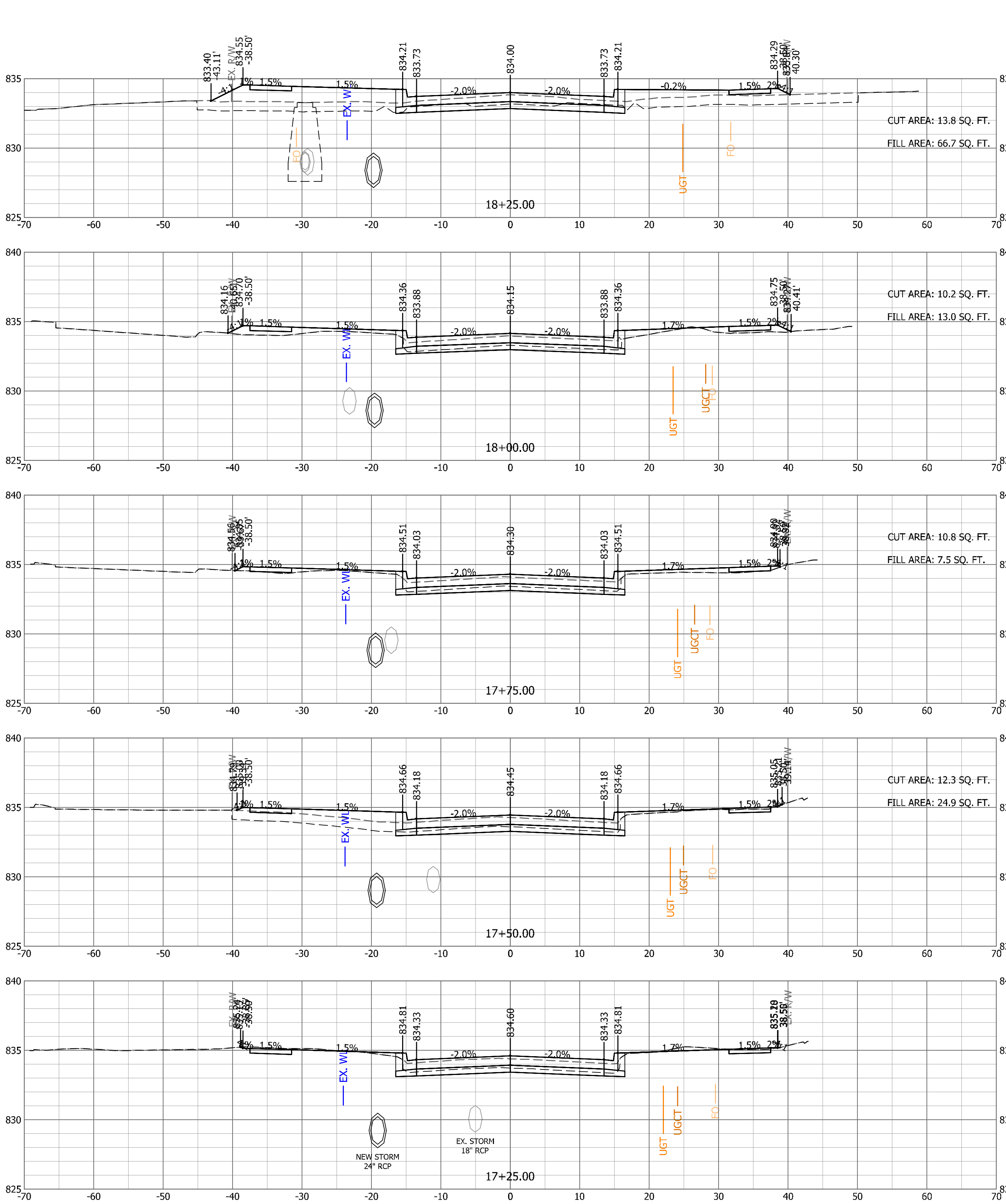
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STA. 13+50 TO 16+25
9TH STREET CROSS SECTIONS

FIELD CHECK PLANS

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DRAWN BY:	JDM
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DESIGN PROJ:	18811.001
CONST PROJ:	PW1502
SCALE:	AS NOTED
DATE:	JAN. 2018
DRAWING NO:	38
SHEET NO:	

[illegible]

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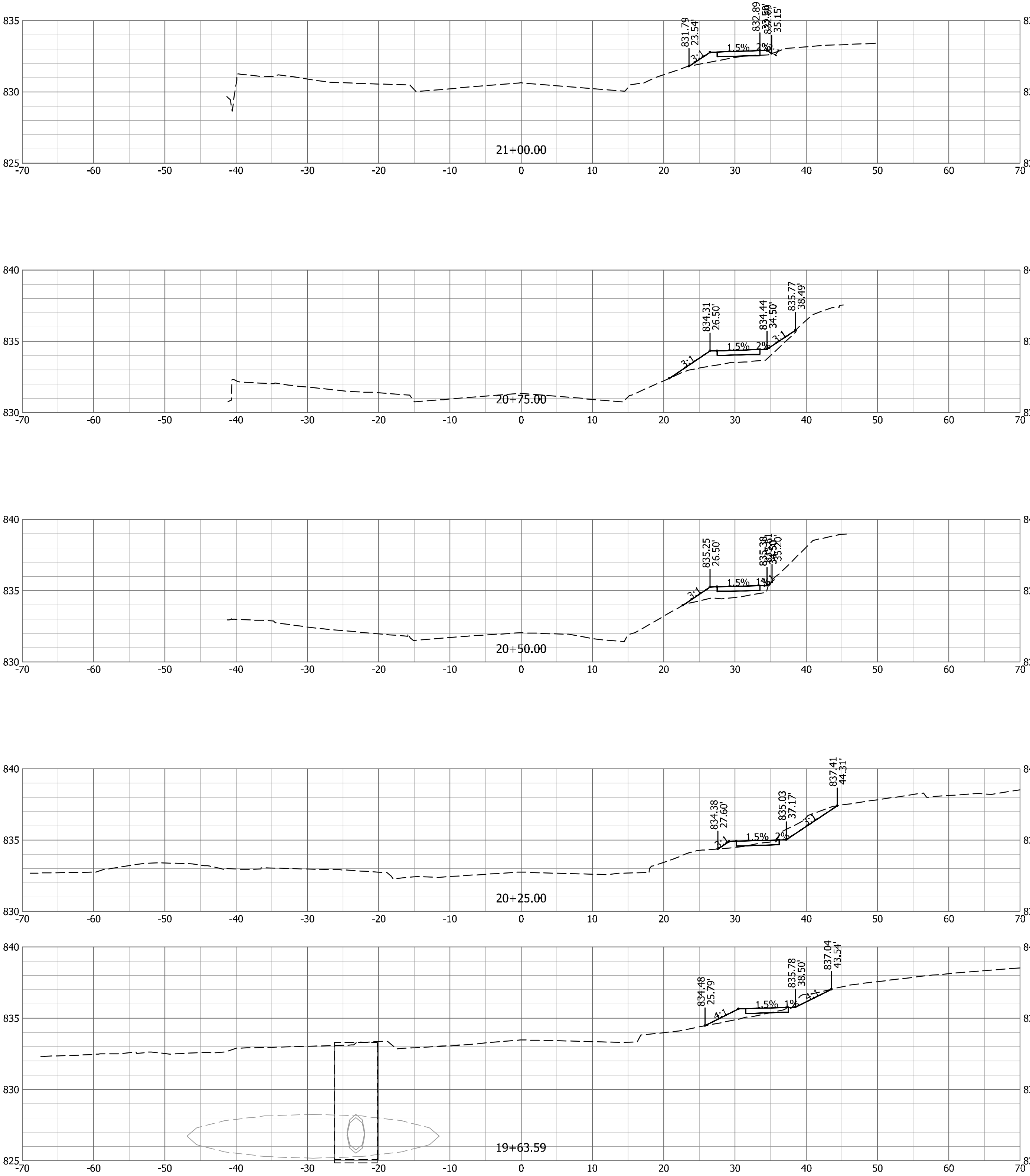
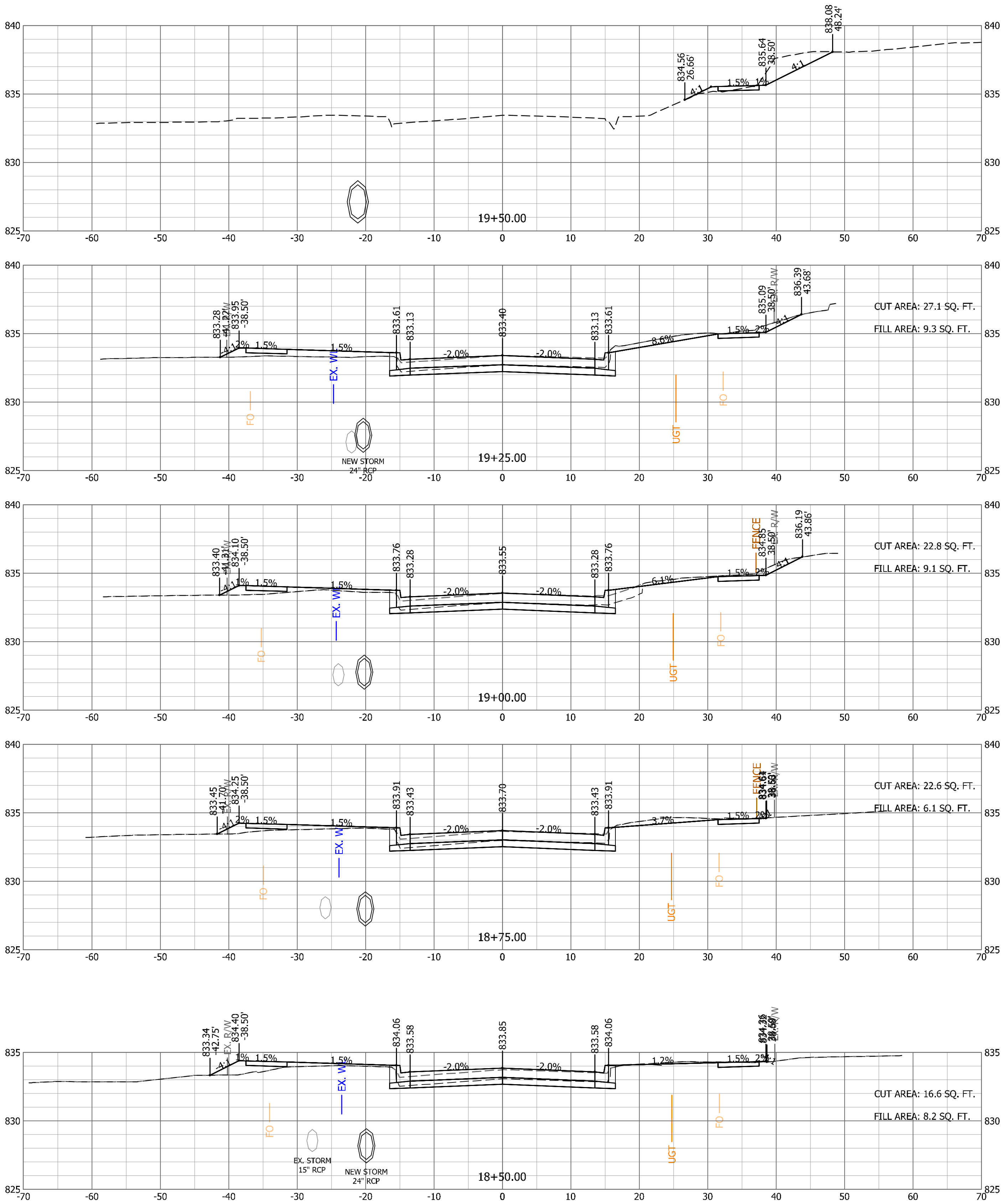
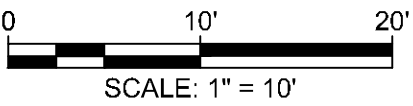
STA. 16+50 TO 18+25
9TH STREET CROSS SECTIONS

FIELD CHECK PLANS

DESIGNED BY:	JDM
DRAWN BY:	JDM
APPROVED BY:	BTB
DESIGN PROJ:	18811.001
CONST PROJ:	PW1502
SCALE:	AS NOTED
DATE:	JAN. 2018
DRAWING NO:	39
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Drawing Name: W:\Proj\18000\18811\18811.001\AutoCad\Plan_Sec\18811.001C_X-section-9th.dwg Layout Name: E 9TH STREET-Section View - L7 Plotted By: JDM0688 Plotted on: 1/25/2018 4:10:03 PM
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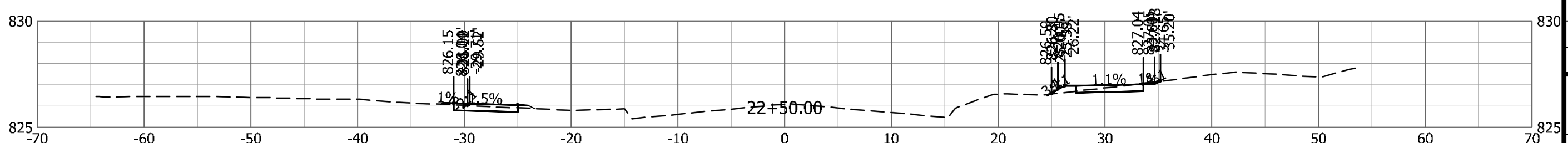
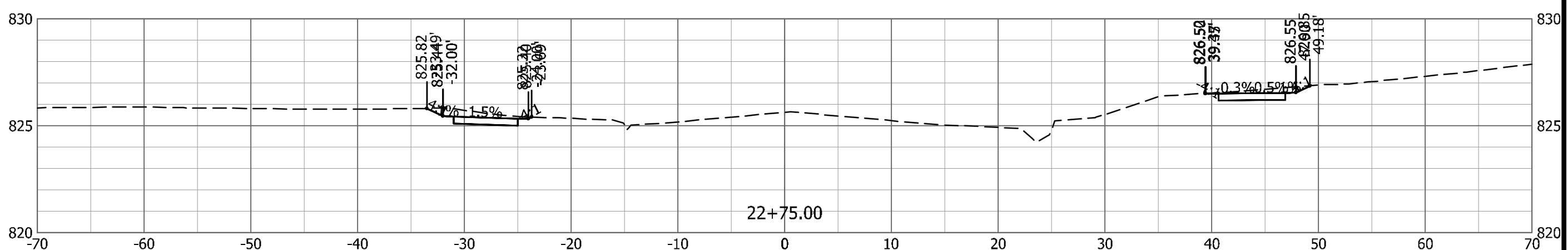
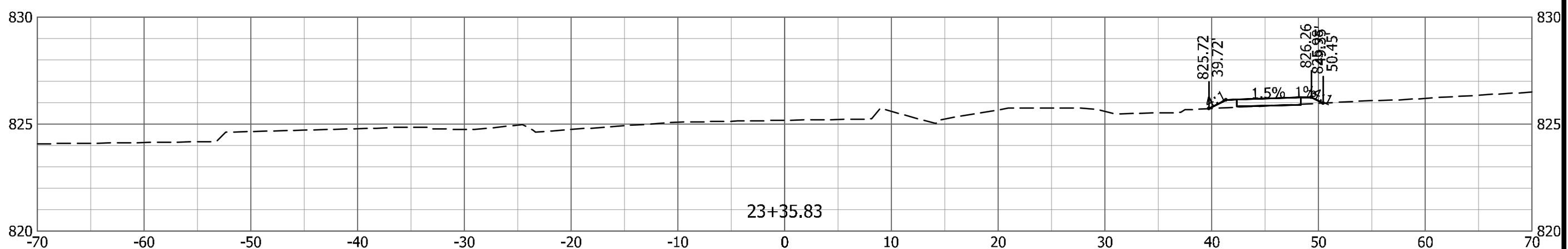
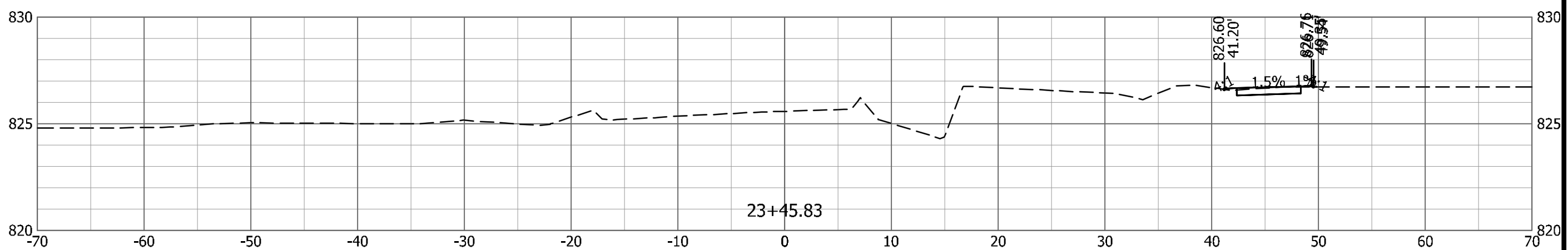
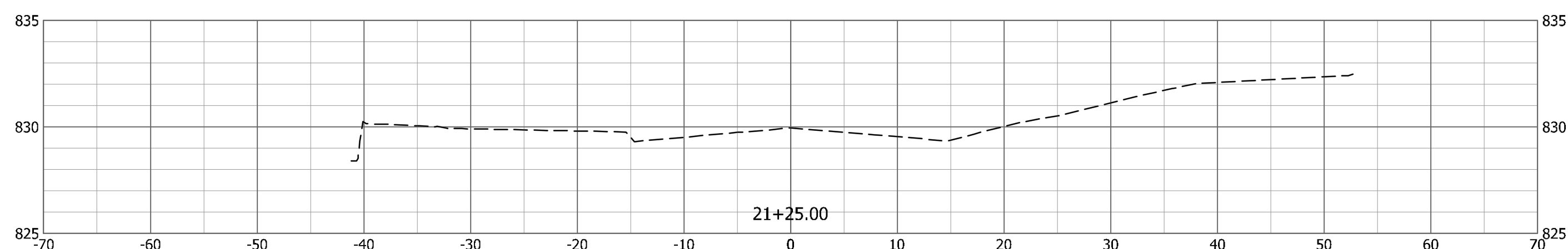
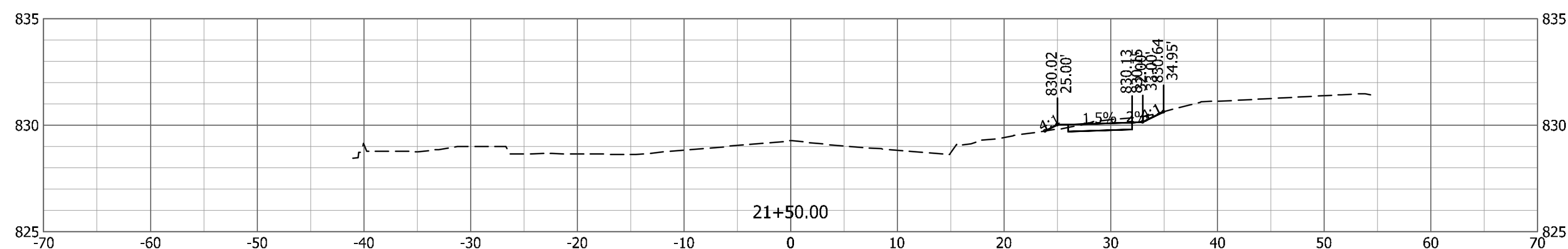
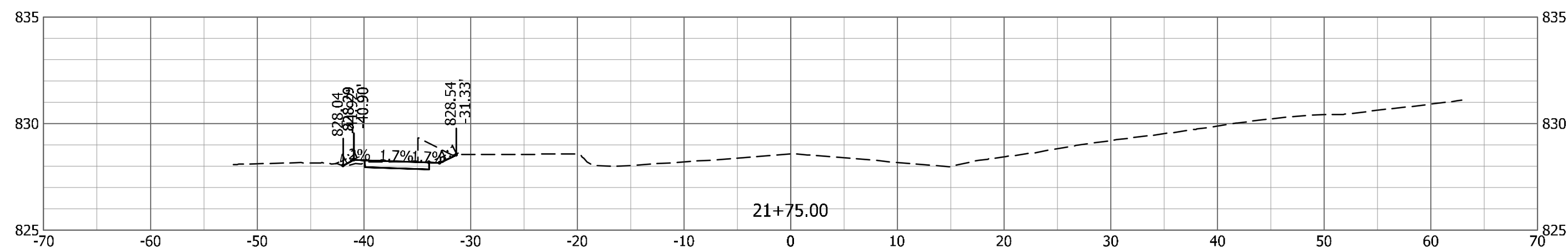
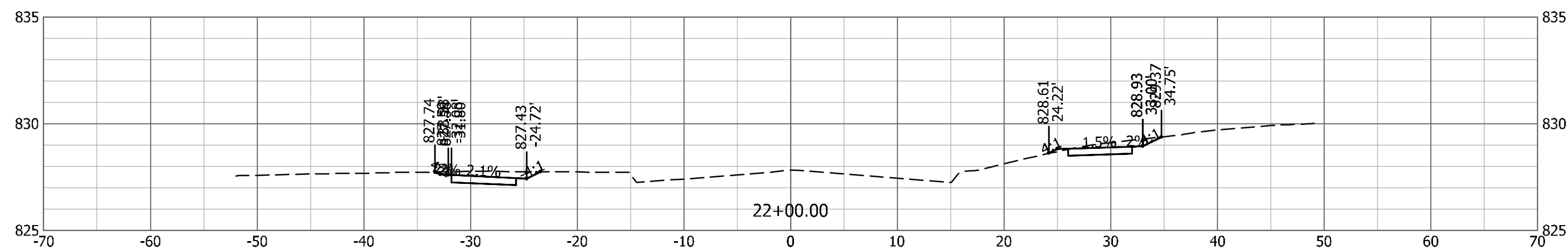
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**STA 18+50 TO 19+00
9TH STREET CROSS SECTIONS**
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STREET, SIDEWALK, & STORM SEWER IMPROVEMENTS
LAWRENCE, KANSAS**

FIELD CHECK PLANS

DESIGNED BY:	JDM
DRAWN BY:	JDM
APPROVED BY:	BTA
DESIGN PROJ:	18811.001
CONST PROJ:	PW1502
SCALE:	AS NOTED
DATE:	JAN. 2018
DRAWING NO:	40
SHEET NO:	40 of 41

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**STA. 21+25 TO 23+48
9TH STREET CROSS SECTIONS**

**E. 9TH STREET - NEW HAMPSHIRE ST. TO PENNSYLVANIA ST.
STREET, SIDEWALK, & STORM SEWER IMPROVEMENTS
LAWRENCE, KANSAS**

FIELD CHECK PLANS

DESIGNED BY:	JDM
DRAWN BY:	JDM
APPROVED BY:	BTA
DESIGN PROJ:	18811.001
CONST PROJ:	PW1502
SCALE:	AS NOTED
DATE:	JAN. 2018
DRAWING NO:	41
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