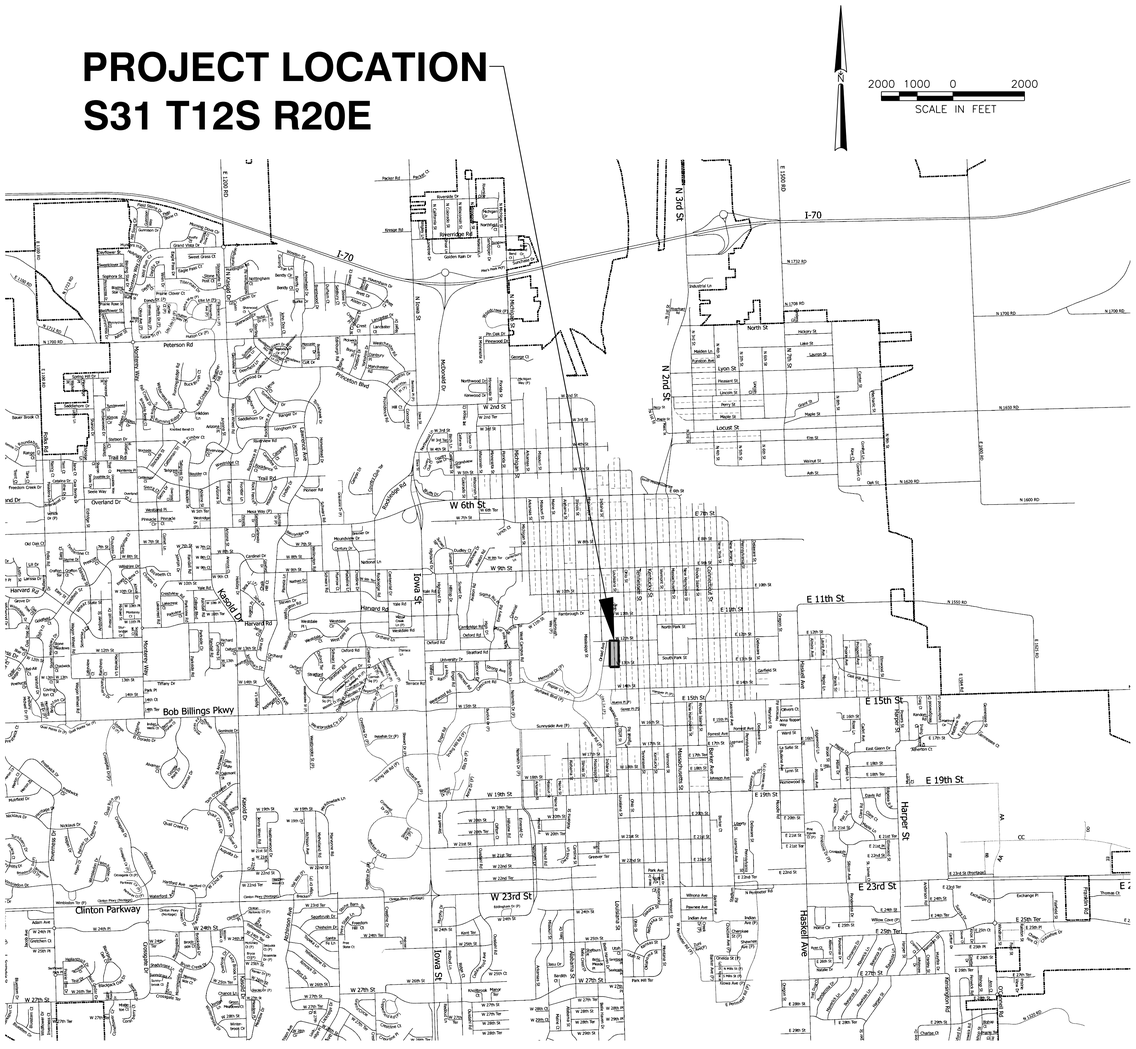
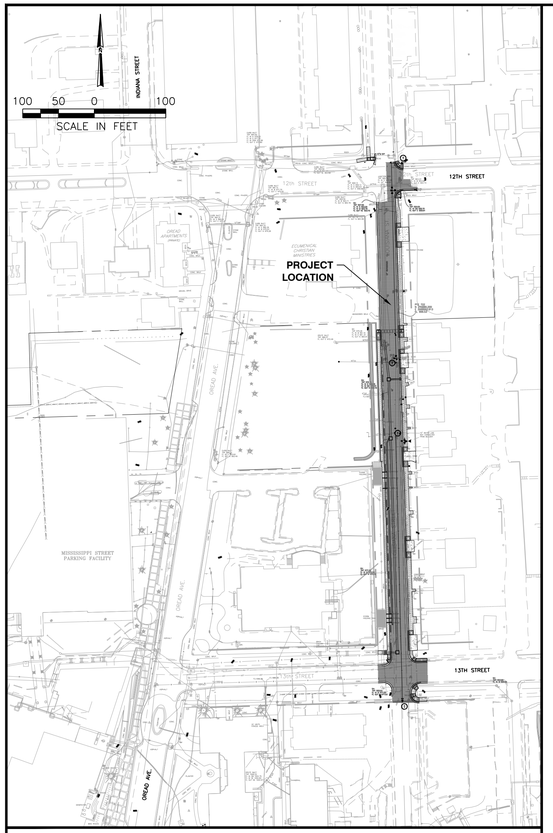
PROJECT LOCATION
S31 T12S R20E


N
2000 1000 0 2000
SCALE IN FEET
I-70
W 6th St
E 11th St
E 15th St
E 19th St
E 23rd St
W 23rd St
W 27th St
Bob Billings Pkwy
Clinton Parkway
Peterson Rd
Overland Dr
Harvard Rd
Inverness Dr
Wakarusa Dr
Iowa St
Kasold Dr
Haskell Ave
Harper St
N 3rd St
N 2nd St
Riverridge Rd
Packer Rd
Kasper Rd
Golden Hahn Dr
Hickory St
Locust St
Walnut St
Oak St
Maple St
Perry St
Lincoln St
Pleasant St
Lyon St
North St
Elm St
Ash St
Madison St
Lake St
Laurel St
Exchange Pl
Thomas St
Franklin St
Rockledge Rd
Crestline Dr
Ridgeview Dr
Ridgecrest Dr
Hillcrest Dr
Mesa View Pl
Mesa Way
Trail Rd
Ridge Rd
Hunter Ct
Hunter Rd
Hunter Dr
Knollwood Dr
Knollwood Ct
Knollwood Cir
Knollwood Pl
Meadowlark Dr
Meadowlark Ln
Meadowlark Rd
Meadowlark Cir
Meadowlark Ct
Meadowlark Pl
Meadowlark Ter
Cedarwood Dr
Cedarwood Ct
Cedarwood Cir
Cedarwood Pl
Cedarwood Ter
Cedarwood Ln
Cedarwood Rd
Cedarwood Ave
Cedarwood Ave (P)
Cedarwood Ave (P)
Cedarwood Ave (P)



GENERAL LAYOUT

SUMMARY OF QUANTITIES		
TRAFFIC CONTROL	1	L.S.
EROSION CONTROL	1	L.S.
DEMOLITION PLAN	1	L.S.
EARTHWORK	1	L.S.
12" KDOT AB-1	2070	S.Y.
8" CONCRETE PAVEMENT	2070	S.Y.
4" CONCRETE SIDEWALK	580	S.Y.
6" KDOT AB-1 UNDER SIDEWALK	580	S.Y.
CURB & GUTTER	1435	L.F.
CONCRETE DRIVE	140	S.Y.
SIDEWALK RAMPS	110	S.Y.
15" PVC STORM SEWER	305	L.F.
18" PVC STORM SEWER	20	L.F.
24" PVC STORM SEWER	425	L.F.
4'X4' STORM STRUCTURES	3	E.A.
3'X2' NYLOPLAST CURB INLET	1	E.A.
PAVEMENT MARKING	1	L.S.
SIGNAGE	1	L.S.
16" WATER LINE	665	L.F.
12" WATER LINE	40	L.F.
16" BUTTERFLY VALVE	5	E.A.
16" 90° ELBOW	2	E.A.
16" SLEEVE	4	E.A.
16" X 12" TEE	1	E.A.
12" GATE VALVE	1	E.A.
FIRE HYDRANT ASSEMBLY	1	E.A.

GENERAL NOTES:

1. PLANS ARE INITIALLY APPROVED FOR A PERIOD OF ONE (1) YEAR, AFTER WHICH THEY AUTOMATICALLY BECOME VOID AND MUST BE UPDATED AND RE-APPROVED BY THE CITY BEFORE ANY CONSTRUCTION WILL BE PERMITTED.
2. THE CITY OF LAWRENCE PLAN REVIEW IS ONLY FOR GENERAL CONFORMANCE WITH CITY OF LAWRENCE DESIGN CRITERIA AND CITY CODE. THE CITY OF LAWRENCE IS NOT RESPONSIBLE OF THE ACCURACY OR ADEQUACY OF THE DESIGN. THE CITY OF LAWRENCE THROUGH THE APPROVAL OF THIS DOCUMENT ASSUMES NO RESPONSIBILITY OTHER THAN STATED ABOVE FOR THE COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT.
3. THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE PLANS (APPROVED BY THE CITY OF LAWRENCE) AND ONE (1) COPY OF THE PROJECT SPECIFICATIONS ON SITE AT ALL TIMES.
4. ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF LAWRENCE COMPLETE STANDARD TECHNICAL SPECIFICATIONS IN EFFECT ON THE CITY'S APPROVAL DATE SHOWN ON THESE PLANS.
5. ALL WORKMANSHIP AND MATERIALS REGULATED BY THE CITY SHALL BE SUBJECT TO THE INSPECTION AND APPROVAL BY CITY PERSONNEL.
6. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING EROSION AND SEDIMENT CONTROL TO PREVENT SEDIMENT FROM REACHING PAVED AREAS, STORM SEWER SYSTEMS, DRAINAGE COURSES AND ADJACENT PROPERTIES. IN THE EVENT THE PREVENTION MEASURES ARE NOT EFFECTIVE, THE CONTRACTOR SHALL REMOVE ANY DEBRIS, SILT, OR MUD AND RESTORE ALL DISTURBED AREAS TO ORIGINAL OR BETTER CONDITION.
7. MAINTENANCE OF DRAINAGE SHALL BE THE CONTRACTOR'S RESPONSIBILITY. DEWATERING SHALL BE SUBSIDIARY TO RELATED ITEMS OF WORK.
8. THE CONTRACTOR SHALL COMPLY WITH CHAPTER 9, SECTION 903 OF THE CODE OF THE CITY OF LAWRENCE REGARDING STORM WATER POLLUTION PREVENTION. ALL WORK RELATED TO THIS WILL BE PAID FOR IN THE BID ITEM "STORM WATER POLLUTION PREVENTION." THIS SHALL INCLUDE, BUT NOT BE LIMITED TO ITEMS SUCH AS STREET CLEANING, PROTECTING PILED SOILS FROM ERODING, TEMPORARY SEEDING, ETC.
9. THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE UTILITY COMPANIES FOR LOCATION OF EXISTING UTILITIES. ANY DAMAGE TO UTILITY LINES CAUSED BY THE CONTRACTOR'S CONSTRUCTION OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
10. UTILITY INFORMATION SHOWN HEREIN IS BASED ON THE BEST INFORMATION AVAILABLE TO THE ENGINEER AT THE TIME OF DESIGN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING, IDENTIFYING AND MAKING THEIR OWN DETERMINATIONS OF UTILITY LOCATIONS, DEPTHS, SIZES, ETC.
11. THE REMOVAL OF ABANDONED UTILITIES SHALL BE CONSIDERED SUBSIDIARY TO OTHER BID ITEMS UNLESS NOTED OTHERWISE ON THE PLANS.
12. ALL TRAFFIC CONTROL DEVICES SHALL BE PROVIDED, INSTALLED, AND MAINTAINED IN ACCORDANCE WITH THE LATEST ADDITION OF THE M.U.T.C.D. IF THE CONTRACTOR WISHES TO DEVELOP THEIR OWN TRAFFIC CONTROL PLAN IT MUST BE APPROVED BY THE ENGINEER BEFORE IT CAN BE IMPLEMENTED ON THIS PROJECT.
13. THE TRAFFIC CONTROL REQUIREMENTS SHOWN ON THESE PLANS ARE MINIMUM REQUIREMENTS ONLY AND DO NOT ATTEMPT TO ADDRESS IN DEPTH THE VARIETY OF SITUATIONS THAT MAY OCCUR ONCE CONSTRUCTION HAS STARTED. IN NO WAY DO THE REQUIREMENTS SHOWN ON THESE PLANS RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR SELECTING THE PROPER TRAFFIC CONTROL DEVICES AND IMPLEMENTATION PROCEDURES THAT WILL ASSURE THE SAFETY OF MOTORIST, BICYCLISTS, PEDESTRIANS, AND WORKERS AT ALL TIMES.
14. THE CONTRACTOR SHALL CONTACT THE CITY OF LAWRENCE TRAFFIC DIVISION AT 832-3035 TO REMOVE AND REPLACE TRAFFIC SIGNS WHICH ARE IN CONFLICT WITH THE PROPOSED IMPROVEMENTS, BUT ARE NOT SPECIFIED TO BE REMOVED AS A PART OF THIS PROJECT.
15. ALL ASPHALT AND CONCRETE TO BE REMOVED SHALL BE NEATLY SAW CUT. SAW CUTS SHALL BE FULL DEPTH AND SHALL BE SUBSIDIARY TO RELATED BID ITEMS. IF THE CONTRACTOR EXCEEDS THE PAVEMENT REMOVAL LIMITS WITHOUT APPROVAL FROM THE ENGINEER, IT SHALL BE AT THE CONSTRICTOR'S EXPENSE.
16. ALL DISPOSAL SITES MUST BE APPROVED BY THE KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT. MATERIALS 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.
17. GEOLOGICAL INFORMATION AS SHOWN HEREIN WAS COMPLETED WITH THE BEST INFORMATION AVAILABLE TO THE ENGINEER AT THE TIME OF PLAN PREPARATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING, IDENTIFYING AND MAKING THEIR OWN DETERMINATIONS OF SUBSURFACE CONDITIONS. ALL EXCAVATION SHALL BE UNCLASSIFIED. NO DIRECT PAYMENT WILL BE MADE FOR ROCK OR PAVEMENT EXCAVATION. ALL WORK SHALL BE CONSIDERED SUBSIDIARY UNLESS OTHERWISE SHOWN IN THE PLANS.
18. FLOWABLE FILL SHALL BE USED TO BACKFILL ALL EXCAVATIONS WITHIN TWO FEET OF EXISTING OR PROPOSED PAVEMENT AREAS. FLOWABLE FILL SHALL BE PLACED TO THE TOP OF THE SUBGRADE.
19. ALL CONCRETE FOR PUBLICLY MAINTAINED INFRASTRUCTURE SHALL BE KCMMB UNLESS OTHERWISE NOTED IN THE PLANS.
20. ALL WORK SHALL BE CONFINED DONE WITHIN THE CONSTRUCTION LIMITS, RIGHT OF WAY, EASEMENTS, OR CITY PROPERTY AS SHOWN IN THE PLANS. ANY DAMAGE TO ADJACENT SURFACING, PAVEMENT MARKINGS, CURB, SIDEWALKS, BIKEWAYS, DRIVEWAYS, STREETLIGHTS, SIGNAL POLES, OR OTHER OBJECTS WITHIN OR OUT OF THE RIGHT OF WAY SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
21. ALL MANHOLES, UTILITY VALVES, AND METER PITS SHALL BE ADJUSTED OR REBUILT TO GRADE AS REQUIRED AND SET IN CONCRETE IF IN ROADWAY FOR FIELD ADJUSTMENT.
22. ALL SIDEWALK AND SIDEWALK RAMPS CONSTRUCTED WILL BE REQUIRED TO COMPLY WITH THE AMERICANS WITH DISABILITIES ACT (ADA).
23. THE CONTRACTOR SHALL NOTIFY ALL PROPERTY OWNERS A MINIMUM OF 48 HOURS IN ADVANCE OF ALL WORK PERTAINING TO THEIR ENTRANCES.
24. CONTRACTOR TO PROVIDE EMERGENCY VEHICLE ACCESS TO STRUCTURES AT ALL TIMES.

UTILITY GENERAL NOTES:

1. PLANS ARE INITIALLY APPROVED FOR A PERIOD OF ONE (1) YEAR, AFTER WHICH THEY AUTOMATICALLY BECOME VOID AND MUST BE UPDATED AND RE-APPROVED BY THE CITY BEFORE ANY CONSTRUCTION WILL BE PERMITTED.
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3. THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE PLANS (APPROVED BY THE CITY OF LAWRENCE) AND ONE (1) COPY OF THE PROJECT SPECIFICATIONS ON SITE AT ALL TIMES.
4. THE CITY OF LAWRENCE TECHNICAL SPECIFICATIONS, LATEST EDITION, AND CITY OF LAWRENCE CONSTRUCTION AND MATERIAL SPECIFICATIONS SECTION 2900 - WATERLINES, LATEST EDITION, SHALL GOVERN CONSTRUCTION OF THIS PROJECT.
5. CONTRACTOR SHALL NOT BE ALLOWED TO WORK SUNDAYS. HOLIDAY OR SATURDAY WORK SHALL BE APPROVED BY THE DEPARTMENT OF UTILITIES.
6. CONTRACTOR SHALL CALL 1-800-DIG-SAFE PRIOR TO ANY PROJECT EXCAVATION.
7. THE UTILITY INFORMATION SHOWN HEREIN IS BASED ON THE BEST INFORMATION AVAILABLE TO THE ENGINEER; HOWEVER, ALL UTILITIES ACTUALLY EXISTING MAY NOT BE SHOWN. THE CONTRACTOR SHALL VERIFY ALL UTILITY DEPTHS AND LOCATIONS PRIOR TO CONSTRUCTION, AND COORDINATE ANY NECESSARY RELOCATIONS. UTILITIES DAMAGED THROUGH THE NEGLIGENCE OF THE CONTRACTOR TO OBTAIN THE LOCATION OF SAME SHALL BE REPAIRED AND REPLACED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE PROJECT.
8. ONLY AUTHORIZED EMPLOYEES OF THE CITY OF LAWRENCE, UTILITY DEPARTMENT SHALL OPERATE VALVES.
9. THE CONTRACTOR SHALL NOTIFY ALL LANDOWNERS IN WRITING AT LEAST ONE (1) WEEK PRIOR TO ANY CONSTRUCTION ACTIVITIES WHICH WOULD TAKE PLACE ADJACENT TO THEIR PROPERTY. INDIVIDUAL DETAILED NOTICES OF ACCESS RESTRICTIONS SHALL BE HAND DELIVERED FORTY EIGHT (48) HOURS PRIOR TO CONSTRUCTION. TWENTY FOUR (24) HOUR NOTICE SHALL BE GIVEN TO ANY WATER CUSTOMER PRIOR TO INTERRUPTION OF SERVICE TO MAKE CONNECTIONS.
10. WHERE EXISTING UTILITIES AND SERVICE LINES ARE TO BE ENCOUNTERED, THE OWNER THEREOF SHALL BE NOTIFIED BY THE CONTRACTOR AT LEAST 48 HOURS IN ADVANCE OF PERFORMING ANY WORK IN THE VICINITY.
11. RELOCATION OF ANY WATER LINE, SEWER LINE OR SERVICE LINE THEREOF REQUIRED FOR THE CONSTRUCTION OF THIS PROJECT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE AT HIS EXPENSE.
12. THE CONTRACTOR SHALL INSTALL THE PROPOSED WATERLINES WITHOUT DISRUPTION OF WATER SERVICE TO CUSTOMERS UNTIL CONNECTIONS TO THE PROPOSED WATERLINES ARE READY TO BE MADE. ONCE SERVICE TO CUSTOMERS HAS BEEN INTERRUPTED, THE CONTRACTOR SHALL WORK CONTINUOUSLY UNTIL SERVICE IS RESTORED.
13. UTILITIES EXPOSED DURING CONSTRUCTION SHALL BE ADEQUATELY SUPPORTED BY THE CONTRACTOR TO PREVENT THE CONDUITS/LINES FROM SAGGING AND PUTTING STRESS ON ANY JOINTS.
14. THE CONTRACTOR SHALL MAINTAIN DRAINAGE DURING CONSTRUCTION AND IS RESPONSIBLE FOR ANY DEWATERING NECESSARY DURING CONSTRUCTION.
15. ALL SIGNING, BARRICADES, AND DRUMS UTILIZED IN TRAFFIC CONTROL SHALL BE PROVIDED, ERECTED, AND MAINTAINED BY THE CONTRACTOR. TRAFFIC CONTROL SHALL BE IN CONFORMANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION.
16. 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.
17. CONSTRUCTION STAKING IS TO BE PROVIDED BY THE CONTRACTOR. SURVEY STAKES, BENCHMARKS, AND PROPERTY PINS DESTROYED BY THE CONTRACTOR SHALL BE REPLACED AT CONTRACTOR'S EXPENSE.
18. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE FERTILIZED, SEEDED, AND MULCHED BY THE CONTRACTOR IN ACCORDANCE WITH CURRENT CITY OF LAWRENCE TECHNICAL SPECIFICATIONS, LATEST EDITION.
19. ALL SURFACE FEATURES DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE RESTORED BY THE CONTRACTOR TO ORIGINAL CONDITION.
20. WHEN BLASTING IS PERMITTED BY LAWRENCE-DOUGLAS COUNTY FIRE AND MEDICAL SERVICES, THE CONTRACTOR SHALL USE THE UTMOST CARE TO PROTECT LIFE AND PROPERTY. THE CONTRACTOR SHALL COMPLY WITH ALL LAWS, ORDINANCES, AND THE APPLICABLE SAFETY CODE REQUIREMENTS AND REGULATIONS RELATIVE TO THE HANDLING, STORAGE AND USE OF EXPLOSIVES AND PROTECTION OF LIFE AND PROPERTY, AND HE SHALL BE RESPONSIBLE FOR ALL DAMAGE THERETO CAUSED BY HIS OR HIS SUBCONTRACTOR'S OPERATIONS.
21. THE CONTRACTOR SHALL INSTALL AND PROPERLY MAINTAIN A MECHANICAL PLUG AT ALL CONNECTION POINTS WITH EXISTING LINES UNTIL SUCH TIME THAT THE NEW LINE IS TESTED AND APPROVED.

LEGEND

	DECIDUOUS TREE		WATER VALVE
	CONIFEROUS TREE		FIRE HYDRANT
	BUSH	GV	GAS VALVE
	SHRUB		CENTERLINE
BOL	BOLLARD		PROPERTY LINE
GI	GRATE INLET ROUND		SECTION LINE
GI	GRATE INLET SQUARE		BENCH MARK
ET	ELECTRICAL TRANSFORMER BOX		FOUND MONUMENT AS NOTED
GM	GAS METER		SET 1/2" BAR & CAP
LP	LIGHT POLE		CHISELED "+"
MH	MANHOLE		YARD LIGHT
TP	TELEPHONE POLE		SINGLE POST SIGN
WM	WATER METER		DOUBLE POST SIGN
PP	POWER POLE	D	DEED
	GUY WIRE	M	MEASURED
TS	TELEPHONE SPLICE BOX	RM	RADIALLY MEASURED
CI	CURB INLET	C	CALCULATED
		P	POWER/PLAT
RR	RAILROAD	FND	FOUND
x	FENCE	R/W	RIGHT-OF-WAY
	CONTINUING LINE	G	GAS
SP	TRAFFIC SIGNAL POLE	S	SANITARY SEWER
TV	TV SPLICE BOX	ST	STORM SEWER
E	ELECTRIC METER	W	WATER
PS	POWER SPLICE BOX	T	TELEPHONE
POST	POST	UG	UNDERGROUND
		OH	OVERHEAD
MB	MAIL BOX	CIP	CAST IRON PIPE
	STUMP	CMP	CORRUGATED METAL PIPE
	MATCH POINT	RCP	REINFORCED CONCRETE PIPE
	CP (CONTROL POINT)	VCP	VITRIFIED CLAY PIPE
		PCP	PLASTIC CORRUGATED PIPE
GT	GAS TEST	TV	CABLE TELEVISION
GR	GAS REGULATOR	E	ELECTRIC
SC	SIAMESE CONNECTOR	ED	EAVES DRAIN
		RD	ROOF DRAIN
SV	STEAM VALVE	PL	PLASTIC
WF	WATER FAUCET		MARSH AREA
DR	DRAIN	PIV	POST INDICATOR VALVE
FP	FLAG POLE	PM	PARKING METER
TH	TEST HOLE	STM	STEAM
COM	FIBER OPTIC TELEPHONE MARKER	AI	AREA INLET
AC	AIR CONDITIONER	GI	GRATE INLET
CO	CLEAN OUT	CMAP	CORRUGATED METAL ARCH PIPE
		FO	FIBER OPTIC
	UTILITY POLE		

HORIZONTAL AND VERTICAL CONTROL IS BASED UPON INFORMATION PROVIDED BY THE KU ENGINEERING DEPARTMENT. CONTROL MONUMENTS ARE SHOWN.

K.U. CONTROL
DRILL HOLE WITH CROSS

PT# 677
N 239693.178
E 2096227.341
EL 1012.76

PT# 698
N 239866.504
E 2096364.125
EL 1006.97

PT# 722
N 240680.200
E 2096552.913
EL 969.53

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REV. NO.	DATE	DESCRIPTION

SK Project #: 17-162

City of Lawrence
PO Box 708
Lawrence, KS 66044
Office (785) 832-7843

City of Lawrence
Louisiana Street, 12th to 13th Street
Street, Storm and Waterline
Lawrence, Kansas 66045-7000
City PWD Project # 1724 Utilities Project # UT1719
DATE: 02-22-2018 DRAWN BY: RD CHECKED BY: SM

GENERAL LAYOUT, GENERAL NOTES & SUMMARY OF QUANTITIES

2

Intermediate Submittal

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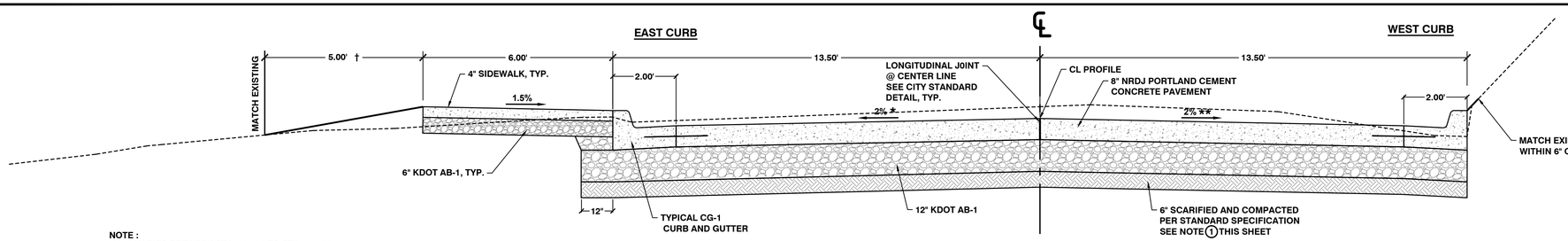
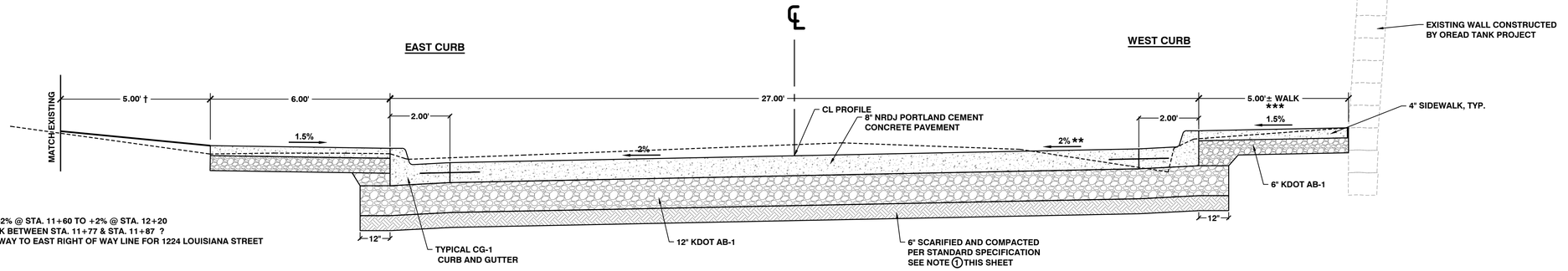


1 REMOVE AND SALVAGE EXISTING BRICK FOR CITY USE. PALLETIZE AND DELIVER BRICKS TO CITY

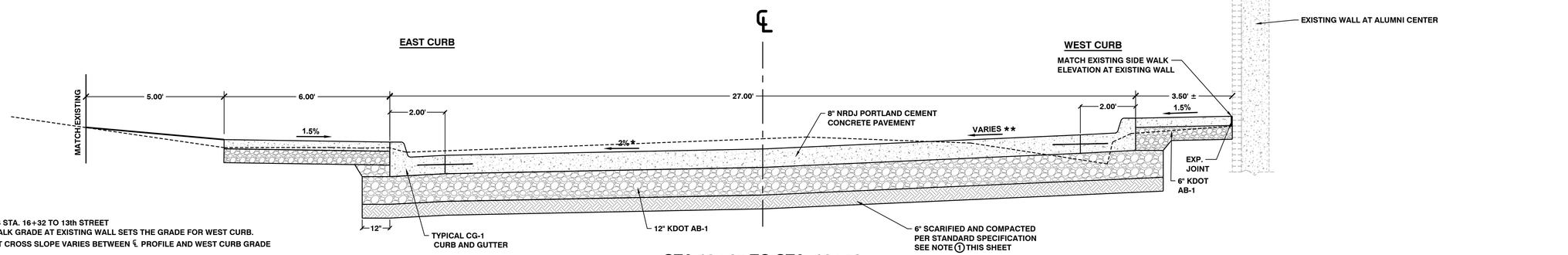
NOTE :
* VARIES BETWEEN STA. 10+00 TO STA. 10+30
** VARIES FROM STA. 10+00 TO STA. VARIES FROM -2% @ STA. 11+60 TO +2% @ STA. 12+20
† EXTEND DRIVEWAY TO EAST RIGHT OF WAY LINE @ STA 10+50

STA 10+00 TO STA. 11+77



NOTE :
** VARIES FROM -2% @ STA. 11+60 TO +2% @ STA. 12+20
*** OMIT SIDEWALK BETWEEN STA. 11+77 & STA. 11+87 ?
† EXTEND DRIVEWAY TO EAST RIGHT OF WAY LINE FOR 1224 LOUISIANA STREET

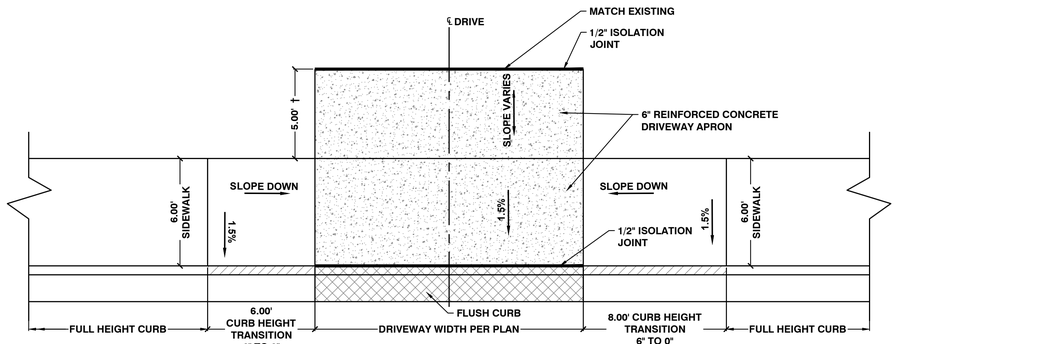
STA 11+77 TO STA. 13+67



NOTE :
* VARIES STA. 16+32 TO 13th STREET
** SIDEWALK GRADE AT EXISTING WALL SETS THE GRADE FOR WEST CURB. STREET CROSS SLOPE VARIES BETWEEN ℄ PROFILE AND WEST CURB GRADE

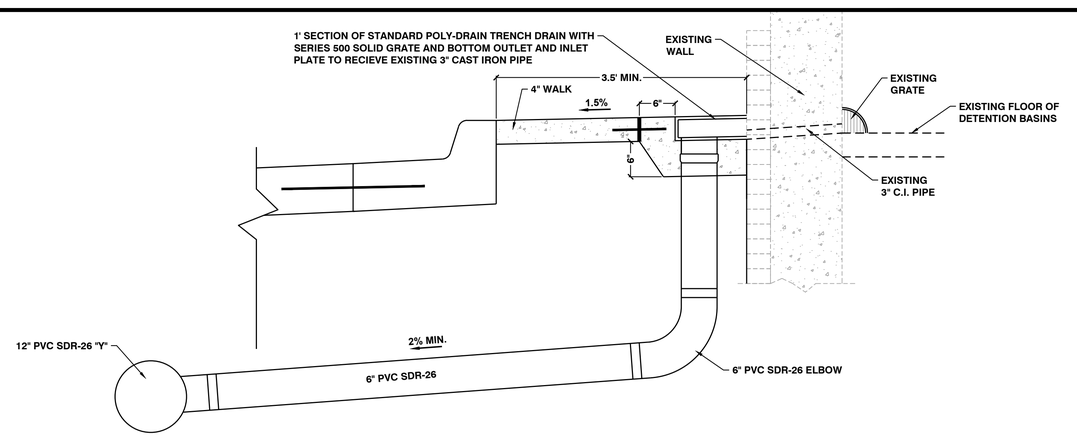
STA 13+67 TO STA. 16+50

1 TYPICAL SECTIONS
NOT TO SCALE



NOTE :
†† EXTEND DRIVE TO EAST RIGHT OF WAY LINE WHERE SHOWN

2 TYPICAL DRIVE WAY PLAN
SCALE 1" = 4'



3 TYPICAL SECTION @ REPLACEMENT OF EXISTING TRENCH DRAINS AT ALUMNI CENTER
NOT TO SCALE

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DATE: 02-22-2018 DRAWN BY: RD CHECKED BY: SM

TYPICAL SECTIONS AND DETAILS

3

Intermediate Submittal

u:\2017\17-162\2018-02-22 review set\03-typical section.dwg

LEGEND

- EXISTING ASPHALT PAVEMENT TO BE REMOVED
- EXISTING CONCRETE PAVEMENT TO BE REMOVED
- EXISTING SIDEWALK TO BE REMOVED
- EXISTING GRAVEL TO BE REMOVED
- EXISTING CURBS TO BE REMOVED
- SAW CUT
- EXISTING WATER LINE TO BE REMOVED
- EXISTING STORM SEWER LINE TO BE REMOVED

NOTES:

1. CONTRACTOR TO DEMO ASPHALT ROAD CAREFULLY TO SALVAGE BRICK UNDER OVERLAY AS MUCH AS POSSIBLE.
2. BRICKS SHALL BE PLACED ON PALLETS AND STORED FOR FUTURE BRICK STREET PROJECTS.

SAWCUT (TYP.)

REMOVE EXISTING DRIVE

REMOVE EXISTING CURB & GUTTER

REMOVE EXISTING SIDEWALK

REMOVE EXISTING DRIVE

MATCH LINE STA. 12+33

REMOVE EXISTING CONCRETE PAVEMENT

SAWCUT (TYP.)

12th STREET

REMOVE EXISTING ASPHALT PAVEMENT

LOUISIANA STREET

REMOVE EXISTING 24" STORM STUB

REMOVE EXISTING CURB & GUTTER

REMOVE EXISTING SIDEWALK

REMOVE EXISTING CURB & GUTTER

RETAINING WALL BY OTHERS

SCALE IN FEET

10 5 0 10

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City of Lawrence

Louisiana Street, 12th to 13th Street
Street, Storm and Waterline

Lawrence, Kansas 66045-7000 Utilities Project # UT1719
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DEMOLITION PLAN - 1

4

Intermediate Submittal

NOTES:

1. CONTRACTOR TO DEMO ASPHALT ROAD CAREFULLY TO SALVAGE BRICK UNDER OVERLAY AS MUCH AS POSSIBLE.
2. BRICKS SHALL BE PLACED ON PALLETS AND STORED FOR FUTURE BRICK STREET PROJECTS.

LEGEND

- EXISTING ASPHALT PAVEMENT TO BE REMOVED
- EXISTING CONCRETE PAVEMENT TO BE REMOVED
- EXISTING SIDEWALK TO BE REMOVED
- EXISTING GRAVEL TO BE REMOVED
- EXISTING CURBS TO BE REMOVED
- SAW CUT
- EXISTING WATER LINE TO BE REMOVED
- EXISTING STORM SEWER LINE TO BE REMOVED

MATCH LINE STA. 12+33

MATCH LINE STA. 15+00

1216 1220 1224 1228 1232 1236

REMOVE EXISTING DRIVE

REMOVE EXISTING SIDEWALK

REMOVE EXISTING CURB & GUTTER

REMOVE EXISTING GRAVEL DRIVE

REMOVE EXISTING ASPHALT PAVEMENT

REMOVE EXISTING 16" WATER LINE

RETAINING WALL BY OTHERS

12" WATER LINE NOW CONNECTED FROM BUILDER

CONC. DRIVE

WALK

W

WM

G

OHU

STORM HOLDING TANK

LVSL

LP

INLETS

MH TOP 972.16 FL IN S 968.26 FL IN SW 970.91 FL OUT N 968.16

FL=972.52 FL=974.04 FL=973 FL=974 FL=974.75 FL=981.2

975 980 985

SCALE IN FEET 10 5 0 10

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Greg Grant Survey
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Tel: (913) 558-3408
Fax: (913) 757-2310

REV. NO.	DATE	DESCRIPTION

SK Project #: 17-162

City of Lawrence
PO Box 708
Lawrence, KS 66044
Office (785) 832-7843

City of Lawrence

Louisiana Street, 12th to 13th Street
Street, Storm and Waterline

Lawrence, Kansas 66045-7000
City PWD Project # 1724 Utilities Project # UT1719
DATE: 02-22-2018 DRAWN BY: RD CHECKED BY: SM

DEMOLITION PLAN - 2

5

Intermediate Submittal

u:\2017\17-162\2018-02-22 review set\04-06-demo.dwg

LEGEND

- EXISTING ASPHALT PAVEMENT TO BE REMOVED
- EXISTING CONCRETE PAVEMENT TO BE REMOVED
- EXISTING SIDEWALK TO BE REMOVED
- EXISTING GRAVEL TO BE REMOVED
- EXISTING CURBS TO BE REMOVED
- SAW CUT
- EXISTING WATER LINE TO BE REMOVED
- EXISTING STORM SEWER LINE TO BE REMOVED

NOTES:
1. CONTRACTOR TO DEMO ASPHALT ROAD CAREFULLY TO SALVAGE BRICK UNDER OVERLAY AS MUCH AS POSSIBLE.
2. BRICKS SHALL BE PLACED ON PALLETS AND STORED FOR FUTURE BRICK STREET PROJECTS.

1236

1242

1244

MATCH LINE STA. 15+00

REMOVE EXISTING CURB & GUTTER

REMOVE EXISTING SIDEWALK

REMOVE EXISTING DRIVE

REMOVE EXISTING SIDEWALK

SAWCUT (TYP.)

REMOVE EXISTING SIDEWALK

REMOVE EXISTING ASPHALT PAVEMENT

REMOVE EXISTING 16" WATER LINE

SAWCUT (TYP.)

REMOVE EXISTING CURB & GUTTER

LOUISIANA STREET

13th STREET

SCALE IN FEET

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DEMOLITION PLAN - 3

6

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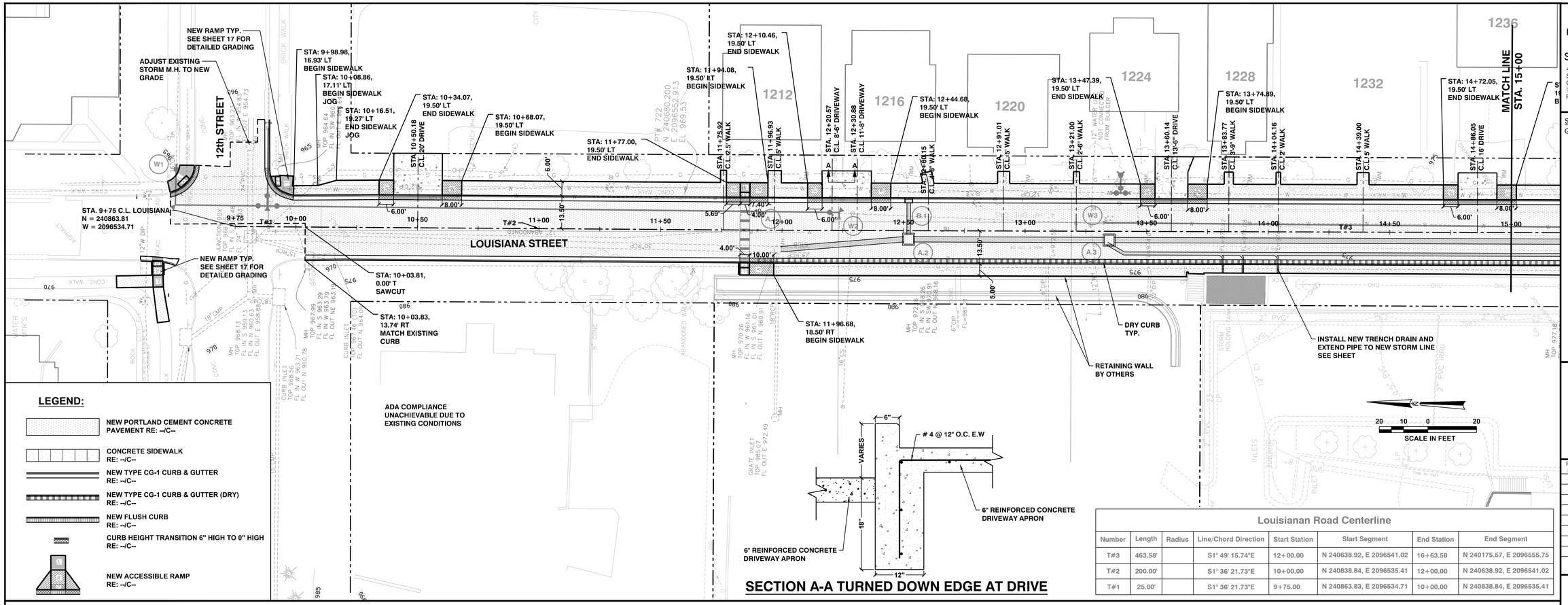
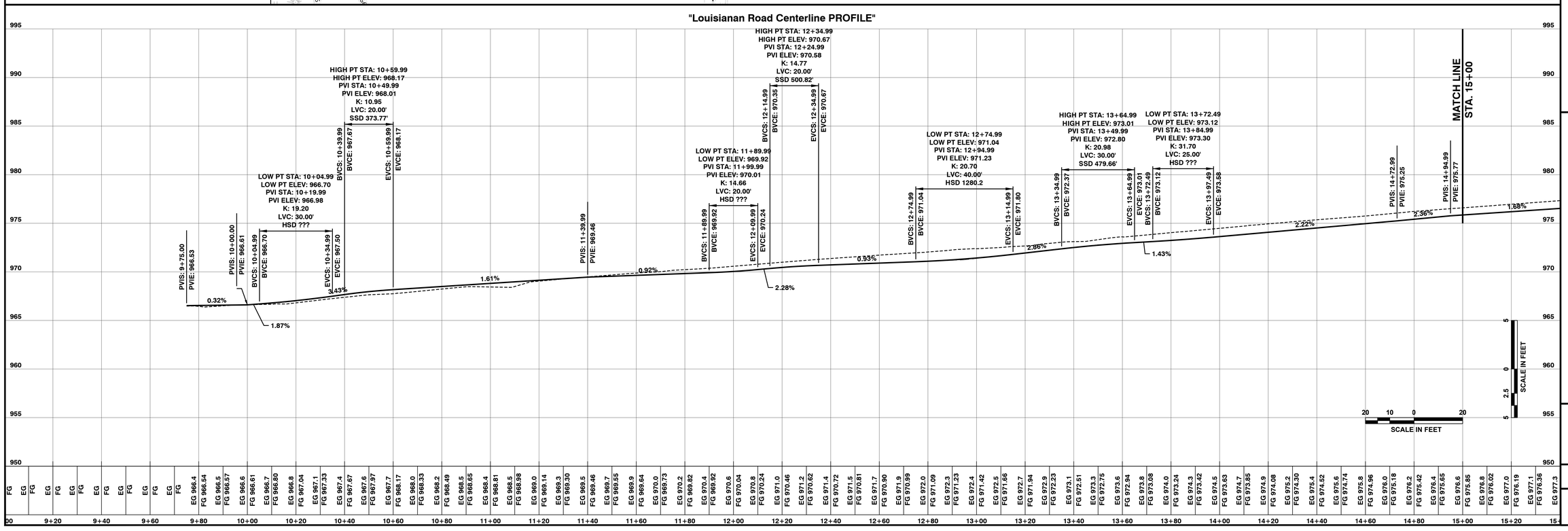


SECTION A-A TURNED DOWN EDGE AT DRIVE

Louisianan Road Centerline

Number	Length	Radius	Line/Chord Direction	Start Station	Start Segment	End Station	End Segment
T#3	463.58'		S1° 49' 15.74"E	12+00.00	N 240638.92, E 2096541.02	16+63.58	N 240175.57, E 2096555.75
T#2	200.00'		S1° 36' 21.73"E	10+00.00	N 240838.84, E 2096535.41	12+00.00	N 240638.92, E 2096541.02
T#1	25.00'		S1° 36' 21.73"E	9+75.00	N 240863.83, E 2096534.71	10+00.00	N 240838.84, E 2096535.41



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PLAN & PROFILE - 1

7

Intermediate Submittal

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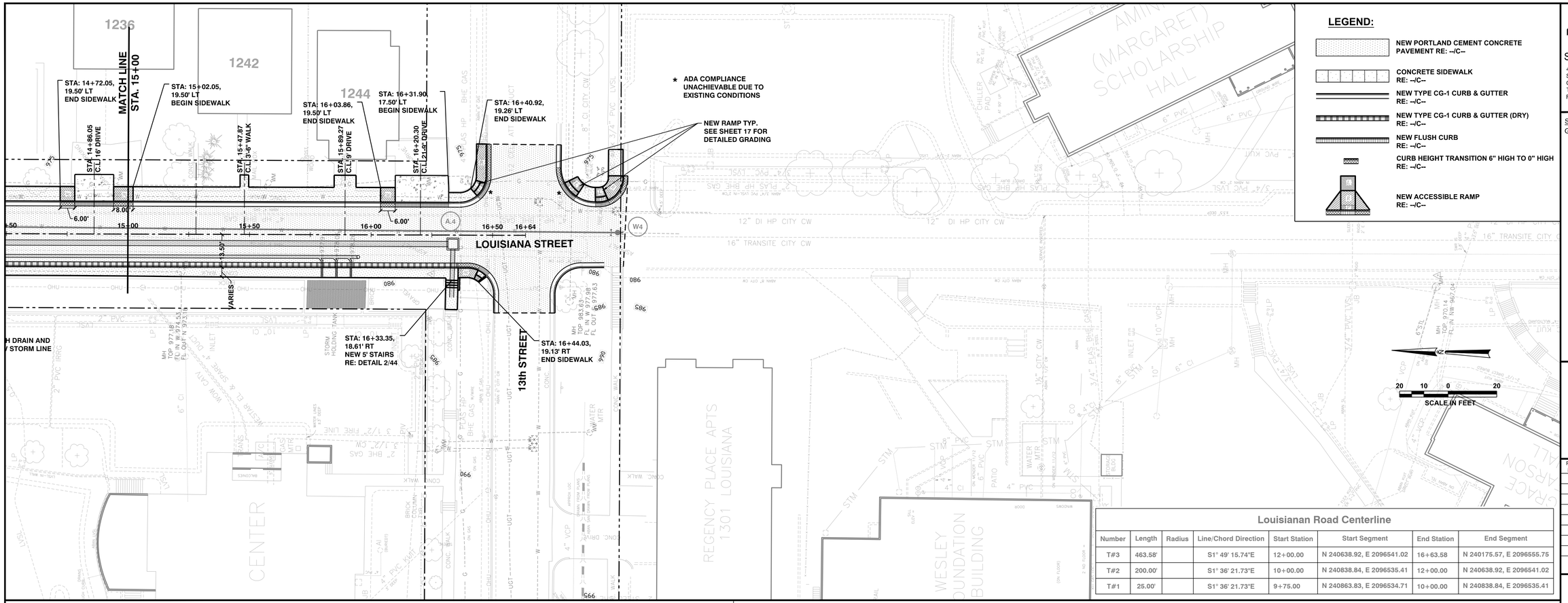

LEGEND:

- NEW PORTLAND CEMENT CONCRETE PAVEMENT RE: –/C–
- CONCRETE SIDEWALK RE: –/C–
- NEW TYPE CG-1 CURB & GUTTER RE: –/C–
- NEW TYPE CG-1 CURB & GUTTER (DRY) RE: –/C–
- NEW FLUSH CURB RE: –/C–
- CURB HEIGHT TRANSITION 6" HIGH TO 0" HIGH RE: –/C–
- NEW ACCESSIBLE RAMP RE: –/C–

Louisianan Road Centerline

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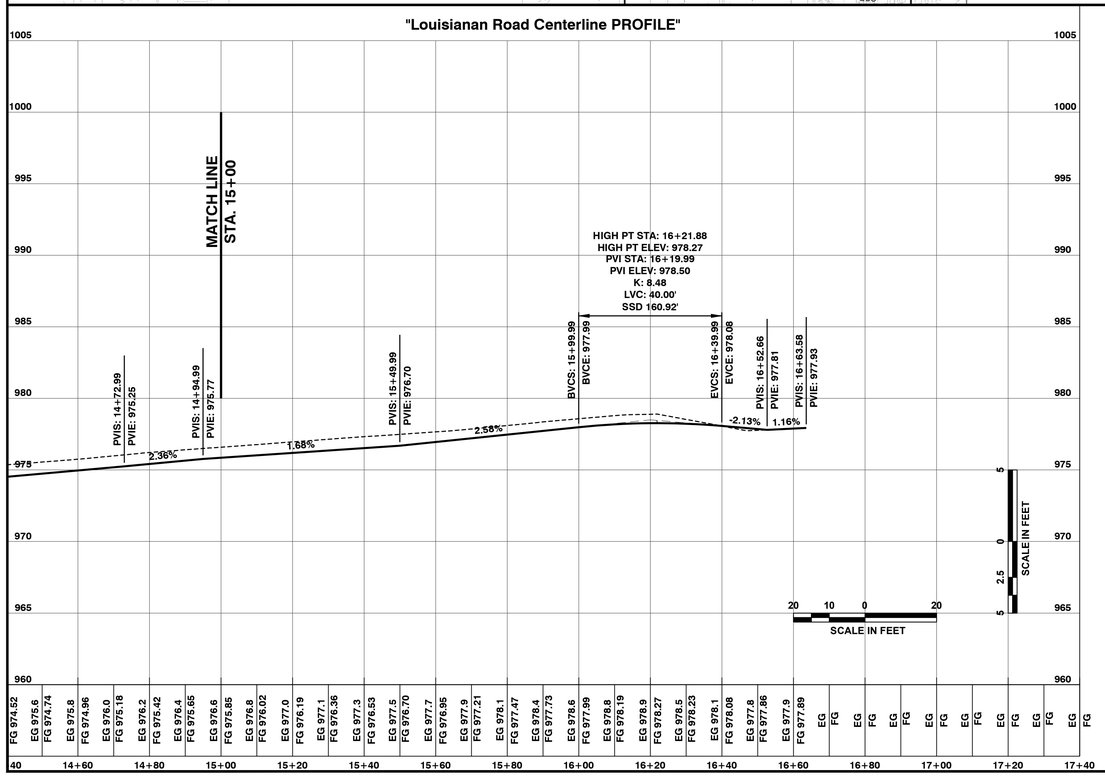
T#2	200.00'		S1° 36' 21.73"E	10+00.00	N 240838.84, E 2096535.41	12+00.00	N 240638.92, E 2096541.02
T#1	25.00'		S1° 36' 21.73"E	9+75.00	N 240863.83, E 2096534.71	10+00.00	N 240838.84, E 2096535.41

"Louisianan Road Centerline PROFILE"



| | | |

NOTES:
SEE SHEET 12 FOR DETAILED INTERSECTION GRADING

MATCH LINE
STA. 12+33

LOUISIANA STREET

12th STREET

1212

W1

W2

A.1

SCALE IN FEET
10 5 0 10

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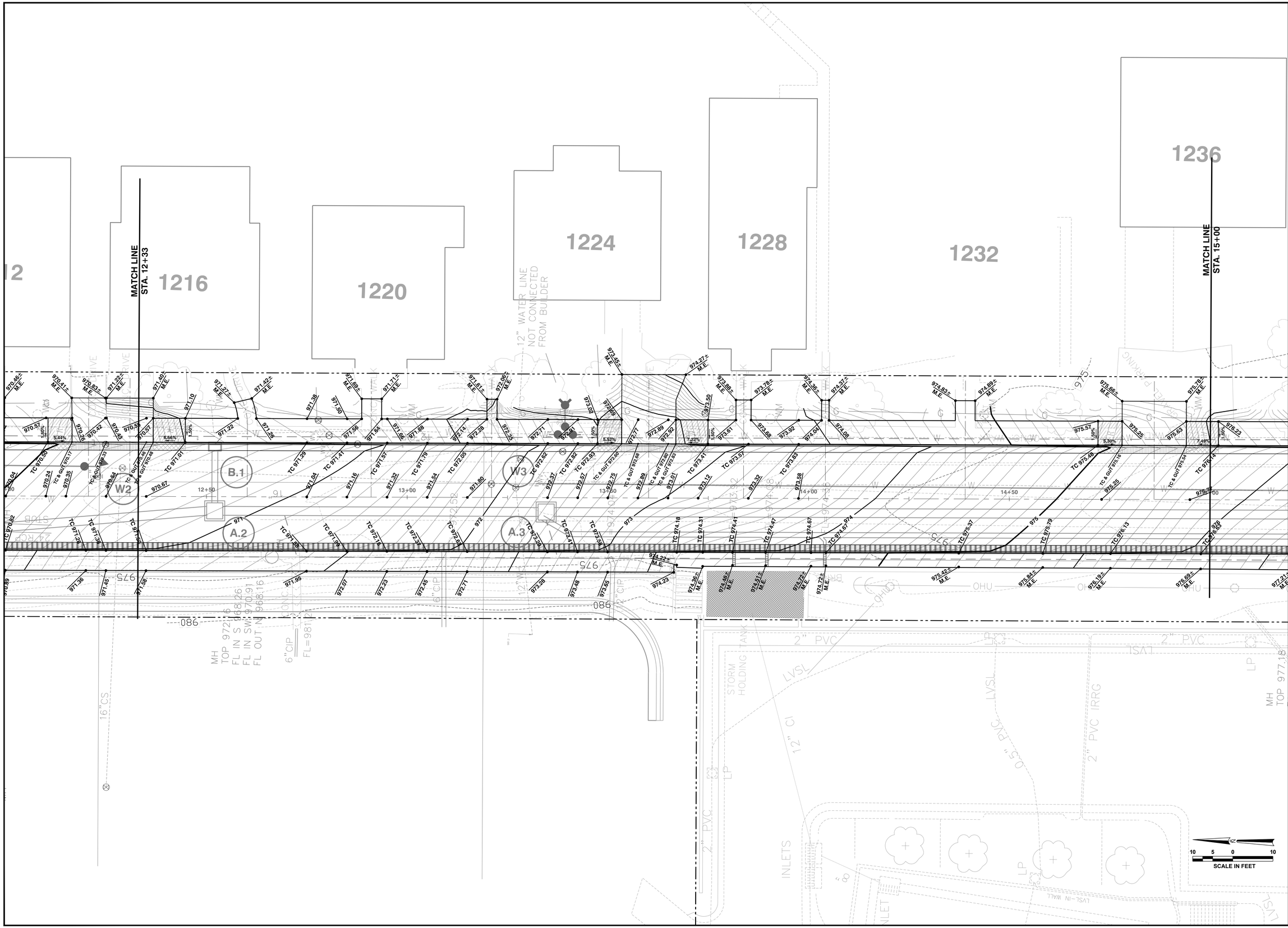
LOUISIANA STREET
GRADING PLAN - 1

9

Intermediate Submittal

u:\2017\17-162\2018-02-22 review set\09-11-grad.dwg



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LOUISIANA STREET GRADING PLAN - 2

10

Intermediate Submittal

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1236

1242

1244

MATCH LINE
STA. 15+00

NOTES:
SEE SHEET 12 FOR DETAILED INTERSECTION GRADING

LOUISIANA STREET

13th STREET

SCALE IN FEET
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LOUISIANA STREET GRADING PLAN - 3

11

Intermediate Submittal

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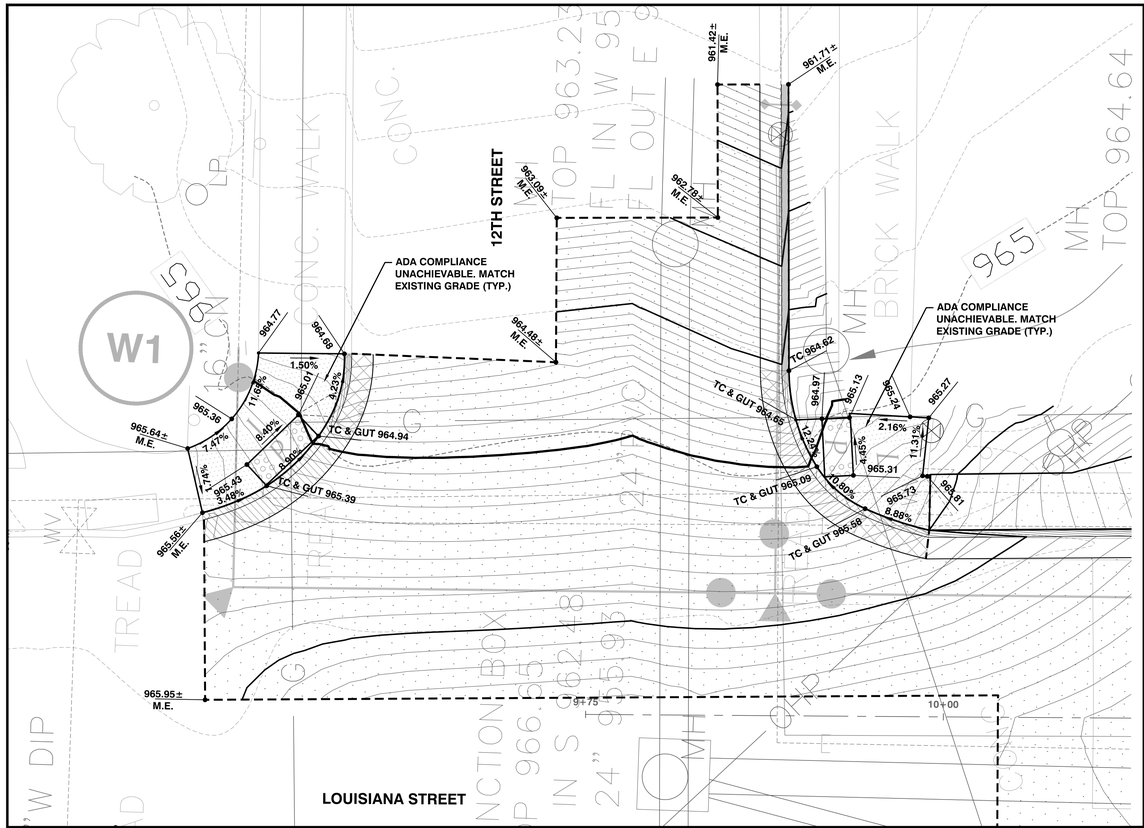
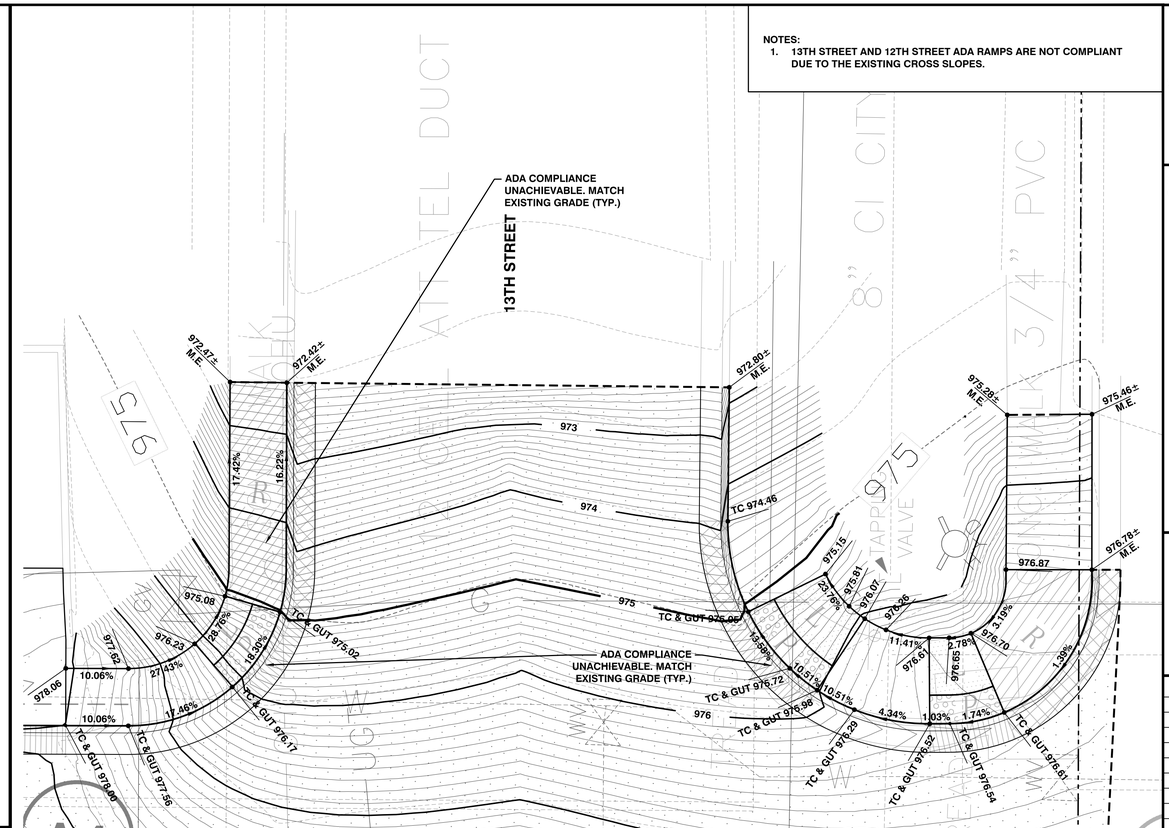
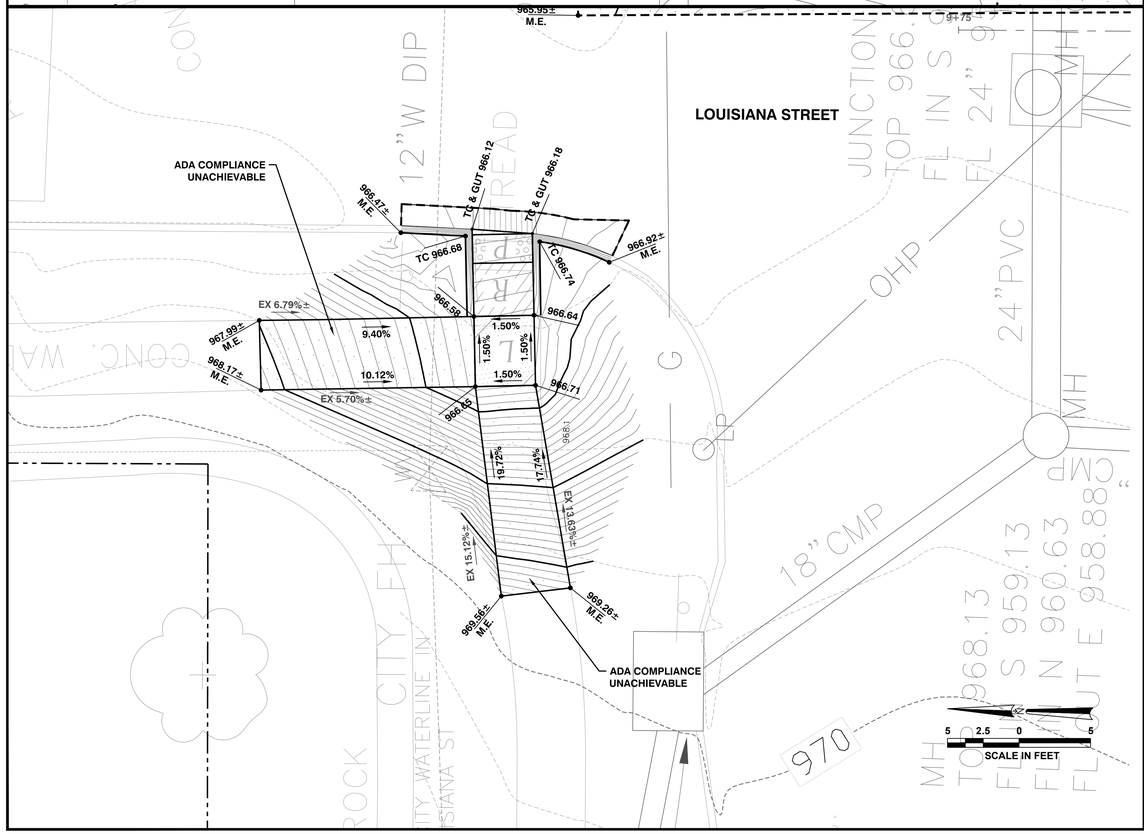
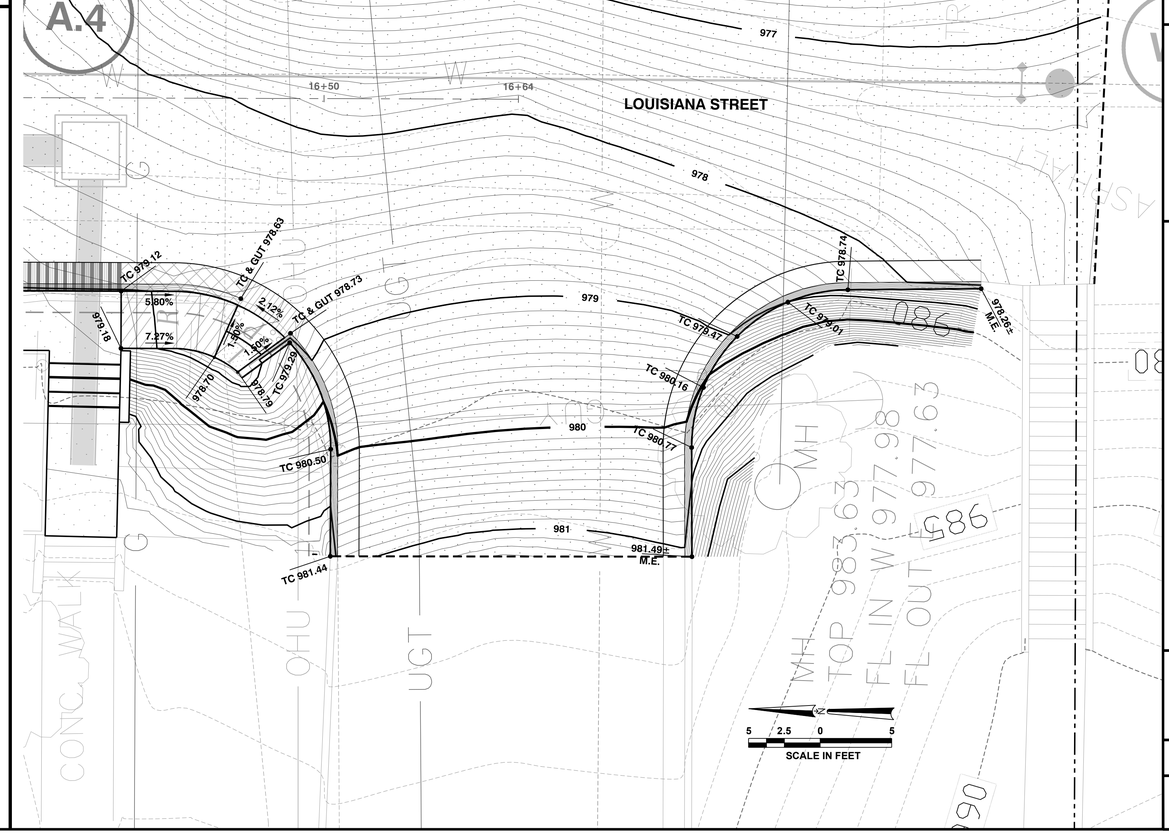
NOTES:

1. **13TH STREET AND 12TH STREET ADA RAMPS ARE NOT COMPLIANT DUE TO THE EXISTING CROSS SLOPES.**









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INTERSECTION DETAILS

12

Intermediate Submittal

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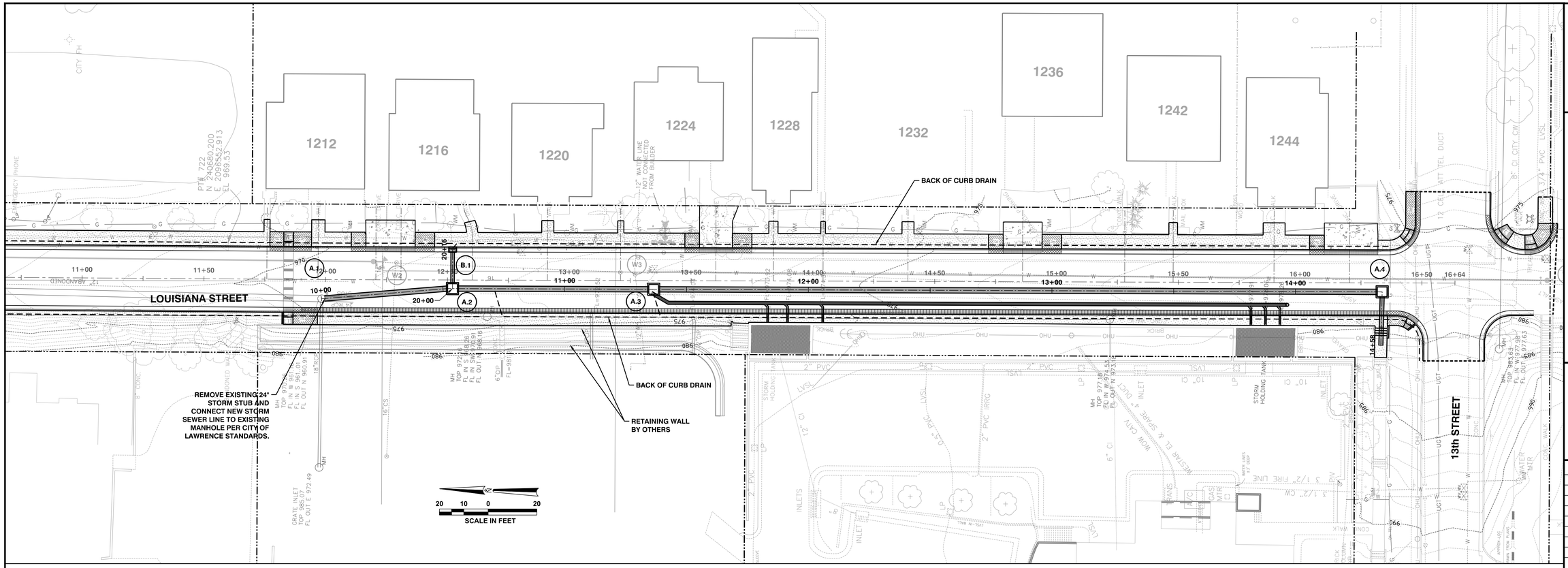

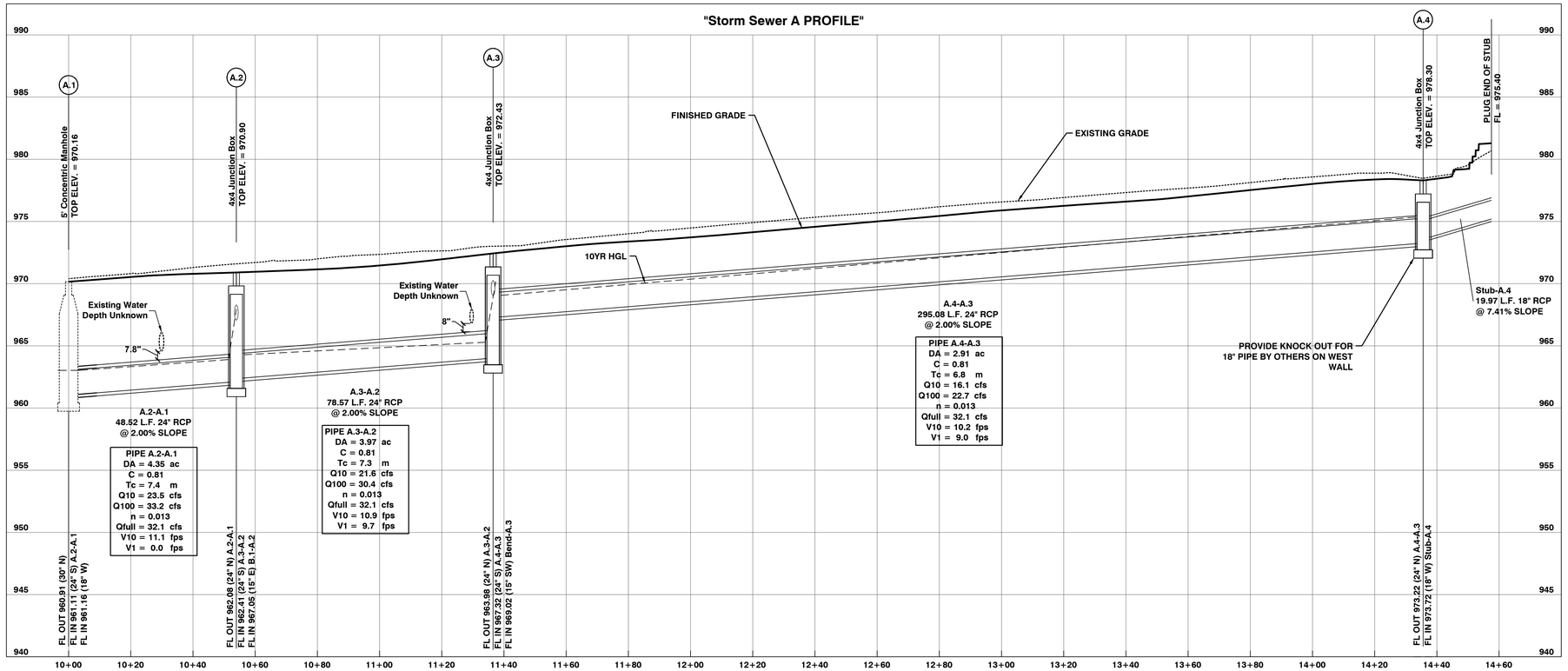

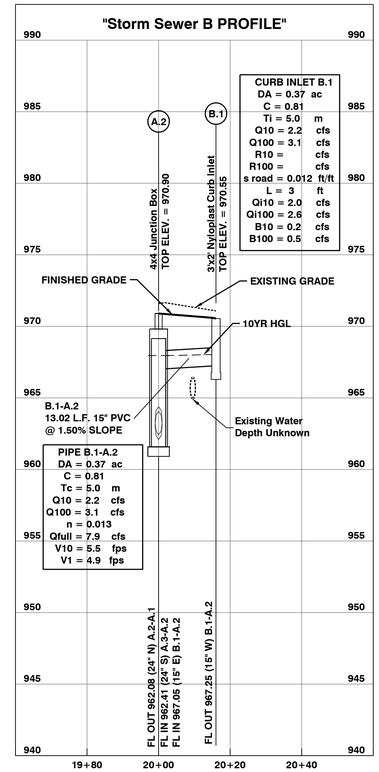

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LOUISIANA STREET
STORM PLAN & PROFILE - 1

13

Intermediate Submittal

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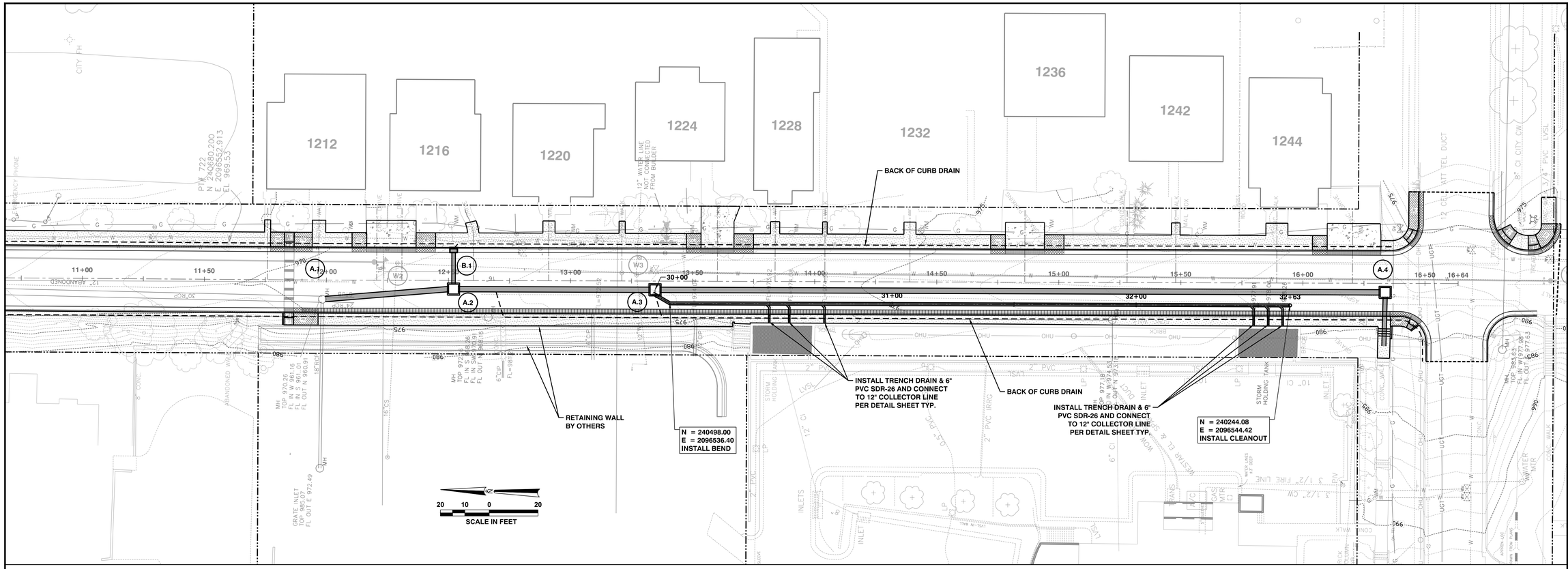

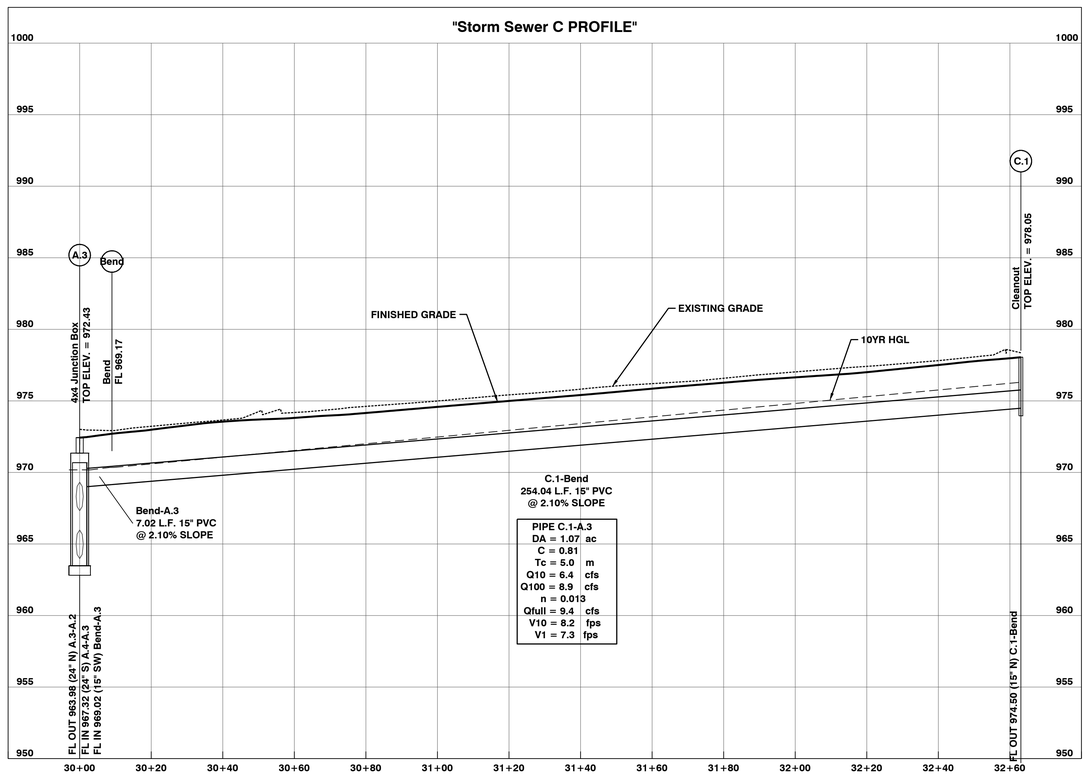

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LOUISIANA STREET
STORM PLAN & PROFILE - 2

14

Intermediate Submittal

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Project:	Louisiana Street Storm
Date:	2/21/2018
Job # :	17-162
Description:	SITE STORM CALCULATIONS
Return Period	10
Antecedent Precipitation	1
Q=CIA	

Line	Cumulative Area (acres)	Cumulative C	Tc Cumulative (min)	I -10 (in/hr)	Q -10 (cfs)	Pipe Dia (inches)	Pipe n	Grade %	Capacity (cfs)	Velocity (ft/sec)	Partial Flow Velocity (ft/sec)
A.4-A.3	2.91	0.81	6.8	6.84	16.1	24	0.013	2.00	32.1	10.2	10.2
A.3-A.2	3.97	0.81	7.3	6.71	21.6	24	0.013	2.00	32.1	10.2	10.9
A.2-A.1	4.35	0.81	7.4	6.68	23.5	24	0.013	2.00	32.1	10.2	11.1
B.1-A.2	0.37	0.81	5.0	7.35	2.2	15	0.013	1.50	7.9	6.5	5.5
C.1-A.3	1.07	0.81	5.0	7.35	6.4	15	0.013	2.10	9.4	7.6	8.2

12th STREET

13th STREET

LOUISIANA STREET

DRAINAGE AREA: B.1
TOTAL AREA: 0.375 ACRES

DRAINAGE AREA TO
EXISTING INLET E.1
TOTAL AREA: 0.556 ACRES

DRAINAGE AREA: A.1
TOTAL AREA: 0.761 ACRES

DRAINAGE AREA: A.3
TOTAL AREA: 1.068 ACRES

STORM BY OTHERS

DRAINAGE AREA: A.4
TOTAL AREA: 2.905 ACRES

SCALE IN FEET

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LOUISIANA STREET DRAINAGE AREA MAP - 1

15

Intermediate Submittal

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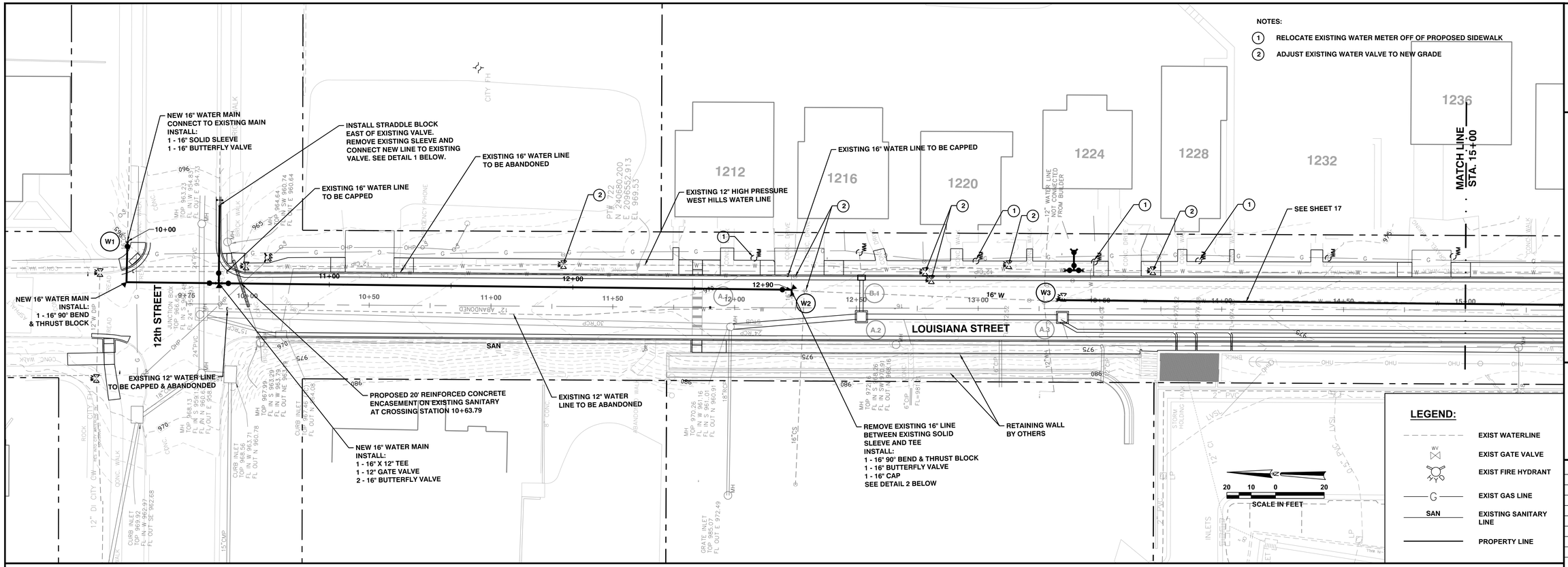

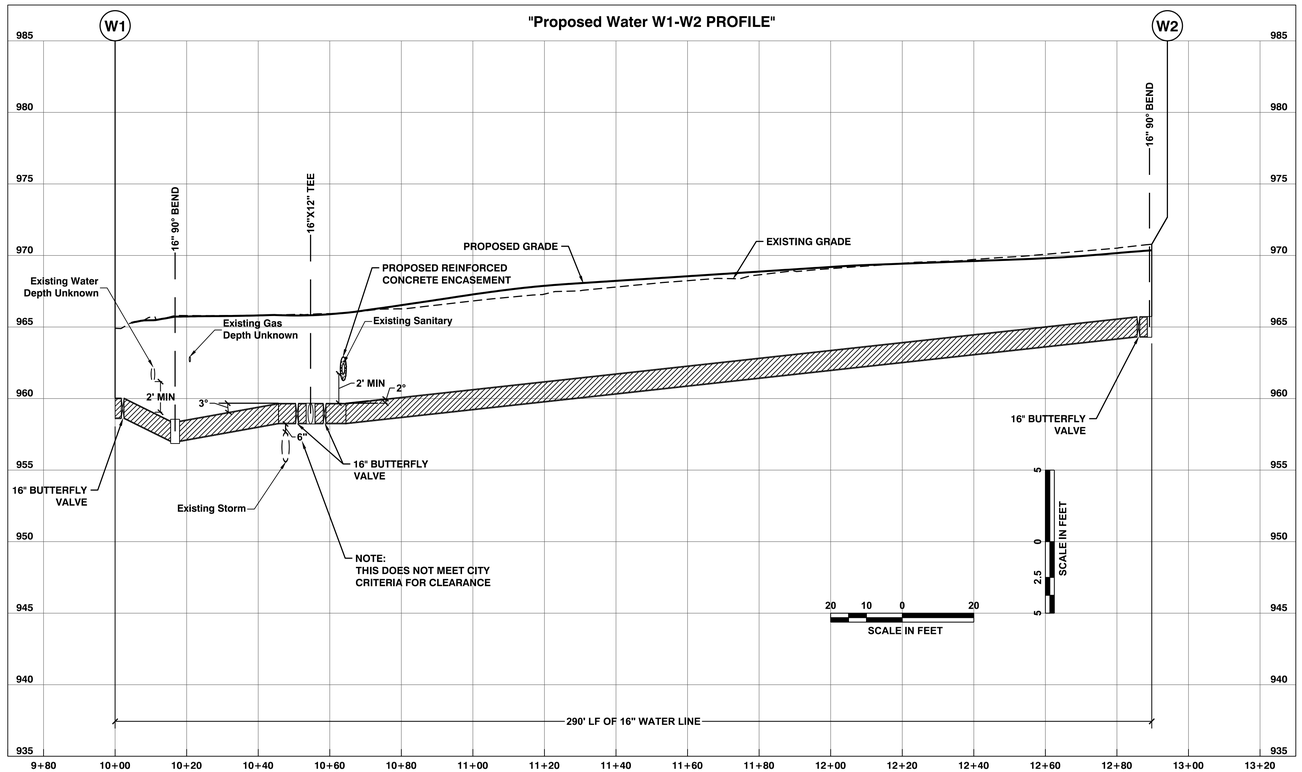

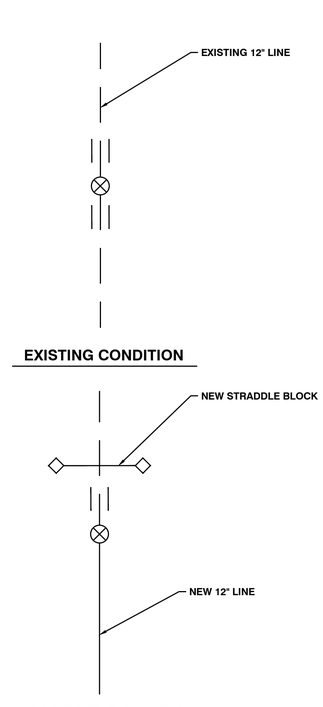

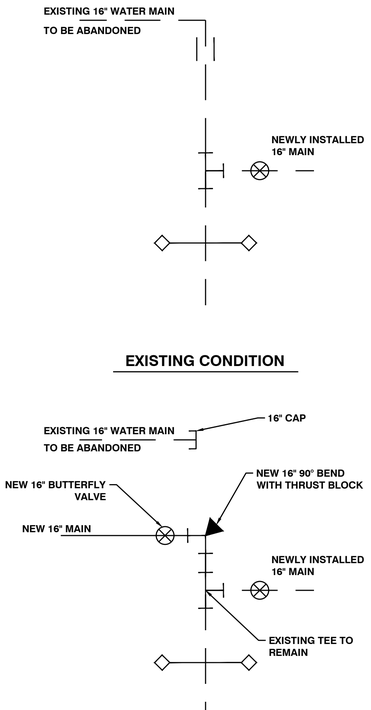

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LOUISIANA STREET WATERLINE PLAN & PROFILE - 1

16

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NOTES:

1. RELOCATE EXISTING WATER METER OFF OF PROPOSED SIDEWALK
2. ADJUST EXISTING WATER VALVE TO NEW GRADE

LEGEND:

- EXIST WATERLINE
- EXIST GATE VALVE
- EXIST FIRE HYDRANT
- EXIST GAS LINE
- SAN — EXISTING SANITARY LINE
- PROPERTY LINE

INSTALL:
1 - FIRE HYDRANT ASSEMBLY
1 - 12"X6" TEE
2 - 12" GATE VALVES
1 - 6" GATE VALVE
2 - 12" SOLID SLEEVES

"12" WATER LINE NOT CONNECTED FROM BUILDER"

MATCH LINE STA. 15+00

16" WATER LINE AT LOUISIANA CONNECT TO EXISTING 16" WATER LINE
INSTALL:
1 - 16" BUTTERFLY VALVE
1 - 16" SOLID SLEEVE
1 - STRADDLE BLOCK

RETAINING WALL BY OTHERS

REMOVE EXISTING TEE AND 16" BUTTERFLY VALVE. CONNECT TO EXISTING 16" WATER MAIN. RELOCATE EXISTING 16" BUTTERFLY VALVE TO NEW WATER LINE. SEE DETAIL 3 BELOW

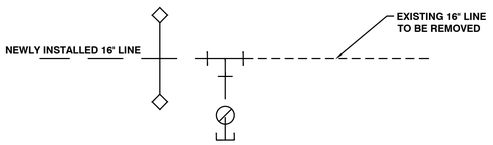
REMOVE EXISTING 16" WATER LINE

PROPOSED 20' REINFORCED CONCRETE ENCASEMENT ON EXISTING SANITARY AT CROSSING STATION 23+50.29

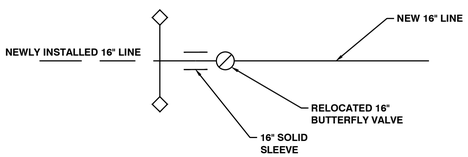
LOUISIANA STREET

13th STREET

SCALE IN FEET: 20 10 0 20

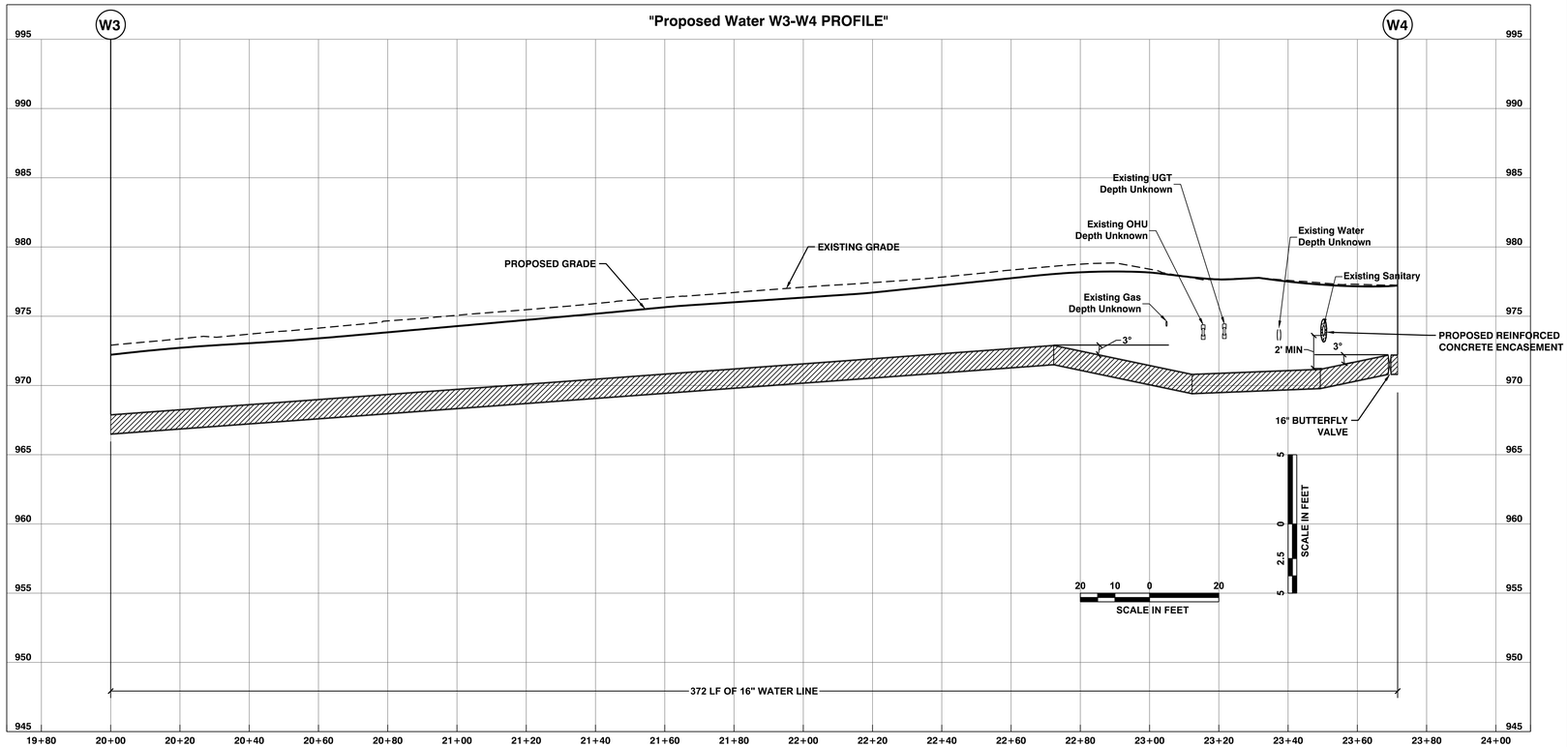


EXISTING CONDITION



PROPOSED CONDITION

DETAIL 3



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Tel: (913) 558-3408
Fax: (913) 757-2310

REV. NO.	DATE	DESCRIPTION

SK Project #: 17-162

City of Lawrence
PO Box 708
Lawrence, KS 66044
Office (785) 832-7843

City of Lawrence
Louisiana Street, 12th to 13th Street
Street, Storm and Waterline
Lawrence, Kansas 66045-7000
City PWD Project # 1724 Utilities Project # UT1719
DATE: 02-22-2018 DRAWN BY: RD CHECKED BY: SM

LOUISIANA STREET
WATERLINE
PLAN & PROFILE - 2

17

Intermediate Submittal

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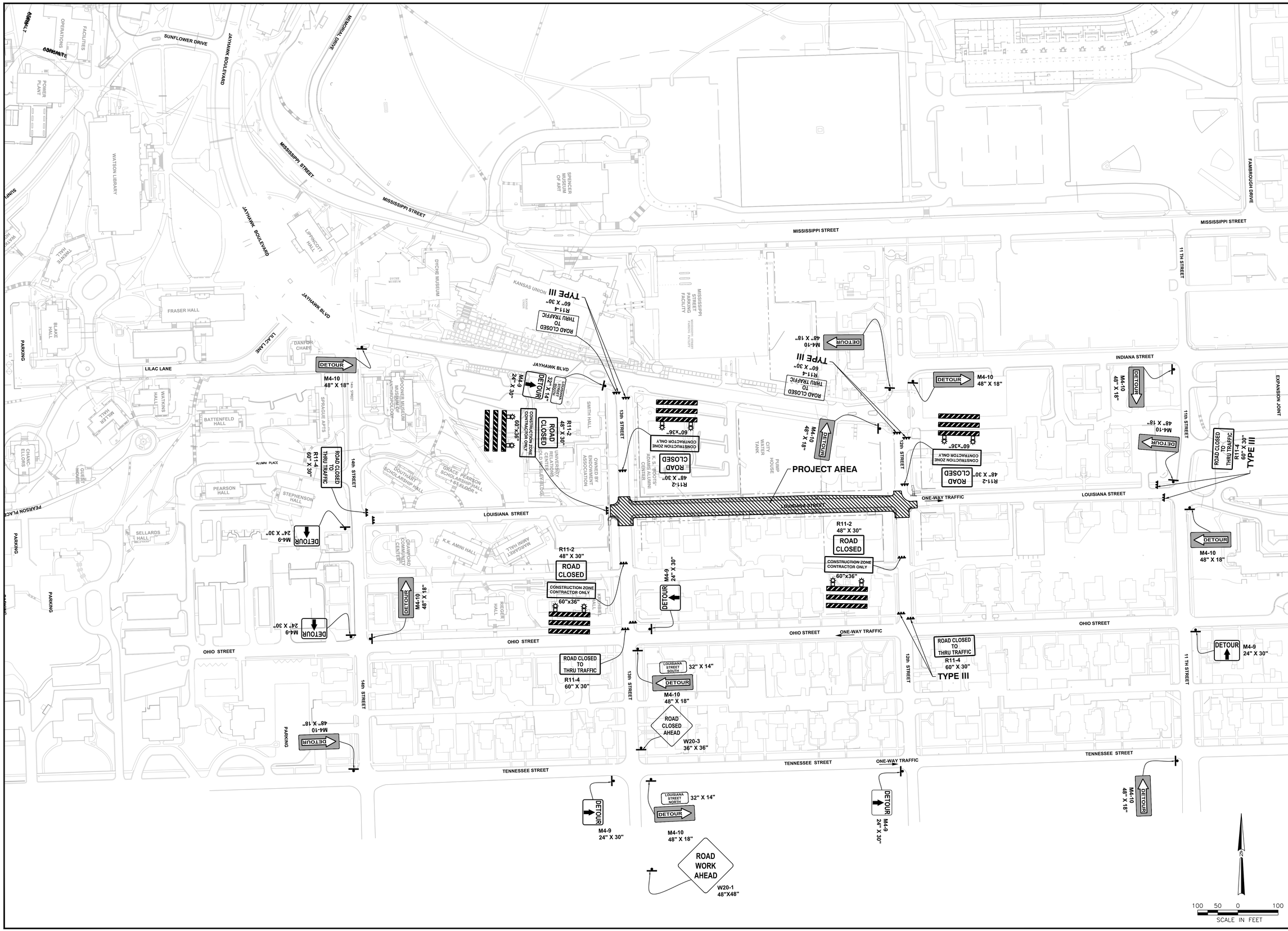

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City of Lawrence

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LOUISIANA STREET TRAFFIC CONTROL PLAN - 1

18

Intermediate Submittal

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LEGEND:

- SILT FENCE
  RE: APWA DETAIL (ESC-10)
- GRAVEL CURB INLET SEDIMENT TRAP
  RE: APWA DETAIL (ESC-24)

SILT FENCE

CURB INLET SEDIMENT TRAP

12th STREET

LOUISIANA STREET

1212 1216 1220 1224 1228 1232 1236

MATCH LINE STA. 15+00

20 10 0 20
SCALE IN FEET

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LOUISIANA STREET EROSION CONTROL PLAN - 1

19

Intermediate Submittal

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LEGEND:

SILT FENCE
RE: APWA DETAIL (ESC-10)

GRAVEL CURB INLET SEDIMENT TRAP
RE: APWA DETAIL (ESC-24)

1236

1242

1244

MATCH LINE STA. 15+00

SILT FENCE

SILT FENCE

LOUISIANA STREET

13th STREET

APPROX LOC FROM CITY PLANS

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SCALE IN FEET
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LOUISIANA STREET EROSION CONTROL PLAN - 2

20

Intermediate Submittal

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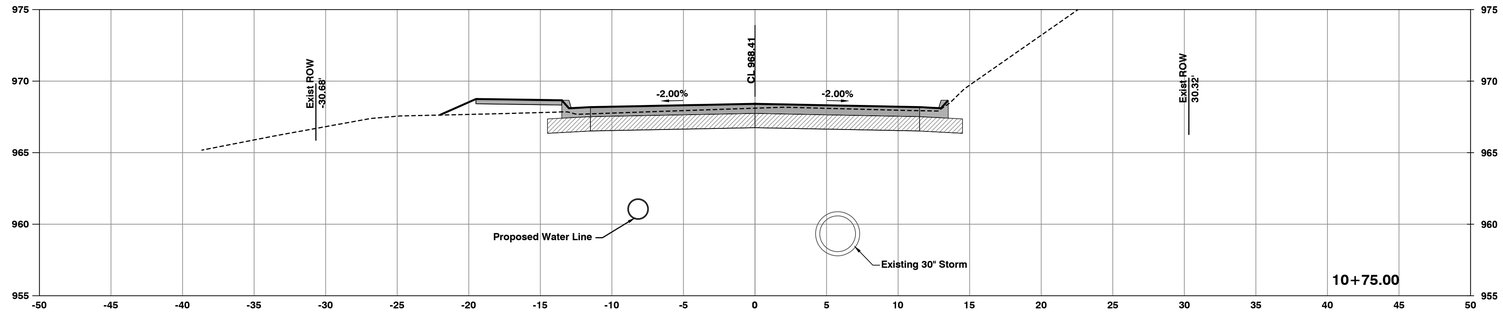

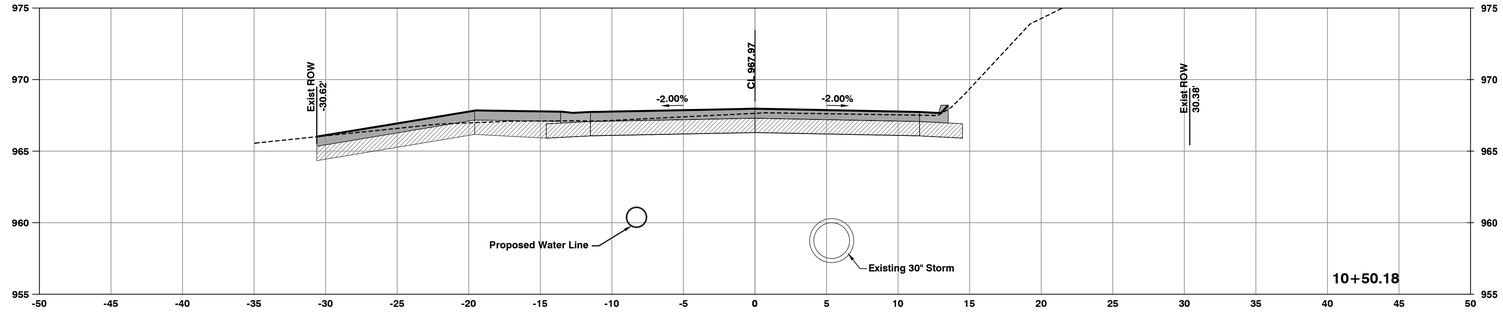

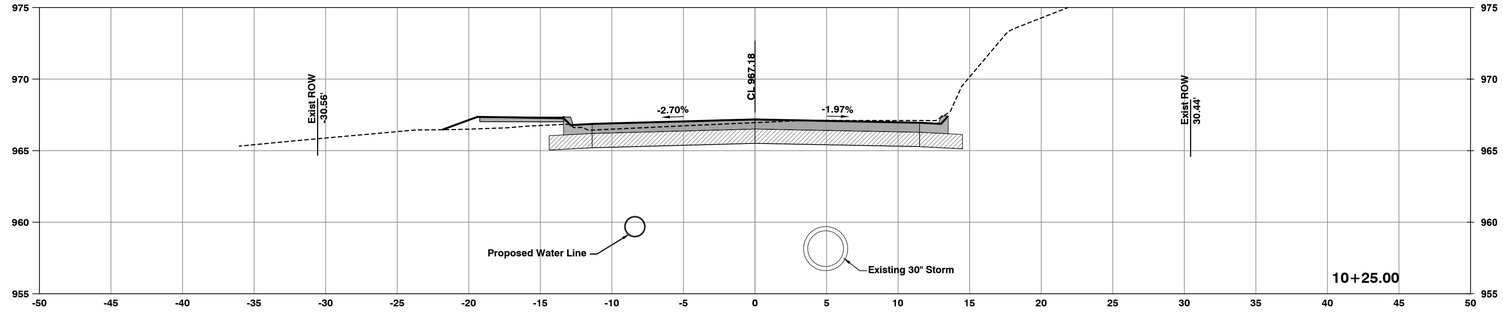

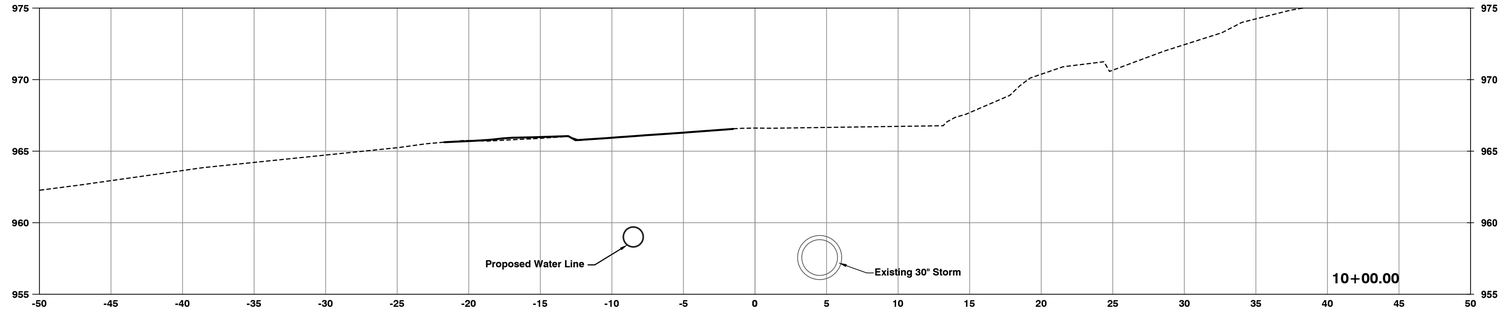

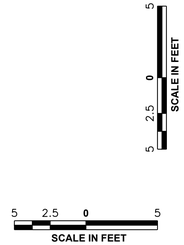

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LOUISIANAN STREET
CROSS SECTIONS - 1

21

Intermediate Submittal

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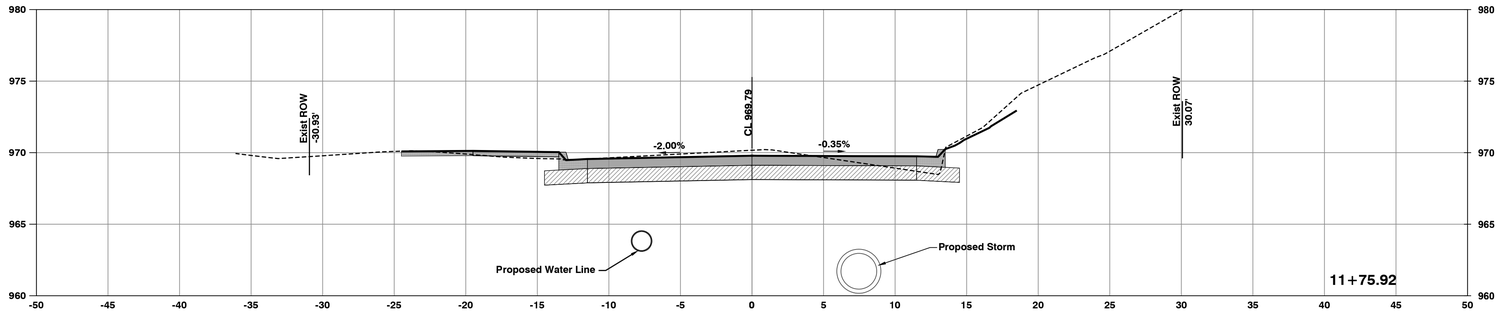

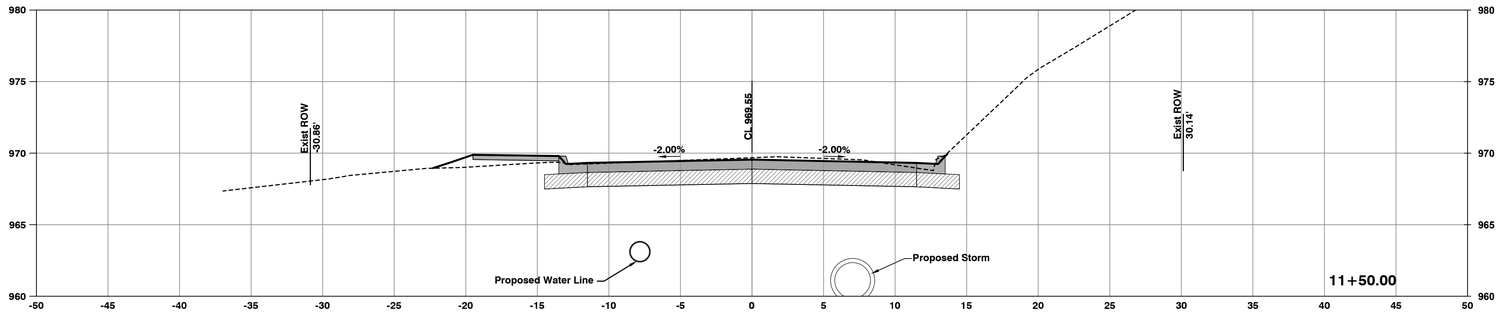

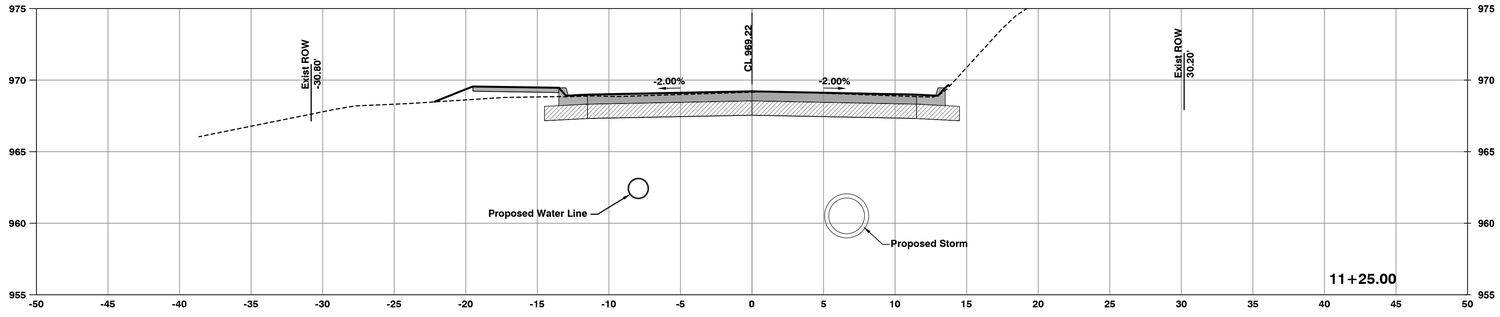

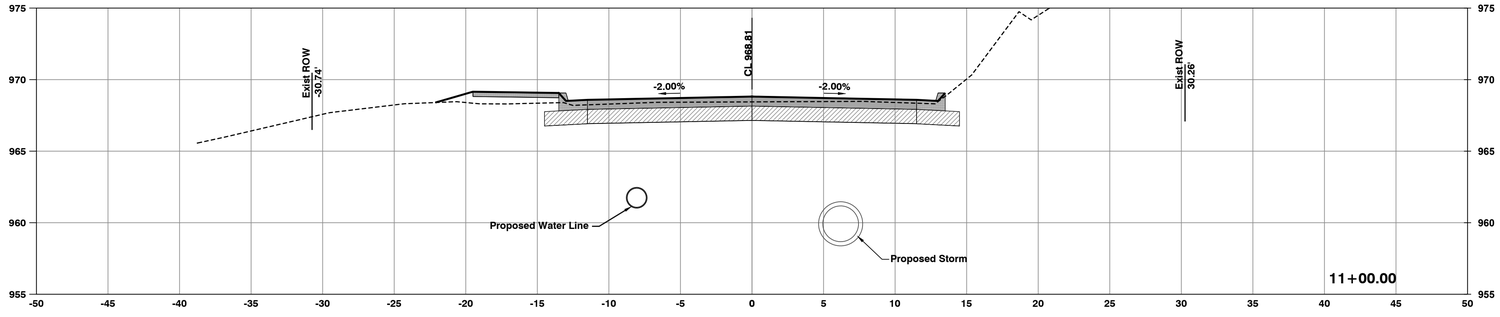

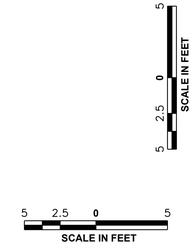

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LOUISIANAN STREET
CROSS SECTIONS - 2

22

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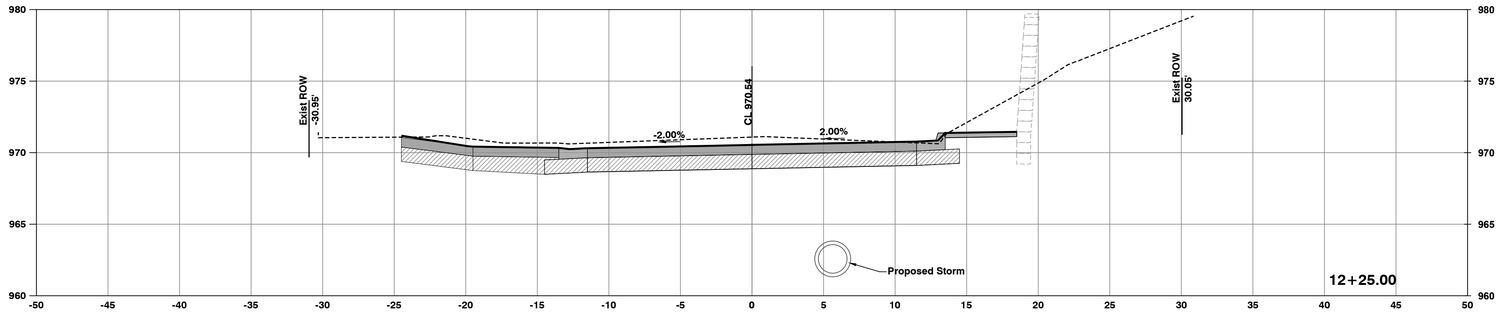

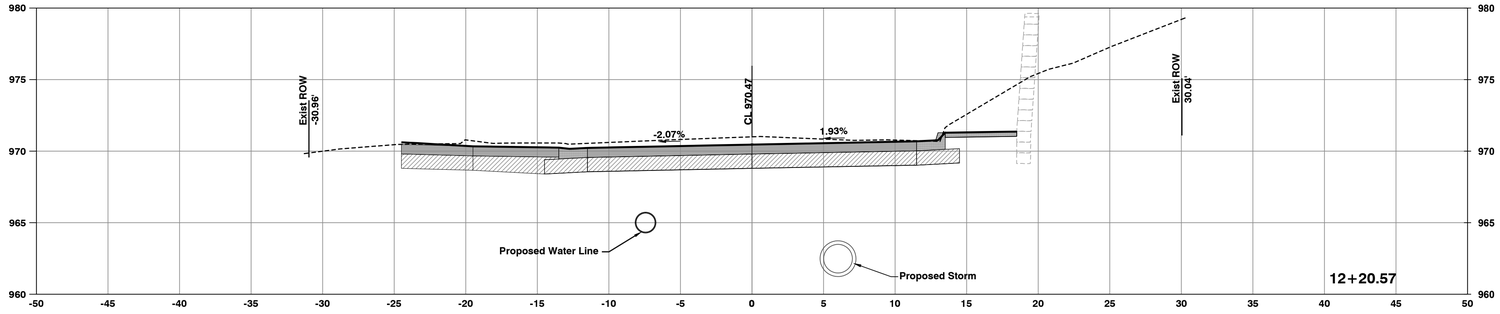

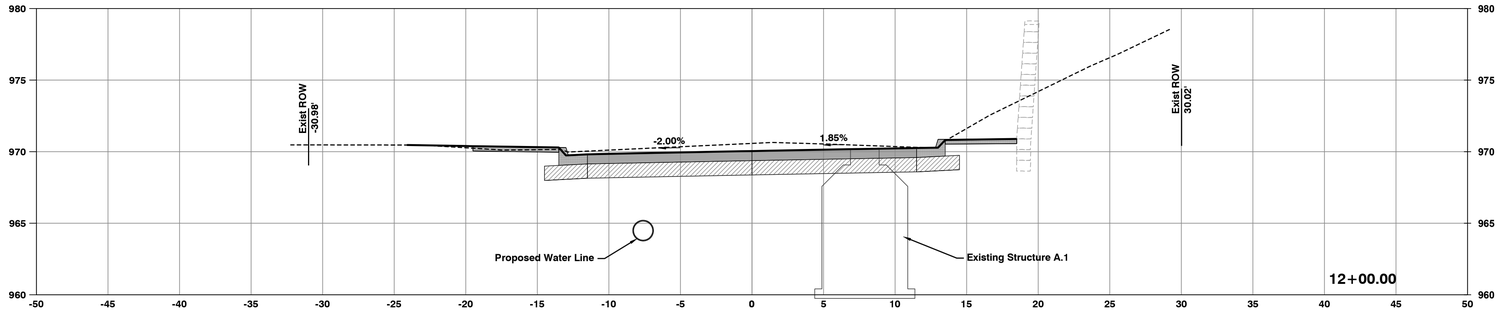

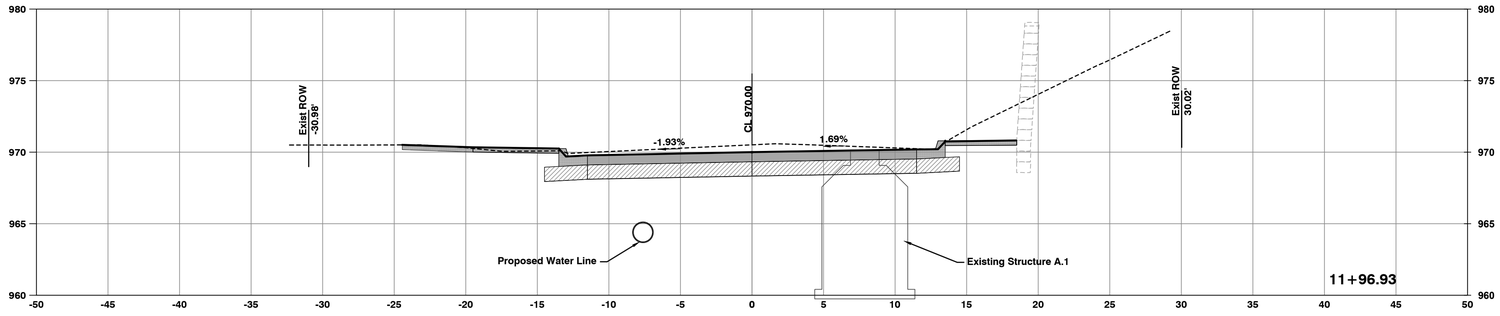

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LOUISIANAN STREET CROSS SECTIONS - 3

23

Intermediate Submittal

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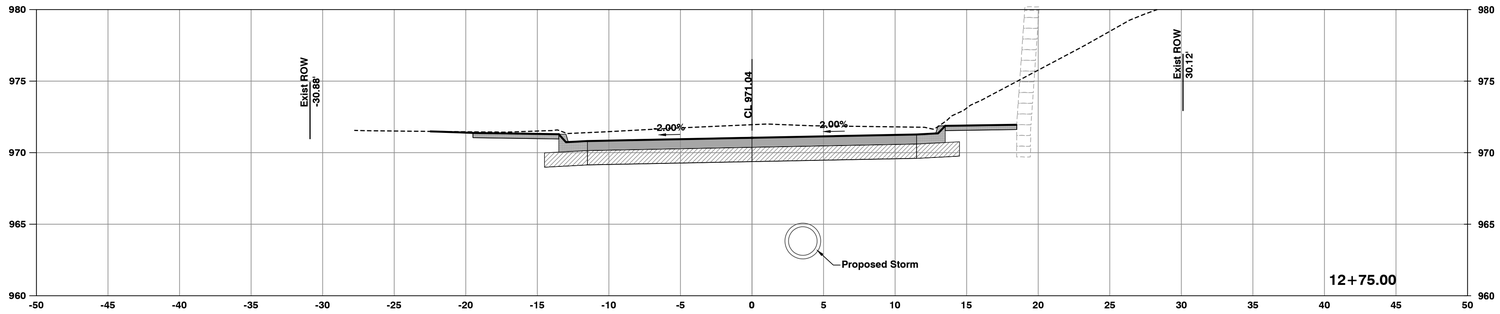

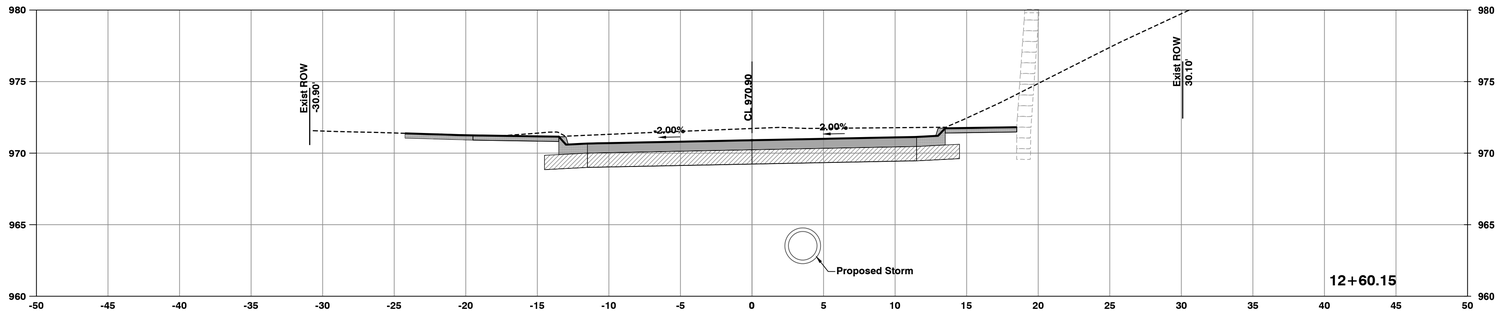

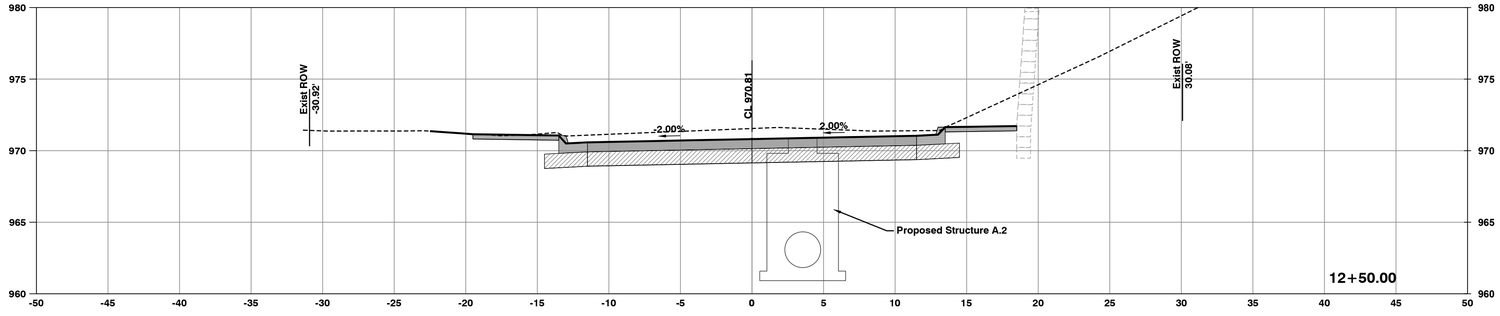

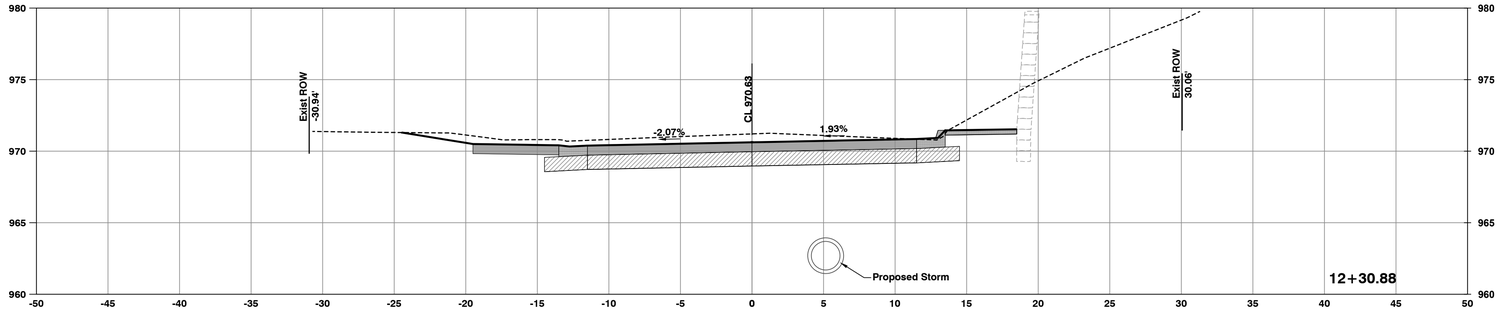

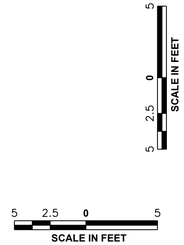

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LOUISIANAN STREET
CROSS SECTIONS - 4

24

Intermediate Submittal

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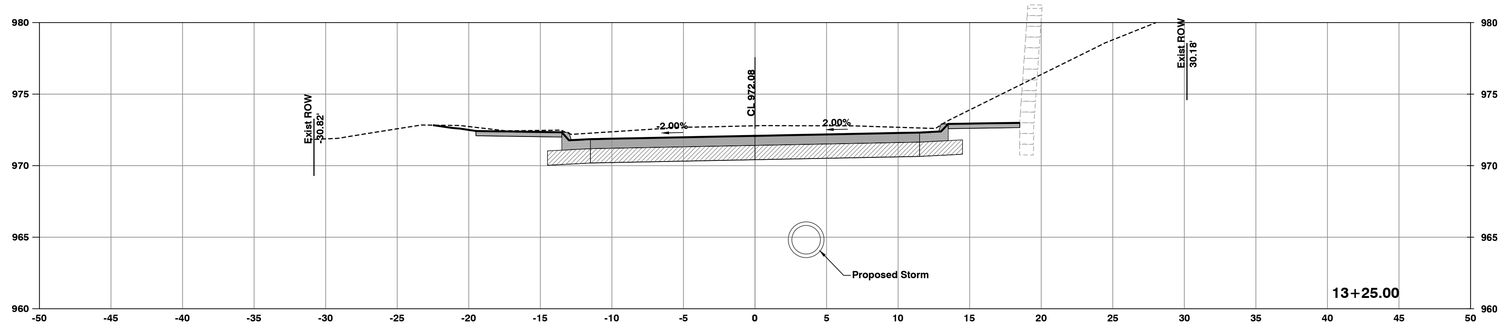

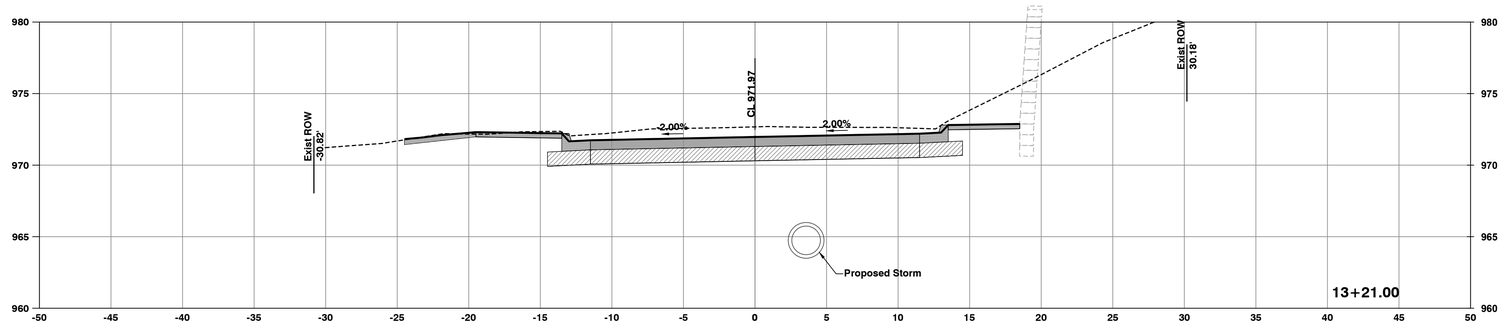

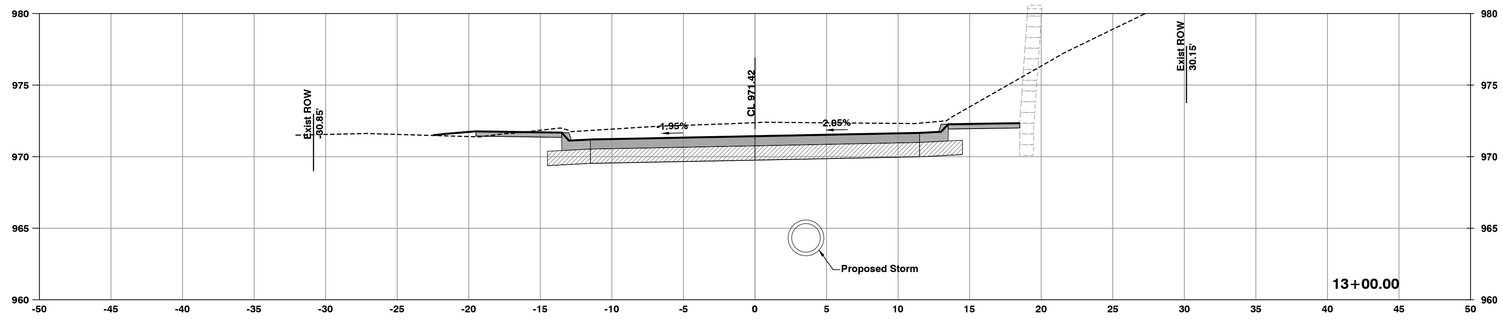

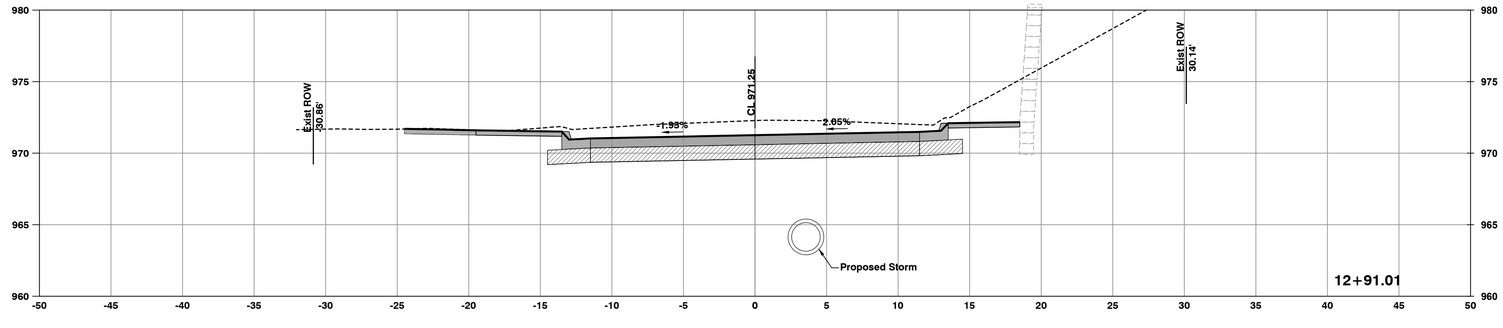

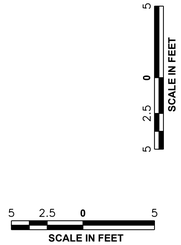

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LOUISIANAN STREET
CROSS SECTIONS - 5

25

Intermediate Submittal

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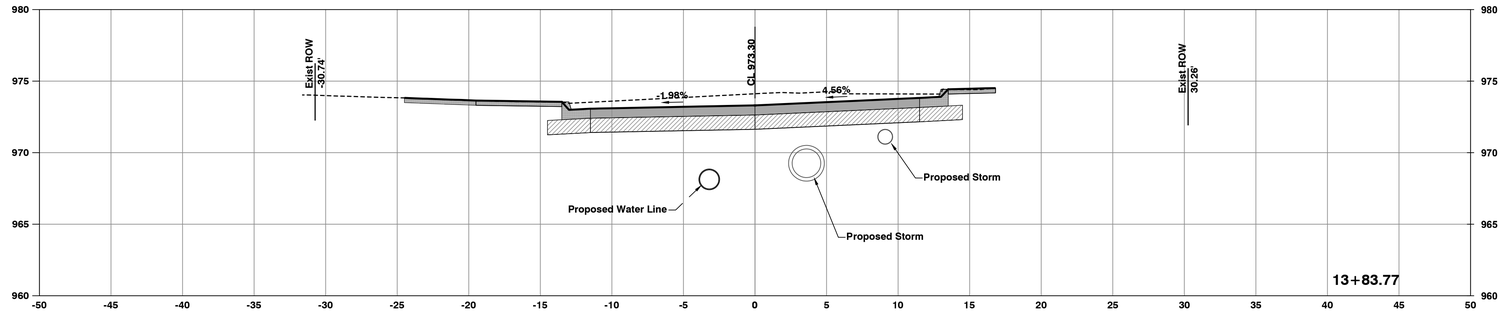

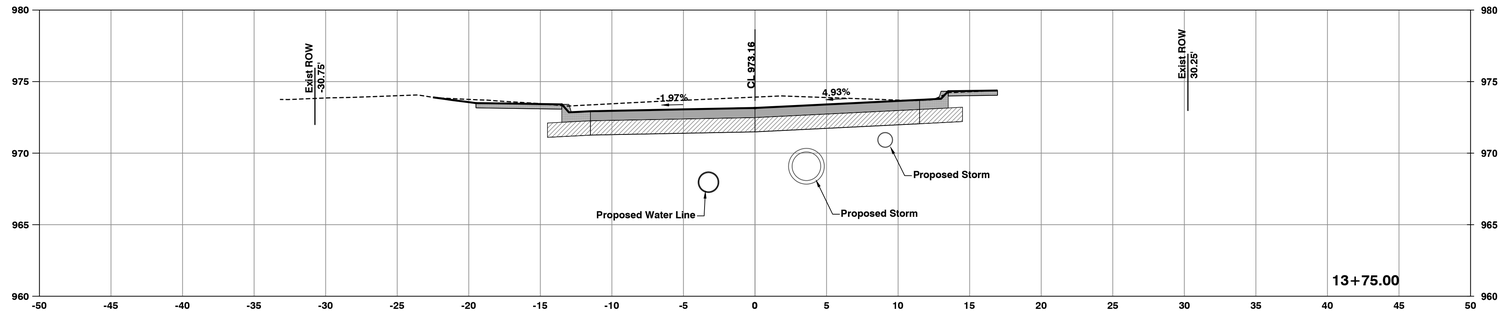

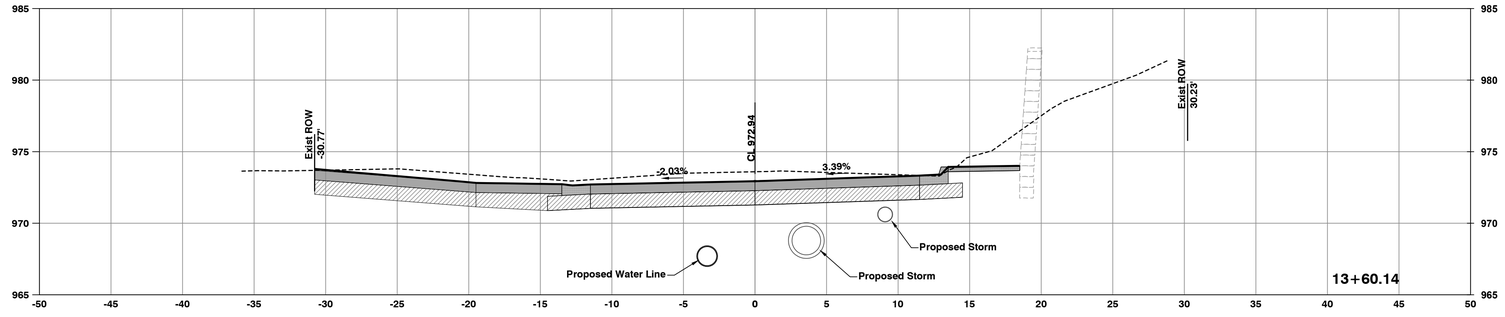

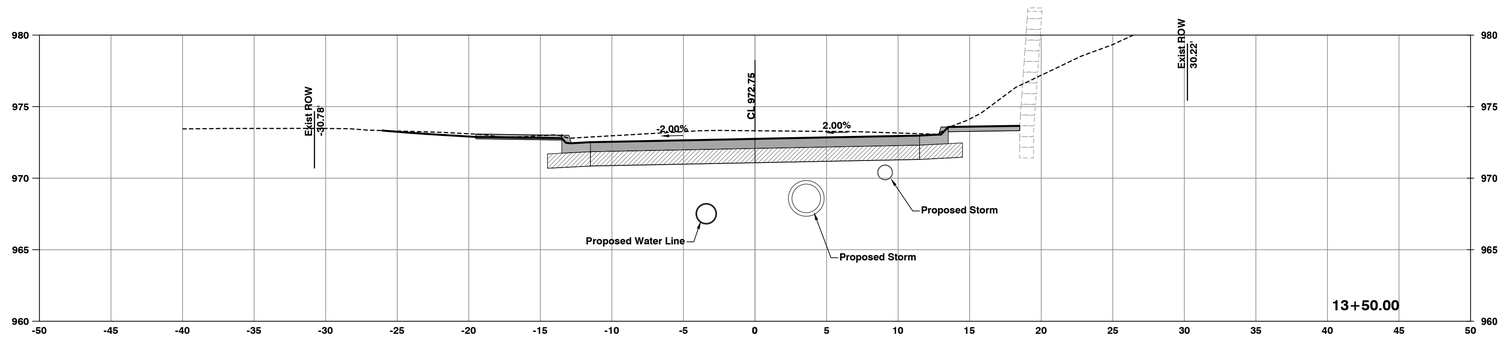

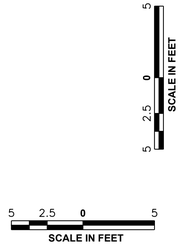

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LOUISIANAN STREET
CROSS SECTIONS - 6

26

Intermediate Submittal

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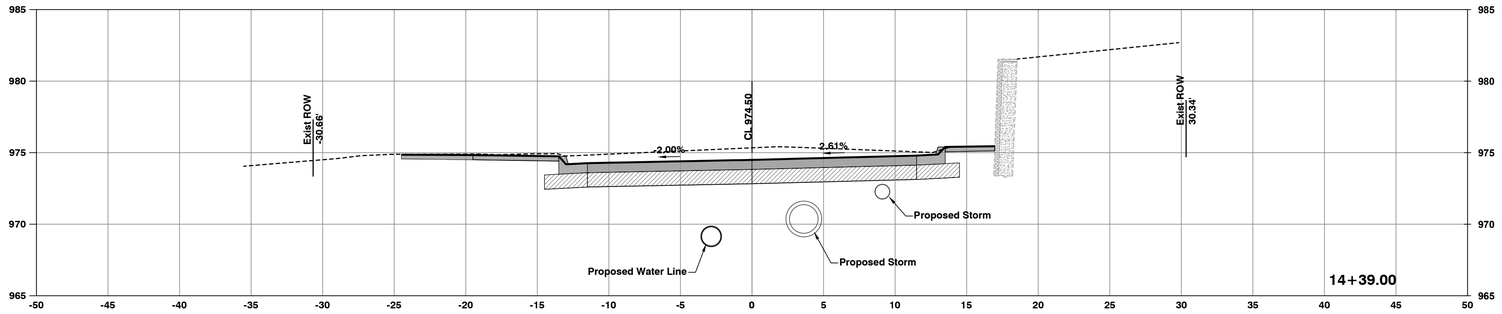

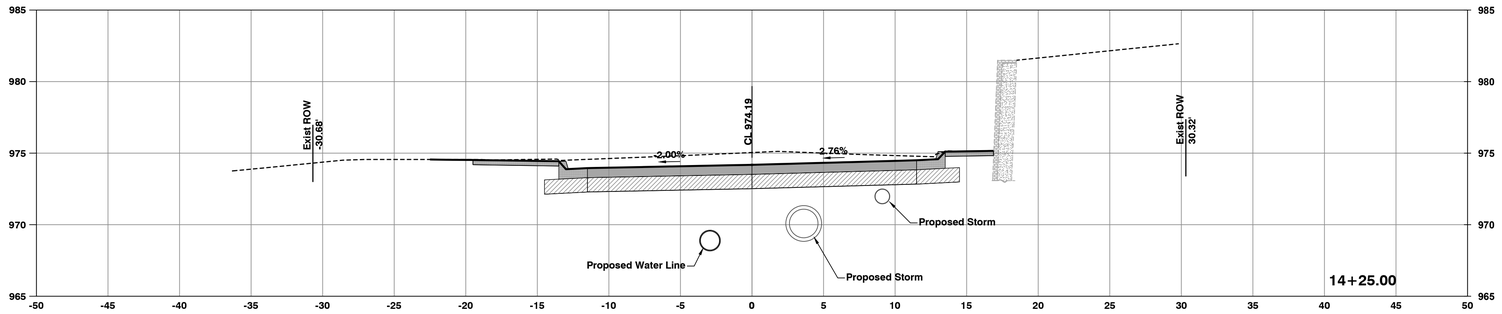

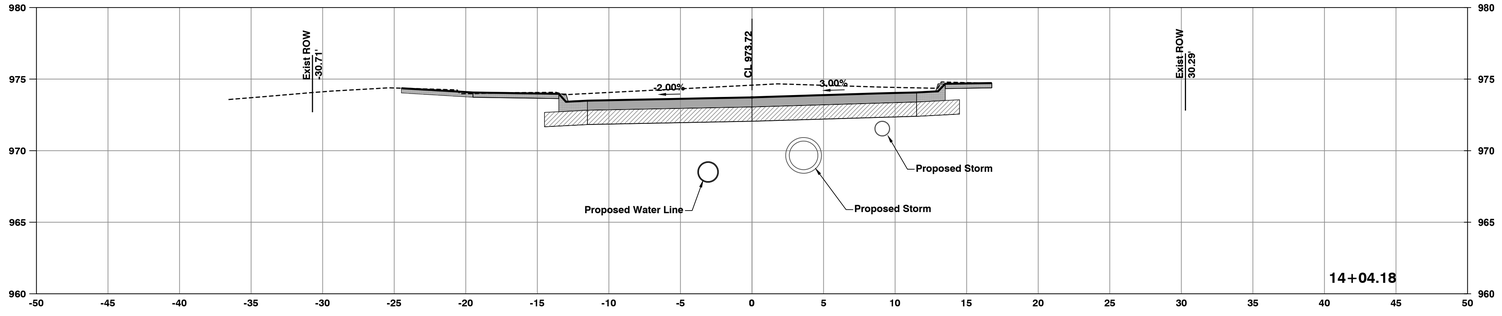

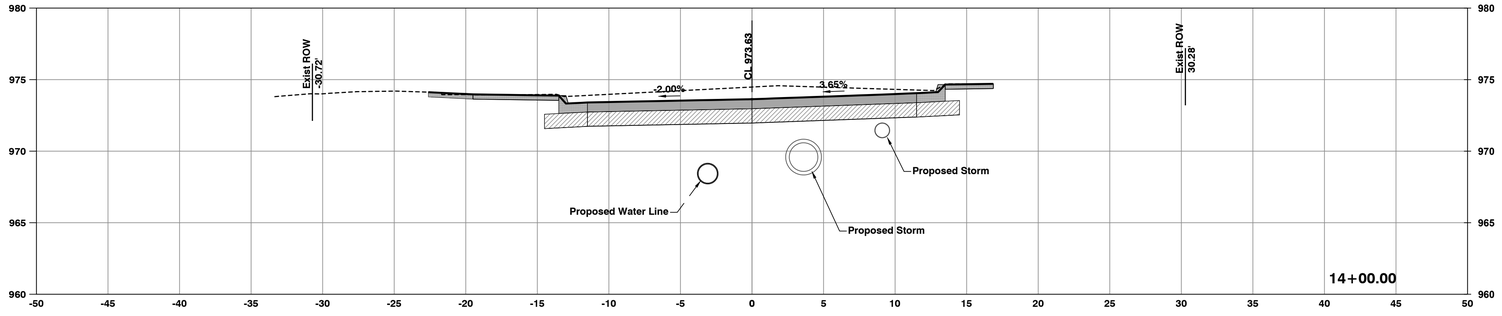

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PO Box 708
Lawrence, KS 66044
Office (785) 832-7843

City of Lawrence
Louisiana Street, 12th to 13th Street
Street, Storm and Waterline
Lawrence, Kansas 66045-7000
City PWD Project # 1724 Utilities Project # UT1719
DATE: 02-22-2018 DRAWN BY: RD CHECKED BY: SM

LOUISIANAN STREET
CROSS SECTIONS - 7

27

Intermediate Submittal

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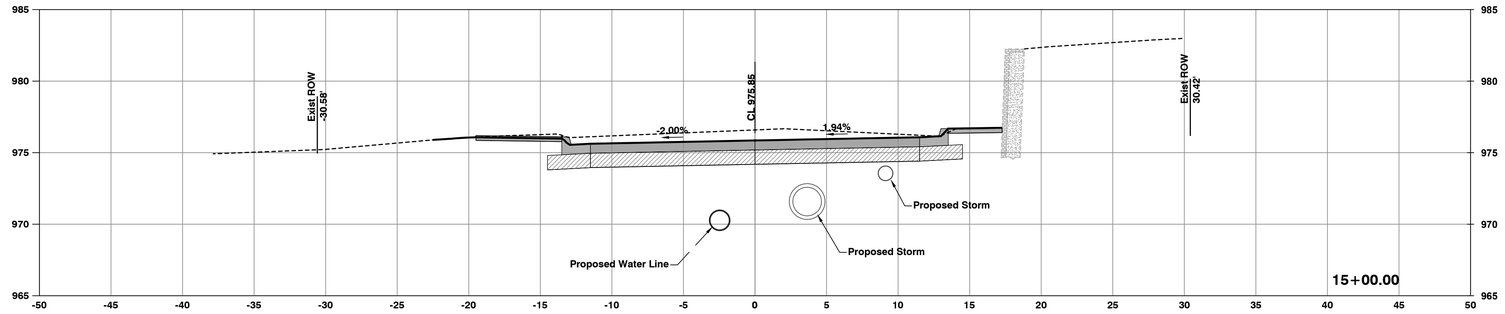

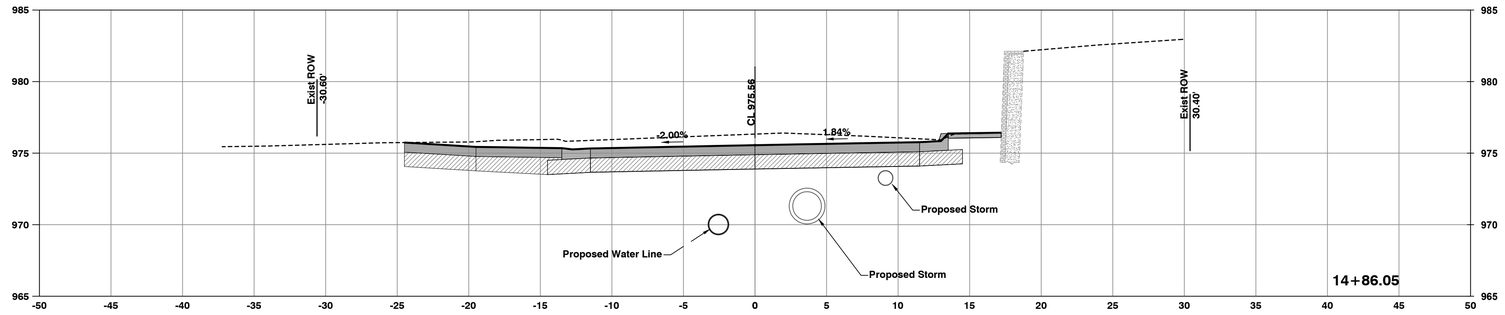

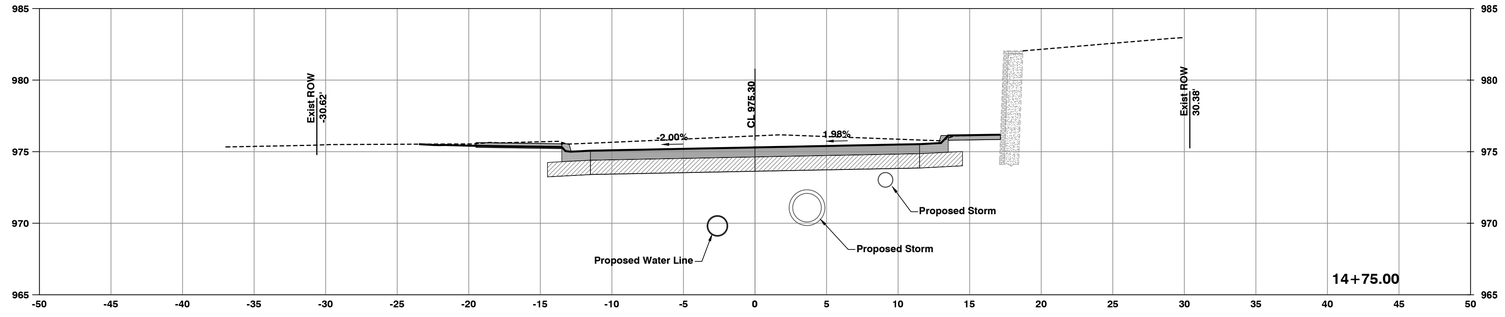

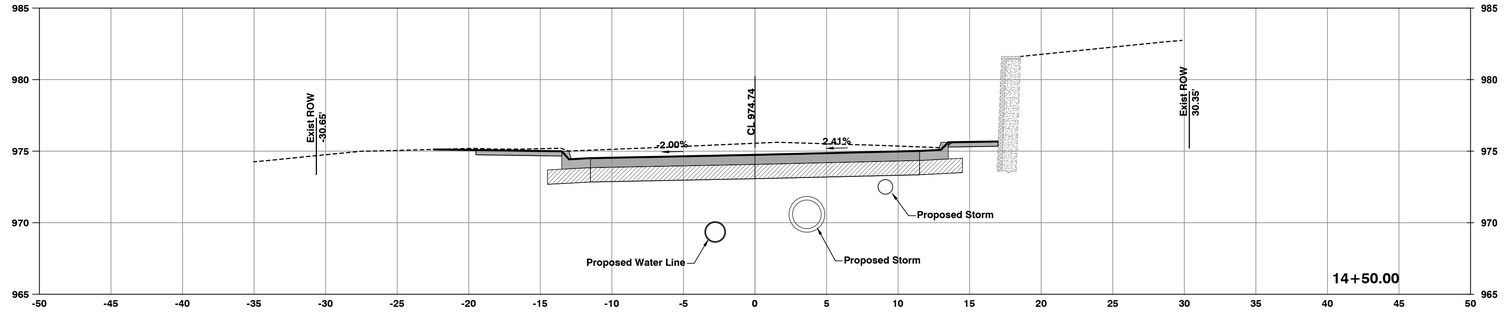

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SK Design Group, Inc.
4600 College Boulevard,
Suite 100
Overland Park, Kansas 66211
Tel: (913) 451-1818
Fax: (913) 451-7599

Survey
Greg Grant Survey
14343 2450 Road
Fontana, KS 66026
Tel: (913) 558-3408
Fax: (913) 757-2310

REV. NO.	DATE	DESCRIPTION

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LOUISIANAN STREET
CROSS SECTIONS - 8

28

Intermediate Submittal

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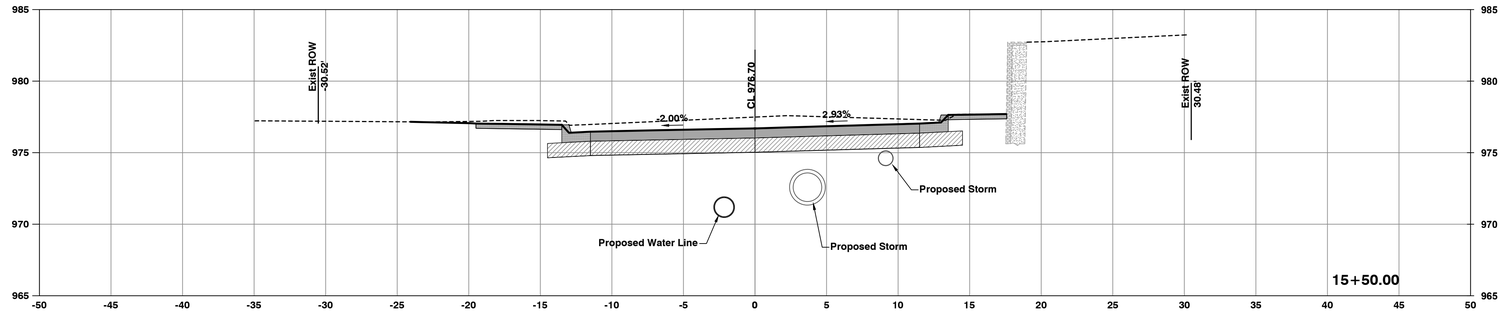

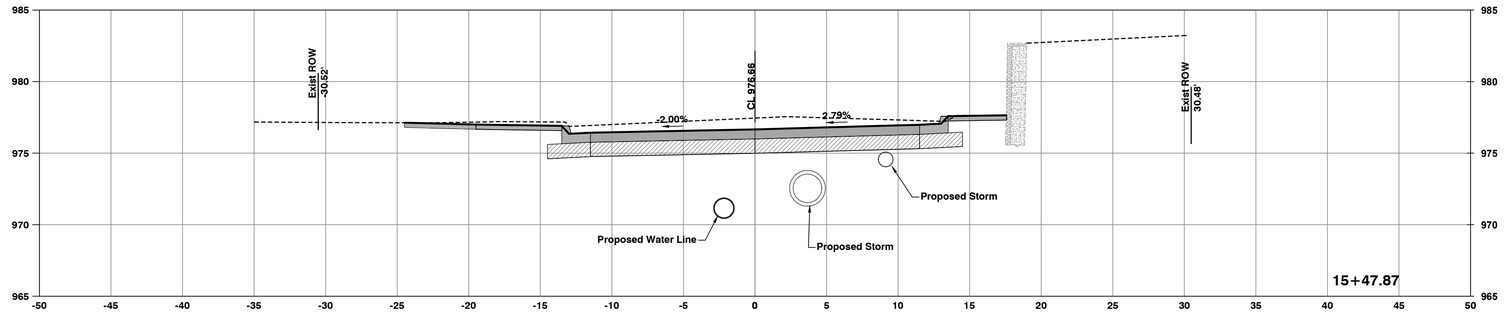

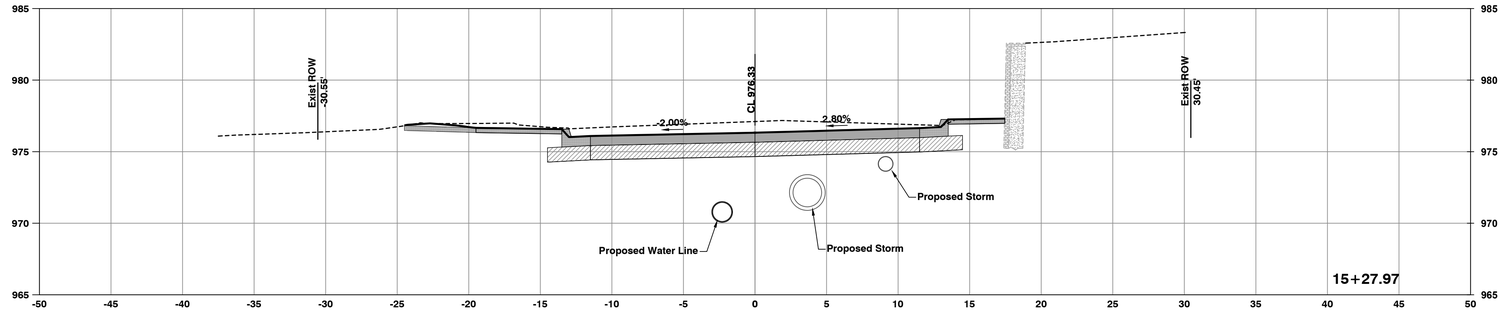

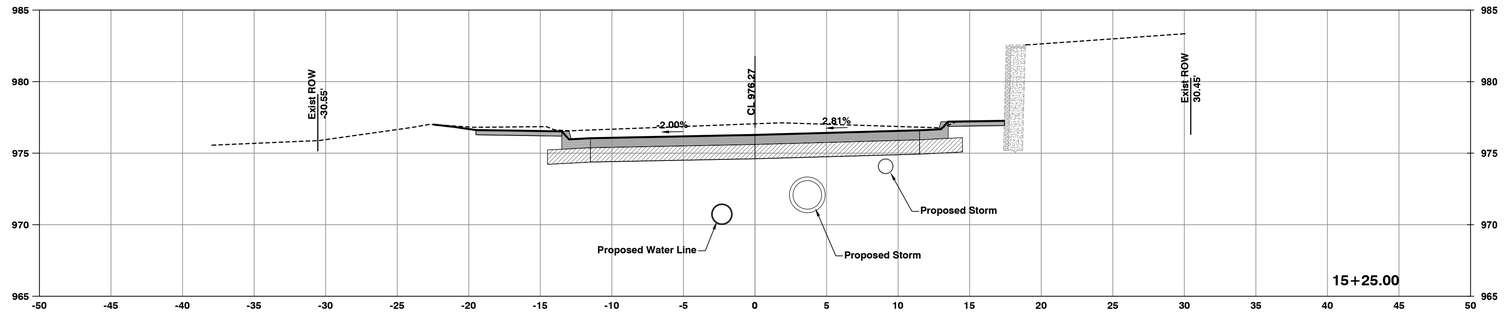

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LOUISIANAN STREET
CROSS SECTIONS - 9

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Intermediate Submittal

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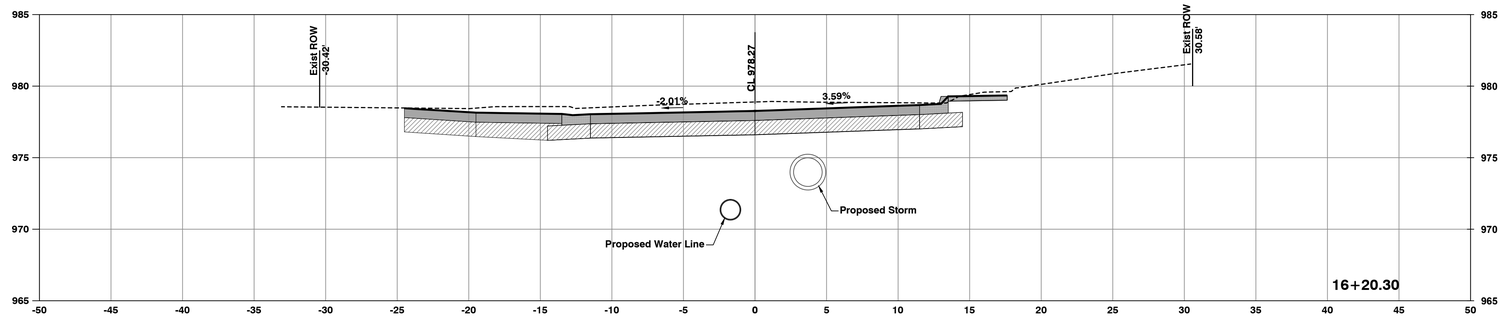

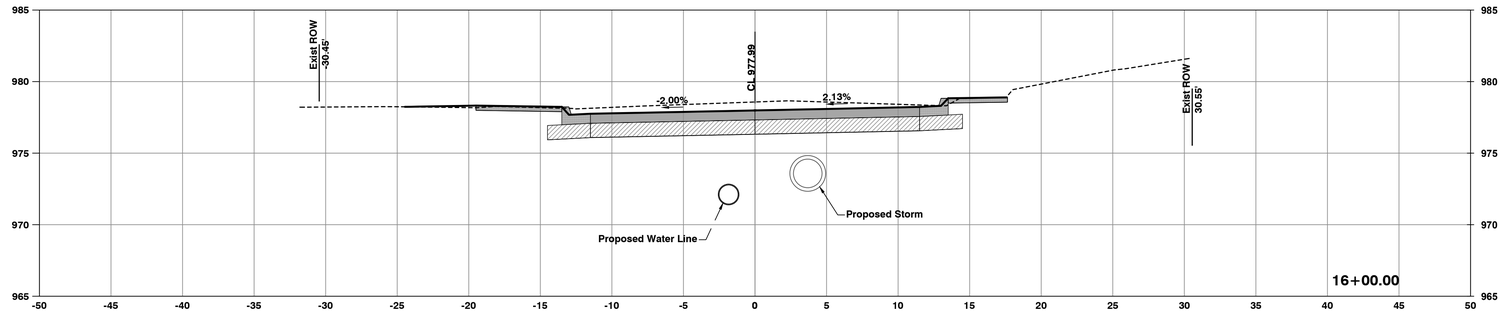

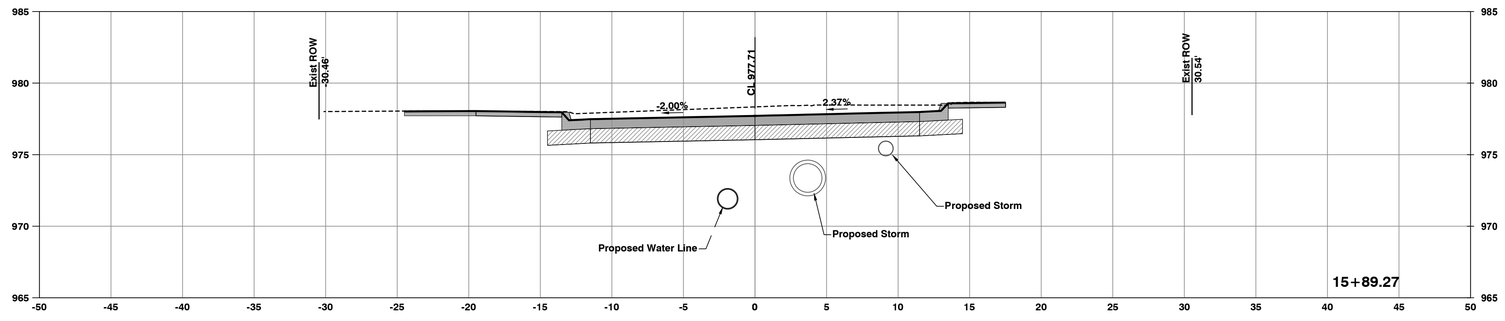

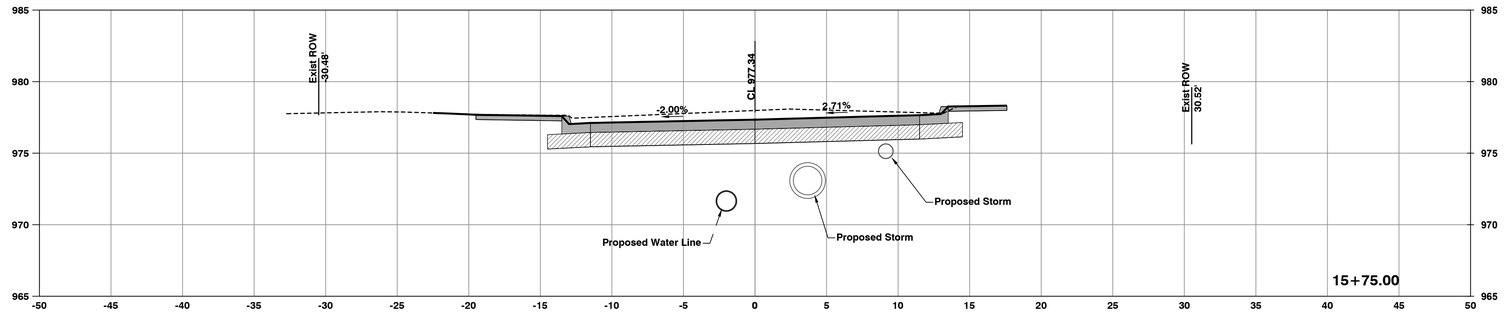

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LOUISIANAN STREET
CROSS SECTIONS - 10

30

Intermediate Submittal

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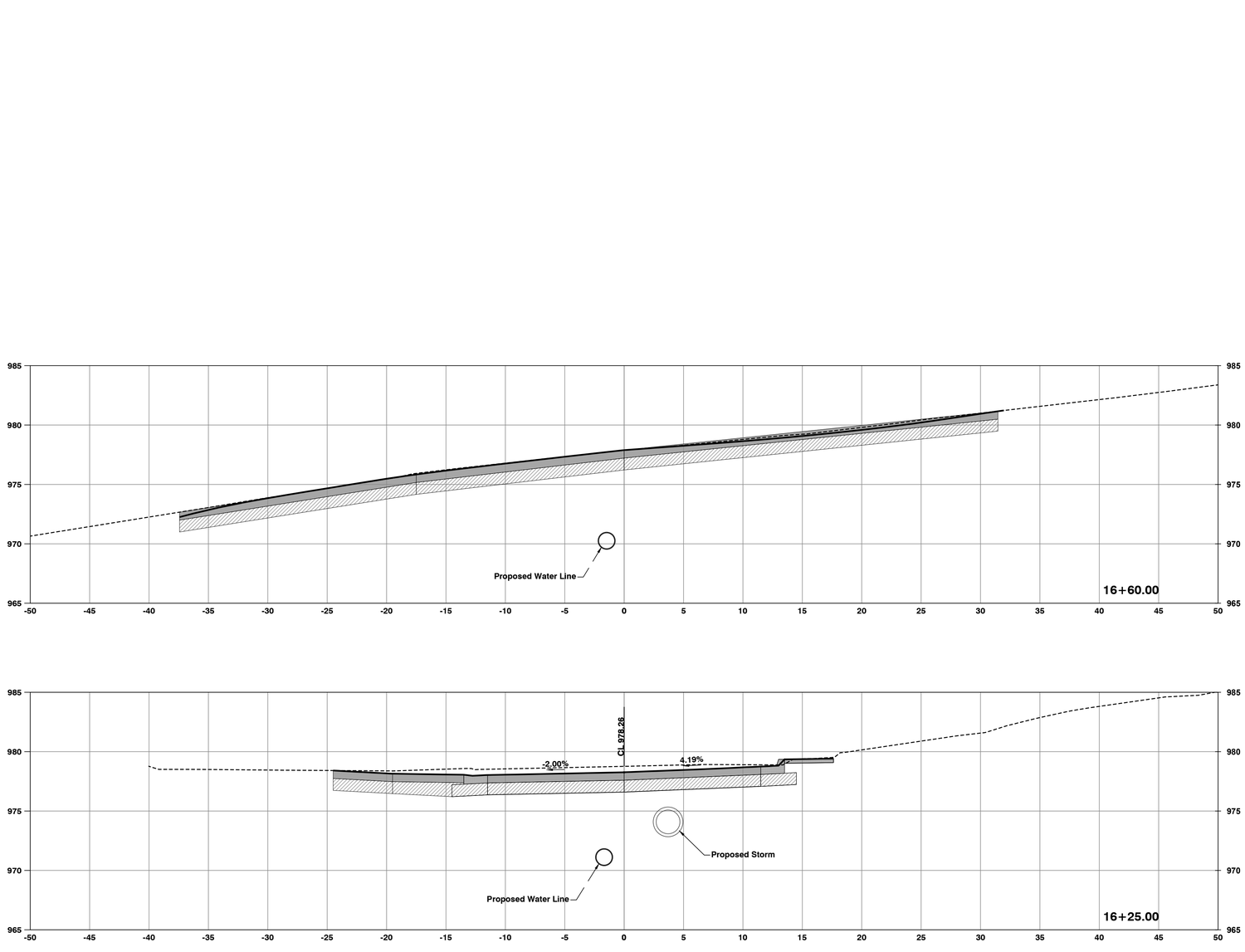

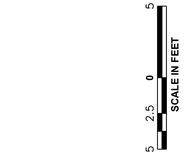

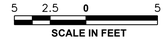

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LOUISIANAN STREET
CROSS SECTIONS - 11

31

Intermediate Submittal

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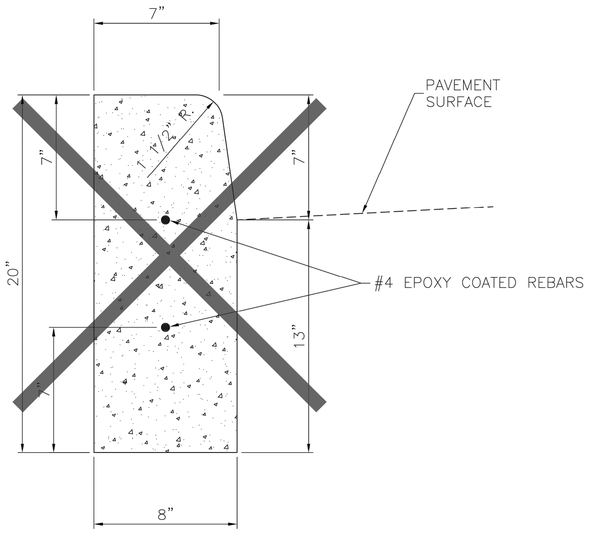
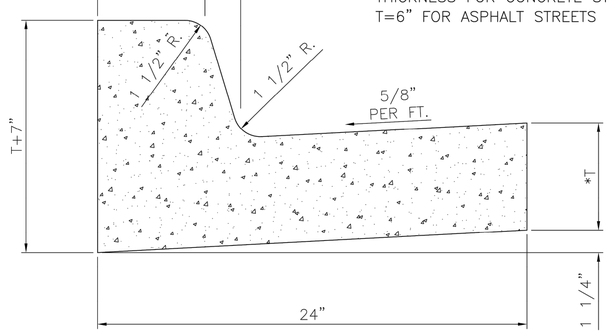
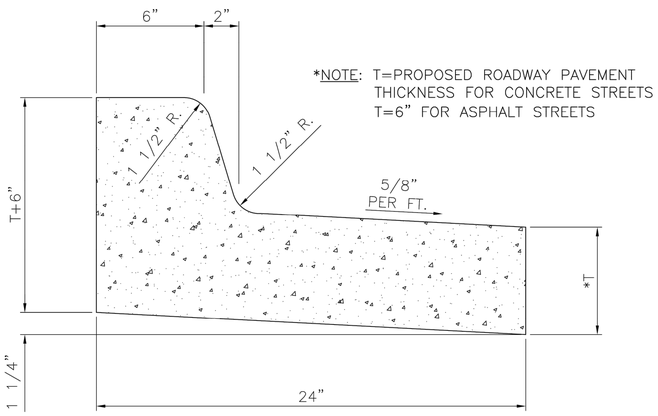


STRAIGHT CURB
(TYPE C–1)

*NOTE: T=PROPOSED ROADWAY PAVEMENT THICKNESS FOR CONCRETE STREETS T=6" FOR ASPHALT STREETS

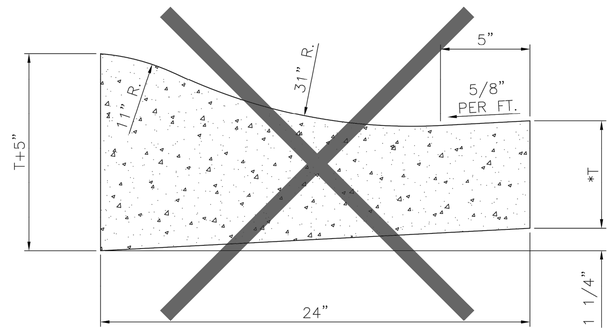


STRAIGHT BACK CURB AND GUTTER
(TYPE CG–1)



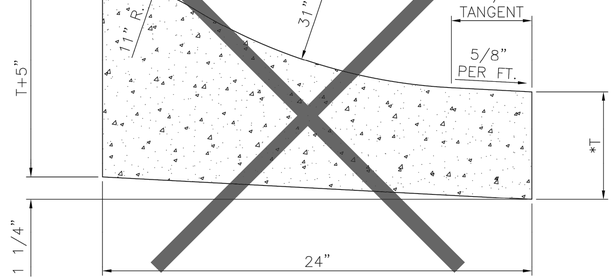
STRAIGHT BACK DRY CURB AND GUTTER
(TYPE CG–1, DRY)

*NOTE: T=PROPOSED ROADWAY PAVEMENT THICKNESS FOR CONCRETE STREETS T=6" FOR ASPHALT STREETS



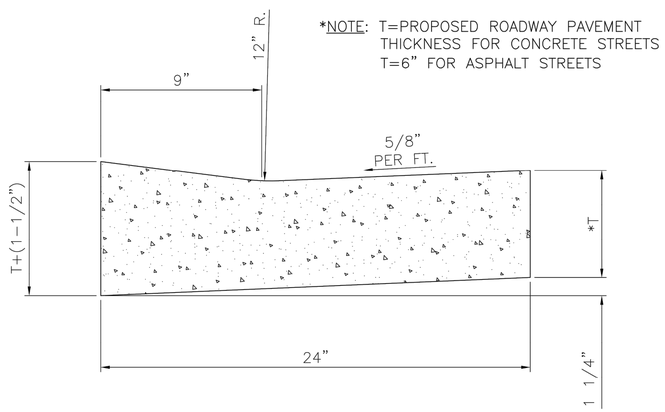
ROLL BACK CURB AND GUTTER
(TYPE CG–2)

*NOTE: T=PROPOSED ROADWAY PAVEMENT THICKNESS FOR CONCRETE STREETS T=6" FOR ASPHALT STREETS



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

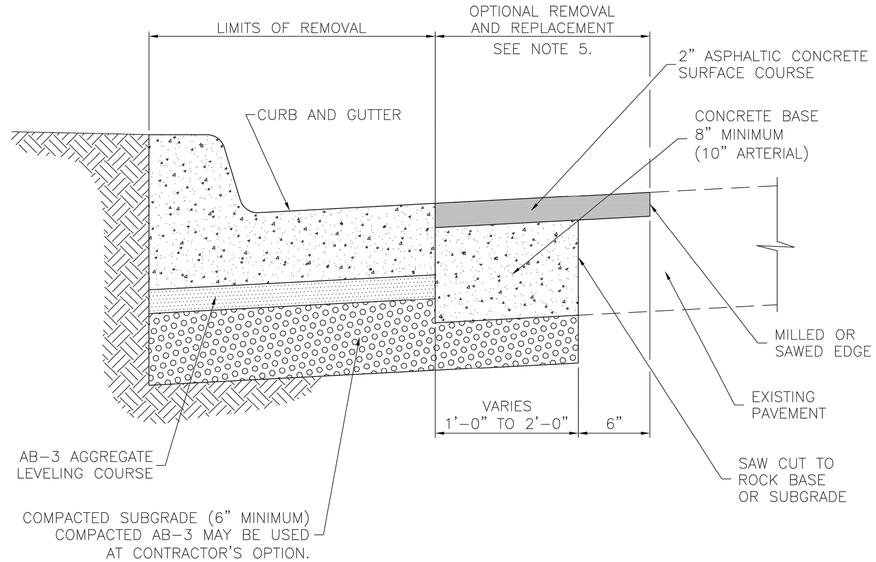
*NOTE: T=PROPOSED ROADWAY PAVEMENT THICKNESS FOR CONCRETE STREETS T=6" FOR ASPHALT STREETS



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)

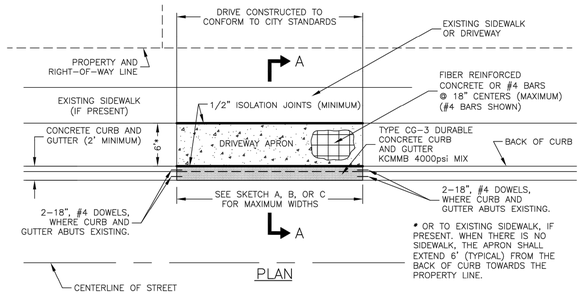
2017 EDITION

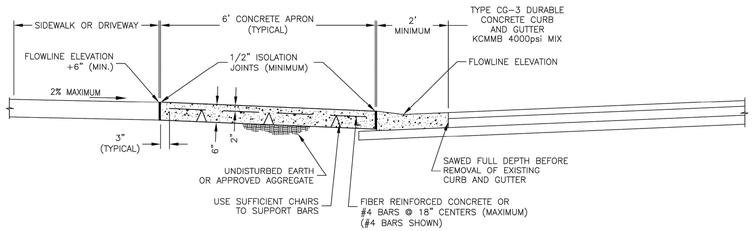
DATE	BY	REVISION
03–21–17	LJM	REPLACES ALL PREVIOUS VERSIONS OF CONCRETE CURB AND GUTTER DETAILS
02–22–16	LJM	REPLACES ALL PREVIOUS VERSIONS OF CONCRETE CURB AND GUTTER DETAILS
03–17–15	LJM	REPLACES ALL PREVIOUS VERSIONS OF CONCRETE CURB AND GUTTER DETAILS
03–17–15	LJM	NO.4 EPOXY COATED REBARS ADDED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

CITY OF LAWRENCE, KANSAS
ENGINEERING DIVISION OF PUBLIC WORKS

STANDARD DETAILS FOR
CONCRETE CURB AND GUTTER

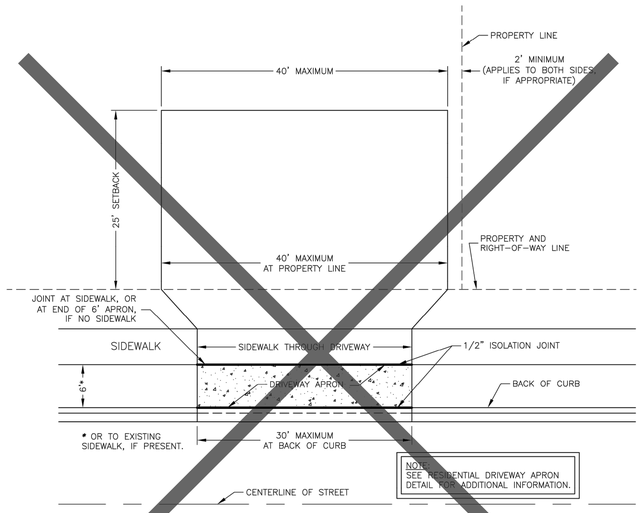
DAVID P. CRONIN, CITY ENGINEER
THOMAS M. MARKUS, CITY MANAGER





SECTION A-A

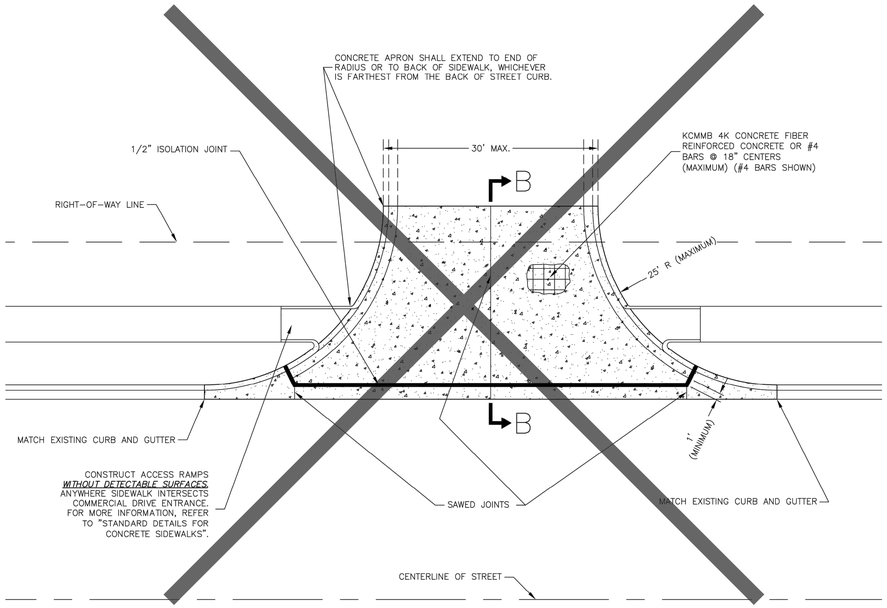
RESIDENTIAL DRIVEWAY APRON



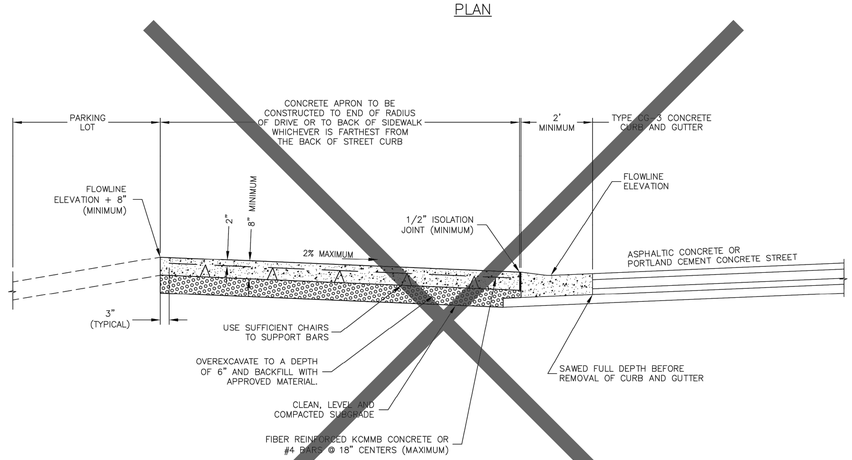
DRIVEWAY DETAIL FOR A DUPLEX WHERE 2-CAR GARAGES ARE SIDE BY SIDE

SCALE : 1"=10'
(SKETCH B)

NOTE: DRIVEWAY APRON MAY BE FLARED, IF DESIRED; HOWEVER, THE MAXIMUM WIDTH AT THE CURB REMAINS AT 30 FEET.



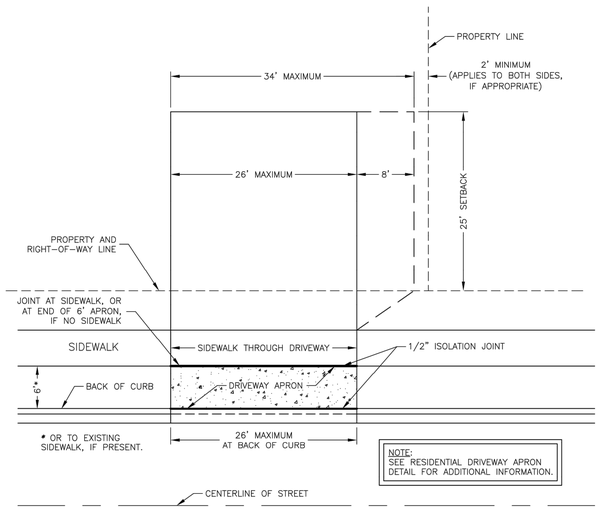
PLAN



NOTE: ON DOWN ENTRANCE GRADES, THE DRIVEWAY APRON SHALL ATTAIN AN ELEVATION 8" HIGHER THAN THE FLOWLINE OF THE CURB AND GUTTER BEFORE SLOPING DOWNWARD.
APRON SHALL BE CONSTRUCTED OF CONCRETE CONTAINING "DURABLE" AGGREGATE PER CITY STANDARD SPECIFICATIONS.

SECTION B-B

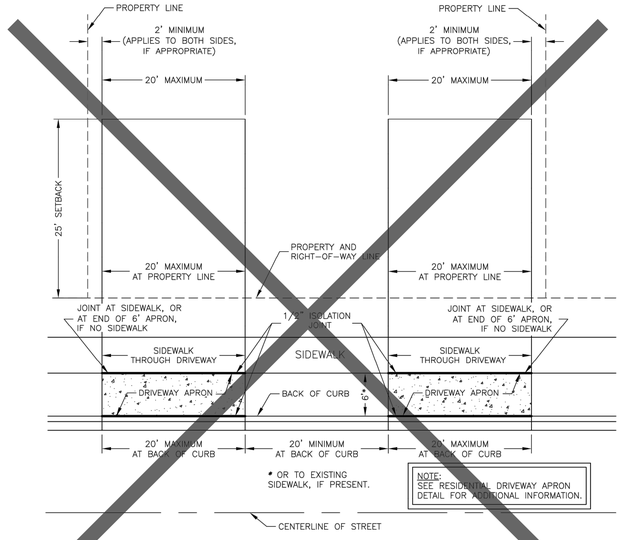
COMMERCIAL DRIVEWAY APRON



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 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.

RESIDENTIAL DRIVEWAY DETAILS

2017 EDITION

SHEET 33 OF 44

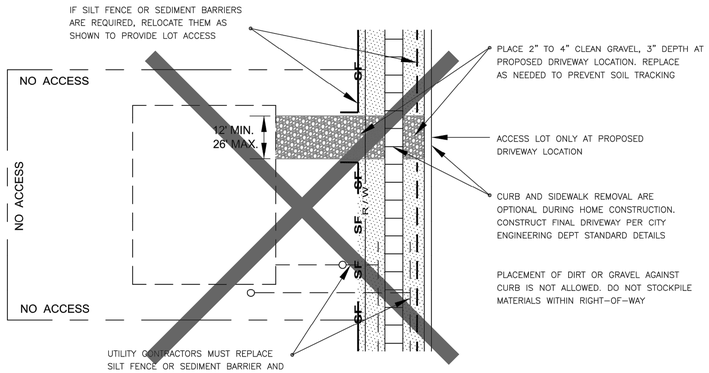
DATE	BY	REVISION
03-21-17	LJM	REPLACES ALL PREVIOUS VERSIONS OF CONCRETE DRIVEWAY DETAILS
02-22-16	LJM	REPLACES ALL PREVIOUS VERSIONS OF CONCRETE DRIVEWAY DETAILS
03-17-15	LJM	REPLACES ALL PREVIOUS VERSIONS OF CONCRETE DRIVEWAY DETAILS
03-17-15	LJM	MINIMUM THICKNESS OF COMMERCIAL DRIVEWAY APRON CHANGED 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

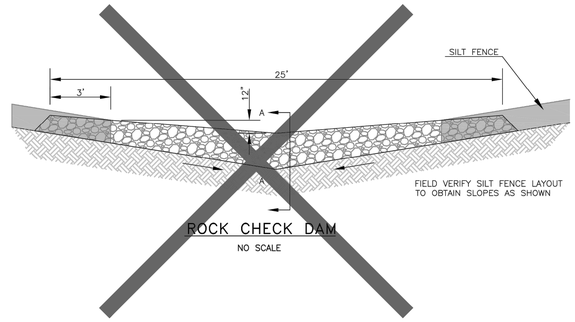
DAVID P. CRONIN
CITY ENGINEER

THOMAS M. MARKUS
CITY MANAGER



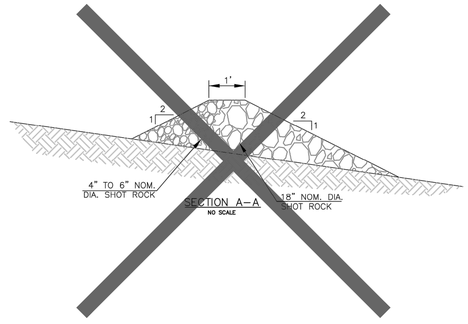
LOT ACCESS DETAIL

APPLIES TO ALL RESIDENTIAL LOTS



ROCK CHECK DAM

NO SCALE



SECTION A-A

NO SCALE

GENERAL NOTES:

1. ALL CONSTRUCTION ACTIVITIES SHALL COMPLY WITH CITY OF LAWRENCE CODE 9-903 REGARDING STORMWATER POLLUTION PREVENTION.

2. CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTATION, INSPECTION, AND MAINTENANCE OF ALL BEST MANAGEMENT PRACTICES (BMPs) AS SHOWN ON THE APPROVED STORMWATER POLLUTION PREVENTION PLAN (SWP3) EXCLUDING CONSTRUCTION UNDER THE CONTROL OF SUBSEQUENT OWNERS OF INDIVIDUAL LOTS AND CONSTRUCTION BY UTILITIES.

3. SUBSEQUENT OWNERS OF INDIVIDUAL LOTS ARE RESPONSIBLE FOR CONTINUED IMPLEMENTATION, INSPECTION, AND MAINTENANCE OF ALL BMPs WITHIN THE LOT AS SHOWN ON THE APPROVED SWP3.

4. CONTRACTOR SHALL PROVIDE A COPY OF THE APPROVED SWP3 TO ALL CONTRACTORS, UTILITIES, AND SUBSEQUENT OWNERS OF INDIVIDUAL LOTS PRIOR TO ANY WORK WITHIN THE SUBDIVISION.

5. CONTRACTORS WILL BE RESPONSIBLE FOR THE IMMEDIATE REMOVAL OF SOIL TRACKED ONTO PAVED STREETS.

6. STREET CONTRACTOR WILL BE RESPONSIBLE FOR MARKING ALL LIMITS OF DISTURBANCE (LOD) AND WILL NOT DISTURB VEGETATIVE COVER OUTSIDE OF THESE LIMITS.

7. INSPECTION OF BMP's SHALL OCCUR AT LEAST ONCE EVERY 14 DAYS AND WITHIN 24 HOURS AFTER A RAINFALL EVENT OF 1/2" OR MORE OF RAIN AS MEASURED ON SITE.

8. MAINTENANCE OF BMPs SHALL INCLUDE NECESSARY REPAIRS, REMOVAL OF SEDIMENT, AND ANY NECESSARY MODIFICATIONS TO BMPs AS AUTHORIZED BY CITY OF LAWRENCE.

9. SILT FENCE WILL BE INSTALLED AS SHOWN ON THIS PLAN WITH MODIFICATIONS (AS APPROVED BY THE CITY) AS NECESSARY AT THE TIME OF INSTALLATION TO FIT THE EXISTING CONDITIONS.

10. TOPSOIL MUST BE STOCKPILED UPSTREAM OF SILT FENCE.

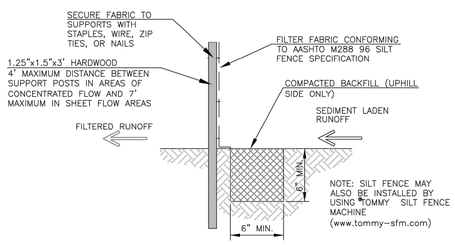
11. SILT FENCE SHALL BE RELOCATED IMMEDIATELY DOWNSTREAM OF ANY ADDITIONAL GRADING OR TRENCHING REQUIRED TO COMPLETE WORK SHOWN ON THESE PLANS.

12. R/W SILT FENCE SHOULD BE INSTALLED AT A DISTANCE OF 3' ON THE UPSLOPE SIDE OF FUTURE SIDEWALKS AND AT A DISTANCE OF 8' FROM THE BACK OF CURB IF NO SIDEWALK IS TO BE CONSTRUCTED AND INSTALLED IMMEDIATELY AFTER FINAL STREET GRADING.

13. TEMPORARY CURB INLET SEDIMENT BARRIERS MUST BE INSTALLED IMMEDIATELY AFTER STRUCTURE PLACEMENT AND ONLY REMOVED JUST PRIOR TO PLACEMENT OF CURB AND GUTTER.

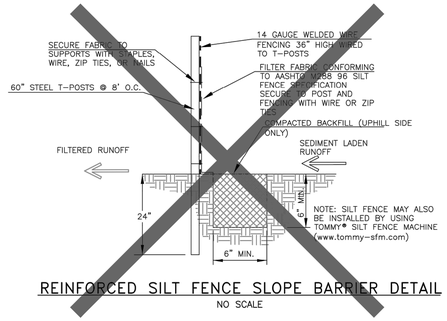
14. AFTER INITIAL DETENTION BASIN GRADING ALL DISTURBED AREAS SHALL BE SEEDED WITH A TEMPORARY COVER CROP OF ANNUAL RYE OR WHEAT. TEMPORARY BASIN OUTLET STRUCTURES SHALL BE INSTALLED PER DETAIL THIS SHEET.

15. AFTER VEGETATIVE COVER OF THE REST OF THE SITE IS ESTABLISHED REMOVE TEMPORARY BASIN OUTLET STRUCTURES, REGARDED BASINS TO REMOVE SEDIMENT, AND RESEED. ALL SEEDED AREAS SHALL BE MULCHED PER CITY OF LAWRENCE STANDARD SPECIFICATIONS.



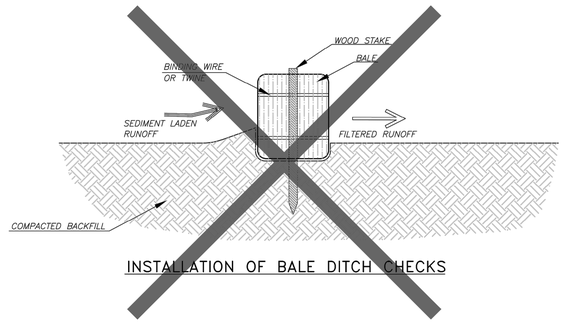
SILT FENCE SLOPE BARRIER DETAIL

NO SCALE

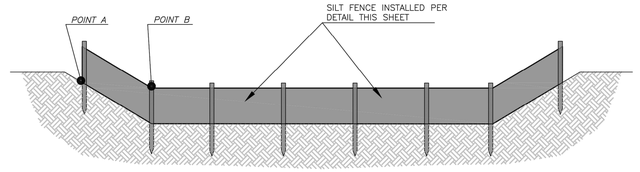


REINFORCED SILT FENCE SLOPE BARRIER DETAIL

NO SCALE



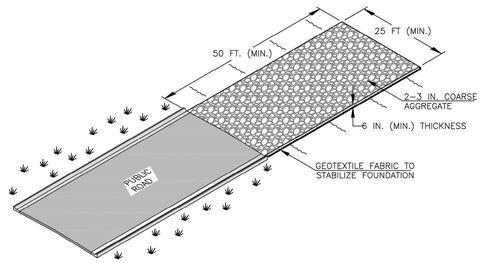
INSTALLATION OF BALE DITCH CHECKS



NOTE: POINT A MUST BE HIGHER THAN POINT B SO THAT WATER FLOWS OVER THE BALES AND NOT AROUND THEM.

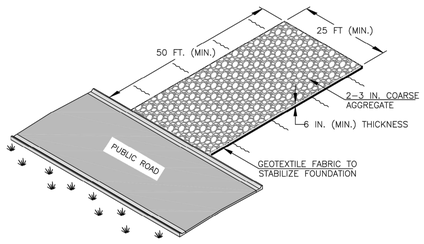
INSTALLATION OF SILT FENCE DITCH CHECKS

NO SCALE



TEMPORARY GRAVEL CONSTRUCTION ENTRANCE PAD

NO SCALE



TEMPORARY GRAVEL CONSTRUCTION ENTRANCE PAD

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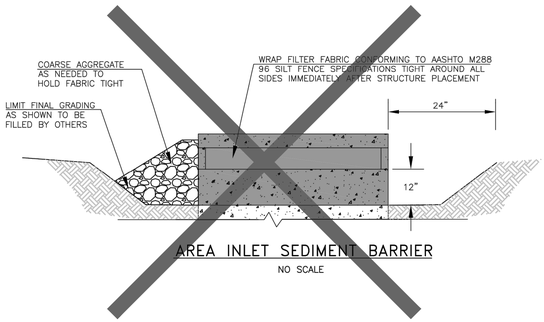
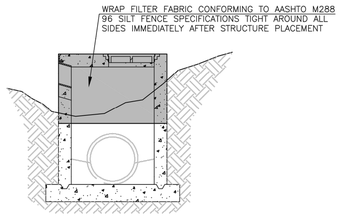


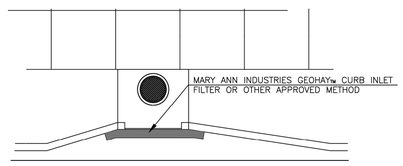
AREA INLET SEDIMENT BARRIER

NO SCALE



TEMPORARY CURB INLET SEDIMENT BARRIER

NO SCALE



LONG-TERM CURB INLET SEDIMENT BARRIER

NO SCALE

2017 EDITION

SHEET **34** OF **44**

DATE	BY	REVISION
03-21-17	LJM	REPLACES ALL PREVIOUS VERSIONS OF EROSION AND SEDIMENT CONTROL DETAILS
02-22-16	LJM	REPLACES ALL PREVIOUS VERSIONS OF EROSION AND SEDIMENT CONTROL DETAILS
03-17-15	LJM	NEW STANDARD DETAIL

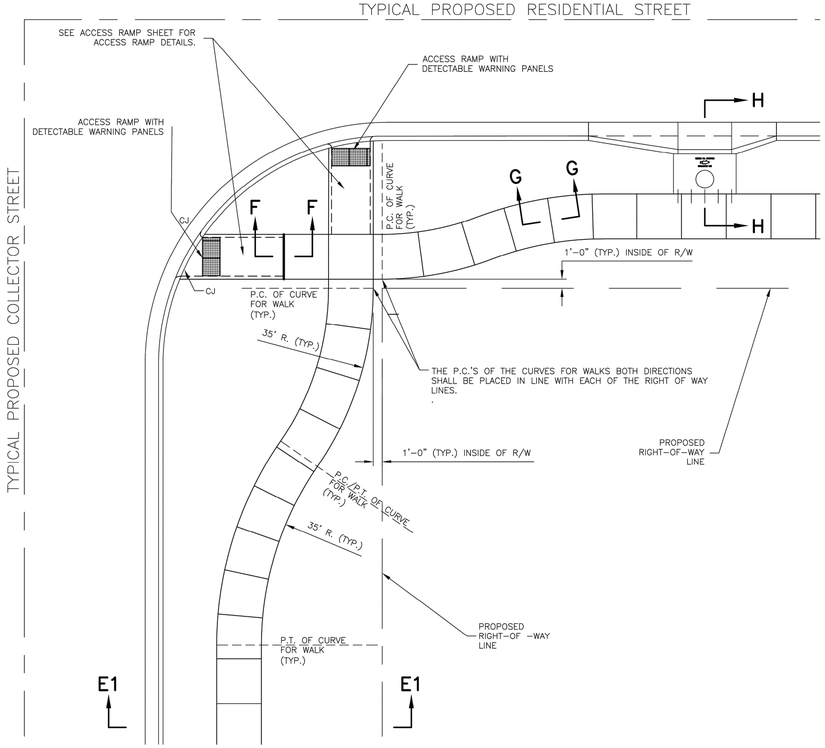
CITY OF LAWRENCE, KANSAS
ENGINEERING DIVISION OF PUBLIC WORKS

STANDARD DETAILS FOR
EROSION AND SEDIMENT CONTROL

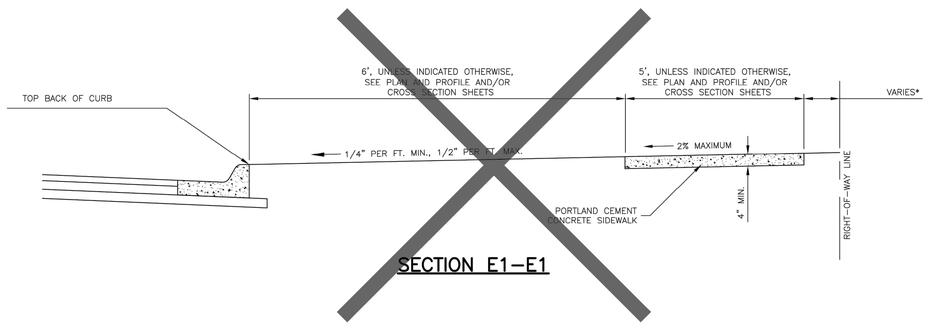
1 OF 2

DAVID P. CRONIN
CITY ENGINEER

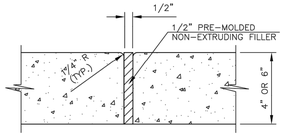
THOMAS M. MARKUS
CITY MANAGER



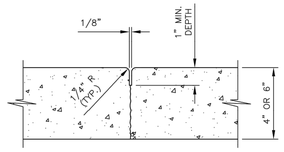
GENERAL SIDEWALK LAYOUT PLAN



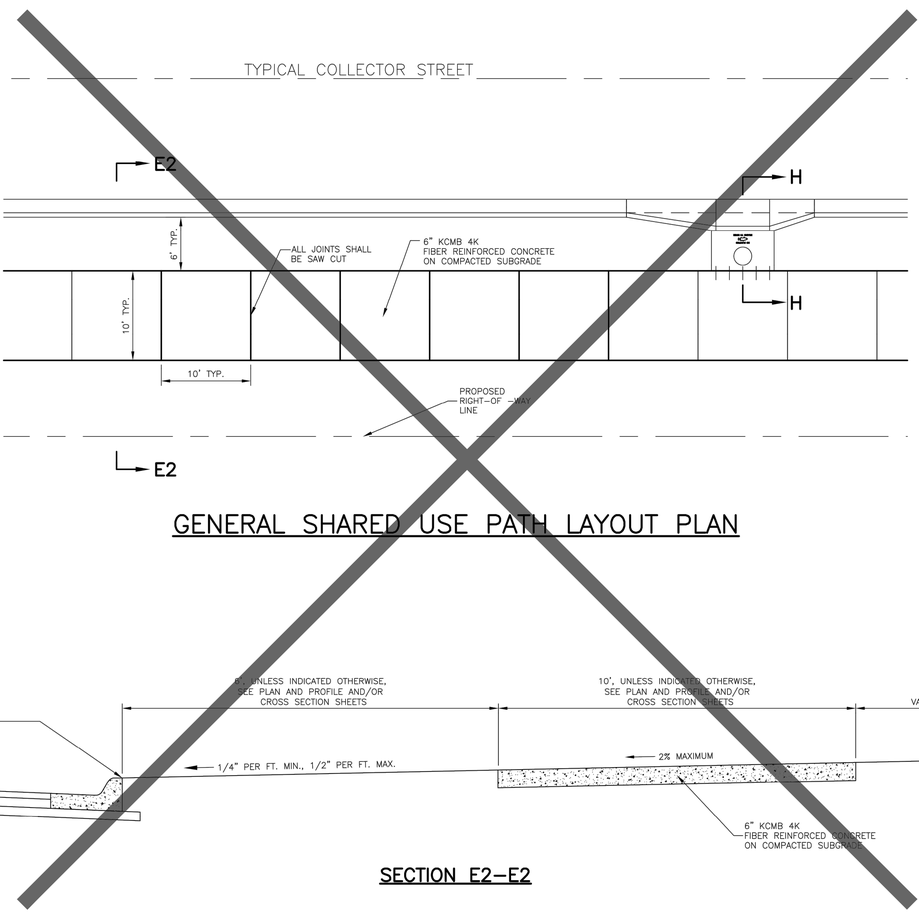
SECTION E1–E1



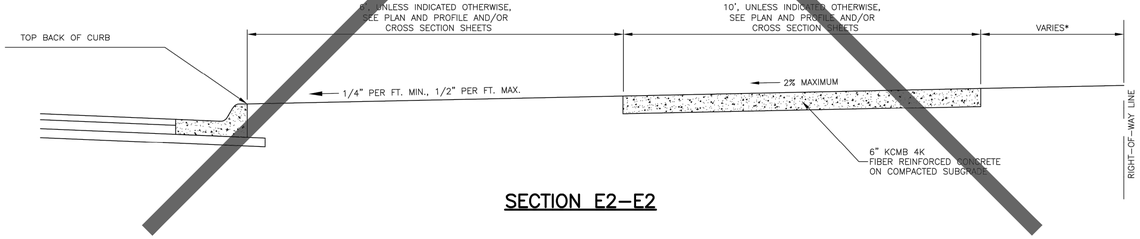
SECTION F–F
ISOLATION JOINT



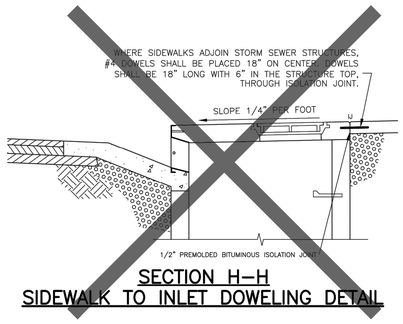
SECTION G–G
CONTRACTION JOINT
(SAWED OR FORMED)



GENERAL SHARED USE PATH LAYOUT PLAN



SECTION E2–E2



SECTION H–H
SIDEWALK TO INLET DOWELING DETAIL

SIDEWALK GENERAL NOTES

1. 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.
2. ISOLATION JOINTS SHALL BE PLACED AT ALL LOCATIONS WHERE SIDEWALK ABUTS EXISTING STRUCTURES AND AS DIRECTED BY THE CITY ENGINEER OR AN AUTHORIZED REPRESENTATIVE.
3. ACCESS RAMPS SHALL BE CONSTRUCTED AT ALL LOCATIONS WHERE SIDEWALKS INTERSECT NEW STREET CONSTRUCTION AND AS OTHERWISE SHOWN ON THE PLANS.
4. ALL SHARED USE PATH JOINTS SHALL BE SAW CUT.
5. ALL SIDEWALKS AND RAMPS MUST BE CONSTRUCTED TO CURRENT ADA STANDARDS.

2017 EDITION SHEET **35** OF **44**

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

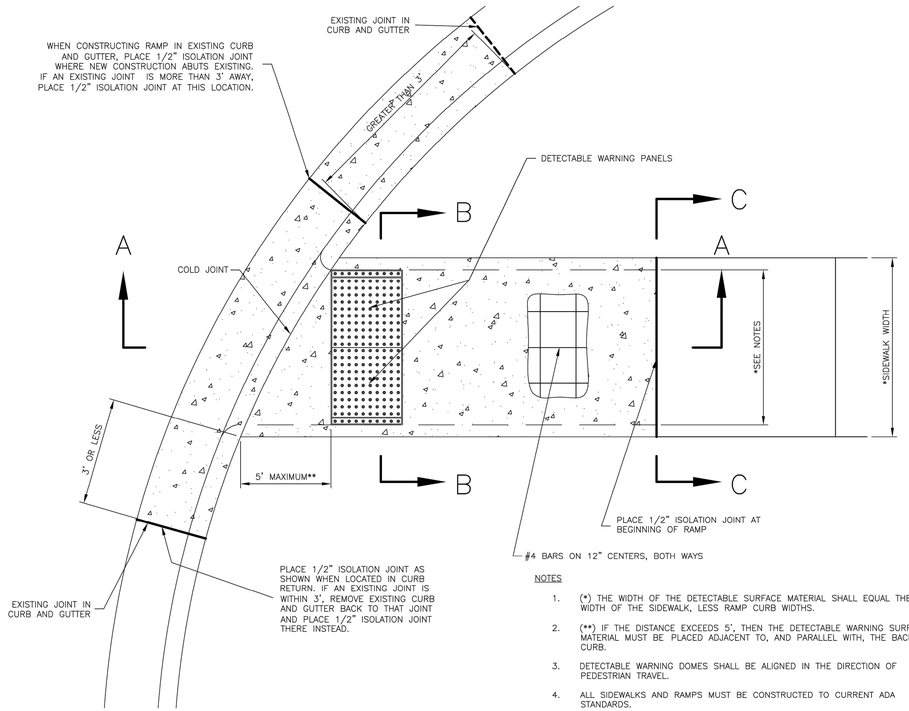
CITY OF LAWRENCE, KANSAS
ENGINEERING DIVISION OF PUBLIC WORKS

STANDARD DETAILS FOR
CONCRETE SIDEWALKS

1 OF 2

DAVID P. CRONIN
CITY ENGINEER

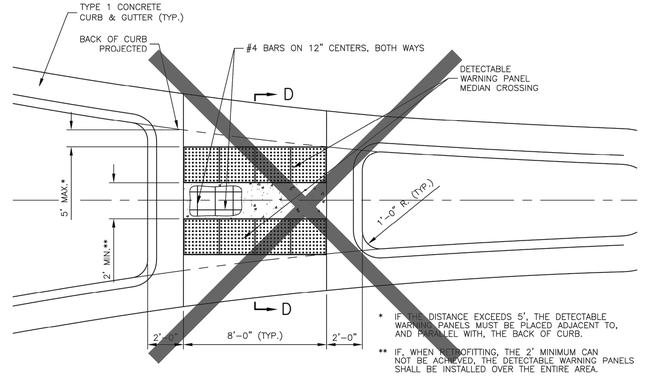
THOMAS M. MARKUS
CITY MANAGER



NOTES

1. (*) THE WIDTH OF THE DETECTABLE SURFACE MATERIAL SHALL EQUAL THE WIDTH OF THE SIDEWALK, LESS RAMP CURB WIDTHS.
2. (**) IF THE DISTANCE EXCEEDS 5', THEN THE DETECTABLE WARNING SURFACE MATERIAL MUST BE PLACED ADJACENT TO, AND PARALLEL WITH, THE BACK OF CURB.
3. DETECTABLE WARNING DOMES SHALL BE ALIGNED IN THE DIRECTION OF PEDESTRIAN TRAVEL.
4. ALL SIDEWALKS AND RAMPS MUST BE CONSTRUCTED TO CURRENT ADA STANDARDS.

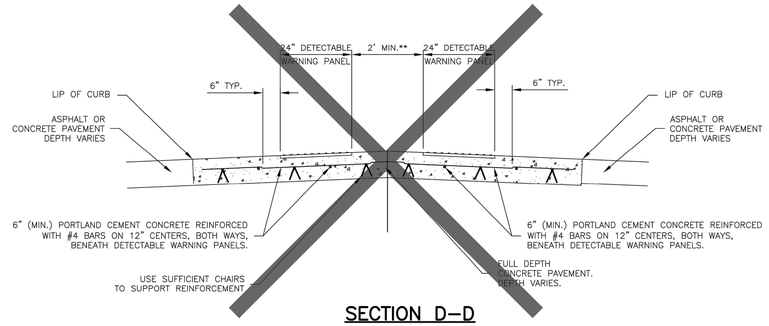
ACCESS RAMP PLAN



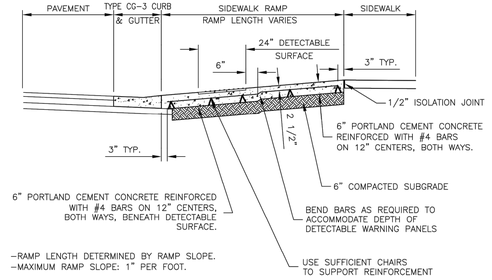
* IF THE DISTANCE EXCEEDS 5', THE DETECTABLE WARNING PANELS MUST BE PLACED ADJACENT TO, AND PARALLEL WITH, THE BACK OF CURB.

** IF, WHEN RETROFITTING, THE 2' MINIMUM CAN NOT BE ACHIEVED, THE DETECTABLE WARNING PANELS SHALL BE INSTALLED OVER THE ENTIRE AREA.

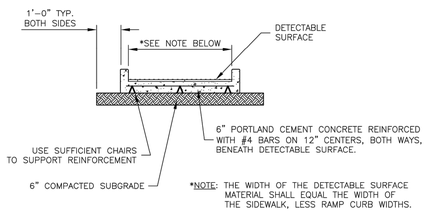
MEDIAN RAMP CROSSING PLAN



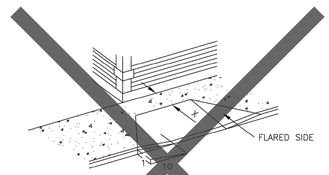
SECTION D–D



SECTION A–A

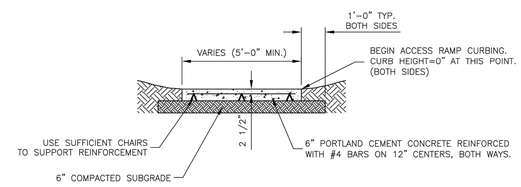


SECTION B–B

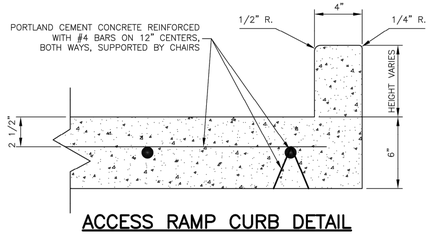


THIS FIGURE SHOWS A TYPICAL CURB RAMP, CUT INTO A WALKWAY PERPENDICULAR TO THE CURB FACE, WITH FLARED SIDES HAVING A MAXIMUM SLOPE OF 1:10. THE LANDING AT THE TOP, MEASURED FROM THE TOP OF THE RAMP TO THE EDGE OF THE WALKWAY OR CLOSEST OBSTRUCTION IS DENOTED AS "X". IF X, THE LANDING LENGTH AT THE TOP 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



SECTION C–C



ACCESS RAMP CURB DETAIL

2017 EDITION

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

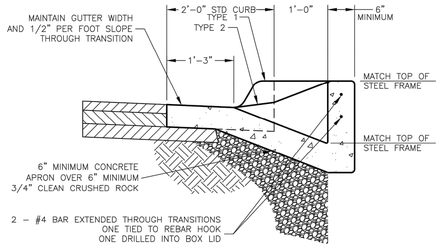
STANDARD DETAILS FOR
CONCRETE SIDEWALK ACCESS RAMPS

DAVID P. CRONIN
CITY ENGINEER

THOMAS M. MARKUS
CITY MANAGER

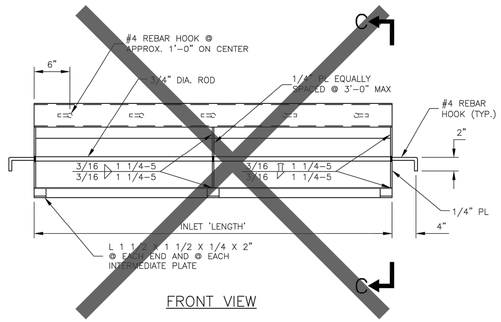
CURB INLET GENERAL NOTES

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 PIPE 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. 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.
7. 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.
8. CURB INLET DIMENSIONS SHALL BE STATED AS 'LENGTH' x 'WIDTH' ON ALL CONSTRUCTION NOTES.
9. THE MINIMUM LENGTH OF CURB INLET OPENING SHALL BE 5 FEET.
10. CURB INLET FRAME TOP CHANNEL SHALL BE FABRICATED FROM 0.15 MAX. CARBON, FORMING QUALITY, OR A36 HOT ROLLED STEEL PLATE.
11. ALL FLAT PLATE AND RODS SHALL BE M1020 MERCHANT QUALITY OR A36 HOT ROLLED STEEL.
12. ALL CURB INLET FRAME MATERIALS SHALL BE FREE FROM RUST AND MILL SCALE.
13. ALL WELDING SHALL CONFORM TO THE PROVISIONS OF THE AWS "STRUCTURAL WELDING CODE."
14. CURB INLET FRAMES SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION PER ASTM A123.
15. CURB INLET FRAMES SHALL BE SLOPED TO MATCH THE STREET CENTERLINE GRADE.
16. 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.
17. 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.
18. 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.
19. FLOWABLE FILL SHALL BE PLACED TO BOTTOM OF THE PAVEMENT, STABILIZED BASE, OR GRANULAR BASE AS DIRECTED BY ENGINEER.
20. CONCRETE FOR INVERT AND COLLARS SHALL MEET CITY SPECIFICATIONS SECTION 2000 – CONCRETE

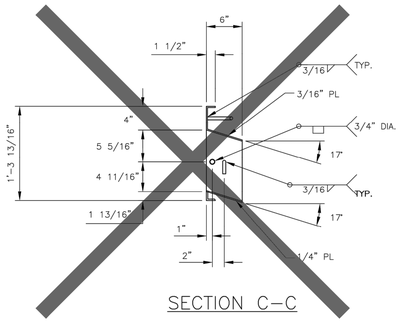


SECTION A–A

CURB TRANSITION

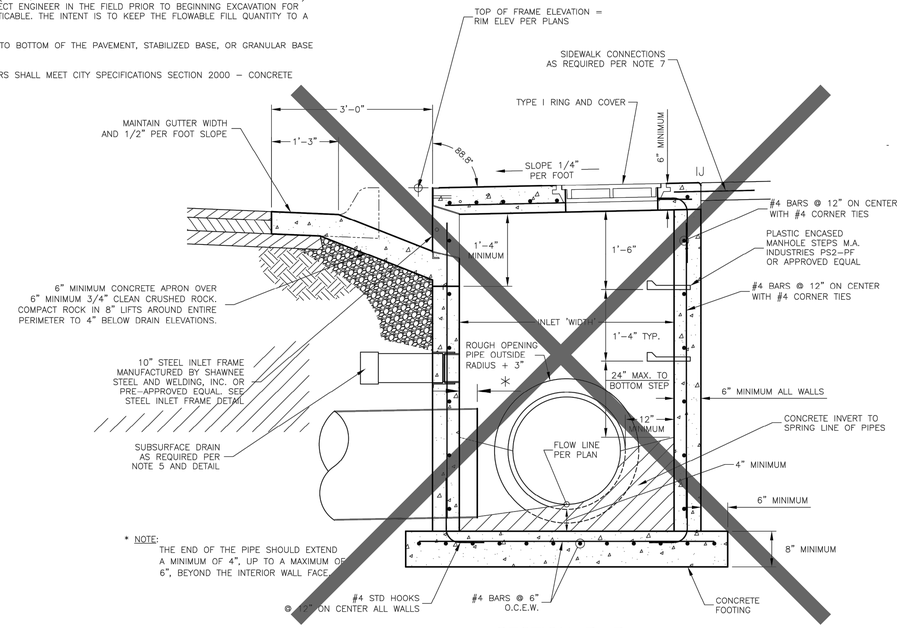


FRONT VIEW

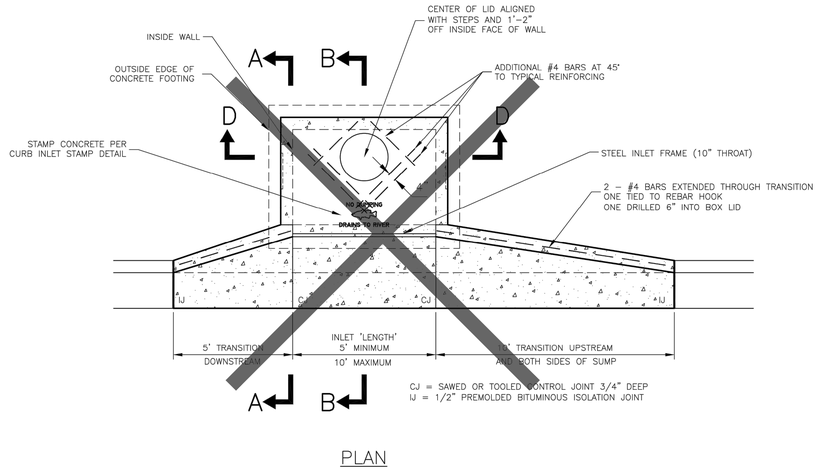


SECTION C–C

STEEL INLET FRAME

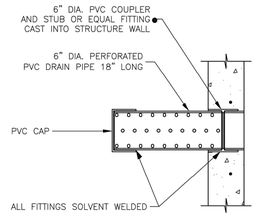


SECTION B–B



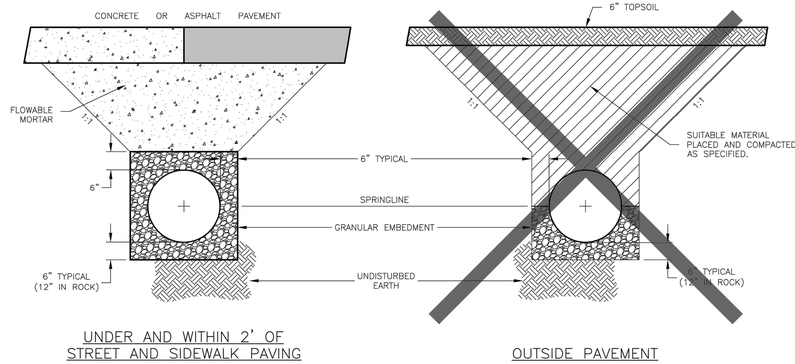
PLAN

STANDARD CURB INLET



SECTION

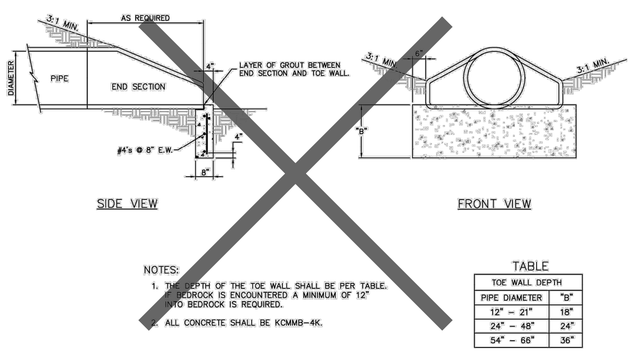
SUBSURFACE DRAIN



UNDER AND WITHIN 2' OF STREET AND SIDEWALK PAVING

OUTSIDE PAVEMENT

TYPICAL TRENCH SECTIONS



SIDE VIEW

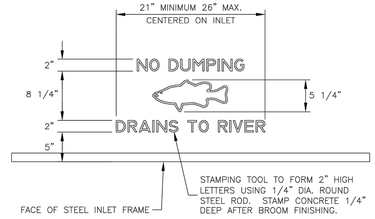
FRONT VIEW

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

TABLE

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

STANDARD END SECTION



PLAN

CURB INLET STAMP

2017 EDITION

SHEET **37** OF **44**

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

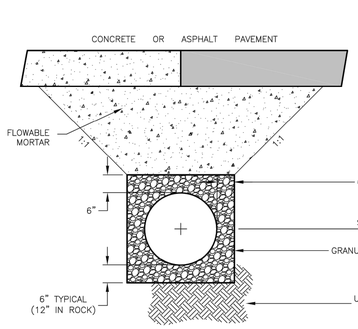
1 OF 2

DAVID P. CRONIN
CITY ENGINEER

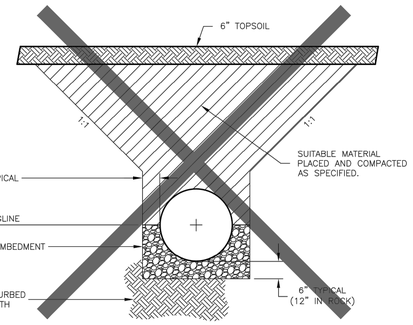
THOMAS M. MARKUS
CITY MANAGER

JUNCTION BOX GENERAL NOTES

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 PIPE 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 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.
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

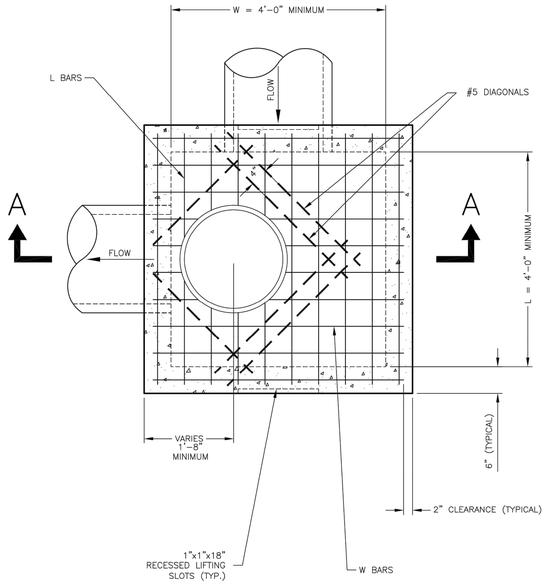


UNDER AND WITHIN 2' OF STREET AND SIDEWALK PAVING

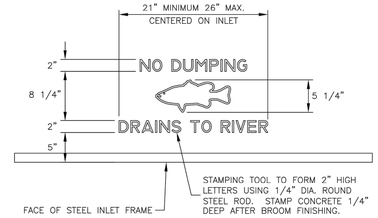


OUTSIDE PAVEMENT

TYPICAL TRENCH SECTIONS

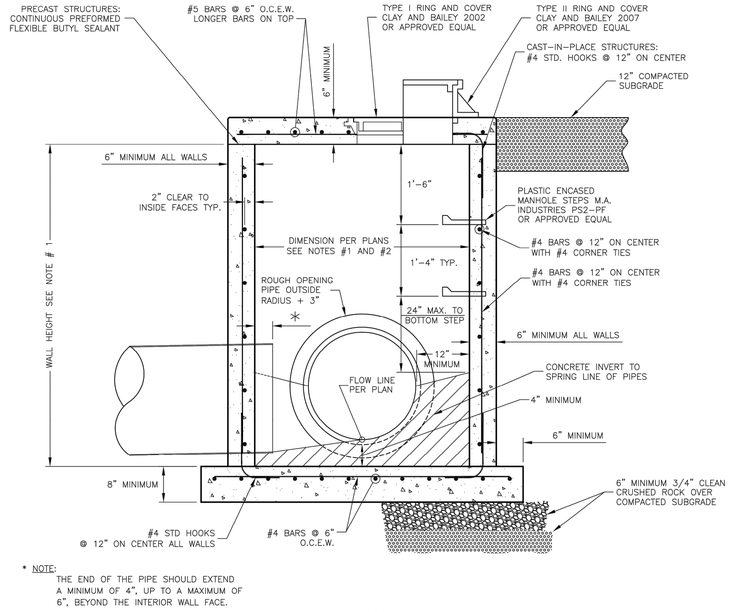


PLAN



PLAN

JUNCTION BOX STAMP



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

TYPICAL SECTION A–A

STANDARD JUNCTION BOX

2017 EDITION

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

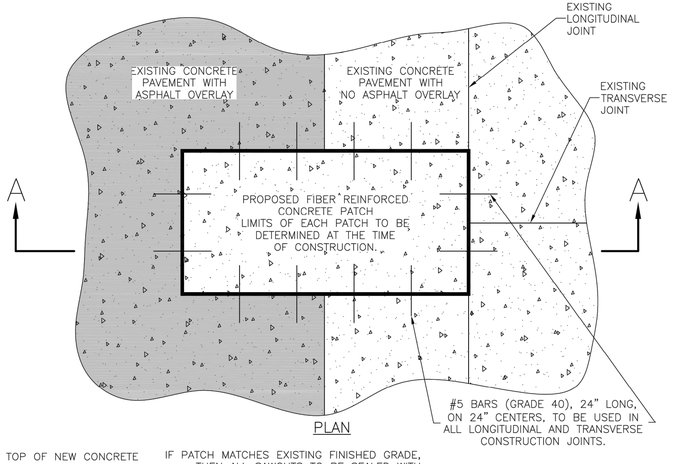
CITY OF LAWRENCE, KANSAS
ENGINEERING DIVISION OF PUBLIC WORKS

STANDARD DETAILS FOR
STORM SEWER JUNCTION BOXES

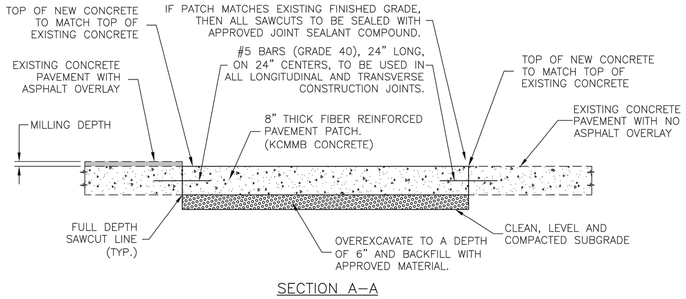
2 OF 2

DAVID P. CRONIN
CITY ENGINEER

THOMAS M. MARKUS
CITY MANAGER

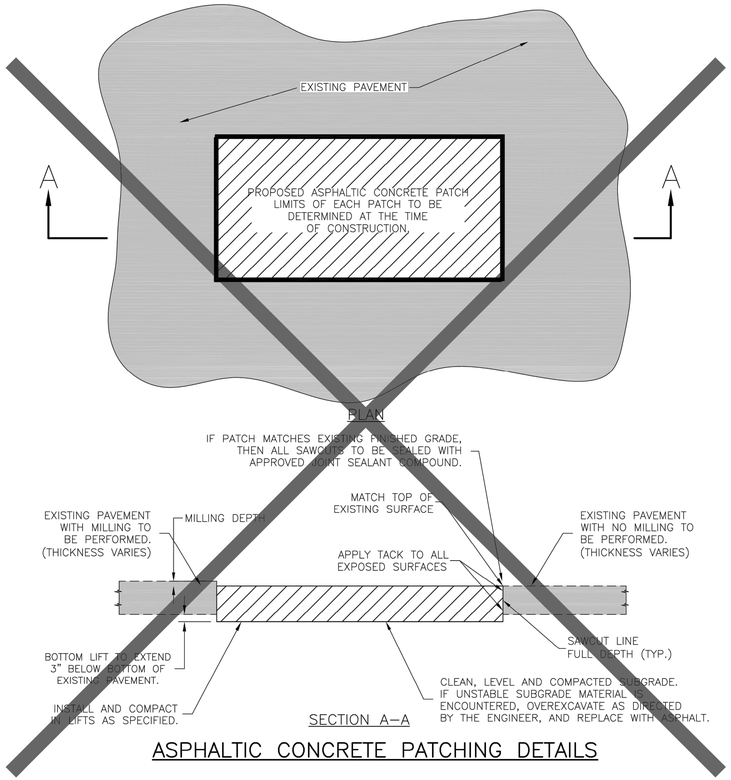


PLAN



SECTION A–A

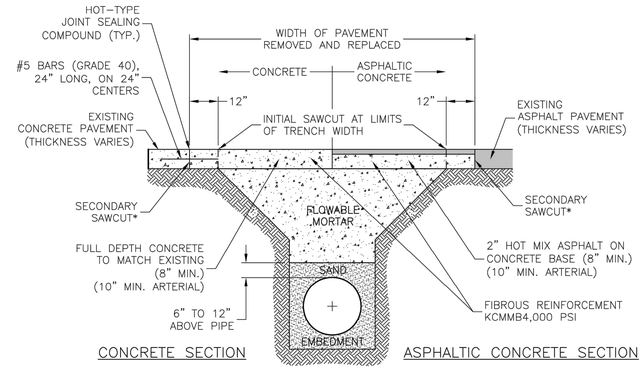
PORTLAND CEMENT CONCRETE PATCHING DETAILS



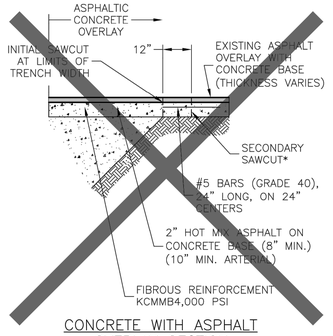
PLAN

SECTION A–A

ASPHALTIC CONCRETE PATCHING DETAILS



CONCRETE SECTION ASPHALTIC CONCRETE SECTION

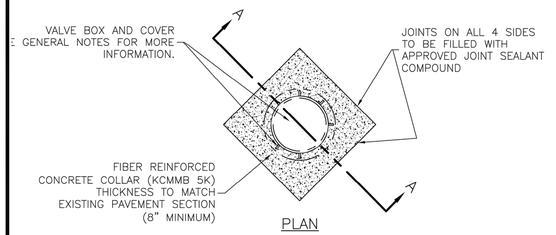


CONCRETE WITH ASPHALT OVERLAY SECTION

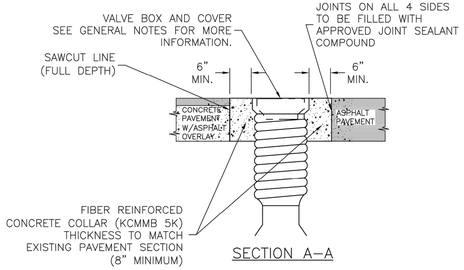
NOTES

1. ALL PAVEMENT SAW CUTS SHALL BE MADE TO FULL DEPTH OF PAVEMENT THICKNESS AND PAVEMENT REMOVED WITHOUT DAMAGE TO ADJACENT PAVEMENT.
2. ALL TRENCHING AND BACKFILL SHALL BE ACCOMPLISHED TO PAVING SUBGRADE PRIOR TO INITIATION OF SECOND SAW CUT AND ADDITIONAL PAVEMENT REMOVAL.
3. PRIOR TO INSTALLATION OF FLOWABLE MORTAR AND NEW PAVEMENT, PAVEMENT SHALL BE OVERCUT TO EXTEND BEYOND ANY LOCATION THAT BECOMES UNDERMINED WITH APPARENT VOIDS UNDER PAVEMENT.
4. BARS SHALL BE DRILLED AND GROUTED INTO EXISTING CONCRETE PAVEMENT.
5. DRILLING AND GROUTING SHALL BE PER KDOT SPECIFICATIONS SECTION 842.
6. TRENCH BACKFILL SHALL BE FLOWABLE FILL FROM TWO (2) FEET BEHIND THE BACK OF CURB ON EACH SIDE OF THE STREET.
7. FOR OVERLAYED BRICK STREETS, THE BRICKS NEED TO BE CLEANED AND PALLETED. CONTACT THE CITY OF LAWRENCE STREET DIVISION TO SCHEDULE PICKUP. THE REMAINING TRENCH SHOULD BE TREATED AS PER THE ASPHALT OVERLAY DETAIL.
8. FOR BRICK STREETS, THE BRICK NEEDS TO BE REPLACED.

PERMANENT PAVEMENT REMOVAL AND REPLACEMENT DETAILS



PLAN

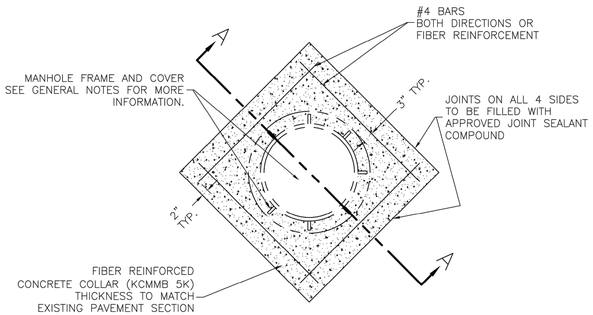


SECTION A–A

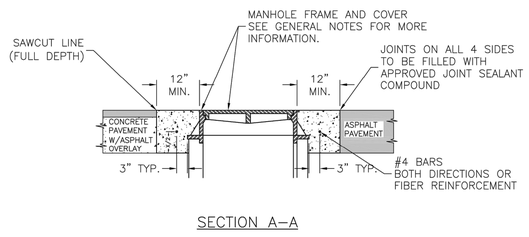
GENERAL NOTES

1.) ADJUST VALVE BOX FRAME AND COVER TO FINISH GRADE AND SLOPE.
2.) THE ORIENTATION OF THE REINFORCED CONCRETE COLLAR SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.
3.) ALL ITEMS SHOWN ABOVE ARE SUBSIDIARY TO THE BID ITEM "VALVE ADJUSTMENT".

STANDARD VALVE ADJUSTMENT DETAILS



PLAN

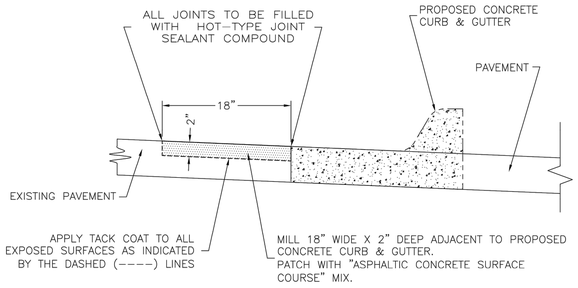


SECTION A–A

GENERAL NOTES

1.) ADJUST MANHOLE FRAME AND COVER TO FINISH GRADE AND SLOPE WITH CONCRETE ADJUSTMENT RINGS AND LEVELING MORTAR AS REQUIRED.
2.) THE ORIENTATION OF THE REINFORCED CONCRETE COLLAR SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.
3.) ALL ITEMS SHOWN ABOVE ARE SUBSIDIARY TO THE BID ITEM "MANHOLE ADJUSTMENT".

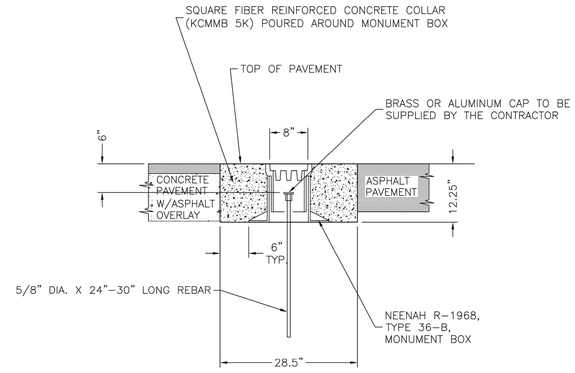
STANDARD MANHOLE ADJUSTMENT DETAILS



ASPHALTIC CONCRETE EDGE PATCH DETAIL ADJACENT TO PROPOSED CONCRETE CURB AND GUTTER OR PAVEMENT

GENERAL NOTES

1.) ADJUST MONUMENT BOX TO FINISH GRADE AND SLOPE WITH CONCRETE ADJUSTMENT RINGS AND LEVELING MORTAR AS REQUIRED.
2.) THE ORIENTATION OF THE REINFORCED CONCRETE COLLAR SHALL BE DETERMINED BY THE CITY SURVEYOR IN THE FIELD.
3.) ALL ITEMS SHOWN ABOVE ARE SUBSIDIARY TO THE BID ITEM "MONUMENT BOX INSTALL/ADJUSTMENT".



TYPE 1 MONUMENT BOX DETAIL

GENERAL NOTES

1.) ADJUST MONUMENT BOX TO FINISH GRADE AND SLOPE WITH CONCRETE ADJUSTMENT RINGS AND LEVELING MORTAR AS REQUIRED.
2.) THE ORIENTATION OF THE REINFORCED CONCRETE COLLAR SHALL BE DETERMINED BY THE CITY SURVEYOR IN THE FIELD.
3.) ALL ITEMS SHOWN ABOVE ARE SUBSIDIARY TO THE BID ITEM "MONUMENT BOX INSTALL/ADJUSTMENT".
4.) OPTION TO INSTALL BY CORING METHOD AS APPROVED BY THE ENGINEER.

2017 EDITION

SHEET **39** OF **44**

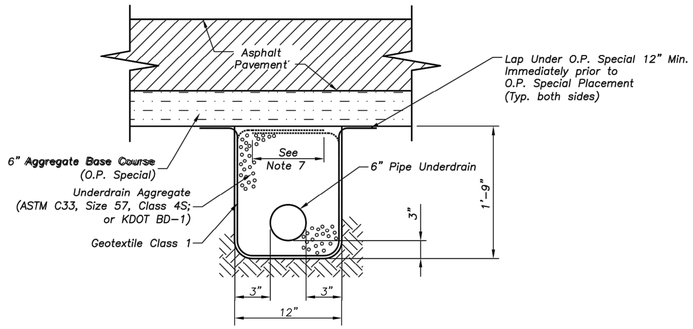
DATE	BY	REVISION
03–21–17	LJM	REPLACES ALL PREVIOUS VERSIONS OF STREET REPAIR DETAILS
02–22–16	LJM	REPLACES ALL PREVIOUS VERSIONS OF STREET REPAIR DETAILS
03–17–15	LJM	NEW STANDARD DETAIL

CITY OF LAWRENCE, KANSAS
ENGINEERING DIVISION OF PUBLIC WORKS

STANDARD DETAILS FOR
STREET REPAIR

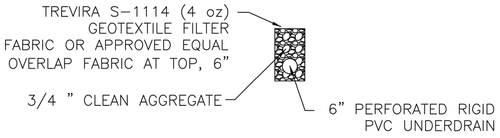
DAVID P. CRONIN
CITY ENGINEER

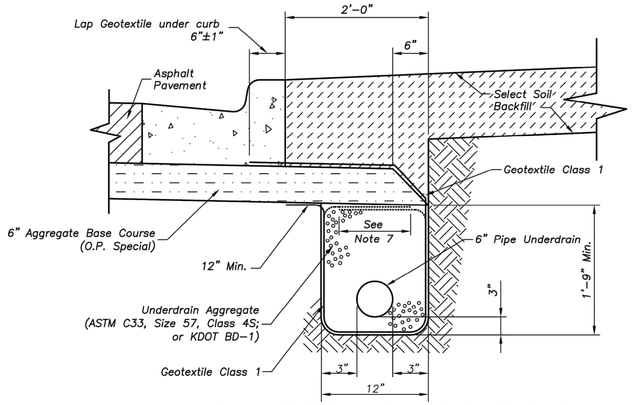
THOMAS M. MARKUS
CITY MANAGER



PIPE UNDERDRAIN LATERAL A–A

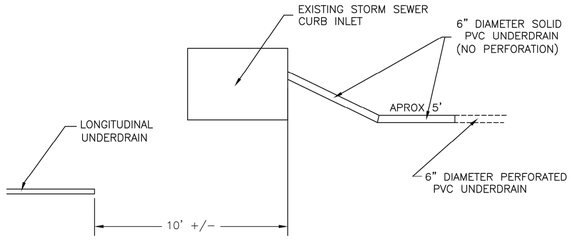
Not to Scale

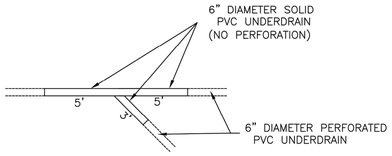


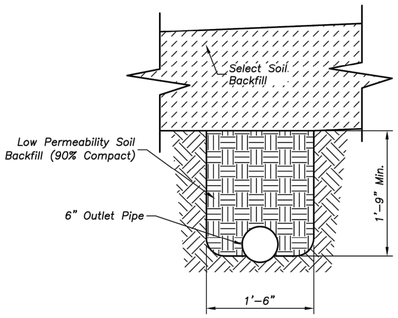


PIPE UNDERDRAIN BEHIND CURB B–B

Not to Scale







OUTLET PIPE

Not to Scale

Underdrain Notes:

1.

2. *All roadway excavation in rock will be undercut no less than 15" below bottom of pavement for the full width of the roadway as shown. Undercut and overbreakage in limestone and durable shale shall be backfilled with material meeting the requirements of Aggregate Base Course (O.P. Special) Specifications. Layers of earth or shale shall not be permitted for backfill up to the bottom of the Aggregate Base Course.*

3. *A minimum of 12" of select soil (topsoil) shall be placed on exposed rock cut or fill slopes outside the limits of the roadway. All rock and shale slopes shall be benched at a maximum of 2' vertical intervals prior to placement of select soil.*

4. *Proposed underdrain pipe layout, flowline elevations, inlet connection points, and details shall be approved prior to construction by the City Engineer.*

5. *Where pipe underdrains are used, all underdrain outlet pipes shall have watertight joints. All outlet pipes shall be tied into the nearest storm sewer inlet as approved. Where edge underdrains are used, all underdrain outlet pipes shall have manufacturer joints approved by the City Engineer. All connections between underdrain pipes and edge connectors or curb inlets shall be made with 2' length of outlet pipe.*

6. *All underdrain pipes shall be installed at a minimum slope of 1%. Pipe shall be installed with the perforations placed down.*

7. *Construct underdrain and fold geotextile over underdrain aggregate to protect the underdrain until the Aggregate Base Course is constructed. Fold the geotextile back and construct the Aggregate Base Course. Geotextile seams shall be overlapped at a minimum of 12".*

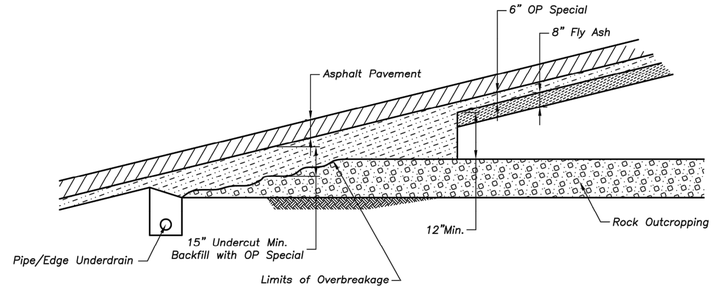
8. *The contractor shall not mix underdrain types of materials within any underdrain system.*

9. *All edge underdrain shall be held in the center of the trench by mechanical methods while placing granular backfill. See detail this sheet. Alternate methods may be used with prior approval by the City Engineer.*

10. *Where edge underdrain crosses non–invasive detector loop conduit, the contractor shall lower the edge drain up to 7" to avoid conflict while maintaining positive drainage as otherwise indicated in these construction notes.*

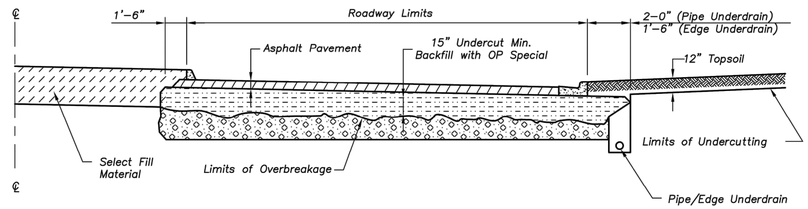
11. *See Approved Materials List for pre–approved Geotextile Class 1 and Class 2.*

UNDERDRAIN



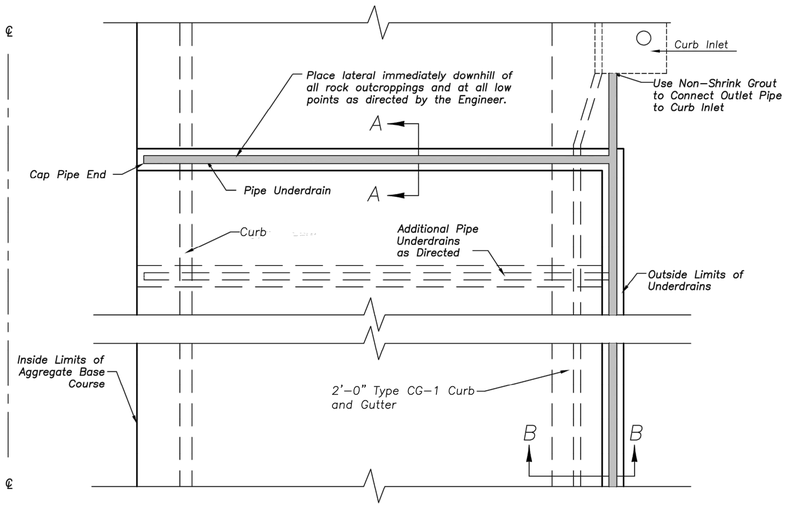
ROCK OUTCROPPING

Not to Scale



ROCK EXCAVATION/AGGREGATE BASE COURSE

Not to Scale



UNDERDRAIN LAYOUT

Not to Scale

2017 EDITION

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

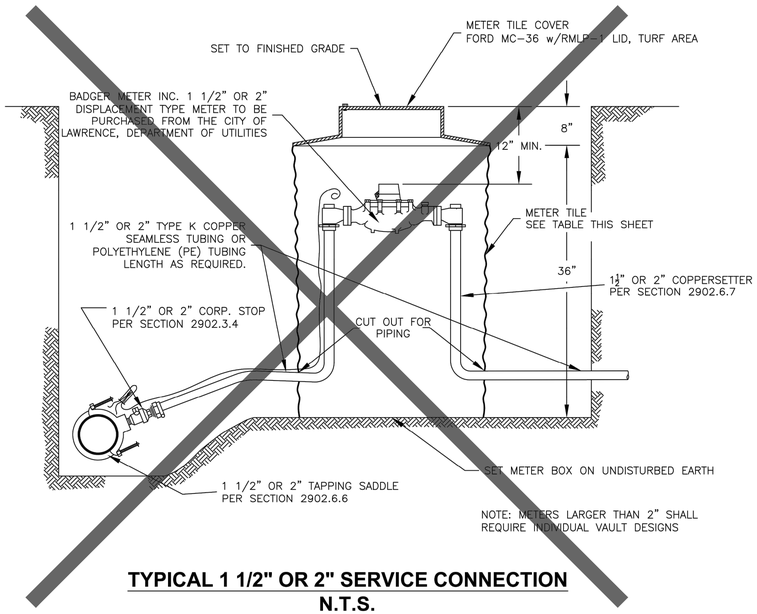
CITY OF LAWRENCE, KANSAS
ENGINEERING DIVISION OF PUBLIC WORKS

STANDARD DETAILS FOR
UNDERDRAIN–CONCRETE STREET

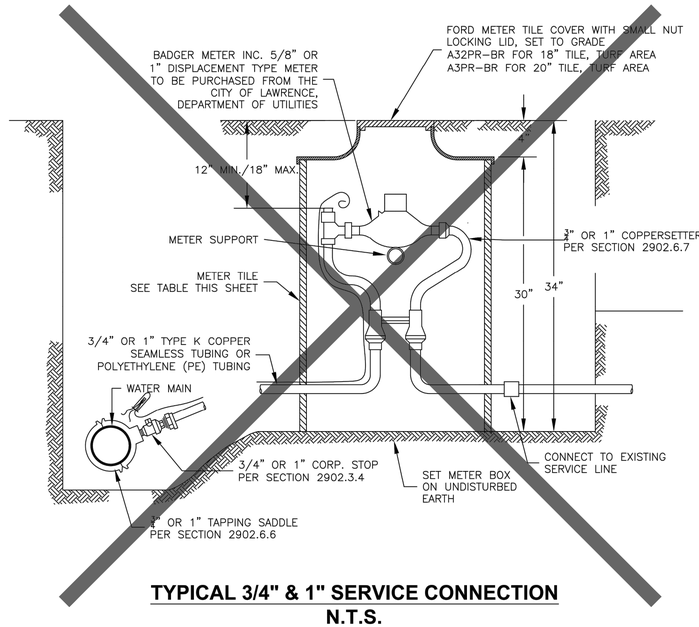
2 OF 2

DAVID P. CRONIN
CITY ENGINEER

THOMAS M. MARKUS
CITY MANAGER



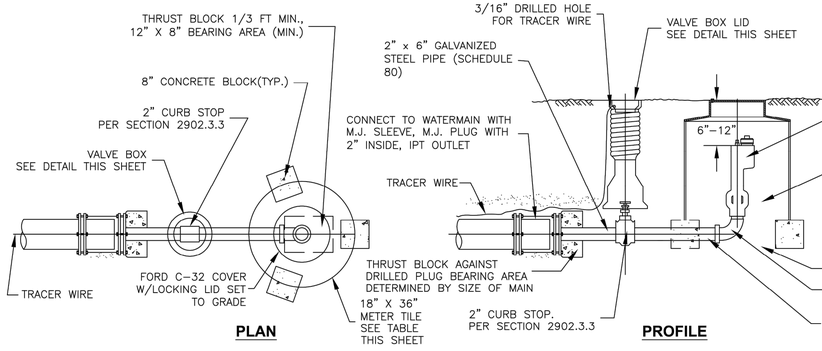
TYPICAL 1 1/2" OR 2" SERVICE CONNECTION
N.T.S.



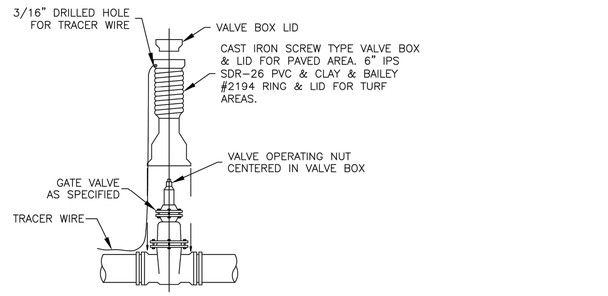
TYPICAL 3/4" & 1" SERVICE CONNECTION
N.T.S.

METER SIZE	METER TILE	ACCEPTABLE PRODUCTS
5/8"	18" DIA.	ADS 1805 AAH, 18050012H, HANCOR MP-NL1-18-002, MP-PL1-18-012, OR OLDCASTLE 00182009
1"	20" DIA.	OLDCASTLE 00202013
1 1/2" OR 2"	36" DIA.	ADS OR HANCOR N-12 HDPE, CONTECH A2000 PVC, OR OLDCASTLE 00362003

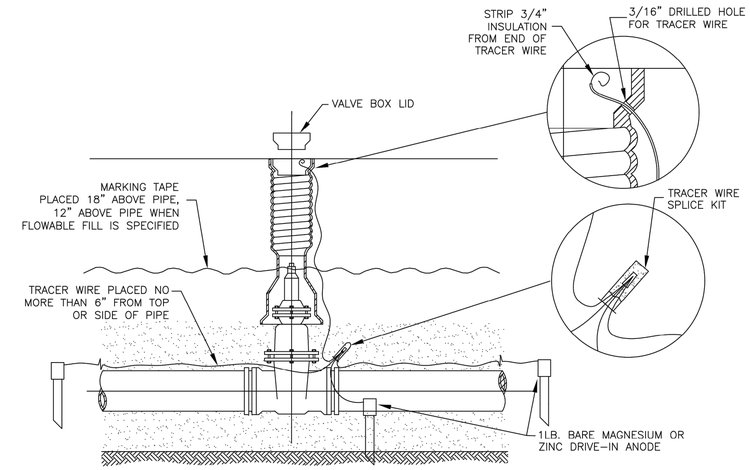
APPROVED METER TILE MATERIALS



BLOWOFF DETAIL
N.T.S.



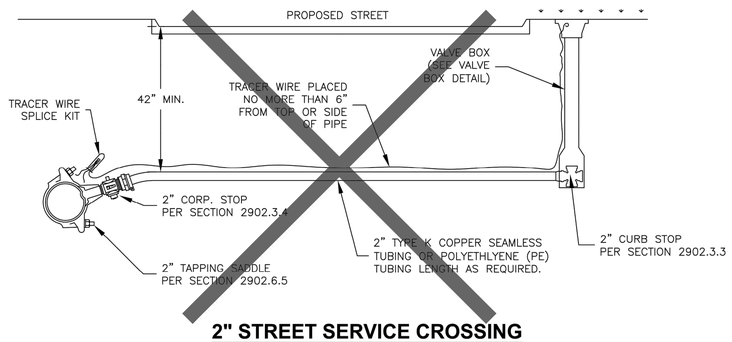
VALVE AND VALVE BOX DETAIL
N.T.S.



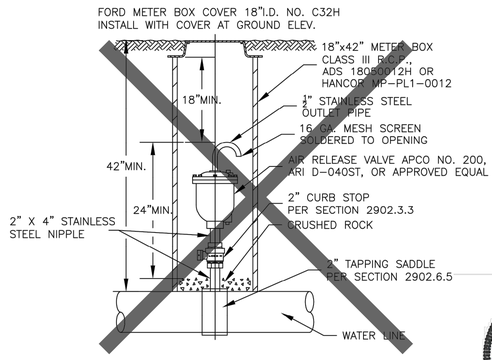
*NOTE:

1. ANODES SHALL BE A MINIMUM OF ONE POUND (1 LB.) BARE MAGNESIUM OR ZINC DRIVE-IN GROUNDING ANODE ROD AND SHALL BE DRIVEN INTO THE GROUND AT TEH SAME ELEVATION AS TEH WATERLINE. ANODES SHALL BE PLACED AT THE BEGINNING AND THE END OF THE WATERLINE, AT EVERY VALVE BOX OR TEST STATION, AT ALL DEAD ENDS, AT THE END OF SERVICE LINES WHERE NOT CONNECTED TO THE WIRE AT THE MAIN, AND/OR AT LEAST EVERY FIVE HUNDRED FEET (500')
2. SPLICE CONNECTIONS SHALL BE COPPERHEAD INDUSTRIES LLC SNAKEBITE LOCKING WIRE CONNECTOR, COPPERHEAD INDUSTRIES SCB-01SR DIRECT BURY, COPPERHEAD INDUSTRIES LLC 3WB-01 DRYCONN THREE-WAY DIRECT BURY LUG CONNECTOR, OR 3M DBR/Y-6 DIRECT BURY.
3. TRACER WIRE SHALL BE 12AWG COPPER CLAD STEEL (CCS), MINIMUM BREAK LOAD OF 280 LBS. WITH BLUE 30MIL HDPE JACKET FOR OPEN TRENCH INSTALLATIONS OR 12AWG COPPER CLAD STEEL (CCS), MINIMUM BREAK LOAD OF 1,100 LBS. WITH BLUE 45 MIL HDPE JACKET FOR DIRECTIONAL DRILL INSTALLATION. TRACER WIRE SHALL BE PLACED NO FURTHER THAN 6" TO THE SIDE OR ABOVE THE WATERLINE. TRACER WIRE SHALL BE ACCESSIBLE AT VALVE BOX OR TEST STATIONS AT LEAST EVERY 500'.
4. MARKING TAPE SHALL BE INSTALLED 18" ABOVE PVC PIPE OR DUCTILE IRON PIPE. MARKER TAPE SHALL BE AT LEAST 3" IN WIDTH, BLUE IN COLOR WITH BLACK LETTERING STATING, "CAUTION BURIED WATERLINE BELOW."
5. TRACER WIRE SHALL BE REQUIRED ON ALL POLYETHYLENE (PE) TUBING SERVICE LINES. SPLICE SERVICE LINE TRACER WIRE TO TRACER WIRE AT THE EXISTING WATERMAIN WITH APPROVED CONNECTOR. IF NO TRACER WIRE IS IN PLACE ON THE EXISTING WATERMAIN, TIE SERVICE LINE TRACER WIRE TO 1LB MIN. ANODE AT EXISTING WATERMAIN.

TRACER WIRE / MARKER TAPE DETAIL
N.T.S.



2" STREET SERVICE CROSSING
N.T.S.



AIR RELEASE VALVE DETAIL
N.T.S.

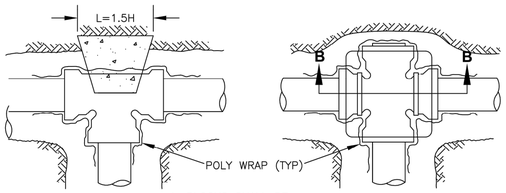
BY	DATE	REVISION
JDS	12/2010	UPDATE SERVICE CONNECTION DETAILS
		TO REFLECT USE OF POLYETHYLENE (PE) TUBING
JDS	12/2011	ANNUAL UPDATE
JDS	02/2013	ANNUAL UPDATE
JDS	12/2013	ANNUAL UPDATE
TWS	03/2015	ANNUAL UPDATE
TWS	01/2016	ANNUAL UPDATE
TWS	01/2017	ANNUAL UPDATE
SMG	01/2018	ANNUAL UPDATE

City of Lawrence
UTILITIES

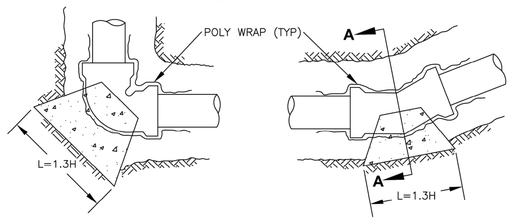
STANDARD WATERLINE DETAILS

Andrew Ensz
Project Engineer

THOMAS M. MARKUS
CITY MANAGER



1. BLOCKS SHALL BE POURED AGAINST UNDISTURBED EARTH
2. PLUGS SHALL BE INDIVIDUALLY RESTRAINED



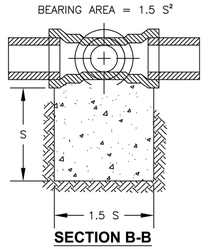
NOTES:
1. BLOCKS SHALL BE POURED AGAINST UNDISTURBED EARTH. PLUGS SHALL BE INDIVIDUALLY RESTRAINED. ALL CONCRETE USED FOR THRUST BLOCKS AND ENCASEMENT SHALL BE CLASS A CONCRETE.

2. PIPE AND FITTINGS WITHIN 2 FEET OF CONCRETE BLOCKING SHALL BE WRAPPED IN 8 MIL POLY WRAP WITH 18" MINIMUM OVERLAP AT SEAM. (TYPICAL ALL BLOCKING INSTALLATIONS EXCEPT BLOCKING FOR FIRE HYDRANT BASE)

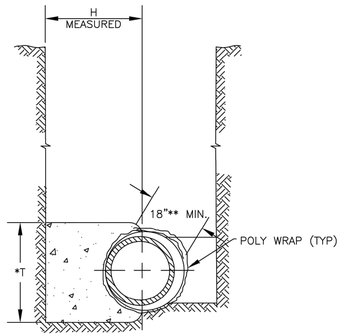
LINE SIZE	BEARING AREA IN SQUARE FEET				
	TEE or DEAD END	90° ELLS	45° ELLS	22 1/2 ° ELLS	11 1/4 ° ELLS
4"	2.7	3.8	2.1	1.1	0.5
6"	5.6	7.9	4.3	2.2	1.1
8"	9.6	13.6	7.4	3.8	1.9
10"	14.5	20.5	11.1	5.7	2.8
12"	20.5	29.0	15.7	8.0	4.0

BEARING AREA BASED ON THE FOLLOWING:
DESIGN PRESSURE: 150 psi
SOIL BEARING CAPACITY: 1500 PSF
SAFETY FACTOR: 1.5

THRUST BLOCK DETAILS
N.T.S.



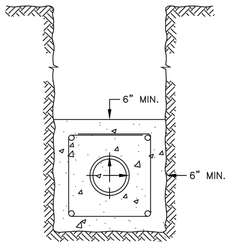
SECTION B-B



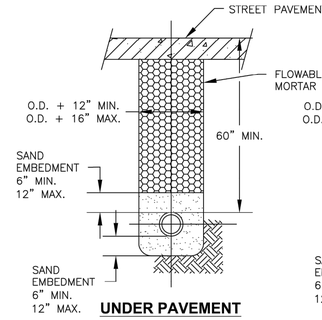
* AS REQUIRED TO OBTAIN THE MINIMUM BEARING AREA SHOWN IN THE TABLE. IN NO CASE SHALL THIS BE LESS THAN THE O.D. OF THE PIPE. BEARING AREA = LxT

** POLYWRAP OVERLAP AT SEAM

SECTION A-A



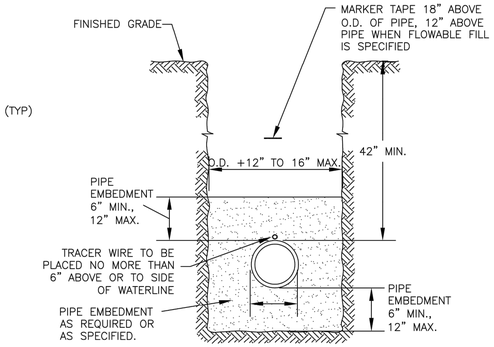
CONCRETE ENCASEMENT DETAIL
N.T.S.



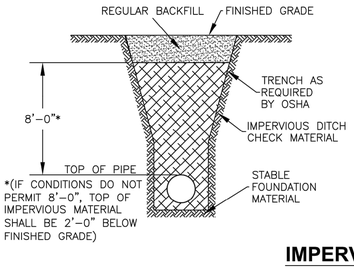
UNDER PAVEMENT — OUTSIDE OF PAVEMENT

NOTES:
1. FLOWABLE MORTAR LIMITS SHALL CONFORM TO SECTION 2903.8.2.c OF THE CITY OF LAWRENCE CONSTRUCTION AND MATERIAL SPECIFICATIONS SECTION 2900 – WATERLINES.
2. COMPACTED BACKFILL SHALL CONFORM TO SECTION 2903.8.2.a AND 2903.8.2.b OF THE CITY OF LAWRENCE CONSTRUCTION AND MATERIAL SPECIFICATIONS SECTION 2900 – WATERLINES.

WATERLINE RIGHT-OF-WAY CROSSING DETAILS
N.T.S.



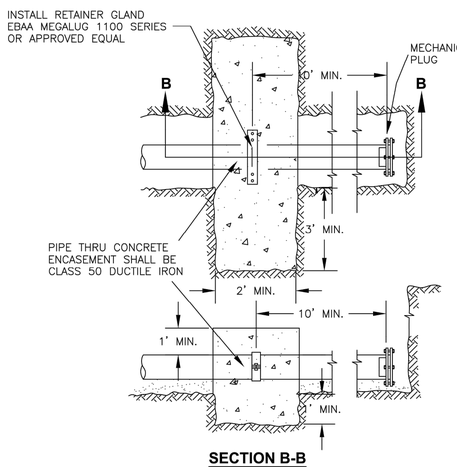
TYPICAL TRENCH SECTION
N.T.S.



*(IF CONDITIONS DO NOT PERMIT 8'–0", TOP OF IMPERVIOUS MATERIAL SHALL BE 2'–0" BELOW FINISHED GRADE)

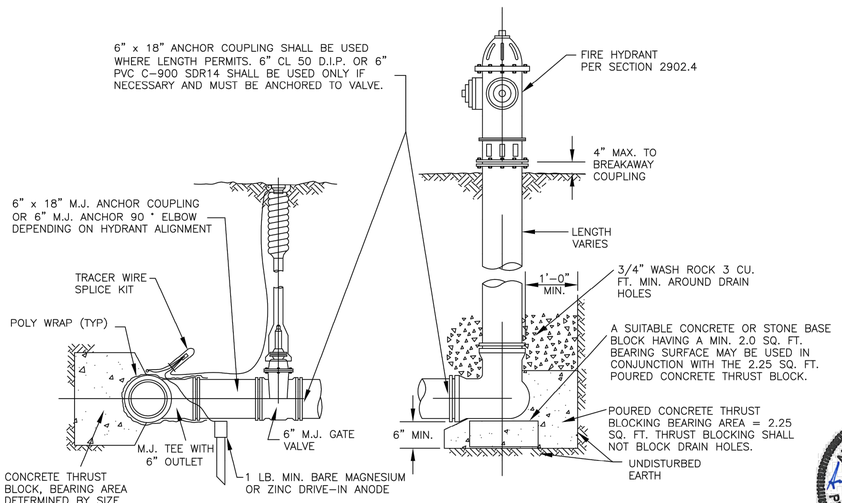
NOTES: 1. IMPERVIOUS DITCH CHECKS SHALL BE PLACED WHERE SHOWN ON THE PLANS. LENGTHS SHALL BE A MINIMUM OF 10 LF. FLOWABLE FILL IS REQUIRED FOR PVC PIPE. FOR OTHER PIPE TYPES, CLAY MATERIAL OR FLOWABLE FILL MAY BE USED AT THE CONTRACTOR'S OPTION. FLOWABLE FILL MATERIAL SHALL CONSIST OF A PORTLAND CEMENT GROUT HAVING A MINIMUM TWENTY–EIGHT (28) DAY COMPREHENSIVE STRENGTH OF FIVE HUNDRED POUNDS PER SQUARE INCH (500 PSI). ORGANIC MATERIAL SHALL BE SELECT CLAY MATERIAL SEPERATED FROM EXCAVATED MATERIALS, FREE OF CLODS, CLUMPS, DEBRIS, ORGANIC MATERIAL, AND STONES, COMPACTED SO AS TO OBTAIN 90% OF MAXIMUM DENSITY OF OPTIMUM MOISTURE PLUS OR MINUS 2%, AS DETERMINED BY ASTM D698.
2. REGULAR BACKFILL (ABOVE DITCH CHECK) SHALL BE FREE OF DEBRIS, ORGANIC MATERIALS AND STONES LARGER THAN 12".

IMPERVIOUS DITCH CHECK
N.T.S.

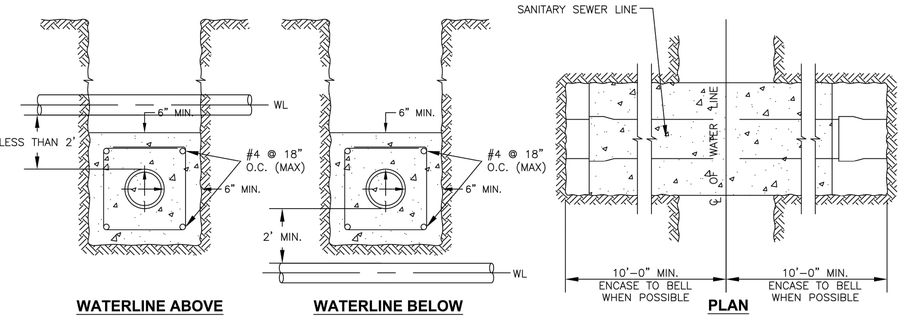


SECTION B-B

STRADDLE OR END BLOCKING
N.T.S.



FIRE HYDRANT ASSEMBLY DETAIL WITH TEST STATION
(N.T.S.)



WATERLINE ABOVE — WATERLINE BELOW — PLAN

CONCRETE ENCASEMENT OF SANITARY SEWER LINE CROSSING WATER LINE
N.T.S.

BY	DATE	REVISION
JDS	02/2013	ANNUAL UPDATE
JDS	12/2013	ANNUAL UPDATE
TWS	03/2015	ANNUAL UPDATE
TWS	01/2016	ANNUAL UPDATE
TWS	01/2017	ANNUAL UPDATE
SMG	01/2018	ANNUAL UPDATE

ANDREW PAUL ENSZ LICENSED 18805 KANSAS PROFESSIONAL ENGINEER

City of Lawrence UTILITIES

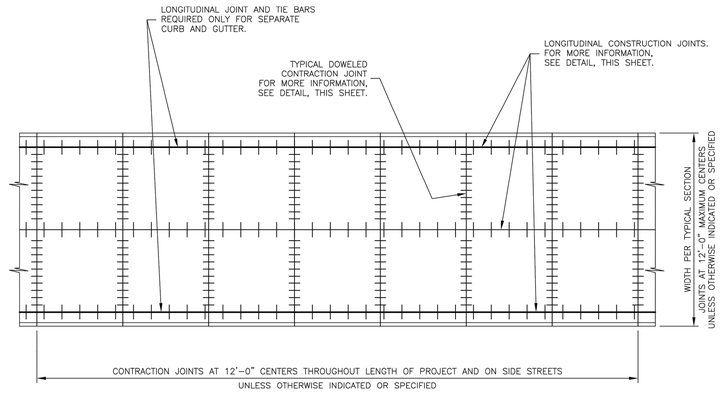
STANDARD WATERLINE DETAILS

Andrew Ensz, Project Engineer

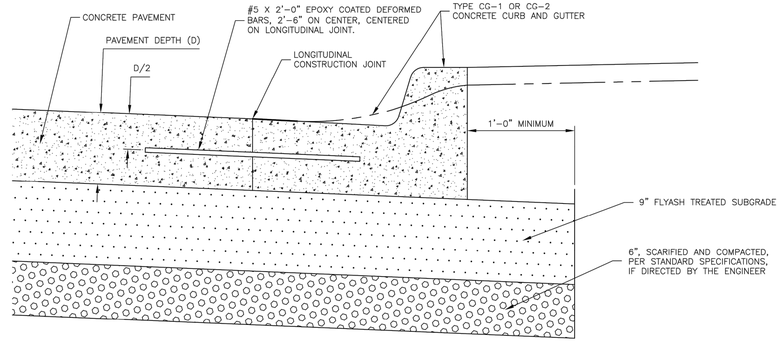
THOMAS M. MARKUS, CITY MANAGER

NOTES:

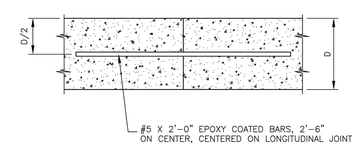
1. ALL BARS, REINFORCEMENT CHAIRS AND JOINT MATERIAL ARE SUBSIDIARY TO THE PRICE BID FOR PORTLAND CEMENT CONCRETE PAVEMENT.
2. CURB AND GUTTER ADJOINING PORTLAND CEMENT CONCRETE PAVEMENT MAY, AT THE CONTRACTOR'S OPTION, BE PLACED INTEGRAL WITH PAVEMENT OR SEPARATELY. IF PLACED SEPARATELY, SEE DETAIL, 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.



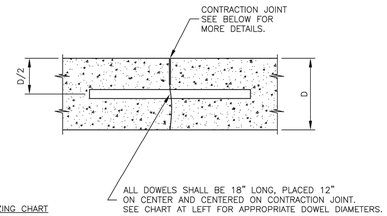
JOINT PLAN



SEPARATE CURB AND GUTTER



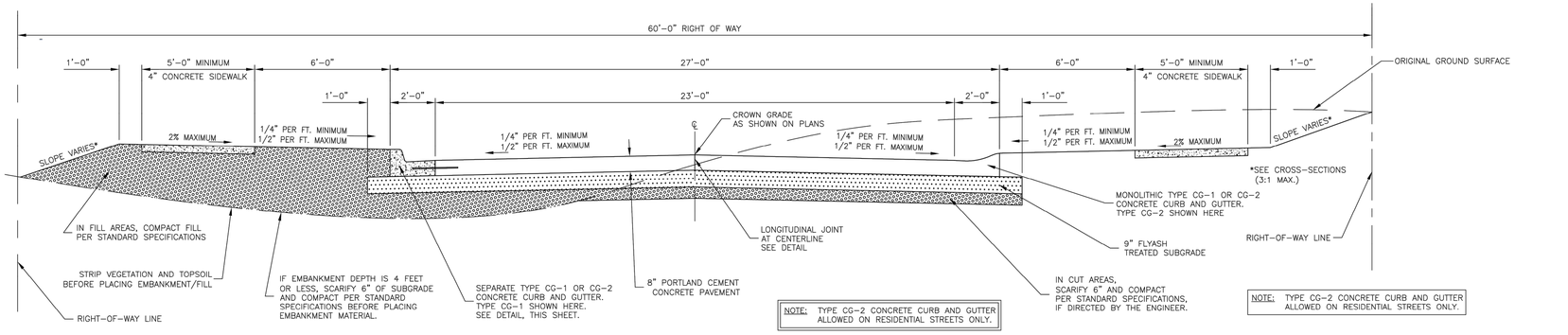
LONGITUDINAL CONSTRUCTION JOINT



DOWEL SIZING CHART

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

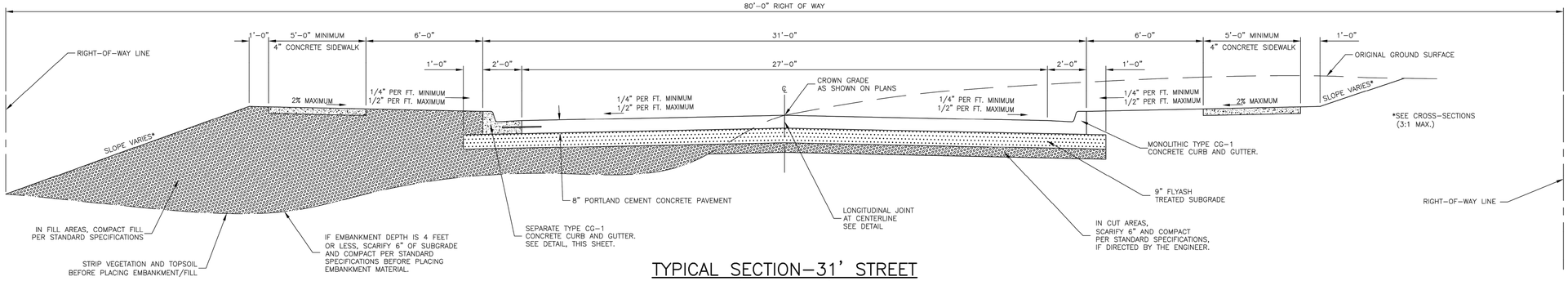
DOWELED CONTRACTION JOINT



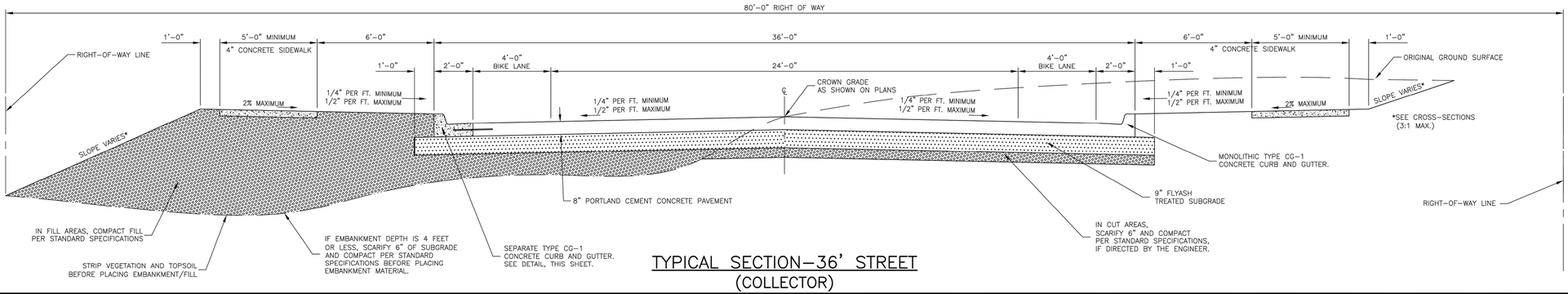
NOTE: TYPE CG-2 CONCRETE CURB AND GUTTER ALLOWED ON RESIDENTIAL STREETS ONLY.

NOTE: TYPE CG-2 CONCRETE CURB AND GUTTER ALLOWED ON RESIDENTIAL STREETS ONLY.

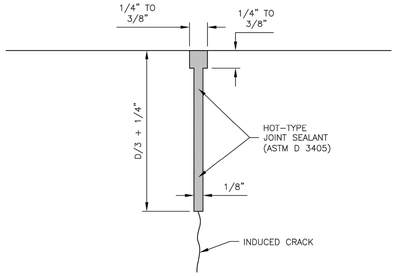
TYPICAL SECTION–27' STREET (RESIDENTIAL)



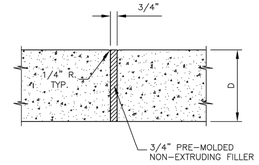
TYPICAL SECTION–31' STREET (COLLECTOR)



TYPICAL SECTION–36' STREET (COLLECTOR)



ENLARGED VIEW OF CONTRACTION JOINT



ISOLATION JOINT

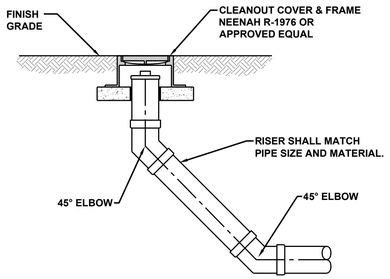
2017 EDITION

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

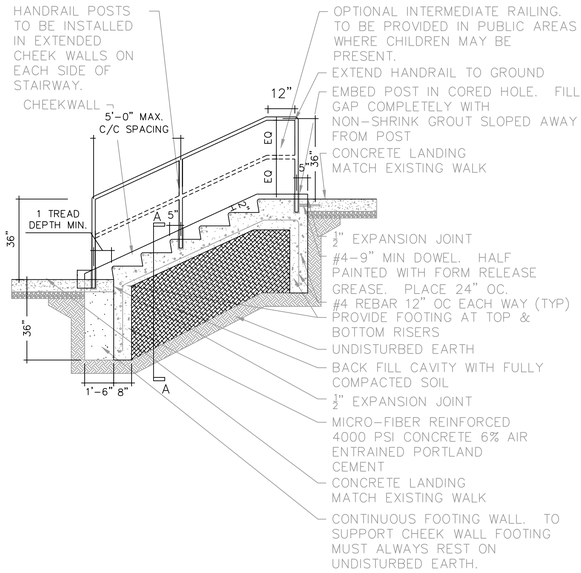
CITY OF LAWRENCE, KANSAS
ENGINEERING DIVISION OF PUBLIC WORKS

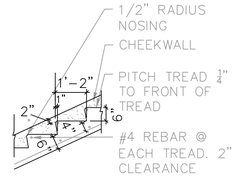
STANDARD DETAILS FOR
PORTLAND CEMENT CONCRETE STREETS

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



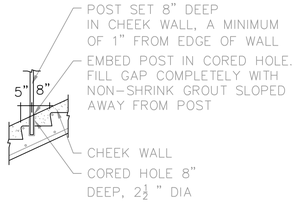
1 END OF LINE CLEANOUT DETAIL
NOT TO SCALE



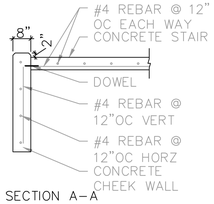


RISER/TREAD DETAIL

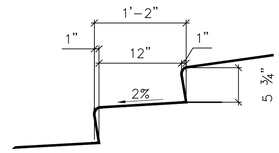
NOTES:
ALL METAL CONNECTIONS WELDED. GRIND SMOOTH AND PROVIDE RUST INHIBITOR PRIMER COAT. PROVIDE SHOP FINISH OF TWO COATS OF MEDIUM BRONZE EXTERIOR ENAMEL OVER PRIMER. ALL FASTENING DEVICES TO BE MEDIUM BRONZE. TOUCH UP AFTER INSTALLATION AS NECESSARY. ALL POSTS ARE TO BE HOT-DIP GALVANIZED.
SURFACE TEXTURE OF ALL CONCRETE: MAGNESIUM FLOAT WITH LIGHT BROOM FINISH. TREAT CONCRETE WITH WHITE CURING COMPOUND SPRAYED ONTO SURFACE.
KU STANDARDS EXCEED ADA



RAIL ANCHOR DETAIL



SECTION A-A
CHEEK WALL DETAIL



EXAGERRATED DETAIL AT STEPS

2 CONCRETE STAIRS DETAIL
NOT TO SCALE

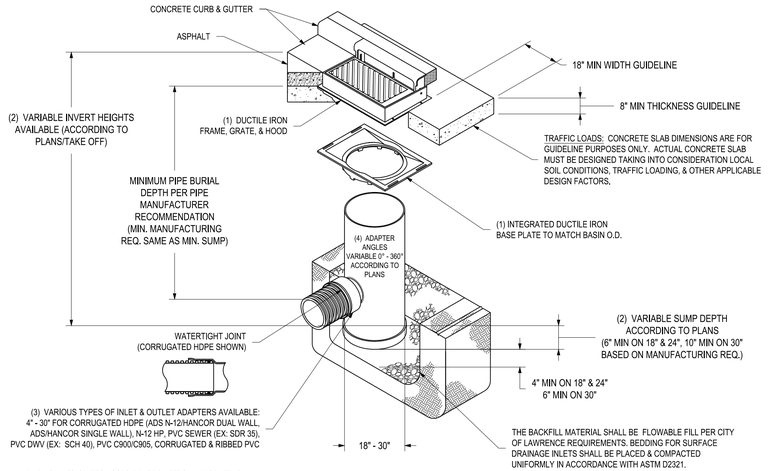
SK Design Group, Inc.
4600 College Boulevard, Suite 100
Overland Park, Kansas 66211
Tel: (913) 451-1818
Fax: (913) 451-7599

Survey
Greg Grant Survey
14343 2450 Road
Fontana, KS 66026
Tel: (913) 558-3408
Fax: (913) 757-2310

REV. NO.	DATE	DESCRIPTION

SK Project #: 17-162

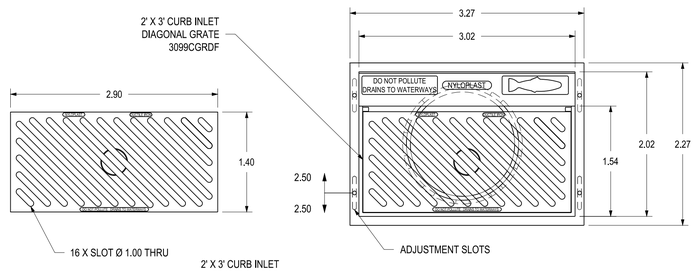
NYLOPLAST 2 FT X 3FT CURB INLET STRUCTURE: 30 _ _ AGR _ _ X

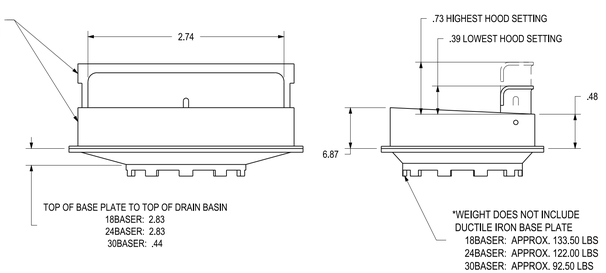


1 - 18" - 30" FRAMES, GRATES, HOODS, & BASE PLATES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
2 - DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS.
3 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP, & PVC SEWER (4" - 24").
4 - ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.
5 - ALL CURB INLET GRATE OPTIONS (DIAGONAL & HIGH FLOW) SHALL MEET H-20 LOAD RATING

3099CGRDF & 3099CGRFH

APPROX. GRATE DRAIN AREA = 232.87 SQ IN
*APPROX. WEIGHT WITH FRAME & HOOD = 344.00 LBS





ALL DIMENSIONS IN INCHES UNLESS NOTED OTHERWISE
GRATE MEETS H-20 LOAD RATING
QUALITY: MATERIALS SHALL CONFORM TO ASTM A536 GRADE 70-50-05
PAINT: CASTINGS ARE FURNISHED WITH A BLACK PAINT
LOCKING DEVICE AVAILABLE UPON REQUEST SEE DRAWING NO. 7002-110-057
SLOPE OF GRATE SURFACE IS 5.2%
CURB INLET FRAME INSIDE VOLUME IS APPROX 2.73 CU FT
APPROX. DRAIN AREA OF GRATE & HOOD
LOWEST SETTING = 369.54 SQ IN
LOWEST + 1" SETTING = 402.41 SQ IN
LOWEST + 2" SETTING = 435.29 SQ IN
LOWEST + 3" SETTING = 468.16 SQ IN
HIGHEST SETTING = 501.044 SQ IN

13 Nyloplast 2 ft x 3 ft Curb Inlet Standard Detail
Not to Scale

City of Lawrence
PO Box 708
Lawrence, KS 66044
Office (785) 832-7843

City of Lawrence
Louisiana Street, 12th to 13th Street
Street, Storm and Waterline
Lawrence, Kansas 66045-7000
City PWD Project # 1724 Utilities Project # UT1719
DATE: 02-22-2018 DRAWN BY: RD CHECKED BY: SM

DETAILS - 13

44

Intermediate Submittal

u:\2017\17-162\2018-02-22 review set\44-details.dwg