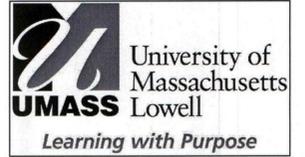


# UNIVERSITY OF MASSACHUSETTS LOWELL

PROJECT NO. UML1203-DC1

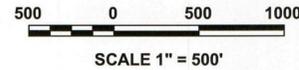
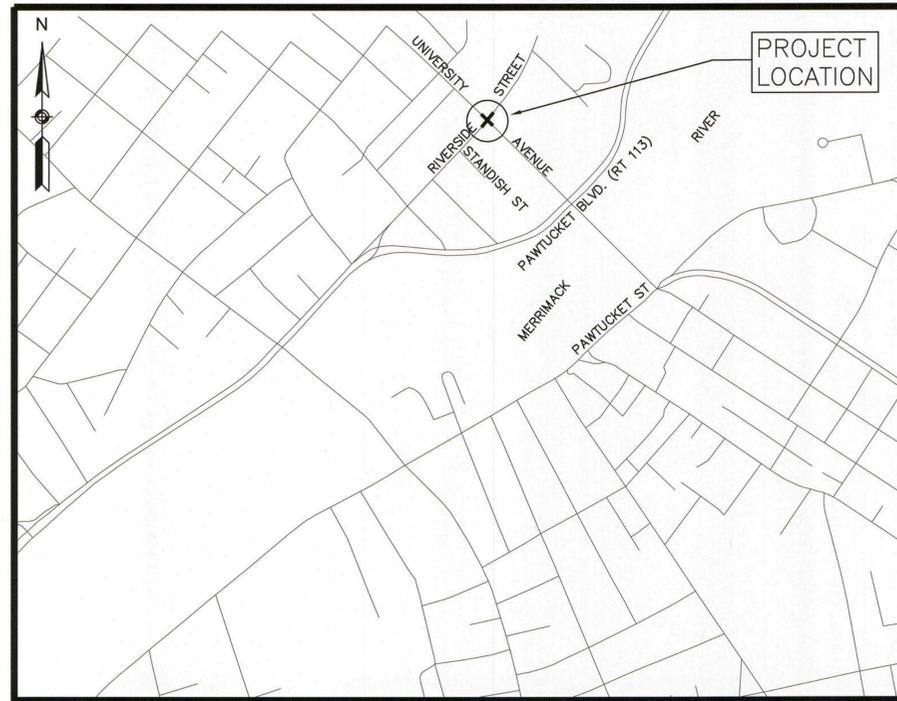
## UNIVERSITY AVENUE AT RIVERSIDE STREET UTILITY INTERSECTION UPGRADE LOWELL, MA



One University Avenue  
Lowell, MA 01854  
(978) 934-4000

### INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET & INDEX
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### BID DOCUMENTS

MARCH 26, 2014

ALTERNATE NO. 1

SHEET NO:



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NITSCH PROJECT # 9519  
 SCALE: AS NOTED  
 DATE: 03/26/2014  
 PROJECT MANAGER: W. MAHER  
 SURVEYOR: A. DIOTTE  
 DRAFTED BY: W. MAHER  
 CHECKED BY: W. MAHER

REV.	COMMENTS REVISIONS	DATE

### TITLE SHEET & INDEX

1

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**LEGEND:**

GENERAL SYMBOLS		
EXISTING	PROPOSED	
		CATCH BASIN / CATCH BASIN CURB INLET
		DECIDUOUS TREE
		SEWER MANHOLE
		DRAIN MANHOLE
		UTILITY POLE
		UTILITY POLE GUY
		FIRE HYDRANT
		LIGHT POLE
		SPOT GRADE
		STONE BOUND W/DRILL HOLE
		WATER GATE
		WATER VALVE
		GAS GATE
		UNDERGROUND STORM DRAIN LINE
		UNDERGROUND SEWER LINE
		UNDERGROUND COMBINED SEWER LINE
		UNDERGROUND ELECTRIC LINE
		UNDERGROUND TELEPHONE LINE
		UNDERGROUND WATER LINE
		UNDERGROUND GAS LINE
		ABAN EXIST. UTILITY
		FIVE FOOT CONTOUR
		ONE FOOT CONTOUR
		FENCE (TYPE NOTED)
		GRANITE CURB
		EDGE OF PAVEMENT

**ABBREVIATIONS**

BO	BY OTHERS	BIT	BITUMINOUS
ADJ	ADJUST	BLDG.	BUILDING
ABAN	ABANDON	BW	BOTTOM OF WALL
N.I.C.	NOT IN CONTRACT	TW	TOP OF WALL
RET.	RETAIN	CATV	CABLE TELEVISION
REM.	REMOVE	CB	CATCH BASIN
R&D	REMOVE & DISCARD	CONC.	CONCRETE
R&R	REMOVE & RESET	DMH	DRAINAGE MANHOLE
R&S	REMOVE & STACK	EHH	ELECTRIC HANDHOLE
PBS	PAINT BOTH SIDES	HYD	HYDRANT
F&C	FRAME & COVER	INV	INVERT ELEVATION
F&G	FRAME & GRATE	LF	LINEAR FEET
RCP	REINFORCED CONCRETE PIPE	LOC.	LOCATION
DIP	DUCTILE IRON PIPE	PVC	POLYVINYL CHLORIDE PIPE
PSB	PLANTABLE SOIL BORROW	RIM	RIM ELEVATION
TS	TRAFFIC SIGNAL	REC.	RECORD
LP	LIGHT POLE	TYP.	TYPICAL
TC	TOP OF CURB	UP	UTILITY POLE
BC	BOTTOM OF CURB	FT	FOOT
PR	PEDESTRIAN RAMP	MAX.	MAXIMUM
PC	POINT OF CURVATURE	MIN.	MINIMUM
PT	POINT OF TANGENCY	VGC	VERTICAL GRANITE CURB
POC	POINT ON CURVE	WG	WATER GATE
PCC	POINT OF CONCENTRIC CURVATURE	WV	WATER VALVE
PRC	POINT OF REVERSE CURVATURE	W/	WITH
VAR	VARIABLE OR VARIES	W/O	WITHOUT
AD	AREA DRAIN	HMA	HOT MIX ASPHALT
ADA	AMERICANS WITH DISABILITIES ACT	MB	MAIL BOX
AAB	ARCHITECTURAL ACCESS BOARD	EXIST	EXISTING
RTE	ROUTE	GR	GUARD RAIL
ROW	RIGHT OF WAY	PROP	PROPOSED
MAINT	MAINTAIN	WCR	WHEELCHAIR RAMP
		DW	DRIVEWAY
		CPP	CORRUGATED PLASTIC (POLYETHYLENE) PIPE
		PERM.	PERMANENT
		GB	GRANITE BOUND
		PROT.	PROTECT

**DEMOLITION NOTES:**

1. THE CONTRACTOR SHALL MAKE ALL NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN ALL NECESSARY CONSTRUCTION PERMITS. THE CONTRACTOR SHALL ALSO PAY ALL FEES AND POST ALL BONDS ASSOCIATED WITH THE SAME, AND COORDINATE WITH THE ARCHITECT AS REQUIRED.
2. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR JOB SITE SAFETY AND ALL CONSTRUCTION MEANS AND METHODS. PRIOR TO BEGINNING CONSTRUCTION, CONTRACTOR SHALL WALK THE SITE WITH THE ARCHITECT TO GAIN A THOROUGH UNDERSTANDING OF THE PROJECT, INCLUDING ANY SPECIAL CONDITIONS AND CONSTRAINTS.
3. SITE PREPARATION AND DEMOLITION SHALL INCLUDE THOSE AREAS WITHIN THE LIMIT OF WORK LINE AS SHOWN ON THIS CONTRACT.
4. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL CONDITIONS IN THE FIELD AND REPORT DISCREPANCIES BETWEEN PLANS AND ACTUAL CONDITIONS TO THE OWNER OR OWNER'S REPRESENTATION IMMEDIATELY.
5. THE LOCATION OF UNDERGROUND UTILITIES SHOWN ON PLANS ARE DIAGRAMMATIC ONLY, AND ALL UTILITIES MAY NOT BE SHOWN. THE CONTRACTOR SHALL CONTACT THE PROPER LOCAL AUTHORITIES OR RESPECTIVE UTILITY COMPANY TO CONFIRM THE LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. ANY DAMAGE DUE TO FAILURE OF THE CONTRACTOR TO CONTACT THE PROPER AUTHORITIES SHALL BE BORNE BY THE CONTRACTOR.
6. CARE SHOULD BE TAKEN IN ALL EXCAVATIONS DUE TO POSSIBLE EXISTENCE OF UNRECORDED UTILITY LINES.
7. EXCAVATION REQUIRED WITHIN PROXIMITY OF EXISTING UTILITY LINES SHALL BE DONE BY HAND. CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING UTILITY LINES OR STRUCTURES INCURRED DURING CONSTRUCTION OPERATIONS AT NO ADDITIONAL COST TO COMMONWEALTH/OWNER.
8. ANY AREA OUTSIDE THE LIMIT OF WORK THAT IS DISTURBED SHALL BE RESTORED TO ITS ORIGINAL CONDITION AT NO ADDITIONAL COST TO THE OWNER.
9. CONSULT ALL OF THE DRAWINGS AND SPECIFICATIONS FOR COORDINATION REQUIREMENTS BEFORE COMMENCING DEMOLITION.
10. CONTRACTOR SHALL SUPPLY AND MAINTAIN FOR THE DURATION OF DEMOLITION ALL NECESSARY DEVICES FOR EROSION, SEDIMENT AND DUST CONTROL, ETC., INCLUDING THOSE DEVICES NECESSARY FOR STOCKPILES AND PROTECTION OF ADJACENT PUBLIC WAYS, AND SHALL REMOVE THE DEVICES AFTER PROJECT COMPLETION.
11. THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE HIS EFFORTS OF THE DEMOLITION AND RELATION OF UTILITIES WITH ALL TRADES, IF APPLICABLE.
12. ALL ITEMS REQUIRING REMOVAL SHALL BE REMOVED TO FULL DEPTH TO INCLUDE BASE MATERIAL AND FOOTINGS OR FOUNDATIONS AS APPLICABLE, AND LEGALLY DISPOSED OF OFF-SITE BY CONTRACTOR.
13. AT ALL LOCATIONS WHERE EXISTING CURBING, CONCRETE PAVEMENT OR BITUMINOUS CONCRETE ROADWAY ABUTS NEW CONSTRUCTION, THE EDGE OF THE EXISTING CURB OR PAVEMENT SHALL BE SAW CUT TO A CLEAN, SMOOTH EDGE.

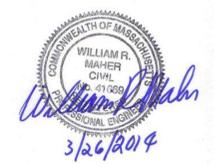
**UTILITY INFORMATION STATEMENT**

1. THE SUB-SURFACE UTILITY INFORMATION SHOWN HEREON IS COMPILED BASED ON FIELD SURVEY INFORMATION, RECORD INFORMATION AS SUPPLIED BY THE UTILITY COMPANIES, AND PLAN INFORMATION SUPPLIED BY THE CITY OF LOWELL; THE COMPLETENESS AND ACCURACY OF SAID COMPILED SUB-SURFACE INFORMATION CAN NOT BE GUARANTEED TO ANY CERTAIN DEGREE OF STATED TOLERANCE. ONLY PHYSICALLY LOCATED SUB-SURFACE UTILITY FEATURES FALL WITHIN NORMAL STANDARD OF CARE ACCURACIES.
2. THE LOCATIONS OF UNDERGROUND PIPES, CONDUITS, AND STRUCTURES HAVE BEEN DETERMINED FROM SAID INFORMATION, AND ARE APPROXIMATE ONLY. COMPILED LOCATIONS OF ANY UNDERGROUND STRUCTURES, NOT VISIBLY OBSERVED AND LOCATED, CAN VARY FROM THEIR ACTUAL LOCATIONS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ACTUAL LOCATION OF ALL UTILITIES.
3. THE STATUS OF UTILITIES, WHETHER ACTIVE, ABANDONED, OR REMOVED IS UNKNOWN FROM THE COMPILATION OF THIS INFORMATION. IT IS INCUMBENT UPON INDIVIDUALS USING THIS INFORMATION TO UNDERSTAND THAT COMPILED UTILITY INFORMATION IS NOT EXACT, AND IS SUBJECT TO CHANGE BASED UPON VARYING PLAN INFORMATION RECEIVED, AND ACTUAL LOCATIONS.
4. THE ACCURACY OF MEASURED UTILITY INVERTS AND PIPE SIZES IS SUBJECT TO FIELD CONDITIONS, THE ABILITY TO MAKE VISUAL OBSERVATIONS AND DIRECT ACCESS TO THE VARIOUS ELEMENTS.
5. THE UTILITY OWNER SHOULD BE CONSULTED AND THE ACTUAL LOCATIONS OF SUBSURFACE STRUCTURES SHOULD BE VERIFIED IN THE FIELD. CONTACT THE DIG SAFE CALL CENTER AT 1-888-344-7233, SEVENTY-TWO HOURS PRIOR TO EXCAVATION, BLASTING, GRADING, AND/OR PAVING.

**GENERAL NOTES:**

1. TOPOGRAPHIC DATA, PROPERTY LINE INFORMATION, AND EXISTING SITE FEATURES WERE OBTAINED FROM A PLAN ENTITLED "EXISTING CONDITIONS SURVEY, UNIVERSITY OF MASSACHUSETTS, LOWELL - NEW BUSINESS SCHOOL, LOWELL, MASSACHUSETTS", PREPARED FOR CAMBRIDGE SEVEN ASSOCIATES, PREPARED BY NITSCH ENGINEERING, DATED SEPTEMBER 24, 2013, REVISED MARCH 13, 2014.
2. FLOODPLAIN INFORMATION WAS OBTAINED FROM THE FLOOD INSURANCE RATE MAP (FIRM) COMMUNITY PANEL NO. 25017C0139E DATED JUNE 4, 2010. THE SITE IS IN ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN).
3. THE LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES SHALL BE CONSIDERED APPROXIMATE AND MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY UTILITY CONNECTIONS OR CROSSINGS OF PROPOSED UTILITIES AND EXISTING UTILITIES. THE CONTRACTOR SHALL CONTACT THE RESPECTIVE UTILITY COMPANIES RELATIVE TO THE LOCATIONS AND ELEVATIONS OF THEIR LINES. THE CONTRACTOR SHALL KEEP A RECORD OF ANY DISCREPANCIES OR CHANGES IN THE LOCATIONS OF ANY UTILITIES SHOWN OR ENCOUNTERED DURING CONSTRUCTION. ANY DISCREPANCIES SHALL BE REPORTED TO NITSCH ENGINEERING.
4. THE CONTRACTOR SHALL COMPLY WITH MASSACHUSETTS GENERAL LAWS CHAPTER 82, SECTION 40, AS AMENDED, WHICH STATES THAT NO ONE MAY EXCAVATE IN THE COMMONWEALTH OF MASSACHUSETTS EXCEPT IN AN EMERGENCY WITHOUT 72 HOURS NOTICE, EXCLUSIVE OF SATURDAYS, SUNDAYS, AND LEGAL HOLIDAYS, TO NATURAL GAS PIPELINE COMPANIES, AND MUNICIPAL UTILITY DEPARTMENTS THAT SUPPLY GAS, ELECTRICITY, TELEPHONE, OR CABLE TELEVISION SERVICE IN OR TO THE CITY OR TOWN WHERE THE EXCAVATION IS TO BE MADE. THE CONTRACTOR SHALL CALL "DIG SAFE" AT 1-888-DIG-SAFE.
5. THE CONTRACTOR SHALL COMPLY WITH MASSACHUSETTS GENERAL LAWS CHAPTER 82A, ALSO REFERRED TO AS JACKIE'S LAW, AS DETAILED IN SECTION 520 CMR 14.00 OF THE CODE OF MASSACHUSETTS REGULATIONS.
6. ALL UTILITY CONNECTIONS ARE SUBJECT TO THE APPROVAL OF, AND GRANTING OF PERMITS BY, THE CITY OF LOWELL. IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO SEE THAT ALL PERMITS AND APPROVALS ARE OBTAINED BEFORE STARTING CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR MAKING ALL NECESSARY ARRANGEMENTS FOR AND FOR PERFORMING ANY NECESSARY WORK INVOLVED IN CONNECTION WITH THE DISCONTINUANCE OF ANY UTILITIES OR WITHIN THE JURISDICTION OF ANY UTILITY COMPANIES, SUCH AS ELECTRICITY, TELEPHONE, WATER, GAS, AND ANY SYSTEM OR SYSTEMS WHICH WILL BE AFFECTED BY THE WORK TO BE PERFORMED UNDER THIS CONTRACT. THE CONTRACTOR SHALL NOTIFY ALL APPROPRIATE AGENCIES, DEPARTMENTS, AND UTILITY COMPANIES, IN WRITING, AT LEAST 48 HOURS AND NOT MORE THAN 30 DAYS PRIOR TO ANY CONSTRUCTION. CONSTRUCTION SHALL NOT INTERFERE WITH OR INTERRUPT UTILITIES WHICH ARE TO REMAIN IN OPERATION.
7. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS, RULES, REGULATIONS AND SAFETY CODES IN THE CONSTRUCTION OF ALL IMPROVEMENTS.
8. THE CONTRACTOR SHALL TAKE ADEQUATE PRECAUTIONS TO PROTECT ALL WALKS, GRADING, SIDEWALKS AND SITE DETAILS OUTSIDE OF THE LIMITS OF REGRADING AND WORK AS SHOWN ON THE DRAWINGS AND SHALL REPAIR AND REPLACE OR OTHERWISE MAKE GOOD AS DIRECTED BY THE ENGINEER OR OWNER'S DESIGNATED REPRESENTATIVE ANY SUCH OR OTHER DAMAGE SO CAUSED.
9. THE CONTRACTOR SHALL REMOVE FROM THE SITE ALL RUBBISH AND DEBRIS FOUND THEREON. STORAGE OF SUCH MATERIALS ON THE PROJECT SITE WILL NOT BE PERMITTED. THE CONTRACTOR SHALL LEAVE THE SITE IN SAFE, CLEAN, AND LEVEL CONDITION UPON COMPLETION OF THE SITE CLEARANCE WORK.
10. THE CONTRACTOR SHALL REMOVE FROM THE AREA OF CONSTRUCTION PAVEMENT, CONCRETE, GRANITE CURBING, CEMENT CURBING, POLES AND FOUNDATIONS, ISLANDS, TREE BERMS AND OTHER FEATURES WITHIN THE LIMITS OF CONSTRUCTION AS REQUIRED TO ACCOMMODATE NEW CONSTRUCTION WHETHER SPECIFIED ON THE DRAWINGS OR NOT.
11. ALL WATER, SEWER, AND DRAIN WORK SHALL BE PERFORMED ACCORDING TO THE REQUIREMENTS AND STANDARD SPECIFICATIONS OF THE CITY OF LOWELL.
12. ELEVATIONS REFER TO THE NATIONAL VERTICAL DATUM OF 1988 (NAVD88).
13. INSTALL WATER LINES WITH A MINIMUM OF FIVE FEET OF COVER AND A MAXIMUM OF SEVEN FEET.
14. MAINTAIN 10 FEET HORIZONTAL SEPARATION AND 18" VERTICAL SEPARATION (WATER OVER SEWER) BETWEEN SEWER AND WATER LINES. WHEREVER THERE IS LESS THAN 10 FEET OF HORIZONTAL SEPARATION AND 18" OF VERTICAL SEPARATION BETWEEN A PROPOSED OR EXISTING SEWER LINE TO REMAIN AND A PROPOSED OR EXISTING WATER LINE TO REMAIN BOTH WATER MAIN AND SEWER MAIN SHALL BE CONSTRUCTED OF MECHANICAL JOINT CEMENT LINED DUCTILE IRON PIPE FOR A DISTANCE OF 10-FEET ON EITHER SIDE OF THE CROSSING. ONE (1) FULL LENGTH OF WATER PIPE SHALL BE CENTERED OVER THE SEWER AT THE CROSSING.
15. UTILITY STRUCTURES TO BE ABANDONED SHALL BE REMOVED TO A DEPTH OF NO LESS THAN 3 FEET BELOW FINISHED GRADE. THE BOTTOMS OF THE STRUCTURES SHALL BE BROKEN AND THE STRUCTURES SHALL BE BACKFILLED WITH GRAVEL BORROW AND COMPACTED.
16. CONTRACTOR SHALL MAINTAIN ALL EXISTING UTILITIES EXCEPT THOSE NOTED TO BE ABANDONED OR REMOVED & DISPOSED.

UNIVERSITY OF MASSACHUSETTS LOWELL  
PROJECT NO. UML1203-DC1  
UNIVERSITY AVENUE AT RIVERSIDE STREET  
UTILITY INTERSECTION UPGRADE  
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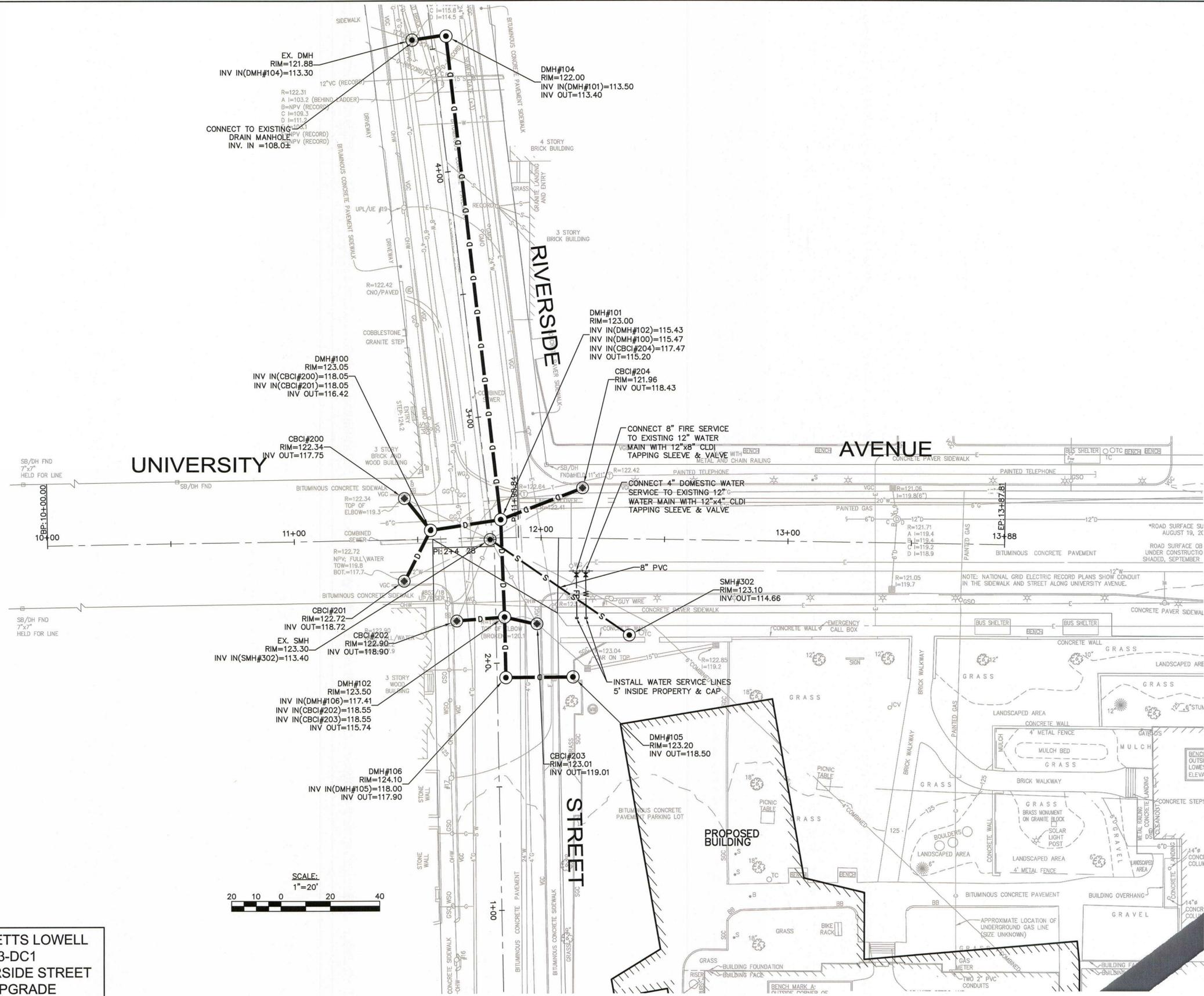
NITSCH PROJECT #	9519
SCALE:	AS NOTED
DATE:	03/26/2014
PROJECT MANAGER:	W. MAHER
SURVEYOR:	A. DIOTTE
DRAFTED BY:	W. MAHER
CHECKED BY:	W. MAHER

REV.	COMMENTS	DATE

**LEGEND, ABBREVIATIONS, AND GENERAL NOTES**

SHEET NO:

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William F. Maher  
 3/26/2014

- GENERAL NOTES:**
1. ASSUME ALL DRAIN PIPE IS 12" RCP UNLESS NOTED OTHERWISE.
  2. CONTRACTOR SHALL USE CITY OF LOWELL STANDARD FRAMES AND COVERS FOR DRAIN MANHOLES AND CITY OF LOWELL STANDARD FRAMES AND GRATES FOR CATCH BASINS.
  3. CONTRACTOR TO REMOVE THE FIVE (5) EXISTING CATCH BASINS LOCATED IN THE INTERSECTION AND CAP PIPE AT BOTH ENDS.
  4. REFER TO SHEET 5 FOR PROFILE OF UNIVERSITY AVENUE.

UNIVERSITY OF MASSACHUSETTS LOWELL  
 PROJECT NO. UML1203-DC1  
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 DRAFTED BY: W. MAHER  
 CHECKED BY: W. MAHER

REV.	COMMENTS	DATE

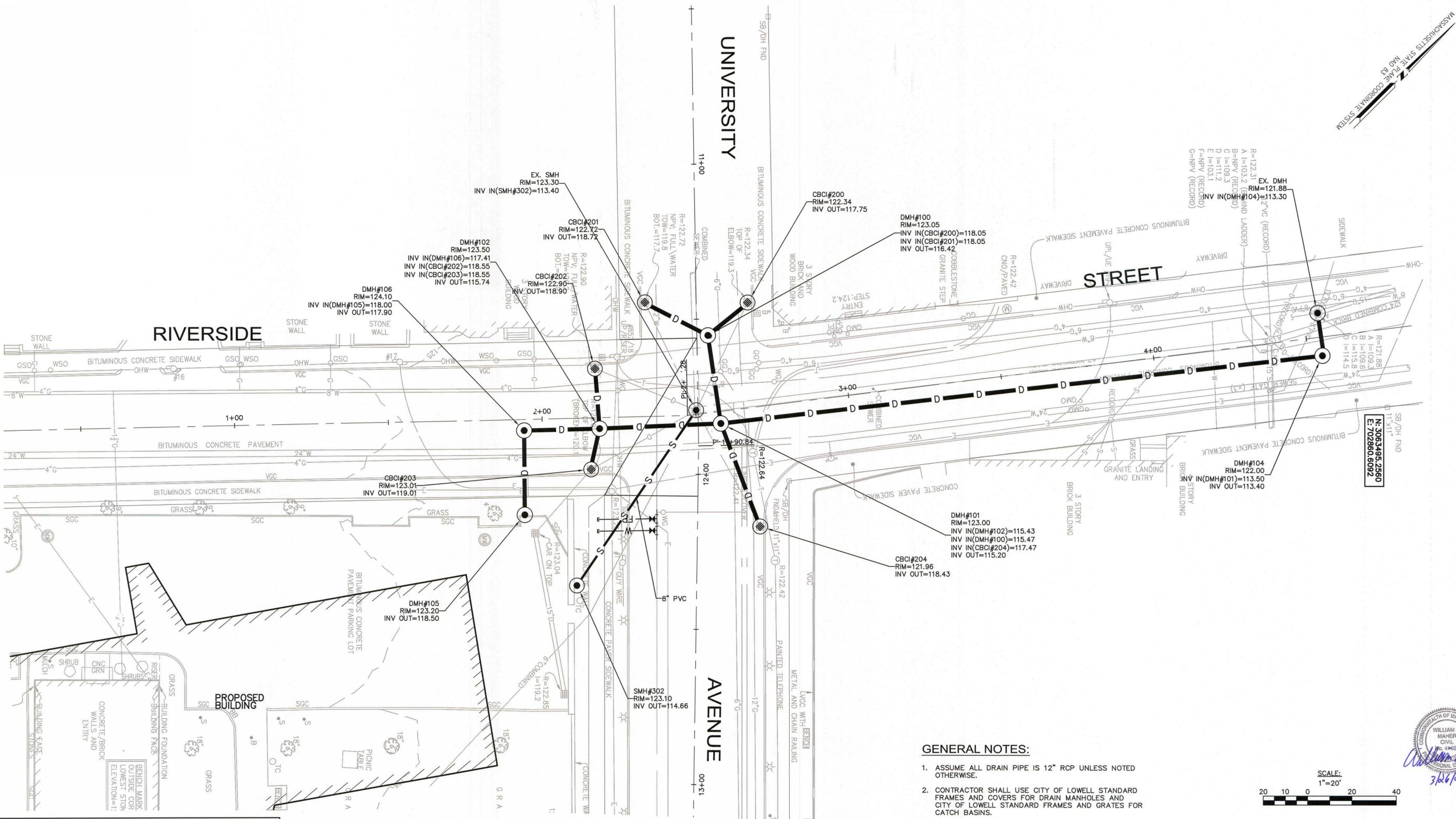
**UTILITY PLAN I**

ALTERNATE NO. 1

SHEET NO:



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 UNIVERSITY AVENUE AT RIVERSIDE STREET  
 UTILITY INTERSECTION UPGRADE  
 LOWELL, MA

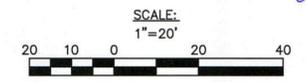
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 PROJECT MANAGER: W. MAHER  
 SURVEYOR: A. DIOTTE  
 DRAFTED BY: W. MAHER  
 CHECKED BY: W. MAHER

REV.	COMMENTS	DATE

- GENERAL NOTES:**
- ASSUME ALL DRAIN PIPE IS 12" RCP UNLESS NOTED OTHERWISE.
  - CONTRACTOR SHALL USE CITY OF LOWELL STANDARD FRAMES AND COVERS FOR DRAIN MANHOLES AND CITY OF LOWELL STANDARD FRAMES AND GRATES FOR CATCH BASINS.
  - CONTRACTOR TO REMOVE THE FIVE (5) EXISTING CATCH BASINS LOCATED IN THE INTERSECTION AND CAP PIPE AT BOTH ENDS.
  - REFER TO SHEET 6 FOR PROFILE OF RIVERSIDE STREET.



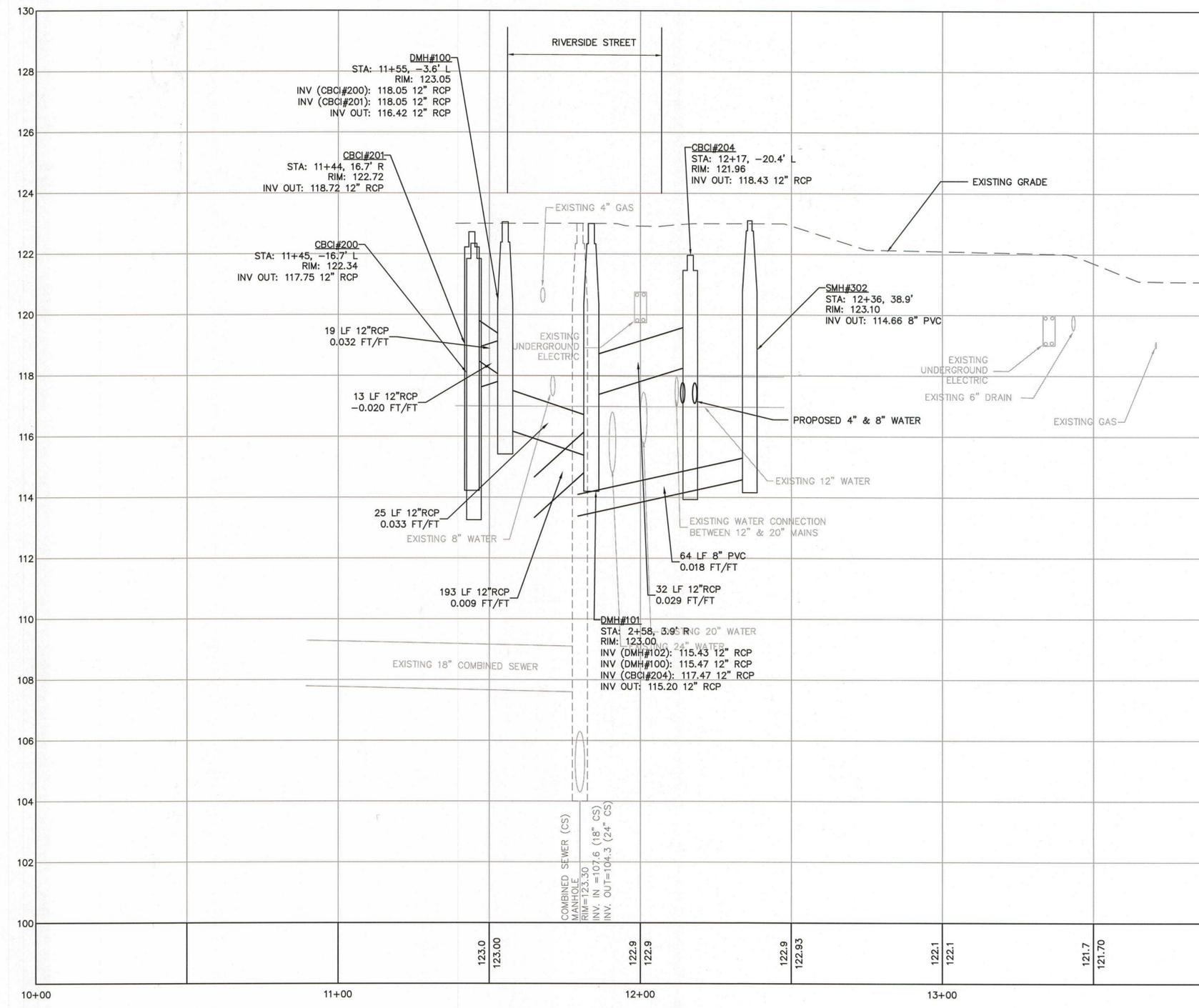
WILLIAM F. MAHER  
 CIVIL ENGINEER  
 No. 44569  
 3/26/2014

ALTERNATE NO. 1

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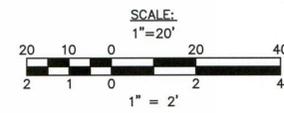
**UTILITY PLAN II**

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**GENERAL NOTES:**

1. ASSUME ALL DRAIN PIPE IS 12" RCP UNLESS NOTED OTHERWISE.
2. CONTRACTOR SHALL USE CITY OF LOWELL STANDARD FRAMES AND COVERS FOR DRAIN MANHOLES AND CITY OF LOWELL STANDARD FRAMES AND GRATES FOR CATCH BASINS.
3. CONTRACTOR TO REMOVE THE FIVE (5) EXISTING CATCH BASINS LOCATED IN THE INTERSECTION AND CAP PIPE AT BOTH ENDS.
4. REFER TO SHEET 3 FOR PLAN OF UNIVERSITY AVENUE.



3/26/2014

UNIVERSITY OF MASSACHUSETTS LOWELL  
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 UNIVERSITY AVENUE AT RIVERSIDE STREET  
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DRAFTED BY:	W. MAHER	
CHECKED BY:	W. MAHER	
REV.	COMMENTS REVISIONS	DATE

**UNIVERSITY AVENUE PLAN/PROFILE**

SHEET NO: