## CITY OF RICHMOND, VIRGINIA

# DEPARTMENT OF PUBLIC WORKS TRANSPORTATION ENGINEERING DIVISION

## **INDEX**

DRAWING TITLE	SHEET
TITLE SHEET	1
CONSTRUCTION NOTES	2
TYPICAL SECTIONS	2A - 2B
E. MARSHALL STREET AT CHIMBORAZO BOULEVARD	3
N STREET AT CHIMBORAZO BOULEVARD	4
M STREET AT 32ND STREET	5
M STREET AT 30TH STREET	6
M STREET AT 27TH STREET	7
S STREET AT 31ST STREET	8
TOTAL NUMBER OF SHEETS	10



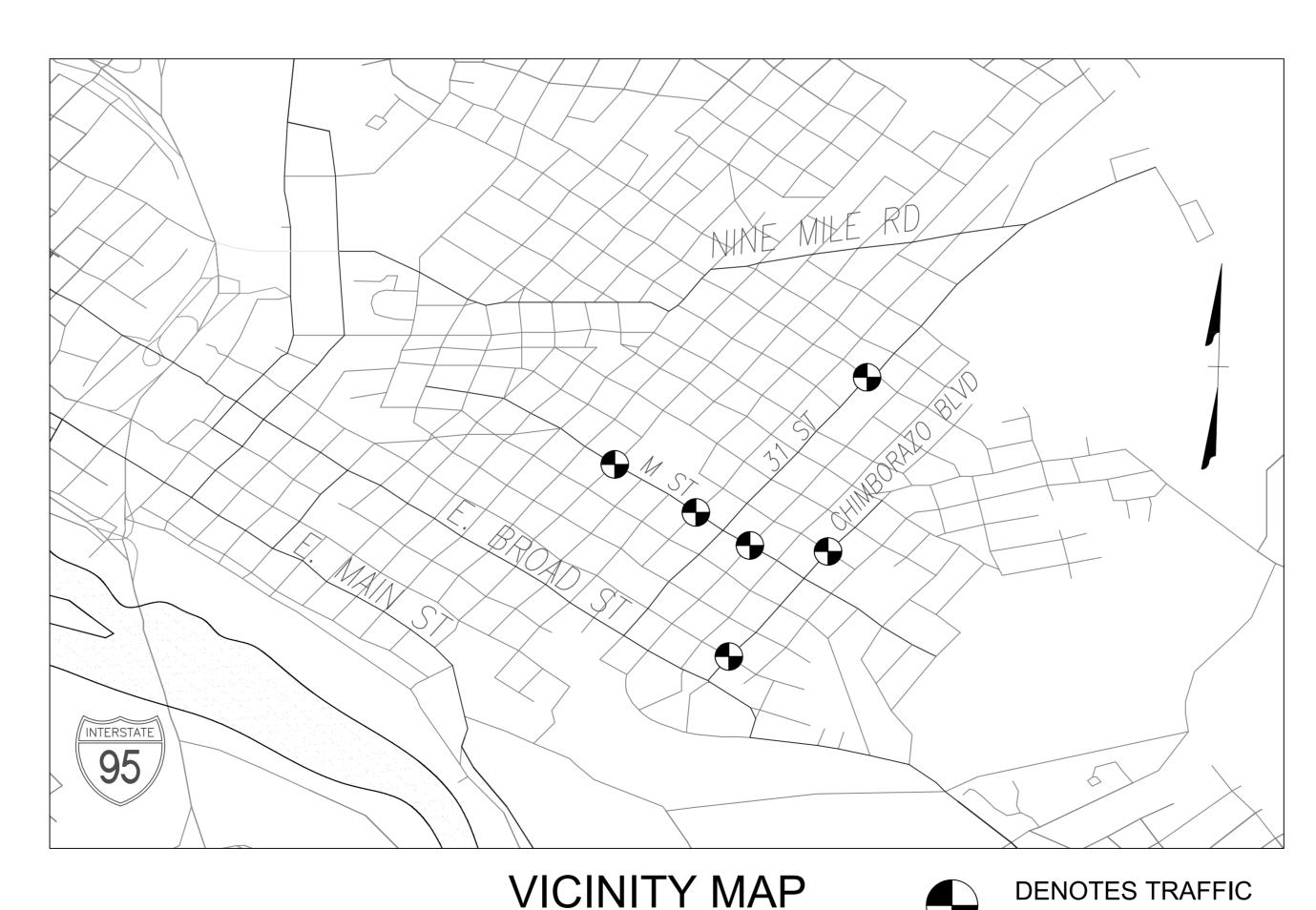
## REVISIONS

NO.	DATE	COMMENTS
_	_	-

# RESIDENTIAL TRAFFIC CALMING IMPROVEMENTS TRAFFIC CIRCLES AT CHIMBORAZO BLVD, M ST, AND S ST

PROJECT NUMBER: 040-290-8910-8973-8976

**CIRCLE LOCATIONS** 



SCALE: 1" = 1000'

## CITY OF RICHMOND

	APPROVED FOR CONSTRUCTION
DATE	SURVEY'S SUPERINTINDENT
DATE	PROJECT MANAGER
DAIL	TROUBLET MANAGER
DATE	MAINTENANCE ENGINEER
DATE	CITY TRANSPORTATION ENGINEER
D. T.	
DATE	CAPITAL PROJECTS ADMINISTRATOR
DATE	CITY ENGINEER
DATE	DIRECTOR OF PUBLIC WORKS

CITY OF RICHMOND GIS DATA
CITY OF RICHMOND GIS DATA

PLAN SURVEYED

PLOTTED

TE BOOK ALIGNMENT CHECKED

TO WAS CHECKED

NO ADDITIONAL RIGHT OF WAY REQUIRED.

VERSION OF THE PLAN ASSEMBLY.

THIS PROJECT IS TO BE CONSTRUCTED IN

**JANUARY 31, 2014** 

DESIGN FEATURES RELATING TO CONSTRUCTION OR

TO REGULATION AND CONTROL OF TRAFFIC MAY BE

SUBJECT TO CHANGE AS DEEMED NECESSARY BY

ACCORDANCE WITH THE VDOT'S 2007 ROAD AND

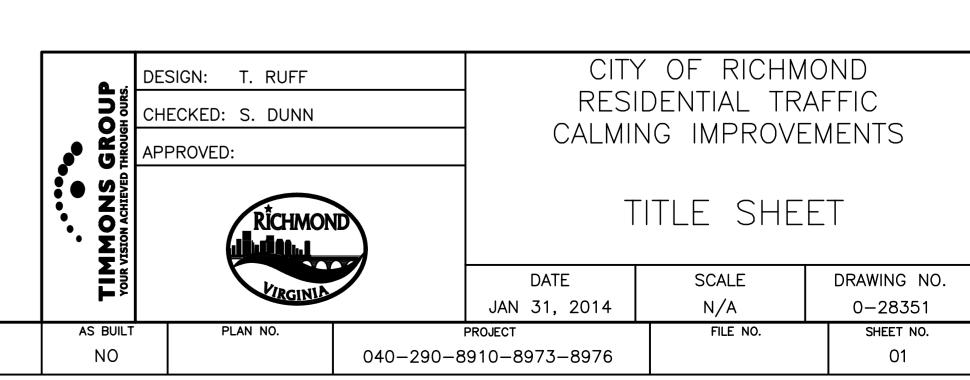
BRIDGE SPECIFICATIONS, 2008 ROAD AND BRIDGE

2009 MUTCD AND AS AMENDED BY THE CONTRACT

STANDARDS, 2011 WORK AREA PROTECTION MANUAL,

PROVISIONS AND THE COMPLETE ELECTRONIC .PDF

THE CITY OF RICHMOND.



## CONSTRUCTION NOTES

### **GENERAL NOTES**

- 1. THE CONTRACTOR SHALL PERFORM ALL WORK AND CONSTRUCTION OR INSTALLATION OF ALL ITEMS WITHIN THE EXISTING CITY OF RICHMOND RIGHT-OF-WAY.
- 2. ALL ITEMS SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH THE LATEST APPLICABLE STANDARDS AND SPECIFICATIONS OF THE CITY OF RICHMOND. THE LATEST STANDARDS AND SPECIFICATIONS OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT), AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), WHICHEVER IS MORE RESTRICTIVE, UNLESS OTHERWISE NOTED ON THE PLANS.
- 3. PRIOR TO CONSTRUCTION OR EXCAVATION, THE CONTRACTOR SHALL ASSUME THE RESPONSIBILITY OF LOCATING ANY UNDERGROUND UTILITIES (PUBLIC OR PRIVATE) THAT MAY EXIST AND CROSS THROUGH THE AREA OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING, AT THE HIS EXPENSE, ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION. THE LOCATION OF EXISTING LINES, CONDUITS, OR OTHER STRUCTURES ACROSS, UNDERNEATH, OR OTHERWISE ALONG THE LINE OF PROPOSED WORK ARE NOT NECESSARILY SHOWN ON THESE PLANS, AND IF SHOWN, ARE ONLY APPROXIMATELY CORRECT. THE CONTRACTOR SHALL BE LIABLE FOR ALL DAMAGE DONE TO ANY STRUCTURES OR PROPERTY THROUGH HIS NEGLIGENCE OR CARELESSNESS. THE PROJECT MANAGER SHALL BE CONTACTED IMMEDIATELY IF LOCATION OR ELEVATION IS DIFFERENT FROM THAT SHOWN ON THE PLANS. IF THERE APPEARS TO BE A CONFLICT, OR UPON DISCOVERY OF ANY UTILITY NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL CONTACT "MISS UTILITY" (1-800-552-7001) PRIOR TO START OF CONSTRUCTION.
- 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE CITY OF RICHMOND PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- 5. THE CONTRACTOR SHALL NOTIFY THE CITY TRAFFIC ENGINEERING DIVISION IN WRITING 72 HOURS PRIOR TO THE BEGINNING OF CONSTRUCTION.
- 6. ANY DEVIATION FROM THE APPROVED PLANS AND/OR STANDARDS AND SPECIFICATIONS MUST BE APPROVED BY THE CITY TRAFFIC ENGINEERING DIVISION IN WRITING PRIOR TO START OF WORK.
- 7. IF A CONFLICT IS FOUND TO EXIST, THE CONTRACTOR SHALL NOTIFY THE CITY TRAFFIC ENGINEERING DIVISION BEFORE ANY WORK IS STARTED IN ORDER TO COORDINATE THE REMAINDER OF THE WORK TO BE DONE.
- 8. THE CONTRACTOR SHALL MAINTAIN UTILITY SERVICES TO EXISTING RESIDENCES AND BUSINESSES DURING CONSTRUCTION. WHEN SERVICES ARE TO BE INTERRUPTED FOR CUT-INS. PLUGGING. OR ABANDONMENT ETC.. THE CONTRACTOR SHALL PROVIDE THE CITY WITH 72 HOURS NOTICE. THE AFFECTED PROPERTY OWNER, RESIDENCE OR BUSINESS SHALL BE NOTIFIED 48 HOURS IN ADVANCE OF SERVICE INTERRUPTIONS. ALL UTILITY SERVICE INTERRUPTIONS SHALL BE KEPT TO AN ABSOLUTE MINIMUM. THE CONTRACTOR SHALL PROVIDE THE PROJECT MANAGER WITH A DETAILED PLAN AND SCHEDULE FOR SERVICE INTERRUPTIONS. A MINIMUM OF FIVE (5) WORKING DAYS IN ADVANCE OF SUCH
- 9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXISTING UTILITIES AND SHALL REPLACE AT NO ADDITIONAL COST, IF DAMAGED, AS DIRECTED BY THE CITY. EXISTING UTILITIES THAT ARE IN CONFLICT AND MAY NEED TO BE REMOVED OR RELOCATED WILL BE COORDINATED BY THE CITY. RELOCATIONS OF CITY FACILITIES WILL BE ADMINISTERED BY THE CITY DEPARTMENT OF PUBLIC UTILITIES. IN CASE OF EMERGENCIES OF UTILITY BREAKAGE/CONFLICT CONTACT:

UTILITY	TELEPHONE NUMBER
GAS	646-8300, 646-8309, 646-8310
WATER	646-8300, 646-8309, 646-8310
SEWER	646-8600, 646-8426
POWER	888-667-3000

- ALL UTILITY CLEARANCES ARE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE OBTAINED PRIOR TO CONSTRUCTION. EXCAVATION WITHIN 1.5' OF GAS OR ELECTRIC LINES SHALL BE PERFORMED BY HAND.
- 11. THE CONTRACTOR SHALL SUBMIT A SEPARATE INTERSECTION TRANSITION PLAN, TO THE ENGINEER FOR APPROVAL A MINIMUM OF 48 HOURS PRIOR TO COMMENCEMENT OF INTERSECTION CONSTRUCTION. INCLUDED IN THIS PLAN SHALL BE TRAFFIC MAINTENANCE PROCEDURES TO BE USED DURING CONSTRUCTION. SEE TRAFFIC MANAGEMENT PLAN NARRATIVE ON THIS SHEET.
- 12. INSTALLATION DIMENSIONS SHOWN WITHIN THE PLANS ARE TYPICAL. MODIFICATIONS SHALL BE MADE AS REQUIRED UNDER APPROVAL FROM THE ENGINEER
- 13. DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE CITY OF RICHMOND.
- 14. THE CONTRACTOR SHALL ADEQUATELY SUPPORT, AND BE RESPONSIBLE FOR, ALL UTILITY LINES EXPOSED AS A RESULT OF CONSTRUCTION ACTIVITY SHOWN ON THE PLANS.
- 15. THE CONTRACTOR SHALL PROVIDE ACCESS THROUGH THE SITE AS DIRECTED BY THE ENGINEER AT ALL TIMES DURING CONSTRUCTION AND SHALL ENSURE THE SAFETY OF PEDESTRIANS FROM TRAFFIC AND CONSTRUCTION HAZARDS.
- 16. THE TOTAL DISTURBED AREA FOR THE PROPOSED TRAFFIC IMPROVEMENTS IS LESS THAN 10.000 SF FOR THIS PROJECT. AND THEREFORE EXEMPTED FROM THE NEED FOR A FORMAL EROSION & SEDIMENT CONTROL PLAN.

- THE CONTRACTOR SHALL NOTIFY THE SURVEYS DIVISION OF THE CITY OF RICHMOND'S DEPARTMENT OF PUBLIC WORKS (646-0436 OR 646-5404) AT LEAST 48 HOURS PRIOR TO ANY ACTIVITIES WHICH MAY DISTURB THE LOCATION OR THE STABILITY OF ANY RIGHT-OF-WAY CORNERSTONE OR MARKER. THE CONTRACTOR WILL COORDINATE HIS WORK WITH THE SURVEYS DIVISION REPRESENTATIVE REGARDING THE PLACEMENT OR REPLACEMENT OF R/W CORNERSTONES OR MARKERS IN ANY AREAS BEING AFFECTED BY CONSTRUCTION. ALL PLACEMENT OR REPLACEMENT OF R/W CORNERSTONES OR MARKERS WILL BE PERFORMED BY SURVEYS DIVISION. THE CONTRACTOR WILL BE RESPONSIBLE FOR REIMBURSING THE CITY FOR ANY COSTS ASSOCIATED WITH REPLACING ANY R/W CORNERSTONES OR MARKERS THAT ARE DISTURBED WITHOUT GIVING PROPER NOTIFICATION.
- NO SURVEY WAS AUTHORIZED BY THE CITY FOR THE PROPOSED LAYOUT AND DESIGN OF INTERSECTION SAFETY IMPROVEMENTS. THEREFORE, CITY OF RICHMOND GIS MAPPING DATA WAS DEEMED ACCEPTABLE BY THE CITY AND USED IN LIEU OF TRADITIONAL SURVEY.
- 19. ALL STREET EXCAVATION AND/OR RESTORATION SHALL BE DONE IN ACCORDANCE WITH THE CITY OF RICHMOND'S RIGHT OF WAY EXCAVATION & RESTORATION MANUAL
- 20. IF THE CONTRACTOR WISHES TO PERFORM WORK DURING EVENING HOURS AND/OR WEEKENDS HE MUST FIRST RECEIVE APPROVAL FROM THE CITY PROJECT MANAGER

### TRANSPORTATION MANAGEMENT PLAN

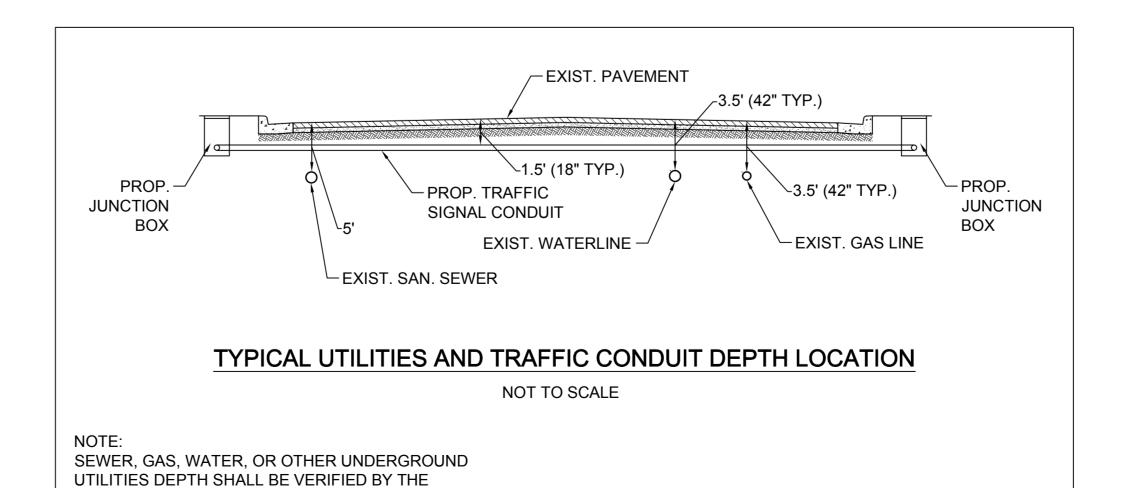
- THE CONTRACTOR MUST ADVISE EMERGENCY COMMUNICATIONS AT 804-646-5700 OF THE CITY ON ALL PLANNED LANE CLOSURES 24 HOURS IN ADVANCE.
- 2. TRAFFIC INCIDENTS THAT MAY OCCUR IN THE WORK ZONE:
- INSPECTOR SHALL NOTIFY PROJECT MANAGER (TOM FLYNN) OF THE TRAFFIC INCIDENT AND TAKE PICTURES OF THE WORK ZONE SETUP.
- CONTRACTOR MAY HAVE TO SHUT DOWN THE WORK DEPENDING UPON THE INCIDENT
- SEVERITY. THE CITY POLICE WILL DETERMINE THE RESPONSE NECESSARY TO ALLOW TRAVELING PUBLIC AROUND INCIDENT, TAKE CONTROL OF THE INCIDENT, AND DIRECT ITS

CLEARING AND RESTORATION TO NORMAL TRAFFIC CONDITIONS.

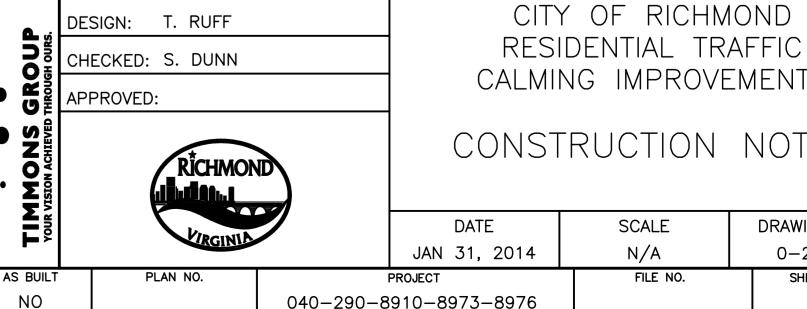
- THE CITY POLICE INCIDENT REPORT WILL BE REVIEWED BY THE CITY PROJECT MANAGER (TOM FLYNN) AT 804-646-5402 TO DETERMINE ANY NEEDED MODIFICATIONS TO THE WORK ZONE LAYOUT. IF CHANGES ARE NECESSARY THEN A MEETING WILL BE CALLED WITH THE CONTRACTOR, CITY INSPECTOR AND CITY PROJECT MANAGER TO DISCUSS MODIFICATION AND IMPLEMENTATION OF AN IMPROVED TRAFFIC CONTROL PLAN.
- 4. THE WORK ZONE SHALL BE MAINTAINED ACCORDING TO THE CITY'S DEPARTMENT OF PUBLIC WORKS SPECIAL PROVISIONS. ALSO THE FOLLOWING TRAFFIC CONTROL SPECIFICATIONS FROM THE VDOT 2011 WORK AREA PROTECTION MANUAL WILL BE USED:
- 4.1. TYPICAL TRAFFIC CONTROL STATIONARY OPERATION ON SHOULDER (FIGURE TTC-4.0) 4.2. TYPICAL TRAFFIC CONTROL - SHOULDER OPERATION WITH MINOR ENCROACHMENT
- (FIGURE TTC-5.0) 4.3. TYPICAL TRAFFIC CONTROL - MOVING/MOBILE OPERATIONS ON MULTI-LANE ROADWAY
- 5. THE CONTRACTOR WILL MAKE ARRANGEMENTS TO STORE EQUIPMENT AND MATERIALS.
- 6. A PUBLIC COMMUNICATIONS PLAN IS NOT APPLICABLE TO THIS PROJECT ALTHOUGH PLANNED LANE CLOSURES WILL BE ANNOUNCED TO THE LOCAL MEDIA.

### PAVEMENT MARKING AND SIGNING

- THE CONTRACTOR SHALL PREPARE THE PAVEMENT SURFACE FOR PROPER ADHESION. ANY SWEEPING OR REMOVAL OF DEBRIS, GRAVEL, DIRT, OR OTHER FOREIGN MATERIALS SHALL BE CONSIDERED AS INCIDENTAL TO THE INSTALLATION
- THE CONTRACTOR SHALL REMOVE COMPLETELY, ALL PREVIOUS PAVEMENT MARKINGS, WHICH, IN THE OPINION OF THE PROJECT MANAGER, CONFLICT WITH THE NEW PAVEMENT MARKINGS.
- UNLESS OTHERWISE SPECIFIED. THE BASIS OF MEASUREMENT SHALL BE ALONG THE LONGITUDINAL CENTERLINE OF PAVEMENT MARKINGS. MEASUREMENT FOR LEGENDS SHALL BE PER MESSAGE, COMPLETE AND IN PLACE.
- 4. PRIOR TO APPLICATION, THE CONTRACTOR SHALL FIELD CHECK AND LOCATE ALL PAVEMENT MARKINGS TO THE SATISFACTION OF THE PROJECT MANAGER.
- ALL MARKINGS IMPROPERLY APPLIED OR LOCATED SHALL BE REMOVED AND CORRECTLY REAPPLIED, AT THE CONTRACTOR'S EXPENSE.
- 6. THERMOPLASTIC PAVEMENT MARKINGS SHALL NOT BE INSTALLED AT ANYTIME WITHIN A FORTY-EIGHT (48) HOUR PERIOD FOLLOWING A RAINFALL
- MARKING MATERIAL SHALL BE APPLIED AT THE SPECIFIED DIMENSIONS AND AT A RATE TO RESULT IN A MARKING THICKNESS OF 90 MILS ± 5 MILS (NOT INCLUDING GLASS BEAD TOP
- THE MARKINGS SHALL BE PROVIDED IN SPECIFIED WIDTHS AND SHAPES. PREFORMED WORKS AND SYMBOLS SHALL CONFORM TO THE APPLICABLE SHAPES AND SIZES OUTLINED IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" FOR STREETS AND HIGHWAYS, LATEST EDITION.
- THE CONTRACTOR SHALL ENSURE THAT A 4" DIAMETER PVC SLEEVE IS PLACED IN IMPERVIOUS AREAS SUCH AS CONCRETE SIDEWALKS TO PERMIT THE INSTALLATION OF GROUND-MOUNTED SIGNS AT THESE LOCATIONS.
- 10. UNLESS OTHERWISE SPECIFIED ON THE PLANS OR IN CONTRACT DOCUMENTS, ALL PAVEMENT MARKINGS AND LEGENDS IN THE PUBLIC RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH VDOT SPECIFICATIONS.
- 11. SIGNS SHALL BE ERECTED ON POSTS WHERE DESIGNATED IN ACCORDANCE WITH THE PAVEMENT MARKING AND SIGNING PLANS. THEY SHALL CONFORM TO THE CURRENT VDOT SPECIFICATIONS AND STANDARDS. EXISTING SIGNS NOT NEEDED SHALL BE REMOVED AND TURNED OVER TO THE DEPARTMENT OF PUBLIC WORKS DESIGNATED LOCATION.
- 12. STOP BAR, SOLID WHITE LINES BEING 2' WIDE, SHALL COMPLETELY TRAVERSE ALL TRAFFIC LANES.
- 13. SOLID YELLOW LINES ARE TO BE USED ADJACENT TO MEDIANS WHICH SEPARATE OPPOSING DIRECTIONS OF VEHICULAR TRAFFIC FLOW. THESE SHALL BE PLACED AT THE BASE OF THE MEDIAN CURB OR AS CLOSE TO IT AS POSSIBLE. EDGE LINES ARE NOT TO BE USED ADJACENT TO CURB ON THE OUTSIDE LANES.
- 14. CENTERLINES ON UNDIVIDED ROADWAYS SHALL BE SOLID DOUBLE YELLOW LINES, 4" WIDE, SEPARATED BY A 4" SPACE.



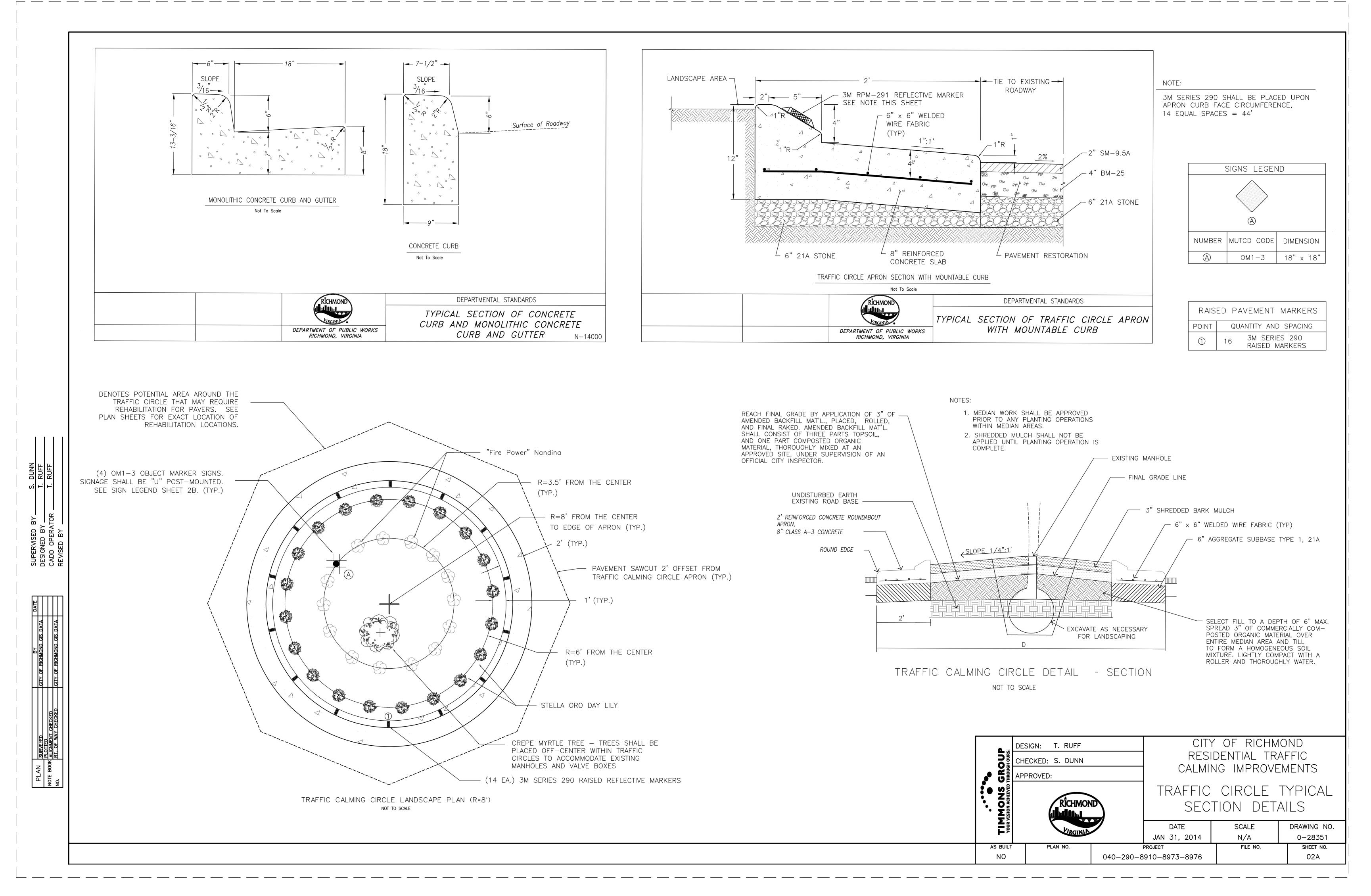
CONTRACTOR IN THE FIELD PRIOR TO CONSTRUCTION



CALMING IMPROVEMENTS

CONSTRUCTION NOTES

DRAWING NO. 0 - 28351SHEET NO. 02



## SIGNS LEGEND NUMBER MUTCD CODE DIMENSION 0M1 - 318" x 18"

RAIS	ED PAVEMENT MARKERS
POINT	QUANTITY AND SPACING
1	14 3M SERIES 290 RAISED MARKERS

BRICK	PAVER REPLACEMENT
SQ. FT.	LOCATION
750	CHIMBORAZO BOULEVARD AT N STREET

## Bituminous Setting Bed Cross Section Detail

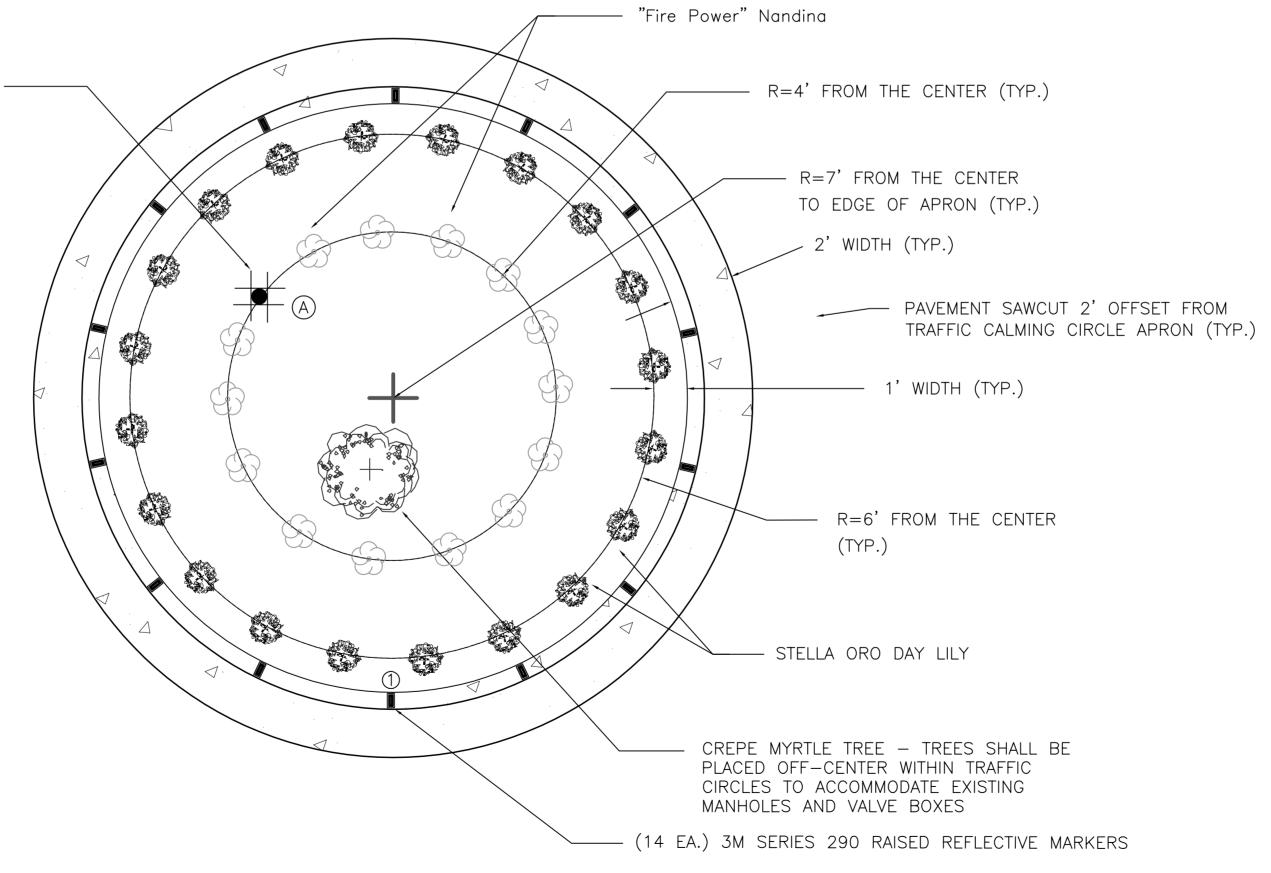
NOTES:

- 1. TRAFFIC CIRCLE SIGN IS NON-STANDARD AND SHALL BE PROVIDED AS SHOWN.
- 2. SIGNS SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST VERSION OF THE MUTCD MANUAL.
- 3. THE CONTRACTOR SHALL MARK THE LOCATION OF EACH TRAFFIC CALMING MEASURE IN THE FIELD AND HAVE THE LOCATIONS APPROVED BY THE ENGINEER.
- 4. THE CONTRACTOR SHALL CONTACT THE ENGINEER BEFORE LANDSCAPE INSTALLATION.

	Asphalt Block: har	T DRY BRUSHED SAND of Both to 1/16"			
					- 3" ASPHALT PAVERS
	<u>†</u>				7
(5) 1. [	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	F ( 7 ( 7 ) ) , F	2-35/5/27		
			4 4	4 4	
	いただかだい		(学)公公	1000	- 2" SAND SETTING BED
17/1/2	1111111111	· ////////////////////////////////////	., -, \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		(MATCH EXIST. CROSS SECTION)
				L.	EXISTING STONE

(4) OM1-3 OBJECT MARKER SIGNS. SIGNAGE SHALL BE "U" POST-MOUNTED.

SEE SIGN LEGEND SHEET 2B. (TYP.)



TRAFFIC CALMING CIRCLE LANDSCAPE PLAN (R=7') NOT TO SCALE

DESIGN: T. RUFF CHECKED: S. DUNN APPROVED:

CITY OF RICHMOND RESIDENTIAL TRAFFIC CALMING IMPROVEMENTS

TRAFFIC CIRCLE TYPICAL SECTION DETAILS

	DATE	SCALE	DRAWING NO.
	JAN 31, 2014	N/A	0-28351
	PROJECT	FILE NO.	SHEET NO.
040-290-8	910-8973-8976		02B

