

**Nomination for ASHE 2024 National Project of the Year Award and
Harrisburg Section Awards
Under \$20 Million**

**North Second Street Two-Way
Multimodal Project
Harrisburg, Pennsylvania**



**Submitted By: Wallace Montgomery
4999 Louise Drive, Suite 104
Mechanicsburg, PA 17055**



AMERICAN SOCIETY OF HIGHWAY ENGINEERS

National Project of the Year Award

OFFICIAL ENTRY FORM

AWARD CATEGORY (Check One): Under \$20 Million Over \$20 Million

SPONSORING REGION (Check One):

- | | | |
|---|--|---|
| <input checked="" type="checkbox"/> Northeast | <input type="checkbox"/> Great Lakes | <input type="checkbox"/> Northwest |
| <input type="checkbox"/> Mid-Atlantic | <input type="checkbox"/> North Central | <input type="checkbox"/> Rocky Mountain |
| <input type="checkbox"/> Southeast | <input type="checkbox"/> South Central | <input type="checkbox"/> Southwest |

CONTACT INFORMATION FOR SUBMITTING REGION:

Contact Name: Robert J. Hudson, PE ASHE Region Position: Member
Phone (Office): 410.828.3814 Phone (Mobile): 443.326.3055 E-Mail Address: rhudson@wallacemontgomery.com
717.590.1414

PROJECT INFORMATION:

ENTERING AGENCY/COMPANY'S NAME: Wallace, Montgomery & Associates, LLP
PROJECT NAME: North Second Street Two-Way Multimodal Project TYPE: Roadway
PROJECT LOCATION: Harrisburg, PA
CITY: Harrisburg COUNTY: Dauphin STATE: PA
FINAL CONSTRUCTION COST: \$5,307,546.49 BUDGETED CONSTRUCTION COST: \$5,171,284.44
PROJECT COMPLETION DATE: 12/13/2022

PROJECT ASHE SECTION: Harrisburg ASHE SECTION CONTACT NAME: Paul McNamee
PHONE (OFFICE): 410.316.7800 PHONE (MOBILE): _____ E-MAIL: Paul.McNamee@kci.com

PROJECT TEAM:

PROJECT OWNER: City of Harrisburg
STREET ADDRESS: MLK Jr. City Government Center 10 N. 2nd St
CITY: Harrisburg STATE: PA ZIP: 17101
CONTACT PERSON: Dan Snow, PE, City Engineer PHONE: 717.255.3185 or 717.315.4255
E-MAIL ADDRESS: dsnow@harrisburgpa.gov

PROJECT DESIGN FIRM: Wallace, Montgomery & Associates, LLP
STREET ADDRESS: 10150 York Road, Suite 200
CITY: Hunt Valley STATE: MD ZIP: 21030
CONTACT PERSON: Robert J. Hudson PE PHONE: 410.828.3814 (MD); 717.590.1414 (PA)
E-MAIL ADDRESS: rhudson@wallacemontgomery.com

PRIME CONTRACTOR: JVI Group, Inc.
STREET ADDRESS: 8210C Carlisle Pike
CITY: York Springs STATE: PA ZIP: 17372
CONTACT PERSON: Steve Bomberger PHONE: 717.629.2086
E-MAIL ADDRESS: sbomberger@jvigroupinc.com

Entry Form Completed By: Robert J. Hudson, PE Date: 1/12/2023



Wanda Williams
Mayor

City of Harrisburg
Office of the City Engineer
1002 N Seventh Street
Harrisburg, PA 17102
Contact Patty Kessler 717 480 9249

January 11, 2023

Robert Hudson, PE
Senior Vice President
Wallace, Montgomery, & Associates, LLP
10150 York Road
Hunt Valley, MD, 21030
410.494.9093

RE: **NORTH SECOND STREET TWO WAY MULTIMODAL PROJECT HARRISBURG, PA**

Dear Robert Hudson:

The City of Harrisburg selected Wallace, Montgomery & Associates, LLP to provide planning and design services along with additional support services for converting North Second Street from one-way to two-way operations.

Wallace, Montgomery & Associates, LLP's design met the City's multimodal improvement goals while staying with the grant budget. The result was an attractive multimodal corridor that met the needs of pedestrians, bicyclists, transit, and motorists.

The Wallace, Montgomery & Associates, LLP design team was critical to the success of this \$5.3 million multimodal project. Their ability to work with the City and PennDOT while balancing the needs of the various stakeholders and accommodating utilities, adjacent property owners and all users including pedestrians, bike and transit sets Wallace, Montgomery & Associates, LLP apart from traditional highway engineers. The City of Harrisburg was so pleased with Wallace, Montgomery & Associates, LLP's ability, and look forward to continuing the standing relationship.

We, at the City of Harrisburg, are highly satisfied with the project that we received when we chose Wallace, Montgomery & Associates, LLP. The project team continually adhered to and focused on delivering the City of Harrisburg's project goals. I hereby confirm the North Second Street Two-Way Multimodal Project was substantially complete on November 23, 2022 and open to the public, and endorse the project to be entered into the ASHE 2023 National Project of the Year award competition.

Sincerely,

Percy R. Bullock, Project Manager
City of Harrisburg
717.433.4833; Prbullock@harrisburgpa.gov

NORTH SECOND STREET TWO-WAY MULTIMODAL PROJECT HARRISBURG, PENNSYLVANIA

Date: 1/11/2024 **Contact:** Robert Hudson, PE **Telephone:** 410.494.9093

INTRODUCTION

Wallace Montgomery (WM) designed and prepared the construction documents for the North Second Street Two-Way Multimodal Project (Project) in the City of Harrisburg, PA (City), which included the following improvements:

- Converting from one-way to two-way operations
- Removal of traffic signals at four intersections and replacing them with three mini-roundabouts and one two-way stop control intersection with a raised crosswalk
- Milling and resurfacing
- 190 ADA ramps and 39 crosswalks crossing North Second Street
- Traffic calming elements including median islands, raised crosswalks, and speed cushions
- Traffic signal rebuilds, signal modifications, and roadway lighting

WHY THIS PROJECT?

In 1950 Harrisburg, PA reached a peak population of 90,000 and to manage traffic congestion various streets were converted to one-way operations. North Second Street was converted to three northbound travel lanes with parallel parking. This configuration resulted in higher speeds, which negatively impacted comfort, safety, and quality of life. By 1956, residents began complaining about the “Second Street Speedway” as the configuration did not align with the corridor’s residential land use and the roadway cut off connection to Riverfront Park. Over the next six decades attempts were made to convert Second Street back to two-way operations, while the City’s population steadily declined to approximately 50,000. Speed studies of the corridor showed that 93% of drivers were exceeding the posted speed limit of 25 mph, with 85% exceeding 38 mph. The City turned to **WM** to develop innovative designs that would calm traffic, convert the roadway back to two-way operations, and mitigate any degradation of capacity to the roadway network. This Project was an urgent priority for the community and **WM** had to deliver an innovative and context-sensitive design.

The Team led by **WM** completed an areawide traffic analysis to evaluate impacts associated with potential changes to the street network in different build and no build scenarios. Critical intersections were analyzed, and Intersection Control Evaluations were completed for major intersections along the corridor to compare different intersection control types including traffic signals, stop control, and mini-roundabouts. Concept plans were developed in conjunction with multiple public meetings and design workshops attended by hundreds of city residents. Environmental clearances and permits were obtained. Construction on utilities and ADA ramps began while final design was still ongoing to meet an aggressive project schedule. On October 13, 2022, after six decades of a “Speedway”, North Second Street opened to two-way traffic with lowered speeds and pedestrian friendly crossings.

PROJECT TEAM

WM served as lead design firm, responsible for preparing the final contract documents (construction plans, specifications, engineer’s estimate, and approvals/permits) used to advertise the Project for construction. **WM** was also tasked with environmental clearances, obtaining the NPDES permit for the Project, and traffic-related project elements: signal removal plans, roadway lighting plans, and traffic signal plans.

Kittelson & Associates, Inc., a subconsultant to **WM**, provided traffic design support. Dawood Engineering, Inc., a subconsultant to **WM**, completed the survey and performed the pavement design. Urban Engineers, Inc. provided onsite representation as construction manager/inspector. JVI Group, Inc. was the prime construction contractor.

COMPLEXITY

Public consensus was utilized to maintain parking, calm traffic, and improve pedestrian accommodations along this 2-mile stretch. To minimize traffic detours and parking restrictions during construction, the Project was staged over three construction seasons with utility rehabilitation and relocation occurring in year one and roadway construction occurring in year two and

three. Construction of ADA ramps was spread out over three years by bidding out the construction of 26 ramps before final design was completed. Project complexity was amplified by the challenging urban environment with aging infrastructure, numerous known and unknown underground utilities, historical buildings, and the need to balance the design of the roadway to improve pedestrian accommodations while maintaining access to motor vehicles. The design mitigated and minimized impacts to the corridor's land uses by working within the existing right-of-way.

NEW APPLICATION OF EXISTING TECHNIQUES/ORIGINALITY/INNOVATION

Innovative design solutions included mini-roundabouts and speed cushions. Mini-roundabouts are small roundabouts used in low-speed urban environments. Various intersection control types were investigated. At three intersections that utilized traffic signals, mini-roundabouts were selected because the net present value of costs (sum of costs associated with construction, post-opening costs, auto passenger delay, truck delay, and safety) was estimated to be lower for the mini-roundabout compared to the other alternatives.

In roundabout design it is important that the vehicle speeds be consistent throughout the roundabout (entry, circular roadway, and exit). Designers typically use horizontal deflections (curves) to maintain consistent speeds. For this Project, adding horizontal deflection to the design was not possible due to the right-of-way impacts. Instead, **WM** designers utilized vertical deflection to maintain consistent speeds by incorporating raised pedestrian crosswalks on the major approaches and speed cushions on the minor street approaches. Speed cushions are similar to speed humps, except the speed cushions are constructed with gaps or wheel cutouts to allow large vehicles to pass unaffected by the vertical delineation. The gaps also helped manage the budget by eliminating the need for additional inlets and trench drains since the gaps allow water to flow along the gutter lines.

SOCIAL/ECONOMIC CONSIDERATIONS

The primary goal of the Project was to make the community more livable. That was accomplished based upon the before and after speed studies and positive feedback from the community. In addition, the total annual reported crimes along the corridor declined from 114 to 85, driven mostly by a decline in theft, vandalism, and other property crimes.

Further, the network traffic study indicated that between 50% and 70% of the PM peak hour northbound traffic on Second Street will divert to parallel facilities including North Third Street, North Sixth Street and North Seventh Street. Since these parallel corridors are underutilized and surrounded by underdeveloped retail and commercial land, the traffic diversion has the potential to bolster Harrisburg's tax base as potential developers seek to capitalize on commuter traffic. Harrisburg is just beginning to see this capitalization as developers are submitting plans to develop those corridors. Most notably, on June 9, 2023, construction began on a 48-unit apartment building with a 6,000 square-foot commercial space on the 1500 block of North Sixth Street; and on May 22, 2023, the JMB Gardens Land Development Plan was approved to consolidate 28 parcels on the 2200 and 2300 blocks of North Sixth Street to construct 41 dwelling units and a community center. While it will take years for the community to fully realize all the benefits of this Project, early indications are that this Project will play a big part in reversing the negative impact of converting this street to one-way traffic that was made in the 1950s.

SAFETY

Traffic safety was a significant concern, with the biggest problem being high vehicular speeds.

Studies clearly show that higher speeds result in greater impact at the time of a crash which leads to more severe injuries and fatalities. This is particularly true for vulnerable road users. A High Injury Network (HIN) analysis of all crashes within the City limits over a five-year period revealed that 66% of all traffic deaths and severe injuries involving people walking, biking, and motor biking occurred on just 6.7 miles of Harrisburg streets. This Project addresses two miles (or nearly a third) of the HIN. Various FHWA Proven Safety Countermeasures were integrated into the Project preconstruction and post construction speed studies were completed at the following three locations along the project corridor. The post construction speed study confirmed a consistent drop of five miles per hour at all three study locations. During the post construction speed study, no vehicles were observed exceeding 5 mph over the posted speed limit and the calculated 85% percentile speed was 26 mph.

Prior to the Project, there were 37 crashes and four serious injury crashes over a three-year period within the project limits based upon available information through PennDOT's Crash Information Tool (PCIT). Currently, information is only available through December 2022; but over that three-month post construction period, there was only one reported crash within the

project limits. If this trend continues, the crashes along the corridor will have decreased by over 67% and serious injuries and fatalities eliminated.

AESTHETICS AND SUSTAINABLE FEATURES

The Project removed overhead wires and utility poles associated with four traffic signals removed. Eleven overhead LED streetlights were installed that match the historic streetlights used throughout the City. A total of 15 dead/damaged trees were removed and 24 trees were planted. The roundabouts center islands were constructed with stamped/stained concrete to mimic the granite Belgium block historically used throughout the City.

MEETING AND EXCEEDING OWNER'S/CLIENT'S NEEDS

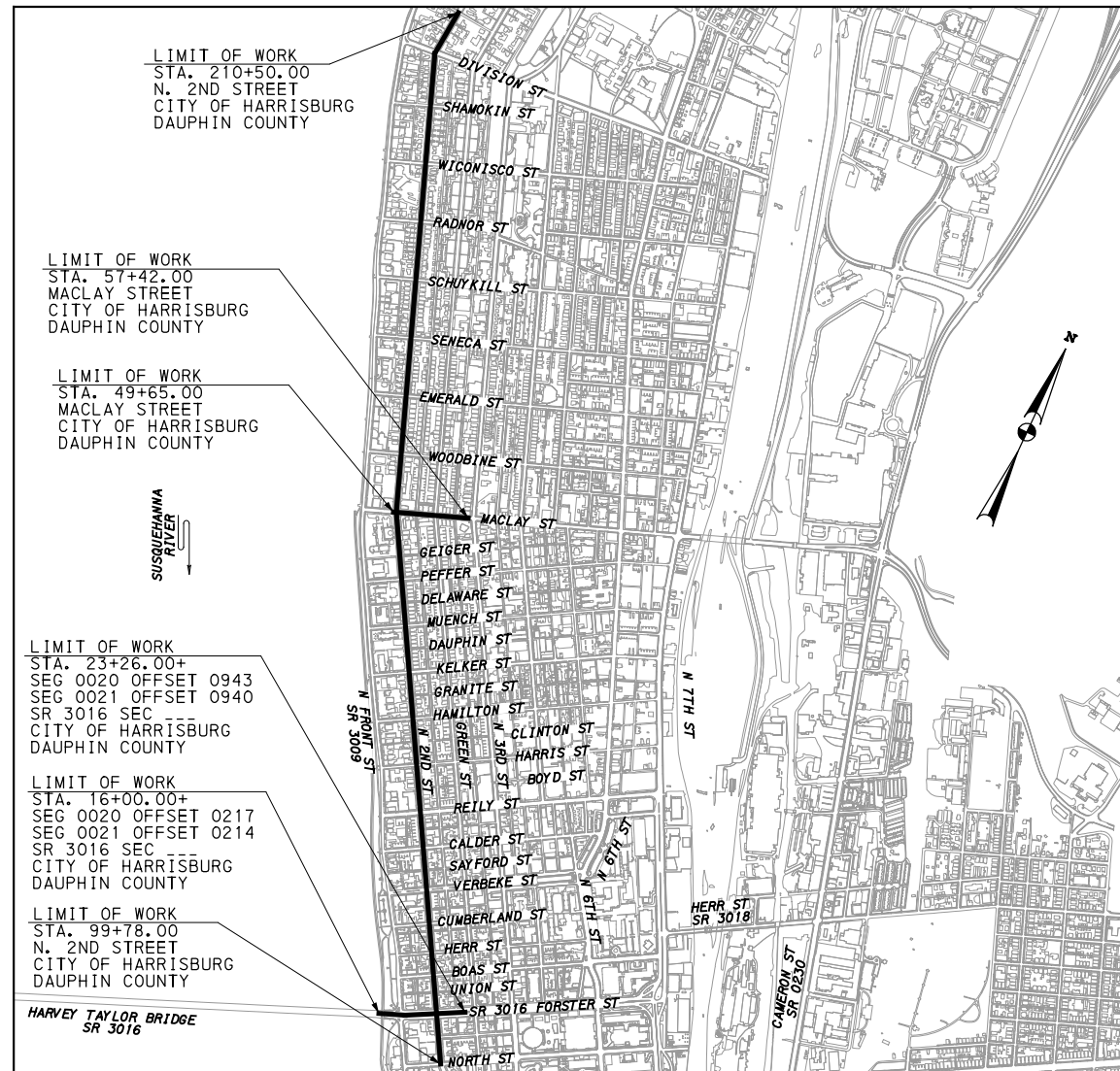
This Project has been the City's highest transportation priority since at least 1977 when the City attempted to convert North Second Street back to two-way by executive order, but quickly reconsidered when PennDOT threatened to withhold federal transportation dollars. Over the next several decades the City and PennDOT delivered various projects to mitigate any negative consequences of a future two-way conversion. This Project is the culmination of those efforts.

CONSTRUCTION PLANS FOR CITY OF HARRISBURG

NORTH SECOND STREET MULTIMODAL PROJECT

LOCATED IN
CITY OF HARRISBURG,
DAUPHIN COUNTY, PENNSYLVANIA

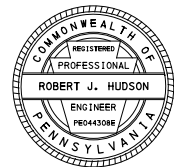
PS&E SUBMISSION NOVEMBER 2020
CONTRACT NO. VZ2020.04



INDEX OF DRAWINGS

SHEET NO.	DWG. NO.	DESCRIPTION
1	-	TITLE SHEET
2 & 3	GN-01 & GN-02	GENERAL NOTES
4 - 6	TS-01 - TS-03	TYPICAL SECTIONS
7 - 9	DE-01 - DE-03	DETAIL SHEETS
10 - 12	RC-01 - RC-03	REFERENCE CIRCLES
13 - 30	PS-01 - PS-18	ROADWAY PLAN SHEETS
31 - 42	DS-01 - DS-12	INTERSECTION DETAIL SHEETS
43 - 67	SP-01 - SP-25	SIGNING AND PAVEMENT MARKING PLANS
68 - 70	ST-01 - ST-03	STORMWATER PLANS AND DETAILS
71 - 91	ES-01 - ES-20	EROSION AND SEDIMENT CONTROL PLANS
92 & 93	TSS-01 & TSS-02	TRAFFIC SIGNAL SYSTEM PLAN
94 - 106	TSP-01 - TSP-13	TRAFFIC SIGNAL CONSTRUCTION PLANS
107	ICP-01	INTERCONNECTION PLAN
108 - 119	LT-01 - LT-12	HIGHWAY LIGHTING PLANS
120 - 137		TABULATION OF QUANTITIES

LOCATION MAP



PROFESSIONAL ENGINEER
11/19/20
DATE



WALLACE
MONTGOMERY
ENGINEERS · PLANNERS · SURVEYORS · CONSTRUCTION MANAGERS
4999 Louise Drive, Suite 104
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922 North 3rd Street, First Floor
Harrisburg, Pennsylvania 17102
717.481.3465 Tel
www.Kittelison.com

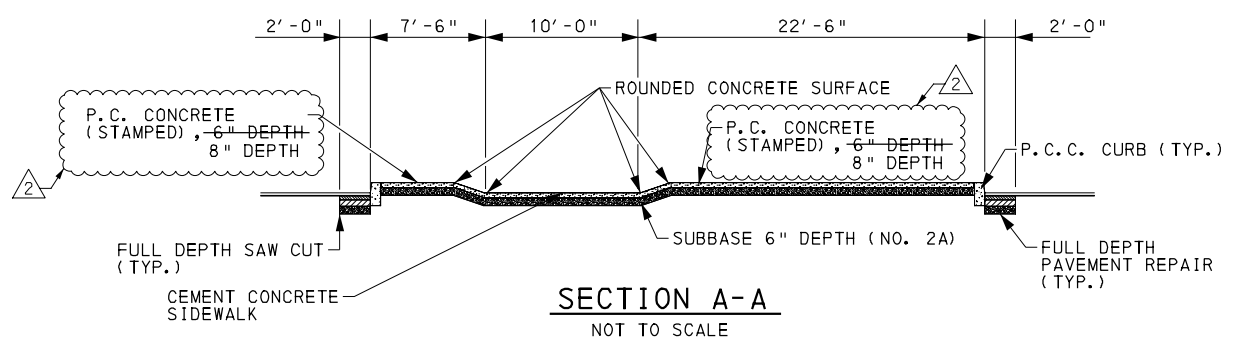
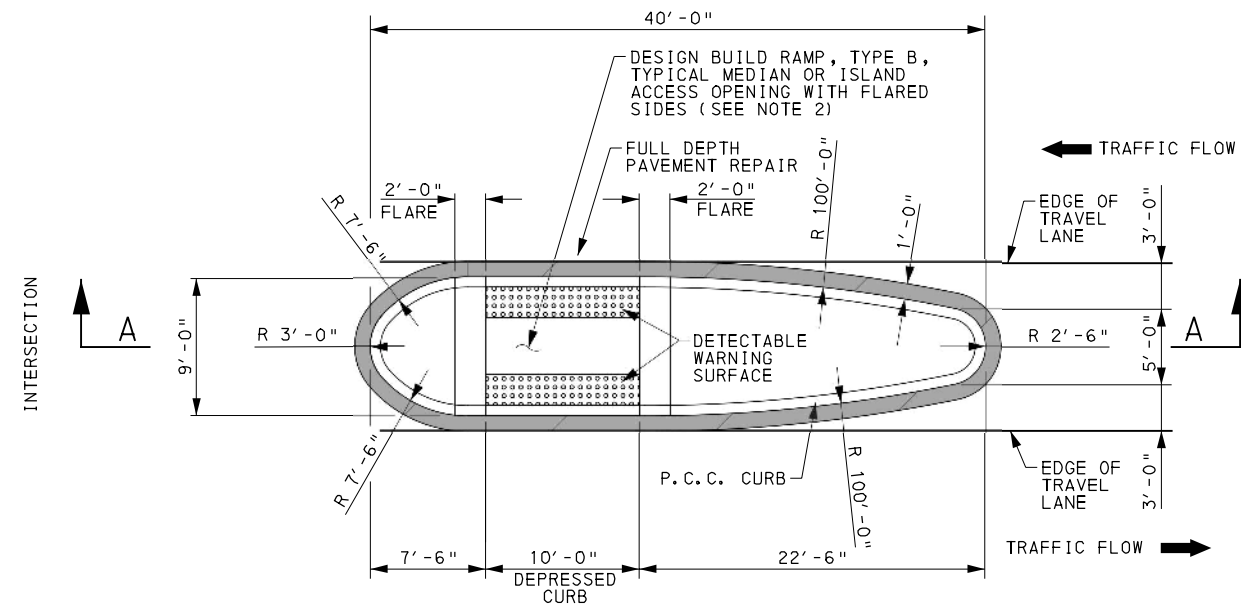


2450 Crums Mill Road
Harrisburg, Pennsylvania 17112
855.432.9663 Tel
www.Dawood.cc



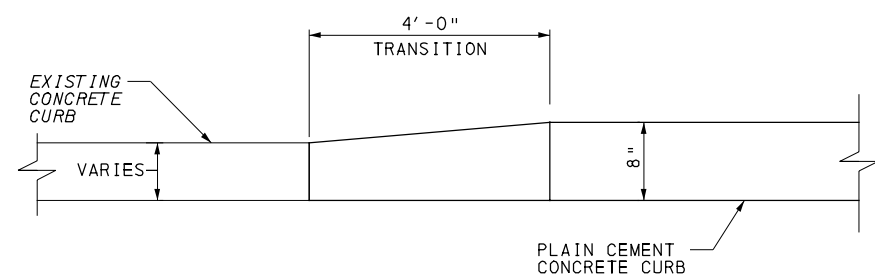
CITY OF HARRISBURG
10 NORTH SECOND STREET
HARRISBURG, PA 17101



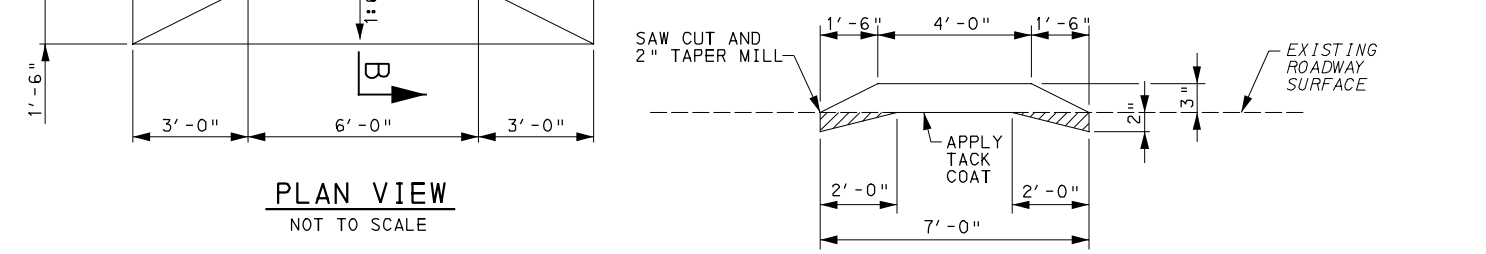
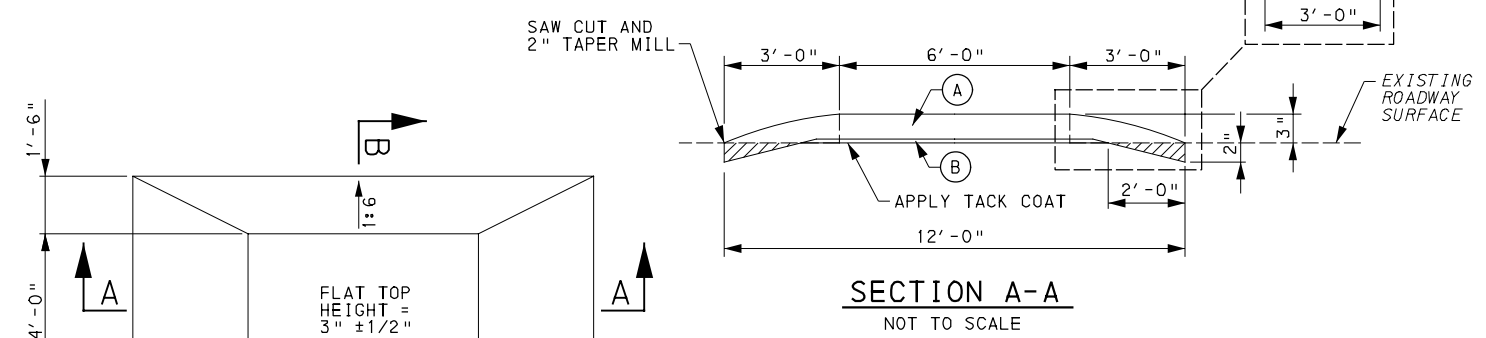
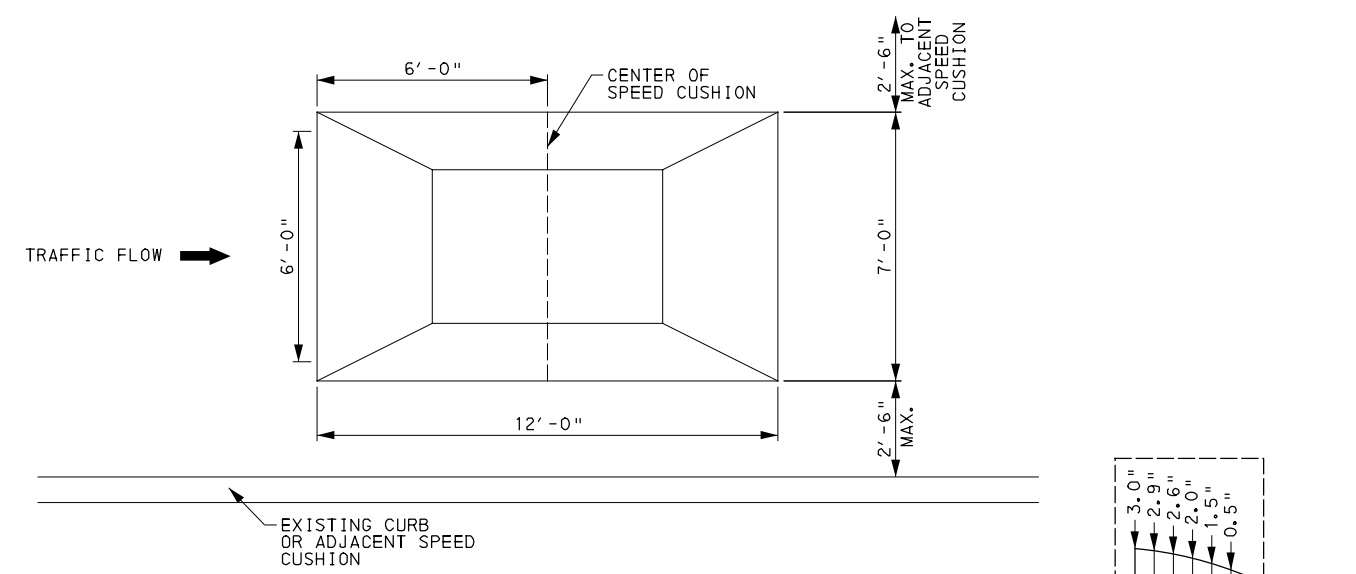


- NOTES:
1. VERIFY THAT THE PROPOSED CURB ALIGNMENT IS FREE OF UTILITY VALVES PRIOR TO CONSTRUCTION. IF CONFLICT IS CONFIRMED, MODIFY AS DIRECTED BY THE ENGINEER IN CHARGE OR CITY REPRESENTATIVE.
 2. CONSTRUCT DESIGN BUILD RAMPS IN ACCORDANCE WITH PENNDOT RC-67M TYPE B TYPICAL MEDIAN OR ISLAND ACCESS OPENING WITH FLARED SIDES. CURB RAMP SHALL
 - A) BE ORIENTED TO PROVIDE AN UNOBSTRUCTED PEDESTRIAN CROSSING TO CURB RAMPS IN THE CORNER OF THE INTERSECTION.
 - B) IF THE CURB RAMP CAN NOT BE CONSTRUCTED IN ACCORDANCE WITH PENNDOT RC-67M THE CONTRACTOR SHALL DEVELOP A TECHNICALLY INFEASIBLE FORM IN ACCORDANCE WITH DESIGN-BUILD RAMP PAY ITEM.

MEDIAN ISLAND DETAIL
NOT TO SCALE



CURB TRANSITION DETAIL
NOT TO SCALE



- NOTES:
1. SPEED CUSHIONS SHALL NOT BE PLACED OVER MANHOLES, WATER VALVES OR GAS VALVES.
 2. CONTRACTOR MUST PROPERLY COMPACT SPEED CUSHION TO PRECLUDE EXCESSIVE SETTLEMENT.

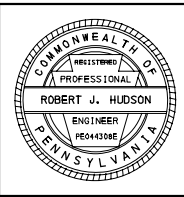
/// DENOTES AN AREA OF THE EXISTING PAVEMENT TO BE MILLED TO PROVIDE PROPER TRANSITION FOR THE SPEED CUSHION. THE VARIABLE DEPTH MILLING IS INCIDENTAL TO THE SPEED CUSHION PAY ITEM.

SPEED CUSHION DETAIL
NOT TO SCALE

- LEGEND**
- (A) SUPERPAVE ASPHALT MIXTURE DESIGN, WEARING COURSE, PG 64S-22, 0.3 TO <3 MILLION ESALS, 9.5 MM MIX, 2" DEPTH, SRL-H
 - (B) SUPERPAVE ASPHALT MIXTURE DESIGN, WEARING COURSE (SCRATCH), PG 64S-22, 0.3 TO <3 MILLION ESALS, 9.5 MM MIX, 1/2" DEPTH, SRL-H

FILE: M:\PROJ\217032_0012\Highways\Cadd\2nd Street_Details_01.dgn
PLOTTED: 1/6/2021

NO.	REVISION	DATE	BY
2	ADDENDUM NO. 2	01/06/21	RJH

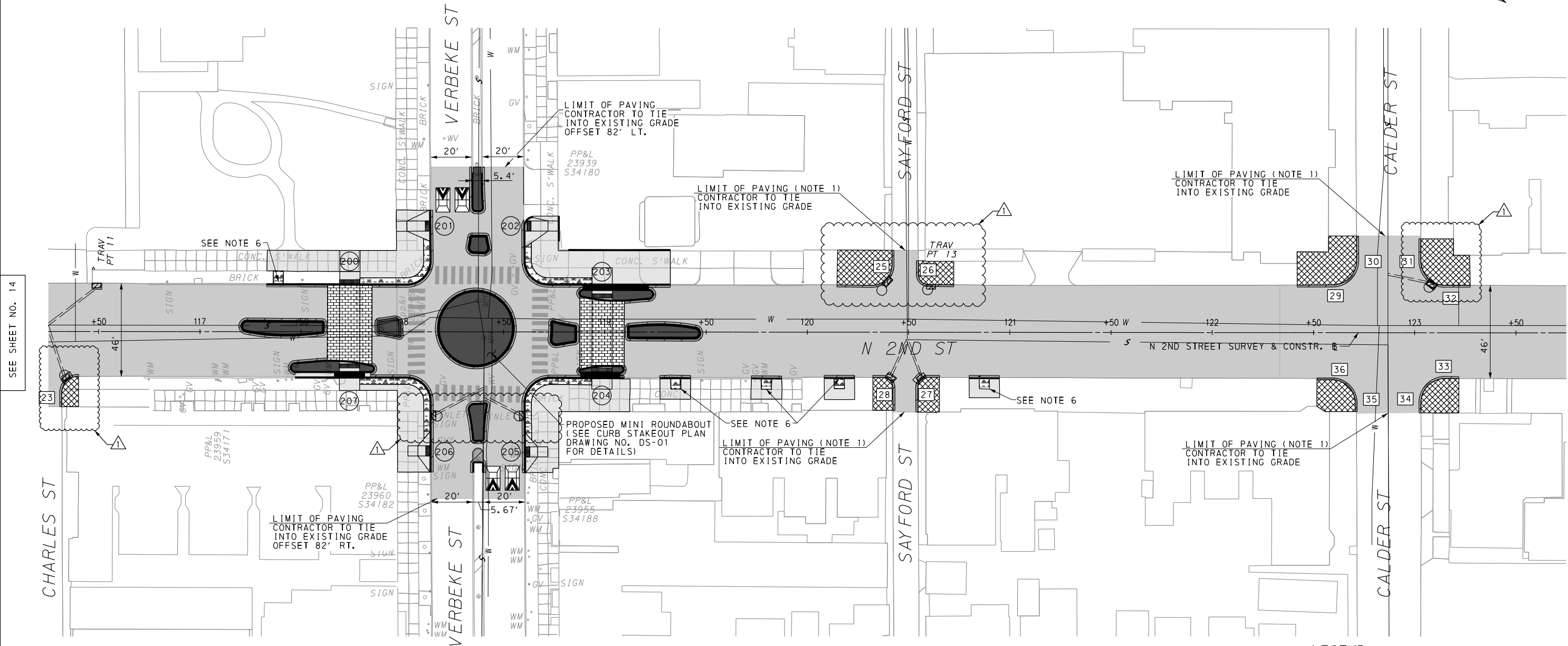
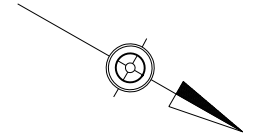


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CITY OF HARRISBURG
10 NORTH SECOND STREET
HARRISBURG, PA 17101

DETAILS FOR NORTH SECOND STREET MULTIMODAL PROJECT

PROJ. MGR.	RJH	DRAWING NO.	DE-01
DESIGN	RJB	SHEET NO.	7 OF 137
CADD	RJB	WM PROJECT NO.	217032.0012
CHECKED	WRW		
SCALE	AS SHOWN		
DATE	NOVEMBER 2020		



SEE SHEET NO. 14

SEE SHEET NO. 16

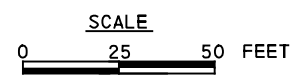
NOTES

1. PROVIDED LIMIT OF PAVING IS APPROXIMATE. LIMIT OF PAVING SHALL EXTEND TO THE FURTHEST CURB REPLACEMENT REQUIRED FOR THE DESIGN-BUILD RAMPS OR AS DIRECTED BY THE ENGINEER IN CHARGE OR CITY REPRESENTATIVE.
2. SEE MID-BLOCK CURB RECONSTRUCTION IN GENERAL NOTES FOR INFORMATION ON ADDITIONAL SIDEWALK AND CURB RECONSTRUCTION NOT SHOWN ON PLANS.
3. CONTRACTOR TO REPLACE SIDEWALK TO THE NEAREST JOINT OR AS DIRECTED BY THE ENGINEER IN CHARGE OR CITY REPRESENTATIVE.

4. COMPLIANT CURB RAMP TO BE CONSTRUCTED UNDER CITY PROJECT NO. V222020.02.
5. COMPLIANT CURB RAMP TO BE CONSTRUCTED UNDER CITY PROJECT MACLAY STREET PARALLEL ACCESS IMPROVEMENTS PROJECT.
6. PROPOSED TREE PIT, SEE DETAIL DE-03.

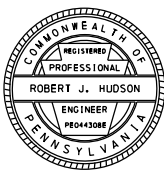
LEGEND

- MILL AND OVERLAY
- FULL DEPTH PAVMENT
- CONCRETE SIDEWALK
- PROPOSED CONCRETE CURB
- PROPOSED INLET REPLACEMENT
- CURB RAMP NO.
- MOUNTABLE STAMPED CONCRETE PAVEMENT
- LANDSCAPE AREA
- RAISED CROSSWALK
- DESIGN BUILD RAMP
- PROPOSED NEW INLET
- DESIGN BUILD CURB RAMP NO.



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PLOTTED: 12/18/2020

NO.	REVISION	DATE	BY
1	ADDENDUM NO. 1	12/18/20	RJH



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CITY OF HARRISBURG
10 NORTH SECOND STREET
HARRISBURG, PA 17101

PLAN SHEET FOR NORTH SECOND STREET MULTIMODAL PROJECT

PROJ. MGR.	RJH	DRAWING NO.	PS-03
DESIGN	BJB/CMS	SHEET NO.	15 OF 137
CADD	CMS	WM PROJECT NO.	217032.0012
CHECKED	RJB/WRW		
SCALE	AS SHOWN		
DATE	NOVEMBER 2020		

FILE: M:\PROJECTS\17032_0012\Highways\Cadd\p\IN-D500_2nd Street.dgn
 PLOTTED: 11/20/2020

SYMBOL	NORTHING	EASTING	ELEV.
A1	341851.7873	2208141.4631	325.10
A2	341850.3738	2208138.9097	325.05
A3	341842.9992	2208125.8477	324.82
A4	341834.5325	2208111.0227	324.56
A5	341818.2114	2208106.5248	324.41
A6	341800.0289	2208116.7927	324.25
A7	341786.9677	2208124.1686	324.10
A8	341783.9310	2208125.8998	324.06

SYMBOL	NORTHING	EASTING	ELEV.
C1	341908.8918	2208002.9031	322.51
C2	341897.9938	2208009.0857	322.65
C3	341886.1719	2208015.7923	322.87
C4	341883.1324	2208017.5166	322.92
C5	341876.1741	2208021.4641	323.06
C6	341873.1251	2208023.1937	323.12
C7	341856.4659	2208032.6416	323.51
C8	341840.1387	2208028.1773	323.66
C9	341831.6038	2208013.2903	323.32
C10	341833.0857	2208006.7023	323.60

SYMBOL	NORTHING	EASTING	ELEV.
B1	341892.0662	2208119.0151	324.71
B2	341890.6640	2208116.6111	324.66
B3	341883.1453	2208103.6316	324.46
B4	341874.9247	2208089.4403	324.14
B5	341879.8349	2208071.5742	323.89
B6	341895.4564	2208062.8498	323.64
B7	341897.6637	2208061.6205	323.60
B8	341906.4003	2208056.7548	323.33
B9	341908.5610	2208055.5514	323.28
B10	341911.6718	2208053.8884	323.23

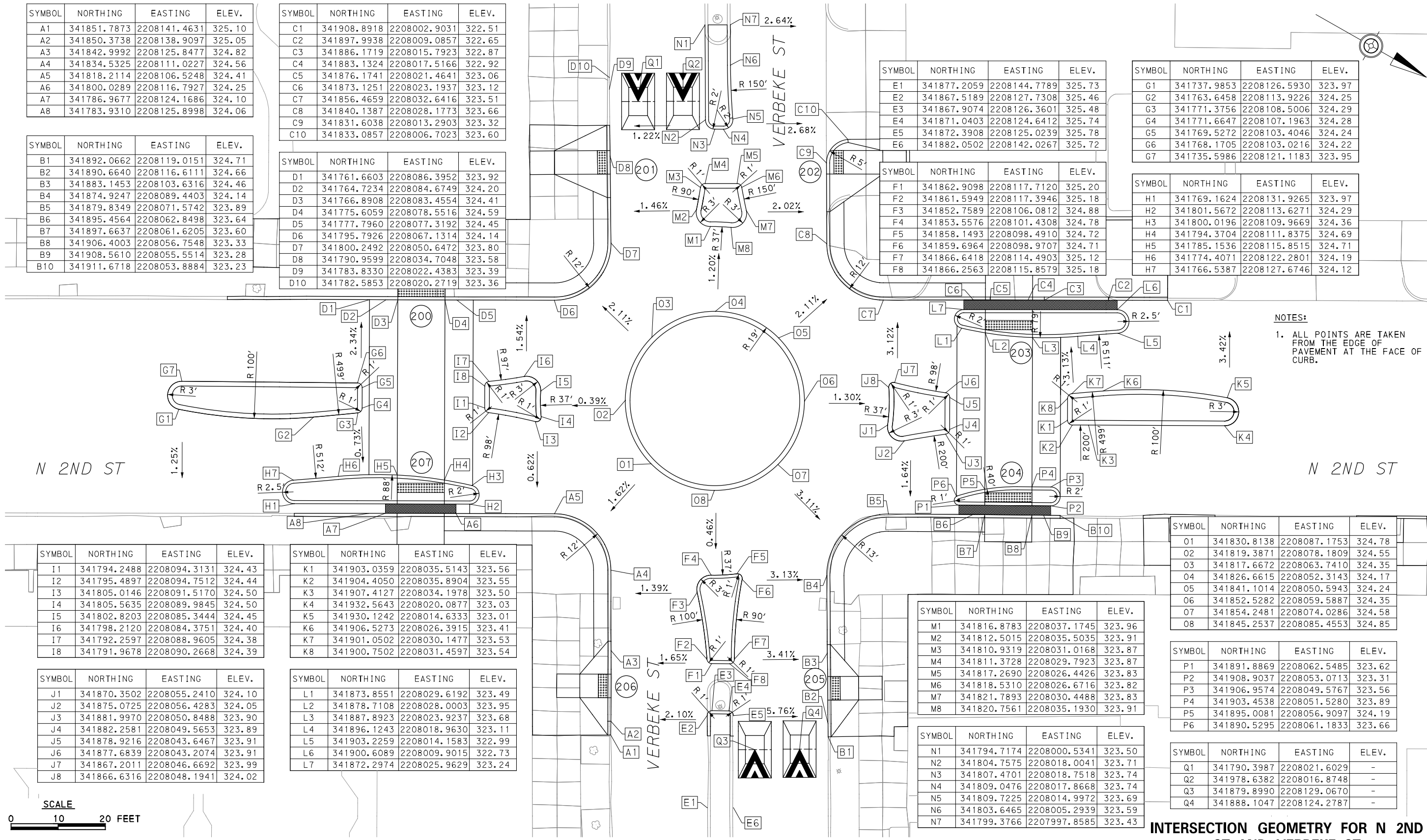
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D1	341761.6603	2208086.3952	323.92
D2	341764.7234	2208084.6749	324.20
D3	341766.8908	2208083.4554	324.41
D4	341775.6059	2208078.5516	324.59
D5	341777.7960	2208077.3192	324.45
D6	341795.7926	2208067.1314	324.14
D7	341800.2492	2208050.6472	323.80
D8	341790.9599	2208034.7048	323.58
D9	341783.8330	2208022.4383	323.39
D10	341782.5853	2208020.2719	323.36

SYMBOL	NORTHING	EASTING	ELEV.
E1	341877.2059	2208144.7789	325.73
E2	341867.5189	2208127.7308	325.46
E3	341867.9074	2208126.3601	325.48
E4	341871.0403	2208124.6412	325.74
E5	341872.3908	2208125.0239	325.78
E6	341882.0502	2208142.0267	325.72

SYMBOL	NORTHING	EASTING	ELEV.
G1	341737.9853	2208126.5930	323.97
G2	341763.6458	2208113.9226	324.25
G3	341771.3756	2208108.5006	324.29
G4	341771.6647	2208107.1963	324.28
G5	341769.5272	2208103.4046	324.24
G6	341768.1705	2208103.0216	324.22
G7	341735.5986	2208121.1183	323.95

SYMBOL	NORTHING	EASTING	ELEV.
F1	341862.9098	2208117.7120	325.20
F2	341861.5949	2208117.3946	325.18
F3	341852.7589	2208106.0812	324.88
F4	341853.5576	2208101.4308	324.78
F5	341858.1493	2208098.4910	324.72
F6	341859.6964	2208098.9707	324.71
F7	341866.6418	2208114.4903	325.12
F8	341866.2563	2208115.8579	325.18

SYMBOL	NORTHING	EASTING	ELEV.
H1	341769.1624	2208131.9265	323.97
H2	341801.5672	2208113.6271	324.29
H3	341800.0196	2208109.9669	324.36
H4	341794.3704	2208111.8375	324.69
H5	341785.1536	2208115.8515	324.71
H6	341774.4071	2208122.2801	324.19
H7	341766.5387	2208127.6746	324.12



NOTES:
 1. ALL POINTS ARE TAKEN FROM THE EDGE OF PAVEMENT AT THE FACE OF CURB.

SYMBOL	NORTHING	EASTING	ELEV.
I1	341794.2488	2208094.3131	324.43
I2	341795.4897	2208094.7512	324.44
I3	341805.0146	2208091.5170	324.50
I4	341805.5635	2208089.9845	324.50
I5	341802.8203	2208085.3444	324.45
I6	341798.2120	2208084.3751	324.40
I7	341792.2597	2208088.9605	324.38
I8	341791.9678	2208090.2668	324.39

SYMBOL	NORTHING	EASTING	ELEV.
K1	341903.0359	2208035.5143	323.56
K2	341904.4050	2208035.8904	323.55
K3	341907.4127	2208034.1978	323.50
K4	341932.5643	2208020.0877	323.03
K5	341930.1242	2208014.6333	323.01
K6	341906.5273	2208026.3915	323.41
K7	341901.0502	2208030.1477	323.53
K8	341900.7502	2208031.4597	323.54

SYMBOL	NORTHING	EASTING	ELEV.
J1	341870.3502	2208055.2410	324.10
J2	341875.0725	2208056.4283	324.05
J3	341881.9970	2208050.8488	323.90
J4	341882.2581	2208049.5653	323.89
J5	341878.9216	2208043.6467	323.91
J6	341877.6839	2208043.2074	323.91
J7	341867.2011	2208046.6692	323.99
J8	341866.6316	2208048.1941	324.02

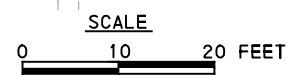
SYMBOL	NORTHING	EASTING	ELEV.
L1	341873.8551	2208029.6192	323.49
L2	341878.7108	2208028.0003	323.95
L3	341887.8923	2208023.9237	323.68
L4	341896.1243	2208018.9630	323.11
L5	341903.2259	2208014.1583	322.99
L6	341900.6089	2208009.9015	322.73
L7	341872.2974	2208025.9629	323.24

SYMBOL	NORTHING	EASTING	ELEV.
M1	341816.8783	2208037.1745	323.96
M2	341812.5015	2208035.5035	323.91
M3	341810.9319	2208031.0168	323.87
M4	341811.3728	2208029.7923	323.87
M5	341817.2690	2208026.4426	323.83
M6	341818.5310	2208026.6716	323.82
M7	341821.7893	2208030.4488	323.83
M8	341820.7561	2208035.1930	323.91

SYMBOL	NORTHING	EASTING	ELEV.
O1	341830.8138	2208087.1753	324.78
O2	341819.3871	2208078.1809	324.55
O3	341817.6672	2208063.7410	324.35
O4	341826.6615	2208052.3143	324.17
O5	341841.1014	2208050.5943	324.24
O6	341852.5282	2208059.5887	324.35
O7	341854.2481	2208074.0286	324.58
O8	341845.2537	2208085.4553	324.85

SYMBOL	NORTHING	EASTING	ELEV.
P1	341891.8869	2208062.5485	323.62
P2	341908.9037	2208053.0713	323.31
P3	341906.9574	2208049.5767	323.56
P4	341903.4538	2208051.5280	323.89
P5	341895.0081	2208056.9097	324.19
P6	341890.5295	2208061.1833	323.66

SYMBOL	NORTHING	EASTING	ELEV.
Q1	341790.3987	2208021.6029	-
Q2	341978.6382	2208016.8748	-
Q3	341879.8990	2208129.0670	-
Q4	341888.1047	2208124.2787	-



INTERSECTION GEOMETRY FOR N 2ND ST AND VERBEKE ST

NO.	REVISION	DATE	BY		<p>WALLACE MONTGOMERY ENGINEERS • PLANNERS • SURVEYORS • CONSTRUCTION MANAGERS 4999 LOUISE DRIVE, SUITE 104 MECHANICSBURG, PA 17055 717.590.1400 Tel/717.766.3507 Fax www.WallaceMontgomery.com</p>	<p>CITY OF HARRISBURG 10 NORTH SECOND STREET HARRISBURG, PA 17101</p>	<p>VERBEKE ST. CURB STAKEOUT PLAN FOR NORTH SECOND STREET MULTIMODAL PROJECT</p>	PROJ. MGR.	RJH	DRAWING NO.	DS-01	
									DESIGN	BJB		
									CADD	BJB		
									CHECKED	WRW	SHEET NO.	31 OF 137
						SCALE	AS SHOWN					
						DATE	NOVEMBER 2020				WM PROJECT NO. 217032.0012	











388°
398°
ZIND & VERBEKE
GAS STATION

NOTICE

VERBEKE

VERBEKE