CITY OF CHARLES TOWN

FINANCE COMMITEE
AGENDA • OCTOBER 4, 2023

Committee Meeting **CITY HALL COUNCIL CHAMBERS** **10:00 AM**
101 E Washington Street, Charles Town, WV 25414

1. CALL TO ORDER

2. APPROVAL OF MINUTES

: **2023-901:** Finance Committee Meeting Minutes - September 6, 2023
FinanceCommitteeReport_6Sep2023.pdf

3. UNFINISHED BUSINESS

4. NEW BUSINESS

: **2023-884:** Chairman's Report

: **2023-882:** Congress and Lawrence Street Intersection Damage
Congress_and_Lawrence_Intersection_Improvements_90__Plans.pdf
2023-09-15_Final_Congress and Lawrence Intersection Improvements.pdf

: **2023-883:** City's Account Balances

: **2023-885:** Utility Tax Discussion

5. ADJOURNMENT

6. NOTICE: The Public May View the Meeting Live by Clicking on the Event Link at:

https://www.charlestownwv.us/government/agendas-and-minutes/

Finance Commitee
101 East Washington Street
Charles Town, WV 25414

SCHEDULED

Meeting: 10/04/23
Department: Finance Commitee
Category: Report
Initiator:

AGENDA ITEM (ID #)

2023-901: Finance Committee Meeting Minutes - September 6, 2023

ATTACHMENTS:

- FinanceCommitteeReport_6Sep2023.pdf

City of Charles Town Finance Committee Report
6 September 2023 Meeting

Drafted by: Bob Trainor - Chairman

Call to Order ooa 10:04AM

1. **Persons present:** Finance Committee Members Ms. Julie Philabaum, Mr. Jeff Hynes, and Mr. Bob Trainor; City Manager, Mr. John Nissel; Finance Consultant (Star-Chapman Group), Mr. Chris Longerbeam; Charles Town Police Chief, Mr. Chris Kutcher; and City Maintenance Supervisor, Mr. Jim Wysong

2. Unfinished Business

2023-787: Signature Cards Update/Summit Bank Update

The Committee updated bank signature cards for the City's Summit Bank account. Bank signature cards were previously updated for the City's Bank of Charles Town accounts.

Recommendations to the City Council: None at this time, information only.

2023-790: Municipal Police and Firefighter Retirement System (MPFRS) Update

Chief Kutcher informed the Committee that the Charles Town Police Department (CTPD) officers currently covered under the Public Employee Retirement System Tier II (PERS-II) have all elected to transfer to MPFRS. He also asked whether or not the City would be willing to provide monetary assistance to help cover the "buy-in" costs for those officers transferring to MPFRS, which could be substantial, particularly for the most senior PERS-II officers.

The Committee agreed that there wasn't a provision in WV Code §8-22A-33a for a municipality to assist those police officers opting to transfer to MPFRS from PERS-II and that providing funds for only a percentage of City personnel would not be equitable. Therefore, the Committee does not recommend providing City funds to individual police officers to help defer "buy-in" costs. However, the Committee asked City staff to explore other options for possible City assistance and to present those options to the Council for consideration.

Recommendations to the City Council: None at this time, information only.

2023-795: COPS Grant Update

Chief Kutcher informed the Committee that the CTPD has not filled the Community Resource Officer position, initiated under a Department of Justice (DOJ) Community Oriented Policing Services (COPS) $125,000 grant, because of the current CTPD personnel shortage. The funding expires in 2027.

The $400,000 COPS technology grant has not yet been released by DOJ. Chief Kutcher has been in contact with Mr. Matt Ward but has not yet received a definitive answer as to when the funds will be released.

Recommendations to the City Council: None at this time, information only.

3. New Business

2023-792: Social Security/MPFRS – Retirement Transition Tier II to MPFRS

Chief Kutcher informed the Committee that those police officers enrolled in MPFRS will be given an opportunity to elect to participate in the Social Security program per WV Code §8-22A-22. Chief Kutcher plans to introduce the Social Security discussion after the PERS-II police officers have been transferred into MPFRS.

The Committee recommended that the CTPD determine the status of their Social Security participation in time for consideration for the City's FY2025 budget development.

Recommendations to the City Council: None at this time, information only.

2023-793: Public Safety Equipment Purchase

Chief Kutcher presented to the Committee a request to purchase road safety equipment, which includes barricades, traffic signage and cones, and portable matrix traffic/event signs. The low bid of three responsive bidders is approx. $44,500.

The Committee agreed that this funding request should be included in the City's FY2025 Capital Budget.

Recommendations to the City Council: Include this request in the FY2025 budget discussion.

2023-796: City's Future Legal Representation Discussion – If Referred to Finance by Council

Since this item was not referred to the Finance Committee no action was taken.

2023-796: South Samuel Street and Academy Drainage Work Scope – If Referred to Finance by Council

Since this item was not referred to the Finance Committee no action was taken.

4. Information Items

The next Finance Committee meeting is tentatively scheduled for 4 October 2023 at 10:00AM

5. Tabled Items

There were no tabled items

6. Pending Items

There were no pending items

7. The meeting was adjourned ooa 10:58AM

Finance Commitee
101 East Washington Street
Charles Town, WV 25414

Meeting: 10/04/23
Department: Finance Commitee
Category: Report
Initiator:

SCHEDULED

AGENDA ITEM (ID #)

2023-884: Chairman's Report

ATTACHMENTS:

Finance Commitee
101 East Washington Street
Charles Town, WV 25414

SCHEDULED

Meeting: 10/04/23
Department: Finance Commitee
Category: Report
Initiator:

AGENDA ITEM (ID #)

2023-882: Congress and Lawrence Street Intersection Damage

ATTACHMENTS:

- Congress_and_Lawrence_Intersection_Improvements_90__Plans.pdf
- 2023-09-15_Final_Congress and Lawrence Intersection Improvements.pdf

Congress and Lawrence Intersection Improvements - 90% Design Plans
Full Intersection Summary
Opinion of Probable Cost

VDOT ITEM #	ITEM DESCRIPTION	UNITS	QUANTITY	SELECTED UNIT PRICE	TOTAL PRICE
	Full Intersection Improvements				
	GENERAL CONSTRUCTION & EARTHWORK				
303SD20-0001	Regular Excavation	CY	20	$80.00	$ 1,600.00
303SD20-0007	Borrow Excavation	CY	20	$120.00	$ 2,400.00
				SUBTOTAL	**$ 4,000.00**
	DRAINAGE AND STORMWATER MANAGEMENT ITEMS				
302SD20-0025	15" Conc. Pipe	LF	110	$160.00	$ 17,600.00
302SD20-0311	Drop Inlet DI-3B, L=4'	EA	6	$7,500.00	$ 45,000.00
302SD20-0660	Manhole MH-1	LF	0	$1,500.00	$ -
302SD20-0663	Frame & Cover MH-1	EA	4	$1,000.00	$ 4,000.00
				SUBTOTAL	**$ 66,600.00**
	PAVEMENT ITEMS				
308SD20-0012	Aggr. Base Matl. Ty. I, No. 21B	TON	53	$50.00	$ 2,650.00
515SD20-0004	Flexible Pave. Planing 0"-2"	SY	413	$10.00	$ 4,130.00
315SD20-0007	Asphalt Conc. Ty. SM-9.5A	TON	105	$180.00	$ 18,900.00
315SD20-0004	Asphalt Conc. Ty. IM-19.0A	TON	13	$200.00	$ 2,600.00
315SD20-0010	Asphalt Conc. Ty. BM-25.0A	TON	22	$210.00	$ 4,620.00
				SUBTOTAL	**$ 32,900.00**
	INCIDENTAL ITEMS				
502SD20-0011	Std. Curb CG-2	LF	257	$50.00	$ 12,850.00
520SD20-0012	Radial Curb CG-2	LF	102	$55.00	$ 5,610.00
504SD20-0002	CG-12 Detectable Warning Surface	SY	9	$550.00	$ 4,950.00
504SD20-0003	Hydr. Cement Conc. Sidewalk 4"	SY	149	$80.00	$ 11,920.00
510SX20-0002	Remove Curb	LF	231	$20.00	$ 4,620.00
508SD20-0004	Demo. Of Pavement (Flexible)	SY	312	$15.00	$ 4,680.00
412SD20-0044	Saw Cutting	LF	292	$15.00	$ 4,380.00
				SUBTOTAL	**$ 49,010.00**
	MAINTENANCE OF TRAFFIC				
NS	Maintenance of Traffic	LS	1	$10,562.10	$ 10,562.10
				SUBTOTAL	**$ 10,562.10**
	ROADSIDE DEVELOPMENT				
602SD20-0003	Topsoil, Class B 2"	ACRE	0.04	$40,000.00	$ 1,600.00
603SD20-0002	Temporary Seed	LB	8	$24.00	$ 192.00
603SD20-0003	Regular Seed	LB	10	$18.00	$ 180.00
603SD20-0004	Overseeding	LB	8	$18.00	$ 144.00
603SD20-0005	Legume Seed	LB	3	$35.00	$ 105.00
603SD20-0006	Legume Overseeding	LB	2	$33.00	$ 66.00
603SD20-0014	Fertilizer (Nitrogen - N)	LB	4	$20.00	$ 80.00
603SD20-0015	Fertilizer (Phosphorous - P)	LB	6	$20.00	$ 120.00
603SD20-0016	Fertilizer (Potassium - K)	LB	3	$20.00	$ 60.00
603SD20-0017	Lime	TON	0.2	$1,090.00	$ 218.00
NS	Tree Removal	EA	0	$500.00	$ -
				SUBTOTAL	**$ 2,765.00**
	EROSION AND SEDIMENT CONTROL				
303SD20-0031	Inlet Protection, Type B	EA	10	$500.00	$ 5,000.00
303SD20-0033	Temporary Silt Fence, Type B	LF	0	$10.00	$ -
				SUBTOTAL	**$ 5,000.00**
	SIGNING AND PAVEMENT MARKING				
701SD20-0001	Sign Panel	SF	100	$40.00	$ 4,000.00
700SD20-0037	Sign Post STP-1,2 1/2", 12 Gauge	LF	135	$28.00	$ 3,780.00
700SD20-0038	Concrete Foundation STP-1, Type A	EA	9	$550.00	$ 4,950.00
704SD20-0006	Type B Class I Pavement Line Marking 4"	LF	30	$1.60	$ 48.00
704SD20-0010	Type B Class I Pavement Line Marking 24"	LF	264	$12.00	$ 3,168.00
				SUBTOTAL	**$ 15,946.00**
				CONSTRUCTION ITEMS SUBTOTAL	**$ 186,783.10**
	CONSTRUCTION INCIDENTALS				
513SD20-0001	Mobilization	LS	1	$21,000.00	$ 21,000.00
517SD20-0001	Construction Surveying (Constr.)	LS	1	$2,000.00	$ 2,000.00
	CONTINGENCY AND CEI				
				CONSTRUCTION, RIGHT OF WAY, UTILITY SUBTOTAL	**$ 209,783.10**
				CONTINGENCY (15%)	$ 32,000.00
				CONSTRUCTION ENGINEERING & INSPECTION (15%)	$ 32,000.00
				TOTAL COST	**$ 273,783.10**

The Consultant has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Consultant at this time and represent only the Consultant's judgment as a design professional familiar with the construction industry. The Consultant cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs.

VDOT ITEM #	ITEM DESCRIPTION	UNITS	QUANTITY	SELECTED UNIT PRICE	TOTAL PRICE
	Southwest Corner Improvements				
	GENERAL CONSTRUCTION & EARTHWORK				
303SD20-0001	Regular Excavation	CY	5.00	$80.00	$ 400.00
303SD20-0007	Borrow Excavation	CY	5.00	$120.00	$ 600.00
				SUBTOTAL	**$ 1,000.00**
	DRAINAGE AND STORMWATER MANAGEMENT ITEMS				
501SD20-0004	Underdrain, UD-4	LF	0	$25.00	$ -
302SD20-0025	15" Conc. Pipe	LF	19	$160.00	$ 3,040.00
302SD20-0311	Drop Inlet DI-3B, L=4'	EA	1	$7,500.00	$ 7,500.00
302SD20-0660	Manhole MH-1	LF	0	$1,500.00	$ -
302SD20-0663	Frame & Cover MH-1	EA	1	$1,000.00	$ 1,000.00
				SUBTOTAL	**$ 11,540.00**
	PAVEMENT ITEMS				
308SD20-0012	Aggr. Base Matl. Ty. I, No. 21B	TON	14	$50.00	$ 700.00
515SD20-0004	Flexible Pave. Planing 0"-2"	SY	220	$10.00	$ 2,200.00
315SD20-0007	Asphalt Conc. Ty. SM-9.5A	TON	26	$180.00	$ 4,680.00
315SD20-0004	Asphalt Conc. Ty. IM-19.0A	TON	4	$200.00	$ 800.00
315SD20-0010	Asphalt Conc. Ty. BM-25.0A	TON	6	$210.00	$ 1,260.00
				SUBTOTAL	**$ 9,640.00**
	INCIDENTAL ITEMS				
502SD20-0011	Std. Curb CG-2	LF	62	$50.00	$ 3,100.00
520SD20-0012	Radial Curb CG-2	LF	27	$55.00	$ 1,485.00
502SD20-0022	Std. Comb. Curb & Gutter CG-6	LF	0	$55.00	$ -
502SD20-0023	Rad. Comb. Curb & Gutter CG-6	LF	0	$60.00	$ -
502SD20-0029	Entrance Gutter CG-9D	SY	0	$150.00	$ -
504SD20-0002	CG-12 Detectable Warning Surface	SY	3	$550.00	$ 1,650.00
504SD20-0003	Hydr. Cement Conc. Sidewalk 4"	SY	33	$80.00	$ 2,640.00
510SX20-0002	Remove Curb	LF	57	$20.00	$ 1,140.00
508SD20-0004	Demo. Of Pavement (Flexible)	SY	72	$15.00	$ 1,080.00
412SD20-0044	Saw Cutting	LF	73	$15.00	$ 1,095.00
507SD20-0028	NS Fence	LF	0	$100.00	$ -
				SUBTOTAL	**$ 12,190.00**
	MAINTENANCE OF TRAFFIC				
NS	Maintenance of Traffic	LS	1	$2,836.54	$ 2,836.54
				SUBTOTAL	**$ 2,836.54**
	ROADSIDE DEVELOPMENT				
602SD20-0003	Topsoil, Class B 2"	ACRE	0.01	$40,000.00	$ 400.00
603SD20-0002	Temporary Seed	LB	2	$24.00	$ 48.00
603SD20-0003	Regular Seed	LB	2.5	$18.00	$ 45.00
603SD20-0004	Overseeding	LB	2	$18.00	$ 36.00
603SD20-0005	Legume Seed	LB	0.75	$35.00	$ 27.00
603SD20-0006	Legume Overseeding	LB	0.5	$33.00	$ 17.00
603SD20-0014	Fertilizer (Nitrogen - N)	LB	1	$20.00	$ 20.00
603SD20-0015	Fertilizer (Phosphorous - P)	LB	1.5	$20.00	$ 30.00
603SD20-0016	Fertilizer (Potassium - K)	LB	0.75	$20.00	$ 15.00
603SD20-0017	Lime	TON	0.05	$1,090.00	$ 55.00
NS	Tree Removal	EA	0	$500.00	$ -
				SUBTOTAL	**$ 693.00**
	EROSION AND SEDIMENT CONTROL				
303SD20-0031	Inlet Protection, Type B	EA	3	$500.00	$ 1,500.00
303SD20-0033	Temporary Silt Fence, Type B	LF	0	$10.00	$ -
NS	Tree Protection / 4' Safety Fence	LF	0	$10.00	$ -
NS	NS (Construction Entrance)	EA	0	$3,500.00	$ -
				SUBTOTAL	**$ 1,500.00**
	SIGNING AND PAVEMENT MARKING				
701SD20-0001	Sign Panel	SF	22	$40.00	$ 880.00
700SD20-0035	Sign Post STP-1,2 3/16", 10 Gauge	LF	0	$30.00	$ -
700SD20-0036	Sign Post STP-1,2 1/2", 10 Gauge	LF	0	$30.00	$ -
700SD20-0037	Sign Post STP-1,2 1/2", 12 Gauge	LF	27	$28.00	$ 756.00
700SD20-0038	Concrete Foundation STP-1, Type A	EA	2	$550.00	$ 1,100.00
700SD20-0039	Concrete Foundation STP-1, Type B	EA	0	$675.00	$ -
704SD20-0006	Type B Class I Pavement Line Marking 4"	LF	14	$1.60	$ 22.40
704SD20-0007	Type B Class I Pavement Line Marking 6"	LF	0	$1.50	$ -
704SD20-0010	Type B Class I Pavement Line Marking 24"	LF	132	$12.00	$ 1,584.00
704SD20-0047	Pvmt Symb Mrkg Sgl Turn Arrow Ty B, CL I	EA	0	$300.00	$ -
				SUBTOTAL	**$ 4,342.40**
				CONSTRUCTION ITEMS SUBTOTAL	**$ 43,741.94**
	CONSTRUCTION INCIDENTALS				
513SD20-0001	Mobilization	LS	1	$5,000.00	$ 5,000.00
517SD20-0001	Construction Surveying (Constr.)	LS	1	$1,000.00	$ 1,000.00
	RIGHT OF WAY AQUISITION				
NS	Plats, Title Reports, and Appraisals	EA	-	$ 2,500	$ -
NS	Fee Simple Right-of-Way	SF	-	$ 5.00	$ -
NS	Permanent Easements	SF	-	$ 4.00	$ -
NS	Temporary Easements	SF	-	$ 2.00	$ -
				RIGHT OF WAY SUBTOTAL	**$ -**
	CONTINGENCY AND CEI				
				CONSTRUCTION, RIGHT OF WAY, UTILITY SUBTOTAL	**$ 49,741.94**
				CONTINGENCY (15%)	$ 8,000.00
				CONSTRUCTION ENGINEERING & INSPECTION (15%)	$ 8,000.00
				TOTAL COST	**$ 65,741.94**

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VDOT ITEM #	ITEM DESCRIPTION	UNITS	QUANTITY	SELECTED UNIT PRICE	TOTAL PRICE
	Northwest Corner Improvements				
	GENERAL CONSTRUCTION & EARTHWORK				
303SD20-0001	Regular Excavation	CY	5.00	$80.00	$ 400.00
303SD20-0007	Borrow Excavation	CY	5.00	$120.00	$ 600.00
				SUBTOTAL	**$ 1,000.00**
	DRAINAGE AND STORMWATER MANAGEMENT ITEMS				
501SD20-0004	Underdrain, UD-4	LF	0	$25.00	$ -
302SD20-0025	15" Conc. Pipe	LF	14	$160.00	$ 2,240.00
302SD20-0311	Drop Inlet DI-3B, L=4'	EA	1	$7,500.00	$ 7,500.00
302SD20-0660	Manhole MH-1	LF	0	$1,500.00	$ -
302SD20-0663	Frame & Cover MH-1	EA	1	$1,000.00	$ 1,000.00
				SUBTOTAL	**$ 10,740.00**
	PAVEMENT ITEMS				
308SD20-0012	Aggr. Base Matl. Ty. I, No. 21B	TON	13	$50.00	$ 650.00
515SD20-0004	Flexible Pave. Planing 0"-2"	SY	216	$10.00	$ 2,160.00
315SD20-0007	Asphalt Conc. Ty. SM-9.5A	TON	26	$180.00	$ 4,680.00
315SD20-0004	Asphalt Conc. Ty. IM-19.0A	TON	3	$200.00	$ 600.00
315SD20-0010	Asphalt Conc. Ty. BM-25.0A	TON	5	$210.00	$ 1,050.00
				SUBTOTAL	**$ 9,140.00**
	INCIDENTAL ITEMS				
502SD20-0011	Std. Curb CG-2	LF	65	$50.00	$ 3,250.00
520SD20-0012	Radial Curb CG-2	LF	22	$55.00	$ 1,210.00
502SD20-0022	Std. Comb. Curb & Gutter CG-6	LF	0	$55.00	$ -
502SD20-0023	Rad. Comb. Curb & Gutter CG-6	LF	0	$60.00	$ -
502SD20-0029	Entrance Gutter CG-9D	SY	0	$150.00	$ -
504SD20-0002	CG-12 Detectable Warning Surface	SY	3	$550.00	$ 1,650.00
504SD20-0003	Hydr. Cement Conc. Sidewalk 4"	SY	40	$80.00	$ 3,200.00
510SX20-0002	Remove Comb. Curb and Gutter	LF	55	$20.00	$ 1,100.00
508SD20-0004	Demo. Of Pavement (Flexible)	SY	76	$15.00	$ 1,140.00
412SD20-0044	Saw Cutting	LF	69	$15.00	$ 1,035.00
507SD20-0028	NS Fence	LF	0	$100.00	$ -
				SUBTOTAL	**$ 12,585.00**
	MAINTENANCE OF TRAFFIC				
NS	Maintenance of Traffic	LS	1	$2,952.44	$ 2,952.44
				SUBTOTAL	**$ 2,952.44**
	ROADSIDE DEVELOPMENT				
602SD20-0003	Topsoil, Class B 2"	ACRE	0.01	$40,000.00	$ 400.00
603SD20-0002	Temporary Seed	LB	2	$24.00	$ 48.00
603SD20-0003	Regular Seed	LB	2.5	$18.00	$ 45.00
603SD20-0004	Overseeding	LB	2	$18.00	$ 36.00
603SD20-0005	Legume Seed	LB	0.75	$35.00	$ 27.00
603SD20-0006	Legume Overseeding	LB	0.5	$33.00	$ 17.00
603SD20-0014	Fertilizer (Nitrogen - N)	LB	1	$20.00	$ 20.00
603SD20-0015	Fertilizer (Phosphorous - P)	LB	1.5	$20.00	$ 30.00
603SD20-0016	Fertilizer (Potassium - K)	LB	0.75	$20.00	$ 15.00
603SD20-0017	Lime	TON	0.05	$1,090.00	$ 55.00
NS	Tree Removal	EA	1	$500.00	$ 500.00
				SUBTOTAL	**$ 1,193.00**
	EROSION AND SEDIMENT CONTROL				
303SD20-0031	Inlet Protection, Type B	EA	2	$500.00	$ 1,000.00
303SD20-0033	Temporary Silt Fence, Type B	LF	0	$10.00	$ -
NS	Tree Protection / 4' Safety Fence	LF	0	$10.00	$ -
NS	NS (Construction Entrance)	EA	0	$3,500.00	$ -
				SUBTOTAL	**$ 1,000.00**
	SIGNING AND PAVEMENT MARKING				
701SD20-0001	Sign Panel	SF	28	$40.00	$ 1,120.00
700SD20-0035	Sign Post STP-1,2 3/16", 10 Gauge	LF	0	$30.00	$ -
700SD20-0036	Sign Post STP-1,2 1/2", 10 Gauge	LF	41	$30.00	$ 1,230.00
700SD20-0037	Sign Post STP-1,2 1/2", 12 Gauge	LF	0	$28.00	$ -
700SD20-0038	Concrete Foundation STP-1, Type A	EA	3	$550.00	$ 1,650.00
700SD20-0039	Concrete Foundation STP-1, Type B	EA	0	$675.00	$ -
704SD20-0006	Type B Class I Pavement Line Marking 4"	LF	14	$1.60	$ 22.40
704SD20-0007	Type B Class I Pavement Line Marking 6"	LF	0	$1.50	$ -
704SD20-0010	Type B Class I Pavement Line Marking 24"	LF	132	$12.00	$ 1,584.00
704SD20-0047	Pvmt Symb Mrkg Sgl Turn Arrow Ty B, CL I	EA	0	$300.00	$ -
				SUBTOTAL	**$ 5,606.40**
				CONSTRUCTION ITEMS SUBTOTAL	**$ 44,216.84**
	CONSTRUCTION INCIDENTALS				
513SD20-0001	Mobilization	LS	1	$6,000.00	$ 6,000.00
517SD20-0001	Construction Surveying (Constr.)	LS	1	$1,000.00	$ 1,000.00
	RIGHT OF WAY AQUISITION				
NS	Plats, Title Reports, and Appraisals	EA	-	$ 2,500	$ -
NS	Fee Simple Right-of-Way	SF	-	$ 5.00	$ -
NS	Permanent Easements	SF	-	$ 4.00	$ -
NS	Temporary Easements	SF	-	$ 2.00	$ -
				RIGHT OF WAY SUBTOTAL	**$ -**
	CONTINGENCY AND CEI				
				CONSTRUCTION, RIGHT OF WAY, UTILITY SUBTOTAL	**$ 51,216.84**
				CONTINGENCY (15%)	$ 8,000.00
				CONSTRUCTION ENGINEERING & INSPECTION (15%)	$ 8,000.00
				TOTAL COST	**$ 67,216.84**

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VDOT ITEM #	ITEM DESCRIPTION	UNITS	QUANTITY	SELECTED UNIT PRICE	TOTAL PRICE
	Northeast Corner Improvements				
	GENERAL CONSTRUCTION & EARTHWORK				
303SD20-0001	Regular Excavation	CY	5.00	$80.00	$ 400.00
303SD20-0007	Borrow Excavation	CY	5.00	$120.00	$ 600.00
				SUBTOTAL	**$ 1,000.00**
	DRAINAGE AND STORMWATER MANAGEMENT ITEMS				
501SD20-0004	Underdrain, UD-4	LF	0	$25.00	$ -
302SD20-0025	15" Conc. Pipe	LF	41	$160.00	$ 6,560.00
302SD20-0311	Drop Inlet DI-3B, L=4'	EA	2	$7,500.00	$ 15,000.00
302SD20-0660	Manhole MH-1	LF	0	$1,500.00	$ -
302SD20-0663	Frame & Cover MH-1	EA	1	$1,000.00	$ 1,000.00
				SUBTOTAL	**$ 22,560.00**
	PAVEMENT ITEMS				
308SD20-0012	Aggr. Base Matl. Ty. I, No. 21B	TON	14	$50.00	$ 700.00
515SD20-0004	Flexible Pave. Planing 0"-2"	SY	227	$10.00	$ 2,270.00
315SD20-0007	Asphalt Conc. Ty. SM-9.5A	TON	27	$180.00	$ 4,860.00
315SD20-0004	Asphalt Conc. Ty. IM-19.0A	TON	4	$200.00	$ 800.00
315SD20-0010	Asphalt Conc. Ty. BM-25.0A	TON	6	$210.00	$ 1,260.00
				SUBTOTAL	**$ 9,890.00**
	INCIDENTAL ITEMS				
502SD20-0011	Std. Curb CG-2	LF	66	$50.00	$ 3,300.00
520SD20-0012	Radial Curb CG-2	LF	29	$55.00	$ 1,595.00
502SD20-0022	Std. Comb. Curb & Gutter CG-6	LF	0	$55.00	$ -
502SD20-0023	Rad. Comb. Curb & Gutter CG-6	LF	0	$60.00	$ -
502SD20-0029	Entrance Gutter CG-9D	SY	0	$150.00	$ -
504SD20-0002	CG-12 Detectable Warning Surface	SY	3	$550.00	$ 1,650.00
504SD20-0003	Hydr. Cement Conc. Sidewalk 4"	SY	40	$80.00	$ 3,200.00
510SX20-0002	Remove Curb	LF	61	$20.00	$ 1,220.00
508SD20-0004	Demo. Of Pavement (Flexible)	SY	83	$15.00	$ 1,245.00
412SD20-0044	Saw Cutting	LF	76	$15.00	$ 1,140.00
507SD20-0028	NS Fence	LF	0	$100.00	$ -
				SUBTOTAL	**$ 13,350.00**
	MAINTENANCE OF TRAFFIC				
NS	Maintenance of Traffic	LS	1	$3,033.26	$ 3,033.26
				SUBTOTAL	**$ 3,033.26**
	ROADSIDE DEVELOPMENT				
602SD20-0003	Topsoil, Class B 2"	ACRE	0.01	$40,000.00	$ 400.00
603SD20-0002	Temporary Seed	LB	2	$24.00	$ 48.00
603SD20-0003	Regular Seed	LB	2.5	$18.00	$ 45.00
603SD20-0004	Overseeding	LB	2	$18.00	$ 36.00
603SD20-0005	Legume Seed	LB	0.75	$35.00	$ 27.00
603SD20-0006	Legume Overseeding	LB	0.5	$33.00	$ 17.00
603SD20-0014	Fertilizer (Nitrogen - N)	LB	1	$20.00	$ 20.00
603SD20-0015	Fertilizer (Phosphorous - P)	LB	1.5	$20.00	$ 30.00
603SD20-0016	Fertilizer (Potassium - K)	LB	0.75	$20.00	$ 15.00
603SD20-0017	Lime	TON	0.05	$1,090.00	$ 55.00
NS	Tree Removal	EA	1	$500.00	$ 500.00
				SUBTOTAL	**$ 1,193.00**
	EROSION AND SEDIMENT CONTROL				
303SD20-0031	Inlet Protection, Type B	EA	3	$500.00	$ 1,500.00
303SD20-0033	Temporary Silt Fence, Type B	LF	0	$10.00	$ -
NS	Tree Protection / 4' Safety Fence	LF	0	$10.00	$ -
NS	NS (Construction Entrance)	EA	0	$3,500.00	$ -
				SUBTOTAL	**$ 1,500.00**
	SIGNING AND PAVEMENT MARKING				
701SD20-0001	Sign Panel	SF	22	$40.00	$ 880.00
700SD20-0035	Sign Post STP-1,2 3/16", 10 Gauge	LF	0	$30.00	$ -
700SD20-0036	Sign Post STP-1,2 1/2", 10 Gauge	LF	27	$30.00	$ 810.00
700SD20-0037	Sign Post STP-1,2 1/2", 12 Gauge	LF	0	$28.00	$ -
700SD20-0038	Concrete Foundation STP-1, Type A	EA	2	$550.00	$ 1,100.00
700SD20-0039	Concrete Foundation STP-1, Type B	EA	0	$675.00	$ -
704SD20-0006	Type B Class I Pavement Line Marking 4"	LF	16	$1.60	$ 25.60
704SD20-0007	Type B Class I Pavement Line Marking 6"	LF	0	$1.50	$ -
704SD20-0010	Type B Class I Pavement Line Marking 24"	LF	132	$12.00	$ 1,584.00
704SD20-0047	Pvmt Symb Mrkg Sgl Turn Arrow Ty B, CL I	EA	0	$300.00	$ -
				SUBTOTAL	**$ 4,399.60**
				CONSTRUCTION ITEMS SUBTOTAL	**$ 56,925.86**
	CONSTRUCTION INCIDENTALS				
513SD20-0001	Mobilization	LS	1	$7,000.00	$ 7,000.00
517SD20-0001	Construction Surveying (Constr.)	LS	1	$1,000.00	$ 1,000.00
	RIGHT OF WAY AQUISITION				
NS	Plats, Title Reports, and Appraisals	EA	-	$ 2,500	$ -
NS	Fee Simple Right-of-Way	SF	-	$ 5.00	$ -
NS	Permanent Easements	SF	-	$ 4.00	$ -
NS	Temporary Easements	SF	-	$ 2.00	$ -
				RIGHT OF WAY SUBTOTAL	**$ -**
	CONTINGENCY AND CEI				
				CONSTRUCTION, RIGHT OF WAY, UTILITY SUBTOTAL	**$ 64,925.86**
				CONTINGENCY (15%)	$ 10,000.00
				CONSTRUCTION ENGINEERING & INSPECTION (15%)	$ 10,000.00
				TOTAL COST	**$ 84,925.86**

The Consultant has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Consultant at this time and represent only the Consultant's judgment as a design professional familiar with the construction industry. The Consultant cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs.

VDOT ITEM #	ITEM DESCRIPTION	UNITS	QUANTITY	SELECTED UNIT PRICE	TOTAL PRICE
Southeast Corner Improvements					
GENERAL CONSTRUCTION & EARTHWORK					
303SD20-0001	Regular Excavation	CY	5.00	$80.00	$ 400.00
303SD20-0007	Borrow Excavation	CY	5.00	$120.00	$ 600.00
				SUBTOTAL	**$ 1,000.00**
DRAINAGE AND STORMWATER MANAGEMENT ITEMS					
501SD20-0004	Underdrain, UD-4	LF	0	$25.00	$ -
302SD20-0025	15" Conc. Pipe	LF	38	$160.00	$ 6,080.00
302SD20-0311	Drop Inlet DI-3B, L=4'	EA	2	$7,500.00	$ 15,000.00
302SD20-0660	Manhole MH-1	LF	0	$1,500.00	$ -
302SD20-0663	Frame & Cover MH-1	EA	1	$1,000.00	$ 1,000.00
				SUBTOTAL	**$ 22,080.00**
PAVEMENT ITEMS					
308SD20-0012	Aggr. Base Matl. Ty. I, No. 21B	TON	14	$50.00	$ 700.00
515SD20-0004	Flexible Pave. Planing 0"-2"	SY	231	$10.00	$ 2,310.00
315SD20-0007	Asphalt Conc. Ty. SM-9.5A	TON	28	$180.00	$ 5,040.00
315SD20-0004	Asphalt Conc. Ty. IM-19.0A	TON	4	$200.00	$ 800.00
315SD20-0010	Asphalt Conc. Ty. BM-25.0A	TON	6	$210.00	$ 1,260.00
				SUBTOTAL	**$ 10,110.00**
INCIDENTAL ITEMS					
502SD20-0011	Std. Curb CG-2	LF	65	$50.00	$ 3,250.00
520SD20-0012	Radial Curb CG-2	LF	26	$55.00	$ 1,430.00
502SD20-0022	Std. Comb. Curb & Gutter CG-6	LF	0	$55.00	$ -
502SD20-0023	Rad. Comb. Curb & Gutter CG-6	LF	0	$60.00	$ -
502SD20-0029	Entrance Gutter CG-9D	SY	0	$150.00	$ -
504SD20-0002	CG-12 Detectable Warning Surface	SY	3	$550.00	$ 1,650.00
504SD20-0003	Hydr. Cement Conc. Sidewalk 4"	SY	38	$80.00	$ 3,040.00
510SX20-0002	Remove Curb	LF	59	$20.00	$ 1,180.00
508SD20-0004	Demo. Of Pavement (Flexible)	SY	83	$15.00	$ 1,245.00
412SD20-0044	Saw Cutting	LF	75	$15.00	$ 1,125.00
507SD20-0028	NS Fence	LF	0	$100.00	$ -
				SUBTOTAL	**$ 12,920.00**
MAINTENANCE OF TRAFFIC					
NS	Maintenance of Traffic	LS	1	$3,028.26	$ 3,028.26
				SUBTOTAL	**$ 3,028.26**
ROADSIDE DEVELOPMENT					
602SD20-0003	Topsoil, Class B 2"	ACRE	0.01	$40,000.00	$ 400.00
603SD20-0002	Temporary Seed	LB	2	$24.00	$ 48.00
603SD20-0003	Regular Seed	LB	2.5	$18.00	$ 45.00
603SD20-0004	Overseeding	LB	2	$18.00	$ 36.00
603SD20-0005	Legume Seed	LB	0.75	$35.00	$ 27.00
603SD20-0006	Legume Overseeding	LB	0.5	$33.00	$ 17.00
603SD20-0014	Fertilizer (Nitrogen - N)	LB	1	$20.00	$ 20.00
603SD20-0015	Fertilizer (Phosphorous - P)	LB	1.5	$20.00	$ 30.00
603SD20-0016	Fertilizer (Potassium - K)	LB	0.75	$20.00	$ 15.00
603SD20-0017	Lime	TON	0.05	$1,090.00	$ 55.00
NS	Tree Removal	EA	1	$500.00	$ 500.00
				SUBTOTAL	**$ 1,193.00**
EROSION AND SEDIMENT CONTROL					
303SD20-0031	Inlet Protection, Type B	EA	2	$500.00	$ 1,000.00
303SD20-0033	Temporary Silt Fence, Type B	LF	0	$10.00	$ -
NS	Tree Protection / 4' Safety Fence	LF	0	$10.00	$ -
NS	NS (Construction Entrance)	EA	0	$3,500.00	$ -
				SUBTOTAL	**$ 1,000.00**
SIGNING AND PAVEMENT MARKING					
701SD20-0001	Sign Panel	SF	28	$40.00	$ 1,120.00
700SD20-0035	Sign Post STP-1,2 3/16", 10 Gauge	LF	0	$30.00	$ -
700SD20-0036	Sign Post STP-1,2 1/2", 10 Gauge	LF	41	$30.00	$ 1,230.00
700SD20-0037	Sign Post STP-1,2 1/2", 12 Gauge	LF	0	$28.00	$ -
700SD20-0038	Concrete Foundation STP-1, Type A	EA	2	$550.00	$ 1,100.00
700SD20-0039	Concrete Foundation STP-1, Type B	EA	0	$675.00	$ -
704SD20-0006	Type B Class I Pavement Line Marking 4"	LF	16	$1.60	$ 25.60
704SD20-0007	Type B Class I Pavement Line Marking 6"	LF	0	$1.50	$ -
704SD20-0010	Type B Class I Pavement Line Marking 24"	LF	132	$12.00	$ 1,584.00
704SD20-0047	Pvmt Symb Mrkg Sgl Turn Arrow Ty B, CL I	EA	0	$300.00	$ -
				SUBTOTAL	**$ 5,059.60**
				CONSTRUCTION ITEMS SUBTOTAL	**$ 56,390.86**
CONSTRUCTION INCIDENTALS					
513SD20-0001	Mobilization	LS	1	$7,000.00	$ 7,000.00
517SD20-0001	Construction Surveying (Constr.)	LS	1	$1,000.00	$ 1,000.00
RIGHT OF WAY AQUISITION					
NS	Plats, Title Reports, and Appraisals	EA	-	$ 2,500	$ -
NS	Fee Simple Right-of-Way	SF	-	$ 5.00	$ -
NS	Permanent Easements	SF	-	$ 4.00	$ -
NS	Temporary Easements	SF	-	$ 2.00	$ -
				RIGHT OF WAY SUBTOTAL	**$ -**
CONTINGENCY AND CEI					
				CONSTRUCTION, RIGHT OF WAY, UTILITY SUBTOTAL	**$ 64,390.86**
				CONTINGENCY (15%)	$ 10,000.00
				CONSTRUCTION ENGINEERING & INSPECTION (15%)	$ 10,000.00
				TOTAL COST	**$ 84,390.86**

The Consultant has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Consultant at this time and represent only the Consultant's judgment as a design professional familiar with the construction industry. The Consultant cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs.

PROJECT #: 110845003
SEPTEMBER 12, 2023

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

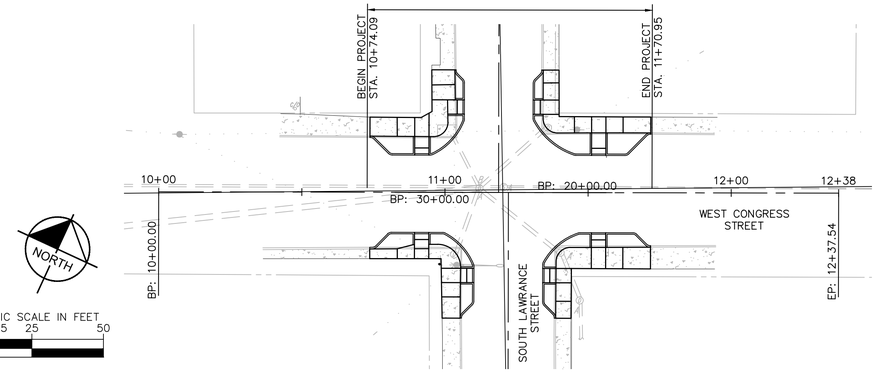
STATE	CITY	PROJECT	SHEET NO.
WV	CITY OF CHARLES TOWN	110845003	1

CHARLES TOWN, WEST VIRGINIA
WEST CONGRESS STREET AND SOUTH LAWRENCE STREET INTERSECTION IMPROVEMENT DESIGN
FINAL PLANS

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
1A	CONSTRUCTION ALIGNMENT AND SURVEY CONTROL DATA
1B(1)–1B(2)	TEMPORARY TRAFFIC CONTROL PLAN
2	GENERAL NOTES AND TYPICAL SECTIONS
2A	EXISTING CONDITIONS AND DEMOLITION PLAN
3	ROADWAY PLAN
3A(1)–3A(2)	GRADING DETAIL SHEET
3B(1)	EROSION & SEDIMENT CONTROL PHASE I
3B(2)	EROSION & SEDIMENT CONTROL PHASE II
3C(1)	DRAINAGE DESCRIPTIONS
3C(2)–3C(3)	STANDARD DETAILS
3C(4)–3C(5)	DRAINAGE CALCULATIONS
3D	DRAINAGE PROFILES
3E	SIGNING & MARKING PLAN
4	AUTOTURN EXHIBIT

PLAN REVISIONS	
DATE	COMMENT



PROJECT OWNER & CONSULTANT

CLIENT / OWNER

CITY OF CHARLES TOWN
JIM WYSONG
CHARLES TOWN MAINTENANCE SUPERVISOR
101 E WASHINGTON STREET
CHARLES TOWN, WV 25414

SURVEYOR

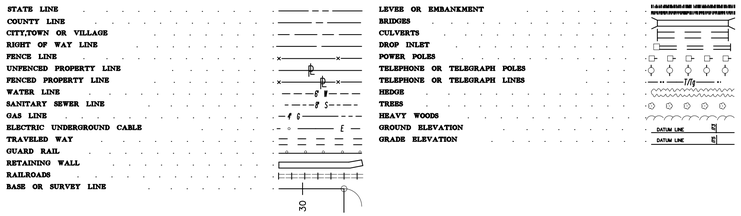
GRS GROUP
6703 DELAND COURT
WEST SPRINGFIELD, VA 22152
PHONE: (703) 727–5828
FAX: (703) 763–2320

ENGINEER

Kimley»Horn

© 2023 KIMLEY–HORN AND ASSOCIATES, INC.
11400 COMMERCE PARK DRIVE
SUITE 400
RESTON, VA 20191
PHONE: 703–674–1300
FAX: 703–674–1350

CONVENTIONAL SIGNS



ADDITIONAL EASEMENTS FOR UTILITY RELOCATIONS MAY BE REQUIRED BEYOND THE PROPOSED RIGHT OF WAY SHOWN ON THE PLANS.

THESE PLANS ARE UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.

THE COMPLETE ELECTRONIC .PDF VERSION OF THE PLAN ASSEMBLY AS AWARDED, INCLUDING ALL SUBSEQUENT REVISIONS, WILL BE THE OFFICIAL CONSTRUCTION PLANS. FOR INFORMATION RELATIVE TO ELECTRONIC FILES AND LAYERED PLANS, SEE GENERAL NOTES.

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE CITY.

CHARLES TOWN – COMPLETE LIST OF WAIVERS/VARIANCES			
ORDINANCE	SECION OF ORDINANCE	DESCRIPTION OF WAIVER OR VARIANCE	DATE GRANTED
N/A			

FUNCTIONAL CLASSIFICATION AND TRAFFIC DATA		
	S LAWRENCE ST	W CONGRESS ST
ROADWAY FUNCTIONAL CLASSIFICATION	MINOR URBAN COLLECTOR	MINOR URBAN COLLECTOR
AADT (2022)	~2500	~2500
GS STANDARD	GS–7	GS–7
V (MPH)	25	25

LOCATION MAP



EINGINEER/SURVEYOR'S CERTIFICATION

"THE PLAT REPRESENTS A SURVEY MADE BY HIM/HER; ALL MONUMENTS AND IMPROVEMENTS INDICATED THEREON ACTUALLY EXIST, AND THAT THEIR LOCATION, SIZE AND MATERIAL ARE CORRECTLY SHOWN; HE/SHE IS FAMILIAR WITH ALL REQUIREMENTS OF THIS ORDINANCE; AND, TO HIS/HER BEST KNOWLEDGE AND BELIEF, ALL REQUIREMENTS OF THIS ORDINANCE HAVE BEEN FULLY COMPLIED THEREWITH."

Mark R Phillips
2023.09.15 09:39:40-04'00'

MARK R. PHILLIPS
KIMLEY–HORN & ASSOCIATES, INC.

DATE

APPROVALS

PRELIMINARY PLAT APPROVAL — DATE

PLANNING COMMISSION — DATE

ZONING ADMINISTRATOR — DATE

THESE PLANS ARE IN CONFORMANCE WITH CITY OF CHARLES TOWN STANDARDS AND ORDINANCES, ANY DEVIATION OR CHANGE IN THESE PLANS SHALL BE APPROVED BY THE ZONING ADMINISTRATOR PRIOR TO CONSTRUCTION.

CALL "MISS UTILITY"
MISS UTILITY OF WEST VIRGINIA (MUWV) AT 811 OR 1-800-245-4848, 48 HOURS PRIOR TO THE START OF WORK. EXCAVATORS MUST NOTIFY ALL PUBLIC UTILITY OPERATORS WHO MAINTAIN UNDERGROUND UTILITY LINES IN THE AREA OF PROPOSED EXCAVATING OR BLASTING AND HAVE THOSE FACILITIES LOCATED BY THE UTILITY COMPANIES PRIOR TO COMMENCING EXCAVATION. THE EXCAVATOR IS RESPONSIBLE FOR COMPLIANCE WITH ALL COUNTY REQUIREMENTS, WEST VIRGINIA CODE AND REGULATIONS.

MARK ROSS PHILLIPS REGISTERED 25167 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER

Mark R Phillips
2023.09.15 09:36:44-04'00'

Kimley-Horn
Reston, Virginia
Roadway Engineer

PROJECT	SHEET NO.
110845003	1

PROJECT MANAGER _ JIM_WYSONG, CITY_OF_CHARLES_TOWN
SURVEYED BY, DATE_GRS_GROUP_(703)_727-5828
DESIGN BY _MARK_PHILLIPS, P.E._(703)_870-3631_(KIMLEY-HORN)

PROJECT MANAGER JIM WYSONG, CITY OF CHARLES TOWN
SURVEYED BY, DATE GRS GROUP, FEBRUARY 28, 2022
DESIGN BY MARK PHILLIPS, P.E. (KIMLEY-HORN) (703) 870-3631

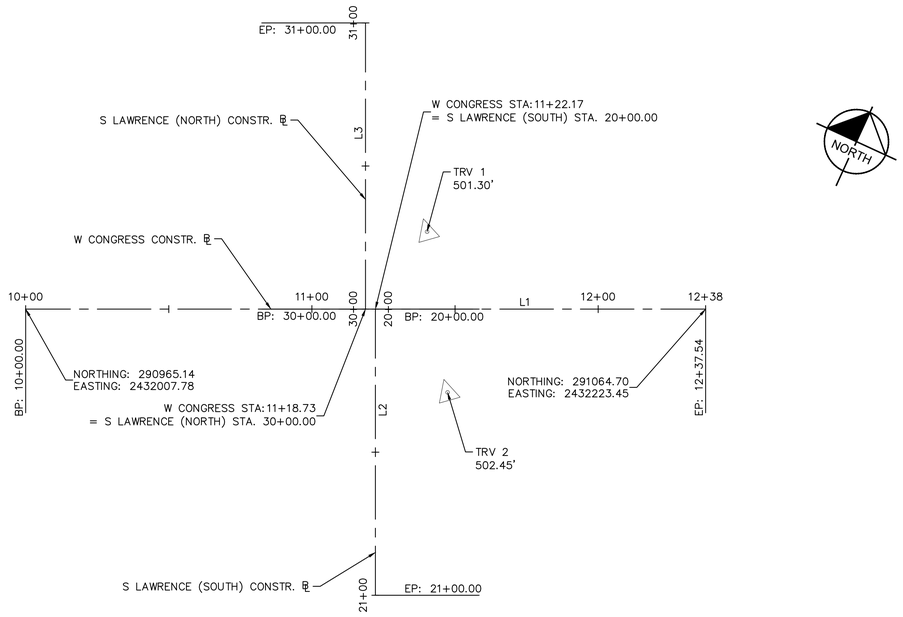
MARK ROSS PHILLIPS REGISTERED 25167 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER

Mark R Phillips
2023.09.15 09:36:59-04'00'

Kimley-Horn
Reston, Virginia
Roadway Engineer

REVISED	STATE	PROJECT	SHEET NO.
	WV	110845003	1A

CONSTRUCTION ALIGNMENT AND SURVEY CONTROL DATA



CONSTRUCTION ALIGNMENT DATA – W CONGRESS											
NO.	DELTA OR BRG	RADIUS	PC	PT	LENGTH	PI NORTHING	PI EASTING	TANGENT START NORTHING	TANGENT START EASTING	TANGENT END NORTHING	TANGENT END EASTING
L1	N 65°13'16" E		10+00.00	12+37.54	237.54'			290965.14	2432007.78	291064.70	2432223.45

CONSTRUCTION ALIGNMENT DATA – S LAWRENCE (SOUTH)											
NO.	DELTA OR BRG	RADIUS	PC	PT	LENGTH	PI NORTHING	PI EASTING	TANGENT START NORTHING	TANGENT START EASTING	TANGENT END NORTHING	TANGENT END EASTING
L2	S 24°46'44" E		20+00.00	21+00.00	100.00'			291016.35	2432118.71	290925.55	2432160.62

CONSTRUCTION ALIGNMENT DATA – S LAWRENCE (NORTH)											
NO.	DELTA OR BRG	RADIUS	PC	PT	LENGTH	PI NORTHING	PI EASTING	TANGENT START NORTHING	TANGENT START EASTING	TANGENT END NORTHING	TANGENT END EASTING
L3	N 24°46'44" W		30+00.00	31+00.00	100.00'			291014.90	2432115.58	291105.70	2432073.67

TRAVERSE POINT LOCATION TABLE			
POINT	NORTHING	EASTING	ELEVATION
TRV1	291048.46	2432123.77	501.30'
TRV2	291000.50	2432153.79	502.45'

W. CONGRESS STREET AND S. LAWRENCE STREET INTERSECTION IMPROVEMENTS
CHARLES TOWN, WEST VIRGINIA

CONSTRUCTION ALIGNMENT AND SURVEY CONTROL DATA

GRAPHIC SCALE IN FEET 0 12.5 25 50

PROJECT	SHEET NO.
110845003	1A

PROJECT MANAGER JIM WYSONG, CITY OF CHARLES TOWN
SURVEYED BY, DATE GRS GROUP, FEBRUARY 28, 2022
DESIGN BY MARK PHILLIPS, P.E. (KIMLEY-HORN) (703) 870-3631

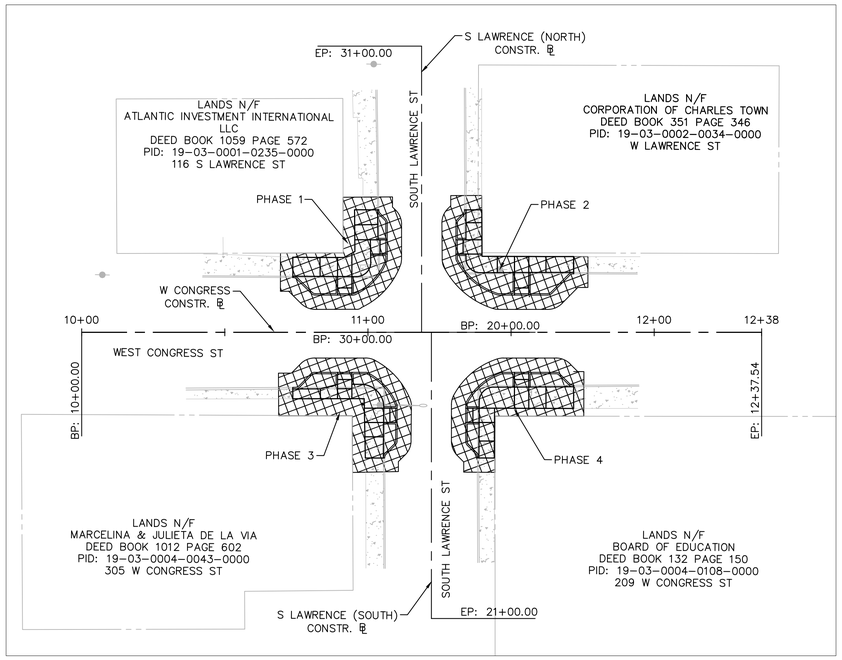
MARK ROSS PHILLIPS REGISTERED 25167 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER

Mark R Phillips
2023.09.15 09:37:08-04'00'

Kimley-Horn
Reston, Virginia
Roadway Engineer

REVISED	STATE	PROJECT	SHEET NO.
	WV	110845003	1B(1)

TEMPORARY TRAFFIC CONTROL PLAN



SEQUENCE OF CONSTRUCTION

PHASE 1

CONTRACTOR SHALL SET UP EROSION AND SEDIMENT CONTROL DEVICES NECESSARY FOR PHASE I AS DEPICTED IN THE PLANS.

INSTALL TEMPORARY TRAFFIC CONTROL SIGNS AND DEVICES IN ACCORDANCE WITH TTC-36.1.

CONSTRUCT STORM IMPROVEMENTS, CURB, AND SIDEWALK IMPROVEMENTS AS DEPICTED IN THE ROADWAY PLANS.

PHASE 2

CONTRACTOR SHALL SET UP EROSION AND SEDIMENT CONTROL DEVICES NECESSARY FOR PHASE 2 AS DEPICTED IN THE PLANS.

INSTALL TEMPORARY TRAFFIC CONTROL SIGNS AND DEVICES IN ACCORDANCE WITH TTC-36.1..

CONSTRUCT STORM IMPROVEMENTS, CURB, AND SIDEWALK IMPROVEMENTS AS DEPICTED IN THE ROADWAY PLANS.

PHASE 3

CONTRACTOR SHALL SET UP EROSION AND SEDIMENT CONTROL DEVICES NECESSARY FOR PHASE 3 AS DEPICTED IN THE PLANS.

INSTALL TEMPORARY TRAFFIC CONTROL SIGNS AND DEVICES IN ACCORDANCE WITH TTC-36.1.

CONSTRUCT STORM IMPROVEMENTS, CURB, AND SIDEWALK IMPROVEMENTS AS DEPICTED IN THE ROADWAY PLANS.

PHASE 4

CONTRACTOR SHALL SET UP EROSION AND SEDIMENT CONTROL DEVICES NECESSARY FOR PHASE 4 AS DEPICTED IN THE PLANS.

INSTALL TEMPORARY TRAFFIC CONTROL SIGNS AND DEVICES IN ACCORDANCE WITH TTC-36.1.

CONSTRUCT STORM IMPROVEMENTS, CURB, AND SIDEWALK IMPROVEMENTS AS DEPICTED IN THE ROADWAY PLANS.

PHASE 5

INSTALL TEMPORARY TRAFFIC CONTROL SIGNS AND DEVICES IN ACCORDANCE WITH TTC-67.1.

CONSTRUCT MILL & OVERLAY IMPROVEMENTS AS DEPICTED IN THE ROADWAY PLANS FROM STATION 10+74.11 TO 11+71.09

Typical Traffic Control
Crosswalk Closure and Pedestrian Detour Operation
(Figure TTC-36.1)
NOTES

Standard:

1. **When crosswalks or other pedestrian facilities are closed or relocated, temporary facilities shall be detectable and shall include accessibility features consistent with the features present in the existing pedestrian facility.**
2. **Curb parking shall be prohibited for at least 50 feet in advance of the midblock crosswalk.**

Guidance:

3. *Audible information devices should be considered where midblock closings and changed crosswalk areas cause inadequate communication to be provided to pedestrians who have visual disabilities.*
4. *Pedestrian traffic signal displays controlling closed crosswalks should be covered or deactivated.*
5. *Temporary markings should be considered for operations exceeding three days in duration.*

Option:

6. Only the TTC devices related to pedestrians are shown. Other devices, such as lane closure signing or ROAD NARROWS (W5-1) signs, may be used to control vehicular traffic.
7. For nighttime closures, Type A Flashing warning lights may be used on barricades supporting signs and closing sidewalks.
8. In order to maintain the systematic use of the fluorescent yellow-green background for pedestrian, bicycle, and school warning signs in a jurisdiction, the fluorescent yellow-green background for pedestrian, bicycle, and school warning signs may be used in TTC zones.

Standard:

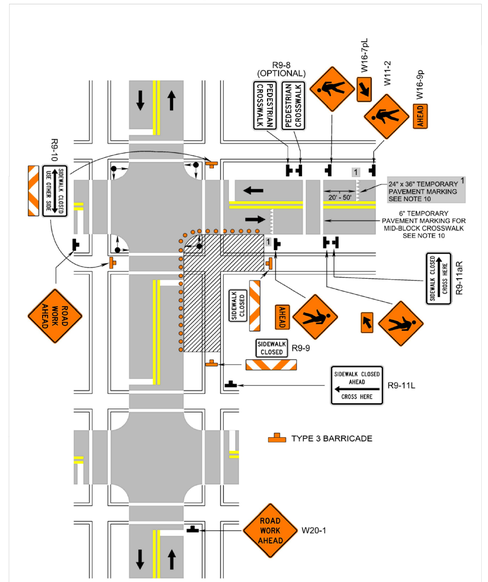
9. **All sidewalk closures shall be closed with Type 3 Barricades.**

Support:

10. Refer to Sections 3B-16 through 3B-18 of the 2009 MUTCD and the Virginia Supplement to the MUTCD[1] for crosswalk[1] lines, yield lines and other related TTC devices that may be used to control vehicular traffic at midblock crosswalks.

1: Revision 1 – 4/1/2015

Crosswalk Closure and Pedestrian Detour Operation
(Figure TTC-36.1)



1: Revision 1 – 4/1/2015

W. CONGRESS STREET AND
S. LAWRENCE STREET
INTERSECTION IMPROVEMENTS
CHARLES TOWN, WEST VIRGINIA

TEMPORARY TRAFFIC CONTROL PLAN

GRAPHIC SCALE IN FEET
0 12.5 25 50

PROJECT 110845003

SHEET NO. 1B(1)

PROJECT MANAGER JIM WYSONG, CITY OF CHARLES TOWN
SURVEYED BY, DATE GRS GROUP, FEBRUARY 28, 2022
DESIGN BY MARK PHILLIPS, P.E. (KIMLEY-HORN) (703) 870-3631

TEMPORARY TRAFFIC CONTROL PLAN

Typical Traffic Control

***Lane Closure Operation through an Unsignalized Intersection*[1]**

(Figure TTC-67.0)

NOTES

Guidance:

1. *Sign spacing distance should be 350'-500' where the posted speed limit is 45 mph or less, 500'-800' where the posted speed limit is greater than 45 mph.*

Standard:

2. **Channelizing device spacing shall be on 20' centers or less 100 feet in advance of the intersection.**

Guidance:

3. *If room permits, a shadow vehicle with at least one rotating amber light or high intensity amber strobe light should be parked 80'-120' in advance of the first work crew.*
4. *If the posted speed limit is 45 mph or greater, the shadow vehicle should have a truck-mounted attenuator.*
5. *If the work space extends across a crosswalk, the crosswalk should be closed using the information and devices shown in Figure TTC-36.*

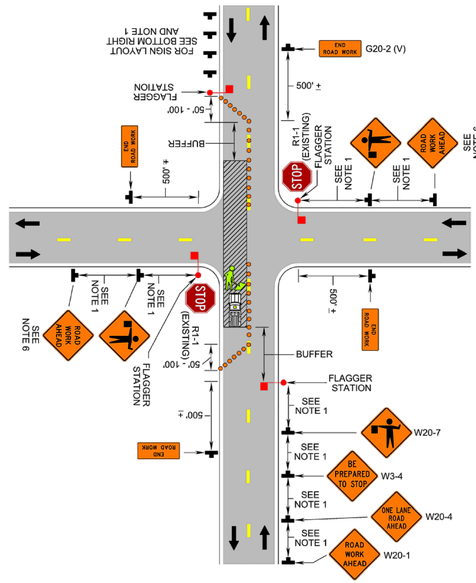
Option

6. At the stop condition intersecting roadway, additional flagger sign may be used (BE PREPARED TO STOP (W3-4)) between the ROAD WORK AHEAD and the flagger station in the proper sequence, as directed by the Regional Traffic Engineer.

1: Revision 1 – 4/1/2015

Lane Closure Operation through an Unsignalized Intersection[1]

(Figure TTC-67.0)



1: Revision 1 – 4/1/2015

Mark R Phillips
2023.09.15 09:37:18-04'00'

Kimley-Horn
Reston, Virginia
Roadway Engineer

REVISED	STATE	PROJECT	SHEET NO.
	WV	110845003	1B(2)

W. CONGRESS STREET AND
S. LAWRENCE STREET
INTERSECTION IMPROVEMENTS
CHARLES TOWN, WEST VIRGINIA

TEMPORARY TRAFFIC CONTROL PLAN

	PROJECT	SHEET NO.
	110845003	1B(2)

PROJECT MANAGER JIM WYSONG, CITY OF CHARLES TOWN
SURVEYED BY, DATE GRS GROUP, FEBRUARY 28, 2022
DESIGN BY MARK PHILLIPS, P.E. (KIMLEY-HORN) (703) 870-3631

GENERAL NOTES AND TYPICAL SECTIONS

MARK ROSS PHILLIPS REGISTERED 25167 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER

Mark R Phillips
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Kimley-Horn
Reston, Virginia
Roadway Engineer

REVISED	STATE	PROJECT	SHEET NO.
	WV	110845003	2

GENERAL NOTES

1. METHODS AND MATERIALS USED IN THE CONSTRUCTION OF THE IMPROVEMENTS HEREIN SHALL CONFORM TO CURRENT JEFFERSON COUNTY CONSTRUCTION STANDARDS AND SPECIFICATIONS AND/OR CURRENT WVDOT STANDARDS AND SPECIFICATIONS.
2. THE ENGINEER SHALL NOT HAVE CONTROL OVER OR CHARGE OF AND SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES NOR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH WORK SHOWN ON THESE PLANS. THE ENGINEER IS NOT RESPONSIBLE FOR THE CONTRACTOR'S SCHEDULES OR FAILURE TO CARRY OUT THE WORK. THE ENGINEER IS NOT RESPONSIBLE FOR ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTOR, OR THEIR AGENTS OR EMPLOYEES, OR ANY OTHER PERSON PERFORMING PORTIONS OF THE WORK.
3. THE CONTRACTOR, OWNER OR DEVELOPER SHALL BE RESPONSIBLE FOR SECURING ANY THIRD PARTY INSPECTION/TESTING SERVICE TO INSURE CONSTRUCTION COMPLIANCE WITH THESE PLANS AND SPECIFICATIONS. IT IS THE ENGINEERING'S RECOMMENDATION THAT A THIRD PARTY INSPECTION/TESTING SERVICE BE EMPLOYED TO ENSURE THAT PROJECT IS COMPLETED AND MATERIALS INSTALLED MEET THE DETAILS AND SPECIFICATIONS IN THESE PLANS.
4. THE LOCATION OF EXISTING UTILITIES SHOWN IN THESE PLANS ARE TAKEN FROM EXISTING RECORDS AND AVAILABLE ASBUILT DATA. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY THE EXACT HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES AS NEEDED PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DIGGING OF ALL TEST HOLES THAT MAY BE REQUIRED, WHETHER RECOMMENDED OR NOT BY THESE PLANS, TO DETERMINE THE EXACT LOCATION AND ELEVATION OF EXISTING UTILITIES. IF ANY CONFLICTS ARISING FROM THIS EXISTING UTILITY VERIFICATION OR IF DURING THE COURSE OF CONSTRUCTION, ANY OBJECT OF AN UNUSUAL NATURE IS ENCOUNTERED, THE CONTRACTOR SHALL CEASE WORK IN THAT AREA AND IMMEDIATELY NOTIFY KIMLEY-HORN & ASSOCIATES AND/OR THE PROPER AUTHORITY. KIMLEY-HORN & ASSOCIATES OR ANY ENGINEER ASSOCIATED WITH THESE PLANS SHALL NOT BE RESPONSIBLE OR LIABLE FOR ANY CONSTRUCTION COST THAT MAY BE ASSOCIATED WITH THE INSTALLATION OR REINSTALLATION ANY UTILITY OR OTHER IMPROVEMENTS IF NOT NOTIFIED OF ANY DISCREPANCIES BETWEEN ACTUAL FIELD CONDITIONS AND THE APPROVED PLAN.
5. THE APPROVAL OF THESE PLANS IN NO WAY RELIEVE THE DEVELOPER, THE CONTRACTOR, OR THEIR AGENTS OF ANY LEGAL RESPONSIBILITY WHICH MAY BE REQUIRED BY THE CODE OF WEST VIRGINIA OR ANY OTHER ORDINANCE ENACTED BY THE COUNTY NOR DOES IT GUARANTEE THE ISSUANCE OF ANY REQUIRED PERMIT BY THE COUNTY, WVDOT OR ANY OTHER AGENCY.
6. AN APPROVED SET OF PLANS AND ALL APPLICABLE PERMITS MUST BE AVAILABLE AT THE CONSTRUCTION SITE AT ALL TIMES DURING CONSTRUCTION. A REPRESENTATIVE OF THE DEVELOPER MUST BE AVAILABLE AT ALL TIMES.
7. THE CONTRACTOR SHALL PROVIDE ADEQUATE MEANS OF CLEANING MUD FROM TRUCKS AND/OR OTHER EQUIPMENT PRIOR TO ENTERING PUBLIC STREETS, AND IT IS THE CONTRACTORS RESPONSIBILITY TO CLEAN STREETS, ALLAY DUST, AND TO TAKE WHATEVER MEASURES ARE NECESSARY TO INSURE THAT PUBLIC STREETS ARE MAINTAINED IN A CLEAN, MUD AND DUST FREE CONDITION AT ALL TIMES.
8. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGE TO THE EXISTING STREETS AND UTILITIES WHICH OCCURS AS A RESULT OF THE CONSTRUCTION PROJECT WITHIN OR CONTIGUOUS TO THE EXISTING RIGHT-OF-WAY.
9. WARNING SIGNS, MARKERS, BARRICADES OR FLAGMEN SHOULD BE IN ACCORDANCE WITH THE STATE AND FEDERAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
10. ALL UNSUITABLE MATERIAL SHALL BE REMOVED FROM THE CONSTRUCTION LIMITS OF THE SITE PLAN BEFORE PLACING EMBANKMENT.
11. ALL PAVEMENT SECTIONS SHOWN ON THESE APPROVED PLANS ARE FOR PRELIMINARY DESIGN ONLY. FINAL PAVEMENT DESIGN SHALL BE BASED UPON ACTUAL FIELD TESTED CBR VALUES. THE CONTRACTOR OR DEVELOPER SHALL BE RESPONSIBLE FOR FIELD TESTS PER WVDOT STANDARDS TO OBTAIN ACTUAL CBR VALUES FOR FINAL DESIGN. FINAL PAVEMENT DESIGNS WILL BE APPROVED BY WVDOT AND/OR THE OWNER/DEVELOPER, WHICH EVER APPLICABLE, PRIOR TO INSTALLATION.
12. ALL SPRINGS SHALL BE CAPPED AND PIPED TO THE NEAREST STORM SEWER MANHOLES OR CURB INLET. THE PIPE SHALL BE MINIMUM 6" DIAMETER.
13. WHEN GRADING IS PROPOSED WITHIN EASEMENTS OF UTILITIES, LETTERS OF PERMISSION FROM ALL INVOLVED COMPANIES MUST BE PROVIDED TO THE CITY PRIOR TO ISSUANCE OF GRADING AND/OR SITE DEVELOPMENT PERMITS.
14. NOTIFICATION SHALL BE GIVEN TO THE JEFFERSON COUNTY PUBLIC SEWER DISTRICT TWO WEEKS PRIOR TO CONSTRUCTION SO THEY CAN ARRANGE TO HAVE A PROJECT REPRESENTATIVE DURING CONSTRUCTION. THE DISTRICT WOULD LIKE TO BE IN THE PRE-CONSTRUCTION PROJECT MEETINGS WITH THE CONTRACTOR.
15. NOTIFICATION SHALL BE GIVEN TO THE CITY OF CHARLES TOWN UTILITY BOARD PRIOR TO CONSTRUCTION OF WATER LINES. INFORMATION SHOULD ALSO BE OBTAINED FROM THE APPROPRIATE AUTHORITY CONCERNING PERMITS, CUT SHEETS, AND CONNECTIONS TO EXISTING LINES.
16. THE DEVELOPER AND/OR CONTRACTOR SHALL BE RESPONSIBLE TO SUPPLY ALL UTILITY COMPANIES WITH COPIES OF THE APPROVED PLANS AND ADVISE THEM THAT ALL GRADING SHALL CONFORM TO THE APPROVED PLANS, AND FURTHER THAT THE UTILITY COMPANIES SHALL BE RESPONSIBLE FOR HONORING THESE PLANS AND THE FINISHED GRADES IN THE INSTALLATION OF THEIR UTILITY LINES.
17. ALL UTILITIES TO BE LOCATED UNDERGROUND.
18. CONTRACTORS SHALL NOTIFY OPERATORS WHO MAINTAIN UNDERGROUND UTILITY LINES IN THE AREA OF PROPOSED EXCAVATING OR BLASTING AT LEAST TWO (2) WORKING DAYS, BUT NOT MORE THAN TEN (10) WORKING DAYS, PRIOR TO COMMENCEMENT OF EXCAVATION OR DEMOLITION.
19. THE DEVELOPER WILL BE RESPONSIBLE FOR THE RELOCATION OF ANY UTILITIES WHICH IS REQUIRED AS A RESULT OF HIS PROJECT. THE RELOCATION SHOULD BE DONE PRIOR TO CONSTRUCTION.
20. CONTROLLED FILLS SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY AS DETERMINED BY METHOD "A" PER STANDARD PROCTOR AASHTO-T99, ASTM-D698, OR VTM-1 AS APPLICABLE. DENSITY SHALL BE CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER AND RESULTS SUBMITTED TO JEFFERSON COUNTY, PRIOR TO PAVEMENT CONSTRUCTION. IF A GEOTECHNICAL REPORT HAS BEEN PREPARED, IT SHOULD SUPERSEDE THE REQUIREMENTS IN THIS NOTE.
21. CONSTRUCTION DEBRIS SHALL BE CONTAINERIZED. NO LESS THAN ONE LITTER RECEPTACLE SHALL BE PROVIDED AT THE CONSTRUCTION SITE.

CITY OF CHARLES TOWN ORDINANCE NOTES:

1. ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF CHARLES TOWN ZONING ORDINANCE AND ARTICLE 1333 OF THE CITY OF CHARLES TOWN SUBDIVISION AND LAND DEVELOPMENT ORDINANCE. CHANGES OR REVISIONS IN CONSTRUCTION PLANS AND SPECIFICATIONS SHALL NOT BE MADE UNLESS FIRST APPROVED BY THE CITY OF CHARLES TOWN AND OTHER APPROPRIATE AGENCIES
2. ALL STREET AND TRAFFIC CONTROL SIGNS SHALL CONFORM TO THE STANDARDS SET FORTH IN SECTION ARTICLE 1333.04 OF THE CITY OF CHARLES TOWN SUBDIVISION AND LAND DEVELOPMENT ORDINANCE. IN ADDITION, ALL SIGNS SHALL BE INSTALLED IN THE PUBLIC RIGHT-OF-WAY AND LOCATED IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, 2009 EDITION AND THE CITY MANAGER.
3. ALL SITE IMPROVEMENTS SHOWN SHALL BE BONDED TO THE SATISFACTION OF THE PLANNING COMMISSION PRIOR TO ISSUANCE OF ANY BUILDING PERMITS.

CITY OF CHARLES TOWN ENGINEERING NOTES:

1. EXISTING TREES ARE TO REMAIN IN THEIR NATURAL CONDITION THROUGHOUT THE DEVELOPMENT WHEREVER PRACTICAL.
2. AT THIS TIME, NO OFF-SITE BORROW PITS ARE ANTICIPATED FOR THIS PROJECT.
5. CUT AND FILL ACTIVITY/MATERIAL SHALL NOT ENCROACH ON ADJOINING PROPERTIES.
18. SITE LIGHTING IS NOT PROPOSED FOR THIS SITE. ANY ADDITIONAL LIGHTING SHALL MEET THE CITY OF CHARLES TOWN REQUIREMENTS.

WVDOT NOTES

WV1. ALL WORK, CONSTRUCTION METHODS AND MATERIALS SHALL CONFORM WITH THE WEST VIRGINIA DIVISION OF HIGHWAYS "STANDARD SPECIFICATIONS ROADS AND BRIDGES ADOPTED JANUARY 1, 2000" AND SUPPLEMENTAL SPECIFICATIONS DATED JANUARY 1, 2001. ALL WORK ON THIS PROJECT SHALL ALSO CONFORM WITH THE SOIL CONSERVATION SERVICE EROSION AND SEDIMENT CONTROL REGULATIONS AND ANY OTHER STATE, FEDERAL, OR LOCAL REGULATIONS APPLICABLE. IN THE EVENT OF CONFLICT BETWEEN ANY OF THESE STANDARDS, SPECIFICATIONS, OR PLANS, THE MOST STRINGENT SHALL GOVERN.

WV2. ALL CONSTRUCTION SHALL COMPLY WITH THE LATEST U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION.

WV3. WHEN WORKING ON WVDOT RIGHT-OF-WAY, ALL TRAFFIC CONTROL, WHETHER PERMANENT OR TEMPORARY, SHALL BE IN ACCORDANCE WITH "TRAFFIC CONTROL FOR STREET AND HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATIONS" DATED NOVEMBER 1994 AS PUBLISHED BY WVDOT.

WV4. DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION, CONTROL AND SAFETY OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY WVDOT.

WV.5 PRIOR TO INITIATION OF WORK, CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL NECESSARY WVDOT LAND USE PERMITS FOR ANY WORK ON WVDOT RIGHT-OF-WAY.

WV.6 IF REQUIRED BY THE LOCAL WVDOT RESIDENCY OFFICE, A PRECONSTRUCTION CONFERENCE MUST BE ARRANGED AND HELD BY THE ENGINEER AND/OR DEVELOPER WITH THE ATTENDANCE OF THE CONTRACTOR, VARIOUS COUNTY AGENCIES, UTILITY COMPANIES AND WVDOT PRIOR TO INITIATION OF WORK.

WV7. CONTRACTOR SHALL NOTIFY THE LOCAL WVDOT RESIDENCY OFFICE WHEN WORK IS TO BEGIN OR CEASE FOR ANY UNDETERMINED LENGTH OF TIME. WVDOT WILL ALSO REQUIRE 48 HOURS NOTICE FOR ANY INSPECTION.

WV.8 THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING ADEQUATE ACCESS TO THE PROJECT FROM THE ADJACENT PUBLIC ROADWAY THROUGH CONSTRUCTION AND MAINTENANCE OF A CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE SOIL CONSERVATION SERVICE EROSION & SEDIMENT CONTROL HANDBOOK. FURTHERMORE, ACCESS TO OTHER PROPERTIES AFFECTED BY THIS PROJECT SHALL BE MAINTAINED THROUGH CONSTRUCTION.

WV9. CONTRACTOR SHALL ENSURE ADEQUATE DRAINAGE IS ACHIEVED AND MAINTAINED ON THE SITE DURING AND AT THE END OF CONSTRUCTION.

WV10. ALL WATER AND SEWER LINES WITHIN EXISTING OR PROPOSED WVDOT RIGHT-OF-WAY ARE TO HAVE MINIMUM 36" COVER AND, WHEN POSSIBLE, TO BE INSTALLED UNDER ROADWAY DRAINAGE FACILITIES.

WV11. ANY UNUSUAL SUBSURFACE CONDITIONS ENCOUNTERED DURING THE COURSE OF CONSTRUCTION SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER AND WVDOT. WORK SHALL CEASE IN THAT VICINITY UNTIL AN ADEQUATE DESIGN CAN BE DETERMINED BY THE ENGINEER AND APPROVED BY WVDOT.

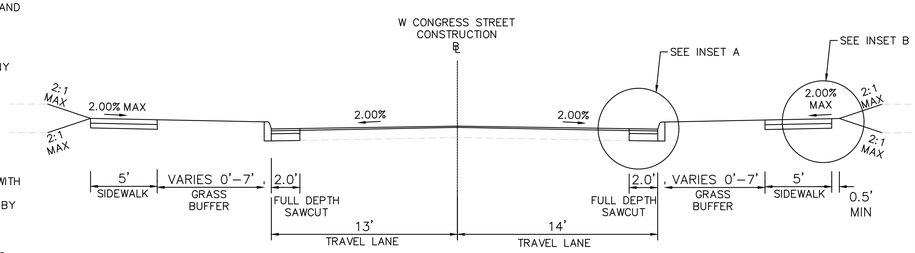
WV12. ALL UNDERCUT AREAS AND BORROW MATERIAL SHALL BE INSPECTED AND APPROVED BY WVDOT INSPECTOR PRIOR TO PLACEMENT OF FILL.

WV13. ALL ROADWAY FILL, BASE, SUBSURFACE MATERIAL AND BACKFILL OF UTILITY/STORM SEWER TRENCHES SHALL BE COMPACTED IN 6" LIFTS TO 98% OF THEORETICAL MAXIMUM DENSITY AS DETERMINED BY AASHTO T-99 METHOD A, WITHIN PLUS OR MINUS 2% OF OPTIMUM MOISTURE FOR THE FULL WIDTH OF ANY DEDICATED STREET RIGHT-OF-WAY. AT THE DIRECTION OF WVDOT INSPECTOR DENSITY TESTS PERFORMED BY A QUALIFIED INDEPENDENT AGENCY SHALL BE CONDUCTED AS REQUIRED IN THE WVDOT ROAD AND BRIDGE SPECIFICATIONS. A COPY OF ALL TESTS SHALL BE SUBMITTED TO WVDOT PRIOR TO FINAL WVDOT APPROVAL.

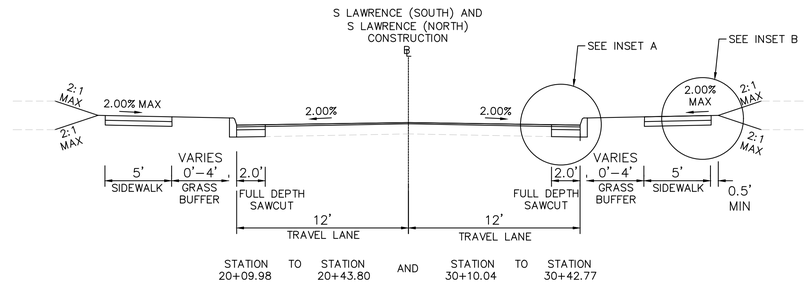
WV16. IF REQUIRED BY THE LOCAL WVDOT RESIDENCY OFFICE, COPIES OF ALL INVOICES FOR MATERIALS WITHIN ANY DEDICATED STREET RIGHT-OF-WAY MUST BE PROVIDED TO THE WVDOT INSPECTOR PRIOR TO ACCEPTANCE OF WORK. UNIT AND TOTAL PRICES MAY BE OBSCURED.

WV17. PRIOR TO ACCEPTANCE BY WVDOT OF ANY STREETS, ANY REQUIRED STREET SIGNAGE AND/OR PAVEMENT MARKINGS MUST BE INSTALLED BY THE DEVELOPER.

TYPICAL SECTIONS

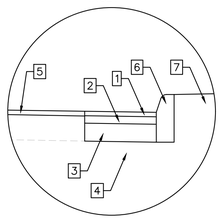


STATION TO STATION
10+73.75 11+71.84

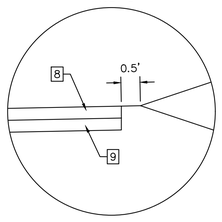


STATION TO STATION AND STATION TO STATION
20+09.98 20+43.80 30+10.04 30+42.77

INSET A



INSET B



LEGEND:

1	1-1/2" BITUMINOUS CONCRETE SURFACE COURSE
2	2-1/2" BITUMINOUS CONCRETE BASE COURSE
3	6" AGGREGATE SUBBASE
4	COMPACTED SUBGRADE
5	VAR. (1"-2") FLEXIBLE PAVEMENT PLANING AND FIXED DEPTH OVERLAY
6	COMBINATION 6" CURB & GUTTER: STD. CG-2 REQ'D
7	STANDARD GRASS BUFFER
8	4" CLASS B CONCRETE SIDEWALK, MAXIMUM 1/4" PER FOOT
9	4" AGGREGATE BASE MATERIAL TYPE I, NO. 21B

W. CONGRESS STREET AND S. LAWRENCE STREET INTERSECTION IMPROVEMENTS
CHARLES TOWN, WEST VIRGINIA

GENERAL NOTES AND TYPICAL SECTIONS

GRAPHIC SCALE IN FEET 0 2.5 5 10

PROJECT 110845003

SHEET NO. 2

PROJECT MANAGER JIM WYSONG, CITY OF CHARLES TOWN
SURVEYED BY, DATE GRS GROUP, FEBRUARY 28, 2022
DESIGN BY MARK PHILLIPS, P.E. (KIMLEY-HORN) (703) 870-3631

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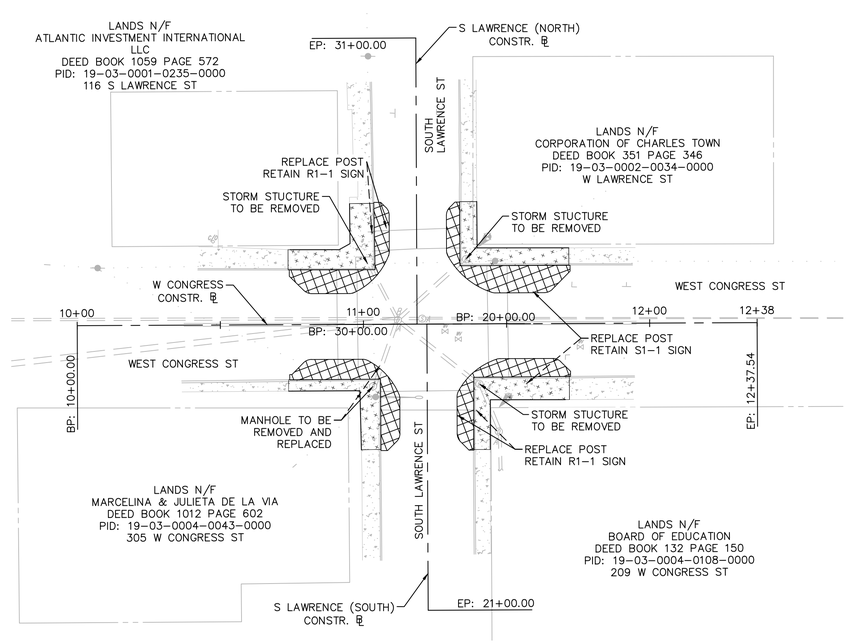
Kimley-Horn
Reston, Virginia
Roadway Engineer

REVISED	STATE	PROJECT	SHEET NO.
	WV	110845003	2A

EXISTING CONDITIONS AND DEMOLITION PLAN



DEMOLITION OF PAVEMENT TOTAL AREA: 1,047 SQ. FT

DEMOLITION OF CONCRETE TOTAL AREA: 1,307 SQ. FT

W. CONGRESS STREET AND S. LAWRENCE STREET INTERSECTION IMPROVEMENTS
CHARLES TOWN, WEST VIRGINIA

EXISTING CONDITIONS AND DEMOLITION PLAN

GRAPHIC SCALE IN FEET 0 12.5 25 50

PROJECT 110845003

SHEET NO. 2A

PROJECT MANAGER JIM WYSONG, CITY OF CHARLES TOWN
SURVEYED BY, DATE GRS GROUP, FEBRUARY 28, 2022
DESIGN BY MARK PHILLIPS, P.E. (KIMLEY-HORN) (703) 870-3631

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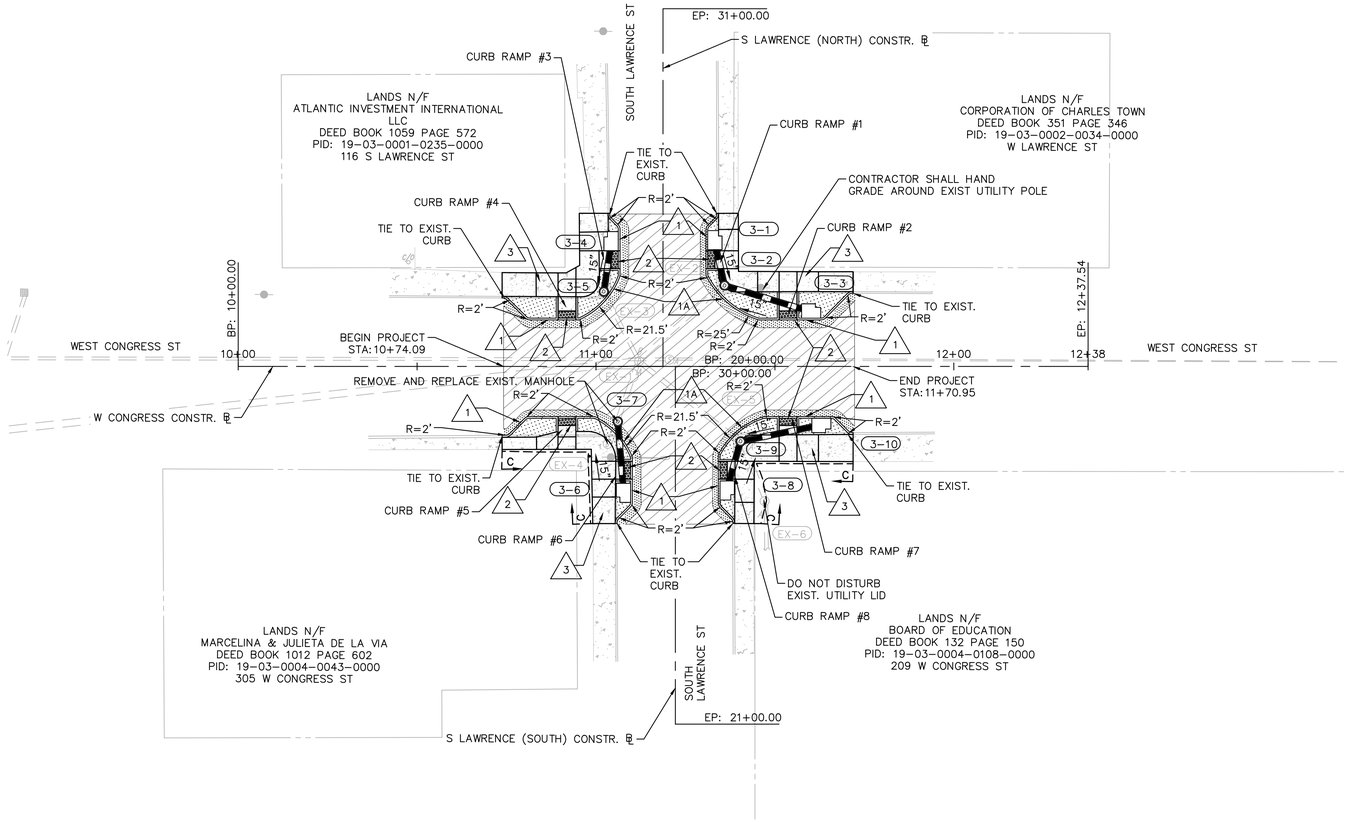
Roadway Engineer

REVISED	STATE	PROJECT	SHEET NO.
	WV	110845003	3

ROADWAY PLAN



LEGEND:

- PROPOSED FULL DEPTH PAVEMENT
- PROPOSED MILL & OVERLAY
- PROPOSED CONCRETE ITEMS
- PROPOSED GRASS BUFFER

- 1 — 6" CURB, STD. CG-2 REQ'D.
- 1A — 6" CURB, RAD. CG-2 REQ'D.
- 2 — DETECTABLE WARNING SURFACE, STD. CG-12, TYPE C REQ'D.
- 3 — HYDR.CEMENT CONC. SIDEWALK REQ'D. W=5.
- C — DENOTES CONSTRUCTION LIMITS IN CUT
- F — DENOTES CONSTRUCTION LIMITS IN FILL

W. CONGRESS STREET AND S. LAWRENCE STREET INTERSECTION IMPROVEMENTS
CHARLES TOWN, WEST VIRGINIA

ROADWAY PLAN

NORTH

GRAPHIC SCALE IN FEET 0 10 20 40

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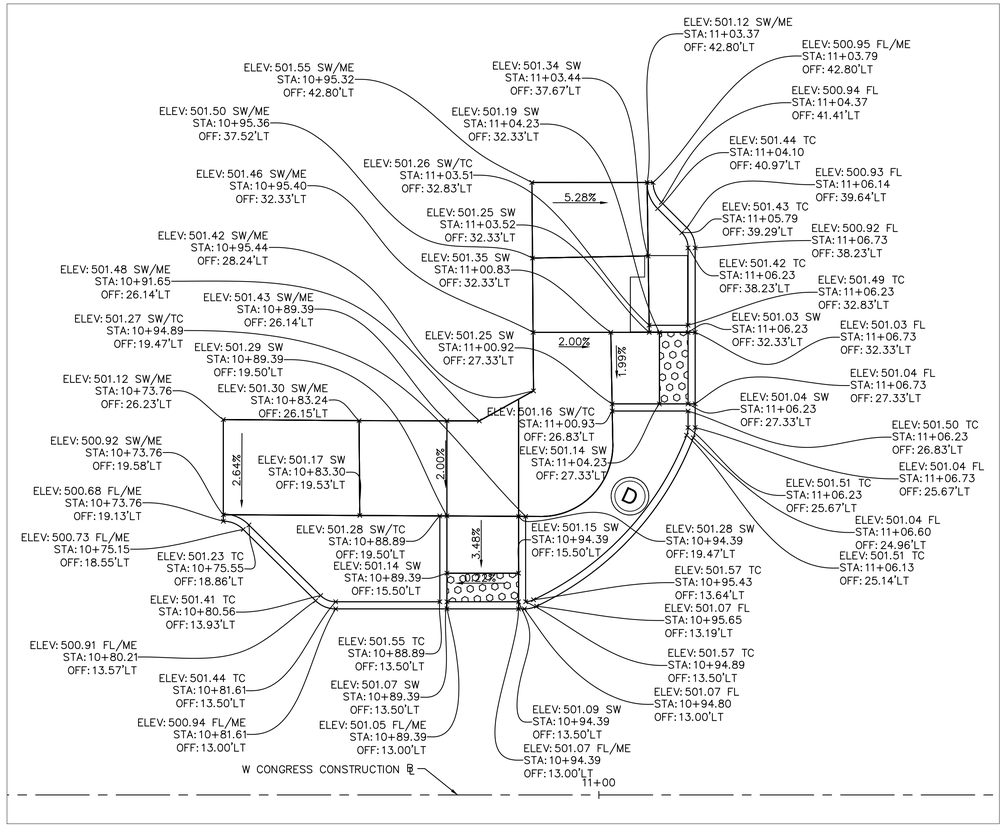
Kimley-Horn
Reston, Virginia
Roadway Engineer

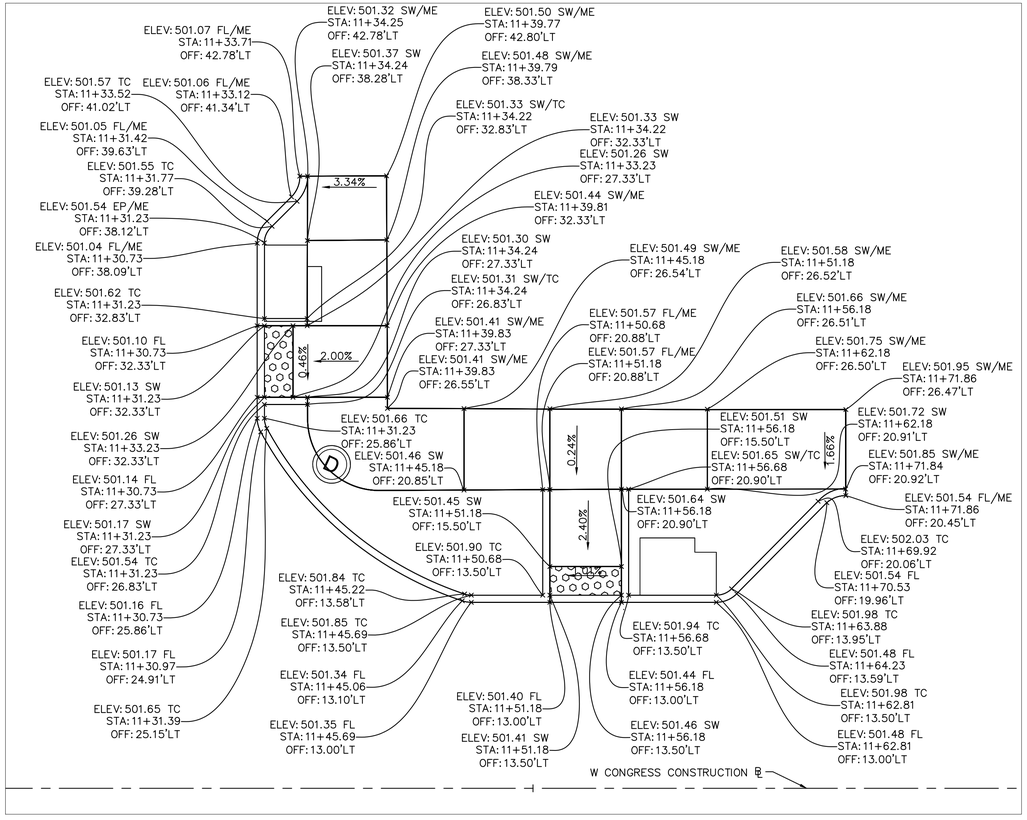
REVISED	STATE	PROJECT	SHEET NO.
	WV	110845003	3A(1)

GRADING DETAIL SHEET

NORTHWEST CORNER



NORTHEAST CORNER



EP: EDGE OF PAVEMENT
FL: FLOWLINE
ME: MATCH EXISTING
SW: SIDEWALK
TC: TOP OF CURB

NORTH

W. CONGRESS STREET AND S. LAWRENCE STREET INTERSECTION IMPROVEMENTS
CHARLES TOWN, WEST VIRGINIA

GRADING DETAIL SHEET

GRAPHIC SCALE IN FEET
0 2.5 5 10

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Kimley-Horn
Reston, Virginia
Roadway Engineer

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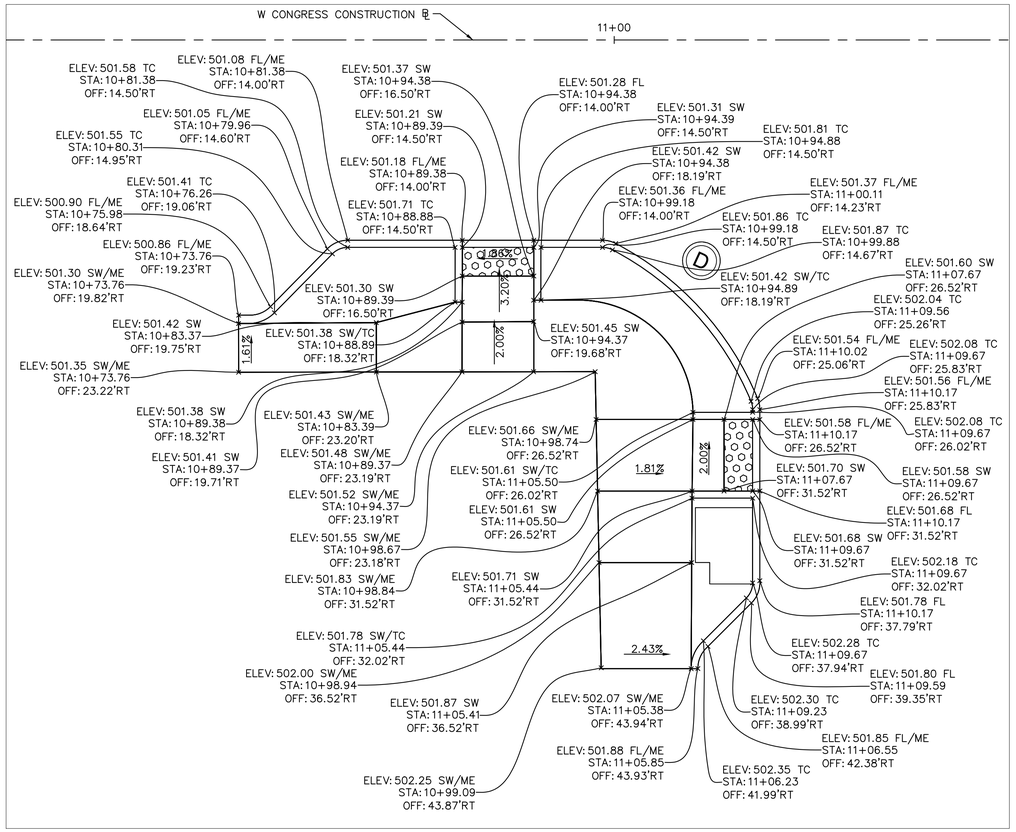
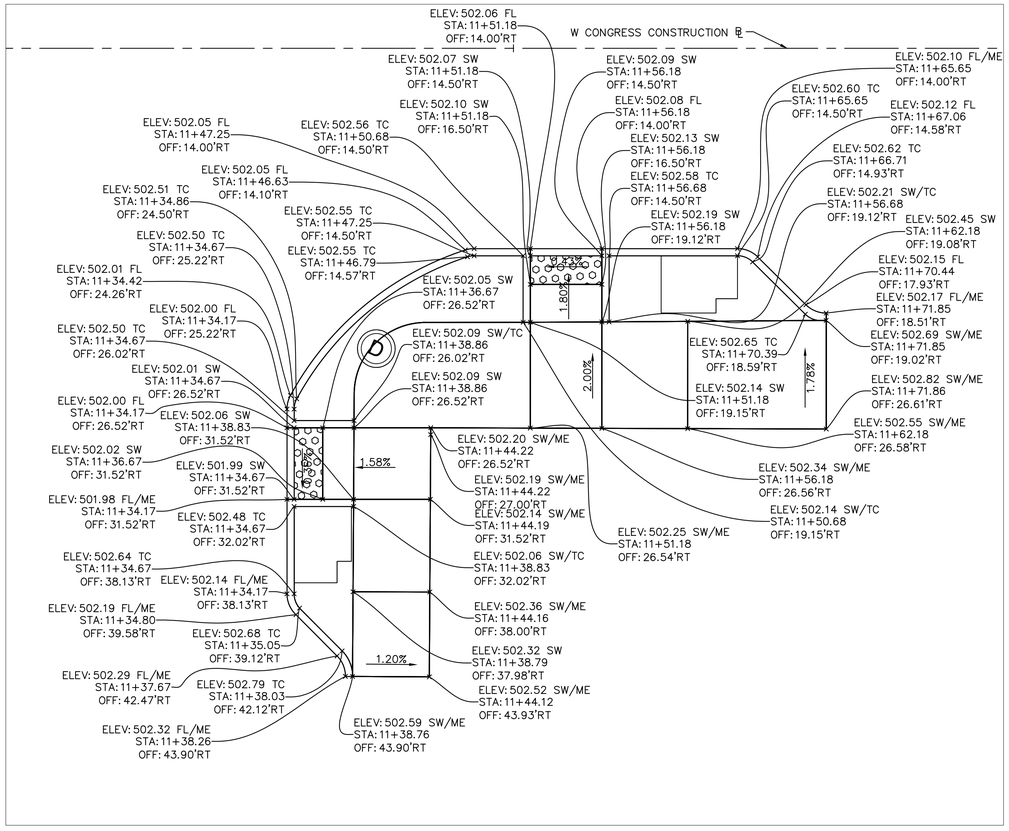
	WV	110845003	3A(2)

GRADING DETAIL SHEET

SOUTHWEST CORNER



SOUTHEAST CORNER



EP: EDGE OF PAVEMENT
FL: FLOWLINE
ME: MATCH EXISTING
SW: SIDEWALK
TC: TOP OF CURB

NORTH

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CHARLES TOWN, WEST VIRGINIA

GRADING DETAIL SHEET

GRAPHIC SCALE IN FEET 0 2.5 5 10

PROJECT	SHEET NO.
110845003	3A(2)

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EROSION & SEDIMENT CONTROL PHASE I

MARK ROSS PHILLIPS REGISTERED 25167 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER

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2023.09.15 09:38:15-04'00'

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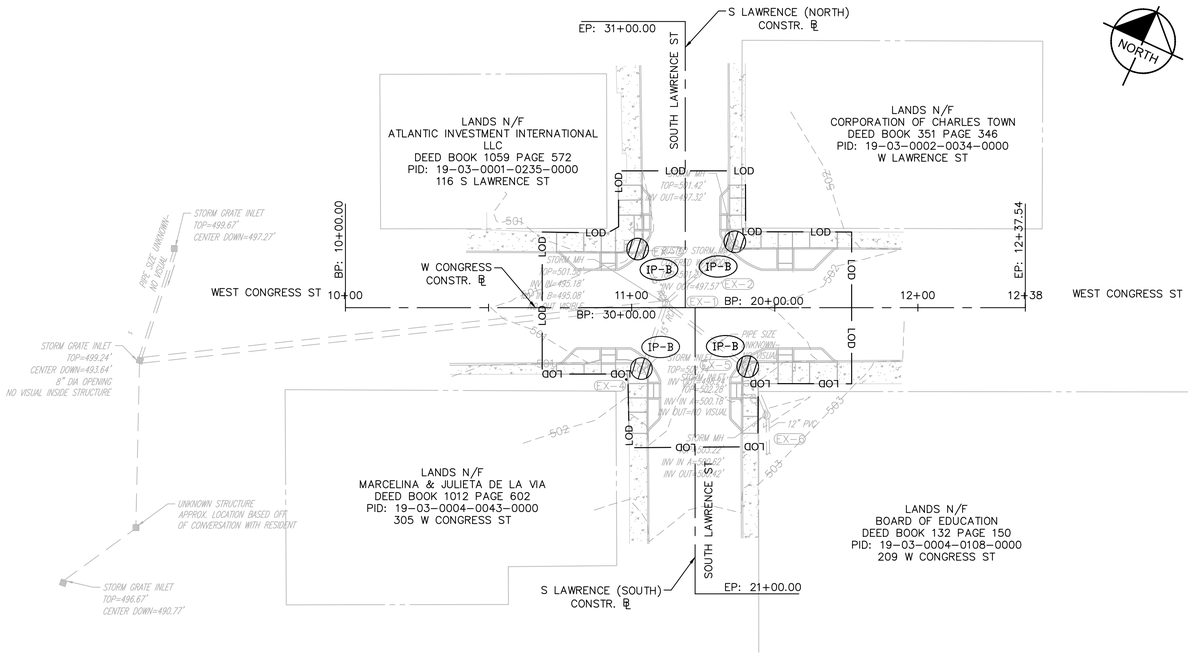


LEGEND:

IP-B	INLET PROTECTION, EC-6, TYPE B
C	DENOTES CONSTRUCTION LIMITS IN CUT
F	DENOTES CONSTRUCTION LIMITS IN FILL
LOD LOD	LIMITS OF DISTURBANCE

W. CONGRESS STREET AND S. LAWRENCE STREET INTERSECTION IMPROVEMENTS
CHARLES TOWN, WEST VIRGINIA

EROSION & SEDIMENT CONTROL PHASE I

GRAPHIC SCALE IN FEET 0 12.5 25 50

PROJECT 110845003

SHEET NO. 3B(1)

PROJECT MANAGER JIM WYSONG, CITY OF CHARLES TOWN
SURVEYED BY, DATE GRS GROUP, FEBRUARY 28, 2022
DESIGN BY MARK PHILLIPS, P.E. (KIMLEY-HORN) (703) 870-3631

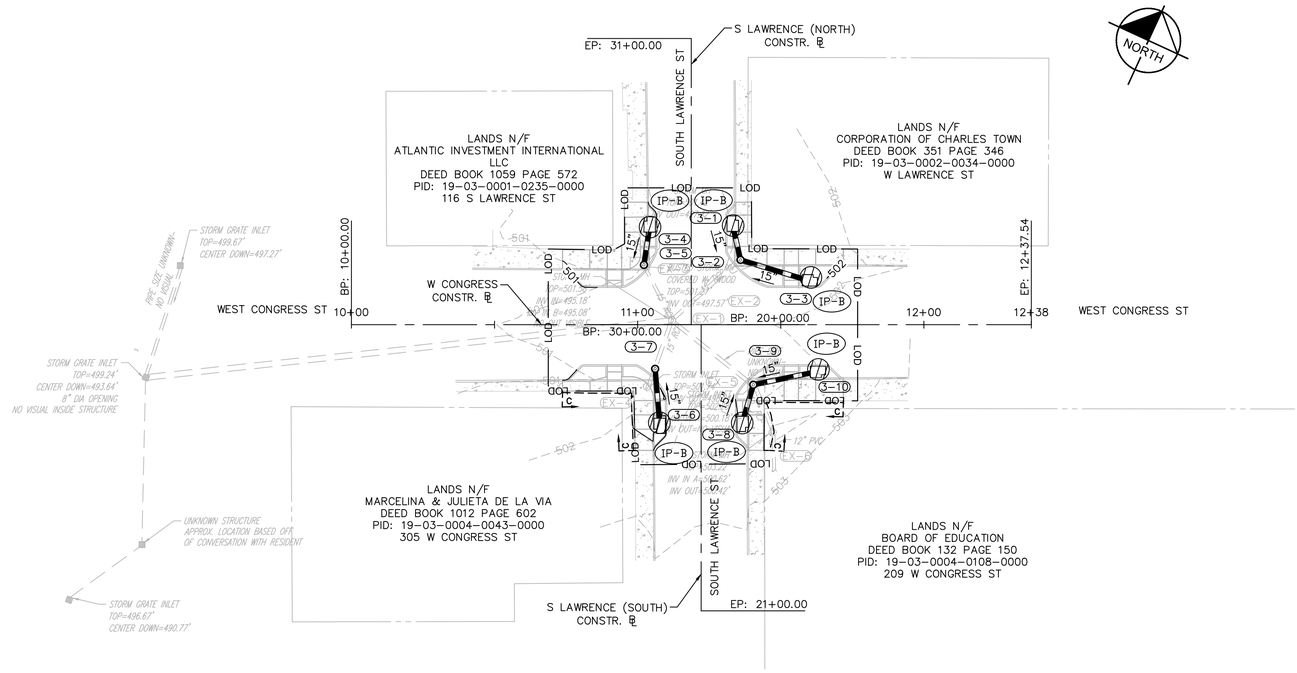
EROSION & SEDIMENT CONTROL PHASE II

MARK ROSS PHILLIPS REGISTERED 25167 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER

Mark R Phillips
2023.09.15 09:38:22-04'00'

Kimley-Horn
Reston, Virginia
Roadway Engineer

REVISED	STATE	PROJECT	SHEET NO.
	WV	110845003	3B(2)



LEGEND:

IP-B	INLET PROTECTION, EC-6, TYPE B
C	DENOTES CONSTRUCTION LIMITS IN CUT
F	DENOTES CONSTRUCTION LIMITS IN FILL
LOD LOD	LIMITS OF DISTURBANCE

W. CONGRESS STREET AND S. LAWRENCE STREET INTERSECTION IMPROVEMENTS
CHARLES TOWN, WEST VIRGINIA

EROSION & SEDIMENT CONTROL PHASE II

GRAPHIC SCALE IN FEET 0 12.5 25 50

PROJECT 110845003

SHEET NO. 3B(2)

PROJECT MANAGER JIM WYSONG, CITY OF CHARLES TOWN
SURVEYED BY, DATE GRS GROUP, FEBRUARY 28, 2022
DESIGN BY MARK PHILLIPS, P.E. (KIMLEY-HORN) (703) 870-3631

DRAINAGE DESCRIPTIONS

MARK ROSS PHILLIPS REGISTERED 25167 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER

Mark R Phillips
2023.09.15 09:38:30-04'00'

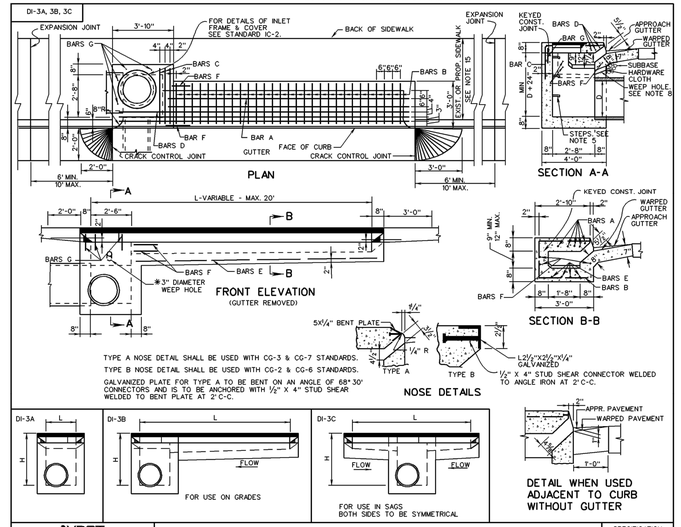
Kimley-Horn
Reston, Virginia
Roadway Engineer

REVISED	STATE	PROJECT	SHEET NO.
	WV	110845003	3C(1)

(3-1)	1 Std. DI-3B Req. L=4', H=3.91', Inv=497.48' Type B Nose, Std. IS-1 Req.	(3-6)	1 Std. DI-3B Req. L=4', H=4.48', Inv=497.58' Type B Nose, Std. IS-1 Req.	(3-9)	1 Std. MH-1 Req. H=3.64', Assumed Std. IS-1 Req.
(3-1)-(3-2)	12' – 15" Conc. Pipe Class IV Req. (Min. 2' Cover) Silt Tight Joint Type Inv(In)=497.48, Inv(Out)=497.42	(3-6)-(3-7)	19' – 15" Conc. Pipe Class IV Req. (Min. 3' Cover) Silt Tight Joint Type Inv(In)=497.58, Inv(Out)=497.49	(EX-1)	STORM MH TOP=501.58' INV IN=495.18' INV IN B=495.08' NO OUT VISIBLE
(3-2)	1 Std. MH-1 Req. H=5.13', Inv=496.38' Std. IS-1 Req.	(3-7)	1 Std. MH-1 Req. H=4.08', Inv=497.39' Std. IS-1 Req.	(EX-2)	BUSTED STORM MH COVERED W/ WOOD TOP=501.27' INV OUT=497.57'
(3-2)-(EX-1)	32' – 15" Conc. Pipe Class IV Req. (Min. 2' Cover) Silt Tight Joint Type Inv(In)=497.32, Inv(Out)=495.18	(3-7)-(EX-1)	18' – 15" Conc. Pipe Class IV Req. (Min. 2' Cover) Silt Tight Joint Type Inv(In)=497.39, Inv(Out)=495.18	(EX-3)	STORM MH TOP=501.42' INV OUT=497.32'
(EX-1)	1 Std. MH Req. H=6.41', Inv=495.18'	(EX-1)	1 Std. MH Req. H=6.41', Inv=495.18' Std. IS-1 Req.	(EX-4)	STORM INLET TOP=501.74' INV OUT=498.24'
(3-3)	1 Std. DI-3B Req. L=4', H=4.33', Inv=497.56' Type B Nose, Std. IS-1 Req.	(3-8)	1 Std. DI-3B Req. L=4', H=3.86', Inv=498.51' Type B Nose, Std. IS-1 Req.	(EX-5)	STORM INLET TOP=502.28' INV IN A=500.18' INV OUT=NO VISUAL
(3-3)-(3-2)	26' – 15" Conc. Pipe Class IV Req. (Min. 3' Cover) Silt Tight Joint Type Inv(In)=497.56, Inv(Out)=497.42	(3-8)-(3-9)	14' – 15" Conc. Pipe Class IV Req. (Min. 2' Cover) Silt Tight Joint Type Inv(In)=498.51, Assumed Inv(Out)=498.44	(EX-6)	STORM MH TOP=503.22' INV IN A=500.62' INV OUT=500.42'
(3-2)	1 Std. MH-1 Req. H=5.13', Inv=496.38' Std. IS-1 Req.	(3-9)	1 Std. MH-1 Req. H=3.64', Assumed Inv=498.34' Std. IS-1 Req. Note: Prior to construction and implementation of structure 3-9 the contractor shall verify the existing culvert invert elevation. Should the elevation differ than what is shown on the plans the contractor shall coordinate with the city and city engineer to identify a solution prior to beginning the work.		
(3-4)	1 Std. DI-3B Req. L=4', H=3.61', Inv=497.74' Type B Nose, Std. IS-1 Req.				
(3-4)-(3-5)	13' – 15" Conc. Pipe Class IV Req. (Min. 2' Cover) Silt Tight Joint Type Inv(In)=497.74, Inv(Out)=497.67	(3-9)-(EX-1)	36' – 15" Conc. Pipe Class IV Req. (Min. 2' Cover) Silt Tight Joint Type Inv(In)=498.34, Inv(Out)=495.18		
(3-5)	1 Std. MH-1 Req. H=3.84', Inv=497.57' Std. IS-1 Req.	(EX-1)	1 Std. MH Req. H=6.41', Inv=495.18' Std. IS-1 Req.		
(3-5)-(EX-1)	22' – 15" Conc. Pipe Class IV Req. (Min. 2' Cover) Silt Tight Joint Type Inv(In)=497.57, Inv(Out)=495.18	(3-10)	1 Std. DI-3B Req. L=4', H=4.01', Inv=498.55' Type B Nose, Std. IS-1 Req.		
(EX-1)	1 Std. MH Req. H=6.41', Inv=495.18' Std. IS-1 Req.	(3-10)-(3-9)	23' – 15" Conc. Pipe Class IV Req. (Min. 2' Cover) Silt Tight Joint Type Inv(In)=498.55, Assumed Inv(Out)=498.44		

2016 ROAD & BRIDGE STANDARDS

DI-3A, 3B, 3C



TYPE A NOSE DETAIL SHALL BE USED WITH CG-3 & CG-7 STANDARDS.
TYPE B NOSE DETAIL SHALL BE USED WITH CG-2 & CG-6 STANDARDS.
GALVANIZED PLATE FOR TYPE A TO BE BENT ON AN ANGLE OF 68°30' CONNECTORS AND IS TO BE ANCHORED WITH ½" X 4" STUD SHEAR WELDED TO BENT PLATE AT 2' C-C.

VDOT ROAD AND BRIDGE STANDARDS — SHEET 1 OF 2 — 104.09 — REVISION DATE 08/10

STANDARD CURB DROP INLET
12" - 30" PIPE: MAXIMUM DEPTH (H) = 8'
VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE 233 302

2016 ROAD & BRIDGE STANDARDS

2016 ROAD & BRIDGE STANDARDS

TABLE OF QUANTITIES

DI-3A, 3B, 3C

REINFORCING STEEL

TYPE	L	AREA OF SLOT	Concrete	BARS A		BARS B		BARS C		BARS D		BARS E		BARS F		BARS G		WEIGHT
	Ft.	Sq. Ft.	Cu. Yds.	No.	Lin. Ft. ✱	No.	Lin. Ft. ✱	No.	Lin. Ft. ✱	No.	Lin. Ft.✱	No.	Lin. Ft.✱	No.	Lin. Ft.✱	No.	Lin. Ft.✱	Lbs.
DI-3A	2'-6"	1.15	2.26	-	-	-	-	1	5'-7"	3	3'-2"	-	-	-	-	6	1'-0"	22
DI-3B	4'	1.83	2.59	5	7'-8"	2	6'-7" to 6'-10"	3	5'-7"	3	3'-2"	4	7'-8"	3	1'-6"	4	1'-0"	64
	6'	2.75	3.02	5	9'-8"	6	6'-7" to 6'-10"	3	5'-7"	3	3'-2"	4	9'-8"	3	1'-6"	4	1'-0"	111
	8'	3.67	3.46	5	11'-8"	10	6'-7" to 6'-10"	3	5'-7"	3	3'-2"	4	11'-8"	3	1'-6"	4	1'-0"	158
	10'	4.58	3.90	5	13'-8"	14	6'-7" to 6'-10"	3	5'-7"	3	3'-2"	4	13'-8"	3	1'-6"	4	1'-0"	204
	12'	5.50	4.34	5	15'-8"	18	6'-7" to 6'-10"	3	5'-7"	3	3'-2"	4	15'-8"	3	1'-6"	4	1'-0"	251
	14'	6.42	4.78	5	17'-8"	22	6'-7" to 6'-10"	3	5'-7"	3	3'-2"	4	17'-8"	3	1'-6"	4	1'-0"	298
	16'	7.33	5.22	5	19'-8"	26	6'-7" to 6'-10"	3	5'-7"	3	3'-2"	4	19'-8"	3	1'-6"	4	1'-0"	345
	18'	8.25	5.66	5	21'-8"	30	6'-7" to 6'-10"	3	5'-7"	3	3'-2"	4	21'-8"	3	1'-6"	4	1'-0"	391
	20'	9.17	6.09	5	23'-8"	34	6'-7" to 6'-10"	3	5'-7"	3	3'-2"	4	23'-8"	3	1'-6"	4	1'-0"	438
DI-3C	6'	2.75	3.01	10	7'-9"	4	6'-7" to 6'-10"	5	5'-7"	3	3'-2"	8	7'-9"	6	1'-6"	2	1'-0"	111
	8'	3.67	3.45	10	9'-9"	8	6'-7" to 6'-10"	5	5'-7"	3	3'-2"	8	9'-9"	6	1'-6"	2	1'-0"	158
	10'	4.58	3.89	10	11'-9"	12	6'-7" to 6'-10"	5	5'-7"	3	3'-2"	8	11'-9"	6	1'-6"	2	1'-0"	205
	12'	5.50	4.33	10	13'-9"	16	6'-7" to 6'-10"	5	5'-7"	3	3'-2"	8	13'-9"	6	1'-6"	2	1'-0"	252
	14'	6.42	4.77	10	15'-9"	20	6'-7" to 6'-10"	5	5'-7"	3	3'-2"	8	15'-9"	6	1'-6"	2	1'-0"	298
	16'	7.33	5.21	10	17'-9"	24	6'-7" to 6'-10"	5	5'-7"	3	3'-2"	8	17'-9"	6	1'-6"	2	1'-0"	345
	18'	8.25	5.65	10	19'-9"	28	6'-7" to 6'-10"	5	5'-7"	3	3'-2"	8	19'-9"	6	1'-6"	2	1'-0"	392
	20'	9.17	6.09	10	21'-9"	32	6'-7" to 6'-10"	5	5'-7"	3	3'-2"	8	21'-9"	6	1'-6"	2	1'-0"	439

NOTES

1. DEPTH OF INLET (H) TO BE SHOWN ON PLANS.
2. THE "H" DIMENSION SHOWN ON THE STANDARDS AND SPECIFIED ON THE PLANS SHALL BE MEASURED FROM THE INVERT OF THE OUTFALL PIPE TO THE TOP OF THE STRUCTURE. PIPE SLOPE SHOWN ON THE STANDARDS IS ONLY FOR ESTIMATING PURPOSES AND IS NOT ACTUAL DIMENSIONS SHALL BE DETERMINED BY THE CONTRACTOR FROM FIELD CONDITIONS.
3. WHEN SPECIFIED ON THE PLANS THE INVERT IS TO BE SHAPED IN ACCORDANCE WITH STANDARD IS-1. THE COST OF FURNISHING AND PLACING ALL MATERIALS INCIDENTAL TO THE SHAPING IS TO BE INCLUDED IN THE BID PRICE FOR THE STRUCTURE.
4. IN THE EVENT THE INVERT OF THE OUTFALL PIPE IS HIGHER THAN THE BOTTOM OF THE STRUCTURE, THE INVERT OF THE STRUCTURE SHALL BE SHAPED WITH CEMENT MORTAR TO PREVENT STANDING OR PONDING OF WATER IN THE STRUCTURE. THE COST OF FURNISHING AND PLACING ALL MATERIALS INCIDENTAL TO THE SHAPING IS TO BE INCLUDED IN THE BID PRICE FOR THE STRUCTURE.
5. STEPS ARE TO BE PROVIDED WHEN H IS 4'-0" OR GREATER. FOR DETAILS SEE STANDARD ST-1.
6. THIS ITEM MAY BE PRECAST OR CAST-IN-PLACE.
7. ✱4 X 8" SMOOTH DOWELS AT APPROXIMATELY 12" C-C TO BE PLACED IN ALL AREAS ADJACENT TO ABUTTING CONCRETE TO PREVENT SETTLEMENT.
8. 3" DIAMETER WEEP HOLE TO BE LOCATED TO DRAIN SUBBASE MATERIAL. WEEP HOLE WITH 12"X18" PLASTIC HARDWARE CLOTH ½" MESH OR GALVANIZED STEEL WIRE MINIMUM WIRE DIAMETER 0.03", NUMBER 4 MESH HARDWARE CLOTH ANCHORED FIRMLY TO THE OUTSIDE OF THE STRUCTURE.
9. ALL REINFORCING STEEL SHALL HAVE A MIN. COVER OF 2".
10. ALL REINFORCING STEEL TO BE CUT CLEAR OF ALL OPENINGS BY 2".
11. CAST-IN PLACE CONCRETE IS TO BE CLASS A3 (3000 PSI). PRECAST CONCRETE IS TO BE 4000 PSI.
12. LENGTH OF SLOT (L) WILL, IN EVERY CASE, BE SHOWN ON PLANS.
13. IF INLET IS CONSTRUCTED IN MEDIAN CURB OR WITH INTEGRAL CURB, GUTTER IS TO BE OMITTED (SEE DETAIL).
14. STANDARD INLETS MAY BE CONSTRUCTED WITH CONCRETE BLOCKS IN ACCORDANCE WITH THE DETAILS SHOWN ON STANDARD DRAWING DI-MB.
15. THIS AREA MAY BE EARTHEN, IN WHICH CASE THE EXPANSION JOINTS WILL APPLY ONLY TO CURB AND GUTTER.
16. CONCRETE QUANTITIES SHOWN ARE FOR DEPTH (H) OF 2'-0". WITHOUT PIPES, THE AMOUNT OF CONCRETE SHOWN MUST BE REDUCED TO OBTAIN TRUE QUANTITIES. FOR INCREASES IN DIFFERENT DEPTHS ADD OR SUBTRACT 0.32 CUBIC YARDS OF CONCRETE FOR EACH FOOT OF DEPTH.
17. LENGTH OF ANGLE IRON AS SHOWN ON SHEET 1 OF 2 IS TO BE L+1⅝" AT 4.10 LBS./FT..
18. ✱ DENOTES LENGTH OF ONE (1) BAR.
19. ALL REINFORCING BARS TO BE ✱5.
20. WHEN INLET IS USED IN 4'-0" MEDIAN, BACK OF INLET IS TO BE SHAPED TO CONFORM TO PROPOSED CURB.

SPECIFICATION REFERENCE 233 302

STANDARD CURB DROP INLET
12" - 30" PIPE: MAXIMUM DEPTH (H) = 8'
VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT ROAD AND BRIDGE STANDARDS — REVISION DATE — SHEET 2 OF 2 — 104.10

2016 ROAD & BRIDGE STANDARDS

W. CONGRESS STREET AND
S. LAWRENCE STREET
INTERSECTION IMPROVEMENTS
CHARLES TOWN, WEST VIRGINIA

DRAINAGE DESCRIPTIONS

PROJECT	SHEET NO.
110845003	3C(1)

PROJECT MANAGER JIM WYSONG, CITY OF CHARLES TOWN
SURVEYED BY, DATE GRS GROUP, FEBRUARY 28, 2022
DESIGN BY MARK PHILLIPS, P.E. (KIMLEY-HORN) (703) 870-3631

STANDARD DETAILS

MARK ROSS PHILLIPS REGISTERED 25167 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER

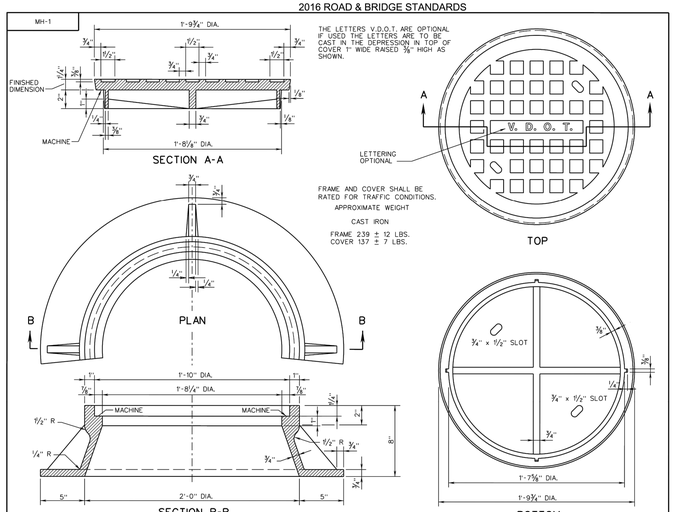
Mark R Phillips
2023.09.15 09:38:39-04'00'

Kimley-Horn
Reston, Virginia
Roadway Engineer

REVISED	STATE	PROJECT	SHEET NO.
	WV	110845003	3C(2)

2016 ROAD & BRIDGE STANDARDS

MH-1

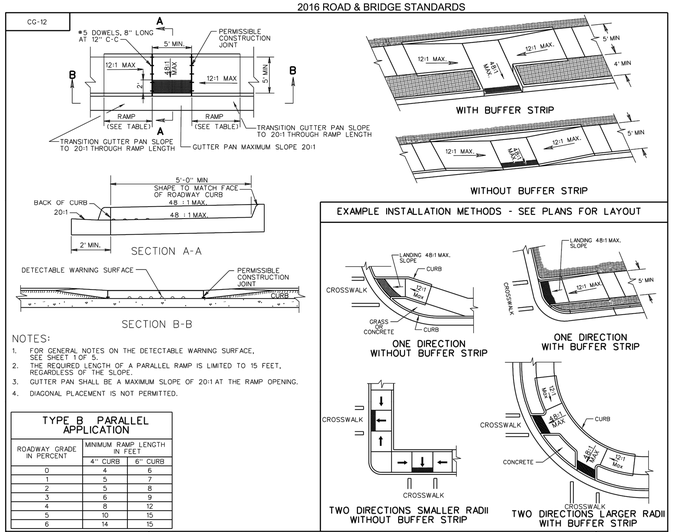


VDOT ROAD AND BRIDGE STANDARDS		A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.	SPECIFICATION REFERENCE
SHEET 2 OF 3	REVISION DATE 04/20	STANDARD MANHOLE FRAME AND COVER VIRGINIA DEPARTMENT OF TRANSPORTATION	224 302
106.02			

2016 ROAD & BRIDGE STANDARDS

2016 ROAD & BRIDGE STANDARDS

CG-12



NOTES:
1. FOR GENERAL NOTES ON THE DETECTABLE WARNING SURFACE, SEE SHEET 1 OF 5.
2. THE REQUIRED LENGTH OF A PARALLEL RAMP IS LIMITED TO 15 FEET, REGARDLESS OF THE SLOPE.
3. GUTTER PAN SHALL BE A MAXIMUM SLOPE OF 20:1 AT THE RAMP OPENING.
4. DIAGONAL PLACEMENT IS NOT PERMITTED.

TYPE B PARALLEL APPLICATION		
ROADWAY GRADE IN PERCENT	MINIMUM RAMP LENGTH IN FEET	
	4" CURB	6" CURB
0	4	6
1	5	7
2	5	8
3	6	9
4	8	12
5	10	15
6	14	15

EXAMPLE INSTALLATION METHODS - SEE PLANS FOR LAYOUT

VDOT ROAD AND BRIDGE STANDARDS		A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.	SPECIFICATION REFERENCE
SHEET 3 OF 5	REVISION DATE 04/19	CG-12 DETECTABLE WARNING SURFACE TYPE B (PARALLEL) APPLICATION VIRGINIA DEPARTMENT OF TRANSPORTATION	105 502 504
204.03			

2016 ROAD & BRIDGE STANDARDS

2016 ROAD & BRIDGE STANDARDS

MH-1

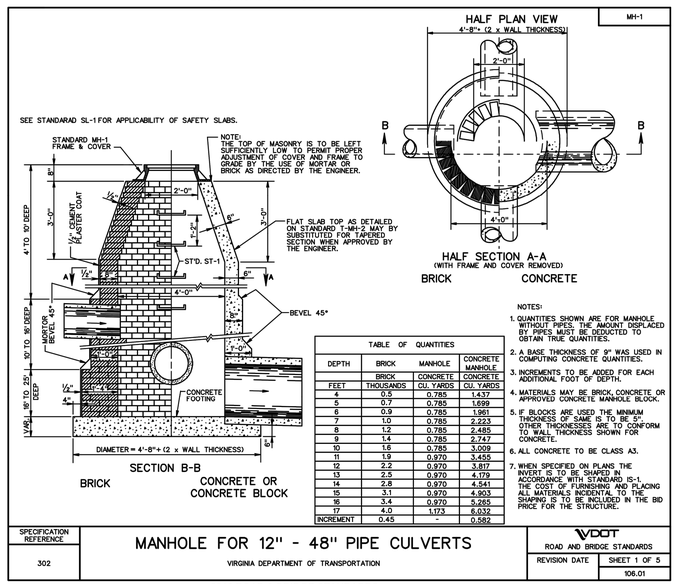


TABLE OF QUANTITIES			
DEPTH	BRICK	MANHOLE	CONCRETE MANHOLE
	BRICK	CONCRETE	CONCRETE
FEET	THOUSANDS	CU. YARDS	CU. YARDS
4	0.5	0.785	1.437
5	0.7	0.785	1.699
6	0.9	0.785	1.961
7	1.0	0.785	2.223
8	1.2	0.785	2.485
9	1.4	0.785	2.747
10	1.6	0.785	3.009
11	1.9	0.970	3.455
12	2.2	0.970	3.817
13	2.5	0.970	4.179
14	2.8	0.970	4.541
15	3.1	0.970	4.903
16	3.4	0.970	5.265
17	4.0	1.173	6.032
INCREMENT	0.45	-	0.582

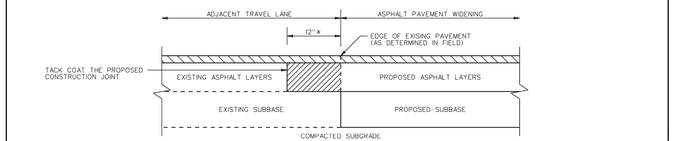
NOTES:
1. QUANTITIES SHOWN ARE FOR MANHOLE WITHOUT PIPES. THE AMOUNT DISPLACED BY PIPES MUST BE DEDUCTED TO OBTAIN TRUE QUANTITIES.
2. A BASE THICKNESS OF 9" WAS USED IN COMPUTING CONCRETE QUANTITIES.
3. INCREMENTS TO BE ADDED FOR EACH ADDITIONAL FOOT OF DEPTH.
4. MATERIALS MAY BE BRICK, CONCRETE OR APPROVED CONCRETE MANHOLE BLOCK.
5. IF BLOCKS ARE USED THE MINIMUM THICKNESS OF SAME IS TO BE 5". OTHER THICKNESSES ARE TO CONFORM TO WALL THICKNESS SHOWN FOR CONCRETE.
6. ALL CONCRETE TO BE CLASS A3.
7. WHEN SPECIFIED ON PLANS THE INVERT IS TO BE SHAPED IN ACCORDANCE WITH STANDARD IS-1. THE COST OF FURNISHING AND PLACING ALL MATERIALS INCIDENTAL TO THE SHAPING IS TO BE INCLUDED IN THE BID PRICE FOR THE STRUCTURE.

SPECIFICATION REFERENCE	MANHOLE FOR 12" - 48" PIPE CULVERTS VIRGINIA DEPARTMENT OF TRANSPORTATION	VDOT ROAD AND BRIDGE STANDARDS
302		REVISION DATE — SHEET 1 OF 5 106.01

2016 ROAD & BRIDGE STANDARDS

2016 ROAD & BRIDGE STANDARDS

WP-2



REMOVE EXISTING ASPHALT LAYERS TO EXISTING SUBBASE AND REPLACE WITH PROPOSED ASPHALT WIDENING LAYERS
PROPOSED MINIMUM 1½ INCH THICK ASPHALT SURFACE COURSE (SEE NOTE 5)
× MINIMUM 12 INCHES, OR GREATER AS NECESSARY TO ABUT THE FULL THICKNESS OF EXISTING ASPHALT LAYERS AS DETERMINED BY CORES (SEE NOTE 3)

NOTES:
1. ASPHALT PAVEMENT WIDENING SHALL HAVE A PAVEMENT DESIGN IN ACCORDANCE WITH CURRENT VDOT PROCEDURES AND BE APPROVED BY THE ENGINEER.
2. THE PAVEMENT DESIGN FOR ASPHALT PAVEMENT WIDENING SHALL MEET OR EXCEED THE DEPTHS AND TYPES OF THE LAYERS OF EXISTING PAVEMENT. SUBSURFACE DRAINAGE OF THE EXISTING AND PROPOSED PAVEMENT SHALL BE ADDRESSED IN THE PAVEMENT DESIGN.
3. A MINIMUM OF THREE CORES SHALL BE TAKEN ALONG THE CENTER OF THE ADJACENT TRAVEL LANE TO DETERMINE THE TYPE AND THICKNESS OF EXISTING PAVEMENT LAYERS. THESE CORES SHALL BE SPACED NO MORE THAN 500 FEET APART.
4. THE ADJACENT TRAVEL LANE SHALL BE MILLED A MINIMUM DEPTH OF 1½ INCHES AND REPLACED WITH AN ASPHALT SURFACE COURSE TO MATCH THE PROPOSED PAVEMENT WIDENING SURFACE COURSE, UNLESS WAIVED BY THE ENGINEER.
5. THE ENGINEER MAY REQUIRE THE MILLING DEPTH OF THE EXISTING PAVEMENT TO BE ADJUSTED TO ACHIEVE AN ACCEPTABLE PAVEMENT CROSS-SLOPE AND EFFECTIVE SURFACE DRAINAGE.
6. EXISTING PAVEMENT MARKINGS AND MARKERS WITHIN THE PROJECT LIMITS SHALL BE RESTORED SUBJECT TO THE APPROVAL OF THE ENGINEER.
7. FINAL TRANSVERSE PAVEMENT TIE-IN SHALL CONFORM TO THE REQUIREMENTS OF SECTION 315 OF THE SPECIFICATIONS EXCEPT THAT ALL JOINTS AT TIE-IN LOCATIONS SHALL BE TESTED USING A 10 FOOT STRAIGHTEDGE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 315 OF THE SPECIFICATIONS.

VDOT ROAD AND BRIDGE STANDARDS		ASPHALT PAVEMENT WIDENING FOR WIDENING SUBJECT TO TRAFFIC VIRGINIA DEPARTMENT OF TRANSPORTATION	SPECIFICATION REFERENCE
SHEET 1 OF 1	REVISION DATE		315
303.02			

2016 ROAD & BRIDGE STANDARDS

W. CONGRESS STREET AND S. LAWRENCE STREET INTERSECTION IMPROVEMENTS
CHARLES TOWN, WEST VIRGINIA

STANDARD DETAILS

	PROJECT	SHEET NO.
	110845003	3C(2)

PROJECT MANAGER JIM WYSONG, CITY OF CHARLES TOWN
SURVEYED BY, DATE GRS GROUP, FEBRUARY 28, 2022
DESIGN BY MARK PHILLIPS, P.E. (KIMLEY-HORN) (703) 870-3631

STANDARD DETAILS

MARK ROSS PHILLIPS REGISTERED 25167 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER

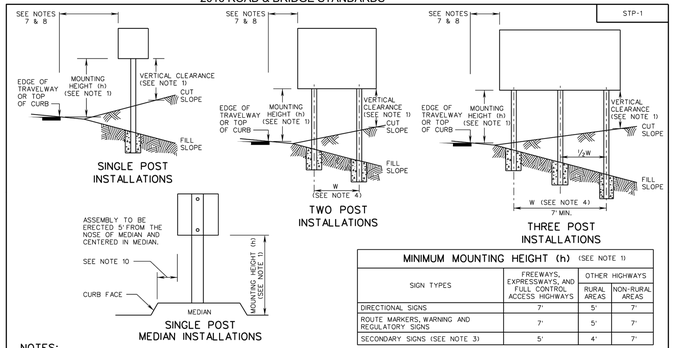
Mark R Phillips
2023.09.15 09:38:48-04'00'

Kimley-Horn
Reston, Virginia
Roadway Engineer

REVISED	STATE	PROJECT	SHEET NO.
	WV	110845003	3C(3)

2016 ROAD & BRIDGE STANDARDS

STP-1



MINIMUM MOUNTING HEIGHT (h) (SEE NOTE 1)			
SIGN TYPES	FREEWAYS, EXPRESSWAYS, AND FULL CONTROL ACCESS HIGHWAYS	OTHER HIGHWAYS	
		RURAL AREAS	NON-RURAL AREAS
DIRECTIONAL SIGNS	7'	5'	7'
ROUTE MARKERS, WARNING AND REGULATORY SIGNS	7'	5'	7'
SECONDARY SIGNS (SEE NOTE 3)	5'	4'	7'

NOTES:

1. FOR ALL SIGNS EXCEPT STREET NAME SIGNS:
   A. MINIMUM MOUNTING HEIGHT (h) SHALL BE IN ACCORDANCE WITH THE "MINIMUM MOUNTING HEIGHT" TABLE ON THIS SHEET. MOUNTING HEIGHT IS MEASURED FROM THE ROADWAY ELEVATION AT THE EDGE OF THE TRAVEL WAY TO THE BOTTOM OF THE SIGN PANEL.
   B. MAXIMUM MOUNTING HEIGHT (h) FOR THE BOTTOM-MOST SIGN PANEL(S) SHALL BE 8 FEET, EXCEPT WHEN NECESSARY TO ACHIEVE MINIMUM VERTICAL CLEARANCE BENEATH SIGN PANEL AS PER NOTE 1C.
   C. MINIMUM VERTICAL CLEARANCE (DISTANCE BETWEEN BOTTOM OF SIGN PANEL AND FINISHED GRADE BENEATH THE PANEL) SHALL BE 7 FEET FOR ANY PORTION OF THE SIGN WITHIN THE CLEAR ZONE. THIS MINIMUM VERTICAL CLEARANCE MAY BE REDUCED TO 5 FEET FOR EITHER OF THE FOLLOWING CONDITIONS:
      - WHEN SIGNS OR PORTIONS OF SIGNS ARE LOCATED MORE THAN 10 FEET UP A CUT SLOPE GREATER THAN 3:1, OR
      - WHEN THE SIGN IS LOCATED AT LEAST THE MINIMUM DISTANCE BEHIND CURB, BARRIER, OR GUARDRAIL AS PER NOTES 7 AND 8.
2. MOUNTING HEIGHT (h) FOR STREET NAME SIGNS SHALL BE BETWEEN 8'-6" AND 9'-0".
3. A SECONDARY SIGN IS CONSIDERED TO BE A SIGN MOUNTED BELOW ANOTHER SIGN, EXCEPT A ROUTE MARKER WITH AN AUXILIARY PLATE IS CONSIDERED TO BE A SINGLE SIGN. A SECONDARY SIGN SHALL NOT BE MOUNTED LOWER THAN 7 FEET ABOVE A PEDESTRIAN SIDEWALK OR PATHWAY IF IT WILL PROJECT INTO THE PEDESTRIAN FACILITY.
4. W = (0.60) X (SIGN PANEL WIDTH)
5. SQUARE TUBE SIGN POSTS REQUIRING A BREAKAWAY SUPPORT SYSTEM SHALL BE AN FHWA APPROVED BREAKAWAY SUPPORT SYSTEM CONFORMING TO AASHTO'S STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS.
6. FOR SIGNS LOCATED IN AREAS WHERE PEDESTRIAN MOVEMENTS ARE LIKELY TO OCCUR OR ON-STREET PARKING IS PERMITTED, THE HEIGHT FROM THE LOWEST PORTION OF THE SIGN PANEL TO THE FINISHED SURFACE SHALL HAVE A MINIMUM CLEARANCE OF 7 FEET.
7. THE LATERAL CLEARANCE TO THE SIGN PANEL SHALL BE A MINIMUM OF 2 FEET FROM THE FACE OF CURB OR 4 FEET FROM FACE OF BARRIER, IF PRESENT.
8. UNLESS OTHERWISE APPROVED BY THE ENGINEER, SIGNS PLACED BEHIND GUARDRAIL SHALL BE LOCATED SUCH THAT THE NEAR SIDE EDGE OF THE SIGN PANEL IS OUTSIDE OF THE GUARDRAIL DEFLECTION DISTANCE.
9. FOR SIGNS AT INTERCHANGE EXIT RAMPS, REFER TO STANDARD ISD-1.
10. 2' MINIMUM FOR MEDIANS OVER 10'-IN WIDTH. 12" MINIMUM FOR MEDIANS 10'-OR LESS IN WIDTH UNLESS SHOWN OTHERWISE IN THE CONTRACT DOCUMENTS.

SPECIFICATION REFERENCE	A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE. SQUARE TUBE SIGN POST VIRGINIA DEPARTMENT OF TRANSPORTATION	VDOT ROAD AND BRIDGE STANDARDS
700		REVISION DATE 08/17 · SHEET 1 OF 12 · 1321.10

2016 ROAD & BRIDGE STANDARDS

2016 ROAD & BRIDGE STANDARDS

STP-1

TABLE 1
FOR HAMPTON ROADS DISTRICT (SEE NOTE 5)

SIZE OF POST	CENTROID (FT.)	MAXIMUM AREA (TOTAL OF SIGN PANELS) (FT2) SINGLE-POST	TWO-POST	THREE-POST	COMMENTS
2 INCH 14 GA.	8	5.8			TYPE A, TYPE D, OR TYPE F FOUNDATION AS SPECIFIED IN THE CONTRACT DOCUMENTS.
	9	5.1			
	10	4.6			
	11	4.2			
	12	3.8			
	13	3.5			
	14	3.3			
2½ INCH 12 GA.	8	11.8	23.6		SINGLE POST: TYPE A OR TYPE E FOUNDATION. MULTI-POST: TYPE B OR TYPE C FOUNDATION, AS SPECIFIED IN THE CONTRACT DOCUMENTS.
	9	10.5	21.0		
	10	9.4	18.8		
	11	8.6	17.2		
	12	7.8	15.6		
	13	7.2	14.5		
	14	6.7	13.5		
2½ INCH 10 GA.	8	13.6	27.2	40.8	TYPE B OR TYPE C FOUNDATION AS SPECIFIED IN THE CONTRACT DOCUMENTS.
	9	12.1	24.2	36.3	
	10	10.9	21.8	32.7	
	11	9.9	19.8	29.7	
	12	9.1	18.2	27.3	
	13	8.4	16.8	25.2	
	14	7.8	15.6	23.4	
2½ INCH 10 GA. WITH 2⅞ INCH 10 GA. INNER POST (SEE NOTE 1)	8	23.9	47.8	71.7	TYPE B OR TYPE C FOUNDATION AS SPECIFIED IN THE CONTRACT DOCUMENTS.
	9	21.2	42.4	63.6	
	10	19.1	38.2	57.3	
	11	17.4	34.8	52.2	
	12	15.9	31.8	47.7	
	13	14.7	29.4	44.1	
	14	13.6	27.2	40.8	

NOTES:

1. THE INNER POST SHALL BE 6 FEET IN LENGTH.
2. CENTROID SHALL BE DETERMINED IN ACCORDANCE WITH PCS-1.
3. MINIMUM COLD FORMED YIELD STRENGTH SHALL BE:
   14 GA. AND 12 GA. - 60 KSI
   10 GA. - 55 KSI
4. FOLLOW SIGN BRACING DETAILS (SEE SHEET 11 OF 12) FOR MAXIMUM SIGN PANEL WIDTHS AND SIGN BRACING SPACING.
5. TABLE 1 SHALL BE USED FOR THE HAMPTON ROADS DISTRICT, EXCEPT THE CITY OF EMPORIA AND COUNTIES OF GREENSVILLE, SUSSEX, AND SOUTHAMPTON SHALL USE TABLE 2.

VDOT ROAD AND BRIDGE STANDARDS	A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE. SQUARE TUBE SIGN POST VIRGINIA DEPARTMENT OF TRANSPORTATION	SPECIFICATION REFERENCE
SHEET 2 OF 12 · REVISION DATE 01/15 · 1321.11		700

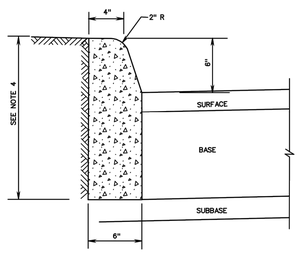
2016 ROAD & BRIDGE STANDARDS

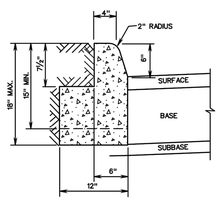
2016 ROAD & BRIDGE STANDARDS

CG-2

NOTES:

1. THIS ITEM MAY BE PRECAST OR CAST IN PLACE.
2. CONCRETE TO BE CLASS A3 IF CAST IN PLACE, 4000 PSI IF PRECAST.
3. CURB HAVING A RADIUS OF 300 FEET OR LESS (ALONG FACE OF CURB) WILL BE PAID FOR AS RADIAL CURB.
4. THE DEPTH OF CURB MAY BE REDUCED AS MUCH AS 3" (15" DEPTH) OR INCREASED AS MUCH AS 3" (21" DEPTH) IN ORDER THAT THE BOTTOM OF CURB WILL COINCIDE WITH THE TOP OF A COURSE OF THE PAVEMENT SUBSTRUCTURE. OTHERWISE, THE DEPTH IS TO BE 18" AS SHOWN. NO ADJUSTMENT IN THE PRICE BID IS TO BE MADE FOR A DECREASE OR AN INCREASE IN DEPTH.
5. CG-2 IS TO BE USED ON ROADWAYS MEETING THE REQUIREMENTS FOR CG-6 AS SHOWN IN APPENDIX A OF THE VDOT ROAD DESIGN MANUAL, IN THE SECTION ON GS URBAN STANDARDS.





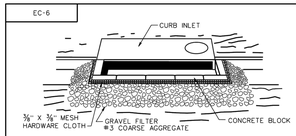
ACCEPTABLE ALTERNATIVE IF CURB IS EXTRUDED

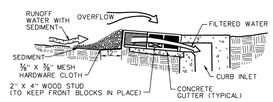
SPECIFICATION REFERENCE	STANDARD 6" CURB VIRGINIA DEPARTMENT OF TRANSPORTATION	VDOT ROAD AND BRIDGE STANDARDS
105 502		REVISION DATE · SHEET 1 OF 1 · 201.01

2016 ROAD & BRIDGE STANDARDS

2016 ROAD & BRIDGE STANDARDS

EC-6





SECTION VIEW

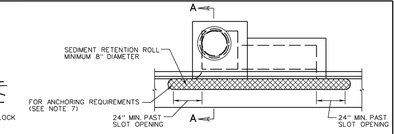
SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE AN OVERFLOW CAPABILITY IS NECESSARY TO PREVENT EXCESSIVE PONDING IN FRONT OF THE STRUCTURE.

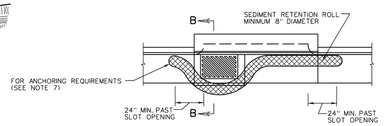
INLET PROTECTION (TYPE B)

NOTES:

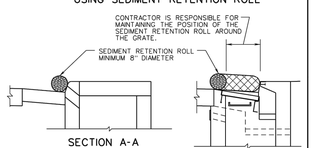
1. INLET PROTECTION USING SEDIMENT RETENTION ROLLS SHALL BE CONSTRUCTED WITH COMPOST FILTER SOCKS OR SEDIMENT TUBES.
2. ONLY SEDIMENT RETENTION ROLL PRODUCTS WITH A MINIMUM 8" DIAMETER LISTED ON THE VDOT APPROVED PRODUCTS LIST MAY BE USED FOR TYPE B INLET PROTECTION.
3. SEDIMENT SHALL BE REMOVED FROM INLET PROTECTION WHEN IT HAS ACCUMULATED TO ONE-HALF THE EXPOSED HEIGHT OF THE STRUCTURE AND PAID FOR AS SEDIMENT REMOVAL PER CUBIC YARD.
4. STACKING SEDIMENT RETENTION ROLLS TO MEET THE REQUIRED INLET PROTECTION HEIGHT IS NOT PERMITTED.
5. SEDIMENT RETENTION ROLLS AND STAKES USED FOR INLET PROTECTION APPLICATIONS SHALL BE REMOVED AFTER STABILIZATION IS COMPLETE.
6. GEOTEXTILE PRODUCTS DESIGNED TO BE INSERTED INTO OR ANCHORED TO GRATES OR SLOTS OF CURB INLETS, AND ARE FOUND ON VDOT'S EC-6 APPROVED PRODUCTS LIST, MAY BE SUBSTITUTED FOR THE DROP INLET PROTECTION DEVICES DETAILED IN THIS STANDARD.
7. SEDIMENT RETENTION ROLL WILL BE ANCHORED WITH A 50 POUND SANDBAG ON EACH END OR IN ACCORDANCE WITH MANUFACTURERS INSTALLATION INSTRUCTIONS.



CURB INLETS WITHOUT GRATE
USING SEDIMENT RETENTION ROLL



CURB INLETS WITH GRATE
USING SEDIMENT RETENTION ROLL



SECTION A-A

SECTION B-B

INLET PROTECTION (TYPE B)
CURB INLETS USING SEDIMENT RETENTION ROLL

INLET PROTECTION (TYPE B), ITEM CODE 27461 EACH

VDOT ROAD AND BRIDGE STANDARDS	A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE. INLET PROTECTION (TYPE B) VIRGINIA DEPARTMENT OF TRANSPORTATION	SPECIFICATION REFERENCE
SHEET 2 OF 3 · REVISION DATE 04/19 · 113.10		107 242 244 303

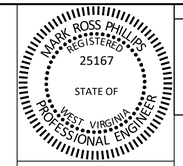
2016 ROAD & BRIDGE STANDARDS

W. CONGRESS STREET AND S. LAWRENCE STREET INTERSECTION IMPROVEMENTS
CHARLES TOWN, WEST VIRGINIA

STANDARD DETAILS

	PROJECT	SHEET NO.
	110845003	3C(3)

PROJECT MANAGER JIM WYSONG, CITY OF CHARLES TOWN
SURVEYED BY, DATE GRS GROUP, FEBRUARY 28, 2022
DESIGN BY MARK PHILLIPS, P.E. (KIMLEY-HORN) (703) 870-3631



Mark R Phillips
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Kimley-Horn
Reston, Virginia
Roadway Engineer

REVISED	STATE	PROJECT	SHEET NO.
	WV	110845003	3C(4)

DRAINAGE CALCULATIONS

Site Information

final results

Post-Development Project (Treatment Volume and Loads)

Enter Total Disturbed Area *(acres)* → 0.07

Maximum reduction required:	*10%*
The site's net increase in impervious cover (acres) is:	*0*
Post-Development TP Load Reduction for Site (lb/yr):	*-0.02*

Check:
BMP Design Specifications List: 2013 Draft Stds & Specs
Linear project? No
Land cover areas entered correctly? ✓
Total disturbed area entered? ✓

TP LOAD REDUCTION NOT REQUIRED

Pre-ReDevelopment Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed forest/open space					0.00
Managed Turf (acres) -- disturbed, graded for yards or other turf to be					0.00
Impervious Cover (acres)				0.07	0.07
					0.07

Post-Development Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested				0.02	0.02 *
Managed Turf (acres) -- disturbed, graded for yards or other turf to be					0.00
Impervious Cover (acres)				0.05	0.05
Area Check	OK.	OK.	OK.	OK.	0.07

** Forest/Open Space areas must be protected in accordance with the Virginia Runoff Reduction Method*

Constants

Annual Rainfall (inches)	43
Target Rainfall Event (inches)	1.00
Total Phosphorus (TP) EMC (mg/L)	0.26
Total Nitrogen (TN) EMC (mg/L)	1.86
Target TP Load (lb/acre/yr)	0.41
Pj (unitless correction factor)	0.90

Runoff Coefficients (Rv)

	A Soils	B Soils	C Soils	D Soils
Forest/Open Space	0.02	0.03	0.04	0.05
Managed Turf	0.15	0.20	0.22	0.25
Impervious Cover	0.95	0.95	0.95	0.95

LAND COVER SUMMARY -- PRE-REDEVELOPMENT

Land Cover Summary-Pre		
Pre-ReDevelopment	**Listed**	**Adjusted[1]**
Forest/Open Space Cover (acres)	0.00	0.00
Weighted Rv(forest)	0.00	0.00
% Forest	0%	0%
Managed Turf Cover (acres)	0.00	0.00
Weighted Rv(turf)	0.00	0.00
% Managed Turf	0%	0%
Impervious Cover (acres)	0.07	0.07
Rv(impervious)	0.95	0.95
% Impervious	100%	100%
Total Site Area (acres)	**0.07**	**0.07**
Site Rv	**0.95**	**0.95**

LAND COVER SUMMARY -- POST DEVELOPMENT

Land Cover Summary-Post (Final)	
Post ReDev. & New Impervious	
Forest/Open Space Cover (acres)	0.02
Weighted Rv(forest)	0.05
% Forest	27%
Managed Turf Cover (acres)	0.00
Weighted Rv (turf)	0.00
% Managed Turf	0%
Impervious Cover (acres)	0.05
Rv(impervious)	0.95
% Impervious	73%
Final Site Area (acres)	**0.07**
Final Post Dev Site Rv	**0.71**

Land Cover Summary-Post	
Post-ReDevelopment	
Forest/Open Space Cover (acres)	0.02
Weighted Rv(forest)	0.05
% Forest	27%
Managed Turf Cover (acres)	0.00
Weighted Rv (turf)	0.00
% Managed Turf	0%
ReDev. Impervious Cover (acres)	0.05
Rv(impervious)	0.95
% Impervious	73%
Total ReDev. Site Area (acres)	**0.07**
ReDev Site Rv	**0.71**

Land Cover Summary-Post	
Post-Development New Impervious	
New Impervious Cover (acres)	0.00
Rv(impervious)	--

Treatment Volume and Nutrient Load

Pre-ReDevelopment Treatment Volume (acre-ft)	0.0053	0.0053	
Pre-ReDevelopment Treatment Volume (cubic feet)	231	231	
Pre-ReDevelopment TP Load (lb/yr)	**0.15**	**0.15**	
Pre-ReDevelopment TP Load per acre (lb/acre/yr)	2.17	2.17	
Baseline TP Load (lb/yr) (**0.41 lbs/acre/yr** applied to pre-redevelopment area excluding pervious land proposed for new impervious cover)		*0.03*	

Final Post-Development Treatment Volume (acre-ft)	0.0039	**Post-ReDevelopment Treatment Volume (acre-ft)**	0.0039	**Post-Development Treatment Volume (acre-ft)**	--	
Final Post-Development Treatment Volume (cubic feet)	172	**Post-ReDevelopment Treatment Volume (cubic feet)**	172	**Post-Development Treatment Volume (cubic feet)**	--	
Final Post-Development TP Load (lb/yr)	**0.11**	**Post-ReDevelopment Load (TP) (lb/yr)***	**0.11**	**Post-Development TP Load (lb/yr)**	--	
Final Post-Development TP Load per acre **(lb/acre/yr)**	1.61	Post-ReDevelopment TP Load per acre **(lb/acre/yr)**	1.61			
		Max. Reduction Required (Below Pre-ReDevelopment Load)	**10%**			
		TP Load Reduction Required for Redeveloped Area (lb/yr)	**-0.02**	**TP Load Reduction Required for New Impervious Area (lb/yr)**	**0**	

[1] *Adjusted Land Cover Summary:*
Pre ReDevelopment land cover minus pervious land cover (forest/open space or managed turf) acreage proposed for new impervious cover.

Adjusted total acreage is consistent with Post-ReDevelopment acreage (minus acreage of new impervious cover).

Column I shows load reduction requirement for new impervious cover (based on new development load limit, 0.41 lbs/acre/year).

Post-Development Requirement for Site Area

TP Load Reduction Required (lb/yr)	**-0.02**	**	*TP LOAD REDUCTION NOT REQUIRED*

Nitrogen Loads (Informational Purposes Only)

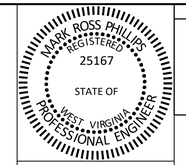
Pre-ReDevelopment TN Load (lb/yr)	1.04	Final Post-Development TN Load (Post-ReDevelopment & New Impervious) (lb/yr)	0.77

W. CONGRESS STREET AND
S. LAWRENCE STREET
INTERSECTION IMPROVEMENTS
CHARLES TOWN, WEST VIRGINIA

DRAINAGE CALCULATIONS

	PROJECT	SHEET NO.
	110845003	3C(4)

PROJECT MANAGER JIM WYSONG, CITY OF CHARLES TOWN
SURVEYED BY, DATE GRS GROUP, FEBRUARY 28, 2022
DESIGN BY MARK PHILLIPS, P.E. (KIMLEY-HORN) (703) 870-3631



Mark R Phillips
2023.09.15 09:39:04-04'00'

Kimley-Horn
Reston, Virginia
Roadway Engineer

REVISED	STATE	PROJECT	SHEET NO.
	WV	110845003	3C(5)

DRAINAGE CALCULATIONS

LD-204 Stormwater Inlet Computations

LD-204 SHEET 1
Rev. 6-85 PPMS# 110845003 PROJ Congress and South Lawrence Street Intersection Improv DATE August 7, 2023 OF 1

	INLET																										Sag Inlets Only			
	NUMBER	TYPE	LENGTH (FT)	STATION	DRAINAGE AREA (AC)	C	CA	sum CA	I (IN/HR)	Q INCR (CFS)	Q_b, CARRYOVER (CFS)	Q_T, GUTTER FLOW (CFS)	S, GUTTER SLOPE (FT/FT)	S_X, CROSS SLOPE (FT/FT)	T, SPREAD (FT)	W (FT)	W/T	S_W, (FT/FT)	S_W/S_X	E_0	a = 12W(S_W - S_X)+Local Depression	S'_W = a/(12w)	$S_e = S_X + S'_W(E_0)$, (FT/FT)	COMPUTED LENGTH, L_T, (FT)	L, SPECIFIED LENGTH (FT)	L/L_T	E	Q_i, INTERCEPTED (CFS)	Q_b, CARRYOVER (CFS)	d (FT)	h (FT)	d/h	T, SPREAD @ SAG (FT)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)
INLETS - ON GRADE																																	
	3-1	Proposed	4	-	0.10	0.90	0.088	0.088	4.0	0.352	0.000	0.352	0.0141	0.0300	3.45	1	0.29	0.0300	1.00	0.60	1.00	0.083	0.080	7	4	0.57	0.78	0.28	0.077	0.1035			
	3-3	Proposed	4	-	0.24	0.90	0.215	0.215	4.0	0.862	0.000	0.862	0.0292	0.0325	4.01	1	0.25	0.0325	1.00	0.53	1.00	0.083	0.077	12	4	0.33	0.52	0.45	0.415	0.1302			
	3-4	Proposed	4	-	0.07	0.90	0.062	0.062	4.0	0.249	0.000	0.249	0.0164	0.0433	2.34	1	0.43	0.0433	1.00	0.77	1.00	0.083	0.108	5	4	0.80	0.94	0.24	0.014	0.1015			
	3-6	Proposed	4	-	0.27	0.90	0.240	0.240	4.0	0.959	0.000	0.959	0.0205	0.0235	5.46	1	0.18	0.0235	1.00	0.42	1.00	0.083	0.058	13	4	0.31	0.48	0.46	0.495	0.1282			
	3-8	Proposed	4	-	0.30	0.90	0.268	0.268	4.0	1.070	0.000	1.070	0.0276	0.0086	10.08	1	0.10	0.0086	1.00	0.24	1.00	0.083	0.029	22	4	0.18	0.30	0.32	0.746	0.0867			
	3-10	Proposed	4	-	2.89	0.90	2.599	2.599	4.0	1.885	0.000	1.885	0.0204	0.0205	7.67	1	0.13	0.0205	1.00	0.31	1.00	0.083	0.046	20	4	0.20	0.33	0.62	1.261	0.1571			

Kimley»Horn

Proposed Storm Drain Design Calculations
VDOT LD-229

Project: West Congress Street and South Lawrence Street Intersection Improvements
Locality: City of Charles Town
Date: 9/12/2023
Project No.: 110845003
Designed By/Checked: Miguel Tyshing, E.I.T /Mark Phillips, P.E.

FROM POINT	TO POINT	DRAINAGE AREA	RUNOFF COEFFICIENT	CA		INLET TIME	RAINFALL	RUNOFF	INVERT ELEVATIONS		LENGTH	SLOPE	SIZE	PIPE CAPACITY	Q / Q_d	VELOCITY	FLOW TIME	
				inlet	accum				upper end	lower end							incr	accum
		acres	C			min	in/hr	cfs	ft	ft	ft	%	in	cfs	%	fps	min	
3-6	3-7	0.27	0.90	0.24	0.24	5.00	0.54	0.13	497.59	497.49	19	0.50%	15	4.57	3%	1.64	0.19	5.00
3-7	EX-1	(N/A)	(N/A)	0.00	0.24	0.00	0.56	0.13	497.39	495.18	18	12.30%	15	22.61	1%	5.03	0.06	5.19
3-3	3-2	0.24	0.90	0.22	0.22	5.00	0.54	0.12	497.56	497.42	28	0.50%	15	4.57	3%	1.59	0.29	5.00
3-1	3-2	0.10	0.90	0.09	0.09	5.00	0.54	0.05	497.48	497.42	12	0.50%	15	4.57	1%	1.22	0.17	5.00
3-2	EX-1	(N/A)	(N/A)	0.00	0.30	0.00	0.56	0.17	497.32	495.18	32	6.70%	15	16.70	1%	4.42	0.12	5.29
3-10	3-9	2.89	0.90	2.60	2.60	8.00	0.73	1.90	498.55	498.44	23	0.50%	15	4.57	42%	3.55	0.11	8.00
3-8	3-9	0.30	0.90	0.27	0.27	5.00	0.54	0.15	498.51	498.44	14	0.50%	15	4.57	3%	1.70	0.14	5.00
3-9	EX-1	(N/A)	(N/A)	0.00	2.87	0.00	0.73	2.11	498.34	495.18	36	8.70%	15	19.05	11%	10.23	0.06	8.11
3-5	EX-1	(N/A)	(N/A)	0.00	0.06	0.00	0.56	0.03	497.57	495.18	22	10.90%	15	21.33	0%	3.22	0.11	5.20
3-4	3-5	0.07	0.90	0.06	0.06	5.00	0.54	0.03	497.74	497.67	13	0.50%	15	4.57	1%	1.10	0.20	5.00
EX-1	O-2	(N/A)	(N/A)	0.00	3.47	0.00	0.74	2.57	495.18	493.64	0	5.00%	24	50.36	5%	8.41	0.06	8.17

Kimley»Horn

Proposed Hydraulic Grade Line Calculations
VDOT LD-347

Project: West Congress Street and South Lawrence Street Intersection Improvements
Locality: City of Charles Town
Date: 9/12/2023
Project #: 110845003
Designed By/Checked: Miguel Tyshing, E.I.T /Mark Phillips, P.E.

INLET	0.8D + INV (OUT)	ACTUAL OUTLET WSE	DESIGN OUTLET WSE	D_o	Q_o	L_o	S_{fo}	H_f	JUNCTION LOSS												FINAL H	INLET WSE	RIM ELEV	AVAILABLE FREEBOARD
									V_o	H_o	Q_b	V_i	Q_bV_i	$\frac{V_i^2}{2g}$	H_i	Angle	H_a	H_t	1.3 H_t	0.5 H_t				
	(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)		(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
EX-1	495.24	495.24	495.24	24	2.57	0	0.0220	0.00	8.41	0.27	2.11	2.94	6.20	0.13	0.05	36.1	0.05	0.38	0.38	0.38	0.38	495.62	501.59	5.97
3-5	496.18	495.62	496.18	15	0.03	22	0.0880	1.93	3.22	0.04	0.03	2.43	0.07	0.09	0.03	36.06	0.04	0.11	0.11	0.11	2.04	498.22	501.40	3.18
3-4	498.67	498.22	498.67	15	0.03	13	0.0050	0.07	1.10	0.01	0.00	0.00	0.00	0.00	0.00	0	0.00	0.01	0.01	0.01	0.07	498.74	501.23	2.49
3-2	496.18	495.62	496.18	15	0.17	32	0.0560	1.79	4.42	0.08	0.12	1.91	0.23	0.06	0.02	55.9	0.03	0.13	0.13	0.13	1.92	498.10	502.69	4.59
3-1	498.42	498.10	498.42	15	0.05	12	0.0030	0.04	1.22	0.01	0.00	0.00	0.00	0.00	0.00	0	0.00	0.01	0.01	0.01	0.05	498.47	501.43	2.96
3-3	498.42	498.10	498.42	15	0.12	28	0.0050	0.14	1.59	0.01	0.00	0.00	0.00	0.00	0.00	0	0.00	0.01	0.02	0.02	0.15	498.57	502.07	3.50
3-7	496.18	495.62	496.18	15	0.13	18	0.1020	1.84	5.03	0.10	0.13	2.43	0.32	0.09	0.03	23.84	0.03	0.16	0.16	0.16	1.99	498.17	502.76	4.60
3-6	498.49	498.17	498.49	15	0.13	19	0.0050	0.09	1.64	0.01	0.00	0.00	0.00	0.00	0.00	0	0.00	0.01	0.02	0.02	0.11	498.60	502.06	3.46
3-9	496.18	495.62	496.18	15	2.11	36	0.0570	2.07	10.23	0.41	1.90	2.93	5.57	0.13	0.05	51.6	0.07	0.52	0.52	0.52	2.59	498.77	502.10	3.33
3-8	499.44	498.77	499.44	15	0.15	14	0.0000	0.00	1.70	0.01	0.00	0.00	0.00	0.00	0.00	0	0.00	0.01	0.02	0.02	0.02	499.46	502.37	2.91
3-10	499.44	498.77	499.44	15	1.90	23	0.0040	0.09	3.55	0.06	0.00	0.00	0.00	0.00	0.00	0	0.00	0.06	0.08	0.08	0.17	499.61	502.48	2.87

W. CONGRESS STREET AND
S. LAWRENCE STREET
INTERSECTION IMPROVEMENTS
CHARLES TOWN, WEST VIRGINIA

DRAINAGE CALCULATIONS

	PROJECT	SHEET NO.
	110845003	3C(5)

PROJECT MANAGER JIM WYSONG, CITY OF CHARLES TOWN
SURVEYED BY, DATE GRS GROUP, FEBRUARY 28, 2022
DESIGN BY MARK PHILLIPS, P.E. (KIMLEY-HORN) (703) 870-3631

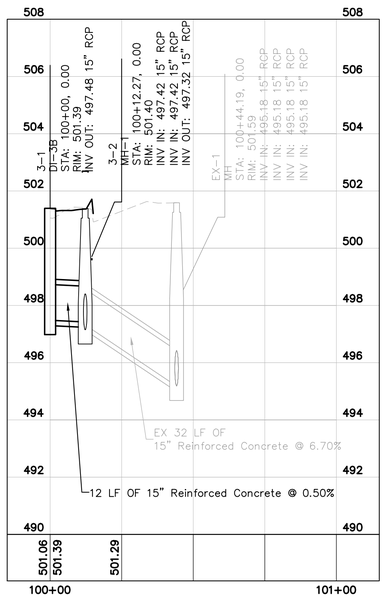
MARK ROSS PHILLIPS REGISTERED 25167 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER

Mark R Phillips
2023.09.15 09:39:11-04'00'

Kimley-Horn
Reston, Virginia
Hydraulic Engineer

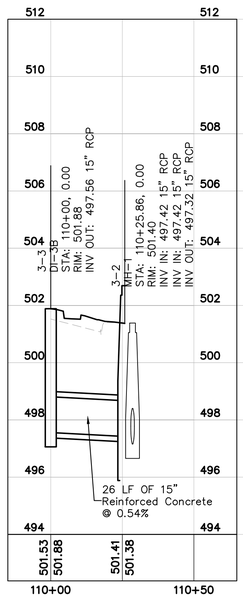
REVISED	STATE	PROJECT	SHEET NO.
	WV	110845003	3D

DRAINAGE PROFILES



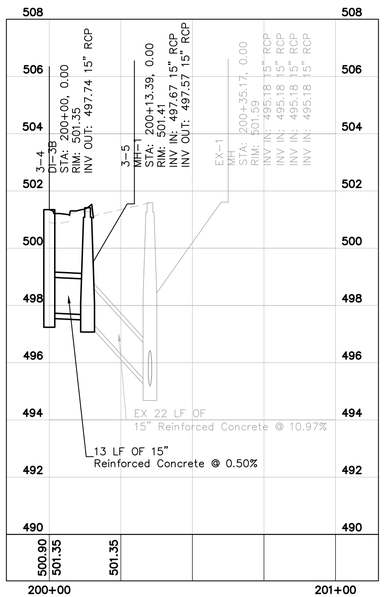
3-1 TO EX-1

SCALE: 1" = 25' H
1" = 2' V



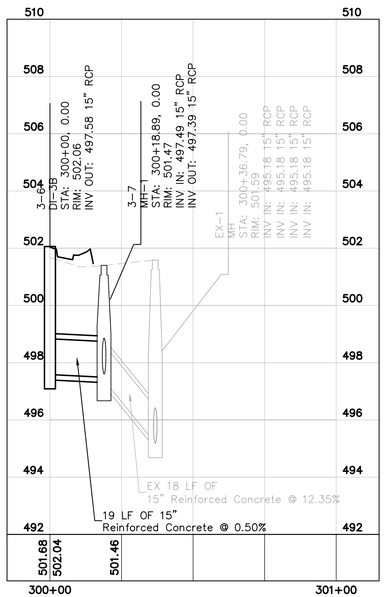
3-3 TO 3-2

SCALE: 1" = 25' H
1" = 2' V



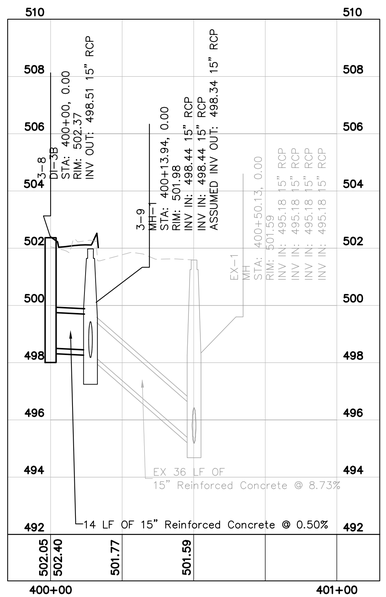
3-4 TO EX-1

SCALE: 1" = 25' H
1" = 2' V



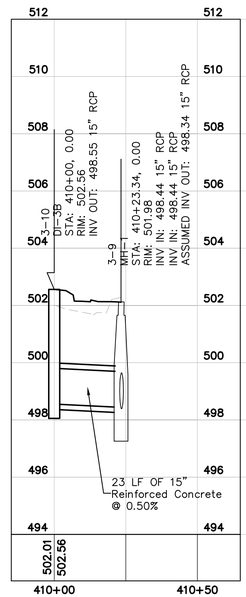
3-6 TO EX-1

SCALE: 1" = 25' H
1" = 2' V



3-8 TO EX-1

SCALE: 1" = 25' H
1" = 2' V



3-10 TO 3-9

SCALE: 1" = 25' H
1" = 2' V

THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY

GRAPHIC SCALE IN FEET
0 12.5 25 50

HORIZONTAL

VERTICAL
5
2.5
1.25
0

W. CONGRESS STREET AND S. LAWRENCE STREET INTERSECTION IMPROVEMENTS
CHARLES TOWN, WEST VIRGINIA

DRAINAGE PROFILES

PROJECT	SHEET NO.
110845003	3D

PROJECT MANAGER JIM WYSONG, CITY OF CHARLES TOWN
SURVEYED BY, DATE GRS GROUP, FEBRUARY 28, 2022
DESIGN BY MARK PHILLIPS, P.E. (KIMLEY-HORN) (703) 870-3631

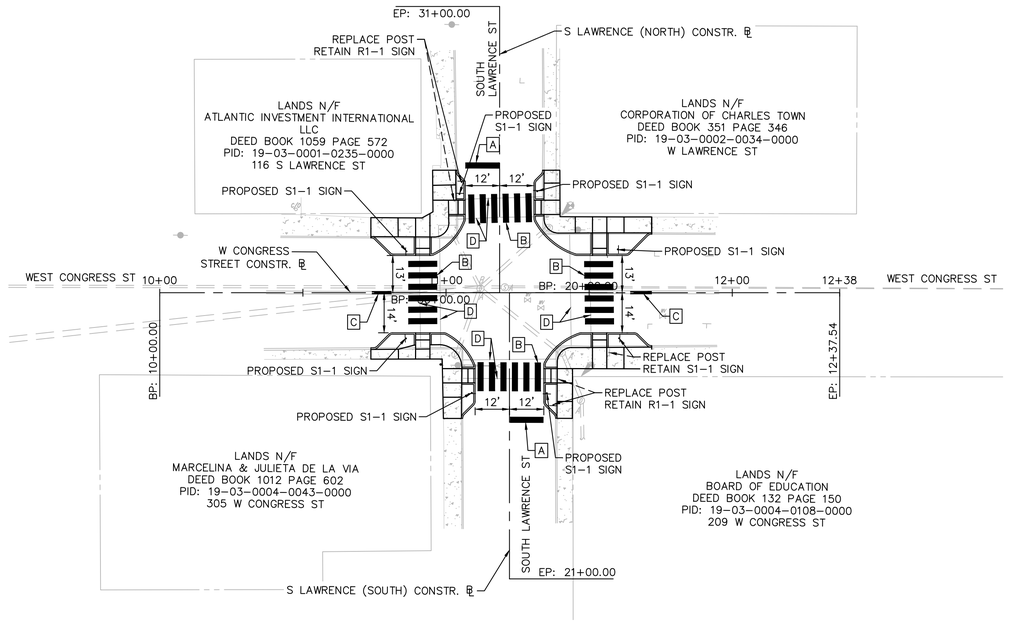
MARK ROSS PHILLIPS REGISTERED 25167 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER

Mark R Phillips
2023.09.15 09:39:19-04'00'

Kimley-Horn
Reston, Virginia
Roadway Engineer

REVISED	STATE	PROJECT	SHEET NO.
	WV	110845003	3E

SIGNING & MARKING PLAN



#	SIGN	MUTCD #	SIZE	PANEL (SF)	POST TYPE
1		R1-1	30" X 30"	6	STP-1 2.5" 12 GA SINGLE 10' POST TYPE A FOUNDATION
2		S1-1	36" X 36"	11	STP-1 2.5" 12 GA SINGLE 10' POST TYPE A FOUNDATION

PAVEMENT MARKING LEGEND:

- A TYPE B, CLASS I, WHITE, 24" WIDTH
- B TYPE B, CLASS I, WHITE, 24" WIDTH, 24" SPACING
- C TYPE B, CLASS 1, YELLOW DOUBLE PAVEMENT LINE MARKING 4" WIDTH, WITH 4" SPACING
- D ERADICATE EXISTING PAVEMENT MARKING

W. CONGRESS STREET AND S. LAWRENCE STREET INTERSECTION IMPROVEMENTS
CHARLES TOWN, WEST VIRGINIA

SIGNING & MARKING PLAN

NORTH

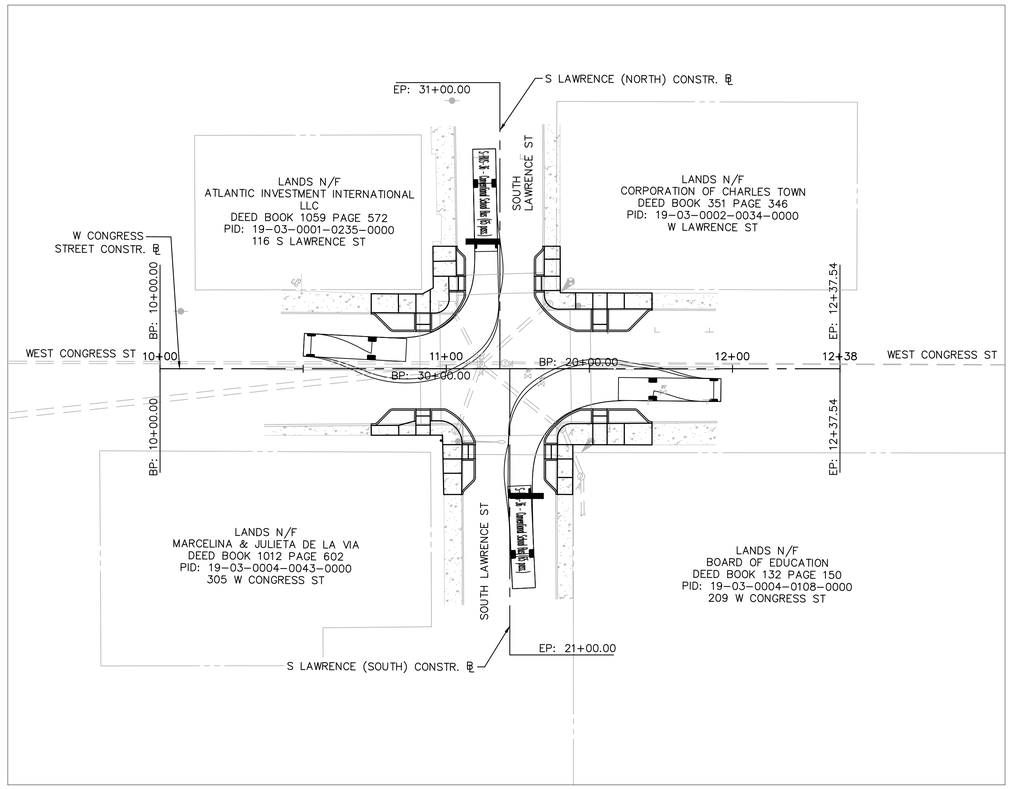
GRAPHIC SCALE IN FEET
0 12.5 25 50

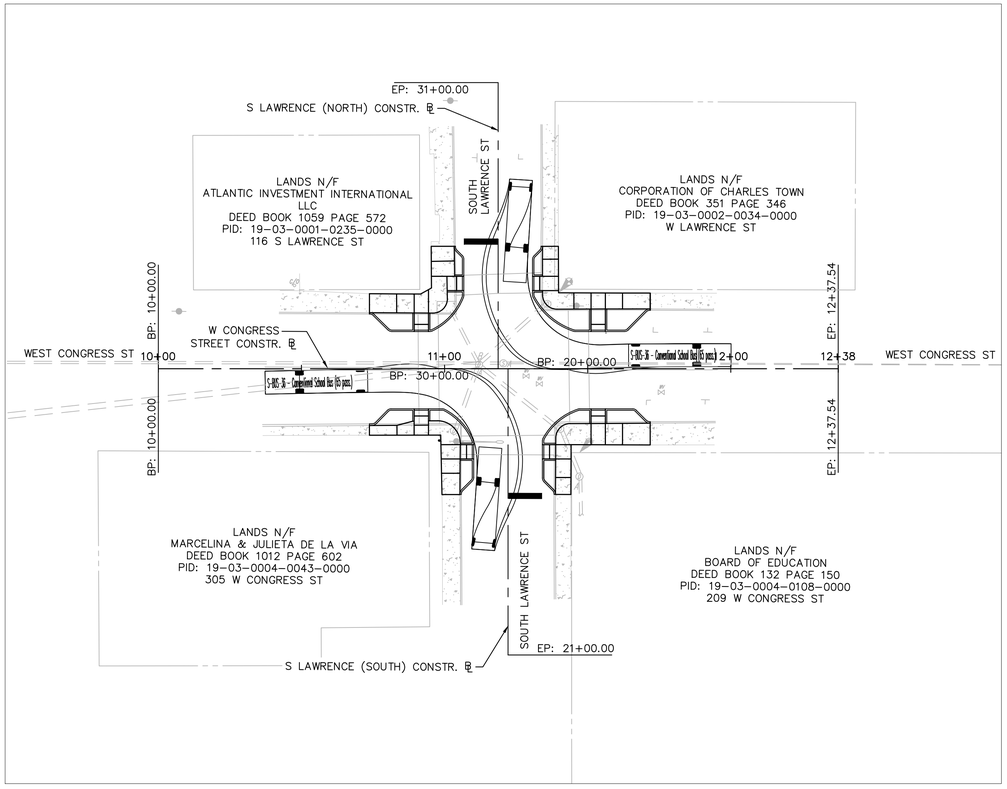
PROJECT	SHEET NO.
110845003	3E

PROJECT MANAGER JIM WYSONG, CITY OF CHARLES TOWN
SURVEYED BY, DATE GRS GROUP, FEBRUARY 28, 2022
DESIGN BY MARK PHILLIPS, P.E. (KIMLEY-HORN) (703) 870-3631

REVISED	STATE	PROJECT	SHEET NO.
	WV	110845003	4

AUTOTURN EXHIBIT





W. CONGRESS STREET AND
S. LAWRENCE STREET
INTERSECTION IMPROVEMENTS
CHARLES TOWN, WEST VIRGINIA

AUTOTURN EXHIBIT

NORTH

GRAPHIC SCALE IN FEET
0 12.5 25 50

PROJECT	SHEET NO.
110845003	4

Finance Commitee
101 East Washington Street
Charles Town, WV 25414

Meeting: 10/04/23
Department: Finance Commitee
Initiator:

SCHEDULED

AGENDA ITEM (ID #)

2023-883: City's Account Balances

ATTACHMENTS:

Finance Commitee
101 East Washington Street
Charles Town, WV 25414

Meeting: 10/04/23
Department: Finance Commitee
Category: Information Only
Initiator:

SCHEDULED

AGENDA ITEM (ID #)

2023-885: Utility Tax Discussion

ATTACHMENTS: