



Project update

ELM AND BELKNAP STREETS RECONSTRUCTION PROJECT

Dover City Council Workshop

March 11, 2020

**By: Gretchen Young, PE
Asst. City Engineer**

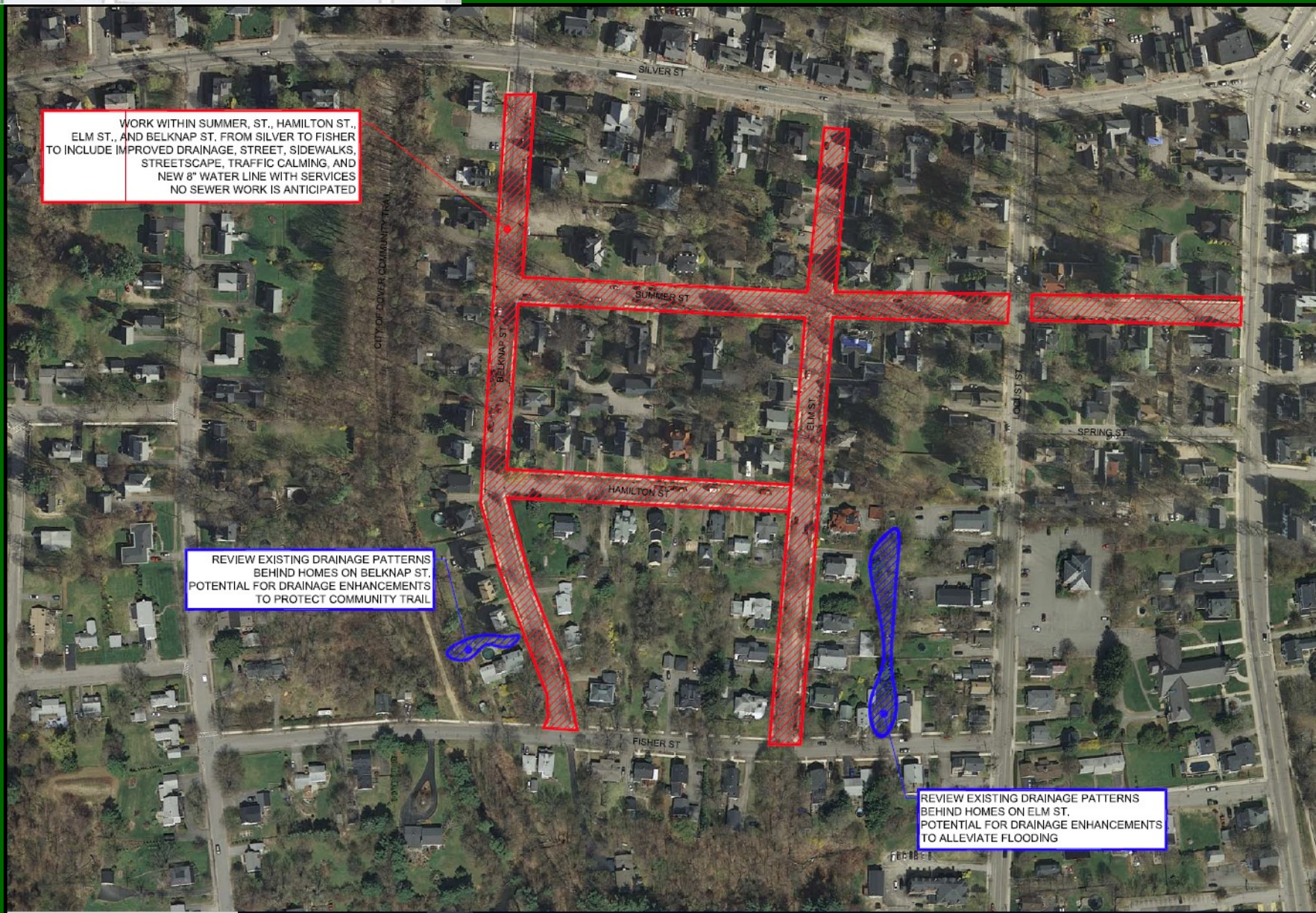
**Tim Vadney, PE
Wright Pierce Engineering**

ELM AND BELKNAP STREETS RECONSTRUCTION PROJECT

WORK WITHIN SUMMER ST., HAMILTON ST.,
ELM ST., AND BELKNAP ST. FROM SILVER TO FISHER
TO INCLUDE IMPROVED DRAINAGE, STREET, SIDEWALKS,
STREETSCAPE, TRAFFIC CALMING, AND
NEW 8" WATER LINE WITH SERVICES
NO SEWER WORK IS ANTICIPATED

REVIEW EXISTING DRAINAGE PATTERNS
BEHIND HOMES ON BELKNAP ST.
POTENTIAL FOR DRAINAGE ENHANCEMENTS
TO PROTECT COMMUNITY TRAIL

REVIEW EXISTING DRAINAGE PATTERNS
BEHIND HOMES ON ELM ST.
POTENTIAL FOR DRAINAGE ENHANCEMENTS
TO ALLEVIATE FLOODING



RECONSTRUCTION PROJECT



- **6" Cast Iron**
- **1890 Vintage**
- **Numerous line breaks and repairs needed**

Proposed water

- **8" DI throughout**
- **New hydrants**
- **New services and shutoffs**

Project update

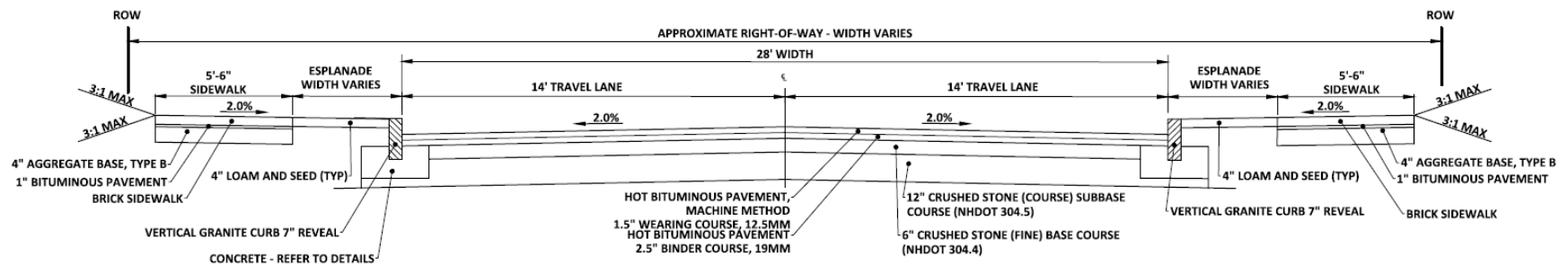
ELM AND BELKNAP STREETS RECONSTRUCTION PROJECT

Existing Roadway



ELM AND BELKNAP STREETS RECONSTRUCTION PROJECT

Proposed Roadway



BELKNAP ST 1+87 TO STA 5+25
ELM ST 20+52 TO 23+60
 NTS

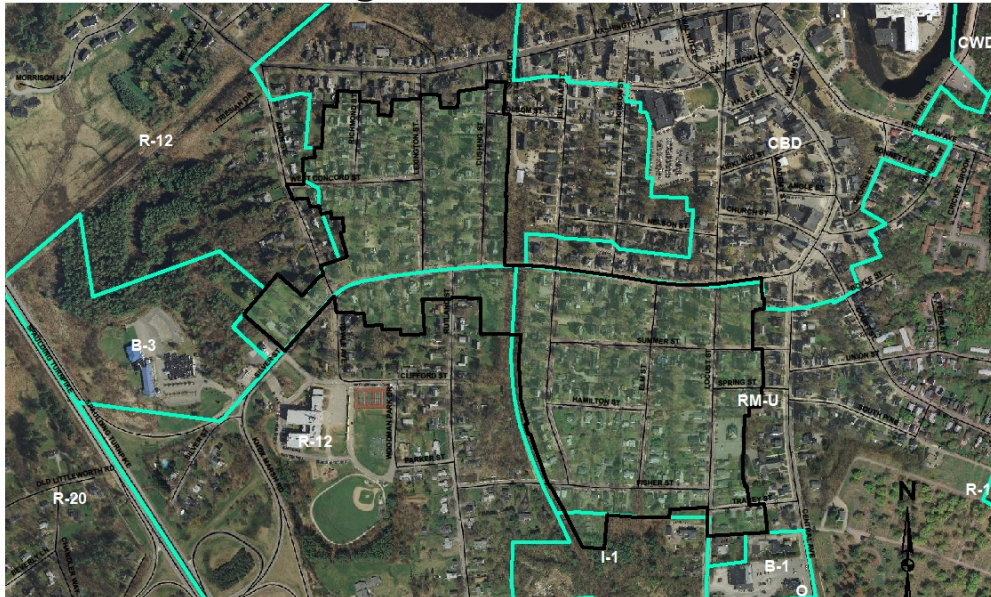
ELM AND BELKNAP STREETS RECONSTRUCTION PROJECT

Street Scape Considerations

- Heritage District
- Existing Trees and Vegetation
- Complete Street Guidance
- ADA Compliance

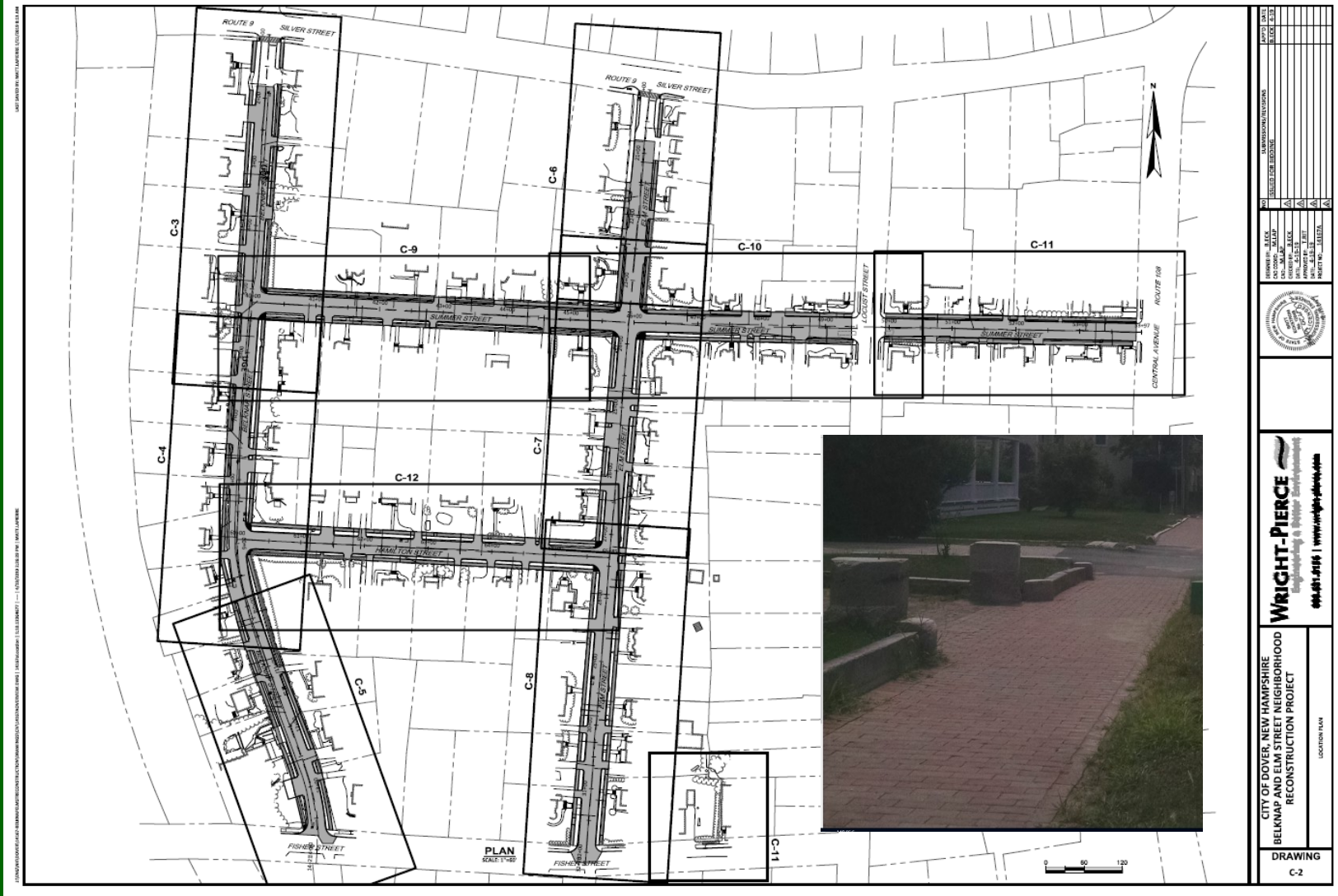


Heritage Residential District



Project update

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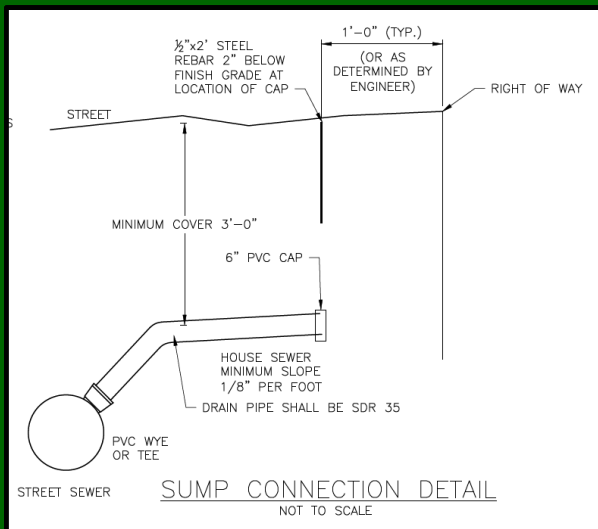
ELM AND BELKNAP STREETS RECONSTRUCTION PROJECT

Existing Drainage

- Poor Drainage
- No Treatment
- Gutters and sumps empty to yard or sewer line

Proposed Drainage

- New Closed Drainage System Throughout
- 10 New Filtering Catchbasins
- 2,350 Lf of 6" collection drain with stubs for gutters and sumps



Project Budget

CIP Funded

GF - \$2,700,000
Water - \$1,100,000
Sewer- \$250,000
Total- \$4,050,000

Project Cost:

Engineering - \$244,990
Const. GF - \$2,476,637.5
Const. W - \$1,008,890
Const. S - \$85,707.5
Total- \$3,816,225

Project Budget

Proposed CO

Additional 1,190 If 6" drain -	\$107,100
<u>Quantity Overage -</u>	<u>\$301,212</u>
Total-	\$408,312

ELM AND BELKNAP STREETS RECONSTRUCTION PROJECT

Bidding Considerations

- Project bid with unit price items
- Construction contract awarded on bid quantities
- Additional quantities needed for some items to complete full project

Belknap & Elm Neighborhood Reconstruction Project Dover, NH

Item	Description	Bid Quantity	Unit	AS BID Unit Price	Extended Total
1	Mobilization and Demobilization	1	LS	\$ 300,000.00	\$ 300,000.00
2	Development and Monitoring of Stormwater Pollution Prevention Plan	1	LS	\$ 10,000.00	\$ 10,000.00
3	Erosion and Sedimentation Control	1	LS	\$ 13,750.00	\$ 13,750.00
4	Allowance: Uniformed Police Officers for Traffic Control	1	Allow	\$ 10,000.00	\$ 10,000.00
5	Flaggers for Traffic Control	500	HR	\$ 45.00	\$ 22,500.00
6	Traffic Regulation and Control	1	LS	\$ 55,000.00	\$ 55,000.00
7	Test Pit Excavation and Backfill	100	CY	\$ 150.00	\$ 15,000.00
8	Clearing and Grubbing	1	LS	\$ 18,000.00	\$ 18,000.00
9	Removal and Disposal of Pavement and Earth Excavation	5,000	CY	\$ 20.00	\$ 100,000.00
10	Remove Large Trees, greater than 12" diameter	14	EA	\$ 1,400.00	\$ 19,600.00
11	Removal of Small Trees (4"-12")	6	EA	\$ 780.00	\$ 4,680.00
12	Remove and Dispose of Stumps, backfill, loam and seed within ROW	4	EA	\$ 900.00	\$ 3,600.00
13	Unsuitable Excavation and Replacement Beneath the Roadway	300	CY	\$ 24.00	\$ 7,200.00
14	Furnish and Install Crushed Stone (Fine) Base	2,400	CY	\$ 60.00	\$ 144,000.00
15	Furnish and Install Crushed Stone (Course) Base	4,800	CY	\$ 30.00	\$ 144,000.00
16	Furnish and Install Hot Bituminous Pavement: Machine Placed	3,700	TON	\$ 95.00	\$ 351,500.00
17	Furnish and Install Hot Bituminous Pavement: Hand Placed	240	TON	\$ 148.00	\$ 35,520.00
18	Furnish and Install Hot Bituminous Pavement: Sidewalk and Walkway	50	SY	\$ 17.00	\$ 850.00
19	Remove and Reset Vertical Granite Curb	6,400	LF	\$ 15.00	\$ 96,000.00
20	Furnish and Install Vertical Granite Curb	2,200	LF	\$ 30.00	\$ 66,000.00
21	Concrete Sidewalk	1,275	SY	\$ 46.00	\$ 58,650.00
22	Brick Sidewalk	2,100	SY	\$ 70.00	\$ 147,000.00
23	Detectable Warning Strip	17	SY	\$ 435.00	\$ 7,395.00
24	Furnish and Install Stop Bars	100	LF	\$ 20.00	\$ 2,000.00
25	Furnish and Install 12" HDPE storm drain	580	LF	\$ 90.00	\$ 52,200.00
26	Furnish and Install 15" HDPE storm drain	2,320	LF	\$ 76.00	\$ 176,320.00
27	Furnish and Install 4' Diameter Catch Basin	270	VF	\$ 450.00	\$ 121,500.00
28	Furnish and Install 4' Diameter Drain Manhole	40	VF	\$ 860.00	\$ 34,400.00
29	Furnish and Install 5' Diameter Drain Manhole	10	VF	\$ 880.00	\$ 8,800.00
30	Furnish and Install Filter Media Box	7	EA	\$ 11,900.00	\$ 83,300.00
31	Furnish and Install 6" PVC Storm Service	1,160	LF	\$ 90.00	\$ 104,400.00
32	Reconnection to Existing Drainage Structures	5	EA	\$ 460.00	\$ 2,300.00
33	Tree Planting/Replacement	1	Allow	\$ 12,000.00	\$ 12,000.00
34	Shrub Plantings/Replacement	1	Allow	\$ 3,000.00	\$ 3,000.00
35	Loam & Seed	3,225	SY	\$ 12.00	\$ 38,700.00
36	Furnish and Install 8" DI Water Main	4,250	LF	\$ 90.00	\$ 382,500.00
37	Furnish and Install 1" Copper Service Pipe	2,000	LF	\$ 77.00	\$ 154,000.00
38	Furnish and Install 8" Gate Valves	19	EA	\$ 1,500.00	\$ 28,500.00
39	Furnish and Install Pipe Insulation	200	LF	\$ 2.50	\$ 500.00
40	Furnish and Install 1" Corporation and Appurtenances	72	EA	\$ 160.00	\$ 11,520.00
41	Furnish and Install 1" Curb stop and Appurtenances	72	EA	\$ 375.00	\$ 27,000.00
42	Furnish and Install Hydrant Assemblies	4	EA	\$ 6,400.00	\$ 25,600.00
43	Furnish, Install, and Maintain Temporary Water Main during construction	4,200	LF	\$ 43.00	\$ 180,600.00
44	Two 4" PVC telecommunications conduit (concrete encased)	1,200	LF	\$ 50.00	\$ 60,000.00
45	Electrical Manhole	3	EA	\$ 4,000.00	\$ 12,000.00
46	Excavation of Unsuitable Material and Replacement Backfill - Trench	100	CY	\$ 45.00	\$ 4,500.00
47	Flowable Fill	100	CY	\$ 265.00	\$ 26,500.00
48	Rock Excavation	50	CY	\$ 160.00	\$ 8,000.00
49	Allowance for Landscaping	1	Allow	\$ 10,000.00	\$ 10,000.00
50	Construction Contingency	1	Allow	\$ 300,000.00	\$ 300,000.00
Subtotal					\$ 3,500,385.00
Sewer					
51	Furnish and Install 8" PVC Gravity Sewer Pipe	50	LF	\$ 285.00	\$ 14,250.00
52	Removal and Disposal of Asbestos Cement Pipe	250	LF	\$ 92.00	\$ 23,000.00
53	Furnish and Install 6" PVC Sewer Services	280	LF	\$ 120.00	\$ 33,600.00
Subtotal					\$ 70,850.00
Base + Alt 1 Total					\$ 3,571,235.00



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QUESTIONS?

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