

Silver Street Improvements

July , 2014



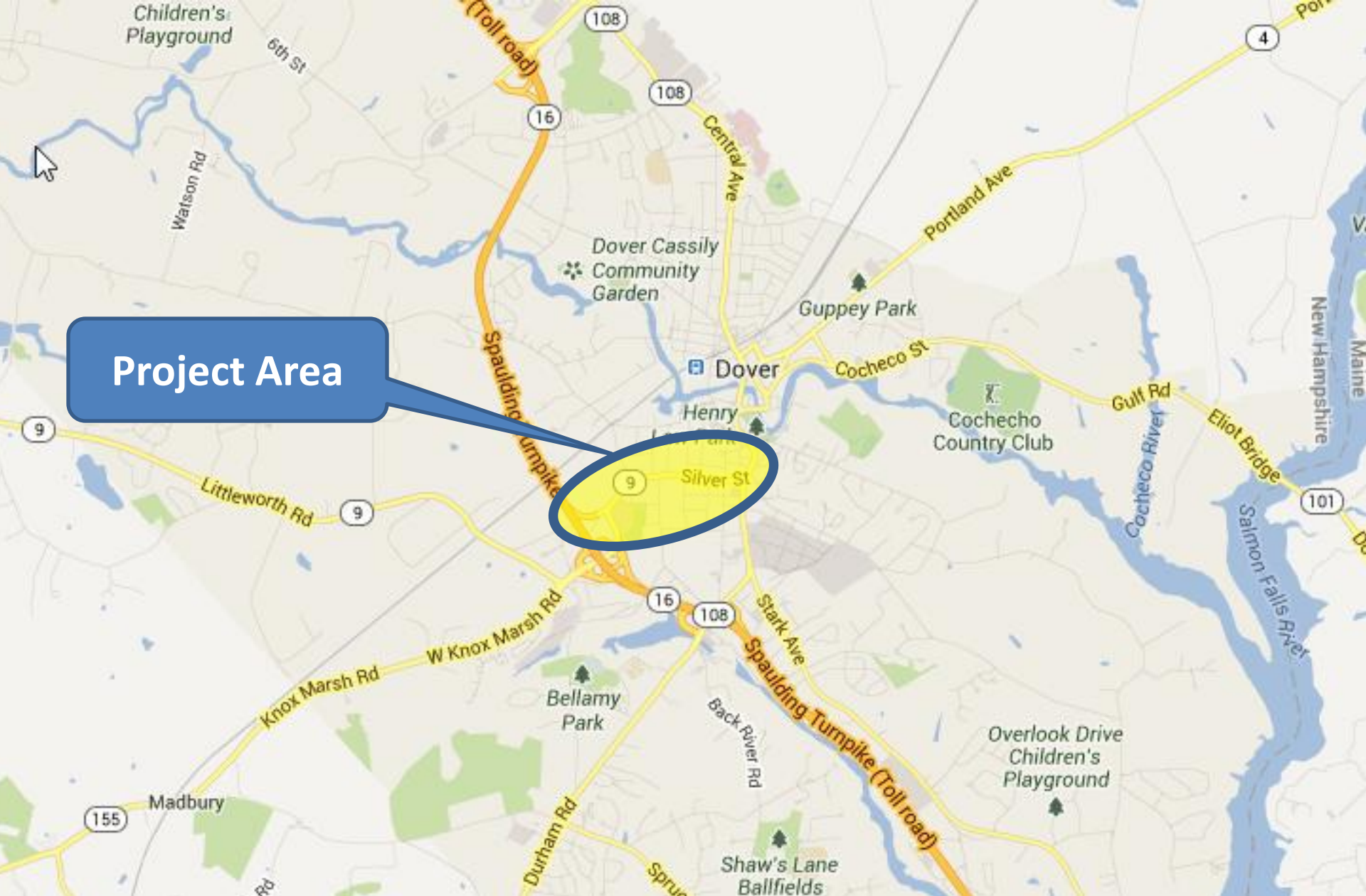
“A City with an emerging urban vibrancy guided by a small town sense of community.”

Agenda

- Project
 - Utilities
 - Traffic
 - Streetscape/Gateway
 - Project Summary
- Construction Impacts
- Q&A

Project Overview

Project Area

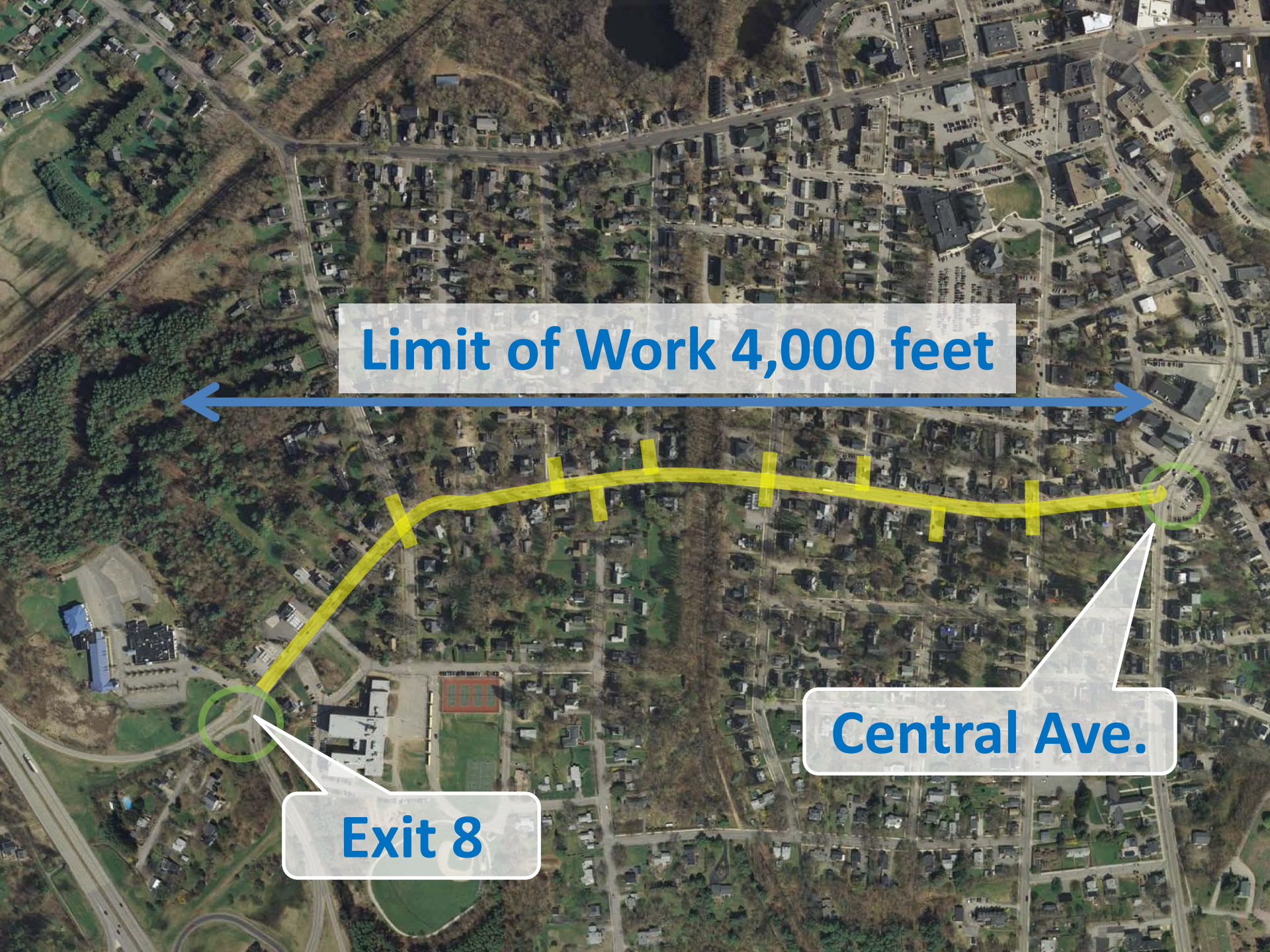


Limit of Work 4,000 feet



Central Ave.

Exit 8







Plan of Work

- Infrastructure Improvements
 - Water, Sewer and Drainage Improvements
 - Road Reconstruction
 - Curbing and Sidewalk
- Traffic Improvements
 - Intersection Signalization
 - Traffic Calming

Plan of Work

- Pedestrian/Bike
 - Cross Walks
 - Bike Lanes
 - Bus Stops
- Visual Enhancements
 - Greenscape and Gateway
 - Signs and Amenities
- Future Improvements (Exit 8 and Court Street)

Courtesy – Dover Public Library



SILVER STREET FROM CENTRAL AVE.
DOVER, N.H.



Silver Street

Dover N.H. 19

Courtesy – Dover Public Library





NO
PARKING
ANY
TIME

50

NO
STOPPING
ANY
TIME



Infrastructure

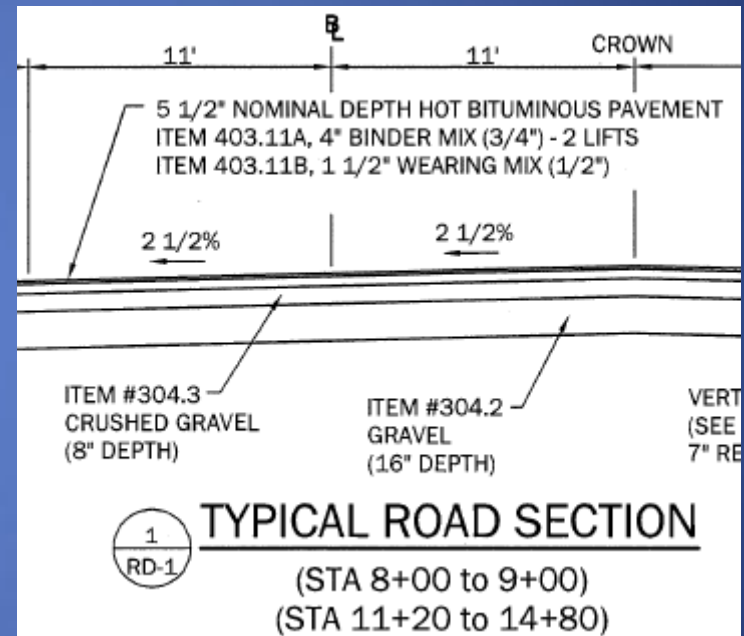
Road, Sidewalk and Utilities

Utilities

- Utilities
 - Sewer – Select areas only
 - Water – 50% of mains, 40 new services and Turnpike crossing
 - Drain – 4,000 feet and 60 new structures
 - Electrical – lighting (29) and traffic signal improvements
 - Conduits for future use

Roadway

- Road Section
 - 24" new gravel
 - 5-1/2" new pavement
- Road Width
 - 32' (typical)
 - Wider at intersections

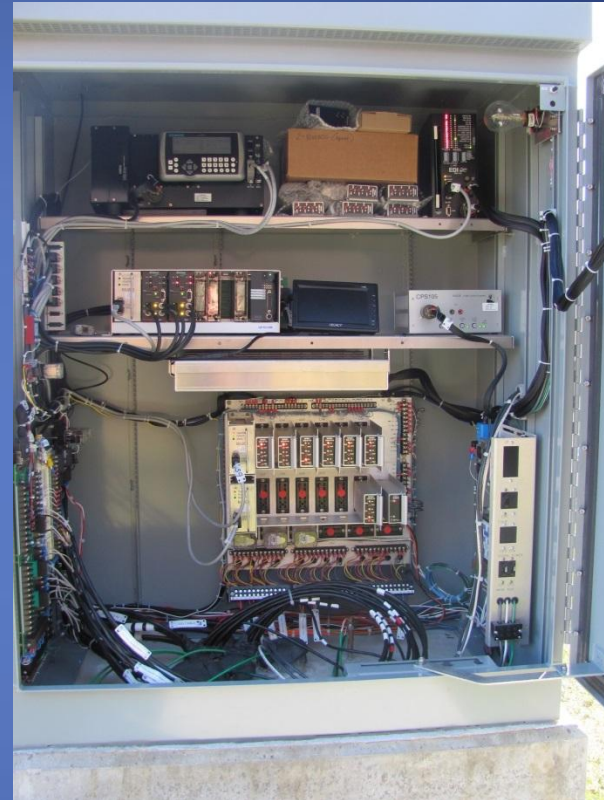


Major Intersections



Traffic Signals

- Optimize Signal Timings
- Signal Coordination

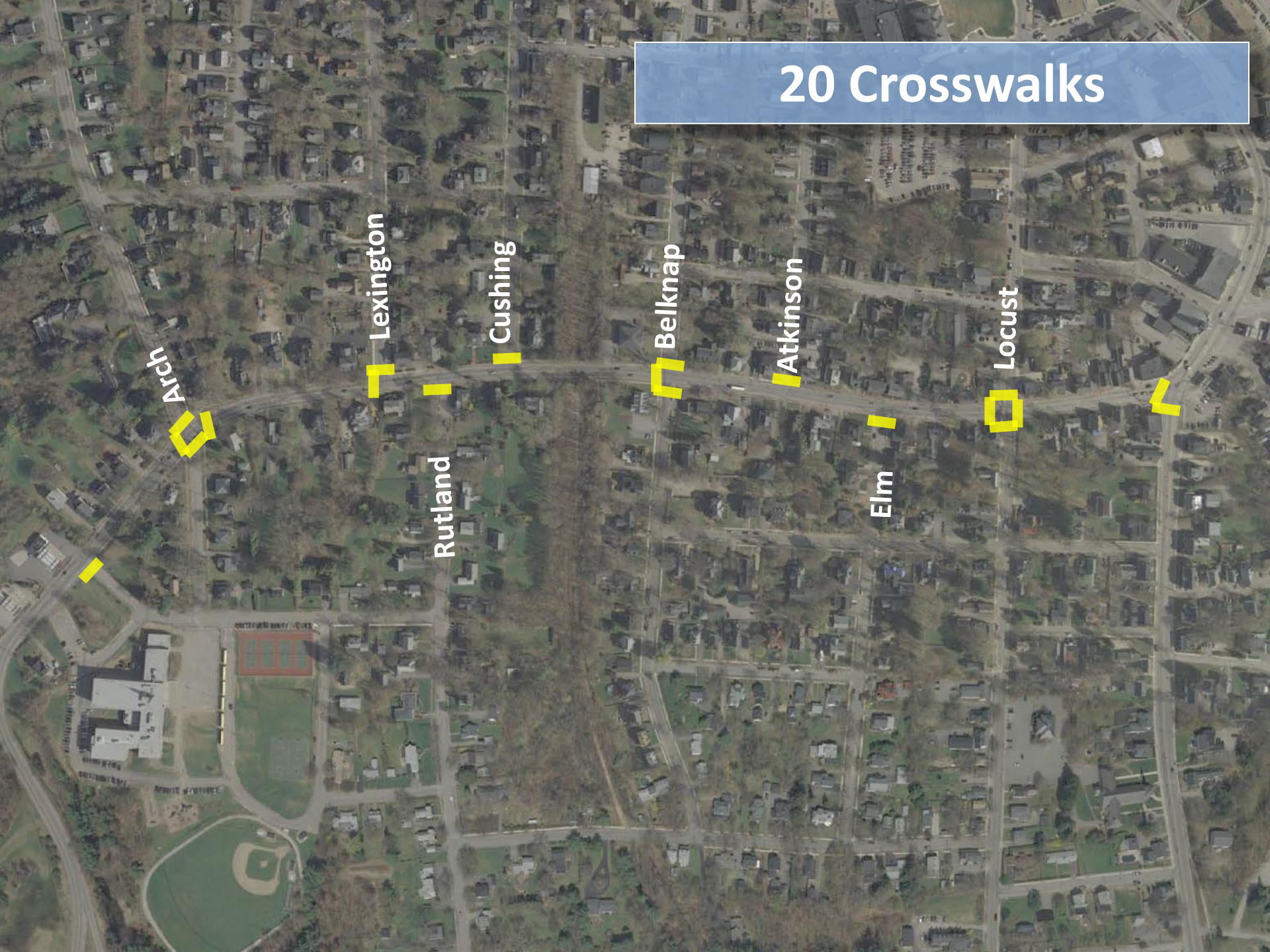


Pedestrian/Bicycle Improvements

- Count-down Displays
- Crosswalks
- Bike Lane



20 Crosswalks



Arch

Lexington

Rutland

Cushing

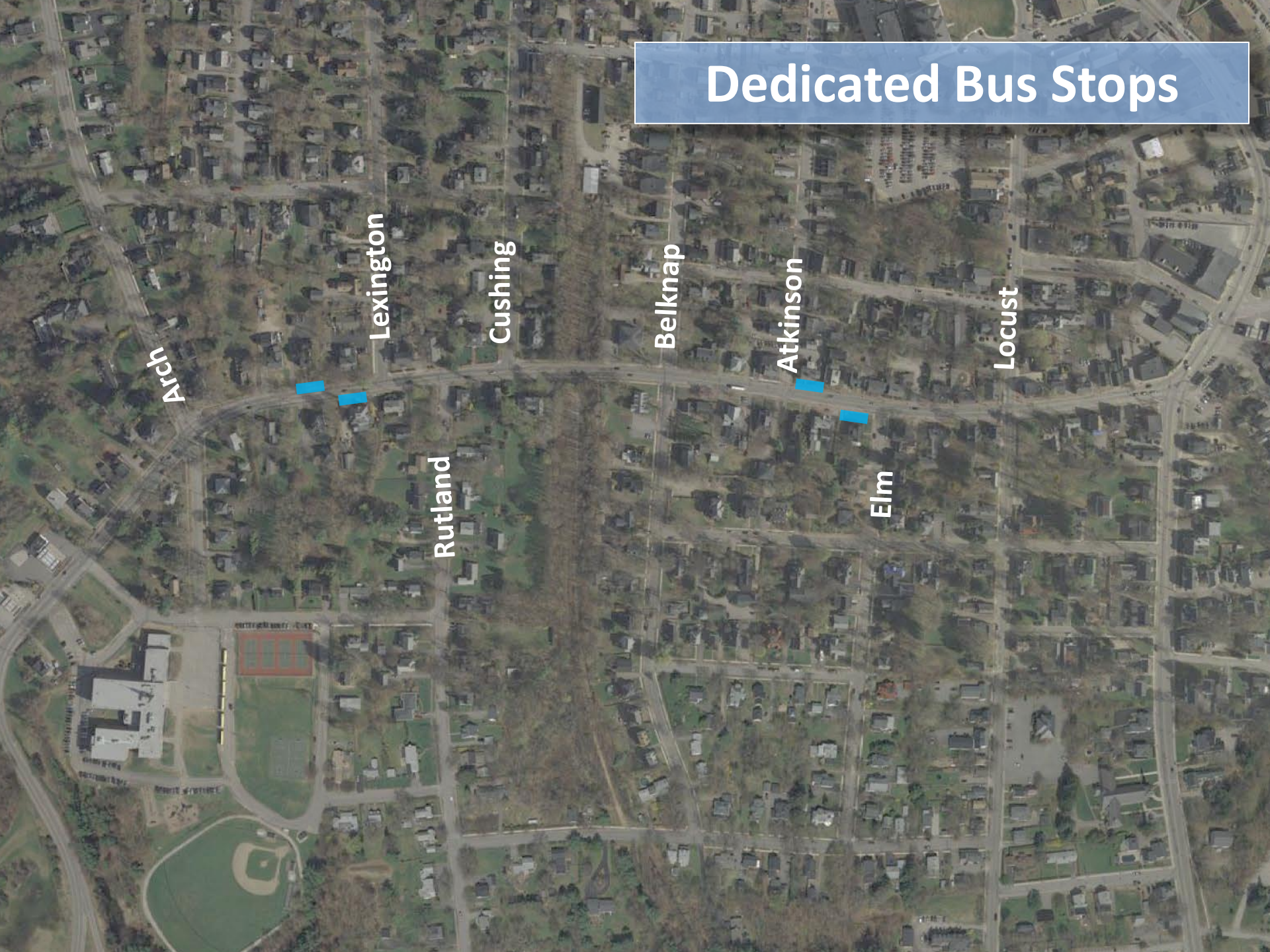
Belknap

Atkinson

Elm

Locust

Dedicated Bus Stops



Arch

Lexington

Cushing

Rutland

Belknap

Atkinson

Elm

Locust

No On Street Parking

Arch

Lexington

Cushing

Belknap

Atkinson

Locust

Rutland

Elm



Side Streets

- Neck downs
 - Elm
 - Atkinson
 - Belknap
 - Cushing
 - Rutland
 - Lexington



Streetscape/Gateway

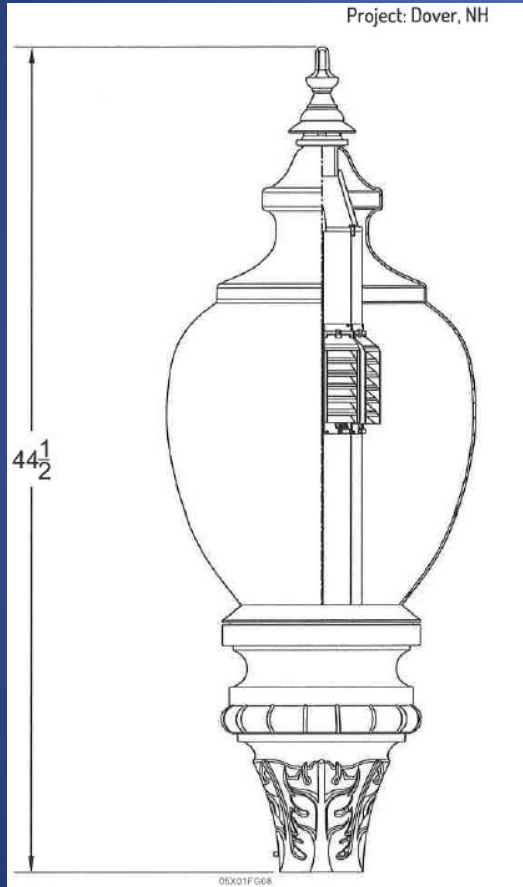
Streetscape Amenities



Streetscape Amenities



Lighting



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9"

GFCI RECEPTACLE WITH WEATHER PROOF COVER (WEATHER PROOF WHILE IN USE) SEE SECTION BASE PLATE DETAIL FOR ORIENTATION

12'-0"

ACCESS DOOR

CUSTOM FLORAL DETAILS FOR SILVER STREET - DOVER, NH

16" DIA

12" DIA

E OF A.D. AND GFCI

LAMP POST SPECIFICATIONS

STYLE:	HANCOCK-INT WITH LADDER REST
HEIGHT:	12'-0"
BASE:	16" DIAMETER
MATERIAL:	(D) 1 PIECE, CAST DUCTILE IRON PER A536-84 GRADE 65-45-12
FINISH:	PRIME PAINT THEN FINISH SHERWIN WILLIAMS ACROLON - CLASSIC BLACK
ACCESS DOOR:	LOCATED IN BASE SECURED WITH TAMPER PROOF HEX SOCKET SECURITY MACHINE SCREWS
GROUND STUD PROVISIONS:	DRILL AND TAP INSIDE WALL OF BASE OPPOSITE ACCESS DOOR TO ACCOMMODATE A 1/4"-20 GROUND STUD (STUD SUPPLIED BY OTHERS)
ANCHOR BOLTS:	(4) 3/4" DIA. X 2 1/2" LONG X 3" HOOK (FULLY GALVANIZED WITH 1 GALVANIZED NUT AND 1 GALVANIZED WASHER PER BOLT)
BOLT PROJECTION:	3" REQUIRED
TENON:	3 1/2" DIA. X 3 1/2" HIGH

Spring City Electrical Mfg. Co.
HALL AND MAIN STREETS - P.O. BOX 19 - SPRING CITY, PA. 19475
 PHONE (610) 948-4000 FAX (610) 948-5577
 E-mail ADDRESS: sales@springcity.com

DESCRIPTION	DPSH-NC-16-12.00-GP-W-323/11W-XX-CB	PDF
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Landscaping/Gateway

- 29 Ornamental lights including electrical system
- 12 Benches
- 1 Waste/recycling receptacle
- 2 Bike racks

Stormwater Management



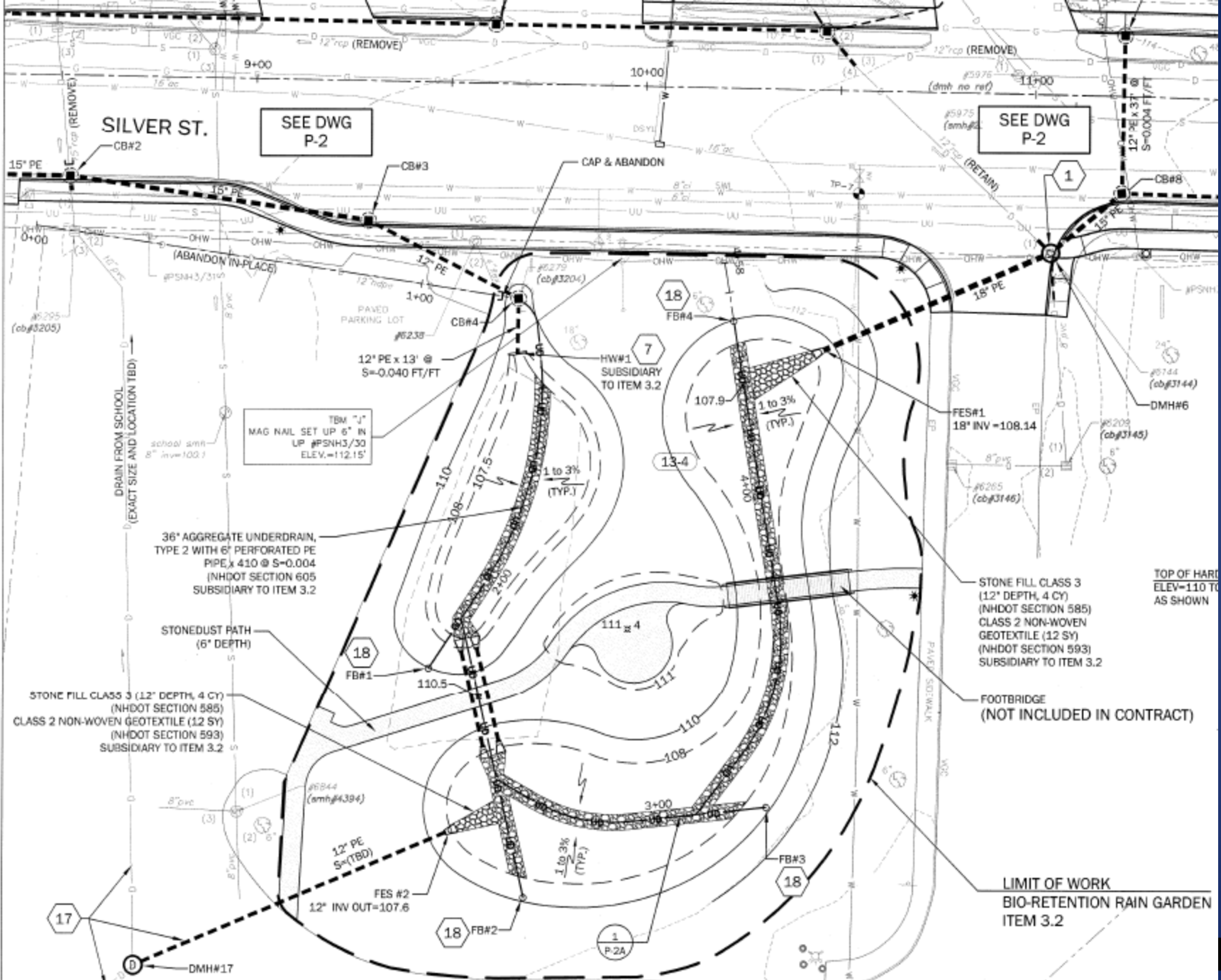
Ironwood
design group, LLC



Low Impact Design

- Rain Garden at Woodman School
- (6) Bio-retention tree ways along curb line with tree root growth zones





SILVER STREET RAIN GARDEN PLAN VIEW

SILVER ST.

SEE DWG P-2

SEE DWG P-2

TBM "J"
MAG NAIL SET UP 6" IN
UP #PSNH3/30
ELEV.=112.15'

36" AGGREGATE UNDERDRAIN,
TYPE 2 WITH 6" PERFORATED PE
PIPE, 410 @ S=0.004
(NHDOT SECTION 605
SUBSIDIARY TO ITEM 3.2

STONEDUST PATH
(6' DEPTH)

STONE FILL CLASS 3 (12" DEPTH, 4 CY)
(NHDOT SECTION 585)
CLASS 2 NON-WOVEN
GEOTEXTILE (12 SY)
(NHDOT SECTION 593)
SUBSIDIARY TO ITEM 3.2

STONE FILL CLASS 3
(12" DEPTH, 4 CY)
(NHDOT SECTION 585)
CLASS 2 NON-WOVEN
GEOTEXTILE (12 SY)
(NHDOT SECTION 593)
SUBSIDIARY TO ITEM 3.2

FOOTBRIDGE
(NOT INCLUDED IN CONTRACT)

LIMIT OF WORK
BIO-RETENTION RAIN GARDEN
ITEM 3.2

TOP OF HARD
ELEV=110 TO
AS SHOWN

DRAIN FROM SCHOOL
(EXACT SIZE AND LOCATION TBD)

CAP & ABANDON

(ABANDON IN-PLACE)

(RETAIN)

1
P.2A

DMH#17

DMH#6

HW#1
SUBSIDIARY
TO ITEM 3.2

12" PE x 13" @
S=0.040 FT/FT

PAVED
PARKING LOT

#6238

CB#4

18
FB#4

7

13-4

110.9

107.5

111 x 4

110

108

112

111

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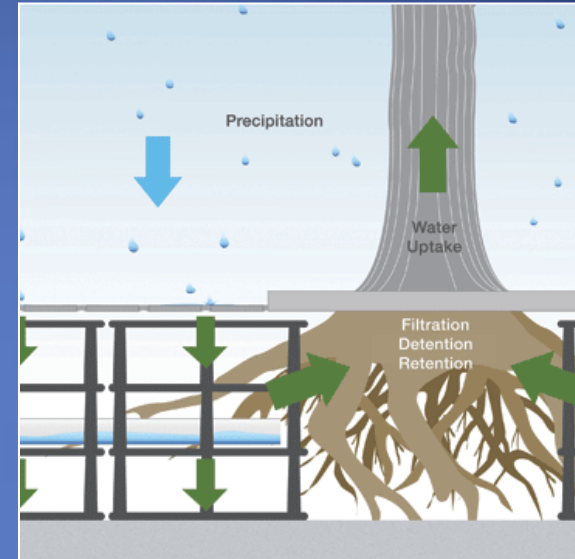
110

108

110

112

Urban Horticulture



Purpose (isolated locations):

- Support root growth and extend tree life
- Reduce sidewalk impacts

Tree Selection

- Hardiness - ability to withstand NH climate, urban heat and pollution, salt tolerance, pest resistance, and longevity
- Form - Appropriate scale, branching height and existing condition such as oh/u
- Seasonal Interest – flowering, fall color and maintenance needs

Tree Varieties

- Maples
- Chestnuts
- Cherry
- Dogwood
- Crabapple



- Magnolia
- Sourwood
- Lilac
- Elm
- Zelkova



Trees and Shrubs

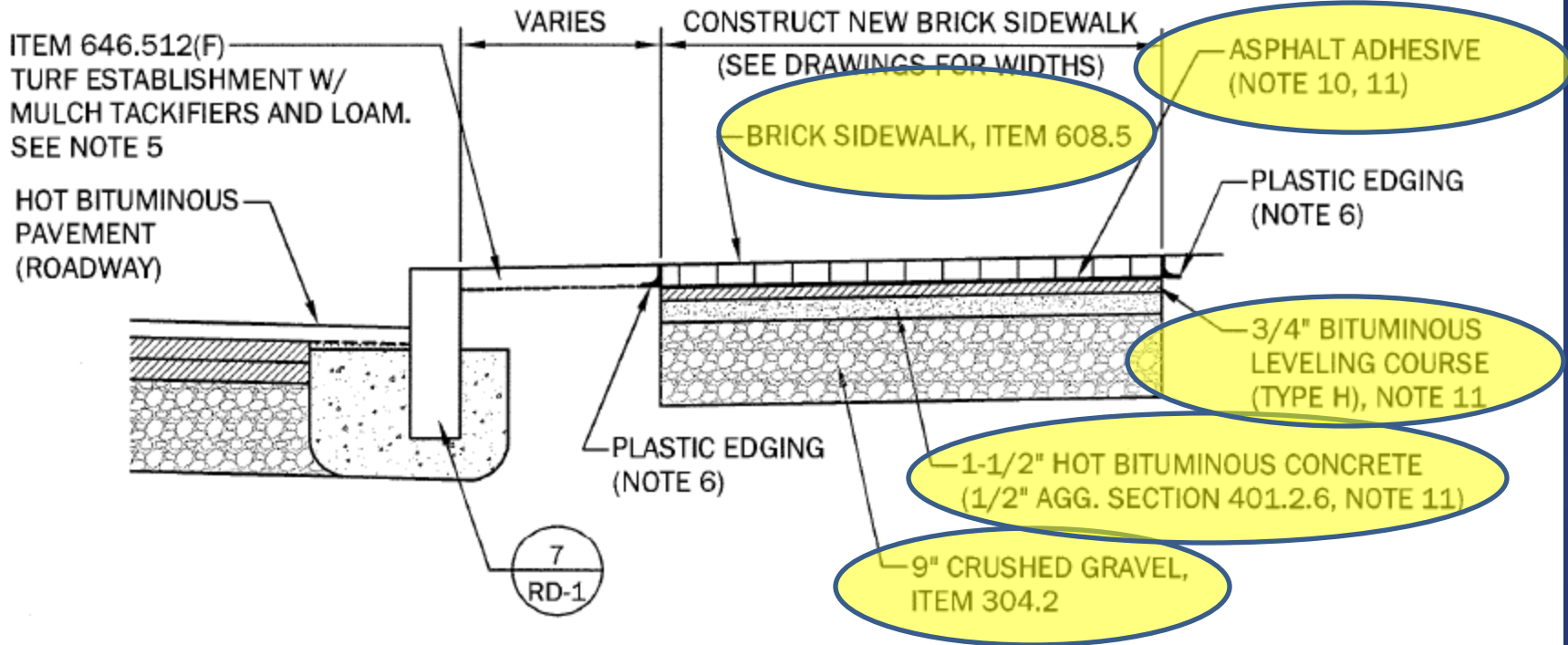
- 100+ Deciduous Trees
- ~50 Shrubs
- 1,300 groundcover plants and perennials
- Ornamental grasses

- Minimal Existing Tree Removal

Brick Sidewalks

- Clay Brick
- Oldest sidewalks are clay brick (Boston, Cambridge, Portland, and Newport) – 40 years
- Construction detail is similar as Portsmouth and Cambridge
- Local manufacturer





6
RD-1 **BRICK SIDEWALK**
NOT TO SCALE

Advantages of Clay Brick

- Less water absorptive
- Greater compressive strength
- Resists de-icing agents
- Repairs match better because brick can be reused
- Creates transition from new modern roadway design to historic structures along Silver

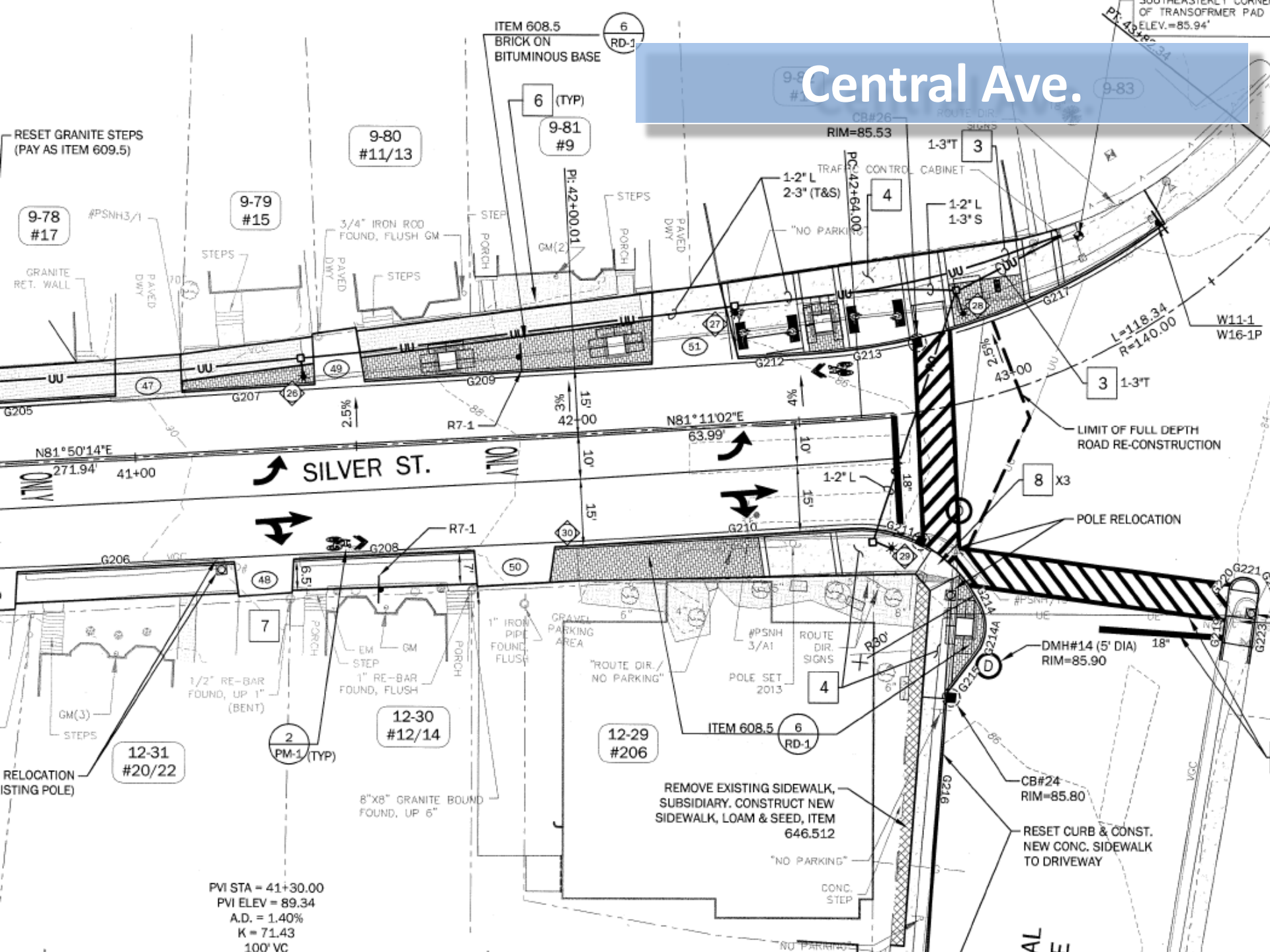
Disadvantages of Clay Brick

- Additional cost to install
- Additional cost to repair especially if brick needs to be replaced
- Limited use in Dover

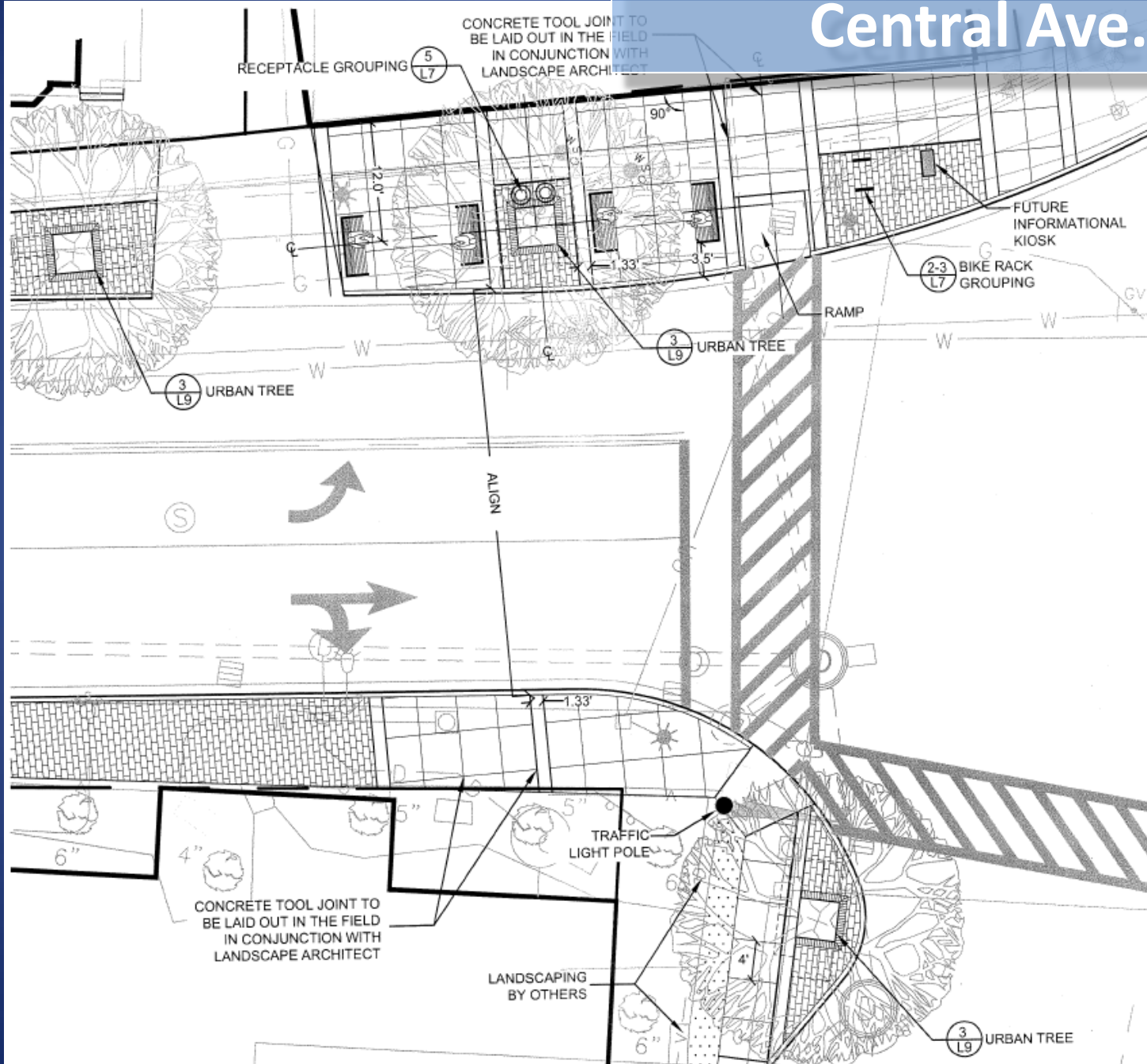
The Project



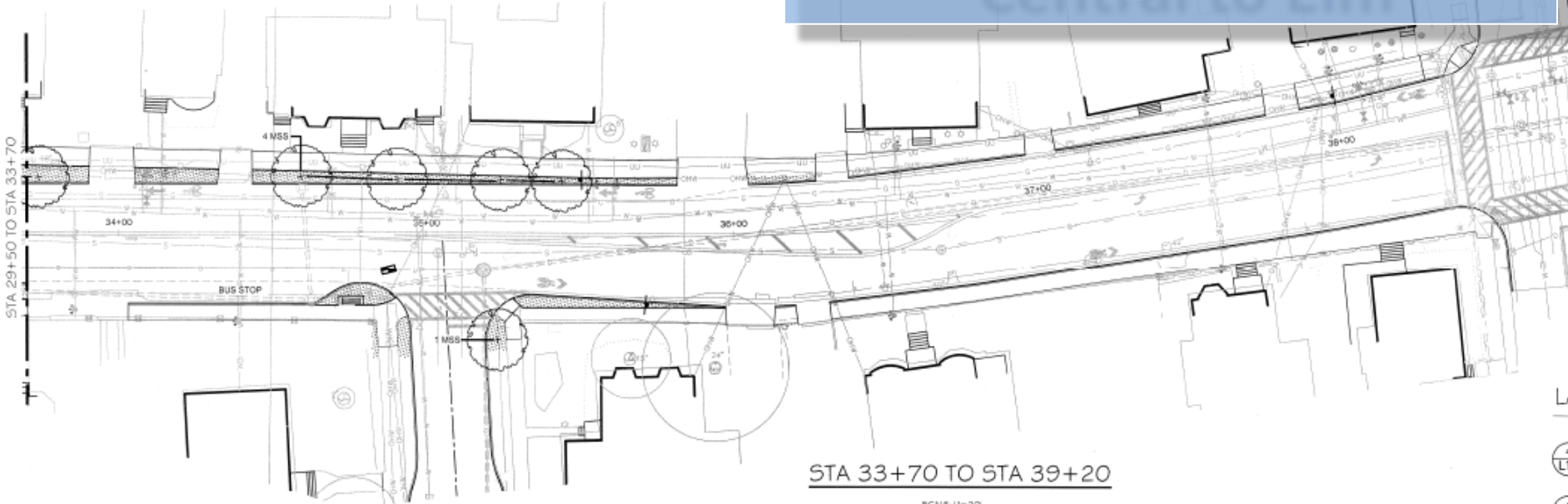
Central Ave.



Central Ave.

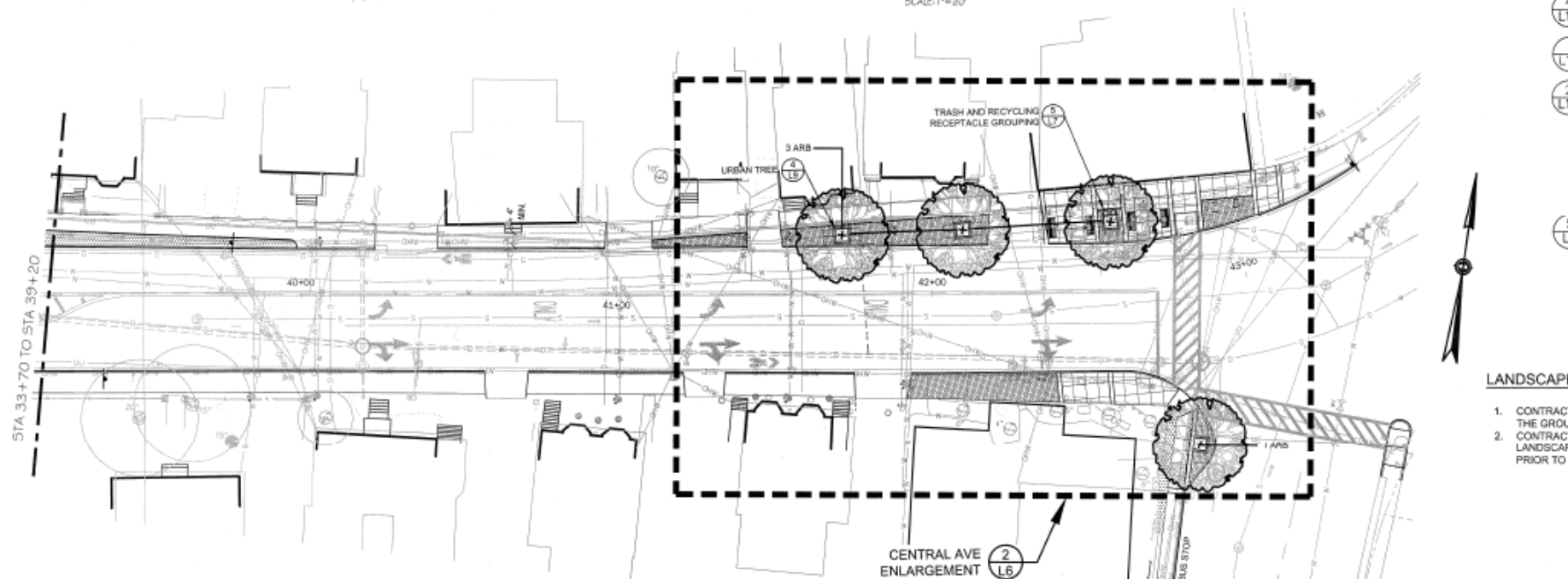


Central to Elm

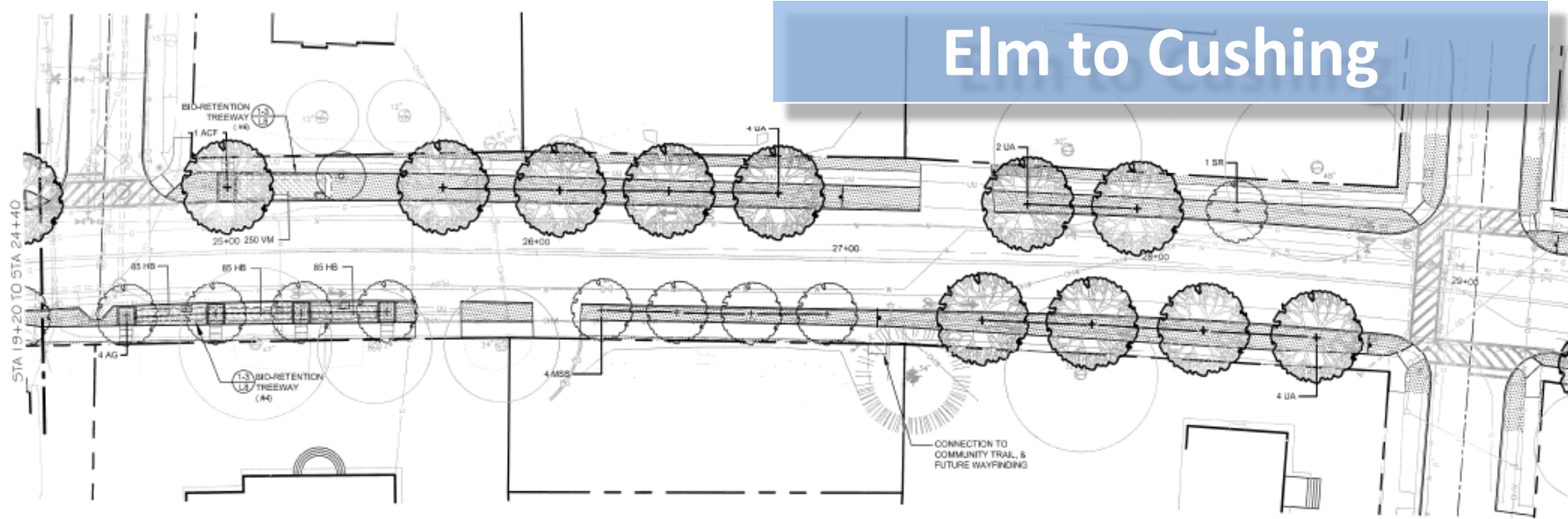


STA 33+70 TO STA 39+20

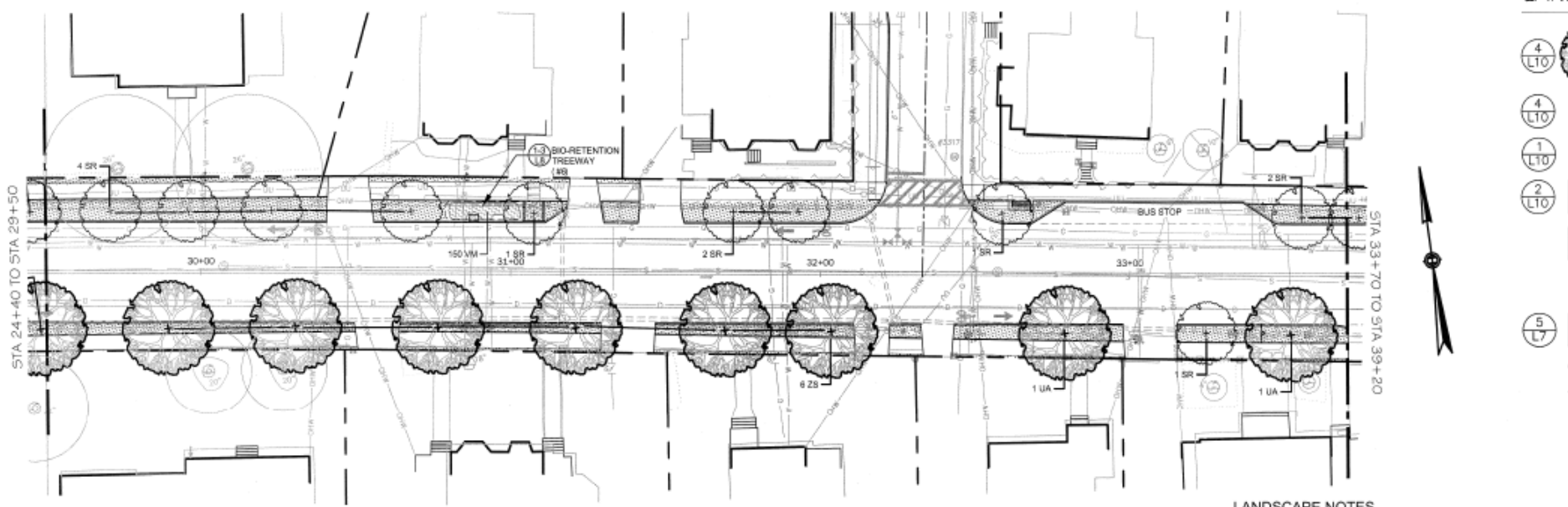
SCALE: 1"=20'



Elm to Cushing



STA 24+40 TO STA 29+50
SCALE: 1"=20'



STA 29+50 TO STA 33+70

LANDSCAPE NOTES

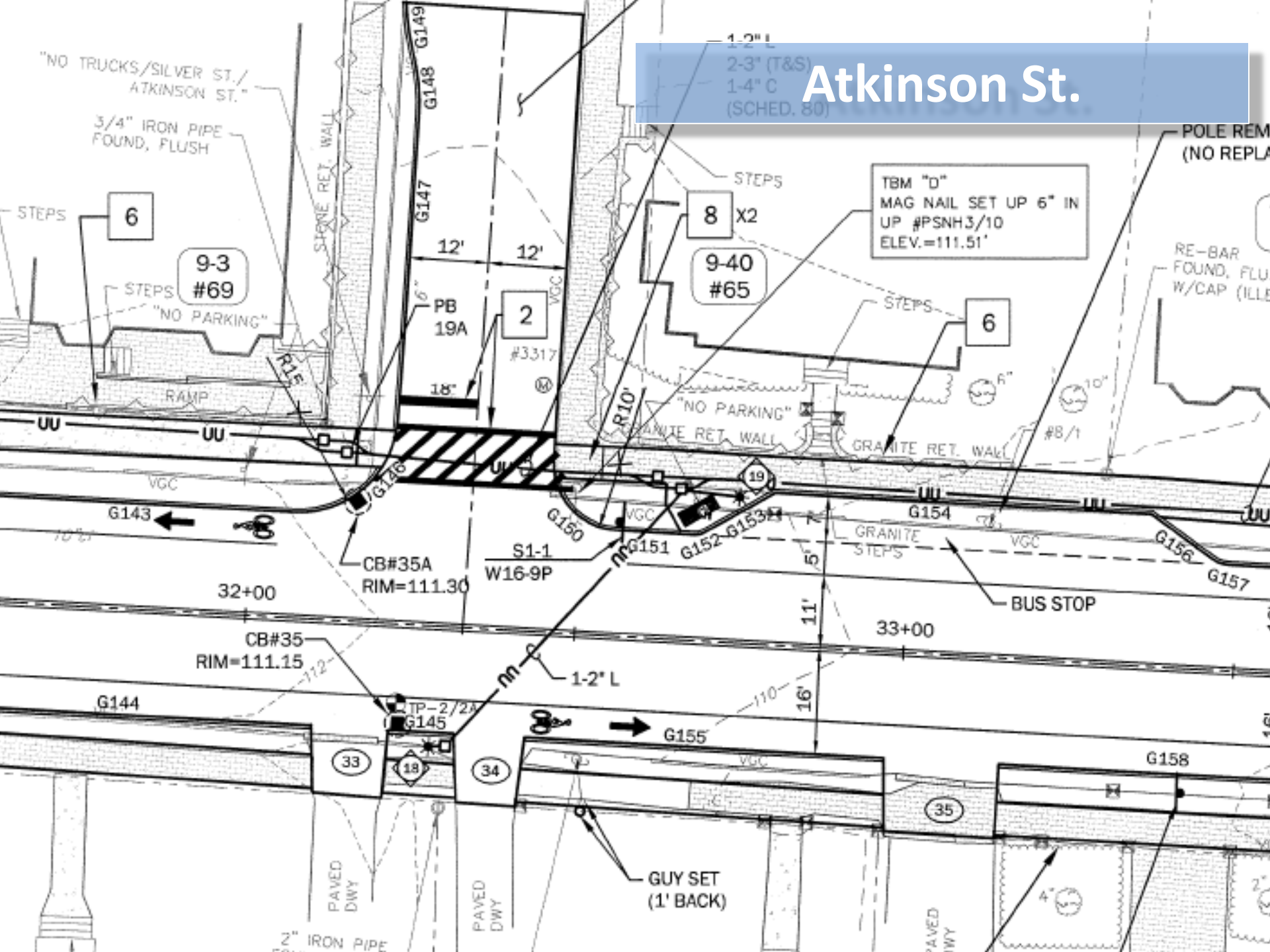
LAND

- 4 LTO
- 4 LTO
- 1 LTO
- 2 LTO
- 5 LV












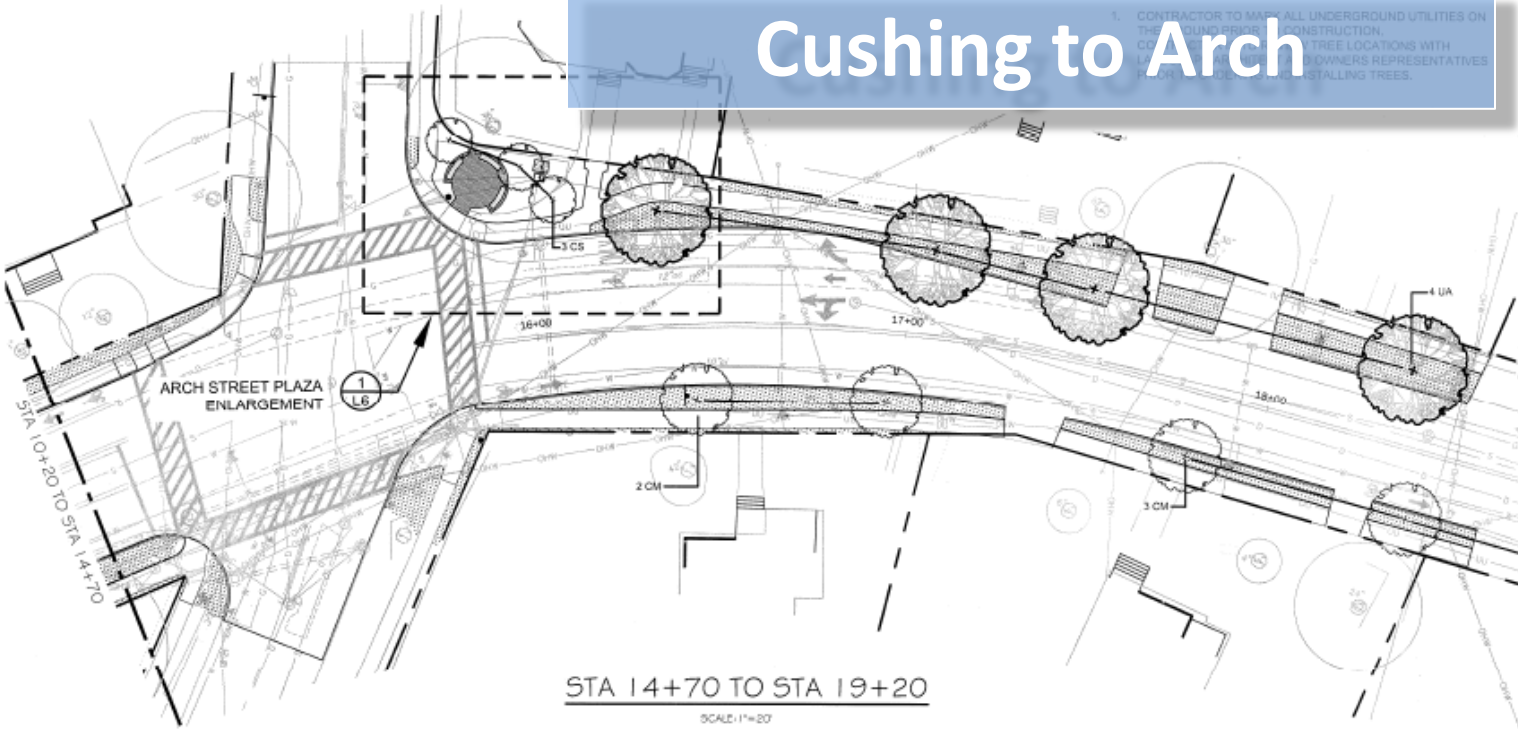
CONTRACTOR TO MARK ALL UNDERGROUND UTILITIES ON

Atkinson St.

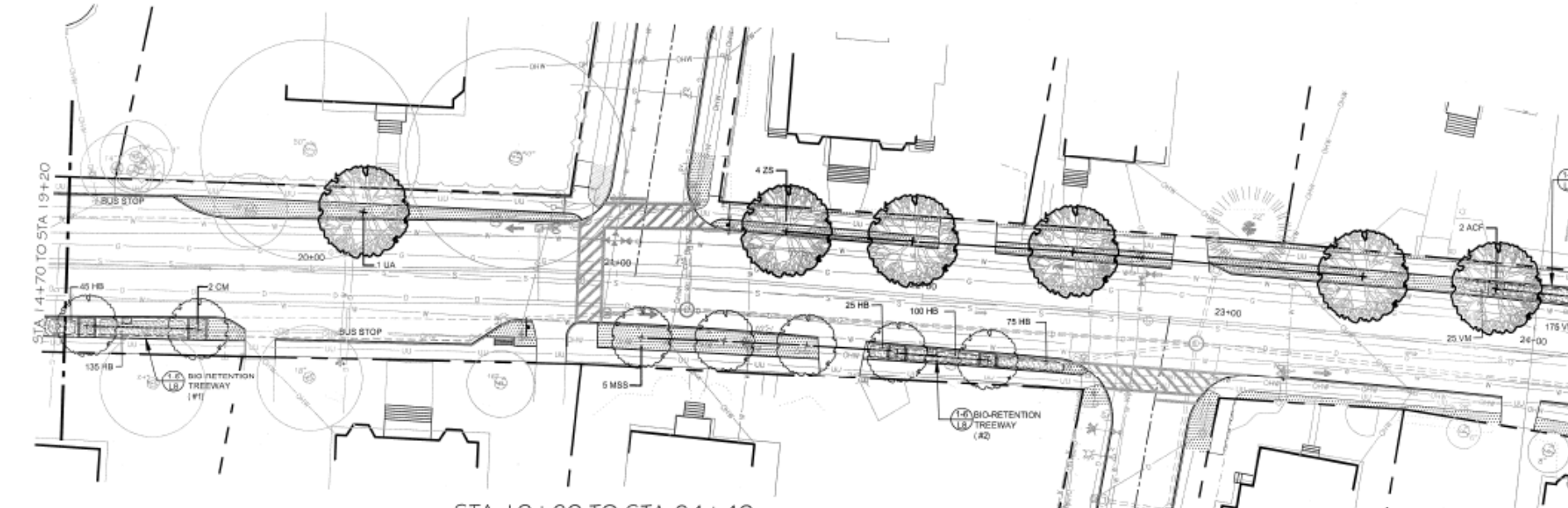


Cushing to Arch

-  4 L10 Deciduous Shade Tree
-  4 L10 Deciduous Flowering Tree
-  1 L10 Shrub Planting
-  2 L10 Groundcover Planting
-  Turf Establishment w/mulch tackifiers & Loam in accordance with section Item 646, subsidiary to item 3.2
-  Existing Tree
-  5 L7 Trash & Recycling Receptacles
-  Matchline
-  Bio Retention Treeway

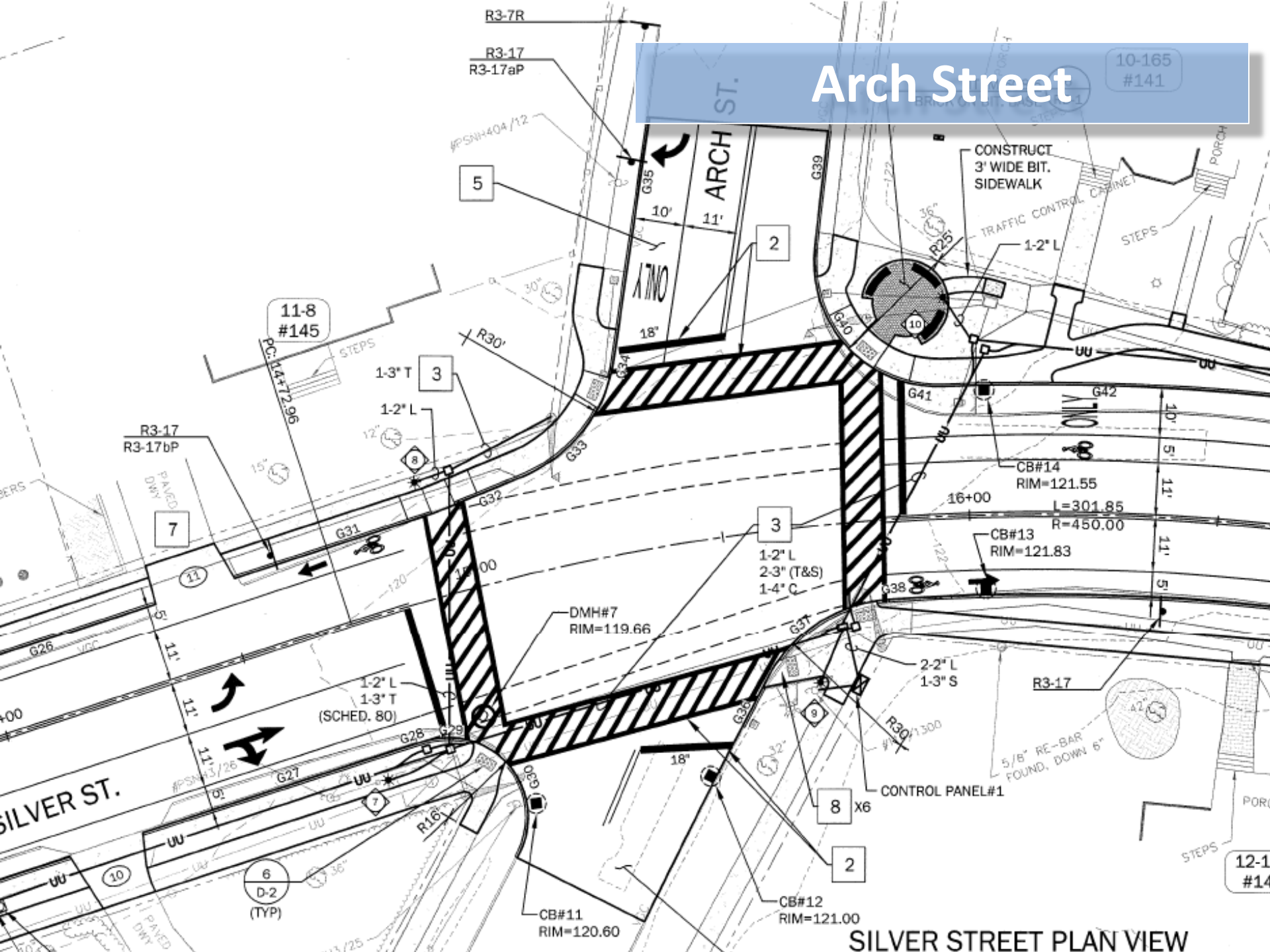


1. CONTRACTOR TO MAP ALL UNDERGROUND UTILITIES ON THE GROUND PRIOR TO CONSTRUCTION.
 2. VERIFY TREE LOCATIONS WITH PROPERTY OWNERS REPRESENTATIVES PRIOR TO INSTALLING TREES.



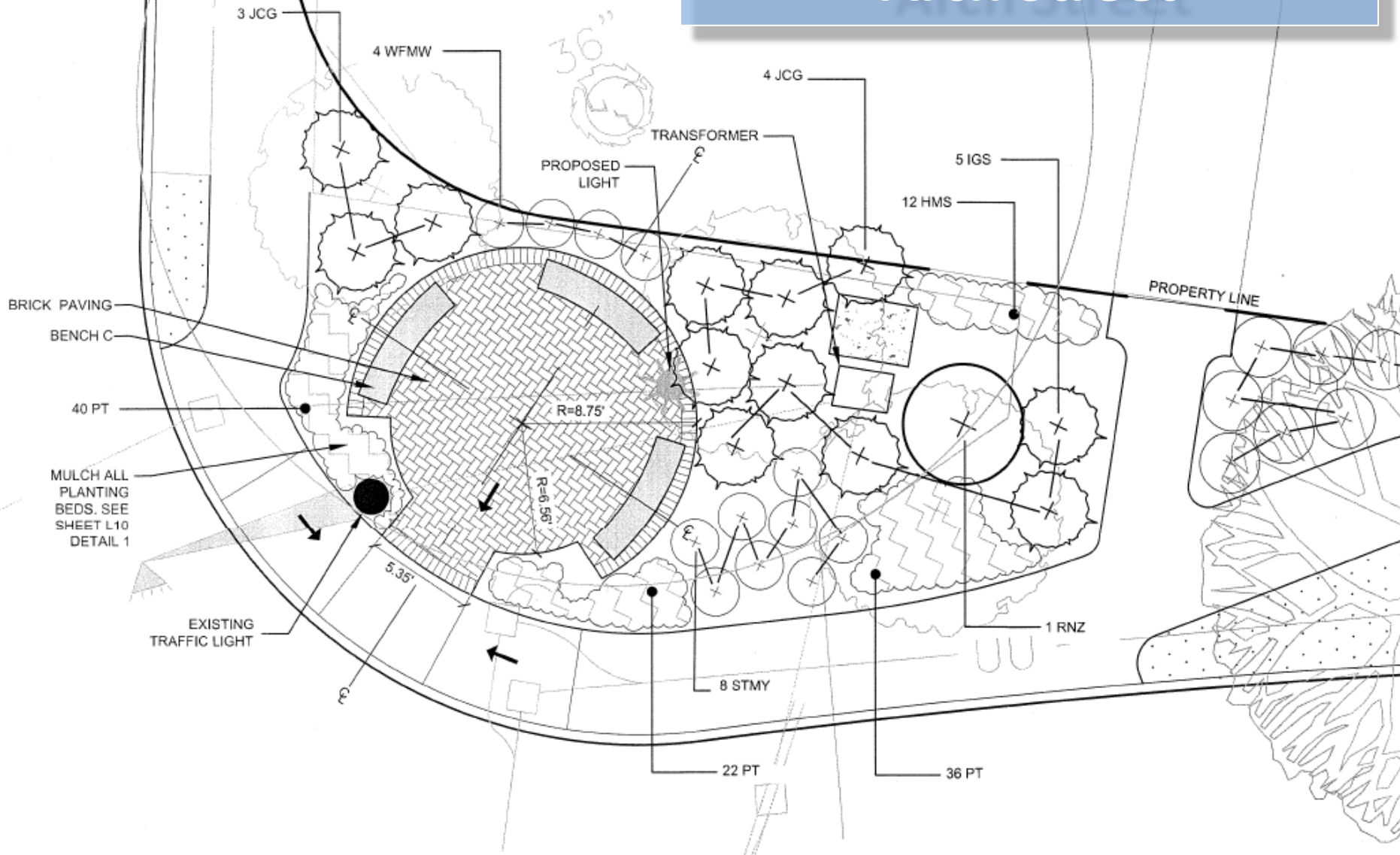
Arch Street

10-165
#141



SILVER STREET PLAN VIEW

Arch Street



BENCH TABLE
FOR SHEETS L1-L6

BENCH A



1

1

ARCH STREET PLAZA

DECIDUOUS TREES					
QTY.	ABRV.	SCIENTIFIC NAME	COMMON NAME	SIZE	REMARKS
4	AG	ACER GINNALA 'FLAME'	FLAME AMUR MAPLE	2 1/2" C	S&B
3	ACF	AESOLLUS CARNEA 'FORT MCNAIR'	FORT MCNAIR HORSECHESTNUT	2 1/2" C	S&B
13	ARB	ACER RUBRUM 'BURGUNDY BELLE'	BURGUNDY BELLE RED MAPLE	3 1/2" C	S&B
8	CM	CORNUS MAS	CORNELIAN CHERRY	2 1/2" C	S&B
3	CS	CORNUS x 'STELLAR PINK'	STELLAR PINK DOGWOOD	2 1/2" C	S&B
14	MS	MAULUS SPRING SNOW	SPRING SNOW CRABAPPLE	2 1/2" C	S&B
6	ME	MAGNOLIA X TELLASENIT	ELIZABETH MAGNOLIA	2 1/2" C	S&B
3	OA	OXYDENDRON ARBOREUM	SCOURWOOD	2 1/2" C	S&B
14	RR	RYNENIA WITTO'S STA 'RUBY RED'	RUBY RED SPANISH BEECH	3 1/2" F	S&B
17	LA	LIUMUS AMERICANA 'LIBERTY'	LIBERTY AMERICAN ELM	4" CAL.	S&B; AVAIL. FROM ELM RESEARCH KEENE, NH
11	ZS	ZELKOVA SERRATA 'GREEN VASE'	GREEN VASE ZELKOVA	3 1/2" C	
SHRUBS					
7	JCS	JUNIPER CHINENSIS 'GOLD STAR'	GOLD STAR JUNIPER	3 1/2" PD	CONTAINER
5	IGS	ILEX GLABRA SHAMROCK	SHAMROCK HICKBERRY	3 1/2" PD	CONTAINER
1	NRZ	RODODENDRON 'NOVA ZEMBLA'	NOVA ZEMBLA RODODENDRON	3" HT	S&B
8	STMY	SPIREA TRILOBATA 'MELLOW YELLOW'	MELLOW YELLOW SPIREA	3 1/2" PD	CONTAINER
17	WFMW	WIGELA FLORIDA 'MIDNIGHT WINE'	MIDNIGHT WINE WIGELA	2 1/2" PD	CONTAINER
PERENNIALS AND GROUNDCOVERS					
600	VM	VINCA MINOR	MYRTLE	2 DT	PLANT 1" O.C.
835	H4	HEDERA HELIX 'BALTICA'	BALTIC IVY	2 DT	PLANT 1" O.C.
34	PT	PACHYSANDRA TERMINALIS	COMMON SPURGE	2 DT	PLANT 1" O.C.
12	HWS	HAWKNEIGHIA MACRO 'STRATA'	VAREGATED JAP. FOREST GRASS	2 DT	PLANT 1" O.C.

LANDSCAPE NOTES

1. GUN MARK TO MARK ALL UNDERGROUND UTILITIES ON THE GROUND PRIOR TO CONSTRUCTION.
2. CONTRACTOR IS TO REVIEW TREE LOCATIONS WITH LANDSCAPE ARCHITECT AND OWNERS REPRESENTATIVES PRIOR TO ORDERING AND INSTALLING TREES.

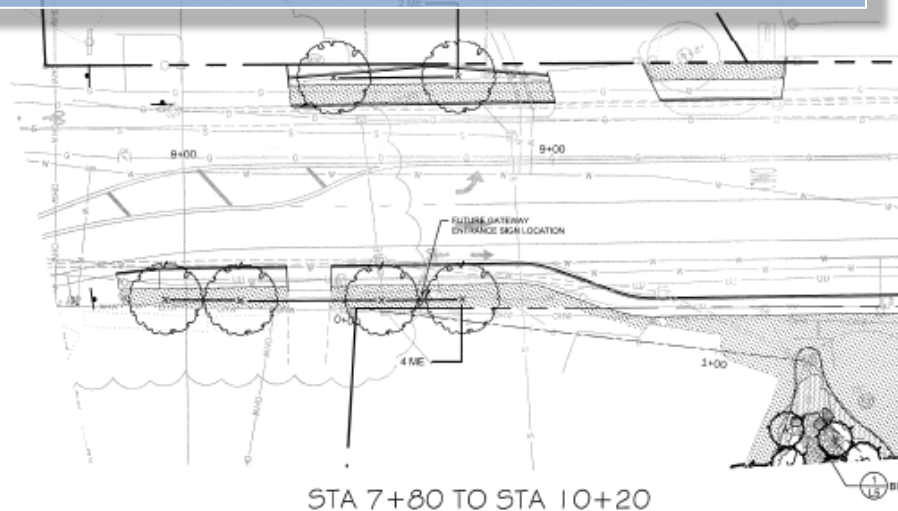
BENCH TABLE FOR SHEETS L1-L6

BENCH A		
BENCH B		
BENCH C		
BENCH D		SEE NOTE 3 ON SHEET L5

LANDSCAPE LEGEND

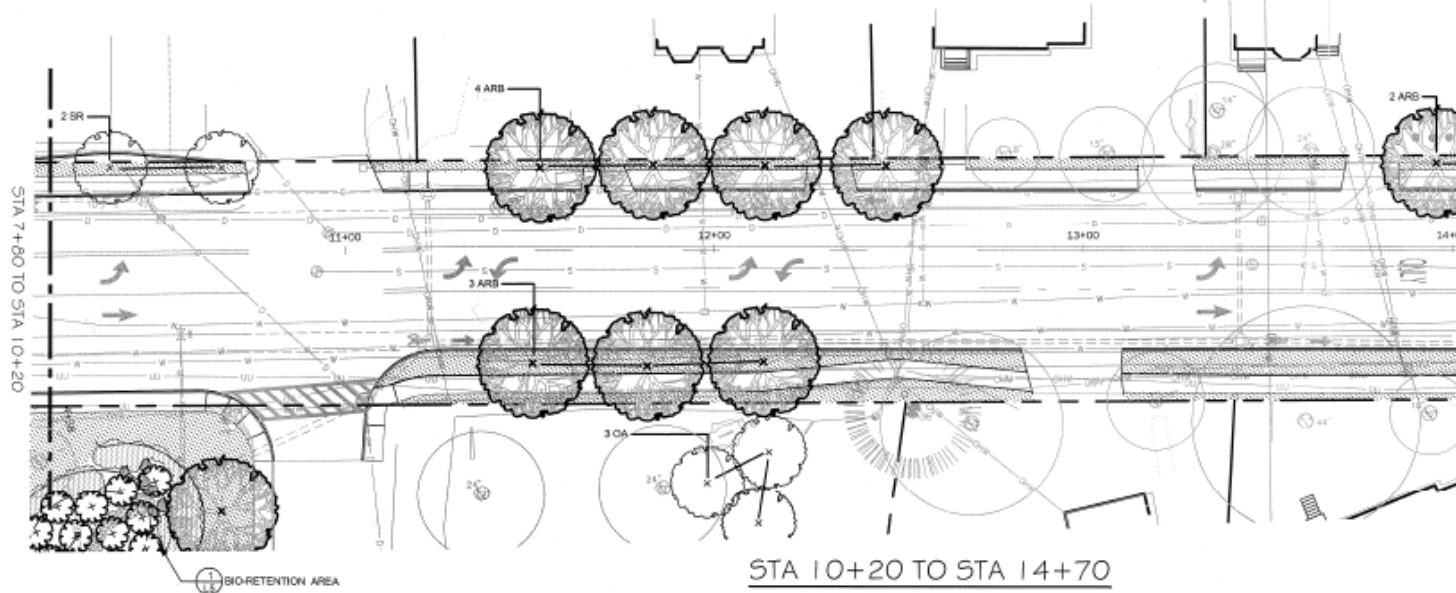
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	Existing Tree
	Trash & Recycling Receptacles
	Matchline
	Bio Retention Treeway

Arch to Exit 8



STA 7+80 TO STA 10+20

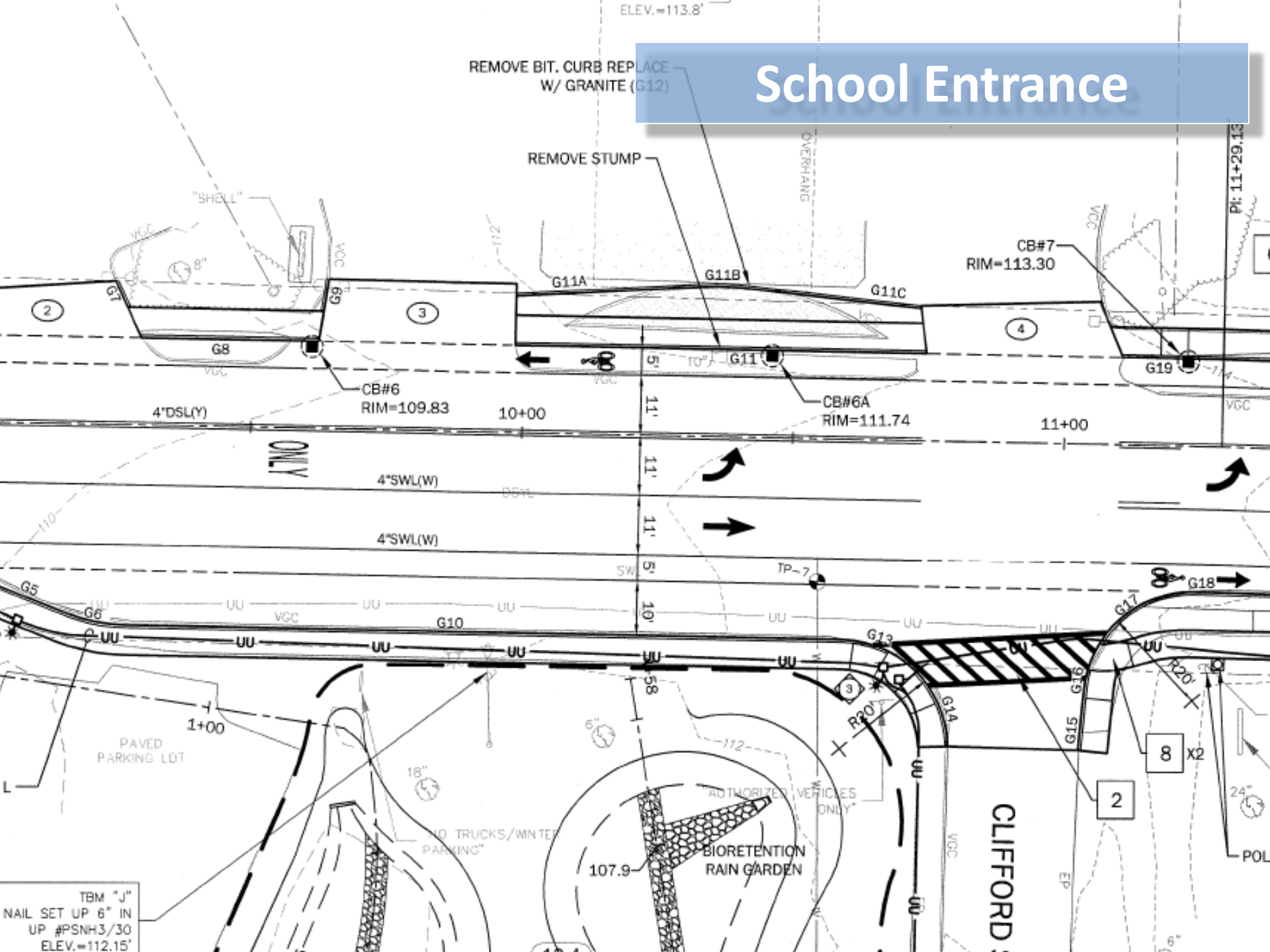
SCALE: 1"=20'



STA 10+20 TO STA 14+70

SCALE: 1"=20'

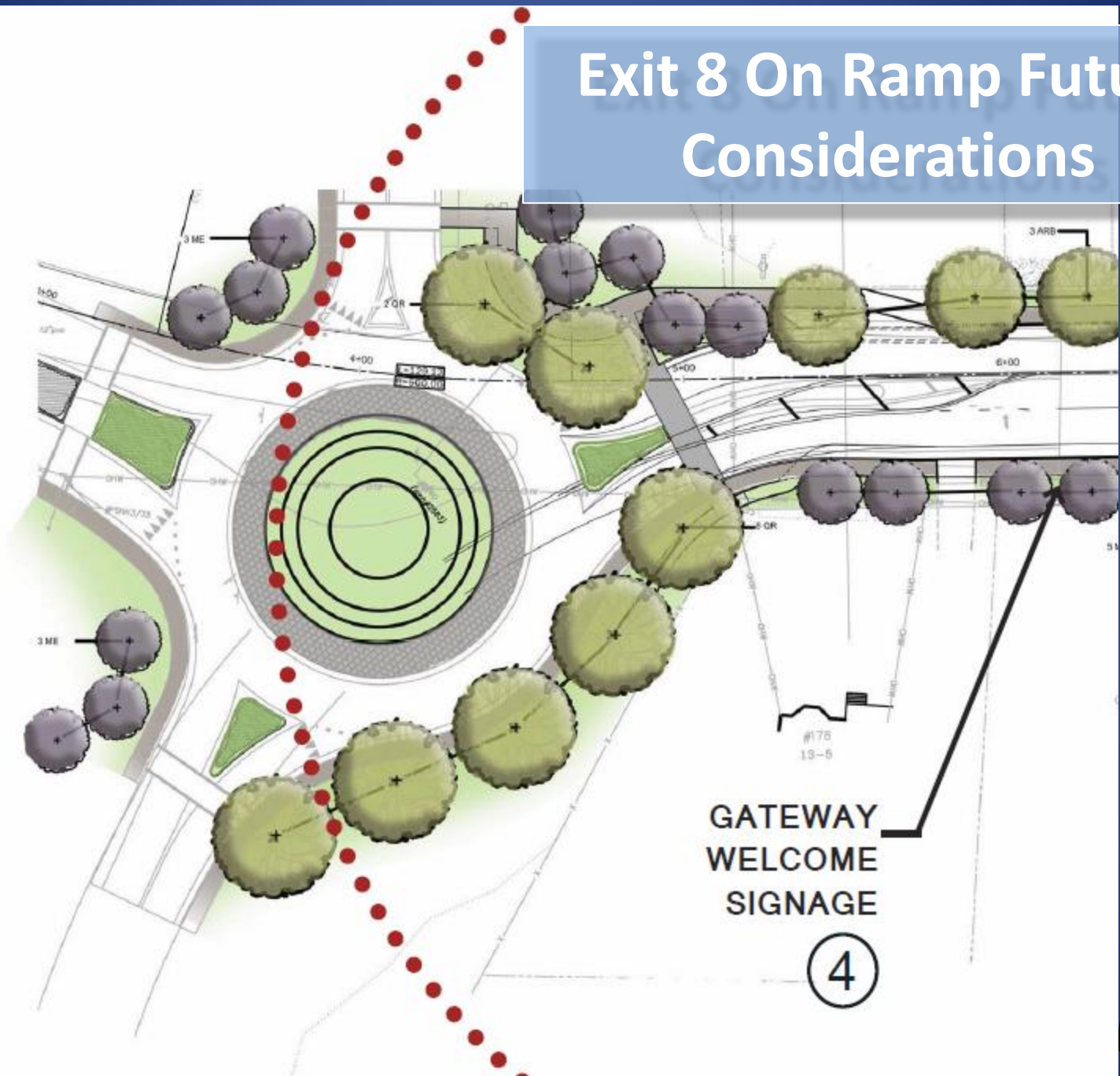
School Entrance

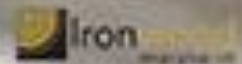


TBM "J"
NAIL SET UP 6" IN
UP #PSNH3/30
ELEV.=112.15'

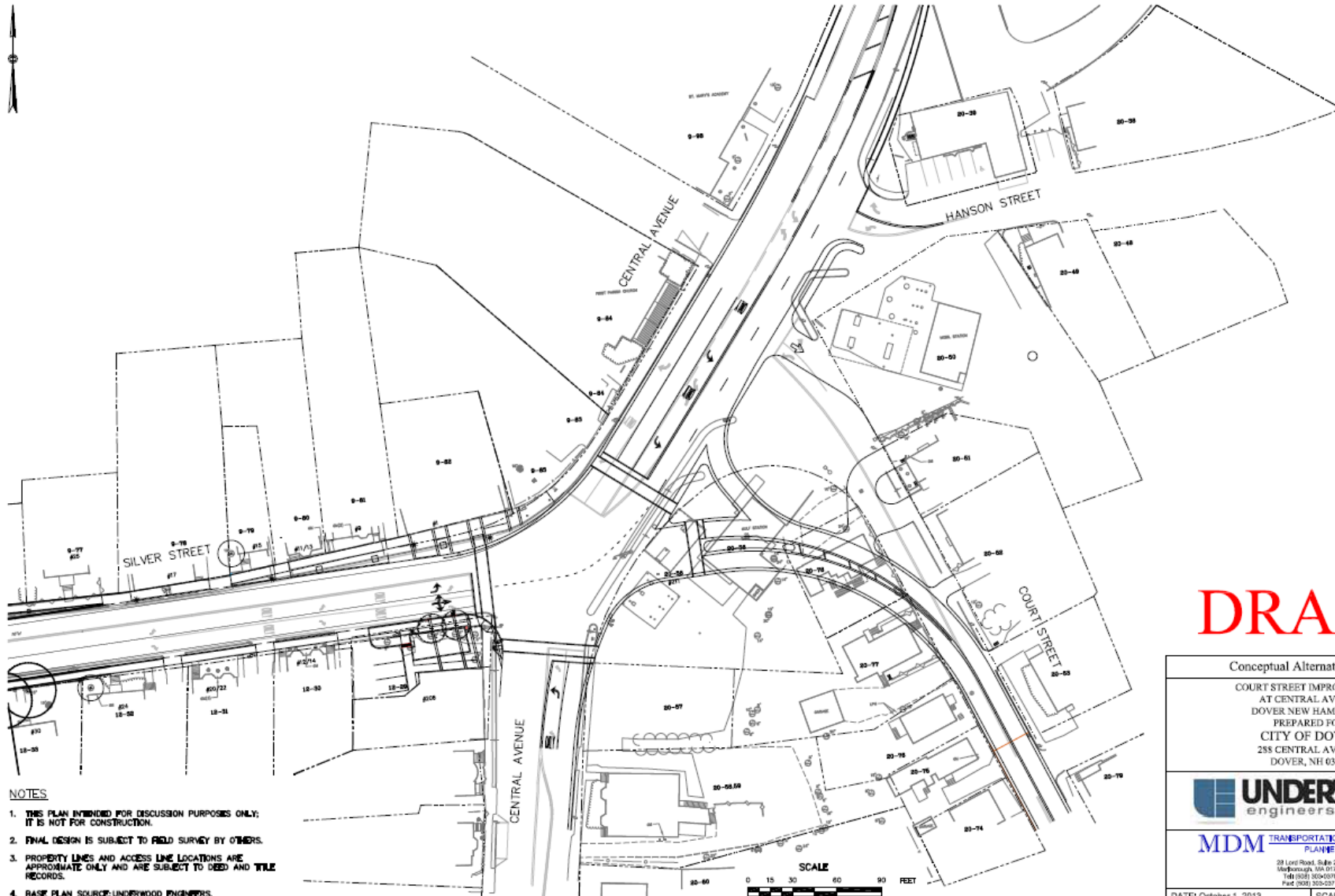
Future Considerations

Exit 8 On Ramp Future Considerations





Future Improvements - Court Street



- NOTES**
1. THIS PLAN INTENDED FOR DISCUSSION PURPOSES ONLY; IT IS NOT FOR CONSTRUCTION.
 2. FINAL DESIGN IS SUBJECT TO FIELD SURVEY BY OTHERS.
 3. PROPERTY LINES AND ACCESS LINE LOCATIONS ARE APPROXIMATE ONLY AND ARE SUBJECT TO DEED AND TITLE RECORDS.
 4. BASE PLAN SOURCE: UNDERWOOD ENGINEERS.

DRAFT

Conceptual Alternate "A" Plan
 COURT STREET IMPROVEMENTS
 AT CENTRAL AVENUE
 DOVER NEW HAMPSHIRE
 PREPARED FOR:
 CITY OF DOVER
 285 CENTRAL AVENUE
 DOVER, NH 03820

UNDERWOOD
 engineers

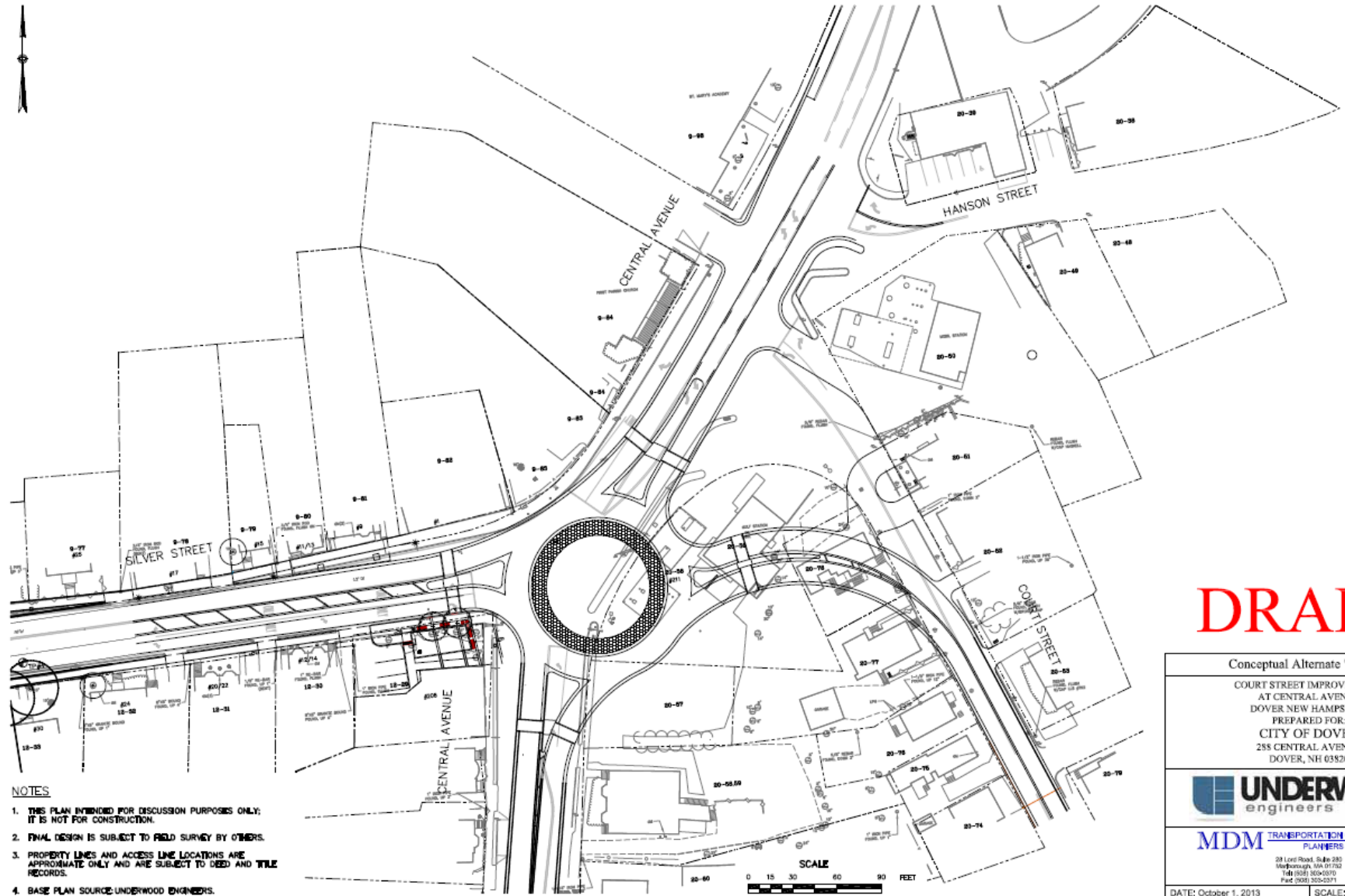
MDM TRANSPORTATION CONSULTANTS, INC.
 PLANNERS & ENGINEERS

28 Lord Road, Suite 200
 Dover, NH 03820
 Tel: 603-356-0070
 Fax: 603-355-0371

DATE: October 1, 2013	SCALE: As Noted
PROJECT No. 672	Title: 672 Concept - Court Street Central 10-1-2013.dwg
	Sheet 1 of 1



Future Improvements - Court Street



DRAFT

- NOTES**
1. THIS PLAN INTENDED FOR DISCUSSION PURPOSES ONLY; IT IS NOT FOR CONSTRUCTION.
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 4. BASE PLAN SOURCE: UNDERWOOD ENGINEERS.

<p>Conceptual Alternate "B" Plan</p> <p>COURT STREET IMPROVEMENTS AT CENTRAL AVENUE DOVER NEW HAMPSHIRE PREPARED FOR: CITY OF DOVER 288 CENTRAL AVENUE DOVER, NH 03820</p>	
	
<p>MDM TRANSPORTATION CONSULTANTS, INC. PLANNERS & ENGINEERS</p> <p>28 Lord Road, Suite 280 Manchester, NH 03102 Tel: 603-256-0370 Fax: 603-256-0371</p>	
DATE: October 1, 2013	SCALE: As Noted
PROJECT No. 672	Sheet 1 of 1

Construction Impacts

CITY OF DOVER

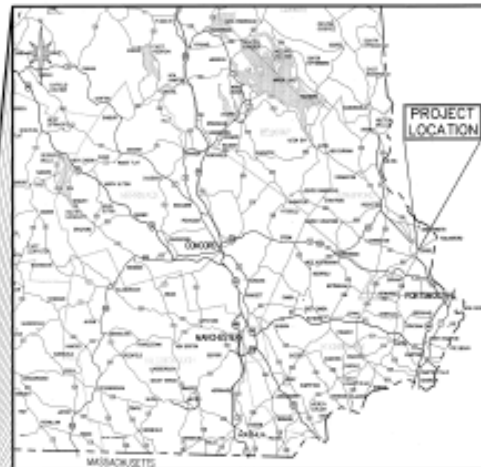
DOVER, NEW HAMPSHIRE

FOR CONSTRUCTION

SILVER STREET RECONSTRUCTION

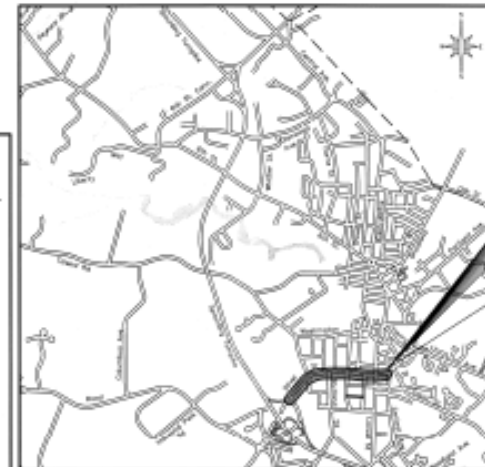
PREPARED BY
UNDERWOOD ENGINEERS
 PORTSMOUTH, NEW HAMPSHIRE

APRIL 2014



LOCATION PLAN

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SHEET TITLE	ORG. NO.	SHT. NO.
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SIGN GRAPHIC	SG-1	51
LIGHTING & ELECTRICAL DETAILS	E-1 & E-2	52-53
TRAFFIC SIGNAL PLANS	TS-1 to TS-3	54-56
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SILVER STREET WATER MAIN REPLACEMENT		
COVER SHEET	-	-
GENERAL NOTES, LEGEND & ABBREVIATIONS	C-1	1
PLAN A & PROFILE STA 1400 TO STA 5482	C-2	2
PLAN-B-ALTERNATE-A- SILVER STREET EXTENSION		
PLAN-C-ALTERNATE-B- WEST KNOW NORTH ROAD		
DETAILS 1	C-3	3
EROSION CONTROL NOTES & DETAILS	C-4	4



VICINITY MAP

UE #1725



Project Schedule

- Contract Award – Mid July, 2014
- Public Meeting – July 16, 2014
- Substantial Completion – 270 Days
- Final Completion – 330 Days
- Winter Shut-down Period
- Construction Phasing and Sequencing

Traffic/Access Impacts

- Project will be disruptive/inconvenient
- Alternating or one way traffic
- Anticipation of detours
- Flagger and Police details
- Maintain access
 - Emergency Vehicles
 - Property Owners
- Maintain safe pedestrian corridor

Questions and Answers