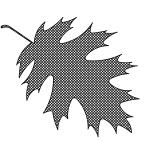


HIGHWAY LANDSCAPE DEVELOPMENT PROJECT



County Line.

(By Others)

(By Contract)

Property Line.....

Easement Line.....

Slope Stake Line.

Exist. Fence.

Exist. Road.
Prop. Road.

Guardrail.....
Survey Line...

City or Town Line

Exist. Right of Way Line Marker
Prop. Right of Way Line Marker

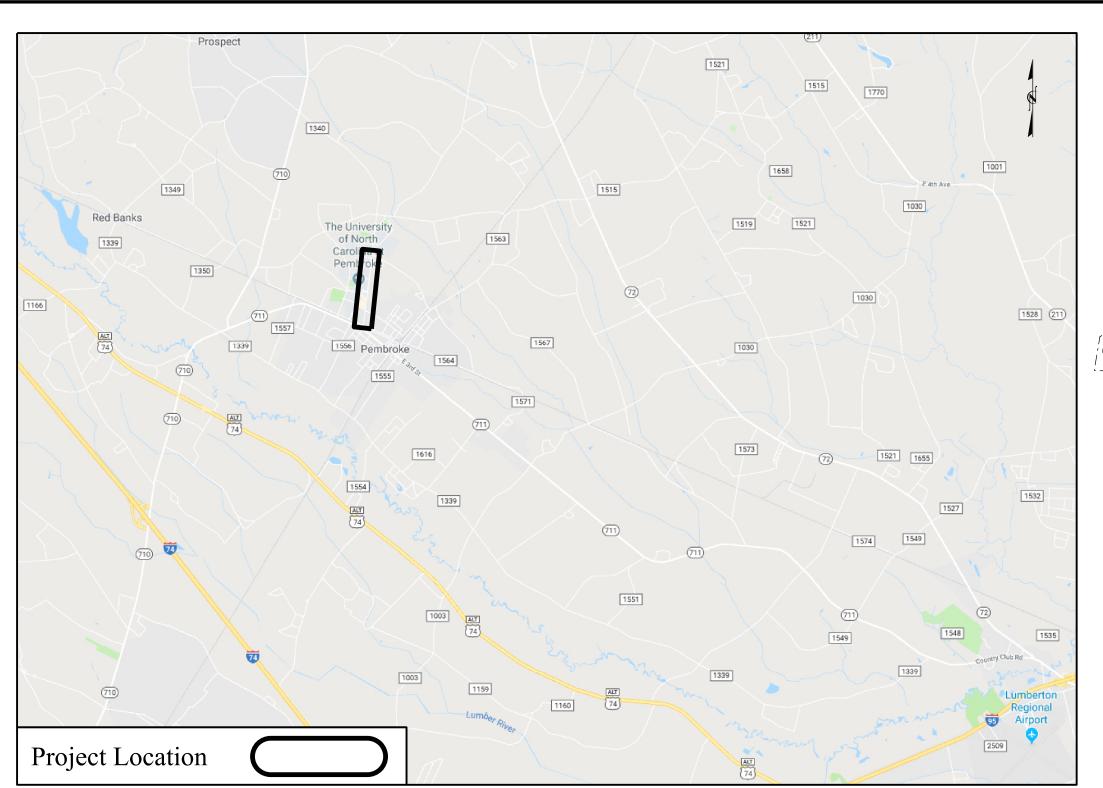
Prop Right of Way Line Marker

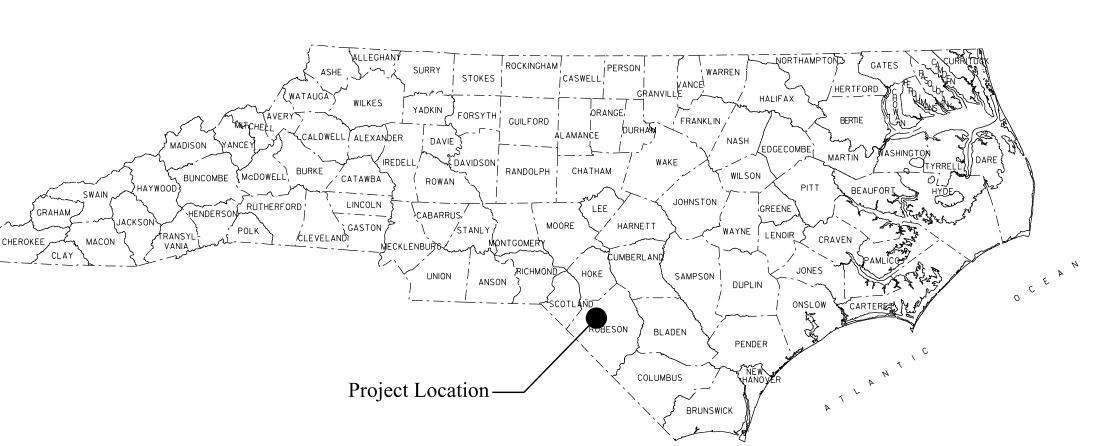
Exist. Control of Access Line Prop. Control of Access Line

Prop. Woven Wire Fence.
Prop. Chain Link Fence.

T.I.P. #	STATE PROJECT W.B.S. #	SHEET#	SHEET # TOTAL	
U-5925(L)	46874.3.2	L1	16	
FED. PROJ. #	DESCRIPTION		DIVISION	
HSIP-1340(12)	TIP		6	

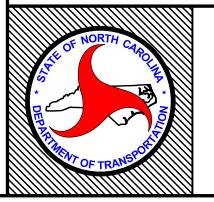
CONVENTIONAL SYMBOLS





Summary of Quantities 1 Year Establishment

DES	SEC	QTY	UNIT	KEY	BOTANICAL NAME	COMMON NAME	SIZE	CALIPER	FURNISH	A.S.N.S.	REMARKS
					Trees						
L	1670	37	еа		Juniperus virginiana 'Brodie'	Brodie Juniper	5-6'		B&B	4.9	7' O.C.
L	1670	46	еа	LD	Lagerstroemia indica 'Whit II'	Dynamite® Crape Myrtle	6-7'		B&B	2.5	11' O.C.
L	1670	16	еа	QS	Quercus shumardii	Shumard Oak		2-2.5"	B&B	2.2	40' O.C.
					Shrubs						
	4670	22			Louis and basic and all a 10 and Louis and	Dan Hankan Louisan	45.40	!	#2.C1	4.4	FI O C
L	1670	23	еа	JH	Juniperus horizontalis 'Bar Harbor'	Bar Harbor Juniper	15-18"		#3 Cont.	4.4	5' O.C.
					Grasses/Groundcovers/Perennials						
					diasses/ diodilacovers/ Ferentilais						
L	1670	19	еа	MC	Muhlenbergia capillaris 'White Cloud'	White Muhly Grass	18-24"		#3 Cont.	13.4	3' O.C.
L	1670	82	еа		Sedum spectabile 'Autumn Joy'	Autumn Joy Sedum	12-15"		#1 Cont.	13.3	2' O.C.
L	1664	9695	sy	ТВ	Cynodon dactylon x C. transvaalensis germplasma*	Tifway 419 Bermuda	n/a		Sod	n/a	Tight Seams
			,		,	,					
					Other Vegetation Costs						
L	1670	73	су		Mulch for Planting						Depth of 4"
L	1670	660	sy		Pre emergence Herbicidal Treatment						
L	1670	660	sy		Post emergence Herbicidal Treatment						
L	1670	12	еа		Monthly Maintenance						
L	1105	1	LS			emporary Traffic Control					
L	SP	1	LS		Irrigation	rigation					
					* 0 1 12 1 1 400/ 1 1						
					* Sod quantity includes 10% extra for waste cuts						



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION LOCATION: Prospect Rd in Pembroke

TYPE of WORK: TIP

COUNTY: Robeson County

Denotes Line Equality

Bridge

Culvert

Railroad

Woods

Exist. Telephone Pole

Prop. Telephone Pole

Tower Pole and Line

Exist. Power Pole

Prop. Power Pole

Sanitary Sewer Line

Water Line

Gas Line

Picnic Shelter

Regeneration

INDEX OF L SHEETS:

L 1.0 - Title Sheet

Reforestation

- L 2.0 Planting Details
- L 3.0 L 8.0 Planting Plans
- L 9.0 Irrigation Notes
- L 10.0 Irrigation Details L 11.0 - L 16.0 Irrigation Plans

PREPARED BY: K Cooper DATE: 11/2018

REVISIONS

DATE	DESCRIPTION

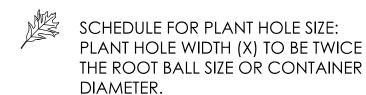
2018 NCDOT STANDARD SPECIFICATIONS

PREPARED IN THE OFFICE OF:

2014 American Standard for Nursery Stock

NCDOT- ROADSIDE ENVIRONMENTAL UNIT
AESTHETIC ENGINEERING SECTION
1557 MAIL SERVICE CENTER
RALEIGH NC 27699 919-707-2920

NOTES:



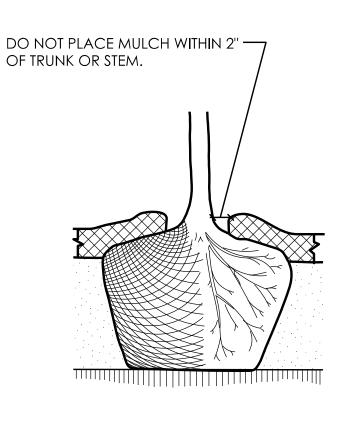
SEE STANDARD SPECIFICATIONS FOR PLANT BED FUMIGATION AND HERBICIDAL TREATMENT.

APPLY FERTILIZER AT PLANTING TIME IN THE FORM OF A SLOW RELEASE PELLET OR TABLET. APPLY AT RATE RECOMMENDED BY MANUFACTURER. BOTH RATE AND FORMULATION MUST BE APPROVED BY FIELD ENGINEER PRIOR TO APPLICATION.

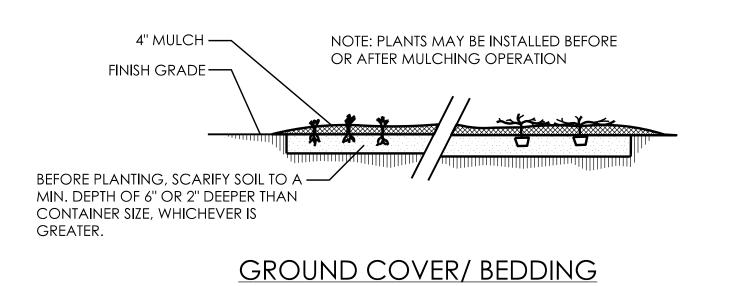
REMOVE WIRE BASKET AND FOLD BURLAP BACK FROM TOP OF ROOT BALL BEFORE BACKFILLING IS COMPLETE.

ALL PRUNING TO FOLLOW STANDARD ARBORICULTURAL PRACTICES AS SPECIFIED BY INTERNATIONAL SOCIETY OF ARBORICULTURE.

DO NOT ATTEMPT TO STRAIGHTEN A TREE THAT HAS BEEN PLANTED AT AN ANGLE WITH THE USE OF STAKING OR GUYING. DIG TREE AND REPLANT TO UPRIGHT POSITION.

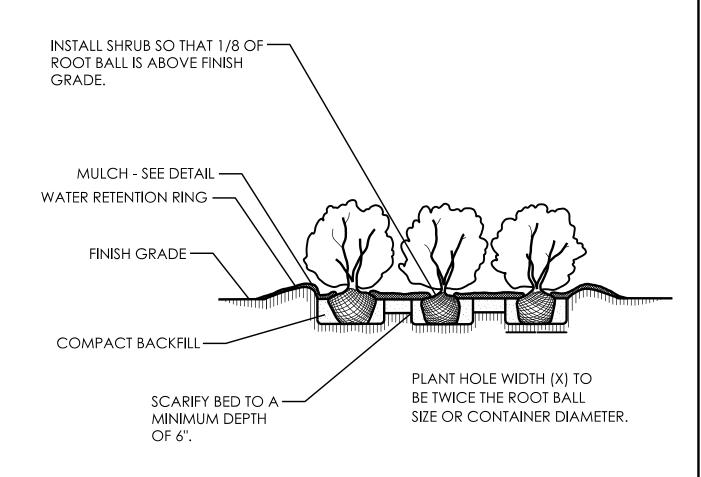


MULCH DETAIL

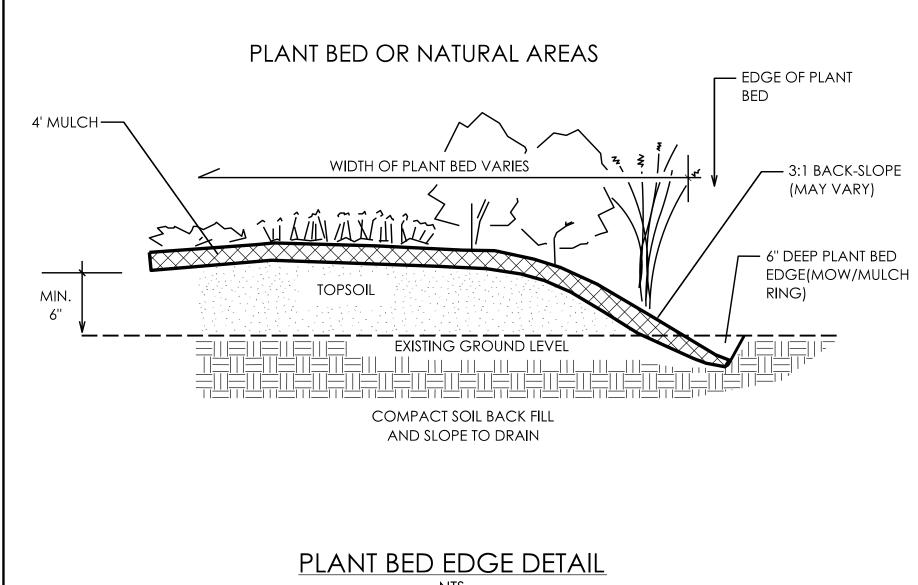


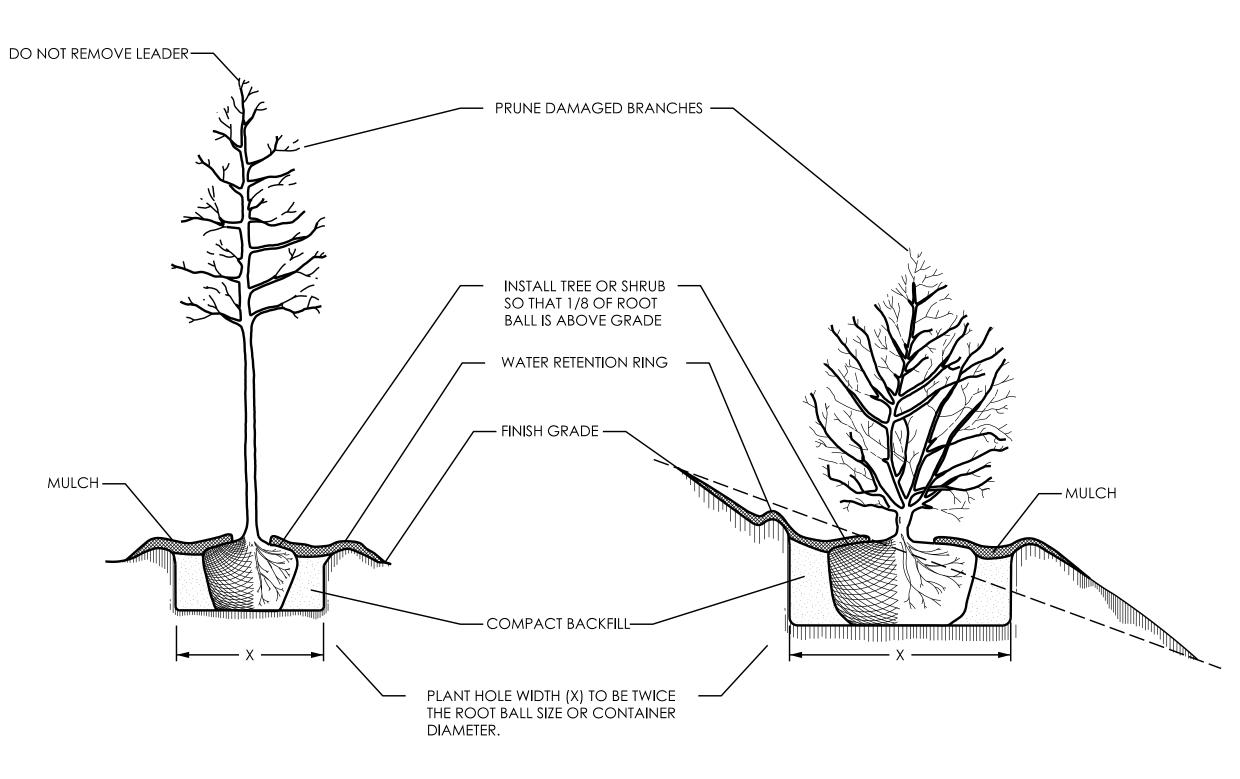
PLANT DETAIL LOCATE PLANT MATERIAL BEHIND GUARDRAIL AT A DISTANCE EQUAL TO ITS RECOMMENDED SPACING (SEE PLAN), UNLESS OTHERWISE DIRECTED BY ENGINEER. Guardrail — EXTEND MULCH TO FRONT — EDGE OF THE GUARDRAIL OR TO PAVEMENT EDGE OF TRAVELWAY. Guardrail Mulching Detail

USE AS DIRECTED BY FIELD ENGINEER



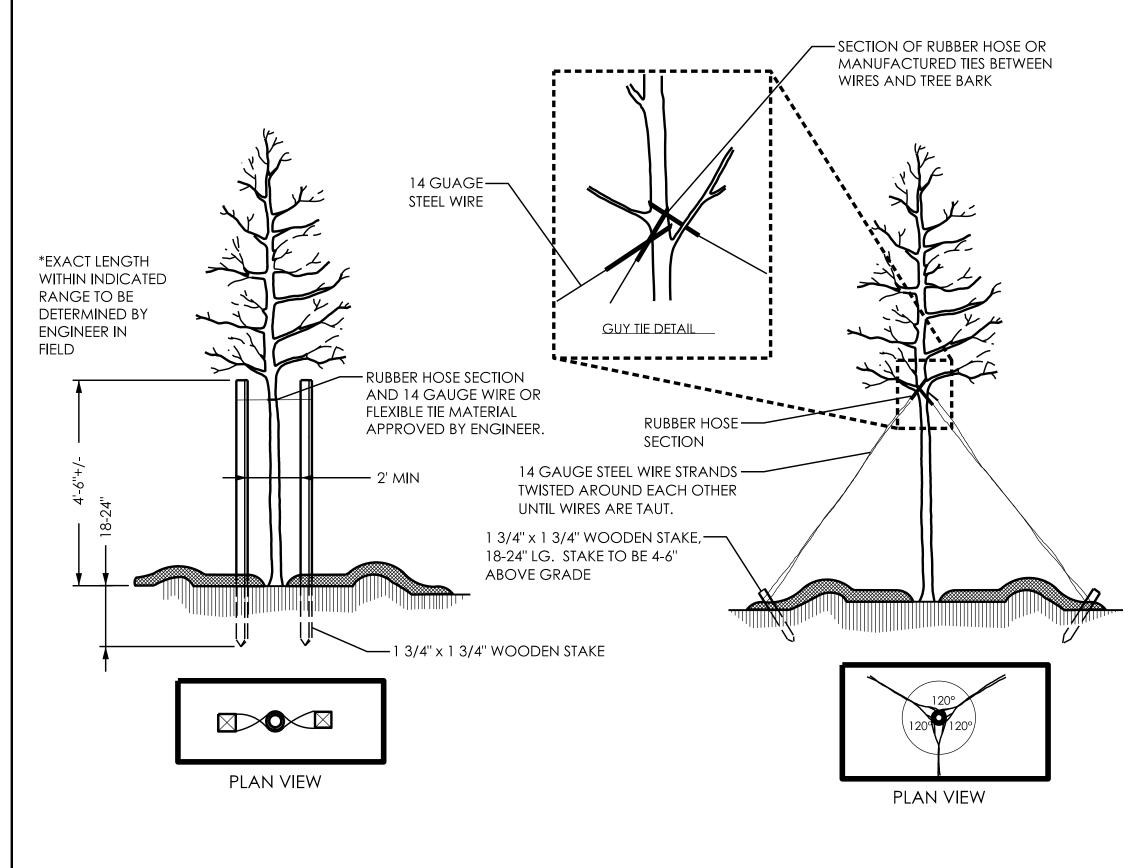
SHRUB BED PLANTING DETAIL



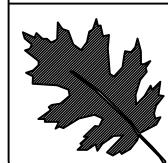


TREE OR SHRUB PLANTING DETAIL

STAKING DETAIL (TREES 6'-10')
USE AS DIRECTED BY FIELD ENGINEER



GUYING DETAIL (TREES 10' OR LARGER)
USE AS DIRECTED BY FIELD ENGINEER



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http://www.ncdot.org/doh/operations/dp chief eng/roadside/

Prospect Rd in Pembroke Robeson County TIP #: U-5925(L)

(LEVEL GROUND)



TREE OR SHRUB PLANTING DETAIL

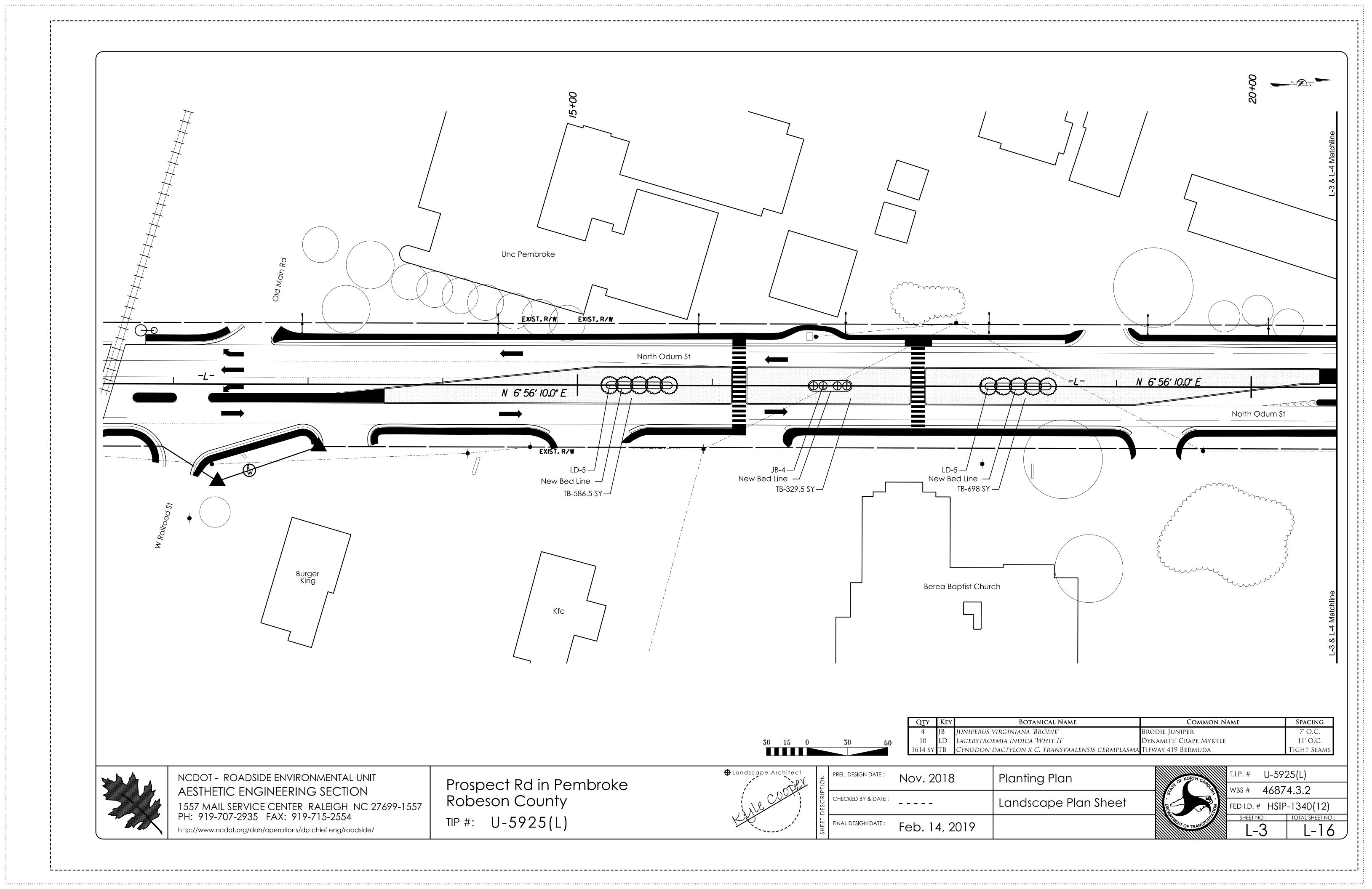
(SLOPING GROUND)

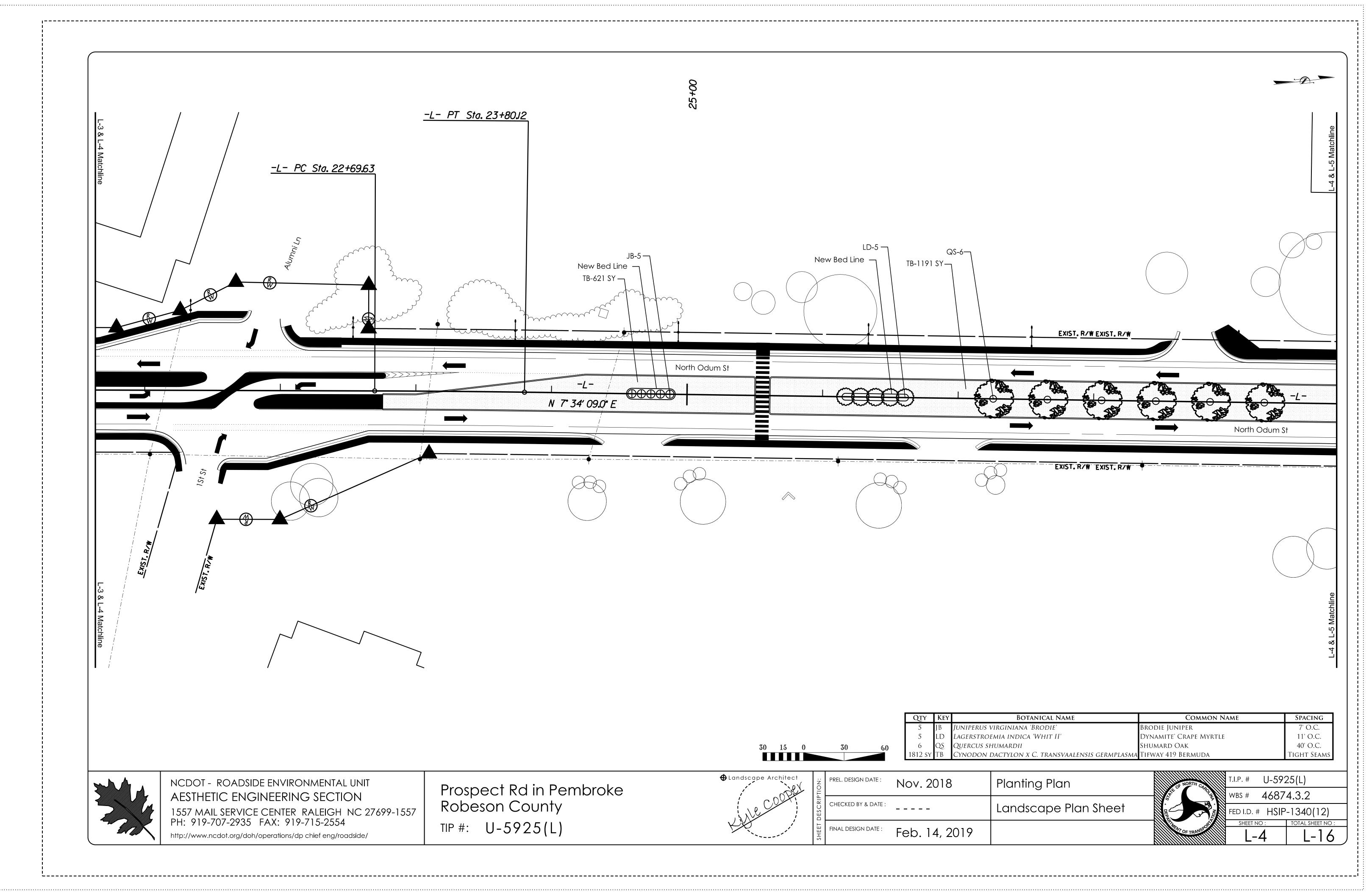
•	TION:	PREL. DESIGN DATE :	Nov. 2018	Planting Details
	DESCRIP	CHECKED BY & DATE :		Landscape Plan Sheet
	SHEET I	FINAL DESIGN DATE :	Feb. 14, 2019	

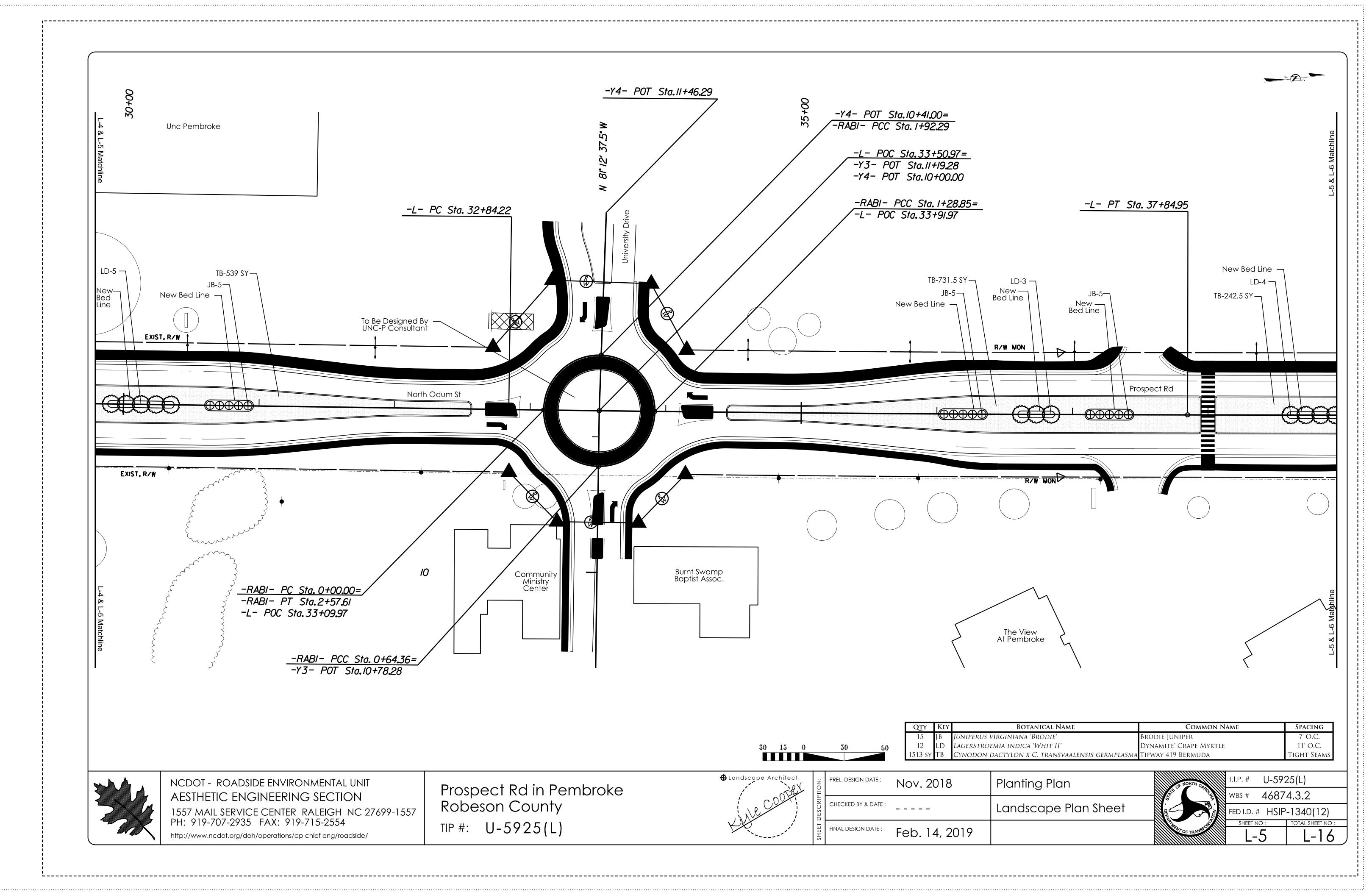


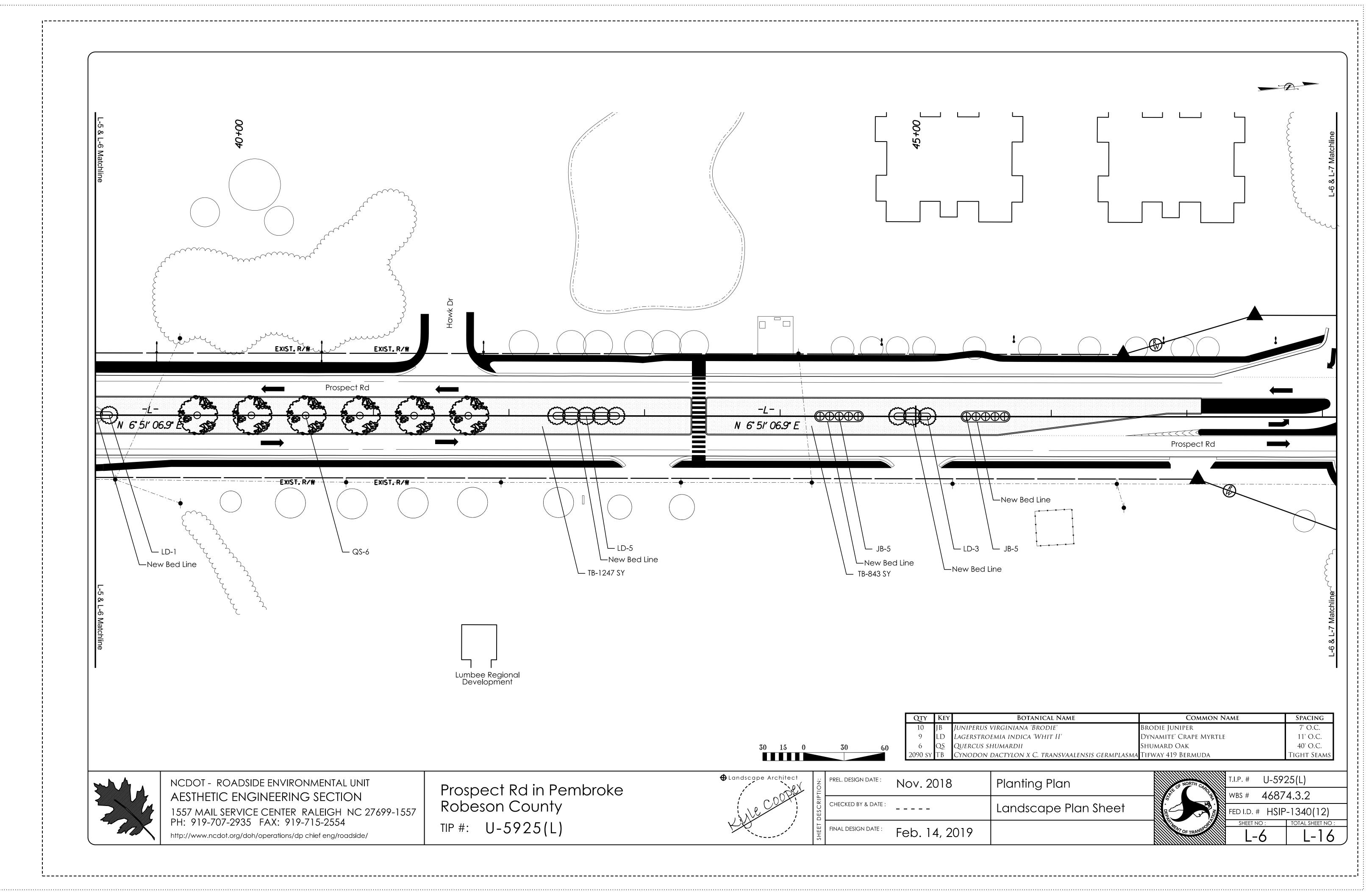
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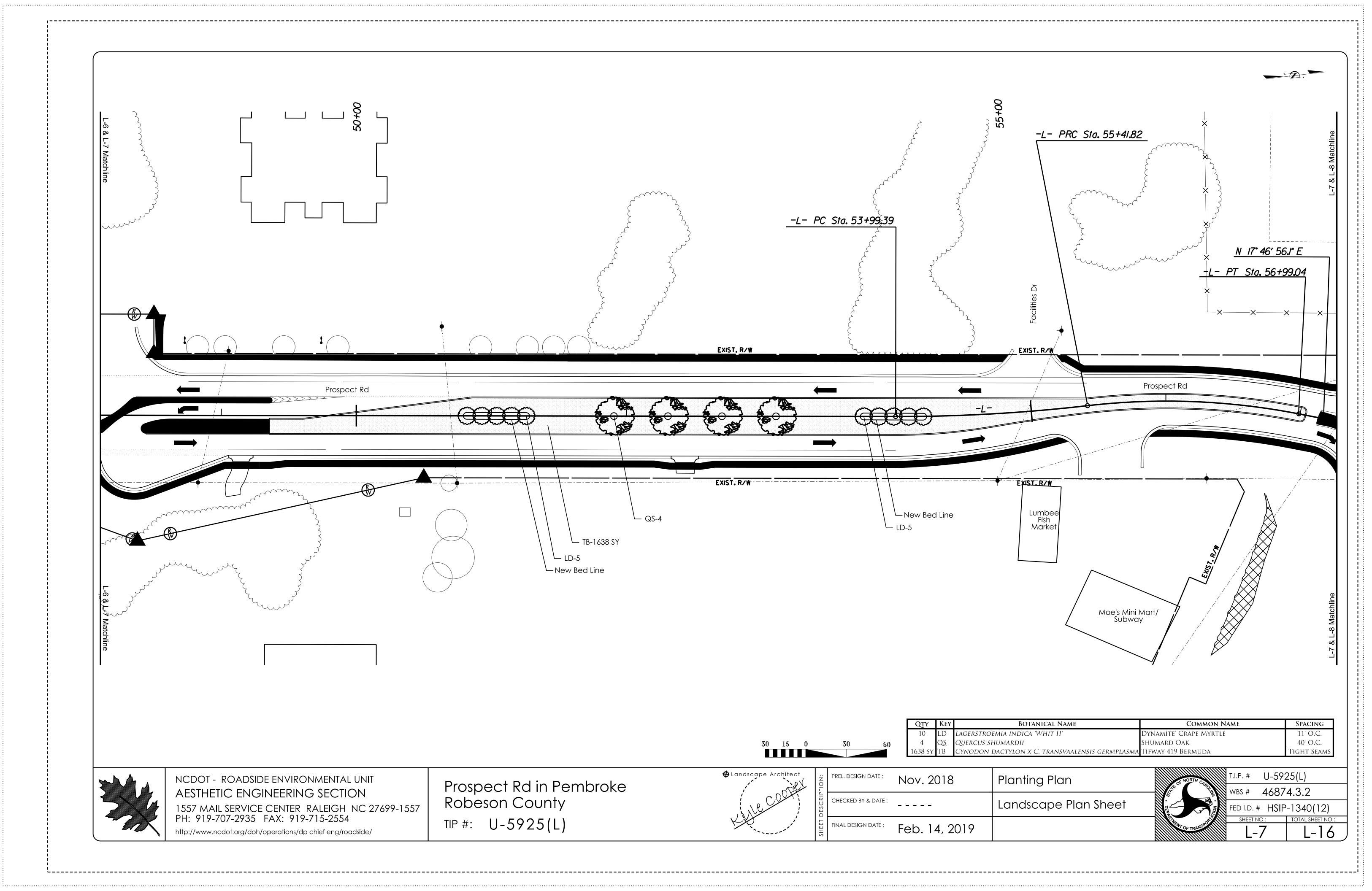
L-16

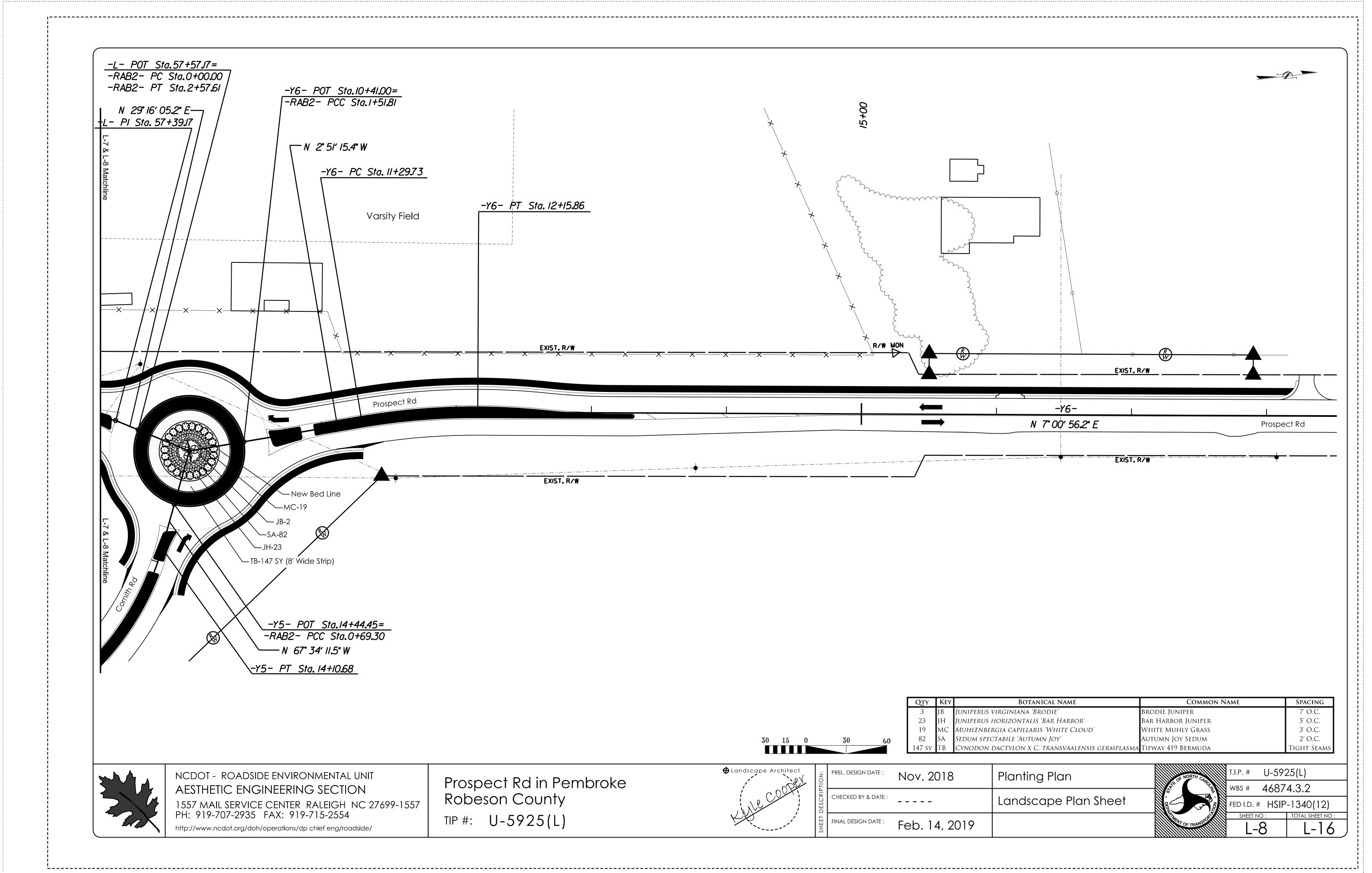












IRRIGATION NOTES & LEGEND

*Irrigation contractor must be licensed by the NCICLB under chapter (2008-177, S.1; 2013-383, S.3).

*All materials may be of comparable manufacture and performance to the brand listed.

GENERAL NOTES

- The irrigation design provided in the plans is schematic in nature, and the irrigation contractor may be required to make minor adjustments in the field as necessary. These adjustments shall be made at no additional cost to the owner and shall be made only after notification is made to the owner (NCDOT).
- The contractor(s) shall familiarize themselves with the site so that they are aware of any special conditions that may exist that could affect their bid proposal and shall hereafter be responsible for all cost incurred by themselves in relation to the installation.
- Place valves & boxes in plant beds where-ever possible.
- The contractor is to minimize disturbance in sod areas (cut and replace sod when necessary).
- Place pressure reducing valves in discreet locations.
- All irrigation products are to be hunter, Toro, or Rainbird (as approved by the Division Roadside Environmental Engineer).
- If there is an existing system in place, be sure to use irrigation heads that are consistent with the existing system.
- The contractor is responsible for providing 'as built' plans to the owner (NCDOT) at the time of project approval. The plans shall be clear, concise, and show all elements of the irrigation system, the location of all equipment, irrigation lines, numbered zones, controller(s), heads and valves.

ESTIMATED IRRIGATION QUANTITIES

Meter Locations - 5
Backflow Preventers - 5
Battery Powered Controllers - 5
Zones/Valves - 15
Main Line Pipe - 1669 If

Lateral Pipe - 7832 If rotator/rotary heads:

10' r - 132 16' r - 70

27' r - 190

Rotor Heads: 35' r - 5

Quantities are estimated based on design drawings. refer to plans for any discrepancies, plans take priority over these estimated quantities. Estimated quantities do not cover all materials necessary for installation. Quantities may be adjusted slightly due to site conditions, specific irrigation equipment, and implementation, or as directed by the NCDOT Engineer.

BACKFLOW PREVENTION

- The reduced pressure backflow preventer assembly shall be the responsibility of the irrigation contractor. The backflow shall be 1.5" in size. The backflow assembly shall be installed downstream of the irrigation meter. The unit must be installed in accordance with all local and state code requirements and shall have an approved cover.

CONTROLLER W/ BATTERY POWERED TIMER

- C Controller may be of comparable manufacture and performance to the brand named.
- -The controller shall be a Hunter, Toro, or rainbird Modular unit. The controller shall incorporate a 24 VAC with the approximate location shown on the plans. Location must be approved by the NCDOT Environmental Roadside Engineer.
- The battery operated controller is to be placed in Carson valve boxes model #910-1 with #910-2 covers.
- All 120 VAC wiring shall be installed in accordance with all applicable electrical code requirements.
- The contractor shall install a wired Hunter, Toro, or rainbird rain sensor that is compatible with the make and model of the controller, the rain sensor mount is to be painted a dark hunter green in order to blend into the landscape.

HEADS

- Hunter, Toro, or Rainbird Pop-up rotator /rotary head fitted with adjustable nozzles with the following radii: 10', 16', and
 27'.
- Hunter, Toro, or Rainbird Pop-up rotor head fitted with adjustable nozzles with the following radii: 35'.
- All heads with a 6"-12" pop-up stroke, if installed with less than 1/3 of the sprinkler body exposed above grade, they shall be installed on polyethylene flex swing joint poly pipe fitted with elbows (3/8" insert by 1/2" M.P.T. and/or 3/8" insert by 3/4" M.P.T.)
- -If greater than 1/3 of the sprinkler body is exposed, then the 6"-12" pop-up head shall be mounted on a schedule 40 PVC pipe riser as described below in relation to mounting shrub head models. In mounting 6"-12" pop-up heads on shrub type risers, care shall be taken to install the head in such a manner that the surrounding plant material (planned or existing) will hide the body of the sprinkler.
- All pop-up irrigation heads designed adjacent to curbs or pavement shall be installed with a clearance of 1 1/2" from the edges of all paved areas to provide for edging and maintenance operations. Heads installed on shrub risers or with the top of the head more than 1 1/2" above the grade shall be installed with a minimum 6" clearance from paved areas.
- All threaded pipe connections shall be assembled using Teflon thread sealing tape.

PIPE

- PR 200 PVC Lateral Piping

- -Minimum depth of cover over lateral piping to be 12". Lateral pipe sizing schedule and summation of gallonage demand on a particular branch of pipe within a control section shall be determined by using the gpm for a nozzle based on a 50 psi base of head pressure and full radius at the pressure as reported in the product's catalog. Pipe sizes for the lateral lines shall be as follows:
- For 0 to 15 gpm accumulated flow use 3/4" PR 200 PVC pipe.
 For 15 up to 35 gpm use 1" PVC pipe.
- Allow for friction loss.
- - Size of pipe to be a minimum of 1 1/2"
 - Depth of cover of mainline piping to be 18"
 - Piping shall be PR 200 solvent weld PVC pipe with schedule 40 PVC solvent weld fittings unless otherwise noted.
 - The contractor shall take all precautions necessary to avoid damaging existing plantings and their roots during the installation of the irrigation system and shall coordinate their efforts with the landscape contractor to optimize the efficiency and the aesthetic quality of the installation.

SLEEVES

- Sleeves shall be 4" PVC. The irrigation contractor shall coordinate with the landscape contractor to insure proper installation of the irrigation system with the landscape and hardscape.

ELECTRIC CONTROL VALVE

- Valves may be of comparable manufacture and performance to the brand named.
- Location of electric 24 VAC remote control valve with flow control feature
- All remote control valves shall be installed in Carson valve boxes with lids mounted at grade level. Single valves may be installed in a Carson model #910-1 valve box with cover, while multiple valves (up to, 2 1" valves or 1 1 1/2") shall be installed in Carson model #1419-1 box with #1419-2 cover.

M WATER SUPPLY/METER

- The meter shall be the owner's/town's responsibility.
- The meter is 1.5" in size. Since the water supply for the system will be potable water, the contractor will be required to install a backflow prevention device which will be located downstream of the irrigation meter.
- This irrigation system shall be capable of delivering 33 gpm minimum with one control station operating at a time at 60 psi at the base of the head for optimum performance of the irrigation system.

24 VAC CONTROLLER WIRING

- All 24 VAC control wiring shall be single strand copper wire with Polyethylene PE direct burial insulation rated for 300 VAC valve "common" wires shall have white insulation while valve "hot" wires shall have red insulation. Both the "common" and "hot" wires shall be #14 AWG. Valve wiring shall follow mainline piping where feasible and shall be laid in the bottom of the trench line with the mainline piping. Wiring shall be "bundled" and taped at intervals of approximately ten feet. All wiring shall be installed in accordance with local code requirements.
- Wire splices shall be kept to an absolute minimum. Where major concentrations of splices are necessary, they shall be placed in a approved valve box, with #910-2 cover installed at grade level. Splices at valve locations shall be made inside of the valve box. All splice locations shall be noted on the as built plan
- Wire runs shall be installed with enough slack and/or expansion loops to prevent excessive strain due to thermal contraction.
- All wire splices shall be made using UL approved direct burial connectors and waterproof materials. All electrical work shall be installed according to code.



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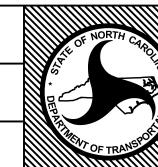
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Prospect Rd in Pembroke Robeson County TIP #: U-5925(L)



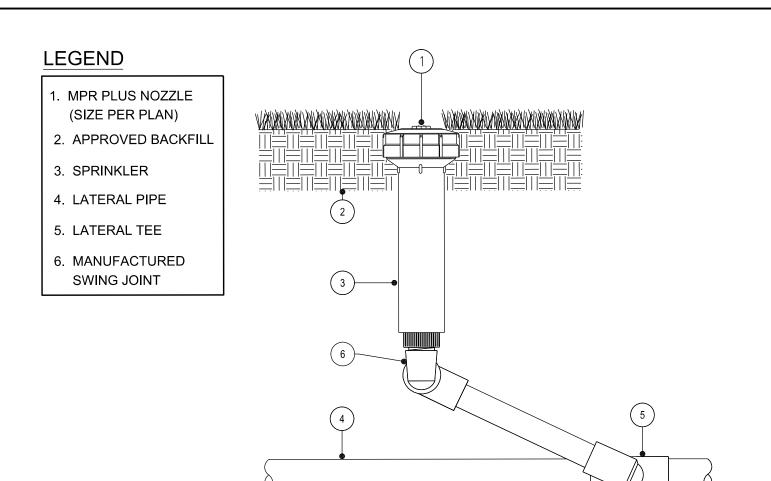
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	DESCRIP	CHECKED BY & DATE :		Landscape Plan Sheet
	HEET	FINAL DESIGN DATE :	Feb. 14, 2019	



T.I.P. # WBS #	U-5925(L)
WBS #	46874.3.2

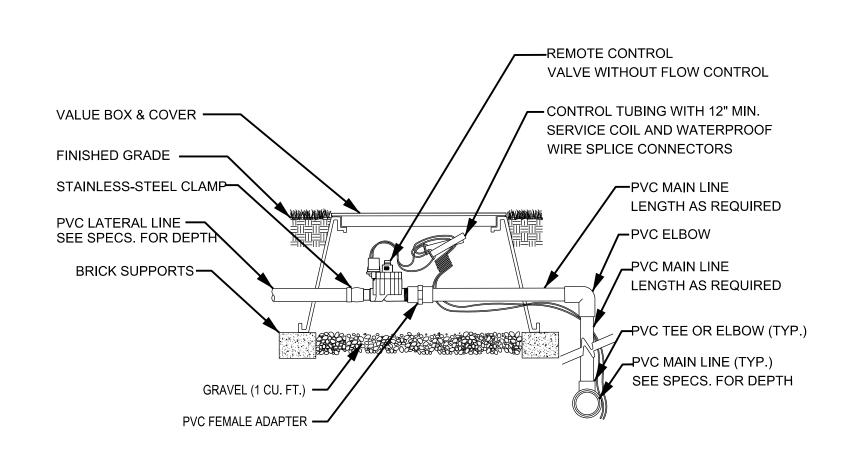
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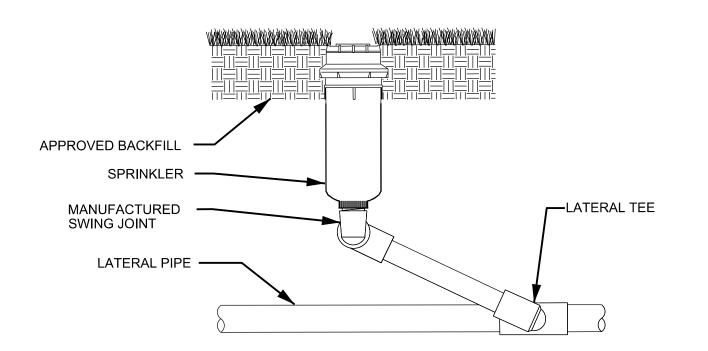
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- 2. DO NOT SCALE DRAWINGS.
- 3. INSTALL SPRINKLERHEAD AT FINISHED GRADE





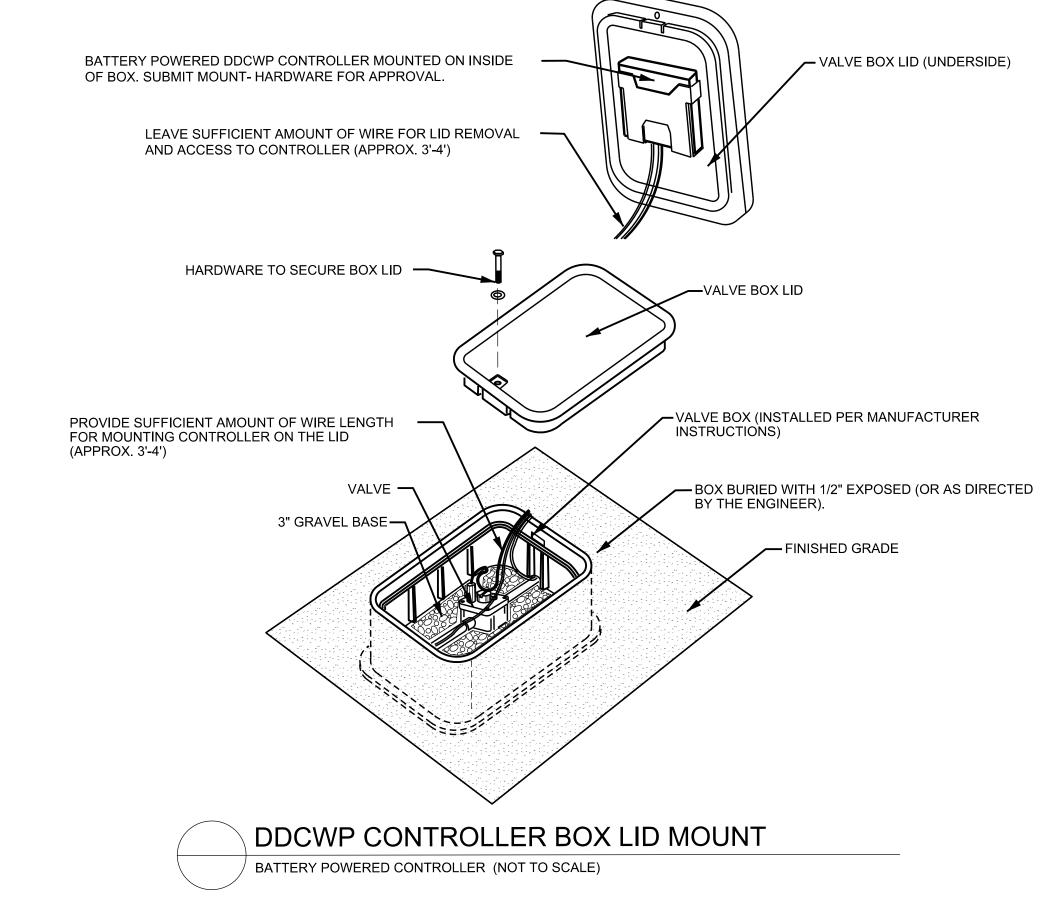
- 1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
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- 1. INSTALLATION TO BE COMPLETED IN ACCORDANCE
- WITH MANUFACTURER'S SPECIFICATIONS. 2. DO NOT SCALE DRAWINGS.
- 3. INSTALL SPRINKLER AT FINISHED GRADE.







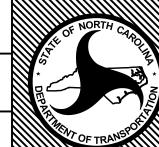
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T.I.P. #	U-5925(L)
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	WBS #

