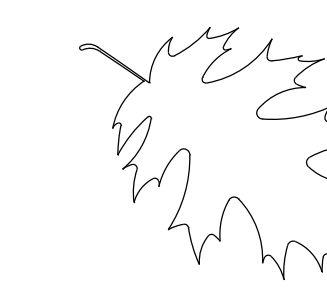
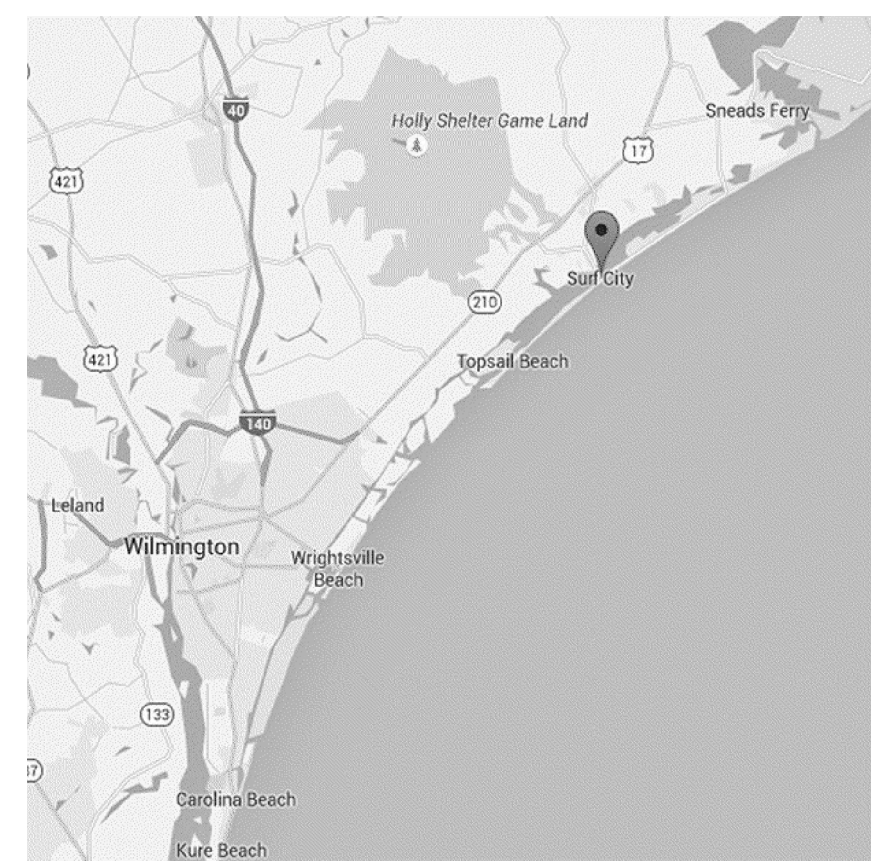




# HIGHWAY LANDSCAPE DEVELOPMENT PROJECT



T.I.P. #	STATE PROJECT W.B.S. #	SHEET #	SHEET # TOTAL
B-4929(L)	40233.3.2	L 1	
FED. PROJ. #	DESCRIPTION	DIVISION	
-	LANDSCAPE	3	

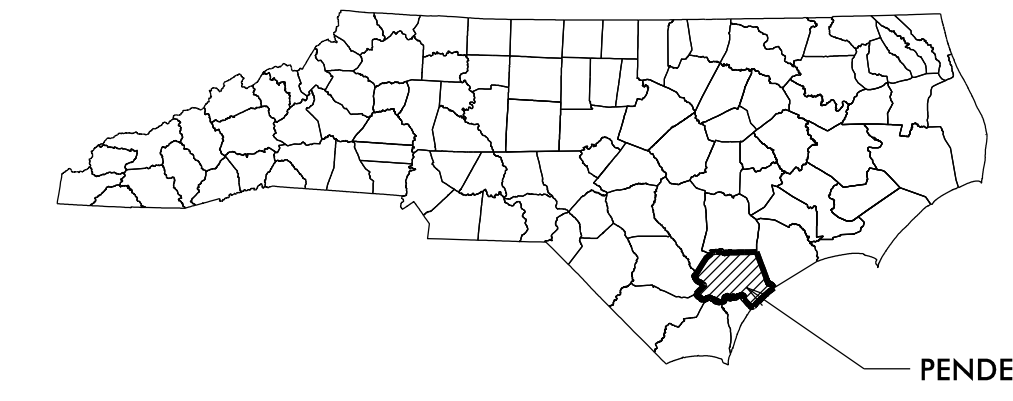


VICINITY MAP

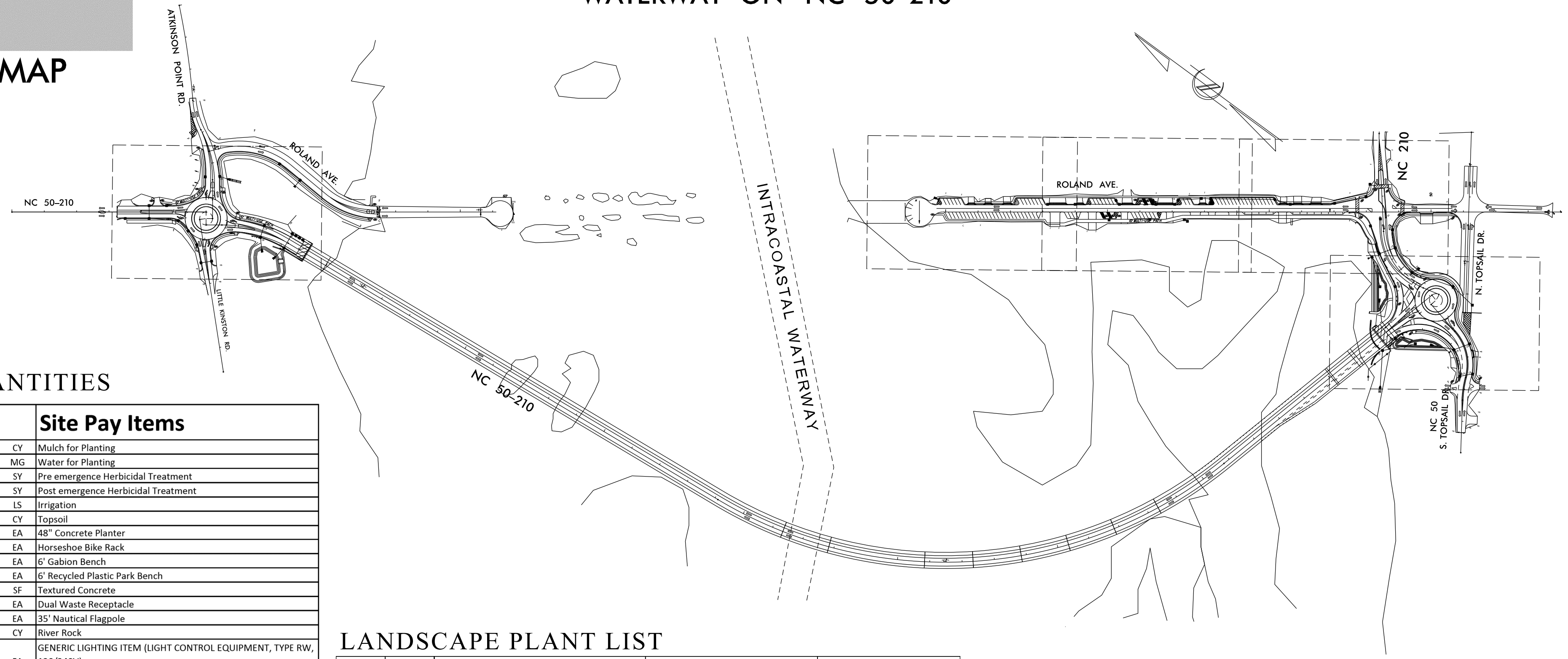
## STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

# PENDER COUNTY

LOCATION: BRIDGE NO. 16 OVER THE INTRACOASTAL WATERWAY ON NC 50-210



PENDER CO



### SUMMARY OF QUANTITIES

Item #	Section	Quan	Site Pay Items
	1670-10	184	CY Mulch for Planting
	1670-11	10	MG Water for Planting
	1670-7	1,660	SY Pre emergence Herbicidal Treatment
	1670-7	1,660	SY Post emergence Herbicidal Treatment
	SP	1	LS Irrigation
	SP	230	CY Topsoil
	SP	9	EA 48" Concrete Planter
	SP	6	EA Horseshoe Bike Rack
	SP	18	EA 6' Gabion Bench
	SP	4	EA 6' Recycled Plastic Park Bench
	SP	1,150	SF Textured Concrete
	SP	6	EA Dual Waste Receptacle
	SP	1	EA 35' Nautical Flagpole
	SP	6	CY River Rock
			GENERIC LIGHTING ITEM (LIGHT CONTROL EQUIPMENT, TYPE RW, 120/240V)
5270000000-N	SP	1	EA
5155000000-E	1409	155	LF ELECTRICAL DUCT, TYPE BD, SIZE ***** (2")
5160000000-E	1409	70	LF ELECTRICAL DUCT, TYPE JA, SIZE ***** (3")
5205000000-E	1410	140	LF ** #8 W/G FEEDER CIRCUIT IN ***** CONDUIT (2, 1.5)
5210000000-E	1410	1,370	LF ** #6 W/G FEEDER CIRCUIT IN ***** CONDUIT (3, 2)
5215000000-E	1410	1,110	LF ** #4 W/G FEEDER CIRCUIT IN ***** CONDUIT (3, 2)
5220000000-E	1410	1,745	LF ** #2 W/G FEEDER CIRCUIT IN ***** CONDUIT (3, 2)
5240000000-N	1411	4	EA ELECTRICAL JUNCTION BOXES ***** (IG18)
5240000000-N	1411	25	EA ELECTRICAL JUNCTION BOXES ***** (LS18)
5240000000-N	1411	1	EA ELECTRICAL JUNCTION BOXES ***** (CS36)
5270000000-N	SP	50.00	EA GENERIC LIGHTING ITEM (Downlight Luminaire, LED)
5270000000-N			GENERIC LIGHTING ITEM (Light Standard with Bishops Crook Twin Arm, Type DB, 16' MH)
5261000000-E	SP	2.00	EA GENERIC LIGHTING ITEM (R1S1 Foundation)
5262000000-E	SP	2.00	EA GENERIC LIGHTING ITEM (Flagpole Light)
	SP	16	EA Monthly Maintenance
	SP	48	LF Pedestrian Channel Devices
	SP	2	EA Audible Warnings
	SP	1	EA Temporary Curb Ramps
	SP	1	LS Temporary Traffic Control
	800	1	LS Mobilization

### LANDSCAPE PLANT LIST

QTY.	UNIT	BOTANICAL NAME	COMMON NAME	FURNISH
Trees				
14	EA	<i>Juniperus virginiana</i>	E. Red Cedar	7-8'; B&B
44	EA	<i>Quercus virginiana</i> 'Darlington'	Darlington Live Oak	10-12'; 1 3/4" cal. B&B
58			total trees	
Shrubs				
38	EA	<i>Ilex vomitoria</i> 'Shillings'	Shillings Dwarf Yaupon Holly	#3 Cont. 12-15"
25	EA	<i>Myrica cerifera</i> 'Don's Dwarf'	Don's Dwarf Wax Myrtle	#3 Cont. 15-18"
48	EA	<i>Clethra alnifolia</i> 'Ruby Spice'	Ruby Spice Clethra	#3 Cont. 15-18"
12	EA	<i>Yucca filamentosa</i>	Adam's Needle	#3 Cont. 15-18"
13	EA	<i>Itsea virginica</i> 'Henry's Garnet'	Henry's Garnet Sweetspire	#3 Cont. 15-18"
12	EA	<i>Sabal minor</i>	Dwarf Sabal Palm	2'-3'; Hgt./Width
148			total shrubs	
Grasses, Groundcovers, & Perennials				
42	EA	<i>Echinacea</i> 'PowWow Wild Berry'	PowWow Coneflower	#1 Cont. 6-9" top growth
16	EA	<i>Muhlenbergia capillaris</i>	Pink Muhly Grass	#1 Cont. 9-12" top growth
295	EA	<i>Rudbeckia fulgida</i> 'Goldsturm'	Goldsturm Black-eyed Susan	#1 Cont. 6-9" top growth
215	EA	<i>Sporobolus heterolepis</i>	Prairie Dropseed	#1 Cont. 9-12" top growth
32	EA	<i>Spartina bakeri</i>	Sand Cordgrass	#1 Cont. 9-12" top growth
600			total Grasses, Groundcovers, & Perennials	

### CONVENTIONAL SYMBOLS

County Line.....	-----
City or Town Line.....	-----
Exist. Right of Way Line Marker.....	-----
Prop. Right of Way Line Marker (By Others).....	-----
Prop Right of Way Line Marker (By Contract).....	-----
Exist. Control of Access Line.....	-----
Prop. Control of Access Line.....	-----
Property Line.....	-----
Easement Line.....	-----
Slope Stake Line.....	-----
Exist. Fence.....	-----
Prop. Woven Wire Fence.....	-----
Prop. Chain Link Fence.....	-----
Exist. Road.....	-----
Prop. Road.....	-----
Guardrail.....	-----
Survey Line.....	-----
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.....	-----
Reforestation.....	-----

### INDEX OF SHEETS:

- L1 ..... TITLE, DESCRIPTION, LOCATION & QUANTITIES
- L2 ..... SITE PLAN.
- L3-L4 ... ROUNDABOUT PLANS
- L5-L7 ... ROLAND AVE PLAN A, B, C
- L8 ..... ROLAND AVE DETAILS
- L9-L10... STREETSCAPE DETAILS
- L11 ..... PAVEMENT DETAILS
- L12 ..... PLANTING DETAILS
- L1i ..... IRRIGATION SPECS
- L2i ..... IRRIGATION DETAILS
- L3i-L7i.. IRRIGATION PLANS
- L8i ..... IRRIGATION ROLAND DETAILS
- E1-E6... LIGHTING /ELECTRICAL PLANS

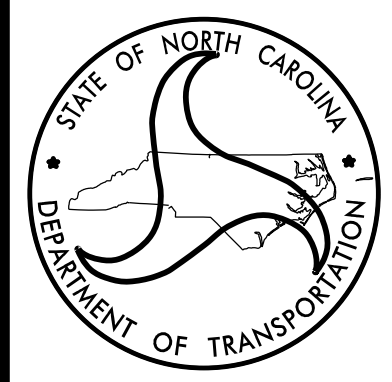
PREPARED BY: BK DATE: 9/2019

DATE	REVISION DESCRIPTION
5-4-20	LIGHTING PLAN & TITLE SHEET
9-16-20	REVISE ROW, LANDSCAPE & LIGHTING
3-1-21	PLAN REVIEW CORRECTIONS
5-5-21	REVISE WITH NATIVE PLANTS

2014 American Standard for Nursery Stock  
 2018 NCDOT STANDARD SPECIFICATIONS  
 PREPARED IN THE OFFICE OF:  
 NCDOT- ROADSIDE ENVIRONMENTAL UNIT  
 LANDSCAPE DESIGN & DEVELOPMENT SECTION  
 1557 MAIL SERVICE CENTER  
 RALEIGH NC 27699 919-707-2920

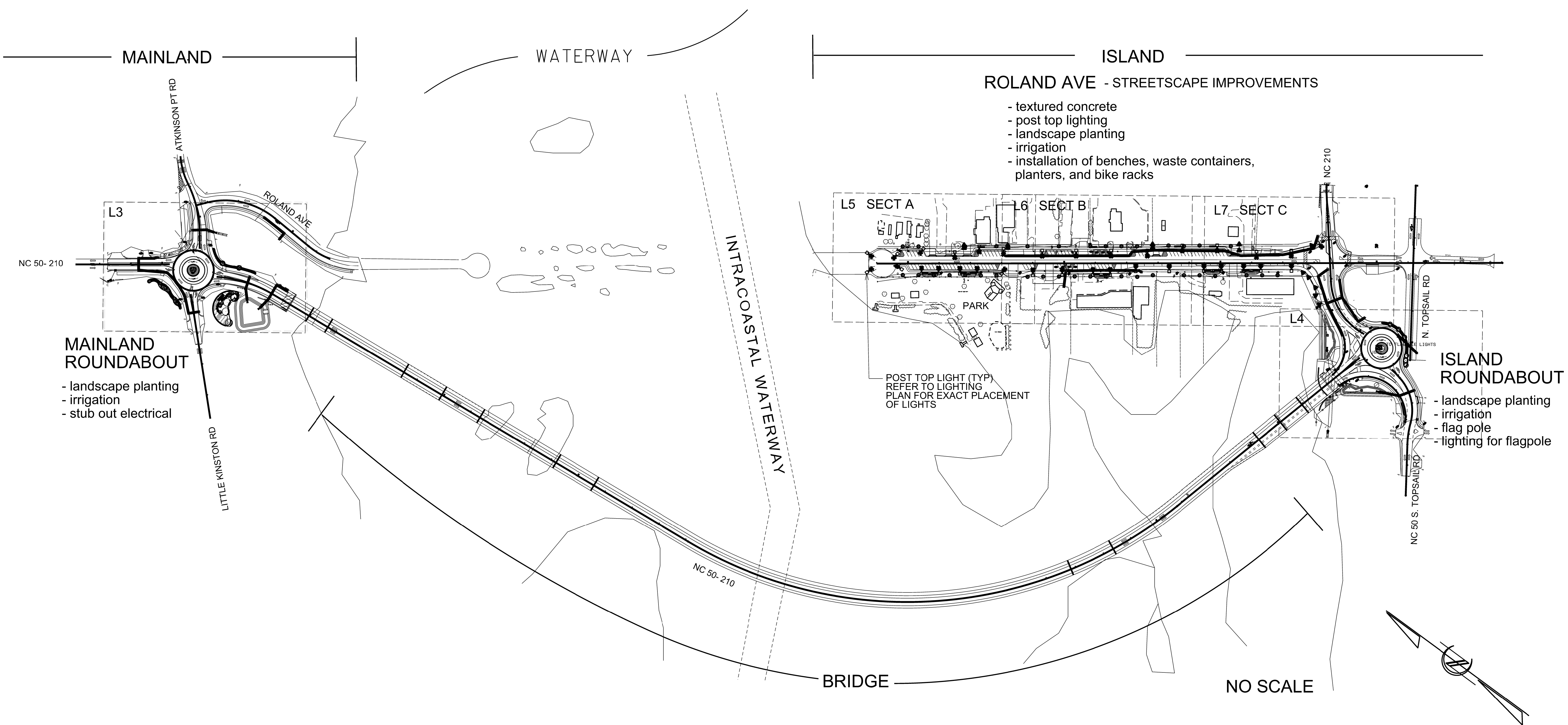
PROJECT: B-4929(L) SURF CITY NC

\$\$\$\$\$TIMES\$\$\$  
\$\$\$\$\$SERVICES\$\$\$  
\$\$\$\$\$USERNAMES\$\$\$  
\$\$\$\$\$PASSWORDS\$\$\$



STATE OF  
NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

LOCATION: SURF CITY NC  
 TYPE of WORK: LANDSCAPE DEVELOPMENT  
 COUNTY: PENDER COUNTY



**ROLAND AVE - STREETScape IMPROVEMENTS**

- textured concrete
- post top lighting
- landscape planting
- irrigation
- installation of benches, waste containers, planters, and bike racks

**MAINLAND ROUNDABOUT**

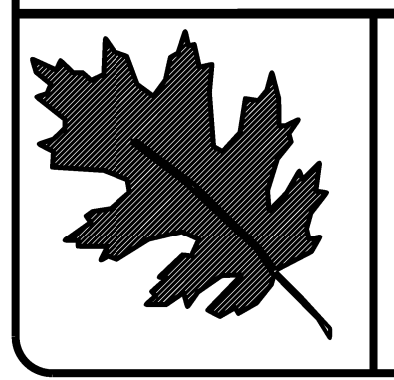
- landscape planting
- irrigation
- stub out electrical

**ISLAND ROUNDABOUT**

- landscape planting
- irrigation
- flag pole
- lighting for flagpole

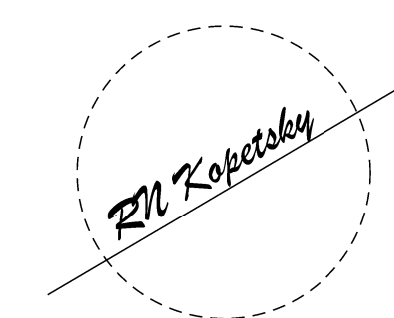
POST TOP LIGHT (TYP)  
REFER TO LIGHTING  
PLAN FOR EXACT PLACEMENT  
OF LIGHTS

NO SCALE



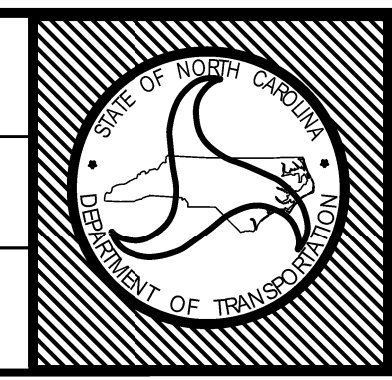
NCDOT - Roadside Environmental Unit  
Aesthetic Engineering Section  
1557 Mail Service Center Raleigh NC 27699-1557  
ph: 919-707-2920 fax: 919-715-2554  
<https://www.ncdot.gov/initiatives-policies/environmental/roadside-beautification>

**B-4929(L) / Roland Ave  
Landscape Development Plan  
Surf City NC**



sheet description:	prel. design date : Aug/2019
	checked by & date :
	final design date :

Landscape Enhancement
Site Plan



T.I.P. #	B-4929(L)
WBS #	40233.3.2
FED I.D. #	
sheet no :	total sheet no :
L2	



**ROUNDAABOUT PLANTING DETAIL**

5- 'DARLINGTON' LIVE OAK (LIMB UP)

5- DWF YAUPON HOLLY

MULCHED PLANT BED

34- PRAIRIE DROPSEED (2' O.C.)

RIVER ROCK

RIVER ROCK

36- PRAIRIE DROPSEED (2' O.C.)

5- DWF YAUPON HOLLY

PLANTING AREA

ADD 40 CY OF TOPSOIL TO PLANTING AREA (MOUND UP TO 16" UNDER TREES)

ADD 4" OF TOPSOIL TO EACH PLANTING AREA (UNLESS OTHERWISE NOTED)

25- DON'S DWARF WAX MYRTLE (5' O.C.)

2- 'DARLINGTON' LIVE OAK (LIMB UP)

5' W PLANTBED PLACE ADJACENT TO SIDEWALK

ENTRANCE SIGN (BY OTHERS)

27- PRAIRIE DROPSEED (30" O.C.)

21- 'RUBY SPICE' CLETHRA (5' O.C.)

8 - E. RED CEDAR

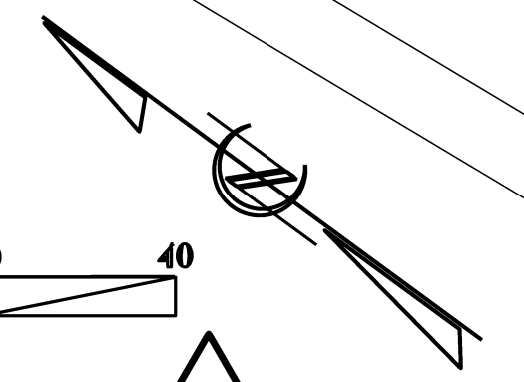
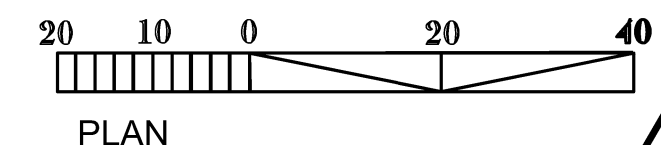
PROVIDE ELECTRICAL AND WATER SERVICE PER TOWN'S REQUEST (APPROX. LOCATION)

13- 'HENRY'S GARNET' SWEETSPIRE (5' O.C.)

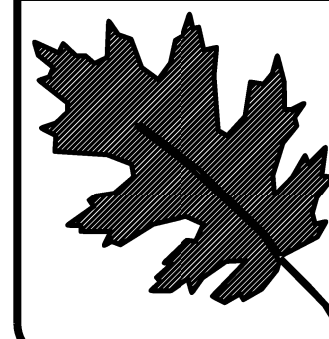
295- GOLDSTURM BLACK-EYED SUSAN (18" O.C.)

6 - E. RED CEDAR

5- 'DARLINGTON' LIVE OAK

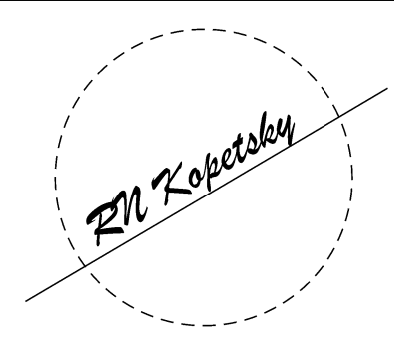


\$\$\$\$\$SYTIME\$\$\$\$\$  
\$\$\$\$\$USER\$\$\$\$\$



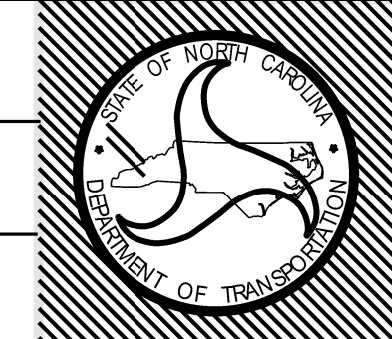
NCDOT - Roadside Environmental Unit  
Aesthetic Engineering Section  
1557 Mail Service Center Raleigh NC 27699-1557  
ph: 919-707-2920 fax: 919-715-2554  
<https://www.ncdot.gov/initiatives-policies/environmental/roadside-beautification>

B-4929(L) / Roland Ave  
Landscape Development Plan  
Surf City NC

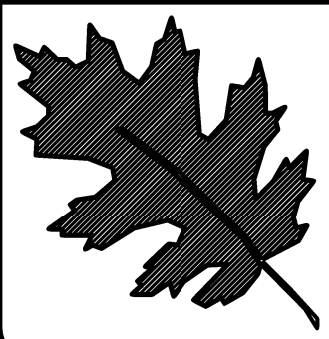
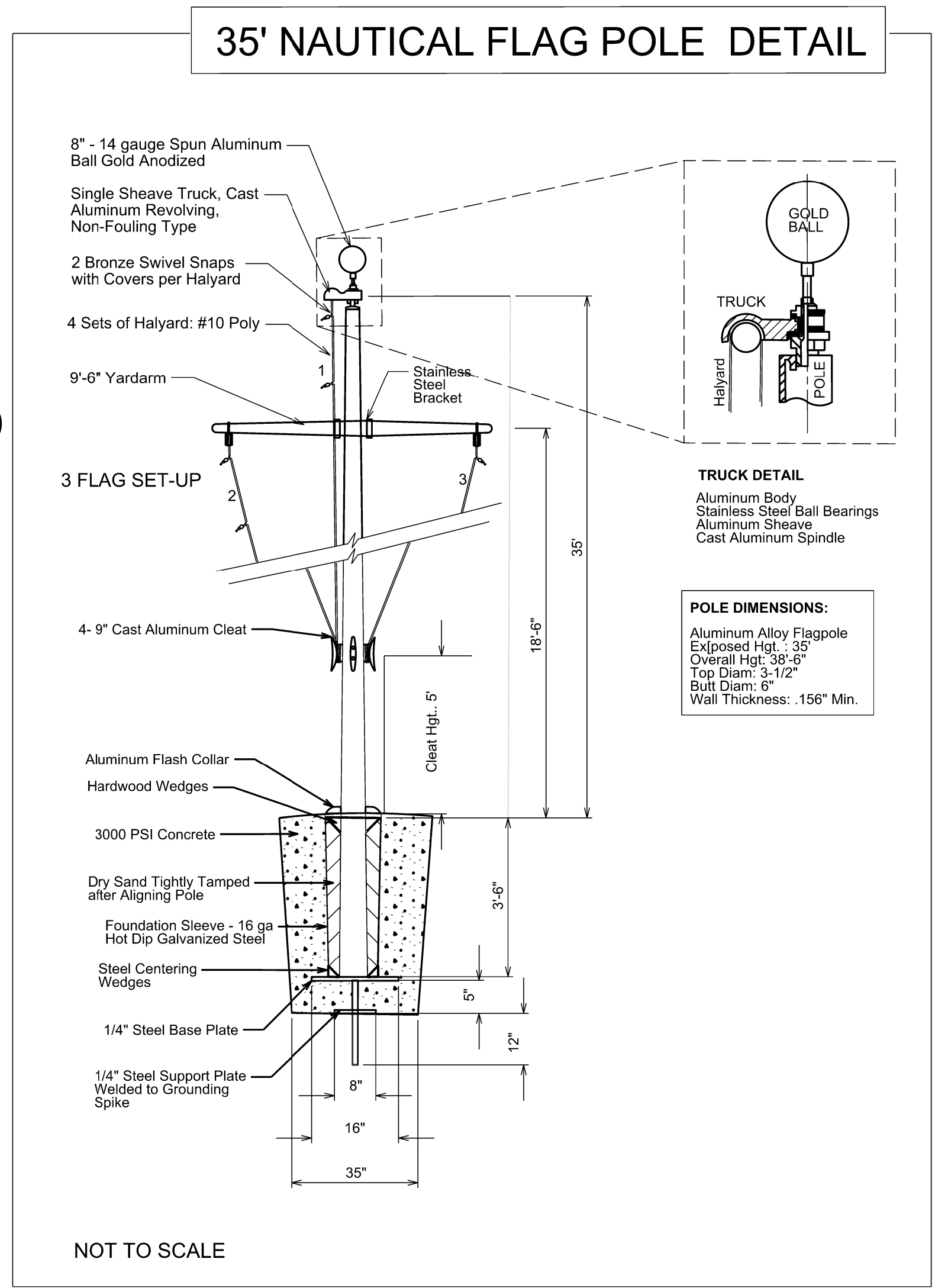
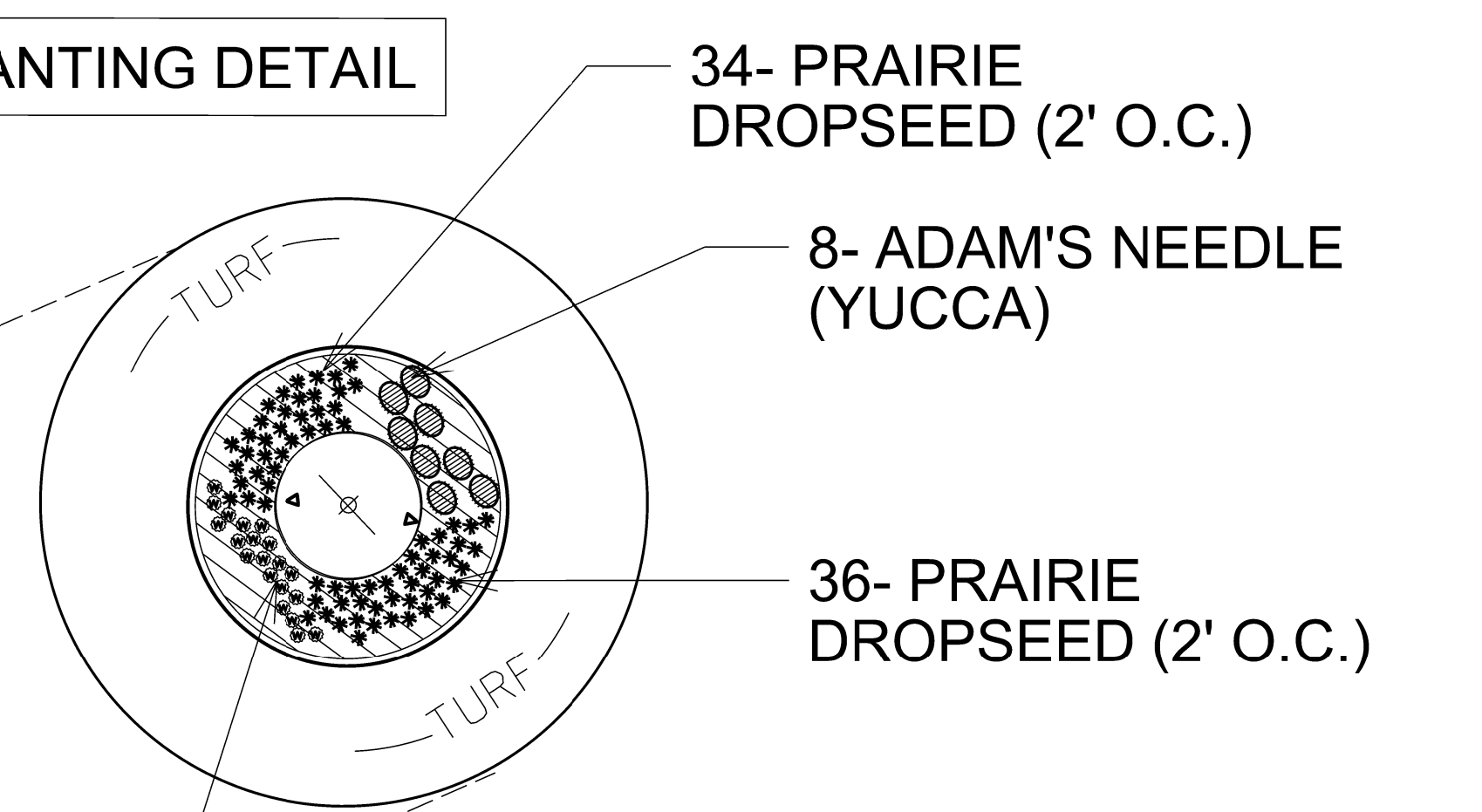
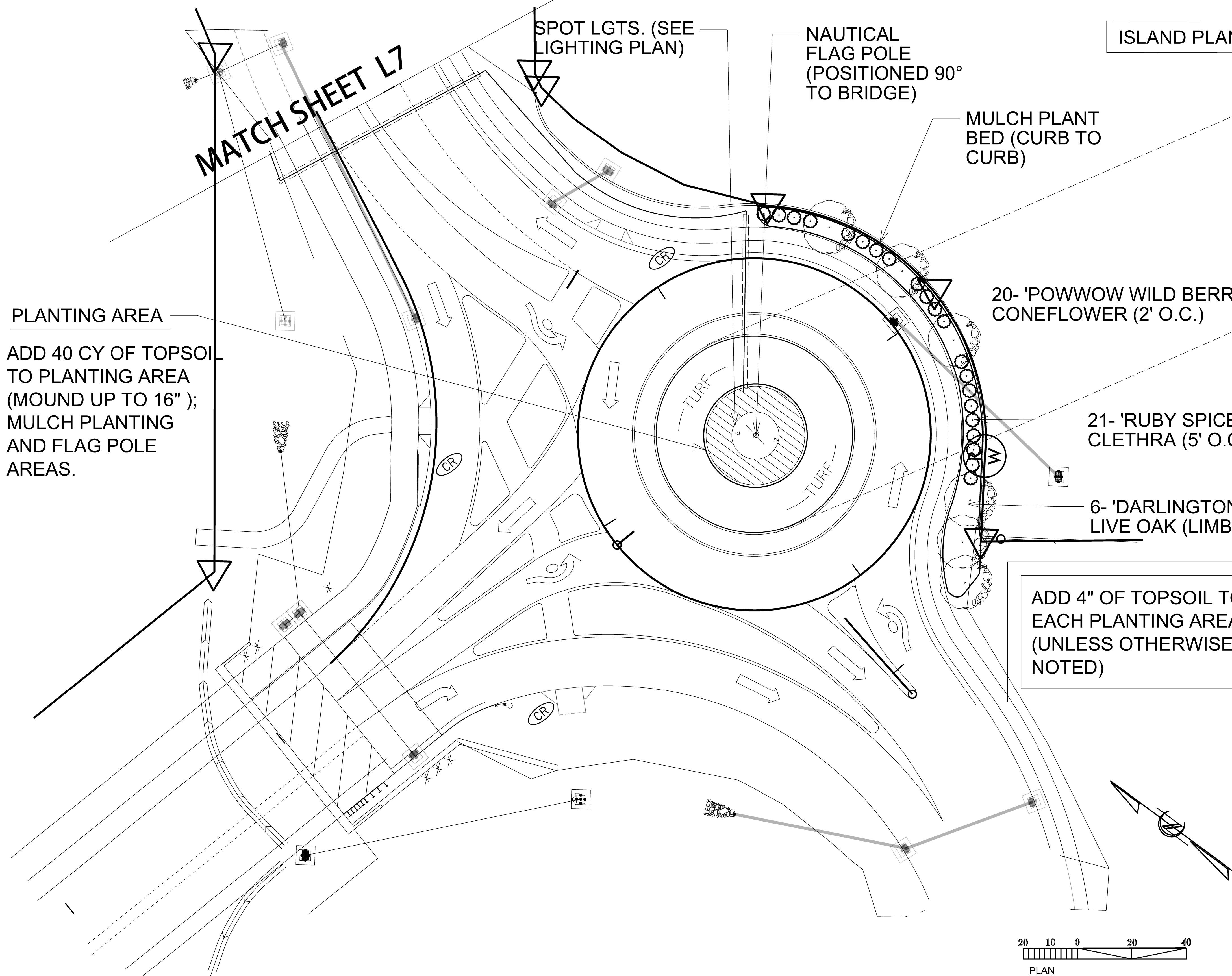


prel. design date :	Sept/2019
checked by & date :	
final design date :	

Landscape Plan  
Mainland Roundabout

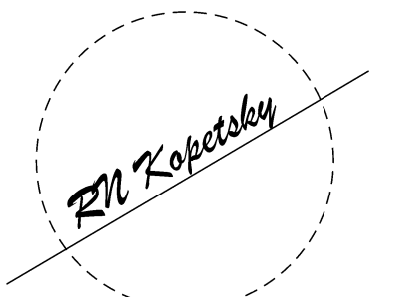


T.I.P. #	B-4929(L)
WBS #	40233.3.2
FED I.D. #	
sheet no. :	total sheet no. :
L3	



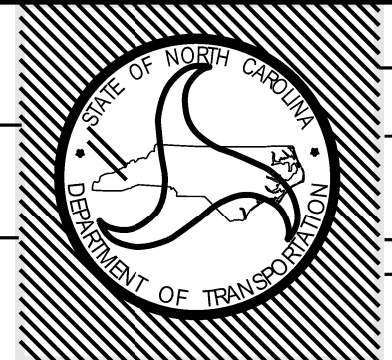
NCDOT - Roadside Environmental Unit  
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<https://www.ncdot.gov/initiatives-policies/environmental/roadside-beautification>

B-4929(L) / Roland Ave  
 Landscape Development Plan  
 Surf City NC



pref. design date :	Sept/2019
checked by & date :	
final design date :	

Landscape Plan  
 Island Roundabout



T.I.P. # B-4929(L)  
 WBS # 40233.3.2  
 FED.I.D. #  
 sheet no : total sheet no :  
 L4



POST TOP LIGHTS (TYP)  
SEE LIGHTING/ ELECTRICAL PLANS  
FOR SPECIFIC PLACEMENT

3- 'DARLINGTON'  
LIVE OAK (LIMB UP  
STREET TREE, 50' O.C.)

MATCH SHEET L6

STREETSCAPE  
DETAIL B2

9- 'DARLINGTON'  
LIVE OAK (LIMB UP  
STREET TREE, 50' O.C.)

STREETSCAPE DETAIL A  
(LANDSCAPE DETAIL A2)

STREETSCAPE DETAIL C  
(HORSESHOE BIKE RACK)

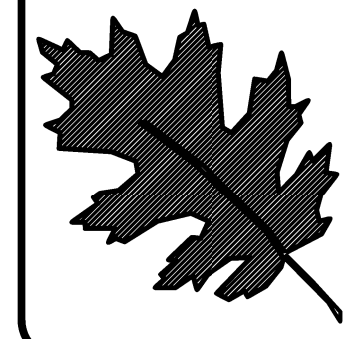
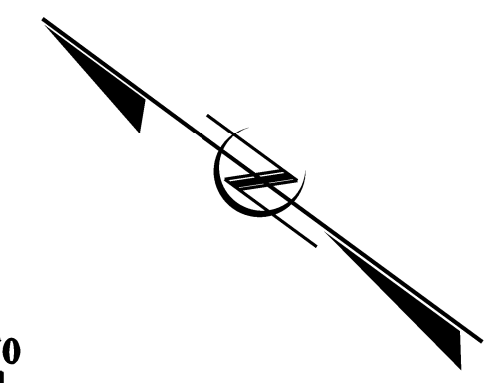
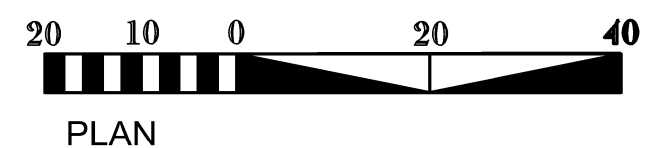
POST TOP LIGHTS (TYP)  
SEE LIGHTING/ ELECTRICAL PLANS  
FOR SPECIFIC PLACEMENT

ADD 4" OF TOPSOIL TO  
EACH PLANTING AREA  
(UNLESS OTHERWISE  
NOTED)

ADJUST PLACEMENT OF TREES IN THE FIELD TO  
MINIMIZE CONFLICTS WITH UTILITIES, EXISTING  
STRUCTURES, AND SIGHTLINES TO SIGNS.

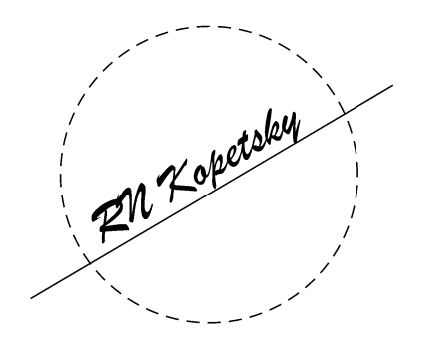
TOWN OF SURF CITY

PAVILION



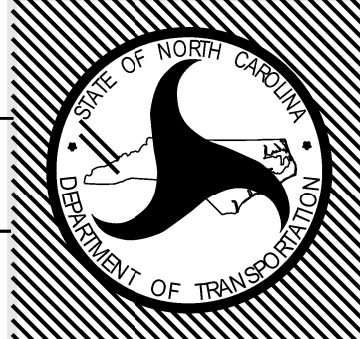
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<https://www.ncdot.gov/initiatives-policies/environmental/roadside-beautification>

B-4929(L) / Roland Ave  
Landscape Development Plan  
Surf City NC



sheet description:	prel. design date : Sept/2019
	checked by & date :
	final design date :

Landscape Plan  
ROLAND AVE SECT. A



T.I.P. #	B-4929(L)
WBS #	40233.3.2
FED I.D. #	
sheet no :	total sheet no :
L5	

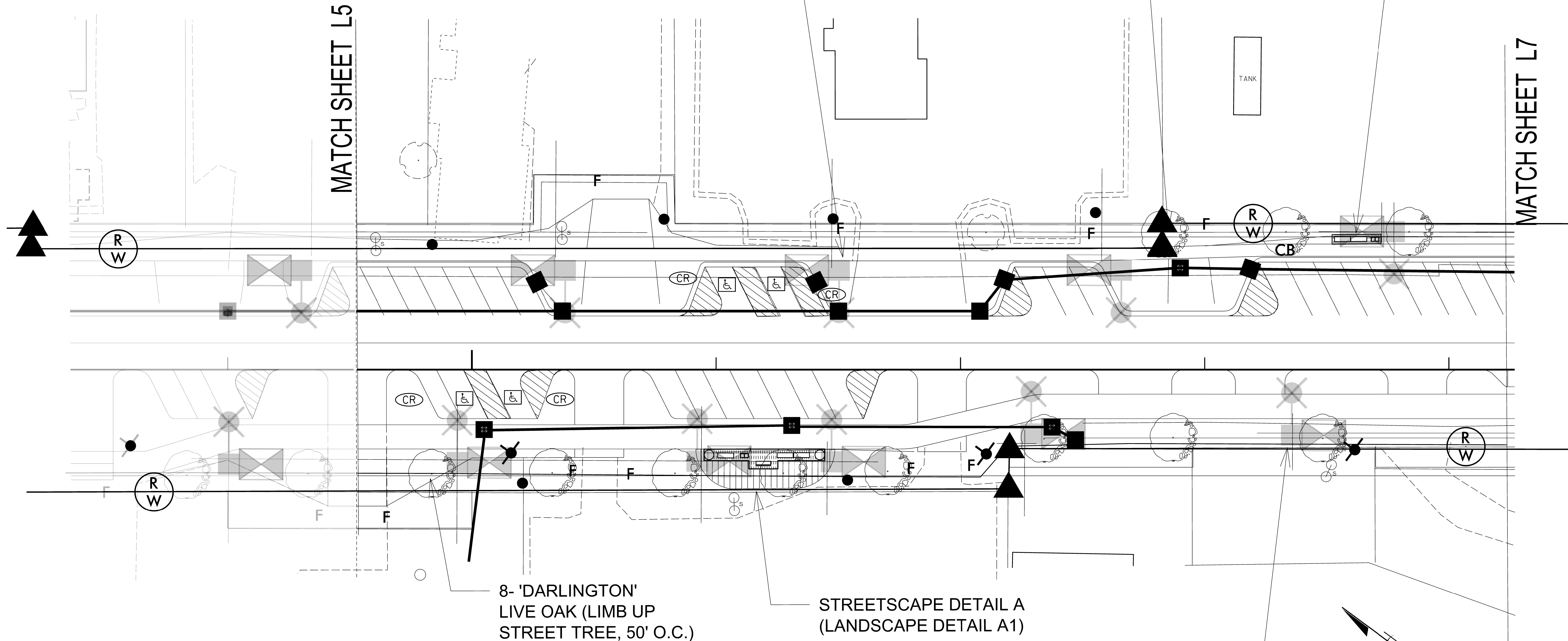
POST TOP LIGHTS (TYP)  
SEE LIGHTING/ ELECTRICAL PLANS  
FOR SPECIFIC PLACEMENT

3- 'DARLINGTON'  
LIVE OAK (LIMB UP  
STREET TREE, 50' O.C.)

STREETSCAPE  
DETAIL B2

MATCH SHEET L5

MATCH SHEET L7



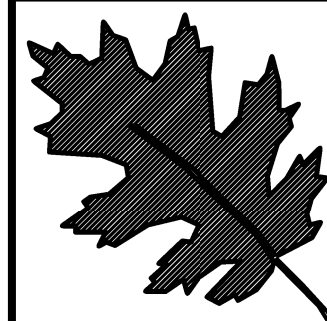
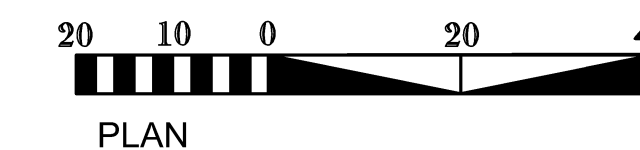
8- 'DARLINGTON'  
LIVE OAK (LIMB UP  
STREET TREE, 50' O.C.)

STREETSCAPE DETAIL A  
(LANDSCAPE DETAIL A1)

ADD 4" OF TOPSOIL TO  
EACH PLANTING AREA  
(UNLESS OTHERWISE  
NOTED)

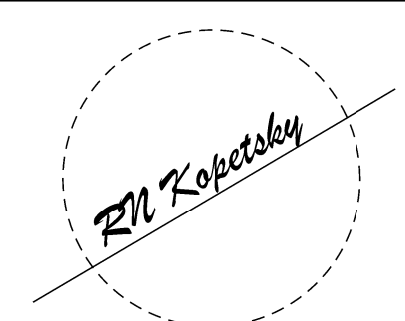
ADJUST PLACEMENT OF TREES IN THE FIELD TO  
MINIMIZE CONFLICTS WITH UTILITIES, EXISTING  
STRUCTURES, AND SIGHTLINES TO SIGNS.

POST TOP LIGHTS (TYP)  
SEE LIGHTING/ ELECTRICAL PLANS  
FOR SPECIFIC PLACEMENT



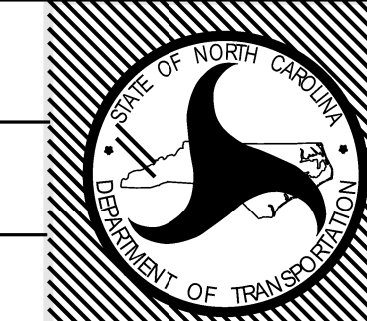
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B-4929(L) / Roland Ave  
Landscape Development Plan  
Surf City NC



sheet description:  
prel. design date : Sept/2019  
checked by & date :  
final design date :

Landscape Plan  
ROLAND AVE SECT. B



T.I.P. # B-4929(L)  
WBS # 40233.3.2  
FED I.D. #  
sheet no : total sheet no :  
**L6**

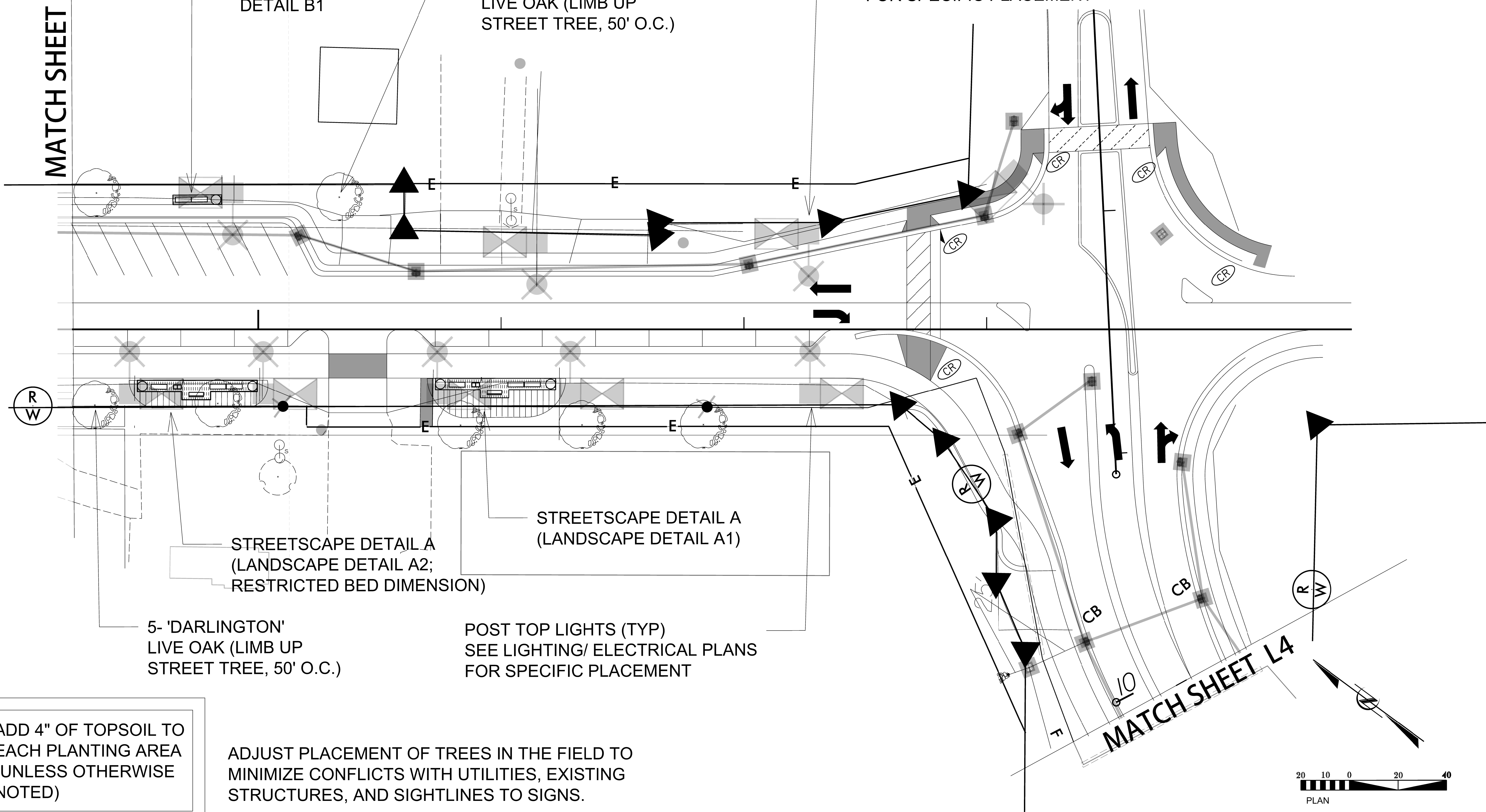


MATCH SHEET L6

STREETSCAPE  
DETAIL B1

2- 'DARLINGTON'  
LIVE OAK (LIMB UP  
STREET TREE, 50' O.C.)

POST TOP LIGHTS (TYP)  
SEE LIGHTING/ ELECTRICAL PLANS  
FOR SPECIFIC PLACEMENT



STREETSCAPE DETAIL A  
(LANDSCAPE DETAIL A1)

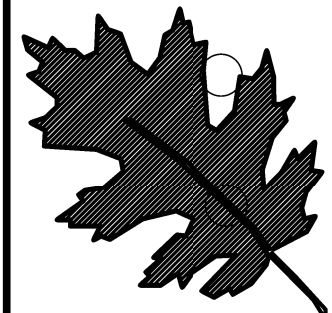
STREETSCAPE DETAIL A  
(LANDSCAPE DETAIL A2;  
RESTRICTED BED DIMENSION)

5- 'DARLINGTON'  
LIVE OAK (LIMB UP  
STREET TREE, 50' O.C.)

POST TOP LIGHTS (TYP)  
SEE LIGHTING/ ELECTRICAL PLANS  
FOR SPECIFIC PLACEMENT

ADD 4" OF TOPSOIL TO  
EACH PLANTING AREA  
(UNLESS OTHERWISE  
NOTED)

ADJUST PLACEMENT OF TREES IN THE FIELD TO  
MINIMIZE CONFLICTS WITH UTILITIES, EXISTING  
STRUCTURES, AND SIGHTLINES TO SIGNS.



NCDOT - Roadside Environmental Unit  
Aesthetic Engineering Section  
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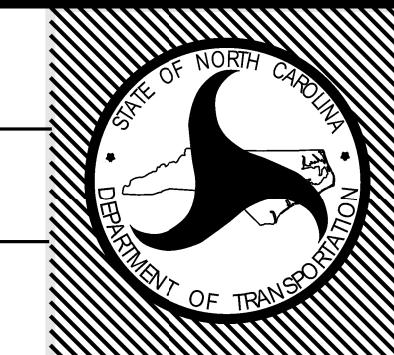
B-4929(L) / Roland Ave  
Landscape Development Plan  
Surf City NC

*R. M. Kobersky*

sheet description:

pref. design date : Sept/2019  
checked by & date :  
final design date :

Landscape Plan  
ROLAND AVE SECT. C



T.I.P. # B-4929(L)  
WBS # 40233.3.2  
FED I.D. #  
sheet no : total sheet no :  
L7



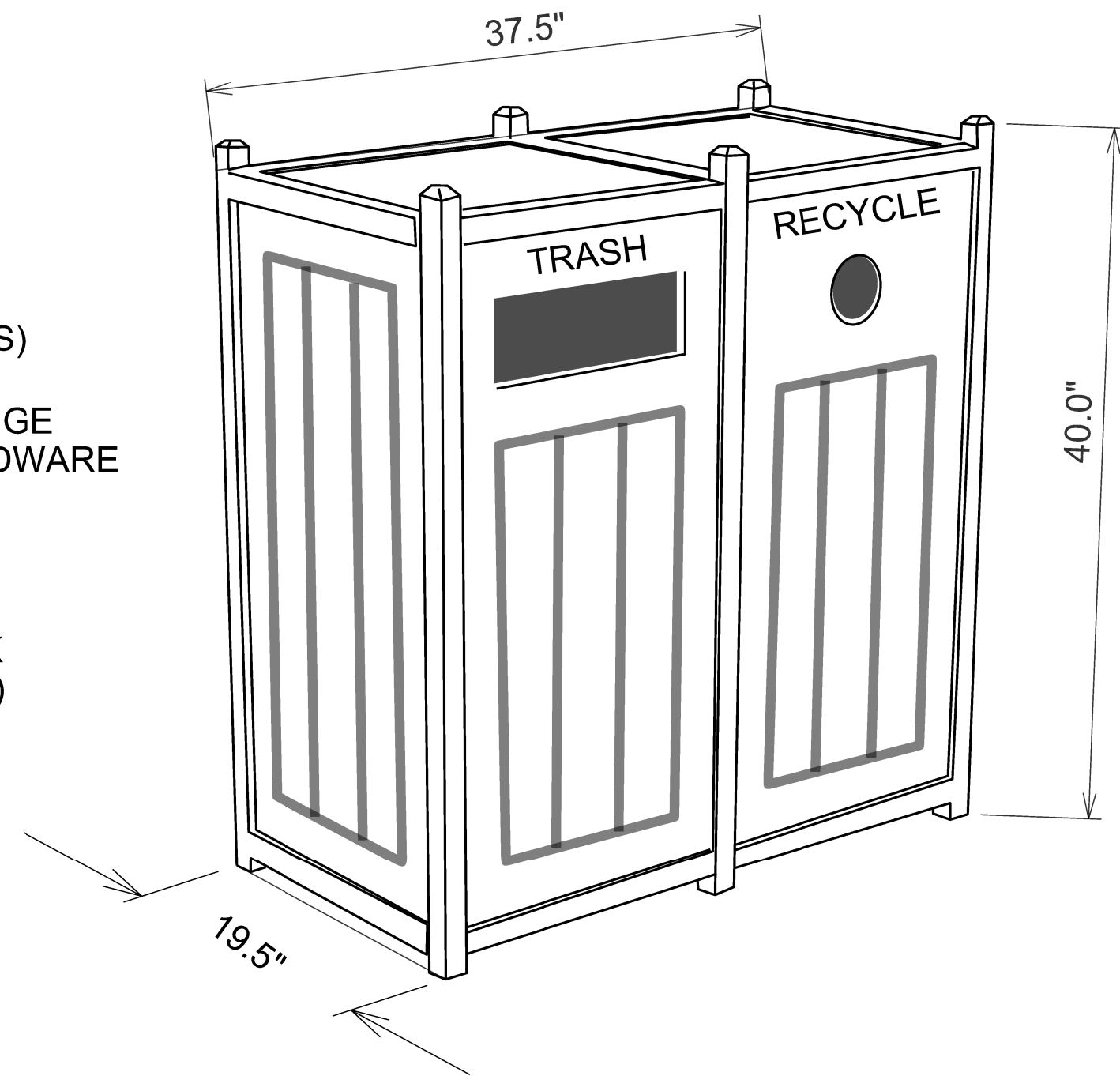


EXTERIOR GRADE  
WATERPROOF  
RECYCLED PLASTIC;  
BLACK TRIM, GREY  
BEADED SIDING  
(MATCH BENCH COLORS)

INDUSTRIAL GRADE HINGE  
AND DOOR LATCH HARDWARE

33 GAL. CAPACITY  
EACH SIDE

MATCHING RIGID BLACK  
PLASTIC LINER (INSERT)



SURFACE MOUNT EACH CORNER FOOT;  
SUBMIT ATTACHMENT HARDWARE  
FOR APPROVAL.

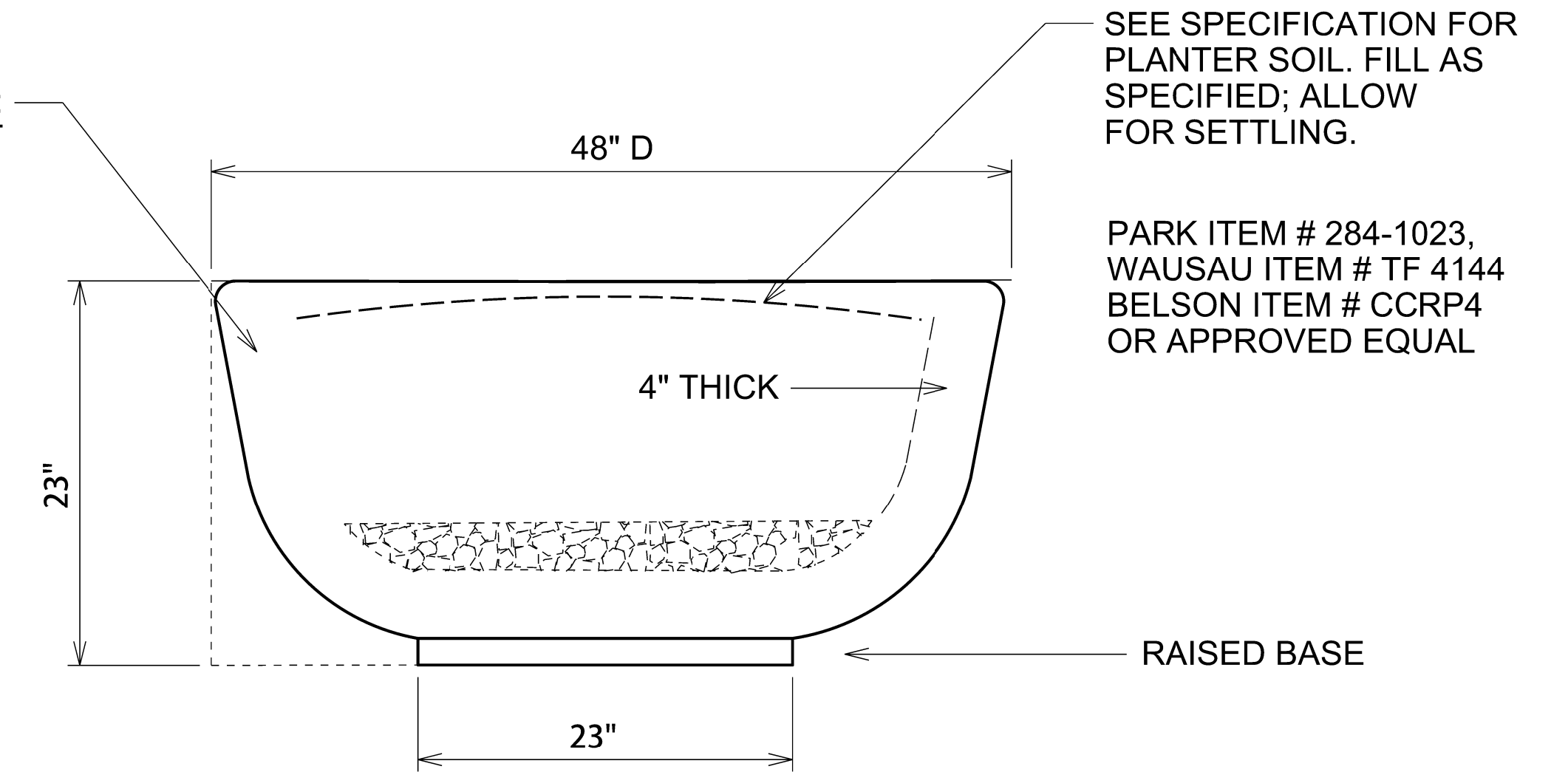
TREE TOP PRODUCTS # 4ZK4964-GY/BK,  
KIRBY BUILT # KWR-63  
TRASH CANS WAREHOUSE  
# N4B-19201926DP1  
OR APPROVED EQUAL

PRECAST CONCRETE BOWL;  
NATURAL LIGHT SANDBLAST  
FINISH

WGT. APPROX. 1200 LBS.

TYPE 3 PORTLAND CEMENT  
3/8" STEEL REBAR SUPPORT  
ASTM C31

PLACE 2" OF CLEAN GRAVEL  
IN BASE OF PLANTER FOR  
DRAINAGE



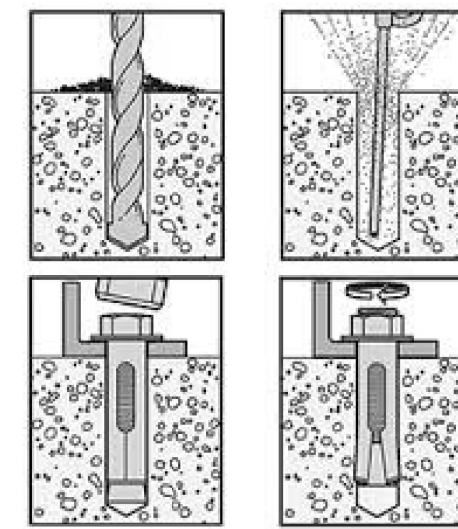
## DUAL WASTE RECEPTACLES

NTS

## 48" CONCRETE PLANTER

NTS

TYPICAL ANCHOR BOLT ATTACHMENT

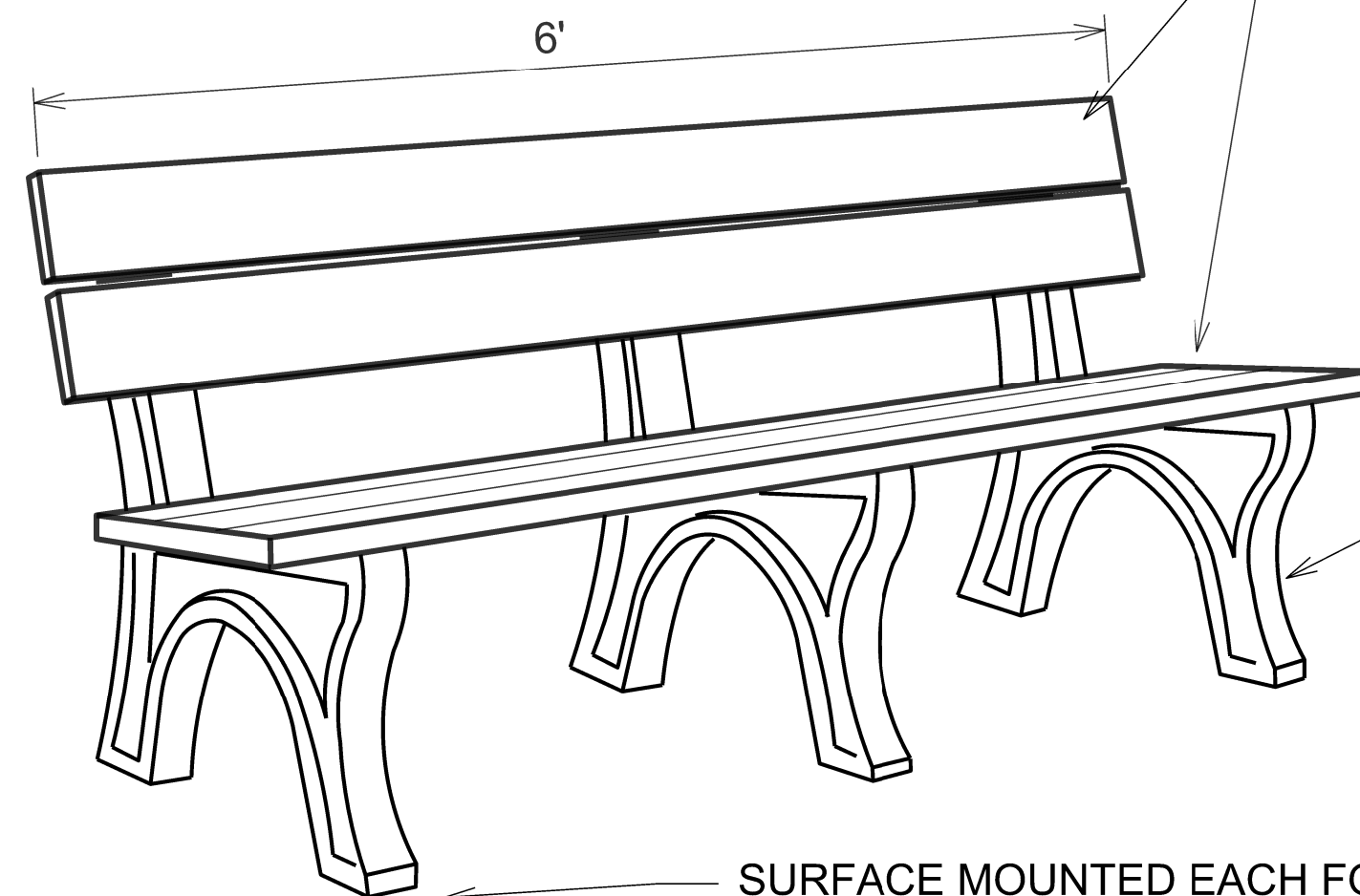


SUBMIT ATTACHMENT PROCESS  
AND PRODUCT TO ENGINEER FOR  
APPROVAL PRIOR TO INSTALLATION.

THE BENCH FACTORY SKU #TBN-71  
OR, BELSON ITEM# PL6-P,  
KIRBY BUILT SKU #KBN-71  
OR APPROVED EQUAL

INSTALL PER MANUFACTURER  
INSTRUCTIONS AND ACCORDING  
TO PLANS/SPECS.

RECYCLED PLASTIC WOOD  
SLATS; GREY PLANK COLOR



RECYCLED PLASTIC WOOD;  
BLACK STRUCTURAL BASE.

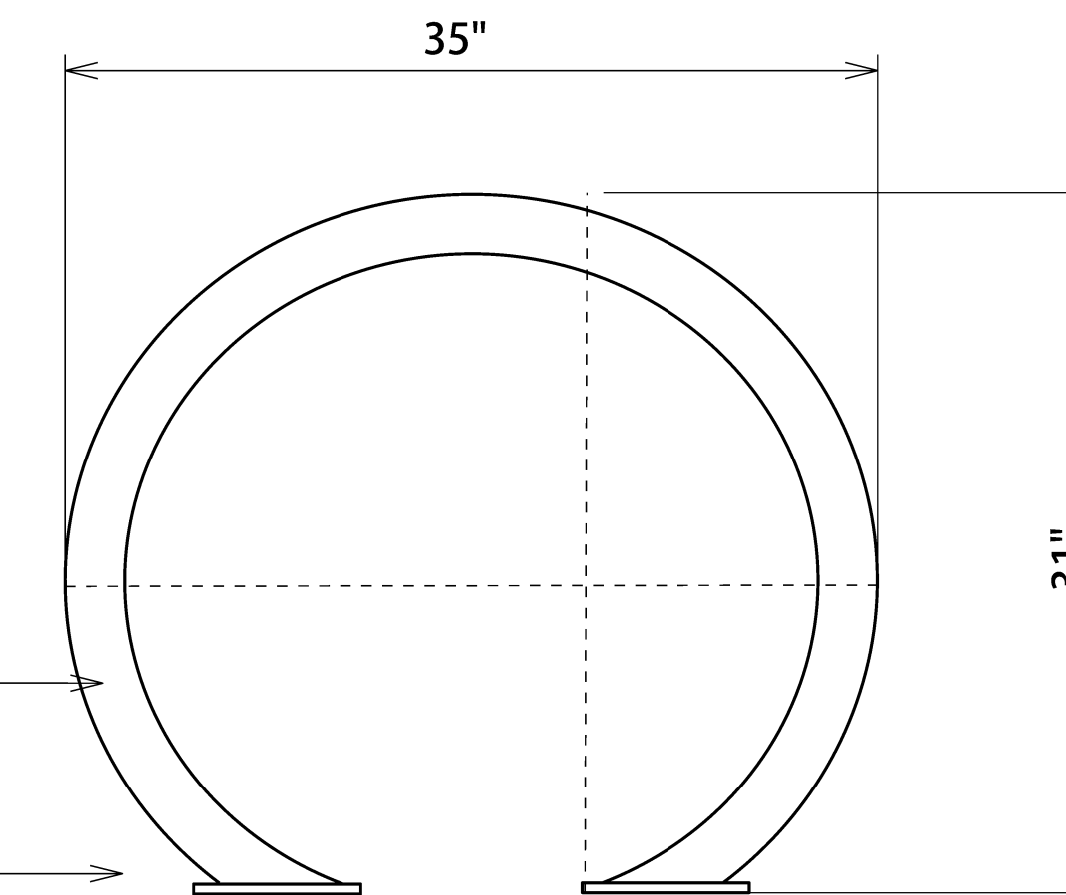
SURFACE MOUNTED EACH FOOT;  
SUBMIT ATTACHMENT HARDWARE  
FOR APPROVAL.

## 6' RECYCLE PLASTIC PARK BENCH

NTS

2-3/8" STAINLESS STEEL  
ROUND TUBING

SURFACE ANCHOR  
(TO CONCRETE)



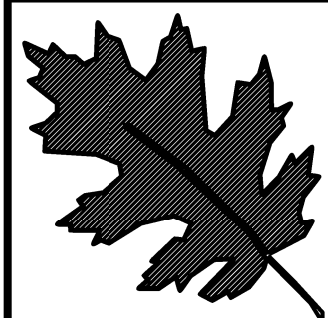
BELSON ITEM # CBBR-2CR-SS,  
PARK ITEM # 509-2043,  
ULINE ITEM # H-6572  
OR APPROVED EQUAL

INSTALL PER MANUFACTURER  
INSTRUCTIONS AND ACCORDING  
TO PLANS/SPECS.

SUBMITTED SAMPLES OF FINISH  
OPTIONS.

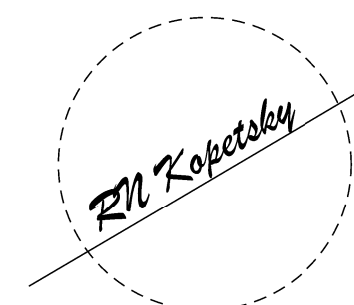
## HORSESHOE BIKE RACK

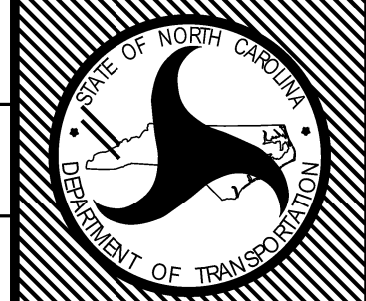
NTS



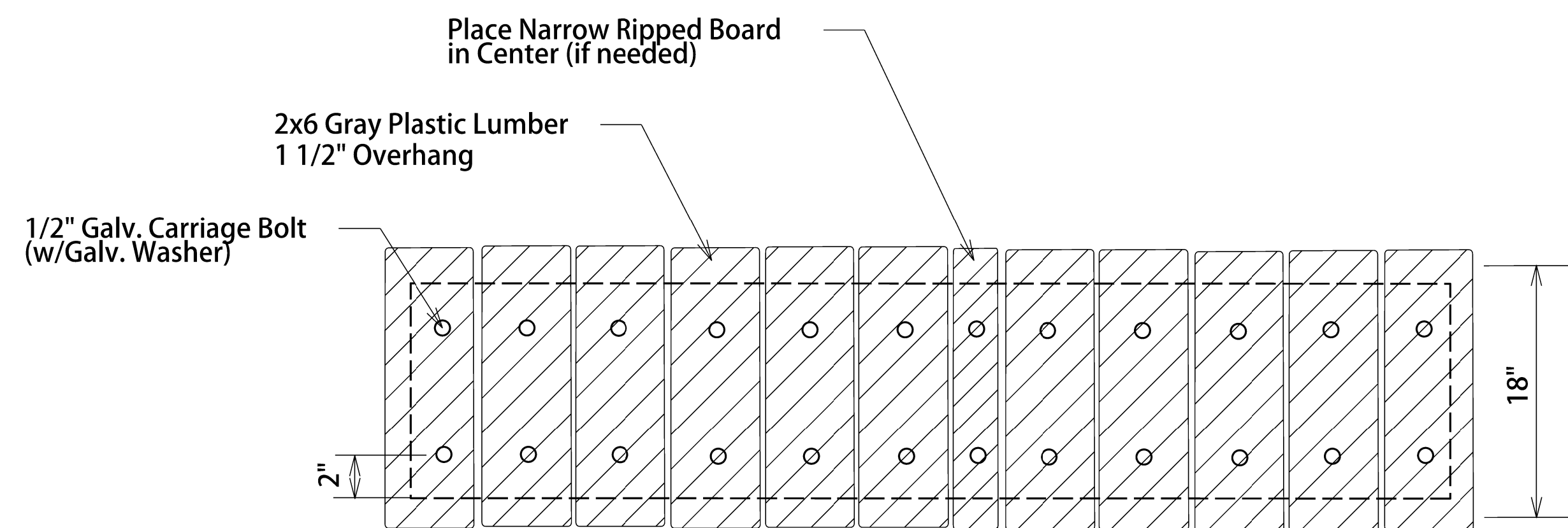
NCDOT - Roadside Environmental Unit  
Aesthetic Engineering Section  
1557 Mail Service Center Raleigh NC 27699-1557  
ph: 919-707-2920 fax: 919-715-2554  
<https://www.ncdot.gov/initiatives-policies/environmental/roadside-beautification>

B-4929(L) / Roland Ave  
Landscape Development Plan  
Surf City NC



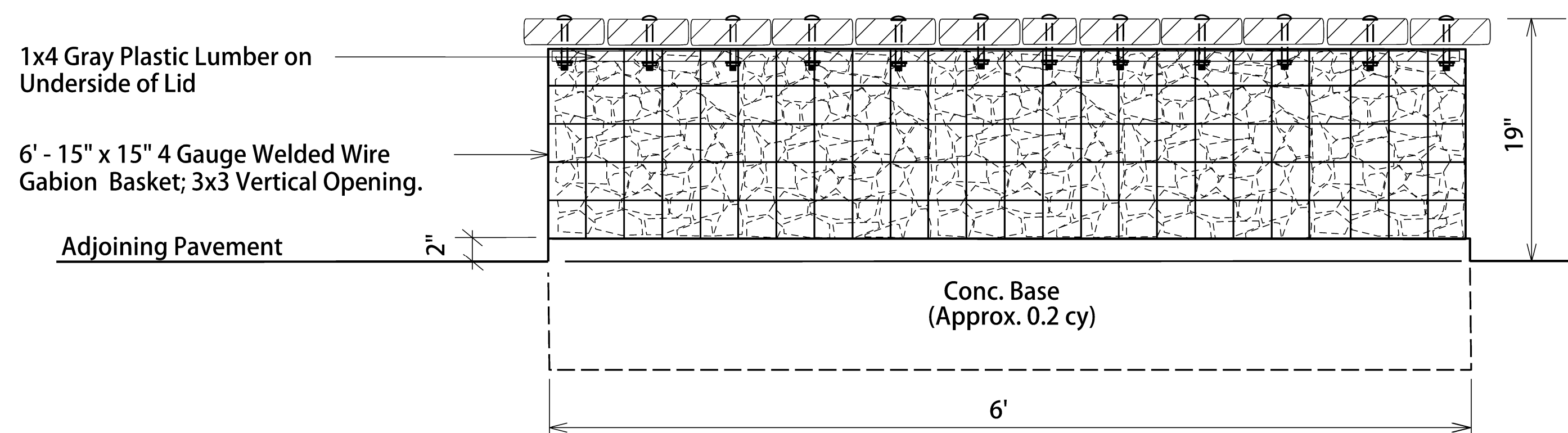
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	checked by & date:				Streetscape Details	WBS #	40233.3.2
	final design date:					FED I.D. #	
				sheet no:	L9	total sheet no:	

# 6' GABION BENCH DETAIL



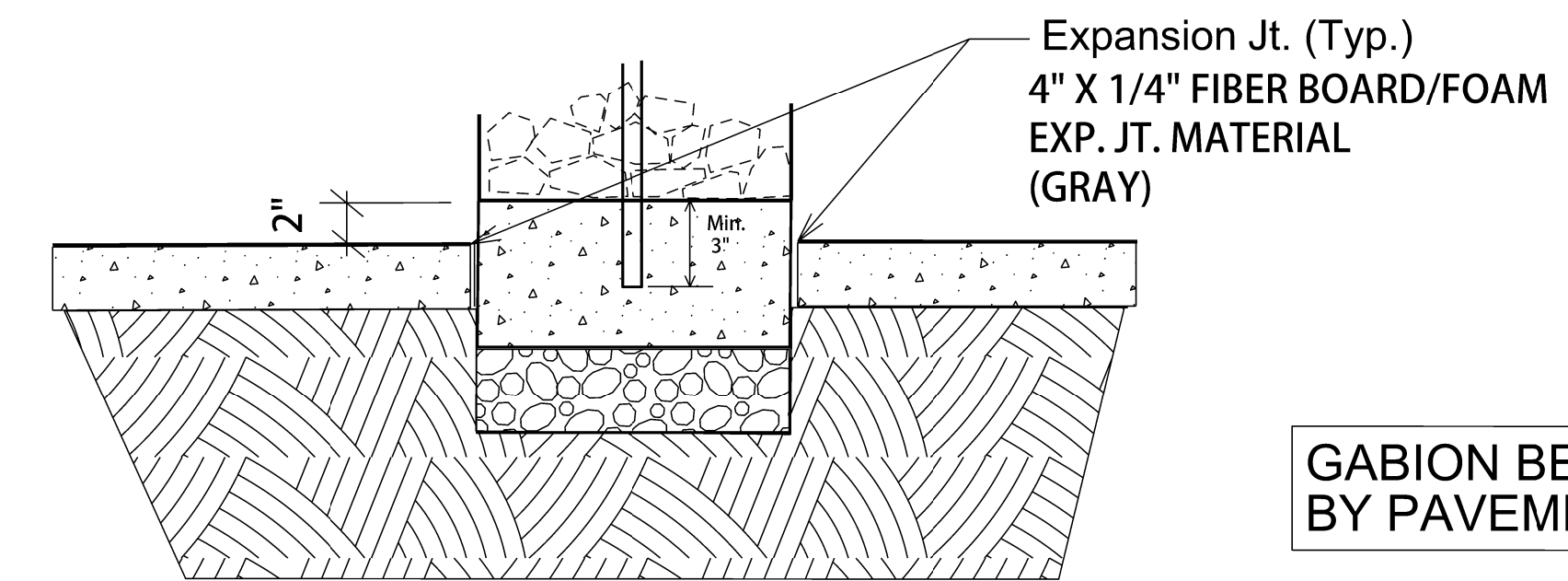
**PLAN**

NTS

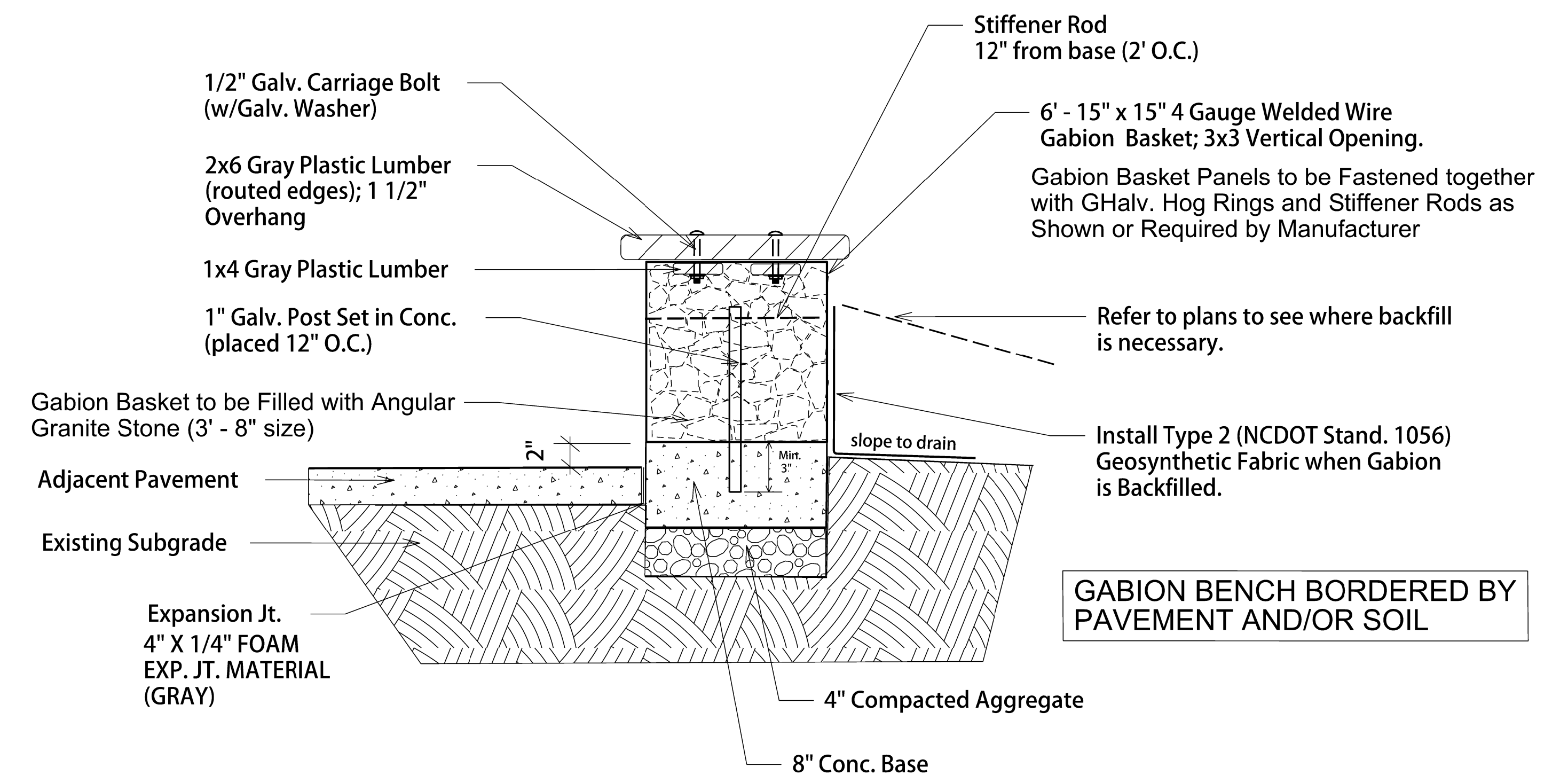


**ELEVATION**

NTS



**GABION BENCH BORDERED BY PAVEMENT**



**GABION BENCH BORDERED BY PAVEMENT AND/OR SOIL**

**SECTION**

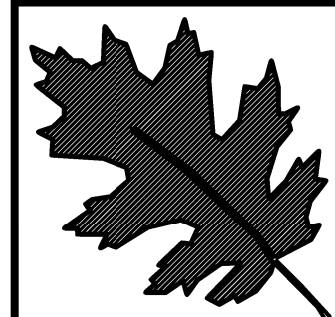
NTS

## NOTES

Hand Place Stones in Basket; Use Larger Flat Stone on Outside of the Basket.

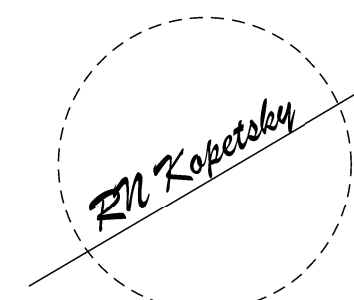
Attach Wooden Plank Seat to Gabion Lid/Top prior to Wiring Lid Closed

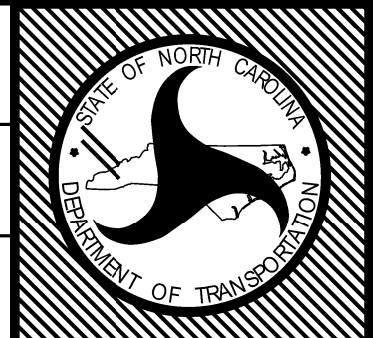
There Shall be No Sharp Edges Corners or Exposed Points



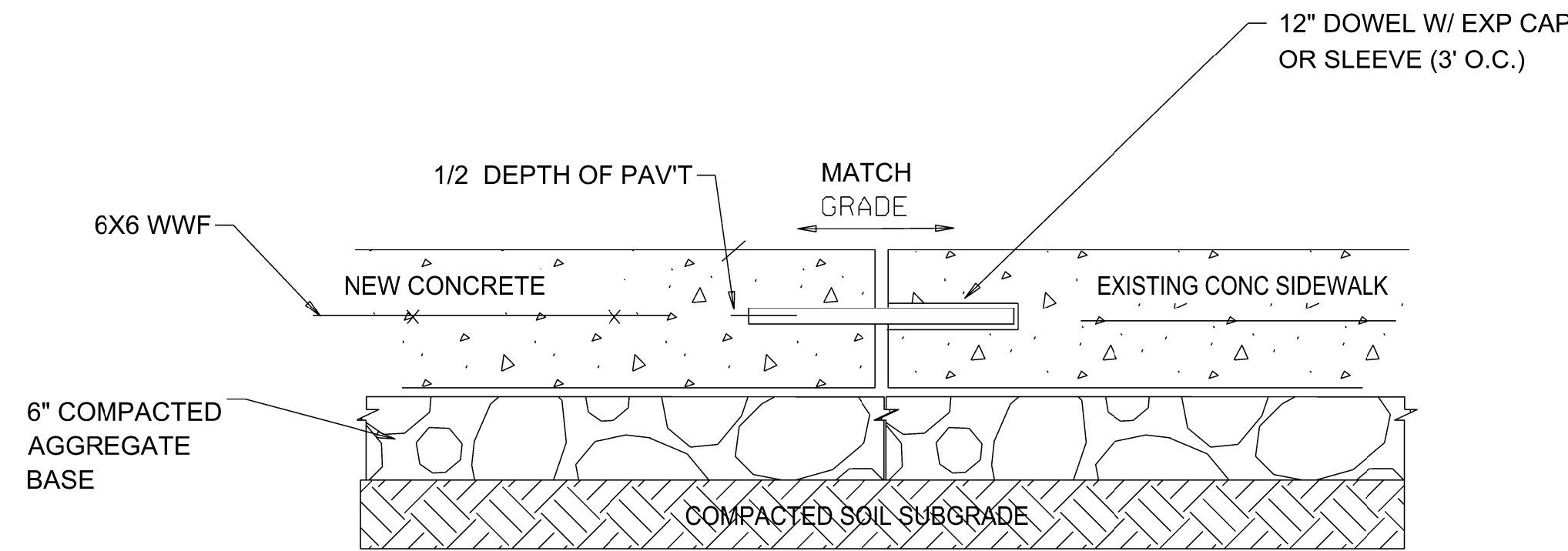
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Aesthetic Engineering Section  
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ph: 919-707-2920 fax: 919-715-2554  
<https://www.ncdot.gov/initiatives-policies/environmental/roadside-beautification>

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Landscape Development Plan  
Surf City NC



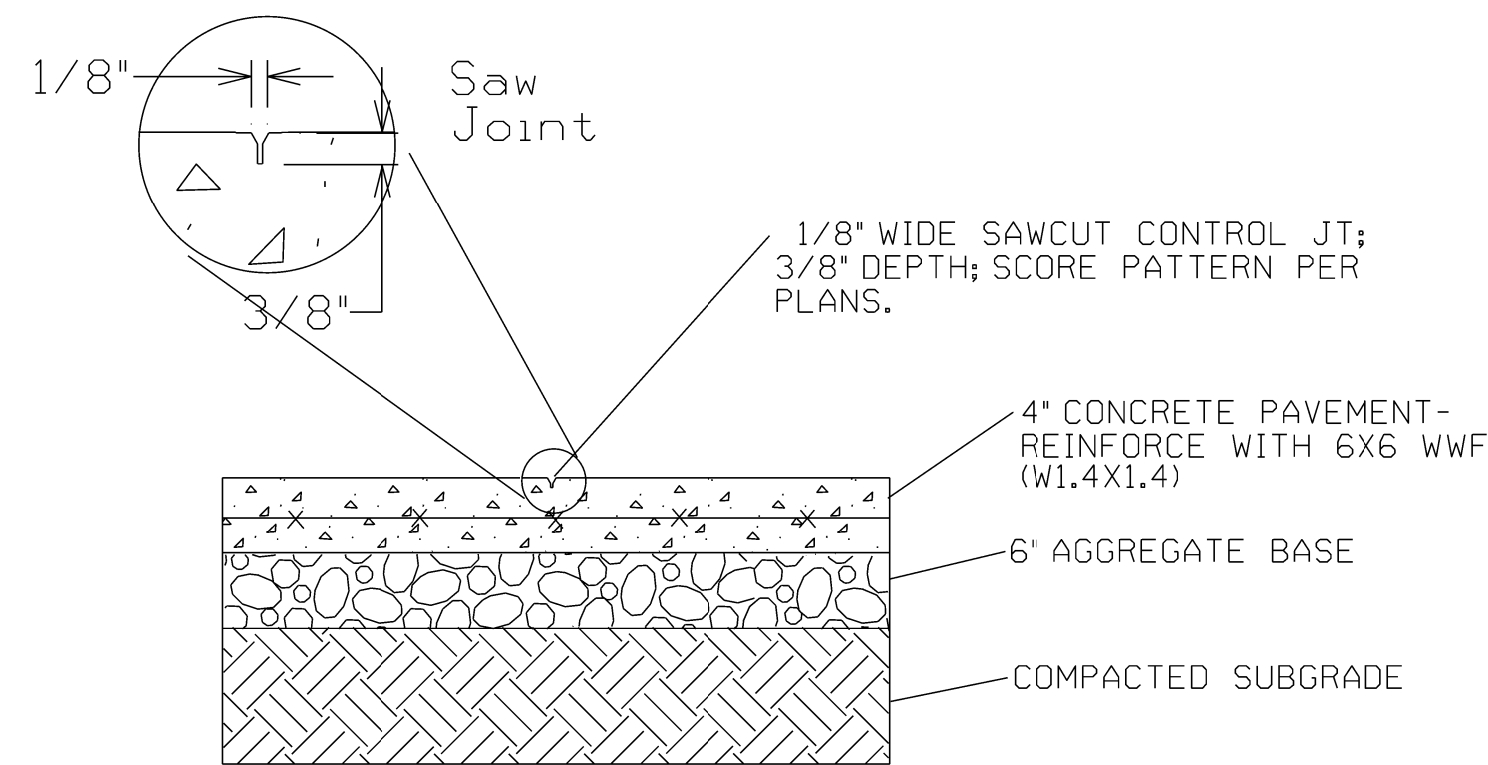
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	checked by & date:				Streetscape Details	WBS #
	final design date:		Gabion Bench		FED I.D. #	
					sheet no:	L10





New Concrete Adjoining Old Concrete Walk

NTS



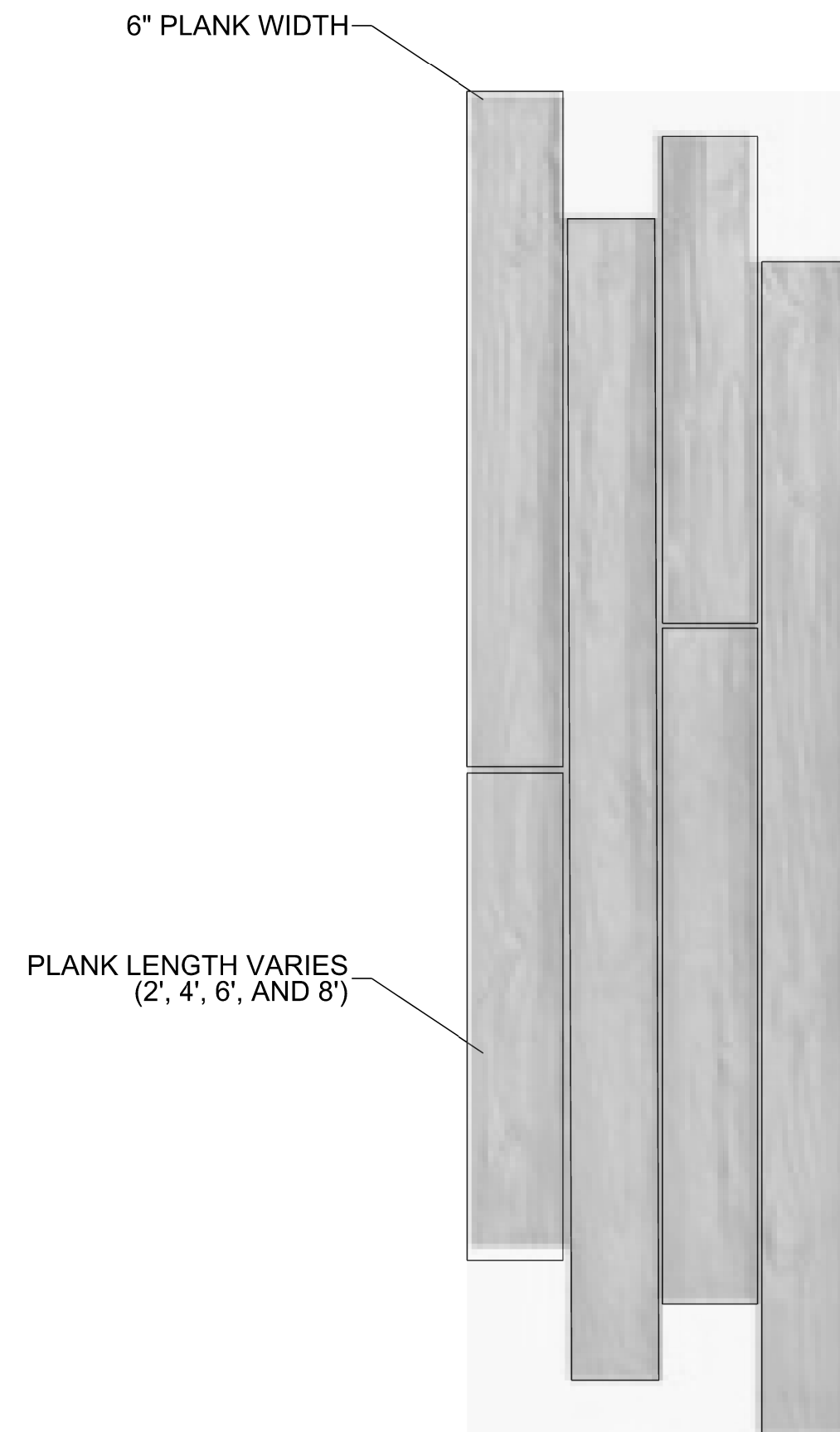
CONCRETE SIDEWALK - CONTROL JOINT

NTS

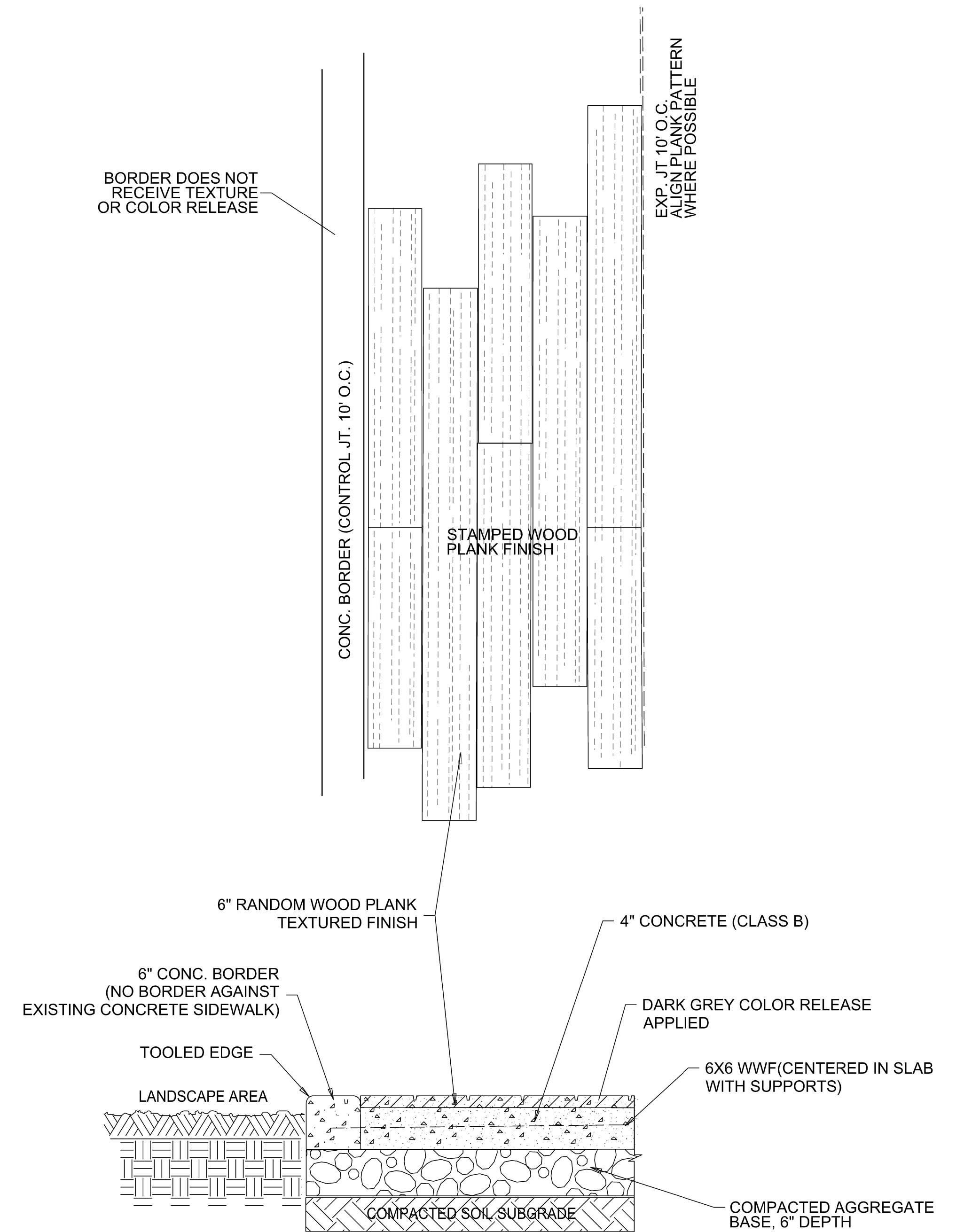
**GENERAL NOTES:**

- 1) REFERENCE SITE PLAN FOR BY SPECIFIC HARDSCAPE PLACEMENT.
- 2) COVER/PROTECT CONCRETE BORDER WHILE APPLYING TEXTURE AND COLOR RELEASE.
- 3) 4" THICK CONCRETE SIDEWALK; APPLY EXP. & CONTROL JTS. AS NOTED.
- 4) PROVIDE COLOR AND TEXTURE SAMPLES, FOR ENGINEER APPROVAL, PRIOR TO CONSTRUCTION.
- 5) RUN BOARD PLANK PATTERN PERPENDICULAR TO EXISTING SIDEWALK.
- 6) 8' X 8' SAMPLE AREA TO BE COMPLETED, REVIEWED, AND APPROVED (BY NCDOT) PRIOR TO COMPLETION OF WORK.

**BOARDWALK  
TEXTURED CONCRETE STAMP**



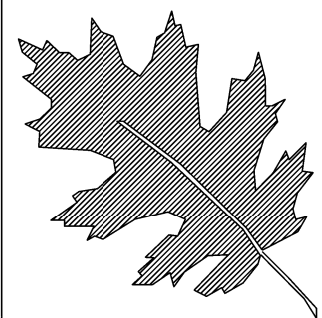
BORDER DOES NOT RECEIVE TEXTURE OR COLOR RELEASE



CONCRETE PATTERN DETAIL

NTS

\$\$\$\$\$SYTIME\$\$\$\$\$  
\$\$\$\$\$USERNAM\$\$\$\$\$



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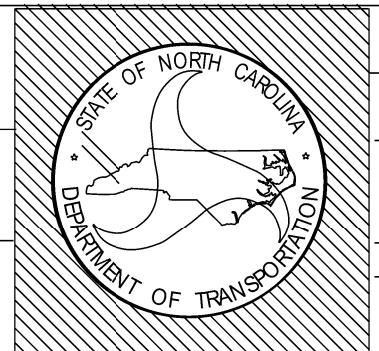
**B-4929(L) / Roland Ave  
Landscape Development Plan  
Surf City NC**

*RN Kobetsky*

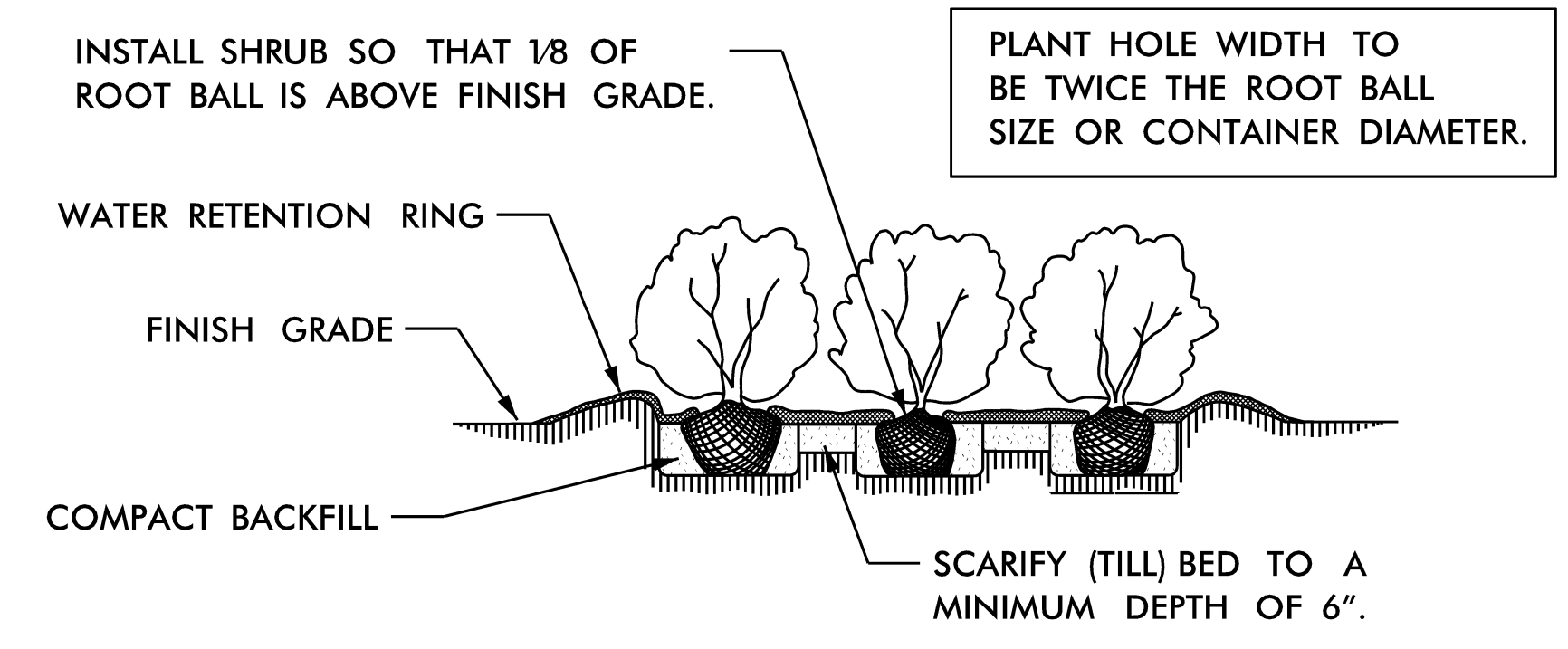
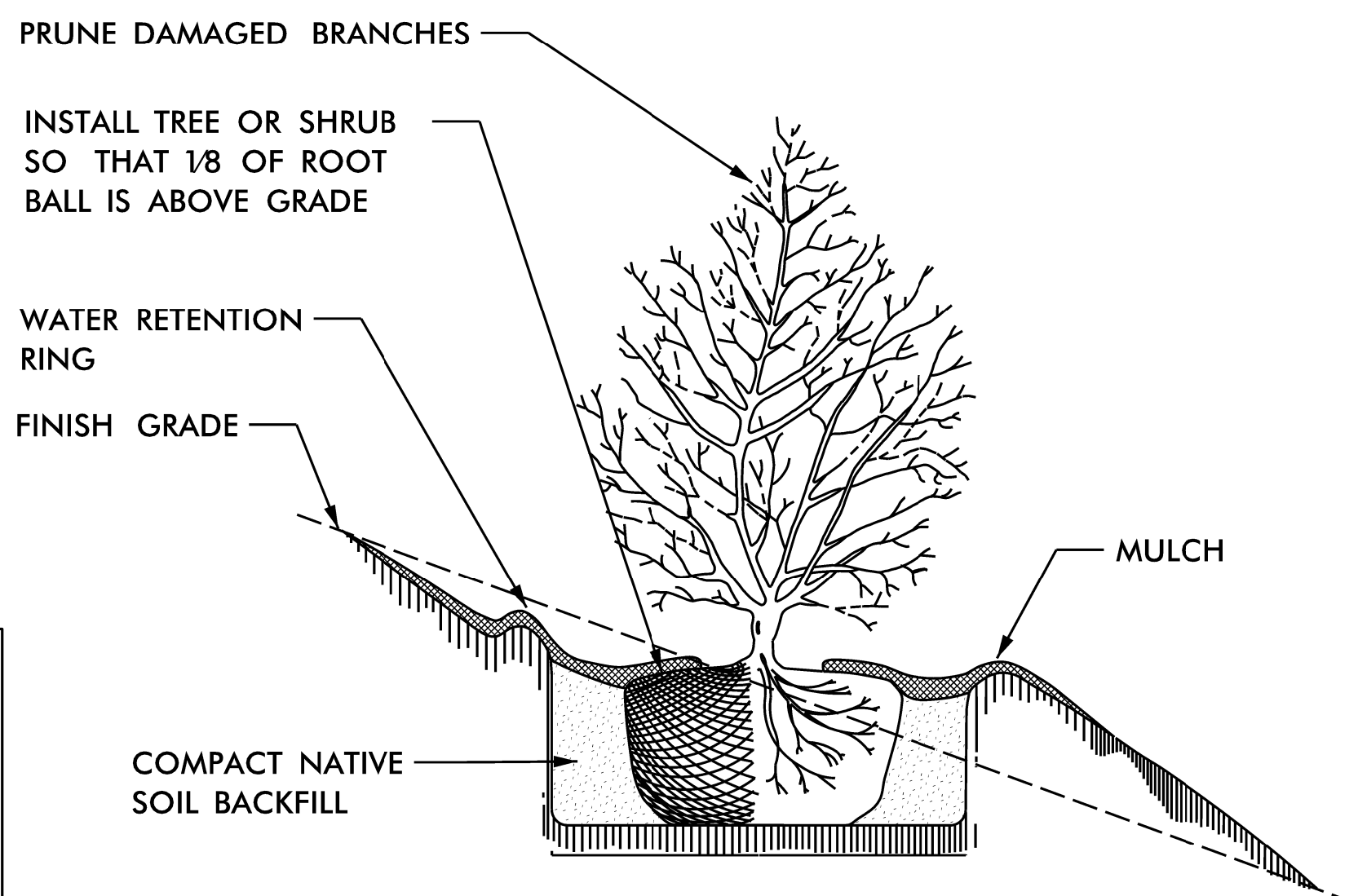
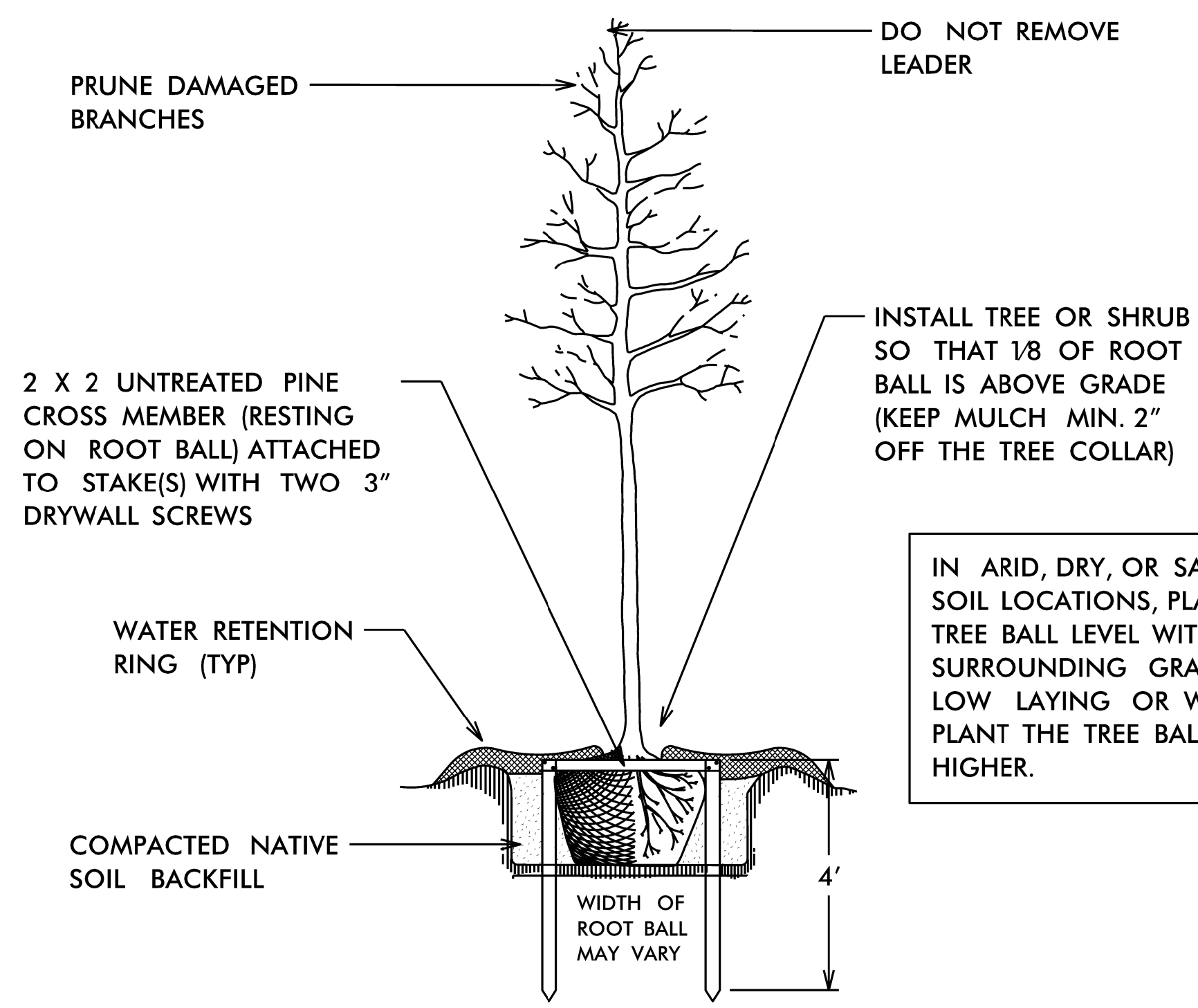
sheet description:

prel. design date :	Aug/2019
checked by & date :	
final design date :	

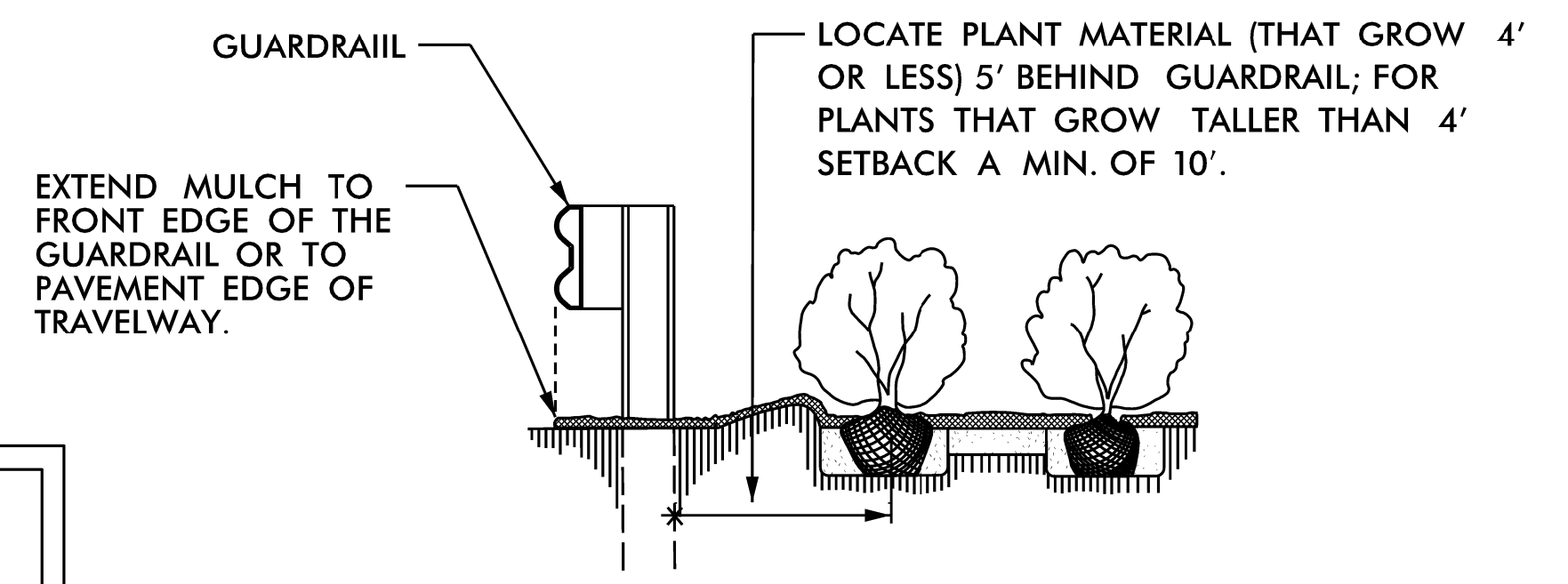
Landscape Enhancement
<b>PAVEMENT DETAILS</b>



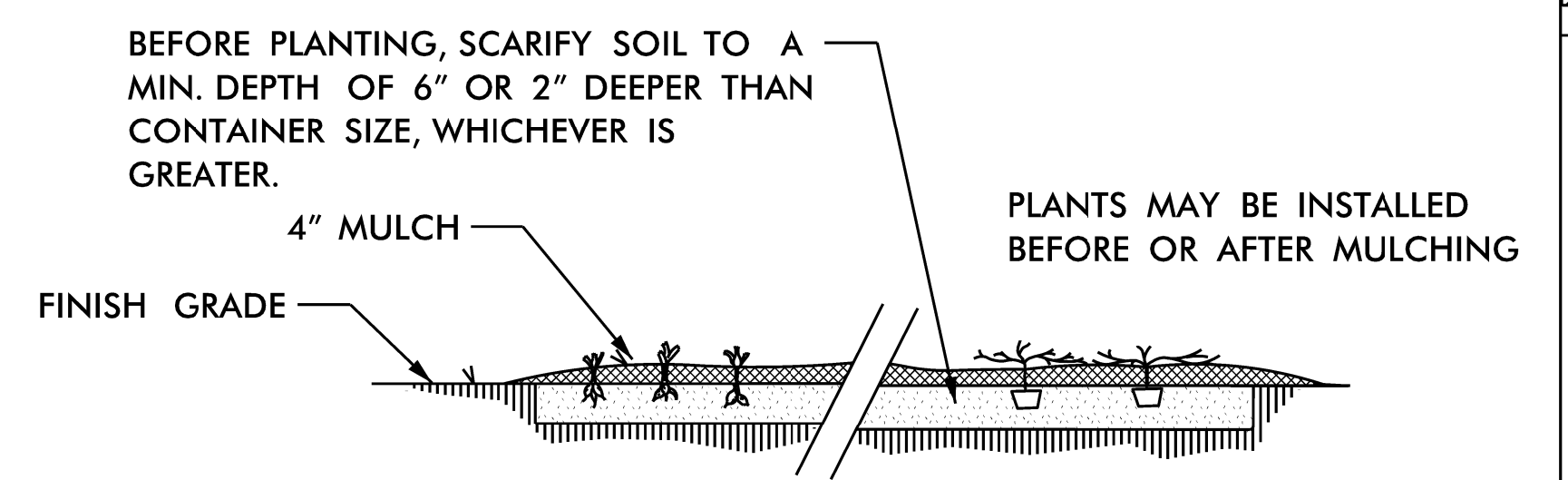
T.I.P. #	B-4929(L)
WBS #	40233.3.2
FED I.D. #	
sheet no :	L11
total sheet no :	



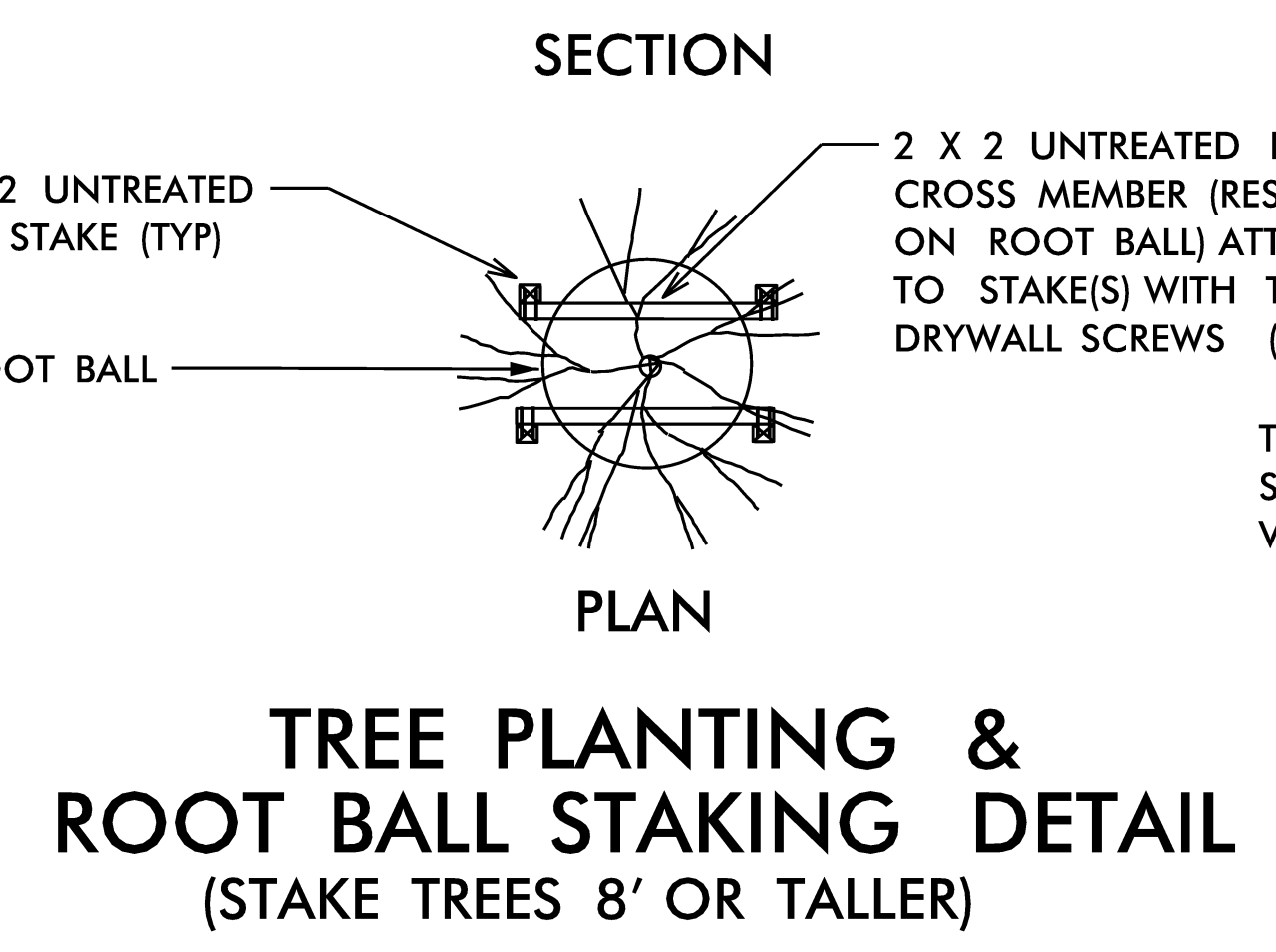
**SHRUB BED PLANTING DETAIL**



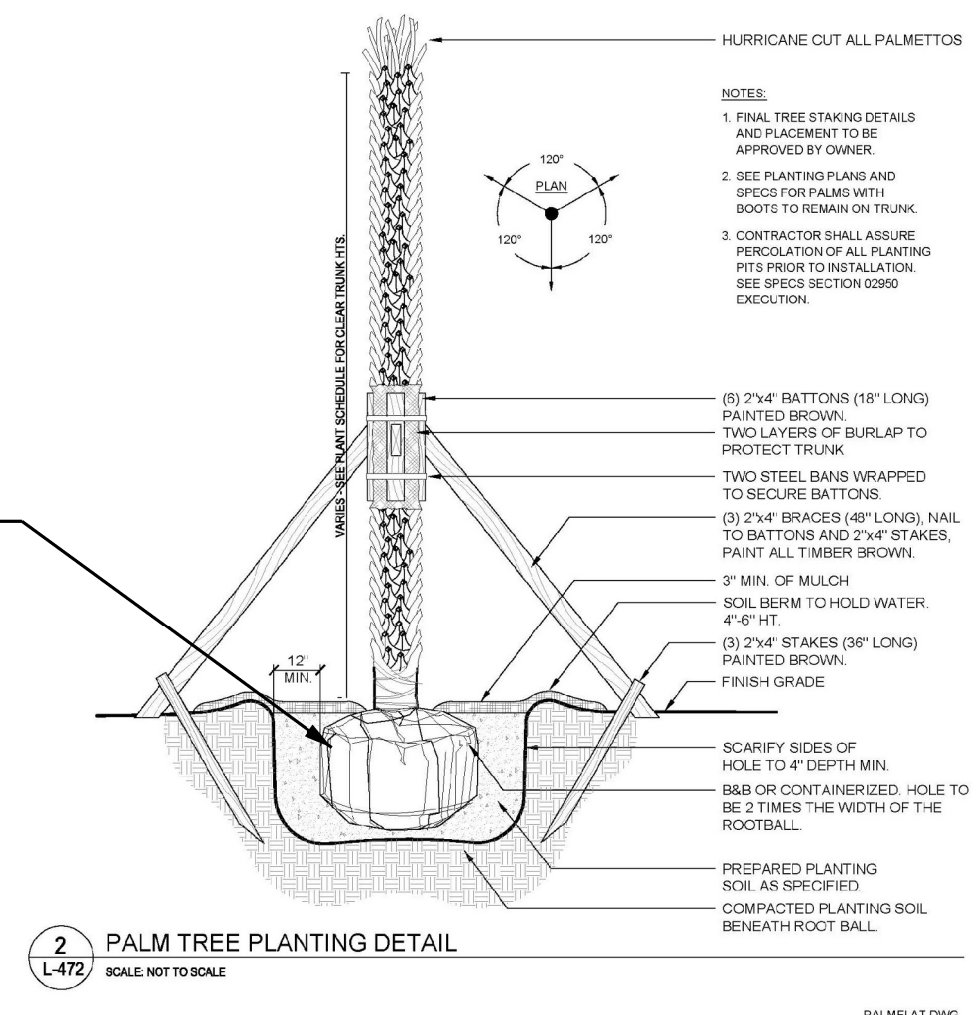
**GUARDRAIL MULCHING DETAIL**  
USE AS DIRECTED BY FIELD ENGINEER



**GROUND COVER/BEDDING PLANT DETAIL**



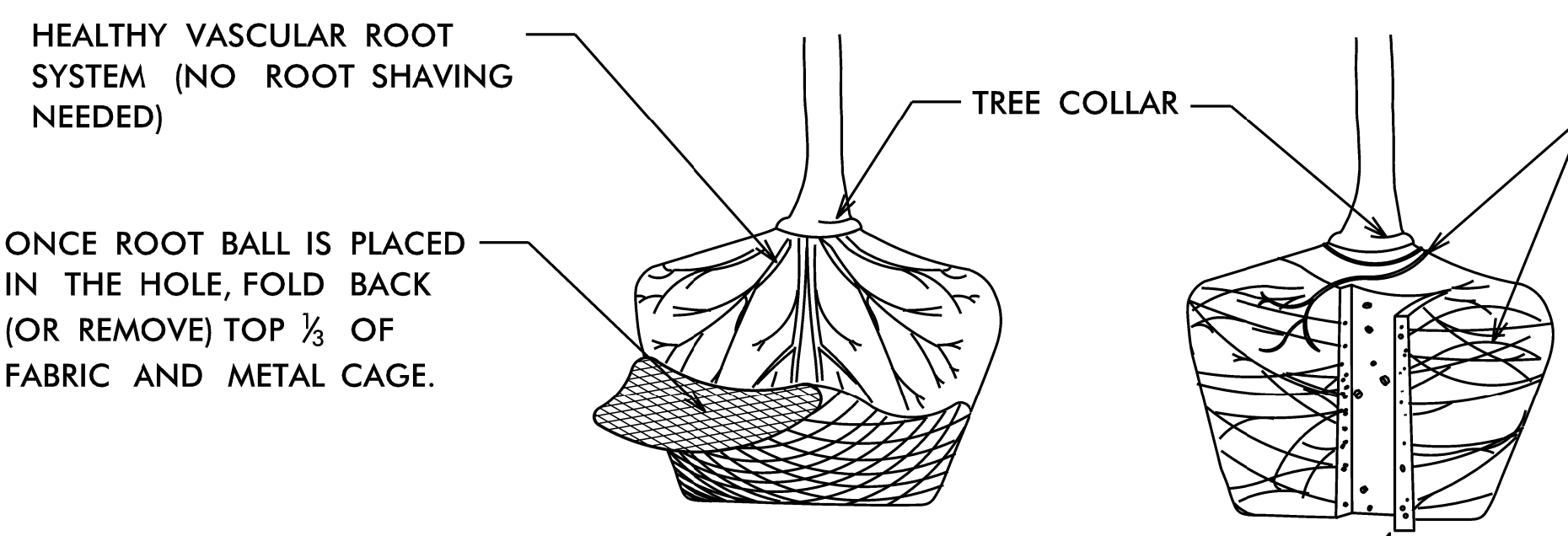
**TREE PLANTING & ROOT BALL STAKING DETAIL**  
(STAKE TREES 8' OR TALLER)



**PALM TREE PLANTING DETAIL**  
SCALE: NOT TO SCALE

**NOTES:**

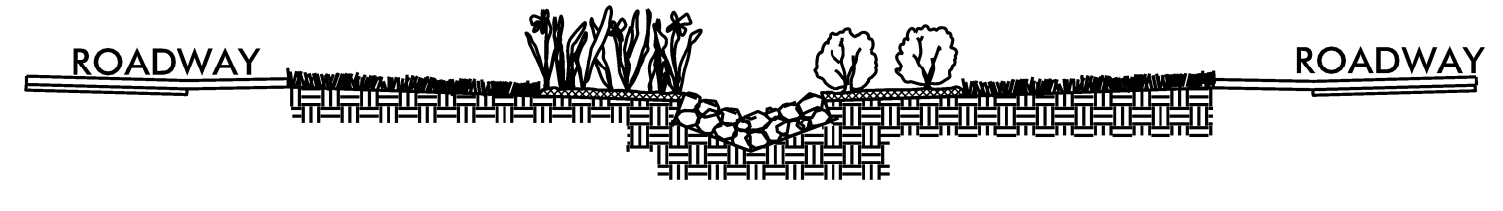
- PLANT HOLE WIDTH TO BE TWICE THE ROOT BALL SIZE OR CONTAINER DIAMETER.
- APPLY HERBICIDES A MIN. OF 7 DAYS PRIOR TO PLANTING, BY LABEL INSTRUCTIONS, OR AS DIRECTED BY THE NCDOT ENGINEER.
- APPLY FERTILIZER AT PLANTING TIME IN THE FORM OF A SLOW RELEASE PELLET OR TABLET. APPLY AT RATE RECOMMENDED BY MANUFACTURER. BOTH RATE AND FORMULATION MUST BE APPROVED BY FIELD ENGINEER PRIOR TO APPLICATION.
- 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.



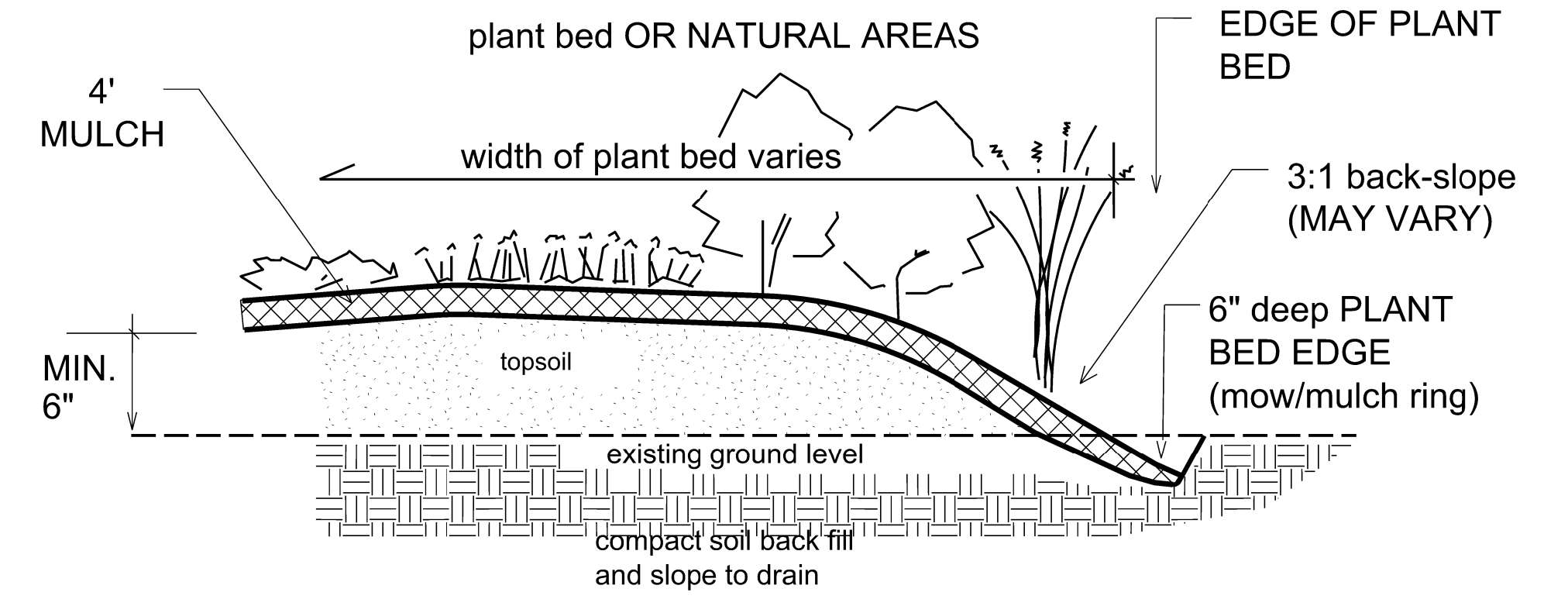
**TREE PLANTING INSTRUCTIONS**  
(FOR CONTAINER OR BALLED & BURLAPPED TREES)

ROOT BALL SHAVING CAN BE PERFORMED JUST PRIOR TO PLANTING OR AFTER PLACING IN THE HOLE.

SHAVE OUTER PERIPHERY OF ROOT BALL (MAX. 2") WITH SHARP SPADE SHOVEL (OR HAND SAW) TO REMOVE GIRDLING ROOTS.



**CLASS "A" STONE DITCH LINING DETAIL**

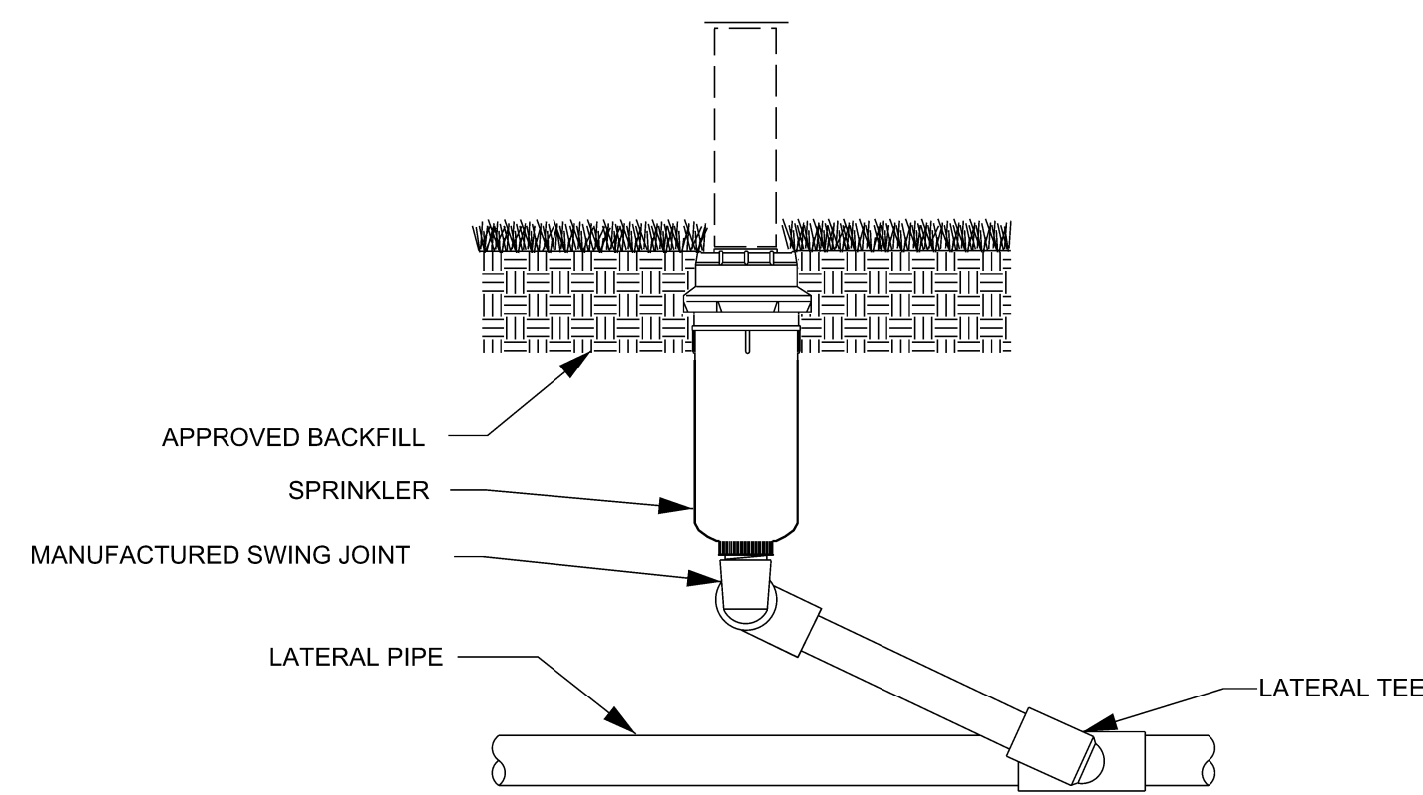


**PLANT BED EDGE DETAIL**

North Carolina Department of Transportation	Roadside Environmental Unit	Aesthetic Engineering Section
PROJECT TITLE:		
B-4929(L) ROLAND AVE. SURF CITY NC PENDER CO		
Plans Drawn By: BK		
Scale:		
Date:		
9 / 13 / 2019		
Sheet Description: Planting Details		
T.I.P. #: B-4929(L)		
Sheet #: L 12		

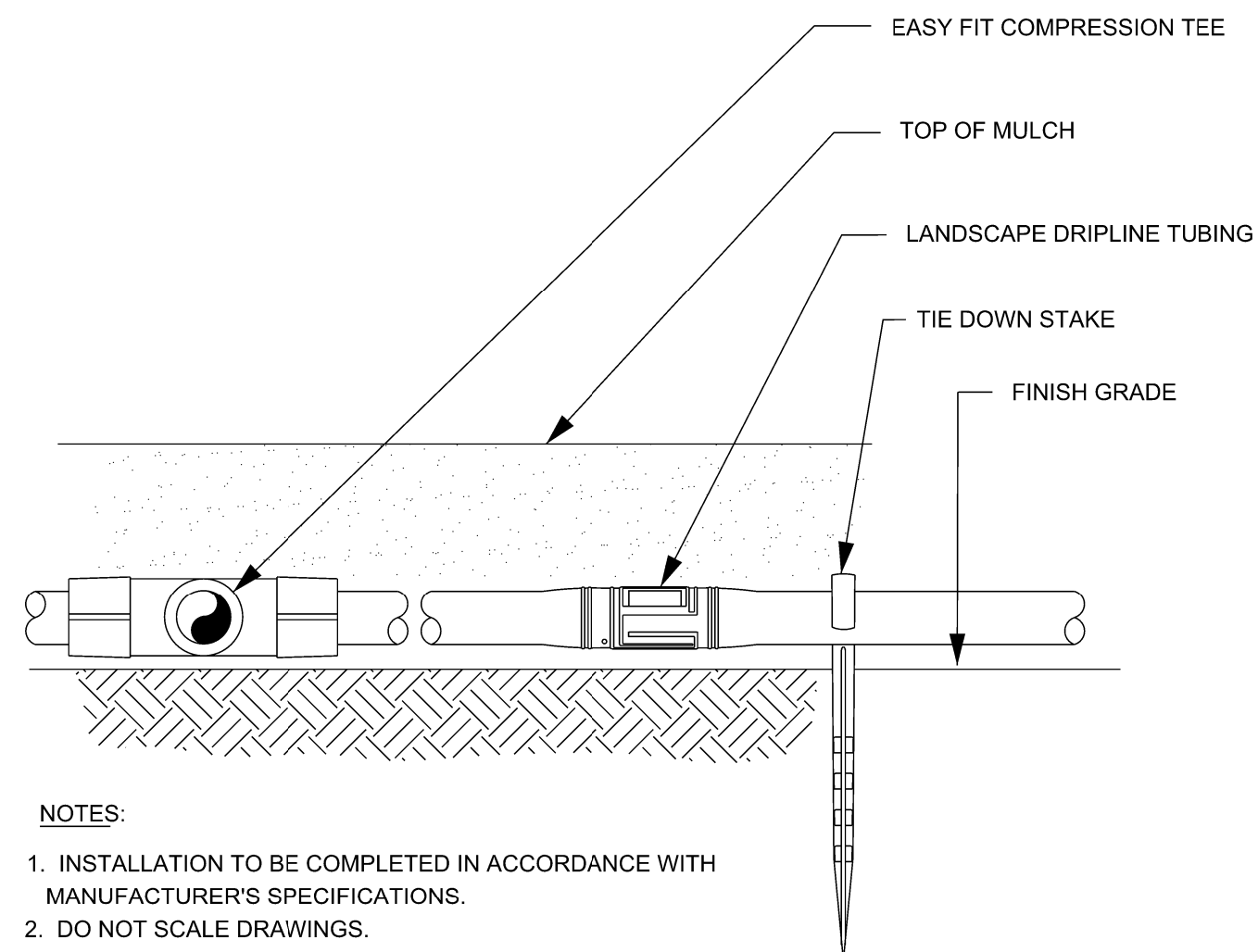






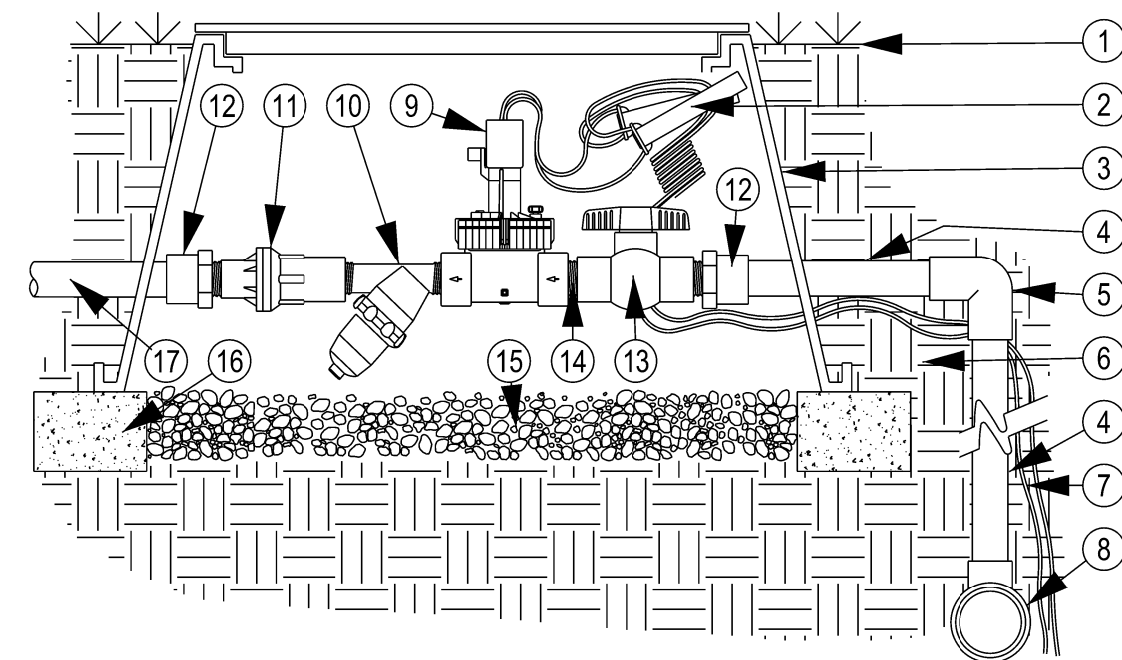
**NOTES:**  
 1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.  
 2. DO NOT SCALE DRAWINGS.  
 3. INSTALL SPRINKLER AT FINISHED GRADE.

**POP-UP SPRAY HEADS**  
 SINGLE-STREAM SPRINKLER, SWING JOINT (NOT TO SCALE)



**NOTES:**  
 1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.  
 2. DO NOT SCALE DRAWINGS.

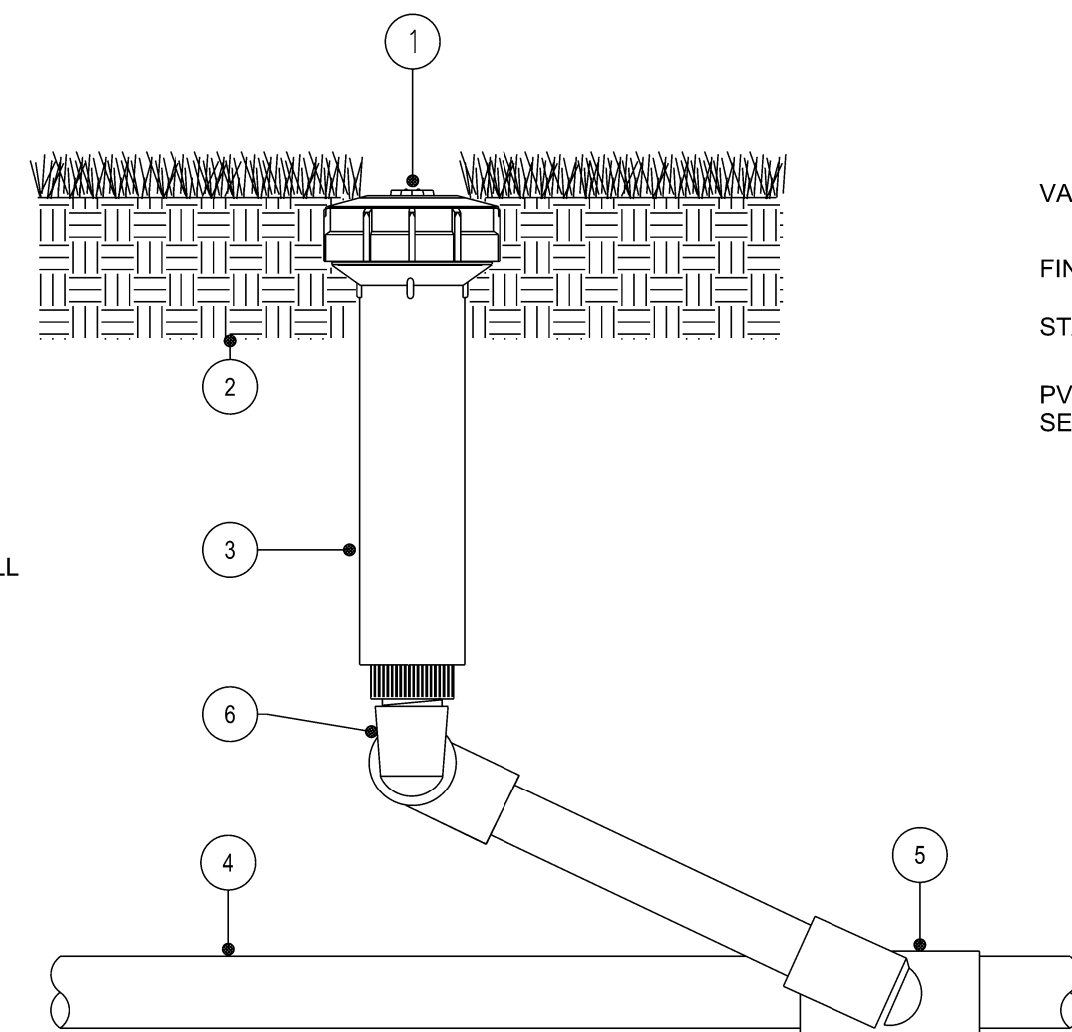
**LANDSCAPE DRIPLINE ON GRADE**  
 POTABLE SYSTEM (NOT TO SCALE)



**DRIPLINE ASSEMBLY**  
 VALVE ASSEMBLY (NOT TO SCALE)

- LEGEND**
- |                                     |                                       |
|-------------------------------------|---------------------------------------|
| 1. FINISHED GRADE                   | 10. MESH SCREEN FILTER WITH FLUSH CAP |
| 2. WATERPROOF DRY SPLICE CONNECTORS | 11. ADJUSTABLE PRESSURE REGULATOR     |
| 3. 12" VALVE BOX WITH COVER         | 12. PVC SCH 40 FEMALE ADAPTER         |
| 4. PVC LATERAL LINE                 | 13. MANUAL VALVE                      |
| 5. SCH 40 PVC 90° ELL JOINT         | 14. PVC SCH 40 TRANSITION NIPPLE      |
| 6. NATIVE SOIL PER SPECIFICATIONS.  | 15. WASHED GRAVEL SUMP (MIN. 3")      |
| 7. CONTROL WIRES TO CONTROLLER.     | 16. BRICK SUPPORTS                    |
| 8. PVC MAINLINE FITTING.            | 17. LATERAL LINE TO DRIP SYSTEM.      |
| 9. REMOTE CONTROL VALVE             |                                       |

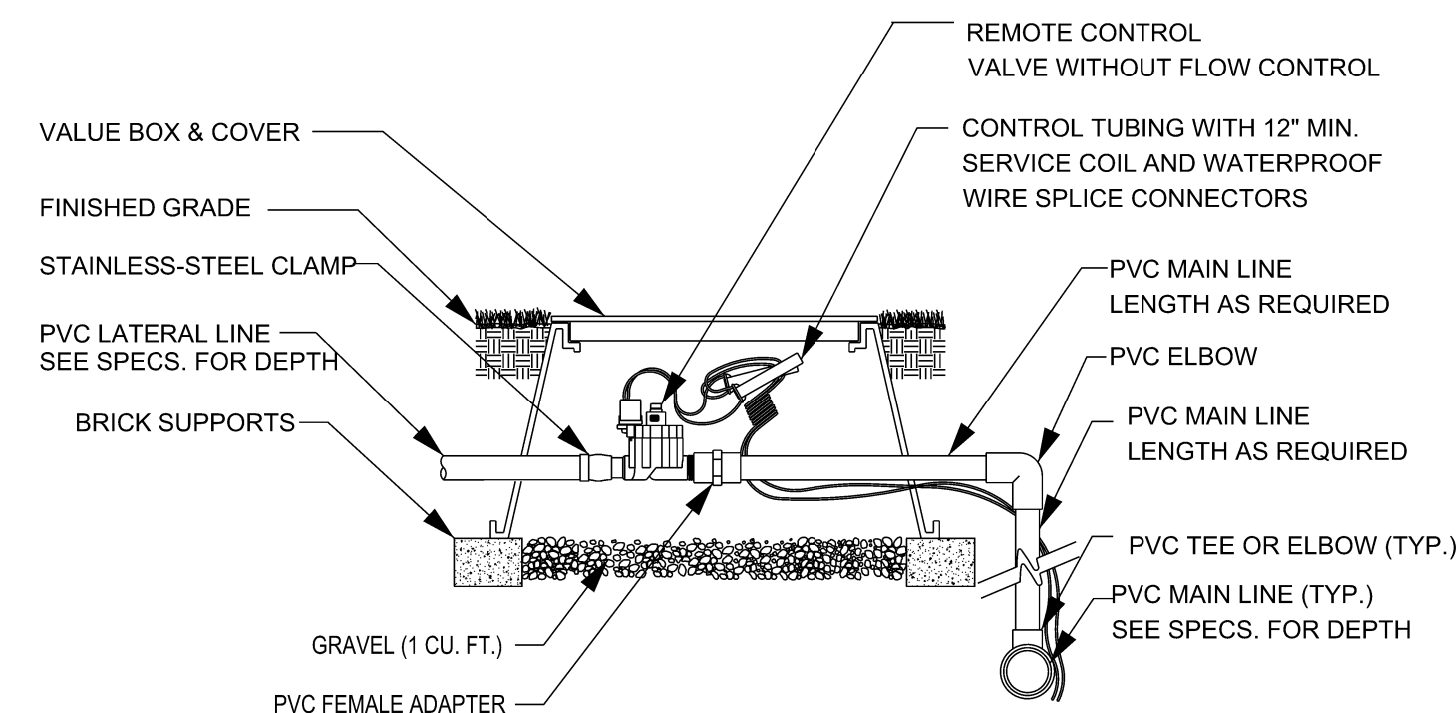
**NOTES:**  
 1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.  
 2. DO NOT SCALE DRAWINGS.



- LEGEND**
- NOZZLE (SIZE PER PLAN)
  - APPROVED BACKFILL
  - SPRINKLER
  - LATERAL PIPE
  - LATERAL TEE
  - MANUFACTURED SWING JOINT

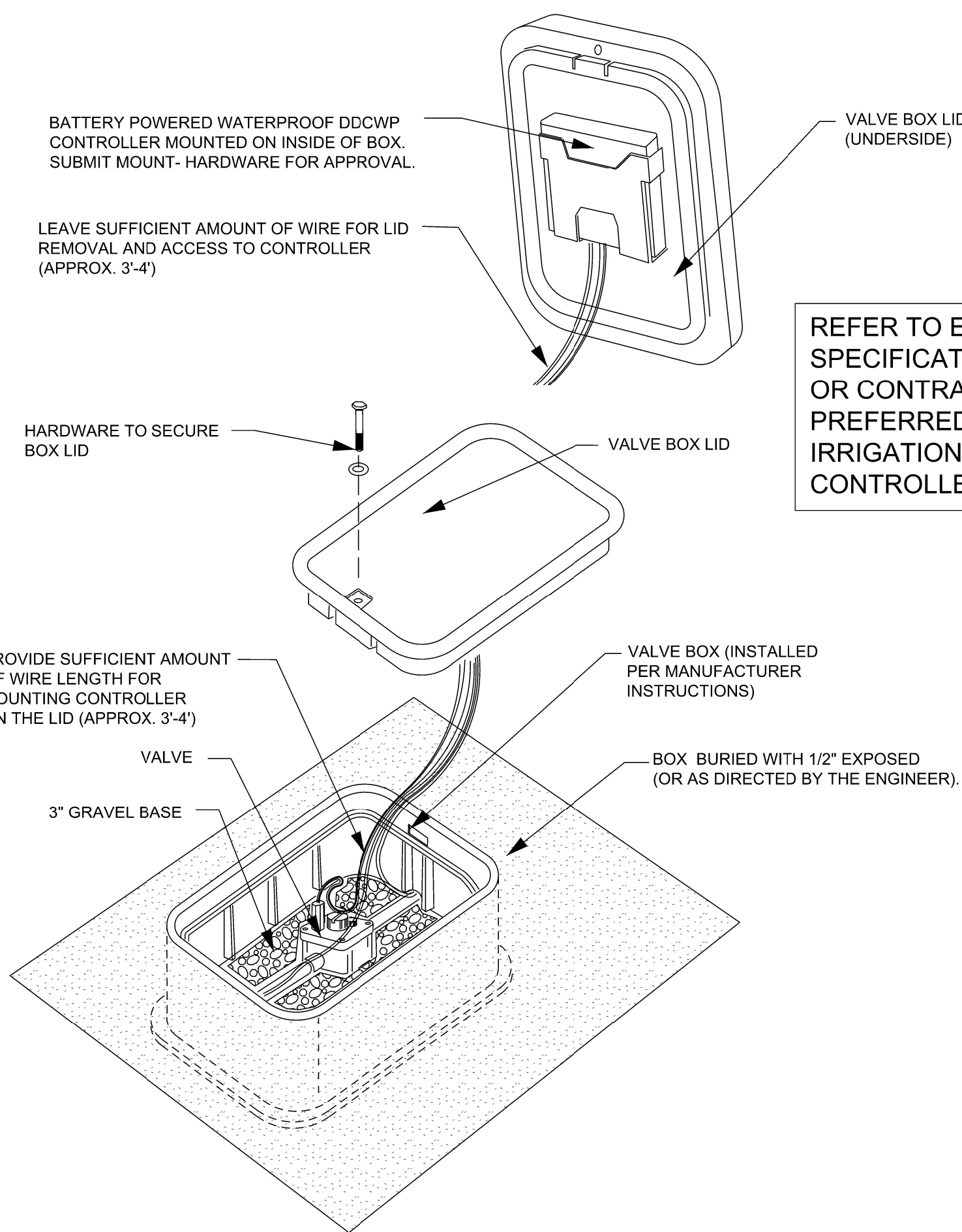
**NOTES:**  
 1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.  
 2. DO NOT SCALE DRAWINGS.  
 3. INSTALL SPRINKLERHEAD AT FINISHED GRADE

**ROTOR SPRINKLER**  
 4 INCH POP-UP (SWING JOINT) (NOT TO SCALE)



**NOTES:**  
 1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.  
 2. DO NOT SCALE DRAWINGS.

**VALVES & BOX**  
 1" PLASTIC VALVE (NOT TO SCALE)

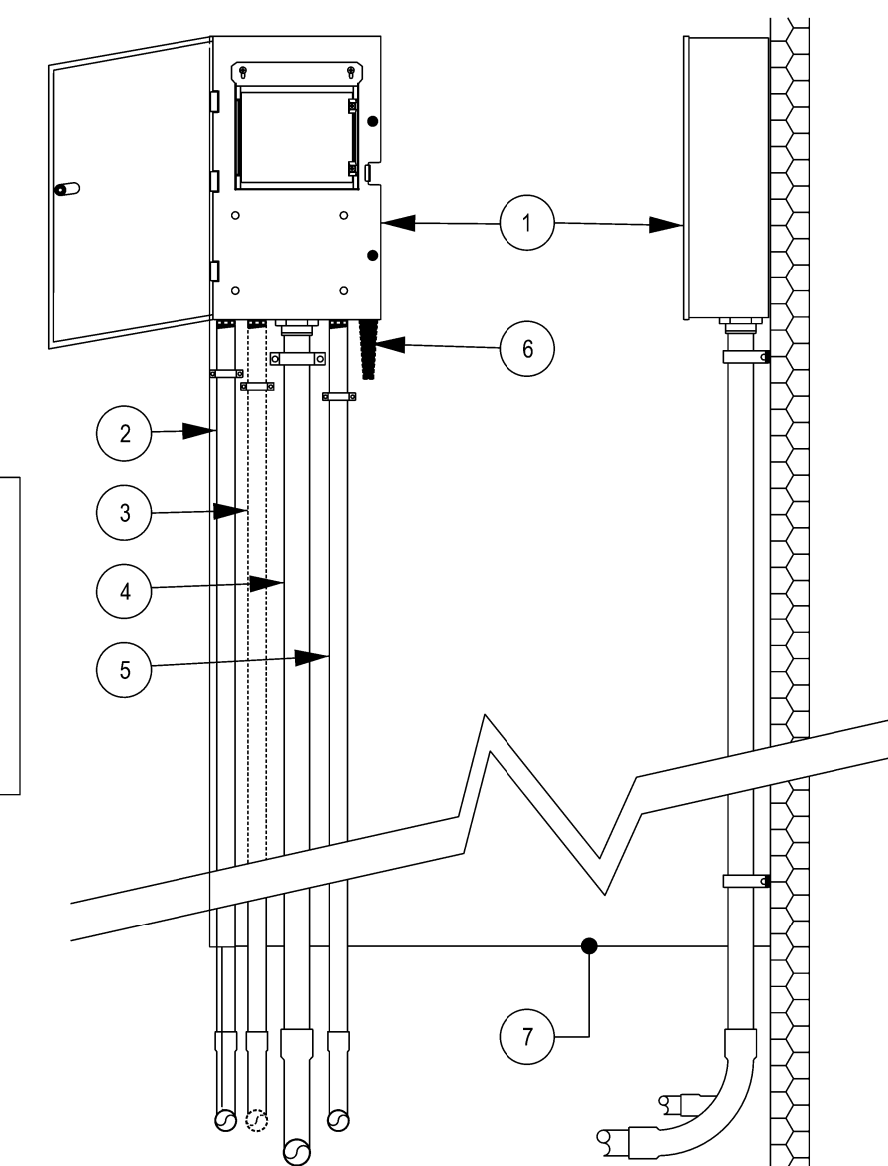


BATTERY POWERED WATERPROOF DDCWP CONTROLLER MOUNTED ON INSIDE OF BOX. SUBMIT MOUNT- HARDWARE FOR APPROVAL.

LEAVE SUFFICIENT AMOUNT OF WIRE FOR LID REMOVAL AND ACCESS TO CONTROLLER (APPROX. 3'-4')

REFER TO ENGINEER, SPECIFICATIONS AND/OR CONTRACT FOR PREFERRED TYPE OF IRRIGATION CONTROLLER.

**DDCWP CONTROLLER BOX LID MOUNT**  
 BATTERY POWERED CONTROLLER (NOT TO SCALE)



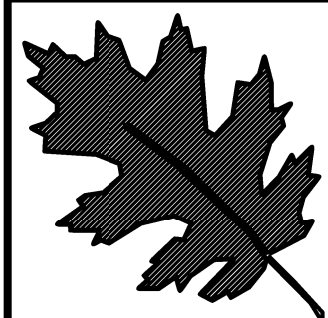
- LEGEND**
- SMALL METAL CABINET WALL MOUNT IRRIGATION CONTROLLER SEE PLAN FOR NUMBER OF STATIONS.
  - 2" CONDUIT FOR REMOTE CONTROL WIRES AND MV OR PUMP START WIRES. OPTIONAL 3" KNOCK-OUT IF LARGER WIRES ARE USED. SECURE TO WALL WITH APPROPRIATE PIPE CLAMPS.
  - 1/2" CONDUIT FOR ELECTRICAL POWER PER LOCAL AND NATIONAL ELECTRICAL CODES. OPTIONAL 3/4" KNOCK-OUT IF LARGER CONDUITS ARE USED.
  - OPTIONAL 1/2" KNOCK-OUT FOR RAIN SENSOR WIRE.
  - 2" CONDUIT FOR REMOTE CONTROL WIRES AND MV OR PUMP START WIRES. OPTIONAL 3" KNOCK-OUT IF LARGER WIRES ARE USED. SECURE TO WALL WITH APPROPRIATE PIPE CLAMPS.
  - 3/4" KNOCKOUT FOR EARTH GROUND WIRES.
  - MOUNTED NARROWBAND ANTENNA
  - FINISHED GRADE

**NOTES:**  
 1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.  
 2. MOUNT CONTROLLER ON EXISTING POST NEW PRESSURE TREATED POST, OR AS DIRECTED BY THE NCDOT ENGINEER.  
 3. DRAWING NOT TO SCALE.

**CONTROLLER WALL MOUNT**  
 WALL-MOUNT CONTROLLER, METAL (NOT TO SCALE)

SUBMIT ALL PROPOSED IRRIGATION MATERIALS FOR APPROVAL PRIOR TO INSTALLATION

\$\$\$\$\$SYTIME\$\$\$\$\$  
 \$\$\$USERNAME\$\$\$\$\$



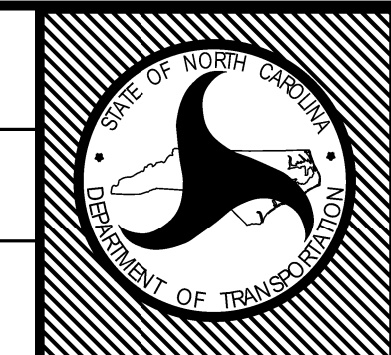
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 1557 Mail Service Center Raleigh NC 27699-1557  
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B-4929(L) / Roland Ave  
 Landscape Development Plan  
 Surf City NC

*RN Kobetsky*

sheet description:	prel. design date:	Aug/2019
	checked by & date:	
	final design date:	

Landscape Enhancement  
 Irrigation Details



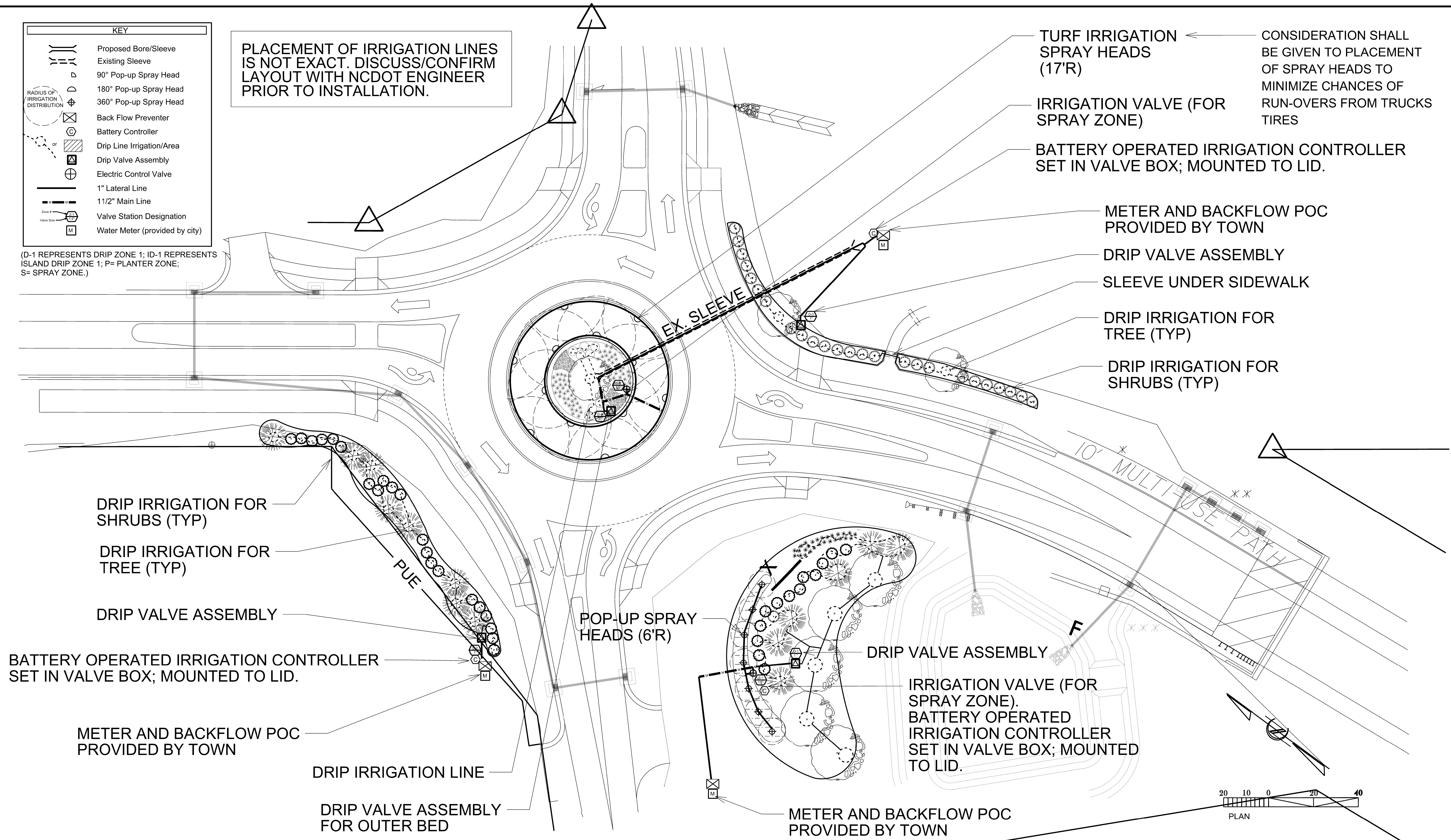
T.I.P. # B-4929(L)  
 WBS # 40233.3.2  
 FED I.D. #  
 sheet no: total sheet no:  
 L-2i



KEY	
	Proposed Bore/Sleeve
	Existing Sleeve
	90° Pop-up Spray Head
	180° Pop-up Spray Head
	360° Pop-up Spray Head
	Back Flow Preventer
	Battery Controller
	Drip Line Irrigation/Area
	Drip Valve Assembly
	Electric Control Valve
	1" Lateral Line
	1 1/2" Main Line
	Valve Station Designation
	Water Meter (provided by city)

(D-1 REPRESENTS DRIP ZONE 1; ID-1 REPRESENTS ISLAND DRIP ZONE 1; P= PLANTER ZONE; S= SPRAY ZONE.)

PLACEMENT OF IRRIGATION LINES IS NOT EXACT. DISCUSS/CONFIRM LAYOUT WITH NCDOT ENGINEER PRIOR TO INSTALLATION.



CONSIDERATION SHALL BE GIVEN TO PLACEMENT OF SPRAY HEADS TO MINIMIZE CHANCES OF RUN-OVERS FROM TRUCKS TIRES

TURF IRRIGATION SPRAY HEADS (17'R)

IRRIGATION VALVE (FOR SPRAY ZONE)

BATTERY OPERATED IRRIGATION CONTROLLER SET IN VALVE BOX; MOUNTED TO LID.

METER AND BACKFLOW POC PROVIDED BY TOWN

DRIP VALVE ASSEMBLY

SLEEVE UNDER SIDEWALK

DRIP IRRIGATION FOR TREE (TYP)

DRIP IRRIGATION FOR SHRUBS (TYP)

DRIP IRRIGATION FOR SHRUBS (TYP)

DRIP IRRIGATION FOR TREE (TYP)

DRIP VALVE ASSEMBLY

BATTERY OPERATED IRRIGATION CONTROLLER SET IN VALVE BOX; MOUNTED TO LID.

METER AND BACKFLOW POC PROVIDED BY TOWN

DRIP IRRIGATION LINE

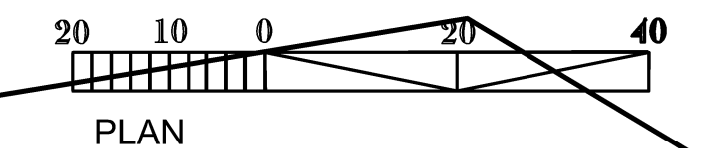
DRIP VALVE ASSEMBLY FOR OUTER BED

POP-UP SPRAY HEADS (6'R)

DRIP VALVE ASSEMBLY

IRRIGATION VALVE (FOR SPRAY ZONE), BATTERY OPERATED IRRIGATION CONTROLLER SET IN VALVE BOX; MOUNTED TO LID.

METER AND BACKFLOW POC PROVIDED BY TOWN



\$\$\$\$\$SYTIME\$\$\$\$\$  
\$\$\$\$\$USER\$\$\$\$\$

NCDOT - Roadside Environmental Unit  
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B-4929(L) / Roland Ave  
Landscape Development Plan  
Surf City NC

*RN Kobersky*

prel. design date :	Sept/2019
checked by & date :	
final design date :	

Landscape Plan  
Mainland Roundabout

T.I.P. #	B-4929(L)
WBS #	40233.3.2
FED I.D. #	
sheet no. :	total sheet no. :
L3i	



**MATCH SHEET L7**

DRIP VALVE ASSEMBLY FOR OUTER BED  
IRRIGATION VALVE (FOR SPRAY ZONE)

METER AND BACKFLOW POC PROVIDED BY TOWN  
BATTERY OPERATED IRRIGATION CONTROLLER SET IN VALVE BOX; MOUNTED TO LID.

NEW BORE/SLEEVE

DRIP VALVE ASSEMBLY FOR ROUNDABOUT BED

DRIP IRRIGATION LINE; SOLID LINE (NO DRIP) RUNS THRU ORNAMENTAL GRASS BEDS

DRIP IRRIGATION AROUND SHRUB (TYP)

DRIP IRRIGATION AROUND TREE (TYP)

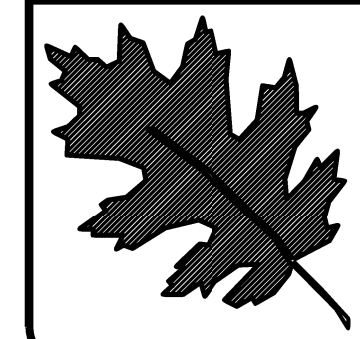
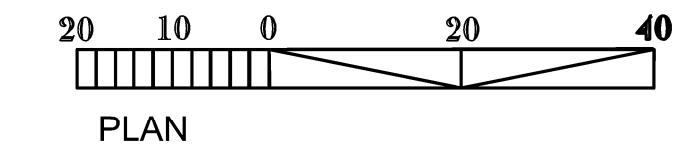
TURF IRRIGATION SPRAY HEADS (17'R)

CONSIDERATION SHALL BE GIVEN TO PLACEMENT OF SPRAY HEADS TO MINIMIZE CHANCES OF RUN-OVERS FROM TRUCKS TIRES

KEY	
	Proposed Bore/Sleeve
	Existing Sleeve
	90° Pop-up Spray Head
	180° Pop-up Spray Head
	360° Pop-up Spray Head
	Back Flow Preventer
	Battery Controller
	Drip Line Irrigation/Area
	Drip Valve Assembly
	Electric Control Valve
	1" Lateral Line
	1 1/2" Main Line
	Valve Station Designation
	Water Meter (provided by city)

(D-1 REPRESENTS DRIP ZONE 1; ID-1 REPRESENTS ISLAND DRIP ZONE 1; P= PLANTER ZONE; S= SPRAY ZONE.)

PLACEMENT OF IRRIGATION LINES IS NOT EXACT. DISCUSS/CONFIRM LAYOUT WITH NCDOT ENGINEER PRIOR TO INSTALLATION.



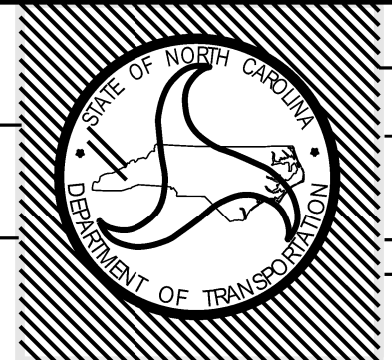
NCDOT - Roadside Environmental Unit  
Aesthetic Engineering Section  
1557 Mail Service Center Raleigh NC 27699-1557  
ph: 919-707-2920 fax: 919-715-2554  
<https://www.ncdot.gov/initiatives-policies/environmental/roadside-beautification>

**B-4929(L) / Roland Ave  
Landscape Development Plan  
Surf City NC**

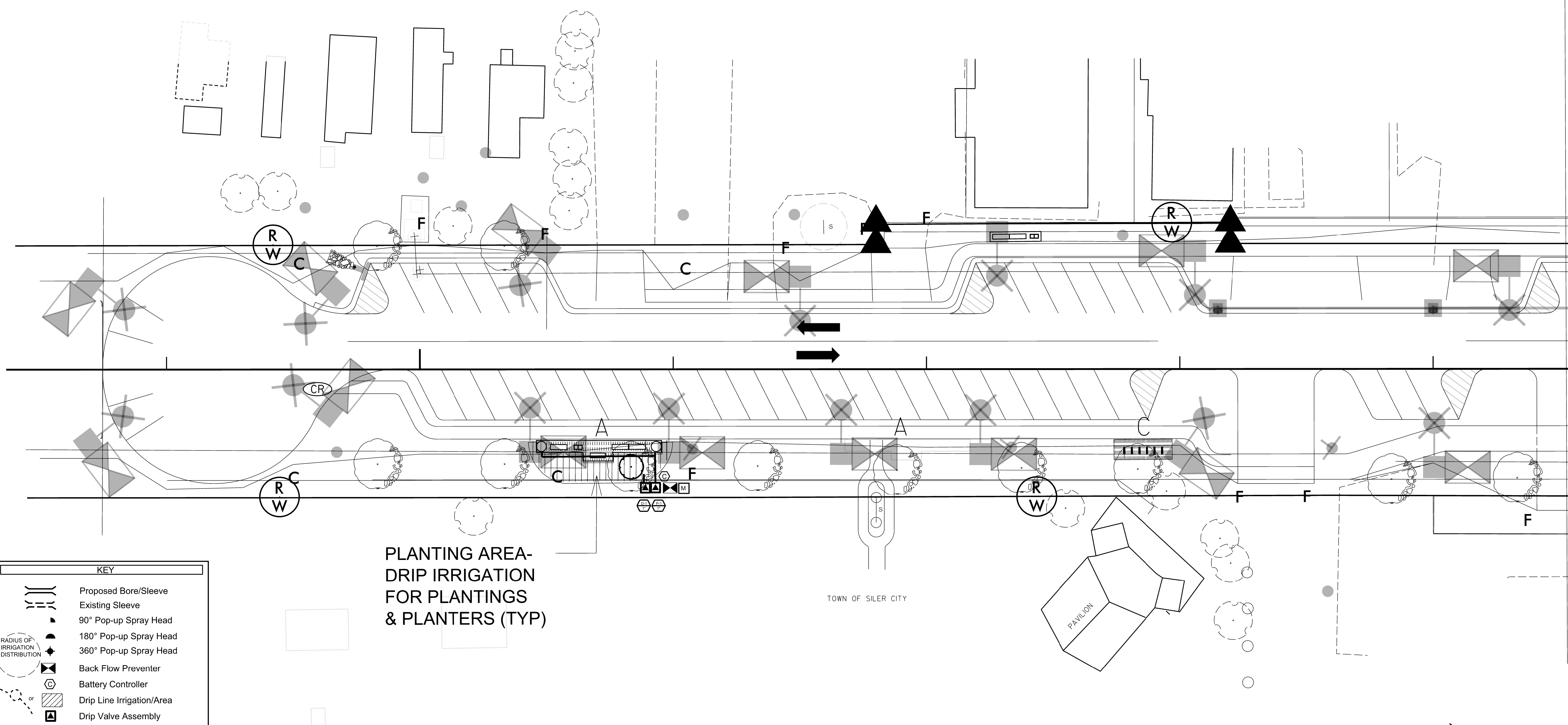
*RM Kopschky*

sheet description:	pref. design date : <b>Sept/2019</b>
	checked by & date :
	final design date :

Landscape Plan  
Island Roundabout



T.I.P. # **B-4929(L)**  
WBS # **40233.3.2**  
FED I.D. #  
sheet no : total sheet no :  
**L4i**



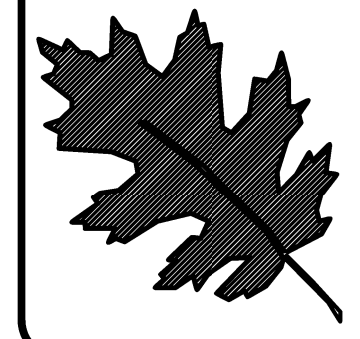
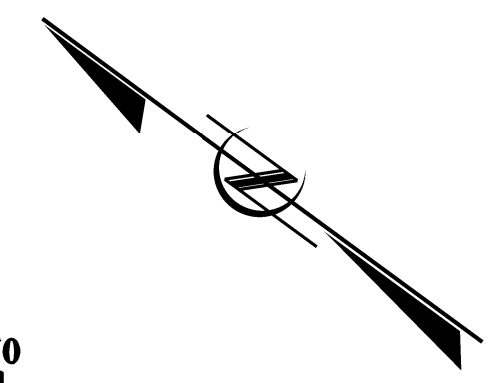
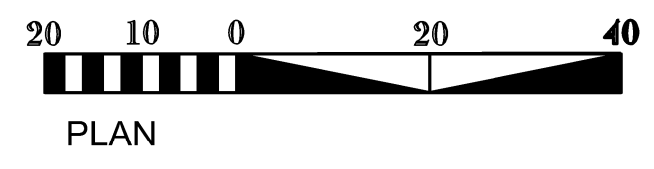
**KEY**

- Proposed Bore/Sleeve
- Existing Sleeve
- 90° Pop-up Spray Head
- 180° Pop-up Spray Head
- 360° Pop-up Spray Head
- Back Flow Preventer
- Battery Controller
- Drip Line Irrigation/Area
- Drip Valve Assembly
- Electric Control Valve
- 1" Lateral Line
- 1 1/2" Main Line
- Valve Station Designation
- Water Meter (provided by city)

PLANTING AREA-  
DRIP IRRIGATION  
& PLANTERS (TYP)

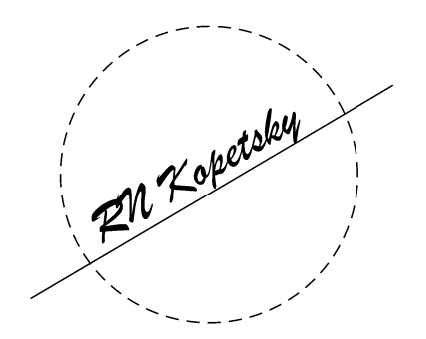
PLACEMENT OF IRRIGATION LINES  
IS NOT EXACT. DISCUSS/CONFIRM  
LAYOUT WITH NCDOT ENGINEER  
PRIOR TO INSTALLATION.

(D-1 REPRESENTS DRIP ZONE 1; ID-1 REPRESENTS ISLAND DRIP ZONE 1; P= PLANTER ZONE; S= SPRAY ZONE.)



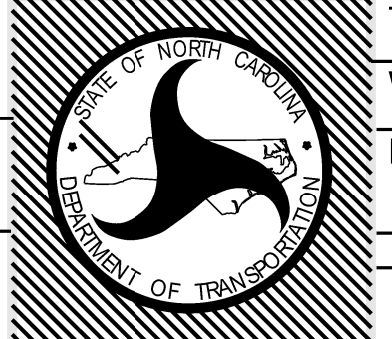
NCDOT - Roadside Environmental Unit  
Aesthetic Engineering Section  
1557 Mail Service Center Raleigh NC 27699-1557  
ph: 919-707-2920 fax: 919-715-2554  
<https://www.ncdot.gov/initiatives-policies/environmental/roadside-beautification>

B-4929(L) / Roland Ave  
Landscape Development Plan  
Surf City NC



sheet description:	prel. design date : Sept/2019
	checked by & date :
	final design date :

Irrigation Plan
ROLAND AVE SECT. A

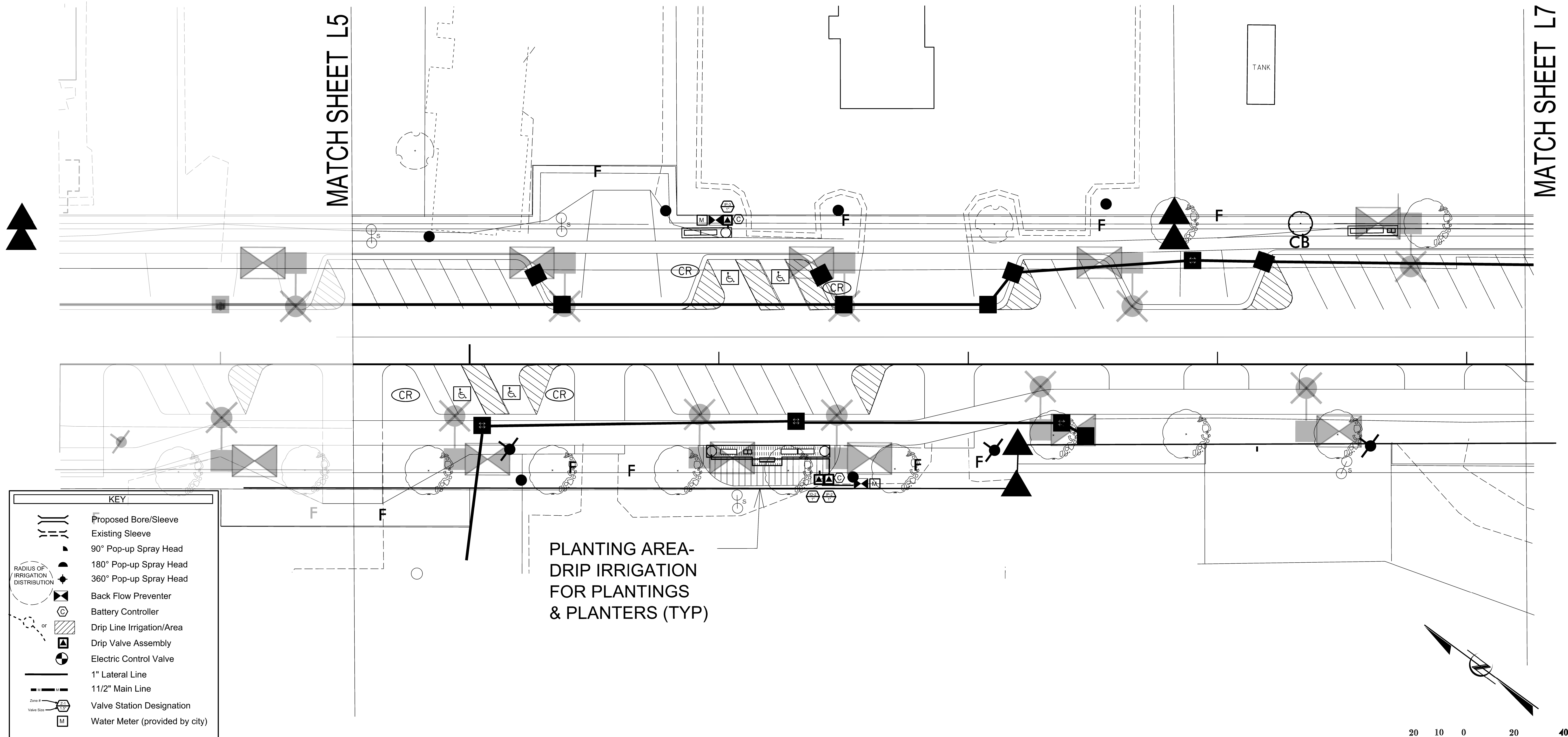


T.I.P. #	B-4929(L)
WBS #	40233.3.2
FED I.D. #	
sheet no :	total sheet no :
L5i	

PLACEMENT OF IRRIGATION LINES IS NOT EXACT. DISCUSS/CONFIRM LAYOUT WITH NCDOT ENGINEER PRIOR TO INSTALLATION.

MATCH SHEET L5

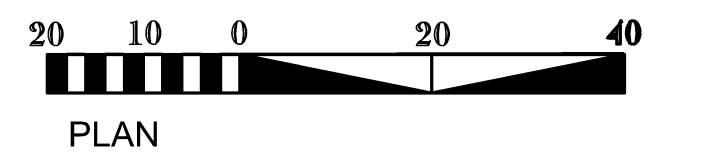
MATCH SHEET L7



PLANTING AREA-  
DRIP IRRIGATION  
& PLANTERS (TYP)

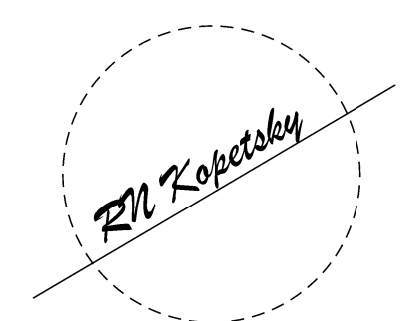
KEY	
	Proposed Bore/Sleeve
	Existing Sleeve
	90° Pop-up Spray Head
	180° Pop-up Spray Head
	360° Pop-up Spray Head
	Back Flow Preventer
	Battery Controller
	Drip Line Irrigation/Area
	Drip Valve Assembly
	Electric Control Valve
	1" Lateral Line
	1 1/2" Main Line
	Valve Station Designation
	Water Meter (provided by city)

(D-1 REPRESENTS DRIP ZONE 1; ID-1 REPRESENTS ISLAND DRIP ZONE 1; P= PLANTER ZONE; S= SPRAY ZONE.)



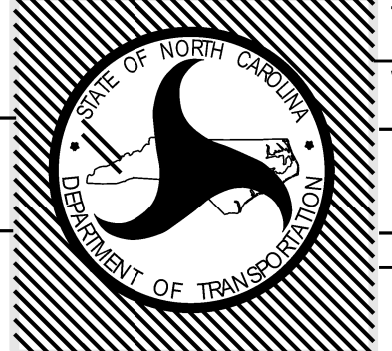
NCDOT - Roadside Environmental Unit  
Aesthetic Engineering Section  
1557 Mail Service Center Raleigh NC 27699-1557  
ph: 919-707-2920 fax: 919-715-2554  
<https://www.ncdot.gov/initiatives-policies/environmental/roadside-beautification>

B-4929(L) / Roland Ave  
Landscape Development Plan  
Surf City NC



sheet description:	prel. design date : Sept/2019
	checked by & date :
	final design date :

Irrigation Plan
ROLAND AVE SECT. B

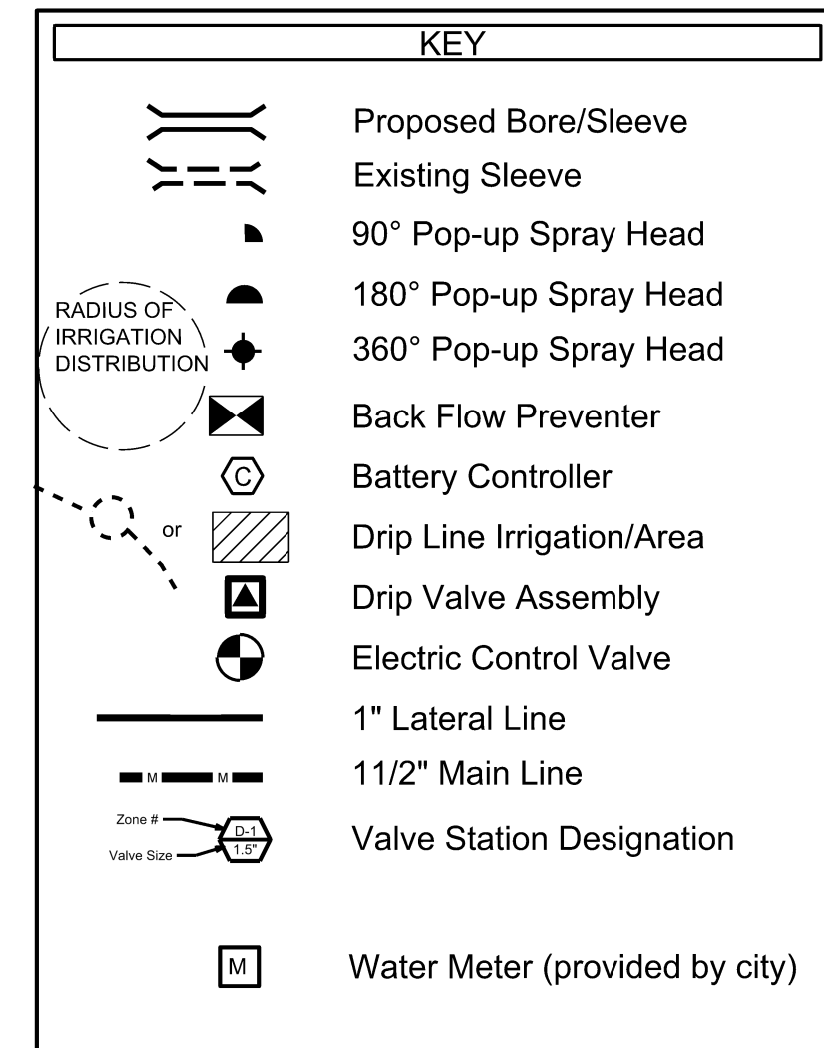


T.I.P. #	B-4929(L)
WBS #	40233.3.2
FED I.D. #	
sheet no :	total sheet no :
L6i	

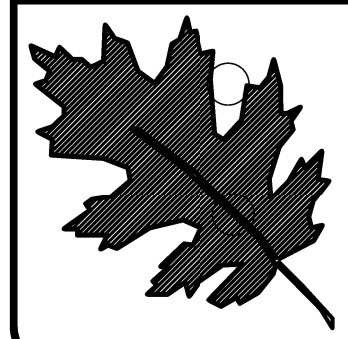
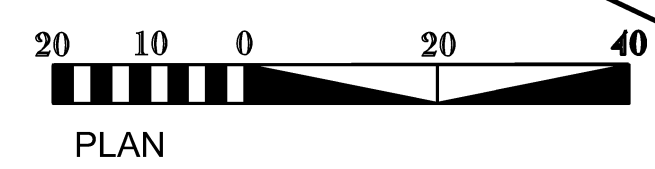
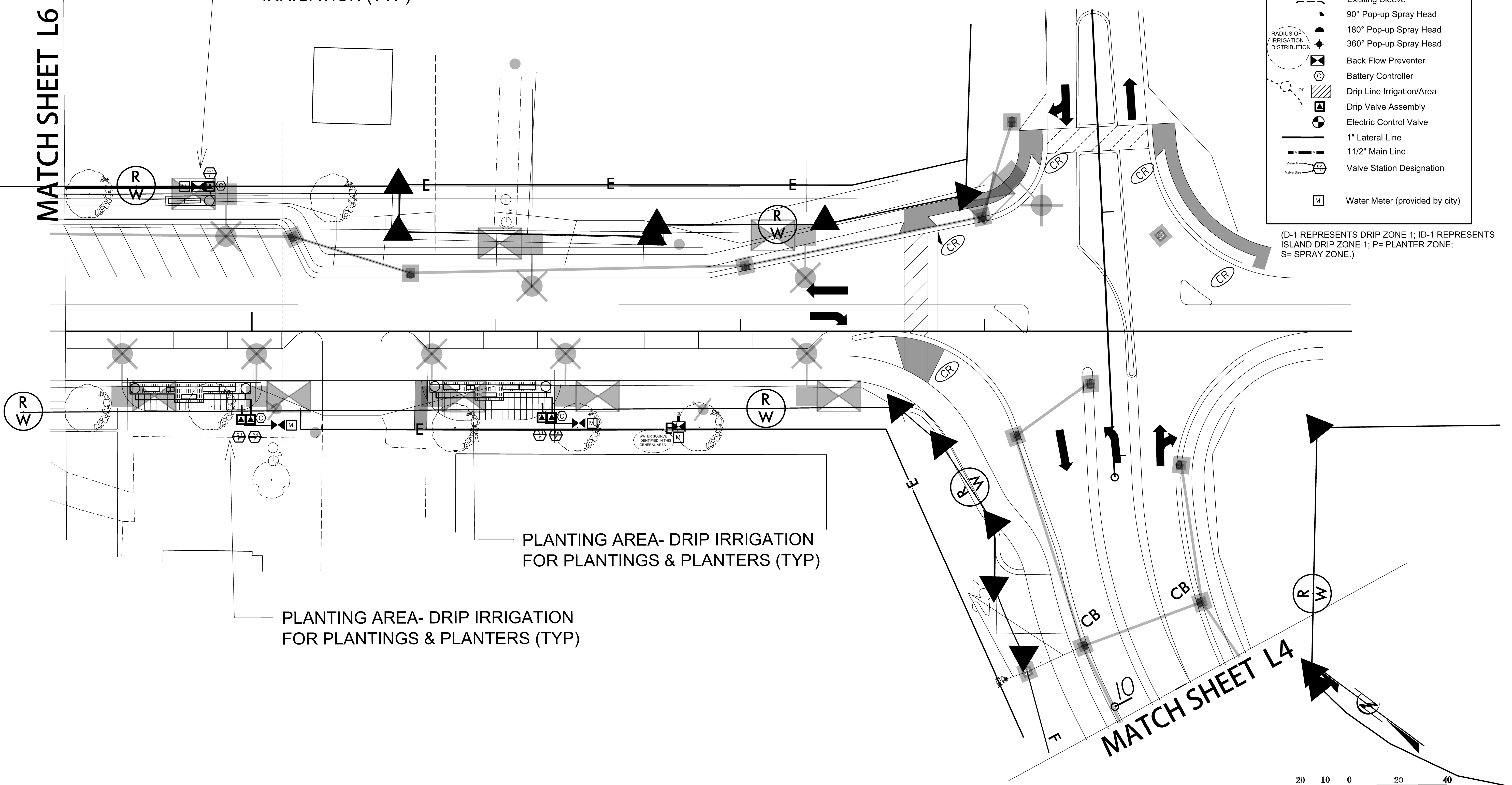


MATCH SHEET L6

DETAIL B- PLANTER IRRIGATION (TYP)



(D-1 REPRESENTS DRIP ZONE 1; ID-1 REPRESENTS ISLAND DRIP ZONE 1; P= PLANTER ZONE; S= SPRAY ZONE.)



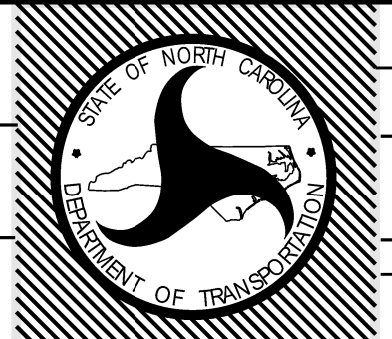
NCDOT - Roadside Environmental Unit  
 Aesthetic Engineering Section  
 1557 Mail Service Center Raleigh NC 27699-1557  
 ph: 919-707-2920 fax: 919-715-2554  
<https://www.ncdot.gov/initiatives-policies/environmental/roadside-beautification>

B-4929(L) / Roland Ave  
 Landscape Development Plan  
 Surf City NC

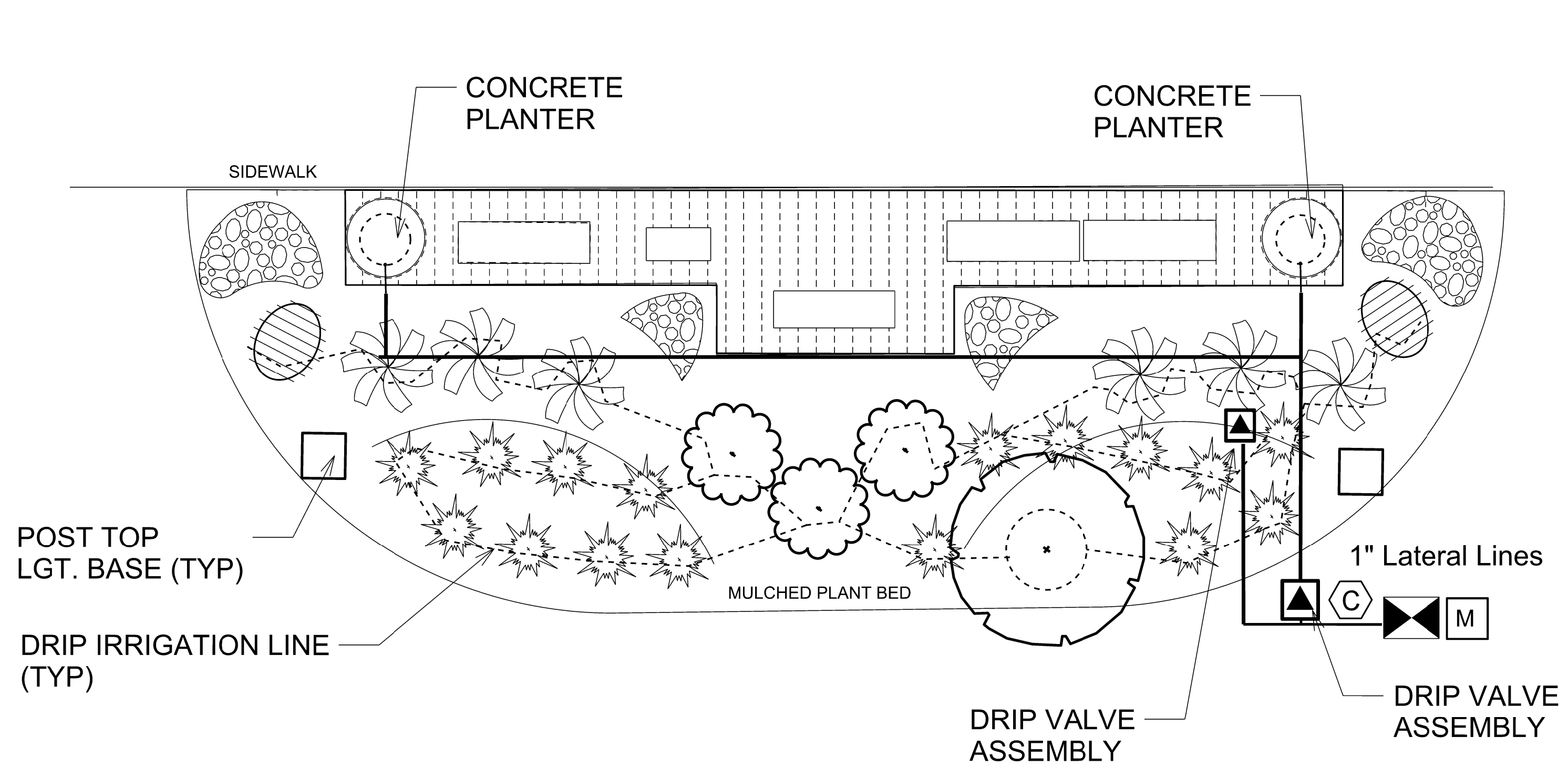
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sheet description:	pref. design date : Sept/2019
	checked by & date :
	final design date :

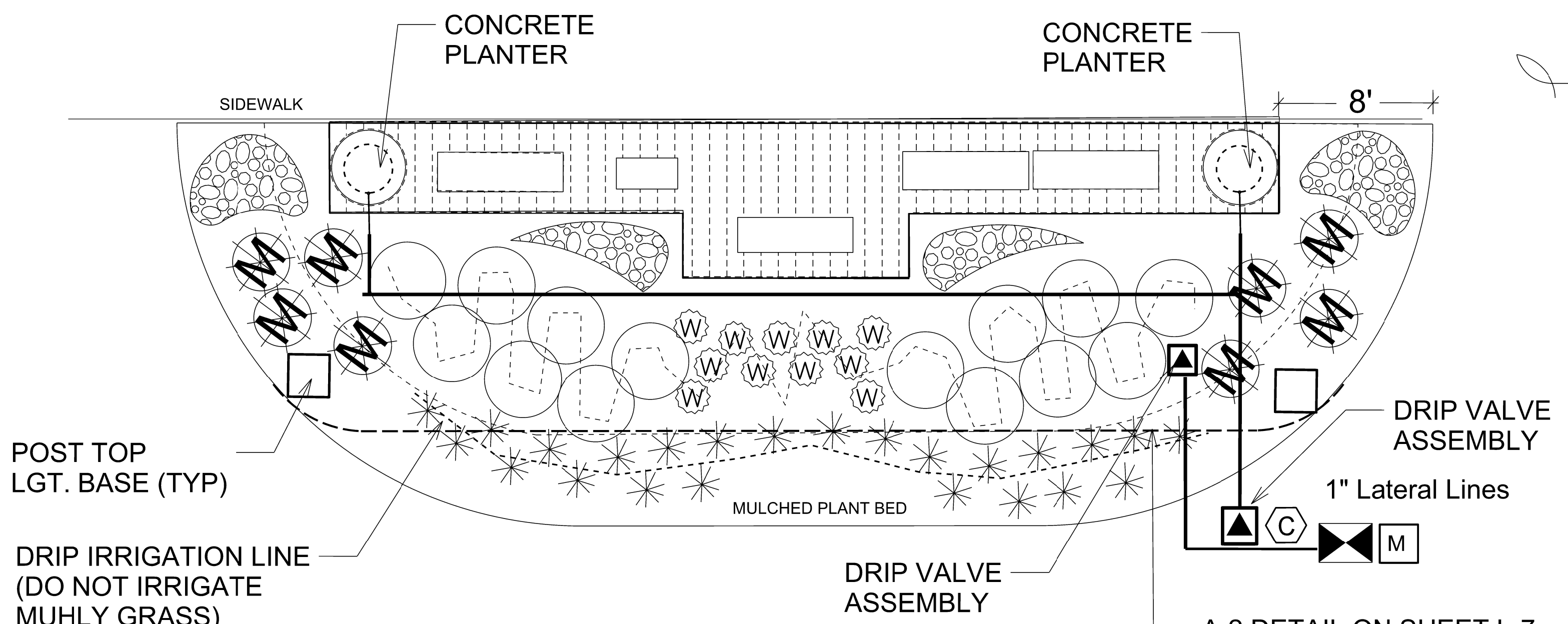
Irrigation Plan  
 ROLAND AVE SECT. C



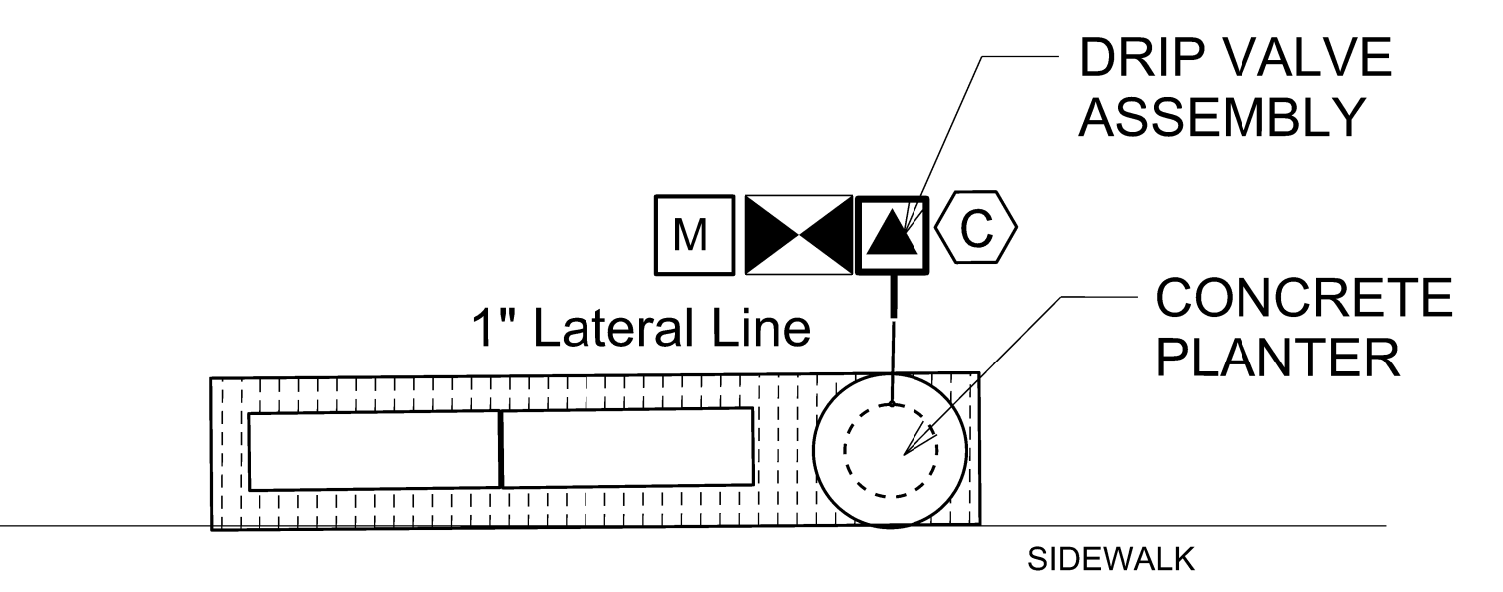
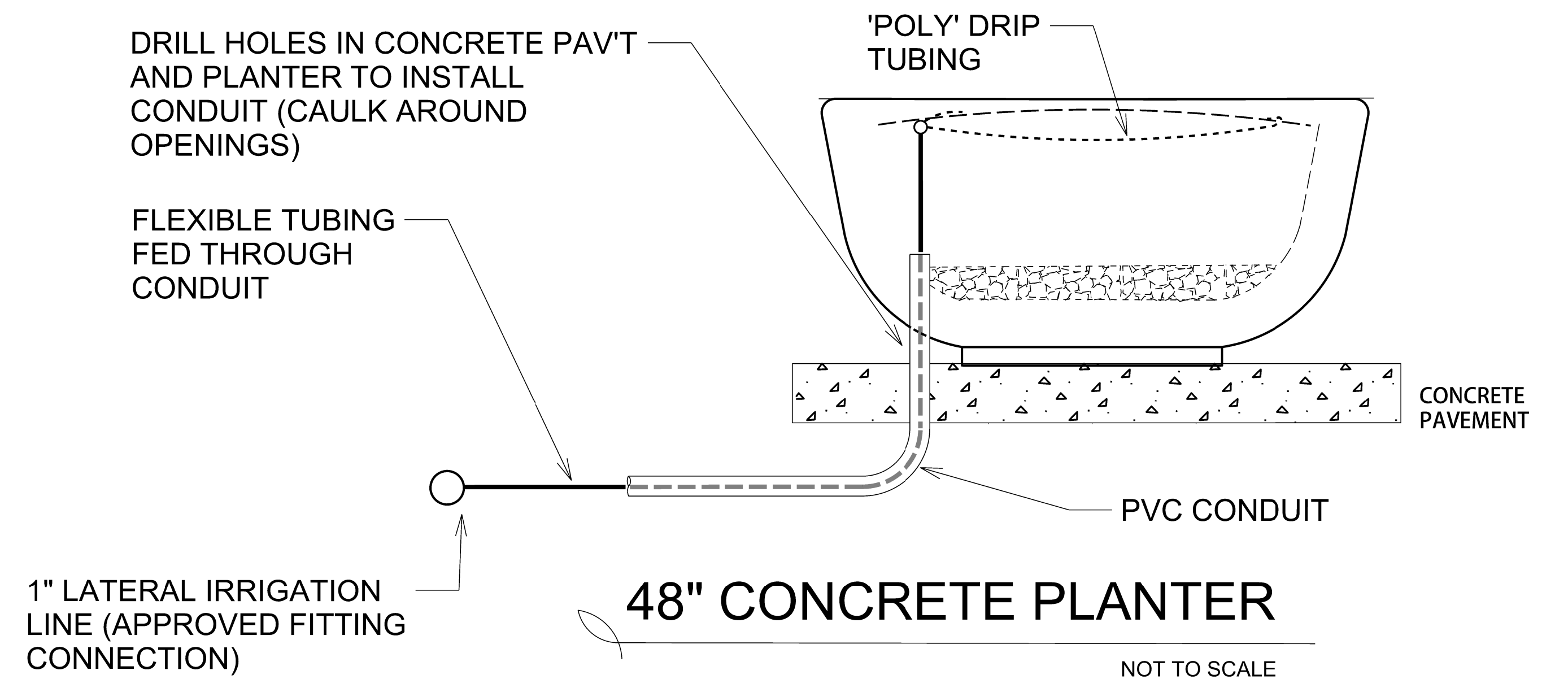
T.I.P. #	B-4929(L)
WBS #	40233.3.2
FED I.D. #	
sheet no :	total sheet no :
L7i	



A-1 Landscape Plan



A-2 Landscape Plan

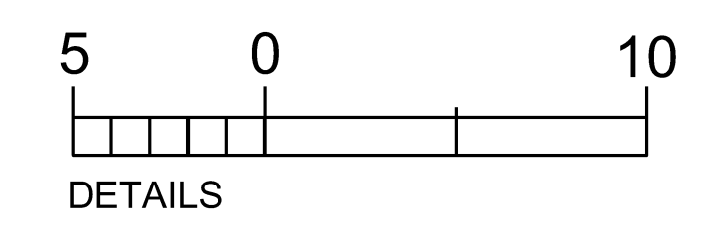


IRRIGATION DETAIL B2

DETAIL B1 DOES NOT RECEIVE IRRIGATION

**NOTES**

- METERS AND BACKFLOWS TO BE SET BY THE TOWN OF SURF CITY.
- PLACEMENT OF IRRIGATION LINES IS NOT EXACT. DISCUSS/CONFIRM LAYOUT WITH NCDOT DESIGN ENGINEER PRIOR TO INSTALLATION.
- PLACE VALVE ASSEMBLY IN PLANT BEDS WHENEVER POSSIBLE.



KEY	
	Proposed Bore/Sleeve
	Existing Sleeve
	90° Pop-up Spray Head
	180° Pop-up Spray Head
	360° Pop-up Spray Head
	Back Flow Preventer
	Battery Controller
	Drip Line Irrigation/Area
	Drip Valve Assembly
	Electric Control Valve
	1" Lateral Line
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	Valve Station Designation
	Water Meter (provided by city)

