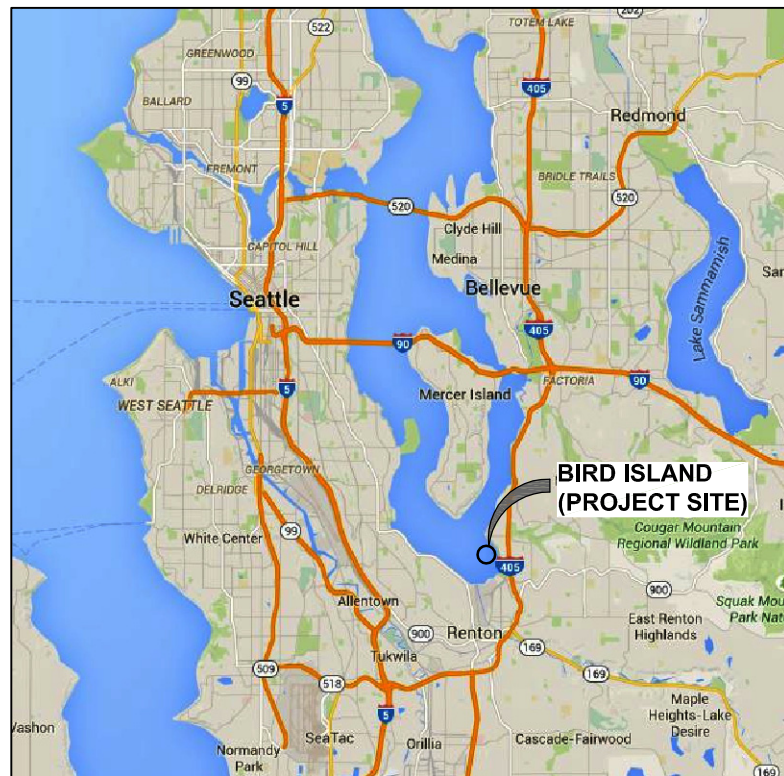


BIRD ISLAND SHORELINE ENHANCEMENT PROJECT PHASE 1 - UPLAND WORK

OCTOBER 2016



VICINITY MAP



AERIAL PHOTO

SHEET INDEX	
TITLE	No.
TITLE SHEET AND INDEX	1
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DIGITAL SIGNATURE:

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10-18-2016

REVISIONS		
REV	DATE	DESCRIPTION

**BIRD ISLAND SHORELINE ENHANCEMENT
PROJECT PHASE 1 - UPLAND WORK**

TITLE:
TITLE SHEET AND INDEX

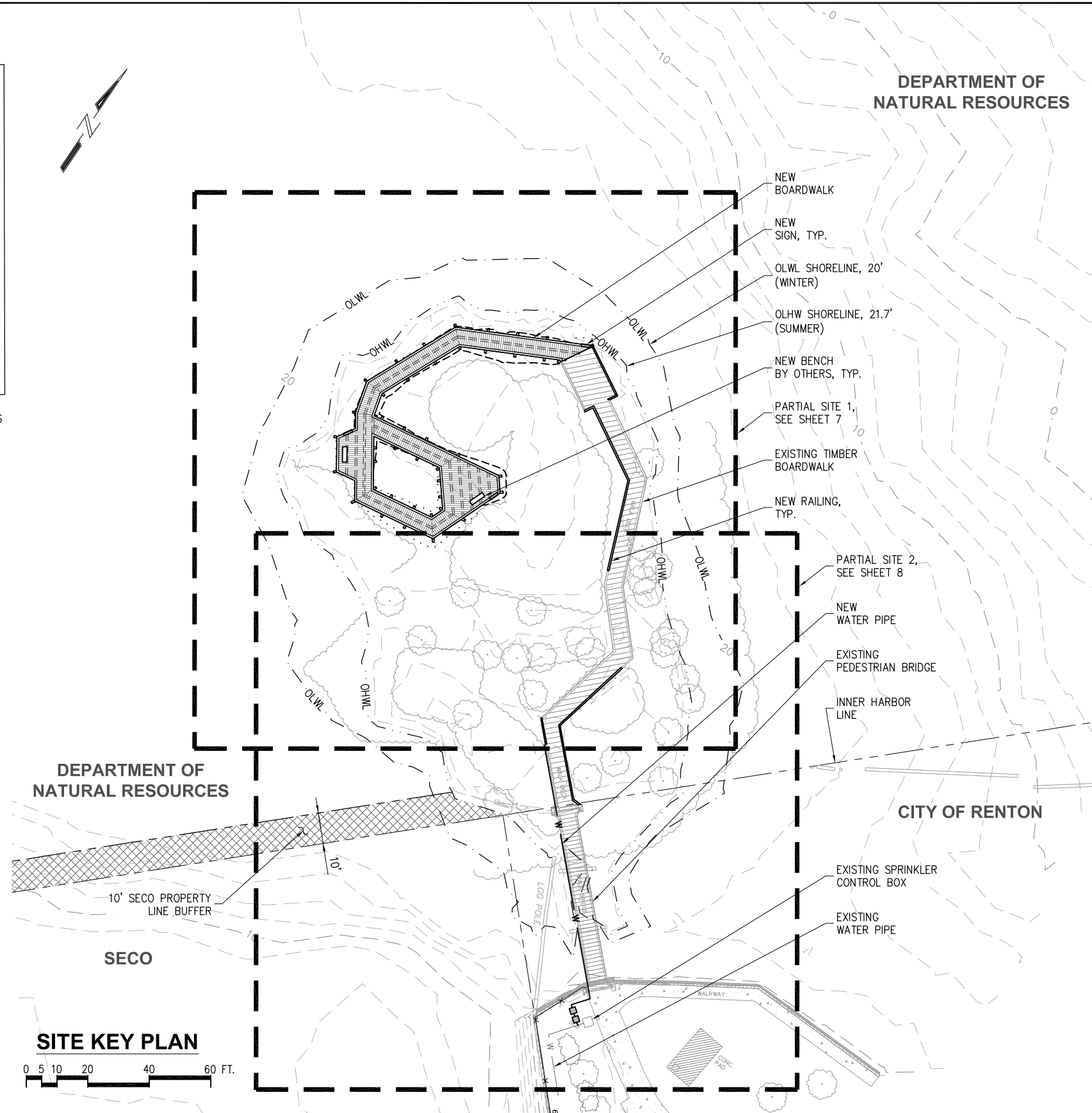
DESIGNED BY:	AD	PROJECT NO:	154031.01	SHEET NO:	1 OF 13
DRAWN BY:	DM	DATE:	OCTOBER 2016		
CHECKED BY:	SR	SCALE:	NOTED		

10/18/16_DMCDONALD
K:\2016\154031 - BIRD ISLAND\UPLAND - 100% DESIGN\154031.01-01_COVER_SHEET.DWG

LEGEND

	NEW WATER PIPE
	NEW RAILING
	NEW BOARDWALK
	EXISTING BOARDWALK
	EXISTING VEGETATION
	EXISTING TREE
	PROPERTY LINE
	CONTOUR LINE
	ORDINARY HIGH WATER
	ORDINARY LOW WATER

NOTE:
NORTHINGS, EASTINGS, AND EXISTING ELEVATIONS
RECEIVED FROM SURVEY BY APS, JUNE 2015.
SEE SHEETS 3 AND 4.



SITE KEY PLAN



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**BIRD ISLAND SHORELINE ENHANCEMENT
PROJECT PHASE 1 - UPLAND WORK**

TITLE: **SITE KEY PLAN**

DESIGNED BY: AD	PROJECT NO: 154031.01	SHEET NO:
DRAWN BY: DM	DATE: OCTOBER 2016	6 OF 13
CHECKED BY: SR	SCALE: NOTED	

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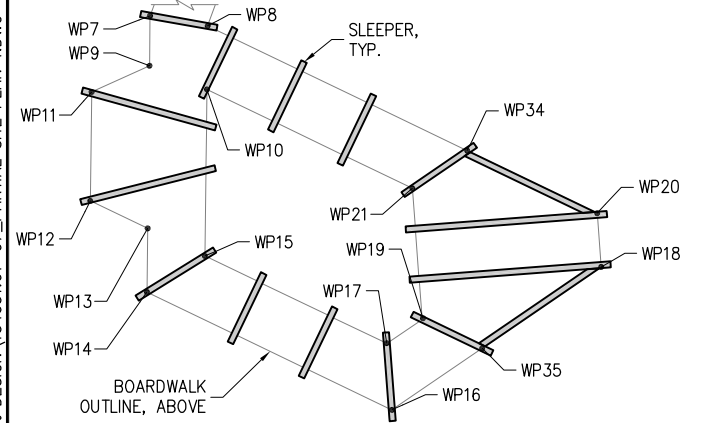
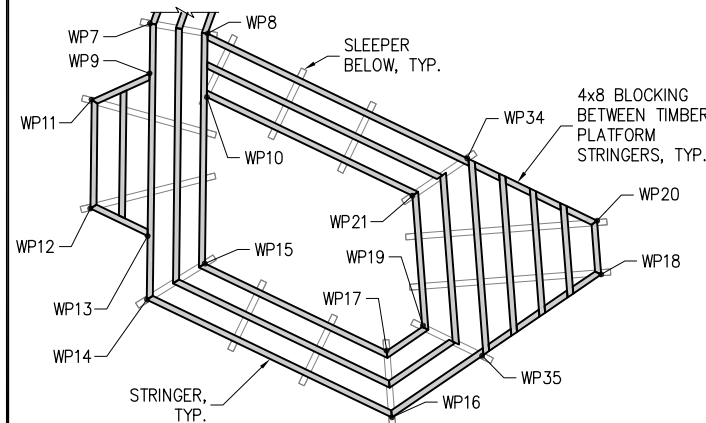
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10/17/16 - DMCDONALD - BIRD ISLAND UPLAND - 100% DESIGN - 154031.01-06 - SITE KEY PLAN.DWG

LEGEND

---	CUT
.....	FILL
—	NEW RAILING
▨	NEW BOARDWALK
▧	EXISTING BOARDWALK
~	EXISTING VEGETATION
○	EXISTING TREE
---	PROPERTY LINE
- - -	CONTOUR LINE
---	ORDINARY HIGH WATER
---	ORDINARY LOW WATER

NOTE: NORTHINGS, EASTINGS, AND EXISTING ELEVATIONS RECEIVED FROM SURVEY BY APS, JUNE 2015. SEE SHEETS 3 AND 4.



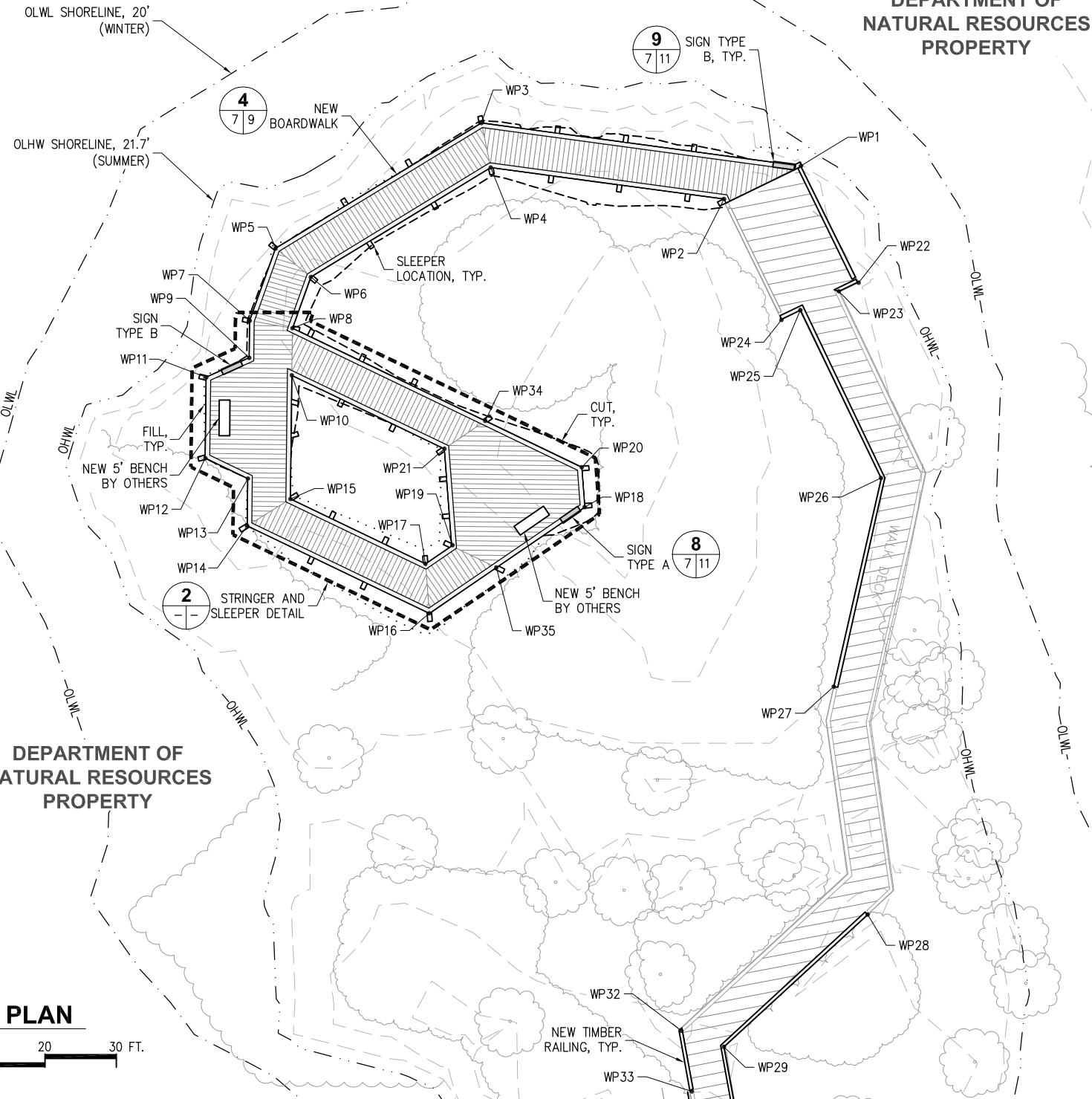
STRINGER AND SLEEPER DETAIL



SITE PLAN

DEPARTMENT OF NATURAL RESOURCES PROPERTY

DEPARTMENT OF NATURAL RESOURCES PROPERTY



WORK POINT TABLE

POINT	NORTHING (FT)	EASTING (FT)	EXISTING ELEVATION (FT)	PROPOSED ELEVATION (FT)	BASE PLATE TYPE
1	187147.20	1301295.64	25.35	23.7	STANDARD
2	187137.33	1301289.32	25.59	23.7	STANDARD
3	187127.03	1301255.21	24.63	24.0	5
4	187122.61	1301259.79	24.97	24.0	5
5	187096.29	1301241.20	24.26	24.6	5
6	187095.73	1301247.54	24.60	24.6	5
7	187085.86	1301243.90	25.26	24.9	6
8	187088.33	1301249.46	24.90	24.9	4
9	187081.51	1301246.77	25.32	24.9	2
10	187082.83	1301253.09	25.91	24.9	3
11	187075.87	1301243.31	24.58	24.9	2
12	187066.41	1301249.58	24.89	24.9	2
13	187067.40	1301256.11	24.87	24.9	2
14	187061.88	1301259.77	24.63	24.9	2
15	187068.38	1301262.66	24.51	24.9	2
16	187066.07	1301287.77	24.04	26.6	1
17	187071.49	1301283.45	24.66	26.6	1
18	187090.62	1301297.44	28.82	26.9	1
19	187075.63	1301285.08	25.35	26.9	1
20	187095.01	1301293.95	29.12	26.9	1
21	187086.34	1301276.56	26.75	26.9	1
22	187138.22	1301311.53	24.56	N/A	EXISTING
23	187135.66	1301309.91	24.65	N/A	EXISTING
24	187127.82	1301305.51	24.60	N/A	EXISTING
25	187130.45	1301306.93	24.51	N/A	EXISTING
26	187117.33	1301329.51	24.09	N/A	EXISTING
27	187089.41	1301340.44	25.52	N/A	EXISTING
28	187065.64	1301362.34	25.71	N/A	EXISTING
29	187038.97	1301356.07	24.47	N/A	EXISTING
30	2244259.75	15616478.89	24.53	N/A	EXISTING
31	2244258.50	15616512.19	23.86	N/A	EXISTING
32	2244449.82	15616198.39	23.68	N/A	EXISTING
33	2244375.32	15616270.48	24.29	N/A	EXISTING
34	2245109.80	15615347.81	27.54	26.9	STANDARD
35	2244918.85	15615499.25	25.22	26.9	STANDARD

100% DESIGN

BIRD ISLAND SHORELINE ENHANCEMENT PROJECT PHASE 1 - UPLAND WORK

PARTIAL SITE 1 PLAN

DESIGNED BY:	AD	PROJECT NO:	154031.01	SHEET NO:	7 OF 13
DRAWN BY:	DM	DATE:	OCTOBER 2016		
CHECKED BY:	SR	SCALE:	NOTED		

REV	DATE	DESCRIPTION

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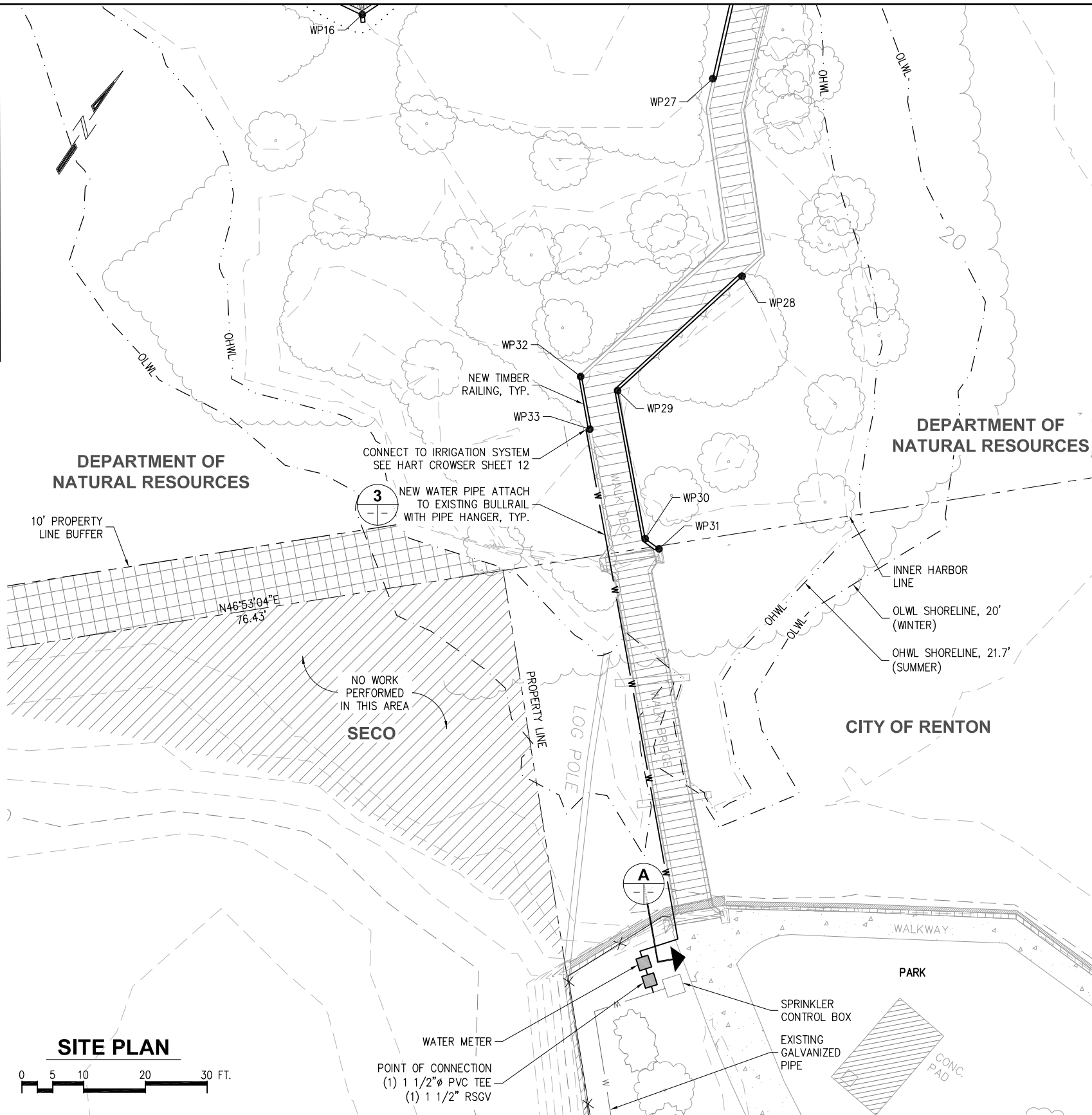
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10/18/16, DMCDONALD
K:\2015\154031 - BIRD ISLAND\UPLAND - 100% DESIGN\154031.01-08_PARTIAL SITE PLAN 2.DWG

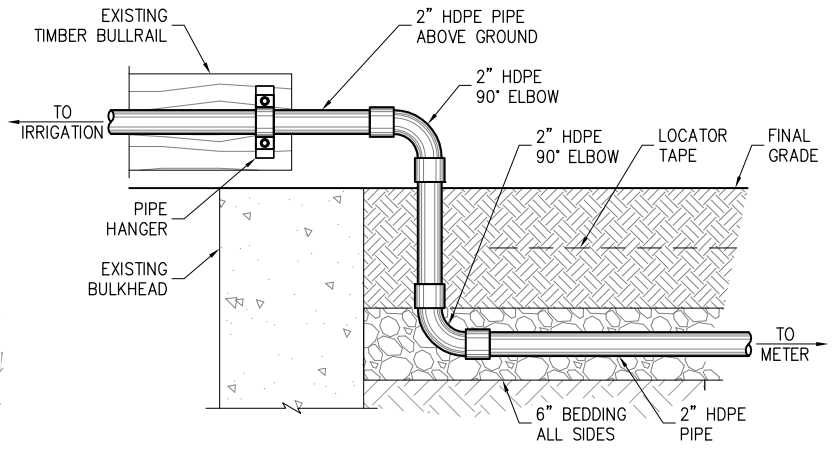
LEGEND

	NEW WATER PIPE
	NEW RAILING
	EXISTING BOARDWALK
	EXISTING VEGETATION
	EXISTING TREE
	PROPERTY LINE
	CONTOUR LINE
	ORDINARY HIGH WATER
	ORDINARY LOW WATER

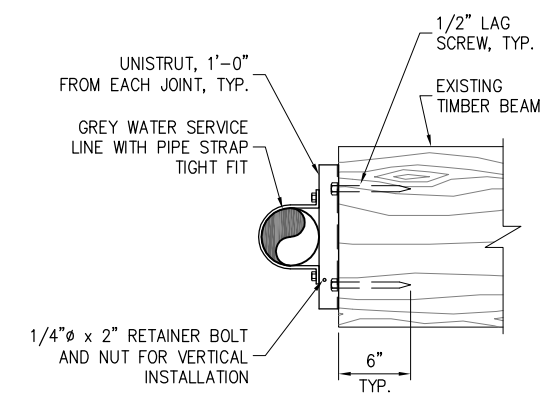
NOTE:
NORTHINGS, EASTINGS, AND EXISTING ELEVATIONS
RECEIVED FROM SURVEY BY APS, JUNE 2015.
SEE SHEETS 3 AND 4.



SITE PLAN



A SECTION



3 PIPE HANGER

100% DESIGN

BIRD ISLAND SHORELINE ENHANCEMENT PROJECT PHASE 1 - UPLAND WORK			
TITLE: PARTIAL SITE 2 PLAN AND WATER SYSTEM DETAILS			
DESIGNED BY: AD	PROJECT NO: 154031.01	SHEET NO: 8 OF 13	
DRAWN BY: DM	DATE: OCTOBER 2016		
CHECKED BY: SR	SCALE: NOTED		

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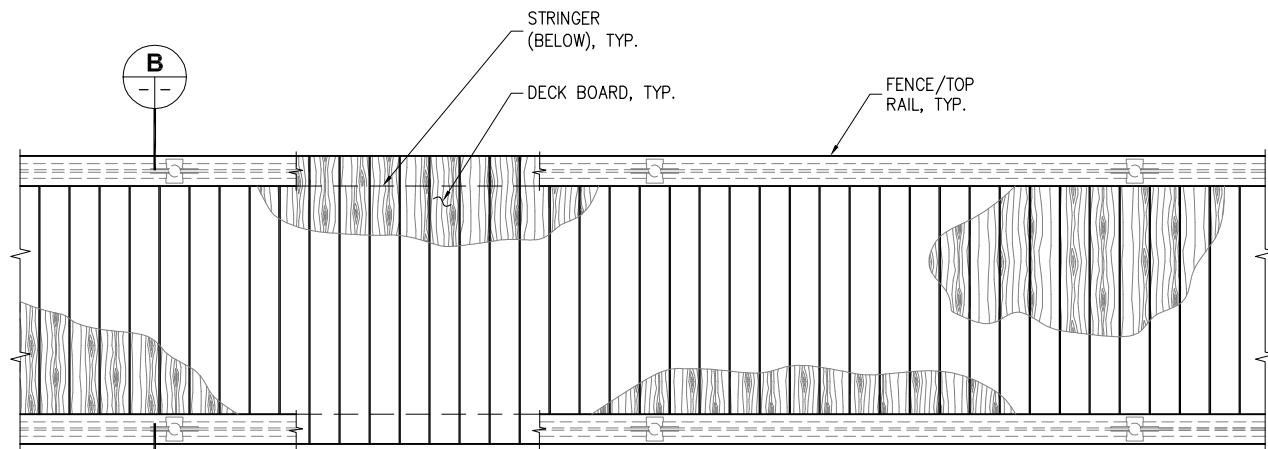


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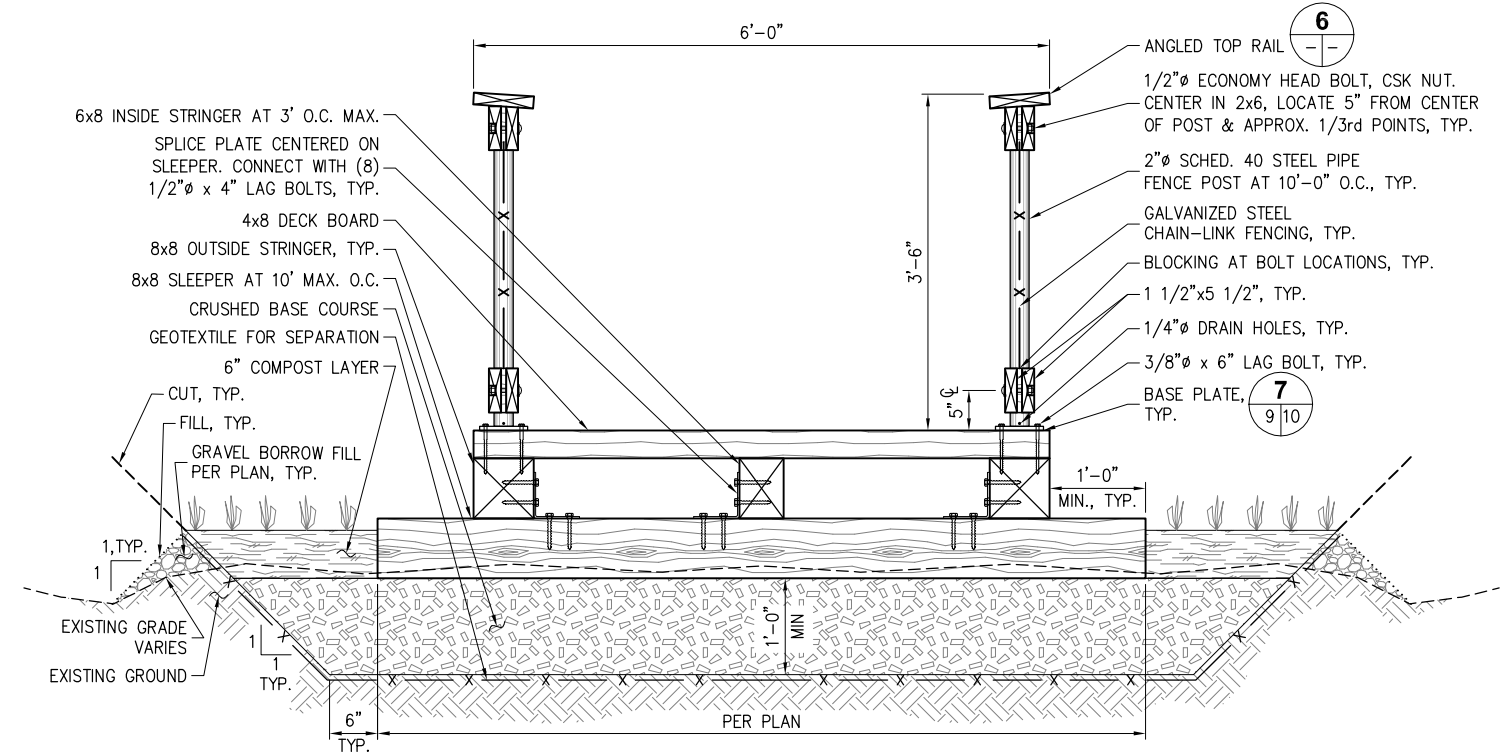


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REV	DATE	DESCRIPTION

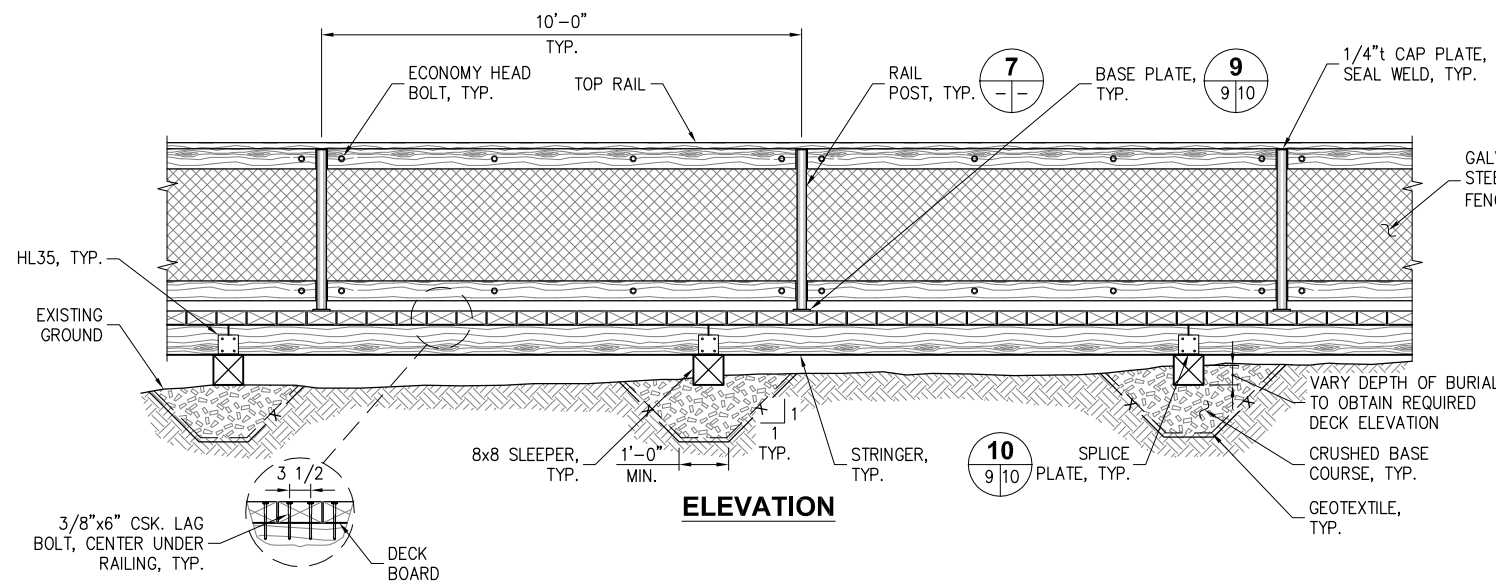
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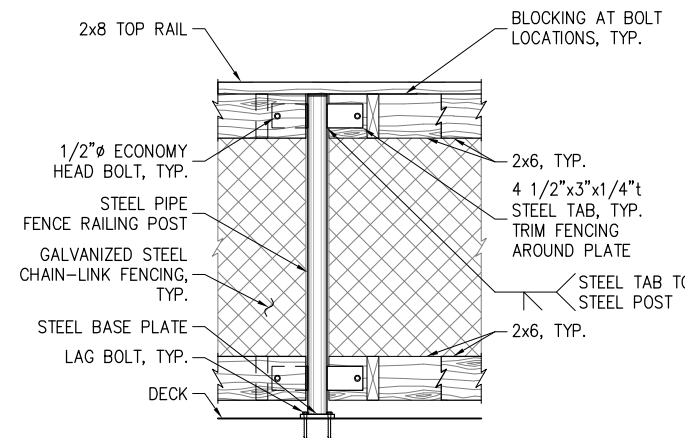
PLAN



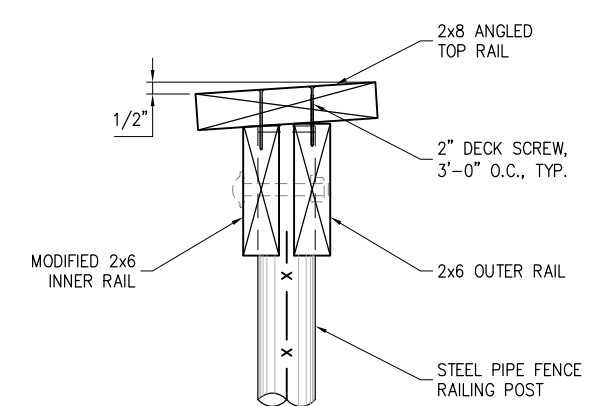
TYPICAL BOARDWALK SECTION
SCALE: 1" = 1'-0"



ELEVATION



5 RAIL POST
(RAILING TO POST CONNECTION)



6 ANGLED TOP RAIL

4 NEW BOARDWALK

100% DESIGN

BIRD ISLAND SHORELINE ENHANCEMENT PROJECT PHASE 1 - UPLAND WORK

TITLE: BOARDWALK DETAILS			
DESIGNED BY: AD	PROJECT NO: 154031.01	SHEET NO: 9 OF 13	
DRAWN BY: DM	DATE: OCTOBER 2016		
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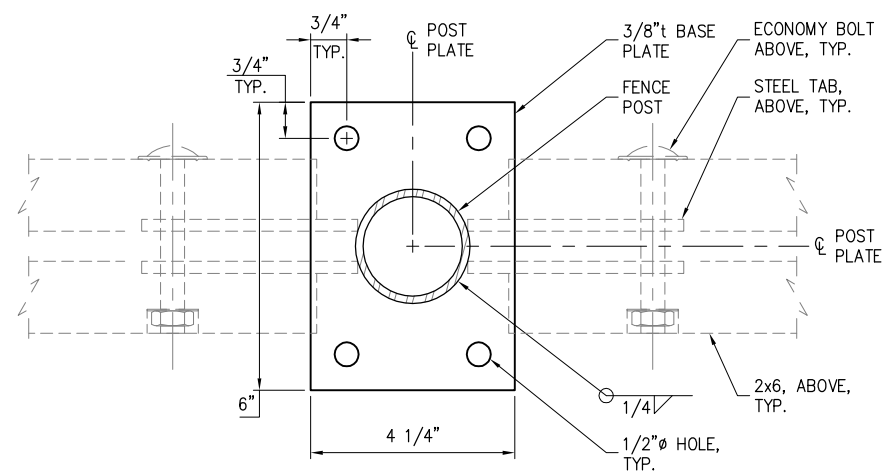


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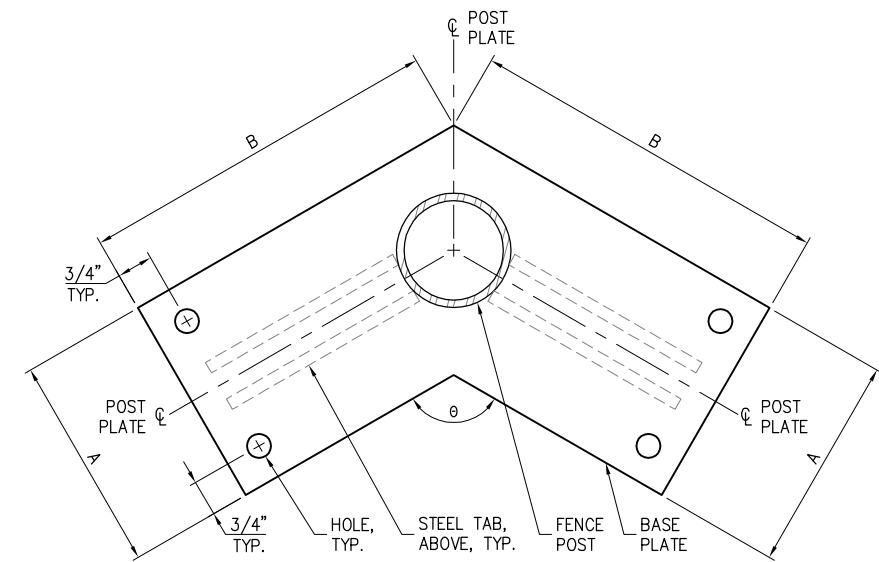


REVISIONS		
REV	DATE	DESCRIPTION

10/18/16_DMCDONALD
 K:\2015\154031 - BIRD ISLAND\UPLAND - 100% DESIGN\154031.01-10_BOARDWALK_DETAILS.DWG



STANDARD



ANGLED
 SEE STANDARD FOR
 INFORMATION NOT SHOWN.

BASE PLATE SCHEDULE				
BASE PLATE TYPE	'A' (IN.)	'B' (IN.)	θ (°)	QUANTITY
STANDARD	PER STANDARD DETAIL			28
ANGLED-1	6	8 1/2	120	6
ANGLED-2	6	9	115	6
ANGLED-3	6	14 1/2	64	1
ANGLED-4	6	1 1/4	97	1
ANGLED-5	6	7	141	4
ANGLED-6	6	6	161	1

7 BASE PLATE

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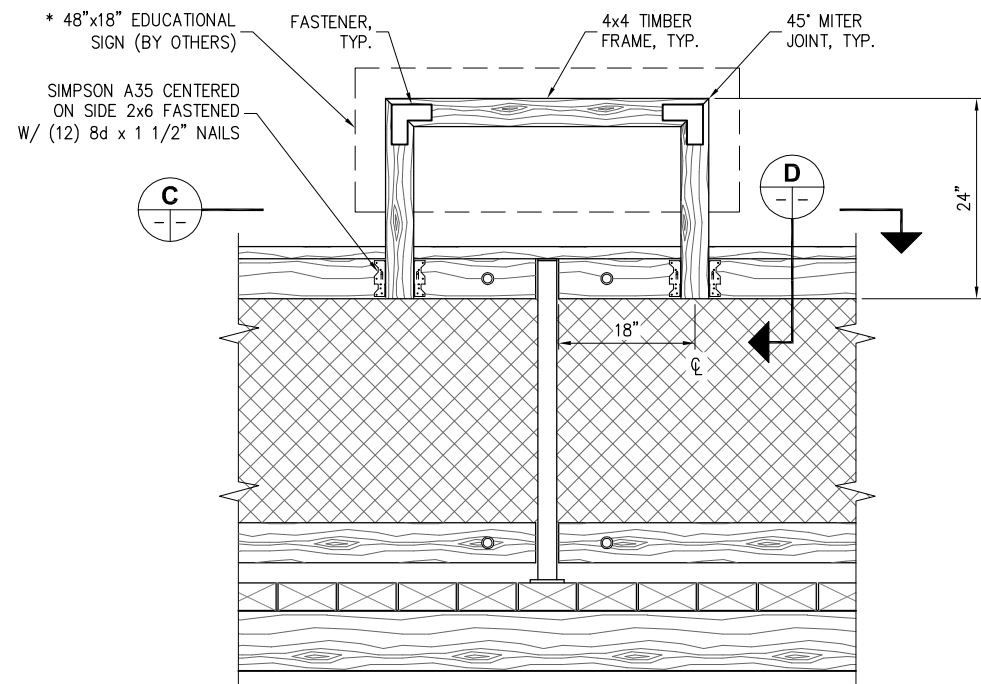
REVISIONS		
REV	DATE	DESCRIPTION

BIRD ISLAND SHORELINE ENHANCEMENT PROJECT PHASE 1 - UPLAND WORK

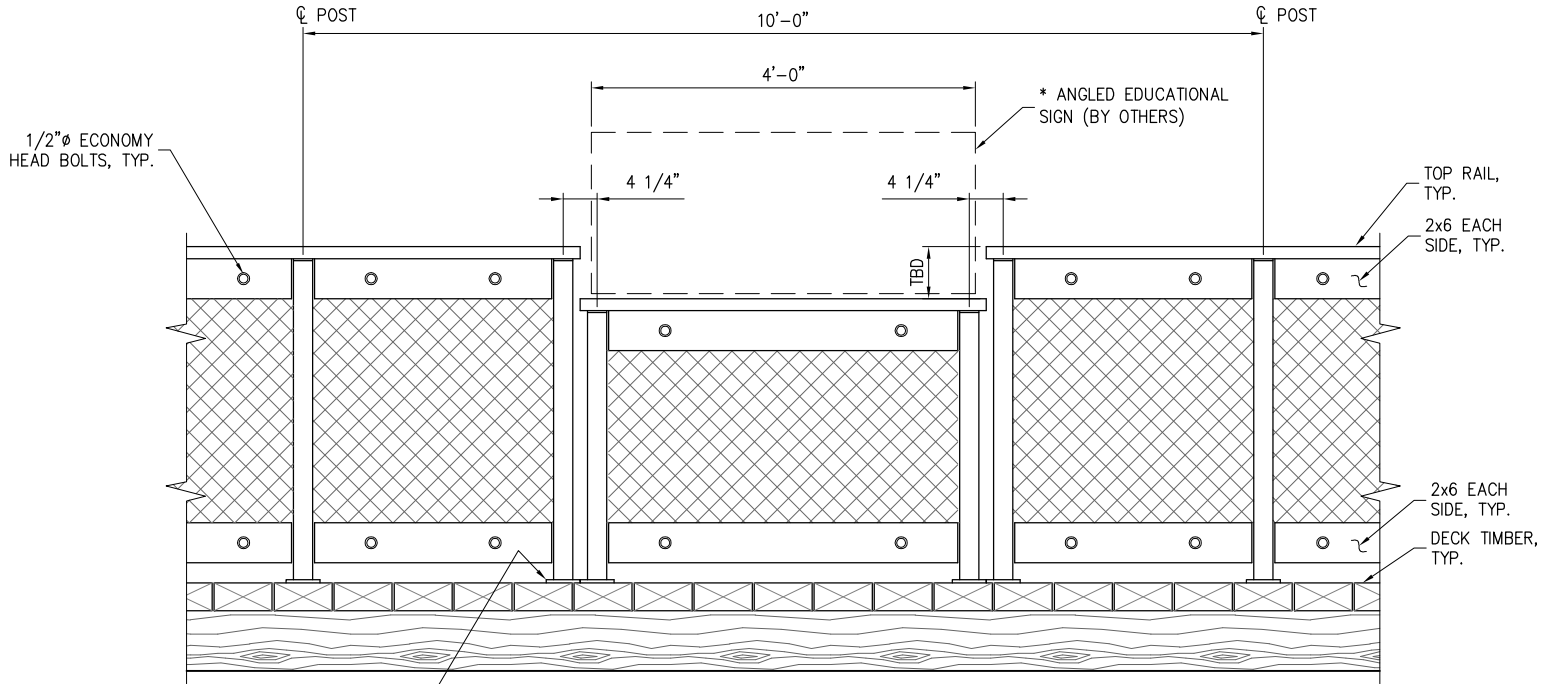
TITLE: **BOARDWALK DETAILS**

DESIGNED BY: AD	PROJECT NO: 154031.01	SHEET NO:
DRAWN BY: DM	DATE: OCTOBER 2016	10 OF 13
CHECKED BY: SR	SCALE: NOTED	

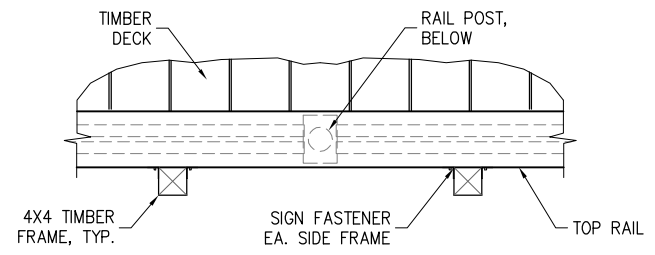
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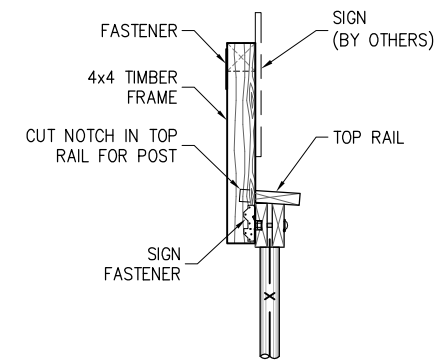
ELEVATION
* TEXT TO BE BETWEEN 40" - 70" FROM TOP OF DECK



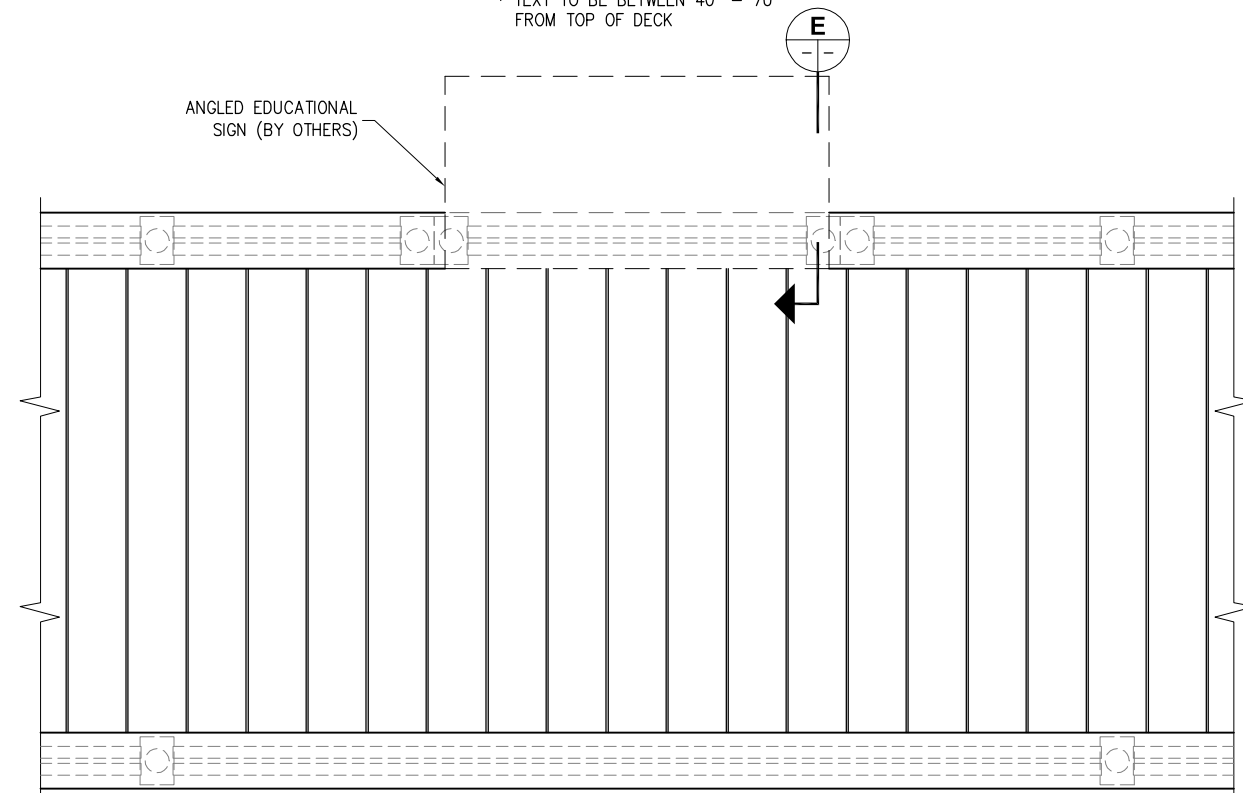
ELEVATION
* TEXT TO BE BETWEEN 40" - 70" FROM TOP OF DECK



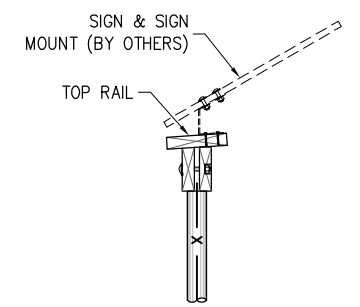
C SECTION



D SECTION



PLAN
SIGN TYPE B



E SECTION

8
SIGN TYPE A

9
SIGN TYPE B

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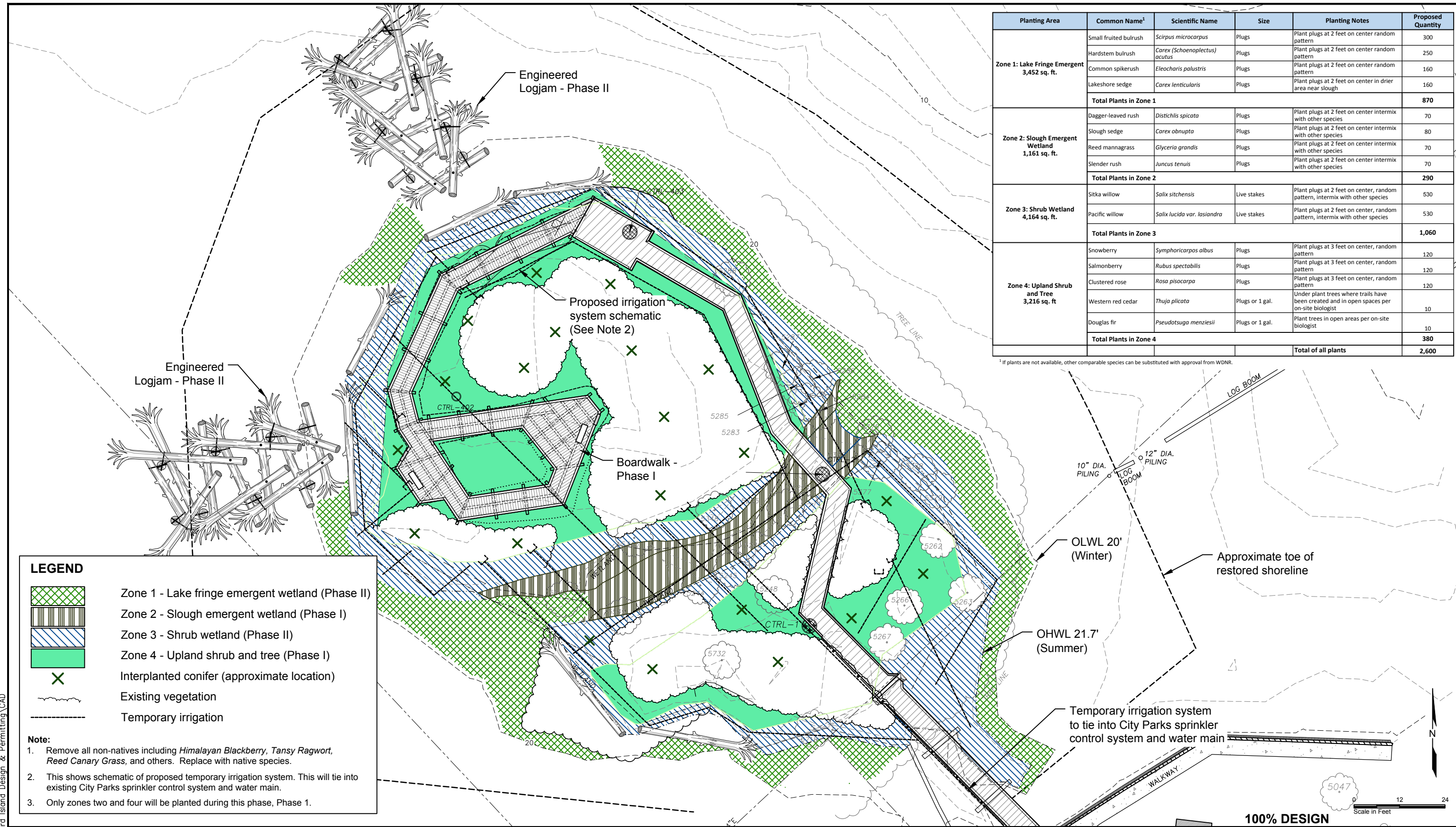
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REV	DATE	DESCRIPTION

BIRD ISLAND SHORELINE ENHANCEMENT PROJECT PHASE 1 - UPLAND WORK			
TITLE: EDUCATIONAL SIGNAGE DETAILS			
DESIGNED BY: AD	PROJECT NO: 154031.01	SHEET NO: 11 OF 13	
DRAWN BY: DM	DATE: OCTOBER 2016		
CHECKED BY: SR	SCALE: NOTED		

9/26/16 NOTEBOOKS\1213233-PND Bird Island Design & Permitting\CAD



Planting Area	Common Name ¹	Scientific Name	Size	Planting Notes	Proposed Quantity
Zone 1: Lake Fringe Emergent 3,452 sq. ft.	Small fruited bulrush	<i>Scirpus microcarpus</i>	Plugs	Plant plugs at 2 feet on center random pattern	300
	Hardstem bulrush	<i>Carex (Schoenoplectus) acutus</i>	Plugs	Plant plugs at 2 feet on center random pattern	250
	Common spikerush	<i>Eleocharis palustris</i>	Plugs	Plant plugs at 2 feet on center random pattern	160
	Lakeshore sedge	<i>Carex lenticularis</i>	Plugs	Plant plugs at 2 feet on center in drier area near slough	160
Total Plants in Zone 1					870
Zone 2: Slough Emergent Wetland 1,161 sq. ft.	Dagger-leaved rush	<i>Distichlis spicata</i>	Plugs	Plant plugs at 2 feet on center intermix with other species	70
	Slough sedge	<i>Carex obnupta</i>	Plugs	Plant plugs at 2 feet on center intermix with other species	80
	Reed mannagrass	<i>Glyceria grandis</i>	Plugs	Plant plugs at 2 feet on center intermix with other species	70
	Slender rush	<i>Juncus tenuis</i>	Plugs	Plant plugs at 2 feet on center intermix with other species	70
Total Plants in Zone 2					290
Zone 3: Shrub Wetland 4,164 sq. ft.	Sitka willow	<i>Salix sitchensis</i>	Live stakes	Plant plugs at 2 feet on center, random pattern, intermix with other species	530
	Pacific willow	<i>Salix lucida var. lasiandra</i>	Live stakes	Plant plugs at 2 feet on center, random pattern, intermix with other species	530
Total Plants in Zone 3					1,060
Zone 4: Upland Shrub and Tree 3,216 sq. ft.	Snowberry	<i>Symphoricarpos albus</i>	Plugs	Plant plugs at 3 feet on center, random pattern	120
	Salmonberry	<i>Rubus spectabilis</i>	Plugs	Plant plugs at 3 feet on center, random pattern	120
	Clustered rose	<i>Rosa pisocarpa</i>	Plugs	Plant plugs at 3 feet on center, random pattern	120
	Western red cedar	<i>Thuja plicata</i>	Plugs or 1 gal.	Under plant trees where trails have been created and in open spaces per on-site biologist	10
	Douglas fir	<i>Pseudotsuga menziesii</i>	Plugs or 1 gal.	Plant trees in open areas per on-site biologist	10
Total Plants in Zone 4					380
Total of all plants					2,600

¹ If plants are not available, other comparable species can be substituted with approval from WDNR.

LEGEND

- Zone 1 - Lake fringe emergent wetland (Phase II)
- Zone 2 - Slough emergent wetland (Phase I)
- Zone 3 - Shrub wetland (Phase II)
- Zone 4 - Upland shrub and tree (Phase I)
- Interplanted conifer (approximate location)
- Existing vegetation
- Temporary irrigation

- Note:**
- Remove all non-natives including *Himalayan Blackberry*, *Tansy Ragwort*, *Reed Canary Grass*, and others. Replace with native species.
 - This shows schematic of proposed temporary irrigation system. This will tie into existing City Parks sprinkler control system and water main.
 - Only zones two and four will be planted during this phase, Phase 1.

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REV	DATE	DESCRIPTION

PROJECT: **BIRD ISLAND SHORELINE ENHANCEMENT PHASES I AND II**

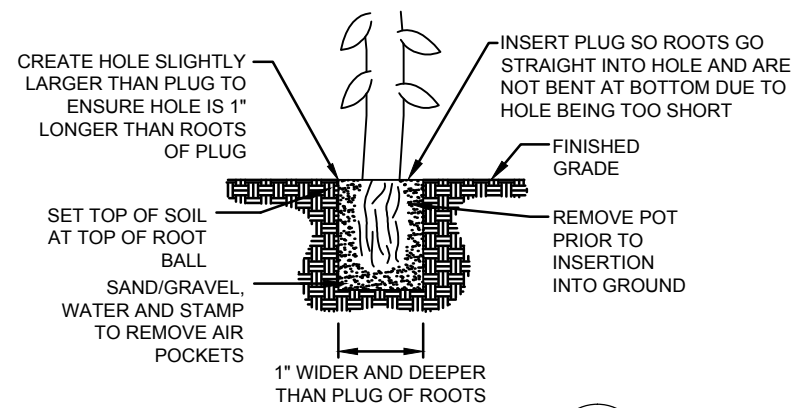
TITLE: **PLANTING PLAN**

DESIGNED BY: JS PROJECT NO: 12132-33 SHEET NO: 12 OF 13

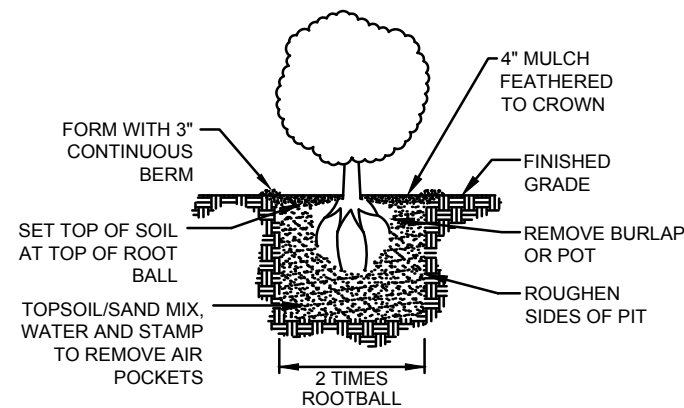
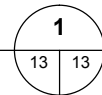
DRAWN BY: EAL DATE: OCTOBER 2016

CHECKED BY: SCALE: 1" = 12'

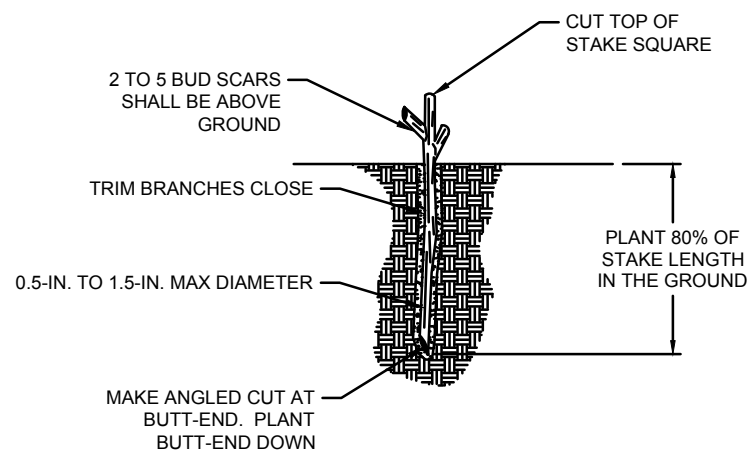
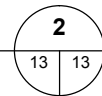
100% DESIGN



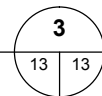
PLUG PLANTING DETAIL
NOT TO SCALE



1-GALLON PLANTING DETAIL
NOT TO SCALE



LIVE STAKE PLANTING DETAIL
NOT TO SCALE



NOTES:

1. THE RECOMMENDED TIME FOR PLANT INSTALLATION IS EARLY FALL BETWEEN OCTOBER 1 AND NOVEMBER 15.
2. A PRE-CONSTRUCTION MEETING SHALL BE HELD WITH ALL PARTICIPATING PARTIES PRIOR TO COMMENCEMENT OF WORK IN THE PLANTING AREAS TO REVIEW THE PROJECT GOALS, PLANTING DETAILS, SITE CONDITIONS, CLEARING/EXCAVATION LIMITS, AND CONSTRUCTION SEQUENCING.
3. CONTRACTOR SHALL REMOVE ANY REMAINING INVASIVE SPECIES THROUGHOUT THE PLANTING AREA, INCLUDING BUT NOT LIMITED TO BLACKBERRY, BINDWEED, AND NON-NATIVE GRASSES USING MACHINERY OR BY HAND. ON-SITE SOIL CONTAINING INVASIVE PLANT SPECIES SHALL NOT BE REUSED WITHIN THE PLANTING AREAS.
4. AN APPROXIMATELY 4-INCH-DEEP LAYER OF MULCH SHALL BE PLACED IN A RING AROUND UPLAND PLANTS IN THE AREA ABOVE THE OHW LINE FOR EROSION CONTROL, WEED PREVENTION, AND MOISTURE RETENTION.
5. ALL SOIL AND MULCH SHALL BE CERTIFIED FREE OF MATERIAL TOXIC TO PLANT GROWTH AND NOXIOUS WEED SEEDS.
6. ONLY ZONES TWO AND FOUR WILL BE PLANTED DURING THIS PHASE, PHASE 1.

PLANT SPECIFICATIONS AND INSTALLATION:

1. ALL PLANTS AND PLANTING ACTIVITIES SHALL CONFORM TO LANDSCAPE INDUSTRY STANDARDS. PLANT STOCK SHALL BE FREE OF DEFECTS, DISEASE, INFESTATIONS, AND SHALL BE HEALTHY. THE OWNER OR OWNER'S REPRESENTATIVE MAY REQUIRE REPLACEMENT OR SUBSTITUTION OF ANY UNACCEPTABLE PLANTS. PLANT STOCK SHALL BE OBTAINED FROM A NURSERY LICENSED TO SELL PLANTS IN WASHINGTON; PLANT STOCK SHALL BE LOCALLY GROWN IN WESTERN WASHINGTON.
2. THE OWNER OR REPRESENTATIVE SHALL BE PRESENT TO INSPECT PLANTS BEFORE THEY ARE INSTALLED AND THE OWNER CAN REJECT PLANTS IF THEY DO NOT MEET THE INDUSTRY STANDARD. CONTRACTOR SHALL PROVIDE OWNER A COPY OF THE PLANT RECEIPTS THAT INCLUDES THE NUMBER PURCHASED. DURING INSPECTION PLANTS NEED TO BE ORGANIZED TO ALLOW FOR EASY INSPECTION AND COUNT.
3. ALL PLANT STOCK SHALL BE HANDLED WITH CARE TO ENSURE PROTECTION FROM INJURY. PLANTS SHALL BE KEPT MOIST AND STORED IN A SHADED AREA UNTIL INSTALLATION WHILE BEING STORED ON THE PROJECT SITE. BEFORE AND AFTER PLANTING, SOIL IN THE PLANTING PITS SHALL BE SATURATED.
4. FOLLOWING EARTHWORK, THE PLANTINGS SHALL BE INSTALLED PER THE SPECIES, QUANTITIES, SIZES, GROUPING AND SPACING IDENTIFIED IN THE PLANT SCHEDULE.
5. PLANTS SHALL BE INSTALLED IN THE LOCATIONS SHOWN ON PLAN (UPLAND OR RIPARIAN AREAS).
6. ZONES 1, 2, AND 4:
 - a. EXCAVATE PLANTING PITS AS SHOWN IN DETAIL 1. GENTLY LOOSEN ROOTS OF CONTAINERIZED PLANT STOCK PRIOR TO PLANTING.
 - b. BACKFILL PLANTING PITS WITH CERTIFIED WEED FREE TOPSOIL/SAND MIX. NO CHEMICALS SHALL BE ADDED TO THE BACKFILL SOIL.
 - c. WATER EACH PLANT THOROUGHLY AFTER PLANTING IN ORDER TO ELIMINATE AIR POCKETS AND AID IN NATURAL SOIL COMPACTION.
9. ZONE 3:
 - a. HARVEST AND PLANT STAKES DURING THE DORMANT SEASON.
 - b. MAKE CLEAN CUTS AND DO NOT DAMAGE STAKES OR SPLIT ENDS DURING INSTALLATION. USE A PILOT BAR IN FIRM SOILS.
 - c. SOAK CUTTINGS CONTINUOUSLY PRIOR TO INSTALLATION.
 - d. TAMP THE SOIL AROUND THE STAKE.
 - e. ONLY NURSERY GROWN STOCK SHALL BE USED. HARVESTING OF WILD PLANTS IS NOT ACCEPTABLE.
 - f. USE EQUAL NUMBER AND EVEN DISTRIBUTION OF EACH WILLOW SPECIES.
 - g. INSTALL WILLOW PER PLANTING DETAIL 3.

IRRIGATION AND MAINTENANCE:

1. CONTRACTOR SHALL PROVIDE IRRIGATION NECESSARY FOR PLANT SURVIVAL ABOVE THE OHW LINE.
2. THE OWNER OR REPRESENTATIVE WILL INSPECT THE IRRIGATION SYSTEM FOR PROPER INSTALLATION AND OPERATION.

100% DESIGN



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REVISIONS		
REV	DATE	DESCRIPTION

PROJECT: BIRD ISLAND SHORELINE ENHANCEMENT PHASES I AND II			
TITLE: PLANTING DETAILS			
DESIGNED BY:	JS	PROJECT NO:	12132-33
DRAWN BY:	EAL	DATE:	OCTOBER 2016
CHECKED BY:		SCALE:	NOT TO SCALE
SHEET NO:			13 OF 13