HETCH HETCHY
WATER SYSTEM
IMPROVEMENT
PROGRAM

CITY AND COUNTY OF SAN FRANCISCO

PUBLIC UTILITIES COMMISSION

SAN FRANCISCO WATER DEPARTMENT

CONTRACT NO. WD-2651

HABITAT RESERVE PROGRAM
BOAT RAMP MITIGATION
VOLUME 1 OF 1

AUGUST 2010

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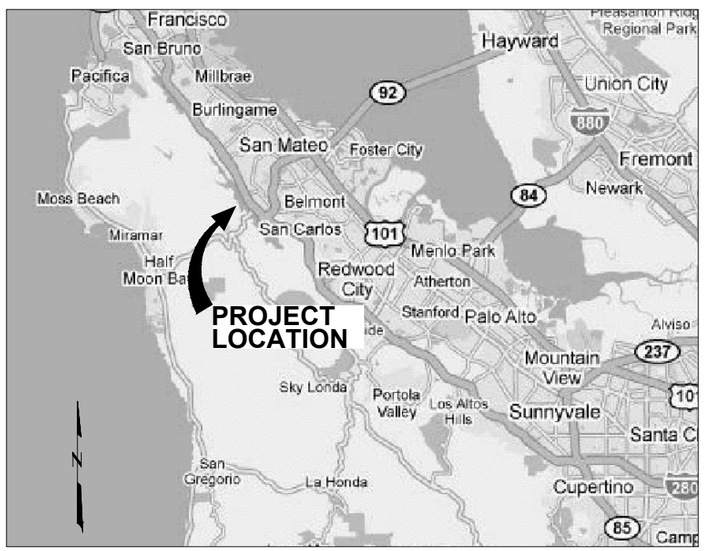
CONSTRUCTION

95% SUBMITTAL

FOR THE SOLE USE OF THE DOCUMENT RECIPIENT – DO NOT CITE, COPY, OR CIRCULATE WITHOUT THE EXPRESS PERMISSION OF THE SFPUC.

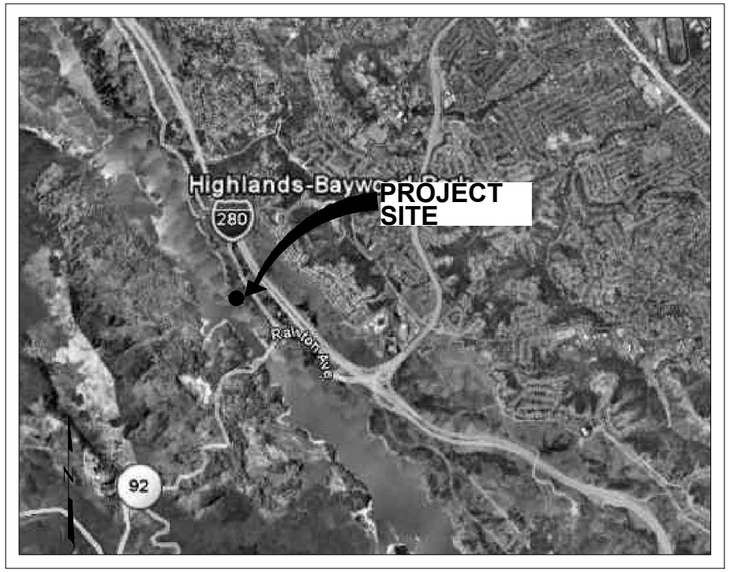
AT THE TIME OF THE BID OPENING, THE CONTRACTOR SHALL POSSESS A VALID CALIFORNIA CLASS A, GENERAL ENGINEERING CONTRACTOR'S LICENSE.

CITY AND COUNTY OF SAN FRANCISCO
PUBLIC UTILITIES COMMISSION
HABITAT RESERVE PROGRAM
BOAT RAMP MITIGATION SITE
CONTRACT NO. WD-2651



VICINITY MAP

NO SCALE



LOCATION MAP

NO SCALE

SHEET NUMBER	DRAWING NUMBER	DESCRIPTION OF DRAWING
1	G-0	COVER SHEET
2	G-1	TITLE SHEET, LOCATION AND VICINITY MAPS, DRAWING INDEX
3	G-2	ABBREVIATIONS, LEGEND, GENERAL NOTES , ACCESS ROAD
4	C-1	ALIGNMENT LOCATION AND SURVEY CONTROL PLAN OF PROPOSED WETLAND
5	C-2	EXISTING CONDITION AND DEMOLITION PLAN OF PROPOSED WETLAND
6	C-3	PROPOSED WETLAND GRADING PLAN
7	C-4	WETLAND SECTION
8	C-5	CONSTRUCTION DETAILS
9	L-1	VEGETATION PROTECTION PLAN
10	L-2	TREE REMOVAL PLAN
11	L-3	PLANTING ZONES

COORDINATE: NAD83
ELEVATION DATUM: NGVD 1929

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PROJECT ENGINEER	CQ	DRAWN	CQ
PROJECT MANAGER	MS	DESIGNED	CQ
APPROVAL	MS	CHECKED	ABW

NO.	DATE	DESCRIPTION	BY	APPR'D

REVISIONS

CONTRACT NO. WD-2651

CITY AND COUNTY OF SAN FRANCISCO
PUBLIC UTILITIES COMMISSION
INFRASTRUCTURE DIVISION
ENGINEERING MANAGEMENT BUREAU

BOAT RAMP MITIGATION SITE

TITLE SHEET, LOCATIONS AND VICINITY MAPS, DRAWING INDEX

CHECKED / APPROVED	DRAWN	SCALE AS SHOWN
SECTION MANAGER	DESIGNED	DATE
APPROVED	APPROVED	
MANAGER, ENGINEERING MANAGEMENT BUREAU	MANAGER, NATURAL RESOURCE DIVISION	

SHEET	PLAN NO.	DRAWING NO.	REVISION NO.
2 OF 11		G-1	

FILE: P:\Projects\10114 San Francisco Public Utilities Commission\10114-09-009 Habitat Reserve Program Mitigation\CAD\Boat Ramp\31 Sheets 02-G1-TITLE.dwg Oct 31, 2010 - 4:20pm

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ABBREVIATIONS

APPROX	APPROXIMATE
&	AND
@	AT
BC	BEGIN CURVE
BM	BENCH MARK
BRG	BEARING
CL,	CENTERLINE
COORD	COORDINATE
CP	CONTROL POINT
CY	CUBIC YARD
DET	DETAIL
DIA OR Ï	DIAMETER
DIM	DIMENSION
DWG	DRAWING
E	EAST
(E) OR EXIST	EXISTING
EA	EACH
EC	END CURVE
ECB	EROSION CONTROL BLANKET
EG	EXAMPLE
EL OR ELEV	ELEVATION
EQ	EQUAL
EQUIP	EQUIPMENT
ETC	ETCETERA
EXIST	EXISTING
FG	FINISHED GRADE
FT	FOOT OR FEET
HORIZ	HORIZONTAL
HP	HIGH POINT
HT	HEIGHT
IE	FOR EXAMPLE
IN	INCH OR INLET
INV	IINVERT
LF	LINEAR FEET
LT	LEFT
MAX	MAXIMUM
MIN	MINIMUM
(N)	NEW
N	NORTH
N/A	NOT APPLICABLE
NTS	NOT TO SCALE
#	NUMBER
OC	ON CENTER
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
POC	POINT OF CURVE
PROJ	PROJECT
PT	POINT OF TANGENCY
QTY	QUANTITY
R, RAD	RADIUS
REF	REFERENCE
REQ	REQUIRED
RSP	REVETMENT SLOPE PROTECTION
S	SOUTH
SD	STORM DRAIN
SECT	SECTION
SHT	SHEET
SIM	SIMILAR
SPEC	SPECIFICATIONS
SQ	SQUARE
STA	STATION
STD	STANDARD
T	TOP
T/	TOP OF
TOPO	TOPOGRAPHIC
TYP	TYPICAL
VAR	VARIES OR VARIABLE
VERT	VERTICAL
W	WEST
W/	WITH
W/O	WITHOUT

GENERAL NOTES

1. SPECIAL CIRCUMSTANCES: NO SHUTDOWN OF THE PROJECT SITE IS ANTICIPATED. HOWEVER, UNFORESEEABLE FIRE, GEO–HAZARD CONDITIONS, HEAVY RAINS, DISCOVERY OF NEW CULTURAL RESOURCE SITES OR OBJECTS, OR PRESENCE OF SPECIAL STATUS SPECIES NOT PREVIOUSLY DOCUMENTED COULD PROMPT SFPUC TO SUSPEND CONSTRUCTION ACTIVITIES FOR SAFETY REASONS AT NO COST TO THE SFPUC, OR THEIR REPRESENTATIVES.

2. HOURS OF WORK: THE CONTRACTOR SHALL CONDUCT ALL WORK BETWEEN THE HOURS OF 8:00 AM AND 6:00 PM, MONDAY THROUGH FRIDAY, UNLESS AUTHORIZED BY SFPUC. CONTRACTOR AND CREW SHALL NOT ENTER THE SITE PRIOR TO 6:30 AM OR LEAVE THE SITE AFTER 6:30 PM, MONDAY THROUGH FRIDAY. NO EQUIPMENT ENGINES OR OTHER NOISE GENERATING ACTIVITIES SHALL BE STARTED PRIOR TO 7:45 AM OR CONTINUE PAST 6:15 PM, MONDAY THROUGH FRIDAY. WEEKEND AND HOLIDAY WORK WILL ONLY BE CONDUCTED AFTER PRIOR AUTHORIZATION FROM THE SFPUC.

3. DAILY COMMUNICATIONS: CONTRACTOR SHALL MAINTAIN DAILY COMMUNICATIONS WITH THE SFPUC TO DISCUSS DETAILS OF IMPLEMENTATION, ORDER OF WORK, METHODS OF MINIMIZING ENVIRONMENTAL IMPACTS AND OTHER RELEVANT COMPONENTS OF CONSTRUCTION.

4. COMPLIANCE WITH REGULATORY PERMITS: THE CONTRACTOR SHALL COMPLETELY REVIEW, BE FAMILIAR WITH AND ADHERE TO THE TERMS AND CONDITIONS OF ALL PERMITS AND AGENCY APPROVALS FOR THIS PROJECT. THE SFPUC WILL BE RESPONSIBLE FOR SECURING AND PROVIDING TO THE CONTRACTOR COPIES OF PERMITS, CERTIFICATIONS, OR AUTHORIZATIONS FROM THE FOLLOWING AGENCIES INCLUDING, BUT NOT LIMITED TO: U.S. ARMY CORPS OF ENGINEERS, THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD SECTION 401, THE U.S. FISH AND WILDLIFE SERVICE, THE NATIONAL MARINE FISHERIES SERVICE AND CALIFORNIA DEPARTMENT OF FISH AND GAME. COPIES OF ALL PERMITS ARE AVAILABLE FROM THE SFPUC AND WILL REMAIN AT THE PROJECT SITE THROUGHOUT THE DURATION OF CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR WORKING WITH THE SFPUC ON SECURING THE NECESSARY NPDES PERMIT AND PREPARATION AND SUBMISSION OF A STORMWATER POLLUTION PREVENTION PLAN (SWPPP).

5. COMPLIANCE WITH COUNTY PERMITS: CONTRACTOR IS RESPONSIBLE FOR ASSISTING WITH ACQUISITION OF AND COMPLIANCE WITH ANY RELEVANT COUNTY PERMITS NEEDED FOR THE PROPOSED CONSTRUCTION ACTIVITIES, INCLUDING, BUT NOT LIMITED TO, TRAFFIC AND ENCROACHMENT PERMITS RELATED TO THE DELIVERY AND HAULING OF CONSTRUCTION EQUIPMENT AND MATERIALS, AND TRAFFIC CONTROL MEASURES (TRAFFIC SAFETY PLAN). THE CONTRACTOR MUST FOLLOW ALL PERTINENT CALTRANS REQUIREMENTS FOR HAULING LARGE VEHICLES OR EQUIPMENT TO THE PROJECT SITE. TO DETERMINE REQUIREMENTS FOR THE SPECIFIC VEHICLES TO BE USED, SEE THE WEB SITE AT WWW.DOT.CA.GOV/HQ/TRAFFOPS/PERMITS

6. AIR QUALITY AND CONSTRUCTION NOISE RESTRICTIONS: THE CONTRACTOR SHALL IMPLEMENT MEASURES TO REDUCE CONSTRUCTION NOISE INCLUDING: ENSURING THAT ALL CONSTRUCTION EQUIPMENT HAS SOUND–CONTROL DEVICES AT LEAST AS EFFECTIVE AS THOSE ORIGINALLY SUPPLIED BY THE MANUFACTURER AND THAT NO EQUIPMENT WITH AN UNMUFFLED EXHAUST IS OPERATED; LIMITING CONSTRUCTION ACTIVITIES TO SPECIFIED TIMES; AND PROHIBITING UNNECESSARY WARMING UP, IDLING, OR ENGINE REVVING OF GAS OR DIESEL POWERED EQUIPMENT OR VEHICLES.

7. AIR QUALITY AND DUST CONTROL RESTRICTIONS: TRUCKS USED FOR HAULING ARE REQUIRED TO BE COVERED OR TO HAVE AT LEAST 2–FEET OF FREEBOARD. STOCKPILES AND EARTHWORK AREAS THAT ARE INACTIVE FOR MORE THAN TEN (10) DAYS OR THAT ARE DEEMED BY THE SFPUC OR ENVIRONMENTAL MONITOR TO BE CAUSING A DUST PROBLEM SHALL BE WATERED OR STABILIZED WITH AN APPROVED STABILIZING AGENT OR, IN THE CASE OF STOCKPILES, ENCLOSED OR COVERED. TRUCKS LEAVING THE PROJECT SITES SHALL HAVE TIRES WASHED OR AN EQUIVALENT APPROVED BY THE SFPUC OR ENVIRONMENTAL MONITOR TO PREVENT/MINIMIZE SEDIMENT FROM BEING TRACKED ONTO PUBLIC ROADWAYS. TRAFFIC SPEEDS ON UNPAVED ROADS WILL BE LIMITED TO 10 MPH.

8. THE SITE WILL BE KEPT FREE OF TRASH AT ALL TIMES. TRASH SHALL BE REMOVED DAILY. ALL ITEMS USED FOR CONSTRUCTION WILL BE REMOVED FROM THE SITE AT THE COMPLETION OF CONSTRUCTION.

9. ON–SITE TRAFFIC AND CONSTRUCTION ACCESS RESTRICTIONS: ANY ROUTES SHOWN ON PLANS THAT OCCUR OFF OF ESTABLISHED ROADS WILL BE MARKED BY THE CONTRACTOR WITH LATHE AND CLEARLY VISIBLE FLAGGING ALONG BOTH SIDES OF 20' WIDE ACCESS EASEMENTS. CONSTRUCTION EQUIPMENT IS NOT TO DEVIATE FROM THIS ROUTE WITHOUT APPROVAL OF THE SFPUC AND THE ENVIRONMENTAL MONITOR. SHOULD THE ROAD BECOME MUDDY OR CONDITIONS DETERIORATE, THE CONTRACTOR IS RESPONSIBLE FOR PLACING MATTING OR FABRIC MATERIAL TO IMPROVE ROAD CONDITIONS WITHOUT WIDENING THE ACCESS EASEMENT: ALL MATERIALS PLACED MUST BE REMOVED AT THE COMPLETION OF THE PROJECT. IN ADDITION, THE CONTRACTOR IS NOT ALLOWED TO WIDEN EXISTING ROADS WITHOUT APPROVAL OF THE SFPUC.

10. CONSTRUCTION EQUIPMENT MAY NOT WORK IN AREAS DESIGNATED AS WETLAND, RIPARIAN, OR CREEK PROTECTION ZONES OR WITHIN OR DIRECTLY ADJACENT TO INDIVIDUAL TREES AND SHRUBS OR STANDS OF TREES OR SHRUBS OR VEGETATION DESIGNATED FOR SALVAGE BY THE SFPUC UNLESS SPECIFICALLY AUTHORIZED. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING PROTECTIVE FENCING TO ENSURE PROTECTION OF THESE RESOURCES AS DESIGNATED ON PLANS.

11. THE CONTRACTOR SHOULD PLAN TO REMEDIATE CONSTRUCTION ACCESS EASEMENTS AT THE CONCLUSION OF USE THROUGH BLADING, RIPPING, OR OTHERWISE REMOVING RUTS AND COMPACTION. THE SFPUC RESERVE THE RIGHT TO REQUIRE THE CONTRACTOR TO REPAIR DAMAGE IN CONSTRUCTION ACCESS EASEMENTS. ALL LATHE SHOULD BE REMOVED BY THE CONTRACTOR AT THE END OF CONSTRUCTION.

12. CONTAMINATION PREVENTION RESTRICTIONS: THE CONTRACTOR SHALL TAKE PREVENTATIVE MEASURES TO AVOID ANY SPILLS OR LEAKS ON THE SITE FROM PETROLEUM PRODUCTS. THE CONTRACTOR SHALL PREPARE A SPILL PREVENTION AND RESPONSE PLAN THAT WILL BE APPROVED BY THE SFPUC AND ENVIRONMENTAL MONITOR, AS WELL AS LEAD AGENCIES. THIS MUST BE IMPLEMENTED AND ADHERED TO BY THE CONTRACTOR. AT A MINIMUM, THIS PLAN SHALL REQUIRE THAT STAGING, STORAGE, AND REFUELING AREAS AND ANY EQUIPMENT REPAIR OR SIMILAR ACTIVITY TAKE PLACE WHEN EQUIPMENT IS AT LEAST 100–FEET FROM ANY ACTIVE CREEK CHANNEL, DITCH, POND, OR FENCED SENSITIVE AREA. REFUELING SHALL ONLY OCCUR IN AREAS APPROVED BY THE SFPUC OR ENVIRONMENTAL MONITOR. STAGING AND STORAGE AREAS SHALL OCCUR ONLY IN DESIGNATED AREAS: ANY STAGING OR STORAGE IN WETLANDS OR OTHER SENSITIVE HABITATS WILL REQUIRE PRIOR APPROVAL FROM THE COR OR ENVIRONMENTAL MONITOR. PROTECTIVE TARPS SHALL BE USED DURING REFUELING OR EQUIPMENT REPAIR. THE CONTRACTOR SHALL INSPECT AND FULLY CLEAN UP ANY SUCH LEAKS OR SPILLS THAT OCCUR ON THE SITE. CONTRACTOR SHALL NOT STORE ANY HAZARDOUS MATERIALS.

13. BIOLOGICAL RESTRICTIONS – WETLANDS, CREEKS, AND RIPARIAN AREAS: DUE TO THE SENSITIVE NATURE OF THE SITE, THE CONTRACTOR SHALL NOT ENTER INTO THESE AREAS FOR ANY REASON WITHOUT PRIOR AUTHORIZATION FROM THE SFPUC OR ENVIRONMENTAL MONITOR.

14. BIOLOGICAL RESTRICTIONS – WILDLIFE: PRIOR TO START OF CONSTRUCTION, THE ENVIRONMENTAL MONITOR OR REPRESENTATIVES WILL GIVE CONTRACTOR'S STAFF A PRESENTATION REGARDING SPECIAL STATUS SPECIES AND RESTRICTIONS REQUIRED IN TERMS OF CLEARANCE SURVEYS AND CONSTRUCTION MONITORING.

LEGEND

EXISTING	PROPOSED	
155	155	CONTOUR LINE
3:1	3:1	REVETMENT AND SLOPE
		DRAINAGEWAY OR DITCH
		CENTER LINE
	XX — XX	SILT FENCE
X X	X X	FENCE
		DIRECTION OF FLOW
× 157.7	FG 10.36	SPOT ELEVATION
		SLOPE WITH FLOW DIRECTION
OR STP–X OR	STP–X	BENCH MARK, TEST PIT
		BORING
		GAUGE BOARD
		HORIZONTAL OR VERTICAL POINT OF INTERSECTION
		LANDSCAPING AND VEGETATION
		PIEZOMETER STATION
OR		TREE

ACCESS ROAD & STAGING AREA

200' 0' 200' 400'

COORDINATE: NAD83
ELEVATION DATUM: NGVD 1929

95% SUBMITTAL

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OCTOBER 29, 2010

CONTRACT NO. WD–2651

CITY AND COUNTY OF SAN FRANCISCO
PUBLIC UTILITIES COMMISSION
INFRASTRUCTURE DIVISION
ENGINEERING MANAGEMENT BUREAU

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BOAT RAMP MITIGATION SITE

ABBREVIATIONS, LEGEND, GENERAL NOTES, ACCESS ROAD

PROJECT ENGINEER	CQ	DRAWN	CQ
PROJECT MANAGER	MS	DESIGNED	CQ
APPROVAL	MS	CHECKED	ABW

NO.	DATE	DESCRIPTION	BY	APPR'D

REVISIONS

CHECKED / APPROVED	DRAWN	SCALE AS SHOWN
SECTION MANAGER	DESIGNED	DATE
APPROVED	APPROVED	
MANAGER, ENGINEERING MANAGEMENT BUREAU	MANAGER, NATURAL RESOURCE DIVISION	

SHEET	PLAN NO.	DRAWING NO.	REVISION NO.
3 OF 11		G–2	

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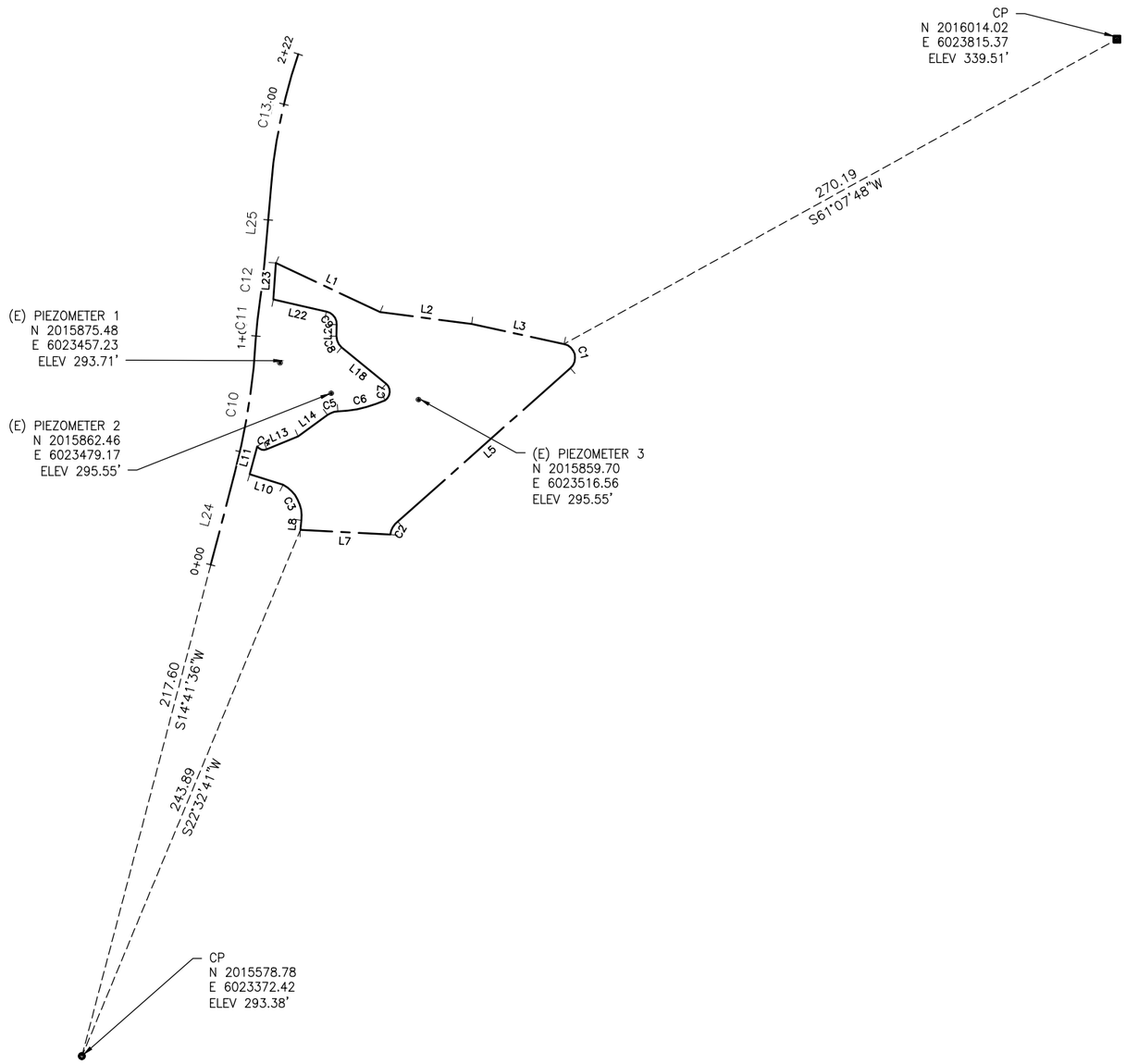

WETLAND LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
C1	13.21	126°07'45"	6.00
C2	6.62	47°06'32"	8.06
C3	18.10	69°11'24"	14.98
C4	4.64	79°07'35"	3.36
C5	4.69	33°34'37"	8.00
C6	20.87	21°55'04"	54.56
C7	8.30	107°21'32"	4.43
C8	5.44	51°56'10"	6.00
C9	7.72	78°39'39"	5.62
L1	49.28	S64°49'17"E	
L2	39.59	S82°35'01"E	
L3	40.42	S77°44'39"E	
L5	98.77	S48°23'06"W	
L7	38.57	N87°00'41"W	
L8	4.16	N5°15'56"E	
L10	14.98	N72°29'44"W	
L11	12.34	N15°09'23"E	
L13	14.44	N67°21'51"E	
L14	15.60	N54°07'07"E	
L18	24.59	N50°43'27"W	

WETLAND LINE AND CURVE TABLE			
LINE #/CURVE #	LENGTH	BEARING/DELTA	RADIUS
L20	4.92	N1°12'44"E	
L22	23.29	N77°14'32"W	
L23	15.66	N3°45'02"E	

NOTES:

1. ALL LENGTHS GIVEN ARE IN US FOOT.
2. HORIZONTAL DATUM IS NAD83 CALIFORNIA STATE PLANES ZONE III, US FOOT.
3. VERTICAL DATUM IS NGVD29.

BOAT RAMP RD						
SEGMENT	LENGTH	BEARING/DELTA	RADIUS	TANGENT	START	END
L24	40.78	N14°38'03"E			STA: 0+00.00 N: 2015789.11 E: 6023427.57	STA: 0+40.78 N: 2015828.57 E: 6023437.87
C10	57.18	011°17'52"	290.00	28.68	STA: 0+40.78 N: 2015828.57 E: 6023437.87	STA: 0+97.97 N: 2015884.96 E: 6023446.79
C11	17.39	005°38'23"	176.72	8.70	STA: 0+97.97 N: 2015884.96 E: 6023446.79	STA: 1+15.36 N: 2015902.25 E: 6023448.65
C12	16.07	004°09'34"	221.34	8.04	STA: 1+15.36 N: 2015902.25 E: 6023448.65	STA: 1+31.43 N: 2015918.19 E: 6023450.58
L25	33.50	N04°49'00"E			STA: 1+31.43 N: 2015918.19 E: 6023450.58	STA: 1+64.93 N: 2015951.57 E: 6023453.39
C13	57.37	013°52'56"	236.80	28.83	STA: 1+64.93 N: 2015951.57 E: 6023453.39	STA: 2+22.30 N: 2016007.61 E: 6023465.06

A / C-2 **ALIGNMENT AND SURVEY CONTROL PLAN**
1" = 30'

N

1"=30' 30' 0' 30' 60'

COORDINATE: NAD83
ELEVATION DATUM: NGVD 1929

95% SUBMITTAL

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PROJECT ENGINEER	CQ	DRAWN	KVS
PROJECT MANAGER	MS	DESIGNED	CQ
APPROVAL	MS	CHECKED	ABW

NO.	DATE	DESCRIPTION	BY	APPR'D

REVISIONS

CONTRACT NO. WD-2651

CITY AND COUNTY OF SAN FRANCISCO
PUBLIC UTILITIES COMMISSION
INFRASTRUCTURE DIVISION
ENGINEERING MANAGEMENT BUREAU

BOAT RAMP MITIGATION SITE

ALIGNMENT AND SURVEY CONTROL PLAN OF PROPOSED WETLAND

CHECKED / APPROVED | DRAWN | SCALE AS SHOWN
SECTION MANAGER | DESIGNED | DATE
APPROVED | APPROVED
MANAGER, ENGINEERING MANAGEMENT BUREAU | MANAGER, NATURAL RESOURCE DIVISION

SHEET 4 OF 11 | PLAN NO. | DRAWING NO. C-1 | REVISION NO.

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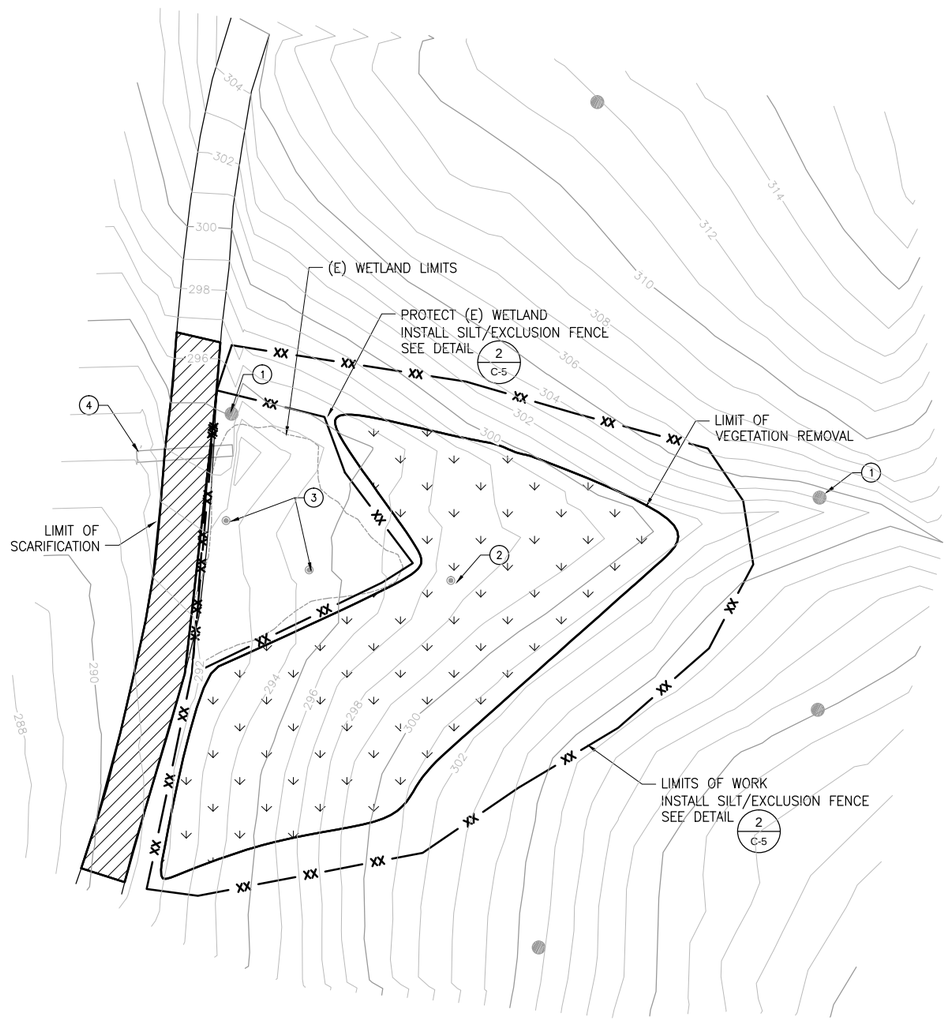

A C-3 **SITE PLAN**
1"=20'

ESTIMATED QUANTITIES	
ITEM	ESTIMATED QUANTITY
SCRUB CLEARING	0.5 AC
TOPSOIL STRIPPING & STOCKPILING*	250 CY
(E) PIEZOMETERS TO ABANDOM	1
SILT FENCE	1,000 LF
TREE PROTECTION	2

*QUANTITY BASED ON IN-SITU SOIL VOLUME

KEYNOTES

1. PROTECT EXISTING TREE, TYP (4 / C-5)
2. REMOVE EXIST PIEZOMETERS
3. EXIST PIEZOMETER TO REMAIN
4. EXIST 36" CULVERT TO BE DESIGNED, REMOVED & REPLACED BY OTHERS

LEGEND

REMOVE EXISTING VEGETATION AND STOCKPILE TOP 6-INCHES OF TOPSOIL

SCARIFY EXISTING ROAD

NOTES:

1. EXISTING PIEZOMETERS TO BE ABANDONED OR REMOVED IN THE GRADING AREA ACCORDING TO SAN MATEO COUNTY HEALTH DEPARTMENT ENVIRONMENTAL HEALTH SERVICES DIVISION STANDARDS.
2. WORK AREA TO BE FENCED OFF TO RESTRICT THE ACCESS OF HEAVY EQUIPMENT FROM PROTECTED AREAS DURING GRADING. FENCED AREA TO BE APPROVED BY CITY REPRESENTATIVE BEFORE COMMENCEMENT OF GRADING.
3. TREE LOCATIONS SHOWN MAY NOT BE EXACT. ALL TREES WITHIN THE PROJECT BOUNDARY SHALL BE IDENTIFIED BY THE CITY REPRESENTATIVE AND MARKED.
4. THE TOPSOIL SHOULD BE OBSERVED AND APPROVED BY CITY REPRESENTATIVE BEFORE STOCKPILING. IF TOPSOIL IS NOT APPROVED FOR USE, IT SHALL BE DISPOSED OF.
5. STOCKPILE AREA SHALL BE IN STAGING AREA.
6. EXACT LOCATION OF SILT/EXCLUSION FENCE TO BE DETERMINED BY CITY REPRESENTATIVE IN THE FIELD.

20' 0' 20' 40'

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ENGINEERING MANAGEMENT BUREAU

BOAT RAMP MITIGATION SITE

EXISTING CONDITION AND DEMOLITION PLAN OF PROPOSED WETLAND

CHECKED / APPROVED	DRAWN	SCALE AS SHOWN
SECTION MANAGER	DESIGNED	DATE
APPROVED	APPROVED	
MANAGER, ENGINEERING MANAGEMENT BUREAU	MANAGER, NATURAL RESOURCE DIVISION	

SHEET	PLAN NO.	DRAWING NO.	REVISION NO.
5 OF 11		C-2	

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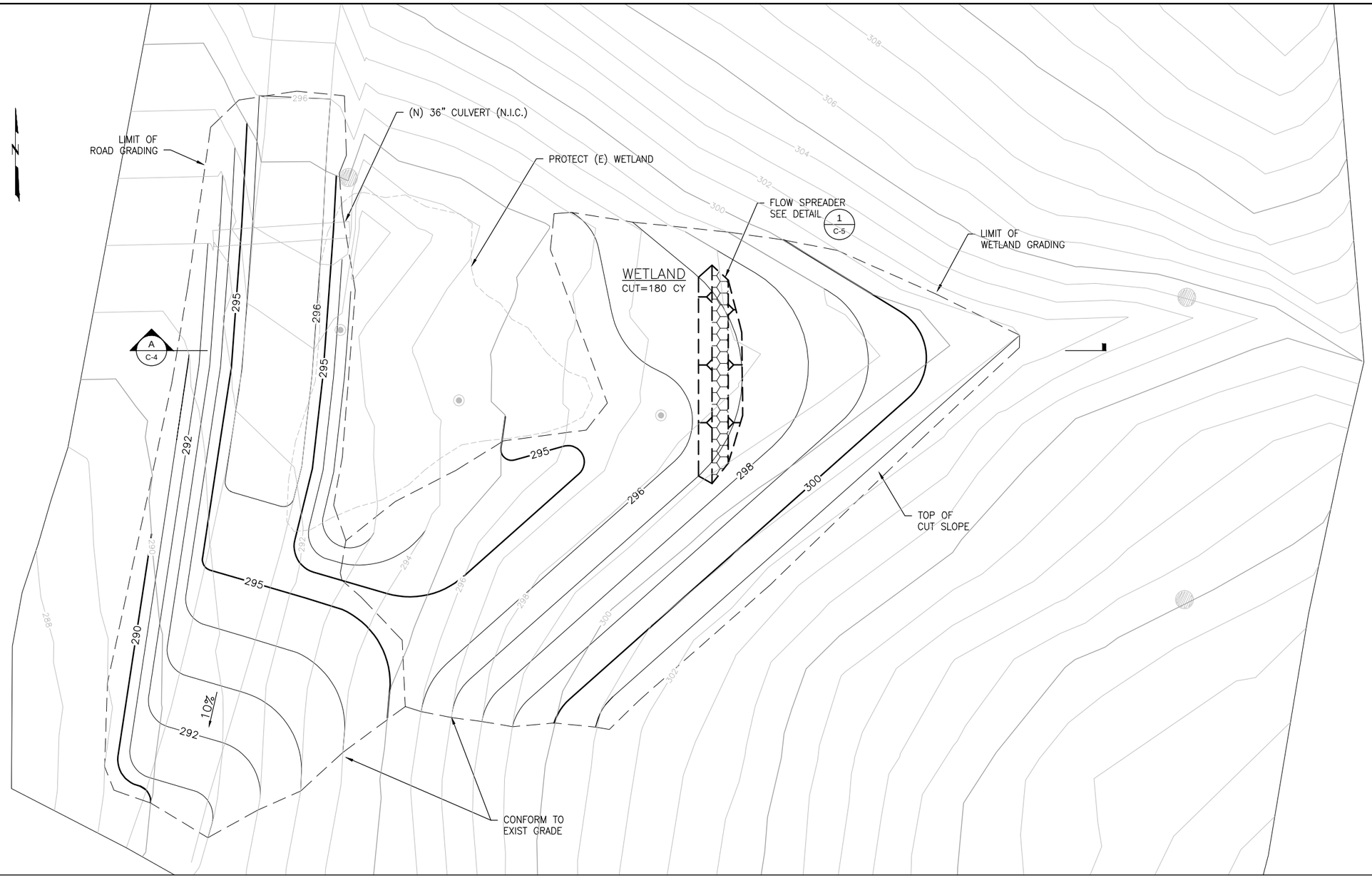

A C-2 **WETLAND GRADING PLAN**
1" = 10'

ESTIMATED QUANTITIES	
ITEM	ESTIMATED QUANTITY
TOTAL WETLANDS CUT*	180 CY
8" GEOCELL	45 LF
2" AGGREGATE BASE	1.5 CY

*QUANTITY BASED ON IN-SITU SOIL VOLUME

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BOAT RAMP MITIGATION SITE

PROPOSED WETLAND GRADING PLAN

CHECKED / APPROVED	DRAWN	SCALE AS SHOWN
SECTION MANAGER	DESIGNED	DATE
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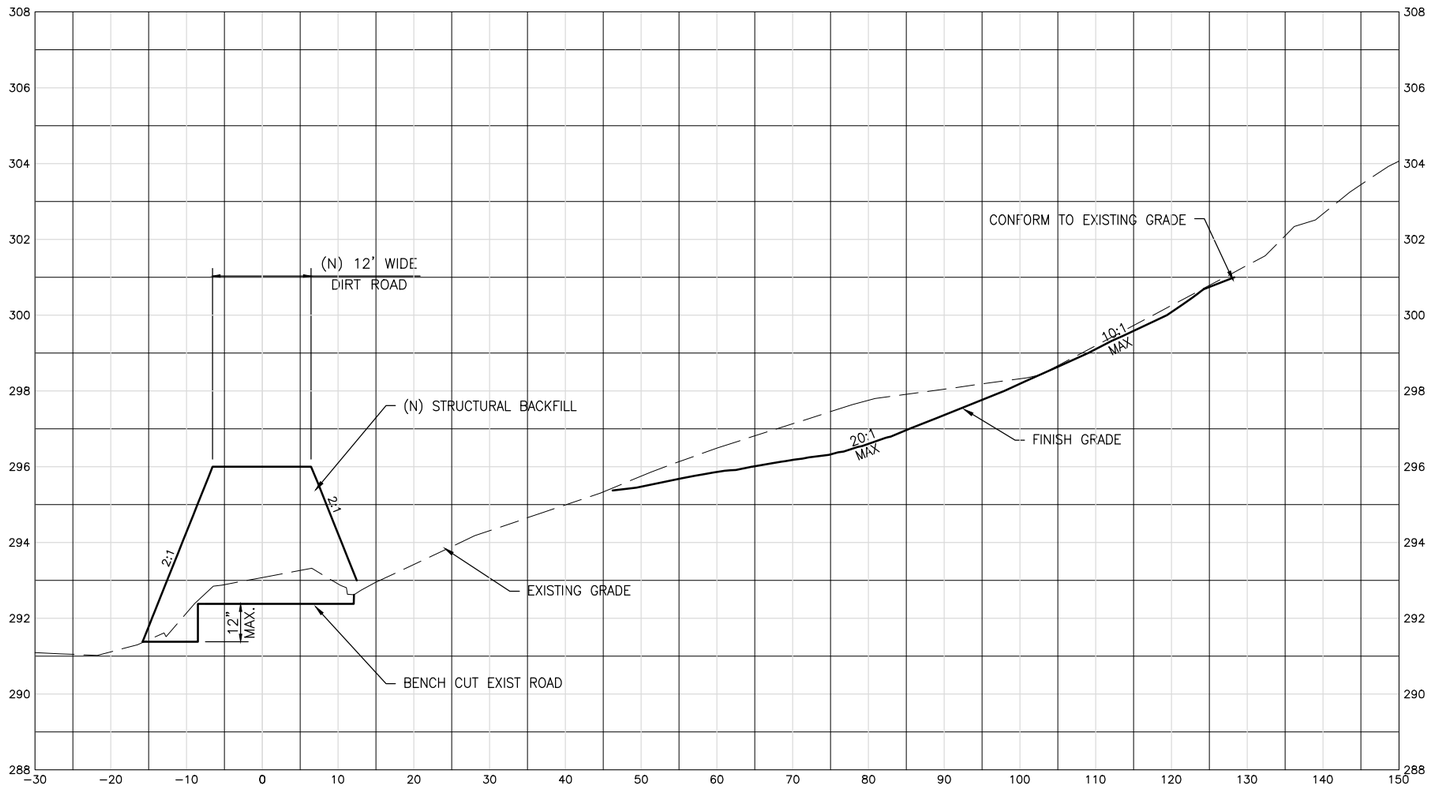
SHEET	PLAN NO.	DRAWING NO.	REVISION NO.
6 OF 11		C-3	

FILE: P:\Projects\10114 San Francisco Public Utilities Commission\10114-09-009 Habitat Reserve Program Mitigation\CAD\Boat Ramp\31 Sheets 06-C3 WETLAND GRADING.dwg Oct 31, 2010 - 4:21pm

0 4 FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES



A
C-3

WETLAND - SECTION

SCALE: 1"=10'H 1"=2'V

10' 0' 10' 20'

COORDINATE:
NAD83
ELEVATION
DATUM:
NGVD 1929

95% SUBMITTAL

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CONSTRUCTION

OCTOBER 29,
2010

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PROJECT ENGINEER	CQ	DRAWN	KVS
PROJECT MANAGER	MS	DESIGNED	CQ
APPROVAL	MS	CHECKED	ABW

NO.	DATE	DESCRIPTION	BY	APPR'D

REVISIONS

CONTRACT NO. WD-2651

CITY AND COUNTY OF SAN FRANCISCO
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INFRASTRUCTURE DIVISION
ENGINEERING MANAGEMENT BUREAU

BOAT RAMP MITIGATION SITE

WETLAND SECTION

CHECKED / APPROVED	DRAWN	SCALE AS SHOWN
SECTION MANAGER	DESIGNED	DATE
APPROVED	APPROVED	
MANAGER, ENGINEERING MANAGEMENT BUREAU	MANAGER, NATURAL RESOURCE DIVISION	

SHEET	PLAN NO.	DRAWING NO.	REVISION NO.
7 OF 11		C-4	

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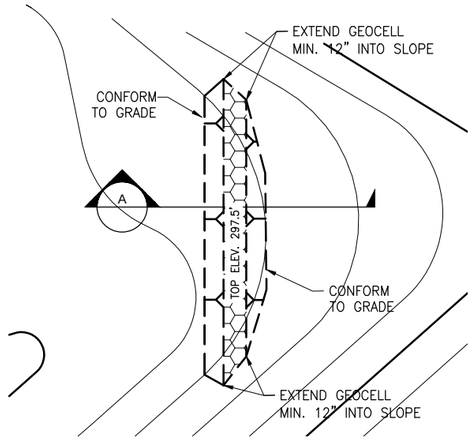
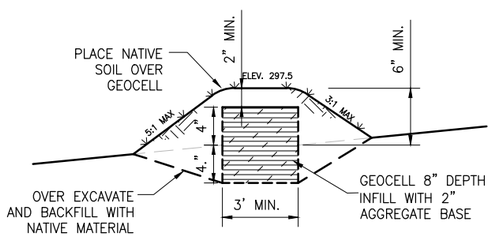




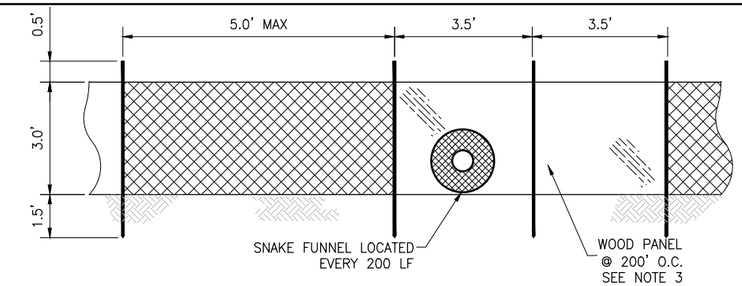
SECTION A

NOTES:

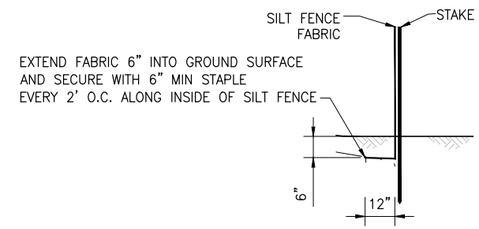
1. TOP ELEVATION OF FLOW SPREADER SHALL BE LEVEL THROUGHOUT ENTIRE LENGTH.
2. GEOCELL SHALL EXTEND A MINIMUM OF 12-INCHES INTO SIDE SLOPE OF GRADED WETLAND AREA.
3. FLOW SPREADER SHALL BE PLANTED AS SHOWN IN PLANTING PLAN.
4. NATIVE MATERIAL BACKFILL SHALL BE PLACED IN HORIZONTAL LAYERS NO MORE THAN 4-INCHES IN DEPTH AND COMPACTED TO 85% BY HAND TAMPING ONLY.

1 / C-3 FLOW SPREADER DETAIL

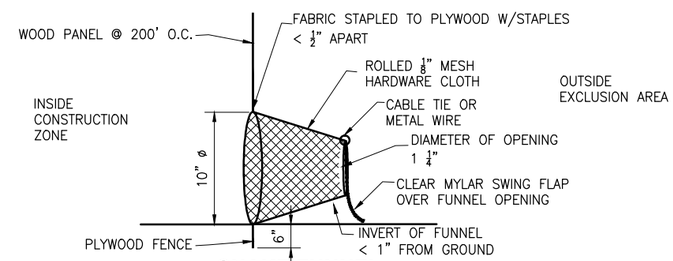
N.T.S.



SILT FENCE ELEVATION



SILT FENCE SECTION



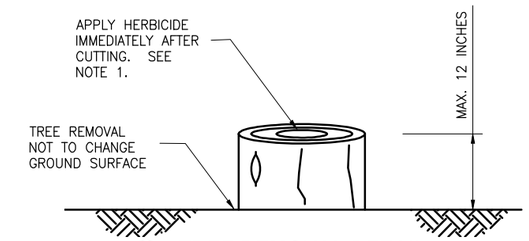
SNAKE FUNNEL

NOTES:

1. AT JOINTS, OVERLAP STAKES AND FOLD FENCE FABRIC AROUND EACH STAKE ONE FULL TURN, REFER TO TEMPORARY SILT FENCE POST AT JOINT DETAIL.
2. FOR END STAKE CONDITION FOLD FENCE FABRIC AROUND TWO STAKES ONE FULL TURN AND SECURE WITH FOUR STAPLES, REFER TO TEMPORARY SILT FENCE END POST DETAIL.
3. SNAKE FUNNEL SHALL WITH WOOD PANEL FENCE SHALL BE EVERY 200' O.C. THE WOOD PANEL IS MADE OF 4'X8' HARDWOOD OR PLYWOOD (EXTERIOR GRADE). THE SURFACE SHALL BE FREE OF KNOTS, CRACKS AND HOLES.

2 / C-2 SILT FENCE/EXCLUSION FENCE INSTALLATION DETAIL

N.T.S.

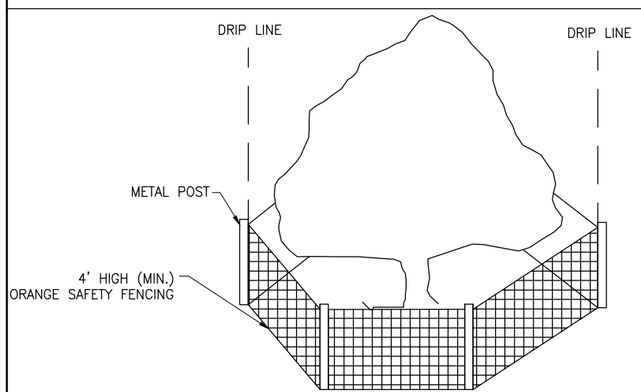


3 / C-2 TREE REMOVAL DETAIL

N.T.S.

NOTES:

1. TREES WITHIN AREA TO BE GRADED SHALL BE FULLY REMOVED INCLUDING ROOTBALL, EXCEPT TREES IDENTIFIED TO REMAIN & BE PROTECTED.



4 / C-2 TEMPORARY VEGETATION PROTECTION FENCING

N.T.S.

COORDINATE: NAD83
ELEVATION DATUM: NGVD 1929

95% SUBMITTAL

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REVISIONS

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ENGINEERING MANAGEMENT BUREAU

BOAT RAMP MITIGATION SITE

CONSTRUCTION DETAILS

CHECKED / APPROVED	DRAWN	SCALE AS SHOWN
SECTION MANAGER	DESIGNED	DATE
APPROVED MANAGER, ENGINEERING MANAGEMENT BUREAU	APPROVED MANAGER, NATURAL RESOURCE DIVISION	

SHEET	PLAN NO.	DRAWING NO.	REVISION NO.
8 OF 11		C-5	

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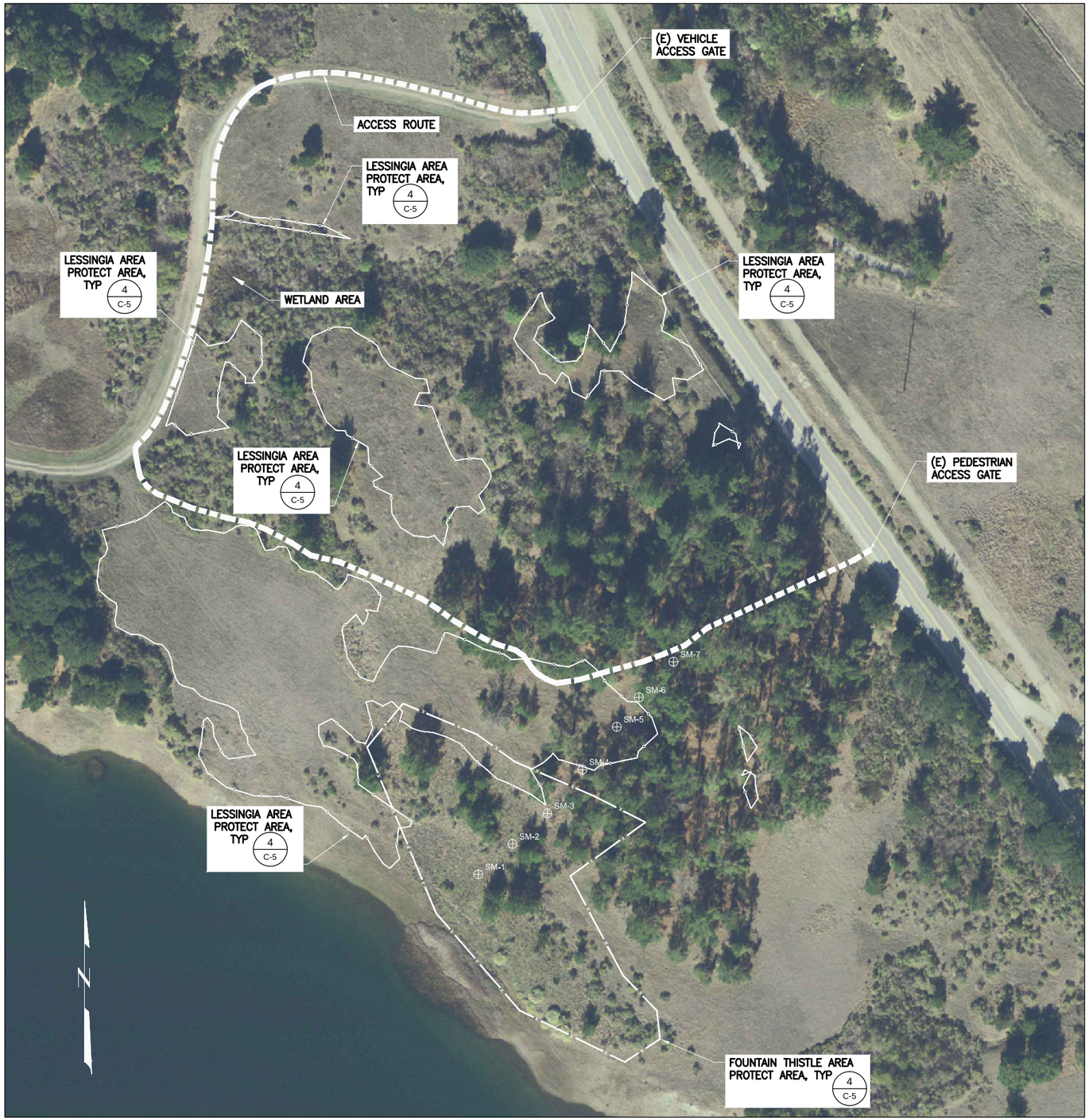

A / - **TREE REMOVAL PLAN**
1" = 60'

100' 0' 100' 200'

SOIL MOISTURE METERS			
SOIL MOISTURE METER	NORTHING	EASTING	ELEVATION (FT)
SM-1	2015269.28	6023721.71	287.63
SM-2	2015299.57	6023755.68	294.28
SM-3	2015330.00	6023790.56	299.62
SM-4	2015373.69	6023825.40	309.19
SM-5	2015416.26	6023859.59	319.72
SM-6	2015445.54	6023881.60	324.76
SM-7	2015480.98	6023916.12	330.07

FOUNTAIN THISTLE BOUNDARY						
SEGMENT	LENGTH	BEARING/DELTA	RADIUS	TANGENT	START	END
L1	44.68	N53°54'01"W			STA: 0+00.00 N: 2015381.92 E: 6023754.87	STA: 0+44.68 N: 2015408.25 E: 6023718.77
L2	80.62	N67°11'31"W			STA: 0+44.68 N: 2015408.25 E: 6023718.77	STA: 1+25.30 N: 2015439.50 E: 6023644.46
L3	56.32	S39°29'06"W			STA: 1+25.30 N: 2015439.50 E: 6023644.46	STA: 1+81.62 N: 2015396.03 E: 6023608.65
L4	178.65	S22°31'24"E			STA: 1+81.62 N: 2015396.03 E: 6023608.65	STA: 3+60.26 N: 2015231.01 E: 6023677.08
L5	127.84	S40°35'39"E			STA: 3+60.26 N: 2015231.01 E: 6023677.08	STA: 4+88.10 N: 2015133.94 E: 6023760.26
L6	116.92	S63°52'28"E			STA: 4+88.10 N: 2015133.94 E: 6023760.26	STA: 6+05.02 N: 2015082.46 E: 6023865.24
L7	41.83	N56°57'40"E			STA: 6+05.02 N: 2015082.46 E: 6023865.24	STA: 6+46.85 N: 2015105.26 E: 6023900.30
L8	28.41	N06°02'03"W			STA: 6+46.85 N: 2015105.26 E: 6023900.30	STA: 6+75.26 N: 2015133.52 E: 6023897.31
L9	49.00	N43°50'28"W			STA: 6+75.26 N: 2015133.52 E: 6023897.31	STA: 7+24.26 N: 2015168.86 E: 6023863.38
L10	111.81	N27°57'39"W			STA: 7+24.26 N: 2015168.86 E: 6023863.38	STA: 8+36.07 N: 2015267.62 E: 6023810.95
L11	92.05	N54°24'27"E			STA: 8+36.07 N: 2015267.62 E: 6023810.95	STA: 9+28.12 N: 2015321.19 E: 6023885.81
L12	57.17	N62°56'47"W			STA: 9+28.12 N: 2015321.19 E: 6023885.81	STA: 9+85.29 N: 2015347.19 E: 6023834.89
L13	87.23	N66°32'12"W			STA: 9+85.29 N: 2015347.19 E: 6023834.89	STA: 10+72.52 N: 2015381.92 E: 6023754.87

COORDINATE: NAD83
ELEVATION DATUM: NGVD 1929

95% SUBMITTAL

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OCTOBER 29, 2010

CONTRACT NO. WD-2651

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BOAT RAMP MITIGATION SITE

VEGETATION PROTECTION PLAN

PROJECT ENGINEER	CQ	DRAWN	MLK
PROJECT MANAGER	MS	DESIGNED	CQ
APPROVAL	MS	CHECKED	ABW

NO.	DATE	DESCRIPTION	BY	APPR'D

REVISIONS

CHECKED / APPROVED — DRAWN — SCALE AS SHOWN
SECTION MANAGER — DESIGNED — DATE
APPROVED — APPROVED
MANAGER, ENGINEERING MANAGEMENT BUREAU — MANAGER, NATURAL RESOURCE DIVISION

SHEET 9 OF 11 — PLAN NO. — DRAWING NO. L-1 — REVISION NO.

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0 4 FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES

A
-
TREE REMOVAL PLAN
1" = 60'

60' 0' 60' 120'

TREE REMOVAL		
TREE REMOVAL ZONE	DESCRIPTION	# OF TREES
1	CONVENTIONAL SYSTEM ZONE (LOW SENSITIVITY)	158
2	CRANE/BUCKET TRUCK/OTHER REACHING METHOD ZONE (MODERATE SENSITIVITY)	20
3	UNCONVENTIONAL METHODS ZONE (HIGH SENSITIVITY)	35

SOIL MOISTURE METERS			
SOIL MOISTURE METER	NORTHING	EASTING	ELEVATION (FT)
SM-1	2015269.28	6023721.71	287.63
SM-2	2015299.57	6023755.68	294.28
SM-3	2015330.00	6023790.56	299.62
SM-4	2015373.69	6023825.40	309.19
SM-5	2015416.26	6023859.59	319.72
SM-6	2015445.54	6023881.60	324.76
SM-7	2015480.98	6023916.12	330.07

NOTES:

1. TREE REMOVAL AREAS ARE APPROXIMATE. TREES TO BE REMOVED ARE TO BE IDENTIFIED AND MARKED BY CITY REPRESENTATIVE BEFORE REMOVAL.
2. TREE REMOVAL INCLUDES MONTEREY PINES. OAK TREES SHALL BE PROTECTED DURING TREE REMOVAL.
3. TREE REMOVAL AREAS AND SKIDDER ROUTE MAY ONLY BE ACCESSED BY APPROVED ACCESS ROUTES SHOWN ON SHEET G-2. EXISTING CREEKS AND WETLANDS MAY NOT BE DISTURBED, FILLED OR GRADED WITHOUT APPROVAL FROM THE CITY REPRESENTATIVE.
4. CONTRACTOR'S TREE REMOVAL, SKIDDER ROUTE AND HAULING PLAN MUST BE REVIEWED AND ACCEPTED BY THE CITY REPRESENTATIVE BEFORE WORK BEGINS.
5. TREES IN ZONE 3 SHALL BE REMOVED BY A METHOD THAT THAT DOES NOT AFFECT THE HEALTH OF THE FOUNTAIN THISTLE PLANT WITHIN THE AREA. THE METHOD SHALL BE APPROVED BY THE CITY REPRESENTATIVE BEFORE COMMENCEMENT OF WORK.
6. TREE REMOVAL SHALL NOT CHANGE THE ORIGINAL GROUND SURFACE.
7. MONITORING BIOLOGIST DESIGNATED BY THE CITY REPRESENTATIVE SHALL BE PRESENT DURING TREE REMOVAL AND VEGETATION MANAGEMENT.
8. A SILT FENCE/EXCLUSION FENCE SHALL BE INSTALLED AROUND EACH INDIVIDUAL ZONE (ZONES 1 THROUGH 3) OF TREE REMOVAL. THE FENCE SHALL TOTALLY ENCLOSE THE WORK AREAS, TYP (2 / C-5)

COORDINATE: NAD83
ELEVATION DATUM: NGVD 1929

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OCTOBER 29, 2010

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PROJECT ENGINEER	CQ	DRAWN	MLK
PROJECT MANAGER	MS	DESIGNED	CQ
APPROVAL	MS	CHECKED	ABW

NO.	DATE	DESCRIPTION	BY	APPR'D

REVISIONS

CONTRACT NO. WD-2651

CITY AND COUNTY OF SAN FRANCISCO
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TREE REMOVAL PLAN

CHECKED / APPROVED	DRAWN	SCALE AS SHOWN
SECTION MANAGER	DESIGNED	DATE
APPROVED MANAGER, ENGINEERING MANAGEMENT BUREAU	APPROVED MANAGER, NATURAL RESOURCE DIVISION	

SHEET	PLAN NO.	DRAWING NO.	REVISION NO.
10 OF 11		L-2	

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0 4 FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES

A
-
PLANTING PLAN
1" = 50'

50' 0' 50' 100'

PLANTING DATA		
NUMBER	PLANTING	ACRES
A	SERPENTINE BUNCHGRASS	5.99
B	SEASONAL WETLAND	0.22
C	FOUNTAIN THISTLE EXPANSION AREA YEAR 2	1.02

NOTES:

1. TREES TO REMAIN SHALL BE MARKED BY A BIOLOGIST DESIGNATED BY THE CITY REPRESENTATIVE AND PROTECTED.
2. PLANTING ZONE MIXES ARE LOCATED IN THE SPECIFICATIONS.
3. RESTORE STAGING AREA TO ZONE 1 PLANTING.

ESTIMATED QUANTITIES		
SCIENTIFIC NAME	ITEM	ESTIMATED QUANTITY
SALIX LASIOLEPIS	ARROYO WILLOW	100
SCIRPUS ACUTUS	BULRUSH	75
JUNCUS EFFUSUS	COMMON RUSH	75
JUNCUS PATENS	SPREADING RUSH	75
CAREX BARBARAE	SANTA BARBARA SEDGE	100
ELEOCHARIS MACROSTACHYS	COMMON SPIKERUSH	75
JUNCUS XIPHIODES	IRIS LEAF–RUSH	100
MIMULUS GUTTATUS	SEEP MONKEYFLOWER	100
DESCHAMPSIA CAESPITOSA VAR. CAESPITOSA	TUFTED HAIRGRASS	15 LBS
HORDEUM BRANCHYANTHERUM	MEADOW BARLEY	10 LBS
LEYMUS TRITICOIDES	CREEPING WILDRYE	15 LBS
NASELLA LEPIDA	FOOTHILL NEEDLEGRASS	15 LBS
MELICA CALIFORNICA	MELIC GRASS	15 LBS
ASTER CHILENSI	PACIFIC ASTER	10 LBS
DANTHONIA CALIFORNICA	CALIFORNIA OATGRASS	10 LBS
SISYRYNCHIUM BELLUM	BLUE–EYED GRASS	10 LBS
CASTILLEJA DENSIFLORA	PURPLE OWL'S CLOVER	8 LBS
CASTILLEJA EXSERTA	EXSERTED PAINTBRUSH	8 LBS
ESCHSCHOLZIA CALIFORNICA	CALIFORNIA POPPY	2 LBS
LASTHENIA CALIFORNICA	CALIFORNIA GOLDFIELDS	8 LBS
LAYIA PLATYGLOSSA	TIDY–TIPS	8 LBS
PLANTAGO ERECTA	CALIFORNIA PLANTAIN	6 LBS
BROMUS CARINATUS	CALIFORNIA BROME	40 LBS
ELYMUS GLAUCUS	BLUE WILD RYE	40 LBS
FESTUCA RUBRA	RED FESCUE	10 LBS
LUPINUS BICOLOR	BICOLOR LUPINE	10 LBS
NASELLA PULCHRA	PURPLE NEEDLEGRASS	10 LBS
VULPIA MICROSTACHYS	THREE WEEK FESCUE	10 LBS
LOMATIUM DASYCARPUM	HAIRY–FRUITED LOMATIUM	100
ERIOGONUM LATIFOLIUM	COAST BUCKWHEAT	100
LUPINUS ALBIFRONS	SILVERLEAF LUPINE	100

COORDINATE: NAD83
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PLANTING ZONES

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APPROVAL	MS	CHECKED	ABW

NO.	DATE	DESCRIPTION	BY	APPR'D

REVISIONS

CHECKED / APPROVED	DRAWN	SCALE AS SHOWN
SECTION MANAGER	DESIGNED	DATE
APPROVED	APPROVED	
MANAGER, ENGINEERING MANAGEMENT BUREAU	MANAGER, NATURAL RESOURCE DIVISION	
SHEET 11 OF 11	PLAN NO.	DRAWING NO. L–3
		REVISION NO.

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