Aug. 16, 2023

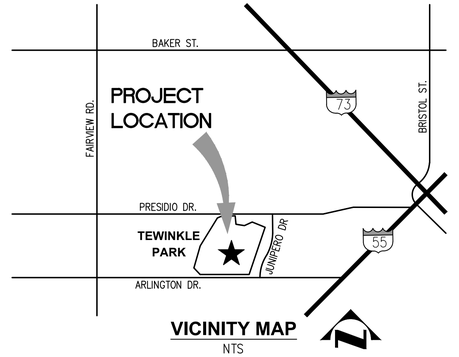
TEWINKLE PARK

LAKE RENOVATION

100% CONSTRUCTION DOCUMENT PLANS



SITE PLAN
1"=60'



VICINITY MAP
NTS

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SHEET LIST INDEX

Sheet Number	Sheet Title
W100	Title Sheet
W101	General Notes
W102	Structural Notes
W110	Erosion Control and Fencing Plan
W200	Overall Lake Plan
W210	Phase 1 – Drain Plan
W211	Phase 1 – Demolition Plan
W212	Irrigation Demolition Plan
W213	Phase 1 – Lake Piping and Utility Plan
W214	Phase 1 – Aeration Plan
W215	Phase 1 – Lake 1 Plan
W216	Irrigation Proposed Plan
W217	Planting Plan
W220	Phase 2 – Drain Plan
W221	Phase 2 – Demolition Plan
W222	Phase 2 – Lake Piping and Utility Plan
W223	Phase 2 – Aeration Plan
W224	Phase 2 – Lake 2 Plan
W225	Phase 2 – Stream Plan
W226	Phase 2 – Stream Plan
W227	Phase 2 – Sections
W231	Phase 3 – Demolition Plan
W232	Phase 3 – Island Piping and Utility Plan
W233	Phase 3 – Island Plan
W240	Demolition Details
W250	Lake Details
W251	Lake Details
W252	Lake Details
W253	Lake Details
W254	Lake Details
W255	Lake Details
W256	Lake Details
W257	Lake Details
W258	Lake Details
W259	Lake Details
W260	Irrigation Details
W300	Flow Schematic
W400	Pump Station Demolition Plan
W410	Pump Station Plan
W411	Pump Station Section
W450	Pump Station Details
W451	Pump Station Details
W500	Electrical General Notes
W501	Electrical Legend
W502	Electrical Single Line Diagram
W503	Electrical Power and Control Plan
W532	Electrical – Island Conduit Utility Plan
W600	CP SCHEMATIC
W601	CP SCHEMATIC
W602	CP SCHEMATIC

PLAN APPROVAL:

REVIEWED FOR CONFORMANCE WITH CITY OF COSTA MESA STANDARDS AND REQUIREMENTS. APPROVAL FOR CONSTRUCTION IS SUBJECT TO THE INFORMATION SHOWN HEREIN. THE CITY OF COSTA MESA AND THE UNDERSIGNED ARE NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS THAT MAY EXIST ON THESE PLANS.

CITY OF COSTA MESA _____ DATE: _____

R.C.E. NO.: _____ EXPIRES: _____

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PRELIMINARY DESIGN DRAWING

THIS DRAWING IS FOR DESIGN USE ONLY AND NOT INTENDED TO BE USED FOR CONSTRUCTION.

NO	BY	DATE	REVISIONS	DATE	APP.

PREPARED BY
ZIRANG SONG
PROJECT ENGINEER
R.C.E. NO. ---- #C85315
EXP: 06/30/2024

DRAWN: SP/RC
DESIGNED: BL
CHECKED: ZS
SCALE: AS SHOWN
DATE: 8/16/2023

TITLE: TITLE SHEET

JOB: TEWINKLE PARK
LAKE RENOVATION
COSTA MESA CA

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SHEET W100
01 OF 50 SHEETS

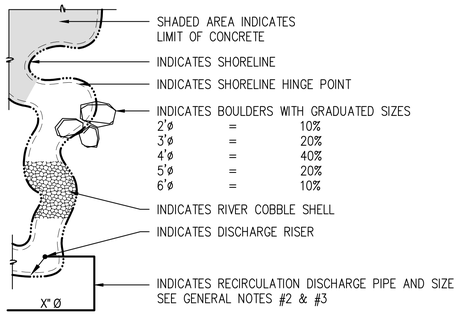
JOB NO. B836

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Xrefs: B836-07 36x24r.dwg, TopoSurvey.dwg, B836 - Lake Base.dwg
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Aug. 16, 2023

LEGEND:



NOTE: NOT ALL SYMBOLS MAY BE USED.

SUGGESTED CONSTRUCTION: PHASING SEQUENCE:

1. CONTRACTOR TO REVIEW ALL AS–BUILT DOCUMENTS AND DO SITE CONFIRMATION BEFORE ANY DEMOLITION OR CONSTRUCTION
2. LAKE 1 DEMOLITION – PHASE 1:
   a. CONTRACTOR TO DRAIN THE LAKE AND MOVE WILDLIFE TO TEMPORARY BASIN (LAKE 2) PER SUGGESTED LAKE CONSTRUCTION PROCEDURES
   b. CONTRACTOR TO FOLLOW DEMOLITION PLAN (SHEET W211) FOR ITEMS TO BE PROTECTED IN PLACE, REMOVED AND REUSED
   c. CONTRACTOR TO CHECK QUANTITY OF THE DEMOLITION ITEMS
3. LAKE 1 CONSTRUCTION – PHASE 1:
   a. INSTALL PIPING VALVES AND FITTING (SEE SHEET W213)
   b. REGRADING THE LAKE (FINE GRADING)
   c. INSTALL RPE LINER PER SPECIFICATIONS
   d. INSTALL SHORELINE, CONCRETE VENEER AND OTHER LAKE COMPONENTS (SEE SHEET W213)
   e. FILL THE LAKE
   f. INSTALL WALKWAY, BOULDERS, LANDSCAPE AND IRRIGATION
4. LAKE 2 DEMOLITION – PHASE 2:
   a. CONTRACTOR TO DRAIN THE LAKE AND MOVE WILDLIFE TO LAKE 1 PER SUGGESTED LAKE CONSTRUCTION PROCEDURES
   b. CONTRACTOR TO FOLLOW DEMOLITION PLAN (SHEET W221) FOR LAKE 2, STREAM AND PONDS ITEMS TO BE PROTECTED IN PLACE, REMOVED AND REUSED
   c. CONTRACTOR TO CHECK QUANTITY OF DEMOLITION ITEMS
5. LAKE 2 AND PONDS CONSTRUCTION – PHASE 2:
   a. INSTALL PIPING, VALVES AND FITTING (SEE SHEET W222)
   b. REGRADING THE LAKE (FINE GRADING)
   c. INSTALL RPE LINER PER SPECIFICATION
   d. INSTALL SHORELINE, CONCRETE VENEER AND OTHER LAKE COMPONENTS (SEE SHEET W224)
   e. INSTALL PONDS PIPING, FITTING AND VALVES INSIDE THE POND (SEE SHEET W224)
   f. DEMO THE EXISTING STREAMS, PONDS AND REBUILT THEM (SEE SHEET W225 AND W226)
   g. FILL THE LAKE
6. ISLAND CONSTRUCTION – PHASE 3:
   a. INSTALL SUMP, DRAINPIPE AND SUMP PUMP
   b. INSTALL PIPE CONNECT TO EXISTING SEWER SYSTEM (SEE SHEET W232)
   c. GRADING THE ISLAND PER SHEET W233
   d. INSTALL WALKWAY, GABION WALLS, BOULDERS, LANDSCAPE AND IRRIGATION

SUGGESTED LAKE CONSTRUCTION PROCEDURES:

LAKE DRAINAGE AND WILDLIFE REMOVAL:

1. REMOVE THE FREE STANDING WATER FROM THE POND AND DISCHARGE ON SITE INTO THE SEWER OUTLET UPON APPROVAL FROM THE LOCAL SEWER DISTRICT WHO WILL ACCEPT THE POND WATER. IN THE EVENT THAT THE SEWER DISTRICT DOES NOT ALLOW OR ACCEPT THE WATER, IT WILL HAVE TO BE HAULED OFF SITE FOR DISPOSAL. CONTRACTOR TO INCLUDE IN THEIR BID AND FEE FOR WATER REMOVAL. CONTRACTOR TO PROVIDE FEE FOR REMOVAL OF WATER THROUGH THE SANITARY SEWER. AS A BID ALTERNATE, CONTRACTOR TO PROVIDE FEE FOR TRANSPORTATION OF WATER OFF–SITE. CONTRACTOR TO PROVIDE THE UNIT COST FOR THE REMOVAL OF THE WATER IN THE BID FORMS.
2. FISH, TURTLES AND OTHER WILD LIFE SHALL BE REMOVED AND CARED FOR BY AN APPROVED WILDLIFE EXPERT (AQUABIO ENVIRONMENTAL TECHNOLOGIES – OFFICE : 310–397–3114). LAKE 2 CAN BE USED AS TEMPORARY POND FOR WILDLIFE. EXCESSIVE WILDLIFE SHALL BE DISPOSED OFF SITE.
3. RINSE SIDES OF POND AS THE LEVEL OF THE POND DROPS WITH WATER PROVIDED ONSITE. CONTRACTOR TO WORK ALONGSIDE WILDLIFE COMPANY SO WORK CAN BE DONE AT THE SAME TIME AS WATER LEVEL DECREASES.
4. CONTRACTOR TO REMOVE SEDIMENT FROM THE BOTTOM OF THE POND. CONTRACTOR TO PROVIDE FEE IN THE BID FORM. CONTRACTOR TO STOCKPILE THE SETTLEMENT FOR OTHER USE. CONTRACTOR TO PROVIDE NECESSARY ENZYMES (DIVERSIFIED WATERSCAPES, INC.) AS REQUIRED FOR REMOVAL OF ODORS EMANATING FROM THE SEDIMENT. ENZYMES NEED TO BE ADDED PRIOR TO COMPLETE REMOVAL OF THE WATER FROM THE LAKE AS RECOMMENDED BY THE ENZYME SUPPLIER. CONTRACTOR TO PROVIDE ENZYME LINE ITEM INCLUDING UNIT PRICE IN BID FORMS.
5. CONTRACTOR TO DETERMINE LIMITS OF SOIL LINER AND SEDIMENT. CONTRACTOR TO REMOVE EXISTING LINER.
6. CONTRACTOR TO GRADE THE LAKE PER PLAN AND INSTALL LAKE SHORELINE AND LINER PER SPECIFICATIONS.
7. REMOVE AND DISPOSE OF VEGETATION THAT OCCURS FROM THE PERIMETER OF THE POND PER THE ENVIRONMENTAL REPORT.
8. CONTRACTOR TO FILL THE LAKE, TRANSFER WILDLIFE TO LAKE 1 (INCLUDE STOCK MOSQUITO FISH AND LAKE 2 WILDLIFE) AND START LAKE 2 CONSTRUCTION W/SIMILAR PROCEDURE.
9. AT CONCLUSION OF PROJECT, CONTRACTOR SHALL REMOVE ALL EQUIPMENT AND DEBRIS RESULTING FROM THEIR WORK.

LAKE EDGE AND LINING CONSTRUCTION:

1. COMPACT THE SUBGRADE UNDER THE LAKE PER SOIL ENGINEER'S SPECIFICATIONS OR WITH A MINIMUM 90% RELATIVE DENSITY.
2. THE ELEVATIONS SHOWN ON THE LAKE PLANS IS DEPENDENT ON THE WATER SURFACE ELEVATIONS SHOWN.
3. VERIFY ELEVATIONS OF TOP OF SHORELINES AND HINGE POINTS AND CONFIRM THAT THE ELEVATION IS WITHIN PLUS OR MINUS 0.10 FOOT OF THE MAXIMUM WATER SURFACE ELEVATION SHOWN ON THE LAKE PLANS. FINE GRADE AS REQUIRED.
4. STAKE CRITICAL POINTS SUCH AS LAKE EDGE, PIPING PENETRATIONS, AND ALL LAKE COMPONENTS AS SHOWN ON THE PLANS.
5. PROVIDE LAYOUT OF LAKE SIDE OF FREEFORM LAKE EDGE ON THE GROUND FOR APPROVAL BY OWNER OR OWNER'S REPRESENTATIVE.
6. CONSTRUCT THE LAKE EDGE PER THE SHORELINE CONSTRUCTION DETAILS SHOWN ON THE LAKE PLANS. PROVIDE KEYWAY AS REQUIRED. NOT ALL LAKE SHORELINES WILL REQUIRE A KEYWAY.

PIPING NOTES:

1. THE PIPING PLAN IS DIAGRAMMATIC. ROUTING AND FINAL LAYOUT TO BE FIELD DETERMINED BY CONTRACTOR AND APPROVED BY ENGINEER PRIOR TO CONSTRUCTION.
2. PIPE TYPE, MATERIALS, AND SUPPORTS SHALL CONFORM TO THE PROJECT SPECIFICATIONS. IN ADDITION, PIPE SHALL BE IN CONFORMANCE WITH UBC, UPC, LOCAL AND NATIONAL BUILDING CODE REQUIREMENTS.
3. PARALLEL PIPE RUNS SHALL BE INSTALLED WITHIN COMMON TRENCHES AND OR PIPE SUPPORTS WHENEVER POSSIBLE.
4. ALL PIPING SHALL BE UNIFORMLY AND CONTINUOUSLY SUPPORTED OVER ITS ENTIRE LENGTH AND ROUTE.
5. ALL ELECTRICAL CONDUITS SHALL BE INSTALLED USING SWEEP FITTINGS IN CONFORMANCE WITH LOCAL AND NATIONAL BUILDING CODES.
6. PRESSURE TEST ALL PIPING PER PROJECT SPECIFICATIONS. KEEP PIPING UNDER PRESSURE TESTING CONDITIONS DURING TRENCH BACKFILL/COMPACTION AND DURING THE INSTALLATION OF WATER FEATURE CONCRETE BASIN.
7. ALL UNDERGROUND AND EQUIPMENT PIPING SHALL BE PVC SCHEDULE 40 UNLESS OTHERWISE DESIGNATED WITHIN PLANS AND SPECIFICATIONS.
8. ALL PIPING RUNS SHALL HAVE THRUST BLOCKS.

LAKE GENERAL NOTES:

1. THESE PLANS ARE INTENDED FOR LAKE/WATER FEATURE CONSTRUCTION USE ONLY. SEE DRAWINGS BY RESPECTIVE DESIGNERS FOR OTHER ASPECTS OF CONSTRUCTION.
2. ALL RECIRCULATION PIPE SHALL BE INSTALLED WITHOUT HIGH POINTS. PREVENT AIR TRAPS AND PROVIDE A 3'–0" (MIN) COVER OUTSIDE WATER FEATURE LIMITS AND A 1'–0" (MIN) COVER WITHIN UNLESS OTHERWISE NOTED ON THE PLANS.
3. ALL PVC PIPE SHALL BE PER THE FOLLOWING SCHEDULE UNLESS OTHERWISE NOTED:

30"ø AND LARGER	80 PSI PVC PIPE OR AS SPECIFIED ON PLAN
15"ø – 27"ø	80 PSI PVC IRRIGATION PIPE (P.I.P.)
10"ø – 12"ø	100 PSI PVC IRRIGATION PIPE (P.I.P.)
8"ø	RING–TITE (RT) CLASS 160
6"ø AND SMALLER	SCHEDULE 40 IPS PVC PIPE

4. PROVIDE THRUST BLOCK ON EVERY PIPE BEND AS REQUIRED. SEE THRUST BLOCK BEARING AREA TABLE ON THE DETAIL SHEETS FOR THRUST BLOCK SCHEDULING.
5. PAINT ALL EXPOSED PVC PIPE WITHIN THE LAKE/WATER FEATURE AREA AND VISIBLE FROM THE SHORELINE WITH BLACK OR DARK BLUE PAINT SUITABLE FOR PIPE MATERIAL.
6. WATER LEVELS SHOWN INDICATE AVERAGE SURFACE ELEVATIONS DURING OPERATION. ELEVATIONS MAY DIFFER DURING SHUTDOWN CONDITIONS.
7. ALL MANUFACTURER PRODUCT CALL–OUTS SHOWN IN THESE PLANS SHALL BE CONSIDERED "OR APPROVED EQUAL" UNLESS OTHERWISE NOTED. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR SUBSTITUTIONS FOR APPROVAL.
8. THE LAKE/WATER FEATURE CONTRACTOR SHALL VERIFY THE AVAILABLE ELECTRICAL POWER PRIOR TO PURCHASING EQUIPMENT.
9. REFER TO SPECIFICATIONS FOR COLOR, TYPE OF BOULDERS TO BE USED, AND INSTALLATION REQUIREMENTS. THE LAKE/WATER FEATURE CONTRACTOR SHALL FURNISH AND INSTALL BOULDERS SUBJECT TO APPROVAL OF THE OWNER. NOTIFY OWNER'S REPRESENTATIVE PRIOR TO SETTING ANY BOULDERS.
10. TOP OF CONCRETE SHORELINE & CONTROL WEIR ELEVATIONS SHALL BE INSTALLED ±0.05' OF ELEVATION AS SHOWN ON PLANS.
11. CONCRETE FOR LAKE CONSTRUCTION UNLESS OTHERWISE SPECIFIED ON PLANS SHALL BE 6 SACK MINIMUM PEA GRAVEL PUMP MIX AND SHALL BE ABLE TO BE PUMPED AT A 3" SLUMP WITH A TRAILER MOUNTED GROUT PUMP WITH A 2" HOSE.
12. THE MEMBRANE LINER SHALL BE 30MIL RPE – SEE LINER SPECIFICATIONS FOR ADDITIONAL INFORMATION.

ABBREVIATIONS:

AR	AIR RELEASE
AIR/VAC	AIR RELEASE AND VACUUM RELIEF
APP EQ	APPROVED EQUAL
BL	BALL VALVE
BF	BIOFILTER
BLDG	BUILDING
BV	BUTTERFLY VALVE
CV	CHECK VALVE
CONC	CONCRETE
CONT	CONTINOUS
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
EW	EACH WAY
EOP	EDGE OF PAVEMENT
EL	ELEVATION
ENG'G	ENGINEERING
EQ	EQUALIZER
FF	FINISH FLOOR
FG	FINISH GRADE
FLG	FLANGE
GAL	GALLONS
GA	GAUGE
GPM	GALLONS PER MINUTE
GV	GATE VALVE
HP	HORSE POWER
HZ	HERTZ
IE	INVERT ELEVATION
IRR	IRRIGATION
MFR	MANUFACTURER
MAX	MAXIMUM
MG	MILLION GALLON
MIN	MINIMUM
OC	ON CENTER
PH	PHASE
PUE	PUBLIC UTILITY EASEMENT
PVC	POLYVINYL CHLORIDE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PS	PUMP STATION
RB	REDUCER BUSHING
REINF	REINFORCED
RCP	REINFORCED CONCRETE PIPE
R/W	RIGHT OF WAY
SCH	SCHEDULE
SPECS	SPECIFICATIONS
SF	SQUARE FEET
THK	THICK
TOF	TOP OF FOOTING
TOP	TOP OF PAVEMENT
TOS	TOP OF SHORELINE
TOW	TOP OF WALL
TDH	TOTAL DYNAMIC HEAD
TYP	TYPICAL
V	VOLTS
WS	WATER SURFACE
WP	WETLAND PLANTER
WQF	WATER QUALITY FILTER

PRELIMINARY NOT FOR CONSTRUCTION

PRELIMINARY DESIGN DRAWING

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NO	BY	DATE	REVISIONS	DATE	APP.

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EXP: 09/30/2024

DRAWN: SP/RC
SCALE: AS SHOWN
DESIGNED: BL
CHECKED: ZS
DATE: 8/16/2023

TITLE: GENERAL NOTES

JOB: TEWINKLE PARK
LAKE RENOVATION
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SHEET W101
02 OF 50 SHEETS

JOB NO. B836

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Aug. 16, 2023

STRUCTURAL TESTS AND SPECIAL INSPECTIONS:

1. STRUCTURAL TESTS AND INSPECTIONS SHALL BE ACCORDING TO CURRENT CALIFORNIA BUILDING CODE.
2. THE SPECIAL INSPECTIONS IDENTIFIED ARE IN ADDITION TO THOSE REQUIRED BY SECTION 110 OF THE CODE, AS AMENDED. SPECIAL INSPECTION IS NOT A SUBSTITUTE FOR INSPECTION BY THE GOVERNING JURISDICTION.
3. AN INDEPENDENT TESTING AGENCY AND SPECIAL INSPECTORS WILL BE RETAINED BY THE OWNER (NOT THE CONTRACTOR OR ANY OTHER PERSON RESPONSIBLE FOR THE WORK) TO PERFORM TESTS AND SPECIAL INSPECTIONS. THE CONTRACTOR SHALL PROVIDE ACCESS AND FURNISH SAMPLES TO THE AGENCY AS REQUIRED.
4. IF INITIAL TESTS OR INSPECTIONS MADE BY THE OWNER'S TESTING AGENCY REVEAL THAT ANY PORTION OF THE WORK DOES NOT COMPLY WITH THE CONTRACT DOCUMENTS, ADDITIONAL TESTS, INSPECTIONS AND NECESSARY REPAIRS WILL BE MADE AT THE CONTRACTOR'S EXPENSE.
5. A CERTIFICATE OF SATISFACTORY COMPLETION OF WORK REQUIRING SPECIAL INSPECTION MUST BE COMPLETED AND SUBMITTED TO THE GOVERNING JURISDICTION AND SEOR.
6. PERIODIC OR CONTINUOUS PRESENCE AND INSPECTION BY THE PROJECT OR SPECIAL INSPECTOR ARE REQUIRED FOR THE FOLLOWING TYPES OF WORK WHERE OCCURS:

REQUIRED VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION (CBC TABLE 1705.3)

	VERIFICATION AND INSPECTION	FREQUENCY
1.	INSPECTION OF REINFORCING STEEL AND PLACEMENT.	P
3.	INSPECT BOLTS TO BE INSTALLED IN CONCRETE.	C
4.	INSPECTION OF (POST-INSTALLED) ANCHORS INSTALLED IN HARDENED CONCRETE. INSTALLERS MUST BE CERTIFIED BY MANUFACTURER IN ACCORDANCE WITH ITS ICC REPORTS.	P
5.	VERIFYING USE OF REQUIRED DESIGN MIX.	P
6.	AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	C
7.	INSPECTION OF CONCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	C
8.	INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	P
12.	INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	P

REQUIRED VERIFICATION AND SPECIAL INSPECTION OF SOILS (CBC TABLE 1705.6)

	VERIFICATION AND INSPECTION TASK	FREQUENCY
1.	VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	P
2	VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	P
3	PERFORM CLASSIFICATION AND TESTING OF CONTROLLED FILL MATERIALS	P
4	VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESS DURING PLACEMENT AND COMPACTION OF CONTROLLED FILL.	C
5	PRIOR TO PLACEMENT OF CONTROLLED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	P

NOTE:
C = CONTINUOUS INSPECTION
P = PERIODIC INSPECTION

EXPANSION (WEDGE) ANCHORS:

1. WHEN INSTALLING DRILLED-IN ANCHORS IN NON-PRESTRESSED CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING.
2. EXPANSION OR WEDGE ANCHORS SHALL BE:
   A. INTO CONCRETE: HILTI KB-TZ (ICC ESR-1917)
3. INSTALL ANCHORS IN ACCORDANCE WITH THE ICC REPORT.
4. PROVIDE STAINLESS STEEL FASTENERS FOR EXTERIOR USE OR WHEN EXPOSED TO WEATHER. PROVIDE GALVANIZED CARBON STEEL ANCHORS AT OTHER LOCATIONS UNLESS OTHERWISE NOTED.
5. IF REINFORCEMENT IS ENCOUNTERED DURING DRILLING, ABANDON HOLE AND SHIFT LOCATION TO AVOID THE REINFORCEMENT. PROVIDE A MINIMUM OF 2 ANCHOR DIAMETERS OR 1", WHICHEVER IS LARGER, OF SOUND CONCRETE BETWEEN THE ANCHOR AND THE ABANDONED HOLE. FILL THE ABANDONED HOLE WITH NON-SHRINK GROUT. IF THE ANCHOR MAY NOT BE SHIFTED AS NOTED ABOVE, CONTACT THE SEOR.
6. LOCATE REINFORCEMENT AND CONFIRM FINAL ANCHOR LOCATIONS PRIOR TO FABRICATING PLATES, MEMBERS OR OTHER STEEL ASSEMBLIES ATTACHED WITH ANCHORS.
7. INSTALL ANCHORS TO THE FOLLOWING SPECIFICATIONS:

HILTI KB-TZ ANCHOR							
ANCHOR DIAMETER (IN)	⅜	½		⅝		¾	
EMBED (IN)	2	2	3¼	3⅛	4	3¾	4¾
MIN HOLE DEPTH (IN)	2⅝	2⅝	4	3⅞"	4¾"	4⅝	5¾"
INSTALL TORQUE (LB-FT)	25	40	40	60	60	110	110
MIN THICKNESS (IN)	4	4	6	5	6	6	8

8. MAINTAIN A MINIMUM EDGE DISTANCE OF 1.5 TIMES THE ANCHOR EMBEDMENT AND MINIMUM ANCHOR SPACING OF 3 TIMES THE ANCHOR EMBEDMENT UNLESS OTHERWISE NOTED. CONTACT SEOR IF THIS CANNOT BE ACCOMPLISHED.

EPOXY DOWELS:

1. WHEN INSTALLING DRILLED-IN DOWELS IN EXISTING NON-PRESTRESSED REINFORCED CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS.
2. DOWELS SHALL BE EPOXIED WITH THE FOLLOWING MATERIALS:
   A. INTO CONCRETE: HILTI HIY-HY 200 WITH SAFESET SYSTEM (ICC ESR-3187)
   HILTI HIT-RE 500-SD (ICC ESR-2322)
   SIMPSON SET-XP (ICC ESR-2508)
3. DOWEL SHALL CONFORM TO ASTM A615 GRADE 60 REINFORCING STEEL.
4. REMOVE GREASE, OIL, RUST AND OTHER LAITANCE FROM RODS AND DOWELS PRIOR TO INSTALLATION.
5. IF REINFORCEMENT IS ENCOUNTERED DURING DRILLING, ABANDON HOLE AND SHIFT THE ANCHOR LOCATION TO AVOID REINFORCEMENT. PROVIDE A MINIMUM OF 2 ANCHOR OR DOWEL DIAMETERS OR 1", WHICHEVER IS LARGER, OF SOUND CONCRETE BETWEEN THE ANCHOR OR DOWEL AND THE ABANDONED HOLE. FILL THE ABANDONED HOLE WITH NON-SHRINK GROUT. IF THE ANCHOR OR DOWEL MAY NOT BE SHIFTED AS NOTED ABOVE, CONTACT THE SEOR.
6. LOCATED REINFORCEMENT AND CONFIRM FINAL ANCHOR LOCATIONS PRIOR TO FABRICATING PLATES, MEMBERS OR OTHER STEEL ASSEMBLIES ATTACHED WITH EPOXY ANCHORS.

STRUCTURAL GENERAL NOTES:

1. MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE CURRENT EDITION OF THE CALIFORNIA BUILDING CODE, TITLE 24, THE ORDINANCES OF THE LOCAL BUILDING OFFICIAL, AND THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
2. REFERENCE TO CODES, RULES REGULATIONS, STANDARDS, MANUFACTURER'S INSTRUCTIONS OR REQUIREMENTS OF REGULATORY AGENCIES IS TO THE LATEST EDITION OF EACH IN EFFECT AT THE DATE OF SUBMISSION OF BID UNLESS THE DOCUMENT DATE IS SHOWN.
3. DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, USE SIMILAR DETAILS OF CONSTRUCTION, SUBJECT TO REVIEW BY THE STRUCTURAL ENGINEER OF RECORD (SEOR).
4. VERIFY ALL DIMENSIONS, ELEVATIONS AND SITE CONDITIONS BEFORE STARTING WORK. NOTIFY LANDSCAPE ARCHITECT OF DISCREPANCIES.
5. DO NOT SCALE THE DRAWINGS.
6. TOLERANCES SHALL BE ACCORDING TO THE BUILDING CODE.
7. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES. NOTIFY THE LANDSCAPE ARCHITECT OF ANY DISCREPANCIES AND RESOLVE BEFORE PROCEEDING WITH THE WORK.
8. THE CONTRACTOR SHALL SUPERVISE, DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES. THE SUPPORTING SERVICES BY THE SEOR, WHETHER PERFORMED PRIOR TO, DURING, OR AFTER CONSTRUCTION, ARE PERFORMED SOLELY FOR THE PURPOSE OF ASSISTING IN QUALITY CONTROL AND IN ACHIEVING CONFORMANCE WITH CONTRACT DRAWINGS; BUT THEY DO NOT GUARANTEE THE CONTRACTOR'S PERFORMANCE AND SHALL NOT BE CONSIDERED AS SUPERVISION OF CONSTRUCTION.
9. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROVIDING A SAFE PLACE TO WORK AND MEETING THE REQUIREMENTS OF ALL APPLICABLE JURISDICTIONS. EXECUTE WORK TO ENSURE THE SAFETY OF PERSONS AND ADJACENT PROPERTY AGAINST DAMAGE BY FALLING DEBRIS AND OTHER HAZARDS RELATED WITH THIS WORK.
10. CONCRETE SLAB ON GRADE HAS NOT BEEN DESIGNED FOR THE FOLLOWING:
    A. ANY CONSTRUCTION LOADS (I.E. CRANES, CONCRETE TRUCKS OR ETC.)
    B. ANY SPECIFIC OCCUPANT SERVICE LOADS (I.E. FORKLIFTS, STORAGE RACKS OR ETC.)

REINFORCING STEEL:

1. REINFORCING SHALL BE FABRICATED ACCORDING TO THE "MANUAL OF STANDARD PRACTICE FOR REINFORCED CONCRETE CONSTRUCTION" AND SHALL CONFORM TO ASTM A615, GRADE 60.
2. PROVIDE REINFORCING SHOWN OR NOTED CONTINUOUS IN LENGTHS AS LONG AS PRACTICABLE.
3. TERMINATE REINFORCING STEEL IN STANDARD HOOKS UNLESS OTHERWISE SHOWN.
4. ALL REINFORCING STEEL INTERRUPTED BY STRUCTURAL STEEL SHALL TERMINATE WITHIN 1" OF STEEL SURFACE WITH A 90° STANDARD HOOK UNLESS OTHERWISE NOTED.
5. ANCHOR BOLTS, DOWELS AND OTHER EMBEDDED ITEMS SHALL BE SECURELY TIED IN PLACE BEFORE CONCRETE IS PLACED.
6. ACCURATELY POSITION, SUPPORT AND SECURE REINFORCEMENT FROM DISPLACING DUE TO FORMWORK, CONSTRUCTION, OR CONCRETE PLACEMENT OPERATIONS. LOCATE AND SUPPORT REINFORCING BY METAL CHAIRS, RUNNERS, BOLSTERS, SPACERS AND HANGERS AT A MAXIMUM SPACING OF 3'-0".
7. SUBMITTAL OF REBAR SHOP DRAWINGS IS NOT REQUIRED BY THE SEOR FOR THIS PROJECT. REBAR SHOP DRAWINGS WILL NOT BE REVIEWED BY THE SEOR.
8. FIELD BENDING OF REINFORCING STEEL SHALL NOT BE ALLOWED UNLESS APPROVED BY THE SEOR.
9. MILL CERTIFICATIONS SHALL BE SUBMITTED FOR REVIEW.

SOILS AND FOUNDATIONS:

1. LOCATE AND PROTECT EXISTING UTILITIES TO REMAIN DURING AND/OR AFTER CONSTRUCTION.
2. REMOVE ABANDONED FOOTINGS, UTILITIES, ETC. WHICH INTERFERE WITH NEW CONSTRUCTION, UNLESS OTHERWISE INDICATED.
3. NOTIFY THE ENGINEER IF ANY BURIED STRUCTURES NOT INDICATED, SUCH AS CESSPOOLS, CISTERNS, FOUNDATIONS, ETC. ARE FOUND.
4. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR EXCAVATION PROCEDURES INCLUDING LAGGING, SHORING, UNDERPINNING AND PROTECTION OF EXISTING CONSTRUCTION.
5. REMOVE LOOSE SOIL AND STANDING WATER FROM EXCAVATIONS PRIOR TO PLACING CONCRETE.
6. EXCAVATIONS MUST BE ACCEPTED BY ENGINEER OF RECORD PRIOR TO PLACING REINFORCING AND CONCRETE. NOTIFY THE EOR WHEN EXCAVATIONS ARE READY FOR INSPECTION.
7. PLACE BACKFILL BEHIND RETAINING WALLS AFTER CONCRETE HAS ATTAINED FULL DESIGN STRENGTH.
8. MECHANICALLY COMPACT EXCAVATION BACKFILLS IN LAYERS. PROVIDE 90% MINIMUM COMPACTION IN ACCORDANCE WITH THE ASTM D1557 TEST METHOD UON IN SOILS REPORT. PROVIDE 95% MINIMUM COMPACTION FOR FILL BENEATH FOOTINGS.
9. SCARIFY AND RECOMPACT TOP 6 INCHES OF SOIL BENEATH FILL PER ITEM ABOVE.

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NO	BY	DATE	REVISIONS	DATE	APP.
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2					
3					
4					
5					

PREPARED BY
ZHANG SONG
PROJECT ENGINEER
R.C.E. NO. — #C89315
EXP: 09/30/2024

DRAWN: SP/RC
SCALE: AS SHOWN
DESIGNED: BL
CHECKED: ZS
DATE: 8/16/2023

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TITLE: **STRUCTURAL NOTES**

JOB: **TEWINKLE PARK**
LAKE RENOVATION
COSTA MESA *CA*

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SHEET **W102**
03 OF 50 SHEETS

JOB NO. B836

Xrefs: B836-07 36x24v.dwg
Dimscale = 24, LTscale = 1, PSltscale = 1, ACAD Ver. = 23.0s (LMS Tech); Viewtwin = 1

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Aug. 16, 2023



EROSION CONTROL LEGENDS:

- STABILIZED CONSTRUCTION ENTRANCE
- SAND AND GRAVEL BAGS
- CONSTRUCTION FENCE AND SILT FENCE
- LIMIT OF WORK

STORM WATER POLLUTION PREVENTION NOTES:

1. EFFECTIVE COMBINATION OF EROSION AND SEDIMENT CONTROL BMP'S SHALL BE IMPLEMENTED TO PROTECT THE EXPOSED PORTIONS OF THE SITE FROM EROSION AND TO PREVENT SEDIMENT DISCHARGES.
2. SEDIMENTS AND OTHER POLLUTANTS SHALL BE RETAINED ON SITE UNTIL PROPERLY DISPOSED OF, AND MAY NOT BE TRANSPORTED FROM THE SITE VIA SHEET FLOW, SWALES, AREA DRAINS, NATURAL DRAINAGE COURSES OR WIND.
3. STOCKPILES OF EARTH AND OTHER CONSTRUCTION–RELATED MATERIALS SHALL BE PROTECTED FROM BEING TRANSPORTED FROM THE SITE BY THE FORCES OF WIND AND WATER FLOW.
4. FUELS, OILS, SOLVENTS, AND OTHER TOXIC MATERIALS SHALL BE STORED IN ACCORDANCE WITH THEIR LISTING AND ARE NOT TO CONTAMINATE THE SOIL AND SURFACE WATERS. ALL APPROVED STORAGE CONTAINERS ARE TO BE PROTECTED FROM THE WEATHER. SPILLS MUST BE CLEANED UP IMMEDIATELY AND DISPOSED OF IN A PROPER MANNER. SPILLS MAY NOT BE WASHED INTO THE DRAINAGE SYSTEM, NOR BE ALLOWED TO SETTLE OR INFILTRATE INTO SOIL.
5. EXCESS OR WASTE CONCRETE MAY NOT BE WASHED INTO THE PUBLIC WAY OR ANY OTHER DRAINAGE SYSTEM. PROVISIONS SHALL BE MADE TO RETAIN CONCRETE WASTES ON SITE UNTIL THEY CAN BE DISPOSED OF AS SOLID WASTES.
6. TRASH AND CONSTRUCTION SOLID WASTES SHALL BE DEPOSITED INTO A COVERED RECEPTACLE TO PREVENT CONTAMINATION OF RAINWATER AND DISPERSAL BY WIND.
7. SEDIMENTS AND OTHER MATERIALS MAY NOT BE TRACKED FROM THE SITE BY VEHICULAR TRAFFIC. THE CONSTRUCTION ENTRANCE ROADWAYS MUST BE STABILIZED SO AS TO INHIBIT SEDIMENTS FROM BEING DEPOSITED INTO THE PUBLIC WAY. ACCIDENTAL DEPOSITS SHALL BE SWEPT UP IMMEDIATELY AND MAY NOT BE WASHED DOWN BY RAIN OR OTHER MEANS.
8. STORM WATER POLLUTION PREVENTION DEVICES AND / OR PRACTICES SHALL BE MODIFIED AS NEEDED AS THE PROJECT PROGRESSES TO ENSURE EFFECTIVENESS.

NOTE: ANY ADDITIONAL EROSION/SEDIMENT CONTROLS MEASURES CALLED OUT BY THE SWPPP WOULD SUPERSEDE THOSE SHOWN ON THIS SHEET.

EROSION CONTROL KEYNOTES:

1. INSTALL GRAVEL BAG BARRIER PER CASQA BMP SE–6
2. INSTALL STABILIZED CONSTRUCTION ENTRANCE/EXIT PER CASQA BMP TC–1
3. INSTALL SILT FENCE PER CASQA BMP SE–1

NORTH

40 20 0 40 80

EROSION CONTROL & FENCING PLAN

SCALE: 1"=40'

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PRELIMINARY DESIGN DRAWING

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PREPARED BY
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EXP: 09/30/2024

DRAWN SP/RC | SCALE AS SHOWN
DESIGNED BL
CHECKED ZS | DATE 8/16/2023

TITLE: EROSION CONTROL AND FENCING PLAN

JOB: TEWINKLE PARK
LAKE RENOVATION
COSTA MESA CA

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SHEET W110
04 OF 50 SHEETS

JOB NO. B836

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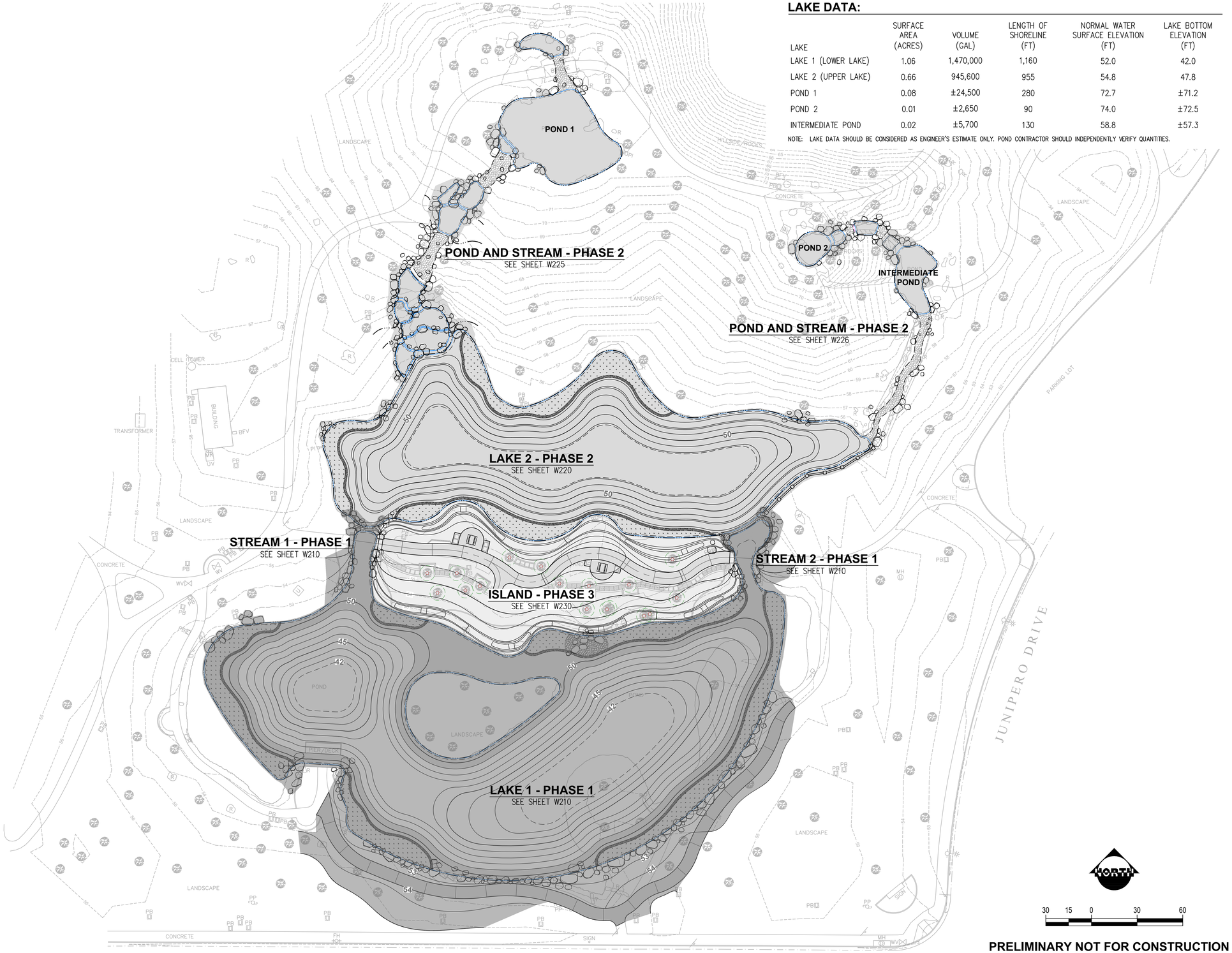
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LAKE DATA:

LAKE	SURFACE AREA (ACRES)	VOLUME (GAL)	LENGTH OF SHORELINE (FT)	NORMAL WATER SURFACE ELEVATION (FT)	LAKE BOTTOM ELEVATION (FT)
LAKE 1 (LOWER LAKE)	1.06	1,470,000	1,160	52.0	42.0
LAKE 2 (UPPER LAKE)	0.66	945,600	955	54.8	47.8
POND 1	0.08	±24,500	280	72.7	±71.2
POND 2	0.01	±2,650	90	74.0	±72.5
INTERMEDIATE POND	0.02	±5,700	130	58.8	±57.3

NOTE: LAKE DATA SHOULD BE CONSIDERED AS ENGINEER'S ESTIMATE ONLY. POND CONTRACTOR SHOULD INDEPENDENTLY VERIFY QUANTITIES.



OVERALL LAKE - PLAN VIEW
SCALE: 1"=30'

NORTH

30 15 0 30 60

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DESIGNED BL
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TITLE
OVERALL LAKE PLAN

JOB
TEWINKLE PARK
LAKE RENOVATION
COSTA MESA ***CA***

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SHEET
W200
05 OF 50 SHEETS

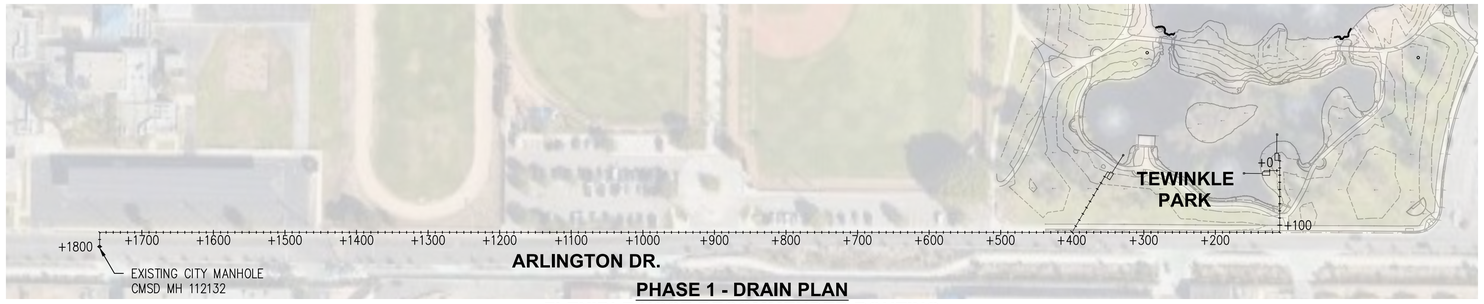
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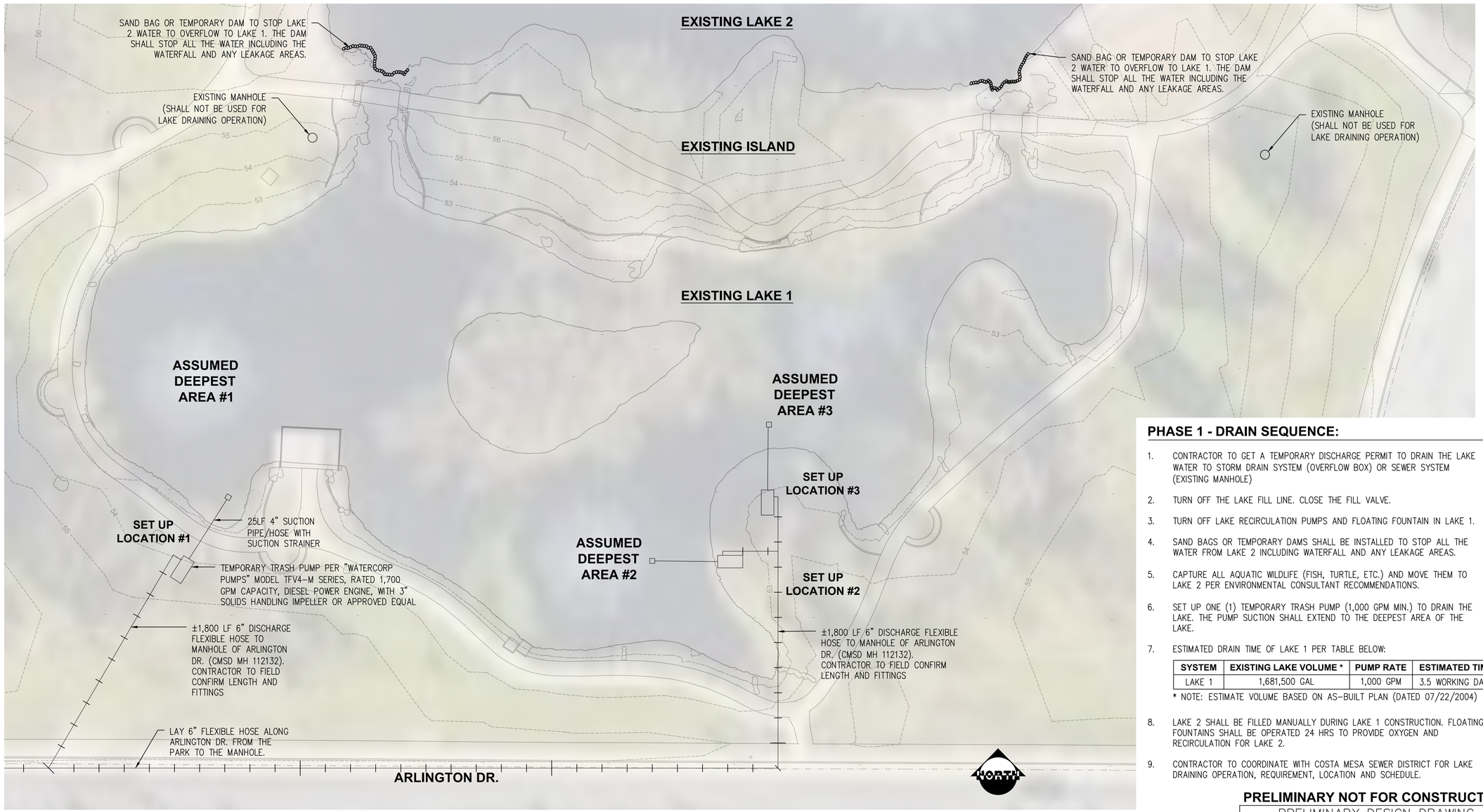
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Dimscale = 24; LTscale = 1; PSltscale = 1; ACAD Ver. = 23.0s (LMS Tech); Viewtwin = 1

Aug. 16, 2023



PHASE 1 - DRAIN PLAN
FLEXIBLE HOSE RECOMMENDED ROUTING

SCALE: 1"=100'



PHASE 1 - DRAIN PLAN

SCALE: 1"=20'

PHASE 1 - DRAIN SEQUENCE:

1. CONTRACTOR TO GET A TEMPORARY DISCHARGE PERMIT TO DRAIN THE LAKE WATER TO STORM DRAIN SYSTEM (OVERFLOW BOX) OR SEWER SYSTEM (EXISTING MANHOLE)
2. TURN OFF THE LAKE FILL LINE. CLOSE THE FILL VALVE.
3. TURN OFF LAKE RECIRCULATION PUMPS AND FLOATING FOUNTAIN IN LAKE 1.
4. SAND BAGS OR TEMPORARY DAMS SHALL BE INSTALLED TO STOP ALL THE WATER FROM LAKE 2 INCLUDING WATERFALL AND ANY LEAKAGE AREAS.
5. CAPTURE ALL AQUATIC WILDLIFE (FISH, TURTLE, ETC.) AND MOVE THEM TO LAKE 2 PER ENVIRONMENTAL CONSULTANT RECOMMENDATIONS.
6. SET UP ONE (1) TEMPORARY TRASH PUMP (1,000 GPM MIN.) TO DRAIN THE LAKE. THE PUMP SUCTION SHALL EXTEND TO THE DEEPEST AREA OF THE LAKE.
7. ESTIMATED DRAIN TIME OF LAKE 1 PER TABLE BELOW:

SYSTEM	EXISTING LAKE VOLUME *	PUMP RATE	ESTIMATED TIME
LAKE 1	1,681,500 GAL	1,000 GPM	3.5 WORKING DAYS

* NOTE: ESTIMATE VOLUME BASED ON AS-BUILT PLAN (DATED 07/22/2004)

8. LAKE 2 SHALL BE FILLED MANUALLY DURING LAKE 1 CONSTRUCTION. FLOATING FOUNTAINS SHALL BE OPERATED 24 HRS TO PROVIDE OXYGEN AND RECIRCULATION FOR LAKE 2.
9. CONTRACTOR TO COORDINATE WITH COSTA MESA SEWER DISTRICT FOR LAKE DRAINING OPERATION, REQUIREMENT, LOCATION AND SCHEDULE.

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NO	BY	DATE	REVISIONS	DATE	APP.

PREPARED BY
ZHANG SONG
PROJECT ENGINEER
R.C.E. NO. #C89315
EXP. 06/30/2024

DRAWN SP/RC | SCALE AS SHOWN
DESIGNED BL
CHECKED ZS | DATE 8/16/2023

TITLE: PHASE 1 - DRAIN PLAN

JOB: TEWINKLE PARK
LAKE RENOVATION
COSTA MESA CA

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SHEET W210
06 OF 50 SHEETS

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Xrefs: B836-07 36x24x.dwg; B836-07 - Drain Sequence Notes.dwg; TopoSurvey.dwg
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DEMOLITION LEGENDS:

ITEM TO BE REMOVED

ITEM TO PROTECT IN PLACE

CONTAINS ITEMS TO REUSE OR RELOCATE

REUSE OR RELOCATE KEYNOTES:

R1 REMOVE, STORE AND RE-INSTALL THE DOCK AFTER PHASE 1 CONSTRUCTION

R2 REMOVE AND REUSE ANY BOULDERS INSIDE THE LAKES

R3 REMOVE, STORE AND RE-INSTALL THE FLOATING FOUNTAINS (6 TYP. TOTAL) AND UNDERWATER CABLES

DEMOLITION GENERAL NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF DEMOLITION ITEMS, PROTECT IN PLACE ITEMS AND QUANTITY PRIOR TO START OF CONSTRUCTION WITH OWNER AND/OR OWNER'S REPRESENTATIVE. AS SHOWN ON THE DEMO PLANS.
2. CONTRACTOR TO COORDINATE WITH OWNER OR OWNER'S REPRESENTATIVES FOR ITEMS TO BE DEMOLISHED.
3. CONTRACTOR TO DISPOSE OF DEBRIS OFF-SITE.
4. CONTRACTOR TO REPLACE ANY ITEMS DAMAGED OR REMOVED THAT WAS NOT SPECIFICALLY IDENTIFIED IN THIS PLAN.

DEMOLITION KEYNOTES:

D1 REMOVE BIOFILTER AT BOTTOM OF LAKE 1

D2 REMOVE LAKE 1 PIPES
- a. 4" BIOFILTER PIPES
- b. 12" BIOFILTER BACKWASH PIPE
- c. 14"ø INTAKE PIPE
- d. RECIRCULATION PIPES (8", 6", 4", 2", 2 ½", 1½")

D3 REMOVE EXISTING UNDERGROUND VAULT NEXT TO THE OVERFLOW BOX

D4 REMOVE LAKE 1 PENINSULAS

D5 REMOVE LAKE 1 EXISTING SHORELINE & LINER

D6 REMOVE WALKWAY

D7 REMOVE LAKE 2 AND PONDS PIPES
- a. LAKE 2 RECIRCULATION PIPES (8", 6", 4", 3", 2 ½", 2", 1½")
- b. POND 1 PIPES
- c. INTERMEDIATE POND PIPES

D8 REMOVE LAKE 2 SHORELINE AND LINER

D9 REMOVE EXISTING VAULT

D10 REMOVE 2½"ø WATER LEVEL SENSOR EQUALIZER

D11 REMOVE EXISTING FLOATING FOUNTAIN JUNCTION BOX (CONTRACTOR TO CONFIRM THE LOCATION)

D12 REMOVE EXISTING FLOATING FOUNTAIN CONDUITS (CONTRACTOR TO CONFIRM THE COUNDUIT ROUTES)

D13 REMOVE EXISTING TREES IN DEMOLITION AREA. LOCATION TO BE CONFIRM WITH CITY (5 TYP).

D14 REMOVE EXISTING WATERFALL

D15 REMOVE EXISTING OZONE BOX AND PIPES INSIDE THE LAKE (3 PLCS. AT LAKE 1 AND 1 PLC. AT LAKE 2)

D16 REMOVE OZONE EXISTING PIPING

D17 REMOVE EXISTING UNDERGROUND VAULT (SCREEN VAULT)

D18 REMOVE EXISTING STREAM #3 AND POND 1

D19 REMOVE EXISTING STREAM #4 AND POND 2

D20 REMOVE EXISTING STREAM #5 AND INTERMEDIATE POND

D21 REMOVE EXISTING WATERFALL FOR REBUILT

D22 REMOVE 8" AND 4"ø POND 1 DISCHARGE

D23 REMOVE 8"ø POND 2 DISCHARGE

D24 REMOVE VALVE AND VALVE BOX

D25 REMOVE 4"ø INTERMEDIATE POND DISCHARGE

D26 REMOVE EXISTING WIRING AND CONDUIT FROM WATER LEVEL SENSOR TO FILL VALVE

D27 REMOVE EXISTING POTABLE WATER CONTROL VALVE

D28 REMOVE EXISTING OVER SHORELINE DISCHARGE

PROTECT-IN-PLACE KEYNOTES:

P1 PROTECT IN PLACE 14"ø INTAKE PIPE

P2 PROTECT IN PLACE 2½"ø WATER LEVEL SENSOR EQUALIZER

~~P3 PROTECT IN PLACE WIRING & CONDUIT FROM WATERLEVEL SENSOR TO FILL VALVE~~ **NOT USED**

~~P4 PROTECT IN PLACE 8"ø & 4"ø POND 1 DISCHARGES~~ **NOT USED**

~~P5 PROTECT IN PLACE 8"ø POND 2 DISCHARGE~~ **NOT USED**

~~P6 PROTECT IN PLACE VALVES IN VALVE BOX~~ **NOT USED**

~~P7 PROTECT IN PLACE 4"ø INTERMEDIATE POND DISCHARGE~~ **NOT USED**

P8 PROTECT IN PLACE BRIDGES BETWEEN LAKE 1 & LAKE 2

P9 PROTECT IN PLACE ALL PONDS SHORELINE, LINER, AND FEATURES

P10 PROTECT IN PLACE WOODEN BRIDGE

P11 PROTECT IN PLACE ALL EXISTING TREES IN AREA OF RENOVATION (26 TYP). NO ACTION ON TREES OUTSIDE OF RENOVATION AREA.

P12 PROTECT IN PLACE OVERFLOW BOX

P13 PROTECT IN PLACE IRRIGATION VALVE BOX FOR FUTURE IMPROVEMENT

P14 PROTECT IN PLACE ELECTRICAL WIRES AND CONDUITS FOR FLOATING FOUNTAIN

P15 PROTECT IN PLACE CONCRETE PULL BOX FOR FUTURE IMPROVEMENT

P16 PROTECT IN PLACE UNDERGROUND VAULT FOR FUTURE IMPROVEMENT

P17 PROTECT IN PLACE ELECTRICAL BOX FOR FUTURE IMPROVEMENT

P18 PROTECT IN PLACE EXISTING PIPING

P19 PROTECT IN PLACE EXISTING SEWER MANHOLE

P20 PROTECT IN PLACE EXISTING IRRIGATION ISOLATION VALVE

P21 CAP AND ABANDON IN PLACE EXISTING OZONE PIPE

P22 PROTECT IN PLACE EXISTING RECYCLED WATER PIPES AND VALVE BOX

P23 PROTECT IN PLACE EXISTING IRRIGATION VALVE BOX

P24 PROTECT IN PLACE EXISTING POTABLE WATER PIPES

P25 PROTECT IN PLACE EXISTING POTABLE WATER VALVE BOX

P26 PROTECT IN PLACE EXISTING POTABLE WATER DISCHARGE

P27 PROTECT IN PLACE DISCHARGE VALVE

P28 PROTECT IN PLACE LAKE 1 ISLAND

PUMP STATION DEMOLITION SEE SHEET W400

LAKE 2

ISLAND

LAKE 1
WS 52.0

P11 8 TYP.

ROCK

BRIDGE

SIGN

ARLINGTON DRIVE

NORTH

20 10 0 20 40

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PHASE 1 - DEMOLITION PLAN

SCALE: 1"=20'

NO	BY	DATE	REVISIONS	DATE	APP.

PREPARED BY
ZIRANG SONG
PROJECT ENGINEER
R.C.E. NO. #C89315
EXP: 06/30/2024

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DESIGNED BL
CHECKED ZS | DATE 8/16/2023

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TITLE
PHASE 1 - DEMOLITION PLAN

JOB
TEWINKLE PARK
LAKE RENOVATION
COSTA MESA CA

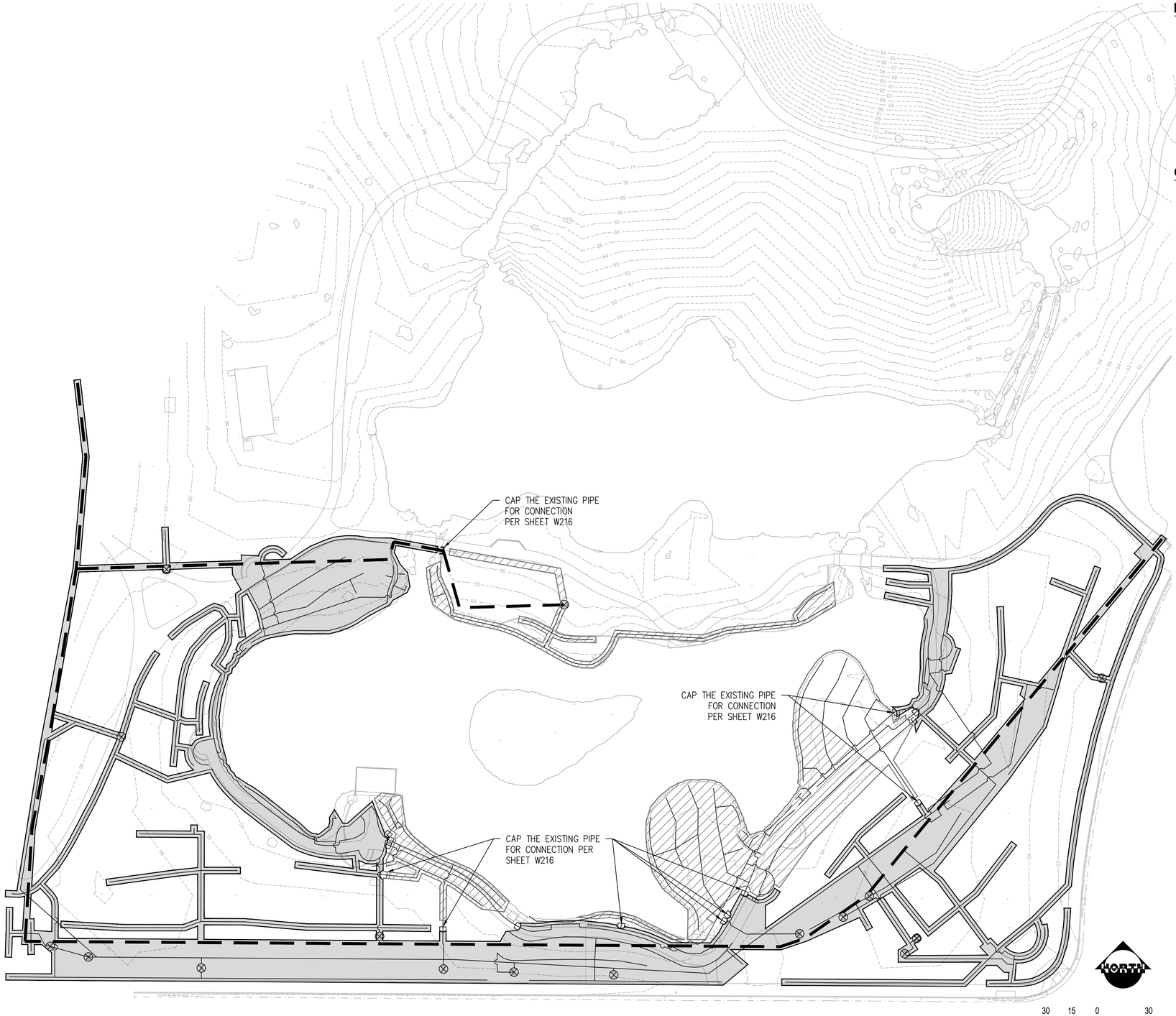
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SHEET
W211
07 OF 50 SHEETS

JOB NO. B836

Xrefs: B836-07 36x24v.dwg; TopoSurvey.dwg; B836 - Existing Piping.dwg; B836-07 - Demo Keynotes.dwg; B836 - Lake Base.dwg
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Aug. 16, 2023



IRRIGATION DEMOLITION PLAN

SCALE: 1"=30'

DEMOLITION LEGENDS:

- ITEM TO BE REMOVED
- ITEM TO PROTECT IN PLACE
- EXISTING MAIN IRRIGATION LINE
- EXISTING IRRIGATION LINE
- EXISTING IRRIGATION VALVE

GENERAL IRRIGATION NOTES

1. ALL MAINLINE PIPINS AND CONTROL WIRES UNDER PAVING SHALL BE INSTALLED IN SEPARATE SLEEVES.
2. ALL LATERAL LINE PIPING UNDER PAVING SHALL BE PVC SCHEDULE 40 AND SHALL BE INSTALLED PRIOR TO PACING. THE PIPING SHALL BE A MINIMUM OF 12" BELOW SUB GRADE.
3. PIPE SIZE SHALL CONFORM TO THOSE SHOWN ON THE DRAWINGS. NO SUBSTITUTION OF SMALLER PIPE SIZES SHALL BE PERMITTED BUT SUBSTITUTION OF LARGER SIZES MAY BE APPROVED. ALL DAMAGES AND REJECTED PIPE SHALL BE REMOVED FROM THE SITE AT THE TIME OF THE REJECTION
4. THE 120 VAC ELECTRICAL POWER SOURCE AT THE CONTROLLER LOCATION SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR. MAKE THE FINAL CONNECTION FROM THE SOURCE TO THE CONTROLLER OR AS ALLOWED BY LOCAL CODES.
5. ALL SPRINKLER HEADS SHALL BE SET PERPENDICULAR TO FINISH GRADE UNLESS OTHERWISE SPECIFIED OR DIRECTED.
6. THIS DESIGN IS DIAGRAMMATIC. ALL PIPING, VALVES, OR OTHER SIMILAR APPURTENANCES SHOWN IN PACED AREAS IS FOR DESIGN AND GRAPHIC CLARIFICATION AND SHALL BE INSTALLED IN IRRIGATED PLANTING AREA WHEREVER POSSIBLE INSTALL ALL VALVES AND BOXES IN SHRUB AREAS AND NOT IN TURF AREAS
7. IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTACTOR TO FAMILIARIZED HIMSELF WITH ALL GRADE DIFFERENCES, LOCATION OF WALLS, RETAINING WALL, STRUCTURES, AND UTILITIES OF THE SITE. COORDINATE WORK WITH OTHER TRADES AND CONTRACTORS FOR THE LOCATION AND INSTALLATION OF ALL IRRIGATION EQUIPMENT. REPAIR AND/OR REPLACE ALL ITEMS DAMAGED BY WORK PERFORMED.
8. DO NOT WILLFULLY INSTALL THE INSTALLATION SYSTEM WHEN IT IS OBVIOUS THAT THE FIELD CONDITIONS VARY FROM THE DRAWINGS AND THAT UNKNOWN OBSTRUCTIONS, GRADE DIFFERENCES, OR DIFFERENCES IN THE AREA DIMENSIONS EXIST THAT HAVE NOT BEEN INDICATED ON THE ENGINEERING. SUCH ITEMS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNERS AUTHORIZED REPRESENTATIVE, ASSUME FULL RESPONSIBILITY FOR ANY NECESSARY REVISIONS IN THE WENT THAT HIS NOTIFICATION IS HEEDED,
9. FLUSH AND ADJUST ALL SPRINKLER HEADS AND VALVES FOR THEIR OPTIMUM OPERATION
10. VERIFY WATER PRESSURE PRIOR TO CONSTRUCTION, REPORT ANY DIFFERENCES BETWEEN THE WATER PRESSURE SHOWN IN THE PLANS AND THE PRESSURE READING IN THE FIELD TO THE OWNERS AUTHORIZED REPRESENTATIVE
11. ALL IRRIGATION EQUIPMENT NOT OTHERWISE DETAILED OR SPECIFIED HEREIN SHALL BE INSTALLED PER THE MANUFACTURES RECOMMENDATIONS AND SPECIFICATIONS.
12. REFER TO THE SPECIFICATIONS FOR ADDITIONAL DETAILED INFORMATION.
13. ALL IRRIGATION AREAS SHALL BE 100% COVERED WITHIN IRRIGATION SPRAY ZONE
14. CONTRACTOR TO VERIFY THE EXISTING IRRIGATION PIPE PRIOR TO INSTALLATION OR DEMOLITION.

PRELIMINARY NOT FOR CONSTRUCTION

PRELIMINARY DESIGN DRAWING

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NO	BY	DATE	REVISIONS	DATE	APP.

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PREPARED BY
ZHANG SONG
PROJECT ENGINEER
R.C.E. NO. — #C89315
EXP: 09/30/2024

DRAWN: SP/RC
DESIGNED: BL
CHECKED: ZS
SCALE: AS SHOWN
DATE: 8/16/2023

TITLE: IRRIGATION DEMOLITION PLAN

JOB: TEWINKLE PARK
LAKE RENOVATION
COSTA MESA CA

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SHEET W212
08 OF 50 SHEETS

JOB NO. B836

Xrefs: B836-07 36x24v.dwg; TopoSurvey.dwg; B836-07 - Irrigation Base.dwg; B836 - Lake Base.dwg
Dimscale = 24, LTscale = 1; PSltscale = 1; ACAD Ver. = 23.0s (LMS Tech); Viewtwist = 1

R:\B836\Engineering\B836-07 (Construction Documents)\sheets\B836-07 W212 Irrigation Demolition Plan.dwg - by ble on 03/08/23 at 9:47:56 AM
Tab: B836-07 W212 Irrigation Demolition Plan

Aug. 16, 2023



LEGENDS:

- DISCHARGE PIPE
- INTAKE PIPE
- RW — RECLAIMED WATER
- W — POTABLE WATER
- SS — SANITARY SEWER
- SD — STORM DRAIN
- E — ELECTRICAL SERVICE
- POINT OF CONNECTION
- ALUM DISCHARGE W/ VALVE AT SHORELINE
- DISCHARGE JET W/ VALVE AT SHORELINE
- XXX — INDICATES RECIRCULATION FLOW (GPM)
- (X) — INDICATES UTILITY REQUIREMENT
- [X] — INDICATES PIPING COMPONENTS

PIPING NOTES:

1. THE PIPING PLAN IS DIAGRAMMATIC. ROUTING AND FINAL LAYOUT TO BE FIELD DETERMINED BY CONTRACTOR AND APPROVED BY ENGINEER PRIOR TO CONSTRUCTION.
2. PIPE TYPE, MATERIALS, AND SUPPORTS SHALL CONFORM TO THE PROJECT SPECIFICATIONS. IN ADDITION, PIPE SHALL BE IN CONFORMANCE WITH UBC, UPC, LOCAL AND NATIONAL BUILDING CODE REQUIREMENTS.
3. PARALLEL PIPE RUNS SHALL BE INSTALLED WITHIN COMMON TRENCHES AND OR PIPE SUPPORTS WHENEVER POSSIBLE.
4. ALL PIPING SHALL BE UNIFORMLY AND CONTINUOUSLY SUPPORTED OVER ITS ENTIRE LENGTH AND ROUTE.
5. ALL ELECTRICAL CONDUITS SHALL BE INSTALLED USING SWEEP FITTINGS IN CONFORMANCE WITH LOCAL AND NATIONAL BUILDING CODES.
6. PRESSURE TEST ALL PIPING PER PROJECT SPECIFICATIONS. KEEP PIPING UNDER PRESSURE TESTING CONDITIONS DURING TRENCH BACKFILL/COMPACTION AND DURING THE INSTALLATION OF WATER FEATURE CONCRETE BASIN.
7. ALL UNDERGROUND AND EQUIPMENT PIPING SHALL BE PVC SCHEDULE 40 UNLESS OTHERWISE DESIGNATED WITHIN PLANS AND SPECIFICATIONS.
8. ALL PIPING RUNS SHALL HAVE THRUST BLOCKS.

UTILITY REQUIREMENTS:

(1) EXISTING 4" POTABLE WATER CONNECTION. CONTROL BY EXISTING WATER LEVEL SENSOR IN VALVE BOX.

(2) AN EXISTING ELECTRICAL FEED @ 480V, 3ø, 4 WIRE TO BE PROTECTED IN PLACE. PROVIDE TERMINATION AT LAKE MOTOR CONTROL PANEL IN THE PUMP STATION. VERIFY REQUIREMENTS WITH THE ELECTRICAL SHEETS. THE ELECTRICAL SHEETS OVERRIDE THIS SHEET FOR CALCULATIONS.

(3) EXISTING SEWER CONNECTION FOR SUMP PUMP DISCHARGE

(4) EXISTING 2"ø RECYCLED WATER

PIPING COMPONENTS:

[1] 8"ø PHASE 1 LAKES RECIRCULATION DISCHARGE PIPE
[2] 6"ø PHASE 2 LAKES RECIRCULATION DISCHARGE PIPE
[3] 14"ø PHASE 1 LAKE INTAKE PIPE WITH SCREEN
[4] PIPE PENETRATION
[5] EXISTING WATER LEVEL SENSOR IN VALVE BOX
[6] EXISTING 2.5" PVC EQUALIZER FOR WATER LEVEL CONTROL
[7] NEW PONDS AND STREAMS DISCHARGE PIPE
[8] NEW WIRING AND 2" CONDUIT FOR WATER LEVEL CONTROL
[9] EXISTING INTAKE PIPE
[10] NEW FILL VALVE IN VALVE BOX TO MATCH THE EXISTING
[11] EXISTING 3"ø VACUUM BREAKER
[12] EXISTING MANHOLE
[13] 2" ELECTRICAL CONDUIT

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NORTH

20 10 0 20 40

PHASE 1 PIPING & UTILITY PLAN

SCALE: 1"=20'

NO	BY	DATE	REVISIONS	DATE	APP.

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PREPARED BY
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R.C.E. NO. — #C89315
EXP: 09/30/2024

DRAWN: SP/RC
SCALE: AS SHOWN
DESIGNED: BL
CHECKED: ZS
DATE: 8/16/2023

TITLE: **PHASE 1 - LAKE PIPING AND UTILITY PLAN**

JOB: **TEWINKLE PARK**
LAKE RENOVATION
COSTA MESA CA

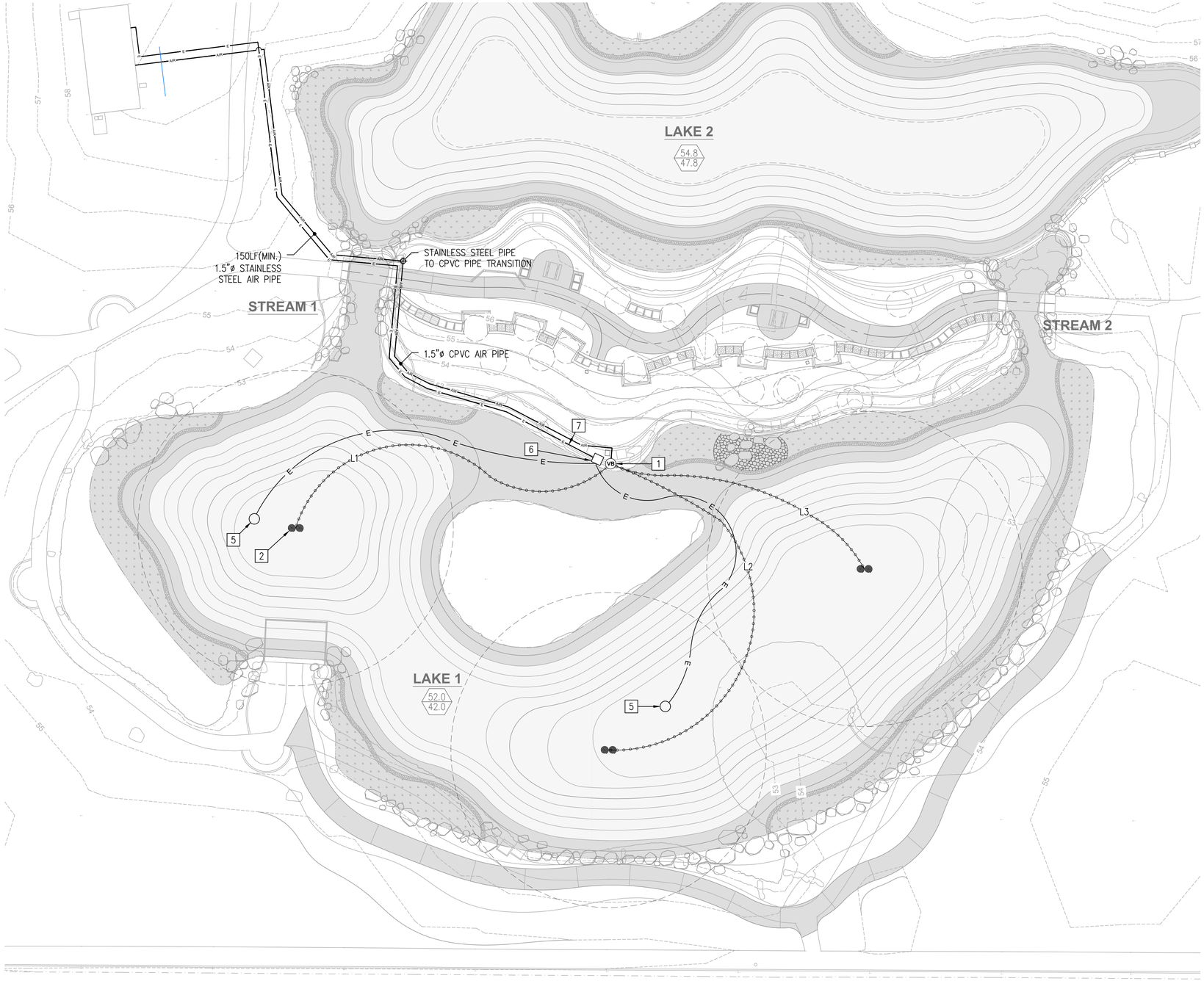
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SHEET **W213**
09 OF 50 SHEETS

JOB NO. B836

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Xrefs: B836-07 36x24v.dwg; TopoSurvey.dwg; B836 – Lake Base.dwg; B836 – Piping Base.dwg; B836 – Existing Piping.dwg; B836-07 – Legends.dwg; B836-07 – Piping Notes.dwg; B836-07 – Utility Requirement Notes.dwg; B836-07 – Piping Components.dwg
Dimscale = 24; LTscale = 1; PSltscale = 1; ACAD Ver. = 23.0s (LMS Tech); Viewtwin = 1

Aug. 16, 2023



PHASE 1 AERATION PLAN
SCALE: 1"=20'

LEGENDS:

- AIR — 1.5" I.D. STAINLESS STEEL OR CPVC PIPE
- o — o — 1/2" SUPER SINK WEIGHTED AIR TUBE
- E — ELECTRICAL SERVICE
- INDICATES AREA OF influence
- INDICATES AERATION POD
- VB — INDICATES AERATION VALVE BOX
- X — INDICATES AERATION COMPONENTS

PIPING NOTES:

1. THE PIPING PLAN IS DIAGRAMMATIC. ROUTING AND FINAL LAYOUT TO BE FIELD DETERMINED BY CONTRACTOR AND APPROVED BY ENGINEER PRIOR TO CONSTRUCTION.
2. PIPE TYPE, MATERIALS, AND SUPPORTS SHALL CONFORM TO THE PROJECT SPECIFICATIONS. IN ADDITION, PIPE SHALL BE IN CONFORMANCE WITH UBC, UPC, LOCAL AND NATIONAL BUILDING CODE REQUIREMENTS.
3. PARALLEL PIPE RUNS SHALL BE INSTALLED WITHIN COMMON TRENCHES AND OR PIPE SUPPORTS WHENEVER POSSIBLE.
4. ALL PIPING SHALL BE UNIFORMLY AND CONTINUOUSLY SUPPORTED OVER ITS ENTIRE LENGTH AND ROUTE.
5. ALL ELECTRICAL CONDUITS SHALL BE INSTALLED USING SWEEP FITTINGS IN CONFORMANCE WITH LOCAL AND NATIONAL BUILDING CODES.
6. PRESSURE TEST ALL PIPING PER PROJECT SPECIFICATIONS. KEEP PIPING UNDER PRESSURE TESTING CONDITIONS DURING TRENCH BACKFILL/COMPACTION AND DURING THE INSTALLATION OF WATER FEATURE CONCRETE BASIN.
7. ALL UNDERGROUND AND EQUIPMENT PIPING SHALL BE PVC SCHEDULE 40 UNLESS OTHERWISE DESIGNATED WITHIN PLANS AND SPECIFICATIONS.
8. ALL PIPING RUNS SHALL HAVE THRUST BLOCKS.

LAKE AERATION COMPONENTS:

D/W254	1	AERATION VALVE BOX
B/W254	2	AERATION DIFFUSER (4 TYP.)
	3	WEIGHTED HOSE
	4	AERATION FEEDLINE
D/W255	5	FLOATING FOUNTAIN PER 'KASCO' J-SERIES MODEL# 3.3JF W/ BIRCH NOZZLE (2 TYP.)
	6	FLOATING FOUNTAIN JUNCTION BOX
	7	2" CONDUIT TO PUMP STATION

WEIGHTED HOSE LENGTH TABLE:

L1	170 LF
L2	170 LF
L3	170 LF
L4	170 LF

NORTH

20 10 0 20 40

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NO	BY	DATE	REVISIONS	DATE	APP.

PREPARED BY
ZHANG SONG
PROJECT ENGINEER
R.C.E. NO. — #C89315
EXP: 06/30/2024

DRAWN: SP/RC | SCALE: AS SHOWN
DESIGNED: BL | DATE: 8/16/2023
CHECKED: ZS

TITLE: **PHASE 1 - AERATION PLAN**

JOB: **TEWINKLE PARK** *LAKE RENOVATION* **COSTA MESA** CA

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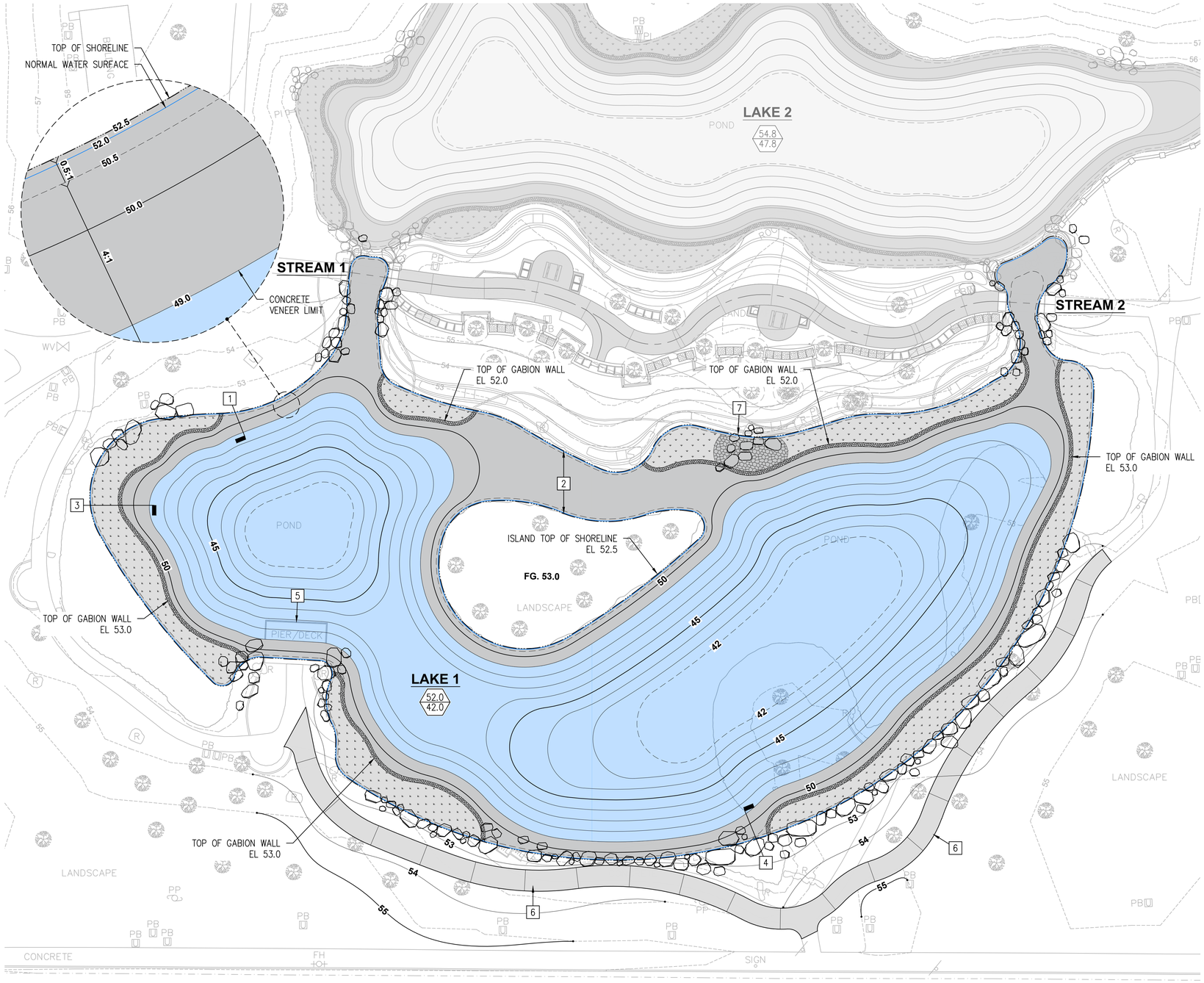
SHEET W214
10 OF 50 SHEETS

JOB NO. B836

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Xrefs: B836-07 36x24x.dwg; TopoSurvey.dwg; B836 - Lake Base.dwg; B836 - Piping Base.dwg; B836-07 - Aeration Component Keynotes.dwg; B836-07 - Legends.dwg; B836-07 - Piping Notes.dwg
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Aug. 16, 2023



ARLINGTON DRIVE

LAKE 1 - PLAN VIEW

SCALE: 1"=20'

NORTH

20 10 0 20 40

LAKE DATA:

	LAKE 1
SURFACE AREA (ACRES)	1.06
VOLUME (GAL)	1,470,000
LENGTH OF SHORELINE (FT)	1,160
NORMAL WATER SURFACE ELEVATION (FT)	52.0
LAKE BOTTOM ELEVATION (FT)	42.0

NOTE: LAKE DATA SHOULD BE CONSIDERED AS ENGINEER'S ESTIMATE ONLY. POND CONTRACTOR SHOULD INDEPENDENTLY VERIFY QUANTITIES.

LAKE COMPONENTS:

- A/W250 [1] ERODED CONCRETE SHORELINE
- B/W250 [2] ERODED CONCRETE SHORELINE WITH STABILIZED DG
- C/W250 [3] PLANTER SHORELINE
- E/W250 [4] BOULDER POCKET
- B/W251 [5] OBSERVATION DECK
- E/W258 [6] CONCRETE PAVING
- D/W250 [7] STEPPING STONE AT PLANTER

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PRELIMINARY DESIGN DRAWING

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PROJECT ENGINEER
R.C.E. NO. — #C89315
EXP: 06/30/2024

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DESIGNED BL
CHECKED ZS | DATE 8/16/2023

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TITLE
PHASE 1 - LAKE 1 PLAN

JOB
TEWINKLE PARK
LAKE RENOVATION
COSTA MESA *CA*

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SHEET
W215
11 OF 50 SHEETS

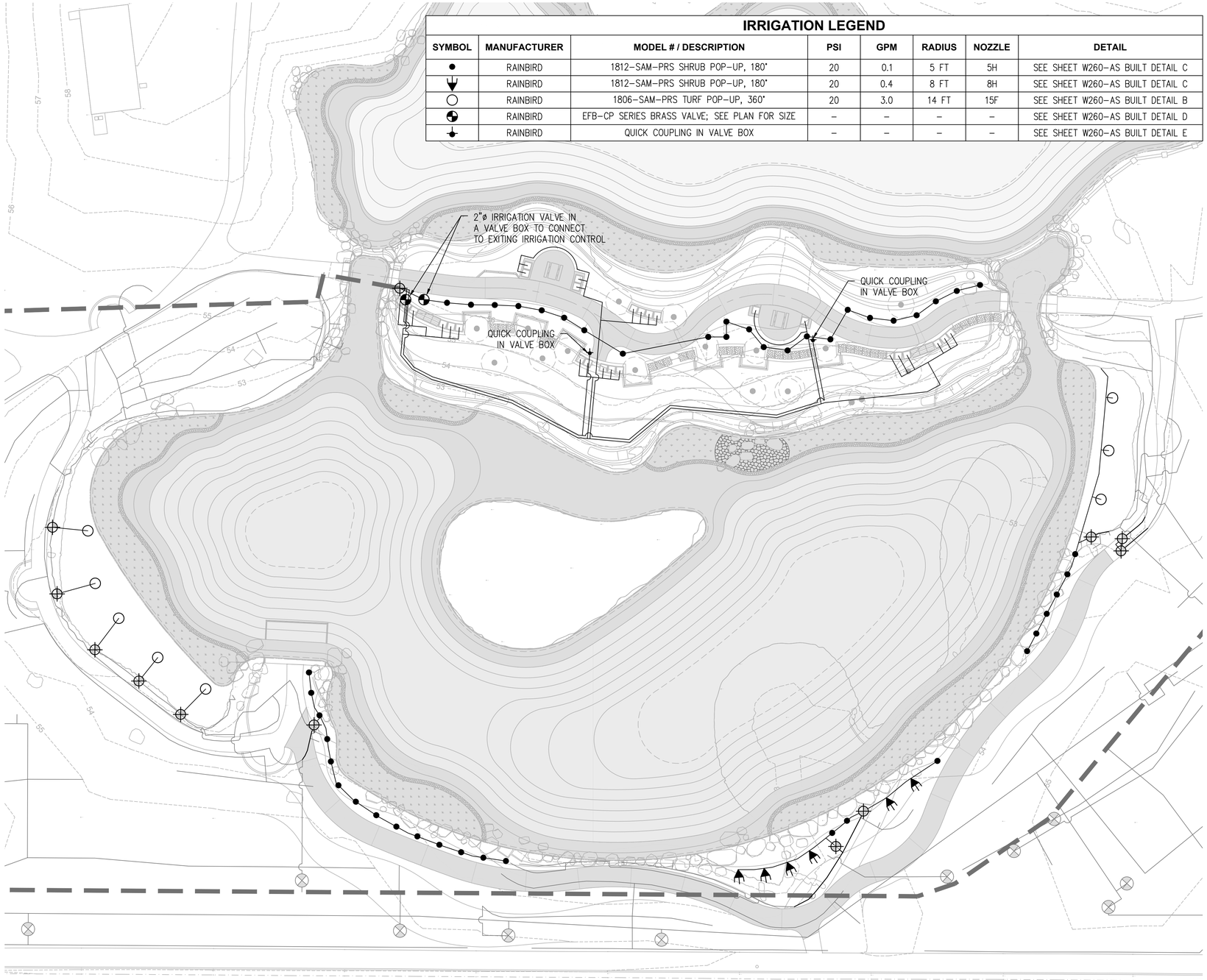
JOB NO. B836

Xrefs: B836-07 36x24+.dwg; TopoSurvey.dwg; B836 - Lake Base.dwg
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Aug. 16, 2023

IRRIGATION LEGEND

SYMBOL	MANUFACTURER	MODEL # / DESCRIPTION	PSI	GPM	RADIUS	NOZZLE	DETAIL
●	RAINBIRD	1812–SAM–PRS SHRUB POP–UP, 180°	20	0.1	5 FT	5H	SEE SHEET W260–AS BUILT DETAIL C
▼	RAINBIRD	1812–SAM–PRS SHRUB POP–UP, 180°	20	0.4	8 FT	8H	SEE SHEET W260–AS BUILT DETAIL C
○	RAINBIRD	1806–SAM–PRS TURF POP–UP, 360°	20	3.0	14 FT	15F	SEE SHEET W260–AS BUILT DETAIL B
◔	RAINBIRD	EFB–CP SERIES BRASS VALVE; SEE PLAN FOR SIZE	–	–	–	–	SEE SHEET W260–AS BUILT DETAIL D
⊕	RAINBIRD	QUICK COUPLING IN VALVE BOX	–	–	–	–	SEE SHEET W260–AS BUILT DETAIL E



LEGENDS:

- DISCHARGE PIPE
- INTAKE PIPE
- RW — RECLAIMED WATER
- W — POTABLE WATER
- SS — SANITARY SEWER
- SD — STORM DRAIN
- E — ELECTRICAL SERVICE
- POINT OF CONNECTION
- ALUM DISCHARGE W/ VALVE AT SHORELINE
- DISCHARGE JET W/ VALVE AT SHORELINE
- XXX — INDICATES RECIRCULATION FLOW (GPM)
- (X) — INDICATES UTILITY REQUIREMENT
- [X] — INDICATES PIPING COMPONENTS

GENERAL IRRIGATION NOTES

1. ALL MAINLINE PIPINS AND CONTROL WIRES UNDER PAVING SHALL BE INSTALLED IN SEPARATE SLEEVES.
2. ALL LATERAL LINE PIPING UNDER PAVING SHALL BE PVC SCHEDULE 40 AND SHALL BE INSTALLED PRIOR TO PACING. THE PIPING SHALL BE A MINIMUM OF 12" BELOW SUB GRADE.
3. PIPE SIZE SHALL CONFORM TO THOSE SHOWN ON THE DRAWINGS. NO SUBSTITUTION OF SMALLER PIPE SIZES SHALL BE PERMITTED BUT SUBSTITUTION OF LARGER SIZES MAY BE APPROVED. ALL DAMAGES AND REJECTED PIPE SHALL BE REMOVED FROM THE SITE AT THE TIME OF THE REJECTION
4. THE 120 VAC ELECTRICAL POWER SOURCE AT THE CONTROLLER LOCATION SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR. MAKE THE FINAL CONNECTION FROM THE SOURCE TO THE CONTROLLER OR AS ALLOWED BY LOCAL CODES.
5. ALL SPRINKLER HEADS SHALL BE SET PERPENDICULAR TO FINISH GRADE UNLESS OTHERWISE SPECIFIED OR DIRECTED.
6. THIS DESIGN IS DIAGRAMMATIC. ALL PIPING, VALVES, OR OTHER SIMILAR APPURTENANCES SHOWN IN PACED AREAS IS FOR DESIGN AND GRAPHIC CLARIFICATION AND SHALL BE INSTALLED IN IRRIGATED PLANTING AREA WHEREVER POSSIBLE INSTALL ALL VALVES AND BOXES IN SHRUB AREAS AND NOT IN TURF AREAS
7. IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTACTOR TO FAMILIARIZED HIMSELF WITH ALL GRADE DIFFERENCES, LOCATION OF WALLS, RETAINING WALL, STRUCTURES, AND UTILITIES OF THE SITE. COORDINATE WORK WITH OTHER TRADES AND CONTRACTORS FOR THE LOCATION AND INSTALLATION OF ALL IRRIGATION EQUIPMENT. REPAIR AND/OR REPLACE ALL ITEMS DAMAGED BY WORK PERFORMED.
8. DO NOT WILLFULLY INSTALL THE INSTALLATION SYSTEM WHEN IT IS OBVIOUS THAT THE FIELD CONDITIONS VARY FROM THE DRAWINGS AND THAT UNKNOWN OBSTRUCTIONS, GRADE DIFFERENCES, OR DIFFERENCES IN THE AREA DIMENSIONS EXIST THAT HAVE NOT BEEN INDICATED ON THE ENGINEERING. SUCH ITEMS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNERS AUTHORIZED REPRESENTATIVE, ASSUME FULL RESPONSIBILITY FOR ANY NECESSARY REVISIONS IN THE WENT THAT HIS NOTIFICATION IS HEEDED,
9. FLUSH AND ADJUST ALL SPRINKLER HEADS AND VALVES FOR THEIR OPTIMUM OPERATION
10. VERIFY WATER PRESSURE PRIOR TO CONSTRUCTION, REPORT ANY DIFFERENCES BETWEEN THE WATER PRESSURE SHOWN IN THE PLANS AND THE PRESSURE READING IN THE FIELD TO THE OWNERS AUTHORIZED REPRESENTATIVE
11. ALL IRRIGATION EQUIPMENT NOT OTHERWISE DETAILED OR SPECIFIED HEREIN SHALL BE INSTALLED PER THE MANUFACTURES RECOMMENDATIONS AND SPECIFICATIONS.
12. REFER TO THE SPECIFICATIONS FOR ADDITIONAL DETAILED INFORMATION.
13. ALL IRRIGATION AREAS SHALL BE 100% COVERED WITHIN IRRIGATION SPRAY ZONE
14. CONTRACTOR TO VERIFY THE EXISTING IRRIGATION PIPE PRIOR TO INSTALLATION OR DEMOLITION.

NORTH

20 10 0 20 40

PROPOSED IRRIGATION PLAN
SCALE: 1"=20'

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PRELIMINARY DESIGN DRAWING

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NO	BY	DATE	REVISIONS	DATE	APP.

PREPARED BY
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R.C.E. NO. #C89315
EXP: 09/30/2024

DRAWN SP/RC | SCALE AS SHOWN
DESIGNED BL | DATE 8/16/2023
CHECKED ZS

TITLE **IRRIGATION PROPOSED PLAN**

JOB **TEWINKLE PARK** *LAKE RENOVATION* **COSTA MESA** CA

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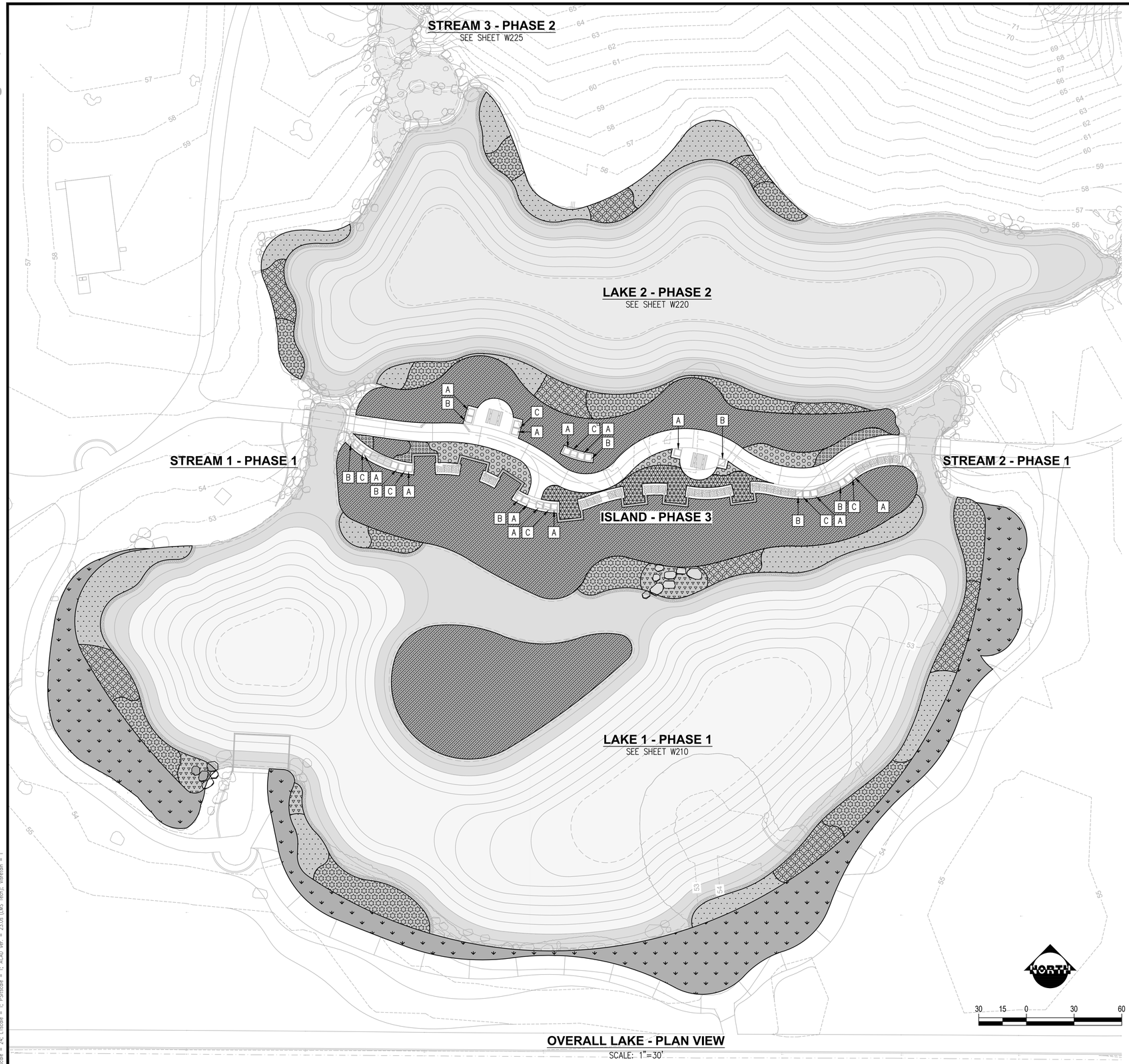
SHEET **W216**
12 OF 50 SHEETS

JOB NO. B836

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Xrefs: B836-07 36x24v.dwg; B836-07 - Legends.dwg; B836 - Lake Base.dwg; B836 - Piping Base.dwg; TopoSurvey.dwg; B836-07 - Irrigation Base.dwg
Dimscale = 24, LTscale = 1; PSltscale = 1; ACAD Ver. = 23.0s (LMS Tech); Viewtwin = 1
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Aug. 16, 2023



OVERALL LAKE - PLAN VIEW
SCALE: 1"=30'

PLANTING PLAN NOTES

1. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO FURNISH AND INSTALL PLANT AS SHOWN ON THE PLAN.
2. PLANT LIST ON THIS PLAN SHALL BE USED AS A GUIDE ONLY. CONTRACTOR TO TAKEOFF, VERIFY SIZES AND QUANTITIES.
3. ALL WORK ON THE IRRIGATION SYSTEM, INCLUDING HYDROSTATIC, COVERAGE, OPERATIONAL TESTS, BACKFILL AND COMPACTION OF TRENCHES SHALL BE PERFORMED PRIOR TO PLANTING OPERATIONS.
4. ALL STRUCTURAL, SHORELINE, AND HARDSCAPE SHALL BE INSTALLED PRIOR TO PLANTING OPERATIONS.
5. SAMPLES OF FERTILIZERS, ORGANIC AMENDMENT, SOIL CONDITIONERS AND SEED SHALL BE SUBMITTED PRIOR TO INCORPORATION, CONTRACTOR SHALL FURNISH TO CITY REPRESENTATIVE A CERTIFICATE OF COMPLIANCE FOR SUCH FURNISHED MATERIALS.
6. LOCATIONS OF PLANTS SHALL BE REVIEWED ON SITE BY ENGINEER/ CITY REPRESENTATIVE PRIOR TO INSTALLATION.
7. IF DURING PLANTING OPERATIONS THERE SEEMS TO BE MINIMAL OR NO PERCOLATION IN PLANTING PITS, CONTRACTOR SHALL CEASE PLANTING OPERATIONS AND IMMEDIATELY NOTIFY THE ENGINEER/ CITY REPRESENTATIVE TO DISCUSS ALTERNATIVE TO MAINTAIN POSITIVE ROOTBALL DRAINAGE MEASURES.
8. PLANTING MATERIAL SHALL BE REVIEWED AND APPROVED BY ENGINEER AND CITY REPRESENTATIVE.
9. EXISTING IRRIGATION OUTSIDE OF THE SCOPE OF WORK SHALL REMAIN FULLY OPERATIONAL AND BE PROTECTED IN PLACE. SEE SHEET W212 FOR IRRIGATION DEMOLITION PLAN AND SHEET W216 FOR IRRIGATION PROPOSED PLAN.
10. CONTRACTOR SHALL ADJUST IRRIGATION HEADS AND LATERAL LINES AS NECESSARY TO ACCOMMODATE MODIFICATIONS TO EXISTING PLANTERS AND PROVIDE 100% IRRIGATION COVERAGE TO PROPOSED PLANTING AREAS.

EXISTING TREE NOTES

1. UNLESS OTHERWISE NOTED ON THE PLAN, ALL EXISTING TREES SHALL BE PROTECT IN PLACE.
2. CONTRACTOR, PRIOR TO ANY WORK WITHIN THE PARK, SHALL MEET WITH ENGINEER/ CITY REPRESENTATIVES TO FLAG THE NUMBER OF ALL THE TREES WITH IN THE PARK. EACH TREE SHALL BE ASSIGNED A UNIQUE NUMBER AND CITY REPRESENTATIVE TO CONFIRM DISPOSITION (REMOVAL, RELOCATION, OR PROTECT IN PLACE) OF TREE PRIOR TO ANY CONTRACTOR ACTIVITY RELATED TO THE TREES. TREES SHALL BE FLAGGED WITH COMPASS ORIENTATION.
3. CONTRACTOR TO COORDINATE WITH CITY TO PRUNE THE EXISTING TREE PRIOR TO CONSTRUCTION.
4. ALL EXISTING TREES ON SHALL HAVE PROTECTED BARRIER AROUND THE TREE MINIMUM 15'-0" FROM THE TREE TRUNK. NO HEAVY EQUIPMENT OR VEHICLE TO DRIVE OVER THE TREE ROOTS.
5. ALL TRENCH SHALL STOP MINIMUM 15'-0" AWAY FROM THE TRUNK OF THE TREE. PIPES AND CONDUITS SHALL BE IN TUNNEL UNDER THE TREES. SEE DETAIL X/WXX

AQUATIC PLANTING NOTES

1. PLANT 3 ANEMOPSIS CALIFORNICA IMMEDIATELY OUTSIDE OF LAKE SHORELINE IN DAMP OR WET SOIL. CHOOSE PROTECTED LOCATIONS IF POSSIBLE. SPREAD THE THREE PLANTS AT LEAST TWO FEET APART. THIS DETAIL TYPICALLY MORE IS USED WHERE THERE ARE OTHER PLANTS IN THE WETLAND OR NO WETLAND.
2. PLANT 5 ANEMOSPSIS CALIFORNICA ON MOUNDS OF SOIL BETWEEN ROCKS. SOIL MOUND SHOULD REACH 3 INCHES ABOVE THE WATER SURFACE ELEVATION. ALLOW 1 FT OF SPACE BETWEEN PLANTS. THIS NOTE IS USED WHERE THERE ARE ROCKS IN WETLAND AND NO OTHER PLANTS ARE SHOWN IN THE IMMEDIATE AREA OF THE ROCKS.
3. INSTALL 18 INCH HIGH BLACK PLASTIC WEATHER-RESISTANT FENCE ALONG WETLAND PERIMETER. ATTACH MESH TO 3 FT METAL STAKES, BLACK OR GREEN, AT 5 FT INTERVALS. SECURE WITH BLACK OR GREEN WIRE OR CABLE TIES, 3 PER STAKE. SEE DETAIL C/W259.

PLANTING LEGEND

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	QTY. / DENSITY
	JUNCUS BALTICUS	BALTIC RUSH	3 FT TALL	1.5 FT SPACING, 1 PLANT PER 9 SF
	JUNCUS EFFUSUS	SOFT RUSH	3 FT TALL	1.5 FT SPACING, 1 PLANT PER 9 SF
	ANEMOPSIS CALIFORNICA	YERBA MANSA	1 FT TALL	PER AQUATIC PLANTING NOTES
	PONTEDARIA CORDATA	PICKERELWEED	3 FT TALL	1.5 FT SPACING, 1 PLANT PER 9 SF
	VINCA MINOR	MYRTLE		
	DYMONDIA	SILVER CARPET		
	ISOTOMA FLUVIATILIS	BLUE STAR CREEPER		
	GRASS TO MATCH EXISTING LANDSCAPE			
	STABILIZED DG			

ISLAND PLANTING LEGEND

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	QTY. / DENSITY
A	JUSTICIA BRANDEGEANNA	SHRIMP PLANT	–	3 PER PLANTER
B	SALVIA MICROPHYLLA	BIG PINK	–	3 PER PLANTER
C	MALVAVISCUS DRUMMONDI	TURK'S CAP	–	3 PER PLANTER

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PRELIMINARY DESIGN DRAWING

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NO	BY	DATE	REVISIONS	DATE	APP.

PREPARED BY
ZIRANG SONG
PROJECT ENGINEER
R.C.E. NO. ---- #C89315
EXP: 06/30/2024

DRAWN SP/RC
DESIGNED BL
CHECKED ZS
SCALE AS SHOWN
DATE 8/16/2023

TITLE **PLANTING PLAN**

JOB **TEWINKLE PARK**
LAKE RENOVATION
COSTA MESA *CA*

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SHEET **W217**
13 OF 50 SHEETS

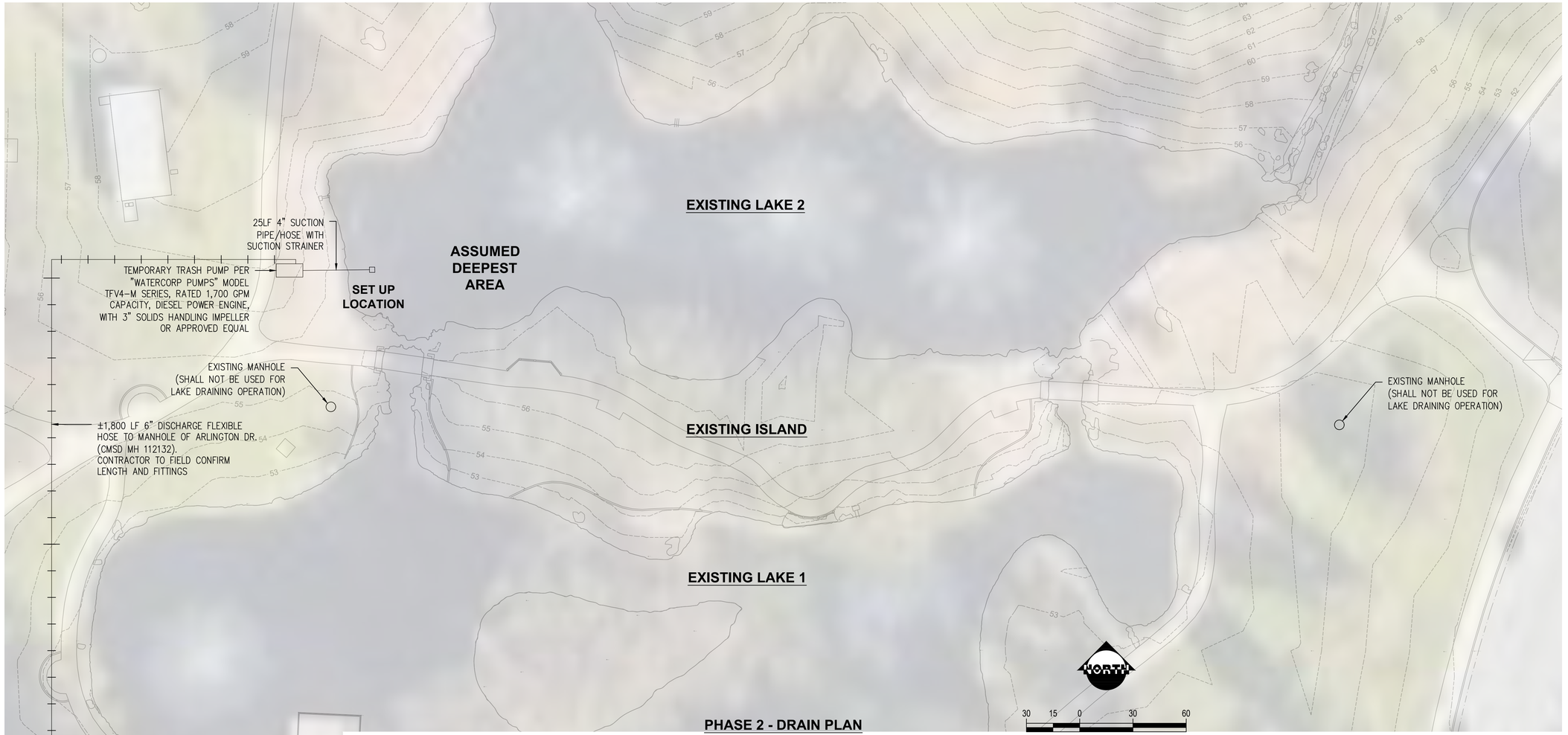
JOB NO. B836

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X-refs: B836-07 36x24v.dwg; B836 - Lake Base.dwg; TopoSurvey.dwg; B836-07 - Planting Plan.dwg
Dimscale = 24, LTscale = 1; PSltscale = 1; ACAD Ver. = 23.0s (LMS Tech); Xoretain = 1

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Aug. 16, 2023



PHASE 2 - DRAIN PLAN
SCALE: 1"=20'



PHASE 2 - DRAIN PLAN
FLEXIBLE HOSE RECOMMENDED ROUTING
SCALE: 1"=100'

100 50 0 100 200

PHASE 2 - DRAIN SEQUENCE:

1. CONTRACTOR TO GET A TEMPORARY DISCHARGE PERMIT TO DRAIN THE LAKE WATER TO STORM DRAIN SYSTEM (OVERFLOW BOX) OR SEWER SYSTEM (EXISTING MANHOLE)
2. TURN OFF THE LAKE FILL LINE. CLOSE THE FILL VALVE.
3. TURN OFF LAKE 2 FLOATING FOUNTAINS.
4. CAPTURE ALL AQUATIC WILDLIFE (FISH, TURTLE, ETC.) AND MOVE THEM TO LAKE 1 PER ENVIRONMENTAL CONSULTANT RECOMMENDATIONS.
5. SET UP ONE (1) TEMPORARY TRASH PUMP (1,000 GPM MIN.) TO DRAIN THE LAKE. THE PUMP SUCTION SHALL EXTEND TO THE DEEPEST AREAS OF THE LAKE.
6. ESTIMATED DRAIN TIME OF LAKE 2 PER TABLE BELOW:

SYSTEM	EXISTING LAKE VOLUME *	PUMP RATE	ESTIMATED TIME
LAKE 2	1,120,700 GAL	1,000 GPM	2.3 WORKING DAYS

* NOTE: ESTIMATE VOLUME BASED ON AS-BUILT PLAN (DATED 07/22/2004)

7. LAKE 1 SHALL BE FILLED MANUALLY DURING LAKE 2 CONSTRUCTION. LAKE 1 RECIRCULATION, AERATION, FLOATING FOUNTAIN, CHEMICAL SYSTEM SHALL BE OPERATED TO MAINTAIN LAKE WATER QUALITY.
8. CONTRACTOR TO COORDINATE WITH COSTA MESA SEWER DISTRICT FOR LAKE DRAINING OPERATION, REQUIREMENT, LOCATION AND SCHEDULE.

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PRELIMINARY DESIGN DRAWING

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NO	BY	DATE	REVISIONS	DATE	APP.

PREPARED BY
ZIRANG SONG
PROJECT ENGINEER
R.C.E. NO. — #C89315
EXP: 09/30/2024

DRAWN: SP/RC
SCALE: 1"=20'SHOWN
DESIGNED: BL
CHECKED: ZS
DATE: 8/16/2023

TITLE: PHASE 2 - DRAIN PLAN

JOB: TEWINKLE PARK
LAKE RENOVATION
COSTA MESA CA

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SHEET W220
14 OF 50 SHEETS

JOB NO. B836

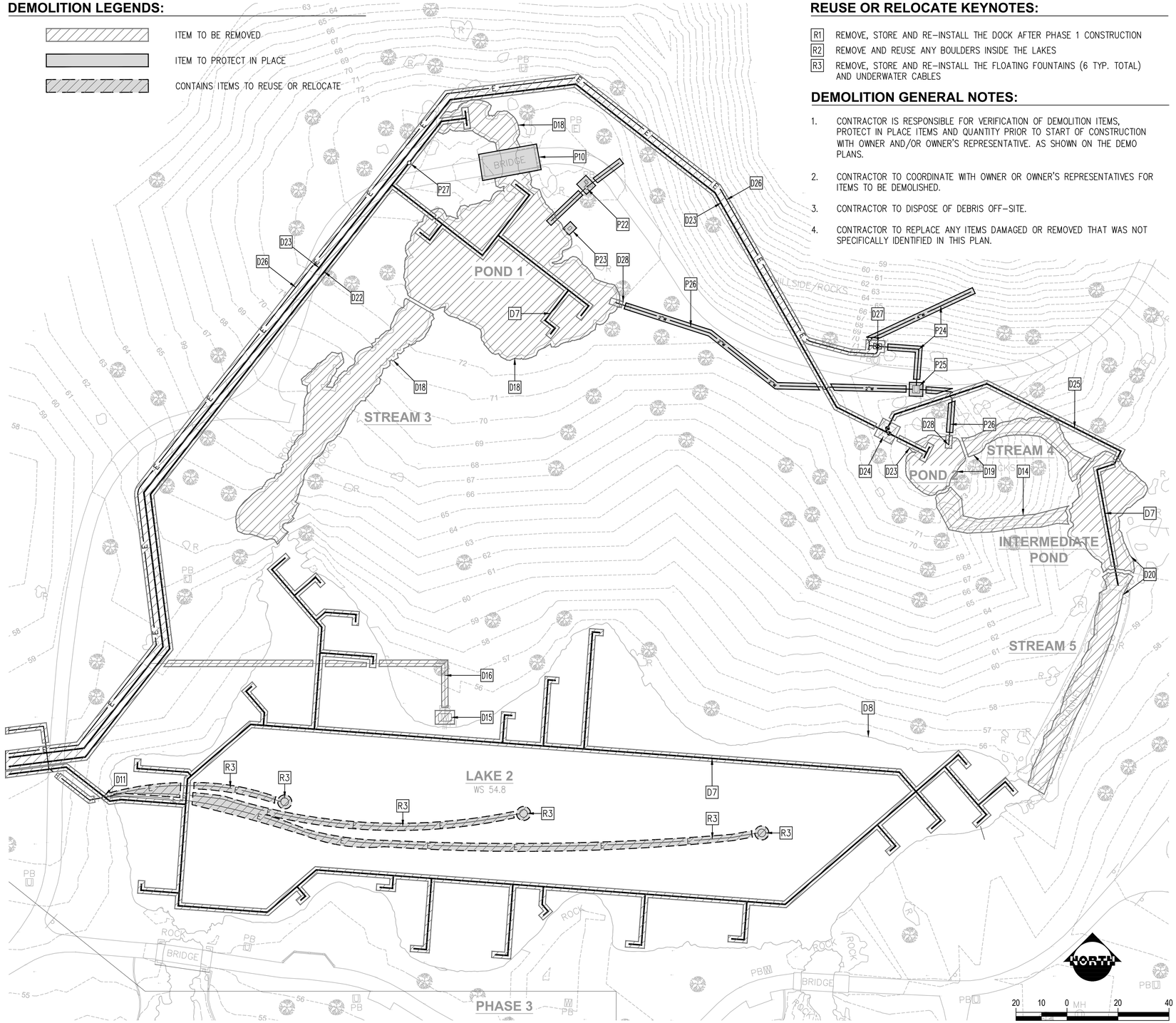
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Xrefs: B836-07 36x24v.dwg; B836-07 - Drain Sequence Notes.dwg; TopoSurvey.dwg
Dimscale = 24, LTscale = 1; PSltscale = 1; ACAD Ver. = 23.0s (LMS Tech); Vizretain = 1
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Aug. 16, 2023

DEMOLITION LEGENDS:

- ITEM TO BE REMOVED
- ITEM TO PROTECT IN PLACE
- CONTAINS ITEMS TO REUSE OR RELOCATE



REUSE OR RELOCATE KEYNOTES:

- R1 REMOVE, STORE AND RE-INSTALL THE DOCK AFTER PHASE 1 CONSTRUCTION
- R2 REMOVE AND REUSE ANY BOULDERS INSIDE THE LAKES
- R3 REMOVE, STORE AND RE-INSTALL THE FLOATING FOUNTAINS (6 TYP. TOTAL) AND UNDERWATER CABLES

DEMOLITION GENERAL NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF DEMOLITION ITEMS, PROTECT IN PLACE ITEMS AND QUANTITY PRIOR TO START OF CONSTRUCTION WITH OWNER AND/OR OWNER'S REPRESENTATIVE. AS SHOWN ON THE DEMO PLANS.
2. CONTRACTOR TO COORDINATE WITH OWNER OR OWNER'S REPRESENTATIVES FOR ITEMS TO BE DEMOLISHED.
3. CONTRACTOR TO DISPOSE OF DEBRIS OFF-SITE.
4. CONTRACTOR TO REPLACE ANY ITEMS DAMAGED OR REMOVED THAT WAS NOT SPECIFICALLY IDENTIFIED IN THIS PLAN.

DEMOLITION KEYNOTES:

- D1 REMOVE BIOFILTER AT BOTTOM OF LAKE 1
- D2 REMOVE LAKE 1 PIPES
  - a. 4" BIOFILTER PIPES
  - b. 12" BIOFILTER BACKWASH PIPE
  - c. 14"ø INTAKE PIPE
  - d. RECIRCULATION PIPES (8", 6", 4", 2", 2 ½", 1½")
- D3 REMOVE EXISTING UNDERGROUND VAULT NEXT TO THE OVERFLOW BOX
- D4 REMOVE LAKE 1 PENINSULAS
- D5 REMOVE LAKE 1 EXISTING SHORELINE & LINER
- D6 REMOVE WALKWAY
- D7 REMOVE LAKE 2 AND PONDS PIPES
  - a. LAKE 2 RECIRCULATION PIPES (8", 6", 4", 3", 2 ½", 2", 1½")
  - b. POND 1 PIPES
  - c. INTERMEDIATE POND PIPES
- D8 REMOVE LAKE 2 SHORELINE AND LINER
- D9 REMOVE EXISTING VAULT
- D10 REMOVE 2½"ø WATER LEVEL SENSOR EQUALIZER
- D11 REMOVE EXISTING FLOATING FOUNTAIN JUNCTION BOX (CONTRACTOR TO CONFIRM THE LOCATION)
- D12 REMOVE EXISTING FLOATING FOUNTAIN CONDUITS (CONTRACTOR TO CONFIRM THE COUNDUIT ROUTES)
- D13 REMOVE EXISTING TREES IN DEMOLITION AREA. LOCATION TO BE CONFIRM WITH CITY (5 TYP).
- D14 REMOVE EXISTING WATERFALL
- D15 REMOVE EXISTING OZONE BOX AND PIPES INSIDE THE LAKE (3 PLCS. AT LAKE 1 AND 1 PLC. AT LAKE 2)
- D16 REMOVE OZONE EXISTING PIPING
- D17 REMOVE EXISTING UNDERGROUND VAULT (SCREEN VAULT)
- D18 REMOVE EXISTING STREAM #3 AND POND 1
- D19 REMOVE EXISTING STREAM #4 AND POND 2
- D20 REMOVE EXISTING STREAM #5 AND INTERMEDIATE POND
- D21 REMOVE EXISTING WATERFALL FOR REBUILT
- D22 REMOVE 8" AND 4"ø POND 1 DISCHARGE
- D23 REMOVE 8"ø POND 2 DISCHARGE
- D24 REMOVE VALVE AND VALVE BOX
- D25 REMOVE 4"ø INTERMEDIATE POND DISCHARGE
- D26 REMOVE EXISTING WIRING AND CONDUIT FROM WATER LEVEL SENSOR TO FILL VALVE
- D27 REMOVE EXISTING POTABLE WATER CONTROL VALVE
- D28 REMOVE EXISTING OVER SHORELINE DISCHARGE

PROTECT-IN-PLACE KEYNOTES:

- P1 PROTECT IN PLACE 14"ø INTAKE PIPE
- P2 PROTECT IN PLACE 2½"ø WATER LEVEL SENSOR EQUALIZER
- ~~P3 PROTECT IN PLACE WIRING & CONDUIT FROM WATERLEVEL SENSOR TO FILL VALVE~~ **NOT USED**
- ~~P4 PROTECT IN PLACE 8"ø & 4"ø POND 1 DISCHARGES~~ **NOT USED**
- ~~P5 PROTECT IN PLACE 8"ø POND 2 DISCHARGE~~ **NOT USED**
- ~~P6 PROTECT IN PLACE VALVES IN VALVE BOX~~ **NOT USED**
- ~~P7 PROTECT IN PLACE 4"ø INTERMEDIATE POND DISCHARGE~~ **NOT USED**
- P8 PROTECT IN PLACE BRIDGES BETWEEN LAKE 1 & LAKE 2
- P9 PROTECT IN PLACE ALL PONDS SHORELINE, LINER, AND FEATURES
- P10 PROTECT IN PLACE WOODEN BRIDGE
- P11 PROTECT IN PLACE ALL EXISTING TREES IN AREA OF RENOVATION (26 TYP). NO ACTION ON TREES OUTSIDE OF RENOVATION AREA.
- P12 PROTECT IN PLACE OVERFLOW BOX
- P13 PROTECT IN PLACE IRRIGATION VALVE BOX FOR FUTURE IMPROVEMENT
- P14 PROTECT IN PLACE ELECTRICAL WIRES AND CONDUITS FOR FLOATING FOUNTAIN
- P15 PROTECT IN PLACE CONCRETE PULL BOX FOR FUTURE IMPROVEMENT
- P16 PROTECT IN PLACE UNDERGROUND VAULT FOR FUTURE IMPROVEMENT
- P17 PROTECT IN PLACE ELECTRICAL BOX FOR FUTURE IMPROVEMENT
- P18 PROTECT IN PLACE EXISTING PIPING
- P19 PROTECT IN PLACE EXISTING SEWER MANHOLE
- P20 PROTECT IN PLACE EXISTING IRRIGATION ISOLATION VALVE
- P21 CAP AND ABANDON IN PLACE EXISTING OZONE PIPE
- P22 PROTECT IN PLACE EXISTING RECYCLED WATER PIPES AND VALVE BOX
- P23 PROTECT IN PLACE EXISTING IRRIGATION VALVE BOX
- P24 PROTECT IN PLACE EXISTING POTABLE WATER PIPES
- P25 PROTECT IN PLACE EXISTING POTABLE WATER VALVE BOX
- P26 PROTECT IN PLACE EXISTING POTABLE WATER DISCHARGE
- P27 PROTECT IN PLACE DISCHARGE VALVE
- P28 PROTECT IN PLACE LAKE 1 ISLAND

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PRELIMINARY DESIGN DRAWING

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PHASE 2 - DEMOLITION PLAN

SCALE: 1"=20'

NO	BY	DATE	REVISIONS	DATE	APP.

PREPARED BY
ZIRANG SONG
PROJECT ENGINEER
R.C.E. NO. ---- #C89315
EXP: 06/30/2024

DRAWN SP/RC | SCALE AS SHOWN
DESIGNED BL
CHECKED ZS | DATE 8/16/2023

TITLE
PHASE 2 - DEMOLITION PLAN

JOB
TEWINKLE PARK
LAKE RENOVATION
COSTA MESA CA

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SHEET
W221
15 OF 50 SHEETS

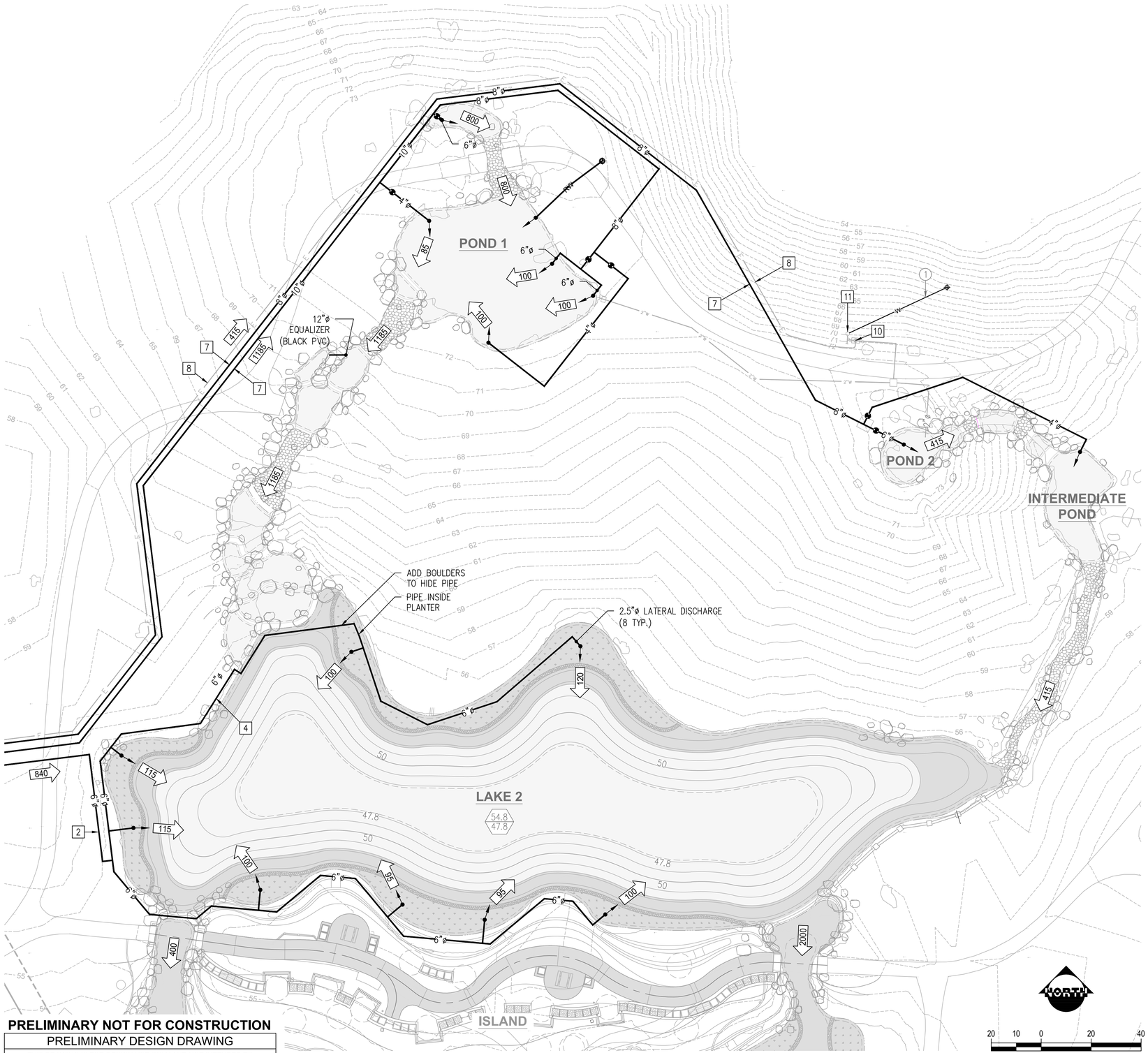
JOB NO. B836

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Xrefs: B836-07 36x24r.dwg, TopoSurvey.dwg, B836 - Existing Piping.dwg, B836-07 - Demo Keynotes.dwg
Dimscale = 24; LTscale = 1; PSltscale = 1; ACAD Ver. = 23.0s (LMS Tech); Varetain = 1

Aug. 16, 2023



LEGENDS:

- DISCHARGE PIPE
- INTAKE PIPE
- RW — RECLAIMED WATER
- W — POTABLE WATER
- SS — SANITARY SEWER
- SD — STORM DRAIN
- E — ELECTRICAL SERVICE
- POINT OF CONNECTION
- ALUM DISCHARGE W/ VALVE AT SHORELINE
- DISCHARGE JET W/ VALVE AT SHORELINE
- XXX — INDICATES RECIRCULATION FLOW (GPM)
- (X) — INDICATES UTILITY REQUIREMENT
- [X] — INDICATES PIPING COMPONENTS

PIPING NOTES:

1. THE PIPING PLAN IS DIAGRAMMATIC. ROUTING AND FINAL LAYOUT TO BE FIELD DETERMINED BY CONTRACTOR AND APPROVED BY ENGINEER PRIOR TO CONSTRUCTION.
2. PIPE TYPE, MATERIALS, AND SUPPORTS SHALL CONFORM TO THE PROJECT SPECIFICATIONS. IN ADDITION, PIPE SHALL BE IN CONFORMANCE WITH UBC, UPC, LOCAL AND NATIONAL BUILDING CODE REQUIREMENTS.
3. PARALLEL PIPE RUNS SHALL BE INSTALLED WITHIN COMMON TRENCHES AND OR PIPE SUPPORTS WHENEVER POSSIBLE.
4. ALL PIPING SHALL BE UNIFORMLY AND CONTINUOUSLY SUPPORTED OVER ITS ENTIRE LENGTH AND ROUTE.
5. ALL ELECTRICAL CONDUITS SHALL BE INSTALLED USING SWEEP FITTINGS IN CONFORMANCE WITH LOCAL AND NATIONAL BUILDING CODES.
6. PRESSURE TEST ALL PIPING PER PROJECT SPECIFICATIONS. KEEP PIPING UNDER PRESSURE TESTING CONDITIONS DURING TRENCH BACKFILL/COMPACTION AND DURING THE INSTALLATION OF WATER FEATURE CONCRETE BASIN.
7. ALL UNDERGROUND AND EQUIPMENT PIPING SHALL BE PVC SCHEDULE 40 UNLESS OTHERWISE DESIGNATED WITHIN PLANS AND SPECIFICATIONS.
8. ALL PIPING RUNS SHALL HAVE THRUST BLOCKS.

UTILITY REQUIREMENTS:

(1) EXISTING 4" POTABLE WATER CONNECTION. CONTROL BY EXISTING WATER LEVEL SENSOR IN VALVE BOX.

(2) AN EXISTING ELECTRICAL FEED @ 480V, 3ø, 4 WIRE TO BE PROTECTED IN PLACE. PROVIDE TERMINATION AT LAKE MOTOR CONTROL PANEL IN THE PUMP STATION. VERIFY REQUIREMENTS WITH THE ELECTRICAL SHEETS. THE ELECTRICAL SHEETS OVERRIDE THIS SHEET FOR CALCULATIONS.

(3) EXISTING SEWER CONNECTION FOR SUMP PUMP DISCHARGE

(4) EXISTING 2"ø RECYCLED WATER

PIPING COMPONENTS:

1. 8"ø PHASE 1 LAKES RECIRCULATION DISCHARGE PIPE
2. 6"ø PHASE 2 LAKES RECIRCULATION DISCHARGE PIPE
3. 14"ø PHASE 1 LAKE INTAKE PIPE WITH SCREEN
4. PIPE PENETRATION
5. EXISTING WATER LEVEL SENSOR IN VALVE BOX
6. EXISTING 2.5" PVC EQUALIZER FOR WATER LEVEL CONTROL
7. NEW PONDS AND STREAMS DISCHARGE PIPE
8. NEW WIRING AND 2" CONDUIT FOR WATER LEVEL CONTROL
9. EXISTING INTAKE PIPE
10. NEW FILL VALVE IN VALVE BOX TO MATCH THE EXISTING
11. EXISTING 3"ø VACUUM BREAKER
12. EXISTING MANHOLE
13. 2" ELECTRICAL CONDUIT

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LAKE 2 - PIPING & UTILITY PLAN

SCALE: 1"=20'

NO	BY	DATE	REVISIONS	DATE	APP.

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PREPARED BY: ZHANG SONG
PROJECT ENGINEER
R.C.E. NO. — #C89315
EXP: 09/30/2024

DRAWN: SP/RC
DESIGNED: BL
CHECKED: ZS
SCALE: AS SHOWN
DATE: 8/16/2023

TITLE: **PHASE 2 - LAKE PIPING AND UTILITY PLAN**

JOB: **TEWINKLE PARK** *LAKE RENOVATION* — **COSTA MESA** CA

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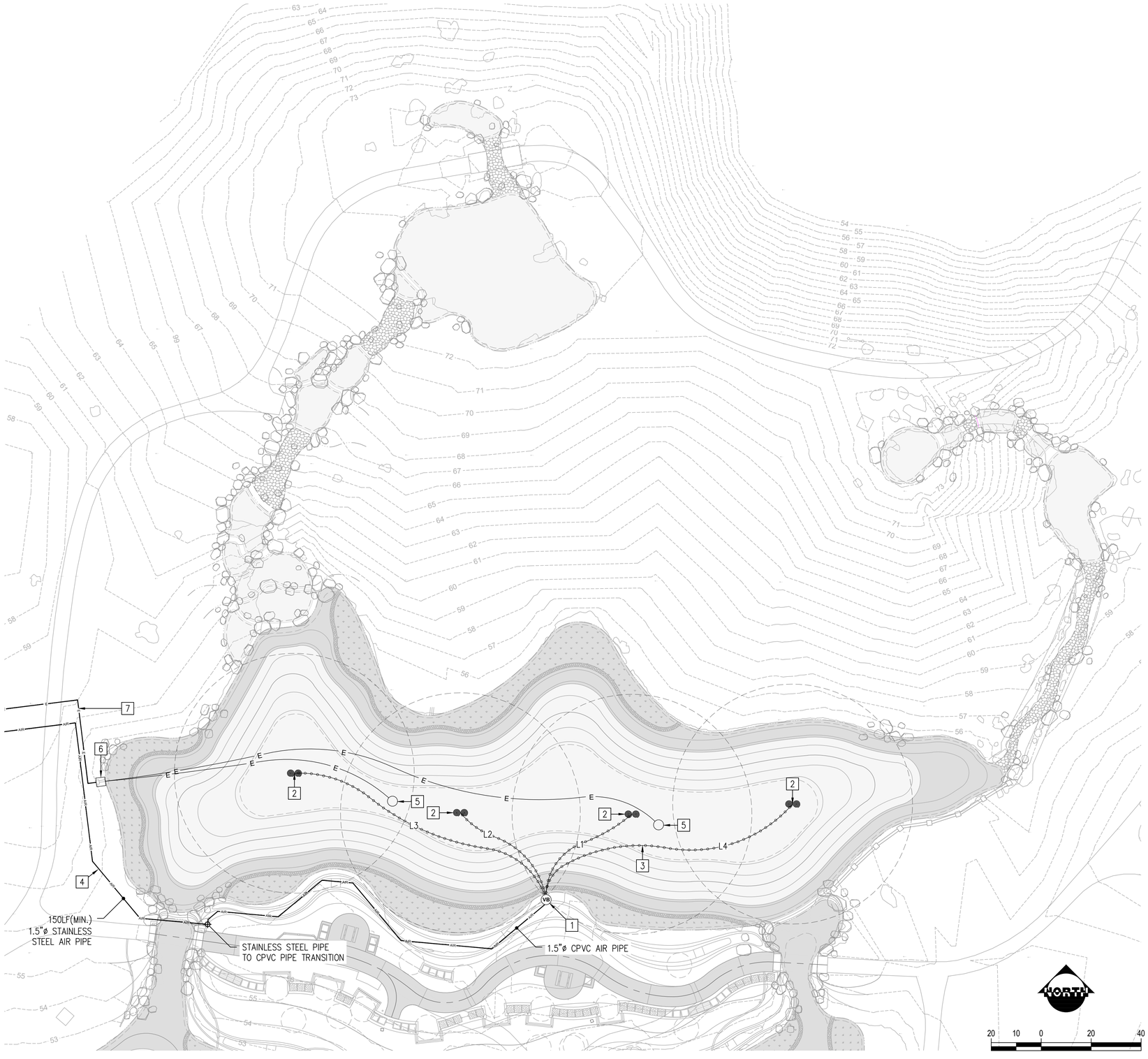
SHEET **W222**
16 OF 50 SHEETS

JOB NO. B836

Xrefs: B836-07 36x24x.dwg; TopoSurvey.dwg; B836 – Lake Base.dwg; B836 – Piping Base.dwg; B836 – Existing Piping.dwg; B836-07 – Legends.dwg; B836-07 – Piping Notes.dwg; B836-07 – Utility Requirement Notes.dwg; B836-07 – Piping Components.dwg
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Aug. 16, 2023



LAKE 2 - AERATION PLAN

SCALE: 1"=20'

LEGENDS:

- AIR — 1.5" I.D. STAINLESS STEEL OR CPVC PIPE
- o — o — 1/2" SUPER SINK WEIGHTED AIR TUBE
- E — ELECTRICAL SERVICE
- INDICATES AREA OF influence
- INDICATES AERATION POD
- VB — INDICATES AERATION VALVE BOX
- X — INDICATES AERATION COMPONENTS

PIPING NOTES:

1. THE PIPING PLAN IS DIAGRAMMATIC. ROUTING AND FINAL LAYOUT TO BE FIELD DETERMINED BY CONTRACTOR AND APPROVED BY ENGINEER PRIOR TO CONSTRUCTION.
2. PIPE TYPE, MATERIALS, AND SUPPORTS SHALL CONFORM TO THE PROJECT SPECIFICATIONS. IN ADDITION, PIPE SHALL BE IN CONFORMANCE WITH UBC, UPC, LOCAL AND NATIONAL BUILDING CODE REQUIREMENTS.
3. PARALLEL PIPE RUNS SHALL BE INSTALLED WITHIN COMMON TRENCHES AND OR PIPE SUPPORTS WHENEVER POSSIBLE.
4. ALL PIPING SHALL BE UNIFORMLY AND CONTINUOUSLY SUPPORTED OVER ITS ENTIRE LENGTH AND ROUTE.
5. ALL ELECTRICAL CONDUITS SHALL BE INSTALLED USING SWEEP FITTINGS IN CONFORMANCE WITH LOCAL AND NATIONAL BUILDING CODES.
6. PRESSURE TEST ALL PIPING PER PROJECT SPECIFICATIONS. KEEP PIPING UNDER PRESSURE TESTING CONDITIONS DURING TRENCH BACKFILL/COMPACTION AND DURING THE INSTALLATION OF WATER FEATURE CONCRETE BASIN.
7. ALL UNDERGROUND AND EQUIPMENT PIPING SHALL BE PVC SCHEDULE 40 UNLESS OTHERWISE DESIGNATED WITHIN PLANS AND SPECIFICATIONS.
8. ALL PIPING RUNS SHALL HAVE THRUST BLOCKS.

LAKE AERATION COMPONENTS:

- D/W254 — 1 — AERATION VALVE BOX
- B/W254 — 2 — AERATION DIFFUSER (4 TYP.)
- 3 — WEIGHTED HOSE
- 4 — AERATION FEEDLINE
- 5 — FLOATING FOUNTAIN (TO BE REINSTALLED) (2 TYP.)
- 6 — FLOATING FOUNTAIN JUNCTION BOX
- 7 — 2" CONDUIT TO PUMP STATION

WEIGHTED HOSE LENGTH TABLE:

L1	40 LF
L2	40 LF
L3	100 LF
L4	100 LF

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PRELIMINARY DESIGN DRAWING

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NO	BY	DATE	REVISIONS	DATE	APP.

PREPARED BY
ZHANG SONG
PROJECT ENGINEER
R.C.E. NO. #C89315
EXP: 09/30/2024

DRAWN: SP/RC
DESIGNED: BL
CHECKED: ZS
SCALE: AS SHOWN
DATE: 8/16/2023

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TITLE: PHASE 2 - AERATION PLAN

JOB: TEWINKLE PARK
LAKE RENOVATION
COSTA MESA CA

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SHEET W223
17 OF 50 SHEETS

JOB NO. B836

Xrefs: B836-07 36x24v.dwg; TopoSurvey.dwg; B836 - Lake Base.dwg; B836 - Piping Base.dwg; B836-07 - Legends.dwg; B836-07 - Piping Notes.dwg; B836-07 - Aeration Component Keynotes.dwg
Dimscale = 24; LTscale = 1; PSltscale = 1; ACAD Ver. = 23.0s (LMS Tech); Viztech = 1
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Aug. 16, 2023

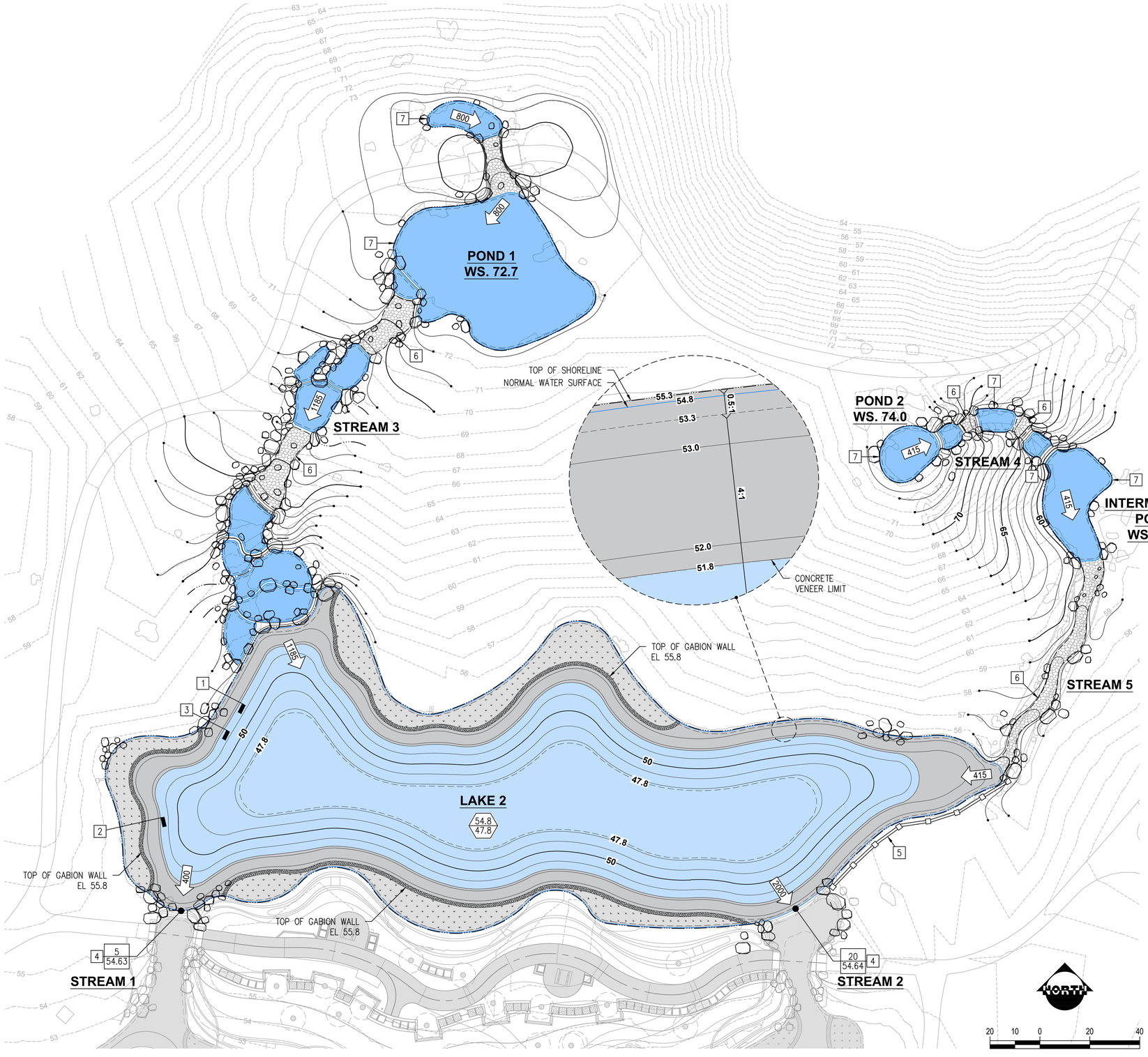
LAKE DATA:

	LAKE 2
SURFACE AREA (ACRES)	0.66
VOLUME (GAL)	945,600
LENGTH OF SHORELINE (FT)	955
NORMAL WATER SURFACE ELEVATION (FT)	54.8
LAKE BOTTOM ELEVATION (FT)	47.8

NOTE: LAKE DATA SHOULD BE CONSIDERED AS ENGINEER'S ESTIMATE ONLY. POND CONTRACTOR SHOULD INDEPENDENTLY VERIFY QUANTITIES.

LAKE COMPONENTS:

- A/W250 [1] ERODED CONCRETE SHORELINE
- E/W250 [2] PLANTER SHORELINE
- B/W250 [3] BOULDER POCKET
- C/W255 [4] WATERFALL WITH CONTROL WEIR
- A/W258 [5] POLE FENCE
- E/W256 [6] NEW STREAM
- F/W256 [7] NEW POND



LAKE 2 - PLAN VIEW
SCALE: 1"=20'

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PRELIMINARY DESIGN DRAWING

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R.C.E. NO. — #C89315
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DRAWN SP/RC | SCALE AS SHOWN
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CHECKED ZS | DATE 8/16/2023

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TITLE
PHASE 2 - LAKE 2 PLAN

JOB
TEWINKLE PARK
LAKE RENOVATION
COSTA MESA CA

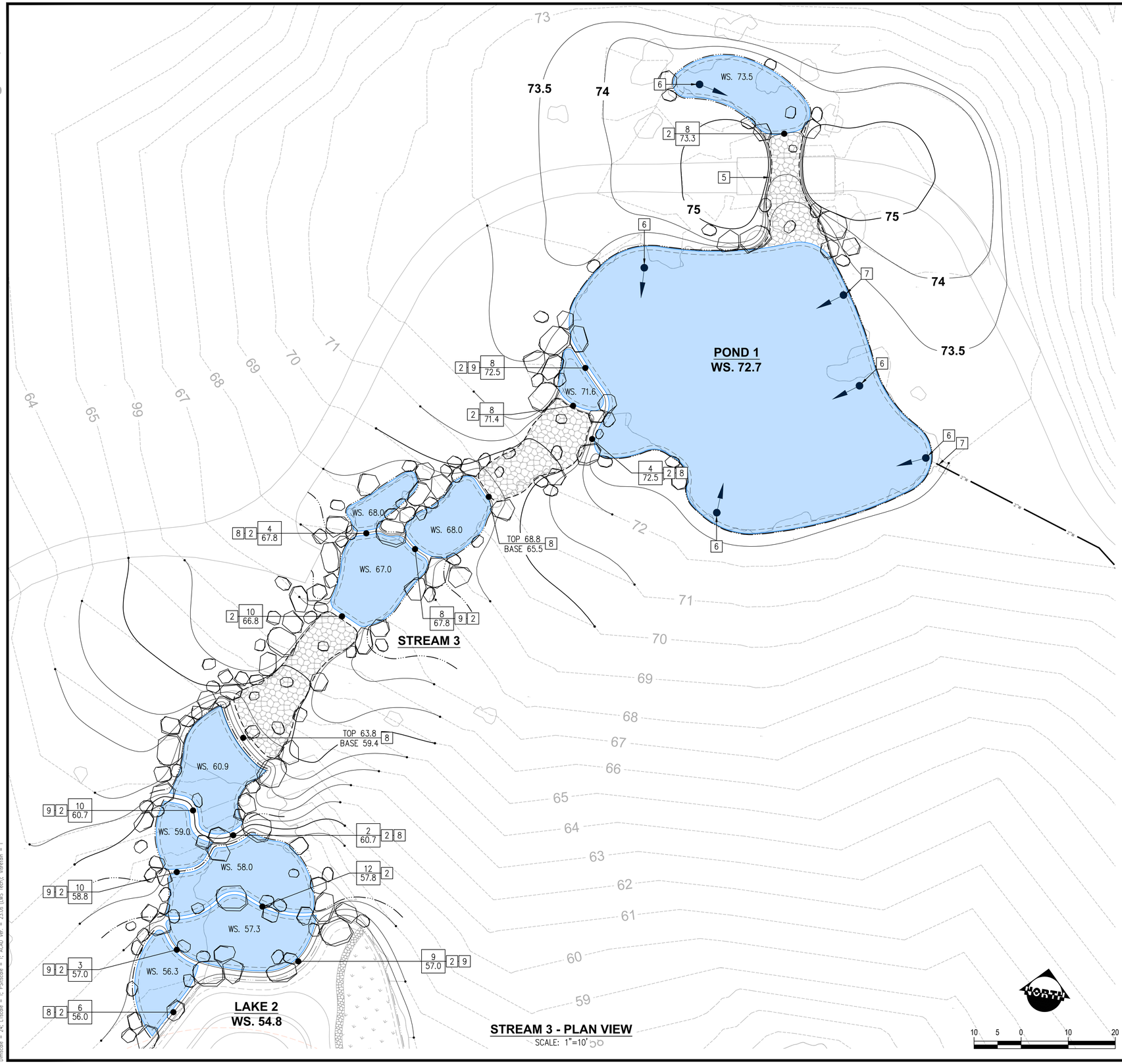
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SHEET W224
18 OF 50 SHEETS

JOB NO. B836

Xrefs: B836-07 36x24v.dwg; TopoSurvey.dwg; B836 - Lake Base.dwg
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Aug. 16, 2023



STREAM 3 - PLAN VIEW
SCALE: 1"=10'

10 5 0 10 20

NORTH

LAKE COMPONENTS:

A W250	1	ERODED CONCRETE SHORELINE
D W256	2	WATERFALL CONTROL WEIR
E W256	3	NEW STREAM
F W256	4	NEW POND
A W251	5	STREAM AT BRIDGE
A W251	6	DISCHARGE RISERS (6 TYP.)
A W251	7	DISCHARGE ABOVE WATER (12" AIR GAP) FOR POTABLE WATER FILL LINE
C W256	8	CASCADE WATERFALL
A W256	9	FREEFALL WATERFALL

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PRELIMINARY DESIGN DRAWING

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NO	BY	DATE	REVISIONS	DATE	APP.

PREPARED BY
ZHANG SONG
R.C.E. NO. PROJECT ENGINEER #C89315
EXP. 09/30/2024

DRAWN SP/RC | SCALE AS SHOWN
DESIGNED BL
CHECKED ZS | DATE 8/16/2023

TITLE **PHASE 2 - STREAM PLAN**

JOB **TEWINKLE PARK**
LAKE RENOVATION
COSTA MESA *CA*

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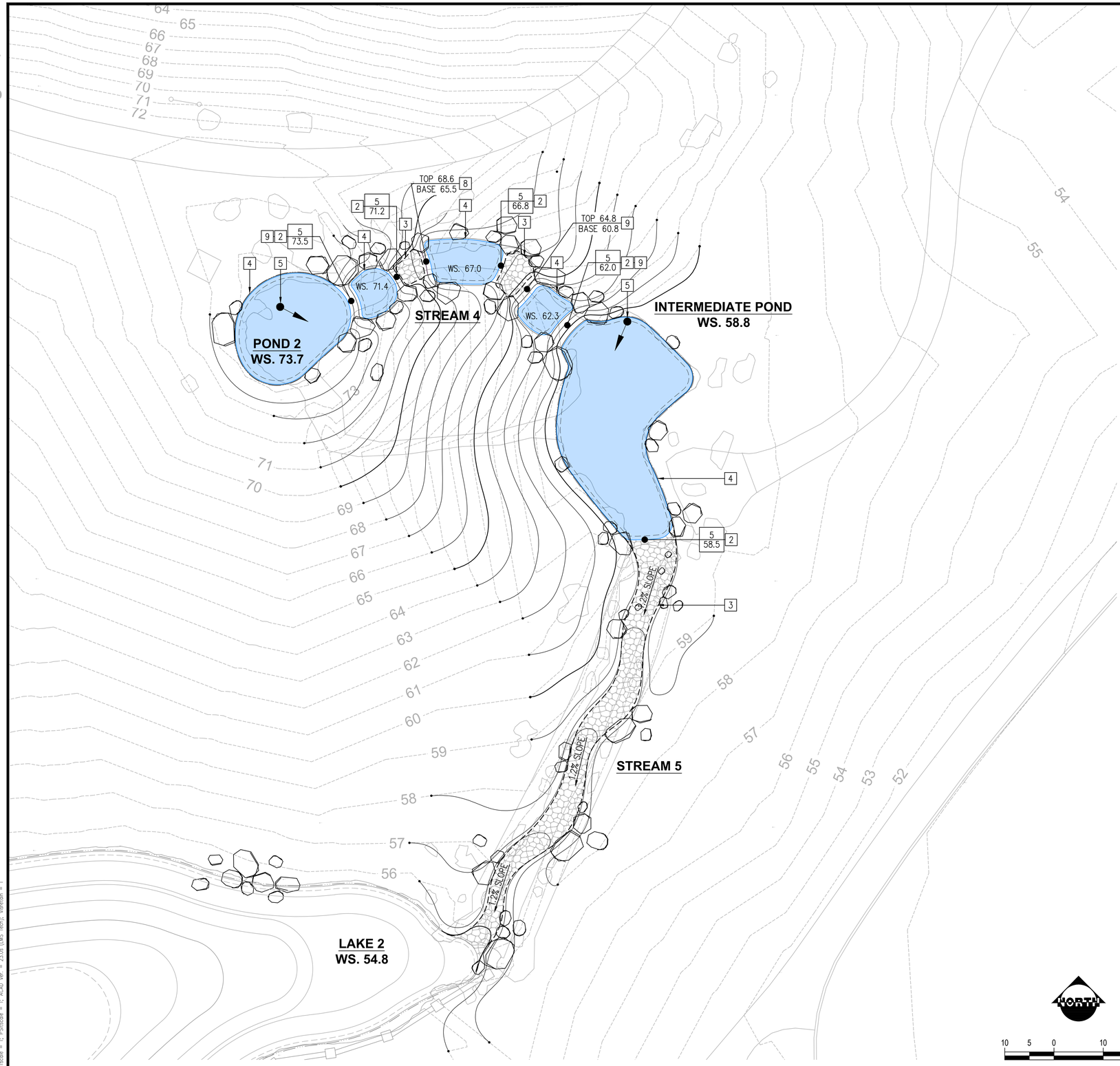
SHEET **W225**
19 OF 50 SHEETS

JOB NO. B836

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Aug. 16, 2023



STREAM 4 AND 5 - PLAN VIEW
SCALE: 1"=10'

10 5 0 10 20

LAKE COMPONENTS:

A W250	1	ERODED CONCRETE SHORELINE
D W256	2	WATERFALL CONTROL WEIR
E W256	3	NEW STREAM
F W256	4	NEW POND
A W251	5	STREAM AT BRIDGE
A W251	6	DISCHARGE RISERS (6 TYP.)
A W251	7	DISCHARGE ABOVE WATER (12" AIR GAP) FOR POTABLE WATER FILL LINE
C W256	8	CASCADE WATERFALL
A W256	9	FREEFALL WATERFALL

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PREPARED BY
ZHANG SONG
PROJECT ENGINEER
R.C.E. NO. ---- #C89315
EXP: 09/30/2024

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DESIGNED BL
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TITLE **PHASE 2 - STREAM PLAN**

JOB **TEWINKLE PARK**
LAKE RENOVATION
COSTA MESA *CA*

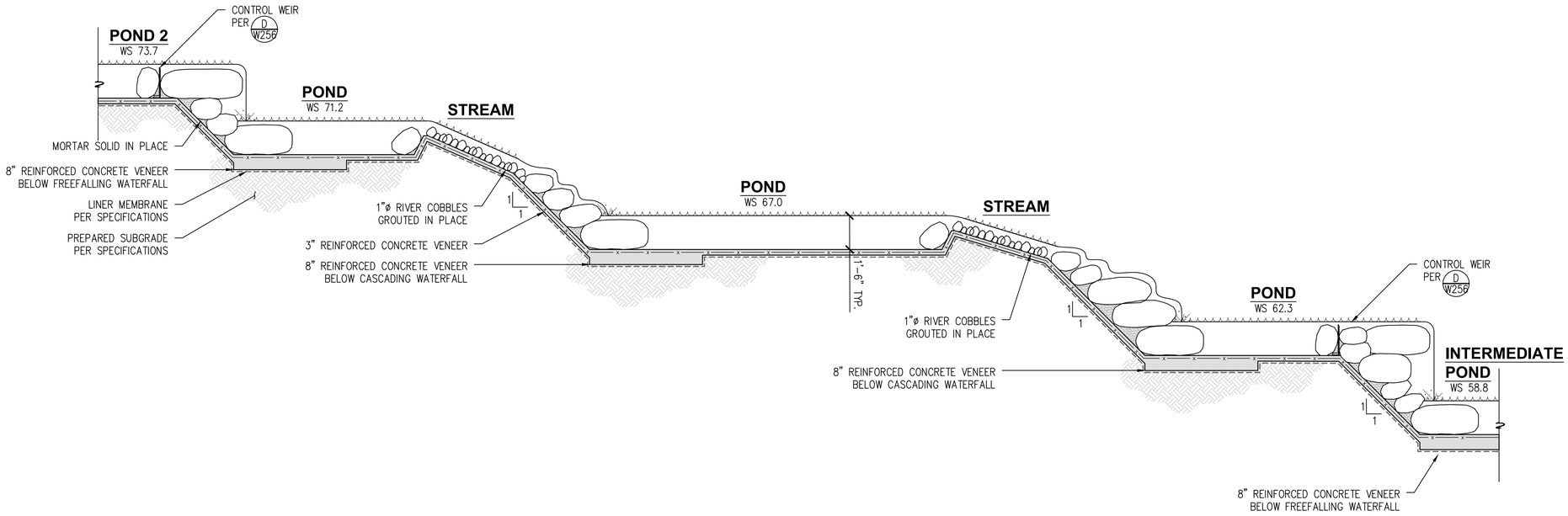
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SHEET **W226**
20 OF 50 SHEETS

JOB NO. B836

Xrefs: B836-07 36x24v.dwg; B836 - Lake Base.dwg; B836 - Piping Base.dwg; TopoSurvey.dwg
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Aug. 16, 2023



A ***TYPICAL STREAM SECTION***
SCALE: 3/8"=1'-0"

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EXP. 06/30/2024

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TITLE
PHASE 2 - SECTIONS

JOB
TEWINKLE PARK
LAKE RENOVATION
COSTA MESA ***CA***

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SHEET
W227
21 OF 50 SHEETS

JOB NO. B836

Xrefs: B836-07 36x24v.dwg, Lake Sections.dwg
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Aug. 16, 2023

DEMOLITION LEGENDS:

ITEM TO BE REMOVED

ITEM TO PROTECT IN PLACE

CONTAINS ITEMS TO REUSE OR RELOCATE

REUSE OR RELOCATE KEYNOTES:

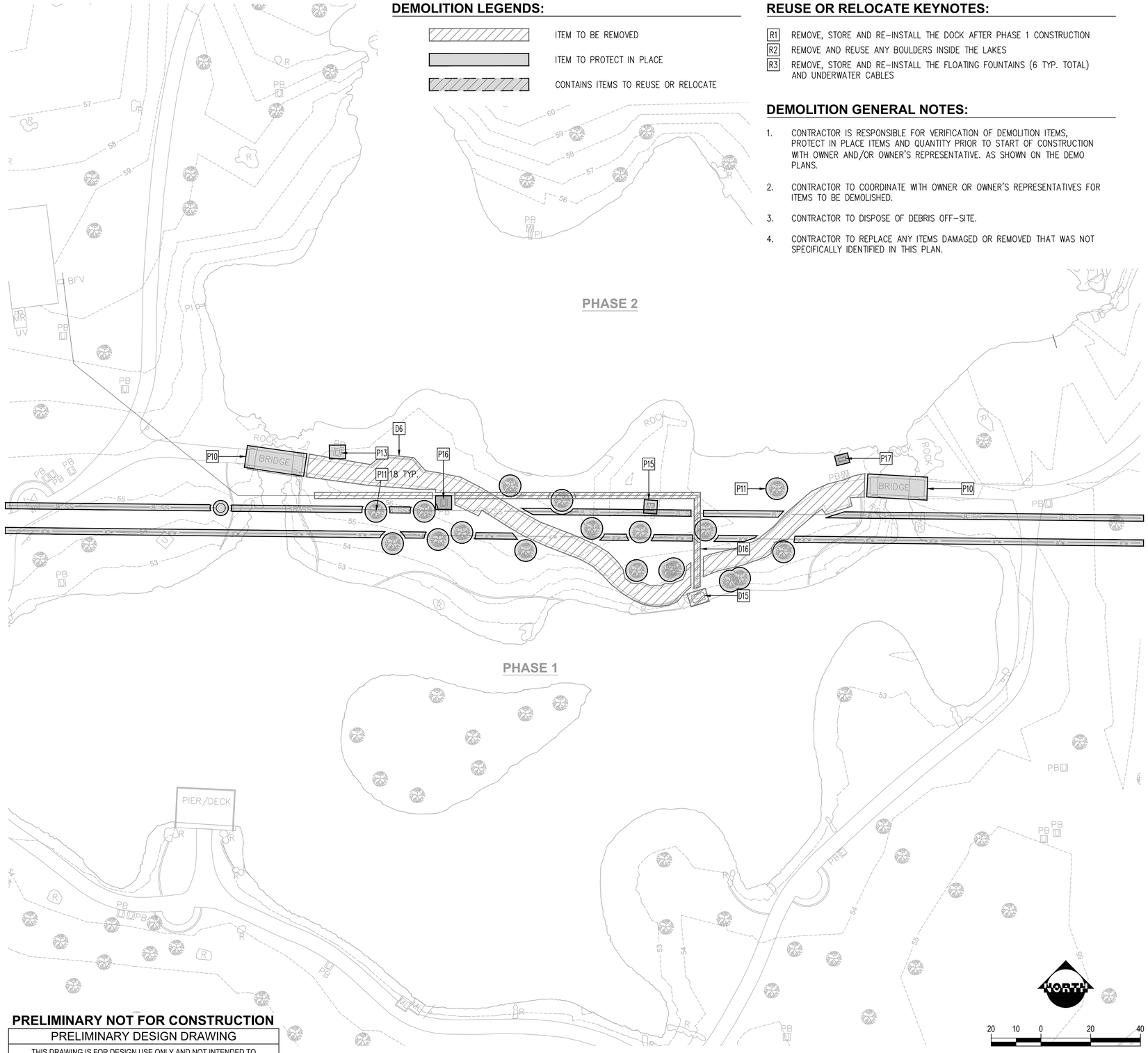
R1 REMOVE, STORE AND RE-INSTALL THE DOCK AFTER PHASE 1 CONSTRUCTION

R2 REMOVE AND REUSE ANY BOULDERS INSIDE THE LAKES

R3 REMOVE, STORE AND RE-INSTALL THE FLOATING FOUNTAINS (6 TYP. TOTAL) AND UNDERWATER CABLES

DEMOLITION GENERAL NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF DEMOLITION ITEMS, PROTECT IN PLACE ITEMS AND QUANTITY PRIOR TO START OF CONSTRUCTION WITH OWNER AND/OR OWNER'S REPRESENTATIVE. AS SHOWN ON THE DEMO PLANS.
2. CONTRACTOR TO COORDINATE WITH OWNER OR OWNER'S REPRESENTATIVES FOR ITEMS TO BE DEMOLISHED.
3. CONTRACTOR TO DISPOSE OF DEBRIS OFF-SITE.
4. CONTRACTOR TO REPLACE ANY ITEMS DAMAGED OR REMOVED THAT WAS NOT SPECIFICALLY IDENTIFIED IN THIS PLAN.



DEMOLITION KEYNOTES:

D1 REMOVE BIOFILTER AT BOTTOM OF LAKE 1

D2 REMOVE LAKE 1 PIPES
- a. 4" BIOFILTER PIPES
- b. 12" BIOFILTER BACKWASH PIPE
- c. 14"ø INTAKE PIPE
- d. RECIRCULATION PIPES (8", 6", 4", 2", 2 ½", 1½")

D3 REMOVE EXISTING UNDERGROUND VAULT NEXT TO THE OVERFLOW BOX

D4 REMOVE LAKE 1 PENINSULAS

D5 REMOVE LAKE 1 EXISTING SHORELINE & LINER

D6 REMOVE WALKWAY

D7 REMOVE LAKE 2 AND PONDS PIPES
- a. LAKE 2 RECIRCULATION PIPES (8", 6", 4", 3", 2 ½", 2", 1½")
- b. POND 1 PIPES
- c. INTERMEDIATE POND PIPES

D8 REMOVE LAKE 2 SHORELINE AND LINER

D9 REMOVE EXISTING VAULT

D10 REMOVE 2½"ø WATER LEVEL SENSOR EQUALIZER

D11 REMOVE EXISTING FLOATING FOUNTAIN JUNCTION BOX (CONTRACTOR TO CONFIRM THE LOCATION)

D12 REMOVE EXISTING FLOATING FOUNTAIN CONDUITS (CONTRACTOR TO CONFIRM THE COUNDUIT ROUTES)

D13 REMOVE EXISTING TREES IN DEMOLITION AREA. LOCATION TO BE CONFIRM WITH CITY (5 TYP).

D14 REMOVE EXISTING WATERFALL

D15 REMOVE EXISTING OZONE BOX AND PIPES INSIDE THE LAKE (3 PLCS. AT LAKE 1 AND 1 PLC. AT LAKE 2)

D16 REMOVE OZONE EXISTING PIPING

D17 REMOVE EXISTING UNDERGROUND VAULT (SCREEN VAULT)

D18 REMOVE EXISTING STREAM #3 AND POND 1

D19 REMOVE EXISTING STREAM #4 AND POND 2

D20 REMOVE EXISTING STREAM #5 AND INTERMEDIATE POND

D21 REMOVE EXISTING WATERFALL FOR REBUILT

D22 REMOVE 8" AND 4"ø POND 1 DISCHARGE

D23 REMOVE 8"ø POND 2 DISCHARGE

D24 REMOVE VALVE AND VALVE BOX

D25 REMOVE 4"ø INTERMEDIATE POND DISCHARGE

D26 REMOVE EXISTING WIRING AND CONDUIT FROM WATER LEVEL SENSOR TO FILL VALVE

D27 REMOVE EXISTING POTABLE WATER CONTROL VALVE

D28 REMOVE EXISTING OVER SHORELINE DISCHARGE

PROTECT-IN-PLACE KEYNOTES:

P1 PROTECT IN PLACE 14"ø INTAKE PIPE

P2 PROTECT IN PLACE 2½"ø WATER LEVEL SENSOR EQUALIZER

~~P3 PROTECT IN PLACE WIRING & CONDUIT FROM WATERLEVEL SENSOR TO FILL VALVE~~ **NOT USED**

~~P4 PROTECT IN PLACE 8"ø & 4"ø POND 1 DISCHARGES~~ **NOT USED**

~~P5 PROTECT IN PLACE 8"ø POND 2 DISCHARGE~~ **NOT USED**

~~P6 PROTECT IN PLACE VALVES IN VALVE BOX~~ **NOT USED**

~~P7 PROTECT IN PLACE 4"ø INTERMEDIATE POND DISCHARGE~~ **NOT USED**

P8 PROTECT IN PLACE BRIDGES BETWEEN LAKE 1 & LAKE 2

P9 PROTECT IN PLACE ALL PONDS SHORELINE, LINER, AND FEATURES

P10 PROTECT IN PLACE WOODEN BRIDGE

P11 PROTECT IN PLACE ALL EXISTING TREES IN AREA OF RENOVATION (26 TYP). NO ACTION ON TREES OUTSIDE OF RENOVATION AREA.

P12 PROTECT IN PLACE OVERFLOW BOX

P13 PROTECT IN PLACE IRRIGATION VALVE BOX FOR FUTURE IMPROVEMENT

P14 PROTECT IN PLACE ELECTRICAL WIRES AND CONDUITS FOR FLOATING FOUNTAIN

P15 PROTECT IN PLACE CONCRETE PULL BOX FOR FUTURE IMPROVEMENT

P16 PROTECT IN PLACE UNDERGROUND VAULT FOR FUTURE IMPROVEMENT

P17 PROTECT IN PLACE ELECTRICAL BOX FOR FUTURE IMPROVEMENT

P18 PROTECT IN PLACE EXISTING PIPING

P19 PROTECT IN PLACE EXISTING SEWER MANHOLE

P20 PROTECT IN PLACE EXISTING IRRIGATION ISOLATION VALVE

P21 CAP AND ABANDON IN PLACE EXISTING OZONE PIPE

P22 PROTECT IN PLACE EXISTING RECYCLED WATER PIPES AND VALVE BOX

P23 PROTECT IN PLACE EXISTING IRRIGATION VALVE BOX

P24 PROTECT IN PLACE EXISTING POTABLE WATER PIPES

P25 PROTECT IN PLACE EXISTING POTABLE WATER VALVE BOX

P26 PROTECT IN PLACE EXISTING POTABLE WATER DISCHARGE

P27 PROTECT IN PLACE DISCHARGE VALVE

P28 PROTECT IN PLACE LAKE 1 ISLAND

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PHASE 3 - DEMOLITION PLAN

SCALE: 1"=20'

NO	BY	DATE	REVISIONS	DATE	APP.

PREPARED BY
ZIRANG SONG
PROJECT ENGINEER
R.C.E. NO. — #C89315
EXP: 6/30/2024

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DESIGNED BL
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TITLE
PHASE 3 - DEMOLITION PLAN

JOB
TEWINKLE PARK
LAKE RENOVATION
COSTA MESA *CA*

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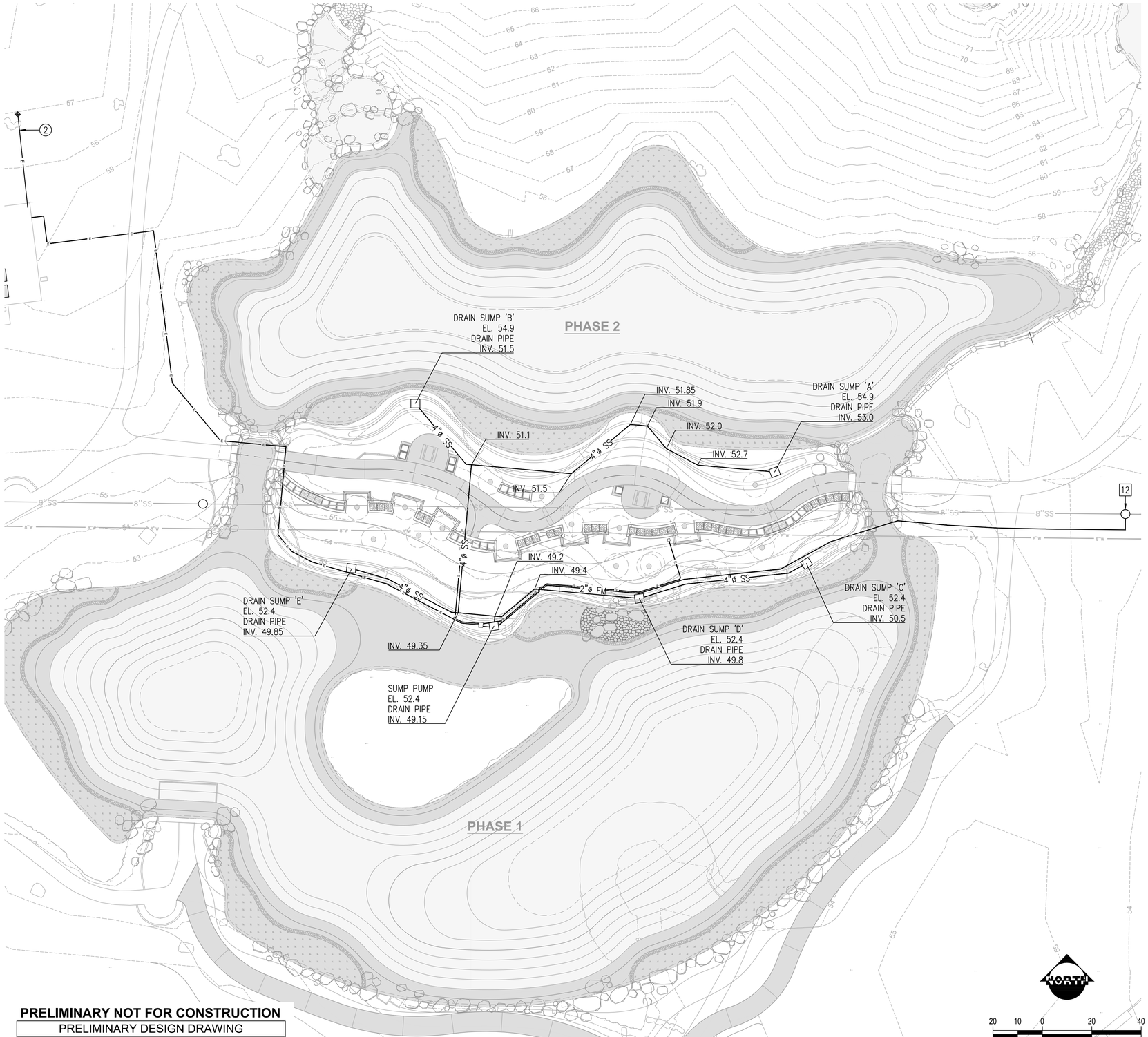
SHEET
W231
22 OF 50 SHEETS

JOB NO. B836

Xrefs: B836-07 36x24v.dwg; TopoSurvey.dwg; B836 - Existing Piping.dwg; B836-07 - Demo Keynotes.dwg
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Aug. 16, 2023



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ISLAND - PIPING & UTILITY PLAN

SCALE: 1"=20'

LEGENDS:

- DISCHARGE PIPE
- INTAKE PIPE
- RW — RECLAIMED WATER
- W — POTABLE WATER
- SS — SANITARY SEWER
- SD — STORM DRAIN
- E — ELECTRICAL SERVICE
- POINT OF CONNECTION
- ALUM DISCHARGE W/ VALVE AT SHORELINE
- DISCHARGE JET W/ VALVE AT SHORELINE
- XXX — INDICATES RECIRCULATION FLOW (GPM)
- (X) — INDICATES UTILITY REQUIREMENT
- [X] — INDICATES PIPING COMPONENTS

PIPING NOTES:

1. THE PIPING PLAN IS DIAGRAMMATIC. ROUTING AND FINAL LAYOUT TO BE FIELD DETERMINED BY CONTRACTOR AND APPROVED BY ENGINEER PRIOR TO CONSTRUCTION.
2. PIPE TYPE, MATERIALS, AND SUPPORTS SHALL CONFORM TO THE PROJECT SPECIFICATIONS. IN ADDITION, PIPE SHALL BE IN CONFORMANCE WITH UBC, UPC, LOCAL AND NATIONAL BUILDING CODE REQUIREMENTS.
3. PARALLEL PIPE RUNS SHALL BE INSTALLED WITHIN COMMON TRENCHES AND OR PIPE SUPPORTS WHENEVER POSSIBLE.
4. ALL PIPING SHALL BE UNIFORMLY AND CONTINUOUSLY SUPPORTED OVER ITS ENTIRE LENGTH AND ROUTE.
5. ALL ELECTRICAL CONDUITS SHALL BE INSTALLED USING SWEEP FITTINGS IN CONFORMANCE WITH LOCAL AND NATIONAL BUILDING CODES.
6. PRESSURE TEST ALL PIPING PER PROJECT SPECIFICATIONS. KEEP PIPING UNDER PRESSURE TESTING CONDITIONS DURING TRENCH BACKFILL/COMPACTION AND DURING THE INSTALLATION OF WATER FEATURE CONCRETE BASIN.
7. ALL UNDERGROUND AND EQUIPMENT PIPING SHALL BE PVC SCHEDULE 40 UNLESS OTHERWISE DESIGNATED WITHIN PLANS AND SPECIFICATIONS.
8. ALL PIPING RUNS SHALL HAVE THRUST BLOCKS.

UTILITY REQUIREMENTS:

(1) EXISTING 4" POTABLE WATER CONNECTION. CONTROL BY EXISTING WATER LEVEL SENSOR IN VALVE BOX.

(2) AN EXISTING ELECTRICAL FEED @ 480V, 3ø, 4 WIRE TO BE PROTECTED IN PLACE. PROVIDE TERMINATION AT LAKE MOTOR CONTROL PANEL IN THE PUMP STATION. VERIFY REQUIREMENTS WITH THE ELECTRICAL SHEETS. THE ELECTRICAL SHEETS OVERRIDE THIS SHEET FOR CALCULATIONS.

(3) EXISTING SEWER CONNECTION FOR SUMP PUMP DISCHARGE

(4) EXISTING 2"ø RECYCLED WATER

PIPING COMPONENTS:

[1] 8"ø PHASE 1 LAKES RECIRCULATION DISCHARGE PIPE
[2] 6"ø PHASE 2 LAKES RECIRCULATION DISCHARGE PIPE
[3] 14"ø PHASE 1 LAKE INTAKE PIPE WITH SCREEN
[4] PIPE PENETRATION
[5] EXISTING WATER LEVEL SENSOR IN VALVE BOX
[6] EXISTING 2.5" PVC EQUALIZER FOR WATER LEVEL CONTROL
[7] NEW PONDS AND STREAMS DISCHARGE PIPE
[8] NEW WIRING AND 2" CONDUIT FOR WATER LEVEL CONTROL
[9] EXISTING INTAKE PIPE
[10] NEW FILL VALVE IN VALVE BOX TO MATCH THE EXISTING
[11] EXISTING 3"ø VACUUM BREAKER
[12] EXISTING MANHOLE
[13] 2" ELECTRICAL CONDUIT

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PREPARED BY
ZIRANG SONG
PROJECT ENGINEER
R.C.E. NO. #C89315
EXP. 06/30/2024

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DESIGNED BL
CHECKED ZS | DATE 8/16/2023

TITLE **PHASE 3 - ISLAND PIPING AND UTILITY PLAN**

JOB **TEWINKLE PARK** *LAKE RENOVATION* **COSTA MESA** CA

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SHEET **W232**
23 OF 50 SHEETS

JOB NO. B836

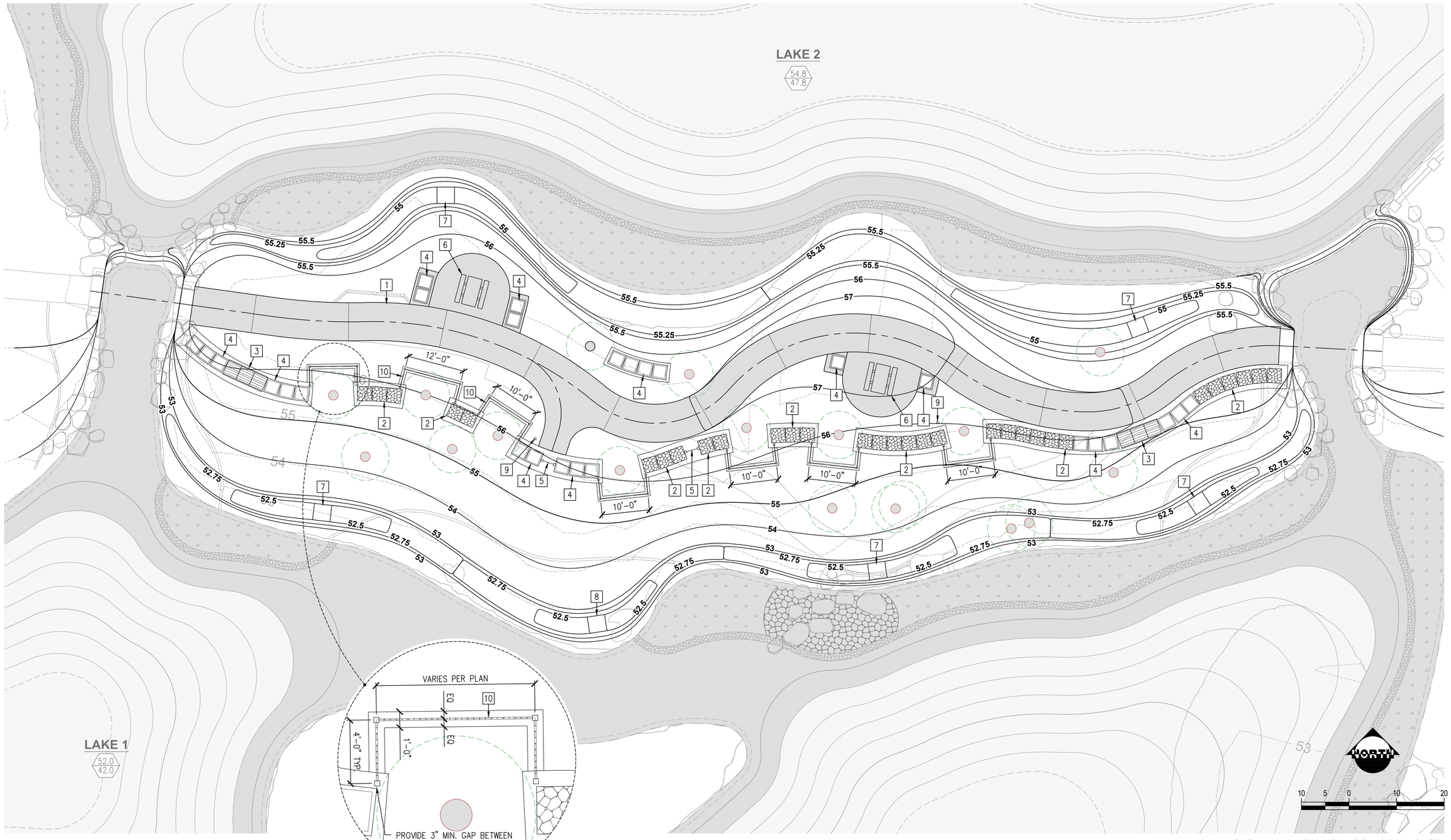
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Aug. 16, 2023

LAKE COMPONENTS:

E/W257	1	PATHWAY PER CITY STANDARD	D/W256	4	PLANTER BOX	—	7	DRAIN SUMP (4 PLCS)	B/W258	10	ALUMINUM FENCE
C/W256	2	3'x3'x3'(H) GABION WALL	A/W256	5	GATE (2 PLCS)	—	8	DRAIN SUMP W/ SUBMERSIBLE PUMP			
F/W256	3	GABION WALL BENCH	D/W257	6	PICNIC TABLE	E/W260	9	QUICK COUPLER (2 PLCS)			



ISLAND - PLAN VIEW
SCALE: 1"=10'

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PRELIMINARY DESIGN DRAWING

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PREPARED BY
ZHANG SONG
R.C.E. NO. — PROJECT ENGINEER #C89315
EXP: 06/30/2024

DRAWN SP/RC | SCALE AS SHOWN
DESIGNED BL
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TITLE
PHASE 3 - ISLAND PLAN

JOB
TEWINKLE PARK
LAKE RENOVATION
COSTA MESA ***CA***

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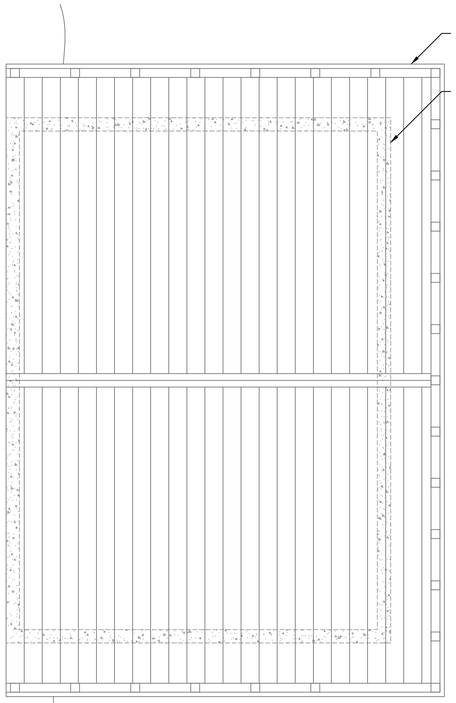
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W233
24 OF 50 SHEETS

JOB NO. B836

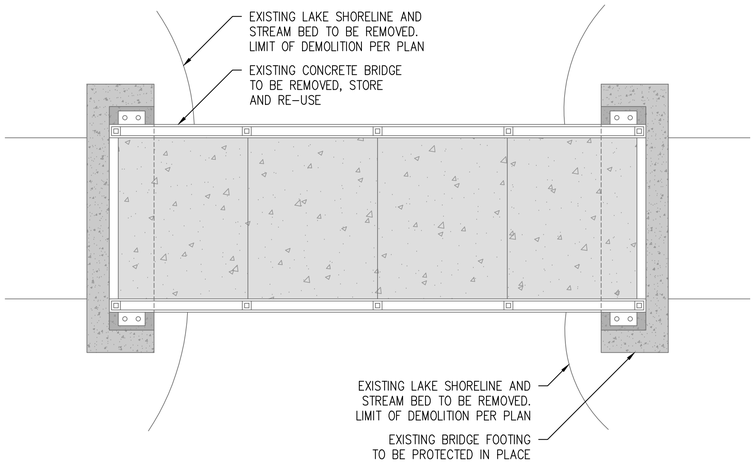
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Xrefs: B836-07 Job24x24.dwg; TopoSurvey.dwg; B836 – Lake Base.dwg
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Aug. 16, 2023

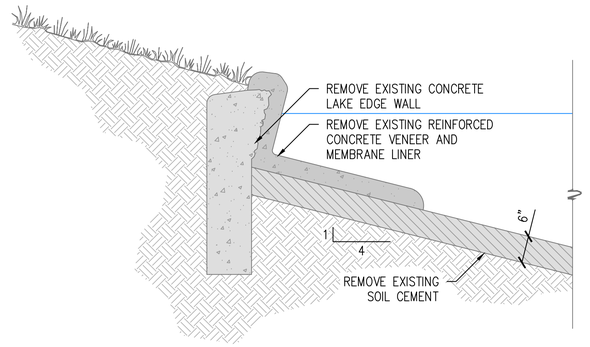


PLAN

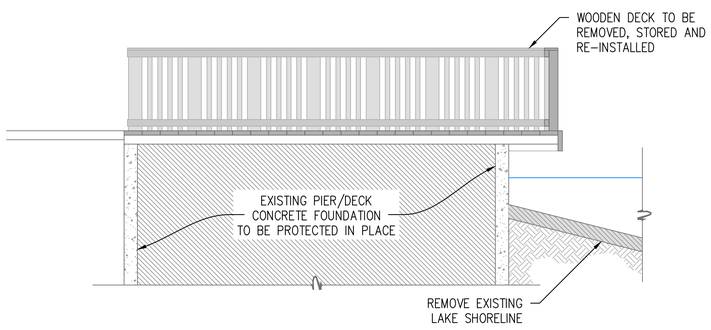


PLAN

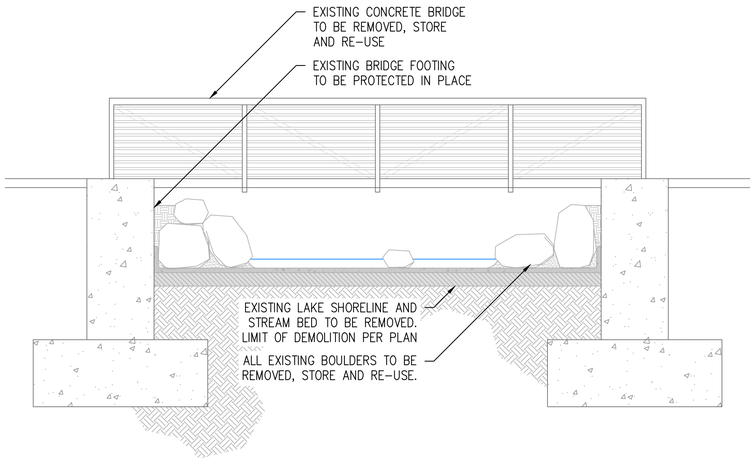
NOTE:
EXISTING SHORELINE SECTION SHOWN FOR REFERENCE ONLY, PER AS-BUILT PLANS. CONTRACTOR TO VERIFY CONDITION ON SITE BEFORE PROCEEDING WITH DEMOLITION.



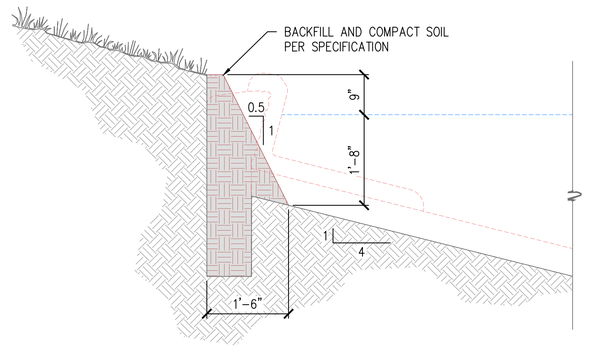
EXISTING SHORELINE



SECTION



SECTION



TYPICAL PROPOSED GRADING SECTION

F ***DEMOLITION AT WOODEN DECK***
SCALE

D ***DEMOLITION AT BRIDGE***
3/8" = 1'-0"

B ***TYPICAL SHORELINE DEMOLITION***
3/4" = 1'-0"

PRELIMINARY NOT FOR CONSTRUCTION

PRELIMINARY DESIGN DRAWING

THIS DRAWING IS FOR DESIGN USE ONLY AND NOT INTENDED TO BE USED FOR CONSTRUCTION.

NO	BY	DATE	REVISIONS	DATE	APP.

PREPARED BY
ZHANG SONG
PROJECT ENGINEER
R.C.E. NO. #C89315
EXP. 09/30/2024

DRAWN SP/RC
SCALE AS SHOWN
DESIGNED BL
CHECKED ZS
DATE 8/16/2023

TITLE **DEMOLITION DETAILS**

JOB **TEWINKLE PARK**
LAKE RENOVATION
COSTA MESA CA

PACE
Advanced Water Engineering
17520 Newhope Street, Suite 200 | Fountain Valley, CA 92708
P: (714) 481-7300 | www.pacewater.com

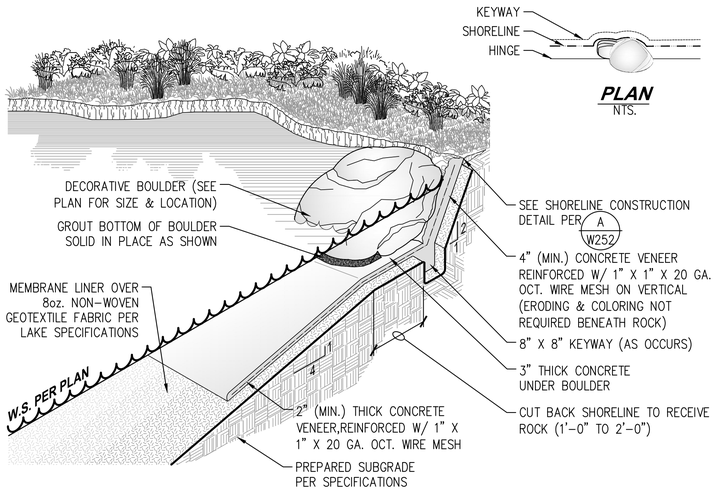
SHEET **W240**
25 OF 50 SHEETS

JOB NO. B836

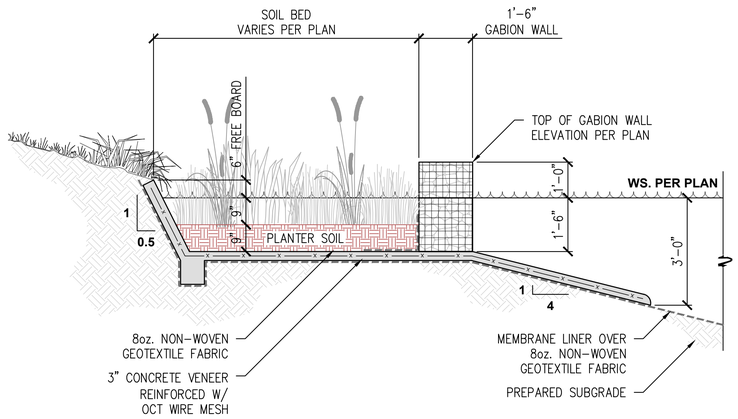
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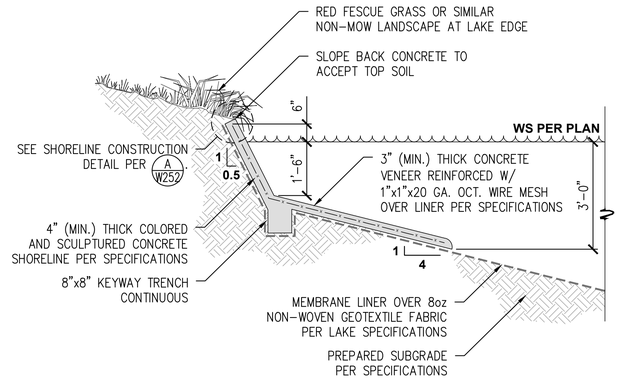
Aug. 16, 2023



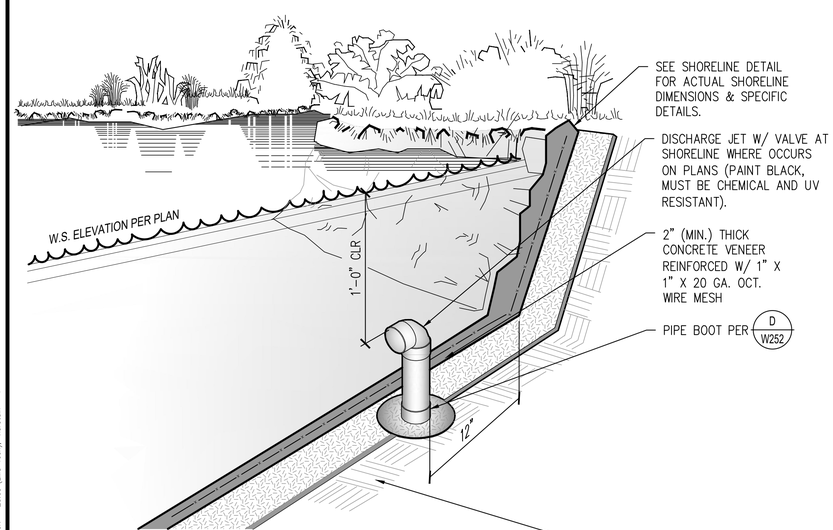
E BOULDER POCKET SHORELINE
NOT TO SCALE



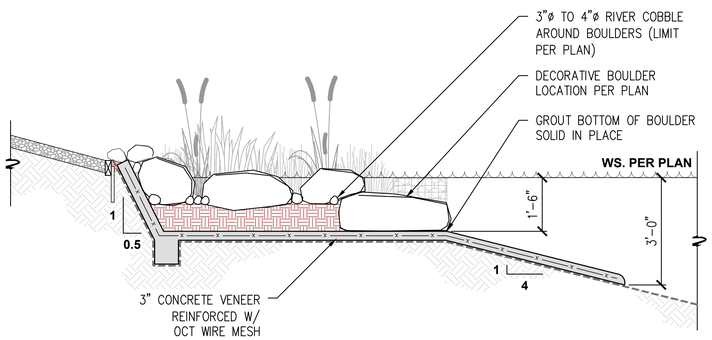
C LAKE PLANTER / WETLAND SHORELINE
SCALE: 1/2" = 1'-0"



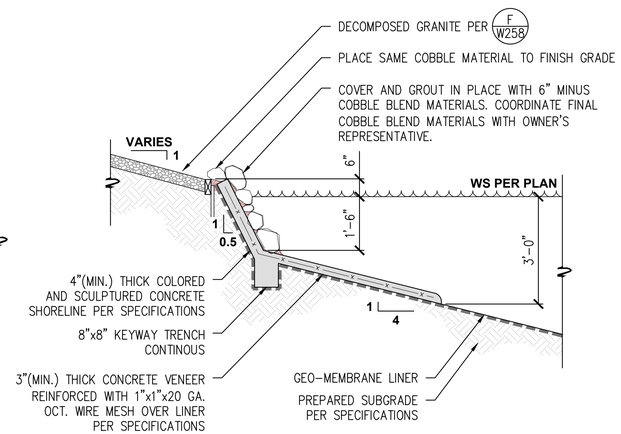
A ERODED CONCRETE SHORELINE
SCALE: 1/2" = 1'-0"



F DISCHARGE JET
NOT TO SCALE



D STEPPING STONE AT PLANTER
SCALE: 1/2" = 1'-0"



B ROCK SHORELINE
SCALE: 1/2" = 1'-0"

PRELIMINARY NOT FOR CONSTRUCTION

PRELIMINARY DESIGN DRAWING

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NO	BY	DATE	REVISIONS	DATE	APP.

PREPARED BY
ZHANG SONG
PROJECT ENGINEER
R.C.E. NO. ---- #C89315
EXP: 09/30/2024

DRAWN: SP/RC | SCALE: AS SHOWN
DESIGNED: BL
CHECKED: ZS | DATE: 8/16/2023

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TITLE: LAKE DETAILS

JOB: TEWINKLE PARK
LAKE RENOVATION
COSTA MESA CA

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SHEET W250
26 OF 50 SHEETS

JOB NO. B836

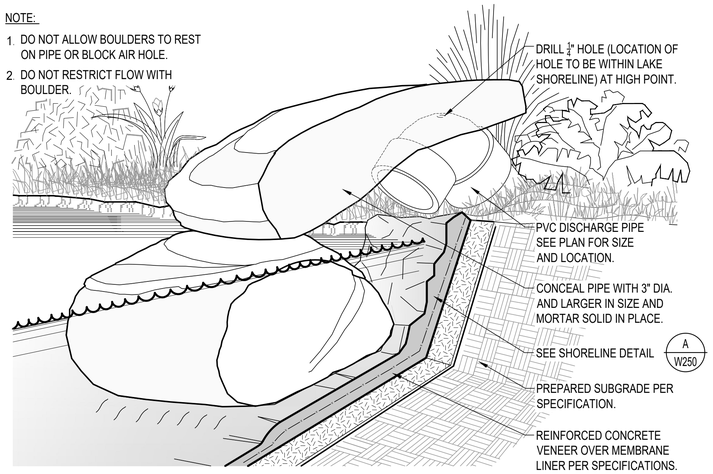
Xrefs: B836-07 36x24v.dwg, Lake Sections.dwg
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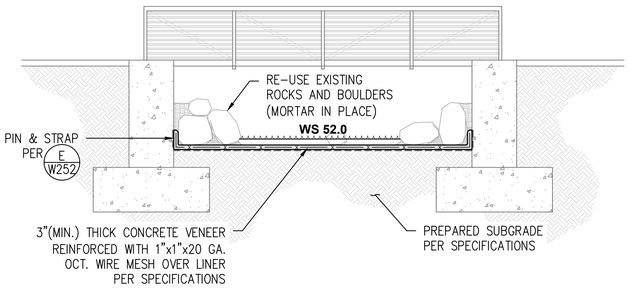
Aug. 16, 2023

NOTE:

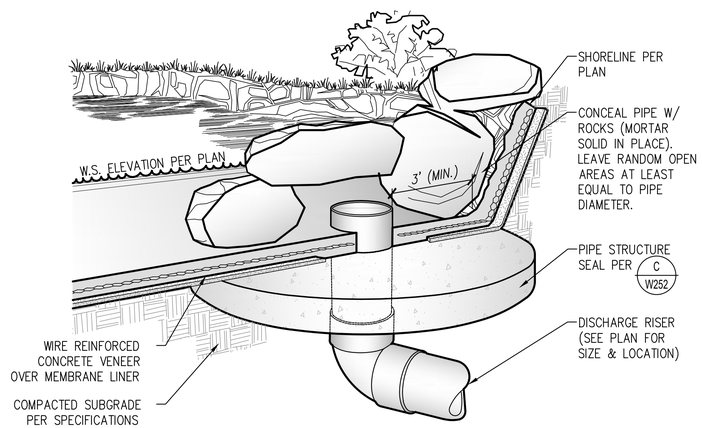
1. DO NOT ALLOW BOULDERS TO REST ON PIPE OR BLOCK AIR HOLE.
2. DO NOT RESTRICT FLOW WITH BOULDER.



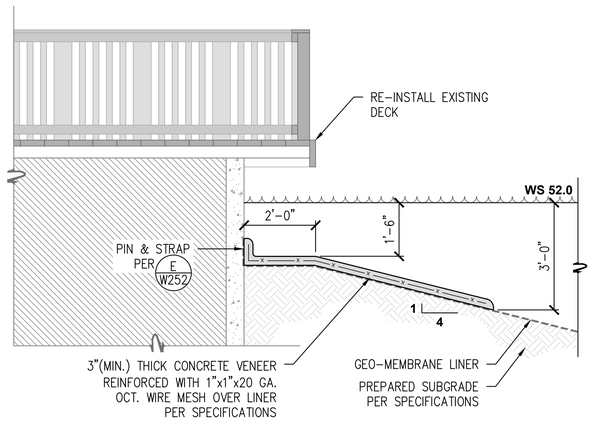
C DISCHARGE ABOVE WATER (FOR POTABLE FILL LINE)
SCALE: NTS.



A STREAM AT BRIDGE
SCALE: 1/4"=1'



D DISCHARGE RISER
SCALE: NTS.



B DECK SHORELINE
SCALE: 1/2" = 1'-0"

PRELIMINARY NOT FOR CONSTRUCTION

PRELIMINARY DESIGN DRAWING

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NO	BY	DATE	REVISIONS	DATE	APP.

PREPARED BY
ZHANG SONG
PROJECT ENGINEER
R.C.E. NO. ---
EXP. 07/30/2024

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SCALE AS SHOWN
DESIGNED BL
CHECKED ZS
DATE 8/16/2023

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TITLE
LAKE DETAILS

JOB
TEWINKLE PARK
LAKE RENOVATION
COSTA MESA CA

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P: (714) 481-7300 | www.pacewater.com

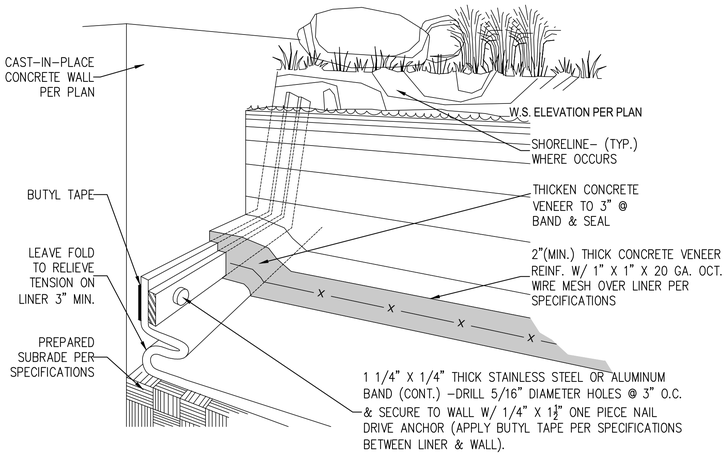
SHEET
W251
27 OF 50 SHEETS

JOB NO. B836

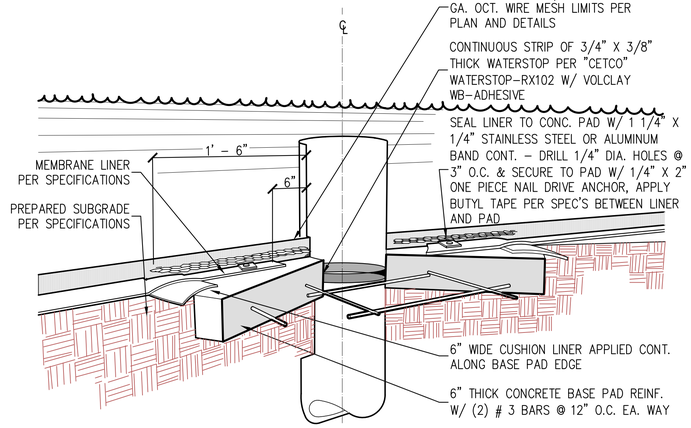
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Xrefs: B836-07 36x24v.dwg, Lake Sections.dwg
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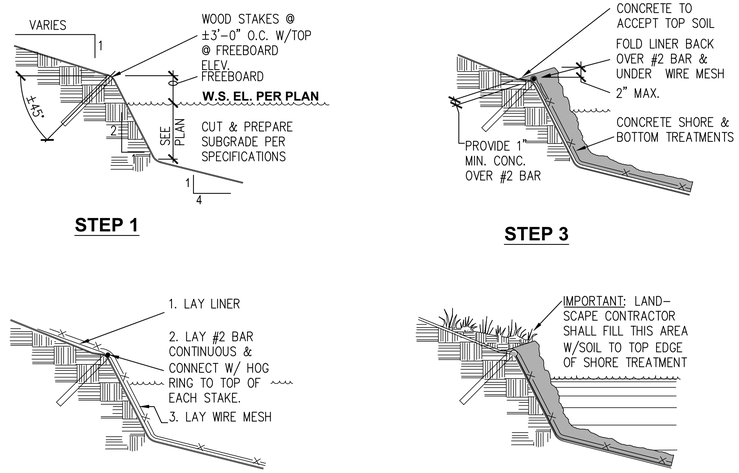
Aug. 16, 2023



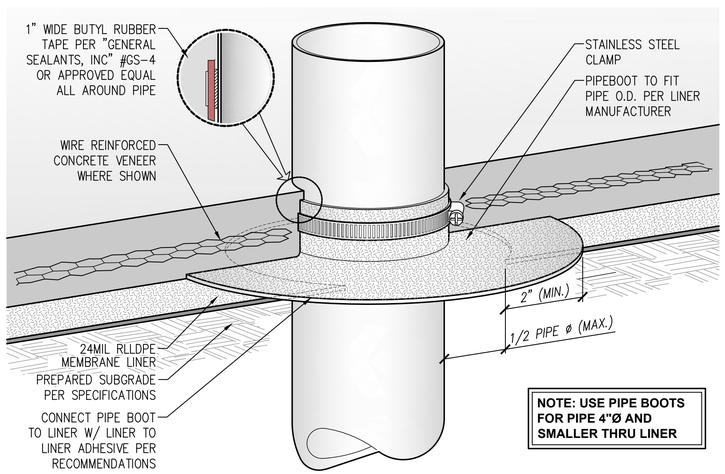
E *PIN & STRAP*
N.T.S.



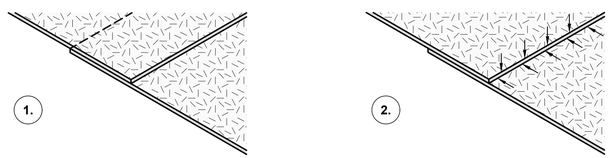
C *PIPE STRUCTURE SEAL*
NOT TO SCALE



A *SHORELINE CONSTRUCTION*
NOT TO SCALE



D *PIPE BOOT*
NOT TO SCALE



1. ALIGN PANELS & OVERLAP EDGES APPROX. 4" TO 6".
2. UTILIZE HOT AIR OR HOT WEDGE WELDING TECHNIQUES TO WELD SEAM TOGETHER IMMEDIATELY. EXTREME CARE SHOULD BE TAKEN THROUGHOUT THE WORK TO AVOID FISHMOUTHS, WRINKLES, FOLDS OR PLEATS IN THE SEAM AREA. PARTICULAR CARE SHOULD BE TAKEN TO ENSURE THAT NO STONES, SCRAP MATERIALS, TRASH, TOOLS OR OTHER UNWANTED ITEMS ARE TRAPPED BENEATH THE GEOMEMBRANE LINER.

B *HDPE LINER SEAMING PROCEDURE*
NOT TO SCALE

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PRELIMINARY DESIGN DRAWING

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NO	BY	DATE	REVISIONS	DATE	APP.

PREPARED BY
ZHANG SONG
PROJECT ENGINEER
R.C.E. NO. ---, #C89315
EXP. 06/30/2024

DRAWN SP/RC | SCALE AS SHOWN
DESIGNED BL
CHECKED ZS | DATE 8/16/2023

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TITLE
LAKE DETAILS

JOB
TEWINKLE PARK
LAKE RENOVATION
COSTA MESA CA

PACE
Advanced Water Engineering
17520 Newhope Street Suite 200 | Fountain Valley, CA 92708
P: (714) 481-7300 | www.pacewater.com

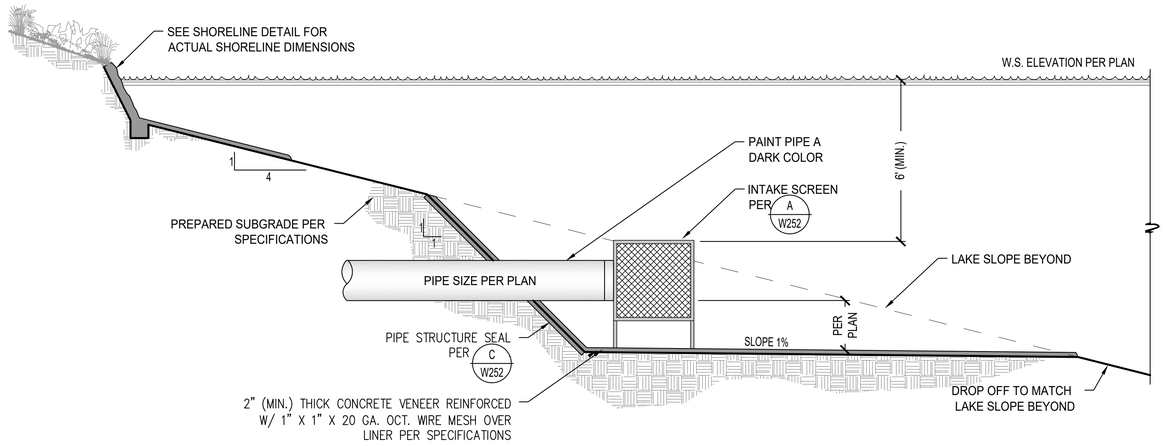
SHEET
W252
28 OF 50 SHEETS

JOB NO. B836

Xrefs: B836-07_36x24v.dwg
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Aug. 16, 2023

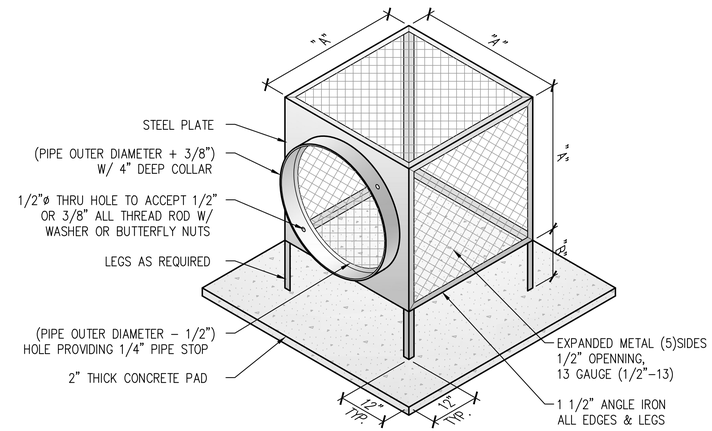


E LAKE INTAKE PIPE
NOT TO SCALE

PIPE SIZE	"A"	"B"
4", 6", 8"	18"	NO LEGS*
10" – 12"	2'–0"	6"
14" – 18"	3'–0"	12"
21" – 24"	4'–0"	12"
> 30"	5'–0"	12"

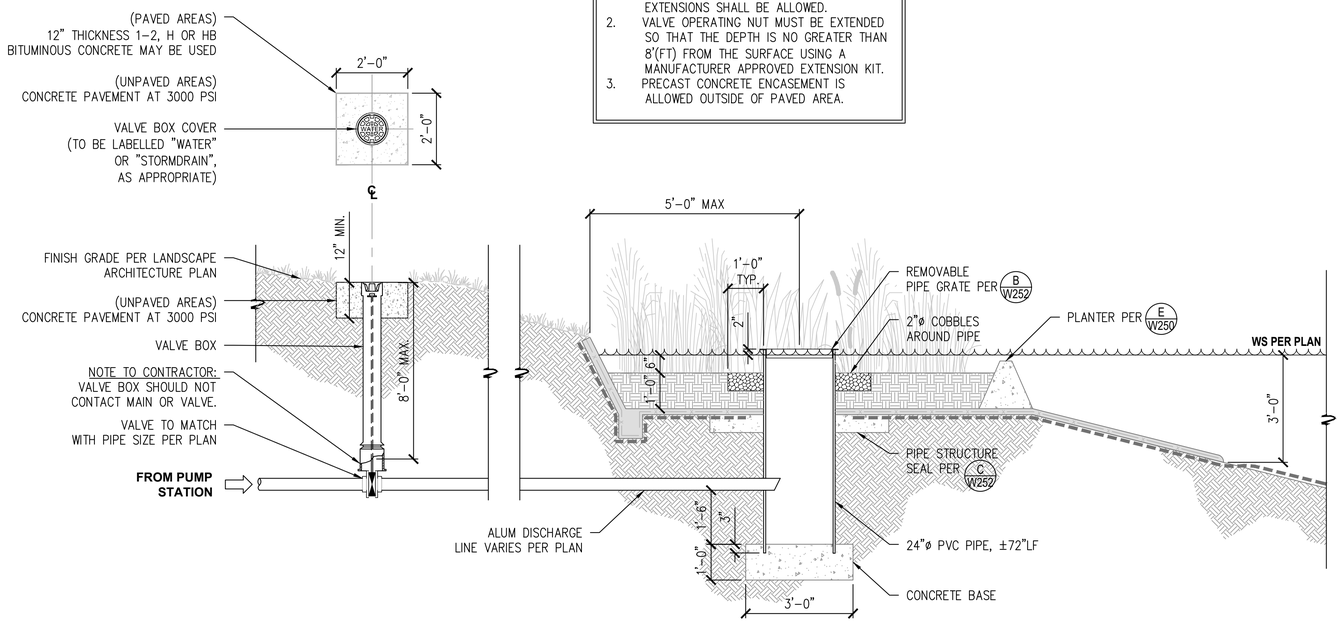
*SOLID BOTTOM & NO CONCRETE PAD

NOTE: EPOXY COAT ENTIRE ASSEMBLY

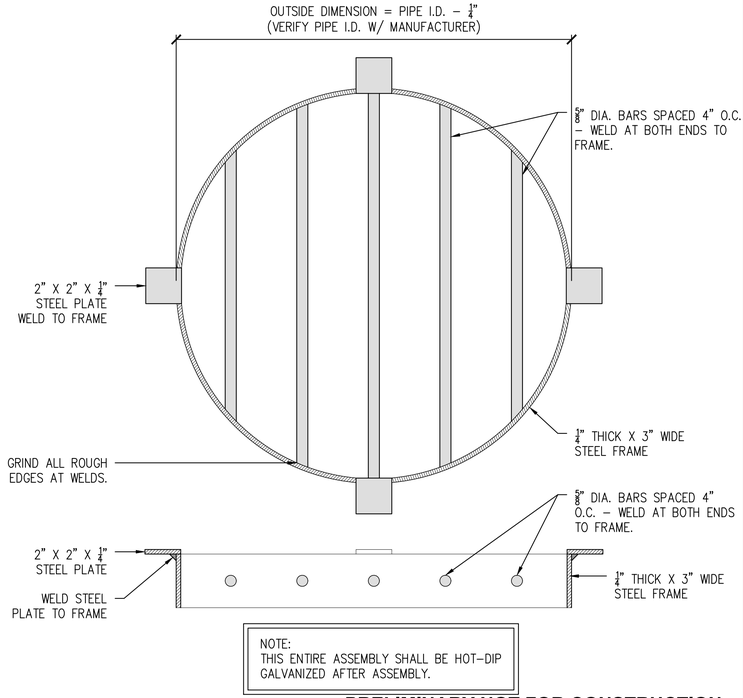


A INTAKE SCREEN
NOT TO SCALE

NOTES:
1. ONLY MANUFACTURED VALVE BOX EXTENSIONS SHALL BE ALLOWED.
2. VALVE OPERATING NUT MUST BE EXTENDED SO THAT THE DEPTH IS NO GREATER THAN 8'(FT) FROM THE SURFACE USING A MANUFACTURER APPROVED EXTENSION KIT.
3. PRECAST CONCRETE ENCASEMENT IS ALLOWED OUTSIDE OF PAVED AREA.



F ALUM DISCHARGE STANDPIPE INSIDE LAKE PLANTER
SCALE: 1/2"=1'



NOTE:
THIS ENTIRE ASSEMBLY SHALL BE HOT–DIP GALVANIZED AFTER ASSEMBLY.

B PIPE GRATE
3"=1'-0"

PRELIMINARY NOT FOR CONSTRUCTION

PRELIMINARY DESIGN DRAWING

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NO	BY	DATE	REVISIONS	DATE	APP.

PREPARED BY: ZIRANG SONG, PROJECT ENGINEER, R.C.E. NO. –, EXP. 09/30/2024
DRAWN: SP/RC | SCALE: 1"=1'SHOWN | DESIGNED: BL | CHECKED: ZS | DATE: 8/16/2023

TITLE: LAKE DETAILS

JOB: TEWINKLE PARK, LAKE RENOVATION, COSTA MESA, CA

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17520 Newhope Street, Suite 200 | Fountain Valley, CA 92708
P: (714) 481-7300 | www.pacewater.com

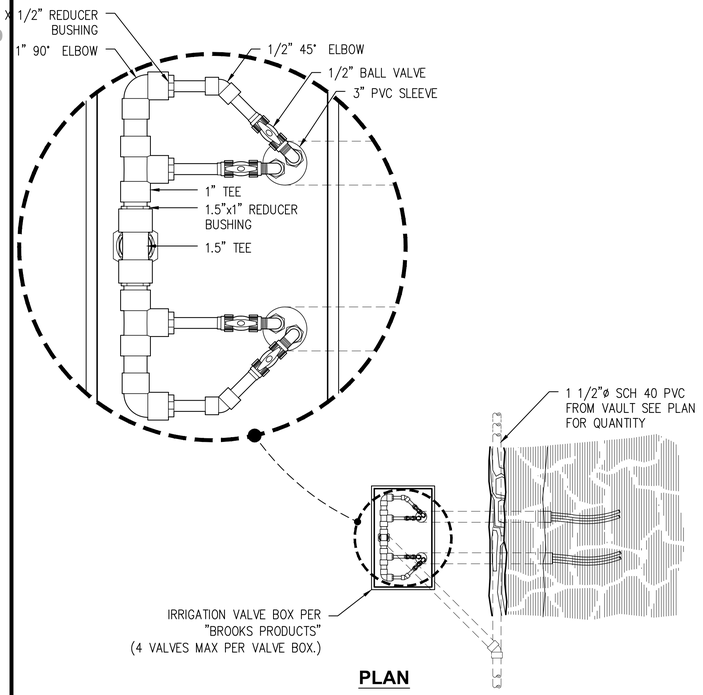
SHEET W253
29 OF 50 SHEETS

JOB NO. B836

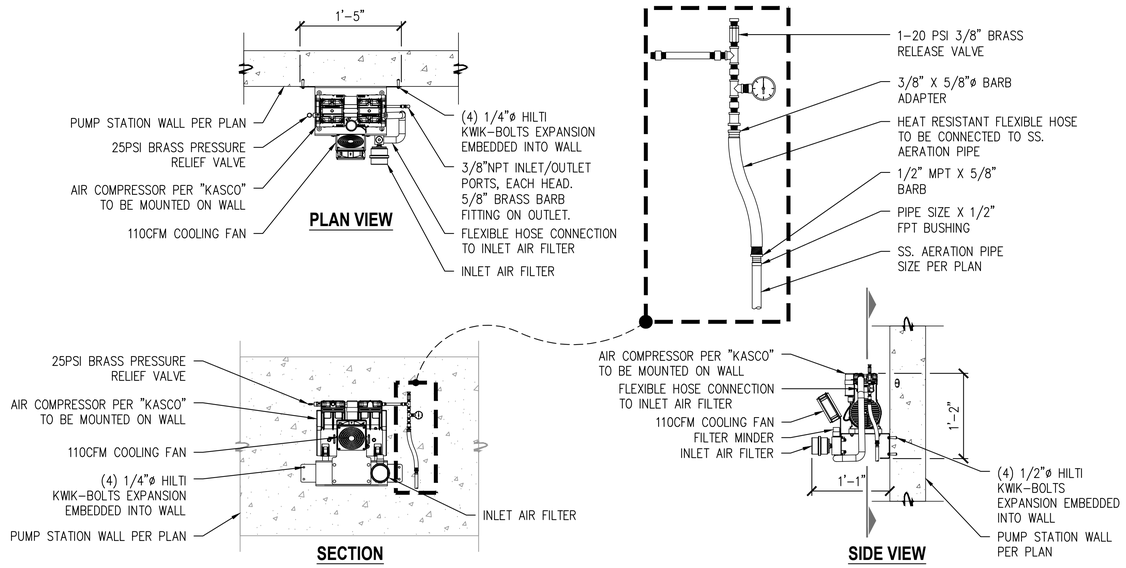
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Xrefs: B836-07 36x24v.dwg
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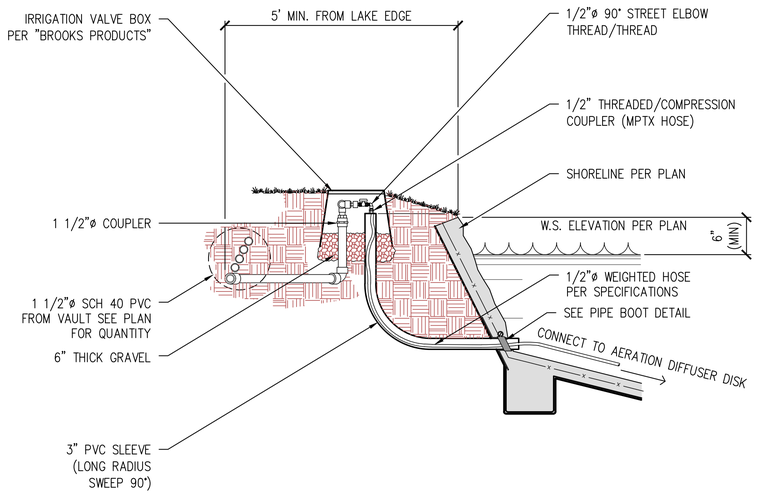
Aug. 16, 2023



PLAN

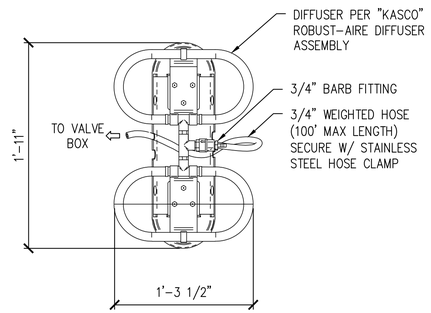


A ***AERATION COMPRESSOR AT PUMP STATION***
SCALE: 1" = 1'-0"

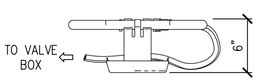


SECTION

D ***AERATION VALVE BOX***
NOT TO SCALE



PLAN VIEW



SECTION VIEW

B ***AERATION DIFFUSER***
NOT TO SCALE

PRELIMINARY NOT FOR CONSTRUCTION

PRELIMINARY DESIGN DRAWING

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NO	BY	DATE	REVISIONS	DATE	APP.

PREPARED BY
ZIRANG SONG
PROJECT ENGINEER
R.C.E. NO. — #C89315
EXP: 06/30/2024

DRAWN: SP/RC
SCALE: 1"=1'SHOWN
DESIGNED: BL
CHECKED: ZS
DATE: 8/16/2023

TITLE: **LAKE DETAILS**

JOB: **TEWINKLE PARK**
LAKE RENOVATION
COSTA MESA ***CA***

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17520 Newhope Street Suite 200 | Fountain Valley, CA 92708
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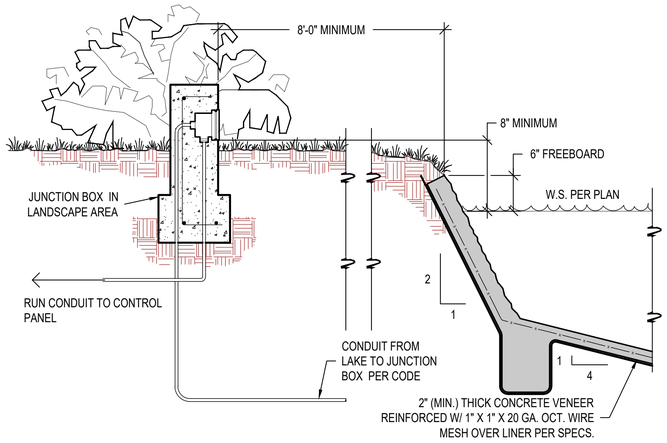
SHEET **W254**
30 OF 50 SHEETS

JOB NO. B836

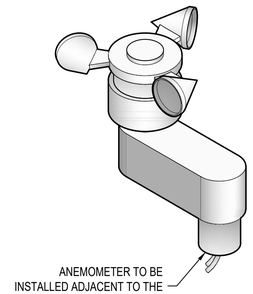
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Xrefs: B836-07 36x24v.dwg; Wall mounted compressor without enclosure.dwg
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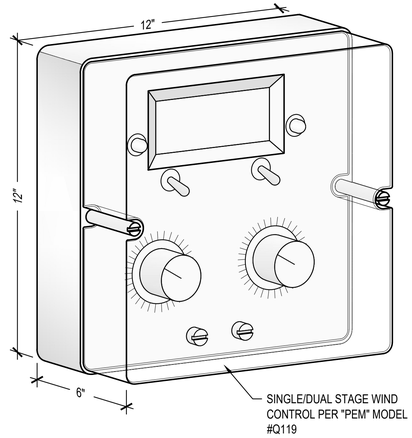
Aug. 16, 2023



C ***JUNCTION BOX AT SHORELINE***
SCALE: 1" = 1'-0"

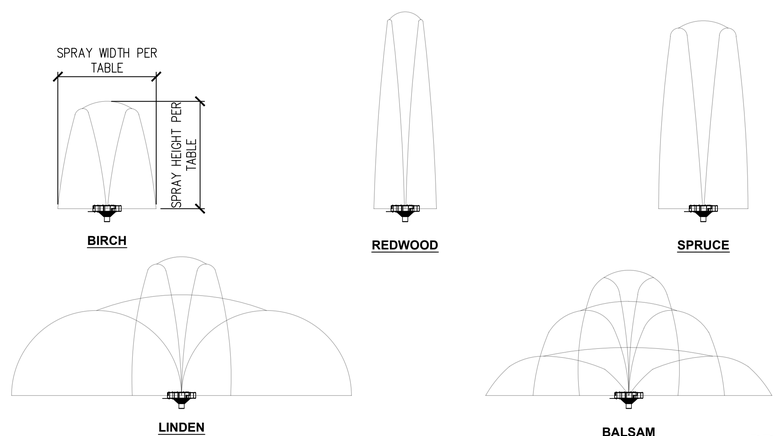


A ***WIND SENSOR***
SCALE: NOT TO SCALE



UNIT SPECIFICATIONS

MODEL	HP	VOLTAGE	OPERATING AMPS	PHASE	FLOAT WIDTH (IN)	UNIT HEIGHT (IN)	MIN. OPERATING DEPTH (IN)	BIRCH NOZZLE		REDWOOD NOZZLE		SPRUCE NOZZLE		LINDEN NOZZLE		BALSAM NOZZLE	
								SPRAY HEIGHT (FT)	SPRAY WIDTH (FT)	SPRAY HEIGHT (FT)	SPRAY WIDTH (FT)	SPRAY HEIGHT (FT)	SPRAY WIDTH (FT)	SPRAY HEIGHT (FT)	SPRAY WIDTH (FT)	SPRAY HEIGHT (FT)	SPRAY WIDTH (FT)
8400	2	208 - 240	10	1	51	22	20	12	11	22	7	21	10	15.5	38	14	32
2.3 JF	2	208	7.5	3	51	22	20	12	11	22	7	21	10	15.5	38	14	32
3.1 JF	3	208 -240	13.4	1	51	25	24	16	12	27	8	26	12	20.5	38	19	34
3.3 JF	3	208	10.3	3	51	25	24	16	12	27	8	26	12	20.5	38	19	34
5.1 JF	5	208 -240	20	1	51	25	26	24	14	32	10	31	12	24.5	46	18	34
5.3 JF	5	208	16	3	51	25	26	24	14	32	10	31	12	24.5	46	18	34
7.3 JF	7.5	208	20	3	51	25	28	26	16	36	10	34	12	26	46	21	36



D ***FLOATING FOUNTAIN***
SCALE: NOT TO SCALE

PRELIMINARY NOT FOR CONSTRUCTION

PRELIMINARY DESIGN DRAWING

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NO	BY	DATE	REVISIONS	DATE	APP.

PREPARED BY
ZIRANG SONG
R.C.E. NO. ---- PROJECT ENGINEER
EXP: 06/30/2024 #C89315

DRAWN SP/RC | SCALE 1"=1'SHOWN
DESIGNED BL
CHECKED ZS | DATE 8/16/2023

TITLE
LAKE DETAILS

JOB
TEWINKLE PARK
LAKE RENOVATION
COSTA MESA ***CA***

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P: (714) 481-7300 | www.pacewater.com

SHEET
W255
31 OF 50 SHEETS

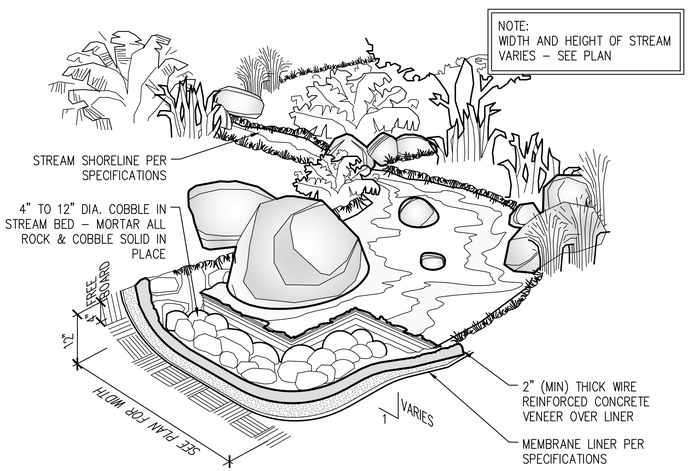
JOB NO. B836

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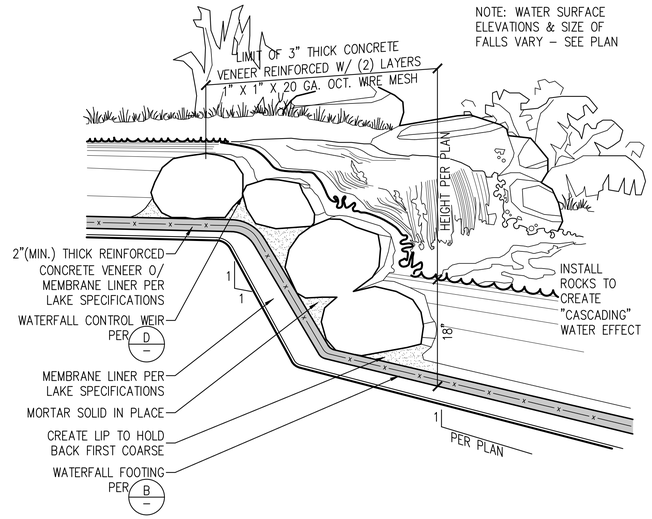
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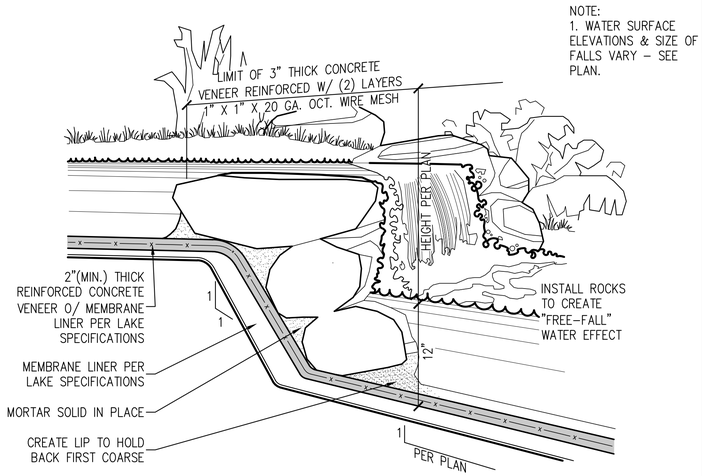
Aug. 16, 2023



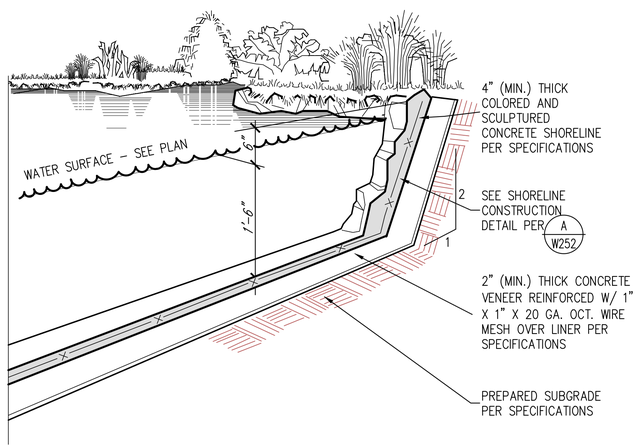
E ***STREAM***
SCALE: NOT TO SCALE



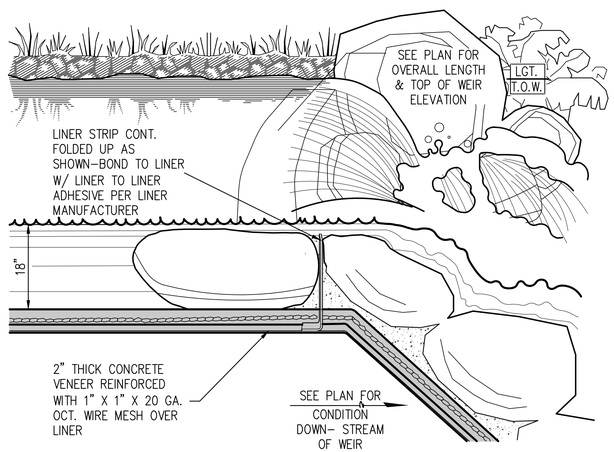
C ***CASCADE WATERFALL***
SCALE: NOT TO SCALE



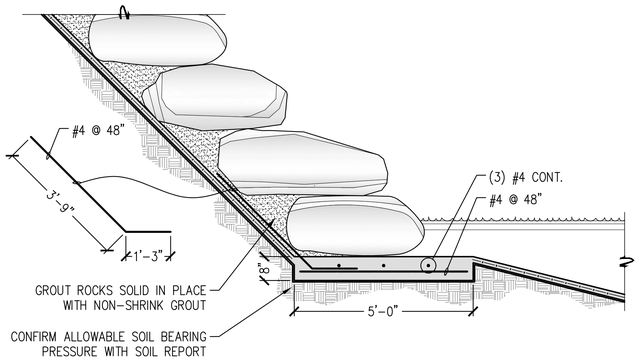
A ***FREEFALL WATERFALL***
SCALE: NOT TO SCALE



F ***POND DETAIL***
SCALE: NOT TO SCALE



D ***WATERFALL CONTROL WEIR***
SCALE: NOT TO SCALE



B ***WATERFALL FOOTING***
SCALE: NOT TO SCALE

PRELIMINARY NOT FOR CONSTRUCTION

PRELIMINARY DESIGN DRAWING

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NO	BY	DATE	REVISIONS	DATE	APP.

PREPARED BY
ZIRANG SONG
PROJECT ENGINEER
R.C.E. NO. ---- #C89315
EXP: 09/30/2024

DRAWN: SP/RC
SCALE: 1"=1'-0" SHOWN
DESIGNED: BL
CHECKED: ZS
DATE: 8/16/2023

TITLE: **LAKE DETAILS**

JOB: **TEWINKLE PARK**
LAKE RENOVATION
COSTA MESA ***CA***

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SHEET **W256**
32 OF 50 SHEETS

JOB NO. B836

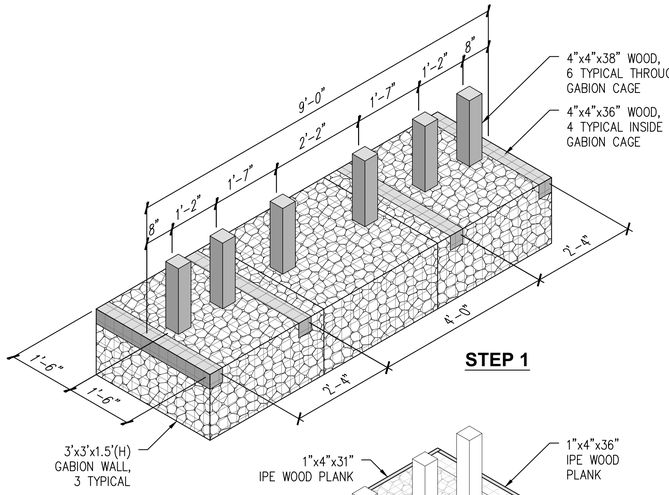
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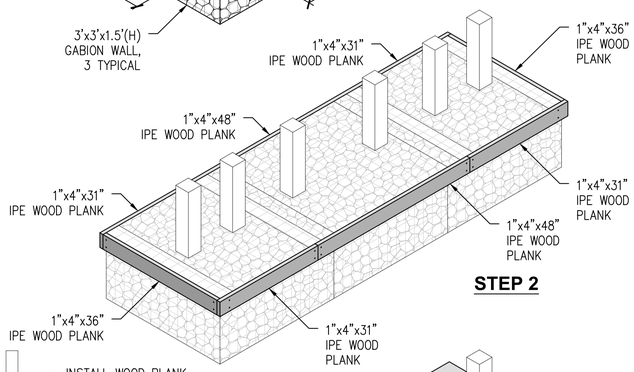
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REV. 07/10/03

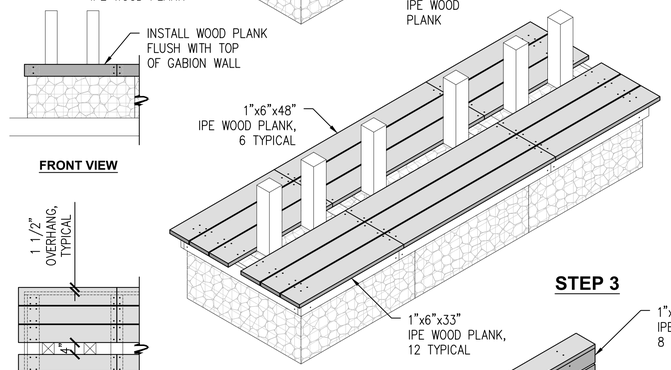
Aug. 16, 2023



STEP 1

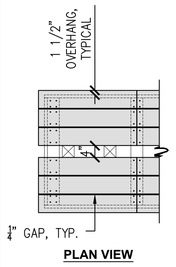


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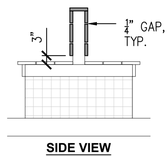


STEP 3

STEP 4



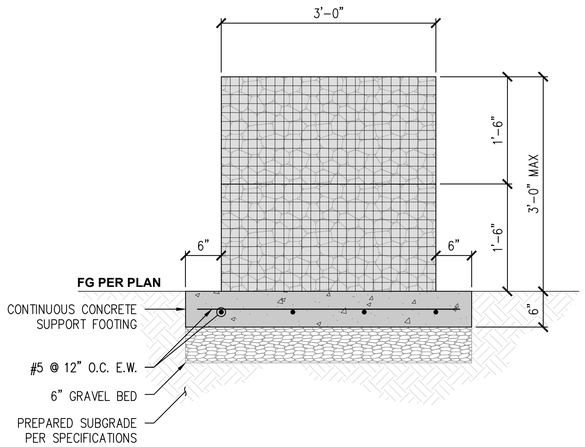
PLAN VIEW



SIDE VIEW

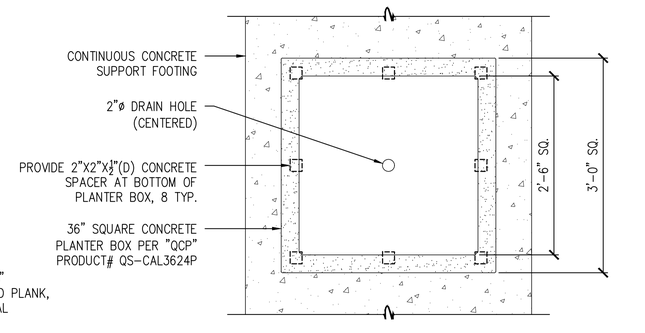
F ***GABION WALL BENCH***
SCALE: 1"=1'-0"

NOTE:
1. FREE STANDING WALL SHOULD NOT EXCEED THE 2(H):1(W) RATIO (5'-0" MAX HEIGHT)

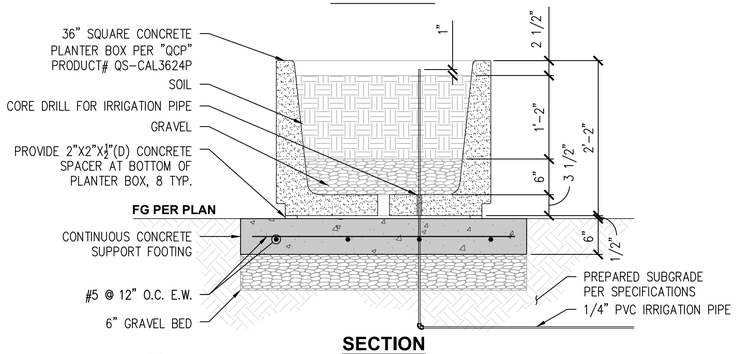


SECTION

C ***GABION WALL***
SCALE: 1"=1'-0"

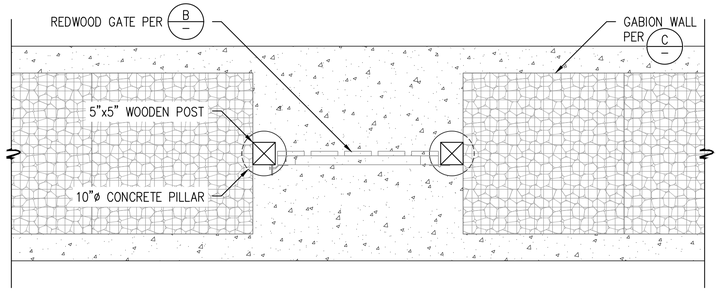


PLAN VIEW

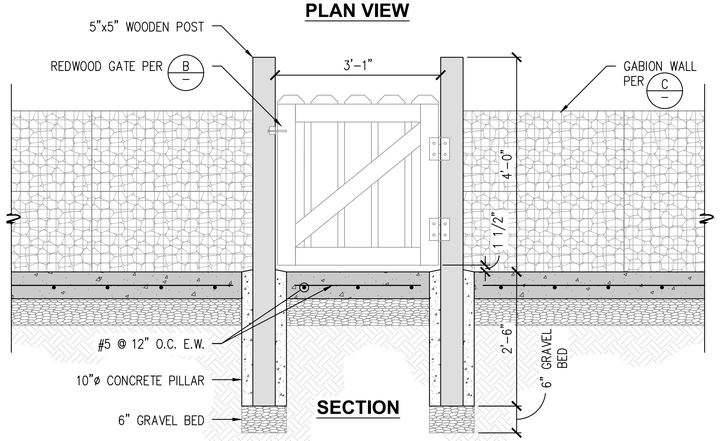


SECTION

D ***PLANTER BOX***
SCALE: 1"=1'-0"

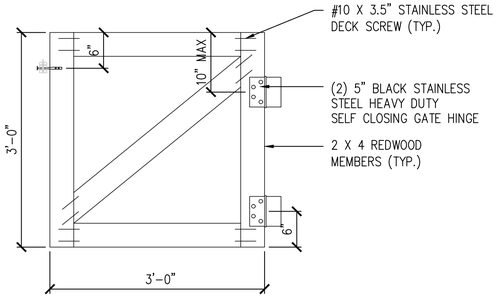


PLAN VIEW

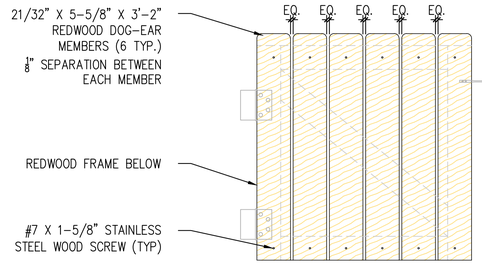


SECTION

A ***GATE***
SCALE: AS SHOWN



REDWOOD FRAME - BACK VIEW



REDWOOD GATE FINISH - FRONT VIEW

B ***REDWOOD GATE***
SCALE: AS SHOWN

PRELIMINARY NOT FOR CONSTRUCTION

PRELIMINARY DESIGN DRAWING

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NO	BY	DATE	REVISIONS	DATE	APP.

PREPARED BY: ZHANG SONG
PROJECT ENGINEER
R.C.E. NO. — #C85315
EXP: 09/30/2024

DRAWN: SP/RC | SCALE: AS SHOWN
DESIGNED: BL | DATE: 8/16/2023
CHECKED: ZS

TITLE: **LAKE DETAILS**

JOB: **TEWINKLE PARK** *LAKE RENOVATION* **COSTA MESA CA**

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SHEET **W257**
33 OF 50 SHEETS

JOB NO. B836

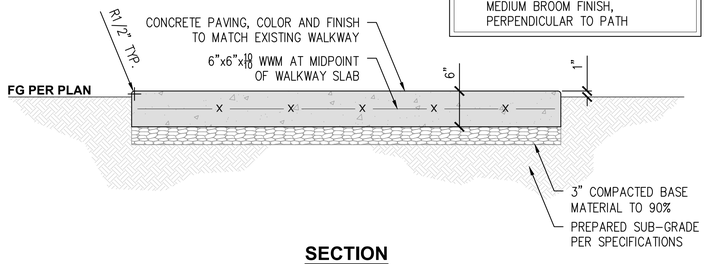
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Xrefs: B836-07 36x24x.dwg; B836-07 Redwood Gate Detail.dwg
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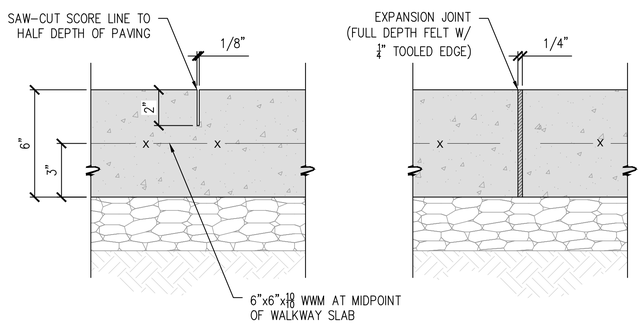
Aug. 16, 2023

NOTE:
1. SURFACE SHALL BE SLIP RESISTANT, MEDIUM BROOM FINISH, PERPENDICULAR TO PATH



SECTION
1"=1'-0"

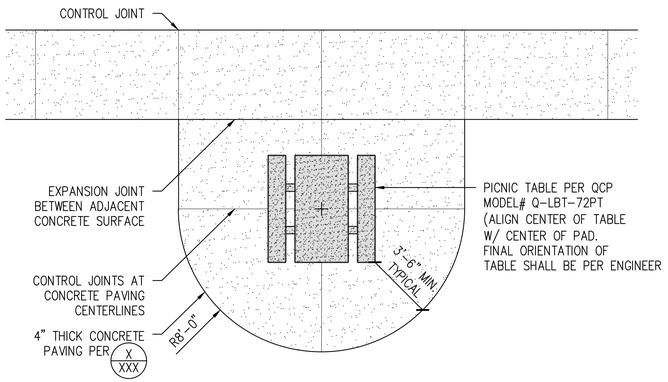
NOTES:
1. EXPANSION JOINTS SHALL BE LOCATED AS SHOWN ON THE CONSTRUCTION PLAN AND/OR ADJACENT TO LARGE SLABS STRUCTURES.
2. FINISH SURFACE SHALL BE MEDIUM BROOM FINISH, NATURAL COLOR CONCRETE.
3. FINAL ORIENTATION OF TABLE & FINAL LOCATION OF TRASH RECEPTACLE SHALL BE REVIEWED & APPROVED PRIOR TO CONSTRUCTION BY THE ENGINEER.
4. TABLE AND TRASH RECEPTACLES SHALL BE INSTALLED AS NOTED ON CONSTRUCTION PLAN, SITE AMENITIES LEGEND.
5. REFER TO CIVIL PLANS FOR SUBBASE.



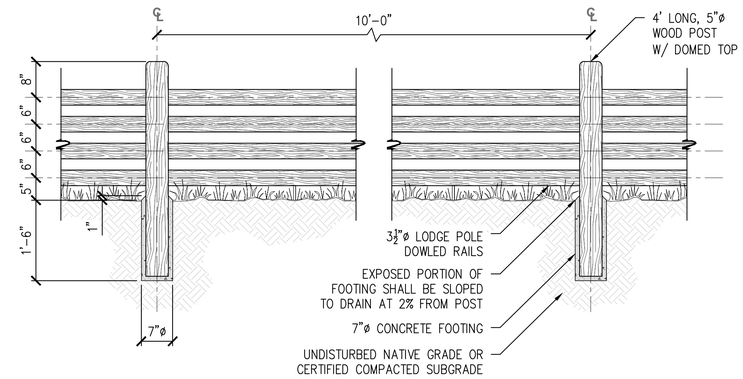
SCORE JOINT
3"=1'-0"

EXPANSION JOINT
3"=1'-0"

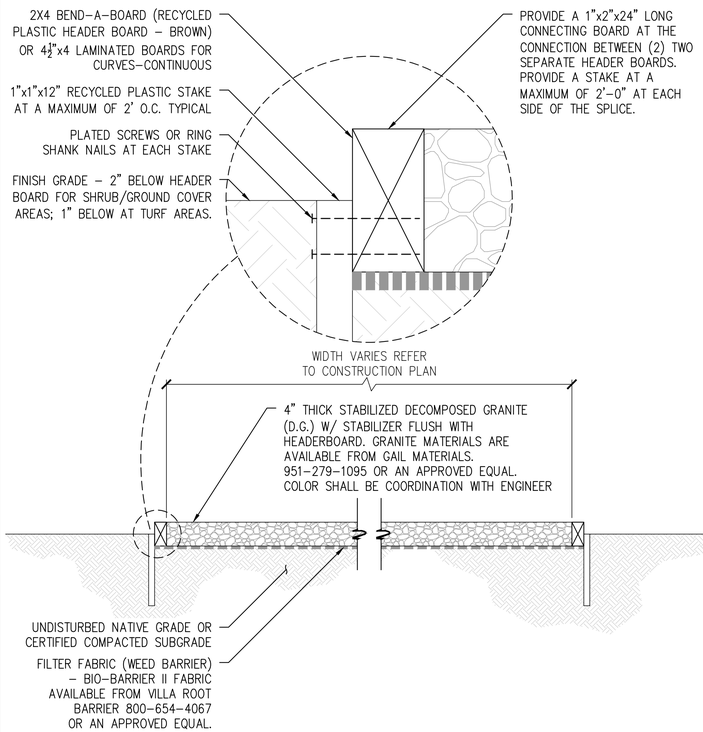
E TYPICAL CONCRETE PAVING
SCALE: AS SHOWN



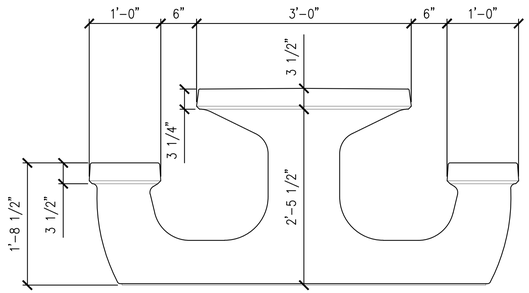
BENCH AREA PLAN
1/4"=1'-0"



A POLE FENCE
SCALE: 3/4" = 1'-0"



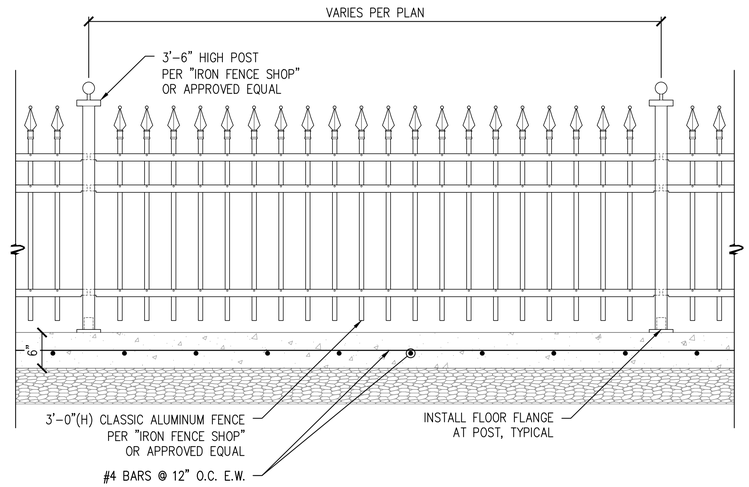
F STABILIZED DECOMPOSED GRANITE
SCALE: AS SHOWN



BENCH SECTION
1"=1'-0"

D PICNIC TABLE
SCALE: AS SHOWN

NOTES:
1. **FENCE LAYOUT PER SHEET W233**
2. **CONTRACTOR TO INSTALL WIRE MESH TO THE INSIDE OF THE FENCE TO STOP ANIMAL FROM PASSING**



B ALUMINUM FENCE
SCALE: 1"=1'-0"

PRELIMINARY NOT FOR CONSTRUCTION

PRELIMINARY DESIGN DRAWING

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NO	BY	DATE	REVISIONS	DATE	APP.

PREPARED BY
ZIRANG SONG
PROJECT ENGINEER
R.C.E. NO. #C89315
EXP. 09/30/2024

DRAWN SP/RC
DESIGNED BL
CHECKED ZS
SCALE AS SHOWN
DATE 8/16/2023

TITLE
LAKE DETAILS

JOB
TEWINKLE PARK
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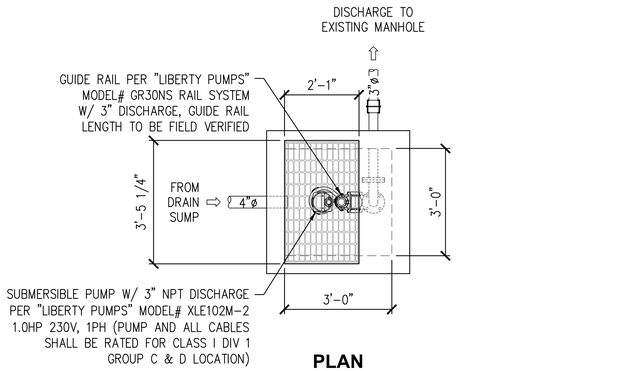
SHEET
W258
34 OF 50 SHEETS

JOB NO. B836

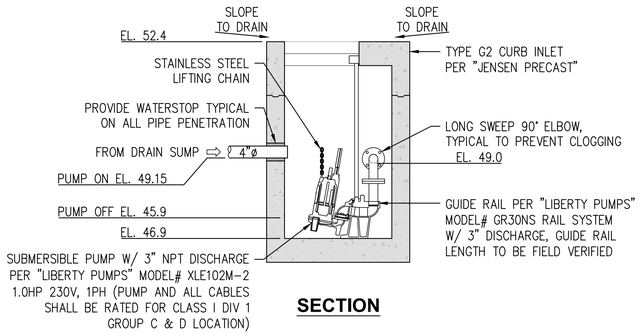
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Xrefs: B836-07 36x24v.dwg
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Aug. 16, 2023



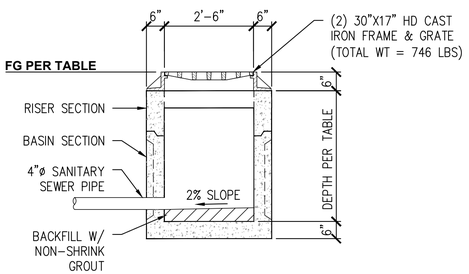
PLAN

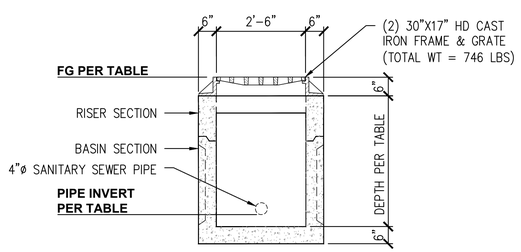


SECTION

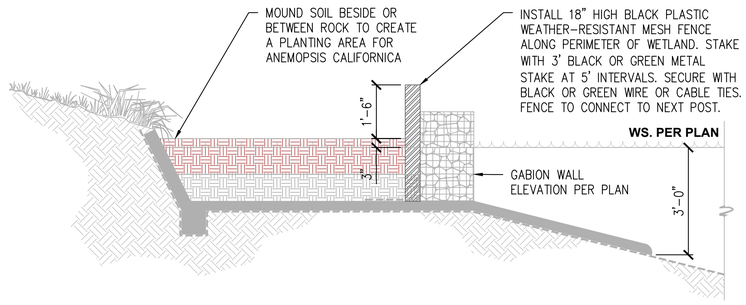
E DRAIN SUMP W/ SUMP PUMP
SCALE: 1/2" = 1'-0"

DRAIN COVER DATA			
DRAIN COVER	PIPE INVERT	FINISH GRADE	DEPTH OF BOX
A	53.0	54.9	2'-0"
B	51.5	54.9	3'-6"
C	50.5	52.4	2'-0"
D	49.8	52.4	2'-6"
E	49.85	52.4	2'-6"

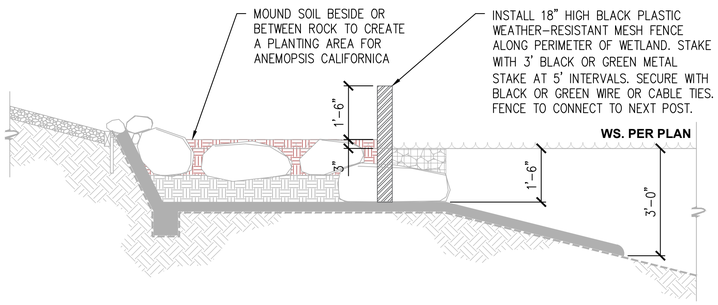




F LANDSCAPE DRAIN SUMP
SCALE: 1/2"=1'-0"

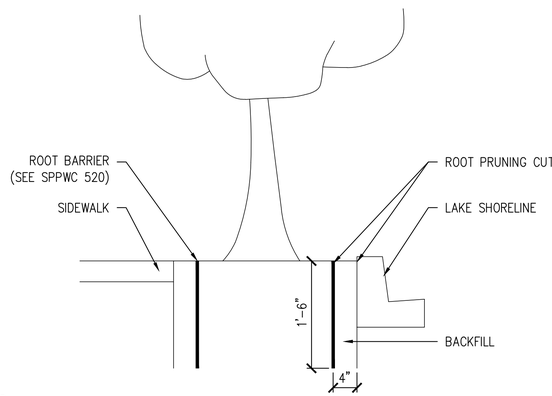


LAKE PLANTER / WETLAND SHORELINE



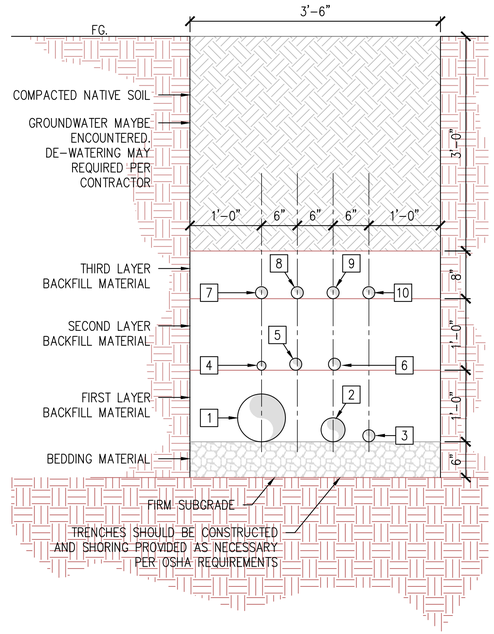
STEPPING STONE AT PLANTER

C TEMPORARY PLANTING FENCE
SCALE: 1/2" = 1'-0"



NOTES:
1. WHERE EXISTING PARKWAY TREES HAVE BEEN ROOT PRUNED, INSTALL CONTINUOUS, LINEAL ROOT BARRIER ADJACENT TO THE CURB AND/OR SIDEWALK.
2. LENGTH AND LOCATION OF ROOT BARRIER SHALL BE DETERMINED BY ENGINEER.
3. ROOT SEALER SHALL BE APPROVED BY THE ENGINEER AT LEAST 48 HOURS IN ADVANCE OF THE PRUNING OPERATION. IT SHALL BE APPLIED TO ALL CUT ROOT AREAS WHICH ARE LARGER THAN 2" (50 MM) IN DIAMETER. THE SEALER SHALL BE APPLIED AS SOON AS PRACTICAL AFTER THE CUTS HAVE BEEN MADE.
4. ROOT BARRIERS SHALL BE FABRICATED FROM A HIGH DENSITY, HIGH IMPACT PLASTIC AND BE EXPRESSLY DESIGNED FOR THE PURPOSE OF ROOT DEFLECTION.
5. ROOT BARRIER, WHERE SHOWN, SHALL BE 80 MIL (2.0 MM) THICK

D TREE ROOT PRUNING
SCALE: 1"=1'-0"

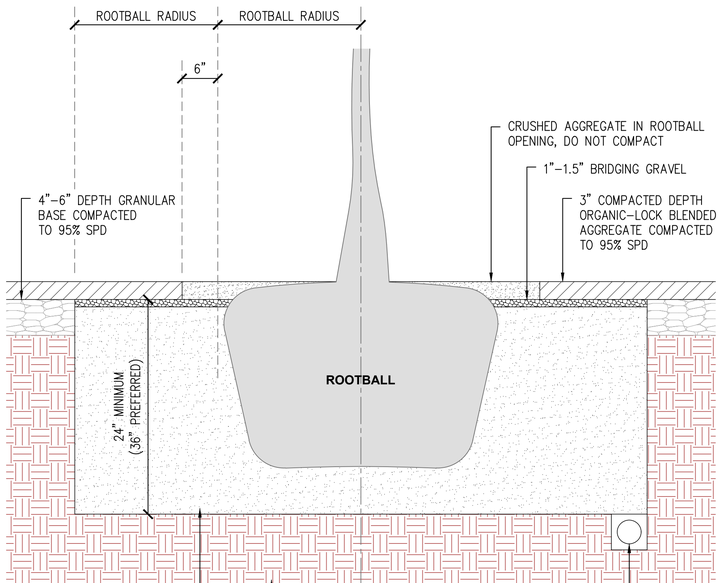


A TYPICAL TRENCH
SCALE: 1"=1'-0"

KEY NOTES:

1. 6" RECIRCULATION DISCHARGE
2. 4" DRAIN SUMP PIPE
3. 3" FORCE MAIN
4. 1.5" AIR SUPPLY
5. 2" IRRIGATION LINE FOR HOSE BIB
6. 2" IRRIGATION LINE FOR PLANTER
7. 2" FLOATING FOUNTAIN ELECTRICAL CONDUIT. SEE SHEET W213 & W214
8. 2" SUMP PUMP ELECTRICAL CONDUIT. SEE SHEET W532.
9. 2" LANDSCAPE OUTLET ELECTRICAL CONDUIT. SEE SHEET W532.
10. 2" SPARE CONDUIT

NOTE:
IF TREE ROOTS ON THE PATH OF THE TRENCH, CONTRACTOR TO STOP THE TRENCH MIN. 15'-0" AWAY FROM THE TRUNK OF THE TREE. ALL PIPE AND CONDUIT SHALL BE ROUTED IN TUNNELS TO AVOID TREE ROOTS DAMAGE.



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B STABILIZED DG WITH TREES
SCALE: 1"=1'-0"

NO	BY	DATE	REVISIONS	DATE	APP.

PREPARED BY
ZIRANG SONG
PROJECT ENGINEER
R.C.E. NO. 77___ #C85315
EXP: 09/30/2024

DRAWN: SP/RC
SCALE: AS SHOWN
DESIGNED: BL
CHECKED: ZS
DATE: 8/16/2023

TITLE: LAKE DETAILS

JOB: TEWINKLE PARK
LAKE RENOVATION
COSTA MESA CA

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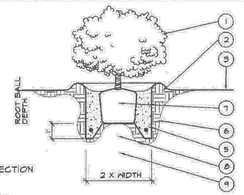
SHEET W259
35 OF 50 SHEETS

JOB NO. B836

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Xrefs: B836-07 36x24v.dwg; B836-07 Trench Detail.dwg; B836-07 Temporary Planting Fence.dwg; B836-07 Landscape Drain Sump.dwg
Dimscale = 24, LTscale = 1, PSltscale = 1, ACAD Ver. = 23.0s (LMS Tech); Varietain = 1
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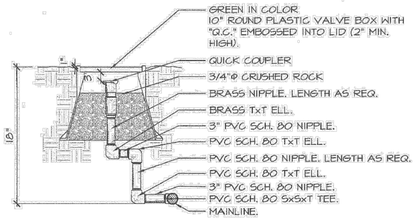
Aug. 16, 2023



LEGEND

1. 1 OR 5 GAL. SHRUB
2. WATER BASIN 3" MIN. DEPTH
3. FINISH GRADE
4. AMENDED BACKFILL - SEE SPECIFICATIONS
5. 21 GRAM PLANT TABLET - SEE SPECIFICATIONS
6. EXISTING SOIL
7. ROOT BALL
8. COMPACTED SOIL BACKFILL MIX. (SEE SPECS.)
9. VERTICAL MULCH DRAIN HOLE (1 1/2" DIA. X 12"DEPTH) FILLED W/ COMPACTED SOIL BACKFILL MIX.

(1) SHRUB PLANTING DETAIL N.T.S.

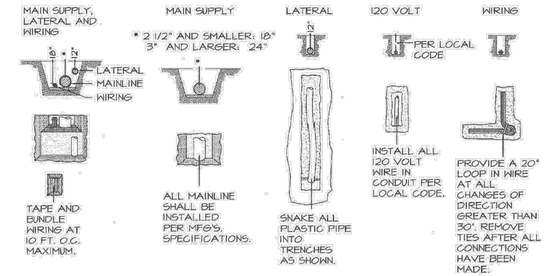


(E) QUICK COUPLER N.T.S.

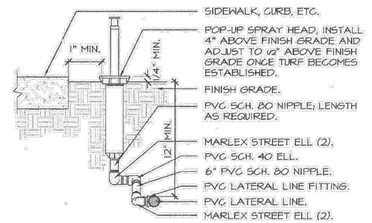


NOT USED

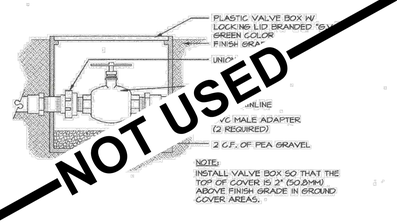
(A) TURF ROTOR N.T.S.



(F) IRRIGATION PIPING / WIRING N.T.S.

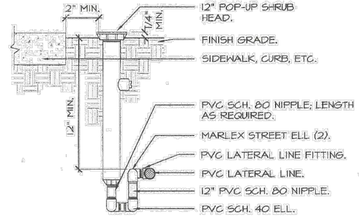


(B) TURF SPRAY N.T.S.



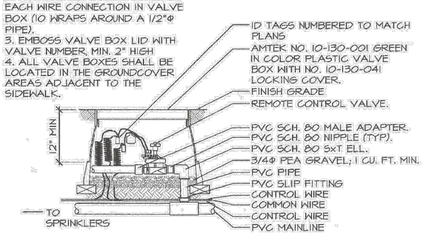
NOT USED

(G) GATE VALVE N.T.S.



(C) SHRUB SPRAY N.T.S.

NOTE:
1. INSTALL ALL WIRE PER LOCAL CODE.
2. PROVIDE EXPANSION COILS AT EACH WIRE CONNECTION IN VALVE BOX (10 WRAPS AROUND A 1/2"Ø PIPE).
3. EMBOSS VALVE BOX LID WITH VALVE NUMBER, MIN. 2" HIGH.
4. ALL VALVE BOXES SHALL BE LOCATED IN THE GROUNDCOVER AREAS ADJACENT TO THE SIDEWALK.



(D) REMOTE CONTROL VALVE N.T.S.

NOT USED

PERIDIAN INTERNATIONAL, INC.
Landscape Architecture & Planning
2638 NEWPORT BLVD. SUITE 130
NEWPORT BEACH • CA 92663
PHONE: 949.675.2445 FAX: 949.675.9992

REGISTERED LANDSCAPE ARCHITECT — ROBERT M. HOWDEN — No. 3460 — Signature — 30-Jun — STATE OF CALIFORNIA

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TEWINKLE PARK UPGRADE
CITY OF COSTA MESA

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REVISION

NO.	DATE	DESCRIPTION
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7		

23-03655-00
PROJECT NUMBER
30 April 2004
DATE
D.L.
DRAWN
R.J.M.
CHECKED

SHEET TITLE
IRRIGATION & PLANTING DETAILS

SHEET NUMBER
LA-ID.PD.I

07/22/2004

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PREPARED BY
ZIRANG SONG
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EXP. 09/30/2024

DRAWN SP/RC | SCALE AS SHOWN
DESIGNED BL
CHECKED ZS | DATE 8/16/2023

TITLE
IRRIGATION DETAILS

JOB
TEWINKLE PARK
LAKE RENOVATION
COSTA MESA CA

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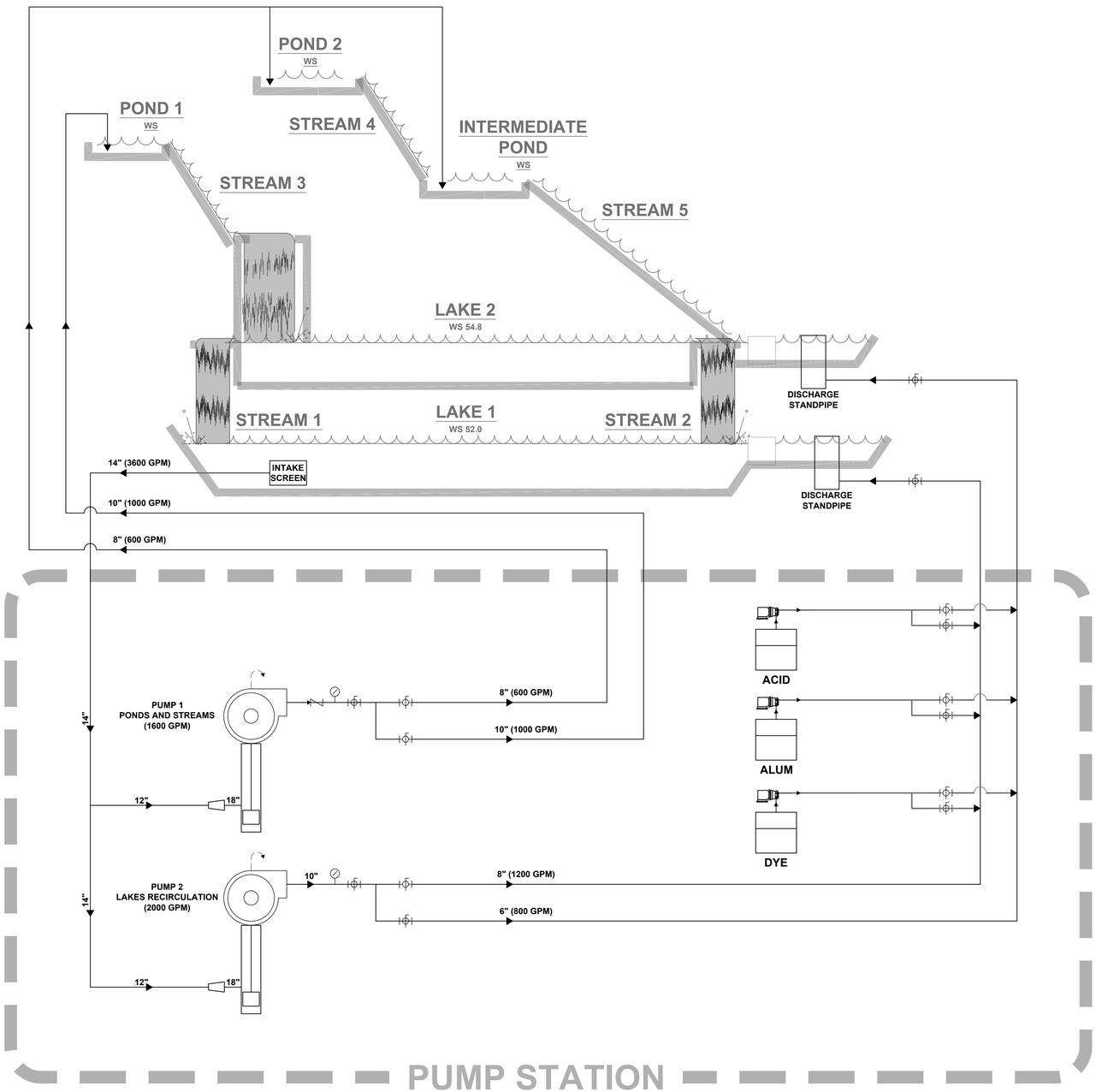
SHEET
W260
36 OF 50 SHEETS

JOB NO. B836

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Xrefs: B836-07 36x24x.dwg
Dimscale = 24; LTscale = 1; PSltscale = 1; ACAD Ver. = 23.0s (LMS Tech); Visretain = 1

Aug. 16, 2023



GENERAL NOTES:

1. FLOW SCHEMATIC INTENDED TO ILLUSTRATE ALL THE MAJOR MECHANICAL COMPONENTS OF THE VARIOUS WATER FEATURE SYSTEMS AND TO SHOW THE LOCATION OF ALL THE CONNECTIONS. CONTRACTOR TO USE FLOW SCHEMATIC AS GUIDE FOR CONSTRUCTION. REFER TO THE VARIOUS DETAILS FOR ADDITIONAL INFORMATION.

LEGEND:



CAN PUMP



CHEMICAL PUMP

MECHANICAL SYMBOLS:

SYMBOL	DESCRIPTION
	FLOW DIRECTION
(S)	PRESSURE TRANSMITTER
	PRESSURE GAUGE
	3 WAY CONTROL VALVE
	FLOW METER
(F)	FLOW TRANSMITTER
	FLOAT VALVE
	GATE VALVE
	GLOBE VALVE
	BALL VALVE
	BUTTERFLY VALVE
	CHECK VLAVE
S	SOLENOID VALVE
M	MOTOR OPERATED VALVE
	UNION CONNECTION
	FLANGE CONNECTION
	Y STRAINER
	PLUG OR CAP
	SIGHT GLASS
	PIPE
	ELECTRICAL WIRE
(TI)	DIAL THERMOMETER
	PRESSURE SUSTAINING VALVE
(TE)	THERMOCOUPLE
(TC)	TEMPERATURE CONTROLLER
(TS)	TEMPERATURE SWITCH
(TCV)	TEMPERATURE CONTROL VALVE
	PIPE CONNECTION AS INDICATED
	ELECTRICAL CONNECTION AS INDICATED

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PREPARED BY
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R.C.E. NO. #C89315
EXP. 6/30/2024

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CHECKED ZS
SCALE 1"=1'SHOWN
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TITLE
FLOW SCHEMATIC

JOB
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LAKE RENOVATION
COSTA MESA CA

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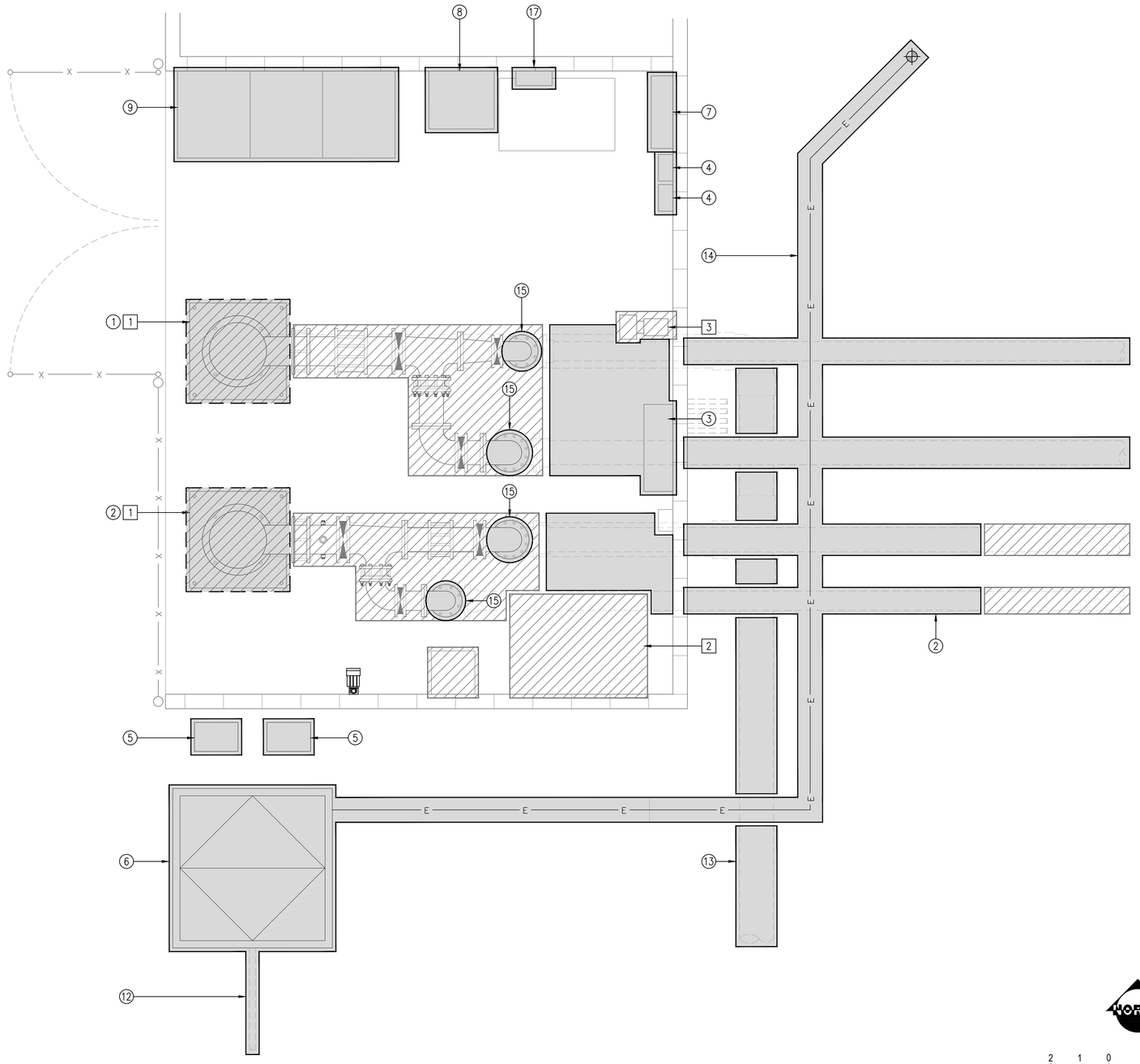
SHEET
W300
37 OF 50 SHEETS

JOB NO. B836

Xrefs: B836-07 36x24v.dwg, B836-07 Flow Schematic.dwg
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Aug. 16, 2023



PUMP STATION DEMOLITION PLAN

½"=1'-0"



2 1 0 2 4ft

DEMOLITION LEGENDS:

- ITEM TO BE REMOVED
- ITEM TO PROTECT IN PLACE
- CONTAINS ITEMS TO PROTECT IN PLACE & TO BE REMOVED

DEMOLITION GENERAL NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF DEMOLITION ITEMS. PROTECT IN PLACE ITEMS AND QUANTITY PRIOR TO START OF CONSTRUCTION WITH OWNER AND/OR OWNER'S REPRESENTATIVE. AS SHOWN ON THE DEMO PLANS.
2. CONTRACTOR TO COORDINATE WITH OWNER OR OWNER'S REPRESENTATIVE FOR ITEMS TO BE DEMOLISHED.
3. CONTRACTOR TO DISPOSE OF DEBRIS OFF-SITE.
4. CONTRACTOR TO REPLACE ANY ITEMS DAMAGED OR REMOVED THAT WAS NOT SPECIFICALLY IDENTIFIED IN THIS PLAN.

DEMOLITION KEYNOTES:

[1] POND AND STREAM PUMP: REMOVE AND SEND TO PUMP MANUFACTURER FOR PUMP PERFORMANCE. CONTRACTOR TO REPORT THE PUMP CONDITION TO ENGINEER FOR REUSING, RE-BUILT OR REPLACE

[2] EXISTING OZONE SKID TO BE REMOVED

[3] AERATION COMPRESSOR TO BE REMOVED AND REPLACED W/NEW COMPRESSOR. SEE EQUIPMENT LIST ON SHEET WXXX

PROTECT-IN-PLACE KEYNOTES:

(1) POND AND STREAM PUMP:
   a. PUMP CAN: PROTECT IN PLACE
   b. PIPE, VALVE, AND FITTING: PROTECT IN PLACE

(2) LAKES RECIRCULATION PUMP:
   a. PUMP CAN: PROTECT IN PLACE
   b. VALVE AND FITTING: PROTECT IN PLACE
   c. PIPE: TO BE PROTECTED IN PLACE FOR 10 LF FROM PUMP STATION WALL. SEE SHEET W120 FOR P.O.C.

(3) FLOATING FOUNTAIN CONTROL PANEL TO BE PROTECTED IN PLACE

(4) IRRIGATION CONTROL PANEL TO BE PROTECTED IN PLACE

(5) IRRIGATION SYSTEM TO BE PROJECTED IN PLACE

(6) WATER LEVEL SENSOR IN VALVE BOX TO BE PROTECTED IN PLACE. CONTROL WIRING & CONDUIT TO BE PROTECTED IN PLACE

(7) LAKE CONTROL PANEL TO BE PROTECTED IN PLACE FOR REBUILT TO WORK W/NEW SYSTEM

(8) EXISTING TRANSFORMER TO BE PROTECTED IN PLACE

(9) EXISTING ELECTRICAL DISTRIBUTION PANEL TO BE PROTECTED IN PLACE

(10) ROOF HATCH OPENING: TO BE PROTECTED IN PLACE

(11) CHAIN LINK FENCE & GATE TO BE PROTECTED IN PLACE

(12) EXISTING 2 ½"ø PVC EQUALIZER PIPE TO BE PROTECTED IN PLACE

(13) EXISTING 14"ø PVC INTAKE PIPE TO BE PROTECTED IN PLACE

(14) EXISTING WIRING AND CONDUIT TO BE PROTECTED IN PLACE

(15) EXISTING VERTICAL PIPE INSIDE PUMP STATION TO BE PROTECTED IN PLACE

(16) EXISTING IRRIGATION LINE AND PROTECTION CAGE TO BE PROTECTED IN PLACE

(17) EXISTING POWER PANEL B 120 / 208 V – FOR NEW ELECTRICAL LOADS

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PROJECT ENGINEER
R.C.E. NO. #C89315
EXP. 09/30/2024

DRAWN SP/RC
DESIGNED BL
CHECKED ZS
SCALE AS SHOWN
DATE 8/16/2023

TITLE
PUMP STATION DEMOLITION PLAN

JOB
TEWINKLE PARK
LAKE RENOVATION
COSTA MESA CA

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SHEET
W400
38 OF 50 SHEETS

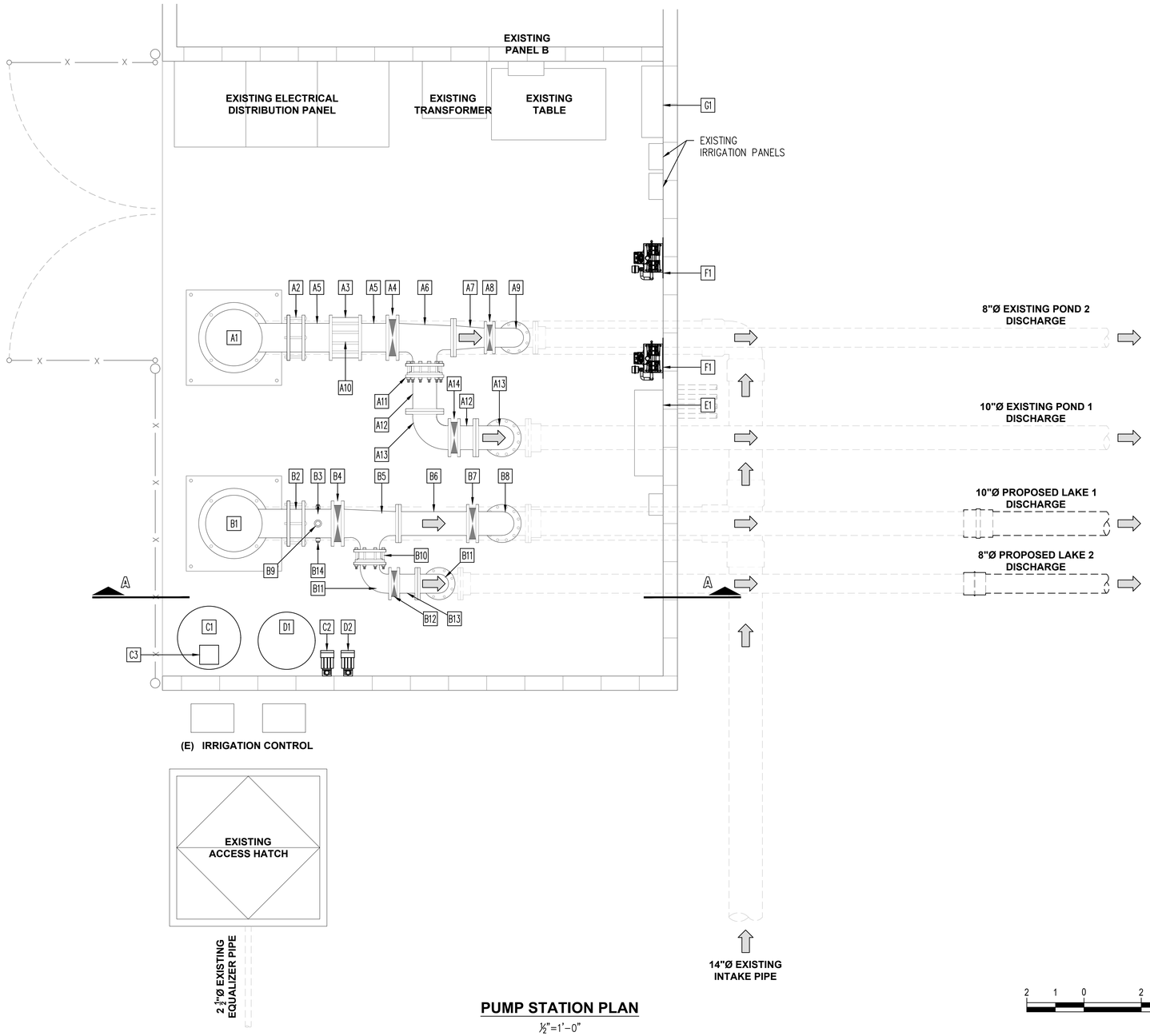
JOB NO. B836

Xrefs: B836-07 36x24v.dwg; B836-07 Existing Pump Station.dwg
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Aug. 16, 2023

EQUIPMENT LIST

ITEM	MODEL	MFG/SUPPLIER	DESCRIPTION	QTY
1	H14MC	NATIONAL PUMP COMPANY	EXISTING POND AND STREAM PUMP PER "NATIONAL PUMP COMPANY" MODEL H14MC – 11.3" IMP. DIA., 1 STAGE 900 RPM, RATED 1,600 GPM AT 33' TDH, 20HP, 460V, 3PH, 60 HZ. CONTRACTOR TO TEST THE PUMP AND REPORT THE CONDITION OF THE EXISTING PUMP TO LAKE/CITY ENGINEER FOR REVIEW PRIOR TO REBUILD AND REUSE THE PUMP. IF THE PUMP HAVE TO BE REPLACED, CONTRACTOR TO PROVIDE QUOTE FOR NEW PUMP.	1
2	H14MC	NATIONAL PUMP COMPANY	EXISTING LAKES RECIRCULATION PUMP PER "NATIONAL PUMP COMPANY" MODEL H14MC – 10.7" IMP. DIA., 1 STAGE 1,170 RPM, RATED 2,000 GPM AT 16.2 TDH, 15HP, 460V, 3PH, 60 HZ. CONTRACTOR TO TEST THE PUMP AND REPORT THE CONDITION OF THE EXISTING PUMP TO LAKE/CITY ENGINEER FOR REVIEW PRIOR TO REBUILD AND REUSE THE PUMP. IF THE PUMP HAVE TO BE REPLACED, CONTRACTOR TO PROVIDE QUOTE FOR NEW PUMP.	1
3	KM–200C	KASCO	AERATION COMPRESSOR – WALL MOUNTED PER "KASCO" MODEL KM–200C RATED 6.8 CFM AT 10PSI, 115V, 1PH. SEE DETAIL A/W253. TWO (2) FOR LAKE 1 AND TWO (2) FOR LAKE 2 AERATION SYSTEM	4
4	45MHP22	STENNER	CHEMICAL FEED PUMPS PER "STENNER" MODEL 45MHP22, RATED 1.1 TO 22.0 GPD AT 100 PSI.	2
5	PLT100EDD	DIRECT MIXER	ALUM MIXER PER "MIXER DIRECT" MODEL PLT100EDD–001, 1HP, DIRECT MOUNTED PLATE MIXER W/ VFD. MOTOR 1HP TEFC, 115V/1PH, 1750 RPM. MOUNT: 12"X12"X0.375 THICK PLATE W/ PEDESTAL.	1
6	TC2738DC	CHEMTAINER	50 GAL ALUM DOUBLE WALL STORAGE TANK PER "CHEMTAINER" MODEL TC2738DC	1
7	TC2435DC	CHEMTAINER	35 GAL ACID DOUBLE WALL STORAGE TANK PER "CHEMTAINER" MODEL TC2435DC	1



PUMP STATION PLAN

½"=1'–0"

2 1 0 2 4ft

PUMP STATION PIPING NOTES:

1. CONTRACTOR TO PROVIDE PIPE SUPPORTS PER EQUIPMENT MANUFACTURER'S REQUIREMENTS AND SPECIFICATIONS AND PER THE PROJECT SPECIFICATIONS.
2. ALL D.I.P. SHALL BE CLASS 350 UNLESS NOTED OTHERWISE.
3. ALL UNDERGROUND MECHANICAL JOINT FITTINGS SHALL BE SUPPLIED WITH RESTRAINING BOLTS (RJ FITTINGS).
4. ALL BURIED PVC PIPE GREATER THAN 3"ø SHOWN ON PLANS SHALL BE C900 UNLESS NOTED OTHERWISE. ALL BURIED PVC PIPE 3"ø OR LESS SHALL BE SCH 40 PVC.
5. ALL PVC PIPE ABOVE GRADE SHALL BE SCH 80 PVC FOR ALL SIZES.
6. ALL STAINLESS STEEL PIPE SHOWN ON PLANS SHALL BE MINIMUM TYPE 304L SCH 10 UNLESS NOTED OTHERWISE.
7. ALL PROCESS PIPES SHALL BE COLOR COATED PER THE PROJECT SPECIFICATIONS WITH THE EXCEPTION OF STAINLESS STEEL PIPES.
8. ALL VALVES SHALL BE ROTATED/ORIENTED PER MANUFACTURE'S RECOMMENDATIONS.

PUMP STATION CONSTRUCTION NOTES:

A POND AND STREAM PUMP SYSTEM:
1. REMOVE, CHECK CONDITION AND REUSE EXISTING PUMP. CONTRACTOR TO REPORT TO LAKE ENGINEER (PACE) THE CONDITION OF THE PUMP FOR REVIEW PRIOR TO REUSING. SEE EQUIPMENT LIST #1.
2. INSTALL 12"ø EXPANSION JOINT COUPLING.
3. INSTALL 12"ø GLOBE–STYLE CHECK VALVE (FLG X FLG).
4. INSTALL 12"ø BUTTERFLY VALVE, LUG–STYLE.
5. INSTALL 12"ø D.I. SPOOL (FLG X FLG).
6. INSTALL 12"X10"X10" D.I. REDUCING TEE (FLG X FLG).
7. INSTALL 10"X8" CONCENTRIC REDUCER (FLG X FLG).
8. INSTALL 8" BUTTERFLY VALVE, LUG–STYLE.
9. INSTALL 8" 90° D.I. ELBOW (FLG X FLG).
10. INSTALL AIR RELIEF VALVE AND PRESSURE GUAGE.
11. INSTALL 10"ø EXPANSION JOINT COUPLING.
12. INSTALL 10"ø D.I. SPOOL (FLG X FLG).
13. INSTALL 10"ø 90° D.I. ELBOW (FLG X FLG).
14. INSTALL 10" BUTTERFLY VALVE LUG–STYLE.
15. CHECK CONDITION OF THE PUMP CANISTER.

B LAKES RECIRCULATION SYSTEM:
1. REMOVE, CHECK CONDITION AND REPLACE W/NEW PUMP. CONTRACTOR TO REPORT TO LAKE ENGINEER (PACE) THE CONDITION OF THE PUMP FOR REVIEW PRIOR TO REUSING. SEE EQUIPMENT LIST #2.
2. INSTALL 12"ø EXPANSION JOINT COUPLING.
3. INSTALL 12"ø D.I. SPOOL (FLG X FLG).
4. INSTALL 12" BUTTERFLY VALVE, LUG–STYLE.
5. INSTALL 12"X10"X8" D.I. REDUCING TEE (FLG X FLG).
6. INSTALL 10"ø D.I. SPOOL (FLG X FLG).
7. INSTALL 10"ø BUTTERFLY VALVE, LUG–STYLE.
8. INSTALL 10"ø – 90° D.I. ELBOW (FLG X FLG).
9. INSTALL AIR RELIEF VLAVE AND PRESSURE GUAGE.
10. INSTALL 8"ø EXPANSION JOINT COUPLING.
11. INSTALL 8"ø – 90° D.I. ELBOW (FLG X FLG).
12. INSTALL 8"ø BUTTERFLY VALVE – LUG–STYLE.
13. INSTALL 8"ø D.I. SPOOL (FLG X FLG).
14. INSTALL CHEMICAL INJECTION QUILL PER DETAIL B/W451

C ALUM ADDITION SYSTEM:
1. INSTALL 50 GAL DOUBLE WALL CONTAINMENT ALUM TANK (SEE EQUIPMENT LIST #6).
2. INSTALL ALUM FEED PUMP (SEE EQUIPMENT LIST #4).
3. INSTALL ALUM MIXER (SEE EQUIPMENT LIST #5).

D ACID ADDITION SYSTEM:
1. INSTALL 35 GAL DOUBLE WALL CONTAINMENT CHEMICAL TANK (SEE EQUIPMENT LIST #7).
2. INSTALL ACID FEED PUMP (SEE EQUIPMENT LIST #4).

E FLOATING FOUNTAIN SYSTEM:
1. REUSE FLOATING FOUNTAIN CONTROL PANEL.

F AERATION SYSTEM:
1. INSTALL WALL MOUNTED AIR COMPRESSORS (4 TYP.). SEE EQUIPMENT LIST #3. COMPRESSOR CAN BE MOUNTED TOP AND BOTTOM. CONTRACTOR TO CONFIRM CLEARANCE FROM MANUFACTURE.

G CONTROL PANEL:
1. LAKE CONTROL PANEL PER "TOTAL CONTROL". SEE SHEET W600–W602.

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EXP: 09/30/2024

DRAWN SP/RC | SCALE AS SHOWN
DESIGNED BL
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TITLE **PUMP STATION PLAN**

JOB **TEWINKLE PARK**
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COSTA MESA *CA*

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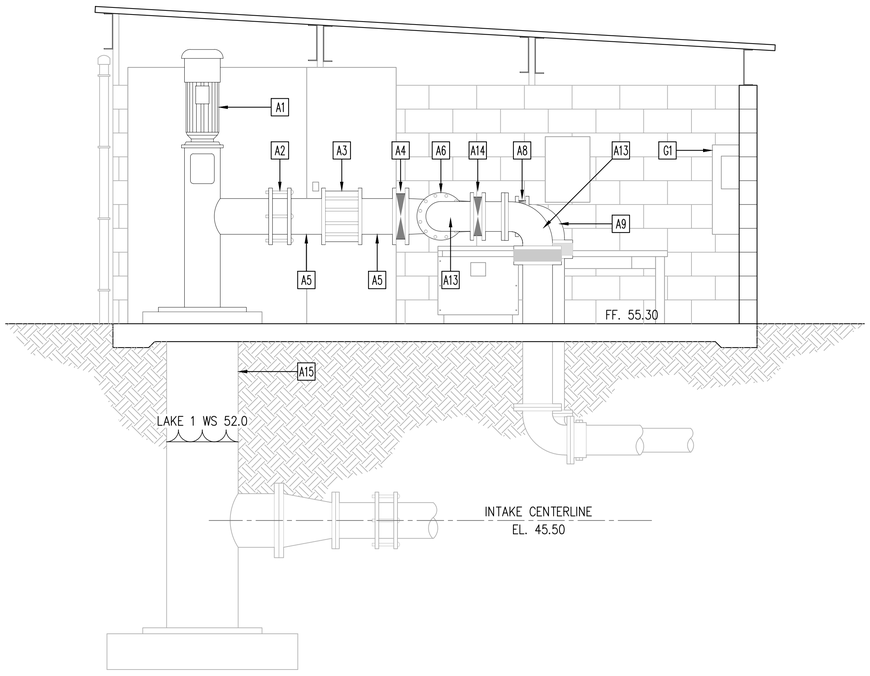
SHEET **W410**
39 OF 50 SHEETS

JOB NO. B836

Xrefs: B836–07 36x24r.dwg, B836–07 Existing Pump Station.dwg
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Aug. 16, 2023



PUMP STATION - SECTION A

½"=1'-0"

PUMP STATION PIPING NOTES:

1. CONTRACTOR TO PROVIDE PIPE SUPPORTS PER EQUIPMENT MANUFACTURER'S REQUIREMENTS AND SPECIFICATIONS AND PER THE PROJECT SPECIFICATIONS.
2. ALL D.I.P. SHALL BE CLASS 350 UNLESS NOTED OTHERWISE.
3. ALL UNDERGROUND MECHANICAL JOINT FITTINGS SHALL BE SUPPLIED WITH RESTRAINING BOLTS (RJ FITTINGS).
4. ALL BURIED PVC PIPE GREATER THAN 3"ø SHOWN ON PLANS SHALL BE C900 UNLESS NOTED OTHERWISE. ALL BURIED PVC PIPE 3"ø OR LESS SHALL BE SCH 40 PVC.
5. ALL PVC PIPE ABOVE GRADE SHALL BE SCH 80 PVC FOR ALL SIZES.
6. ALL STAINLESS STEEL PIPE SHOWN ON PLANS SHALL BE MINIMUM TYPE 304L SCH 10 UNLESS NOTED OTHERWISE.
7. ALL PROCESS PIPES SHALL BE COLOR COATED PER THE PROJECT SPECIFICATIONS WITH THE EXCEPTION OF STAINLESS STEEL PIPES.
8. ALL VALVES SHALL BE ROTATED/ORIENTED PER MANUFACTURE'S RECOMMENDATIONS.

PUMP STATION CONSTRUCTION NOTES:

[A] POND AND STREAM PUMP SYSTEM:
1. REMOVE, CHECK CONDITION AND REUSE EXISTING PUMP. CONTRACTOR TO REPORT TO LAKE ENGINEER (PACE) THE CONDITION OF THE PUMP FOR REVIEW PRIOR TO REUSING.
2. INSTALL 12"ø EXPANSION JOINT COUPLING.
3. INSTALL 12"ø GLOBE-STYLE CHECK VALVE (FLG X FLG).
4. INSTALL 12"ø BUTTERFLY VALVE, LUG-STYLE.
5. INSTALL 12"ø D.I. SPOOL (FLG X FLG).
6. INSTALL 12"X10"X10" D.I. REDUCING TEE (FLG X FLG).
7. INSTALL 10"X8" CONCENTRIC REDUCER (FLG X FLG).
8. INSTALL 8" BUTTERFLY VALVE, LUG-STYLE.
9. INSTALL 8" 90° D.I. ELBOW (FLG X FLG).
10. INSTALL AIR RELIEF VALVE AND PRESSURE GUAGE.
11. INSTALL 10"ø EXPANSION JOINT COUPLING.
12. INSTALL 10"ø D.I. SPOOL (FLG X FLG).
13. INSTALL 10"ø 90° D.I. ELBOW (FLG X FLG).
14. INSTALL 10" BUTTERFLY VALVE LUG-STYLE.
15. CHECK CONDITION OF THE PUMP CANISTER.

[B] LAKES RECIRCULATION SYSTEM:
1. REMOVE, CHECK CONDITION AND REPLACE W/NEW PUMP. CONTRACTOR TO REPORT TO LAKE ENGINEER (PACE) THE CONDITION OF THE PUMP FOR REVIEW PRIOR TO REPLACING.
2. INSTALL 12"ø EXPANSION JOINT COUPLING.
3. INSTALL 12"ø D.I. SPOOL (FLG X FLG).
4. INSTALL 12" BUTTERFLY VALVE, LUG-STYLE.
5. INSTALL 12"X10"X8" D.I. REDUCING TEE (FLG X FLG).
6. INSTALL 10"ø D.I. SPOOL (FLG X FLG).
7. INSTALL 10"ø BUTTERFLY VALVE, LUG-STYLE.
8. INSTALL 10"ø – 90° D.I. ELBOW (FLG X FLG).
9. INSTALL AIR RELIEF VLAVE AND PRESSURE GUAGE.
10. INSTALL 8"ø EXPANSION JOINT COUPLING.
11. INSTALL 8"ø – 90° D.I. ELBOW (FLG X FLG).
12. INSTALL 8"ø BUTTERFLY VALVE – LUG-STYLE.
13. INSTALL 8"ø D.I. SPOOL (FLG X FLG).
14. INSTALL CHEMICAL INJECTION QUILL PER DETAIL B/W451

[C] ALUM ADDITION SYSTEM:
1. INSTALL 50 GAL DOUBLE WALL CONTAINMENT ALUM TANK (SEE EQUIPMENT LIST).
2. INSTALL ALUM FEED PUMP (SEE EQUIPMENT LIST).
3. INSTALL ALUM MIXER (SEE EQUIPMENT LIST).

[D] ACID ADDITION SYSTEM:
1. INSTALL 50 GAL DOUBLE WALL CONTAINMENT CHEMICAL TANK (SEE EQUIPMENT LIST).
2. INSTALL ACID FEED PUMP (SEE EQUIPMENT LIST).

[E] FLOATING FOUNTAIN SYSTEM:
1. REUSE FLOATING FOUNTAIN CONTROL PANEL.

[F] AERATION SYSTEM:
1. INSTALL AIR COMPRESSOR / BLOWER (SEE EQUIPMENT LIST).

[G] CONTROL PANEL:
1. REBUILT THE CONTROL PANEL TO WORK W / NEW SYSTEM.

2 1 0 2 4ft

PRELIMINARY NOT FOR CONSTRUCTION

PRELIMINARY DESIGN DRAWING

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NO	BY	DATE	REVISIONS	DATE	APP.

PREPARED BY
ZIRANG SONG
PROJECT ENGINEER
R.C.E. NO. ---- #C89315
EXP: 09/30/2024

DRAWN: SP/RC | SCALE: AS SHOWN
DESIGNED: BL
CHECKED: ZS | DATE: 8/16/2023

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TITLE: **PUMP STATION SECTION**

JOB: ***TEWINKLE PARK*** ***LAKE RENOVATION*** ***COSTA MESA*** ***CA***

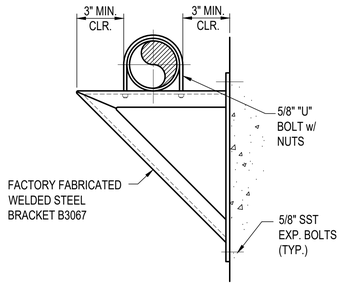
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SHEET **W411**
40 OF 50 SHEETS

JOB NO. B836

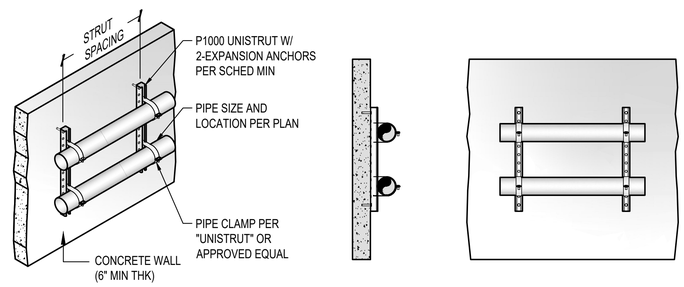
Xrefs: B836-07 36x24v.dwg; B836-07 Pump Station Section.dwg
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G:\B836\Engineering\B836-07 (Construction Documents)\sheets\B836-07 W411 Pump Station Section.dwg - Tab: Pump Station Section - by ble on 03/07/23 at 3:44:39 PM

Aug. 16, 2023

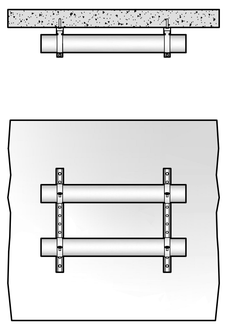


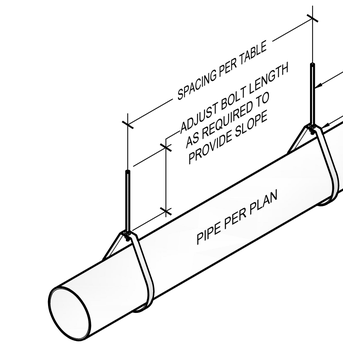
WALL BRACKET SUPPORT

PVC PIPE SIZE	MAX. HANGING LOAD RATING (LBS)	STRUT SPACING	EXPANSION ANCHOR & EMBED
3/8" TO 1/2"	400	4'-0"	HILTI KB-TZ (SS)
3/4" TO 1 1/4"	600	4'-5"	HILTI KB-TZ (SS)
1 1/2" TO 3"	800	5'-3/4"	HILTI KB-TZ (SS)
3 1/2" TO 5"	1000	8'-1/4"	HILTI KB-TZ (SS)
6" TO 12"	1000	10'-0"	HILTI KB-TZ (SS)



PIPE SUPPORT AT WALL





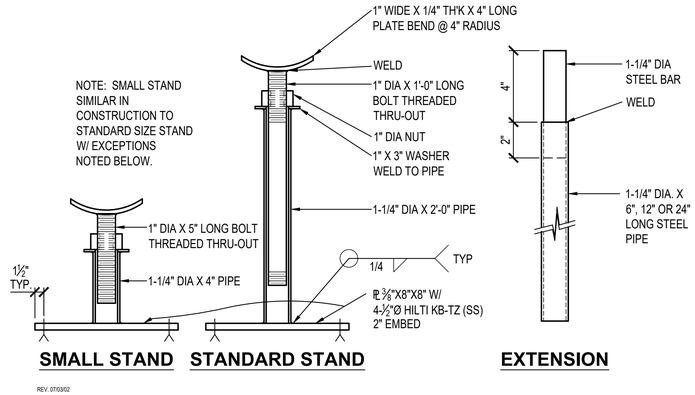
NOTE: ATTACH EXPANSION ANCHORS INTO A CONCRETE SLAB WITH A 6" MINIMUM THICKNESS OR INTO A 3¼" CONCRETE OVER A 3" METAL DECK.

HANGER SIZES

PVC PIPE SIZE	SPACING (MAX)	EXPANSION ANCHOR & EMBED
1/2"to 2"	2'-6"	HILTI KB-TZ (SS)
2"	4'-6"	HILTI KB-TZ (SS)
3"	5'-0"	HILTI KB-TZ (SS)
4"	6'-0"	HILTI KB-TZ (SS)
6"	6'-6"	HILTI KB-TZ (SS)
8"	7'-6"	HILTI KB-TZ (SS)

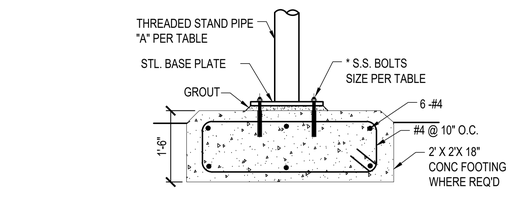
PIPE HANGER

NOTE: PAINT ENTIRE ASSEMBLY WITH PRIMER PAINT



REV. 07/03/02

PIPE STAND 10" OR SMALLER

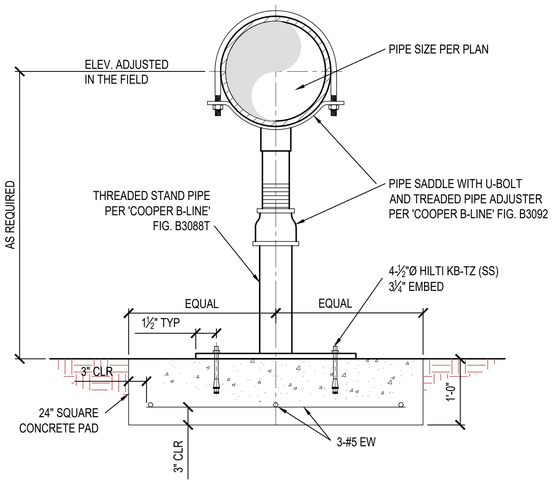


DIMENSIONS				
PIPE Ø SIZE	BOLT SIZE	STAND PIPE "A"	ADJ. PIPE "B"	FLANGE SUPPORT PLATE THK. "C"
4-12	1/2	3"	2 1/2"	1/4"
14-16	5/8	4"	3"	3/8"
18-36	7/8	6"	4"	3/8"

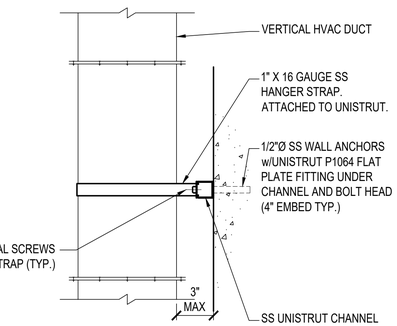
INSTALLATION NOTE:
PIPE SUPPORT SPACING, MATERIAL AND QUANTITY PER SPECS.

* BOLT EMBEDMENT DEPTH PER TABLE HEREON.

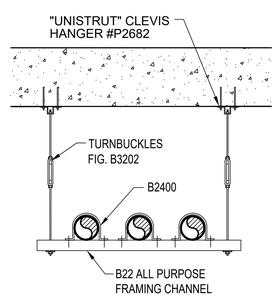
PIPE STAND FOOTING (AS NEEDED)



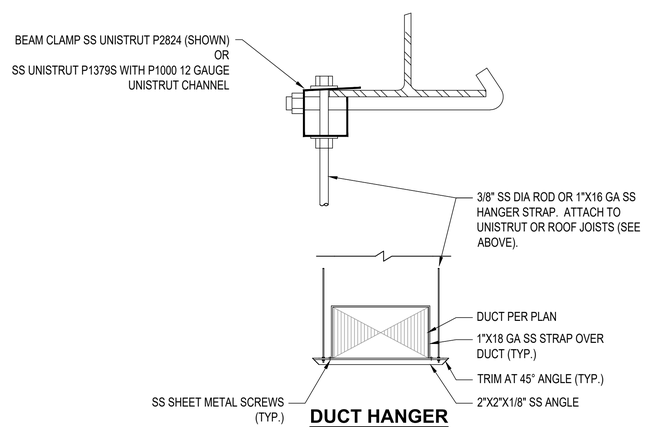
PIPE SUPPORT 12" OR BIGGER



VERTICAL DUCT SUPPORT



PIPE HANGER



DUCT HANGER

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PRELIMINARY DESIGN DRAWING

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F **PIPE SUPPORT/ STAND**
NOT TO SCALE

NO	BY	DATE	REVISIONS	DATE	APP.

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PREPARED BY
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EXP: 06/30/2024

DRAWN: SP/RC
SCALE: 1"=1'-0" (SHOWN)
DESIGNED: BL
CHECKED: ZS
DATE: 8/16/2023

TITLE: **PUMP STATION DETAILS**

JOB: **TEWINKLE PARK** / **LAKE RENOVATION** — **COSTA MESA** CA

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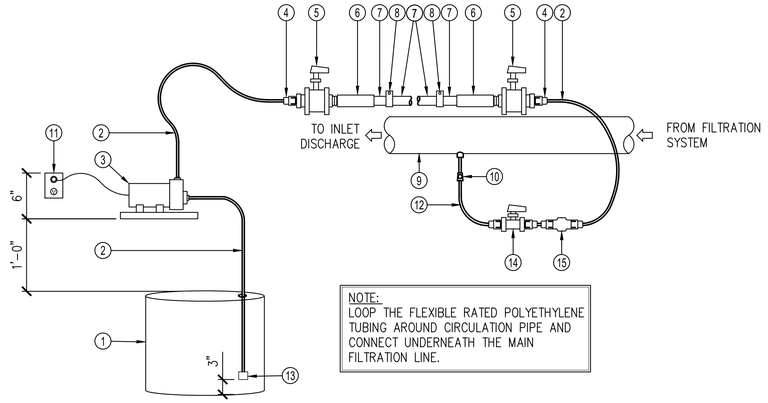
SHEET **W450**
41 OF 50 SHEETS

JOB NO. B836

Xrefs: B836-07 36x24x.dwg
Dimscale = 24, LTscale = 1, PSltscale = 1, ACAD Ver. = 23.0s (LMS Tech), Viewton = 1

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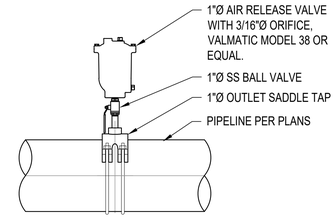
Aug. 16, 2023



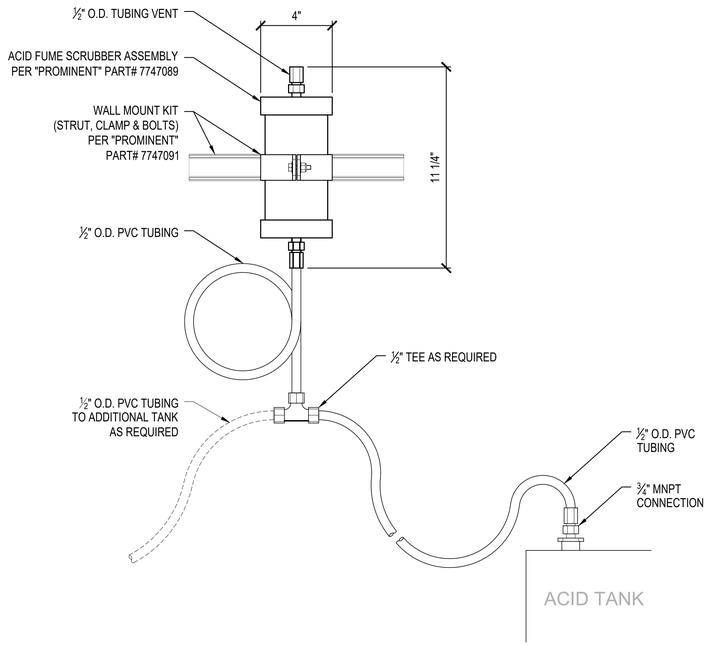
KEYNOTES

1. CHEMICAL TANK
2. FLEXIBLE PRESSURE RATED POLYETHYLENE TUBING SUPPLIED BY PUMP MANUFACTURER (MAX DISTANCES')
3. CHEMICAL FEED PUMP PER EQUIPMENT LIST
4. PIPE TO TUBE ADAPTER TYPICAL
5. ISOLATION VALVE
6. 1/2" SCH. 80 PVC FIP FEMALE ADAPTER TYPICAL
7. 1/2" SCH. 80 PVC PIPE TYPICAL
8. 1/2" PIPE CLIP B-LINE #B3191 AT 24" O.C. MOUNTED TO WALL
9. POOL/SPA CIRCULATION PIPING
10. CHEMICAL INJECTOR PER DETAIL B ON SHEET W451
11. POWER OUTLET (ON/OFF CONTROL BY CONTROL PANEL)
12. NEEDS TO BE ACCESSIBLE FROM THE GROUND BY PERSONNEL WITHOUT A LADDER
13. CHEMICAL SUCTION FOOT VALVE
14. BALL VALVE
15. CHECK VALVE

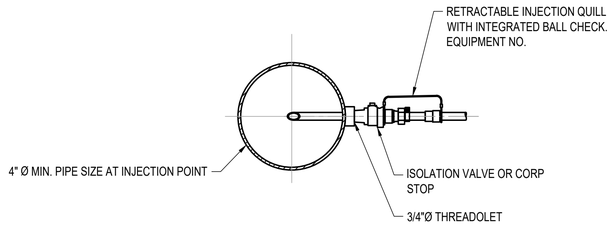
C **CHEMICAL FEED SYSTEM**
NOT TO SCALE



A **AIR RELEASE VALVE DETAIL**
NOT TO SCALE



D **ACID SCRUBBER TANK**
NOT TO SCALE



B **CHEMICAL INJECTION DETAIL**
NOT TO SCALE

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ZHANG SONG
PROJECT ENGINEER
R.C.E. NO. — #C89315
EXP. 09/30/2024

DRAWN SP/RC | SCALE 1"=1'SHOWN
DESIGNED BL
CHECKED ZS | DATE 8/16/2023

TITLE
PUMP STATION DETAILS

JOB
TEWINKLE PARK
LAKE RENOVATION
COSTA MESA ***CA***

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SHEET
W451
42 OF 50 SHEETS

JOB NO. B836

Xrefs: B836-07 36x24v.dwg
Dimscale = 24, LTscale = 1, PSltscale = 1; ACAD Ver. = 23.0s (LMS Tech); Viewtan = 1
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Aug. 16, 2023

GENERAL ELECTRICAL NOTES:

1. ELECTRICAL CODE SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE (2020 NEC) AS AMENDED BY THE CALIFORNIA ELECTRICAL CODE (2019 CEC) THE ENERGY CODE REFERENCE TO READ CALIFORNIA ENERGY CODE TITLE 24 (2019 CENC) AND ADD CALIFORNIA BUILDING CODE (2019 CBC) AND THE CITY OF COSTA MESA MUNICIPAL CODE.
2. ALL WORK SHALL BE DONE IN A NEAT, WORKMANLIKE, FINISHED AND SAFE MANNER, ACCORDING TO THE LATEST PUBLISHED NATIONAL ELECTRICAL CONTRACTOR'S ASSOCIATION STANDARDS OF INSTALLATION, UNDER COMPETENT SUPERVISION.
3. CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION TO BECOME FAMILIAR WITH EXISTING CONDITIONS AND ALL OTHER FACTORS WHICH MAY AFFECT THE EXECUTION OF THIS WORK.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO EXISTING WALKS, WALLS, DRIVEWAYS, CURBS, ETC. DAMAGES SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE CITY AT NO ADDITIONAL COST TO THE CITY.
5. CONTRACTOR SHALL PAY FOR LOCAL FEES, PERMITS AND INSPECTIONS AS MAY BE REQUIRED AND PROVIDE A CERTIFICATE OF INSPECTION TO THE CITY.
6. LEAVE THE SITE CLEAN, REMOVE ALL DEBRIS, EMPTY CARTONS, TOOLS, CONDUIT, WIRE SCRAPS AND ALL MISCELLANEOUS SPARE EQUIPMENT AND MATERIALS USED IN THE WORK DURING CONSTRUCTION.
7. IT IS THE OBLIGATION OF THE CONTRACTOR TO ORGANIZE HIS WORK SO THAT A COMPLETE ELECTRICAL, INSTRUMENTATION, AND/OR CONTROL SYSTEM FOR THE FACILITY WILL BE PROVIDED AND SUPPORTED BY ACCURATE SHOP AND RECORD DRAWINGS, AND ALL O&M MANUALS.
8. ALL CABLES SHALL BE NEW, COPPER, RATED FOR 600V AND LISTED FOR ITS LOCATION WITH A MINIMUM TEMPERATURE RATING OF 75 DEG C WET AND 90 DEG C DRY; POWER CABLES SHALL BE TYPE XHHW-2 FOR UNDERGROUND/ABOVE GROUND, UNLESS NOTED OTHERWISE.
9. MINIMUM SIZE CONDUIT ABOVE GROUND SHALL BE 3/4" AND MINIMUM SIZE CONDUIT BELOW GROUND SHALL BE 1" UNLESS NOTED OTHERWISE. ALL CONDUITS FOR POWER AND LIGHTING SHALL CONTAIN A GROUNDING CONDUCTOR.
10. MINIMUM SIZE POWER CONDUCTORS SHALL BE #12 AWG UNLESS NOTED OTHERWISE.
11. ALL TERMINAL RATINGS SHALL HAVE A MINIMUM TEMPERATURE RATING OF 75 DEG C. CABLES SHALL BE DE-RATED PER NEC 110.14 (C).
12. CONDUIT SIZE SHALL BE AS SPECIFIED IN THE PLANS OR DETAILS. UNDERGROUND CONDUIT SHALL BE SCH 40 PVC ENCASED IN CONCRETE WITH PVC COATED GALVANIZED RIGID STEEL BENDS, ELBOWS AND TURN-UPS. EXPOSED CONDUIT IN THE CHEMICAL ROOM AND OUTDOORS SHALL BE PVC COATED GRS. ALL OTHER EXPOSED ABOVE-GROUND CONDUIT SHALL BE GALVANIZED RIGID STEEL.
13. EQUIPMENT AND WIRING METHODS LOCATED OUTSIDE SHALL BE RATED FOR CORROSIVE LOCATIONS, ENCLOSURES SHALL BE NEMA 4X SS. EQUIPMENT IN THE ELECTRICAL ROOM SHALL BE NEMA 12 UNLESS NOTED OTHERWISE.
14. GROUND AND BOND ALL EQUIPMENT AND ENCLOSURES PER NEC ARTICLE 250 AND MANUFACTURER REQUIREMENTS.
15. CONTRACTOR SHALL PLAN AND INSTALL WORK IN SUCH A MANNER AS TO CONFORM TO THE STRUCTURE, AVOID OBSTRUCTIONS, PRESERVE HEADROOM AND KEEP OPENINGS AND PASSAGEWAYS CLEAR.
16. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIAL, ETC. NECESSARY FOR A COMPLETE AND WORKABLE ELECTRICAL SYSTEM WHETHER OR NOT THESE ITEMS ARE SPECIFICALLY NOTED ON THESE DRAWINGS. INCIDENTAL ITEMS NOT INDICATED ON THE DRAWINGS, NOR MENTIONED IN SPECIFICATIONS THAT CAN BE LEGITIMATELY AND REASONABLY INFERRED TO BELONG TO THE WORK DESCRIBED OR BE NECESSARY IN GOOD PRACTICE TO PROVIDE A COMPLETE SYSTEM, SHALL BE FURNISHED AND INSTALLED AS THOUGH ITEMIZED HERE IN EVERY DETAIL.
17. ALL TRENCHING, CONDUITS, ETC. SHALL BE ROUTED AND INSTALLED IN SUCH A MANNER THAT WILL NOT DAMAGE EXISTING FACILITIES OR UNDERGROUND UTILITIES. SHOULD DAMAGE OCCUR, IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR DAMAGE TO THE SATISFACTION OF THE CITY OR INSPECTOR.
18. ALL CONDUIT RUNS SHOWN ON THIS PLAN ARE SCHEMATIC IN NATURE. THE CONTRACTOR SHALL MAKE SURE THAT ALL CONDUIT MEETS LOCAL AND STATE CODES.
19. WHEN CROSSING PATHWAYS OR SIDEWALKS, CONTRACTOR SHALL BORE UNDER EXISTING CONCRETE WALKS AND SAWCUT ASPHALT WALKS. ASPHALT WALKS AND CONCRETE SIDEWALKS TO BE REPLACED IN KIND.
20. CONTRACTOR SHALL GUARANTEE WORK INSTALLED UNDER THE CONTRACT TO BE FREE FROM DEFECTIVE WORKMANSHIP AND MATERIALS, USUAL WEAR EXPECTED, AND SHOULD ANY SUCH DEFECTS DEVELOP WITHIN A PERIOD OF ONE YEAR ACCEPTANCE OF THE PROJECT BY THE CITY, THE CONTRACTOR SHALL REPAIR AND/OR REPLACE ANY DEFECTIVE ITEMS AND DAMAGE RESULTING FROM FAILURE OF THESE ITEMS, AT NO EXPENSE WHATSOEVER TO THE CITY.
21. ALL CIRCUITS SHALL BE LEGIBLY IDENTIFIED AT THE PANEL, JUNCTION BOXES AND AT ALL EQUIPMENT IN A PERMANENT MANNER (I.E. ETCHED PLATES, CONDUCTOR TAG, PERMANENT MARKER, ETC.). THE LABELING SHALL INCLUDE PANEL CIRCUIT NUMBER, "TO" AND "FROM" IDENTIFICATION, AND MARKED "SPARE" WHERE APPLICABLE.
22. CONTRACTOR SHALL TEST ELECTRICAL SYSTEM FOR SHORT CIRCUITS AND MEGGER TEST FEEDERS AND BRANCH CIRCUIT WIRING. INSURE LOW IMPEDANCE GROUND PATH SYSTEM. PERFORM HIPOT TESTING WHEN REQUIRED BY LOCAL JURISDICTION.
23. CONTRACTOR SHALL COORDINATE ALL EQUIPMENT CONNECTIONS WITH EQUIPMENT SUPPLIER PRIOR TO ROUGH-IN. PROVIDE ADDITIONAL FUSED DISCONNECT SWITCHES AND CONTROLS IF OVERCURRENT PROTECTION OR CONTROLS ARE NOT INTEGRAL WITH UNITS.
24. FULL LOAD AMPS (FLA) SIZES, AS NOTED IN THESE DRAWINGS, ARE BASED ON SPECIFIED EQUIPMENT DATA. CONTRACTOR SHALL VERIFY NAMEPLATE FLA OF EQUIPMENT SUPPLIED AND COORDINATE ACCORDINGLY PER EQUIPMENT SUPPLIERS RECOMMENDATIONS AND CODE REQUIREMENTS.
25. CONDUITS OR RACEWAYS INSTALLED IN AREAS WHERE ELEVATION CHANGES MAY CAUSE WATER OR MOISTURE TO ENTER THE ELECTRICAL EQUIPMENT THROUGH THE CONDUIT SHALL BE SEALED IN ACCORDANCE WITH NEC 300.5 (G).
26. MATERIALS SHALL BE NEW AND OF THE BEST QUALITY WITH MANUFACTURER'S NAME PRINTED THEREON. MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH NEMA, ANSI, UNDERWRITER'S LABORATORY OR OTHER APPLICABLE STANDARDS AND RATED FOR HEAVY DUTY SERVICE.
27. SELECTION OF MATERIALS SHALL BE IN STRICT ACCORDANCE WITH THE DRAWINGS AND/OR SPECIFICATIONS.
28. THE SUBMITTALS SHALL BE NEATLY GROUPED AND ORGANIZED. PERTINENT INFORMATION SHALL BE HIGHLIGHTED, AND THE SPECIFIC PRODUCT SHALL BE IDENTIFIED. ALL SUBMITTALS SHALL BE COMPLETE, AND PRESENTED IN ONE PACKAGE. THE SUBMITTAL SHALL INCLUDE A COMPLETE LIST OF THE EQUIPMENT AND MATERIALS, INCLUDING THE MANUFACTURER'S NAME, PRODUCT SPECIFICATION, DESCRIPTIVE DATA, TECHNICAL LITERATURE, PERFORMANCE CHARTS, CATALOG CUTS, INSTALLATION INSTRUCTION, AND SPARE PART RECOMMENDATIONS FOR EACH DIFFERENT ITEM OF THE EQUIPMENT SPECIFIED.
29. VERIFY ALL CONDUIT FILL RATIOS, BOX FILLS, AND CONDUIT BENDS (MAX 360 DEGREES) ARE MET PER NEC REQUIREMENTS. INSTALL PULL BOXES AND DE-RATE CABLE AMPACITY AS NECESSARY.
30. CONTRACTOR TO READ ALL THE DRAWINGS IN THIS SET TO BECOME FAMILIARIZED WITH THE FULL ELECTRICAL SCOPE, INCLUDING BUT NOT LIMITED TO THE MECHANICAL, INSTRUMENTATION AND CIVIL DRAWINGS.
31. THESE DRAWINGS AND THE PROJECT SPECIFICATIONS ARE COMPLEMENTARY. WHERE THERE IS OVERLAP, THE MORE STRINGENT REQUIREMENT WILL TAKE PRECEDENCE.
32. CONTRACTOR SHALL VERIFY ALL CIRCUITS CONTAIN LESS THAN 5% VOLTAGE DROP. CONTRACTOR SHALL PROVIDE SHORT CIRCUIT ANALYSIS AND ARC FLASH STUDY, AS REQUIRED.
33. CONTRACTOR SHALL COORDINATE AND PERFORM WORK TO THE STANDARDS OF ALL APPLICABLE UTILITY COMPANIES, INCLUDING BUT NOT LIMITED TO UNDERGROUND ELECTRICAL LINES, GAS LINES AND WATER LINES. WHEN AN ISSUE OR DISCREPANCY ARISES, NOTIFY THE CITY AND ENGINEER IMMEDIATELY.
34. CONTRACTOR TO PROVIDE REQUIREMENTS FOR NFPA 70E, AS REQUIRED.
35. CONTRACTOR SHALL NOTIFY THE ENGINEER AND THE CITY WITH ANY DISCREPANCIES FOUND DURING INSTALLATION OR REVIEW.
36. LIGHTING SHALL BE INSTALLED IN THE BUILDING TO PROVIDE A MINIMUM OF 30 FOOT CANDLES IN ALL INDOOR ROOMS.
37. ALL POWER AND LIGHTING CONDUITS SHALL HAVE A GROUND WIRE, BE AT LEAST #12 THHN, AND SIZED FOR PROPER AMPACITY DERATING AND CONDUIT FILL.
38. ALL 120V RECEPTACLES SHALL BE GFCI PROTECTED, EITHER WITH A GFCI RECEPTACLE OR THROUGH A GFCI CIRCUIT BREAKER.

SCOPE OF WORK:

THE CITY OF COSTA MESA UPGRADE LAKE PUMP MOTORS AT TEWINKLE MEMORIAL PARK:

1. PROVIDE DESIGN DETAIL TO UPGRADE POWER CONDUIT SUPPORT CONNECTIONS TO REFURBISHED LAKE PUMP MOTORS PER N.E.C.
2. PROVIDE DEDICATED 120V CIRCUITS TO NEW LAKE AIR COMPRESSOR AND CHEMICAL INJECTION PUMPS.

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PRELIMINARY DESIGN DRAWING

THIS DRAWING IS FOR DESIGN USE ONLY AND NOT INTENDED TO BE USED FOR CONSTRUCTION.

NO	BY	DATE	REVISIONS	DATE	APP.
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2					
3					
4					
5					

PREPARED BY
ZHANG SONG
PROJECT ENGINEER
R.C.E. NO. #C89315
EXP. 09/30/2024

DRAWN SP/RC
SCALE AS SHOWN
DESIGNED BL
CHECKED ZS
DATE 8/16/2023

TITLE **ELECTRICAL GENERAL NOTES**

JOB **TEWINKLE PARK**
LAKE RENOVATION
COSTA MESA *CA*

PACE
Advanced Water Engineering
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SHEET **W500**
43 OF 50 SHEETS

JOB NO. B836

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Xrefs: B836-07 36x24v.dwg
Dimscale = 24; LTscale = 1; PSltscale = 1; ACAD Ver. = 23.0s (LMS Tech); Visretain = 1
G:\B836\Engineering\B836-07 (Construction Documents)\sheets\B836-07 W500 Electrical General Notes.dwg - Tab: Electrical General Notes - by ble on 03/07/23 at 3:45:21 PM

Aug. 16, 2023

PLAN LEGEND

- EXPOSED CONDUIT
- EXISTING EXPOSED CONDUIT
- CONDUIT WITHIN CEILING, FLOOR, WALLS, OR UNDERGROUND
- EXIST. CONDUIT WITHIN CEILING, FLOOR, WALLS, OR UNDERGROUND
- GROUNDING ELECTRODE CONDUCTOR
- OHE — EXISTING OVERHEAD ELECTRIC
- CONDUIT BEND UP
- CONDUIT BEND DOWN
- FENCE
- FLOOR MOUNTED ETHERNET (10/100) OUTLET (RJ-45)
- TELEPHONE OUTLET (RJ-11)
- ETHERNET (10/100) OUTLET (RJ-45)
- COMBINATION TELEPHONE/ETHERNET (10/100) OUTLET (RJ-11 & RJ-45)
- 20 — 240V SIMPLEX RECEPTACLE (NUMBER DENOTES CIRCUIT AMPS)
- 20 — 480V SIMPLEX RECEPTACLE (NUMBER DENOTES CIRCUIT AMPS)
- 120V, 20A SIMPLEX RECEPTACLE
- 120V, 20A DUPLEX RECEPTACLE
- 120V, 20A QUADRAPLEX RECEPTACLE
- $ — 120V, 20A SPST SWITCH
- $M — MANUAL MOTOR STARTER
- $3 — 120V, 20A 3-WAY SWITCH
- $4 — 120V, 20A 4-WAY SWITCH
- AT — ANALYZER TRANSMITTER
- CS — CONDUCTIVITY SWITCH
- FS — FLOAT SWITCH
- J — ABOVE GROUND JUNCTION BOX
- LE — LEVEL ELEMENT
- LP — LEVEL PROBES
- LT — LEVEL TRANSPONDER
- PC — PHOTOCELL
- PS — PRESSURE SWITCH
- TS — TEMPERATURE SWITCH
- T — THERMOSTAT
- ZS — INTRUSION ALARM SWITCH
- JB — UNDERGROUND JUNCTION BOX
- MH — MANHOLE
- HH — HANDHOLE
- DISCONNECT SWITCH
- F — FUSED DISCONNECT SWITCH
- CB — ENCLOSED CIRCUIT BREAKER
- COMBINATION MOTOR STARTER
- MOTOR STARTER
- PUSHBUTTON CONTROL STATION
- CONDUIT SEAL-OFF FITTING
- S — SOLENOID VALVE (ENERGIZED TO CLOSE)
- S — SOLENOID VALVE (ENERGIZED TO OPEN)
- BUTTERFLY VALVE
- PLUG VALVE
- GATE VALVE
- R — ALARM BEACON
- H — HORN

SINGLE LINE DIAGRAM AND SCHEMATIC LEGEND

- FIELD WIRING
- PANEL WIRING
- COMMUNICATIONS WIRING
- CABLE (MULTICONDUTOR SHIELDED)
- R — PILOT LIGHT (LETTER DENOTES COLOR)
- H R — PUSH-TO-TEST PILOT LIGHT (LETTER DENOTES COLOR)
- CR — CONTROL RELAY
- PRESSURE SWITCH (N.O.) CLOSES ON RISING LEVEL
- PRESSURE SWITCH (N.C.) OPENS ON RISING LEVEL
- TIMING RELAY, (N.O.) CONTACT TIME TO CLOSE (ON DELAY TIMER)
- TIMING RELAY, (N.C.) CONTACT TIME TO OPEN (ON DELAY TIMER)
- TIMING RELAY, (N.O.) CONTACT TIME TO OPEN (OFF DELAY TIMER)
- TIMING RELAY, (N.C.) CONTACT TIME TO CLOSE (OFF DELAY TIMER)
- FLOW SWITCH (N.O.) CLOSES ON RISING LEVEL
- FLOW SWITCH (N.C.) OPENS ON RISING LEVEL
- FLOAT SWITCH (N.C.) OPENS ON RISING LEVEL
- FLOAT SWITCH (N.O.) CLOSES ON RISING LEVEL
- LIMIT SWITCH (N.C.)
- LIMIT SWITCH (N.O.)
- LIMIT SWITCH (N.C.)
- LIMIT SWITCH (N.O.)
- TEMPERATURE SWITCH (N.C.) OPENS ON RISING LEVEL
- TEMPERATURE SWITCH (N.O.) CLOSES ON RISING LEVEL
- CIRCUIT BREAKER WITH DOOR OPERATED HANDLE, 3P, 480V, THERM MAG TRIP, UNO
- 3P, 480V MOLDED CASE CIRCUIT BREAKER WITH THERMAL MAG TRIP, UNO
- CONTACT (N.O.)
- CONTACT (N.C.)
- PUSHBUTTON (N.O.) MOMENTARY CLOSE
- PUSHBUTTON (N.C.) MOMENTARY OPEN
- 2-POSITION SELECTOR SWITCH
- H O A — 3-POSITION SELECTOR SWITCH (HAND-OFF-AUTO)
- LO STOP — LOCKOUT STOP PUSHBUTTON
- PUSH-PULL EMERGENCY STOP PUSHBUTTON
- DISCONNECT SWITCH (N.O.)
- DISCONNECT SWITCH (N.C.)
- EARTH GROUND CONNECTION
- GROUND ROD AND WELL
- OVERLOAD (ELECTRONIC TYPE)
- THERMAL OVERLOAD (BI-METALLIC)
- FUSED TERMINAL BLOCK
- N — NEUTRAL BUS
- G — GROUND BUS
- H — HORN
- BUZZER
- TERMINAL BLOCK
- FIELD TERMINATION
- MLO — MAIN LUG ONLY
- POWER DISTRIBUTION BLOCK
- COIL/INDUCTOR
- POWER TRANSFORMER
- HEATER
- M — MOTOR STARTER CONTACTOR COIL
- ETM — ELAPSED TIME METER
- M — METER & CURRENT TRANSFORMER
- WHM — WATT HOUR METER AND SOCKET
- PFR — PHASE FAILURE RELAY
- TR XX — TIME DELAY RELAY
- LR XX — LATCHING RELAY
- CR XX — CONTROL RELAY
- ISR XX — INTRINSICALLY SAFE RELAY
- EDGE CONNECTORS
- INTERNAL CONTACT (N.O.)
- INTERNAL CONTACT (N.C.)
- BATTERY
- CAPACITOR
- SOLENOID
- RESISTOR
- DIODE
- MOV — METAL OXIDE VARISTOR
- INDICATING FUSE HOLDER AMPERE SIZE SHOWN
- S LA — LIGHTNING ARRESTER
- CXXXX — CONDUIT DESIGNATION C-CONTROL P-POWER
- EQUIPMENT TAG REFERENCE
- I/O POINT REFERENCE PLC, I/O RACK, OR ENUNCIATOR PANEL
- DRAWING REFERENCE
- LOCATION SYMBOL
- SHEET NOTE TAG
- EDGE CONNECTOR
- INSTRUMENTATION
- PHOTOCELL AND TIME CLOCK
- CONDUIT STUB-UP AND CAP
- INV — ACTIVE HARMONIC FILTER

ABBREVIATION LIST

A, AMP	AMPERES
AM	AMMETER
AC	ALTERNATING CURRENT
AIC	AMPS INTERRUPTING CAPACITY
BAT	BATTERY BC BATTERY CHARGER
C	COMMON
CB	CIRCUIT BREAKER
CNTL	CONTROL
CPT	CONTROL POWER TRANSFORMER
CP	CONTROL PANEL
CR	CONTROL RELAY
CT	CURRENT TRANSFORMER
DC	DIRECT CURRENT
DR	DUPLEX RECEPTACLE
(E)	EXISTING
EC	EDGE CONNECTOR
EF	EXHAUST FAN
ETM	ELAPSED TIME METER
F	FUSE
FB	FUSE BLOCK
(F)	FUTURE
FLTR	FILTER
FS	FLOAT SWITCH
FVNR	FULL VOLTAGE NON REVERSING
FVR	FULL VOLTAGE REVERSING
G, GND	GROUND
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
HPS	HIGH PRESSURE SODIUM
HS	HAND SWITCH
ICP	INSTRUMENTATION CONTROL PANEL
ISR	INTRINSICALLY SAFE RELAY
I, IND	INDICATOR
INST	INSTANTANEOUS
KV	KILOVOLT
KVA	KILOVOLT AMPERES
KW	KILOWATT
LED	LIGHT EMITTING DIODE
LCD	LIQUID CRYSTAL DISPLAY
LA	LIGHTNING ARRESTER
LCP	LOCAL CONTROL PANEL
LPU	LIGHTNING PROTECTION UNIT
LOS	LOCK OUT STOP
LR	LATCH RELAY
LS	LOAD SPLITTER
MA	MILLIAMPERES
MB	MAIN BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MOT	MOTOR OVERTEMPERATURE
MMS	MOTOR MOISTURE SENSOR
MS	MOTOR STARTER
N	NEUTRAL
NA	NON AUTOMATIC
(N)	NEW
N.I.C.	NOT IN CONTRACT
NP	NAMEPLATE
OT	OVERTEMPERATURE
O/L	OVERLOAD DEVICE
PB	PUSHBUTTON
PCB	PRINTED CIRCUIT BOARD
PC	PROGRAMMABLE CONTROLLER
PLC	PROGRAMMABLE LOGIC CONTROLLER
PL-1	PILOT LIGHT 1
PFR	PHASE/POWER FAIL RELAY
PNL	PANEL
POT	POTENTIOMETER
PPM	POWER PHASE MONITOR
PR	PAIR CABLE
PS	PRESSURE SWITCH
PT	POTENTIAL TRANSFORMER
PTT	PUSH TO TEST
PVC	POLYVINYL CHLORIDE
PWR	POWER
RR	RUN RELAY
RV	REDUCED VOLTAGE
RVAT	REDUCED VOLTAGE AUTO-TRANSFORMER
SSS	SOLID-STATE STARTER
SR	SIMPLEX RECEPTACLE
SS	SELECTOR SWITCH, SOFT STARTER
SP	SURGE PROTECTOR
SPD	SURGE PROTECTOR DEVICE
SV	SOLENOID VALVE
SWBD	SWITCHBOARD
TB	TERMINAL BLOCK
TR	TIME DELAY RELAY
TC	TIMECLOCK
TM	THERMAL MAGNETIC
TS	TEMPERATURE SWITCH
TSP	TWISTED SHIELDED PAIR
TWP	TWISTED PAIR
TYP	TYPICAL
UG	UNDERGROUND
V	VOLTS, VOLTAGE
VM	VOLTMETER
VFD	VARIABLE FREQUENCY DRIVE
WP	WEATHERPROOF
TR,XFMR	TRANSFORMER
XP	EXPLOSION PROOF
XMITR	TRANSMITTER/TRANSPONDER

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NO	BY	DATE	REVISIONS	DATE	APP.

PREPARED BY: ZHANG SONG
PROJECT ENGINEER
R.C.E. NO. #C89315
EXP: 06/30/2024
DRAWN: SP/RC
SCALE: AS SHOWN
DESIGNED: BL
CHECKED: ZS
DATE: 8/16/2023

TITLE: ELECTRICAL LEGEND

JOB: TEWINKLE PARK LAKE RENOVATION — COSTA MESA CA

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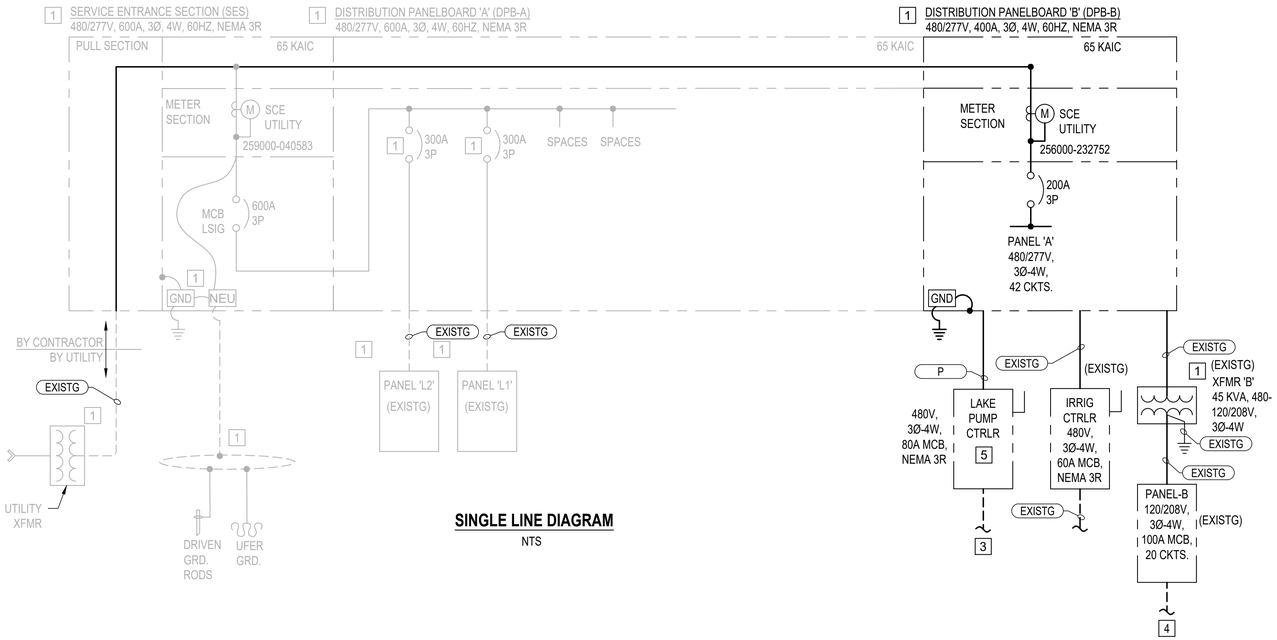
SHEET W501
44 OF 50 SHEETS

JOB NO. B836

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X-refs: B836-07 36x24x.dwg
Dimscale = 24, LTscale = 1; PSltscale = 1; ACAD Ver. = 23.0s (LMS Tech); Xoretain = 1

Aug. 16, 2023



SINGLE LINE DIAGRAM

NTS

CONSTRUCTION NOTES:

1. EXISTING ELECTRCIAL EQUIPMENT AND CONDUIT TO REMAIN.
2. PROVIDE NEW 120V DEDICATED GFCI BREAKER FOR NEW ISLAND EVENT J-BOX ROUTE NEW WIRES TO ISLAND.
3. PROVIDE PUMP MOTOR CONDUIT STUB-UP PROTECTION WITH FLOOR MOUNTED STRUT SYSTEM TO REFURBISHED MOTORS ON VERTICAL PUMP PER NEC CODE.
4. REFER TO POWER AND CONTROL PLAN FOR ROUTING OF NEW ELECTRICAL EQUIPMENT IN LAKE PUMP STATION.
5. PROVIDE REPLACEMENT LAKE PUMP CONTROLLER PANEL WALL - MOUNTED BY (TOTAL CONTROL MANUF) AND PANEL A 80A/3P C.B., REFURBISHED MOTORS ON VERTICAL PUMPS PER PROJECT SCOPE OF WORK.
6. DEMO AND LABEL "SPACE" REMOVE ALL EXISTING "OZONE" ELECTRICAL EQUIPMENT FROM THE LAKE PUMP STATION RETURN TO CITY PER PROJECT SCOPE OF WORK.

NOTES:

1. DRAWINGS ARE DIAGRAMMATIC AND DO NOT REFLECT ACTUAL ROUTING. CONTRACTOR SHALL INSTALL PULLPOINTS WHERE REQUIRED FOR PULLING TENSION AND MAINTAINING LESS THEN (4) 90 DEGREE BENDS.
2. ALL EQUIPMENT, INCLUDING INSTRUMENTATION, IS NOT SHOWN ON THIS DIAGRAM. REFERENCE MECHANICAL AND INSTRUMENTATION DIAGRAMS.
3. GROUND AND BOND ALL ENCLOSURES PER GROUNDING PLANS AND MANUFACTURER/CODE REQUIREMENTS.
4. NOT ALL EQUIPMENT AND WIRING IS SHOWN ON THIS DIAGRAM. REFERENCE DRAWINGS IN THE ELECTRICAL SET AND ENTIRE PROJECT TO COMPLETELY UNDERSTAND THE SCOPE OF ELECTRICAL WORK.

PANEL "A"

VOLTAGE:	480/277 VAC	VOLT AMPS	MAIN BKR:	200	A
SCCR:	42 KAIC		PANEL BUS:	225	A

LOAD DESCRIPTION	VA	CB	BKR	PHASE A	PHASE B	PHASE C	BKR	CB	VA	LOAD DESCRIPTION	
"SPACE"			1	16295			2		16295	LAKE PUMP CTRLR PANEL	5
"SPACE"			3		16295		4	80/3	16295	LAKE PUMP CTRLR PANEL	5
"SPACE"			5			16295	6		16295	LAKE PUMP CTRLR PANEL	5
"SPACE"			7	14000			8		14000	XFMR B 45 KVA	
"SPACE"			9		14000		10	100/3	14000	XFMR B 45 KVA	
"SPACE"			11			14000	12		14000	XFMR B 45 KVA	
"SPACE"			13	4750			14		4750	IRRIG CONTROLLER	
"SPACE"			15		4750		16	60/3	4750	IRRIG CONTROLLER	
"SPACE"			17			4750	18		4750	IRRIG CONTROLLER	
"SPACE"			19	0			20			"SPACE"	
"SPACE"			21		0		22			"SPACE"	
"SPACE"			23			0	24			"SPACE"	
"SPACE"			25	0			26			"SPACE"	
"SPACE"			27		0		28			"SPACE"	
"SPACE"			29			0	30			"SPACE"	
"SPACE"			31	0			32			"SPACE"	
"SPACE"			33		0		34			"SPACE"	
"SPACE"			35			0	36			"SPACE"	
"SPACE"			37	0			38			"SPACE"	6
"SPACE"			39		0		40			"SPACE"	6
"SPACE"			41			0	42			"SPACE"	6
				PHASE A	PHASE B	PHASE C					
VA/PHASE (SUBTOTAL)				35045	35045	35045	3Φ, 4W				
AMPS/PHASE (SUBTOTAL)				126.5	126.5	126.5	10,000 AIC BREAKERS				
VA (SUBTOTAL)				105135			NEMA 1 INSIDE "DPB-B" INSIDE NEMA 3R ENCL.				
25% OF LARGEST INDUCTIVE LOAD (VA)				0	290	0					
GRAND TOTAL (AMPS)				126.8			* INDICATES LOAD CALCULATED AT 125%				
PERCENT CAPACITY				63.4%							

PANEL "B"

VOLTAGE:	120/208 VAC	VOLT AMPS	MAIN BKR:	100	A
SCCR:	22 KAIC		PANEL BUS:	125	A

LOAD DESCRIPTION	VA	CB	BKR	PHASE A	PHASE B	PHASE C	BKR	CB	VA	LOAD DESCRIPTION	
MAIN		100	1	0			2		0	"SPACE"	
CIRCUIT		/	3		0		4	60/	0	SPARE	
BKR		3	5			0	6	2	0	SPARE	
LIGHTS	300	20/1	7	550			8	20/1	250	SPRINKLER TIMER	
GFIC RECEPT	180	20/1	9		680		10	20/1	500	SPRINKLER TIMER	
SPARE	0	30/1	11			0	12	30/1	0	SPARE	
WIND CTRL	180	20/1	13	180			14		0	"SPACE"	
ISLAND EVENT J-BOX	500	20/1	15		500		16		0	"SPACE"	2
ISLAND EVENT J-BOX	500	20/1	17			500	18		0	"SPACE"	2
SPARE		20/1	19	0			20		0	"SPACE"	
				PHASE A	PHASE B	PHASE C					
VA/PHASE (SUBTOTAL)				730	1180	500	3Φ, 4W				
AMPS/PHASE (SUBTOTAL)				6.1	9.8	4.2	10,000 AIC BREAKERS				
VA (SUBTOTAL)				2410			NEMA 3R ENCL.				
25% OF LARGEST INDUCTIVE LOAD (VA)				0	0	0					
GRAND TOTAL (AMPS)				6.7			* INDICATES LOAD CALCULATED AT 125%				
PERCENT CAPACITY				6.7%							

NOTES:

1. PROVIDE UPDATED, COMPLETE, AND ACCURATE TYPED PANELBOARD CIRCUIT DIRECTORIES AT THE COMPLETION OF WORK.
2. CIRCUIT BREAKERS SHALL BE THERMAL MAGNETIC, TRIP INDICATING.
3. MULTI-POLE CIRCUIT BREAKERS SHALL BE EQUIPPED WITH AN INTERNAL COMMON TRIP MECHANISM.
4. CIRCUIT BREAKERS SHALL BE OF THE SAME MANUFACTURER AS THE PANELBOARD.
5. PANELBOARDS SHALL BE BOLT-ON TYPE.
6. BREAKER SHALL HAVE FIXED LOCKS WHEN REQUIRED BY NEC CODE.
7. PANELBOARDS SHALL BE PROVIDED WITH SPARE BREAKERS AS INDICATED.
8. "SPACE" INDICATES A LISTED CIRCUIT BREAKER COVER.
9. BOTH ENDS OF CONDUCTORS SHALL BE LABELED WITH THE PANEL NAME AND CIRCUIT.

BUS BRACING CALCULATION (WORST CASE)
MAIN CIRCUIT BREAKER - 600 AMPERES

Isc = (300A) (480V) (1.73) / 1000 = 249.4 KVA

ASSUME 300KVA UTILITY TRANSFORMER @ 3.0% Z

SHORT-CIRCUIT CURRENT AVAILABLE (WORST CASE) BY EATON, TABLE 1.

= 33,451 AMPS.

ADD MOTOR CONTRIBUTION

33,451 + (48) = 33,499 AMPS

MULTIPLY BY 10% FOR VOLTAGE FLUCTUATION

33,499 X 1.1 = 36,849 AMPS

BUS BRACING SHALL BE 42 KAIC

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PRELIMINARY DESIGN DRAWING

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NO	BY	DATE	REVISIONS	DATE	APP.

PREPARED BY: ZIYANG SONG
R.C.E. NO. PROJECT ENGINEER #C89315
EXP: 09/30/2024
DRAWN: SP/RC
DESIGNED: BL
CHECKED: ZS
SCALE: AS SHOWN
DATE: 8/16/2023

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TITLE: ELECTRICAL SINGLE LINE DIAGRAM

JOB: TEWINKLE PARK LAKE RENOVATION — COSTA MESA CA

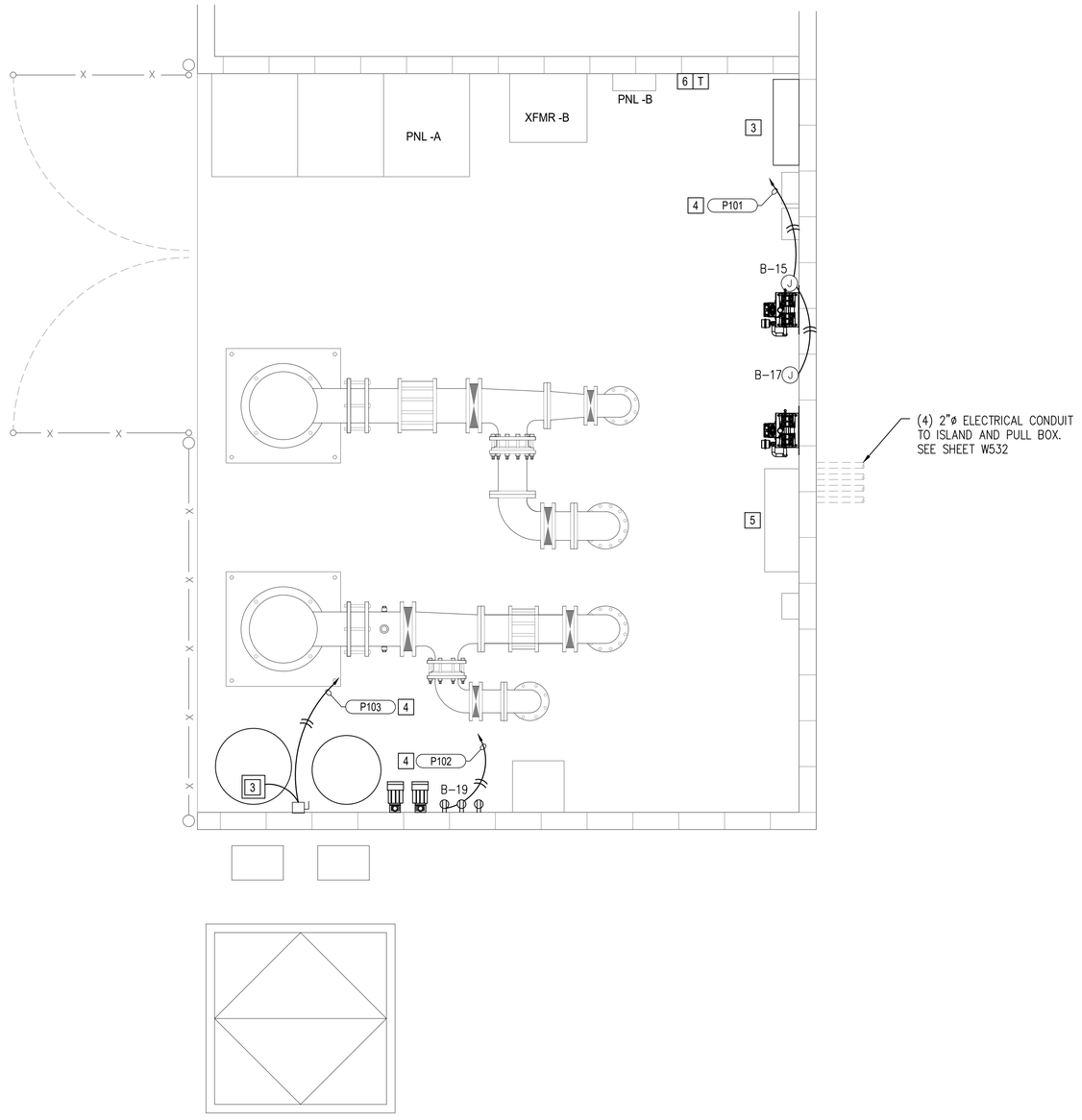
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SHEET W502
45 OF 50 SHEETS

JOB NO. B836

Xrefs: B836-07 36x24v.dwg
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Aug. 16, 2023



PUMP STATION PLAN

½"=1'-0"

2 1 0 2 4ft

CONSTRUCTION NOTES:

1. TERMINATE TO PUMP MOTOR AS REQUIRED BY MANUFACTURER SPECIFICATIONS.
2. PROVIDE STRUT SUPPORT CONDUIT CONNECTION TO PUMP MOTOR AS REQUIRED BY MANUFACTURER SPECIFICATIONS.
3. PROVIDE CONDUIT CONNECTION TO NEW PUMP CONTROLLER FROM MIXER MOTOR AS REQUIRED BY MANUFACTURER SPECIFICATIONS.
4. ROUTE CONDUIT TO NEW PUMP CONTROLLER PANEL REFER TO MANUFACTERER DRAWINGS.
5. IRRIGATION / FOUNTAIN CONTROLLER PANEL. SEE SHEET W214.
6. NEW PUMP CONTROLLER PANEL TRANSFORMER WALL MOUNTED.

NOTES:

1. LABEL CONDUITS PER DETAIL "F" ON .
2. CONDUCTORS FOR HOME RUN CIRCUITS FOR LIGHTING AND RECEPTACLES SHALL BE #10 AWG MINIMUM SIZE.
3. RECEPTACLE WIRING SHALL BE TYPE XHHW-2.
4. RECEPTACLE OUTLETS SHALL BE CLEARLY LABELED WITH THE CIRCUIT PROVIDING POWER. LABEL SHALL BE SUITED FOR ENVIRONMENT RECEPTACLE IS LOCATED IN.
5. ALL CONDUITS SHALL CONTAIN A PROPERLY SIZED GROUND CONDUCTOR.
6. MOUNT AND WIRE ALL EQUIPMENT PER MANUFACTURER REQUIREMENTS.

LEGEND:

⊖ WP	120V, 20A GFCI DUPLEX TAMPER-WEATHER RESISTANT RECEPTACLE WITH METALLIC WEATHERPROOF WHILE IN USE COVER, EXTRA DUTY.
⊖	120V, 20A GFCI DUPLEX TAMPER-WEATHER RESISTANT RECEPTACLE.
(J)	ABOVE GROUND JUNCTION BOX
T	POWER TRANSFORMER

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PREPARED BY
ZHANG SONG
PROJECT ENGINEER
R.C.E. NO. #C89315
EXP: 07/30/2024

DRAWN: SP/RC
DESIGNED: BL
CHECKED: ZS
SCALE: AS SHOWN
DATE: 8/16/2023

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TITLE
ELECTRICAL POWER AND CONTROL PLAN

JOB
TEWINKLE PARK
LAKE RENOVATION
COSTA MESA *CA*

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SHEET
W503
46 OF 50 SHEETS

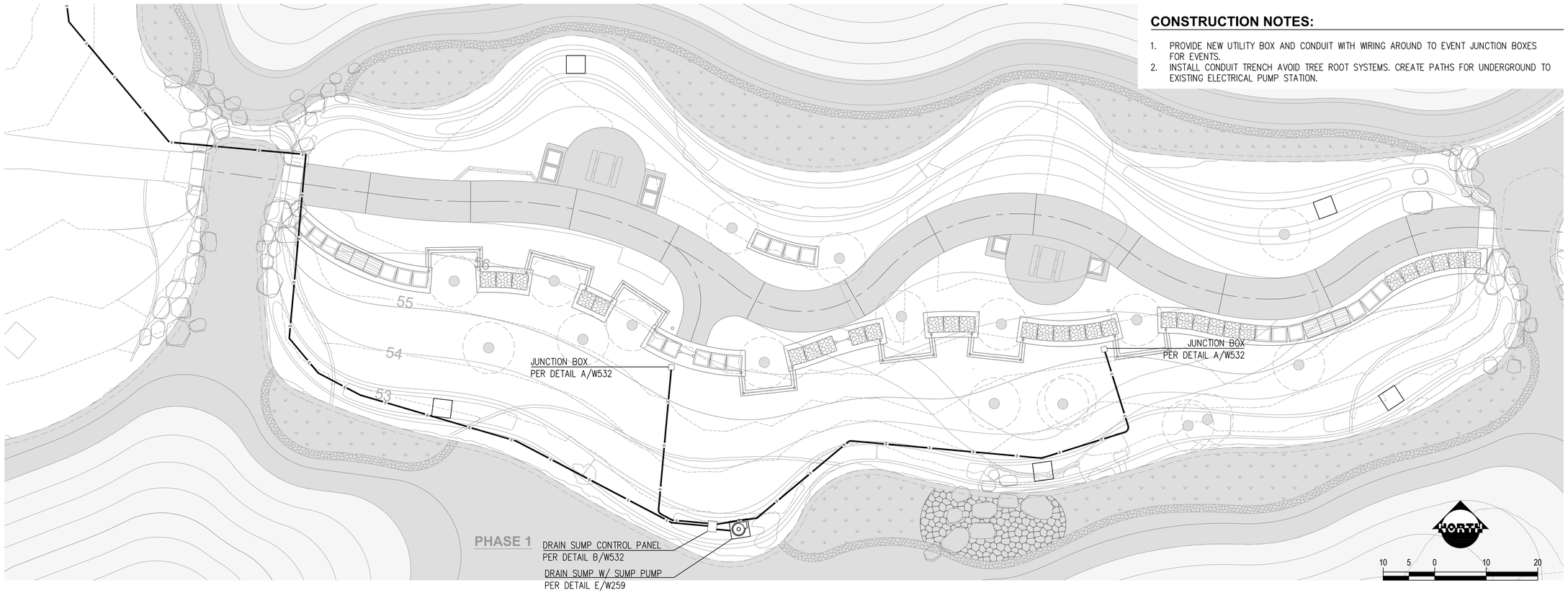
JOB NO. B836

Xrefs: B836-07 36x24.dwg; B836-07 Existing Pump Station.dwg
Dimscale = 24; LTscale = 1; PSTscale = 1; ACAD Ver. = 23.0s (LMS Tech); Varetain = 1
A:\B836\Engineering\B836-07 (Construction Documents)\sheets\B836-07 W503 Electrical Power and Control Plan.dwg - Tab: Electrical Power And Control Plan - by ble on 03/07/23 at 3:46:02 PM

Aug. 16, 2023

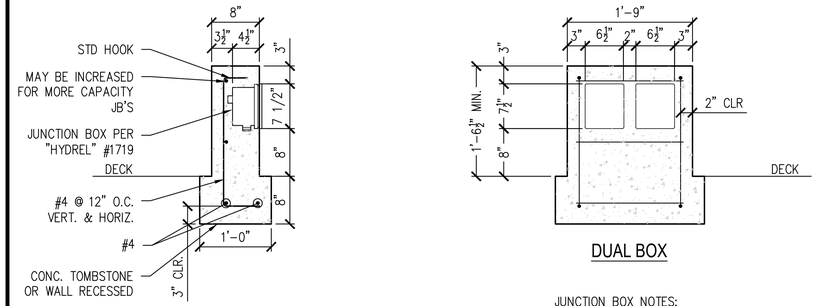
CONSTRUCTION NOTES:

1. PROVIDE NEW UTILITY BOX AND CONDUIT WITH WIRING AROUND TO EVENT JUNCTION BOXES FOR EVENTS.
2. INSTALL CONDUIT TRENCH AVOID TREE ROOT SYSTEMS. CREATE PATHS FOR UNDERGROUND TO EXISTING ELECTRICAL PUMP STATION.



ELECTRICAL - ISLAND CONNECTION

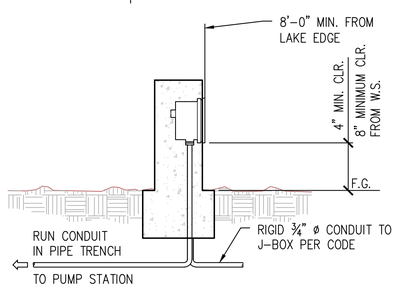
SCALE: 1"=10'



DUAL BOX

JUNCTION BOX NOTES:

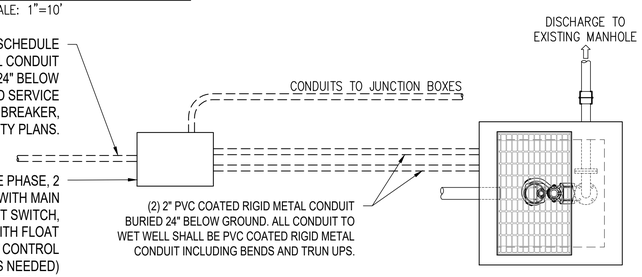
1. THE LIGHTING CIRCUIT MUST HAVE A GROUND FAULT CIRCUIT INTERRUPTER (GFCI), AND AN APPROPRIATELY RATED CIRCUIT BREAKER.
2. THE LIGHT FIXTURE AND ALL METAL ITEMS WITHIN 5 FEET OF THE POOL MUST BE PROPERLY ELECTRICALLY BONDED.
3. COORDINATE COLOR AND LOCATION WITH LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION
4. JUNCTION BOXES SHALL BE SQUARE W/ CONCRETE PEDESTAL



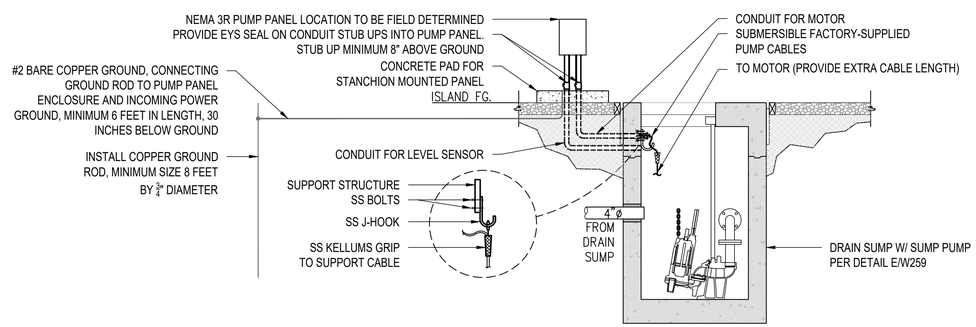
A ***ELECTRICAL JUNCTION BOX***
SCALE: 1" = 1'-0"

2-#6 & 1-#10 GND (TYPE XHHW-2) IN 2" PVC SCHEDULE 40 CONDUIT WITH PVC COATED RIGID METAL CONDUIT BENDS AND TURN UPS, BURIED MINIMUM 24" BELOW GRADE. ORIGINATING FROM METERED SERVICE PEDESTAL, CIRCUITS 3 & 5 (30 AMP, 2-POLE BREAKER, 240VAC, SINGLE PHASE) - SEE TARRA UTILITY PLANS.

PUMP CONTROL PANEL, SINGLE PHASE, 2 HP, 20 AMPS, 230 VAC, NEMA 3R, WITH MAIN CIRCUIT BREAKER DISCONNECT SWITCH, DEAD-FRONT SECURED PANEL, WITH FLOAT SWITCHES, TYPE "LIBERTY" CONTROL PANEL WITH ACCESSORIES (AS NEEDED) OR APPROVED EQUAL.



PLAN VIEW - FINISH ELEVATION



SECTION

B ***SUMP PUMP CONTROL PANEL***
SCALE: 1/2"=1-0"

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NO	BY	DATE	REVISIONS	DATE	APP.

PREPARED BY
ZHANG SONG
PROJECT ENGINEER
R.C.E. NO. ---- #C89315
EXP: 06/30/2024

DRAWN: SP/RC
DESIGNED: BL
CHECKED: ZS
SCALE: AS SHOWN
DATE: 8/16/2023

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TITLE: **ELECTRICAL - ISLAND CONDUIT UTILITY PLAN**

JOB: ***TEWINKLE PARK***
LAKE RENOVATION
COSTA MESA ***CA***

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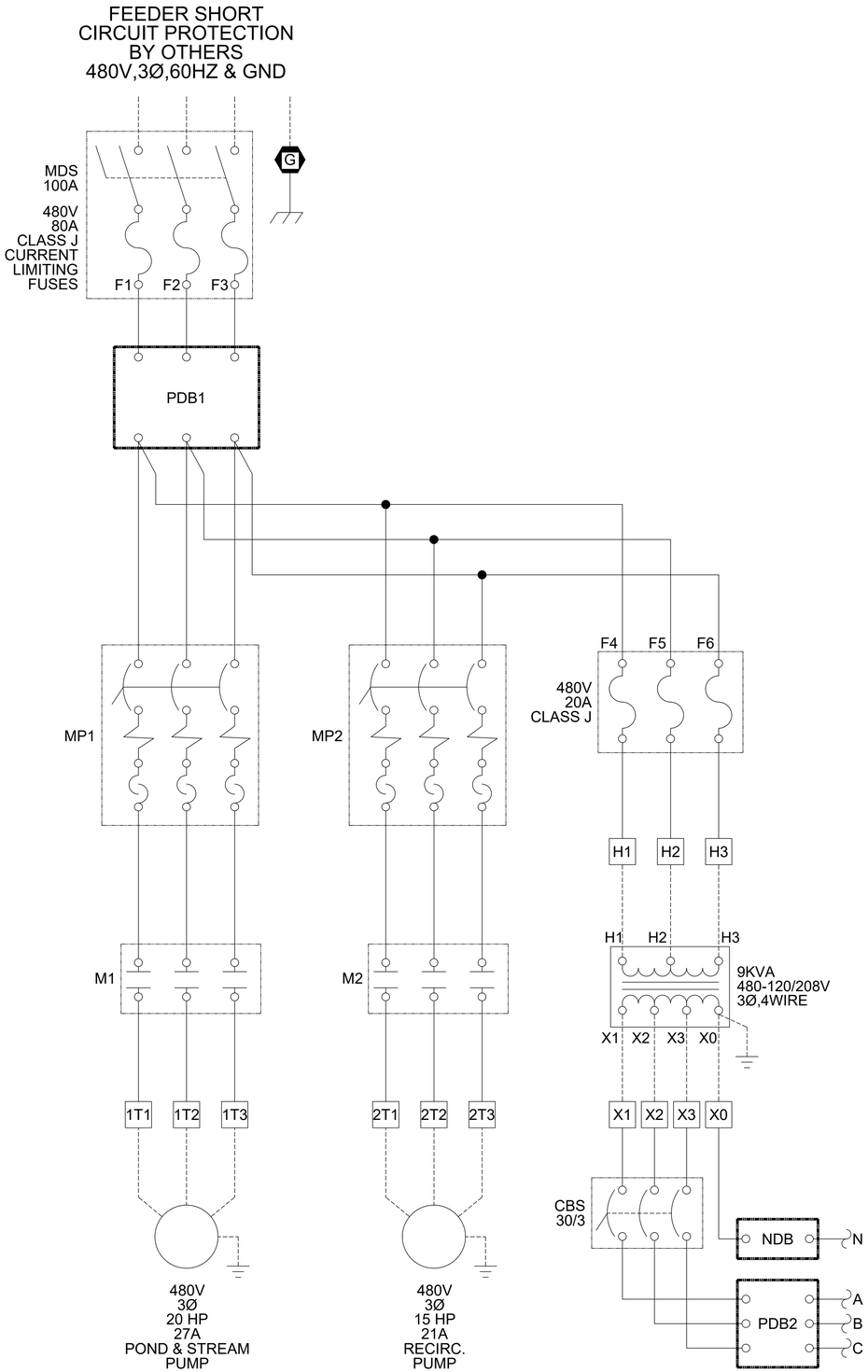
SHEET **W532**
47 OF 50 SHEETS

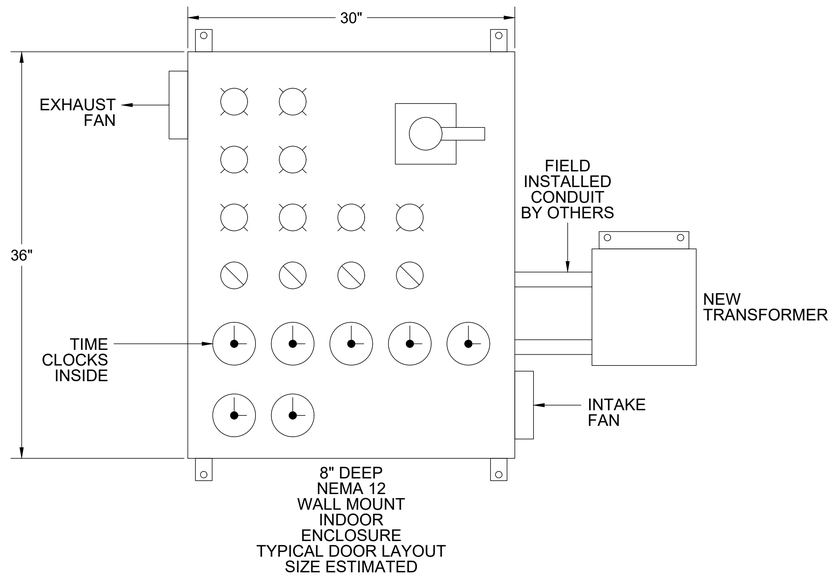
JOB NO. B836

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Xrefs: B836-07 36x24v.dwg; TopoSurvey.dwg; B836 - Lake Base.dwg; B836 - Piping Base.dwg; B836 - Existing Piping.dwg; B836-07 - Piping Notes.dwg
Dimscale = 24, LTscale = 1; PSltscale = 1; ACAD Ver. = 23.0s (LMS Tech); Maxtain = 1

Aug. 16, 2023





NOTES:
1) U.L. 508A LISTED INDUSTRIAL CONTROL PANEL
TO BE FABRICATED & LABELED PER U.L. 508A.

2) GFI BEAKERS TO BE RATED AT 6MA
GROUND FAULT FOR PERSONEL PROTECTION.
3) DOOR MOUNTED INDICATING LIGHTS TO BE LED TYPE.

4) CONTROL PANEL TO BE MANUFACTURED
AND PURCHASED FROM RSD-TOTAL CONTROL
26021 ATLANTIC OCEAN DRIVE
LAKE FOREST, CA.
949-380-7878
apearson@rsd.net

TOTAL CONTROL
a Division of RSD
26021 Atlantic Ocean Drive
Lake Forest, CA. 92630
949-380-7878 949-380-0755 Fax

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PREPARED BY
ZHANG SONG
PROJECT ENGINEER
R.C.E. NO. #C89315
EXP. 09/30/2024

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DESIGNED BL
CHECKED ZS
SCALE AS SHOWN
DATE 8/16/2023

TITLE
CP SCHEMATIC

JOB
TEWINKLE PARK
LAKE RENOVATION
COSTA MESA ***CA***

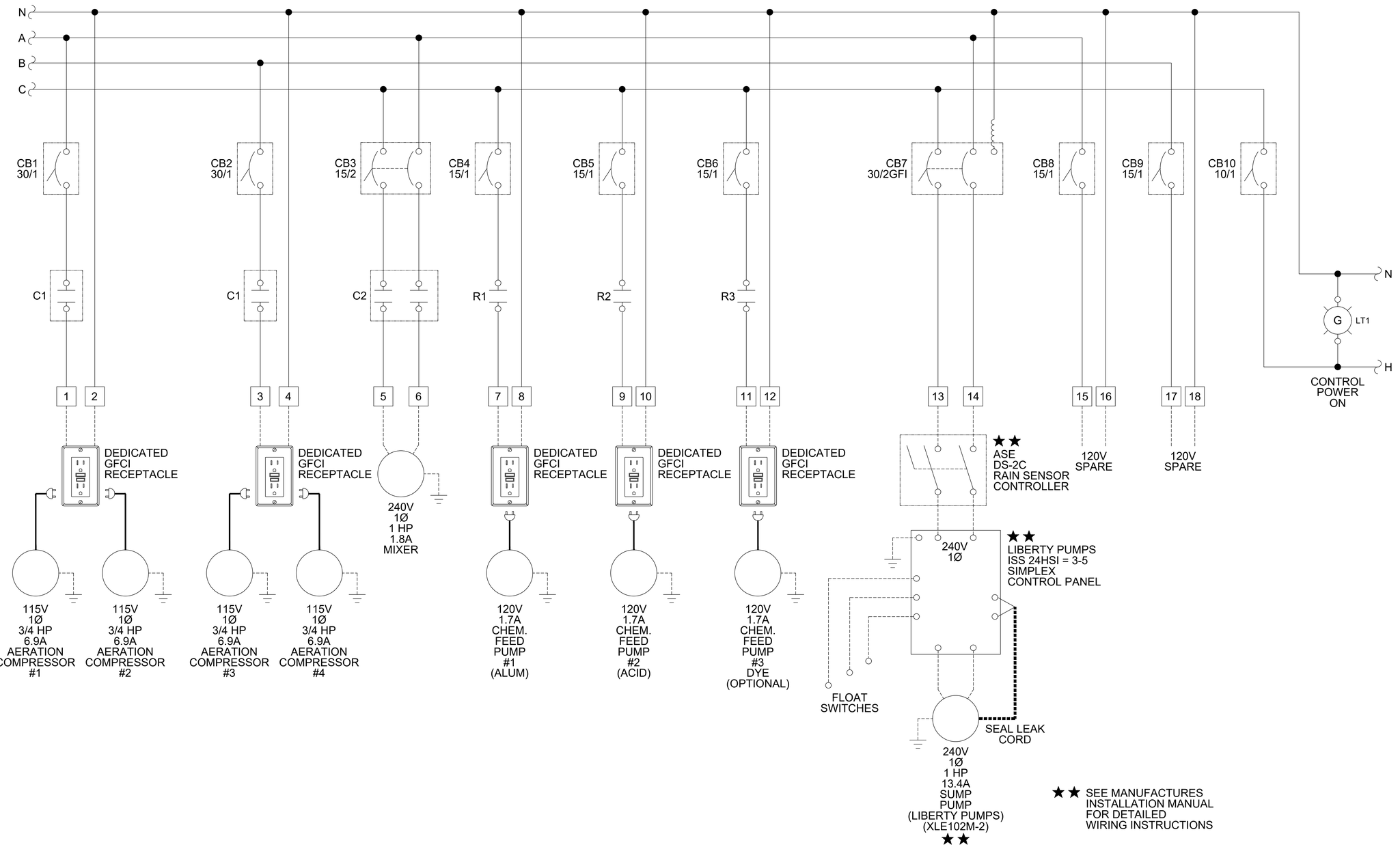
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SHEET
W600
48 OF 50 SHEETS

JOB NO. B836

Xrefs: B836-07 36x24v.dwg; 07906 AP PACE_TEWINKLE PARK.dwg
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TITLE
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SHEET
W601
49 OF 50 SHEETS

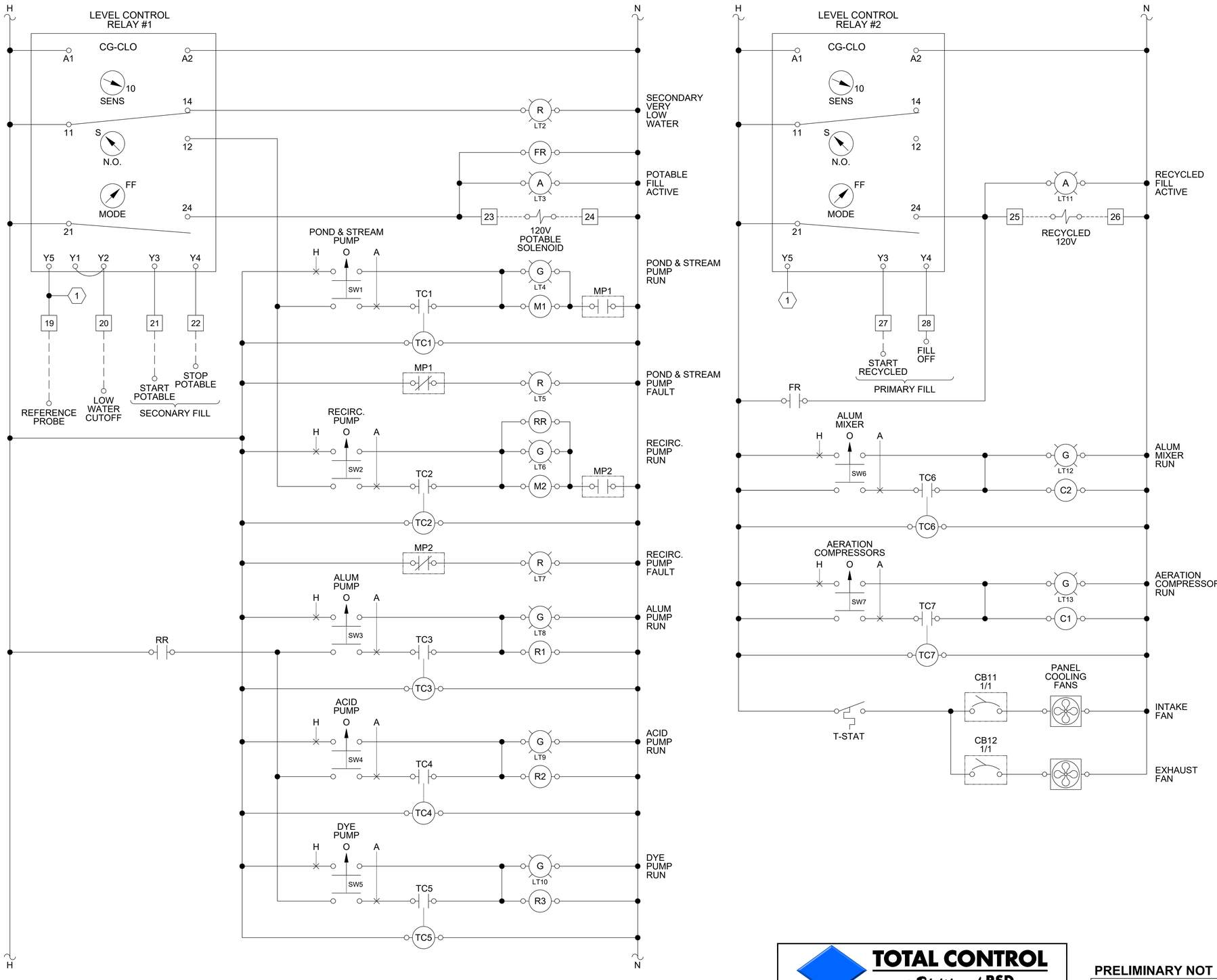
JOB NO. B836

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a Division of **RSD**
26021 Atlantic Ocean Drive
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Xref: B836-07 36x24v.dwg, 07906 AP PACE_TEWINKLE PARK.dwg
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SCALE AS SHOWN
DESIGNED BL
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SHEET
W602
50 OF 50 SHEETS

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