

**RECLAMATION DISTRICT NO. 1601
TWITCHELL ISLAND
BOARD OF TRUSTEES MEETING
TUESDAY, APRIL 16, 2024
9:00 AM
ENGINEER'S REPORT**

I. PROJECT FUNDING AGREEMENT TW – 21 - 1.2 TIMES PROJECT

- A. Review the general status of the project process.

II. DISTRICT EXCAVATOR RECOVERY WITH INSURANCE COMPANY

- A. Review status of the Excavator extraction efforts.
B. Review Dutra Construction Co. Inc. "Proposal for Excavator Extraction" dated March 29, 2024.

EXHIBIT A: Dutra Construction Co Inc Proposal dated 3/29/24.

EXHIBIT B: Photos of Excavator in January of 2024 and March of 2024.

III. DISTRICT PUMP STATION SOLAR ARRAY

- A. Review status of Solar Array Plans.

EXHIBIT C: KSN Inc. DRAFT Pump Station Solar Array Plans.

IV. USGS Aloft InSAR FOR LEVEE INSPECTION

- A. Review request by Jim Howle, hydrologist with USGS, to deploy monitoring points along District's levee (Levee Station 220+00 to 240+00) adjacent to Sevenmile Slough to perform Aloft Interferometric Synthetic Aperture Radar (InSAR) System testing and ground truthing instruments. This technology and concept are supported by the Department of Water Resources. Recommend Board of Trustees Approval and seek District Counsel to draft permission letter.

EXHIBIT D: Email correspondence from Jim Howell dated Friday 4/5/24.

EXHIBIT E: Excerpt on Aloft InSAR.

Exhibit A



29 March 2024

Mr. Christopher Neudeck, P.E.
President, KSN, Inc.
711 N. Pershing Avenue
West Sacramento, CA 95691

Subject: Proposal for Excavator Extraction Services
Reclamation District No. 1601 - Twitchell Island

Dear Mr. Neudeck,

The Dutra Group is pleased to provide this proposal in response to the recent inquiry from KSN regarding the extraction of a Reclamation District excavator that is stuck and buried in a peat field on the district's property.

Understanding the complexity and urgency of the situation, The Dutra Group is well-equipped and experienced in handling such challenging assignments. With our extensive expertise in working in peatlands and a proven track record of successful recoveries, we are confident in our ability to assist in this matter.

Our proposal encompasses a comprehensive approach to the extraction process. We have prepared a Lump Sum price for the removal of the excavator, which includes Mobilization & Demobilization, Excavator Extraction & Removal, and Site Restoration. The price proposal excludes cleanup or removal of any Hazardous Material associated with the excavator.

The proposed scope of work includes:

1. Mobilization of necessary equipment, including cranes, dozers, an amphibious excavator, crane mats, wreckers, long reach excavators, and specialized tools.
2. Construction of a road using crane mats, potentially supported by a steel truss system, to provide access to the excavator.
3. Utilization of an amphibious excavator to access the sunken area and prepare the excavator for extraction.
4. Deployment of additional long reach excavators, dozers, and wreckers with high capacity winches to provide the necessary pulling forces for uprighting and extracting the excavator.
5. Provision of tools such as sectional barge sections, gin pole mechanisms, skids, and other specialty equipment to facilitate the extraction process.
6. Removal of the excavator, transportation off the island, scrapping of excavator
7. Repair/ restoration of the field and cleanup post-extraction.

THE DUTRA GROUP

8. Clean up of the equipment, crane mats, and tools used for the extraction effort.

Our proposal stipulates that payment will be contingent upon the successful removal of the excavator. Should extraction efforts prove unsuccessful, The Dutra Group will not seek compensation for the Lump Sum proposal.

Pricing:

- | | |
|---|----------------|
| 1. Mobilization & Demobilization: | \$ 418,850.00 |
| 2. Excavator Extraction & Removal: | \$1,379,852.00 |
| 3. Site Restoration 500 tons @ \$159/ton: | \$ 79,500.00 |

We are committed to collaborating closely with Reclamation District No. 1601 and ensuring the successful resolution of this matter in a safe and efficient manner.

We look forward to the opportunity to discuss our proposal further and address any questions or concerns you may have. Please do not hesitate to contact us to arrange a meeting at your earliest convenience.

Thank you for considering our proposal. We appreciate the opportunity to be of service.

Sincerely,
The Dutra Group



Ryan D. Abood
Vice President, Delta Operations

THE DUTRA GROUP

Exhibit A General Conditions

1. This proposal is valid for 30 days from the date submitted.
2. This proposal is contingent upon reaching mutually agreeable contract terms, with the understanding that all proposal terms and these General Conditions shall be incorporated into any resulting contract between the parties.
3. Any resulting contract will create an independent contractor relationship between the parties; no fiduciary duty or agency will be created.
4. In the event of any conflicts among the contract documents, Contractor's Scope of Work and any conditions or exclusions therefrom shall control.
5. Owner will obtain all permissions, permits, licenses, and inspections required for Contractor to perform the Work and shall pay all costs associated therewith, excluding only those licenses required to be held by Contractor to generally perform this type of work.
6. Owner will provide all plans, specifications, and other designs services required for the Work – no design services are included in Contractor's Scope of Work unless explicitly provided in the proposal.
7. Owner will provide unlimited and unrestricted access to the site area(s) necessary for the Work.
8. Owner will locate and mark or move, as necessary, any permanent or temporary utility, whether active or abandoned, that may be affected by the Work.
9. If vessel access is a component of the Work, the waterway shall be of sufficient depth for the vessel's required draft at the time(s) Contractor requires access.
10. Contractor will not perform any containment, cleanup, or disposal of hazardous materials that (a) were pre-existing at the Site or (b) if brought to the Site for the Project, were not released by Contractor. If Contractor encounters any hazardous materials at the site that have not been rendered harmless, Contractor shall immediately stop work in the affected area and report the condition to Owner. To the fullest extent permitted by law, Owner shall defend, indemnify, and hold harmless Contractor, its affiliates, officers, employees, directors, and agents from all claims, damages, losses, and expenses, included but not limited to attorneys' fees, arising out of or resulting from any pre-existing hazardous materials.
11. If Owner is providing any materials or equipment for Contractor's Work, they shall be provided at no cost to Contractor and shall meet the requirements of the Work, including applicable plans and specifications, without the need for any alteration or adjustment, and Contractor shall not be responsible for any defects therein, warranty thereto, or damage or loss thereto, except to the extent caused by Contractor or its lower tier contractors.
12. Contractor shall be entitled to rely on the accuracy, adequacy, and completeness of the information provided to it or authored by Owner or Owner's other contractors, including without limitation the plans and specifications, their compliance with applicable laws, codes, and standards, and any site data, including subsurface data, regardless of any disclaimer and regardless of when the information was provided to Contractor. Such information shall be incorporated into any resulting contract. Contractor shall not be required to independently verify the accuracy, adequacy, or completeness of such information, though Contractor shall promptly notify Owner of any deficiencies or discrepancies that it discovers therein. If any deficiency or discrepancy impacts the Work, it shall be addressed via change order.
13. Contractor shall perform the Work in one continuous, uninterrupted operation, 10__ hours per day, 7__ days a week, unless otherwise specifically provided in the proposal.
14. Contractor shall commence and proceed with the Work according to a mutually agreeable schedule, which shall be incorporated into any resulting contract and which Owner may modify via change order. This change order shall encompass all related price and time impacts to Contractor.
15. If Contractor is unable to maintain a continuous operation due to circumstances beyond its control, including as a result of Owner's or Owner's other contractors' delays or Owner's suspension of the Work, Owner shall pay Contractor its standby rate of \$ __ tbd __ per hour, unless otherwise specifically provided in the proposal.
16. If any delay/suspension not caused by Contractor exceeds ten consecutive working days, or twenty cumulative working days during the project, Contractor may, at its option, demobilize, to return at a future mutually agreeable date, at the cost of Owner.

17. Contractor will provide payment and performance bonds upon request at an additional cost. Contractor will not provide a letter of credit, nor will Contractor's owners or officers provide a personal guarantee.
18. Owner shall pay Contractor at least monthly for approved invoices, which shall include stored materials, within 30 days of submission, assuming Contractor has provided all reasonably requested prerequisites.
19. Owner shall not withhold any retention from its payments to Contractor.
20. Owner shall pay Contractor 100% of its price for mobilization upon completion thereof.
21. Late payments by either party shall bear interest at the same rate, which shall be 18% per annum, unless otherwise agreed.
22. If Owner has the right to deduct or offset any payment, Contractor shall have an equal right to do so.
23. Contractor may suspend Work if Owner fails to pay undisputed amounts when due and fails to cure the nonpayment within five business days from written notice thereof.
24. Statutory lien/bond claim waivers shall be used wherever required or available. If the Work is being performed in a state that does not have statutory lien/bond claim waivers required or available, the lien/bond claim waivers shall mirror California's statutory waivers.
25. Contractor's lien rights shall not be subordinated to any other claimant of Owner.
26. Contractor has performed a reasonable investigation of the site satisfying itself as to (1) the known and readily observable nature, location, and character of the site and the project, specifically including the surface conditions of the site and the surrounding area, and all structures and obstructions thereon, both natural and man-made, and any subsurface conditions disclosed in writing by Owner; (2) the nature, location, and character of the general area in which the project is located, including generally prevailing climatic conditions, labor supply, labor cost, equipment supply, and equipment cost; (3) the quality and quantity of all materials, supplies, tools, equipment, labor, and services necessary to complete the Work at the quoted price and according to the mutually agreed schedule; and (4) any requirements imposed by applicable laws and applicable permits, and Contractor shall not be entitled to any increase in the price or extension to the schedule for its failure to perform such a reasonable site investigation. Contractor's obligation to perform a reasonable site investigation shall not extend beyond the foregoing and Contractor specifically repudiates any obligation to assume the risk of (a) subsurface conditions not disclosed in writing by Owner, (b) differing site conditions, (c) abnormal weather conditions, or (d) delays not caused by Contractor, and Contractor shall be entitled to make a claim for an increase to the price and/or extension to the schedule caused thereby.
27. Contractor warrants that the Work shall be performed in a good and workmanlike manner, according to the plans and specifications, free from defects in design, material, and workmanship, and using new materials unless otherwise specified. Contractor specifically disclaims all other warranties implied by law, including the warranty of fitness for a particular purpose and warranty of merchantability, as well as any requirement to perform the Work according to Owner's intent.
28. The duration of Contractor's warranty shall not (a) for construction Work, exceed one year from the substantial completion date of its Work or (b) for dredging Work, exceed the date the area is surveyed for payment.
29. Contractor shall not bear the risk of loss for any loss or damage to the Work (a) caused by Owner, Owner's other contractors, any force majeure events, (b) covered by Owner's builder's risk policy, or, if not caused or covered by any of the foregoing, (c)(i) for construction Work, beyond the date of substantial completion or Owner's beneficial use (in whole or in part) of the Work, whichever occurs earlier, or (ii) for dredging Work, beyond the date the area is surveyed for payment.
30. The amount of liquidated damages to be assess for Contractor delays shall be negotiated and shall only apply to the extent Contractor and/or its lower tier contractors are responsible for causing the delay.
31. Contractor's liability and indemnity obligations for any property damage, physical injury, breach of contract, or other claim, loss, damage, or expense shall be proportional, to the extent of its or its lower tier contractors' acts or omissions. Contractor shall not be liable for Owner's or any other party's acts or omissions, whether active or passive, or be required to indemnify Owner or any other party for such. Owner shall have the same liability and indemnity obligations to Contractor.
32. Contractor's provision of insurance, including its primary response, additional insured endorsements, and waivers of subrogation, shall be limited to the extent of Contractor's proportional liability and indemnity obligations.

33. Contractor shall not be required to waive any rights available to it under the law unless equally applicable to and waived by Owner.
34. Except provisions for liquidated damages or damages that are a part of third-party claims that either Party has an obligation to indemnify the other Party from, neither party shall be liable to the other for indirect damages of any kind, including incidental, special, and consequential damages and encompassing, without limitation, loss of use, loss of profit, and loss of business opportunity.
35. Contractor may request a change order or pursue a claim against Owner for an increase to the price and/or extension to the schedule when Owner's or Owner's other contractors' acts or omissions, including delays, adversely affect Contractor's performance of the Work or otherwise cause damage, loss, or expense to Contractor.
36. Change orders, and any claimed accord and satisfaction associated therewith, shall encompass only the scope of the change order, not the entirety of the project performed up to the date of the change order.
37. Change order / claim notice deadlines shall not be less than ten business days from the date Contractor knew of the circumstance giving rise thereto.
38. A change order shall utilize the unit prices provided in the contract, if applicable. If no such unit price is applicable, the parties will negotiate to reach a mutually agreeable price for the work. If the parties are unable to reach an agreement, Contractor shall perform the work on a time and materials basis, plus a fee of twenty-four percent for all overhead and profit associated therewith.
39. Force majeure shall include labor, material, equipment, and lower tier contractor shortages due to any pandemic or epidemic, including COVID-19, and all abnormal climate conditions, which shall be defined as all precipitation days for the period of time in excess of the ten year average reported by the National Oceanic and Atmospheric Administration reporting station located closest to the Site. Contractor shall not be responsible for any delay damages and shall be entitled to make a claim for an increase to the price and/or an extension to the schedule if delayed as a result thereof.
40. Contractor shall be given the opportunity to cure any breach of contract or defect in the Work, which it shall commence and diligently continue within a minimum of ten business days from written notice thereof.
41. In the event of termination for default, Owner may take possession of Contractor's materials as well as equipment and tools specifically leased for the project. All equipment and tools owned or leased for non-project-related reasons by Contractor shall remain in the sole possession of Contractor.
42. In the event of termination for convenience, Contractor shall be paid (a) for mobilization, the Work completed to date, and demobilization, each at the rates provided, (b) reasonable costs of termination, and (c) twenty-four percent of those termination costs for overhead and profit.

Exhibit B

JAN 2024



MARCH 2024

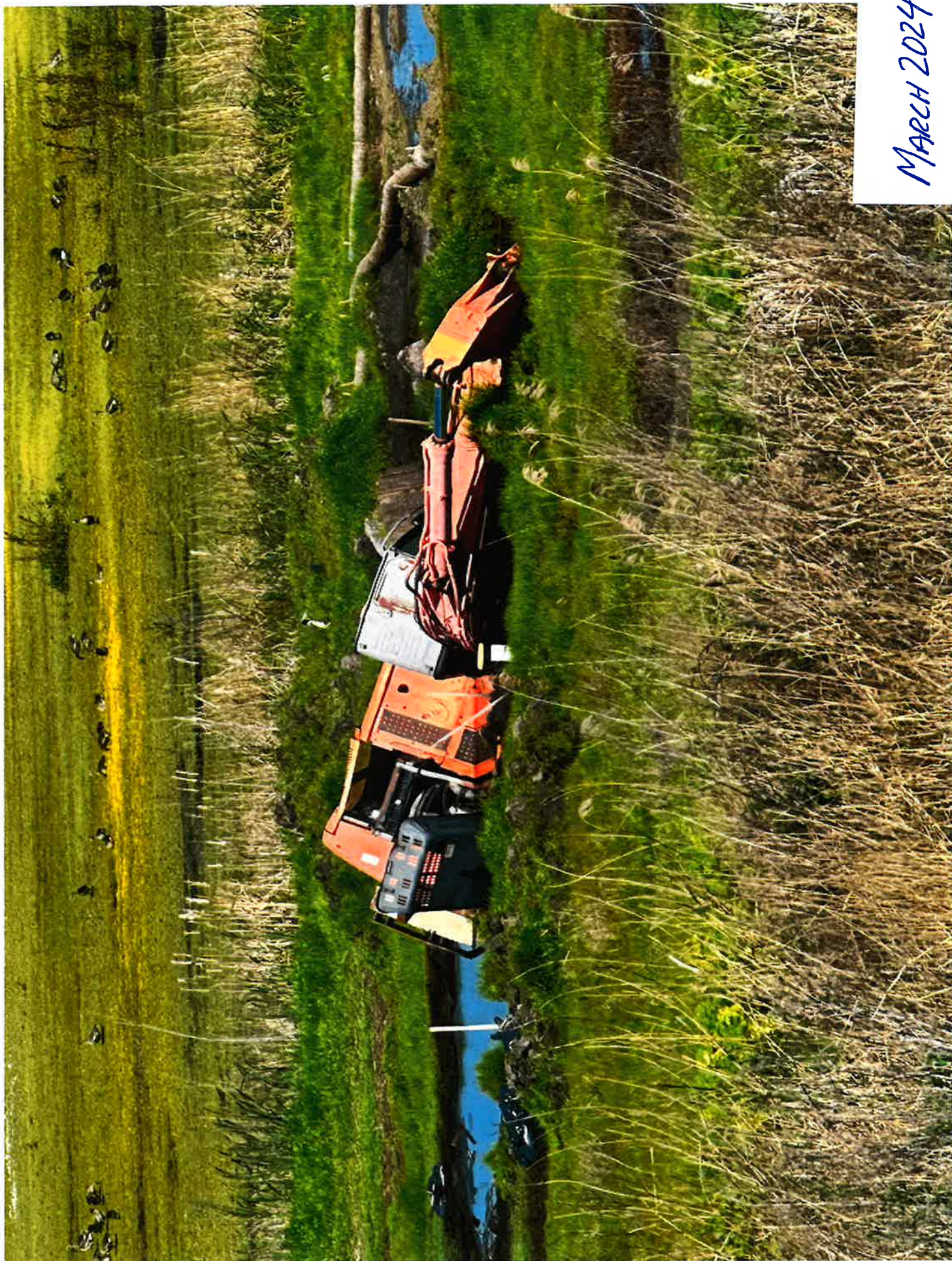


Exhibit C

RECLAMATION DISTRICT NO. 1601

TWITCHELL ISLAND

SACRAMENTO COUNTY, CALIFORNIA

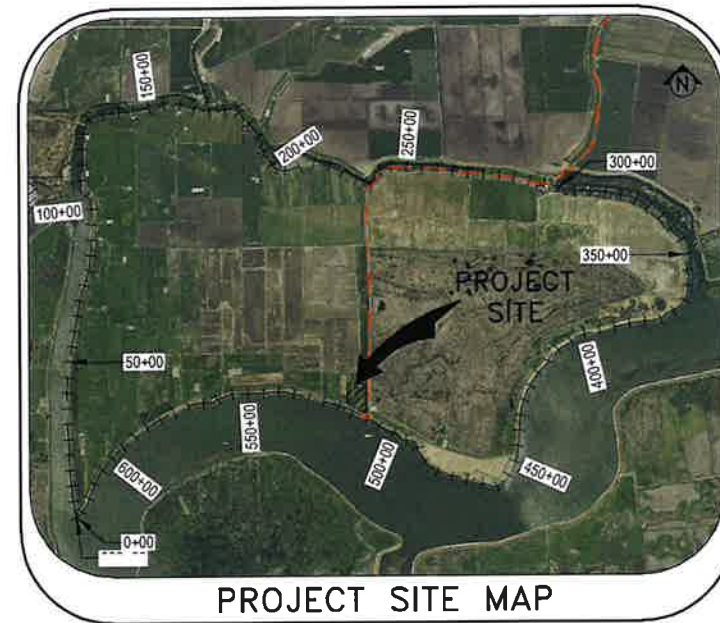
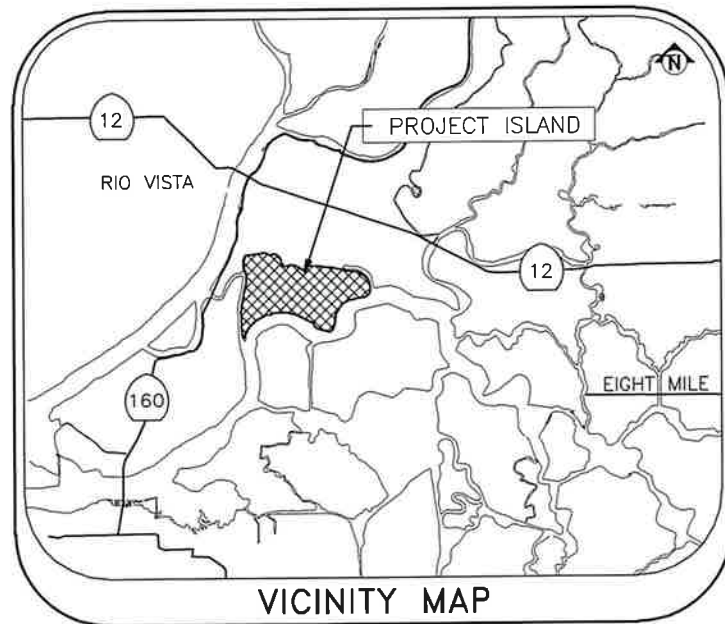
PUMP STATION SOLAR ARRAY

BETWEEN

LEVEE STATION 510+00 AND STATION 515+00

PRELIMINARY

PRELIMINARY



SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	GENERAL NOTES
3	BASE MAP & HAUL ROUTES
4	SITE MAP
5	FOOTING DETAILED PLAN VIEW
6	STRUCTURAL COVER SHEET
7-8	STRUCTURAL NOTES
9	STRUCTURAL SITE PLAN
10	CP1 STRUCTURAL VIEWS
11	FOUNDATION DETAILS
12	STEEL DETAILS
13	ELECTRICAL PLAN
14	SINGLE LINE DIAGRAM

SHEET INDEX

FILE SPEC: P:\1110_Twitchell_Island\0950_Pump_Station_Solar_Array\08_Civil\400_Plans\020_CAD_Sheets\G-001.dwg
 PLOT DATE: Apr 10, 2024 - 10:14am



SUBMITTAL	
%	Date



PROJECT ENGINEER
 PRELIMINARY
 NOT FOR
 CONSTRUCTION

NO.	DESCRIPTION	DATE	APPR.

DESIGN BY JAM
 DRAWN BY DAV
 CHECK BY JAM
 HORIZONTAL DATUM
 CCS83, ZONE 2
 VERTICAL DATUM
 NAVD88

DRAWING SCALE
 N.T.S.
 ORIGINAL DRAWING SCALE
 0 1/2" 1"



711 N Pershing Avenue
 Stockton, CA 95203
 209-946-0288
 1550 Harbor Drive, Suite 212
 West Sacramento, CA 95691
 916-403-5900

RECLAMATION DISTRICT 1601
 TWITCHELL ISLAND
 SACRAMENTO COUNTY
 PUMP STATION SOLAR ARRAY
 TITLE SHEET

DATE
 APRIL 2024
 SHEET IDENTIFICATION
G-001
 SHEET 01 OF 05
 KSN PROJECT FILE NO.
 1110 - 0950

GENERAL NOTES:

- PRIOR TO THE COMMENCEMENT OF WORK, A JOINT INSPECTION BETWEEN THE ENGINEER, OR HIS REPRESENTATIVE, AND THE CONTRACTOR, OR HIS REPRESENTATIVE, WILL BE CONDUCTED TO REVIEW THE PRE-CONSTRUCTION CONDITIONS OF THE EXISTING FACILITIES IN THE VICINITY OF THE PROJECT SITE. (E.G. ROADS, PUMPS, DISCHARGE PIPES, SIPHONS, RAMPS, GATES, SIGNS, ETC.) IF SUCH EXISTING FACILITIES ARE DAMAGED BY THE CONTRACTOR'S OPERATIONS, THE CONTRACTOR, AT HIS EXPENSE, SHALL REPLACE OR RESTORE THEM TO THE CONDITION THAT EXISTED PRIOR TO THE COMMENCEMENT OF WORK.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT (209) 946-0268, A MINIMUM OF 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY WORK.
- THE DISTRICT RESERVES THE RIGHT TO SUSPEND CONSTRUCTION AT ANY TIME IN THE EVENT OF EXTREME HIGH OR LOW TIDES, FLOOD EVENTS, OTHER CONDITIONS OR EMERGENCIES THAT MAY JEOPARDIZE THE INTEGRITY OF THE DISTRICT'S LEVEE SYSTEM.
- THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, COUNTY AND LOCAL REQUIREMENTS, AS REQUIRED FOR TRAFFIC CONTROL AND PUBLIC SAFETY DURING PROJECT CONSTRUCTION.
- THE DISTRICT WILL FURNISH ALL RIGHT-OF-WAYS FOR ALL LEVEE ROADS UNDER THE DISTRICT'S JURISDICTION. THE CONTRACTOR WILL SECURE RIGHT-OF-WAYS FOR ALL OTHER AREAS NOT UNDER THE DISTRICT'S JURISDICTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ACCESS ALONG THE DISTRICT/COUNTY LEVEE ROADS AT ALL TIMES DURING CONSTRUCTION. ANY DAMAGE TO THE LEVEE ROADS AND ACCESS RAMPS SHALL BE IMMEDIATELY REPAIRED BY THE CONTRACTOR AT HIS EXPENSE.
- IF DELIVERING MATERIAL OR EQUIPMENT BY TRUCK, ALL TRUCK TRAFFIC SHALL BE LIMITED TO THE DISTRICT/COUNTY LEVEE ROADS, UNLESS OTHERWISE APPROVED.
- MAXIMUM SPEED LIMIT ON DISTRICT LEVEE ROADS IS 30 MPH, OR AS POSTED.
- THE ENGINEER WILL PROVIDE LOCATIONS OF THE DESIGNATED PROJECT SITE, AND WILL PROVIDE TEMPORARY BENCHMARKS IN THE VICINITY OF THE PROJECT SITES TO BE UTILIZED BY THE CONTRACTOR.
- THE CONTRACTOR IS RESPONSIBLE FOR SETTING ALL CONSTRUCTION STAKING AND SURVEYING, AS MAY BE REQUIRED FOR CONSTRUCTION ACTIVITIES.
- CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE DISTRICT AND THE DISTRICT'S ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE DISTRICT OR THE ENGINEER.
- ANY DEFICIENCIES NOTED DURING INTERIM AND FINAL INSPECTIONS BY THE ENGINEER AND/OR DISTRICT, SHALL BE CORRECTED BY THE CONTRACTOR PRIOR TO FINAL ACCEPTANCE BY THE DISTRICT. ANY ADDITIONAL COSTS AND EXPENSES FOR MOBILIZATION AND/OR DEMOBILIZATION, LABOR, EQUIPMENT AND OTHER ASSOCIATED COSTS REQUIRED TO CORRECT THE DEFICIENCIES NOTED, EXCEPT SPECIFIED MATERIAL(S), SHALL BE BORNE BY THE CONTRACTOR.
- THE CONTRACTOR SHALL NOT CLOSE ANY ROAD, STREET, OR HIGHWAY TO THE PUBLIC EXCEPT WITH THE PERMISSION OF THE ENGINEER AND THE PROPER GOVERNMENTAL AUTHORITY. TEMPORARY PROVISIONS SHALL BE MADE BY THE CONTRACTOR TO ENSURE CONTINUOUS ACCESS TO PUBLIC AND PRIVATE DRIVEWAYS, AND PROPER FUNCTIONING OF SEWER INLETS, GUTTERS, CULVERTS, DRAINAGE AND IRRIGATION DITCHES, AND NATURAL WATER COURSES.
- THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY FIELD CHANGES MADE WITHOUT WRITTEN AUTHORIZATION FROM THE ENGINEER.
- SHOULD IT APPEAR THAT THE WORK TO BE DONE, OR ANY MATTER RELATIVE THERETO, IS NOT SUFFICIENTLY DETAILED OR EXPLAINED ON THESE PLANS, THE CONTRACTOR SHALL CONTACT THE ENGINEER AT (209) 946-0268 FOR SUCH FURTHER EXPLANATIONS AS MAY BE NECESSARY.
- THE INTENT OF THESE PLANS ARE TO SERVE AS A GUIDE AND TO PROVIDE THE CONTRACTOR WITH INFORMATION AND DETAILS NECESSARY TO CONSTRUCT THE PROJECT AND FURNISH THE NECESSARY LABOR, MATERIALS, AND EQUIPMENT TO PERFORM THE WORK IN ACCORDANCE WITH THEIR TRUE INTENT AND PURPOSE. THE CONTRACTOR SHALL NOTIFY THE DISTRICTS ENGINEER IMMEDIATELY REGARDING ANY DISCREPANCIES AND AMBIGUITIES WHICH MAY EXIST IN THE PLANS OR SPECIFICATIONS. IF THE PLANS DESCRIBE PORTION OF THE WORK IN GENERAL TERMS BUT NOT IN COMPLETE DETAIL, IT IS UNDERSTOOD THAT ONLY THE BEST GENERAL PRACTICE IS TO PREVAIL AND THAT ONLY MATERIALS AND WORKMANSHIP OF THE FIRST QUALITY ARE TO BE USED.

- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE OSHA REGULATIONS.
- ALL IMPROVEMENTS TO BE DONE SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THESE PLANS AND SPECIFICATIONS.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER WHENEVER IT APPEARS THERE IS A CHANGE IN SITE CONDITIONS OR AN ADJUSTMENT TO BE MADE IN WORK REQUIREMENTS.
- THE CONTRACTOR SHALL AT ALL TIMES BE RESPONSIBLE FOR THE SECURITY OF HIS PLANT AND EQUIPMENT. THE DISTRICT WILL NOT TAKE ANY RESPONSIBILITY FOR MISSING OR DAMAGED EQUIPMENT, TOOLS, OR PERSONAL BELONGINGS.

ENVIRONMENTAL NOTES:

- THE CONTRACTOR SHALL MAINTAIN AIR POLLUTION CONTROLS BY NOT DISCHARGING SMOKE, DUST, OR ANY OTHER AIR CONTAMINANTS INTO THE ATMOSPHERE IN SUCH QUANTITY AS WILL VIOLATE THE REGULATIONS OF ANY LEGALLY CONSTITUTED AUTHORITY. HE SHALL ALSO ABATE DUST NUISANCE BY CLEANING, SWEEPING AND SPRINKLING WITH WATER, OR OTHER MEANS AS NECESSARY. THE USE OF WATER IN AN AMOUNT WHICH RESULTS IN MUD ON PUBLIC ROADS IS NOT ACCEPTABLE AS A SUBSTITUTE FOR SWEEPING OR OTHER METHODS.
- THE CONTRACTOR SHALL EXERCISE EVERY REASONABLE PRECAUTION TO PROTECT STREAMS, WATERWAYS AND OTHER BODIES OF WATER FROM POLLUTION WITH FUELS, OIL, BITUMEN'S, CALCIUM CHLORIDE, AND OTHER HARMFUL MATERIALS AND SHALL CONDUCT AND SCHEDULE HIS OPERATIONS SO AS TO AVOID OR MINIMIZE MUDDYING AND SILTING OF SAID WATERS. CARE SHALL BE EXERCISED TO PRESERVE ROADSIDE VEGETATION BEYOND THE LIMITS OF CONSTRUCTION.
- THROUGHOUT ALL PHASES OF CONSTRUCTION, INCLUDING SUSPENSION OF WORK, AND UNTIL FINAL ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL KEEP THE WORK SITE CONDITIONS CLEAN AND FREE FROM RUBBISH AND DEBRIS.
- THE CONTRACTOR SHALL PRESERVE AND PROTECT ANY PLANTS AND TREES AS MAY BE DESIGNATED AND MARKED BY THE ENGINEER AT THOSE REPAIR SITES AND DESIGNATED PRIOR TO COMMENCEMENT OF SITE WORK. SOME PRUNING AND TRIMMING OF BRANCHES MAY BE REQUIRED.

UTILITY NOTES:

- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE ACTUAL LOCATION OF ALL UNDERGROUND, SURFACE, OVERHEAD, AND SUBMARINE IMPROVEMENTS, OR FACILITIES WHICH MAY BE SUBJECT TO DAMAGE BY REASON OF HIS OPERATIONS.
- THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES AND SHALL CONTACT THE RESPECTIVE UTILITY COMPANIES PRIOR TO COMMENCEMENT OF WORK. HE SHALL BE RESPONSIBLE FOR THE LOCATION AND PRESERVATION OF ALL SUCH FACILITIES IN THE AREA OF CONSTRUCTION, AND SHALL NOTIFY UTILITIES TWENTY-FOUR (24) HOURS IN ADVANCE OF ANY CONSTRUCTION. (UNDERGROUND SERVICE ALERT (800) 642-2444).

DUST AND MUD CONTROL:

- DURING THE COURSE OF CONSTRUCTION, THE CONTRACTOR SHALL KEEP ALL CONSTRUCTION AREAS, HAUL ROADS, OTHER ROADWAYS, AND OTHER USE AREAS WHERE DUST IS GENERATED WELL WATERED.
- THE CONTRACTOR MAY BE REQUIRED TO DEDICATE AT LEAST ONE (1) WATER TRUCK FOR THE ALLEVATION OR PREVENTION OF DUST NUISANCE FOR, BUT NOT LIMITED TO, THE FOLLOWING AREAS:
 - A. PROJECT AREA
 - B. ACCESS ROADS
 - C. CROP AREAS
 - D. LEVEE CROWN ROADS
- WATER WILL BE MADE AVAILABLE FOR THE CONSTRUCTION OPERATIONS FROM THE SURROUNDING WATERWAY. THE PUMPING FACILITY SHALL BE LOCATED IN AN AREA THAT WILL NOT CREATE A TRAFFIC OR MUD HAZARD ON THE ROADS USED BY THE CONTRACTOR, PUBLIC AND LOCAL TRAFFIC.

ACCESS HAUL ROADS:

- THE CONTRACTOR SHALL IMPROVE AND MAINTAIN THE LEVEE ACCESS ROADS AS MAY BE REQUIRED ALONG THE ROUTES DESIGNATED ON THE PLANS TO TRANSPORT THE MATERIAL TO THE REPAIR SECTIONS.
- THE DESIGNATED LEVEE ACCESS ROUTES FOR THIS PROJECT MAY REQUIRE THE CONTRACTOR TO MODIFY AND REWORK THE EXISTING LEVEE ROADS TO MEET THE CONTRACTOR'S HAULING REQUIREMENTS.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR MAKING ANY NECESSARY IMPROVEMENTS, MODIFICATIONS, AND ALTERATIONS TO MEET HIS REQUIREMENT AND FOR THE MAINTENANCE AND EXPENSE THEREOF.

- THE CONTRACTOR SHALL SECURE ALL OTHER ACCESS ROAD EASEMENTS AS MAY BE REQUIRED WITH THE INDIVIDUAL PROPERTY OWNERS FOR ALL NON-DISTRICT AND/OR PUBLIC ACCESS ROADS AND AS DESCRIBED IN SPECIAL PROVISIONS, SECTION 1.12, "TRAFFIC CONTROL & RIGHT-OF-WAY."
- THE CONTRACTOR SHALL BE RESTRICTED TO THE USE OF HIGHWAY LEGAL SIZED TRUCKS AND TRAILERS AND OTHER EQUIPMENT OPERATIONS OVER THE DESIGNATED ROADS, UNLESS OTHERWISE APPROVED BY THE ENGINEER.

SPECIAL NOTES:

THE NOTES PLACED ON THIS PLAN SHEET ARE TO BE USED AS A GUIDE FOR VARIOUS TOPICS DESCRIBED. SPECIFIC DETAILS AND FURTHER EXPLANATIONS OF THE VARIOUS NOTES ARE DESCRIBED AT LENGTH IN THE SPECIFICATIONS AND WITHIN THESE PLANS.

PRELIMINARY

FILE SPEC: P:\1110_Twitchell_Island\0950_Pump_Station_Solar_Array\08_Civil\400_Plans\020_CAD_Sheets\G-002.dwg
PLOT DATE: Apr 10, 2024 - 10:15am

811 Know what's below. Call before you dig.	SUBMITTAL	
	%	Date

PROJECT ENGINEER
PRELIMINARY
NOT FOR
CONSTRUCTION

NO.	DESCRIPTION	DATE	APPR.

DESIGN BY JAM	DRAWING SCALE
DRAWN BY DAV	N.T.S.
CHECK BY JAM	
HORIZONTAL DATUM CCS83, ZONE 2	ORIGINAL DRAWING SCALE
VERTICAL DATUM NAVD88	0 1/2" 1"

KON inc.

KJELDEN SINNOCK NEUDECK
CIVIL ENGINEERS & LAND SURVEYORS
www.ksninc.com

711 N Pershing Avenue
Stockton, CA 95203
209-946-0268

1550 Harbor Drive, Suite 212
West Sacramento, CA 95691
916-403-5900

RECLAMATION DISTRICT 1601 TWITCHELL ISLAND SACRAMENTO COUNTY	DATE APRIL 2024
PUMP STATION SOLAR ARRAY NOTES & DETAILS	SHEET IDENTIFICATION G-002 SHEET 02 OF 05 KSN PROJECT FILE NO. 1110 - 0950

FILE SPEC: P:\1110_Twitchell_Island\0950_Pump_Station_Solar_Array\08_Civil\400_Plans\020_CAD_Sheets\CS-101.dwg
 PLOT DATE: Apr 10, 2024 - 10:15am



SUBMITTAL	
%	Date

PRELIMINARY



PROJECT ENGINEER
**PRELIMINARY
 NOT FOR
 CONSTRUCTION**

NO.	DESCRIPTION	DATE	APPR.

DESIGN BY JAM
 DRAWN BY DAV
 CHECK BY JAM
 HORIZONTAL DATUM
 CCS83, ZONE 2
 VERTICAL DATUM
 NAVD88

DRAWING SCALE
 1" = 1000'
 ORIGINAL DRAWING SCALE
 0 1/2" 1"

ZOK inc. **KJELDEN SINNOCK NEUDECK**
 CIVIL ENGINEERS & LAND SURVEYORS
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 1550 Harbor Drive, Suite 212
 West Sacramento, CA 95691
 916-403-5900

RECLAMATION DISTRICT 1601
 TWITCHELL ISLAND
 SACRAMENTO COUNTY
**PUMP STATION SOLAR ARRAY
 BASE MAP & HAUL ROUTES**

DATE
 APRIL 2024
 SHEET IDENTIFICATION
CS-101
 SHEET 03 OF 05
 KSN PROJECT FILE NO.
 1110 - 0950

FILE SPEC: P:\1110_Twitchell_Island\9950_Pump_Station_Solar_Array\08_Civil\400_Plans\020_CAD_Sheets\C-101.dwg
 PLOT DATE: Apr 10, 2024 - 10:15am



SUBMITTAL	
%	Date

PRELIMINARY



PROJECT ENGINEER
**PRELIMINARY
 NOT FOR
 CONSTRUCTION**

NO.	DESCRIPTION	DATE	APPR.

DESIGN BY JAM
 DRAWN BY DAV
 CHECK BY JAM
 HORIZONTAL DATUM
 CCS83, ZONE 2
 VERTICAL DATUM
 NAVD88

DRAWING SCALE
 1" = 50'
 ORIGINAL DRAWING SCALE
 0 1/2" 1"

**KJELDEN
 SINNOCK
 NEUDECK**
 CIVIL ENGINEERS & LAND SURVEYORS
 www.ksninc.com

711 N Pershing Avenue
 Stockton, CA 95203
 209-946-0268

1550 Harbor Drive, Suite 212
 West Sacramento, CA 95691
 916-403-5900

RECLAMATION DISTRICT 1601
 TWITCHELL ISLAND
 SACRAMENTO COUNTY

**PUMP STATION SOLAR ARRAY
 SITE MAP**

DATE
 APRIL 2024

SHEET IDENTIFICATION
C-101

SHEET 04 OF 05
 KSN PROJECT FILE NO.
 1110 - 0950

FILE SPEC: P:\1110_Twitchell_Island\0950_Pump_Station_Solar_Array\09_Civil\400_Plans\020_CAD\Sheets\C-102.dwg
 PLOT DATE: Apr 10, 2024 - 10:15am



PILE NUMBER	NORTHING	EASTING
1	1797726.2115	6661664.9900
2	1797726.2115	6661698.9900
3	1797726.2115	6661732.9900
4	1797726.2115	6661766.9900
5	1797661.1918	6661664.9900
6	1797661.1918	6661698.9900
7	1797661.1918	6661732.9900
8	1797661.1918	6661766.9900
9	1797596.1721	6661664.9900
10	1797596.1721	6661698.9900
11	1797596.1721	6661732.9900
12	1797596.1721	6661766.9900
13	1797531.1524	6661664.9900
14	1797531.1524	6661698.9900
15	1797531.1524	6661732.9900
16	1797531.1524	6661766.9900

SITE PREPARATION FOR SOLAR ARRAY INSTALLATION:

- CLEARING AND GRUBBING:** REMOVE ALL VEGETATION, ROOTS, AND DEBRIS FROM PROJECT AREA.
- SUBGRADE MOISTURE CONDITIONING:** MOISTURE CONDITION AND ADJUST SOIL MOISTURE LEVELS AS NECESSARY TO FACILITATE OPTIMAL COMPACTION CONDITIONS.
- SUBGRADE COMPACTION:** COMPACT THE SUBGRADE TO MINIMUM 85% RELATIVE COMPACTION.
- ALL-WEATHER SURFACING:** CONSTRUCT A 6-INCH THICK LAYER OF NEW 3/4-INCH CLASS 2 AGGREGATE BASE MATERIAL OVER ENTIRE PROJECT AREA. COMPACT TO MINIMUM 90% RELATIVE COMPACTION.



SUBMITTAL	
%	Date

PRELIMINARY



PROJECT ENGINEER
 PRELIMINARY
 NOT FOR
 CONSTRUCTION

NO.	DESCRIPTION	DATE	APPR.

DESIGN BY JAM
 DRAWN BY DAV
 CHECK BY JAM
 HORIZONTAL DATUM
 CCS83, ZONE 2
 VERTICAL DATUM
 NAVD88

DRAWING SCALE
 1" = 20'
 ORIGINAL DRAWING SCALE
 0 1/2" 1"



711 N Pershing Avenue
 Stockton, CA 95203
 209-946-0288
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RECLAMATION DISTRICT 1601
 TWITCHELL ISLAND
 SACRAMENTO COUNTY
**PUMP STATION SOLAR ARRAY
 FOOTING DETAILED PLAN VIEW**

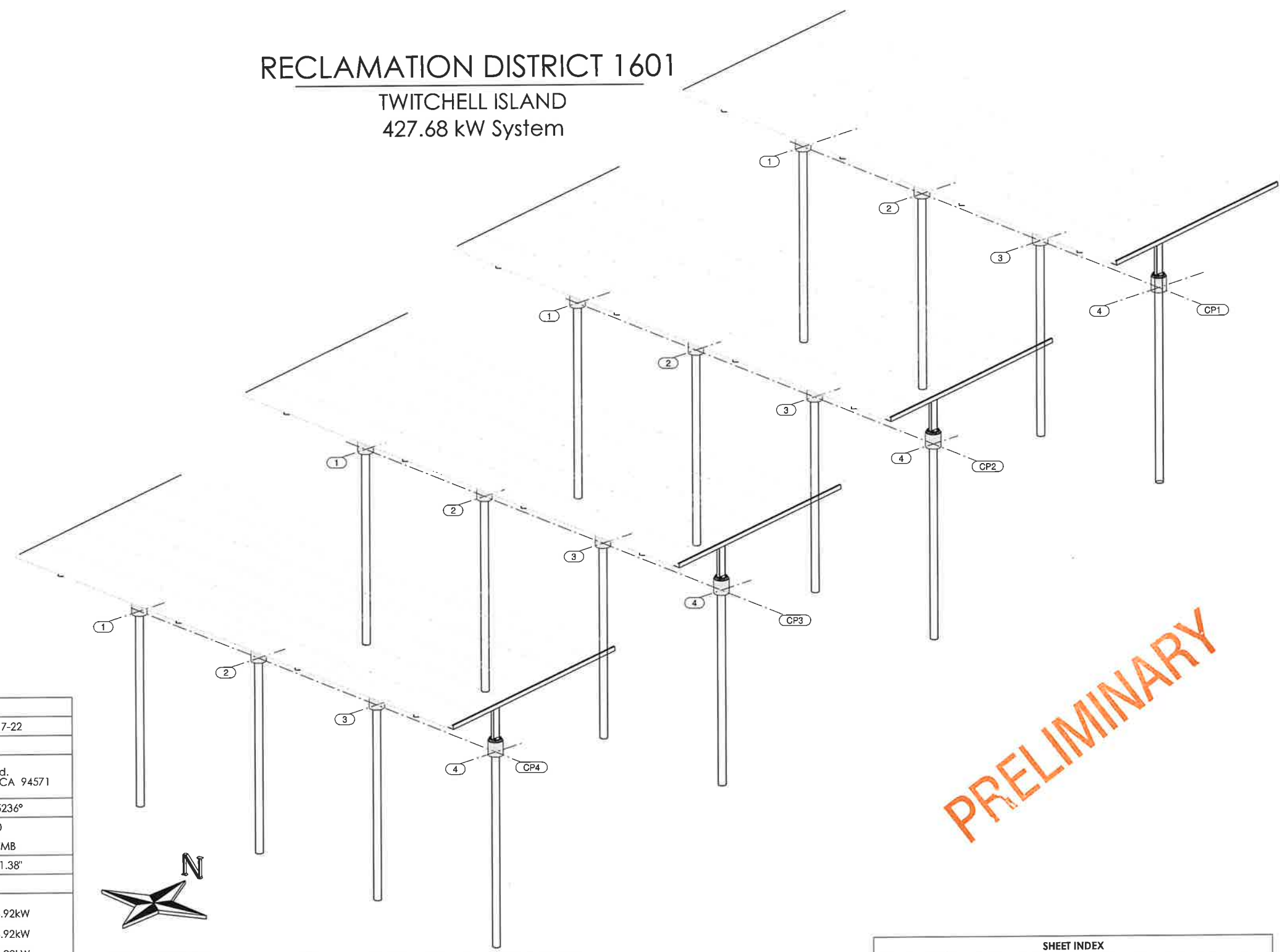
DATE
 APRIL 2024
 SHEET IDENTIFICATION
C-102
 SHEET 05 OF 05
 KSN PROJECT FILE NO.
 1110 - 0950

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RECLAMATION DISTRICT 1601

TWITCHELL ISLAND

427.68 kW System



PRELIMINARY

DESIGN CRITERIA	
GOVERNING CODES	CBC 2022/ ASCE 7-22
OCCUPANCY TYPE	U
PROJECT ADDRESS	Twitchell Island Ferry Rd, Ferry Road, Rio Vista, CA 94571
LATITUDE / LONGITUDE	38.09773°, -121.65236°
PV MODULE	DEEP BLUE 3.0 JAM72D30-540/MB
SIZE (L X W X H)	89.96" x 44.64" x 1.38"
ORIENTATION	PORTRAIT
PV ARRAY SIZES	CP1 6x33 / 106.92kW
	CP2 6x33 / 106.92kW
	CP3 6x33 / 106.92kW
	CP4 6x33 / 106.92kW
LOADING CONDITIONS	
WIND SPEED	93 mph
SNOW LOAD	5 PSF
OCCUPATIONAL RISK CATEGORY	CATEGORY II
SURFACE ROUGHNESS CATEGORY	
EXPOSURE CATEGORY	

GEOTECHNICAL DESIGN CRITERIA	
GEOTECHNICAL REPORT BY	ENGEO, Inc
GEOTECHNICAL REPORT DATE	3/8/2022
SEISMIC SITE CLASSIFICATION	CATEGORY E
SEISMIC RISK CATEGORY	CATEGORY II
SEISMIC DESIGN CLASSIFICATION	
SEISMIC COEFFICIENTS	SS = 1.104 g SDS = NULL S1 = 0.398 g SD1 = NULL SMS = NULL SM1 = NULL

SHEET INDEX	
SHEET	DESCRIPTION
S001	STRUCTURAL COVER SHEET
S002	GENERAL STRUCTURAL NOTES, SPECIAL INSPECTIONS
S003	GENERAL STRUCTURAL NOTES, CONTINUED
S004	OVERALL SITE PLAN
S100	CP1 STRUCTURAL VIEWS & BOM
S200	FOUNDATION DETAILS, 36" CIDH W/ DRIVEN STEEL 18" Ø PILE
S300	STEEL DETAILS

RECLAMATION DISTRICT 1601
TWITCHELL ISLAND
427.68 kW System
*427.68 kW DCp Twitchell Island Ferry Road, Rio Vista, CA 94571.
COVER SHEET ~ STRUCTURAL

REVISIONS	DESCRIPTION / CHANGE NOTICE	DATE	CB	DB	ACH	PER	ACH	PER	ACH
		DATE	PER	ACH	PER	ACH	PER	ACH	PER
No.									
A	ISSUED FOR INITIAL REVIEW	04/01/2024							
B	ISSUED FOR STAMP AND PERMIT	04/07/2024							

DRAWN BY:
ACH

PROJECT ENGINEER:
M. GILLIS

PROJECT:
24410

DRAWING FILE:
S001 - COVER SHEET

PROJECT STEEL FINISH SPEC:
Galvanized to ASTM A123
SURFACE PREP: SSPC-SP6 (U.N.O.)

ORIGINAL SHEET SIZE 36 X 24
DO NOT SCALE DRAWING

SHEET:
S001

PRINT DATE:

GENERAL STRUCTURAL NOTES

GENERAL

1. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO STARTING CONSTRUCTION, DO NOT SCALE DRAWINGS.
2. THE STRUCTURAL ERECTION DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHODS OF CONSTRUCTION THE CONTRACTOR SHALL PROVIDE WHICH ARE REQUIRED TO PROTECT THE STRUCTURE DURING CONSTRUCTION, SUCH MEASURES MIGHT INCLUDE, BUT ARE NOT LIMITED TO BRACING AND SHORING.
3. ALL REQUESTS FOR CLARIFICATION (RFC) MUST BE SUBMITTED IN WRITING PRIOR TO PROCEEDING WITH WORK.
4. THE ENGINEER OF RECORD SHALL BE NOTIFIED OF ANY DISCREPANCIES OR INCONSISTENCIES.
5. ALL DRAWINGS ARE CONSIDERED CONTRACT DOCUMENTS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REVIEW, CONTROL AND COORDINATION OF ALL DRAWINGS AND SPECIFICATIONS IN CONNECTION WITH PRE-CONSTRUCTION AND CONSTRUCTION ACTIVITIES.
6. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF KERN SOLAR STRUCTURES AND THE ENGINEER OF RECORD IN WRITING PRIOR TO THE INITIATION OF WORK. ALL DISCREPANCIES SHALL BE CLARIFIED IN WRITING BY KERN SOLAR STRUCTURES AND THE ENGINEER OF RECORD PRIOR TO THE CONTINUATION OF WORK.
7. ANY WORK PERFORMED IN CONFLICT WITH THE CONTRACT DOCUMENTS OR ANY CODE OR STANDARD REQUIREMENTS SHALL BE CORRECTED BY THE CONTRACTOR AT THEIR EXPENSE.
8. NOTES AND DETAILS ON APPLICATION / PROJECT SPECIFIC DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND DETAILS.
9. ALL WORK SHALL CONFORM TO THE MINIMUM STANDARDS INCLUDING THE FOLLOWING CODES: LOCAL BUILDING CODE, REGULATING AGENCIES, AUTHORITY HAVING JURISDICTION (A.H.J)

CONTRACTOR SUBMITTALS AND SHOP DRAWINGS

1. THE CONTRACTOR SUBMITTALS AND SHOP DRAWING ARE INTENDED TO HELP THE STRUCTURAL ENGINEER OF RECORD VERIFY THE DESIGN CONCEPT, IT IS THE CONTRACTOR'S RESPONSIBILITY TO CHECK THEIR OWN SHOP DRAWINGS.
2. THE STRUCTURAL SHOP DRAWINGS WILL BE RETURNED FOR RESUBMITTAL IF A CURSORY REVIEW SHOWS MAJOR ERRORS WHICH SHOULD HAVE BEEN ADDRESSED BY THE CONTRACTOR.
3. THE FOLLOWING SUBMITTALS (ALONG WITH SUPPORTING CALCULATIONS) ARE REQUIRED FOR STRUCTURAL REVIEW:
 - A. REINFORCING STEEL DESIGN INCLUDING FABRICATION DRAWINGS
 - B. CONCRETE MIX DESIGN INCLUDING STRENGTH TEST RESULTS
 - C. STRUCTURAL STEEL FABRICATION DRAWINGS
4. THE FOLLOWING SUBMITTALS TYPICALLY ARE NOT REQUIRED FOR STRUCTURAL REVIEW:
 - A. FORMWORK
 - B. STRUCTURAL STEEL MILL REPORTS
 - C. SHORING AND BRACING
5. SHOP DRAWINGS AND CALCULATIONS SHALL CLEARLY REFERENCE THE DESIGN ASSUMPTIONS USED TO PRODUCE THE SUBMITTAL.
6. ALL SUBMITTALS WILL BE PROVIDED IN A DIGITAL FORMAT FOR REVIEW (PREFERABLY PDF) BY THE STRUCTURAL ENGINEER OF RECORD.

STATEMENT OF STRUCTURAL TESTS AND SPECIAL INSPECTIONS

THE FOLLOWING ELEMENTS OF CONSTRUCTION SHALL REQUIRE SPECIAL INSPECTION PER CHAPTER 17 OF THE CURRENT BUILDING CODE UNLESS NOTED OTHERWISE
SPECIAL INSPECTIONS AND TESTING SHALL BE PROVIDED BY AN INSPECTION AGENCY, EMPLOYED BY THE OWNER, AND QUALIFIED BY THE BUILDING OFFICIAL TO INSPECT THE PARTICULAR TYPE OF CONSTRUCTION, TESTS AND INSPECTIONS, AS REQUIRED BY SECTIONS 110 & 1705 OF THE CURRENT IBC. SHALL BE PERFORMED DURING CONSTRUCTION ON THE TYPES OF WORK LISTED BELOW:

CATEGORY	INSPECTION	TESTING
• STRUCTURAL STEEL CONSTRUCTION	SECTION 1705.2	SECTION 1705.13
• CONCRETE CONSTRUCTION	SECTION 1705.3 / TABLE 1705.3	SECTION 1705.3
• SOILS	SECTION 1705.6 / TABLE 1705.6	
• CAST-IN-PLACE DEEP FOUNDATIONS	SECTION 1705.8 / TABLE 1705.8	

- A. THE SPECIAL INSPECTIONS IDENTIFIED ON PLANS ARE, IN ADDITION TO, AND NOT A SUBSTITUTE FOR, THOSE INSPECTIONS REQUIRED TO BE PERFORMED BY THE GOVERNING JURISDICTION, SPECIALLY INSPECTED WORK WHICH IS INSTALLED OR COVERED WITHOUT THE APPROVAL OF AN INSPECTOR FROM THE GOVERNING JURISDICTION IS SUBJECT TO REMOVAL OR EXPOSURE.
- B. FOR CONTINUOUS INSPECTION, WHEN WORK IN MORE THAN ONE CATEGORY OF WORK REQUIRING SPECIAL INSPECTION IS TO BE PERFORMED SIMULTANEOUSLY, OR THE GEOGRAPHIC LOCATION OF THE WORK IS SUCH THAT IT CANNOT BE CONTINUOUSLY OBSERVED IN ACCORDANCE WITH THE PROVISIONS OF THE CODE, IT IS THE CONTRACTOR'S RESPONSIBILITY TO EMPLOY A SUFFICIENT NUMBER OF INSPECTORS TO ASSURE THAT ALL WORK IS INSPECTED IN ACCORDANCE WITH THOSE PROVISIONS.
- C. THE SPECIAL INSPECTORS MUST BE CERTIFIED BY THE GOVERNING JURISDICTION IN THE CATEGORY OF WORK REQUIRED TO HAVE SPECIAL INSPECTION.

EXCEPTIONS:

 1. SOILS INSPECTIONS BY THE SOILS ENGINEER OF RECORD OR THE PROJECT INSPECTOR
 2. WHEN WAIVED BY THE GOVERNING JURISDICTION
- D. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INFORM THE SPECIAL INSPECTOR OR INSPECTION AGENCY AT LEAST TWO WORKING DAYS PRIOR TO PERFORMING ANY WORK THAT REQUIRES SPECIAL INSPECTION. ALL WORK PERFORMED WITHOUT REQUIRED SPECIAL INSPECTION IS SUBJECT TO REMOVAL.
- E. PROVIDE SPECIAL INSPECTION FOR CONNECTIONS BOLTED WITH A325 AND A490 BOLTS. INSPECTIONS SHALL BE DONE PER APPROVED NATIONALLY RECOGNIZED STANDARDS AND THE REQUIREMENTS OF THE CODE AND THE GOVERNING JURISDICTION. WHILE THE WORK IS IN PROGRESS, THE SPECIAL INSPECTOR SHALL DETERMINE THE BOLTS, NUTS, WASHERS AND PAINT; BOLTED PARTS; AND INSTALLATION AND TIGHTENING MEET THE STANDARDS REQUIREMENTS.
- F. THE SPECIAL INSPECTOR FOR HIGH STRENGTH BOLTED CONNECTIONS SHALL:
 1. OBSERVE THE CALIBRATION PROCEDURES WHEN SUCH PROCEDURES ARE REQUIRED BY THE PLANS OR SPECIFICATIONS.
 2. MONITOR THE INSTALLATION OF BOLTS TO DETERMINE THAT ALL PLIES OF CONNECTED MATERIALS HAVE BEEN DRAWN TOGETHER.
 3. MONITOR THAT THE SELECTED PROCEDURE IS PROPERLY USED TO TIGHTEN ALL BOLTS.
- G. THE CONSTRUCTION MATERIALS TESTING LABORATORY MUST BE APPROVED BY THE GOVERNING JURISDICTION, FOR TESTING OF MATERIALS, SYSTEMS, COMPONENTS AND, EQUIPMENT.
- H. PERIODIC INSPECTION SHALL OCCUR FREQUENTLY ENOUGH TO INSPECT ALL OF THE INSTALLED ITEMS AND TO PERIODICALLY WITNESS THE INSTALLATION OF THE ITEMS.
- I. THE SPECIAL INSPECTOR SHALL PROVIDE WEEKLY REPORTS AND A FINAL REPORT TO THE STRUCTURAL ENGINEER IN ADDITION TO REPORTING REQUIREMENTS OUTLINED IN SECTION 1704.2.4.
- J. A CERTIFICATE OF SATISFACTORY COMPLETION OF WORK REQUIRING SPECIAL INSPECTION MUST BE COMPLETED AND SUBMITTED TO THE GOVERNING JURISDICTION AND THE STRUCTURAL ENGINEER OF RECORD FOR THE PROJECT.
- K. THE SPECIAL INSPECTOR SHALL ENSURE THAT ALL DEFICIENCIES NOTED BY THE STRUCTURAL ENGINEER IN STRUCTURAL OBSERVATION REPORTS ARE CORRECTED. SUCH COMPLIANCE SHALL BE REFERENCED IN SPECIAL INSPECTOR REPORT.

STRUCTURAL STEEL

1. STRUCTURAL STEEL DESIGN SHALL BE APPROVED AND FABRICATED BY AN AISC APPROVED CONTRACTOR.
2. ALL STRUCTURAL STEEL SHALL CONFORM TO THE ASTM DESIGNATION INDICATED BELOW UNLESS OTHERWISE NOTED:

DESCRIPTION	DESIGNATION
W SHAPES - COLUMNS, GIRDERS AND BEAMS	A992, GRADE 50
BASE PLATES AND CAP PLATES	A572, GRADE 50
STIFFENERS AND MISC. PLATES	A572, GRADE 50 OR A36
ANGLES, CHANNELS AND MISC.	A36
HSS SECTIONS	A500, GRADE C
'C' AND 'Z' PURLINS	A653-G90
HIGH STRENGTH BOLTED CONNECTIONS	BOLTS: ASTM A325
	NUTS: ASTM A563
	WASHERS: F436
	TC BOLTS: F1852
	TI WASHERS: F959
ANCHOR RODS	F1554, GRADE 105

3. THE STRUCTURAL STEEL FABRICATOR SHALL MAINTAIN ALL MANUFACTURERS MATERIAL TEST REPORTS (MTR) FOR ALL STRUCTURAL STEEL MEMBERS.
4. THE APPROVED STRUCTURAL STEEL FABRICATOR SHALL EMPLOY DETAILED FABRICATION AND QUALITY CONTROL PROCEDURES THAT PROVIDE A BASIS FOR INSPECTION CONTROL OF THE WORKMANSHIP AND MATERIALS USED IN FABRICATION. AT COMPLETION OF FABRICATION, THE APPROVED FABRICATOR SHALL SUBMIT A CERTIFICATE OF COMPLIANCE TO THE BUILDING OFFICIAL STATING THAT THE WORK WAS PERFORMED IN ACCORDANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS.
5. ALL STRUCTURAL STEEL MEMBERS SHALL BE CLASSIFIED AS ARCHITECTURALLY EXPOSED STRUCTURAL STEEL - TYPE 3 (AESS 3) AND SHALL BE FABRICATED, FINISHED AND HANDLED PER ANSII/ AISC 303-16, CHAPTER 10-AESS 3.
6. ALL WELDING TO BE PERFORMED BY WELDERS CERTIFIED TO AWS D1.1 STRUCTURAL WELDING CODE, PER AISC 360 LATEST EDITIONS AND APPROVED WELD PROCEDURES.
7. ALL WELDING FILLER MATERIALS SHALL BE APPROVED TO AWS SPECIFICATION A5.20 AND CLASSIFIED TO AWS E71T-1.
8. STRUCTURAL OBSERVATIONS SPECIFIED IN SECTIONS 1, 2 AND 3 OF THE ADJACENT TABLE (STEEL: TESTS AND SPECIAL INSPECTIONS) ARE NOT REQUIRED FOR THIS PROJECT PER BUILDING CODE IF FABRICATION IS COMPLETED BY A FABRICATOR APPROVED TO PERFORM SUCH WORK WITHOUT SPECIAL INSPECTION.
9. AT COMPLETION OF FABRICATION, THE APPROVED FABRICATOR SHALL SUBMIT A CERTIFICATE OF COMPLIANCE TO THE OWNER OR OWNER'S AUTHORIZED AGENT FOR SUBMITTAL TO THE BUILDING OFFICIAL STATING THAT WORK WAS PERFORMED IN ACCORDANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS.
10. ALL HIGH STRENGTH BOLTS SHALL BE TIGHTENED TO "PRETENSIONED" CONDITION PER AISC 360 SECTION J3.2b AND RCSC SPECIFICATION SECTION B.2 UNLESS OTHERWISE SPECIFIED.
11. ALL EXPOSED STEEL MEMBERS, HARWARE AND BOLTS SHALL BE GALVANIZED OR OTHERWISE TREATED PER APPROVED LOCAL STANDARDS TO RESIST CORROSION.

STEEL: TESTS AND SPECIAL INSPECTIONS			
VERIFICATION AND INSPECTION	TYPE	RESP	REFERENCING STANDARD
1. VERIFICATION OF STRUCTURAL STEEL MATERIAL			
A. STRUCTURAL STEEL MARKINGS CONFORMING TO AISC 360, CURRENT EDITION	P	SI	AISC 360: M5.5
B. VERIFY MANUFACTURERS MATERIAL TEST REPORTS	P	SI	AISC 360: M5.5
2. VERIFICATION OF WELD FILLER MATERIALS AND PROCEDURES			
A. VERIFY MARKINGS TO CONFORM TO INDICATED AWS SPECIFICATION	P	SI	AISC 360: A3.5 AWS A5.20
B. VERIFY MANUFACTURERS MATERIAL TEST REPORTS OR CERTIFICATE OF COMPLIANCE	P	SI	AISC 360: A3.5 AWS A5.20
C. VERIFY WELD PROCEDURE (WPS), WELDER QUALIFICATION AND EQUIPMENT	P	SI	AISC 360: A3.5 AWS A5.20
3. VERIFICATION OF WELDING			
A. MULTIPASS WELDS	C	SI	AWS D1.1
B. SINGLE-PASS WELDS > 5/16"	C	SI	AWS D1.1
C. SINGLE PASS WELDS = 5/16"	P	SI	AWS D1.1
4. MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS AND WASHERS			
A. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS	P	SI	AISC 360: A3.3, N5.6-1 RCSC 2.3
B. VERIFY MANUFACTURERS MATERIAL TEST REPORTS OR CERTIFICATE OF COMPLIANCE	P	SI	AISC 360: N5.6-1 RCSC 2.1
C. VERIFY "SNUG-TIGHTEND" CONNECTIONS	P	SI	AISC 360: M2.5, N5.6-2 RCSC B.1, 9.1

TEST AND SPECIAL INSPECTIONS KEY

TYPE:

- P (PERIODIC) - INDICATES THAT A PERIODIC SPECIAL INSPECTION IS REQUIRED
- C (CONTINUOUS) - INDICATES THAT A CONTINUOUS SPECIAL INSPECTION IS REQUIRED
- T (TEST) - INDICATES THAT A TEST IS REQUIRED
- RESPONSIBILITY (PERFORMED BY):
- SI (SPECIAL INSPECTOR) - INDICATES THAT A SPECIAL INSPECTION IS TO BE PERFORMED BY QUALIFIED SPECIAL INSPECTOR
- PI (PROJECT INSPECTOR) - INDICATES THAT A SPECIAL INSPECTION IS TO BE PERFORMED BY THE QUALIFIED PROJECT INSPECTOR
- GE (GEOTECHNICAL ENGINEER) - INDICATES THAT THE SPECIAL INSPECTION IS TO BE PERFORMED BY A REGISTERED GEOTECHNICAL ENGINEER OR HIS/ HER AUTHORIZED REPRESENTATIVE

PRELIMINARY



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STAMP

RECLAMATION DISTRICT 1601
TWITCHELL ISLAND
427.48 kW System

427.48 kW DCp Twitchell Island Ferry Road, Rio Vista, CA 94571.

GENERAL STRUCTURAL NOTES

NO.	DESCRIPTION / CHANGE NOTICE	DATE		CB	DB	ACH	PIH	ACH	PIH
		04/01/2024	04/07/2024						
A	ISSUED FOR INITIAL REVIEW								
B	ISSUED FOR STAMP AND PERMIT								

DRAWN BY:
ACH

PROJECT ENGINEER:
M. GILLIS

PROJECT:
24410

DRAWING FILE:
S002- GENERAL STRUCTURAL NOTES

PROJECT STEEL FINISH SPEC:
Galvanized to ASTM A123
SURFACE PREP: SSPC-SP6 [U.N.O.]

ORIGINAL SHEET SIZE 36 X 24
DO NOT SCALE DRAWING

SHEET:

S002

PRINT DATE:

GENERAL STRUCTURAL NOTES CONTINUED

FOUNDATION

- CONTRACTOR SHALL INVESTIGATE SITE DURING CLEARING AND EARTHWORK OPERATIONS FOR FILLED EXCAVATIONS OR BURIED STRUCTURES, SUCH AS CESSPOOLS, CISTERNS, FOUNDATIONS, ETC. IF ANY SUCH STRUCTURES ARE FOUND, STRUCTURAL ENGINEER SHALL BE NOTIFIED IMMEDIATELY.
- CONTRACTOR SHALL REMOVE CONTAMINATED SOILS (WHERE OCCUR) PER THE SOILS REPORT, SOIL REMOVAL AND RECOMPACTION SHALL BE PER THE SOILS REPORT AND APPROVED CONTRACT DOCUMENTS.
- FOUNDATIONS SHALL BE PLACED AND ESTIMATED ACCORDING TO DEPTHS SHOWN ON DRAWINGS, SHOULD SOIL ENCOUNTERED AT THESE DEPTHS NOT BE APPROVED BY THE INSPECTOR OR SOILS ENGINEER, FOUNDATION ELEVATIONS WILL BE ALTERED.
- KEEP EXCAVATIONS FREE OF WATER BEFORE PLACING CONCRETE UNLESS OTHERWISE APPROVED BY THE SOILS ENGINEER. IF UNABLE TO SEAL OFF WATER FLOW, PER THE APPROVAL OF THE SOILS ENGINEER, ALLOW WATER LEVEL TO ATTAIN ITS NORMAL LEVEL AND PLACE CONCRETE BY THE TREMIE METHOD OR OTHER APPROVED METHOD, CONTRACTOR TO PROVIDE FOR DE-WATERING OF EXCAVATIONS FROM EITHER SURFACE WATER, GROUND WATER, OR SEEPAGE, IF REQUIRED.
- EACH BORING FOR THE DRILLED PIER MUST BE INSPECTED BY THE SOILS ENGINEER PRIOR TO PLACING CONCRETE AND REINFORCING STEEL. ADJUST SHAFT LENGTHS UNDER DIRECTION OF THE SOILS ENGINEER AND THE OWNER'S REPRESENTATIVE BASED ON SOIL CONDITIONS AT TIME OF DRILLING.
- PRECAUTIONS SHOULD BE TAKEN DURING THE INSTALLATION OF PIERS TO MINIMIZE THE POSSIBILITY OF CAVING, CLOSELY SPACED PIERS SHOULD BE DRILLED AND FILLED ALTERNATELY, ALLOWING THE CONCRETE TO SET AT LEAST EIGHT HOURS BEFORE DRILLING AN ADJACENT HOLE. PIER EXCAVATIONS SHOULD BE FILLED WITH CONCRETE AS SOON AFTER DRILLING AND INSPECTION AS POSSIBLE.
- PLACE REINFORCING STEEL IN ONE CONTINUOUS UNIT AND ACCURATELY HOLD SECURELY IN FINAL POSITION USING CHAIRS OR SPACERS DURING CONCRETE PLACEMENT.
- AN UNREINFORCED HEIGHT OF 12 INCHES AT THE BOTTOM OF THE SHAFT IS ACCEPTABLE.
- CONSTRUCTION SHALL COMPLY WITH THE REQUIREMENTS OF ACI 336.3R, LATEST EDITION.
- EXISTING SOILS PARAMETERS OUTLINED IN ENCLOSED GEOTECHNICAL DATA REPORT, PREPARED BY ENGeo, 7/21/21.
- THIS DESIGN IS BASED ON THE FINDINGS AND RECOMMENDATIONS OUTLINED IN ENCLOSED GEOTECHNICAL DESIGN REPORT, PREPARED BY ENGeo, 3/9/2022, GEOTECHNICAL DESIGN CRITERIA BASED ON THIS REPORT CAN BE FOUND ON S001.

REINFORCING STEEL

- REINFORCING BARS SHALL CONFORM TO THE REQUIREMENTS OF CHAPTER 19 OF THE CODE, ASTM A615 (A706 WHERE NOTED ON PLANS), GRADE 60 UNLESS OTHERWISE NOTED, DEFORMATIONS SHALL BE IN ACCORDANCE WITH ASTM A-305.
- BARS SHALL BE CLEAN OF RUST, GREASE, OR OTHER MATERIALS LIKELY TO IMPAIR BOND, ALL REINFORCING BAR BENDS SHALL BE MADE COLD.
- REINFORCING BARS SHALL NOT BE SPLICED UNLESS SPECIFICALLY NOTED ON PLAN AND SHALL CONFORM TO THE PROVISIONS OF ACI 318. LAP ALL HORIZONTAL BARS AT CORNERS AND INTERSECTIONS.
- ALL BARS SHALL BE MARKED SO THEIR IDENTIFICATION CAN BE MADE WHEN THE FINAL IN-PLACE INSPECTION IS MADE.
- REINFORCING STEEL SHALL BE DETAILED IN ACCORDANCE WITH ACI 315.
- COMPLETE AND DETAILED REINFORCING PLACEMENT DRAWINGS SHALL BE PREPARED AND SUBMITTED FOR REVIEW BY THE STRUCTURAL ENGINEER PRIOR TO FABRICATION IN ACCORDANCE WITH SPECIFICATIONS AND APPLICABLE CODES, THESE APPROVED DRAWINGS SHALL BE AVAILABLE ON THE JOB SITE PRIOR TO PLACING OF CONCRETE.
- REBAR SPACINGS GIVEN ARE MAXIMUM ON CENTER WHETHER STATED AS "O.C." OR NOT, UNLESS A SPECIFIED LENGTH IS GIVEN, ALL REBAR IS CONTINUOUS WHETHER STATED AS "CONT." OR NOT.
- MILL TEST REPORTS FOR GRADE 60 BARS SHALL BE SUBMITTED PRIOR TO PLACEMENT OF CONCRETE.
- MECHANICAL BAR SPLICES (COUPLERS) SHALL BE USED WHERE SPECIFIED ON PLANS, THEY MAY ALSO BE USED AT THE CONTRACTOR'S OPTION IN LIEU OF LAP SPLICES AND WHERE REINFORCING IS SHOWN CONTINUOUS THROUGH BY ACI 318 AND BE ONE OF THOSE LISTED BELOW AND INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS:
 - HRC 500 SERIES MECHANICAL COUPLERS (ICC ESR-2764)
 - LENTON A2 SERIES MECHANICAL SPLICES (IAPMO ER-0129)

FOUNDATION TESTS AND SPECIAL INSPECTIONS			
VERIFICATION AND INSPECTION	TYPE	RESP	REFERENCING STANDARD
1. SOILS (TABLE 1705.6)			
A. VERIFY MATERIALS BELOW FOOTINGS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY	P	GE	-
B. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL	P	GE	-
C. PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY	P	GE	-
2. CAST-IN-PLACE DEEP FOUNDATIONS (TABLE 1705.8)			
A. INSPECT DRILLING OPERATIONS AND MAINTAIN COMPLETE AND ACCURATE RECORDS FOR EACH ELEMENT.	C	SI	-
B. VERIFY PLACEMENT LOCATIONS, PLUMBNESS, DIAMETER AND DEPTH, VERIFY ADEQUATE END-BEARING STRATA CAPACITY AND PROPER MATERIAL AT DEPTH.	C	SI	-
3. REINFORCING STEEL (TABLE 1705.3)			
INSPECT REINFORCING STEEL, PRESTRESSING TENDONS, SHEAR STUDS AND PLACEMENT	P	SI	ACI 318: 20, 25.2, 25.3, 26.6.1 - 26.6.3
B. INSPECT WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A706	P	SI	ACI 318: 20, 25.2, 25.3, 26.6.1 - 26.6.3
C. INSPECT ANCHOR BOLTS AND EMBED PLATES TO BE INSTALLED IN CONCRETE PRIOR TO AND DURING PLACEMENT OF CONCRETE	C	SI	ACI 318: 17.8.2

CONCRETE

- ALL CONCRETE CONSTRUCTION SHALL CONFORM WITH THE CODE AND WITH THE PROVISIONS OF ACI 318 AND ACI 301.
- CONCRETE MIXES SHALL BE DESIGNED BY A QUALIFIED TESTING LABORATORY AND APPROVED BY THE STRUCTURAL ENGINEER.
 - MIX DESIGN METHODS (TEST HISTORY OR TRIAL BATCH METHOD) PER THE CODE SHALL BE USED TO PROPORTION CONCRETE. SUBMIT MIX DESIGN METHOD DATA.
 - MIX DESIGNS SHALL SATISFY EITHER THE SHRINKAGE CRITERIA OR THE W/ C RATIO AND TOTAL WATER CRITERIA.
- PORTLAND CEMENT SHALL CONFORM TO ASTM C-150 TYPE II
- AGGREGATE FOR HARD ROCK CONCRETE SHALL CONFORM TO ALL REQUIREMENTS AND TESTS OF ASTM C33 AND PROJECT SPECIFICATIONS. CONCRETE SHALL BE DESIGNED TO FACILITATE PLACEMENT BY PUMP, EXCEPTIONS MAY BE USED ONLY WITH PERMISSION OF THE STRUCTURAL ENGINEER.
- CONCRETE MIXING OPERATION, ETC, SHALL CONFORM TO ASTM C94.
- SCHEDULE OF STRUCTURAL CONCRETE PERFORMANCE REQUIREMENTS:

MEMBER	F _c / 28 DAY	MAX W/C	MAX DENSITY
ALL FOOTINGS AND FOUNDATIONS	5000 PSI	0.50	150 PCF

- PLACEMENT OF CONCRETE SHALL CONFORM TO ACI 301 AND PROJECT SPECIFICATIONS, CLEAN AND ROUGHEN TO 1/4" AMPLITUDE ALL CONCRETE SURFACES AGAINST WHICH NEW CONCRETE IS TO BE PLACED.
- CONTINUOUS INSPECTION OF CONCRETE SHALL INCLUDE INSPECTION DURING INSTALLATION OF REINFORCING STEEL, INSPECTION SHALL BE SCHEDULED SO THAT PLACEMENT OF REINFORCING STEEL, CONDUIT, SLEEVES, AND EMBEDDED ITEMS MAY BE CORRECTED PRIOR TO PLACEMENT OF OVERLYING GRIDS OF REINFORCING STEEL.
- FOR CAST-IN-PLACE CONCRETE, THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT:

DESCRIPTION	MINIMUM COVER
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3" (±3/8")
CONCRETE EXPOSED TO EARTH OR WEATHER No. 6 THROUGH No. 18 BAR	2" (±3/8")
CONCRETE EXPOSED TO EARTH OR WEATHER No. 5 BAR, W31 OR D31 WIRE OR SMALLER	1 1/2" (±3/8")
CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH THE GROUND	3/4" (±1/4")

- ALL REINFORCING BARS, ANCHOR BOLTS, AND OTHER CONCRETE INSERTS SHALL BE WELL SECURED IN POSITION PRIOR TO PLACING CONCRETE.
- CONCRETE SHALL BE PUMPED IN PLACE IN 18" TO 24" LIFTS PER ACI RECOMMENDATIONS.
- PIPES OR CONDUITS LARGER THAN 4" DIAMETER SHALL NOT BE EMBEDDED IN STRUCTURAL CONCRETE EXCEPT WHERE SPECIFICALLY APPROVED BY STRUCTURAL ENGINEER, PIPES OR CONDUITS SHALL NOT DISPLACE OR INTERRUPT REINFORCING BARS, SPACE THE PIPES OR CONDUITS SUCH THAT PROPER CONCRETE PLACEMENT AND CONSOLIDATION IS ACHIEVED.
- FOAM USED AS STAY-IN-PLACE FORMS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 5.8 PSI AT 1% DEFORMATION AND A MINIMUM MODULUS OF 580 PSI PER ASTM D6817.
- PROVIDE MIN 1/4" CHAMFER ON ALL EXPOSED CORNERS UNLESS INDICATED OTHERWISE.

CONCRETE TESTS AND SPECIAL INSPECTIONS			
VERIFICATION AND INSPECTION	TYPE	RESP	REFERENCING STANDARD
1. PRE-PLACEMENT INSPECTIONS (TABLE 1705.3)			
A. INSPECT POSITION AND PLACEMENT OF REINFORCEMENT STEEL	C	SI	ACI 318: 26.6
B. INSPECT POSITION OF PLACEMENT OF EMBEDDED STRUCTURAL STEEL COLUMNS, ANCHOR BOLT ASSEMBLIES, ELECTRICAL CONDUIT AND GROUNDING GRID EMBEDMENTS	C	SI	ACI 318: 26.8.2, 26.11.1.2
C. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS	C	SI	ACI 318: 26.11.1.2
2. CONCRETE PLACEMENT			
A. VERIFY USE OF REQUIRED DESIGN MIX	P	SI	ACI 318: 19, 26.4.3, 26.4.4
B. INSPECT CONCRETE PLACEMENT TECHNIQUES	C	SI	ACI 318: 26.5
C. AT THE TIME CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, RECORD THE FOLLOWING TEST RESULTS OF THE CONCRETE: • SLUMP • AIR CONTENT • TEMPERATURE	C	SI	ACI 318: 26.5, 26.12 ASTM C172 ASTM C31
D. VERIFY SPECIFIED CURING TEMPERATURE AND TECHNIQUES FOR PLACED CONCRETE	P	SI	ACI 318: 26.5.3 26.5.5
E. VERIFY IN-SITE CONCRETE STRENGTH PRIOR TO THE REMOVAL OF FORMS AND SHORING SYSTEMS	P	SI	ACI 318: 26.11.2

TEST AND SPECIAL INSPECTIONS KEY

- TYPE:
- P (PERIODIC) - INDICATES THAT A PERIODIC SPECIAL INSPECTION IS REQUIRED
 - C (CONTINUOUS) - INDICATES THAT A CONTINUOUS SPECIAL INSPECTION IS REQUIRED
 - T (TEST) - INDICATES THAT A TEST IS REQUIRED
 - SI (SPECIAL INSPECTOR) - INDICATES THAT A SPECIAL INSPECTION IS TO BE PERFORMED BY QUALIFIED SPECIAL INSPECTOR
 - PI (PROJECT INSPECTOR) - INDICATES THAT A SPECIAL INSPECTION IS TO BE PERFORMED BY THE QUALIFIED PROJECT INSPECTOR
 - GE (GEOTECHNICAL ENGINEER) - INDICATES THAT THE SPECIAL INSPECTION IS TO BE PERFORMED BY A REGISTERED GEOTECHNICAL ENGINEER OR HIS/ HER AUTHORIZED REPRESENTATIVE

PRELIMINARY



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BAKERSFIELD, CA 93305 USA
+1 (661) 912-0560

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STAMP

RECLAMATION DISTRICT 1601
 TWITCHELL ISLAND
 427.68 KW System
 *427.68 KW DCp Twitchell Island Ferry Road, Rio Vista, CA 94571.
 GENERAL STRUCTURAL NOTES - CONTINUED

REVISIONS	DATE	DESCRIPTION / CHANGE NOTICE	CB	DB	FB	GB	HB
			ACH	PRH	PRH	ACH	
NO							
A	04/01/2024	ISSUED FOR INITIAL REVIEW					
B	04/09/2024	ISSUED FOR STAMP AND PERMIT					

DRAWN BY:
ACH

PROJECT ENGINEER:
M. GILLIS

PROJECT:
24410

DRAWING FILE:
S003- GENERAL STRUCTURAL NOTES

PROJECT SPEC. FINISH SPEC:
Galvanized to ASTM A123
SURFACE PREP: SSPC-SP6 (U.N.O)

ORIGINAL SHEET SIZE 36 X 24
DO NOT SCALE DRAWING

SHEET:
S003

PRINT DATE:



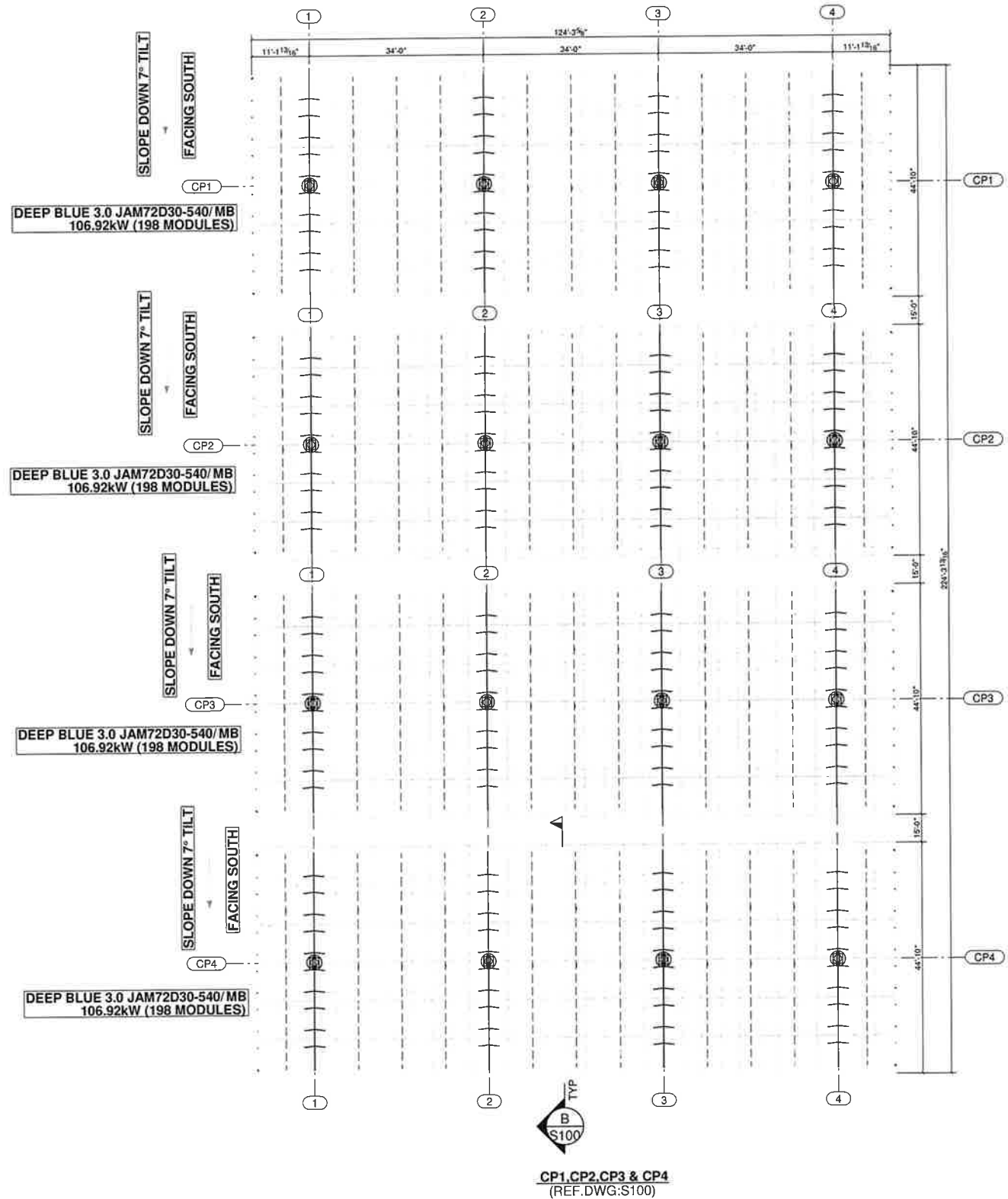
PROJECT NORTH



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OVERALL SITE PLAN OF TWITCHELL ISLAND

RECLAMATION DISTRICT 1601
TWITCHELL ISLAND
427.68 kW System
"427.68 kW DCP" Twitchell Island Ferry Road, Rio Vista, CA 94571.
OVERALL SITE PLAN ~

NO.	REVISIONS	DESCRIPTION / CHANGE NOTICE	DATE	DB	CB
A	ISSUED FOR INITIAL REVIEW		04/07/2024	PH	ACH
B	ISSUED FOR STAMP AND PERMIT		04/09/2024	PH	ACH

DRAWN BY:
ACH

PROJECT ENGINEER:
M. GILLIS

PROJECT:
24410

DRAWING FILE:
S004- OVERALL SITE PLAN

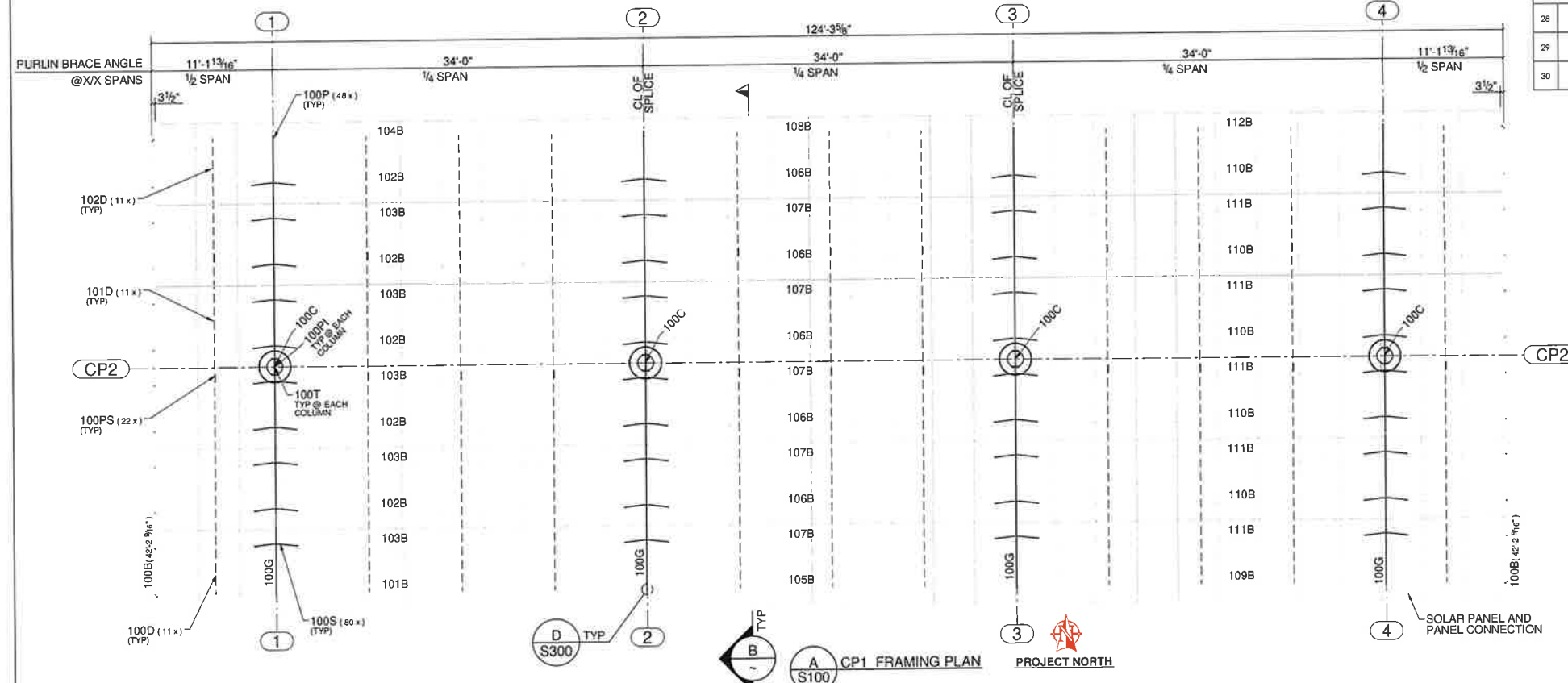
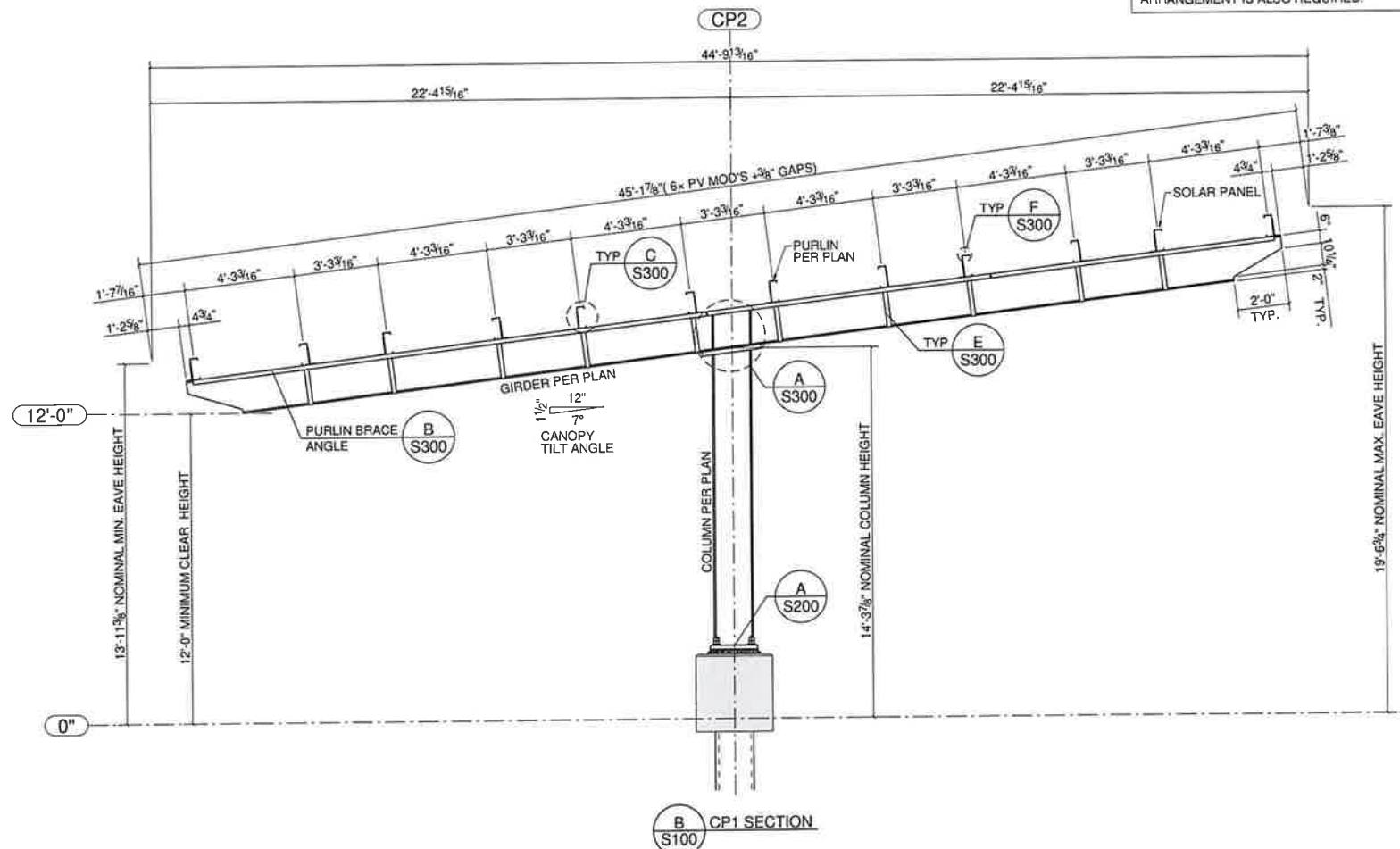
PROJECT STEEL FINISH SPEC:
Galvanized to ASTM A123
SURFACE PREP: SSPC-SP6 (U.N.O)

ORIGINAL SHEET SIZE 36 X 24
DO NOT SCALE DRAWING

SHEET: **S004**

PRINT DATE:

NOTE :-
 THE ARRANGEMENT SHOWN IS FOR QTY (1) CARPORT CP1.
 QTY (1) CARPORT CP2, CP3 & CP-4 WITH AN IDENTICAL
 ARRANGEMENT IS ALSO REQUIRED.



BILL OF MATERIALS							
ITEM NO	PART NUMBER	SHIPPING MARK	PROFILE	DESCRIPTION	LENGTH	MATERIAL	QTY.
STRUCTURAL COMPONENTS							
1	1xxC	W18X60	COLUMN		11'-5"	A112 HOT DIPPED GALV. PER ASTM A113	4
2	1xxG	W18X60	GIRDER		42'-8 9/16"	A112 HOT DIPPED GALV. PER ASTM A113	4
3	1xxB	C10X3 5X10GA	CENTER PURLIN		33'-11 3/4"	A333-010 PRE-GALV.	12
4	1xxB	C10X3 5X10GA	END PURLIN		45'-1 9/16"	A333-010 PRE-GALV.	24
5	1xxB	OC10 25X3 5X12GA	PURLIN CAP		42'-2 9/16"	A333-010 PRE-GALV.	2
6	1xxT	PL1/8"X22"	AS TEMPLATE			A33 NO PAINT	4
7	1xxD	L2X2X1/4	BTM FLG BRACE		11'-0 13/16"	A33 HOT DIPPED GALV. PER ASTM A113	22
8	1xxD	L2X2X1/4	BTM FLG BRACE		20'-0"	A33 HOT DIPPED GALV. PER ASTM A113	11
9	1xxPI	PIPE18X5	DRIVEN STEEL PILE		42'-2 1/2"	A33 NO PAINT	4
10	1xxP	BPL1/4"X8"	G-CLIP		0'-10 9/16"	A33 HOT DIPPED GALV. PER ASTM A113	48
11	1xxPS	PL3/16"X1 1/2"	SPLICE PLATE		0'-8 1/2"	A33 HOT DIPPED GALV. PER ASTM A113	22
12	1xxS	SHT10GA	STRAP		2'-6 11/16"	A33 HOT DIPPED GALV. PER ASTM A113	80
STRUCTURAL HARDWARE							
13			HEAVY HEX BOLT 1 1/4"Ø x 4 1/4"			A325N GALV.	24
14			HEAVY HEX NUT 1 1/4"Ø			A563 GALV.	24
15			FLAT WASHER 1 1/4"Ø			F436 GALV.	24
16			HEX BOLT 1/2"Ø x 1 3/4"			A307 GALV.	96
17			HEX NUT 1/2"Ø			A563 GALV.	96
18			FLAT WASHER 1/2"Ø			F844 GALV.	96
19			HEX BOLT 1/4"Ø x 1 1/2"			A307 GALV.	160
20			HEX NUT 1/4"Ø			A563 GALV.	160
21			FLAT WASHER 1/4"Ø			F844 GALV.	160
22			HEX BOLT 1/4"Ø x 1 1/4"			A307 GALV.	88
23			HEX NUT 1/4"Ø			A563 GALV.	88
24			FLAT WASHER 1/4"Ø			F844 GALV.	88
25			HEX BOLT 1/4"Ø x 1"			A307 GALV.	132
26			HEX NUT 1/4"Ø			A563 GALV.	132
27			FLAT WASHER 1/4"Ø			F844 GALV.	132
SOLAR PV MODULE HARDWARE							
28			SELF DRILLING HEX SCREW 1/4"Ø-14 x 1"			304SS	288
29			SERRATED FLANGE HEX SCREW 5/16"Ø-18 x 3/4"			18-8 SS	792
30			SERRATED FLANGE HEX NUT 5/16"Ø-18			18-8 SS	792

SHIPPING MARK KEY
 CARPORT (CP) # MEMBER TYPE
 ASSEMBLY # RANGING 00 TO 99
 EXAMPLE: 101B (SEE PLAN)
 ASSEMBLY TYPES:
 COLUMN - C
 GIRDER - G
 CENTER PURLIN - B
 END PURLIN - B
 PURLIN CAP - B
 BTM FLG BRACE - D
 G-CLIP - P
 DRIVEN STEEL PILE - PI
 SPLICE PLATE - PS
 STRAP - S
 AS TEMPLATE - T

PRELIMINARY

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RECLAMATION DISTRICT 1601
TWITCHELL ISLAND
 427.68 kW System

"427.2 KW DCp Twitchell Island Ferry Road, Rio Vista, CA 94571."
 CP1 STRUCTURAL VIEWS & BOM

NO.	DESCRIPTION / CHANGE NOTICE	DATE	ISSUED FOR INITIAL REVIEW		ISSUED FOR STAMP AND PERMIT	
			DB	ACH	DB	ACH
A		04/01/2024				
B		04/09/2024				

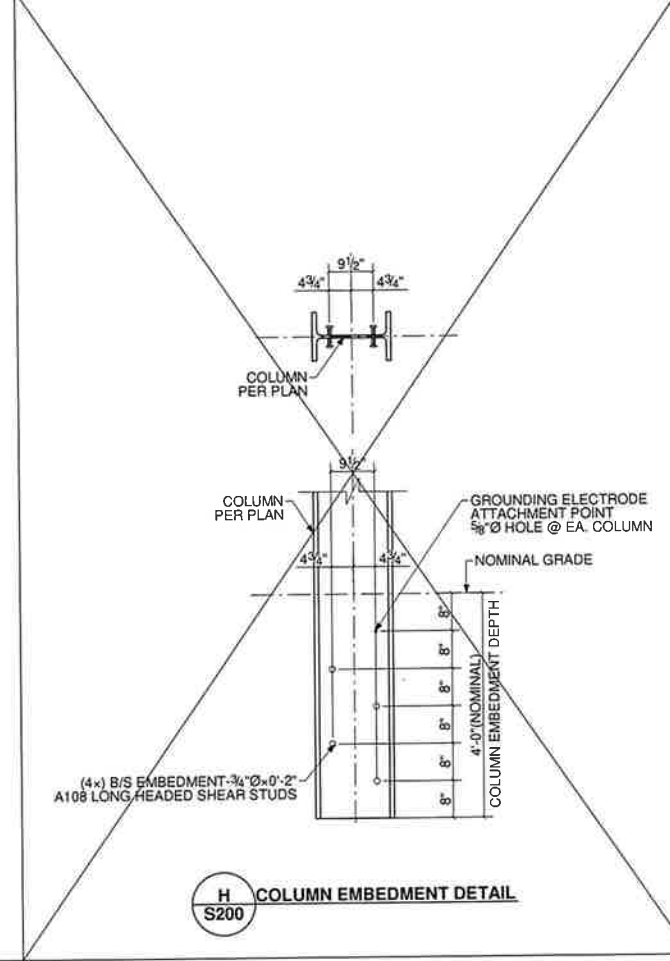
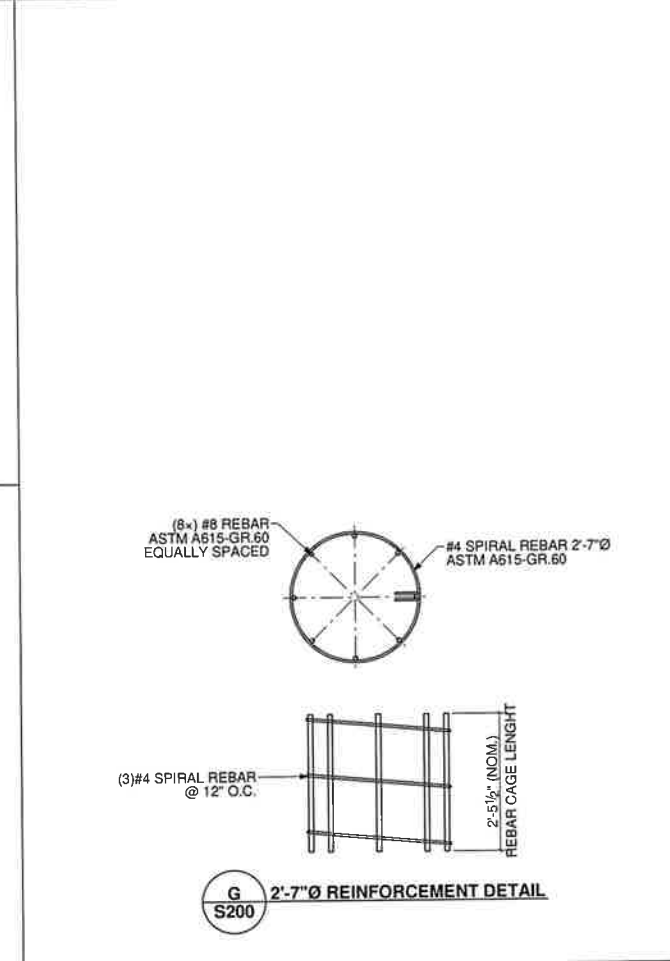
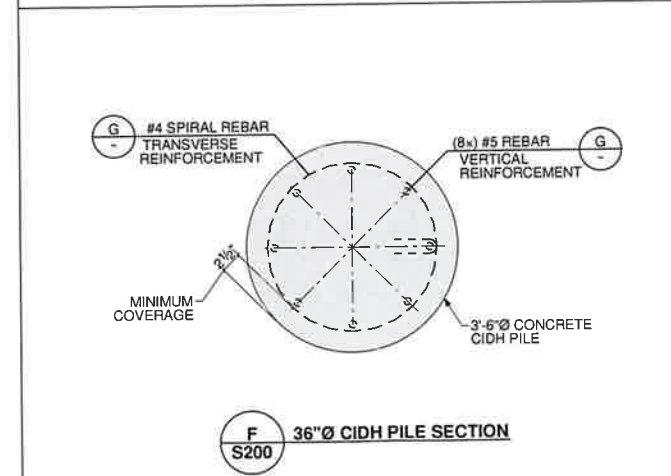
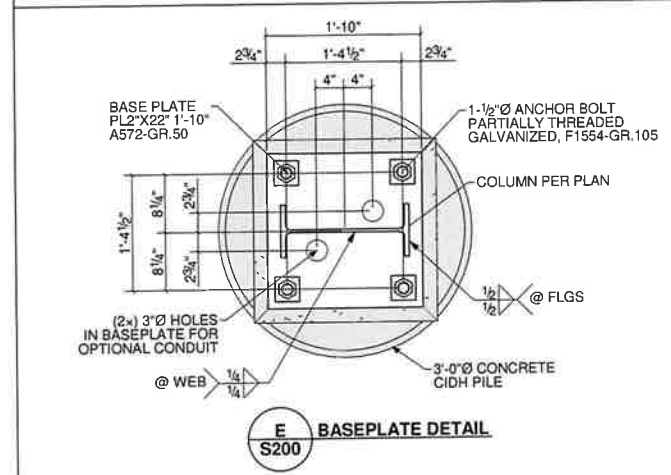
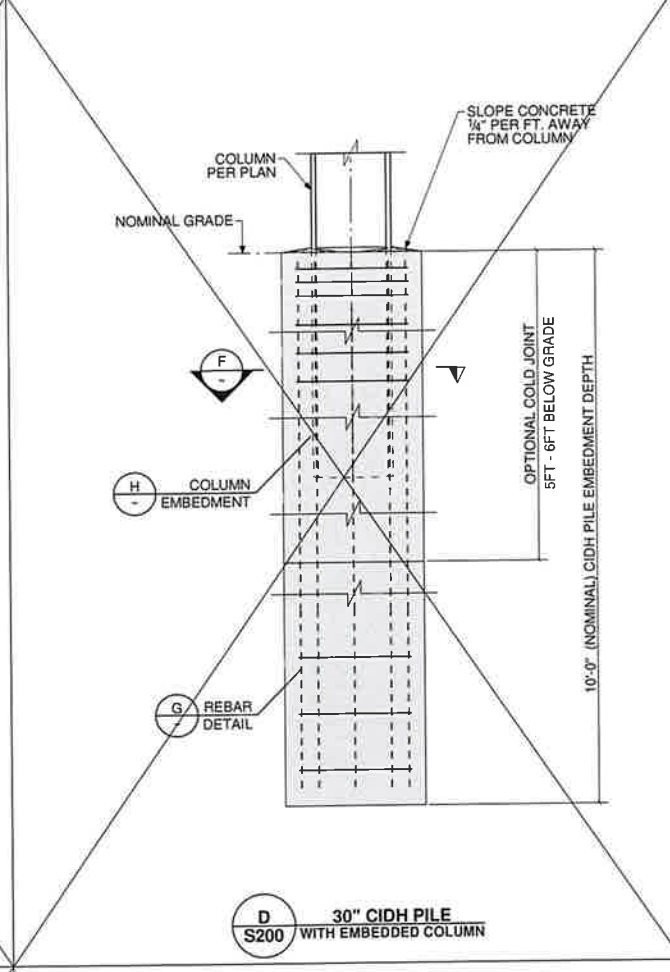
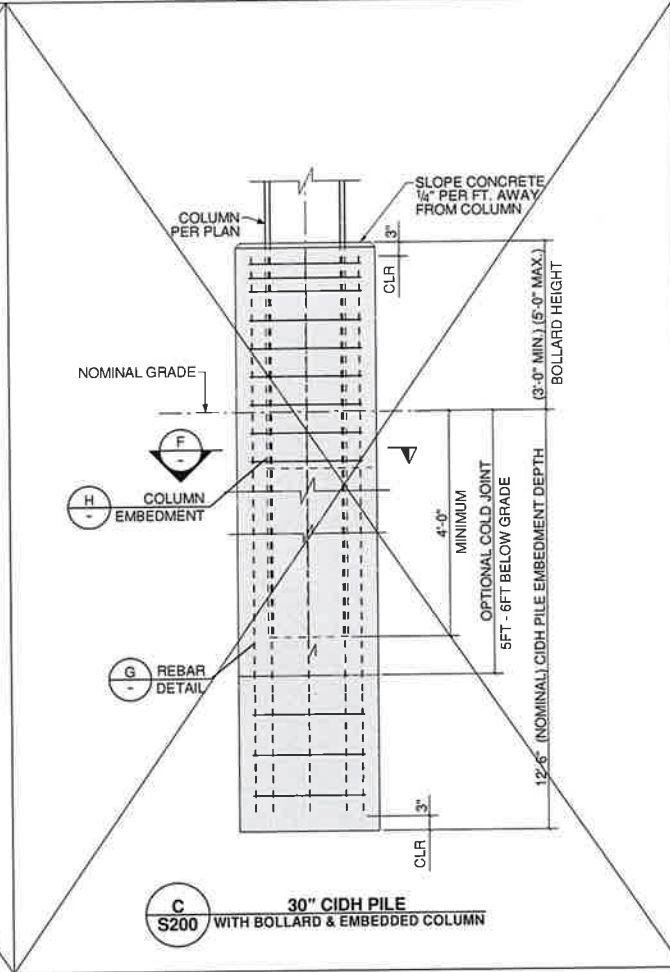
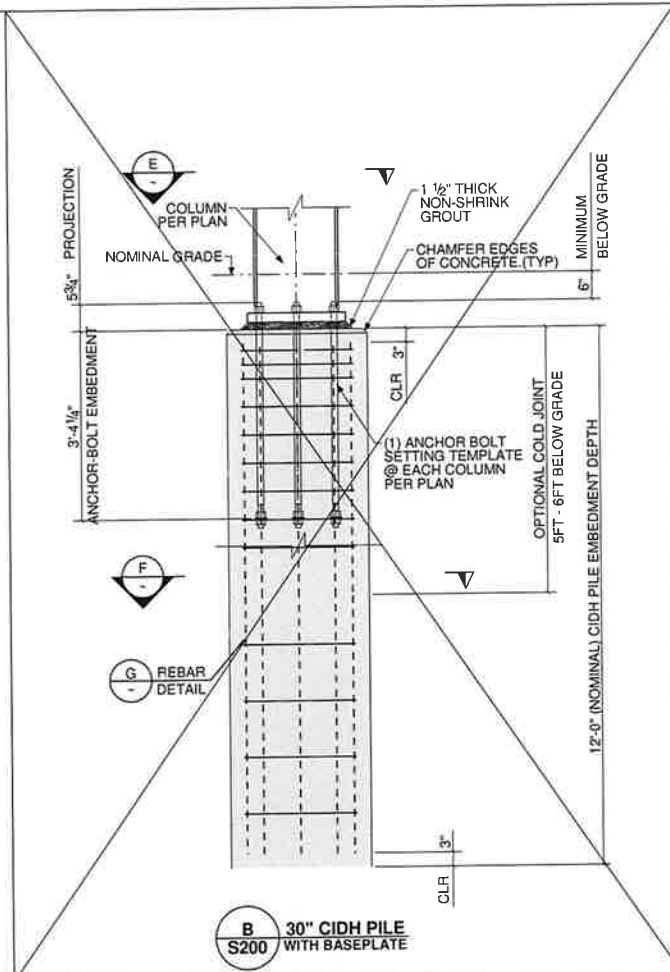
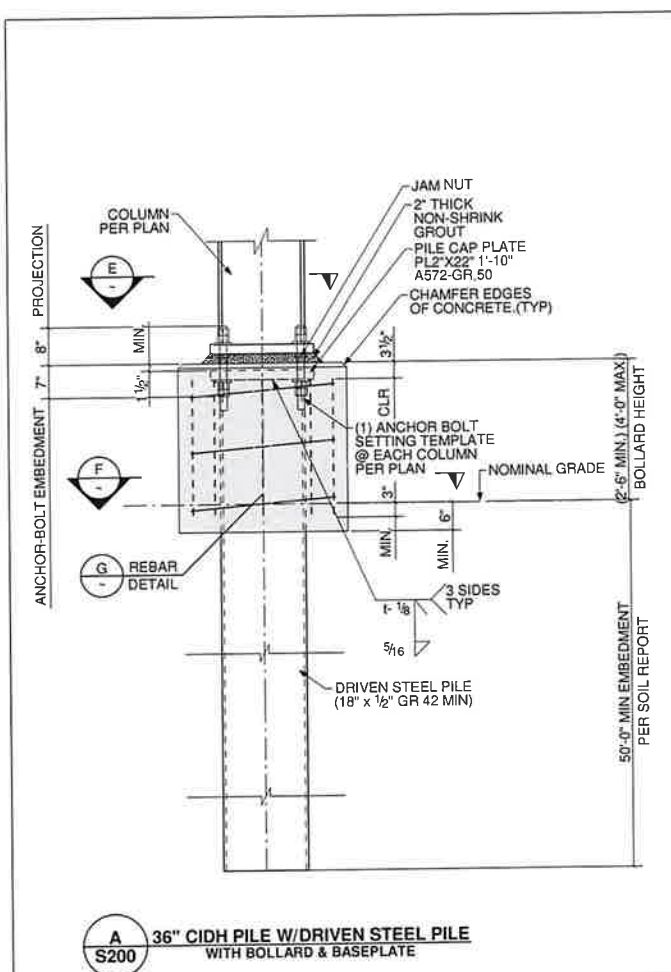
DRAWN BY: ACH
 PROJECT ENGINEER: M. GILLIS
 PROJECT: 24410
 DRAWING FILE: S100-CP1 STRUCTURAL VIEWS & BOM
 PROJECT STEEL FINISH SPEC: Galvanized to ASTM A123
 SURFACE PREP: SSPC-SP6 (U.N.O.)
 ORIGINAL SHEET SIZE 36 X 24
 DO NOT SCALE DRAWING

S100

PRINT DATE:

NO.	DATE	DESCRIPTION / CHANGE NOTICE	BY	CHK
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DRAWN BY: ACH
PROJECT ENGINEER: M. GILLIS
PROJECT: 24410
DRAWING FILE: S200- FOUNDATION DETAILS
PROJECT STEEL FINISH SPEC: Galvanized to ASTM A123
SURFACE PREP: SSPC-SP6 (U.N.O.)
ORIGINAL SHEET SIZE 36 X 24
DO NOT SCALE DRAWING



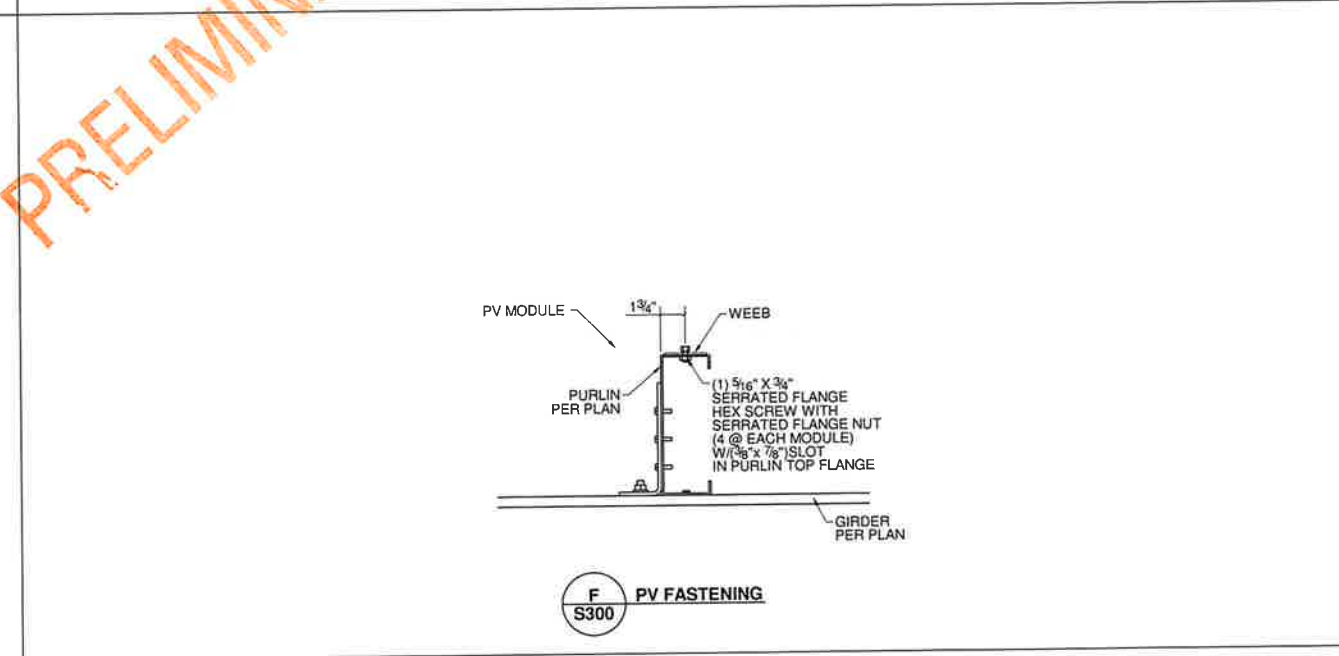
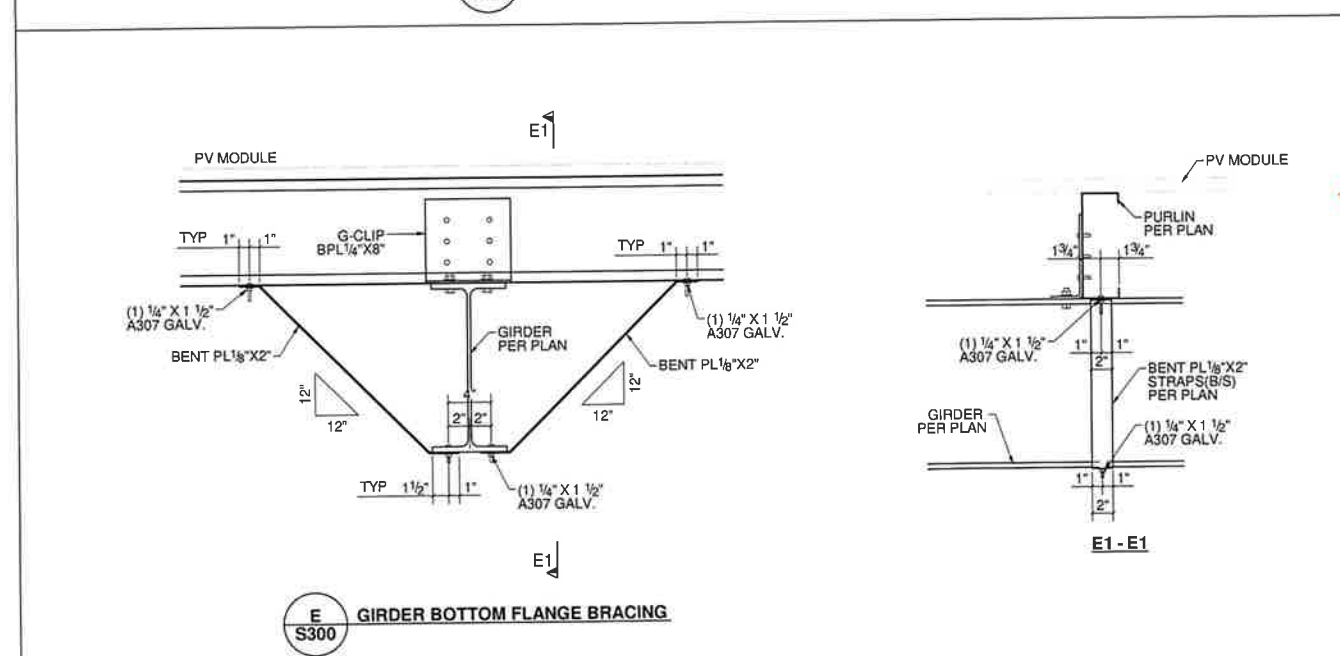
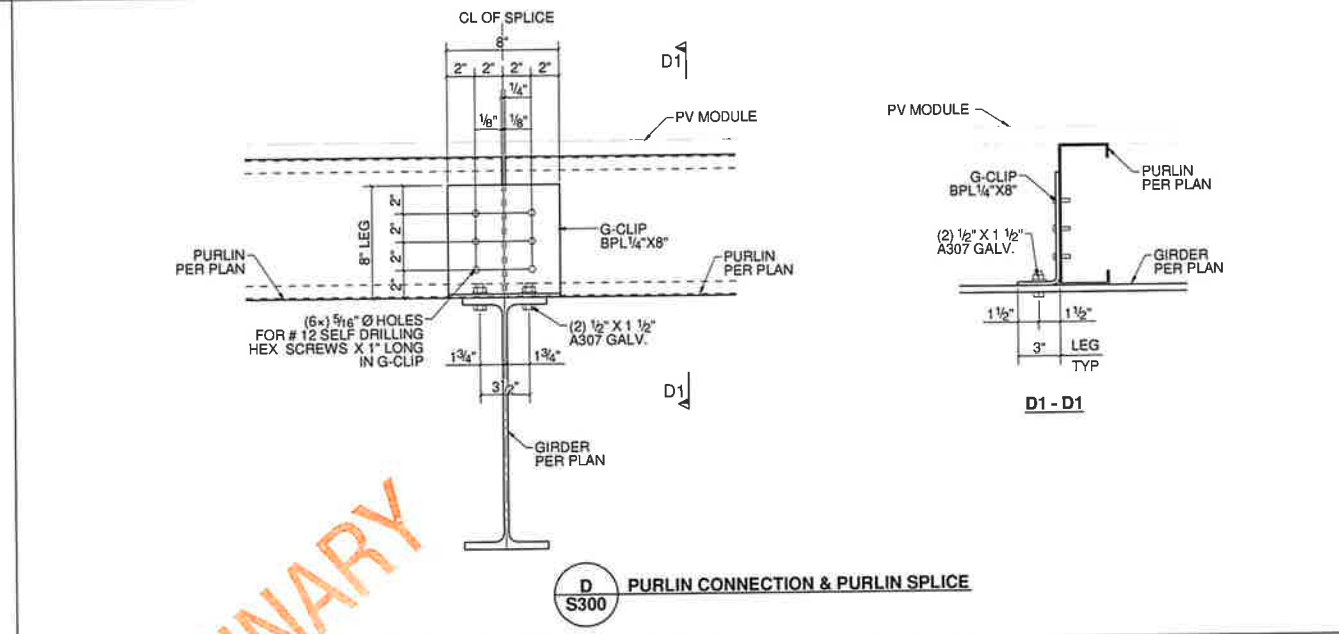
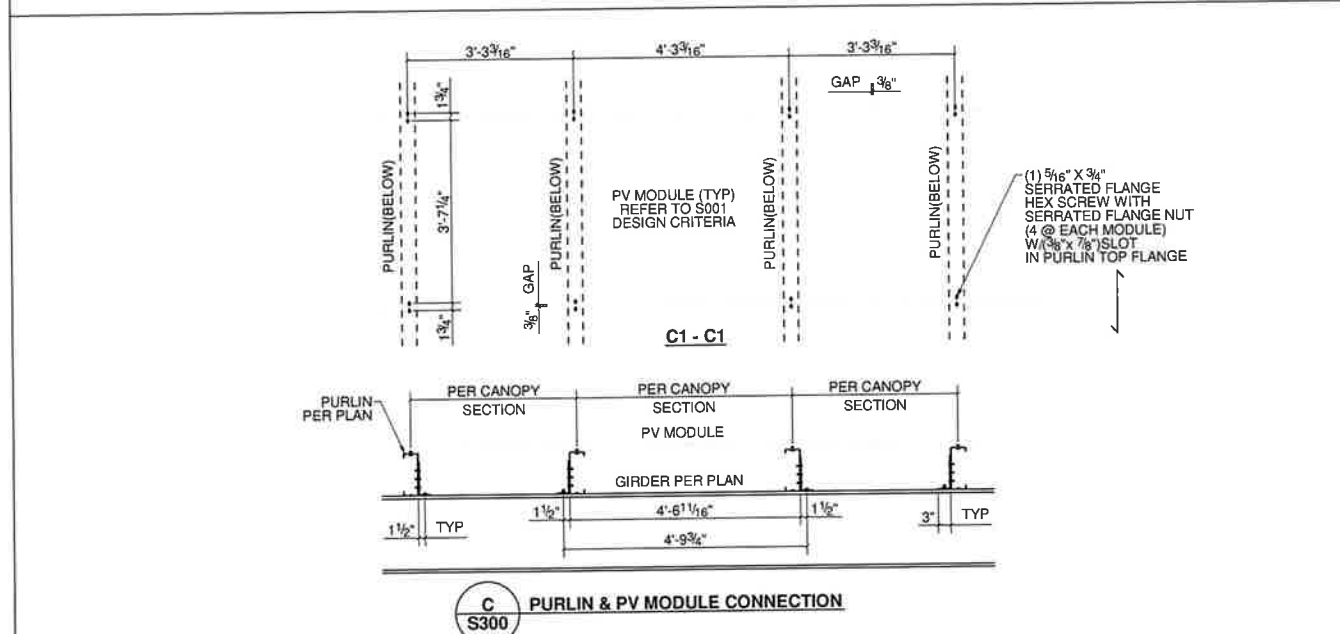
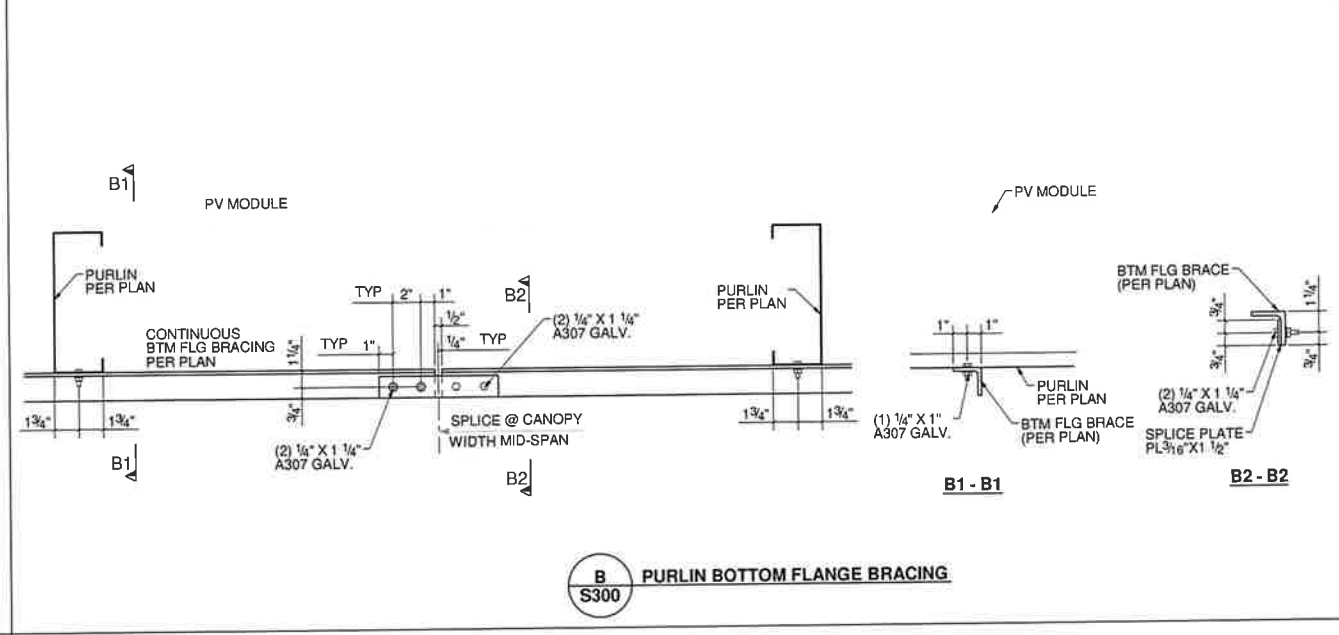
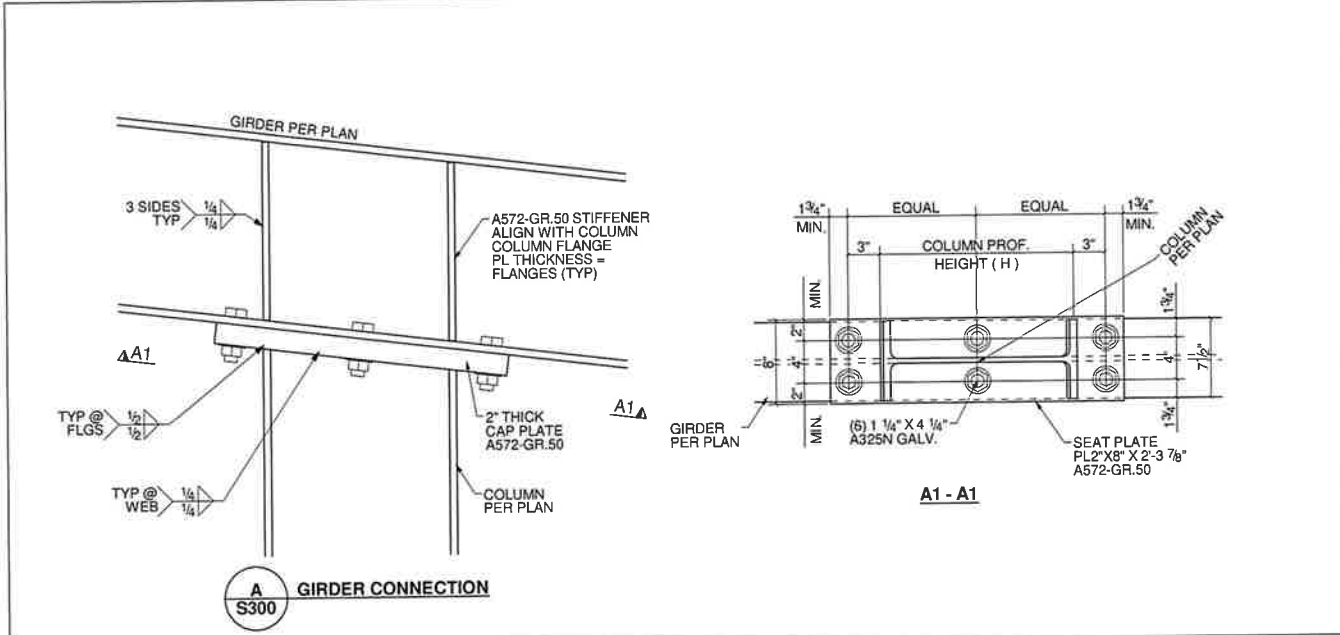
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NO.	DESCRIPTION / CHANGE NOTICE	DATE	DB	CB	ACH	ACH
A	ISSUED FOR INITIAL REVIEW	04/01/2024				
B	ISSUED FOR STAMP AND PERMIT	04/07/2024				

DRAWN BY:
ACH
PROJECT ENGINEER
M. GILLIS
PROJECT:
24410
DRAWING FILE:
S300- STEEL DETAILS
PROJECT STEEL FINISH SPEC:
Galvanized to ASTM A123
SURFACE PREP: SSPC-SP4 (U.N.O.)
ORIGINAL SHEET SIZE 36 X 24
DO NOT SCALE DRAWING

SHEET:

S300



PRELIMINARY



- ELECTRICAL LEDGEN**
1. (N) SMA STP 62-US-41 INVERTER
 2. (N) 600A SUB PANEL
 3. (N) CHRISTY PULL BOX
 4. (N) 600A FUSED DISCONNECT
 5. (E) 600A DISCONNECT
 6. (E) 600A METER/MAIN SERVICE (METER# 1009485969)
 7. (N) (2) 3 1/2" PVC CONDUITS
 8. (N) SILFAB SIL-490 HN MODULES
 9. (N) 1 1/2" PVC (EA. INVERTER)

Licensed Electrician
 Panelized Structures, Inc.
 Tim Pfisterer
 CA 652269
 NV 0074404

[Signature]

NORTH
 W E
 S



Job: RECLAMATION DISTRICT 1601
 SOLAR SYSTEM
 Location: TWITCHELL ISL RD WS 1.3MI S/JACKSON SLU RD
 ELECTRICAL PLAN

NO.	REVISION	DATE

DWG DATE: _____
 APPROVALS SENT DATE: _____
 DRAWN BY: ESD
 CHECKED BY: TP
 SCALE: NONE
 FINAL PLANS DATE: _____
 JOB: _____
 SHEET **PV3** OF _____

PRELIMINARY

Exhibit D

Christopher H. Neudeck

From: Howle, James F <jfhowle@usgs.gov>
Sent: Friday, April 5, 2024 8:54 AM
To: Christopher H. Neudeck
Cc: Wong, Vincent@DWR
Subject: USGS Study at Twitchell Island Levee
Attachments: Twitch.png

CAUTION: This email originated from outside the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good Morning Chris,

My name is Jim Howle and I'm with the U.S. Geological Survey – California Water Science Center. Vincent Wong gave me your contact information and suggested that I contact you.

We are looking for a small study site to ground truth a new drone-mounted (UAV) levee monitoring technology (W-band InSAR). Vincent and DWR engineer David Julian have identified a section of the Twitchell Island levee (highlighted area in the attachment) that would meet our science needs (a paved levee crest that is actively deforming). I was hoping that I could talk with you to discuss the possibility of the USGS conducting a validation study (using terrestrial lidar) in this general area of the Twitchell Island levee.

Thank you for your time and consideration – Jim

Jim Howle – Hydrologist
USGS California Water Science Center
Truckee Field Office
10775 Pioneer Trail, Suite 102
Truckee, CA. 96161

ND-0004 (UNIT A)

ND-0050

ND-0007
(UNIT B)

ND-0009

220400

240400

TWITCHELL
AND

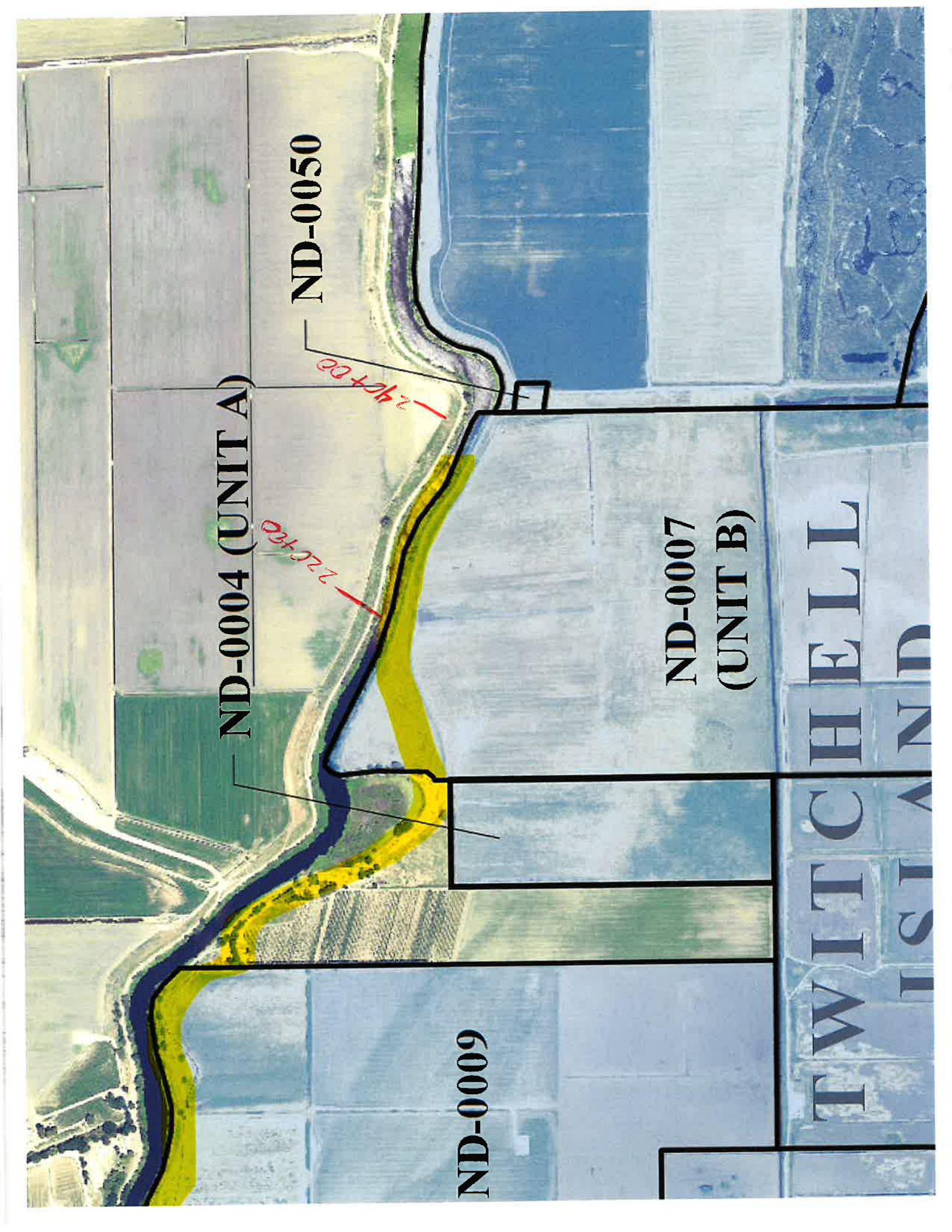


Exhibit E

Aloft InSAR for Levee Inspection

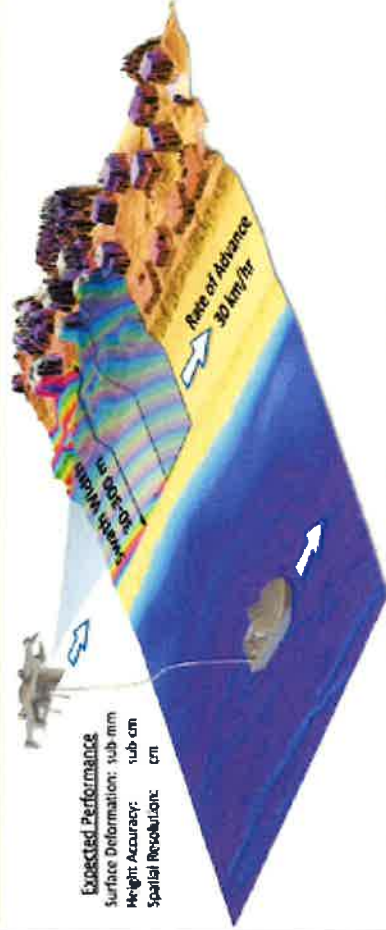
ALOFT SENSING

Aloft Interferometric Synthetic Aperture Radar (InSAR) systems are compact enough to fit onto small drones. Innovative algorithms provide high-resolution, exquisitely sensitive terrain and change detection maps. Two frequency bands support both broad-area and fine-scale infrastructure inspection needs.

Aloft's systems can work stand-alone or coherently across multiple platforms.

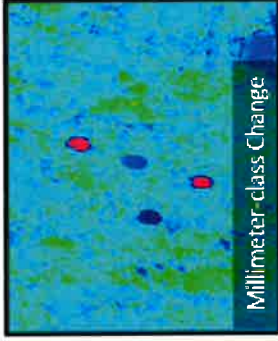
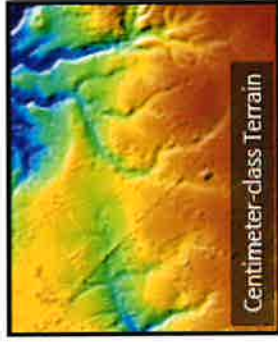


Aloft X-band SAR on Tethered UAS

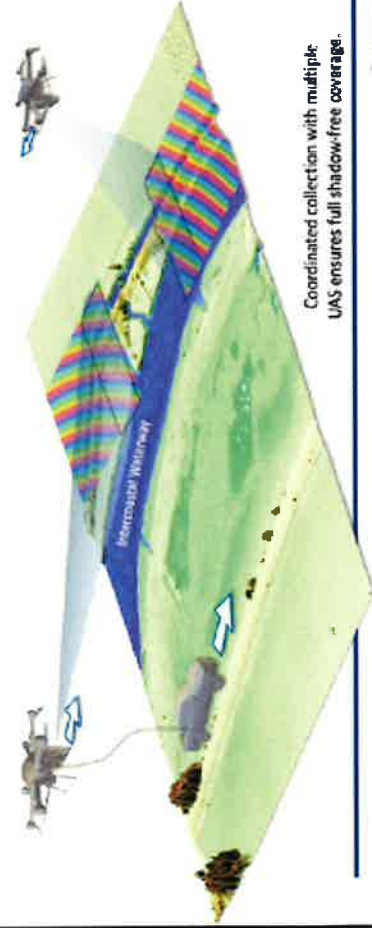


Aloft Mapping Products

X-band: 15-cm resolution, mm change, broad area



Levee Inspection with X-band and W-band InSAR
 (10m-1km swath, sub-mm change accuracy)



Coordinated collection with multiple UAS ensures full shadow-free coverage.

W-band (mm-Wave): 3-cm resolution, sub-mm change, Focused area

