

INFORMATION HANDOUT

WATER QUALITY

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

NATIONWIDE PERMIT CONDITION

MATERIALS INFORMATION

INSTALLATION DETAILS FOR STATE-FURNISHED BATTERY BACKUP SYSTEM
(BBS Cabinet mounting details and wiring details)



Linda S. Adams
Secretary for
Environmental
Protection

California Regional Water Quality Control Board

Central Valley Region

Karl E. Longley, ScD, P.E., Chair

11020 Sun Center Drive #200, Rancho Cordova, California 95670-6114
Phone (916) 464-3291 • FAX (916) 464-4645
<http://www.waterboards.ca.gov/centralvalley>



Arnold
Schwarzenegger
Governor

14 April 2009

Tony Singh
California Department of Transportation
1976 Dr. Martin Luther King Jr. Blvd.
Stockton, CA 95201

**CLEAN WATER ACT §401 TECHNICALLY CONDITIONED WATER QUALITY
CERTIFICATION FOR DISCHARGE OF DREDGED AND/OR FILL MATERIALS FOR THE
MC HENRY LADD SIGNAL PROJECT, (WDID#5B50CR00038) STANISLAUS COUNTY**

WATER QUALITY CERTIFICATION STANDARD CONDITIONS:

1. This certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to §13330 of the California Water Code and §3867 of Title 23 of the California Code of Regulations (23 CCR).
2. This certification action is not intended and shall not be construed to apply to any discharge from any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent certification application was filed pursuant to 23 CCR subsection 3855(b) and the application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.
3. The validity of any non-denial certification action shall be conditioned upon total payment of the full fee required under 23 CCR §3833, unless otherwise stated in writing by the certifying agency.
4. Certification is valid for the duration of the described project. Discharger shall notify the Regional Board in writing within 7 days of project completion.

ADDITIONAL TECHNICALLY CONDITIONED CERTIFICATION CONDITIONS:

In addition to the four standard conditions, the applicant shall satisfy the following:

1. California Department of Transportation shall notify the Board in writing of the start of any in-water activities.
2. Except for activities permitted by the U.S. Army Corps under §404 of the Clean Water Act, soil, silt, or other organic materials shall not be placed where such materials could pass into surface water or surface water drainage courses.

California Environmental Protection Agency

3. The discharge of petroleum products or other excavated materials to surface water is prohibited.
4. Activities shall not cause turbidity increases in surface water to exceed:
 - (a) where natural turbidity is between 0 and 5 Nephelometric Turbidity Units (NTUs), increases shall not exceed 1 NTU;
 - (b) where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent;
 - (c) where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs;
 - (d) where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent.

Except that these limits will be eased during in-water working periods to allow a turbidity increase of 15 NTU over background turbidity as measured in surface waters 300 feet downstream from the working area. In determining compliance with the above limits, appropriate averaging periods may be applied provided that beneficial uses will be fully protected.

5. Activities shall not cause settleable matter to exceed 0.1 ml/l in surface waters as measured in surface waters 300 feet downstream from the project.
6. Activities shall not cause visible oil, grease, or foam in the work area or downstream.
7. All areas disturbed by project activities shall be protected from washout or erosion.
8. In the event that project activities result in the deposition of soil materials or creation of a visible plume in surface waters, the following monitoring shall be conducted immediately upstream and 300 feet downstream of the work site and the results reported to this office within two weeks:

Parameter	Unit	Type of Sample	Frequency of Sample
Turbidity	NTU	Grab	Every 4 hours during in water work
Settleable Material	ml/l	Grab	Same as above.

9. California Department of Transportation shall notify the Board immediately if the above criteria for turbidity, settleable matter, oil/grease, or foam are exceeded.
10. California Department of Transportation shall notify the Board immediately of any spill of petroleum products or other organic or earthen materials.
11. California Department of Transportation shall comply with all Department of Fish and Game 1600 requirements for the project.

12. California Department of Transportation must obtain coverage under the NPDES General Permit for Storm Water Discharges Associated with Construction Activities issued by the State Water Resources Control Board.

REGIONAL WATER QUALITY CONTROL BOARD CONTACT PERSON:

Daniel Worth, Environmental Scientist
11020 Sun Center Drive #200
Rancho Cordova, California 95670-6114
(916) 464-4709
dworth@waterboards.ca.gov

WATER QUALITY CERTIFICATION:

I hereby issue an order certifying that any discharge from California Department of Transportation; Mc Henry Ladd Signal Project (WDID#5B50CR00038) will comply with the applicable provisions of §301 ("Effluent Limitations"), §302 ("Water Quality Related Effluent Limitations"), §303 ("Water Quality Standards and Implementation Plans"), §306 ("National Standards of Performance"), and §307 ("Toxic and Pretreatment Effluent Standards") of the Clean Water Act. This discharge is also regulated under State Water Resources Control Board Water Quality Order No. 2003-0017 DWQ "Statewide General Waste Discharge Requirements For Dredged Or Fill Discharges That Have Received State Water Quality Certification (General WDRs)".

Except insofar as may be modified by any preceding conditions, all certification actions are contingent on (a) the discharge being limited and all proposed mitigation being completed in strict compliance with the applicant's project description and the attached Project Information Sheet, and (b) compliance with all applicable requirements of the Regional Water Quality Control Board's Water Quality Control Plan (Basin Plan).


for Pamela C. Creedon
Executive Officer

Enclosure: Project Information

cc: U.S. Army Corps of Engineers, Sacramento
Dave Smith, Wetlands Section Chief (WTR-8), U.S. Environmental Protection Agency,
Region 9, San Francisco
U.S. Fish & Wildlife Service, Sacramento
Bill Orme, 401 Certification and Wetlands Unit Chief, State Water Resources Control Board,
Sacramento
Jeff Drongesen, Department of Fish and Game, Sacramento
Bill Jennings, CA Sportfishing Protection Alliance, Stockton
Laura Peterson-Diaz, Department of Fish and Game, Fresno

PROJECT INFORMATION

Application Date: 2 February 2009

Applicant: Tony Singh
California Department of Transportation
1976 Dr. Martin Luther King Jr. Blvd.
Stockton, CA 95201

Project Name: Mc Henry Ladd Signal Project

Application Number: WDID#5B50CR00038

U.S. Army Corps File Number: Non-reporting NW#14

Type of Project: Road modification and culvert replacement

Project Location: Section 28, Township 2 South, Range 9 East, MDB&M. Latitude: 37°37'30" and Longitude: 120°52'30".

County: Stanislaus County

Receiving Water(s) (hydrologic unit): Modesto Irrigation Canal, San Joaquin Hydrologic Basin, San Joaquin Valley Floor Hydrologic Unit #535.30, Riverbank HA

Water Body Type: Existing irrigation canal/streambed

Designated Beneficial Uses: The Basin Plan for the Central Valley Regional Board has designated beneficial uses for surface and ground waters within the region. Beneficial uses that could be impacted by the project include: Municipal and Domestic Water Supply (MUN); Agricultural Supply (AGR); Industrial Supply (IND), Hydropower Generation (POW); Groundwater Recharge, Water Contact Recreation (REC-1); Non-contact Water Recreation (REC-2); Warm Freshwater Habitat (WARM); Cold Freshwater Habitat (COLD); and Wildlife Habitat (WILD).

Project Description (purpose/goal): The proposed project is designed to improve the safety of the traveling public by reducing collisions along SR 108. Traffic signals will be installed at the intersection of McHenry Avenue and Patterson Road. Additionally, the work proposes to widen SR 108 to provide a right-turn exclusive lane on McHenry Avenue for northbound traffic, and a left-turn exclusive lane on Patterson Road for westbound traffic. The existing irrigation canal structure on McHenry Avenue (east side structure only) will need to be demolished and reconstructed beyond the Clear Recovery Zone (20.0'). The project plans also include the extension of the Dr. Moore Lateral culvert along SR 108. This culvert transports the water in the above mentioned irrigation canal under McHenry Avenue, and will be extended to accommodate the widening of the road.

Preliminary Water Quality Concerns: The construction activities may impact surface waters with increased turbidity and settleable matter.

Proposed Mitigation to Address Concerns: California Department of Transportation will implement Best Management Practices (BMPs) to control sedimentation and erosion. All temporary affected areas will be restored to pre-construction contours and conditions upon completion of construction activities. California Department of Transportation will conduct turbidity and settleable matter testing during in water work, stopping work if Basin Plan criteria are exceeded or are observed.

Fill/Excavation Area: This project will temporarily impact 0.023 acre of United States Waters. The widened road will be constructed over 0.004 acre of United States Waters, and 26 cubic yards of reinforced concrete fill will be used in construction.

Dredge Volume: None

U.S. Army Corps of Engineers Permit Number: Nationwide Permit #14

Department of Fish and Game Streambed Alteration Agreement: The California Department of Fish and Game will not be issuing a Streambed Alteration Agreement for this project.

Possible Listed Species: None

Status of CEQA Compliance: The California Department of Transportation approved the Categorical Exemption for this project on 19 September 2008.

Compensatory Mitigation: Temporary impacts to 0.023 acre of United States Waters will be restored to original conditions.

Application Fee Provided: Total fees of \$714.00 have been submitted as required by 23 CCR §3833b(3)(A) and by 23 CCR §2200(e).

DISTRIBUTION LIST

U.S. Army Corp of Engineers
Sacramento District Office
Regulatory Section, Room 1480
1325 J Street
Sacramento, CA 95814-2922

Dave Smith
Wetlands Section Chief (W-3)
United States Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA 94105

United States Fish & Wildlife Service
Sacramento Fish & Wildlife Office
2800 Cottage Way
Sacramento, CA 95825

Jeff Drongesen
Department of Fish and Game
1701 Nimbus Road, Suite A
Rancho Cordova, CA 95670

Bill Orme
State Water Resources Control Board
401 Certification and Wetlands Unit Chief
P.O. Box 100
Sacramento, CA 95814

Bill Jennings
CA Sportfishing Protection Alliance
3536 Rainier Avenue
Stockton, CA 95204

Laura Peterson-Diaz
Department of Fish and Game
1234 East Shaw Avenue
Fresno, CA 93710

Nationwide Permit Application

Project Information

District: 10 **Project Name:** Mc Henry/ Ladd Signals
County: Stanislaus **Project EA:** 10-0N440
Route: 108 **Post Miles:** 28.7- 29.3
Project Manager: Tony Singh **Phone No:** (209) 948-7058
Project Biologist: Kriti Uppal **Phone No:** (209) 932-2371
7.5-Minute Quad: Riverbank **Waterbody/ Watershed:** Modesto Irrigation Canal

Latitude/Longitude: 37° 37'30"/120 ° 52'30"

Nationwide Permit requested: #14 (Linear Transportation Projects)

Project Description:

This Project proposes to install traffic signals on the SR (State Route) 108 intersections at McHenry Avenue and the Patterson Road in Stanislaus County. The work also proposes to widen SR 108 to provide a right- turn exclusive lane on McHenry Avenue northbound traffic and a left- turn exclusive lane on Patterson road westbound traffic. To widen SR 108, existing power poles along the south side of Patterson Road (SR108) will need to be relocated and the existing irrigation canal structure on McHenry Avenue (right side structure only) will need to be demolished and reconstructed beyond the Clear Recovery Zone (20.0')

Project Purpose and Need:

The need for this project is to address an identified pattern of broadside collisions occurring at this location. The purpose is to improve the safety of the traveling public by reducing the occurrence of broadside collisions. The Project proposes to install traffic signals on SR-108 at McHenry Avenue and Patterson Road, respectively.

Lead Federal Agency: Caltrans (under NEPA Delegation)

Federal Endangered Species Act (FESA): The above activities will have no effect to any federally listed threatened or endangered species. No critical habitat will be affected.

Permit Being Requested (Check one)

Reporting Nationwide Permit Non-Reporting NWP

Corps Authority Information

Section 404: A Section 404 permit is required from the ACOE when a project requires fill or other modification of waters of the U.S. Wetlands and Other Waters of the U.S. are regulated under Section 404 of the Federal Clean Water Act. The project plans include the extension of the Dr. Moore Lateral culvert along SR 132 at the southern end of the project footprint, which requires ACOE Section 404 permit. The proposed project qualifies for a Non-Reporting Nationwide Permit #14 (Linear Transportation Projects).

Minimal impact criteria

The project will result in minimal impacts to the aquatic environment. The contractor must take steps to eliminate potential impacts as directed in Caltrans' Standard Specifications. The contractor is also required to implement a Storm Water Pollution Prevention Plan and a Water Pollution Control Plan.

To address any potential impacts that may be associated with the construction of the proposed project, Best Management Practices (BMPs) must be implemented as described in the Storm Water Project Planning and Design Guide. The contractor must take steps to eliminate all pollutant storm water discharges and all non-storm water discharges.

- 1-No work will be conducted outside of the project limits.
- 2-Construction activities will be scheduled during low flow conditions for Modesto Irrigation Canal in order to minimize temporal turbidity and unnecessary ground disturbance.
- 3- Prior to any tree removal, Caltrans biology will construct pre-construction surveys to ensure that the trees slated for removal are free of nesting birds as required in the Federal Migratory Bird Treaty Act during the time frame of February 15 through September 1.
- 4- If staging areas for equipment storage are needed, Caltrans biology must approve these staging areas prior to use, or the contractor must supply environmental clearance (if the staging area/areas are located outside of the identified Caltrans right of way.)
- 5- The contractor shall at all times adhere to Caltrans' Standard BMP's to ensure minimal to no impact to water quality.

If adequate measures and precautions were used, the proposed project would not adversely affect the water quality in the project area.

Permit Compliance Information

Compliance with Nationwide General Conditions:

1. Navigation: There are no navigable waterways within the project study area that will be affected by construction activities. There will be no effects on navigation.
2. Aquatic Life Movement: No disruption of aquatic life movement will take place as a result of this project. Near normal downstream flows will be maintained to the greatest extent possible. All work associated with construction activities will take place during low-flow conditions and/or dry season.
3. Spawning Areas: There are no spawning areas within the project area.
4. Migratory Bird Breeding Areas: There are not designated waterfowl breeding areas within or adjacent to the project study area.
5. Shellfish Beds: There are no areas of concentrated shellfish production within the project study area.
6. Suitable Material: Fill will meet suitable material standards and will be free from toxic pollutants. Fill will be limited to the minimal amount necessary to accomplish the project.
7. Water Supply Intakes: There will be no discharge of dredged or fill material in the proximity of a public water supply intake.
8. Adverse Effects From Impoundments: Impoundments will not be included in construction activities. Adverse effects will not result from impoundments.
9. Management of Water Flows: The project is designed to maintain pre-construction downstream flow conditions. The project will not permanently restrict or impede the passage of normal or expected high water flows.

10. Fills within 100-Year Floodplains: As defined in 23 CFR Section 650.105(q), the project does not constitute a significant floodplain encroachment.
11. Equipment: Minimization measures will be taken to avoid soil disturbance in the irrigation ditches.
12. Soil Erosion and Sedimentation Controls: Caltrans' standard erosion controls will be utilized to prevent soil erosion and prevent sedimentation.
13. Removal of Temporary Fills: The temporary fill used in this project will be removed and the fill area will be returned to pre-existing elevations and contours.
14. Proper Maintenance: The maintenance of the roadway will be the responsibility of Caltrans.
15. Wild and Scenic Rivers: There are no wild and scenic rivers within the project area
16. Tribal Rights: There are no tribal rights issues within the project area.
17. Endangered Species: No threatened or endangered species will be impacted as a result of this project.
18. Historic Properties: There are no historic properties listed, or eligible for listing, in the National Register of Historic Places within the project area.
19. Designated Critical Waters: There are no designated critical resource waters within the project area.
20. Mitigation: This project has been designed to avoid and minimize adverse effects to Waters of the U.S. to the maximum extent possible.
21. Water Quality: A 401-certification package has been completed and will be submitted to the State Regional Water Quality Control Board.
22. Coastal Zone Management: Does not apply to this project.
23. Regional and Case-by-Case Conditions: Any regional or case specific conditions added by the ACOE or the RWQCB in its 401 Certification will be complied with. The proposed project does not occur within the vicinity or manner of any Regional Conditions outlined by the ACOE.
24. Use of Multiple Nationwide Permits: Caltrans is only applying for a NWP # 14 for this project.
25. Transfer of Nationwide Permit Verification: If property is sold, the permit may be transferred to the new owner and the Corps office will be notified.
26. Compliance Certification: Caltrans will submit a signed certification regarding the completed work and the required mitigation to ACOE.
27. Pre-construction Notification: A Preconstruction Notification (PCN) is not required for NWP #14 as the loss of waters of the United States does not exceed 1/10 of an acre and there is no discharge in aquatic site including wetlands.

Nationwide Permit Requested

Nationwide Permit #14 (Linear Transportation Projects)

Activities required for the construction, expansion, modification, or improvement of linear transportation projects (e.g., roads, highways, railways, trails, airport runways, and taxiways) in waters of the United

States. For linear transportation projects in non-tidal waters, the discharge cannot cause the loss of greater than 1/2-acre of waters of the United States.

Project Impact Information (area affected in acres)

Wetlands (permanent): 0.0
Wetlands (temporary): 0.0
Waters of the U.S. (permanent): 0.004
Waters of the U.S. (temporary): 0.023

Project Mitigation Information

No mitigation is required.

Avoidance and Minimization Measures include:

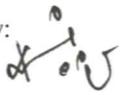
This project has been designed to avoid and minimize adverse effects to waters of the U.S. to the maximum extent practicable at the project site.

The following avoidance and minimization measures would be followed to protect the natural resources:

- 1-No work will be conducted outside of the project limits.
- 2-Construction activities will be scheduled during low flow conditions for canal in order to minimize temporal turbidity and unnecessary ground disturbance.
- 3-Prior to any tree removal, Caltrans biology will construct pre-construction surveys to ensure that the trees slated for removal are free of nesting birds as required in the Federal Migratory Bird Treaty Act during the time frame of February 15 through September 1.
- 4- If staging areas for equipment storage are needed, Caltrans biology must approve these staging areas prior to use, or the contractor must supply environmental clearance (if the staging area/areas are located outside of the identified Caltrans right of way.)
- 5- The contractor shall at all times adhere to Caltrans' Standard BMP's to ensure minimal to no impact to water quality.

Based on the information provided above, I hereby certify that this project qualifies for a nationwide permit pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344), Section 10 of the U.S. Rivers and Harbors Act (33 U.S.C. 406), and the District of the Engineer of the U.S. Army Corps of Engineers.

Prepared By:


Kriti Uppal
Environmental Planner, Natural Science
NSJVEM Branch

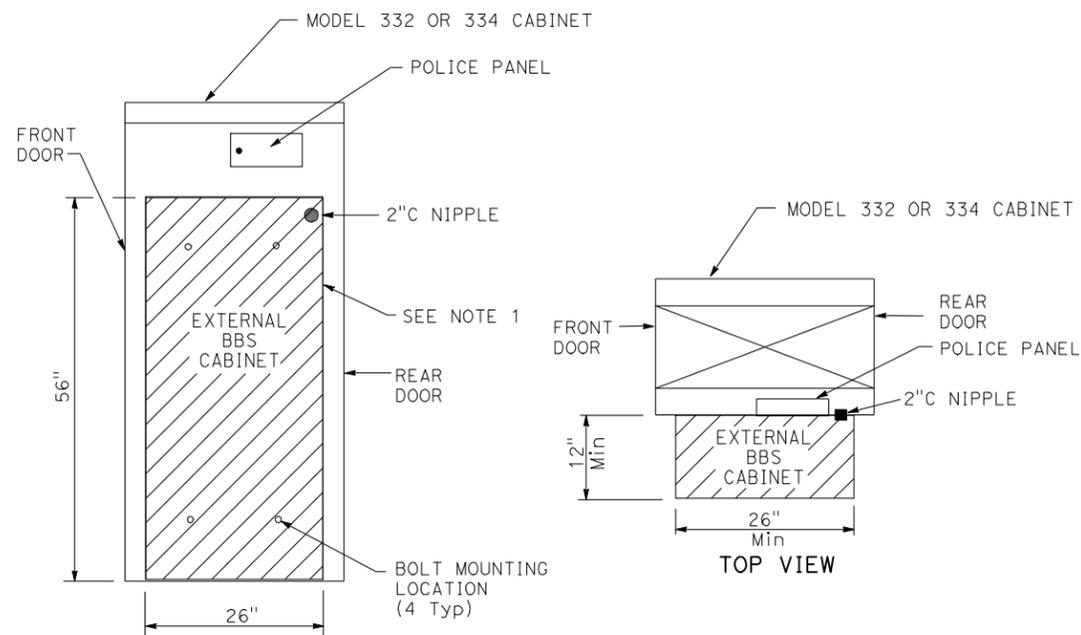
Date: 12/29/08

Approved By:


Project Manager
Tony Singh

Date: 12/29/08

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
Theresa Gabriel			12-20-07	REGISTERED PROFESSIONAL ENGINEER	
REGISTERED ELECT ENGINEER			DATE	Theresa A. Gabriel	
PLANS APPROVAL DATE				No. E15129	
				Exp. 6-30-10	
				ELECT	
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.					

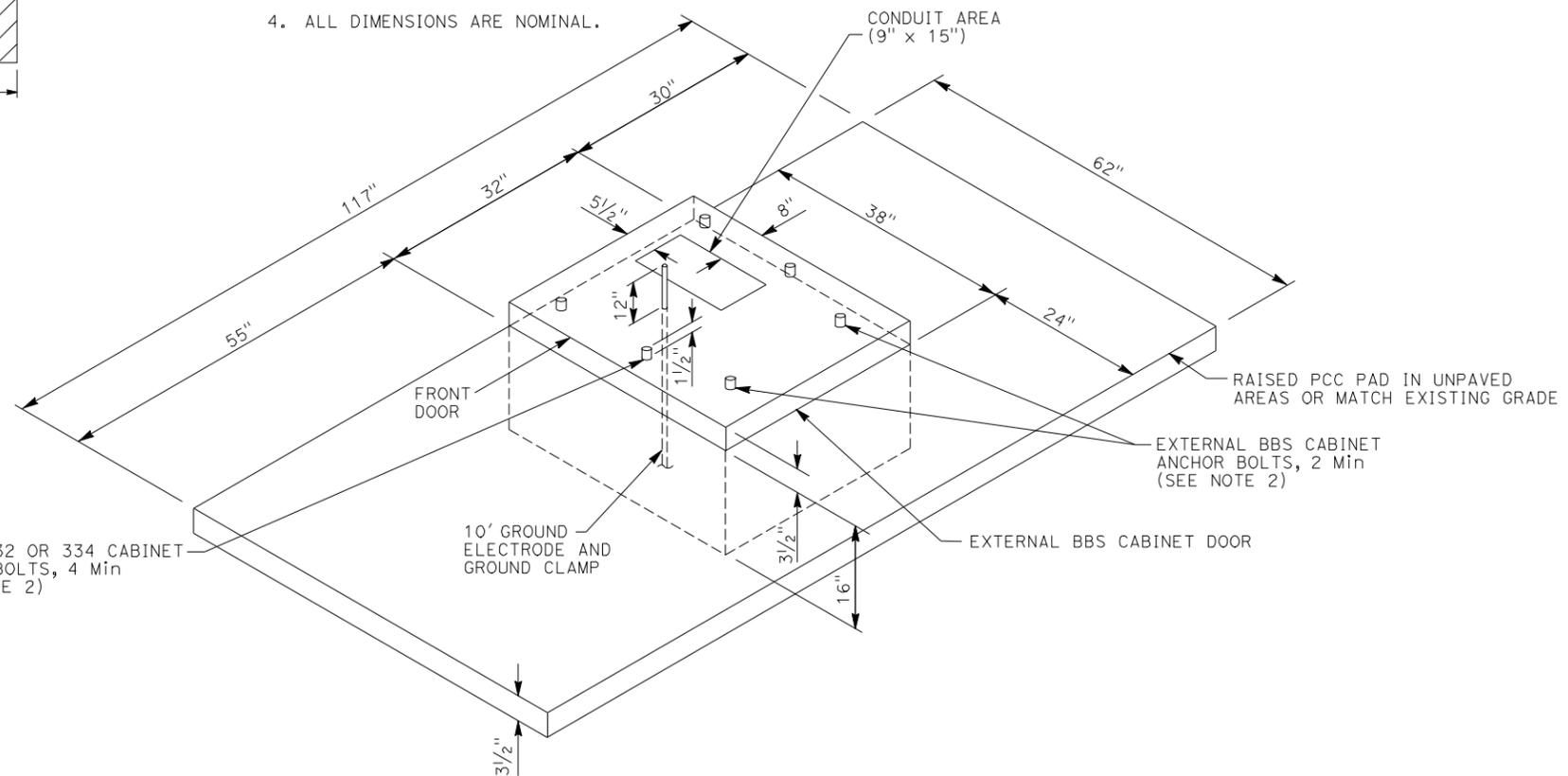


SIDE VIEW

EXTERNAL BBS CABINET MOUNTED TO THE MODEL 332 OR 334 CABINET

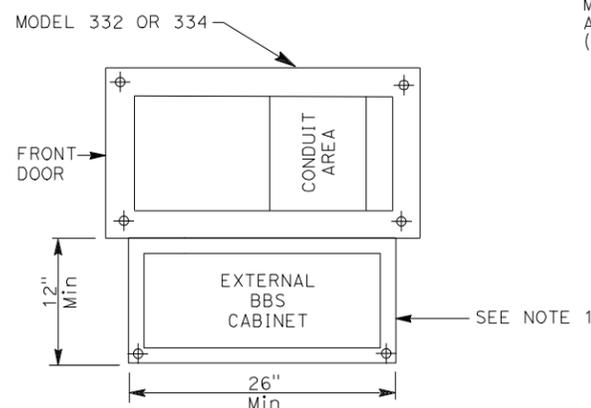
NOTE: (THIS SHEET ONLY)

1. THE EXTERNAL BBS CABINET SHALL BE MOUNTED TO THE MODEL 332 OR 334 CABINET WITH FOUR 18-8 STAINLESS STEEL HEX HEAD, FULLY-THREADED, 3/8"-16 X 1" BOLTS; TWO WASHERS PER BOLT, DESIGNED FOR 3/8" BOLTS AND ARE 18-8 STAINLESS STEEL, 1" OUTSIDE DIAMETER, ROUND, AND FLAT; AND ONE K-LOCK NUT PER BOLT THAT IS 18-8 STAINLESS STEEL AND A HEX-NUT. THE ENGINEER WILL HAVE TO APPROVE THE BOLT MOUNTING LOCATION PRIOR TO INSTALLATION.
2. THE ANCHOR BOLTS SHALL BE 3/4" Dia X 15" WITH A 2"-90° BEND. THE CABINET MANUFACTURER'S SPECIFICATION SHALL DETERMINE THE LOCATION OF THE ANCHOR BOLTS IN THE FOUNDATION. THE ENGINEER WILL HAVE TO APPROVE THE ANCHOR BOLTS AND ITS LOCATION IN THE FOUNDATION PRIOR TO CONSTRUCTION.
3. THE CONTRACTOR SHALL VERIFY THE DIMENSIONS OF THE BBS CABINET PRIOR TO CONSTRUCTING THE FOUNDATION OF THE MODIFIED PORTION OF THE S+D MODEL 332 AND 334 CABINET FOUNDATION. THE ENGINEER WILL HAVE TO APPROVE ANY NECESSARY DEVIATIONS PRIOR TO CONSTRUCTION.
4. ALL DIMENSIONS ARE NOMINAL.



MODIFIED MODEL 332 AND 334 CABINET FOUNDATION DETAIL FOR BATTERY BACKUP SYSTEM (BBS)

(FOR DIMENSIONS AND DETAILS NOT SHOWN AND ADDITIONAL NOTES, SEE SHEET ES-3C OF THE STANDARD PLANS FOR MODEL 332 AND 334 CABINETS)



BASE PLAN FOR BBS MOUNTED TO THE MODEL 332 OR 334 CABINET

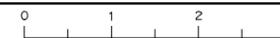
(FOR DIMENSIONS AND DETAILS NOT SHOWN, SEE SHEET A6-1 TO A6-4, CABINET HOUSING DETAILS OF THE TRANSPORTATION ELECTRICAL EQUIPMENT SPECIFICATION (TEES))

ELECTRICAL SYSTEMS (BBS FOUNDATION DETAILS)

NO SCALE

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

RELATIVE BORDER SCALE 15 IN INCHES



USERNAME => trmnguye
DGN FILE => BBS Foundation.dgn

CU 00000

EA 000000

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Et Gibbons
 REVISIONS: x
 REVISOR: x
 DATE: x
 CHECKED BY: x
 DESIGNED BY: x
 SUPERVISOR: x
 TRANSPORTATION: x
 LAST REVISION: 12-20-07
 DATE PLOTTED: 03-DEC-2008
 TIME PLOTTED: 08:56

LEGEND: (THIS SHEET ONLY)

PTS = POWER TRANSFER SWITCH
 UPS = UNINTERRUPTIBLE POWER SUPPLY
 UPSC = UNINTERRUPTIBLE POWER SUPPLY CONTROLLER
 UPSM = UPS MODE
 BP = BYPASS
 MBPS = MANUAL BYPASS SWITCH
 AC+ = UNGROUNDED CONDUCTOR
 AC- = GROUNDED CONDUCTOR
 C = COMMON
 Grn = GREEN
 Blk = BLACK
 Wht = WHITE
 SF = STATE-FURNISHED
 TB = TERMINAL BOARD
 Cntl = CONTROL
 Gnd = GROUND
 Temp = TEMPERATURE
 Batt = BATTERY

NOTES: (THIS SHEET ONLY)

- TYPE A REFERS TO THE BBS EQUIPMENT FROM MANUFACTURER A.
- CASE-1 REFERS TO THE SITUATION WHEN THE ENTIRE BBS EQUIPMENT INCLUDING THE BATTERIES ARE INSTALLED IN THE BBS CABINET.
- THE LOCATION OF THE 2" NIPPLE WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.
- THE CONTRACTOR SHALL FURNISH AND INSTALL A NEMA-1 ENCLOSURE WITH 30 A, 1P, 120/240 VOLTS RATED CIRCUIT BREAKER MANUFACTURED PER UL STANDARD 489.
- A TEMPERATURE PROBE SHALL BE ATTACHED TO THE BATTERY BY TAPE OR ATTACHED TO THE NEGATIVE TERMINAL OF THE BATTERY.
- THE ELECTRICAL POWER FOR THE COOLING FAN FOR THE BBS CABINET SHALL BE TAPPED FROM THE BOTTOM OF THE TB IN THE 332 CABINET.
- THE CONTRACTOR SHALL PROVIDE A 9-WIRE WIRING HARNESS OR BUNDLED 9 MULTICOLOR CONDUCTORS, #18 AWG WIRES FROM THE RELAY ON THE INVERTER/CHARGER UNIT TO THE CONTROLLER. THE ENDS OF THE CONDUCTORS SHALL BE INSULATED WITH TAPE AND A SIX-FOOT COIL ON EACH END.

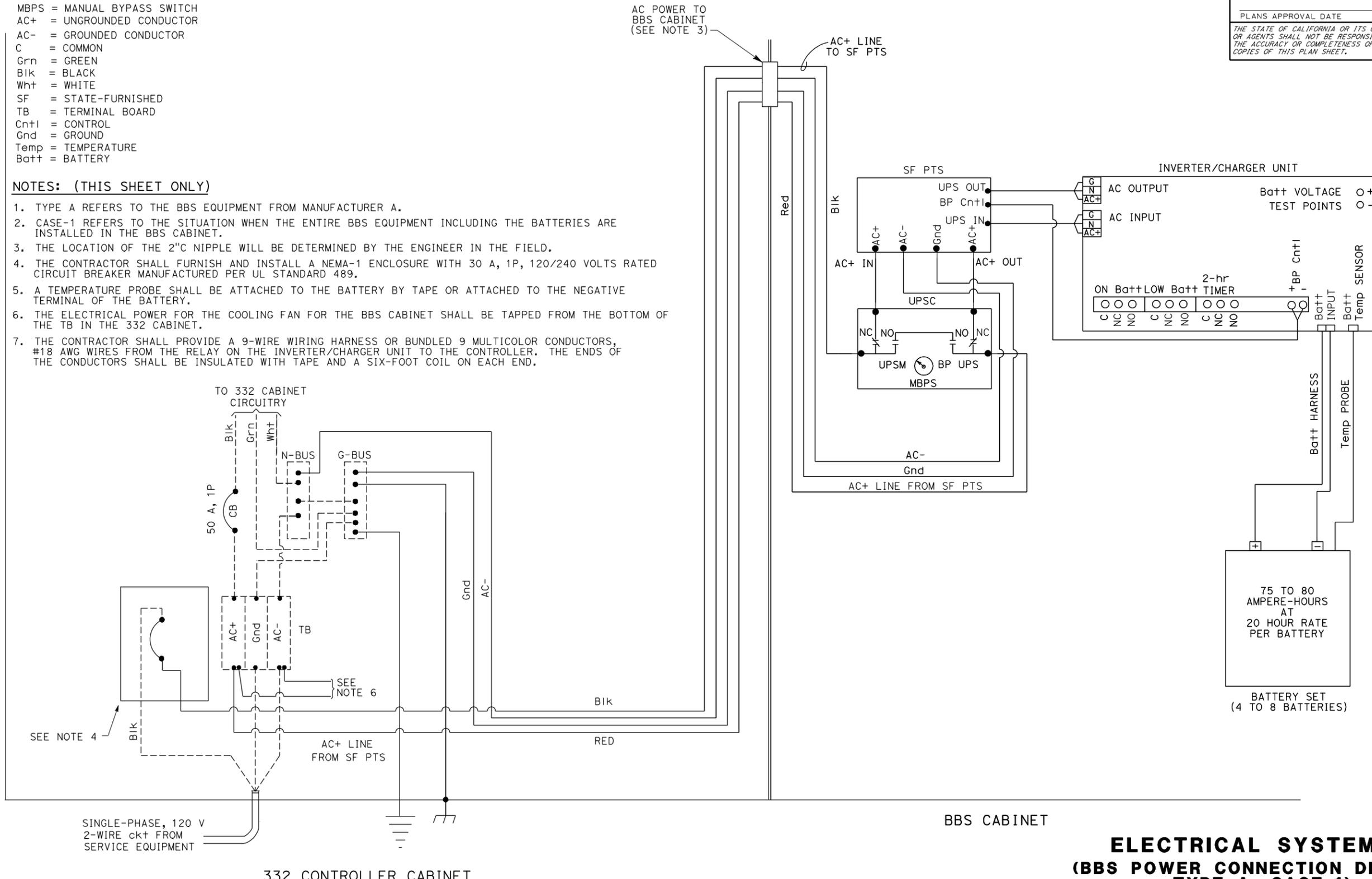
Dist	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No.	TOTAL SHEETS

Theresa Gabriel 12-20-07
 REGISTERED ELECTRICIAN DATE

PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER
 Theresa A. Gabriel
 No. E15129
 Exp. 6-30-10
 ELECT
 STATE OF CALIFORNIA

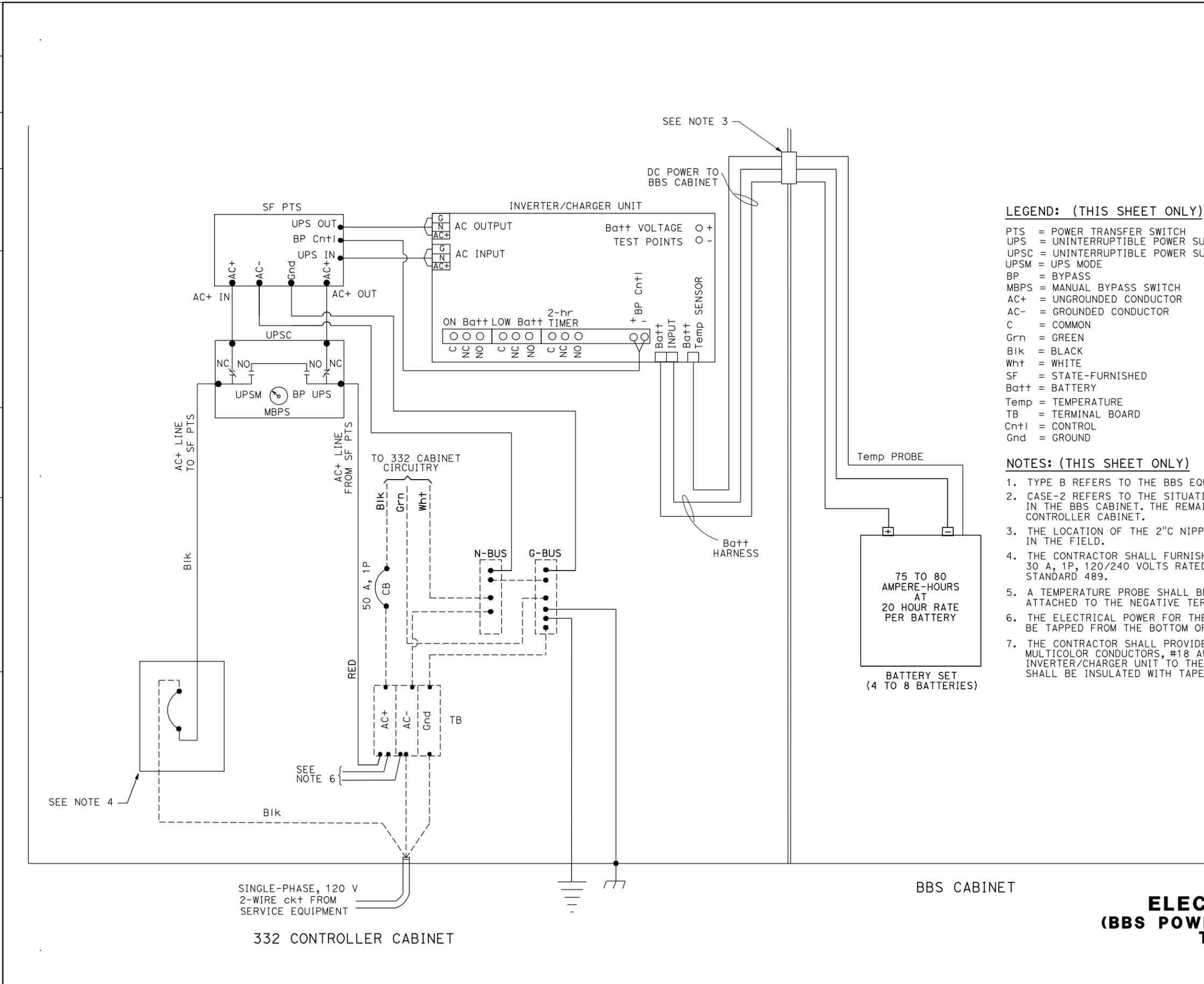


**ELECTRICAL SYSTEMS
 (BBS POWER CONNECTION DIAGRAM,
 TYPE A, CASE-1)**

NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

Theresa Gabriel 12-20-07
 REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

Theresa A. Gabriel
 No. E15129
 Exp. 6-30-10
 ELECT
 STATE OF CALIFORNIA

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LEGEND: (THIS SHEET ONLY)

- PTS = POWER TRANSFER SWITCH
- UPS = UNINTERRUPTIBLE POWER SUPPLY
- UPSC = UNINTERRUPTIBLE POWER SUPPLY CONTROLLER
- UPSM = UPS MODE
- BP = BYPASS
- MBPS = MANUAL BYPASS SWITCH
- AC+ = UNGROUNDED CONDUCTOR
- AC- = GROUNDED CONDUCTOR
- C = COMMON
- Grn = GREEN
- Blk = BLACK
- Wht = WHITE
- SF = STATE-FURNISHED
- Batt = BATTERY
- Temp = TEMPERATURE
- TB = TERMINAL BOARD
- CntI = CONTROL
- Gnd = GROUND

NOTES: (THIS SHEET ONLY)

1. TYPE B REFERS TO THE BBS EQUIPMENT FROM MANUFACTURER B.
2. CASE-2 REFERS TO THE SITUATION WHEN ONLY THE BATTERIES ARE INSTALLED IN THE BBS CABINET. THE REMAINING EQUIPMENT IS PLACED IN THE 332 CONTROLLER CABINET.
3. THE LOCATION OF THE 2" NIPPLE WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.
4. THE CONTRACTOR SHALL FURNISH AND INSTALL A NEMA-1 ENCLOSURE WITH 30 A, 1P, 120/240 VOLTS RATED CIRCUIT BREAKER MANUFACTURED PER UL STANDARD 489.
5. A TEMPERATURE PROBE SHALL BE ATTACHED TO THE BATTERY BY TAPE OR ATTACHED TO THE NEGATIVE TERMINAL OF THE BATTERY.
6. THE ELECTRICAL POWER FOR THE COOLING FAN FOR THE BBS CABINET SHALL BE TAPPED FROM THE BOTTOM OF THE TB IN THE 332 CABINET.
7. THE CONTRACTOR SHALL PROVIDE A 9-WIRE WIRING HARNESS OR BUNDLED 9 MULTICOLOR CONDUCTORS, #18 AWG WIRES FROM THE RELAY ON THE INVERTER/CHARGER UNIT TO THE CONTROLLER. THE ENDS OF THE CONDUCTORS SHALL BE INSULATED WITH TAPE AND A SIX-FOOT COIL ON EACH END.

**ELECTRICAL SYSTEMS
 (BBS POWER CONNECTION DIAGRAM,
 TYPE A, CASE-2)**

NO SCALE

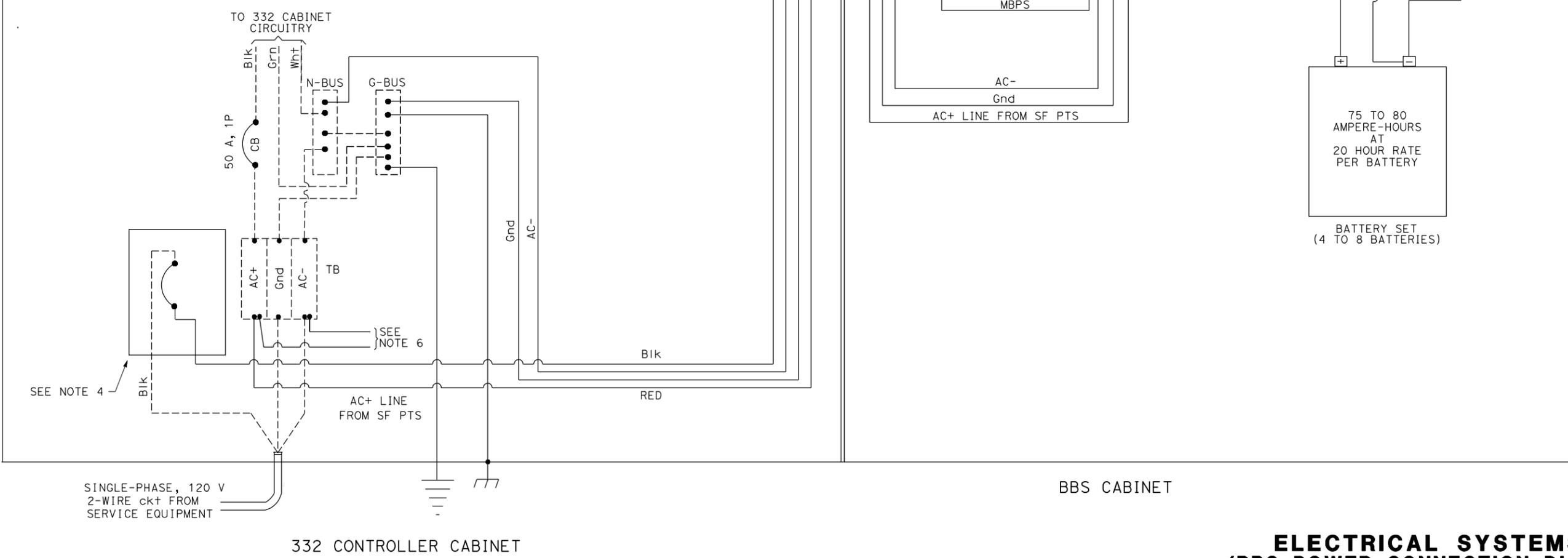
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
Theresa Gabriel			12-20-07		
REGISTERED ELECT. ENGINEER			DATE		
Plans Approval Date					
Theresa A. Gabriel			REGISTERED PROFESSIONAL ENGINEER		
No. E15129			Exp. 6-30-10		
ELECT			STATE OF CALIFORNIA		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.					

LEGEND: (THIS SHEET ONLY)

- PTS = POWER TRANSFER SWITCH
- UPS = UNINTERRUPTIBLE POWER SUPPLY
- UPSC = UNINTERRUPTIBLE POWER SUPPLY CONTROLLER
- UPSM = UPS MODE
- BP = BYPASS
- MBPS = MANUAL BYPASS SWITCH
- AC+ = UNGROUNDED CONDUCTOR
- AC- = GROUNDED CONDUCTOR
- C = COMMON
- Grn = GREEN
- Blk = BLACK
- Wht = WHITE
- SF = STATE-FURNISHED
- Batt = BATTERY
- Temp = TEMPERATURE
- TB = TERMINAL BOARD
- Cntl = CONTROL
- Gnd = GROUND

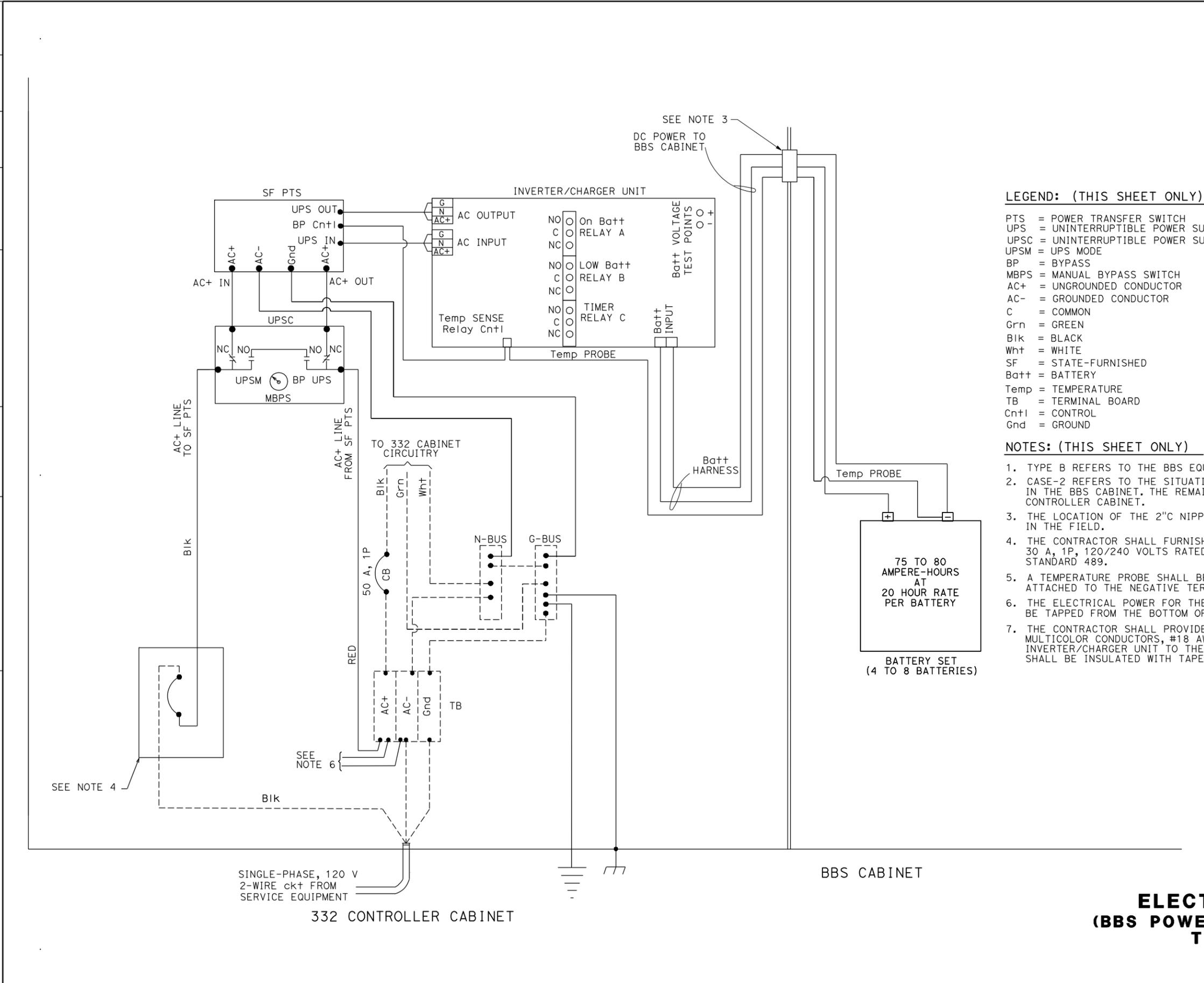
NOTES: (THIS SHEET ONLY)

- TYPE B REFERS TO THE BBS EQUIPMENT FROM MANUFACTURER B.
- CASE-1 REFERS TO THE SITUATION WHEN THE ENTIRE BBS EQUIPMENT INCLUDING THE BATTERIES ARE INSTALLED IN THE BBS CABINET.
- THE LOCATION OF THE 2" C NIPPLE WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.
- THE CONTRACTOR SHALL FURNISH AND INSTALL A NEMA-1 ENCLOSURE WITH 30 A, 1P, 120/240 VOLTS RATED CIRCUIT BREAKER MANUFACTURED PER UL STANDARD 489.
- A TEMPERATURE PROBE SHALL BE ATTACHED TO THE BATTERY BY TAPE OR ATTACHED TO THE NEGATIVE TERMINAL OF THE BATTERY.
- THE ELECTRICAL POWER FOR THE COOLING FAN FOR THE BBS CABINET SHALL BE TAPPED FROM THE BOTTOM OF THE TB IN THE 332 CABINET.
- THE CONTRACTOR SHALL PROVIDE A 9-WIRE WIRING HARNESS OR BUNDLED 9 MULTICOLOR CONDUCTORS, #18 AWG WIRES FROM THE RELAY ON THE INVERTER/CHARGER UNIT TO THE CONTROLLER. THE ENDS OF THE CONDUCTORS SHALL BE INSULATED WITH TAPE AND A SIX-FOOT COIL ON EACH END.



**ELECTRICAL SYSTEMS
(BBS POWER CONNECTION DIAGRAM,
TYPE B, CASE-1)**
NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 Functional Supervisor
 Calculated-Designed By
 Checked By
 Revised By
 Date Revised
 State of California
 12-20-07



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

Theresa Gabriel 12-20-07
 REGISTERED ELECT-ENGINEER DATE

PLANS APPROVAL DATE

Theresa A. Gabriel
 No. E15129
 Exp. 6-30-10
 ELECT
 STATE OF CALIFORNIA

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LEGEND: (THIS SHEET ONLY)

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- Wht = WHITE
- SF = STATE-FURNISHED
- Batt+ = BATTERY
- Temp = TEMPERATURE
- TB = TERMINAL BOARD
- Cntl = CONTROL
- Gnd = GROUND

NOTES: (THIS SHEET ONLY)

1. TYPE B REFERS TO THE BBS EQUIPMENT FROM MANUFACTURER B.
2. CASE-2 REFERS TO THE SITUATION WHEN ONLY THE BATTERIES ARE INSTALLED IN THE BBS CABINET. THE REMAINING EQUIPMENT IS PLACED IN THE 332 CONTROLLER CABINET.
3. THE LOCATION OF THE 2" C NIPPLE WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.
4. THE CONTRACTOR SHALL FURNISH AND INSTALL A NEMA-1 ENCLOSURE WITH 30 A, 1P, 120/240 VOLTS RATED CIRCUIT BREAKER MANUFACTURED PER UL STANDARD 489.
5. A TEMPERATURE PROBE SHALL BE ATTACHED TO THE BATTERY BY TAPE OR ATTACHED TO THE NEGATIVE TERMINAL OF THE BATTERY.
6. THE ELECTRICAL POWER FOR THE COOLING FAN FOR THE BBS CABINET SHALL BE TAPPED FROM THE BOTTOM OF THE TB IN THE 332 CABINET.
7. THE CONTRACTOR SHALL PROVIDE A 9-WIRE WIRING HARNESS OR BUNDLED 9 MULTICOLOR CONDUCTORS, #18 AWG WIRES FROM THE RELAY ON THE INVERTER/CHARGER UNIT TO THE CONTROLLER. THE ENDS OF THE CONDUCTORS SHALL BE INSULATED WITH TAPE AND A SIX-FOOT COIL ON EACH END.

**ELECTRICAL SYSTEMS
 (BBS POWER CONNECTION DIAGRAM,
 TYPE B, CASE-2)**

NO SCALE