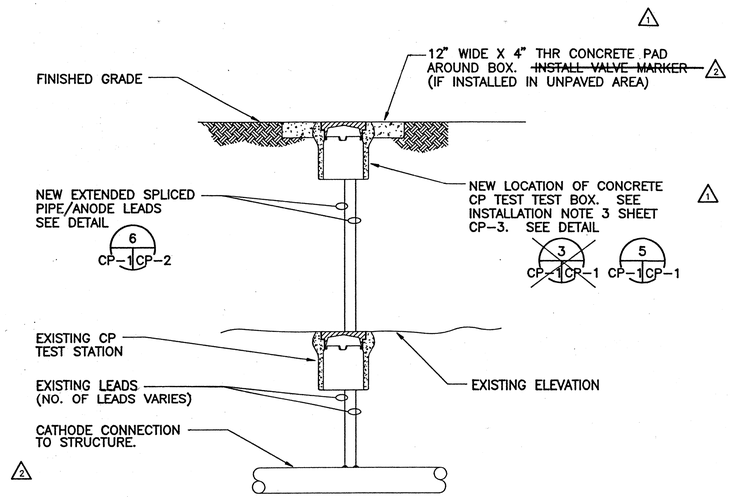
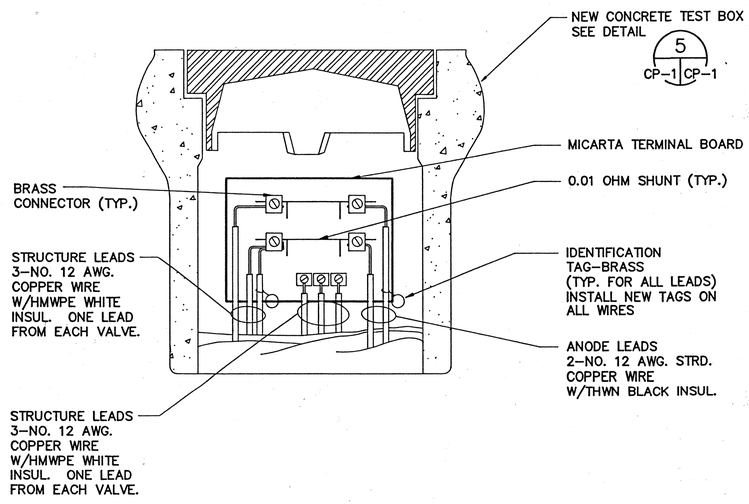
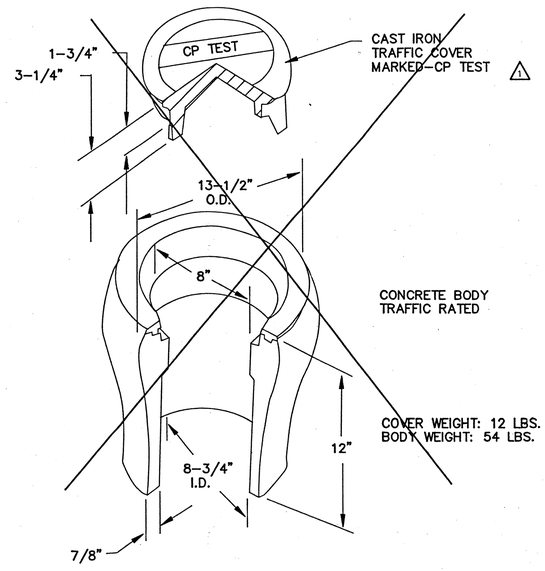


TEST BOX ELEVATION DETAIL — 1 CP-1 CP-1



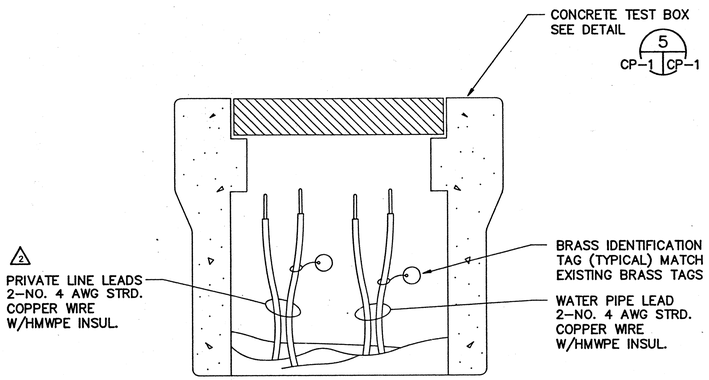
ANODE STATION WIRING DETAIL — 2 CP-1 CP-1 (2)



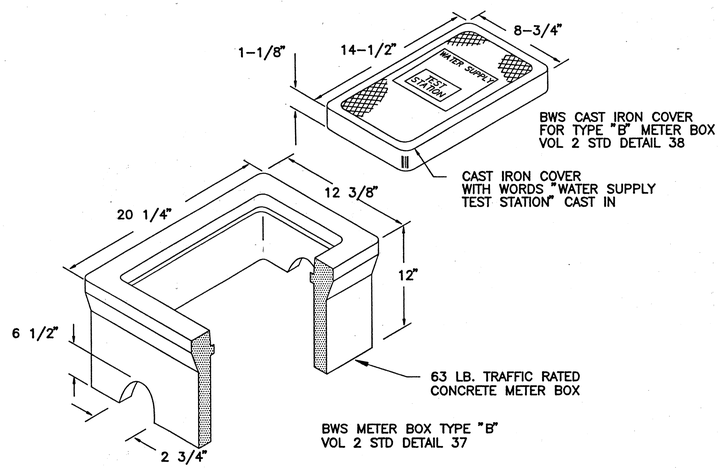
EXISTING CONCRETE TEST BOX — 3 CP-1 CP-1

IF EXISTING TEST BOX IS OF THIS TYPE THEN REPLACE WITH TYPE "B" METER BOX AS SHOWN IN DETAIL 5 THIS SHEET.

1



EXISTING CP BOND BOX WIRING — 4 CP-1 CP-1



1

NEW CP CONCRETE TEST BOX — 5 CP-1 CP-1

PMT-76A-01-97

Rev	Date	Description	Eng	App
1	9/30/94	REVISIONS PER BWS COMMENTS	BRW	BCS
2	10/27/94	REVISIONS PER BWS COMMENTS	BRW	BCS
3				

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(619) 565-6580
a corrpro company

Client:
GENTRY DEVELOPMENT CO., A HAWAII LIMITED PARTNERSHIP
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HONOLULU, HAWAII 96809

IROQUOIS POINT ROAD
RAISING EXISITING TEST STATIONS

MISCELLANEOUS CATHODIC PROTECTION DETAILS

Designed by: JJG Date: JAN. 6, 1994
Drawn by: WSM Proj. no.: 52447
Approved:

REGISTERED PROFESSIONAL ENGINEER BLAINE C. STAPP No. 1014 EXP.12/31/95 CORROSION STATE OF CALIFORNIA

This work was prepared by me or under my supervision

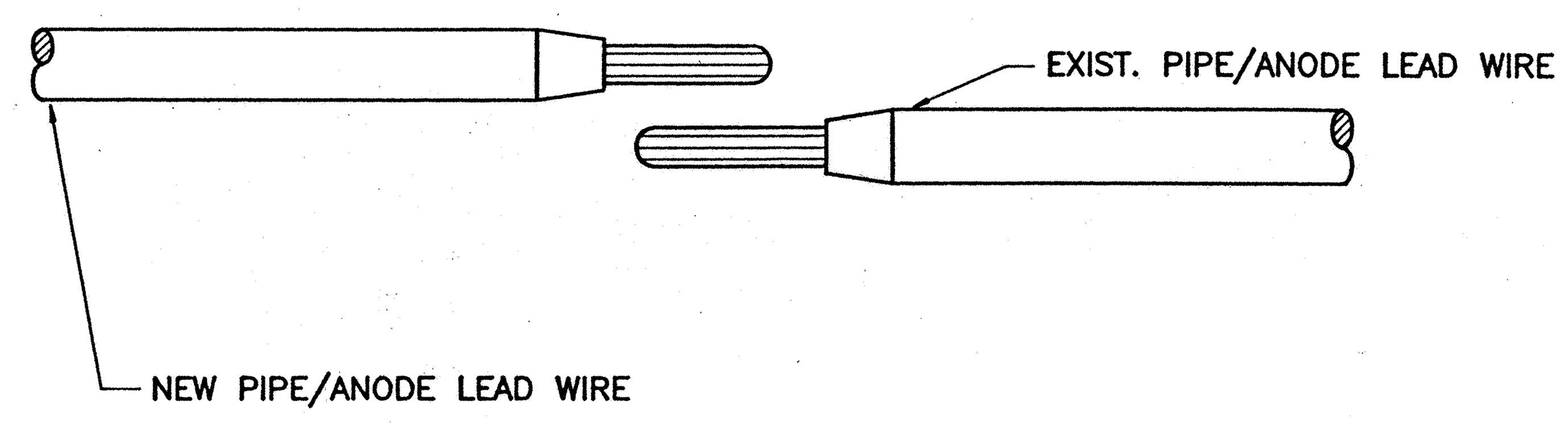
CHIEF, PLANNING AND ENGINEERING, B.W.S. Date

PSG FILE NO: DS3404A REV: 10/27/94

CP-1

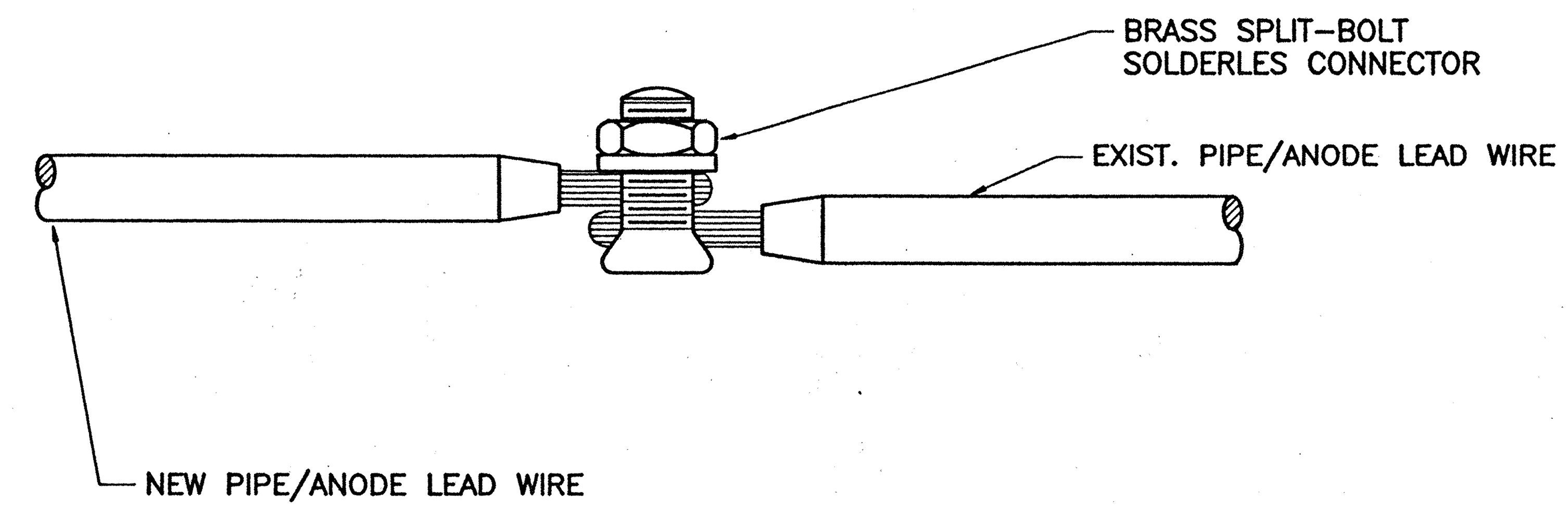
RECORD DRAWINGS

SHEET CP-1 of _____ Sheets



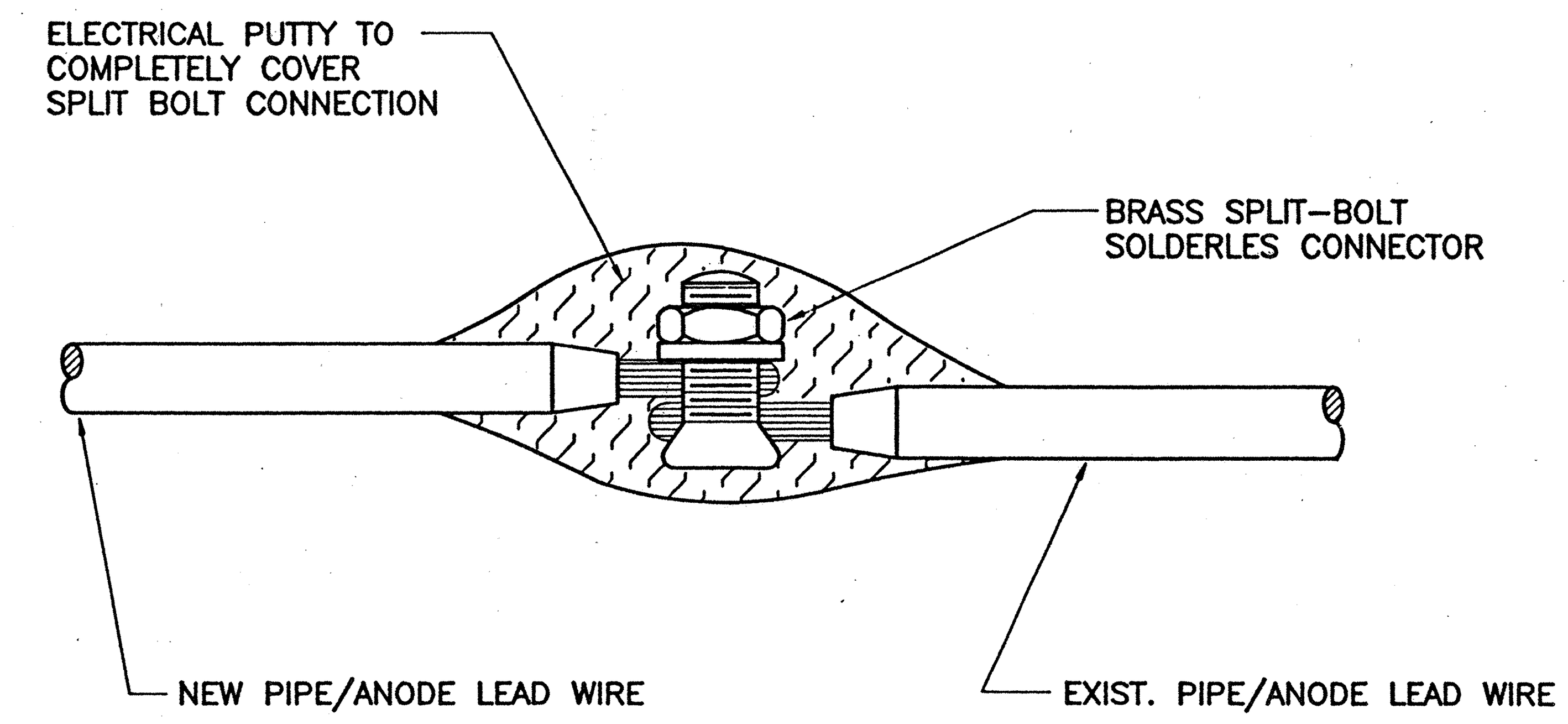
STRIP EXISTING LEAD WIRE TO EXPOSE A CLEAN AND SHINY SURFACE.
STRP NEW LEAD WIRE (SAME TYPE AND SIZE).

CABLE SPLICE – STEP 1



INSERT LEAD WIRES INTO APPROPRIATELY SIZED SPLIT–BOLT CONNECTOR AND TIGHTEN FIRMLY AS SHOWN ABOVE.

CABLE SPLICE – STEP 2

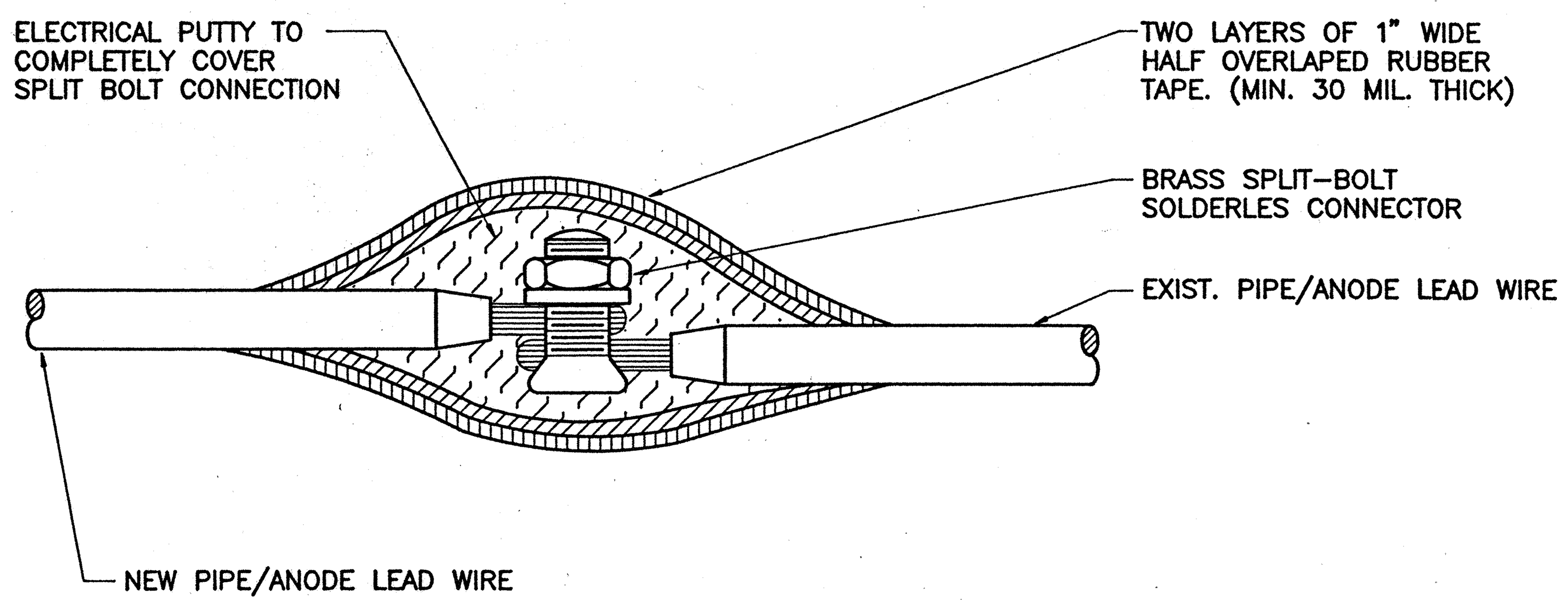


COMPLTETELY ENCASED SPLIT–BOLT CONNECTOR WITH ELECTRICAL INSULATION PUTTY. APPLY PUTTY IN A SMOOTH FASHION TO EASE THE APPLICATION OF THE OUTER TAPE LAYERS.

CABLE SPLICE – STEP 3

CONSTRUCTION NOTES:

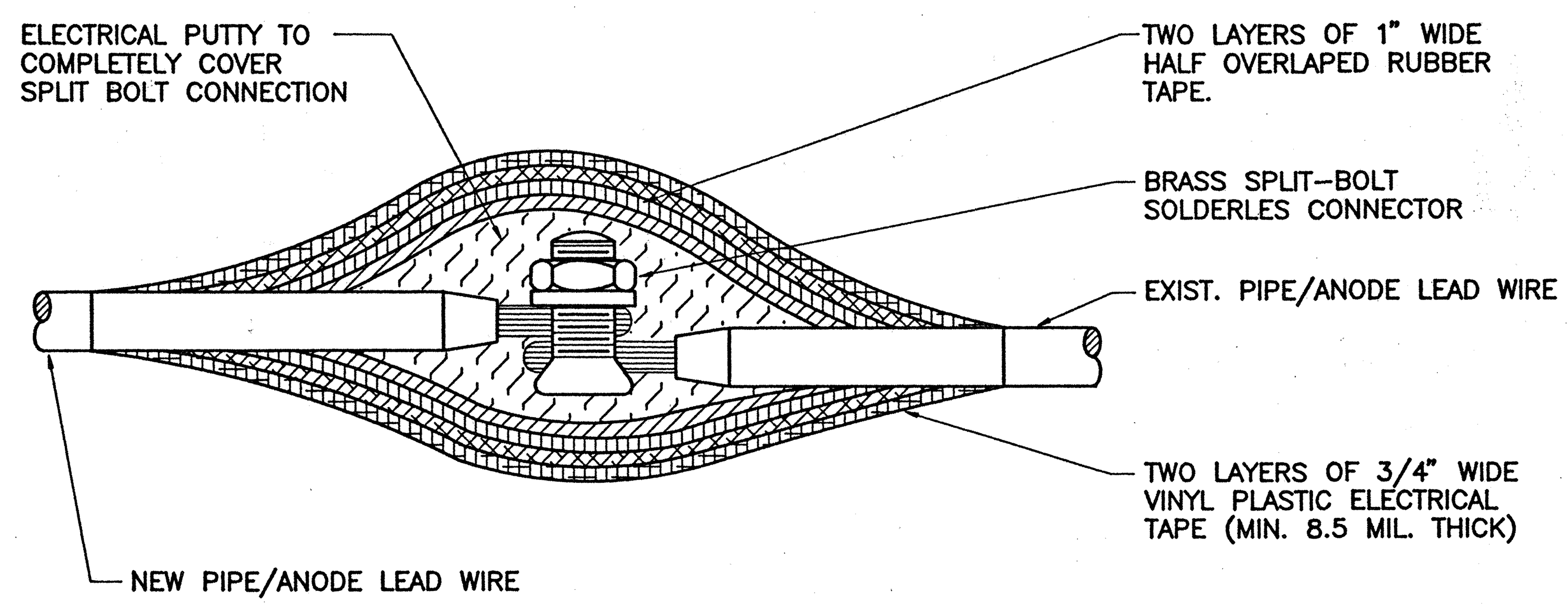
1. SIZE AND TYPE OF WIRE VARIES DEPENDING ON LOCATION. ALWAYS USE SAME TYPE AND SIZE WIRE WHEN SPLICING.
2. AFTER TEST BOXES HAVE BEEN RAISED TO THE NEW ELEVATION, ENSURE THAT THERE IS A MINIMUM OF 18" OF WIRE LOOPED WITHIN THE TEST BOX AND THAT THEY ARE PROPERLY TAGGED.
3. IDENTIFY ALL EXTENDED PIPE AND ANODE LEADS WITH THE SAME MARKINGS THAT ARE PRESENT ON THE EXISTING LEADS.



APPLY TWO LAYERS OF 1" WIDE BUTYL RUBBER BASED SELF–AMALGAMATING INSULATING TAPE WITH 50% OVERLAP.

APPLY TO SPLICE WHILE SLIGHTLY STRETCHING TAPE. AFTER THE SPLICE IS COMPLETELY COVERED, MOLD THE TAPE WITH YOUR HANDS TO RESULT IN A SMOOTH CONTOURED SURFACE.

CABLE SPLICE – STEP 4



APPLY TWO LAYERS OF 3/4" WIDE VINYL PLASTIC ELECTRICAL TAPE WITH 50% OVERLAP.

CABLE SPLICE – STEP 5

CABLE SPLICE 6 CP–1 CP–2

DET# S018–28

PMT–76A–01–97

Rev	Date	Description	Eng	App
△				
△				
△				

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Client:
GENTRY DEVELOPMENT CO.
A HAWAII LIMITED PARTNERSHIP
P.O. BOX 295
HONOLULU, HAWAII 96809

IROQUOIS POINT ROAD
RAISING EXISITING TEST STATIONS

SPLICE CONNECTION DETAILS
STEPS 1 – 5

Designed by: JJG Date: JAN. 6, 1994
Drawn by: WSM Proj. no.: 52447
Approved:

CHIEF, PLANNING AND ENGINEERING, B.W.S. Date

REGISTERED PROFESSIONAL ENGINEER No. 1014 EXP.12/31/95 CORROSION STATE OF CALIFORNIA

This work was prepared by me or under my supervision

PSG FILE NO: DS3404B REV: 9/30/94

CP-2

RECORD DRAWINGS

SHEET CP–2 of ____ Sheets

INSTALLATION NOTES

1. UNLESS OTHERWISE SPECIFIED, ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE CITY AND COUNTY OF HONOLULU, BOARD OF WATER SUPPLY'S "WATER SYSTEM EXTERNAL CORROSION CONTROL STANDARDS", VOLUME 3, DATED 1991 AND ALL SUBSEQUENT AMENDMENTS AND ADDITIONS.

2. VALVE AND FITTINGS COATING – ALL BURIED VALVES AND FITTINGS 4 INCHES AND LARGER DIAMETER SHALL HAVE A 15 MIL MINIMUM DRY FILM THICKNESS FACTORY APPLIED FUSION-BONDED EPOXY COATING COMPLYING WITH AWWA STANDARD C213. SEE BWS STD, VOL. 3, PART 3, PARAGRAPH 1.4.1.

3. ALL TEST STATIONS SHALL BE INSTALLED OUT OF TRAFFIC LANES AND BEHIND STREET CURBS (PREFERABLY BETWEEN THE CURB AND THE SIDEWALK) TO ALLOW TO ALLOW SAFE ACCESS FOR TESTING.

4. THE PIPE SECTIONS TO BE CATHODICALLY PROTECTED SHALL BE ELECTRICALLY ISOLATED FROM ALL OTHER METALLIC STRUCTURES (I.E.: METALLIC SERVICE LATERALS, EXISTING WATER MAINS, AND STEEL IN THRUST BLOCKS) BY INSTALLING DIELECTRIC UNIONS, SECTIONS OF NONMETALLIC PIPE, INSULATING FLANGE KITS OR FLAT SHEETS OF RUBBER OR GASKET STOCK AT THE THRUST BLOCKS (BWS STD, VOL 3, DETAIL 109).

5. CONTRACTOR SHALL ACTIVATE AND TEST THE CATHODIC PROTECTION SYSTEM TO ENSURE THAT THE WATER PIPELINE IS RECEIVING A FULL LEVEL OF PROTECTION AGAINST EXTERNAL CORROSION IN ACCORDANCE WITH THE MOST RECENT EDITION OF N.A.C.E RP0169-92. THE CONTRACTOR SHALL ALSO FURNISH ALL NECESSARY EQUIPMENT AND MATERIAL REQUIRED TO PERFORM ALL TESTS. TESTS AND DATA REPORTING FORMAT SHALL BE IN ACCORDANCE WITH FIGURES 5 THROUGH 10 IN PART 7, "TESTING" OF THE BWS "WATER SYSTEM EXTERNAL CORROSION CONTROL STANDARDS", VOLUME 3, DATED 1991. COMPLETED FIELD DATA SHEETS SHALL BE FORWARDED TO THE BWS ENGINEER FOR APPROVAL AND CONSTRUCTION RECORD KEEPING.

6. A QUALIFIED INDIVIDUAL OR FIRM EXPERIENCED IN INSPECTING THE INSTALLATION OF CORROSION CONTROL SYSTEMS, ACCEPTABLE TO AND APPROVED BY THE BWS SHALL BE EMPLOYED BY THE CONTRACTOR TO INSPECT THE INSTALLATION OF THE EXTERNAL CORROSION CONTROL SYSTEM. INSPECTION PERSONNEL SHALL BE UNDER THE DIRECT SUPERVISION OF A REGISTERED PROFESSIONAL CORROSION ENGINEER OR A CORROSION SPECIALIST CERTIFIED BY THE NATIONAL ASSOCIATION OF CORROSION ENGINEERS.

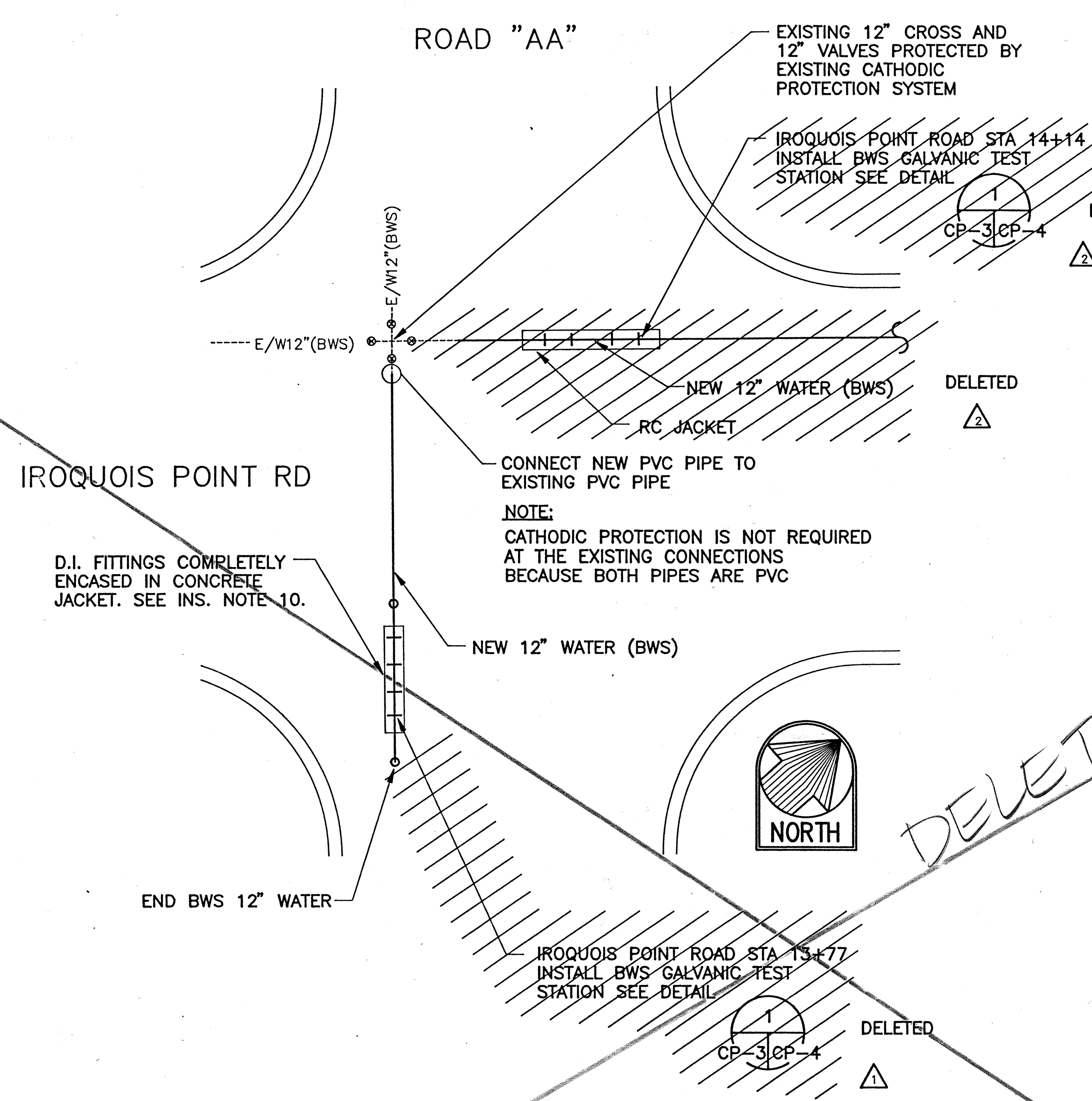
7. WIRE SPLICES – WIRE SPLICES SHALL NOT BE INSTALLED IN ANY PIPE WIRES, ANODE WIRES, OR ZINC REFERENCE ELECTRODE LEAD WIRES EXCEPT WHERE TEST BOXES ARE BEING RELOCATED. SEE SHEET CP-2 FOR SPLICE DETAIL. 3

8. DRAWINGS – THE DRAWINGS FOR THE CATHODIC PROTECTION SYSTEMS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED FOR EXACT LOCATIONS UNLESS SCALES ARE EXPLICITLY STATED ON THE SPECIFIC DRAWING. FIELD CONDITIONS, NON-INTERFERENCE WITH OTHER UTILITIES OR TRADE AND ARCHITECTURAL, MECHANICAL, AND STRUCTURAL FEATURES SHALL DETERMINE EXACT LOCATIONS. CONTRACTOR SHALL NOTE OTHER EXISTING UTILITIES IN THE AREA. CARE SHALL BE TAKEN DURING EXCAVATION NOT TO DAMAGE THESE UTILITIES. ANY DAMAGED UTILITIES SHALL BE REPAIRED TO THE SATISFACTION OF THE UTILITY OWNER'S STANDARDS AT THE CONTRACTOR'S EXPENSE.

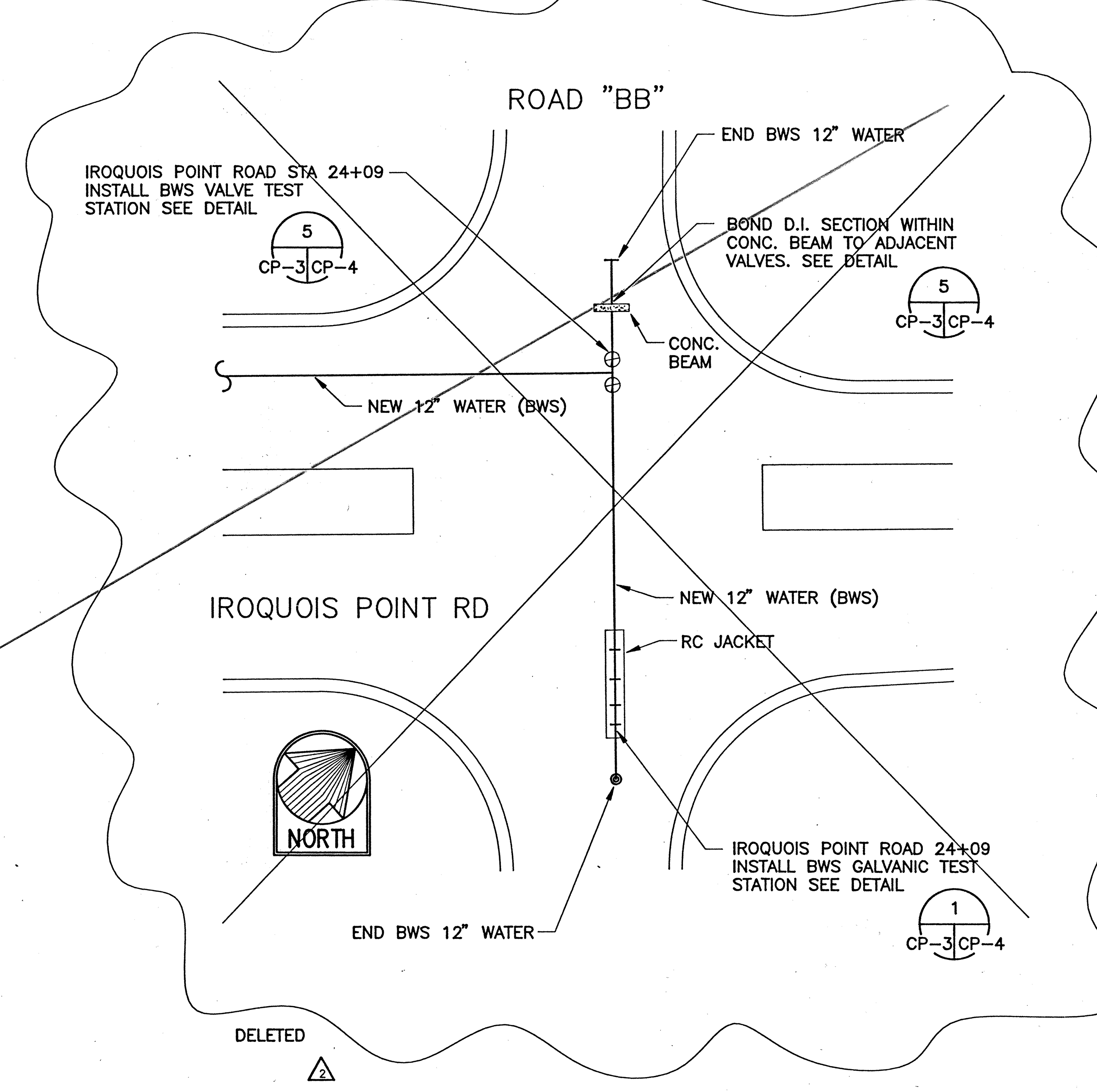
9. AS-BUILT DRAWINGS – AS-BUILT DRAWINGS FOR THE CATHODIC PROTECTION SYSTEM SHALL BE MAINTAINED BY THE CONTRACTOR DURING INSTALLATION AND CONSTRUCTION OF THE CATHODIC PROTECTION SYSTEMS. DRAWINGS SHALL BE REVISED TO SHOW EXACT LOCATIONS OF ALL ANODES, TEST BOXES, INSULATED PIPE FLANGES, AND OTHER RELATED ITEMS.

10. DUCTILE IRON FITTINGS THAT ARE ENCASED IN CONCRETE JACKET MUST BE COMPLETELY EMERSED WITH A MINIMUM CONCRETE COVER OF 3 INCHES. STEEL REINFORCING IN THE CONCRETE MUST NOT BE IN CONTACT WITH THE DUCTILE IRON. BONDING OF FITTINGS IS NOT REQUIRED IN THIS SITUATION.

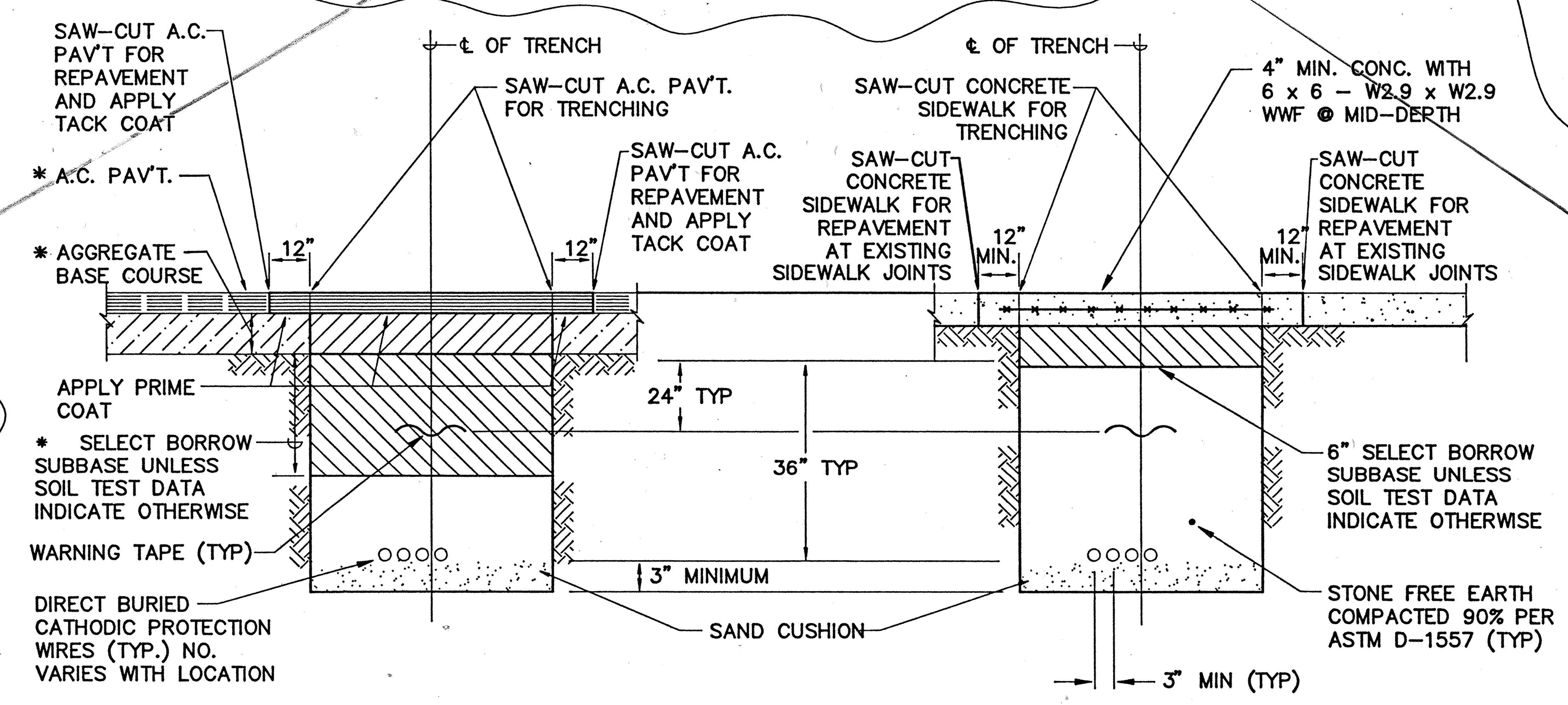
1



SITE PLAN – ROAD "AA"



SITE PLAN – ROAD "BB"



* SEE SHT C-17 FOR ALTERNATIVE PAVEMENT SECTION

CP TEST WIRE TRENCH

NOT TO SCALE

7 CP-1 CP-3

ADDED TRENCHING DETAIL 3

PMT-76A-1-97

Rev	Date	Description	Eng	App
4	3/20/95	Delete this sheet. Replace with new sheet CP-3		
1	9/30/94	REVISIONS PER BWS COMMENTS	BRW	BCS
2	9/30/94	ROAD "BB" DELETED	BRW	BCS
3	10/27/94	REVISIONS PER BWS COMMENTS	BRW	BCS

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REGISTERED PROFESSIONAL ENGINEER · BLAINE C. STEWART · No. 1014 · EXP.12/31/95 · CORROSION · STATE OF CALIFORNIA

IROQUOIS POINT ROAD IMPROVEMENTS
ROAD "AA" TO ROAD "BB"

CATHODIC PROTECTION NOTES & SITE PLANS

Designed by: JJG Date: JAN 19, 1994
Drawn by: JJG Proj. no.: 52515

Approved:

CHIEF, PLANNING AND ENGINEERING, B.W.S. Date 11/4/94

CP-3

PSG FILE NO: 053404C REV: 10/27/94

RECORD DRAWINGS

SHEET CP-3 of ____ Sheets

INSTALLATION NOTES

1. UNLESS OTHERWISE SPECIFIED, ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE CITY AND COUNTY OF HONOLULU, BOARD OF WATER SUPPLY'S "WATER SYSTEM EXTERNAL CORROSION CONTROL STANDARDS", VOLUME 3, DATED 1991 AND ALL SUBSEQUENT AMENDMENTS AND ADDITIONS.

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3. ALL TEST STATIONS SHALL BE INSTALLED OUT OF TRAFFIC LANES AND BEHIND STREET CURBS (PREFERABLY BETWEEN THE CURB AND THE SIDEWALK) TO ALLOW TO ALLOW SAFE ACCESS FOR TESTING.

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5. CONTRACTOR SHALL ACTIVATE AND TEST THE CATHODIC PROTECTION SYSTEM TO ENSURE THAT THE WATER PIPELINE IS RECEIVING A FULL LEVEL OF PROTECTION AGAINST EXTERNAL CORROSION IN ACCORDANCE WITH THE MOST RECENT EDITION OF N.A.C.E RP0169–92. THE CONTRACTOR SHALL ALSO FURNISH ALL NECESSARY EQUIPMENT AND MATERIAL REQUIRED TO PERFORM ALL TESTS. TESTS AND DATA REPORTING FORMAT SHALL BE IN ACCORDANCE WITH FIGURES 5 THROUGH 10 IN PART 7, "TESTING" OF THE BWS "WATER SYSTEM EXTERNAL CORROSION CONTROL STANDARDS", VOLUME 3, DATED 1991. COMPLETED FIELD DATA SHEETS SHALL BE FORWARDED TO THE BWS ENGINEER FOR APPROVAL AND CONSTRUCTION RECORD KEEPING.

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8. DRAWINGS – THE DRAWINGS FOR THE CATHODIC PROTECTION SYSTEMS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED FOR EXACT LOCATIONS UNLESS SCALES ARE EXPLICITLY STATED ON THE SPECIFIC DRAWING. FIELD CONDITIONS, NON–INTERFERENCE WITH OTHER UTILITIES OR TRADE AND ARCHITECTURAL, MECHANICAL, AND STRUCTURAL FEATURES SHALL DETERMINE EXACT LOCATIONS. CONTRACTOR SHALL NOTE OTHER EXISTING UTILITIES IN THE AREA. CARE SHALL BE TAKEN DURING EXCAVATION NOT TO DAMAGE THESE UTILITIES. ANY DAMAGED UTILITIES SHALL BE REPAIRED TO THE SATISFACTION OF THE UTILITY OWNER'S STANDARDS AT THE CONTRACTOR'S EXPENSE.

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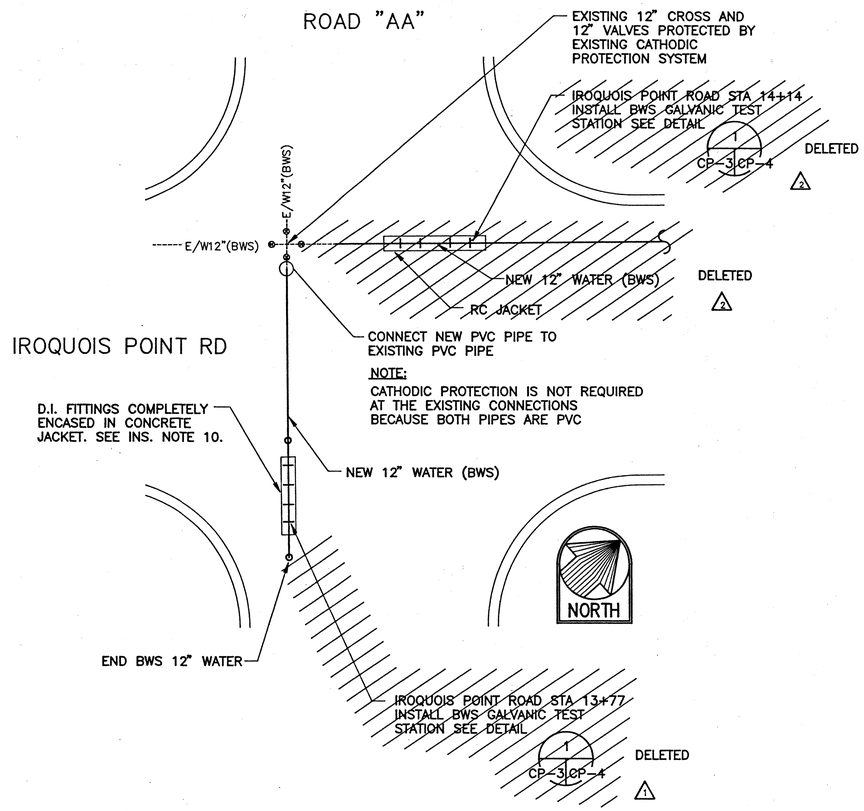
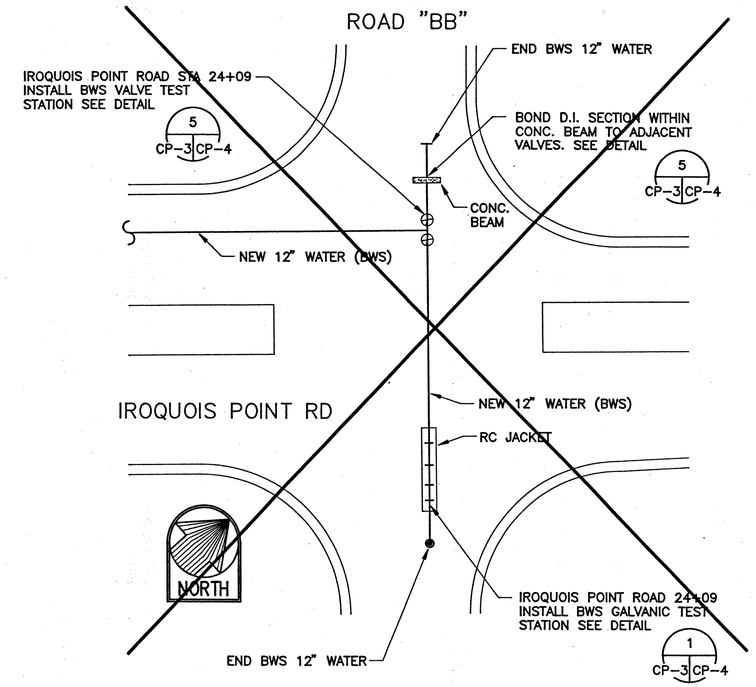
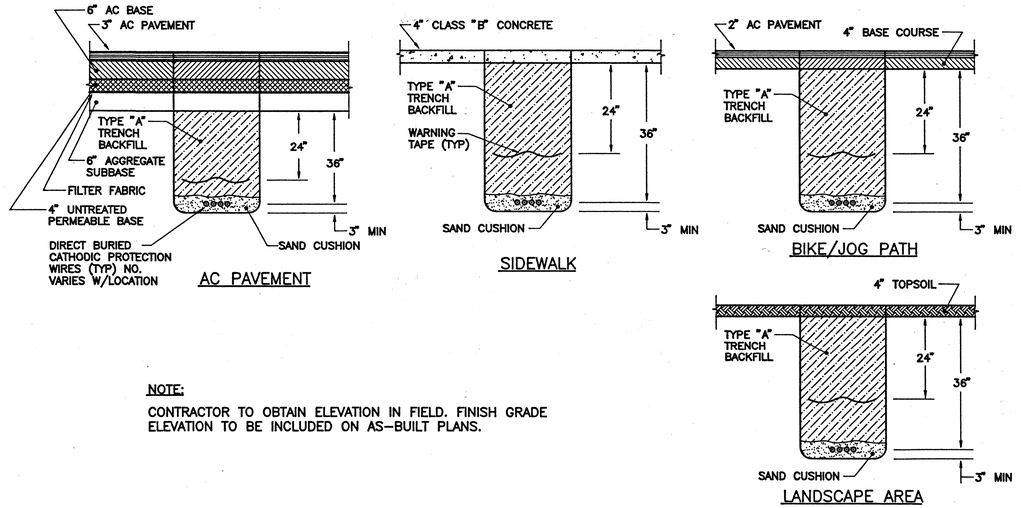
△1



SITE PLAN – ROAD "AA"



SITE PLAN – ROAD "BB"



NOTE:
CONTRACTOR TO OBTAIN ELEVATION IN FIELD. FINISH GRADE ELEVATION TO BE INCLUDED ON AS–BUILT PLANS.

ADDED TRENCHING DETAIL
△3
△4

CP TEST WIRE TRENCH
NOT TO SCALE
7 CP-1 CP-3

Rev	Date	Description	Eng	App
△1	9/30/94	REVISIONS PER BWS COMMENTS	BRW	BCS
△2	9/30/94	ROAD "BB" DELETED	BRW	BCS
△3	10/25/94	REVISIONS PER BWS COMMENTS	BRW	BCS
△4	1/23/95	NEW TRENCH DET. PER DOT APPROVED PAVEMENT SECTIONS.	BRW	BCS

RECORD PROFESSIONAL ENGINEER BRUCE C. STANDEN No. 1014 EXP.12/31/95 CORROSION STATE OF CALIFORNIA

PSG FILE NO: DS3404C REV: 9/30/94

PMT-76A-01-97

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IROQUOIS POINT ROAD IMPROVEMENTS
ROAD "AA" TO ROAD "BB"

CATHODIC PROTECTION NOTES & SITE PLANS

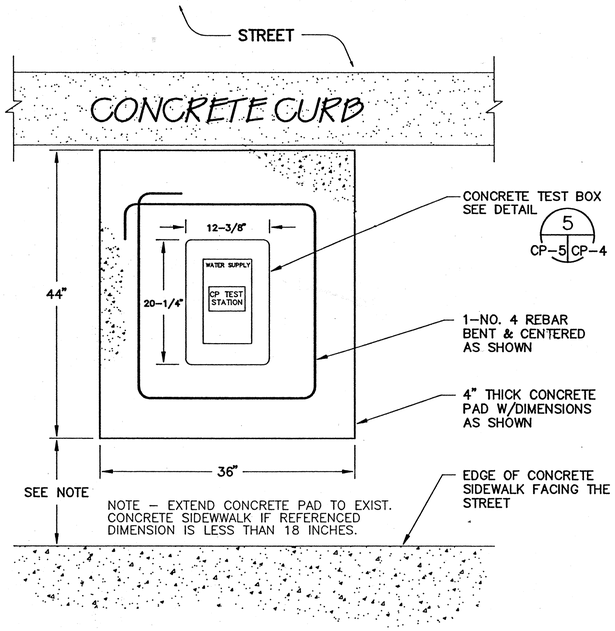
Designed by: JJG
Drawn by: JJG
Approved:
Date: JAN 19, 1994
Proj no.: 52515

CHIEF, PLANNING AND IMP ENGINEERING, B.W.S. 3/22/95 Date

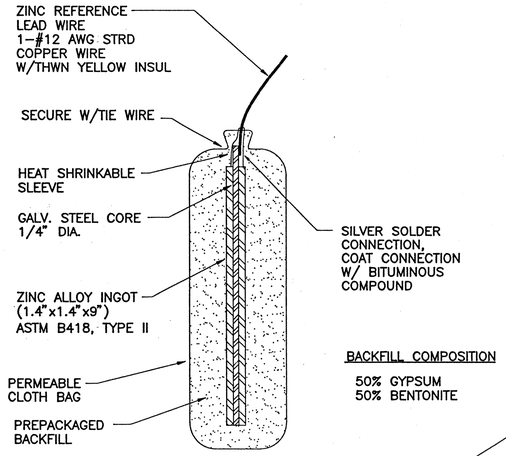
CP-3.1

RECORD DRAWINGS

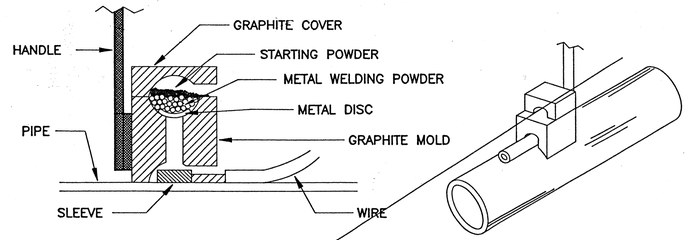
SHEET CP-3.1 of _____ Sheets

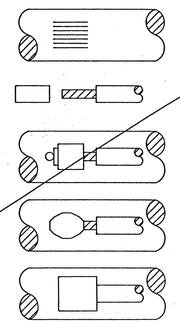


CONCRETE PAD FOR CP TEST STATIONS 6 CP-4 CP-5



PREPACKAGED ZINC REFERENCE ELECTRODE 7 CP-4 CP-5
NOT TO SCALE





STEP 1. FILE STRUCTURE CONNECTION AREA (3 IN. x 3 IN.) TO BARE SHINY METAL AND CLEAN.

STEP 2. STRIP INSULATION FROM WIRE. ATTACH COPPER SLEEVE (REQUIRED ON NO. 10 AWG WIRE AND SMALLER).

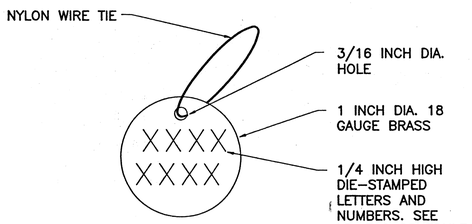
STEP 3. HOLD MOLD FIRMLY WITH OPENING AWAY FROM OPERATOR AND IGNITE WITH FLINT GUN.

STEP 4. REMOVE SLAG FROM CONNECTION AND PEEN WELD FOR SOUNDNESS.

STEP 5. COVER CONNECTION AND EXPOSED STRUCTURE SURFACE WITH A BITUMINOUS COATING COMPOUND. PLACE PLASTIC SHIELD CAP FIRMLY OVER CONNECTION.

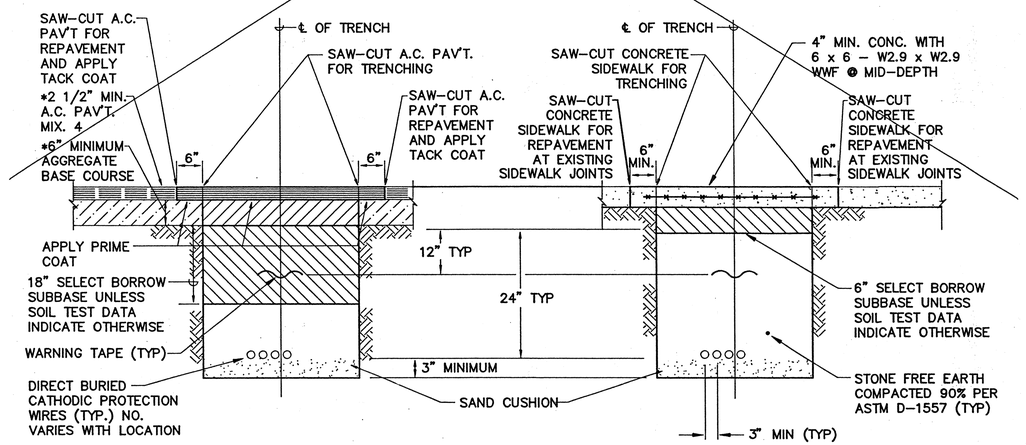
NOTES:
1. ALL WIRE WELDS SHALL BE MINIMUM 6 INCHES APART.
2. STANDARD WELD CARTRIDGES SHALL BE USED FOR STEEL SURFACES, FOR DUCTILE IRON AND CAST IRON, USE XF-19 ALLOY OR EQUIVALENT.

ALUMINO-THERMIC WELD 8 CP-4 CP-5



I.D. TAG SCHEDULE	
STRUCTURE	LABEL
12" GATE VALVE	12" GV
~~DUCTILE IRON FITTING OR SPECIAL~~	~~DI FIG~~
~~ZINC REFERENCE ELECTRODE~~	~~REF~~
17 LB. MAGNESIUM ANODE	17 MG

BRASS IDENTIFICATION TAG 9 CP-4 CP-5



*A.C. PAV'T. & BASE COURSE TO MATCH EXIST. THICKNESS OR THE MINIMUM THICKNESS SHOWN, WHICHEVER IS GREATER. PAVEMENT RESTORATION SHALL BE EQUAL OR BETTER THAN EXISTING IN THICKNESS & QUALITY.

CP TEST WIRE TRENCH 10 CP-4 CP-5
NOT TO SCALE

CP-5

1 DELETED
2 ROAD "BB" DELETED
CP NOT REQUIRED ON D.I. FITTINGS ENCASED IN CONCRETE

PMT-76A-01-97

Rev	Date	Description	Eng	App
1	9/30/94	REVISIONS PER BWS COMMENTS	BRW	BCS
2	9/30/94	ROAD "BB" DELETED	BRW	BCS

REGISTERED PROFESSIONAL ENGINEER ELAINE C. STANLEY No. 1014 EXP.12/31/95 CORROSION STATE OF CALIFORNIA

PSG FILE NO: DS3404E REV: 9/30/94

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Client:
GENTRY DEVELOPMENT CO., A HAWAII LIMITED PARTNERSHIP
P.O. BOX 295
HONOLULU, HAWAII 96809

IROQUOIS POINT ROAD IMPROVEMENTS
ROAD "AA" TO ROAD "BB"

MISCELLANEOUS CATHODIC PROTECTION DETAILS II

Designed by: JJG Date: JAN. 19, 1994
Drawn by: JJG Proj. no.: 52515
Approved:

CHIEF, PLANNING AND ENGINEERING, B.W.S. Date

RECORD DRAWINGS

SHEET CP-5 of _____ Sheets