

**GENERAL NOTES**

- BRIDGE CONTRACTOR SHALL INITIATE A PRE-CONSTRUCTION MEETING WITH SDG&E 6 WEEKS PRIOR TO CONSTRUCTION. PRESENT SHALL BE SDG&E ELECTRIC REPRESENTATIVE, SDG&E CIVIL/STRUCTURAL REPRESENTATIVE AND GENERAL FOREMAN FOR INSTALLATION.
- FOR BRIDGE CONSTRUCTION DRAWINGS REFER TO "CITY OF SAN DIEGO, CA; CARMEL MOUNTAIN ROAD PHASE 1".
- THE ABUTMENT OPENINGS AND HORIZONTAL LOCATION OF CONDUITS SHALL BE PER DIMENSIONS IN SHEETS S-1 & S-2. VERTICAL LOCATION SHALL FOLLOW VERTICAL CURVE OF BRIDGE SOFFIT.
- THE ANTICIPATED SEISMIC DISPLACEMENTS AT ABUTMENTS 1 AND 3 ARE: TRANSVERSE DISPLACEMENT = 2"
- SDG&E REPRESENTATIVE: BILL CORNWODE ☎ TEL. (858) 636-3951  
SDG&E PROJECT ENGINEER: DEVIN ZORNIZER ☎ TEL. (858) 654-1650  
SDG&E CIVIL/STRUCTURAL MANAGER: SAM HARRIS ☎ TEL. (858) 654-8764
- SDG&E SHALL PROVIDE AND INSTALL: PVC CONDUITS, CONDUIT SUPPORTS, PVC COUPLINGS AND CAPS, PVC EXPANSION JOINTS, SHEAR PLATES, POLYFOAM, AND ALL MATERIALS FOR A COMPLETE CONDUIT INSTALLATION. ANCHOR BOLTS SHALL BE PROVIDED BY SDG&E AND INSTALLED BY BRIDGE CONTRACTOR.
- CONTRACTOR SHALL PROVIDE EXCAVATION, COMPACTION, BACKFILL MATERIAL AND INSTALLATION AS REQ'D.
- SPACING BETWEEN EXPANSION JOINTS SHALL BE AS SHOWN ON THE DRAWINGS.

- ALL PVC CONDUIT JOINTS SHALL BE 12" MINIMUM FROM CONDUIT SUPPORTS.
- ALL WORK SHALL BE INSPECTED BY BOTH SDG&E CIVIL/STRUCTURAL AND AN ELECTRIC REPRESENTATIVE FROM THE OPERATING BASE. ADDITIONALLY, ALL HEBB ANCHOR BOLTS REQUIRE INSPECTION BY SDG&E CIVIL/STRUCTURAL REPRESENTATIVE.
- BRIDGE CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO SDG&E PRIOR TO SCHEDULED WORK AND SHALL ALLOW TIME IN ITS CONSTRUCTION SCHEDULE FOR SDG&E TO PERFORM THE FOLLOWING TASKS:
  - A. ANCHOR BOLT INSTALLATION -- BRIDGE CONTRACTOR SHALL NOTIFY SDG&E AT LEAST 30 DAYS PRIOR TO PLACEMENT OF SOFFITS AND STEM WALLS, AND SHALL INSTALL ANCHOR BOLTS BEFORE SOFFITS AND STEM WALLS ARE PLACED. BRIDGE CONTRACTOR SHALL ALLOW SDG&E ACCESS TO INSPECT ANCHOR BOLT PLACEMENT PRIOR TO PLACEMENT OF CONCRETE FOR SOFFIT & STEM WALLS.
  - B. CONDUIT AND SUPPORT INSTALLATION -- BRIDGE CONTRACTOR SHALL NOTIFY SDG&E AT LEAST 30 DAYS PRIOR TO COMPLETION OF PLACEMENT OF SOFFITS AND STEM WALLS, AND REMOVAL OF FORMWORKS, AND SHALL ALLOW SDG&E AT LEAST 15 WORKING DAYS TO INSTALL ELECTRIC CONDUITS AND CONDUIT SUPPORTS INSIDE THE DESIGNATED BRIDGE CELL.
  - C. CONDUIT EXTENSION & CONNECTION INSTALLATION -- BRIDGE CONTRACTOR SHALL NOTIFY SDG&E AT LEAST 10 DAYS PRIOR TO COMPLETION OF FINAL BACKFILL AND COMPACTION OF ABUTMENT AND APPROACH STRUCTURES, AND SHALL ALLOW SDG&E AT LEAST 15 WORKING DAYS FOR INSTALLATION OF SHEAR PLATES AND EXTENSION CONDUITS. THIS WORK MAY BE COMPLETED IN ITEM #2EL ABOVE.

**STRUCTURAL STEEL**

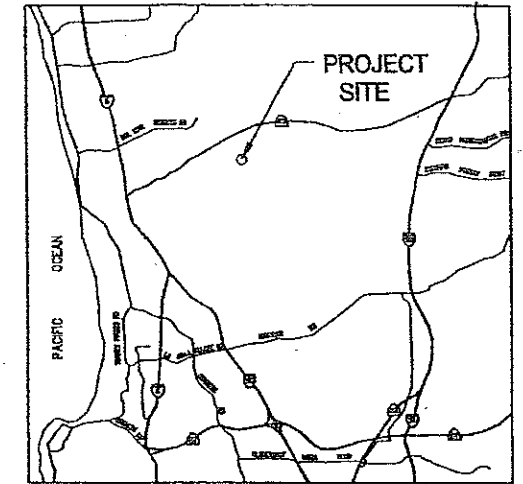
- STEEL WORK SHALL CONFORM TO THE LATEST AISC "CODE OF STANDARD PRACTICE" FOR THE DESIGN FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDING. ALL WELDING SHALL COMPLY WITH AWS D1.1 STRUCTURAL WELDING CODE. QUALIFICATIONS OF WELDERS SHALL BE IN ACCORDANCE WITH THE "STANDARD QUALIFICATION PROCEDURES" OF THE AWS.
- E70XX ELECTRODES SHALL BE USED FOR WELDING OF STRUCTURAL STEEL.
- ALL STEEL SHAPES AND PLATES SHALL BE ASTM A-36 STEEL; STRUCTURAL TUBING SHALL BE ASTM A500 GRADE B.
- UNLESS OTHERWISE NOTED: ALL ANCHOR BOLTS AND CONNECTION BOLTS SHALL BE A-307. BOLT HOLE DIAMETERS SHALL BE BOLT SIZE PLUS 1/16" FOR CONNECTION BOLTS. ANCHOR BOLTS SHALL BE CAST-IN-PLACE OR APPROVED EQUAL. ALL BOLTS SHALL BE GALVANIZED & TIGHTENED TO THEIR PROOF LOADS BY TURN-OF-NUT METHOD.
- ALL STRUCTURAL STEEL SHALL BE GALVANIZED ACCORDING TO ASTM A123 AND A153. FABRICATOR SHALL COMPLY WITH ASTM A143, A384, AND A385.
- ANCHOR BOLTS AND CONNECTION BOLTS SHALL BE GALVANIZED U.N.O.
- FABRICATOR SHALL PROVIDE PROPER DRAIN HOLES PER ASTM A385 FOR TUBULAR SECTIONS FOR GALVANIZING.
- SHOP DRAWINGS SHALL BE SUBMITTED FOR SDG&E APPROVAL PRIOR TO FABRICATION.
- DAMAGED GALVANIZING SHALL BE TOUCHED UP BY 2 COATS OF SDG&E APPROVED ZINC-RICH PAINT.

**LEGEND**

- A.B. .... ANCHOR BOLT
- ABUT. .... ABUTMENT
- BB. .... BEGIN BRIDGE
- BRG. .... BEARING
- C. .... CENTER LINE
- CMR. .... CARMEL MOUNTAIN ROAD
- EA. .... EACH
- EB. .... END BRIDGE
- EJ. .... EXPANSION JOINT
- EMB. .... EMBEDMENT
- NTS. .... NOT TO SCALE
- NS/S. .... NEAR SIDE/FAR SIDE
- R. .... RADIUS
- REQ'D. .... REQUIRED
- SM. .... SIMILAR
- SS. .... STAINLESS STEEL
- THD. .... THREAD OR THREADED
- T.O.C. .... TOP OF CONCRETE
- TS. .... TUBULAR STEEL
- TYP. .... TYPICAL
- U.M.O. .... UNLESS NOTED OTHERWISE

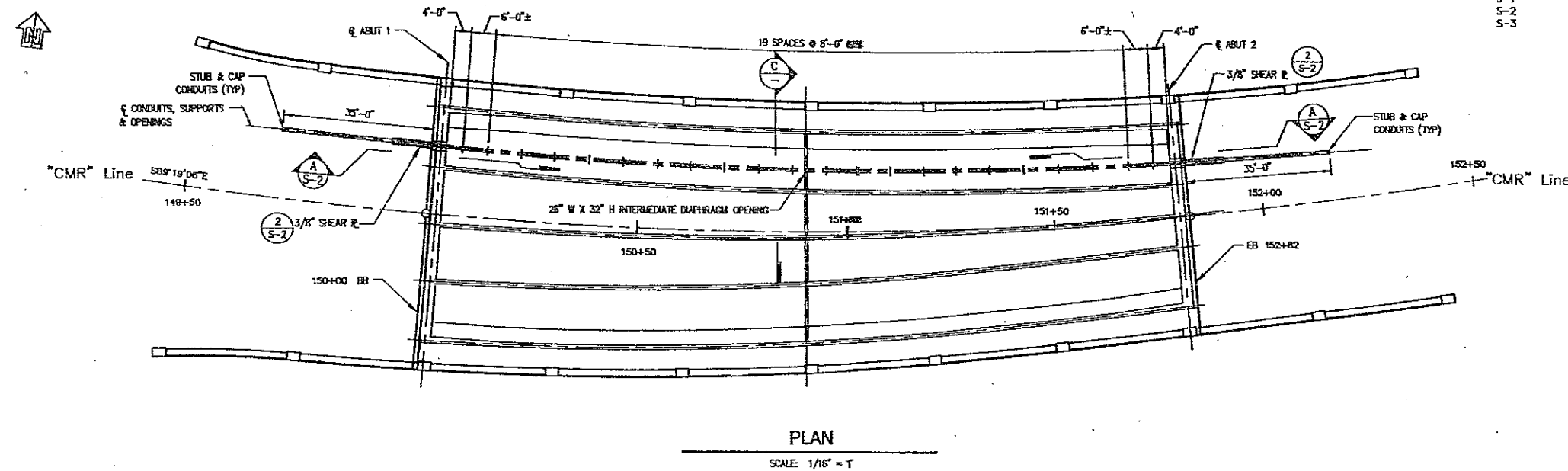
**SHEET INDEX**

SHEET NO.	TITLE
S-1	GENERAL LAYOUT & LONGITUDINAL SECTION
S-2	SECTION & DETAILS
S-3	FIXED AND SLIDING CONDUIT SUPPORTS



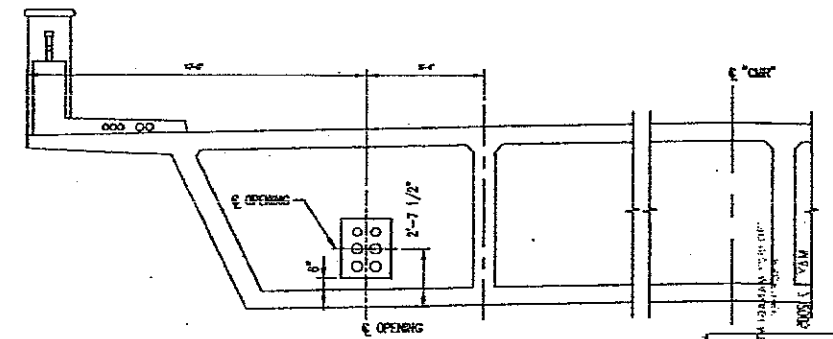
**VICINITY MAP**

NO SCALE



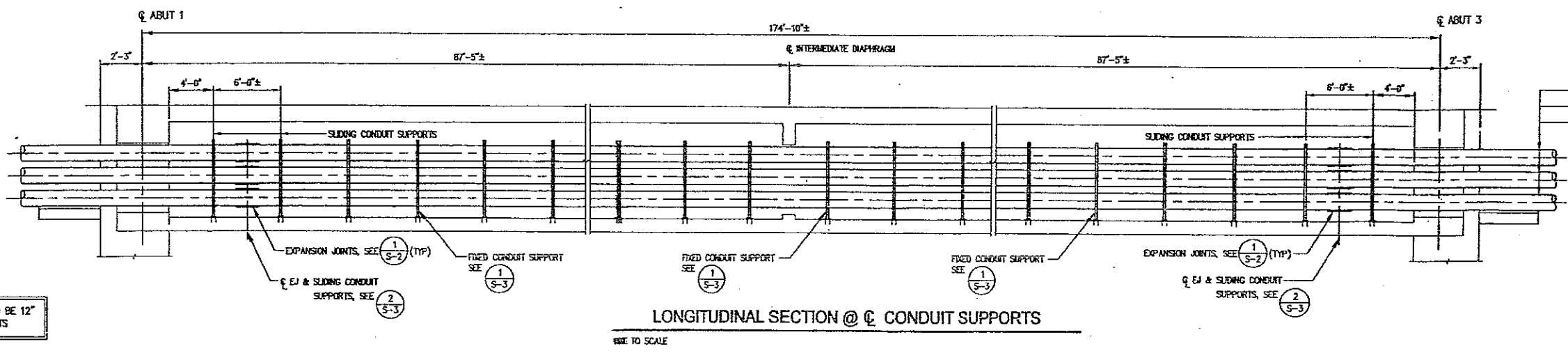
**PLAN**

SCALE: 1/16" = 1'



**OPENING LOCATION C**

SCALE: 1/4" = 1'



**LONGITUDINAL SECTION @ CONDUIT SUPPORTS**

NOTE TO SCALE

PVC CONDUITS SPLICE JOINTS TO BE 12" MIN. FROM CONDUIT SUPPORTS

- ☉ (2) 40 SCH 40 PVC CONDUITS (TYP)
- ☉ (2) 56 SCH 40 PVC CONDUITS
- ☉ (2) 56 SCH 40 PVC CONDUITS

NOTE: ANY CHANGES TO THIS DRAWING SHALL BE DONE BY THE SDG&E CIVIL/STRUCTURAL SECTION. MANAGER'S PHONE: (858) 654-8764

**REVISIONS**

NO.	DATE	BY	APPR.	REVISION

**SAN DIEGO GAS & ELECTRIC**

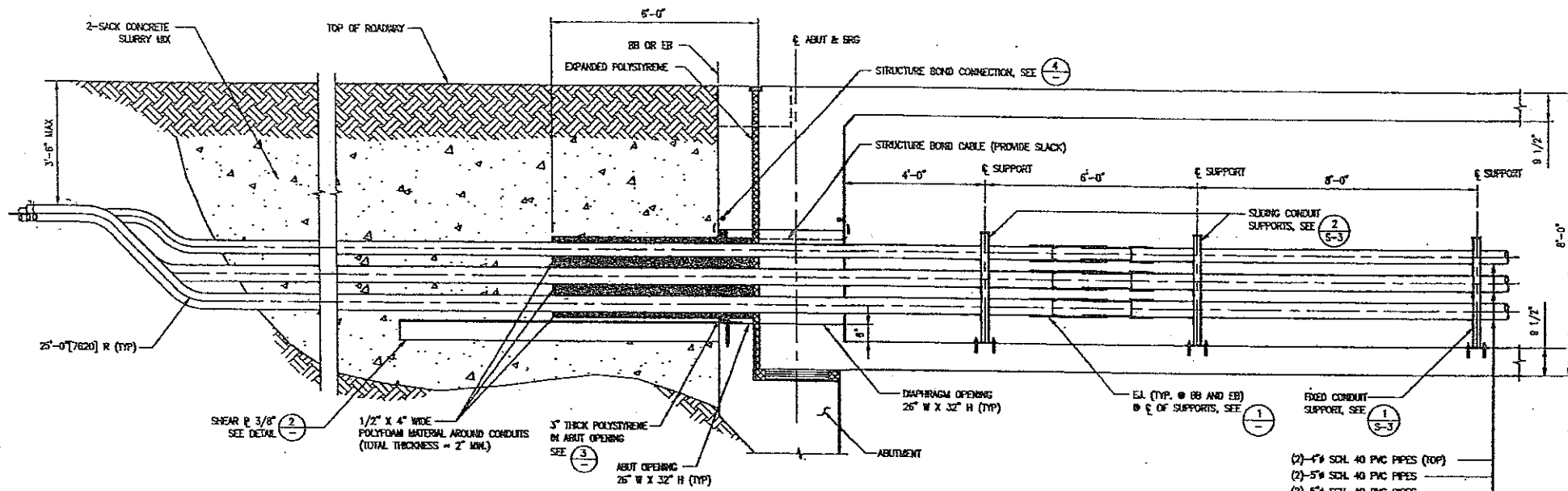
CARMEL MOUNTAIN ROAD AT SHAW LORENZ  
ELECTRIC CONDUIT SUPPORTS  
GENERAL LAYOUT & LONGITUDINAL SECTION

DRAWN BY: SA	DATE: 04/28/05	SCALE: AS NOTED	NO.
CHECKED BY: RZ	DATE: 04/28/05		

SDG&E SAN DIEGO GAS & ELECTRIC  
ELECTRIC CONSTRUCTION ORDER  
04/UG BASE DRAWING

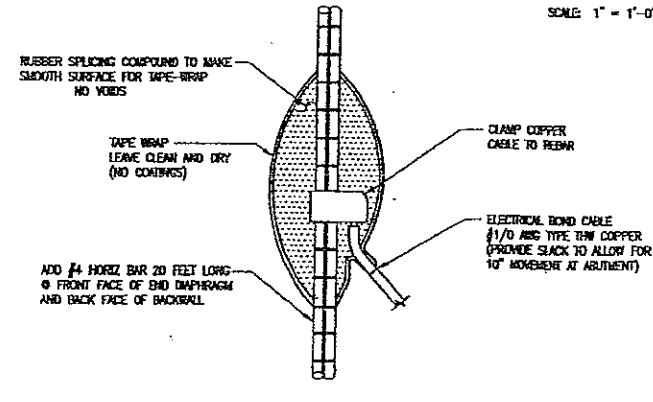
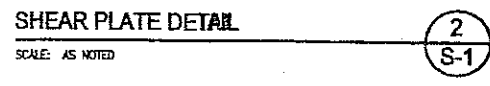
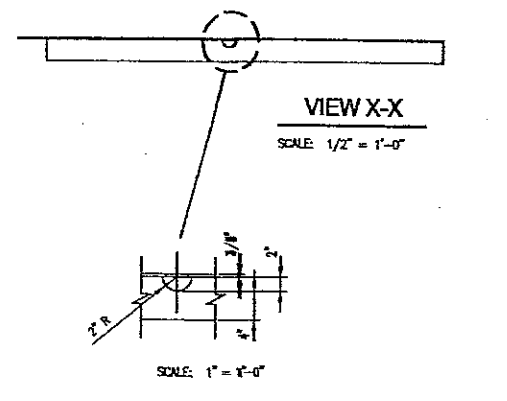
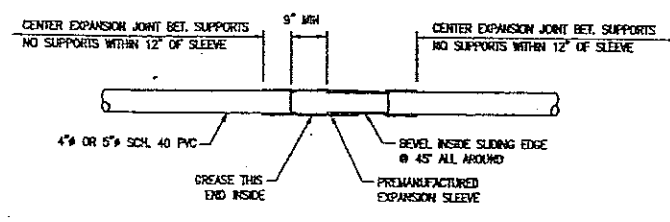
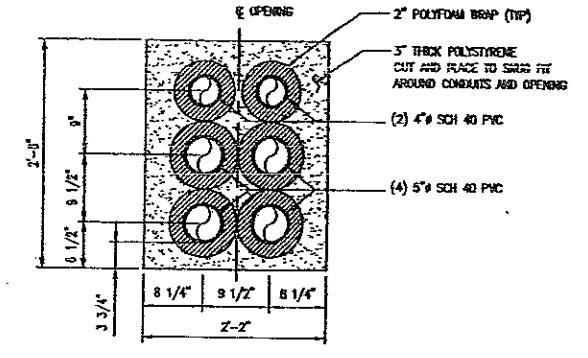
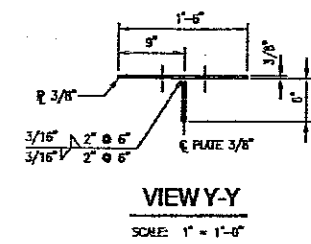
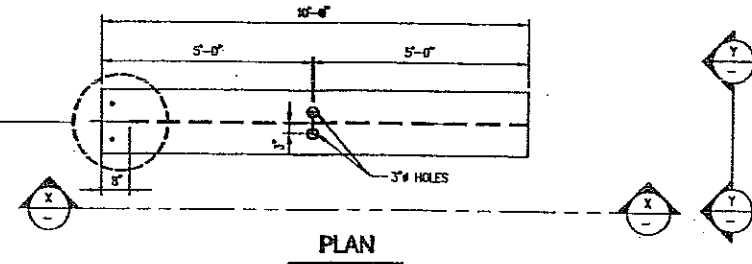
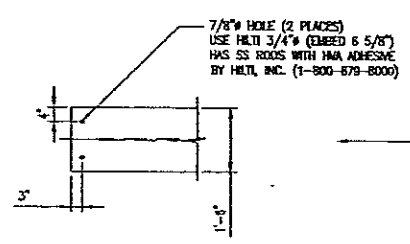
PLANNER: W. CORNWODE  
PLOT DATE: 04/28/05  
DSSS NO.: 534 109  
CONSTRUCTION ORDER NO.: 2840620  
SHEET 1 OF 3

LBIW Bob Brady 562-432-9451



**BILL OF MATERIALS**

SUPPLIED AND INSTALLED BY DEVELOPER				
ITEM	DESCRIPTION	QUANTITY	STOCK NUMBER	ASSEMBLY UNIT
1.	5" SCHEDULE 40 PVC CONDUITS	AS REQ'D	251408	S40-5"
2.	5" EXTENDED EXPANSION SLEEVES	8 EA.		
3.	4" SCHEDULE 40 PVC CONDUITS	AS REQ'D		
4.	4" EXTENDED EXPANSION SLEEVES	4 EA.		
5.	FIXED CONDUIT SUPPORTS COMPLETE WITH REQUIRED HARDWARE, SEE (2)	18 EA.		
6.	SLIDING CONDUIT SUPPORTS COMPLETE WITH REQUIRED HARDWARE, SEE (2)	4 EA.		
7.	5" SCHEDULE 40 BENDS (25' RADIUS MIN. & 22 DEGREES MAX. AS REQ'D)	18 EA.		
8.	5" SCHEDULE 40 END CAPS	8 EA.		
9.	4" SCHEDULE 40 BENDS (25' RADIUS MIN. & 22 DEGREES MAX. AS REQ'D)	8 EA.		
10.	4" SCHEDULE 40 END CAPS	4 EA.		
11.	POLYFOAM WRAP (1/2" X 4" WIDE) ATLAS CONST. CO. TEL. NO. (858) 277-2100	AS REQ'D		
12.	SHEAR PLATES, SEE DETAIL (2)	2 EA.	543110	SHEAR
13.	POLYSTYRENE PAD FOR ABUTMENT BACKFILL, SEE (3)	AS REQ'D		
14.	HLTI 3/4" X 9 5/8" SS HAS ALL THREADED ANCHORS W/ HMA ADHESIVE FOR SHEAR PLATES	4 EA.		
15.	PROPS, SPACERS, TIE BARS	AS REQ'D		
16.	2-SACK CONCRETE SLURRY MIX	AS REQ'D		
17.	HIGH-STRENGTH HIGH-TEMPERATURE 288 THREADLOCKER BY LOCTITE CORP. TEL. NO. (619) 530-8210	AS REQ'D		



- NOTES:
- CLAMPS SHALL BE BRONZE WITH 2-BOLT COPPER CONNECTORS BY FERN LINDEN, BURNBY, BLACKBURN, DOSSERT OR EQUAL.
  - SPLICING COMPOUND SHALL BE 3M SCOTCH SEAL 2229 OR EQUAL.
  - TAPE SHALL BE 3M SCOTCH SUPER 33 AND VENTL ELECTRICAL TAPE.

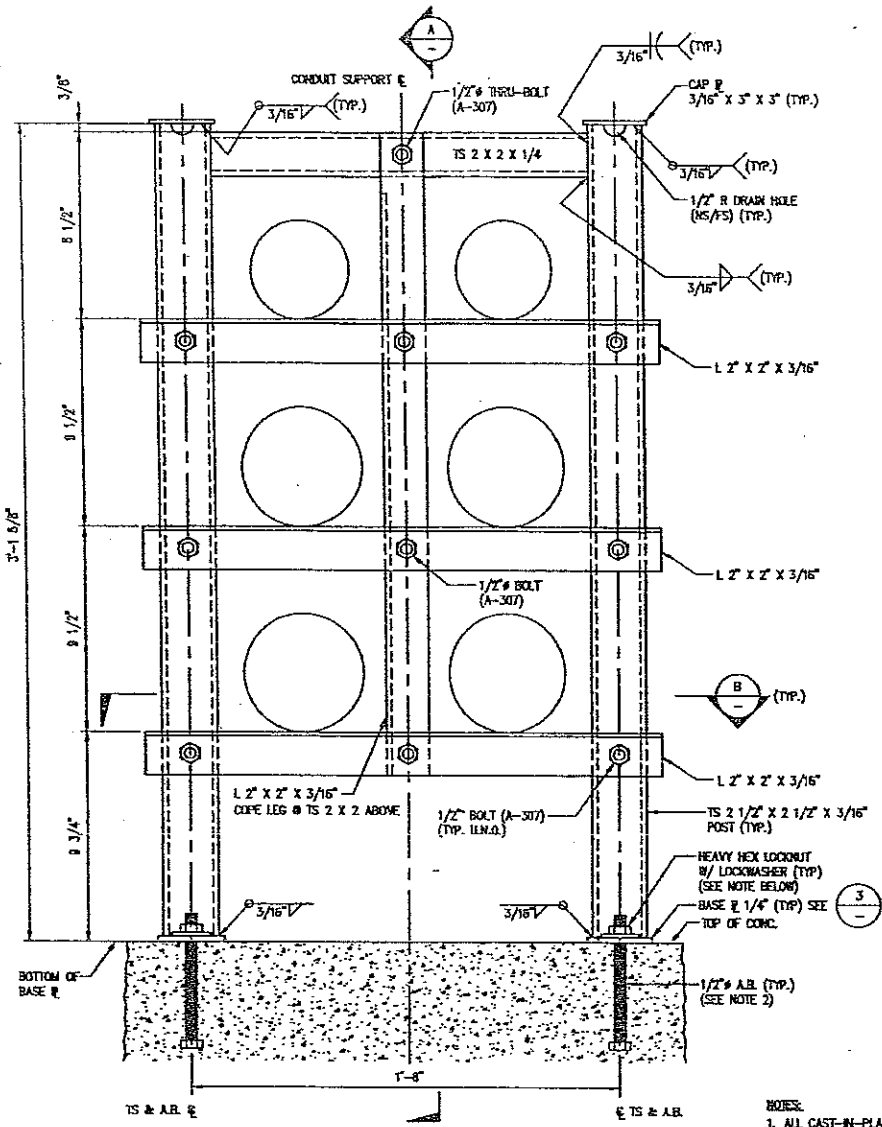
NOTE:  
ANY CHANGES TO THIS DRAWING SHALL BE DONE BY THE SPECIAL CIVIL/STRUCTURAL SECTION MANAGER'S PHONE: (619) 534-0254

REVISIONS				REVISIONS				REVISIONS			
NO.	WORK DONE	DATE	BY	NO.	WORK DONE	DATE	BY	NO.	WORK DONE	DATE	BY

**SAN DIEGO GAS & ELECTRIC**  
CARMEL MOUNTAIN ROAD AT SHAW LORENZ  
ELECTRIC CONDUIT SUPPORTS  
SECTION & DETAILS

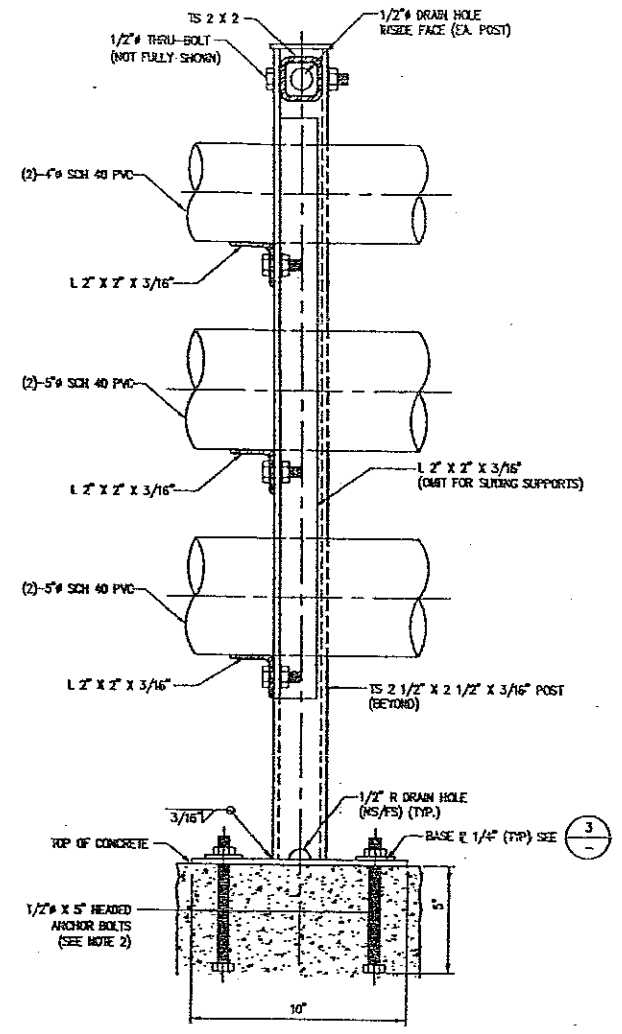
PLANNER: W. CORNMODE  
PLOT DATE: 04/28/05  
DPS# NO.: 534-109  
CONSTRUCTION ORDER NO.: 2840620  
REV/SUPP: 0

DATE: 04/28/05  
SCALE: AS NOTED  
SHEET 2 OF 3  
S2



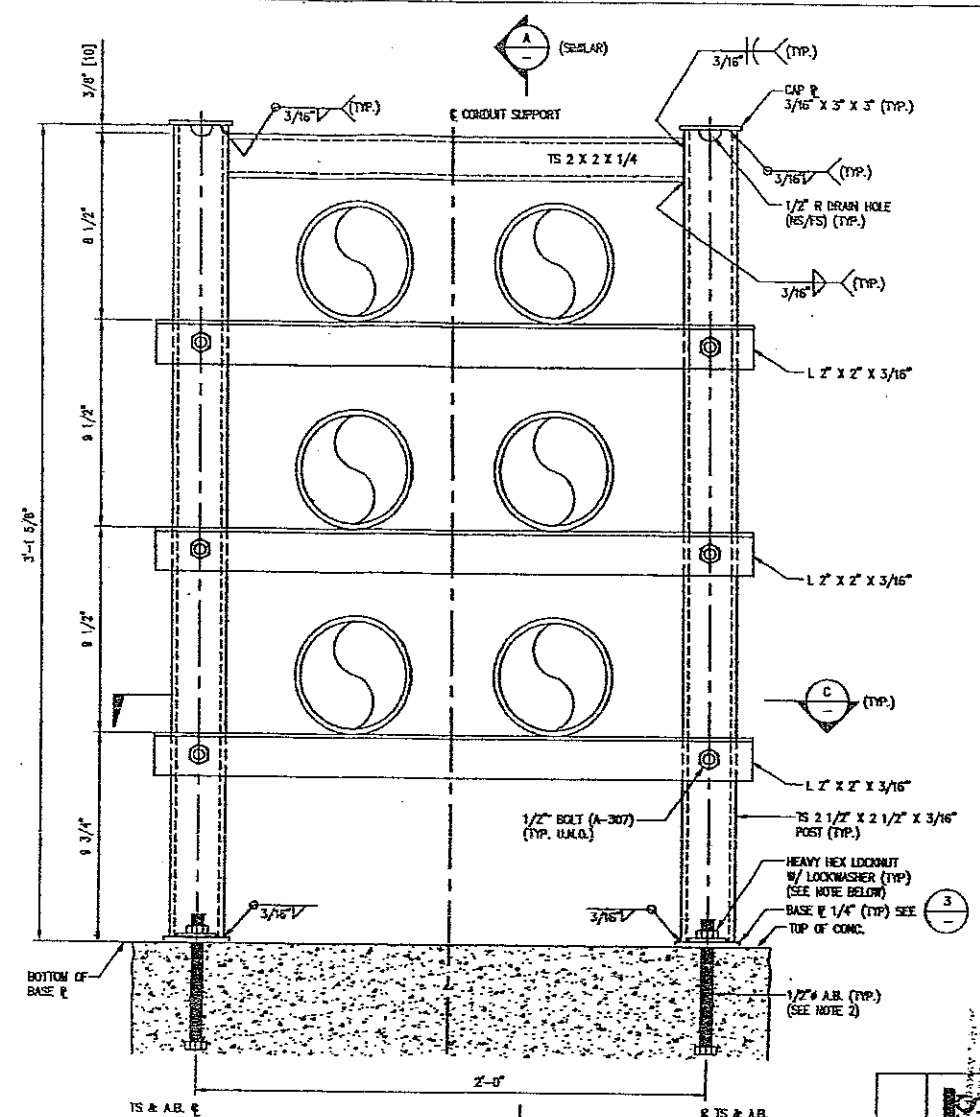
**FIXED CONDUIT SUPPORT**  
SCALE: 3" = 1'-0"

1 S-1  
1 S-2



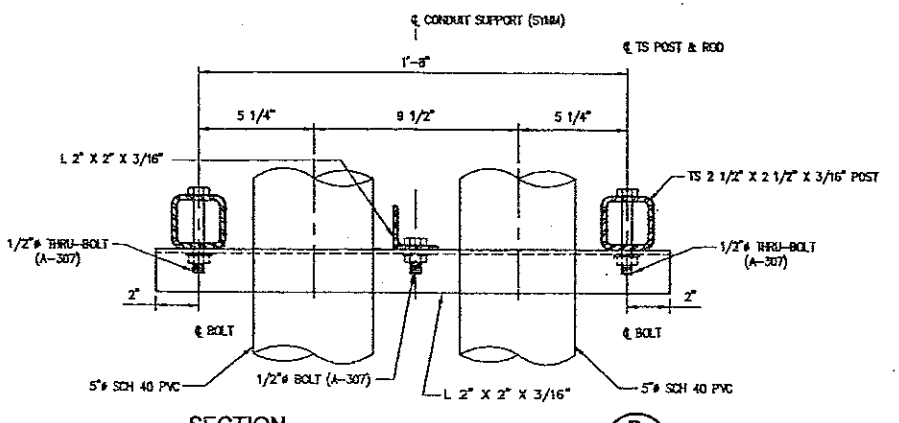
**SECTION**  
SCALE: 3" = 1'-0"

A



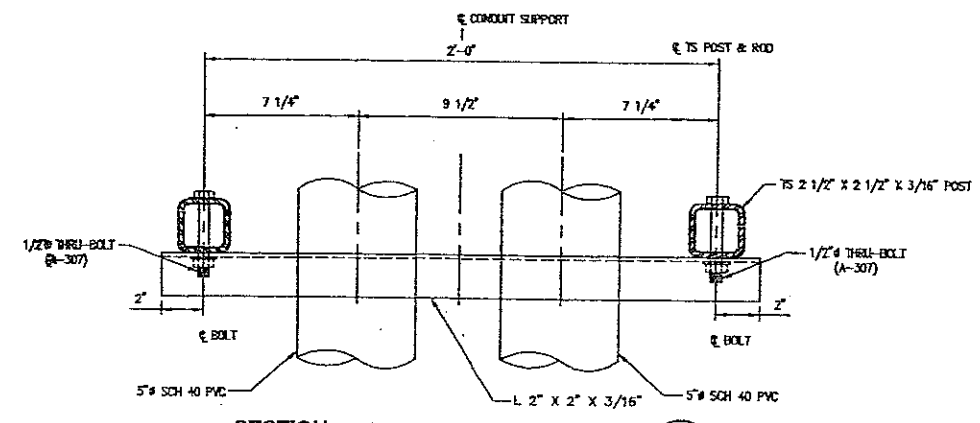
**SLIDING CONDUIT SUPPORT**  
SCALE: 3" = 1'-0"

2 S-1  
2 S-2



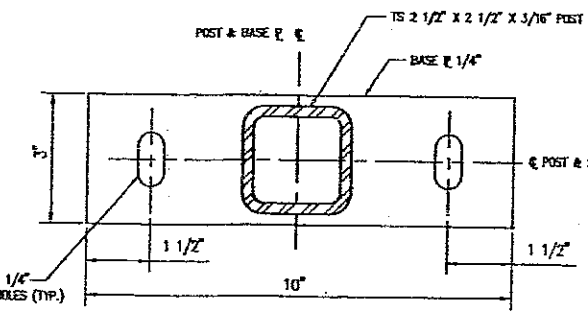
**SECTION**  
SCALE: 3" = 1'-0"

B



**SECTION**  
SCALE: 3" = 1'-0"

C



**BASE PLATE DETAIL - PLAN**  
SCALE: 6" = 1'-0"

3

- NOTES:**
- ALL CAST-IN-PLACE FASTENERS SHALL RECEIVE LOCKTITE LIQUID HIGH-STRENGTH HIGH-TEMPERATURE 266 THREADLOCKER. SEE BILL OF MATERIALS.
  - ANCHOR BOLTS SHALL BE 1/2" X 7" CAST IN PLACE (EMBED 5") OR HEAT 1/2" (EMBED 4 1/4") STAINLESS STEEL HAS RODS WITH HVA ADHESIVE. SEE NOTE S-1.

**NOTE:**  
ANY CHANGES TO THIS DRAWING SHALL BE DONE BY THE SDGE CIVIL/STRUCTURAL SECTION. MANAGER'S PHONE: (619) 694-8764

REVISIONS									
NO.	WORK DONE	DATE	BY	APPROV.	NO.	WORK DONE	DATE	BY	APPROV.

**SAN DIEGO GAS & ELECTRIC**

CARMEL MOUNTAIN ROAD AT SHAW LORENZ  
ELECTRIC CONDUIT SUPPORTS  
FIXED AND SLIDING CONDUIT SUPPORTS

CONSTRUCTION ORDER NO. 2840620

REV/SUPP 0

SHEET 3 OF 3

S-3

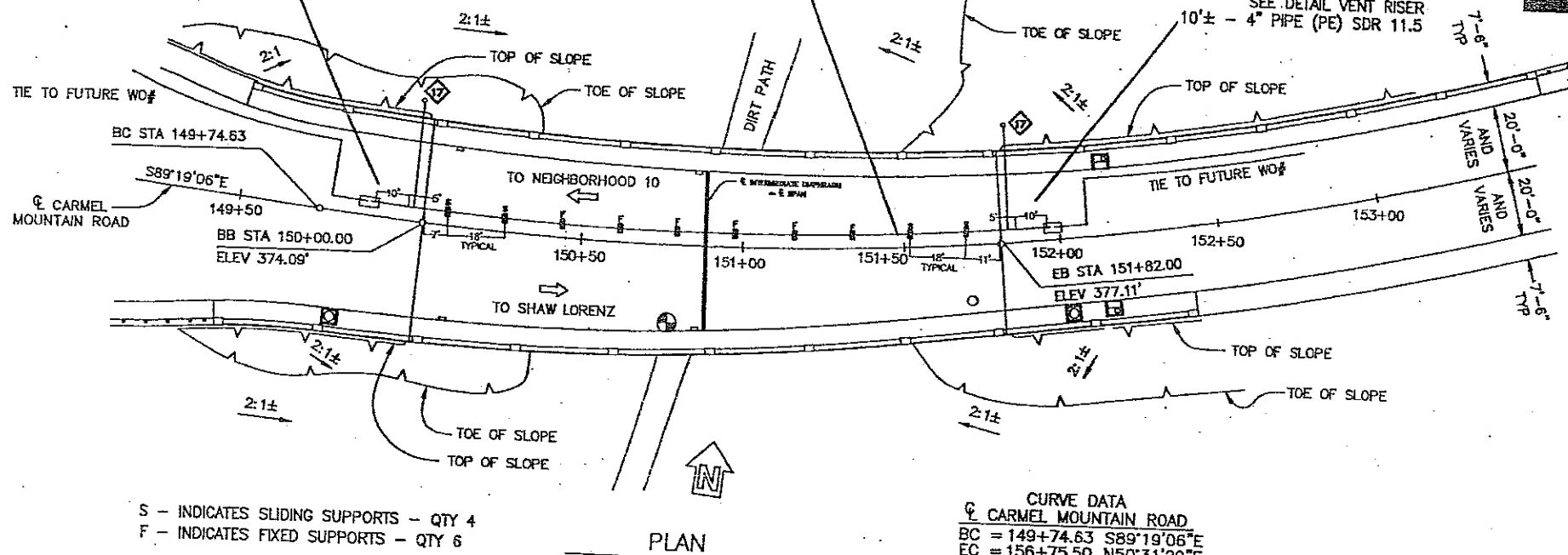
PLANNER: W. CORRODIO  
DRAWN DATE: 04/28/05  
DRESS NO.: 634 109  
SAN DIEGO GAS & ELECTRIC  
ELECTRIC CONSTRUCTION ORDER  
1/01/03 BASE DRAWING

PRELIMINARY COPY  
NOT FOR CONSTRUCTION

- INSTALL:  
50'± - 2" PIPE STEEL  
1 - 17# ANODES  
1 - 12" VALVE BOX & COVER  
SEE DETAIL VENT RISER  
10'± - 4" PIPE (PE) SDR 11.5

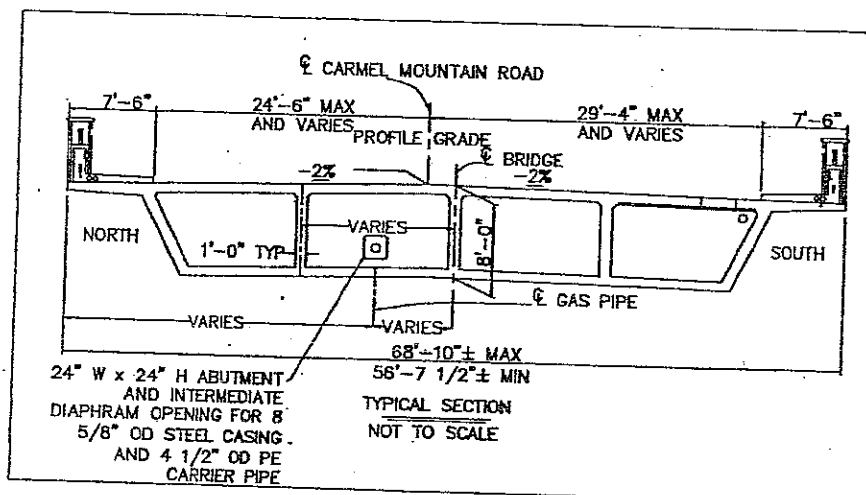
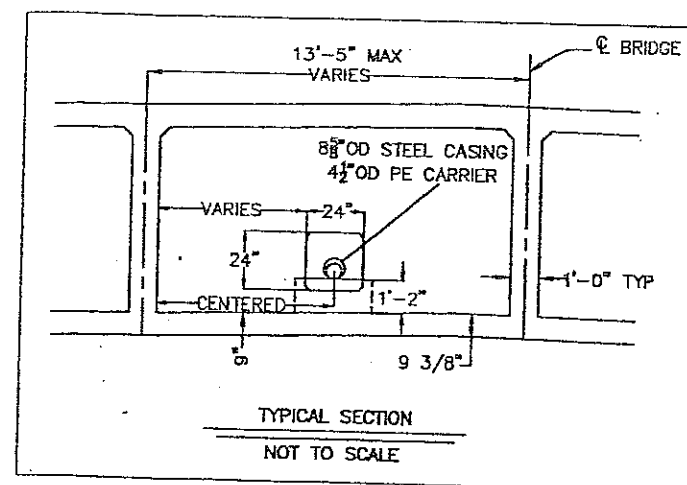
- INSTALL:  
205' - 8" WRAPPED STEEL CASINGS  
205' - 4" PIPE (PE) SDR 11.5  
2 - 8" CAPS OR BLANKS (STEEL)  
4 - SLIDING SUPPORTS  
6 - FIXED SUPPORTS  
53 - 8" X 4" CASING SPACERS  
2 - 4" X 8" END SEALS  
6 - 8" FRP FIBERGLASS SLEEVES FOR ABUTMENT BACKWALL

- INSTALL:  
50'± - 2" PIPE STEEL  
1 - 17# ANODES  
1 - 12" VALVE BOX & COVER  
SEE DETAIL VENT RISER  
10'± - 4" PIPE (PE) SDR 11.5



CURVE DATA  
CARMEL MOUNTAIN ROAD  
BC = 149+74.63 S89°19'06"E  
EC = 156+75.50 N50°31'29"E  
R = 1,000.00'  
Δ = 40°09'25"  
C = 700.87'

DESIGN BY LOCATION



- GAS NOTES**
- FIELD ENGINEERING REP. GORDON STORRS (858) 581-7518 TO SET POSITION AND GRADE.
  - NOTIFY PIPELINE OPS. (858) 549-6574 5 DAYS PRIOR TO START OF JOB.  
NOTIFY WELDING INSPECTION (858) 549-6533 5 DAYS PRIOR TO START OF JOB.  
NOTIFY CATHODIC PROTECTION DEPARTMENT (858) 549-6566 5 DAYS PRIOR TO START OF JOB.  
ENGINEERING QUESTIONS CONTACT JENNIFER EBNER (858) 547-2054.  
CONTACT ANDREW PHAN (858-547-3359) FOR DESIGN CHANGES.  
CONTACT BOB WEBB (858) 547-2006 48 HOURS PRIOR TO INSTALLATION OF PE PIPE.
  - ANTICIPATED SEISMIC MOVEMENT: SUPERSTRUCTURE RELATIVE TO ABUTMENT IS 1-2" TRANSVERSE AND LONGITUDINAL. NO MOVEMENT OF ABUTMENT RELATIVE TO THE SOIL.
  - ALL SUPPORTS TO BE EQUAL DISTANCE FROM BRIDGE SOFFIT TO ACCOMMODATE BRIDGE SETTLEMENT.
  - SPECIAL ORDERED ITEMS TO BE PICKED UP AT MIRAMAR. CONTACT STEPHANIE KILBOURNE 48 HOURS PRIOR TO STARTING WORK @ (858) 549-6550 OR TONY LOPEZ @ (858) 549-6546.
  - CONCRETE 28 DAY STRENGTH SHALL BE 4000 PSL. SPECIAL INSPECTION REQUIRED TO VERIFY COMPRESSIVE STRENGTH OF CONCRETE.
  - EXTEND CASING 5' BEYOND ABUTMENT BACKWALL. EXTEND 4" PE 10' BEYOND CASING.
  - MINIMUM 10' LENGTH OF PE IN SOIL BEFORE FIRST FITTING.  
TEST 4" PE PIPE @ 100 PSI FOR 1 HOUR.
  - NO FITTINGS ARE ALLOWED ON THE 4" PE PIPE INSTALLED IN THE CASING.
  - IF 4" CARRIER PIPE IS NOT ENERGIZED, INSTALL (1/2") PE RISER AND PRESSURE GAUGE. AND MAINTAIN 40 PSIG AIR PRESSURE.

- LABOR PROVIDED BY BRIDGE CONTRACTOR**
- INSTALL Z-SHAPE REBAR IN BRIDGE SOFFIT AND ALL PIPE SUPPORT REBAR
  - SANDBLAST TOP OF SOFFIT OR ROUGHEN TO (1/4") AMPLITUDE PRIOR TO POURING PIPE SUPPORT
  - FABRICATE WOOD FORMS FOR ALL 10 PIPE SUPPORTS
  - INSTALL FIBERGLASS SLEEVES, PIPE SUPPORT BRACKETS, ANCHOR BOLTS, WASHERS, AND NUTS.
  - POUR CONCRETE FOR PIPE SUPPORTS
  - REMOVE WOOD FORMS
  - TIGHTEN BOLT NUTS ON BRACKETS
  - TEST CONCRETE STRENGTH
  - INSTALL FRP SLEEVES IN ABUTMENT BACKWALL

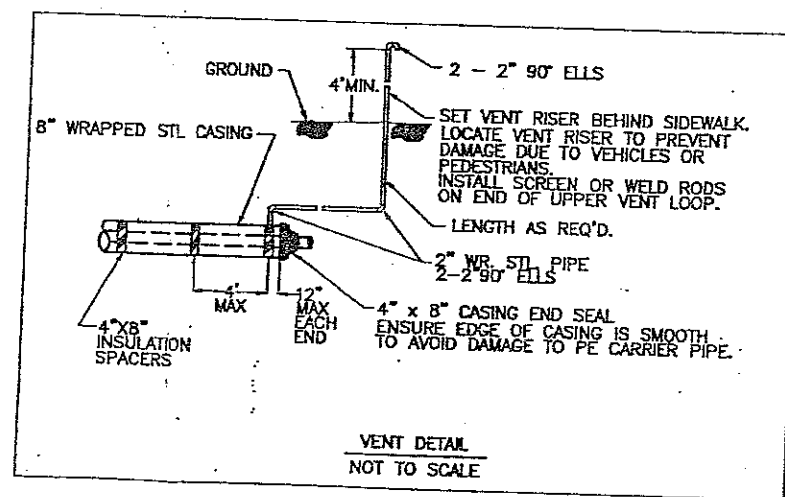
- LABOR PROVIDED BY SDG&E**
- WELD AND INSTALL 8" CASING IN BRIDGE
  - EXCAVATE TRENCHES AND INSTALL 8" CASING, 2" VENT PIPES, AND 4" PE (SDR 11.5) CARRIER PIPE TO LOCATION FOR MAIN TIE-IN.
  - INSTALL 17# ANODES, BONDWIRES, AND 12" BOX & COVER.
  - BACKFILL TRENCHES
  - CHECK CATHODIC PROTECTION OF ANODES

**MATERIALS PROVIDED BY SDG&E**

ITEMS	DESCRIPTION	QTY
1.	(8-5/8") OD, (.188") WALL WRAPPED STEEL CASING, API 5L GR X 46, 17#/FT	205'
2.	(4") PE SDR 11.5 CARRIER PIPE 2#/FT	225'
3.	(2.375") OD, (0.154") WALL WRAPPED STEEL VENT PIPE, API 5L OR ASTM A53 OR ASTM GRB, 4#/FT	100'
4.	(8") STEEL CAPS	2
5.	(2") STEEL ELBOW, STD WT, GR B	8
6.	(3/8") THICK, (2-1/2") WIDE GALVANIZED STEEL BRACKET, ASTM A36, SLIDING PIPE SUPPORT (8") CASING	4
7.	(3/8") THICK (2-1/2") WIDE GALVANIZED STEEL BRACKETS, ASTM A36, FIXED PIPE SUPPORT (8") CASING	6
8.	(3/4") DIA, (8") NC ANCHOR BOLT, (3/4") X (1-1/2") SAE WASHER, NUT 316 SS, ASTM F593	20
9.	17 LB MAGNESIUM ANODE W/ BOND WIRES	2
10.	(12") X (10") VALVE BOX AND ROUND COVER	2
11.	SHADING MATERIAL FOR (8") CASING & (2") VENT PIPES	2
12.	(8") FIBER GLASS SLEEVE (ONE HALF SECTION), (1/8") THICK X (6") LONG.	AS REQ'D
13.	(4") X (8") PSI MODEL S, RUBBER CASING END SEAL	30
14.	(4") X (8") INSULATING CASING SPACERS	2
15.	(8") FIBERGLASS SLEEVE (ONE HALF SECTION), (1/8") THICK X (16") LONG	53

**MATERIALS PROVIDED BY CONTRACTOR**

ITEMS	DESCRIPTION	QTY
1.	#4 REBAR, 8" X 14 1/2" X 8", Z	40
2.	#3 REBAR, 27" LONG	40
3.	#3 REBAR, 5" X 8", LOOP	28
4.	#3 REBAR, 5" X 12 1/2" LOOP	12
5.	#3 REBAR, 7" X 12" X 7", WING	12
6.	WOOD AND MATERIALS TO FABRICATE 10 PIPE SUPPORTS	AS REQ'D
7.	CONCRETE, 4,000 PSL FOR 10 PIPE SUPPORTS	AS REQ'D



**SDGE** **Sempra Energy utility**

GAS TECHNICAL SERVICES - DRAWING  
GAS DISTRIBUTION SYSTEM

200'-8" CASING AND 4" PE MAIN  
SHAW LORENZ BRIDGE  
CITY OF SAN DIEGO

BUDGET#	05500	THOMAS BROS#	1208-FZ
PLAT PAGE:	72/913	DATE:	08/29/05
DRAWN:	AHP	DESIGNED:	AHP
SIZED:	SJP	DATE:	06/09/05
SYSTEM PROTECTION:			
PIPELINE OPERATIONS:			
REGION ENGINEERING:	JAE	DATE:	06/29/05
APPROVED:	AHP	DATE:	9/16/05

PROJECT No./DPSS No.: 534109-020  
Work Order No.: 1713290  
PLOT SCALE: 1:1  
REV: 0