N

INSTALL NEW 2" FIBERGLASS VENT LINE TO EXIST'G. GALV. VENT RISER.

NEW 520 GALLON MODERN WELDING DOUBLE WALL WASTE OIL TANK. REMOVE EXIST'G. 280 GALLON W.O. TANK.

NUMBER	SH.	REFERENCE DRAWINGS

EXIST'G. POWER PANEL

LEAK ALERT LA-08

A/C PAVING

EXIST'G. CONCRETE.

CASHIER

ABANDON WASTE OIL DRAIN LINE. CUT FLUSH WITH LUBE BAY FLOOR & FILL W/CONCRETE.

A/C PAVING

UNLEADED 92

UNLEADED 87

EXIST'G. CONCRETE

3/4" COND. FROM ANNULAR PROBE TO ALARM PANEL IN CASHIER BOOTH. LOOP 3/4" COND. FROM PROBE TO RISER CONTAINMENT BOX.

2' (TYP)

MONITOR WELL

NEW REINFORCED CONC. SLAB

87/89/92

87/89/92

A/C PAVING

MAC ARTHUR BLVD

HARRISON STREET

WASTE OIL TANK:

1. REMOVE EXIST'G. 280 GALLON WASTE OIL TANK. COMPLY WITH ALL APPLICABLE REGULATIONS.
2. UNOCAL IS RESPONSIBLE FOR PROPER DISPOSAL OF ALL SOIL.
3. REMOVE EXIST'G WASTE OIL VENT LINE. REPLACE WITH NEW 2" FIBERGLASS VENT LINE. CONNECT TO EXIST'G. GALVANIZED VENT RISER.
4. ABANDON EXIST'G. WASTE OIL DRAIN LINE. CUT FLUSH WITH LUBE BAY FLOOR AND FILL WITH CONCRETE.
5. INSTALL NEW MODERN WELDING 520 GALLON DOUBLE WALL FIBERGLASS COATED WASTE OIL TANK.
6. WASTE OIL TANK SHALL BE TESTED AS REQ'D.
7. TANK HOLE SHALL BE FENCED OFF WHEN NOT ATTENDED OR DURING OFF HOURS.
8. INSTALL REINFORCED CONCRETE SLAB FOR TANK.
9. INSTALL (1) 3/4" CONDUIT FROM ANNULAR PROBE AT WASTE OIL TANK TO ALARM PANEL IN BLD'G. STUB UP CONDUIT INSIDE OF BLD'G. AND ROUTE OVERHEAD TO ALARM PANEL. LOOP (1) 3/4" CONDUIT FROM ANNULAR PROBE WELL TO RISER CONTAINMENT BOX OF WASTE OIL TANK.
10. SEE J SHEETS FOR PIPING & TANK SPECIFICATIONS.
11. SEE B-0 SHEET FOR CONCRETE SPECIFICATIONS.

Features & text shown on this drawing are for general reference only and must be field verified.

REV. BY	CKD. BY	APP'D

DRAWN BY JSR

CHECKED BY

APPROVED

DATE 04-14-92

SCALE 1" = 10'

SERVICE STATION 1871

MAC ARTHUR BOULEVARD & HARRISON STREET
OAKLAND, CALIFORNIA

WASTE OIL TANK REPLACEMENT

Unocal Refining & Marketing Division

UNOCAL 76

DRAWING NO.

SHEETS SHEET

SPECIFICATIONS

1. CONCRETE WORK:

PLACING CONCRETE

Concrete shall be scheduled to pour monolithically. If a pour is interrupted and initial curing takes place, care shall be exercised to make a bonded joint. Soil shall be compacted and moistened as required prior to commencement of any pour.

Concrete mixed on job site shall be machine mixed in the following dry measured and compacted proportions to produce a 28 day compressive strength of 2,500 PSI;

1 part Portland cement (6 sacks per cu. yd. minimum)
2 1/2 parts concrete sand
3 1/2 parts 1" maximum crushed rock or gravel

Water content shall not exceed 7 1/2 gallons for each sack of cement.

FORMING

A tolerance of 1/4", plus or minus, will be permitted in the location of forms. Depth of forms to be full depth of concrete being poured.

CONCRETE MIX – (EXCEPT ON PUBLIC PROPERTY)

Plant or transit mix concrete shall conform to the following: minimum of six sacks of cement per yard of concrete, 1" maximum rock, 28 day compressive strength of 2,500 PSI – standard concrete.

CONCRETE MIX FOR WORK ON PUBLIC PROPERTY

Concrete for approaches, sidewalks, or other work upon public property, shall conform to governing regulations. In the absence of such regulations the mix specified above shall be used.

REINFORCING

1. All concrete slabs shall be reinforced with #4 bars, 18" O.C.
2. Reinforcing steel shall be deformed bars conforming to ASTM designation A–615–80 grade 40 for #4 bars or smaller and grade 60 for #5 bars or larger.
3. Reinforcing bars may be spliced by lapping 30 bar diameters in concrete or 1'–6" which ever is largest.
4. Reinforcing shall have the following minimum cover: concrete poured against earth, 3", against earth but formed 2".

SPECIFICATIONS FOR CONCRETE MASONRY CONSTRUCTION

1. Masonry units shall conform to specifications of ASTM designation C–90–75 grade N.

2. Portland cement shall conform to ASTM designation C–150–80.

3. Mortar shall be freshly prepared and uniformly mixed in the ratio by volumes or 1 part cement, 1/2 part lime putty, 4 1/2 parts sand and shall conform to ASTM designation C–270–80a. If plastic type cement is used, the lime putty shall be omitted.

4. Grout shall be of fluid consistency and mixed in the ratio by volumes, 1 part cement, 3 parts sand, or 1 part cement, 3 parts sand and 2 parts pea gravel.

5. Reinforcing steel shall be deformed bars conforming to ASTM designation A–615–80 grade 40 for #4 bars or smaller and grade 60 for #5 bars or larger.

6. Reinforcing bars may be spliced by lapping 30 bar diameters in concrete or 1'–6" which ever is largest.

7. Reinforcing shall have the following minimum cover: concrete poured against earth, 3", against earth but formed 2".

8. Concrete shall have a minimum strength of 2,500 PSI in 28 days --- standard concrete.

9. Construction shall be of highest quality workmanship and all walls shall be laid true and plumb.

FOUNDATION DESIGN

Foundation design based on non–expansive soil or compacted fill. If inspection reveals that foundation site contains expansive soil, submit soil report from recognized laboratory for approval of building and safety division prior to pouring footings.

PIERS AND FOUNDATONS

General contractor shall provide and accurately set anchor bolts with nuts, or anchor pads, as shown on drawings. Top of piers shall be grouted smooth, level, and at the exact elevations shown.

Pier and footings depths shown on drawings are minimum and the General Contractor shall include in his bid the cost of increasing pier and foundation depths to conform to prevailing requirements of local authorities and codes.

CANOPY ISLANDS

Grout pocket in canopy footing (first pour) shall be stripped of forms and left open and clean for steel building contractor to insert canopy column and install grout. After columns are set in place and internal electrical conduit and downspout connections have been made, concrete contractor will finish islands.

STEEL BUILDINGS WITH CONCRETE BLOCK WALLS

When steel buildings are contructed with one or more concrete block walls, the contractor shall furnish and install galvanized steel flashing which is grouted into block walls.

ROOF DRAINAGE

Roof drainage shall be conducted under sidewalk through curb to gutter via approved conductors.

BLACK COLORED CONCRETE:
All exposed concrete surfaces including but not limited to the following:

BUILDING:

a. All interior floors except restrooms and sales room

b. All exterior building curbs including all horizontal and vertical surfaces

c. All exterior concrete slabs, work aprons, and refuse enclosure slabs and curbs

CANOPIES:

a. All islands including drive slabs

YARD:

a. All planter curbs

b. All light pole and sign pole foundations

c. All miscellaneous slabs, bases, and curbs required for exterior equipment

Mechanically mix three pounds (two gallon dry mix) regular uncompressed iron oxide, black to 1 sack of cement to 1 sack of plaster sand. Trowel this mixture on surface specified a minimum of 1/4" thick within one hour after concrete base course is poured.

Surfaces of concrete stoop at front door of building, shall be hard smooth steel trowel finish and given a fine non-skid texture by stroking with a clean fine hair broom.

Surfaces of concrete floors, pump islands, and all slabs including drive slabs shall be wood floated, then steel troweled. The surface shall then be given a medium non-skid texture by stroking with a clean fine hair broom.

CURING
A.C. Horn clear seal curing and hardner shall be flood coated uniformly over all concrete floors, islands, and island drive slabs immediately after initial set. Application by Hudson sprayer is recommended.

WAX
Apply one coat, lithocrome colored wax L.M. Scofield Co. #A-20 black (U-909) to all exposed black concrete surfaces.

NUMBER	SH.	REFERENCE DRAWINGS

REV. NO.	DATE	REVISED — DESTROY ALL PRINTS BEARING EARLIER DATE	REV. BY	CKD. BY	APD
1	7-3-90	GENERAL REVISION	CHP		
2	1-29-92	CHANGE STRENGTH TO 2500 psi, REINFORCING TO #4 @ 18" O.C.	CHP		

DRAWN BY JSR

CHECKED BY

APPROVED P.MORTON

DATE 4-15-90

SCALE

CONCRETE SPECIFICATIONS

Unocal Refining & Marketing Division

UNOCAL 76

DRAWING NO. B-0

SHEETS SHEET

OWNER OR COMPANY IS UNOCAL, REPRESENTED BY ITS PROJECT ENGINEER, W
IS AUTHORIZED TO ACT FOR IT WITH RESPECT TO THIS ENTIRE PROJECT.

GENERAL CONTRACTOR IS THE INDIVDUAL OR FIRM WITH WHOM THE OWNER H
CONTRACTED FOR SATISFACTORY COMPLETION OF THE ENTIRE PROJECT. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR SCHEDULING AND COORDINATING ALL WORK INVOLVED IN THE PROJECT. HE IS RESPONSIBLE FOR APPROVING OR REJECTING ALL MATERIALS AND WORKMANSHIP FURNISHED FOR ALL PARTS OF THIS PROJECT, INCLUDING THOSE WHICH ARE ORDERED OR SUBCONTRACTED BY HIM AND THOSE WHICH MAY BE ORDERED OR CONTRACTED DIRECTLY BY THE OWNER.

CONTRACTOR AS USED HEREIN, REFERS TO THE INDIVIDUAL OR FIRM WHO
UNDERTAKES THE PERFORMANCE AND SATISFACTORY COMPLETION OF THE WORK SPECIFIED HEREIN AND WHICH SHALL BE SCHEDULED, PERFORMED, AND COMPLETED AS DIRECTED BY THE GENERAL CONTRACTOR.

SCOPE

THIS CONTRACTOR SHALL FURNISH, AT HIS OWN COST AND EXPENSE, ALL LABOR; MATERIAL; EQUIPMENT; AND TRANSPORTATION REQUIRED TO COMPLETE UPON THIS SITE, THE FOLLOWING:

THE GENERAL ARRANGEMENT DRAWING SHOWS THE ENTIRE SCOPE OF THIS CONSTRUCTION WORK. IN THE EVENT OF VARIANCES BETWEEN IT AND ANY OTHER DRAWINGS, AS TO LOCATION OF BUILDINGS, STRUCTURES, FACILITIES OR EQUIPMENT SHOWN, THE GENERAL ARRANGEMENT DRAWING SHALL GOVERN.

THE CONTRACTOR SHALL ALSO SUPPLY AND INSTALL CERTAIN APPURTENANCES DESCRIBED HEREIN. THE FABRICATION AND CONSTRUCTION SHALL BE PERFORMED IN STRICT CONFORMANCE TO THE FOLLOWING DRAWINGS WHICH ARE ATTACHED HERETO AND ARE A PART HEREOF:

INSURANCE

CONTRACTOR SHALL PURCHASE AND MAINTAIN IN FULL FORCE AND EFFECT THE FOLLOWING POLICIES OF INSURANCE, WHICH WILL BE PRIMARY AS TO ANY OTHER EXISTING VALID AND COLLECTIBLE INSURANCE.

CONTRACTOR AGREES TO ADVISE ALL ITS EMPLOYEES AND THE EMPLOYEES OF ITS SUBCONTRACTORS AND AGENTS THAT: (1) IT IS THE POLICY OF UNOCAL THAT THE USE, POSSESSION, SALE, TRANSFER OR PURCHASE OF ILLEGAL DRUGS ON UNOCAL PROPERTY IS PROHIBITED; (2) ENTRY ONTO UNOCAL PROPERTY CONSISTUTES CONSENT TO AN INSPECTION OF THE EMPLOYEE AND HIS OR HER PERSONAL EFFECTS WHEN ENTERING, ON, OR LEAVING UNOCAL PROPERTY; AND (3) ANY EMPLOYEE WHO IS FOUND IN VIOLATION OF THE POLICY OR WHO REFUSES TO PREMIT AN IN-SPECTION MAY BE REMOVED AND BARRED FROM UNOCAL PROPERTY, AT THE DISCRETION OF UNOCAL.

*CONTRACTOR AGREES TO PROTECT, INDEMNIFY AND HOLD COMPANY AND ITS EMPLOYEES, AGENTS, AND OFFICERS FREE AND HARMLESS FROM AND AGAINST ANY AND ALL CLAIMS, DEMANDS, AND CAUSES OF ACTION OF ALL KINDS INCLUDING WITHOUT LIMITATION, CLAIMS OF PROPERTY DAMAGE, INJURY OR DEATH, ARISING OUT OF OR BEING IN ANY WAY CONNECTED WITH CONTRACTOR'S PERFORMANCE UNDER THIS AGREEMENT, EXCEPT FOR MATTERS SHOWN BY FINAL JUDGMENT TO HAVE BEEN CAUSED BY THE SOLE NEGLIGENCE OF COMPANY. THE INSURANCE REQUIREMENTS OF THE FOLLOWING PARAGRAPH SHALL NOT BE CONSTRUED TO LIMIT THE INDEMNIFICATION PROVIDED HEREUNDER; THE INDEMNIFICATION PROVIDED HEREIN SHALL BE EFFECTIVE TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE DEFENSE OF ANY AND ALL CLAIMS, DEMANDS OR SUITS AGAINST COMPANY, ITS EMPLOYEES, AGENTS AND OFFICERS, INCLUDING WITHOUT LIMITATION, CLAIMS BY ANY EMPLOYEE OF ANY CONTRACTOR OR ANY EMPLOYEE OF ANY SUBCONTRACTOR, EVEN THOUGH THE CLAIMANT MAY ALLEGE WILLFULL MISCONDUCT OR SOLE NEGLIGENCE ON THE PART OF COMPANY.

WITH RESPECT TO OPERATIONS PERFORMED UNDER OR INCIDENT TO THIS AGREE-MENT, CONTRACTOR FURTHER AGREES TO OBTAIN AND MAINTAIN INSURANCE ACCEPTABLE TO COMPANY WHICH IS PRIMARY AS TO ANY OTHER EXISTING, VALID AND COLLECTIBLE INSURANCE AND EXCEPT FOR WORKERS' COMPENSATION, EMPLOYERS' LIABILTY, AND CONTRACTURAL LIABILTY INSURANCE NAMES COMPANY AS AN ADDITIONAL INSURED WITH A CROSS LIABILITY CLAUSE (SEVERABILITY OF INTEREST). SUCH INSURANCE SHALL INCLUDE:

(A) COMPREHENSIVE GENERAL AND PROFESSIONAL LIABILITY INSURANCE COVERING SUBCONTRACTOR'S CONTAINMENT LIABILITY, COMPLETED OPERATIONS AND PRODUCT LIABILITY, CONTRACTUAL LIABILITY, AND IF REQUESTED BY COMPANY, LIABILITY ARISING FROM EXPLOSION, COLLAPSE OR UNDERGROUND PROPERTY DAMAGE, ALL WITH A MINIMUM COMBINED SINGLE LIMIT OF $1,000,000 EACH OCCURRENCE (OR THE EQUIVALENT) BODILY INJURY AND PROPERTY DAMAGE AND,

(B) COMPREHENSIVE AUTOMOBILE LIABILITY INSURANCE COVERING ALL OWNED, HIRED, OR OTHERWISE OPERATED NON-OWNED VEHICLES WITH A MINIMUN COMBINED SINGLE LIMIT OF $1,000,000 EACH OCCURRENCE (OR THE EQUIVALENT) FOR BODILY INJURY AND PROPERTY DAMAGE AND,

(C) (i) WORKERS' COMPENSATION INSURANCE AS REQUIRED BY LAW, COVERING ALL STATES OF OPERATION, AND,

(ii) EMPLOYERS' LIABILITY INSURANCE WITH A MINIMUM LIMIT OF $100,000 EACH OCCURRENCE.

COMPANY SHALL HAVE THE RIGHT TO REQUIRE CONTRACTOR TO CHANGE THE MINIMUM LIMITS OF SUCH COVERAGE. SUBROGATION AGAINST COMPANY SHALL BE WAIVED AS RESPECTS WORKERS' COMPENSATION AND EMPLOYERS' LIABILITY INSURANCE, EXCEPT IN MATTERS SHOWN BY FINAL JUDGEMENT TO HAVE BEEN CAUSED BY THE SOLE NEGLI-GENCE OF THE COMPANY. THE INSURANCE REQUIRED UNDER PARAGRAPH (*). FURTHER, THE INSURANCE TO BE CARRIED SHALL BE IN NO WAY LIMITED BY ANY LIMITATION EXPRESSED IN PARAGRAPH (*) OF THE GENERAL CONTRACT TERMS AND CONDITIONS, NOT ANY LIMITATION PLACED ON THE INDEMNITY THEREIN GIVEN AS A MATTER OF LAW.

PACKAGE #1 FOR EACH DW FIBERGLASS COATED STEEL TANK

1.) 3 – 2" x 24" FLEX CONNECTORS M x MS U–320
    3 – 2" x 24" FLEX CONNECTORS M x.M U–320
2.) 1 EXTRACTOR VALVE ASSEMBLY WITH BLEED HOLE U–321
    1 EXTRACTOR VALVE ASSEMBLY WITHOUT BLEED HOLE U–321
3.) 1 VAPOR RECOVERY ADAPTOR AND CAP U–322
4.) 1 4" FILL ADAPTOR AND CAP U–323
5.) 1 SUBMERGED FILL TUBE U–324
6.) 1 2" BALL VALVE U–329
7.) 1 NAME PLATE HOLDER U–331
8.) 6 – 1" CONDUIT FITTINGS, 1 – 3/4" CONDUIT FITTING (U–325)
9.) 2 RISER CONTAINMENT SUMPS WITH INSTALLATION KIT U–314
10.) 1 CNI CONTAINMENT PACKAGE
    A. SPILL CONTAINMENT MANWAY AND FILL BOX U–313
    B. PUMP BOX ASSEMBLY U–319
    C. 3 DOUBLE TAP FLANGE PIPE 319 DT BUSHINGS TO CONTAINMENT BOX U–325
11.) 3 CONTAINMENT BOOTS FOR EXTERIOR FLEXCONNECTORS (U–332)
12.) 1 MONITOR BOX U–316
13.) OVERFILL PREVENTION VALVE (U–318)

PACKAGE #2 DOUBLE WALL WASTE OIL TANK

1.) EXTRACTOR W/O BLEED VALVE U–321
2.) 1 1" CONDUIT FITTING U–325
3.) 1 RISER CONTAINMENT BOX U–314
4.) 1 CNI MANWAY U–312
5.) 1 – 2" X 24" FLEX CONNECTOR M X M (U–320)
6.) 1 CONTAINMENT BOOT FOR EXTERIOR FLEXCONNECTORS U–332
7.) 1 MONITOR BOX U–316
8.) TOTAL CONTAINMENT UNISEAL GROMMET U–340
9.) 1 – 4" FILL ADAPTOR AND CAP (U–323)

THE CONTRACTOR SHALL INSPECT THE SITE, DRAWINGS, AND SPECIFICATIONS PRIOR TO SUBMITTING HIS BID. SHOULD THE CONTRACTOR FIND DISCREPANCIES OR QUESTION THE CONTRACT REQUIREMENTS, HE SHALL ASK THE PROJECT ENGINEER FOR CLARIFICATION. THE CONTRACTOR SHALL COORDINATE THIS WORK WITH OTHERS TO AVOID ANY POSSIBLE DELAYS.

EXTRA WORK AND CONTRACT SUPPLEMENTS

CHANGES AND EXTRAS SHALL BE AUTHORIZED IN WRITING. ORAL AGREEMENTS WILL NOT BE RECOGNIZED BY OWNER.

INSPECTION OF WORK

OWNER'S REPRESENTATIVE WILL INSPECT ALL MATERIAL AND WORKMANSHIP FUNISHED UNDER THE CONTRACT. IF, IN HIS OPINION, ANY PART IS UNSATISFACTORY, THE CONTRACTOR SHALL REPLACE OR CORRECT IT AT CONTRACTOR'S EXPENSE.

CLEAN–UP

CONTRACTOR SHALL REMOVE FROM CONSTRUCTION SITE AND ADJACENT PROPERTIES EXCESS AND WASTE MATERIAL FROM THIS WORK. FILL BOXES AND CONTAINMENT SUMPS SHALL BE CLEAN AND FREE OF EARTH.

GUARANTEE OF MATERIAL AND WORKMANSHIP

IF, WITHIN ONE YEAR AFTER THE DATE OF COMPLETION AND OF THIS WORK, ANY OF THE MATERIAL OR WORKMANSHIP FURNISHED BY THE CONTRACTOR SHALL PROVE DEFECTIVE, CONTRACTOR WILL, UPON RECEIPT OF OWNER'S WRITTEN REQUEST, REPLACE OR REPAIR IT AT CONTRACTOR'S EXPENSE.

PERMITS

BUILDING PERMIT WILL BE OBTAINED AND PAID FOR BY OTHERS. ALL OTHER PERMITS NECESSARY TO COMPLETE THIS WORK SHALL BE OBTAINED BY THE CONTRACTOR.

ALL WORK SHALL BE PERFORMED ACCORDING TO THE REQUIREMENTS OF THE CITY, COUNTY, AND STATE HAVING JURISDICTION OVER THE CONSTRUCTION.

GENERAL PIPING SPECIFICATIONS

MATERIAL

CONTRACTOR SHALL NOT DEVIATE FROM MATERIALS OR PRODUCTS SPECIFIED UNLESS THROUGH MUTUAL AGREEMENT WITH OWNER'S REPRESENTATIVE. SUBSTITUTE MATERIALS SHALL BE DESCRIBED, SPECIFYING ANY DIFFERENCE IN COST. ONLY NEW MATERIALS SHALL BE USED.

TANK FILL ASSEMBLY

THE CONTRACTOR SHALL ATTACH TO THE TAG LUG IN EACH TANK FILL BOX A METAL COMMODITY TAG (BRAND NAME OF PETROLEUM PRODUCT CONTAINED) AND A METAL CAPACITY TAG.

FLEX CONNECTOR / DOUBLE TAP FLANGE ASSEMBLY

CONTRACTOR SHALL ASSEMBLE AND TEST AS FOLLOWS:

1. UNSCREW FLANGE NUT AND REMOVE WASHER FROM DOUBLE TAP(DT) FLANGE.
2. CONNECT M x M SWIVEL FLEX CONNECTOR TO THE SIDE OF THE DT FLANGE WHERE THE FLANGE NUT WAS REMOVED. CONNECT M x M FLEX CONNECTOR ON THE OTHER SIDE.
3. PRESSURE TEXT ASSEMBLY AT 76 PSI FOR 15 MINUTES. IF NO PERCEPTABLE CHANGE IN PRESSURE HAS OCCURED DURING THE TEST PERIOD, THE SYSTEM SHALL BE CONSIDERED INITIALLY ACCEPTABLE.
4. INSERT THE ASSEMBLY THROUGH THE RISER CONTAINMENT BOX AND ATTACH WITH THE FLANGE NUT AND WASHER FROM INSIDE OF THE BOX. THE M x M SWIVEL FLEX CONNECTOR SHOULD BE ON THE INSIDE OF THE BOX.

GENERAL ELECTRICAL SPECIFICATIONS

MATERIAL SUPPLIED BY CONTRACTOR:

THE CONTRACTOR SHALL PURCHASE AND INSTALL ALL MATERIALS. ALL MATERIAL SHALL BE NEW AND FIRST QUALITY AND SHALL BE LISTED BY A NATIONALLY RECOGNIZED TESTING LAB.

WIRES AND CABLES:

WIRING INSIDE OF BUILDING AND ABOVE GROUND SHALL BE TYPE TW. WIRING IN CONDUIT UNDER-GROUND OR IN DAMP LOCATIONS SHALL BE TYPE TW. THE MINIMUM SIZE CONDUCTOR SHALL BE NO. 12 GAUGE AND MAY BE STRANDED OR SOLID; NO. 6 GAUGE AND LARGER SHALL BE STRANDED. ALL CONDUCTORS SHALL BE COPPER.
RACEWAYS SHALL BE COMPLETE AND PERMANENTLY IN PLACE BEFORE INSTALLATION OF CONDUCTORS. CONDUCTORS SHALL BE CLEAN WHEN INSTALLED. ALL CONDUCTORS SHALL BE CONTINUOUS AND WITHOUT SPLICES BETWEEN JUNCTION BOXES. WHERE SPLICES ARE MADE, THE INSULATION COLOR OF EACH ELECTRICAL CIRCUIT SHALL BE CONTINUOUS THROUGH ITS LENGTH.

CONDUIT

7

CONDUIT MATERIAL SHALL CONFORM TO THE FOLLOWING SCHEDULE:

1. BELOW GROUND – CONDUIT SHALL BE PVC COATED OR RIGID GALV. CONDUIT WRAPPED WITH CORROSION PROTECTION TAPE AND LAID A MINIMUM OF 24" BELOW GRADE.
2. ABOVE GROUND AND OUTSIDE OF BUILDING – CONDUIT SHALL BE HOT-DIPPED GALVANIZED RIGID STEEL CONDUIT CONFORMING TO ANSI STANDARD 80.1.
3. INSIDE THE BUILDING – CONDUIT NOT CONCEALED SHALL BE HOT-DIPPED GALVANIZED EMT CONFORMING TO ANSI STANDARD C80.3.

FITTINGS SHALL BE CONSISTENT AND COMPATIBLE WITH RELATED RACEWAY MATERIAL. EMT CONNECTORS SHALL BE PRESSURE GLAND TYPE.
THE CONDUIT SYSTEM AND ALL CONDUCTING WIRE ENCLOSURES SHOULD BE SECURELY BONDED TOGETHER.

THE CONTRACTOR SHALL INSURE THAT UNDERGROUND PIPING USED FOR CONDUITS ARE NOT CRUSHED OR BLOCKED. PULL WIRES SHALL BE INSTALLED IN EMPTY OR FUTURE USE CONDUITS.

GROUNDING

THE GROUNDING SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE. ALL MOTORS, STARTING EQUIPMENT, AND CONDUIT SYSTEMS SHALL BE GROUNDED. THE WATER SUPPLY LINES AND STEEL BUILDING SHAL BE MADE A PART OF THE GROUNDING ELECTRODE. THE GROUNDING ELECTRODE CONDUCTOR SHALL BE SIZED ACCORDING TO THE NATIONAL ELECTRIC CODE (1981), BUT SHALL BE NO SMALLER THAN #6 AWG COPPER.

T E S T I N G

PETROLEUM PRODUCTS FOR TESTING EQUIPMENT

24 HOURS BEFORE CONTRACTOR REQUIRED DELIVERY OF PETROLEUM PRODUCTS FOR TESTING EQUIPMENT OR FOR BALLASTING TANKS, HE SHALL REQUEST THE OWNER'S REPRESENTATIVE TO ARRANGE FOR IT. IMMEDIATELY AFTER THE DELIVERY, CONTRACTOR AND OWNER'S REPRESENTATIVE SHALL TOGETHER ACCURATELY GAUGE THE PETROLEUM PRODUCT WITH A GAUGE STICK AND MAKE A RECORD ON THE GASOLINE "PURCHASE AND SALE ROUTE SHEET", FORM #3-6H52. UPON COMPLETION AND ACCEPTANCE OF CONSTRUCTION WORK BY THE OWNER'S REPRESENTATIVE, THE CONTRACTOR SHALL REPEAT THE AFORE DESCRIBED GAUGING PROCEDURE AND RECORD FOR COMPARISON WITH THE FIRST GAUGES.

TESTING GASOLINE PIPE SYSTEMS

OWNER'S REPRESENTATIVE SHALL BE NOTIFIED 24 HOURS IN ADVANCE OF TEST.
PIPE SHALL BE AIR TESTED BEFORE, DURING AND AFTER BACKFILLING. A SOAP SOLUTION SHALL BE APPLIED TO ALL FITTINGS DURING TEST BEFORE BACKFILLING. CONTRACTOR SHALL COMPLETE TESTS AT THE TIME DESIGNATED. EACH PIPE SYSTEM, PRODUCT PIPING, VAPOR RETURN PIPING AND VENT PIPING, SHALL BE PRESSURED TO 76 P.S.I. AND MAINTAINED AT THAT PRESSURE FOR 15 MINUTES BEFORE BACKFILLING, DURING BACKFILLING, AND REMAIN PRESSURIZED UNTIL ALL CONSTRUCTION IS COMPLETE. IF NO PERCEPTIBLE CHANGE IN PRESSURE HAS OCCURRED AT THE END OF THE TEST PERIOD, THE SYSTEM SHALL BE CONSIDERED INITIALLY ACCEPTABLE.
PERCEPTIBLE WATER IN TANKS AND CONTAINMENT AREAS SHALL BE REMOVED BY THE CONTRACTOR.

IF DOUBLE WALL PIPE IS USED THE SECONDARY PIPE IS TO BE PRESSURE TESTED AT 5 P.S.I. FOR 15 MINUTES, BEFORE BACKFILLING, AND 15 MINUTES AFTER BACKFILLING

GASOLINE DISPENSERS

AS SPECIFIED ON GENERAL ARRANGEMENT DRAWING, CONTRACTOR SHALL SECURELY LEVEL AND ANCHOR EACH DISPENSER TO CONCRETE ISLAND. CORE HOLES SHALL BE FILLED WITH CLEAN SAND TO 2 INCHES BELOW THE IMPACT VALVE ACTUATOR LEVER AFTER DISPENSERS ARE INSTALLED. PADLOCK ALL DISPENSER NOZZLES AND ALLOW DISPENSER SHIPPING CARTON OR CRATING TO REMAIN OVER DISPENSERS FOR PROTECTION AFTER INSTALLATION.

DISPENSER TESTS

DISPENSER METERS SHALL BE ADJUSTED AS NEAR AS POSSIBLE TO ZERO ERROR. ADVISE UNOCAL'S REPRESENATIVE OF ANY METER THAT CANNOT BE HELD TO PLUS-OR-MINUS 3 1/2 CUBIC INCHES OF TOLERANCE IN A 5-GALLON MEASURE, FOR

IN MATTERS SHOWN BY FINAL JUDGEMENT TO HAVE BEEN CAUSED BY THE SOLE NEGLIGENCE OF THE COMPANY. THE INSURANCE REQUIRED UNDER PARAGRAPH (*). FURTHER, THE INSURANCE TO BE CARRIED SHALL BE IN NO WAY LIMITED BY ANY LIMITATION EXPRESSED IN PARAGRAPH (*) OF THE GENERAL CONTRACT TERMS AND CONDITIONS, NOT ANY LIMITATION PLACED ON THE INDEMNITY THEREIN GIVEN AS A MATTER OF LAW.

GENERAL CONDITIONS

THE CONTRACTOR SHALL FURNISH ALL MATERIAL AND LABOR TO INSTALL ALL PETROLEUM AND WASTE OIL PIPING, TANK PIPING, VENT TANK EQUIPMENT, AND CONNECTIONS TO PETROLEUM DISPENSERS AS DESCRIBED IN THE FOLLOWING DRAWINGS.

GENERAL ARRANGEMENT FOR THIS LOCATION.
MECHANICAL DRAWING FOR THIS LOCATION.
PETROLEUM PIPING & SPECIFICATION DRAWINGS.

ALL OF WHICH ARE TO BE CONSIDERED AS PART HEREOF. WORK OR MATERIAL WHICH IS NOT SPECIFIED BUT WITHOUT WHICH A SATISFACTORY JOB CANNOT REASONABLY BE COMPLETED, SHALL BE CONSIDERED PART OF THE CONTRACTOR'S WORK.

THE OWNER SHALL FURNISH UNDERGROUND TANKS, LEAK MONITORS AND UNDERGROUND TANK CONTAINMENT ASSEMBLIES HEREIN.

TANK FILL ASSEMBLY

THE CONTRACTOR SHALL ATTACH TO THE TAG LUG IN EACH TANK FILL BOX A METAL COMMODITY TAG (BRAND NAME OF PETROLEUM PRODUCT CONTAINED) AND A METAL CAPACITY TAG.

PIPING

PIPEWORK OVER TANKS OR UNDER BUILDING FLOORS SHALL BE AVOIDED. PIPE UNDER CONCRETE SLABS SHALL BE LIMITED TO THE MINIMUM REQUIRED TO REACH DISPENSERS. STREET ELLS AND THREAD NIPPLES SHALL NOT BE USED. PIPELINES SHALL BE PLACED IN STRAIGHT RUNS, USING PIPE FITTINGS AS REQUIRED. PIPELINES SHALL BE BURIED 18" BELOW FINISHED YARD GRADE. STEEL PIPELINES SHALL BE BURIED SEPARATE FROM COPPER PIPELINES. HORIZONTAL VENT LINES SHALL BE GRADED UNIFORMLY UPWARD FROM TANKS AT 1/4" PER LINEAR FOOT MINIMUM, WITHOUT TRAPS, THUS PERMITTING LIQUID TO DRAIN INTO TANKS. VERTICAL LINES PLACED AGAINST EXTERIOR WALL OF BUILDING SHALL BE SPACED AS SHOWN AND SECURELY ATTACHED TO WALL. VERTICAL LINES AT BUILDING SHALL TERMINATE 1'-6" ABOVE PARAPET OR EAVE WITHOUT VENT CAP OR OTHER FITTING.

SPECIAL CARE SHALL BE TAKEN TO PREVENT THE INTERMIXING OF STONES, DIRT CLODS, OR OTHER DEBRIS WITH THE CLEAN BACKFILL SAND AROUND THE PIPE, WRAPPED SWING JOINTS AND/OR FLEXIBLE CONNECTORS.

CON
APPI

J–0.1 U–NUMBER PART SPECIFICATIONS
J–1.0 D.W. PIPING W/V.R. AND FLEX CONN.
J–1.1 S.W. PROD. PIPING W/V.R., 2" F.G. PIPING W/FLEX.
J–2 F.G. TANKS, U.G. STOR.–INSTALLATION SPECS.
J–4.0 STEEL, D.W., F.G. COATED U.G. STOR. TANKS
J–4.1 STEEL, S.W., F.G. COATED U.G. STOR. TANKS
J–4.2A STOR. TANKS, S.W., F.G., OWENS–CORNING
J–4.2B STOR. TANKS, S.W., F.G., XERXES
J–5.0 CONC. TANK SLAB DETAILS, D.W. PROD. TANKS.
J–5.1 CONC. TANK SLAB DETAILS, D.W. WASTE OIL TANK
J–6 SPEC. –REMOVAL & DISPOSAL OF U.G. FUEL TANKS
J–8.0 CO–AXIAL HOSE RETRACTOR INSTALLATION, EMCO–WHEATON & OPW BALANCE SYS.
J–8.1 TYP. DISPENSER– DIESEL W/HOSE RETACTOR
J–8.2 DISPENSER HOSE RETRACTOR INSTALL., EMCO– WHEATON & OPW BALANCE SYS.
J–8.3 TYP. DISPENSER – GASOLINE W/O HOSE RETRACTOR OR V.R
J–9.0 SECOND. CONTAIN. STD. D.W. TANK INSTALL W/RISER CONT.
J–9.1 SECOND. CONTAIN. STD. TANK INSTALL. W/RISER CONTAINMENT
J–9.2A STD. S.W. F.G. TANK INSTALL W/RISER CONTAIN., OWENS–CORN.
J–9.2B STD. S.W. F.G. TANK INSTALL W/RISER CONTAIN., XERXES
J–10 RISER CONTAIN. & TANK DET.
J–11 WASTE OIL TANK W/RISER CONTAIN.
J–11A WASTE OIL TANKS W/MONITOR

A TAPER LENGTH OF 1 1/2 MINIMUM IS NECESSARY.

MONITORING SYSTEM

CONTRACTOR SHALL INSTALL MONITORING SYSTEM. OWNER SHALL SUPPLY APPROVED MONITORING SYSTEM.

AND ALLOW DISPENSER SHIPPING CARTON OR CRATING TO REMAIN OVER DISPENSERS FOR PROTECTION AFTER INSTALLATION.

DISPENSER TESTS

DISPENSER METERS SHALL BE ADJUSTED AS NEAR AS POSSIBLE TO ZERO ERROR. ADVISE UNOCAL'S REPRESENATIVE OF ANY METER THAT CANNOT BE HELD TO PLUS-OR-MINUS 3 1/2 CUBIC INCHES OF TOLERANCE IN A 5-GALLON MEASURE, FOR REPAIR UNDER MANUFACTURER'S WARRANTY. TESTS WILL BE MADE ACCORDING TO METHODS PRESCRIBED BY DEPARTMENT OF WEIGHTS AND MEASURES. COST OF PUMP OPERATING LICENSE SHALL BE PAID BY OTHERS.

TESTING WASTE OIL TANK

CONTRACTOR TO PREPARE WASTE OIL TANK FOR TESTING AND FILL WASTE OIL TANK WITH WATER TO TOP OF FILL TUBE. CONTRACTOR TO BE PRESENT DURING TEST TO ASSIST TESTOR. UPON SUCCESSFUL COMPLETION OF TANK TEST (BY OTHERS) THE CONRACTOR. THE CONTRACTOR SHALL PUMP OUT ALL WATER FROM THE TANK AND PROPERLY DISPOSE.

TESTING CONTAINMENT BOX

AFTER PIPING INSTALLATION AND PRIOR TO BACKFILLING, EACH CONTAINMENT BOX SHALL BE WATER TESTED IN THE PRESENCE OF A UNOCAL REPRESENTATIVE. THIS WATER TEST SHALL CONSIST OF FILLING THE CONTAINMENT BOX WITH WATER TO A" LEVEL 6" BELOW THE TOP OF THE CONTAINMENT BOX. THIS TEST SHOULD HAVE A DURATION OF 1 HOUR. UPON SUCCESSFUL COMPLETION OF WATER TEST, CONTRACTOR SHALL PUMP OUT WATER FROM CONTAINMENT BOX. CONTRACTOR SHALL MAKE ANY REPAIRS TO CONTAINMENT BOX AS REQUIRED IN ORDER TO PASS THIS WATER TIGHTNESS TEST.

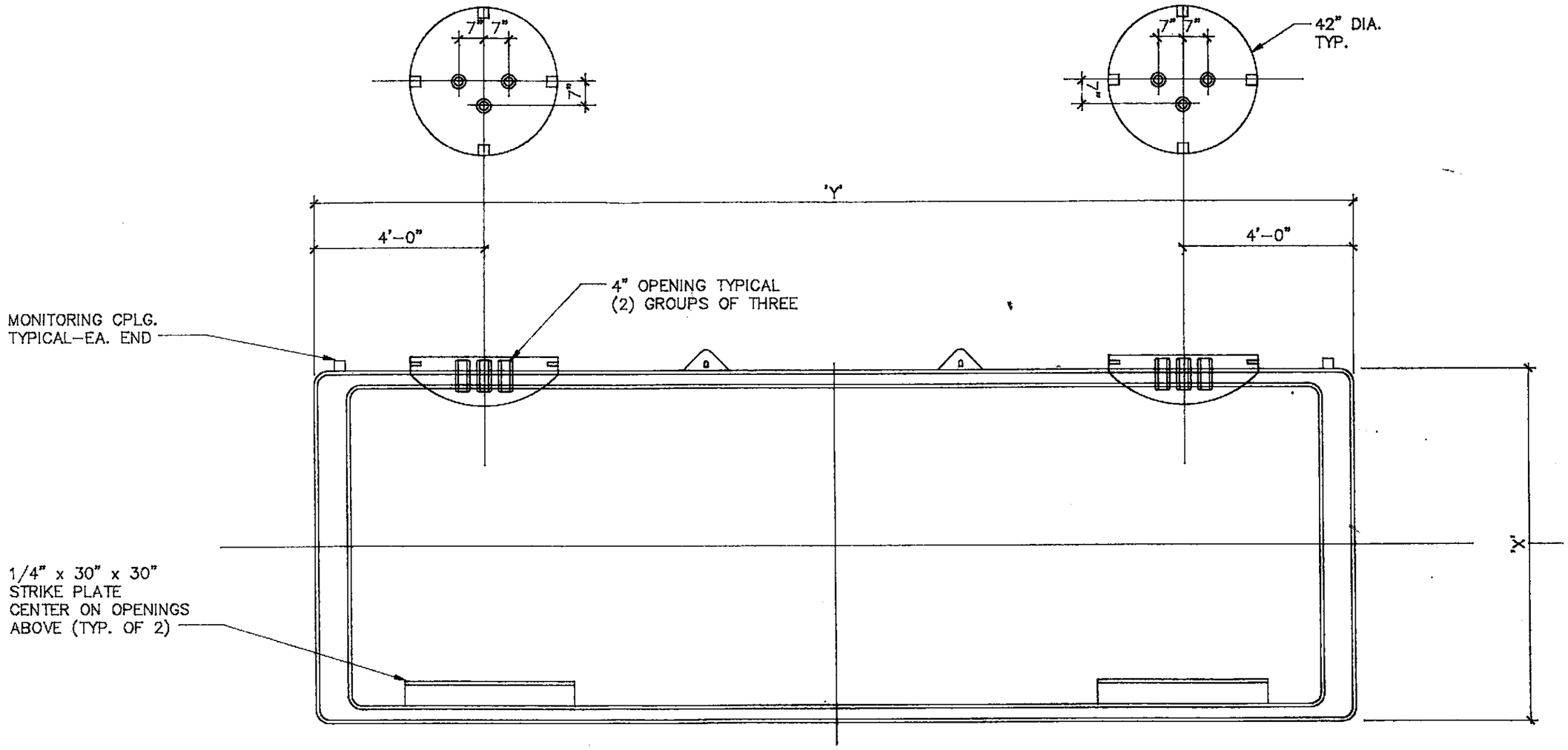
REV. NO.	DATE	REVISED — DESTROY ALL PRINTS BEARING EARLIER DATE	REV. BY	CKD. BY	APP'D
1	9-19-88	GENERAL REVISIONS			
2	2-13-89	REVISED PACKAGE #1 & #2 EQUIPMENT & TEST PROCEDURES	TAIT		
3	8-2-89	ADDED FLEX CONNECTOR/DOUBLE TAP INSTRUCTIONS	TAIT		
4	11-2-89	GENERAL REVISIONS	TAIT		
5	5-10-90	GENERAL REVISIONS	CHP		
6	2-20-91	GENERAL REVISIONS	JSR		
7	1-30-92	CHANGED CONDUIT BURY DEPTH TO 24"	CHP		

DRAWN BY JSR
CHECKED BY
APPROVED
DATE 11-30-87
SCALE

SERVICE STATION GENERAL SPECIFICATIONS PIPING AND TESTING

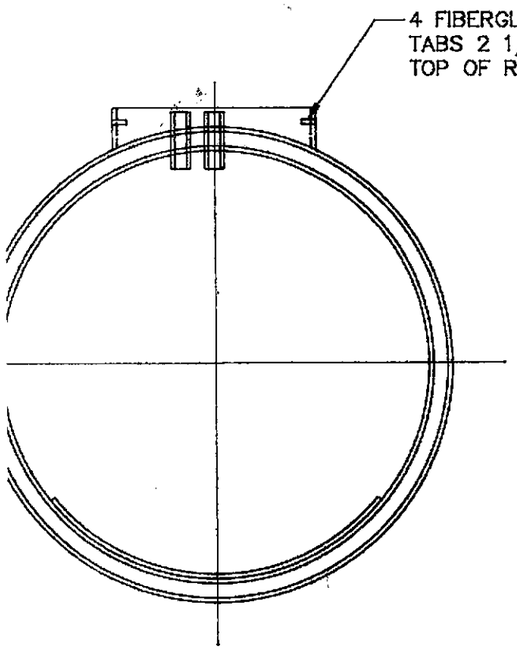
Unocal Refining & Marketing Division
UNOCAL 76

DRAWING NO. J-0
SHEETS SHEET

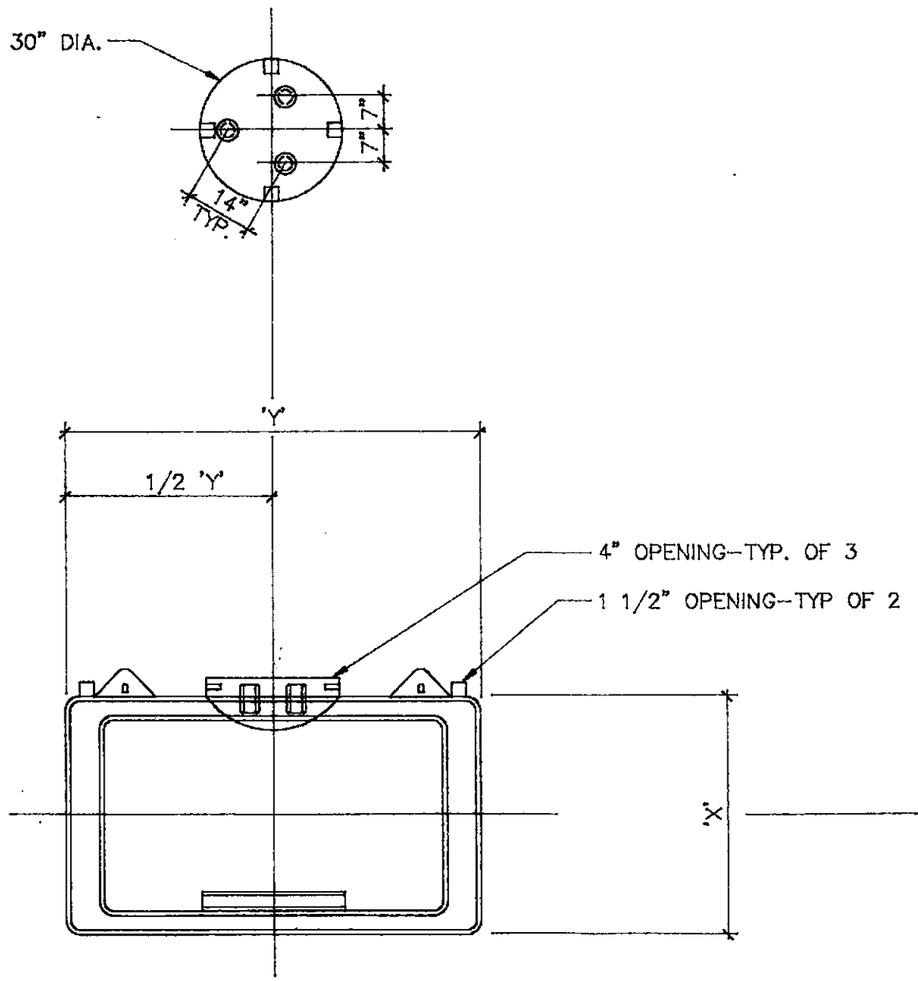


SIDE VIEW

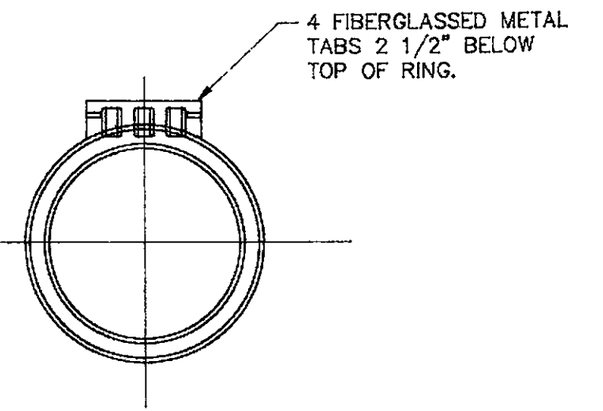
10,000/12,000/15,000 GALLON TANKS



END VIEW



SIDE VIEW



END VIEW

U-303

500 GALLON TANK

U-303

MODERN WELDING CO. INC.			
CAPACITY (GALS.)	'X'	'Y'	WEIGHT (LBS.)
10,000	100"	28'-0"	19,100
10,000	115 1/4"	21'-0"	17,800
12,000	100"	33'-0"	22,100
12,000	115 1/4"	25'-0"	20,700
15,000	113"	30'-7"	21,000

JOOR MANUFACTURING INC./K & T			
CAPACITY (GALS.)	'X'	'Y'	WEIGHT (LBS.)
10,000	113"	20'-5"	17,125
12,000	113"	24'-5"	19,625
15,000	113"	30'-7"	21,000

NUMBER	SH.	REFERENCE DRAWINGS

MODERN WELDING CO. INC.			
CAPACITY (GALS.)	'X'	'Y'	WEIGHT (LBS.)
520	48"	6'-0"	1,400

JOOR MANUFACTURING INC./K & T			
CAPACITY (GALS.)	'X'	'Y'	WEIGHT (LBS.)
500	47 1/2"	6'-1"	1,375

FIBERGLASS-COATED UNDERGROUND STORAGE TANK INSTALLATION

APPROVED FIBERGLASS DOUBLE WALL COATED STEEL TANKS ARE JOOR "PLASTEEL" AND MODERN WELDING "ENVIRO-TANK". SEE GENERAL ARRANGEMENT DRAWING FOR CAPACITY AND QUANTITY OF TANKS.

GASOLINE STORAGE TANKS

UNLESS OTHERWISE SPECIFIED, TANKS SHALL BE INSTALLED FOUR (4) FEET BELOW FINISHED YARD GRADE. TANKS SHALL BE SET ON A FIRM BASE OF 12" THICK COMPACTED SAND AND SURROUNDED ON ALL SIDES BY A MINIMUM THICKNESS OF 12" OF CLEAN SAND.

WET AND ROD SAND UNTIL IT IS THOROUGHLY COMPACTED. AFTER PIPING HAS BEEN INSTALLED, INSPECTED AND TESTED, COMPLETE THE BACKFILLING WITH SAND. BACKFILL WILL BE PLACED IN SIX (6) INCH LAYERS. EACH LAYER SHALL BE PUDDLED AND TAMPED TO PREVENT FUTURE SETTLEMENT. THE NEED FOR PROPER BACKFILL AND COMPACTION IS COMPOUNDED WITH A DOUBLE WALL TANK AND ALL CONCERNED ARE FOREWARNED OF THIS REQUIREMENT.

AFTER TANKS ARE DELIVERED TO SITE, TANK MANUFACTURER OR SUPPLIER IS RESPONSIBLE FOR PERFORMING THE 35,000 VOLT HOLIDAY TEST AND REPAIR ANY HOLIDAYS DISCOVERED. TEST MUST BE WITNESSED BY UNOCAL ENGINEER OR HIS REPRESENTATIVE.

CONTRACTOR SHALL PRESSURE TEST TANKS ON THE JOB SITE BEFORE SETTING THE TANKS IN THE HOLE. BEFORE TESTING, TIGHTEN ALL FITTINGS. PRESSURE TESTING SHALL BE DONE WITH EITHER A 10 P.S.I. GAUGE ACCURATELY CALIBRATED FOR PRESSURES RANGING FROM 0-10 P.S.I. OR ELSE A MERCURY MANOMETER GAUGE. A PRESSURE RELIEF SYSTEM SET AT 5 P.S.I. IS TO BE INSTALLED IN THE VENT OPENING OF ALL TANKS PRIOR TO PRESSURIZING THE TANKS. PRESSURE TESTING SHALL BE DONE IN THE FOLLOWING SEQUENCE: (1) PRESSURE TEST INNER TANK TO 4 P.S.I. FOR 15 MINUTES AND VERIFY THAT NO PRESSURE DROP IS EXPERIENCED. (2) IF INNER TANK HAS TESTED SATISFACTORILY, RELIEVE PRESSURE IN THE TANK. (3) REMOVE TEST AND SET TANK IN HOLE. TANKS UNDER PRESSURE SHOULD NOT BE LEFT UNATTENDED. IF TANK(S) WILL NOT HOLD PRESSURE, TANK MANUFACTURER MUST BE NOTIFIED TO PROVIDE REPLACEMENT TANK. TESTING PROCEDURE MAY VARY WITH LOCAL ORDINANCES.

NOTES:

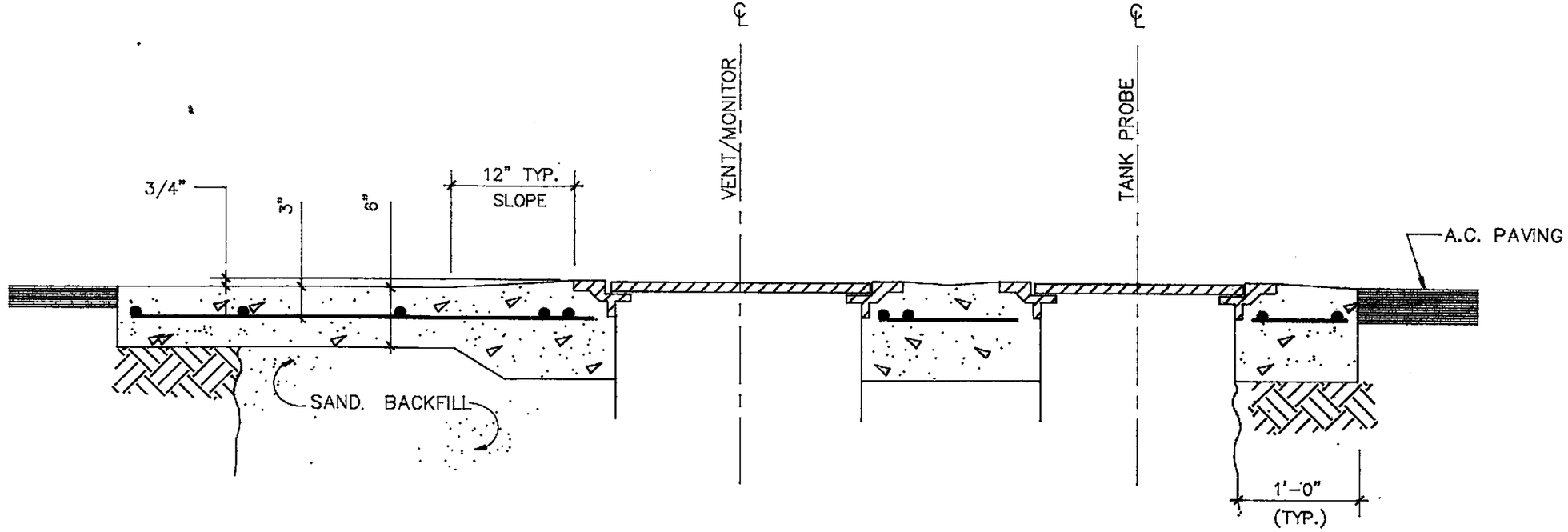
1. ALL UNUSED TANK OPENINGS SHALL BE TIGHTLY SECURED WITH PIPE PLUGS AND SHALL BE COVERED WITH A FIBERGLASS CAP (HAT) INSTALLED IN ACCORDANCE WITH MANUFACTURERS SPECTIFICATIONS UTILIZING WET RESIN.
2. ALL UNUSED VERTICAL RISER THREADS SHALL BE WRAPPED IN FIBERGLASS 3" MIN. ABOVE EXPOSED THREADS IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
3. ALL RISERS & SUMP DRAIN PIPING TO BE WRAPPED PER DRAWING J-0.
4. ALL LOCKABLE CAPS SHALL HAVE PADLOCKS KEYED ALIKE WITH THE EXCEPTION OF THE "FILL" CAP WHICH SHALL BE KEYED SEPERATELY.

REV. NO.	DATE	REVISED	DESTROY ALL PRINTS BEARING EARLIER DATE	REV. BY	CKD. BY	APP'D

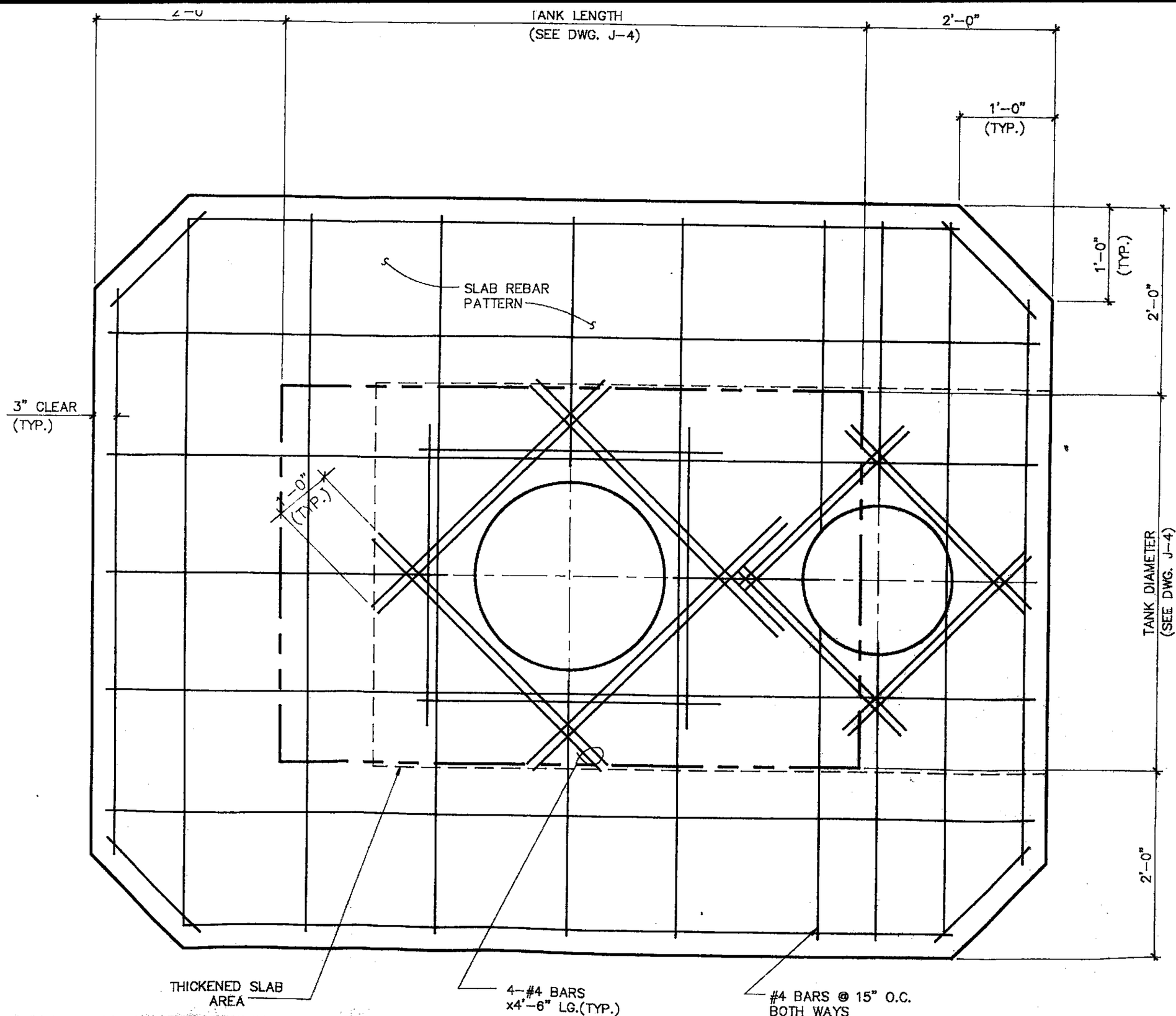
DRAWN BY TAIT

CHECKED BY

SERVICE STATION DOUBLE WALL STEEL FIBERGLASS COATED UNDERGROUND



SECTION THRU TANK SLAB


2'-0"
TANK LENGTH
(SEE DWG. J-4)
2'-0"
1'-0"
(TYP.)
1'-0"
(TYP.)
2'-0"
SLAB REBAR
PATTERN
3" CLEAR
(TYP.)
1'-0"
(TYP.)
TANK DIAMETER
(SEE DWG. J-4)
2'-0"
THICKENED SLAB
AREA
4-#4 BARS
x4'-6" LG.(TYP.)
#4 BARS @ 15" O.C.
BOTH WAYS

GENERAL NOTES:

1. CONCRETE QUALITY AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH UBC CHAPTER 26.

2. CONCRETE SHALL HAVE AN ULTIMATE MINIMUM COMPRESSIVE STRENGTH OF 2,000 PSI AFTER 28 DAYS WITH SIX SACKS OF CEMENT PER YARD OF CONCRETE. MIXTURE SHALL BE IN COMPLIANCE TO CONCRETE SPECIFICATIONS (DWG. B-0).

3. MATERIALS:
   A. CEMENT SHALL BE ASTM C150 PORTLAND CEMENT, TYPE II (OR TYPE V IF SULFATES ARE PRESENT IN SOIL)
   B. AGGREGATES SHALL COMPLY WITH ASTM C33 WITH A MAXIMUM SIZE OF ONE INCH (1")
   C. WATER SHALL BE CLEAN AND FREE FROM INJURIOUS AMOUNTS OF OIL OR OTHER DELETERIOUS MATTER

4. ALL CONCRETE SHALL BE MIXED IN ACCORDANCE WITH ASTM C94 AND BE COLORED BLACK. METHOD OF OBTAINING BLACK COLORING SHALL BE PER NOTE 7 BELOW

5. ALL REINFORCING STEEL SHALL MEET THE REQUIREMENTS OF ASTM A615 GRADE 60.

6. A UNOCAL REPRESENTATIVE SHALL APPROVE EXCAVATION AND REBAR PLACEMENT PRIOR TO PLACING OF CONCRETE.

7. BLACK COLOR CONCRETE:
   MECHANICALLY MIX THREE POUNDS(TWO GALLON DRY MIX) REGULAR UNCOMPRESSED IRON OXIDE, BLACK TO 1 SACK OF CEMENT TO 1 SACK OF PLASTER SAND. TROWEL THIS MIXTURE ON SURFACE SPECIFIED A MINIMUM OF 1/4" THICK WITHIN ONE HOUR AFTER CONCRETE BASE COURSE IS POURED. SLABS TO BE WOOD FLOATED, STEEL TROWELED, THEN APPLY BLACK CONCRETE MIX. THE SURFACE SHALL THEN BE GIVEN A MEDIUM NON-SKID TEXTURE BY STROKING WITH A CLEAN FINE HAIR BROOM.

8. FOR SINGLE WALL TANK-ELIMINATE MONITOR BOX, REBAR CAGE AROUND SAME AND THICKENED PORTION OF SLAB AT BOX.

REVISED — DESTROY ALL PRINTS BEARING EARLIER DATE	REV. BY	CKD. BY	APP'D
	CHP		
	JSR		

DRAWN BY JSR
CHECKED BY
APPROVED
DATE 2-9-87
SCALE

SERVICE STATION CONCRETE TANK SLAB DETA DOUBLE-WALL WASTE OIL TA

Unocal Refining & Marketing Division
UNOCAL 76

DRAWING NO.
SS 7514
SHEETS

BACKFILL OPERATIONS

1. CLEAR EXCAVATION OF ALL LOOSE SOIL BEFORE PROCEEDING WITH BACKFILL.
2. TANK EXCAVATION SHALL BE BACKFILLED WITH NON-EXPANSIVE MATERIAL. CLEAN WASHED SAND OR PEA GRAVEL ARE APPROVED BACKFILL MATERIALS. IF SAND IS USED, CAUTION MUST BE TAKEN TO ASSURE THAT PROPER COMPACTION IS OBTAINED BENEATH THE TANKS. THIS CAN BE DONE BY ADEQUATELY FLUSHING THE SAND WITH WATER TO FILL VOIDS BENEATH THE TANKS.
3. IF TANKS ARE RELOCTED AND/OR FORMER LOCATION ABANDONED, FILL MUST BE PLACED IN LEVEL LOOSE LAYERS ABOUT SIX INCHES IN THICKNESS, MOISTENED NEAR OPTIMUM MOISTURE AND PROPERLY COMPACTED. SUCCEEDING LAYERS OF FILL SHALL BE SIMILARLY PLACED AND COMPACTED. DURING THE PLACEMENT OF BACKFILL, THE UPPER PORTION OF THE EXCAVATION'S SIDEWALLS SHALL BE BROKEN DOWN (BENCHED) TO PROVIDE A TRANSITION BETWEEN THE COMPACTED FILL AND ADJOINING GROUND.
4. IF ASPHALT PAVEMENT IS NOT TO BE REPLACED, THE EXCAVATED AREA SHALL BE SMOOTHLY GRADED TO PROVIDE A CLEAN EVEN SURFACE. ALL EXCESS MATERIALS SHALL BE REMOVED AND THE AREA SHALL BE LEFT IN A BROOM CLEAN CONDITION.
5. IF ASPHALT PAVEMENT IS TO BE REPLACED, BACKFILL SHALL BE PLACED AND COMPACTED TO SUB-GRADE ELEVATION AFTER WHICH PAVING SECTION SHALL BE INSTALLED PROVIDING A NEAT AND SMOOTH TRANSITION WITH EXISTING PAVEMENT SURFACES AND AREA SHALL BE PROPERLY BROOM CLEANED.
6. CONTRACTOR SHALL FURNISH CERTIFIED COMPACTION REPORT FROM THE SOILS LABORATORY ACKNOWLEDGING THAT A MINIMUM OF 90% OF MAXIMUM DENSITY HAS BEEN OBTAINED. COPIES OF THE COMPACTION REPORT SHALL ALSO BE FORWARDED TO THE PROPER BUILDING DEPARTMENT IN ADDITION TO THE (2) COPIES FURNISHED TO THE OWNER.

PROCEDURE FOR CONTRACTOR WORK

REMOVAL OF UNDERGROUND STORAGE TANKS

1. OBTAIN AND PAY FOR FIRE DEPARTMENT PERMIT.
2. OBTAIN AND PAY FOR ALL OTHER NECESSARY PERMITS AND LICENSES THAT MAY BE REQUIRED TO PERFORM THIIS WORK.
3. NOTIFY FIRE DEPARTMENT AND/OR ANY OTHER GOVERNMENTAL INSPECTORS HAVING JURISDICTION SUFFICIENTLY IN ADVANCE OF PROCEEDING WITH TANK ABANDONMENT TO OBTAIN PROPER CLEARANCE TO PROCEED WITH WORK AND ARRANGE FOR REQUIRED INSPECTIONS.
4. SAW CUT ASPHALT PAVEMENT IF NECESSARY TO MINIMIZE AMOUNT OF ASPHALT REMOVED TO ACCOMMODATE TANK REMOVAL. IF LOT IS TO BE COMPLETELY STRIPPED OF ASHPALT PAVEMENT, DISREGARD SAW CUTTING REQUIREMENT.
5. BREAK OUT AND REMOVE ASPHALT PAVEMENT, CONCRETE SLABS, ETC. AND DISPOSE OF IN A LAWFUL MANNER IN AN APPROVED DISPOSAL AREA.
6. COMPLETELY UNCOVER TOPS OF UNDERGROUND TANKS TO BE REMOVED.
7. COMPLETELY PUMP OUT ALL PETROLEUM PRODUCTS THAT MAY REMAIN IN THE TANKS AND DISPOSE OF IN AN APPROVED MANNER, WHICH WILL INVOLVE DISCHARGING THE PETROLEUM PRODUCTS INTO APPROVED VESSELS AND TRANSPORTING THEM FROM THE PREMISES IN AN APPROVED AND LICENSED VEHICLE TO TRANSPORT PETROLEUM PRODUCTS. THE PRODUCTS CAN EITHER BE SALVAGED AND DISCHARGED INTO STORAGE TANKS OR DISPOSED OF IN AN APPROVED DISPOSAL AREA LICENSED TO RECEIVE PETROLEUM RELATED REFUSE.
8. ALLOW CONTENTS IN PIPING TO DRAIN INTO TANKS BEFORE DISCONNECTING. DRAINING CONTENTS INTO TANK EXCAVATION OR SURROUNDING SOIL IS UNACCEPTABLE. IMMEDIATELY CAP ALL UNUSED OPENINGS.
9. REFER TO REMOVAL AND DISPOSAL PROCEDURE STEP 3,4 & 5.
10. COMPLETE BALANCE OF EXCAVATION NECESSARY TO REMOVE THE TANKS.
11. RECORD TANK NUMBERS AND FURNISH TO FIRE DEPARTMENT INSPECTOR.
12. AFTER APPROVAL OF FIRE INSPECTOR HAS BEEN OBTAINED, COMPLETE REMOVAL OF UNDERGROUND TANKS. TANKS SHALL BE REMOVED WITH A CRANE ONLY. CRANE SHOULD BE ADEQUATELY SIZED (SEE J4.0).
13. HAUL TANKS AWAY FROM PREMISES IMMEDIATELY AFTER TANK REMOVAL FROM EXCAVATED AREA.
14. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UNOCAL REPRESENTATIVE IN THE EVENT THAT SOIL CONTAMINATION IS ENCOUNTERED IN THE EXCAVATED AREA.

REMOVAL & DISPOSAL OF UNDERGROUND TANKS

I. SCOPE

THIS SPECIFICATION COVERS GAS-FREEING, REMOVAL AND DISPOSAL OF UNDERGROUND TANKS.

II. GAS FREEING & TANK REMOVAL

A. SAFETY PRECAUTIONS

1. ALL SOURCES OF IGNITION SHALL BE AVOIDED DURING COMMODITY REMOVAL AND EXCAVATION OF TANK.
2. SMOKING, USE OF OPEN FLAME, OR USE OF TOOLS GENERATING ELECTRIC SPARKS SHALL BE PROHIBITED IN TANK AREAS.
3. THE AREA ADJACENT TO THE EXCAVATION SHALL BE BARRICADED AGAINST THE ENTRANCE OF UNAUTHORIZED PERSONS.
4. COMMODITY, OR MIXTURE OF COMMODITY AND WATER SHALL NOT BE DRAINED INTO A STREET, GUTTER, SEWER OR TANK EXCAVATION.
5. DON'T GUESS, TEST THE ATMOSPHERE OF THE TANK FOR EXPLOSIVE RANGE WITH A "FLAMMABLE VAPOR INDICATOR" WHICH SHALL READ 0.10 (10% OF THE LOWER EXPLOSIVE LIMIT) OR LOWER.

B. PROCEDURE

1. REMOVE ALL POSSIBLE COMMODITY FROM THE TANK BY MEANS OF PUMP WITH SUCTION RESTING ON THE BOTTOM OF THE TANK.
2. COMMODITY REMOVED SHALL BE TRANSPORTED IN AN APPROVED AND LICENSED VEHICLE OR PLACED IN CLOSED CONTAINERS. MIXTURE OF COMMODITY AND WATER OR SLUDGE SHALL BE DISPOSED OF IN AN AUTHORIZED RECYCLING FACILTY OR DUMP SITE LICENSED TO RECEIVE PETROLEUM RELATED REFUSE.
3. PLACE IN THE TANK THROUGH THE FILL OPENING, 10 GALLONS OF WATER PER 1,000 GALLONS OF CAPACITY, AGAIN USE PUMP UNTIL SUCTION IS LOST.
4. REPEAT STEP "3".
5. BEFORE EXCAVATION, THE TANK ATMOSPHERE SHALL BE RENDERED SAFE BY ONE OF THE FOLLOWING ALTERNATE METHODS:

A. CO2 DRY ICE METHOD: FOR EACH 1,000 GALLONS OF TANK CAPACITY, 10 OR 15 POUNDS OF CO2 BASED ON LOCAL ORDINANCES, IN THE FORM OF DRY ICE, SHALL BE PLACED IN THE TANK THROUGH THE FILL OPENING. ALL OPENINGS IN THE TANK, EXCEPT THE VENT, SHALL THEN BE PLUGGED TIGHTLY.

TANK SHALL NOT BE REMOVED FROM THE GROUND FOR 16

D. AIR BLOWER METHOD: USING AIR MOTOR DRIVEN FAN OR LARGE COMPRESSOR POSITIONED REMOTELY AND TO WINDWARD OF THE TANK, INJECT AIR TO THE BOTTOM OF THE TANK BY MEANS OF PIPE OR HOSE THROUGH THE FILL OPENINGS AND ALLOW IT TO ESCAPE THROUGH ANOTHER OPENING. IT IS IMPERATIVE THAT THE AIR DIFFUSING PIPE BE PROPERLY BONDED TO PREVENT THE DISCHARGE OF A SPARK. CONTINUE CIRCULATION OF AIR UNTIL THE ATMOSPHERE WITHIN THE TANK TESTED WITH A "FLAMMABLE VAPOR INDICTOR" WILL READ 0.14 (14% OF THE LOWER EXPLOSIVE LIMIT) OR LOWER.

PLUG ALL OPENINGS TIGHTLY AND REMOVE THAT TANK IN ACCORDANCE WITH INSTRUCTIONS IN PARAGRAPH II-B-6. RETEST THE ATMOSPHERE WITHIN THE TANK JUST BEFORE REMOVAL FROM EXCAVATION.

E. STEAM CLEANING: STEAM CLEANING IS AN APPROVED METHOD TO RENDER AN UNDERGROUND TANK SAFE WHEN PERFORMED BY AN EXPERIENCED/LICENSED CONTRACTOR. SPECIAL STEPS SHOULD BE TAKEN TO PREVENT THE BUILD UP OF STATIC CHARGES ON ANY OF THE EQUIPMENT AND AVOID ANY POSSIBILITY OF SPARKING WHEN GAINING ACCESS INTO THE TANK TO CLEAN IT.

6. BEFORE REMOVING THE TANK FROM THE EXCAVATION, RAISE THE END OPPOSITE TANK OPENINGS TO DRAIN REMAINING LIQUID TO THE OTHER END. REMOVE THE PLUG FROM FILL OPENINGS AND WITH A GOOD WATER HOSE STREAM THROROUGHLY FLUSH THE ENTIRE INTERIOR TO WASH DOWN REMAINING COMMODITY, SLUDGE AND LOOSE MATERIAL.

THIS CONTAMINANT SHALL BE REMOVED BY PUMP WITH SUCTION RESTING AT LOW POINT OF TANK. REMOVE TANK FROM EXCAVATED AREA AND RETEST THE TANK ATMOSPHERE TO MAKE CERTAIN THAT READINGS DO NOT EXCEED 0.14. IF READING GREATER THAN 0.14 IS OBSERVED, INTRODUCE ADDITIONAL DRY ICE AS INDICATED IN PARAGRAPH II-B-5.A. LOAD THE TANK AND TRANSPORT TO DESTINATION.

TANK SHALL NOT BE REMOVED FROM THE GROUND FOR 16 HOURS OR OVERNIGHT, THUS ALLOWING TIME FOR THE DRY ICE TO VAPORIZE. EXCAVATION MAY PROCEED DURING THIS PERIOD BUT NOT REMOVAL. THEREAFTER, THE TANKS SHALL BE REMOVED IN ACCORDANCE WITH INSTRUCTIONS IN PARAGRAPH II-B-6.

CAUTION: SKIN CONTACT WITH DRY ICE MAY PRODUCE BURNS. THIS METHOD SHOULD NOT BE USED IF TANK IS TO TO BE ENTERED FOR ANY REASON, AS THE TANK ATMOSPHERE WILL BE OXYGEN DEFICIENT.

B. CO2 GAS CYLINDER METHOD: (USE SIPHON CYLINDERS) FOR EACH 1,000 GALLONS OF TANK CAPACITY, 10 OR 15 POUNDS OF CO2 COMPRESSED GAS PER LOCAL ORDINANCES (DETERMINED BY NET CONTENT WEIGHT OF CYLINDER) SHALL BE DISCHARGED BY MEANS OF A HOSE TO THE BOTTOM OF THE TANK WITH THE CYLINDER CONTROL VALVE OPENED AS WIDE AS POSSIBLE WITHOUT CAUSING FREE END OF HOSE TO WHIP. DO NOT USE CO_2 EXTINGUISHERS.

CAUTION: A GROUNDED DISCHARGING DEVICE MUST BE USED TO DISSIPATE STATIC ELECTRIC CHARGES. THIS METHOD SHOULD NOT BE USED IF THE TANK IS TO BE ENTERED FOR ANY REASON.

AFTER COMPLETING THE DISCHARGE OF CO2 AND WEIGHING CYLINDERS TO BE CERTAIN THE SPECIFIED WEIGHT OF GAS HAS BEEN DISCHARGED, ALL TANK OPENINGS SHALL BE TIGHTLY PLUGGED AND TANK REMOVED IN ACCORDANCE WITH INSTRUCTIONS IN PARAGRAPH 11-B-6.

C. DEGASSING METHOD: ONLY LOCAL AGENCY APPROVED EQUIPMENT SHALL BE USED. THIS EQUIPMENT IS THREADED ON TO THE FUEL TANKS. THE TANKS ARE TRIPLE RINSED IN CONJUNCTION WITH DEGASSING. DEGASSING CONTINUES UNTIL A 5% LOWER EXPLOSIVE LIMIT IS ACHIEVED. A NON-SPARKING PNEUMATIC CHISEL SHALL BE USED TO CUT A WINDOW IN THE TANKS FOR INSPECTION AS REQUIRED. PROCEED, IF NEEDED, WITH ADDITIONAL CLEANING, PUMPING & DEGASSING UNTIL A 0% LOWER EXPLOSIVE LIMIT IS OBSERVED. WHEN REQUIRED, A STATE CERTIFIED MARINE CHEMIST SHALL INSPECT AND CERTIFY THE TANKS AS VAPOR FREE AND SAFE FOR ANY TYPE OF DESTRUCTION.

III. TANK DISPOSAL

A. STORAGE OF USED TANKS

THE LOCATION SELECTED FOR STORING SURPLUS TANKS SHALL BE AS ISOLATED AS POSSIBLE IN AN AREA NOT ACCESSIBLE TO THE PUBLIC.

IF TANK IS TO BE REINSTALLED WITHIN 10 DAYS AFTER EXCAVATION AND THE FLUSHING HAD BEEN OMITTED, THE TANK SHALL BE PLACED WITH OPENINGS UP AND PLUGGED, ON 6" x 6" WOODEN BLOCKS AND CHOCKED TO PREVENT MOVEMENT. ONE PLUG SHOULD HAVE A 1/8 INCH VENT HOLE TO PREVENT EXCESSIVE PRESSURE BUILD-UP DUE TO TEMPERATURE CHANGE.

B. SALE OR TRANSFER

THE FOLLOWING INSTRUCTIONS SHALL APPLY TO SALE IN USABLE CONDITION, SALE AS JUNK, TRANSFER TO OTHER OPERATING DEPARTMENT, OR CONTRACT REMOVAL AND DISPOSAL OF ANY TANK, VESSEL OR CONTAINER.

1. WRITTEN NOTIFICATION SHALL BE GIVEN ON TRANSFERRING DOCUMENT, INVOICE, BILL OF SALE, REMOVAL, CONTRACT, ETC., OF ANY SUCH TANK, VESSEL OR CONTAINER AS FOLLOWS:

   SURPLUS TANKS ARE SOLD OR OTHERWISE DISPOSED OF WITH THE UNDERSTANDING THAT:

   TANK MAY CONTAIN AN EXPLOSIVE MIXTURE OF PETROLEUM VAPORS.

   TANK HAS OR MAY HAVE CONTAINED LEADED GASOLINE. A TANK WHICH HAS CONTAINED LEADED GASOLINE MAY BE CONTAMINATED WITH TETRAETHYL LEAD TO AN EXTENT THAT IT CONNOT BE CLEANED SUFFICIENTLY TO PERMIT SAFE STORAGE OF EDIBLE OR POTABLE COMMODITIES.

C. JUNKING

TANKS THAT ARE DAMAGED OR LEAKING EXCESSIVELY AND ARE UNFIT FOR OTHER DISPOSITION, MAY BE HAULED TO AN ESTABLISHED PUBLIC DUMP OR JUNK PILE PROVIDED THEY ARE MUTILATED TO AN UNRECLAIMABLE EXTENT TO PREVENT RETRIEVAL FOR ANY PURPOSE.

DISPOSAL PRECAUTIONS

IF THE STEEL IS TO BE SOLD FOR SCRAP AND POSSIBLE REMELTING IN THE MANUFACTURE OF NEW STEEL, ALL INTERIOR SURFACE OF ANY PLATES WHICH HAVE BEEN IN CONTACT WITH SLUDGE SHOULD BE SANDBLASTED OR WIREBRUSHED TO BARE METAL.

REV. NO.	DATE	REVISED — DESTROY ALL PRINTS BEARING EARLIER DATE	REV. BY	CKD. BY	APP'D
1	8/77	REVISED & REWRITTEN (SUPERSEDES SHT J-2)	FFA		
2	11/87	REVISED & REWRITTEN	TAIT		
3	8/88	REVISED & REWRITTEN	TAIT		
4	8/89	SAFETY REVISIONS TO PROCEDURES	TAIT		
5	1/91	GENERAL REVISIONS	TAIT		

DRAWN BY JSR

CHECKED BY

APPROVED

DATE 04-14-92

SCALE

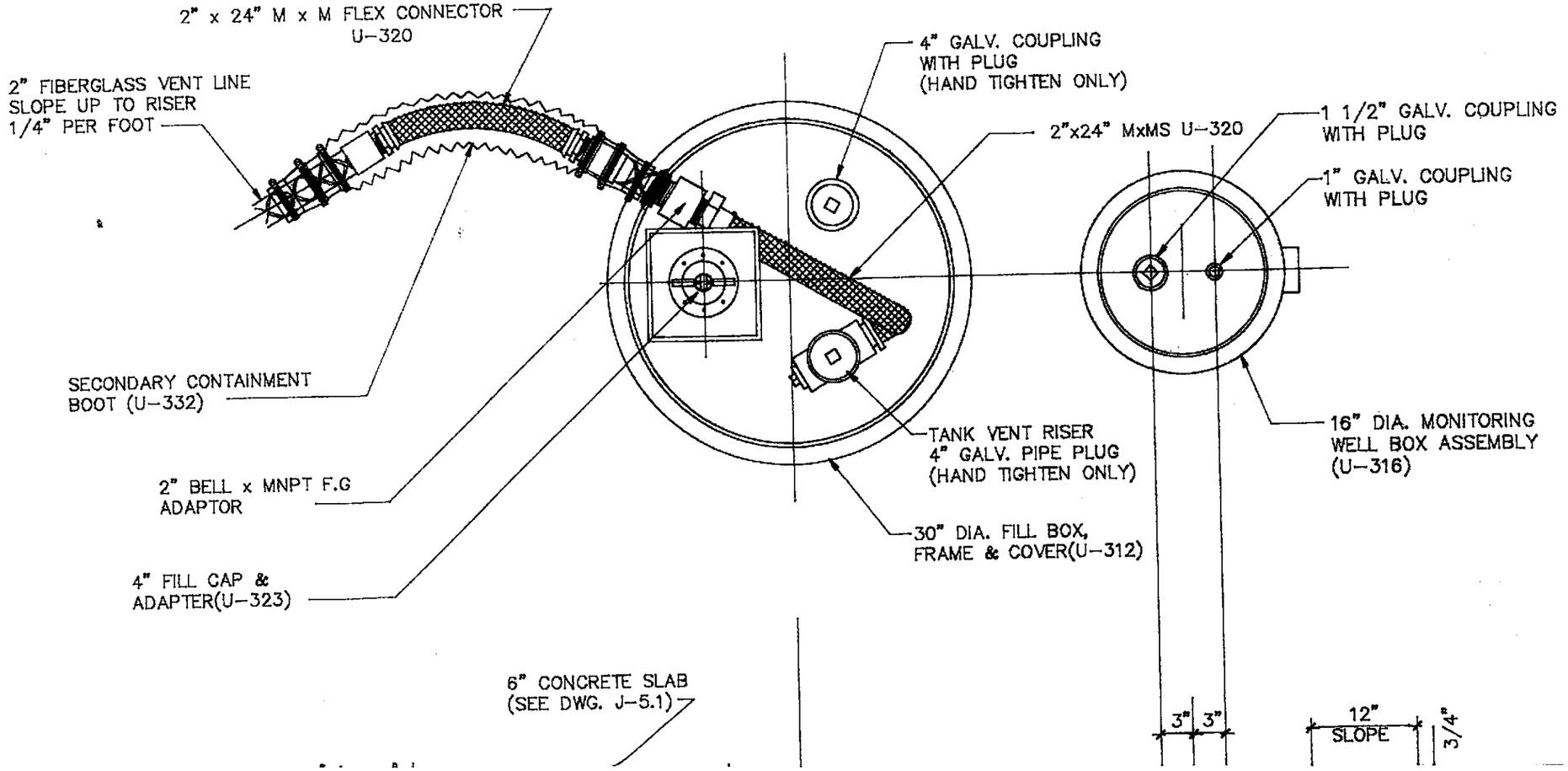
SPECIFICATION
REMOVAL & DISPOSAL OF UNDERGROUND FUEL TANKS

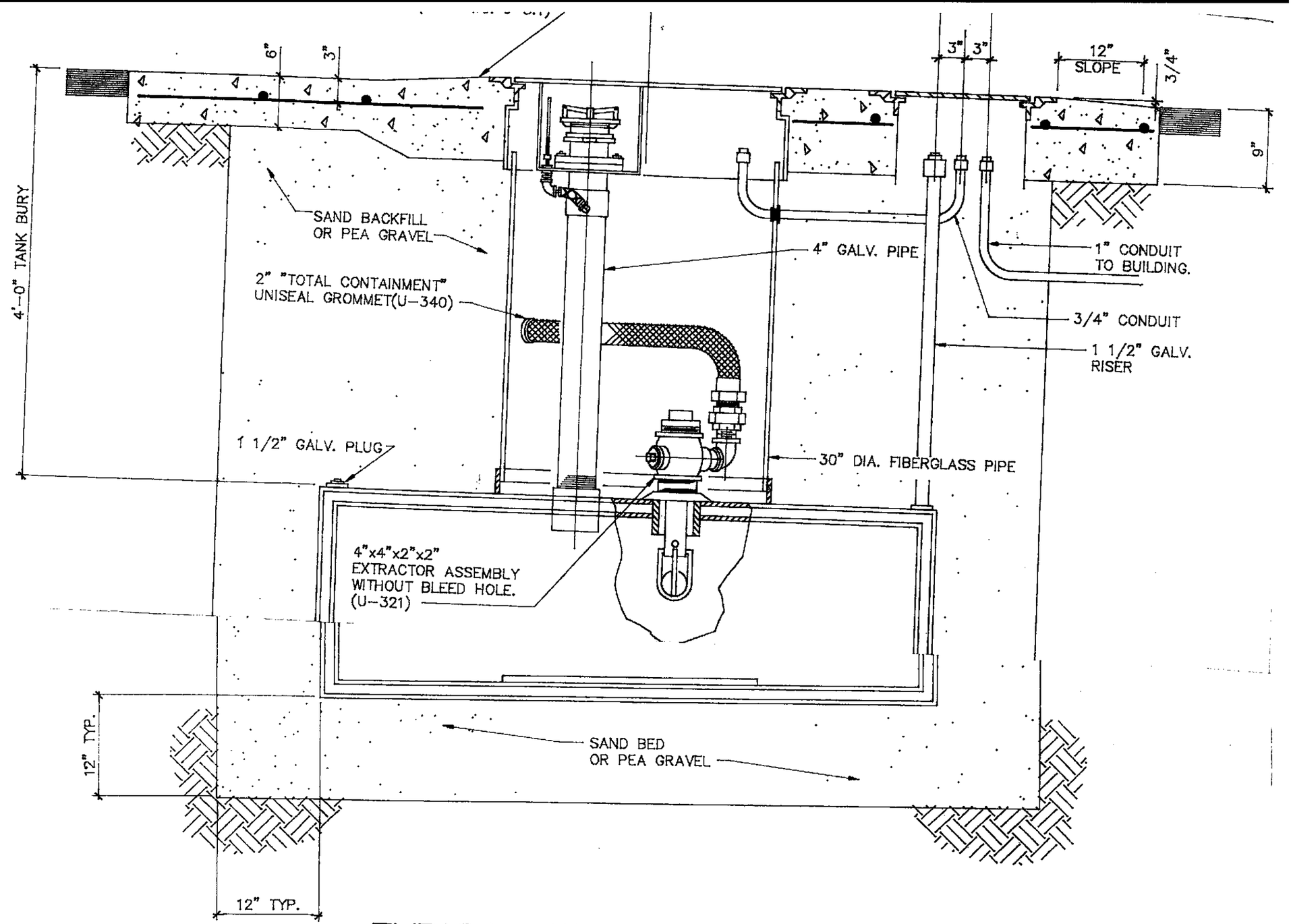
Unocal Refining & Marketing Division

UNOCAL 76

DRAWING NO. J-6

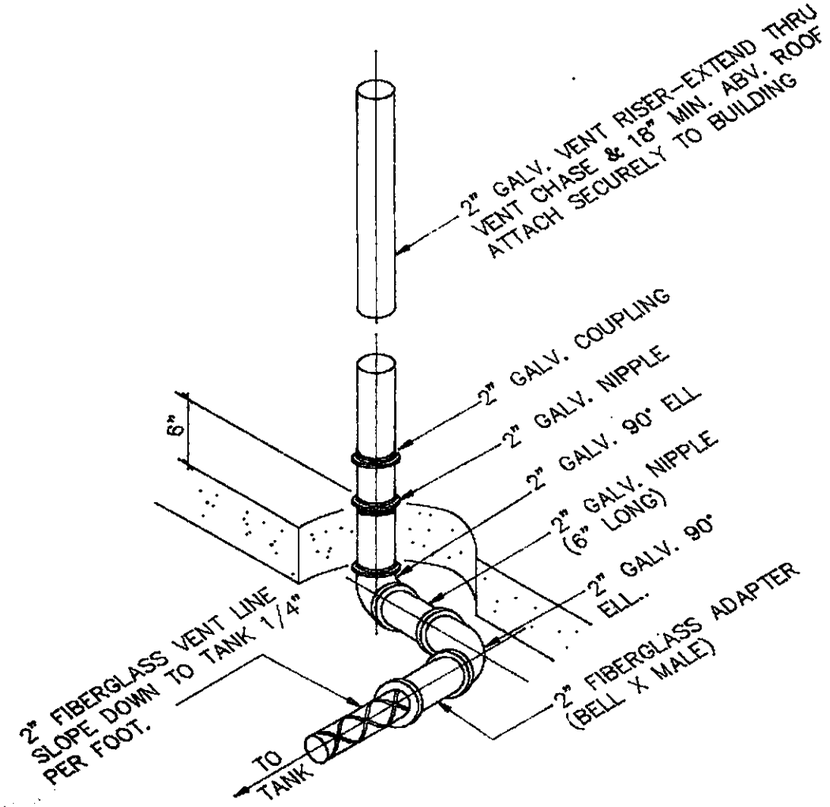
SHEETS SHEET


2" x 24" M x M FLEX CONNECTOR
U-320
2" FIBERGLASS VENT LINE
SLOPE UP TO RISER
1/4" PER FOOT
4" GALV. COUPLING
WITH PLUG
(HAND TIGHTEN ONLY)
2"x24" MxMS U-320
1 1/2" GALV. COUPLING
WITH PLUG
1" GALV. COUPLING
WITH PLUG
SECONDARY CONTAINMENT
BOOT (U-332)
2" BELL x MNPT F.G
ADAPTOR
4" FILL CAP &
ADAPTER(U-323)
TANK VENT RISER
4" GALV. PIPE PLUG
(HAND TIGHTEN ONLY)
30" DIA. FILL BOX,
FRAME & COVER(U-312)
16" DIA. MONITORING
WELL BOX ASSEMBLY
(U-316)
6" CONCRETE SLAB
(SEE DWG. J-5.1)
3"
3"
12"
SLOPE
3/4"



TYPICAL WASTE OIL TANK

DOUBLE WALL



DETAIL – VENT RISER ASSEMBLY

REV. NO.	DATE	REVISED — DESTROY ALL PRINTS BEARING EARLIER DATE	REV. BY	CKD. BY	APP'D

DRAWN BY JSR
CHECKED BY
APPROVED R.SCHWAB
DATE 2-9-87
SCALE

SERVICE STATION PETROLEUM PIPING WASTE OIL TANK WITH MONITOR

Unocal Refining & Marketing Division
UNOCAL 76

DRAWING NO. J–11.0
SHEETS SHEET