

B19-11093 B19-11092 B19-11091 B19-11090

17-6-19

DRN DATE APPD DRG NO

SINGLE LINE DIAGRAM & LEGEND

ASSOCIATED DRAWINGS

AGA CONSULTING

GPO BOX 3097 DARWIN NT 0801

ELECTRICAL & MECHANICAL

CONTRACT DRAWING

DESCRIPTION

AMENDMENTS

TERRITORY LIFE

PHONE: 0417 160700

CONTACT: CLEMENT WILLIAMS

GPO Box 1779 DARWIN NT 0801



PRELIMINARY/PROPOSED

T TENDERING PURPOSES ONLY

CANCELLED/SUPERSEDED

AC APP. FOR CONSTRUCTION

AI AS INSTALLED

AGA406-16A

FILE No: NE590/12087

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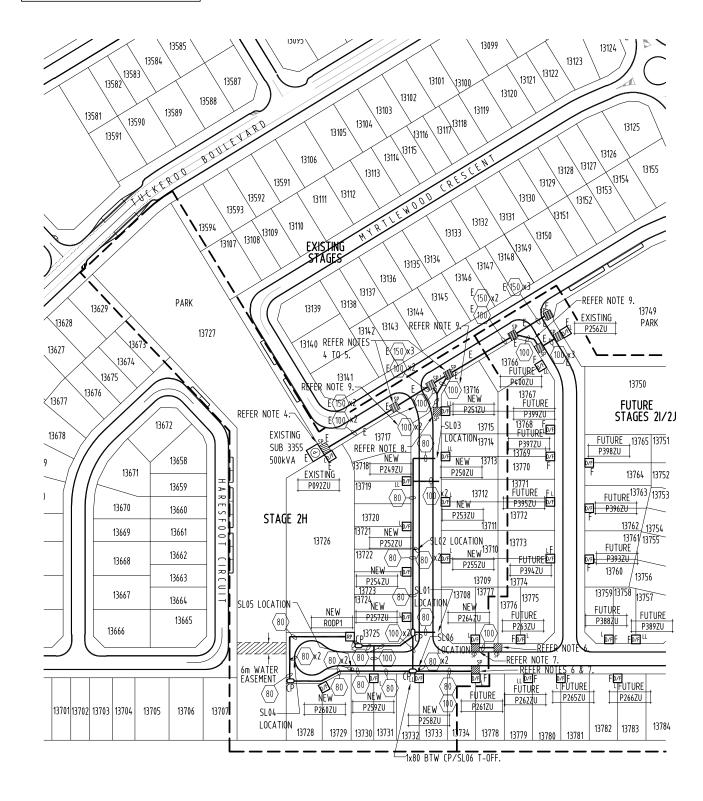
DRAFTING STANDARD TO A.S.1100



WARNING

BEWARE OF EXISTING UNDERGROUND SERVICES. ONTRACTOR SHALL CONFIRM LOCATIONS OF SERVICES PRIOR TO EXCAVATION COORDINATE WITH ALL RELEVANT AUTHORITIES.

GIFTED ASSETS



SITE PLAN (1:1000 AT A1)

DRAWING STATUS APPD DATE AGA CONSULTING PRELIMINARY/PROPOSED TERRITORY LIFE ENGINEERS PTY LTD T TENDERING PURPOSES ONLY GPO Box 1779 DARWIN NT 0801 ELECTRICAL & MECHANICAL AC APP. FOR CONSTRUCTION B19-11093 B19-11092 B19-11091 B19-11089 SINGLE LINE DIAGRAM & LEGEND NOTES MASTER SERVICES PLAN LV ELECTRICAL RETICULATION AI AS INSTALLED CANCELLED/SUPERSEDED PHONE: 0417 160700 CONTRACT DRAWING 17-6-19 GPO BOX 3097 DARWIN NT 0801 DRN DATE APPD DRG NO NO DESCRIPTION CONTACT: CLEMENT WILLIAMS AMENDMENTS ASSOCIATED DRAWINGS AGA406-16A

NORTHERN TERRITORY

	DES DRN CKD APPD SCALE	A.GANGUR K.TAVENER A.GANGUR 1:1000 AT A1	SUBDIV	POWER SERVICES - PALMERSTON DISTRIBUTION SUBDIVISION OF LOT 12087 ZUCCOLI STAGE 2 - STAGE 2H CONDUIT/DUCT LAYOUT					
		17-6-19 1. IN mm	A1	DRAWING B19-11090 0					
DRAFTING STANDARD TO A.S.1100			S.1100	FILE No: NE590/12087 AMDT					

NOTES

- 1 REFER DWG No. B19-11092 FOR DETAILS OF ITEMS LISTED IN LEGEND.
- 2 ALL SPARE CONDUITS SHALL INCLUDE DRAW WIRES/FITTED WITH END CAPS.
- 3 PROVIDE CONTINUOUS SWEEP BENDS IN ALL CHANGES IN CONDUIT ROUTE DIRECTIONS.
- 4 CONTRACTOR SHALL LOCATE EXISTING SAND PITS AT LOCATIONS SHOWN & INSTALL NEW LV DIST. CABLING FROM EXISTING SUB 3355 WITHIN EXISTING SPARE 1x100mm HD uPVC CONDUIT BETWEEN EXISTING SAND PITS & THEN DIRECT BURIED TO NEW DIST. PILLAR P249ZU.
- 5 CONTRACTOR SHALL LOCATE EXISTING EARTH CABLING IN LOCATIONS SHOWN, JOINT NEW 1x1C 70 Sq mm Cu, BARE EARTH CABLING & EXTEND TO AND CONNECT TO NEW DIST, PILLARS P2497U/P2517U
- 6 CONTRACTOR SHALL SUPPLY & INSTALL 1x1C 70 Sq mm Cu, BARE EARTH TO SAND PIT SHOWN & LEAVE 3m COILED IN SAND PIT FOR FUTURE STAGE CONNECTION
- 7 CONTRACTOR SHALL SUPPLY & INSTALL 1x100mm HD uPVC SWEEP BEND CONDUIT TO WITHIN NEW DIST. PILLARS P258ZU/P264ZU AND EXTEND TO WITHIN NEW SAND PIT IN ROAD RESERVE IN FRONT OF NEW DIST. PILLARS P258ZU/P264ZU & THEN INSTALL 1x100mm HD uPVC CONDUIT TO NEW SAND PIT AS SHOWN - FOR FUTURE STAGE LV DIST. CABLING.
- 8 CONTRACTOR SHALL SUPPLY & INSTALL 2x100mm HD uPVC SWEEP BEND CONDUITS TO WITHIN NEW DIST. PILLAR P251ZU & EXTEND TO WITHIN NEW SAND PIT IN ROAD RESERVE IN FRONT OF NEW DIST, PILLAR P251ZU - FOR POWER AND WATER TO PULL THROUGH LV. DIST CABLING.
- 9 CONTRACTOR SHALL SUPPLY & INSTALL 1x100mm HD uPVC SPARE CONDUIT/S (FITTED WITH DRAW ROPES/CAPPED) BETWEEN SAND PITS SHOWN -FOR POWER AND WATER TO PULL THROUGH LV DIST. CABLING.
- 10 CONTRACTOR SHALL SUPPLY & INSTALL SPARE 1x80mm HD upvc conduit from New Street Light SL04 to New Sand PIT Shown for Future STAGE STREET LIGHTING (AS PART OF STREET LIGHTING WORKS).
- 11 EXTEND ALL CONDUITS AT ROAD CROSSINGS TO WITHIN ELECTRICAL SERVICES TRENCH ALLOCATION.
- 12 MINIMUM 300mm HORIZONTAL SEPARATION REQUIRED BETWEEN EDGE OF NBN CONDUIT/S & LV CABLING. TRENCH WIDTH MAYBE EXTENDED BY 200mm TOWARDS PROPERTY BOUNDARY TO ENSURE 300mm HORIZONTAL SEPARATION PROVIDED. WHERE 300mm SEPARATION NOT PROVIDED, LV CABLING SHALL BE INSTALLED IN 100mm HD uPVC CONDUIT. ALSO REFER DWG No. B19-11089, DETAILS B & C.

LEGEND

- EXISTING PACKAGE SUBSTATION (RATING AS SHOWN).
- NEW DISTRIBUTION DOUBLE LINK PILLAR FUSED TYPE. 'E' INDICATES EXISTING/'F' INDICATES FUTURE. D/F ^l
- NEW DISTRIBUTION LINK PILLAR FUSED TYPE. 'E' INDICATES EXISTING/'F' INDICATES FUTURE.
- NEW DISTRIBUTION PILLAR FUSED TYPE. 'F' INDICATES FUTURE. D/F
- NEW ROAD OWNER DIST. PILLAR (AS PART OF STREET LIGHTING WORKS).
 - NEW ELECTRICAL CONDUIT/DUCT. CONDUIT/DUCT TYPE AS FOLLOWS:

 HD uPVC FOR ALL HV CABLING.

 HD uPVC FOR LV DIST. CABLING FOR ROAD CROSSINGS.

 HD uPVC FOR STREET LIGHT CABLING (AS PART OF STREET LIGHTING WORKS).
- NUMBER INSIDE INDICATES CONDUIT/DUCT SIZE. NUMBER SHOWN/DRAWN INDICATES NUMBER OF CONDUITS REQUIRED.
- NEW SAND PIT 1000x1000x600D WITH A MINIMUM COVER OF 0.9m TO TOP OF CONDUITS. 'E' INDICATES EXISTING.
- NEW SAND PIT 1500x1000x600D WITH A MINIMUM COVER OF 0.9m TO TOP OF CONDUITS.
- OCP NEW CABLE PIT (AS PART OF STREET LIGHTING WORKS). LV CONDUITS DO NOT PASS THROUGH CABLE PITS.



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GIFTED ASSETS



SITE PLAN (1:1000 AT A1)

<u>NOTES</u>

1 - REFER DWG No. B19-11092 FOR DETAILS OF ITEMS LISTED IN LEGEND (EXCLUDING WATER/SEWER/DRAINAGE CONNECTION).

LEGEND

EXISTING PACKAGE SUBSTATION (RATING AS SHOWN).

NEW DISTRIBUTION DOUBLE LINK PILLAR - FUSED TYPE. 'E' INDICATES EXISTING/'F' INDICATES FUTURE.

NEW DISTRIBUTION LINK PILLAR - FUSED TYPE. 'E' INDICATES EXISTING/'F' INDICATES FUTURE.

D/F NEW DISTRIBUTION PILLAR - FUSED TYPE.

NEW ROAD OWNER DIST. PILLAR (AS PART OF STREET LIGHTING WORKS).

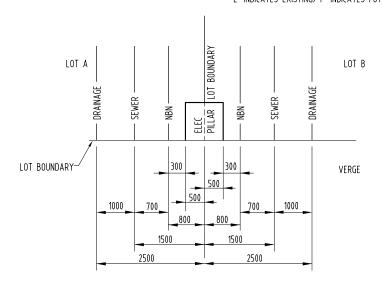
-_E___ EXISTING LV SERVICE CABLE/CONNECTION.

 $-\frac{30(F)}{2}$ Future 3 Phase Consumer Mains (by Lot owner).

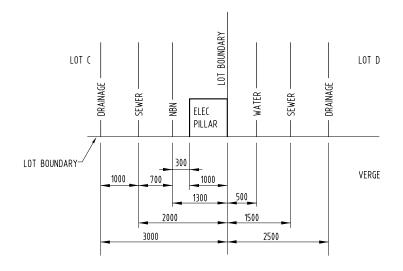
NEW WATER CONNECTION. 'E' INDICATES EXISTING/'F' INDICATES FUTURE. W

NEW SEWER CONNECTION. 'E' INDICATES EXISTING/'F' INDICATES FUTURE. (§)

NEW DRAINAGE CONNECTION. 'E' INDICATES EXISTING/'F' INDICATES FUTURE.



DETAIL D - TYPICAL OFFSETS FOR ELEC/NBN/SEWER/DRAINAGE/WATER LOT CONNECTIONS - ELEC PILLAR IN 2 LOTS (N.T.S.)



DETAIL E - TYPICAL OFFSETS FOR ELEC/NBN/SEWER/DRAINAGE/WATER LOT CONNECTIONS - ELEC PILLAR IN 1 LOT (N.T.S.)

DRAFTING STANDARD TO A.S.1100

DEVELOPER:	
TERRITORY GPO Box 1779 DARWIN NT 0801	LIFE

PHONE: 0417 160700 FACSIMLE: EMAIL: clement.williams@territorylife.com.au CONTACT: CLEMENT WILLIAMS AGA CONSULTING ENGINEERS PTY LTD ELECTRICAL & MECHANICAL

GPO BOX 3097 DARWIN NT 0801

FACSIMILE: 08 89421400 EMAIL: alekg@agaeng.com.

CONTRACT DRAWING

AMENDMENTS

B19-11093 B19-11092 B19-11090 B19-11089 SINGLE LINE DIAGRAM & LEGEND NOTES CONDUIT/DUCT LAYOUT LV ELECTRICAL RETICULATION 17-6-19 DRN DATE APPD DRG NO DESCRIPTION

ASSOCIATED DRAWINGS

DRAWING STATUS APPD DATE PRELIMINARY/PROPOSED T TENDERING PURPOSES ONLY AC APP. FOR CONSTRUCTION AI AS INSTALLED C CANCELLED/SUPERSEDED AGA406-16A



DES	A.GANGUR	POWER	SERVICES -	PALMERSTON	DISTRIBUTION	N
DRN	K.TAVENER	SUBDIV	ISION OF LOT	12087		
CKD	A.GANGUR	ZUCCO	LI STAGE 2 -	STAGE 2H		
APPD		MASTER	SERVICES PL	AN		
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FILE No: NE590/12087

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GIFTED ASSETS

NOTES - WORKS BY DEVELOPERS CONTRACTOR

- 1 ALL WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH CURRENT POWER AND WATER CONSTRUCTION METHODS. REQUIREMENTS & STANDARDS AS DETAILED IN POWER AND WATER DESIGN AND CONSTRUCTION GUIDELINES, UNDERGROUND MANUAL & ACCESS TO APPARATUS RULES.
- 2 ALL PURCHASED MATERIALS/EQUIPMENT TO CONSTRUCT ELECTRICAL RETICULATION SHALL BE IN ACCORDANCE WITH POWER AND WATER'S RELEVANT STANDARDS/TECHNICAL REQUIREMENTS AND FROM A POWER AND WATER AUTHORISED MANUFACTURER, SPECIFICALLY FOR HIGH VOLTAGE AND LOW VOLTAGE DISTRIBUTION NETWORKS. ANY NON-STANDARD MATERIALS/EQUIPMENT USED WITHOUT OBTAINING PRIOR APPROVAL IN WRITING FROM POWER NETWORKS, ASSET MANAGEMENT QUALITY GROUP CAN BE REJECTED AND REPLACED BY THE APPROVED STANDARD ITEM BEFORE POWER AND WATER ACCEPTS THE HANDOVER OF ELECTRICAL ASSETS AND ISSUING POWER CLEARANCE FOR THE CONSTRUCTION/DEVELOPMENT. IF UNSURE. CONTACT POWER AND WATER POWER NETWORK ASSET MANAGEMENT QUALITY GROUP ON standardsengineers@powerwater.com.au.
- 3 IN COMPLIANCE TO SAFETY REQUIREMENTS REGARDING ACCESS TO APPARATUS RULES, ALL OPENINGS OR TRENCHES IN FRONT OF APPLICABLE POWER ASSETS WHICH ARE CURRENTLY IN SERVICE MUST BE BACKFILLED OR HAVE SUBSTANTIAL COVER (SUITABLE STEEL PLATE OR 19mm FORM PLY SECURED TO A 150mm x 100mm TIMBER CROSS MEMBERS) OVER THE OPENINGS WHEN WORKS HAVE COMPLETED FOR THE DAY IN ORDER TO ALLOW POWER AND WATER'S PERSONNEL SAFE ACCESS TO THE APPARATUS & TO PERFORM ANY SWITCHING IF REQUIRED, IN ADDITION TO CURRENT STANDARD FENCING
- 4 CONTRACTOR SHALL CONTACT & SUBMIT AN UNDERGROUND INSTALLATION PROGRAM" TO POWER AND WATER'S PROGRAM DELIVERY VIA E-MAIL (programdelivery.pwc@powerwater.com.au) THIRTY (30) DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS. THE UNDERGROUND INSTALLATION IS SUBJECT TO APPROVAL BY PROGRAM DELIVERY 7 DAYS PRIOR TO WORK COMMENCING.
- 5 FUSED DISTRIBUTION PILLARS SHALL BE SUPPLIED AND INSTALLED BY CONTRACTOR AND LABELLED IN ACCORDANCE WITH POWER AND WATER REQUIREMENTS, LABELS SHALL BE PROVIDED BY CONTRACTOR, PILLARS SHALL BE TYPE IN ACCORDANCE WITH POWER AND WATER STANDARD DWG S02-2-3-08 & INSTALLATION IN ACCORDANCE WITH POWER AND WATER STD DWG's S02-2-3-12 & S02-2-3-13.
- 6 SERVICE ALLOCATIONS SHALL BE AS PER DWG No. B19-11089, DETAIL A AND SHALL BE INSTALLED IN ACCORDANCE WITH POWER AND WATER STANDARD DWG'S S2-2-6-2 AND S2-2-6-3 (TRENCH DETAILS). ALSO REFER DWG No. B19-11089 DETAILS B & C.
- 7 ELECTRICITY EASEMENTS SHALL BE IN ACCORDANCE WITH POWER AND WATER STANDARD DWG'S S2-2-6-17. - FUSED PILLARS: 1mx1m WHERE PILLAR FULLY IN 1 LOT OR 0.5mx1m WHERE ONE PILLAR IN 2 LOTS (IE ON COMMON BOUNDARY) FOR 3 & 5 SLOT FUSED PILLAR.

WHERE FRONT/SIDE OF PILLARS ELECTRICTY EASEMENTS DO NOT ALIGN WITH FRONT OF SIDE LOT BOUNDARIES. ELECTRICITY EASEMENTS SHALL EXTEND TO FRONT OR SIDE LOT BOUNDARY. DEVELOPER SHALL SURVEY & REGISTER ELECTRICITY EASEMENTS REQUIRED IN FAVOUR OF POWER AND WATER (AT NO COST TO POWER AND

8 - LV CABLES SUPPLIED AND INSTALLED BY CONTRACTOR SHALL BE TYPE IN ACCORDANCE WITH POWER AND WATER STANDARD DWG'S S2-1-1-19 AND S2-1-1-20.

- 9 SERVICE CABLES FROM DIST. PILLARS TO WITHIN EACH LOT IS TO BE PROVIDED BY LOT OWNER.
- 10 CONTRACTOR SHALL LIAISE WITH NBN CONTRACTOR TO ENABLE CONDUITS AND COMMUNICATIONS PITS TO BE INSTALLED BY NBN CONTRACTOR AT THE APPROPRIATE CONSTRUCTION STAGE (INCLUDING CONDUITS AT ROAD CROSSINGS). THE CONTRACTOR SHALL BACKFILL/COMPACT TRENCHES, UPON INSTALLATION OF ELECTRICAL SERVICES CABLING. TO A LEVEL IN ACCORDANCE WITH STANDARD POWER AND WATER DWG'S S2-2-6-2 TO ENABLE NBN CONTRACTOR TO INSTALL COMMUNICATIONS CONDUITS AND PITS. THE CONTRACTOR SHALL THEN COMPLETE BACKFILL/COMPACTION OF TRENCHES.
- 11 CONTRACTOR SHALL INSTALL ALL NUMBER PLATES (LABELS) REQUIRED BY POWER AND WATER IE PILLARS. CONTRACTOR SHALL LABEL ALL CABLE DESTINATIONS IN ACCORDANCE WITH POWER AND WATER STANDARD DRAWING S02-1-8-25.
- 12 ALL WORKS REQUIRED ON EXISTING ENERGISED RETICULATION SHALL ONLY BE CARRIED OUT BY POWER AND WATER PERSONNEL. DEVELOPER/CONTRACTOR SHALL LIAISE WITH POWER AND WATER TO COORDINATE CONNECTION OF THE WORK INTO EXISTING UNDERGROUND RETICULATION. ALL COSTS ASSOCIATED SHALL BE PAID BY DEVELOPER.
- 13 DEVELOPER SHALL ENSURE THAT ONLY POWER AND WATER ACREDITED ELECTRICAL CONTRACTOR IS EMPLOYED TO CARRY OUT WORK ON THIS ELECTRICAL SYSTEM (CONTACT MANAGER NETWORK ENGINEERING -8924 5191).
- 14 DEVELOPER SHALL LIAISE WITH POWER AND WATER TO OBTAIN "HANDOVER OF WORK BY DEVELOPER". CONTRACTOR SHALL SUBMIT TO POWER AND WATER ON COMPLETION OF WORK, SIGNED COPY OF "CONTRACTOR'S CERTIFICATE OF COMPLETION & HANDOVER - POWER NETWORK ASSETS" & SIGNED COPY OF "ELECTRICAL CERTIFICATE OF
- 15 CABLE ROUTE LENGTHS NOMINATED ON SINGLE LINE DIAGRAM ARE FOR POWER AND WATER INFORMATION ONLY & SHALL NOT BE USED FOR TENDERING PURPOSES.
- 16 COORDINATE WITH CIVIL SERVICES FOR LOCATION OF WATER, SEWERAGE AND DRAINAGE SERVICES.
- 17 CONTRACTOR SHALL PROVIDE "AS CONSTRUCTED" DRAWINGS IN ACCORDANCE WITH POWER AND WATER'S "POWER NETWORKS DESIGN AND CONSTRUCTION GUIDELINES", INCLUDING A COPY OF THE FINAL SURVEY PLAN. THE "AS CONSTRUCTED" DRAWINGS SHALL INCLUDE:
- 1 x A1 PAPER PRINT INDICATING "AS INSTALLED" (OF ALL DRAWINGS).
- 1 x A3 PAPER PRINT INDICATING "AS INSTALLED" (OF ALL DRAWINGS).
- 1 DIGITAL (CD) COPY OF ALL DRAWINGS (MICROSTATION .DGN FILES).

NOTES - WORKS BY POWER AND WATER (AT DEVELOPERS COST)

- 1 CONTRACTOR SHALL ARRANGE FOR POWER AND WATER TO CARRY OUT THE FOLLOWING WORKS:
- PULL THROUGH NEW LV DIST. CABLING (FROM NEW DIST. PILLAR P249ZU) LEFT COILED IN EXISTING SAND PIT IN FRONT OF EXISTING SUB 3355 & CONNECT/TERMINATE TO EXISTING SUB 3355 SPARE LV STRIPPLE FUSE UNIT.
- DISCONNECT EXISTING LV DIST. CABLING FROM EXISTING DIST. PILLAR P256ZU, PULL BACK/CUT & PULL INTO NEW DIST. PILLAR P251ZU & CONNECT/TERMINATE.
- SUPPLY/INSTALL NEW LV DIST. CABLING BETWEEN EXISTING DIST. PILLAR P256ZU/NEW DIST. PILLAR P251ZU & CONNECT/TERMINATE EACH END.
- CARRY OUT FARTH TESTS
- COMPLETE FINAL CONNECTION, TESTING & COMMISSIONING OF NEW DISTRIBUTION PILLARS & ASSOCIATED CABLING/WORKS.
- 2 DEVELOPER SHALL PAY ALL ASSOCIATED COSTS FOR POWER AND WATER TO CARRY OUT ABOVE WORKS. POWER AND WATER'S FINAL CONNECTION QUOTE FOR PAYMENT SHALL ONLY BE PROVIDED TO THE DEVELOPER OR THE DEVELOPER'S SUCCESSFUL ELECTRICAL CONTRACTOR WITH A WRITTEN ADVICE BY THE DEVELOPER

TERRITORY LIFE GPO Box 1779 DARWIN NT 0801

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APPD DATE



DES A.GANGUR	POWER SERVICES - PALMERSTON DISTRIBUTION	
DRN K.TAVENER	SUBDIVISION OF LOT 12087	
CKD A.GANGUR	ZUCCOLI STAGE 2 - STAGE 2H	
APPD	NOTES	
SCALE N.T.S.		
ISSUED 17-6-19	A1 DRAWING B19-11092	
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