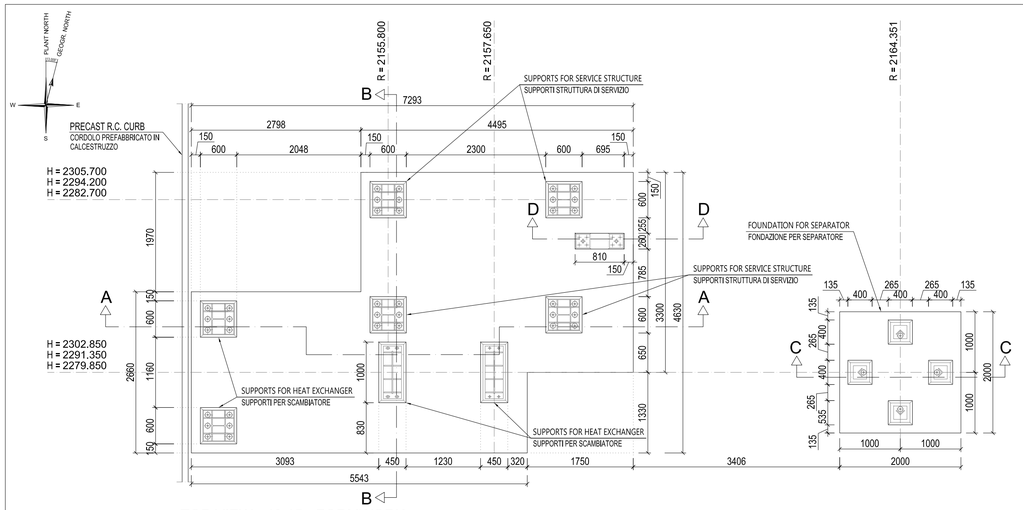
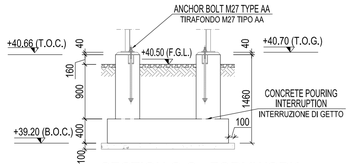


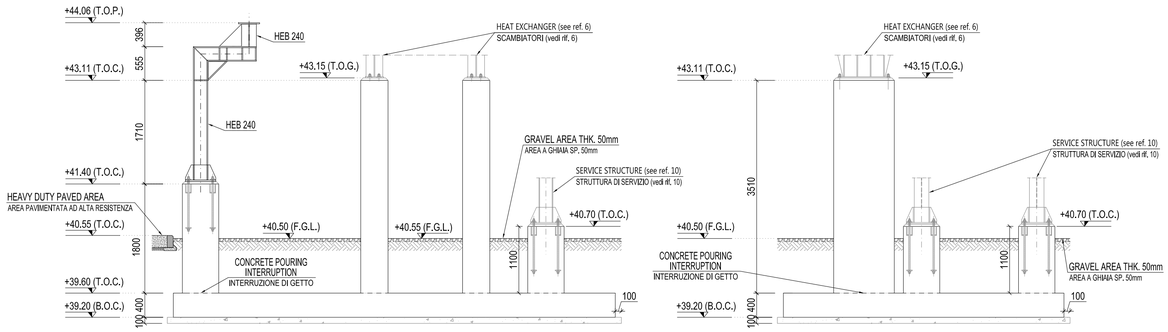
TOP VIEW +43.15 - FORMWORK
PIANTA +43.15 - CASSERATURE

BILL OF MATERIALS FOR CIVIL WORKS
COMPUTO DEI MATERIALI PER OPERE CIVILI

STRUCTURAL CONCRETE CALCESTRUZZO STRUTTURALE	18.88 m³
LEAN CONCRETE MAGRONE	3.32 m³
BITUMINOUS COATING RIVESTIMENTO BITUMINOSO	67.50 m²
FORMWORK CASSERATURA	61.01 m²
REINFORCEMENT ARMATURA	1698.30 kg
GROUTING MORTAR MALTA DI LIVELLAMENTO	0.17 m³
ANCHOR BOLTS M27 TYPE AA BULLONI DI ANCORAGGIO M27 TIPO AA	n. 38 216.22 kg
BOLTS M27 BULLONI M27	n. 4
CHEMICAL ANCHOR BOLTS TYPE HILTI HIT-RE 500 HIT- V M10 ANCORAGGI CHIMICI TIPO HILTI HIT-RE 500 HIT- V M10	n. 8
HEA 240 HEA 240	218.30 kg
PLATES THK. 17 mm PIASTRE sp. 17 mm	107.16 kg
PLATES THK. 20 mm PIASTRE sp. 20 mm	28.26 kg
PLATES THK. 25 mm PIASTRE sp. 25 mm	98.00 kg

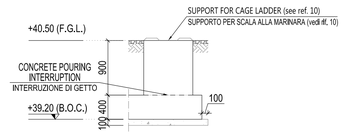


SECTION C-C - FORMWORK
SEZIONE C-C - CASSERATURE

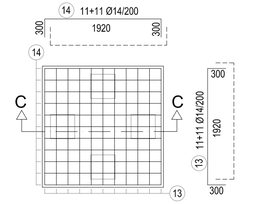


SECTION A-A - FORMWORK
SEZIONE A-A - CASSERATURE

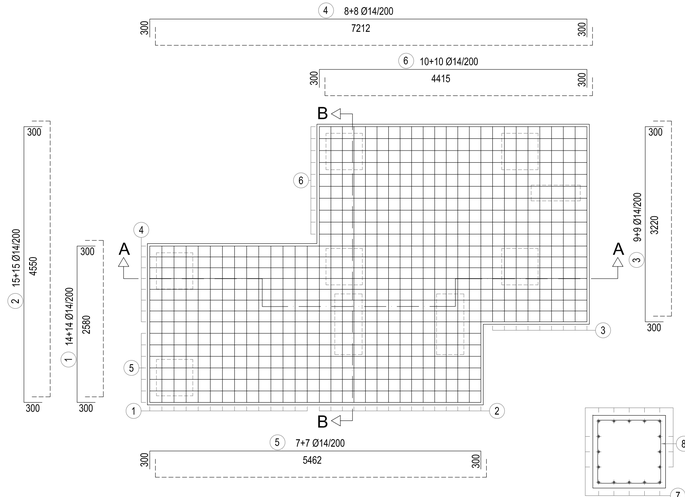
SECTION B-B - FORMWORK
SEZIONE B-B - CASSERATURE



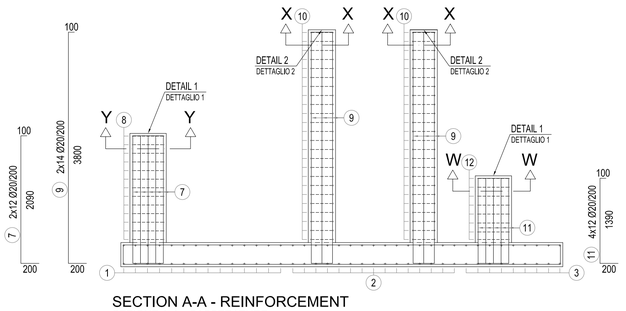
SECTION D-D - FORMWORK
SEZIONE D-D - CASSERATURE



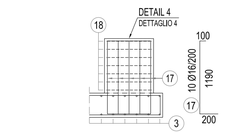
FOUNDATION SLAB FOR SEPARATOR REINFORCEMENT
PLATEA DI FONDAZIONE PER SEPARATORE ARMATURE



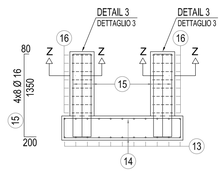
TOP VIEW +39.60 - REINFORCEMENT
PIANTA +39.60 - ARMATURE



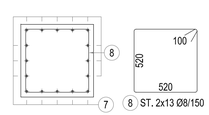
SECTION A-A - REINFORCEMENT
SEZIONE A-A - CASSERATURE



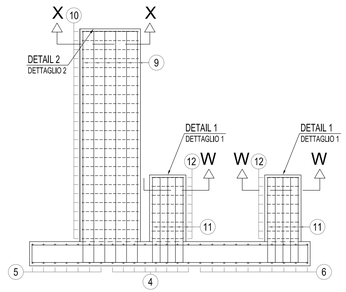
SECTION D-D - REINFORCEMENT
SEZIONE D-D - ARMATURE



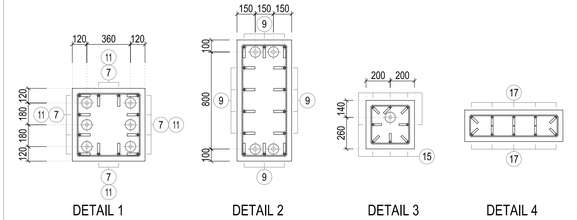
SECTION C-C - REINFORCEMENT
SEZIONE C-C - ARMATURE



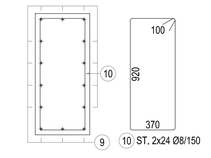
SECTION Y-Y - REINFORCEMENT
SEZIONE Y-Y - ARMATURE
SCALE / SCALA 1:25



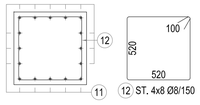
SECTION B-B - REINFORCEMENT
SEZIONE B-B - ARMATURE



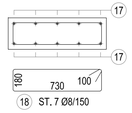
REINFORCEMENT POSITIONING ON COLUMNS
DISPOSIZIONE ARMATURE SUI TORRINI
SCALE / SCALA 1:25



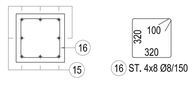
SECTION X-X - REINFORCEMENT
SEZIONE X-X - ARMATURE
SCALE / SCALA 1:25



SECTION W-W - REINFORCEMENT
SEZIONE W-W - ARMATURE
SCALE / SCALA 1:25



SECTION W-W - REINFORCEMENT
SEZIONE W-W - ARMATURE
SCALE / SCALA 1:25



SECTION Z-Z - REINFORCEMENT
SEZIONE Z-Z - ARMATURE
SCALE / SCALA 1:25

REFERENCE DOCUMENTS / DOCUMENTI DI RIFERIMENTO

IPR01-C5521-300-Q-TSD-0001	REF 1: Design Specification for Concrete Works
IPR01-C5521-000-Q-DQA-0001	REF 2: General Plot Plan
IPR01-C5521-300-N-TSD-0001	REF 3: Design Specification for Steel Works
IPR01-C5521-961-Q-TCE-0003	REF 4: Foundation for Heat Exchanger - Structural Calculation Report
IPR01-C5521-961-Q-DQF-0006	REF 5: Foundation for Heat Exchanger - Bar Bending List
IPR01-C5521.1020-370-M-DME-0001_REV.0	REF 6: Heat Exchanger - General Assembly Drawing with Foundation Load
IPR01-C5521.1020-370-M-DME-0002_REV.0	REF 7: Separator - General Assembly Drawing with Foundation Load
IPR01-C5521-000-Q-DQF-0001	REF 8: Standard for Anchor Bolts
IPR01-C5521-900-Q-TSD-0001	REF 9: Specification for Earth Moving Works
IPR01-C5521-970-N-DNB-0009	REF 10: Steel Structure for Heat Exchangers - Plans and Views

LEGEND / LEGENDA

B.O.C. = BOTTOM OF CONCRETE / FONDO DEL CALCESTRUZZO
F.G.L. = FINISHED GROUND LEVEL / LIVELLO DEL TERRENO FINITO
= HOLD / DA DEFINIRE
= CONCRETE POURING INTERRUPTION / INTERRUZIONI DI GETTO
T.O.C. = TOP OF CONCRETE / ESTRADOSSO DEL CALCESTRUZZO
T.O.G. = TOP OF GROUT / ESTRADOSSO MALTA DI LIVELLAMENTO
T.O.P. = TOP OF PLATE / ESTRADOSSO DELLA PIASTRA

REMARKS / NOTE

1) ALL DIMENSIONS ARE IN mm, UNLESS OTHERWISE INDICATED. / TUTTE LE QUOTE SONO IN mm, SALVO DIVERSA INDICAZIONE.
2) ALL ELEVATIONS ARE IN m. F.G.L. CORRESPONDS TO +40.50 m a.s.l.
TUTTE LE ELEVAZIONI SONO IN m. F.G.L. CORRISPONDE A +40.50 m s.l.m.
3) ALL CONCRETE SURFACES IN CONTACT WITH SOIL BELOW GROUND LEVEL WILL BE PROTECTED BY A BITUMEN-BASED WATERPROOF COATING TYPE SIKA IGOL-2 OR SIMILAR.
TUTTE LE SUPERFICI IN CALCESTRUZZO IN CONTATTO CON IL TERRENO AL DI SOTTO DEL TERRENO SARANNO PROTETTE DA UN RIVESTIMENTO IMPERMEABILE A BASE DI BITUME TIPO SIKA IGOL-2 O SIMILARE.
4) ALL THE EXPOSED EDGES WILL BE CHAMFERED AS SHOWN BELOW / TUTTI I BORDI ESPOSTI SARANNO SMUSSATI COME INDICATO SOTTO:
5) WHERE FOUNDATIONS CANNOT BE PLACED ON THE UNDISTURBED SOIL BACKFILLING UP TO FOUNDATION LEVEL WILL BE CARRIED OUT WITH SELECTED MATERIAL PROPERLY COMPACTED ACCORDING TO REF.9 OR WITH INCREASED THICKNESS OF LEAN CONCRETE .
DOVE LE FONDAZIONI NON POSSONO ESSERE POSTE SU TERRENO INDISTURBATO VERRANNO EFFETTUATI RINTERRI FINO AL LIVELLO DI FONDAZIONE CON MATERIALI SELEZIONATI E CORRETTAMENTE COMPATTATI IN ACCORDO A RIF.9 O CON UNO SPESSORE MAGGIORATO DI MAGRONE.
6) BAR OVERLAPS SHALL BE AT LEAST 50 DIAMETERS. / LA SOVRAPPOSIZIONE DELLE ARMATURE DOVRA' ESSERE ALMENO 50 DIAMETRI .
7) REFER TO THE REF.3 FOR FABRICATION AND CONSTRUCTION REQUIREMENTS OF ALL STEEL STRUCTURES.
FARE RIFERIMENTO ALLA RIF.3 PER I REQUISITI DI FABBRICAZIONE E COSTRUZIONE DI TUTTE LE STRUTTURE IN ACCIAIO.
8) AFTER ANCHOR BOLTS INSTALLATION AND BEFORE CONCRETE POURING AN ACCURATE CHECK OF ANCHOR BOLTS POSITION SHALL BE CARRIED OUT BY CIVIL SUBCONTRACTOR.
DOPO L'INSTALLAZIONE DEI TIRAFONDI E PRIMA DEL GETTO DEVE ESSERE ESEGUITO UN ACCURATO CONTROLLO DELLA LORO POSIZIONE DA PARTE DEL SUBAPPALTATORE CIVILE.
9) REFER TO THE REF.3 FOR FABRICATION AND CONSTRUCTION REQUIREMENTS OF ALL STEEL STRUCTURES.
FARE RIFERIMENTO AL RIF.3 PER I REQUISITI DI FABBRICAZIONE E COSTRUZIONE DI TUTTE LE STRUTTURE IN ACCIAIO.

CONCRETE / CALCESTRUZZO

REFERENCE STANDARD / NORMATIVA DI RIFERIMENTO	NTC 14-01-2008, EN 206-I
STRUCTURAL CONCRETE GRADE / CLASSE DEL CLS STRUTTURALE	C 28/35
LEAN CONCRETE GRADE / CLASSE DEL MAGRONE	C 12/15
CEMENT TYPE / TIPO DI CEMENTO	CEM IV/B 32.5 or CEM II/B-M 42.5
MINIMUM CEMENT CONTENT (STRUCTURAL CONCRETE) CONTENUTO MINIMO DI CEMENTO (CALCESTRUZZO STRUTTURALE)	350 kg/m³
MINIMUM CEMENT CONTENT (LEAN CONCRETE) CONTENUTO MINIMO DI CEMENTO (MAGRONE)	270 kg/m³
EXPOSURE CLASS / CLASSE DI ESPOSIZIONE	XC2 (FOR FOUNDATIONS) XC3 (FOR RISING STRUCTURES)
PROPOSED SLUMP CLASS / CLASSE DI SLUMP PROPOSTA	S3 (100 - 150 mm) FOR HORIZONTAL STRUCTURES S4 (160 - 200 mm) FOR VERTICAL STRUCTURES

WATER SHALL COMPLY WITH REQUIREMENTS OF EN 1008 / L'ACQUA DEVE SODDISFARE LE RICHIESTE DELLA EN 1008

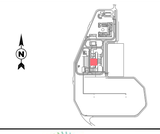
REINFORCEMENT STEEL / BARRE DI ARMATURA

REFERENCE STANDARD / NORMATIVA DI RIFERIMENTO	NTC 14-01-2008, ENV 1992-1-1 (EC2)
STEEL BARS / BARRE DI ACCIAIO	B450C

MINIMUM BAR COVER / COPRIFERRO MINIMO

FOR ALL SURFACES / PER OGNI SUPERFICIE	40 mm

KEY PLAN / PIANTA CHIAVE



Trans Adriatic Pipeline

CONTRACTOR DOCUMENT NUMBER N. DOCUMENTO APPALTATORE	REVISION NO. REVISIONE N.
7900-CH-000120	A

RENCO

REV.	REMARK / DESCRIPTION NOTA/ DESCRIZIONE	PREP ELA.	VFY VER.	APR APP.	DATE DATA
A	ISSUED FOR REVIEW / EMISSIONE PER REVISIONE	PMB	LEVANTINI	PIROMALLI	06-07-2017

PROJECT TITLE
TITOLO PROGETTO
TRANS ADRIATIC PIPELINE
GASDOTTO TRANS ADRIATICO

DRAWING TITLE
TITOLO DISEGNO
FOUNDATION FOR HEAT EXCHANGER
STRUCTURAL DRAWINGS
FORMWORK & REINFORCEMENT
FONDAZIONI PER SCAMBIATORI - DISEGNI STRUTTURALI CASSERI ED ARMATURE

TAG NUMBERS
SIGLA
- - - - -

Format Formato	SCALE: Scala	FACILITY CODE COD. IMPIANTO	SYSTEM NO. SISTEMA N.	SHEET FOGLIO	RD CODE CODICE RD	REVISION NO. REVISIONE N.
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DRAWING NO.
DISEGNO N.
IPR01-C5521-961-Q-DQF-0005-01

FORMAT A1 UNI EN ISO 5457