

Dated: -----

**Improvement/Rehabilitation of Remaining Portion of Road
from Sujawal to Badin (52 Km) Near Khore Wah to Start
of Badin Bypass (Km 27+750 to Km 79+750), Scheme
No. I, (ADP # 2227/2016-17).**

CONTRACT PACKAGE # SCA/EA/CP-X

ADDENDA TO BID DOCUMENT

ADDENDUM # 1

NOTICE TO ALL BIDDERS

The Bidding Documents for the above-referenced Project are modified as set forth in this Addendum. The original Bidding Documents issued remain in full force and effect, except as modified by this Addendum, which is hereby made part of the Bidding Documents. Bidder shall take this Addendum into consideration when preparing and submitting a bid, and shall acknowledge receipt of this Addendum in the space provided on the Bid Form.

In accordance with Clause 9 of Instructions to Bidders following texts of the bid documents are deleted / amended in Part-II Special Condition of Contract and replaced with new text.

Add Paragraphs

Page No.	Description	Sub Clause Reference	Explanation
92	Record of Contractor's Personnel and Equipments	6.10	The Contractor Shall submit to the Engineer on daily basis the resources mobilized with status of working, idle, breakdown.

Deleted /Replaced Text

Page No.	Description	Sub Clause Reference	Explanation
94 Line No. 08	Programme	8.3	Delete "Programme of Programme" and Replace with "Programme of Works"

Revised Pages

Page No.	Description	Explanation
37	Appendix-C to Bid (B)	Attached
113 To 135	Special Provisions From SP-1 To SP-9	Attached

Revised BOQ

BOQ	Attached
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Other terms and Conditions shall remain unchanged.

Danish Saeed
Director General
Sindh Coal Authority

- B When Escalation is allowed on the materials only.**
Price adjustment on following items shall be allowed:

Cost Element	Description	Base price	Applicable index
1	2	3	4
(i)	Cement – in bags (50kg bag)	540.50	Government of Pakistan (GP) Federal Bureau of Statistics (FBS) Monthly Statistical Bulletin for Karachi (Lucky Cement)
(ii)	Reinforcing Steel Steel	73,000	Amreli Steel
(iii)	Bitumen 60/70 in Bulk 80/100 in drums	47,151 58,575	Attock Petroleum Karachi
	Total Three items.		

Notes:

1. The base prices shall be those as provided in above table. Current indices or prices shall be those applying last 28 days prior to the last day of the billing period.
2. Any fluctuation in the prices of materials other than those given above shall not be subject to adjustment of the Contract Price.

SPECIAL PROVISION

SPECIAL PROVISIONS

SP-1 NOT USED

SP-2 ENGINEER'S FACILITIES

2.1 SCOPE

- a) The Contractor shall provide, properly maintained and serviced, facilities for the Engineer (the "Engineer's Facilities") comprising of an office, (the "Engineer's Office"), a laboratory (the "Engineer's Laboratory"), housing (the "Engineer's Housing"), survey equipment (the "Engineer's Survey Equipment") and vehicles (the "Engineer's Vehicles") as specified hereinafter for the exclusive use of the Engineer during the whole Contract period.
- b) The Contractor shall provide and pay for all consumables, the consumption of electricity, gas and water, the installation and the use of telephones, and provide and pay for all other incidental and running costs related to the Engineer's Facilities.
- c) The Engineer's Facilities shall be available and ready for use within 30 (Thirty) days of the Commencement Date during this period of (30) thirty days the contractor shall make an interim arrangement at his own cost by hiring suitable and acceptable hotel/office/vehicles to serve the purpose to the satisfaction of Engineer.
- d) The Contractor shall be responsible for and take all necessary measures to ensure the security of the Engineer's Office, Laboratory and Housing and their contents at all times and shall employ watchmen for this purpose.
- e) The Engineer's Housing, Office and Laboratory shall be provided as per the requirements set forth in relevant SPs., under the pay item on the respective BOQ.
- f) The Engineer's Facilities, including all vehicles, equipment, furniture, fixtures fittings laboratory & survey equipment shall become the property of the Contractor as stated in relevant SPs.

2.2 SITE LAYOUT

- a) The layouts of the sites for the Engineer's Office and Laboratory are to be agreed by the Engineer and should take into account the following general requirements:
- b) Safe access from the public road.
- c) Paved areas for vehicle movement.
- d) Covered areas for vehicle parking.
- e) Dust suppression in unpaved areas.
- f) Grading of the site to provide drainage.
- g) Separate foul and surface water drainage system, with outfall and treatment as appropriate. Septic tanks being suitably distanced from and down-wind of occupied buildings.
- h) Standby electrical generating capacity located and protected to avoid noise nuisance.
- i) Suitable and convenient covered areas for storage of materials samples.
- j) Ducts, cables, pipes and sewers for services and drainage.
- k) A car washing area with a water source and proper drainage.
- l) Areas of visual amenity having trees, flower beds, shrubs and so forth, with a water source nearby.

- m) Security measures comprising perimeter fencing or walls, gates and guardhouses.

2.3 UTILITIES

- a) Back-up electrical power supply by diesel generator shall be provided. The generator shall have an automatic cut-in in case of failure of the main supply. The power circuit shall be equipped with voltage regulation to protect electrical equipment from overload and to ensure proper operation of computers and the like.
- b) A continuous water supply shall be available for normal use. All kitchens shall be provided with potable water and the source shall be tested and certified by the Contractor at least monthly or at shorter intervals as directed by the Engineer.
- c) Continuous supplies of water, gas, electricity and fuel for the stand-by generator shall be provided by the Contractor who shall be responsible for and pay all costs of installation, connection, maintenance and use.
- d) The Contractor shall take appropriate measures to discourage the presence or entry of termites, cockroaches, vermin and the like. Such measures may include chemical treatment of foundations, sealing of joints in construction and periodic fumigation.
- e) Contractor shall be responsible to do all the formalities in acquiring and installing the Gas, Telephone, Water and Electricity connection for the respective building required under this SP.

2.4 COMMUNICATIONS

1. The Contractor shall arrange for, provide and install in the Engineer's Office, Housing and Laboratory, communication facilities comprising a total of one (01) subscriber trunk dialing (STD) and one (01) (NSTD) telephone lines and eight (08) mobile (cellular) telephone sets with all appurtenances.
2. The Contractor will be required to pay for the cost of telephone calls including calls from mobile phones made by the Engineer, his staff and their dependents up to a total cost of Rs.25,000/= (Twenty five Thousand Rupees) per calendar month.
3. After Completion of the project (cellular) telephones will be the Property of Contractor.

2.5 ESTABLISHMENT

1. Within 7 (Seven) days of the Commencement Date the Contractor shall submit to the Engineer the details of furniture and equipment for the Engineer's Office and Laboratory. The rental housing/office/laboratory shall also be arranged within this period.
2. Within 7 (Seven) days of receiving the Contractor's proposals the Engineer will approve them with any necessary modifications and will instruct the Contractor to proceed with the procurement of the furnishings and equipment.
3. The Engineer's Facilities shall be available and ready for use within 30 (Thirty) days of the Commencement Date.
4. Till such time that the Engineer's facilities are provided the contractor shall made an interim arrangement and shall bear all expenses, such as rent, transport, communications, utilities etc. required to be provided under the provision of the relevant SPs.

SP-3 ENGINEER'S CENTRAL OFFICE**3.1 SCOPE**

The contractor shall provide the Engineer's office building on rental basis.

- a) The office shall comprising six offices, a conference room, four lavatories with washing facilities, a kitchen and a tea room.
- b) The Contractor's Office will be situated adjacent to but at a reasonable distance from the Engineer's Office.
- c) The Contractor shall maintain the Engineer's Office in good condition to the satisfaction of the Engineer for as long as required for the purposes of the Contract.
- d) The office building shall be provided with underground and overhead water reservoirs of adequate capacity.
- e) The building shall be provided with all facilities in accordance with SP-2.
- f) The Engineer's office will be handed over to the Contractor six months after the date of issue of the Taking Over Certificate.
- g) The Engineer's Office fittings, equipment and furnishings shall become the property of the Contractor, six months after the date of issue of the Taking-Over Certificate.

3.2 FURNITURE AND EQUIPMENT

In addition to normal stationery requirements, the Contractor shall provide for the Engineer's Office, furnishings and equipment complying at least to the following list, all to the approval of the Engineer and all for the exclusive use of the Engineer.

No. ITEM

OFFICE FURNITURE

- | | |
|----|---|
| 5 | Standard office desks with lockable drawers and glass top |
| 4 | Small tables |
| 5 | Swivel type padded desk chairs with arms and castors |
| 1 | Executive desk with lockable drawers and glass top with computer table |
| 1 | Executive type upholstered desk chair |
| 1 | Secretary's desk with chair and matching computer table |
| 1 | Conference table for twelve persons with padded swivel chairs |
| 16 | Standard office chairs |
| 8 | Lockable metal filing cabinets for drawings (1.0 x 0.80 x 0.75) m with 4 No. Drawers |
| 6 | Metal cabinets with two lockable doors and five shelves 0.95m x 0.50m x 1.85m high |
| 2 | Metal filing cabinets with four lockable drawers |
| 4 | Metal filing cabinets with two lockable drawers |
| 4 | Book cases with two shelves |
| 1 | Executive sofa set comprising one sofa, two armchairs and coffee table with glass top |
| 6 | Display boards |
| 6 | Metal waste baskets |
| 7 | Office clock, battery powered |
| 6 | Plastic trash containers, 500 mm diameter minimum by 750 mm high. |
| 1 | Electric water coolers |
| 6 | Desk lamps, fluorescent, 20 watts |
| 1 | Desk lamp, executive type |
| 1 | Photocopier with enlarging and reduction capability with 55-65 copies/minute speed |
| 1 | Automatic voltage stabilizer for Xerox photocopier |
| 5 | Air conditioners (cooling and heating) 18,000 BTU or as required |

No. ITEM

- 1 Facsimile machine, Panasonic VF-270 or similar
- 1 Automatic voltage stabilizer for facsimile machine
- 10 Standard size staplers
- 2 Heavy duty staplers
- 3 Paper cutters
- 2 Paper hole punches, heavy duty
- 10 Paper hole punches, light duty
- 2 Pairs of scissors, heavy duty
- 10 Pencil sharpeners
- 2 Pencil sharpeners, desk mounted
- 10 Calculators Scientific
- 1 Binding machine, Model No. 212 PB by General Binding Corp or similar
- 1 Digital Camera, 35 mm single lens reflex Canon/Nikkon or similar, 35-150 mm zoom lens, electronic flash gun, carrying case, filters
- 4 Fire extinguishers (carbon dioxide), wall-hung

COMPUTER EQUIPMENT

- 6 Desktop PC, Intel Core i7 2.4 Ghz 7th Generation, 8 GB RAM, 500 GB hard disk, DVD/RW, LED/LCD 20" PCI Express Graphic Card 2GB, LAN 10/100, Sound Card.
- 2 Laser Printer (A3 + A4 paper size),
- 3 Uninterruptible Power supplies, 1 KVA.
- 1 Copies of the latest versions of the following PC software
Windows 7 32Bit or MS Office 2010
- Autocad (latest version)

MISCELLANEOUS

- 2 Oxford Shorter English Dictionary (Soft/Hard copy)
- 2 English – Urdu and Urdu – English dictionaries
- 20 Construction hard hats
- 1 Set of relevant AASHTO specifications
- 1 Set of relevant Asphalt Institute manuals
- 1 Set of relevant British Standard specifications
- 1 Set of relevant ASTM standards
- Consumables including camera film, batteries for clocks and calculators, paper, cartages and all other office supplies as required.
- Venetian blinds and cotton curtains on all windows

KITCHEN

- 1 Double stainless steel sink with drain board
- 1 Electric refrigerator, 0.50 cu.m capacity with separate freezer compartment, self defrost type
- 1 Gas stove with oven, four burners, and gas bottles as required.
- 1 Set of kitchen cabinets, lockable, with formica top
- 1 Electric kettle
- 1 Electric coffee maker
- 1 Water heater, 60 liters per minutes
- 6 Tea towels
- 2 Towel racks
- 1 Exhaust fan
- Tea pot, coffee pot, cups, saucers, glasses, spoons and serving trays for 24 persons

No. ITEM

LAVATORIES

- 4 Hot water heaters, 6 liters per minute
- 4 Water closets, pedestal style
- 4 Wash basins with hot and cold water
- 4 Stainless steel lavatory paper holders
- 4 Paper towel dispensers
- 4 Mirrors, 400 mm x 500 mm
- 4 Ceramic urinals
- 4 Exhaust fan, ½ HP, 220 Volt
- 4 Towel holder

3.3 MEASUREMENT AND PAYMENT

The cost of providing, furnishing and equipping the Engineer's office shall be measured and paid for at the contract unit price quoted in the Bill of Quantities, which price and payment shall be full compensation for all costs of providing building, painting furnishing and providing all services, equipment, utilities, installations and access/service roads and for all materials, labour, equipment and incidentals for the proper completion of the work prescribed in these Specifications or as directed by the Engineer.

The office equipment and furnishing are not payable and shall be considered as incidental to other pay items.

PAY ITEM NO.	DESCRIPTION	UNIT OF MEASUREMENT
SP-3	a) Provide Engineer's Central Office (Rental) b) Equip and Furnish Engineer's Office	Per month Lum Sum

SP-4 ENGINEER'S HOUSING (SENIOR & JUNIOR STAFF)**4.1 SCOPE**

The contractor shall provide the building for Engineer's housing on rental basis. The Contractor shall also provide equipment and furniture for the Engineer's Housing as described in 4.2.

Engineer's Housing shall constitute of the following Buildings:

1. Residential accommodation for Senior staff, 6 bed rooms, drawing dining and Servant Room with attached bathrooms
2. Residential accommodation for Junior staff, 3 bed rooms with attached bathrooms
3. Provision of Furnishing of Engineer's Housing as listed but not limited to as stated in SP-4.2.

4.2 FURNITURE AND EQUIPMENT

1. The Engineer's Housing shall be fully furnished and equipped to the satisfaction of the Engineer, including curtains, linen, blankets, glassware, cutlery, crockery and kitchen utensils as indicated below, which list is intended only as a guide to indicate the minimum requirements that will be acceptable.
2. The Engineer's Housing shall be provided with efficient drainage and sanitation and shall be provided with potable water, gas and electricity supplies available throughout 24 hours of each day.
3. The Contractor shall maintain the Engineer's Housing in good condition to the satisfaction of the Engineer as long as required for the purposes of the Contract.
4. The buildings shall be provided with all necessary facilities in accordance with SP-2.
5. The buildings provided under this SP for Engineer's Housing shall be provided with underground and overhead water reservoirs of adequate capacity.
6. The Engineer's Housing for Sr. Staff will be handed over to the Contractor six months after the date of issue of the Taking Over Certificate, while Housing for Jr. Staff will be handed over to the Contractor on the date of issue of the Tking Over Certificate.
7. The fittings, equipment and furnishings of Engineer's Housing for Sr. staff shall become the property of the Contractor, six months after the date of issue of the Taking-Over Certificate, while for Jr. Staff will be handed over to the Contractor on the date of issue of the Tking Over Certificate.

ITEM	NUMBER PER HOUSE	
	Senior Staff	Junior Staff
FURNITURE		
Double bed with mattress	6	-
Single bed with mattress	2	3
Bedside table	6	3
Dressing table with mirror and stool	6	3
Chest of drawers	6	-
Wardrobe	6	3
Bedroom chair	6	3
Writing table and chair	6	3
Dining table(s) and chairs (to seat 12 persons and 6 persons)	1	1
Sideboard with drawers	2	2
Sofa set	2	1
Occasional table	4	4
Wall mirror	6	3
Kitchen cupboards and tables or fitted units	1 Set	1 Set

Side table	6	3
Bookcase	6	3
Linen, Blankets, Towels etc.	6 Sets	3Sets

ITEM	NUMBER PER HOUSE	
	Senior Staff	Junior Staff
EQUIPMENT		
Air Conditioners (Cooling and Heating)		
18000 BTU or as required	6	3
Television 40" screen colour	1	1
Satellite television parabolic dish and tuner	1	1
DVD player	1	1
Refrigerator, 0.5 cu.m for and 0.25 cu.m, self-defrost type with separate deep freeze compartment	1	1
Cooker, four burner with thermostatically - Controlled oven	1	1
Washing machine	1	1
Shelves	As reqd	As reqd
Bathroom wall mirror, shelf, medicine cabinet stool and towel rails	As reqd	As reqd
Glassware, cutlery, crockery, kitchen utensils etc.	2 Set	1 Set
Fire extinguisher	2	1

4.3 MEASUREMENT AND PAYMENT

The cost of providing, furnishing and equipping the Engineer's Housing under this SP shall be measured and paid for at the contract unit price quoted in the Bill of Quantities for the respective Pay Items listed below, which price and payment shall be full compensation for all costs of providing building, finishing, painting, furnishing and providing all services, equipment, utilities and installation and for all materials, labour, equipment and incidental for the proper completion of the work prescribed in these Specifications or as directed by the Engineer.

PAY ITEM NO.	DESCRIPTION	UNIT OF MEASUREMENT
SP-4	Provide Engineer's Housing	
(a)	Provision of residential accommodation for Senior Staff (Rental)	Per month
(b)	Provision of residential accommodation for Junior Staff (Rental)	Per month
(c)	Provide Furnishing and Equipment for Engineer's Housing for Senior & Junior Staff	Lum Sum

SP-5 ENGINEER'S LABORATORY**5.1 SCOPE**

1. The Contractor for the duration of the Contract shall provide Engineer's Laboratory on rental basis. The laboratory shall be for the exclusive use of the Engineer for testing soils, aggregate, concrete and bituminous materials. The laboratory shall be fully equipped with all utilities, furniture, apparatus and fittings appropriate to such use.
2. The Engineer's Laboratory shall be located adjacent to the Engineer's Office. It shall consist of a hall and two offices with storage, lavatory and washing facilities. The hall shall be divided into bitumen section, a soil and aggregates section, and a concrete section.
3. Outside the laboratory water tanks shall be constructed for curing concrete samples, of a size and location approved by the Engineer.
4. The laboratory shall be provided with electricity and telephone and shall be air-conditioned. It shall have a regular and dependable supply of water, gas and electricity available throughout 24 hours of each day.
5. All rooms shall be provided with exhaust fans, located particularly over fume cupboards and the like.
6. To maintain the water supply the building shall be provided with underground and overhead water reservoirs of adequate capacity.
7. The lavatory shall be connected to a septic tank of adequate capacity with a 200 mm sanitary pipe and ventilation pipe stack.
8. The Contractor shall provide two nos qualified materials technicians and two nos laboratory helpers to assist in operating the laboratory. All costs necessary for the provision and upkeep of these personnel shall be the responsibility of the Contractor and shall be considered included in the payment herein specified for providing and maintaining the Engineer's Laboratory.
9. The building for laboratory shall be provided with all the facilities in accordance with SP-2.
10. The Engineer's Laboratory will be handed over to the Contractor six months after the date of issue of the Taking Over Certificate.
11. The Engineer's Laboratory fittings, furnishings and equipment shall become the property of the Contractor six months after the date of issue of the Taking-Over Certificate.

5.2 SAMPLING

It shall be the responsibility of the Contractor to take samples as required by the Engineer and to provide all necessary transport, labour, tools, containers, wrappings and so forth for uplifting and dispatching samples to the Engineer's Laboratory.

5.3 TESTS

1. The Engineer's Laboratory shall be equipped to perform the following in-house tests:

TEST	AASHTO DESIGNATION
Moisture content test by oven drying	
Atterberg limits	T-89 & T-90
Moisture density relationship of soils (standard method)	T-99
Moisture density relationship of soils (modified method)	T-180, Method B and D
Specific gravity of soils	T-100
CBR test	T-193
Sieve analysis of soils and aggregate and mineral filler	T-88, T-27 and T-37
Specific gravity and water absorption of the fine aggregates	T-84
Specific gravity and water absorption of coarse aggregates	T-85
Unit weight of aggregates	T-19
Los/Angeles abrasion test for aggregates	T-96
Chemical tests:	
- Organic impurities for sand in concrete	T-21
- Chlorides and Sulphates in fine aggregates	ASTM-1411
- Potential alkali reactivity test	ASTM-C 289
Amount of material passing No. 200 sieve	T-11
Soundness of aggregates	T-104
Clay lumps and friable particles in aggregates	T-112
Curing concrete compressive test specimens	T-23
Compressive strength of concrete cylinder specimens	T-22
Quality of water to be used in concrete	T-26
Making and curing concrete test specimens in the laboratory	T-126

TEST	AASHTO DESIGNATION
Plastic fines in graded aggregates and soils by use of sand equivalent test	T-176
Sampling bituminous materials	T-40
Marshall test and loss in stability	T-245
Specific gravity of compacted bituminous mixtures	T-166
Quantitative extraction of bitumen from bituminous paving mixtures	T-164
Viscosity of bitumen	T-20, T-202
Penetration of bitumen	T-49
Flash and fire points	T-48
Solubility of bituminous materials in organic solvents	T-44
Coating and stripping of bitumen-aggregate mixture	T-182
Petrographic analysis	

2. The Engineer's Laboratory shall be equipped to perform the following field tests:

TEST	AASHTO DESIGNATION
In-place density by sand cone method (with 15.25 cms and 30.5 cms cone)	T-191
In-place density of compacted base course containing large sizes of coarse aggregates	T-181
Sampling fresh concrete	T-141
Concrete slump	T-119
Sampling bituminous materials	T-40
Determining the temperature of bituminous paving mixtures	-

Coring and determination of bulk specific gravity of compacted bituminous T-230, T-166
Mixtures

FURNISHING

The Contractor shall provide for the Engineer's Laboratory furnishings described in the following list to a quality approved by the Engineer. Substitution of type may be made only upon approval of the Engineer.

NO.	DESCRIPTION
3	Standard office desks
1	Swivel type padded desk chairs
7	Work tables
15	Standard office chairs
6	Small tables
3	Side racks
3	Metal filing cabinets, 4-drawer
6	Electronic calculators
2	Air conditioners (cooling and heating)
1	Electric water coolers
1	Display board
3	Desk lamps, fluorescent, 20 watts
3	Standard size staplers
1	Heavy duty stapler
2	Paper cutters
2	Paper hole punches
2	Pencil sharpeners
4	Fire extinguishers

5.4 EQUIPMENT

1. The Contractor shall provide new laboratory equipment as noted in the list *Equipment for the Engineer's Laboratory* included herein. The equipment shall be purchased from international suppliers, all to the approval of the Engineer.
2. The Contractor shall submit to the Engineer within 7 (seven) days of the Commencement Date a complete list of the equipment, apparatus and supplies he proposes to furnish for the Engineer's Laboratory. The list shall include the manufacturer's name and descriptive literature.
3. Additional equipment and materials shall be supplied by the Contractor at no additional cost as and when required by the Engineer to perform any test relevant to the Works.
4. Any damaged equipment received in the laboratory shall not be accepted by the Engineer and shall have to be replaced with new one of matching quality and other specifications of the equipment. Any equipment got damaged due to the negligence of contractor's staff during the working shall be repaired or replaced as would be convenient to the contractor such that the testing schedule in any way should not be effected. The repaired equipment shall be examined by the Engineer or his representative and approved for the use in the material testing. If repaired equipment does not come up to the satisfaction of the Engineer, the same shall have to be replaced with new one.

5.5 MEASUREMENT AND PAYMENT

1. The cost of providing, furnishing and equipping the Engineer's Laboratory shall be measured and paid for at the contract unit price quoted in the Bill of Quantities for the respective Pay Items listed below, which price and payment shall be full compensation for all costs of providing building, finishing, painting, furnishing and providing all services, equipment, utilities installation and access/service roads and for all materials, labour, equipment and incidentals for the proper completion of the work prescribed in these Specifications, drawings or as directed by the Engineer.

PAY ITEM NO.	DESCRIPTION	UNIT OF MEASUREMENT
SP-5		
(a)	Provide Engineer's Laboratory on Rental basis	Per month
(b)	Provide New Equipment & Furniture for Engineer's Laboratory	Lum Sum

EQUIPMENT FOR SITE LABORATORY

SR. NO.	EQUIPMENT DESCRIPTION	MODEL No./ NAME	UNIT	QTY.
GENERAL EQUIPMENT				
1	Laboratory oven, capacity 256 litre	LIM-600 (NEUMAR, GER)	Each	1
2	Laboratory oven, capacity 53 litre	LIM-400 (NEUMAR, GER)	Each	1
3	Hot plate, maximum temperature 350°C	L-236	Each	1
4	Gas burner, two flames	-	Each	1
5	Bunsen burner with tripod	-	Each	1
6	Heavy duty straight spring scale	China	Each	1
7	Heavy duty balance, 20 kg.	OHAUS, USA	Each	1
8	Triple beam balance, 2,610 grams	OHAUS, USA	Each	2
9	Precision mechanical balance	OHAUS, USA	Each	1
10	Wall clock	-	Each	1
11	Stop watch	CASIO	Each	1
12	Vernier caliper	China	Each	1
13	Thermometer, general, 0°C - 200°C	ZEAL, UK	Each	2
14	Maximum - minimum thermometer	Local	Each	1
15	Tongs	China	Each	2
16	Desicator	PYREX	Each	1
17	Beaker, pyrex, 250 ml	PYREX	Each	2
18	Beaker, pyrex, 500 ml	PYREX	Each	2
19	Beaker, pyrex, 1,000 ml	PYREX	Each	2
20	Funnel, 250 ml	China	Each	2
21	Funnel, 500 ml	China	Each	2
22	Volumetric flask, 100 ml	China	Each	2
23	Volumetric flask with stopper, 250 ml	China	Each	2
24	Volumetric flask with stopper, 500 ml	China	Each	2
25	Volumetric bottle flask, 250 ml	China	Each	2
26	Volumetric bottle flask, 500 ml	China	Each	2
27	Wash bottle, 100 ml	China	Each	2
28	Wash bottle, 250 ml	China	Each	2
29	Wash bottle, 500 ml	China	Each	2
30	Specific gravity bottles (100 ml)	China	Each	1
31	Graduated cylinder, 100 ml	China	Each	2
32	Graduated cylinder, 250 ml	China	Each	2
33	Graduated cylinder, 1,000 ml	China	Each	2
34	Reagent bottle stoppered, 2 litre	China	Each	2
35	Aluminium cans with cover, 2" diameter	Local	L.S.	*
36	Aluminium cans with cover, 3" diameter	Local	L.S.	*
37	Scoop	Local	Each	2
38	Brush, fine	Local	Each	1
39	Wire brush, coarse	Local	Each	1
40	Wire brush, fine	Local	Each	1
41	Bucket, 12 litre	Local	Each	2

SR. NO.	EQUIPMENT DESCRIPTION	MODEL No./ NAME	UNIT	QTY.
42	Trolley	Local	Each	1
43	Shovel, large	Local	Each	1
44	Pickaxe	Local	Each	1
45	Sample splitter, coarse	Local	Each	1
46	Sample splitter, fine	Local	Each	1
47	Sieve shaker for 8" diameter sieve, motorised	Local	Each	1
48	Tin pan/tray, 12" x 12" x 2"	Local	Each	4
49	Tin pan/tray, 18" x 18" x 3"	Local	Each	4
50	Tin pan/tray, 24" x 18" x 3"	Local	Each	4
51	Tin pan/tray, 36" x 24" x 3"	Local	Each	4
52	Mortar procelain, 200 mm diameter with rubber covered pestle	China	Each	1
COARSE AND FINE AGGREGATES SIEVE ANALYSIS				
53	Sieve set 8" diameter:			
54	3/4 inch	CBC-8075	Each	3
55	1/2 inch	CBC-8050	Each	2
56	3/8 inch	CBC-8037	Each	2
57	No. 4 (4.74 mm)	CB-84	Each	2
58	No. 8 (2.36 mm)	CB-88	Each	2
59	No. 10 (2.00 mm)	CB-810	Each	3
60	No. 16 (1.18 mm)	CB-816	Each	2
61	No. 30 (0.60 mm)	CB-830	Each	2
62	No. 40 (0.425 mm)	CB-840	Each	3
63	No. 50 (0.300 mm)	CB-850	Each	2
64	No. 80 (0.180 mm)	CB-880	Each	1
65	No. 100 (0.150 mm)	CB-8100	Each	2
66	No. 200 (0.075 mm)	CB-8200	Each	3
67	Wet washing No. 200	CL-385	Each	3
	Sieve set 12" diameter:			
68	3 inch (75 mm)	CW-18300	Each	2
69	2 1/2 inch (63 mm)	CW-18250	Each	2
70	2 inch (50 mm)	CW-18200	Each	2
71	1 1/2 inch (38 mm)	CW-18150	Each	2
72	1 inch (25 mm)	CW-18100	Each	2
73	3/4 inch (19 mm)	CW-18075	Each	2
74	1/2 inch (12.5 mm)	CW-18050	Each	2
75	3/8 inch (9.5 mm)	CW-18037	Each	2
76	No. 4 (4.74 mm)	CW-184	Each	2
	Sieve set 18" diameter:			
77	3 inch (75 mm)	CW-18300	Each	2
78	2 1/2 inch (63 mm)	CW-18250	Each	2
79	2 inch (50 mm)	CW-18200	Each	2

SR. NO.	EQUIPMENT DESCRIPTION	MODEL No./ NAME	UNIT	QTY.
80	1 1/2 inch (38 mm)	CW-18150	Each	2
81	1 inch (25 mm)	CW-18100	Each	2
82	3/4 inch (19 mm)	CW-18075	Each	2
83	1/2 inch (12.5 mm)	CW-18050	Each	2
84	3/8 inch (9.5 mm)	CW-18037	Each	2
85	No. 4 (4.75 mm)	CW-184	Each	2
86	Pan	CB-8500	Each	2
87	Cover	CB-8506	Each	2
ATTERBERG LIMITS				
88	Liquid limit test set with all accessories	CL-209	Each	1
89	Plastic limit test set with all accessories	CL-251	Each	1
SAND EQUIVALENT				
90	Apparatus complete	CL-230	Set	1
COARSE AND FINE AGGREGATE UNIT WEIGHT				
91	Density basket, brass	G-340	Each	1
92	Sand absorption cone and tamper	Local	Each	1
93	Pycnometers	Local	Each	2
94	Specific gravity bottle	China	Each	1
95	Specific gravity bottle	China	Each	1
96	Specific gravity bottle	China	Each	1
ABRASION				
97	Los Angeles abrasion machine with abrasion char	M-600	Each	1
COARSE AND FINE AGGREGATE SOUNDNESS				
98	Distilled water	-	L.S.	*
99	Sodium sulphate solution	-	L.S.	*
MODIFIED COMPACTION				
100	Straight edge	Local	Each	1
101	Scoop	Local	Each	1
102	Scoop	Local	Each	1
103	Mixing spoons	Local	Each	1
104	Modified compaction hammer, 10 lbs	Local	Each	2
105	Modified compaction mould, 6" diameter	Local	Each	2
106	Modified compaction mould, 4" diameter	Local	Each	2
107	Preparation knife	Local	Each	1
108	Wooden hammer	Local	Each	1
109	Spatula	Local	Each	1
110	Mixing tray, 24" x 24" x 3"	Local	Each	*
LABORATORY CBR				
111	Soaking, tank 60" x 120" x 24"	-	Each	1
112	CBR mould, 6" diameter with collars, plate, screws	Local	Each	9
113	Filter Paper	Local	L.S.	*
114	Swell Plates	Local	Each	9
115	Surcharge weights	Local	Each	18
116	Surcharge weights, slotted	Local	Each	2
117	Tripod attachment	Local	Each	9

SR. NO.	EQUIPMENT DESCRIPTION	MODEL No./ NAME	UNIT	QTY.
118	Dial indicator	Local	Each	9
119	Spacer, disc	Local	Each	2
120	CBR testing machine automatic	CN-705	Each	1
121	Proving ring, 10 KN	PR-60	Each	1
122	Providing ring, 50 KN	PR-100	Each	1
FIELD DENSITY				
123	Sand cone bottle	Local	Each	2
124	Density plate	Local	Each	2
125	Plastic jug for sand	Local	Each	2
126	Replacement jug	Local	Each	2
127	Spoon	Local	Each	2
128	Plastic bags	Local	L..S	*
129	Chisel, 12"	Local	Each	2
130	Hammaer, 2.5 lbs	Local	Each	2
131	Field balance	OHAUS (USA)	Each	2
132	Sieve No. 30 (0.60 mm)	Local	Each	2
BITUMEN				
133	Bitumen penetration test, penetrometer	AP-140	Set	
ASPHALT				
134	Marshall stability compressive machine	AP-170 & PR 60	Each	1
135	Marshall specimen mould assembly	Local	Each	1
136	Base plate for compressive mould	AP-166	Each	1
137	Marshall compaction hammer	AP-165	Each	1
138	Marshall specimen mould holder	AP-167	Each	1
139	Marshall breaking head	AP-169	Each	1
140	Marshall flow meter	AP-171	Each	1
141	Marshall mixing apparatus	C-110	Each	1
142	Water bath (thermostatic) controlled to 60°C	AP-160	Each	1
143	Bituminous extractor apparatus complete	AP-174	Each	1
144	Filter disc	AP-177	L.S.	*
145	Mixing bowl (steel)	AP-190	Each	1
146	Vacuum pycnometer	AP-132	Each	1
147	Extractor for stability mould	AP-168	Each	1
148	Stability mould with coller	AP-166	Each	6
149	Compaction pedestal	AP-172	Each	1
150	Pavement core drill with 4" diameter core	DR-1304	Each	1
151	Core bit, 4" diameter	DR-1440	Each	4
152	Carbon tetrachloride	AP-178	Drum	*
153	Thermometer, metallic 350°C	-	Each	4
154	Hubbard-carmick specific gravity bottle	AP-185	Each	1
155	Stop watch for marshall test	-	Each	1
CONCRETE AND CEMENT				
156	Compressive strength machine, heavy duty, 250,0	CT-755	Each	1
157	Steel scale	-	Each	2
158	Curing tank with temperature control	-	Each	1

SR. NO.	EQUIPMENT DESCRIPTION	MODEL No./ NAME	UNIT	QTY.
159	Cement mould brush	CT-68B	Each	2
160	Flexure attachment	CT-84	Each	1
161	Concrete tray	CT-58	Each	*
162	Air meter complete	-	Set	1
163	Cylinder mould, heavy duty, 6" diameter	CT-35	Each	9
164	Cylinder capping apparatus	CT-53	Each	1
165	Concrete capping compound	-	Kg	*
166	Laboratory warming pot	L-114	Each	1
167	Slump test cone	CT-69	Set	2
168	Tamper	CT-22	Each	1
169	Vibrating table	CT-164	Each	1
170	Concrete micrometer	CT-29	Each	1
171	Vicat apparatus set	CT-1	Set	1
172	Steel straight edge	-	Each	2
173	Hand gloves, rubber	-	Pair	*
174	Trowel triangular blade	CT-67	Each	2
175	Cement cube mould	CT-60	Each	2

SP-6 MAINTENANCE OF ENGINEER'S CENTRAL OFFICE, SENIOR AND JUNIOR STAFF HOUSING AND CENTRAL LABORATORY

6.1 SCOPE

1. The Contractor shall maintain the Engineer's Office, Housing and Laboratory in all respects, including all repairs and replacements of any item and the supply of all consumables.
2. The Contractor shall provide all necessary janitorial services and supplies for the Engineer's Office, Laboratory and Housing. The services shall include normal domestic servicing and cleaning, including lavatories and bathrooms, washing windows and so forth. Janitorial services shall be performed on a daily basis with personnel and to a programme of work approved by the Engineer.
3. The Contractor shall maintain the Engineer's Office, Laboratory and Housing in a neat, hygienic and attractive manner and provide daily garbage collection and disposal services.
4. The Contractor shall maintain fire extinguishers and air-conditioners as recommended by their manufacturers and shall clean and replace air-conditioner air filters at regular intervals of one month, or more frequently if required by service conditions or as otherwise directed by the Engineer.
5. The Contractor shall provide guard services for the Engineer's Office, Laboratory and Housing on a twenty-four hour basis. The suitability, number and work schedule of all guard personnel shall be approved by the Engineer.
6. The maintenance of Engineer's office housing and laboratory shall also include payment of all utilities bills such as Gas, Telephone (includes Mobile Telephone also) Electricity and water etc. by the contractor which shall not be paid separately and shall be deemed to be included in maintenance per month cost under the respective BOQ items of SP-6.
7. The Contractor shall provide these services from the date of acceptance of the individual facilities by the Engineer until the date of issue of the Taking-Over Certificate plus six months.

6.2 MEASUREMENT AND PAYMENT

The maintenance and servicing of the Engineer's Office, Housing and Laboratory shall be measured and paid for at the contract unit price quoted in the Bill of Quantities for the respective Pay Items listed below, commencing from the date of occupancy of the premises by the Engineer. In case of a Contract Extension, maintenance and servicing will be paid for on the same monthly basis, provided that it has been approved by the Engineer or Employer in accordance with the conditions of contract.

PAY ITEM NO.	DESCRIPTION	UNIT OF MEASUREMENT
SP-6	Maintain Engineer's Office, Housing and Laboratory	
(a)	Maintain Engineer's Central Office	Per month
(b)	Maintain Engineer's Housing for Senior Staff	Per month
(c)	Maintain Engineer's Housing for Junior Staff	Per month
(d)	Maintain Engineer's Laboratory	Per month

SP-7 ENGINEER'S SURVEY EQUIPMENT**7.1 SCOPE**

1. The Contractor shall provide and maintain survey equipment for the use of the Engineer. All the survey equipment shall be new and shall be maintained throughout the Contract and replaced by the Contractor free of charge in case of damage or loss howsoever caused. The Contractor shall also arrange calibration of all surveying equipments after every three months.
2. The Contractor shall provide and pay for experienced survey helpers for the Engineer as required by the Engineer.
3. The survey equipment after the completion of the project plus six months shall become the property of the Contractor.

7.2 EQUIPMENT

The Contractor shall provide and maintain the following survey equipment:

NO. DESCRIPTION

1	Total Station survey units complete
1	Total Station accessories complete as under: <ul style="list-style-type: none"> - Interface Cable - Comms Plus Unit - Precision Wooden Tripod
1	Single Tilting Range Pole Prism complete as under: <ul style="list-style-type: none"> - Prism - Single Tilting Mount with Coaxial Target - Range Pole Telescopic Tripod with Soft Case - 2 m Telescopic Range Pole - Range Pole Level - Soft Case
1	Single Tilting Prism with Coaxial Target complete as under: <ul style="list-style-type: none"> - Prism - Single Tilting Mount with Coaxial Target - Simple Carrier - Tribach with Optical Plummet - Soft
1	Triple Tilting Prism with Coaxial Target complete as under: <ul style="list-style-type: none"> - Prism - Triple Tilting Mount with Coaxial Target - Simple Carrier - Tribach with optical plummet - Soft case
2	Aluminium Telescopic Tripod
2	1 m Range Pole for Extension
1	Automatic Level complete
1	Aluminium Telescopic Tripod
3	Leveling Staff (local manufacture)
2	Range Pole Level
6	Steel measuring tape, 50 m long

- 6 Steel measuring tape, 20 m long
- 25 Steel measuring tape, 3 m long
- 12 Measuring rod (4 m)
- 18 Ranging rod with tripod

7.3 CONSUMABLES

The Contractor shall provide adequate supplies of expendable materials, such as pencils, rubbers, inks, notebooks, drawing paper, survey pegs, brushes, paints etc. as required by the Engineer.

7.4 MEASUREMENT AND PAYMENT

1. The cost of providing and maintenance of surveying equipment for the exclusive use of the Engineer, including survey helpers for the duration of the contract, shall be paid for at the contract unit price quoted in the Bill of Quantities for the respective Pay Items listed below, which price and payment shall be full compensation for all costs of providing survey equipments, survey helpers, materials and its maintenance and incidentals for the proper completion of the work prescribed in these Specifications or as directed by the Engineer.

PAY ITEM NO.	DESCRIPTION	UNIT OF MEASUREMENT
SP-7		
(a)	Provide New Survey Equipment	Lum Sum
(b)	Maintain Survey Equipment	Per month

SP-8 ENGINEER'S VEHICLES**8.1 SCOPE**

1. The Contractor shall provide, maintain and make available at all times for the exclusive use of the Engineer the following new vehicles (on rental basis), the number and type of each being as specified below:

Toyota Corolla with A/C -----1 no.
 Suzuki Cultus with A/C and CNG----- 3 nos
 Suzuki Bolan A/C and CNG----- 3 no

All vehicles shall be air-conditioned.

2. All vehicles shall be fitted with 3-point inertia-reel seat belts for all occupants.
3. All the vehicles shall be provided for the Engineer's use within 28 (twenty eight) days from the Start Date.
4. If the Contractor fails to provide the vehicles within the time specified the cost incurred by the Engineer in renting similar replacement vehicles plus a 20% (twenty percent) overhead charge shall be payable by the Contractor.
5. The vehicles shall be registered, taxed, comprehensively insured, fuelled, repaired, serviced, cleaned and maintained by the Contractor for the duration of the Contract and temporarily replaced if, in the Engineer's opinion, any vehicle is not in a roadworthy condition.
6. The Contractor shall provide safe, experienced and competent drivers for all the vehicles, to the approval of the Engineer. Each driver shall be responsible for the vehicle allocated to him for the duration of the Contract. The Contractor shall promptly replace any driver who, in the Engineer's opinion, is not satisfactory.
7. The Engineer's vehicles shall become the property of the Contractor six months after the issuance of Taking Over Certificate.

8.2 MEASUREMENT AND PAYMENT

The cost of providing and maintenance of Engineer's Vehicles for the duration of the Contract, shall be paid for at the contract unit price quoted in the Bill of Quantities for the respective Pay Items listed below, which price and payment shall be full compensation for all costs of providing, maintaining including drivers, fuel, lubricants, repairs, all insurances, taxes and everything necessary for the completion of the work prescribed in these Specifications or as directed by the Engineer.

PAY ITEM NO.	DESCRIPTION	UNIT OF MEASUREMENT
SP-8	(a) Providing Engineer's Vehicles	Per month
	(b) Maintain Engineer's Vehicles	Per month

SP-9 ENGINEER'S SITE OFFICE,**9.1 OFFICE BUILDING**

The contractor shall provide the Engineer's office on rental basis.

- a) The building office shall comprising Three (03) room, with lavatories and washing facilities, a kitchen and a tea room.
- b) The Contractor shall maintain the Engineer's Office in good condition to the satisfaction of the Engineer for as long as required for the purposes of the Contract.
- c) The Contractor shall provide the Engineer with at-least two office messenger and pay for the same.
- d) The office building shall be provided with underground and overhead water reservoirs of adequate capacity.
- e) The building shall be provided with all facilities in accordance with SP-2.
- f) The Engineer's Office fittings, equipment and furnishings shall become the property of the Contractor, on the date of issue of the Taking-Over Certificate.

FURNITURE AND EQUIPMENT

In addition to normal stationery requirements, the Contractor shall provide for the Engineer's Office/Laboratory, furnishings and equipment complying at least to the following list, all to the approval of the Engineer and all for the exclusive use of the Engineer.

No. ITEM

OFFICE FURNITURE

- | | |
|---|--|
| 3 | Standard office desks with lockable drawers and glass top |
| 2 | Small tables |
| 1 | Large table |
| 3 | Swivel type padded desk chairs with arms and castors |
| 8 | Standard office chairs |
| 3 | Lockable metal filing cabinets for drawings (1.0 x 0.80 x 0.75) m with 4 No. Drawers |
| 3 | Book cases with two shelves |
| 3 | Display boards |
| 3 | Metal waste baskets |
| 3 | Office clock, battery powered |
| 3 | Plastic trash containers, 500 mm diameter minimum by 750 mm high. |
| 1 | Electric water coolers |
| 1 | Air conditioners (cooling and heating) 18,000 BTU or as required |
| 3 | Standard size staplers |
| 1 | Heavy duty staplers |
| 2 | Paper cutters |
| 1 | Paper hole punches, heavy duty |
| 3 | Paper hole punches, light duty |
| 1 | Pairs of scissors, heavy duty |
| 3 | Pencil sharpeners |
| 1 | Pencil sharpeners, desk mounted |
| 3 | Calculators Scientific |
| 1 | Fire extinguishers (carbon dioxide), wall-hung |

COMPUTER EQUIPMENT

- 1 Desktop PC, Intel Core i7 2.4 Ghz Second Generation, 4 GB RAM, 500 GB hard disk, DVD/RW, LED/LCD 20" PCI Express Graphic Card 1GB, LAN 10/100, Sound Card.
- 1 Laser Printer (A4 paper size),
- 1 Uninterruptible Power supplies, 1 KVA.
- 1 Copies of the latest versions of the following PC software
Windows 7 32Bit or MS Office 2010

- Autocad (latest version)

MISCELLANEOUS

- 1 English – Urdu and Urdu – English dictionaries
- 6 Construction hard hats
Consumables including camera film, batteries for clocks and calculators, paper, carteges and all other office supplies as required.
Venetian blinds and cotton curtains on all windows

LAVATORIES

- 2 Hot water heaters, 6 liters per minute
- 2 Water closets, pedestal style
- 2 Wash basins with hot and cold water
- 2 Stainless steel lavatory paper holders
- 2 Paper towel dispensers
- 2 Mirrors, 400 mm x 500 mm
- 2 Ceramic urinals
- 2 Exhaust fan, ½ HP, 220 Volt
- 2 Towel holder

9.2 MEASUREMENT AND PAYMENT

The cost of providing, furnishing and equipping the Engineer's office shall be measured and paid for at the contract unit price quoted in the Bill of Quantities, which price and payment shall be full compensation for all costs of providing building, painting furnishing and providing all services, equipment, utilities, installations and access/service roads and for all materials, labour, equipment and incidentals for the proper completion of the work prescribed in these Specifications or as directed by the Engineer.

The office furniture, fixtures and equipment shall become the property of the Contractor on the date of issuance of Taking Over Certificate.

PAY ITEM NO.	DESCRIPTION	UNIT OF MEASUREMENT
SP-9	a) Provide, furnish, equip Engineer's Site Office	Per Month
	b) Maintenance of Engineer's Office	Per Month

**IMPROVEMENT/REHABILITATION OF REMAINING PORTION OF ROAD FROM SUJAWAL
TO BADIN (52 Km.)**

**NEAR KHORE WAH TO START OF BADIN BYPASS (KM. 27+750 TO KM 79+750)
SCHEME NO. I (ADP# 2227/2016-17)**

CONTRACT PACKAGE # SCA/EA/CP-X

**SUMMARY OF BILLS
ISSUED UNDER ADDENDUM # 1**

BILL NO.	DESCRIPTION	TOTAL (Rs.)
1	EARTHWORK	
2	SUB BASE AND BASE COURSES	
3	SURFACING	
4A	BOX CULVERTS & PIPE CULVERTS	
4B	BRIDGE STRUCTURE 01 (1-30m Span)	
4C	BRIDGE STRUCTURE 02 (21m Span)	
4D	BRIDGE STRUCTURE 03 (21m Span)	
4E	BRIDGE STRUCTURE 04 (12m Span)	
5	DRAINAGE & EROSION WORKS	
6	ANCILLARY WORKS	
7	ENGINEER'S FACILITIES	
SUB-TOTAL BILL 1 - 7		
DAY WORKS		
TOTAL BID PRICE (To Form of Bid)		

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INITIAL

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**IMPROVEMENT/REHABILITATION OF REMAINING PORTION OF ROAD FROM SUJAWAL
TO BADIN (52 Km.)**

**NEAR KHORE WAH TO START OF BADIN BYPASS (KM. 27+750 TO KM 79+750)
SCHEME NO. I (ADP# 2227/2016-17)**

CONTRACT PACKAGE # SCA/EA/CP-X

**BILL OF QUANTITIES
ISSUED UNDER ADDENDUM # 1**

BILL NO.1: EARTHWORK

Item No.	Item Description	Unit	Estimated Quantities	Rate (Rs.)	Amount (Rs.)
106a	Excavation and Disposal of Unsuitable Common Material	M ³	68,505		
108a	Formation of Embankment from Roadway Excavation in Common Material	M ³	49,502		
108c	Formation of Embankment from Borrow Excavation in Common Material	M ³	20,927		
108ci	Filling of Rain Cuts from Roadway Excavation in common Material	M ³	80,000		
109a	Subgrade preparation in earth cut	Sq.m	418,400		
110	Improved Subgrade	M ³	3,893		
TOTAL BILL NO. 1 EARTHWORK					

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**BILL OF QUANTITIES
ISSUED UNDER ADDENDUM # 1**

BILL NO. 2: SUB BASE AND BASE COURSES

Item No.	Item Description	Unit	Estimated Quantities	Rate (Rs.)	Amount (Rs.)
201	Granular Sub-base	M ³	114,354		
202	Aggregate Base course	M ³	94,445		
209b	Scarification of Existing Asphalt Concrete and Placement on Rain cut Area and Removal of Surplus Matrial from Site is included	Sq.m	360,620		
TOTAL BILL NO. 2 SUB BASE & BASE COURSES					

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**BILL OF QUANTITIES
ISSUED UNDER ADDENDUM # 1**

BILL NO. 3: SURFACING

Item No.	Item Description	Unit	Estimated Quantities	Rate (Rs.)	Amount (Rs.)
203b	Asphaltic Base Course Plant mix (class "B")	M ³	30,368		
302b	Bituminous Prime Coat	Sq.m	379,600		
303b	Bituminous Tack Coat	Sq.m	379,600		
304b	Double Surface Treatment	Sq.m	260,000		
305b	Asphaltic Concrete For Wearing Course (Class "B")	M ³	18,980		
	TOTAL BILL NO. 3 SURFACING				

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SCHEME NO. I (ADP# 2227/2016-17)**

CONTRACT PACKAGE # SCA/EA/CP-X

**BILL OF QUANTITIES
ISSUED UNDER ADDENDUM # 1**

BILL No. 4A: BOX CULVERTS & PIPE CULVERTS

Item No.	Item Description	Unit	Estimated Quantities	Rate (Rs.)	Amount (Rs.)
510	Dismantling of Structure and Obustraction	M ³	3,478		
107e	Structural Backfill using Common Material	M ³	4,686		
401a3(i)	Concrete Class A3 (Underground)	M ³	2,600		
401a(i)	Extra over for Class A3 Concrete with SR Cement	M ³	260		
401f	Lean Concrete	M ³	600		
404b	Reinforcement as per AASHTO M31 Grade 60	Ton	315		
509a	Rip Rap Class A	M ³	416		
406a(i)	Premoulded Joint Filler with Polysulphide Joint Seal	KG	550		
501o	R.C.C. Pipe Culvert AASHTO M 170 Class IV (Dia 910 mm)	M	140		
TOTAL BILL No. 4A: BOX CULVERTS & PIPE CULVERTS					

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CONTRACT PACKAGE # SCA/EA/CP-X

**BILL OF QUANTITIES
ISSUED UNDER ADDENDUM # 1**

BILL NO. 4B: BRIDGE STRUCTURE 01 (1-30m Span)

Item No.	Item Description	Unit	Estimated Quantities	Rate (Rs.)	Amount (Rs.)
510	Dismantling of Structure and Obstructions	M ³	400		
107a	Structural Excavation in Common Material	M ³	555		
107d	Granular Backfill	M ³	301		
107e	Common Backfill	M ³	64		
401a1iii	Concrete Class A1 (Elevated)	M ³	61		
401a3iii	Concrete Class A3 (Elevated)	M ³	185		
401f	Lean Concrete (Foundatin and / or Girder Casting Bed)	M ³	20		
401i	Extra Over Class A1 with SR Cement	M ³	3		
404a	Reinforcement as per AASHTO M. 31 Grade 40	Tons	0.20		
404b	Reinforcement as per AASHTO M. 31 Grade 60	Tons	72		
404c	Galvanized Mild Steel	Tons	0.30		
405a	Precast Pre-stressed Concrete Member, Span 30 m	Each	4		
406a(i)	Premoulded Joint Filler with Polysulphide Joint Seal	KG	395		
406e	Elastomeric Bearing Pads (According to size and thickness)	M ³ cm	69,120		
407d1	Cast in place Concrete Pile (dia. 1000 mm)	M	297		
407h	Pile Load Test up to 240 Ton load	Each	1		
509e	Grouted Rip Rap Class B	M ³	180		
509c	Rip Rap Class C	M ³	180		

Cont.

**IMPROVEMENT/REHABILITATION OF REMAINING PORTION OF ROAD FROM SUJAWAL
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**NEAR KHORE WAH TO START OF BADIN BYPASS (KM. 27+750 TO KM 79+750)
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CONTRACT PACKAGE # SCA/EA/CP-X

**BILL OF QUANTITIES
ISSUED UNDER ADDENDUM # 1**

BILL NO. 4B: BRIDGE STRUCTURE 01 (1-30m Span)

Item No.	Item Description	Unit	Estimated Quantities	Rate (Rs.)	Amount (Rs.)
SP-10	Pile Integrity Testing	Each	9		
SP-13	PVC sleeve pipes with CAP of dia and wall thickness as shown on drawings.	M	67		
SP-14	Permanent Steel Casing including all fixtures (wall thickness as per drawing)	Tons	4		
SP-15	Bridge Expansion Joint (NFJ OR Equivalent)	M	21		
SP-16	Exploratory / Confirmatory boring and Testing in Dry / Wet Area including Geotechnical Report (4 copies to be submitted)	Job	2		
705	Construction and Maintenance of Diversion including temporary arrangement of land (if required)	LS	1		
SP-17	Providing and Fixing drainage Pipe in Bridge Deck with steel Grating (G.I. Pipe of dia as shown on drawings)	M	20		
TOTAL BILL NO.4B: BRIDGE STRUCTURE					

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TO BADIN (52 Km.)**

**NEAR KHORE WAH TO START OF BADIN BYPASS (KM. 27+750 TO KM 79+750)
SCHEME NO. I (ADP# 2227/2016-17)**

CONTRACT PACKAGE # SCA/EA/CP-X

**BILL OF QUANTITIES
ISSUED UNDER ADDENDUM # 1**

BILL NO. 4C: BRIDGE STRUCTURE 02 (21m Span)

Item No.	Item Description	Unit	Estimated Quantities	Rate (Rs.)	Amount (Rs.)
510	Dismantling of Structure and Obstructions	M ³	360		
107a	Structural Excavation in Common Material	M ³	330		
107d	Granular Backfill	M ³	30		
107e	Common Backfill	M ³	230		
401a1ii	Concrete Class A1 (On Ground)	M ³	35		
401a1iii	Concrete Class A1 (Elevated)	M ³	15		
401a3iii	Concrete Class A3 (Elevated)	M ³	125		
401f	Lean Concrete (Foundatin and / or Girder Casting Bed)	M ³	15		
401i	Extra Over Class A1 with SR Cement	M ³	3		
404a	Reinforcement as per AASHTO M. 31 Grade 40	Tons	0.20		
404b	Reinforcement as per AASHTO M. 31 Grade 60	Tons	45		
404c	Galvanized Mild Steel	Tons	0.30		
405a	Precast Pre-stressed Concrete Member, Span 21 m	Each	4		
406a(i)	Remoulded Joint Fines with Polyurethane Joint Seal	KG	360		
406e	Elastomeric Bearing Pads (According to size and thickness)	Cu.cm	48,000		
407d1	Cast in place Concrete Pile (dia. 760 mm)	M	300		
407h	Pile Load Test up to 240 Ton load	Each	1		
509e	Grouted Rip Rap Class B	M ³	165		
509c	Rip Rap Class C	M ³	165		

Cont.

**IMPROVEMENT/REHABILITATION OF REMAINING PORTION OF ROAD FROM SUJAWAL
TO BADIN (52 Km.)**

**NEAR KHORE WAH TO START OF BADIN BYPASS (KM. 27+750 TO KM 79+750)
SCHEME NO. I (ADP# 2227/2016-17)**

CONTRACT PACKAGE # SCA/EA/CP-X

**BILL OF QUANTITIES
ISSUED UNDER ADDENDUM # 1**

BILL NO. 4C: BRIDGE STRUCTURE 02 (21m Span)

Item No.	Item Description	Unit	Estimated Quantities	Rate (Rs.)	Amount (Rs.)
SP-10	Pile Integrity Testing	Each	8		
SP-13	PVC sleeve pipes with CAP of dia and wall thickness as shown on drawings.	M	50		
SP-14	Permanent Steel Casing including all fixtures (wall thickness as per drawing)	Tons	4		
SP-15	Bridge Expansion Joint (NFJ OR Equivalent)	M	21		
SP-16	Exploratory / Confirmatory boring and Testing in Dry / Wet Area including Geotechnical Report (4 copies to be submitted)	Job	2		
705	Construction and Maintenance of Diversion including temporary arrangement of land (if required)	LS	1		
SP-17	Providing and Fixing drainage Pipe in Bridge Deck with steel Grating (G.I. Pipe of dia as shown on drawings)	M	10		
TOTAL BILL NO.4C: BRIDGE STRUCTURE					

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**IMPROVEMENT/REHABILITATION OF REMAINING PORTION OF ROAD FROM SUJAWAL
TO BADIN (52 Km.)**

**NEAR KHORE WAH TO START OF BADIN BYPASS (KM. 27+750 TO KM 79+750)
SCHEME NO. I (ADP# 2227/2016-17)**

CONTRACT PACKAGE # SCA/EA/CP-X

**BILL OF QUANTITIES
ISSUED UNDER ADDENDUM # 1**

BILL NO. 4D: BRIDGE STRUCTURE 03 (21m Span)

Item No.	Item Description	Unit	Estimated Quantities	Rate (Rs.)	Amount (Rs.)
510	Dismantling of Structure and Obstructions	M ³	360		
107a	Structural Excavation in Common Material	M ³	330		
107d	Granular Backfill	M ³	30		
107e	Common Backfill	M ³	230		
401a1ii	Concrete Class A1 (On Ground)	M ³	35		
401a1iii	Concrete Class A1 (Elevated)	M ³	15		
401a3iii	Concrete Class A3 (Elevated)	M ³	125		
401f	Lean Concrete (Foundatin and / or Girder Casting Bed)	M ³	15		
401i	Extra Over Class A1 with SR Cement	M ³	3		
404a	Reinforcement as per AASHTO M. 31 Grade 40	Tons	0.20		
404b	Reinforcement as per AASHTO M. 31 Grade 60	Tons	45		
404c	Galvanized Mild Steel	Tons	0.30		
405a	Precast Pre-stressed Concrete member, Span 21 m	Each	4		
406a(i)	Remoulded joint filler with polysulfide Joint Seal	KG	360		
406e	Elastomeric Bearing Pads (According to size and thickness)	Cu.cm	48,000		
407d1	Cast in place Concrete Pile (dia. 760 mm)	M	300		
407h	Pile Load Test up to 240 Ton load	Each	1		
509e	Grouted Rip Rap Class B	M ³	165		
509c	Rip Rap Class C	M ³	165		

Cont.

**IMPROVEMENT/REHABILITATION OF REMAINING PORTION OF ROAD FROM SUJAWAL
TO BADIN (52 Km.)**

**NEAR KHORE WAH TO START OF BADIN BYPASS (KM. 27+750 TO KM 79+750)
SCHEME NO. I (ADP# 2227/2016-17)**

CONTRACT PACKAGE # SCA/EA/CP-X

**BILL OF QUANTITIES
ISSUED UNDER ADDENDUM # 1**

BILL NO. 4D: BRIDGE STRUCTURE 03 (21m Span)

Item No.	Item Description	Unit	Estimated Quantities	Rate (Rs.)	Amount (Rs.)
SP-10	Pile Integrity Testing	Each	8		
SP-13	PVC sleeve pipes with CAP of dia and wall thickness as shown on drawings.	M	50		
SP-14	Permanent Steel Casing including all fixtures (wall thickness as per drawing)	Tons	4		
SP-15	Bridge Expansion Joint (NFJ OR Equivalent)	M	21		
SP-16	Exploratory / Confirmatory boring and Testing in Dry / Wet Area including Geotechnical Report (4 copies to be submitted)	Job	2		
705	Construction and Maintenance of Diversion including temporary arrangement of land (if required)	LS	1		
SP-17	Providing and Fixing drainage Pipe in Bridge Deck with steel Grating (G.I. Pipe of dia as shown on drawings)	M	10		
	TOTAL BILL NO.4D: BRIDGE STRUCTURE				

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**IMPROVEMENT/REHABILITATION OF REMAINING PORTION OF ROAD FROM SUJAWAL
TO BADIN (52 Km.)**

**NEAR KHORE WAH TO START OF BADIN BYPASS (KM. 27+750 TO KM 79+750)
SCHEME NO. I (ADP# 2227/2016-17)**

CONTRACT PACKAGE # SCA/EA/CP-X

**BILL OF QUANTITIES
ISSUED UNDER ADDENDUM # 1**

BILL NO. 4E: BRIDGE STRUCTURE 04 (12m Span)

Item No.	Item Description	Unit	Estimated Quantities	Rate (Rs.)	Amount (Rs.)
510	Dismantling of Structure and Obstructions	M ³	480		
107a	Structural Excavation in Common Material	M ³	450		
107d	Granular Backfill	M ³	20		
107e	Common Backfill	M ³	175		
401a1ii	Concrete Class A1 (On Ground)	M ³	35		
401a1iii	Concrete Class A1 (Elevated)	M ³	10		
401a3ii	Concrete Class A3 (On Ground)	M ³	175		
401a3iii	Concrete Class A3 (Elevated)	M ³	75		
401f	Lean Concrete (Foundatin and / or Girder Casting Bed)	M ³	20		
401i	Extra Over Class A1 with SR Cement	M ³	3		
404a	Reinforcement as per AASHTO M. 31 Grade 40	Tons	0.10		
404b	REINFORCEMENT AS PER AASHTO M. 31 GRADE 40	Tons	55		
404c	Galvanized Mild Steel	Tons	0.30		
405b	Lounching of RCC Girder	Tons	42		
406a(i)	Remoulded joint filler with polysulfuric joint seal	KG	360.00		
406e	Elastomeric Bearing Pads (According to size and thickness)	Cu.cm	36,000		
407d1	Cast in place Concrete Pile (dia. 760 mm)	M	270		
407h	Pile Load Test up to 240 Ton load	Each	1		
509e	Grouted Rip Rap Class B	M ³	75		
509c	Rip Rap Class C	M ³	75		

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**IMPROVEMENT/REHABILITATION OF REMAINING PORTION OF ROAD FROM SUJAWAL
TO BADIN (52 Km.)**

**NEAR KHORE WAH TO START OF BADIN BYPASS (KM. 27+750 TO KM 79+750)
SCHEME NO. I (ADP# 2227/2016-17)**

CONTRACT PACKAGE # SCA/EA/CP-X

**BILL OF QUANTITIES
ISSUED UNDER ADDENDUM # 1**

BILL NO. 4E: BRIDGE STRUCTURE 04 (12m Span)

Item No.	Item Description	Unit	Estimated Quantities	Rate (Rs.)	Amount (Rs.)
SP-10	Pile Integrity Testing	Each	8		
SP-13	PVC sleeve pipes with CAP of dia and wall thickness as shown on drawings.	M	30		
SP-15	Bridge Expansion Joint (NFJ OR Equivalent)	M	21		
SP-16	Exploratory / Confirmatory boring and Testing in Dry / Wet Area including Geotechnical Report (4 copies to be submitted)	Job	1		
705	Construction and Maintenance of Diversion including temporary arrangement of land (if required)	LS	1		
SP-17	Providing and Fixing drainage Pipe in Bridge Deck with steel Grating (G.I. Pipe of dia as shown on drawings)	M	8		
TOTAL BILL NO.4E: BRIDGE STRUCTURE					

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**IMPROVEMENT/REHABILITATION OF REMAINING PORTION OF ROAD FROM SUJAWAL
TO BADIN (52 Km.)**

**NEAR KHORE WAH TO START OF BADIN BYPASS (KM. 27+750 TO KM 79+750)
SCHEME NO. I (ADP# 2227/2016-17)**

CONTRACT PACKAGE # SCA/EA/CP-X

**BILL OF QUANTITIES
ISSUED UNDER ADDENDUM # 1**

BILL NO. 5: DRAINAGE & EROSION WORKS

Item No.	Item Description	Unit	Estimated Quantities	Rate (Rs.)	Amount (Rs.)
107a	Structural Excavation In Common Material	M ³	3,855		
509a	Rip Rap Class A	M ³	14,392		
509h	Filter Layer of Granular Material	M ³	10,794		
TOTAL BILL NO. 5: DRAINAGE & EROSION WORKS					

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**IMPROVEMENT/REHABILITATION OF REMAINING PORTION OF ROAD FROM SUJAWAL
TO BADIN (52 Km.)**

**NEAR KHORE WAH TO START OF BADIN BYPASS (KM. 27+750 TO KM 79+750)
SCHEME NO. I (ADP# 2227/2016-17)**

CONTRACT PACKAGE # SCA/EA/CP-X

**BILL OF QUANTITIES
ISSUED UNDER ADDENDUM # 1**

BILL NO. 6: ANCILLARY WORKS

Item No.	Item Description	Unit	Estimated Quantities	Rate (Rs.)	Amount (Rs.)
604 a	Metal Beam Guard Rail I/C End Pice And Post	M	10,280		
607 a	Traffic Road Sign				
	a) Category 1	Each	15		
	b) Category 2	Each	15		
	c) Category 3A	Each	10		
	d) Category 3B	Each	10		
	e) Category 3C	Sq.m	10		
608 i1	Pavement Marking In Reflective Tp Paint For Lines of 15 Cm Width				
	i) White Lines	M	17,336		
	ii) Yellow Lines	M	104,000		
609 di	Reflectorized Pavement Stud (Raised Profile Type - Double)	Each	8,670		
TOTAL BILL NO. 6: ANCILLARY WORKS					

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**IMPROVEMENT/REHABILITATION OF REMAINING PORTION OF ROAD FROM SUJAWAL
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**NEAR KHORE WAH TO START OF BADIN BYPASS (KM. 27+750 TO KM 79+750)
SCHEME NO. I (ADP# 2227/2016-17)**

CONTRACT PACKAGE # SCA/EA/CP-X

**BILL OF QUANTITIES
ISSUED UNDER ADDENDUM # 1**

BILL NO. 7: ENGINEER'S FACILITIES

Item No.	Item Description	Unit	Estimated Quantities	Rate (Rs.)	Amount (Rs.)
SP-3	Engineer's Office				
(a)	Provide Engineer's Central Office (Rental)	Per Month.	24		
(b)	Equip and Furnish Engineer's Office	LS			
SP-4	Provide Engineer's Housing				
(a)	Provision of residential accomodation for Senior Staff (Rental)	Per Month	24		
(b)	Provision of residential accomodation for Junior Staff (Rental)	Per Month	24		
(c)	Provide Furnishing and Equipment for Engineer's Housing	LS			
SP-5	Engineer's Laboratory				
(a)	Provide Engineer's Laboratory on Rental Basis	Per Month.	24		
(b)	Provide New Equipment & Furniture for Engineer's Laboratory	LS			
SP-6	Maintain Engineer's Office, Housing and Laboratory				
a	Maintain Engineer's Office	Per Month	24		
b	Maintain Engineer's Housing for Senior Staff	Per Month	24		
c	Maintain Engineer's Housing for Junior Staff	Per Month	24		
d	Maintain Engineer's Laboratory	Per Month	24		
SP-7	Engineer's Survey Equipment				
a	Provide New Survey Equipment	LS			
b	Maintain Survey Equipment	Per Month	24		

Cont.

**IMPROVEMENT/REHABILITATION OF REMAINING PORTION OF ROAD FROM SUJAWAL
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**NEAR KHORE WAH TO START OF BADIN BYPASS (KM. 27+750 TO KM 79+750)
SCHEME NO. I (ADP# 2227/2016-17)**

CONTRACT PACKAGE # SCA/EA/CP-X

**BILL OF QUANTITIES
ISSUED UNDER ADDENDUM # 1**

BILL NO. 7: ENGINEER'S FACILITIES

Item No.	Item Description	Unit	Estimated Quantities	Rate (Rs.)	Amount (Rs.)
SP-8	Engineer's Vehicles				
a	Providing Engineer's Vehicles (Rental Basis)				
	• Toyota Corolla with A/C (01 No.)	Per Month	24		
	• Suzuki Cultus with A/C and CNG...(03 No.)	Per Month	72		
	• Suzuki Bolan A/C and CNG...(03 No.)	Per Month	72		
b	Maintain Engineer's Vehicles				
	• Toyota Corolla with A/C (01 No.)	Per Month	24		
	• Suzuki Cultus with A/C and CNG...(03 No.)	Per Month	72		
	• Suzuki Bolan A/C and CNG...(03 No.)	Per Month	72		
TOTAL BILL NO. 7 : Bill of Quantities					

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