REPLIES TO PRE BID QUERIES LOT-5 DATED - 24.04.2023						
NIT NO : PNMM/PC-183/E- 4020/NCB DATED 16.03.2023						
SUB : SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF FLARE SYSTEM ON PACKAGE BASIS AT TFL						
S.NO.	SECTION NO.	PAGE NO.	CLAUSE NO.	SUBJECT	PRE BID CLARIFICATIONS	PDIL REPLY
1	Technical Specification for Supply, Installation, Testing & Commissioning of Flare System (Document No.: PC183-E-4020-SEC VI)	363 (18 of 33)	4.0 (l) - 2nd point	Structural painting with chlorinated rubber	We understand to consider painting scheme as per clause no. 5.0 of Construction, Pre-comm, Comm & start up" starting from page 94/135 (page 577 of 1266 of NIT); please review & confirm specifically paint system applicable for Flare tower/demountable flare derrick structure or advise otherwise.	Painting on Flare Stalk steel structure ans other plant structures such as Pipe racks or support structuress , shall be as per PDIL TS-2001 (ANNEXURE 7-2H) attached in NIT. Refer Clause no. 9 of TS-Civil Page 19 of 32. (As per clause- "9.0 PAINTING ON STRUCTURAL STEEL Painting on steel structures can be referred in TS2001-Painting Specification provided elsewhere in NIT. On Minor Structural Steel Sections/Structures such as fencing, concertina coil etc. Painting on Structural Steel on minor structures shall be with synthetic enamel paint of approved brand and manufacture to give an even shade: Two or more coats on new work after necessary primer coat.")
2				Plot plan & Fire fighting layout	Please provide seperate Plot plan & Fire fighting layout document. Reason being we are unable to read the document.	Please refer the attached layout- SWPL-TFL-0023-MEC-DW-002-R1_COM. LAY-HYD & SPR MAIN NETWORK FOR OSBL AREAS
3	366			Battery limit	According to document PC183-E-4020-SEC VI page number 21 of 33 which is about installation and commissioning of flares, in clauses 6.1 -III (pg 366), it is mentioned that sterile radius should be considered 90 meter. However, according to document PC183-E-4020-SEC VI page number 21 of 33 At any point within 90m sterile boundary from stack base at ground level should have maximum 1.58 Kw/m2 (excluding solar radiation0.98 kW/m2) radiations That means at the base of the stack as well as at any point within the 90 m boundary the limit is 1.58 Kw/m2. Kindly confirm if our understanding is correct or not.	The maximum Radiation intensity is 1.58 Kw/m2 (excluding solar radiation 0.98 kW/m2) at any point within 90m sterile boundary from stack base at ground level.
4					If above understanding is correct, than as we move away from the stack base the radiation levels will go below allowable radiation levels. In such a scenario can bidder consdier the tie points as provided in the document "Overall Plot Plan" (pg 1083) at 35m from stack bottom. In addition, can we also consider KOD locations near to the tie-points? Please note, per OISD guidelines KOD should be placed outside the sterile radius. But, in that case the minimum radiation limits are acheived at the boundary of the sterile radius which increases as me move towards the stack base. However, for this case that requirement is superseeded by minimum radiation requirement at stack base. Kindly confirm the location of KOD.	Bidder understanding is correct. Bidder can consider KOD locations near to the tie-points.
5				Waste water	For waste liquid stream accumlated in Molecular Seal and KOD, vendor shall provide the accumulation point at the base of the stack. Customer will be responsible for further disposal of this waste liquid stream from the base of stack: Kindly confirm.	Refer the attached tentative sketch (PID) in per NIT for water seal requirement. And Waster water shall be routed to nearest drain through water seal.
6				Header sizes	Per P&ID and Flare Datasheet, we understand the header-sizes mentioned are the sizes at the tie-in point and further sizes of the flare-tip shall be determined by the vendor as per their design.	Bidder understanding is correct.

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7				Location of low pressure flare gas connection & Demounting arrangement	According to provided PID on page number 1266 it is shown that low pressure gas stream is directly injected on the top of the flare stack riser. During this, condensation may be occur on the header line. Additionally, this is a demountable riser system & hence mutiple connections to the riser will be difficult to handle during demounting. Please check & reconfirm the locations. Bidder recommends to insert these streams in to KOD.	Kindly refer the note 20 in P&ID. Bidder can connect the stream at any location as per the their best engineering practice to meet the all NIT conditions.
8		350		Tempurge system - Bidder to provide the Tempurge system alongwith its supply, installation, erection, testing & commissioning.	As per P&ID note 17, tempurge system to be installed before KOD. PLease confirm the exact location.	As per Note 17, bidder to provide the tempurge aggangement as per their best engineering practice & some minimum requirement mentioned in NIT. However, location to be decide by bidder.
9				Radiation limit for Simultaneous flaring	As per Table 6 (Details of Simultaneous flaring at same time in HP Gas Flare Stack and NH3 Flare Stack) on page 359 it is clearly mentioned that simulataneous flaring is only happening for NH3 and HP flare system but as per radiation table on page 366 it is mentioned that radiation limits is applicable for all streams including acid gas. Hence, please confirm whether in simultaneous flaring if Acid Gas to be considered or not.	Bidder to note that, in any case (mentioned at the below of table 6), heat radiation shall not exeed the mentioned vallue i.e. 1.58 Kw/m2 (excluding solar radiation 0.98 kW/m2) at any point within 90m sterile boundary from stack base at ground level. And bidder tyo submit the calculation (radiation graph) for all case.
10				Simultaneous flaring	As per document number PC183-E-4020-SEC VI Page number 14 of 33 table 6 simultaneous flaring chart is provided according to that for ammonia flare there are 3 gas streams & each stream has different operating pressure like ammonia flare gas header from CGP & A&U is 0.4 kg/cm2g , Dry seal flare gas header from CGP is 0.36 kg/cm2g & Dry seal flare gas header from A&U is 0.17 kg/cm2g during this simultaneous flaring we have to increase the header size of high pressure gas stream & decrease the pressure to match the pressure of all the gas streams If we don't do this, the low pressure gas stream will be disturbed to go up. Same is applicable for HP & acid flare kindly check & confirm our understanding is correct.	Bidder to design the system as per their best engineering practice to meet the all NIT conditions.
11		366		Radiation Citeria	As per table 7, clause 6.1 III radiation criteria excluding solar radation is 0.98 kw/m2 @ any point within 90 m sterile boundary from stack base at ground level. From our experience 0.98 kw/m2 is normally including solar radiation. Kindly re-confirm.	The maximum Radiation intensity is 1.58 Kw/m2 (excluding solar radiation 0.98 kW/m2) at any point within 90m sterile boundary from stack base at ground level.
12		366		Radiation Citeria with sterile radius	According to document PC183-E-4020-SEC VI page number 21 of 33 At any point within 90m sterile boundary from stack base at ground level- 1.58 Kw/m2 (**excluding solar radiation0.98 kW/m2**)-That means at the base of the stack as well as at any point within the 90 m boundary the limit is 1.58 Kw/m2. Kindly confirm if our understanding is correct or not.	The maximum Radiation intensity is 1.58 Kw/m2 (excluding solar radiation 0.98 kW/m2) at any point within 90m sterile boundary from stack base at ground level.
13				Ammonia KOD	According to document PC183-E-4020-SEC VI page number 369 of 1266 serial number 6.3.4 KOD position can be Vertical or Horizontal & as per PID it is shown as Horizontal only. As per our experience we intend to provide vertical Ammonia KOD at the base of stack with internal or external steam coil. Please check & confirm this is acceptable.	Bidder can select Vertical / Horizontal as per their beat engineering practie to meet the all NIT conditions.
14		362-363		KOD Design criteria	Kindly provide liquid condensate % & liquid droplet size for each KOD design.	Bidder to design the system as per their best engineering practice to meet the all NIT conditions.
15		355		KOD location	As per OISD 106 KOD location will be 90 away from the stack base. Please check and confirm our understanding for location of KOD's.	Bidder can consider KOD locations near to the tie-points.
18				KOD mechanical datasheet	No knock out drum (KOD) mechanical datasheets are provided in the tender documents, please provide all KOD Mechanical datasheet.	Mechanical dat asheet / GA Drawing to be prpeared by bidder considering approved process data sheet with complinace of design codeand NIT conditions during DEC.

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S.NO.	SECTION NO.	PAGE NO.	CLAUSE NO.	SUBJECT	PRE BID CLARIFICATIONS	PDIL REPLY
19		365		FFG location - location of flame front generator shall be such that the pilot flame is visible from it - page no.365/1266,point no. 5.2.d	Please confirm the exact location of FFG system from stack base.	The same shall be decided during detail engineering to meet the NIT condition.
22		355		Water Seal Drum	Please note that Water seal drum is not applicable to the present scope considering the flare gas composition. Please confirm the scope of water seal drum at this stage in order to avoid post order revision in the contract.	Kindly refer P&ID and the note 21 mentioned in P&ID.
24		376		LPG Fuel Gas	LPG manifold system as back up to fuel gas for each FFG panel will be provided by bidder. However, LPG cylinder shall be excluded from bidder scope. If LPG cylinder will be puchased by bidder, then re-filling responsibility comes to bidder & it is very tedious process to transfer the ownership of LPG cylinder. So to avoid this process frequently, bidder will not provide LPG cylinders.	LPG requirement, manifold and all required hoses for connecting the cylinders are to be provided by flare vendor. Client will only supply LPG cylinder.
25				Condensate line valve	As per P&ID Gate valve is shown on condensate line. Instead can bidder consider butterfly valve?	Biider to provide as per PID.
26		363		Dispersion Analysis & CPCB ELV's	As per clause no. 4.0 Scope of Work / Supply, dispersion analysis and study report of flare emissions is in bidders scope. Hence, please provide CPCB emission limit values to check the dispersion analysis of flue gas from the stack.	bidder has to perform it for all required flare emissions for the respective flare stacks to meet the latest CPCB norms.
27		351-358		Allowable pressure	For HP , Ammonia & Acid flare stack, bidder will design the flare system for pressure associated with the maximum flowrates available in those streams. (e.g. For Ammonia Gas flare stack bidder has considered 0.4 kg/cm2 g @ 266,200 + 29,073 kg/h). Please confirm.	Refer table 5 for peak load of individual flare.
28		366		As per point no. 5.2 - k - Demountable derrick arrangement - Suitable provision of retractable davit for trouble free tip replacement shall be provided. A ground winch with wire rope shall be used for replacement of the tip	Noted. But with demountable arrangement there is normally no 360 degree platform at the top. Hence, it will not be possible to remove or replace the tip at the top. Please clarify.	Refer ammendment IV
29		368		Ammonia flare MOC	As per tender document page no.368/1266,pont no.6.3.3.a, the material of Ammonia flare riser mentioned as LTCS , please confirm the material grade for ammonia riser stack. (e.g SA516 Gr 70)	EFW,ASTM A671 GR.CC60.CL32,ASME B36.10, SIZE 48"
30		368		HP flare MOC	As per tender document page no.368/1266,pont no.6.3.3.b, the material of HP/Syn gas flare riser mentioned as CS , please confirm the material grade for HP/Syn gas riser stack. (e.g. SA516 Gr 70)	LSAW,API 5L GR.B,ASME B36.10,SIZE 48"
31		362		Auxilary winch	As per tender document page no.362/1266,point no. 4.0.a ,it is mention that, Auxiliary winch for transporting tools & tackles to operating platform. Please clearify the point.	Biider to porovide the Auxiliary winch to help the operator for transporting tools & tackles to operating platform.
32		368		Demountable derrick arrangement	As per tender document page no.368/1266 point number 7 - Lowering, raising & canting / overturning system including demountable facility consisting of hydraulic winch mechanism (installed spare pump along with motor) along with required no of sheaves / pulleys, wire ropes, tilting tables & tilting beds & any other accessories. Please confirm these all items are considered under demountable flare arrangement.	Bidder may consider these items under demountable flare arrangement. However, bidder to supply all these items as per NIT.
33		362		Hydraulic power pack for both the winches	As per tender document page no.362/1266,point no. 4.0.a ,it is mention that, Hydraulic power pack for both the winches may be common or separate, as per vendor's design. As per our understanding it is part of demountable flare system please confirm.	Bidder may consider these items under demountable flare arrangement. However, bidder to supply all these items as per NIT.

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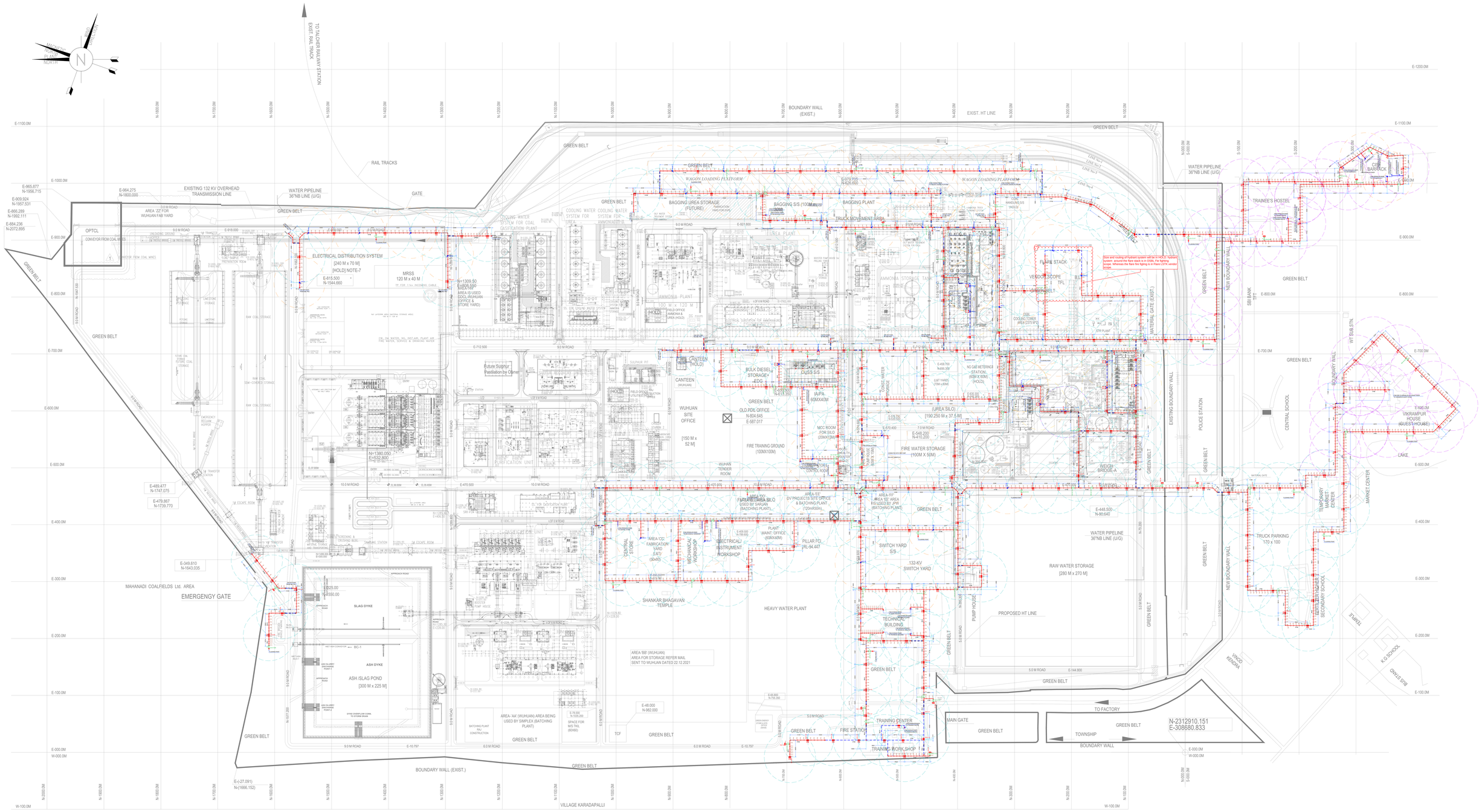
S.NO.	SECTION NO.	PAGE NO.	CLAUSE NO.	SUBJECT	PRE BID CLARIFICATIONS	PDIL REPLY
34		364		Medium for smokeless operation - page no.364/1266,point no. 5.0.q, it is mentioned that,Flare system has been designed by vendor to achieve complete combustion and should be smokeless.	As per provided flare gas composition smoke is not generated. Operation will be smokeless without requirement of air or steam.	Bidder to design the system as per their best engineering practice to meet the all NIT conditions.
35				Material of construction for pressure vessel table	As per tender document pressure vessel specifications page no.1117/1266 2.1.a material of construction for pressure vessel table,it is given as SA 516 GR.60/70 (KCS/CS) for heads and shell for vessel. Please confirm the material grade for pressure vessels.	As per tender document pressure vessel specifications page no.1117/1266 2.1.a Both mention grades SA 516 GR.60/70 (KCS/CS) are acceptable in case of Carbon-steel equipment . Bidder to select accordingly .
36				Header pipe Schedule / Thickness	As per tender document, Upto 24 inches pipe thickness/ schedule has been mentioned. Kindly confirm pipe thicknes/ schedule for 42" & 48" header line.	42" SCH XS PIPE CLASS B14& 48" SCH SCH XS PIPE CLASS B24Z



Size and routing of hydrant system will be in HOLD. hydrant system around the flare stack is in OSBL Fire fighting system. Whereas the flare fire fighting is in Flare LSTK vendor scope.

PLAN VIEW- FIRE FIGHTING SYSTEM (OSBL PKG.)
SCALE 1:1150

LEGENDS:-

A/G FIRE WATER PIPE	WATER CUM FOAM MONITOR (750GPM)
U/G FIRE WATER PIPE	HOSE BOX
SPRINKLER PIPE	4WAY FIRE BRIGADE CONNECTOR
GATE VALVE	RCC HUME PIPE
SINGLE HEADED HYDRANT VALVE	TRIPE SUPPORT
DOUBLE HEADED HYDRANT VALVE	FOAM DRUM
WATER MONITOR	REDUCER (CONCENTRIC)

NOTES:-

1. ALL PIPE SIZES ARE IN INCH.
2. ABOVE GROUND FIRE RING MAIN SHOULD BE SUPPORTED ON PEDESTAL.
3. PIPE SHALL BE LAID UNDERGROUND AT MAINTENANCE WAY / APPROACH ROAD/ TRANSFORMER WAY / ENTRY / EXIT FOR THE BUILDINGS. /R1/.
4. PIPING SHALL BE TESTED HYDROSTATICALLY AT 150% OF MAXIMUM WORKING PRESSURE FOR TWO HOURS.
5. ALL PIPE SHALL BE PAINTED AS PER PAINTING SCHEME / SPEC. IN TENDER.
6. THE EXTERNAL HYDRANT & MONITORS SHALL BE PLACED AT A MAX. 45M DISTANCE AERIALLY.
7. THE PIPE SIZE HAS BEEN FINALIZED CONSIDERING MAX. VELOCITY 3M/SEC. AS PER THE TENDER CL. 8. PRE-BID CONFIRMATION.
8. ABOVE GROUND FIRE MAIN SHALL BE LAID MIN. +300MM FROM FGL.
9. HYDRANT VALVE & MONITOR SHALL BE COMMENCED WITH HEADER AT 3 OR 9 O'CLOCK POSITION.
10. TAPPING FOR HYDRANT & MONITOR SHALL BE TAKEN FROM HYDRANT HEADER BY MAKING BRANCH CONNECTION.
11. ISOLATION VALVE (SLUICE VALVE) SHALL BE PROVIDED IN UPSTREAM OF YARD HYDRANT VALVES & MONITORS.
12. ALL DEVIATONS SHALL BE INCORPORATED IN THE AS BUILT DRAWING.
13. THE INSERT PLATE SHALL BE ANCHORED PROPERLY. /R1/.
14. GUIDE SUPPORT SHALL BE WELDED ON THE INSERT PLATE.
15. THE NUMBERS AND SIZES OF PIPES SHALL BE LAID ON PEDESTALS AS PER SCHEDULE OF PIPE SUPPORTS.
16. WHEREVER PIPE RACKS ARE AVAILABLE, SUPPORT SHALL BE TAKEN FROM SUITABLE MEMBERS OF PIPE RACK STRUCTURE, ONLY AFTER THE PRIOR APPROVAL OF POIL / TFL AND PIPES SHALL BE LAID ABOVE GROUND.
17. EXISTING TRENCHES SHALL USED IF POSSIBLE.
18. ALL THE PIPES, VALVES, FIRE FIGHTING EQUIPMENT ETC. WHICH IS REQUIRED, THE MATERIAL SPECIFICATION WILL BE AS PER THE APPROVED DATA SHEET. /R1/.
19. THE SIZE OF HYDRANT & MONITOR SHALL BE 150MM DIA. PIPES, 100MM DIA. PIPES, 5M FOR 150 AND 2.5M FOR 100 DIA PIPES AND 1.5M FOR ABOVE 250 MM DIA PIPES.
20. ALL THE HYDRANT & MONITORS SHALL BE INSTALLED BESIDE THE MAIN ROAD. THE HEADER PIPE TO HYDRANT & MONITOR DISTANCE AS PER SUIT TO SITE CONDITION.
21. MINOR MODIFICATION SHALL BE DONE AS PER THE SUIT TO SITE CONDITION IRRESPECTIVE OF DETAIL ENGINEERING IN LAYOUT DRAWING WITH THE PRIOR APPROVAL OF SITE IN-CHARGE OF CLIENT.
22. PIPE, FITTINGS, VALVES, BRANCH CONNECTION AS PER THE PIPING MATERIAL SPECIFICATION PMS. /R1/.
23. RESTRICTION ORIFICE SHALL BE PROVIDED AT DOWNSTREAM OF ISOLATION VALVE OF HYDRANT POST TO MAINTAIN THE PRESSURE REQUIREMENTS AS PER TAC / B: 15394. /R1/.
24. AT LEAST 10% OF ALL THE WELDED JOINTS SHALL BE RADIOGRAPHICALLY TESTED AND HALF OF THE JOINTS RADIOGRAPH SHALL BE FIELD JOINTS. /R1/.

REFERENCE DRAWING & DOCUMENT DETAIL:-

1. DESIGN BASIS REPORT OF FIRE FIGHTING SYSTEM. (DOC. NO.: SWPL-TFL-0023-PDI-DC-002, R0).
2. OVERALL PLOT PLAN INCLUDING ALL ROAD, DRAIN, BUILDING / PLANT / AREA DETAILS. (GA-VERT. OTHER SERVICES. ETC. (DWG. NO.: PD-190-000-W-0001, R2).
3. PRESSURE DROP CALCULATION OF EXTERNAL FIRE PROTECTION SYSTEM FOR OVERALL AREA. (DOC. NO.: SWPL-TFL-0023-PRO-DC-001, R0).
4. SCHEMATIC DIAGRAM OF HYDRANT SYSTEM (DWG. NO.: SWPL-TFL-0023-SCH-DW-002, R0).
5. GA & STRUCTURAL DRAWING OF PEDESTAL FOR PIPE SUPPORT / PIPE SLEEPERS ETC. (DWG. NO.: SWPL-TFL-0023-CIV-DW-008).

HOLD POINTS:-

1. THE REQUIREMENT OF WATER SPRAY SYSTEM SHALL BE INDICATED LATER BASED ON INPUT DRAWING RECEIVED FROM PDIL.
2. DUE TO INSUFFICIENT INPUTS OF ALL AREAS AS PER SCOPE, THE FIRE PROTECTION SYSTEM AGAINST THAT RESPECTIVE AREAS ARE NOT SHOWN.

REV.	DATE	DESCRIPTION	PPD.	CKD.	APPD.
1	11.04.2023	REVISED & RESUBMITTED FOR APPROVAL	DB	SB	VC
0	30.01.2023	ISSUED FOR APPROVAL	DB	SB	VC

FPS CONTRACTOR:
STERLING AND WILSON PVT. LTD.
7th.FLOOR, TOWER-II, MILLENNIUM CITY IT PARK
PLOT No.-62, BLOCK-DN, SECTOR-V,KOL-700091

S&W DWG. NO.: SWPL-TFL-0023-MEC-DW-002
REV. No. 1

CLIENT: M/s. TALCHER FERTILIZER LIMITED
LOCATION: TALCHER, ANGUL DISTRICT, ODISHA (INDIA)

TITLE: COMPOSITE PIPING LAYOUT OF HYDRANT & SPRAY SYSTEM MAIN NETWORK FOR OSBL AREAS.

REV. 0 1
SHEET - 1 OF 15
SCALE - 1 : 1150, 1:500
DRG. No.: ----------
FILE: ----------

CONSULTANT: PROJECTS & DEVELOPMENT INDIA LTD., NOIDA

SIZE - 4A0 (2378mm x 1682mm)