



Republika ng Pilipinas

Lungsod Quezon

BIDS AND AWARDS COMMITTEE FOR INFRASTRUCTURE & CONSULTANCY

2nd Floor, Finance Building, Procurement Department, Quezon City Hall Complex, Elliptical Road, Quezon City



March 9, 2022

Request for Quotation/ Proposal

| No. | Project No. | Project Name | Location | Amount | Duration Cal. Days | Office | Source Fund |
|-----------------------------------|-------------|--|---|------------|--------------------|------------------------|-----------------------------------|
| <u>Buildings – Small B</u> | | | | | | | |
| 1 | 22-001SV | Proposed Rehabilitation of Fire Exit at Social Development Center at Barangay Payatas | Payatas | 165,523.84 | 30 | Engineering Department | Engineering Department |
| 2 | 22-002SV | Proposed Rehabilitation of Reception Area at Betty Go Belmonte Super Health Center in Barangay Holy Spirit | Holy Spirit | 341,124.74 | 30 | Engineering Department | 20% Community Development Fund |
| 3 | 22-003SV | Proposed Rehabilitation of Novaliches District Hospital Covid Ward | San Bartolome | 354,897.38 | 30 | Engineering Department | Engineering Department - SB No. 1 |
| 4 | 22-004SV | Proposed Rehabilitation of Waterline System at Culiati High School | Culiati | 586,890.41 | 60 | Engineering Department | Special Education Fund |
| 5 | 22-005SV | Proposed Temporary Enclosure for Crematory Machine at Baesa Crematorium | Baesa | 594,910.45 | 30 | Engineering Department | Engineering Department - SB No. 1 |
| 6 | 22-006SV | Proposed Rehabilitation of Reception Area at Health Centers in Barangay Libis and Barangay Bagumbuhay (District 3) | Libis and Bagumbuhay | 632,587.24 | 30 | Engineering Department | 20% Community Development Fund |
| 7 | 22-007SV | Proposed Rehabilitation of Reception Area at Health Centers in Barangay Alicia and Barangay Paltok (District 1) | Alicia and Paltok | 809,220.13 | 30 | Engineering Department | 20% Community Development Fund |
| 8 | 22-008SV | Proposed Rehabilitation of Day Care Center at Idang Street, Sitio Aguardiente | Sta. Monica | 828,057.99 | 30 | Engineering Department | Engineering Department - SB No. 1 |
| 9 | 22-009SV | Proposed Upgrading of Electrical System at Sauyo High School | Tandang Sora | 846,268.11 | 90 | Engineering Department | Special Education Fund |
| 10 | 22-010SV | Proposed Rehabilitation of Reception Area at Health Centers in Barangay Apolonio Samson, Barangay Tandang Sora and Barangay Pasong Tamo (District 6) | Apolonio Samson, Tandang Sora and Pasong Tamo | 851,009.93 | 30 | Engineering Department | 20% Community Development Fund |



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| | | | | | | | |
|-------------------------------|----------|--|-------------------------------------|------------|----|------------------------|--------------------------------|
| 11 | 22-011SV | Proposed Rehabilitation of Electrical System at North Fairview Elementary School | North Fairview | 856,353.23 | 60 | Engineering Department | Special Education Fund |
| 12 | 22-012SV | Proposed Upgrading of Service Entrance at NOH Sta. Lucia Senior High School | Sta. Lucia | 908,850.15 | 60 | Engineering Department | Special Education Fund |
| 13 | 22-013SV | Proposed Construction of Terrace at Barangay Hall In Barangay Kalusugan | Kalusugan | 914,528.02 | 60 | Engineering Department | Engineering Department |
| 14 | 22-014SV | Proposed Rehabilitation of Distribution Feeder at Lagro Elementary School | Greater Lagro | 933,602.51 | 60 | Engineering Department | Special Education Fund |
| 15 | 22-015SV | Proposed Rehabilitation of Reception Area at Health Centers in Barangay Kamuning, Barangay Kaunlaran and Barangay San Vicente (District 4) | Kamuning, Kaunlaran and San Vicente | 953,997.37 | 30 | Engineering Department | 20% Community Development Fund |
| <u>Roads – Small B</u> | | | | | | | |
| 16 | 22-016SV | Proposed Rehabilitation (Surface Improvement) at Lourdes Street | Novaliches Proper | 933,825.43 | 30 | Engineering Department | 20% Community Development Fund |

The Quezon City Government through its Bids and Awards Committee – Infra and Consultancy undertake a Small Value Procurement in accordance with **Section 53.9 of the Revised Implementing Rules and Regulations of Republic Act No. 9184.**

Please quote your best offer for the project/s described above, subject to the Terms and Conditions provided. Submit your proposal/price quotation duly signed by you or your duly authorized representative not later than **15 March 2022** on or before **10:00 A.M.,** Philippine Standard Time, together with the following documents:

1. PhilGEPS Platinum Certificate (3 pages)
2. DTI or SEC Registration Certificate
3. Mayor's Permit
4. Tax Clearance
5. PCAB License (Bidders with valid Philippine Contractors Accreditation Board (PCAB)
6. Audited Financial Statements
7. Net Financial Contracting Capacity (NFCC)
8. List of Key Construction Personnel to be assign for the project
9. List of Major Equipment to be used for the Project
10. Duly Notarized Affidavit of Undertaking of Key Personnel and Equipment
11. Income/Business Tax Returns
12. Omnibus Sworn Statement prescribed by the Government Procurement Policy Board (GPPB) duly notarized with attached Secretary's Certificate (*If a partnership, corporation, cooperative, or joint venture*). The authorized representative as identified in the Omnibus Sworn Statement shall be the signatory in the proposal/price quotation form.



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BIDS AND AWARDS COMMITTEE FOR INFRASTRUCTURE & CONSULTANCY
2nd Floor, Finance Building, Procurement Department, Quezon City Hall Complex, Elliptical Road, Quezon City



Opening of Quotations/Proposals will be on **15 March 2022** at exactly **1:00 P.M.**

in a **SEALED LONG BROWN ENVELOPE** shall:

- 1 Contain the Name of Project of the contract to be quoted in capital letters;
- 2 Bear the name and address of the Contractor in capital letters;
- 3 Be addressed to the Procuring Entity's BAC.

Name of Project: **IN CAPITAL LETTERS**

**Quezon City Local Government
BIDS AND AWARDS COMMITTEE (INFRA & CONSULTANCY)
2/F Procurement Department, Finance Building
Quezon City Hall Compound**

TERMS AND CONDITIONS

1. Contractor shall **provide correct and accurate** information required in this form.
2. Price quotation/proposal must be valid for a period of thirty (30) calendar days from the date of submission.
3. Price quotation/proposal, to be denominated in Philippine Peso shall include all taxes, duties and/or levies payable.
4. Quotation/Proposal **exceeding** the Approved Budget for the Contract (ABC) shall be **rejected**.
5. Award of contract shall be made to the lowest quotation/proposal (for infra) which complies with the minimum technical specifications and other terms and conditions stated herein.
6. Any interlineations, erasures or overwriting shall be valid only if they are signed or initialed by the contractor or his/her duly authorized representative/s.
7. The Engineering Department shall have the right to inspect and monitor the construction projects
8. Non-submission of eligibility documents shall mean disqualification of Quotation/Proposal.
9. Liquidated damages equivalent to one tenth (1/10) of one percent (1%) of the cost of the unperformed portion for every day of delay, Engineering Department shall rescind the contract once the cumulative amount of liquidated damages reaches ten percent (10%) of the amount of the contract, without prejudice to other courses of action and remedies open to it.
10. Failure to follow these instructions will disqualify your entire quotation/proposal.

For any clarification you may contact us at 89884242 loc. 8505/8709.

ATTY. MARK DALE DIAMOND P. PERRAL
Chairman, BAC Infra and Consultancy



Republika ng Pilipinas
Lungsod ng Quezon
CITY ENGINEERING DEPARTMENT
5th,6th ,7th Floors, QC Civic Center Building "B"
Telephone Nos. 8988-4242 Local 8538



Project Name : **PROPOSED REHABILITATION (SURFACE IMPROVEMENT) AT LOURDES STREET** ✓
Location : **Barangay Novaliches Proper, District 5, Quezon City** ✓

LIST OF MANPOWER

| | Manpower | No. |
|---|-----------------------------|----------------------------|
| 1 | Project Engineer | 1 |
| 2 | Materials Engineer | 1 |
| 3 | Safety Practitioner/Officer | Refer to DOLE Requirements |
| 4 | Surveyor | As Needed |
| 5 | Procurement Officer | 1 |
| 6 | Equipment Operator | 5 |
| 7 | General Foreman | 1 |
| 8 | Laborer | 4 |

Note: 1 Operator : 1 Major Equipment

Prepared by:


AURELIO E. FULGENCIO
Planning and Programming Division

Checked by:


MARILEN F. COMENDADOR
Planning and Programming Division



Republika ng Pilipinas
Lungsod ng Quezon
CITY ENGINEERING DEPARTMENT
5th,6th ,7th Floors, QC Civic Center Building "B"
Telephone Nos. 8988-4242 Local 8538



Project Name : **PROPOSED REHABILITATION (SURFACE IMPROVEMENT) AT LOURDES STREET** ✓
Location : **Barangay Novaliches Proper, District 5, Quezon City** ✓

LIST OF EQUIPMENT

| | NAME OF EQUIPMENT | NO. OF UNIT |
|---|-------------------------------------|-------------|
| 1 | Bituminous Prime Coat Truck Sprayer | 1 |
| 2 | Broom Truck | 1 |
| 3 | Dumptruck | 1 |
| 4 | Pneumatic Roller | 1 |
| 5 | Truck Paver | 1 |

Note: 1 Operator : 1 Major Equipment

Prepared by:


AURELIO B. FULGENCIO
Planning and Programming Division

Checked by:


MARILEN F. COMENDADOR
Planning and Programming Division

PROJECT TITLE : PROPOSED REHABILITATION (SURFACE IMPROVEMENT) AT LOURDES

LOCATION : Barangay Novaliches Proper, District 5, Quezon City

PROJECT NO. : 22 - 016SV

DURATION : Thirty (30) Calendar Days

BREAKDOWN OF COST

| ITEM NO. | WORK DESCRIPTION AND SCOPE OF WORKS | DIRECT COST | INDIRECT COST | AMOUNT |
|----------|-------------------------------------|-------------|---------------|--------|
| I | GENERAL REQUIREMENTS | P | P | P |
| II | CIVIL / STRUCTURAL WORKS | | | |

TOTAL COST P _____

LUMP SUM BID IN WORDS : _____

Contractor : _____

Bid Form

Page 3 of 3

BILL OF QUANTITIES
(Road Construction/Rehabilitation Project)

PROJECT TITLE : PROPOSED REHABILITATION (SURFACE IMPROVEMENT) AT LOURDES STREET

LOCATION : Barangay Novaliches Proper, District 5, Quezon City

PROJECT NO. : 22 - 016SV

DURATION : Thirty (30) Calendar Days

Road Details:

| NAME | TYPE | LENGTH | WIDTH | LIMITS |
|----------------|---------|--------|-------|---|
| LOURDES STREET | ASPHALT | 120M | 6M | LOURDES STREET: STA. 00+000 (Buenamar Drive) to STA. 00+120 (Maagap Street) |

Scope of Works:

- 1 General Requirements include billboard, steel barricade, traffic cone (rental) and construction safety and health
- 2 Spraying of Bituminous Prime Coat, and Asphalt Overlaying and Improvement
- 3 Provisions of Thermoplastic Lane Markings.
- 4 All necessary testing and commissioning shall be performed in accordance to standards.

| ITEM NO. | WORK DESCRIPTION AND SCOPE OF WORKS | QTY | UNIT | UNIT COST | AMOUNT |
|-------------------------------------|-------------------------------------|--------------------------|-------|-----------------------|----------|
| I | GENERAL REQUIREMENTS | | | | |
| SPL7 | Billboard | 1 | unit | P | P |
| SPL 12 | Construction Safety and Health | 1 | unit | | |
| SPL 13b | Steel Barricade | 2 | unit | | |
| SPL 13c | Traffic Cone (Rental) | 12 | unit | | |
| | | | | | |
| | | | | DIRECT COST I | P |
| | | | | | |
| | | | | | |
| II | CIVIL / STRUCTURAL WORKS | | | | |
| A. | Laying of Asphalt Pavement | | | | |
| 302 | Bituminous Prime Coat | 0.8 | m.t. | P | P |
| 310 | Bituminous Concrete Surface Course | 86 | m.t. | | |
| B. | Construction of Concrete Manholes | | m.t. | | |
| SPL 53d | Upgrading of Manholes (2-Cover) | 2 | unit | | |
| C. | Painting Works | | | | |
| SPL 10a | Thermoplastic Markings White | 45 | sq.m. | | |
| | | | | | |
| | | | | DIRECT COST II | P |
| | | | | | |
| NOTE: | | | | | |
| • Strictly enforce health protocols | | TOTAL DIRECT COST | | | P |

| ITEM NO. | WORK DESCRIPTION AND SCOPE OF WORKS | QTY | UNIT | UNIT COST | AMOUNT |
|----------|---|-----|------|---|----------|
| | relative to latest applicable DPWH Memorandum. • SPL13b shall be turned over to City Engineering Department. | | | Overhead, Contingencies and Miscellaneous Expenses (OCM) Profit VAT | |
| | | | | TOTAL ESTIMATED COST | P |



REPLUBLIKA NG PILIPINAS
LUNGSOD QUEZON
CITY ENGINEERING DEPARTMENT
5TH 6TH 7TH Floors, QC Civic Center Building "B"
Telephone Nos. 8988-4242 Local 8538



NAME OF PROJECT : **PROPOSED REHABILITATION (SURFACE IMPROVEMENT) AT LOURDES STREET** ✓
LOCATION : **BARANGAY NOVALICHES PROPER, DISTRICT 5, QUEZON CITY** ✓

TECHNICAL SPECIFICATIONS

I. GENERAL REQUIREMENTS

ITEM SPL 7 – BILLBOARD
DESCRIPTION

This item shall consist of installation of Billboards on locations as established by the Engineer-In-Charge in conformity with the standard size, design, layout and dimension as shown in the Plans.

MATERIAL REQUIREMENTS
Based on the standard design approved by and material requirement of the implementing agency.

ITEM SPL 12 CONSTRUCTION SAFETY AND HEALTH
DESCRIPTION

This item shall include necessary provision of construction safety and health gear such as safety vest, Safety helmet, First Aid Kit, Safety Boots and Gloves. All materials delivered and utilized for the project shall be turned-over to the Implementing agency after the completion of the project.

MATERIAL REQUIREMENTS
Based on the standard design and specifications approved by and material requirement of the implementing agency.

ITEM SPL 13b STEEL BARRIER (RENTAL)
DESCRIPTION

This item shall consist of fabrication of steel barricades in accordance with the Standard Specifications for Public Works and Highways and in reasonably close conformity shown on the plans or as established by the Engineer-In-Charge.

MATERIAL REQUIREMENTS

STEEL BARRICADES

Metal units shall conform to the plan dimensions and to the following specification requirements for the designated materials. Metal gratings and covers which are to rest on frames shall bear on them evenly. They shall be assembled before shipment and so marked that the same pieces may be reassembled readily in the same position when installed. Inaccuracy of bearings shall be corrected by machining, if necessary. A frame and a grating or cover to be used with it shall constitute one pair. All castings shall be uniformly coated with asphalt-based emulsion meeting the requirements of ASTM D 1187, Asphalt-base Emulsion for use as Protective Coating for Metal. Samples of the material in casting shall be taken during the casting of the units and shall be separate casting poured from the same material as the casting they represent.

| | |
|--|--------------|
| Structural steel | AASHTO M 183 |
| Galvanizing, where specified for these units, shall conform to the requirements of | AASHTO M 111 |
| Reinforcing Steel | AASHTO M 31 |

ITEM SPL 13c TRAFFIC CONE

DESCRIPTION

This item shall consist of installation of steel barriers / traffic cone on locations as established by the Engineer-In-Charge in conformity with the Standard size, design, layout and dimension as shown in the Plans.

MATERIAL REQUIREMENTS

Based on the standard design approved by and material requirement of the implementing agency.

II. CIVIL / STRUCTURAL WORKS

ITEM 302 – BITUMINOUS PRIME COAT

DESCRIPTION

This Item shall consist of preparing and treating an aggregate base course with material in accordance with the Plans and Specifications, preparatory to the construction of a bituminous surface course.

MATERIAL REQUIREMENTS

Bituminous material shall be either Rapid Curing (RC) or Medium Curing (MC) Cut-back Asphalt, whichever is called for in the Bill of Quantities. It shall conform to the requirements of Item 702, Bituminous Materials. The type and grade shall be specified in the Special Provisions.

ITEM 310 – BITUMINOUS CONCRETE SURFACE COURSE, HOT LAID

DESCRIPTION

This Item shall consist of constructing a bituminous concrete surface course composed of aggregates, mineral filler, and bituminous material mixed in a central plant, constructed and laid hot on the prepared base in accordance with this Specification and in conformity with lines, grades, thickness and typical cross-section shown on the Plans.

MATERIAL REQUIREMENTS

COMPOSITION AND QUALITY OF BITUMINOUS MIXTURE (Job-Mix Formula)

The bituminous mixture shall be composed of aggregate, mineral filler, hydrated lime, and bituminous material. At least three weeks prior to production, the Contractor shall submit in writing a job-mix formula for each mixture supported by laboratory test data along with samples and sources of the components and viscosity-temperature relationships information to the Engineer for testing and approval.

Each job-mix formula submitted shall propose definite single values for:

1. The percentage of aggregate passing each specified sieve size.
2. The percentage of bituminous material to be added.
3. The temperature of the mixture delivered on the road.
4. The kind and percentage of additive to be used.
5. The kind and percentage of mineral filler to be used.

After the job-mix is established, all mixture furnished for the project shall conform thereto within the following ranges of tolerances:

| | | |
|---------------------------------|---|-----------|
| Passing No. 4 and larger sieves | ± | 7 percent |
|---------------------------------|---|-----------|

| | | |
|---|---|-------------|
| Passing No. 8 to No. 100 sieves (inclusive) | ± | 4 percent |
| Passing No. 200 sieve | ± | 2 percent |
| Bituminous Material | ± | 0.4 percent |
| Temperature of Mixture | ± | 10 °C |

Should a change in source of material be proposed or should a job-mix formula prove unsatisfactory, a new job-mix formula shall be submitted by the Contractor in writing and be approved by the Engineer prior to production. Approval of a new job mix formula may require laboratory testing and verification. The mixture shall have a minimum compressive strength of 1.4 MPa (200 psi). The mixture shall have a mass percent air voids with the range of 3 to 5. The mixture shall also have an index of retained strength of not less than

70 when tested by AASHTO T 165. For aggregates having maximum sizes over 25 mm (1 inch), AASHTO T 165 will be modified to use 150 mm x 150 mm (6 x 6 inches) cylindrical specimens. The 150 mm (6 inches) cylinders will be compacted by the procedures outlined in AASHTO T 167 modified to employ 10 repetitions of a molding load of 9.6 MPa (1400 psi), with no appreciable holding time after each application of the full load.

BITUMINOUS MATERIAL

It shall be Penetration Grade Asphalt Cement. Asphalt cement shall conform to the requirements of AASHTO M 226.

AGGREGATES

It shall be uniformly graded from coarse to fine. Target value for the intermediate sieve sizes shall be established within the limits shown in table 703.1. The contractor shall submit the proposed target value in writing to the Engineer-In-Charge for approval. The target gradation is subject to confirmation testing in accordance with section 307.2 before approval by the engineer. Any changes in the target gradation are subject to confirmation testing in accordance with section 307.2., unless otherwise approved in writing by the engineer. No target gradation adjustment will be permitted during the span of a lot.

TABLE 703.1 – Range of Gradation Target Values

| Sieve Designation, mm | Mass percent passing square mesh sieves, AASHTO T 11 and T 27, exclusive of mineral filler |
|-----------------------|--|
| | Range: |
| 25 (1") | 100 |
| 19 (3/4") | 100 |
| 4.75 (No. 4) | 50 – 60 |
| 2.36 (No. 8) | 38 – 48 |
| 0.075 (No. 200) | 3 – 7 |
| | The minimum for Sand Equivalent is 35 |

No intermediate size of aggregate shall be removed for other purposes without written consent of the engineer. If crushed gravel is used, not less than 50 mass percent of the material retained on the 4.75 mm (No. 4) sieve shall be particles having at least one fractured face. That portion of the composite material passing a 4.75 mm (No. 4) sieve shall have a sand equivalent of not less than 35, as determined by AASHTO T 176, Alternate Method No. 2. The aggregate shall show a durability index not less than 35 (coarse and fine) as determined by AASHTO T 210. The material shall be free of clay balls and adherent films of clay or other matter that would prevent thorough coating with the bituminous material.

MINERAL FILLER

Filler material for bituminous bases or pavements shall meet the requirements of AASHTO M 17, Mineral Filler for Bituminous Paving Mixtures.

Mineral filler shall be graded within the following limits:

| Sieve | Maximum Perfect Passing |
|--------------------|-------------------------|
| 0.600 mm (No. 30) | 100 |
| 0.300 mm (No. 50) | 95 – 100 |
| 0.075 mm (No. 200) | 70 – 100 |

The mineral filler shall have a plasticity index not greater than 4. Plasticity Index limits are not appropriate for hydraulic lime and cement.

HYDRATED LIME

Hydrated lime shall conform to the requirements of PHILSA I-1-68 or ASTM C 207-76 and shall be of the following type:

- Type N - Normal hydrated lime for masonry purposes.
- Type S - Special hydrated lime for masonry purposes.
- Type NA - Normal air-entraining hydrated lime for masonry purposes.
- Type SA - Special air-entraining hydrated lime for masonry purposes.

Type N and S are suitable for use in mortar, in scratch and brown coats of cement plaster, for stucco and for addition to Portland Cement concrete. Type NA and SA are air-entrained hydrated limes that are suitable for use in any of the above uses where air-entrainment are desired. Type S and SA hydrated lime develop high, early plasticity and higher water retentivity and by a limitation on their unhydrated oxide content. It is the intent of this Specification to use either the Type N or S for soil stabilization and as filler requirement to bituminous plant mixtures. It is expected to provide pavements with greater resistance to the detrimental effects of water, especially flooding during the rainy season.

PROPORTIONING OF MIXTURES

The proportion of bituminous material on the basis of total dry aggregate shall be from 5.0 to 8.0 mass percent. The exact percentage to be used shall be fixed by the Engineer in accordance with the job-mix formula and the other quality control requirements. During the mixing operation, one-half to one (0.5 to 1.0) mass percent of hydrated lime, dry aggregate basis, shall be added to the mixture. The lower percentage limit is applicable to aggregates which are predominantly calcareous.

ITEM SPL53d – UPGRADING OF MANHOLE COVER (ROADWAY)
DESCRIPTION

This item shall consist of construction of manholes and inlets in accordance with the Standard Specifications for Public Works and Highways and in reasonably close conformity with the lines and grades shown on the plans or as established by the Engineer-In-Charge.

MATERIAL REQUIREMENTS

Concrete for these structures shall meet the requirements of Item 405, Structural Concrete. Other materials shall meet the following specifications:

CORRUGATED METAL UNITS

The units shall conform to Plan dimensions and the metal to AASHTO M 36. Bituminous coating, when specified, shall conform to ASTM D 1187, Asphalt-base Emulsion for use as Protective Coating for Metal.

| | |
|--|--------------|
| Sewer and manhole brick (Made from clay or shale) | AASHTO M 91 |
| Building brick (Solid masonry units made from clay or shale) | AASHTO M 114 |

JOINT MORTAR

Unless otherwise indicated on the Plans, joints mortar shall be composed of one part Portland Cement and two parts fine aggregate by volume to which hydrated lime has been added in an amount equal to 10 percent of the cement by weight. All materials for mortar shall meet the requirements of Item 405, Structural Concrete.

FRAMES, GRATINGS, COVERS AND LADDER RUNGS

Metal units shall conform to the plan dimensions and to the following specification requirements for the designated materials. Metal gratings and covers which are to rest on frames shall bear on them evenly. They shall be assembled before shipment and so marked that the same pieces may be reassembled readily in the same position when installed. Inaccuracy of bearings shall be corrected by machining, if necessary. A frame and a grating or cover to be used with it shall constitute one pair.

All castings shall be uniformly coated with asphalt-based emulsion meeting the requirements of ASTM D 1187, Asphalt-base Emulsion for use as Protective Coating for Metal. Samples of the material in casting shall be taken during the casting of the units and shall be separate casting poured from the same material as the casting they represent

| | |
|--|--------------|
| Gray iron casting | AASHTO M 105 |
| Mild to medium-strength carbon steel castings for general application | AASHTO M 103 |
| Structural steel | AASHTO M 183 |
| Galvanizing, where specified for these units, shall conform to the requirements of | AASHTO M 111 |
| Reinforcing Steel | AASHTO M 31 |

PRE-CAST CONCRETE UNITS

These units shall be cast in substantial permanent steel forms. Structural concrete used shall attain a minimum 28-day compressive strength of 20.682 MPa (3000 psi). The pre-cast units shall be cured in accordance with AASHTO M 171. Water absorption of individual cores taken from such units shall not exceed 7 percent. Additional reinforcement shall be provided as necessary to provide for handling of the pre-cast units. A sufficient number of cylinders shall be cast from the concrete for each unit permit compression tests at 7, 14 and 28 days, and to allow for at least 3 cylinders for each test. If the strength requirement is met at 7 or 14 days, the units shall be certified for use 14 days from the date of casting. If the strength is not met at 28 days, all units made from that batch or load will be rejected. Cracks in units, honeycombed or patched areas in excess of 2,000 square millimeters, excessive water absorption and failure to meet strength requirements shall be the causes for rejection. Pre-cast reinforced concrete manhole risers and tops shall conform to the requirements of AASHTO M 199. The plants will be inspected periodically for compliance with specified manufacturing methods, and material samples will be obtained for laboratory testing for compliance with material quality requirements. This may be the basis for acceptance of manufacturing lots as the quality. All materials shall be subjected to inspection for acceptance as to condition at the latest practicable time the Engineer has the opportunity to check for compliance prior to or during incorporation of materials into the work

ITEM SPL 10a/10b – THERMOPLASTIC MARKINGS (WHITE/YELLOW)
MATERIAL REQUIREMENTS

Reflectorized thermoplastic pavement material shall be homogeneously composed of pigment, filler, resins, and glass reflectorizing spheres.

The thermoplastic materials shall be available to both white and yellow.

Glass Beads (Pre-mix) shall be uncoated and shall comply with the following requirements:

Refractive Index, min. – 1.5

Spheres Percent, min. – 90

Gradation:

| Sieve, mm | Mass Percent Passing |
|-----------|----------------------|
| 0.850 | 100 |
| 0.600 | 75 – 95 |
| 0.425 | - |
| 0.300 | 15 – 35 |
| 0.180 | - |
| 0.150 | 0 – 5 |

NOTES:

All other item of works not covered by this listed TECHNICAL SPECIFICATIONS shall be ISSUED with supplemental specifications by the Implementing Agency based on the Program of Work and Approved Plan(s) for the proposed project.

PREPARED BY:


AURELIO B. FULGENCIO

Planning and Programming Division

CHECKED BY:


MARILEN F. COMENDADOR

Planning and Programming Division