



DEPARTAMENTO DE

SALUD

GOBIERNO DE PUERTO RICO

ADMINISTRATION OFFICE
Auction Administrative Support Section

June 04, 2025.

ADDENDUM 02

RFP-SP-2022-2024-026-PAVILIONS-DH

Inspection Services for Demolition Project Pavilions and
Accessory Buildings, San Juan, Puerto Rico

(FEMA DISASTER 4339)

Purpose:

The purpose of this addendum is to answer all questions submitted by the proponents.

Ferpo Consulting PSC

1. In Attachment A – Cost Schedule, Item 1A lists “Weekly Inspection Services,” while Item 1B refers to “Inspection Services for 7 months.” Could you please clarify whether the intention is for Item 1A to reflect the monthly rate (for weekly inspections) and for Item 1B to represent the total cost for the 7-month period (i.e., the monthly rate multiplied by the number of weeks in 7 months)?

Answer:

Item 1A should include the fixed cost for weekly inspection services over one month, while Item 1B should reflect the cost for weekly inspection services over a total of seven months.

2. Does the referenced 7-month inspection period in the cost schedule include the project closeout phase? Typically, after a contractor completes their scope of work, inspectors and project management personnel remain involved to finalize documentation, punch lists, and other closeout tasks. Depending on the project's complexity, this closeout period can extend from one month to several months. Please confirm whether this period is expected to be part of the 7-month duration or if it should be accounted for separately.

Answer:

Yes, the 7-month period includes the project's closeout phase.

VERITAS CM LLC

3. In the "Invite RFP" document, the "Application Number" field indicates RFP-SP-2024-2025-025-DS-LAJAS-RIO GRANDE; however, the title mentions RFP-SP-2022-2024-026-PAVILIONS-DH. We would be grateful if you could clarify this discrepancy. *(En el documento de "Invite RFP", el campo "Application Number" indica RFP-SP- 2024-2025-025-DS-LAJAS-RIO GRANDE; sin embargo, en el título se menciona RFP-SP-2022-2024-026-PAVILIONS-DH. Agradeceremos nos puedan aclarar esta discrepancia.)*

Answer:

The correct “Application Number”, as well as the RFP title, should read RFP-SP-2022-2024-026-PAVILIONS-DH.

4. The RFP mentions the demolition of a pavilion and surrounding structures. We would appreciate it if you could indicate the exact location of the project. (*En el RFP se menciona la demolición de un pabellón y estructuras aledañas. Agradeceremos se indique la localización exacta del proyecto.*)

Answer:

The scope of work for which inspection services are being requested in this RFP includes the demolition of four pavilion buildings and three accessory buildings. Located next to Building A of the former Central Offices of the Department of Health and the current Puerto Rico Public Health Laboratory.

The exact location is:

1111 Av. Tte. César Luis González, San Juan, 00927, Puerto Rico

GPS Coordinates: 18.39031, -66.07408

5. It is established that the duration of the project is seven (7) months. Could you confirm whether this period applies to each building individually or to the project as a whole? (*Se establece que la duración del proyecto es de siete (7)*

meses. ¿Podrían confirmar si este periodo aplica a cada edificio individualmente o al proyecto en su totalidad?)

Answer:

The established 7-month period applies to the entire project.

6. We are interested in reviewing the detailed scope of the project. We would appreciate it if you could provide us with the "Scope of Work" (PW) document, including details such as the square footage to be worked on, among other relevant aspects. *(Estamos interesados en revisar el alcance detallado del proyecto. Agradeceremos se nos provea el documento del "Scope of Work" (PW), incluyendo detalles como los pies cuadrados a trabajarse, entre otros aspectos relevantes.)*

Answer:

The demolition plans, technical specifications, and the bid table used in the demolition bidding will be published.

CPM

7. The RFP Invitation indicates under "Other Responsibilities" that the Proponent is responsible for acquiring all certificates and permits required for the activities and deliverables outlined. Could you please

clarify which specific permits and/or certifications are expected to be obtained by the Proponent?

Answer:

It is not part of the services required by the project's inspection firm.

However, the inspection firm will be responsible for preparing the reports required for the SWPPP, the CES Plan, and those mandated by OGPe as part of the construction/ demolition permit.

8. Will PRDOHe require a specific format or submission platform for weekly reports, safety reports, executive summaries, RFIs, and final documentation (e.g., email, online portal, or hard copy)?

Answer:

No specific format is required.

9. In addition to the EPA's Construction General Permit (CGP) Site Inspector Training certificate, are there any additional qualifications, licenses, or certifications required for the Resident Inspector?

Answer:

This certificate is required to designate the inspector for the Storm Water Pollution Prevention Plan (SWPPP). As outlined in the scope of services of this

RFP, it will be the responsibility of the inspection firm to prepare the necessary reports to comply with the requirements of this plan. In addition to this certification, the resident inspector must be a licensed engineer (PE) with active membership in the College of Engineers and Surveyors of Puerto Rico (CIAPR).

10. What is the anticipated timeline for issuing the Notice to Proceed (NTP) following the selection of the contractor?

Answer:

It is expected that by the end of July 2025, a Notice to Proceed for inspection services will be issued.

The contractor responsible for the demolition has already been selected and has been issued a Notice to Proceed (NTP) for Phase 1, which includes the environmental mitigation of ACM and LBP materials from the structures to be demolished. Phase 2, which involves the demolition of the structures, is expected to commence in August upon receipt of the corresponding construction/demolition permit. The project is under the supervision of the firm that prepared the demolition plan and drawings.

11. Given that transportation, travel, and per diem costs are excluded from funding, will there be any consideration for reimbursement of these expenses under certain conditions?

Answer:

These costs will not be considered for reimbursement. The costs included in the proposal should account for these expenses.

12. The RFP notes that compensation will be based on a "monthly fixed rate." Is this rate tied to a defined number of site visits or inspections per week? If so, how many visits are expected?

Answer:

A minimum of one weekly inspection by the resident inspector (licensed engineer) is required. This inspection must be of sufficient duration to allow the inspector to collect the necessary data to prepare the monthly reports required by OGPe, validate compliance with the Storm Water Pollution Prevention Plan (SWPPP) and prepare the reports required by the Environmental Protection Agency (EPA), assess the progress of the work, ensure adherence to the contractor's demolition safety plan, and perform other typical tasks of a resident inspector on similar projects.

Follow-up meetings for the demolition project have been scheduled to take place on Tuesdays at 2:00 PM in person at the New Headquarters of the Department of Health in San Juan. On certain occasions, meetings may be held virtually and/or in person at the project's location. The duration of these progress meetings should be considered additional time beyond the required weekly inspections, and therefore, the total cost in the proposal should account for this time.

13. How should the Proponent proceed if the number of required inspections increases beyond the initial scope? Will there be a mechanism for adjusting compensation accordingly?

Answer:

At least one weekly inspection is required. There is no specified minimum or maximum duration for each inspection. Therefore, the inspector should allocate sufficient time to perform the required tasks, and these costs should be included in their proposal.

However, if the Department of Health determine that additional inspections beyond those originally requested are necessary, it will be addressed through an amendment to the original contract.

14. The RFP mentions the inclusion of an inspector assistant (EIT or AIT). Can you clarify the expected weekly hourly effort by the inspector assistant and the licensed Inspector of Record?

Answer:

The assistant inspector is not a requirement. The resident inspector must determine the need for an assistant to support report preparation, documentation, field visits if necessary, and other tasks deemed necessary by the resident inspector. However, it is required that the resident inspector visits the project at least once a week and that the work performed by the assistant is supervised and duly authorized (signed) by the resident inspector (licensed engineer). The costs of an assistant inspector, if deemed necessary, should be included as part of the total costs indicated in the proposal.

15. Will the Resident Inspector be responsible for submitting monthly reports to OGPe? If so, is there a specific format or process for these submissions?

Answer:

It is part of the inspection firm's responsibilities, as well as the SWPPP reports to the EPA. No specific format or process is required as long as the requirements of both agencies are met.

16. Will a draft of the professional services contract be made available for review prior to the proposal submission deadline?

Answer:

The draft of the professional services contract may be shared after the RFP has been awarded.

17. Please confirm that the General Liability Insurance is not required.

Answer:

On page 17, section 6: Insurance Requirements of the document titled: Pliego RFP-SP-2022-2024-026-PAVILLIONS-DH, the insurance requirements for the proponents are specified.

18. Given the scope of the RFP, would PRDOHe consider extending the proposal submission deadline by two weeks to June 24, 2025?

Answer:

**The deadline for proposal submission will be extended by ten (10) days to
June 20, 2025, at 2:00 PM. (Addendum 01- publish on June 03, 2025)**

All additional instructions and requirements set forth in the Request for Proposal documents remain unchanged. This Addendum is part of the Request for Proposal.

The information included herein must be considered at the time of submission of the Proposal.



Carlos Padilla Cruz

Interim Manager

End of the Addendum



INVITACIÓN Y PLIEGO DE SUBASTA FORMAL NÚM. 24J-08889-R1

FECHA DE PUBLICACIÓN: 5 DE MARZO DE 2024

PARA LA ADQUISICIÓN DE SERVICIOS DE REMOCIÓN DE ASBESTO Y PLOMO Y DEMOLICIÓN DE LOS PABELLONES 1, 2, 3 Y 4 Y LOS EDIFICIOS ACCESORIOS 1, 2 Y 3, ADSCRITOS AL DEPARTAMENTO DE SALUD DEL GOBIERNO DE PUERTO RICO

FECHA DE REUNIÓN PRE-SUBASTA OBLIGATORIA:

Jueves, 7 de marzo de 2024, a las 11:00 am

FECHA DE INSPECCIÓN OCULAR OBLIGATORIA:

Viernes, 8 de marzo de 2024, a las 10:30 am

FECHA LÍMITE PARA SOMETER PREGUNTAS:

Martes, 12 de marzo de 2024, a las 4:00 pm

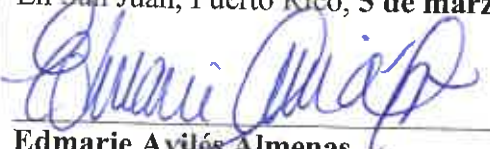
FECHA DE ENTREGA DE LA OFERTA:

Jueves, 21 de marzo de 2024, a las 10:00 am

FECHA DE APERTURA:

Jueves, 21 de marzo de 2024, a las 11:00 am

En San Juan, Puerto Rico, 5 de marzo de 2024.


Edmarie Avilés Almenas

Secretaria
Junta de Subastas





I. INSTRUCCIONES GENERALES

1. FORMULARIO

El Licitador presentará su oferta en el formulario provisto para ello. Si fuera necesario aclarar o describir más detalladamente su oferta, el Licitador podrá añadir páginas, pero no podrá alterar los formularios o tablas provistas. Las páginas adicionales podrán ser completadas a manuscrito con letra legible o utilizando cualquier medio tecnológico y en papel timbrado del Licitador.

2. TÉRMINOS

El término “días” significará días calendario, a menos que otra cosa así se exprese. Las palabras y frases utilizadas en este pliego se interpretarán según el contexto aceptado por el uso común y corriente; las usadas en el presente incluyen el futuro; el número singular incluye a su vez el plural; y las usadas en el género masculino incluyen también el femenino y el neutro, salvo en los casos que tal interpretación resultare absurda.

3. LICITADORES REGISTRADOS

A todo Licitador que: 1) esté registrado en el RUL; 2) que haya presentado oferta para una subasta; y 3) que luego del acto de apertura no se encuentre elegible, se le concederá un término improrrogable de **cinco (5) días laborables**, contados a partir del acto de apertura, para que someta la información o los documentos correspondientes en el RUL. Durante dicho período no se realizará adjudicación alguna. La secretaria de la Junta de Subastas será responsable de notificar al licitador mediante llamada telefónica y correo electrónico, sobre el término provisto para que actualice sus constancias en el RUL. En caso de que el licitador no actualice sus constancias en el RUL durante el término provisto, **será descalificado**.

El Licitador deberá someter todos los documentos y certificaciones solicitadas. También deberá cumplir con todos los requisitos, términos y condiciones establecidos en el pliego de la subasta al momento de entregar su oferta. No se aceptará ningún documento por parte del Licitador con posterioridad al acto de apertura, a excepción del certificado de elegibilidad del RUL, que estará sujeto a que se presente dentro del término antes dispuesto.

El Licitador inelegible no estará visible en el RUL para ser contratado por las entidades gubernamentales. La inelegibilidad se mantendrá hasta tanto el Licitador cumpla con el requerimiento de información o la presentación de los documentos solicitados. **El Licitador tendrá que contar con el estatus de elegible en el RUL previo a la adjudicación de la subasta.**

4. LICITADORES NO REGISTRADOS

Cuando un Licitador que no esté registrado en el RUL comparezca a un proceso de subasta y presente una oferta, la Junta de Subastas no deberá rechazar la misma por el hecho de que dicho Licitador no esté en el RUL y le concederá un término de **cinco (5) días laborables**, contados a partir del acto de apertura para que someta todos los documentos requeridos ante el RUL. En caso de que el Licitador no entregue los documentos requeridos, **será descalificado**.



5. IMPUGNACIÓN A LA INVITACIÓN O AL PLIEGO DE LA SUBASTA

Cualquier licitador interesado en participar en una subasta formal podrá impugnar **la Invitación o el Pliego a Subasta**, mediante escrito, únicamente cuando no se haya seguido cualesquiera de los procedimientos establecidos en el Reglamento Núm. 9230, *según enmendado*, conocido como “Reglamento Uniforme de Compras y Subastas de la Administración de Servicios Generales del Gobierno de Puerto Rico” o cuando se considere que el término fijado para efectuar el estudio y preparación de la oferta y la fecha para radicar la oferta no es suficiente. El escrito deberá contener el fundamento por el cual se impugna la invitación, y estar firmado por el licitador.

El escrito de impugnación deberá ser radicado **personalmente** ante la Administración Auxiliar de Adquisiciones, dentro de los **tres (3) días laborables** siguientes a la fecha de envío por la Junta de Subastas de la Invitación mediante correo electrónico a los licitadores o desde la fecha de publicación de la Invitación en el Registro Único de Subastas (RUS). Si la fecha de envío de la Invitación es distinta a la fecha de publicación de la Invitación en el RUS, se contará a partir de la fecha de envío de ésta última. **Todo escrito de impugnación radicado fuera del término aquí establecido será rechazado de plano.** Deberá notificarse copia del recurso presentado a los licitadores invitados a la subasta formal y a la Junta de Subastas. El escrito de impugnación deberá cumplir con lo establecido en la **Sección 7.3.6** del Reglamento Núm. 9230, *supra*.

6. REUNIÓN PRE-SUBASTA: OBLIGATORIA

Todo licitador o persona interesada en presentar una oferta para la subasta formal de referencia, tendrá que acceder **OBLIGATORIAMENTE** a la reunión pre-subasta. **Todo licitador que presente una oferta y que no haya participado de la reunión pre-subasta será descalificado.**

La reunión pre-subasta será realizada de **modo virtual**, y podrá acceder a esta a través de la página “web” de la ASG mediante la siguiente dirección electrónica: www.asg.pr.gov, en el área de “Adquisiciones” en la sección de “Subastas/Licitaciones”. Además, deberá acceder al enlace de la subasta de referencia, el cual le proveerá la opción de conectividad a “Reunión Virtual Pre-subasta”. Al conectarse a la Reunión Virtual Pre-Subasta, el licitador deberá registrarse previo al inicio de los procesos. Cualquier licitador que acceda luego de que el miembro asociado de la Junta de Subastas que presida los trabajos, o su representante autorizado, haya finalizado el registro de asistencia en alta voz, será descalificado.

La reunión pre-subasta se llevará a cabo el **jueves, 7 de marzo de 2024, a las 11:00 am** con el propósito de aclarar a los licitadores las dudas que surjan en torno al pliego de subasta.

Los participantes a esta reunión tendrán que observar normas y conductas que garanticen el respeto y el decoro. Cualquier manifestación de conducta inapropiada por parte de cualquier licitador o persona interesada en participar en el proceso de subasta formal **constituirá fundamento suficiente para su descalificación.**

Un miembro asociado de la Junta de Subastas o su representante autorizado presidirá la reunión pre-subasta.

La Junta de Subastas se reserva el derecho a convocar a una o más reuniones pre-subastas.



7. INSPECCIÓN OCULAR: (OBLIGATORIA)

La inspección ocular se llevará a cabo en las facilidades del pabellón 1 Anexo al Edificio A del Departamento de Salud, el **viernes, 8 de marzo de 2024, a las 10:30 am**. Todo licitador o persona interesada en presentar una oferta para la subasta formal de referencia, **tendrá que asistir de manera OBLIGATORIA** a la inspección ocular. **La incomparecencia a la inspección ocular será causa suficiente para su descalificación.**

Todo licitador o persona interesada que llegue a la inspección ocular luego de finalizado el registro de asistencia no podrá participar de la misma y se entenderá que no compareció.

8. FECHA, HORA Y MODO DE ENTREGAR LA OFERTA

Las ofertas tienen que ser presentadas en o antes del **jueves, 21 de marzo de 2024, a las 10:00 am**, de las siguientes **dos (2) formas**:

1. **Físicamente**, en la Oficina de la Junta de Subastas, localizada en el Centro Gubernamental Minillas, Torre Norte, Piso 12, San Juan, Puerto Rico; y,
2. **Electrónicamente**, utilizando el enlace <https://asg.pr.gov/subastas>, identificando el número de Subasta de referencia y cargando su oferta en la sección de “documentos”.

El Licitador que no presente su oferta en las dos (2) formas aquí requeridas será descalificado. No se aceptarán ofertas físicas después de la fecha y hora límite establecida para la entrega de ofertas.

El sobre que contenga la oferta que se presentará físicamente deberá identificarse de la siguiente forma: **“Atención: Oferta de Subasta Formal Núm. 24J-08889-R1”**. Además, el sobre deberá incluir la siguiente información: nombre del licitador, nombre de la compañía que representa, dirección postal y número de teléfono de contacto.

Toda oferta recibida sin identificar según lo aquí establecido será tramitada como correspondencia regular. Bajo esta circunstancia, la Junta de Subastas no será responsable si el remitente pierde su oportunidad de presentar la oferta a tiempo, como tampoco podrá requerir que se tome conocimiento de su oferta o imputar que la oferta haya sido divulgada o abierta antes de tiempo.

Se considerará como **oferta oficial el documento presentado físicamente** en la Oficina de la Junta de Subastas. Al recibirse el sobre que contiene la oferta en la Oficina de la Junta de Subastas, se marcará indicando la fecha y hora exacta en que fue recibido, lo que constituirá la fecha y hora oficial de entrega de la oferta.

Los documentos sometidos mediante el enlace aquí provisto **deberán incluir una copia fiel y exacta de los documentos de oferta entregados físicamente**. La fecha y hora de recibo de la oferta presentada por correo electrónico, será la impresa en el documento. Como excepción, la Junta de Subastas podrá autorizar la entrega



física de anejos complementarios que, por el tamaño de su contenido, sobrepasen el espacio disponible para someter la oferta electrónica.

En el caso de que por alguna razón se haya recibido la oferta de un licitador de forma física, pero no se haya recibido la oferta electrónica a la fecha y hora límite indicadas anteriormente, se le notificará durante el Acto de Apertura al licitador y este tendrá hasta antes de que finalice dicho Acto para enviar la misma.

De ocurrir algún evento natural o circunstancia especial que ocasione el cierre de la Junta e impida el recibo de ofertas en la fecha y hora antes indicada, las ofertas se entregarán en el día en que la Junta reanude sus funciones, a la hora dispuesta originalmente, o a cualquier otra que oportunamente se notifique.

Las ofertas que se reciban físicamente fuera de la fecha y hora límite aquí dispuesta se devolverán al licitador informándole su incumplimiento con las condiciones establecidas y su descalificación. Se retendrá el sobre original de envío de la oferta el cual se hará formar parte del expediente de la subasta.

9. CONTENIDO DE LA OFERTA

Todo licitador o persona interesada presentará **físicamente** su oferta en un sobre sellado en la Oficina de la Junta de Subastas.

El sobre que contenga la oferta que se presentará físicamente y la oferta electrónica, deberán incluir los siguientes documentos:

- a. Fianza de Licitación en **original y firmada** (“*Bid Bond*”). La fianza **ORIGINAL** deberá ser sometida junto con la oferta entregada físicamente.
- b. Anejo I de la Oferta del Licitador. Véase inciso 12.
- c. Anejo II y III, según aplique. Véase inciso 12.
- d. Tabla de Ofertas **provista por la Junta de Subastas**. No podrá ser alterada ni modificada.
- e. Literatura de cada producto ofertado, según aplique.
- f. Carta del manufacturero, según aplique.
- g. Carta de presentación. Véase inciso 20.
- h. Resolución o documento acreditativo vigente del por ciento correspondiente, según establecido en leyes preferenciales y la normativa adoptada a su amparo, y emitido por la Junta de Inversión para la Industria Puertorriqueña, si aplica. Si el licitador no presenta dicho documento **junto con su oferta**, no se aplicará a la oferta presentada el por ciento relacionado.
- i. Cualquier otro documento requerido en este pliego o en las especificaciones adjuntas.

En cumplimiento con la ley federal del “Paperwork Reduction Act of 1995” los licitadores no tendrán que someter con sus propuestas la invitación y el pliego de esta Subasta, salvo los anejos y los documentos indicados en este Pliego o sus anejos. El Licitador podrá ser descalificado de no adjuntar a su oferta los documentos arriba mencionados.



10. CORRECCIONES A LA OFERTA (“*Typos*”)

Toda oferta deberá presentarse en forma legible, clara, completa y precisa. Ofertas múltiples, variadas o ambiguas no serán consideradas. Las correcciones a las ofertas, las cuales surgen como consecuencia de errores, deberán estar refrendadas por el licitador **con su firma o sus iniciales**, de lo contrario, quedará invalidada la oferta para la partida o las partidas correspondientes. No se aceptarán ofertas que incluyan correcciones realizadas con tinta correctiva, tinta blanca, cinta correctiva o “liquid paper”.

11. DIRECCIONES EN LA OFERTA

La oferta deberá contener la dirección física y postal de la oficina principal del negocio del licitador en Puerto Rico, así como también, el nombre y la dirección del agente residente de la corporación, cuando aplique.

12. FIRMAS EN LA OFERTA

Las ofertas deberán estar refrendadas (bajo la firma) por el licitador que aparece registrado en el RUL, en el espacio provisto para ello en el formulario identificado como **ANEJO I** de este pliego de subasta formal, **“Oferta del Licitador”**. En caso de que el licitador no esté registrado en el RUL, la oferta deberá estar refrendada por la persona que someterá todos los documentos requeridos ante el RUL. Se autoriza la firma electrónica del Licitador en la oferta presentada, en virtud de lo establecido en la Carta Circular ASG Núm. 2020-014 del 19 de mayo de 2020. Los Licitadores no registrados en el RUL, deberán cumplimentar y acompañar su Oferta con el Formulario **ANEJO 2 ó ANEJO 3, según corresponda**, los cuales se hacen formar parte de este pliego.

No cumplir con estos requisitos constituirá el rechazo de la oferta.

13. MODIFICACIONES A LAS OFERTAS

Cualquier modificación **que varíe los términos de la oferta previamente sometida** se hará mediante comunicación escrita la cual deberá ser presentada ante la Junta de Subastas y deberá enviarse en un sobre cerrado, debidamente identificado con la información siguiente:

- a) Número de la subasta
- b) Fecha
- c) Hora señalada para la entrega de la oferta
- d) Nombre y dirección del suplidor
- e) Información en que se indique las razones para la modificación de la oferta

No se admitirán modificaciones presentadas luego de la fecha límite establecida para la presentación de las ofertas.

Toda modificación de oferta será abierta en la fecha y hora señalada para el acto de apertura de la subasta, juntamente con la licitación original.



Cuando la oferta sea modificada, si esto conllevará un aumento en precio de la oferta original, será obligación del licitador, ajustar la fianza de acuerdo con la nueva cuantía. De no hacerlo así, se rechazarán ambas ofertas.

14. RETIRO DE LA OFERTA

- a) El retiro de una oferta podrá efectuarse mediante solicitud escrita dirigida a la Junta de Subastas, presentada en cualquier momento previo al acto de apertura.
- b) El licitador no podrá presentar una oferta sustituta, una vez retirada su oferta para una compra determinada.
- c) **Ningún licitador podrá retirar su oferta con posterioridad al acto de apertura de una subasta.**

15. FECHA Y HORA DEL ACTO DE APERTURA

Las ofertas se abrirán el **jueves, 21 de marzo de 2024, a las 11:00 am**. Todo licitador o persona interesada en comparecer al acto de apertura, el cual **se realizará de modo virtual**, podrá acceder al mismo a través de la página “web” de la ASG, en el área de “Adquisiciones”, en la sección de “Subastas/Licitaciones”. Además, deberá acceder al enlace de la subasta formal de referencia, el cual le proveerá la opción de conectividad al **“Acto de Apertura Virtual”**.

Toda oferta presentada dentro del término dispuesto para la entrega estará bajo la custodia de la Junta de Subastas y **bajo ninguna circunstancia** se abrirá hasta la fecha y hora fijada para el acto de apertura.

Si antes de la fecha del acto de apertura y por razones fuera del control de la Junta de Subastas o de la ASG el sobre resultare abierto, violentado, o deteriorado, la Junta de Subastas se comunicará con el licitador concernido para que éste verifique personalmente el sobre y los documentos que contiene y los vuelva colocar en otro sobre sellado, debidamente identificado, y entregue formalmente la licitación. La fecha de entrega será la fecha de recibo original. El secretario de la Junta de Subastas preparará un acta de las incidencias a la cual unirá el sobre abierto, deteriorado o violentado y el licitador firmará al calce del acta indicando la fecha y la hora de la inspección del sobre.

El acto de apertura público tiene como propósito el que las partes interesadas puedan comprobar qué ofertas se recibieron y conocer la cuantía de cada oferta. El acto de apertura será dirigido por un miembro asociado de la Junta de Subastas o su representante autorizado.

Toda persona que comparezca virtualmente al acto de apertura deberá observar las normas de conducta que establezca durante dicho acto la Junta de Subastas.



16. MARCA, MODELO Y LITERATURA

En aquellas subastas donde aplique, el Licitador indicará en su oferta la **marca y modelo de los bienes incluidos en su oferta**. También **incluirá con su oferta literatura** que permita validar que los bienes ofertados cumplen con las especificaciones requeridas en el pliego de subasta formal.

A menos que se indique la necesidad de que el bien sea de una marca y modelo específico, cualquier mención sobre estas será a manera de referencia, y los licitadores podrán ofrecer bienes o productos de igual o similar calidad, siempre que cumplan con las especificaciones mínimas.

17. REPRESENTANTE EXCLUSIVO

Si el licitador que ofrece una marca específica es el **representante exclusivo de dicha marca**, tendrá la obligación de mencionarlo en la oferta y remitir la certificación del manufacturero.

18. INFORMACIÓN CONFIDENCIAL

Las ofertas presentadas por los licitadores serán parte del expediente de la subasta en la cual éstos participaron y pasarán a ser propiedad de la Administración, independientemente de que se cancele o adjudique la subasta formal. No obstante, la información confidencial constitutiva de secretos de negocio o cualquier otra información protegida por derechos de autor, entre otras disposiciones legales, no podrá ser divulgada por la Administración, por la Junta de Subastas u otra entidad gubernamental.

Toda información que constituya información confidencial y protegida deberá ser anejada a la oferta por el licitador en una hoja individual que deberá titularse “Información Confidencial y Protegida”.

19. DOCUMENTOS

Todos los documentos deben ser presentados en papel tamaño carta, entiéndase, tamaño 8 ½ pulgadas por 11 pulgadas.

20. CARTA DE PRESENTACIÓN

La carta de presentación debe ser clara, concisa, e incluir suficientes detalles para la realización de una evaluación efectiva. El licitador debe asumir que el Gobierno no tiene conocimiento previo sobre su experiencia y tampoco sobre sus prácticas de negocio. Además, la carta de presentación deberá incluir, una breve descripción de lo siguiente:

- a) Desempeño pasado: De haber suplido bienes, de haber realizado obras o de haber prestado servicios no profesionales iguales, similares o relacionados a los requeridos en este pliego de subasta formal, deberá proveer el listado de los clientes del sector público y privado a quienes en los pasados dos (2) años suplió los bienes, realizó las obras o prestó los servicios. Deberá proveer además la información de contacto de dichos clientes.



- b) Capacidad técnica: Deberá detallar la capacidad, enfoque y conocimientos necesarios (entre otros aspectos técnicos o de logística) que posee su empresa, industria o negocio para cumplir con la provisión de los bienes, realización de obras o prestación de servicios no profesionales ofertados.
- c) Cualquier otra información que el licitador entienda pertinente que la Junta de Subastas deba conocer, para la evaluación correspondiente.

La carta de presentación deberá estar firmada por la persona autorizada en el RUL a esos efectos o por la persona que presentará sus documentos en el RUL (en caso de que no esté registrado). El desempeño pasado y la capacidad técnica serán tomadas en consideración por la Junta de Subastas como parte de los criterios para determinar el *mejor valor*.

La Junta de Subastas y la ASG se reservan el derecho de solicitar a los licitadores, sus clientes o a terceros (incluidos o no por el licitador como referencia) información adicional para corroborar la información suscrita por el licitador en su carta de presentación.

21. ADVERTENCIAS

- a. Proveer cualquier tipo de información o documentación falsa o fraudulenta como parte de la oferta presentada para esta subasta formal, será causa suficiente para descalificar o rechazar la oferta de cualquier licitador, así como para cancelar o resolver cualquier orden de compra o contrato otorgado en virtud de esta.
- b. La ASG podrá ordenar la cancelación parcial o total de la subasta formal cuando ello sirva los mejores intereses del Gobierno de Puerto Rico, independientemente de la fase en que se encuentre, siempre que sea previo a la formalización del contrato o de haberse emitido una orden de compra.
- c. La ASG podrá enmendar cualquier invitación o pliego de la subasta formal cuando ello sirva los mejores intereses del Gobierno de Puerto Rico.

La ASG podrá enmendar el pliego de la subasta formal hasta dos (2) días laborables antes del acto de apertura de las ofertas cuando la enmienda implique cambios o solicitudes adicionales que se deben incluir en la oferta o licitación o, un (1) día laborable antes del acto de apertura de la subasta cuando la enmienda no afecte la presentación de las ofertas.

En casos de **proyectos de obras de construcción** la ASG podrá enmendar el pliego de la subasta formal hasta cinco (5) días laborables antes del acto de apertura de las ofertas cuando la enmienda implique cambios o solicitudes adicionales que se deben incluir en la oferta o licitación o tres (3) días laborables antes del acto de apertura de la subasta cuando la enmienda no afecte la presentación de las ofertas.

- d. Ni la Junta de Subastas ni la ASG aceptarán una fianza por una cantidad menor a la aquí establecida. De ser presentada mediante compañía de seguros, la fianza será emitida a favor de la Administración de Servicios Generales y de ser presentada en cheque certificado o giro postal, será emitida a favor del



Secretario de Hacienda. El incumplimiento con este requisito conllevará el rechazo de la oferta. Cualquier oferta que no incluya entre los documentos presentados la correspondiente Fianza de Licitación en **ORIGINAL Y DEBIDAMENTE FIRMADA**, será rechazada.

- e. La Junta de Subastas y la ASG darán fiel cumplimiento a la política pública de compras preferenciales dispuesta en ley.
- f. El Licitador a quien se adjudique la *buena pro* de esta subasta formal, quedará sujeto a lo establecido en la ***Política de Revisión de Contratos*** suscrita por la Junta de Administración y Supervisión Fiscal.
- g. La adjudicación de la presente subasta formal no obliga de ningún modo a la ASG a emitir una Orden de Compra o suscribir un Contrato.
- h. En caso de que los bienes, obras o servicios no profesionales a ser adquiridos en esta subasta formal sean parcial o totalmente financiados con fondos federales, el licitador deberá estar registrado y elegible en el ***System for Award Management (SAM)*** al momento de suscribir el contrato o emitirse la orden de compra. De no estar registrado y ser elegible, será descalificado.
- i. La adjudicación de la presente subasta formal no constituirá el acuerdo formal entre las partes. Será necesario que se suscriba el contrato correspondiente o que la Administración emita una orden de compra suscrita por una persona autorizada.
- j. Todo licitador que ofrezca equipo, maquinaria o vehículo que consuma energía eléctrica o combustible para su operación, al hacer su oferta, deberá hacer constar que su equipo, maquinaria o vehículo cumple con los requisitos establecidos por la ***Ley Federal de Conservación de Energía***. Al adjudicarse estas subastas, la Junta de Subastas se atenderá a las normas federales de consumo, conservación y utilidad del bien que se trate y **no será causa de impugnación** el adjudicar la subasta a un licitador que ofrezca un bien más caro si los ofrecidos por los demás licitadores no cumplen con las normas establecidas por dicha Ley.

II. OFERTAS ADMISIBLES E INADMISIBLES

1. UNIDAD DE PRECIO OFERTADO

La oferta deberá hacerse en dólares y centavos. No serán consideradas ofertas que se expresen en términos de por ciento, en referencia a posibles precios indeterminados, o cantidad de dinero o por cientos “menores” o “en exceso” de la oferta más baja, salvo que así sea dispuesto y requerido en el pliego de la subasta.

2. OFERTAS NO RESPONSIVAS O INACEPTABLES

Al hacer su oferta, el licitador se limitará a ofrecer u ofertar lo que se le solicita dentro de las especificaciones y las condiciones establecidas en el pliego de subasta. Las especificaciones establecen requisitos mínimos. **Cualquier oferta que sobrepase las especificaciones solicitadas podrá ser aceptada, siempre y cuando**



no altere sustancialmente las características de los bienes, obras o servicios no profesionales solicitados en el pliego de subasta formal, de forma tal que pueda interpretarse como *competencia desleal*.

La Junta de Subastas no considerará las ofertas que añadan o eliminen especificaciones o condiciones requeridas en el pliego de subasta, o que las alteren, modifiquen o varíen. Tampoco se considerarán las ofertas que contengan frases, párrafos o comentarios ambiguos, incompletos, indefinidos o que resten certeza a la oferta.

3. DESVIACIONES PERMISIBLES

La Junta de Subastas podrá aceptar desviaciones mínimas en las especificaciones, términos y condiciones de las ofertas recibidas, cuando:

- a. ningún licitador ofrezca el bien o servicio no profesional con las especificaciones requeridas;
- b. no se afecte el propósito original a que está destinada la subasta; y,
- c. el precio cotizado sea competitivo y comparable con el prevaleciente en el mercado.

La Junta de Subastas se reserva el derecho de obviar cualquier informalidad o diferencia de menor importancia en los términos y condiciones si cumple con el propósito para el que se solicitan y resulta beneficioso para el Gobierno de Puerto Rico. Las desviaciones no podrán afectar sustancialmente la calidad, capacidad o características esenciales de los artículos o servicios solicitados.

4. OFERTAS INCOMPLETAS

Ofertas en las que no se completen todos los encasillados incluidos en la “Tabla de Ofertar” podrán ser **rechazadas**. En caso de que el Licitador no desee ofertar para una partida particular, deberá anotar en el encasillado “N/B” – (NO BID).

5. VARIAS OFERTAS POR UN MISMO LICITADOR

No podrá un licitador o empresa comercial someter varias ofertas para una subasta, ya sea a nombre propio o bajo seudónimos, de alguna de sus subsidiarias o sucursales, de algunos o varios de sus socios, agentes, oficiales y entidades a que éstos pertenezcan, porque **se declararán nulas todas y cada una de las ofertas**.

6. RECHAZO GLOBAL

Se podrá rechazar cualquiera o todas las ofertas para una subasta formal en las situaciones siguientes:

- a. Cuando los licitadores no cumplan con alguno de los requisitos, especificaciones o condiciones estipuladas.
- b. Cuando los precios obtenidos sean irrazonables o los términos resulten onerosos para el Gobierno de Puerto Rico.



- c. Cuando las ofertas demuestren que los licitadores controlan el mercado del producto solicitado y se entienda que se han puesto de acuerdo entre sí para ofertar precios excesivos. En tal caso, se realizará el referido correspondiente al Departamento de Justicia.
- d. Si los intereses económicos del Gobierno de Puerto Rico pudiesen verse afectados o no existe el presupuesto necesario para cumplir con la obligación.

7. OFERTA LIMITADA

El licitador que entienda que **solamente puede sostener sus precios por un período de tiempo determinado, así lo hará constar en su oferta**, especificando el término (**fecha exacta; día, mes y año**) durante el cual sostiene o garantiza la misma. En cualquier caso, que el Licitador no especifique el término durante el cual garantiza su oferta, se entenderá que sostiene su oferta (precio ofertado) hasta la firma del contrato o la emisión de la orden de compra.

Se podrá ejecutar la **Fianza de Licitación** si expirado el término de diez (10) días laborables a partir de la notificación de la adjudicación, el licitador agraciado no presenta la Fianza de Ejecución. Además, se podrá ejecutar si el licitador agraciado se niega a firmar el contrato dentro de los diez (10) días laborables siguientes de habersele citado para ello.

8. COMPETENCIA ADECUADA

Todo licitador o persona interesada en participar de la presente subasta formal, **ACEPTA Y RECONOCE** que la ASG emite este pliego con el propósito de **para la adquisición de servicios de remoción de asbesto y plomo y demolición de los Pabellones 1, 2, 3 y 4 y los Edificios Accesorios 1, 2 y 3, adscritos al Departamento de Salud del Gobierno de Puerto Rico.**

El licitador a quien se adjudique la “buena pro” de esta subasta formal no podrá ofrecer a ninguna entidad del Gobierno de Puerto Rico un precio menor al ofertado en este proceso de licitación para el mismo bien, obra o servicio no profesional.

III. CONDICIONES GENERALES

1. TRANSPORTACIÓN, ACARREO Y ENTREGA

Los precios ofertados **incluyen los gastos de transportación y acarreo** hasta la entrega final de los bienes o servicios en el lugar que designe la agencia peticionaria, **libre de cargo adicional para el Gobierno.**

No se autorizará ningún aumento al precio ofertado relacionado a transportación, acarreo y entrega de los bienes, obras o servicios después del término establecido para presentar ofertas. Ello implica que la Administración no considerará solicitudes de enmiendas a contratos u órdenes de compra, presentadas por los licitadores, para aumentar el precio ofertado por dicho concepto (aumento en el mercado en los gastos asociados a transportación, acarreo y entrega) durante el término de la obligación, salvo lo dispuesto en el inciso 3 de la sección III de este pliego.



2. PRECIOS OFERTADOS

Toda persona ofertará basándose en **precios justos y razonables** de conformidad con el tipo de bien, obra o servicio no profesional que se licita.

Los precios ofrecidos por el Licitador **se mantendrán fijos durante la vigencia del contrato** que se otorgue o **durante la vigencia de la orden de compra que se emita**, y no estarán sujetos a cambios por aumento en el mercado o de cualquier otra índole, ya sean previsibles o no, salvo lo dispuesto en el inciso 3 de la sección III de este pliego.

3. AJUSTE DE PRECIO (ESCALATION CLAUSE)

Los precios ofrecidos podrán estar sujetos a cambios por fluctuaciones legales (arbitrios o impuestos), cargos de acarreo en el mercado, o aumento en el precio de la materia prima, siempre y cuando el licitador someta evidencia documentada acreditativa del aumento. El aumento en el precio establecido estará sujeto a la aprobación escrita de la Administración de Servicios Generales. Para disminuir precios bastará con la mera notificación escrita.

4. TÉRMINO DE ENTREGA

El Licitador deberá informar en su oferta el término en que se entregarán los bienes, en que se completarán las obras o se prestarán los servicios incluidos en su oferta indicando los días, semanas o meses. El licitador no podrá incluir ningún costo adicional al precio ofertado por concepto de gastos relativos a la entrega del bien adquirido, no obstante, deberá desglosar el detalle del precio ofertado.

Cuando un licitador indique que su término de entrega es “inmediato” se entenderá que es en las veinticuatro (24) horas próximas a la emisión de la orden de compra o de la orden de comienzo.

Las entidades requirentes podrán establecer el término de entrega de los bienes, obras o servicios licitados, de acuerdo con su necesidad.

La entrega de los bienes, obras o servicios no profesionales se efectuará dentro del término que haya ofertado el Licitador, a partir del recibo de la orden de compra o de la emisión de la orden de comienzo para las obras de construcción.

5. ALMACENAJE

En caso de que el licitador que venda al Gobierno de Puerto Rico tuviera que almacenar los suministros a entregar, el Gobierno no será responsable del precio que pague el licitador por concepto de almacenaje ni por las ganancias que deje de obtener.



6. ARBITRIOS

En proyectos de obras de construcción a ser realizadas en un lugar predeterminado (según establecido en el pliego), el licitador deberá considerar **dentro del precio ofertado**, los costos relacionados al pago de arbitrios, patentes o cualquier otro permiso necesario para la realización de la obra.

7. MUESTRAS

En caso de que la Junta de Subastas requiera muestras representativas de los bienes ofertados, el Licitador hará entrega de estas, en la Oficina de la Junta de Subastas dentro del término indicado en la notificación o en el Pliego de la Subasta.

Las muestras solicitadas se proveerán:

- a. Libre de costo para el Gobierno;
- b. Con las características en las especificaciones requeridas;
- c. Provistas del marbete original que identifica la marca del producto y en el envase o empaque comercial original;
- d. Acompañadas de la literatura del manufacturero.

En el caso que la muestra requerida no sea entregada por el Licitador dentro del término establecido, **será descalificado**.

Si dentro del proceso del examen de las muestras éstas se destruyen o se gastan, el Gobierno no responderá por el costo de éstas.

Si luego del examen, las muestras no se destruyen o no se gastan en su totalidad, el licitador viene obligado a recogerlas dentro de los diez (10) días de haber sido notificado por cualquier medio (teléfono o correo electrónico) para ello. Si transcurrido dicho término, el licitador no pasa a recoger las muestras, éstas pasarán a ser propiedad del Gobierno.

En caso del licitador agraciado, sus muestras podrán retenerse para la adecuada administración del contrato. En el caso que se le devuelvan éstas, el licitador agraciado tendrá que tenerlas disponible para inspección en cualquier momento durante la vigencia del contrato.

Las muestras sometidas a evaluación serán representativas del producto que se ofrece y estarán identificadas por renglón, partida, tipo, calidad, estilo y tamaño, así como el número de la subasta y el nombre del licitador.

8. GARANTÍA

Según aplique, el licitador deberá incluir con su oferta, copia de la garantía, emitida por el manufacturero del producto y servicio, la cual detalle el período específico o los términos aplicables a cada garantía, su vigencia, términos, sus limitaciones y condiciones, los trámites requeridos para reclamar la garantía (en aquellos casos,



donde el Pliego no disponga el trámite para los reclamos), el nombre de la entidad que proveerá el servicio de reemplazo, subsanación, corrección o reparación del producto o el servicio y los términos de entrega e instalación del producto o servicio.

La garantía del producto o servicio deberá detallar qué incluye. El licitador se obligará a honrar la garantía suscrita con la oferta o propuesta, así como la garantía dispuesta por el fabricante.

El contratista agraciado prestará directamente la garantía. El contratista agraciado tendrá un término de siete (7) días contados a partir de que la Agencia Requiriente le someta la reclamación de garantía por escrito para evaluarla y proceder con los arreglos correspondientes.

El licitador deberá asumir los costos relacionados a la garantía, incluidos los gastos de transporte o envío.

Se considerará de manera preferente la garantía prestada por un fabricante de Puerto Rico a la garantía prestada por un fabricante del exterior.

Todo licitador vendrá obligado a honrar al Gobierno de Puerto Rico la garantía del fabricante, si alguna, independientemente de si se compra o no a través de un distribuidor.

En las “Especificaciones” y “Condiciones Especiales” de este pliego de subasta formal se podrá establecer la garantía mínima (periodo mínimo de garantía) que requiere la ASG para el bien, obra o servicio.

En la columna identificada como “Garantía” incluida en la Tabla de Ofertar, el licitador hará constar la garantía ofrecida para el bien, obra o servicio ofertado (qué incluye y el periodo de garantía): el licitador podrá ofrecer mayor garantía a la requerida por la ASG, pero no podrá ofrecer una garantía menor.

El ofrecimiento por parte del licitador de una garantía menor a la requerida por la ASG para el bien, obra o servicio podrá conllevar el rechazo de la oferta.

En cualquier caso, que, en las “Especificaciones” y “Condiciones Especiales” de este pliego de subasta formal la ASG no establezca garantía mínima para el bien, obra o servicio, SERÁ OBLIGACIÓN DEL LICITADOR detallar en la Tabla de Ofertar la garantía incluida para el bien, obra o servicio ofertado.

En cualquier caso, que, en las “Especificaciones” y “Condiciones Especiales” de este pliego de subasta formal la ASG se establezca garantía mínima para el bien, obra o servicio, y el licitador no indique un término distinto en la Tabla de Ofertar, se entenderá que con la firma de la Oferta acoge dicha garantía mínima como suya.

SERÁ OBLIGACIÓN DEL LICITADOR detallar en la Tabla de Ofertar la garantía incluida para el bien, obra o servicio ofertado en término de días, meses, semanas o años.



9. EVALUACIÓN Y ADJUDICACIÓN

A. EVALUACIÓN

Al evaluar las ofertas el Especialista de Compras y Subastas o el Comité Evaluador de Subastas podrán tomar en consideración los siguientes criterios:

- a. La exactitud con la cual el licitador ha cumplido con las especificaciones, los términos y las condiciones del pliego de la subasta formal.
- b. La calidad de los bienes, obras y servicios no profesionales ofrecidos y cómo éstos cumplen con las especificaciones y satisfacen las necesidades establecidas. En las situaciones en que se efectuaron pruebas con muestras suministradas por el licitador, se incluirá la evaluación de la muestra del bien entre los aspectos de este criterio de calidad.
- c. Si el precio es competitivo y comparable con el prevaleciente en el mercado. Además, aplicará el porcentaje (%) de preferencia establecido si la persona o la entidad ha presentado una Resolución de la Junta para la Inversión en la Industria Puertorriqueña o cualquier documento acreditativo de preferencia, según dispuesto en leyes preferenciales, salvo que la subasta sea sufragada en todo o en parte con fondos federales.
- d. La experiencia del licitador para llevar a cabo trabajos de la naturaleza bajo consideración en obras y servicios no profesionales.
- e. El término de entrega más próximo.
- f. La capacidad económica y financiera, así como la trayectoria y experiencia previa del licitador para proveer estos servicios o bienes y cumplir con los términos de entrega y garantías del producto o servicio.
- g. El período específico o los términos aplicables a cada garantía, sus limitaciones y condiciones, los pasos requeridos para reclamar la garantía, qué entidad proveerá el servicio de reemplazo, subsanación, corrección o reparación del bien o el servicio.
- h. Si el licitador es empresa minoritaria o de mujeres, u otra para la cual se deba considerar bajo cualquier ley aplicable, salvo que la subasta sea sufragada en todo o en parte con fondos federales.
- i. Cualquier otro criterio pertinente que represente el mejor valor para el Gobierno de Puerto Rico.

La Junta de Subastas examinará y evaluará todas las ofertas presentadas antes de adjudicar la subasta. En cualquier momento durante el periodo de evaluación, la Junta por medio de la Secretaría de la Junta podrá comunicarse con los licitadores o citar a reuniones públicas para obtener aclaraciones sobre las ofertas. Esto se hará constar en el expediente. El propósito de estas aclaraciones no es obtener información adicional que no se presentó originalmente en la oferta, sino obtener una mejor comprensión del contenido proporcionado.



La evaluación o recomendación del Especialista en Compras y Subastas o del Comité Evaluador formará parte del expediente de la subasta.

La Junta de Subastas no estará obligada a acoger la evaluación y recomendación del Especialista en Compras y Subastas o del Comité Evaluador, si a su entender esta no representa el mejor valor para el Gobierno de Puerto Rico, y así lo hará constar en su Resolución de Adjudicación.

La Junta de Subastas adjudicará la *buena pro* al licitador responsivo que haya ofertado el mejor valor. **El mejor valor no necesariamente será la oferta o propuesta que presente el más bajo costo o precio.**

B. ADJUDICACIÓN

Una vez adjudicado un asunto ante la consideración de la Junta de Subastas, se notificará la determinación final mediante Resolución o Aviso de Adjudicación. La Resolución de Adjudicación será notificada adecuadamente, mediante correo federal certificado con acuse de recibo o correo electrónico, a todas las partes que tengan derecho a impugnar tal determinación, entendiéndose, a todos los licitadores presentaron oferta. Cuando se notifique por correo electrónico, se utilizará el correo electrónico dispuesto por el licitador en el Anejo I. Cuando no se haya establecido correo electrónico en el Anejo I, se notificará al correo electrónico registrado por el licitador en el RUL.

La notificación de la adjudicación de la subasta **no constituirá un acuerdo formal entre las partes. Será necesario que se suscriba el contrato correspondiente o se emita una orden de compra.**

10. COMPROMISO POR ADJUDICACIÓN

Ningún Licitador estará autorizado a entregar bienes, realizar obras u ofrecer servicios sin haberse otorgado un contrato o sin que se haya emitido una orden de compra o ambos, según determinado por la ASG.

No se considerará al Gobierno de Puerto Rico comprometido ni de ningún modo obligado por adjudicación alguna, hasta tanto se haya formalizado el correspondiente contrato o se haya emitido la orden de compra, o ambos, según determinado por la ASG.

11. REVISIÓN ADMINISTRATIVA

La parte adversamente afectada por una decisión de la Junta de Subastas podrá, dentro del término de diez (10) días laborables a partir del depósito en el correo federal o correo electrónico notificando la adjudicación de la subasta, presentar una solicitud de revisión ante la Junta Revisora de Subastas de la Administración de Servicios Generales.

Si la fecha de archivo en autos de la copia de la notificación de la determinación final de la adjudicación es distinta a la del depósito en el correo federal o correo electrónico, el término se calculará a partir de la fecha del depósito en el correo federal o del correo electrónico.



a) Notificación de la Presentación de Revisión Administrativa

La parte recurrente notificará copia de la solicitud de revisión administrativa a la Administración de la ASG y a la Junta de Subastas. Simultáneamente, notificará también al proveedor que obtuvo la buena pro en la subasta. Este requisito es de carácter jurisdiccional. En el propio escrito de revisión, la parte recurrente certificará a la Junta Revisora su cumplimiento con este requisito. La notificación deberá hacerse por correo certificado con acuse de recibo y correo electrónico. La parte recurrente deberá notificar, además, a todos los licitadores que participaron de la subasta.

12. CANTIDADES A SER COMPRADAS

La orden de compra emitida indicará las cantidades específicas de los bienes, obras o servicios a ser adquiridos.

13. MODO DE FACTURAR

Toda factura para el cobro de bienes, obras o servicios que se presente ante las agencias deberá contener la siguiente certificación:

Bajo pena de nulidad absoluta certifico que ningún servidor público (del Gobierno de Puerto Rico o indicar nombre de la agencia que emite le orden de compra) es parte o tiene algún interés en las ganancias o beneficios producto del contrato objeto de esta factura y de ser parte o tener interés en las ganancias o beneficios productos del contrato, ha mediado una dispensa previa. La única consideración para suministrar los bienes o servicios objeto del contrato ha sido el pago acordado con el representante autorizado de la (agencia que emite la orden de compras). El importe de esta factura es justo y correcto, los trabajos han sido realizados, los productos han sido entregados y los servicios han sido prestados y no se ha recibido pago por ellos.

14. PAGOS

Las agencias procesarán el pago conforme a lo dispuesto por el Departamento de Hacienda o las disposiciones aplicables. Será responsabilidad de las agencias exigirle al proveedor que entregue las facturas en o antes de diez (10) días después de la finalización, período o fecha de entrega del bien o servicio.

15. LEY DE PREFERENCIA

Salvo que la subasta sea sufragada en todo o en parte con fondos federales, y existan excepciones, la ASG y la Junta cumplirán cabalmente con las políticas de preferencia, consagradas en las siguientes disposiciones legales:

- Ley 14-2004, según enmendada, conocida como “Ley para la Inversión de la Industria Puertorriqueña”;
- Ley 129-2005, según enmendada, conocida como “Ley de Reservas en las Compras del Gobierno del Estado Libre Asociado de Puerto Rico”;



- Ley 253-2006, conocida como “Ley de Contratos de Selección Múltiple en los Procesos de Compras”;
- Ley 42-2018, según enmendada, conocida como “Ley de Preferencia para Contratistas y Proveedores Locales de Construcción”.

a. USO DEL POR CIENTO DE PREFERENCIA: El Licitador que interese se le reconozca el por ciento (%) de preferencia asignado, presentará la resolución vigente otorgada por la Junta de Inversión en la Industria Puertorriqueña, por la Compañía de Comercio y Exportación de Puerto Rico o cualquier otro organismo rector juntamente con su oferta, en aras de validar su preferencia. La resolución deberá disponer el renglón o renglones a los cuales se les ha concedido la preferencia.

b. CESIÓN DEL POR CIENTO DE PREFERENCIA: La empresa que haya obtenido el por ciento de preferencia por concepto de manufactura para alguno de sus productos, podrá cederlo a sus agentes establecidos en Puerto Rico mediante carta notariada en la que indique expresamente que le está cediendo a cada agente el por ciento de preferencia otorgado para dicho producto por la Junta de Inversión en la Industria Puertorriqueña o cualquier otro organismo rector. Dicha carta tendrá que estar aprobada y sellada con el sello oficial de la entidad gubernamental que la emite.

c. APLICACIÓN DEL POR CIENTO DE PREFERENCIA: Se aplicará el por ciento (%) de preferencia a los precios ofertados por el licitador para los bienes, obras o servicios.

d. RESOLUCIÓN EMITIDA ACTUALIZADA: En toda compra que se realice bajo un contrato u orden de compra producto de este pliego de subasta, el Licitador que haya obtenido un por ciento (%) preferencial para sus productos, deberá presentar al momento de cada compra, la resolución vigente emitida por la Junta de Inversión en la Industria Puertorriqueña, por la Compañía de Comercio y Exportación de Puerto Rico, o cualquier otro organismo rector. De no presentar la resolución vigente, no podrá disfrutar de los beneficios de dichas leyes.

16. FIANZAS O GARANTÍAS

a. FIANZA DE LICITACIÓN (“*Bid Bond*”)

La fianza de licitación será un respaldo provisional que prestará el Licitador con el propósito de asegurarle al Gobierno de Puerto Rico que habrá de sostener su oferta durante todo el procedimiento de la subasta.

Para esta subasta formal se requiere una **fianza de licitación de un cinco (5) por ciento del precio total de la oferta presentada por el licitador**. Ni la Junta de Subastas ni la ASG aceptarán una fianza por un monto menor al aquí establecido o a nombre de otra entidad distinta a la Administración de Servicios Generales o Secretario de Hacienda, según sea el caso. Si la fianza de licitación se presenta a través de una compañía de seguros, la fianza se emitirá a favor de la Administración de Servicios Generales; si la fianza de licitación se presenta mediante cheque certificado o giro postal, se emitirá a favor del Secretario de Hacienda.



La fianza de licitación se presentará simultáneamente con la oferta sometida por el licitador físicamente; **en cualquier caso, que el licitador no presente el documento o instrumento acreditativo de la fianza de licitación en ORIGINAL y FIRMADO será descalificado. La fianza de licitación deberá tener una vigencia de ciento ochenta (180) días.**

El incumplimiento de este requisito dará lugar al rechazo de la oferta y la descalificación del licitador.

Cuando se suscriba el contrato o se emita la orden de compra, según aplique, la Junta de Subastas, devolverá todas las fianzas de licitación presentadas, incluida la del licitador agraciado a quien se le haya adjudicado la “buena pro”.

La ASG podrá ejecutar la Fianza de Licitación si expirado el término de diez (10) días laborables a partir de la notificación de la adjudicación, el licitador agraciado no presenta la Fianza de Ejecución. Además, se podrá ejecutar si el licitador agraciado se niega a firmar el contrato dentro de los diez (10) días laborables siguientes de habersele citado para ello.

b. FIANZA DE EJECUCIÓN Y PAGO ("Performance & Payment Bond")

El Licitador a quien se adjudique la “buena pro” de la subasta formal, deberá presentar una fianza de ejecución y pago en **ORIGINAL** ante la Junta de Subastas, **no más tarde de los diez (10) días laborables siguientes a la notificación de la adjudicación.**

Dicha fianza garantizará la ejecución del contrato u orden de compra, según aplique.

Para esta subasta se requiere una **Fianza de Ejecución y Pago de cien (100) por ciento de la oferta adjudicada.** Ni la Junta de Subastas ni la ASG no aceptará una fianza por un monto menor al aquí establecido o a nombre de otra entidad distinta a la Administración de Servicios Generales o Secretario de Hacienda, según sea el caso. Si la fianza de ejecución se presenta a través de una compañía de seguros, la fianza se emitirá a favor de la Administración de Servicios Generales endosando a la Entidad Peticionaria; si la fianza de ejecución se presenta mediante cheque certificado o giro postal, se emitirá a favor del Secretario de Hacienda. **La fianza de ejecución deberá tener una vigencia igual al término del contrato o al término licitado para la culminación de la obra.**

Se podrá ejecutar la Fianza de Ejecución y Pago si transcurrido el término dispuesto en la oferta, el licitador agraciado no entrega los bienes, no honra las garantías o no cumple las obligaciones según contratadas, por causas imputables a éste, o si el licitador adeudase cualquier suma a cualquier persona que le haya prestado servicios de mano de obra o que le haya suministrado materiales para la realización y cumplimiento de la obra objeto del contrato. Además, el licitador tendrá que responder económicamente por la diferencia en precio se adjudique en segunda instancia o del precio que se obtenga mediante compra excepcional. Si la fianza no cubre dicho exceso, se reclamará el balance al licitador concernido.



17. ENTREGA TARDÍA DE BIENES O EN LA RENDICIÓN DE SERVICIOS NO PROFESIONALES

El licitador con quien la Administración o cualquier entidad gubernamental perfeccione un contrato o al licitador a quien se emita una orden de compra, vendrá obligado a suministrar el bien mueble o servicio ordenado de conformidad con los términos de entrega, especificaciones y otras condiciones estipuladas. Habido incumplimiento del contrato de parte del licitador por retraso en la entrega del bien mueble o servicio no profesional contratado, la Oficina de Finanzas, al momento de tramitar el pago, podrá hacer un descuento del medio por ciento del valor del contrato incumplido por cada día laborable de retraso; entendiéndose que en ningún momento el importe total a ser descontado por daños y perjuicios excederá el diez por ciento (10%) del importe del contrato para la partida correspondiente. Igualmente, la fianza que garantiza la ejecución del contrato responderá del pago de daños y perjuicios.

La penalidad por entrega tardía de un proyecto de obra de construcción se fijará según dispone el Reglamento Núm. 9230, *supra*.

En aquellas subastas sufragadas en todo o en parte con fondos federales, aplicará los dispuesto en la regulación federal.

18. PENALIDADES AL LICITADOR POR INCUMPLIMIENTO DE CONTRATO

El Administrador de la ASG, ante el incumplimiento de contratos y determinación de falta de responsabilidad económica o de otra índole por parte de los contratistas, podrá imponer las penalidades o medidas que estime adecuadas para la protección del interés público, incluyendo, pero sin limitarse a: la confiscación de la fianza o fianzas depositadas en garantía, y; la eliminación del Registro Único de Licitadores (RUL) por el tiempo que estimare pertinente, el nombre de cualquier persona natural o jurídica que incumpliere un contrato o que en otra forma incurra en violación a los términos de la orden.

Además, la ASG se reserva el derecho de aplicar cualesquiera otras sanciones, según provistas en el Reglamento antes mencionado, en la Ley 73-2019, según enmendada, así como también, las pactadas en el contrato otorgado u orden de compra emitida.

Las medidas tomadas en caso de incumplimiento serán impuestas solamente por la ASG, previa investigación de los hechos, mediando notificación adecuada y en observancia del debido proceso de ley. **En aquellas subastas sufragadas en todo o en parte con fondos federales, aplicará los dispuesto en la regulación federal, cuando sea incompatible con lo aquí dispuesto.**

19. CANCELACIÓN DE ORDEN DE COMPRA POR NEGATIVA A ENTREGAR LOS BIENES, NEGATIVA A REALIZAR LA OBRA O NEGATIVA A PRESTAR LOS SERVICIOS CONTRATADOS

Si el licitador se niega a entregar los bienes ordenados, se niega a realizar la obra contratada o se niega a prestar los servicios contratados, la Administración podrá cancelar la orden de compra o contrato relacionado. También podrá emitir una nueva orden de compra u otorgar un contrato que considere los mismos bienes,



obras o servicios a favor de otro licitador, sin perjuicio de la aplicación de cualesquiera otras medidas dispuestas en otras disposiciones legales relacionadas a incumplimiento contractual.

20. CERTIFICACIONES

El licitador deberá incluir con su oferta, **según sea requerido en este pliego de subasta formal**, aquellas certificaciones o licencias necesarias requeridas para suplir los bienes, realizar las obras o realizar las prestaciones de servicios considerados en las especificaciones.

Todo licitador deberá cumplir con lo siguiente:

A. CÓDIGO DE ÉTICA PARA CONTRATISTAS:

Todo Licitador deberá cumplir con lo establecido en la Ley Núm. 2-2018, según enmendada, conocida como ***“Código Anticorrupción para el Nuevo Puerto Rico”***. Será requisito indispensable para contratar con el Gobierno que toda persona se comprometa a registrarse por las disposiciones del Código de Ética establecido en la ley de referencia.

Además, la persona natural o jurídica que desee participar de la adjudicación de una subasta o en el otorgamiento de algún contrato, con cualquier agencia o instrumentalidad gubernamental, corporación pública, municipio, o con la Rama Legislativa o Rama Judicial, para la realización de servicios o la venta o entrega de bienes, **someterá una declaración jurada**, ante notario público, en la que informará si la persona natural o jurídica o cualquier presidente, vicepresidente, director, director ejecutivo, o miembro de una junta de oficiales o junta de directores, o personas que desempeñen funciones equivalentes para la persona jurídica, ha sido convicta o se ha declarado culpable de cualquiera de los delitos enumerados en la Sección 6.8 de la Ley 8-2017, según enmendada, conocida como ***“Ley Administración y Transformación de los Recursos Humanos en el Gobierno de Puerto Rico”***, o por cualquiera de los delitos contenidos en dicho Código. **La declaración jurada se deberá someter solo en aquellos casos donde el licitador no este registrado en el RUL o no tenga el RUL vigente.**

Cualquier persona, sea natural o jurídica, que haya sido convicta por: infracción a los Artículos 4.2, 4.3 o 5.7 de la Ley 1-2012, conocida como ***“Ley Orgánica de la Oficina de Ética Gubernamental”***, por infracción a alguno de los delitos graves contra el ejercicio del cargo público o contra los fondos públicos de los contenidos en los Artículos 250 al 266 de la Ley 146-2012, según enmendada, conocida como ***“Código Penal de Puerto Rico”***, por cualquiera de los delitos tipificados en el Código o por cualquier otro delito grave que involucre el mal uso de los fondos o propiedad pública, incluyendo sin limitarse los delitos mencionados en la Sección 6.8 de la Ley 8-2017, estará inhabilitada de contratar o licitar con cualquier agencia ejecutiva del Gobierno de Puerto Rico por el término aplicable bajo el Artículo 6.8 de la Ley 8-2017. Cuando no se disponga un término, la persona quedará inhabilitada por diez (10) años contados a partir de la fecha en que termine de cumplir la sentencia.

Todo contrato deberá incluir una cláusula de resolución en caso de que la persona que contrate con las agencias ejecutivas resultare convicta, en la jurisdicción estatal o federal, por alguno de los delitos que le inhabilitan para contratar bajo el inciso anterior. En los contratos se certificará que la persona no ha sido convicta, en la



jurisdicción estatal o federal, por ninguno de los delitos antes dispuestos. **El deber de informar será de naturaleza continua durante todas las etapas de contratación y ejecución del contrato.**

Todo Licitador queda sujeto a las **sanciones y penalidades establecidas en el Artículo 3.7. — Sanciones y penalidades de la Ley 2-2018**, según enmendada. (3 L.P.R.A. § 1883f) o cualquier otra ley que la sustituya.

B. CÁNONES DE ÉTICA DE SU PROFESIÓN:

Toda persona deberá observar las máximas y los principios de excelencia y honestidad que cobijan su profesión, además de las normas o cánones éticos de la asociación o colegio al cual pertenece y que reglamenta su oficio o profesión, tanto en la relación con sus competidores como con el Gobierno de Puerto Rico.

En el caso de personas que no pertenezcan a un colegio o asociación, o en el caso de asociaciones y colegios que no posean un Código de Ética para sus miembros, deberán observar los principios generales de conducta ética que se consideran razonables en su profesión u oficio.

21. COLABORACIÓN INVESTIGATIVA

Toda persona, licitador o contratista colaborará con cualquier investigación que inicie el Gobierno estatal o federal sobre transacciones de negocios u otorgación de contratos o concesión de incentivos gubernamentales, del cual fue parte o se benefició directa o indirectamente.

22. CLÁUSULA ANTIDISCRIMEN

Ni la Junta de Subastas ni la ASG discriminan por razón de raza, color, género, origen o condición social, ideas políticas o religiosas, edad, nacionalidad, por ser víctima o ser percibida como víctima de violencia doméstica, agresión sexual o acecho, condición de veterano, identidad u orientación sexual, real o percibida, impedimento físico, mental o sensorial.

23. COMUNICACIONES Y ANUNCIOS

Se advierte a todos los licitadores y personas naturales o jurídicas interesadas en participar en este proceso de subasta formal que **está prohibido tener contacto con relación a esta subasta con los funcionarios o empleados de la Junta de Subastas y de la ASG, así como de la Administración Auxiliar de Adquisiciones y de la Oficina de Compras**, luego de concluida la reunión pre-subasta y hasta que esta subasta sea adjudicada por la Junta. El incumplir con lo anterior resultará en el rechazo de la oferta.

Comunicaciones con otros representantes del Gobierno respecto a cualquier asunto relacionado a esta subasta formal está prohibido durante todo el proceso de licitación. Cualquiera que incumpla con lo antes indicado, será descalificado y podrá conllevar cualquier otra penalidad impuesta por leyes o reglamentos aplicables.

Toda comunicación se emitirá por medio del siguiente correo electrónico:
juntadesubastas@mail.jedi.asg.pr.gov.



El licitador deberá someter toda duda o pregunta relacionada a esta subasta utilizando el enlace <https://asg.pr.gov/subastas> bajo el número de la Subasta de referencia.

Cualquier información o anuncio relacionado con esta subasta formal será publicado por la Junta de Subastas a través de la página cibernética de la ASG y notificado mediante correo electrónico a los licitadores hábiles para participar del proceso. Toda información, anuncio público o enmienda relacionada a esta subasta se hará por escrito con las debidas autorizaciones de la ASG y la Junta de Subastas y emitidos por la Junta.

IV. FORMALIZACIÓN DE CONTRATO

1. FORMALIZACIÓN DEL CONTRATO

En relación a la subasta formal de referencia, se podrá formalizar un contrato (según aplique). La oferta del licitador agraciado y lo dispuesto en el pliego de la subasta formal constituirá la base del correspondiente contrato. El contrato se podrá formalizar tan pronto la ASG reciba las garantías o fianzas requeridas del licitador.

2. RENEGOCIACIÓN DE LOS PRECIOS, TÉRMINOS Y CONDICIONES DEL CONTRATO (NO LIMITADA A EXTENSIONES DE VIGENCIA DE CONTRATO)

Los precios ofrecidos por el licitador se mantendrán fijos durante la vigencia del contrato que se otorgue y no estarán sujetos a cambios por aumento en el mercado o de cualquier otra índole, ya sean previsibles o no, **salvo lo dispuesto en el inciso 3 de la sección III de este pliego de subasta formal.**

Ningún comprador de entidad alguna (incluida la ASG), está autorizado a renegociar los precios, términos y condiciones establecidos en el contrato.

Como excepción, la Administradora de la ASG, *motu proprio* o a petición de licitador interesado, podrá autorizar enmiendas a los precios, términos y condiciones establecidos en cualquier contrato, de existir **justa causa** para ello, durante la vigencia del contrato. La ASG realizará el análisis correspondiente para determinar si procede la enmienda propuesta. Los fundamentos que amparan las correspondientes enmiendas deberán constar en escrito relacionado.

3. NEGATIVA A FORMALIZAR EL CONTRATO

La ASG podrá ejecutar la Fianza de Licitación si el licitador agraciado **se niega a firmar el correspondiente contrato, una vez convocado para ello por parte de la Oficina de Contratos de la ASG o la entidad requirente.**

4. VIGENCIA DEL CONTRATO

La Administración podrá celebrar cualquier procedimiento de subasta formal con el objetivo de otorgar un contrato, bajo cuyos términos y condiciones, se podrán levantar órdenes de compra relacionadas.



El contrato que se formalice bajo esta subasta tendrá una vigencia de **no aplica**, contados a partir de su otorgamiento.

La Administración podrá autorizar enmendar el contrato a los fines de extender su vigencia cumpliendo con lo dispuesto en la Sección 7.3.25 del Reglamento Núm. 9230, *supra*. El suplidor será informado por escrito y con anticipación a la fecha de vencimiento del contrato de la intención de extender éste por parte de la ASG. Las enmiendas se harán mediante escrito de “Enmienda” y deberá contar con las firmas de las partes.

5. ALCANCE DEL CONTRATO

El contrato que se otorgará bajo esta subasta formal cubrirá las necesidades de la agencia requirente, entidades gubernamentales y entidades exentas del Gobierno de Puerto Rico, según definidas en la Ley 73, *supra*. También cubrirá las necesidades de los municipios. El suplidor no podrá negarse a ofrecer los servicios a ninguna entidad gubernamental, exenta y municipios.

6. INSTRUCCIONES DE USO DEL CONTRATO

De formalizarse un contrato se orientará a los compradores sobre el uso de este mediante las “Instrucciones de Uso de Contrato”. Las referidas instrucciones incluirán los mismos términos y condiciones que surgen del pliego de la subasta formal y la tabla de ofertar. Las instrucciones constituirán una guía de uso exclusivamente para los compradores.

V. RESCISIÓN DEL CONTRATO

Ningún jefe de agencia gubernamental o instrumentalidad del Gobierno, corporación pública, municipio, o de la Rama Legislativa o Rama Judicial, adjudicará subasta u otorgará contrato alguno para la realización de servicios o la venta o entrega de bienes, a persona natural o jurídica que haya sido convicta o se haya declarado culpable en el foro estatal o federal, en cualquier otra jurisdicción de Estados Unidos de América o en cualquier otro país, de aquellos delitos constitutivos de fraude, malversación o apropiación ilegal de fondos públicos dispuestos en la Ley 2, *supra*, según enmendada. Esta prohibición de adjudicar subastas u otorgar contratos, se extiende a aquellas personas jurídicas cuyos presidentes, vicepresidentes, directores, directores ejecutivos, o miembros de su Junta de Oficiales o Junta de Directores, o persona que desempeñe funciones equivalentes, haya sido convicto o se haya declarado culpable en el foro estatal o federal, en cualquier otra jurisdicción de Estados Unidos de América o en cualquier otro país, de aquellos delitos constitutivos de fraude, malversación o apropiación ilegal de fondos públicos, según enumerados en la referida Ley.

La prohibición para la contratación, subcontratación o adjudicación de una subasta contenida en la Ley 2, *supra*, tendrá una duración de veinte (20) años, a partir de la convicción correspondiente en casos por delito grave, y una duración de ocho (8) años en casos por delito menos grave.

La convicción o culpabilidad por cualquiera de los delitos enumerados en la Ley 2, *supra*, conllevará, además de cualesquiera otras penalidades, la rescisión automática de todos los contratos vigentes a esa fecha entre la persona convicta o declarada culpable y cualesquiera agencias o instrumentalidades del Gobierno estatal,



corporaciones públicas, municipios, la Rama Legislativa o la Rama Judicial. Además de la rescisión del contrato, el Gobierno tendrá derecho a exigir la devolución de las prestaciones que hubiese efectuado con relación al contrato o contratos afectados directamente por la comisión del delito.

VI. ESPECIFICACIONES

Las especificaciones incluidas en este pliego de subasta formal son el conjunto de características físicas, funcionales, estéticas y de calidad de cada uno de los bienes, obras o servicios que se solicitan, los cuales sirven de guía para describir detalladamente lo que se solicita. Los licitadores vienen obligados a cumplir cabalmente con cada uno de los detalles incluidos en las especificaciones.

El Licitador deberá cumplir con las Especificaciones incluidas en los documentos de esta subasta.

VII. CONDICIONES E INSTRUCCIONES ESPECIALES

1. **Los licitadores tienen que cumplir con lo dispuesto en la tabla de ofertar, el Alcance de los Trabajos, las Especificaciones y los documentos adjuntos a este Pliego.**
2. El Contratista deberá tener vigente la póliza de Responsabilidad Pública y de la Corporación del Fondo del Seguro del Estado que respalden este proyecto. Los costos relacionados a seguros y fianzas deberán estar incluidos en el precio ofertado.
3. El Contratista será responsable de obtener el permiso de construcción o notificación de obra exenta de permiso de construcción por parte de la Oficina de Gerencia de Permiso (OGPe), según aplique.
4. El contratista tendrá que cumplir con las leyes y regulaciones ambientales, según aplique. El Contratista será responsable de garantizar que todo el trabajo subcontratado se realice de conformidad con las normas, leyes y políticas federales, estatales y regulaciones ambientales, según aplique.
5. El Contratista será responsable del pago de los arbitrios, patente e impuestos municipales y estatales, según apliquen, así como cualquier costo relacionado a los permisos o documentación requerida, los cuales estarán incluidos en el precio ofertado.
6. Cualquier rotura de las facilidades públicas o privadas existentes serán reparadas por el contratista sin costo al dueño o a la Agencia Requirente.
7. **Los licitadores tendrán que establecer el término de entrega en la tabla de ofertar. Dicho término podrá ser un factor determinante al momento de adjudicar. La fecha de entrega será en días naturales y comienza a contar a partir de que se emite la orden de comienzo por parte de la Agencia Requirente.**
8. **Los licitadores deberán entregar junto con su oferta evidencia de su registro en <http://sam.gov/SAM/>. Las ofertas de licitadores que no se encuentren activos en el mencionado Registro al momento de adjudicar serán rechazadas.**
9. **El licitador considerará lo establecido en el *Build American, Buy America Act (BABAA)* y su cumplimiento.**
10. **El licitador debe entregar junto con su oferta los siguientes documentos:**
 - a. **Certificación sobre subcontratos (ANEJO IV).**
 - b. **Certificación sobre no conflicto de interés (ANEJO V).**



- c. **Certificación anti-cabildeo (ANEJO VI).**
- d. **Certificación sobre no colusión (ANEJO VII).**
- e. **Denegación limitada de participación y declaración jurada de estado de suspensión o inhabilitación (ANEJO VIII).**
- f. **Certificación sobre exclusión, suspensión, inelegibilidad o exclusión voluntaria (ANEJO IX).**
- g. **Cualquier otro requerido en los documentos de esta Subasta.**

No incluir estos anejos completados con su oferta, conlleva el rechazo de la propuesta.

11. **Se requiere una garantía mínima de un (1) año en mano de obra, materiales y equipos.** El contratista agraciado prestará directamente la garantía. El contratista agraciado tendrá un término de siete (7) laborables contados a partir de que la Agencia Requirente le someta la reclamación de garantía por escrito para evaluarla y proceder con los arreglos correspondientes. **No se aceptarán garantías que indique “según manufacturero” o “según fabricante”. Se rechazará toda oferta que no provea la garantía mínima requerida.**
12. El licitador que interese participar en esta Subasta Formal tiene que licitar en todas las partidas de la tabla de ofertar, el no ofertar en alguna de las partidas será causa suficiente para su descalificación.
13. Los licitadores considerarán como parte de los costos de su oferta todo lo establecido en el Reglamento Núm. 7998 de 3 de marzo de 2011, **“Uniform General Conditions for Public Work Contracts in Puerto Rico”** y el cual formará parte integral del contrato que será formalizado objeto de esta licitación.
14. Es requerido el cumplimiento con la Ley Núm. 111 del 22 de junio de 1961, según enmendada, conocida como **“Ley de la Fianza de Pago que Todo Contratista debe de Prestar al Comienzo de Toda Obra de Construcción para Garantizar el Pago de Salarios de Obreros y Empleados”**.
15. El licitador deberá considerar dentro de la oferta el costo de los siguientes:
 - a. Póliza del Fondo del Seguro del Estado.
 - b. Responsabilidad Pública
 - c. Daños a la Propiedad
 - d. Builder's Risk
 - e. Cualquier “Soft Cost” no solicitado en documentos de licitación.
16. El contratista luego de recibir la orden de compra por parte de ASG, tendrá que entregar al Departamento de Salud los “submittals” y el “schedule” de los trabajos a realizar, que le sean requerido para su aprobación previo al inicio de los trabajos. El contratista no comenzara ningún trabajo hasta que reciba la notificación de proceder por parte del Departamento de Salud.
17. Empleados en área de proyecto, deben cumplir con las regulaciones de OSHA. EPP (capacete, gafas, guantes, zapatos de seguridad, etc.) son requeridos en todo momento dentro de la obra. **Referencia:** OSHA 1926.96/ OSHA 1926.100/ OSHA 1926.102(a)(2) / 42 CFR Parte 84/ OSHA 1926.502/ OSHA 1926.52.
18. Supervisor o persona a cargo de la obra debe tener como mínimo requerimiento, adiestramiento de OSHA 30Hrs.
19. Empleados del contratista deberán estar uniformados e identificados en todo momento.
20. Proyectos con 10 empleados o más, deberán tener un inspector de seguridad ocupacional en el área a tiempo completo.



21. El contratista mantendrá las áreas limpias de trabajo en todo momento. No se permitirá la disposición de desperdicios en los contenedores de basura de las facilidades. Los desperdicios deberán ser removidos periódicamente fuera de las facilidades. El contratista agraciado deberá entregar los manifiestos de disposición.
22. El contratista deberá comunicarse con el encargado del proyecto antes de comenzar labores.
23. El contratista es responsable de rectificar las medidas y evaluar las condiciones existentes de las facilidades.
24. El licitador debe considerar el alquiler de cualquier equipo necesario para realizar las tareas. (Elevador aéreo, elevador de pluma, camiones con pluma, andamios, etc.) o cualquier equipo que entienda necesario para ejecutar los trabajos, deberá estar considerado dentro del precio de la oferta presentada.
25. El contratista es responsable de presentar documentación de referencia de los trabajos realizados y los pagos a los trabajadores con su nómina certificada con el ponche de la corporación y someterla al Departamento de Salud semanalmente.
26. **Este proyecto es sufragado en todo o en parte por fondos federales. El Contratista es responsable del estricto cumplimiento con las provisiones legales y reglamentarias que forman parte de este Pliego y cualquier otra reglamentación, regulación o certificación requerida o impuesta por el Gobierno Federal para adquisiciones sufragadas con fondos federales. El cumplimiento con estos requisitos podrá ser auditado por las agencias estatales o federales pertinentes.**
27. **El contratista tendrá que cumplir con la Orden Ejecutiva 2022-14.**
28. El contratista es responsable del estricto cumplimiento con las provisiones legales y reglamentarias que forman parte de este Pliego y cualquier otra reglamentación, regulación o certificación requerida o impuesta por el Gobierno federal para proyectos sufragado con fondos federales.
29. El licitador, previo a la presentación de su oferta, considerará y se familiarizará con todas las leyes y reglamentos aplicables al desarrollo del proyecto, financiamiento de la obra y todas aquellas que puedan afectar el costo, progreso, desarrollo y desempeño de la Obra.
30. Es requerida la Certificación sobre Trabajos de Electricidad para todo trabajo eléctrico, realizados como parte del desarrollo de la obra.
31. Es requerida la Certificación sobre Trabajos de Plomería para todo trabajo de plomería, realizados como parte del desarrollo de la obra.
32. Es requerida la Certificación sobre Trabajos de Aire Acondicionado y Refrigeración para todo trabajo de aire acondicionado y refrigeración, realizados como parte del desarrollo de la obra.
33. El contratista deberá implementar todas las medidas de seguridad que estime necesarias para delimitar y rotular las áreas impactadas por los trabajos relacionados a este proyecto, así como las áreas dispuestas para almacenaje de materiales y equipos, de forma tal que se pueda restringir el acceso a las mismas de personas ajenas a los trabajos incluidos en contrato, durante el desarrollo de la obra.
34. La emisión de ruidos procedentes de las áreas impactadas por los trabajos incluidos en contrato no excederá los niveles máximos establecidos en ley y de acuerdo con las disposiciones establecidas en los reglamentos aplicables.
35. El contratista deberá tomar todas las medidas necesarias para evitar: la propagación de polvo fugitivo procedente de actividades de remoción o demolición selectiva y de acarreo de materiales



- o escombros, en estricto cumplimiento con las disposiciones establecidas por ley y en reglamentos aplicables. La utilización de materiales y equipo que emitan gases y residuos tóxicos al ambiente, en estricto cumplimiento con las disposiciones establecidas por ley y en reglamentos aplicables.
36. El contratista será responsable de garantizar que todo el trabajo subcontratado se realice de conformidad con las normas, políticas federales y estatales aplicables.
 37. El contratista o subcontratista acepta específicamente estar sujeto a la disposición de confidencialidad con respecto a la información de identificación personal.
 38. Previo al inicio de los trabajos, el contratista agraciado deberá firmar contrato con la Agencia Requirente.
 39. El contratista no discriminará contra ningún empleado o solicitante de empleo por motivos de raza, color, religión, sexo, orientación sexual, identidad de género u origen nacional. El contratista tomará medidas de acción afirmativa para asegurar que los solicitantes estén empleados y que los empleados reciban un trato sin tener en cuenta su raza, color, religión, sexo, orientación sexual, identidad de género u origen nacional durante el empleo. Estas medidas incluirán, entre otras, las siguientes: Empleo, ascenso, degradación o transferencia; contratación o anuncios de contratación; despido o rescisión; tasas de pago u otras formas de Departamento de Seguridad Nacional de los Estados Unidos.
 40. El contratista se compromete a colocar en lugares visibles, a disposición de los empleados y de los solicitantes de empleo, avisos en los que se expongan las disposiciones de esta cláusula de no discriminación.
 41. El contratista, en todas las solicitudes o anuncios de empleo colocados por el contratista o en su nombre, declarará que todos los solicitantes calificados recibirán consideración para el empleo sin tener en cuenta raza, color, religión, sexo, orientación sexual, identidad de género, u origen nacional.
 42. El contratista no despedirá ni discriminará de ninguna otra manera a ningún empleado o solicitante de empleo porque tal empleado o solicitante haya indagado, discutido o divulgado la remuneración del empleado o solicitante o de otro empleado o solicitante. Esta disposición no se aplicará a los casos en que un empleado que tenga acceso a la información sobre la remuneración de otros empleados o solicitantes como parte de las funciones esenciales del puesto de trabajo de ese empleado revele la remuneración de otros empleados o solicitantes a personas que no tengan acceso a esa información de otro modo, a menos que esa divulgación sea en respuesta a una denuncia o acusación formal, en apoyo de una investigación, proceso, vista o acción, incluyendo una investigación realizada por el empleador, o es consistente con la obligación legal del contratista de proporcionar información.
 43. El contratista le enviará, según aplique, a cada sindicato o representante de los trabajadores con quienes tenga un convenio colectivo u otro contrato o acuerdo, una notificación que se le deberá proporcionar avisando a dicho sindicato o representantes de los trabajadores sobre los compromisos del contratista bajo esta sección, además colocará copias de la notificación en lugares visibles para los empleados y solicitantes de empleo.
 44. El contratista cumplirá con todas las disposiciones de las Ordenes Ejecutivas vigentes al momento de la adjudicación.
 45. El contratista proporcionará toda la información y los informes de ser requeridos para determinación de cumplimiento con las normas, reglamentos y órdenes.



46. Todos los servicios de licitación y/o adquisiciones deberán realizarse de conformidad con lo establecido en 2 C.F.R. 200.318-200.326.
47. El contratista adoptará las medidas con respecto a cualquier subcontrato u orden de compra que la agencia administradora pueda ordenar como medio de hacer cumplir tales disposiciones, incluyendo sanciones por incumplimiento: Disponiéndose, sin embargo, que en caso de que un contratista se involucre o corra el riesgo de entrar en un litigio con un subcontratista o proveedor como resultado de dicha directriz de la agencia administradora, el contratista podría solicitar a los Estados Unidos que entre en dicho litigio para proteger los intereses de Estados Unidos. El solicitante además está de acuerdo en que estará sujeto a la cláusula de igualdad de oportunidades anterior con respecto a sus propias prácticas de empleo cuando participe en trabajos de construcción con asistencia federal: Disponiéndose, que si el solicitante que participa es un gobierno estatal o local, la cláusula de igualdad de oportunidades anterior no es aplicable a cualquier agencia, instrumentalidad o subdivisión de dicho gobierno que no participa en los trabajos sobre o bajo el contrato.
48. El licitador considerará lo establecido en el *Davis Bacon Act and Related Act (DBRA)* y su cumplimiento. Todas las transacciones relacionadas a los trabajos a realizar se harán en cumplimiento con la Ley Davis-Bacon (40 U.S.C. 3141-3144, y 3146- 3148) y los requisitos de 29 C.F.R. Parte 5, según apliquen. El contratista deberá cumplir con 40 U.S.C. 3141-3144, y 3146-3148 y los requisitos de 29 C.F.R. Parte 5, según apliquen.
49. Todo contratista está prohibido de inducir, por cualquier medio, a cualquier persona empleada en la construcción, finalización o reparación de obras públicas, a renunciar a cualquier parte de la remuneración a la cual tenga derecho. La entidad no federal debe reportar a FEMA todas las infracciones reportadas o sospechadas. Además, de acuerdo con las regulaciones, cada contratista y subcontratista debe proporcionar cada semana un estado respecto a los salarios pagados a cada uno de sus empleados involucrados en el trabajo cubierto bajo la Ley Anti-Soborno Copeland y la Ley Davis Bacon durante el periodo previo de nómina semanal.
50. El contratista es responsable de cumplir con la "LEY DE HORAS TRABAJADAS BAJO CONTRATO Y NORMAS DE SEGURIDAD".
51. El contratista es responsable de cumplir con la "LEY DE AIRE LIMPIO Y LA LEY FEDERAL PARA EL CONTROL DE LA CONTAMINACIÓN DEL AGUA" de la orden de compra ser mayor de \$150,000.00. El contratista se compromete a informar cualquier violación al (nombre del solicitante quien firma el contrato), y entiende y acepta que el (nombre del solicitante quien firma el contrato), a su vez, reportará o garantizará la adecuada notificación sobre cualquier violación a la ley, a la Agencia Federal para el Manejo de Emergencias (FEMA), y a la Oficina Regional pertinente de la Agencia para la Protección Ambiental (EPA). El contratista se compromete a incluir estos requisitos en cada subcontratación que exceda la cantidad de \$150,000.00 en fondos, total o parcialmente provenientes de asistencia federal de FEMA.
52. El contratista no puede estar en la lista de entidades excluidas o suspendidas, o que de otra forma son excluidas o no elegibles para participar en programas de asistencia federal. Se requerirá la confirmación de cumplimiento, antes de la firma de contrato con el Departamento de Salud.
53. ANTI-CABILDEO DE BYRD.- El contratista certificará que no utilizará ni ha utilizado fondos federales para pagar a personas u organizaciones con el fin de influir o intentar influir sobre un funcionario o empleado de cualquier agencia, miembro del Congreso, funcionario o empleado



- del Congreso, o un empleado de un miembro del Congreso, para obtener cualquier contrato federal, subvención o cualquier otra adjudicación. Se incluye certificación requerida.
54. El contratista hará uso máximo de productos que contengan materiales recuperados que sean artículos designados por la EPA, a menos que el producto no pueda ser adquirido competitivamente dentro de un plazo que permita cumplir con el calendario de ejecución de los trabajos a realizar; cumpliendo los requisitos de ejecución del contrato, o a un precio razonable. De necesitar mayor información favor referirse a <https://www.epa.gov/smm/comprehensive-procurement-guidance-cpg>. El Contratista también se compromete a cumplir con todos los demás requisitos aplicables del Artículo 6002 de la Ley de Eliminación de Desechos Sólidos.
 55. El contratista se compromete a proporcionar al Departamento de Salud, al administrador de FEMA, al Contralor General de Estados Unidos o a cualquiera de sus representantes autorizados acceso a cualquier libro, documento, papel y registro del Contratista que sea directamente pertinente a este proceso de subasta y/o al contrato con el Departamento de Salud con el propósito de realizar auditorías, inspecciones, extractos y transcripciones.
 56. El contratista se compromete a cumplir con todas las leyes federales, regulaciones, órdenes ejecutivas, políticas, procedimientos y directivas de FEMA.
 57. El contratista se compromete a cumplir con la "Ley de Reclamaciones Falsas".
 58. Los trabajos ser realizarán de manera que se garantice la seguridad de los empleados y visitantes de la institución, así como de los empleados del Contratista.
 59. La Agencia Requirente se reserva el derecho a detener los trabajos para la protección de los empleados o visitantes.
 60. **El Contratista proveerá e instalará un rotulo de 4'x 8'. El diseño e información en el mismo será provista por el gerente del proyecto. El rótulo tendrá que incluir el logo de la Agencia Requirente, de la ASG y del Gobierno de Puerto Rico.**



Administración de Servicios Generales
Gobierno de Puerto Rico

Anejo I**OFERTA DEL LICITADOR**

Fecha: _____

Nombre Compañía / No. Licitador

☐ Negocio privado, ☐ Corporación, o ☐ Asociación, por la presente somete su oferta.

Seguro Social Patronal: _____

Hacemos constar que hemos leído todas las instrucciones, términos, condiciones, enmiendas, notificaciones, minutas y cláusulas del pliego de subastas; que entendemos y aceptamos cumplir con todas las cláusulas contenidas en éstos y en el contrato. Asimismo, certificó que sostendré mi oferta durante todo el proceso de licitación y hasta que cumpla con la entrega de los bienes, la finalización de la obra o se presten los servicios adjudicados. De haberse requerido, certifico mediante este Anejo el cumplimiento con el "Buy American Act" o el "Build America, Buy America", o cualquier ley similar.

La dirección sometida con esta oferta es la dirección donde recibimos nuestra correspondencia.

Yo, _____, CERTIFICO que estoy autorizado a firmar esta oferta y mi nombre y firma constan registradas en el Registro de Licitadores.

Nombre en letra de molde_____
Firma_____
Puesto o cargo que ocupa

Dirección Postal:

Dirección Física:

Número de Teléfono y Fax:

Correo Electrónico:

Corporación Foránea_____
Nombre del Agente Residente_____
Número de Teléfono y Fax_____
Dirección



ANEJO II

Administración de Servicios Generales
Gobierno de Puerto Rico

Yo, _____, en mi carácter personal, mayor de edad,
(nombre y apellidos)
_____, y vecino de _____,
(estado civil) (profesión) (ciudad) (país o estado)

CERTIFICO LO SIGUIENTE:

1. Que mi nombre y demás circunstancias personales son las anteriormente expresadas.
2. Que comparezco como dueño de negocio de tipo individual.
3. Que el nombre comercial de mi negocio (D/B/A, *si aplica*), es el siguiente,

4. Que el propósito del negocio individual que represento es proveer los siguientes bienes, obras o servicios profesionales o no profesionales: (*escriba a que se dedica*)

5. Que las siguientes personas, **cuyas firmas aparecen en el presente documento más adelante**, están autorizadas a nombre y en representación del negocio, a firmar las ofertas que se sometan como parte de los procesos de compra de bienes y servicios profesionales y no profesionales que se lleven a cabo por las distintas agencias, corporaciones públicas y municipios del Gobierno de Puerto Rico.
6. Que **las firmas de las personas que constan en el presente documento** obligan al negocio que represento en todos los procesos de compra de bienes y servicios profesionales o no profesionales realizados por las agencias de la Rama Ejecutiva del Gobierno de Puerto Rico, corporaciones públicas y municipios. De igual forma, dichas personas están autorizadas a firmar ofertas y suscribir todo tipo de documento requerido como parte de dicha comparecencia.



Nombre y Apellidos	Posición	Firma

7. Que suscribo la presente Certificación con el propósito de cumplir con uno de los requisitos para ingresar al Registro Único de Licitadores (RUL) o al Registro Único de Proveedores de Servicios Profesionales (RUP) y para cualquier otro propósito administrativo o legal pertinente.

Y PARA QUE ASÍ CONSTE, firmo la presente certificación en _____,
(ciudad)
_____, hoy _____ de _____ de 20_____.
(país o estado)

FIRMA

Afidávit Número: _____

JURADA Y SUSCRITA ante mí por _____, de las circunstancias personales antes mencionadas, en su carácter de _____ de la _____ (tipo de negocio) y a quien identifico mediante _____.

En _____, _____, hoy _____ de _____ de 20____.

Nombre del (de la) Notario(a)

Firma del (de la) Notario(a)

**RESOLUCIÓN CORPORATIVA**(no se aceptará Declaración Jurada que tenga
borrones, tachaduras o corrector)**ANEJO III**

Yo _____, mayor de edad, (estado civil) _____, (profesión) _____, y vecino de _____, en calidad de _____ de la (tipo de negocio) _____, certifico, que en reunión celebrada el día _____ de _____ de 20____, a la cual asistió el quórum reglamentario, se resolvió autorizar a las personas nombradas a continuación, para que cualquiera de ellas, a nombre y en representación de esta Corporación, puedan comparecer a los procesos de compra de bienes y servicios no profesionales realizados por las agencias de la Rama Ejecutiva del Gobierno de Puerto Rico, corporaciones públicas y municipios, así como firmar ofertas y suscribir contratos y todo tipo de documento requerido como parte de dicha comparecencia, por lo que sus firmas, las cuales se hacen constar en este documento, obligan a esta (tipo de negocio) _____.

Nombre y Apellido	Posición	Firma

En mi carácter de _____ de la (tipo de negocio) _____, certifico, además, que la Resolución arriba transcrita no ha sido revocada, anulada o enmendada en forma alguna y que se mantiene vigente con toda su fuerza y vigor.

PARA QUE ASÍ CONSTE, firmo la presente y estampo el sello de la _____ (tipo de negocio).

En _____, hoy ____ de _____ de 20____.

Firma del (de la) Declarante

AFIDÁVIT

Afidávit Número: _____

JURADA Y SUSCRITA ante mí por _____ de las circunstancias personales antes mencionadas, en su carácter de _____ de la _____ (tipo de negocio) y a quien identifico mediante _____.

En _____, hoy ____ de _____ de 20____.

Nombre del (de la) Notario(a)

Firma del (de la) Notario(a)

**ANEJO IV - CERTIFICACIÓN SUBCONTRATOS**

Yo _____, mayor de edad, _____,
(nombre del representante autorizado del Proponente) (estado civil)
_____, y vecino de _____,
(profesión) (domicilio) (país o estado)
en calidad de _____
(posición)
en _____
(nombre del Proponente) certifico que de

ser el proponente agraciado tendré que, en caso de que subcontrate algún servicio o entidad para cumplir en todo o en parte con la propuesta adjudicada, previo a la firma del correspondiente contrato, brindar por escrito la información de contacto del subcontratista, así como cualquier otra información o documentación requerida por la ASG o por la entidad peticionaria, según aplique. En aquellos casos donde la necesidad de subcontratar surja luego de la firma del contrato, tendré que proveer, previo a que el subcontratista comience las labores, la información de este a la ASG o a la entidad peticionaria, según aplique.

De igual forma, reconozco que todo subcontratista tiene que cumplir con las disposiciones de este pliego, así como con las leyes y reglamentos aplicables al proponente.

La ASG y la entidad peticionaria se reservan el derecho de cancelar el contrato correspondiente o la orden de compra, en aquellos casos donde el subcontratista no cumpla con los requisitos dispuestos en este pliego, o cuando el proponente incumpla su deber de informar cualquier subcontratación.

Nombre del Representante Autorizado por el Proponente

Fecha

Firma del Representante Autorizado por el Proponente



ANEJO V - CERTIFICACIÓN SOBRE NO CONFLICTO DE INTERÉS

Yo, _____, en mi carácter personal, mayor de edad, _____ y vecino de _____ he sido designado como el representante autorizado de _____ (nombre del Proponente).

En tal sentido, certifico que:

1. La declaración de cualificaciones y propuesta que presento en respuesta de este proceso de licitación, es genuina y no se lleva a cabo en interés o en nombre de ninguna persona, firma o entidad no revelada;
2. No hemos solicitado ni inducido a ninguna persona, empresa o entidad a abstenerse de presentar una declaración de cualificaciones y propuesta;
3. No existe colusión o fraude alguno en donde haya participado la entidad que represento para obtener cualquier ventaja sobre cualquier otro Proponente;
4. Ni mi persona o la entidad que represento no tiene relación comercial o personal con ninguna otra empresa o persona que pueda ser considerada un conflicto de interés para la Administración de Servicios Generales (ASG) y Departamento de Salud (DS); y
5. El personal clave identificado en la declaración de cualificaciones para realizar los servicios y obra (diseño y construcción) no tiene interés comercial, personal o relación con cualquier funcionario o empleado de la ASG y DS que no se indique en la declaración de cualificaciones presentada.
6. Ningún empleado de la ASG y DS tiene interés directo o indirecto en este proceso de licitación ni tiene o tuvo participación en la preparación de los documentos que firman parte de la declaración de cualificaciones y propuesta presentadas.
7. Ningún funcionario público o empleado de la ASG y DS posee interés económico con cualquier empleado y personal de la entidad que represento y que así mismo, no han tenido interés financiero directo o indirecto con éstos en los últimos cuatro (4) años.
8. Ningún funcionario público o empleado de la ASG y DS ha solicitado o aceptado, directa o indirectamente, ser medio de cualquier persona o entidad con interés en la declaración de cualificaciones y propuesta que presento, incluido el Proponente, cualquier bien de cualquier valor, incluidos obsequios, gratificaciones, contribuciones, servicios, donaciones, préstamos o para cualquier miembro de su entorno inmediato familia, o parientes, o para cualquier persona, como forma de compensación por desempeñar los deberes y responsabilidades de su cargo en relación con este proceso de licitación.



9. No tengo parentesco dentro del cuarto (4°) grado de consanguinidad y/o segundo (2°) grado de afinidad con funcionario o empleado público de la ASG y DS que participa o influye o tiene capacidad para hacerlo en las decisiones sobre este proceso de licitación.
10. Reconozco que la DS está muy comprometida con el uso eficaz de los recursos del Gobierno en beneficio del pueblo de Puerto Rico. Así que, ASG y DS apoyará y cumplirá con lo dispuesto en la Ley 2-2018, conocida como Anticorrupción Código para el Nuevo Puerto Rico, según enmendado, incluyendo el Título III, Código de Ética para Contratistas, Suplidores y Solicitantes de Incentivos Económicos del Gobierno de Puerto Rico. A la luz de lo anterior, yo, como representante autorizado del Proponente, también certifico que:
 - a. Acepto cumplir con las disposiciones aplicables de la Ley 2-2018, conocida como Ley Anti- Código de Corrupción para el Nuevo Puerto Rico, según enmendado, incluyendo el Título III, Código de Ética para Contratistas, Proveedores y Solicitantes de Incentivos Económicos del Gobierno de Puerto Rico y reconocen que este es un requisito esencial para ejecutar transacciones o establecer acuerdos con ASG y DS.
11. Que como representante autorizado del Proponente afirmo y certifico la veracidad de lo aquí divulgado. Además, reconozco la aplicabilidad de los remedios administrativos dispuestos en el 31 U.S.C. Capítulo 38 en caso de divulgaciones falsas o fraudulentas.

En _____, hoy ____ de _____ de _____.

Nombre y cargo del funcionario autorizado por el Proponente

Firma del Representante Autorizado del Proponente



ANEJO VI - CERTIFICACIÓN ANTI-CABILDEO

El suscribiente certifica, a su mejor saber y entender, que:

- Ningún fondo federal asignado ha sido pagado o será pagado, por o en nombre del suscribiente, a ninguna persona para influenciar o intentar influir sobre un funcionario o empleado de una agencia, un miembro del Congreso, un funcionario o empleado del Congreso, o un empleado de un miembro del Congreso para la adjudicación de cualquier contrato federal, subvención federal, préstamo federal, o la firma de cualquier acuerdo de cooperación, o para extender, continuar, renovar, enmendar o modificar cualquier contrato federal, adjudicación, préstamo o acuerdo de cooperación.
- En caso de haberse pagado o de que se vislumbre el pago de fondos no federales a cualquier persona para influenciar o intentar influir sobre un funcionario o empleado de cualquier agencia, un miembro del Congreso, un funcionario o empleado del Congreso, o un empleado de un miembro del Congreso en relación con este contrato federal, subvención, préstamo o acuerdo de cooperación, el suscribiente completará y presentará el Formulario Estándar-LLL, "Formulario de Divulgación para Reportar Cabildeo" conforme a sus instrucciones.
- El suscribiente exigirá que el lenguaje de esta certificación se incluya en todas las sub-adjudicaciones de fondos, en todos los niveles de contratación (incluyendo subcontratos, subvenciones secundarias y contratos bajo subvenciones, préstamos y acuerdos de cooperación) y exigirá a todos los subreceptores certificar y divulgar la información requerida.
- Esta certificación es una representación material de los hechos o presunciones, sobre los cuales descansa este contrato al momento de su ejecución. La presentación de esta certificación es un prerequisite transaccional impuesto por la sección 1352, Título 31, U.S.C. Cualquier persona que no presente la certificación requerida, estará sujeta a una sanción civil no menor de \$10,000 y no mayor de \$100,000 por cada incumplimiento."

El Proponente, _____, certifica o afirma la veracidad y exactitud de cada declaración de su certificación y divulgación, si alguna. Además, el Proponente entiende y acepta que las disposiciones del 31 U.S.C. Cap. 38, Los Remedios Administrativos para las Declaraciones y Reclamaciones Falsas, se aplicarán a esta certificación y divulgación, a la medida que correspondan.

Firma del funcionario autorizado por el Proponente

Fecha

Nombre y cargo del funcionario autorizado por el Proponente

**ANEJO VII - CERTIFICACIÓN SOBRE NO COLUSIÓN**

Yo, _____ [nombre del representante autorizado del Proponente],
mayor de edad, _____ [estado civil], _____ [profesión] y residente
de _____, _____ [estado o territorio de residencia], en mi calidad de
_____ [título del cargo] de
_____ [corporación nombre] (en adelante, el "Proponente"),
debidamente juramentado, depone y declara que:

1. Mis circunstancias personales son las mencionadas anteriormente.
2. Soy el _____ [título del puesto que ocupa en la corporación]
del Proponente, con poder y autoridad para ejecutar esta declaración.
3. Mediante la presentación de esta declaración de cualificaciones y propuesta, el Proponente y cada una
de las personas que firman en nombre del Proponente certifican, bajo pena de perjurio, que a su leal
saber y entender:
 - a) los precios de la propuesta se hayan fijado de forma independiente sin colusión, consulta,
comunicación o acuerdo, con el propósito de restringir la competencia, en cuanto a cualquier asunto
relacionado con dichos precios con cualquier otro oferente o con cualquier Proponente;
 - b) a menos que la ley aplicable exija lo contrario, los precios que se han cotizado en la propuesta no
han sido revelados a sabiendas por el Proponente y no serán revelados a sabiendas por el
Proponente antes de la apertura, directa o indirectamente, a cualquier otro postor o a cualquier
Proponente; y
 - c) el Proponente no ha intentado ni intentará inducir a ninguna otra persona, sociedad o corporación
a presentar o no presentar una propuesta con el fin de restringir la competencia.

En _____, hoy _____ de _____ de _____.

FIRMA DEL DECLARANTE



Yo _____, mayor de edad, _____,
(nombre del representante autorizado del Proponente) (estado civil)
_____, y vecino de _____,
(profesión) (domicilio) (país)
en calidad de _____
(posición)
en _____, certifico que,
(nombre del Proponente)

1. Al firmar esta Certificación, el representante del Proponente certifica que la firma, empresa o persona que presenta la declaración de cualificaciones y propuesta no ha sido suspendida, inhabilitada o legalmente impedida de participar en ninguna actividad de contratación pública con ningún gobierno federal, estatal o local.
2. Al firmar esta Certificación sin revelar toda la información pertinente sobre una inhabilitación o suspensión resultará en el rechazo de su declaración de cualificaciones y propuesta o la cancelación de un contrato. La Administración de Servicios Generales también podrá ejercer cualquier otro recurso disponible en derecho.

Y PARA QUE ASÍ CONSTE, firmo la presente certificación en _____
 _____ hoy _____ de _____ de 20 _____.

FIRMA DEL DECLARANTE

Afidávit Número: _____

JURADA Y SUSCRITA ante mí por _____ de las circunstancias personales antes mencionadas, en su carácter de _____ de la _____ y a quien identifico mediante _____

En _____, hoy _____ de _____ de 20_____

Nombre del (de la) Notario(a)

Firma del (de la) Notario(a)



ANEJO IX - CERTIFICACIÓN SOBRE EXCLUSIÓN, SUSPENSIÓN, INELEGIBILIDAD O EXCLUSIÓN VOLUNTARIA

Al presentar esta certificación, el Proponente _____ certifica que:

- (1) Ni la entidad ni ninguno de sus dirigentes ha sido excluido o suspendido, se le ha propuesto para ser excluido, se le ha declarado inelegible o se ha excluido voluntariamente de participar en esta transacción por algún departamento o agencia federal;
- (2) Informará por escrito de inmediato a quien se presenta esta certificación si en cualquier momento la entidad descubre que su certificación era errónea al momento de su presentación o se ha vuelto errónea debido a que las circunstancias han cambiado;
- (3) No participará a sabiendas en una transacción cubierta de nivel inferior con una persona que ha sido inhabilitada, suspendida o declarada inelegible o que ha quedado excluida voluntariamente de participar en esta transacción cubierta, a menos que lo autorice el departamento o la agencia con la cual se originó dicha transacción;
- (4) Incluirá la cláusula titulada "Certificación con relación a la inhabilitación, suspensión, inelegibilidad y exclusión voluntaria en transacciones cubiertas de nivel inferior", sin modificar dicha cláusula, en todas las transacciones cubiertas de nivel inferior y en todas las solicitudes de transacciones cubiertas de nivel inferior;
- (5) Las certificaciones que se incluyen en el presente documento constituyen una representación material de los hechos que sirvieron de base a esta transacción cuando se realizó la transacción; y
- (6) Si la entidad no puede certificar alguna de las declaraciones incluidas en esta certificación, dicha entidad deberá adjuntar una explicación a esta certificación.

Firma de/la representante autorizado del Proponente

Fecha: _____

Nombre y dos apellidos en letra de molde del/la representante autorizado(a) de la Proponente



ATTACHMENT X

PROVISIONS REQUIRED IN ANY FEDERALLY SUBSIDIZED CONTRACT (2 CFR § 200.326 AND 2 CFR PART 200, APPENDIX II), AND GRANTS AWARDED BY THE UNITED STATES (HUD) HOUSING AND URBAN DEVELOPMENT DISTRICT, AS APPLICABLE:

I. Remedies

Contracts for more than the simplified acquisition threshold currently set at \$250,000, which is the inflation-adjusted amount determined by the Civil Agency Procurement Council and the Defense Acquisition Regulations Council as authorized by 41 U.S.C. 1908, must address administrative, contractual, or legal remedies in cases where successful Bidders violate or violate the terms of the contract, and provide for such sanctions and sanctions as appropriate.

II. Equal Employment Opportunities

Except as otherwise provided under 41 CFR Part 60, all contracts that meet the definition of "federally assisted construction contract" in 41 CFR Part 60-1.3 must include the equal opportunity clause provided in 41 CFR 60-1.4(b), pursuant to Executive Order 11246, "Equal Employment Opportunity" (30 FR 12319, 12935, 3 CFR Part, 1964-1965 Comp., p. 339), as amended by Executive Order 11375, "Amendment of Executive Order 11246 Concerning Equal Employment Opportunity," and implementing regulations in 41 CFR part 60, "Office of Federal Contract Enforcement Programs, Equal Employment Opportunity Department of Labor."

To that end, and pursuant to Section 41 CFR 60-1.4(b), during the performance of this Agreement, the SUCCESSFUL BIDDER agrees to the following:

A. The SUCCESSFUL BIDDER will not discriminate against any employee or job applicant because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The Successful Bidder will take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. That action shall include, inter alia, the following:

1. Employment, improvement, degradation or transfer; recruitment or recruitment advertising; dismissal or termination; payment rates or other forms of compensation; and selection for training, including apprenticeship. The SUCCESSFUL BIDDER undertakes to publish in visible places, available to employees and job applicants, notices that will be provided establishing the provisions of this non-discrimination clause.

B. The SUCCESSFUL BIDDER, in all applications or advertisements for employees placed by or on behalf of the SUCCESSFUL BIDDER, shall declare that all qualified applicants shall be considered for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.



- C. The SUCCESSFUL BIDDER shall not discharge or otherwise discriminate against any employee or job applicant because such employee or applicant has inquired, discussed or disclosed the compensation of the employee or applicant or other employee or applicant. This provision shall not apply to cases where an employee who has access to the compensation information of other employees or applicants as part of such employee's essential job functions discloses the compensation of such other employees or applicants to persons who do not have access to such information, unless such disclosure is in response to a grievance or formal charge, in compliance with an investigation, proceeding, hearing or action, including an investigation conducted by the employer, or in accordance with the legal duty of the Successful Bidder to provide information.
- D. The SUCCESSFUL BIDDER send to each trade union or workers' representative with whom it has a collective agreement or other contract or understanding, a notice to be provided advising that trade union or the workers' representatives of commitments of the Successful Bidder under this section and publish copies of the notification in visible places available to employees and job applicants.
- E. The SUCCESSFUL BIDDER shall comply with all provisions of Executive Order 11246 of September 24, 1965, and the relevant rules, regulations, and orders of the Secretary of Labor.
- F. The SUCCESSFUL BIDDER shall provide all information and reports required by or pursuant to Executive Order 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, and shall allow access to its books, records, and accounts by the administering agency and the Secretary of Labor for investigative purposes to determine compliance with such standards, regulations and orders.
- G. In the event of non-compliance by the SUCCESSFUL BIDDER with the non- discrimination clauses of this contract or any of the aforementioned rules, regulations or orders, this contract may be canceled, terminated or suspended in whole or in part and the Successful Bidder may be declared ineligible for new government contracts or construction contracts with federal assistance in accordance with the procedures authorized in the Order. Executive 11246 of September 24, 1965, and such other sanctions may be imposed, and remedies may be invoked as provided for in Executive Order 11246 of September 24, 1965, or by rule, regulation or order of the Secretary of Labor, or as provided by law.
- H. The SUCCESSFUL BIDDER shall include the provisions of the first paragraph of this Article III and sections A through G above in each subcontract or purchase order, unless exempted by the rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order 11246 of September 24, 1965, so that those provisions shall be binding on each subcontractor or supplier.
- I. The SUCCESSFUL BIDDER shall take such measures with respect to any subcontract or purchase order that the administering body may direct as a means of enforcing such provisions, including penalties for non-compliance: Provided that, in the event that a Successful Bidder becomes involved in, or threatened with, litigation with a sub- contractor or supplier as a result of such direction by the administering body, the SUCCESSFUL BIDDER may request the United States to enter such litigation to protect the interests of the United States.



J. The SUCCESSFUL BIDDER further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when participating in federally assisted construction work: As long as the applicant participating is a state or local government, the above equal opportunity clause does not apply to any agency, instrumentality or subdivision of such government that does not participate in the work in or under the contract.

K. The SUCCESSFUL BIDDER agrees that it will actively assist and cooperate with the administering agency and the Secretary of Labor to obtain compliance of the sub- contractors with the equal opportunity clause and the rules, regulations and orders of the Secretary of Labor, which shall provide the administering body and the Secretary of Labor with such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering body in fulfilling the agency's primary responsibility to ensure compliance.

L. The SUCCESSFUL BIDDER further agrees that it will refrain from entering into any modification of contract or contract subject to Executive Order 11246 of September 24, 1965, with a Successful Bidder excluded from, or who has not demonstrated eligibility for, government contracts and government-assisted construction contracts pursuant to the Executive Order and will carry out the sanctions and penalties for violation of the match clause. d of opportunities that may be imposed on successful Bidders and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the SUCCESSFUL BIDDER agrees that if it defaults or refuses to comply with these companies, the administering body may take any or all of the following actions: Cancel, terminate or suspend all or part of the grant (contract, loan, insurance, guarantee); refrain from extending any additional assistance to the DEPARTMENT within the framework of the program in respect of which the failure or reimbursement occurred until a guarantee has been received. satisfactory future compliance of such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

III. Copeland Anti-Kickback Act Compliance Clause

A. The salaries of personnel performing work under this Agreement shall be paid unconditionally and not less than once a month without deduction from payroll or reimbursement on any account, except only payroll deductions that are required by law or permitted by applicable regulations issued by the Secretary of Labor. in accordance with Copeland's "Anti-Bribery Act" of 13 June 1934 (48 Stat. 948; 62 Stat. 740; 63 Stat. 108; Title 18 U.S.C. § 874; and Title 40 USC § 276c). The SUCCESSFUL BIDDER will comply with 18 U.S.C. 874, 40 U.S.C. 3145, and the requirements of 29 C.F.R. pt. 3 and all applicable "Anti-Bribery" regulations and will insert appropriate provisions into all subcontracts covering work under this Agreement to ensure compliance by sub-contractors with such regulations.

B. Subcontracts. The SUCCESSFUL BIDDER or subcontractor shall insert in any subcontract the foregoing clause and other clauses that FEMA and HUD may require by appropriate instructions, and also a clause requiring subcontractors to include these clauses in any lower-level subcontract. The Principal Bidder shall be responsible for compliance by any lower-level subcontractor with all such contractual clauses.



C. Noncompliance. Failure to comply with the above contractual clauses may be grounds for termination of the contract, and disqualification as a Successful Bidder and subcontractors, as provided in 29 C.F.R., section 5.12.

IV. Contract Hours Clause and Safety Standards Act Clause (40 U.S.C. § 3701 and Subsequent)

A. Overtime requirements. No Successful Bidder or subcontractor who hires, for any part of the contractual work, which may require or involve the employment of workers or mechanics, shall demand or allow such worker or mechanic, in any working week in which he is employed in such work, to work in excess of forty hours in that working week unless such worker or mechanic receives compensation at a rate not less than one and a half times the basic wage rate for all hours worked above forty hours in that working week.

B. Rape; liability for unpaid wages; damages settled. In case of violation of the clause set forth in section VI (A) of this section, the Successful Bidder and any subcontractor responsible for it shall be liable for unpaid wages. In addition, such Successful Bidder and subcontractor shall be liable to the United States (in the case of work performed under contract for the District of Columbia or a territory, to such District or territory), for liquidated damages. Such liquidated damages shall be calculated with respect to each individual worker or mechanic, including guards and guards, employed in violation of the clause set forth in section VI (A) of this section, in the amount of \$27 for each calendar day on which individual was required or permitted to work above the standard forty-hour workweek without payment of the overtime wages required by the clause. set out in section VI (A) of this section.

C. Withholding of unpaid wages and liquidated damages. The DEPARTMENT shall by its own action or at the written request of an authorized representative of the Department of Labor withhold or cause to be withheld, of any money payable because of the work performed by the Licensed Bidder or subcontractor under any contract or any other federal contract with the same Principal Bidder, or any other federally assisted contract subject to the Contract Working Hours and Safety Standards, which is in the hands of the same Principal Successful Bidder, the sums determined to be necessary to satisfy any liability of such Successful Bidder or subcontractor for wages and damages settled in accordance with the provisions of section VI (B) of this section.

D. HEALTH AND SAFETY STANDARDS: The SUCCESSFUL BIDDER agrees to comply with Sections 107 and 103 of the Contract Work and Safety Standards Act. Section 107 of the Act applies to construction work and provides that no worker or mechanic shall be required to work in environments or in working conditions that are unhealthy, hazardous, or hazardous to his or her health and safety as determined in the construction, safety and health standards promulgated by the Secretary of Labor. These requirements do not apply to the purchase of supplies or materials or items normally available on the open market, nor to contracts of carriage.

E. Subcontracts. The SUCCESSFUL TENDERER shall insert in any subcontracting the clauses set out in paragraphs VI (A)(B)(C)(D) of this section and also a clause requiring subcontractors to include these clauses in



any lower-level subcontract. The SUCCESSFUL BIDDER shall be responsible for compliance by any lower-level subcontractor or subcontractors with the clauses set forth in sections VI (A)(B)(C)(D)(E) of this section.

VI. Suspension and Ineligibility Clause

- A. The SUCCESSFUL BIDDER represents and warrants that he and his contractors are not excluded or suspended or excluded or ineligible to participate in federal assistance programs subject to 2 CFR Part 2424.
- B. Debarment and Suspension. A contract award must not be made to parties listed on the governmentwide exclusions in the System of Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 and 12689.
- C. This contract is a covered transaction for the purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such, the SUCCESSFUL BIDDER is obliged to verify that none of the principal bidders of the Successful Bidder (defined in 2 C.F.R. 180.995) or their affiliates (defined in 2 C.F.R. 180.905) are excluded (defined in 2 C.F.R. 180.940) or disqualified (defined in 2 C.F.R. 180.935).
- D. The SUCCESSFUL BIDDER shall comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, and must include a requirement to comply with these regulations in any lower-level covered transaction it makes.
- E. This certification is a material representation of the facts invoked by the SUCCESSFUL BIDDER. If it is later determined that the SUCCESSFUL BIDDER did not comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to the resources available to the DEPARTMENT, the Federal Government may remedy, including, but not limited to suspension and/or disqualification.
- F. The SUCCESSFUL BIDDER undertakes to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C while its offer is valid and for the entire period of any Contract that may arise from this offer. The SUCCESSFUL BIDDER further undertakes to include a provision requiring such compliance in its covered lower-level transactions.

VII. Access to Records Clause

The following access to registration requirements applies to this agreement:

- A. The SUCCESSFUL BIDDER undertakes to provide the DEPARTMENT, FEMA, the Office of the Comptroller General of the United States, HUD, the Department of Housing of Puerto Rico or any agency that has subsidized the works contracted herein, access to any book, document, document and record of the SUCCESSFUL BIDDER that is directly relevant to this contract in order to conduct audits, exams, extracts and transcripts.



B. The SUCCESSFUL BIDDER undertakes to allow any of the foregoing parts to be reproduced by any means or to copy extracts and transcripts as reasonably necessary.

C. The SUCCESSFUL BIDDER agrees to provide the DEPARTMENT, FEMA, the Office of the Comptroller General of the United States, FEMA to HUD, the Puerto Rico Department of Housing with any agency that has subsidized the works contracted herein, access to construction or other work sites related to the work being completed under the contract.

D. In compliance with the Disaster Recovery Act of 2018, the (write on behalf of the non- federal entity) and the SUCCESSFUL BIDDER acknowledge and agree that no language in this agreement is intended to prohibit internal audits or reviews by the FEMA Administrator or U.S. Comptroller General.

VIII. DHS Seal Clause, Logo and Flags

The SUCCESSFUL BIDDER will not use the DHS seal(s), logos, crests, or reproductions of flags or likeness of DHS agency officials without the specific prior approval of FEMA.

IX. Federal Law Enforcement, Regulation, and Executive Orders Clause

This is an acknowledgement that FEMA's financial assistance will be used to fund all or part of the contract. The SUCCESSFUL BIDDER will comply with all applicable FEMA federal laws, regulations, executive orders, policies, procedures, and directives.

X. No Obligation of the Federal Government

The Federal Government is not a party to this contract and is not subject to any obligation or liability to the non-federal entity, Bidder Or any other party related to any matter resulting from the contract.

XI. Program Fraud Clause and False or Fraudulent Statements or Related Acts

The SUCCESSFUL BIDDER acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to the successful Bidder's actions related to this contract.

When a sub-recipient also requests CDBG-DR to fund non-federal cost-sharing, the following provisions are also required to fulfill the contract.

XII. Drug Free

The SUCCESSFUL BIDDER shall establish procedures and policies that promote a drug-free work environment. The SUCCESSFUL BIDDER must notify its employees of these policies as well as the penalties that may be imposed if any type of violation occurs. The SUCCESSFUL BIDDER must notify the DEPARTMENT if any of



its employees are criminally convicted of any offense related to the use of drugs in the work environment. Such notification shall be made within ten (10) days of the conviction being declared.

XIII. Right to Inventions

A. Stafford Act Disaster Grants. This requirement does not apply to Public Assistance, Hazard Mitigation Grant Program, Fire Management Assistance Grant Program, Crisis Counseling and Training Grant Program, Disaster Management Grant Program, or the Federal Individual and Household Assistance Program – Other Needs Assistance Grants, since FEMA awards under these programs do not meet the definition of "financing agreement."

B. If FEMA's award meets the definition of "financing agreement" under 37 CFR. 401.2(a) and the non-federal entity wishes to enter into a contract with a small business or non-profit organization with respect to the replacement of parts, assignment, or execution of experimental, development, or research work under that "funding agreement," the non-federal entity must comply with the requirements of 37 CFR Part 401 (Rights and Inventions Made by Non-Profit Organizations and Small Businesses under Government Grants, Contracts, and Cooperation Agreements) and any implementing regulations issued by FEMA. See 2 C.F.R. Part 200, Appendix II.

C. Regulation of 37 CFR § 401.2(a) currently defines "funding agreement" as any contract, grant, or cooperation agreement entered into between any federal agency, in addition to the Tennessee Valley Authority, and any Successful Bidder for the performance of experimental, development, or research work funded in whole or in part by the federal government. This term also includes any assignment, replacement of the parties or subcontract of any kind entered into for the performance of experimental, development or research work under a financing agreement as defined in the first phase of this paragraph.

D. This contract is one of works and construction, however, if it requires the realization of experimental, development or research work. The Department and the Successful Bidder shall stipulate the rights of the Federal Government and the recipient over any resulting invention pursuant to 37 CFR Part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any implementing regulations issued by any agency that has subsidized the works contracted herein.

XIV. Small and Minority Enterprises, Women's Commercial Enterprises and Labor Surplus Area Enterprises

The SUCCESSFUL BIDDER shall take the necessary affirmative action to ensure that minority enterprises, women's business enterprises and enterprises in the area of surplus labor are used in subcontracting where possible. Steps include, but are not therefore not:



- A. Include qualified small and minority enterprises and women's business enterprises on application lists,
- B. Ensure that small and minority businesses and women's business enterprises are solicited whenever they are potential sources,
- C. Divide total needs, where economically feasible, into smaller tasks or quantities to allow for maximum participation by small and minority enterprises and women's business enterprises.
- D. Establish delivery schedules, where permitted by the requirement, that encourage the participation of small and minority businesses and women's business enterprises; and
- E. Use the services and assistance of the Small Business Administration and the Department of Commerce's Minority Business Development Agency.
- F. For contracts of \$10,000 or more, the SUCCESSFUL BIDDER must file Form HUD 2516 (Contract and Subcontract Activity) with the Puerto Rico Department of Housing, quarterly.

The Department and the Successful Bidder agree to comply with mandatory rules and policies related to the Hatch Act, Public Law 94-163, as amended.

The Hatch Act applies to the political activities of certain state and local employees. State and local employees involved in or interfering with the works and provisions set forth in this agreement and/or the grants made hereunder may engage in any of the following activities: being a candidate in nonpartisan elections; attend political meetings and conventions; contribute money; campaigning in partisan elections; and holding positions in political parties. State and local employees involved in or interfering with the works and provisions set forth in this contract and/or the grants made hereunder may not perform the following activities: being a candidate in partisan elections; using official influence to interfere in elections; coercing the political contributions of subordinates in support of political parties or candidates to the office of the special counsel. operates a website that provides guidance on incubation law issues.

XV. Certification of Non-Segregated Facilities (Applicable to construction contracts exceeding \$10,000)

The SUCCESSFUL BIDDER certifies that it does not maintain or provide for its establishments, and that it does not allow employees to perform their services anywhere, under its control, where segregated facilities are maintained. It further certifies that it will not maintain or provide employees with segregated facilities in any of its establishments and will not allow employees to perform their services anywhere under its control where segregated facilities are maintained. The SUCCESSFUL BIDDER agrees that failure to comply with this certification is a violation of the equal opportunity clause of this Agreement.

As used in this certification, the term "segregated facilities" means any waiting room, work area, restrooms and washes, restaurants and other dining areas, time clocks, walk-in closets and other storage or walk-in closet areas, parking lots, drinking fountains, recreation or entertainment areas, transportation and lodging facilities provided for employees who are segregated by explicit directive or who, in fact, they are segregated on the basis of race, color, religion, or national origin due to local habits, customs, or any other reason.



The SUCCESSFUL BIDDER further agrees that (except where it has obtained it for specific periods of time) it will obtain an identical certification from the proposed subcontractors prior to the award of subcontracts exceeding \$10,000 that are not exempt from the provisions of the equal opportunity clause; that it will retain such certifications on file; and that it will send the above notice to the proposed subcontractors. s (except where proposed subcontractors have submitted identical certifications for specific time periods).

XVI. Flood Protection Act 1973

The SUCCESSFUL BIDDER will ensure that procedures and mechanisms are in place to monitor compliance with all flood insurance requirements as found in the Flood Disaster Protection Act of 1973, 24 CFR § 570.605.

XVII. Non-Assignability

The SUCCESSFUL BIDDER shall not assign any interest in the contract resulting from this procurement and shall not transfer any interest in the same (whether by assignment or novation) without prior written approval of the PRDOH.

XVIII. Religious Activity

The Department and the Successful Bidder agree to refrain from using the funds related to this Agreement for inherently religious activities prohibited by 24 CFR 570,200(j), such as worship, religious instruction, or proselytizing.

XIX. THE PARTIES shall notify the Puerto Rico Department of Housing as soon as possible if this Agreement or any aspect related to early work under this Agreement creates an actual or potential conflict of interest (as defined 2 CFR § 200.318(c), if applicable). The Department and the Successful Bidder shall explain the actual or potential conflict in writing in sufficient detail for Housing to assess such actual or potential conflict. The Department and the Successful Bidder shall provide the Puerto Rico Department of Housing with any additional information necessary to fully evaluate and address such actual or potential conflict of interest. The Department and the Successful Bidder will accept any reasonable conflict mitigation strategy employed by the Puerto Rico Department of Housing.

XX. The SUCCESSFUL BIDDER shall indemnify, defend and hold harmless the Government of Puerto Rico and the Department of Housing of Puerto Rico, its agents and employees, from and against any and all claims, actions, demands, charges and judgments arising out of or related to the negligence or intentionality, misconduct of the SUCCESSFUL BIDDER in the performance of the services required in this Agreement and that affect the funds that are subsidized by the Puerto Rico Department of Housing and HUD.



XXI. Information Requirements

THE PARTIES undertake to complete and submit all reports, in the form and according to the schedule required by the Department of Housing of Puerto Rico. THE PARTIES will cooperate with all efforts of the Puerto Rico Department of Housing and/or the Government of Puerto Rico to comply with HUD's reporting requirements and regulations, including, but not least, 2 CFR § 200.328 and 24 CFR § 570.507, where applicable.

XXII. Wage Withholding

If, as part of this Agreement, the SUCCESSFUL BIDDER or any subcontractor, the DEPARTMENT or any federal or state agency that subsidizes the works contracted herein may withhold from the payment due to the SUCCESSFUL BIDDER an amount sufficient to pay the difference between the wages to be paid and the wages actually paid to such employees. by the total number of hours worked. The amounts withheld may be disbursed by these agencies on behalf of the SUCCESSFUL BIDDER the respective employees to whom they are owed.

XXIII. Claims and Controversies Concerning Wage Rates

Claims and disputes relating to salary rates or classifications of professional personnel or technicians performing work under this Agreement shall be immediately reported in writing to the DEPARTMENT for determination.

XXVI. Value Engineering (Applicable to construction contracts exceeding \$2,000 when required by program legislation.)

The SUCCESSFUL BIDDER shall comply with the regulations on systematic and organized approach to analyze the functions of systems, equipment, facilities, services and materials to ensure that they achieve their essential functions at the lowest cost consistent with the life cycle in execution, reliability, quality and safety, in accordance with 2 CFR § 200.318. (G).

XXV. Section 3 of the Housing and Urban Development Act 1968 (as required by applicable thresholds)

A. Work to be performed under this Agreement is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. § 1701u (Section 3). The purpose of Section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by Section 3 are directed, to the greatest extent possible, to low- and very low-income individuals, particularly individuals who are beneficiaries of HUD housing assistance.

B. THE PARTIES agree to comply with HUD's regulations in 24 CFR Part 135, which implement Section 3. THE PARTIES certify that they are not under any contractual or other impediments that prevent them from complying with the regulations of Part 135.



- C. The SUCCESSFUL BIDDER agrees to send to each labor organization or workers' representative with which the SUCCESSFUL BIDDER has a collective agreement or other understanding, if any, a notice to the labor organization or workers' representative of its commitment under this clause of Section 3, and will publish copies of the notice in visible locations in the workplace where both employees and training applicants and jobs can see it. The notice shall describe the preference set forth in Section 3, establish the minimum number and job titles subject to recruitment, the availability of apprenticeship and training positions, the qualifications for each; the name and location of the person(s) who are filling out the applications for each of the positions; and the expected date for the start of the work.
- D. The SUCCESSFUL BIDDER agrees to include this clause of Section 3 in each subcontract subject to compliance with the regulations in 24 CFR Part 135, and agrees to take appropriate action, as provided in these clauses, if the subcontractor is determined to be in violation of the regulations in 24 CFR Part 135. The SUCCESSFUL BIDDER will not subcontract to any subcontractor when it has evidence or knowledge that the subcontractor has been found to be in violation of the regulations in 24 CFR Part 135.
- E. The SUCCESSFUL BIDDER shall certify that vacant jobs, including training positions, are filled: (1) after the selection of the SUCCESSFUL BIDDER but before the contract is executed, and (2) when filled with persons other than those to whom the regulations of 24 CFR Part 135 are intended to provide employment opportunities, it was not done by circumventing the obligations of the SUCCESSFUL BIDDER under 24 CFR Part 135.
- F. Failure to comply with HUD's regulations in 24 CFR Part 135 may result in penalties, termination of this Agreement for breach, and exclusion or suspension of future HUD- assisted contracts.
- G. With respect to work to be performed under this Agreement, Section 3, Section 7(b) of the Indian Self-Determination and Educational Assistance Act (25 U.S.C. § 450e) also applies. Section 7(b) requires that, to the greatest extent possible: (i) preference and training and employment opportunities shall be given to Indians, and (ii) preference shall be given in the award of contracts and subcontracts to Indian organizations and Indian-owned enterprises. THE PARTIES subject to the provisions of Section 3 and Section 7(b) agree to comply with Section 3 to the fullest extent possible, but without obviating compliance with Section 7(b).
- H. For contracts exceeding \$100,000, the SUCCESSFUL BIDDER shall submit Form HUD 60002 (Section 3 Summary Report) to the Puerto Rico Department of Housing, quarterly, without prejudice to the annual reporting requirement set forth in the instructions on that form.

XXVI. Fair Housing Act

The SUCCESSFUL BIDDER shall comply with the provisions of the Fair Housing Act of 1968, as amended. The Act prohibits discrimination in the sale or rental of housing, the financing of housing or the provision of brokerage services against any person on the basis of race, color, religion, sex, nationality, disability or family status. The Equal Housing Opportunity Act prohibits discrimination against individuals on the basis of race, color,



religion, sex, or national origin in the sale, rental, lease, or other disposition of residential property, or in the use or occupation of federally funded assisted living.

XXVII. Section 109 of the Housing and Community Development Act of 1974

THE PARTIES shall comply with the provisions of Section 109 of the Housing and Community Development Act of 1974. No person in the United States may be excluded from participation in, on the basis of race, color, national origin, or sex, be denied the benefits of, or be subject to discrimination under any program or activity funded in whole or in part with funds available under this title. Section 109 further provides that discrimination on the basis of age under the Age Discrimination Act 1975 or in respect of a qualified disabled person under Section 504 of the Rehabilitation Act 1973, as amended, is prohibited.

XXVIII. Record Retention

The SUCCESSFUL BIDDER agrees to maintain all books, records, accounts and reports and all other records produced or collected in connection with the contract resulting from this procurement for a period of not less than six (6) years after the date of final payment and close-out of all pending matters related this Contract or the federally declared disasters. If any litigation, claim, or audit is reasonably anticipated to arise or started before the expiration of the six (6) year period, the records must be retained until all litigation claims or audit findings involving the records have been resolved and final action taken.

XXIX. Provisions Required By Law Deemed Inserted

Each and every provision of law and clause required by law, regulation, executive order, policy, procedure, directive, Federal grant award or agreement, or cooperative agreement with any Federal agency to be inserted in this Contract shall be deemed to be inserted herein and the agreement shall be read and enforced as though it were included herein through mistake or otherwise, any provision is not inserted, or is not correctly inserted, then upon the application of the inserted application of either party the Contract shall be amended to make such insertion or correction.

XXX. Subcontracting

The SUCCESSFUL BIDDER shall only subcontract with the purpose to fulfill the essential services object of this Contract. Under no circumstance shall the PRDOH's consent to authorize such subcontracts be interpreted as them incurring in additional obligations as to the total compensation in dollars proposed by BIDDER herein, or that the SUCCESSFUL BIDDER will be relieved of its responsibility for any damages that the subcontracted party would cause.

Every subcontract shall be subject to all special conditions established in the contract resulting from this procurement and to any additional condition the PRDOH deems necessary for its approval, and to all law and regulations (state and federal) applicable to the contract originated and subscribed by THE PARTIES.



Procedural provisions for subcontracting. When subcontracting, the SUCCESSFUL BIDDER shall solicit for and contract with such subcontractors in a manner providing for fair competition. Some of the situations considered to be restrictive of competition include, but are not limited to:

1. Placing unreasonable requirements on firms in order for them to qualify to do business;
2. Requiring unnecessary experience and excessive bonding;
3. Noncompetitive pricing practices between firms or between affiliated Companies;
4. Noncompetitive awards to consultants that are on retainer contracts
5. Organizational conflicts of interest;
6. Specifying only a brand name product instead of allowing an equal product to be offered and describing the performance of other relevant requirements of the procurement; and
7. Any arbitrary action in the procurement process.

The SUCCESSFUL BIDDER confirms that all work shall be performed by personnel experienced in the appropriate and applicable profession and areas of expertise, taking into account the nature of the work to be performed under this Contract. The SUCCESSFUL BIDDER will include all HUD General Provisions and 2 CFR Appendix II provisions in every subcontract issued by it under this Contract, so that such provisions will be binding upon each of its subcontractors as well as the requirement to flow down such terms to all lower-tiered subcontractors.

XXXI. Discrimination Due to Certain Labor Matters

No person employed on the services covered by this Contract shall be discharged or in any way discriminated against because he or she has filed any complaint or instituted or caused to be instituted any proceeding or has testified or is about to testify in any proceeding under or relating to the labor standards applicable hereunder to their employer.

XXXII. Domestic Preference for Procurements

As appropriate and to the extent consistent with law, the SUCCESSFUL BIDDER, to the greatest extent practicable under a Federal award, will provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States (including but not limited to iron, aluminum, steel, cement, and other manufactured products). The requirements of this section must be included in all subawards including all contracts and purchase orders for work or products under this award.'

XXXIII. Federal Labor Standards Act

The SUCCESSFUL BIDDER shall comply with the Federal Labor Standards Provisions set forth in FORM HUD 4010, available at <https://www.hud.gov/sites/documents/4010.PDF>

XXXIV. Interest of Certain Federal Officers

No member of, or delegate to, the Congress of the United States and no Resident Commissioner shall be admitted any share or part of this Contract or to any benefit to arise therefrom.



XXXV. Interest of Members of Local Public Agency and Others

The SUCCESSFUL BIDDER agrees to establish safeguards to prohibit employees from using positions for a purpose that is or gives the appearance of being motivated by a desire for private gain for themselves or others, particularly those with whom they have a family, business, or other tie. The **SECOND PARTY** will be aware of and avoid any violation of the laws of this State which prohibit municipal officers and employees from having or owning any interest or share, individually or as agent or employee of any person or corporation, either directly or indirectly, in any contract made or let by the governing authorities of such municipality for the construction or doing of any public work, or for the sale or purchase of any materials, supplies or property of any description, or for any other purpose whatsoever, or in any subcontract arising therefrom or connected therewith, or to receive, either directly or indirectly, any portion or share of any money or other thing paid for the construction or doing of any public work, or for the sale or purchase of any property, or upon any other contract made by the governing authorities of the municipality, or subcontract arising therefore or connected therewith.

The SUCCESSFUL BIDDER will also be aware of and avoid any violation of the laws of this State which prescribe a criminal penalty for any public officer who has an interest in any contract passed by the board of which he or she is a member during the time he or she was a member and for one year thereafter.

XXXVI. Interest of Bidder

The Bidder certifies that it presently has no interest and shall not acquire any interest, direct or indirect, in the above-described project or any parcels therein or any other interest which would conflict in any manner or degree with the performance of the Work hereunder. The **SECOND PARTY** further agrees that no person having any such interest shall be employed in the performance of the contract resulting from this procurement.

XXXVII. Personnel

The SUCCESSFUL BIDDER represents that it has, or will secure at its own expense, all personnel required in performing the services under this procurement. Such personnel shall not be employees of, or have any contractual relationship with, the contracting party. All the services required hereunder will be performed by the SUCCESSFUL BIDDER or under its supervision, and all personnel engaged in the work shall be fully qualified and shall be authorized or permitted under State and local law to perform such services. No person who is serving sentence in a penal or correctional institution shall be employed on work under the contract resulting from this procurement.

XXXVIII. Procurement of Recovered Materials

In the performance of the contract resulting from this procurement, the SUCCESSFUL BIDDER shall make maximum use of products containing recovered materials that are EPA-designated items unless the product cannot be acquired:

1. Competitively within a timeframe providing for compliance with the Contract Performance Schedule;
2. Meeting Contract performance requirements; or
3. At a reasonable price.



Information about this requirement, along with the list of EPA-designated items, is available at EPA's Comprehensive Procurement Guidelines web site:

<https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program>.

The SUCCESSFUL BIDDER also agrees to comply with all other applicable requirements of Section 6002 of the Solid Waste Disposal Act.

XXXIX. Prohibition of Certain Services and Equipment

The SUCCESSFUL BIDDER is prohibited from procuring, obtaining, entering into a contract (or extending or renewing a contract) to procure or obtain equipment, services, or systems that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. As described in Public Law 115-232, section 889, covered telecommunications equipment is telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities). For the purpose of public safety, security of government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by the above companies, or their subsidiaries or affiliates, is equally prohibited. Finally, the procurement, or obtaining through any manner, of telecommunications or video surveillance equipment or services provided or produced by such entities as the above, or by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise under the influence of, the government of a covered foreign country, is also prohibited.



ATTACHMENT XI

SCOPE OF WORK

Damage #181598; Building A Campus Pavilions (Annexes)

General Facility Information:

Facility Type: Building

Building Type: Hospital

Facility: Hospital Laboratories

Facility Description:

Pavilion #1: Steel frame building with CMU walls (exterior) approximately 6,500 SF.

Pavilion #2: A rectangular shaped 2 story building of approximately 6,270 SF with a footprint of (210 FT long x 25 FT wide). **Pavilion #3:** The facility is a one-story Pavilion building of approximately 5,250 SF footprint.

Pavilion #3 Annex: The facility is a one-story office building of approximately 3,008 SF footprint **Pavilion #4:** This facility consists of a 1-story concrete building with gable roof with 2/12 pitch and a footprint of 5,016 SF.

Pavilion #4 Annex: This facility consists of a 1-story concrete building with a gable galvalume metal roof with 5/12 pitch. Footprint of 1,396.5 SF. **Pavilion #4 Trailer :** This facility consists of an aluminum siding office trailer with paneled walls and a footprint of 1,008 SF. Please refer to the document attached with full details of each building.

Approx. Year Built: 1960

Location Description: 1111 Calle Teniente Cesar Gonzalez San Juan, PR 00929
GPS Latitude/Longitude: 18.39031, -66.07408

Accessory Building # 1

Accessory Building # 2

Accessory Building #3

SCOPE OF WORK

PHASE 1

Asbestos and Lead Remediation. (Please, review the scope and studies).



The contractor is responsible for verifying in the field the work to be performed.

Phase II:

Demolition of Pavilions 1,2,3,4 and accessory buildings 1,2 and 3. (Please, review the scope, drawings, and technical specifications)

01 General Requirements

Selective Structure (Building) Demolition:

Execute all selective demolition and removal work as indicated in Drawings and related specifications. The Contractor shall remove demolition debris at the end of each working day or more frequently, if required, to keep the working area clean and safe.

Demolition of Pavilions 1,2,3,4 and accessory buildings 1,2 and 3

Pavilion #1

Pavilion # 2

Pavilion #3

Pavilion #4

Accessory BLDG. 1

Accessory BLDG. 2

Accessory BLDG. 3

TECHNICAL SPECIFICATIONS

Hurricane Maria 4339 DR-PR Project No.49545 P/W 00720. For all the items described here, please check the attached documents.

- Public Health Laboratory phase 1: Demolition Package.
- Technical Specifications Laboratorio de Salud Pública
Phase 1: General Demolition Package.
- Lead and Asbestos Inspection Report



Project Notes:

1. Solid Waste Disposal Act

Contractor shall handle, manage, and dispose of all types of hazardous waste in accordance with requirements of local, state, and federal laws, regulations, and ordinances. In addition, the Applicant shall ensure that all debris is separated and disposed of in a manner consistent with the PR DNER guidelines at a permitted site or landfill.

For asbestos containing material and lead base paint the Applicant shall handle, manage, and dispose of all types of hazardous waste in accordance with requirements of local, state, and federal laws, regulations, and ordinances. In addition, the Applicant shall ensure that all debris is separated and disposed of in a manner consistent with the PR-DNER guidelines at a permitted site or landfill or provide evidence of the close out permit from PR-DNER for activities of remediation, abatement or removal of those materials.

Contractor will provide the name, location, coordinates and permits of the disposal facility to the PRDOH upon project completion as part of Project Closeout.

2. Permitting

The Selected Proponent will be responsible for securing and presenting to PRDOH all necessary and relevant permits to conduct and complete this work.

3. Project Performance Schedule

The Selected Proponent will submit a detailed Performance Schedule within 15 days upon notification of adjudication.

MINIMUM FEDERAL TERMS AND CONDITIONS

1. **Clean Air Act and the Federal Water Pollution Control Act** – Contracts of amounts in excess of \$150,000.00 must contain provisions that requires the contractor to agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. §§7401-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. §§ 1251-1387)
2. **Byrd Anti-Lobbying Amendment** – Contractors that apply or bid for an award of \$100,000.00 or more must file the required certification. (31 U.S.C. § 1352, as amended); (44 C.F.R. Part 18)
3. **Buy American Act of 1933** – To the extent applicable, Contractor shall comply with the Buy American Act in the purchases of goods (articles, materials, or supplies) valued over \$10,000.00. (41 U.S.C §8301 et seq.)
4. **Contract Work Hours and Safety Standard Act** – Where applicable, this act requires compliance with 40 U.S.C. § 3701 et seq. to all FEMA grants that involves the employment of mechanics and laborers, which include watchmen and guards.



5. **Davis-Bacon and Related Acts** – To the extent applicable, Contractor shall comply with the prevailing wage requirements applicable to construction, alteration, or repair of public buildings or public works. (29 CFR Parts 1, 3 and 5)
6. **Solid Waste Disposal Act** – To the extent applicable, Contractor will comply with regulations related to waste management and disposition in a manner that maximizes energy and resource recovery. (42 U.S.C. §6002 et seq.)
7. **Age Discrimination Act of 1975** – No person in the United States shall, based on age, be excluded from participating in, be denied the benefits of, or be subjected to discrimination under, any program or activity receiving federal financial assistance. (42 U.S.C. § 6101 et seq.)
8. **Rehabilitation Act of 1973** – Contractors will not discriminate against any employee or applicant for employment solely because of physical or mental handicap for which the employee or applicant is otherwise well qualified. (29 U.S.C. § 701 et seq.)
9. **Civil Rights Act of 1964** - No person in the United States shall, on the grounds of race, color or national origin, be excluded from participating in, be denied the benefits of, or be subjected to discrimination under, any program or activity receiving federal financial assistance. (42 U.S.C § 1971, et seq.)
10. **Energy Efficiency** – The Contractor agrees to comply with the requirements of 42 U.S.C § 6201 which contain policies relating to energy efficiency.
11. **Compliance with the United States Office of Management and Budget** – Contractor agrees to comply with the regulations, policies, guidelines, and requirements related to the use of federal funds under the contract.
12. **Compliance with Laws, Regulations and Executive Orders** – The Contractor acknowledges that FEMA, HUD, or other federal financial disaster funds will be used to fund work under the Formal Bid and the resulting contract. The Contractor shall comply with all applicable Federal and Puerto Rico Government laws, regulations, executive orders, policies, procedures, and directives, including but not limited to the Puerto Rico Anticorruption Code, all Federal Cost Principles set forth in 2 C.F.R. Part 200, and all applicable FEMA regulations in 44 C.F.R. Chapter 1.



TABLA DE OFERTAR
SUBASTA FORMAL 24J-08889-R1
PARA LA ADQUISICIÓN DE SERVICIOS DE DEMOLICIÓN DE LA INFRAESTRUCTURA, REMOCIÓN DE ASBESTO Y PLOMO DE
LOS PABELLONES ANEXOS AL EDIFICIO A DE OFICINAS ADMINISTRATIVAS Y LABORATORIO DE SALUD PÚBLICA, ADSCRITO AL
DEPARTAMENTO DE SALUD DEL GOBIERNO DE PUERTO RICO

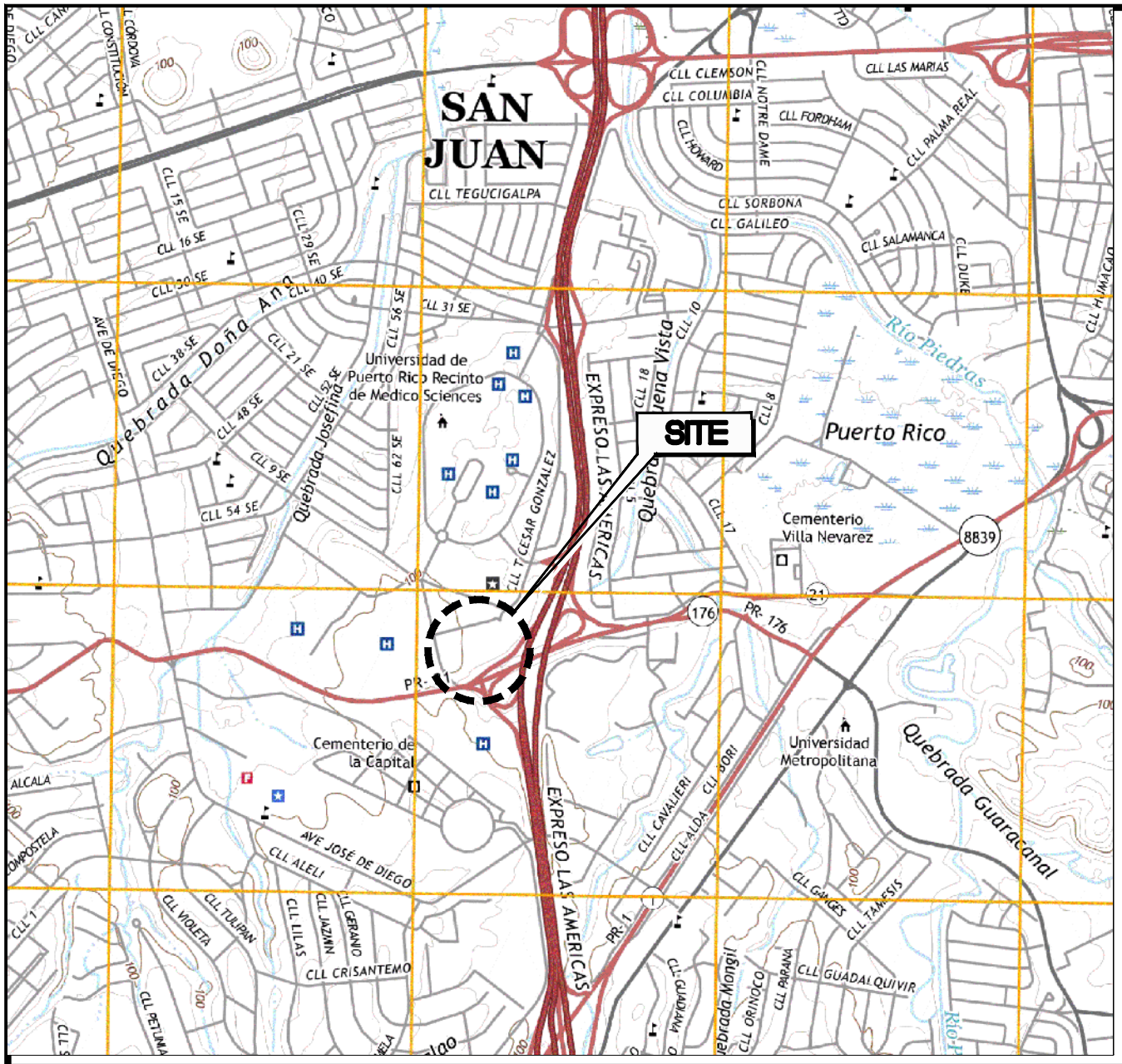


PARTIDA	DESCRIPCION	UNIDAD	CANTIDAD	COSTO DEL MATERIAL	COSTO DE LA OBRA	COSTO TOTAL	TIEMPO DE ENTREGA
Building Demolition							
EXISTING CONDITIONS							
1	Buildings Demolition	LS	1				
2	Selective Site Demolition	LS	1				
3	Asbestos Remediation	LS	1				
4	Lead Remediation	LS	1				
CONCRETE							
5	Miscellaneous Concrete	LS	1				
MECHANICAL							
6	Mechanical Demolition	LS	1				
ELECTRICAL							
7	Electrical Demolition	LS	1				
8	New Electrical Work (as part of the shutdown)	LS	1				
EARTHWORK							
9	Earth Moving	LS	1				
10	Erosion and Sedimentation Controls	LS	1				
EXTERIOR IMPROVEMENTS							
11	Crushed Stone Surface (including Wood Edging)	LS	1				
12	Chain Link Fences and Gates (including Security Mesh)	LS	1				
13	Landscape Grading	LS	1				
14	Sodding	LS	1				
15	Asphalt Pavement Repair (After saw cut and demolition of existing asphalt pavement required to install the new electrical feeder to connect the trailers and laboratories, provide aggregate base course & asphalt pavement to repair the existing road.)	LS	1				
For quote all the items described here, please check the attached documents .				TOTAL			



TABLA DE OFERTAR
SUBASTA FORMAL 24J-08889-R1
PARA LA ADQUISICIÓN DE SERVICIOS DE DEMOLICIÓN DE LA INFRAESTRUCTURA, REMOCIÓN DE ASBESTO Y PLOMO DE LOS PABELLONES ANEXOS AL EDIFICIO A DE OFICINAS ADMINISTRATIVAS Y LABORATORIO DE SALUD PÚBLICA, ADSCRITO AL DEPARTAMENTO DE SALUD DEL GOBIERNO DE PUERTO RICO

[illegible]



LOCATION PLAN N.T.S.

DEPARTAMENTO DE SALUD
PUBLIC HEALTH LABORATORY
PHASE 1: DEMOLITION PACKAGE

SAN JUAN

P U E R T O R I C O

INDEX OF DRAWINGS

T-01 - SHEET TITLE, LOCATION PLAN & INDEX OF DRAWINGS

REFERENCE DRAWINGS

FOR REFERENCE DRAWINGS REFER TO TECHNICAL SPECIFICATIONS SECTION 00 01 15 - LIST OF DRAWINGS SHEETS.

CIVIL DRAWINGS

- C0-30 EXISTING CONDITIONS AND TOPOGRAPHIC SURVEY
- C1-10 DEMOLITION PLAN
- C1-20 UTILITIES DEMOLITION PLAN
- C2-10 LAYOUT PLAN
- C4-80 EROSION AND SEDIEMENTATION CONTROL PLAN
- C4-90 EROSION AND SEDIEMENTATION CONTROL DETAILS
- C9-10 TYPICAL SECTIONS AND DETAILS
- C12-10 RECYCLING PLAN
- C12-11 RECYCLING DETAILS

ARCHITECTURAL DRAWINGS

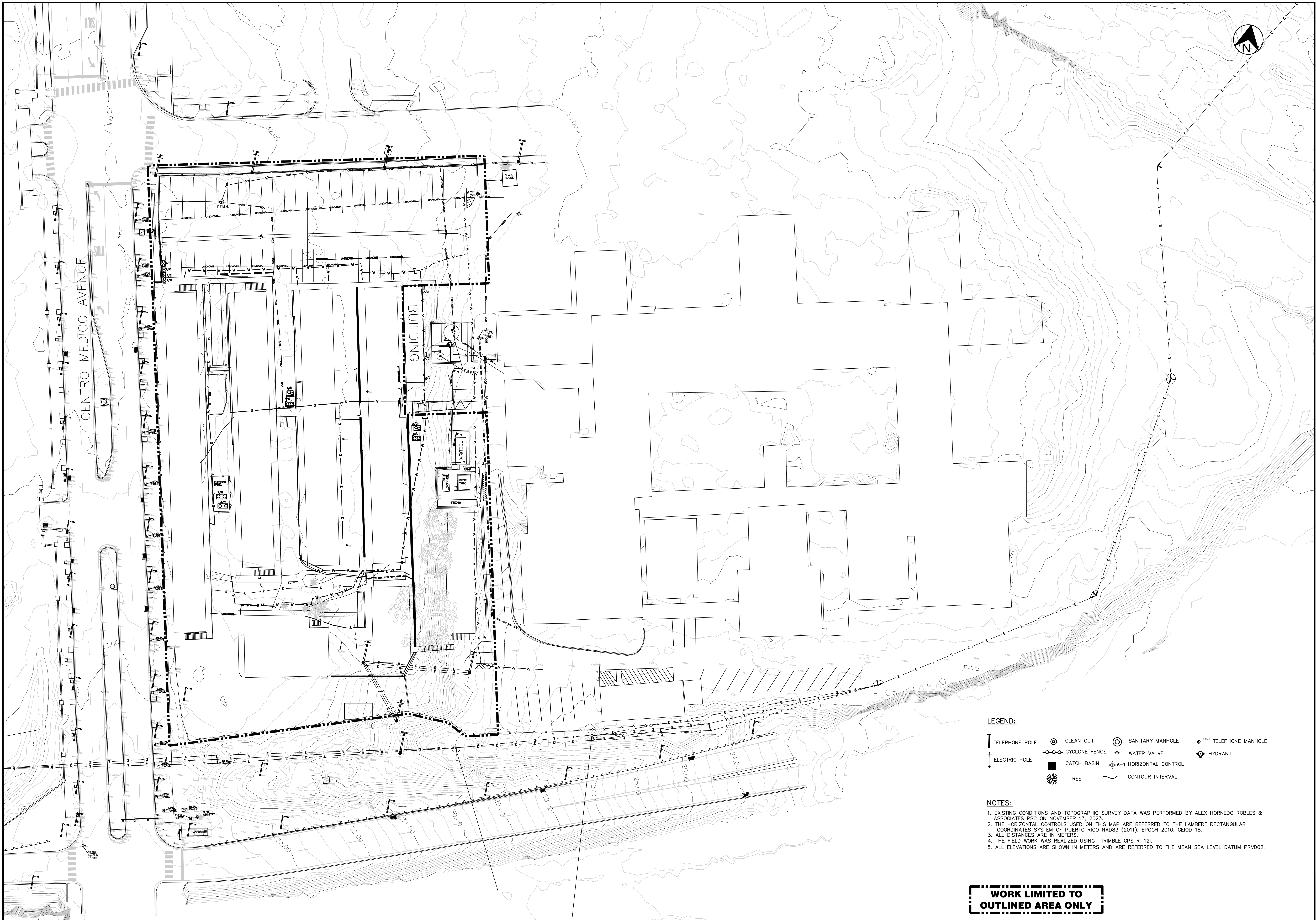
- DA0-01 DEMOLITION ARCHITECTURAL GENERAL NOTES AND KEYNOTES
- DA1-00 ARCHITECTURAL SITE PLAN - DEMOLITION
- DA1-01 GENERAL GROUND FLOOR PLAN - DEMOLITION
- DA1-02 GENERAL SECOND FLOOR PLAN - DEMOLITION

MECHANICAL DRAWINGS

- DM2-00 GENERAL FLOOR PLAN - MECHANICAL DEMOLITION
- DM2-01 GENERAL SECOND FLOOR PLAN - MECHANICAL DEMOLITION

ELECTRICAL DRAWINGS

- DE0-01 DEMOLITION ELECTRICAL SITE PLAN
- DE6-01 DEMOLITION ELECTRICAL INSTALLATION PLAN
- DE6-02 DEMOLITION ELECTRICAL INSTALLATION SECOND FLOOR PLAN
- E0-01 ELECTRICAL SITE PLAN



LEGEND:

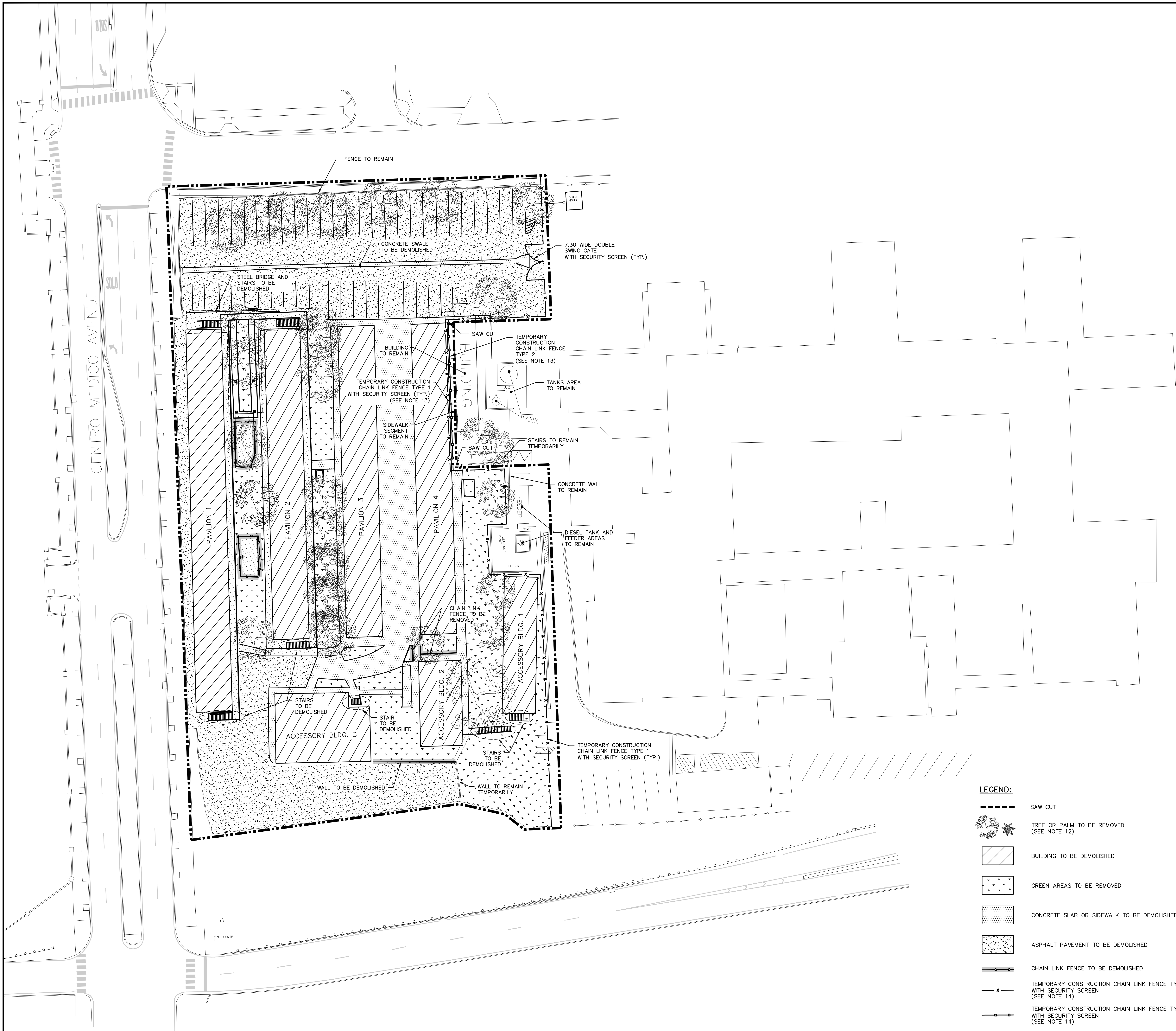
- | | | | |
|----------------|------------------|--------------------|-------------------|
| TELEPHONE POLE | CLEAN OUT | SANITARY MANHOLE | TELEPHONE MANHOLE |
| ELECTRIC POLE | CYCLONE FENCE | WATER VALVE | HYDRANT |
| | CATCH BASIN | HORIZONTAL CONTROL | |
| TREE | CONTOUR INTERVAL | | |

NOTES:

- EXISTING CONDITIONS AND TOPOGRAPHIC SURVEY DATA WAS PERFORMED BY ALEX HORNEDO ROBLES & ASSOCIATES PSC ON NOVEMBER 13, 2023.
- THE HORIZONTAL CONTROLS USED ON THIS MAP ARE REFERRED TO THE LAMBERT RECTANGULAR COORDINATES SYSTEM OF PUERTO RICO NAD83 (2011), EPOCH 2010, GEIOD 18.
- ALL DISTANCES ARE IN METERS.
- THE FIELD WORK WAS REALIZED USING TRIMBLE GPS R-12L.
- ALL ELEVATIONS ARE SHOWN IN METERS AND ARE REFERRED TO THE MEAN SEA LEVEL DATUM PRVD02.

WORK LIMITED TO
OUTLINED AREA ONLY

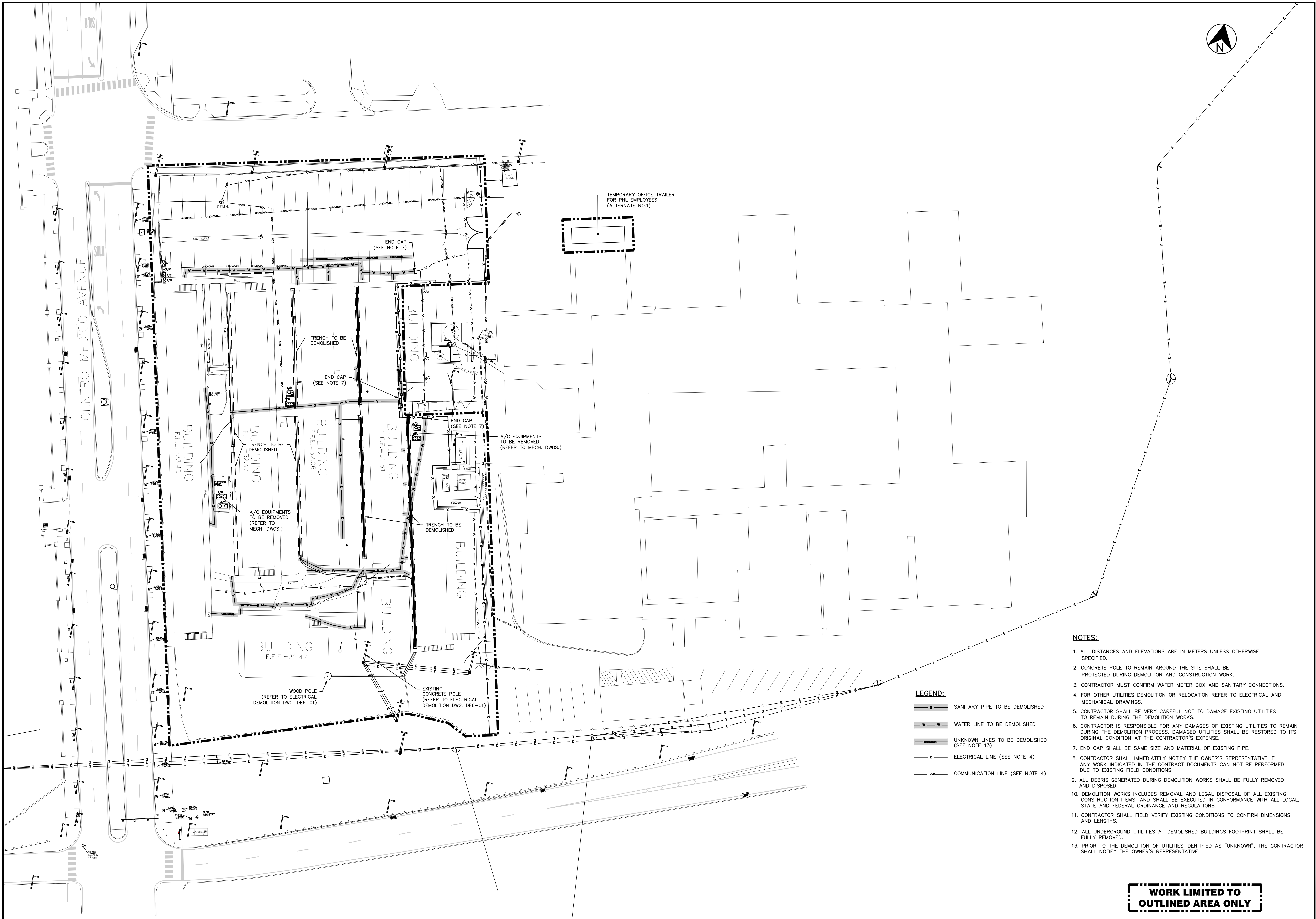
CMA ARCHITECTS & ENGINEERS LLC	DEPARTAMENTO DE SALUD PUBLIC HEALTH LABORATORY PHASE 1: DEMOLITION PACKAGE	SAN JUAN	PUERTO RICO										Job No. 23027	EXISTING CONDITIONS AND TOPOGRAPHIC SURVEY	C0-30	
													SCALE AS SHOWN			
													DATE 11/07/23			
				11/22/23			A. MARTINEZ						DRAWN BY A.M. MUÑOZ			
													CHECKED BY A.MARTINEZ			
DATE		REVISIONS		BY	DATE		REVISIONS		BY	DATE		REVISIONS		BY	TITLE	



1. ALL DISTANCES AND ELEVATIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
2. ALL CONCRETE SLABS, CONCRETE BASES AND FOUNDATIONS SHALL BE FULLY DEMOLISHED.
3. CONTRACTOR SHALL BE VERY CAREFUL NOT TO DAMAGE EXISTING UTILITIES TO REMAIN DURING THE DEMOLITION WORKS.
4. CONTRACTOR SHALL BE VERY CAREFUL NOT TO DAMAGE EXISTING BUILDING AND EQUIPMENT TO REMAIN DURING THE DEMOLITION WORKS.
5. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE INFLICTED TO ADJACENT PROPERTY OR OTHER AREAS DURING THE DEMOLITION PROCESS. DAMAGED ITEMS SHALL BE RESTORED TO ITS ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
6. FOR CIVIL UTILITIES DEMOLITION REFER TO DRAWING C1-20.
7. FOR OTHER UTILITIES DEMOLITION REFER TO ELECTRICAL AND MECHANICAL DRAWINGS.
8. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE IF ANY WORK INDICATED ON THE CONTRACT DOCUMENTS CAN NOT BE PERFORMED DUE TO EXISTING FIELD CONDITIONS.
9. ALL DEBRIS GENERATED DURING DEMOLITION WORKS SHALL BE FULLY REMOVED AND DISPOSED.
10. DEMOLITION WORKS INCLUDES REMOVAL AND LEGAL DISPOSAL OF ALL EXISTING CONSTRUCTION ITEMS, AND SHALL BE EXECUTED IN CONFORMANCE WITH ALL LOCAL, STATE AND FEDERAL ORDINANCE AND REGULATIONS.
11. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS TO CONFIRM DIMENSIONS AND LENGTHS.
12. FOR TREE INVENTORY REFER TO DRAWING L1-10.
13. TEMPORARY CONSTRUCTION CHAIN LINK FENCE TYPE 2 SHALL BE INSTALLED AT SITE PRIOR TO THE DEMOLITION OF PAVILION 4. UPON DEMOLITION OF PAVILION 4 CONTRACTOR SHALL REMOVE TEMPORARY FENCE TYPE 2 AND INSTALL THE TEMPORARY CONSTRUCTION CHAIN LINK FENCE TYPE 1 ALLOWING 1.83 CLEARANCE FROM THE EXISTING METAL STRUCTURE.
14. IN CASE WHERE HIGH VELOCITY WINDS ARE EXPECTED DUE TO WEATHER CONDITIONS, FENCE SECURITY SCREEN MUST BE REMOVED.

	SAW CUT
	TREE OR PALM TO BE REMOVED (SEE NOTE 12)
	BUILDING TO BE DEMOLISHED
	GREEN AREAS TO BE REMOVED
	CONCRETE SLAB OR SIDEWALK TO BE DEMOLISHED
	ASPHALT PAVEMENT TO BE DEMOLISHED
	CHAIN LINK FENCE TO BE DEMOLISHED
	TEMPORARY CONSTRUCTION CHAIN LINK FENCE WITH SECURITY SCREEN (SEE NOTE 14)
	TEMPORARY CONSTRUCTION CHAIN LINK FENCE WITH SECURITY SCREEN (SEE NOTE 14)

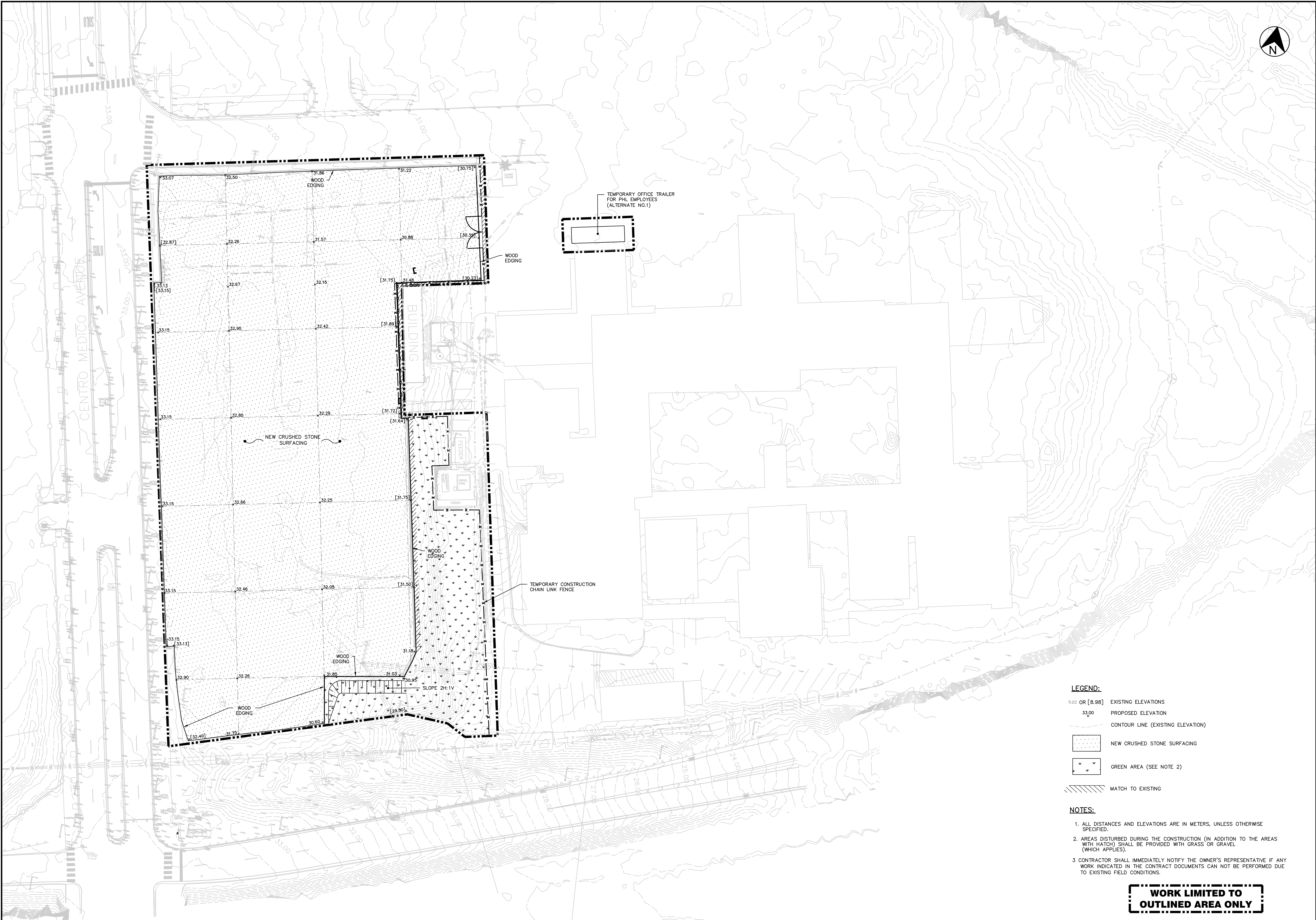
**WORK LIMITED TO
OUTLINED AREA ONLY**



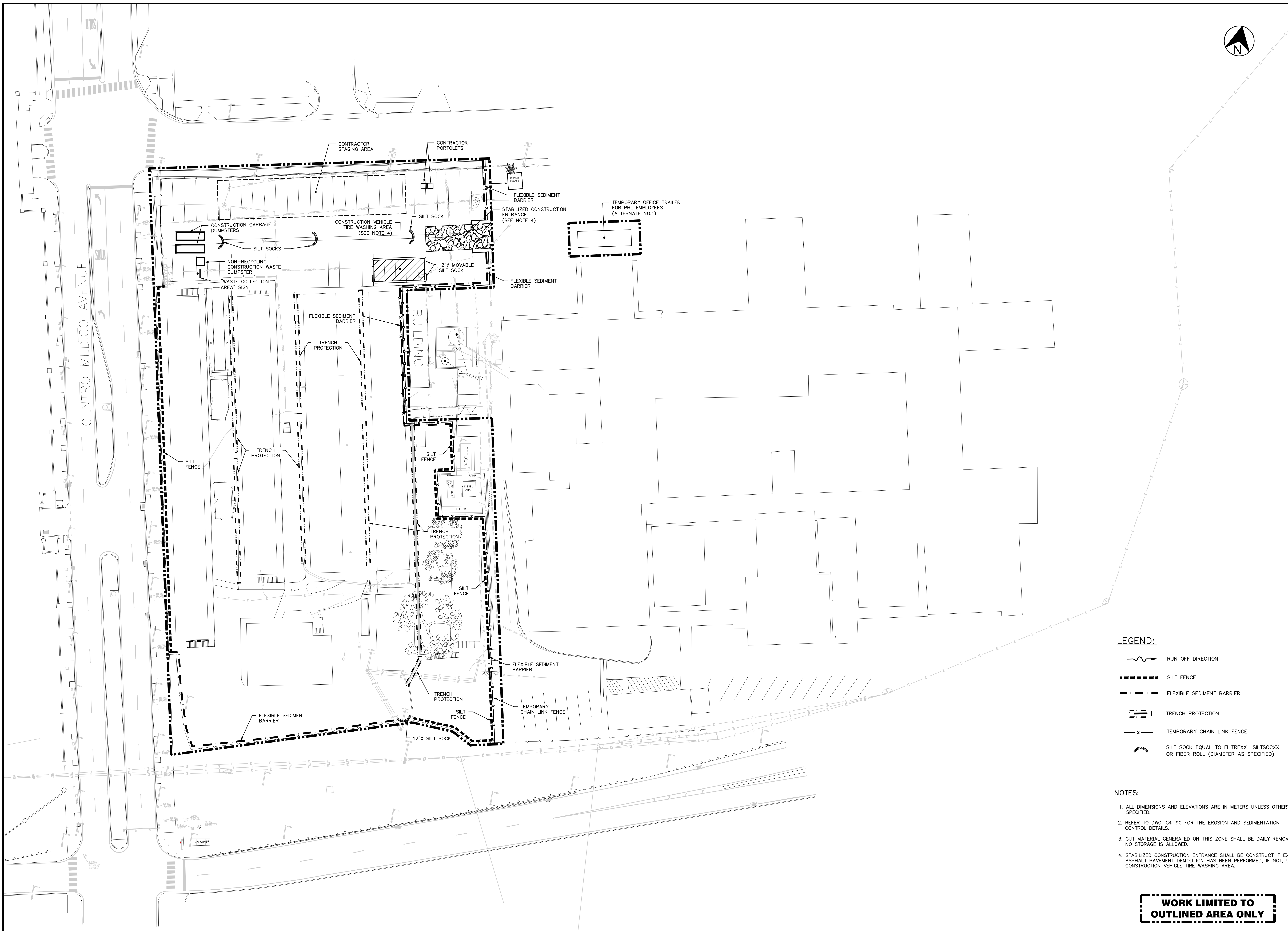
- NOTES:**
1. ALL DISTANCES AND ELEVATIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
 2. CONCRETE POLE TO REMAIN AROUND THE SITE SHALL BE PROTECTED DURING DEMOLITION AND CONSTRUCTION WORK.
 3. CONTRACTOR MUST CONFIRM WATER METER BOX AND SANITARY CONNECTIONS.
 4. FOR OTHER UTILITIES DEMOLITION OR RELOCATION REFER TO ELECTRICAL AND MECHANICAL DRAWINGS.
 5. CONTRACTOR SHALL BE VERY CAREFUL NOT TO DAMAGE EXISTING UTILITIES TO REMAIN DURING THE DEMOLITION WORKS.
 6. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGES OF EXISTING UTILITIES TO REMAIN DURING THE DEMOLITION PROCESS. DAMAGED UTILITIES SHALL BE RESTORED TO ITS ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
 7. END CAP SHALL BE SAME SIZE AND MATERIAL OF EXISTING PIPE.
 8. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE IF ANY WORK INDICATED IN THE CONTRACT DOCUMENTS CAN NOT BE PERFORMED DUE TO EXISTING FIELD CONDITIONS.
 9. ALL DEBRIS GENERATED DURING DEMOLITION WORKS SHALL BE FULLY REMOVED AND DISPOSED.
 10. DEMOLITION WORKS INCLUDES REMOVAL AND LEGAL DISPOSAL OF ALL EXISTING CONSTRUCTION ITEMS, AND SHALL BE EXECUTED IN CONFORMANCE WITH ALL LOCAL, STATE AND FEDERAL ORDINANCE AND REGULATIONS.
 11. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS TO CONFIRM DIMENSIONS AND LENGTHS.
 12. ALL UNDERGROUND UTILITIES AT DEMOLISHED BUILDINGS FOOTPRINT SHALL BE FULLY REMOVED.
 13. PRIOR TO THE DEMOLITION OF UTILITIES IDENTIFIED AS "UNKNOWN", THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE.

- LEGEND:**
- S SANITARY PIPE TO BE DEMOLISHED
 - W WATER LINE TO BE DEMOLISHED
 - UNKNOWN UNKNOWN LINES TO BE DEMOLISHED (SEE NOTE 13)
 - E ELECTRICAL LINE (SEE NOTE 4)
 - COM COMMUNICATION LINE (SEE NOTE 4)

**WORK LIMITED TO
OUTLINED AREA ONLY**



	DEPARTAMENTO DE SALUD PUBLIC HEALTH LABORATORY PHASE 1: DEMOLITION PACKAGE	SAN JUAN PUERTO RICO	11/22/23			11/07/23			Job No. 23027	LAYOUT AND GRADING PLAN	C3-20
			A. MARTINEZ			A.M. MUÑOZ			SCALE AS SHOWN		
			ISSUED FOR BID			CHECKED BY A.MARTINEZ			DATE		
			DATE	REVISIONS	BY	DATE	REVISIONS	BY	CHECKED BY		



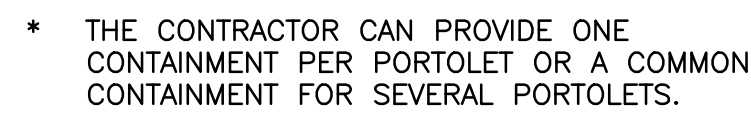
	RUN OFF DIRECTION
	SILT FENCE
	FLEXIBLE SEDIMENT BARRIER
	TRENCH PROTECTION
	TEMPORARY CHAIN LINK FENCE
	SILT SOCK EQUAL TO FILTREXX SILTSOCKXX OR FIBER ROLL (DIAMETER AS SPECIFIED)

1. ALL DIMENSIONS AND ELEVATIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
2. REFER TO DWG. C4-90 FOR THE EROSION AND SEDIMENTATION CONTROL DETAILS.
3. CUT MATERIAL GENERATED ON THIS ZONE SHALL BE DAILY REMOVED NO STORAGE IS ALLOWED.
4. STABILIZED CONSTRUCTION ENTRANCE SHALL BE CONSTRUCT IF EXISTING ASPHALT PAVEMENT DEMOLITION HAS BEEN PERFORMED, IF NOT, USE CONSTRUCTION VEHICLE TIRE WASHING AREA.

**WORK LIMITED TO
OUTLINED AREA ONLY**



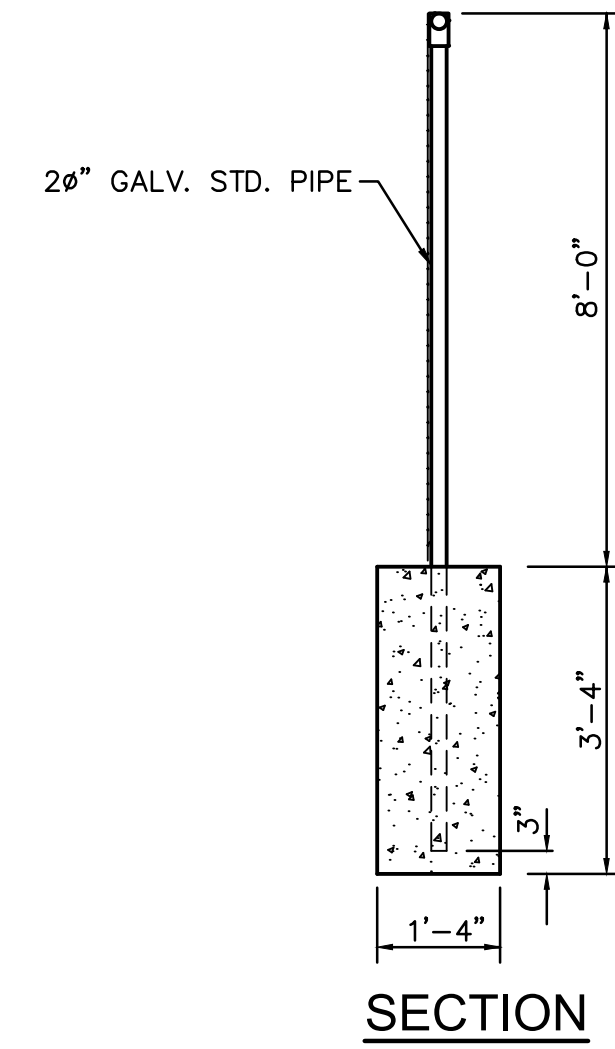
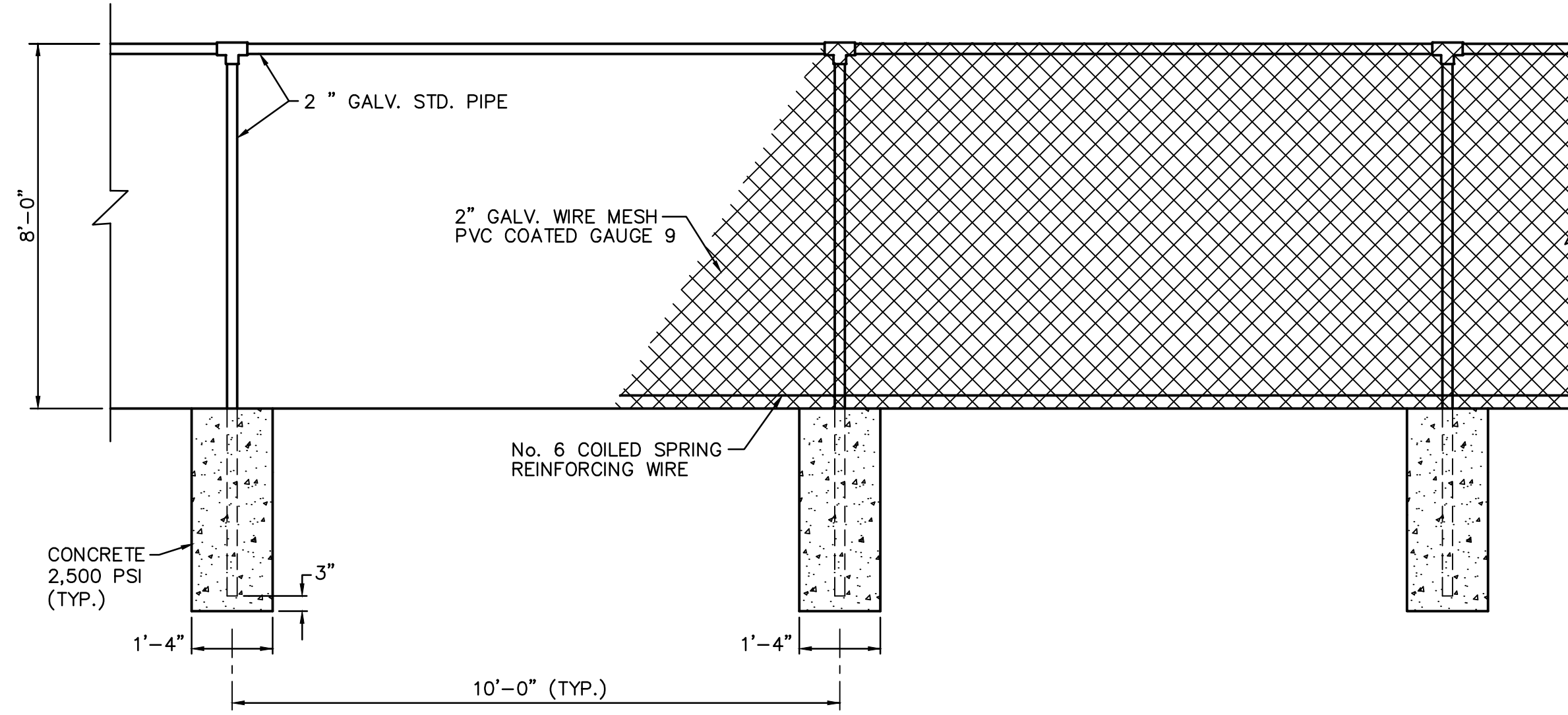
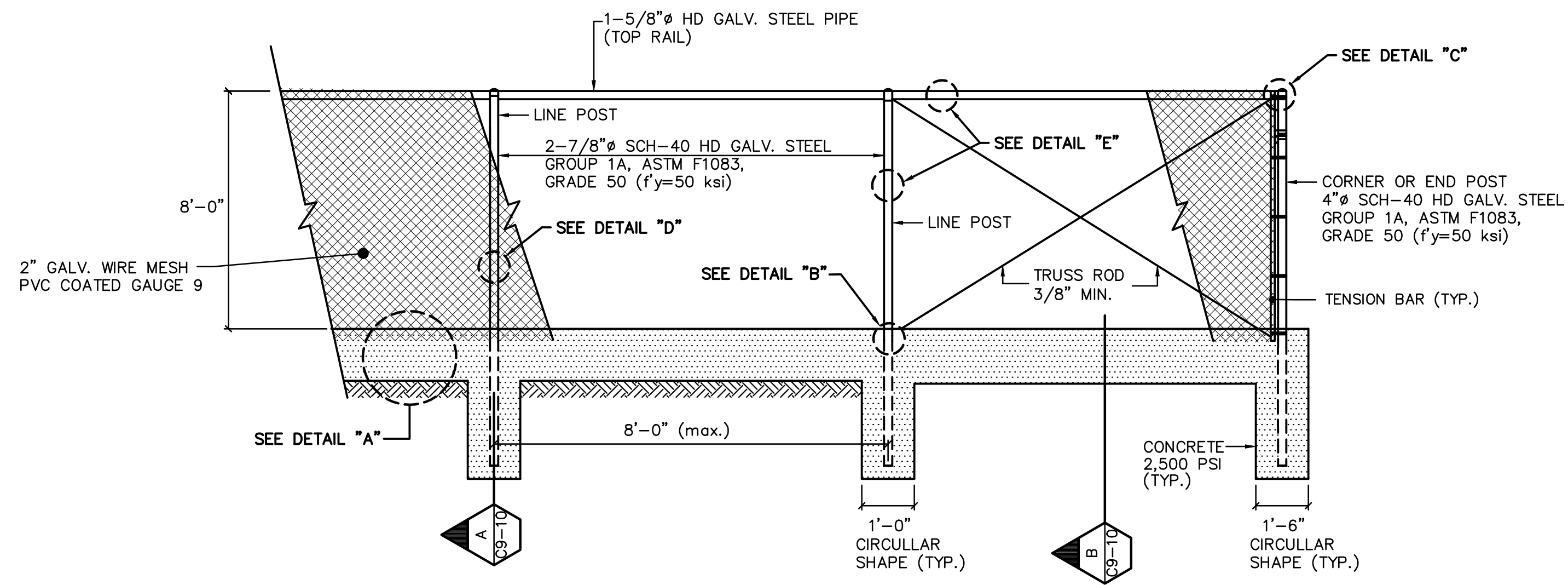
1. PROVIDE APPROPRIATE TRANSITION BETWEEN STABILIZED CONSTRUCTION ENTRANCE AND EXIST. PAVEMENT.
2. STONE SIZE: USE AASHTO M-43 SIZE No. 2 STONE.



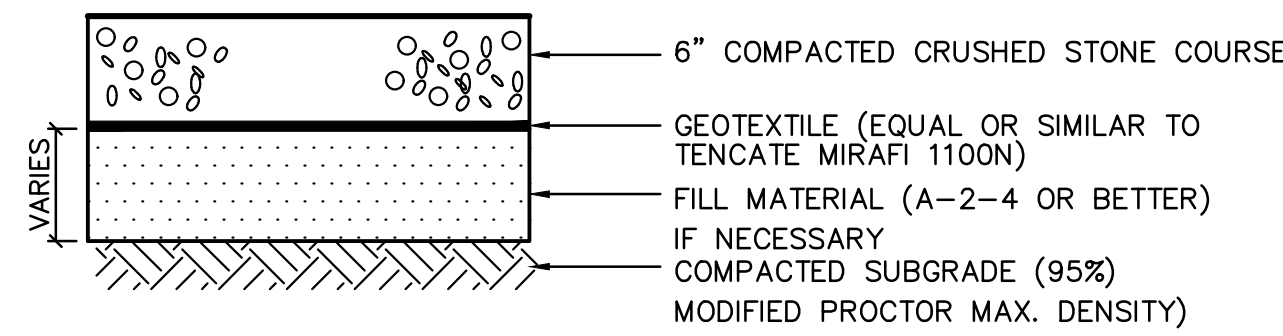
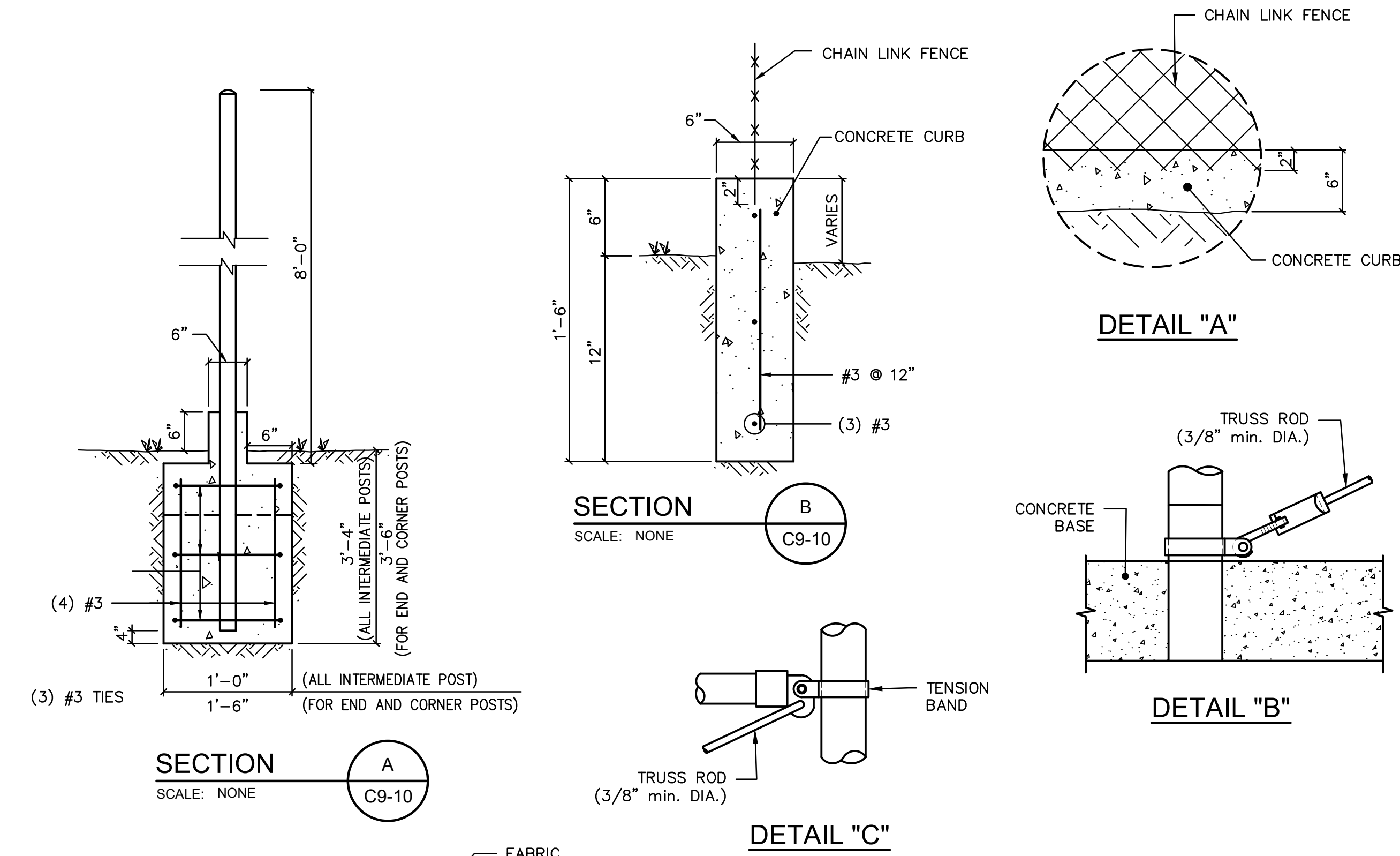
- FLEXIBLE SEDIMENT BARRIER DETAIL**
- NTS
- 7
C4-90

- 1) EROSION CONTROL MEASURES SHALL BE INSPECTED AFTER EACH RAINFALL THAT EXCEEDS 2" IN 24 HOUR AND THE NECESSARY REPAIRS MADE.
- 2) SEDIMENT SHALL BE REMOVED AND THE EROSION CONTROL MEASURES RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH.
- 3) EROSION CONTROL MEASURES SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
- 4) ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IN NO LONGER REQUIRED SHALL BE DRESSED TO CONFIRM WITH THE EXISTING GRADE, PREPARED AND SEEDED.

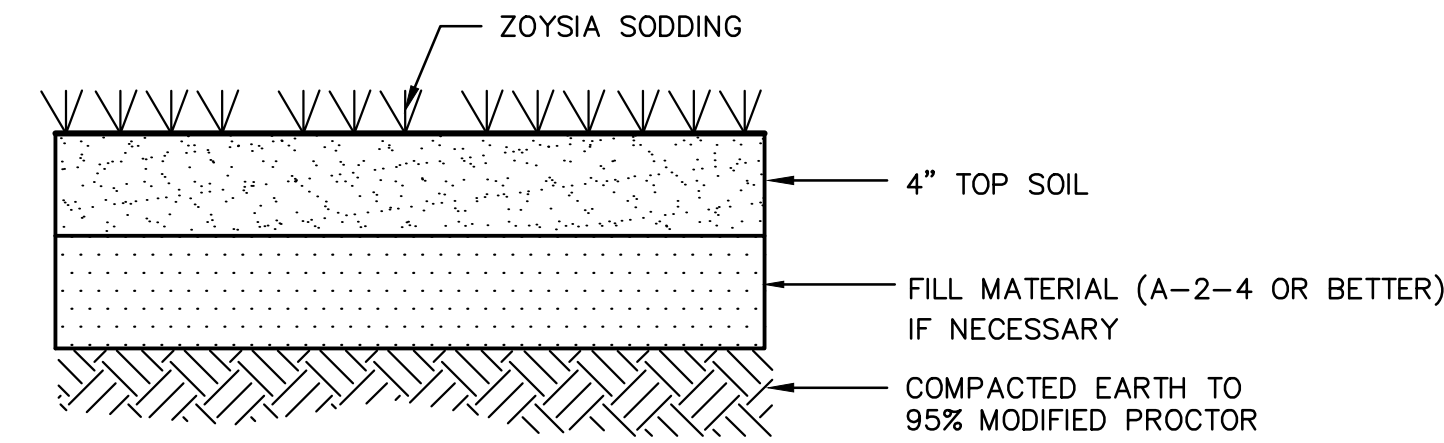
- 1) THE CONTRACTOR SHALL PROTECT ALL SWALES AND CHANNELS NEAR THE PROJECT AREA THAT COULD BE POTENTIALLY, IMPACTED PRIOR TO START ANY EXCAVATION. ALL MEASURES CAN BE REMOVED WHEN THE LOCAL CONSTRUCTION BE COMPLETED.
- 2) ALL DISTURBED AREAS SHALL BE PROTECTED BY THE CES PLAN MEASURES EVEN THOUGH CONSTRUCTION ONLY INCLUDES PART OF THE PARCEL.
- 3) CONTRACTOR SHALL INSPECT SEDIMENT BARRIERS AFTER EACH RAIN EVENT. REPAIRS SHALL BE DONE AS SOON AS POSSIBLE. SEDIMENT SHALL BE REMOVED FROM THE BARRIERS WHEN THEY REACH HALF THE HEIGHT OF THE BARRIER.
- 4) THE CONTRACTOR SHALL MAINTAIN THE INTEGRITY OF THE STABILIZED CONSTRUCTION ENTRANCE AS DETAILED ON DWGS.
- 5) THE CONTRACTOR SHALL MAINTAIN A WATER TANK TRUCK TO SPRAY IT AROUND THE WORKING AREA WHEN THE PROJECT INSPECTOR REQUIRES IT. A WATER HOSE WILL BE INSTALLED NEAR THE CONSTRUCTION VEHICLES TIRES WASHING DESIGNATED AREAS.
- 6) THE CONTRACTOR SHALL STRICTLY FOLLOW THE GUIDELINES STATED AT THE CES PLAN APPROVED BY THE ENVIRONMENTAL QUALITY BOARD.
- 7) THE CONTRACTOR SHALL DISPOSE ALL WASTE MATERIALS AT AN APPROVED LANDFILL.
- 8) THE CONTRACTOR SHALL RESTORE PAVED AREAS AND RE-SEED GRASS AREAS AS SOON AS POSSIBLE OR AS INSTRUCTED BY THE PROJECT INSPECTOR.
- 9) ANY MODIFICATION PROPOSAL TO THE CES PLAN SHALL BE CONSULTED WITH THE DESIGNER.
- 10) A SIGN SHALL BE INSTALLED AT EACH PROJECT ENTRANCE AS PER APPROVED ON THE "PERMISO UNICO INCIDENTAL".



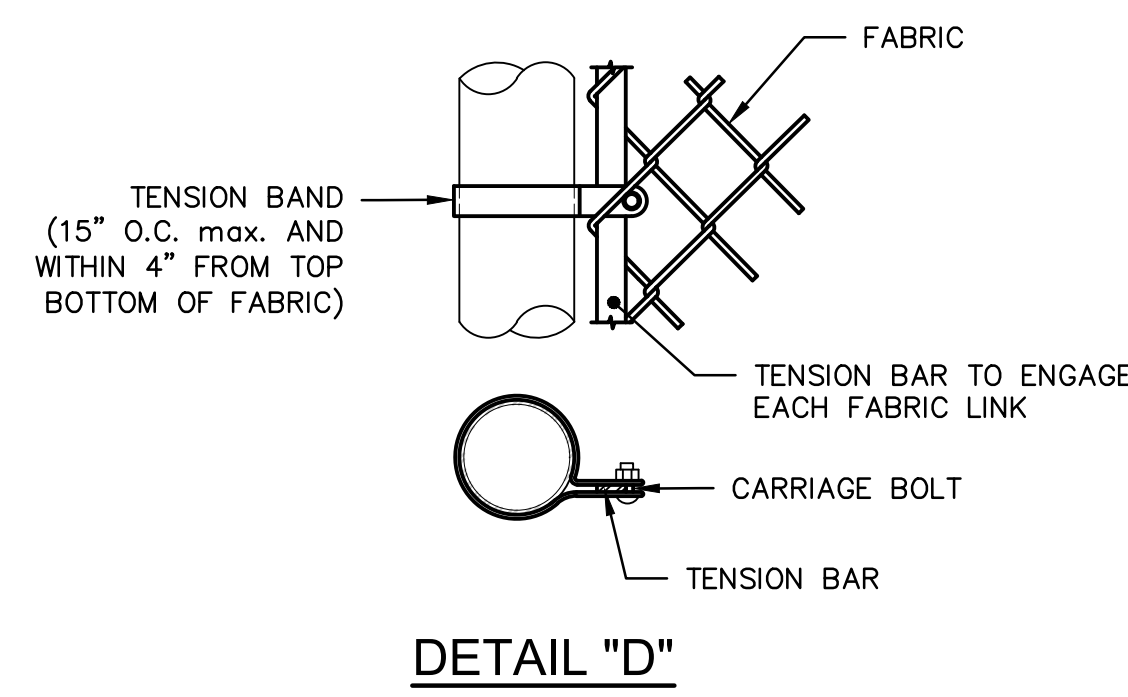
TEMPORARY CHAIN LINK FENCE
SCALE: NONE



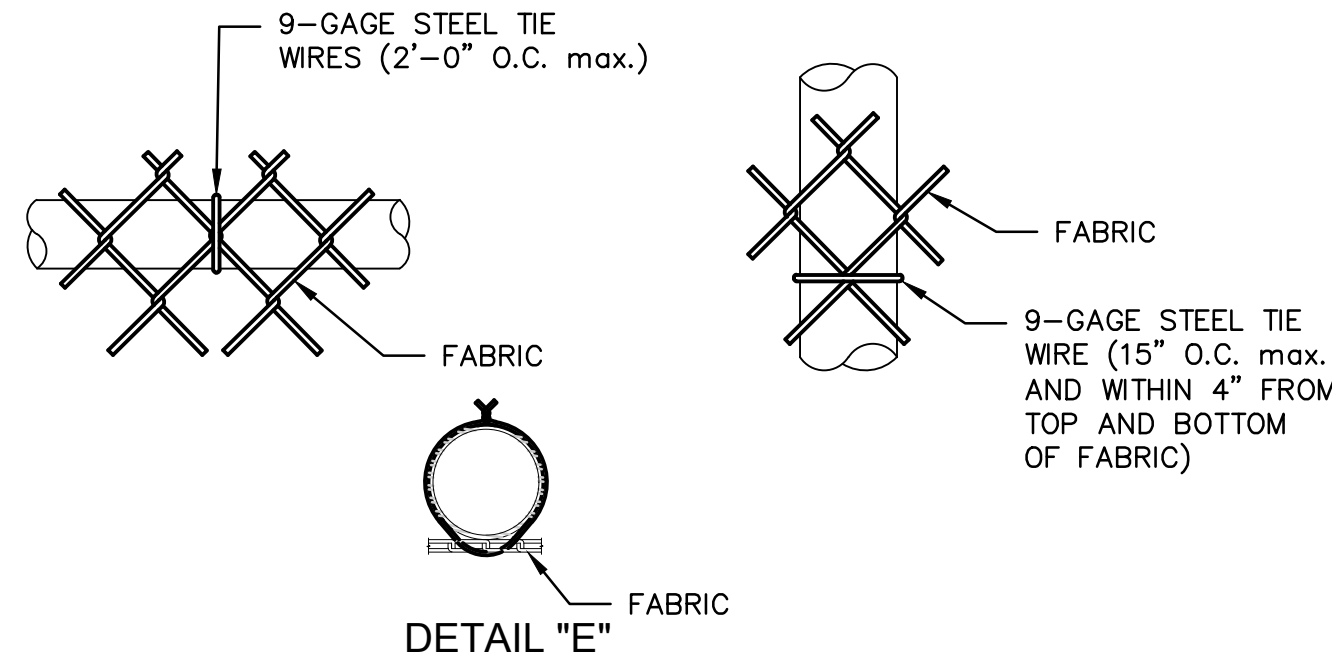
CRUSHED STONE SURFACING
SCALE: NONE



GRASS DETAIL
SCALE: NONE

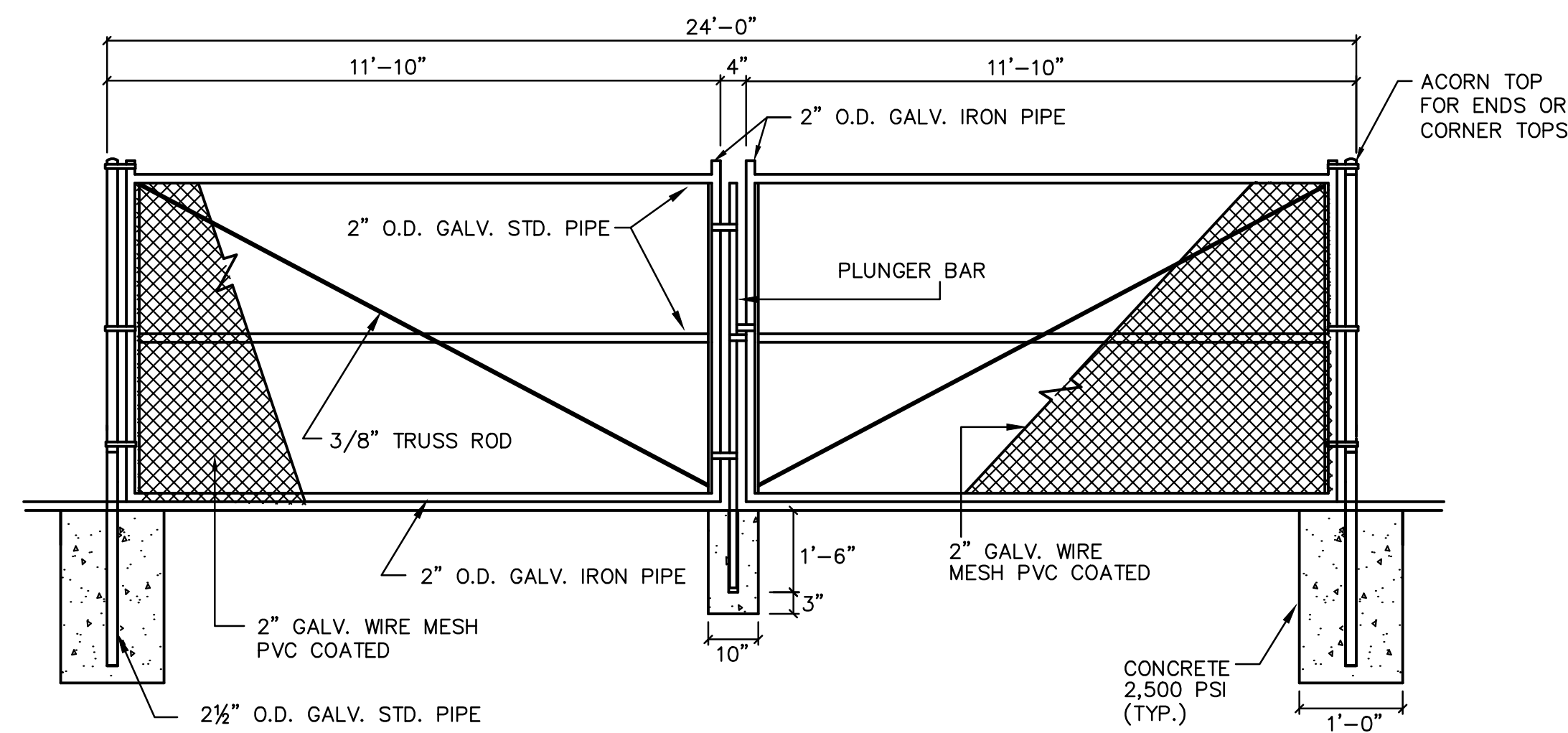


DETAIL "D"



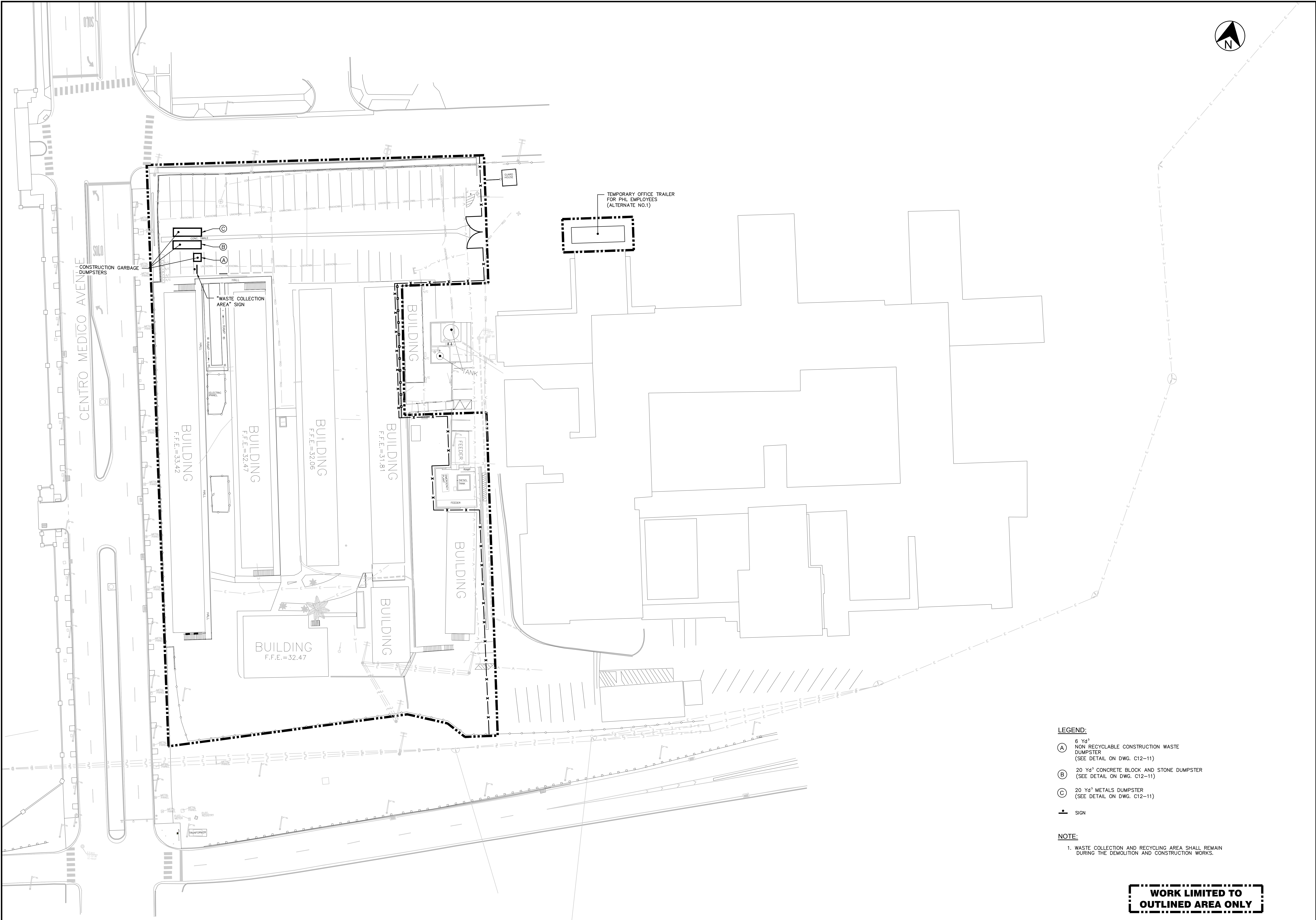
DETAIL "E"

TEMPORARY CHAIN LINK FENCE DETAIL TYPE -1
SCALE: NONE



24'-0" WIDE CHAIN LINK GATE DETAIL
SCALE: NONE

11/22/23	ISSUED FOR BID	A. MARTINEZ	DATE	REVISIONS	BY	DATE	REVISIONS	BY	Job No. 23027	SCALE AS SHOWN	TYPICAL SECTIONS AND DETAILS	C9-10
DATE	REVISIONS	BY	DATE	REVISIONS	BY	DATE	REVISIONS	BY	DRAWN BY A.M. MUÑOZ	CHECKED BY A.MARTINEZ	TITLE	



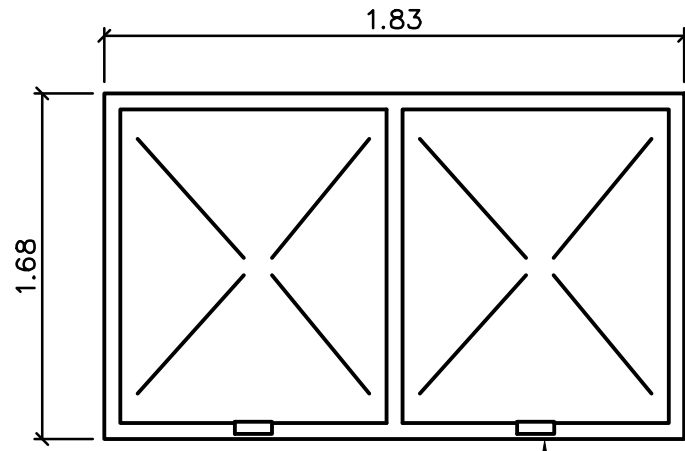
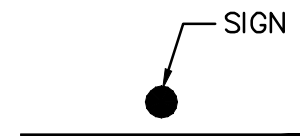
- LEGEND:**
- (A) 8 Yd³ NON RECYCLABLE CONSTRUCTION WASTE DUMPSTER (SEE DETAIL ON DWG. C12-11)
 - (B) 20 Yd³ CONCRETE BLOCK AND STONE DUMPSTER (SEE DETAIL ON DWG. C12-11)
 - (C) 20 Yd³ METALS DUMPSTER (SEE DETAIL ON DWG. C12-11)
 - SIGN

NOTE:

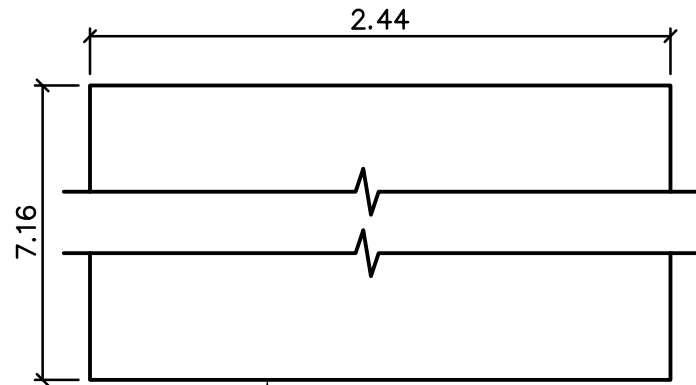
1. WASTE COLLECTION AND RECYCLING AREA SHALL REMAIN DURING THE DEMOLITION AND CONSTRUCTION WORKS.

**WORK LIMITED TO
OUTLINED AREA ONLY**

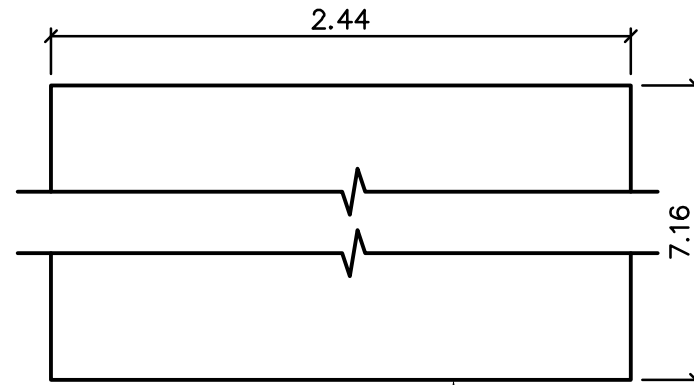
CMA ARCHITECTS & ENGINEERS LLC	DEPARTAMENTO DE SALUD PUBLIC HEALTH LABORATORY PHASE 1: DEMOLITION PACKAGE	SAN JUAN PUERTO RICO										Job No.	23027	RECYCLING PLAN	C12-10
												SCALE	AS SHOWN		
												DATE	11/07/23		
			11/22/23			A. MARTINEZ						DRAWN BY	A.M. MUÑOZ		
			DATE	REVISIONS	BY	DATE	REVISIONS	BY	DATE	REVISIONS	BY	CHECKED BY	A.MARTINEZ		



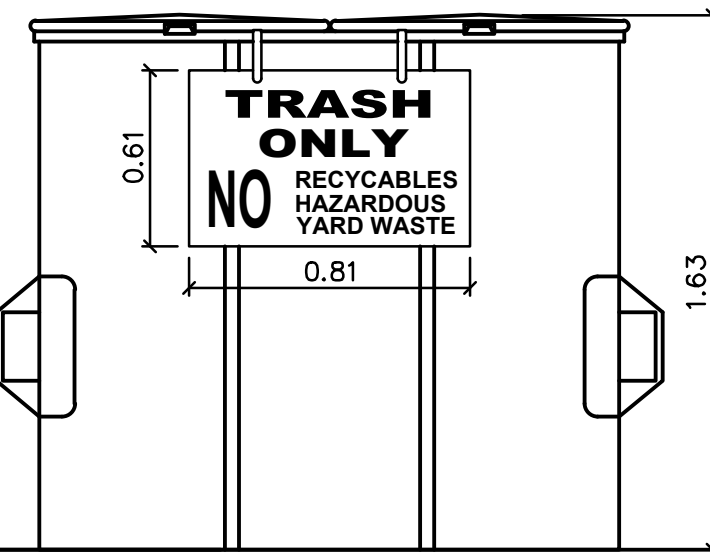
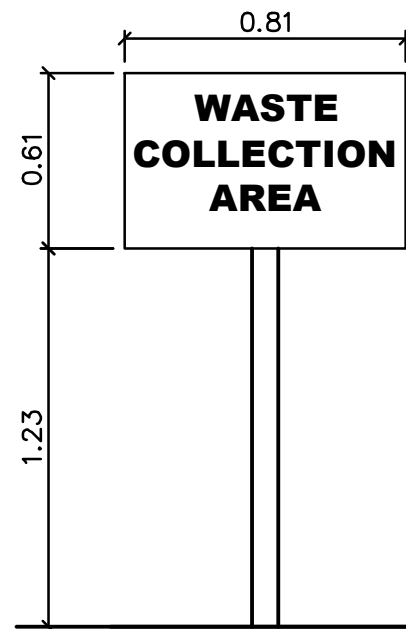
6 YD³ COVERED DUMPSTER FOR
NON RECYCLING CONSTRUCTION WASTE
SEE DETAIL "A"



20 YD³ DUMPSTER FOR
CONSTRUCTION WASTE
SEE DETAIL "C"



20 YD³ DUMPSTER FOR
CONSTRUCTION WASTE
SEE DETAIL "C"



(A)

NON-RECYCLABLE CONSTRUCTION
DUMPSTER SIGN SPECS

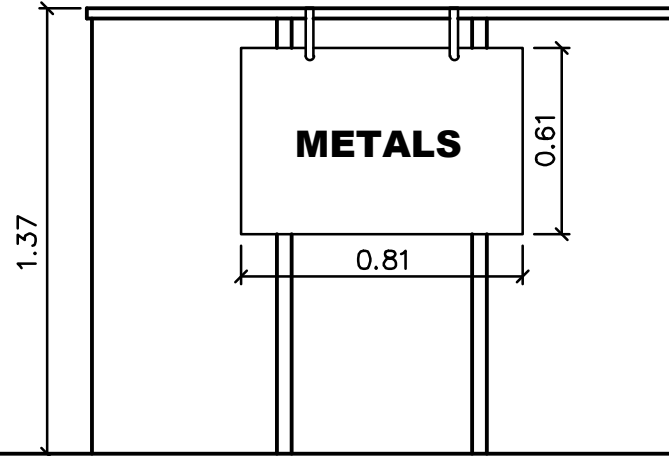
- 5/8" PAINTED BOARD
- 6" METAL HANGER
- RED LETTERS



(B)

CONSTRUCTION WASTE
DUMPSTER SIGN SPECS

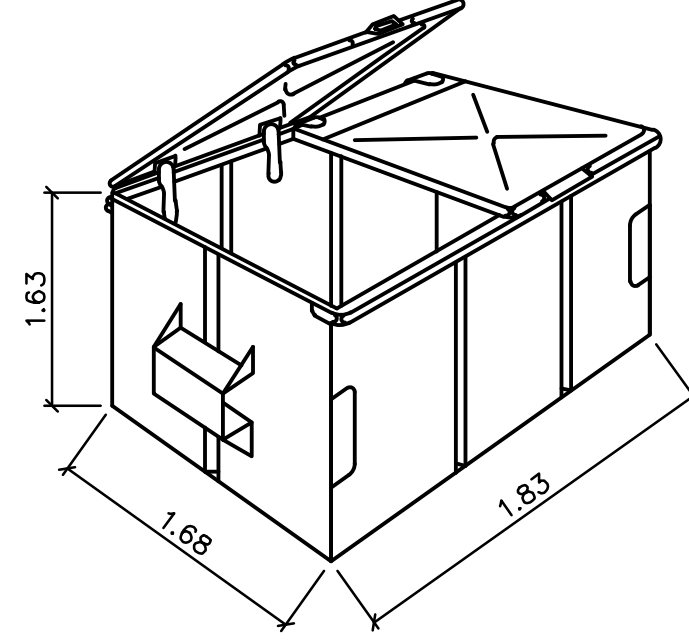
- 5/8" PAINTED BOARD
- 6" METAL HANGER
- RED LETTERS



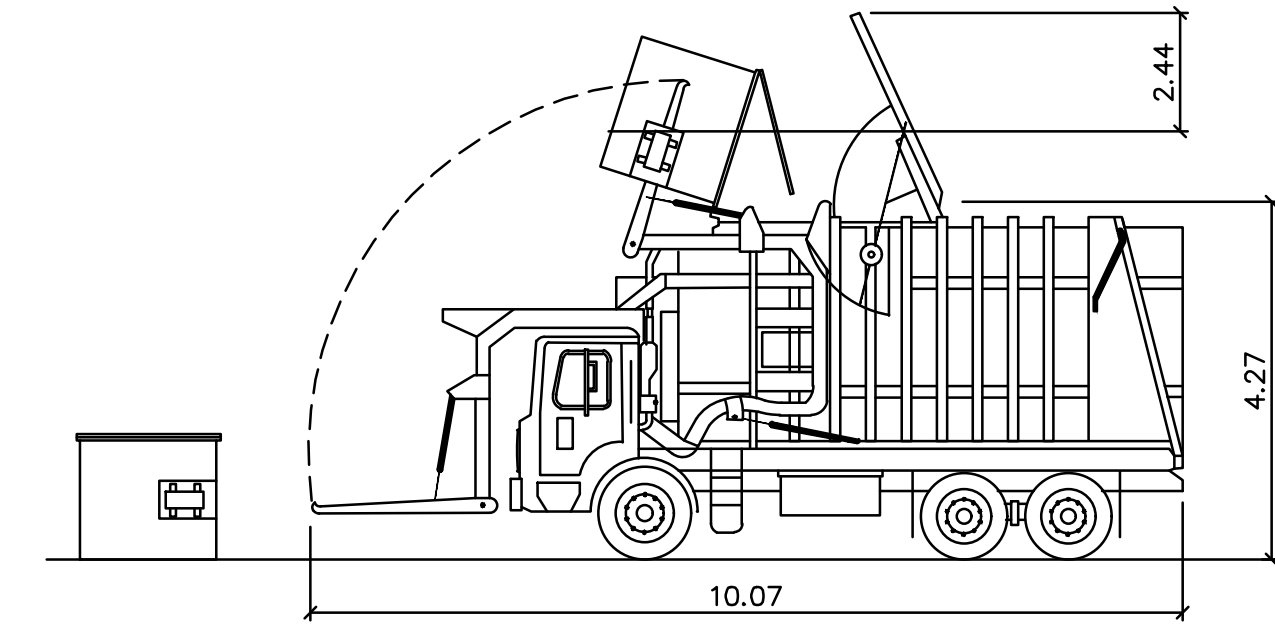
(C)

METAL
DUMPSTER SIGN SPECS

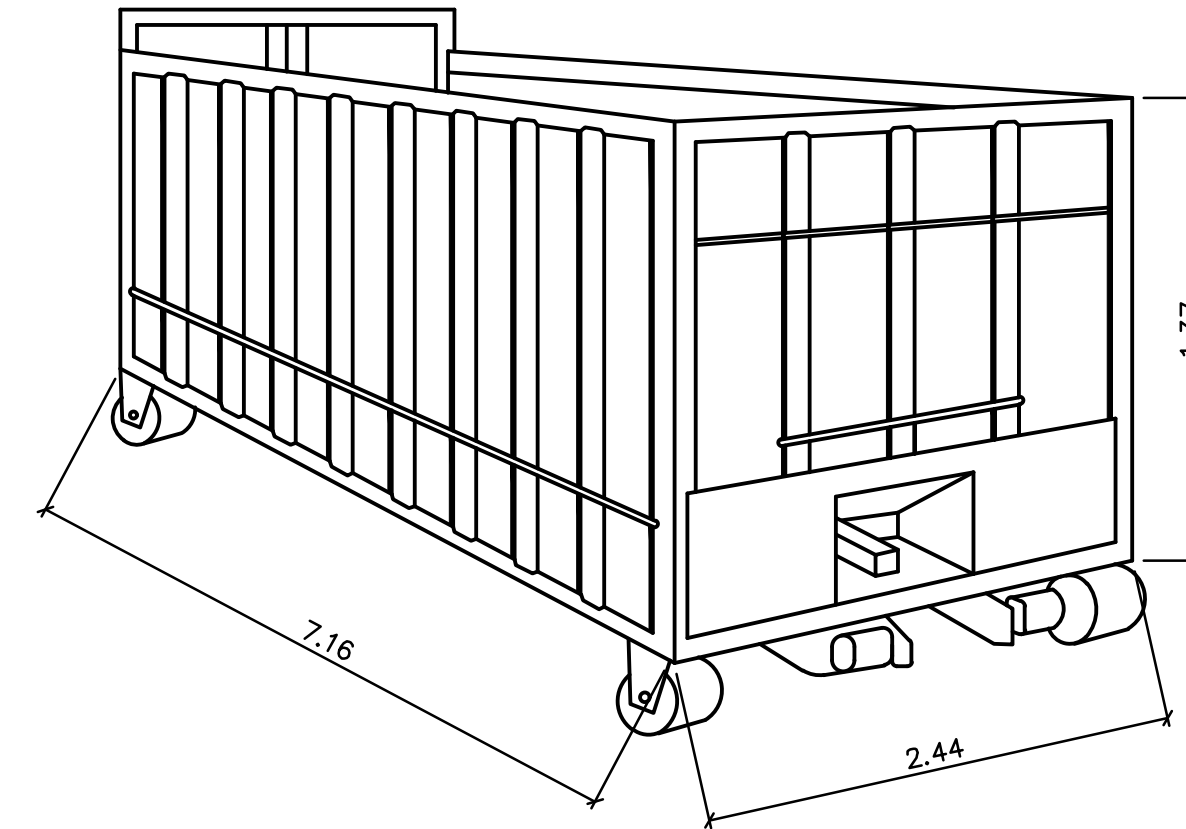
- 5/8" PAINTED BOARD
- 6" METAL HANGER
- RED LETTERS



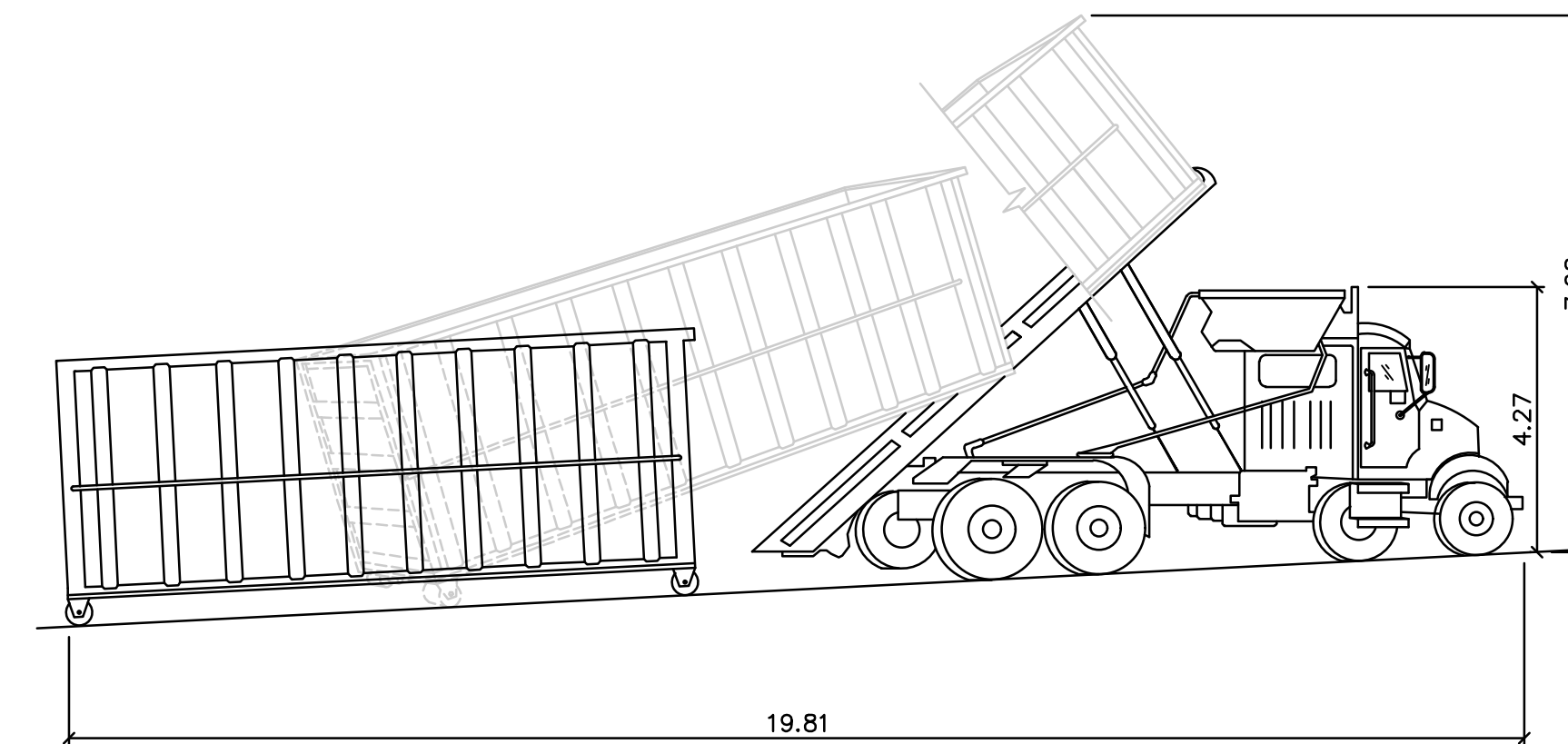
DETAIL "A"



DETAIL "B"



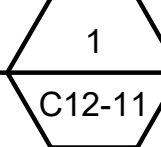
DETAIL "C"

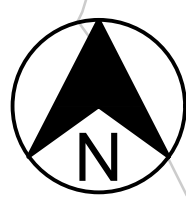


DETAIL "D"

RECYCLING AREA DETAIL

NTS





NOTES:	
EXISTING TREE	1. ALL DISTANCES ARE EXPRESSED IN METERS UNLESS OTHERWISE NOTED. 2. EXISTING CONDITIONS AND TOPOGRAPHIC DATA TAKEN BY SURVEYOR ALEX HORNEDO-ROBLES & ASSOC. DATED 11/13/2023. 3. TREES WILL BE MITIGATED ACCORDING TO A RULE 3.4.2 OF JOINT REGULATION FOR THE EVALUATION & ISSUANCE OF PERMITS FOR LAND USE & DEVELOPMENT EFFECTIVE JUNE 16, 2023.
EXISTING PALM	4. THE REMOVAL MUST BE PERFORMED BY A QUALIFIED PERSONAL BEFORE REMOVAL OFF TREES. THE CONTRACTOR MUST IDENTIFIED UNDERGROUND UTILITIES THAT COULD BE AFFECTED BY THE TREE REMOVAL. 5. ALL ELEVATIONS ARE EXPRESSED IN METERS.

B - BEES IN HOLLOW TRUNK
(Cavidades en el árbol utilizadas por las abejas)
BO - BORERS (Insectos perforadores)
BU - BURN (B=Base, T=Trunk, C=Crown)
C - GIRDLER (Corte anular en la corteza del árbol)
CD - CODOMINATE TRUNKS (Troncos codominantes)
CE - COVERED WITH EPHYNTES (Cubierto de plantas epífitas)
CO - COMPARTMENTALIZATION (R=Roots, T=Trunk, B=Branch)
CR - CONFINED ROOTS (Raíces confinadas)
D - DEAD (Muerto)
DE - DECAYING (Decaimiento)
DS - DECIDUOUS STAGE (Etapa deciduo)
EB - EMBEDDED BARK (Corteza incluida)
EH - ELECTRICAL HAZARD (Riesgo a líneas eléctricas)
EPI - EPICORMIC GROWTH (Crecimiento epicórmico de ramas)
ER - EXPOSED ROOTS BY EROSION (Raíces expuestas por la erosión)
F - CLOSE TO A FENCE OR GIRDLER BY A FENCE
(Cerca de una verja o ramaje incrustadas en la verja)
FP - USED AS A FENCE POST (Usado como poste de verja)
FMR - FILL MATERIAL ON ROOTS (Material de relleno en las raíces)
FS - FLOWERING STAGE (Etapa de floración)
FU - FUNGUS (Hongos)
G - GOOD (Buenas condiciones)
GR - GIRDLING ROOTS
H - HOLLOW (Cavidades en el tronco)
HF - HISTORY OF FAILURE (Evidencia de ramas quebradas)
LB - LOSING BARK (Pérdida de corteza)
LE - LEANED (Inclinado)
MI - MECHANICAL INJURY (Lesiones mecánicas)
PFC - POOR FOLIAGE COLOR (Color del follaje pobre)
R - SPROUTING (Retoño)
RD - ROOT DAMAGE (Daño en las raíces)
RO - ROOTS OUT (Raíces fuera de la tierra)
RS - ROOTS UNDER SIDEWALK (Raíces por debajo de las aceras)
SDB - SOME DEAD BRANCHES (Algunas ramas muertas)
T - TERMITES (Termitas o comején)
TO - TOPPING (Poda de la parte superior del árbol)
UP - UNPROPER PRUNNING (Poda inadecuada)
V - COVERED WITH VINES (Cubierto de enredaderas)

1- VERY POOR
2- POOR
3- FAIR
4- GOOD
5- EXCELLENT

- TOTAL = 37 TREES
- REMAIN = 0 TREES
- TO BE CUT = 37 TREES

- 37 TREES

- 37 EXISTING TREES
- TREES < 24" = 22 X 3 = 66 TREES
- TREES > 24" = 8 X 4 = 32 TREES
- TREES > 40" = 7 X 5 = 35 TREES
- TOTAL MITIGATION = 133 TREES

- 133 TREES X \$100.00 = \$13,300.00

EXISTING TREE

EXISTING PALM

EXISTING TREE OR PALM
LOCATED APPROXIMATELY

EXISTING CONDITIONS

JUAN FERNÁNDEZ CÓRDOVA
INSPECTOR DE SIEMBRA Y REFORESTACIÓN
41309-ISF-00502

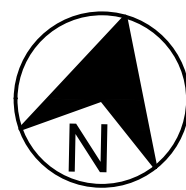
GENERAL DEMOLITION NOTES:

1. THE CONSTRUCTION SITE SHALL BE MAINTAINED NEAT AND CLEAN FREE FROM ACCUMULATION OF TRASH AND DEBRIS REMOVE ALL TRASH, DEBRIS, RUBBISH, ETC. FROM SITE AND DISPOSED OF IT IN A LEGAL MANNER ON A DAILY BASIS.
2. DEMOLITION AND REMOVAL OF RUBBISH SHALL BE CONDUCTED IN A MANNER THAT ELIMINATES HAZARDS TO PERSONS AND PROPERTY, AND SHALL PREVENT THE RELEASE OF DUST INTO THE AIR.
3. GENERAL CONTRACTOR TO COORDINATE W/ SUB CONTRACTORS OR RESPONSIBLE PARTIES FOR DEMOLITION UNDER FLOOR SLAB FOR RUNS OF MECHANICAL OR ELECTRICAL SYSTEMS, REFER RESPECTIVELY TO DWGS FOR LOCATIONS OF SAID RUNS, REQUIRED FOR PROPER DEMOLITION OF THESE SYSTEMS WITHIN BUILDING.
4. REFER TO ELEC. & MECH. DWG'S PACKAGE TO COORDINATE ELECTRICAL & MECH. SYSTEMS INCLUDING, BUT NOT LIMITING TO: SECURITY & LIFE SAFETY SYSTEMS.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES INFLICTED TO ADJACENT PROPERTIES OR OTHER AREAS DURING THE DEMOLITION PROCESS. DAMAGE ITEMS SHALL BE RESTORED TO ITS ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
6. GENERAL CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS. DEMOLITION RESPONSIBILITIES ARE NOT NECESSARILY LIMITED TO THOSE PORTRAYED IN DEMOLITION PLAN PACKAGE.
7. DEMOLITION WORK INCLUDES REMOVAL AND LEGAL DISPOSAL OF ALL EXISTING CONSTRUCTION ITEMS, I.E. TRASH, DEBRIS, RUBBISH, EQUIPMENT ETC. FROM THE SITE AND SHALL BE EXECUTED IN CONFORMANCE WITH ALL LOCAL, STATE AND FEDERAL ORDINANCES AND REGULATIONS AS SET FORTH BY ALL GOVERNING AUTHORITIES.
8. ALL DEMOLITION WORK SHALL BE COORDINATED WITH ALL INVOLVED DISCIPLINE'S PRIOR TO COMMENCEMENT OF WORK.
9. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER IF ANY WORK INDICATED IN THE CONTRACT DOCUMENTS CANNOT BE PERFORMED DUE TO EXISTING FIELD CONDITIONS, OR ANY INTERRUPTIONS THAT MAY ARISE.
10. DRAWINGS LABELED "DRAWINGS FOR REFERENCE ONLY" ARE SUPPLIED FOR THAT PURPOSE ONLY, AND SHALL NOT BE INTERPRETED AS DOCUMENTATION OF AS-BUILT CONDITIONS.
11. CONTRACTOR SHALL VERIFY LOCATION AND CURRENT USE OF ANY UTILITIES WITHIN THE PREMISES. ALL SURFACE OR ABOVE GROUND UTILITIES SHALL BE REMOVED AND DISPOSED OF. ALL UNDERGROUND UTILITIES SHALL BE CAPPED OR SEALED AT SOURCE, BURIED, AND DOCUMENTED FOR FUTURE REFERENCE. CONTRACTOR SHALL VERIFY AND NOTIFY THE OWNER OF ANY UTILITIES CROSSING THROUGH THE PREMISES IN ROUTE TO ADJACENT PROPERTIES THAT MIGHT IMPACT THE OPERATION OF SAID PROPERTIES.
12. ALL MAJOR DEMOLITION AND NOISE CREATING WORK SHALL BE COORDINATED IN ADVANCE WITH CORRESPONDING AUTHORITIES FOR ALLOWABLE HOURS OF OPERATION. WHEN DEMOLITION MAY CAUSE DISRUPTION AND OR DISTURBANCE, AS PER LOCAL AUTHORITIES, WORK SHALL BE CONDUCTED ON OVERTIME TIME AND NOT DURING REGULAR BUSINESS HOURS AND SHALL BE COORDINATED ACCORDINGLY.
13. SHUTDOWNS. GENERAL CONTRACTOR SHALL COORDINATE WITH GOVERNING AUTHORITIES ELECTRICAL, PLUMBING, HVAC EQUIPMENT, FIRE & LIFE SAFETY SYSTEM REQUIRED AS PART OF THE WORK.
14. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ANY LOSSES INCURRED IN THE EVENT THAT THE LOSSES OF ANY SERVICE OR DAMAGE CAUSED BY DEMOLITION PREVENT LOCAL AUTHORITIES & HOME OWNER'S FROM CONDUCTING BUSINESS.
15. ANY EXISTING FURNITURE, FILE CABINETS, PATIENT FILE'S AND OFFICE OR MEDICAL EQUIPMENT ON SITE AT TIME OF DEMOLITION SHALL BE RETURNED TO THE OWNER. CAUTION SHALL BE TAKEN TO PROTECT SAID ITEMS UNTIL RETURNED TO OWNER.

DEMOLITION KEYNOTES:

- 1 EXISTING PAVED AREA, REFER TO CIVIL DWGS.
- 2 EXISTING CONCRETE PAD, REFER TO CIVIL DWGS.
- 3 EXISTING SIDEWALK, REFER TO CIVIL DWGS.
- 4 EXISTING METAL RAMP STRUCTURE TO BE DEMOLISHED.
- 5 DEMOLISH EXISTING ELEVATED METAL WALKWAY INCLUDING BUT NOT LIMITED TO: HAND/GUARDRAILS AND ACCESS STAIRS.
- 6 EXISTING PLANTING AREA, REFER TO CIVIL DWGS.
- 7 EXISTING TWO LEVEL CONCRETE BUILDING WITH WOOD/METAL ROOF. DEMOLISH BUILDING/STRUCTURE INCLUDING BUT NOT LIMITED TO INTERIOR PARTITIONS, RESTROOMS, DOORS AND WINDOWS. (REF.TO MECH., ELECT. AND CIVIL DWGS FOR FURTHER DETAILS).
- 8 EXISTING SINGLE LEVEL CONCRETE BUILDING WITH WOOD/METAL ROOF. DEMOLISH BUILDING/STRUCTURE INCLUDING BUT NOT LIMITED TO INTERIOR PARTITIONS, RESTROOMS, DOORS AND WINDOWS. (REF.TO MECH., ELECT. AND CIVIL DWGS FOR FURTHER DETAILS)
- 9 PORTION OF EXISTING SIDEWALK TO REMAIN.
- 10 EXISTING METAL STRUCTURE TO REMAIN. PROTECT DURING DEMOLITION/CONSTRUCTION.
- 11 EXISTING WATER RESERVOIR TANK TO REMAIN. PROTECT DURING DEMOLITION/CONSTRUCTION.
- 12 EXISTING ELECTRICAL SUBSTATION TO REMAIN. PROTECT DURING DEMOLITION/CONSTRUCTION.
- 13 EXISTING ELECTRICAL GENERATOR TO REMAIN. PROTECT DURING DEMOLITION/CONSTRUCTION.
- 14 EXISTING ELECTRICAL SUBSTATION TO BE DEMOLISHED, REFER TO ELEC. DWGS. FOR FURTHER DETAILS ON TRANSFER OF LOADS.
- 15 EXISTING SINGLE LEVEL CONCRETE STRUCTURE WITH METAL ROOF AND ALUMINUM JALOUSIE WINDOWS. DEMOLISH BUILDING/STRUCTURE INCLUDING BUT NOT LIMITED TO INTERIOR PARTITIONS, RESTROOMS, DOORS AND WINDOWS. (REF.TO MECH., ELECT. AND CIVIL DWGS FOR FURTHER DETAILS).
- 16 EXISTING SINGLE LEVEL CONCRETE STRUCTURE WITH ALUMINUM JALOUSIE WINDOWS. DEMOLISH BUILDING/STRUCTURE INCLUDING BUT NOT LIMITED TO INTERIOR PARTITIONS, RESTROOMS, DOORS AND WINDOWS. (REF.TO MECH., ELECT. AND CIVIL DWGS FOR FURTHER DETAILS).
- 17 EXISTING CONCRETE SURFACE, REFER TO CIVIL DWGS.
- 18 EXISTING TWO LEVEL WOOD STRUCTURE BUILDING WITH CONCRETE BASE AND METAL ROOF. DEMOLISH BUILDING/STRUCTURE INCLUDING BUT NOT LIMITED TO INTERIOR PARTITIONS, RESTROOMS, DOORS AND WINDOWS. (REF.TO MECH., ELECT. AND CIVIL DWGS FOR FURTHER DETAILS).
- 19 DEMOLISH EXISTING STAIR, HANDRAILS AND FOUNDATION.
- 20 EXISTING SITE CONCRETE WALL, REFER TO CIVIL DWGS.
- 21 EXISTING STAIR TO REMAIN. PROTECT DURING DEMOLITION/CONSTRUCTION.

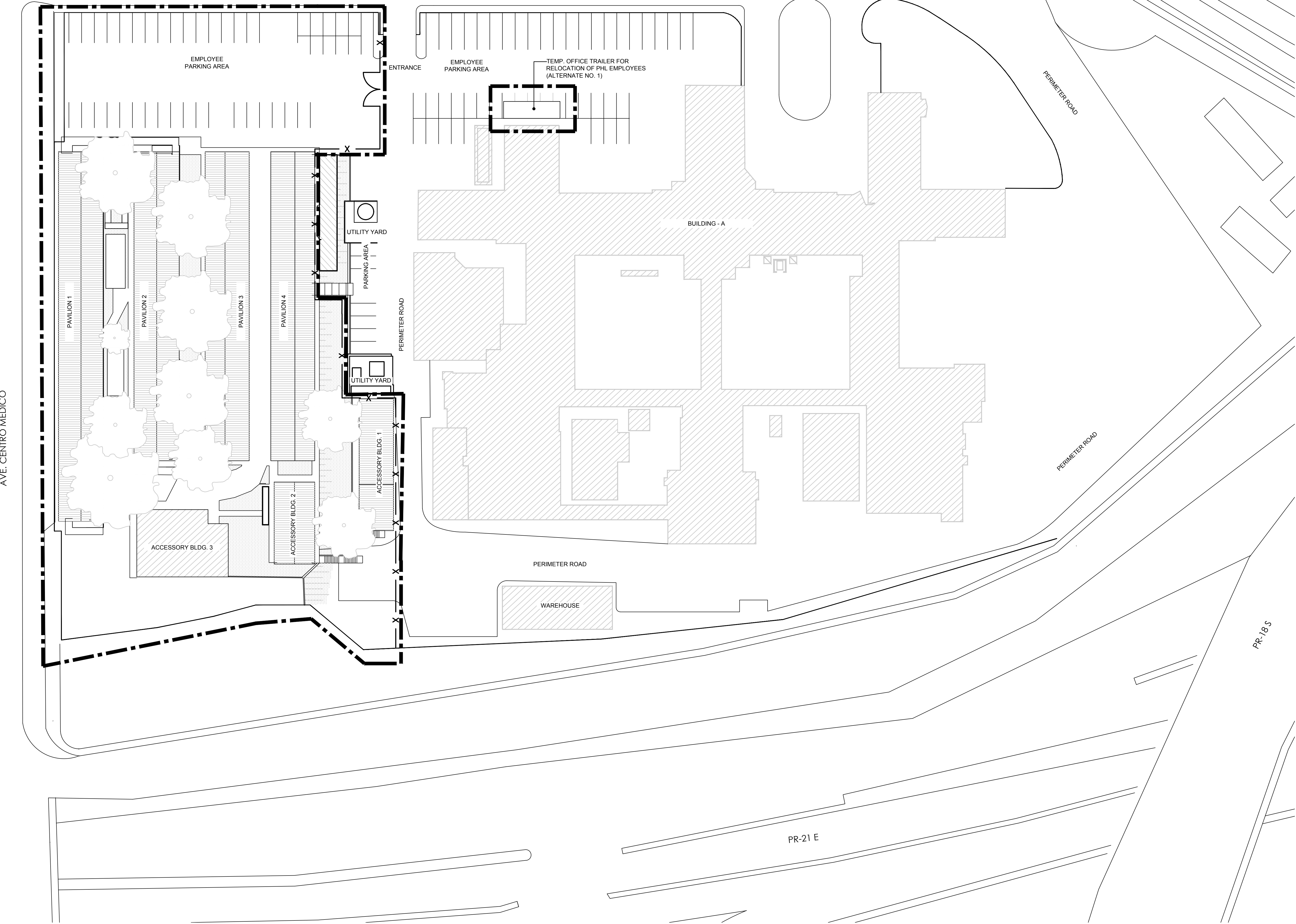
									Job No. 23027	DEMOLITION ARCHITECTURAL GENERAL NOTES AND KEYNOTES				
									SCALE AS SHOWN					
									DATE 10/30/23					
									DRAWN BY J.M.					
									CHECKED BY G.S.					
11/22/2023			ISSUED FOR BID			Y.DOITTEAU								
DATE	REVISIONS		BY	DATE	REVISIONS		BY	DATE	REVISIONS		BY	CHECKED BY	G.S.	TITLE



DEMOLITION LEGEND:

- SHADE COLOR DENOTES
EXISTING CONDITION
- EXISTING FENCE TO REMAIN
- X

TEMPORARY CONSTRUCTION FENCE. SEE CIVIL DWG'S.

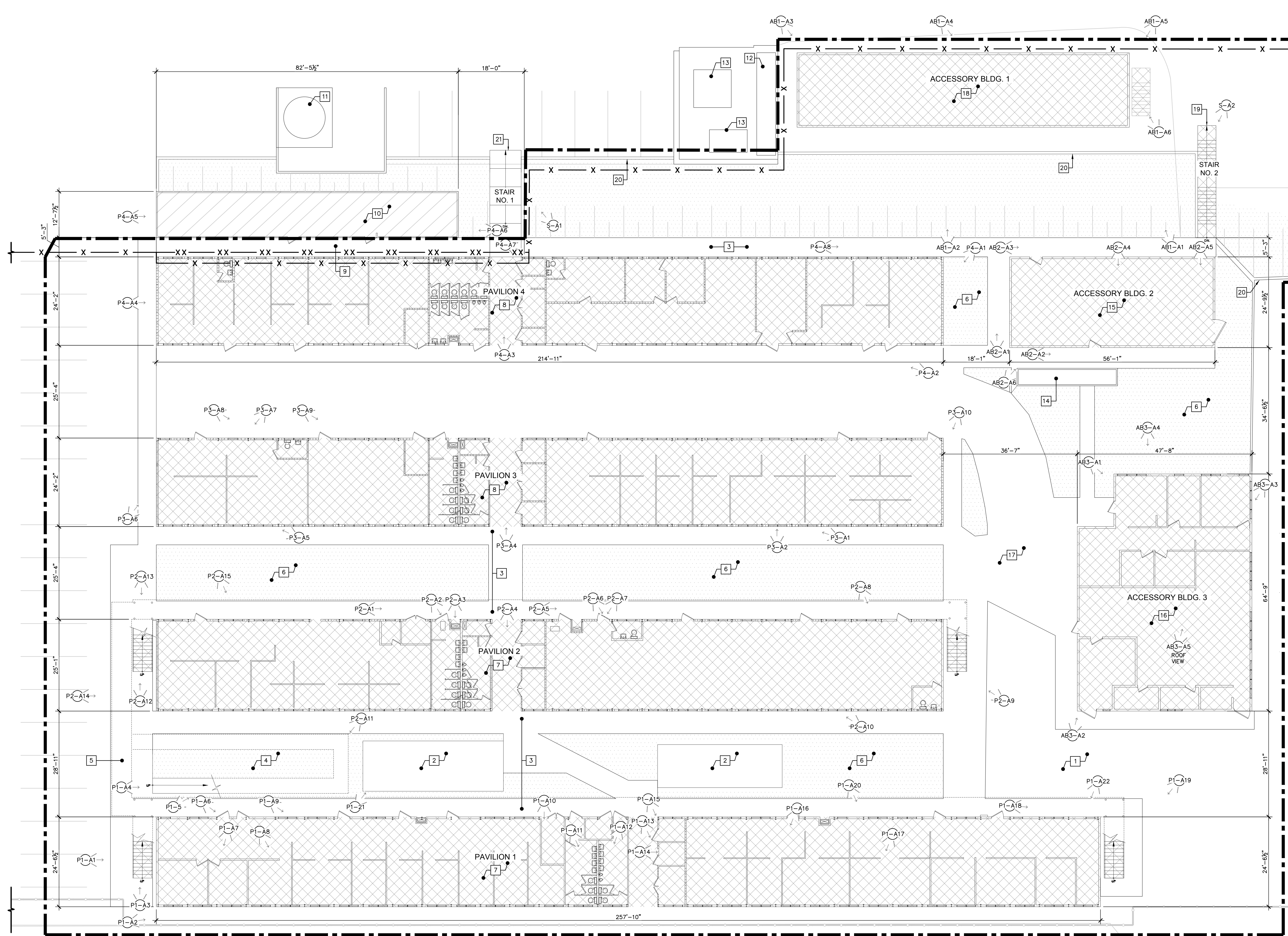
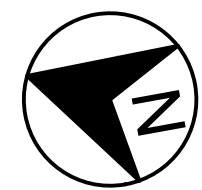


ARCHITECTURAL GENERAL DEMOLITION - SITE PLAN
SCALE: 1/32"=1'-0"

DEMOLITION GENERAL NOTES:

1. REFER TO GENERAL DEMOLITION NOTES ON DWG. NO: DA1-01.
2. FACILITIES ARE POSITIVE TO ASBESTOS/LEAD PRESENCE. MOBILIZATION CAN START BUT NO DEMOLITION OR CONSTRUCTION WORK SHALL BE PERFORMED UNTIL COMPLIANCE WITH PERMITS, WHICH REQUIRES MITIGATION AND CERTIFICATION (NEGATIVE CERTIFICATION) PRIOR DEMO/CONST. WORKS STARTS. REFER TO DOCUMENT 01 10 00 - SUMMARY OF WORK INCLUDED AS PART OF THE TECHNICAL SPECIFICATIONS.
3. REFER TO ELECTRICAL AND MECHANICAL DRAWINGS FOR DETAIL ON DEMO.

WORK LIMITED TO
OUTLINED AREA ONLY



DEMOLITION LEGEND:

- BUILT AREA TO BE DEMOLISHED. REFER TO CIVIL DWGS. FOR SITE DEMOLITION.
- PLANTING AREAS, REFER TO CIVIL DWGS.
- PHOTO SYMBOL, REFER TO PHOTO REPORT INCLUDED AS PART OF SPECIFICATION 00 31 21 - EXISTING CONDITION INFORMATION.
- TEMPORARY CONSTRUCTION FENCE. SEE CIVIL DWGS. REFER TO DETAIL 1-C9-10.
- TEMPORARY CONSTRUCTION PROTECTION FENCE. SEE CIVIL DWGS. REFER TO DETAIL 3-C9-10 AND NOTE 1 FROM THIS DWG.
- DEMOLITION KEYNOTE, REFER TO DWG. NO: DA0-01.

NOTE:

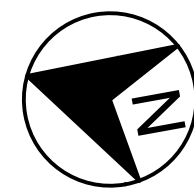
- TEMPORARY CONSTRUCTION PROTECTION FENCE SHALL BE INSTALLED AT SITE PRIOR TO THE DEMOLITION OF PAVILION 4. UPON DEMOLITION OF PAVILION 4 STRUCTURE, CONTRACTOR SHALL REMOVE TEMPORARY CONSTRUCTION PROTECTION FENCE AND INSTALL A TEMPORARY CONSTRUCTION FENCE THAT ALLOWS 6'-0" CLEARANCE FROM THE EXISTING METAL STRUCTURE (IDENTIFIED WITH A DEMO KEY NOTE 10).

GENERAL DEMOLITION NOTES:

- REFER TO GENERAL DEMOLITION NOTES AND DEMOLITION KEYNOTES ON DWG. NO: DA0-01.
- FACILITIES ARE POSITIVE TO ASBESTOS/LEAD PRESENCE. MOBILIZATION CAN START BUT NO DEMOLITION OR CONSTRUCTION WORK SHALL BE PERFORMED UNTIL COMPLIANCE WITH PERMITS, WHICH REQUIRES MITIGATION AND CERTIFICATION (NEGATIVE CERTIFICATION) PRIOR DEMO/CONST. WORKS STARTS. REFER TO DOCUMENT 01 10 00 - SUMMARY OF WORK INCLUDED AS PART OF THE TECHNICAL SPECIFICATIONS.
- REFER TO ELECTRICAL AND MECHANICAL DRAWINGS FOR DETAIL ON DEMO.

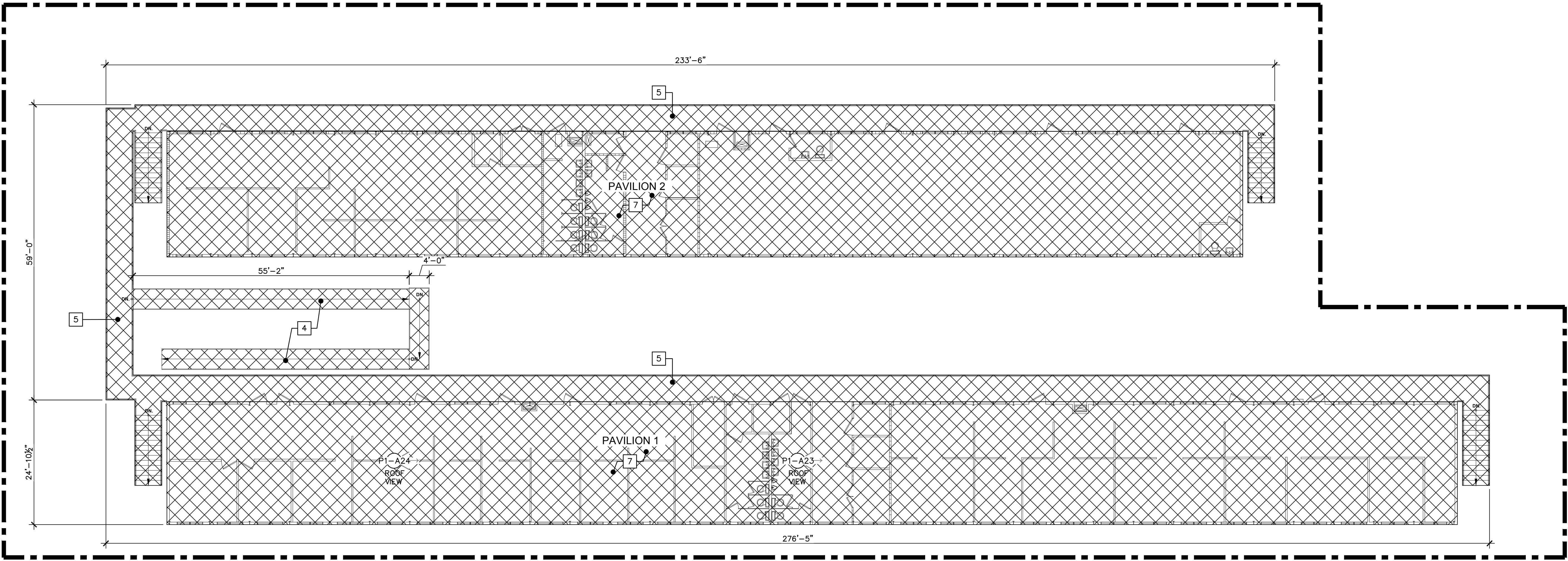
**WORK LIMITED TO
OUTLINED AREA ONLY**

GENERAL GROUND FLOOR PLAN - DEMOLITION
SCALE: 3/32"=1'-0"



DEMOLITION LEGEND:

- BUILT AREA TO BE DEMOLISHED. REFER TO CIVIL DWGS. FOR SITE DEMOLITION.
- PLANTING AREAS, REFER TO CIVIL DWGS.
- PHOTO SYMBOL, REFER TO PHOTO REPORT INCLUDED AS PART OF SPECIFICATION 00 31 21 - EXISTING CONDITION INFORMATION.
- DEMOLITION KEYNOTE, REFER TO DWG. NO: DA0-01.



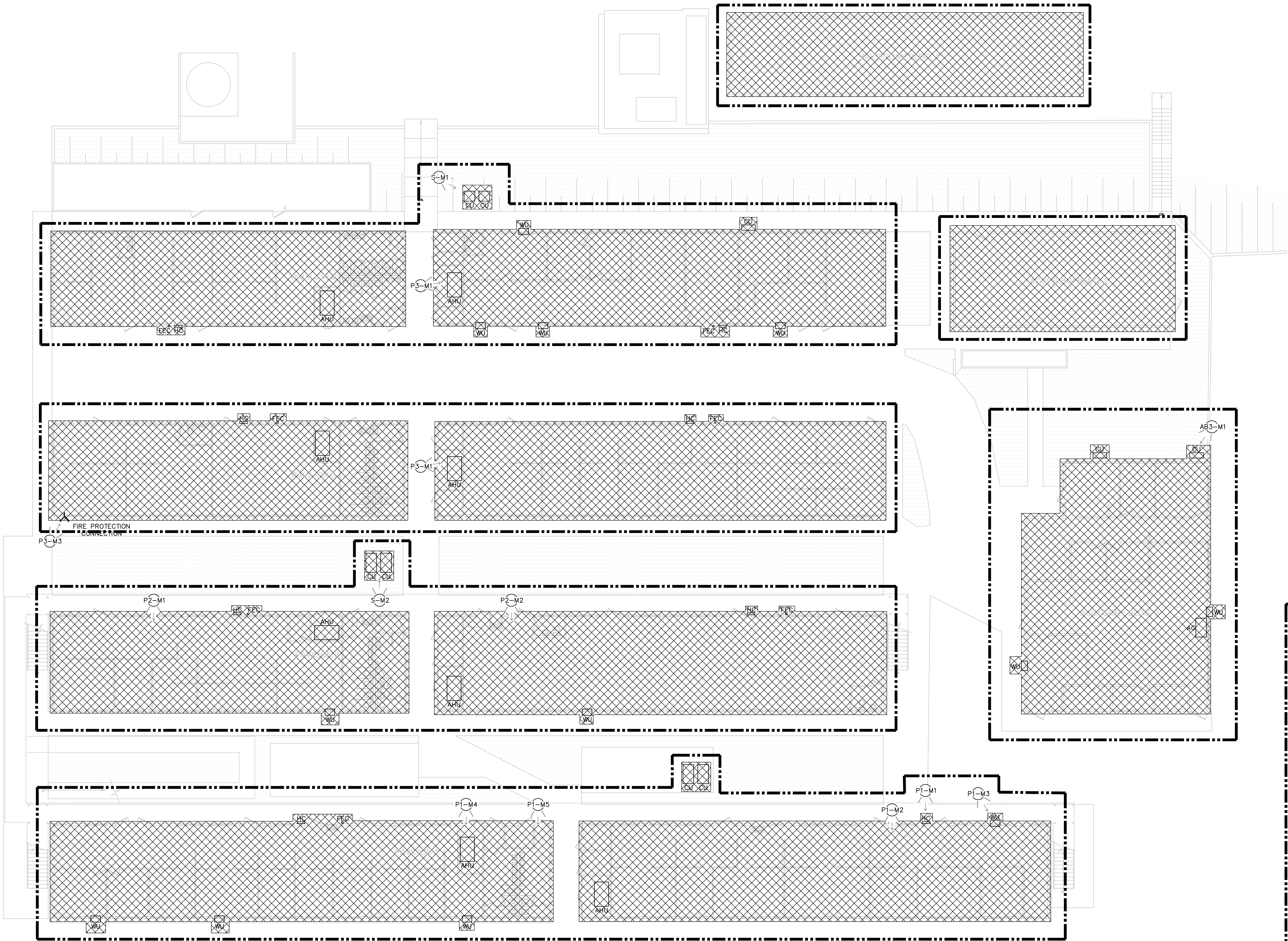
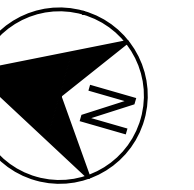
GENERAL SECOND FLOOR PLAN - DEMOLITION
SCALE: 3/32"=1'-0"

GENERAL DEMOLITION NOTES:

1. REFER TO GENERAL DEMOLITION NOTES AND DEMOLITION KEYNOTES ON DWG. NO: DA0-01.
2. FACILITIES ARE POSITIVE TO ASBESTOS/LEAD PRESENCE. MOBILIZATION CAN START BUT NO DEMOLITION OR CONSTRUCTION WORK SHALL BE PERFORMED UNTIL COMPLIANCE WITH PERMITS, WHICH REQUIRES MITIGATION AND CERTIFICATION (NEGATIVE CERTIFICATION) PRIOR DEMO/CONST. WORKS STARTS. REFER TO DOCUMENT 01 10 00 - SUMMARY OF WORK INCLUDED AS PART OF THE TECHNICAL SPECIFICATIONS.
3. REFER TO ELECTRICAL AND MECHANICAL DRAWINGS FOR DETAIL ON DEMO.

WORK LIMITED TO
OUTLINED AREA ONLY

									Job No.	23027	GENERAL SECOND FLOOR PLAN DEMOLITION	DA1-02
									SCALE	AS SHOWN		
									DATE	10/20/23		
									DRAWN BY	CAD		
DATE	REVISIONS	BY	DATE	REVISIONS	BY	DATE	REVISIONS	BY	CHECKED BY		TITLE	



SITE PLAN - MECHANICAL DEMOLITION
SCALE: 3/32"=1'-0"

WORK LIMITED TO
OUTLINED AREA ONLY

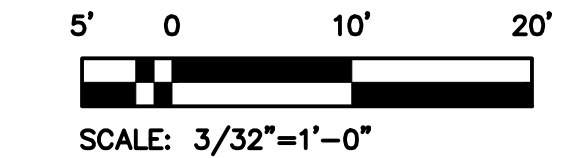
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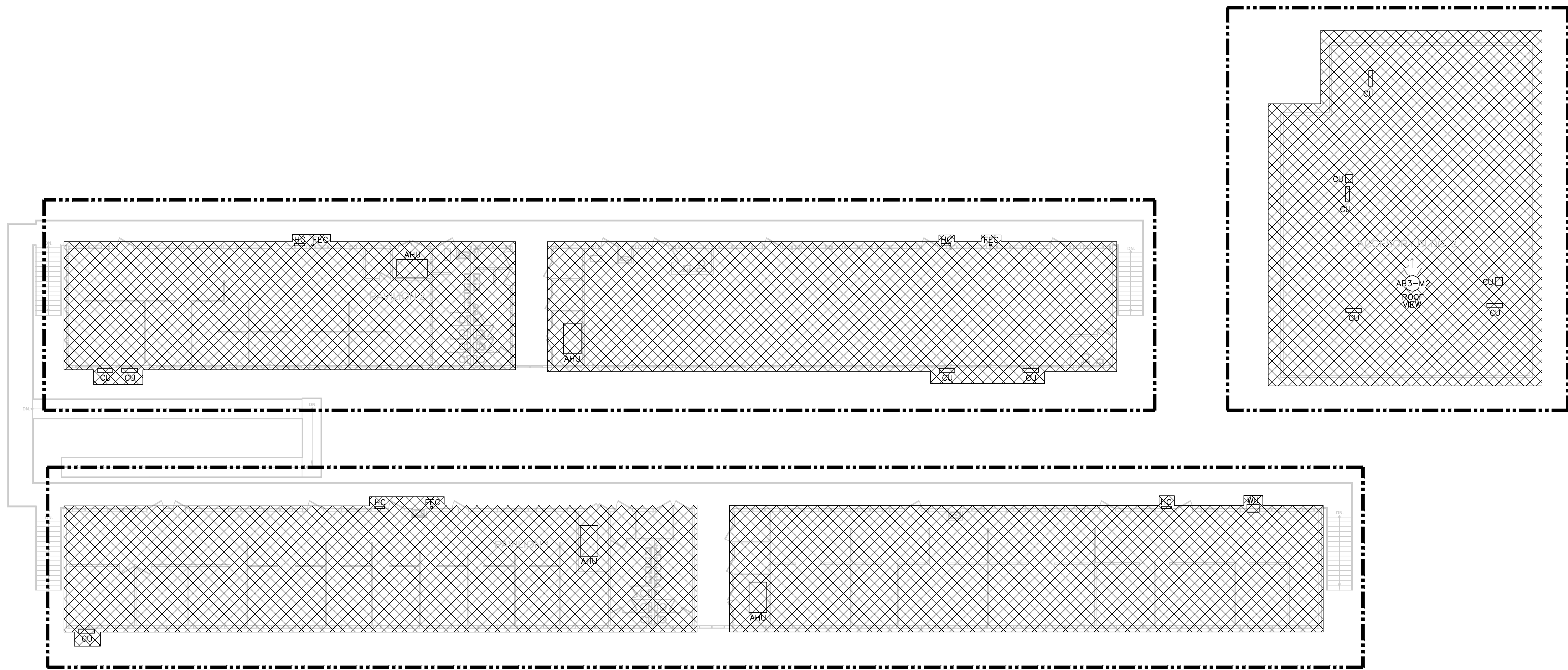
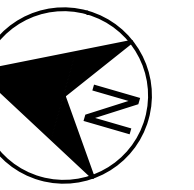
TO BE DEMOLISHED

PHOTO SYMBOL, REFER TO PHOTO REPORT INCLUDED AS PART OF SPECIFICATION 00 31 21 - EXISTING CONDITION INFORMATION.

NOTES:

- CONTRACTOR SHALL DEMOLISH ALL EXISTING HVAC DUCTWORK, INCLUDING BUT NOT LIMITED TO, ITS INSULATION, JACKETING, SUPPORTS, DAMPERS, DIFFUSERS AND GRILLES.
- ALL GENERATED WASTE SHALL BE PROPERLY DISPOSED OF.
- CONTRACTOR SHALL DEMOLISH EXISTING DUCTLESS AIR HANDLING UNITS AND THEIR CORRESPONDING CONDENSING UNITS, INCLUDING BUT NOT LIMITED TO, CONTROL DEVICES, REFRIGERANT PIPING, CONDENSATE PIPING, INSULATION, SUPPORTS, JACKETING, AND THE ELECTRICAL CONNECTION UP TO ITS SOURCE.
- THE REMOVAL OF REFRIGERANT PIPING SHALL COMPLY WITH CURRENT LAW REGULATIONS AND SPECIFICATIONS.
- CONTRACTOR SHALL DEMOLISH ALL ABOVE GROUND POTABLE WATER PIPING, INCLUDING BUT NOT LIMITED TO, SUPPORTS, VALVES, FIXTURES, AND ACCESSORIES.
- CONTRACTOR SHALL DEMOLISH ALL ABOVE GROUND SANITARY AND STORM PIPING, INCLUDING BUT NOT LIMITED TO, DRAINS, SUPPORTS AND FIXTURES.
- CONTRACTOR SHALL DEMOLISH ALL ABOVE GROUND FIRE PROTECTION PIPING, INCLUDING BUT NOT LIMITED TO, VALVES, SUPPORTS, SIAMASE, HOSES AND HOSE CABINETS.
- CONTRACTOR SHALL DEMOLISH ALL FIRE EXTINGUISHERS AND THEIR CABINETS.
- REFER TO CIVIL DRAWINGS FOR DEMOLITION SCOPE FOR UNDERGROUND UTILITIES.
- CONTRACTOR SHALL DEMOLISH ALL UNDERGROUND SANITARY PIPING AND POTABLE WATER PIPING BELOW THE BUILDING UP TO THE DEMOLITION LIMIT IN THE CIVIL DRAWINGS.

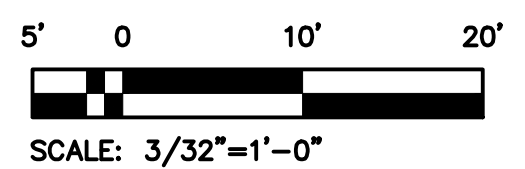




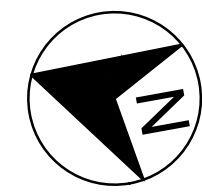
SITE PLAN - EXISTING CONDITION
SCALE: 3/32"=1'-0"

- LEGEND:**
- TO BE DEMOLISHED
 - PHOTO SYMBOL, REFER TO PHOTO REPORT INCLUDED AS PART OF SPECIFICATION 00 31 21 - EXISTING CONDITION INFORMATION.
- NOTES:**
- CONTRACTOR SHALL DEMOLISH ALL EXISTING HVAC DUCTWORK, INCLUDING BUT NOT LIMITED TO, ITS INSULATION, JACKETING, SUPPORTS, DAMPERS, DIFFUSERS AND GRILLES.
 - ALL GENERATED WASTE SHALL BE PROPERLY DISPOSED OF.
 - CONTRACTOR SHALL DEMOLISH EXISTING DUCTLESS AIR HANDLING UNITS AND THEIR CORRESPONDING CONDENSING UNITS, INCLUDING BUT NOT LIMITED TO, CONTROL DEVICES, REFRIGERANT PIPING, CONDENSATE PIPING, INSULATION, SUPPORTS, JACKETING, AND THE ELECTRICAL CONNECTION UP TO ITS SOURCE.
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 - CONTRACTOR SHALL DEMOLISH ALL ABOVE GROUND FIRE PROTECTION PIPING, INCLUDING BUT NOT LIMITED TO, VALVES, SUPPORTS, SIAMOSE, HOSES AND HOSE CABINETS.
 - CONTRACTOR SHALL DEMOLISH ALL FIRE EXTINGUISHERS AND THEIR CABINETS.
 - REFER TO CIVIL DRAWINGS FOR DEMOLITION SCOPE FOR UNDERGROUND UTILITIES.
 - CONTRACTOR SHALL DEMOLISH ALL UNDERGROUND SANITARY PIPING AND POTABLE WATER PIPING BELOW THE BUILDING UP TO THE DEMOLITION LIMIT IN THE CIVIL DRAWINGS.

**WORK LIMITED TO
OUTLINED AREA ONLY**



SCALE: 3/32"=1'-0"



DEMOLITION GENERAL NOTES

1. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS. DEMOLITION RESPONSIBILITIES ARE NOT NECESSARILY LIMITED TO THOSE PORTRAYED IN DEMOLITION PLAN.
2. THE CONTRACTOR SHALL BE RESPONSIBLE TO KEEP THE EXISTING SYSTEM NOT IN THE DEMOLITION SCOPE IN OPERATION.
3. THE CONTRACTOR IS RESPONSIBLE TO REPAIR ALL DAMAGE TO EXISTING UTILITIES OR STRUCTURES NOT IN THE DEMOLITION SCOPE.
4. BEFORE BEGINNING ANY ELECTRICAL DEMOLITION THE CONTRACTOR SHALL VERIFY WITH OWNER THAT THE ELECTRICAL SYSTEM IS SECURE AND SAFE TO WORK.
5. FEEDERS SIZE ARE ESTIMATED BASED ON BREAKERS SIZE. CONTRACTOR SHALL VERIFY AT FIELD REAL FEEDERS SIZE AND EXACT LOCATION.

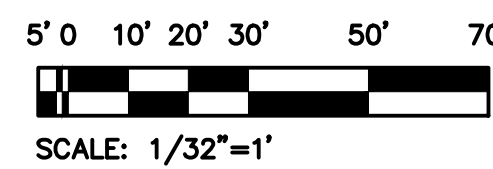
DEMOLITION NOTES

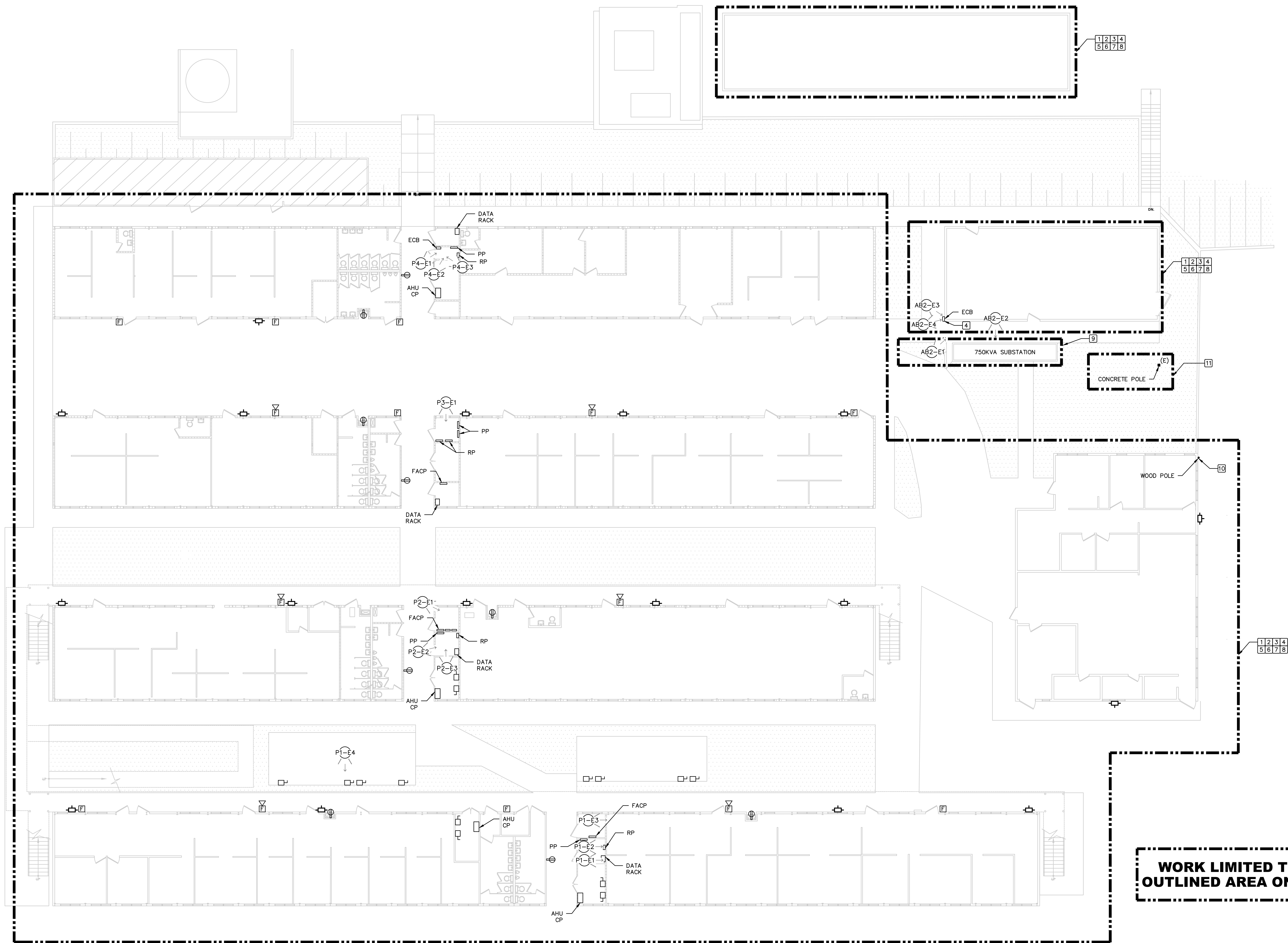
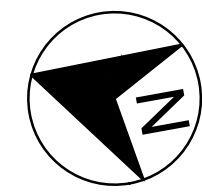
- 1 REMOVE EXISTING TRIPLEX CABLE INCLUDING WEATHERHEAD AND MAST UP TO EXISTING BOX TO REMAIN AT BUILDING A. REFER TO DRAWING E0-01 FOR POWER RELOCATION.
- 2 REMOVE EXISTING WIRES AND CONDUIT SERVING PANELBOARD AT EXISTING CONTAINER TO REMAIN. REFER TO DRAWING E0-01 FOR POWER SOURCE RELOCATION.
- 3 FOR PAVILION DEMOLITION SCOPE REFER TO DRAWING DE6-01.

LEGEND

SYMBOL	DESCRIPTION
SEC 120/208	EXISTING TRIPLEX CABLE TO BE REMOVED.
(E)	EXISTING TO REMAIN.
	PHOTO SYMBOL. REFER TO REPORT INCLUDED AS PART OF SPECIFICATION 00 31 21 - EXISTING CONDITION INFORMATION.

WORK LIMITED TO
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DEMOLITION GENERAL NOTES

1. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS. DEMOLITION RESPONSIBILITIES ARE NOT NECESSARILY LIMITED TO THOSE PORTRAYED IN DEMOLITION PLAN.
2. THE CONTRACTOR SHALL BE RESPONSIBLE TO KEEP THE EXISTING SYSTEM NOT IN THE DEMOLITION SCOPE IN OPERATION.
3. THE CONTRACTOR IS RESPONSIBLE TO REPAIR ALL DAMAGE TO EXISTING UTILITIES OR STRUCTURES NOT IN THE DEMOLITION SCOPE.
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5. FEEDERS SIZE ARE ESTIMATED BASED ON BREAKERS SIZE. CONTRACTOR SHALL VERIFY AT FIELD REAL FEEDERS SIZE AND EXACT LOCATION.

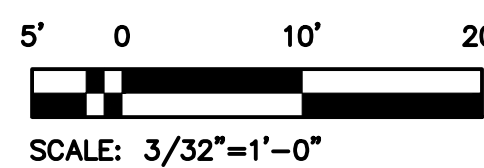
DEMOLITION NOTES

- 1 REMOVE EXISTING LIGHTING FIXTURES, INCLUDING WIRES, CONDUITS AND BOXES UP TO POWER SOURCE.
- 2 REMOVE EXISTING TOGGLE SWITCHES, INCLUDING WIRES, CONDUITS AND BOXES UP TO POWER SOURCE.
- 3 REMOVE EXISTING RECEPTACLES INCLUDING WIRES, CONDUITS AND BOXES UP TO POWER SOURCE.
- 4 REMOVE EXISTING PANELBOARDS AND ENCLOSED CIRCUIT BREAKERS INCLUDING UNDERGROUND FEEDERS, BRANCH CIRCUIT BREAKERS, WIRES, CONDUITS AND BOXES UP TO SOURCE AND LOAD.
- 5 REMOVE EXISTING VARIABLE FREQUENCY DRIVES, CONTROL PANEL, SAFETY SWITCHES, WIRES, CONDUIT, BOXES AND ELECTRICAL COMPONENT INCLUDING INSTRUMENTATION AND CONTROL RELATED TO ANY MECHANICAL EQUIPMENT TO BE DEMOLISHED.
- 6 REMOVE EXISTING FIRE ALARM LOOP INCLUDING DEVICES, WIRES, CONDUITS AND BOXES UP TO CONTROL PANEL.
- 7 REMOVE EXISTING SECURITY AND ACCESS CONTROL DEVICES INCLUDING WIRES, CONDUITS AND BOXES UP TO CONTROL PANEL.
- 8 REMOVE EXISTING DATA OUTLET INCLUDING WIRES, CONDUITS AND BOXES UP TO DATA RACK.
- 9 REMOVE 750KVA 4160-208/120V ELECTRICAL SUBSTATION INCLUDING ENCLOSURE, CONCRETE PAD, FUSES, METER, CIRCUIT BREAKERS, UNDERGROUND PRIMARY FEEDER UP TO RISER AND ANY RELATED CONDUIT WIRES AND BOXES UP TO LOAD.
- 10 REMOVE EXISTING WOOD POLE.
- 11 EXISTING CONCRETE UTILITY POLE TO REMAIN.

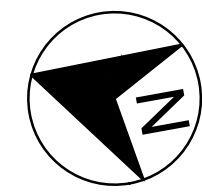
LEGEND

SYMBOL	DESCRIPTION
(E)	EXISTING TO REMAIN.
X-XX →	PHOTO SYMBOL. REFER TO REPORT INCLUDED AS PART OF SPECIFICATION 00 31 21 - EXISTING CONDITION INFORMATION.
□	WALL LIGHTING OUTLET HID LUMINAIRE
⊕	DUPLEX GROUNDING RECEPTACLE 20A, 2P, 3W, 125 VOLT
F	FIRE ALARM SYSTEM MANUAL PULL STATION
▽	FIRE ALARM SYSTEM AUDIO/VISUAL HORN STROBE LIGHT
□	SAFETY SWITCH, 600 VOLTS, HEAVY DUTY NON-FUSIBLE NEMA 1 ENCLOSURE

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SCALE: 3/32"=1'-0"

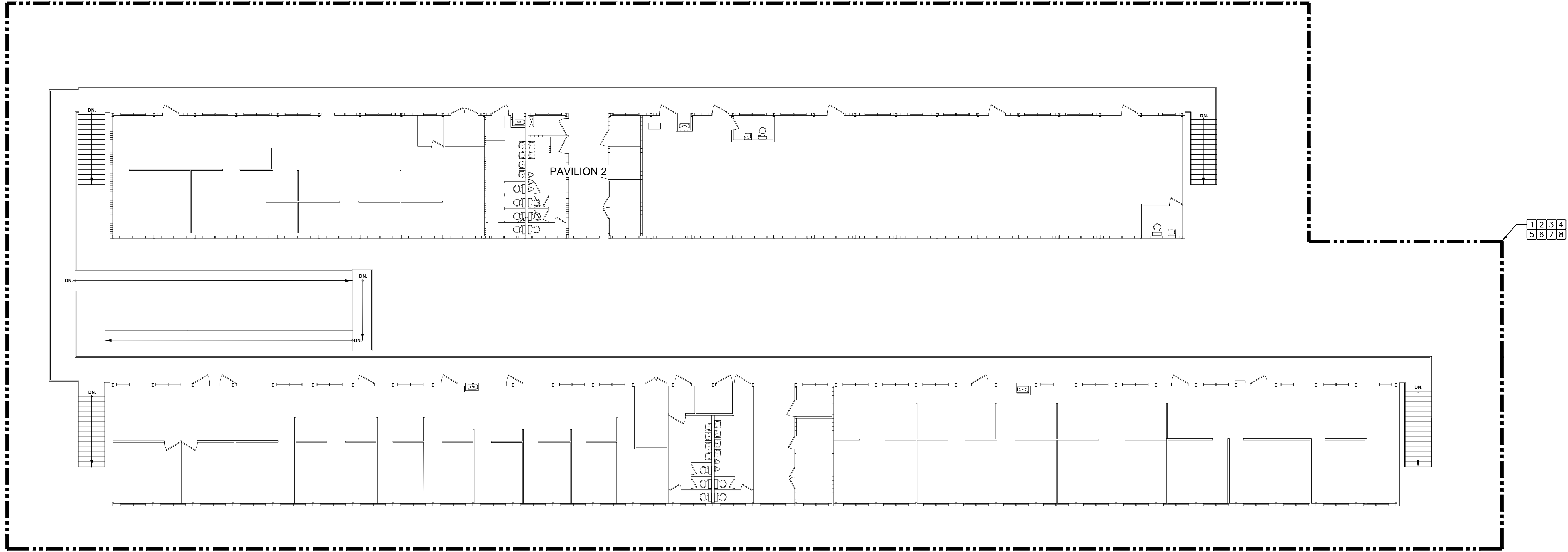


DEMOLITION GENERAL NOTES

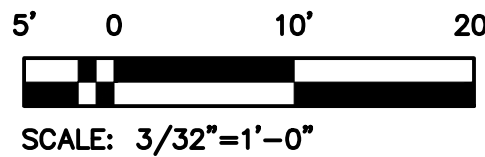
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DEMOLITION NOTES

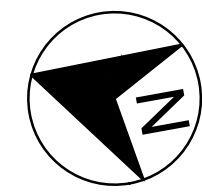
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- 4 REMOVE EXISTING PANELBOARDS AND ENCLOSED CIRCUIT BREAKERS INCLUDING BRANCH CIRCUIT BREAKERS, WIRES, CONDUITS AND BOXES UP TO SOURCE AND LOAD.
- 5 REMOVE EXISTING VARIABLE FREQUENCY DRIVES, CONTROL PANEL, SAFETY SWITCHES, WIRES, CONDUIT, BOXES AND ELECTRICAL COMPONENT INCLUDING INSTRUMENTATION AND CONTROL RELATED TO ANY MECHANICAL EQUIPMENT TO BE DEMOLISHED.
- 6 REMOVE EXISTING FIRE ALARM LOOP INCLUDING DEVICES, WIRES, CONDUITS AND BOXES UP TO CONTROL PANEL.
- 7 REMOVE EXISTING SECURITY AND ACCESS CONTROL DEVICES INCLUDING WIRES, CONDUITS AND BOXES UP TO CONTROL PANEL.
- 8 REMOVE EXISTING DATA OUTLET INCLUDING WIRES, CONDUITS AND BOXES UP TO DATA RACK.



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									Job No. 23027		DEMOLITION ELECTRICAL INSTALLATION SECOND FLOOR PLAN		DE6-02	
									SCALE 3/32"=1'-0"					
									DATE 10/30/2023					
									DRAWN BY CAD					
11/22/2023			ISSUED FOR BID			CLM								
DATE	REVISIONS		BY	DATE	REVISIONS		BY	DATE	REVISIONS		BY	TITLE		

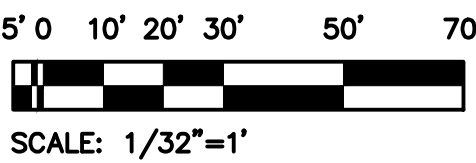
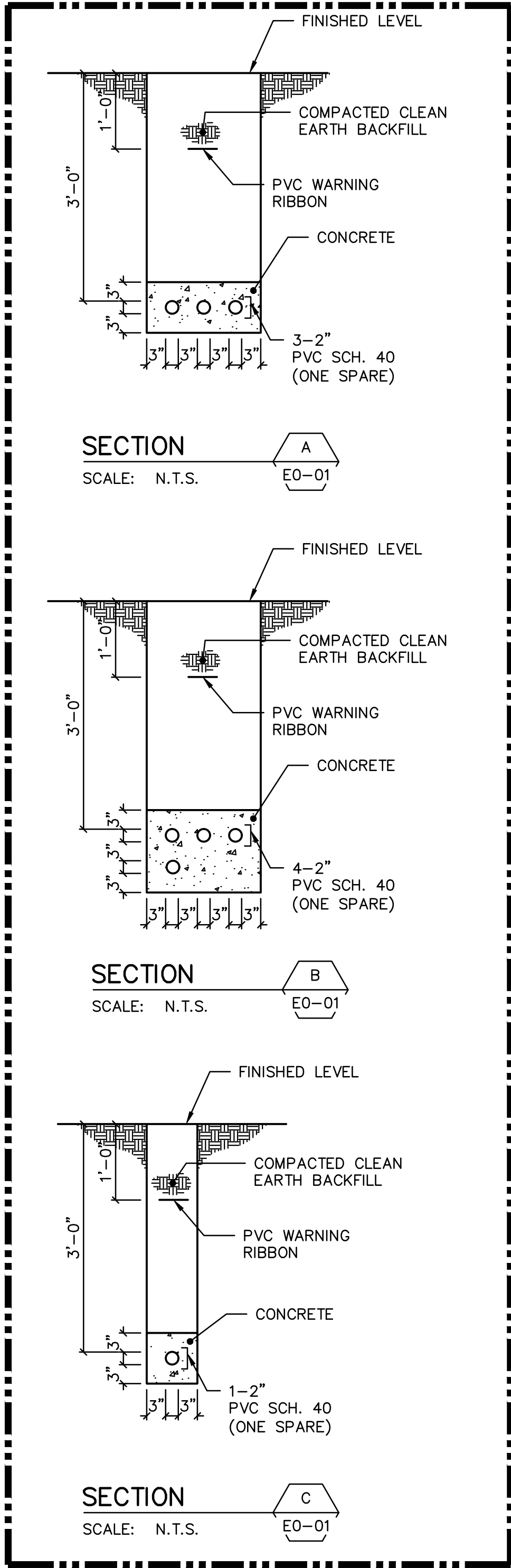


NOTES

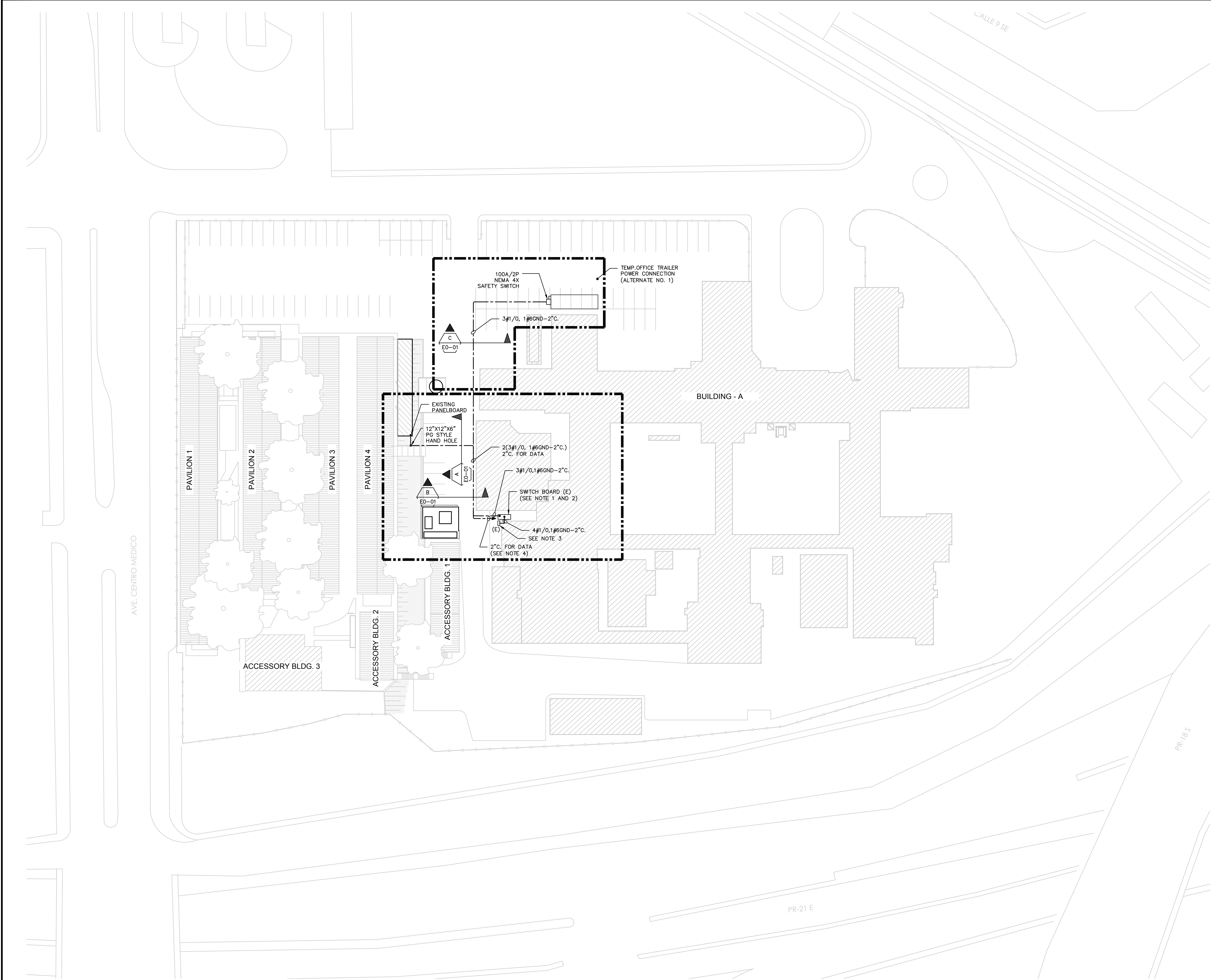
1. PROVIDE NEW 150A/3P CIRCUIT BREAKER WITH THE SAME CHARACTERISTIC AS THE EXISTING ONES. EXISTING SWITCHBOARD CAT.# IS SPECTRA SERIES. CONTRACTOR SHALL COORDINATE WITH THE DEPARTAMENTO DE SALUD DE PUERTO RICO TO COORDINATE ANY SHUTDOWN OF THE ELECTRICAL SERVICE AT EXISTING BUILDING.
2. PROVIDE NEW 100A/2P CIRCUIT BREAKER WITH THE SAME CHARACTERISTIC AS THE ONES. EXISTING SWITCHBOARD CAT.# IS SPECTRA SERIES. CONTRACTOR SHALL COORDINATE WITH THE DEPARTAMENTO DE SALUD DE PUERTO RICO TO COORDINATE ANY SHUTDOWN OF THE ELECTRICAL SERVICE AT EXISTING BUILDING.
3. INTERCEPT AND SPLICE EXISTING POWER CIRCUIT AT EXISTING JUNCTION BOX.
4. PROVIDE 2" C. CONDUIT FOR DATA ROOM UP TO DATA ROOM. CONTRACTOR SHALL COORDINATE DATA ROOM EXACT LOCATION AT FIELD WITH OWNER.

ALTERNATE NO. 1 NOTES

1. PROVIDE NEW 100A/2P CIRCUIT BREAKER WITH THE SAME CHARACTERISTIC AS THE ONES. EXISTING SWITCHBOARD CAT.# IS SPECTRA SERIES. CONTRACTOR SHALL COORDINATE WITH THE DEPARTAMENTO DE SALUD DE PUERTO RICO TO COORDINATE ANY SHUTDOWN OF THE ELECTRICAL SERVICE AT EXISTING BUILDING.



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CMA ARCHITECTS & ENGINEERS LLC	DEPARTAMENTO DE SALUD PUBLIC HEALTH LABORATORY PHASE 1: DEMOLITION PACKAGE											Job No. 23027		ELECTRICAL SITE PLAN	E0-01											
												SCALE 1/32"=1'-0"														
												DATE 10/27/23														
												DRAWN BY CAD														
												CHECKED BY CLM														
SAN JUAN		PUERTO RICO	11/22/2023 ISSUED FOR BID			CLM																				
DATE		REVISIONS			BY		DATE		REVISIONS			BY		DATE		REVISIONS			BY		CHECKED BY		CLM		TITLE	

TECHNICAL SPECIFICATIONS

Laboratorio de Salud Pública
Phase 1: General Demolition Package

Issued for Bid



San Juan, Puerto Rico

November 22, 2023



CMA
ARCHITECTS &
ENGINEERS LLC

DOCUMENT 00 01 10

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01 31 00	Project Management and Coordination	IFB	A	11/22/2023
01 32 00	Construction Progress Documentation	IFB	A	11/22/2023
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02 41 16	Structure Demolition	IFB	A	11/22/2023
02 82 00	Asbestos Remediation	IFB	A	11/22/2023
02 83 00	Lead Remediation	IFB	A	11/22/2023
DIVISION 03 – CONCRETE				
03 30 53	Miscellaneous Cast-In-Place Concrete	IFB	A	11/22/2023
DIVISION 26 – ELECTRICAL				
26 05 00	General Provisions	IFB	A	11/22/2023
26 05 26	Grounding and Bonding	IFB	A	11/22/2023
26 05 26.13	Grounding Systems for Substations	IFB	A	11/22/2023
26 05 26.16	Low Resistance Neutral Grounding Resistor	IFB	A	11/22/2023
26 05 33.19	Raceways: Wireways	IFB	A	11/22/2023
26 05 33.29	Raceways: Outlet Boxes	IFB	A	11/22/2023
26 05 33.33	Raceways: Junction, Pull and Cable Support Boxes	IFB	A	11/22/2023
26 05 43	Underground Duct System	IFB	A	11/22/2023
26 08 00	Acceptance Testing	IFB	A	11/22/2023

DIVISION 31 – EARTHWORK

31 20 00	Earth Moving	IFB	A	11/22/2023
31 25 00	Erosion and Sedimentation Controls	IFB	A	11/22/2023

DIVISION 32 – EXTERIOR IMPROVEMENT

32 15 40	Crushed Stone Surfacing	IFB	A	11/22/2023
32 31 13	Chain Link Fences and Gates	IFB	A	11/22/2023
32 91 19	Landscape Grading	IFB	A	11/22/2023
32 92 23	Sodding	IFB	A	11/22/2023

*Attachments for Section 00 31 21 - Existing Condition Information will be located at the end of the Technical Specifications

IFB = Issued for Bid

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DOCUMENT 00 01 15
LIST OF DRAWING SHEETS

<u>DRAWING NO.</u>	<u>TITLE</u>	<u>STATUS</u>	<u>REVISION</u>	<u>DATE</u>
<u>CIVIL</u>				
C0-30	Existing Conditions and Topographic Survey	IFB	A	11/22/23
C1-10	Demolition Plan	IFB	A	11/22/23
C1-20	Utilities Demolition Plan	IFB	A	11/22/23
C3-20	Layout and Grading Plan	IFB	A	11/22/23
C4-80	Erosion and Sedimentation Control Plan	IFB	A	11/22/23
C4-90	Erosion and Sedimentation Control Details	IFB	A	11/22/23
C9-10	Typical Sections and Details	IFB	A	11/22/23
C12-10	Recycling Plan	IFB	A	11/22/23
C12-11	Recycling Details	IFB	A	11/22/23
L1-10	Tree Inventory	IFB	A	11/22/23
<u>ARCHITECTURAL</u>				
DA0-01	Demolition Architectural General Notes & Keynotes	IFB	A	11/22/23
DA1-00	Architectural Site Plan - Demolition	IFB	A	11/22/23
DA1-01	General Ground Floor Plan - Demolition	IFB	A	11/22/23
DA1-02	General Second Floor Plan - Demolition	IFB	A	11/22/23
<u>MECHANICAL</u>				
DM2-00	General Floor Plan - Mechanical Demolition	IFB	A	11/22/23
DM2-01	General Second Floor Plan - Mechanical Demolition	IFB	A	11/22/23
<u>ELECTRICAL</u>				
DE0-01	Demolition Electrical Site Plan	IFB	A	11/22/23
DE6-01	Demolition Electrical Installation Plan	IFB	A	11/22/23
DE6-02	Demolition Electrical Installation Second Floor Plan	IFB	A	11/22/23
E0-01	Electrical Site Plan	IFB	A	11/22/23

REFERENCE DRAWINGS

A-1	Floor Plans Building No. 1	-	-	05/20/93
A-2	Floor Plans Building No. 2	-	-	05/20/94
A-3	Floor Plan & Elev. Building No. 3	-	-	05/20/94
A-4	Floor Plan & Elev. Building No. 4	-	-	05/20/94

IFB = Issued for Bid

END OF DOCUMENT

DOCUMENT 00 31 21
EXISTING CONDITION INFORMATION

PART 1 - GENERAL

1.1 EXISTING CONDITION INFORMATION

- A. This Document with its referenced attachments is part of the Procurement and Contracting Requirements for Project. They provide Owner's information for Bidders' convenience and are intended to supplement rather than serve in lieu of the Bidders' own investigations. They are made available for Bidders' convenience and information but are not a warranty of existing conditions. This Document and its attachments are not part of the Contract Documents.
- B. Existing drawings that include information on existing conditions including previous construction at Project site are available as part of the Project Drawings.
- C. Existing Hazardous Materials Reports (*these documents are attached at the end of the Technical Specifications Book*):
 - 1. Public Health Laboratory, Lead Based Inspection Report, prepared by CMA Architects & Engineers LLC. for the Department of Health Puerto Rico, dated: November 6, 2023. (attached at the end of this Section).
 - 2. Public Health Laboratory, Asbestos Containing Materials Inspection Report, prepared by CMA Architects & Engineers LLC. for the Department of Health Puerto Rico, dated: November 1, 2023. (attached at the end of this Section).
 - 3. *Reporte de Inspección Pintura en Base de Plomo*, prepared by R & S Professional Equipment, Inc., dated: September, 2019 (attached at the end of this Section).
- D. Photographic report of existing conditions that includes photographic documentation on existing conditions, prepared by CMA Architects & Engineers LLC., dated 10/30/23, is available at the end of this Section (*these photos are attached at the end of the Technical Specifications Book*):
 - 1. Architectural Photo Report
 - 2. Mechanical Photo Report
 - 3. Electrical Photo Report

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF DOCUMENT

SECTION 01 10 00

SUMMARY OF WORK

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Project Information.
- B. Work covered by Contract Documents.
- C. Work by Owner.
- D. Access to site.
- E. Work restrictions.
- F. Specification and drawing conventions.
- G. Miscellaneous provisions.
- H. Scope of Work – General.

1.2 RELATED SECTIONS

- A. Division 00 Sections – Procurement and Contracting Requirements.
- B. Division 01 Section 01 50 00 - Temporary Facilities and Controls: Limitations and procedures governing temporary use of Owner's facilities.
- C. Remaining Division 01 Sections – General Requirements.
- D. Division 02 through 32 Sections – Technical Specifications.

1.3 PROJECT INFORMATION

- A. Owner: Puerto Rico Department of Health
- B. Architect-Engineer: CMA Architects & Engineers LLC

1.4 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of Project is defined by the Contract Documents and consists of the following:
 - 1. The Contractor shall furnish all necessary materials, labor, supervision and any other necessary incidentals required to complete the Scope of Work of the Building Demolition and associated site and infrastructure work as described herein or as indicated on the drawings and related specifications.
- B. Type of Contract:
 - 1. Project will be constructed under a Lump Sum (Single Prime Contract).

1.5 ACCESS TO SITE

- A. General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.

- B. Use of Site: Limit use of Project site to areas within the Contract limits indicated on the drawings. Do not disturb portions of Project site beyond areas in which the Work is indicated.

1. Limits: Confine construction operations to areas within Contract limits.
2. Driveways, Walkways and Entrances: Keep main entrances to Owner's site, driveways, parking garage, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.

1.6 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.

1. Comply with limitations on use of public streets outside Owner's premises and with other requirements of Authorities Having Jurisdiction (AHJ).
2. All costs associated with work restrictions described herein shall be including in the bid proposal. There will be no financial adjustments for failure to include additional monies for work restrictions in the Bid Proposal.

- B. On-Site Work Hours

1. General Construction Work:
 - a. Limit work in the building to business hours 7 am to 5 pm; Monday through Friday, unless otherwise indicated.
 - b. Weekend Hours: No work.
2. Noise, Vibration, Dust and Odors (Heavy Construction or Demolition Work): Limit operations that may result in high levels of noise and vibration, dust, odors, or other disruption to neighbors.
 - a. Limit work to business hours 8 am to 4 pm; Monday through Friday, unless otherwise indicated.
 - b. Weekend Hours: No work.
 - c. Notify Owner's Representative not less than two (2) working days in advance of proposed disruptive operations.
 - d. Obtain Owner Representative's written permission before proceeding with disruptive operations.

- C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:

1. Notify Owner's Representative not less than five (5) working days in advance of proposed utility interruptions.
2. Obtain Owner Representative's written permission before proceeding with utility interruptions.

- D. Nonsmoking Site: Smoking is not permitted within the Owner's site.

- E. Controlled Substances: Use of tobacco products and other controlled substances on Owner facilities is not permitted.

- F. Employee Identification: Provide identification tags with photograph for Contractor and its Subcontractor's personnel working on Owner facilities. Require personnel to use identification tags with photograph at all times. Contractor and Subcontractor's employees shall not enter the project site without appropriate identification tags.
- G. All construction personnel will be required to comply with Owner's Security Requirements and Procedures.

1.7 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 - 1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (;) is used within a sentence or phrase.
 - 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
 - 1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
 - 2. Abbreviations: Materials and products are identified by abbreviations scheduled on Drawings.
 - 3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.
- D. Manufacturers and Products:
 - 1. Whenever an item, material, or equipment is specified in the Contract Documents, employing either the name of a proprietary item or a specific supplier, the specification or description is crafted with the intent of defining the minimum requisite type, function, appearance, and quality.
 - a. Refer to ASG, Regulation 9230 - Uniform Regulation for Purchases and Bids of Goods, Works and Nonprofessional Services of the General Services Administration (*Administración de Servicios Generales*) of the Government of Puerto Rico, Section 10.5.3 – Compulsory General Conditions to be Included in All Purchases, Bid, or Request for Proposals Packets, According to their Subject of Matter, paragraph 4 – Trademarks.
 - 2. The Contractor is responsible for presenting the submittal for approval, clearly indicating whether the proposed item, material or equipment is an "Or Equal" or a Substitute.
 - a. Refer to UNIFORM GENERAL CONDITIONS FOR PUBLIC WORKS CONTRACTS, Paragraph 6.5.6.

1.8 MISCELLANEOUS PROVISIONS

A. Connections to Existing Facilities:

1. Contractor shall make all necessary connections to existing facilities. In each case, Contractor shall receive permission from the Owner's On Site Representative prior to undertaking connections. Contractor shall protect facilities against deleterious substances and damage.
2. Connections to existing facilities shall be thoroughly planned in advance, and all required equipment, materials and labor shall be on hand at the time of undertaking the connections. Work shall proceed continuously (around the clock) if necessary to complete connections in the minimum time.

B. Safety Requirements:

1. The work site is within Owner facilities and the Contractor shall comply at all times with the Owner's safety requirements.
2. It is the Contractor's responsibility to provide safety equipment required to protect the Owner's personnel and Owner's property to the satisfaction of OSHA Standards for the Construction Industry (29 CFR Part 1926). This includes but is not limited to the follows:
 - a. Provide Owner approved fire blankets and welding boxes as required for welding.
 - b. Provide fire hoses with pressure to nozzle at all times when performing hot work. The hose will be manned at all times during working hours.
 - c. Provide adequate fire extinguishers when performing hot work.
 - d. Contractors performing hot work (welding, cutting, soldering, brazing, other) shall comply with OSHA's requirements (29 CFR 1926.352, Fire Prevention for Welding and Cutting) and implement hot work programs including the use of a written hot work permit.
 - e. The Contractor shall bring, special emphasis to bear on the subject to safety by use of posters and other visual reminders and such other methods as he may devise.
 - f. The Contractor's proposed safety program is to be reviewed with the Owner's On Site Representative prior to the start of field construction and integrated into the overall safety program.
3. The Contractor shall conduct an indoctrination session of the "Contractor Safety Regulations" with his own forces and subcontractors employees within the first week of employment. Each Contractor and Sub-contractor employee receiving this indoctrination will be required to sign a Contractor's form stating that he has received this training. Contractor shall conduct weekly safety meetings with his employees.

C. Security at Work Area

1. The security at the Construction Compound and Staging Areas is the sole responsibility of the Contractor at all times during the Construction Phase.

SCOPE OF WORK GENERAL

PART 2 - SCOPE OF WORK - GENERAL

2.1 GENERAL

- A. The following is an outline of the general work requirements for Demolition of the Laboratorio de Salud Pública, San Juan, Puerto Rico. This outline is prepared as a guide only and is not to be considered as a complete description of the work requirements.
- B. The Contractor shall construct the items listed below and the more specifically detailed in the drawings in strict accordance with the specifications listed elsewhere in the Contract Documents.
- C. Where the Contractor's work shall encounter existing construction, the Contractor shall verify the condition and dimensional accuracy before proceeding. Where the new construction, as specified, is in conflict with existing conditions, the Contractor shall immediately bring it to the attention of the Owner's On Site Representative and/or Architect-Engineer for resolution.
- D. All equipment and materials shall be installed in strict accordance with the printed instructions of the manufacturer, unless more stringent requirements are required by the Owner's On Site Representative or are shown on the drawings.
- E. Contractor shall notify and receive written approval from the Owner's On Site Representative and/or Architect-Engineer for proposed deviations from Contract Documents. If proposed deviations are made without the Owner's On Site Representative and/or Architect-Engineer written approval, this shall be considered as just cause for dismantling and removal of said work at Owner's On Site Representative and/or Architect-Engineer discretion. Reconstruction and/or reinstallation of the work shall be at Contractor's expense.
- F. Owner's On Site Representative, Architect-Engineer and/or his authorized representative shall have the right at all times to inspect and test the work and shall for this purpose have access to the work whenever it is in preparation or in progress. The Contractor shall provide necessary labor and proper facilities for such access, inspection and testing, and shall provide complete information concerning all materials entering into the work.
- G. Contractor shall handle and haul all materials, equipment and tools from the designated storage area(s) to the work area.
- H. Contractor shall provide all hoisting, scaffolding and/or shoring required for the complete installation of all materials, equipment or systems included in this Scope of Work.
- I. Contractor shall provide all required cutting, drilling, bolting, welding, patching, weatherproof, etc. necessary to complete the work under this Scope of Work.
- J. Contractor shall furnish the services of all trades necessary to complete all items enclosed in this Scope of Work.
- K. Contractor shall furnish material and labor necessary to correct at his expense, any items improperly installed.
- L. Contractor shall receive, unload, store and provide necessary weather protection for all materials, equipment and tools which he furnishes and installs. These items shall be stored in areas within Owner's premises designated by the Owner's On Site Representative.
- M. Contractor shall furnish, install and maintain all temporary field offices required for this work for the duration of this Contract. Location of temporary field office to be designated by the Owner's Representative.
- N. Contractor shall furnish all field engineering services required to complete this work.

- O. Contractor shall make all submittals and obtain all approvals as specified and required to complete this work.
- P. Contractor shall provide all required guarantees and certification for items of work and systems installed under this contract.
- Q. Rubbish and dirt resulting from the Contractor's work shall be removed by the Contractor daily or more frequently as necessary to prevent the accumulation thereof and shall be disposed of as directed by the Owner's On Site Representative and/or Architect-Engineer. Failure of the Contractor to clean up and remove rubbish as called for, will be cause for the Owner's On Site Representative and/or Architect-Engineer to order this work to be done by others at the expense of the Contractor.
- R. The areas assigned for Contractor's use and areas in which he is doing construction work shall be cleaned thoroughly at least once daily. All construction debris shall be removed in a legal manner from the project site on a daily basis. Contractor is responsible for maintaining a high standard of housekeeping in his construction sites, field offices, and storage areas at all times. Contractor shall store materials in a safe and organized manner and dispose off site material containers and construction debris on a daily basis.
- S. All construction trailers, office sheds and warehouses used by the Contractor during the execution of this work shall be placed at the place (authorized by the Owner's On Site Representative) within Owner's premises.
- T. When the work is being executed away from the premises, the Owner's On Site Representative and Architect-Engineer shall be notified, in reasonable time, where such work is being done and when it will be ready for inspection, so that the Owner's On Site Representative, the Architect-Engineer and/or his authorized representatives may, if they should so desire, inspect the same from time to time before delivery.
- U. Contractor shall take necessary actions to eliminate possible fire hazards and to prevent damage to any construction work, building materials, equipment, temporary field offices, storage sheds and all other property.
- V. Contractor shall protect all existing materials and areas against damage during the performance of his Work. Any damage to roads, parking lots, traffic coatings (parking lots), steel, concrete slabs, walls, roof, piping, equipment, etc., inflicted by this Contractor will be repaired at his expense.

2.2 SAFETY

- A. Contractor shall contact Owner's On Site Representative regarding safety requirements and shall comply with said requirements for the entire duration of the Contract.

2.3 CONSTRUCTION PROGRESS SCHEDULE

- A. The Construction Progress Schedule will be monitored on a daily and/or weekly basis by the Owner's On Site Representative and/or the Architect-Engineer.
- B. If it becomes apparent during the monitoring of the progress that slippage has occurred, then the Owner's On Site Representative and/or the Architect-Engineer shall direct the Contractor to take all necessary steps to regain the slippage and maintain the additional manpower until such time that the progress agrees with the current schedule. This will be accomplished at no cost to Owner.
- C. The Contractor will be responsible for maintaining the project with the maximum number of skilled workers at all times to achieve the completion dates indicated in the construction schedule. If the Contractor determines that overtime and/or shift work is required to attain such dates, such costs shall be included in the Bid Proposal.

2.4 TESTING

- A. Contractor shall hire and pay for all required testing laboratory services to perform all inspections and tests required by the respective Specification Sections. Testing, because of faulty work, will be paid by the Contractor.
 - 1. Soil classification tests.
 - 2. Soil compaction tests.
 - 3. Asphalt pavement compaction tests.
 - 4. Any other testing listed in either the drawings and technical specifications.

2.5 FIRE PROTECTION AND SAFETY

- A. During the entire construction / demolition phase, Contractor shall provide at all times the quantity of filled or fully charged fire extinguishers and hose to meet safety and fire prevention practices established under NFPA 241.
- B. Welding, flame cutting or other operations involving the use of flame, arcs or sparking devices, will not be allowed without adequate protection. All combustible or flammable material shall be removed from the immediate working area or, if removal is impossible, all flammable or combustible materials shall be protected with suitable noncombustible shields to prevent spark, flames, or hot metal from reaching the flammable or combustible materials.
- C. Contractors shall comply with OSHA's requirements (29 CFR 1926, Subpart J, Welding and Cutting) for the handling and storage of compressed gases used for welding and cutting.
- D. Not more than one day's supply of flammable liquids such as oil, gasoline, paint or paint solvent shall be brought into the buildings at any one time. All flammable liquids having a flash point of one hundred ten degrees Fahrenheit (110°F) or below which must be brought into the building shall be confined in Underwriters' Laboratories labeled safety cans. If one day's supply requires quantities greater than a safety can will hold, one (1) fifty-five (55) gallon drum may be used. Drums are to be equipped with safety bungs and U.L. listed pumps. The bulk supply of all flammables shall be stored at least seventy-five feet (75'-0") from the building or other combustible materials. Spigots on drums containing flammable liquids are prohibited on the project site.
- E. Flammable building materials located inside the building shall be kept to an absolute minimum.
- F. Burning of debris and rubbish on the site is not permitted.
- G. No gasoline, benzine or like combustible materials shall be poured into sewers, manholes, or traps.
- H. The gases used for welding and cutting shall be purchased in cylinders. These cylinders shall be constructed and maintained in accordance with regulations of the U.S. Department of Transportation. The cylinders shall bear DOT markings and the contents of each cylinder shall be legibly marked in large letters.
- I. Cylinders of oxygen and acetylene inside buildings shall be stored in areas that are well ventilated and free from moisture and water. Flammable substances, such as oil and volatile liquids shall not be stored in the same area. The area assigned to cylinder storage shall be well protected by location from possible damage by other types of activity. Oxygen cylinders stored inside shall be separated by a fire-resistant partition from cylinders containing flammable gases.
- J. Cylinders of oxygen and acetylene are to be protected from the hot sun by such means as canopies and/or sheds.

- K. To avoid confusion, full cylinders and empty cylinders should be stored in separate groups. All empty cylinders shall be marked "Empty" or "MT."
- L. Flammable gas, such as acetylene, and other gases shall not be premixed with air or oxygen, prior to consumption, except at burner or in a cutting or welding torch designed for that purpose.
- M. Oxygen and acetylene shall be withdrawn from cylinders provided with regulators and/or pressure-reducing valves specifically designed for such purposes.
- N. All cylinders shall be set in a vertical position during storage at the job site and while in portable carts, when in use, and shall be fastened to insure against tipping.

**SCOPE OF WORK
BUILDING DEMOLITION**

PART 3 - SCOPE OF WORK: BUILDING DEMOLITION

3.1 EXISTING CONDITIONS

A. Selective Structure (Building) Demolition:

1. Execute all selective demolition and removal work as indicated in Drawings and related specifications. The Contractor shall remove demolition debris at the end of each working day or more frequently, if required, to keep the working area clean and safe. If there are discrepancies and/or conflicts between demolition notes indicated herein and Demolition Notes listed in Drawing No. C1-10 the demolition notes of these drawings shall prevail.

3.2 PERFORMANCE REQUIREMENTS

A. Objectives:

1. Practice efficient waste management in the use of materials in the course of the Work. Use all reasonable means to divert construction and demolition waste from landfills and incinerators.
 - a. Facilitate recycling and salvage of materials.
2. Properly remove and dispose in a legal manner of the following materials:
 - a. Lighting Fixtures / Lamps (Hazardous Waste).
 - b. Refrigerant gas (remove/collect refrigerants from mechanical units compressors.
 - c. Other possible hazardous waste that may be present and is expected to be present in a medical facility.
 - d. Asbestos Containing Materials.
 - e. Lead Base Paint Materials.
3. Comply with Specification 01 74 19 - Construction Waste Management.

3.3 ASBESTOS

- A. A licensed Asbestos Inspector has completed asbestos testing and test results are included with Specification 00 31 21 - Existing Condition Information. Testing results indicate that the building materials are positive to asbestos content.
- B. Follow Specification 02 82 00 - Asbestos Remediation.

3.4 LEAD BASE PAINT

- A. A licensed Lead Base Paint Inspector has completed lead base paint testing and test results are included with Specification 00 31 21 - Existing Condition Information. Testing results indicate that the building materials are positive to lead base paint.
- B. Follow Specification 02 83 00 - Lead Remediation.

3.5 DEMOLITION SCHEDULE / STAGES

A. Mobilization to the Job Site:

1. Mobilization can start but no demolition or construction work is allowed until compliance with Permits, Mitigation and Negative Certification requirements below.

B. Mitigation:

1. Asbestos Containing Materials / Lead Base Paint Materials mitigation shall be the first activity executed in this project.
2. Mitigation is specified in the following sections:
 - a. 02 82 00 - Asbestos Remediation
 - b. 02 83 00 - Lead Remediation
3. No demolition or filing of PCOC can start prior to mitigation.

C. Permits – Before Mitigation:

1. As required in Joint Permit Regulation – 2020 ("Reglamento Conjunto"), all demolition activities require filing and obtaining a Construction Permit (PCOC) in OGPe.
2. A prerequisite to obtain a PCOC is filing and obtaining a Certification indicating that the structure to be demolished is free from Asbestos Containing Materials / Lead Base Paint Materials.
 - a. This Certification shall be signed and sealed by the Asbestos Material / Lead Base Paint Inspector.
 - b. Mitigation is a pre-requisite to this Certification.

D. Permits – After Mitigation:

1. Once mitigation is completed, the Certification can be issued.
2. After the Certification is received (and all other documentation required) a PCOC can be filed in OGPe.

E. Demolition:

1. Once the PCOC is obtained from OGPe, the demolition can start.

3.6 SHUTDOWNS

A. Electrical Shutdowns:

1. Demolition work include the demolition of the Electrical Substation, Accessory Bldg. and Pavilion 4 refer to photo AB2-E5, P4-E4 and Electrical Drawings.
2. Contractor shall relocated the triplex cable that originates form the substation scheduled for demolition and serve the laboratories to remain, refer to photo AB2-E5.
3. Contractor shall relocated the power and data sources for the existing metal structure to remain, located at Pavilion 4 scheduled for demolition and serve the laboratories to remain and the metal structure.
4. Coordinate Shutdowns with Owner's Operations, the proposed relocation will required a disruption to the facilities chillers.
 - a. Contractor shall execute the shutdown on a weekend.

3.7 BUILDING DEMOLITION

A. Pre-Demolition Activities:

1. Provide perimeter fence, as indicated on Drawing No. C2-10 and Section 32 31 13 - Chain Link Fences and Gates, to provide protection and ensure security around building demolition area.
2. Provide adequate, lighting inside Buildings, at all times during interior partial demolition.
3. Use water mist and other suitable methods to limit spread of dust and dirt. Comply with governing environmental-protection regulations. Do not use water when it may damage adjacent construction or create hazardous or objectionable conditions, such as flooding, and pollution.
4. Explosives: Use of explosives is not permitted.

B. Execute all demolition and removal work as indicated in Reference Drawings and as specified in Section 02 41 16 – Structural Demolition. The Contractor shall remove demolition debris to keep the working area clean and safe. Work includes but is not limited to:

1. Complete demolition of building and partial site areas indicated on Drawings.
2. The buildings concrete spread footing foundations and foundation walls shall be removed and voids filled and compacted as per Specification 31 20 00 - Earth Moving.
3. Concrete slab on grade, walls and other concrete materials shall be demolished and may be processed on-site as manufactured aggregate to be used as fill material over the footprint of the building, as indicated on Drawings.
4. Protection of existing site areas, fences and utilities, adjacent to the demolition area, not to be demolished.
5. Salvage, re-use and recycle material to the highest extent possible.
6. Dispose off offsite at an EQB/DRNA approved landfill of all demolition debris (not scheduled to be re-used or recycled on-site), waste, rubbish and garbage. Contractor shall provide evidence to Owner's Representative that this contractual requirement is accomplished.

3.8 EARTHWORK AND LANDSCAPE

- A. Earthwork (Specification 31 20 00 - Earth Moving) shall include backfill areas excavated, open pits and holes caused as a result of demolition work.
- B. Provision shall be made to prevent the accumulation of water or damage to existing pavements, storm sewer systems, fences or utilities on the premises or the adjoining sites.
- C. After demolition phase is complete deposit and compact fill material, (Specification 31 20 00 - Earth Moving).

3.9 COMPLIANCE WITH CES PLAN

- A. Contractor shall implement and maintain CES Plan requirements outlined on CES Plan Drawings during entire execution of the Work. Refer to Specification 31 25 00 - Erosion and Sedimentation Controls.
- B. Monitor, prepare and submit to EQB / DRNA, monthly reports of the CES Plan implementation.

3.10 EXTERIOR IMPROVEMENTS AND UTILITIES

- A. Provide crushed stone surfaces, fences and sodding where indicated on Drawings and Specifications.

3.11 MECHANICAL – ELECTRICAL SYSTEMS DEMOLITION

- A. For Mechanical / Electrical materials to be removed, refer to Drawings and Sections 02 41 19.43 - Selective Mechanical Demolition and 02 41 19.53 - Selective Electrical Demolition.
- B. Mechanical
 - 1. Remove all mechanical materials debris from the structures during demolition and do not allow debris to accumulate in piles.
 - 2. Refrigerant: Before starting demolition, remove refrigerant from mechanical equipment according to 40 CFR 82 and regulations of authorities having jurisdiction.
 - 3. If unanticipated mechanical, electrical or structural elements which conflict with intended function or design are encountered, investigate and measure both nature and extent of the conflict. Submit report to Owner's Representative in written, accurate detail. Pending receipt of directive from Architect-Engineer, rearrange selective demolition schedule as necessary to continue overall job progress without delay.
- C. Electrical
 - 1. Remove all electrical materials debris from the structures during demolition and do not allow debris to accumulate in piles.
 - 2. Provide adequate lighting at all times during demolition.
 - 3. If unanticipated mechanical, electrical or structural elements which conflict with intended function or design are encountered, investigate and measure both nature and extent of the conflict. Submit report to Architect-Engineer in written, accurate detail. Pending receipt of directive from Architect-Engineer, rearrange selective demolition schedule as necessary to continue overall job progress without delay.

END OF SECTION

SECTION 01 23 00

ALTERNATES

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Administrative and procedural requirements for alternates.
- B. Schedule of alternates

1.2 RELATED SECTIONS

- A. Division 01 Sections - General Requirements
- B. Division 02 through 32 Sections

1.3 DEFINITIONS

- A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the base bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
 - 1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
 - 2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

- A. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
 - 1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.
- B. Execute accepted alternates under the same conditions as other work of the Contract.
- C. Schedule: A schedule of alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. Alternate: Office Trailer Rental.

1. **Base Bid:** Do not provide a trailer.
2. **Alternate No. 1:** The base bid includes the rental of one office trailers measuring 12 feet by 40 feet each, equipped with electrical wiring, data, outlets, lighting fixtures, ventilation, HVAC systems, as indicated on Section 01 35 00 "Office Trailer Rental."
3. **Alternate No. 2:** The alternate bid encompasses the rental of one office trailers measuring 10 feet by 28 feet each, equipped with electrical wiring, data, outlets, lighting fixtures, ventilation, HVAC systems, as indicated on Section 01 35 00 "Office Trailer Rental."

B. Alternate: Electrical Work.

1. **Base Bid:** Execute Electrical Demolition and New Work as described in Electrical Drawings and related Technical Specifications.
2. **Alternate No. 3: Deduct Electrical Connection:** Do not perform the demolition described in Note 1 of Drawing No. DE0-01 - Demolition Electrical Site Plan. Also do not perform the new Electrical Work described on Drawing No. E0-01 - Electrical Site Plan. Do not deduct Asphalt Pavement Repairs. These repairs are part of the Base Bid.

END OF SECTION

SECTION 01 31 00
PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. General coordination procedures.
 - 2. Coordination drawings.
 - 3. Requests for Information (RFIs).
 - 4. Project Web site.
 - 5. Project meetings.

1.2 RELATED SECTIONS

- A. Section 01 32 00 - Construction Progress Documentation: For preparing and submitting Contractor's construction schedule.
- B. Section 01 73 00 - Execution: For procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.

1.3 DEFINITIONS

- A. RFI: Request from Owner, Architect-Engineer, or Contractor seeking information required by or clarifications of the Contract Documents.

1.4 INFORMATIONAL SUBMITTALS

- A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
 - 1. Name, address, and telephone number of entity performing subcontract or supplying products.
- B. Key Personnel Names: Within 15 consecutive calendar days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office, and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.

1.5 GENERAL COORDINATION PROCEDURES

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
1. Preparation of Contractor's construction schedule.
 2. Preparation of the schedule of values.
 3. Installation and removal of temporary facilities and controls.
 4. Delivery and processing of submittals.
 5. Progress meetings.
 6. Project closeout activities.

1.6 REQUESTS FOR INFORMATION (RFIS)

- A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
1. Architect-Engineer will return RFIs submitted to Architect-Engineer by other entities controlled by Contractor with no response.
 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
1. Project name.
 2. Project number.
 3. Date.
 4. Name of Contractor.
 5. Name of Architect-Engineer.
 6. RFI number, numbered sequentially.
 7. RFI subject.
 8. Specification Section number and title and related paragraphs, as appropriate.

9. Drawing number and detail references, as appropriate.
 10. Field dimensions and conditions, as appropriate.
 11. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 12. Contractor's signature.
 13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
 - a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.
- C. RFI Forms: Form bound in Project Manual.
1. Attachments shall be electronic files in Adobe Acrobat PDF format.
- D. Architect- Engineer's Action: Architect-Engineer will review each RFI, determine action required, and respond. Allow five working days for Architect-Engineer's response for each RFI. RFIs received by Architect-Engineer after 1:00 p.m. will be considered as received the following working day.
1. The following Contractor-generated RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for approval of Contractor's means and methods.
 - d. Requests for coordination information already indicated in the Contract Documents.
 - e. Requests for adjustments in the Contract Time or the Contract Sum.
 - f. Requests for interpretation of Architect's actions on submittals.
 - g. Incomplete RFIs or inaccurately prepared RFIs.
 2. Architect-Engineer's action may include a request for additional information, in which case Architect-Engineer's time for response will date from time of receipt of additional information.
 3. Architect-Engineer's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to the Uniform General Conditions for Public Work Contracts in Puerto Rico Article 10 -Change of Contract Price, Cost of The Work And Unit Price Work and Article 11 – Changes in The Work..
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Owner and/or Owner's Representative in writing within 10 working days of receipt of the RFI response.
 - b. The approval of the change in the Contract Time or the Contract Sum will not proceed without the certification of funds and the approval of the "Administración de Servicios Generales" (ASG).
- E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. Include the following:

1. Project name.
 2. Name and address of Contractor.
 3. Name and address of Architect-Engineer.
 4. RFI number including RFIs that were returned without action or withdrawn.
 5. RFI description.
 6. Date the RFI was submitted.
 7. Date Architect-Engineer's response was received.
- F. On receipt of Architect-Engineer's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect-Engineer within seven days if Contractor disagrees with response.
1. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
- G. The Owner is entitled to reimbursement from the Contractor for amounts paid to the Architect-Engineer for evaluating and responding to the Contractor's requests for information (RFI's) that are not prepared in accordance with the Contract Documents, or when requested information is available to the Contractor from a careful study and comparison of the Contract Documents, field conditions, other Owner-provided information, Contractor-prepared coordination drawings, or prior Project correspondence or documentation.

1.7 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site unless otherwise indicated.
1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect-Engineer of scheduled meeting dates and times.
 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect-Engineer, within three calendar days of the meeting.
- B. Preconstruction / demolition Conference: Architect-Engineer will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect-Engineer, but no later than 10 calendar days after execution of the Agreement.
1. Conduct the conference to review responsibilities and personnel assignments.
 2. Attendees: Authorized representatives of Owner, Architect-Engineer, Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 3. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Phasing.

- c. Designation of key personnel and their duties.
 - d. Lines of communications.
 - e. Procedures for processing field decisions and Change Orders.
 - f. Procedures for RFIs.
 - g. Procedures for testing and inspecting.
 - h. Procedures for processing Applications for Payment.
 - i. Distribution of the Contract Documents.
 - j. Submittal procedures
 - k. Preparation of record documents.
 - l. Use of the premises.
 - m. Work restrictions.
 - n. Working hours.
 - o. Owner's occupancy requirements.
 - p. Responsibility for temporary facilities and controls.
 - q. Procedures for disruptions and shutdowns.
 - r. Construction waste management and recycling.
 - s. Office, work, and storage areas.
 - t. Equipment deliveries and priorities.
 - u. First aid.
 - v. Security.
 - w. Progress cleaning.
4. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- C. Progress Meetings: Conduct progress meetings at weekly intervals.
- 1. Coordinate dates of meetings with preparation of payment requests.
 - 2. Attendees: In addition to representatives of Owner, Architect-Engineer, Contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind

schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

- 1) Review schedule for next period.
- b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Deliveries.
 - 5) Access.
 - 6) Site utilization.
 - 7) Temporary facilities and controls.
 - 8) Progress cleaning.
 - 9) Quality and work standards.
 - 10) Status of correction of deficient items.
 - 11) Field observations.
 - 12) Status of RFIs.
 - 13) Status of proposal requests.
 - 14) Pending changes.
 - 15) Status of Change Orders.
 - 16) Pending claims and disputes.
 - 17) Documentation of information for payment requests.
4. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.

PART 2 - EXECUTION

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION

REQUEST FOR INFORMATION



PROJECT: _____ R.F.I. NUMBER: _____

FROM: _____
TO: _____ DATE: _____

A/E PROJECT NUMBER: _____
RE: _____ CONTRACT FOR: _____

This Clarification Notice is issued for the purpose of clarifying the Contract Documents based on an interpretation reasonably inferable from the Contract Documents, and therefore has no effect on the Contract Sum or Contract Time. Proceeding with Work in accordance with this Clarification Notice indicates acceptance with no change in the Contract Sum or Contract Time.

SPECIFICATION SECTION: _____ PARAGRAPH: _____ DRAWING REFERENCE: _____ DETAIL: _____

REQUEST:

SIGNED BY:

DATE:

RESPONSE:

☐ Attachments

RESPONSE FROM: _____ TO: _____ DATE REC'D: _____ DATE RET'D: _____

SIGNED BY:

DATE:

COPIES: ☐ Owner ☐ Consultants ☐ _____ ☐ _____ ☐ _____ ☐ _____ ☐ File

OWNER: _____ CONTRACTOR: _____

[illegible]

SECTION 01 32 00

CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
 - 1. Startup construction schedule.
 - 2. Contractor's construction schedule.
 - 3. Construction schedule updating reports.
 - 4. Daily construction reports.
 - 5. Site condition reports.

1.2 RELATED SECTION

- A. Section 01 33 00 - Submittal Procedures: For submitting schedules and reports.
- B. Section 01 40 00 - Quality Requirements: For submitting a schedule of tests and inspections.

1.3 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
 - 1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
 - 2. Predecessor Activity: An activity that precedes another activity in the network.
 - 3. Successor Activity: An activity that follows another activity in the network.
- B. Cost Loading: The allocation of the schedule of values for the completion of an activity as scheduled. The sum of costs for all activities must equal the total Contract Sum unless otherwise approved by Architect-Engineer.
- C. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.
- D. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- E. Event: The starting or ending point of an activity.
- F. Float: The measure of leeway in starting and completing an activity.

1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
 2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
 3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.
- G. Resource Loading: The allocation of manpower and equipment necessary for the completion of an activity as scheduled.

1.4 INFORMATIONAL SUBMITTALS

- A. Format for Submittals: Submit required submittals in the following format:
1. Working electronic copy of schedule file, where indicated.
 2. PDF electronic file.
 3. Two paper copies.
- B. Startup construction schedule.
1. Approval of cost-loaded, startup construction schedule will not constitute approval of schedule of values for cost-loaded activities.
- C. Startup Network Diagram: Of size required to display entire network for entire construction period. Show logic ties for activities.
- D. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.
1. Submit a working electronic copy of schedule, using software indicated, and labeled to comply with requirements for submittals. Include type of schedule (initial or updated) and date on label.
- E. Construction Schedule Updating Reports: Submit with Applications for Payment.
- F. Daily Construction Reports: Submit at weekly intervals.
- G. Site Condition Reports: Submit at time of discovery of differing conditions.

1.5 QUALITY ASSURANCE

- A. Scheduling Consultant Qualifications: An experienced specialist in CPM scheduling and reporting, with capability of producing CPM reports and diagrams.
- B. Prescheduling Conference: Conduct conference at Project site to comply with requirements in Section 01 30 00 Administrative Requirements. Review methods and procedures related to the preliminary construction schedule and Contractor's construction schedule, including, but not limited to, the following:
1. Review software limitations and content and format for reports.
 2. Verify availability of qualified personnel needed to develop and update schedule.
 3. Discuss constraints, including phasing, work stages, area separations, interim milestones and partial Owner occupancy.

4. Review delivery dates for Owner-furnished products.
5. Review schedule for work of Owner's separate contracts.
6. Review submittal requirements and procedures.
7. Review time required for review of submittals and resubmittals.
8. Review requirements for tests and inspections by independent testing and inspecting agencies.
9. Review time required for Project closeout and Owner startup procedures, including commissioning activities.
10. Review and finalize list of construction activities to be included in schedule.
11. Review procedures for updating schedule.

1.6 COORDINATION

- A. Coordinate Contractor's construction schedule with the schedule of values, submittal schedule, progress reports, payment requests, and other required schedules and reports.
 1. Secure time commitments for performing critical elements of the Work from entities involved.
 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Time Frame: Extend schedule from date established for commencement of the Work to date of Substantial Completion.
 1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
- B. Activities: Treat each story or separate area as a separate numbered activity for each main element of the Work. Comply with the following:
 1. Project Schedule: The Project Schedule shall comply with the delivery term offered ("termino de entrega ofertado") and awarded in the bid process.
 2. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect-Engineer.
 3. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
 4. Submittal Review Time: Include review and resubmittal times indicated in Section 01 33 00 Submittal Procedures in schedule. Coordinate submittal review times in Contractor's construction schedule with submittal schedule.
 5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect-Engineer's administrative procedures necessary for certification of Substantial Completion.

6. **Punch List and Final Completion:** Include not more than 20 calendar days for completion of punch list items and final completion.
- C. **Constraints:** Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
 1. **Phasing:** Arrange list of activities on schedule by phase.
 2. **Work under More Than One Contract:** Include a separate activity for each contract.
 3. **Work by Owner:** Include a separate activity for each portion of the Work performed by Owner.
 4. **Products Ordered in Advance:** Include a separate activity for each product.
 5. **Work Restrictions:** Show the effect of the following items on the schedule:
 - a. Coordination with existing construction.
 - b. Limitations of continued occupancies.
 - c. Uninterruptible services.
 - d. Environmental control.
 6. **Work Stages:** Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:
 - a. Subcontract awards.
 - b. Submittals.
 - c. Purchases.
 - d. Deliveries.
 - e. Installation.
 - f. Tests and inspections.
 7. **Construction Areas:** Identify each major area of construction for each major portion of the Work. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities to provide for the following:
 - a. Temporary enclosure and space conditioning.
 - b. Permanent space enclosure.
 - c. Substantial Completion.
- D. **Milestones:** Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and final completion, and the following interim milestones:
 1. Temporary enclosure and space conditioning.
 2. Hazard mitigation.
 3. Start of activities.
 4. Substantial Completion.
- E. **Upcoming Work Summary:** Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:

1. Unresolved issues.
 2. Unanswered Requests for Information.
 3. Rejected or unreturned submittals.
 4. Notations on returned submittals.
 5. Pending modifications affecting the Work and Contract Time.
- F. Computer Scheduling Software: Prepare schedules using current version of a program that has been developed specifically to manage construction schedules.
1. Use Microsoft Project, or Primavera, software.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE (CPM SCHEDULE)

- A. CPM Schedule: Prepare Contractor's construction schedule using a cost- and resource-loaded, time-scaled CPM network analysis diagram for the Work.
1. Develop network diagram in sufficient time to submit CPM schedule so it can be accepted for use no later than 15 calendar days after date established for commencement of the Work.
 - a. Failure to include any work item required for performance of this Contract shall not excuse Contractor from completing all work within applicable completion dates, regardless of Architect-Engineer's approval of the schedule.
 2. Establish procedures for monitoring and updating CPM schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.
 3. Use "one workday" as the unit of time for individual activities. Indicate nonworking days and holidays incorporated into the schedule in order to coordinate with the Contract Time.
- B. CPM Schedule Preparation: Prepare a list of all activities required to complete the Work. Using the startup network diagram, prepare a skeleton network to identify probable critical paths.
1. Activities: Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities. Include estimated time frames for the following activities:
 - a. Preparation and processing of submittals.
 - b. Mobilization and demobilization.
 - c. Delivery.
 - d. Fabrication.
 - e. Installation.
 - f. Punch list and final completion.
 - g. Activities occurring following final completion.
 2. Critical Path Activities: Identify critical path activities, including those for interim completion dates. Scheduled start and completion dates shall be consistent with Contract milestone dates.
 3. Processing: Process data to produce output data on a computer-drawn, time-scaled network. Revise data, reorganize activity sequences, and reproduce as often as necessary to produce the CPM schedule within the limitations of the Contract Time.

4. Format: Mark the critical path. Locate the critical path near center of network; locate paths with most float near the edges.
 - a. Subnetworks on separate sheets are permissible for activities clearly off the critical path.
- C. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using a network fragment to demonstrate the effect of the proposed change on the overall project schedule.
- D. Initial Issue of Schedule: Prepare initial network diagram from a sorted activity list indicating straight "early start-total float." Identify critical activities. Prepare tabulated reports showing the following:
 1. Contractor or subcontractor and the Work or activity.
 2. Description of activity.
 3. Main events of activity.
 4. Immediate preceding and succeeding activities.
 5. Early and late start dates.
 6. Early and late finish dates.
 7. Activity duration in workdays.
 8. Total float or slack time.
- E. Schedule Updating: Concurrent with making revisions to schedule, prepare tabulated reports showing the following:
 1. Identification of activities that have changed.
 2. Changes in early and late start dates.
 3. Changes in early and late finish dates.
 4. Changes in activity durations in workdays.
 5. Changes in the critical path.
 6. Changes in total float or slack time.
 7. Changes in the Contract Time.

2.3 REPORTS

- A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
 1. List of subcontractors at Project site.
 2. Approximate count of personnel at Project site.
 3. Material deliveries.
 4. Accidents.
 5. Meetings and significant decisions.
 6. Unusual events (see special reports).
 7. Stoppages, delays, shortages, and losses.
 8. Emergency procedures.

9. Change Orders received and implemented.
 10. Construction Change Directives received and implemented.
 11. Services disconnection.
 12. Substantial Completions authorized.
- B. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.
- C. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Scheduling Consultant: Engage a consultant to provide planning, evaluation, and reporting using CPM scheduling.
1. In-House Option: Owner may waive the requirement to retain a consultant if Contractor employs skilled personnel with experience in CPM scheduling and reporting techniques. Submit qualifications.
 2. Meetings: Scheduling consultant shall attend all meetings related to Project progress, alleged delays, and time impact.
- B. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.
1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each meeting.
 2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
 3. As the Work progresses, indicate final completion percentage for each activity.
- C. Distribution: Distribute copies of approved schedule to Architect-Engineer Owner, separate contractors, inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
1. When revisions are made, distribute updated schedules to the same parties. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION

SECTION 01 32 33
PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
 - 1. Pre demolition photographs.
 - 2. Periodic demolition photographs.
 - 3. Final completion demolition photographs.
- B. Related Requirements:
 - 1. Section 02 41 13 – Selective Site Demolition for photographic documentation before site demolition operations commence.

1.2 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For photographer.
- B. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.
- C. Digital Photographs: Submit image electronic files within three days of taking photographs.
 - 1. Digital Camera: Minimum sensor resolution of 8 megapixels.
 - 2. Format: Minimum 3200 by 2400 pixels, in unaltered original files, with same aspect ratio as the sensor, uncropped, date and time stamped, in folder named by date of photograph, accompanied by key plan file.
 - 3. Identification: Provide the following information with each image description in file metadata tag:
 - a. Name of Project.
 - b. Name and contact information for photographer.
 - c. Name of Architect and Owner's Representative.
 - d. Name of Contractor.
 - e. Date photograph was taken.
 - f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.

PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC MEDIA

- A. Digital Images: Provide images in JPG format, produced by a digital camera with minimum sensor size of 8 megapixels, and at an image resolution of not less than 3200 by 2400 pixels.

PART 3 - EXECUTION

3.1 DEMOLITION PHOTOGRAPHS

- A. Photographer: Engage a qualified photographer to take construction photographs.
- B. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
 - 1. Maintain key plan with each set of construction photographs that identifies each photographic location.
- C. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
 - 1. Date and Time: Include date and time in file name for each image.
 - 2. Field Office Images: Maintain one set of images accessible in the field office at Project site, available at all times for reference. Identify images in the same manner as those submitted to Architect and Owner's Representative.

3.2 DEMOLITION PHOTOGRAPHS – GENERAL PHOTOS

- A. Preliminary Photographs: Before commencement of demolition, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Owner's Representative.
 - 1. Flag construction / demolition limits before taking construction photographs.
 - 2. Take 100 photographs to show existing conditions at the property, inside the construction limits, before starting the Work.
 - 3. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.
- B. Periodic Photographs: Take at least 20 photographs weekly, with timing each month adjusted to coincide with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.
- C. Final Completion Photographs: Take at least 40 color photographs after date of Substantial Completion for submission as project record documents. Owner's Representative will inform photographer of desired vantage points.

3.3 DEMOLITION AERIAL PHOTOGRAPHS

- A. Provide aerial photographs of the site taken on or about the cutoff date for each scheduled Application for Payment or as otherwise required by the Owner's Representative.
- B. Employ professional commercial aerial photographer acceptable to the Owner's Representative, to

take construction record photographs periodically during the course of work. Photographer shall be a firm or individual of established reputation who has been regularly engaged as a professional aerial photographer for not less than one year. Provide two references for which the aerial photographer has performed work of similar nature during the preceding 12 months.

- C. Release of Photographs: Photographs shall not be released to entities other than the Owner and Owner's Representative without the Owner's permission.
- D. Provide aerial photographs with each monthly application for payment and as follows:
 - 1. Existing site prior to the start of Contractor operations.
 - 2. Site clearing.
 - 3. Substantial and Final Completion of a major phase or component of work.
- E. Technique
 - 1. Provide factual presentation
 - 2. Photographs shall be taken during good weather conditions with adequate lighting. Photographs with cloud shadows on the primary target shall not be acceptable.
 - 3. Provide correct exposure of film using shutter speed appropriate to the task of stopping action and lens aperture setting to eliminate soft focus at the edges of negatives. Maximum depth of field and critical focus is required to produce images with high resolution and contrast to show maximum detail with minimum grain. A lens corresponding to the film format that will control optical distortion shall be used.
- F. Aerial Views and Quantities Required
 - 1. Take 10 aerial photographs each time they are required. Take photos inside the construction limits.
 - 2. Photograph the work from a minimum of 3 different directions (views) as approved by the Owner's Representative with vantage points to best show the entire site and detailed close-ups, status of construction and progress since taking the previous photographs. Unless requested otherwise, take all monthly photographs from the same direction and altitude.
 - 3. The altitude and angle of view selected by the aerial photographer will be such that the image captured will include and emphasize the entire site while eliminating, as much as possible, excessive amounts of foreground, background and especially horizon and sky.

END OF SECTION

SECTION 01 33 00
SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
 - 1. Definitions.
 - 2. Action Submittals.
 - 3. Submittal Administrative Requirements.
 - 4. Submittal Procedures.
 - 5. Delegated – Design Services.
 - 6. Contractor's Review.
 - 7. Architect – Engineer's Action.

1.2 Related Sections

- A. Section 01 20 00 – Price and Payment Procedures: For submitting Applications for Payment and the schedule of values.
- B. Section 01 32 00 - Construction Progress Documentation: For submitting schedules and reports, including Contractor's construction schedule.
- C. Section 01 78 39 - Project Record Documents: For submitting record Drawings, record Specifications, and record Product Data.

1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect-Engineer's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
- B. Informational Submittals: Written and graphic information and physical samples that do not require Architect-Engineer's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

1.4 ACTION SUBMITTALS

- A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect-Engineer and additional time for handling and reviewing submittals required by those corrections.
 - 1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.

2. Initial Submittal: Submit concurrently with startup construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.
 - a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.
4. Format: Arrange the following information in a tabular format:
 - a. Scheduled date for first submittal.
 - b. Specification Section number and title.
 - c. Submittal category: Action; informational.
 - d. Name of subcontractor.
 - e. Description of the Work covered.
 - f. Scheduled date for Architect-Engineer's final release or approval.
 - g. Scheduled date of fabrication.
 - h. Scheduled dates for purchasing.
 - i. Scheduled dates for installation.
 - j. Activity or event number.

1.5 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Architect – Engineer's Digital Data Files: Electronic digital data files of the Contract Drawings will not be provided by Architect-Engineer for Contractor's use in preparing submittals.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
 3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
 4. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Architect-Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect-Engineer's receipt of submittal. No extension of the Contract

Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow 10 working days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect-Engineer will advise Contractor when a submittal being processed must be delayed for coordination.
 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 3. Resubmittal Review: Allow 10 working days for review of each resubmittal.
 4. Sequential Review: Where sequential review of submittals by Owner, or other parties is indicated, allow 15 working days for initial review of each submittal.
 - a. Membrane roofing.
 - b. Fire protection.
- D. Paper Submittals: Place a permanent label or title block on each submittal item for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
 2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect-Engineer.
 3. Include the following information for processing and recording action taken:
 - a. Project name.
 - b. Date.
 - c. Name of Architect-Engineer.
 - d. Name of Contractor.
 - e. Name of subcontractor.
 - f. Name of supplier.
 - g. Name of manufacturer.
 - h. Submittal number or other unique identifier, including revision identifier.
 - 1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 06 10 00.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 06 10 00.01.A).
 - i. Number and title of appropriate Specification Section.
 - j. Drawing number and detail references, as appropriate.
 - k. Location(s) where product is to be installed, as appropriate.
 - l. Other necessary identification.
 4. Additional Paper Copies: Unless additional copies are required for final submittal, and unless Architect-Engineer observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.

- a. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Architect-Engineer.
5. Transmittal for Paper Submittals: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect-Engineer will return without review submittals received from sources other than Contractor.
 - a. Transmittal Form for Paper Submittals: Provide locations on form for the following information:
 - 1) Project name.
 - 2) Date.
 - 3) Destination (To:).
 - 4) Source (From:).
 - 5) Name and address of Architect-Engineer.
 - 6) Name of Contractor.
 - 7) Name of firm or entity that prepared submittal.
 - 8) Names of subcontractor, manufacturer, and supplier.
 - 9) Category and type of submittal.
 - 10) Submittal purpose and description.
 - 11) Specification Section number and title.
 - 12) Specification paragraph number or drawing designation and generic name for each of multiple items.
 - 13) Drawing number and detail references, as appropriate.
 - 14) Indication of full or partial submittal.
 - 15) Transmittal number, numbered consecutively.
 - 16) Submittal and transmittal distribution record.
 - 17) Remarks.
 - 18) Signature of transmitter.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

- A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
 1. Action Submittals: Submit one copy of each submittal unless otherwise indicated. Architect-Engineer will return one copy.
 2. Informational Submittals: Submit one copy of each submittal unless otherwise indicated. Architect-Engineer will return one copy. Architect-Engineer will not return copies.

3. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
 2. Mark each copy of each submittal to show which products and options are applicable.
 3. Submit Product Data in the following format:
 - a. One paper copy of Product Data unless otherwise indicated. Architect-Engineer will return one copy.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
- D. Coordination Drawing Submittals: Comply with requirements specified in Section 01 31 00 - Project Management and Coordination.
- E. Contractor's Construction Schedule: Comply with requirements specified in Section 01 32 00 - Construction Progress Documentation.
- F. Application for Payment and Schedule of Values: Comply with requirements specified in Section 01 29 00 - Payment Procedures.
- G. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Section 01 40 00 - Quality Requirements.
- H. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Section 01 77 00 - Closeout Procedures.
- I. Maintenance Data: Comply with requirements specified in Section 01 78 23 - Operation and Maintenance Data.
- J. LEED Submittals: Comply with requirements specified in Section 018113.13 "Sustainable Design Requirements - LEED for New Construction and Major Renovations," Section 018113.16 "Sustainable Design Requirements - LEED for Commercial Interiors," Section 018113.19 "Sustainable Design Requirements - LEED for Core and Shell Development," and Section 018113.23 "Sustainable Design Requirements - LEED for Schools."
- K. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.
- L. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.
- M. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- N. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

- O. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- P. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- Q. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- R. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- S. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
 - 1. Name of evaluation organization.
 - 2. Date of evaluation.
 - 3. Time period when report is in effect.
 - 4. Product and manufacturers' names.
 - 5. Description of product.
 - 6. Test procedures and results.
 - 7. Limitations of use.
- T. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
- U. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- V. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
- W. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

2.2 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect- Engineer.
- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF electronic file and three (3) paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect-Engineer.
- B. Project Closeout and Maintenance Material Submittals: See requirements in Section 01 77 00 - Closeout Procedures.
- C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT-ENGINEER'S ACTION

- A. Action Submittals: Architect- Engineer will review each submittal, make marks to indicate corrections or revisions required, and return it. Architect-Engineer will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action, as follows:
 1. Final Unrestricted Release: Where the submittal is marked "Approved", the Work covered by the submittal may proceed provided it complies with the Contract Documents. Final acceptance will depend on that compliance.
 2. Final-but-Restricted Release: Where the submittal is marked "Approved as Noted", the Work covered by the submittal may proceed provided it complies both with Architect's notations and corrections on the submittal and the Contract Documents. Final acceptance will depend on that compliance.
 3. Resubmit: Where the submittal is marked "Not Approved, Revise and Resubmit", do not proceed with the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity for the product submitted. Revise or prepare a new submittal according to Architect's notations and corrections.
 4. Rejected: Where the submittal is marked "Not Approved, Resubmit" or "Rejected", do not proceed with the Work covered by the submittal. Prepare a new submittal for a product that complies with the Contract Documents.
 5. Incomplete-Resubmit: Where the submittal is marked "Submit Additional Information", do not proceed with the Work covered by the submittal. Prepare additional information requested, or required by the Contract Documents, that indicates compliance with requirements, and resubmit.

6. Other Action: If the submittal is primarily for information purposes, record purposes, special processing, or other contractor activity, the submittal will be returned marked "Action Not Required."
- B. Informational Submittals: Architect-Engineer will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect-Engineer will forward each submittal to appropriate party.
- C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect-Engineer.
- D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- E. Submittals not required by the Contract Documents may be returned by the Architect- Engineer without action.

END OF SECTION

SECTION 01 35 00
OFFICE TRAILER RENTAL

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Owner Office for accommodating 10 people.
- B. Maintenance and Cleaning.
- C. Termination and Removal.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this section.

1.3 SUBMITTALS

- A. Submit manufacturer's specifications and installation details for the office trailer to the Architect/Engineer for review and approval prior to rental agreement execution.

PART 2 - PRODUCTS

2.1 OFFICE TRAILER REQUIREMENTS

- A. Area of sufficient size to accommodate needs of Owner.
- B. Dimensions: Approximately 12 feet by 40 feet.
- C. Self-contained, built-in air-cooling equipment necessary to maintain a uniform indoor temperature of 68 to 72 deg F.
- D. Lighting fixtures capable of maintaining average illumination of 20 fc at desk height.
- E. Interior and exterior lighting levels (day + night) to provide a safe environment.
- F. Electrical Distribution Panel: Three (3) circuit minimum, 120-volt, 60 Hz service.
- G. Minimum twelve (12), 120-volt duplex convenience outlets, at least two (2) on each wall. More outlets will be required at long walls.
- H. Minimum eight (8) data receptacles inside the Trailer. At least two (2) on each wall. Data connection to the trailer is by Owner.
- I. Adequate windows and ventilation to maintain a comfortable working environment.
- J. Adequate provision for data and communication connections.
- K. Interior fittings and existing workstations, storage cabinets, and seating to be relocated at proposed trailer.
- L. Windows: Minimum three (3); but with total area of not less than ten (10) percent of floor area, with operable sash and window blinds. Locate to provide views of construction.

- M. Staircases: Two staircases for access, one at each entry point of the trailer, complying with local safety regulations.
- N. Wooden Roofs: Two wooden roof structures, one over each entryway, providing shelter and waterproofing.
- O. Hurricane Leveling, Anchors & Tiedown: Installation of appropriate hurricane-proof leveling systems, anchors, and tiedowns to ensure stability and safety during severe weather conditions.
- P. Skirting: Installation of skirting around the base of the trailer to protect the underside from weather elements and improve overall appearance.
- Q. Insurance: Adequate insurance coverage for the trailer, including but not limited to liability and property damage.

2.2 INSTALLATION

- A. The Contractor shall install the office trailer in a location as approved by the Owner/Architect, ensuring it meets all local regulations and codes regarding placement and safety.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. The Contractor shall inspect the delivered office trailer upon arrival to ensure conformity with specifications and shall promptly report any discrepancies to the Owner/Architect.

3.2 RENTAL AGREEMENT

- A. The Contractor shall enter into a rental agreement with the Owner/Architect for the office trailer, including provisions for maintenance, utility connections, and removal at the end of the specified rental period.
- B. The rental agreement starts 30 days prior to the demolition of Pavilion No. 4.

3.3 MAINTENANCE

- A. The Contractor shall maintain the office trailer in good condition throughout the rental period, including but not limited to regular cleaning, repairs as necessary, and servicing of HVAC and electrical systems.

3.4 REMOVAL

- A. Remove field office and facilities when indicated by Owner's Representative but no later than two months after the end of the demolition of Pavilion No.4. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
 - 1. Materials and facilities that constitute temporary facilities are property of Contractor.
 - 2. Remove temporary roads and paved areas not intended for or acceptable for integration into permanent construction. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by Owner's Representative.

3. At the end of the demolition of Pavilion No.4. repair, renovate, and clean permanent facilities used during construction period.

END OF SECTION

SECTION 01 35 00
OFFICE TRAILER RENTAL

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Owner Office for accommodating 10 people.
- B. Maintenance and Cleaning.
- C. Termination and Removal.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this section.

1.3 SUBMITTALS

- A. Submit manufacturer's specifications and installation details for the office trailer to the Architect/Engineer for review and approval prior to rental agreement execution.

PART 2 - PRODUCTS

2.1 OFFICE TRAILER REQUIREMENTS

- A. Area of sufficient size to accommodate needs of Owner.
- B. Dimensions: Approximately 12 feet by 40 feet.
- C. Self-contained, built-in air-cooling equipment necessary to maintain a uniform indoor temperature of 68 to 72 deg F.
- D. Lighting fixtures capable of maintaining average illumination of 20 fc at desk height.
- E. Interior and exterior lighting levels (day + night) to provide a safe environment.
- F. Electrical Distribution Panel: Three (3) circuit minimum, 120-volt, 60 Hz service.
- G. Minimum twelve (12), 120-volt duplex convenience outlets, at least two (2) on each wall. More outlets will be required at long walls.
- H. Minimum eight (8) data receptacles inside the Trailer. At least two (2) on each wall. Data connection to the trailer is by Owner.
- I. Adequate windows and ventilation to maintain a comfortable working environment.
- J. Adequate provision for data and communication connections.
- K. Interior fittings and existing workstations, storage cabinets, and seating to be relocated at proposed trailer.
- L. Windows: Minimum three (3); but with total area of not less than ten (10) percent of floor area, with operable sash and window blinds. Locate to provide views of construction.

- M. Staircases: Two staircases for access, one at each entry point of the trailer, complying with local safety regulations.
- N. Wooden Roofs: Two wooden roof structures, one over each entryway, providing shelter and waterproofing.
- O. Hurricane Leveling, Anchors & Tiedown: Installation of appropriate hurricane-proof leveling systems, anchors, and tiedowns to ensure stability and safety during severe weather conditions.
- P. Skirting: Installation of skirting around the base of the trailer to protect the underside from weather elements and improve overall appearance.
- Q. Insurance: Adequate insurance coverage for the trailer, including but not limited to liability and property damage.

2.2 INSTALLATION

- A. The Contractor shall install the office trailer in a location as approved by the Owner/Architect, ensuring it meets all local regulations and codes regarding placement and safety.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. The Contractor shall inspect the delivered office trailer upon arrival to ensure conformity with specifications and shall promptly report any discrepancies to the Owner/Architect.

3.2 RENTAL AGREEMENT

- A. The Contractor shall enter into a rental agreement with the Owner/Architect for the office trailer, including provisions for maintenance, utility connections, and removal at the end of the specified rental period.
- B. The rental agreement starts 30 days prior to the demolition of Pavilion No. 4.

3.3 MAINTENANCE

- A. The Contractor shall maintain the office trailer in good condition throughout the rental period, including but not limited to regular cleaning, repairs as necessary, and servicing of HVAC and electrical systems.

3.4 REMOVAL

- A. Remove field office and facilities when indicated by Owner's Representative but no later than two months after the end of the demolition of Pavilion No.4. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
 - 1. Materials and facilities that constitute temporary facilities are property of Contractor.
 - 2. Remove temporary roads and paved areas not intended for or acceptable for integration into permanent construction. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by Owner's Representative.

3. At the end of the demolition of Pavilion No.4, repair, renovate, and clean permanent facilities used during construction period.

END OF SECTION

SECTION 01 40 00
QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
 - 1. Conflicting requirements.
 - 2. Action submittals.
 - 3. Informational submittals.
 - 4. Reports and documents.
 - 5. Quality assurance.
 - 6. Quality control.
 - 7. Test and inspection log.
 - 8. Repair and protection.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
 - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
 - 3. Requirements for Contractor to provide quality-assurance and -control services required by Architect-Engineer, Owner, Commissioning Authority, or authorities having jurisdiction are not limited by provisions of this Section.
 - 4. Specific test and inspection requirements are not specified in this Section.

1.2 REFERENCES

- A. ASTM E329 – Agencies Engaged in Construction Inspection and/or Testing.
- B. 29 CFR 1910, Subpart A, Section 1910-7 – Definition and Requirements for a Naturally Recognized Testing Laboratory.

1.3 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

- B. **Quality-Control Services:** Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual product incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities
- C. **Product Testing:** Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.
- D. **Source Quality-Control Testing:** Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.
- E. **Field Quality-Control Testing:** Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- F. **Testing Agency:** An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- G. **Installer/Applicator/Erector:** Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
- H. **Experienced:** When used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.4 CONFLICTING REQUIREMENTS

- A. **Referenced Standards:** If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect-Engineer for a decision before proceeding.
- B. **Minimum Quantity or Quality Levels:** The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect-Engineer for a decision before proceeding.

1.5 INFORMATIONAL SUBMITTALS

- A. **Testing Agency Qualifications:** For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- B. **Schedule of Tests and Inspections:** Prepare in tabular form and include the following:
 - 1. Specification Section number and title.
 - 2. Entity responsible for performing tests and inspections.
 - 3. Description of test and inspection.
 - 4. Identification of applicable standards.
 - 5. Identification of test and inspection methods.
 - 6. Number of tests and inspections required.

7. Time schedule or time span for tests and inspections.
8. Requirements for obtaining samples.
9. Unique characteristics of each quality-control service.

1.6 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
 1. Date of issue.
 2. Project title and number.
 3. Name, address, and telephone number of testing agency.
 4. Dates and locations of samples and tests or inspections.
 5. Names of individuals making tests and inspections.
 6. Description of the Work and test and inspection method.
 7. Identification of product and Specification Section.
 8. Complete test or inspection data.
 9. Test and inspection results and an interpretation of test results.
 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 12. Name and signature of laboratory inspector.
 13. Recommendations on retesting and reinspecting.
- B. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.7 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.
 1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
- C. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:

1. Contractor responsibilities include the following:
 - a. Provide test specimens representative of proposed products and construction.
 - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect-Engineer with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

1.8 QUALITY CONTROL

- A. Contractor Responsibilities: All testing and inspections shall be hired and paid by the Contractor. Perform quality-control activities required to verify that the Work complies with requirements, whether specified or not.
 1. Provide quality-control services specified and those required by Authorities Having Jurisdiction (AHJ). Perform quality-control services required of Contractor by Authorities Having Jurisdiction, whether specified or not.
 2. Notify testing agencies and Architect-Engineer at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
 3. Submit a certified written report, in duplicate, of each quality-control service.
 4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 5. Submit additional copies of each written report directly to Authorities Having Jurisdiction, when they so direct.
- B. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- C. Testing Agency Responsibilities: Cooperate with Architect-Engineer and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
 1. Notify Architect-Engineer and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 6. Do not perform any duties of Contractor.

- D. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
 - 1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- E. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents as a component of Contractor's quality-control plan. Coordinate and submit concurrently with Contractor's construction schedule. Update as the Work progresses.
 - 1. Distribution: Distribute schedule to Owner, Architect-Engineer, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

PART 2 - PRODUCTS

Not used

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

- A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:
 - 1. Date test or inspection was conducted.
 - 2. Description of the Work tested or inspected.
 - 3. Date test or inspection results were transmitted to Architect.
 - 4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Architect-Engineer's reference during normal working hours.

3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
 - 1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 01 73 00 - Execution.
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION

SECTION 01 50 00
TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Temporary utility installation
- B. Support facilities installation
- C. Security and protection facilities installation
- D. Operation, termination and removal

1.2 RELATED SECTIONS:

- A. Section 01 10 00 – Summary of Work: For work restrictions and limitations on utility interruptions.

1.3 REFERENCES

- A. ASTM E84 – Standard Test Method for Surface Burning Characteristics of Building Materials.
- B. ASTM E136 – Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C.
- C. NFPA 70 – National Electrical Code.
- D. NFPA 241 – Safeguarding Construction, Alteration, and Demolition Operations.

1.4 USE CHARGES

- A. General: Installation and removal of temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner's construction forces, Architect-Engineer, occupants of Project, testing agencies, and Authorities Having Jurisdiction.
- B. Sewer Service: Pay sewer-service use charges for sewer usage by all entities for construction operations.
- C. Water Service: Pay water-service use charges for water used by all entities for construction operations.
- D. Electric Power Service: Pay electric-power-service use charges for electricity used by all entities for construction operations.

1.5 INFORMATIONAL SUBMITTALS

- A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.
- B. Erosion- and Sedimentation-Control Plan: Show compliance with requirements of Environmental Quality Board (EQB) or Authorities Having Jurisdiction (AHJ), whichever is more stringent.
- C. Fire-Safety Program: Show compliance with requirements of NFPA 241 and Authorities Having Jurisdiction (AHJ). Indicate Contractor personnel responsible for management of fire-prevention program.

1.6 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for Authorities Having Jurisdiction (AHJ) to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.7 PROJECT CONDITIONS

- A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Portable Chain-Link Fencing: Minimum 2-inch, 0.148-inch-thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet high with galvanized-steel pipe posts; minimum 2-3/8-inch-OD line posts and 2-7/8-inch-OD corner and pull posts. Provide concrete bases for supporting posts.
- B. Wood Enclosure Fence: Plywood, 6 feet high, framed with four 2-by-4-inch rails, with preservative-treated wood posts spaced not more than 8 feet apart.
- C. Polyethylene Sheet: Reinforced, fire-resistive sheet, 10-mil minimum thickness, with flame-spread rating of 15 or less per ASTM E 84 and passing NFPA 701 Test Method 2.

2.2 TEMPORARY FACILITIES

- A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.
- B. Common-Use Field Office: Of sufficient size to accommodate needs of Owner, Architect-Engineer, and construction personnel office activities and to accommodate Project meetings specified in other Division 01 Sections. Keep office clean and orderly. Furnish and equip offices as follows:
 - 1. Furniture required for Project-site documents including desk, chairs, file cabinets, plan tables, plan racks, and bookcases.
 - 2. Conference room of sufficient size to accommodate meetings of 10 individuals. Provide electrical power service and 120-V ac duplex receptacles, with no fewer than one receptacle on each wall. Furnish room with conference table, chairs, and 4-foot-square tack and marker boards.
 - 3. Drinking water and private toilet.
 - 4. Coffee machine and supplies.
 - 5. Cooling equipment necessary to maintain a uniform indoor temperature of 68 to 72 deg F.
 - 6. Lighting fixtures capable of maintaining average illumination of 20 fc at desk height.
- C. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction / demolition operations.

2.3 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
 - 1. Locate facilities to limit site disturbance as specified in Section 01 10 00.
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.
 - 1. Arrange with utility company, Owner and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
- B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.
 - 1. Connect temporary sewers to municipal system or private system indicated as directed by Authorities Having Jurisdiction (AHJ).
- C. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction.
- D. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of Authorities Having Jurisdiction (AHJ) for type, number, location, operation, and maintenance of fixtures and facilities.
- E. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.
 - 1. Install electric power service overhead unless otherwise indicated.
- F. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
 - 1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
- G. Telephone Service: Provide temporary telephone service in common-use facilities for use by all construction personnel. Install one telephone line (s) for each field office.
 - 1. Provide superintendent with cellular telephone or portable two-way radio for use when away from field office.
- H. Electronic Communication Service: Provide the following:
 - 1. Internet Service: Broadband modem, router and ISP, equipped with hardware firewall, providing minimum 384 Kbps upload and 1 Mbps download speeds at each computer.

3.3 SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following:
 - 1. Provide construction for temporary offices, shops, and sheds located within construction area or within 30 feet of building lines that is noncombustible according to ASTM E 136. Comply with NFPA 241.
 - 2. Maintain support facilities until Architect-Engineer schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.
- B. Traffic Controls: Comply with requirements of Authorities Having Jurisdiction.
 - 1. Protect existing site improvements to remain including curbs, pavement, and utilities.
 - 2. Maintain access for fire-fighting equipment and access to fire hydrants.
- C. Parking: Provide temporary parking areas for construction personnel.
- D. Dewatering Facilities and Drains: Comply with requirements of Authorities Having Jurisdiction (AHJ). Maintain Project site, excavations, and construction free of water.
 - 1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.
- E. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.
 - 1. Identification Signs: Provide Project identification signs as indicated on Drawings.
 - 2. Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.
 - a. Provide temporary, directional signs for construction personnel and visitors.
 - 3. Maintain and touchup signs so they are legible at all times.
- F. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in Section 01 73 00.
- G. Temporary Stairs: Until permanent stairs are available, provide temporary stairs where ladders are not adequate.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
- B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
 - 1. Comply with work restrictions specified in Section 01 10 00.

- C. Temporary Erosion and Sedimentation Control: Comply with requirements of 2003 EPA Construction General Permit or Authorities Having Jurisdiction (EQB-CES Plan), whichever is more stringent and requirements specified in Section 31.00.
- D. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, according to erosion- and sedimentation-control Drawings and requirements of 2003 EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.
 - 1. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross tree- or plant- protection zones.
 - 2. Inspect, repair, and maintain erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
 - 3. Clean, repair, and restore adjoining properties and roads affected by erosion and sedimentation from Project site during the course of Project.
 - 4. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.
- E. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.
- F. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.
- G. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Perform control operations lawfully, using environmentally safe materials.
- H. Site Enclosure Fence: Before construction operations begin, furnish and install site enclosure fence in a manner that will prevent people and animals from easily entering site except by entrance gates.
- I. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- J. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.
 - 1. Prohibit smoking in construction / demolition areas.
 - 2. Supervise welding / cutting operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
 - 3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
 - 4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.5 OPERATION, TERMINATION, AND REMOVAL

- A. **Supervision:** Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. **Maintenance:** Maintain facilities clean and free of debris and waste until removal.
- C. **Termination and Removal:** Remove each temporary facility when need for its service has ended, or no later than Substantial Completion. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
 - 1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
 - 2. Remove temporary roads and paved areas not intended for or acceptable for integration into permanent construction. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by Authorities Having Jurisdiction.
 - 3. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 01 73 00.

END OF SECTION

SECTION 01 60 00
PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Administrative and procedures requirements for selection of products for use in Project.
- B. Product delivery, storage and handling.

1.2 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.

1.3 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism.
- B. Delivery and Handling:
 - 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
 - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 - 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 - 4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.
- C. Storage:
 - 1. Store products to allow for inspection and measurement of quantity or counting of units.
 - 2. Store materials in a manner that will not endanger Project structure.
 - 3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
 - 4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.

5. Protect stored products from damage.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
 1. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.

PART 3 - EXECUTION

NOT USED.

END OF SECTION

SECTION 01 73 00
EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
 - 1. Construction layout.
 - 2. Field engineering and surveying.
 - 3. Installation of the Work.
 - 4. Cutting and patching.
 - 5. Progress cleaning.
 - 6. Protection of installed construction.
 - 7. Correction of the Work.

1.2 RELATED SECTIONS

- A. Section 01 10 00 – Summary of Work: For limits on use of Project site.
- B. Section 01 77 00 – Closeout Procedures: For submitting final property survey with Project Record Documents, recording of Owner accepted deviations from indicated lines and levels, and final cleaning.

1.3 REFERENCES

- A. NFPA 241 – Safeguarding Construction, Alteration, and Demolition Operations.

1.4 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Registered Land Surveyor and Professional Engineer.
- B. Certificates: Submit certificate signed by the Registered Land Surveyor certifying that location and elevation of new construction and improvements comply with requirements.
- C. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.
- D. Certified Surveys: Submit one copy signed by the Registered Land Surveyor.

1.6 QUALITY ASSURANCE

- A. Land Surveyor Qualifications: A Professional Registered Land Surveyor who is legally qualified to practice in jurisdiction where Project is located (Commonwealth of Puerto Rico) and who is experienced in providing land-surveying services of the kind indicated.
- B. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
 - 1. Structural Elements: When cutting and patching structural elements, notify Architect-Engineer of locations and details of cutting and await directions from Architect-Engineer before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.
 - 1. Before construction / demolition, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utilities. Notify to Architect-Engineer of discrepancies with location and invert elevations shown in the Contract Documents.
 - 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
 - 1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
- C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
 - 1. Description of the Work.
 - 2. List of detrimental conditions, including substrates.
 - 3. List of unacceptable installation tolerances.
 - 4. Recommended corrections.
- D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. **Existing Utility Information:** Furnish information to Owner and Architect-Engineer that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with Authorities Having Jurisdiction (AHJ).
- B. **Field Measurements:** Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. **Space Requirements:** Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. **Review of Contract Documents and Field Conditions:** Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a Request for Information (RFI) to Architect-Engineer according to requirements in Section 01 31 00.

3.3 CONSTRUCTION LAYOUT

- A. **Verification:** Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect-Engineer promptly.
- B. **General:** Engage a Registered Land Surveyor to lay out the Work using accepted surveying practices.
 - 1. Establish benchmarks and control points to set lines and levels as needed to locate each element of Project.
 - 2. Establish limits on use of Project site.
 - 3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
 - 4. Inform installers of lines and levels to which they must comply.
 - 5. Check the location, level and plumb, of every major element as the Work progresses.
 - 6. Notify Architect-Engineer when deviations from required lines and levels exceed allowable tolerances.
 - 7. Close site surveys with an error of closure equal to or less than the standard established by Authorities Having Jurisdiction (AHJ).
- C. **Site Improvements:** Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.
- D. **Record Log:** Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect-Engineer.

3.4 FIELD ENGINEERING

- A. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
 - 1. Do not change or relocate existing benchmarks or control points without prior written approval of Architect-Engineer. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Architect-Engineer before proceeding.
 - 2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.
- B. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with Authorities Having Jurisdiction (AHJ) for type and size of benchmark.
 - 1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
 - 2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
 - 3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.
- C. Certified Survey: On completion of major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework.

3.5 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 - 1. Make vertical work plumb and make horizontal work level.
- B. Conduct construction / demolition operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

3.6 CUTTING AND PATCHING

- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Temporary Support: Provide temporary support of work to be cut.
- C. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

- D. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.
- E. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
 - 4. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 - 5. Proceed with patching after construction operations requiring cutting are complete.
- F. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
- G. Cleaning: Clean areas and spaces where cutting and patching are performed.

3.7 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
 - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 - 2. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
 - a. Use containers intended for holding waste materials of type to be stored.
 - 3. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently
- B. Site: Maintain Project site free of waste materials and debris.
- C. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- D. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 01 50 00 or Section 01 74 19.

- E. During handling and installation, clean and protect construction in progress and adjoining materials already in place.
- F. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period.
- G. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

END OF SECTION

SECTION 01 74 19
CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Section includes administrative and procedural requirements for the following:
 - 1. Salvaging nonhazardous demolition and construction waste.
 - 2. Recycling nonhazardous demolition and construction waste.
 - 3. Disposing of nonhazardous demolition and construction waste.

1.2 RELATED SECTIONS

- A. Section 02 41 13 - Selective Site Demolition: For disposition of waste resulting from partial demolition of site improvements, and for disposition of hazardous waste.
- B. Section 02 41 16 - Structure Demolition: For disposition of waste resulting from demolition of buildings and structures, and for disposition of hazardous waste.

1.3 REFERENCES

- A. Construction Permits and Land Uses Joint Regulation, Puerto Rico Planning Board, January 2, 2021.
- B. Law for the Reduction and Recycling of Solid Wastes ("Ley para la Reducción y Reciclaje de los Desperdicios Sólidos"), Law No. 411, October 8, 2000, amending Law No. 70 of September 18, 1992.

1.4 DEFINITIONS

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.
- F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.5 PERFORMANCE REQUIREMENTS

- A. Disposal of Solid Waste: The Contractor shall comply with Law for the Reduction and Recycling of Solid Wastes ("Ley para la Reducción y Reciclaje de los Desperdicios Sólidos"), Law No. 411, October 8, 2000, amending Law No. 70 of September 18, 1992.

Article 6, Section A, Separation at Source.

All industries, factories, shops and any other institution that employs more whether full time or part time will have to implement a Recycling Plan ("Todas las fábricas, tiendas, comercios y cualquier otro tipo de institución que emplee más ya sean a tiempo completo o a tiempo parcial tendrán que implantar un Plan de

- The contractor will have to comply with the Recycling Plan ("Pl

- B. General: Practice efficient waste management in the use of materials in the course of the Work. Use all reasonable means to divert construction and demolition waste from landfills and incinerators. Facilitate recycling and salvage of materials, including the following:

1. Demolition Waste:
 - a. Concrete.
 - b. Concrete reinforcing steel.
 - c. Concrete masonry units.
 - d. Wood studs.
 - e. Plywood and oriented strand board.
 - f. Wood paneling.
 - g. Wood trim.
 - h. Structural and miscellaneous steel.
 - i. Rough hardware.
 - j. Roofing.
 - k. Insulation.
 - l. Doors and frames.
 - m. Door hardware.
 - n. Windows.
 - o. Glazing.
 - p. Metal studs.
 - q. Gypsum board.
 - r. Acoustical tile and panels.
 - s. Carpet.
 - t. Carpet pad.

- u. Demountable partitions.
- v. Equipment.
- w. Cabinets.
- x. Plumbing fixtures.
- y. Piping.
- z. Supports and hangers.
- aa. Valves.
- bb. Sprinklers.
- cc. Mechanical equipment.
- dd. Refrigerants.
- ee. Electrical conduit.
- ff. Copper wiring.
- gg. Lighting fixtures.
- hh. Lamps.
- ii. Ballasts.
- jj. Electrical devices.
- kk. Switchgear and panelboards.
- ll. Transformers.

1.6 ACTION SUBMITTALS

- A. Waste Management Plan: Submit plan within 7 days of date established for the Notice to Proceed.
- B. Waste Management Plan shall be in accordance with Solid Wastes Reduction and Recycling Law including but not limited to the following:
 - 1. Analysis of estimated job-site waste to be generated, including types and quantities of compostable, recyclable, and salvageable materials.
 - 2. Description of means and methods to achieve diversion requirement for compostable, recyclable, and salvageable materials, including those that may be donated to charitable organizations.
 - 3. Identification of recycling contractors and haulers proposed for use in the project and locations accepting construction waste materials or entities providing related services.
- C. Construction Waste Recycling Plan and approval certification from the Solid Wastes Management Authority (SWMA). Copy of the SWMA Recycling Plan Questionnaire and instructions are included as appendix.
- D. Construction Wastes Recycling Plan shall be in accordance with SWMA regulations including but not limited to: SWMA Construction Wastes Recycling Plan Questionnaire.

- E. Site Plan with the location of all recycling facilities.
- F. Descriptive Memoir with a detailed description of all the recycling activities.
- G. List of recycling contractors to be utilized. Copy of the "*Sistemas de Relleno Sanitario con Permisos Vigentes, a Principios de 2022*" is included in Attachment C after End of Section."
- H. List of waste landfill or recycling facility.
- I. Letter of Commitment
- J. Quarterly Reports shall be submitted to the SWMA. Copy of the quarterly report form is included as appendix.

1.7 INFORMATIONAL SUBMITTALS

- A. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit report. Use Form CWM-7 for construction waste and Form CWM-8 for demolition waste. Include the following information:
 - 1. Waste Management Form for each delivery of waste diverted or sent to the landfill. See Attachment A for Waste Management Form.
 - 2. Material category.
 - 3. Generation points of waste.
 - 4. Total quantity of waste in tons.
 - 5. Quantity of waste salvaged, both estimated and actual in tons.
 - 6. Quantity of waste recycled, both estimated and actual in tons.
 - 7. Total quantity of waste recovered (salvaged plus recycled) in tons.
 - 8. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.
- B. Waste Reduction Calculations: Before request for Substantial Completion, submit calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.
- C. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.
- D. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.
- E. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- F. Landfill Disposal Records: Indicate receipt and acceptance of waste by landfills facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- G. Qualification Data: For waste management coordinator and refrigerant recovery technician.
- H. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery

was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

1.8 QUALITY ASSURANCE

- A. **Waste Management Coordinator Qualifications:** Experienced firm, with a record of successful waste management coordination of projects with similar requirements, as waste management coordinator.
- B. **Refrigerant Recovery Technician Qualifications:** Certified by EPA-approved certification program.
- C. **Regulatory Requirements:** Comply with hauling and disposal regulations of authorities having jurisdiction.
- D. **Waste Management Conference:** Conduct conference at Project site to comply with requirements in Section 01 31 00 Administrative Requirements. Review methods and procedures related to waste management including, but not limited to, the following:
 - 1. Review and discuss waste management plan including responsibilities of waste management coordinator.
 - 2. Review requirements for documenting quantities of each type of waste and its disposition.
 - 3. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
 - 4. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
 - 5. Review waste management requirements for each trade.

1.9 WASTE MANAGEMENT PLAN

- A. **General:** Develop a waste management plan according to ASTM E 1609 and requirements in this Section. Plan shall consist of waste identification, waste reduction work plan, and cost/revenue analysis. Distinguish between demolition and construction waste. Indicate quantities by weight or volume but use same units of measure throughout waste management plan. Use Waste Management Form for each delivery of waste diverted or sent to the landfill. See Attachment A for Waste Management Form and Attachment B for Waste Management and Disposal Routes.
- B. **Waste Identification:** Indicate anticipated types and quantities of demolition, site-clearing and construction waste generated by the Work. Use Form CWM-1 for construction waste and Form CWM-2 for demolition waste. Include estimated quantities and assumptions for estimates.
- C. **Waste Reduction Work Plan:** List each type of waste and whether it will be salvaged, recycled¹, or disposed of in landfill or incinerator. Use Form CWM-3 for construction waste and Form CWM-4 for demolition waste. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.
 - 1. **Salvaged Materials for Reuse:** For materials that will be salvaged and reused in this Project, describe methods for preparing salvaged materials before incorporation into the Work.
 - 2. **Salvaged Materials for Sale:** For materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.
 - 3. **Salvaged Materials for Donation:** For materials that will be donated to individuals and organizations, include list of their names, addresses, and telephone numbers.

¹ Materials that can be recycled could include metals, wood, and concrete

4. **Recycled Materials:** Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
5. **Disposed Materials:** Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility. Refer to Attachment C at the end of this Specification. C. All materials that cannot be recycled shall be disposed adequately.
 - a. A list of waste landfill or recycling facilities is attached as part of Attachment C: *Sistemas de Relleno Sanitario con Permisos Vigentes, a Principios de 2022*
6. **Handling and Transportation Procedures:** Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location where materials separation will be performed.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

- A. **General:** Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
 1. Comply with operation, termination, and removal requirements in Section 01 50 00 - Temporary Facilities and Controls.
 2. Fill and keep record of each Waste Management Form used for each delivery of waste diverted or sent to the landfill. See Attachment A for Waste Management Form.
- B. **Waste Management Coordinator:** Engage a waste management coordinator to be responsible for implementing, monitoring, and reporting status of waste management work plan.
- C. **Training:** Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work.
 1. Distribute waste management plan to everyone concerned within three days of submittal return.
 2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.
- D. **Site Access and Temporary Controls:** Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.
 2. Comply with Section 01 50 00 - Temporary Facilities and Controls for controlling dust and dirt, environmental protection, and noise control.
- E. **Waste Management in Historic Zones or Areas:** Hauling equipment and other materials shall be of sizes that clear surfaces within historic spaces, areas, rooms, and openings, by 12 inches or more.
- F. **Records:** Maintain onsite logs for each load of materials removed from site:

1. Landfill Log: Include type of material, load (by weight or volume), recycling/hauling service, date accepted by landfill, and facility fee.
2. Waste Diversion: Include type of material, load (by weight or volume), recycling/hauling service, date accepted by recycling service, or non-profit receiver and facility fee.
3. Where comingling occurs prior to collection, track the amount of construction waste diverted from landfill based on the weight or volume of the removed co-mingled waste and provide the documentation of percentages of recycled material from the sorting facility.

3.2 SALVAGING DEMOLITION WASTE

- A. Salvaged Items for Reuse in the Work: Salvage items for reuse and handle as follows:
 1. Clean salvaged items.
 2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.
 3. Store items in a secure area until installation.
 4. Protect items from damage during transport and storage.
 5. Install salvaged items to comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make items functional for use indicated.
- B. Salvaged Items for Sale and Donation: Not permitted on Project site. Items shall be removed from the project site prior to sale or donation.
- C. Salvaged Items for Owner's Use: Salvage items for Owner's use and handle as follows:
 1. Clean salvaged items.
 2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.
 3. Store items in a secure area until delivery to Owner.
 4. Transport items to Owner's storage area on-site.
 5. Protect items from damage during transport and storage.
- D. Doors and Hardware: Brace open end of door frames. Except for removing door closers, leave door hardware attached to doors.
- E. Equipment: Drain tanks, piping, and fixtures. Seal openings with caps or plugs. Protect equipment from exposure to weather.
- F. Plumbing Fixtures: Separate by type and size.
- G. Lighting Fixtures: Separate lamps by type and protect from breakage.
- H. Electrical Devices: Separate switches, receptacles, switchgear, transformers, meters, panelboards, circuit breakers, and other devices by type.

3.3 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL

- A. General: Recycle paper and beverage containers used by on-site workers.

- B. Recycling Receivers and Processors: List below is provided for information only; available recycling receivers and processors include, but are not limited to, the following:
 - 1. Refer to Attachment K: "Listado de Centros de Acopio e Instalaciones de Reciclaje – ADS (Autoridad de Desperdicios Sólidos – Puerto Rico)"
- C. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall accrue to Contractor.
- D. Preparation of Waste: Prepare and maintain recyclable waste materials according to recycling or reuse facility requirements. Maintain materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process.
- E. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical according to approved construction waste management plan.
 - 1. Provide appropriately marked containers or bins for controlling recyclable waste until removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
 - 2. Inspect containers and bins for contamination and remove contaminated materials if found.
 - 3. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 - 4. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
 - 5. Store components off the ground and protect from the weather.
 - 6. Remove recyclable waste from Owner's property and transport to recycling receiver or processor.

3.4 RECYCLING DEMOLITION WASTE

- A. Concrete: Remove reinforcement and other metals from concrete and sort with other metals.
 - 1. Pulverize concrete to maximum 4-inch size.
 - 2. Crush concrete and screen for use as satisfactory soil for fill or subbase.
- B. Masonry: Remove metal reinforcement, anchors, and ties from masonry and sort with other metals.
 - 1. Pulverize masonry to maximum 1-inch size.
 - a. Crush masonry and screen for use as general fill in Earthwork.
 - 2. Clean and stack undamaged, whole masonry units on wood pallets.
- C. Wood Materials: Sort and stack members according to size, type, and length. Separate lumber, engineered wood products, panel products, and treated wood materials.
- D. Metals: Separate metals by type.
 - 1. Structural Steel: Stack members according to size, type of member, and length.
 - 2. Remove and dispose of bolts, nuts, washers, and other rough hardware.

- E. Gypsum Board: Stack large clean pieces on wood pallets or in container and store in a dry location. Remove edge trim and sort with other metals. Remove and dispose of fasteners.
- F. Acoustical Ceiling Panels and Tile: Stack large clean pieces on wood pallets and store in a dry location.
- G. Metal Suspension System: Separate metal members including trim, and other metals from acoustical panels and tile and sort with other metals.
- H. Carpet and Pad: Roll large pieces tightly after removing debris, trash, adhesive, and tack strips.
 - 1. Store clean, dry carpet and pad in a closed container or trailer provided by Carpet Reclamation Agency or carpet recycler.
- I. Carpet Tile: Remove debris, trash, and adhesive.
 - 1. Stack tile on pallet and store clean, dry carpet in a closed container or trailer provided by Carpet Reclamation Agency or carpet recycler.
- J. Piping: Reduce piping to straight lengths and store by type and size. Separate supports, hangers, valves, sprinklers, and other components by type and size.
- K. Conduit: Reduce conduit to straight lengths and store by type and size.

3.5 RECYCLING CONSTRUCTION WASTE

- A. Packaging:
 - 1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
 - 2. Polystyrene Packaging: Separate and bag materials.
 - 3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
 - 4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.
- B. Wood Materials:
 - 1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.
 - 2. Clean Sawdust: Bag sawdust that does not contain painted or treated wood.
- C. Gypsum Board: Stack large clean pieces on wood pallets or in container and store in a dry location.

3.6 DISPOSAL OF WASTE

- A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill acceptable to authorities having jurisdiction.
 - 1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

- B. Burning: Do not burn waste materials.
- C. Disposal: Remove waste materials from Owner's property and legally dispose of them.

3.7 DRAWINGS

- A. Refer to Recycling Plan Drawing.

3.8 ATTACHMENTS

- A. Attachment A: Waste Management Form
- B. Attachment B: Routes for Waste Management and Disposal Routes
- C. Attachment C: *Sistemas de Relleno Sanitario con Permisos Vigentes, a Principios de 2022*
- D. Form CWM-1 for Construction Waste Identification.
- E. Form CWM-2 for Demolition Waste Identification.
- F. Form CWM-3 for Construction Waste Reduction Work Plan.
- G. Form CWM-4 for Demolition Waste Reduction Work Plan.
- H. Form CWM-5 Cost/Revenue Analysis of Construction Waste Reduction Work Plan.
- I. Form CWM-6 Cost/Revenue Analysis of Demolition Waste Reduction Work Plan.
- J. Form CWM-7 for Construction Waste
- K. Form CWM-8 for Demolition Waste.
- L. "Listado de Centros de Acopio e Instalaciones de Reciclaje – ADS (Autoridad de Desperdicios Sólidos – Puerto Rico)".
- M. SWMA Recycling Plan Questionnaire and Instructions.
- N. SWMA quarterly Report Form.
- O. Example of Letter of Commitment.
- P. "Forma PGC-012" from Environmental Quality Board (EQB).

END OF SECTION

ATTACHMENT A

Waste Management Form

Minimum products that shall be recycled, reused or salvaged may include but are not limited to: Asphalt paving, concrete, concrete reinforcing steel, concrete masonry units, wood studs, plywood and oriented strand board, wood paneling, wood trim, structural and miscellaneous steel, rough hardware, roofing, insulation, doors and frames, door hardware, windows, glazing, metal studs, gypsum board, acoustical tile and panels, carpet, carpet pad, demountable partitions, equipment, cabinets, plumbing fixtures, piping, supports and hangers, valves, sprinklers, mechanical equipment, refrigerants, electrical conduit, copper wiring, lighting fixtures, lamps, ballasts, electrical devices, switchgear and panelboards, and transformers.

Date	Type of Waste	Diversion Method or Name of Landfill		Diverted Materials (Tons)	Land filled Materials (Tons)
		Method of Diversion (Recycler, Charitable Organization, Reuse Center, Nonprofit Organization or use on other Building)	Landfill		

A. Total Waste Diverted (Tons)	
B. Total Waste Sent to Landfill (Tons)	
C. Total Quantity of Waste (Tons): $C = A + B$	
D. Percent of Waste Diverted (Total Waste Diverted/Total Quantity of Waste): $D = (A/C) \times 100$	%

Vendor or Material Receiver Company Name: _____

Vendor or Material Receiver Representative's Name (please print): _____

Vendor or Material Receiver Representative's Signature: _____

ATTACHMENT C

SISTEMAS DE RELLENO SANITARIO CON PERMISOS VIGENTES, A PRINCIPIOS DE 2022

INSTALACION	VIGENCIA DEL PERMISO	COMENTARIOS
Peñuelas Valley Landfill	Permiso en evaluación*	Tiene autorización para CAT
La Vega Landfill and Resources	Permiso en Evaluación*	
Ponce Landfill	16 MAR 2025	Sistema de Relleno Sanitario
El Coquí Landfill (Humacao), Lote A & B	11 JUN 2026	Sistema de Relleno Sanitario
E-Cycling, Humacao	8 MAYO 2022	Facilidad de Reciclaje
Estación de Transbordo Municipio de San Juan	30 AGO 2024	Estación de Transbordo
Estación de Transbordo Municipio de Caguas	30 SEP 2025	Estación de Transbordo
Añasco	19 FEB 2023	Sistema de Relleno Sanitario
Cabo Rojo	29 OCT 2024	Sistema de Relleno Sanitario
Carolina	09 ABR 2024	Sistema de Relleno Sanitario
Cayey	19 ENE 2023	Sistema de Relleno Sanitario
Fajardo	27 AGO 2025	Sistema de Relleno Sanitario
Juncos	24 FEB 2026	Sistema de Relleno Sanitario
Mayagüez	11 FEB 2024	Sistema de Relleno Sanitario
Yauco	29 OCT 2024	Sistema de Relleno Sanitario

*Estas instalaciones solicitaron la renovación de permiso dentro del tiempo estipulado por reglamentación.

Según el Reglamento para los Sistemas de Relleno Sanitario vigente, toda instalación de sistema de relleno sanitario con un permiso vigente, en espera de emisión de renovación, está autorizada a recibir desperdicios sólidos no peligrosos, siempre y cuando haya presentado al DRNA una solicitud de renovación de permiso sesenta (60) días calendario antes de la fecha de expedición del permiso vigente.

FORM CWM-1: CONSTRUCTION WASTE IDENTIFICATION

MATERIAL CATEGORY	GENERATION POINT	EST. QUANTITY OF MATERIALS RECEIVED* (A)	EST. WASTE - % (B)	TOTAL EST. QUANTITY OF WASTE* (C = A x B)	EST. VOLUME CY (CM)	EST. WEIGHT TONS (TONNES)	REMARKS AND ASSUMPTIONS
Packaging: Cardboard							
Packaging: Boxes							
Packaging: Plastic Sheet or Film							
Packaging: Polystyrene							
Packaging: Pallets or Skids							
Packaging: Crates							
Packaging: Paint Cans							
Packaging: Plastic Pails							
Masonry or CMU							
Lumber: Cut-Offs							
Lumber: Warped Pieces							
Plywood or OSB (scraps)							
Wood Forms							
Wood Waste Chutes							
Wood Trim (cut-offs)							
Metals							
Insulation							
Joint Sealant Tubes							
Gypsum Board (scraps)							
Carpet and Pad (scraps)							
Piping							
Electrical Conduit							
Other:							

* Insert units of measure.

FORM CWM-2: DEMOLITION WASTE IDENTIFICATION

MATERIAL DESCRIPTION	EST. QUANTITY	EST. VOLUME CY (CM)	EST. WEIGHT TONS (TONNES)	REMARKS AND ASSUMPTIONS
Asphaltic Concrete Paving				
Concrete				
CMU				
Lumber				
Plywood and OSB				
Wood Paneling				
Miscellaneous Metals				
Structural Steel				
Rough Hardware				
Insulation				
Roofing				
Doors and Frames				
Door Hardware				
Windows				
Glazing				
Acoustical Tile				
Carpet				
Carpet Pad				
Demountable Partitions				
Equipment				
Cabinets				
Plumbing Fixtures				
Piping				
Piping Supports and Hangers				
Valves				
Sprinklers				
Mechanical Equipment				
Electrical Conduit				
Copper Wiring				
Light Fixtures				
Lamps				
Lighting Ballasts				
Electrical Devices				
Switchgear and Panelboards				
Transformers				
Other:				

FORM CWM-3: CONSTRUCTION WASTE REDUCTION WORK PLAN					
MATERIAL CATEGORY	GENERATION POINT	TOTAL EST. QUANTITY OF WASTE TONS (TONNES)	DISPOSAL METHOD AND QUANTITY		
			EST. AMOUNT SALVAGED TONS (TONNES)	EST. AMOUNT RECYCLED TONS (TONNES)	EST. AMOUNT DISPOSED TO LANDFILL TONS (TONNES)
Packaging: Cardboard					
Packaging: Boxes					
Packaging: Plastic Sheet or Film					
Packaging: Polystyrene					
Packaging: Pallets or Skids					
Packaging: Crates					
Packaging: Paint Cans					
Packaging: Plastic Pails					
Masonry or CMU					
Lumber: Cut-Offs					
Lumber: Warped Pieces					
Plywood or OSB (scraps)					
Wood Forms					
Wood Waste Chutes					
Metals					
Insulation					
Roofing					
Joint Sealant Tubes					
Gypsum Board (scraps)					
Carpet and Pad (scraps)					
Piping					
Electrical Conduit					
Other:					

FORM CWM-4: DEMOLITION WASTE REDUCTION WORK PLAN

MATERIAL CATEGORY	GENERATION POINT	DISPOSAL METHOD AND QUANTITY				HANDLING AND TRANSPORTION PROCEDURES
		TOTAL EST. QUANTITY OF WASTE TONS (TONNES)	EST. AMOUNT SALVAGED TONS (TONNES)	EST. AMOUNT RECYCLED TONS (TONNES)	EST. AMOUNT DISPOSED TO LANDFILL TONS (TONNES)	
Concrete						
CMU						
Lumber						
Plywood and OSB						
Wood Paneling						
Miscellaneous Metals						
Structural Steel						
Rough Hardware						
Insulation						
Doors and Frames						
Door Hardware						
Windows						
Glazing						
Acoustical Tile						
Carpet						
Carpet Pad						
Demountable Partitions						
Equipment						
Cabinets						
Plumbing Fixtures						
Piping						
Supports and Hangers						
Valves						
Sprinklers						
Mechanical Equipment						
Electrical Conduit						
Copper Wiring						
Light Fixtures						
Lamps						
Lighting Ballasts						
Electrical Devices						
Switchgear and						
Panelboards						
Transformers						
Other:						

FORM CWM-5: COST/REVENUE ANALYSIS OF CONSTRUCTION WASTE REDUCTION WORK PLAN

MATERIALS	TOTAL QUANTITY OF MATERIALS (VOL OR WEIGHT) (A)	EST. COST OF DISPOSAL (B)	TOTAL EST. COST OF DISPOSAL (C = A x B)	REVENUE FROM SALVAGED MATERIALS (D)	REVENUE FROM RECYCLED MATERIALS (E)	LANDFILL TIPPING FEES AVOIDED (F)	HANDLING AND TRANSPORTATION COSTS AVOIDED (G)	NET COST SAVINGS OF WORK PLAN (H = D+E+F+G)
Packaging: Cardboard								
Packaging: Boxes								
Packaging: Plastic Sheet or Film								
Packaging: Polystyrene								
Packaging: Pallets or Skids								
Packaging: Crates								
Packaging: Paint Cans								
Packaging: Plastic Pails								
Masonry or CMU								
Lumber: Cut-Offs								
Lumber: Warped Pieces								
Plywood or OSB (scraps)								
Wood Forms								
Wood Waste Chutes								
Metals								
Insulation								
Joint Sealant Tubes								
Gypsum Board (scraps)								
Carpet and Pad (scraps)								
Piping								
Electrical Conduit								
Other:								

FORM CWM-6: COST/REVENUE ANALYSIS OF DEMOLITION WASTE REDUCTION WORK PLAN

MATERIALS	TOTAL QUANTITY OF MATERIALS (VOL. OR WEIGHT) (A)	EST. COST OF DISPOSAL (B)	TOTAL EST. COST OF DISPOSAL (C = A x B)	REVENUE FROM SALVAGED MATERIALS (D)	REVENUE FROM RECYCLED MATERIALS (E)	LANDFILL TIPPING FEES AVOIDED (F)	HANDLING AND TRANSPORTATION COSTS AVOIDED (G)	NET COST SAVINGS OF WORK PLAN (H = D+E+F+G)
Concrete								
CMU								
Lumber								
Plywood and OSB								
Wood Paneling								
Wood Trim								
Miscellaneous Metals								
Structural Steel								
Rough Hardware								
Insulation								
Doors and Frames								
Door Hardware								
Windows								
Glazing								
Acoustical Tile								
Carpet								
Carpet Pad								
Demountable								
Partitions								
Equipment								
Cabinets								
Plumbing Fixtures								
Piping								
Supports and								
Hangers								
Valves								
Sprinklers								
Mech. Equipment								
Electrical Conduit								
Copper Wiring								
Light Fixtures								
Lamps								
Lighting Ballasts								
Electrical Devices								
Switchgear and								
Panelboards								
Transformers								
Other:								

FORM CWM-8: DEMOLITION WASTE REDUCTION PROGRESS REPORT

MATERIAL CATEGORY	GENERATION POINT	QUANTITY OF WASTE SALVAGED				QUANTITY OF WASTE RECYCLED		TOTAL QUANTITY OF WASTE RECOVERED TONS (TONNES) (D = B + C)	TOTAL QUANTITY OF WASTE RECOVERED % (D / A x 100)
		ESTIMATED TONS (TONNES)	ACTUAL TONS (TONNES)	ESTIMATED TONS (TONNES)	ACTUAL TONS (TONNES)	ESTIMATED TONS (TONNES)	ACTUAL TONS (TONNES)		
Concrete									
CMU									
Lumber									
Plywood and OSB									
Wood Paneling									
Miscellaneous Metals									
Structural Steel									
Rough Hardware									
Insulation									
Doors and Frames									
Door Hardware									
Windows									
Glazing									
Acoustical Tile									
Carpet									
Carpet Pad									
Demountable Partitions									
Equipment									
Cabinets									
Plumbing Fixtures									
Piping									
Supports and Hangers									
Valves									
Sprinklers									
Mechanical Equipment									
Electrical Conduit									
Copper Wiring									
Light Fixtures									
Lamps									
Lighting Ballasts									
Electrical Devices									
Switchgear and									
Panelboards									
Transformers									
Other:									

Lista de Centros de Acopio e Instalaciones de Reciclaje



Porque todos merecemos una segunda oportunidad...

Revisado: mayo 2009

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NOTA: El propósito de esta lista es informar a la ciudadanía sobre los centros de acopio y empresas de reciclaje que la Autoridad de Desperdicios Sólidos (ADS) ha identificado. La ADS no recomienda ni favorece a ninguna compañía de las aquí descritas y no garantiza que estas cuenten con el endoso de nuestra agencia. De existir un centro o empresa que no esté incluido en esta lista o para conocer más información sobre alguna de las empresas, favor contactar la Oficina de Desarrollo de Mercados e Industrias, al teléfono (787) 765-7575 extensión 4150.

Aceite de Motor Usado Procesadores

Alternative Fuels
Carretera Núm. 2 Km. 26.7
Sector Guarisco Barrio Espinosa
Dorado
722-8820 / 8821

Olein Recovery Corp.
(Instalación de reciclaje)
Carretera 901 Km. 2.7
Barrio Camino Nuevo
Yabucoa
893-0224

Rubén Martínez Oil Collection Services
Carretera 887 km. 0.4
Urb. Julio N. Matos Bo. Martín González
Carolina
769-1111

EMSCO
Carretera 865 Km. 2
Barrio Campanilla
Toa Baja
794-0090

Oil Energy System
256 Concordia
Petrowest Plaza Piso 2
Mayagüez
832-5757 / 5790

PR Used Oil Collectors
Bayamón
250-0203

Aceite de Motor Usado Transportistas

EMSCO
Toa Baja
794-1985

Induchem Services
Guaynago
720-8787

PR Safety Transport
Ponce
844-9018

Safety Kleen Environmental System
Manatí
854-1090

Ashland Chemical Company
Bayamón
501-7359

Transporte Sánchez
Caguas
746-3322

Oil Energy System
Mayagüez
834-0555

Oil & Tramp
Rio Piedras
261-5871

PR Used Oil Collectors
Bayamón
250-0203

Rubén Martínez Oil Collection Services
Carolina
769-1100
769-1111

Septix Waste, Inc.
Ponce
840-9090

Indutech Environmental
Caguas
743-6868

Ensco Caribe
Cataño
788-8000

Díaz Transport
Yauco
399-2470

Olein Recovery Corp.
Yabucoa
266-2103
893-0224

Aceite Vegetal (de cocina)

Edelcar
(Instalación de reciclaje)
Calle Central Esquina San Pablo
Area Industrial
Cataño
(787) 783-4747

Biodiesel & Fuels de Puerto Rico
Carretera # 169 Km. 2.0
Barrio Camarones
Guaynabo
(787) 708-9046

Baterías de Autos (plomo-ácido)

Almacen Caraballo
Parcelas Rodríguez Olmos
Arecibo
878-2375

El Gran Tadeo Mill
Carretera Núm. 110 Km. 4
Moca
252-1816

Isla Bonita Metals
Calle Léster Lote 8
Carolina
750-4172

The Battery Recycling
(Instalación de reciclaje)
Carretera Núm. 2
Barrio Cambalache
Arecibo
880-5373

Safety Kleen Environmental System
Carretera Núm. 2 Km. 51
Manatí
884-4452

Borinquen Metal Scrap
Carretera Núm. 1 Km. 39.8
Caguas
747-5850

Borinquen Metal Scrap
Carretera Núm. 189 Km. 9
Gurabo
737-4900

Santurce Metal & Bag
Avenida Las Palmas 1104
Santurce
724-7880

Environics
Carretera Núm. 1 km. 39
Ubr. Villa Esperanza Calle Bonanza
Caguas
745-7891

WR Recycling
Carretera Núm. 103 km. 2.3 Bo. Bajura
Cabo Rojo
255-4772 / 538-1486

Biosólidos / Cienos (Lodos de plantas de tratamiento)

Caribbean Composting
(Instalación de reciclaje)
Carretera 681 Km. 3.4 Islote II
Arecibo
(787)879-3156

Autoridad de Acueductos y
Alcantarillados Planta de Composta
(Instalación de reciclaje)
Carretera 342 Km. 0.5 Bo. Sabanetas
Mayagüez
(787) 834-7540

R-4 Enterprises (solo transportan)
Carretera 1 Km. 113.6 Bo. Pastilla
Juana Díaz
(787) 783-7721

Cartón

Guaynabo Recycling
Carretera Núm. 1 Km. 21.7
Barrio Mamey
273-7639

Corporación Comunitaria Reciclaje del
Norte, PT
Carretera Núm. 2 Km. 88.1
Hatillo
262-0305

Industrial Fibers, Corp (IFCO)
Carretera 872 Km. 1.3
Rio Plantation
Bayamón
653-4300

Corporación Comunitaria Reciclaje del
Norte, PT
División Península de Cantera
Calle Santa Elena 2425
Península de Cantera Bo. Obrero
San Juan
726-04446

IFCO Recycling
Carretera Núm. 1Km. 32.2 (int)
Barrio Bairoa
Caguas
653-4300

GC Reciclaje, PT
Carretera Núm. 3 Km. 71..9
Punta Santiago
Humacao
852-9100

Cartonera de PR
Carretera Núm. 167 Km. 24.3
Bayamón
787-0675

WR Recycling
Carretera 103 Km. 2.3 Barrio Bajura
Cabo Rojo
255-4772
538-1486

Smurfit Fibras Internacionales
Barrio Puerto Viejo
Playa de Ponce
Ponce
843-7145

Multi Recycling Systems
Vater Industrial Park
Carolina
762-2740

Pronatura
Parque Industrial Luchetti
Calle C Lote 30
Bayamón
622-4252

Cartuchos de Impresora

Alternative Kartridge
Carretera 194 Ext. Fajardo Gardens
Fajardo
801-0631
630-7818

Facsimil Paper Connection
La Cerámica Industrial Park
Carolina
257-0808

PR Imagine Solutions
Riveras del Río B-32 C11
Bayamón
449-7747

Toner Plus of PR
Calle 2 B-34 Santa Mónica
Bayamón
299-7171

La Casa de las Tintas
Calle Villas Plaza Sol de Borinquén Suite
116
Ponce
284-3431

Toner Solutions, Inc.
Urb. Country Club 886 Calle Galápagos
San Juan
782-9481 / 375-7300 / 381-8889

Equipos electrónicos (Computadoras, TVs, DVD, VHS, entre otros)

Nova Terra
(procesador)
Carretera Núm. 655 Km. 1.0 Bo. Islote
Arecibo
817-4327

Caribbean Hi-Tech Recyclers
(procesador)
Carretera Núm. 332 Lote # 7
Zona Industrial Ciénaga
Guánica
821-0342 / 447-9316

Environics Recycling
Carretera Núm. 1 Km. 39
Urb. Villa Esperanza Calle Bonanza
Caguas
745-7891

Ecologic PR, Inc
Carretera Núm. 2 Km. 97.9 Bo. Cocos
Quebradillas
895-3100 / 385-3296

GC Reciclaje, Inc. PT
Carretera Núm. 3 Km. 71.9 Punta Santiago
Humacao
852-9100

E-cycling
Carretera Núm. 924 Km. 2.8
Humacao
635-1405

Corporación Comunitaria Reciclaje del Norte, PT
Carretera Núm. 2 Km. 88.1
Hatillo
262-0305

R-4 Enterprises
Garden Hill Plaza MSC 309
1353 Carretera Núm. 19
Guaynabo
675-9600

Corporación Comunitaria Reciclaje del Norte, PT
División Península de Cantera
Avenida Eduardo Conde Esq. Villa Palmeras
Santurce
726-0444

Safety Kleen Environmental System
Carretera Núm. 2 Km. 51
Manatí
854-1090

River City Communications
cswiderski@rccom.net
889-4295

Escombros Hormigón y Asfalto

Controlled Demolitions & Recycling
(hormigón)
Carretera Núm. 2 Km. 24.3
Barrio Espinosa
Dorado
883-4580

Toledo Engineering Corp
(hormigón)
Monte Atenas Office Park Suite 206
San Juan
283-8787

Betterecycling Corp
(Asfalto)
Carretera Núm. 1 Km. 83.4
Salinas
764-1000

Betterecycling
(Asfalto)
F-3 PR-2 Km. 139.6
Aguada
764-1000

Sunset Contractors & Recycling
(hormigón)
Arroyo
613-5505

Reliable Recycling
(hormigón)
Carretera Núm. 865 Km. 0.6
Toa Baja
794-0927

Betterecycling Corp
(Asfalto)
F-2 PR 887 Km. 0.4 Urb. Industrial Julio N. Matos
Carolina
764-1000

Lámparas Fluorescentes (bombillas)

Onyx Environmental Services
Turabo
Industrial Park
Gurabo
744-0070

Safety Kleen Environmental Systems
Carretera Núm. 2 Km. 51
Manatí
854-1090

Environics Recycling
Carretera Núm. 1 Km. 39
Urb. Villa Esperanza Calle Bonanza
Caguas
745-7891

Lamp Recycling
Calle 16 SO Núm. 1432 Caparra Terrace
Guaynabo
758-1930

Mattress

Comfort Mattress
Carretera Núm. 423 Km. 0.0
San Sebastián
280-3200 / 517-0614

Metales Ferrosos (Enseres, autos, varillas, entre otros)

Schnitzer PR DBA Ponce Resources
Carretera Núm. 3 Km. 156.4
Barrio Aguirre
Salinas
824-6133

Schnitzer PR DBA Ponce Resources
Carretera Núm. Km. 7.7
Camino Principal
Sector Industrial Corujo Hato Tejas
Bayamón
649-9138

Schnitzer PR DBA Ponce Resources
Barrio Bairoa Carretera Núm. 1 Km. 30
Caguas
824-6133

Materials Management
Km. 26.6 Carretera Núm. 2 Bo. Espinosa
Dorado
627-8286 / 627-8296

Multi Recycling Systems
Vater Industrial Park
Sabana Abajo
Carolina
762-2740

Nova Terra
Carretera Núm. 655 Km. 1 Bo. Islote
Arecibo
817-4327

Puerto Metal Recycling
Carretera Núm. 2 Km. 25.1 Bo. Espinosa
Dorado
270-1233

Castillo Metals
Carretera Núm. 3 Km. 71.1 Punta Santiago
Humacao
903-2544 / 676-8034

Daltra
Carretera Núm. 967 Km. 0.3 Sector las 3T
Rio Grande
809-5201

Homeca Recycling
Carretera Núm. 309 Km. 1.4
Hormigueros
849-1488

Homeca Recycling
Carretera Núm. 1 Km. 121.6 Mercedita
Ponce
290-5791

Homeca Recycling
Calle Comercio Núm. 1 Playa Ponce
Ponce
841-2223

Homeca Recycling
Carretera Núm. 183 Km. 4.5
Bo. Tomas de Castro
Caguas
903-0450

R-4 Enterprises
Carretera Núm. 1 Km. 113.6 Bo. Pastilla
Juana Díaz
675-9600

GC Reciclaje, PT
Carretera Núm. 3 Km. 71.9
Sector Industrial Punta Santiago
Humacao
852-9100

Scrapyard Metal Recycling
Carretera Núm. 2 Km. 19.7 Bo. Candelaria
Toa Baja
780-4706

Procesadora de Metales
Carretera Núm. 2 Km. 26.8 Calle Hucár
Sector Guarisco Bo. Espinosa
Dorado
270-6800

Metales no Ferrosos (cobre, aluminio, bronce, entre otros)

Almacén Caraballo
Parcelas Rodríguez Olmos
Arecibo
878-2375

El Gran Tadeo Mill
Carretera Núm. 110 Km. 4
Moca
252-1816

GC Reciclaje, PT
Carretera Núm. 3 Km. 71.9
Sector Industrial Punta Santiago
Humacao
852-9100

Schnitzer PR DBA Ponce Resources
Barrio Bairoa Carretera Núm. 1 Km. 30
Caguas
824-6133

Schnitzer PR DBA Ponce Resources
Carretera Núm. Km. 7.7
Camino Principal
Sector Industrial Corujo Hato Tejas
Bayamón
649-9138

Schnitzer PR DBA Ponce Resources
Carretera Núm. 3 Km. 156.4
Barrio Aguirre
Salinas
824-6133

Corporación Comunitaria Reciclaje del Norte, PT
División Península de Cantera
Avenida Eduardo Conde Esq. Villa Palmeras
Santurce
726-0444

Corporación Comunitaria Reciclaje del Norte, PT
Carretera Núm. 2 Km. 88.1
Hatillo
262-0305

Guayama Metals
Carretera Núm. 3 Km. 149.0 Bo. Aguirre
Salinas
239-0950

Borinquen Metal Scrap
Carretera Núm. 1 Km. 39.8
Caguas
747-5850

Borinquen Metal Scrap
Carretera Núm. 187 Km. 9
Gurabo
737-4900

Homeca Recycling
Calle Comercio Núm. 1 Playa Ponce
Ponce
841-2223

Homeca Recycling
Carretera Núm. 183 Km. 4.5
Bo. Tomas de Castro
Caguas
903-0450

Homeca Recycling
Carretera Núm. 1 Km. 121.6 Mercedita
Ponce
290-5791

Homeca Recycling
Carretera Núm. 309 Km. 1.4
Hormigueros
849-1488

Pronatura
Parque Industrial Luchetti
Calle C Lote 30
Bayamón
622-4252

Harry's Metal Recycling
Avenida Juan Rosado 415
Arecibo
878-2835

Nova Terra
Carretera Núm. 655 Km. 1 Bo. Islote
Arecibo
817-4327

Isla Bonita metals
Calle Lester Lote 8
Carolina
750-4172

Moncho Metal
Calle Nueva Palma 1056
Santurce
722-7491

WR Recycling
Carretera 103 Km. 2.3 Bo. Bajura
Cabo Rojo
255-4772

Taller de Reciclaje de Metales
Carretera Núm. 2 Km. 688
Vega Baja
807-7063

IFCO Recycling
Carretera Núm. 1Km. 32.2 (int)
Barrio Bairoa
Caguas
653-4300

Industrial Fibers, Corp (IFCO)
Carretera 872 Km. 1.3
Rio Plantation
Bayamón
653-4300

Guaynabo Recycling
Barrio Mamey
273-7639

La Villa Metals
251 Calle Villa
Ponce
842-2379

Southwest Metal Recovery
Carretera Núm. 121 km. 1.6 Sector La Pica
Sabana Grande
873-2610

Los Muchachos Metals
Carretera Núm. 2 km. 19.1
Toa Baja
241-2728

Pagán & Pagán Recycling
Carretera Núm. 2 Km. 35 Bo. Pueblo Nuevo
Vega Baja
858-6268

Multi Recycling Systems
Váter Industrial Park Sabana Abajo
Carolina
762-2740

Vega Aluminum Recycling
Carretera Núm. 119 Km. 8.8 Bo. Ciénaga
Camuy
566-5942

Santurce Metal & Bag
Avenida Las palmas 1104
Santurce
724-7880

26 Metal Recycling
Calle Pedro de Castro 705
Santurce
727-2751

Castillo Metals
Carretera Núm. 3 Km. 71.1 Punta Santiago
Humacao
903-2544 / 676-8034

La Virgencita Recycling
Carretera Núm. 2 Km. 22.4
Toa Baja
(939) 645-2454

Neumáticos desechados Procesadores

Ambrosiani Hermanos
(recauchadores)
Carretera Núm. 188 Km. 0.8 San Isidro
Canóvanas
725-3540

Correa Tire Recycling
(recauchadores)
Carretera Núm. 2 Km. 26.7 Bo. Espinosa
626-1111 / 883-4105 / 795-1111

REMA
(procesador)
Carretera Núm. 1 Km. 28.8
Barrio Rio Caña Abajo
Caguas
703-6798 / 703-0585

Embos
(recauchadores)
Carretera Núm.29 Km. 2.3
Dorado
794-1211

Integrated Waste Management
(procesador)
Barrio Tallaboa
Peñuelas
783-8630

Neumáticos Desechados Transportistas y Exportadores

Chris & John Recycler
(Exportador)
Aguada
868-7621

Technique Recycling
(Exportador)
Dorado
368-9719

CN Recycling
Camuy
409-4121

R-4 Enterprises
Guaynabo
675-9600

JR Recycling
Carolina
750-4972

K & V Tire Collector
Rio Grande
887-8139

PR Safety Transport
Ponce
884-9018

Prospero Tire Recycling
(Exportador)
Carolina
750-4015 / 960-2445

Terralina Environmental Co.
(Exportador)
San Juan
781-5583

N & E Transport
Guayama
864-1997

RDB Recycle
Luquillo
889-3209

Transportadores de Neumáticos
Guaynabo
790-0190

WL Caribbean Works
Juana Díaz
(939) 645-7581

El Nuevo Ciclo
Comerio
875-3574

BJ Transport
Salinas
617-7651

HL Transport Recycling
Guayama
308-4072

Perdí
Caguas
747-1662

Ski Service
Cayey
547-1985

Paletas de Madera

Caribbean Composting**
(Instalación de reciclaje)
Carretera 681 Km. 3.4 Islote II
Arecibo
(787)879-3156

Caribe Recycling**
(Instalación de reciclaje)
Carretera Núm. 1 Km. 26
Parque Industrial Quebrada Arenas
Rio Piedras
789-0110 / 789/0885

Héctor Caro Wooden Pallets
(Instalación de reciclaje)
Carretera 412 Km. 3
Rincón
823-2901

Caribe Pallets & Packaging
876 Barrio Las Cuevas
Trujillo Alto
755-3622

J Torres Wooden Pallets**
(Instalación de reciclaje)
Carretera 693 Km. 13.4 Int.
Finca 14 Local # 3
Vega alta
883-1178

Demolition Pallets**
(Instalación de reciclaje)
Bo. Guavate Sector Los Nieves Carr. 184 763
Km. 8.1 Int.
Cayey
649-9727 / 258-1872

Autoridad de Acueductos y
Alcantarillados Planta de Composta
(Instalación de reciclaje)
Carretera 342 Km. 0.5 Bo. Sabanetas
Mayagüez
(787) 834-7540

GC Reciclaje, PT
Carretera Núm. 3 Km. 71.9
Sector Industrial Punta Santiago
Humacao
852-9100

Puerto Rico Pallet Recycling**
(Instalación de reciclaje)
Barrio Espinosa Sector Laguna II
Dorado
270-2198

CC Pallets
Carretera 735 Int. Carretera Núm. 1
Barrio Montellanos
Cayey
751-6164

Nephesh Wood Recycling
Carretera Núm. 1 Km. 37.9
Barrio Bairoa
Caguas
961-2700 / 2701 / 594-0691

Soil & Mulch**
(Instalación de reciclaje)
Bo. Garrochales Carretera 682 Km. 4.1
Barceloneta
846-3398 / 346-3780

** Compañías que colorean viruta (mulch)

Papel

Guaynabo Recycling
Carretera Núm. 1 Km. 21.7
Barrio Mamey
273-7639

Industrial Fibers, Corp (IFCO)
Carretera 872 Km. 1.3
Rio Plantation
Bayamón
653-4300

IFCO Recycling
Carretera Núm. 1Km. 32.2 (int)
Barrio Bairoa
Caguas
653-4300

Cartonera de PR
Carretera Núm. 167 Km. 24.3
Bayamón
787-0675

Smurfit Fibras Internacionales
Barrio Puerto Viejo
Playa de Ponce
Ponce
843-7145

Pronatura
Parque Industrial Luchetti
Calle C Lote 30
Bayamón
622-4252

Corporación Comunitaria Reciclaje del Norte, PT
Carretera Núm. 2 Km. 88.1
Hatillo
262-0305

Corporación Comunitaria Reciclaje del Norte, PT
División Península de Cantera
Calle Santa Elena 2425
Península de Cantera Bo. Obrero
San Juan
726-04446

GC Reciclaje, PT
Carretera Núm. 3 Km. 71..9
Punta Santiago
Humacao
852-9100

WR Recycling
Carretera 103 Km. 2.3 Barrio Bajura
Cabo Rojo
255-4772
538-1486

Multi Recycling Systems
Vater Industrial Park
Carolina
762-2740

Shred it
Calle Progreso Núm. 852
Esq. Perdón
Santurce
430-2030 / 994-2040

Periódico

Guaynabo Recycling
Carretera Núm. 1 Km. 21.7
Barrio Mamey
273-7639

Corporación Comunitaria Reciclaje del Norte, PT
Carretera Núm. 2 Km. 88.1
Hatillo
262-0305

Industrial Fibers, Corp (IFCO)
Carretera 872 Km. 1.3
Rio Plantation
Bayamón
653-4300

Corporación Comunitaria Reciclaje del Norte, PT
División Península de Cantera
Calle Santa Elena 2425
Península de Cantera Bo. Obrero
San Juan
726-04446

IFCO Recycling
Carretera Núm. 1Km. 32.2 (int)
Barrio Bairoa
Caguas
653-4300

GC Reciclaje, PT
Carretera Núm. 3 Km. 71..9
Punta Santiago
Humacao
852-9100

Cartonera de PR
Carretera Núm. 167 Km. 24.3
Bayamón
787-0675

WR Recycling
Carretera 103 Km. 2.3 Barrio Bajura
Cabo Rojo
255-4772
538-1486

Smurfit Fibras Internacionales
Barrio Puerto Viejo
Playa de Ponce
Ponce
843-7145

Multi Recycling Systems
Vater Industrial Park
Carolina
762-2740

Pronatura
Parque Industrial Luchetti
Calle C Lote 30
Bayamón
622-4252

Plástico

Ameriplast, Corp
(Instalación de reciclaje)
Cabo Caribe Ind. Park
Carretera 686 Km. 17.5
Vega Baja
858-1500

Plastic Home Products
Carretera Núm. 3 Km. 105.3
Maunabo
861-2220 / 340-0526

Ameriplast, Corp
Carretera Núm. 2 Antigua Central
Cambalache
Arecibo
858-1500

Jael Plastics
(Instalación de reciclaje)
Barrio Cerro Gordo Km 4.4
San Lorenzo
736-3433

WR Recycling
Carretera 103 Km. 2.3 Barrio Bajura
Cabo Rojo
255-4772
538-1486

Corporación Comunitaria Reciclaje del Norte, PT
División Península de Cantera
Calle Santa Elena 2425
Península de Cantera Bo. Obrero
San Juan
726-0446

Pronatura
Parque Industrial Luchetti
Calle C Lote 30
Bayamón
622-4252

Multi Recycling Systems
Vater Industrial Park
Carolina
762-2740

Guaynabo Recycling
Carretera Núm. 1 Km. 21.7
Barrio Mamey
273-7639

Corporación Comunitaria Reciclaje del Norte, PT
Carretera Núm. 2 Km. 88.1
Hatillo
262-0305

Plastex Corp.
Carretera Núm. 112 Km. 2.3
Parque Industrial Mora Guerrero
Isabela
272-8050 / 720-6527

GC Reciclaje, PT
Carretera Núm. 3 Km. 71..9
Punta Santiago
Humacao
852-9100

US Recycling
Carretera Núm. 3 Parque Industrial Palmas
Arroyo
485-7878

Las Marías Recycling
Carretera Núm. 119 Km. 19.2
Las Marías
827-3591

Multiplast Corp
Carretera Núm. 701 Km. 4
Salinas
824-4500

International Plastics Process
Carretera 5538 Urb. Industrial Felicia Final
Santa Isabel
646-4793

IFCO Recycling
Carretera Núm. 1Km. 32.2 (int)
Barrio Bairoa
Caguas
653-4300

Industrial Fibers, Corp (IFCO)
Carretera 872 Km. 1.3
Rio Plantation
Bayamón
653-4300

Residuos de Alimento (no procesados)

Asociación de Porcinocultores
(Instalación de reuso)
Carretera Núm. 375
Sector Javilla Bo. Quebradas
Yauco
649-2510

Residuos de Jardinería

Caribbean Composting
(Instalación de reciclaje)
Carretera 681 Km. 3.4 Islote II
Arecibo
(787)879-3156

Autoridad de Acueductos y
Alcantarillados Planta de Composta
(Instalación de reciclaje)
Carretera 342 Km. 0.5 Bo. Sabanetas
Mayagüez
(787) 834-7540

Agro Ambiente
(Instalación de reciclaje)
Carretera Núm. 10 Sector Los Caños
Barrio Tanamá
Arecibo
923-7517

Héctor Caro Wooden Pallets
Carretera 412 Km. 3
Rincón
823-2901

Nephesh Wood Recycling
Carretera Núm. 1 Km. 37.9
Barrio Bairoa
Caguas
961-2700/2701 /594-0691

Demolition Pallets
(Instalación de reciclaje)
Bo. Guavate Sector Los Nieves Carr. 184
763 Km. 8.1 Int.
Cayey
649-9727 / 258-1872

Bioreciclaje
(Instalación de reciclaje)
Carretera Núm. 2 Marginal Bo. Sabanetas
Antigua Central Igualdad
Mayagüez
464-9909

Composta Angelorum
(Instalación de reciclaje)
Villalba
(787) 461-0341

Vivero Hábitat
(Instalación de reciclaje)
Carretera Núm. 510 Km. 1.0
Barrio Sabana Llana
Juana Díaz
390-1862

Soil & Mulch
(Instalación de reciclaje)
Bo. Garrochales Carretera 682 Km. 4.1
Barceloneta
846-3398 / 346-3780

Vidrio

Guaynabo Recycling
Carretera Núm. 1 Km. 21.7
Barrio Mamey
273-7639

Industrial Fibers, Corp (IFCO)
Carretera 872 Km. 1.3
Rio Plantation
Bayamón
653-4300

IFCO Recycling
Carretera Núm. 1Km. 32.2 (int)
Barrio Bairoa
Caguas
653-4300

Corporación Comunitaria Reciclaje del Norte,
PT
Carretera Núm. 2 Km. 88.1
Hatillo
262-0305

Corporación Comunitaria Reciclaje del Norte,
PT
División Península de Cantera
Calle Santa Elena 2425
Península de Cantera Bo. Obrero
San Juan
726-04446

Comercial la Pino
(Instalación de uso de final)
Carretera Núm. 111 Km. 25
Barrio Piedras Blancas
San Sebastián
896-2075

Multi Recycling Systems
Vater Industrial Park
Carolina
762-2740

WR Recycling
Carretera 103 Km. 2.3 Barrio Bajura
Cabo Rojo
255-4772
538-1486

GC Reciclaje, PT
Carretera Núm. 3 Km. 71..9
Punta Santiago
Humacao
852-9100



Oficina de Desarrollo de Mercados e Industrias
(787) 765-7575 extensión 4150
mercados@ads.gobierno.pr

AUTORIDAD DE
DESPERDICIOS SÓLIDOS



Estado Libre Asociado de Puerto Rico



**PLAN DE REDUCCIÓN, REUTILIZACIÓN Y RECICLAJE
PARA PROYECTOS DE CONSTRUCCIÓN**

1. Identificación del Plan

- ☐ Primer Plan
☐ Revisión

2. Identifique la manera en la que presentará el Plan

- ☐ Plan Individual
☐ Plan Grupal

3. Información General

Nombre de la compañía	
Dirección física	
Dirección postal	
Teléfono	
Facsímil	
Correo Electrónico (E-mail)	
Página Cibernética (Web Site)	
Persona de mayor jerarquía	
Puesto de la persona de mayor jerarquía	
Cantidad de empleados	Tiempo regular _____ Tiempo parcial _____ Por contrato _____ Otros _____
Horario operacional	
Persona contacto (Encargada del Plan)	
Puesto de la persona contacto	
Teléfono de la persona contacto	
Facsímil de la persona contacto	

4. Ubicación de los Proyectos (Si aplica)

Pueblo	Dirección Física	Número de Empleados

5. Objetivos

1.	
2.	
3.	
4.	
5.	

6. Residuos de Construcción

Material ¹	Cantidad	Compañía de Recogido	Frecuencia de Recogido	Disposición/Mercado
Ej. hormigón	5 tons	Co. contratada	2 días consecutivos	Sitio que recibe

7. Residuos Sólidos Generados

Material	Cantidad	Compañía de Recogido	Frecuencia de Recogido	Lugar de Disposición
Ej. domésticos	300 lbs	Co. contratada	2 días/semana	Ubicación del SRS

¹ Otros ejemplos: asfalto, acero (varilla), aluminio (ventanas, puertas, etc.), material vegetativo

8. Residuos Especiales y Universales (Si aplica)

Material ²	Cantidad	Compañía de Recogido	Frecuencia de Recogido	Disposición/Mercado
Ej. neumáticos	160 lbs	Co. contratada	mensual	Sitio que recibe

9. Materiales Reciclables Recuperados

Material	Cantidad	Compañía de Recogido	Frecuencia de Recogido	Mercado
Papel	200 lbs	Co. Contratada	2 veces en semana	Sitio que recibe

10. Certificación de la persona encargada de completar el documento

Nombre	
Firma	
Fecha	

² Otros ejemplos: lámparas fluorescentes, baterías, termómetros, computadoras, lodos, placas, aceite de codinar, aceite usado, cartuchos de tinta, plaguicidas, solventes

11. Anejo-Carta de Compromiso

PARA USO DE ADS	
Técnico Evaluador	
Acción Recomendada	☐ Certificar ☐ No Certificar
Comentarios	
Firma	
Fecha	



**INFORME TRIMESTRAL DE REDUCCIÓN, REUTILIZACIÓN Y RECICLAJE
PARA PROYECTOS DE CONSTRUCCIÓN**

1. Año: _____

2. Trimestres

- ☐ enero-marzo
☐ abril-junio
☐ julio-septiembre
☐ octubre-diciembre

3. Información General

Nombre de la compañía	
Dirección física	
Dirección postal	
Teléfono	
Facsímil	
Correo Electrónico (E-mail)	
Página Cibernética (Web Site)	
Persona de mayor jerarquía	
Puesto de la persona de mayor jerarquía	
Cantidad de empleados	Tiempo regular _____ Tiempo parcial _____ Por contrato _____ Otros _____
Horario operacional	
Persona contacto (Encargada del Plan)	
Puesto de la persona contacto	
Teléfono de la persona contacto	
Facsímil de la persona contacto	

4. Residuos de Construcción

Material ¹	Cantidad	Compañía de Recogido	Frecuencia de Recogido	Disposición/Mercado
Ej. hormigón	5 tons	Co. contratada	2 días consecutivos	Sitio que recibe

5. Residuos Sólidos Generados

Material	Cantidad	Compañía de Recogido	Frecuencia de Recogido	Lugar de Disposición
Ej. domésticos	150 lbs	Co. contratada	2 día/semana	Ubicación del SRS

6. Residuos Especiales y Universales (Si aplica)

Material ²	Cantidad	Compañía de Recogido	Frecuencia de Recogido	Disposición/Mercado
Ej. neumáticos	80 lbs	Co. contratada	mensual	Sitio que recibe

7. Materiales Reciclables Recuperados

Material	Cantidad	Compañía de Recogido	Frecuencia de Recogido	Mercado
Papel				
Vidrio				
Plástico				
Residuo Orgánico				
Aluminio				
Otros				

¹ Otros ejemplos: asfalto, acero (varilla), aluminio (ventanas, puertas, etc.), material vegetativo

² Otros ejemplos: lámparas fluorescentes, baterías, computadoras, lodos, placas, termómetros, aceite de cocinar, aceite usado, cartuchos de tinta, plaguicidas, solventes

8. Total de Residuos Sólidos Generados en el Trimestre

Total ³	
--------------------	--

9. Certificación de la persona encargada de completar el documento⁴

Nombre	
Firma	
Fecha	

PARA USO DE ADS	
Técnico Evaluador	
Acción Recomendada	☐ Certificar ☐ No Certificar
Comentarios	
Firma	
Fecha	

³ Para completar este inciso sume las cantidades reportadas en los incisos 4, 5, 6 y 7.

⁴ Al firmar el Informe la persona encargada certifica bajo pena ley lo siguiente: "Este documento se preparó bajo mi dirección o supervisión a tenor con un sistema diseñado para garantizar que personal cualificado recopila y evalúa adecuadamente la información sometida. Según mis consultas con la persona o personas responsables de recopilar la información, ésta es, según mi mejor conocimiento y creencia verdadera, exacta y completa. Estoy consciente que personal de la Autoridad de Desperdicios Sólidos (ADS) podrá visitar las facilidades y solicitar las certificaciones de las compañías que se llevan los materiales reciclables y de que existen penalidades significativas por someter información falsa, incluyendo la posibilidad de multas por violaciones a sabiendas".

CARTA DE COMPROMISO

Yo, _____ (nombre), _____ (posición), a cargo del proyecto
_____ (nombre del proyecto), me comprometo a implantar las
estrategias de reducción de desperdicios sólidos no peligrosos, reuso de materiales y
recuperación de materiales reciclables el Plan de Reducción, Reutilización y Reciclaje para el
Proyecto de Construcción que acompaña esta carta de compromiso. El predio donde se construirá
el proyecto _____ (nombre del proyecto) está ubicado en
_____ (dirección), _____
(municipio).

Para que así conste, firmo este documento el _____ de _____ de _____.

Contratista del Proyecto

() _____



GOBIERNO DE PUERTO RICO
OFICINA DEL GOBERNADOR
JUNTA DE CALIDAD AMBIENTAL

Área de Calidad de Agua



Oficina de Gerencia de Permisos

Forma PGC-012

MANIFIESTO PARA UNA ACTIVIDAD GENERADORA

1. Proyecto:	2. Localización Física:
3. Dueño, Representante Autorizado u Operador:	5. Dirección Postal:
4. Teléfono:	8. Tipo de Desperdicios:
6. Número de Permiso General:	9: Cantidad en yds' :
7. Fecha de Expiración:	12. Fecha de Expiración:
10. Transportador:	13. Número de Tabilla:
11. Número de Permiso:	

Certificación de Entrega: Declaro bajo pena de perjurio que la información suministrada ha sido examinada, y la misma, a mi mejor entendimiento, es verdadera, precisa y completa.

Firma Original

Dueño, Representante Autorizado u Operador

Fecha

14. Instalación de Disposición Final:	15. Permiso JCA:
16. Teléfono:	18. Dirección Postal:
17. Localización Física:	20. Puesto que Ocupa:
19. Recibido por:	

Certificación de Recibo: Declaro bajo pena de perjurio que la información suministrada ha sido examinada, y la misma, a mi mejor entendimiento, es verdadera, precisa y completa.

Firma

Fecha

INSTRUCCIONES

Este documento debe acompañar cada cargamento de desperdicios producidos durante la actividad generadora hasta su disposición final, según lo dispone la Regla 644, Inciso D (7) del Reglamento para el Manejo de los Desperdicios Sólidos No Peligrosos de la JCA.

1. El **Generador** origina el manifiesto, completando **todos** los encasillados correspondientes, firmará certificando que la información es correcta y entregará el manifiesto con la carga al Transportador.
2. El **Transportador** llevará la carga hasta la instalación de disposición final, donde entregará el manifiesto y la carga.
3. El encargado de la **Instalación de Disposición Final** recibe la carga, completa los encasillados correspondientes, firmará certificando haber recibido el cargamento y devolverá el manifiesto al Transportador.
4. El **Transportador** devolverá al Generador el manifiesto firmado como evidencia de haber depositado la carga.
5. El **Generador** mantendrá en el proyecto un registro de todos los manifiestos generados durante el desarrollo de la obra. Al **culminar el proyecto se entregará el original de este registro a la JCA para cerrar el expediente del caso.**

Original--JCA

Copia--Generador

Para cualquier duda sobre este documento, puede comunicarse con cualquiera de las oficinas de la JCA:

Humacao	Ponce	Arecibo	Mayaguez	Guayama
285-2818	840-4070	880-0013	833-1188	864-0103

Área Metro
767-8181

Dirección Física: Ave. Ponce de León 1308, Carr. Estatal 8838, Sector el Cinco, Río Piedras, PR 00926
Dirección Postal: Apartado 11488, Santurce, PR 00910-1488
Tel. (787)-767-8181 • Fax (787)-767-8118



SECTION 01 77 00
CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Substantial Completion procedures.
 - 2. Final completion procedures.
 - 3. Final cleaning.
 - 4. Repair of the Work.

1.2 RELATED SECTIONS

- A. Section 01 50 00 – Temporary Facilities and Controls
- B. Section 01 73 00 – Execution: For progress cleaning of Project site.
- C. Section 01 74 19 – Construction Waste Management and Disposal
- D. Section 01 78 39 – Project Record Documents: For submitting record Drawings, record Specifications, and record Product Data.

1.3 ACTION SUBMITTALS

- A. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
- B. Certified List of Incomplete Items: Final submittal at Final Completion.

1.4 CLOSEOUT SUBMITTALS

- A. Certificate of Insurance: For continuing coverage.

1.5 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.
- B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 calendar days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
 - 1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.

2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, final completion construction photographic documentation, and similar final record information.
 3. Submit test records.
- C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 calendar days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
1. Advise Owner of pending insurance changeover requirements.
 2. Participate with Owner in conducting inspection and walkthrough.
 3. Terminate and remove temporary facilities from Project site, along with construction tools, and similar elements.
 4. Complete final cleaning requirements.
 5. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 calendar days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect-Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect-Engineer will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect-Engineer's, that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
 2. Results of completed inspection will form the basis of requirements for final completion.

1.6 FINAL COMPLETION PROCEDURES

- A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:
1. Submit a final Application for Payment according to Section 01 20 00 – Payment Procedures.
 2. Certified List of Incomplete Items: Submit certified copy of Architect-Engineer's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect-Engineer. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
- B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect-Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect-Engineer will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.7 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
 1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
 2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
 3. Include the following information at the top of each page:
 - a. Project name.
 - b. Date.
 - c. Name of Architect-Engineer.
 - d. Name of Contractor.
 - e. Page number.
 4. Submit list of incomplete items in the following format:
 - a. Electronic file format (Word, etc.): Architect-Engineer will return annotated file, or
 - b. PDF electronic file format: Architect-Engineer will return annotated file.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers for final cleaning.
 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
 - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.

- c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - e. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
 - f. Leave Project site clean.
- C. Construction Waste Disposal: Comply with waste disposal requirements in Section 01 74 19 – Construction Waste Management and Disposal.

3.2 REPAIR OF THE WORK

- A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.
 - B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces and touching up with matching materials. Where damaged or worn items cannot be repaired or restored, provide replacements. Restore damaged construction and permanent facilities used during construction to specified condition.
- 1. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that already show evidence of repair or restoration.

END OF SECTION

SECTION 01 78 39
PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Section includes administrative and procedural requirements for project record documents, including the following:

1. Record Drawings.

1.2 RELATED SECTIONS

- A. Section 01 33 00 – Submittal Procedures
B. Section 01 73 00 – Execution.

1.3 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:

1. Number of Copies: Submit one set(s) of marked-up record prints.
 - a. Initial Submittal:
 - 1) Submit one (1) copy of marked-up record prints.
 - 2) Architect-Engineer will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.
 - b. Final Submittal:
 - 1) Submit one (1) copy of marked-up record prints.
 - 2) Print each drawing, whether or not changes and additional information were recorded.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.

1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Accurately record information in an acceptable drawing technique.
 - c. Record data as soon as possible after obtaining it.

- d. Record and check the markup before enclosing concealed installations.
- e. Cross-reference record prints to corresponding archive photographic documentation.
- 2. Content: Types of items requiring marking include, but are not limited to, the following:
 - a. Dimensional changes to Drawings.
 - b. Revisions to details shown on Drawings.
 - c. Depths of demolition and excavations.
 - d. Locations and depths of underground utilities.
 - e. Revisions to routing of piping and conduits.
 - f. Revisions to electrical feeders' location.
 - g. Locations of concealed internal utilities.
 - h. Changes made by Change Order or Construction Change Directive.
 - i. Changes made following Architect-Engineer's written orders.
 - j. Details not on the original Contract Drawings.
 - k. Field records for variable and concealed conditions.
 - l. Record information on the Work that is shown only schematically.
- 3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
- 4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
- 5. Mark important additional information that was either shown schematically or omitted from original Drawings.
- 6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
 - 1. Record Prints: Organize record prints into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
 - 2. Format: Annotated PDF electronic file with comment function enabled.
 - 3. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
 - 4. Identification: As follows:
 - a. Project name.

- b. Date.
- c. Designation "PROJECT RECORD DRAWINGS."
- d. Name of Architect-Engineer.
- e. Name of Contractor.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.
- B. Maintenance of Record Documents and Samples: Store record documents and Samples in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Architect-Engineer's reference during normal working hours.

END OF SECTION

SECTION 02 41 13
SELECTIVE SITE DEMOLITION

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Examination of areas where demolition work will occur.
- B. Preparation of demolition areas.
- C. General demolition requirements.
- D. Protection.
- E. Dust and debris control.
- F. Fire protection measures.
- G. General demolition requirements.
- H. Specific selective site demolition procedures.
- I. Patching.
- J. Disposition of demolished material.
- K. Clean up of areas.

1.2 RELATED SECTIONS

- A. Division 01 - General Requirements.
- B. Document 01 10 00 - Summary of Work.
- C. Section 01 74 19 - Construction Waste Management.
- D. Section 02 41 16 - Structure Demolition.
- E. Section 02 82 00 - Asbestos Remediation.

1.3 REFERENCES

- A. ANSI A10.6 - Safety Requirements for Demolition Operations.
- B. NFPA 241 – Safeguarding Construction Alteration, and Demolition Operations.
- C. NFPA 5000 – Building Construction and Safety Code.
- D. OSHA 29 CFR 1926 - Construction Industry Subpart T: Demolition.

1.4 DEFINITIONS

- A. Refer to Specification 02 41 16 - Structure Demolition.

1.5 SUBMITTALS

- A. Refer to Specification 02 41 16 - Structure Demolition.

1.6 QUALITY ASSURANCE

- A. Refer to Specification 02 41 16 - Structure Demolition.

1.7 PREDEMOLITION CONFERENCE

- A. Refer to Specification 02 41 16 - Structure Demolition.

1.8 WORK RESTRICTIONS

- A. Refer to Work Restrictions paragraph in Document 01 10 00 - Summary of Work.

1.9 JOB CONDITIONS

- A. Refer to Specification 02 41 16 - Structure Demolition.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Section 01 31 00 – Project Management and Coordination.
- B. Verify that utilities have been disconnected and capped.
- C. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- D. Inventory and record the conditions of items to be removed and reinstalled.
- E. When unanticipated mechanical, electrical or structural elements that conflict with intended function or design area encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect-Engineer.
- F. Survey of Existing Conditions: Record existing conditions by use of measured drawings, preconstruction photographs or videotapes.
- G. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems: Maintain services/systems indicated to remain and protect them against damage during demolition operations.
- B. Service/System Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/ electrical systems serving areas to be demolished.
 - 1. Owner or its authorized representative will arrange to shut off indicated services/systems when requested by Contractor.
 - 2. If services/systems are required to be removed, relocated, or abandoned, before proceeding with demolition provide temporary services/systems that bypass area of demolition and that maintains continuity of services/systems to other parts of building.

3.3 PREPARATION

- A. Provide, erect, and maintain temporary barriers and security devices.
- B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent facilities to remain.
 - 1. Provide protection to ensure safe passage of people around selective demolition areas and to and from occupied portions of building.
- C. Protect existing landscaping materials, appurtenances and structures which are not to be demolished.
- D. Mark location of utilities.

3.4 PROTECTION

- A. Traffic Control Signs: Where pedestrian and driver safety is endangered in the area of removal work, use traffic barricades with flashing lights. Notify Owner's On Site Representative prior to beginning work.
- B. Existing Work: Protect existing work which is to remain in place, be reused, or remain the property of the Owner. Repair items which are to remain and which are damaged during performance of the work to their original condition, or replace with new. Do not overload structural elements. Provide new supports and reinforcement for existing construction weakened by demolition or removal work. Repairs, reinforcement or structural replacement shall have Owner's approval.
- C. Facilities: Protect electrical and mechanical services and utilities. Where removal of existing utilities and pavement is specified or indicated, provide approved barricades, temporary covering of exposed areas, and temporary services or connections for electrical and mechanical utilities.

3.5 DUST AND DEBRIS CONTROL

- A. Prevent the spread of dust and debris to surrounding areas and avoid the creation of a nuisance or hazard in the surrounding area.
- B. Do not use water if it results in hazardous or objectionable conditions such as, but not limited to, flooding or pollution.
- C. Clean the work area daily. The Owner reserves the right to cleanup any condition that in the Owner's On Site Representative's judgment is detrimental to the Owner and shall charge the cleanup expense to the amount due to the Contractor.

3.6 FIRE PROTECTION DURING DEMOLITION PHASE

- A. Wherever a cutting torch or other equipment that might cause a fire is used, provide and maintain fire extinguishers nearby ready for immediate use. All possible users shall be instructed in use of fire extinguishers.
- B. Hydrants shall be accessible at all times. No debris shall be permitted to accumulate within a radius of 20 feet of fire hydrants.
- C. An overall demolition fire safety program shall be developed by Contractor. Essential items to be included but not limited to:
 - 1. Good housekeeping.
 - 2. On-site security.

3. Installation of fire protection systems.
4. Preservation of existing systems during demolition.
5. Organization and training of an on-site fire brigade.
6. A pre-fire plan developed with the Owner.
7. Protection of existing structures and equipment from exposure to fire resulting from alternation and demolition operations.

3.7 DEMOLITION – GENERAL REQUIREMENTS

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
 1. Proceed with selective demolition systematically, from higher to lower level.
 2. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.
 3. Maintain adequate ventilation when using cutting torches.
 4. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
 5. Dispose of demolished items and materials promptly.
 6. Return elements of construction and surfaces that are to remain to condition existing before selective demolition operations began.
 7. Disconnect and cap designated utilities within demolition areas.
 8. Backfill areas excavated open pits and holes caused as a result of demolition.
 9. Rough grade and compact areas affected by demolition to maintain site grades and contours.
 10. Do not burn or bury materials on site. Leave site in clean condition.
- B. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect-Engineer, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.8 SPECIFIC SITE DEMOLITION PROCEDURES

- A. Asphalt Paving: Remove ground, scarified, or sawcut asphalt paving (surface and base courses) including aggregate base course down to bare substrate. Provide neat sawcut at limits of asphalt paving removal as indicated.
- B. Portland Cement Concrete Paving: Remove ground, scarified, or sawcut Portland cement concrete paving including aggregate base course down to bare substrate. Provide neat sawcuts at limits of Portland cement concrete paving as indicated.
- C. Sidewalks: Remove ground, scarified, or sawcut concrete sidewalks including crushed stone base down to bare substrate. Provide neat sawcuts at limits of concrete sidewalks as indicated.

- D. Curb: Sawcut concrete at ends of demolition section and remove segment of curb down to bare substrate. Provide neat sawcuts at limits of curb removal as indicated.
- E. Curb and Gutters: Sawcut concrete at ends of demolition sections and remove segment of curb and gutter down to bare substrate. Provide neat sawcuts at limits of curb and gutter removal as indicated.
- F. Concrete: Sawcut concrete along straight lines to a depth of not less than 2 inches. Make each cut in walls perpendicular to the face and in alignment with the cut in the opposite face. Break the remaining concrete provided that the broken area is concealed in the finished work, and the remaining concrete is sound. At locations where the broken face cannot be concealed, grind smooth or saw cut entirely through the concrete.
- G. Concrete Slab on Grade: Saw cut perimeter of area to be demolished, then break up and remove.
- H. Chain Link Fence: Remove entire or partial sections of chain link fence including foundation posts and gates.
- I. Utilities and Related Equipment: Remove existing utilities as indicated and terminate in a manner conforming to the nationally recognized code covering the specific utility and approved by the Owner's On Site Representative. Remove meters and related equipment and deliver to a location within Plant Premises in accordance with the instructions of the Owner's On Site Representative. If utility lines are encountered that are not shown on drawings, contact the Owner's On Site Representative for further instructions.

3.9 PATCHING

- A. Where removals leave holes and damaged surfaces exposed in the finished work, patch and repair these holes and damaged surfaces to match adjacent finished surfaces.
- B. Where new work is to be applied to existing surfaces, perform removals and patching in a manner to produce surfaces suitable for receiving new work.
- C. Finished surfaces of patched area shall be flush with the adjacent existing surface and shall match the existing adjacent surface as closely as possible as to texture and finish.

3.10 DISPOSITION OF DEMOLISHED MATERIALS

- A. General: Except for items or materials to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EQB (Environmental Quality Board) / DRNA approved landfill.
- B. Do not allow demolished materials to accumulate on-site.
- C. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- D. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
- E. Burning: Do not burn demolished materials.
- F. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.11 CLEANUP

- A. Remove and transport debris and rubbish in a manner that will prevent spillage on pavements, streets or adjacent areas.
- B. Clean up spillage from pavements, streets and adjacent areas.

- C. Return adjacent areas to condition existing before demolition operations began.

END OF SECTION

SECTION 02 41 16
STRUCTURE DEMOLITION

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Examination of items to be demolished
- B. Preparation
- C. Protection
- D. General Requirements of demolition work
- E. Demolition by mechanical means
- F. Site restoration
- G. Repairs
- H. Disposal of demolish materials
- I. Cleaning

1.2 RELATED SECTIONS

- A. Division 1 Sections – General Requirements.
- B. Document 01 10 00 - Summary of Work.
- C. Section 01 32 33 - Photographic Documentation.
- D. Section 01 74 19 - Construction Waste Management.
- E. Section 02 41 13 - Selective Site Demolition: For partial demolition of site improvements.
- F. Section 02 82 00 - Asbestos Remediation.

1.3 REFERENCES

- A. ANSI/ASSE A10.6 – Safety Requirements for Demolition Operations
- B. 40 CFR 82 – Protection of Stratospheric Ozone
- C. NFPA 241 – Safeguarding Construction, Alteration, and Demolition Operations
- D. NFPA 5000 – Building Construction and Safety Code
- E. National Association of Demolition Contractors – Demolition Safety Manual
- F. OSHA 29 CFR 1926 – Construction Industry Subpart T: Demolition

1.4 DEFINITIONS

- A. Demolition: The process of wrecking or taking out any load-supporting structural member of a facility together with any related handling and disposal operations.

- B. Demolition Plan: The planned steps and processes for managing demolition activities and identifying the required sequencing activities and disposal mechanisms. Plan shall be approved by Owner's Representative prior to work beginning. Prepare a Demolition Plan and submit proposed salvage, demolition, and removal procedures for approval before work is started.
- C. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged.
- D. Remove and Salvage: Carefully detach from existing construction, in a manner to prevent damage, and deliver to Owner ready for reuse. Include fasteners or brackets needed for reattachment elsewhere.

1.5 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor and shall be removed from Owner's property.
- B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.
 - 1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.6 INFORMATIONAL SUBMITTALS

- A. Section 01 33 00 – Submittal Procedures
- B. Qualification Data: Submit qualification data of demolition firm and for qualified refrigerant recovery technician.
- C. Proposed Protection Measures: Submit informational report, including Drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control and for noise control.
 - 1. Shop Drawings: Indicate location and construction of barricades, fences, and temporary work.
 - 2. Adjacent Buildings: Detail special measures proposed to protect adjacent buildings to remain including means of egress from those buildings.
- D. Demolition Plan: Indicate the following:
 - 1. Detailed sequence of demolition work, with starting and ending dates for each activity, including procedures for careful removal and disposition of materials specified to be salvaged.
 - 2. Coordination with other work in progress, including temporary interruption of utility services.
 - 3. Procedures and work restrictions to mitigate dust, noise, vibration, and odors that may impact neighbors. Submit statement or drawing that indicates the measures proposed for use, proposed locations, and proposed time frame for their operation. Identify options if proposed measures are later determined to be inadequate.
 - 4. A disconnection schedule of utility services indicating shutoff and capping or re-routing of utility services.
 - 5. A detailed description of methods and equipment to be used for each operation and of the sequence of operations.
 - 6. Identification of components and materials to be salvaged for reuse or recycling.

7. Append tracking forms for all removed materials indicating type, quantities, condition, destination, and end use. Coordinate Demolition Plan with Waste Management Plan in accordance with Section 01 74 19 - Construction Waste Management.
- E. Inventory: Submit a list of items to be removed and salvaged and deliver to Owner prior to start of demolition.
- F. Predemolition Photographs or Video: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by demolition operations. Comply with Section 01 32 33 - Photographic Documentation. Submit before the Work begins.
- G. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.
- H. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

1.7 QUALITY ASSURANCE

- A. Section 01 40 00 – Quality Requirements
- B. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.
- C. Regulatory Requirements: Comply with governing EPA notification regulations before beginning demolition. Comply with hauling and disposal regulations of Authorities Having Jurisdiction (AHJ).
- D. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

1.8 PREDEMOLITION CONFERENCE

- A. Predemolition Conference: Conduct conference at Project site to comply with contractual requirements. Review methods and procedures related to demolition including, but not limited to, the following:
 1. Inspect and discuss condition of construction to be demolished.
 2. Review structural load limitations of existing structures.
 3. Review and finalize building demolition schedule and verify availability of demolition personnel, equipment, and facilities needed to make progress and avoid delays.
 4. Review and finalize protection requirements.
 5. Review procedures for noise control and dust control.
 6. Review procedures for protection of adjacent buildings, roads, and fences.
 7. Review items to be salvaged and returned to Owner (if any).

1.9 WORK RESTRICTIONS

- A. Refer to Work Restrictions paragraph in Document 01 10 00 - Summary of Work.

1.10 PROJECT CONDITIONS

- A. Section 01 73 00 – Execution and Closeout Requirements

- B. Buildings to be demolished will be vacated and their use discontinued before start of the Work.
 - C. Buildings immediately adjacent to demolition area will be occupied. Conduct building demolition so operations of occupied buildings will not be disrupted.
 - 1. Provide not less than 72 hours' notice of activities that will affect operations of adjacent occupied buildings.
 - 2. Maintain access to existing walkways, exits, and other facilities used by occupants of adjacent buildings.
 - a. Do not close or obstruct walkways, exits, or other facilities used by occupants of adjacent buildings without written permission from authorities having jurisdiction.
 - D. Owner assumes no responsibility for buildings and structures to be demolished.
 - 1. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
 - E. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
 - 1. Hazardous materials will be removed by Owner before start of the Work.
 - 2. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.
 - F. Hazardous Materials: Hazardous materials are present in buildings and structures to be demolished. A report on the presence of hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present.
 - 1. Hazardous material remediation is specified elsewhere in the Contract Documents.
 - 2. Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified elsewhere in the Contract Documents.
 - G. On-site storage or sale of removed items or materials is not permitted.
- 1.11 COORDINATION**
- A. Arrange demolition schedule so as not to interfere with Owner's on-site operations or operations of adjacent occupied buildings.

PART 2 - PRODUCTS

2.1 MATERIALS - SOIL

- A. Satisfactory Soils: Comply with requirements in Section 31 20 00 - Earth Moving.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting demolition operations.
- B. Review Project Record Documents of existing construction provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.

- C. Inventory and record the condition of items to be removed and salvaged. Provide photographs or video of conditions that might be misconstrued as damage caused by salvage operations. Comply with Section 01 32 33 - Photographic Documentation.
- D. Perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during building demolition operations.
- E. Verify that hazardous materials have been remediated before proceeding with building demolition operations.
- F. Inventory and record the condition of items to be removed and salvaged.

3.2 PREPARATION

- A. Refrigerant: Remove refrigerant from mechanical equipment according to 40 CFR 82 and regulations of authorities having jurisdiction before starting demolition.
- B. Existing Utilities: Locate, identify, disconnect, and seal or cap off indicated utilities serving buildings and structures to be demolished.
 - 1. Arrange to shut off indicated utilities with utility companies.
 - 2. If removal, relocation, or abandonment of utility services will affect adjacent occupied buildings, then provide temporary utilities that bypass buildings and structures to be demolished and that maintain continuity of service to other buildings and structures.
 - 3. Cut off pipe or conduit a minimum of 24 inches below grade. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing according to requirements of authorities having jurisdiction.
- C. Existing Utilities: See plumbing and electrical Sections for shutting off, disconnecting, removing, and sealing or capping utilities. Do not start demolition work until utility disconnecting and sealing have been completed and verified in writing.
- D. Temporary Shoring: Provide and maintain interior and exterior shoring, bracing, or structural support to preserve stability and prevent unexpected movement or collapse of construction being demolished.
 - 1. Strengthen or add new supports when required during progress of demolition.
- E. Salvaged Items: Comply with the following:
 - 1. Clean salvaged items of dirt and demolition debris.
 - 2. Pack or crate items after cleaning Identify contents of containers.
 - 3. Store items in a secure area until delivery to Owner.
 - 4. Transport items to storage area designated by Owner.
 - 5. Protect items from damage during transport and storage.

3.3 PROTECTION

- A. Existing Facilities: Protect adjacent walkways, loading docks, building entries, and other building facilities during demolition operations. Maintain exits from existing buildings.

- B. Temporary Shoring: Provide and maintain interior and exterior shoring, bracing, or structural support to preserve stability and prevent unexpected movement or collapse of construction being demolished.
 - 1. Strengthen or add new supports when required during progress of demolition.
- C. Existing Utilities: Maintain utility services to remain and protect from damage during demolition operations.
 - 1. Do not interrupt existing utilities serving adjacent occupied or operating facilities unless authorized in writing by Owner and authorities having jurisdiction.
 - 2. Provide temporary services during interruptions to existing utilities, as acceptable to Owner and authorities having jurisdiction.
 - a. Provide at least 72 hours' notice to occupants of affected buildings if shutdown of service is required during changeover.
- D. Temporary Protection: Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction and as indicated. Comply with requirements in Section 01 50 00 - Temporary Facilities and Controls.
 - 1. Protect adjacent buildings and facilities from damage due to demolition activities.
 - 2. Protect existing site improvements, appurtenances, and landscaping to remain.
 - 3. Erect a plainly visible fence around drip line of individual trees or around perimeter drip line of groups of trees to remain.
 - 4. Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
 - 5. Provide protection to ensure safe passage of people around building demolition area and to and from occupied portions of adjacent buildings and structures.
 - 6. Protect walls, windows, roofs, and other adjacent exterior construction that are to remain and that are exposed to building demolition operations.
 - 7. Erect and maintain dustproof partitions and temporary enclosures to limit dust, noise, and dirt migration to occupied portions of adjacent buildings.
- E. Remove temporary barriers and protections where hazards no longer exist. Where open excavations or other hazardous conditions remain, leave temporary barriers and protections in place.

3.4 DEMOLITION, GENERAL

- A. General: Demolish indicated buildings and site improvements completely, as indicated on Drawings, Specifications and Demolition Plan.
- B. Use methods required to complete the Work within limitations of governing regulations and as follows:
 - 1. Do not use cutting torches until work area is cleared of flammable materials. Maintain portable fire-suppression devices during flame-cutting operations.
 - 2. Maintain fire watch during and for at least two (2) hours after flame cutting operations.
 - 3. Maintain adequate ventilation when using cutting torches.

4. Locate building demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
- C. Engineering Surveys: During demolition, perform surveys to detect hazards that may result from building demolition activities.
- D. Site Access and Temporary Controls: Conduct building demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 1. Do not close or obstruct streets, walks, walkways, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.
 2. Use water mist and other suitable methods to limit spread of dust and dirt. Comply with governing environmental-protection regulations. Do not use water when it may damage adjacent construction or create hazardous or objectionable conditions, such as flooding, and pollution.



- E. Explosives: Use of explosives is not permitted.

3.5 DEMOLITION BY MECHANICAL MEANS

- A. Proceed with demolition of structural framing members systematically, from higher to lower level. Complete building demolition operations above each floor or tier before disturbing supporting members on the next lower level.
- B. Remove debris from elevated portions of the building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
 1. Remove structural framing members and lower to ground by method suitable to minimize ground impact and dust generation.
- C. Salvage: Items to be removed and salvaged are indicated on Drawings (if any).
- D. Remove existing structures indicated to be removed to below grade level:
 1. Below-Grade Construction: Demolish foundations and other below-grade construction that are within footprint of existing construction and extending 5 feet outside footprint indicated. Abandon and cap below-grade construction outside this area.
 - a. Remove below-grade construction, including basements, foundation walls, and footings, completely to at least 4-feet below grade.

- b. Fill below-grade construction voids flush with grade as per Section 31 20 00 - Earth Moving.
- E. Existing Utilities: Abandon and cap existing utilities and below-grade utility structures. Cut utilities flush with grade. Cap with same materials and size as the existing utility.
- F. Existing Utilities: Demolish existing utilities and below-grade utility structures that are within 5 feet outside footprint indicated for new construction. Abandon utilities outside this area.
 - 1. Fill abandoned utility structures with satisfactory soil materials according to backfill requirements in Section 31 20 00 - Earth Moving.
 - 2. Piping: Disconnect piping at unions, flanges, valves, or fittings.
 - 3. Wiring Ducts: Disassemble into unit lengths and remove plug-in and disconnecting devices.
- G. Existing Utilities: Demolish and remove existing utilities and below-grade utility structures.
 - 1. Piping: Disconnect piping at unions, flanges, valves, or fittings.
 - 2. Wiring Ducts: Disassemble into unit lengths and remove plug-in and disconnecting devices.

3.6 SITE RESTORATION

- A. Do not begin excavation, filling, and other earth-moving operations that are sequential to demolition in areas occupied by structures to be demolished until all demolition in the area has been completed and debris removed. Fill holes, open basements and other hazardous openings.
 - 1. Below-Grade Areas: Completely fill below-grade areas and voids resulting from building demolition operations with satisfactory soil materials according to backfill requirements in Section 31 20 00 - Earth Moving.
- B. Site Grading: Uniformly rough grade area of demolished construction to a smooth surface, free from irregular surface changes. Provide a smooth transition between adjacent existing grades and new grades.

3.7 REPAIRS

- A. Promptly repair damage to adjacent buildings caused by demolition operations.

3.8 DISPOSAL OF DEMOLISHED MATERIALS

- A. Remove demolition waste materials from Project site and legally dispose of them in an EPA-approved landfill acceptable to Authorities Having Jurisdiction (AHJ).
 - 1. Do not allow demolished materials to accumulate on-site.
 - 2. Remove and transport the debris in a manner that prevents spillage on streets or adjacent areas. Apply local regulations regarding hauling and disposal.
- B. See Section 01 74 19 -Construction Waste Management and Disposal for recycling of demolition waste.
- C. Showing for sale or selling materials and equipment on site is prohibited.
- D. Do not burn demolished materials.

3.9 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by building demolition operations. Return adjacent areas to condition existing before building demolition operations began.
 - 1. Clean roadways of debris caused by debris transport.

END OF SECTION

SECTION 02 82 00

ASBESTOS REMEDIATION

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Equipment.
- B. Work Procedure.
- C. Clean-up and disposal.

1.2 REFERENCES

A. ANSI

- 1. Z9.2 - Fundamentals Governing the Design and Operation of Local Exhaust Systems
- 2. Z88.2 - Respiratory Protection

B. ASTM

- 1. ASTM C 732 - Aging Effects of Artificial Weathering on Latex Sealants
- 2. ASTM D 522 - Mandrel Bend Test of Attached Organic Coatings
- 3. ASTM D1331 - Surface and Interfacial Tension of Solutions of Surface-Active Agents
- 4. ASTM D2794 - Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)
- 5. ASTM E84 - Surface Burning Characteristics of Building Materials
- 6. ASTM E96 - Water Vapor Transmission of Materials
- 7. ASTM E119 - Fire Tests of Building Construction and Materials
- 8. ASTM E736 - Cohesion/Adhesion of Sprayed Fire-Resistive Materials Applied to Structural Members

C. CFR

- 1. 29 CFR 1910.134 - Respiratory Protection
- 2. 29 CFR 1910.141 - Sanitation
- 3. 29 CFR 1910.145 - Accident Prevention Signs and Tags
- 4. 29 CFR 1910.1200 - Hazard Communication
- 5. 29 CFR 1926.58 - Asbestos, Tremolite, Anthophyllite, and Actinolite
- 6. 40 CFR 61-SUBPART A - General Provisions
- 7. 40 CFR 61-SUBPART M - National Emission Standard for Asbestos
- 8. 40 CFR 763-SUBPART F - Friable Asbestos-Containing Materials in Schools

D. EPA

1. EPA 560/5-85-024 - Guidance for Controlling Asbestos Containing Materials in Buildings

E. UL

1. UL 586 - High-Efficiency, Particulate, Air Filter Units

F. Report

1. Section 00 31 21 - Existing Condition Information.
2. CMA Architects & Engineers LLC: Asbestos Containing Materials Inspection Report. Prepared for: Departamento de Salud – Monacillo Urbano, San Juan PR, September, 2019.

1.3 DEFINITIONS

- A. Action Level: An airborne concentration of asbestos fibers, in the breathing zone of a worker equaling 0.1 fibers per cubic centimeter of air calculated as an 8-hour time weighted average.
- B. Amended Water: Water containing a wetting agent or surfactant with a surface tension of 29 dynes per square centimeter when tested in accordance with ASTM D1331.
- C. Area Sampling: Sampling of asbestos fiber concentrations within the asbestos control area and outside the asbestos control area which approximates the concentrations of asbestos in the theoretical breathing zone but is not actually collected in the breathing zone of an employee.
- D. Asbestos: The term asbestos includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite and any of these minerals that has been chemically treated or altered. Materials are considered to contain asbestos if the asbestos content is at least one percent of the material by area.
- E. Asbestos Control Area: That area where asbestos removal operations are performed which is isolated by physical boundaries which assist in the prevention of the uncontrolled release of asbestos dust, fibers, or debris. Two examples of an asbestos control area are: a full containment and a "glovebag."
- F. Asbestos Fibers: Those fibers having an aspect ratio of at least 3:1 and longer than 5 micrometers as determined by National Institute for Occupational Safety and Health (NIOSH) Method 7400.
- G. Asbestos Permissible Exposure Limit: 0.2 fibers per cubic centimeter of air as an 8-hour time weighted average as defined by 29 CFR 1926.58 or other federal legislation having legal jurisdiction for the protection of workers health.
- H. Background: Normal airborne asbestos concentration in an area similar to the asbestos abatement area but in an uncontaminated (with asbestos) state.
- I. Contractor: The Contractor is that individual, or entity under contract to the Navy to perform the herein listed work.
- J. Encapsulants: Specific materials in various forms used to chemically entrap asbestos fibers in various configurations to prevent these fibers from becoming airborne. There are four types of encapsulants as follows which must comply with performance requirements as specified herein.
 1. Removal Encapsulant (can be used as a wetting agent).
 2. Bridging Encapsulant (used to provide a touch, durable surface coating to asbestos containing material)
 3. Penetrating Encapsulant (used to penetrate the asbestos containing material down to substrate, encapsulating all asbestos fibers)

- 4. Lock-Down Encapsulant (used to seal off or "lock-down" minute asbestos fibers left on surfaces from which asbestos containing material has been removed)
- K. Friable Asbestos Material: Material that contains more than one percent asbestos by area and that can be crumbled, pulverized, or reduced to powder by hand pressure when dry.
- L. Glovebag Technique: Those asbestos removal and control techniques put forth in 29 CFR 1926.58 Appendix G, III-A, B, C, D and Figure G-1.
- M. HEPA Filter Equipment: High efficiency particulate air (HEPA) filtered vacuum and/or exhaust ventilation equipment with a filter system capable of collecting and retaining asbestos fibers. Filters shall retain 99.97 percent of particles 0.3 microns or larger as indicated in UL 586.
- N. Nonfriable Asbestos Material: Material that contains asbestos in which the fibers have been temporarily locked in by a bonding agent, coating, binder, or other material so that the asbestos is well bound and may not release fibers during any appropriate use, handling, storage or transportation. It is understood that asbestos fibers will be released under other conditions such as demolition or removal.
- O. Personal Sampling: Air sampling to determine asbestos fiber concentrations within the breathing zone of a specific employee, performed in accordance with 29 CFR 1926.58.
- P. Private Industrial Hygienist (PIH): That industrial hygienist hired by the Contractor to perform the herein listed industrial hygiene tasks. In some instances, the PIH can perform this role vicariously through a trained subordinate, but only with the specific consent of the Contracting Officer.
- Q. TEM: Refers to Transmission Electron Microscopy
- R. Time Weighted Average (TWA): The TWA is an 8-hour time weighted average airborne concentration of asbestos fibers. At least three full shift samples per person are required to establish that person's TWA exposure.
- S. Wetting Agent: That specific agent used to reduce airborne asbestos levels by physically bonding asbestos fibers to material to be removed. An equivalent wetting agent must have a surface tension of at least 29 dynes per square centimeter as tested in accordance with ASTM D1331.

1.4 REQUIREMENTS

- A. Description of Work: The work covered by this section includes the handling of asbestos containing materials which are encountered during repair, construction and demolition projects and describes some of the resultant procedures and equipment required to protect workers and occupants of the building or area, or both, from contact with airborne asbestos fibers. The work also includes the disposal of the generated asbestos containing materials. More specific operational procedures will be outlined in the Asbestos Hazard Abatement Plan called for elsewhere in this specification. Provide full containment, glovebag or outdoor techniques as outlined in this specification.
- B. Medical Requirements: 29 CFR 1926.58.
 - 1. Medical Examinations: Before exposure to airborne asbestos fibers, provide workers with a comprehensive medical examination as required by 29 CFR 1926.58 or other pertinent state or local directives. This requirement must have been satisfied within the past year. The same medical examination shall be given on an annual basis to employees engaged in an occupation involving asbestos and within 30 calendar days before or after the termination of employment in such occupation. Specifically identify x-ray films of asbestos workers to the consulting radiologist and mark medical record jackets with the work "ASBESTOS".
 - 2. Medical Records: Maintain complete and accurate records of employees' medical examinations, medical records, and exposure data for a period of 50 years after termination of

employment and make records of the required medical examinations and exposure data available for inspection and copying to: The Assistant Secretary of Labor for Occupational Safety and Health (OSHA), or authorized representatives of them, and an employee's physician upon the request of the employee or former employee.

- C. **Training:** Within one year prior to assignment to asbestos work, each employee shall be instructed by the PIH about the hazards of asbestos, safety and health precautions, the use and requirements for protective clothing, equipment, and respirators, and the association of cigarette smoking and asbestos-related disease, and all additional requirements of 29 CFR 1926.58. Furnish each employee with a respirator fit test administered by the PIH as required by 29 CFR 1926.58. Fully cover engineering and other hazard control techniques and procedures. In addition, train all personnel involved in the asbestos removal in accordance with United States Environmental protection Agency (USEPA) or state criteria whichever is more stringent. The Contractor shall document the training by providing dates of training, training entity, course outline, names of instructors, and qualifications of instructors upon request by the Contracting Officer or Owner Representative.
- D. **Permits, Licenses, and Notifications:** Obtain necessary permits and licenses in conjunction with asbestos removal, hauling, and disposition, and furnish timely notification of such actions required by Federal, state, regional, and local authorities. Notify the Environmental Quality Board (EQB) in writing 10 days prior to the commencement of work in accordance with 40 CFR 61, SUBPART M.
- E. **Safety and Health Compliance:** In addition to detailed requirements of this specification, comply with those applicable laws, ordinances, criteria, rules, and regulations of federal, state, regional, and local authorities regarding handling, storing, transporting, and disposing of asbestos waste materials. Comply with the applicable requirements of the current issue of 29 CFR 1926.58, 40 CFR 61, SUBPART A and 40 CFR 61, SUBPART M. Submit matters of interpretation of standards to the appropriate administrative agency for resolution before starting the work. Where the requirements of this specification, applicable laws, rules, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirement as defined by the Contracting Officer shall apply.
- F. **Respiratory Protection Program:** Establish and implement a respirator program as required by ANSI Z88.2 and 29 CFR 1910.134.
- G. **Industrial Hygienist (IH):** Conduct personal and area/environmental air sampling and training under the direction of an Industrial Hygienist currently certified for comprehensive practice by the American Board of Industrial Hygiene. For the purpose of this contract, the Contractor shall retain the services of an industrial hygienist (PIH) to perform all sampling.
- H. **Hazard Communication:** Adhere to all parts of 29 CFR 1910.1200 and provide the Contracting Officer with a copy of the Material Safety Data Sheets (MSDS) for all materials brought to the site.

1.5 SUBMITTALS

- A. Submit in accordance with Section 01 33 00.
- B. **Manufacturer's Catalog Data:**
 - 1. Local exhaust equipment
 - 2. Vacuums
 - 3. Respirators
 - 4. Pressure differential automatic recording instrument
 - 5. Amended water

C. Statements:

1. **Asbestos Hazard Abatement Plan:** Submit a detailed plan of the safety precautions and work procedures to be used in the removal and demolition of materials containing asbestos. The plan shall be prepared, signed, and sealed, including certification number and date, by the PIH. Such plan shall include but not be limited to the precise personal protective equipment to be used, the location of asbestos control areas including clean and dirty areas, buffer zones, showers, storage areas, change rooms, removal method, interface of trades involved in the construction, sequencing of asbestos related work, disposal plan, type of wetting agent and asbestos sealer to be used, locations of local exhaust equipment, planned air monitoring strategies, and a detailed description of the method to be employed in order to control pollution. The plan shall also include (both fire and medical emergency) response plans. This plan must be approved in writing prior to the start of any asbestos work. The Contractor and PIH shall meet with the Contracting Officer prior to beginning work, to discuss in detail the asbestos plan, including work procedures and safety precautions. Once approved by the Contracting Officer, the plan will be enforced as if an addition to the specification. Any changes required in the specification as a result of the plan shall be identified specifically in the plan to allow for free discussion and approval by the Contracting Officer prior to the start of work.
2. **Testing Laboratory:** Submit the name, address, and telephone number of the testing laboratory selected for the sampling, analysis, and reporting of airborne concentrations of asbestos fibers along with certification that persons counting the samples have been judged proficient by successful participation within the last year in the American Industrial Hygiene Association (AIHA) Proficiency Analytical Testing (PAT) Program. Where analysis to determine asbestos content in bulk materials is required, submit evidence that the laboratory is accredited by the National Institute of Science and Technology (NIST) under National Voluntary Laboratory Accreditation Program (NVLAP) for asbestos analysis.
3. **Industrial Hygienist Certification:** Submit the name, address, and telephone number of the Industrial Hygienist (PIH) selected to prepare the Asbestos Hazard Abatement Plan, direct monitoring and training, and documented evidence that the Industrial Hygienist is currently certified in comprehensive practice by the American Board of Industrial Hygiene, including certification number and date. Personnel performing any industrial hygiene function under the direction of the PIH shall be employed by the PIH's company.
4. **Landfill Approval:** Submit written evidence that the landfill for disposal is approved for asbestos disposal by the USEPA and the Environmental Quality Board (EQB). Submit detailed delivery tickets, prepared, signed and dated by an agent of the landfill, certifying the amount of asbestos materials delivered to the landfill, within 3 days after delivery. A hazardous waste manifest shall be submitted, within 3 days, to the Owner's On Site Representative.
5. **Employee Training:** Submit certificates signed by each employee indicating that the employee has received training in the proper handling of materials that contain asbestos; understands the health implications and risks involved, including the illnesses possible from exposure to airborne asbestos fibers; understands the use and limits of the respiratory equipment to be used; and understands the results of monitoring of airborne quantities of asbestos as related to health and respiratory equipment as indicated in 29 CFR 1926.58 on an initial and annual basis.
6. **Medical Certification:** Provide a written certification signed by a licensed physician that all workers and supervisors have met or exceeded all of the medical prerequisites listed herein and in 29 CFR 1926.58 and 29 CFR 1910.134.

D. Field Test Reports

1. **Air Sampling Results:** Complete fiber counting and provide results to the PIH for review within 16 hours. Notify the Owner's on Site Representative immediately of any airborne levels of asbestos fibers in excess of the acceptable limits. Submit sampling results to the Contracting

Officer and the affected Contractor employees within 3 working days, signed by the testing laboratory employee performing air sampling, the employee that analyzed the sample, and the PIH.

2. Pressure Differential Recordings for Local Exhaust System: Provide a local exhaust system that creates a negative pressure of at least 0.02 inches of water relative to the pressure external of the enclosure and operate it continuously, 24 hours a day, until the enclosure of the asbestos control area is removed. Submit pressure differential recordings for each work day to the PIH for review and to the Contracting Officer or Owner Representative within 24 hours from the end of each work day. Notify the Contractor and the Contracting Officer or Owner Representative immediately of any variance in the pressure differential which could cause adjacent unsealed areas to have asbestos fiber concentrations in excess of 0.01 fibers per cubic centimeter or background whichever is higher. In no circumstance shall levels exceed 0.1 fibers per cubic centimeter.

E. Certificates

1. Vacuums
2. Water filtration equipment
3. Ventilation systems
4. Other equipment required to contain airborne asbestos fibers
5. Chemical encapsulants / sealers
6. Show compliance with ANSI Z9.2 by providing manufacturers' certifications.

F. Records

1. Notifications: Notify the Owner's On Site Representative in writing 10 working days prior to the start of asbestos work.
2. Rental Equipment: Provide a copy of the written notification to the rental company concerning the intended use of the equipment and the possibility of asbestos contamination of the equipment.
3. Respirator Program Records: Submit records of the respirator program as required by ANSI Z88.2, 29 CFR 1910.134, 29 CFR 1926.58.

PART 2 - PRODUCTS

2.1 ENCAPSULANTS

- A. General: Shall conform to current USEPA requirements, shall contain no toxic or hazardous substances, no solvents and shall conform to the following performance requirements.
- B. Removal Encapsulants

Requirement

Test Standard

Flame Spread - 25, Smoke Emission - 50

ASTM E 84

Combustion Toxicity Zero Mortality

University of Pittsburgh Protocol

Life Expectancy – 20 years

<u>Requirement</u>	<u>Test Standard</u>
Permeability - Minimum 0.4 Terms	ASTM E 96
C. Bridging Encapsulant	
<u>Requirement</u>	<u>Test Standard</u>
Flame Spread - 25, Smoke Emission - 50	ASTM E 84
Combustion Toxicity Zero Mortality	University of Pittsburgh Protocol
Life Expectancy - 20 years	ASTM C 732 Accelerated Aging Test
Permeability - Minimum 0.4 perms	ASTM E 96
Cohesion/Adhesion Test - 50 pounds of force/foot	ASTM E 736
Fire Resistance - Negligible affect on fire resistance rating over 3 hour test (Classified by UL for use over fibrous and cementitious sprayed fireproofing)	ASTM E 119
Impact Resistance - Minimum 43 in/lb	ASTM D 2794 Gardner Impact Test
Flexibility - no rupture or cracking	ASTM D 522 Mandrel Bend Test
D. Penetrating Encapsulant	
<u>Requirement</u>	<u>Test Standard</u>
Flame Spread - 25, Smoke Emission - 50	ASTM E 84
Combustion Toxicity Zero Mortality	University of Pittsburgh Protocol
Life Expectancy - 20 years	ASTM C 732 Accelerated Aging Test
Permeability - Minimum 0.4 perms	ASTM E 96
Cohesion/Adhesion Test - 50 pounds of force/foot	ASTM E 736
Fire Resistance - Negligible affect on fire resistance rating over 3 hour test (Classified by UL for use over fibrous and cementitious sprayed fireproofing)	ASTM E 119
Impact Resistance - Minimum 43 in/lb	ASTM D 2794 Gardner Impact Test
Flexibility - no rupture or cracking	ASTM D 522 Mandrel Bend Test
E. Lock-down Encapsulant	
<u>Requirement</u>	<u>Test Standard</u>

<u>Requirement</u>	<u>Test Standard</u>
Flame Spread - 25, Smoke Emission - 50	ASTM E 84
Combustion Toxicity Zero Mortality	University of Pittsburgh Protocol
Life Expectancy - 20 years	ASTM C 732 Accelerated Aging Test
Permeability - Minimum 0.4 perms	ASTM E 96
Fire Resistance – Negligible affect on fire resistance rating over 3 hour test (Tested with fireproofing over encapsulant applied directly to steel member)	ASTM E 119
Bond Strength - 100 pounds of force foot (Tests compatibility with cementitious and fibrous fire-proofing)	ASTM E 736

PART 3 - EXECUTION

3.1 EQUIPMENT

- A. General: Make available to the Owner's On-Site Representative two complete sets of personal protective equipment as required herein, for entry to the asbestos control area at all times for inspection of the asbestos control area. Provide equivalent training to the Owner's On-Site Representative as provided to Contractor employees in the use of the required personal protective equipment. Provide manufacturer's certificate of compliance for all equipment required to contain airborne asbestos fibers.
- B. Respirators: Select respirators from those approved by the National Institute for Occupational Safety and Health (NIOSH), Department of Health and Human Services.
 1. Respirators for Handling Asbestos: Provide personnel engaged in the removal and demolition of asbestos materials with Type C supplied-air respirators, in the pressure/demand mode with an auxiliary self-contained breathing apparatus. The use of any other type of respiratory protection must be requested in writing by the PIH. The request shall identify the specific type of respiratory protection requested and the reasoning behind the choice. Forward the request to the Owner's On-Site Representative. A different request shall be filled for each type of operation. All respiratory protection shall comply with the spirit and letter of 29 CFR 1926.58 and 29 CFR 1910.134. Use of other than Type C supplied-air respirators, in the pressure/demand mode with an auxiliary self-contained breathing apparatus is prohibited unless approved by the Owner's on-Site Representative.
- C. Exterior Whole-Body Protection
 1. Protective Clothing: Provide personnel exposed to asbestos with disposable protective whole body clothing, head coverings, gloves, and foot coverings. Provide disposable plastic or rubber gloves to protect hands. Cloth gloves may be worn inside the plastic or rubber gloves for comfort, but shall not be used alone. Make sleeves secure at the wrists, make foot coverings secure at the ankles, and make clothing secure at the neck using tape.
 2. Work Clothing: Provide cloth work clothes for wear under the disposable protective coveralls and foot coverings and either dispose of or properly launder them as recommended by the PIH after use.

3. **Decontamination Unit:** Provide a temporary, negative pressure unit with a separate decontamination locker room and a clean locker room with a shower that complies with 29 CFR 1910.141 (d)(3) in between for personnel required to wear whole body protective clothing. Provide two separate lockers for each asbestos worker, one in each locker room. Keep street clothing and street shoes in the clean locker. HEPA vacuum and remove asbestos contaminated disposable protective clothing while still wearing respirators at the boundary of the asbestos work area and seal in impermeable bags or containers for disposal. Do not wear work clothing between home and work. Locate showers between the decontamination locker room and the clean locker room and require that all employees shower before changing into street clothes. Collect used shower water and filter to remove asbestos contamination with an approved water filtration equipment. Dispose of filters and residue as asbestos contaminated work clothing as asbestos contaminated waste. Decontamination units shall be physically attached to the asbestos control area. Build both a personnel decontamination unit and an equipment decontamination unit onto and integral with each asbestos control area.
 4. **Eye Protection:** Provide goggles to personnel engaged in asbestos operations when the use of a full-face respirator is not required.
- D. **Warning Signs and Labels:** Provide bilingual warning signs printed in English and Spanish at all approaches to asbestos control areas containing concentrations of airborne asbestos fibers. Locate signs at such a distance that personnel may read the sign and take the necessary protective steps required before entering the area. Provide labels and affix to all asbestos materials, scrap, waste, debris, and other products contaminated with asbestos.
1. **Warning Sign:** Provide vertical format conforming to 29 CFR 1910.145 (d)(4), and 29 CFR 1926.58 (k) minimum 20 by 14 inches displaying the following legend in the lower panel:

<u>Legend</u>	<u>Notation</u>
Danger	1-inch Sans Serif Gothic or Block
Asbestos	1-inch Sans Serif Gothic or Block
Cancer and Lung Disease Hazard	1/4-inch Sans Serif Gothic or Block
Authorized Personnel Only	1/4-inch Gothic
Respirators and Protective Clothing Are Required in this Area	1/4-inch Gothic

Spacing between lines shall be at least equal to the height of the upper of any two lines.

2. **Warning Labels:** Provide labels conforming to 29 CFR 1926.58 (K) of sufficient size to be clearly legible, displaying the following legend:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD
BREATHING ASBESTOS DUST MAY
CAUSE SERIOUS BODILY HARM

- E. Local Exhaust System: Provide a local exhaust system in the asbestos control area in accordance with ANSI Z9.2 and 29 CFR 1926.58 that will provide at least four air changes per hour inside of the containment. Local exhaust shall be operated 24 hours per day, until the asbestos control area is removed and shall be leak proof to the filter and equipped with HEPA filters. Local exhaust equipment shall be sufficient to maintain a minimum pressure differential of minus 0.02 inch of water column relative to adjacent, unsealed areas. Provide continuous 24-hour per day monitoring of the pressure differential with a pressure differential automatic recording instrument. In no case shall the building ventilation system be used as the local exhaust system for the asbestos control area. Filters on exhaust equipment shall conform to ANSI Z9.2 and UL 586. The local exhaust system shall terminate out of doors.
- F. Tools: Vacuums shall be leak proof to the filter and equipped with HEPA filters. Filters on vacuums shall conform to ANSI Z9.2 and UL 586. Do not use power tools to remove asbestos containing materials unless the tool is equipped with effective, integral HEPA filtered exhaust ventilation systems. Remove all residual asbestos from reusable tools prior to storage or reuse.
- G. Rental Equipment: If rental equipment is to be used, furnish written notification to the rental agency concerning the intended use of the equipment and the possibility of asbestos contamination of the equipment.

3.2 WORK PROCEDURE

- A. Perform asbestos related work in accordance with 29 CFR 1926.58 and as specified herein. Use wet or if given prior EPA approval, dry removal procedures and full containment, or outdoor techniques. Personnel shall wear and utilize protective clothing and equipment as specified herein. Eating, smoking, drinking, or applying cosmetics shall not be permitted in the asbestos work or control areas. Personnel of other trades not engaged in the removal and demolition of asbestos shall not be exposed at any time to airborne concentrations of asbestos unless all the personnel protection provisions of this specification are complied with by the trade personnel. Shut down the building ventilating, and air conditioning system, cap the openings to the system, and provide temporary ventilation, and air conditioning prior to the commencement of asbestos work. Disconnect electrical service when wet removal is performed and provide temporary electrical service prior to the use of any water. If an asbestos spill occurs outside of the asbestos control area, stop work immediately, correct the condition to the satisfaction of the Contracting Officer including clearance sampling, prior to resumption of work.
- B. Protection of Existing Work to Remain: Perform demolition work without damage or contamination of adjacent work. Where such work is damaged or contaminated as verified by the Owner Representative using visual inspection or sample analysis, it shall be restored to its original condition or decontaminated by the Contractor at no expense to the Owner as deemed appropriate by the Owner Representative. This includes inadvertent spill of dirt, dust, or debris in which it is reasonable to conclude that asbestos may exist. When these spills occur, stop work immediately. Then clean up the spill. When satisfactory visual inspection and air sampling results are obtained from the PIH work may proceed.
- C. Precleaning: Wet wipe and HEPA vacuum all surfaces with asbestos debris prior to establishment of a containment.
- D. Asbestos Control Area Requirements:
 - 1. Full Containment: Block and seal openings in areas where the release of airborne asbestos fibers can be expected. Establish an asbestos containment with the use of curtains, portable partitions, or other enclosures to prevent the escape of asbestos fibers from the contaminated asbestos work area. Containment development shall include protective covering of walls, and ceilings with a continuous membrane of two layers of minimum 4-mil plastic sheet sealed with tape to prevent water or other damage. Provide two layers of 6-mil plastic sheet over floors and extend a minimum of 12 inches up walls. Seal all joints with tape. Provide local exhaust system in the asbestos control area. Openings will be allowed in enclosures of asbestos

control areas for the supply and exhaust of air for the local exhaust system. Replace filters as required to maintain the efficiency of the system.

2. Outdoor: Establish designated limits for the asbestos work area with the use of rope or other continuous barriers and maintain all other requirements for asbestos control areas except for local exhaust. Also, where an enclosure is not provided, conduct area monitoring of airborne asbestos fibers during the work shift at the designated limits downwind of the asbestos area at such frequency as recommended by the PIH and conduct personal samples of each worker engaged in asbestos handling (removal, disposal, transport and other associated work). If the quantity of airborne asbestos fibers monitored at the breathing zone of the workers or designated limits at any time exceeds background or 0.01 fibers per cubic centimeter whichever is lesser, stop work, evacuate personnel in adjacent areas or provide personnel with approved protective equipment at the discretion of the Owner's On Site Representative.

E. Asbestos Handling Procedures

1. General Procedures: Wet asbestos material with a fine spray of amended water or specific wetting agent during removal, cutting, or other handling to reduce the emission of airborne fibers. Remove material and immediately place in 6 mil plastic disposal bags. Where unusual circumstances prohibit the use of 6 mil plastic bags, submit an alternate proposal for containment of asbestos fibers to the Owner's on Site Representative for approval. For example, in the case where both piping and insulation are to be removed, the Contractor may elect to wet the insulation and wrap the pipes and insulation in plastic and remove the pipe by sections.
 2. Sealing Contaminated Items Designated for Disposal: Remove contaminated architectural, mechanical, and electrical appurtenances such as blinds, full-height partitions, carpeting, duct work, pipes and fittings, radiators, light fixtures, conduit, panels, and other contaminated items designated for removal by completely coating the items with an asbestos lockdown encapsulant at the demolition site before removing the items from the asbestos control area. These items need not be vacuumed. The asbestos lockdown encapsulant shall be tinted a contrasting color. It shall be spray-applied by airless method. Thoroughness of sealing operation shall be visually gauged by the extent of colored coating on exposed surfaces. Lockdown encapsulants shall comply with the performance requirements specified herein.
 3. Exposed Pipe Insulation Edges: Contain edges of asbestos insulation to remain that exposed by a removal operation. Wet and cut the rough ends true and square with sharp tools and then encapsulate the edges with a 1/4-inch-thick layer of non-asbestos containing insulating cement troweled to a smooth hard finish. When cement is dry, lag the end with a layer of non-asbestos lagging cloth, overlapping the existing ends by 4 inches. When insulating cement and cloth is an impractical method of sealing a raw edge of asbestos, take appropriate steps to seal the raw edges as approved by the Contracting Officer.
- F. Air Sampling: Sampling of airborne concentrations of asbestos fibers shall be performed in accordance with 29 CFR 1926.58 and as specified herein. Sampling performed in accordance with 29 CFR 1926.58 shall be performed by the PIH. Sampling performed for environmental and quality control reasons shall be performed by the PIH. Unless otherwise specified, use NIOSH Method 7400 for sampling and analysis.
1. Sampling Prior to Asbestos Work: Provide area air sampling and establish the baseline one day prior to the masking and sealing operations for each demolition and removal site. Establish the background by performing area sampling in similar but uncontaminated sites in the building.
 2. Sampling During Asbestos Work: The PIH shall provide personal and area sampling as indicated in 29 CFR 1926.58 and governing environmental regulations. Thereafter, provided the same type of work is being performed, provide area sampling at least once every work shifts close to the work inside the containment, outside the clean room entrance to the

containment, and at the exhaust opening of the local exhaust system. If sampling outside the containment shows airborne levels have exceeded background or 0.01 fibers per cubic centimeter, whichever is greater, stop all work, correct the condition(s) causing the increase, and notify the Contracting Officer immediately. In areas where the construction of a containment is not required, after initial TWAs are established and provided the same type of work is being performed, provide sampling at the designated limits of the asbestos work area at such frequency as recommended by the PIH. Where glovebag methods are used, perform personal and area air sampling at locations and frequencies that will accurately characterize the evolving airborne asbestos levels.

The PIH shall provide personal sampling as indicated in 29 CFR 1926.58. At the same time the NIH will provide area sampling close to the work inside the containment, outside the clean room entrance to the containment, and at the exhaust opening of the local exhaust system. Thereafter, provided the same type of work is being performed, the NIH will provide area sampling once every work shifts close to the work inside the containment, outside the clean room entrance to the containment, and at the exhaust opening of the local exhaust system. If sampling outside the containment shows airborne levels have exceeded background or 0.01 fibers per cubic centimeter, whichever is greater, stop all work, correct the conditions(s) causing the increase, and notify the Contracting Officer immediately. Where glovebag methods are used, perform personal and area air sampling at locations and frequencies that will accurately characterize the evolving airborne asbestos levels.

3. Sampling After Final Clean-Up (Clearance Sampling): Provide area sampling of asbestos fibers using aggressive air sampling techniques as defined in the EPA 560/5-85-024 and establish an airborne asbestos concentration of less than 0.01 fibers per cubic centimeter after final clean-up but before removal of the containment or the asbestos work control area. After final cleanup and the asbestos control area is dry but prior to clearance sampling, the PIH shall perform a visual inspection to ensure that the asbestos control and work area is free of any accumulations of dirt, dust, or debris. Use transmission electron microscopy (TEM) to analyze clearance samples and report the results in accordance with current NIOSH criteria. The asbestos fiber counts from these samples shall be less than 0.01 fibers per cubic centimeter or be not greater than the background, whichever is greater. Should any of the final samples indicate a higher value, the Contractor shall take appropriate actions to re-clean the area and shall repeat the sampling and TEM analysis at the Contractor's expense.
- G. Lock Down: Prior to removal of plastic barriers and after pre-clearance cleanup of gross contamination, a visual inspection by the PIH, of all areas affected by the removal of the asbestos contaminated materials for any visible fibers, shall be conducted and approved by the PIH. A post removal (lock down) encapsulant shall then be spray applied to ceiling, walls, floors and other areas exposed in the removal area. The exposed area shall include but not be limited to plastic barriers, furnishings and articles to be discarded as well as dirty change room, air locks for bag removal and decontamination chambers.
- H. Site Inspection: Prior to removal of plastic barriers and after pre-clearance cleanup of gross contamination, a visual inspection by the PIH, of all areas affected by the removal of the asbestos contaminated materials for any visible fibers, shall be conducted and approved by the PIH. A post removal (lock down) encapsulant shall then be spray applied to ceiling, walls, floors and other areas exposed in the removal area. The exposed area shall include but not be limited to plastic barriers, furnishings and articles to be discarded as well as dirty change room, air locks for bag removal and decontamination chambers.

3.3 CLEAN-UP AND DISPOSAL

- A. Housekeeping: While parts of asbestos dust control are housekeeping and clean-up procedures. Maintain surfaces of the asbestos control area free of accumulations of asbestos fibers. Give meticulous attention to restricting the spread of dust and debris; keep waste from being distributed over the general area. Use HEPA filtered vacuum cleaners. Do not blow down the space with

compressed air. When asbestos removal is complete, all asbestos waste is removed from the work-site, and final clean-up is completed, the Contracting Officer will certify the area as safe before the signs can be removed. After final clean-up and acceptable airborne concentrations are attained but before the HEPA unit is turned off and the containment removed, remove all pre-filters on the building HVAC system and provide new pre-filters. Dispose of filters as asbestos-contaminated materials. Reestablish HVAC mechanical, and electrical systems in proper working order. The Contracting Officer will visually inspect all surfaces within the containment for residual material or accumulated dust or debris. The Contractor shall re-clean all areas showing dust or residual materials. If re-cleaning is required, air sample and establish an acceptable asbestos concentrations after re-cleaning. The Contracting officer will certify that the area is safe in writing before unrestricted entry is permitted. The Government shall have the option to perform monitoring to certify the areas are safe before entry is permitted.

- B. Title to Materials: All materials resulting from demolition work, except as specified otherwise, shall become the property of the Contractor and shall be disposed of as specified in applicable local, state, and Federal regulations and herein.
- C. Disposal of Asbestos
 - 1. Procedure for Disposal: Collect asbestos waste, asbestos contaminated water, scrap, debris, bags, containers, equipment, and asbestos contaminated clothing which may produce airborne concentrations of asbestos fibers and place in sealed fiberproof, waterproof, non-returnable containers (e.g. double plastic bags 6 mils thick, cartons, drums or cans). Wastes within the containers must be wetted to insure the security of the material in case of container breaching. Affix a warning and Department of Transportation (DOT) label to each bag or use at least 6 mil thick bags with the approved warnings and DOT labeling preprinted on the bag. Dispose of waste asbestos material at an Environmental Protection Agency (EPA) or state-approved asbestos landfill off Government property. For temporary storage, store sealed impermeable bags in asbestos waste drums or skids. An area for interim storage of asbestos waste-containing drums or skids will be assigned by the Contracting Officer or his authorized representative. Procedure for hauling and disposal shall comply with 40 CFR 61, SUBPART M, state, regional, and local standards. Sealed plastic bags may be dumped from drums into the burial site unless the bags have been broken or damaged. Damaged bags shall remain in the drum and the entire contaminated drum shall be buried. Uncontaminated drums may be recycled. Workers unloading the sealed drums shall wear appropriate respirators and personal protective equipment when handling asbestos materials at the disposal site.
 - 2. Asbestos Disposal Quantity Report: Direct the PIH to record and report, to the Owner's On Site Representative, the amount of asbestos containing material removed and released for disposal. Deliver the report for the previous day at the beginning of each day shift with amounts of material removed during the previous day reported in linear feet or square feet as described initially in this specification and in cubic feet for asbestos containing material released for disposal.

END OF SECTION

SECTION 02 83 00

LEAD REMEDIATION

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

- A. General: This section includes precautions and procedures required for lead contaminant control and lead waste disposal during the life of the Contract. It applies to removal, containment and disposal of lead containing paint and adhesives.
- B. Work Area: The work areas are throughout the buildings and are described in reports listed in References. In addition, the Work Areas for lead-based paint and/or adhesive removal include:
 - 1. Two feet on each side of locations intended to be cut using heat or flame. Coordinate with the demolition contractor to determine locations.
 - 2. Painted surfaces to be abraded or cut using abrasive tools. Coordinate with the demolition contractor to determine locations.

1.2 QUALITY CONTROL

- A. Contractor Qualifications: The Contractor shall be a firm of established reputation (or if newly organized, whose personnel have previously established a reputation in the same field), which is regularly engaged in, and which maintains a regular force of workmen skilled in lead-based paint abatement and shall have performed this work on previous projects.
- B. The Contractor shall provide proof of current insurance pertaining to general liability and lead-based paint abatement work coverage.

1.3 SUBMITTALS

- A. Initial Submittals of Lead Abatement Contractor or Subcontractor Qualification Information
 - 1. Contractor Qualification Information:
 - a. Name and location of at least 3 similar lead removal projects performed by the Contractor, including name and telephone number of contract representative.
 - b. Experience and Qualifications of Supervision: Name and experience record of superintendent and foreman. Include evidence of knowledge of applicable regulations; evidence of participation and successful completion of Occupational Safety and Health Administration (OSHA) approved training course in lead-based paint removal and/or supervision of lead related work; and experience with lead related work in a supervisory position as evidenced through supervision of at least three lead-based paint abatement contracts.
 - c. Name and experience record of workers who will be assigned to this project. Include for each person evidence of successful completion of OSHA lead-based paint abatement training given by qualified personnel. Provide certification that employees meet the medical surveillance requirements of 29 Code of Federal Regulations (CFR) Section 1910.125 - Lead.
 - 2. Names and qualifications of each contractor that will be transporting, storing, treating, and disposing of the wastes. Include the facility location and a 24-hour point of contact.
- B. The following submittals are required to be approved by the Owner Representative after award, but prior to receiving notice to proceed:

1. Plan of Action: Submit a detailed plan of the procedures proposed for use in complying with the requirements and regulations included in this specification. The plan shall include the location and layout of decontamination areas, the sequencing of lead work, the interface of trades involved in the performance of work, and methods to be used to assure the safety of visitors to the site.
 2. Methods and materials for lead-based paint and adhesive removal.
 3. Methods and materials for enclosure, dust control, and dust collection.
 4. Work plan for waste containment, removal, and disposal. Wastes shall be cleaned up and containerized daily.
 5. Site Safety and Health Plan.
- C. The following submittals are required to be submitted to the Owner Representative at the completion of work:
1. All sample analytical results.
 2. Waste disposal receipts (manifests, bills of lading, and Certificates of Destruction or Disposal).
 3. Daily air monitoring data, both personal and perimeter monitoring.
- D. Qualifications
1. The Contractor shall be registered in the DRNA ("Departamento de Recursos Naturales y Ambientales") / Environmental Quality Board (EQB)) as an approved and authorized firm to perform removal of lead-based paint.
 2. The abatement Contractor shall comply with Chapter V (Rules 1540 through 1547) of the Regulation for the Control of Lead-Based Paint Abatement Activities ("Reglamento para el Control de Actividades de Mitigación de Pintura con Base de Plomo") enforced by the Environmental Quality Board (EQB). These rules pertain to the requirements for the registration and certification of the abatement Contractor and the employees in the EQB.
 3. The abatement Contractor shall comply with Chapter VI (Rules 1550 through 1557) of the Regulation for the Control of Lead-Based Paint Abatement Activities ("Reglamento para el Control de Actividades de Mitigación de Pintura con Base de Plomo") enforced by the Environmental Quality Board (EQB). These rules pertain to the permits required to perform the abatement, the proper removal, storage, and disposal of the lead based containing wastes.

1.4 REFERENCES

- A. American National Standards Institute (ANSI) Publication:
1. Z9.2-79 Fundamentals Governing the Design and Operation of Local Exhaust Systems
- B. Code of Federal Regulations:
1. 29 CFR 1910.1025: OSHA LEAD
 2. 29 CFR 1926.62: LEAD
 3. 29 CFR 1910.134: OSHA General Industry Respirator Requirements
- C. Local Regulations: Applicable Puerto Rico regulations shall apply.

1. Regulation for Lead-Based Paint Abatement Activities ("Reglamento para el Control de Actividades de Mitigación de Pintura con Base de Plomo")
 2. Regulation for the Control of Non-Hazardous Waste ("Reglamento para el Control de Desperdicios No Peligrosos")
 3. Regulation for the Control of Air Pollution ("Reglamento para el Control de la Contaminación Atmosférica")
 4. Water Quality Standards Regulation ("Estándares de Calidad de Agua")
- D. Federal Regulations:
1. Occupational Safety and Health Act - OSHA
 2. Resource Conservation and Recovery Act (RCRA) – Environmental Protection Agency
- E. Report
1. Section 00 31 21 - Existing Condition Information
 2. R & S Professional Equipment, Inc.: Lead Based Paint Inspection Report. Prepared for: Departamento de Salud – Monacillo Urbano, San Juan PR, September, 2019.

1.5 CONTRACTOR RESPONSIBILITY

- A. The Contractor shall assume full responsibility and liability for compliance with all OSHA, Environmental Quality Board (EQB), Environmental Protection Agency (EPA), Department of Transportation (DOT), and other applicable federal and local regulations pertaining to the protection of the workers, visitors to the work area, and persons occupying areas adjacent to the work area. The OSHA general industry standard for lead, 29 CFR 1910.1025, and 1926.62 will be followed. The Contractor is responsible for providing medical examinations and maintaining medical records of personnel as required by the applicable federal, state, and local regulations, and shall hold the Owner and the Owner Representative harmless for failure to comply with any applicable safety or health regulation on the part of himself/herself, his/her employees, or his/her subcontractors.

1.6 PROJECT/SITE CONDITIONS

- A. Means of Egress: Establish and maintain emergency and fire exits from the work area.
- B. Use of Existing Facilities: Use of existing toilets, showers, and/or other similar facilities in the buildings as decontamination areas is prohibited.
- C. Environmental Conditions to be Maintained: Fire protection systems shall be always maintained.
- D. Decontamination Facility: Throughout the time that lead removal is taking place, the abatement contractor will maintain working five-stage decontamination facilities, where necessary, at the point of access to the containment(s) in each building. As a minimum, each decontamination facility will consist of a clean changing area, an air space, a shower, another air space, and a contaminated changing area. The location of each facility shall be approved by the Owner Representative. Water for decontamination showers as well as wetting down the Work Area shall be provided by the Contractor. All water from the lead abatement process shall be filtered with a 5-micron filter system and discharged to the local sewer system.
- E. Access to Work Area: Access to work areas shall be through decontamination areas. The following shall have access to work area:
1. Owner Representatives

2. EQB Inspectors
 3. Owner Contract Monitoring Personnel
 4. OSHA Inspectors
 5. EPA Inspectors
 6. Local Building or Health Officials
- F. All electrical systems in the buildings shall be locked out and the Contractor shall erect temporary power sources with ground fault protection.
- G. Contractor shall arrange for and provide water service necessary to complete the abatement work.
- H. All buildings covered under this contract will be unoccupied.

1.7 SEQUENCING/SCHEDULING

- A. The contractor shall provide a work schedule and sequencing plan consistent with the plans and procedures submitted under 1.3 Submittals: Plan of Action.
1. Hours of operation shall be between the hours of 7:00 a.m. to 4:30 p.m. unless prior arrangements are made with the Owner Representative.
 2. The Contractor shall provide the name and telephone number of at least one responsible individual and an alternate, who will serve to respond to operational problems and/or emergencies on a 24-hour on-call basis. The Contractor shall agree that notice to his/her designated representative shall constitute notice to the Contractor and shall agree to be bound by any commitments or representations made by the representative.

PART 2 - PRODUCTS

2.1 PAINT AND ADHESIVE REMOVER

- A. Liquid paint and adhesive remover shall be a type recommended by the manufacturer for removing paint or adhesive from each substrate without causing undue damage to the substrate. Materials used are to be of limited toxicity, volatility, and flammability. A material safety data sheet (MSDS) and other appropriate product information for all removers proposed for use shall be submitted to the Owner Representative for review prior to beginning work.

2.2 VACUUMS

- A. All vacuums used during paint and adhesive removal shall be equipped with high efficiency particulate air (HEPA) filters conforming to ANSI Z9.2 1979.

2.3 RESPIRATORS AND PROTECTIVE CLOTHING

- A. At a minimum, workers should wear disposable coveralls, disposable gloves and a respirator equipped with HEPA filters. Combination HEPA and organic vapor cartridges shall be used if the lead-based paint removal involves chemical strippers. Eye protection and protective gloves shall be worn when working with chemical strippers. Disposable coveralls shall be placed in abatement waste daily by the contractor. All workers shall be trained on the hazards of lead and good personal hygiene, such as no eating/drinking/smoking in the work area and washing when leaving the work area.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Before beginning lead paint or adhesive removal in any area, cover all surfaces which may accumulate dust or scrapings with 6-mil plastic sheeting taped securely in place. Barriers and coverings shall be adequate to ensure that dust, debris, fumes, etc., are contained within the Work Area and do not contaminate building surfaces.
- B. Exits shall not be blocked without the permission of the Owner Representative.

3.2 WORK PROCEDURES

- A. The method of lead-based paint abatement removal chosen by the contractor must minimize the generation of lead dust. The following methods of paint and adhesive removal will not be allowed: open flame burning, dry scraping, and machine sanding without attached HEPA filtration.
- B. Coordination of Work of All Trades: Coordinate work of all trades to ensure that their work is performed in accord with applicable regulations and to ensure that the integrity or isolation of the lead removal area is maintained.
- C. The Contractor is responsible for personal monitoring under OSHA regulations to document and control worker exposure. The OSHA regulations include provisions for exposure monitoring, engineering and work practice controls, training, medical monitoring, record keeping, and job removal. The Owner Representative will perform quality assurance environmental testing prior to beginning, and during, work to demonstrate that there is no appreciable elevation of airborne lead outside the work area. The Contractor shall conduct air monitoring sampling outside the work area during removal to assure lead levels remain under the OSHA action level of 30 micrograms per cubic meter of air as an 8-hour time-weighted average (TWA) for inorganic lead.
- D. Upon exiting the removal area, personnel shall decontaminate by HEPA vacuuming gross debris from disposable clothing and wet wiping all exposed body surfaces. Workers shall not leave the work area wearing protective clothing.

3.3 CLEANUP AND DISPOSAL

- A. Housekeeping: Control buildup of debris accumulations, giving meticulous attention to preventing the spread of lead containing debris.
- B. At the end of each work period, vacuum and collect all debris to maintain surfaces free of paint chip and dust accumulation. Do not dry sweep or use compressed air to clean up the area. Seal lead debris in airtight containers and remove from work site. Handling and disposal of debris is to be in compliance with OSHA, EPA and all other applicable regulations. All lead-containing waste is to be handled and disposed of as hazardous waste unless TCLP (toxicity characteristic leaching procedure) testing is performed and indicates otherwise.
- C. Disposal of lead-containing paint chips, debris and wastewater must be in accordance with EPA and Puerto Rico regulations. A copy of each manifest is to be provided to the Owner Representative at the time the shipment is made. Within 30 calendar days of the time the Hazardous Waste Treatment Storage and Disposal Facility (TSDF) receives the waste, a completed copy of the manifest is to be provided to the Owner Representative. Certificates of Destruction or Disposal (CD) shall be provided to the Owner Representative within 90 calendar days of delivery of waste to the TSDF.
- D. Final Cleaning: HEPA vacuum and damp clean area with an anionic solution such as trisodium phosphate. Sweeping is not to be permitted. Vacuum cleaning is to be performed only with vacuum cleaners equipped with HEPA filters. If the Owner Representative finds the area unacceptable, the Contractor shall re-clean until acceptance is gained. Contractor shall continue the abatement process at no additional cost to the Owner or Owner Representative until an acceptable visible

inspection is obtained. The Owner Representative will visually inspect the work area for acceptance after final cleaning. An acceptable visible inspection will be no visible paint on the surface being abated and no visible paint waste remaining in the work area.

END OF SECTION

SECTION 03 30 53

MISCELLANEOUS CAST IN PLACE CONCRETE

PART 1 - GENERAL

1.1 REFERENCES

- A. AASHTO M182 - Burlap Cloth Made from Jute or Kenaf and Cotton Mats
- B. ACI 116R - Cement and Concrete Terminology
- C. ACI 117 - Tolerances for Concrete Construction and Materials
- D. ACI 201.2R - Guide to Durable Concrete
- E. ACI 211.1 - Practice for Selecting Proportions for Normal, Heavyweight and Mass Concrete
- F. ACI 301 - Structural Concrete
- G. ACI 302.1R - Guide for Concrete Floor and Slab Construction
- H. ACI 308.1 - Specification for Curing Concrete
- I. ACI 318 - Building Code Requirements for Structural Concrete and Commentary
- J. ACI 347R - Guide to Formwork for Concrete
- K. ACI Manual of Standard Practice
- L. ASTM A82 - Steel Wire, Plain, for Concrete Reinforcement
- M. ASTM A615 - Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
- N. ASTM C33 - Concrete Aggregates
- O. ASTM C94 - Ready-Mixed Concrete
- P. ASTM C125 - Terminology Relating to Concrete and Concrete Aggregates
- Q. ASTM C150 - Portland Cement
- R. ASTM C171 - Sheet Materials for Curing Concrete
- S. ASTM C260 - Air-Entraining Admixtures for Concrete
- T. ASTM C309 - Liquid Membrane-Forming Compounds for Curing Concrete
- U. ASTM C494 - Chemical Admixtures for Concrete
- V. ASTM C1017 - Chemical Admixtures for Use in Producing Flowing Concrete
- W. ASTM C1315 - Liquid Membrane-Forming Compounds Having Special Properties for Curing and Sealing Concrete
- X. ASTM D1751 - Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types)

- Y. ASTM D1752 - Preformed Sponge Rubber Cork and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction
- Z. CRSI - Manual of Standard Practice
- AA. Portland Cement Association (PCA) – Design and Control of Concrete Mixtures

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Design Mixtures: For each concrete mixture.

1.3 QUALITY ASSURANCE

- A. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C94 requirements for production facilities and equipment.
- B. Comply with the following sections of ACI 301, unless modified by requirements in the Contract Documents:
 - 1. "General Requirements."
 - 2. "Formwork and Formwork Accessories."
 - 3. "Reinforcement and Reinforcement Supports."
 - 4. "Concrete Mixtures."
 - 5. "Handling, Placing, and Constructing."
- C. Comply with ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

PART 2 - PRODUCTS

2.1 MATERIALS - FORMWORK

- A. Furnish formwork and formwork accessories according to ACI 301.

2.2 MATERIALS - STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A615, Grade 60, deformed.

2.3 MATERIALS - CONCRETE

- A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source throughout Project:
 - 1. Portland Cement: ASTM C150, Type I.
- B. Normal-Weight Aggregate: ASTM C33, graded, 3/4-inch nominal maximum aggregate size.
- C. Water: ASTM C94.

2.4 MATERIALS - ADMIXTURES

- A. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
1. Water-Reducing Admixture: ASTM C494, Type A.
 2. Retarding Admixture: ASTM C494, Type B.
 3. Water-Reducing and Retarding Admixture: ASTM C494, Type D.
 4. High-Range, Water-Reducing Admixture: ASTM C494, Type F.
 5. High-Range, Water-Reducing and Retarding Admixture: ASTM C494, Type G.
 6. Plasticizing and Retarding Admixture: ASTM C1017, Type II.

2.5 MATERIALS - BONDING AGENTS (LONG POT LIFE AND CONTACT TIME)

- A. Multi-purpose, 2-component, 100% solids, moisture-tolerant, structural epoxy adhesive, complying with ASTM C-881, Types I and II, Grade-2, Class-C and AASHTO M-235 specifications. Long pot life and contact time. Products offered by manufacturers to comply with the requirements for epoxy-resin type grout include the following:
1. Sika Chemical Corp.; Product: Sikadur 32, Hi-Mod LPL.

2.6 MATERIALS - CURING

- A. Evaporation Retarder: Waterborne, monomolecular film forming; manufactured for application to fresh concrete.
- B. Absorptive Cover: AASHTO M182, Class 3, burlap cloth or cotton mats.
- C. Moisture-Retaining Cover: ASTM C171, polyethylene film or white burlap-polyethylene sheet.
- D. Water: Potable.

2.7 CONCRETE MIXTURES

- A. Comply with ACI 301 requirements for concrete mixtures.
- B. Normal-Weight Concrete: Prepare design mixes, proportioned according to ACI 301, as follows:
1. Minimum Compressive Strength: As indicated on Drawings at 28 days.
 2. Maximum Water-Cementitious Materials Ratio: 0.50.
 3. Slump Limit: 4 inches plus or minus 1 inch.

2.8 CONCRETE MIXING

- A. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete according to ASTM C94. Mix concrete materials in appropriate drum-type batch machine mixer.
1. For mixer capacity of 1 cu. yd. or smaller, continue mixing at least 1-1/2 minutes, but not more than 5 minutes after ingredients are in mixer, before any part of batch is released.

2. For mixer capacity larger than 1 cu. yd., increase mixing time by 15 seconds for each additional 1 cu. yd.
3. Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mix type, mix time, quantity, and amount of water added. Record approximate location of final deposit in structure.

PART 3 - EXECUTION

3.1 FORMWORK

- A. Design, construct, erect, brace, and maintain formwork according to ACI 301.

3.2 INSTALLATION - EMBEDDED ITEMS

- A. Place and secure anchorage devices and other embedded items required for adjoining work attached to or supported by cast in place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

3.3 INSTALLATION - STEEL REINFORCEMENT

- A. Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.

3.4 INSTALLATION - JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Locate and install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect-Engineer.

3.5 CONCRETE PLACEMENT

- A. Comply with ACI 301 for placing concrete.
- B. Do not add water to concrete during delivery, at Project site, or during placement.
- C. Consolidate concrete with mechanical vibrating equipment.

3.6 FINISHING FORMED SURFACES

- A. Rough-Formed Finish: As cast concrete texture imparted by form-facing material with tie holes and defective areas repaired and patched. Remove fins and other projections exceeding 1/2-inch.
 1. Apply to concrete surfaces not exposed to public view.
- B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defective areas. Remove fins and other projections exceeding 1/8-inch.
 1. Apply to concrete surfaces exposed to public view, to receive a rubbed finish, or to be covered with a coating or covering material applied directly to concrete.
- C. Rubbed Finish: Apply the following rubbed finish, defined in ACI 301, to smooth-formed finished as-cast concrete where indicated:

1. Smooth-rubbed finish.
 2. Grout-cleaned finish.
 3. Cork-floated finish.
- D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

3.7 FINISHING UNFORMED SURFACES

- A. General: Comply with ACI 302.1R for screeding, restraighening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
- B. Screed surfaces with a straightedge and strike off. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane before excess moisture or bleedwater appears on surface.
1. Do not further disturb surfaces before starting finishing operations.
- C. Scratch Finish: Apply scratch finish to surfaces indicated and surfaces to receive concrete floor topping or mortar setting beds for ceramic or quarry tile, portland cement terrazzo, and other bonded cementitious floor finishes, unless otherwise indicated.
- D. Float Finish: Apply float finish to surfaces indicated, to surfaces to receive trowel finish, and to floor and slab surfaces to be covered with fluid-applied or sheet waterproofing, fluid-applied or direct-to-deck-applied membrane roofing, or sand-bed terrazzo.
- E. Trowel Finish: Apply a hard trowel finish to surfaces indicated and to floor and slab surfaces exposed to view or to be covered with resilient flooring, carpet, ceramic or quarry tile set over a cleavage membrane, paint, or another thin film-finish coating system.

3.8 CONCRETE PROTECTING AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 301 for hot-weather protection during curing.
- B. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- C. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.
- D. Curing Methods: Cure formed and unformed concrete for at least seven days by one or a combination of the following methods:
1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
 - a. Water.
 - b. Absorptive cover, water saturated and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.

2. **Moisture Retaining Cover Curing:** Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
3. **Curing Compound:** Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.
4. **Curing and Sealing Compound:** Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

3.9 FIELD QUALITY CONTROL

- A. **Testing Agency:** Contractor shall engage a qualified testing agency to perform tests and inspections.
- B. **Tests:** Perform according to ACI 301.
 1. **Testing Frequency:** One composite sample shall be obtained for each 10 cu. yd. or fraction thereof of each concrete mix placed each day.

3.10 REPAIRS

- A. **Remove and replace concrete** that does not comply with requirements in this Section.

END OF SECTION

SECTION 26 05 00

GENERAL PROVISIONS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes General Provisions for Electrical Installation.

1.2 RELATED SECTIONS

- A. All sections included in this Project.

1.3 REFERENCES

- A. All work shall be in accordance with latest edition of all applicable codes and standards to include, but not limited to, the following:

1. AEIC – Association of Edison Illuminating Companies
2. ANSI – American National Standards
3. ASTM – American Society for Testing and Materials
4. CBM – Certified Ballast Manufacturers
5. FMS – Factory Mutual System
6. ICEA – Insulated Cable Engineers Association
7. IEEE – Institute of Electrical and Electronic Engineers
8. NBS – National Bureau of Standards
9. NEC – National Electrical Code
10. NEMA – National Electric Manufacturers Association
11. NESC – National Electrical Safety Code
12. NETA – International Electrical Testing Association
13. NFPA – National Fire Protection Association
14. OSHA – Occupational Safety and Health Act.
15. PREPA – Puerto Rico Electric Power Authority
16. PRHA – Puerto Rico Highway Authority
17. PRTRB – Puerto Rico Telecommunications Regulatory Board
18. UL – Underwriters Laboratories

1.4 SYSTEM DESCRIPTION

- A. The work covered by this specification shall include furnishing all labor, material, equipment, and services to construct and install the complete electrical system as shown on Drawings and Specifications.

1.5 DESIGN DRAWINGS

- A. The Architect-Engineer's drawings shall serve as the working drawings. They indicate the general layout of the complete electrical system.
- B. Field verification of scale dimensions on plans is directed since actual locations, distances and levels will be governed by actual field conditions.
- C. The Electrical Contractor shall also review civil, architectural, structural, and mechanical drawings to avert possible installation conflicts. Should drastically change from original plans be necessary to resolve such conflicts, the contractor shall notify the Architect-Engineer, and secure written approval and agreement on necessary adjustments before the installation is started.
- D. Discrepancies shown on different plans, or between plans and actual field conditions, or between plans and specifications, shall promptly be brought to the attention of the Architect-Engineer for a decision.
- E. All items not specifically mentioned in the specifications or noted in the drawings, but which are obviously necessary to make a complete working installation shall be included.

1.6 TEMPORARY POWER

- A. The Electrical Contractor shall furnish, install, maintain, and remove after construction is completed a temporary power and lighting system. He shall coordinate the characteristics of the system with the General Contractor.

1.7 SAFETY PRECAUTIONS

- A. The Electrical Contractor shall furnish and place proper guards as per OSHA regulations for prevention of accidents. He shall provide and maintain any other construction required to secure safety of life or property, including the maintenance of sufficient lights.

1.8 SUBMITTALS

- A. The Electrical Contractor shall submit detailed dimensioned shop drawings covering all items of equipment, data for each type of product used in the Project. No equipment should be ordered until these shop drawings and/or data sheets have been approved.

1.9 CLOSEOUT SUBMITTALS

- A. Record Drawings:
 - 1. The Electrical Contractor shall keep a complete set of drawings at the site of work for the express and only purpose of noting thereon on a continuous basis all changes in construction, layout or conduit, ducts, etc., which are affected during construction due to field conditions, change orders, etc.
 - 2. This set of provisional record drawings shall be kept up to date with all changes noted thereon, and these provisional record drawings shall be submitted for the inspection and approval of the Architect-Engineer at least five days prior to any partial monthly payment.
 - 3. Upon termination of the work, the Owner shall furnish a complete set of copies, on which the Electrical Contractor shall, in a neat and workmanlike manner, make a complete record of all changes and revisions to the original work. These drawings shall be delivered to the owner before final liquidation of the contract.
- B. Manuals:

1. The Electrical Contractor shall provide the Owner with three bound copies of Instruction Manuals on the operation and maintenance of each piece of equipment installed, including: inspection, maintenance, cleaning, grounding, precaution, and operation.
2. At the time the manuals are given, the Electrical Contractor shall supply the Owner with three copies of the equipment manufacturer's recommended spare parts list.
3. The Electrical Contractor shall provide three copies of the time current curves of each protective device furnished.

1.10 DELIVERY, RECEIVING AND STORING

- A. All electrical materials, equipment and accessories required to complete the work shall be delivered to, received, unloaded, and stored by the Electrical Contractor until they are installed.
- B. Prior to shipment, all items shall be protected or crated to prevent damage during shipment and handling. Wooden covers shall protect equipment flange faces. Electrical Contractor shall perform all required uncrating, unpacking, cleaning and inspection prior to installation.
- C. All items shall be inspected as soon as they are received to determine if any damage has occurred in transit. Damaged items shall be repaired or replaced immediately to prevent delay in the construction schedule.
- D. All items shall be properly protected during all phases of the work. Materials, equipment, and accessories, which are not weatherproof, shall be protected against weather damage during storage. The Electrical Contractor shall be responsible for the safekeeping of all items during receiving, storing and installation.
- E. Defective equipment or equipment damaged in the course of relocation, installation, or test shall be replaced or repaired in a manner meeting with the approval of the Owner.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Electrical materials shall be new and products of recognized manufacturers and as noted on the drawings and/or stated in these specifications.

2.2 SPECIFICATION BY BRAND NAME

- A. It is the intent of these specifications to establish quality standards of materials and equipment installed. Hence, specific items are identified by manufacturer, trade name or catalog designation.

2.3 SUBSTITUTIONS

- A. Should the Electrical Contractor propose to furnish material and equipment other than those specified as permitted by the "approved equal" clause, he shall clearly indicate in the bid proposal all substitutions. Indicating complete description (manufacturer, brand name, catalog number, etc.) and technical data for all items.
- B. Acceptance or rejection of the proposed substitutions shall be subject to approval of the Owner representative. If requested the Electrical Contractor shall submit samples of both the specified and the proposed items for inspection.
- C. Electrical Contractor shall be responsible for notifying any other Contractor whose work should become affected due to the substitution of a piece of equipment other than that which is incurred by the other trades due to the substitution.

PART 3 - EXECUTION

3.1 LABOR

- A. All workmanship shall be first class and performed by persons qualified in this trade.
- B. Insofar as is it possible, the Electrical Contractor shall keep the same foremen and workmen throughout the project duration.

3.2 SUPERVISION

- A. During the entire progress of the job, the Electrical Contractor shall have a competent experienced engineer and all necessary assistants. This engineer shall not be changed during the progress of the job without the consent of the Owner representative.

3.3 SLEEVES, OPENINGS, AND INSERTS

- A. The Electrical Contractor shall furnish and install all sleeves or openings through floor or walls required for passage of all conduits or ducts installed by him. If openings are done on fire rated walls or floor, those openings shall be sealed in order to maintain the fire rating integrity.
- B. The Electrical Contractor shall furnish and install all inserts and hangers required to support bus ducts, conduits, pull boxes, luminaires, etc. Refer to sections 13 05 41 "Seismic Control" and 13 05 42 "Seismic control and Vibration Isolation".
- C. If the sleeves, hangers, inserts, etc. are improperly installed, the Electrical Contractor shall do all necessary cutting and patching at their own expense, to rectify the errors.

3.4 CUTTING AND PATCHING

- A. Cutting of walls, partitions, floor and roof that may be necessary for this installation shall be done in a neat workmanlike manner. Openings shall be cut only large enough to facilitate the installation.
- B. Cutting of structural members or cutting that in any manner weakens the structure is forbidden.
- C. Patching shall be done with the same type of material as was removed. The completed patching work shall restore the surface to its original appearance. Rubble and excess patching material shall be promptly removed from the premises.
- D. Patching of waterproofed surfaces shall be done in a manner, which shall render the area completely waterproof.

3.5 EXCAVATION AND BACKFILL

- A. All excavation trenching and backfilling required for properly installing the electrical duct systems shall be provided as part of the electrical work unless otherwise stated in the specifications or on the drawings.
- B. Trenches shall be dug to the proper alignment and required depth only so far in advance of pipe laying as required to permit orderly progress of the work. Trenches shall be only wide enough to permit satisfactory joining of piping.
- C. All excavations shall be kept free of water by pumping or other approved means, during progress of the work and until the excavations are backfilled. Backfilling shall be done immediately after the work has been inspected and approved.
- D. Where sub-grade soils are unstable and cannot properly support piping, trenches shall be excavated at least six inches deeper than required, backfilled with an approved fill material to the proper elevation and compacted.

- E. Special conditions for anchors, supports, thrust blocks, etc., shall be as indicated on the drawings.
- F. Backfilling shall not be done until testing has been satisfactorily completed and approved and all concrete appurtenances have been properly cured.
- G. Backfill shall be select material, free from rock larger than four inches in diameter and free from deleterious material. The backfill shall be tamped in layers not exceeding six inches in depth and shall be sufficiently damp to permit thorough compaction on each side of the pipe to provide solid support and backing against the external surface, to an elevation of at least 12 inches above the top of the pipe. The balance of the fill shall contain no rock larger than eight inches in its largest dimension and free from deleterious matter. The balance shall be compacted thoroughly by puddling or flooding, or by tamping if the material does not consolidate readily by puddling.
- H. All excess excavated material not used for backfilling shall be removed from the site.

3.6 FIELD QUALITY CONTROL

- A. All material and workmanship shall be subject to inspection, examination, and test by the Owner representative at any and all times during construction.
- B. After the installation is completed, the Electrical Contractor shall conduct an operating test for approval. The equipment shall be demonstrated to operate in accordance with the requirements of these specifications. The test shall be performed in the presence of the Owner representative.
- C. The Electrical Contractor shall furnish promptly, without additional charge, all reasonable facilities, labor, materials and equipment for the safe and convenient inspection and tests that may be required by the Owner representative.
- D. The electrical installation shall meet the approval of the Puerto Rico Electrical Power Authority as required, and the Electrical Contractor shall furnish a Certificate of this approval.

3.7 CLEANING AND PAINTING

- A. All equipment, luminaires, conduits, ducts, and other exposed work shall be thoroughly cleaned. All plated, polished, or painted work shall be bright and clean.
- B. All equipment shall have factory standard finish unless otherwise called by technical specification for special treatment. Painting Contractor will provide other painting.

3.8 GUARANTEE OF WORK

- A. All the work herein specified shall be guaranteed free from labor and material defects for one year after the work is received. The Electrical Contractor shall deliver a document covering the terms of this guarantee to the Owner.

END OF SECTION

SECTION 26 05 26

GROUNDING AND BONDING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes:
- B. Rod Electrodes
- C. Conductors
- D. Grounding well components
- E. Mechanical connectors
- F. Exothermic connections
- G. Related Sections:
- H. Section 26 08 00 – Acceptance Testing

1.2 REFERENCES

- A. All work shall be in accordance with the latest edition of all applicable codes, standards, and regulations to include, but no limited to the following:
- B. ANSI C1 / NFPA 70 – National Electrical Code
- C. ANSI C114.1 / IEEE Std. 142 – Recommended practice for Grounding of Industrial and Commercial Buildings
- D. NETA (International Electrical Testing Association) – Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems.
- E. UL 467 – Applicable requirements of UL Standards, pertaining to grounding and bonding of systems, circuits, and equipment.

1.3 SYSTEM DESCRIPTION

- A. Provide materials and labor to ground electrical systems as shown on Drawings to include but not limited to, the following:
 - 1. Raceway system.
 - 2. Feeders
 - 3. Motor, Motor Starters, Transformers, Panelboards, Switchboards.
 - 4. Receptacles and electrical enclosures.
 - 5. Center points of delta-wye Transformers.
- B. Provide Building Ground Loop when indicated on Drawings and connect structural columns to the building ground loop as shown on Drawings.

1.4 PERFORMANCE REQUIREMENTS

- A. Grounding System Resistance: 5 ohms maximum except as otherwise indicated on Drawings.

1.5 SUBMITTALS

- A. Product Data: Submit data for each type of product used in the Project.
- B. Test Reports: Indicate overall resistance to ground, resistance of the individual ground rods or triangular ground mat. Report values greater than 5 ohms for remedial action.

1.6 CLOSEOUT SUBMITTALS

- A. Project Record Documents: Record actual locations of components and grounding electrodes.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. All material shall be new, unused, and delivered in original manufacturer's packaging.
- B. Protect from weather and construction traffic, dirt, water, chemical and mechanical damage, by storing in original packaging.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Except as otherwise indicated, provide electrical grounding and bonding systems indicated on Drawings with assembly of materials including but not limited to cable/wires, connectors, solderless lug terminals, bus-bar conductors, grounding electrodes and plate electrodes, bonding jumper braid, and additional accessories needed for a complete installation.
- B. All materials shall be listed and approved for the intended application.

2.2 CABLE

- A. Soft drawn, copper, bare or insulated (as indicated), stranded, with 95% conductivity.
- B. Ground Cable to be sized in accordance with NEC Tables.

2.3 BUS-BAR CONDUCTORS

- A. Copper bus bar, minimum ¼ inch by 2 inches, unless indicated otherwise, with length as indicated on drawings. Bus bar shall be continuous throughout its length without joints or splices.

2.4 BONDING JUMPER BRAID

- A. Stainless Steel braided tape, constructed of 30-gage bare stainless-steel wires and properly sized for indicated applications.

2.5 GROUND ELECTRODES

- A. Ground Rods: shall be ¾ inch by 10-foot copper clad steel unless otherwise specified on Drawings.
- B. Ground Test Boxes: Shall be 12-inch diameter by 24 inch long concrete pipe with belled end and a cast iron cover with legend "GROUND" embossed on top.

2.6 CONNECTIONS

- A. Provide compression type cable connectors on underground installations, which are expressly intended, for that purpose by the manufacturer.
- B. Ground connections to ground rods shall be pressure connectors.
- C. Provide exothermic welded connections where grounding conductors connect to building structural elements and for other applications as shown on Drawings. Provide exothermic – welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.
- D. Provide ground clamp connectors for joining ground cable to pipe or plate. Clamps shall be fabricated of high-strength metals to provide corrosion-resistant permanently tight connection.

2.7 GROUNDING AND BONDING CLAMPS: CONDUIT TO TRAY

- A. Provide grounding and bonding clamp connecting rigid steel, IMC or EMT conduit to aluminum or steel cable tray.
- B. Grounding and bonding clamps shall assure electrical continuity and have capacity to conduct safely any fault current likely to be imposed. Clamps shall meet the applicable requirements of ANSI C33.8 (UL 467).

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify existing conditions under which electrical grounding and bonding connections are to be made. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to installer.
- B. Verify final backfill and compaction has been completed before driving rod electrodes.

3.2 INSTALLATION

- A. Install grounding loops, which encircle the building and are connected to structural columns, and to driven electrodes, as indicated on Drawings. Use exothermic connection to connect the ground cable to the column. Exothermic welds shall be made strictly in accordance with the weld manufacturer's written recommendations. Welds which are "puffed up" or which show convex surfaces indicating improper cleaning are not acceptable.
- B. Protect ground cables crossing expansion joints or similar separations in structures and pavements by use of approved devices or methods of installation which provide the necessary slack in the cable across the joint to permit movement. Use stranded or other approved flexible copper cable run or jumper across such separation.
- C. Install rod electrodes at locations indicated on Drawings. The rod electrode shall be driven full length into the earth. The maximum resistance of a driven ground shall not exceed 5 ohms. If this resistance cannot be obtained with a single rod, a sufficient number of additional rods shall be installed not closer than 6 feet in center so that the resultant resistance will be within that limit.
- D. Install ground test boxes for grounding electrodes with detachable cable connections at locations indicated on the drawings. Install well box top flush with the finished grade.
- E. Equipment Grounding Conductor: Install separate, insulated conductor within each feeder and branch circuit raceway. Terminate each end on suitable lug, bus or bushing.

- F. Permanently ground entire light and power system in accordance with NEC, including service equipment, distribution switchboards, distribution panels, lighting panelboards, switch and starter enclosures, motor frames, grounding type receptacles, and other exposed non-current carrying metal parts of electrical equipment.
- G. Install branch circuits feeding isolated ground receptacles with separate insulated grounding conductor, connected only at isolated ground receptacle, ground terminals, and at ground bus of serving panel.
- H. The ground connection of the electric system neutral shall be made in each Substation. An insulated neutral conductor must be carried from the Switchgear neutral bus back to the transformer neutral. The insulated neutral conductor must not be grounded on the downstream side of the Switchgear in the feeders.
- I. Accomplish grounding of electrical system by using insulated grounding conductor installed with feeders and branch circuit conductors in conduits. Size grounding conductors in accordance with NEC. Install from grounding bus of serving panel to ground bus of served panel, grounding screw of receptacles, lighting fixture housing, light switch outlet boxes or metal enclosures of service equipment. Ground conduits by means of grounding bushings on terminations at panelboards with installed number 12 AWG conductor to grounding bus.
- J. Effectively ground the secondaries of all 208Y/120 volt and 480Y/277-volt transformers by connecting the winding mid-point to the building grounding system.
- K. Cable Tray System Grounding:
 - 1. All metal sections of a cable tray system shall be bonded and effectively grounded to provide a continuous circuit for fault current. Each conduit leaving the tray shall be grounded.
 - 2. Cable tray system shall be electrically connected to enclosures in which the cables terminate. Connecting grounding conductors and bonding jumpers between enclosures and cable tray system shall be located as close to the cables as practical.
 - 3. Cable tray system shall be bonded together at all locations where cables change from one tray system to another. Bonding jumpers between different cable tray systems shall be located as close to the cables as possible.
- L. Permanently attach equipment and grounding conductors prior to energizing equipment.
- M. To ensure that difference in potential does not exist on the ground system, all grounds, i.e. system, equipment, isolated and lightning protection must be tied to the same building ground grid system. Individual or separate systems can not exist. There is only one grounding system for a building.

3.3 FIELD QUALITY CONTROL

- A. Inspect and test in accordance with NETA.
- B. Grounding and Bonding: Perform inspections and tests listed in NETA, Section 7 13
- C. Perform ground resistance testing in accordance with IEEE 142.
- D. Perform leakage current tests in accordance with NFPA 99.
- E. Perform continuity testing in accordance with IEEE 142
- F. When improper grounding is found on receptacles, check receptacles in entire project and correct. Perform retest.

- G. An independent testing laboratory engaged in the business of electrical acceptance testing similar to the inspections and tests specified shall perform the testing. The testing laboratory shall have a minimum of five years experience.
- H. The testing laboratory shall submit proof of qualifications to the Owner. Proof shall include but not be limited to:
 - 1. Name of the required registered electrical engineer.
 - 2. Certified International Electrical Testing Association (NETA) test technician.
 - 3. Experience as a testing laboratory for a minimum of five years.
 - 4. Equipment available for use in this project.
- I. Test in cooperation with other affected contractors. The Owner shall approve the schedule of tests. Three-day notice shall be given prior to testing, unless otherwise necessary or specified.
- J. All testing shall be performed according to the manufacturer's instructions and test value limitations indicated by testing equipment company or equipment manufacturer.
- K. The reference Standards are available as follows:
 - 1. NETA Grounding System Tests
International Electrical Testing Association (NETA)
P.O. Box 687, Morrison, CO 80465
Tel: (303) 697-8441; Fax: (303) 697-8431
E-mail: net@netaworld.org – Web site: www.netaworld.org
 - 2. IEEE Std. 142, IEEE Std 81, and IEEE Std. 80
Institute of Electrical and Electronic Engineers (IEEE)
IEEE Customer Service Center
445 Hoes Lane
P.O. Box 1331
Piscataway, NJ 08855-1331
Tel: (732) 981-0060; E-mail: ieee.org/shop
 - 3. NFPA 99
National Fire Protection Association
1 Battery March Park, Quincy MA 02269-9101
Tel: (800) 344-3555

END OF SECTION

SECTION 26 05 26.13

GROUNDING SYSTEMS FOR SUBSTATIONS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes all necessary conductors, rod electrodes, exothermic connections, mechanical connections, and additional accessories to construct a ground grid that provides a grounding system for a Substation.
- B. Related Sections:
 - 1. Section 26 08 00 – Acceptance Testing
 - 2. Section 26 05 26 – Grounding and bonding

1.2 REFERENCES

- A. All work shall be in accordance with the latest edition of all applicable codes and standards to include, but not limited to, the following:
 - 1. NEC – National Electrical Code
 - 2. OSHA – Occupational Safety & Health Act
 - 3. UL – Underwriters Laboratories
 - 4. ANSI – American National Standards
 - 5. NEMA – National Electric Manufacturers Association
 - 6. NETA – InterNational Electrical Testing Association
 - 7. IEEE – Institute of Electrical and Electronics Engineers
 - 8. PREPA – Puerto Rico Electric Power Authority

1.3 SYSTEM DESCRIPTION

- A. Provide materials and labor to ground electrical systems as shown on Drawings to include but not limited to, the following:
 - 1. Substation Structure
 - 2. Transformers, Switchgears, Air Interrupter Switches, Circuit Breakers, and additional equipment included in the Substation.
 - 3. Substation Fence and access doors.
 - 4. Raceway system
 - 5. Center points of delta-wye Transformers.
- B. Provide a complete ground-grid enclosing the substation and including the fence within the ground-grid area. Except as otherwise indicated on Drawings:

1. The perimeter conductor of the grid will be parallel to the fence line at a distance of not less than three (3) feet outside the fence.
 2. Cross conductors shall be provided interconnecting the perimeter conductor in both directions. Exothermic connections shall be used in the points of crossing of all conductors.
 3. The ground-grid shall be installed at least 18 inches below the ground level. The depth of the crushed-stone (minimum resistivity of 3000 ohms-meter) layer that will cover the ground-grid area is not included in this minimum buried dimension.
 4. Provide ground electrodes, connected to the ground-grid, in the points of connection of the down conductor from the surge arresters, the transformer neutral and the plate where the air interrupter switch will be operated. Provide additional ground electrodes as indicated on Drawings.
- C. The system shall be in accordance with ANSI/IEEE Std. 80 – Guide for Safety in ac Substation Grounding.

1.4 PERFORMANCE REQUIREMENTS

- A. Grounding System Resistance: 5 ohms maximum except as otherwise indicated on Drawings.

1.5 SUBMITTALS

- A. Product Data: Submit data for each type of product used in the Project.
- B. Test Reports: Indicate overall resistance to ground, resistance of the individual ground rods. Report values greater than 5 ohms for remedial action.

1.6 CLOSEOUT SUBMITTALS

- A. Project Record Documents: Record actual locations of components and grounding electrodes.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. All material shall be new, unused, and delivered in original manufacturer's packaging.
- B. Protect from weather and construction traffic, dirt, water, chemical and mechanical damage, by storing in original packaging.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Except as otherwise indicated, provide electrical grounding and bonding systems indicated on Drawings; with assembly of materials including but not limited to cables, connectors, solderless lug terminals, grounding electrodes and plate electrodes, bonding jumper braid, and additional accessories needed for a complete installation.
- B. All materials shall be listed and approved for the intended application.

2.2 CABLE

- A. Soft drawn, copper, bare or insulated (as indicated), stranded, with 95% conductivity.
- B. Ground Cable to be sized in accordance with NEC Tables.

2.3 BUS-BAR CONDUCTORS

- A. Copper bus bar, minimum ¼ inch by 2 inches, unless indicated otherwise, with length as indicated on drawings. Bus bar shall be continuous throughout its length without joints or splices.

2.4 BONDING JUMPER BRAID

- A. Stainless Steel braided tape, constructed of 30-gage bare stainless-steel wires and properly sized for indicated applications.

2.5 GROUND ELECTRODES

- A. Ground Rods: shall be ¾ inch by 10-foot copper clad steel unless otherwise specified on Drawings.
- B. Ground Test Boxes: shall be 8-inch diameter by 24 inch long concrete pipe with belled end, and a cast iron cover with legend "ground" embossed on top.

2.6 CONNECTIONS

- A. Exothermic connections (Cadweld or approved equal) shall be the standard method of splicing ground wire underground.
- B. Provide ground clamp connectors for joining ground cable to pipe or plate. Clamps shall be fabricated of high-strength metals to provide corrosion-resistant permanently tight connection.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify existing conditions under which electrical grounding and bonding connections are to be made. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to installer.
- B. Verify that final backfill, and compaction has been completed before driving rod electrodes.

3.2 INSTALLATION

- A. Install ground-grid as indicated on Drawings.
- B. Exothermic welds shall be made strictly in accordance with the weld manufacturer's written recommendations. Welds which are "puffed up" or which show convex surfaces indicating improper cleaning are not acceptable.
- C. Install rod electrodes at locations indicated on Drawings. The rod electrode shall be driven full length into the earth. The maximum resistance of a driven ground shall not exceed 5 ohms. If this resistance cannot be obtained with a single rod, a sufficient number of additional rods shall be installed not closer than 6 feet in center so that the resultant resistance will be within that limit.
- D. Install ground test boxes for grounding electrodes with detachable cable connections at locations indicated on the drawings. Install well box top flush with the finished grade.
- E. Ground the substation fence at each gate post and corner post and at intervals not exceeding 10 feet. Bond each gate section to the fence post through a 1/8-inch by one-inch flexible braided copper strap and clamps.
- F. Connect surge arrester down conductor, substation structure, air interrupter switch operator, transformer tank, metal-clad switchgear, and enclosures of additional equipment to the ground-grid.

- G. The ground connection of the electric system neutral shall be made in each substation as shown on the drawings. An insulated neutral conductor must be carried from the switchgear neutral bus back to the transformer neutral. The insulated neutral wire must not be grounded on the downstream side of the switchgear in the feeders.

3.3 FIELD QUALITY CONTROL

- A. Inspect and test in accordance with NETA.
- B. Grounding and Bonding: Perform inspections and tests listed in NETA, Section 7.13
- C. Perform ground resistance testing in accordance with IEEE 142.
- D. Perform leakage current tests in accordance with NFPA 99.
- E. Perform continuity testing in accordance with IEEE 142
- F. Perform ground resistance measurement for each piece of equipment.
- G. An independent testing laboratory engaged in the business of electrical acceptance testing similar to the inspections and tests specified shall perform the testing. The testing laboratory shall have a minimum of five years experience.
- H. The testing laboratory shall submit proof of qualifications to the Owner. Proof shall include but not be limited to:
 - 1. Name of the required registered electrical engineer.
 - 2. Certified International Electrical Testing Association (NETA) test technician.
 - 3. Experience as a testing laboratory for a minimum of five years.
 - 4. Equipment available for use in this project.
- I. Test in cooperation with other affected contractors. The Owner shall approve the schedule of tests. Three-day notice shall be given prior to testing, unless otherwise necessary or specified.
- J. All testing shall be performed according to the manufacturer's instructions and test value limitations indicated by testing equipment company or equipment manufacturer.
- K. The reference Standards are available as follows:
 - 1. NETA Grounding System Tests
International Electrical Testing Association (NETA)
P.O. Box 687, Morrison, CO 80465
Tel: (303) 697-8441; Fax: (303) 697-8431
E-mail: net@netaworld.org – Web site: www.netaworld.org
 - 2. IEEE Std. 142, IEEE Std. 81, and IEEE Std. 80
Institute of Electrical and Electronic Engineers (IEEE)
IEEE Customer Service Center
445 Hoes Lane
P.O. Box 1331
Piscataway, NJ 08855-1331
Tel: (732) 981-0060; E-mail: ieee.org/shop
 - 3. NFPA 99
National Fire Protection Association
1 Battery March Park, Quincy MA 02269-9101

Puerto Rico Department of Health
San Juan, Puerto Rico

Laboratorio de Salud Pública
Phase 1: General Demolition Package

Tel: (800) 344-3555

END OF SECTION

SECTION 26 05 26.16

LOW RESISTANCE NEUTRAL GROUNDING RESISTOR

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes low resistance neutral grounding resistor to connect the neutral of the Power Transformers to ground.
- B. Related Sections:
 - 1. Section 26 05 26 – Grounding and bonding
 - 2. Section 26 05 26.13 – Grounding System for Substations
 - 3. Section 26 08 00 – Acceptance Testing

1.2 REFERENCES

- A. All work shall be in accordance with the latest edition of all applicable codes and standards to include, but not limited to, the following:
 - 1. NEC – National Electrical Code
 - 2. OSHA – Occupational Safety & Health Act
 - 3. UL – Underwriters Laboratories
 - 4. ANSI – American National Standards
 - 5. NEMA – National Electric Manufacturers Association
 - 6. NETA – InterNational Electrical Testing Association
 - 7. IEEE – Institute of Electrical and Electronics Engineers
 - 8. PREPA – Puerto Rico Electric Power Authority

1.3 SYSTEM DESCRIPTION

- A. Provide materials and labor to connect the neutral of the power transformer to ground through a low resistance resistor.

1.4 SUBMITTALS

- A. Shop Drawings: Indicate overall outline dimensions, floor plan, foundation bolt holes, support weight, and mounting details.
- B. Test Reports: Submit certified test reports in accordance with IEEE Standard 32.

1.5 CLOSEOUT SUBMITTALS

- A. Project Record Documents: Include copy of manufacturer's certified drawings.
- B. Operation and Maintenance Manuals: Submit complete instructions for unpacking, handling, care, inspection, installation, connection, operation, and maintenance of equipment.

1.6 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with a minimum of ten years of experience.
- B. Testing Agency: Company specializing in testing products specified in this section with a minimum of ten years of experience.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. All equipment shall be suitably created and protected for handling and shipment to the job site.
- B. The manufacturer as to the contents of the package shall list any accessories or components, which will be shipped separately.
- C. Package for San Juan, Puerto Rico shipment. Shipment crates, and boxes shall be clearly identified as to its contents.
- D. Accept equipment on site. Inspect for damage.
- E. Handle carefully to avoid damage to components and finish.

PART 2 - PRODUCTS

2.1 GENERAL

- A. The neutral grounding resistance shall be designed, and factory tested in accordance with IEEE Standard 32.
- B. The neutral grounding resistance shall be designed to conform the requirements in accordance with the Puerto Rico Building Code 2018 unless otherwise specified.
- C. The neutral grounding resistance shall be suitable for outdoor service.

2.2 RATINGS

- A. System voltage and initial current as indicated on Drawings. It will withstand operation at rated voltage for 10 seconds, without exceeding a temperature rise of 750 degrees C, unless otherwise indicated.

2.3 DESIGN DETAILS

- A. The resistor will consist of stainless-steel stamped grid elements, double insulated. The resistor terminals must be stainless steel. All resistor endframes, hardware, and non-current carrying spacers must be zinc plated steel.
- B. If more than one resistor frame is required, series connections must be solid copper bus.
- C. The resistor bank or banks shall be mounted on porcelain standoff insulators with a rating equal to or greater than the line to neutral voltage.

2.4 ENCLOSURE

- A. The neutral grounding resistor shall be provided with an outdoor safety enclosure. The enclosure shall have a solid top, screened side covers, and top mounted eyebolts for handling ease. The enclosure finish will be mill galvanized or ANSI 61 gray unless otherwise specified.

2.5 NAMEPLATES

- A. The neutral grounding resistor shall be provided with an aluminum or stainless-steel nameplate, which shall be riveted to the exterior of the enclosure. Furthermore, each resistor bank must be identified with an aluminum or stainless-steel nameplate riveted to the resistor bank end frame.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that pads and supports are suitable for installation.

3.2 INSTALLATION

- A. Neutral grounding resistors shall be mounted on a concrete base 4 inches high above finished floor level.
- B. Set neutral grounding resistors plumb and level on concrete base.
- C. Provide seismic restraints.
- D. Sufficient space shall be provided all around the transformer to assure adequate ventilation.
- E. Ground and bond the neutral grounding resistors in accordance With Sections 26 05 26 and 26 05 26.13.

3.3 FIELD QUALITY CONTROL

- A. Perform inspections and test NETA, Section 7.13 (Grounding System)
- B. Perform additional Electrical Tests if required by the Puerto Rico Electrical Power Authority. Submit evidence of PREPA approval.

3.4 CLEANING

- A. Clean exposed surfaces and restore finish.

END OF SECTION

SECTION 26 05 33.19
RACEWAYS: WIREWAYS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes wireways.
- B. Related Sections:
 - 1. Section 26 05 24 – Auxiliary Gutters

1.2 REFERENCES

- A. All work shall be in accordance with the latest edition of all applicable codes and standards to include, but not limited to, the following:
 - 1. NEC – National Electrical Code
 - 2. OSHA – Occupational Safety and Health Act.
 - 3. UL – Underwriters Laboratories
 - 4. ANSI – American National Standards Institute
 - 5. NEMA – National Electric Manufacturers Association

1.3 SYSTEM DESCRIPTION

- A. Provide Wireways in which conductors are laid in place after the wireway has been installed as a complete system.

1.4 SUBMITTALS

- A. Product Data: Submit data for each type of Wireway used in the Project.

1.5 DELIVERY, STORAGE AND HANDLING

- A. All materials furnished under this section shall be new, unused, and delivered in original manufacturer's packaging.
- B. All materials shall be labeled and identified for intended application.
- C. All materials shall be protected from damage at all times and stored in staging areas.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Wireway System shall be provided where indicated on Drawings. The system will include straight sections, elbows, T fittings, X fittings, and couplings as required providing a complete system. Every component shall be constructed in accordance with Underwriters' Laboratories Standards UL 870 and NEMA 250.
- B. The components of the Wireway System shall be constructed and installed to ensure adequate electrical and mechanical continuity of the complete system.

- C. Wireway shall be of sufficient size to accommodate feeder conduits and cables and provide ample room for installing the conductors.
- D. Wireway shall not contain more than 30 current-carrying conductors at any cross section. The sum of the cross-sectional areas of all contained conductors shall not exceed 20 percent of the interior cross-sectional area of the wireway.
- E. Where more than 30 conductors are installed the derating factors specified in the National Electrical Code (NFPA 70) shall be applied to the current-carrying conductors.
- F. For entire Wireway System installation, some of the following types, as noted on Drawings, shall be used. Metal wireways installed outdoors shall be listed as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
 - 1. General Purpose Nema Type 1 for interior locations.
 - 2. Raintight Nema Type 3R for exterior locations.
 - 3. Oiltight Nema Type 12 for interior locations where a degree of protection against dust, falling dirt and dripping water is required.
 - 4. Stainless Steel Nema 4X for corrosive atmospheres in interior and exterior locations.
- G. Wireways shall not have openings except those through which conduits pass.
- H. Wireway shall be suitable for lay-in conductors. Connector cover shall be permanently attached to permit that the conductors are laid in place after the wireway has been installed as a complete system.

2.2 GENERAL PURPOSE NEMA TYPE 1 WIREWAY

- A. Wireway shall be constructed with or without knockouts as indicated on Drawings.
- B. As indicated on Drawings Wireway finish shall be:
 - 1. Galvanized Sheet Steel
 - 2. Sheet Steel provided with a rust inhibiting coating and baked enamel finish.
- C. The thickness of the sheet steel shall not be less than the following:

Maximum Width of the Widest Surface	USS Gauge
Not over 6 inches	No. 16
Over 6 inches and not over 12 inches	No. 14

- D. Wireway shall have full-access screw cover mounted with corrosion resistant screws, or hinged cover. All screws installed toward the inside shall be protected by spring nuts or otherwise guarded to prevent wire insulation damage.

2.3 RAIN-TIGHT NEMA TYPE 3 WIREWAY

- A. Wireway shall be of galvanized sheet steel. The thickness of the sheet steel shall not be less than the following:

Maximum Width of the Widest Surface	USS Gauge
Not over 6 inches	No. 16
Over 6 inches and not over 12 inches	No. 14

- B. Wireway shall have gasketed full-access screw cover mounted with corrosion resistant screws. All screws installed toward the inside shall be protected by spring nuts or otherwise guarded to prevent wire insulation damage.
- C. Wireway shall have conduit hubs or equivalent provision to exclude water at the conduit entrance.

2.4 OILTIGHT

- A. Wireway shall be constructed with or without knockouts as indicated on Drawings.
- B. Wireway shall be constructed of 14-gauge steel. All metal parts shall be provided with rust inhibiting phosphatizing coating and a baked finish.
- C. Wireway shall have hinged covers with gaskets all around. Covers shall be held closed with external screw clamps or quick release latches.
- D. Oil resistant gaskets shall be provided in each joint to assure oil tight seal when lengths are joined.
- E. All straight sections and fittings shall be completely open on one side, so conductors can be laid in along an entire wireway run.
- F. Wireway joint connections shall be made with corrosion resistant screws.

2.5 STAINLESS STEEL TYPE 4X WIREWAY

- A. Wireway shall be constructed of Type 304 stainless steel. 16 gauge shall be used in the covers and bodies and 10 gauge in the flanges.
- B. Wireway shall have hinged covers with gaskets all around. Covers shall be closed with external screw clamps to assure complete seal between covers and bodies.
- C. Oil resistant gaskets shall be provided in each joint to assure oil tight seal when sections and fittings are bolted together. Wireway joint connections shall be made with stainless steel screws.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify wireway locations and routing and termination of raceways prior to rough in.
- B. Coordinate the work with that of other trades to ensure that the wireways are true and level with finished ceiling, wall, or floor.
- C. No electrical work shall be installed in areas where the work of other trades might cause physical damage to conductors, equipment, wireway or fittings until the work of the other trades has been completed.

3.2 INSTALLATION

- A. Wireways shall be supported from the building structure. Provide supports as follows:

1. Horizontal Support: At each end of the horizontal run and at each joint, and other points to maintain spacing between supports of 10 feet maximum.
 2. Vertical Support: At intervals not exceeding 15 feet. There shall be not more than one joint between supports.
- B. Wireways shall not be installed in concealed spaces.
- C. Where the wireway passes transversely through walls, the length passing through the wall shall be unbroken and access to the conductors shall be maintained on both sides of the wall.

3.3 CLEANING

- A. Clean interior of wireways to remove dust, debris, and other material.
- B. Clean exposed surfaces and restore finish.

END OF SECTION

SECTION 26 05 33.29

RACEWAYS: OUTLET BOXES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes outlet boxes.
- B. Related Sections:
 - 1. Section 26 05 33.13 – Conduit System
 - 2. Section 26 05 33.16 – Conduit Fittings

1.2 REFERENCES

- A. All work shall be in accordance with the latest edition of all applicable codes and standards to include, but not limited to, the following:
 - 1. NEC – National Electric Code
 - 2. OSHA – Occupational Safety & Health Act
 - 3. UL – Underwriters Laboratories
 - 4. ANSI – American National Standards Institute
 - 5. NEMA – National Electric Manufacturers Association.

1.3 SYSTEM DESCRIPTION

- A. Provide outlet boxes as indicated on Drawings. Outlet boxes are shown in approximate locations unless dimensioned.

1.4 SUBMITTALS

- A. Product Data: Submit data for each type of outlet box used in the Project.

1.5 DELIVERY, STORAGE AND HANDLING

- A. All materials furnished under this section shall be new, unused, and delivered in original manufacturer's packaging.
- B. All materials shall be labeled and identified for intended application.
- C. All materials shall be protected from damage at all times and stored in staging areas.

PART 2 - PRODUCTS

2.1 GENERAL

- A. The box for each type of outlet shall be as specified in the ***Outlet Schedule on Drawings***.
- B. Boxes shall be furnished drilled and tapped to receive a grounding screw.

2.2 WALL AND CEILING BOXES

- A. Wall and ceiling boxes shall be standard square or octagonal galvanized stamped steel boxes, at least 4 inches wide and 1-½ inches deep. Each box shall be of sufficient size to provide free space for all conductors enclosed in the box and accommodate the specified conduits and wiring device or devices indicated on the Drawings. Sheet metal outlet and device outlets shall comply with NEMA OS1 and UL 514A.
- B. All boxes shall have plaster covers to bring openings flush with finished wall or not more than ¼ inch under wall surface.
- C. Install 3/8-inch fixture stud in lighting fixture outlet boxes as may be required.

2.3 BOXES IN CONCRETE SLAB

- A. Outlet boxes installed in concrete slab shall be standard (4 inches octagonal) deep concrete rings with appropriate covers. Install concrete rings so those conduits entering sides of boxes can clear steel reinforcing rods.
- B. Install 3/8-inch fixture stud in lighting fixture outlet boxes as may be required. Outlet boxes designed for attachment of luminaires weighing more than 50lb shall be listed and marked for the maximum allowable weight.

2.4 BOXES IN EXPOSED INSTALLATION

- A. Outlet boxes in exposed installations shall be of the cast-metal type with threaded openings or threaded hubs.

2.5 BOXES IN WET AND DAMP LOCATIONS

- A. Outlet boxes exposed to weather or in damp locations shall be of the cast-metal type with threaded hubs for conduit connections and with neoprene gasketed covers and stainless-steel cover screws.

2.6 BOXES IN HAZARDOUS AREAS

- A. In hazardous areas, boxes shall be approved for the type of hazard determined in accordance with the National Electrical Code classification. At least five full threads shall be engaged on all conduit connections to box hubs.

2.7 FLOOR BOXES

- A. Unless otherwise indicated on Drawings, boxes for floor outlets shall be of cast-metal, threaded conduit entrance, waterproof type with means for adjusting cover plate to finished floor level. Boxes shall have an approved gasket or seal between the adjusting ring and box. Cover plates shall be of heavy brass with permanent ring and box.
- B. When a Poke-Thru System is indicated on Drawings, provide devices UL listed and classified for this type of installation in order to meet the requirements for fire classification for up to four-hour floor slabs. These devices shall be installed in accordance with the manufacturer's recommendations. Provide flush or pedestal type of service box as indicated on Drawings.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify outlet locations and routing and termination location of raceways prior to rough in.
- B. Coordinate the work with that of other trades to ensure that the outlet boxes are true and level with finished ceiling, wall or floor.

- C. No electrical work shall be installed in areas where the work of other trades might cause physical damage to wires, conduit, equipment, boxes, or fittings until the work of the other trades has been completed.

3.2 INSTALLATION

- A. Outlets shall be located in the locations shown on the drawings. Outlet boxes shall be located so that when fixtures or other fittings are installed, they will be symmetrically located according to the room layout and will not interfere with other work or equipment.
- B. The height of the outlet boxes above finished floor level shall be as indicated on Drawings.
- C. Wall lighting outlets shall be located centered in columns or in wall above doors when installed in these locations.
- D. Clock outlets and/or exit light outlets over doors shall be installed at a height, which will center the clock or exit light between top of door trim and ceiling.
- E. Wall switch outlets, when located near doors, shall be installed on the lock side of the door and at a maximum distance of 6 inches from door trim.
- F. Wall outlets shall be installed with edges plumb and level. Locate wall outlets of same type at same level in each room, except where otherwise indicated.
- G. Wall outlets of different types (receptacles, telephone, data, etc.) that are indicated in the same location and at the same height shall be located at a maximum distance of 6 inches between center of outlets, except where otherwise indicated.
- H. Where rows of ceiling outlets occur, align them carefully.
- I. Open knockouts in outlet boxes only if required for inserting conduit. Seal unused openings as approved.
- J. Boxes shall be fastened in place to prevent movement during concrete pour.
- K. Boxes located in partitions such as gypsum board, metal, lath and plaster, or any other similar partition shall be adequately supported using approved devices.
- L. The opening in outlet boxes shall be closed during the plastering and/or concrete pour of structures with plain paper or clip-on blank metal plates. The use of newspaper will not be permitted.

3.3 CLEANING

- A. Clean interior of boxes to remove dust, debris, and other material.

END OF SECTION

SECTION 26 05 33.33

RACEWAYS: JUNCTION, PULL & CABLE SUPPORT BOXES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes Junction, Pull and Cable Support Boxes.
- B. Related Sections:
 - 1. Section 26 05 33.13 – Conduit System

1.2 REFERENCES

- A. All work shall be in accordance with the latest edition of all applicable codes and standards to include, but not limited to, the following:
 - 1. NEC – National Electrical Code
 - 2. OSHA – Occupational Safety and Health Act
 - 3. UL – Underwriters Laboratories
 - 4. ANSI – American National Standards Institute
 - 5. NEMA – National Electric Manufacturers Association

1.3 SYSTEM DESCRIPTION

- A. Provide Junction Boxes, Pull Boxes and Cable Support Boxes as indicated on Drawings. Boxes are shown in approximate locations unless dimensioned.

1.4 SUBMITTALS

- A. Product Data: Submit data for each type of box used in the Project.

1.5 DELIVERY, STORAGE AND HANDLING

- A. All materials furnished under this section shall be new, unused, and delivered in original manufacturer's packaging.
- B. All materials shall be labeled and identified for intended application.
- C. All materials shall be protected from damage at all times and stored in staging areas.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Minimum size of boxes shall be as required by the National Electrical Code for the number of conduits and conductors entering and leaving it. Where intermediate cable supports are necessary because of box dimensions, insulated, removable cross brackets to support the conductors shall be provided.

- B. Where indicated on Drawings, vertical cable support boxes shall be provided. Boxes shall be large enough to accommodate the feeder conduits indicated and provide ample space to install cable supports.
- C. Where indicated on Drawings, boxes are to be equipped with steel barriers to separate the feeder circuits.
- D. Partitions shall be installed in all multipurpose pull boxes for isolating conductors of different systems.
- E. Boxes shall not have openings except those through which conduits pass.
- F. Unless otherwise indicated on Drawings the following types of boxes shall be provided:
 - 1. Interior locations: Galvanized Sheet Steel
 - 2. Outdoor locations: Galvanized Sheet Steel, Nema 3R raintight construction or Cast Metal type, as specified on Drawings.
 - 3. Wet and Damp Locations: Cast Metal type.
 - 4. Corrosive atmospheres: Type 4X Stainless Steel or Cast Metal type.
 - 5. Hazardous Areas: Cast Metal type suitable for use in the area in accordance with the classification of the area.

2.2 GALVANIZED SHEET STEEL BOXES

- A. Except as otherwise indicated on Drawings boxes shall be:
 - 1. Nema Type 1 for indoor installation.
 - 2. Nema Type 3R for outdoor installation or indoor installation that needs protection for dripping water.
- B. Type 1 boxes shall have full-access screw covers mounted with corrosion resistant screws, or hinged doors, as indicated on Drawings. All flanges shall overlap at least ½ inch. A cover attached to a box for flush mounting shall extend at least 1-inch beyond each of the outer walls of the box proper.
- C. Type 3R boxes shall have gasketed full-access screw covers mounted with corrosion resistant screws, or gasketed hinged doors, as indicated on Drawings. Boxes shall have conduit hubs or equivalent provision to exclude water at the conduit entrance. Galvanized steel shall be painted for a double layer of corrosion protection.
- D. For boxes not over 100 cubic inches in size, the metal shall not be less than No. 14 USS gauge.
- E. For boxes over 100 cubic inches in size, the metal shall be not less than the following:

<u>Where no Surface Area Exceeds</u>	<u>Where no Single Dimension Exceeds</u>	<u>USS Gauge</u>
1000 square inches	40 inches	No. 14
1500 square inches	60 inches	No. 12
Over 1500 square inches	Over 60 inches	No. 10

2.3 STAINLESS STEEL BOXES

- A. Except as otherwise indicated on Drawings boxes shall be:
 - 1. Nema Type 4X for corrosive atmospheres at indoor locations
 - 2. Nema Type 4X for corrosive atmospheres at outdoor locations
- B. Boxes shall have gasketed full-access screw covers mounted with stainless steel screws, or gasketed hinged doors, as indicated on Drawings. All flanges shall overlap at least ½ inch.
- C. For boxes not over 100 cubic inches in size, the metal shall not be less than No. 16 USS gauge.
- D. For boxes over 100 cubic inches in size, the metal shall be not less than the following:

<u>Where no Surface Area Exceeds</u>	<u>Where no Single Dimension Exceeds</u>	<u>USS Gauge</u>
900 square inches	36 inches	No. 16
2200 square inches	60 inches	No. 14
Over 2200 square inches	Over 60 inches	No. 12

2.4 CAST METAL BOXES

- A. In wet and damp location boxes shall have threaded hubs for conduit connections and shall be provided with neoprene gasketed covers.
- B. In hazardous areas, boxes shall be approved for the type of hazard determined in accordance with the National Electrical Code classification. At least five full threads shall be engaged on all conduit connections to box hubs.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify box locations and routing and termination of raceways prior to rough in.
- B. Coordinate the work with that of other trades to ensure that the outlet boxes are true and level with finished ceiling, wall, or floor.
- C. No electrical work shall be installed in areas where the work of other trades might cause physical damage to wires, conduit, equipment, boxes, or fittings until the work of the other trades has been completed.

3.2 INSTALLATION

- A. Boxes shall be securely mounted to the building structure with supporting facilities independent of the conduit entering or leaving the boxes.
- B. The mounting holes on boxes shall be of sufficient size to permit a certain amount of adjustment. If the mounting holes become too large for the screw or bolt head, properly sized washers must be used.
- C. Large boxes shall be provided with additional support. Structural leg supports from the box to the building structure or wall will be required.

- D. In long vertical runs, conductors shall be supported in pull boxes at maximum spaces as follows:

Conductor Size	Copper	Aluminum
1/0 or smaller	100 feet	200 feet
2/0 to 4/0	80 feet	180 feet
250 MCM to 350 MCM	60 feet	135 feet
To 500 MCM	50 feet	120 feet
To 750 MCM	40 feet	95 feet
Over 750 MCM	35 feet	85 feet

- E. Where any dimension of a Junction or Pull Box exceeds 6 feet, provisions shall be made for racking or otherwise supporting all conductors in the box.
- F. Where several feeders pass through a common pull box fireproof tags or other approved method shall identify them.
- G. Conductors of light and power systems of 600 volts or less may be installed in the same enclosure, providing only that all conductors in the enclosure are insulated for the maximum voltage of any system within the enclosure.
- H. Pull, Junction and Cable Support Boxes shall be permanently accessible. Conductors inside the box must be accessible without removing wall covering, plaster, or any other parts of the building, except those which are designed for ready removal and replacement such as removable ceiling panels, access panels, etc.

3.3 CLEANING

- A. Clean interior of boxes to remove dust, debris, and other material.
- B. Clean exposed surfaces and restore finish.

END OF SECTION

SECTION 26 05 43

UNDERGROUND DUCT SYSTEM

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes underground duct construction for electrical distribution systems.

1.2 RELATED SECTIONS

- A. Section 26 05 26 – Grounding and Bonding

1.3 REFERENCES

- A. All work shall be in accordance with all applicable codes and standards to include, but not limited to, the following:
 - 1. NEC – National Electrical Code
 - 2. OSHA – Occupational Safety & Health Act
 - 3. UL – Underwriters Laboratories
 - 4. ANSI – American National Standards
 - 5. ASTM – American Society for Testing and Materials.
 - 6. NEMA – National Electric Manufacturers Association
 - 7. PREPA – Puerto Rico Electrical Power Authority
 - 8. PRHA – Puerto Rico Highway Authority

1.4 SYSTEM DESCRIPTION

- A. Provide all labor and materials to complete trenching, duct system, manholes, concrete encasement when required, backfilling, and pavement repair for the construction of electrical distribution system as indicated on drawings.
- B. As indicated on Drawings the duct installation for the electrical distribution system shall be of the following types:
 - 1. Conduit installation with concrete encasement.
 - 2. Conduit installation without concrete encasement.

1.5 SUBMITTALS

- A. Product Data: Submit data for each type of conduit, prefabricated manholes, conduit spacers, marking tape and accessories used in the Project.

1.6 CLOSEOUT SUBMITTALS

- A. Project Record Documents: Furnish one set of marked copies of contract drawings, showing exact routing and depths of all underground conduits, manholes, pull boxes and hand holes. Furnish

scaled plot plans showing principal outline of buildings and structures. Reference conduits, ducts, box walls, and all bends deviating from straight line, dimensionally from fixed objects or structures.

1.7 COORDINATION

- A. Resolve interference with other underground ducts, piping or equipment, either new or existing.

1.8 DELIVERY, STORAGE AND HANDLING

- A. All materials furnished under this section shall be new, unused and delivered in original manufacturer's packaging.
- B. All materials shall be protected from damage at all times and stored in staging areas.

PART 2 - PRODUCTS

2.1 CONDUITS

- A. All conduits shall be provided with fittings and accessories.
- B. Conduit installation with concrete encasement: As indicated on drawings the conduit shall be:
 - 1. Rigid Steel: hot dipped galvanized
 - 2. Plastic: Polyvinyl chloride (PVC) conduit, DB-120 or Schedule 40 approved for use as raceway for 90 degree C conductors.
- C. Conduit installation without concrete encasement: As indicated on Drawings the conduit shall be:
 - 1. Plastic: Polyvinyl chloride (PVC) conduit, DB-120 or Schedule 40 approved for use as raceway for 90 degree C conductors.

2.2 CONDUIT SPACERS

- A. Provide conduit spacers made of plastic to maintain spacing of 3 inches (76 mm) between conduits.

2.3 GRAVEL FILL

- A. Clean 3 inches maximum size, not more than 70 percent passing No. 4 sieve, not more than 10 percent passing No. 200 mesh sieve.

2.4 CONCRETE

- A. 3,000 psi at 28 days. Minimum 5-1/2 sacks cement, maximum 1-inch coarse aggregate. Aggregate to meet ASTM C33.

2.5 REINFORCEMENT

- A. ASTM A-615 Grade 40

2.6 PAVEMENT

- A. 6-inch run off crush stone base course, grading Class B.
- B. 4-inch bituminous base course B-1
- C. 2-inch bituminous surface course S-1
- D. All materials measured at depth after compaction.

PART 3 - EXECUTION

3.1 PAVEMENT CUTTING

- A. Cut pavement in straight lines, as required for trench excavation.
- B. Remove and legally dispose of pavement materials.

3.2 TRENCH EXCAVATION

- A. Prior to opening an excavation, effort shall be made to determine whether underground installations (sewer, water, fuel, electrical lines, telephone lines, etc.) will be encountered and, if so, where such underground installations are located. When the excavation approaches the estimated location of such an installation, the exact location shall be determined and when it is uncovered, proper supports shall be provided for the existing installation.
- B. Includes all earth and miscellaneous material encountered that is possible to excavate with a one-cubic yard backhoe in good working condition. Excavate to exact depth and grade with bottom tamped hard. Report wet or unstable trench bottom to Owner. Should Owner deem unsuitable, excavate to depth as directed and backfill with approved bedding material as directed by Owner. The duct structure should be kept dry until the concrete envelope has been poured. The trench must be pumped where there is an excessive amount of water.
- C. The trench bottom should be level. The levelness of the duct structure is determined by the levelness of the trench bottom. All sharp bends should be avoided in the excavation.
- D. Banks and Sides: Angle or recline to sheathing, shoring and bracing as required for safety, and conforming to all applicable laws, rules, regulations, and codes.
- E. Protection: Provide lights and barricades to properly protect persons and property per all applicable laws and regulations.
- F. Disposal of excess Excavated Material: Legally dispose all excess excavated material off site.

3.3 INSTALLATION OF CONDUITS

- A. Install conduit indicated to be encased in concrete with concrete, spacers, reinforcing, etc. as specified, and as indicated.
- B. Install conduit runs following routing on drawings and running in straight lines as far as possible. Where deviation from a straight line becomes necessary, install bends of sufficient radius for proper rodding and installation of cables.
- C. Accomplish changes in direction of runs exceeding total of 10 degrees, either vertical or horizontal, by long sweep bends having a minimum radius of curvature of 25 feet (7.62 m), except that manufactured bends used at ends of short runs of 100 feet (30.48 m) or less and then only at or close the end of run. Long sweep bends made up of one or more curved or straight sections and/or combinations thereof. Install manufactured bends with minimum radius of 36 inches (915 mm) where larger radius cannot be used.
- D. Lay duct lines to minimum slope of 3 inches (76 mm) per 100 feet (30.48 m) and slope to manholes, as indicated. Duct lines are to slope away from buildings where possible.
- E. Stagger joints in conduits at least 6 inches (150 mm). Do not allow couplings to rest on bottom of trench. Install couplings for plastic conduit in accordance with manufacturer's recommendations.
- F. Install spacers at intervals of approximately 5 feet (1.52 m) and stagger between tiers of ducts to provide not less than 12 inches (300 mm) of longitudinal separation. The maximum intervals

between spacers on curved sections should not exceed 4 feet (1.22 m). Install base spacers to provide at least 3 inches (76 mm) between bottom of trench and underside of bottom conduits. Completely fill space with concrete. Firmly tied conduits and spacers together with pieces of heavy twine (not wire) before concrete is placed.

- G. Due to magnetic induction under no circumstances shall reinforcement rod or magnetic type material be used to support conduits or used between duct lines.
- H. Prior to placing of concrete, remove all dirt, sand, and any other debris from between conduits and from trench bottoms. Hold conduits in place to prevent floating or accidental movement.
- I. Install concrete encasements so minimum clearance of 12 inches (300 mm) from concrete to parallel pipes, lines, structures, etc. is maintained. Where ducts cross, minimum clearance of 6 inches (150 mm) will be acceptable. Do not allow the top of concrete to be less than 36 inches (915 mm) below finished grade or paving. Submit special conditions, which may require lesser clearances for approval.
- J. No sharp objects, such as reinforcing rods, spades, etc. should be used for tamping the concrete envelope around the ducts. Wooden tampers are recommended. Concrete vibrators should never be used for tamping.
- K. Exposed duct ends shall be protected during pouring so that concrete cannot get inside ducts.
- L. Where a connection is made to existing duct line, firmly bond or dowel concrete encasement to existing encasement.
- M. Where electrical ducts cross under roads, encase them in concrete.
- N. Keep conduits clean of concrete, dirt, and other substances during the course of construction. After the duct lines have been completed, pull a standard flexible mandrel not less than 12 inches (300 mm) long, having a diameter approximately $\frac{1}{4}$ inch (6 mm) less than the inside diameter of the conduit, through each conduit, after which, pull a brush with stiff bristles through each conduit to make certain that no particles of earth, sand or gravel have been left in the line. Replace conduit runs that do not allow the passage of the mandrel at any additional cost to the Owner. Pneumatic rodding may be used to draw in the lead wire. Plug and seal spare conduits after cleaning.

3.4 TRENCH BACKFILL

- A. Materials: Where no pavement occurs, use excavated material. Where pavement occurs, use gravel.
- B. Start after approval by Owner. Backfill should not be placed until the concrete has been allowed sufficient time to set. A minimum time of 48 hours after pouring of concrete is recommended.
- C. Place:
 - 1. Conduit encased in concrete: Material used in backfilling around duct banks should be fine and free from lumps, well tamped beneath and adjacent to the sides of the concrete envelope. Place 6-inch layers from bottom of excavation to bottom of paving. No boulders or stones over 4 inches. Tamp each 6-inch layer with mechanical tamper.
 - 2. Conduit without concrete encasement: Backfill shall contain no boulders or stones over 1-inch to a point 12 inches above raceways. Tamp each 6-inch layer with mechanical tamper.
- D. Compaction: Uniformly spread each layer moisten or dry, as required, and then compact so unit dry weight of the compacted material meets or exceeds 95 percent Modified Proctor, as per ASTM D-1557. Provide a minimum of 4-field density tests to verify compaction.

3.5 PLACING PAVEMENT

- A. Place each layer separately and compact to depths specified. Comply with Specification Section 401 of the Puerto Rico Highway Authority.

3.6 MANHOLES, PULL BOXES, AND HAND HOLES

A. General

1. Unless otherwise indicated, install tops of manhole covers in unpaved areas approximately 2 inches (25 mm) above finished grade and in paved areas install flush with finished surface of paving.
2. Install galvanized corrosion-resistant channel support with continuous slot and required fittings designed for concrete encasement.
3. Where duct lines, enter thin wall terminate conduits with end bells.
4. Damp proofing: Apply two coats of bituminous damp proofing material to exterior surfaces of wall. Apply by brush or spray, in accordance with manufacturer's instructions. Allow time between coats to permit sufficient drying.

B. Prefabricated:

1. Shall be approved by the Puerto Rico Electrical Power Authority and/or the Puerto Rico Highway Authority.

C. Cast in Place:

1. Construct them of Class A (3,000 psi) concrete cast in place, as indicated.
2. Place a 6-inch (150 mm) crushed stone base under each manhole.
3. Construct cast-in-place manholes, pull boxes, and hand holes with forms, complete with centering cores and molds to conform to shape, form, line, and grade required, and maintain sufficiently rigid to prevent deformation under load. Make all joints leak proof and arrange horizontally or vertically. Place forms on successive units for continuous surfaces and fit to accurate alignment, assuring a smooth completed surface, free from irregularities.
4. At convenient point close to wall, drive two- (2) 5/8-inch by 8-feet long copper-clad steel ground rods into earth as indicated. Extend ground rod approximately 5 inches (125 mm) above finished manhole floor. After completion of manhole, connect 6-foot (1.83 m) length of No. 2/0 AWG bare copper wire to ground rod and coil it within manhole.
5. Size space and place reinforcing bars, as indicated, and as specified.
6. Set frames to the required grade in full bed of concrete mortar, to take watertight connection.

3.7 CLEANING

- A. Clean interior of manholes, pull boxes and hand holes to remove dust, debris, and other material.

END OF SECTION

SECTION 26 08 00

ACCEPTANCE TESTING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes Acceptance Testing for Electrical Power Distribution Equipment and Systems.

1.2 APPLICABLE REFERENCES

- A. All inspections and field tests shall be in accordance with the latest edition of the following codes, standards, and specifications except as provide otherwise herein.
 - 1. ASTM – American Society for Testing and Materials
 - 2. ANSI – American National Standards Institute
 - 3. IEEE – Institute of Electrical and Electronic Engineers
 - 4. ICEA – Insulated Cable Engineers Association
 - 5. NETA – International Electrical Testing Association
 - 6. NEMA – National Electrical Manufacturer's Association
 - 7. NEC – National Electrical Code
 - 8. NFPA – National Fire Protection Association
 - 9. OSHA – Occupational Safety and Health Administration
 - 10. PREPA – Puerto Rico Electric Power Authority
 - 11. UL – Underwriters Laboratories, Inc.

1.3 EQUIPMENT AND SYSTEMS TO BE TESTED

- A. Transformers
- B. Cables and Wires
- C. Metal-Enclosed Busways
- D. Outdoor Bus Structures
- E. Switches
- F. Circuit Breakers
- G. Switchgear and Switchboard Assemblies
- H. Instrument Transformers
- I. Metering
- J. Protective Relays
- K. Ground-Fault Protection System

- L. Surge Arrestors
- M. AC Motors
- N. AC Generators
- O. Motor Control
- P. Adjustable Speed Drive Systems
- Q. Emergency Systems
- R. Uninterruptible Power Systems
- S. Capacitors
- T. Direct-Current Systems
- U. Grounding Systems.

1.4 SYSTEM DESCRIPTION

- A. The work covered by this specification shall include furnishing all labor, material, equipment, and services to perform de acceptance tests for the complete electrical system.
- B. Preliminary acceptance tests are defined as those tests and inspections required to determine that the equipment involved may be energized for final operations tests.
- C. Final acceptance will depend upon equipment performance, characteristics, ant their compliance with the intended design as determined by system operational tests defined in this and other sections of these specifications.
- D. Use the standards of the industry such as IEE, NEMA, ANSI, IPCEA, NETA and guides in testing the equipment.
- E. Follow all Puerto Rico Electric Power Authority (PREPA) regulations.

1.5 QUALIFICATIONS

- A. The testing shall be performed by an independent testing laboratory engaged in the business of electrical acceptance testing similar to the inspections and tests specified. Testing laboratory shall have a minimum of ten years experience.
- B. The testing laboratory shall submit proof of qualifications to the Owner. Proof shall include but not be limited to:
 - 1. Name of the required registered professional engineer.
 - 2. Qualifications of test personnel: Minimum of two years supervised field experience, or certified National Electrical Testing Association (NETA) test technician.
 - 3. Experience as a testing laboratory for a minimum of five years.
 - 4. Equipment available for use on this project.
- C. Membership in the NETA may be submitted in addition to the above list to substantiate qualifications.

1.6 TEST PROCEDURE

- A. The Owner will provide a set of project electrical documents to assist in ascertaining the extent of the project testing.
- B. The testing laboratory shall be responsible for tests and test record for each item to be tested.
- C. Test in the presence of the Owner's representative at the option of the Owner.
- D. Report immediately to the Owner any system, material, or workmanship which is defective, in compliance with the specifications.
- E. Provide necessary test equipment and be responsible for setting-up test equipment, wire checks of factory wiring, and any other preliminary work in preparation for the electrical acceptance tests.
- F. Having a calibration program which maintains applicable test instrumentation within rated accuracy. Accuracy shall be traceable to the National Bureau of Standards. Calibration frequency shall be in accordance with the following schedule:
 - 1. Field instruments: six months maximum
 - 2. Laboratory instruments: 12 months maximum.
- G. Dated calibration shall be visible on equipment.
- H. Test in cooperation with other affected subcontractors. The schedule of tests shall be approved by the Owner's representative. Three-day notice shall be given prior to testing, unless otherwise necessary or specified.
- I. Advise the manufacturer's representative of tests performed on their equipment. Give a minimum of ten calendar day notice to permit him to witness the equipment under test, should be desire.
- J. Certain pieces of equipment have the services of a manufacturer's service engineer who will assist in performing the tests on the equipment. When this service is provided, he will verify and sign each report form.
- K. Tests shall be non-destructive and shall not exceed the manufacturer's recommended limit for the equipment being tested.
- L. Where required for the validity of tests of safety of equipment and personnel, isolate equipment to be tested from the system.
- M. All testing shall be performed according to the manufacturer instructions and test value limitation indicated by testing equipment company or equipment manufacturer.

1.7 TEST REPORT

- A. Incorporate a record of inspections and tests into the test report.
- B. The test report shall be bond and certified by the testing laboratory.
- C. Furnish seven (7) copies of the complete report to the Owner, no later than 30 days after completion of project. At the discretion of the Owner's representative, due to the installation scheduling of specific items of equipment or for other reasons, testing may be subdivided into several smaller packages. In that case, one copy of a test report shall be submitted no later than 30 days after completion of each test package, and an inclusive test report containing the package reports shall be submitted in the quantity and the time specified above for the complete project.
- D. Include the following in the test report:

1. Summary of the project.
 2. Description of the equipment tested.
 3. Description of test performed.
 4. List of test equipment used and calibration dates.
 5. Test results.
 6. Conclusions and recommendation, if any.
- E. Where adjustment, modifications, or repairs are made to equipment in order to meet the equipment and/or system specifications, the test results and reports shall indicate the "as left" condition.
- F. The test forms shall include but not be limited to the following:
1. Name plate catalog number, serial number, and rating.
 2. Desired performance or performance range.
 3. Measure performances.
 4. Test equipment used.
 5. Test personnel and date.
 6. Any discrepancies or repairs made.
- G. G. Test forms that are different than NETA copyrighted test report forms shall be approved by the Owner's representative.

1.8 VISUAL INSPECTION

- A. Prior to testing, equipment shall be visually inspected to determine that there is no physical damage, loose bolts or missing parts, and the equipment is supplied in agreement with the contract documents, and properly installed and connected.

1.9 ENVIRONMENTAL CONDITIONS

- A. Temperature
1. Test results shall be corrected to 20 degrees C both actual ambient temperature test reading and calculated, corrected to temperature, test values shall be reported.
 2. Test shall not be made on any equipment when the insulation temperature is below 0 degrees C.
- B. Humidity
1. Test shall not be made on any equipment where the relative humidity is above 70 percent. Deviations of this requirement will only be made by the Owner's representative, if it can be demonstrated that the higher humidity will not affect the test or that the higher humidity can be accounted for adequately in interpreting the test results.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Non used.

PART 3 - EXECUTION

3.1 TRANSFORMERS

- A. Dry Type Air-Cooled, 600 volt and below – Small (167 kVA Single-Phase, 500 kVA Three-Phase, and Smaller).
 - 1. Perform inspection and tests listed in NETA, Section 7.2.1.1
- B. Dry-Type Air-Cooled, All above 600 Volt and 600 Volt and Below-Large (Greater than 167 kVA Single-Phase and 500 kVA Three-Phase)
 - 1. Perform inspection and tests listed in NETA, Section 7.2.1.2
 - 2. Perform any additional test required by PREPA latest regulations.
- C. Liquid-Filled
 - 1. Perform inspection and test listed in NETA, Section 7.2.2
 - 2. Perform any additional test required by PREPA latest regulations.

3.2 CABLES

- A. Low-Voltage, 600 Volt Maximum
 - 1. Perform inspection and test listed in NETA, Section 7.3.2
- B. Medium-Voltage, 69 kV Maximum
 - 1. Perform inspection and test listed in NETA, Section 7.3.3
 - 2. Perform any additional test required by PREPA latest regulations.
- C. High-Voltage
 - 1. Perform inspection and test listed in NETA, Section 7.3.3
 - 2. Perform any additional test required by PREPA latest regulations.

3.3 METAL-ENCLOSED BUSWAYS

- A. Perform inspection and test listed in NETA, Section 7.4.

3.4 OUTDOOR BUS STRUCTURES

- A. Perform inspection and test listed in NETA, Section 7.21
- B. Perform any additional test required by PREPA latest regulations.

3.5 SWITCHES

- A. Low-Voltage

1. Perform inspection and test listed in NETA, Section 7.5.1.1
- B. Medium-Voltage, Metal-Enclosed
 1. Perform inspection and test listed in NETA, Section 7.5.1.2
 2. Perform any additional test required by PREPA latest regulations.
- C. High and Medium Voltage, Open
 1. Perform inspection and test listed in NETA, Section 7.5.1.3
 2. Perform any additional test required by PREPA latest regulations.
- D. Oil Switches: Medium-Voltage
 1. Perform inspection and test listed in NETA, Section 7.5.2
 2. Perform any additional test required by PREPA latest regulations.
- E. Vacuum Switches: Medium Voltage
 1. Perform inspection and test listed in NETA, Section 7.5.3
 2. Perform any additional test required by PREPA latest regulations.
- F. SF6 Switches: Medium Voltage
 1. Visual and Mechanical Inspection. Perform inspection and test listed in NETA, Section 7.5.4.
 - a. Inspect for physical damage and compare nameplate data with plans and specifications.
 - b. Inspect anchorage, alignment, and grounding.
 - c. Perform all mechanical operation and contact blade alignment tests on both the circuit switcher and its operating mechanism in accordance with manufacturer's instruction.
 - d. Check tightness of bolted bus joints by calibrated torque wrench method. Refer to manufacturer's instruction for proper foot pound level.
 2. Electrical Tests
 - a. Measure contact resistance
 - b. Perform switcher travel time test if unit is properly equipped for this test.
 - c. Circuit switcher shall be tripped by operation of each protective device.
 - d. Perform insulation resistance test on each pole to ground.
 - e. Perform ac or dc over potential test on each pole to ground and pole to pole.
 - f. Perform insulation resistance test on all control wiring at 1000 volts dc (Do not perform this test on wiring connected to solid state relays).
 - g. All tests indicated in this section shall be verified with equipment manual and manufacturer instructions and recommendations.

3.6 CIRCUIT BREAKERS

- A. Low-Voltage: Insulated/Molded Case
 - 1. Perform inspection and test listed in NETA, Section 7.6.1.1
- B. Low-Voltage: Power
 - 1. Perform inspection and test listed in NETA, Section 7.6.1.2
- C. Medium-Voltage: Air
 - 1. Perform inspection and test listed in NETA, Section 7.6.2.1
 - 2. Perform any additional test required by latest PREPA regulations.
- D. Medium-Voltage: Oil
 - 1. Perform inspection and test listed in NETA, Section 7.6.2.2
 - 2. Perform any additional test required by latest PREPA regulations.
- E. Medium-Voltage: Vacuum
 - 1. Perform inspection and test listed in NETA, Section 7.6.2.3
 - 2. Perform any additional test required by latest PREPA regulations.
- F. Medium-Voltage: SF6
 - 1. Perform inspection and test listed in NETA, Section 7.6.2.4
 - 2. Perform any additional test required by latest PREPA regulations.
- G. High-Voltage: Oil
 - 1. Perform inspection and test listed in NETA, Section 7.6.3.1
 - 2. Perform any additional test required by latest PREPA regulations.
- H. High-Voltage: SF6
 - 1. Perform inspection and test listed in NETA, Section 7.6.3.2
 - 2. Perform any additional test required by latest PREPA regulations.

3.7 SWITCHGEAR AND SWITCHBOARD ASSEMBLIES

- A. Perform inspection and test listed in NETA, Section 7.1

3.8 INSTRUMENT TRANSFORMERS

- A. Perform inspection and tests listed in NETA, Section 7.10

3.9 METERING

- A. Perform inspection and tests listed in NETA, Section 7.11

3.10 PROTECTIVE RELAYS

- A. Perform inspection and tests listed in NETA, Section 7.9
- B. Perform any additional test required by latest PREPA regulations.

3.11 GROUND-FAULT PROTECTION SYSTEM

- A. Perform inspection and tests listed in NETA, Section 7.14

3.12 SURGE ARRESTORS

- A. Low-Voltage Surge Protection Devices
 - 1. Perform inspections and tests listed in NETA, Section 7.19.1
- B. Medium and High-Voltage Surge Protection Devices
 - 1. Perform inspections and tests listed in NETA, Section 7.19.2

3.13 AC MOTORS

- A. Perform inspection and test listed in NETA, Section 7.15.1.1

3.14 AC GENERATORS

- A. Perform inspection and test listed in NETA, Section 7.15.2.1

3.15 MOTOR CONTROL

- A. Motor Starters: Low Voltage
 - 1. Perform inspection and test listed in NETA, Section 7.16.1.1
- B. Motor Starters: Medium Voltage
 - 1. Perform inspection and test listed in NETA, Section 7.16.1.2
- C. Motor Control Centers: Low and Medium Voltage
 - 1. Perform inspection and tests listed in NETA, Section 7.16.2.1

3.16 ADJUSTABLE SPEED DRIVE SYSTEMS

- A. Perform inspection and test listed in NETA, Section 7.17

3.17 EMERGENCY SYSTEMS

- A. Engine Generator
 - 1. Perform inspection and test listed in NETA, Section 7.22.1
- B. Automatic Transfer Switches
 - 1. Perform inspection and test listed in NETA, Section 7.22.3

3.18 UNINTERRUPTIBLE POWER SYSTEMS

- A. Perform inspection and test listed in NETA, Section 7.22.2

3.19 CAPACITORS

- A. Perform inspection and test listed in NETA, Section 7.20.1

3.20 DIRECT-CURRENT SYSTEMS

- A. Batteries
 - 1. Perform inspection and test listed in NETA, Section 7.18.1
- B. Battery Chargers
 - 1. Perform inspection and test listed in NETA, Section 7.18.2

3.21 GROUNDING SYSTEMS

- A. Perform inspection and test listed in NETA, Section 7.13

3.22 REFERENCES

- A. The reference Standards are available as follows:

International Electrical Testing Association (NETA)
P.O. Box 687, Morrison, CO 80465
Tel: (303)697-8441; Fax (303)697-8431
E-mail: neta@netaworld.org – Web site: www.netaworld.org

- B. Approved Testing Companies

- 1. EISEC
RR3, Box 3160
Río Piedras, PR 00928
Tel: (787)764-5015, (787)764-5130; Fax (787)751-3526
Mr. Alexis González.
- 2. Phasor Engineering Inc.
Box 9012, Ponce, PR 00732-9012
Tel: 844-9336, 844-3040; San Juan 727-4655
Mr. Rafael Castro
- 3. Power Engineering, Inc
St. D, Cataño, PR 00632
G.P.O Box 1905
San Juan, PR 00936
Tel: (787)788-6052 (787)788-6340, (787)788-5121, (787)788-6380
Mr. Félix J. Velázquez

END OF SECTION

SECTION 31 20 00

EARTH MOVING

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Examination of Subtracts, Areas and Conditions.
- B. Preparation.
- C. Dewatering.
- D. General Excavation Requirements.
- E. Preparing sub-grades for pavements.
- F. Sub-base course and base course for asphalt paving.
- G. Field Quality Control.
- H. Protection.
- I. Disposal of Surplus and Waste Materials.

1.2 RELATED SECTIONS

- A. Division 01 Sections – General Requirements.
- B. Section 02 41 16 - Structure Demolition.
- C. Section 03 30 53 - Miscellaneous Cast-In-Place Concrete
- D. Section 31 25 00 - Erosion and Sedimentation Controls.

1.3 REFERENCES

- A. AASHTO M145 - Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes.
- B. AASHTO T193 – Method of Test for the California Bearing Ratio.
- C. ASTM C33 - Concrete Aggregates
- D. ASTM C94 - Ready Mixed Concrete
- E. ASTM D448 - Sizes of Aggregate for Road and Bridge Construction
- F. ASTM D1557 - Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft lbf/ft³)
- G. ASTM D1883 - CBR (California Bearing Ratio) of Laboratory Compacted Soils
- H. ASTM D2167 - Density and Unit Weight of Soil in Place by the Rubber Balloon Method
- I. ASTM D2487 - Classification of Soils for Engineering Purposes (Unified Soil Classification System)
- J. ASTM D2937 - Density of Soil in Place by the Drive Cylinder Method

- K. ASTM D2940 - Graded Aggregate Material for Bases or Sub-bases for Highways or Airports
- L. ASTM D3740 - Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
- M. ASTM D4254 - Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density
- N. ASTM D4318 – Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
- O. ASTM D4429 - Test Method for CBR (California Bearing Ratio) of Soils in Place
- P. ASTM D6938 - Test Method for In Place Density and Water Content of Soil and Soil Aggregate by Nuclear Methods (Shallow Depth)
- Q. ASTM E329 - Agencies Engaged in Construction Inspection, Testing, or Special Inspection
- R. 29 CFR Part 1926 Sub-Part P – (Section 1926.650 - 1926.652): Safety and Health Regulations for Construction - Excavations
- S. US Bureau of Reclamation, Department of the Interior: Earth Manual, Parts 1 and 2

1.4 DEFINITIONS

- A. Base Course: Aggregate layer placed between the sub-base course and hot-mix asphalt paving.
- B. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.
- C. Excavation: Removal of material encountered above sub-grade elevations and to lines and dimensions indicated.
 - 1. Unauthorized Excavation: Excavation below sub-grade elevations or beyond indicated lines and dimensions without direction by Architect-Engineer. Unauthorized excavation, as well as remedial work directed by Architect-Engineer, shall be without additional compensation.
- D. Fill: Soil materials used to raise existing grades.
- E. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.
- F. Sub-base Course: Aggregate layer placed between the sub-grade and base course for hot-mix asphalt pavement, or aggregate layer placed between the sub-grade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.
- G. Sub-grade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below sub-base, drainage fill, drainage course, or topsoil materials.
- H. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

1.5 INFORMATIONAL SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures
- B. Qualification Data: For qualified testing agency.

- C. Material Test Reports: For each on-site and borrow soil material proposed for fill and backfill as follows:
 - 1. Classification according to ASTM D 2487.
 - 2. Laboratory compaction curve according to ASTM D 1557.
- D. Pre-excavation Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by earth moving operations. Submit before earth moving begins.

1.6 QUALITY ASSURANCE

- A. Section 01 40 00 - Quality Requirements
- B. Geo-technical Testing Agency Qualifications: Qualified according to ASTM E 329 and ASTM D 3740 for testing indicated.

1.7 FIELD CONDITIONS

- A. Section 01 73 00 - Execution
- B. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth moving operations.
 - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
 - 2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.
- C. Utility Locator Service: Notify "Centro de Excavaciones" for area where Project is located before beginning earth moving operations.
- D. Do not commence earth moving operations until temporary erosion- and sedimentation-control measures, specified in 31 25 00 - Erosion and Sedimentation Controls are in place.

PART 2 - PRODUCTS

2.1 MATERIALS - SOILS

- A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.
- B. Satisfactory Soils: Soil Classification Groups A-1 or A-2-4 according to AASHTO M 145, or a combination of these groups; free of rock or gravel larger than 3 inches in any dimension, debris, waste, vegetation, and other deleterious matter.
- C. Unsatisfactory Soils: Soil Classification Groups A-2-5, A-2-6, A-2-7, A-3, A-4, A-5, A-6, and A-7 according to AASHTO M 145.
 - 1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.
- D. Sub-base Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.
- E. Base Course: Refer to Section 32 11 23 - Aggregate Base Course.

- F. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.
- G. Sand: ASTM C 33; fine aggregate.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth moving operations.
- B. Protect and maintain erosion and sedimentation controls during earth moving operations.

3.2 DEWATERING

- A. Prevent surface water and ground water from entering excavations, from ponding on prepared sub-grades, and from flooding Project site and surrounding area.
- B. Protect sub-grades from softening, undermining, washout, and damage by rain or water accumulation.
 - 1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.

3.3 EXPLOSIVES

- A. Explosives: Do not use explosives.

3.4 EXCAVATION FOR STRUCTURES

- A. Excavate to indicate elevations and dimensions within a tolerance of plus or minus 1 inch. If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.

3.5 EXCAVATION FOR WALKS AND PAVEMENTS

- A. Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and sub-grades.

3.6 SUB-GRADE INSPECTION

- A. Notify Architect-Engineer when excavations have reached required sub-grade.
- B. If Architect-Engineer determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.
- C. Proof-roll sub-grade below the building slabs and pavements with a pneumatic-tired and loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated sub-grades.
 - 1. Completely proof-roll sub-grade in one direction, repeating proof-rolling in direction perpendicular to first direction. Limit vehicle speed to 3 mph.
 - 2. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Architect-Engineer, and replace with compacted backfill or fill as directed.

- D. Reconstruct sub-grades damaged by rain, accumulated water, or construction activities, as directed by Architect-Engineer, without additional compensation.

3.7 STORAGE OF SOIL MATERIALS

- A. Stockpiles borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 - 1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.8 BACKFILL

- A. Place and compact backfill in excavations promptly, but not before completing the following:
 - 1. Construction below finish grade including, where applicable, sub-drainage, damp-proofing, waterproofing.
 - 2. Surveying locations of underground utilities for Record Documents.
 - 3. Testing and inspecting underground utilities.
 - 4. Removing concrete formwork.
 - 5. Removing trash and debris.
 - 6. Removing temporary shoring and bracing, and sheeting.
 - 7. Installing permanent or temporary horizontal bracing on horizontally supported walls.
- B. Place backfill on sub-grades free of mud.

3.9 SOIL MOISTURE CONTROL

- A. Uniformly moisten or aerate sub-grade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.
 - 1. Do not place backfill or fill soil material on surfaces that are muddy.
 - 2. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry density.

3.10 COMPACTION OF SOIL BACKFILLS AND FILLS

- A. Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.
- B. Place backfill and fill soil materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.
- C. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D 1557:
 - 1. Under structures, building slabs, steps, and pavements, scarify and re-compact top 12 inches of existing sub-grade and each layer of backfill or fill soil material at 95 percent.

2. Under turf or unpaved areas, scarify and re-compact top 6 inches below sub-grade and compact each layer of backfill or fill soil material at 85 percent.

3.11 GRADING

- A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
 1. Provide a smooth transition between adjacent existing grades and new grades.
 2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.
- B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish sub-grades to required elevations within the following tolerances:
 1. Turf or Unpaved Areas: Plus or minus 1 inch.
 2. Pavements: Plus or minus 1/2 inch.

3.12 SUB-BASE AND BASE COURSES UNDER PAVEMENTS AND WALKS

- A. Place sub-base course and base course on sub-grades free of mud.
- B. On prepared sub-grade, place sub-base course and base course under pavements and walks as follows:
 1. Install separation geo-textile on prepared sub-grade according to manufacturer's written instructions, overlapping sides and ends.
 2. Place base course material over sub-base course under hot-mix asphalt pavement.
 3. Shape sub-base course and base course to required crown elevations and cross-slope grades.
 4. Place sub-base course and base course 6 inches or less in compacted thickness in a single layer.
 5. Place sub-base course and base course that exceeds 6 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.
 6. Compact sub-base course and base course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D 1557.

3.13 FIELD QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements
- B. Testing Agency: Contractor shall engage a qualified geotechnical engineering testing agency to perform tests and inspections.
- C. Allow testing agency to inspect and test sub-grades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.

- D. Testing agency will test compaction of soils in place according to ASTM D 1556, ASTM D 2167, ASTM D 2922, and ASTM D 2937, as applicable. Tests will be performed at the following locations and frequencies:
 - 1. Paved and Building Slab Areas: At sub-grade and at each compacted fill and backfill layer, at least one test for every 2000 sq. ft. or less of paved area or building slab, but in
- E. When testing agency reports that sub-grades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.

3.14 PROTECTION

- A. Protecting Graded Areas: Protect newly graded areas from traffic and erosion. Keep free of trash and debris.
- B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
 - 1. Scarify or remove and replace soil material to depth as directed by Architect-Engineer; reshape and recompact.
- C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
 - 1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.15 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Remove surplus satisfactory soil and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.
- B. Transport surplus satisfactory soil to designated storage areas on Owner's property. Stockpile or spread soil as directed by Architect-Engineer.
 - 1. Remove waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

END OF SECTION

SECTION 31 25 00

EROSION AND SEDIMENTATION CONTROLS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. General requirements
- B. Installation of erosion and sedimentation controls.
- C. Removal of temporary erosion control features.
- D. Maintenance of erosion control measures.
- E. Protection during supervision of Contract Time.
- F. Surface water management, stormwater runoff control and erosion control.

1.2 RELATED SECTIONS

- A. Division 1 Sections - General Requirements
- B. Section 31 20 00 – Earth Moving

1.3 REFERENCES

- A. EQB Approved CES Plan
- B. Erosion and Sedimentation Controls Drawings and Details

1.4 SUBMITTALS

- A. Section 01 33 00 – Submittal Procedures.
- B. Submit copies of a certification from the manufacturer and/or supplier that all materials used in this work meet the appropriate project specification.

1.5 QUALITY ASSURANCE

- A. Section 01 40 00 – Quality Requirements
- B. Implement CES Plan Measures indicated in the Drawings.
- C. Monitor and prepare monthly reports to EQB / DRNA.

1.6 CONTROL OF CONTRACTOR'S OPERATIONS WHICH MAY RESULT IN WATER POLLUTION

- A. Take sufficient precautions to prevent pollution of streams, channels and other water impoundments, with fuels, oils, bitumens, calcium chloride, or other harmful materials. Conduct and schedule operations so as to avoid or otherwise minimize pollution or siltation of such streams, etc. Do not dump the residue from dust collector or washer into any water body.
- B. Construction operations in channels and other impoundments shall be restricted to those areas where it is necessary to perform filling or excavation to accomplish the work shown in the Contract Documents and to those areas which must be entered to construct temporary or permanent structures. As soon as conditions permit, promptly clear channels and impoundments of all obstructions placed therein or caused by construction operations.

- C. Except as necessary for construction, do not deposit excavated material in channels or impoundments, or in a position close enough thereto, to be washed away by high water or runoff.
- D. Where pumps are used to remove highly turbid waters from enclosed construction areas or forms, treat water prior to discharge into storm sewer system. Pump the water into grassed swales, appropriate vegetated areas, or sediment basins, or confine it by an appropriate enclosure such as siltation curtains when other methods are not considered appropriate.
- E. Do not disturb lands or waters outside the limits of construction, except as may be found necessary to complete the work.

1.7 START OF WORK

- A. Prior to starting work the Contractor shall, field survey and stake the limits of construction.
- B. Obtain the Owner's approval of the field survey.
- C. Install all silt fence, hay bale and enviro fence along the limits of construction as indicated on the drawings and approved CES Plan.
- D. Obtain the Owner's and Environmental Quality Board / DRNA approval of the installed erosion and sedimentation control measures.
- E. Initiate permitted operations.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Materials used for the construction of the temporary erosion and sedimentation control measures are not to be incorporated into the completed project and therefore may be new or used materials.
- B. No testing of materials used in construction of temporary erosion control features will be required.

PART 3 - EXECUTION

3.1 GENERAL

- A. Temporary erosion control features shall consist of, but not to be limited to, temporary sodding, sandbagging, slope drains, sediment basins, artificial coverings, berms, baled hay or straw, floating silt barriers, staked silt barriers and skated fences. Design details for some of these items may be found in the Water Quality Section of the applicable Regulations for the Commonwealth of Puerto Rico.
- B. Incorporate permanent erosion control features into the project at the earliest practical time. Correct conditions, using temporary measures, that develop during construction to control erosion prior to the time it is practical to construct permanent control features.
- C. Construct temporary and permanent erosion and sediment control measures to prevent the pollution of adjacent water ways in conformance with the laws, rules and regulations of Federal, State and local agencies.

3.2 INSTALLATION

- A. Sandbagging: This work shall consist of furnishing and placing sandbags in configurations, so as to control erosion and siltation.
- B. Slope Drains: This work shall consist of constructing slope drains, utilizing pipe, filter fabric mats, rubble, cement concrete, asphaltic concrete plastic sheeting, or other acceptable materials in

accordance with details shown in PRHTA Standards or as may be approved as suitable to adequately perform the intended function.

- C. Sediment Basins: Sediment basins shall be constructed in accordance with the details shown in the drawings or as suitable to adequately perform the intended function. Sediment basins shall be cleaned out as often necessary.
- D. Artificial Coverings: This work shall consist of furnishing and applying fiber mats, netting, plastic sheeting, or other approved covering to the earth surfaces.
- E. Berms: This work shall consist of construction of temporary earth berms to divert the flow water from an erodible surface.
- F. Baled Hay or Straw:
 - 1. This work shall consist of construction of baled hay or straw dams to protect against downstream accumulation of silt. The baled hay or straw dams shall be constructed in accordance with the details shown in PRHTA Standards.
 - 2. The dams shall be placed so as to effectively control silt dispersion under conditions presents on this project. Alternate solutions and usage of materials may be used if approved.
- G. Temporary Silt Fences and Staked Silt Barriers: This work shall consist of furnishing, installing, maintaining and removing staked turbidity barriers in accordance with the manufacturer's directions, these specifications and the details as shown in the drawings.
- H. Floating Silt Barriers: This work shall consist of installing, maintaining, and removal of floating silt barriers to contain turbidity that may occur as the result of dredging, filling, or other construction activities in waters of the State. The type of barrier used, the deployment and maintenance of the barrier will be such as to minimize dispersion of turbid waters from the construction site. Alternate methods or materials may be used provided that compliance with applicable permit conditions and State water quality standards are maintained.
- I. Enviro Fence: This work shall consist of furnishing, installing, maintaining and removing staked geo-grid fence in accordance with this specification, the Drawings, and the manufacturer's recommendations.

3.3 REMOVAL OF TEMPORARY EROSION CONTROL FEATURES

- A. In general, remove or incorporate into soil any temporary erosion control features existing at the time of construction of the permanent erosion control features in such manner that there will be not detrimental effect. Removal of such measures shall not occur prior to receipt of approvals from the Owner.

3.4 MAINTENANCE OF EROSION CONTROL FEATURES

- A. General: Provide continuous routine maintenance of permanent and temporary erosion control features until the project is completed and accepted.

3.5 PROTECTION DURING SUSPENSION OF CONTRACT TIME

- A. If it is necessary that the construction operations be suspended for any appreciable length of time, shape the top of the earthwork in such a manner as to permit runoff of rainwater and construct earth berms along the top edges of embankments to intercept runoff water. Provide temporary slope drains to carry runoff from cuts and embankments which are located in the vicinity of rivers, streams, canals, lakes, and impoundments. Should such preventive measures fail, immediately take such other action as necessary to effectively prevent erosion and siltation.

3.6 SURFACE WATER MANAGEMENT, STORMWATER RUNOFF CONTROL AND EROSION CONTROL

- A. In addition to all other applicable laws, ordinances, codes, rules, regulations, orders and decrees with which Contractor is obligated to comply, the Contractor expressly affirms that it has made itself familiar with, and shall fully comply with, the Storm Water Pollution Prevention Plan (SWPPP) for this project (if any).
- B. Concurrently with the execution of the Agreement by the Contractor or 7 days before the Contractor begins work, whichever is earlier, the Contractor shall submit to the Owner for delivery to USEPA a completed and executed 'Notice of Intent' (NOI) for Storm Water Discharges Associated with Industrial Activity Under the NPDES General Permit, EPA Form 3510-6(0-92), and the Contractor shall submit to the Owner a completed and executed Contractor's Certification on a form to be provided by the Owner.
- C. The Contractor shall be responsible for all runoff control efforts, including without limitation providing protection of areas receiving runoff, in accordance with any applicable regulations, codes, plans and permits.
- D. The Contractor shall furnish, install and maintain, at no additional cost to the Owner, all necessary surface protection such as temporary retention basins, silt screens, diapers, jute mesh, filter fabric, hay bales, sod, sandbags, etc., for turbidity control and to prevent erosion and surface degradation.
- E. The Contractor recognizes and agrees that should any of the ponds, lakes, canals or other bodies of water adjacent to the site become contaminated due to the actions or inactions of the Contractor, the costs to flocculate, clean or remedy such contamination by any means necessary or required, will be borne by the Contractor. The Owner shall take turbidity readings on a regular basis and shall enforce all applicable environmental regulations.

END OF SECTION

SECTION 32 12 16.13

ASPHALT PAVEMENT REPAIR

PART 1 - GENERAL

1.1 SUMMARY

- A. This section specifies the materials, equipment, and methods required for the repair of asphalt pavement following trench excavation in existing streets.

1.2 REFERENCES

- A. Asphalt Institute Manual MS-4 - The Asphalt Handbook.
- B. Puerto Rico Transportation and Highway Authority - Specification Section 401 Hot Plant Mix Bituminous Pavement.

PART 2 - PRODUCTS

2.1 ASPHALTIC MATERIALS

- A. Surface Course: Hot Plant-Mix Bituminous Asphalt, Pavement Mix S-1(75).
- B. Base Course: Hot Plant-Mix Bituminous Asphalt, Pavement Mix B-1(75).

2.2 BASE MATERIALS

- A. Lean Concrete: 12-inch layer with a compressive strength of 1,000 psi.
- B. Fill Material: A-2-4 or better, compacted to 95% Modified Proctor Standard.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Excavate the trench to the required depth and width as per the existing conditions and remove all debris.
- B. Ensure the subgrade is stable and graded to the specified level.

3.2 SUBGRADE PREPARATION

- A. Compact the subgrade to 95% Modified Proctor Standard.
- B. Place and compact 12 inches of lean concrete ($f_c=1,000\text{psi}$) over the prepared subgrade.

3.3 BASE COURSE INSTALLATION

- A. Install the base course material to a compacted thickness of 0.10 foot of Pavement Mix B-1(75).

3.4 SURFACE COURSE INSTALLATION

- A. Overlay the base course with a 0.05 foot thick layer of the Pavement Mix S-1(75).

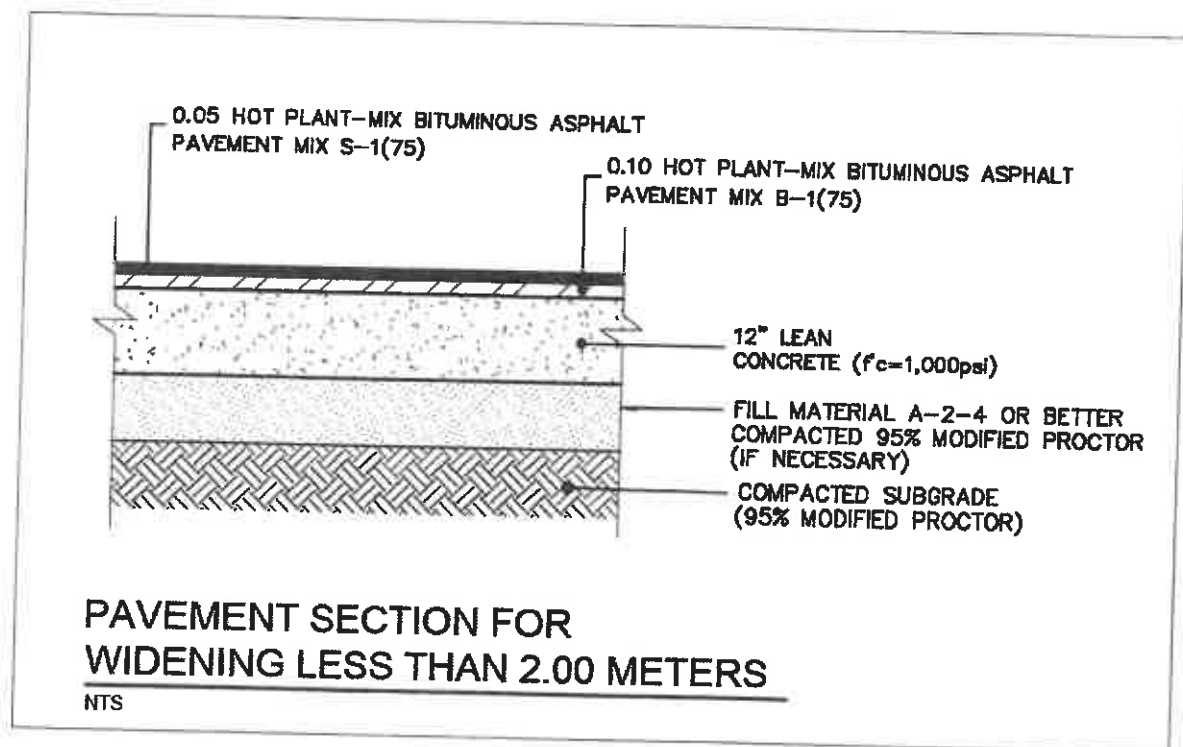
3.5 COMPACTION

- A. Compact the asphalt layers until achieving a uniform density, smooth surface, and the required cross-section.

3.6 QUALITY CONTROL

- A. Inspect the compacted pavement for smoothness, thickness, and conformity to the cross-sectional dimensions.

END OF SECTION



SECTION 32 15 40

CRUSHED STONE SURFACING

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Inspection of subgrade.
- B. Placement of filter fabric.
- C. Placement of crushed stone surfacing.

1.2 RELATED SECTIONS

- A. Division 01 Sections - General Requirements.
- B. Section 31 20 00 – Earth Moving.

1.3 REFERENCES

- A. ASTM C136 - Sieve Analysis of Fine and Coarse Aggregates.
- B. ASTM D448 - Standard Classification for Sizes of Aggregate for Road and Bridge Construction.
- C. ASTM D1682 - Breaking Load and Elongation of Textile Fabrics.

1.4 SUBMITTALS

- A. Section 01 33 00 – Submittal Procedures: Procedures for submittals.
- B. Test Reports: Submit test reports of stone materials. Approval of the material shall be obtained prior to the delivery of any material to the site.

1.5 DELIVERY AND STORAGE

- A. Section 01 60 00 – Product Requirements.
- B. Deliver and store materials in a manner to prevent contamination or segregation.
- C. Store filter fabric to prevent exposure to direct sunlight, in accordance with the manufacturer's printed recommendations.

PART 2 - PRODUCTS

2.1 MATERIALS – CRUSHED STONE

- A. Crushed Stone: Angular, crushed, washed natural stone, free of shale, clay, friable materials, and debris well grade, size 4 as per ASTM D448.

2.2 MATERIALS - ACCESSORIES

- A. Filter Fabric: Needle-punched nonwoven geotextile composed of polypropylene fibers, which are formed into a stable network such that the fibers retain their relative position. Inert to biological degradation and resistant to naturally encountered chemicals, alkalis, and acids.

- 1. Refer to Drawings for product.

- B. Wood Edging: Provide pressure-treated timber, minimum dimensions 2" x 6", resistant to decay and termites, conforming to ASTM D1751 standards for outdoor use.
 - 1. Stakes: Provide wood stakes, with a minimum length of 12 inches, to secure the wood edging in the ground.
 - 2. Fasteners: Utilize galvanized nails and screws, appropriate for outdoor use and compatible with pressure-treated wood, to ensure longevity and structural integrity of the wood edging.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Section 01 31 00 – Administrative Requirements.
- B. Verify that compacted subgrade is dry and ready to receive crushed stone paving.
- C. Verify that gradients and elevations of base are correct.
- D. Beginning of installation means acceptance of existing conditions.

3.2 PLACEMENT - FILTER FABRIC

- A. Place filter fabric on top of compacted subgrade, in accordance with the manufacturer's printed recommendations.

3.3 INSTALLATION – WOOD EDGING

- A. Install wood edging along the perimeter of the crushed stone area, ensuring each timber is level and securely anchored with wood edging stakes, at a minimum depth of 8 inches into the subgrade.
- B. Join wood edging corners with mitered cuts at a 45-degree angle, reinforcing each joint with galvanized corner brackets to maintain a consistent border and prevent displacement.

3.4 PLACEMENT – CRUSHED STONE SURFACING

- A. Place crushed stone on entire area of interconnection facility as shown on the Drawings.
 - 1. Layer Thickness: 6 inches.
- B. Level surfaces to elevations indicated.

END OF SECTION

SECTION 32 31 13

CHAIN LINK FENCES AND GATES

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Examination of areas and conditions
- B. Preparation
- C. Installation, general
- D. Installation of chain link fence
- E. Installation of security screen
- F. Installation of gates
- G. Field quality control
- H. Adjusting

1.2 RELATED SECTIONS

- A. Division 1 – General Requirements
- B. Section 03 30 53 - Miscellaneous Cast-In-Place Concrete: For cast-in-place concrete in post footings.
- C. Section 31 20 00 – Earth Moving: Site excavation, fill and backfill where chain-link fences and gates are located.

1.3 REFERENCES

- A. ASCE/SEI 7 – Minimum Design Loads for Buildings and Other Structures
- B. ASTM A121 – Zinc Coated (Galvanized) Steel Barbed Wire
- C. ASTM A123 – Zinc (Hot Dipped Galvanized) Coatings on Iron and Steel Products
- D. ASTM A392 – Zinc Coated Steel Chain Link Fence Fabric
- E. ASTM A653 – Steel Sheet, Zinc Coated (Galvanized) or Zinc Iron Alloy Coated (Galvannealed) by the Hot Dip Process.
- F. ASTM A817 – Metallic Coated Steel Wire for Chain Link Fence Fabric and Marcellled Tension Wire
- G. ASTM A824 – Metallic Coated Steel Marcellled Tension Wire for Use with Chain Link Fence
- H. ASTM C1107 – Packaged Dry, Hydraulic Cement Grout (Nonshrink)
- I. ASTM F567 – Practice for Installation of Chain Link Fence

- J. ASTM F626 – Fence Fittings
- K. ASTM F900 – Industrial and Commercial Swing Gates
- L. ASTM F934 – Standard Colors for Polymer Coated Chain Link Fence Materials
- M. ASTM F1043 – Strength and Protective Coatings on Metal Industrial Chain Link Fence Framework
- N. ASTM F1083 – Pipe, Steel, Hot Dipped Zinc Coated (Galvanized) Welded, for Fence Structures
- O. ASTM F1184 – Industrial and Commercial Horizontal Slide Gates
- P. ASTM F1553 – Guide for Specifying Chain Link Fence
- Q. CLFMI WLG 2445 – Guide for Selection of Line Post Spacing for Chain Link Fence
- R. U.S. Architectural & Transportation Barriers Compliance Board - American with Disabilities Act (ADA) and Architectural Barriers Act (ABA) Accessibility Guidelines for Buildings and Facilities.

1.4 ACTION SUBMITTALS

- A. Section 01 33 00 – Submittal Procedures
- B. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for chain-link fences and gates.
 - 1. Fence and gate posts, rails, and fittings.
 - 2. Chain-link fabric, reinforcements, and attachments.
 - 3. Accessories: Privacy slats and Barbed wire.
 - 4. Gates and hardware.
 - 5. Security Screen.
- C. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work. Show accessories, hardware, gate operation, and operational clearances.
- D. Samples for Initial Selection: For components with factory-applied color finishes.

1.5 INFORMATIONAL SUBMITTALS

- A. Section 01 33 00 – Submittal Procedures
- B. Qualification Data: For qualified professional engineer and testing agency.
- C. Product Certificates: For each type of chain-link fence, operator, and gate, from manufacturer.
- D. Product Test Reports: For framing strength according to ASTM F 1043.
- E. Field quality-control reports.
- F. Warranty: Sample of special warranty.

1.6 PROJECT CONDITIONS

- A. Section 01 73 00 - Execution and Closeout Requirements
- B. Field Measurements: Verify layout information for chain-link fences and gates shown on Drawings in relation to property survey and existing structures. Verify dimensions by field measurements.

1.7 WARRANTY

- A. Section 01 73 00 - Execution and Closeout Requirements
- B. Special Warranty: Manufacturer's standard form in which Installer agrees to repair or replace components of chain-link fences and gates that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 - 2. Warranty Period: One year from Date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MATERIALS - CHAIN-LINK FENCE FABRIC

- A. General: Provide fabric in one-piece heights measured between top and bottom of outer edge of selvage knuckle or twist. Comply with CLFMI Product Manual and with requirements indicated below:
 - 1. Fabric Height: As indicated on Drawings.
 - 2. Steel Wire Fabric: Wire with a diameter of 0.148 inch (Gage 9)
 - a. Mesh Size: 2 inches.
 - b. Zinc-Coated Fabric: ASTM A 392, Type II, Class 2, 2.0 oz./sq. ft. with zinc coating applied after weaving.
 - 3. Selvage: Twisted top and knuckled bottom.

2.2 MATERIALS – SECURITY SCREEN

- A. Basis of Design:
- B. Material:
 - 1. Knitted Polyethylene with No Fillers
 - 2. 175-GSM commercial grade knitted HDPE material
- C. Blockage: 90% Privacy & the Highest Level of UV Inhibitors
- D. UV: Moderate UV inhibitors
- E. Life expectancy: 5-year outdoor

2.3 MATERIALS - FENCE FRAMING

- A. Posts and Rails: Comply with ASTM F 1043 for framing, including rails, braces, and line; terminal; and corner posts. Provide members with minimum dimensions and wall thickness according to ASTM F 1043 or ASTM F 1083 based on the following:
 - 1. Fence Height: As indicated on Drawings.
 - 2. Heavy Industrial Strength: Material Group IA, round steel pipe, Schedule 40.
 - a. Line Post: As indicated on Drawings.
 - b. End, Corner and Pull Post: As indicated on Drawings.
 - 3. Horizontal Framework Members: bottom rails complying with ASTM F 1083.
 - 4. Brace Rails: Comply with ASTM F 1043.
 - 5. Metallic Coating for Steel Framing:
 - a. Type A, consisting of not less than minimum 2.0-oz./sq. ft. average zinc coating per ASTM A 123/A 123M or 4.0-oz./sq. ft. zinc coating per ASTM A 653/A 653M.

2.4 MATERIALS - TENSION WIRE

- A. Metallic-Coated Steel Wire: 0.177-inch- diameter, marcelled tension wire complying with ASTM A 817 and ASTM A 824, with the following metallic coating:
 - 1. Type II, zinc coated (galvanized) by hot-dip process, with the following minimum coating weight:
 - a. Class 5: Not less than 2 oz./sq. ft. of uncoated wire surface.
- B. Polymer-Coated Steel Wire: 0.177-inch- diameter, tension wire complying with ASTM F 1664, Class 2b over zinc -coated steel wire.
 - 1. Color: Black, complying with ASTM F 934.

2.5 MATERIALS - SWING GATES

- A. General: Comply with ASTM F 900 for gate posts and single or double swing gate types. Provide automated vehicular gates that comply with ASTM F 2200.
 - 1. Gate Leaf Width: As indicated.
 - 2. Gate Fabric Height: As indicated.
- B. Pipe and Tubing:
 - 1. Zinc-Coated Steel: Comply with ASTM F 1043 and ASTM F 1083; protective coating and finish to match fence framing.
 - 2. Gate Posts: Round tubular steel.
 - 3. Gate Frames and Bracing: Round tubular steel.
- C. Frame Corner Construction: Welded or assembled with corner fittings.

- D. **Extended Gate Posts and Frame Members:** Extend gate posts and frame end members above top of chain-link fabric at both ends of gate frame 12 inches to attach barbed wire assemblies.
- E. **Hardware:**
 - 1. **Hinges:** As indicated on Drawings.
 - 2. **Latches** permitting operation from both sides of gate with provision for padlocking accessible from both sides of gate.
 - 3. **Padlock and Chain:** As indicated on Drawings.
 - 4. **Lock:** As indicated on Drawings.

2.6 MATERIALS - FITTINGS

- A. **General:** Comply with ASTM F 626.
- B. **Post Caps:** Provide for each post.
 - 1. Provide line post caps with loop to receive tension wire or top rail.
- C. **Rail and Brace Ends:** For each gate, corner, pull, and end post.
- D. **Rail Fittings:** Provide the following:
 - 1. **Top Rail Sleeves:** Pressed-steel or round-steel tubing not less than 6 inches long.
 - 2. **Rail Clamps:** Line and corner boulevard clamps for connecting intermediate and bottom rails in the fence line-to-line posts.
- E. **Tension and Brace Bands:** Pressed steel.
- F. **Tension Bars:** Steel, length not less than 2 inches shorter than full height of chain-link fabric. Provide one bar for each gate and end post, and two for each corner and pull post, unless fabric is integrally woven into post.
- G. **Truss Rod Assemblies:** Steel, hot-dip galvanized after threading rod and turnbuckle or other means of adjustment.
- H. **Barbed Wire Arms:** Pressed steel or cast iron, with clips, slots, or other means for attaching strands of barbed wire, and means for attaching to posts for each post unless otherwise indicated, and as follows:
 - 1. Provide line posts with arms that accommodate top rail or tension wire.
 - 2. Provide corner arms at fence corner posts, unless extended posts are indicated.
 - 3. Type I, single slanted arm.
- I. **Tie Wires, Clips, and Fasteners:** According to ASTM F 626.
 - 1. **Standard Round Wire Ties:** For attaching chain-link fabric to posts, rails, and frames, complying with the following:
 - a. **Hot-Dip Galvanized Steel:** 0.106-inch- diameter wire.

2.7 MATERIALS - BARBED WIRE

- A. Steel Barbed Wire: Comply with ASTM A 121, for three-strand barbed wire, 0.099-inch-diameter line wire with 0.080-inch-diameter, four-point round barbs spaced not more than 5 inches o.c.
 - 1. Zinc Coating: Type Z, Class 3.

2.8 MATERIALS - GROUT AND ANCHORING CEMENT

- A. Non shrink, Nonmetallic Grout: Premixed, factory-packaged, no staining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout, recommended in writing by manufacturer, for exterior applications.
- B. Erosion-Resistant Anchoring Cement: Factory-packaged, non-shrink, non-staining, hydraulic-controlled expansion cement formulation for mixing with potable water at Project site to create pourable anchoring, patching, and grouting compound. Provide formulation that is resistant to erosion from water exposure without needing protection by a sealer or waterproof coating and that is recommended in writing by manufacturer, for exterior applications.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for a verified survey of property lines and legal boundaries, site clearing, earthwork, pavement work, and other conditions affecting performance of the Work.
 - 1. Do not begin installation before final grading is completed unless otherwise permitted by Architect-Engineer.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Stake locations of fence lines, gates, and terminal posts. Do not exceed intervals of 500 feet or line of sight between stakes. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments.

3.3 INSTALLATION, GENERAL

- A. Install chain-link fencing to comply with ASTM F 567 and more stringent requirements indicated.
 - 1. Install fencing on established boundary lines inside property line.

3.4 INSTALLATION - CHAIN-LINK FENCE

- A. Post Excavation: Drill or hand-excavate holes for posts to diameters and spacings indicated, in firm, undisturbed soil.
- B. Post Setting: Set posts in concrete at indicated spacing into firm, undisturbed soil.
 - 1. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices.
 - 2. Concrete Fill: Place concrete around posts to dimensions indicated and vibrate or tamp for consolidation. Protect aboveground portion of posts from concrete splatter.

- a. Exposed Concrete: Extend 2 inches above grade; shape and smooth to shed water.
 - b. Concealed Concrete: Top 2 inches to allow covering with surface material.
- C. Terminal Posts: Locate terminal end, corner, and gate posts per ASTM F 567 and terminal pull posts at changes in horizontal or vertical alignment of 15 degrees or more.
- D. Line Posts: Space line posts uniformly at 8 feet o.c.
- E. Post Bracing and Intermediate Rails: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Diagonally brace terminal posts to adjacent line posts with truss rods and turnbuckles. Install braces at end and gate posts and at both sides of corner and pull posts.
 - 1. Locate horizontal braces at midheight of fabric 72 inches or higher, on fences with top rail and at two-third fabric height on fences without top rail. Install so posts are plumb when diagonal rod is under proper tension.
- F. Tension Wire: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Pull wire taut, without sags. Fasten fabric to tension wire with 0.120-inch- diameter hog rings of same material and finish as fabric wire, spaced a maximum of 24 inches o.c. Install tension wire in locations indicated before stretching fabric. Provide horizontal tension wire at the following locations:
 - 1. Extended along bottom of fence fabric. Install bottom tension wire within 6 inches of bottom of fabric and tie to each post with not less than same diameter and type of wire.
- G. Intermediate and Bottom Rails: Install and secure to posts with fittings.
- H. Chain-Link Fabric: Apply fabric to outside of enclosing framework. Leave 1 inch between finish grade or surface and bottom selvage unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Anchor to framework so fabric remains under tension after pulling force is released.
- I. Tension or Stretcher Bars: Thread through fabric and secure to end, corner, pull, and gate posts with tension bands spaced not more than 15 inches o.c.
- J. Tie Wires: Use wire of proper length to firmly secure fabric to line posts and rails. Attach wire at one end to chain-link fabric, wrap wire around post a minimum of 180 degrees, and attach other end to chain-link fabric per ASTM F 626. Bend ends of wire to minimize hazard to individuals and clothing.
 - 1. Maximum Spacing: Tie fabric to line posts at 8 inches o.c. and to braces at 24 inches o.c.
- K. Fasteners: Install nuts for tension bands and carriage bolts on the side of the fence opposite the fabric side. Peen ends of bolts or score threads to prevent removal of nuts.
- L. Barbed Wire: Install barbed wire uniformly spaced, angled toward security side of fence. Pull wire taut, install securely to extension arms, and secure to end post or terminal arms.

3.5 SECURITY MESH

- A. Install in accordance with manufacturer's printed instructions.
- B. Refer to Attachment at the end of this specification.

3.6 GATE INSTALLATION

- A. Install gates according to manufacturer's written instructions, level, plumb, and secure for full opening without interference. Attach fabric as for fencing. Attach hardware using tamper-resistant or concealed means. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation and lubricate where necessary.

3.7 ADJUSTING

- A. Gates: Adjust gates to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.
- B. Lubricate hardware gate operator and other moving parts.

END OF SECTION

SECTION 32 91 19
LANDSCAPE GRADING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Substrate Preparation
 - 2. Placing Topsoil
 - 3. Field Quality Control
 - 4. Schedules
 - 5. Attachments – Topsoil Application

1.2 RELATED SECTIONS

- 1. Division 01 Sections – General Requirements
- 2. Section 31 20 00 - Earth Moving
- 3. Section 32 92 23 – Sodding

1.3 REFERENCES

- A. ASTM D2974 – Test Methods for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils.
- B. Department of Transportation and Public Works – Standard Specifications for Road and Bridge Construction - Specification 625 - Topsoil.

1.4 SUBMITTALS

- A. Section 013300 - Submittal Procedures: Submittal procedures
- B. Samples: Submit, in air-tight containers, 10 lb sample of each type of fill to testing laboratory.
- C. Materials Source: Submit name of imported materials source.
- D. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.5 QUALITY ASSURANCE

- A. Furnish each topsoil material from single source throughout the Work.
- B. Perform Work in accordance with Public Works standard, Specification 625 - Topsoil.

PART 2 - PRODUCTS

2.1 MATERIAL - TOPSOIL

- A. Topsoil:
 - 1. On-site topsoil or off-site topsoil.

2. Fertile, friable, natural loam, surface soil, reasonably free of subsoil, clay lumps, brush, weeds and other litter, and free of roots, stumps, stones larger than 2-inches in any dimension, and other extraneous or toxic matter harmful to plant growth.
3. Obtain topsoil from local sources or from areas having similar soil characteristics to that found at the project site
4. Obtain topsoil only from naturally, well-drained sites where topsoil occurs in a depth of not less than 4-inches; do not obtain from bogs or marshes, composition shall be from 5 to 20 percent organic matter as determined by the test for organic materials by using ASTM D2974.
5. Maximum particle size, ¾-inch, with a maximum 3 percent retained on ¼-inch screen. Other components shall conform to the following item:

pH (ASTM E70)	5.5 to 7
Soluble Salts	600 ppm maximum
Silt	25 to 50
Clay	10 to 30
Sand	20 to 35

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.
- B. Verify building and trench backfilling have been inspected.
- C. Verify substrate base has been contoured and compacted.

3.2 PREPARATION

- A. Protect landscaping and other features remaining as final Work.
- B. Protect existing structures, fences, sidewalks, utilities, paving, and curbs.

3.3 SUBSTRATE PREPARATION

- A. Eliminate uneven areas and low spots.
- B. Remove debris, roots, branches, stones, in excess of ½-inch in size. Remove contaminated subsoil.
- C. Scarify surface to depth of 6-inches where topsoil is scheduled. Scarify in areas where equipment used for hauling and spreading topsoil has compacted subsoil.

3.4 PLACING TOPSOIL

- A. Place topsoil in areas where seeding, sodding, planting, and trees to nominal depth of 12-inches. Place topsoil during dry weather.
- B. Fine grade topsoil to eliminate rough or low areas. Maintain profiles and contour of subgrade.
- C. Remove roots, weeds, rocks, and foreign material while spreading.
- D. Manually spread topsoil close to plant material, and trees to prevent damage.
- E. Lightly compact or roll placed topsoil.

- F. Remove surplus subsoil and topsoil from site.
- G. Leave stockpile area and site clean and raked, ready to receive landscaping.

3.5 TOLERANCES

- A. Section 01 40 00 - Quality Requirements: Tolerances.
- B. Top of Topsoil: Plus or minus ½-inch.

3.6 PROTECTION OF INSTALLED WORK

- A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for protecting finished Work.
- B. Prohibit construction traffic over topsoil.

3.7 SCHEDULES

- A. Compacted topsoil thicknesses:
 - 1. Seeded Grass: 6-inches.
 - 2. Sod: 4-inches.
 - 3. Shrub Beds: 18-inches.
 - 4. Flower Beds: 12-inches.
 - 5. Planter Boxes: To within 3-inches of box rim.

3.8 FIELD QUALITY CONTROL

- A. Section 01 40 00 -Quality Requirements
- B. Independent testing laboratory will test topsoil for organic material, pH, phosphate, potash content and gradation of particles.
 - 1. Test for organic materials by using ASTM D2974.
 - 2. Determine the percent of silt, sand, clay, and foreign material such as rocks, roots, and vegetation.

3.9 ATTACHMENTS – TOPSOIL APPLICATION

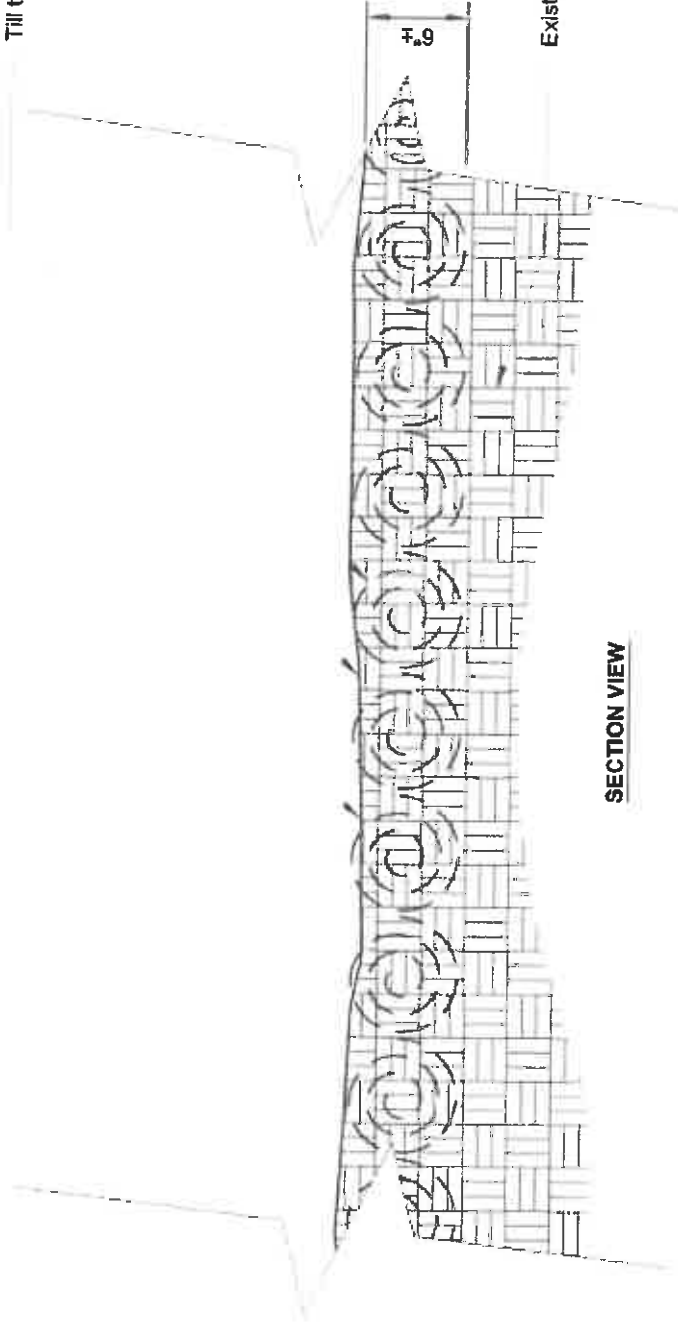
- A. Existing Soil – Minor Modification
- B. Modified Existing Soil – Installed Planting Mix
- C. Modified Existing Soil – Compacted Sub-Soil (Fracturing)

END OF SECTION

Remove existing turf, thatch,
groundcover, plants, or
weeds.

Finished grade.

Till top 6" of soil.



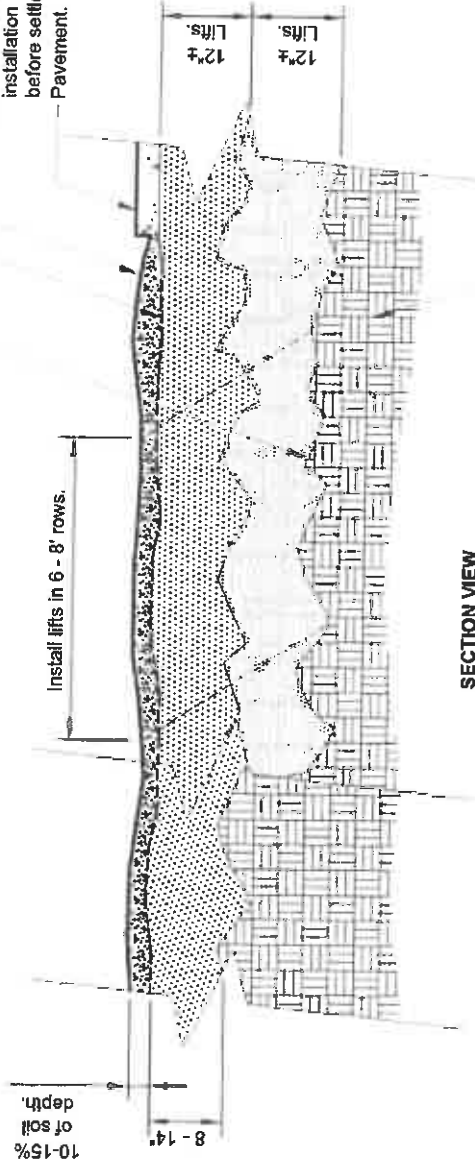
SECTION VIEW

Notes:
1- See planting soil specifications for additional requirements.

S-X EXISTING SOIL - MINOR MODIFICATION

Loosen subgrade by dragging teeth of bucket.

Proposed finished grade after settlement.
Finish grade after installation but before settlement.
Pavement.



SECTION VIEW

Existing soil.
Confirm subgrade drains one - half inch per hour or greater.

Notes:

- 1- Means and methods of soil compaction shall be determined at time of soil mock up.
- 2- Soil compaction after installation shall be 75 - 250 PSI at soil moisture between field capacity and wilting point.
- 3- For soil depths see planting soil specifications.
- 4- See planting soil specification for additional requirements.

S-X

MODIFIED EXISTING SOIL - INSTALLED PLANTING MIX

Before starting soil fracturing
 apply 2 - 3" of compost over
 existing grade.
 Existing grade
 after rough grading.

Fracture soil using a
 backhoe. Dig into the
 soil and the compost.
 Lift the soil and drop
 in place to fracture
 compaction. Repeat
 over entire planting
 area.

Pavement. Do
 not fracture
 soil adjacent
 to pavement.

2'±

18 - 24"

Apply 3 - 4" of compost and
 required chemical adjustment
 prior to final tilling.
 Proposed finished
 grade after
 settling.

STEP ONE

Finish grade
 adjacent to paving
 shall be 1 - 2"
 below pavement
 surface.

18 - 24"

STEP TWO

Notes:
 1- For planting areas narrower than 8' reduce the distance between
 paving and soil fracturing from 2' to 1'.

2- See planting soil specification for additional requirements.

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S-X MODIFIED EXISTING SOIL - COMPACTED SUB SOIL (FRACTURING)

SECTION 32 92 23

SODDING

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Verification of prepared soil base.
- B. Fertilizing.
- C. Sod installation.
- D. Maintenance.

1.2 RELATED SECTIONS

- A. Division 01 Sections - General Requirements.
- B. Section 32 91 19 - Landscape Grading: Preparation of subsoil and placement of topsoil in preparation for the Work of this Section.

1.3 REFERENCES

- A. ASPA (American Sod Producers Association) - Guideline Specifications to Sodding.
- B. FS O-F-241 - Fertilizers, Mixed, Commercial.

1.4 DEFINITIONS

- A. Weeds: Includes Dandelion, Jimsonweed, Quackgrass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambsquarter, Chickweed, Cress, Crabgrass, Canadian Thistle, Nutgrass, Poison Oak, Blackberry, Tansy Ragwort, Bermuda Grass, Johnson Grass, Poison Ivy, Nut Sedge, Nimble Will, Bindweed, Bent Grass, Wild Garlic, Perennial Sorrel, and Brome Grass.

1.5 MAINTENANCE DATA

- A. Section 01 77 00 – Closeout Procedures.
- B. Operation Data: Submit for continuing Owner maintenance.
- C. Maintenance Data: Include maintenance instructions, cutting method and maximum grass height; types, application frequency, and recommended coverage of fertilizer.

1.6 QUALITY ASSURANCE

- A. Section 01 40 00 – Quality Requirements.
- B. Sod: Minimum age of 18 months, with root development that will support its own weight without tearing, when suspended vertically by holding the upper two corners.
- C. Submit sod certification for grass species and location of sod source.
- D. Sod Producer: Company specializing in sod production and harvesting with minimum five years' experience and certified by the Commonwealth of Puerto Rico.
- E. Installer: Company approved by the sod producer.

1.7 REGULATORY REQUIREMENTS

- A. Comply with regulatory agencies for fertilizer and herbicide composition.
- B. Provide certificate of compliance from authority having jurisdiction indicating approval of fertilizer and herbicide mixture.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 – Product Requirements.
- B. Deliver sod on pallets in rolls. Protect exposed roots from dehydration.
- C. Do not deliver more sod than can be laid within 24 hours.

1.9 MAINTENANCE SERVICE

- A. Section 01 77 00 – Closeout Procedures.
- B. Furnish service and maintenance of sodded areas for three (3) months from Date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MATERIALS - SOD

- A. Sod: ASPA Certified or Nursery grown grade; cultivated grass sod; type indicated below, with strong fibrous root system, free of stones, burned or bare spots; containing no more than 5 weeds per 1000 square feet.
 - 1. Zoysia Grass.
- B. Fertilizer: FS O-F-241, Type I, Grade A; recommended for grass, with fifty percent of the elements derived from organic sources; of proportion necessary to eliminate any deficiencies of topsoil, as indicated in analysis.
- C. Water: Clean, fresh and free of substances or matter which could inhibit vigorous growth of grass.

2.2 MATERIALS - ACCESSORIES

- A. Wood Pegs: Softwood, sufficient size and length to ensure anchorage of sod on slope.
- B. Wire Mesh: Interwoven hexagonal metal wire mesh of 2 inch size.
- C. Edging: Galvanized steel.
- D. Herbicide: As recommended by the Landscape Architect.

2.3 HARVESTING SOD

- A. Machine cut sod and load on pallets in accordance with ASPA Guidelines.
- B. Cut sod in area not exceeding 1 square yard, with minimum 1/2 inch and maximum 1 inch topsoil base.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Section 01 31 00 – Administrative Requirements.
- B. Verify that prepared soil base is ready to receive the work of this section.

3.2 FERTILIZING

- A. Apply fertilizer in accordance with manufacturer's instructions.
- B. Apply after smooth raking of topsoil and prior to installation of sod.
- C. Apply fertilizer no more than 48 hours before laying sod.
- D. Mix thoroughly into upper 2 inches of topsoil.
- E. Lightly water to aid the dissipation of fertilizer.

3.3 LAYING SOD

- A. Moisten prepared surface immediately prior to laying sod.
- B. Lay sod immediately after delivery to site to prevent deterioration.
- C. Lay sod tight with no open joints visible, and no overlapping; stagger end joints 12 inches minimum. Do not stretch or overlap sod pieces.
- D. Lay smooth. Align with adjoining grass areas.
- E. Place top elevation of sod 1/2 inch below adjoining edging, paving or curbs.
- F. On slopes 6 inches per foot and steeper, lay sod perpendicular to slope and secure every row with wooden pegs at maximum 2 feet on center. Drive pegs flush with soil portion of sod.
- G. Prior to placing sod, on slopes exceeding 8 inches per foot or where indicated, place wire mesh over topsoil. Securely anchor in place with wood pegs sunk firmly into the ground.
- H. Water sodded areas immediately after installation. Saturate sod to 4 inches of soil.
- I. After sod and soil have dried, roll sodded areas to ensure good bond between sod and soil and to remove minor depressions and irregularities.

3.4 MAINTENANCE

- A. Mow grass at regular intervals to maintain at a maximum height of 2-1/2 inches. Do not cut more than 1/3 of grass blade at any one mowing.
- B. Neatly trim edges and hand clip where necessary.
- C. Immediately remove clippings after mowing and trimming.
- D. Water to prevent grass and soil from drying out.
- E. Roll surface to remove or irregularities.
- F. Control growth of weeds. Apply herbicides in accordance with manufacturer's instructions. Remedy damage resulting from improper use of herbicides.

- G. Immediately replace sod to areas which show deterioration or bare spots.
- H. Protect sodded areas with warning signs during maintenance period.

END OF SECTION



TABLA DE OFERTAR ENMENDADA I

SUBASTA FORMAL 24J-08889-R1

PARA LA ADQUISICIÓN DE SERVICIOS DE DEMOLICIÓN DE LA INFRAESTRUCTURA, REMOCIÓN DE ASBESTO Y PLOMO DE
LOS PABELLONES ANEXOS AL EDIFICIO A DE OFICINAS ADMINISTRATIVAS Y LABORATORIO DE SALUD PÚBLICA, ADSCRITO AL
DEPARTAMENTO DE SALUD DEL GOBIERNO DE PUERTO RICO



PARTIDA	DESCRIPCION	UNIDAD	CANTIDAD	COSTO DEL MATERIAL	COSTO DE LABOR	COSTO TOTAL	GARANTIA	TIEMPO DE ENTREGA
Building Demolition								
EXISTING CONDITIONS								
1	Buildings Demolition	LS	1					
2	Selective Site Demolition	LS	1					
3	Asbestos Remediation	LS	1					
4	Lead Remediation	LS	1					
CONCRETE								
5	Miscellaneous Concrete	LS	1					
MECHANICAL								
6	Mechanical Demolition	LS	1					
ELECTRICAL								
7	Electrical Demolition	LS	1					
8	New Electrical Work (as part of the shutdown)	LS	1					
EARTHWORK								
9	Earth Moving	LS	1					
10	Erosion and Sedimentation Controls	LS	1					
GARANTIA								
11	Crushed Stone Surface (including Wood Edging)	LS	1					
12	Chain Link Fences and Gates (including Security Mesh)	LS	1					
13	Landscape Grading	LS	1					
14	Sodding	LS	1					
15	Asphalt Pavement Repair (After saw cut and demolition of existing asphalt pavement required to install the new electrical feeder to connect the trailers and laboratories, provide aggregate base course & asphalt pavement to repair the existing road.)	LS	1					
	For quote all the items described here, please check the attached documents .			TOTAL				



TABLA DE OFERTAR ENMENDADA I

SUBASTA FORMAL 24J-08889-R1

PARA LA ADQUISICIÓN DE SERVICIOS DE DEMOLICIÓN DE LA INFRAESTRUCTURA, REMOCIÓN DE ASBESTO Y PLOMO DE
LOS PABELLONES ANEXOS AL EDIFICIO A DE OFICINAS ADMINISTRATIVAS Y LABORATORIO DE SALUD PÚBLICA, ADSCRITO AL
DEPARTAMENTO DE SALUD DEL GOBIERNO DE PUERTO RICO



PARTIDA	DESCRIPCION	UNIDAD	CANTIDAD	COSTO DEL MATERIAL	COSTO DE LABOR	COSTO TOTAL	GARANTIA	TIEMPO DE ENTREGA
PARTIDA	DESCRIPCION	UNIDAD	CANTIDAD	COSTO DEL MATERIAL	COSTO DE LABOR	COSTO TOTAL	GARANTIA	TIEMPO DE ENTREGA
Alternates	We acknowledge that ALL price quotations shall include all labor, materials, equipment, overhead, insurance, bonds, applicable taxes, profit, adjustment of schedule, etc., necessary to add or to deduct the total amount of each alternate proposal. All Contract Documents conditions and requirements apply to the Alternate Work. The Government reserves the right to accept or reject any or all alternate Bids.							
Alternates - Office Trailer Rental								
1	Perform all work for the rental, installation and removal of a trailer 12ft x 40ft. Refer to Section 01 23 00 - Alternates and 01 35 00 - Office Trailer.	LS	1					
2	Perform all work for the rental, installation and removal of a trailer 10ft x 28ft. Refer to Section 01 23 00 - Alternates and 01 35 00 - Office Trailer.	LS	1					
Alternate - Electrical Works								
3	Deductive Alternate - Deduct Electrical Connection: Do not performed the demolition described in Note 1 of Drawing No. DE0-01 - Demolition Electrical Site Plan. Also do not performed the new Electrical Work describe on Drawing No. E0-01 - Electrical Site Plan. Do not deduct Asphalt Pavement Repairs. These repairs are part of the Base Bid.	LS	1					
TÉRMINO DE ENTREGA TOTAL: _____								