ADDENDUM NO. 3

06/28/24

Marianas High School Career Technical Education Center Construction Project

NMHC IFB 2024-006

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1. **General:** The following revisions, additions, corrections, and/or clarifications to the specifications shall apply to the work affected thereby. Careful note of the Addendum shall be taken into consideration by the bidder/contractor, and all trade affected shall be fully advised of the information contained herein. In the event of conflicts between the drawings, specifications and this Addendum, the content of this Addendum shall govern. All further conflicts in the work resulting from or caused by, the contents of this Addendum must be brought to the attention of the Contracting Officer for resolution. Failure to acknowledge this Addendum in accordance with the instructions, may subject your bid to rejection on the affected item(s)/services(s).

2. **Request for Information (RFI) Responses to the following:**

   a) **HBR RFI**
   b) **RNV RFI**
   c) **UMI RFI**
   d) **USA Fanter RFI**

There are some RFIs that have yet to be answered as soon as we get the responses from our implementing partner and the Construction Manager we will send another addendum.

(Note: acknowledgement of addendums must be indicated in the bid proposal form.)

All other requirements of the Invitation For Bids (IFB) shall remain as stated

Jesse S. Palacios
Corporate Director

Northern Marianas Housing Corporation (NMHC)

Community Development Block Grant-Disaster Recovery (CDBG-DR)

Request for Information (RFI)

HBR RFI-001 – General Requirements

IFB X/RFP ☐RF1-01-053024

Bidder/Proposer: **Date:**

Project Name: Marianas High School Career Technical Education Center Construction Project

No.	Question
1.	All government permit applications and fee requirements are Contractor Responsibility? PSS Response: Yes, all permit applications and fee requirements are the responsibility of the Contractor. However, Zoning Permit 2024-0200 has been obtained and can be shared after issuance of the NTP.
2.	A 100% Federally Funded Project? By what agency? PSS Response: Fifty-percent equal cost share is made available by the U.S. Department of Housing and Urban Development, Community Development Block Grant, Disaster Recovery and the U.S. Department of Commerce, Economic Development Administration (EDA).
3.	A US Treasury Listed Bonding Company Requirement. PSS Response: Refer to NMHC – Instruction to Bidders p. 4, Section 6, C.
4.	Wages must comply with the Davis Bacon Act. PSS Response: Refer to NMHC – Instruction to Bidders p. 9, Section 17, F.
5.	Buy American Products are not required for this project? PSS Response: U.S. Department of Commerce, EDA – adjustment period waiver of Buy America Requirements (Date: 2022.08.08). Although the above waiver is issued EDA encourages the selected contractor - to the greatest extent practical, contractors are encouraged to purchase American made equipment and products with funding provided under EDA financial assistance awards, as indicated in Section 29 Buy America (of the bid packet) Contracting Provisions for Construction Project (OMB Number: 0610-0096 Expiration Date: 01/31/2025). NMHC Response: **HUD Waived the BABA requirement.**
6.	Please confirm if alternate materials substitution is acceptable? PSS Response: Refer to Specifications, Section 01 25 00 – Substitution Procedures.
7.	Can you provide a Bid plan with auto cad copy for our reference? PSS Response: Official request to the Contracting Officer. Note: release form is required.
8.	Can we request a bid submission extension for 3 weeks? PSS Response: Refer to Addendum 2 emailed on 06/26/2024.
9.	Please confirm Budget Group/Responsibility Matrix and please provide listing? 1 –To be Purchased and Installed by Contractor 2 –To be Purchased by Client and Installed by Contractor 3 –To be Purchased by Client and Installed by Client PSS Response: Refer to A1001, Keynote Schedule. Note: white board(s) will be moved to Group 1.

Northern Marianas Housing Corporation (NMHC)

Community Development Block Grant-Disaster Recovery (CDBG-DR)

Request for Information (RFI)

HBR RFI-001 – Site/Civil/Structural Works DOR Responses

IFB X/RFP ☐ _____

Bidder/Proposer: **Date:**

Project Name: Marianas High School Career Technical Education Center Construction Project

No.	Question
1.	Please confirm if is still need to comply with EDA stipulations requirement to hire a professional Archaeologist during the CTE building footprint excavation and construction? OR already pre-approved for HPO section 106 for Earthmoving Permit requirements. NO NEED to submit a research design and archeological survey and data recovery work and monitoring plan? If incase HPO found out that a studies and remedial work is needed. Owners- PSS will be responsible for all related cost. DOR Response: Yes, it is an EDA requirement to hire a professional Archaeologist during the CTE Center footprint excavation. Unless provided otherwise by the owner, contractor to include costs for Archaeological monitoring for footprint excavation. Refer to Special Conditions Historical Preservation. All costs associated the Special Conditions Historical Preservation are to be included in the bid packet.
2.	Please confirn sheet Cl0l, Note 2 :requirement. A New 6ft. High Solid Temporary Construction Fence is required, Contractor to submit Security Fence Detail for Review and approval .OR Existing Plywood Security Fence/ Barricade is acceptable. ? DOR Response: Selected contractor will be responsible for maintaining and extending the already constructed construction fence even if replacement is required.
3.	**Please provide a copy of Geotechnical Report for conctractor reference?** DOR Response: See attached Geotechnical Report.
4.	Since a complete set of BID contruction plan/drawing and material specification are design and stamp by DOR and to be supervise by PSS/Owner selected CM. Winning Contractor has NO responsibility for other Special Inspection requirements.? Please advise? DOR Response: Contractor is not required for Special Inspection other than obtaining a geotechnical engineer for subsurface improvements.
5.	Please confirm your minimum requirements for building foundation requirement of 7'-0" depth for Ground floor finish elevation. (3 ft. depth of foundation+ 4 ft. depth min compacted base course with 95% FDT.) For reference please see sheet S505/6.? DOR Response: Correct as shown on Detail 1 on S511 as required by the geotechnical investigation. Note, the building finished floor elevation is ~2'-0" above existing grade.
6.	If during the actual excavation of building foundation encounter a water table within a 6 ft. depth, reference to sheet G005 , log boring BH#2. Please provide specific instruction and methodology to continue the 7 ft. depth minimum requirement for foundation excavation.? Contractor will address this additional work as a change order cost? DOR Response: Note, building finished floor elevation is ~2'-0" above existing grade. Ground water is not anticipated to be encountered.

7. Please advise if excavated on site foundation materials, can be used as ordinary backfill materials, to be screen as require on Bid technical specification?

   DOR Response: No.

8. Please see Material Specification 03 30 00-05 Item 2.5/B: Concrete mix Design Requirement for 4,000 PSI, Compressive strength @ 28 days for all building structures and PCC pavement With Water Cement Ratio of 0.40 for foundation & water tank and 0.45 for all other building components. Please confirm, IF Saipan base concrete supply company, Hawaiian Rock Product - Standard Concrete Design Mix 4,000 PSI@ 28 days with 0.46 water/ cement ratio is acceptable? Please advise ?

   DOR Response: No, concrete mix designs for water tank and foundations shall have a water cement ratio of 0.40.

9. Please see your key note requirement for EWl : Concrete Additive : Xypex? Our On Island Concrete Supplier HRP can not supply this item in their ready mix concrete? Please confirm if can be delete or provide other material specifications?

   DOR Response: If a water proofing admixture is not allowed by the concrete supplier, the admixture may be substituted for a cementitious crystalline waterproofing Xypex Concentrate or approved equal. Waterproof coating specifications for the water tank, planters and retaining walls will be provided in an upcoming addendum.

10. Please confirm your key note requirement for EW2 : Cast in Place Concrete Wall Reckli 2/701 liberty form linerextrior face finish? Please provide manufacturer contact number or email address for quotation requirements. Or on site form to match finish is acceptable for CIP concrete design wall?

    DOR Response: See Specification Section 03 10 00 Paragraph 2.5.A.1.

11. Please provide AWNCl/ AWNC2/ AWNC3 reinforcement details? Please see Sheet A666 & A667

    DOR Response: See Drawing S531.

Northern Marianas Housing Corporation (NMHC)

Community Development Block Grant-Disaster Recovery (CDBG-DR)

Request for Information (RFI)

HBR RFI-001 – Architectural Works DOR Responses

IFB X/RFP ☐_____

Bidder/Proposer: **Date:**

Project Name: Marianas High School Career Technical Education Center Construction Project

No.	Question
1.	Please provide new wall partition and furred wall thermal efficiency rating values? Including materials specifications? For the following Key Notes : IP1/1P2/1P3/ IP4/IP6 / IP7 / IP8/ IP9. ETC. DOR Response: R5.7c insulation is required to walls that interface conditioned to non-conditioned spaces as indicated in the attached mark-up provided for clarity. Provide Batt or spray foam as indicated on the drawings. All wall insulation is to be priced separately and to be confirmed on construction drawings. All other locations indicated for insulation according to the schedules on drg A200 and A201 require sound attenuation batt with a min STC rating of 40; allow for furring 'C' channels for all gypsum walls.
2.	Please provide new roof and ceiling thermal efficiency rating values? Including materials specifications? For the following Key Notes Items: INS-1/ INS-2/ INS-3.? DOR Response: INS-1 is an acoustic rated insulation with minimum STC rating of 40. INS-2 & 3 requires a minimum thermal efficiency rating of R-38
3.	Please provide Division 10 specialties materaisl specifications? DOR Response: The specifications have been attached separately for previous RFIs but will be consolidated. Please find attached.
4.	Please confirm if local supplier Kautz Glass Co. is acceptable as our sub-contractor for Aluminum door and window supplier? Please confirm? DOR Response: Supplier is acceptable as long as products meet or exceed the project specifications.
5.	Please provide paint finish requirement for exterior/ interior wall & ceiling finish? Flat/ Eggshel or semigloss? DOR Response: Flat paint for ceiling. Semi-gloss on internal and external walls.
6.	Please check and provide materials specification, recommended manufacturer contact information for quotation purposes? For all finishing materials? DOR Response: Please refer to the attached finishes schedule.
7.	Please provide Landscaping plan/ drawing and materials specifications? DOR Response: Landscaping is not included as part of the project.
8.	Please provide Glazing Perforated Vinyl Film Plan/Drawing and materials specification and manufacturer contact Information. DOR Response: Material specifications are as indicated on A653. Local Supplier includes, but is not limited to, Marianas Variety.

9. Please provide floor finishes materials specifications? And recommended manufacturere supplier contact information?

DOR Response: Please refer to the attached finishes schedule.

Northern Marianas Housing Corporation (NMHC)

Community Development Block Grant-Disaster Recovery (CDBG-DR)

Request for Information (RFI)

HBR RFI-001 – Mechanical/Plumbing Works DOR Responses

IFB X/RFP ☐_____

Bidder/Proposer: **Date:**

Project Name: Marianas High School Career Technical Education Center Construction Project

No.	Question
1.	Please provide material technical specifications for Facility Storm Drainage Pipin? DOR Response: See attached Specification Section 22 14 23, 22 14 14, and 33 41 00 to be provided in an upcoming addendum.
2.	Please provide materials technical specification for Storm Drainage Piping Specialties? DOR Response: See attached Specification Section 33 41 00 to be provided in an upcoming addendum.
3.	Please confirm sheet C104 main connection of CUC waterline will be follow? If in case a nearest connection point on the area is possible do you accept the final connection? DOR Response: Yes, follow proposed connection as shown on C104. A new connection is recommended versus a connection within the campus that is fed from Texas Road.

Northern Marianas Housing Corporation (NMHC)

Community Development Block Grant-Disaster Recovery (CDBG-DR)

Request for Information (RFI)

HBR RFI-002 – DOR Responses

IFB X/RFP ☐ _____

Bidder/Proposer: **Date:**

Project Name:

No.	Question
1.	Will a shutter schedule be provided for this project? DOR Response: Please price according to the drawings.
2.	WT04a AND wt04b; is this louver is for duct vent? If so, how can the screen be installed on the interior of vent? Is exterior mount being acceptable? DOR Response: Yes, louver/grille are for intake and exhaust grilles. Please refer to the mechanical drawings, particularly the grille schedules for further details. The sizing requirements of the grilles shown on the mechanical drawings takes precedence over architectural drawings, but contractor to advise of any discrepancies. We have no objections with the vermin mesh screen being in front of the grilles unless otherwise stated on the mechanical drawings.
3.	WT05 at 2nd floor and stair landing is a project out vent below 36" from finish floor line? DOR Response: WT.05 grilles shown on the south elevation (dwg detail 4/A400) are 4' above the FFL of level 2 as documented. These grilles are required for two high level exhaust ducts. Refer the mechanical drawings for further details.
4.	Is there any code requirement regarding on this? DOR Response: The workshop behind window type WT.05 is a double heighted space ie there is no falling hazard. Not sure what standard you are referring to? Please provide more information.
5.	Is T05 and WT06 is the same? DOR Response: Yes, WT.05 and WT.06 alum. grille/louvers are documented to match in overall size, blade size, finish etc. The WT05 louvers are exhaust louvers ie may have additional connection details for ducting and WT.06 are general air intake ventilation louvers (WT.06) – no ducting, thus numbered differently. We have been provided ventilation louvers (WT.06) to the east side of the non-conditioned auto-workshop space as shown on dwg 1/A100.
6.	WT07 show 3 panel on the window plan but 4 panel on the door plan; can 4 panel be use to ensure wind load requirement are met? DOR Response: Please refer to drawing A653 for the 4 panel louver system to match the double door arrangement.
7.	WT08 show 3 panel on the window plan but 4 panel on the floor plan; can 4 panel be use to ensure wind load requirement are met? DOR Response: As per above response - 4 panel system.

8. Sliding window plan detail will have a sliding screen for shutter operation/locking from the interior? Other is floor shutter, other exterior 2nd floor fixed window and floor windows will have exterior keyed lock. Please confirm.

   DOR Response: The school/client is responsible for direction on operational requirements of the shutters and windows during an emergency ie how the shutters/windows will be closed and locked. We have no objections with the shutters being operated/locked from the interior side on the upper floor and exterior side for the level 1/ground floor.

9. WT14 internal double-glazed unit on top and laminated glass panel on bottom of page, highlighted AS1288 on top right corner of page. Is AS1288 is an Australian Code requirement?

   DOR Response: Please ignore the AS1288 standard and refer to glazing specifications.

10. Internal Double-glazed need to be special ordered, can laminated safety glass be acceptable?

    DOR Response: Internal double-glazed sidelights/windows will improve thermal efficiencies within the conditioned rooms and acoustics. Andre to advise on value for cost. I would request a separate price (line item) to make the comparison.

11. Plan show 1 ¾" bottom sill on all WT13 from floor line details, can a 6" high bulk head frame be use?

    DOR Response: Need further information to answer query. Please provide image. The elevation shows a 2" (approx.) frame height.

12. Specs 08 4113 Aluminum-Framed Entrances and Storefronts; part 1.5 Verify field measurements before fabrication. All windows, doors and storefront must be fabricated locally? Please confirm.

    DOR Response: Not required to be manufactured locally. Just verify dimensions of openings on site before purchase and installation.

13. Specs 08 4113 Aluminum-Framed Entrances and Storefronts; part 2.6 specify Color Anodized Dark Bronze but in Specs 08 5113 Aluminum Windows; part 2.5 Aluminum Finish is Class I, CLEAR Anodic Finish. All windows, doors, shutters and louvers will be Silver Anodized? Please advise.

    DOR Response: Color to be dark bronze.

14. Specs 08 91 00 Louvers; part 202 Bird Screen A Bord cannot enter thru a 2" x 4" vertical depth fixed louver system with only l"daylite clearance between blades. Can this be removed of bird screen be accepted?

    DOR Response: Bird screen to remain.

15. Stainless steel insect screen will rust and corrode with red oxide dust and overwhelm the screen. Also with 5 miles from coastal area with salt air will add to the corrosion. Can a fiber cloth mesh be use instead as an alternative?

    DOR Response: Stainless steel insect screen to remain as specified

16. Specs 08 80 00-3 Glazing; part 2.1 Glass Product - C. ASTM 1996 -the code is for impact windows no covered with shutters. All windows and doors have storm shutters requirements. That this is not applicable? Please confirm.

    DOR Response: Specification is to remain: All external windows were documented to have shutters unless windows have roller door storm protection eg main entry

17. Specs 08 80 00-6 Glazing; part 2.8 Laminated-Glass Type GL-1 with 3mm glass + .030mm interlayer+ 3mm, is this type only for interior glass or should 5mm glass + . 76mm interlayer+ 5mm glass be an alternative replacement?

    DOR Response: Specifications state that CL-1 is for interior windows and GL-2 is for exterior windows: GL-2 glazing must meet minimum properties and wind loading requirements as stated in the specification.

18. Specs 08 80 00-7Glazing; part 2.8B Glass Type GL-2, 1) Solar-gray+ Clear LowE or approved equal as specify. Plan note for WT02, WT03, WY04 call for silver reflective glass. Can 5-6mm silver reflective= .76mm clear interlayer+ 5-6mm clear combination annealed float glass cut to size locally for a 200 MPH or 100 PSF wind load in each panel size, 8.76mm for WT0l, WY20 and 12.76mm for WT02 and WT03. Please confirm.

    DOR Response: The alternative or substitute, must be submitted in accordance with Sec 01 25 00 and must meet the wind load requirements as indicated on the structural drawings.

19. Windows WT18A and WT18B call for both laminated on bottom and double glass external on top of page with no specs for this glazing type, only ahead, sill, jamb detail plan A665 sheet. State Double Glazed Panel preferred or high-performance single glaze unit. Is a 12.76mm silver reflective laminated glass that will be uniform with all other exterior units be acceptable? Please confirm.

DOR Response: Glazing for WT8a and WT18b are to be GL-2 with properties as described within the specifications.

Northern Marianas Housing Corporation (NMHC)

Community Development Block Grant-Disaster Recovery (CDBG-DR)

Request for Information (RFI)

RNV RFI-006 - DOR Responses

IFB X/RFP ☐ _____

Bidder/Proposer: **Date:**

Project Name: Marianas High School Career Technical Education Center Construction Project

No.	Question
1.	For Bid Additive BA003 - Acoustical Ceiling Tiles, please confirm if this is for CLTL1 or CLAC-001. DOR Response: Bid Additive 003 covers CLTL1 and CLAC-001.
2.	In Specifications Section 22 42 23 - Commercial Showers, please provide equipment schedule indicated in Part 2.1 (Shower Faucets) DOR Response: Fixture schedule is shown on the Architectural A700 series sheets.
3.	In Specifications Section 22 42 16.16 - Commercial Sinks, please provide equipment & fixture schedule indicated in Part 2.1 (Janitor Sink) and 2.2 (Kitchen Sink). DOR Response: Fixture schedule is shown on the Architectural A700 series sheets.
4.	Please provide specifications of IP11 (Insulation: Backing to timber batten screen, black acoustic insulation) DOR Response: Refer attached finishes schedule.
5.	Please provide specifications of IP12/K18 (Insulated Stainless Steel Kitchen Wall Panel). DOR Response: Please provide standard S/S 316 grade 1.5mm thick splashback with insulation suitable for a kitchen
6.	Please provide specifications of IP40 (Operable Wall Partitions) DOR Response: Refer attached finishes schedule.
7.	Please provide specifications of IP16 (Wall Finish: Vinyl). DOR Response: Refer attached finishes schedule.
8.	Please provide specification of IP17 (Wall Finish: Fabric, Pin Board/Acoustic Board) DOR Response: Refer attached finishes schedule.
9.	Please provide specifications of IPG1 and IPG2 (Bathroom Screen and Door System) DOR Response: Provide cost for standard semi-recessed glazed shower screen with glazed swing door. This could be locally sourced. Glazing must be toughened glass min. 1/4" thick.
10.	Please provide specification of CURTAIN 1, 2 and 3 shown on Plan A702 DOR Response: Refer attached finishes schedule.

Northern Marianas Housing Corporation (NMHC)

Community Development Block Grant-Disaster Recovery (CDBG-DR)

Request for Information (RFI)

RNV RFI-005 - DOR Responses

IFB X/RFP ☐_____

Bidder/Proposer: **Date:**

Project Name: Marianas High School Career Technical Education Center Construction Project

No.	Question
1.	We would like to ask for a 3-week extension on the bid submission to give time to our suppliers to give us a quotation especially for the materials/equipment that don't have specifications. DOR Response: Refer to Addendum 2 emailed June 26, 2024.
2.	For Spray Foam Insulations (INS-1, INS-2, and INS-3), please provide the R-Value and Performance Requirments of each as it is not indicated in Specifications Section 07 21 00 (Thermal Insulation). DOR Response: INS-1 is an acoustic rated insulation with minimum STC rating of 40. INS-2 & 3 requires a minimum thermal efficiency rating of R-38
3.	Please provide Resilient Flooring Specification for FLVY1 and FLVY2 shown on Plan A300. DOR Response: Refer attached finishes schedule.
4.	Please provide sealer and oxide/pigment specifications for FLCR1 on Plan A300. DOR Response: Refer attached finishes schedule.
5.	Please provide specifications of Waterproof Sealer with Grit Additive (Anti-Slip Concrete Waterproof Sealer) mentioned on Plan A300 for floor finish of non tagged areas. DOR Response: Please remove grit additive from costs
6.	Please provide specifications of sealer to be used on ceiling tagged "NC" on Plan A250lease DOR Response: No ceiling is required where 'NC' is shown
7.	Please provide specifications of BLIND1 shown on Plan A250. DOR Response: Refer attached finishes schedule.
8.	In Plan C105, please confirm that RCP SD Pipe is to be used. Can it be substituted with HDPE Pipe instead? If no, please provide specification of the RCP SD Pipe. DOR Response: AT to confirm
9.	White board is included in the Bid additives, but it is under Budget Group No. 2 which makes it an OFCI (Owner Furnished Contractor Installed) Material. Should we only consider the labor cost for this item in the Bid Schedule? DOR Response: Move to group 1.
10.	Specifications for Loading Dock Bumpers were provided but it is not indicated in Plans. Please confirm the location of the Bumpers. DOR Response: Provided at the Theater Back of House Loading Area. Please refer drawing A/A701 for location (loading

dock roller door) and keynotes. It is also drawn on the elevation drawing 5/A400 and Detail 3 on A635.

Northern Marianas Housing Corporation (NMHC)

Community Development Block Grant-Disaster Recovery (CDBG-DR)

Request for Information (RFI)

RNV RFI-004 - DOR Responses

IFB X/RFP ☐_____

Bidder/Proposer: **Date:**

Project Name: Marianas High School Career Technical Education Center Construction Project

No.	Question
1.	Plan A654 and A655 calls out door frames to be aluminum but Plan A657 indicate frames as metal. Please advise which should govern. DOR Response: Door frames to be aluminum.
2.	For Door Type T30 in Plan A656, please confirm if the clouded area is a Vision Window/Fenestrated Slats. DOR Response: The clouded detail is only an indicative representation of a roller door lock - a proprietary item. Refer manufacturers specifications and details for the lock type as required.
3.	Please provide specification of RFS1 and RFS2 shown on Plans A150 and A250. DOR Response: Skylights as shown are Vtech CT4x4 CMHCHRG – 4x4 Curb Mounted Cap Skylight with impact resistant insulated glass (hurricane resistant) or approved equal.
4.	Please confirm if Spray Foam Insulations (INS-1, INS-2 and INS-3) shown on Plan A251 can be replaced with Glass fiber/Batt Insulation. DOR Response: INS-3 which is to be used at the Theatre Ceiling, **cannot** be replaced with Batt or Blanket Insulation; INS-1 and INS-2, which are located in rooms that have a suspended ceiling, can be replaced with Batt or Blanket Insulation.
5.	Please confirm if the required Xypex Additive for the External Concrete Walls is a concrete admixture or a sealer you apply after form removal. Also requesting the specification for this. DOR Response: The Xypex product reference is a concrete admixture to improve waterproofing and prevent moisture ingress through concrete walls expose to moisture. However, if a water proofing admixture is not allowed by the concrete supplier, the admixture may be substituted for a cementitious crystalline waterproofing Xypex Concentrate or approved equal. Waterproof coating specifications for the water tank, planters and retaining walls will be provided in an upcoming addendum.
6.	Please provide specification of Sealer to be used for CC1, CC2 and CC5 shown in Plan A020. DOR Response: Concrete sealer for CC1, CC2, and CC5 TO BE: PPG; 4-6200C PERMA-CRETE PLEX-SEAL or approved equal. Performance requirements to match. See attached for reference.
7.	Please confirm what is "P4/R11" indicated in CC3, CC4 and CC7 shown in Plan A020. DOR Response: P4/R11 are slip resistance levels. Please comply with the IBC slip resistance for the particular areas ie external/internal, slope/no slope.
8.	Please provide specification of oxide/pigment finish indicated in CC4 shown in Plan A020. DOR Response: Exact finish to be confirmed by PSS. Bid price should be based on a general oxide/pigment finish plus allowance for any change.

9. In Specification Section 09 30 00 - Tiling, please confirm if CT-1, CT-2 and CT-3 are to be used in this project.

   DOR Response: CT-1, CT-2, & CT-3 are no longer in the project; they were called out in the specs but that was before cost cutting measures were implemented. Now the project calls for concrete or vinyl tiles.

Northern Marianas Housing Corporation (NMHC)

Community Development Block Grant-Disaster Recovery (CDBG-DR)

Request for Information (RFI)

RNV RFI-003 - DOR Responses

IFB X/RFP ☐_____

Bidder/Proposer: **Date:**

Project Name: Marianas High-School Career Technical Education Center Construction Project

No.	Question
1.	In Plan C104 and Detail 7/Plan C503, the main to lateral connection detail is for a 2"Ø waterline. Can you provide a detail for a 8"Øx6"Ø connection? DOR Response: See attached advanced copy of revised C503 sheet for your use. An official revised sheet to be provided in an upcoming addendum. Note, provided that the Route 33 has been constructed with a new sidewalk. Contractor to demolish one panel of the sidewalk and curb, and reconstruct to conform original state.
2.	Please provide connection detail of the 3" Water Meter. DOR Response: See attached advanced copy of C503. Note, the 3" Water Meter is not readily available from CUC and will be provided by the Contractor.
3.	For Door Type T30, the Stormtite Model Numbers where provided. Can the roll-up doors specifications be provided so we can look for an equal? DOR Response: Please refer to dwg A656 for the roller door specification. Manufacturer is 'Overhead Door'. Yes, an approved equal eg insulated & high wind resistant for Type B meeting the wind load requirements as indicated on the structural drawings.
4.	For Door Type T40, please provide specifications for Steel Manual Sliding Gate. DOR Response: Door Type T40 is not used. Gate to be a chainlink swing gate per the Civil Drawings.

Northern Marianas Housing Corporation (NMHC)

Community Development Block Grant-Disaster Recovery (CDBG-DR)

Request for Information (RFI)

RNV RFI-002 - DOR Responses

IFB X/RFP ☐_____

Bidder/Proposer: **Date:**

Project Name:

No.	Question
1.	Please provide specifications for Solid Core Doors. DOR Response: The timber solid core door types are shown on drawings A654 to A657. Typical thickness is 1-3/4".
2.	Please confirm that Door Type-T11 is not used for this project. DOR Response: Door Type T11 is not required
3.	Please confirm that Window Type-WT.10 is not used for this project. DOR Response: Window Type WT10 is not required
4.	Please provide specifications for signages. DOR Response: Please refer signage plan with updated specifications
5.	Please provide specifications of Concrete Pavers (TGSI 1, TGSI 2 and TGSI 3). DOR Response: Please refer to the attached finishes schedule.

Northern Marianas Housing Corporation (NMHC)

Community Development Block Grant-Disaster Recovery (CDBG-DR)

Request for Information (RFI)

RNV RFI-001 - DOR Responses

IFB X/RFP ☐_____

Bidder/Proposer: **Date:**

Project Name: Marianas High School Career Technical Education Center Construction Project

No.	Question
1.	What works are to be included in Bid Schedule Item 015-Conveying (Sub)? DOR Response: Bid Schedule Item 015-Conveying is for the wheelchair lift per Specification 14 42 00.
2.	Under 26 00 00 Basic Electrical Materials and Methods Section 1.3 Supervision of work " Electrical work shall be under the full supervision of a professional electrical engineer or a master electrician registered to practice in CNMI." Can this requirement be waived? DOR Response: No, electrical work involves life safety concerns. Therefore, waiving this requirement is not acceptable. Professional Electrical Engineer or Master Electrician registered to practice in Guam is acceptable alternative.
3.	In the Telecommunication General Notes Item No. 2 ALL TELECOMMUNICATIONS WORK MUST BE UNDER FULL SUPERVISION OF A REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER (RCDD). Can this requirement be waived? DOR Response: The project involves critical telecommunication systems. Therefore, we do not recommend that this requirement to be waived. However, EMCE defers to User/CNMI Public School to confirm.
4.	Under 27 15 13 communication copper horizontal cabling Item 1.8 Quality Assurance A.2. Installation Shall be under the direct supervision of level 2 installer, who shall be present at all times when work of this section is performed in the project site. Can this requirement be waived? DOR Response: Will revise item 1.8.A to "Telecommunications Qualifications 1. Work under this section shall be performed by and the equipment shall be provided by the approved telecommunications contractor and key personnel. Qualifications shall be provided for: the telecommunications system contractor, the telecommunications system installer, and the supervisor (if different from the installer). A minimum of 30 days prior to installation, submit documentation of the experience of the telecommunications contractor and of the key personnel. a. Telecommunications Contractor The telecommunications contractor shall be a firm which is regularly and professionally engaged in the business of the applications, installation, and testing of the specified telecommunications systems and equipment. The telecommunications contractor shall demonstrate experience in providing successful telecommunications systems within the past 3 years of similar scope and size. Submit documentation for a minimum of three and a maximum of five successful telecommunication system installations for the telecommunications contractor. b. Key Personnel Provide key personnel who are regularly and professionally engaged in the business of the application, installation and testing of the specified telecommunications systems and equipment. There may be one key person or more key persons proposed for this solicitation depending upon how many of the key roles each has successfully provided. Each of the

key personnel shall demonstrate experience in providing successful telecommunications systems within the past 3 years.

Supervisors and installers assigned to the installation of this system or any of its components shall be Building Industry Consulting Services International (BICSI) Registered Cabling Installers, Technician Level. Submit documentation of current BICSI certification for each of the key personnel.

In lieu of BICSI certification, supervisors and installers assigned to the installation of this system or any of its components shall have a minimum of 3 years experience in the installation of the specified copper and fiber optic cable and components. They shall have factory or factory approved certification from each equipment manufacturer indicating that they are qualified to install and test the provided products. Submit documentation for a minimum of three and a maximum of five successful telecommunication system installations for each of the key personnel. Documentation for each key person shall include at least two successful system installations provided that are equivalent in system size and in construction complexity to the telecommunications system proposed for this solicitation. Include specific experience in installing and testing telecommunications systems and provide the names and locations of at least two project installations successfully completed using optical fiber and copper telecommunications cabling systems. All of the existing telecommunications system installations offered by the key persons as successful experience shall have been in successful full-time service for at least 18 months prior to the issuance date for this solicitation. Provide the name and role of the key person, the title, location, and completed installation date of the referenced project, the referenced project owner point of contact information including name, organization, title, and telephone number, and generally, the referenced project description including system size and construction complexity."

5. Please provide plan and specification for the grounding system and lightning protection system.

   DOR Response: Lightning protection system with ground ring is not part of the project.

6. Please provide specifications of Furniture shown on set A700 plans.

   DOR Response: Furniture shown on the A700 plans are not included as part of this project, to be sourced by the PSS.

7. Please provide specifications of ITNE1 (Computer), ITNE2 (Multifunction Device), ITNE3 (Telephone), ITAV1(Display), and ITAV2 (Display Screen)

   DOR Response: Note FFE Schedule Notes on A001. Items listed above are either Budget Group No. 2 or 3. See excerpt below.

FFE SCHEDULE NOTES

BUDGET GROUP NO. LEGEND

1. TO BE PURCHASED & INSTALLED BY CONTRACTOR
2. TO BE PURCHASED BY CLIENT, INSTALLED BY CONTRACTOR
3. TO BE PURCHASED & INSTALLED BY CLIENT

NOTES

- CLIENT TO CONFIRM ALL GROUP NUMBERS.
- **THE COUNT/QUANTITY COLUMN IN ALL FFE SCHEDULES ARE ISSUED FOR GUIDENCE ONLY & MUST NOT TO BE RELIED UPON FOR ACCURACY. IT IS THE CONTRACTOR'S RESPONSIBLITY TO CONFIRM ALL QUANTITIES.**

8. Please provide details and specifications of Joinery/Cabinets.

   DOR Response: Please find the attached joinery drawing set (Group 1 items only) – dwgs A800, A801 & A810. The drawings have been provided to consolidate joinery items already shown in the architectural drawing set for further guidance.

9. Please provide specifications of Kitchen Equipment shown on Plan A706.

   DOR Response: See attached kitchen equipment schedule for review.

10. Please provide specifications of Toilet Accessories/Toilet Partitions.

    DOR Response: Please find the attached detailed plan of the toilet partition layout A860 as well as specification SEC 10 21 13 for further clarity for costing. We note that the toilet partitioning was incorrectly coded/keynoted as IP15. The code for the partition is now IP19.

Northern Marianas Housing Corporation (NMHC)

Community Development Block Grant-Disaster Recovery (CDBG-DR)

Request for Information (RFI)

UMI RFI-001 – DOR Responses

IFB X/RFP ☐ _____

Bidder/Proposer: **Date:**

Project Name: Marianas High School Career Technical Education Center Construction Project

No.	Question
1.	Extension of Bid Submission DOR Response: Refer to Addendum 2 emailed June 26, 2024.
2.	Additional details on the Thickness of Base Course underneath slab on grade DOR Response: 8" thick aggregate base compacted to 95% MDD is required beneath the slam on grade as shown on detail 9 on S501. Note, this is different from foundation subgrade preparation as shown on S511.
3.	Equipment Pad rebar details. DOR Response: 10" Thick Exterior equipment pads to be reinforced with #5 @ 6" on centers, each way, top and bottom. Details to be provided in an upcoming addendum. Interior equipment pad details per Detail 6 on S501. Roof top equipment pads per Sheet S507.

Northern Marianas Housing Corporation (NMHC)

Community Development Block Grant-Disaster Recovery (CDBG-DR)

Request for Information (RFI)

USAF RFI-001 – DOR Responses

IFB X/RFP ☐ _____

Bidder/Proposer: **Date:**

Project Name: Marianas High School Career Technical Education Center Construction Project

No.	Question
1.	Please provide technical specifications for Facility Storm Drainage Piping and Storm Drainage Specialties. DOR Response: See attached advanced copy of Specification Section 22 14 14, 22 14 23 and 33 41 00. This will be released in an upcoming addendum.
2.	For plan A633 Section detail c, please provide the FC Sheeting specification. DOR Response: Allow for 5/8" Type X GWB gypsum board instead of FC sheeting. The relevant detail is 3/A636. Allo for gypsum board, vapor barrier, insulation, and c channels.
3.	Regarding the Xypex Additive, can we use the Xypex C-1000NF? DOR Response: Yes, however, if a water proofing admixture is not allowed by the concrete supplier, the admixture may be substituted for a cementitious crystalline waterproofing Xypex Concentrate or approved equal. Waterproof coating specifications for the water tank, planters, and retaining walls will be provided in an upcoming addendum.
4.	Please clarify the Waterproofing Membrane to be used for concrete foundation. DOR Response: Waterproofing membrane will be required for the water tank, planters and retaining walls.
5.	Can we request for Specs for CCTV and connection details? to be connected to local fire department? DOR Response: CCTV will be provided by PSS.
6.	Can we request an extension for bid submission and RFI submission? DOR Response: Refer to Addendum 2 emailed June 26, 2024.

SECTION 22 14 14 STORM DRAINAGE PIPING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Hubless, cast-iron soil pipe and fittings.
2. Specialty pipe fittings.

1.2 ACTION SUBMITTALS

A. Product data.

B. Sustainable Design Submittals:

1. Product Data: For adhesives, indicating VOC content.
2. Laboratory Test Reports: For adhesives, indicating compliance with requirements for low-emitting materials.

1.3 INFORMATIONAL SUBMITTALS

A. Field Quality-Control Reports: Inspection reports signed by authorities having jurisdiction.

1.4 QUALITY ASSURANCE

A. Provide materials bearing label, stamp, or other markings of specified testing agency.

1.5 WARRANTY

A. Listed manufacturers to provide labeling and warranty of their respective products.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Components and installation are to be capable of withstanding the following minimum working pressure unless otherwise indicated:

1. Storm Drainage Piping: 10-foot head of water.

2.2 PIPING MATERIALS

A. Piping materials to bear label, stamp, or other markings of specified testing agency.

B. Comply with requirements in "Piping Schedule" Article for applications of pipe, tube, fitting materials, and joining methods for specific services, service locations, and pipe sizes.

2.3 HUBLESS, CAST-IRON SOIL PIPE AND FITTINGS

A. Pipe and Fittings:

1. Marked with CISPI collective trademark and NSF certification mark.
2. Standards: ASTM A888 and CISPI 301.

B. Standard, Hubless-Piping Couplings:

1. Marked with CISPI collective trademark.
2. Standards: ASTM C1277 and CISPI 310.
3. Description: Stainless steel corrugated shield with stainless steel bands and tightening devices; and ASTM C564, rubber sleeve with integral, center pipe stop.

C. Heavy-Duty, Hubless-Piping Couplings:

1. Standard: ASTM C1277 or ASTM C1540.
2. Description: Stainless steel shield with stainless steel bands and tightening devices; and ASTM C564, rubber sleeve with integral, center pipe stop.

D. Cast-Iron, Hubless-Piping Couplings:

1. Standard: ASTM A1056.
2. Description: Two-piece ASTM A48/A48M, cast-iron housing; stainless steel bolts and nuts; and ASTM C564, rubber sleeve with integral, center pipe stop.

2.4 SPECIALTY PIPE FITTINGS

A. Transition Couplings:

1. General Requirements: Fitting or device for joining piping with small differences in ODs or of different materials. Include end connections of same size as and compatible with pipes to be joined.
2. Fitting-Type Transition Couplings: Manufactured piping coupling or specified-piping-system fitting.
3. Unshielded, Non-pressure Transition Couplings:

a. Standard: ASTM C1173.
b. Description: Elastomeric sleeve, reducing or transition pattern. Include shear ring and corrosion-resistant-metal tension band and tightening mechanism on each end.

c. Sleeve Materials:

1) For Cast-Iron Soil Pipes: ASTM C564 rubber.

4. Shielded, Non-pressure Transition Couplings:

a. Standard: ASTM C1460.
b. Description: Elastomeric or rubber sleeve with full-length, corrosion-resistant outer shield and corrosion-resistant-metal tension band and tightening mechanism on each end.
c. End Connections: Same size as and compatible with pipes to be joined.

PART 3 - EXECUTION

3.1 EARTH MOVING

A. Comply with requirements for excavating, trenching, and backfilling.

3.2 INSTALLATION OF PIPING

A. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems.

B. Install piping as indicated unless deviations from layout are approved on coordination drawings.

C. Install piping in concealed locations.

1. Piping installed in equipment rooms, service areas, and where indicated may be exposed.

D. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated.

E. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal.

F. Install piping to permit valve servicing.

G. Install piping at indicated slopes.

H. Install piping free of sags and bends.

I. Install fittings for changes in direction and branch connections.

J. Install piping to allow application of insulation.

K. Install seismic restraints on piping.

L. Make changes in direction for piping using appropriate branches, bends, and long-sweep bends.

1. Do not change direction of flow more than 90 degrees.
2. Use proper size of standard increasers and reducers if pipes of different sizes are connected.

    a. Reducing size of drainage piping in direction of flow is prohibited.

M. Lay buried building piping beginning at low point of each system.

1. Install true to grades and alignment indicated, with unbroken continuity of invert. Place hub ends of piping upstream.
2. Install required gaskets according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements.
3. Maintain swab in piping and pull past each joint as completed.

N. Install piping at the following minimum slopes unless otherwise indicated.

1. Building Storm Drain: 1/4 inch per foot downward in direction of flow for piping NPS 3 and smaller; downward in direction of flow for piping NPS 4 and larger.
2. Horizontal Storm Drainage Piping: 1/4 inch per foot downward in direction of flow.

O. Install cast-iron soil piping in accordance with CISPI's "Cast Iron Soil Pipe and Fittings Handbook," Ch IV, "Installation of Cast Iron Soil Pipe and Fittings."

P. Install engineered controlled-flow drain specialties and storm drainage piping in locations indicated.

Q. Plumbing Specialties:

1. Install cleanouts in storm drainage gravity-flow piping in accessible locations.

    a. Install cleanout fitting with closure plug inside the building in storm drainage force-main piping.
    b. Comply with requirements for cleanouts specified in Section 22 14 23 "Storm Drainage Piping Specialties."

2. Install drains in storm drainage gravity-flow piping.

    a. Comply with requirements for drains specified in Section 22 14 23 "Storm Drainage Piping Specialties."

R. Do not enclose, cover, or put piping into operation until it is inspected and approved by authorities having jurisdiction.

S. Install sleeves for piping penetrations of walls, ceilings, and floors.

1. Comply with requirements for sleeves specified in Section 22 05 00 "Common Work Results for Plumbing."

T. Install sleeve seals for piping penetrations of concrete walls and slabs.

1. Comply with requirements for sleeve seals specified in Section 22 05 00 "Common Work Results for Plumbing."

U. Install escutcheons for piping penetrations of walls, ceilings, and floors.

1. Comply with requirements for escutcheons specified in Section 22 05 00 "Common Work Results for Plumbing."

3.3 JOINT CONSTRUCTION

A. Hubless, Cast-Iron Soil Piping Coupled Joints: Join in accordance with CISPI 310 and CISPI's "Cast Iron Soil Pipe and Fittings Handbook" for hubless-piping coupling joints.

B. Joint Restraints and Sway Bracing:

1. Provide joint restraints and sway bracing for storm drainage piping joints to comply with the following conditions:

a. Provide axial restraint for pipe and fittings 5 inches and larger, upstream and downstream of all changes in direction, branches, and changes in diameter greater than two pipe sizes.
b. Provide rigid sway bracing for pipe and fittings 4 inches and larger, upstream and downstream of all changes in direction 45 degrees and greater.
c. Provide rigid sway bracing for pipe and fittings 5 inches and larger, upstream and downstream of all changes in direction and branch openings.

3.4 INSTALLATION OF SPECIALTY PIPE FITTINGS

A. Transition Couplings:

1. Install transition couplings at joints of piping with small differences in ODs.
2. In Drainage Piping: Unshielded, non-pressure transition couplings.

3.5 INSTALLATION OF HANGERS AND SUPPORTS

A. Comply with requirements for seismic-restraint devices.

B. Comply with requirements for hangers, supports, and anchor devices specified in Section 22 05 29 "Hangers and Supports for Plumbing Piping and Equipment."

1. Install carbon-steel pipe hangers for horizontal piping in noncorrosive environments.
2. Install stainless steel pipe hangers for horizontal piping in corrosive environments.
3. Install carbon-steel pipe support clamps for vertical piping in noncorrosive environments.
4. Install stainless steel pipe support clamps for vertical piping in corrosive environments.
5. Vertical Piping: MSS Type 8 or Type 42, clamps.

6. Install individual, straight, horizontal piping runs:

    a. 100 Feet and Less: MSS Type 1, adjustable, steel clevis hangers.
    b. Longer Than 100 Feet: MSS Type 43, adjustable roller hangers.
    c. Longer Than 100 Feet if Indicated: MSS Type 49, spring cushion rolls.

7. Multiple, Straight, Horizontal Piping Runs 100 Feet or Longer: MSS Type 44, pipe rolls. Support pipe rolls on trapeze.
8. Base of Vertical Piping: MSS Type 52, spring hangers.

C. Install hangers for cast-iron piping with maximum horizontal spacing and minimum rod diameters, to comply with MSS SP-58, locally enforced codes, and authorities having jurisdiction requirements, whichever are most stringent.

D. Support horizontal piping and tubing within 12 inches of each fitting and coupling.

E. Support vertical cast-iron piping to comply with MSS SP-58, locally enforced codes, and authorities having jurisdiction requirements, whichever are most stringent, but as a minimum at base and at each floor.

3.6 CONNECTIONS

A. Drawings indicate general arrangement of piping, fittings, and specialties.

B. Connect interior storm drainage piping to exterior storm drainage piping. Use transition fitting to join dissimilar piping materials.

C. Connect storm drainage piping to roof drains and storm drainage specialties.

1. Install test tees (wall cleanouts) in conductors near floor, and floor cleanouts with cover flush with floor.
2. Comply with requirements for cleanouts and drains specified in Section 22 14 23 "Storm Drainage Piping Specialties."

D. Where installing piping adjacent to equipment, allow space for service and maintenance of equipment.

3.7 IDENTIFICATION

A. Identify exposed storm drainage piping.

B. Comply with requirements for identification specified in Section 22 05 53 "Identification for Plumbing Piping and Equipment."

3.8 FIELD QUALITY CONTROL

A. During installation, notify authorities having jurisdiction at least 24 hours before inspection must be made. Perform tests specified below in presence of authorities having jurisdiction.

1. Roughing-in Inspection: Arrange for inspection of piping before concealing or closing-in after roughing-in.
2. Final Inspection: Arrange for final inspection by authorities having jurisdiction to observe tests specified below and to ensure compliance with requirements.

B. Reinspection: If authorities having jurisdiction find that piping will not pass test or inspection, make required corrections and arrange for reinspection.

C. Reports: Prepare inspection reports and have them signed by authorities having jurisdiction.

D. Test storm drainage piping in accordance with procedures of authorities having jurisdiction or, in absence of published procedures, as follows:

1. Test for leaks and defects in new piping and parts of existing piping that have been altered, extended, or repaired.

    a. If testing is performed in segments, submit separate report for each test, complete with diagram of portion of piping tested.

2. Leave uncovered and unconcealed new, altered, extended, or replaced storm drainage piping until it has been tested and approved.

    a. Expose work that was covered or concealed before it was tested.

3. Test Procedure:

    a. Test storm drainage piping on completion of roughing-in.
    b. Close openings in piping system and fill with water to point of overflow, but not less than 10-foot head of water.
    c. From 15 minutes before inspection starts until completion of inspection, water level must not drop.
    d. Inspect joints for leaks.

4. Repair leaks and defects with new materials and retest piping, or portion thereof, until satisfactory results are obtained.
5. Prepare reports for tests and required corrective action.

3.9 CLEANING

A. Clean interior of piping. Remove dirt and debris as work progresses.

3.10 PROTECTION

A. Protect piping and drains during remainder of construction period to avoid clogging with dirt and debris and to prevent damage from traffic and construction work.

B. Place plugs in ends of uncompleted piping at end of day and when work stops.

C. Repair damage to adjacent materials caused by storm drainage piping installation.

3.11 PIPING SCHEDULE

A. Aboveground storm drainage piping NPS 6 and smaller is to be the following:

1. Hubless, cast-iron soil pipe and fittings; hubless-piping couplings; and coupled joints.
2. Dissimilar Pipe-Material Couplings: Unshielded, non-pressure transition couplings.

B. Aboveground, storm drainage piping NPS 8 and larger is to be the following:

1. Hubless, cast-iron soil pipe and fittings; hubless-piping couplings; and coupled joints.
2. Dissimilar Pipe-Material Couplings: Unshielded, non-pressure transition couplings.

C. Underground storm drainage piping NPS 6 and smaller is to be the following:

1. Hubless, cast-iron soil pipe and fittings; cast-iron, hubless-piping couplings; and coupled joints.
2. Dissimilar Pipe-Material Couplings: Unshielded, non-pressure transition couplings.

D. Underground, storm drainage piping NPS 8 is to be the following:

1. Hubless, cast-iron soil pipe and fittings; cast-iron, hubless-piping couplings; and coupled joints.
2. Dissimilar Pipe-Material Couplings: Unshielded, non-pressure transition couplings.

END OF SECTION 22 14 14

SECTION 22 14 23 STORM DRAINAGE PIPING SPECIALTIES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. General-purpose roof drains.
2. Miscellaneous storm drainage piping specialties.
3. Cleanouts.
4. Trench drains.

1.2 ACTION SUBMITTALS

A. Product Data:

1. General-purpose roof drains.
2. Miscellaneous storm drainage piping specialties.
3. Cleanouts.
4. Trench drains.

1.3 QUALITY ASSURANCE

A. Provide drainage piping specialties are to bear label, stamp, or other markings of specified testing agency.

PART 2 - PRODUCTS

2.1 GENERAL-PURPOSE ROOF DRAINS

A. Cast-Iron Roof Drains.

1. Cast-Iron, Large-Sump, General-Purpose Roof Drains:

a. Standard: ASME A112.6.4.
b. Body Material: Cast iron.
c. Dimension of Body: Nominal 14-to 16-inch diameter.
d. Dome Material: Aluminum.
e. Combination flashing ring and gravel stop.
f. Outlet: Bottom.
g. Outlet Type: No-hub.
h. Options:

1) Extension collars.
2) Underdeck clamp.

3) Sump receiver plate.
4) Perforated Gravel Guard: Stainless steel.
5) Vandal-proof dome.
6) Water Dam: 2 inches high.

2. Cast-Iron, Medium-Sump, General-Purpose Roof Drains:

a. Standard: ASME A112.6.4.
b. Body Material: Cast iron.
c. Dimension of Body: 8- to 12-inch diameter.
d. Dome Material: Aluminum.
e. Combination flashing ring and gravel stop.
f. Outlet: Bottom.
g. Outlet Type: No-hub.
h. Options:

1) Extension collars.
2) Underdeck clamp.
3) Sump Receiver plate.
4) Wire Mesh: Stainless steel or brass over dome.
5) Perforated Gravel Guard: Stainless steel.
6) Vandal-proof dome.
7) Water Dam: 2 inches.

3. Cast-Iron, Small-Sump, General-Purpose Roof Drains.

a. Standard: ASME A112.6.4.
b. Body Material: Cast iron.
c. Dimension of Body: Nominal 8-inch diameter.
d. Dome Material: Cast iron.
e. Combination flashing ring and gravel stop.
f. Outlet: Bottom.
g. Outlet Type: No-hub.
h. Options:

1) Extension collars.
2) Underdeck clamp.
3) Sump receiver plate.
4) Wire Mesh: Stainless steel or brass over dome.
5) Vandal-proof dome.

2.2 MISCELLANEOUS STORM DRAINAGE PIPING SPECIALTIES

A. Downspout Adapters:

1. Description: Manufactured, gray-iron casting, for attaching to horizontal-outlet, parapet roof drain and to exterior sheet metal downspout.
2. Size: Inlet size to match parapet drain outlet.

B. Downspout Boots.

1. Description: Manufactured, ASTM A48/A48M, gray-iron casting, with strap or ears for attaching to building; NPS 4 outlet; and shop-applied bituminous coating.
2. Size: Inlet size to match downspout and NPS 4 outlet.

C. Metal Downspout Nozzles:

1. Description: Nozzle with wall flange and mounting holes to cover rough opening and serve as anchor.
2. Size: Same as connected downspout.
3. Material: Cast bronze or nickel bronze nozzle and flange.
4. Piping Connection Type: No-hub.
5. Opening Protection: None.

2.3 CLEANOUTS

A. Cast-Iron Cleanouts.

1. Cast-Iron Exposed Cleanouts:

   a. Standard: ASME A112.36.2M.
   b. Size: Same as connected branch.
   c. Body Material: No-hub, cast-iron soil pipe test tee as required to match connected piping.
   d. Closure: Countersunk or raised-head, brass plug.
   e. Closure Plug Size: Same as, or not more than, one size smaller than cleanout size.

2. Cast-Iron Exposed Floor Cleanouts:

   a. Standard: ASME A112.36.2M.
   b. Size: Same as connected branch.
   c. Type: Heavy-duty, adjustable housing.
   d. Body or Ferrule: Cast iron.
   e. Outlet Connection: No-hub.
   f. Closure: Cast-iron plug.
   g. Adjustable Housing Material: Cast iron with threads.
   h. Frame and Cover Material and Finish: Nickel-bronze, copper alloy.
   i. Frame and Cover Shape: Round.
   j. Top Loading Classification: Heavy Duty.
   k. Riser: ASTM A74, Service Class, cast-iron drainage pipe fitting and riser to cleanout.

l. Options:

1) Clamping device.

3. Cast-Iron Wall Cleanouts:

a. Standard: ASME A112.36.2M. Include wall access.
b. Size: Same as connected drainage piping.
c. Body: No-hub, cast-iron soil pipe test tee as required to match connected piping.
d. Closure Plug:

1) Material: Cast iron.
2) Head: Countersunk or raised.
3) Drilled and threaded for cover attachment screw.
4) Size: Same as, or not more than, one size smaller than cleanout size.

e. Wall-Access Cover Plate: Round, flat, chrome-plated brass or stainless steel cover plate with screw.
f. Wall-Access Frame and Cover: Round, nickel-bronze, copper-alloy, or stainless steel wall-installation frame and cover.

4. Cast-Iron Test Tees:

a. Standard: ASME A112.36.2M and ASTM A74, ASTM A888, or CISPI 301.
b. Size: Same as connected drainage piping.
c. Body Material: Hub-and-spigot, cast-iron soil-pipe T-branch or no-hub, cast-iron soil-pipe test tee as required to match connected piping.
d. Closure Plug: Countersunk or raised head, brass.
e. Closure Plug Size: Same as, or not more than, one size smaller than cleanout size.

2.4 TRENCH DRAINS

A. Trench Drains:

1. Standard: ASME A112.6.3.
2. Body Material: Cast iron.
3. Top-Loading Classification: Heavy Duty.
4. Grat Material: Cast iron or stainless steel.
5. Flange: Anchor.
6. Outlet: Bottom.
7. Outlet Type: Inside caulk.
8. Options:

a. Clamping device.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install roof drains in accordance with roof membrane manufacturer's written installation instructions at low points of roof areas.

1. Install flashing collar or flange of roof drain to maintain integrity of waterproof membranes where penetrated.
2. Position roof drains for easy access and maintenance.

B. Install downspout adapters on outlet of back-outlet parapet roof drains and connect to sheet metal downspouts.

C. Install downspout boots at grade with top 6 inches above grade. Secure to building wall.

D. Install downspout nozzles at exposed bottom of conductors where they spill onto grade.

E. Install cleanouts in aboveground piping and building drain piping in accordance with the following instructions unless otherwise indicated:

1. Use cleanouts the same size as drainage piping up to NPS 4. Use NPS 4 for larger drainage piping unless larger cleanout is indicated.
2. Locate cleanouts at each change in direction of piping greater than 45 degrees.
3. Locate cleanouts at minimum intervals of 50 ft. for piping NPS 4 and smaller and 100 ft. for larger piping.
4. Locate cleanouts at base of each vertical storm piping conductor.

F. For floor cleanouts for piping below floors, install cleanout deck plates with top flush with finished floor.

G. For cleanouts located in concealed piping, install cleanout wall access covers, of types indicated, with frame and cover flush with finished wall.

H. Install horizontal backwater valves in floor with cover flush with floor.

I. Install drain-outlet backwater valves in outlet of drains.

J. Install test tees in vertical conductors and near floor.

K. Install wall cleanouts in vertical conductors. Install access door in wall if indicated.

L. Install trench drains at low points of surface areas to be drained. Set grates of drains flush with finished surface unless otherwise indicated.

M. Install through-penetration firestop assemblies for penetrations of fire- and smoke-rated assemblies.

1. Comply with requirements in Section 07 84 13 "Penetration Firestopping."

3.2 CONNECTIONS

A. Comply with requirements for piping specified in Section 22 14 14 "Storm Drainage Piping." Drawings indicate general arrangement of piping, fittings, and specialties.

3.3 INSTALLATION OF FLASHING

A. Fabricate flashing from single piece of metal unless large pans, sumps, or other drainage shapes are required.

B. Install sheet flashing on pipes, sleeves, and specialties passing through or embedded in floors and roofs with waterproof membrane.

C. Set flashing on floors and roofs in solid coating of bituminous cement.

D. Secure flashing into sleeve and specialty clamping ring or device.

3.4 CLEANING

A. Clean piping specialties during installation and remove dirt and debris as work progresses.

3.5 PROTECTION

A. Protect piping specialties during remainder of construction period to avoid clogging with dirt or debris and to prevent damage from traffic and construction work.

B. Place plugs in ends of uncompleted piping at end of each day and when work stops.

END OF SECTION 22 14 23

SECTION 33 41 00

STORM UTILITY DRAINAGE PIPING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Storm drainage piping.
2. Accessories.
3. Underground pipe markers.
4. Catch basins and plant area drains.
5. Cleanouts.
6. Bedding and cover materials.

B. Related Sections:

1. Section 03 30 00 - Cast-In-Place Concrete
2. Section 31 05 13 - Soils for Earthwork
3. Section 31 05 16 - Aggregates for Earthwork
4. Section 31 23 16 - Excavation
5. Section 31 23 17 - Trenching
6. Section 31 23 23 - Fill
7. Section 33 05 13 - Manholes and Structures

1.2 REFERENCES

A. American Association of State Highway and Transportation Officials:

1. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 10-lb Rammer and a 18-in. Drop.
2. AASHTO M 252 - Standard Specification for Corrugated Polyethylene Drainage Pipe.
3. AASHTO M 294 - Standard Specification for Corrugated Polyethylene Pipe, 300- to 1500-mm Diameter.

B. ASTM International:

1. ASTM A74 - Standard Specification for Cast Iron Soil Pipe and Fittings.
2. ASTM C14 - Standard Specification for Concrete Sewer, Storm Drain, and Culvert Pipe.
3. ASTM C76 - Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe.

4. ASTM C443 - Standard Specification for Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets.
5. ASTM C564 - Standard Specification for Rubber Gaskets for Cast Iron Soil Pipe and Fittings.
6. ASTM C924 - Standard Practice for Testing Concrete Pipe Sewer Lines by Low-Pressure Air Test Method.
7. ASTM C969 - Standard Practice for Infiltration and Exfiltration Acceptance Testing of Installed Precast Concrete Pipe Sewer Lines.
8. ASTM C1103 - Standard Practice for Joint Acceptance Testing of Installed Precast Concrete Pipe Sewer Lines.
9. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort 12,400 ft-lbf/ft3.
10. ASTM D1557 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort 6,000 ft-lbf/ft3.
11. ASTM D2235 - Standard Specification for Solvent Cement for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe and Fittings.
12. ASTM D2321 - Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications.
13. ASTM D2564 - Standard Specification for Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Piping Systems.
14. ASTM D2729 - Standard Specification for Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
15. ASTM D2751 - Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Sewer Pipe and Fittings.
16. ASTM D2855 - Standard Practice for Making Solvent-Cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and Fittings.
17. ASTM D2922 - Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
18. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).
19. ASTM D3034 - Standard Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
20. ASTM D 3212 - Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals.
21. ASTM D 3350 - Standard Specification for Polyethylene Plastics Pipe and Fittings Materials.
22. ASTM F477 - Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.
23. ASTM F 2306 - Standard Specification for 12 to 60 in. 300mm to 1500 mm Annular Corrugated Profile-Wall Polyethylene (PE) Pipe and Fittings for Gravity-Flow Storm Sewer and Subsurface Drainage Applications.
24. ASTM F 2648 - Standard Specification for 2 to 60 inch 50 to 1500mm Annular Corrugated Profile Wall Polyethylene (PE) Pipe and Fittings for Land Drainage Applications.
25. AASHTO M 252 - Standard Specification for Corrugated Polyethylene Drainage Pipe.
26. AASHTO M 294 - Standard Specification for Corrugated Polyethylene Pipe, 300- to 1500-mm Diameter.

1.3 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures

B. Product Data: Submit data indicating pipe and pipe accessories.

C. Manufacturer's Installation Instructions: Submit special procedures required to install Products specified.

D. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

E. Shop Drawings: Showing layout of all lines, manholes and related facilities.

1.4 CLOSEOUT SUBMITTALS

A. Section 01 77 00 - Closeout Procedures: Requirements for submittals.

B. Project Record Documents:

1. Accurately record actual locations of pipe runs, connections, catch basins, and invert elevations.
2. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.5 QUALITY ASSURANCE

A. Perform Work in accordance with the CNMI and Federal laws, regulations and building code standards.

B. Maintain one copy of each document on site.

1.6 PRE-INSTALLATION MEETINGS

A. Section 01 31 00 – Project Management and Coordination: Pre-installation meeting.

B. Convene minimum one week prior to commencing work of this section.

1.7 COORDINATION

A. Section 01 31 00 – Project Management and Coordination: Coordination and project conditions.

B. Coordinate the Work with termination of storm connection outside building, trenching, connection to foundation drainage system, and public storm utility service.

PART 2 - PRODUCTS

2.1 STORM DRAINAGE PIPING

A. Materials For Pipe Sizes 4-Inch Diameter and Larger

1. High density polyethylene resin compound meeting cell classification 435400C per ASTM D3350.
2. High Density Polyethylene (HDPE) pipe shall be dual wall and comply with AASHTO M294 or ASTM F2306 or low pressure (5psi sustained and 10psi surge) applications.
3. The pipe Manufacturer must certify compliance with the above requirements.

B. Ultra-Rib PVC Gravity Storm Drainage Pipe

1. All corrugated pipe shall be seamless profile wall and meet the requirements of ASTM F794 and Uni-Bell Uni-B-9. Pipe shall have a smooth interior with a solid cross-sectional rib exterior. Exterior ribs shall be perpendicular to the axis of the pipe to allow placement of the sealing gasket without additional cutting or machining. The pipe stiffness shall be a minimum of 46 psi when tested at 5% deflection in accordance with ASTM D2412. Pipe shall be green in color.
2. Ultra-Rib shall be made of the finest PVC material, meeting a cell classification of 12454 or 12364 as defined in ASTM D1784. Ultra-Rib PVC Gravity Storm Drainage Pipe as manufactured by PWEagle.

C. Fittings

1. All molded fittings and fabricated fittings shall be fully pressure rated to match the pipe SDR pressure rating to which they are made. All fittings shall be molded or fabricated by the manufacturer. No Contractor fabricated fittings shall be used unless approved by the Engineer.
2. The manufacturer of the HDPE pipe shall supply all HDPE fittings and accessories as well as any adapters and/or specials required to perform the work as shown on the Drawings and specified herein.
3. All fittings shall be installed using butt-fused fittings, thermo-fused fittings/couplings, or flanged adapters and must be approved by the Engineer. NO size on size wet taps shall be permitted.
4. All transition from HDPE pipe to ductile iron or PVC shall be made per the approval of the Engineer and per the HDPE pipe manufacturer's recommendations and specifications. A molded flange connector adapter within a carbon steel back-up ring assembly shall be used for pipe type transitions. Ductile iron back-up rings shall mate with cast iron flanges per ANSI B16.1. A 316 stainless steel back-up ring shall mate with a 316 stainless steel flange per ANSI B16.1.
5. Transition from HDPE to ductile iron fittings and valves shall be approved by the Engineer before installation.
6. No solid sleeves shall be allowed between such material transitions.
7. The pipe supplier must certify compliance with the above requirements.

2.2 ACCESSORIES

A. Filter Fabric: Non-biodegradable, woven.

B. Grout: Specified in Section 03 30 00.

2.3 UNDERGROUND PIPE MARKERS

A. Plastic Ribbon Tape: Bright colored, continuously printed, minimum 6 inches wide by 4 mil thick, manufactured for direct burial service.

B. Trace Wire: Bare Copper, solid conductor.

2.4 JUNCTION BOXES & DRAIN INLETS

A. Junction Box Lid and Frame Manufacturers:

1. Neenah Products.
2. Substitutions: Refer to Section 01 60 00 - Product Requirements.

B. Junction Box Lid and Frame:

1. Construction: Cast iron construction.
2. Lid Design: Checkerboard grill.
3. Nominal Lid and Frame Size: As indicated in the Drawings.

C. Drain Inlet Frame and Grade Manufacturers:

1. Pacific Grating or approved equal

D. Drain Inlet Frame and Grate

1. Ho dipped galvanized after fabrication

E. Base Pad: Cast-in-place concrete of type specified in Section 03 30 00.

2.5 BEDDING AND COVER MATERIALS

A. Bedding: Coarse aggregate base material as specified in Section 31 05 16 Aggregates for Earthwork.

B. Cover: Coarse aggregate base material as specified in Section 31 05 16 Aggregates for Earthwork.

C. Soil Backfill from Above Pipe Zone material to Finish Grade in areas outside pavement and structures: Subsoil (Native soil non-structural) as specified in Section 31 05 13 Soils for Earthwork.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Section 01 31 00 – Project Management and Coordination: Verify existing conditions before starting work.

B. Verify trench cut excavation base is ready to receive work and excavations, dimensions, and elevations are as indicated on layout drawings.

3.2 PREPARATION

A. Hand trim excavations to required elevations. Correct over excavation with fine aggregate.

B. Remove large stones or other hard matter which could damage piping or impede consistent backfilling or compaction.

3.3 BEDDING

A. Excavate pipe trench in accordance with Manufacturer's Recommendations for work of this Section. Hand trim excavation for accurate placement of pipe to elevations indicated.

B. Place bedding material at trench bottom, level materials in continuous layer not exceeding 8 inches compacted depth in accordance with Manufacturer's Recommendations.

C. Maintain optimum moisture content of bedding material to attain required compaction density.

3.4 INSTALLATION - PIPE

A. Install pipe, fittings, and accessories in accordance with Manufacturer's Recommendations. Seal joints watertight.

B. Place pipe on minimum deep bed as indicated in the Drawings.

C. Lay pipe to slope gradients noted on drawings with maximum variation from indicated slope of 1/8 inch in 10 feet.

D. Install aggregate at sides and over top of pipe. Install top cover to minimum compacted thickness of 12 inches, compact to 95 percent.

E. Refer to Section 31 23 23 for backfilling and compacting requirements. Do not displace or damage pipe when compacting.

F. Refer to Section 33 05 13 for manhole requirements.

G. Connect to stormwater treatment system and to public storm sewer system.

H. Install trace wire continuous over top of pipe. Buried 6 inches below finish grade, above pipe line; coordinate with Section 31 23 23 and 31 23 17.

I. Install site storm drainage system piping to building storm drainage system. Refer to Section 33 41 00.

3.5 INSTALLATION - CATCH BASINS AND CLEANOUTS

A. Form bottom of excavation clean and smooth to correct elevation.

B. Form and place Cast-In-Place Concrete base pad, with provision for storm sewer pipe end sections.

C. Level top surface of base pad; sleeve concrete shaft sections to receive storm sewer pipe sections.

D. Establish elevations and pipe inverts for inlets and outlets as indicated on Drawings.

E. Mount lid and frame level in grout, secured to top cone section to elevation indicated.

3.6 FIELD QUALITY CONTROL

A. Section 01 40 00 - Quality Requirements and 01 73 00 - Execution: Field inspecting, testing, adjusting, and balancing.

B. Request inspection prior to and immediately after placing aggregate cover over pipe.

C. Compaction Testing: In accordance with ASTM D1557, ASTM D698, AASHTO T180, ASTM D2922, ASTM D3017.

D. When tests indicate work does not meet specified requirements, remove work, replace and retest.

E. Frequency of Compaction Tests: One set of three (3) tests per 100 L.F. of trench per lift when under roadways pavement or structures and one set of three (3) tests per 300 L.F. of trench per lift in other areas.

F. Infiltration Test: Test in accordance with ASTM 969.

G. Deflection Test: At the direction of the Engineer or Owner, make a deflection test on individual lengths of installed plastic pipeline on completion of all work adjacent to and over the pipeline, including leakage tests, backfilling, placement of fill, grading, paving, concreting, and any other superimposed loads. Deflection of pipe in the installed pipeline under all external loads shall not exceed 4.5 percent of the normal inside diameter of pipe. Determine whether the allowable deflection has been exceeded by use of (a) a pull-through device, or (b) a deflection measuring device.

H. Pressure Test: Test in accordance with ASTM C924 and ASTM C1103, depending on size of pipe.

3.7 PROTECTION OF FINISHED WORK

A. Section 01 73 00 - Execution: Protecting finished Work.

B. Protect pipe and aggregate cover from damage or displacement until backfilling operation is in progress.

1. Take care not to damage or displace installed pipe and joints during construction of pipe supports, backfilling, testing, and other operations.
2. Repair or replace pipe that is damaged or displaced from construction operations.

END OF SECTION 33 41 00