# SOUTH JERSEY TRANSPORTATION AUTHORITY
# ATLANTIC CITY EXPRESSWAY

# 2021 WEST MAINTENANCE ADDITION PROJECT

## September 1, 2021

**WINSLOW TOWNSHIP**
**CAMDEN COUNTY**



| UTILITIES |
|---|
| SOUTH JERSEY GAS COMPANY (GAS MAINS) |
| ATLANTIC CITY ELECTRIC COMPANY (POLE LINES, CONDUIT) |
| VERIZON OF NEW JERSEY, INC. (POLE LINES, CONDUIT) |
| SPRINT NEXTEL |
| COMCAST (CABLE) OF SOUTH JERSEY |
| AT&T |
| NEW JERSEY AMERICAN WATER CO. |
| VERIZON BUSINESS |
| SJTA / ADESTA, LLC |
| EGG HARBOR MUNICIPAL UTILITIES AUTHORITY |
| CAMDEN COUNTY MUNICIPAL UTILITIES AUTHORITY |
| WINSLOW TOWNSHIP DEPARTMENT OF MUNICIPAL UTILITIES |
| ATLANTIC COUNTY UTILITIES AUTHORITY |


LOCATION MAP
NOT TO SCALE

INDEX OF DRAWINGS



PREPARED AND RECOMMENDED BY:

M. ELAINE DASTI, P.E. — DATE
NEW JERSEY PROFESSIONAL ENGINEER
T & M ASSOCIATES

APPROVED BY SOUTH JERSEY TRANSPORTATION AUTHORITY:

STEPHEN M. MAZUR, P.E., P.T.O.E. — DATE
CHIEF ENGINEER
SOUTH JERSEY TRANSPORTATION AUTHORITY

| NO. | DATE | REVISION |
|---|---|---|
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| | | |
| 1 | 09/09/2021 | ADDENDUM #1 |

GENERAL NOTES

1.0 GENERAL

1. All work shall conform to the IBC 2018 Building Code, NJ Edition and to all other applicable Federal, State, and local regulations.

2. Work not indicated on a part of the drawings but reasonably implied to be similar to that shown at corresponding places shall be repeated.

3. Contractor shall coordinate openings and penetrations through the structure as shown on the Architectural, Structural, Mechanical, Electrical, and Plumbing drawings. Provide additional reinforcement as required per the typical details.

4. Contractor shall verify and/or establish all existing conditions and dimensions at the site.

5. If the existing field conditions do not permit the installation of the work in accordance with the details shown, the Contractor shall notify the Engineer immediately and provide a sketch of the condition with their proposed modification of the details given on the contract documents.

6. Contractor shall provide for dewatering as required during excavation and construction.

7. Where alterations involve the existing supporting structure, the Contractor shall provide shoring and protection required to ensure the structural integrity of the existing structure.

8. Bracing, sheeting, shoring, etc., required to support existing buildings, sidewalks, utilities, etc., shall be designed by a professional engineer licensed in the State of New Jersey, engaged by the Contractor; Contractor to provide signed and sealed detailed shop drawings and calculations indicating all shoring work to be performed for submission and review.

9. In no case shall heavy equipment be permitted closer than 8'-0" from any foundation wall. If it is necessary to operate such equipment closer than 8'-0" to the wall, the Contractor shall be the sole responsible party and, at their own expense, shall provide adequate supports or brace the wall to withstand the additional loads superimposed from such equipment.

10. No blasting shall be permitted without written approval.

11. Testing & inspection is required of all construction delineated on the Structural drawings. The Owner shall employ a testing/inspection agency for the concrete and soil testing and inspections. The Contractor shall employ a testing/inspection agency for the Hilti anchor installation inspections. These agencies shall provide personnel with the following minimum qualifications:

- Certified by National Institute for Certification in Engineering Technologies (NICET), or other recognized comparable organization.
- For inspection, sampling, testing concrete: ACI Certified Concrete Field-Testing Technician, Grade I; and Construction Inspector, Level II.
- Submit periodic reports to Engineer during construction. Submit final inspection report summary for each division of work, certified by a licensed professional engineer, that testing & inspections were performed, and that work was performed in accordance with Contract Documents.

12. If initial inspections made by either testing or inspection agency reveal that any portion of the work does not comply with the Contract Documents, additional tests, inspections, and necessary repairs will be made at the Contractor's expense.

13. If differences occur within or between drawings and specifications regarding materials, strength, or quantities, the better material, higher strength, and greater quantity indicated, specified, or noted shall be provided.

14. For the addition to the SJTA West Maintenance Building, existing structural information, dimensions, and elevations were obtained from original design drawings dated January 1964 and drawings for the SJTA West Maintenance Building Addition dated February 25, 2013.

2.0 EXISTING CONDITIONS

1. Verify and/or establish all existing conditions, locations, and dimensions of walls, slabs, framing, utilities, finishes, materials, and systems affecting the work. Notify the Engineer of any discrepancies from information indicated on contract documents prior to ordering materials. Verify clearances required for all new equipment, piping, ductwork, and related components.

2. The structural work is based on documents of the existing construction referenced above. Verify and/or establish that existing building components conform to the original building documents. Examine the layout, elevations, member sizes, connection, details, etc. of the existing structure. Report any discrepancies with the original building construction documents to the Engineer before any affected work is performed.

3.0 SELECTIVE DEMOLITION

1. Where building alterations involve supporting the existing structure, provide shoring and protection to ensure the structural integrity of the existing structure. Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain.

2. The Contractor is responsible for determining all instances in which shoring is required. Shoring indicated in the Contract Documents may or may not constitute the extent of shoring required.

3. Shoring required to support the existing structure shall be designed by a Professional Engineer licensed in the State of New Jersey, engaged by the Contractor. The Contractor to provide signed and sealed detailed shop drawings and calculations indicating all shoring work to be performed for submission and review.

4. Selective Demolition Definitions:

a. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or reinstalled.
b. Remove and Salvage: Detach from existing construction, in a manner to prevent damage, and deliver to Owner/G.C.
c. Remove and Reinstall: Detach items from existing construction, in a manner to prevent damage, prepare for reuse, and reinstall where indicated.
d. Existing to Remain: Leave existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.

5. The Contractor shall protect the existing building during all selective demolition for the duration of the construction activities.

6. Contractor is to coordinate with Architectural and MEP drawings to establish the extent of wall and slab removal.

7. Coordinate size of openings with tolerances required for casework, stairs, door jambs, ducts, utilities, etc. Coordinate size of opening with ADA requirements, as required.

8. Do not cut openings in beams, columns, walls, or footings without the approval of the Engineer before field cutting the opening.

4.0 EARTHWORK

1. Engineered (controlled compacted) fill within the building area shall be constructed prior to footing excavation. See specifications for requirements of controlled compacted fill.

2. Excavation shall be performed so as not to disturb existing adjacent buildings, streets and utility lines. Verify location of all utilities prior to commencement of work. Hand excavate around utilities as required.

3. Backfill shall be brought up equally on each side of walls.

5.0 FOUNDATIONS

1. Foundations have been designed and footing elevations established on assumptions made by CVM due to no Geotechnical Report available. Design assumptions must be verified/confirmed in the field by a Geotechnical Engineer.

2. Footings shall bear on undisturbed stratum or engineered fill with an assumed minimum bearing capacity of 2,000 psf, which is required to be verified by a Geotechnical Engineer.

3. Prior to footing concrete placement, the footing subgrade shall be approved by the inspecting engineer/geotechnical engineer. If conditions prove to be unacceptable at elevations shown, the excavation shall be lowered to acceptable subgrade material. Fill over-excavation with lean concrete (2500 psi).

4. The bottom of exterior footings shall be a minimum of three (3) feet below finished grade, U.N.O.

5. Slabs on ground shall bear on mechanically compacted soil capable of supporting 1000 psf. Drainage fill under slabs shall be compacted sand and gravel or crushed stone (6" minimum thickness).

6. Contractor shall verify all existing field conditions that may affect the installation of the foundation system as shown prior to starting work.

7. Provide Testing & Inspections for all soils, foundations and related work as required on sheet S200a.

6.0 CONCRETE

1. Concrete shall be reinforced, detailed, and constructed in accordance with the Building Code Requirements for Structural Concrete (ACI 318-14) and the Manual of Standard Practice.

2. Concrete shall have a minimum 28-day compressive strength as follows:

| Type | f'c (psi) | Air Entrainment (Y/N) |
|---|---|---|
| Footings | 4,000 | N |
| Foundation Walls | 5,000 | Y |
| Slabs on Grade | 4,000 | N |

3. Reinforcing steel: ASTM A-615 Grade 60.

4. All hooks on reinforcement bars shown in sections and details are to be standard hooks per ACI, unless noted otherwise.

5. At the Contractor's option, all hooks on reinforcement bars shown in sections and details for #5 bars and smaller are permitted to be stirrup hooks if a continuous nosing bar is provided.

6. Fiber Reinforcement:

a. Synthetic macro fiber complying with ASTM C1116, Type 3, to be placed in slabs on grade.

b. For pumped concrete with fiber reinforcement, to avoid the potential of the concrete mix clogging the pump, it is recommended to use a 5" minimum diameter pump and pump line.

c. The macro-synthetic fibers are to be added to the mix at the batch plant. Per fiber manufacturer's recommendations the fibers should be the last item added to the truck/mix.

7. Fiber Reinforcement Dosage Criteria:

a. Polypropylene/polyethylene synthetic macro fiber complying with ASTM C1116 Type 3, minimum 2-inch length, having an aspect ratio 50 to 90 and meeting ICC-ES Acceptance Criteria for Polyolefin Chopped Strands for use according to AC-383.
   i. Basis of Design
      1. Euclid Chemical Company (The); Tuf-Strand SF

b. Synthetic Macro Fiber Reinforcement
   i. Measure, batch and mix per ASTM C94 and C1116
   ii. For 6" thick slabs-on-grade:
      1. Use dosage that will provide minimum Re3 (Rt150) value of 22 +/- 3% per ASTM C1116 and C1609 in the specified concrete. In no case shall dosage rate be less than 4.0 pounds per cubic yard on concrete.

8. Placing of concrete shall not start until the placement of reinforcing has been approved by the Owner's inspection agency.

9. The following minimum concrete cover shall be provided for reinforcement placed in cast-in-place concrete (non-prestressed) U.N.O.:

a. Concrete cast against and permanently exposed to earth: 3"

b. Concrete exposed to earth or weather:
   i. No. 6 through No. 18 bars: 2"
   ii. No. 5 bar, W31 or D31 wire, and smaller: 1.5"

10. Bonding agent shall be used where new concrete is placed against existing concrete. Epoxy bonding agent is required if joint will be exposed to moisture.

11. Use the following cementitious materials, of the same type, brand, and source, throughout the Project:
   a. Portland Cement: ASTM C150, Type I.
   b. Fly Ash: ASTM C618, Class C. Limit percentage, by weight, to 25 percent.
   c. Ground Granulated Blast-Furnace Slag: ASTM C989, Grade 100 or 120. Limit percentage, by weight, to 50 percent.

12. Use normal-weight, ASTM C33, Class 3S coarse aggregate or better, graded. Maximum aggregate size is ¾" nominal. Provide aggregates from a single source. Submit material test reports for the aggregate to include service record data indicating absence of deleterious expansion of concrete due to alkali aggregate reactivity.

13. 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.
   a. Water-Reducing Admixture: ASTM C494, Type A.
   b. Retarding Admixture: ASTM C494, Type B.
   c. Water-Reducing and Retarding Admixture: ASTM C494, Type D.
   d. Air-Entraining Admixtures: ASTM C260

14. Prepare concrete design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test date, or both, according to ACI 301. Proportion normal weight concrete mixtures as follows:

4,000 psi non-air entrained:
   a. Minimum Compressive Strength: 4000 psi at 28 days.
   b. Maximum Water-Cementitious Materials Ratio: 0.45.
   c. Slump Limit: 4 inches, plus or minus 1 inch.
   d. Synthetic Macro-Fiber: Where req'd, uniformly disperse in concrete mixture at manufacturer's recommended rate, but not less than stated in these notes.

5,000 psi air entrained:
   a. Minimum Compressive Strength: 5000 psi at 28 days.
   b. Maximum Water-Cementitious Materials Ratio: 0.40.
   c. Slump Limit: 4 inches, plus or minus 1 inch.
   d. Air Content: 6 percent, plus or minus 1.5 percent at point of delivery.

15. Contraction joint spacing in slab on grade is as follows U.N.O. on drawings:

a. Contractor is to submit proposed layout for review by Engineer before placing slab on grade (not structural slab).

b. Provide maximum spacing 2.5 x slab thickness (in feet) with a maximum aspect ratio of 1.5.

16. Coordinate all under-slab and in-slab utilities and floor penetrations with Civil, M/E/P, and Architectural drawings.

17. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:

   a. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd., but less than 25 cu. yd., plus one set for each additional 50 cu. yd. If the pour is less than 5 cu. yd., obtain one composite sample minimum.
   b. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
   c. Air Content: ASTM C 231, pressure method, for normal-weight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
   d. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each composite sample.
   e. Compression Test Specimens: ASTM C 31/C 31M.
      i. Cast and laboratory cure three sets of cylinder specimens for each composite sample.
      ii. A set of cylinder specimens is defined as follows:
         1. If the cylinder size is 6x12, the set shall consist of 2 cylinders.
         2. If the cylinder size is 4x8, the set shall consist of 3 cylinders.
   f. Compressive-Strength Tests: ASTM C 39/C 39M; test one set of laboratory-cured cylinder specimens at 7 days, one set of cylinder specimens at 28 days and hold one set of cylinder specimens to be tested at 56 days if the 28 day breaks are low.
      i. A compressive-strength test shall be the average compressive strength from a set of cylinder specimens obtained from same composite sample and tested at age indicated.
   g. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.
   h. Test results shall be reported in writing to Engineer, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.

18. The following items must be submitted for review and approval by Engineer:

   a. Product Data: for each type of product indicated.
   b. Design Mixtures: For each concrete mixture. Indicate amounts of mixing water to be withheld for later addition at Project site.
   c. Material Test Reports: For aggregate, from a qualified testing agency, indicating compliance with requirements.
   d. Material Certificates: For each of the following, signed by manufacturers:
      i. Cementitious materials
      ii. Admixtures
      iii. Steel reinforcement and accessories
      iv. Fiber reinforcement
   e. Documentation from synthetic macro fiber manufacturer showing that proposed fiber dosage will meet or exceed the specified Re3 (Rt150) value.
   f. Steel Reinforcement Shop Drawings:
      i. Placing drawings that detail fabrication, bending, and placement. Include bar sizes, lengths, material grade, bar schedules, bent bar diagrams, bar arrangement, splices and laps, and supports for concrete reinforcement.
      ii. Submit all drawings to Engineer for review prior to the start of fabrication or commencement of work.

7.0 STRUCTURAL STEEL

1. Fabrication and erection of structural steel shall conform to AISC 360-16, Fifteenth Edition of the AISC Steel Construction Manual (LRFD - Load and Resistance Factor Design), ANSI/AISC 360-16 Specification for Structural Steel Buildings, and ANSI/AISC 303-16 Code of Standard Practice, except Section 4.4.1.b of the Code which shall not be applicable to this project. Section 4.4.1.b of the Code shall not imply that the approval constitutes the owner's acceptance of all responsibility for the design adequacy of any detail configuration of connections developed by the fabricator as part of their preparation of these shop drawings.

2. Structural Steel:
   a. ASTM A-36 for Channels, Angles, and Plates (U.N.O.)

3. Anchor Rods: ASTM F1554 (S1), Grade 55, weldable.

4. Steel angles and plates, along with bolts and washers, in direct contact with exterior finish masonry and all exposed structural steel, shall be hot-dipped galvanized.

5. All long slotted and oversized holes to be covered with 5/16" plate washers that are large enough to cover the entire slot, U.N.O. These plate washers shall have standard holes.

8.0 POST INSTALLED ANCHORS

A. General Requirements:

1. Anchor capacity is dependent upon spacing between adjacent anchors and proximity of anchors to the edge of concrete. Install anchors in accordance with spacing and edge clearances indicated on the drawings.

2. Substitution requests for alternative products must be approved in writing by the Engineer prior to use. If the Contractor requests the use of a substitution for an anchor product, the Contractor shall provide signed and sealed calculations demonstrating the substitution can achieve the performance values of the specified anchor product and the design value is equal to or greater than the product specified on the Contract Documents. The Contractor shall also submit the ICC ESR showing compliance with the relevant building code. All anchor sizes and embedment depths must be evaluated and compared to the specified anchor product for the substitution to be reviewed and approved.

3. All anchors shall assume the concrete is cracked, U.N.O.

4. Anchors shall be installed by qualified personnel in accordance with the Contract Documents.

5. The installation of post installed anchors shall be in accordance with the Manufacturer's Printed Installation Instructions (MPII).

6. Provide Testing & Inspections for post installed anchors and related work in compliance with ACI 355.4-11 and individual product ESRs. Refer to sheet S200a for additional information.

7. The Contractor shall arrange for an anchor manufacturer's representative to provide onsite installation training for all the anchors specified. The Engineer must receive documentation confirming that all the Contractor's personnel who install anchors are trained prior to the commencement of installing anchors.

B. Adhesive Anchors:

1. Adhesive anchors denoted on the structural drawings have been designed in accordance with IBC 2018, ACI 318-14 Chapter 17, and shall have been tested in accordance with ACI 355.4.

2. Adhesive anchors installed into cracked and uncracked concrete shall consist of the following types as provided by Hilti, Inc.:

   a. For shallow holes, shorter working time or shorter cure time:
      i. For Anchor Diameters ½" to 1" use Hilti HIT-HY 200 Adhesive anchoring system with Safe Set Technology using the Hilti Hollow Drill Bit (TE-CD or TE-YD) and VC 20/40 Vacuum (VC 20-U or VC 40-U) system with a HAS-E Rod per ESR-3187.
      ii. For Rebar sizes #3 to #8 use Hilti HIT-HY 200 Adhesive anchoring system with Safe Set Technology using the Hilti Hollow Drill Bit (TE-CD or TE-YD) and VC 20/40 Vacuum (VC 20-U or VC 40-U) system with deformed rebar per ESR-3187.

3. Anchors installed into grout filled or solid masonry, hollow masonry, or multi-wythe masonry walls shall use Hilti HIT-HY 270 hybrid adhesive, U.N.O. Steel anchor element shall be Hilti HAS-E continuously threaded rod or continuously deformed steel rebar as noted.
   a. For anchors in grout-filled CMU, hollow CMU and hollow brick masonry, provide HIT-HY 270 Safe Set System using the Hilti Hollow Drill Bit (TE-CD or TE-YD) and VC 150 or VC 300 series vacuum.

4. Provide a composite mesh screen tube for all anchors into unreinforced masonry, hollow CMU, or hollow brick walls using Hilti HIT-HY 270 hybrid adhesive according to the Manufacturer's recommendations for appropriate size screen tube.

5. All anchors to be installed in accordance with ICC Report and Manufacturer's recommendations. Anchor diameter, spacing and embedment depths are noted in sections and details.

6. Anchor Specifications (Typical Unless Noted Otherwise):
   a. HAS-E Standard Rod material meeting the requirements of ISO 898 Class 5.8, with HAS-E Standard Nut material meeting the requirements of SAE J995 Grade 5, with HAS-E Standard Washers meeting the requirements of ASTM F884, HV.
   b. Reinforcing steel used in adhesive anchor connections shall conform to ASTM A615, Grade 60.

7. All HAS-E Standard and HAS Super Rods (except 7/8" diameter) shall be zinc plated to ASTM B633 SC1. 7/8" diameter HAS Super Rods shall be hot-dip galvanized in accordance with ASTM A153.

8. The Contractor must install all adhesive anchors according to the following criteria in order to achieve the design parameters used to determine the adhesive anchor capacity:

   a. Concrete shall have a minimum age of 21 days at the time of anchor installation.
   b. Concrete temperature at time of anchor installation shall be at least 50 degrees F.
   c. Moisture condition of concrete at the time of installation shall be considered "dry".
   d. All holes must be hammer drilled, no core drilling unless approved by the Engineer. If core drilling is approved, the hole must be intentionally roughened using the manufacturer's recommended roughing drill bit (Hilti Roughening tool, TE-YRT).

9.0 COLD FORMED METAL FRAMING

1. Fabricate cold-formed metal framing to comply with American Iron and Steel Institute "North American Specification for the Design of Cold-Formed Steel Structural Members" and "Standard for Cold-Formed Steel Framing – General Provisions" latest editions.

2. All galvanized studs and/or joists, 12, 14, and 16 gauge, shall be formed from steel that corresponds to the requirements of ASTM A1003, with a minimum yield strength of 50,000 psi.

3. All galvanized 18- and 20-gauge studs and/or joists and all galvanized track, bridging, and accessories shall be formed from steel that corresponds to the requirements of ASTM A1003, with a minimum yield strength of 33,000 psi.

4. All galvanized studs, joists and accessories shall have a minimum G-60 coating in conformance with ASTM A1003/A653.

5. Prior to fabrication of framing, the Contractor shall submit fabrication and erection drawings to the Engineer for review.

6. Framing components may be preassembled into panels prior to erecting. Prefabricated panels shall be square with components attached in a manner as to prevent racking.

7. Axially loaded studs shall be installed in a manner which will assure that ends of the studs are positioned against the inside track web prior to stud and track attachment.

8. Studs shall be plumbed, aligned, and securely attached to the flanges or webs of both upper and lower tracks, unless noted otherwise.

9. All stud ends shall be nested tight in track, or tied to adjacent framing members as detailed, except at deflection track detail.

10. Punched holes in studs occurring at connections or track locations shall be capped with an 18" long section of track fastened to the stud with a minimum of (6) #10 self-drilling screws.

11. All headers and sills shall be continuous members constructed with un-punched studs or tracks.

12. Field cuts shall be made with saws and shall be square and true. Torch cutting of framing members shall not be permitted.

13. Framing members shall be held in place until properly fastened. Temporary bracing shall be provided until erection is complete and all attached adjacent framing is complete.

14. Wall stud bridging shall be attached in a manner to prevent stud rotation. Bridging rows shall be spaced according to the following schedule:

   a. Walls less than 5'-0" in height: bridging not required.
   b. Walls up to 8'-0" in height: one row of bridging at mid-height.
   c. Walls over 8'-0" in height: bridging rows equally spaced, 4'-0" O.C. maximum.

15. Framed wall openings shall include headers and supporting studs as shown on the plans.

16. Splices in axially loaded studs are not permitted.

17. Joists shall be located directly over bearing studs or a load distribution member to be provided at the top track.

18. Welded connections shall be wire brushed and coated with a zinc rich paint, and shall comply with American Welding Society "Structural Welding Code (D.1.1)" and "Specifications for Welding Sheet Steel in Structures (D1.3)" latest editions.

19. Screws to conform to SAE J78, unless otherwise noted.

20. All fasteners connecting cold-formed members shall be a minimum of (2) No. 10 screws (0.19-inch diameter) at each connection, unless specifically detailed. All screws shall extend a minimum of three threads beyond the last ply penetrated. Wire-tying is not permitted. Screws shall be spaced not less than 3/4 inch on center and shall be a minimum of 3/4 from the edge of cold-formed surfaces. All studs shall be secured to tracks with one screw through each flange except where noted.

21. All fasteners connecting cold-formed members to concrete shall be HILTI X-U Powder Actuated Fasteners (PAF) of 0.157 inch diameter (unless noted otherwise) with the following criteria:

   a. Spacing requirements for PAFs into concrete:
      i. Minimum spacing distance = 4"
      ii. Minimum edge distance = 3"
   b. PAF embedment = 1.25"
   c. Fasten PAF into concrete with low-velocity fasteners only.
   d. Provide multiple fasteners for any attachment unless noted otherwise.

10.0 SHEATHING AND WOOD DECKING

1. Plywood shall be identified with the APA grade-trademark of the American Plywood Association and shall be installed in accordance with the project specifications.

2. Plywood face grain shall be perpendicular to supports. Joints in plywood are to be staggered. Nailing and screwing of plywood floor/roof diaphragms shall comply with APA requirements, and unless noted otherwise, fasteners are to conform to "Fastening Schedule" Table 2304.10.1 of IBC 2018.

4. Plywood for roof sheathing shall be minimum 3/4" and each shall conform to APA PS-1 rated sheathing, 32/16, exterior, 48" x 96" plywood, and shall be two span continuous. Provide lumber blocking at edge supports as indicated, otherwise, use panel edge clips, tongue and groove plywood.

5. Gypsum sheathing on exterior walls to be a minimum of 5/8" thick (U.N.O). Installation of gypsum sheathing shall conform to IBC 2018 and ASTM Standard C1396. Fasteners shall not be less than 3/8" from all edges of gypsum and studs, blocking, and plates.

11.0 DESIGN LOADS

Dead:
Dead loads vary based on actual building construction. Refer to complete set of Contract Documents for determining dead loads

Live:
Typical rooms: 100 psf

Roof Live: 20 psf

Snow:
Roof Snow: 20 psf
Ground Snow Load – $P_g$: 20 psf
Flat-Roof Snow Load – $P_f$: 14 psf
Exposure Factor - $C_e$: 1.0
Thermal Factor - $C_t$: 1.0
Slope Factor(s) – $C_s$: 1.0
Snow Load Importance Factor – $I_s$: 1.0

Wind: (Main Wind Force Resisting System)
Basic Design Wind Speed V: 118 mph
Allowable Stress Design Wind Speed $V_{asd}$: 92 mph
Risk Category: II
Wind Exposure Category: C
Internal Pressure Coefficient: +/- 0.18
Components and Cladding: To be designed in accordance with ASCE 7-16.

Seismic:
Seismic Design Category: B
Site Class: D (Assumed)
Seismic Importance Factor – $I_e$: 1.0
Risk Category: II
$S_S$: 0.162
$S_1$: 0.045
$S_{DS}$: 0.173
$S_{D1}$: 0.072
Seismic Resisting System: Light-frame walls with shear panels of all other materials
Response Modification Coefficient - R: 2
Seismic Response Coefficient – $C_s$: 0.0865
Deflection Amplification Factor - $C_d$: 2
Design Base Shear: $V = C_s$ x Effective Seismic Weight
Analysis Procedure: Equivalent Lateral Force (ELF) Procedure


CONSULTANT:
YOUR GOALS. OUR MISSION.
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DRAWN BY: AJC
CHECKED BY: EMJ
APPROVED BY: LRS

PROFESSIONAL SEAL
STATE OF NEW JERSEY
DAVID A. VAN DEKKER
No. GE36377
LICENSED PROFESSIONAL ENGINEER

| REVISION NO. | REVISION DATE | DESCRIPTIONS |
|---|---|---|
| 1 | 09/09/2021 | ADDENDUM #1 |

SOUTH JERSEY TRANSPORTATION AUTHORITY
FARLEY SERVICE PLAZA
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(609) 965 - 6060

PROJECT TITLE
ATLANTIC CITY EXPRESSWAY
2021 WEST MAINTENANCE ADDITION PROJECT
WINSLOW TOWNSHIP, CAMDEN COUNTY, N.J.

SHEET TITLE
STRUCTURAL GENERAL NOTES

SCALE 12" = 1'-0"
DATE 09/01/2021

DRAWING NO. S200
SHEET NO.

STRUCTURAL TESTING & INSPECTION NOTES:

1. Refer to General Notes for additional information regarding testing and inspection.
2. Continuous Inspection is defined as "the full-time observation of work requiring inspection by an approved Inspector who is present in the area where the work is being performed." When Continuous inspection is required, 100% of the work must be inspected and it must be inspected as the work is being performed.
3. Periodic Inspection is defined as "the part-time or intermittent observation of work requiring inspection by an approved Inspector who is present in the area where the work has been or is being performed and at the completion of the work." When periodic inspection is indicated, inspection of less than 100% of the work may be acceptable for certain items.
4. Provide Continuous or Periodic Inspections for the following items.
5. Provide Continuous or Periodic Inspections for the following Adhesive Anchor items, as required by ESR-3187 (Hilti HIT- HY 200), ESR-4143 and ESR-4144 (Hilti HIT-HY 270), and ACI 355.4-11. The Inspector or Hilti Representative, engaged by the Contractor, must verify the initial installations of each type and size of adhesive anchor by construction personnel on site. Subsequent installations of the same anchor type and size by the same construction personnel are permitted to be performed in the absence of the inspector. Any change in the anchor product being installed or the personnel performing the installation requires an initial inspection.
6. Any work which has been covered or otherwise made inaccessible prior to review by the Inspector is subject to removal or exposure, at no additional cost to the Owner.

1

**TESTING & INSPECTION OF SOILS**

| VERIFICATION AND INSPECTION TASK | CONTINUOUS | PERIODIC |
|---|---|---|
| 1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity. | - | X |
| 2. Verify excavations are extended to proper depth and have reached proper material. | - | X |
| 3. Perform classification and testing of compacted fill materials. | - | X |
| 4. Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill. | X | - |
| 5. Prior to placement of compacted fill, inspect subgrade and verify that the site has been prepared properly. | - | X |

**TESTING & INSPECTION OF CONCRETE CONSTRUCTION**

| VERIFICATION AND INSPECTION TASK | CONTINUOUS | PERIODIC |
|---|---|---|
| 1. Inspection of all reinforcing steel, and verify placement. Inspect size, spacing, cover, positioning and grade of reinforcing steel. Verify that reinforcing bars are free of form oil or other deleterious materials. Inspect bar laps and mechanical splices. Verify that bars are adequately tied and supported on chairs or bolsters. | - | X |
| 2. Inspect anchors cast in concrete. | - | X |
| 3. Inspect anchors post-installed in hardened concrete members: [b] | | |
| a. Adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads. | X | - |
| b. Mechanical anchors and adhesive anchors not defined in section a above. | - | X |
| 4. Verify use of required design mix. | - | X |
| 5. Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete. | X | - |
| 6. Inspect concrete placement for proper application techniques. | X | - |
| 7. Verify maintenance of specified curing temperature and techniques. | - | X |
| 8. Inspect formwork for shape, location, and dimensions of the concrete member being formed. | - | X |

[b] Specific requirements for inspection shall be included in the research report for the anchor issued by an approved source. Where specific requirements are not provided, inspection requirements shall be specified by the registered design professional and shall be approved by the building official prior to the commencement of the work.

**INSPECTION & QUALITY ASSURANCE OF ADHESIVE ANCHORS INSTALLED IN HARDENED CONCRETE PER ACI 355.4-11, ESR-3187 (Hilti HIT-HY 200),**

| VERIFICATION AND INSPECTION TASK | CONTINUOUS | PERIODIC |
|---|---|---|
| 1. Anchor type. | | X |
| 2. Anchor dimensions. | | X |
| 3. Concrete type. | | X |
| 4. Concrete compressive strength. | | X |
| 5. Adhesive identification and expiration date. | | X |
| 6. Hole dimensions. | | X |
| 7. Hole cleaning procedures. | | X |
| 8. Anchor spacing. | | X |
| 9. Edge distances. | | X |
| 10. Concrete thickness. | | X |
| 11. Anchor embedment. | | X |
| 12. Installation torque and adherence to the manufacturer's printed installation instructions. | | X |

**TESTING & INSPECTION & QUALITY ASSURANCE OF ADHESIVE ANCHORS INSTALLED IN CONCRETE MASONRY PER ESR-4143 & ESR-4144 (Hilti HIT-HY 270)**

| VERIFICATION AND INSPECTION TASK | CONTINUOUS | PERIODIC |
|---|---|---|
| 1. Anchor type. | | X |
| 2. Anchor dimensions. | | X |
| 3. Masonry type. | | X |
| 4. Masonry compressive strength. | | X |
| 5. Adhesive identification and expiration date. | | X |
| 6. Hole dimensions. | | X |
| 7. Hole cleaning procedures. | | X |
| 8. Anchor spacing. | | X |
| 9. Edge distances. | | X |
| 10. Masonry wall thickness. | | X |
| 11. Anchor embedment. | | X |
| 12. Base material temperature. | | X |
| 13. Installation torque and adherence to the manufacturer's printed installation instructions. | | X |


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610-989-3800 - www.cvmprofessional.com


DESIGNED BY:
DRAWN BY: AJC
CHECKED BY: EMJ
APPROVED BY: LRS

PROFESSIONAL SEAL
STATE OF NEW JERSEY · DAVID A. VAN DICKER · No. GE36377 · LICENSED PROFESSIONAL ENGINEER

| REVISION NO. | REVISION DATE | DESCRIPTIONS |
|---|---|---|
| 1 | 09/09/2021 | ADDENDUM #1 |

SOUTH JERSEY TRANSPORTATION AUTHORITY
FARLEY SERVICE PLAZA
P.O. BOX 351
HAMMONTON, NJ 08037
(609) 965 - 6060

PROJECT TITLE: ATLANTIC CITY EXPRESSWAY
2021 WEST MAINTENANCE ADDITION PROJECT
WINSLOW TOWNSHIP, CAMDEN COUNTY, N.J.

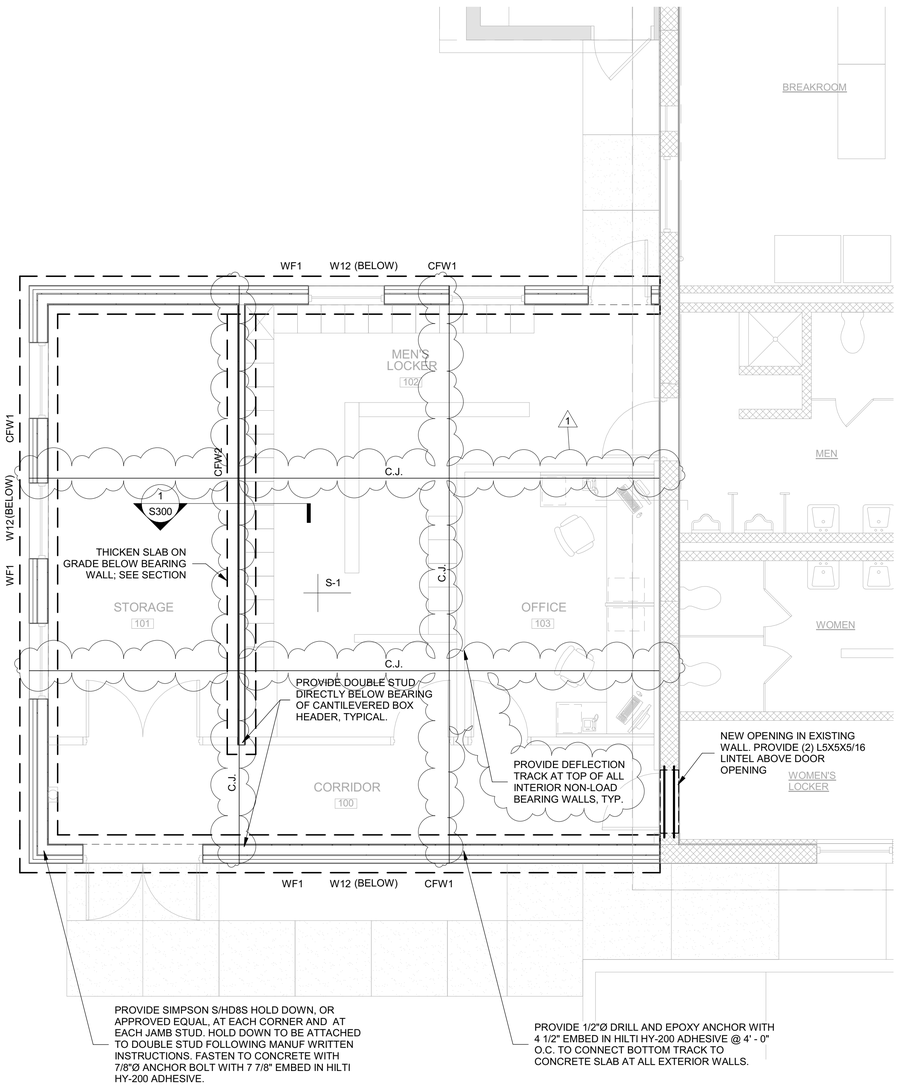
SHEET TITLE: STRUCTURAL TESTING & INSPECTIONS

SCALE: 12" = 1'-0"

DATE: 09/01/2021

DRAWING NO.: S200a

SHEET NO.



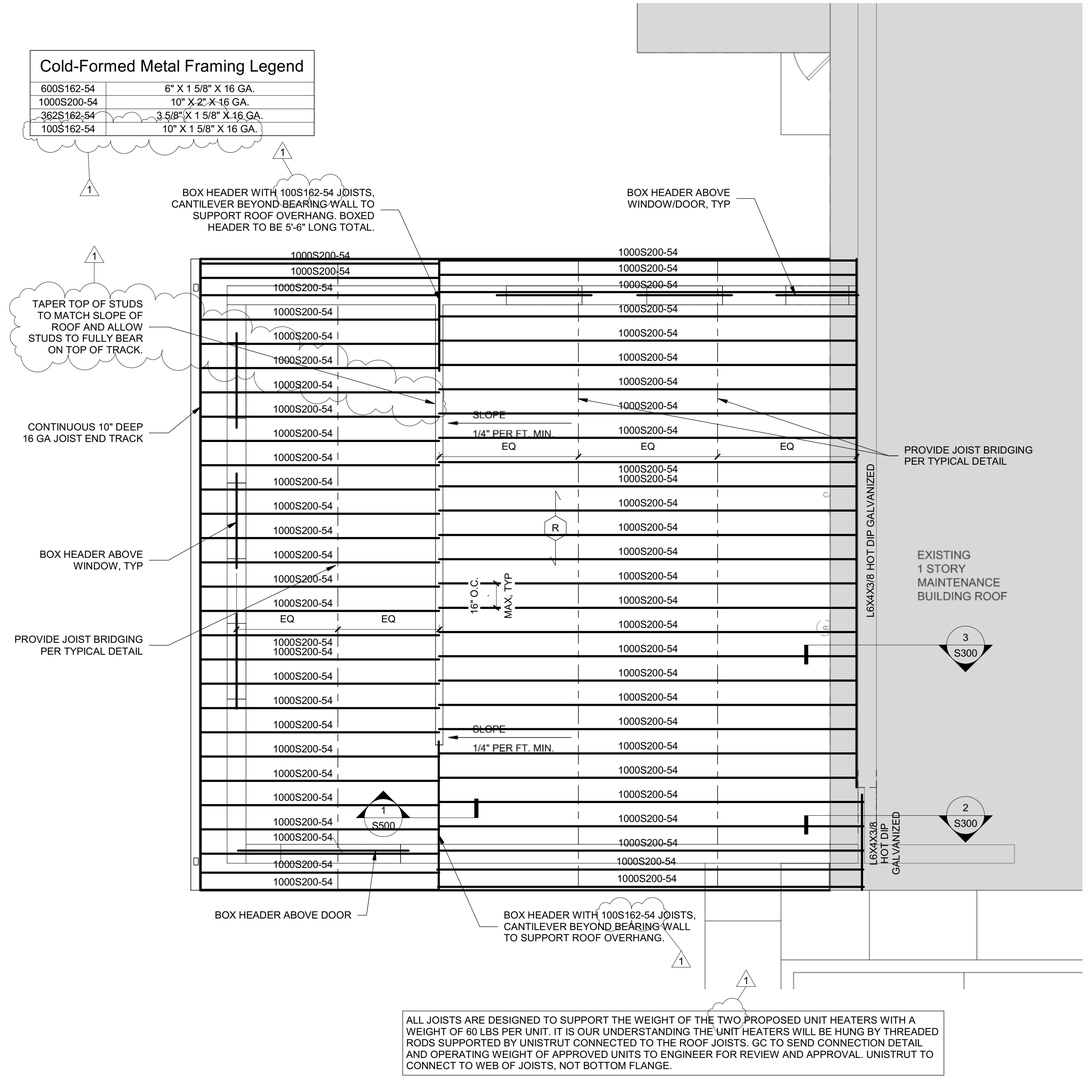

## 1 S201 FOUNDATION PLAN

1/4" = 1'-0"

PLAN NORTH

NOTES:

1. DATUM EL. 0' - 0" IS REFERENCED AS TOP OF EXISTING SLAB IN ADJACENT BUILDING.
2. [ ] TOP OF SLAB ELEVATION IS AT DATUM UNLESS NOTED THUS ON PLAN FROM DATUM.
3. TOP OF FOOTING ELEVATION IS 3' - 0" BELOW DATUM UNLESS NOTED THUS ( ).
4. TOP OF CONCRETE WALL ELEVATION IS 1' - 0" BELOW DATUM UNLESS NOTED < >.
5. WF1 DENOTES REINFORCED CONCRETE WALL FOOTING. SIZE AND REINFORCING PER TYPICAL DETAIL.
6. C.J. DENOTES CONTRACTION JOINT. SEE TYPICAL DETAILS ON SHEET S300.
7. SEE SHEET S300 FOR TYPICAL FOUNDATION DETAILS.
8. W12 DENOTES REINFORCED CONCRETE WALL. SIZE AND REINFORCING PER TYPICAL DETAIL.
9. S-1 DENOTES 6" THICK SLAB-ON-GRADE, REINFORCED W/ SYNTHETIC FIBER REINFORCEMENT. DOSAGE AS SHOWN IN GENERAL NOTES.
10. CFW1 DENOTES COLD FORMED METAL FRAMED BEARING WALL WITH 600S162-54 STUDS AT 16" O.C.
11. CFW2 DENOTES COLD FORMED METAL FRAMED BEARING WALL WITH 362S162-54 STUDS AT 16" O.C.
12. SEE SHEET S500 FOR TYPICAL COLD FORMED METAL FRAMING DETAILS.
13. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN.
14. SEE SHEET S200 FOR GENERAL NOTES.
15. SEE SHEET S200a FOR TESTING & INSPECTIONS.




ALL JOISTS ARE DESIGNED TO SUPPORT THE WEIGHT OF THE TWO PROPOSED UNIT HEATERS WITH A WEIGHT OF 60 LBS PER UNIT. IT IS OUR UNDERSTANDING THE UNIT HEATERS WILL BE HUNG BY THREADED RODS SUPPORTED BY UNISTRUT CONNECTED TO THE ROOF JOISTS. GC TO SEND CONNECTION DETAIL AND OPERATING WEIGHT OF APPROVED UNITS TO ENGINEER FOR REVIEW AND APPROVAL. UNISTRUT TO CONNECT TO WEB OF JOISTS, NOT BOTTOM FLANGE.

## 2 S201 ROOF PLAN

1/4" = 1'-0"

PLAN NORTH

NOTES:

1. TOP OF ROOF JOIST ELEVATION SLOPES; SEE ARCH DWGS.
2. R DENOTES SPAN OF 3/4" FRTW APA STRUCTURAL 1 RATED PLYWOOD SHEATHING.
3. SLOPE DENOTES SLOPE TO LOW POINT.
4. SEE SHEET S500 FOR COLD FORMED METAL FRAMING TYPICAL DETAILS
5. SEE SHEET S200 FOR GENERAL NOTES.
6. SEE SHEET S200a FOR TESTING & INSPECTIONS.
7. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN.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| | |
|---|---|
| DESIGNED BY: | |
| DRAWN BY: | AJC |
| CHECKED BY: | EMJ |
| APPROVED BY: | LRS |

PROFESSIONAL SEAL

STATE OF NEW JERSEY — DAVID A. VAN ECKER — No. GE36377 — LICENSED PROFESSIONAL ENGINEER

| REVISION NO. | REVISION DATE | DESCRIPTIONS |
|---|---|---|
| 1 | 09/09/2021 | ADDENDUM #1 |


SOUTH JERSEY TRANSPORTATION AUTHORITY
FARLEY SERVICE PLAZA
P.O. BOX 351
HAMMONTON, NJ 08037
(609) 965 - 6060


PROJECT TITLE: ATLANTIC CITY EXPRESSWAY
2021 WEST MAINTENANCE ADDITION PROJECT
WINSLOW TOWNSHIP, CAMDEN COUNTY, N.J.

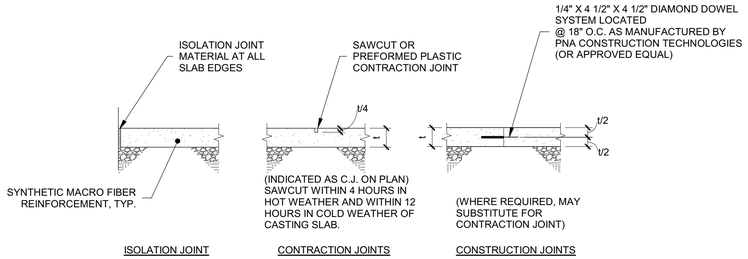
SHEET TITLE: NEW FOUNDATION & FRAMING PLANS

SCALE: As indicated

DATE: 09/01/2021

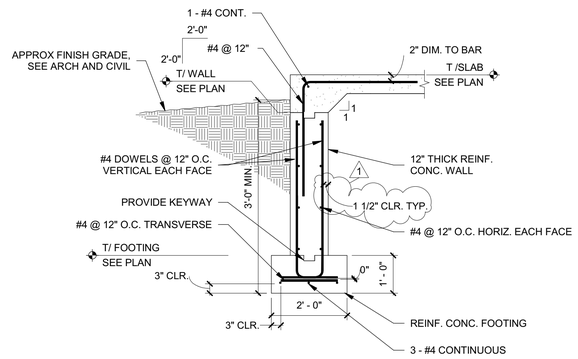
DRAWING NO.: S201

SHEET NO.:



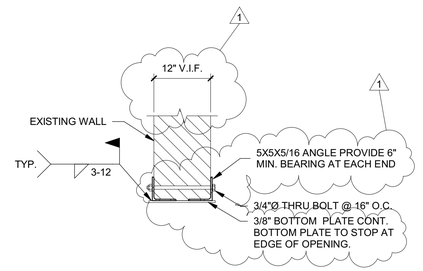

## A SLAB ON GRADE JOINT DETAILS

NOTE: W.W.R. IS NOT REQUIRED WHERE SYNTHETIC MACRO FIBER REINFORCEMENT IS PROVIDED PER THE SPECIFICATIONS.




## B WALL FOOTING DETAIL

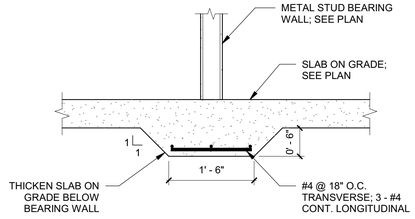
NOTE: WALL FOOTING TO BE CENTERED ON WALL U.N.O.



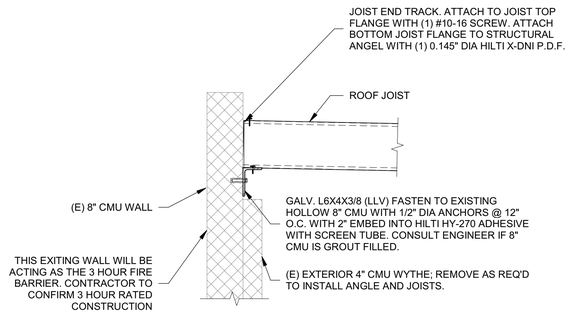

## C TYPICAL LINTEL DETAIL

NOTE:

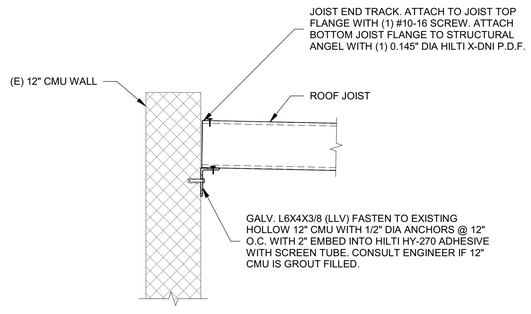
PROVIDE TEMPORARY SHORING FOR EXISTING MASONRY ABOVE AS REQUIRED




## 1 S300 SECTION




## 2 S300 SECTION




## 3 S300 SECTION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DESIGNED BY:

DRAWN BY: AJC

CHECKED BY: EMJ

APPROVED BY: LRS

PROFESSIONAL SEAL

STATE OF NEW JERSEY
DAVID A. VAN OCKER
No. GE36377
LICENSED PROFESSIONAL ENGINEER

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SOUTH JERSEY TRANSPORTATION AUTHORITY
FARLEY SERVICE PLAZA
P.O. BOX 351
HAMMONTON, NJ 08037
(609) 965 - 6060

PROJECT TITLE
ATLANTIC CITY EXPRESSWAY
2021 WEST MAINTENANCE ADDITION PROJECT
WINSLOW TOWNSHIP, CAMDEN COUNTY, N.J.

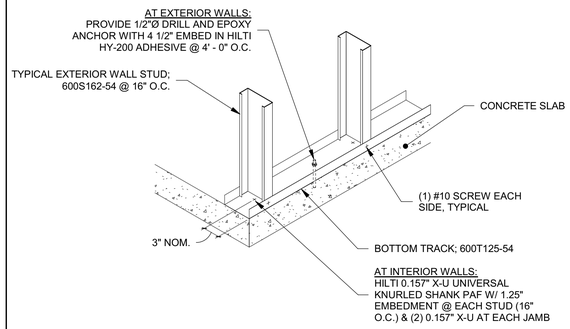
SHEET TITLE
FOUNDATION AND MASONRY DETAILS

SCALE: As indicated

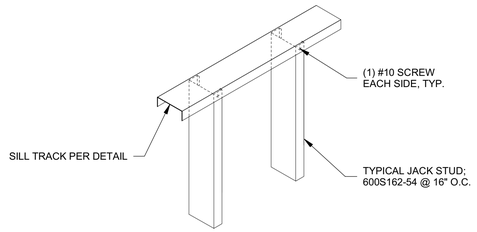
DATE: 09/01/2021

DRAWING NO.
S300

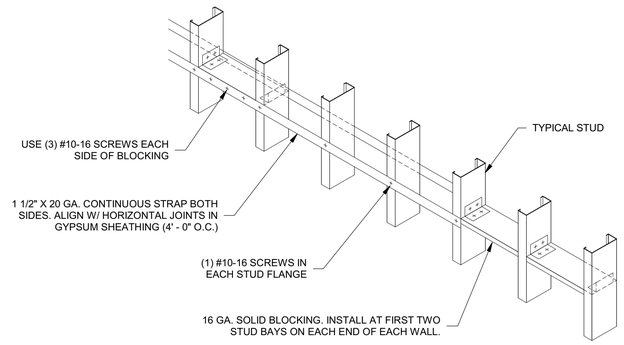
SHEET NO.




## A STUD TO BOTTOM TRACK

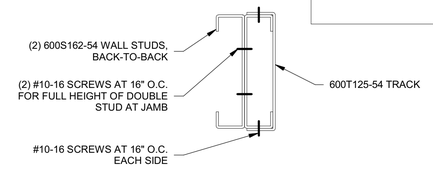



## B STUD TO SILL TRACK

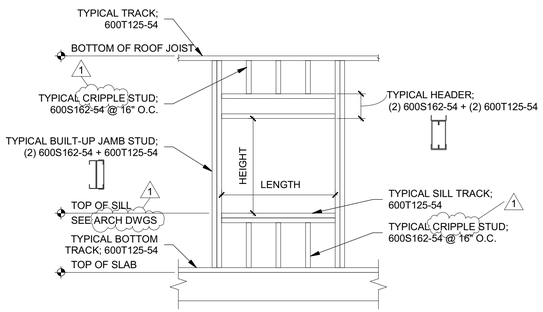



## C WALL STUD BRIDGING AND BLOCKING

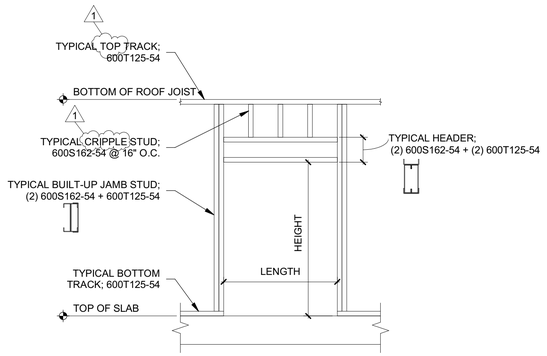
NOTE: INSTALL GYPSUM SHEATHING HORIZONTAL ON ALL WALLS, FASTEN WITH #10 SCREWS SPACED 8" O.C. AT PANEL EDGES AND 12" O.C. IN THE FIELD.



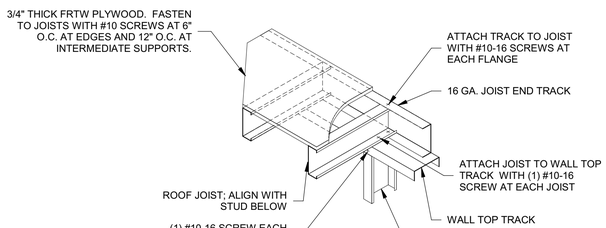

## D BUILT-UP JAMB STUD PLAN DETAIL



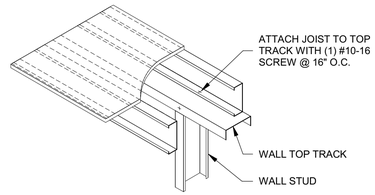

## E EXTERIOR WALL WINDOW OPENINGS




## F EXTERIOR WALL DOOR OPENINGS

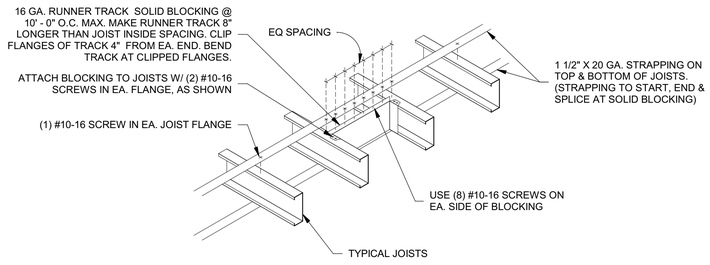



JOISTS PERPENDICULAR TO WALL



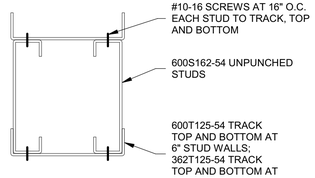

JOISTS PARALLEL TO WALL

## G JOIST TO WALL CONNECTION

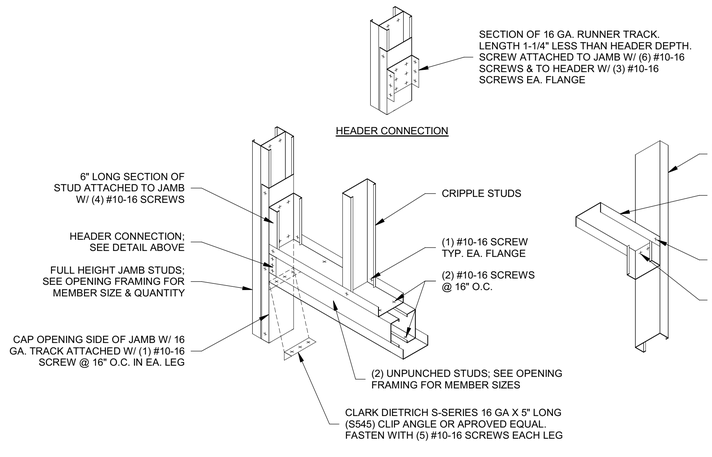



## H JOIST BRIDGING

NOTE: PROVIDE BRIDGING AT 8' - 0" O.C. OR CENTER OF JOIST SPAN WHERE SPAN IS LESS THAN 16' - 0"



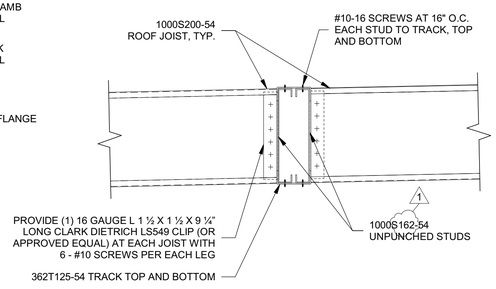

## J BUILT-UP BOX HEADER SECTION




## K HEADER & SILL ATTACHMENT TO JAMB

NOTE: ALL MEMBERS COMPRISING OF MULTIPLE COMPONENTS ARE TO HAVE THOSE COMPONENTS ATTACHED TO ONE ANOTHER AT 12" O.C. WITH #10 SCREWS ALONG THEIR ENTIRE LENGTHS. ALL COMPONENTS ARE TO BE FULL-LENGTH (NO SPLICES).




## 1 S500 SECTION - BOX HEADER AT ROOF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PROFESSIONAL SEAL
STATE OF NEW JERSEY · DAVID A. VAN OCKER · No. GE36377 · LICENSED PROFESSIONAL ENGINEER

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SOUTH JERSEY TRANSPORTATION AUTHORITY
FARLEY SERVICE PLAZA
P.O. BOX 351
HAMMONTON, NJ 08037
(609) 965 - 6060

PROJECT TITLE: ATLANTIC CITY EXPRESSWAY
2021 WEST MAINTENANCE ADDITION PROJECT
WINSLOW TOWNSHIP, CAMDEN COUNTY, N.J.

SHEET TITLE: COLD FORMED METAL FRAMING DETAILS

SCALE: As indicated

DATE: 09/01/2021

DRAWING NO. S500

SHEET NO.