GENERAL NOTES

ABBREVIATIONS

@	At
A.B.	Anchor Bolt
AESS	Architecturally Exposed Structural Steel
ARCH.	Architect or Architectural
BLDG.	Building
BLKG.	Blocking
B.O.F.	Bottom of Footing
B.O.S.	Bottom of Steel
BOTT.	Bottom
BRG.	Bearing
CANT.	Cantilever
C.F.M.F.	Cold Formed Metal Framing
C.J.	Control Joint
CLR.	Clear
CMU	Concrete Masonry Unit
COL.	Column
CONC.	Concrete
CONN.	Connection
CONST.	Construction
CONT.	Continuous
CONTR.	Contractor
COORD.	Coordinate
C.W.	Curtain Wall
DET.	Detail
DIA. or ø	Diameter
DIAG.	Diagonal or Diagram
DWG.	Drawing
DWL.	Dowel
E.F.	Each Face
E.J.	Expansion Joint
EL.	Elevation
ELEV.	Elevator
EMBED.	Embedment
E.O.S.	Edge of Slab
E.W.	Each Way
EX.	Existing
EXT.	Exterior
F.F.S.	Frost-Free Slab
F.S.	Far Side
FTG.	Footing
F.V.	Field Verify
GA.	Gauge or Gage
GALV.	Galvanized
H.P.	High Point
HORIZ.	Horizontal
I.F.	Inside Face
INT.	Interior
JT.	Joint
LLH	Long Leg Horizontal
LLV	Long Leg Vertical
LOC.	Location
L.P.	Low Point
LT. WT.	Lightweight
MASY.	Masonry
MAX.	Maximum
MECH.	Mechanical
MIN.	Minimum
N.F.	Near Face
N.I.C.	Not In Contract
N.T.S.	Not To Scale
O.C.	On Center
O.F.	Outside Face
OPNG.	Opening
OPP.	Opposite
P.C.	Precast
R.	Radius
REF.	Reference
REINF.	Reinforcing or Reinforcement
REQD.	Required
SECT.	Section
SIM.	Similar
S.O.G.	Slab On Ground
S.S.	Stainless Steel
STIFF.	Stiffener or Stiffened
T&B	Top And Bottom
T.B.D.	To Be Determined
T.O.C.	Top of Concrete
T.O.F.	Top of Footing
T.O.S.	Top of Steel
T.O.W.	Top of Wall
TYP.	Typical
U.O.N.	Unless Otherwise Noted
VERT.	Vertical
W/	With
WWR	Welded Wire Reinforcement
W.P.	Work Point

CODES AND STANDARDS

1. Tunnel Restoration work has been designed to, and shall be constructed in accordance with the following building codes and standards:
   A. 2011 Ohio Building Code (OBC 2011)
   B. ASCE 7-05, Minimum Design Loads for Buildings and Other Structures
   C. Ohio University: Design and Construction Standards
2. Unless explicitly modified in the Contract Drawings and Specifications, the Contractor shall comply with provisions of:
   A. ACI 301-10, Specifications for Structural Concrete
   B. ACI 318-08, Building Code Requirements for Structural Concrete
   C. ACI 530-08, Building Code Requirements for Masonry Structures
   D. ACI 530.1-08, Specification for Masonry Structures
   E. AISC 360-05, Specification for Structural Steel Buildings
   F. AWS D1.1-10, Structural Welding Code - Steel

DESIGN LOADS

Live load ---------- 100 psf

Earthquake design data

Seismic importance factor (ASCE 7, Table 11.5-1) ---------- I_e = 1
Occupancy category (OBC Table 1604.5) ---------- II
Mapped spectral response accelerations
Short period ---------- S_s = 0.147 g
1-second period ---------- S_1 = 0.060 g
Site class ---------- D (assumed)
Spectral response coefficients
Short period ---------- S_{ds} = 0.157 g
1-second period ---------- S_{d1} = 0.095 g
Seismic design category ---------- B
Analysis procedure ---------- Equivalent lateral force procedure

Restoration complies with all exceptions listed in ASCE 7, Appendix 11B.3. Further analysis and design of the existing structure for seismic force-resistance are not required.

Special loads

Chubbs Tunnel:
Vertical soil loads (assumed 8'-0" vertical height) ---------- 960 psf

DESIGN STRESSES

Concrete (strength design) minimum compressive strength in 28 days:
Tunnel top slab (Air-Entrained) ---------- f'_c = 5,000 psi
Sidewalk, paving slab (Air-Entrained) ---------- $f'c$ = 4,000 psi
Lean concrete, for use with overexcavations ---------- $f'c$ = 1,500 psi

Reinforcing bars (ASTM A615, Grade 60) (Epoxy Coated)---------- F_Y = 60,000 psi
Welded wire reinforcement (ASTM A185) (Epoxy Coated)---------- f_s = 30,000 psi
Structural Steel (ASTM A36) ---------- Fy= 36,000 psi
Masonry ---------- f'_m = 1,500 psi
Solid Brick (ASTM C216 Grade SW)
Mortar (ASTM C270) ---------- Type S

GENERAL

1. All new construction shall comply with the Contract Documents and the Building Code.
2. Typical details and general notes apply to all parts of the work except where specifically detailed or unless otherwise noted.
3. The structural drawings illustrate structural members. Refer to Civil, and electrical drawings for non-structural items which require special provisions during the construction of the structural members.
4. Drawings are not to be scaled.
5. Refer to Landscaping plans for, slopes, drains, curbs, etc.
6. Existing MEP piping, utilities and conduits etc. shown within the tunnel space are for reference only. Contractor shall verify locations and size of all such utilities and piping to determine their impact on the proposed restoration work, as detailed on the contract drawings.
7. The Contractor shall protect all utilities, MEP piping, conduits etc. within the tunnel during the entire restoration phase (demolition thru completion of tunnel top replacement). All utilities that occur between the tunnel top slab and the street level shall be located accurately, supported and protected during the excavation operations and throughout the entire construction phase.
8. The Contractor shall verify and be responsible for all dimensions and conditions which impact the work. Field verify sizes, elevations, hole locations, etc., prior to fabrication.
9. The Contractor shall carefully review the drawings to identify the scope of work required, visit the site to relate the scope of work to existing conditions and determine the extent to which those conditions and physical surroundings will impact the work.
10. Existing conditions as shown on these plans are for reference only. The Contractor is required to field verify all existing conditions prior to construction.
11. The Contractor shall resolve any conflicts on the drawings or in the specifications with the Architect/Engineer before proceeding with the work.
12. Any deviation, modification, or substitution from the approved set of structural drawings shall be submitted to the University, Architect/Engineer for review/approval prior to its use or inclusion on the shop drawings.
13. The Contractor shall provide all necessary shores, braces, and guys required to support all loads to which the tunnel structure and components, soils, other structures, and utilities may be subjected during construction. Shoring systems shall be designed, signed, and sealed by a professional engineer licensed in the jurisdiction where the project is located.
14. The Contractor shall provide means, method, techniques, sequence, and procedure of construction as required.
15. The Contractor shall protect all work, materials, and equipment from damage and shall provide proper storage facilities for materials and equipment during construction.
16. Site visits performed by the University/ Architect/Engineer do not constitute inspections of means and methods of construction performed by the Contractor.
17. Structural observations performed by the Engineer during construction are not the continuous and special inspection services and do not waive the responsibility for the inspections required of the Building Department Inspector or the testing agency. Observations also do not guarantee the Contractor's performance and shall not be considered as supervision of construction.
18. The Contractor shall review shop drawings for completeness and compliance with contract documents. The Contractor shall stamp shop drawings prior to submission to the Engineer.
19. Review of the shop drawings by the Engineer shall not be construed as an authorization to deviate from the Contract Documents.
20. Shop drawings will not be processed if they are incomplete, lack coordination with relevant portion of contract documents, lack calculations if required, or if deviations, modifications, and substitutions are indicated without prior written approval from the University/ Engineer.
21. No pipes or ducts shall be embedded into structural members unless so shown on the plans or approved by the Engineer.

DEMOLITION

1. Notify all local agencies having jurisdiction.
2. Locate existing tunnel utilities in areas of construction. Coordinate with OU Design and Construction, and facilities for any shut-off requirements of tunnel utilities. Call the Ohio Utilities Protection Service at 800-362-2764, for all other utilities.
3. Demolition procedures, shoring requirements, sequence techniques, etc., either given in or implied by these drawings, are suggestions only. Contractor shall retain, at his own expense, a professional engineer licensed in the jurisdiction where the project is located to determine all construction phase requirements. Contractor shall submit drawings, signed and sealed by his Engineer, to the Owner and Engineer for concept review and record purposes. Contractor shall be solely responsible for the protection, stability, etc., of existing and new structures during execution of the work.
4. Before undertaking any demolition work, ascertain the existing conditions of the properties and buildings adjoining or in close proximity to the premises by survey.
5. Contractor shall perform all work in such a manner as to protect existing and adjacent structures and be responsible to properly repair any damage that occurs as a result of his work. Contractor shall repair all damage to streets, sidewalks, utility lines, or any other public or private properties resulting from the execution of the work at no cost to the University or Engineer.
6. Cease operations and notify University and Engineer immediately if safety or integrity of structure appears to be endangered. Properly brace and support structure before resuming operations.
7. Notify Owner and Architect/Engineer immediately if any portion of existing structure which is not to be demolished is damaged. Contractor shall pay for all repair costs, including design and inspection expenses.
8. Do not cut or alter any structural members without written authorization of the Engineer unless indicated on the structural drawings.
9. Do not allow resulting debris to accumulate. Dispose of this material in a legal manner.

TEMPORARY SHORING AND BRACING

1. Structure is designed to be self-supporting and stable after the restoration work/repairs fully completed.
2. The contractor shall be responsible for erection procedures and sequence, shall maintain stability of the tunnel structure and its component parts, and shall be responsible for adequacy of temporary or incomplete construction and connections during erection. Such responsibilities include, but are not limited to: addition of shoring as required to support forms, decks, walls, and other elements as required during construction, sheeting, temporary connections, bracing, guys, or tie-downs necessary to maintain stability of parts, subassemblies, or all of the structure.
3. Contractor shall assume full design responsibility for temporary shoring and bracing, which shall be designed, signed, and sealed by a professional engineer licensed in the jurisdiction where project is located.
4. Temporary shoring shall be maintained throughout construction and shall be removed only after completion of all required supporting elements.
5. Remove any remaining temporary shoring after construction is complete.

STRUCTURAL TESTING AND SPECIAL INSPECTIONS

Special structural testing and inspections are required. The University shall hire an approved independent testing agency. The agency shall be designated as the special inspector and shall provide structural testing and special inspections as required by the building code and as noted in the Contract Documents. Reports of inspection and testing shall be sent to the Architect, Engineer, University, Contractor, and Building Department. Structural testing and special inspection shall include:

1. Concrete: mix data, daily pour reports, cylinder tests, slump, entrained air tests, and temperature. See specifications for all testing and inspection requirements.
2. Reinforcement: placement, type, size, and grade of steel. See specifications for all testing and inspection requirements.
3. Earth Fill: certification of all fill material and in-place density tests. See specifications for all testing and inspection requirements.
4. Structural steel: Bolted and welded connections.

EARTHWORK SHORING

1. Temporary shoring for excavations shall be provided when required by local, state, or OSHA officials or codes at no additional cost to the University.
2. Where forces from existing structures, roadways, walks, utility lines, or other encumbrances required for construction come onto shoulders of excavations, the Contractor shall provide shoring of adequate size and strength to resist the combined earth and adjacent surcharge pressures.
3. The Contractor shall be responsible for design and placement of shoring and bracing of temporary earth retaining structures required to perform the tunnel top restoration work.
4. Local, state, and OSHA safety requirements for personnel working in trenches shall be enforced by the Contractor. The Contractor shall hold the University, and Engineers harmless from claims due to injury from violation of safety requirements resulting from work persons or others working in excavations.
5. Contractor is responsible to locate existing buried utilities, tunnel structures etc., prior to installation earthwork shoring. All such structures to remain shall be protected during the entire construction phase.

ADHESIVE AND EXPANSION ANCHORS

1. For connections to existing concrete or solid masonry, use wedge type expansion bolts (HILTI KWIK BOLT 3, or other approved) or adhesive anchors (HILTI HAS-E rods or rebar with HILTI HY 150 adhesive, or other approved), with diameter and embedment length as noted on the drawings.
2. For connections to existing hollow masonry or brick, use sleeve anchors (HILTI HLC, or other approved) or adhesive anchors (HILTI HIT-A rods with screen tube with HILTI HY 20 adhesive, or other approved), with diameter and embedment length as noted on the drawings.
3. Locate existing reinforcing by means of a rebar detector prior to drilling. Adjust the connection as required to avoid damaging any reinforcing.
4. Notify the Engineer if the existing concrete or masonry is cracked in the vicinity of the anchors prior to drilling.

CONCRETE CONSTRUCTION

1. All concrete construction shall be in accordance with the latest Building Code Requirements for Structural Concrete ACI 318 and ACI Detailing Manual, except that construction and removal of forms and reshoring shall be inspected by the Contractor's engineer.
2. Reinforcing steel shall have the following minimum coverage. Place bars as near to the concrete surface as these minima permit wherever possible, unless noted otherwise:
   A. Concrete poured against earth: 3"
   B. Formed concrete in contact with earth: 2"
   C. Exterior face of walls: 2"
   D. All other wall faces, slabs: 1" (#11 and smaller)
3. Welded wire reinforcement for slabs on ground shall have a minimum top coverage of 1" and a maximum top coverage of 1 1/2", unless otherwise noted. Reinforcement shall be positively supported and maintained in this position during placement of concrete.
4. Furnish bar supports where necessary during construction.
5. Provide plastic-coated (not plastic-tipped) or stainless steel chairs in all concrete exposed to view in completed structure.
6. Provide pipe sleeves and inserts in concrete work where required. Coordinate w/ Landscaping drawings.
7. Construction joints shall be positioned so as not to change the structural design requirements. The location and size of all construction joints shall be approved by the Engineer. Submit proposed pour layout for Engineer's review and approval two weeks prior to placing concrete.
8. Welding of reinforcing bars (including tack welding) is not permitted without permission of Engineer in writing. Where and when permitted, welded rebars shall comply with ASTM A706 (Fy=60 ksi) and welding shall conform to AWS D1.4, Welding shall be performed by certified welders.
9. Provide horizontal keyways in construction joints in, supported slabs; minimum 1 1/2" depth with height equal to one-third of member depth, unless otherwise shown or noted.
10. Drawings show typical reinforcing conditions. Contractor shall prepare detailed placement drawings of all conditions showing quantity, spacing, sizes, clearances, laps, intersections, and coverage required by the structural details, applicable code, and trade standards. Contractor shall notify reinforcing inspector of any adjustments from typical conditions which are proposed in placement drawings to facilitate field placement of reinforcing steel and concrete.
11. Bar bends shall be made cold. Bars shall not be bent after any portion of the bar is encased in concrete.
12. Splices (grade 60 deformed bars):
    A. Lap all compression splices 30 bar diameters of the larger bar.
    B. Lap all tension splices in accordance with the following tables. Provide Class B Tension Lap Splices unless otherwise noted.
    C. Increase tension or compression splice lengths by the following factors. Increases are Cumulative:
       1) Epoxy-coated top bars: 1.3
       2) Epoxy-coated other bars: 1.5
    D. Top bars are defined as horizontal bars with more than 12" of fresh concrete below.

Bar Size	Class B Tension Lap Splice					
	fc = 3000 psi		fc = 4000 psi		fc = 5000 psi	
	Top	Other	Top	Other	Top	Other
#3	28"	22"	24"	19"	22"	17"
#4	37"	29"	33"	25"	29"	23"
#5	47"	36"	41"	31"	36"	28"
#6	56"	43"	49"	37"	43"	34"
#7	81"	63"	71"	54"	63"	49"
#8	93"	72"	81"	62"	72"	56"
#9	105"	81"	91"	70"	81"	63"
#10	118"	91"	102"	79"	92"	70"
#11	131"	101"	113"	87"	102"	78"

MISCELLANEOUS

1. All phases of work are subject to testing, inspection, and acceptance by the engineer or University.
2. All site layout, including centerlines, bench marks etc. shall be completed in accordance with the project documents. Contractor shall hire a professional surveyor to accurately survey and document the existing site conditions, elevations, layouts of site features and streets, and adjoining curbs, sidewalks, etc.prior to commencing demolition of the existing street construction.All benchmark locations shall be protected and maintained during the entire duration of the project.
3. The University intends to hire an environmental firm to assess and remediate any hazardous materials encountered in the tunnel space. The abatement work, if required, will be completed prior to the start of this project. If hazardous materials of any kind are encountered, the University shall be notified immediately. All hazardous materials removal shall be by the University, and is excluded from the current project.
4. Contractor shall ensure that working storm drainage systems be maintained throughout the work areas at all times during construction.

PERMITS

1. Proper permit documentation shall be kept on site at all times and displayed in a conspicuous location. Contractor shall comply with all Permit conditions and requirements (inspection scheduling etc.)
2. Ohio Division of Industrial Compliance permit will be applied and paid for by Architect/Engineer on behalf of the University.

EARTHWORK

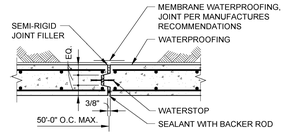
1. The base bid shall include all earthwork as required to complete the project in accordance with the project documents to the best of the engineer's knowledge. A subsurface investigation has not been conducted and a soils report has not been prepared for the site/project.
2. Excess excavation not reused on site shall be relocated and properly spoiled off-site in accordance with the applicable requirements of the governing authorities having jurisdiction. Spoils shall only be kept on site when so shown on the plans or as directed by the engineer.
3. All subgrades shall be inspected a certified testing agency and they shall verify the material's maximum dry density (obtained in accordance with ASTM Standard Method D-698) and the backfill, compaction and sub base preparation work.
4. Excavation shall continue through unsuitable soil until suitable soil is encountered. Contractor shall not use unsuitable material for backfilling.
5. All the work regarding site preparation, earth fill construction, backfill requirements, foundation preparations, etc., shall be in strict conformance to the requirements of Earthwork Specifications and Landscaping Drawings.
6. Unless otherwise noted in the geotechnical report or specifications, compact all fill under slabs on ground to 98% of optimum laboratory density in accordance with ASTM D698 Standard Proctor Method. Place fill in 6" to 8" layers and compact with vibratory tamping equipment.
7. In granular soils (sands and gravel) the soil shall be mechanically tamped to a hard surface immediately prior to placing footing.
8. Before backfill, all walls must be adequately braced and all tunnel top slab replacement work must be completed. For backfill requirements, see specifications.
9. Locate existing underground utilities in areas of construction. Coordinate with utility companies for any shut-off requirements of still active lines. Call the Ohio Utilities Protection Service at 800-362-2764.
10. When excavations approach the ground water level, the water level shall be lowered by an acceptable dewatering system so that the water level is maintained continuously a minimum of 2'-0" below the excavation.

STEEL CONSTRUCTION

1. Steel detailing, fabrication, and erection shall conform to the AISC Specification for Structural Steel Buildings and Code of Standard Practice, and the AWS Structural Welding Code.
2. Stresses occurring during fabrication, shipment, and erection shall be temporary and not excessive. Stresses at all times shall be less than design and allowable stresses. The full design and load-carrying capacity of the steel work shall not be impaired due to fabrication, shipment, or erection procedures. Throughout the complete process, the stability of all individual members and assembles shall be maintained.
3. The Contractor shall be responsible for the control of all erection procedures and sequences with relation to temperature differentials and weld shrinkage.
4. All additional steel required for erection purposes shall be provided at no additional cost and shall be removed unless approved by the Owner in writing.
5. Connections - welded or high strength bolted:
   A. High-strength bolts shall be installed in accordance with "Specifications for Structural Joints Using ASTM A325 or A490 Bolts".
   B. A325N with hardened washers: use for all connections.
   C. Provide hardened washers under nuts at all high-strength bolts, except where plate washers are used per AISC Specifications.
   D. All bolts should be tightened to full pretensioning load.
   E. Use standard holes with the following exceptions: oversize holes are permitted when bolts are loaded in tension; short slotted holes are permitted for shear loading perpendicular to the slot.
   F. Where minimum AISC fillet weld thickness requirement exceeds welds shown on details, or weld size is not specified, provide minimum AISC Weld.
6. Welding electrodes shall be E70XX except where other electrodes are required for compatibility with material being welded.
7. Shop drawings are required and shall note type of electrodes, size of all welds, and type and size of all bolts. Shop drawings shall be prepared under the supervision of a professional engineer licensed in the jurisdiction where the project is located.
8. Steel Painting: (Tunnel Piping Supports) Provide chemically active, modified alkyd primer, Tnemec Series 10-99 at 2.5 mils thickness (0.063 mm or approved equal.
   1. Adhesion - ASTM D3359; no less than a rating of 5.
   2. Salt Fog - ASTM B117; no blistering, cracking, rusting, or delaminating of film after 500 hours of exposure.
9. See all contract drawings for miscellaneous steel requirements.
10. All shop and field welding shall be performed by a recently certified welder.
11. All welding and high strength bolting must be inspected by a qualified testing laboratory, hired by the University.

WATERPROOFING SYSTEM

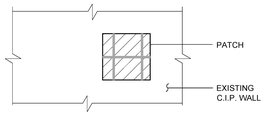
1. Chubbs Tunnel (Assembly A) - Cold fluid applied elastomeric membrane
   A. Provide a complete, cold fluid applied, elastomeric, coal tar free, waterproofing membrane system including all applicable sealants, elastomeric flashing needed to prevent water penetration. Comply with manufacturer's requirements with regards to substrate conditions, delivery storage and handling, surface preparation, application, protection and clean up. Provide a complete system with compatible manufacturer recommended accessories including but not limited to surface primer, joint backing, reinforcing fabric, elastomeric sheet flashing, joint treatment and protection course. Minimum thickness of the fluid applied membrane shall be 120 mils.
      Acceptable products: Tremco 250GC by Tremco inc.
      LM-85 s/l/LM-95 cold fluid applied membrane by Polyguard; or other approved equal.
   B. Warranty:
      Deliver to the architect/engineer signed copies of the following written warranties against defective materials and workmanship executed for the following periods following the date of completion. Warranty that installed waterproofing membrane system shall be free of defects including adhesive failure, cohesive failure, and waterproofing failure resulting from substrate cracking up to 1/16 inch.
      1) Manufacturer's standard warranty covering materials for a five year period.
      2) Applicator's standard warranty covering workmanship for two year period.
   C. Flood test: follow ASTM D 5957. Use sand bags or other means to restrict runoff. Flood deck with water up to a depth of 2" and allow to stand at least 48 hours.
2. Union Street Tunnel (Assembly B) - Dual system of cold fluid applied membrane & sheet applied elastomeric membrane
   A. Provide a combination system comprised of a fast cure, elastomeric, fluid applied, base waterproofing coating on the concrete surface and a post applied, self adhesive sheet membrane. Comply with manufacturer's requirements with regards to substrate conditions, delivery storage and handling, surface preparation, application, protection and clean up. Provide a complete system with compatible manufacturer recommended accessories including but not limited to surface primer, joint backing, reinforcing fabric, elastomeric sheet flashing, joint treatment, protection/drainage board. Minimum thickness of the fluid applied membrane shall be 90 mils. Minimum thickness of the self adhesive sheet applied membrane shall be 60 mils.
      Acceptable products: Dual core waterproofing system by Polyguard: LM-95/LM-85 cold fluid applied membrane with self adhesive 650 membrane or other approved equal.
   B. Warranty:
      Deliver to the architect/engineer signed copies of the following written warranties against defective materials and workmanship executed for the following periods following the date of completion. Warranty that installed waterproofing membrane system shall be free of defects including adhesive failure, cohesive failure, and waterproofing failure resulting from substrate cracking up to 1/16 inch.
      1) Manufacturer's standard warranty covering materials for a five year period.
      2) Applicator's standard warranty covering workmanship for two year period.
   C. Flood test: follow ASTM D 5957. use sand bags or other means to restrict runoff. Flood deck with water up to a depth of 2" and allow to stand at least 48 hours.



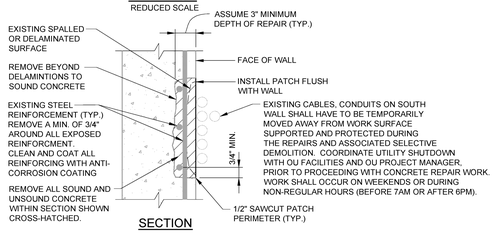
EXPANSION JOINT DETAIL WITH KEY

NOTES:
1. ALLOW 48 HOURS BETWEEN ADJACENT POURS. JOINT DETAILS FOR CONTRACTION AND CONSTRUCTION JOINT DETAILS.
2. BACK FILL WITH APPROVED MATERIAL.
3. DO NOT EXTEND REINFORCING THROUGH EXPANSION JOINTS.

CONCRETE EXPANSION JOINT DETAILS



ELEVATION
REDUCED SCALE

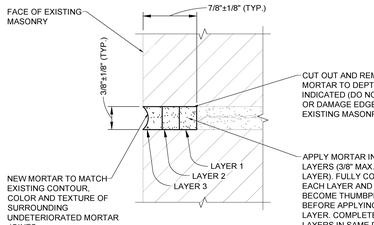


SECTION

CONCRETE WALL REPAIR - UNION STREET TUNNEL

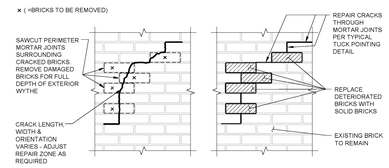
(UNIT PRICE WORK ITEM: U-1)

NOTES:
1. ADD NEW EPOXY COATED REINFORCING AS DIRECTED BY ENGINEER.
2. SEE SPECIFICATIONS FOR APPROVED MATERIALS AND ADDITIONAL REPAIR PROCEDURES.
3. SEE PRODUCT MANUFACTURER'S TECHNICAL DATA SHEETS FOR MIXING, SURFACE PREPARATION, APPLICATION PROCEDURES AND CURING.
4. CONTRACTOR MAY HAVE TO ADD FORM ON FACE OF THE WALL WITH AN ACCESS PORT AT TOP OF REPAIR PATCH AREA. PLACE FLOWABLE REPAIR MORTAR TO FACILITATE INSTALLATION OF PATCHING MATERIAL AROUND EXISTING CONDUITS/HVAC PIPING INTERFERENCES.



TYPICAL PLAN OR SECTION DETAIL
TUCK POINTING OF CLAY MASONRY JOINTS - CHUBBS TUNNEL

(UNIT PRICE WORK ITEM: U-2)



REPRESENTATIVE ELEVATION (EXISTING CONDITIONS)
REPRESENTATIVE ELEVATION (REPAIRED CONDITIONS)

CRACKED/SPALLED CLAY MASONRY REPLACEMENT DETAIL - CHUBBS TUNNEL
(UNIT PRICE WORK ITEM: U-3)

TYPICAL REPAIR NOTES: (WORK ITEMS U-1, U-2, U-3)

1. Typical repair procedures are shown on the drawings. The contractor is responsible for locating all specific repair areas, conditions, and dimensions on the top surface and the underside of the floor structure. Do not scale the drawings.
2. Approximate quantities for each work item are noted in the specs and shall be used for the purpose of bidding. Quantities not given, but required to complete the work indicated on the drawings or described in the Specifications, shall be considered as Base Bid items.
3. The contractor shall keep an accurate cumulative total of actual quantities of work performed and shall submit quantity totals each week to the Engineer for review and approval. Submit accurate record drawings with each pay request for review.
4. Payments will be made for actual quantities of repair work completed. Unit prices for approved added or deducted quantities will be used to adjust Base Bid Contract Amounts.
5. Contractor shall submit proposed repair materials to Engineer for review and approval. Only approved materials shall be used. No substitutions will be accepted after bid opening.
6. Contractor is responsible to identify all repair areas by detailed inspection and sounding of all concrete surfaces.
7. Contractor shall mark repair areas and notify the Engineer to confirm or modify the marked areas.
8. See Specifications for additional requirements.
9. Obtain Engineer's verification of extent of repairs prior to demolition.
10. Coordinate work schedules and utility shutdown with University's authorized representative, OU facilities and Project Manager.
11. Cooperate and assist the testing laboratory in performing all tests.

AUTHORITY CONTACTS:

CITY OF ATHENS FIRE DEPARTMENT	(740-592-3301)
CITY OF ATHENS STREET DEPARTMENT	(740-592-3343)
CITY OF ATHENS WATER AND SEWER	(740-593-7636)
OHIO UNIVERSITY OFFICE OF DESIGN AND CONSTRUCTION	(740-593-2727)
OHIO UNIVERSITY OFFICE OF INFORMATION TECHNOLOGY	(740-593-1222)

UTILITIES:

ATHENS WATER AND SEWER	(740-593-7636)
AMERICAN ELECTRIC POWER	(800-277-2177)
COLUMBIA GAS	(800-282-0157)
OHIO UNIVERSITY	(740-593-2911)
TIME WARNER CABLE	(800-934-4181)
FRONTIER COMMUNICATIONS	(800-921-8101)
OHIO UTILITIES PROTECTION SERVICE	(800-362-2764)

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