

AECOM TECHNICAL SERVICES, INC.

**RECOMMENDED** 

1700 MARKET STREET, SUITE 1600

PHILADELPHIA, PA 19103 (215) 735-0832





**CONSTRUCTION PLANS FOR:** 

# TWEEDS MILL PARKING STRUCTURE REPAIRS

CONTRACT NUMBER: T201550004 FEDERAL AID PROJECT NUMBER: -

COUNTY: NEW CASTLE M.R. #: -HOCKESSIN \_ HAMPTON VALLEY FALLS NWOOD POINTE HOCKESSIN LAMBETH RIDING

**PROJECT LOCATION** 

**UNITS** 

**U.S. CUSTOMARY** SHEET Nº DRAWING Nº PN-001 PROJECT NOTES CONSTRUCTION PHASING - SHEET 1 CONSTRUCTION PHASING - SHEET 2 CP-101 C-100 RE-GRADING PLAN, DETAILS, AND E&S GENERAL NOTES - ARCHITECTURE A-100 LOWER-LEVEL PLAN A-110 UPPER-LEVEL PLAN AND DETAILS A-400 SECTIONS AND DETAILS S-001 GENERAL NOTES - STRUCTURES TYPICAL DETAILS S-011 S-100 LOWER-LEVEL PLAN UPPER-LEVEL PLAN - SHEET 1 S-111 UPPER-LEVEL PLAN - SHEET 2 S-200 ELEVATIONS S-300 STAIR CANOPY - SHEET S-301 STAIR CANOPY - SHEET 2 CONNECTOR SECTIONS AND DETAILS - SHEET 1 CONNECTOR SECTIONS AND DETAILS - SHEET 2 S-402 CONNECTOR SECTIONS AND DETAILS - SHEET 3 S-411 SECTIONS AND DETAILS - SHEET 1 21 22 S-412 SECTIONS AND DETAILS - SHEET 2 SECTIONS AND DETAILS - SHEET 3 S-414 SECTIONS AND DETAILS - SHEET 4 24 25 ELECTRICAL LEGEND AND ABBREVIATIONS ELECTRICAL NOTES AND LIGHTING FIXTURE SCHEDULE 26 27 E-100 ELECTRICAL PLAN - DEMOLITION ELECTRICAL PLAN - LOWER-LEVEL NEW WORK 28 E-101 29 E-102 ELECTRICAL PLAN - UPPER-LEVEL NEW WORK LOWER-LEVEL PLUMBING PLAN UPPER-LEVEL PLUMBING PLAN TOTAL SHEETS: 31

INDEX OF SHEETS

# APPROVED DESIGN EXCEPTIONS DESIGN PARAMETER

**ADDENDA & REVISIONS** 

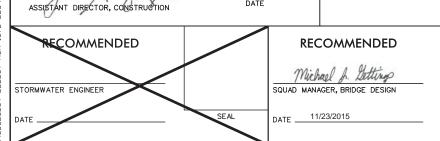
NAME & DATE

	ASSOCIATED	CONTRACTS
CONTRACT NO.		CONTRACT NAME

**LOCATION MAP** 

**AINSLEY** 

WOODS



11/13/2015

12/02/2015

12/03/2015 DATE

12/04/2015 DATE

DATE



**RECOMMENDED** 







ASSISTANT DIRECTOR, BRIDGE

DATE \_\_\_\_12/06/2015



**APPROVED** 

12/07/2015



### LOCATION AND DESCRIPTION:

- THE TWEEDS MILL PARKING STRUCTURE IS LOCATED AT 100 FITNESS WAY, HOCKESSIN, NEW CASTLE COUNTY, DELAWARE. THE WORK INVOLVES, BUT IS NOT LIMITED TO, THE REHABILITATION OF CONCRETE STRUCTURES, REPLACEMENT OF THE EXISTING STAIR CANOPY, RE-COATING OF THE UPPER AND LOWER-LEVEL DRIVING SURFACES. REPLACEMENT OF LIGHT FIXTURES AT THE LOWER-LEVEL, AND MISCELLANEOUS ELECTRICAL AND PLUMBING WORK.
- THIS PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING STANDARDS: DELAWARE DEPARTMENT OF TRANSPORTATION (DELDOT) "STANDARD SPECIFICATIONS", DATED AUGUST 2001 AND DELDOT "STANDARD CONSTRUCTION DETAILS", DATED 2001, INCLUDING ALL REVISIONS UP TO THE DATE OF ADVERTISEMENT. WHERE THERE IS CONFLICT BETWEEN THE DELDOT STANDARDS AND SPECIFICATIONS AND THE PROJECT SPECIAL PROVISIONS, THE PROJECT SPECIAL PROVISIONS SHALL TAKE PRECEDENCE.
  - INTERNATIONAL EXISTING BUILDING CODE (IEBC) 2015 AS AMENDED BY NEW CASTLE COUNTY CHAPTER 6 BUILDING CODE.
  - INTERNATIONAL BUILDING CODE (IBC) 2015 AS AMENDED BY NEW CASTLE COUNTY CHAPTER 6 BUILDING CODE.
    - USE AND OCCUPANCY CLASSIFICATION: LOW-HAZARD STORAGE, GROUP S-2. CONSTRUCTION TYPE (EXISTING PARKING STRUCTURE): TYPE II-B.
    - 111. CONSTRUCTION TYPE (PROPOSED STAIR CANOPY): TYPE II-B.

### DEMOLITION:

- THE CONTRACTOR SHALL PREVENT DEBRIS FROM FALLING ONTO THE LOWER-LEVEL WHERE PROTECTION OR BARRICADES ARE NOT PROVIDED. THE CONTRACTOR SHALL PROMPTLY REMOVE FALLEN DEBRIS TO THE SATISFACTION OF THE ENGINEER. IF THE ENGINEER DETERMINES THAT ADEQUATE PROTECTIVE DEVICES ARE NOT BEING EMPLOYED, THE WORK SHALL BE SUSPENDED UNTIL ADEQUATE PROTECTION IS PROVIDED.
- THE COST OF FURNISHING, INSTALLING, MAINTAINING, REMOVING AND DISPOSING OF ALL PLATFORMS, NETS, SCREENS OR OTHER PROTECTIVE DEVICES SHALL BE INCLUDED IN THE CONTRACTOR'S BID AND SHALL BE INCIDENTAL TO ITEM NUMBER 763000.

  DURING THE WORK THE CONTRACTOR SHALL USE CARE TO COLLECT ALL DEBRIS AND WATER USED
- FOR CONSTRUCTION PROMPTLY AND PREVENT ANY POLLUTION OF THE PROJECT AREA. THE CONTRACTOR SHALL BE HELD LIABLE FOR CONTAMINATION OF THE PROJECT AREA DUE TO NEGLIGENCE. THE COLLECTION AND DISPOSAL OF CONSTRUCTION WATER AND DEBRIS WILL NOT BE MEASURED, BUT WILL BE CONSIDERED INCIDENTAL TO THE WORK ITEM WHICH GENERATED THE WATER AND DEBRIS.
- THE CONTRACTOR SHALL PERFORM ALL WORK WITH CARE SO THAT ANY MATERIALS WHICH ARE TO REMAIN IN PLACE, OR WHICH ARE TO REMAIN THE PROPERTY OF DELDOT, WILL NOT BE DAMAGED. IF THE CONTRACTOR DAMAGES ANY MATERIALS WHICH ARE TO REMAIN IN PLACE OF ARE TO REMAIN THE PROPERTY OF DELOOT, THE DAMAGED MATERIAL'S SHALL BE REPAIRED OR REPLACED IN A MANNER SATISFACTORY TO THE ENGINEER AT THE EXPENSE OF THE CONTRAC<mark>TO</mark>R
- THE CONTRACTOR SHALL USE WET DIAMOND BLADE SAW CUTTING FOR CONCRETE REMOVAL OPERATIONS.
  ALL CONSTRUCTION DEBRIS. EXCAVATED MATERIAL. BRUSH. ROCKS. AND REFUSE INCIDENTAL TO SUCH WORK SHALL BE PLACED EITHER ON SHORE ABOVE THE INFLUENCE OF FLOOD WATERS OR ON SOME SUITABLE DUMPING GROUND.
- EVERY EFFORT SHALL BE MADE TO KEEP CONSTRUCTION DEBRIS FROM ENTERING ADJACENT WATERWAYS OR WETLANDS. ANY DEBRIS THAT ENTERS THOSE AREAS SHALL BE REMOVED IMMEDIATELY.
- THE DISPOSAL OF TREES, BRUSH, AND OTHER DEBRIS IN ANY STREAM CORRIDOR, WETLAND, SURFACE WATER, OR DRAINAGE AREA IS PROHIBITED.

### STAGING AREAS:

- PROPER EROSION AND SEDIMENT CONTROL MEASURES AS DETERMINED BY THE ENGINEER SHALL BE INSTALLED IN ALL STAGING AREAS. ALL AREAS USED BY THE CONTRACTOR FOR STAGING OPERATIONS SHALL BE APPROVED BY THE ENGINEER PRIOR TO USE AND SHALL BE FULLY RESTORED BY THE CONTRACTOR UPON COMPLETION OF THE PROJECT. IF THE STAGING AREA IS PAVED. IT SHALL BE RESTORED TO THE ORIGINAL CONDITION. IF THE AREA IS UNPAVED. IT SHALL BE RE-GRADED, TOPSOILED, SEEDED AND MULCHED IN ACCORDANCE WITH DELAWARE STANDARD SPECIFICATION 908 FOR SOIL STABILIZATION PRACTICES TO THE SATISFACTION OF THE ENGINEER. THE SEED SHALL ADHERE TO THE SPECIFICATIONS FOR PERMANENT GRASS SEEDING - DRY GROUND. ALL COSTS ASSOCIATED WITH RESTORATION OF THE STAGING AREA SHALL BE AT THE CONTRACTOR'S EXPENSE AND SHALL BE INCIDENTAL TO SPECIAL PROVISION FOR ITEM NUMBER 763569. IF THE ENGINEER DETERMINES THAT A SATISFACTORY STAND OF GRASS DOES NOT EXIST AT THE TIME OF FINAL INSPECTION, ALL COSTS ASSOCIATED WITH REESTABLISHING A SATISFACTORY STAND OF GRASS SHALL BE AT THE CONTRACTOR'S EXPENSE AND SHALL BE INCIDENTAL TO SPECIAL PROVISION FOR ITEM NUMBER 763569.
- STORAGE OR STOCKPILING OF MATERIALS OR EQUIPMENT ON THE UPPER-LEVEL IS PROHIBITED WITHOUT PRIOR WRITTEN CONSENT OF THE ENGINEER. TO REQUEST STORAGE OR STOCKPILING AREAS ON THE UPPER-LEVEL, THE CONTRACTOR SHALL SUBMIT WRITTEN ANALYSIS PREPARED BY A PROFESSIONAL ENGINEER INDICATING THE RESULTANT STRESSES IN THE STRUCTURE ALONG WITH SPECIFIC LOCATIONS, DIMENSIONS, AND WEIGHTS OF EQUIPMENT OR MATERIALS TO BE STORED.

# 5. MAINTENANCE OF TRAFFIC:

- MAINTENANCE OF TRAFFIC SHALL BE AS PER THE CONSTRUCTION PHASING PLANS. KEEP DRIVEWAYS, PARKING GARAGE AND ENTRANCES SERVING PREMISES CLEAR AND AVAILABLE TO GARAGE PATRONS, HAC PATRONS, AND EMERGENCY VEHICLES AT ALL TIMES. DO NOT USE THESE AREAS FOR PARKING OR STORAGE OF MATERIALS.
- ALL WORK SHALL BE PERFORMED IN A MANNER THAT WILL REASONABLY PROVIDE THE LEAST PRACTICABLE OBSTRUCTION TO ALL ROAD USERS, INCLUDING VEHICULAR, PEDESTRIAN, AND BICYCLE TRAFFIC, AND SHALL CONFORM TO THE REQUIREMENTS OF THE 2011 DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, PART 6, INCLUDING ALL REVISIONS UP TO THE DATE OF ADVERTISEMENT FOR RIDS.

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE MAXIMUM ALLOWABLE EQUIPMENT AND MATERIAL WEIGHTS WHICH MAY BE IMPOSED ON THE UPPER-LEVEL OF THE GARAGE. THE CONTRACTOR'S MEANS AND METHODS FOR CONSTRUCTION OPERATIONS SHALL NOT COMPROMISE THE STRUCTURAL INTEGRITY OF THE GARAGE IN THE FINAL CONDITION. ANY DAMAGES TO THE GARAGE AS A RESULT OF OVERLOADING THE STRUCTURE SHALL BE REPAIRED OR REPLACED IN A MANNER SATISFACTORY TO THE ENGINEER AT THE EXPENSE OF THE CONTRACTOR.
- BEFORE CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL RECORD AND MONITOR SITE CONDITIONS BY USE OF VIDEO OR OTHER DATA RECORDATION. AS PART OF THAT EFFORT, THE CONTRACTOR MAY ALSO UNDERTAKE FIELD MEASUREMENTS AND RECORD EXISTING CONDITIONS FOR DESIGN DETAILS AND ANY CONTRASTING SPECIFICATIONS. COPIES WILL BE PROVIDED TO THE ENGINEER DURING THE PRE-CONSTRUCTION MEETING. THE DEPARTMENT SHALL REVIEW AND APPROVE THE DOCUMENTATION PRIOR TO BEGINNING OF CONSTRUCTION ACTIVITIES. THE EFFORTS WILL BE USED FOR ANY DISPUTE RESOLUTIONS,
- ALL EXISTING DIMENSIONS AND ELEVATIONS SHOWN ARE BASED ON THE BEST AVAILABLE INFORMATION AND ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS, GEOMETRY, AND ELEVATIONS AS NECESSARY PRIOR TO ORDERING ANY MATERIALS AND COMMENCING CONSTRUCTION TO ENSURE PROPER FIT OF THE PROPOSED CONSTRUCTION.

- THE CONTRACTOR SHALL GIVE NOTIFICATION BY TELEPHONE BY CALLING "MISS UTILITY" AT 1-800-282-8555 A MINIMUM OF TWO FULL WORKING DAYS PRIOR TO STARTING WORK TO LOCATE ALL UTILITIES.
- COORDINATE THE REQUIREMENTS FOR PROTECTION OF ANY UTILITY WITH THE UTILITY OWNER PRIOR TO STARTING WORK.
- THE CONTRACTOR SHALL CONDUCT OPERATIONS IN A MANNER WHICH ENSURES THAT THE UTILITIES WILL NOT BE DISTURBED OR ENDANGERED, AND ASSUME FULL RESPONSIBILITY FOR ANY DAMAGE TO UTILITIES DURING CONSTRUCTION. THE DEPARTMENT DOES NOT ASSUME RESPONSIBILITY FOR REIMBURSEMENT, PARTICIPATING IN DESIGN AND/OR REVISIONS, OR LIABILITY FOR ACCURACY OF TYPE, SIZE AND LOCATIONS OF ANY UTILITY.

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

TWEEDS MILL PARKING STRUCTURE REPAIRS

CONTRACT BRIDGE NO. N/A T201550004 ESIGNED BY: GSH COUNTY CHECKED BY: NEW CASTLE NPU

**PROJECT NOTES** 

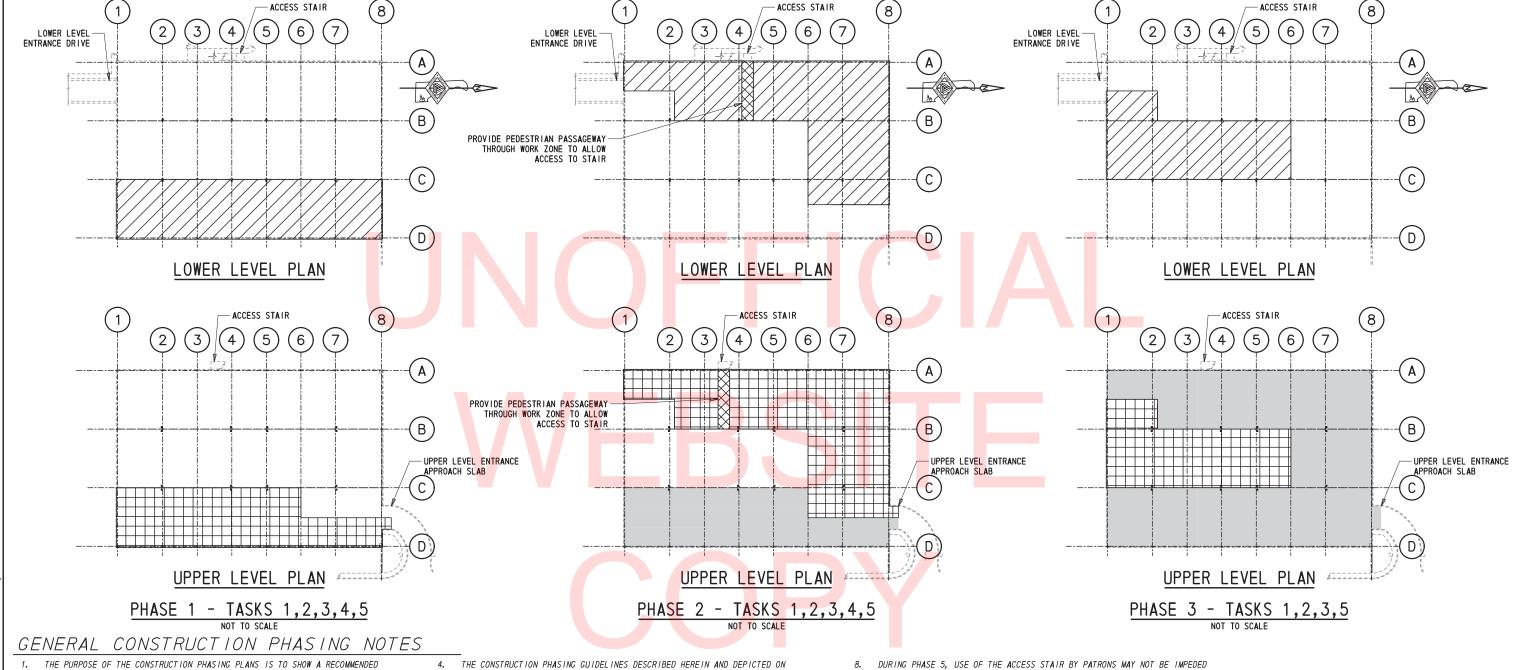
PN-001

SHEET NO.

2

OTAL SHTS

SCALE AS NOTED



- CONSTRUCTION PHASING PLAN AND SEQUENCE THAT ALLOWS THE CONTRACTOR UNRESTRICTED ACCESS TO THE PORTIONS OF THE GARAGE THAT ARE UNDER CONSTRUCTION IN EACH PHASE WHILE ALLOWING NORMAL GARAGE OPERATIONS AND UNIMPEDED PATRON ACCESS TO THE PORTIONS OF THE GARAGE THAT ARE NOT UNDER CONSTRUCTION
- THE "PHASED REHABILITATION TASKS" SHOWN ON DRAWINGS CP-100 AND CP-101 REPRESENT THOSE TASKS WHICH ARE REQUIRED TO BE PERFORMED IN SEPARATE CONSTRUCTION PHASES IN ORDER TO MAINTAIN SUFFICIENT PARKING AT THE GARAGE DURING REHABILITATION WORK. THE REMAINING TASKS WHICH ARE INCLUDED WITHIN THE CONTRACT DOCUMENTS DO NOT RESULT IN MAJOR DISRUPTION TO THE GARAGE OPERATIONS AND THEREFORE MAY BE PERFORMED AT THE CONTRACTOR'S DISCRETION. ALL TASKS NOT DESIGNATED AS "PHASED REHABILITATION TASKS" SHALL BE COORDINATED BY THE CONTRACTOR AND SHALL EMPLOY ADEQUATE SIGNAGE, BARRICADES AND PROTECTION FOR PATRONS, VEHICLES, AND CONTRACTORS. AT ALL TIMES THE CONTRACTOR SHALL MAINTAIN A MINIMUM AVAILABILITY OF 50% OF THE TOTAL GARAGE PARKING SPACES FOR USE BY PATRONS DURING REHABILITATION
- EACH CONSTRUCTION PHASE IS SEQUENTIAL, HOWEVER, THE ACTUAL SEQUENCE OF CONSTRUCTION ACTIVITIES WITHIN EACH PHASE SHALL CONFORM TO THE CONTRACTOR'S APPROVED, PROJECT-SPECIFIC CRITICAL PATH METHOD SCHEDULE.

- THE CONSTRUCTION PHASING GUIDELINES DESCRIBED HEREIN AND DEPICTED ON DRAWINGS CP-100 AND CP-101 HAVE BEEN DEVELOPED TO ENSURE THAT GARAGE OPERATIONS CAN AND WILL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. THE CONSTRUCTION PHASING GUIDELINES ARE NOT INTENDED TO REFLECT ALL ELEMENTS OF THE WORK, RESTRICT THE SCOPE OF WORK, OR RELIEVE THE CONTRACTOR FROM HIS CONTRACTUAL OBLIGATIONS TO PREVENT INTERFERENCE WITH THE NORMAL OPERATIONS OF THE GARAGE.
- THE GENERAL CONTRACTOR SHALL SUBMIT A DETAILED AND COORDINATED CONSTRUCTION PHASING PLAN TO THE ENGINEER AND RECEIVE APPROVAL PRIOR TO MOBILIZING TO THE SITE.
- THE CONTRACTOR SHALL FURNISH, INSTALL AND MAINTAIN SUITABLE BARRICADES, WARNING AND DETOUR SIGNS, PEDESTRIAN CONTROL DEVICES AND PROTECTIVE MEASURES NECESSARY TO PROVIDE SAFETY AND GRAPHIC DIRECTION TO THE PUBLIC AT ALL PLACES WHERE THE WORK PROHIBITS PUBLIC ACCESS OR CONSTITUTES A POTENTIAL HAZARD. PAYMENT FOR THESE ITEMS SHALL BE INCIDENTAL TO SPECIAL PROVISION FOR ITEM 763569.
- THE CONTRACTOR SHALL CONSTRUCT TEMPORARY DUST CONTROL BARRIERS TO ALLOW PATRONS FULL USE OF ALL NON-WORK AREAS OF THE GARAGE AND TO PROTECT VEHICLES FROM DUST ACCUMULATION OR DAMAGE FROM DEBRIS. PAYMENT FOR THESE ITEMS SHALL BE INCIDENTAL TO SPECIAL PROVISION FOR ITEM 763569.

ADDENDUMS / REVISIONS

- DURING PHASE 5, USE OF THE ACCESS STAIR BY PATRONS MAY NOT BE IMPEDED BY THE REHABILITATION EFFORTS. THE REMOVAL OF THE EXISTING CANOPY AND CONSTRUCTION OF THE NEW CANOPY AT THE ACCESS STAIR SHALL NOT BE PERFORMED DURING PHASE 5. WHEN PUBLIC USE OF THE ACCESS STAIR IS IMPEDED THE CONTRACTOR SHALL FURNISH AND INSTALL TEMPORARY SIGNAGE AT THE BASE OF THE GARAGE ENTRANCE RAMP AND AT THE UPPER-LEVEL OF THE GARAGE INDICATING THE ACCESS RESTRICTION AND THE APPROPRIATE DETOUR ROUTE.
- ANY INTERRUPTIONS TO THE ELECTRICAL SERVICE AT THE GARAGE RESULTING FROM THE REHABILITATION WORK SHALL BE RESTORED AT THE END OF EACH WORK DAY.
  UNLESS APPROVAL IS GRANTED BY THE ENGINEER, THE CONTRACTOR SHALL MAINTAIN POWER TO THE GARAGE EMERGENCY EXIT SIGNAGE AND EMERGENCY LIGHTING AT ALL
- 10. LIGHTING SHALL BE MAINTAINED AT ALL PUBLICLY-ACCESSIBLE AREAS OF THE GARAGE AT ALL TIMES. AS NECESSARY THE CONTRACTOR MAY PROVIDE TEMPORARY POWER AND LIGHTING IF SERVICE TO THE MAIN LIGHTING FIXTURES IS INTERRUPTED. TEMPORARY LIGHTING SHALL PROVIDE A MINIMUM ILLUMINATION AT ALL PUBLICLY-ACCESSIBLE AREAS OF 1 FOOTCANDLE (MEASURED HORIZONTALLY AT THE FLOOR LEVEL).
- 11. AREAS INDICATED AS "PROTECTED PEDESTRIAN PASSAGEWAYS" SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR SUCH THAT GARAGE PATRONS ARE ALLOWED SAFE PASSAGE THROUGH ACTIVE WORK ZONES. AS NECESSARY THESE PASSAGEWAYS SHALL BE COMPRISED OF STABLE FLOORING, WALLS AND CEILINGS WHICH PROVIDE PROTECTION FROM CONSTRUCTION DUST AND DEBRIS.
- 12. SEE CONTRACT SPECIFICATIONS AND SPECIAL PROVISION FOR ITEM 763569 FOR ADDITIONAL PHASING REQUIREMENTS.

# PHASED REHABILITATION TASKS:

- REPAIR DOUBLE TEE PANEL JOINT CONNECTIONS
- REPAIR CRACKS AT DOUBLE TEE FLANGES AND STEMS REPAIR LOWER-LEVEL SLAB CRACKS
- DEMOLISH AND REPLACE UPPER-LEVEL APPROACH SLAB
- REPLACE DOUBLE TEE JOINT SEALANTS
- APPLY WATERPROOFING COATING AT UPPER-LEVEL APPLY CONCRETE SEALER AT LOWER-LEVEL
- RE-STRIPE PARKING

LEGEND:

WORK AREA

AREA ON LOWER LEVEL TO BE CLOSED TO PUBLIC WHILE WORK AT UPPER LEVEL IS PERFORMED (NOTED LOWER LEVEL WORK TO BE PERFORMED DURING THIS PHASE)

WORK COMPLETED IN PREVIOUS PHASE (NOT INCLUDING COATINGS AND STRIPING)



N/A

PROTECTED PEDESTRIAN PASSAGEWAY THROUGH

CP-100 SHEET NO. 3 CONSTRUCTION PHASING - SHEET 1 OTAL SHTS

DELAWARE DEPARTMENT OF TRANSPORTATION

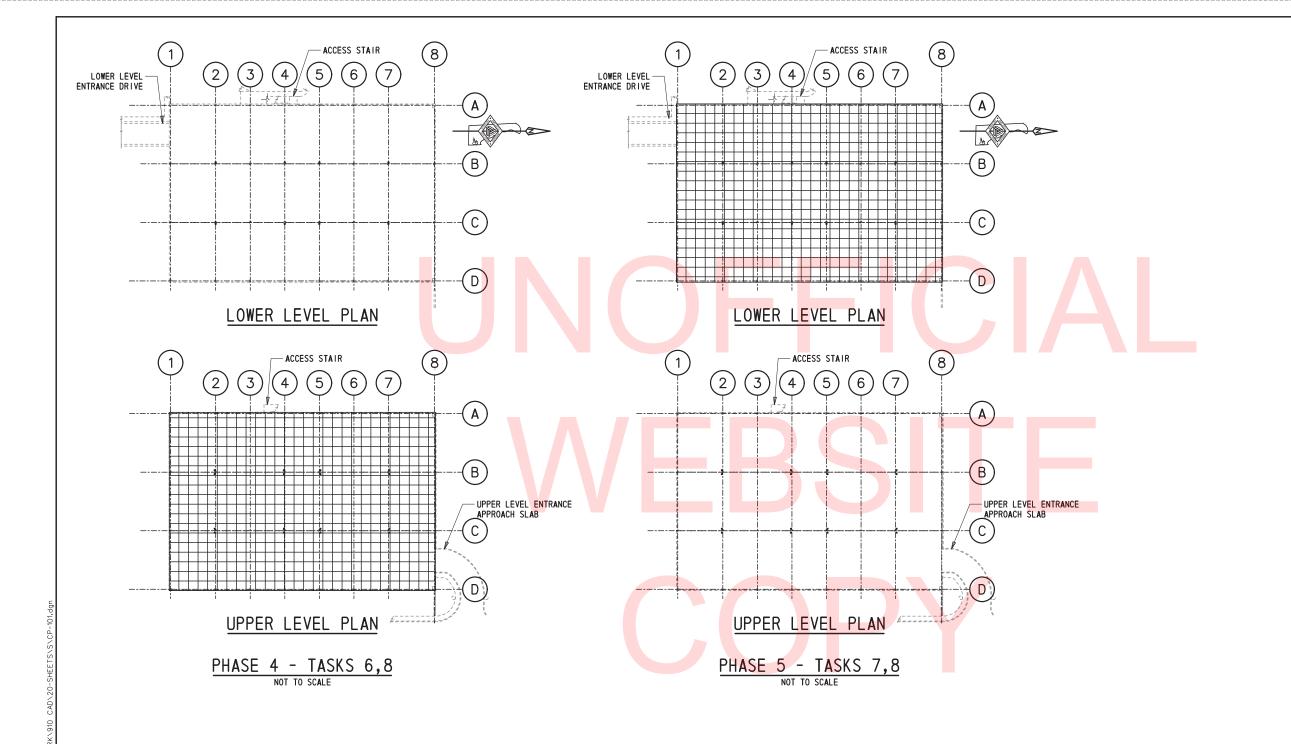
SCALE AS NOTED

TWEEDS MILL PARKING STRUCTURE REPAIRS

T201550004 ESIGNED BY: GSH COUNTY CHECKED BY: NPU NEW CASTLE

BRIDGE NO.

CONTRACT



# NOTES:

1. SEE GENERAL CONSTRUCTION PHASING NOTES ON DRAWING CP-100.

# PHASED REHABILITATION TASKS:

- REPAIR DOUBLE TEE PANEL JOINT CONNECTIONS REPAIR CRACKS AT DOUBLE TEE FLANGES AND STEMS REPAIR LOWER-LEVEL SLAB CRACKS
- DEMOLISH AND REPLACE UPPER-LEVEL APPROACH SLAB
- REPLACE DOUBLE TEE JOINT SEALANTS
  APPLY WATERPROOFING COATING AT UPPER-LEVEL
  APPLY CONCRETE SEALER AT LOWER-LEVEL
  RE-STRIPE PARKING

### LEGEND:

WORK AREA

AREA ON LOWER LEVEL TO BE CLOSED TO PUBLIC WHILE WORK AT UPPER LEVEL IS PERFORMED (NOTED LOWER LEVEL WORK TO BE PERFORMED DURING THIS PHASE)

WORK COMPLETED IN PREVIOUS PHASE (NOT INCLUDING COATINGS AND STRIPING)

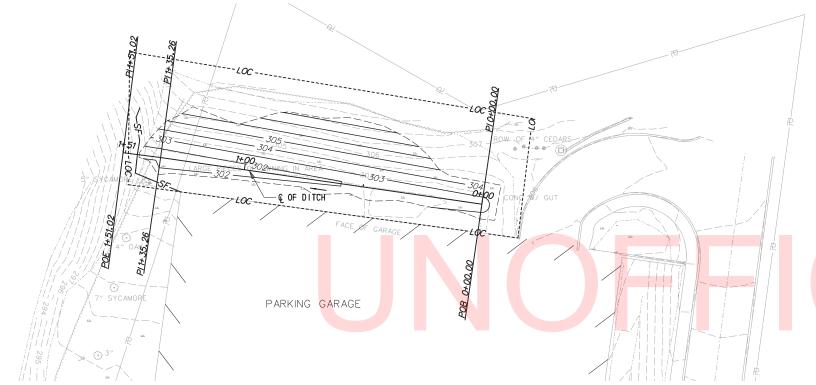
DELAWARE **DEPARTMENT OF TRANSPORTATION**  ADDENDUMS / REVISIONS SCALE AS NOTED

TWEEDS MILL PARKING STRUCTURE REPAIRS

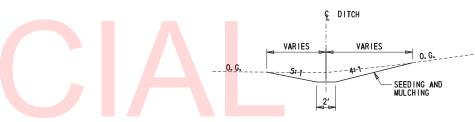
CONTRACT BRIDGE NO. N/A T201550004 DESIGNED BY: JEG COUNTY NEW CASTLE CHECKED BY: CRW

CONSTRUCTION PHASING - SHEET 2

CP-101 OTAL SHTS.



CONSTRUCTION ALIGNMENT CONTROL									
PO INT	STATION	0FFSET	NORTHING	EAST ING					
POB	0+00.00	0	<i>647975. 1589</i>	<i>572293. 8369</i>					
PI	1+35. 26	0	647994. 5950	572159. 9767					
P0E	1+51.02	0	<i>647995. 5869</i>	572144. 3451					



TYPICAL SECTION

SCALE: 1" = 5'-0"

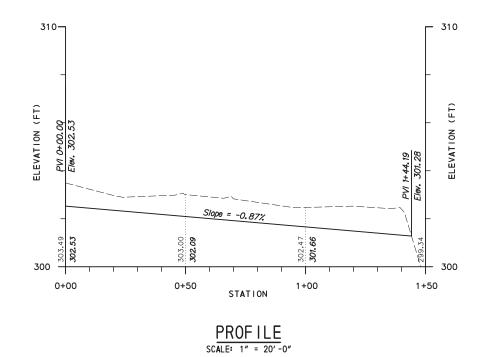
# SITE PLAN AND EROSION AND SEDIMENT CONTROL PLAN



## NOTES:

1. THERE IS APPROXIMATELY 3680 SF OF DISTURBANCE (LOD) WITHIN THE LOC FOR REGRADING.

LEGEND						
EX	ISTING SYMBOLS					
**************************************	GRASS LAWN					
₿	TREE - DECIDUOUS					
0	SHRUBBERY					
	WOODS LINE BOUNDARY					
(1)	TRAFFIC - LIGHT POLE AND BASE					
PRO	OPOSED SYMBOLS					
100+00	CONSTRUCTION BASELINE					
·LOC	LIMIT OF CONSTRUCTION					
	LIMIT OF DISTURBANCE (LOD)					
SF	— SILT FENCE					
	DITCH FLOW ARROW					



DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE AS NOTED

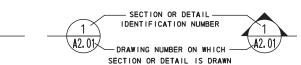
TWEEDS MILL PARKING STRUCTURE REPAIRS

BRIDGE NO. N/A T201550004 DESIGNED BY: KMH COUNTY CHECKED BY: JLC NEW CASTLE

RE-GRADING PLAN, DETAILS, AND E&S

C-100 OTAL SHTS.

A2. 01



SYMBOL WHERE SECTION IS TAKEN

OWER-LEVEL PLAN DETAIL IDENTIFICATION NUMBER SCALE: 1/16" = 1'-0'

TITLE WHERE SECTION IS DRAWN



# GENERAL NOTES

- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE BUILDING CODE OF DELAWARE STATE NEW CASTLE COUNTY IBC 2015 AND THE RULES AND REGULATIONS OF ALL AGENCIES, DEPARTMENTS AND COMMISSIONS HAVING JURISDICTION.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS IN THE FIELD PRIOR TO COMMENCING WORK, AND SHALL REPORT TO THE ENGINEER AS OWNER'S REP. (TYPICAL) ANY CONDITION OR DISCREPANCY BETWEEN DRAWINGS AND FIELD CONDITIONS REQUIRING MODIFICATIONS BEFORE PROCEEDING WITH THE WORK
- REFERENCING OF DRAWINGS IS FOR CONVENIENCE ONLY AND DOES NOT LIMIT APPLICATION OF ANY DRAWING.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL CONDITIONS AND MATERIALS WITHIN THE PROPOSED CONSTRUCTION AREAS. THE CONTRACTOR SHALL DESIGN AND INSTALL ADEQUATE SHORING AND BRACING FOR ALL STRUCTURAL OR REMOVAL TASKS.
- REFER TO DRAWINGS FOR ADDITIONAL GENERAL NOTES. ABBREVIATIONS AND SYMBOLS. AND LEGENDS. ALL NOTES ARE TO BE REVIEWED AND APPLIED TO RELATED BUILDING COMPONENTS.
- NOTES APPEAR ON VARIOUS SHEETS FOR VARIOUS SYSTEMS AND MATERIALS. SHEETS ARE TO BE REVIEWED AND NOTES ON ANY ONE SHEET ARE TO BE APPLIED TO RELATED SYSTEMS AND MATERIALS DEPICTED ON OTHER DRAWINGS.
- 7. THE CONTRACTOR SHALL LAY OUT HIS OWN WORK, AND SHALL PROVIDE ALL DIMENSIONS REQUIRED FOR OTHER TRADES (PLUMBING, ELECTRICAL, FTC.).
- THE CONTRACTOR SHALL PERFORM ALL CUTTING, PATCHING, AND REPAIRING AS REQUIRED TO PERFORM ALL OF THE WORK INDICATED ON THE DRAWINGS, AND ALL OTHER WORK THAT MAY BE REQUIRED TO COMPLETE THE JOB.
- THE TERM "FINISHED FLOOR" WHERE INDICATED ON THE DRAWINGS REFERS TO THE NORMAL FINISHED FLOOR LEVEL OF THAT FLOOR.

TWEEDS MILL PARKING STRUCTURE - NEW CASTLE COUNTY

THE STATE OF DELAWARE HAS DELEGATED THE SELECTION AND MAINTENANCE OF THE BUILDING CODE TO THE COUNTIES. NEW CASTLE COUNTY HAS ADOPTED THE 2015 EDITION OF THE IBC WITH SOME LOCAL ADDITIONS AND DELETIONS, NONE OF WHICH MODIFY THE SECTIONS UNDER DISCUSSION BELOW.

IBC 2015 REFERS TO NFPA 10 STANDARD FOR PORTABLE FIRE EXTINGUISHERS, THE LATEST EDITION OF WHICH IS 2013.

PARKING FACILITY CATEGORIZED AS "LIGHT HAZARD"

THE FOLLOWING IS THE JUSTIFICATION FOR THE CATEGORIZATION; A PARKING GARAGE CAN BE CONSIDERED LIGHT OR ORDINARY HAZARD

THE AUTOMOBILES CONTAIN GASOLINE (A CLASS B HAZARD), THE FUEL IS IN LIMITED QUANTITIES, 25 GALLONS OR LESS, AND THE FIRE IS TYPICALLY LIMITED TO ONE VEHICLE.

FIRE EXTINGUISHERS

IBC 2015 AND NFPA 10, 2013 EDITION IBC SECTION 906 PORTABLE FIRE EXTINGUISHERS ANALYSIS:

- 1. MUST BE CLEARLY VISIBLE FROM ALL POINTS OF THE FLOOR.
- 2. TABLE 906.3.(1)(FROM FIRE CODE) CALLS FOR A MAXIMUM OF 75 FEET MAXIMUM TRAVEL DISTANCE.
- 3. TABLE 6.2.1.1 LIMITS THE AREA PER EXTINGUISHER IN TWO WAYS, AN OVERALL MAXIMUM OF 11,250 SF AND A MORE SPECIFIC 3000 SF PER UNIT OF A FOR LIGHT HAZARD.
- 4. THE EXISTING INSTALLATION HAS 6 FIRE EXTINGUISHERS ON THE UPPER LEVEL AND 6 ON THE LOWER LEVEL; EXISTING FE'S ARE 4-A: 80-B: C FIRE EXTINGUISHERS.

EXIT SIGNS IBC 2015 SECTION 1013

- 1. FROM ANY POINT ON THE FLOOR EITHER THE EXIT ITSELF OR AN EXIT SIGN MUST BE CLEARLY VISIBLE.
- 2. "EXIT" SHALL BE IN 6" UPPER CASE LETTERS.
- 3. THE SIGNS SHALL BE ORIENTED PERPENDICULAR TO THE LINE OF SIGHT.

**DELAWARE DEPARTMENT OF TRANSPORTATION** 

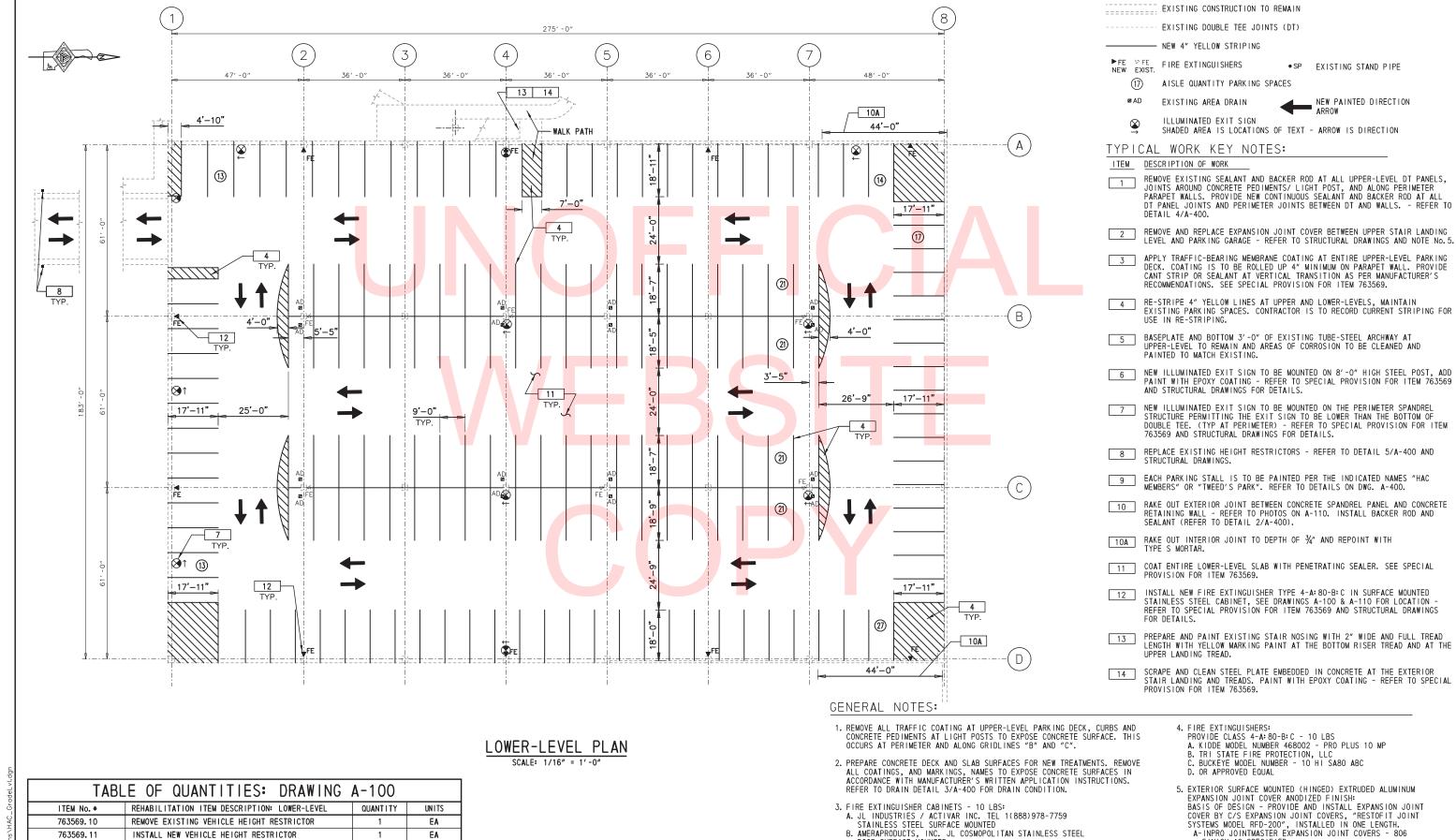
ADDENDUMS / REVISIONS

TWEEDS MILL PARKING STRUCTURE REPAIRS

CONTRACT BRIDGE NO. N/A T20155000 DESIGNED BY: NIELS R. BENAVIDES COUNTY CHECKED BY: S. TOMASIELLO NEW CASTLE

**GENERAL NOTES ARCHITECTURE** 

A-001 SHEET NO. 6 OTAL SHTS .31



763569.10

763569.11

763569.24

DELAWARE DEPARTMENT OF TRANSPORTATION

763569.25,.26,.27,.28 INSTALL NEW ILLUMINATED EXIT SIGNS

REMOVE EXISTING VEHICLE HEIGHT RESTRICTOR

INSTALL NEW FIRE EXTINGUISHER AND SIGNAGE

(\*) SEE SPECIAL PROVISION ITEM 763569 BREAKOUT SHEET FOR ITEM NUMBER DETAILS.

INSTALL NEW VEHICLE HEIGHT RESTRICTOR

ADDENDUMS / REVISIONS SCALE AS NOTED

EΑ

EΑ

EΑ

EΑ

10

TWEEDS MILL PARKING STRUCTURE REPAIRS

C. LARSEN'S GEMINI SERIES FIRE EXTINGUISHER CABINET-STAINLESS STEEL SOLID DOOR SURFACE MOUNTED

DOOR SURFACE MOUNTED

D. OR APPROVED EQUAL.

BRIDGE NO. N/A T201550004 DESIGNED BY: NIELS R. BENAVIDES COUNTY CHECKED BY: S. TOMASIELLO NEW CASTLE

LEGEND

LOWER-LEVEL PLAN

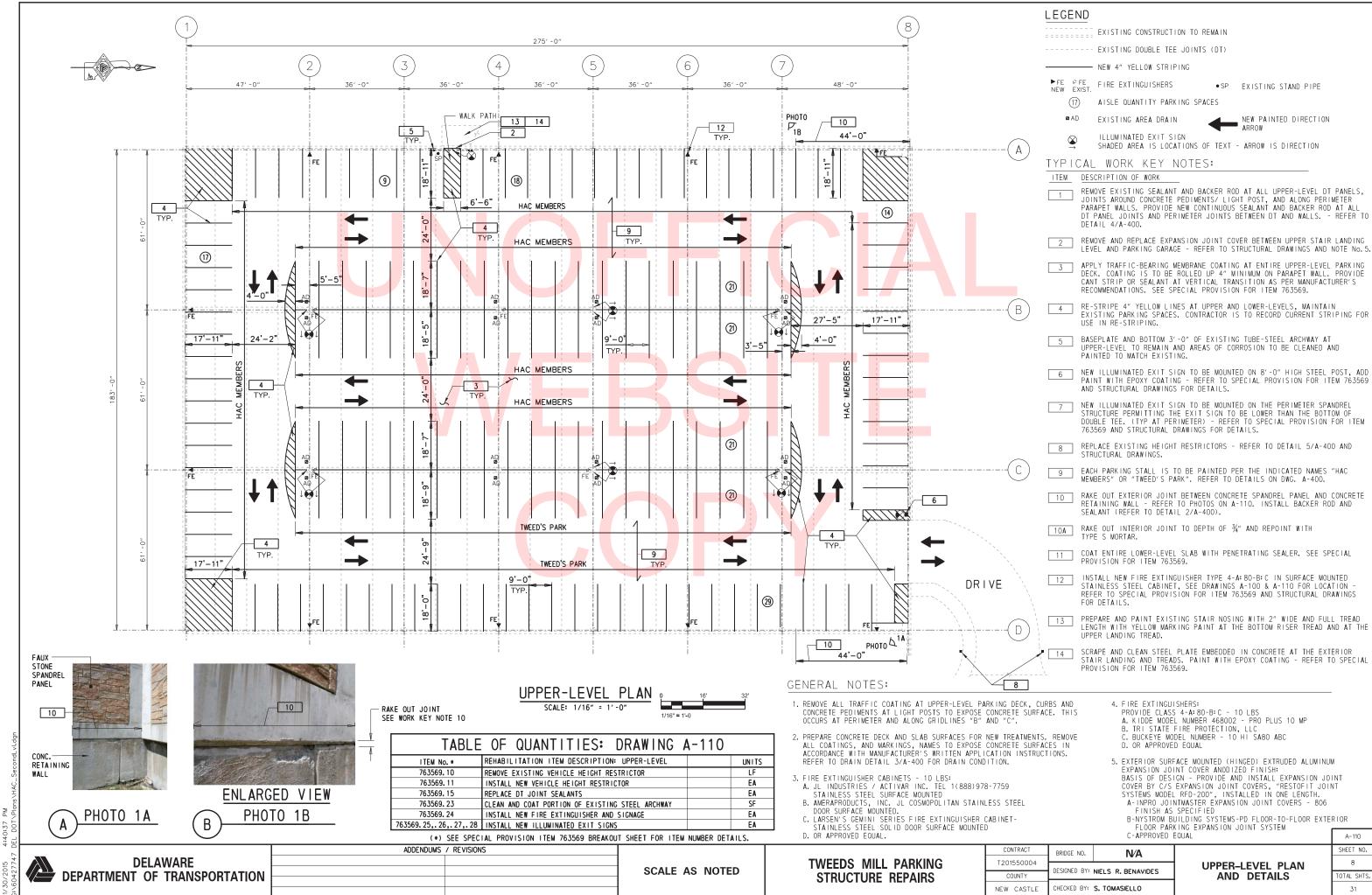
B-NYSTROM BUILDING SYSTEMS-PD FLOOR-TO-FLOOR EXTERIOR FLOOR PARKING EXPANSION JOINT SYSTEM

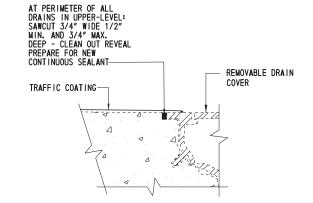
FINISH AS SPECIFIED

C-APPROVED EQUAL

OTAL SHTS

A-100





PROCEDURE

- SCARIFY EXISTING COATING IN ORDER TO COMPLETELY REMOVE COATING AND EXPOSE CONCRETE DECK.
- 2. RAKE OUT DEBRIS FROM REVEAL AROUND EXPOSED FRAME OF DRAIN BODY.
- 3. INSTALL SEALANT-COMPATIBLE WITH COATING.
- INSTALL NEW TRAFFIC COATING; BRIDGE REVEAL (ALL SIDES), EXTEND TRAFFIC COATING ON FRAME OF DRAIN BODY ALL SIDES.
- DECK DRAIN DETAIL AT UPPER=LEVEL SCALE: NOT TO SCALE

CONCRETE SPANDREL (TYP) RAKE OUT ¾" DEEP MORTAR JOINT, COAT STEEL PLATES WITH RUST INHIBITOR AND PROVIDE CONTINUOUS (TYP) RAKE OUT SEALANT JOINT & REPOINT WITH MORTAR CONCRETE RETAINING **INTERIOR EXTERIOR** 10" V. 1. F.

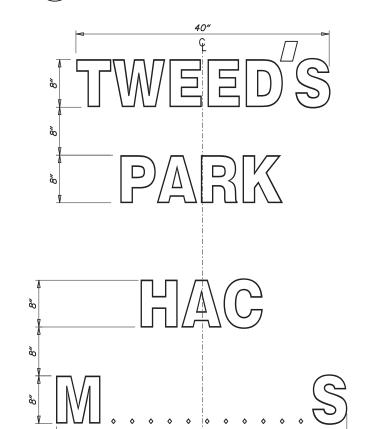
SECTION DETAIL

VARIES 9'-0" TYPICAL AISLE TYP. STALL PARKING

0,0 4" MIN. 6" MAX. 1' -5" 10" 1' -5" **PAVEMENT** STRIPING, TYP. TRAFFIC ARROW, TYP. LETTER, TYP.

USE NON-REFLECTIVE PAINT, TYP. REFER TO SPECIAL PROVISION FOR ITEM 763569 FOR BALANCE OF INFORMATION

# PAVEMENT MARKINGS SCALE: NOT TO SCALE



TYPICAL PARKING LETTERING DETAILS EACH UPPER LEVEL PARKING STALL TO HAVE REFLECTIVE NAME REFER TO PLANS FOR LOCATION

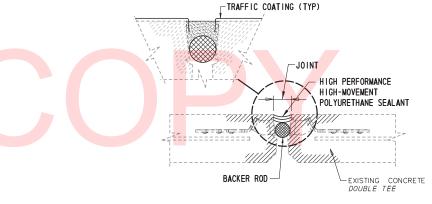
45"

# SCALE: NOT TO SCALE

Clearance 7'8"

- 1. CLEARANCE BAR TO BE 1/4 INCH THICK (MIN) HIGH DENSITY POLYETHYLENE (HDPE) WITH EYEHOOK ASSEMBLY AND TWO (2) 24 INCH LONG GALVANIZED STEEL CHAIN LINK GRADE 30.
- 2. BAR MOUNTING HEIGH ELEVATION 7'-8" TO UNDER SIDE BAR FROM FLOOR SURFACE BAR IS TO BE YELLOW BACKGROUND WITH BLACK LETTERING AND REFLECTIVE RED STRIPES- TWO EACH END. ALL TUBES ARE TO HAVE CLOSED ENDS.
- 3. PROVIDE TWO BARS AT EACH LOCATION, ONE CENTERED IN EACH DRIVE LANE.
- 4. LETTERING IS TO FACE UPCOMING TRAFFIC DIRECTION. A. IDEAL SHIELD - CLEARANCE BARS SYSTEM HDPE 5.25" DIAMETER AND 78" LONG B. POST GUARD - CLEARANCE BARS HDPE 4.5" DIAMETER AND 80" LONG C. TRAFFIC PROTECTORS CLEARANCE BARS 5" DIAMETER AND 80" LONG D. OR APPROVED EQUAL

CLEARANCE BAR DETAIL SCALE: NOT TO SCALE



TYP DECK JOINT DETAIL SCALE: NOT TO SCALE

### PROCEDURE

- 1. REMOVE EXISTING JOINT SEALANT. CLEAN ALL SURFACES AS PER MANUFACTURER'S WRITTEN INSTALLATIONS INSTRUCTIONS.
- 2. INSTALL TRAFFIC COATING AFTER STRUCTURAL CONCRETE REPAIRS TO JOINTS ARE COMPLETE. COATING SHALL TURN DOWN INTO VERTICAL SURFACE OF DT JOINT.
- 3. INSTALL CLOSED CELL BACKER ROD PER MANUFACTURER'S RECOMMENDATION BACKER TO BE OVERSIZED (25% TO 50%) TO FIT TIGHTLY INTO JOINT.
- 4. INSTALL HIGH PERFORMANCE HIGH-MOVEMENT POLYURETHANE SEALANT PER MANUFACTURER'S RECOMMENDATION. SEE SPECIAL PROVISION FOR ITEM 763569.

DELAWARE **DEPARTMENT OF TRANSPORTATION** 

ADDENDUMS / REVISIONS

SCALE AS NOTED

TWEEDS MILL PARKING STRUCTURE REPAIRS

CONTRACT	BRIDGE NO.	N/A	
T201550004	000201	IVA	
1201550004	DECICNED DV	ے ا	
COUNTY	DESIGNED BT:	NIELS R. BENAVIDES	3
NEW CASTLE	CHECKED BY:	S. TOMASIELLO	

SECTIONS AND DETAILS

OTAL SHTS. 31

A-400

# DETAIL SYMBOLS



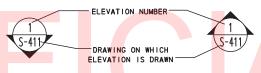
- DRAWING NUMBER ON WHICH SECTION OR DETAIL IS DRAWN

SYMBOL WHERE SECTION IS TAKEN

DETAIL IDENTIFICATION NUMBER

OWER-LEVEL PLAN SCALE: 1/16" = 1'-0'

# TITLE WHERE SECTION IS DRAWN



ELEVATION SYMBOL

# GENERAL NOTES

- PROJECT NOTES:
- d. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT NOTES PROVIDED ON DRAWING PN-001.
- 2. LOADING:
  - d. DESIGN LOADING FOR REHAB WORK IS PER IBC 2015 AND ASCE 7-10 "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES".
  - THE UPPER LEVEL OF THE GARAGE IS DESIGNED FOR A TOTAL SUPERIMPOSED LOAD OF 75 PSF, COMPRISED OF THE FOLLOWING: 1. LIVE LOAD FOR PARKING GARAGE WITH PASSENGER VEHICLES: 40 PSF, OR A 3000 LB CONCENTRATED LOAD.

II. ROOF SNOW LOAD: 25 PSF

111. SUPERIMPOSED DEAD LOAD: 5 PSF IV. FUTURE ALLOWANCE: 5 PSF.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE MAXIMUM ALLOWABLE CONSTRUCTION EQUIPMENT AND MATERIAL WEIGHTS WHICH MAY BE IMPOSED ON THE UPPER-LEVEL OF THE GARAGE PER THE PROJECT NOTES ON PN-001.

# 3. CONCRETE:

- a. ALL CONCRETE WORK SHALL COMPLY WITH DELDOT SPECIFICATIONS AND WITH ACI 318: "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE".
- PIERS FOOTINGS, SLAB ON GRADE:
- CLASS A (MINIMUM f'c = 4500 PSI @ 28 DAYS)
- ALL OTHER CONCRETE, INCLUDING SLAB REPAIRS:
- CLASS A AND MINIMUM f'c = 5000 PSI @ 28 DAYS
- MIX REQUIREMENTS SHALL CONFORM TO SECTION 812 OF THE DELDOT STANDARD SPECIFICATIONS.
- ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4" UNLESS OTHERWISE NOTED. UPPER-LEVEL SLAB REPAIRS SHALL NOT BE CHAMFERED.
- CONTRACTOR SHALL USE WET DIAMOND BLADE SAW CUTTING FOR CONCRETE REMOVAL OPERATIONS.
- ALL STRUCTURAL SLAB REPAIRS SHALL BE COMPLETED AND PROPERLY CURED PRIOR TO APPLYING ARCHITECTURAL COATINGS AND TREATMENTS.
- 4. BAR REINFORCEMENT:
- a. REINFORCING STEEL SHALL CONFORM TO AASHTO M31 (ASTM A615), GRADE 60. UNCOATED.
- CLEAR COVER SHALL BE PER ACI 318, BUT NOT LESS THAN INDICATED
- WELDING OF REINFORCEMENT DURING FABRICATION OR CONSTRUCTION IS NOT PERMITTED

STRUCTURAL STEEL:

S-411

- d. ALL STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH AISC 360 "SPECIFICATION FOR STRUCTURAL STEEL BILLI DINGS"
- STRUCTURAL STEEL ASTM DESIGNATIONS SHALL BE AS FOLLOWS:
  - i. WIDE FLANGES AND TEES: A992 (Fy=50 KSI)
  - 11. CHANNELS: A572 GRADE 50 (Fy=50 KSI)
  - 111. HSS TUBES (RECT & SQUARE): A500 GRADE B (46 KSI) IV. HSS TUBES (ROUND): A500 GRADE B (42 KSI)

  - v. PIPES: A53 GRADE B (35 KSI)
  - v1. ANGLES: A36 (36 KSI) v11. PLATES: A36 (36 KSI)
  - ANCHOR BOLTS SHALL BE ROUND BAR STOCK, THREADED, CONFORMING TO ASTM F1554, GRADE 36 MIN UNLESS OTHERWISE NOTED. ANCHOR BOLTS SHALL BE SUPPLIED WITH CORRESPONDING NUTS AND WASHERS.
  - ALL WELDING SHALL COMPLY WITH AWS D1.1 "STRUCTURAL WELDING CODE - STEEL'
- FOR FIELD WELDING, ONLY LOW HYDROGEN E70XX ELECTRODES SHALL
- FOUNDATIONS AND SLABS ON GRADE:
  - d. BEARING STRATA SHALL HAVE A MINIMUM BEARING CAPACITY OF 2500 PSF BASED ON THE APRIL 2015 GEOTECHNICAL REPORT BY DUFFIELD ASSOCIATES AND BE COMPACTED TO HIGH DENSITY EQUIVALENT TO A MINIMUM OF 98% MAXIMUM DENSITY AT OPTIMUM MOISTURE DETERMINED BY SOIL COMPACTION TEST (ASTM D698).
  - A 10 INCH THICK LAYER OF DELDOT GRADED AGGREGATE TYPE B PER DELDOT STANDARD SPECIFICATION SECTIONS 302 AND 821 IS TO BE PLACED UNDER ALL SLABS ON GRADE.
- 7. MISCELLANEOUS ARCHITECTURAL AND ELECTRICAL ANCHORAGES:
  - a. MATERIALS:
    - 1. STRUCTURAL STEEL FOR FABRICATED SUPPORTS AND RESTRAINTS: ASTM A 36/A 36M, STEEL PLATES, SHAPES, AND BARS; GALVANIZED PER ASTM A123.
    - II. MOUNTING. ANCHORING. AND ATTACHMENT COMPONENTS: ITEMS FOR FASTENING ITEMS OR THEIR SUPPORTS TO BUILDING SURFACES INCLUDE THE FOLLOWING:
      - d. MECHANICAL EXPANSION ANCHORS: SEE SPECIFICATION SECTION 030135 "CONCRETE REHABILITATION" IN "APPENDIX A" OF SPECIAL PROVISION FOR ITEM 763569.
    - THROUGH BOLTS: STRUCTURAL TYPE, HEX HEAD, AND ZINC-COATED. COMPLY WITH ASTM A 307.
    - III. RATED STRENGTH: ADEQUATE IN TENSION, SHEAR, AND PULLOUT FORCE TO RESIST MAXIMUM LOADS CALCULATED OR IMPOSED FOR THIS PROJECT, WITH A MINIMUM STRUCTURAL SAFETY FACTOR OF FIVE TIMES THE APPLIED FORCE, MINIMUM DIAMETER OF ANCHORAGES SHALL BE 5/16".
    - IV. COORDINATE SIZE AND LOCATION OF ANCHORAGES WITH EQUIPMENT MANUFACTURER'S WRITTEN INSTRUCTIONS FOR INSTALLATION.
  - b. SUPPORT INSTALLATION
    - MOUNTING AND ANCHORAGE OF SURFACE-MOUNTED EQUIPMENT AND COMPONENTS: ANCHOR AND FASTEN ELECTRICAL ITEMS AND THEIR SUPPORTS TO BUILDING STRUCTURAL ELEMENTS BY THE FOLLOWING METHODS UNLESS OTHERWISE INDICATED BY CODE:
      - TO EXISTING CONCRETE: MECHANICAL EXPANSION ANCHORS.
      - ITEMS MOUNTED ON HOLLOW WALLS AND NONSTRUCTURAL BUILDING SURFACES: MOUNT CABINETS, PANELBOARDS, DISCONNECT SWITCHES, CONTROL ENCLOSURES, SIGNS, PULL AND JUNCTION BOXES. TRANSFORMERS. AND OTHER DEVICES ON SLOTTED-CHANNEL RACKS ATTACHED TO SUBSTRATE VIA THROUGH BOLTS.
    - 11. CUT, FIT, AND PLACE MISCELLANEOUS METAL SUPPORTS ACCURATELY IN LOCATION, ALIGNMENT, AND ELEVATION TO SUPPORT AND ANCHOR MATERIALS AND EQUIPMENT.
  - c. PAINTING
    - TOUCHUP: COMPLY WITH REQUIREMENTS IN SPECIFICATION SECTION 099113 "EXTERIOR PAINTING" IN "APPENDIX A" OF SPECIAL PROVISION FOR ITEM 763569 FOR CLEANING AND TOUCHUP PAINTING OF BOLTED CONNECTIONS AND ABRADED AREAS OF SHOP PAINT ON MISCELLANEOUS METAL.
    - 11. GALVANIZED SURFACES: CLEAN BOLTED CONNECTIONS AND ABRADED AREAS AND APPLY GALVANIZING-REPAIR PAINT TO COMPLY WITH ASTM A 780.

**DELAWARE DEPARTMENT OF TRANSPORTATION** 

LOC LG or L

LSL LONGIT LP

ADDENDUMS / REVISIONS

SCALE AS NOTED

TWEEDS MILL PARKING STRUCTURE REPAIRS

BRIDGE NO. N/A T20155000 ESIGNED BY: GSH COUNTY NEW CASTLE CHECKED BY: NPU

**STRUCTURES** 

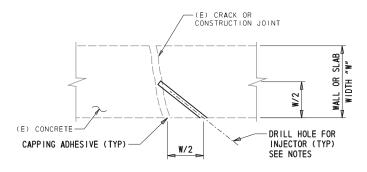
SHEET NO. 10 OTAL SHTS

S-001

**GENERAL NOTES -**

# TYPE 1: TYPICAL EPOXY INJEC<mark>T</mark>ION CRACK REPAIR DETAIL NOT TO SCALE

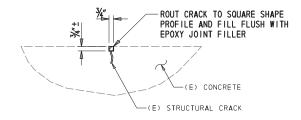
- THIS DETAIL APPLIES AT NON-MOVING CRACKS AS SHOWN ON PLAN LIMITED TO A RANGE OF 0.005" TO 0.25" IN WIDTH IN CONCRETE BEAM, WALL OR SLAB SURFACES WITH NO EVIDENCE OF ACTIVE OR INACTIVE LEAKAGE.
- THOROUGHLY CLEAN CRACK AND COMPLETELY REMOVE LOOSE PARTICLES, DIRT, GREASE, LAITANCE, SALT AND ANY OTHER CONTAMINANTS THAT WOULD PREVENT BONDING OF THE REPAIR COMPOUND TO THE STRUCTURE.
- REPAIRS SHALL BE INJECTED WITH AN APPROVED TWO-COMPONENT, EPOXY COMPOUND SUITABLE FOR REPAIRING CONCRETE CRACKS BY PRESSURE INJECTION.
- FINISHED CRACK SURFACE SHALL BE FLUSH WITH ADJACENT CONCRETE



# TYPE 2: TYPICAL LEAKING CRACK INJECTION GROUTING DETAIL

# NOT TO SCALE

- THIS DETAIL APPLIES AT ALL CRACKS AND CONSTRUCTION JOINTS IN CONCRETE WALLS AND SLABS THAT SHOW VISIBLE EVIDENCE OF PRESENT (ACTIVE) LEAKAGE OR PREVIOUS (INACTIVE) LEAKAGE. SEE TYPE 1 REPAIR DETAIL THIS SHEET IF SLABS OR WALLS ARE NOT ACTIVELY LEAKING AND DO NOT EXHIBIT SIGNS OF PREVIOUS LEAKAGE.
- DRILL HOLE SIZE SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- INSTALL INJECTION PORTS AND PRESSURE INJECT HYDRO ACTIVE GROUT AT EACH HOLE LOCATION.
- REMOVE INJECTION PORTS AND FILL HOLES WITH DRYPACK MORTAR AFTER PRESSURE INJECTION WORK IS COMPLETE.



# TYPE 3: TYPICAL ROUT AND SEAL <mark>CR</mark>ACK REPAIR DETAIL

### NOT TO SCALE

- THIS DETAIL APPLIES ONLY AT CRACKS AND CONSTRUCTION JOINTS IN CONCRETE ELEMENTS AS SHOWN ON PLAN THAT ARE NOT ACTIVELY LEAKING AND DO NOT EXHIBIT
- CUT OR CHISEL CRACK TO A MINIMUM DEPTH OF  $\frac{3}{4}$ " WITH A SQUARE SHAPE OF  $\frac{3}{4}$ " WIDTH.
- THOROUGHLY CLEAN CRACK AND COMPLETELY REMOVE LOOSE PARTICLES, DIRT, GREASE, LAITANCE, SALT AND ANY OTHER CONTAMINANTS THAT WOULD PREVENT BONDING OF THE REPAIR COMPOUND TO THE STRUCTURE.
- MIX AND APPLY APPROPRIATE EPOXY JOINT FILLER IN STRICT ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS DEPENDING ON WHETHER THE CRACK IS AT A HORIZONTAL,

REQUIRED SPECIAL INSPEC	TIONS AND T	ESTS OF C <mark>O</mark> N	CRETE CONST	RUCTION
TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD	IBC REFERENCE
1. INSPECT REINFORCEMENT AND VERIFY PLACEMENT.	-	X	ACI 318 CH. 20, 25.2, 25.3, 26.5.1-26.5.3	1908. 4
2. INSPECT ANCHORS CAST IN CONCRETE.	-	x	ACI 318:17.8.2	-
3. INSPECT MECHANICAL ANCHORS AND ADHESIVE ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS.	-	Х	ACI 318: 17.8.2	-
4. VERIFY USE OF REQUIRED DESIGN MIX.	-	Х	ACI 318: CH. 19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3
5. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	х	-	ASTM C 172 ASTM C 31 ACI 318: 26.4.5,26.12	1908. 10
6. INSPECT CONCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	х	-	ACI 318: 26.4.5	1908.6, 1908.7, 1908.8
7. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	-	Х	ACI 318: 26. 4. 7-26. 4. 9	1908. 9
8. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	-	Х	ACI 318: 26.10.1(B)	-

### CONTINUOUS SPECIAL PERIODIC SPECIAL INSPECTION INSPECTION VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY. Χ 2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH Х AND HAVE REACHED PROPER MATERIAL. 3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED Х FILL MATERIALS. 4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.

REQUIRED SPECIAL INSPECTIONS AND TESTS OF SOILS

### NOTES:

 SEE SPECIFICATION SECTION 030135 "CONCRETE REHABILITATION" IN "APPENDIX A" OF SPECIAL PROVISION FOR ITEM 763569 FOR ADDITIONAL INFORMATION (TYP).

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE AS NOTED

TWEEDS MILL PARKING STRUCTURE REPAIRS

5. PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT THE SITE HAS BEEN

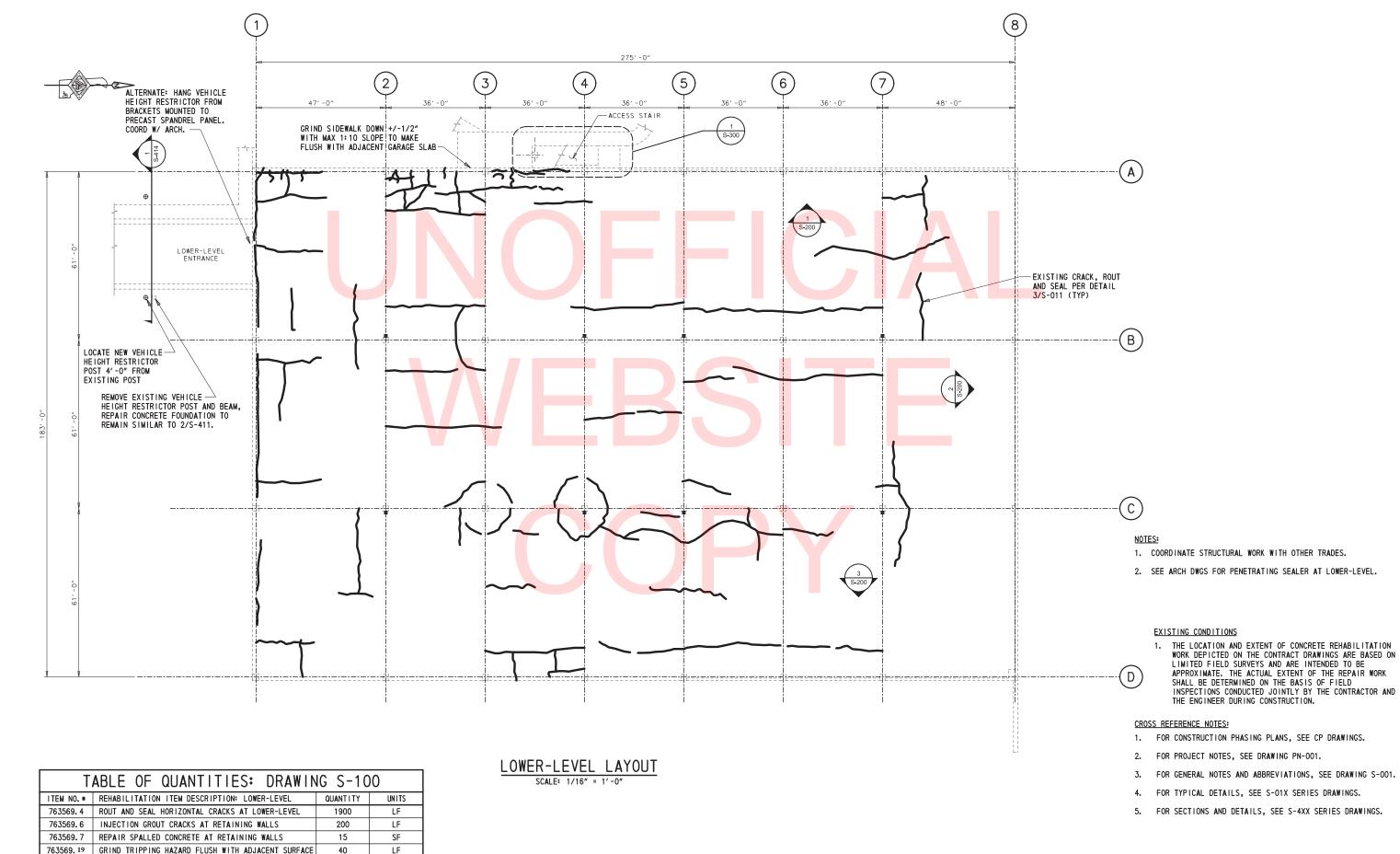
PREPARED PROPERLY.

BRIDGE NO. N/A T201550004 ESIGNED BY: GSH COUNTY CHECKED BY: NEW CASTLE

TYPICAL DETAILS

OTAL SHTS

S-011



S-100

12

OTAL SHTS.

LOWER-LEVEL PLAN

BRIDGE NO.

DESIGNED BY: GSH

CHECKED BY: NPU

T201550004

COUNTY

NEW CASTLE

TWEEDS MILL PARKING

STRUCTURE REPAIRS

N/A

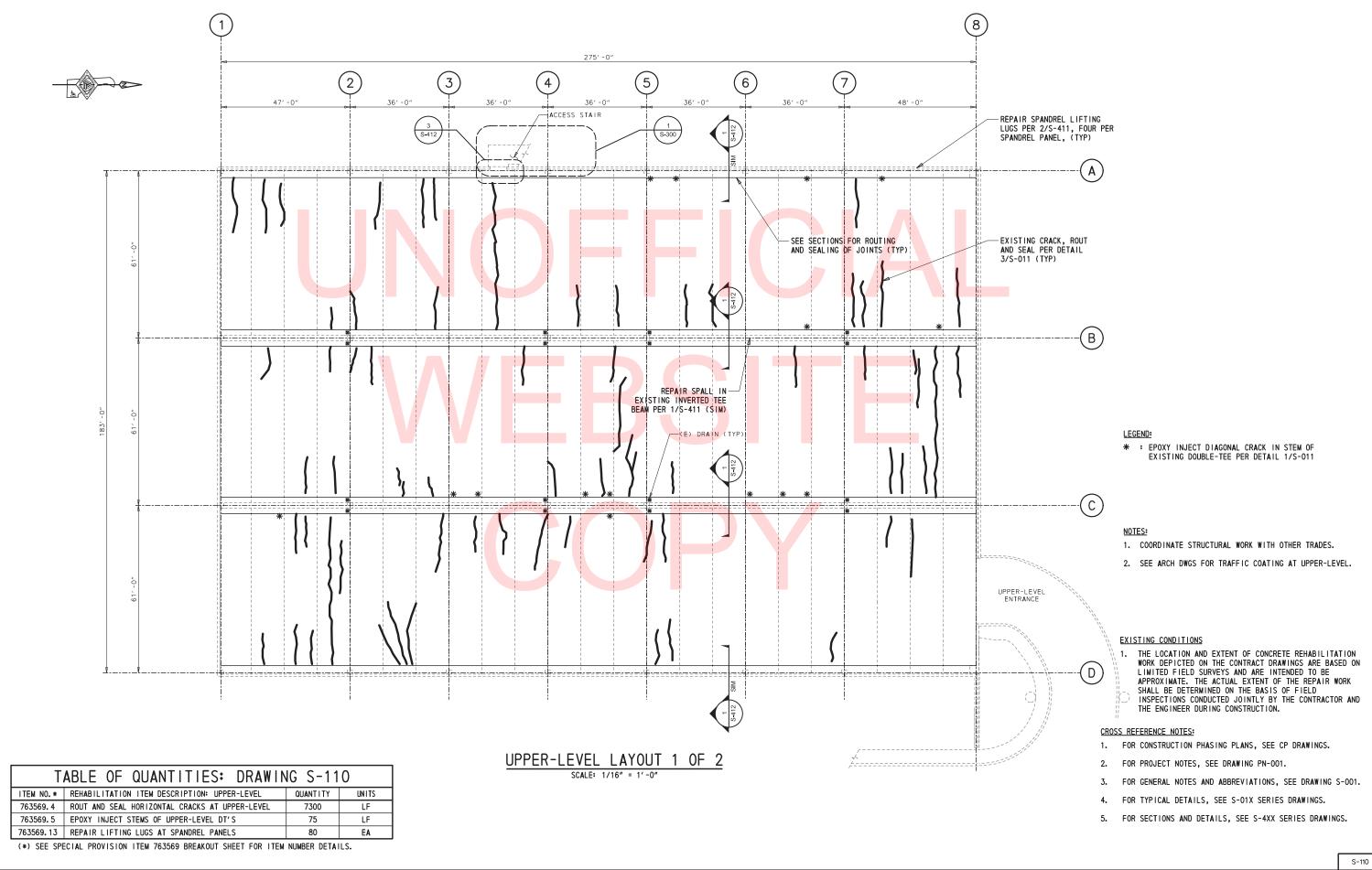
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(\*) SEE SPECIAL PROVISION ITEM 763569 BREAKOUT SHEET FOR ITEM NUMBER DETAILS.

DELAWARE

**DEPARTMENT OF TRANSPORTATION** 

ADDENDUMS / REVISIONS



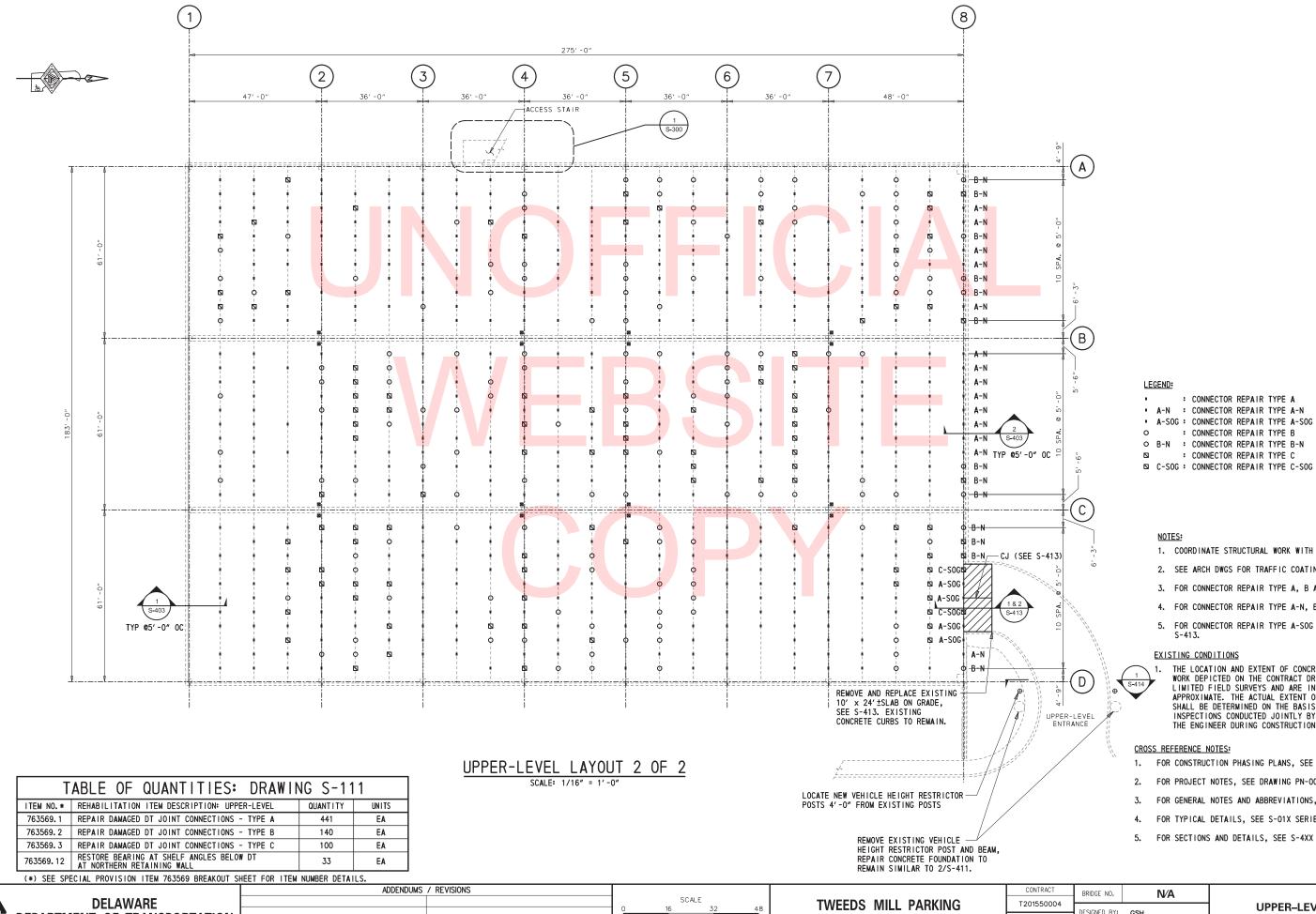
DELAWARE **DEPARTMENT OF TRANSPORTATION**  ADDENDUMS / REVISIONS

TWEEDS MILL PARKING STRUCTURE REPAIRS

BRIDGE NO. N/A T201550004 DESIGNED BY: GSH COUNTY CHECKED BY: NPU NEW CASTLE

**UPPER-LEVEL** PLAN - SHEET 1

OTAL SHTS.



1. COORDINATE STRUCTURAL WORK WITH OTHER TRADES.

: CONNECTOR REPAIR TYPE A

: CONNECTOR REPAIR TYPE B

: CONNECTOR REPAIR TYPE C

- 2. SEE ARCH DWGS FOR TRAFFIC COATING AT UPPER-LEVEL.
- 3. FOR CONNECTOR REPAIR TYPE A, B AND C SEE S-401.
- 4. FOR CONNECTOR REPAIR TYPE A-N, B-N AND C-N SEE S-402.
- 5. FOR CONNECTOR REPAIR TYPE A-SOG AND C-SOG SEE S-402 &

### EXISTING CONDITIONS

THE LOCATION AND EXTENT OF CONCRETE REHABILITATION WORK DEPICTED ON THE CONTRACT DRAWINGS ARE BASED ON LIMITED FIELD SURVEYS AND ARE INTENDED TO BE APPROXIMATE. THE ACTUAL EXTENT OF THE REPAIR WORK SHALL BE DETERMINED ON THE BASIS OF FIELD INSPECTIONS CONDUCTED JOINTLY BY THE CONTRACTOR AND THE ENGINEER DURING CONSTRUCTION.

### CROSS REFERENCE NOTES:

- FOR CONSTRUCTION PHASING PLANS, SEE CP DRAWINGS.
- 2. FOR PROJECT NOTES, SEE DRAWING PN-001.
- FOR GENERAL NOTES AND ABBREVIATIONS, SEE DRAWING S-001.
- 4. FOR TYPICAL DETAILS, SEE S-01X SERIES DRAWINGS.
- 5. FOR SECTIONS AND DETAILS, SEE S-4XX SERIES DRAWINGS.

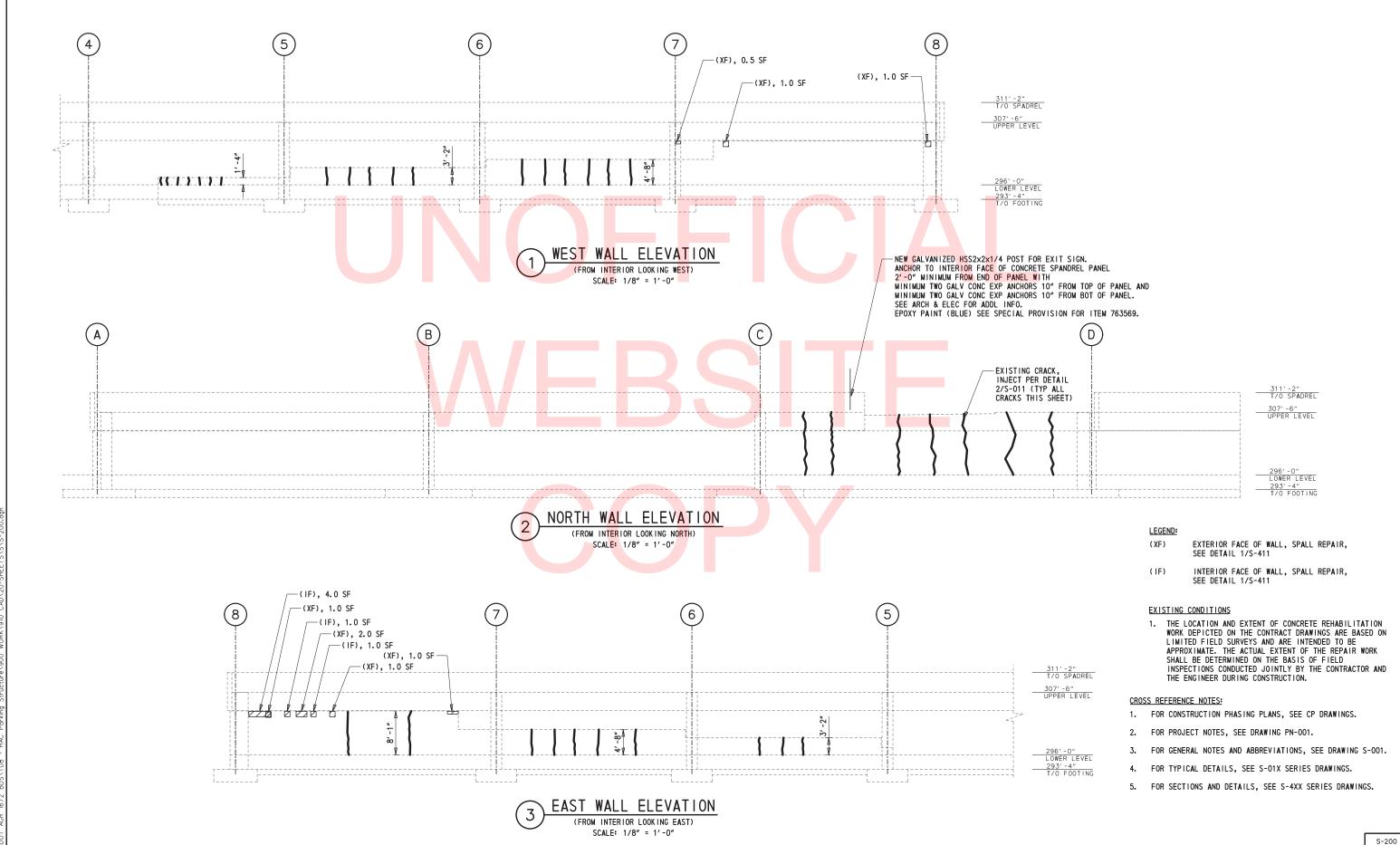
**DEPARTMENT OF TRANSPORTATION** 

STRUCTURE REPAIRS

N/A ESIGNED BY: GSH COUNTY CHECKED BY: NPU NEW CASTLE

**UPPER-LEVEL** PLAN - SHEET 2

S-111 OTAL SHTS.



DELAWARE

**DEPARTMENT OF TRANSPORTATION** 

ADDENDUMS / REVISIONS

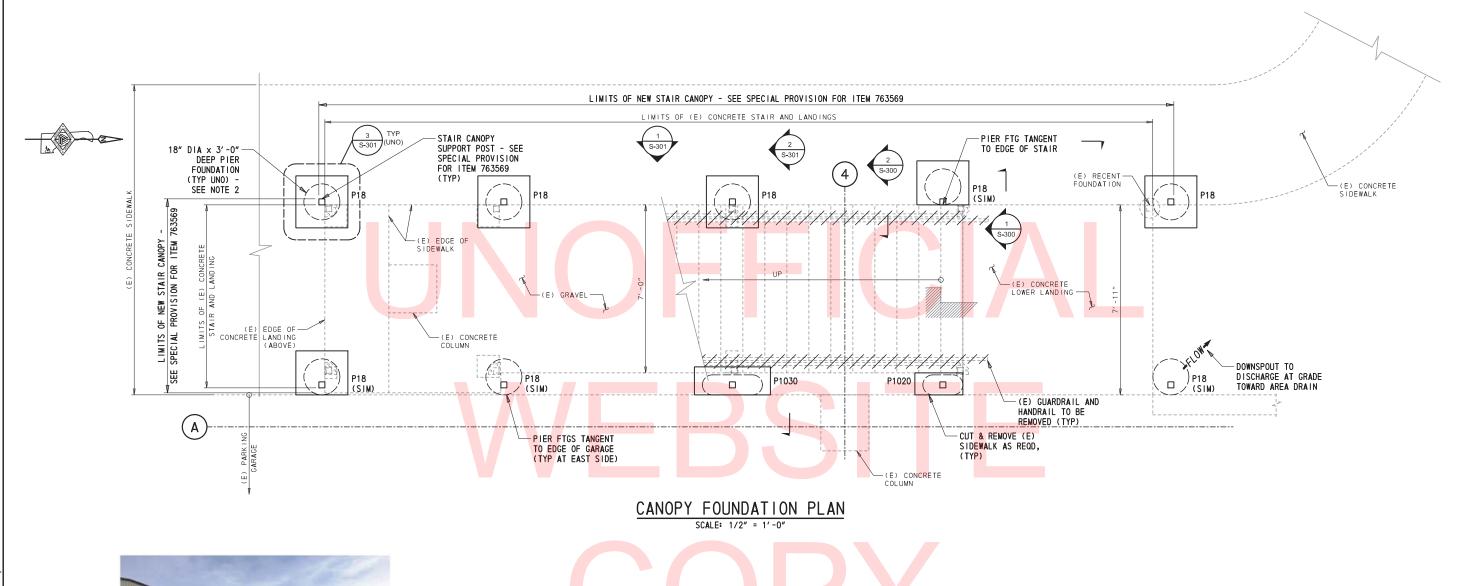
TWEEDS MILL PARKING STRUCTURE REPAIRS

BRIDGE NO. N/A T201550004 DESIGNED BY: GSH COUNTY NEW CASTLE CHECKED BY: NPU

**ELEVATIONS** 

15 OTAL SHTS.

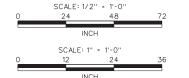
SHEET NO.





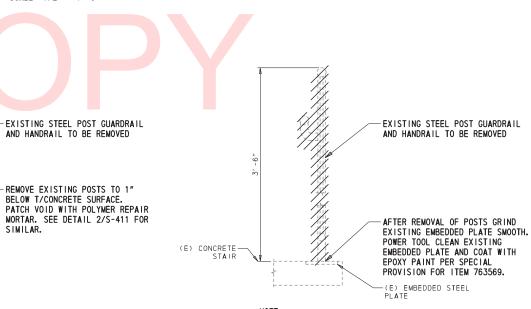
REFERENCE PHOTO FOR PROPOSED NEW CANOPY (SIMILAR)

NOT TO SCALE



NOTE:
(3) POSTS TO BE REMOVED AND
PATCHED. (70) LF OF GUARDRAIL
AND HANDRAIL TO BE REMOVED.

(E) CONCRETE — STAIR



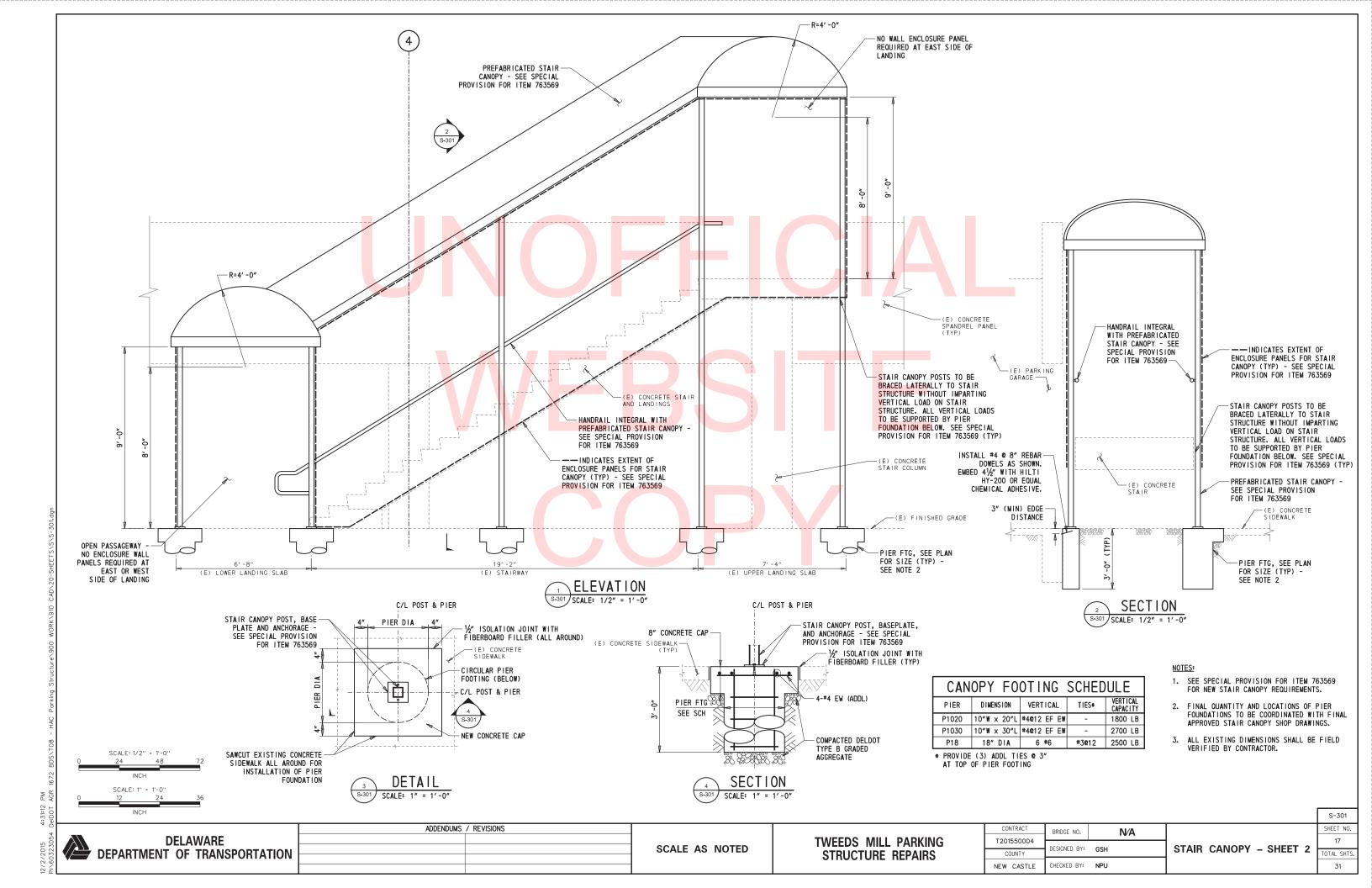
NOTE: (11) POSTS TO BE REMOVED. SEE SECTION 1/S-300 FOR GUARDRAIL AND HANDRAIL DETAILS.

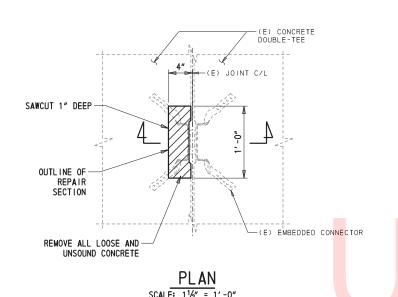
SECTION
SCALE: 1" = 1'-0"

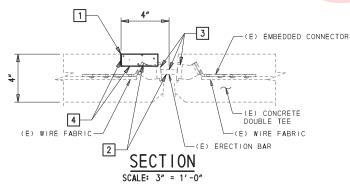
### NOTES:

- 1. SEE SPECIAL PROVISION FOR ITEM 763569 FOR NEW STAIR CANOPY REQUIREMENTS.
- FINAL QUANTITY AND LOCATIONS OF PIER FOUNDATIONS TO BE COORDINATED WITH FINAL APPROVED STAIR CANOPY SHOP DRAWINGS.
- 3. ALL EXISTING DIMENSIONS SHALL BE FIELD VERIFIED BY CONTRACTOR.
- 4. /// INDICATES EXTENT OF DEMOLITION.
- 5. P## INDICATES SONOTUBE PIER FOOTING. SEE CANOPY FOOTING SCHEDULE ON S-301.

							S-300
	ADDENDUMS / REVISIONS			CONTRACT	BRIDGE NO. NA		SHEET NO.
DELAWARE DEPARTMENT OF TRANSPORTATION	/ARE		TWEEDS MILL PARKING	T201550004	TVA	STAIR CANOPY - SHEET 1	16
		SCALE AS NOTED	STRUCTURE REPAIRS	COUNTY	DESIGNED BY: GSH		TOTAL SHTS.
			OTHOOTORE HELAINO	NEW CASTLE	CHECKED BY: NPU		31



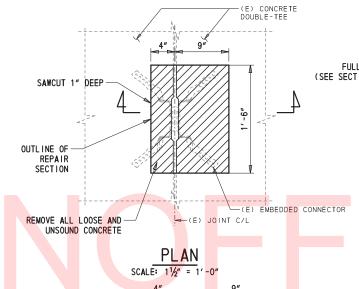


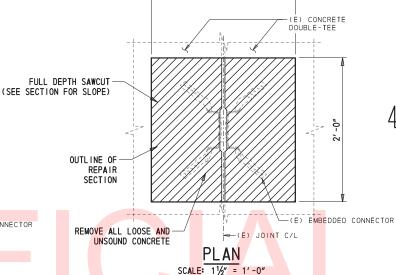


# CONNECTOR REPAIR TYPE A

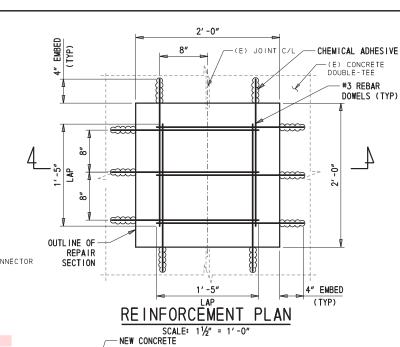
DEMOLITION AND REPAIR SEQUENCE FOR REPAIR TYPE A

- SAW CUT 1" DEEP AROUND PERIMETER OF REPAIR AREA TO DIMENSIONS SHOWN, INCLUSIVE OF 2" MINIMUM BUFFER IN PLAN BEYOND EXTENTS OF UNSOUND CONCRETE. DO NOT CUT EXISTING STEEL. REMOVE ALL UNSOUND
- CLEAN ALL EXPOSED STEEL INCLUDING WIRE FABRIC, ERECTION BAR, AND EMBED CONNECTORS.
- COAT STEEL TO REMAIN EXPOSED IN FINAL CONDITION WITH ZINC-RICH PAINT.
- PREP CONCRETE SURFACES, APPLY CORROSION-INHIBITING BONDING AGENT TO STEEL, AND PLACE POLYMER REPAIR MORTAR PER MANUFACTURER'S WRITTEN RECOMMENDATIONS.





2' -0"



4" EMBED (TYP)

└─(E) CONCRETE DOUBLE TEE

1'-1" (E) EMBEDDED CONNECTOR 4 3 6 (E) WIRE FABRIC-2 SEE REPAIR CE) CONCRETE CHEMICAL ADHESIVE 3/4" CLEAR TYPE A UNDER CONNECTOR -(E) WIRE FABRIC (E) ERECTION BAR SECTION SCALE: 3" = 1'-0"

CONNECTOR REPAIR TYPE B

DEMOLITION AND REPAIR SEQUENCE FOR REPAIR TYPE B REPAIR LEFT SIDE OF JOINT PER TYPE A CONNECTOR REPAIR REPAIR RIGHT SIDE OF JOINT AS FOLLOWS:

- SAW CUT 1" DEEP AROUND PERIM<mark>ETE</mark>R OF REPAIR AREA TO DIMENSIONS SHOWN, INCLUSIVE OF 2" MINIMUM BUFFER IN PLAN BEYOND EXTENTS OF UNSOUND CONCRETE. DO NOT CUT EXISTING STEEL. REMOVE ALL UNSOUND CONCRETE TO A MAXIMUM DEPTH OF 2" USING 17 LB
- WHERE CONCRETE REMOVAL EXPOSES EMBEDDED CONNECTORS, REMOVE A 3/4" MINIMUM ANNULAR SPACE SO THAT THE NEW REPAIR MORTAR WILL COMPLETELY ENCAPSULATE
- CLEAN ALL EXPOSED STEEL INCLUDING WIRE FABRIC, ERECTION BAR, AND EMBEDDED CONNECTORS.
- INSPECT WELDS. IF DAMAGED OR DETERIORATED, REWELD WITH 3/16" FILLET. COAT STEEL TO REMAIN EXPOSED IN
- INSTALL (3) STAINLESS 1/4" DIA EYEBOLTS @ 6" OC ALONG LONG EDGE, EMBED 1 1/2" WITH HILTI HY-200 OR EQUAL CHEMICAL ADHESIVE.
- PREP CONCRETE SURFACES, APPLY CORROSION-INHIBITING BONDING AGENT TO STEEL, AND PLACE POLYMER REPAIR MORTAR PER MANUFACTURER'S WRITTEN RECOMMENDATIONS.

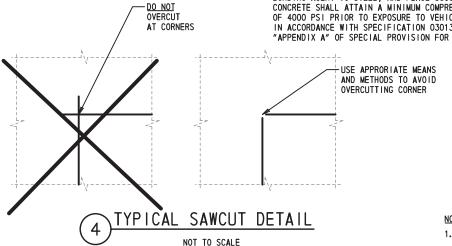


2' -0"

2

DEMOLITION AND REPAIR SEQUENCE FOR REPAIR TYPE C

- SAW CUT FULL DEPTH AROUND PERIMETER OF REPAIR AREA TO DIMENSIONS SHOWN, INCLUSIVE OF 2" MINIMUM BUFFER IN PLAN BEYOND EXTENTS OF UNSOUND CONCRETE. SLOPE SAW CUTS 1:4 AS SHOWN. REMOVE ALL UNSOUND
- INSTALL #3 REBAR DOWELS AS SHOWN, EMBED 4" WITH HILTI HY-200 OR EQUAL CHEMICAL ADHESIVE.
- PREP CONCRETE SURFACES, APPLY CORROSION-INHIBITING BONDING AGENT TO STEEL, AND PLACE 5000 PSI CONCRETE.
  CONCRETE SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI PRIOR TO EXPOSURE TO VEHICLE LOADING IN ACCORDANCE WITH SPECIFICATION 030135. 3. 3. G. 4 IN "APPENDIX A" OF SPECIAL PROVISION FOR ITEM 763569.





NOTES:

1. SEE SPECIFICATION SECTION 030135 "CONCRETE REHABILITATION" IN "APPENDIX A" OF SPECIAL PROVISION FOR ITEM 763569 FOR ADDITIONAL INFORMATION (TYP).

**DELAWARE** DEPARTMENT OF TRANSPORTATION

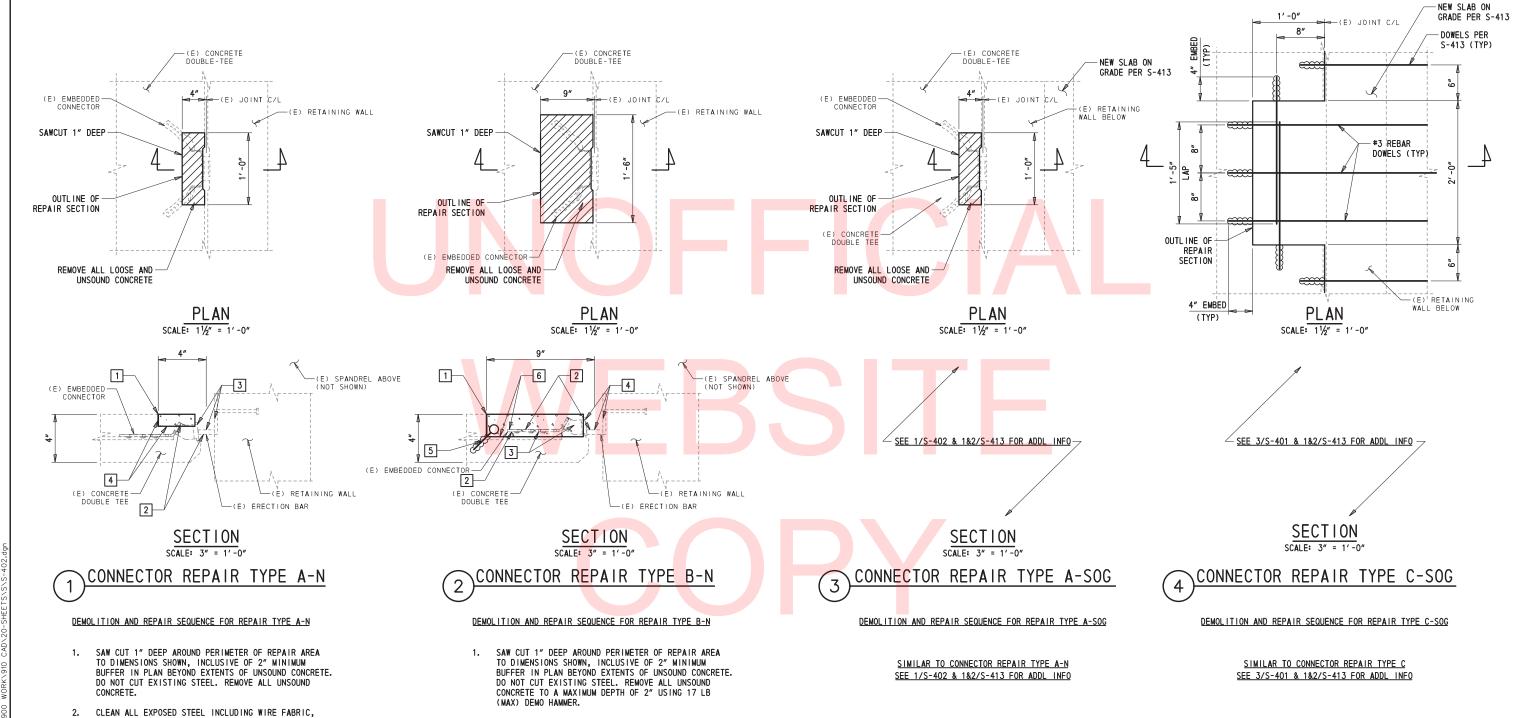
ADDENDUMS / REVISIONS SCALE AS NOTED

TWEEDS MILL PARKING STRUCTURE REPAIRS

CONTRACT BRIDGE NO. N/A T201550004 ESIGNED BY: GSH COUNTY CHECKED BY: NEW CASTLE

**CONNECTOR SECTIONS** AND DETAILS - SHEET 1

S-401 18 OTAL SHTS.



1. SEE SPECIFICATION SECTION 030135 "CONCRETE REHABILITATION" IN "APPENDIX A" OF SPECIAL PROVISION FOR ITEM 763569 FOR ADDITIONAL INFORMATION (TYP).

ERECTION BAR, AND EMBED CONNECTORS.

WITH ZINC-RICH PAINT.

COAT STEEL TO REMAIN EXPOSED IN FINAL CONDITION

PER MANUFACTURER'S WRITTEN RECOMMENDATIONS.

PREP CONCRETE SURFACES, APPLY CORROSION-INHIBITING

BONDING AGENT TO STEEL, AND PLACE POLYMER REPAIR MORTAR

WHERE CONCRETE REMOVAL EXPOSES EMBEDDED CONNECTORS, REMOVE A 3/4" MINIMUM ANNULAR SPACE SO THAT THE NEW REPAIR MORTAR WILL COMPLETELY ENCAPSULATE

- CLEAN ALL EXPOSED STEEL INCLUDING WIRE FABRIC, ERECTION BAR, AND EMBEDDED CONNECTORS.
- INSPECT WELDS. IF DAMAGED OR DETERIORATED, REWELD WITH 3/16" FILLET. COAT STEEL TO REMAIN EXPOSED IN FINAL CONDITION WITH ZINC-RICH PAINT.
- INSTALL (3) STAINLESS 1/4" DIA EYEBOLTS @ 6" OC ALONG LONG EDGE, EMBED 1 1/2" WITH HILTI HY-200 OR EQUAL CHEMICAL ADHESIVE.
- PREP CONCRETE SURFACES, APPLY CORROSION-INHIBITING BONDING AGENT TO STEEL, AND PLACE POLYMER REPAIR MORTAR

PER MANUFACTURER'S WRITTEN RECOMMENDATIONS. ADDENDUMS / REVISIONS

S-402 CONTRACT BRIDGE NO. N/A DELAWARE T201550004 TWEEDS MILL PARKING **CONNECTOR SECTIONS** SCALE AS NOTED ESIGNED BY: GSH **DEPARTMENT OF TRANSPORTATION** AND DETAILS - SHEET 2 OTAL SHTS. STRUCTURE REPAIRS COUNTY CHECKED BY: NEW CASTLE

# REPAIR SEQUENCE

- 1. TIGHTEN ALL EXISTING NUTS.
- POWER TOOL CLEAN ALL EXPOSED STEEL AND COAT STEEL WITH ZINC-RICH PAINT.
- B. CLEAN AND FILL IN ALL GAPS BETWEEN ANGLE AND CONCRETE FACES WITH DRYPACK NON-SHRINK MORTAR TO ACHIEVE FULL BEARING.

### NOTES:

 SEE SPECIFICATION SECTION 030135 "CONCRETE REHABILITATION" IN "APPENDIX A" OF SPECIAL PROVISION FOR ITEM 763569 FOR ADDITIONAL INFORMATION (TYP).

	SCAL	E: 11/2" =	1'-0''	
0	6	12	18	24
		INCH		
	SCA	LE: 3" = '	1'-0''	
0	3	6	9	12
		INCH		

		ADDENDUMS	/ REVISIONS
	DELAWARE		
	DEPARTMENT OF TRANSPORTATION		
	DEPARTIVIENT OF TRANSPORTATION		

SCALE AS NOTED

TWEEDS MILL PARKING STRUCTURE REPAIRS

CONTRACT
BRIDGE NO.

T201550004

COUNTY

DESIGNED BY: GSH

NEW CASTLE
CHECKED BY: NPU

CONNECTOR SECTIONS
AND DETAILS - SHEET 3

SHEET NO.

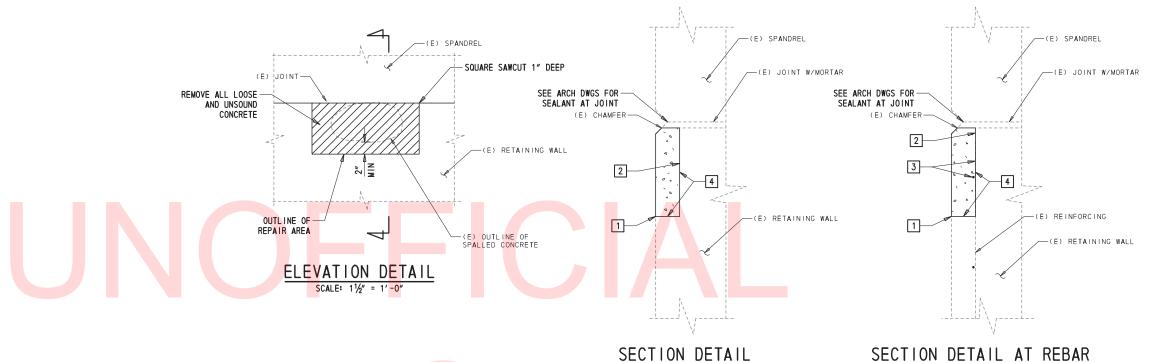
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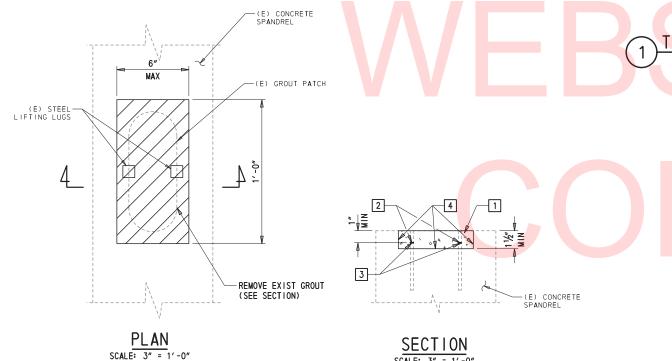
TOTAL SHTS.

31

S-403

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# TYPICAL CONCRETE WALL SPALL REPAIR DETAIL

## DEMOLITION AND REPAIR SEQUENCE FOR WALL SPALL

- 1. SAW CUT 1" DEEP AROUND PERIMETER OF REPAIR AREA, WITH 2" MINIMUM BUFFER BEYOND EXTENTS OF UNSOUND CONCRETE. DO NOT CUT EXISTING STEEL.
- 2. REMOVE ALL UNSOUND CONCRETE TO SOUND SUBSTRATE.
- WHERE STEEL REINFORCING OR SHIMS ARE PRESENT, CLEAN ALL EXPOSED REINFORCING STEEL AND SHIMS AND APPLY CORROSION-INHIBITING BONDING AGENT.
- PREP SURFACES OF CONCRETE AND PLACE POLYMER REPAIR MORTAR PER MFR'S WRITTEN RECOMMENDATIONS FLUSH WITH ADJACENT CONCRETE SURFACES AND MATCH EXISTING CHAMFERED PROFILE.

# TYPICAL SPANDREL LIFTING LUGS REPAIR DETAIL

DEMOLITION AND REPAIR SEQUENCE FOR SPANDREL LIFTING LUGS REPAIR

- 1. REMOVE EXIST GROUT PATCH TO A MINIMUM DEPTH OF 11/2".
- 2. CUT EXIST STEEL LIFTING LUGS TO A MINIMUM DEPTH OF 1".
- CLEAN EXPOSED STEEL LIFTING LUGS.
- PREP SURFACES OF CONCRETE, APPLY CORROSION-INHIBITING BONDIND AGENT TO STEEL, AND PLACE POLYMER REPAIR MORTAR PER MFR'S WRITTEN RECOMMENDATIONS FLUSH WITH ADJACENT SURFACES.

# NOTES:

SCALE: 3" = 1'-0"

1. SEE SPECIFICATION SECTION 030135 "CONCRETE REHABILITATION" IN "APPENDIX A" OF SPECIAL PROVISION FOR ITEM 763569 FOR ADDITIONAL INFORMATION (TYP).

ADDENDUMS / REVISIONS **DELAWARE DEPARTMENT OF TRANSPORTATION** 

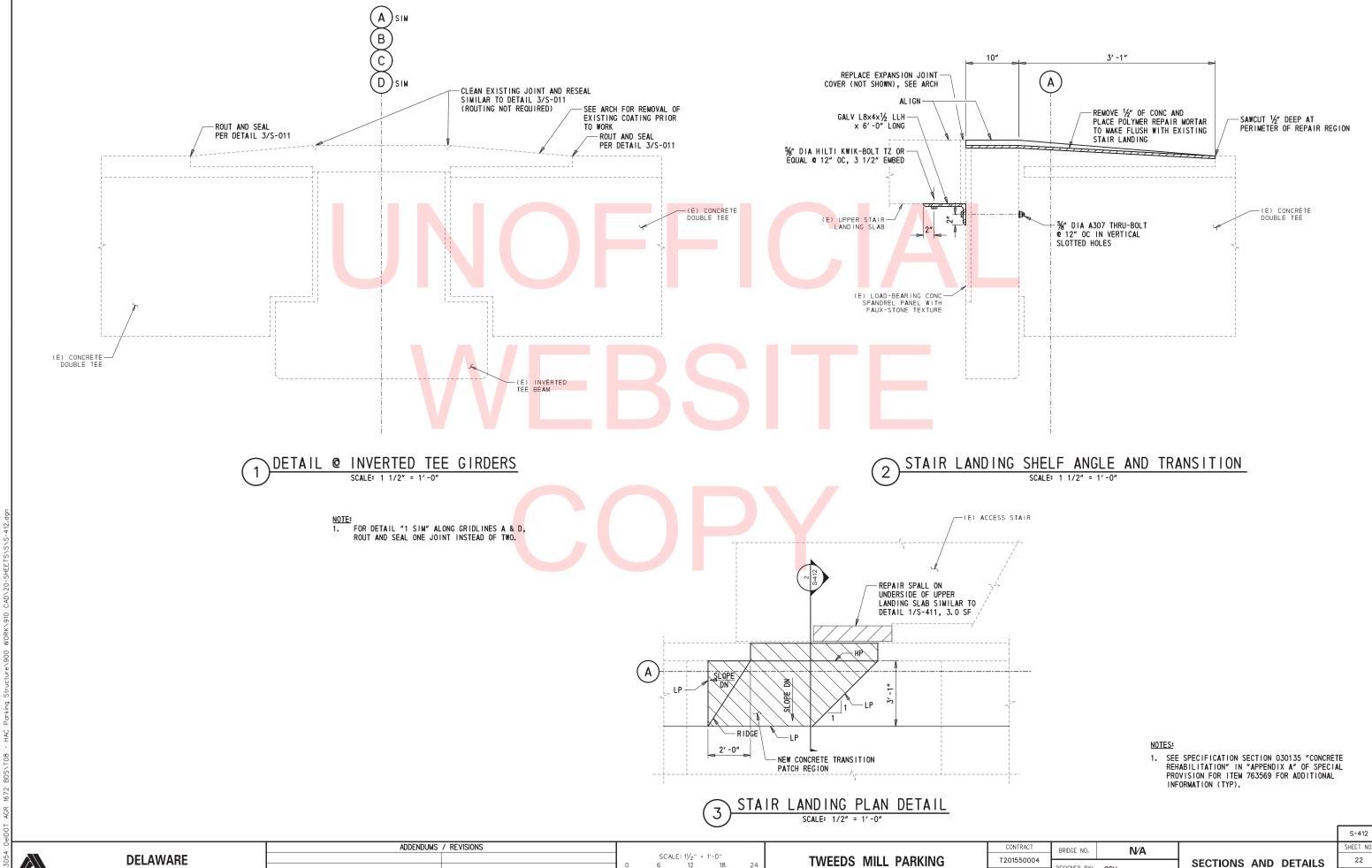
SCALE AS NOTED

TWEEDS MILL PARKING STRUCTURE REPAIRS

CONTRACT BRIDGE NO. N/A T201550004 ESIGNED BY: GSH COUNTY CHECKED BY: NPU NEW CASTLE

**SECTIONS AND DETAILS** SHEET 1

S-411 21 OTAL SHTS. 31



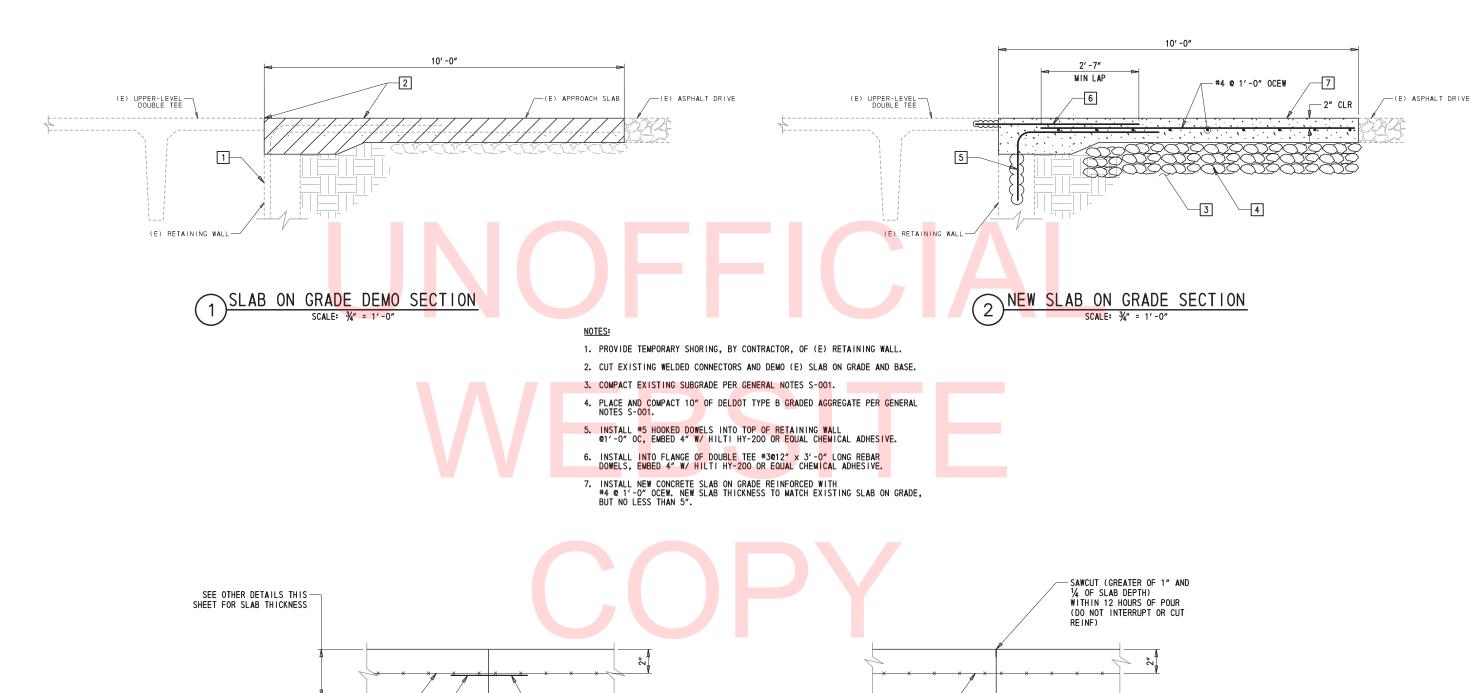
**DEPARTMENT OF TRANSPORTATION** 

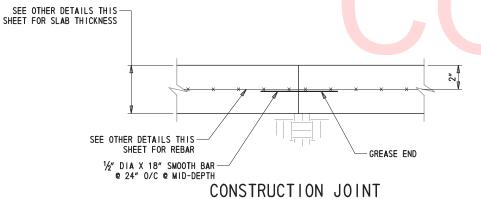
STRUCTURE REPAIRS

DESIGNED BY: GSH COUNTY NEW CASTLE CHECKED BY: NPU

SECTIONS AND DETAILS SHEET 2

OTAL SHTS. 31





SEE PLAN

CONTROL JOINT

# SLAB ON GRADE DETAILS

LOCATE CONTROL JOINTS/CONSTRUCTION JOINTS TO CREATE PANELS OF 225 SQ FEET (MAXIMUM), WITH PANEL ASPECT RATIOS NO GREATER THAN 1.5 TO 1.

ADDENDUMS / REVISIONS **DELAWARE DEPARTMENT OF TRANSPORTATION** 

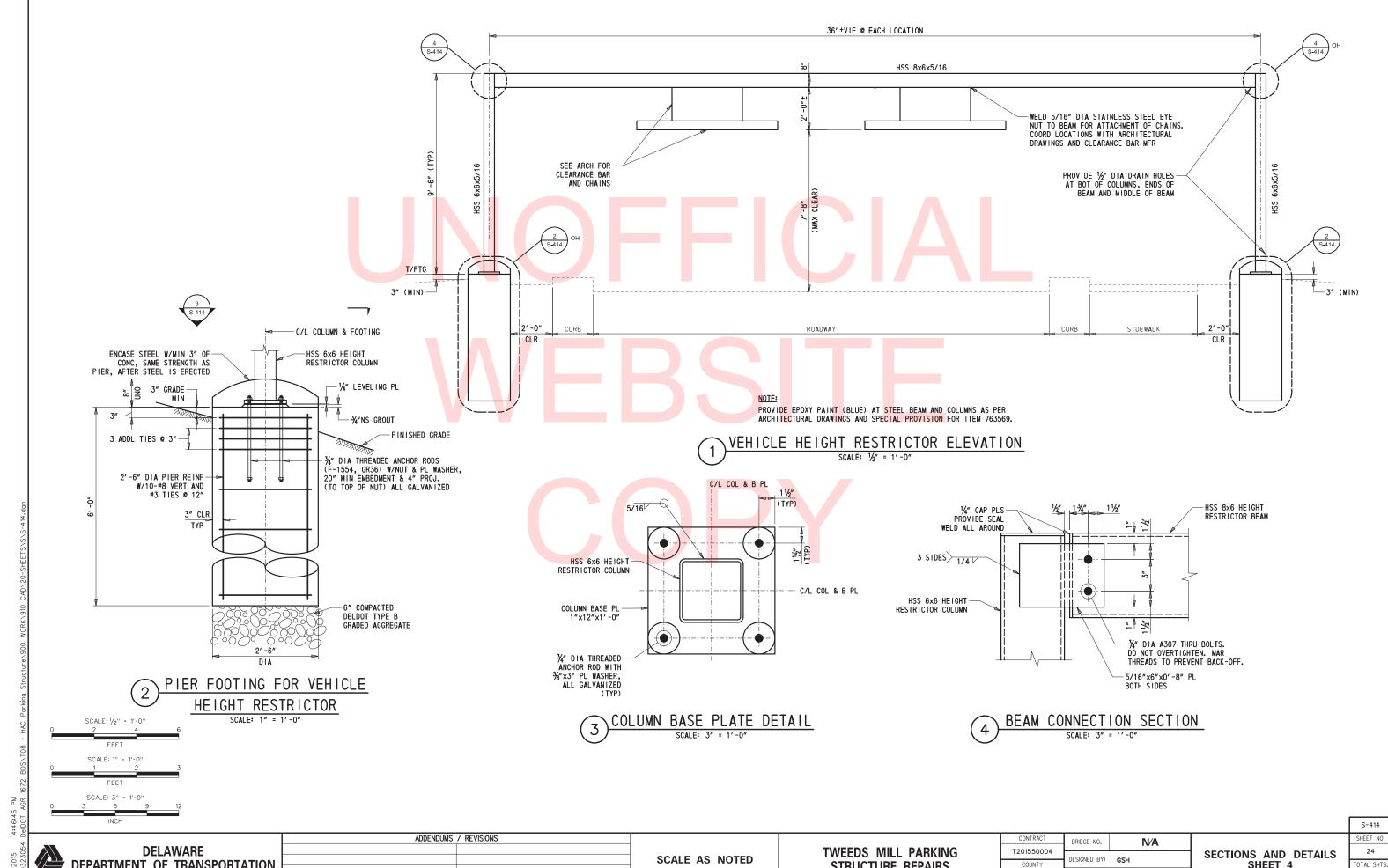
SCALE AS NOTED

TWEEDS MILL PARKING STRUCTURE REPAIRS

BRIDGE NO. N/A T201550004 ESIGNED BY: GSH COUNTY CHECKED BY: NPU NEW CASTLE

SECTIONS AND DETAILS SHEET 3

S-413 23 OTAL SHTS.



**DEPARTMENT OF TRANSPORTATION** 

SCALE AS NOTED

STRUCTURE REPAIRS

ESIGNED BY: GSH CHECKED BY: NPU NEW CASTLE

SECTIONS AND DETAILS SHEET 4

COUNTY

# PROPOSED SYMBOLS

	IDENTIFIERS
V/////	PANELBOARD, 208Y/120 VOLTS
	PANELBOARD, 480Y/277 VOLTS
$\rightleftharpoons$	RECESSED DUPLEX RECEPTACLE, 20A, 125V AC. MOUNT 18" AFF, UON
<b>─</b>	RECESSED QUADRAPLEX RECEPTACLE, 20A, 125V AC. MOUNT 18" AFF, UON
<u></u>	RECESSED WALL MOUNTED JUNCTION BOX, MOUNT 18" AFF, UON
<b>(</b>	JUNCTION BOX IN CEILING
0	SUSPENDED LIGHT FIXTURE
▼ 🛇	EMERGENCY EXIT SIGN LIGHTING FIXTURE, SUSPENDED/PENDANT MOUNTED. DARKENED QUARTER DENOTES FACE. DIRECTIONAL ARROW AS INDICATED ON PLAN
▼ 🌣	EMERGENCY EXIT SIGN LIGHTING FIXTURE, WALL MOUNTED. DARKENED QUARTER DENOTES FACE. DIRECTIONAL ARROW AS INDICATED ON PLAN
	EMERGENCY LIGHTING UNIT WITH BATTERY
LP 2	BRANCH CIRCUIT WIRING. UPPER STRING INDICATES PANEL WHERE CIRCUIT IS DERIVED, I.E. PANEL "LP". LOWER NUMBER INDICATES PANEL CIRCUIT BREAKER POSITION, I.E. CIRCUIT #2. PROVIDE 2*12 +1*12G-3/4"C WHEN NOT NOTED
E3	CONDUIT
	CONDUIT UP
-	CONDUIT DOWN
ş	WALL SWITCH
X	SHEET NOTE

# **SYMBOLS LEGEND**

	EXISTING TO REMAIN
<i>\\\\\</i>	EXISTING TO BE REMOVED
	NEW WORK
SUBSCRIPT ADDED	TO ANY SYMBOL INDICATES THE FOLLOWING:
E	EXISTING TO REMAIN
X	EXISTING TO BE REMOVED
XR	EXISTING TO BE RELOCATED
ER	EXISTING TO BE REPLACED
R	RELOCATED

/.333.42 AW ts\60427747-DelDOT HAC Parking Structure\05\_Dwgs\900 WORK\910 CAD\20-

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

ATION

SCALE AS NOTED

TWEEDS MILL PARKING STRUCTURE REPAIRS

CONTRACT
T201550004

COUNTY
DESIGNED BY: DMR

NEW CASTLE CHECKED BY: AM

ELECTRICAL LEGEND AND ABBREVIATIONS E-001
SHEET NO.
25
TOTAL SHTS.
31

- 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING THE ACCURACY OF ALL EQUIPMENT SHOWN ON THESE DRAWINGS. CONTRACTOR SHALL VERIFY EXISTING FIELD CONDITIONS PRIOR TO REMOVAL OF ANY EQUIPMENT AND DISCONNECTIONS.
- 3. LIGHTING IS CONTROLLED BY CONTACTOR AND TIME CLOCK LOCATED ON THE LOWER LEVEL OF THE PARKING STRUCTURE IN THE NORTHWEST CORNER NEXT TO EXISTING PANELBOARD "P".
- 4. SECURITY CAMERAS ARE MONITORED OFF SITE.
- 5. ALL WORK SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC), DELAWARE DEPARTMENT OF TRANSPORTATION (DeIDOT), AND ALL OTHER APPLICABLE FEDERAL, STATE, AND
- 6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH ALL OTHER TRADES.
- 7. CONTRACTOR SHALL VERIFY ALL EQUIPMENT REQUIREMENTS BEFO<mark>RE</mark> INSTALLING CONDU<mark>IT AND/OR COND</mark>UCT<mark>OR</mark> FROM POWER SOURCE TO EQUIPMENT TERMINATION.
- 8. EXACT LOCATION, MOUNTING HEIGHT, AND TYPE OF TERMINATION FROM JUNCTION BOX. STUB-UPS. DISCONNECT SWITCHES, ETC., SHALL BE DETERMINED FROM ARCHITECTURAL DRAWINGS, SHOP DRAWINGS, EQUIPMENT CUTSHEETS, OR DETAILS BEFORE CONDUIT ROUGH-IN.
- 9. CONTRACTOR SHALL PROVIDE AND INSTALL MINIMUM #12 AWG CONDUCTOR AND 3/4" DIAMETER GALVANIZED RIGID STEEL CONDUIT FOR ALL BRANCH CIRCUITRY. TYPE AC CABLE (BX) SHALL NOT BE USED.
- 10. ALL CONDUIT CONNECTORS SHALL BE THREADED TYPE STEEL. ALL FITTINGS SHALL BE STEEL.
- 11. GROUNDING OF ALL CONDUIT, JUNCTION BOXES, AND EQUIPMENT SHALL CONFORM TO THE LATEST APPLICABLE EDITION OF THE NATIONAL ELECTRICAL CODE. CONTINUITY OF METAL RACEWAYS SHALL BE INSURED BY THE USE OF DOUBLE LOCKNUTS, GROUNDING CONNECTOR SHALL BE OF PRESSURE TYPE SIMILAR AND EQUAL TO BURNDY OR O-Z.
- 12. ALL CONDUCTORS SHALL BE COPPER WITH INSULATION RATED 75°C TYPE THHN, THWN, OR THW.

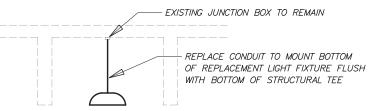
- 13. CONTRACTOR SHALL DERATE CONDUCTORS PER NATIONAL ELECTRICAL CODE IF MORE THAN THREE PHASE CONDUCTORS ARE INSTALLED IN A SINGLE CONDUIT.
- 14. FURNISH ALL LABOR, MATERIAL SERVICES, AND SKILLED SUPERVISION NECESSARY FOR THE CONSTRUCTION, ERECTION, INSTALLATION, CONNECTION, TESTING, AND ADJUSTMENT OF ALL CIRCUIT AND ELECTRICAL EQUIPMENT SPECIFIED HEREIN, SHOWN OR NOTED ON THE DRAWINGS AND DELIVERY TO THE OWNER COMPLETE IN ALL RESPECTS READY FOR USE.
- 15. ALL ELECTRICAL WORK SHALL BE NEW EXCEPT WHERE SPECIFICALLY NOTED OTHERWISE.
- 16. ALL CUTTING AND PATCHING SHALL BE PERFORMED IN A WORKMANLIKE MANNER ACCEPTABLE TO THE
- 17. FOLLOW MANUFACTURER'S RECOMMENDATION FOR PROPER INSTALLATION OF ALL EQUIPMENT.
- 18. ALL EQUIPMENT SHALL BE UL APPROVED.
- 19. PROVIDE PRESSED STEEL JUNCTION BOXES AS REQUIRED FOR CONDUIT RUNS.
- 20. ALL NEW ELECTRICAL CONNECTIONS SHALL BE CLEARLY LABELED WITH CIRCUIT NUMBER AND SOURCE PANFI BOARD INFORMATION.
- 21. PROVIDE NECESSARY POWER TO ALL EQUIPMENT OF ARCHITECTURAL, MECHANICAL, FIRE PROTECTION, PLUMBING, AND ALL OTHER TRADES.
- 22. CONTRACTOR SHALL PROVIDE UPDATED TYPED PANELBOARD SCHEDULE AFTER INSTALLATION OF ALL NEW BRANCH CIRCUITS.
- 23. ALL NEWLY INSTALLED CONDUIT SHALL BE RUN PARALLEL AND/OR PERPENDICULAR TO THE BASE BUILDING STRUCTURAL ELEMENTS. ALL NEW CONDUIT RUNS SHALL UTILIZE EXISTING BLOCKOUTS (HOLES) IN DOUBLE TEE STEMS. CUTTING OF NEW HOLES IN DOUBLE TEE STEMS IS NOT PERMITTED.
- 24. ALL FLEXIBLE CONDUIT SHALL BE LIMITED TO 6 FEET IN LENGTH.
- 25. THE SERVICE LOAD SHALL BE BALANCED WITHIN 10% OF THE FEEDER CAPACITY.
- 26. CONTRACTOR SHALL PROVIDE TORQUE REPORTS ON ALL NEW ELECTRICAL PANEL TERMINATIONS.



CONDUIT TO BE REPLACED WITH NEW, LONGER CONDUIT

-BOTTOM OF FXISTING LIGHT FIXTURE FLUSH WITH BOTTOM OF STRUCTURAL TEE

EXISTING LIGHT FIXTURE MOUNTING



REPLACEMENT LIGHT FIXTURE MOUNTING

# LIGHTING FIXTURE MOUNTING DETAIL (TYPICAL)

	LIGHTING FIXTURE SCHEDULE								
TYPE	DESCRIPTION		LAMPS VOLTAGE MOUNT IN	MOUNT ING	BASIS OF DESIGN (OR APPROVED EQUAL)	REMARKS			
	DESCRIPTION	QTY	TYPE	VOLTAGE	MOBINITING	BASTS OF BESTON CON AFTNOVED EGUALY	ALMANAS		
А	4' INDUSTRIAL TYPE FLUORESCENT LIGHTING FIXTURE WITH SYMMETRICAL REFLECTOR AND WIRE GUARD	2	32W T8	1 <mark>20-</mark> 277	SUSPENDED	1. LITHONIA LIGHTING Z8SMR48-2-32-MVOLT-GEB10IS-WGZ8SMR48 2. HUBBELL COLUMBIA LIGHTING CSR4-232-U-EU-CSRWG4-SXX 3. COOPER LIGHTING - METALUX SNF-232-UNV-EB81-U-SCFXX-SNF-SYM-4-WG/SNF-4FT	PROVIDE CONDUIT STEM/PENDANT SUCH THAT BOTTOM OF FIXTURE WILL BE FLUSH WITH BOTTOM OF STRUCTURAL TEES (APPROXIMATELY 9' AFF TO BOTTOM OF FIXTURE)		
В	CIRCULAR PARKING GARAGE/CANOPY LED LIGHT FIXTURE WITH ONE PIECE LOW COPPER DIE CAST ALUMINUM HOUSING AND INJECTION MOLDED ACRYLIC DISTRIBUTION LENS		LED 28W LED 65W LED 38W	120-277 277 120-277	SUSPENDED SUSPENDED SUSPENDED	1. COOPER LIGHTING - MCGRAW-EDISON TT-B1-LED-E1-MO-AP-DOS 2. KIM LIGHTING PGL71W-E35-60L-3K-277-PS-SCP 3. PHILIPS LIGHTING - STONCO OLP-32G3-350-S-UNV-EZ-PX10-TSA-PND-OJB	PROVIDE NEW CONDUIT STEM/PENDANT SUCH THAT BOTTOM OF FIXTURE WILL BE FLUSH WITH STRUCTURAL TEES (APPROXIMATELY 9' AFF TO BOTTOM OF FIXTURE). SEE DETAILS ABOVE		
Х1	EXIT SIGN LIGHTING FIXTURE WITH BATTERY BACKUP	-	LED 3.8W LED 0.7W LED 1.03W	120-277	SUSPENDED	1. HUBBELL LIGHTING - DUAL LITE SE-S-R-WN-E-I 2. LITHONIA LIGHTING LOC-W-1-R-EL N 3. COOPER LIGHTING - SURE-LITES LPX7SD	INSTALL FIXTURE SUCH THAT "EXIT" SIGN LETTERING IS BELOW ANY STRUCTURAL OBJECTS. PROVIDE NECESSARY MOUNTING DEVICES TO MATCH ORIENTATION SHOWN ON PLANS. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR ADDITIONAL MOUNTING INFORMATION		
Х2	EXIT SIGN LIGHTING FIXTURE WITH BATTERY BACKUP AND SUITABLE FOR WET LOCATIONS	- - -	LED 3.8W LED 2.7W LED 5.0W	120-277	SUSPENDED	1. HUBBELL LIGHTING - DUAL LITE LN4XRWE-I 2. LITHONIA LIGHTING WLTE-W-1-R-EL-SD 3. H.E. WILLIAMS EXIT-WET-CP-SF-R-WHT-EM-SDT	PROVIDE NECESSARY MOUNTING DEVICES TO MATCH ORIENTATION SHOWN ON PLANS. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR ADDITIONAL MOUNTING INFORMATION		

**SPECIFICATIONS** 

THIS SPECIFICATION ONLY APPLIES TO LIGHTING FIXTURE TYPE B.

- IP RATING: 65 or 66
- INPUT WATTAGE: MINIMUM 28 WATTS INITIAL LUMENS: MINIMUM 3285
- COLOR TEMPERATURE: MINIMUM 4000K
- CRI; MINIMUM 70
- OCCUPANCY SENSOR: SHALL BE INTEGRAL TO THE FIXTURE AND OPERATE AT THE SAME VOLTAGE AS THE FIXTURE. SHALL BE CAPABLE OF DIMMING FIXTURE TO 50% OF ITS RATED OUTPUT. SHALL HAVE A MINIMUM 5 MINUTE TIME
- MOUNTING: SUSPENDED
- FINISH: TGIC POLYESTER POWDER COAT PAINT. COLOR OF FINISH SHALL BE COORDINATED WITH THE USER
- WARRANTY: MINIMUM 5 YEARS

DELAWARE **DEPARTMENT OF TRANSPORTATION** 

ADDENDUMS / REVISIONS

SCALE AS NOTED

TWEEDS MILL PARKING STRUCTURE REPAIRS

CONTRACT	BRIDGE NO.	N/A	
T001EE0004	0111002 1101	IVA	
Г201550004	DESIGNED BY:		
COUNTY	DESIGNED BT:	DMR	
EW CASTLE	CHECKED BY:	АМ	

**ELECTRICAL NOTES** AND LIGHTING FIXTURE SCHEDULE F-002 SHEET NO. 26 OTAL SHTS .31

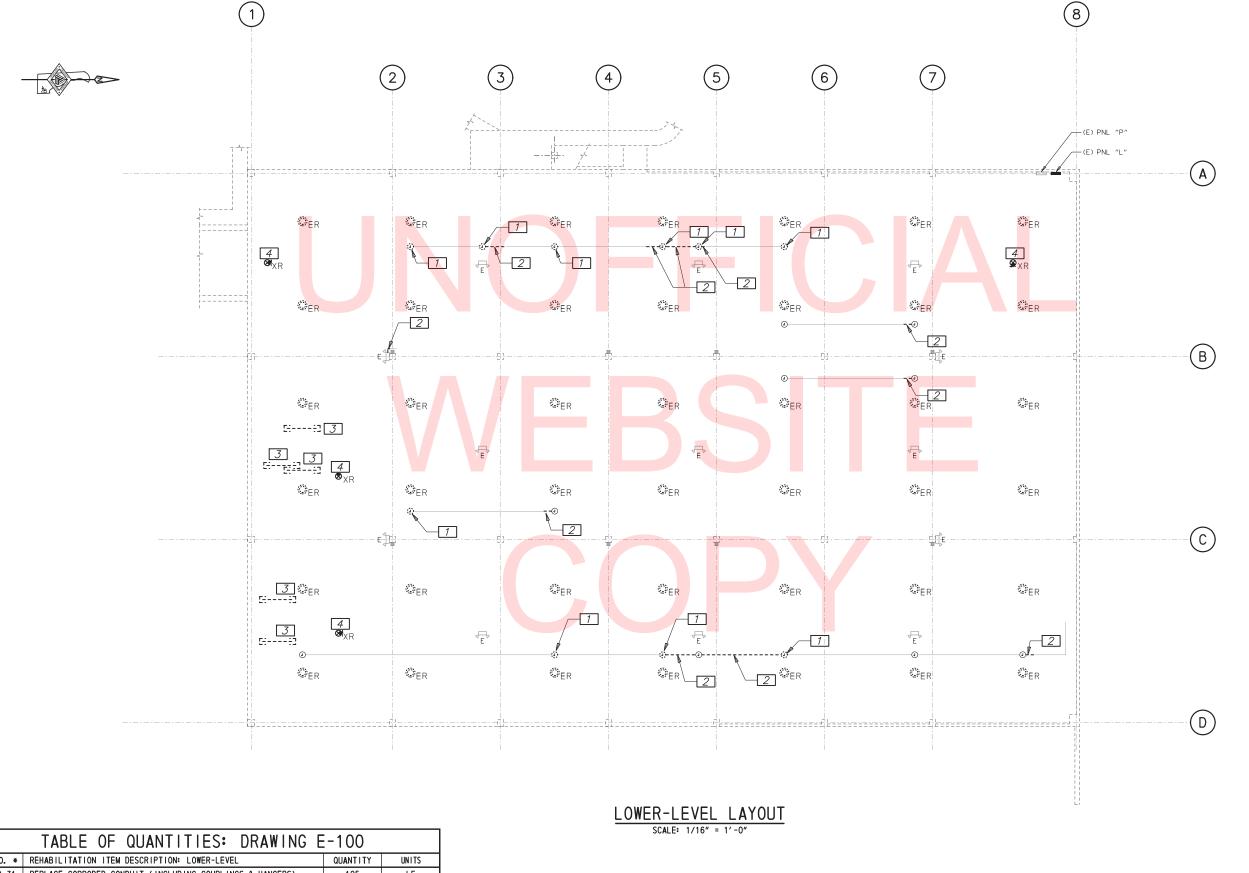


TABLE OF QUANTITIES: DRAWING E-100			
ITEM NO. *	REHABILITATION ITEM DESCRIPTION: LOWER-LEVEL	QUANTITY	UNITS
763569. 31	REPLACE CORRODED CONDUIT (INCLUDING COUPLINGS & HANGERS)	125	LF
763569. 31	REPLACE CORRODED JUNCTION BOXES (INCLUDING FITTINGS/COUPLERS)	10	EA
763569.32	REMOVE ABANDONED IN PLACE CONDUIT AND CABLING	60	LF

(\*) SEE SPECIAL PROVISION ITEM 763569 BREAKOUT SHEET FOR ITEM NUMBER DETAILS

**DELAWARE** 

ADDENDUMS / REVISIONS **DEPARTMENT OF TRANSPORTATION** 

TWEEDS MILL PARKING STRUCTURE REPAIRS

BRIDGE NO. N/A T201550004 DESIGNED BY: DMR COUNTY NEW CASTLE CHECKED BY: AM

ELECTRICAL PLAN -LOWER LEVEL -DEMOLITION

GENERAL NOTES

SHEET NOTES

OTHERWISE NOTED.

REPLACEMENT

1. REFER TO DRAWING E-001 FOR LEGEND & ABBREVIATIONS AND E-002 FOR NOTES. 2. REFER TO DRAWING E-101 FOR NEW WORK.

3. ALL WORK IS EXISTING TO REMAIN UNLESS

4. NOT ALL ELECTRICAL EQUIPMENT, CONDUIT, AND JUNCTION BOXES ARE SHOWN ON THE DRAWING.

7 REMOVE EXISTING RUSTED JUNCTION BOX FOR

2 REMOVE RUSTED PORTION OF EXISTING CONDUIT RUN FOR REPLACEMENT

REMOVE EXISTING ABANDONED IN PLACE CONDUIT AND DISCARD

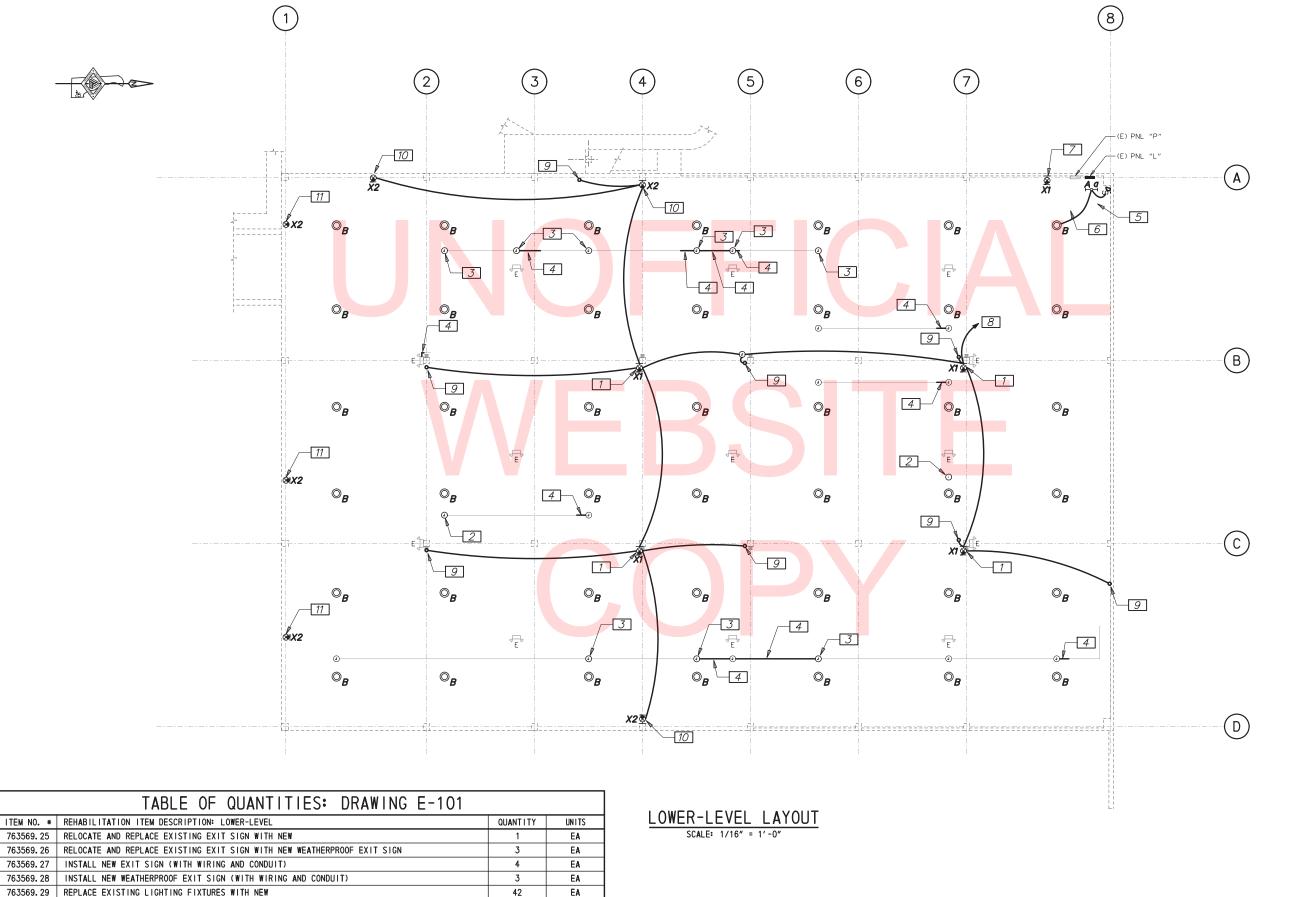
REMOVE EXISTING EXIT SIGN LIGHTING
FIXTURE. RETAIN BRANCH CIRCUIT WIRING
AND CONDUIT FOR FIXTURE RELOCATION

E-100

27

OTAL SHTS.

SCALE AS NOTED



**GENERAL NOTES** 

- 1. REFER TO DRAWING E-001 FOR LEGEND & ABBREVIATIONS AND E-002 FOR NOTES.
- 2. REFER TO DRAWING E-100 FOR DEMOLITION
- 3. ALL WORK IS EXISTING TO REMAIN UNLESS OTHERWISE NOTED.
- 4. NOT ALL ELECTRICAL EQUIPMENT, CONDUIT, AND JUNCTION BOXES ARE SHOWN ON THE
- 5. REFER TO DRAWING E-002 FOR LIGHTING FIXTURE SCHEDULE.

### SHEET NOTES

- 7 PROVIDE EXIT SIGN LIGHT FIXTURE, TYPE X1. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR MOUNTING DETAILS
- 2 PROVIDE BLANK COVER PLATE FOR JUNCTION BOX
- 3 PROVIDE JUNCTION BOX
- 4 PROVIDE 34 CONDUIT TO MATCH EXISTING CONDUIT. CONNECT TO EXISTING CONDUIT
- 5 PROVIDE LIGHT FIXTURE, TYPE A. CONNECT TO LIGHT SWITCH AT WALL AS SHOWN ON
- 6 CONNECT LIGHT FIXTURE 'A' TO NEAREST EXISTING BRANCH CIRCUIT, ENSURE LIGHT SWITCH ONLY CONTROLS LIGHT FIXTURE "A" AND NO OTHER LIGHT FIXTURES
- PROVIDE EXIT SIGN LIGHT FIXTURE, TYPE X1. EXTEND RETAINED BRANCH CIRCUIT WIRING AND CONDUIT TO NEW LOCATION, REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR MOUNTING DETAILS
- 8 CONNECT EXISTING PANEL "L". PROVIDE 20A/1P CIRCUIT BREAKER IN EMPTY SPACE LOCATION, MATCH EXISTING TYPE AND AIC RATING OF OTHER BREAKERS IN THE PANEL
- 9 CONDUIT UP TO EXIT SIGN ON UPPER-LEVEL. SEE DRAWING E-102 FOR CONTINUATION
- PROVIDE EXIT SIGN LIGHT FIXTURE, TYPE X2. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR MOUNTING
- PROVIDE EXIT SIGN LIGHT FIXTURE, TYPE X2. EXTEND RETAINED BRANCH CIRCUIT WIRING AND CONDUIT TO NEW LOCATION. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR MOUNTING DETAILS

(\*) SEE SPECIAL PROVISION ITEM 763569 BREAKOUT SHEET FOR ITEM NUMBER DETAILS

763569.30 | INSTALL NEW FLUORESCENT STRIP LIGHT (WITH CONDUIT, WIRING, JUNCTION BOX, AND WALL SWITCH)

DELAWARE **DEPARTMENT OF TRANSPORTATION** 

ADDENDUMS / REVISIONS

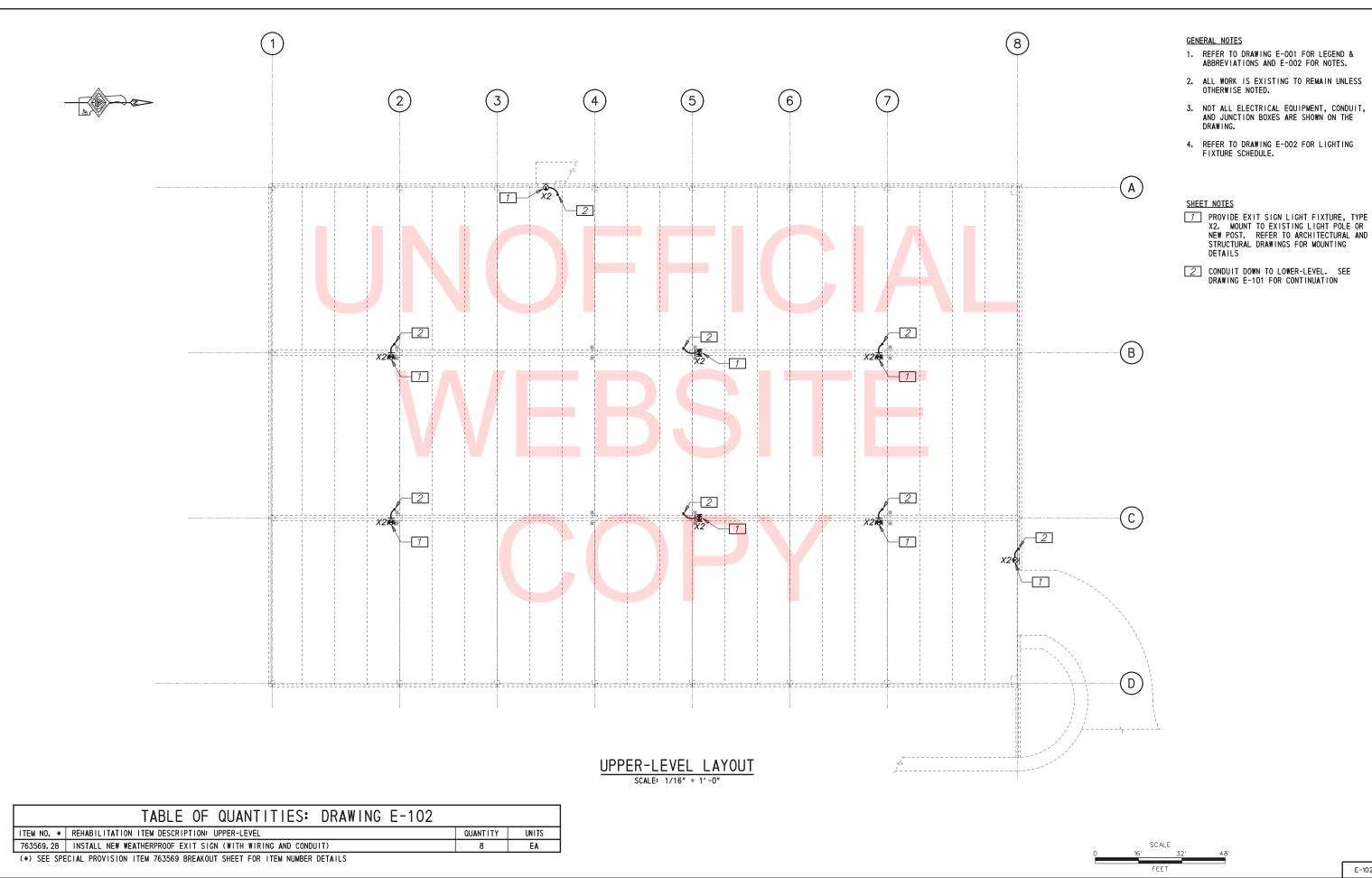
EA

TWEEDS MILL PARKING STRUCTURE REPAIRS

BRIDGE NO. N/A T201550004 ESIGNED BY: DMR COUNTY CHECKED BY: АМ NEW CASTLE

**ELECTRICAL PLAN -**LOWER LEVEL -**NEW WORK** 

E-101 SHEET NO. 28 OTAL SHTS.



**DELAWARE DEPARTMENT OF TRANSPORTATION**  ADDENDUMS / REVISIONS

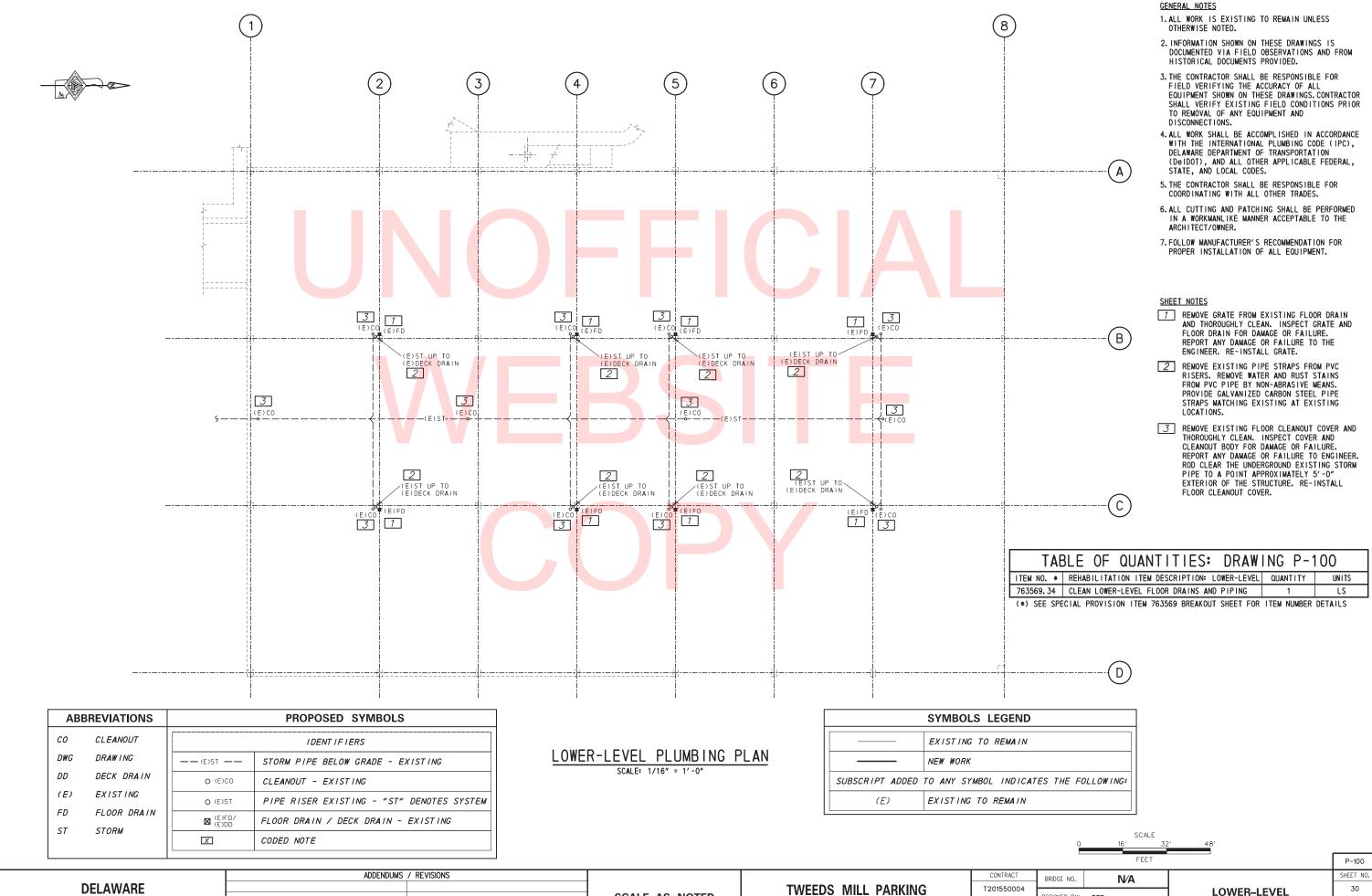
SCALE AS NOTED

TWEEDS MILL PARKING STRUCTURE REPAIRS

BRIDGE NO. N/A T201550004 DESIGNED BY: DMR COUNTY NEW CASTLE CHECKED BY: AM

ELECTRICAL PLAN -UPPER LEVEL -NEW WORK

E-102 29 OTAL SHTS.



**DEPARTMENT OF TRANSPORTATION** 

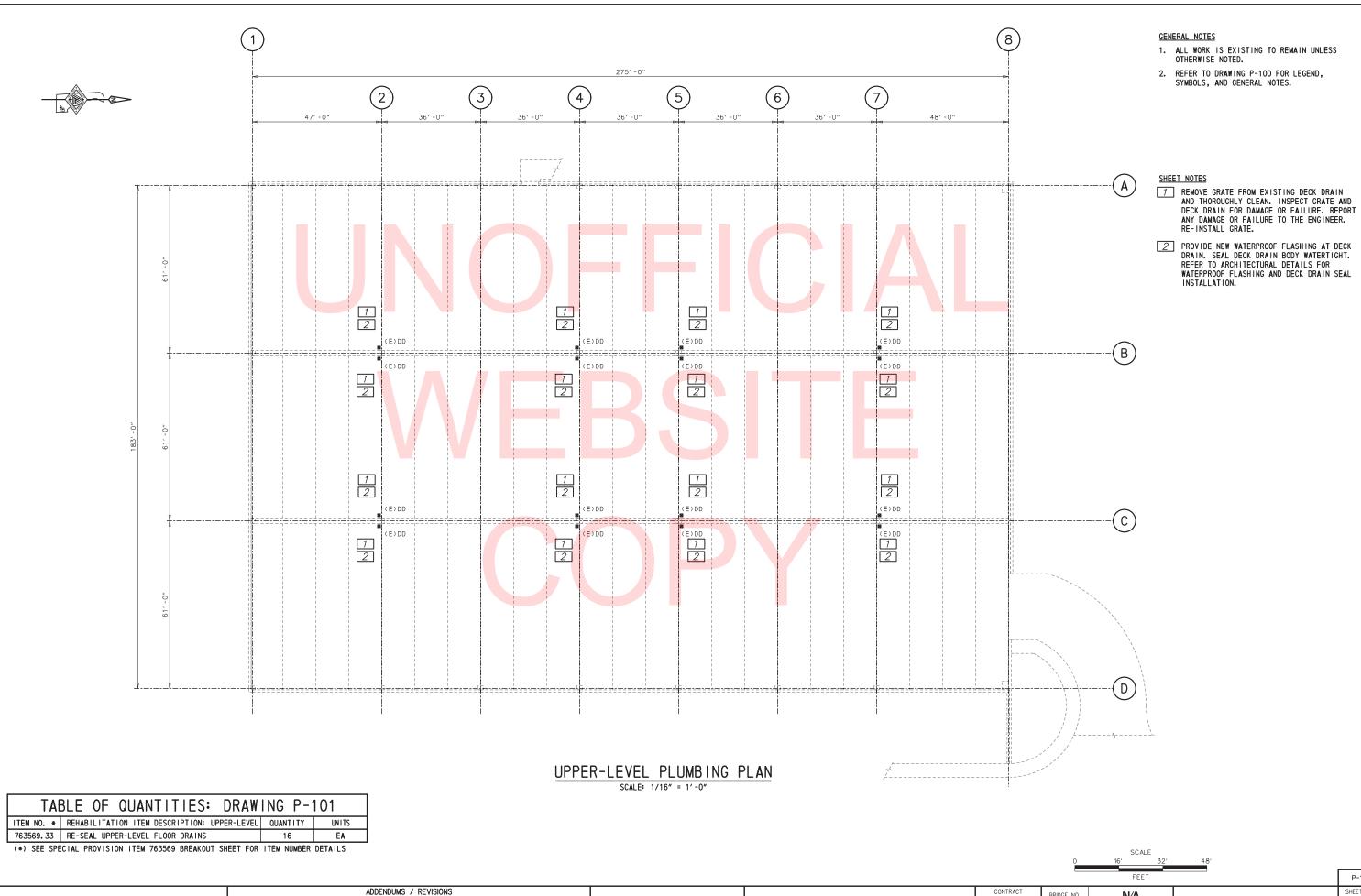
SCALE AS NOTED

STRUCTURE REPAIRS

ESIGNED BY: REB COUNTY CHECKED BY: ТМ NEW CASTLE

LOWER-LEVEL PLUMBING PLAN

30 OTAL SHTS.



DELAWARE **DEPARTMENT OF TRANSPORTATION** 

TWEEDS MILL PARKING STRUCTURE REPAIRS

BRIDGE NO. N/A T201550004 DESIGNED BY: REB COUNTY NEW CASTLE CHECKED BY: ТМ

UPPER-LEVEL PLUMBING PLAN

P-110

SHEET NO.

31

OTAL SHTS.

SCALE AS NOTED