GENERAL NOTES

1. ALL DIMENSIONS GIVEN IN U.S. CUSTOMARY UNITS.
2. DESIGN SPECIFICATIONS
   - Refer to Design Manual Part 4, Volume 1, Part A Design Specifications and Volume 2, Appendix B
   - Provide narrative and engineering instructions in accordance with publication 408 and the contract special provisions.
3. MATERIAL STANDARDS
   - REINFORCEMENT STEEL: Fy = 60 KSI (CLASS A) - CLASS B CONCRETE: f'c = 4000 PSI (CLASS AAAP CONCRETE)
4. SEAM LOSE:
   - CONCRETE: f'c = 4000 PSI (CLASS A), f'c = 3000 PSI (CLASS B) CONCRETE
5. EARTH PRESS:
   - CONCRETE: f'c = 4000 PSI (CLASS A), f'c = 3000 PSI (CLASS B) CONCRETE

TYPICAL ELEVATION

- DEPTH OF ABUTMENT FEED CONSTRUCTION JOINT IS 3'-3" AT SHALLOWEST POINT (SEE SHEET 4-A).
- MAXIMUM DEPTH BETWEEN THE MINIMUM AND MAXIMUM CAP DEPTH SHALL NOT EXCEED 1'-0" FOR DECK AND 4'-0" FOR PIPE PILES.
- BOTH H-PILES AND PIPE PILES MAY BE USED WITH STEEL OR CONCRETE GIRDERS.
- CONCRETE FLOOR SLABS ON GRAY CONSTRUCTION JOINTS, PROVIDE A TROWEL SMOOTH SURFACE.
- THE DISTANCE REQUIRED TO PROVIDE 3" CLEARANCE BETWEEN THE FILES IS THE MINIMUM REINFORCEMENT EXTENDING FROM THE FILES.

TYPICAL PLAN

- DEPTH OF ABUTMENT FEED CONSTRUCTION JOINT IS 3'-3" AT SHALLOWEST POINT (SEE SHEET 4-A). 2'-0" MINIMUM ABUTMENT DEPTH.
- RAW: CONCRETE f'c = 4000 PSI (CLASS AAAP CONCRETE) FOR DECK SLABS, APPROACH SLABS, AND END DIAPHRAGMS.
- REINFORCEMENT STEEL fy = 60 KSI (CLASS A) - CLASS B CONCRETE: f'c = 3000 PSI (CLASS B) CONCRETE.

DETACHED WINGWALL NOTES

1. INSTALL THE STEEL PILE H-PILES SHOWN (SEE SHEET 4-A)
2. Workflow: SEAM LOSE CONCRETE:
   - CONCRETE COVER: INTEGRAL ABUTMENT (i.e., CAP BEAM AND END DIAPHRAGM) AND WINGWALLS ABOVE CONSTRUCTION JOINT, MODULAR RATIO (Es/Ec) n = 8.
3. PROVIDE MATERIALS AND WORKMANSHIP IN ACCORDANCE WITH PUBLICATION 408 AND THE CONTRACT SPECIAL PROVISIONS.
4. PENNDOT DESIGN MANUAL PART 4, VOLUME 1, PART B: DESIGN SPECIFICATIONS AND VOLUME 2, APPENDIX G
5. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF PROJECT DELIVERY
STANDARD INTEGRAL ABUTMENT LAYOUT AND GENERAL NOTES

STANDARD DRAWING

BD-667M

RECOMMENDED 09/12/2011
RECOMMENDED 09/12/2011
SHEET 1 OF 9

REFERENCE DRAWINGS

BD-667M

TYPICAL CONSTRUCTION SECTIONS

BD-667M TYPICAL CONSTRUCTION DETAILS

BD-667M CONSTRUCTION DETAILS

BD-667M TYPICAL INSTALLATION DETAILS

BD-667M INSTALLATION DETAILS

BD-667M EXPANSION DETAILS
Note: Use DETAIL P, THIS SHEET for APPROVED WATERPROOFING MEMBRANE (HOT DIP GALVANIZED) and LIMITS OF DETACHED WINGWALL EXPANSION JOINT. SEE NOTE 4 of DETACHED WINGWALL DETAILS. APPROVED SEALER, ASPHALT CEMENT, and GRIND TO PROVIDE SMOOTH SURFACE. BEND PLATE TO MOVE FREELY ASPHALT CEMENT PG 64-22 TO ALLOW PAINT WA-1 OR PERFORMANCE GRADED. APPLY ONE COAT OF ASPHALT CEMENT WATERPROOFING MEMBRANE AT TOP OF新建 SEAT AND BELOW SEAT JOINTS AND SEAL EDGES TO CONCRETE WITH SILICONE CALK. EXTEND SPONGE TO COVER ALL EXPOSED OPENINGS AND END EXTEND SPONGE TO COVER APPROACH SLAB. BEAM SEAT AND BELOW JOINTS AT TOP OF 新建 WATERPROOFING MEMBRANE WITH 6" MINIMUM SLACK. APPLY ONE COAT OF ASPHALT CEMENT PAINT MAX. PERFORMANCE GRADED ASPHALT CEMENT PG 64-22 TO ALLOW SPONGE TO MOVE FREELY ASBENTATION

VIEW S-S  SECTION T-T

NOTE: USE DETAIL P, THIS SHEET FOR

APPROVED WATERPROOFING MEMBRANE AND LIMITS OF DETACHED WINGWALL EXPANSION JOINT.
EXISTING GROUND
BOTTOM OF BEAM OR GIRDER
EXISTING FOUNDATION

SLOPE PROTECTION
SUBSTRUCTURE UNIT FOR DETAILS FOR USING EXISTING
NOTE:
MIXED SUBSTRUCTURE TYPES
NOTE:
MINIMIZE JOINTS AND FOUNDATION PRESSURES.
FIXITY SHOULD BE CAREFULLY CONSIDERED TO
FOR GEOMETRY OR GEOTECHNICAL FEATURES.
ABUTMENT TYPES TO MEET SITE REQUIREMENTS
INTEGRAL ABUTMENTS MAY BE USED WITH OTHER
MULTI SPAN STRUCTURES

NOTE:
• FOR THE SPAN ARRANGEMENT THE PIER SHOULD BE
  FIXED TO MINIMIZE LONGITUDINAL SUPERSTRUCTURE
  FORCES AT ABUTMENTS.
• FOR ADDITIONAL SPANS, PIER STIFFNESS MUST BE
  CONSIDERED TO DEVELOP THE MOST EFFICIENT
  DESIGNS AND MINIMIZE MOVEMENT.

WINGWALLS
ABUTMENT AND CAST-IN-PLACE
POSITION DOES NOT MEET SITE NEEDS COMPLETELY.
EXISTING SUBSTRUCTURE UNIT IF THE LENGTH OR
ADDITIONAL RIPRAP CAN BE ADDED TO AUGMENT THE
NEEDS TO BE CHECKED.
REMAINING EXISTING STRUCTURE FOR PROPOSED CONDITIONS
FOR MANY BRIDGE REPLACEMENTS. STABILITY OF THE
THE ABOVE DETAIL HAS PROVEN AN ECONOMICAL OPTION
FOR ADDITIONAL SPANS, PIER STIFFNESS MUST BE
CONSIDERED TO DEVELOP THE MOST EFFICIENT
DESIGNS AND MINIMIZE MOVEMENT.
FOR TWO SPAN ARRANGEMENT THE PIER SHOULD BE
FIXED TO MINIMIZE LONGITUDINAL SUPERSTRUCTURE
FORCES AT ABUTMENTS.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF PROJECT DELIVERY
STANDARD
INTEGRAL ABUTMENT
MISCELLANEOUS DETAILS

APR. 29, 2016
AP R. 29, 2016