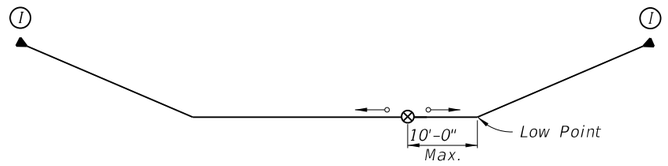
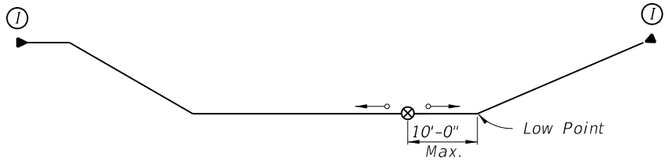


Profile 1



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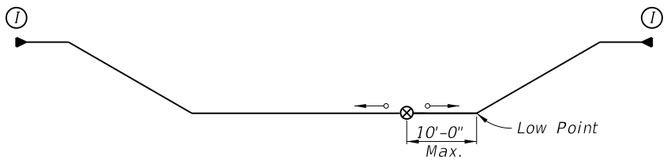

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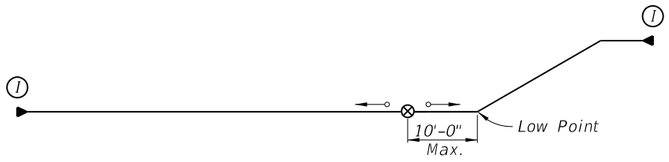
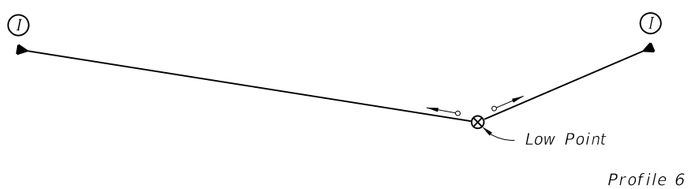


Profile 4

Profile 5



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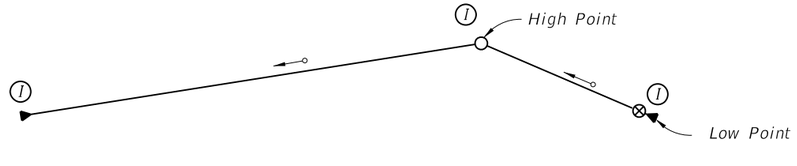
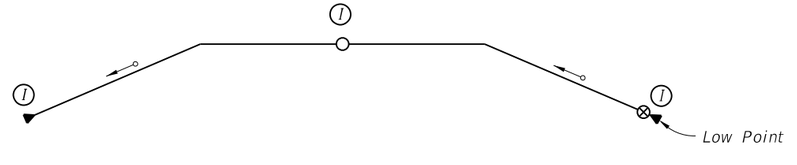


Profile 7



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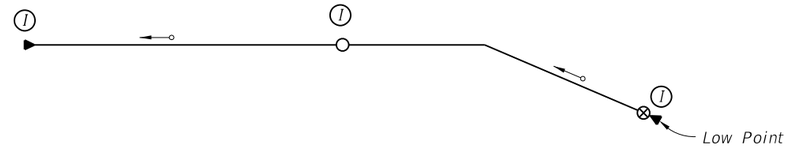
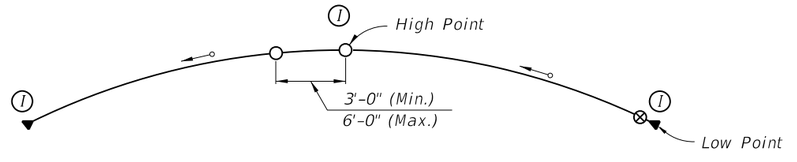
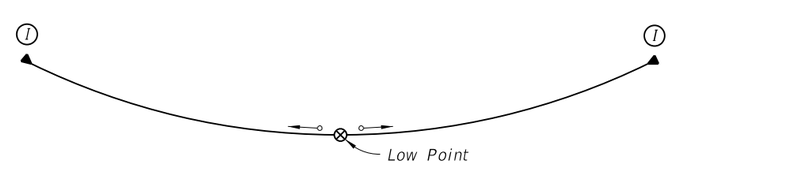


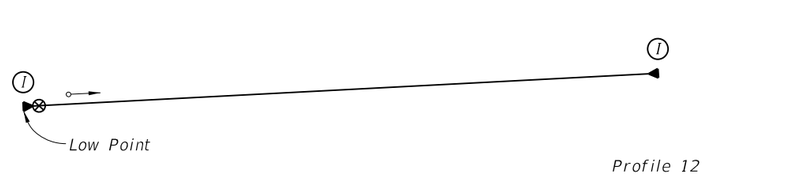
Profile 9



Profile 10



Profile 11



Profile 12

General Notes:

1. The details shown on Indices No. 21801, 21802, and 21803 depict the final condition of the post-tensioning system. The standards assume certain methods to obtain the required final condition. The Contractor may elect to modify these methods with the approval of the Engineer of Record provided the post-tensioning system is protected from contamination during all intermediate steps and the final condition conforms with the requirements of the Contract Documents.

2. See Specifications for grouting procedures, and post-tensioning systems.

3. See Specifications for surface preparation and other details of the epoxy grout pour-backs (Post-Tensioning).

4. See Specifications for surface preparation and other details of the elastomeric coating (Elastomeric Coating System).

5. See Specifications for surface preparation and other details of the Magnesium Ammonium Phosphate Concrete (Magnesium Ammonium Phosphate Concrete) (MAPC).

6. If deviations from these standard methods are proposed, the Contractor shall demonstrate through a mock-up or other methods that his proposed grouting plan adequately fulfills the requirement of fully grouted tendons.

7. The Contractor shall attach pressure gauges to all grout inlets during the grouting operation. Locations of all pressure gauges shall be noted on the grouting operations plan.

8. The grout outlets shown shall be adjusted to accommodate the true high point of the tendon in the completed structure.

9. All grout inlets / outlets are to be sealed using threaded plugs with the exception of inlets / outlets exiting to a vertical face or exiting from the bottom of the bottom soffit.

10. All grout inlets / outlets exiting on vertical surfaces shall be directed toward the inside face of exterior girders or toward the interior of cellular boxes.

11. See Index No. 21802 for "POST-TENSIONING ANCHORAGE PROTECTION".

12. See Index No. 21803 for "POST-TENSIONING ANCHORAGE AND GROUTING DETAILS".

Legend:

- Strand Tendon
- End Anchor with Grout Outlet
- Grout Inlet
- Grout Outlet
- Optional Grout Outlet
- Drain / Grout Inlet
- Direction of Grout Flow
- (I) Inspection Location

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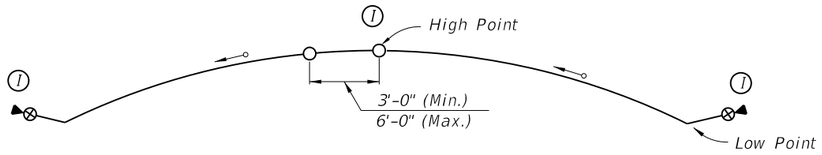
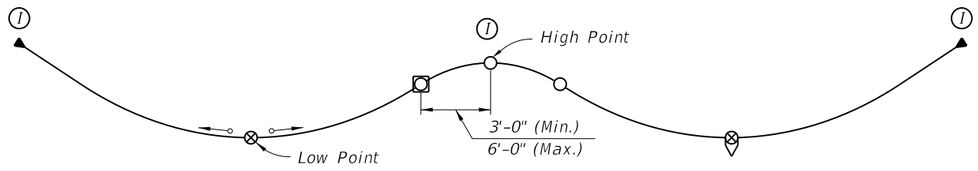
LAST REVISION	REVISION	DESCRIPTION:				
07/01/14			FDOT 2015 DESIGN STANDARDS	POST-TENSIONING VERTICAL PROFILES	INDEX NO. 21801	SHEET NO. 1 of 2



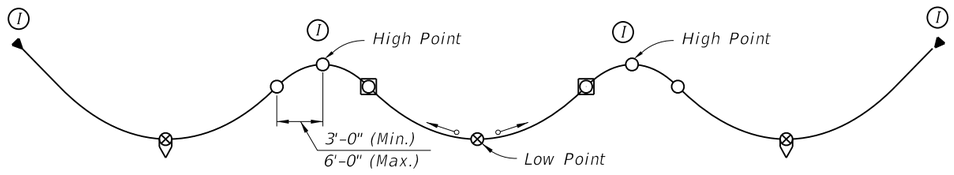
Profile 13

Post-Tensioning Vertical Profiles for Staged Grouting

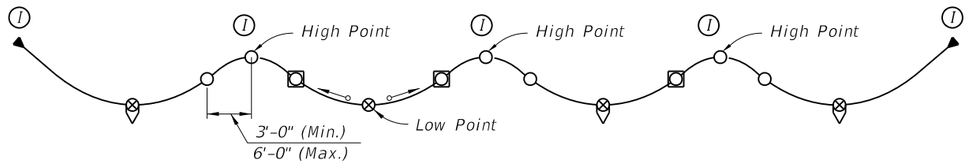
(Simultaneous Low Point Grouting through a Manifold is not Permitted)



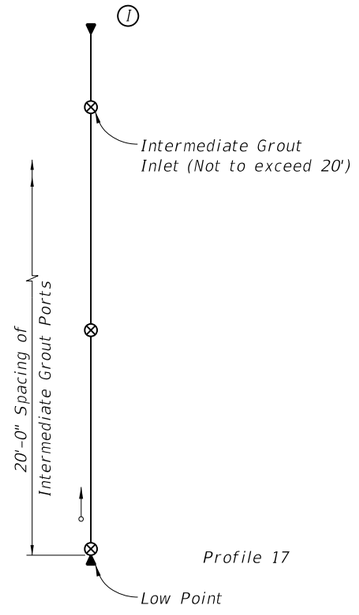
Profile 14



Profile 15



Profile 16



Profile 17

NOTES: Grouting Procedures

1. *Take into account longitudinal grade, if any, and establish direction of grouting.*
2. *Orient end anchors so that grout outlet is at the top.*
3. *Provide grout outlets at all anchors.*
4. *Provide grout inlet at low point of all tendon profiles.*
5. *For tendons longer than 150 feet, additional grout outlets are required.*
6. *Incorporate the information on these drawings into the grouting operations plan.*
7. *In the grouting plan, show*
   a. *Direction of grouting*
   b. *Locations of grout inlets & outlets*
   c. *Staged grouting operations*
   d. *Sequence of opening & closing vents*
   e. *Procedures for time delayed grout phasing of the tendons.*
8. *After grouting, inspect all anchors and high points for voids.*
9. *Vacuum grout voids and seal post-tensioning system in accordance with the specifications.*

Legend:

- Strand Tendon
- End Anchor with Grout Outlet
- Grout Inlet
- Grout Outlet
- Optional Grout Outlet
- Drain / Optional Grout Inlet
- Direction of Grout Flow
- I Inspection Location

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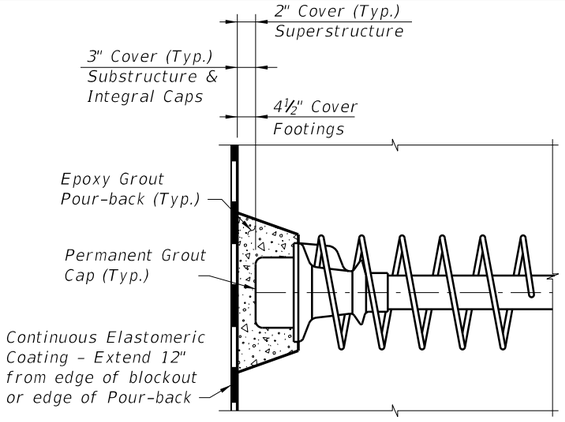
LAST REVISION	REVISION	DESCRIPTION:	FDOT 2015 DESIGN STANDARDS	POST-TENSIONING VERTICAL PROFILES	INDEX NO.	SHEET NO.
07/01/14					21801	2 of 2



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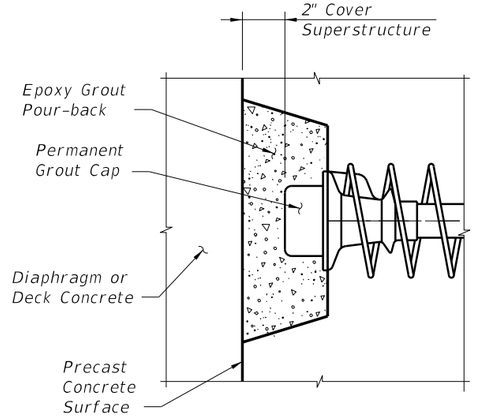

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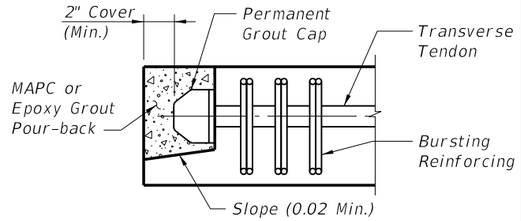
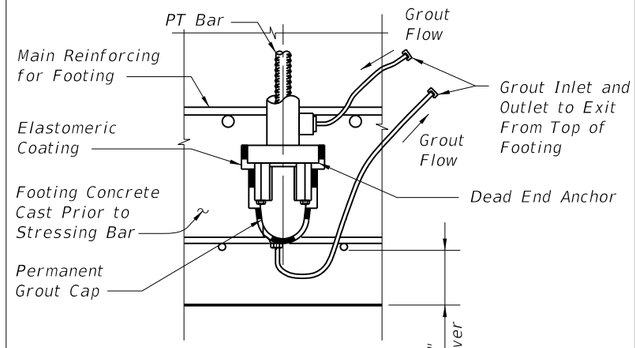
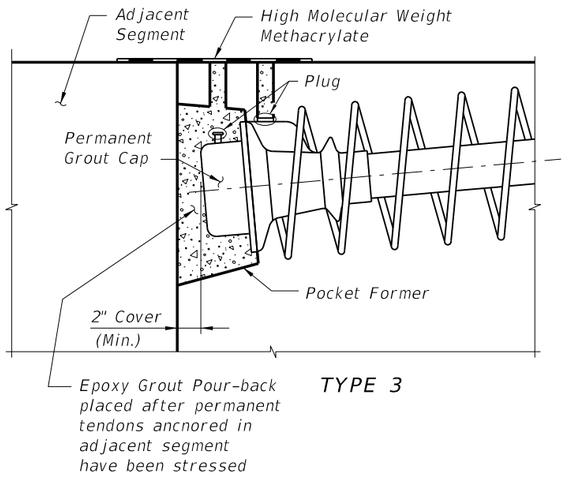


TYPE 7

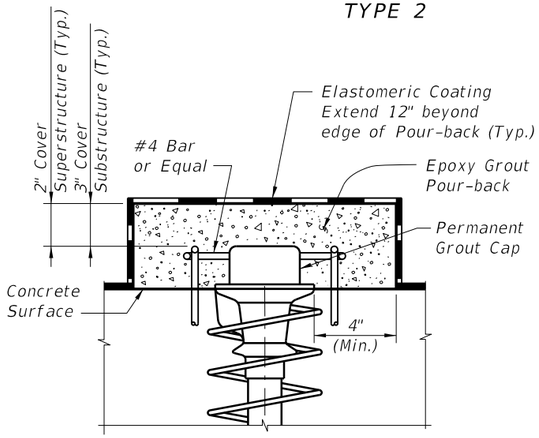
Type 7 Notes:
1. Traffic or Pedestrian/Bicycle Railing not shown for Clarity.
2. Where Pour-back is not protected by Traffic or Pedestrian/Bicycle Railing, Coat Pour-back with High Molecular Weight Methacrylate.



TYPE 8



TYPE 3



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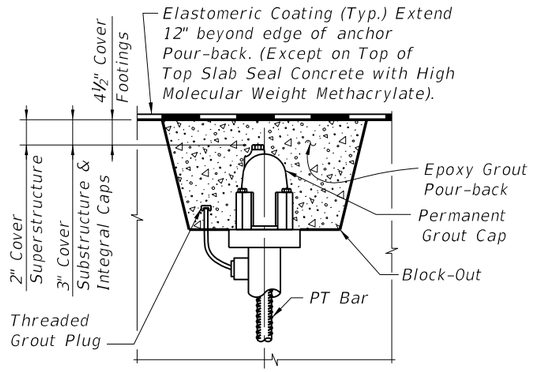
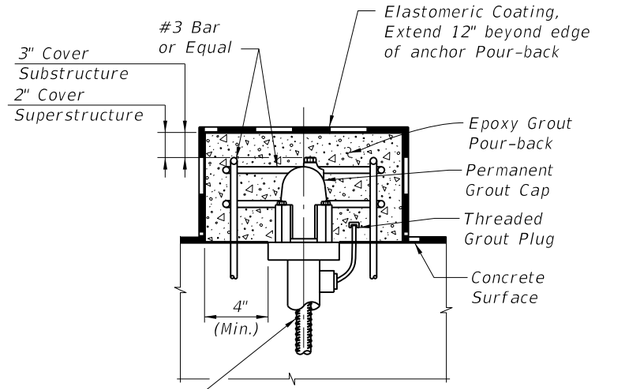
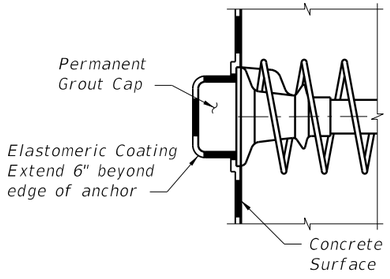


TYPE 9



TYPE 10



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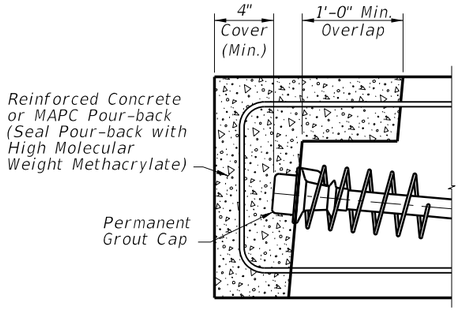
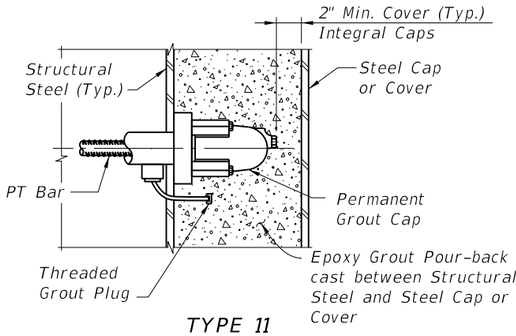
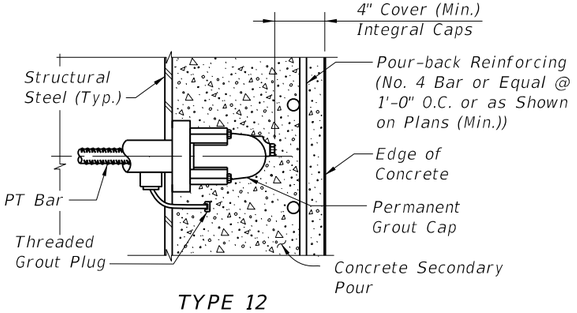


TYPE 6

ANCHOR PROTECTION FOR PT TENDONS



TYPE 11
(Shear Studs not Shown for Clarity)



TYPE 12
(Shear Studs not Shown for Clarity)

ANCHOR PROTECTION FOR PT BARS

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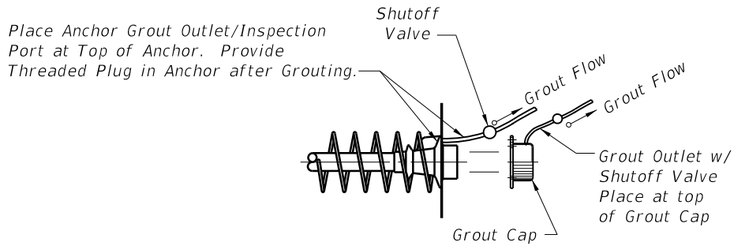
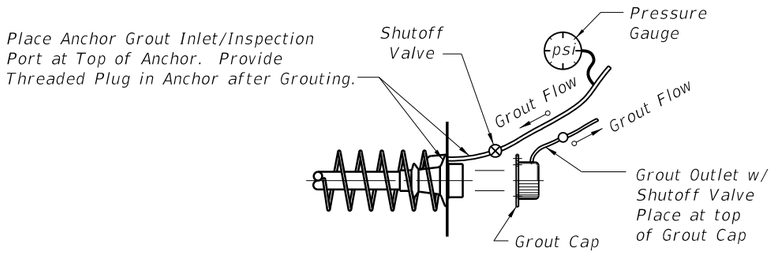
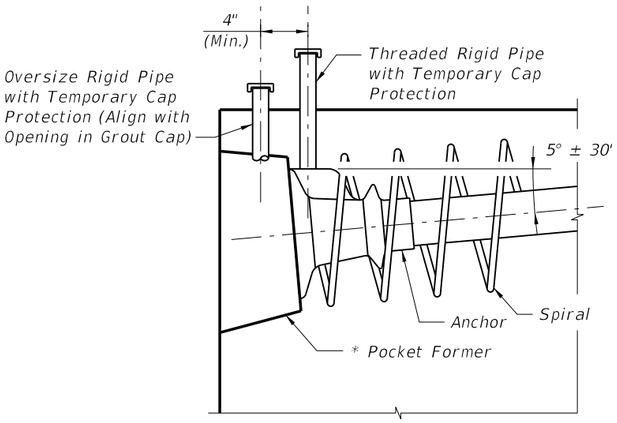
LAST REVISION	REVISION	DESCRIPTION:			
01/01/12			2015 DESIGN STANDARDS	POST-TENSIONING ANCHORAGE PROTECTION	INDEX NO. 21802 / SHEET NO. 1 of 1



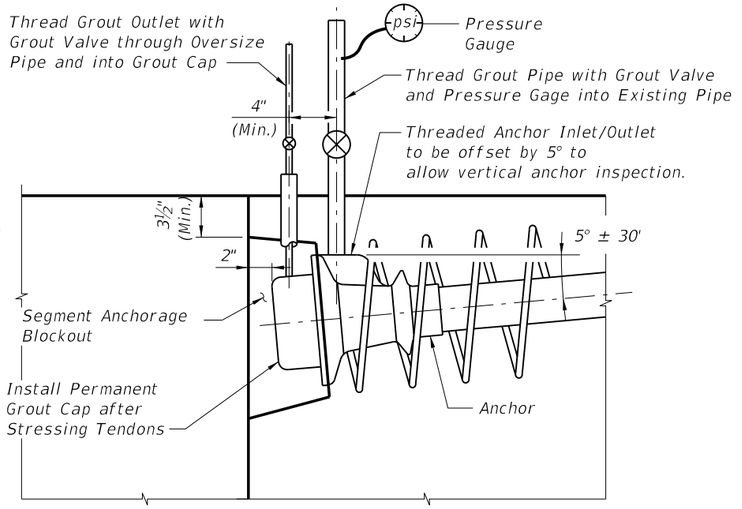
FACE INSPECTED
ANCHOR WITH GROUT OUTLET



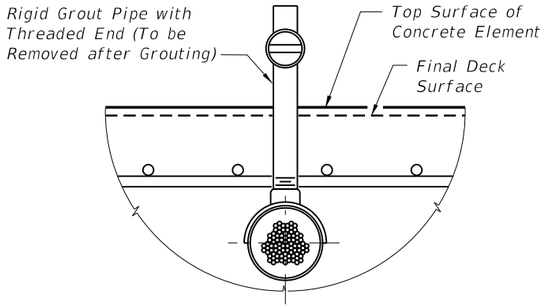
FACE INSPECTED
ANCHOR WITH GROUT INLET



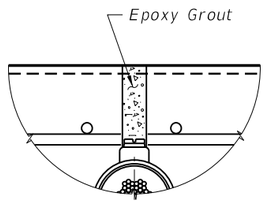
1 INSTALLATION & SHIPPING



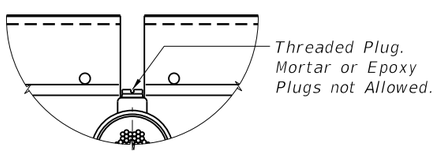
2 GROUTING



1 GROUT OUTLET CONNECTION TO TENDON



3 FILLING POCKET

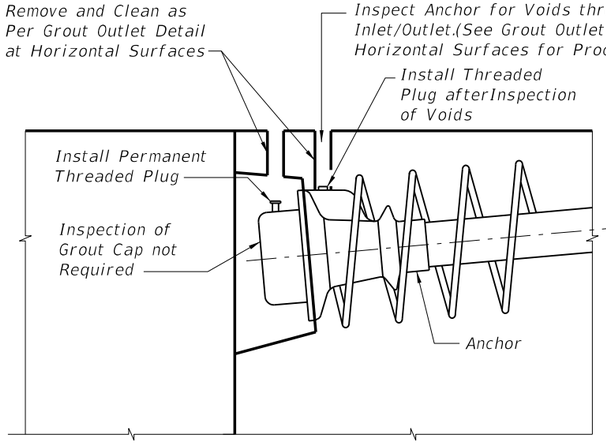


2 POCKET PREPARATION

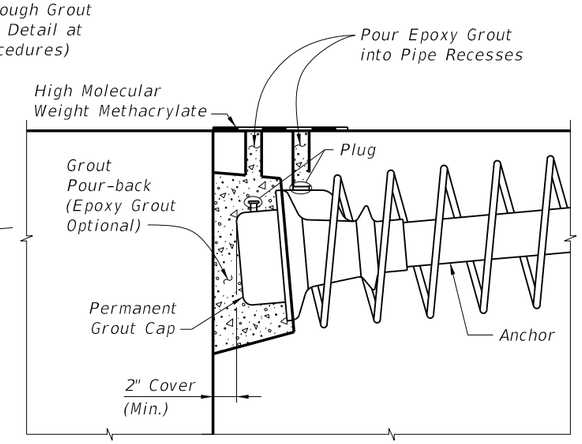
PROCEDURE:

1. Remove Rigid Grout Pipe.
2. Inspect Tendon for Voids as Necessary.
3. Vacuum Grout as Required and Allow Grout to Cure. Remove Pipe used for Vacuum Grouting.
4. Clean Threads and Rethread as Required.
5. Install Threaded Plug into Outlet to Form a Tight Fit.
6. Over-Ream Hole (¼" Ø Over-Ream) Clean and Roughen Sides.
7. Fill Pocket with Epoxy Grout.

GROUT OUTLET DETAIL AT HORIZONTAL SURFACES



3 INSPECTION



4 PROTECTION

NOTES:

1. Holes used for the Inspection and Grout Inlets/Outlets may be Formed using Tapered Pipes or Mandrels.

TOP INSPECTED ANCHOR WITH GROUT INLET
INSTALLATION, GROUTING, INSPECTION & PROTECTION

* Round ◯ Pocket Former – Gravity Fed Placement of Grout Acceptable
Modified Square ⬠ Pocket Former – Gravity Fed Placement of Grout Acceptable
Square □ Pocket Former – Vacuum Grouting Required

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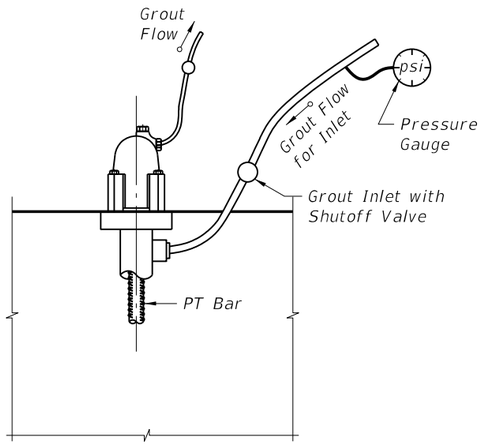
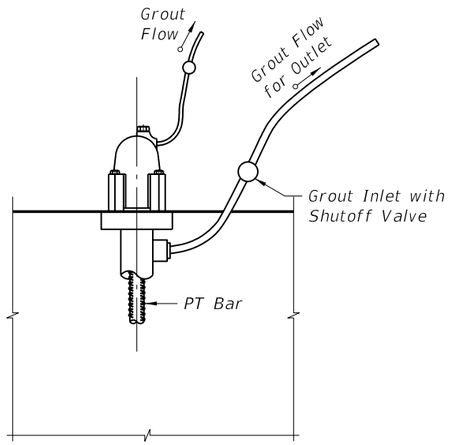
LAST REVISION	REVISION	DESCRIPTION:			
01/01/11			2015 DESIGN STANDARDS	POST-TENSIONING ANCHORAGE AND GROUTING DETAILS	INDEX NO. 21803 / SHEET NO. 1 of 3



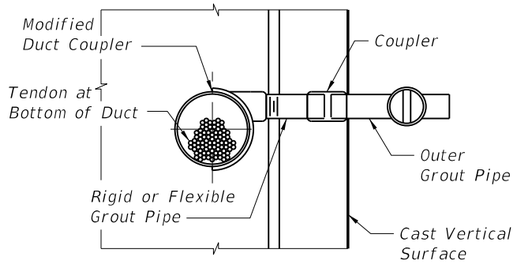
INLET END



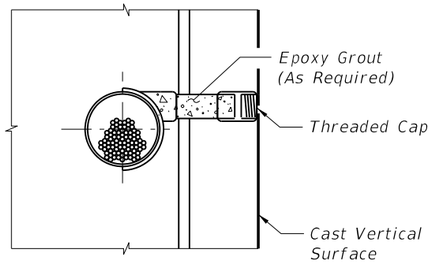
NOTE:
Anchor or Nut to allow for Flow of Grout into Cap.

OUTLET END

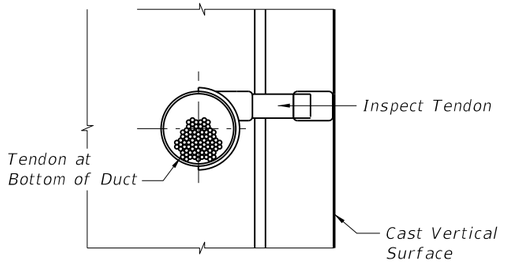
GROUT INLET AND OUTLET DETAILS FOR PT BARS



1 GROUT OUTLET CONNECTION TO TENDON



3 FILLING POCKET

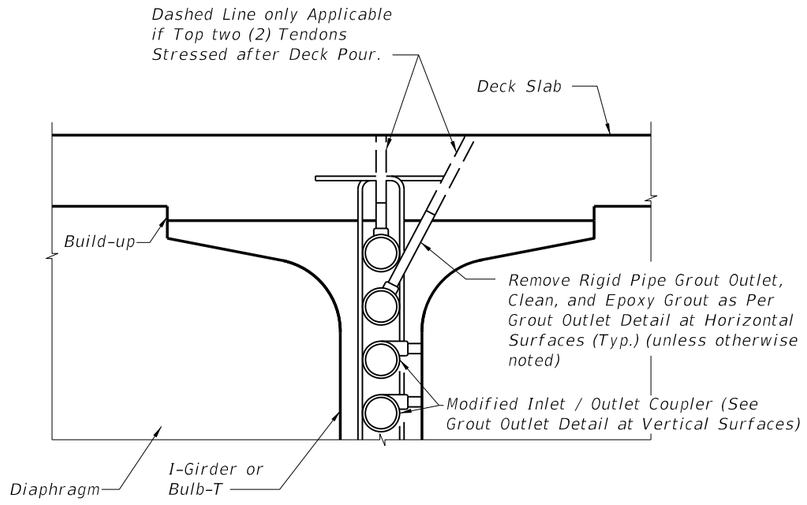


2 POCKET PREPARATION

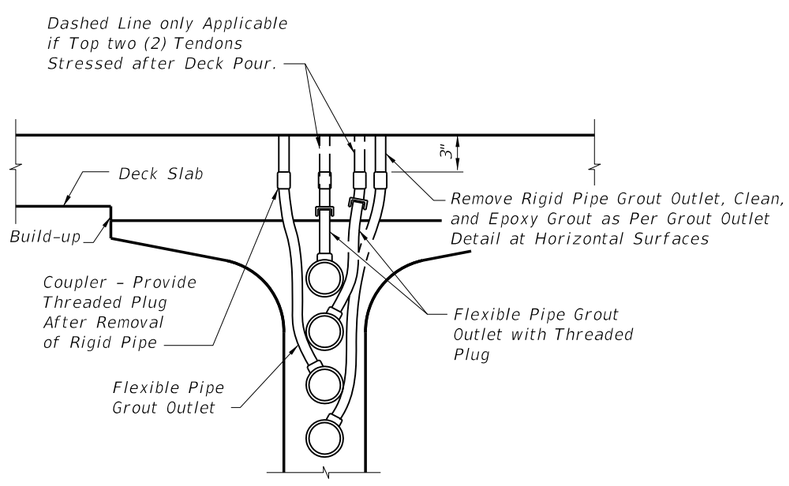
PROCEDURE:

1. Remove Rigid Grout Pipe.
   or Drill Grout in Flexible Pipe.
2. Inspect Tendon for Voids as Necessary.
3. Vacuum Grout as Required and Allow
   Grout to Cure for 24 hr. (Min.).
   Remove Pipe used for Vacuum Grouting.
4. Plug Recess with Threaded Cap on Inside Surfaces
   of Box Sections and Inside (non-fascia) Surfaces
   of I-Girders. For all other Surfaces, Plug
   Recess with both Threaded Cap and Epoxy Grout.

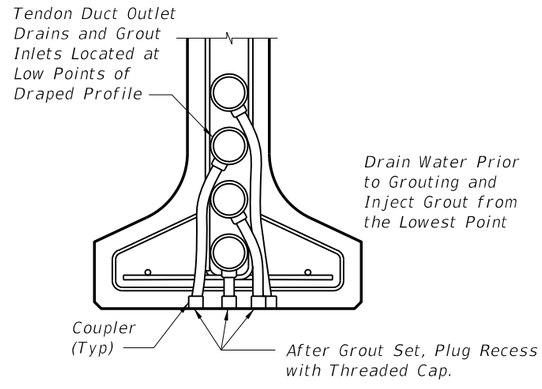
GROUT OUTLET DETAIL AT VERTICAL SURFACES



HIGH POINT INSPECTION
LOCATION AT GROUT OUTLET



TENDONS AT 3' TO 6'
FROM HIGH POINTS (GROUT OUTLET)



TENDONS AT LOW POINTS
(GROUT INLET / DRAIN)

GROUT INLET AND OUTLET DETAILS FOR I-GIRDERS/BULB-T'S

Details for C-I-P Boxes with Internal Tendons Similar. Web Reinforcing not Shown for Clarity.

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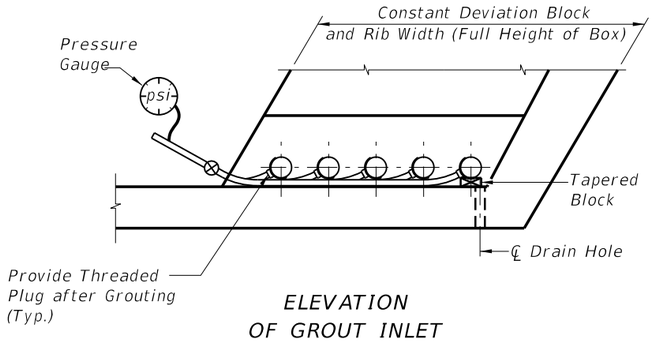
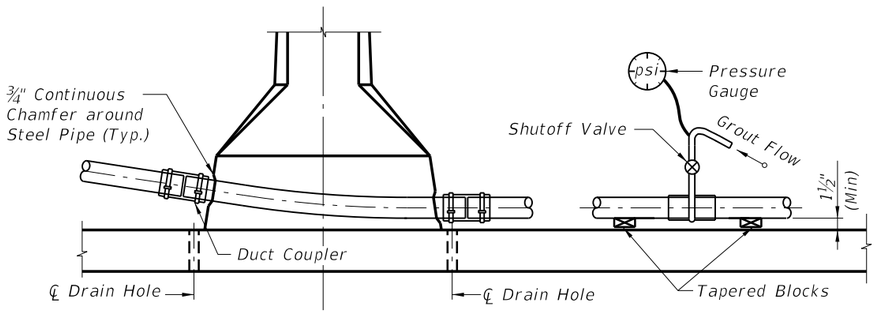
LAST REVISION	REVISION	DESCRIPTION:	2015 DESIGN STANDARDS	POST-TENSIONING ANCHORAGE AND GROUTING DETAILS	INDEX NO.	SHEET NO.
01/01/11			FDOT		21803	2 of 3



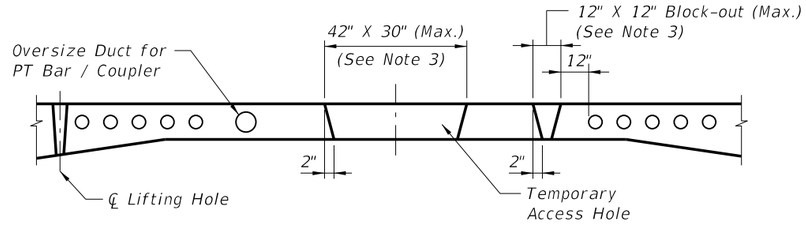
ELEVATION
OF GROUT INLET

NOTES:
Place Tapered Blocks Under Each Tendon to be Grouted to Raise Duct off Tendon Strands. Center Strands within Duct before Grouting Blocks Shall be Removed after Grout has Set. Blocks Shall not Damage or Permanently Deform Duct.



SECTION

GROUTING FOR SPAN BY SPAN CONSTRUCTION



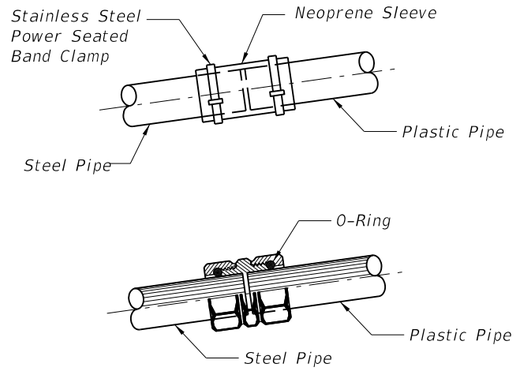
TEMPORARY ACCESS HOLES

Notes: Temporary Access Holes

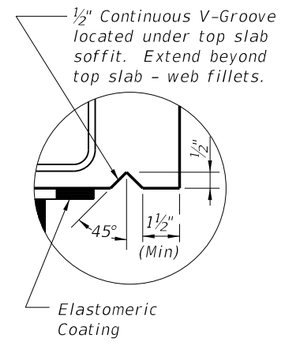
1. Temporary access holes to facilitate access for erection, jacking and grouting operations inside the box during construction are allowed. The access holes shall be limited to a maximum size of 42" wide x 30" long and shall be limited to one per span.
2. Slab block-outs for temporary / permanent longitudinal post-tensioning bars are not allowed. Temporary/ permanent PT bars in the top slab shall be placed in oversized ducts in the slab to accommodate both the bar and coupler.
3. In lieu of 1 ~ 42" x 30" temporary access hole, a maximum of 2 top slab block-outs (12" x 12" (Max.)) between the webs is allowed for construction per span. Block-outs shall be a minimum of 12" from the nearest duct or anchor and shall be located as to prevent direct drip onto bottom slab anchors.

Notes: Repair of Temporary Access Holes, Block-outs, and Lifting Holes

1. Form all large block-outs with tapered sides.
2. Immediately before casting the concrete, mechanically clean the mating concrete surfaces to remove any laitance and to expose small aggregate.
3. Repair all holes and block-outs with Magnesium Ammonium Phosphate Concrete within 24 hours of cleaning concrete.
4. After completion of the deck grooving, coat the repaired and surrounding concrete surfaces with High Molecular Weight Methacrylate.
5. Alternately, epoxy grout may be used to repair holes. High Molecular Weight Methacrylate is not required with epoxy grout.



DUCT COUPLER DETAIL



DETAIL OF DRIP
LEDGE AT ABUTMENTS AND
EXPANSION JOINTS FOR SEGMENTAL
AND CAST-IN-PLACE BOX CONSTRUCTION

5/22/2014 2:50:34 PM

LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
01/01/11			FDOT 2015 DESIGN STANDARDS	POST-TENSIONING ANCHORAGE AND GROUTING DETAILS	21803	3 of 3