

THE STATE OF DELAWARE DEPARTMENT OF TRANSPORTATION

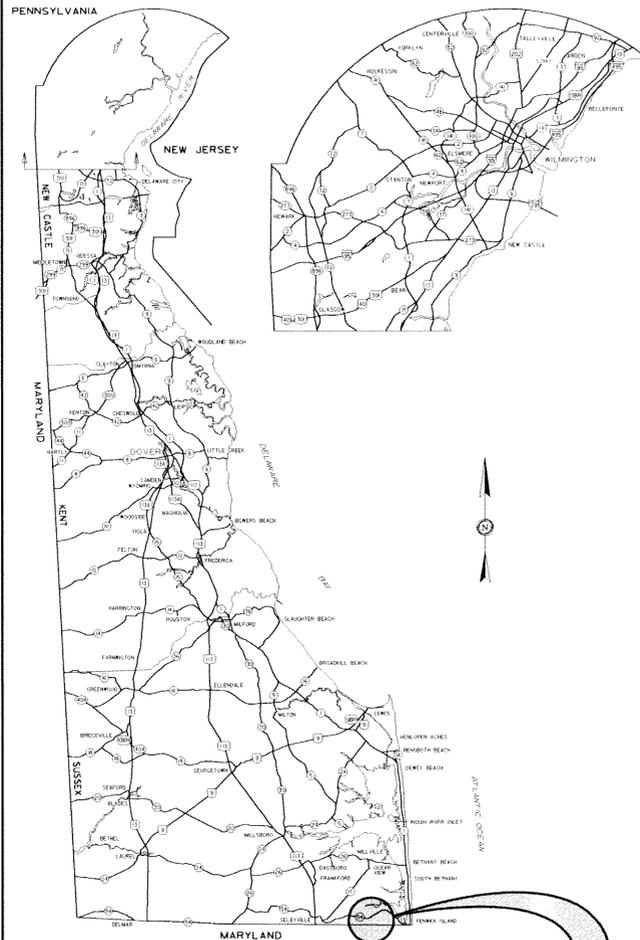
U.S. CUSTOMARY
UNITS



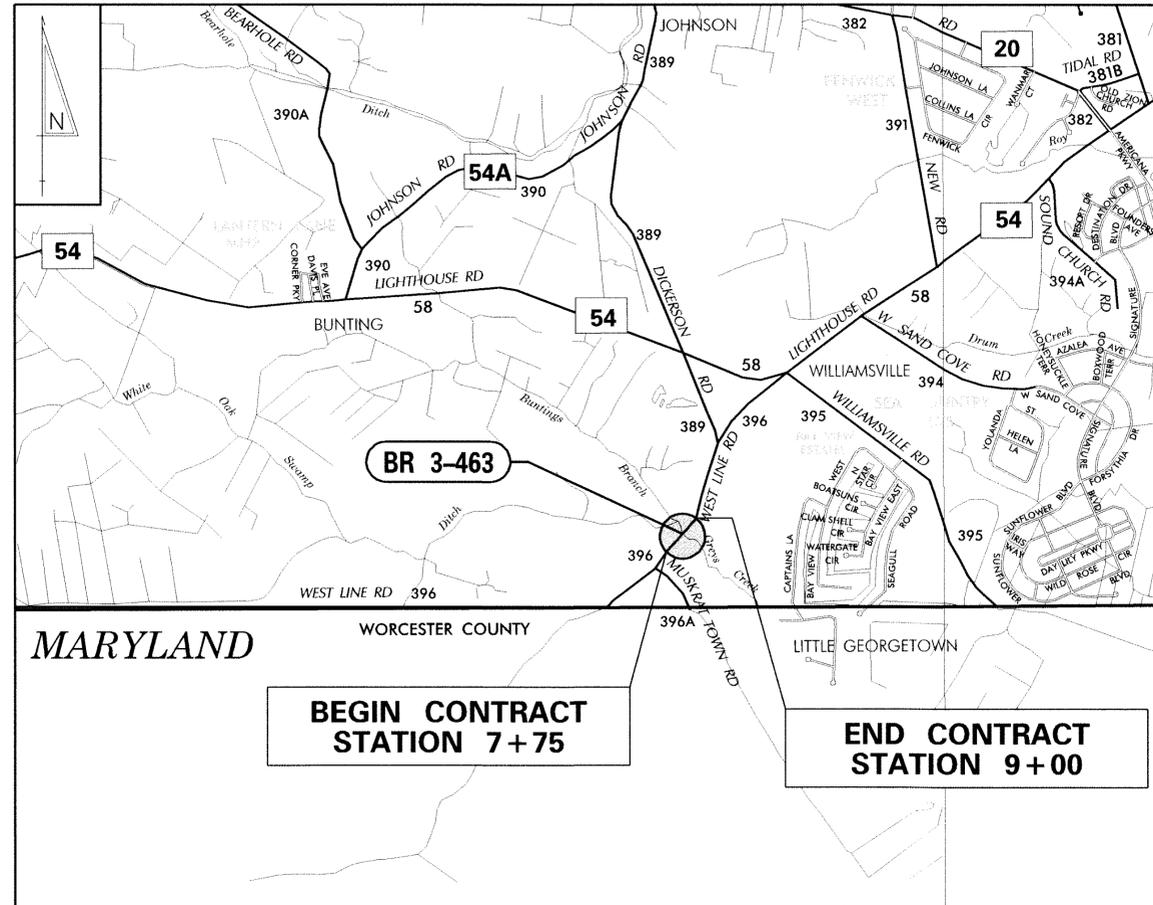
CONSTRUCTION PLANS FOR: PROVIDE PRECAST ELEMENTS FOR BR3-463 ON S396 WEST LINE ROAD OVER BUNTINGS BRANCH (EMERGENCY REPAIRS)

CONTRACT NUMBER: T201347204
FEDERAL AID PROJECT NUMBER: EBROS-S396(03)

COUNTY: SUSSEX M.R. #: S396



GENERAL LOCATION OF CONTRACT



DESIGN DESIGNATION

FUNCTIONAL CLASS: MINOR COLLECTOR ROAD	D.H.V. PROJECTED: 45	YEAR: 2040
TYPE OF CONSTRUCTION: BRIDGE REPLACEMENT	DESIGN SPEED: 55 M.P.H.	
A.A.D.T. CURRENT: 431	YEAR: 2012	TRUCKS: 11%
A.A.D.T. PROJECTED: 625	YEAR: 2040	DIRECTION OF DISTRIBUTION: 60%

INDEX OF SHEETS

SHEET NO.	TABLE OF CONTENTS
1	TITLE SHEET
2	BRIDGE PLAN, SECTION, & ELEVATION
3	BRIDGE DETAILS

TOTAL SHEETS: 3

APPROVED DESIGN EXCEPTIONS

DESIGN PARAMETER	REQUIRED	PROVIDED	DATE
MINIMUM HORIZONTAL CURVE RADIUS	1060'	780'	12/18/12
SUPERELEVATION RATE	6%	2.04%	12/18/12
MINIMUM K (CREST)	114	23	12/18/12
STOPPING SIGHT DISTANCE	495'	380'	12/18/12

ADDENDA & REVISIONS

DESCRIPTION	NAME & DATE

ASSOCIATED CONTRACTS

CONTRACT NO.	CONTRACT NAME
T201347202	BR3-463 ON S396 WEST LINE ROAD OVER BUNTINGS BRANCH (EMERGENCY REPLACEMENT)

PREPARED BY
THE CONSULTING FIRM OF

SEAL

RECOMMENDED _____ DATE _____

RECOMMENDED

SQUAD MANAGER, CONSTRUCTION _____ DATE _____

GROUP ENGINEER, CONSTRUCTION _____ DATE _____

ASSISTANT DIRECTOR, TRANSPORTATION SOLUTIONS (CONSTRUCTION) _____ DATE _____

FINAL PLANS

RECOMMENDED

STORMWATER ENGINEER _____

DATE _____ SEAL _____

RECOMMENDED

[Signature]

SQUAD MANAGER, BRIDGE DESIGN

DATE 1/2/13

RECOMMENDED

[Signature]

BRIDGE DESIGN ENGINEER

DATE 1/2/2013

RECOMMENDED

[Signature]

GROUP ENGINEER, PROJECT DEVELOPMENT

DATE _____ SEAL _____

RECOMMENDED

[Signature]

ASSISTANT DIRECTOR, BRIDGE DESIGN

DATE JANUARY 3, 2012

REGISTERED

[Seal]

SEAL

APPROVED

[Signature]

CHIEF ENGINEER

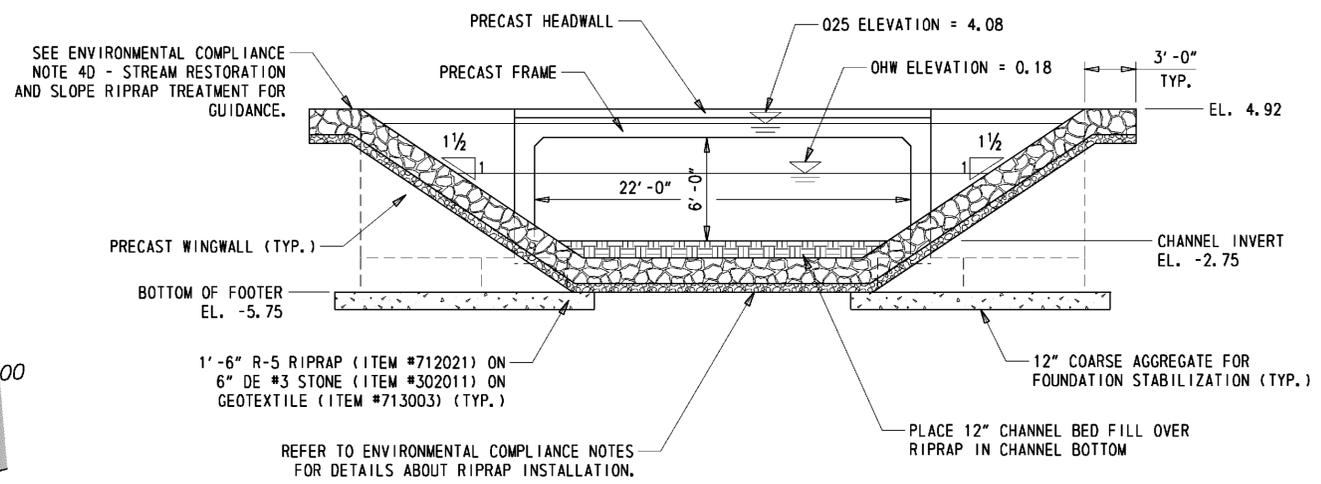
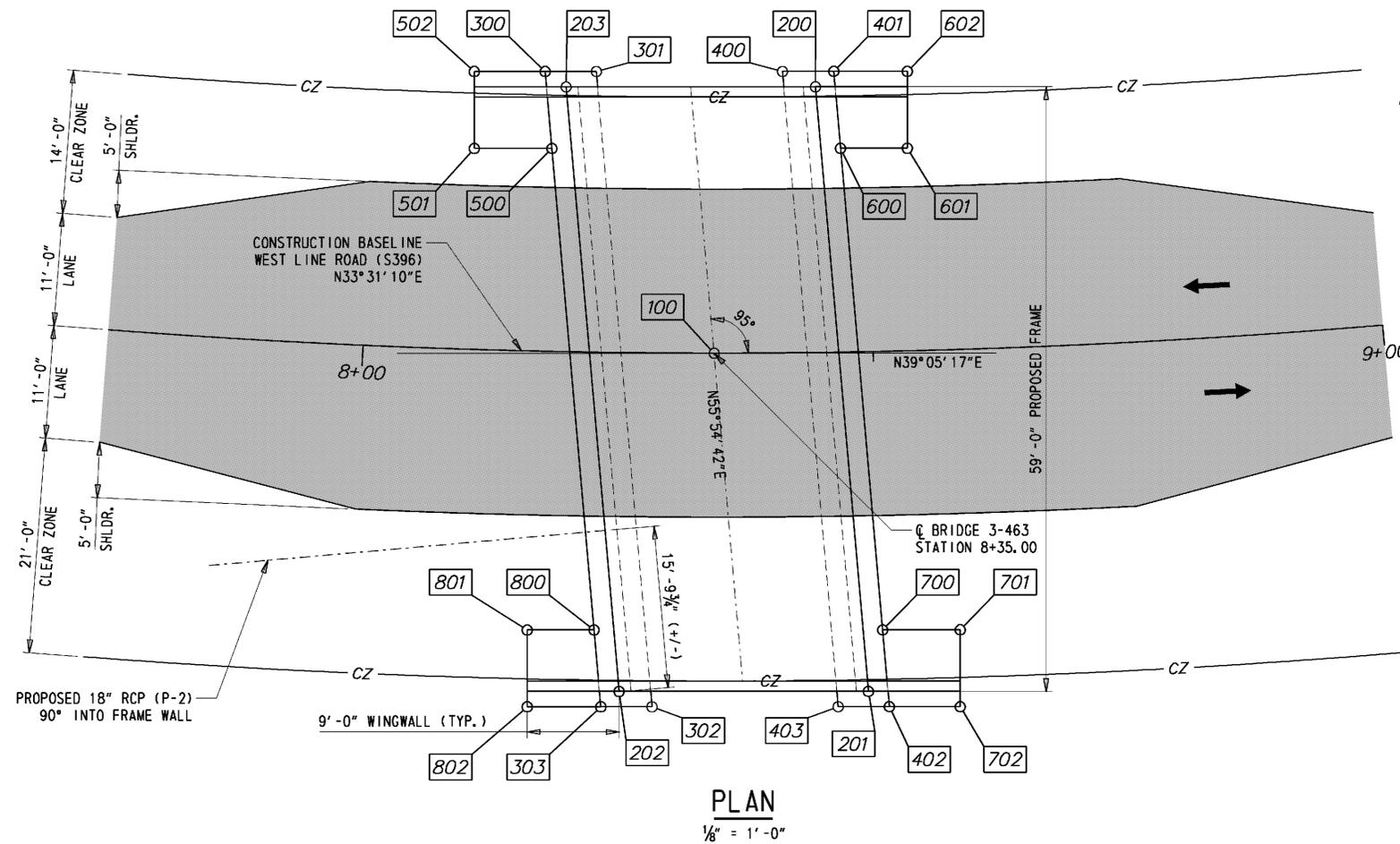
DATE 1/3/13

REGISTERED

[Seal]

SEAL

LAST REVISED: 03/03/2011
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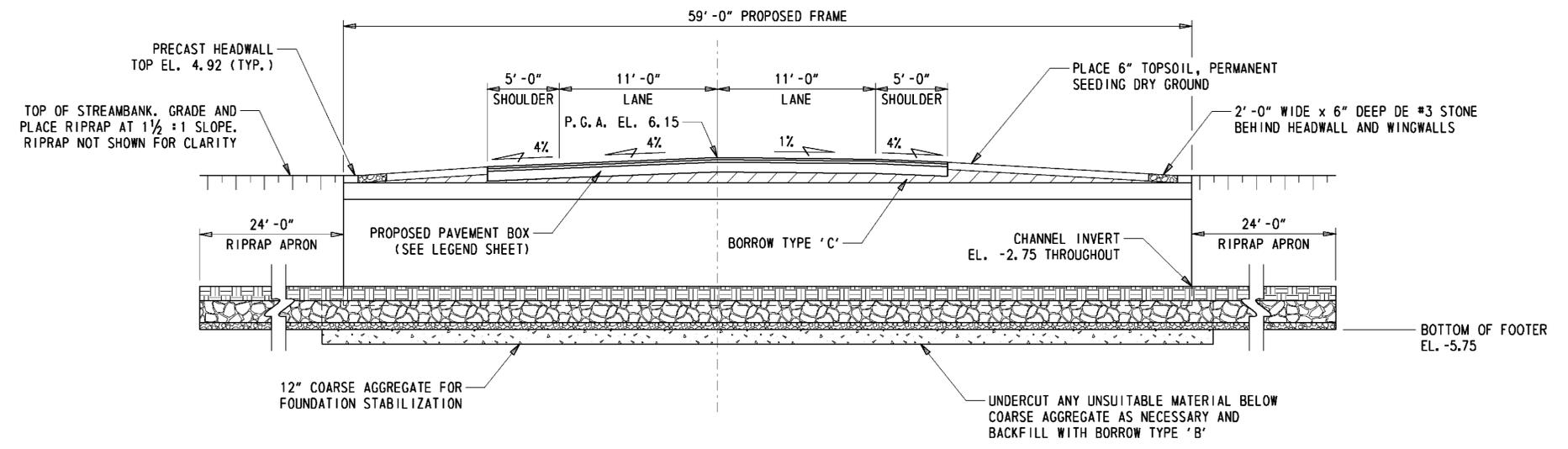
BRIDGE ELEVATION
 $\frac{1}{8}'' = 1' - 0''$

PLAN
 $\frac{1}{8}'' = 1' - 0''$

FRAME LAYOUT COORDINATES				
PT.	STATION	OFFSET	NORTHING	EASTING
100	8+35.00	0.00	165462.8094	736031.8407
200	8+20.02	-25.86	165467.9575	736002.5259
201	8+45.29	-25.93	165486.9166	736017.9267
202	8+49.49	33.14	165453.7227	736066.9758
203	8+26.06	33.05	165434.7636	736051.5746
300	8+17.86	-27.32	165467.3075	736000.0661
301	8+23.06	-27.41	165471.2032	736003.2307
302	8+29.16	34.52	165436.3215	736054.7738
303	8+24.36	34.58	165432.4258	736051.6092
400	8+41.96	-27.47	165485.3576	736014.7288
401	8+47.16	-27.41	165489.2533	736017.8934
402	8+51.43	34.68	165454.3716	736069.4365
403	8+46.63	34.59	165450.4759	736066.2719

WINGWALL LAYOUT COORDINATES				
PT.	STATION	OFFSET	NORTHING	EASTING
500	8+18.70	-19.83	165463.0879	736006.3011
501	8+10.90	-19.64	165457.1863	736001.5070
502	8+10.67	-27.13	165461.9176	735995.6877
600	8+47.72	-19.90	165485.0338	736024.1285
601	8+54.44	-19.76	165490.1166	736028.2574
602	8+54.63	-27.26	165494.8479	736022.4381
700	8+50.95	27.17	165458.5912	736063.2015
701	8+58.29	27.36	165464.4928	736067.9956
702	8+58.08	34.86	165459.7615	736073.8149
800	8+23.62	27.09	165436.6453	736045.3741
801	8+17.30	27.21	165431.5625	736041.2452
802	8+17.46	34.71	165426.8312	736047.0645

CONTRACT SPECIFIC NOTES
 1. THIS SHEET IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY.



BRIDGE SECTION
 $\frac{1}{8}'' = 1' - 0''$

ADDENDUMS / REVISIONS



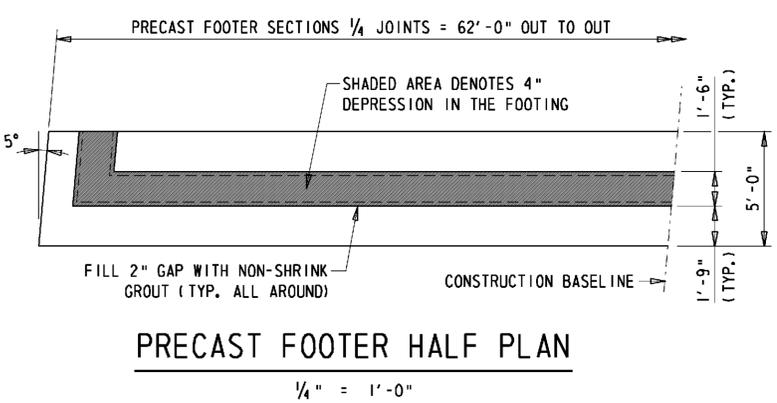
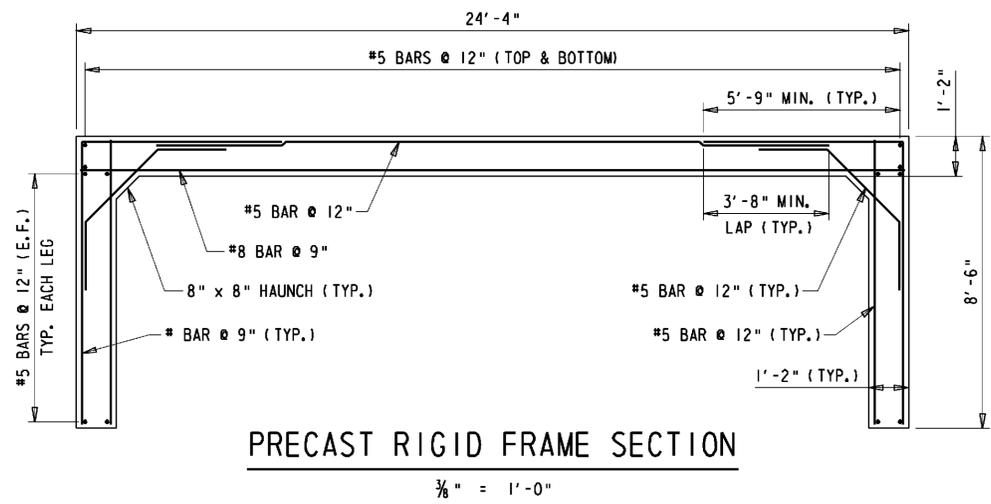
PROVIDE PRECAST ELEMENTS FOR BR3-463 ON S396 WEST LINE ROAD OVER BUNTINGS BRANCH (EMERGENCY REPAIRS)

CONTRACT	BRIDGE NO.	3-463
T201347204	DESIGNED BY: NED	
COUNTY	CHECKED BY: EM	
SUSSEX		

BRIDGE PLAN, SECTION & ELEVATION

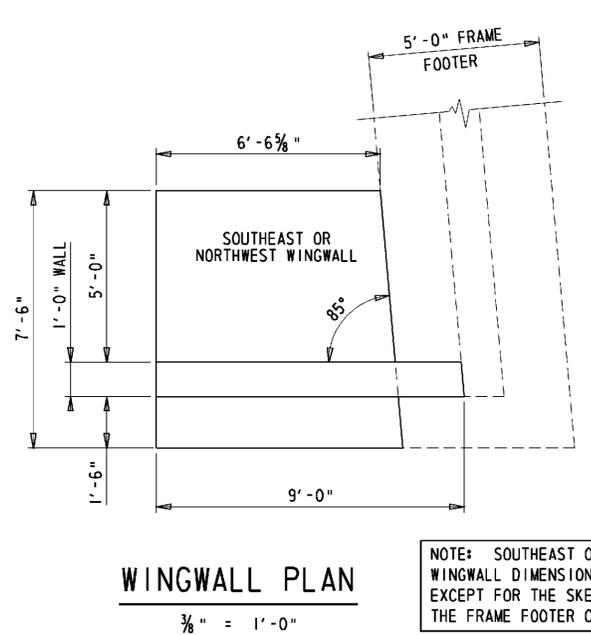
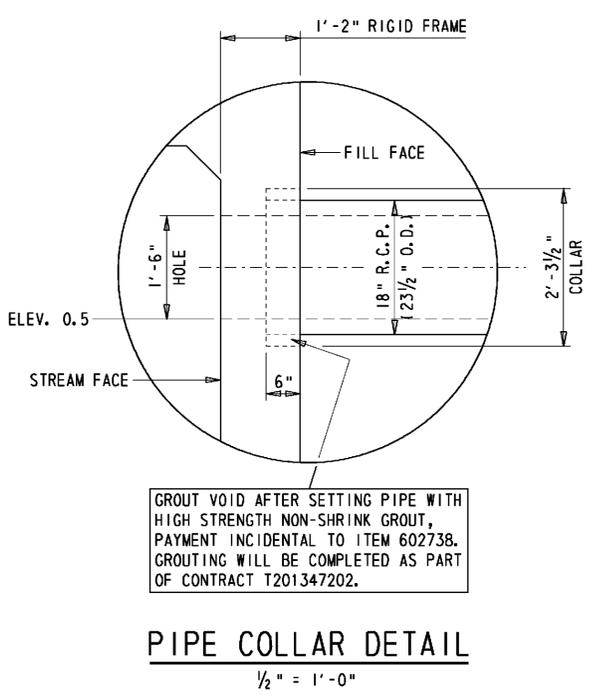
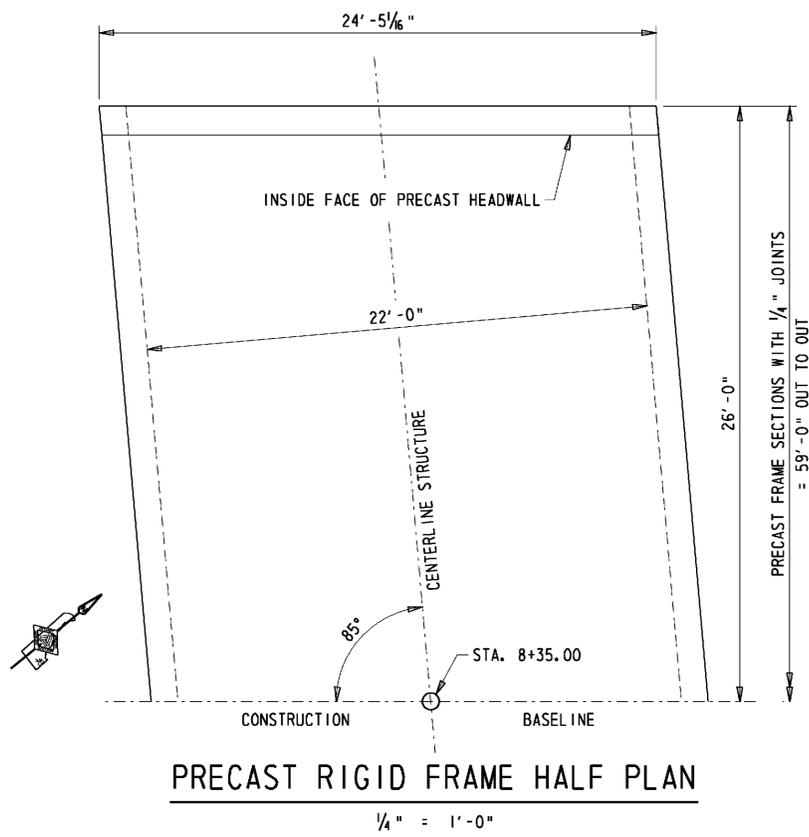
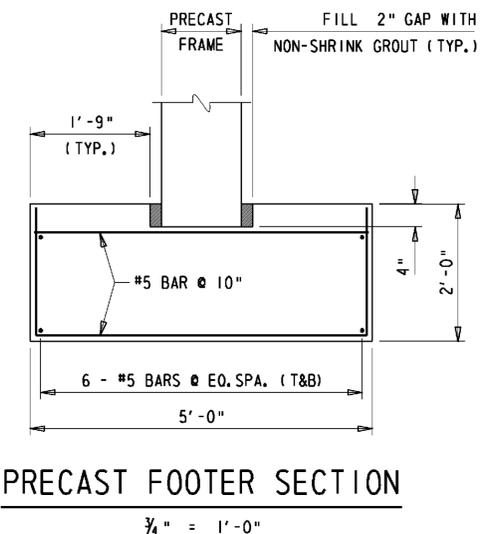
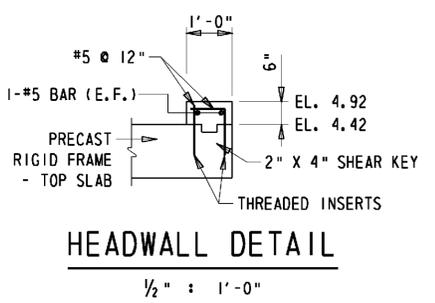
SHEET NO.	2
TOTAL SHTS.	3

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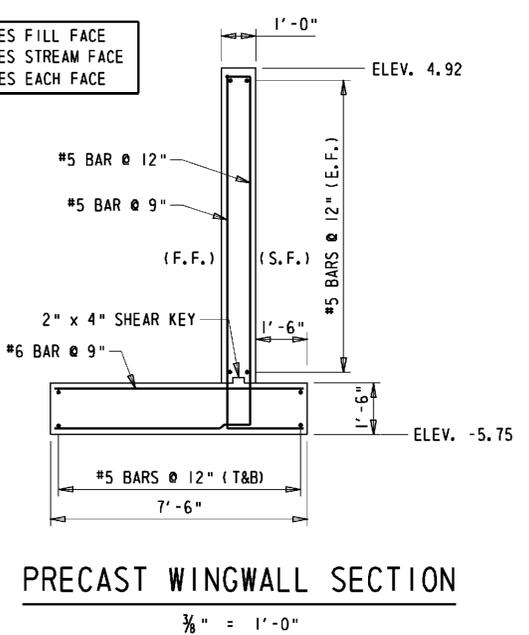


CONTRACT SPECIFIC NOTES

- THIS CONTRACT SHALL PROVIDE PRECAST ELEMENTS FOR THE REPLACEMENT OF BRIDGE 3-463.
- FULL BRIDGE PLANS ARE STILL IN DEVELOPMENT AT THE TIME OF BIDDING FOR THIS CONTRACT. IF ADDITIONAL INFORMATION IS NEEDED, PLEASE CONTACT DELDOT CONTRACT ADMINISTRATION.
- SUPPLIER IS TO SUPPLY AND DELIVER THE PRECAST ELEMENTS TO THE JOB SITE WHICH IS IN ZIP CODE 19975. THE SUPPLIER SHALL COORDINATE WITH THE CONSTRUCTION CONTRACTOR (ONCE CHOSEN BY THE DEPARTMENT) FOR DELIVERY. THE FABRICATOR MUST COORDINATE WITH THE CONSTRUCTION CONTRACTOR WITHIN TWO DAYS OF WHEN THE PRECAST ELEMENTS ARE READY FOR DELIVERY. THE SUPPLIER MUST BE PREPARED TO DELIVER THE PRECAST ELEMENTS TO THE SITE ON MARCH 15, 2013. IF THE SUPPLIER CANNOT MEET THIS DATE, THEN HE SHALL PROVIDE THE EARLIEST DATE IN WHICH HE CAN PROVIDE THE PRECAST ELEMENTS. THE CONSTRUCTION CONTRACTOR SHALL BE RESPONSIBLE FOR OFFLOADING THE PRECAST ELEMENTS FROM THE TRUCKS AT THE SITE. PRECAST ELEMENTS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 602 OF THE STANDARD SPECIFICATIONS.



F.F. - DENOTES FILL FACE
S.F. - DENOTES STREAM FACE
E.F. - DENOTES EACH FACE



PRECAST ELEMENT NOTES

- DESIGN PLANS / WORKING DRAWINGS
INFORMATION PERTAINING TO THE PRECAST REINFORCED CONCRETE RIGID FRAME AND WINGWALL SECTIONS IS INTENDED TO SERVE AS AN INDICATION OF THE TYPE OF CONSTRUCTION ACCEPTABLE FOR USE. THE FABRICATOR WILL BE REQUIRED TO PREPARE AND SUBMIT FOR APPROVAL A COMPLETE SET OF DETAILED SHOP DRAWINGS FOR THE PRECAST CONCRETE UNITS THEY PROPOSE TO FURNISH. THE SHOP DRAWINGS SHALL INCLUDE:
A. AN OVERALL PLAN SHOWING ALL UNITS TOGETHER AND DETAILS OF EACH TYPE OF UNIT.
B. A PLAN VIEW OF REINFORCEMENT FOR ANY IRREGULAR SHAPED (SKEWED, CURVED, ETC.) SECTIONS.
C. REINFORCING BAR LIST
D. BILL OF MATERIALS INCLUDING ALL ACCESSORIES
E. METHOD AND SEQUENCE OF POST-TENSIONING
- PRECAST ELEMENTS AND ACCESSORIES
PAYMENT FOR ITEM 602739 - PRECAST CONCRETE RIGID FRAME AND ITEM 602738 - PRECAST CONCRETE RETAINING WALL SHALL INCLUDE:
A. ALL PRECAST ELEMENTS FOR RIGID FRAME, HEADWALLS AND FOOTERS UNDER ITEM 602739 AND WINGWALLS UNDER ITEM 602738.
B. ALL ASSOCIATED REINFORCEMENT.
C. ALL ACCESSORIES (INCLUDING, BUT NOT LIMITED TO, CONCRETE FINISH, POST-TENSIONING TENDONS, CONNECTION PLATES, GROUT, JOINT WRAP) MENTIONED IN THE FOLLOWING NOTES UNLESS NOTED OTHERWISE.
D. DELIVERY OF ALL PRECAST ELEMENTS AND ALL ACCESSORIES.
- MISCELLANEOUS CONCRETE NOTES
A. ALL EXPOSED SURFACES SHALL BE PROTECTED WITH A WATER MISCIBLE, PENETRATING SILANE SEALER APPLIED AT THE FABRICATION PLANT.
B. ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4" UNLESS OTHERWISE NOTED.
- RIGID FRAME POST-TENSIONING
POST TENSIONING SHALL BE COMPLETED BY THE FABRICATOR. THE PRECAST RIGID FRAME SECTIONS SHALL BE POST-TENSIONED TOGETHER WITH A MINIMUM OF FOUR POST-TENSIONING TENDONS. THE FRAME SHALL BE POST-TENSIONED SUCH THAT THE NEOPRENE GASKETS ARE COMPRESSED ALL AROUND AND THERE IS A 1/2" MAXIMUM GAP BETWEEN SECTIONS. MAXIMUM POST-TENSIONING FORCE SHALL BE 28,900 lbs. POST-TENSIONING DETAILS (PLACEMENT, SEQUENCE OF TENSIONING, etc.) SHALL BE SHOWN IN THE SUBMITTED SHOP DRAWINGS. ALL POCKETS FOR POST-TENSIONING DUCTS SHALL BE FILLED WITH NON-SHRINK GROUT.
- WINGWALL POST TENSIONING
A. THE PRECAST WINGWALL SECTIONS SHALL BE POST TENSIONED TOGETHER AND POSITIVELY CONNECTED TO THE RIGID FRAME WITH A MINIMUM OF TWO POST-TENSIONING TENDONS. POST-TENSIONING SHALL BE AS PER NOTE 4.
B. AT LOCATIONS WHERE POST TENSIONING OF THE WINGWALLS IS NOT FEASIBLE, A BOLTED CONNECTION MAY BE USED. BOLTED CONNECTION DETAILS SHALL BE SHOWN IN THE SUBMITTED SHOP DRAWINGS.
- BOLTED CONNECTIONS
THE BOLTED CONNECTION MUST CONSIST OF A MINIMUM OF TWO 3'-0" WIDE x 2'-0" TALL x 1/4" THICK PLATES PER JOINT WITH AT LEAST FOUR 3/4" BOLTS PER PLATE. ANGLED PLATES SHALL HAVE 8 BOLTS. SLOTTED HOLES IN THE PLATE SHALL NOT BE PERMITTED. HOLES FOR ANCHOR BOLTS MAY BE FIELD DRILLED.
- JOINTS BETWEEN PRECAST SECTIONS
A. NEOPRENE GASKETS SHALL BE PROVIDED AT THE JOINTS BETWEEN ALL PRECAST UNITS IN ORDER TO MAKE THE JOINTS WATERTIGHT. AFTER INSTALLATION, THE GASKETS SHALL BE COMPRESSED SUCH THAT GAPS ARE NOT VISIBLE.
B. ALL JOINTS BETWEEN PRECAST RIGID FRAME SECTIONS SHALL HAVE A SHEAR KEY IN THE TOP SLAB.
C. ALL WINGWALL TO WINGWALL AND WINGWALL TO RIGID FRAME JOINTS SHALL HAVE A SHEAR KEY.
D. THE LOCATIONS OF THE JOINTS IN THE RIGID FRAME OR WINGWALLS SHALL BE DETERMINED BY THE PRECASTER AND SUBMITTED IN THE SHOP DRAWINGS FOR APPROVAL.
E. THE REINFORCEMENT SHALL HAVE 2" COVER AT THE END OF EACH SECTION AND MEET OR EXCEED THE MINIMUM AREA OF STEEL PER FOOT DENOTED IN THE PLANS.
F. ALL JOINT EXTERIORS SHALL BE COVERED WITH A MINIMUM 9" WIDE WRAP CENTERED ON THE JOINT AS PER THE SPECIAL PROVISION FOR ITS RESPECTIVE ITEM.
- INSTALLATION OF ALL INCIDENTAL ITEMS LISTED IN PRECAST ELEMENTS NOTES 4 THROUGH 7 WITH THE EXCEPTION OF POST TENSIONING SHALL BE PAID FOR UNDER CONTRACT T201347202.