City Of Torrington

ENGINEERING DEPARTMENT
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Torrington, CT 06790-5245
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ADDENDUM No. 1

DATE ISSUED: May 5, 2017

RE: Torrington Drainage and Associated Improvements (Various Locations)

BID No. DAI-027-051117

All bidders are hereby advised of the following amendments to the Contract Bid Documents, which are hereby made an integral part of the specifications for the subject project, prepared by The City of Torrington, to the same extent as all other documents. All work shall conform to the standards and provisions of same.

Bids submitted shall be deemed to include the Contract Document information as shown in Addendum No. 1. General bidders shall notify sub-bidders that may be affected by this addendum as applicable. Bidders shall be required to acknowledge receipt of this Addendum in the space provided on the Bid Proposal Form, Page BP-1. Failure to acknowledge this Addendum by the Bidder may result in the rejection of their bid. Bidders are directed to review changes to all portions of the work as changes to one portion may affect the work of another.

1. **REPLACE Plan Sheets C3 to C8** with the revised **Drawing Sheets C3 to C8** dated 5/05/17 Revision No. 1.

2. **REPLACE Plan Sheets D1 to D4** with the revised **Drawing Sheets D1 to D4** dated 5/05/17 Revision No. 1.

3. **Replace Exhibit "A" Bid Form –**pages BF-1 through BF-9 with the attached revised Exhibit "A" Bid Form pages BF-1 through BF-9 dated 05/05/2017.

4. **Replace Special Provision 02075 Site Demolition and Salvage** pages 02075 -01 through 02075 -04 with the attached revised pages 02075 -01 through 02075 -04 noted as REVISED FOR ADDENDUM#1 and dated 05/05/2017.

5. **ADD Special Provision 02300 Sanitary Sewer** pages 02300-01 through 02300-4 noted as ISSUED FOR ADDENDUM#1 dated 05/05/2017.

6. **Replace Special Provision 02500 Storm Drainage** pages 02500-01 through 02500-09 with the attached revised pages 02500-01 through 02500-09 noted as REVISED FOR ADDENDUM#1 and dated 05/05/2017.

7. **Replace Special Provision 02600 Bituminous Paving (Sidewalks, And Patching, Commercial And Residential Driveway)** pages 02600-01 through 02600-02 with the attached revised pages 02600-01 through 02600-02 noted as REVISED FOR ADDENDUM#1 and dated 05/05/2017.

8. **Replace Special Provision 03005 Utility Conflict Resolution** pages 03005-01 with the attached revised page 03005-01 noted as REVISED FOR ADDENDUM#1 and dated 05/05/2017

9. **ADD to Section B-INFORMATION FOR BIDDERS-PART 18. WAGE RATES-Paragraph (g)-Page IFB-6:** "(The value of 25% of the state-funded portion of this contract equates to $200,000.)"

10. **ADD to Plan Sheet C12-NOTES:**
C12-10. ALL EXISTING SANITARY SEWER SERVICE LATERALS IN PHYSICAL CONFLICT WITH NEW STORM SEWER PIPES SHALL BE REPLACED TO AVOID CONFLICT AS DIRECTED BY THE ENGINEER AND IN ACCORDANCE WITH PLAN DETAILS AND SPECIFICATIONS.

11. **DELETE SECTION 4.06 BITUMINOS CONCRETE - PART 4.06.04 METHOD OF MEASUREMENT- PART "3. Material for Tack Coat"**

END OF ADDENDUM No. 1

EXHIBIT "A" BID FORM

TORRINGTON DRAINAGE AND ASSOCIATED IMPROVMENTS (VARIOUS LOCATIONS)
TORRINGTON, CONNECTICUT **Addendum No.1 – 5/05/2017**
(Applies to entire bid form)

Note: Bids shall include all applicable fees

Item No.	Total Estimated Quantity	Description	Unit Price	Total Amount
1.	1	Mobilization and Demobilization the price per lump sum of _____ Dollars and _____Cents	$	$_____
2.	1	Traffic Person (Uniformed Flagger), the price estimated cost for, _____ Dollars and _____Cents	$ Estimated	$45,000.00
3.	1	Traffic Person (Municipal Police Officer) the price estimated cost for, _____ Dollars and _____Cents	$ Estimated	$35,000.00
4.	1	Maintenance and Protection of Traffic the price per lump sum of _____ Dollars and _____Cents	$_____	$_____
5.	1	Construction Staking the price per lump sum of _____ Dollars and _____Cents	$_____	$_____
6.	74	Earth Excavation (Bus Bay Drop Off Area) the price per cubic yard of _____ Dollars and _____Cents	$_____	$_____

Item No.	Total Estimated Quantity	Description	Unit Price	Total Amount
7.	40	Unsuitable Material Excavation the price per cubic yard of _____ Dollars and _____Cents	$_____	$_____
8.	1	Clearing and Demolition the price per lump sum of _____ Dollars and _____Cents	$_____	$_____
9.	1	Remove Stone Culvert on Field Street the Price per lump sum of _____ Dollars and _____Cents	$_____	$_____
10.	1	Remove Stone Culvert on Prospect Street the Price per lump sum of _____ Dollars and _____Cents	$_____	$_____
11.	300	Gravel Sub Base the price per ton of, _____ Dollars and _____Cents	$_____	$_____
12.	24	Type "CM" Catch Basin, complete, the price per each of _____ Dollars and _____Cents	$_____	$_____

	Item No.	Total Estimated Quantity	Description	Unit Price	Total Amount
⇨	13.	1	Type "CM" Catch Basin Top Only complete, the price per each of _____ Dollars and _____Cents	$_____	$_____
⇨	14.	2	Type II "CM" Catch Basin Top complete, the price per each of _____ Dollars and _____Cents	$_____	$_____
⇨	15.	1	Type II Catch Basin Type “C” Top (Custom) the price per each of _____ Dollars and _____Cents	$_____	$_____
⇨	16.	5	Type “C” Catch Basin the price per each of _____ Dollars and _____Cents	$_____	$_____
	17.	1	Type I Catch Basin Single Type “C” Top the price per each of _____ Dollars and _____Cents	$_____	$_____
	18.	7	Paved Invert in Catch Basin complete, the price per each of, _____ Dollars and _____Cents	$_____	$_____

Item No.	Total Estimated Quantity	Description	Unit Price	Total Amount
19.	1	Alter Existing Catch Basin, complete the price per each of, _____ Dollars and _____Cents	$_____	$_____
20.	1	Alter Existing Storm Manhole complete, the price per each of, _____ Dollars and _____Cents	$_____	$_____
21.	3	48” Storm Manhole, complete the price per each of, _____ Dollars and _____Cents	$_____	$_____
22.	1	60” Storm Manhole, complete the price per each of _____ Dollars and _____Cents	$_____	$_____
23.	75	12” HDPE Storm Pipe, complete the price per linear foot of, _____ Dollars and _____Cents	$_____	$_____
24.	394	15” HDPE Storm Pipe, complete the price per linear foot of _____ Dollars and _____Cents	$_____	$_____

Item No.	Total Estimated Quantity	Description	Unit Price	Total Amount
25.	342	18” HDPE Storm Pipe, complete the price per linear foot of _____ Dollars and _____Cents	$_____	$_____
26.	16	24” HDPE Storm Pipe, complete the price per linear foot of _____ Dollars and _____Cents	$_____	$_____
27.	126	30” HDPE Storm Pipe, complete the price per linear foot of _____ Dollars and _____Cents	$_____	$_____
28.	36	36” HDPE Storm Pipe, complete the price per linear foot of _____ Dollars and _____Cents	$_____	$_____
29.	41	12” Class V RCP Storm Pipe, complete the price per linear foot of _____ Dollars and _____Cents	$_____	$_____
30.	499	30” Class V RCP Storm Pipe, complete the price per linear foot of _____ Dollars and _____Cents	$_____	$_____

Item No.	Total Estimated Quantity	Description	Unit Price	Total Amount
31.	13	Replace Storm Manhole Frame and Cover to Grade, complete the price per each of _____ Dollars and _____Cents	$_____	$_____
32.	23	Reset Manhole Frame and Cover to Grade, complete the price per each of _____ Dollars and _____Cents	$_____	$_____
33.	1690	Permanent Bituminous Concrete Patching, the price per square foot for, _____ Dollars and _____Cents	$_____	$_____
34.	18676	Bituminous Concrete Sidewalk or Residential Driveway, the price per square foot for, _____ Dollars and _____Cents	$_____	$_____
35.	2250	Bituminous Concrete Commercial Driveway the price per square foot for, _____ Dollars and _____Cents	$_____	$_____
36.	100	Processed Aggregate Base, the price per ton for, _____ Dollars and _____Cents	$_____	$_____

Item No.	Total Estimated Quantity	Description	Unit Price	Total Amount
37.	3240	New Granite Curbing, the price per linear foot for, _____ Dollars and _____Cents	$_____	$_____
38.	418	New Curved Granite Curbing, the price per linear foot for, _____ Dollars and _____Cents	$_____	$_____
39.	2100	Remove and Reset Stone Curbing, the price per linear foot for, _____ Dollars and _____Cents	$_____	$_____
40.	2500	Concrete Sidewalk and Residential Driveway Apron the price per square foot for, _____ Dollars and _____Cents	$_____	$_____
41.	4320	Turf Establishment, the price per square yard for, _____ Dollars and _____Cents	$_____	$_____
42.	10	Utility Conflict Resolution the price per each of, _____ Dollars and _____Cents	$_____	$_____

Item No.	Total Estimated Quantity	Description	Unit Price	Total Amount
43.	1358	6” Bituminous Concrete Curbing, the price per linear foot for, _____ Dollars and _____Cents	$_____	$_____
44.	25	Existing Traffic and Parking Signs, Reinstalled the price per each for, _____ Dollars and _____Cents	$_____	$_____
45.	50	Loop Detector Sawcut, the price per linear foot for, _____ Dollars and _____Cents	$_____	$_____
46.	224	4” White Hot Applied Pavement Markings, the price per linear foot for, _____ Dollars and _____Cents	$_____	$_____
47.	800	4” Yellow Hot Applied Pavement Markings, the price per linear foot for, _____ Dollars and _____Cents	$_____	$_____
48.	1344	Hot Applied Pavement Markings, Symbols and Legends, the price per square foot for, _____ Dollars and _____Cents	$_____	$_____

Item No.	Total Estimated Quantity	Description	Unit Price	Total Amount
49.	15526	Full Depth Reclamation of Street Pavements 0” to 12” of Existing Asphalt, the price per square yard for, _____ Dollars and _____Cents	$_____	$_____
50.	3540	Bituminous Concrete, (HMA S 0.50) Super Pave, the price per ton for, _____ Dollars and _____Cents	$_____	$_____
51.	210	6” PVC Sanitary Sewer Lateral Pipe, complete the price per linear foot of _____ Dollars and _____Cents	$_____	$_____

Total Bid Amount $ _____

Total Bid Amount of above items to be inserted on “Bid Proposal” page.

END OF SECTION

SECTION 02075
SITE DEMOLITION AND SALVAGE

ITEM-CLEARING AND DEMOLITION
ITEM-REMOVE STONE CULVERT FIELD STREET
ITEM-REMOVE STONE CULVERT PROSPECT STREET

PART 1 - GENERAL

1.01 CONTRACT DOCUMENTS

The general provisions of the CONTRACT, including General and Supplementary Conditions and General Requirements, apply to the work specified in this subsection.

1.02 DESCRIPTION

A. Demolition includes, but is not limited to, removal of existing curbs, sidewalk, driveways, cutting and removal of tree roots, manmade structures, pavements, abandoned utilities, abandon metal pipe sleeves and valves and similar construction items. Work also includes removal of two existing stone culverts one on Field Street and one Prospect Street. Demolition also includes removal and disposal of, trash, debris, and all other materials found on or near the surface of the ground in the construction area and understood by generally accepted engineering practice not to be suitable for construction of the type contemplated. Demolition materials and debris shall be removed from the Project Area and legally disposed of in accordance with applicable Federal, State and local codes and regulations. Work includes saw cutting of pavements and sidewalks and removal of existing material to proposed subgrade elevations.

B. Depressions below the original ground surface resulting from the removal of sidewalk and pavement or from the result on overexcavation shall be filled with suitable processed aggregate base material and compacted to make the surface conform to the adjacent subgrade surface of the ground. No additional compensation will be allowed.

C. Existing signage, posts and foundation system shall remain in place and be protected during demolition and construction activities. Any damage to existing signage posts or foundation system as a result of the contractors operations shall be replaced at the expense of the contractor. Sign system replacement shall be in accordance with current specifications of the signs owner, City of Torrington or State of Connecticut Department of Transportation.

D. Existing granite curbs determined by the City to be in satisfactory condition to be used shall be removed and reset as detailed/shown on drawings. Any remaining existing granite curb not reused and determined by the City to be in satisfactory condition shall be carefully loaded on a truck so not to break pieces and delivered to the City's "City Dog Pound" on Bogue Road, Harwinton, Connecticut. Granite curbing removed that is determined to be in unsatisfactory condition by the City shall be disposed of offsite with other demolition materials as described below. Contractor shall be responsible for transporting granite pieces to site from "City Dog Pound" if needed.

E. Abandon existing storm manhole as identified on the design drawings are to be abandoned by removing the frame and cover and top section to within 2' of design surface. Bulkhead all connecting pipes. Fill structure with flowable fill concrete.

F. All work to bulkhead pipe ends as identified on the design drawings shall be considered part of demolition work. Pipes identified on the design drawings as to be abandoned shall have both ends plug seal bulk headed.

G. All test pit excavation work to locate and verify the elevation of existing underground gas, sanitary and water service laterals, duct-bank structures and any other utilities as noted on these plans shall be considered incidental to demolition work item.

H. All Catch basins as identified on the design drawings to be removed shall include the removal of all existing connecting storm piping that is in conflict with the installation of new storm pipe or catch basins. This pipe removal work shall be considered part of demolition work item. Bulkhead open ends of existing remaining pipes.

I. Two existing underground concrete utility duct-bank structures with electrical conduits with wiring and other piping are located on Field Street between STA 13+50 and 14+00. Structures, wiring and piping are to be removed to facilitate the installation of storm sewer piping. Existing utility duct-bank structures are to be entirely removed to within 3' of new storm sewer piping and catch basins. Open ends of existing structures to be plugged and sealed watertight with cast-in-place concrete ensuring the work is structurally sound to support the roadway above. The CONTRACTOR shall confirm the status of wiring with the Torrington Business Park LLC prior to demolition. All removals and bulkhead work is to be considered as part of demolition item.

J. Work to connect new pipes to existing pipes as noted on the design drawings (PR-JCT(M1) cast-in-place concrete collar, PR-JCT(M2) & PR-JCT(P1) connect new pipe to existing pipe) shall be considered part of demolition work of the stone culverts on Field and Prospect Streets.

PART 2 – PRODUCTS N/A

PART 3 - METHOD OF CONSTRUCTION

3.01 UTILITIES

A. It shall be the Contractor's responsibility to determine the actual location of all utilities. The Contractor shall promptly repair or have repaired by applicable utility company any damage incurred to utilities during construction work at no cost to City or the utility company. The Contractor shall maintain existing utilities to remain in service to adjacent buildings. The contractor is required to set/reset, adjust to finished grade any utility boxes or covers encountered in the proposed sidewalk area during construction as directed by the engineer. This work shall be done in accordance with the applicable utility companies' standards and specifications. There shall be no separate payment for setting resetting or adjusting utility boxes or covers.

B. Sawing existing pavement is required in order to produce a clean vertical and neat edge without damage to the remaining pavement. Also, saw cutting concrete sidewalks is required in order to produce a clean and neat edge where new sidewalk ends/begins with existing sidewalks to remain. There shall be no additional payment for sawing of sidewalks, roads, driveways or curbs. Any additional patching or repairs required outside the limits demolition as shown on the demolition plan caused by the contractor's work shall be repaired at the Contractors expense. All backfill and restoration work shall be performed immediately following installation of new curbs and sidewalk. Where voids are created by removal of utilities and hardscape item, the Contractor shall import backfill material. Imported fill material shall be in accordance with City of Torrington backfill specification as shown in City standard trench details and compacted accordingly to details. Excessive groundwater issues shall be eliminated as part of this work.

C. The Contractor shall not interrupt existing utilities serving adjacent buildings, except when authorized in writing by authorities having jurisdiction or ownership. Any temporary interruption necessary shall be directly coordinated and supervised by utility company personnel. Upon receiving such authorization the Contractor shall provide and maintain temporary services during interruptions of existing utilities, as acceptable to utility company, governing authorities and the building owner.

3.03 PROTECTION AND SAFETY

A. Protection and safety of the surrounding community and property shall take the highest priority during demolition operations. The City of Torrington is not responsible for safety measures employed during demolition or construction. The City of Torrington has no contractual duty to control the safest methods or means of the work, job site responsibilities, supervision or to supervise safety and does not voluntarily assume any such duty or responsibility.

B. All construction operations shall be conducted so as to prevent damage to adjacent buildings, structures and other facilities and injury to persons. Special care and attention shall be taken by Contractor when working directly

along the adjacent buildings. Existing building foundations are old and impacts may cause damage. Contractor shall repair or replace any damage caused by demolition or construction activities at his own expense.

C. The Contractor shall make a careful examination of the materials to be demolished and of the adjoining property and utilities which are to remain and take whatever precautions are necessary to carry on operations so as to prevent any settlement, collapse, damage or other impacts to adjacent buildings, structures, stoops, utilities and other existing features. The contractor shall repair any lawn areas disturbed or damaged by construction operations. This repair shall include installing 4" of topsoil seeding and mulching. No separate payment shall be made for the restoration or repairs of damaged lawn areas. During all operations, the Contractor is responsible for the structural integrity of these structures and surrounding structures relative to any problems or damages resulting from the performance of the Contractor's work. The Contractor shall notify the City immediately if the safety of an adjacent structure or facility is endangered or if any movement has occurred. The Contractor must provide interior and exterior shoring, bracing or support to prevent movement or settlement of the adjacent structures when safety concerns warrant. Any damage inflicted upon adjacent property, construction or utilities by the Contractor's work must be corrected promptly by the Contractor at no cost to the City. Contractor shall include in his demolition bid all costs associated with the additional time and additional precautionary measures that are needed in the areas where abutting walls. Work may include saw cutting existing pavement adjacent to walls so smaller pieces of pavements can be removed without damage to the walls.

D. All work adjacent to occupied buildings which may produce fire hazards or create nuisances or safety and health hazards from noise, vibration, gases, vapors, fumes, dust mists, or odors shall not be performed unless preventive controls or measures are implemented. Special attention is brought to adjacent building fresh air intakes, air conditioning units, etc. which need protection from dust during demolition.

3.04 OCCUPANCY AND ADJACENT PROPERTIES

The adjacent buildings shall maintain their present occupancy and function. (Any vacant units that become occupied during the project time shall be included). The Contractor shall take any and all measures necessary to protect persons associated with these properties from harm and damage during demolition activities, as well as maintaining emergency vehicle and pedestrian traffic around the demolition area. Fire and police access shall be maintained. The Contractor shall conduct demolition operations and removal of debris in a manner that ensures the least interference with the roadway, pedestrian walkways, parking and other adjacent occupied facilities.

PART 4 - MEASUREMENT AND PAYMENT

A. Payment Item "**Clearing and Demolition"** will be paid for at the lump sum price quoted on the bid form for this work.

- **a.** There will be no separate measurement for payment of each individual clearing and demolition work component listed under this specification.
- **b.** There will be no separate measurement for payment of any costs associated with cutting, removal, disposal and capping of an inactive or abandoned utility.
- **c.** There will be no separate measurement for payment for work associated with the abandonment of the traffic loop or adjusting conduits and hand holes, existing utility valve/box tops, or new replacements to grade.
- **d.** There will be no separate measurement or payment for coordination work between the contractor and utility companies.
- **e.** There will be no separate payment for transporting existing granite curb to or from City's "City Dog Pound" site or other areas of the project for reuse or use within the project.
- **f.** There will be no separate payment for test pit excavation work to locate and verify the elevation of existing underground utilities.
- **g.** There will be no separate payment for abandon existing storm manholes, bulkheading pipes, removing existing catch basins and removing all existing pipes that are in conflict with new pipe installation as determined by the Engineer.

h. There will be no separate payment for partial removal and bulkheading of two existing underground concrete utility duct-bank structures on Field Street.

i. There will be no separate payment for connecting new pipes to existing pipes or connecting existing pipes into new catch basin or manhole structures.

Payment for **Clearing and Demolition** will be made in three equal payments of 33.33% of the lump sum value until the entire lump sum value has been paid.

B. Payment for the item **"Remove Stone Culvert Field Street"** will be paid for at the lump sum price quoted on the bid form for this work. The lump sum price shall include full compensation for all labor, supervision, materials, pipe and structure saw cutting, bulk heading of existing pipes, coring, equipment, gravel/granular fill bedding, excavation and backfill, pavement removal, material disposal, transportation, connecting to existing pipes and all other items necessary or incidental to the completion of the work under this section in accordance with these Special Provisions/Technical Specifications and the Contract Drawings.

C. Payment for the item **"Remove Stone Culvert Prospect Street"** will be paid for at the lump sum price quoted on the bid form for this work. The lump sum price shall include full compensation for all labor, supervision, materials, pipe and structure saw cutting, bulk heading of existing pipes, coring, equipment, gravel/granular fill bedding, excavation and backfill, pavement removal, material disposal, transportation, connecting to existing pipes and all other items necessary or incidental to the completion of the work under this section in accordance with these Special Provisions/Technical Specifications and the Contract Drawings.

ITEM	**UNIT**
CLEARING AND DEMOLITION	**L.S.**
REMOVE STONE CULVERT FIELD STREET	**L.S.**
REMOVE STONE CULVERT PROSPECT STREET	**L.S.**

END OF SECTION

SECTION 02300
SANITARY SEWERS

PART 1 - SCOPE

1.01 CONTRACT Description

A. Where existing Building/House service connection pipe is in physical conflict with new storm pipe, the CONTRACTOR shall furnish all Building/House service connection pipe, fittings, adapters/jointing materials, bedding, labor, tools and equipment necessary to lay and joint the pipe in accordance with the specifications herein. The existing location of wyes and building services are, in general, shown on the Drawings. These locations are to be utilized as a guide only.

B. The CONTRACTOR shall furnish and install tees and wye branches as necessary, to replace all existing tees, wye branches and chimneys that are necessary or required for Building/House service connection pipe being replaced and re-laid to new grade.

PART 2 - MATERIALS

2.01 GENERAL

A. PVC Sewer Pipe shall meet the dimensional tolerance of ASTM D 3034, PVC Sewer Pipe, SDR 35. Connections shall be made with a flexible transition coupling as manufactured by "Fernco" or approved equal

B. The quality of all materials, process of manufacture, and finished pipe shall be subject to inspection by the ENGINEER at the place of manufacture or at the site of the Work, and all pipe shall be subject to rejection at any time on account of failure to meet these specifications.

C. Pipe slope shall not be set less than a grade of 1%.

PART 3 INSTALLATION OF PIPE

3.01 CONTROL OF ALIGNMENT AND GRADE

A. In general all sanitary sewer lines shall be installed utilizing a "laser beam" as authorized and approved by the ENGINEER. All methods, equipment and labor used for establishing line and grade shall be approved by the ENGINEER.

B. The CONTRACTOR shall demonstrate to the ENGINEER that all personnel, responsible for the line and grade of the sewer pipe installation, have been sufficiently trained and are proficient in the use of laser beam equipment.

C. The CONTRACTOR shall verify, at 100 foot intervals and at all manholes, for all pipe installation, that the sewer line is being installed true to line and grade as shown on the Contract Drawings.

D. The use of string levels, hand levels, carpenter levels or any other crude devices for transferring grade or setting pipe will not be permitted.

E. The Work shall be done in strict conformity with controls and instructions. The CONTRACTOR shall carefully preserve bench marks, reference points and stakes, and in case of willful or careless destruction by his own men, he will be charged with the resulting expense and shall be responsible for any mistakes or delay that may be caused by their unnecessary loss or disturbance.

3.02 PREPARATION OF BED

A. As soon as excavation has been completed to proper depth as shown on the Typical Sanitary Sewer Service Lateral Details a layer of pipe bedding material shall be placed and compacted to the elevation necessary to bring the pipe to grade.

B. The compacted bed shall be rounded so that at least the bottom quadrant of the pipe shall rest firmly for the full length of the barrel. Suitable holes for bells or couplings shall be dug around the pipe joints to provide ample space for making tight joints.

C. It shall be the CONTRACTOR's responsibility to control any water in the trench below the pipe invert and he shall place concrete, clay or other impermeable material in the bedding at intervals to prevent horizontal movement of the groundwater which might induce settling of the bed, or make it difficult to handle the water in the trench.

3.04 LAYING PIPE

A. Each pipe length shall be inspected for cracks, defects, and any other evidence of unsuitability. Before lowering in place, the pipe shall be struck with a suitable tool to verify its soundness.

B. Pipe shall be laid in the dry and at no time shall water in the trench be permitted to flow into the sewer.

C. Blocking under the pipe will not be Permitted except where a concrete cradle is proposed in which case, pre-cast concrete blocks shall be used.

D. The pipe shall then be laid on the trench bedding as shown on the Typical Sanitary Sewer Service Lateral Details, and the spigot pushed home. Jointing shall be in accordance with the manufacturer’s instructions and appropriate ASTM Standards, and the CONTRACTOR shall have on hand for each pipe-laying crew, the necessary tools, gauges, pipe cutters, etc., necessary to install the pipe in a workmanlike manner. Pipe laying shall proceed upgrade with spigot ends pointing in the direction of the flow.

E. After the pipe has been set to grade, additional pipe bedding material shall be placed in 8-inch layers to a depth as indicated on the Drawings. Tamping bars shall be carefully employed to assure compaction of the bedding under the lower quadrants of the pipe.

G. An utility identification warning tape shall be placed as detailed on the Contract Drawings for all sewers installed.

H. At this point, the pipe shall be checked for line and grade and any debris, tools, etc., shall be removed.

I. If inspection of the pipe is satisfactory, the CONTRACTOR may then refill or backfill the remainder of the trench with approved gravel.

3.05 RECONNECTION OF SERVICE CONNECTIONS

When an existing tee or wye branch has been replaced, the service connection to that fitting will be attached securely. This connection shall be made with a flexible transition coupling as manufactured by "Fernco" or approved equal, if directed by the Engineer.

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PART 4 - CONNECTIONS TO EXISTING SEWERS AND MANHOLES

4.01 GENERAL

A. The CONTRACTOR shall make all connections to the existing facilities as indicated on the Drawings and as herein specified, or as directed.

B. The CONTRACTOR shall furnish all pipe, fittings and appurtenances. The CONTRACTOR shall do all excavation and backfill as required.

C. Existing pipelines damaged by the CONTRACTOR shall be replaced by him at his own expense in a manner approved by the ENGINEER.

4.02 INTERFERENCE

A. The CONTRACTOR shall develop a program for the construction and placing in service of the new works subject to the approval of the ENGINEER. All works involving cutting into and connecting to the existing facilities shall be planned so as to interfere with operation of the existing facilities for the shortest possible time and when the demands on the system best permit such interference even to the extent of working outside of normal working hours to meet these requirements.

B. The CONTRACTOR shall have all possible preparatory work done and shall provide all labor, tools, material supervision and equipment required to do the work in one continuous operation.
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C. The CONTRACTOR shall have no claim for additional compensation, by reason of delay or inconvenience, for adapting his operations to the needs of the public.

4.03 NORMAL JOINT CONNECTIONS

The CONTRACTOR shall make joint connections similar to those on the existing pipe or adaptable to such pipe unless specifically otherwise shown on the Drawings or directed by the ENGINEER.

4.04 CONNECTION TO EXISTING SEWERS AND MANHOLES

A. Service Connections

1. Service connections constructed where there is no connection fitting or where the fitting has been damaged by or cannot be located by the CONTRACTOR shall be constructed as detailed on the Contract Drawings.

2. Existing sewers shall be tapped by mechanical tapping machines specifically designed for such work. Tapping by use of hammer and chisel shall not be allowed except if specifically authorized in writing by the ENGINEER.

PART 5 - CONCRETE CRADLE OR ENCASEMENT

Where indicated on the Drawings, or as directed by the ENGINEER, sewer pipe shall be covered by a concrete arch encasement or entirely encased with concrete. Class "A" Concrete encasement shall be a minimum of 12” thickness around entire pipe.

PART 6 - MEASUREMENT

6.01 There will be no separate measurement for earth trench excavation or gravel backfill, the cost of such materials and work will be considered as included in the general cost of laying pipe.

6.02 Building/House service connection pipe will be measured as the actual length of pipe and fittings at the price bid shall include the cost of all required pipe fittings adapters, and accessories complete.

PART 7 - PAYMENT

7.01 Payment made under this section shall be considered as full compensation for furnishing all labor, equipment, materials and services and installing sewer pipes of the sizes and types shown on the plans, and tabulated in the bid proposal, complete in place, including all connections necessary to constitute a fully operational sewer approved by the ENGINEER.

7.02 Payment will be at the Contract unit price bid per linear foot for whichever size and type of pipe as directed to be installed by the ENGINEER. The unit price bid shall include items as detailed on plans.

7.03 Payment shall include all clearing, grubbing, excavating, dewatering, testing, backfilling, trench support, connections, bedding, utility identification warning tape, by-pass pumping, compacting, saw cutting and pavement removal, grading, disposal of unsuitable and surplus excavated material and all other work necessary or incidental to the completion of the work under this section of the Specifications.

7.04 The cost of the concrete encasement shall be included in the unit price of the Utility Conflict Resolution unit price bid.

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END OF SECTION

SECTION 02500
STORM DRAINAGE

ITEM - TYPE "CM"CATCH BASIN
ITEM - TYPE "CM" CATCH BASIN TOP
ITEM - TYPE II CATCH BASIN TYPE "CM" TOP
ITEM - TYPE II CATCH BASIN TYPE "C" TOP (CUSTOM)
ITEM - TYPE "C" CATCH BASIN
ITEM - TYPE I CATCH BASIN SINGLE TYPE "C" TOP
ITEM - PAVED INVERT IN CATCH BASIN
ITEM - ALTER EXISTING CATCH BASIN
ITEM - ALTER EXISTING STORM MANHOLE
ITEM - 48" STORM MANHOLE
ITEM - 60" STORM MANHOLE
ITEM - 12" HDPE STORM PIPE
ITEM - 15" HDPE STORM PIPE
ITEM - 18" HDPE STORM PIPE
ITEM - 24" HDPE STORM PIPE
ITEM - 30" HDPE STORM PIPE
ITEM - 36" HDPE STORM PIPE
ITEM - 12" CLASS V RCP STORM PIPE
ITEM - 36" CLASS V RCP STORM PIPE
ITEM - REPLACE STORM MANHOLE FRAME AND COVER TO GRADE
ITEM - RESET MANHOLE FRAME AND COVER TO GRADE

PART 1 - GENERAL

1.01 SCOPE OF THE WORK

A. Storm drainage system includes, but is not limited to, construction of storm sewers, drainage structures, drainage appurtenances, riprap, ditching, backfilling, shoring, and dewatering of trenches for storm sewers as required for safe and workmanlike construction.

Under this heading shall be included the construction and installation of all catch basins, junction boxes, storm manholes, drop inlets, paved inverts, drainage pipe (and also the alteration, reconstruction or conversion of such existing structures) all in conformity with the lines, grades, dimensions and details shown on the Contract Drawings, or as ordered, and in accordance with the provisions of these technical specifications for the various materials and work which constitute the completed structure.

When it becomes necessary to increase the horizontal dimensions of storm manholes, catch basins, junction boxes and drop inlets to sizes greater than those shown on the Contract Drawings in order to provide for multiple pipe installations or large pipes or for other reasons, the Contractor shall construct such storm manholes, catch basins and drop inlets to modified dimensions as directed by the Engineer.

B. Excavation, pipe bedding, backfilling, and compaction in accordance with the details shown on the Contract Drawings is included in the per foot unit cost of the pipe to be installed.

C. **Item – Alter Existing Storm Manhole** shall refer to work required to alter the bench and pipe openings of existing manhole **EX-STMH(F1)**. Work includes modifying the existing bench of manhole EX STMH(F1) to change the direction of the outlet flow. The outlet pipe EX STP(F3) is to be abandoned and its outlet opening plugged. Proposed pipe PR-STP(F1) is to be connected to the west side of the manhole by breaking out an opening into the side of the manhole. The existing benching in the manhole is to be modified to change the flow direction to outlet into pipe PR-STP(F1). The existing outlet invert elevation is to be maintained for the new outlet pipe. Two connecting pipes from existing catch basin are also to be abandoned and plugged with the manhole bench filled in as required to maintain the main through flow. See detail 3 on Sheet D4 of the design plans.

D. **Item - Type II Catch Basin Type "C" Top (Custom)** shall refer to all work required to install PR-CB(M3). Work includes a custom installation of a Type II catch basin base slab and shallow riser with Type "C" top and storm manhole top combined side-by-side. See detail 2 on Sheet D4 of the design plans.

E. **Item – Alter Existing Catch Basin** - Existing catch basin and manhole structures are to be altered to accept new connecting pipes. Existing structures shall be modified by creating a new opening in the structure to accept new connecting pipe of various sizes. Work shall include but is not limited to coring or saw cutting to create a new opening in the existing structure to accept a new pipe connection. Make new openings no larger than 6" larger in diameter than the new pipe O.D. size in any direction. Cast-in-place concrete (with reinforcing if required) shall be used to fill all void areas to same structure wall thickness. All existing invert elevations shall be maintained unless otherwise show on project design plans.

1.02 QUALITY ASSURANCE

A. Storm drain pipe may be inspected at the manufacturing source as well as at the job site by City.

B. Contractor shall notify City for inspection of pipe and drainage structure installation prior to backfilling trenches.

1.03 JOB CONDITIONS

A. Construction of the drainage system shall proceed as early in the construction program as possible. Maintain adequate drainage of the project area at all times. Prevent flooding of adjacent roads and private properties.

B. Temporary Drainage: Wherever possible, new storm sewers and inlets to serve the various drainage areas shall be constructed and placed in service. Where this is not possible, temporary drainage facilities shall be provided as required. These may include temporary ditches, slope drains, temporary connections into completed storm sewers, or such other means as the circumstances may require.

PART 2 - MATERIALS

Materials: The materials to be used in the construction shall be those indicated on the Contract Drawings or ordered by the Engineer and shall conform to CDOT Form 816 Standard Specification, Section M.08. Protective compound material shall conform to CDOT Form 816 Standard Specification, Section M.03.01-11. Pervious material shall conform to CDOT Form 816 Standard Specification, Section M.02.05.

2.01 BEDDING MATERIAL

A. Bedding material shall comply with CDOT Form 816 Standard Specification, Section M.02 and M.01.01 which shall be 2" broken stone – No. 4.

2.02 STORM DRAIN PIPE MATERIALS

A. Reinforced Concrete Storm Pipe (RCP) shall be, Class 5 smooth interior with bell and spigot, flexible, watertight, rubber-type gasket connections, and conform to CDOT Form 816 Standard Specification, Section M.08.01.

B. High Density Polyethylene Storm Pipe (HDPE) shall be smooth interior surface (Type S) without perforations, conforming to CDOT Form 816 Standard Specification, Section M.08.01.

2.03 CASTINGS

A. Drop Inlet frames and grates shall conform to Type CM as shown on the Contract Drawings. Grate and frame shall be galvanized steel with surface suitable for tack weld. Galvanizing shall conform to CDOT Form 816 Standard Specification, Section M.06.03.

2.04 MANHOLES, STORM-PRECAST CONCRETE

A. All pre-cast storm manholes shall be in conformance with CDOT Form 816 Standard Specification, Section 5.07.

B. Frames and covers shall be as outlined on the Contract Drawings.

C. Omit brick inverts and joint sealant.

D. Manhole steps shall not be installed in riser structures.

E. All new manholes shall have monolithic bases with pre-cast inverts at the angle as shown on the design plans.

2.05 APPURTENANCE MATERIAL

A. Brick:

1. Clay or Shale Brick: Comply with ASTM C32 for sewer brick and manhole brick, grade as selected. Brick dimensions shall be 4" x 8" x 2½" nominal and shall yield the wall thickness as shown on the plans.

2. Concrete Masonry Units: Comply with ASTM C139.

B. Mortar shall conform to CDOT Form 816 Standard Specification, Section M.11.04 and comply with ASTM C270, Type M, for the pipe joints and manhole and inlet brickwork.

C. Concrete for storm drainage construction shall be in accordance with CDOT Form 816 Standard Specification, Section M.03.01. Strength shall be 4,000 psi at age 28 days.

D. Reinforcement shall comply with ASTM A615.

E. Geotextile shall be of a type appearing on the Connecticut Department of Transportation's Approved Products List for Geotextiles, referred to in CDOT Form 816 Standard Specification, Section M.08.01-26.

2.06 CATCH BASINS, STORM-PRECAST CONCRETE:

A. All catch basins shall have NO or minimum sump depth. Pipe openings are to be made in riser walls with minimum wall depth under pipes only to provide structural integrity of the riser.

PART 3 **- CONSTRUCTION METHODS**

3.01 GENERAL

A. All pipes will be laid in an open trench of dimensions as shown in Details on the Contract Drawings. No projecting pipe conditions will be allowed.

B. Lengths of storm drain pipe shown on the Contract Drawings are approximate distances inside wall to inside wall of structures. Contractor shall install pipe based on actual field conditions. Slopes of pipe specified on the Contract Drawings shall be verified by field measurement prior to trenching.

C. Particular care shall be exercised in establishing the relationship of storm drain pipe, drainage structure bases, and final drainage top conditions. Drainage structure tops are required to be located in specific position and orientation. Subsurface construction is to be located to allow drainage structure construction as detailed on the Contract Drawings without modification. In case of misalignment of drainage structure tops and bases, Contractor will be required to correct the construction as directed by the Engineer.

3.02 STRUCTURES

1. These structures shall be constructed in accordance with the requirements contained herein for the character of work involved. The provisions of CDOT Form 816 Standard Specification, Section 6.02.03 pertaining to bar reinforcement shall apply except that shop drawings need not be submitted for approval, unless called for on the plans or directed by the Engineer. Welding shall be performed in accordance with the applicable sections of the AWS Structural Welding Code, D1.1.

2. The surfaces of the tops of all catch basins, junction boxes and drop inlets shall be given a coat of protective compound material immediately upon completion of the concrete curing period at the rate of .04 gallons per square yard (0.2 liter per square meter).

3. All masonry units shall be laid in full mortar beds.

4. Metal fittings for catch basins, junction boxes, manholes or drop inlets shall be set in full mortar beds or otherwise secured as shown on the plans.

5. When constructing a new drainage structure within a run of existing pipe, if in the opinion of the engineer the existing pipe is damaged by the contractor the section of existing pipe damaged shall be replaced with new pipe of identical type and size to the limits specified by the engineer in the field. There shall be no additional compensation for this work or material and the cost of this work shall be included in the cost of the individual drainage structure.

6. Pervious material shall be used for backfilling the upper portion of the excavation made for catch basins and drop inlets down to the elevation of the invert of the outlet pipe. A 4" PVC perforated weep pipe(s) of a min. 3' long, surrounded by ¾" crushed stone, shall extend parallel with upstream storm pipe(s) and shall serve as a "weep" drain to convey subsurface drainage into structure. The upstream end of the pipe shall be capped with a PVC end cap. There shall be no separate payment for this work or materials and all cost associated with this shall be incorporated into the unit cost of the individual drainage structure.

7. Frames, covers and tops which are to be reset shall be removed from their present beds, the walls or sides shall be rebuilt to conform to the requirements of the new construction and the tops, frames and covers reset, or the grates or covers may be raised by extensions of suitable height approved by the Engineer.

8. Frames, covers and tops which are to be replaced, shall be replaced with new, sound material conforming to the above requirements for the material involved.

9. Where the construction plans call for paved catch basin inverts shall be shelved with sound, hard burned brick. Brick shall conform to ASTM C 32-73 Sewer and Manhole Brick, Grade SS.

3.03 BRICK MASONRY

A. This section applies to brick masonry, for the paved catch basin invert.

B. The brick shall be sound, hard, and uniform dense brick, regular and uniform in shape and size, of compact texture, and satisfactory to the ENGINEER. Brick shall comply with the ASTM Standard Specifications for Sewer Brick (made from clay or shale), Designation C 32-73, for Grade SS, hard brick.

C. Rejected brick shall be immediately removed from the work site by the CONTRACTOR at his own expense.

D. The mortar shall be composed of Portland Cement, hydrated lime and sand, in the proportions of 1 part cement to 1/2 part lime to 4-1/2 parts sand (by volume). The proportion of cement to lime may vary from 1:1/4 for hard brick to 1:3/4 for softer brick, but in no case shall the volume of sand exceed three times the sum of the volume of cement and lime.

E. Cement shall be Type II Portland Cement conforming to ASTM C-150, Standard Specifications for Portland Cement.

F. The hydrated lime shall be Type S conforming to the ASTM Standard Specifications for Hydrated Lime for Masonry Purposes, Designation C207.

G. The sand shall consist of inert natural sand conforming to the ASTM Standard Specifications for Concrete (Fine) Aggregates, Designation C33as follows:

Sieve	**Percent Passing by Weight**
3/8"	**100%**
#4	**95-100%**
#8	**80-100%**
#16	**50- 85%**
#30	**25- 60%**
#50	**10- 30%**
#100	**2- 10%**

Fineness Modulus 2.3 - 3.1

H. Only clean bricks shall be used in brickwork for catch basins. The brick shall be moistened by suitable means, as directed, until they are neither so dry as to absorb water from the mortar nor so wet as to be slippery when laid.

I. Each brick shall be laid in full bed and joint of mortar without requiring subsequent grouting, flushing, or filling, and shall be thoroughly bonded as directed.

J. Brick masonry shall be protected from too rapid drying by the use of burlap kept moist, or by other approved means, and shall be protected from the weather and frost, all as required.

3.04 PIPE LAYING

A. Pipe laying shall proceed upgrade where practicable. Pipe shall be laid true to line and grade with a straight and uniform invert. Pipe shall not be laid in a wet or muddy trench. Trenches shall be dewatered as required and the bottom shall be firm, smooth, and properly shaped as specified.

3.05 BACKFILLING

A. Backfilling above crushed stone bedding shall be done with selected material, free from rocks larger than 5 inches in size and free of debris. Crushed stone shall be carefully placed and tamped around and over the pipe to avoid displacement of the pipe or damage to the joints. All backfill shall be placed in 8-inch lifts and shall meet material and compaction requirements of Section 02220 of the City of Torrington Special Provisions/Technical Specifications.

3.06 APPURTENANCES

A. All drainage structures are to be constructed as shown on the Contract Drawings. Refer to details for location and size.

1. Contractor shall furnish and install drainage structures as shown in detail on the Contract Drawings.
2. Drainage structures shall have shaped inverts unless sumps are noted on plans.
3. All mortar joints shall be filled full. Joints shall be struck flush inside and out.
4. Joints shall not be less than ¼ inch and not more than 2 inch in thickness. No spalls or bats shall be used except for shaping around irregular openings or when unavoidable at corners.
5. All pipe entering drainage structures shall be cut and ground smooth with the face of the wall. Breaking the pipe will not be acceptable.
6. All joints around pipe and structure walls at the face of the wall shall be packed full with mortar.
7. The bottom of drainage structures shall be clean of all debris and walls shall be wiped clean of mortar as work progresses.
8. Catch basin tops shall be cast-in-place to line and grade and shall slope continuous with gutter.
9. Masonry construction is required to be solid. All joints and spaces shall be filled full of mortar as units are laid. Structural masonry construction practice is required. Outside joints are to be filled full or mortar and struck flush. Walls are to be constructed to line and plumb.
10. Pipes or drainage structures shall not be broken by impact methods. Cutting of pipe with a pipe saw is required. Alteration or modification of any drainage structure shall be accomplished by means of saw cutting or coring. All reasonable precautions shall be taken to prevent damage to the pipes and drainage structures.
11. Catch basins with through flow or as noted on the design plans, shall have paved inverts installed as per Detail 5.5 on Sheet D4.

3.06 CONCRETE CONSTRUCTION

A. Precast concrete construction shall be in accordance with the CDOT Form 816 Standard Specifications. Shop Drawings shall be submitted to Engineer.

3.07 CLEANUP

A. Pipes and structures shall be left clean and free from mud or debris of any kind. When looked through, each line between structures shall show a full circle of light. Otherwise, Contractor shall be required to remove and replace the defective portion of the work.

3.08 WORKMANSHIP

A. Any pipe which is not in true alignment and grade and properly placed as to the center line of the road or which shows any undue settlement after laying, or is damaged, shall be taken up and re-laid or replaced without extra compensation.

3.09 CONNECTIONS TO EXISTING STORM SEWERS AND STRUCTURES

A. The CONTRACTOR shall make all connections to the existing facilities as indicated on the Contract Drawings and as herein specified, or as directed.
   a. Item – Alter Existing Catch Basin shall include

B. The CONTRACTOR shall furnish all pipe, fittings and appurtenances. The CONTRACTOR shall do all excavation and backfill as required.

C. Existing pipelines damaged by the CONTRACTOR shall be replaced by him at his own expense in a manner approved by the ENGINEER.

3.10 INTERFERENCE

A. The CONTRACTOR shall develop a program for the construction and placing in service of the new works subject to the approval of the ENGINEER. All works involving cutting into and connecting to the existing facilities shall be planned so as to interfere with operation of the existing facilities for the shortest possible time and when the demands on the system best permit such interference even to the extent of working outside of normal working hours to meet these requirements.

B. The CONTRACTOR shall have all possible preparatory work done and shall provide all labor, tools, material supervision and equipment required to do the work in one continuous operation.

C. The CONTRACTOR shall have no claim for additional compensation, by reason of delay or inconvenience, for adapting his operations to the needs of the public.

PART 4 – METHOD OF MEASUREMENT

1. Site Drainage will be measured for payment as it appears in the Bid Proposal. Payment will include full compensation for all labor, materials, pipe and structure saw cutting, coring, equipment, gravel/granular fill bedding, excavation and backfill, pavement removal and all other items necessary or incidental to the completion of the work under this section in accordance with these Special Provisions/Technical Specifications and the Contract Drawings.

2. Storm Pipe will be measured for payment at the unit price bid per linear foot measured from the inside wall of manhole or catch basin to the inside wall of manhole or catch basin. Where a run of pipe begins or ends at an inlet or outlet structure (i.e. flared end, headwall, etc.), the pipe shall be measured from the end of the pipe connecting to the inlet or outlet structure to the inside wall of manhole or catch basin or existing pipe end.

3. Catch Basins will be measured for payment by the actual number of each installed complete, of the Types as shown on the contract drawings. Catch basins will be measured for payment as a unit including excavation, removal and disposal of existing catch basin structure, or earthen material, cutting of pavement, removal and replacement of pavement, pervious material, backfill and all necessary alterations to the walls and furnishing and setting the precast top frame, grate and type CM hooded inlet. There will be no separate measurement for payment for the granite hooded inlet.

4. Storm Manholes will be measured for payment by the actual number of each installed complete as shown on the Contract Drawings. Storm manholes will be measured for payment as a complete unit including excavation, removal and disposal of existing storm manhole structure, or earthen material, cutting of pavement, removal and replacement of pavement, pervious material, backfill and all necessary alterations to the walls and furnishing and setting the fame, and cover to finished grade.

5. Replacement of catch basin tops and storm manhole frames will be measured for payment by the actual number of each installed complete as a unit including excavation, removal and disposal of existing catch basin top, earthen material, cutting of pavement, removal and replacement of pavement, pervious material, backfill and furnishing and setting the precast top frame, grate and type CM hooded inlet, or cover. There will be no separate measurement for payment for the granite hooded inlet.

6. Resetting of sanitary manhole frames and covers will be measured for payment by the actual number of each installed complete as a unit including excavation, removal and disposal earthen material, cutting of pavement, removal and replacement of pavement, pervious material, backfill and furnishing and setting the frame, and cover.

7. Alter Existing Manhole EX STMH(F1) will be measured for payment by the actual number of each manhole structure altered, including all excavation, removal and disposal of existing structure materials, or earthen material, cutting of pavement, removal and replacement of pavement, pervious material, backfill and all necessary alterations to the walls and furnishing and bulkhead and sealing existing pipe openings, removing existing concrete bench material, cast-in-place concrete and forming to create new benched invert, setting the new pipe into the structure with cast-in-place concrete to create a structurally sound waterproof seal between the pipe and existing structure and

all equipment, tools, supervision, and labor incidental thereto.

8. Alter Existing Catch Basins will be measured for payment by the actual number of each opening made to a catch basin or manhole, including all excavation, removal and disposal of existing structure materials, or earthen material, cutting of pavement, removal and replacement of pavement, pervious material, backfill and all necessary alterations to the walls and furnishing and setting the new pipe into the structure with cast-in-place concrete to create a structurally sound waterproof seal between the pipe and existing structure and all equipment, tools, supervision, and labor incidental thereto.

PART 5 – BASIS OF PAYMENT

5.05—Basis of Payment: These structures will be paid for as follows:

1 **Type CM Catch Basins** will be paid for at the contract unit price each for proposed catch basin of the type specified, complete in place, which price shall include all precast parts excavation, removal, and disposal of existing catch basin structure or earth, 4" PVC perforated weep pipe, pervious material, backfill, cutting of pavement, removal and replacement of pavement structure, The precast top, frame, grate and type CM granite hooded inlet and all materials, equipment, tools, supervision, and labor incidental thereto. There will be no separate payment for the granite hooded inlet.

2 **Type C Catch Basins** will be paid for at the contract unit price each for proposed catch basin of the type specified, complete in place, which price shall include all precast parts excavation, removal, and disposal of existing catch basin structure or earth, 4" PVC perforated weep pipe, pervious material, backfill, cutting of pavement, removal and replacement of pavement structure, The precast top, frame, and all materials, equipment, tools, supervision, and labor incidental thereto.

3 **Type II C Catch Basins (double)** will be paid for at the contract unit price each for proposed catch basin of the type specified, complete in place, which price shall include all precast parts excavation, removal, and disposal of existing catch basin structure or earth, 4" PVC perforated weep pipe, pervious material, backfill, cutting of pavement, removal and replacement of pavement structure, The precast top, frame, grate and type CM granite hooded inlet and all materials, equipment, tools, supervision, and labor incidental thereto. There will be no separate payment for the granite hooded inlet.

4 **Type CM Catch Basin Top** tops will be paid for at the contract unit price each for "Type "CM" Catch Basin Top" complete in place, which price shall include excavation, cutting of pavement, removal and replacement of pavement, removal and disposal of existing catch basin top, setting the top, pervious material, bricks, backfill, all alterations to present catch basin, all materials including catch basin top, frame and grate, type CM granite hooded inlet, all equipment, tools, supervision, and labor incidental thereto. There will be no separate payment for the granite hooded inlet.

5 **Modify Existing Storm Manhole EX STMH(F1)** Alterations, modifications, reconstruction, or conversion of existing drainage structures, will be paid for at the contract unit price each, complete in place, which price shall include full compensation for all supervision, labor, materials, pipe and structure saw cutting, coring, bulkhead and sealing existing pipe openings, , removing existing concrete bench material, cast-in-place concrete and forming to create new benched invert, equipment, gravel/granular fill bedding, new frame and cover, excavation and backfill, pervious material, pavement removal and all other items necessary or incidental to the completion of the work under this section in accordance with these Special Provisions/Technical Specifications and the Contract Drawings.

(FORMER PARAGRAPH NUMBER 6 – DELETED)

6 **Storm Manhole 48" and 60"** will be paid for at the contract unit price each, complete in place, which price shall include full compensation for all supervision, labor, materials, pipe and structure saw cutting, coring, equipment, gravel/granular fill bedding, precast invert base, new frame and cover, excavation and backfill, pervious material, pavement removal, connection to existing pipes or structures and all other items necessary or incidental to the completion of the work under this section in accordance with these Special Provisions/Technical Specifications and the Contract Drawings.

7 **Storm Pipe** will be paid for at the contract unit price per lineal foot for the size and type specified, complete in place, which price shall include full compensation for all supervision, labor, pipe materials, excavation, backfilling, compaction, foundation stone, pervious material, equipment, tools, and all work, incidental thereto.

8 **Replace storm manhole frame and cover** will be paid for by the actual number of each installed complete as a unit. Which price shall include full compensation for all supervision, labor, excavation, removal and disposal of existing storm manhole frame and cover, earthen material, cutting of pavement, removal and replacement of pavement, pervious material, backfill and furnishing and setting the new frame and setting to proposed grade.

9 **Reset sanitary manhole frame and cover** will be paid for by the actual number of each installed complete as a unit, which price shall include full compensation for all supervision, labor, excavation, removal and disposal of, earthen material, cutting of pavement, removal and replacement of pavement, pervious material, backfill and resetting frame and cover.

10 **Paved Catch Basin Invert** will be paid for by the actual number of each installed complete as a unit, which price shall include full compensation for all supervision, labor, materials, red brick and mortar.

11 **Alter Existing Catch Basin** will be paid for by the actual number of each opening made to a catch basin or manhole, which price shall include full compensation for all supervision, labor, removal and replacement of pavement, excavation, compaction, backfill, equipment, all materials and labor to seal around the pipe.

ITEM	**UNIT**
TYPE "CM" CATCH BASIN	**EA.**
TYPE "CM" CATCH BASIN TOP	**EA.**
TYPE II "CM" CATCH BASIN TOP	**EA.**
ITEM-TYPE II CATCH BASIN TYPE "C" TOP (CUSTOM)	**EA.**
TYPE "C" CATCH BASIN	**EA.**
TYPE I CATCH BASIN SINGLE TYPE "C" TOP	**EA.**
PAVED INVERT IN CATCH BASIN	**EA.**
ALTER EXISTING CATCH BASIN	**EA.**
ALTER EXISTING STORM MANHOLE	**EA.**
48" STORM MANHOLE	**L.F.**
60" STORM MANHOLE	**L.F.**
12" HDPE STORM PIPE	**L.F.**
15" HDPE STORM PIPE	**L.F.**
18" HDPE STORM PIPE	**L.F.**
24" HDPE STORM PIPE	**L.F.**
30" HDPE STORM PIPE	**L.F.**
36" HDPE STORM PIPE	**L.F.**
12" CLASS V RCP STORM PIPE	**L.F.**
30" CLASS V RCP STORM PIPE	**L.F.**
REPLACE STORM MANHOLE FRAME AND COVER TO GRADE	**EA.**
RESET MANHOLE FRAME AND COVER TO GRADE	**EA.**

END OF SECTION

SECTION 02600
BITUMINOUS PAVING (SIDEWALKS, AND PATCHING, COMMERCIAL AND RESIDENTIAL DRIVEWAY)

ITEM-PERMANENT BITUMINOUS CONCRETE PATCHING
ITEM- BITUMINOUS CONCRETE SIDEWALK OR RESIDENTIAL DRIVEWAY
ITEM-BITUMINOUS CONCRETE COMMERCIAL DRIVEWAY

PART 1 - SCOPE

A. The work covered by this section of the specifications consists in furnishing all plant, labor, equipment, appliances and materials and in performing all operations in connection with the placement of bituminous concrete pavement, complete in place. Work under this section includes bituminous concrete sidewalk, and commercial and residential bituminous concrete driveway aprons. Work includes permanent patching the roadway adjacent to the new curb on Prospect Street (at intersection of Prospect Place) and for patching storm installation work within the Prospect Street roadway. See typical utility trench detail for permanent patch requirements, typical bituminous concrete sidewalk detail for sidewalk requirements, and bituminous concrete curbing detail for curb requirements. Paving material and methods of placement shall be fully done in accordance with the Referenced Specifications and Details. Work also includes any demolition and removal of existing material in an area to be paved to ensure positive drainage or to obtain necessary grades.

PART 2 - MATERIALS

A. The materials for the bituminous concrete mixture, sources of supply, formula for mix, mix tolerances, approval of mix formula and the control of the mixture shall conform to the requirements of Article M.04 of the Reference Specifications. (Class 2 mix).

B. Processed aggregate base shall conform to Subarticles M.05.01-1, M.05.01-2 and M.05.01-3 of the Reference Specifications.

C. Gravel subbase shall conform to Subarticles M.02.02, Grade B of the Reference Specifications.

PART 3 - EXECUTION

3.01 SUBGRADE PREPARATION

Subgrade shall be prepared in accordance with Reference Specification, Section 2.09.03, Construction Methods.

3.02 BASE PREPARATION

Processed aggregate base shall be applied in accordance with Reference Specification, Section 3.04.03, Construction Methods.

3.03 BITUMINOUS CONCRETE PAVEMENT

Bituminous paving shall be applied in accordance with Reference Specification, Section 4.06.03, and Construction Methods.

3.04 BITUMINOUS TACK COAT

Bituminous tack coat shall conform to Section M.04.01of the Reference Specifications and shall be applied between asphaltic concrete layers in case of delayed construction or overlays of existing pavements.

PART 4 – MEASUREMENT AND PAYMENT

4.01BASIS OF MEASUREMENT AND PAYMENT:

A) For work associated with providing **Permanent Bituminous Concrete Patching** shall be measured as the total number of square feet of bituminous concrete patching complete in place located within the pay limits specified on the Bituminous Concrete Patching Detail or as directed by the Engineer and will be paid for at the contract unit price per square foot of Permanent **Bituminous Concrete Patching** which price shall include and all tools, materials, and equipment used for this activity.

B) For work associated with providing **Bituminous Concrete Sidewalk or Residential Driveway** shall be measured as the total number of square feet of bituminous concrete sidewalk or residential driveway complete in place located within the pay limits specified on the Bituminous Concrete Sidewalk Detail or as directed by the Engineer and will be paid for at the contract unit price per square foot of **Bituminous Concrete Sidewalk or Residential Driveway** which price shall include and all tools, materials, and equipment used for this activity.

C) For work associated with providing **Bituminous Concrete Commercial Driveway** shall be measured as the total number of square feet of bituminous concrete commercial driveway complete in place located within the pay limits specified on the Bituminous Concrete Commercial Driveway Detail or as directed by the Engineer and will be will be paid for at the contract unit price per square foot of **Bituminous Concrete Commercial Driveway** complete in place which price shall include and all tools, materials, and equipment used for this activity.

D) There will be no extra pay item for tack coat application. The contractor is expected to schedule his paving operations in a timely manner to eliminate the need for tack between the binder and finish surface course. If there is a delay of more than 3 days between applications of courses then the Contractor shall be responsible for applying a full tack coat at the Contractors expense.

ITEM	**UNIT**
PERMANENT BITUMINOUS CONCRETE PATCHING	**S.F.**
BITUMINOUS CONCRETE SIDEWALK OR RESIDENTIAL DRIVEWAY	**S.F.**
BITUMINOUS CONCRETE COMMERCIAL DRIVEWAY	**S.F.**

END OF SECTION

SECTION 03005
UTILITY CONFLICT RESOLUTION

ITEM-UTILITY CONFLICT RESOLUTION

PART 1 - GENERAL

The work covered by this section consists of work and procedures to be adhered to by the Contractor when a utility main and lateral, duct, service connection or structure is found to be in direct conflict with the proposed work in this contract. A direct conflict shall be defined as a condition where the proposed utility pipe or structure and the existing utility occupy the same physical space.

PART 2 - EXECUTION

The Contractor shall immediately notify the Engineer when it is determined that a utility main and lateral, duct, service connection or structure is found to be in direct conflict with the proposed work.

Test pits may be required where directed by the Engineer to assist in determining direct conflicts.

The Engineer will determine whether field adjustment or a change in the design will avoid said conflict and shall issue a field order to the Contractor for said design change.

If the Engineer determines that said utility must be removed and replaced in a new location, the Contractor shall immediately contact the owner of said utility and request that it be removed and replaced to resolve the conflict or, if approved by the utility company, the Contractor shall complete the relocation work with his own forces under the supervision of the utility company.

The Contractor shall assist the utility company as requested for the relocation work. This work may include pavement cutting and removal, excavation and backfilling, temporary and permanent pavements and all other work necessary to resolve the conflict.

All costs charged by the utility company, if any, for the removal and relocation of the utility main and lateral, duct, service connection or structure, shall be borne by the City.

If the Contractor exposes a utility during trenching operations and it is determined by the Engineer and/or utility owner that the utility is inactive and abandoned, then the Contractor shall cut and remove the abandoned utility section that is in conflict with the proposed new work. The end of the cut utility shall be plugged with concrete or another approved material approved by the Engineer or utility owner.

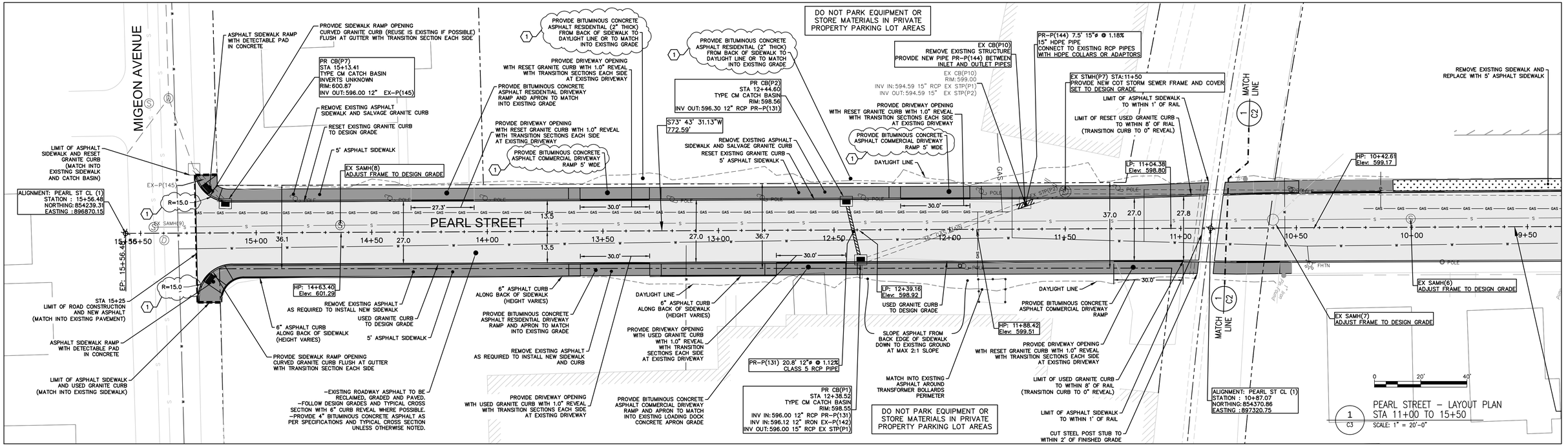
PART 3 - MEASUREMENT AND PAYMENT

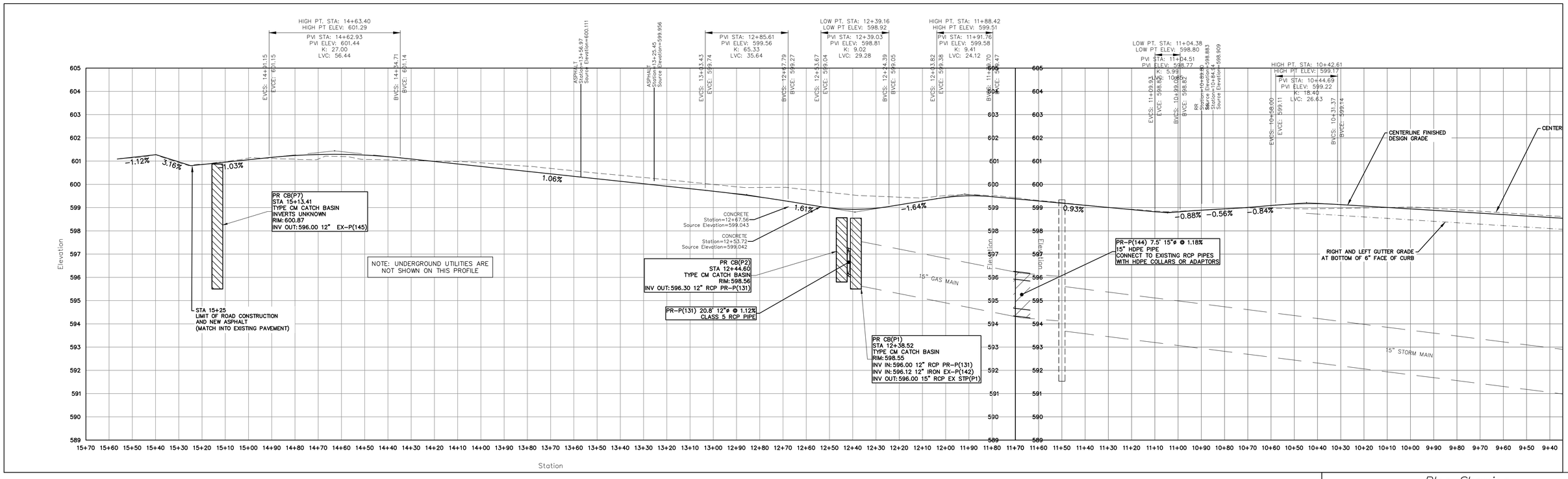
There will be no measurement and payment for any costs, including down time, associated with the relocation of existing active utilities that can be relocated by deflecting the existing utility line under the supervision of the respective utility owner without removal or replacement or for conflicts that are resolved by a field adjustment or design change to the proposed work. Also, there will be no separate measurement and payment for any costs associated with cutting, removal, disposal, and capping of an inactive or abandoned utility.

This work will be paid for at the Contract Unit Price bid per each for “Utility Conflict Resolution”, which price shall include all labor, material, equipment, tools, utility coordination, utility charges, down time and delays and all other costs necessary or incidental to complete the item as specified. The unit price for this item shall include all costs for constructing a concrete cradle/encasement for sanitary pipe crossing conflicts.

ITEM	**UNIT**
UTILITY CONFLICT RESOLUTION	**EA.**

END OF SECTION





2 / C3 CENTER LINE PROFILE
SCALE: H: 1"=20'-0" V: 1"=2'

#	DATE	REVISION	
1	4/24/17	ISSUED FOR INFORMATION	PK
2	5/05/17	REVISION NO. (1)	PK

Plan Showing
Proposed Road Reconstruction
Pearl Street – Prospect to RR Tracks

PEARL STREET - PLAN AND PROFILE

prepared by
City of Torrington Engineering Department

FEB 2017
Scale: 1" = 20'

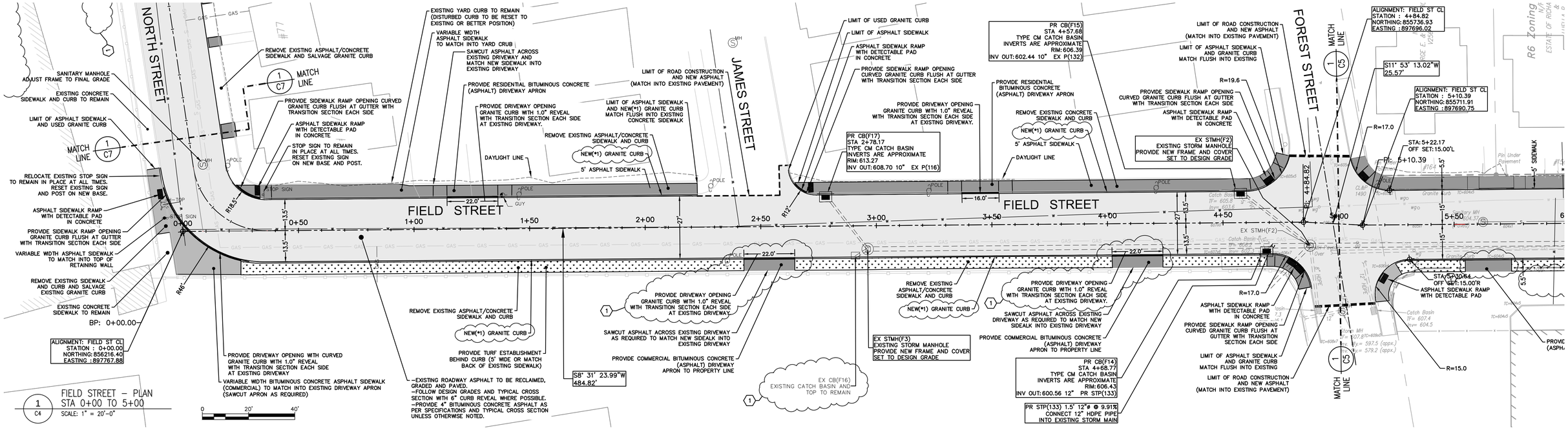
Drawn: PK
Checked: EF

SHEET NO. C3

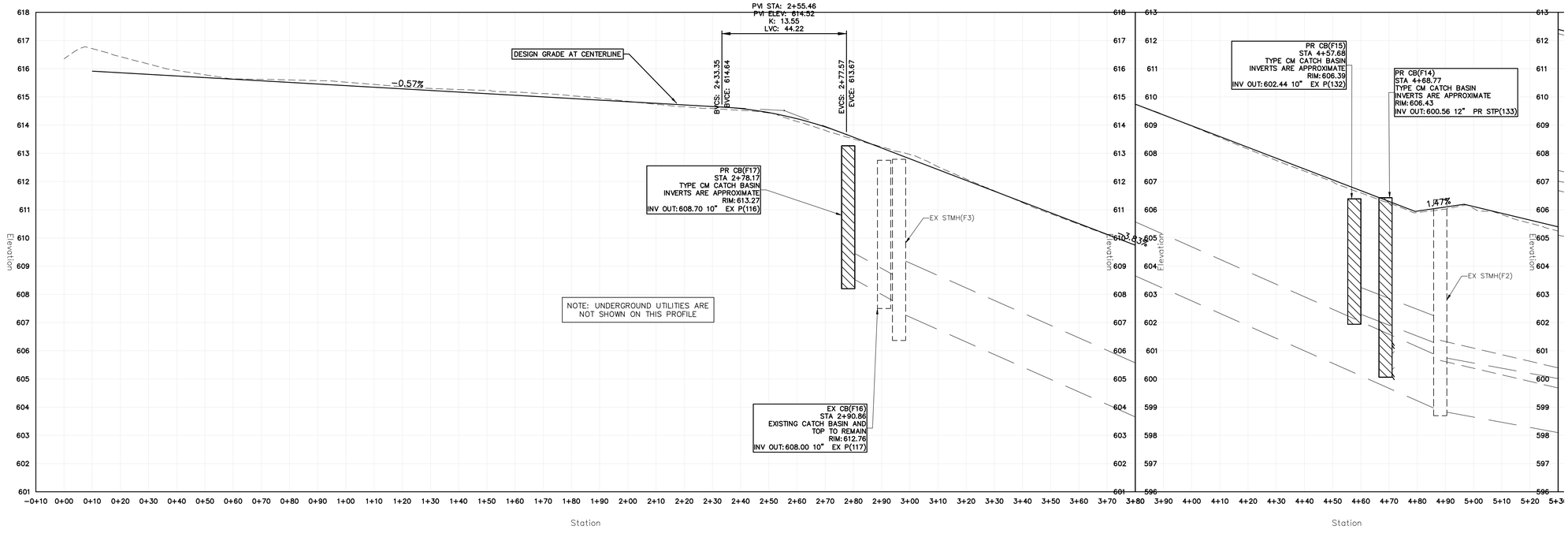
IMPORTANT NOTE: UNDERGROUND UTILITIES ARE APPROXIMATE PRIOR TO ANY EXCAVATION OR CONSTRUCTION CONTACT – "CALL BEFORE YOU DIG" 1-800-922-4455

1 INCH

C3 PEARL - RR TO MIGEON, 5/4/2017 2:19:12 PM, ISSUED FOR ADDENDUM 1



1 / C4 FIELD STREET – PLAN
STA 0+00 TO 5+00
SCALE: 1" = 20'-0"



2 / C4 CENTER LINE PROFILE
SCALE: H: 1"=20'-0" V: 1"=2'

SPECIAL NOTES:
*1 –DENOTES ITEMS CHANGED IN REVISION NO. 1

#	DATE	REVISION	
1	4/24/17	ISSUED FOR BID	PK
2	5/05/17	REVISION NO. (1)	PK

Plan Showing
Proposed Road Reconstruction
Field Street – North to Forest

FIELD STREET - PLAN AND PROFILE

prepared by
City of Torrington Engineering Department

FEB 2017
Scale: 1" = 20'

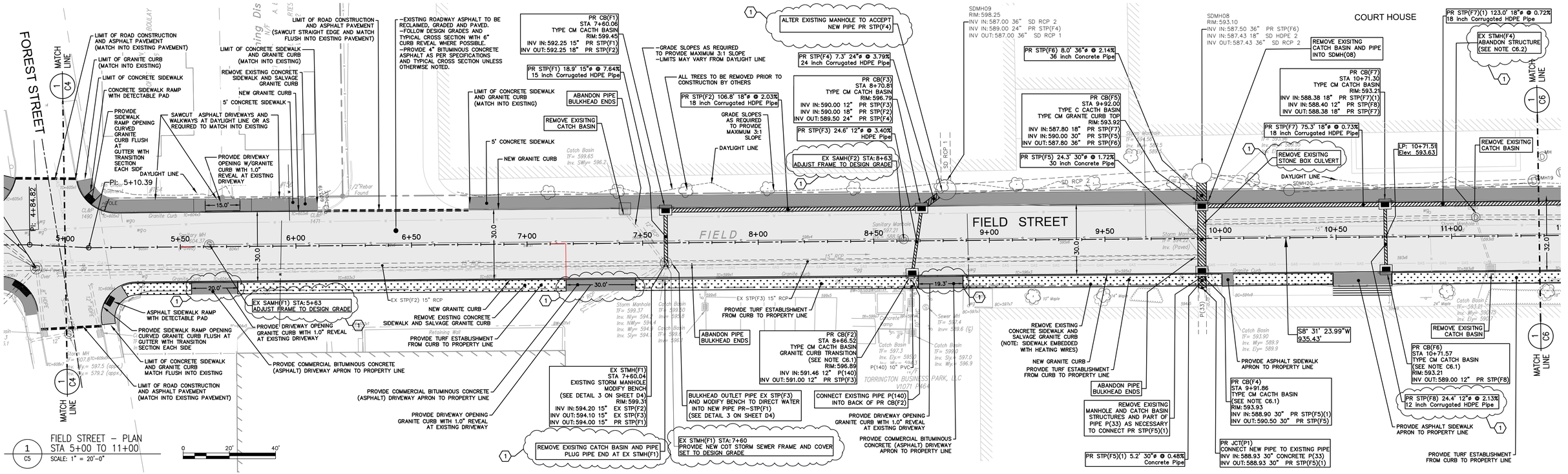
Drawn by: PK
Checked: EF

SHEET NO. C4

IMPORTANT NOTE:
UNDERGROUND UTILITIES ARE APPROXIMATE.
PRIOR TO ANY EXCAVATION OR CONSTRUCTION CONTACT –
"CALL BEFORE YOU DIG" 1-800-922-4455

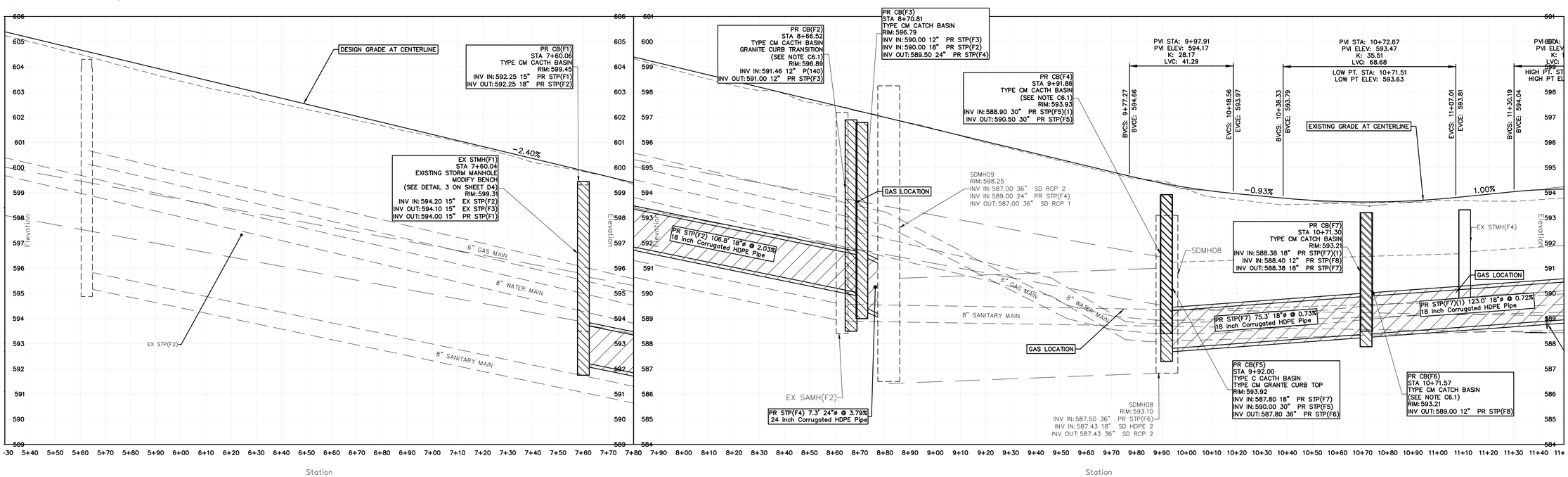
1 INCH

C4 FIELD - NORTH TO FOREST, 5/4/2017 2:03:15 PM, ISSUED FOR ADDENDUM 1



1 C5 FIELD STREET – PLAN
STA 5+00 TO 11+00
SCALE: 1" = 20'-0"

0 20' 40'



2 C5 CENTER LINE PROFILE
SCALE: H: 1"=20'-0" V: 1"=2'

PROJECT SPECIFIC NOTES:

- C6.1: DUE TO CLOSE PROXIMITY OF GAS MAIN, CATCH BASIN MAY REQUIRE CUSTOM OR MODIFIED CONSTRUCTION.
- C6.2: ABANDON STRUCTURE BY REMOVING TOP SECTION TO WITHIN 2' OF DESIGN SURFACE. BULKHEAD ALL CONNECTING PIPES. FILL STRUCTURE WITH FLOWABLE FILL CONCRETE.
- C6.3: ALL EXPLORATORY EXCAVATION WORK TO LOCATE EXISTING UNDERGROUND UTILITIES AS NOTED ON THESE PLANS SHALL BE CONSIDERED AS PART OF DEMOLITION WORK ITEM AND INCIDENTAL TO REMOVAL WORK.
- C6.4: CATCH BASIN/MANHOLE AND PIPE REMOVAL: ALL EXISTING CATCH BASINS AND MANHOLES TO BE REMOVED SHALL INCLUDE ANY EXISTING CONNECTING STORM PIPING TO ALLOW FOR INSTALLATION OF NEW STORM PIPE. THIS PIPE REMOVAL WORK SHALL BE CONSIDERED PART OF DEMOLITION WORK ITEM. (REV. 1)
- C6.5: GRANITE CURB INSTALLATION SHALL INCLUDE CONCRETE BEDDING UNDER CURB (AS PER DETAIL 3.3) FULL CONTINUOUS LENGTH FROM STATION 7+00 RT TO 15+00 RT.

#	DATE	REVISION	
1	4-24-17	ISSUED FOR BID	PK
2	5/05/17	REVISION NO. (1)	PK

Plan Showing
Proposed Road Reconstruction
Field Street – North to Pearl

FIELD STREET - PLAN AND PROFILE

prepared by
City of Torrington Engineering Department

FEB 2017
Scale: 1" = 20'

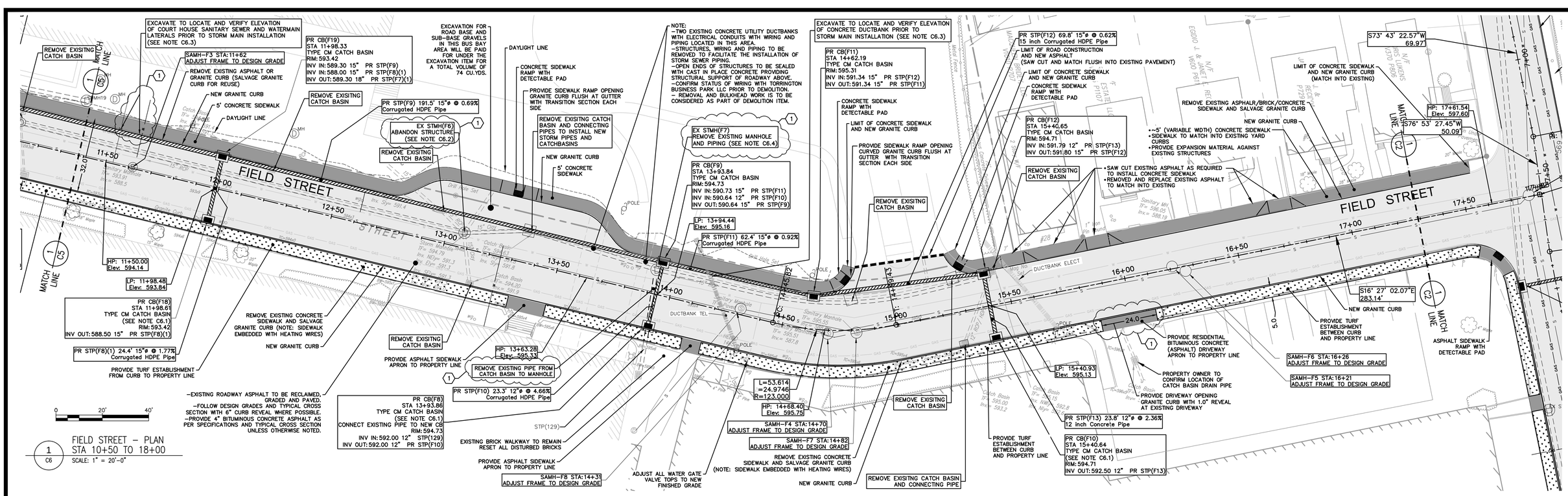
Drawn by: PK
Checked: EF

SHEET NO. C5

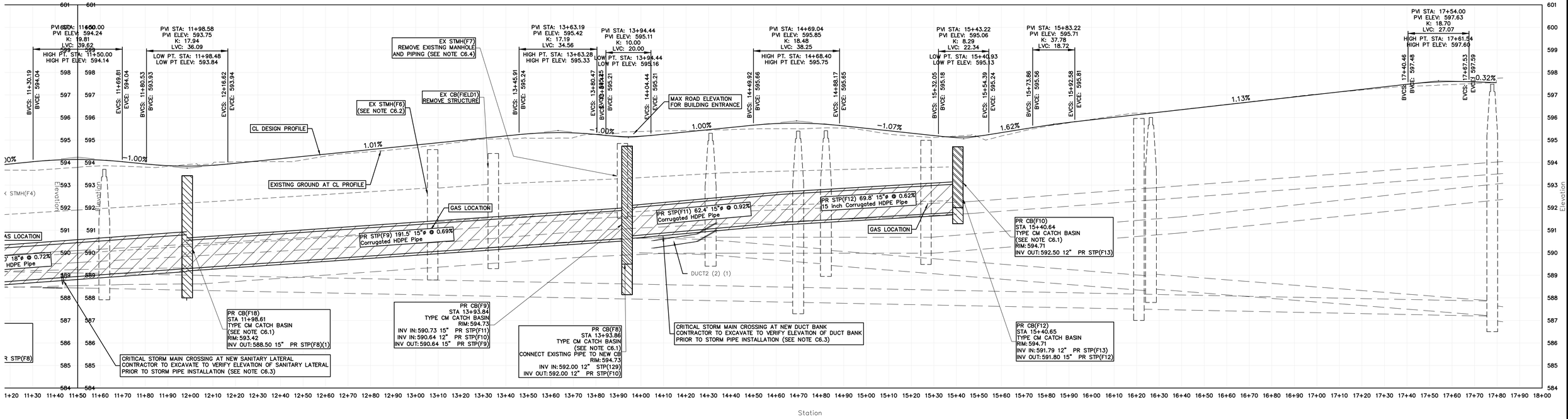
IMPORTANT NOTE:
UNDERGROUND UTILITIES ARE APPROXIMATE PRIOR TO ANY EXCAVATION OR CONSTRUCTION CONTACT – "CALL BEFORE YOU DIG" 1-800-922-4455

1 INCH

C5 FIELD - FOREST TO CTHS; 5/5/2017 11:48:48 AM; ISSUED FOR ADDENDUM 1



1 C6 FIELD STREET – PLAN
STA 10+50 TO 18+00
SCALE: 1" = 20'-0"



2 C6 CENTER LINE PROFILE
SCALE: H: 1"=20'-0" V: 1"=2"

PROJECT SPECIFIC NOTES:

- C6.1: DUE TO CLOSE PROXIMITY OF GAS MAIN, CATCH BASIN MAY REQUIRE CUSTOM OR MODIFIED CONSTRUCTION.
- C6.2: ABANDON STRUCTURE BY REMOVING TOP SECTION TO WITHIN 2' OF DESIGN SURFACE. BULKHEAD ALL CONNECTING PIPES. FILL STRUCTURE WITH FLOWABLE FILL CONCRETE.
- C6.3: ALL EXPLORATORY EXCAVATION WORK TO LOCATE EXISTING UNDERGROUND UTILITIES AS NOTED ON THESE PLANS SHALL BE CONSIDERED AS PART OF DEMOLITION WORK ITEM AND INCIDENTAL TO REMOVAL WORK.
- C6.4: CATCH BASIN/MANHOLE AND PIPE REMOVAL: ALL EXISTING CATCH BASINS AND MANHOLES TO BE REMOVED SHALL INCLUDE ANY EXISTING CONNECTING STORM PIPING TO ALLOW FOR INSTALLATION OF NEW STORM PIPE. THIS PIPE REMOVAL WORK SHALL BE CONSIDERED PART OF DEMOLITION WORK ITEM. (REV. 1)
- C6.5: GRANITE CURB INSTALLATION SHALL INCLUDE CONCRETE BEDDING UNDER CURB (AS PER DETAIL 3.3) FULL CONTINUOUS LENGTH FROM STATION 7+00 RT TO 15+00 RT.

#	DATE	REVISION	
1	4/24/17	ISSUED FOR BID	PK
2	5/05/17	REVISION NO. 1	PK

Plan Showing
Proposed Road Reconstruction
Field Street – North to Pearl

FIELD STREET - PLAN AND PROFILE

prepared by
City of Torrington Engineering Department

FEB 2017
Scale: 1" = 20'

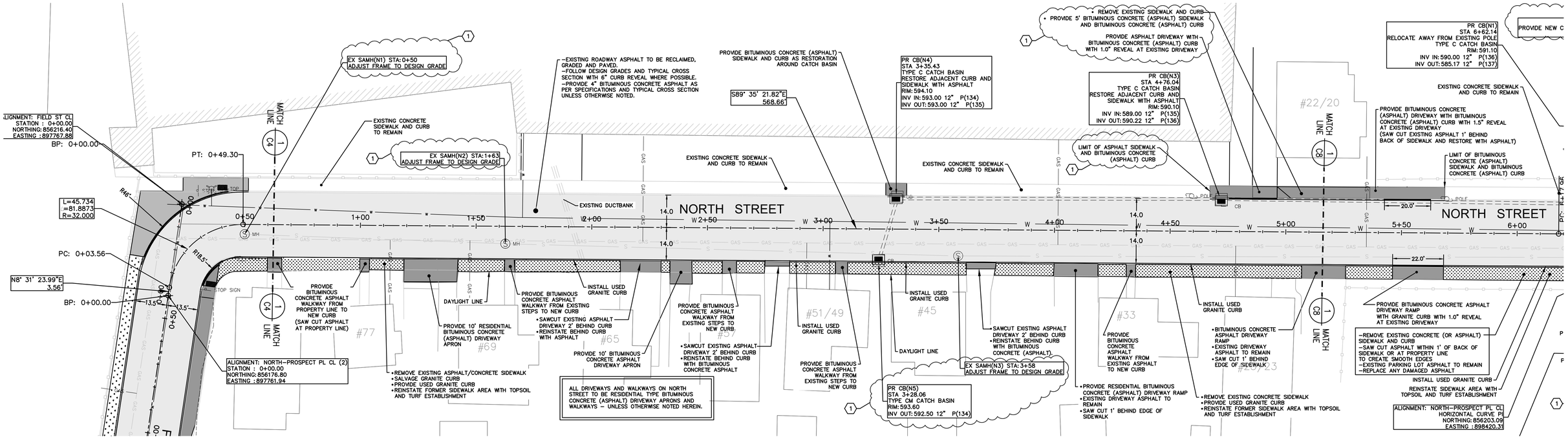
Drawn PJKK
Checked: MW

SHEET NO. C6

IMPORTANT NOTE:
UNDERGROUND UTILITIES ARE APPROXIMATE
PRIOR TO ANY EXCAVATION OR CONSTRUCTION CONTACT -
"CALL BEFORE YOU DIG" 1-800-922-4455

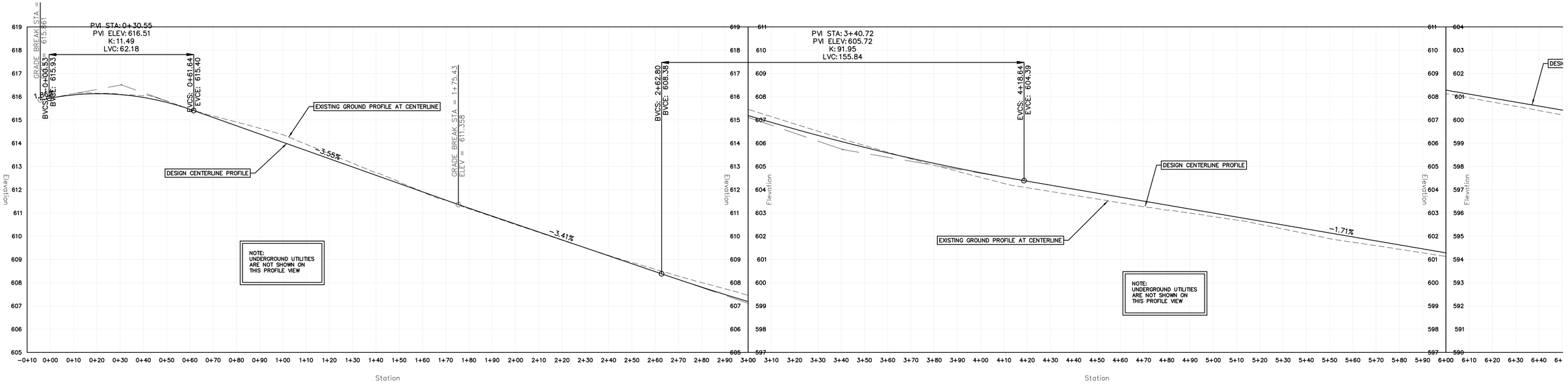
1 INCH

C6 FIELD - CTHS TO PEARL, 5/5/2017 11:51:10 AM, ISSUED FOR ADDENDUM 1



1 / C7 NORTH STREET – PLAN
STA 0+00 TO 6+00
SCALE: 1" = 20'-0"

0 20' 40'



2 / C7 CENTER LINE PROFILE
SCALE: H: 1"=20'-0" V: 1"=2'

#	DATE	REVISION	
1	4/24/17	ISSUED FOR BID	PK
2	5/05/17	REVISION NO. (1)	PK

Plan Showing
Proposed Road Reconstruction
North Street – Field to Main

NORTH STREET - PLAN AND PROFILE

prepared by
City of Torrington Engineering Department

FEB 2017
Scale: 1" = 20'

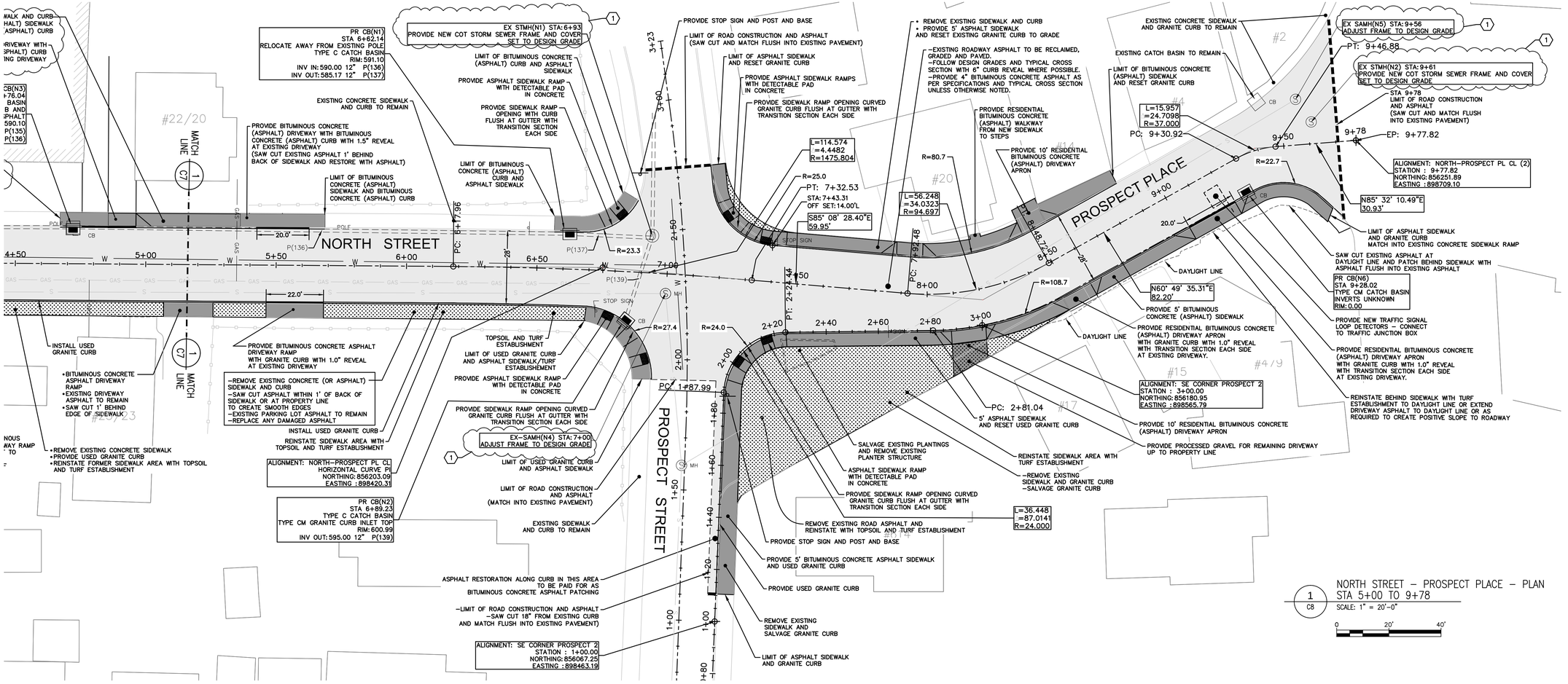
Drawn PJKK
Checked: EF

SHEET NO. C7

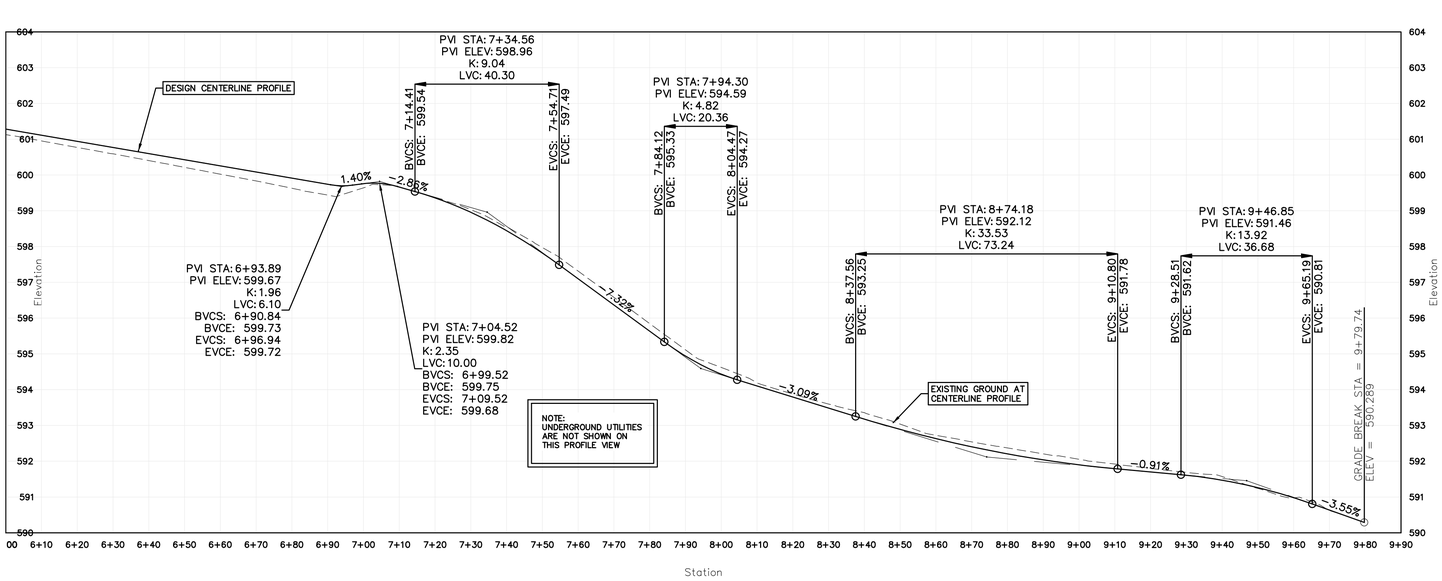
IMPORTANT NOTE:
UNDERGROUND UTILITIES ARE APPROXIMATE
PRIOR TO ANY EXCAVATION OR CONSTRUCTION CONTACT –
"CALL BEFORE YOU DIG" 1-800-922-4455

1 INCH

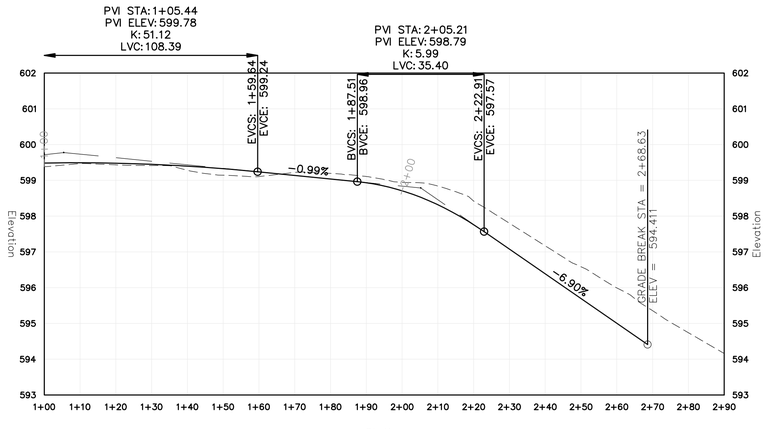
C7 NORTH - FIELD TO 0+500, 5/4/2017 2:34:52 PM, ISSUED FOR ADDENDUM 1



1 C8 NORTH STREET – PROSPECT PLACE – PLAN
STA 5+00 TO 9+78
SCALE: 1" = 20'-0"
0 20' 40'



2 C8 PROSPECT PLACE – CENTER LINE PROFILE
SCALE: H: 1"=20'-0" V: 1"=2'



3 C8 SE CORNER PROSPECT 2 – GUTTER LINE PROFILE
SCALE: H: 1"=20'-0" V: 1"=2'

#	DATE	REVISION	
1	4/24/17	ISSUED FOR BID	PK
2	5/05/17	REVISION NO. 1	PK

Plan Showing
Proposed Road Reconstruction
Prospect Place – Prospect to Main

PROSPECT PLACE - PLAN AND PROFILE

prepared by
City of Torrington Engineering Department

FEB 2017
Scale: 1" = 20'

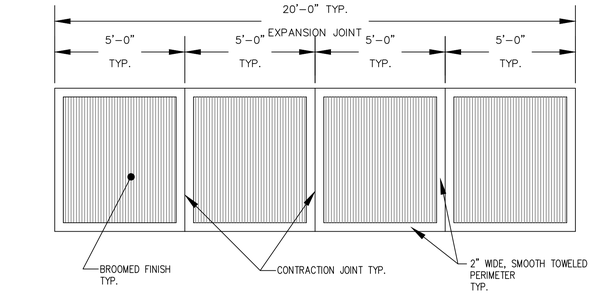
Drawn PJKK
Checked: EF

IMPORTANT NOTE:
UNDERGROUND UTILITIES ARE APPROXIMATE.
PRIOR TO ANY EXCAVATION OR CONSTRUCTION CONTACT -
"CALL BEFORE YOU DIG" 1-800-922-4455

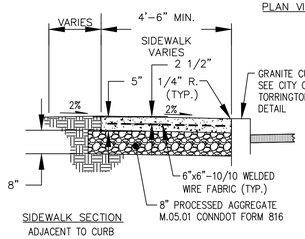
SHEET NO. C8

1 INCH

C8 NORTH & PROSPECT PL, 5/4/2017 2:36:36 PM, ISSUED FOR ADDENDUM 1



PLAN VIEW



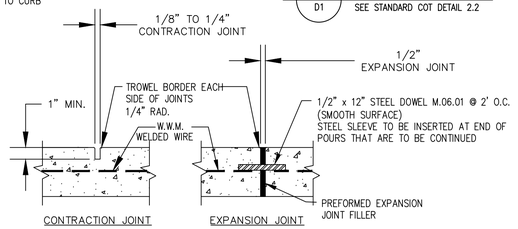
SIDEWALK SECTION
ADJACENT TO CURB

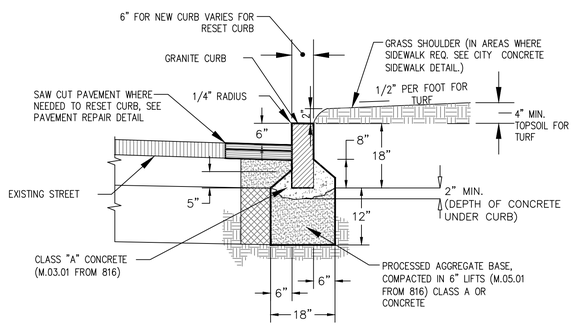
NOTES:

1. CLASS F 4000 PSI (28 DAYS) CONCRETE M.03.01 WITHIN 5% TO 7% ENTRAINED AIR CONNDOT STD. SPEC 9.21
2. WALKS NOT TO EXCEED 5% MAX. SLOPE AND 2% CROSS SLOPE UNLESS OTHERWISE NOTED AS RAMP.
3. EXPANSION JOINTS AASHTO M213 TO BE INSTALLED EVERY 20 FEET MAX.
4. ALL CONCRETE WALKS ARE TO BE SEALED WITH "SALTGUARD"-A PRESCO CONCRETE SEALER OR APPROVED EQUAL AS DETAILED IN THE SPECIFICATIONS.

2.2 D1 CONCRETE SIDEWALK

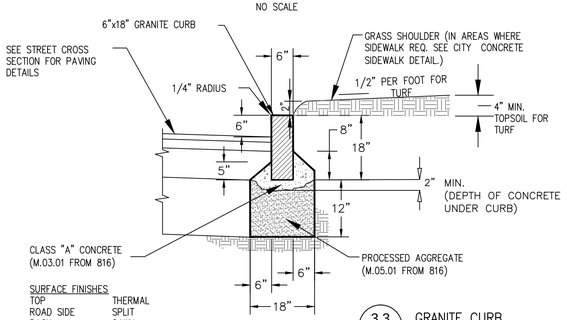
SEE STANDARD COT DETAIL 2.2





GRANITE CURB
RESET OR REPLACEMENT DETAIL

NO SCALE



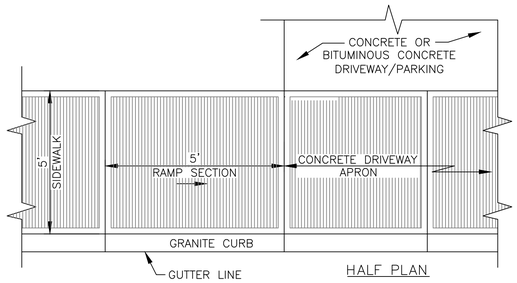
SURFACE FINISHES

TOP	THERMAL
ROAD SIDE	SPLIT
BACK	SAWN
BOTTOM	SAWN OR SPLIT

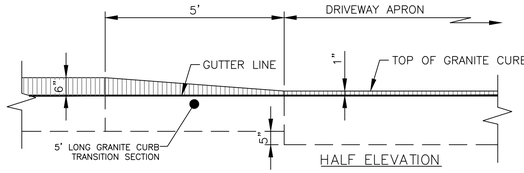
3.3 D1 GRANITE CURB

SEE STANDARD COT DETAIL 3.3
(REVISION 1)

NOTES
1: CURB JOINTS TO BE FILLED WITH SIKAFLEX -2c NS EZ MIX (COLOR LIMESTONE)
2. CONCRETE UNDER CURB SHALL BE INSTALLED UNDER EACH JOINT, EXTENDING MINIMUM 2' LONG AT EACH JOINT CENTERED ON THE JOINT.
3. CONCRETE UNDER GRANITE CURB SHALL BE INSTALLED FULL LENGTH OF THE CURB AT ALL DRIVEWAYS, SIDEWALK RAMPS AND WHERE NOTED ON THE DESIGN DRAWINGS.



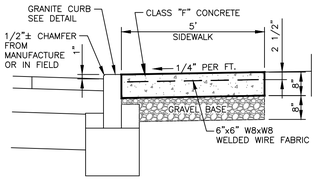
HALF PLAN



HALF ELEVATION

NOTES:

1. CONCRETE-M.0301 TO BE CLASS 'F' CONCRETE, 4000 PSI. (28 DAYS)
2. INSTALL 6"X6" W8.0XW8.0 WELDED WIRE FABRIC IN CONCRETE SECTIONS,
3. STONE, CONCRETE OR BRICK PAVERS SHALL NOT BE USED IN ANY APRON WITHIN THE CITY RIGHT WAY.
4. ALL CONCRETE WALKS ARE TO BE SEALED WITH "SALTGUARD"-A PRESCO CONCRETE SEALER OR APPROVED EQUAL AS DETAILED IN THE SPECIFICATIONS
5. 1/2" x 12" STEEL DOWEL M.06.01 @ 2' O.C. (SMOOTH SURFACE) STEEL SLEEVE TO BE INSERTED AT END OF POURS THAT ARE TO BE CONTINUED

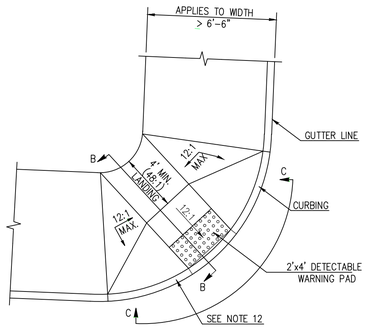


CONCRETE DRIVEWAY APRON
WHERE SIDEWALK ADJOINS CURBING

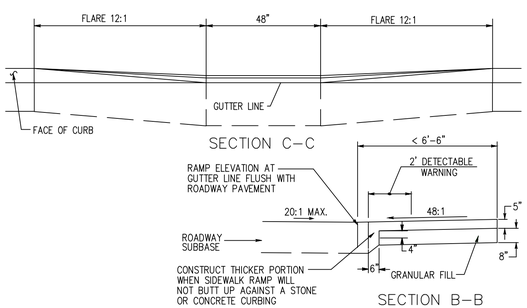
NO SCALE

2.3 D1 CONCRETE APRON WITH SIDEWALK ADJOINING CURB

SEE STANDARD COT DETAIL 2.3

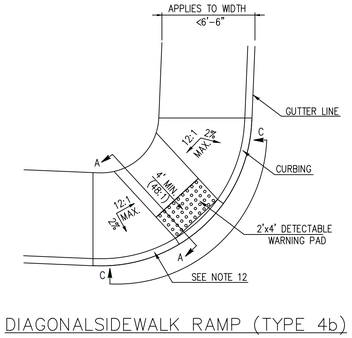


DIAGONAL SIDEWALK RAMP (TYPE 4a)

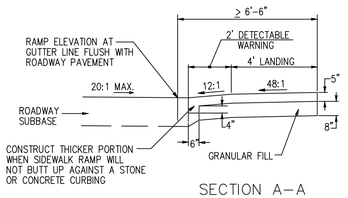


2.8 D1 DIAGONAL SIDEWALK RAMP - TYPE 4A

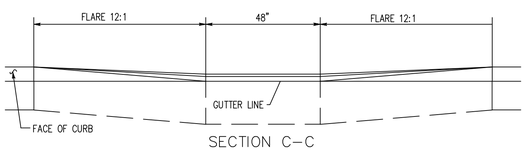
SEE STANDARD COT DETAIL 2.8



DIAGONALSIDEWALK RAMP (TYPE 4b)



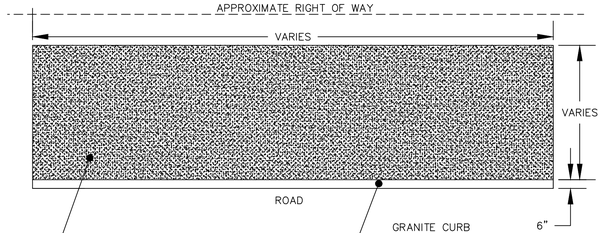
SECTION A-A



SECTION C-C

2.9 D1 DIAGONAL SIDEWALK RAMP - TYPE 4B

SEE STANDARD COT DETAIL 2.9

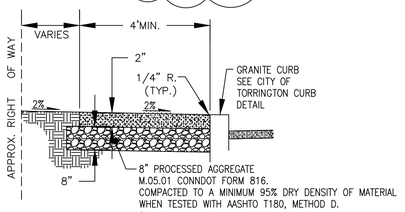


PLAN VIEW

NOTES:

1. CLASS 2 BITUMINOUS CONCRETE SURFACE, MATERIALS MUST CONFORM TO REQUIREMENTS OF CTDOT FORM 816,SECTION M.04, CLASS 2 AND IN ACCORDANCE WITH CTDOT FORM 816 SPEC. 9.22.
2. DEPTH OF ASPHALT FOR BITUMINOUS CONCRETE COMMERCIAL DRIVEWAYS SHALL BE :
   - 1-1/2" BITUMINOUS CONCRETE CLASS 2
   - 2-1/2" BITUMINOUS CONC CLASS 1.

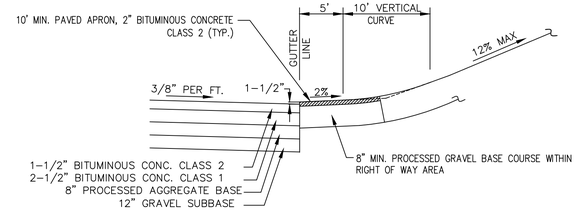
REV 1



SIDEWALK SECTION
ADJACENT TO CURB

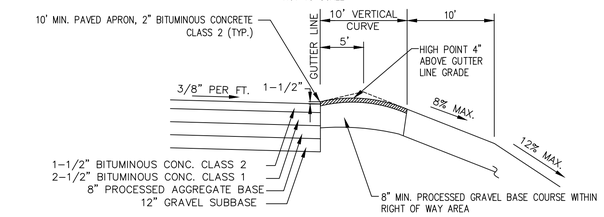
2.11 D1 BITUMINOUS CONCRETE SIDEWALK

SEE STANDARD COT DETAIL 2.11
(REVISION 1)



TYPICAL BITUMINOUS CONCRETE DRIVEWAY SECTION
(IN CUT WITHOUT SIDEWALK)

NOT TO SCALE



TYPICAL BITUMINOUS CONCRETE DRIVEWAY SECTION
(IN FILL WITHOUT SIDEWALK)

NOT TO SCALE

HIGHWAY SPEED LIMIT (MPH)	MINIMUM SIGHT DISTANCE (IN FEET)
25	280
30	335
35	390
40	445
45	500
50	555
55	610

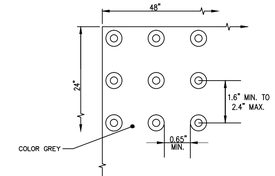
NOTE:
1. DRAINAGE IMPROVEMENTS INCLUDING THE ADDITION OF SWALES, CATCH BASINS, PIPE CULVERTS, RIP RAP AND UNDERDRAINS MAY BE REQUIRED AS A CONDITION OF DRIVEWAY PENDING CITY REVIEW OF SITE CONDITIONS.
2. ALSO, ROAD SHOULDER MAY NEED TO BE CLEARED OF SIGHT LINE OBSTRUCTIONS INCLUDING EXCAVATING EMBANKMENT WHERE APPLICABLE.
3. SEE DETAIL 2.11 ON SHEET D1 FOR BITUMINOUS CONCRETE COMMERCIAL DRIVEWAY SPECIFICATIONS

2.1 D1 BITUMINOUS CONCRETE DRIVEWAYS

SEE STANDARD COT DETAIL 2.1
(REVISION 1)

GENERAL SIDEWALK NOTES

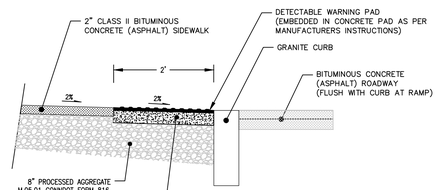
1. MAXIMUM SLOPES OF ADJOINING GUTTERS AND ROAD SURFACES IMMEDIATELY ADJACENT TO THE SIDEWALK RAMP OR ACCESSIBLE ROUTE SHOULD NOT EXCEED 20:1.
2. CARE SHALL BE TAKEN TO ASSURE UNIFORM GRADE ON THE RAMP, FREE OF SAGS AND ABRUPT GRADE CHANGES.
3. ALL RAMPS SHALL BE CONSTRUCTED OF CLASS "F" CONCRETE IN ACCORDANCE WITH CONNECTICUT STANDARD SPECIFICATIONS ARTICLE M.03.01.
4. SIDEWALK RAMPS SHALL HAVE A COARSE BROOM FINISH TRANSVERSE TO THE SLOPE OF THE RAMP. THE SURFACE ALONG ACCESSIBLE ROUTES SHALL BE STABLE, FIRM AND SLIP RESISTANT IN COMPLIANCE WITH ADAAG SECTION 4.5.
5. DIAGONAL SIDEWALK RAMPS AT MARKED CROSSINGS SHALL BE WHOLLY CONTAINED WITHIN THE MARKINGS, EXCLUDING ANY FLARED SIDES.
6. REMOVAL OF EXISTING SIDEWALK FOR NEW RAMP INSTALLATIONS SHALL BE TO THE NEAREST EXPANSION/CONTRACTION JOINT OR DUMMY JOINT. 12:1 MAY NOT BE ACHIEVABLE DUE TO SIDEWALK GRADE. IN RECOGNITION OF THIS, A MINIMUM LIMIT OF 15' FOR A PARALLEL RAMP SHALL BE USED. REMOVAL SHALL NOT BE FURTHER THAN 2' FROM THE PROPOSED RAMP UNLESS DIRECTED BY THE ENGINEER. SAW CUT REQUIRED FOR DUMMY JOINTS SHALL BE INCLUDED IN THE COST OF "CONCRETE SIDEWALK".
7. EXPANSION JOINTS IN CONCRETE SHALL MATCH THOSE IN ADJACENT SIDEWALKS BUT IN NO CASE SHALL THE SPACING BETWEEN EXPANSION JOINTS EXCEED 12' UNLESS OTHERWISE NOTED.
8. RAISED ISLANDS IN MARKED CROSSINGS SHALL HAVE SIDEWALK RAMPS AT BOTH SIDES AND A LEVEL AREA AT LEAST 4' LONG BETWEEN THE RAMPS. IF THIS CAN NOT BE ACHIEVED, THE RAISED ISLAND SHALL BE CUT THROUGH LEVEL WITH THE ROADWAY AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
9. SIDEWALK RAMPS SHALL BE CONSTRUCTED AND PAID FOR UNDER THE ITEM "CONCRETE SIDEWALK", INCLUDING CURBING WITHIN THE LIMITS OF THE NEW SIDEWALK RAMP AND DETECTABLE WARNING STRIPS.
10. CURBING WITHIN THE LIMITS OF THE NEW SIDEWALK RAMP SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE REQUIREMENTS OF FORM 814A SECTIONS 8.11 AND 8.13.
11. HANDICAP RAMPS CONFORMING WITH CONNECTICUT GENERAL STATUTES, SEC. 7-118q, SHALL BE INCORPORATED IN ALL PROPOSED SIDEWALKS AT ALL STREET INTERSECTIONS, AND AT ALL OTHER LOCATIONS WHERE THE GRADE OF A DRIVEWAY OR OTHER FACILITY TAKES PRECEDENCE OVER THE GRADE OF THE PROPOSED SIDEWALK.
12. TRANSITION TO FULL HEIGHT CURB. INSTALL STONE CURBING IF ADJACENT CURBING IS STONE. INSTALL CONCRETE CURBING IF ADJACENT CURBING IS CONCRETE OR BITUMINOUS.
13. INSTALL THE EDGE OF THE DETECTABLE WARNING 6" FROM THE EDGE OF ROAD.
14. TO PERMIT WHEELCHAIR WHEELS TO ROLL BETWEEN DOMES, ALIGN DOMES ON A SQUARE GRID. IN THE DIRECTION OF PEDESTRIAN TRAVEL.
15. DETECTABLE WARNING PAD TO BE 2'x4' CAST-IN PLACE COMPOSITE TACTILE WITH INLINE DOME PATTERN WITH EMBEDMENT FLANGES SET FLUSH IN CAST-IN-PLACE CLASS F CONCRETE SIDEWALK.
16. FOR BITUMINOUS CONCRETE SIDEWALKS SET DETECTABLE WARNING PAD IN 4" THICK CONCRETE PAD WITH TOP OF DETECTABLE PAD SET FLUSH TO SIDEWALK GRADE. - SEE DETAIL 2.9.2



DOME SPACING

DOME SECTION

DETECTABLE WARNING PAD
DOME DETAIL 2.9.1



DETECTABLE WARNING PAD IN BITUMINOUS CONCRETE SIDEWALK
SECTION DETAIL 2.9.2

#	DATE	REVISION	
1	4/24/17	ISSUED FOR BID	PK
2	5/05/17	REVISION NO. 1	PK

Plan Showing
Proposed Road Reconstruction
Field, Pearl, North, Prospect Place

SIDEWALK AND CURB DETAILS

prepared by
City of Torrington Engineering Department

FEB 2017
Scale: 1" = 20'

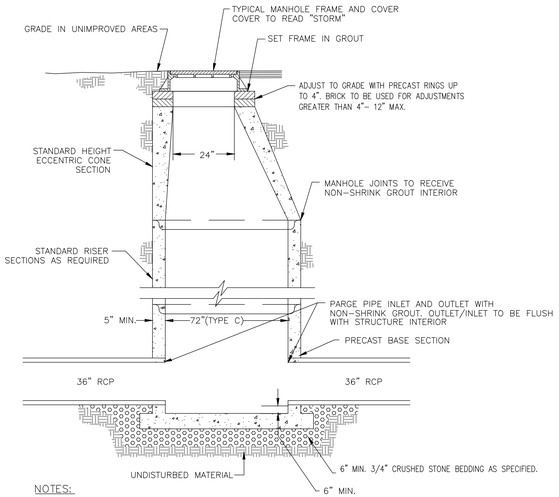
Drawn PJKK
Checked: EF

SHEET NO. D1

IMPORTANT NOTE:
UNDERGROUND UTILITIES ARE APPROXIMATE
PRIOR TO ANY EXCAVATION OR CONSTRUCTION CONTACT -
"CALL BEFORE YOU DIG" 1-800-922-4455

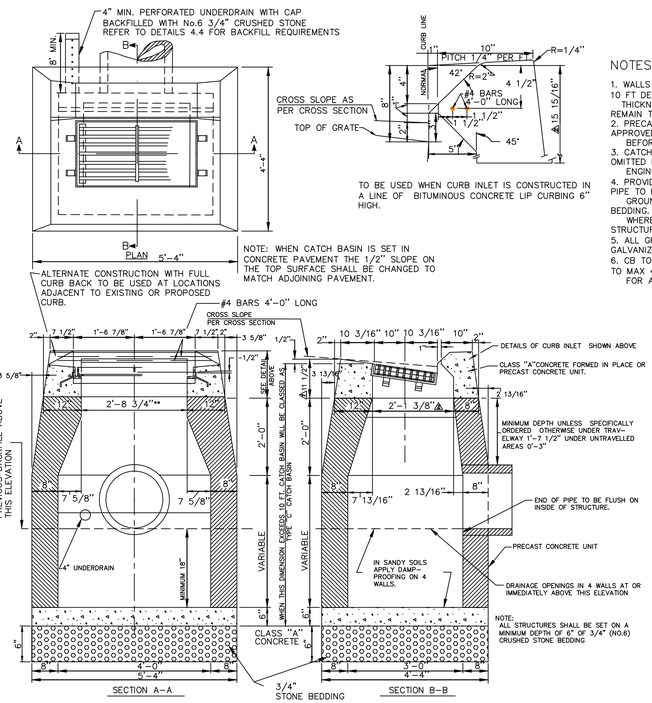
1 INCH

D1 SIDEWALK & CURB DETAILS, 5/5/2017 11:43:26 AM, ISSUED FOR ADDENDUM 1



NOTES:
1. REINFORCED CONCRETE MANHOLE SECTIONS CONFORMING TO ASTM C–478.
2. TYPE "A" MANHOLE SHALL BE 48" IN DIAMETER.
3. TYPE "B" MANHOLE SHALL BE SAME AS "A" EXCEPT IT SHALL BE 60" IN DIAMETER.
4. TYPE "C" MANHOLE SHALL BE SAME AS "A" EXCEPT IT SHALL BE 72" IN DIAMETER.
5. TYPE "D" MANHOLE SHALL BE SAME AS "A" EXCEPT IT SHALL BE 84" IN DIAMETER.
6. TYPE "E" MANHOLE SHALL BE SAME AS "A" EXCEPT IT SHALL BE 96" IN DIAMETER.
7. ALL MANHOLE BASES SHALL BE REDUCED TO 48" DIAMETER STD RISER SECTIONS UNLESS INDICATED OTHERWISE ON THE CONTRACT DRAWINGS
8. THERE WILL BE NO STEPS IN ANY MANHOLE.
9. RISER SHALL CONTAIN NO INTERIOR STEPS OR HOLES FOR STEPS.

5.2 / D2 PRE–CAST CONCRETE MANHOLE DETAIL
NTS



4.1 / D2 TYPE "C" CATCH BASIN DETAIL
NTS

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL COMPLY WITH PROJECT MANUAL; CITY OF TORRINGTON CT STANDARDS AND SPECIFICATIONS, AND STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION FORM 816 IN THE ABOVE REFERENCED HIERARCHY. IF SPECIFICATIONS AND PLANS ARE IN CONFLICT, THE MORE STRINGENT SHALL APPLY.

2. REFER TO PLANS, DETAILS AND PROJECT MANUAL FOR ADDITIONAL INFORMATION. THE CONTRACTOR SHALL VERIFY ALL ROADWAY CONDITIONS IN THE FIELD AND CONTACT THE CITY ENGINEER IF THERE ARE ANY QUESTIONS OR CONFLICTS REGARDING THE CONSTRUCTION DOCUMENTS, PROJECT SPECIFICATIONS AND/OR FIELD CONDITIONS SO THAT APPROPRIATE REVISIONS CAN BE MADE PRIOR TO BIDDING. MISPRINTS, AND TYPOGRAPHICAL ERRORS, SHALL NOT BE CONSIDERED AS LEGITIMATE CLAIMS FOR ADDITIONAL WORK OR ADDITIONAL PAYMENT.

3. DO NOT INTERRUPT EXISTING UTILITIES.

4. THE CONTRACTOR SHALL ABIDE BY ALL OSHA FEDERAL STATE AND LOCAL REGULATIONS WHEN OPERATING CRANES, BOOMS, HOISTS, ETC. IN CLOSE PROXIMITY TO OVERHEAD ELECTRIC LINES. IF CONTRACTOR MUST OPERATE EQUIPMENT CLOSE TO ELECTRIC LINES, CONTACT POWER COMPANY TO MAKE ARRANGEMENTS FOR PROPER SAFEGUARDS. ANY UTILITY COMPANY FEES SHALL BE PAID FOR BY THE CONTRACTOR.

5. THE CITY OF TORRINGTON IS NOT RESPONSIBLE FOR SITE SAFETY MEASURES TO BE EMPLOYED DURING CONSTRUCTION. THE CITY OF TORRINGTON HAS NO CONTRACTUAL DUTY TO CONTROL THE SAFEST METHODS OR MEANS OF THE WORK, JOB SITE RESPONSIBILITIES, SUPERVISION TO SUPERVISE SAFETY AND DOES NOT VOLUNTARILY ASSUME ANY SUCH DUTY OR RESPONSIBILITY.

6. THE CONTRACTOR SHALL COMPLY WITH CFR 29 PART 1926 FOR EXCAVATION TRENCHING AND TRENCH PROTECTION REQUIREMENTS.

7. INFORMATION ON EXISTING UTILITIES AND STORM DRAINAGE SYSTEMS HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY COMPANY AND MUNICIPAL RECORD MAPS AND/OR FIELD SURVEY AND IS NOT GUARANTEED CORRECT OR COMPLETE. UTILITIES AND STORM DRAINAGE SYSTEMS ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE AND THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES AND STORM DRAINAGE SYSTEMS INCLUDING SERVICES. PRIOR TO DEMOLITION OR CONSTRUCTION, THE CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" 72 HOURS BEFORE COMMENCEMENT OF WORK AT 1–800–922–4455" AND VERIFY ALL UTILITY AND STORM DRAINAGE SYSTEM LOCATIONS.

8. ALL CONTRACTORS AND SUBCONTRACTORS SHALL OBTAIN COMPLETE DRAWING PLAN SETS FOR BIDDING AND CONSTRUCTION.

9. ALL NOTES AND DIMENSIONS DESIGNATED "TYPICAL" APPLY TO ALL LIKE OR SIMILAR CONDITIONS THROUGHOUT THE PROJECT. IF A CONDITION EXISTS THAT THE TYPICAL DIMENSION, DETAIL, OR SECTION DOES NOT APPLY THE CONTRACTOR SHALL NOTIFY THE ENGINEER FOR FURTHER DIRECTION.

10. CONTRACTOR(S) TO TAKE AND VERIFY ALL DIMENSIONS AND CONDITIONS OF THE WORK AND BE RESPONSIBLE FOR COORDINATION OF SAME. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO START OF WORK.

11. ALL AREAS DISTURBED BY THE CONTRACTOR OUTSIDE THE PROJECT LIMITS AS SHOWN OR DESCRIBED BY THE CONTRACT DOCUMENTS SHALL BE RESTORED AT NO ADDITIONAL COST TO THE CITY.

12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPORT OF EXISTING UTILITIES AND REPAIR OR REPLACEMENT COSTS OF UTILITIES DAMAGED DURING CONSTRUCTION OPERATIONS WHETHER ABOVE OR BELOW GRADE.

13. ALL UTILITIES LOCATED WITHIN THE PROJECT LIMITS INCLUDING BUT NOT LIMITED TO SEWER, WATER, GAS, ELECTRICITY, AND TELECOMMUNICATIONS, SHALL HAVE THERE RESPECTIVE COVERS, BOXES, ETC. SHALL BE SET TO FINAL GRADE. COORDINATE WORK WITH RESPECTIVE UTILITY COMPANIES. NO ADDITIONAL PAYMENT SHALL BE MADE FOR THIS ITEM.

14. CONTRACTOR SHALL NOT DISTURB ANY AREA OUTSIDE THE LIMITS OF EASEMENTS AND RIGHT–OF–WAY.

15. ALL UTILITY AND DRAINAGE STRUCTURES LOCATED WITH IN THE PROJECT LIMITS SHALL BE RESET TO FINISHED GRADE, PER CITY OF TORRINGTON, AND C.D.O.T. STANDARDS AND SPECIFICATIONS.

16. ANY DISTURBANCE TO THE RIGHT OF WAY OUTSIDE THE LIMITS OF CONSTRUCTION AS SHOWN ON THESE PLANS SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER, AT THE EXPANSE OF THE CONTRACTOR.

17. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ALL UTILITY LOCATED WITHIN THE PROJECT LIMITS;

TORRINGTON WATER COMPANY	860–489–4149
TORRINGTON SEWER DEPARTMENT	860–489–9167
CABLE VISION OF LITCHFIELD	860–567–3103
EVERSOURCE (GAS)	203–596–3069
EVERSOURCE (ELECTRIC)	860–496–5278

PROJECT SPECIFIC NOTES:

N1 – ALTER EXISTING CATCH BASIN
–EXISTING CATCH BASIN AND MANHOLE STRUCTURE PIPE OPENINGS SHALL BE MODIFIED AS REQUIRED TO ACCEPT NEW PIPE SIZES.
–MAKE NEW OPENINGS NO LARGER THAN 6" WIDER THAN NEW PIPE OD SIZE IN ANY DIRECTION.
–CAST–IN–PLACE CONCRETE (WITH REINFORCING IF REQUIRED) SHALL BE USED TO FILL ALL VOID AREAS TO MINIMUM STRUCTURE WALL THICKNESS.
–EXISTING INVERT ELEVATIONS SHALL BE MAINTAINED UNLESS OTHERWISE SHOW ON PROJECT DESIGN PLANS.

N2 – EXISTING STONE CULVERT UNDER PROSPECT STREET – CONNECT TO EXISTING (REVISION 1)
–THE EXISTING 48"x60" STONE CULVERT UNDER PROSPECT STREET CONNECTS TO AN EXISTING CULVERT STRUCTURE WITH BENCHED 30" HALF PIPE BOTTOM, NEW PR–CB(M1) SHALL BE CONNECTED TO THE DOWNSTREAM OPENING BY WAY OF A TRANSITION SECTION PR–JCT(M1) BY PROVIDING A SHORT SECTION OF 36" HDPE PIPE PR–STP(M10) WITH CAST IN PLACE (C–I–P) CONCRETE COLLAR TO SEAL ALL VOID OPENINGS AROUND THE NEW PIPE. THE NEW C–I–P CONCRETE COLLAR SHALL ENCLOSE THE EXISTING STRUCTURE OPENINGS AND THE OUTSIDE OF THE NEW CONNECTING PIPE PR–STP(M10) BY AT LEAST 2 FEET IN ALL DIRECTIONS. THIS COLLAR SHALL BE WATERTIGHT AND STRUCTURALLY SOUND TO SUPPORT THE ABOVE ROAD AND SIDEWALK. WORK FOR THIS CONNECTION SHALL BE CONSIDERED PART OF THE REMOVAL WORK AND INCLUDED IN THE LUMP SUM CLEARING AND DEMOLITION ITEM

N3 – BULKHEAD EXISTING PIPES
–EXISTING PIPE ENDS AS NOTED IN THE PROJECT PLANS SHALL BE SEALED WITH BRICK AND MORTAR OR CAST–IN–PLACE CONCRETE TO MAKE A WATERTIGHT BARRIER PLUG.

N4 – MANHOLE FRAME AND COVER – STORM COVER – SLOTTED
–PROVIDE HEAVY DUTY MANHOLE FRAME AND COVER EQUAL TO CAMPBELL FOUNDRY COMPANY PATTERN NUMBER 1184 (SLOTTED COVER)

N5 – MANHOLE FRAME AND COVER – COT STORM COVER
–PROVIDE CITY OF TORRINGTON MANHOLE FRAME AND COVER (STORM TYPE COVER) EQUAL TO CAMPBELL FOUNDRY COMPANY PATTERN NUMBER 1203–7312

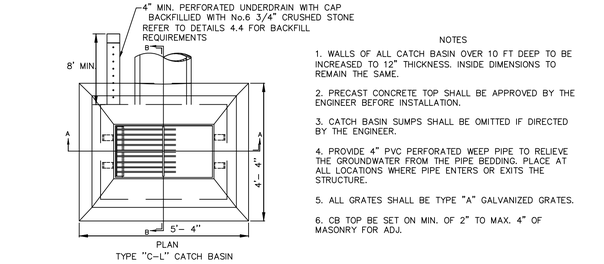
N6 – DEMOLITION AND REMOVALS
–LIMITS OF REMOVALS AND DEMOLITION ARE SHOWN ON THESE DESIGN PLANS HEREIN. DAYLIGHT LINES AND LIMITS OF CONSTRUCTION GENERALLY REPRESENT THE LIMITS OF REMOVALS. MATCHING INTO EXISTING SLOPES AND DRIVEWAYS DURING CONSTRUCTION TO ENSURE POSITIVE DRAINAGE SLOPES MAY EXTEND THE LIMITS OF BEYOND THOSE SHOWN ON THESE PLANS. NO ADDITIONAL PAYMENT WILL BE MADE FOR ADDITIONAL REMOVALS BEYOND THE LIMITS SHOWN ON THESE PLANS TO MATCH INTO EXISTING DURING CONSTRUCTION. ALL AREA BASED UNIT PRICE ITEMS WILL BE PAID AT THE ACTUAL AMOUNT OF WORK INSTALLED.
– REMOVAL OF EXISTING PIPES CONNECTED TO EXISTING CATCH BASINS OR MANHOLES SHALL BE CONSIDERED PART OF THE REMOVAL WORK AND INCLUDED IN THE LUMP SUM CLEARING AND DEMOLITION ITEM. ALL EXISTING PIPE SHALL BE REMOVED TO ALLOW FOR NEW PIPE, CATCH BASIN AND MANHOLE REMOVALS.

N7 – TEST PITS AND EXCAVATION FOR VERIFYING LOCATION OF UNDERGROUND UTILITIES
– ALL WORK TO EXCAVATE AND VERIFY LOCATION OF UNDERGROUND UTILITIES IS TO BE CONSIDERED PART OF THE LUMP SUM SITE CLEARING AND DEMOLITION ITEM. THE CONTRACTOR SHALL LOCATE ALL UTILITIES AND SERVICE LATERALS ON MUNSON STREET WHERE THE NEW STORM MAIN PIPE IS TO BE LOCATED. THIS SHOULD BE DONE AS SOON AS POSSIBLE TO ALLOW FOR POSSIBLE UTILITY COORDINATION TIME SHOULD ANY UTILITIES NEED TO BE RELOCATED. THERE WILL BE NO ADDITIONAL COMPENSATION FOR DELAYS RESULTING FROM UTILITY COMPANY WORK REQUIRED TO RELOCATE UTILITIES.

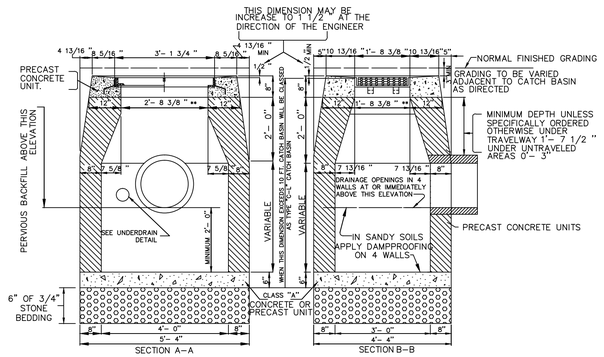
N8 – EXISTING SIGNS (REVISION 1)
– WHERE EXISTING SIGN ARE WITHIN LOCATED WITHIN THE AREA OF INSTALLATION WORK, CONTRACTOR SHALL REMOVE SIGNS AND POST PRIOR TO CONSTRUCTION AND REPLACE ALL SIGNS AND POSTS IN SAME LOCATION AFTER CONSTRUCTION. SIGNS SHALL BE RELACED ON NEW POSTS AND BASES. POSTS AND BASES SHALL BE REPLACED WITH NEW MATERIALS. ALL INSTALLATION WORK SHALL MEET COT SPECIFICATIONS.

N9 – CATCH BASINS (REVISION 1)
ALL CATCH BASINS SHALL HAVE NO OR MINIMUM SUMP DEPTH. PIPE OPENINGS ARE TO BE MADE IN RISER WALLS WITH MINIMUM WALL DEPTH UNDER PIPES ONLY TO PROVIDE STRUCTURAL INTEGRITY OF THE RISER.

N10 – MANHOLES BASES (REVISION 1)
ALL NEW MANHOLES SHALL HAVE MONOLITHIC BASES WITH PRE–CAST INVERTS AT THE ANGLE AS SHOWN ON THE DESIGN DRAWINGS.

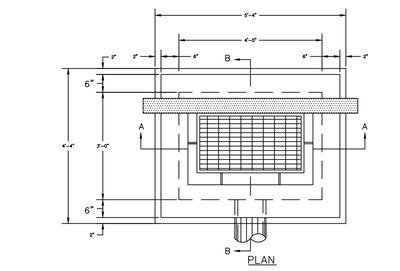


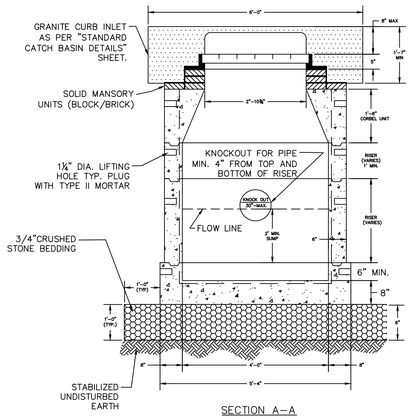
NOTES
1. WALLS OF ALL CATCH BASIN OVER 10 FT DEEP TO BE INCREASED TO 12" THICKNESS. INSIDE DIMENSIONS TO REMAIN THE SAME.
2. PRECAST CONCRETE TOP SHALL BE APPROVED BY THE ENGINEER BEFORE INSTALLATION.
3. CATCH BASIN SUMPS SHALL BE OMITTED IF DIRECTED BY THE ENGINEER.
4. PROVIDE 4" PVC PERFORATED WEEP PIPE TO RELIEVE THE GROUNDWATER FROM THE PIPE BEDDING. PLACE AT ALL LOCATIONS WHERE PIPE ENTERS OR EXITS THE STRUCTURE.
5. ALL GRATES SHALL BE TYPE "A" GALVANIZED GRATES.
6. CB TOP BE SET ON MIN. OF 2" TO MAX. 4" OF MASONRY FOR ADJ.

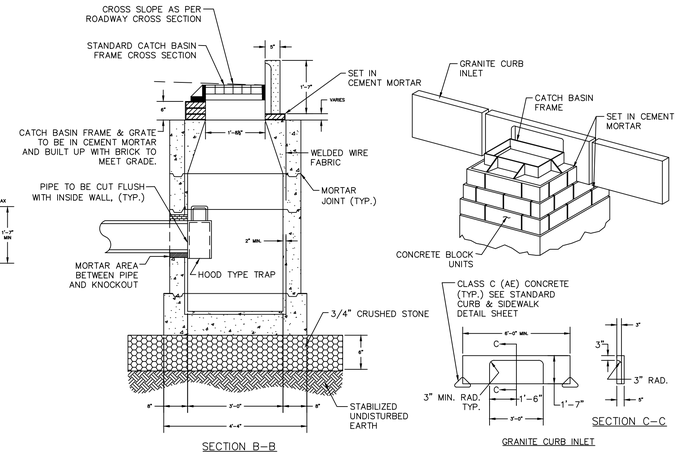


4.2 / D2 TYPE "C–L" CATCH BASIN DETAIL
NTS

GENERAL NOTES:
1. SHEET IS SUPPLEMENTAL TO THE STANDARD SHEET OF THESE CONTRACT DRAWINGS ENTITLED " STANDARD CATCH BASIN DETAILS".
2. "STANDARD CATCH BASIN DETAILS" SHEET SHALL BE THE BASIS FOR CONTRACTION OF ALL CATCH BASIN AND DROP INLET DETAILS WHICH ARE NOT SHOWN ON THIS SHEET INCLUDING, BUT NOT LIMITED TO:
"CATCH BASIN HOOD AND APPURTANANCES"
"GRANITE CURB INLET"
"TYPE C L DROP INLET"
"TYPE C–L CATCH BASIN"
3. THIS SHEET IS FOR THE PURPOSE OF INDETIFYING THE CHARACTERISTICS OF THE PRECAST ITEMS WHICH MAY BE UTILIZED BY THE CONTRACTOR IN LIUE OF THE MANSORY CONSTRUCTION DETAILED ON THE "STANDARD CATCH BASIN DEATILS" SHEET.
4. PRECAST CATCH BASINS AND DROP INLETS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M199 (ASTM C478).







NOTE:
WHERE A PRECAST UNIT IS USED FOR SUMP, THE TOP OF THE UNIT SHALL BE AT LEAST 6" BELOW THE BOTTOM OF THE O.D. OF THE PIPE OUTLETTING FROM THE CATCH BASIN.

4.15 / D2 TYPE CM CATCH BASIN GRANITE CURB INLET
NTS

#	DATE	REVISION	
1	4/24/17	ISSUED FOR BID	PK
2	5/05/17	REVISION NO. 1	PK

Plan Showing
Proposed Road Reconstruction
Field, Pearl, North, Prospect Place
NOTES AND DRAINAGE DETAILS
prepared by
City of Torrington Engineering Department

AUG 2016
Scale: 1" = 20'

Drawn PJKK
Checked: EF

IMPORTANT NOTE:
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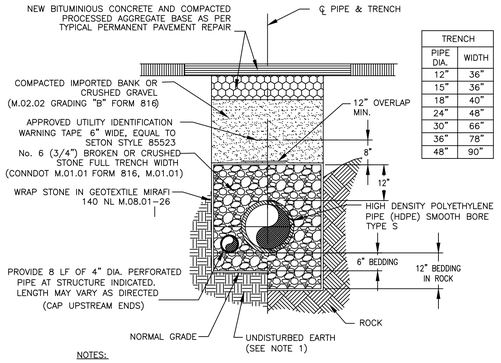
SHEET NO. D2

1 INCH

D2 NOTES AND DRAINAGE DETAILS, 5/5/2017 11:43:32 AM, ISSUED FOR ADDENDUM 1

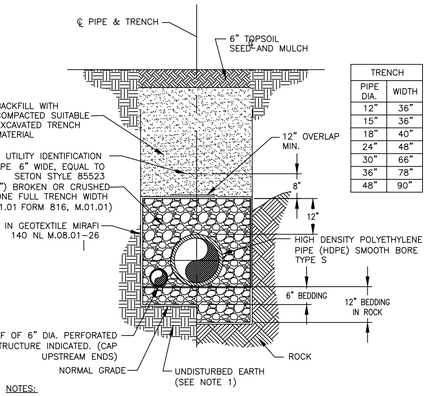


TRENCH	
PIPE DIA.	WIDTH
12"	36"
15"	36"
18"	40"
24"	48"
30"	66"
36"	78"
48"	90"

NOTES:

1. BEDDING SHALL BE No.6 (3/4") CRUSHED STONE (CONNDOT FORM 816 M.01.01)
2. UNSUITABLE MATERIAL BELOW NORMAL GRADE SHALL BE REPLACED WITH No.6(3/4") CRUSHED STONE (CONNDOT FORM 816, ART. M.01.01) AS DIRECTED BY THE CITY ENGINEER.
3. ALL WORK MUST BE CONDUCTED IN STRICT ACCORDANCE WITH THE LATEST REGULATIONS OF OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)FOR EXCAVATIONS.

4.4 / D3 STORM DRAINAGE TRENCH DETAIL FOR HDPE PIPE IN PAVED AREAS
NTS



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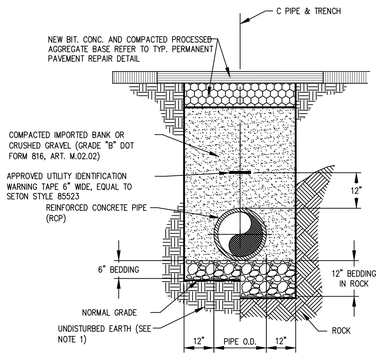
4.5 / D3 TYPICAL STORM DRAINAGE TRENCH HDPE NON-PAVED AREAS
NTS



NOTES:

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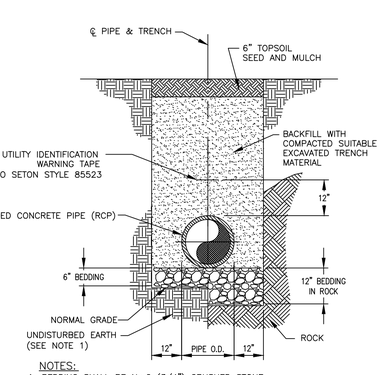
4.6 / D3 TYPICAL STORM DRAINAGE TRENCH RCP PAVED AREAS
NTS



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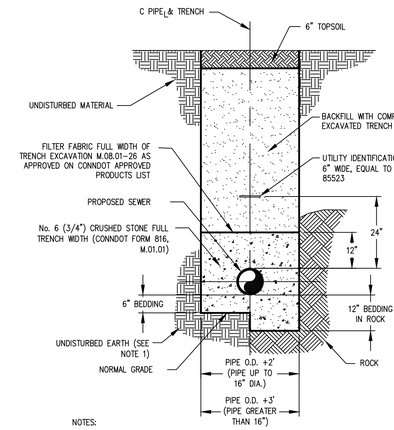
4.7 / D3 TYPICAL STORM DRAINAGE TRENCH RCP NON-PAVED AREAS
NTS



NOTES:

1. BEDDING TO BE 6" OF 3/4" CRUSHED STONE
2. UNSUITABLE MATERIAL BELOW NORMAL GRADE SHALL BE REPLACED WITH NO.6 (3/4") CRUSHED STONE (CONNDOT FORM 816, M.01.01) AS DIRECTED BY THE CITY ENGINEER.
3. ALL WORK MUST BE CONDUCTED IN STRICT ACCORDANCE WITH THE LATEST REGULATIONS OF OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) FOR EXCAVATIONS.

5.9 / D3 TYPICAL SANITARY SEWER TRENCH NON-PAVED AREAS
NTS (REVISION 1)

1.4 / D3 TEMPORARY TRENCH REPAIR
NTS

NOTES:

1. PERMANENT PAVEMENT REPAIR SHALL BE COMPLETED BETWEEN 6 AND 12 MONTHS AFTER TEMPORARY PAVEMENT REPAIR IS INSTALLED.
2. SHORING REQUIRED PER OSHA STANDARDS.
3. IF EDGE OF TRENCH IS WITHIN TWO (2) FEET OF CURBED GUTTER LINE OR UNPAVED SHOULDER, THEN REMOVE AND REPLACE PAVEMENT.

1.5 / D3 PERMANENT TRENCH REPAIR
NTS

2.5 / D3 SIDEWALK TRENCH REPAIR
NTS

NOTES:
1. BEDDING TO BE 6" OF 3/4" CRUSHED STONE
2. UNSUITABLE MATERIAL BELOW NORMAL GRADE SHALL BE REPLACED WITH NO. 6 (3/4") CRUSHED STONE (DOT FORM 816, ART. M.01.01) AS DIRECTED BY THE CITY ENGINEER.
3. ALL WORK MUST BE CONDUCTED IN STRICT ACCORDANCE WITH THE LATEST REGULATIONS OF OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) FOR EXCAVATIONS.

5.8 / D3 TYPICAL SANITARY SEWER TRENCH PAVED AREAS
NTS (REVISION 1)

NOTE:

1. REFER TO TECHNICAL SPECIFICATIONS FOR BITUMINOUS CONCRETE SPECIFICATIONS.
2. AGGREGATE BASE AND SUB-BASE ARE NOT REQUIRED WHERE ROAD IS RECLAIMED AND EXISTING BASE AND SUB-BAS EXIST.
3. ADDITIONAL AGGREGATE IF REQUIRED WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR PROCESSED AGGREGATE BASE.
4. AGGREGATE BASE AND SUB-BASE ARE REQUIRED FOR WIDENING AREAS OR WHERE NO ROAD BASE OR SUB-BASE EXISTS.
4. *2 REQUIRED FOR ALL RECLAIMED ROADS.

1.1 / D3 TYPICAL CITY STREET CROSS SECTION
NTS

#	DATE	REVISION	
1	4/24/17	ISSUED FOR BID	PK
2	5/05/17	REVISION NO. 1	PK

Plan Showing
Proposed Road Reconstruction
Field, Pearl, North, Prospect Place

TRENCH REPAIR DETAILS

prepared by
City of Torrington Engineering Department

AUG 2016
Scale: 1" = 20'

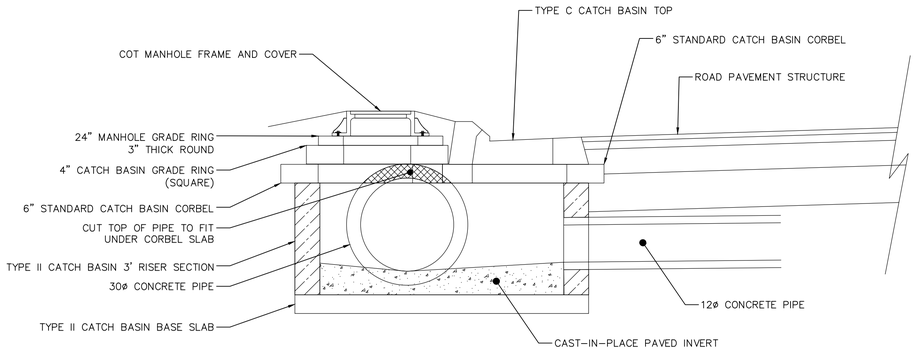
Drawn PJKK
Checked: EF

IMPORTANT NOTE:
UNDERGROUND UTILITIES ARE APPROXIMATE PRIOR TO ANY EXCAVATION OR CONSTRUCTION CONTACT - "CALL BEFORE YOU DIG" 1-800-922-4455

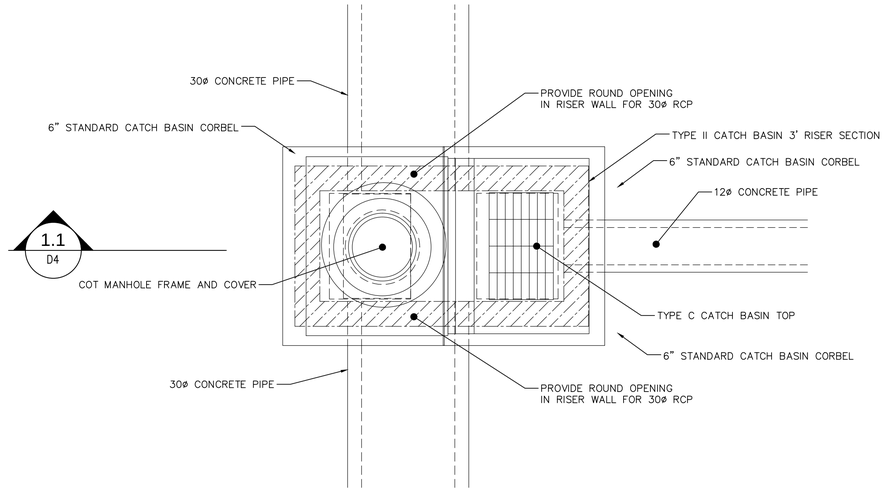
SHEET NO. D3

1 INCH

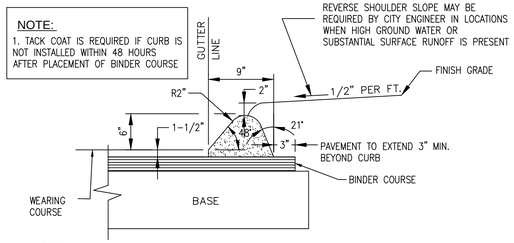
D3 TRENCH REPAIR DETAILS, 5/5/2017 11:43:37 AM, ISSUED FOR ADDENDUM 1



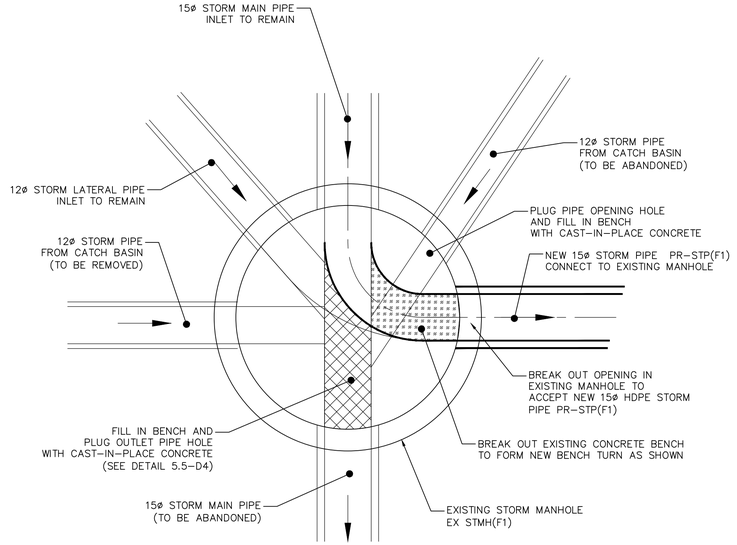
1 / D4 — CUSTOM TYPE II CATCH BASIN PR-CB(M3)
SECTION VIEW



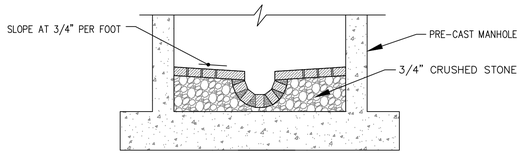
1 / D4 — CUSTOM TYPE II CATCH BASIN PR-CB(M3)
PLAN VIEW



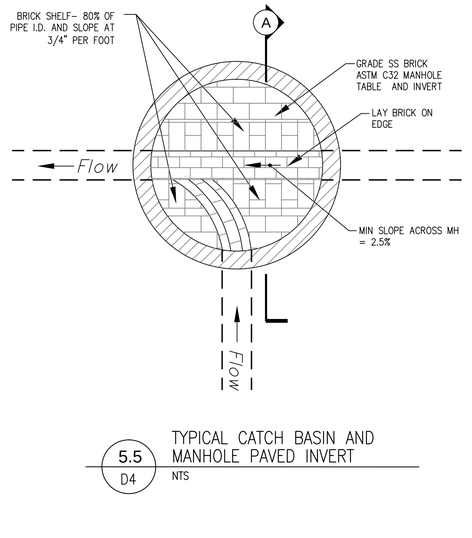
3.1 / D4 — BITUMINOUS CONCRETE LIP CURB
SEE STANDARD COT DETAIL 3.1 (REVISION 1)



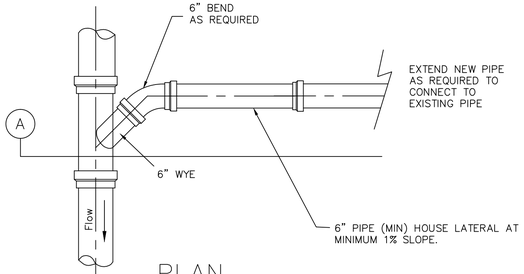
3 / D4 — MANHOLE EX STMH(F1) MODIFICATIONS
PLAN VIEW



SECTION 'A'
NO SCALE

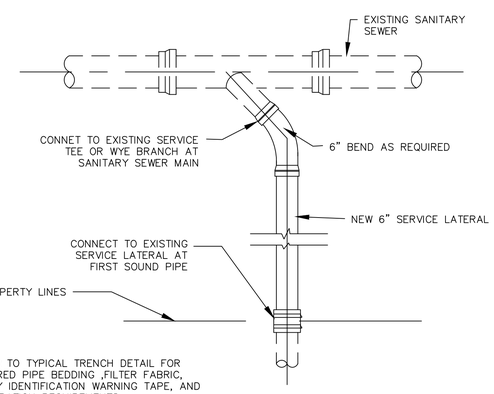


5.5 / D4 — TYPICAL CATCH BASIN AND MANHOLE PAVED INVERT
NTS



NOTES
1. REFER TO TYPICAL TRENCH DETAIL FOR REQUIRED PIPE BEDDING, WARNING TAPE, AND RESTORATION REQUIREMENTS.
2. MAXIMUM BEND SHALL NOT EXCEED 22.5°.
3. PVC PIPE SHALL CONFORM TO ASTM D-3034 SDR 35.
4. REFER TO TYPICAL TRENCH DETAIL SHEET FOR FILTER FABRIC, UTILITY IDENTIFICATION

5.10 / D4 — TYPICAL SANITARY SEWER SERVICE LATERAL INSTALLATION
NTS (REVISION 1)



NOTES:
1. REFER TO TYPICAL TRENCH DETAIL FOR REQUIRED PIPE BEDDING ,FILTER FABRIC, UTILITY IDENTIFICATION WARNING TAPE, AND RESTORATION REQUIREMENTS.
2. MAXIMUM BEND SHALL NOT EXCEED 22.5
3. PVC PIPE SHALL CONFORM TO ASTM D-3034 SDR 35.

5.12 / D4 — TYPICAL SANITARY SEWER SERVICE LATERAL REPLACEMENT TO EXISTING WYE
NTS (REVISION 1)

#	DATE	REVISION	
1	4/24/17	ISSUED FOR BID	PK
2	5/05/17	REVISION NO. 1	PK

Plan Showing
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Field, Pearl, North, Prospect Place

PROJECT SPECIFIC DETAILS

prepared by
City of Torrington Engineering Department

FEB 2017
Scale: 1" = 20'

Drawn PJKK
Checked: EF

SHEET NO. D4

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1 INCH

D4 SPECIFIC DETAILS, 5/5/2017 11:43:47 AM, ISSUED FOR ADDENDUM 1