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ADDENDUM 04

PROJECT:	Exeter Twp ESC	MWS PROJECT NO:	25-049
ADDRESS:	70 Gibraltar Road		
	Reading, PA 19606	ISSUE DATE:	10/30/2026*

*revised drawings and specs are dated for 10/29/2026

The following changes shall be incorporated into the work in accordance with all general requirements as if incorporated in the original documents.

GENERAL CHANGES: N/A

CHANGES TO DRAWINGS:

1.) A101: Adjusted storefront tags at doors. Added downspout callout notes to downspouts previously only called out in elevation.

2.) A106: Revised plan to show all water hose reels as identified on interior elevations. Adjusted screen locations in the Apparatus Bay. Updated various other screen locations/quantities/schedule. Clarified air/water/electric hose reel and compressor install responsibilities.

3.) A500: Added downspout callout notes to downspouts previously only called out in elevation.

4.) A603: Adjusted storefront elevations to properly reflect plan and elevations. SF-3 has changed to center glazed.

5.) A604: Details for SF-3 have been graphically changed to reflect center set storefront.

6.) A705: Adjusted screen locations.

7.) Site Plan (C07) – removed rope anchor note.

8.) Grading Plan (C08 & C09) – Revised sanitary cleanouts and traps for consistency with Profiles. Revised roof drains to show 26 total. Revised gas service to grills for consistency with Plumbing Plan. Added 1.25" PVC gas box drain pipe label and revised gas box drain pipe to discharge to Inlet (I-2B.3.1). Labeled three (3) additional roof drain storm cleanouts (west side of building).

9.) Utility Plan (C10 & C11) – Revised water line label to be DIP CL 52. Revised sanitary cleanouts and traps for consistency with Profiles. Revised roof drains to show 26 total. Revised gas service to grills for consistency with Plumbing Plan. Added 1.25" PVC gas box drain pipe label and revised gas box drain pipe to discharge to Inlet (I-2B.3.1). Labeled three (3) additional roof drain storm cleanouts (west side of building).

10.) Profiles (C12, C107, C207) – EW-2A.1 to I-2A.5 – water line crossing revised to be DIP CL 52. I-2B.3.1 to I-2B.3 – added pipe inverts to I-2B.3.1

11.) Profiles (C13, C108, C208) – Revised three (3) sanitary lateral profiles for cleanout and trap consistency with Plans.

12.) Details (C17) – Removed rope anchor detail.

13.) Details (C25 & C211) – Added two (2) storm cleanout details.

14.) Details (C26 & C212) – Moved ADS Stormtech detail from sheet C25/C211 to sheet C26/C212.

15.) E&S Plan (C105 & C106) - Revised sanitary cleanouts and traps for consistency with Profiles. Revised roof drains to show 26 total. Revised gas service to grills for consistency with Plumbing Plan. Revised gas box drain pipe to discharge to Inlet (I-2B.3.1).

16.) Grading & PCSM Plan (C205 & C206) - Revised sanitary cleanouts and traps for consistency with Profiles. Revised roof drains to show 26 total. Revised gas service to grills for consistency with Plumbing Plan. Revised gas box drain pipe to discharge to Inlet (I-2B.3.1).

17.) Mechanical sheets: VRF system adjustment and schedules updated.

18.) E102: Exterior lighting circuiting and contactors/controls have been revised.

19.) E201: I.T. Room panelboard and control panel locations have been revised.

20.) E201: CAD monitor locations, power/data have been revised as per markups.

21.) E202: Cable tray note and routing have been revised.

22.) E202: Radio system grounding notes have been revised.

23.) E204: Mechanical equipment VRFO-1disconnect size has been revised.

24.) E601: Single line diagram has been revised to reflect spaces present and accurate feeder sizes.

25.) E606: Panel Schedule circuiting has been revised.

26.) P201: Air reels and Hose reels are now shown on this drawing

27.) P202: Hose reels moved to P201

28.) All FSA sheets: adjusted to properly show monitors in scope.

CHANGES TO SPECIFICATIONS:

1.) 00 0010 – Table Of Contents – Revised and reissued.
2.) 00 1100 – Instructions to Bidders – Revised and reissued. Change has been made to Number 20 – Retainage.
3.) 00 1200.1 - Site Construction Bid Proposal Form – Revised and reissued. Unit Price 2 (UPA2) has been updated. Unit Price 6 (UPA6) and Unit Price 7 (UPA7) have been added. Bid Document Submission has been updated.
4.) 00 1200.2 - General Construction Bid Proposal Form – Revised and reissued. Bid Document Submission has been updated.
5.) 00 1200.3 - Fire Protection Construction Bid Proposal Form – Revised and reissued. Bid Document Submission has been updated.
6.) 00 1200.4 - Plumbing Construction Bid Proposal Form – Revised and reissued. Bid Document Submission has been updated.
7.) 00 1200.5 - Mechanical Construction Bid Proposal Form – Revised and reissued. Bid Document Submission has been updated.
8.) 00 1200.6 - Electrical Construction Bid Proposal Form – Revised and reissued. Alternate #13 has been added. Bid Document Submission has been updated.
9.) 00 3100 - Available Project Information – Additional Geotechnical information has been added.
10.) 00 7000.1 – A132-2019 – Revised and reissued. Section 5.1.7 – Retainage has updated.

11.) 00 1200.2 - General Construction Bid Proposal Form – Revised and reissued. Alternate #9 and Alternate #10 have been revised. Bid Document Submission has been updated.
12.) 01 1200 is revised to match A106
13.) 01 3117A – Coordination Drawings – Newly Issued.
14.) 01 3117B – 3D Computer Model Agreement – Newly Issued.
15.) 01 3117C – AIA G202-2013 BIM Protocol Form – Newly Issued.
16.) 01 3117D – MW Digital Release Form - Newly Issued
17.) 01 3117E – Providence Agreement of Release Form - Newly Issued
18.) 01 3117D – HRG Agreement of Release – Newly Issued.
19.) 01 3117G – DEDC Agreement of Release Form - Newly Issued
20.) 08 8000 - Glazing – Storefront type adjustments
21.) 23 8129-Variable-Refrigerant-Flow Hvac Systems – VRF modifications
22.) 33 1416 (Site Water Utility Distribution Piping) – Removed reference to PVC Pipe (2.1).

BIDDER QUESTIONS & RESPONSES:

41.) QUESTION: For the GC, will our super be required to be on site while the site contractor is working? Or only required for our work?

RESPONSE: Full time supervision for the GC is only required when scope of work for the GC contract starts through closeout of the project. A Superintendent will not be required to be on site during the initial Site Phase 1 of Construction.

42.) QUESTION: Please clarify where the 4" and 6" Sidewalk details apply. It appears that there is 4" sidewalk on the northeast side of the building between 2 sections of 6" sidewalk. Is that correct? Or does the 6" sidewalk detail apply to the entire sidewalk area north and east of the building? Similarly, where does the 5" Sidewalk detail apply, and where does the transition from 5" to 4" sidewalk occur?

RESPONSE: 6" sidewalk is hatched, located at the NE and SE building corners, refer to sheet C07. 5" sidewalk is within the Street Right of Way parallel to Gibraltar Road and DeMoss Road, refer to sheet C07. 4" sidewalk is the remaining on-site sidewalk. Refer to sheet C15 for sidewalk details.

43.) QUESTION: Where are we to submit RFI's? Through this message box?

RESPONSE: Yes, please submit all RFIs through the Messages Tab > + New Message. The CM Team at Boyle will be notified.

44.) QUESTION: Doors 144C, 144D and 154 appear on the main door schedule. They are indicated as being hollow metal, but under materials as re called out as aluminum doors and aluminum frames. My guess is that they are to be FRP doors with aluminum frames, but this item needs clarified.

RESPONSE: Doors 144C, 144D, and 154C will have aluminum frames and FRP doors. See revised A101, A600 and A603. Some storefront types have been corrected.

45.) QUESTION: Storefront frame type SF3, seven required, above the overhead/folding doors in the bay area, require radius heads. The storefront for the project is to be Kawneer 451T – Front-Set. The front-set storefront system cannot be bent. There are two options, change these seven windows to center-set, which can be bent or change the openings to curtain wall, which can be bent. The curtain wall is more expensive than storefront, takes more time to fabricate, install and glaze. I would recommend the center-set storefront option. Please request clarification for what system should be used.

RESPONSE: SF-3 has been changed to Center Set.

46.) QUESTION: Section 001100-6 states to provide one (1) hard copy of bid and one (1) electronic USB. The Mechanical bid form 001200.5-3 indicates to include two (2) hard copies and one (1) electronic USB. Which is correct?

RESPONSE: Please refer to Response for Question No. 3 on Addendum No. 2, dated 10/15/26.

47.) QUESTION: Which prime contractor is responsible to install the HVAC roof curbs. Also, who is responsible to install the exterior louvers. The specs are contradicting.

RESPONSE: Please refer to the Multiple Contract Summary specification 01 1200. MC shall provide all roof curbs and accessories for HVAC equipment including louvers and vents. MC shall furnish curbs and layout for installation by GC. General Contractor shall apply sealant around wall mounted outside air intake louvers provided and installed by the HVAC Contractor. General Contractor to furnish and install all exterior Architectural vents and louvers.

48.) QUESTION: Please review the attached Request for Approval (RFA) from Allegion, which proposes their door hardware as an approved equal to the hardware specified for the Exeter Township Emergency Services Facility project.

Please confirm whether the proposed Allegion hardware is acceptable as an approved equal for bidding purposes. If any exceptions or items do not meet the project specifications, please identify the required revisions.

We are providing the supporting documentation in two separate attachments due to file size.

We would appreciate clarification before bid day so our door and hardware subcontractors can provide competitive pricing.

RESPONSE: The substitution is acceptable. Products shall be submitted during the submittal review process that equal or exceed the basis of design. The substitution request is provided attached.

49.) QUESTION: Dwg E000 Symbol Legend Notes Communication Devices Section references an Intercom system. We do not see any intercom devices on the drawings, and no spec has been provided for an intercom system. Please confirm that no intercom system is being provided under this project.

RESPONSE: Correct, no intercom system has been provided. Intercom system note section have been removed.

50.) QUESTION: There is a spec 275313 for a clock system, however we are not seeing any clocks shown on the drawings. Please clarify whether a clock system is being provided under this project. If a clock system is to be included, provide drawings showing the clock quantity and locations.

RESPONSE: Clock locations have been shown on plans as per MWS's markups.

51.) QUESTION: Can we confirm the Fire Station Alerting System wire types for devices back to the IT room? Will all devices be home runs? Or is there some sort of wiring details that can be provided.

RESPONSE: FSA wiring diagrams are still in progress, and some of them will be home runs but not all. Fire Station Alerting System wiring types shall be coordinated by Fire Station Alerting system vendor and low voltage contractor.

52.) QUESTION: Who is responsible for all structured cabling? Including Digital Clocks and TV's. Based on A106 looks as though EC to handle whereas notes on G001 indicate owner vendor to provide all Structured cabling.

RESPONSE: Owner's vendor will provide low voltage cabling.

53.) QUESTION: Please confirm the utility providers (PAWC, UGI, etc.) are responsible for installing their respective utilities (Sanitary, Water, Gas, Electric, etc.) in the public roads & ROWs complete, including excavation, stone bedding utility installation, stone backfill, grass/concrete/asphalt restoration, traffic control, etc. The SC does not have any responsibility for any of this work, correct?

RESPONSE: Please refer to the Multiple Contract Summary specification 01 1200, page 13 under the SC's scope of work for more detailed description of these responsibilities. Electric Utilities will be run overhead to Utility Pole located on site at which point the excavation, bedding, and backfill of underground electric to transformer locations and into the building will be by the SC. EC will install underground conduit pathways for this work.

54.) QUESTION: How should the SC leave the site on at the completion of rough grading on 3/31/2027? Should the SC temp seed anything other than stockpiles?

Is the SC responsible for any temporary roads and paving? If so, please clarify what is required. When is the stone subbase for concrete & asphalt paving areas to be installed?

RESPONSE: All exposed soil conditions must be temporary stabilized in accordance with the NPDES Permit and Conservation District guidelines. SC should install the stone subbase for concrete and asphalt pacing areas at the end of Site Phase 1. SC should account for some touch up to subbase as part of their preparation for the installation of the concrete paving and asphalt paving. In the event the Alternate is selected to change the concrete paving area to heavy duty asphalt paving, the Construction Manager may coordinate and request binder paving be installed by the SC at the end of Site Phase 1.

55.) QUESTION: Is the SC responsible for maintenance of the site (rock construction entrances, drive & parking area subgrade [or subbase, or temp paving], street cleaning, etc.) while not on site? The SC will be off the site from April 1st 2027 until November 2027.

RESPONSE: Please refer to the Temporary Facilities and Controls specification 01 1500 for direction of these responsibilities. The Site Contractor is responsible for all NPDES permit responsibilities and maintenance thereof through NOT.

56.) QUESTION: Please confirm the SC is Not responsible for handling or removing the spoils generated from other prime contractor's or utility provider's work scope (spoils from utilities in the public roads/RWs, building footer spoils, etc.).

RESPONSE: Spoils generated from Utility Companies in the ROW will be handled by the Utility Companies. SC is responsible for all spoils from excavation of site utilities outside of the building pad. Each Prime is responsible for their own spoils generated within the building pad.

57.) QUESTION: Will the SC be responsible for any restoration in the paved staging area on the existing macadam parking area? If so, please clarify what will be required

RESPONSE: The SC shall assume responsibility for restoring this area upon completion of the Work. Restoration shall return the site to conditions equal to or better than those existing prior to the commencement of construction, including any areas impacted by the construction operations.

58.) QUESTION: Please clarify when rock removal will be paid by the CY unit price. The specs define Site Rock as solid mineral material with volume in excess of 1/3 CY or solid material that cannot be removed with ¾ CY capacity excavator and trench rock as volume in excess of 1/6 CY; however, the bid form unit price indicates rock will be paid when "in excess of 1 CY at *Individual Locations*". Will removal all rock that meets the definitions in the specs be paid at the CY unit price.

RESPONSE: The Specifications define the criteria for classifying rock under each applicable condition, while the Unit Prices establish the basis for compensation associated with rock removal. The SC Prime Contractor shall be responsible for the removal and disposal of up to 1 cubic yard (CY) of rock at each individual excavation location at no additional cost. Any rock encountered in excess of 1 CY per individual location will be compensated in accordance with the applicable Unit Price. HRG to confirm they are in agreeance.

59.) QUESTION: Please confirm that any unsuitable soils encountered will be handled/remediated and paid for with either Unit Price No. 3 or No. 4. Due the time of year the site work is to occur, it's possible that soils may be unsuitable due to excessive moisture and/or frost.

RESPONSE: The SC shall roll and cap the site daily to prevent deterioration of soil conditions. No trenches may remain open overnight. The SC is responsible for maintaining existing soil conditions to the greatest extent practicable throughout the project. The SC shall also provide temporary seeding and mulching for all soil stockpiles to ensure they remain stable, dry, and suitable for reuse. As necessary, soils may be scarified and allowed to dry to maintain workable conditions. Any request for the use of project allowances must be submitted formally by the SC and will be subject to review by the Construction Manager (CM) and Owner. The Construction Manager shall have final authority regarding the approval and use of all allowances.

60.) QUESTION: The construction milestone schedule is weather permitting, correct? Weather delays will extend the schedule accordingly, correct?

RESPONSE: Please refer to the sample AIA 232 contract in the specifications, section 8.3 Delays and Extensions of Time for clarification.

61.) QUESTION: The SC will not be responsible for handling rock or unsuitable soils for other prime contractor's or utility provider's work scope, correct?

RESPONSE: SC will be responsible only for their scope of work.

62.) QUESTION: What is the schedule for the PAWC, UGI and irrigation relocation work to start and be completed?

RESPONSE: All site utilities are identified within the Construction Milestone Schedule. The relocation of the irrigation system is currently being coordinated with the Owner and is anticipated to be completed prior to the commencement of work in this area under the SC Prime Contract.

63.) QUESTION: The GC is responsible for the patio seat wall, correct? Please confirm which prime contractor is responsible for the concrete patio.

RESPONSE: Correct, GC will install the patio Seat Wall. The SC is responsible for the concrete patio.

64.) QUESTION: It appears some of the site demo and clearing has already been completed. Please confirm what clearing remains to be done, specifically along the western property line. Is any clearing required beyond this property line?

RESPONSE: Specification Section 00 1100 "Instruction to Bidders", Paragraph 4.6 states "Before submitting a Bid, each Bidder will, at Bidder's expense, make or obtain any additional examinations, investigations, explorations, tests and studies, and obtain any additional information and data which pertain to the physical conditions (surface, subsurface, and underground facilities) at or contiguous to the site or otherwise which may affect cost, progress, performance, or furnishing the Work and which Bidder deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price, and other terms and conditions of the Contract Documents."

65.) QUESTION: The SC is responsible for the sidewalk along Demoss Road, correct?

RESPONSE: Yes, SC is responsible for this work.

66.) QUESTION: Which prime contractor is responsible for the Rope Anchors?

RESPONSE: Rope Anchors are interior of the Training Tower only, and are to be provided by and installed by the GC. Site drawings have been revised to remove reference to rope anchors.

67.) QUESTION: Will retainage be withheld? If so, please confirm the percentage, and if it will be reduced during the project or if it will all be released at the project's completion.

RESPONSE: Yes. Retainage of ten percent (10%) will be withheld until the Work of each Contract is fifty percent (50%) complete, at which point one-half of the retainage held will be returned and no more than five percent (5%) will be withheld thereafter, in accordance with 62 Pa.C.S. § 3921. Remaining retainage will be released upon substantial completion of each Contractor's Work in accordance with 62 Pa.C.S. § 3941, less one and one-half times the value of any uncompleted items. See Section 5.1.7 of the Agreement as revised by Addendum No. 4.

68.) QUESTION: The SC is not responsible for any professional testing (compaction testing, concrete testing, asphalt testing, infiltration testing, etc.) correct?

RESPONSE: Correct. This will be provided by a third Party Testing Agency contracted with the Owner.

69.) QUESTION: Is full-depth 2A stone backfill required for all storm pipe trenches in all new paving areas? Similarly, is full-depth 2A stone backfill required above SCM-3?

RESPONSE: Yes, full 2A stone backfill is required in these locations.

70.) QUESTION: Can the SLCPP storm pipe contain recycled materials, or must it be all virgin?

RESPONSE: Refer to Spec 33-4200-2.1.B, SLCPP shall comply with AASHTO M294. For ADS, our understanding is their only AASHTO M294 (and PennDOT) approved SLCPP is virgin. SLCPP shall comply with AASHTO M294.

71.) QUESTION: For SCM-1, please confirm no modifications are required to the existing outlet structure other than replacing the grate.

RESPONSE: For the SCM-1 box outlet structure that is correct. There is also a separate SCM-1 HW outlet structure that requires an orifice plate. Refer to sheets C09 and C25.

72.) QUESTION: For SCM-3, Is Infiltration Media required under the stone bedding? If so, what is the required depth?

RESPONSE: Refer to SWCM-3 detail notes 1-3, sheet C25. Media is only required if rock or perched water is encountered. The depth is 2 feet, if this is required. The construction manager will be adding an allowance, should this be needed.

73.) QUESTION: Please confirm how many roof drain downspout risers are required. The site plans appear to show 27, whereas the Sheets A101 and A500 of the Architectural drawings appear to show 25 and 23, respectively.

RESPONSE: There are 26 downspouts which feed into the SWM. See revised A101 and A500, C09 and C11.

74.) QUESTION: Please provide a detail for the storm cleanouts (CO-2A.4.2, CO-3B.3, C0-3B.4, CO-3B.3.1). Similarly, please provide a detail for the roof drain cleanouts.

RESPONSE: Storm cleanout details added to sheet C25. No roof drain cleanouts are proposed. If the question pertains to downspout cleanouts, refer to the detail on sheet C22. Three (3) storm cleanouts were added upslope of Inlet I-2B.3.1 (west side of building), refer to sheets C09 and C11. All roofs drain via gutter to downspout and no cleanout is required aside from the cleanout provided at the boot.

75.) QUESTION: Please confirm the SC not responsible for installing the sanitary laterals from the Oil Sand separate to the building, and that the PC will be installing these two laterals, including excavation, stone & backfill.

RESPONSE: Please refer to the Multiple Contract Summary specification 01 1200. Installation of all sanitary piping and connections to include the installation of the oil/sand separator is by the SC. PC will install all piping and connections from the building to the oil/sand separator.

76.) QUESTION: Please provide a Cleanout Trap detail.

RESPONSE: The right of way cleanout trap will be installed by PAWC. The other trap references were removed from sheets C11 and C13.

77.) QUESTION: Please confirm cleanouts are to be installed per the profiles (the profiles do not match the plans with respect to cleanouts).

RESPONSE: The cleanouts were revised on the Plan and Profiles for consistency, refer to sheets C09, C11-C13.

78.) QUESTION: Is full-depth 2A stone backfill required for all sanitary pipe trenches in new paving areas?

RESPONSE: Yes, full 2A stone backfill is required in these locations.

79.) QUESTION: Please confirm the C900 water main is to be DR-18.

RESPONSE: The water line was revised to be 6" DIP CL 52, refer to question 80.

80.) QUESTION: The SC is to install a 6" flanged riser in the building, correct? Please confirm where the pipe should transition from C900 to DIP.

RESPONSE: SC is responsible for installation of the flanged riser in the building. The water line between the meter pit and building was revised to be 6" DIP CL 52. The labels on sheet C11 and C12 were revised. The water specification was revised to eliminate PVC pipe and require DIP, refer to spec section 33 1416.

81.) QUESTION: Is full-depth 2A stone backfill required for all water pipe trenches in new paving areas?

RESPONSE: Yes, full 2A stone backfill is required in these locations.

82.) QUESTION: Please confirm the SC's responsibility for the on-site gas, electric and telecom lines & trenches. The SC is only responsible for excavation, stone bedding & backfill, and all MEP primes be supplying & installing all necessary conduit, pull boxes, etc., correct?

RESPONSE: Please refer to the Multiple Contract Summary specification 01 1200 for details and all responsibilities.

83.) QUESTION: Is full-depth 2A stone backfill required for all gas, electric & telecom trenches in new paving areas?

RESPONSE: Yes, full 2A stone backfill is required in these locations.

84.) QUESTION: The SC is responsible for installing the exterior light pole concrete bases, but the EC will supply the concrete bases, correct? Will these be precast concrete bases?

RESPONSE: SC will install, EC will supply. These will be precast bases per detail 2 on E103.

85.) QUESTION: Is the SC responsible for any work associated with the Illuminated Bollards?

RESPONSE: SC is responsible for install, EC will supply.

86.) QUESTION: Please confirm which prime contractor is responsible for the Gas Box Drain Pipe as shown on the Site Plans. The site plans say to refer to the plumbing plan, but there does not appear to be any info for this on the plumbing plan.

RESPONSE: DEDC calls out a 1 1/4" drain pipe to be installed by the PC on P201 Keynote 7. Gas Box information is (was) located on P601 plumbing schedule (we have added materials of construction to that schedule)

87.) QUESTION: Section 011200-16 para.1.11.A.13. indicates new ducts are to be cleaned. If the ductwork has covered ends throughout install, will duct cleaning be required?

RESPONSE: Yes, final duct cleaning will be required to ensure the system is turned over to the Owner in a fully cleaned condition.

88.) QUESTION: Is the Owner hiring an inspection agency to perform all the 3rd party testing for the building code requirements. The specs are contradicting.

RESPONSE: Yes. If there are specific inspections that are believed to be inadequately defined or unclear within the Contract Documents, please identify them and provide additional detail so they can be reviewed and addressed accordingly.

89.) QUESTION: The equipment schedule and floor plan on A106 call for the GC to provide brackets for the televisions and alerting monitors. Please provide a specification for all mounts to be purchased.

RESPONSE: A106 has been adjusted. All screen brackets will be provided by the Owner or Owner's vendor.

90.) QUESTION: The three manufacturers listed in 237499-2 are all made/represented by the same company, Trane. Will Daikin or any other manufacturers be accepted? The VRF spec is allowing Daikin so I think they should be able to bid on the DOAS unit as well.

RESPONSE: Yes, Daikin is acceptable (which was in the specification). LG and Samsung have been added to 238129 specification as well.

91.) QUESTION: Which primes responsibility is it for the temp fencing?

RESPONSE: Please refer to the Temporary Facilities and Controls specification 01 1500 for direction of these responsibilities. The Site Contractor is responsible for all temporary fencing.

92.) QUESTION: Drawing M111 - There is a VRFI-AV shown in the AV storage but I don't see this on the schedule. Please direct me to where I can find this.

RESPONSE: M602 diagram and M603 schedule have been updated

93.) QUESTION: There is a VRFI-16F shown on M111 but not on the schedule.

RESPONSE: M602 diagram and M603 schedule have been updated

94.) QUESTION: There is an AC-1 shown on M102. What is this?

RESPONSE: AC-1 is the air compressor, also shown on P202 and scheduled on P601

95.) QUESTION: Circuits LP3-58 and LP3-47 look to be associated with patio equipment but are shown on the LP3 panel schedule IT Room receptacle and general Rec. This panel is also on the other side of the building, should this be that way?

RESPONSE: Circuits have been updated with correct designation to be fed from a panelboard that is nearer.

96.) QUESTION: Panel LVP1 is listed to feed generator panel is this a typo? LVP1 isn't shown? LP1 doesn't have a 60A breaker listed for Generator Panel power?

RESPONSE: Circuit breaker has been added to panel schedule to feed panel GP in the generator enclosure.

97.) QUESTION: Please provide a spec for pipe and fittings.

RESPONSE: All piping specifications were included with the original construction documents

98.) QUESTION: Drawing P201 shows a 6" PRV on the incoming water service. Is this correct?

If so, who is responsible for providing and install it?

RESPONSE: Added Detail 1/P000 to indicate contractor scope of work and added reference to this detail on P-201. Also added scope demarcation to 2/F000

99.) QUESTION: Are there any more specifications available on the storefront doors?

RESPONSE: Please refer to Section 08 4113 - Aluminum-Framed Entrances and Storefronts.

100.) QUESTION: Storefront window framing is called out as 451UT center set in specifications, on A603 of plans it's called out as front set which is not possible with the 451UT system.

RESPONSE: A603 and the specifications have been updated so that storefront SF-3 is center set.

101.) QUESTION: Is the finish on frame SF-3 to be painted red finish in lieu of clear anodized finish?

RESPONSE: SF-3 shall be prefinished red.

102.) QUESTION: On the site lighting plan when referring to (VIA LC1) is that the Pyramid Digital Clock?

RESPONSE: No, VIA LC1 is in reference to the exterior lighting circuit being controlled by a lighting contactor.

103.) QUESTION: On the site power plan is the EMS Sign,Traffic warning device, and water meter vault future work? Don't see circuitry allocated for them.

RESPONSE: Circuiting has been added for the EMS sign, Traffic warning device and water meter vault power.

104.) QUESTION: RF-2 Vinyl Stair Nosing (Tarkett SVCD-63-A) appears in the Material Finish Key on A105, but it is not shown in the Finish Schedule or on A406/A407 — the training tower stairs read as steel pan with cast-in-place concrete and an integral 1-inch nosing. Please confirm where RF-2 applies, if anywhere, and the governing spec section.

RESPONSE: Detail of where RF-2 is found on sheet 7/A708. RF-2 applies to the raised platform in the kitchen/ dayroom. It's highlighted in the spec set section 09 6513.

105.) QUESTION: Alternate #10 / Room 147: Room 147 (Equipment/T&S) is CT-1 ceramic tile in the base bid. Please confirm whether Alternate #10 includes replacing the Room 147 floor finish with the resinous system and resinous base.

RESPONSE: The GC Bid form has been updated and attached. Room 147 will not be included in alternate #10.

106.) QUESTION: Untagged floor finishes: Please confirm the floor finishes for Room 150 (Records) and Room 155 (Tool Room), which carry no legible finish tag on A104/A105.

RESPONSE: Room 150 is noted as KX-1 and Room 155 is noted as RES-1. Refer to both A104 and A105 as it is listed accordingly.

107.) QUESTION: Apparatus Bay 144 striping: RES-2 / RES-3 / RES-4 striping inside the bay is not dimensioned separately on the drawings. If the bid form requires separate pricing by resinous system, please advise the area split; otherwise we will carry the bay as one resinous system.

RESPONSE: Refer to Sheet A104 Finish Plan for dimensions.

108.) QUESTION: Spec 011200 1.14 A 31 States "Coordinate work with all of the Owner's vendors and sub-contractors including, but not limited to Telecom, Security, and Audio Visual." The Security and AV has already been clarified via previous RFI answers however please verify that the Owner is responsible for the TeleData.

RESPONSE: Confirmed, the Owner is responsible for TeleData.

109.) QUESTION: I wanted to clarify if shop drawings are actually necessary for 09-2216 non-structural framing? This will add a substantial amount of cost if shop drawings for everything covered under this spec are required.

RESPONSE: Yes, this is a performance-based spec, so we do need to see these shop drawings.

110.) QUESTION: Please provide specs for Mixing Valves that are to be provided at each water heater.

RESPONSE: Specification 22 1119 - DOMESTIC WATER PIPING SPECIALTIES Part 2.5: TEMPERATURE-ACTUATED WATER MIXING VALVES

111.) QUESTION: On the schedule under site work it has installation of generator. I assume purchase and installation would be by electrical. Who owns the concrete slab under the generator?

RESPONSE: Schedule only references the generator as part of the Site not Site Work Package. EC is to provide and install the Generator and the SC has no responsibility in the installation of the generator equipment. SC is responsible for the installation of the Generator Pad and must coordinate with the EC for all layout.

112.) QUESTION: Who owns purchase and installation of the sign?

RESPONSE: Please specify which sign is in question. The Monument sign will be installed by the GC.

113.) QUESTION: Who owns purchase and installation of the flagpole?

RESPONSE: The GC is responsible for the flagpole and foundations for the flagpole.

114.) QUESTION: Who install the seat wall?

RESPONSE: GC will install the patio Seat Wall.

115.) QUESTION: There appears to be sidewalk which is across the street as shown in the attached document. Is this intended to be installed by site contractor?

RESPONSE: Confirmed, SC will be responsible for this installation. Refer to NW corner of Township Municipal Building and Maintenance Building parcel, sheet C07. Sidewalk within the right of way to be 5", refer to question 42.

116.) QUESTION: There mentions plans by TPD, which identifies the Opticom Detector. Is this intended to be installed with site? If so can you please provide the TPD plans.

RESPONSE: This work is to be constructed by Others through a separate Owner Contract. This includes the golf course sign relocation and flashing warning signs, devices, and detectors.

117.) QUESTION: Can you please confirm if the storm run attached is intended to be replaced or is just shown for reference.

RESPONSE: The existing storm pipe from Existing Inlet-2 to MH-4 (sheet C-12) will remain / shown for reference. The existing storm pipe will connect to proposed Manhole MH-4.

118.) QUESTION: The equipment schedule says "contractor furnish and install" but does not specify which contractor(s) are responsible for the air hose port (EQ30), water hose reel (EQ32), electrical cord reel (EQ34), and air compressor (EQ35); please confirm who is responsible. The plans and specs seem to contradict each other. On other projects, we typically see this equipment in the MEP contracts. The multiple contract summary does not clarify this issue either.

RESPONSE: EQ30 and EQ35 shall be Mechanical Prime, EQ32 shall be Plumbing Prime, EQ34 shall be Electrical prime. See updated sheet A106.

119.) QUESTION: Where do I find the specs for the UPS?

RESPONSE: BOD UPS model has been added to the single line diagram.

120.) QUESTION: Can you please confirm if infiltration media is required? The attached drawing shows the note saying (If) media is required.

RESPONSE: See question 72.

121.) QUESTION: The BC-04 and its associated indoor units are not shown on the schematic on M602.

RESPONSE: M602 schedule / diagrams have been updated

122.) QUESTION: There is liquid, suction, and hot gas piping shown from BC-01 to BC-02, BC-03, & BC-04 but none shown from condensing unit on the roof to BC-01.

RESPONSE: There is a note on M111 above room T&S 137 "RL/RS UP TO VRFO-1 ON ROOF"

123.) QUESTION: The specifications mention Heat-Soaked Glass in the warranty requirements; paragraph 1.10.C, if heat soaking is required, it is a very expensive option and will eliminate many of the glass fabricators from bidding the project. Please request a clarification, if heat soaking is actually required for the project.

RESPONSE: Heat-Soaked Glass will not be required. See revised spec.

124.) QUESTION: The specifications require for the exterior lite of the insulated vision glass to be Solar Gray. The performance data requires a visible light transmittance of 64% (see paragraph 3.9.A.10 – attached). Using gray glass, per the attached performance chart, will result in a visible light transmittance of 32%. Please request a clarification. If the 64% light transmittance is required, a clear exterior light will need to be used, in lieu of gray.

RESPONSE: We will remove the requirement for 64% light transmittance. See the attached updated glazing specification.

125.) QUESTION: Reference Notes #1 and #5 on Drawing A104 require two custom terrazzo department seals within the terrazzo flooring, incorporating up to eight colors. Please provide details of the custom seals for pricing purposes. If details are unavailable, please provide an allowance to include in our terrazzo proposal for both custom terrazzo-filled seals.

RESPONSE: The Department Seal would be the same seal in both areas. Reference Note 5 on sheet A104 is an Add Alternate note. The seal image is attached.

126.) QUESTION: If Alternates #9 and #10 are accepted, terrazzo flooring will remain in Lobby 101, Storage 105, and Janitor 121. Please confirm whether the terrazzo flooring in Storage 105 and Janitor 121 should be included in either alternate.

RESPONSE: See revised section 00 1200.2 - General Construction Bid Proposal Form. Janitor 121 was added to #9 and room 147 is removed from #10.

127.) QUESTION: Please confirm whether moisture treatment is required and should be included in the terrazzo pricing.

RESPONSE: Confirmed, we do need moisture testing on the slab before the terrazzo is installed and if it fails, we should have a moisture remediation treatment applied to mitigate concrete moisture issues.

128.) QUESTION: Please clarify whether the terrazzo crack isolation membrane is required over the entire concrete substrate or only at existing cracks.

RESPONSE: Per the specification, apply crack suppression membrane at substrate cracks. It's only necessary if the new slab forms cracks after curing.

129.) QUESTION: Alternate #10 requires deleting terrazzo flooring in Corridor 145, EMS Dayroom 146, and Equipment 147. However, Equipment 147 is not identified on the finish schedule or drawings. Please clarify the location of Equipment 147 and confirm whether terrazzo flooring is required in this room.

RESPONSE: Room 147 is a toilet and shower room and is identified on plans and schedules to have CT-1 flooring. The GC Bid form has been updated and attached.

130.) QUESTION: Drawing A106 identifies furnishing and installation responsibilities for equipment that appear inconsistent with Section 01 12 00, which identifies several of these items as Owner-furnished for GC installation. Please confirm furnishing and installation responsibilities for the following:

EQ37 and EQ38 — Manual and dual roller shades.

EQ42 and EQ45 — Magnetic whiteboards.

EQ46 — Motorized chain winch.

EQ26, EQ27 and EQ39 — Plastic lockers.

RESPONSE: Section 01 1200 is revised to match A106.

131.) QUESTION: Drawing C17; Section 01 12 00, Paragraphs 1.9 and 1.10; GC Bid Form, Alternate #12. Please clarify the division of work between the Site Contractor and General Contractor for Alternate #12, which replaces the base-bid dumpster enclosure with the specified alternate construction. Please confirm which prime furnishes and installs the alternate enclosure foundations, concrete slab, masonry, structural steel, bollards, gates and related accessories. Identify which elements replace the base-bid work and which remain unchanged.

RESPONSE: In reference to Alternate #12 acceptance, the GC would own the concrete foundations, masonry, steel, and fence material as noted in the alternate. The SC per the basis of design owns the bollards and concrete slab and would stay the same if Alternate #12 were to be accepted.

132.) QUESTION: Section 08 71 00 — Door Hardware; Addendum #3, Section 28 10 00 — Access Control; Drawing G001.

Please confirm that the General Contractor is responsible for furnishing and installing the specified electrified door hardware, including electric strikes, electrified locks and power-transfer hardware, while the Electrical Contractor and/or Owner's security vendor is responsible for all associated low-voltage wiring, power supplies, connections, programming and system testing.

Please also clarify who provides and terminates wiring between the electrified hardware and the access-control system, and which contractor is responsible for demonstrating the completed hardware/access-control interface.

RESPONSE: Confirmed, the GC will own the electrified door hardware, including electric strikes, electrified locks and power-transfer hardware, while the Electrical Contractor and/or Owner's security vendor is responsible for all associated low-voltage wiring, power supplies, connections, programming and system testing.

The Owner's security vendor will provide and terminate wiring between the electrified hardware and the access-control system, and demonstrating the completed hardware/access-control interface.

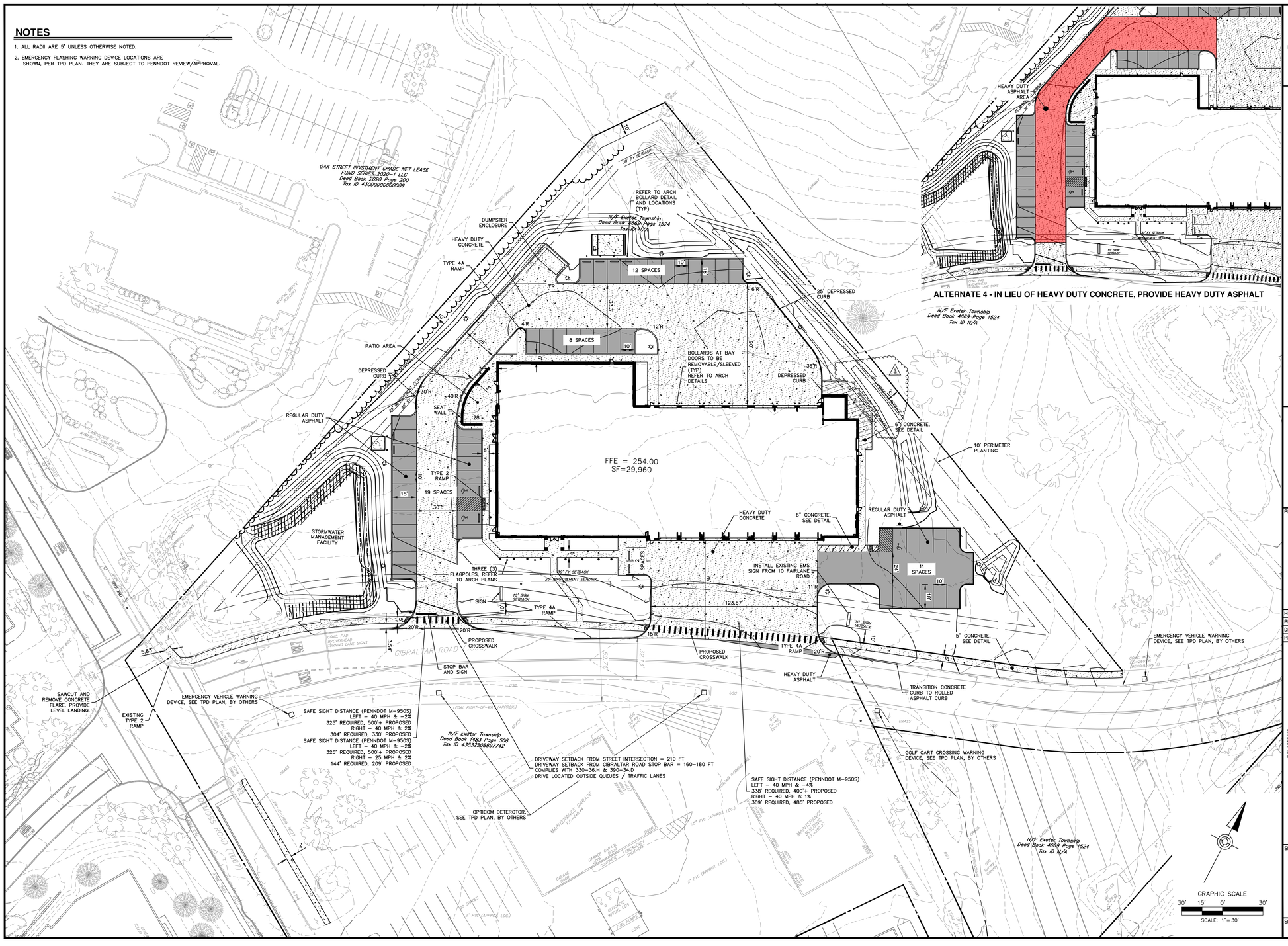
ATTACHMENTS:

1) Civil drawings: C07, C08, C09, C10, C11, C12, C13, C17, C25, C26, C105, C106, C107, C108, C205, C206, C207, C208, C211, C212.
2) Architectural drawings: G000, A101, A106, A500, A600, A603, A604, A705
3) MEP drawings: M111, M602, M603, P000, P201, P202, P601, F000, E000, E101, E102, E201, E202, E204, E301, E601, E604, E606.
4) FSA drawings: FSA-7, FSA-8, FSA-9, FSA-10, FSA-11, FSA-12.
5) Fire Department Seal for Terrazzo per question #125
6) 00 0010 – Table Of Contents
7) 00 1100 – Instructions to Bidders
8) 00 1200.1 - Site Construction Bid Proposal Form
9) 00 1200.2 - General Construction Bid Proposal Form
10) 00 1200.3 - Fire Protection Construction Bid Proposal Form
11) 00 1200.4 - Plumbing Construction Bid Proposal Form
12) 00 1200.5 - Mechanical Construction Bid Proposal Form
13) 00 1200.6 - Electrical Construction Bid Proposal Form
14) 00 3100 - Available Project Information
15) 00 7000.1 – A132-2019
16) 01 1200 – Multiple Contract Summary
17) 01 3117A – Coordination Drawings
18) 01 3117B – 3D Computer Model Agreement
19) 01 3117C – AIA G202-2013 BIM Protocol Form
20) 01 3117D – MW Digital Release Form
21) 01 3117E – Providence Agreement of Release Form
22) 01 3117D – HRG Agreement of Release
23) 01 3117G – DEDC Agreement of Release Form
24) 08 4113 - Aluminum-Framed Entrances and Storefronts
25) 08 8000 – GLAZING
26) 23 8129-Variable-Refrigerant-Flow Hvac Systems
27) 33 1416 - Site Water Utility Distribution Piping
28) Substitution request for Allegion door hardware

END OF ADDENDUM

NOTES

1. ALL RADII ARE 5' UNLESS OTHERWISE NOTED.
2. EMERGENCY FLASHING WARNING DEVICE LOCATIONS ARE SHOWN, PER TPD PLAN. THEY ARE SUBJECT TO PENNDOT REVIEW/APPROVAL.



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PRELIMINARY / FINAL LAND DEVELOPMENT PLAN
FOR
EMERGENCY SERVICES FACILITY
EXETER TOWNSHIP
4975 DEMOSS ROAD
READING, PA 19606
EXETER TOWNSHIP, BERKS COUNTY, PENNSYLVANIA

PROFESSIONAL SEAL:

HRG PROJECT NUMBER: R006367.0427
PLAN DATE: 2026.02.18
DRAWING SCALE: AS SHOWN
PROJ. MANAGER: DENNIS REICHEL

REVISIONS

NO.	DATE	DESCRIPTION
1	2026.03.18	REV AS PER 3/16/26 PLANNING COMMISSION COMMENTS
2	2026.04.15	50% CONSTRUCTION PLAN
3	2026.08.21	90% CONSTRUCTION PLAN
4	2026.10.01	BID SET
5		
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SHEET TITLE:
SITE PLAN

SHEET: **SI** **07**

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SEAL:

EXETER TOWNSHIP
EMERGENCY SERVICES FACILITY
70 GIBRALTER ROAD
READING, PA 19606

PROJECT NUMBER:
25-049

SUBMISSION:
100% CONSTRUCTION DOCUMENTS

ORIGINAL ISSUE DATE:
10/01/2026

SHEET REVISION SCHEDULE:
A ADDENDUM 4 - 10/29/2026

REFERENCE PLAN

SHEET NUMBER:

C07

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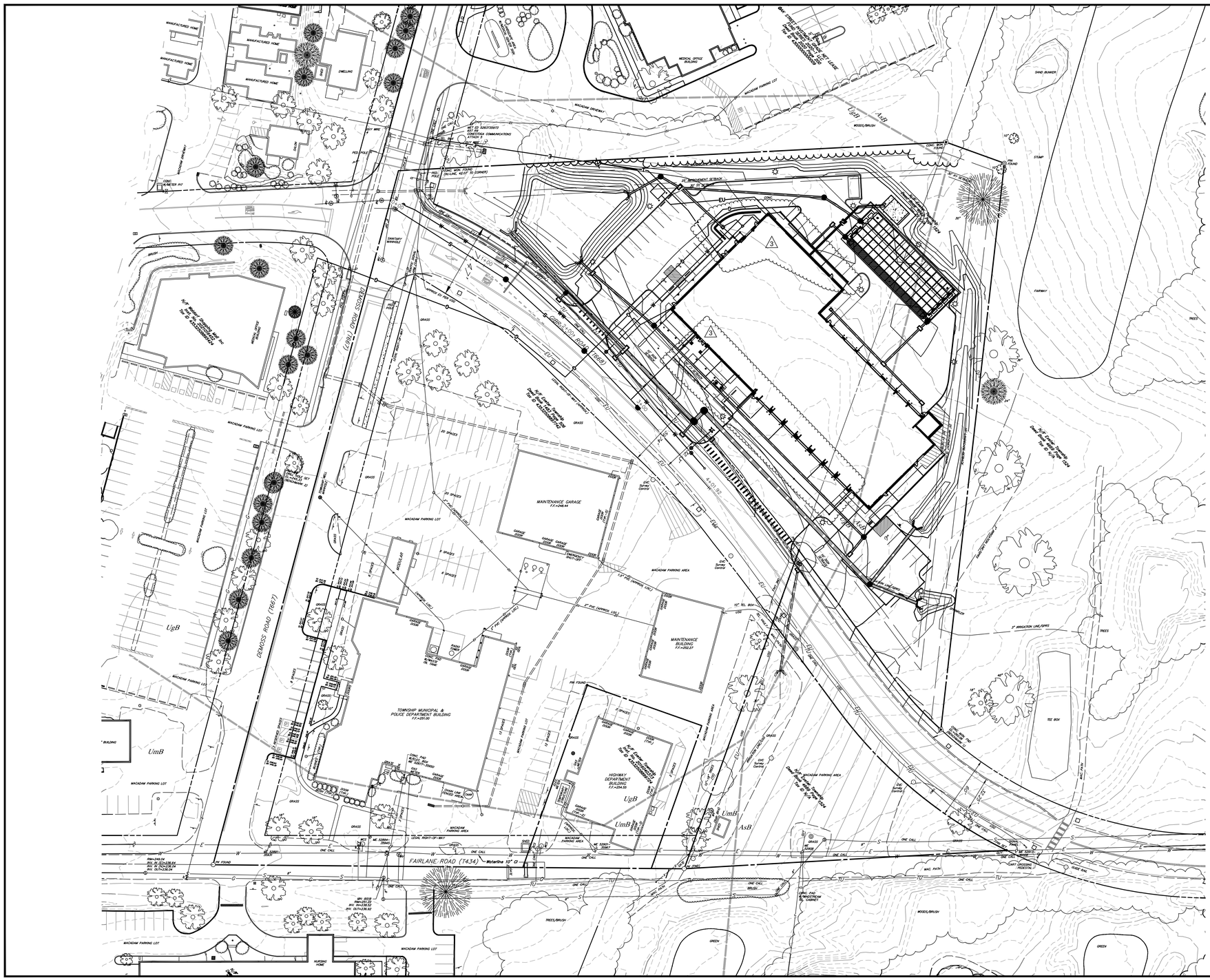

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PRELIMINARY / FINAL LAND DEVELOPMENT PLAN
FOR
EMERGENCY SERVICES FACILITY

EXETER TOWNSHIP
4975 DEMOSS ROAD
READING, PA 19606

EXETER TOWNSHIP, BERKS COUNTY, PENNSYLVANIA

PROFESSIONAL SEAL:

HRG PROJECT NUMBER: R006367.0427
PLAN DATE: 2026.02.18
DRAWING SCALE: 1"=40'
PROJ. MANAGER: DENNIS REICHEL

REVISIONS

NO.	DATE	DESCRIPTION
1	2026.03.18	REV AS PER 3/16/26 PLANNING COMMISSION COMMENTS
2	2026.04.15	SCM CONSTRUCTION PLAN
3	2026.08.21	90% CONSTRUCTION PLAN
4	2026.10.01	BID SET
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SHEET TITLE:
OVERALL GRADING & PCSM PLAN

SHEET: GR-OA 08

© MWS & HRG - P:\2025\2504-EXETER\Drawings\Sheets\GR-OA.dwg, 2/18/2026 8:51:38 AM, JeffRussell

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SEAL:

EXETER TOWNSHIP
EMERGENCY SERVICES FACILITY
70 GIBRALTAR ROAD
READING, PA 19606

PROJECT NUMBER:
25-049

SUBMISSION:
BID SET

ORIGINAL ISSUE DATE:
10/01/2026

SHEET REVISION SCHEDULE:
2 ADDENDUM 03 - 10/22/2026
3 ADDENDUM 04 - 10/29/2026

REFERENCE PLAN

SHEET NUMBER:

C08

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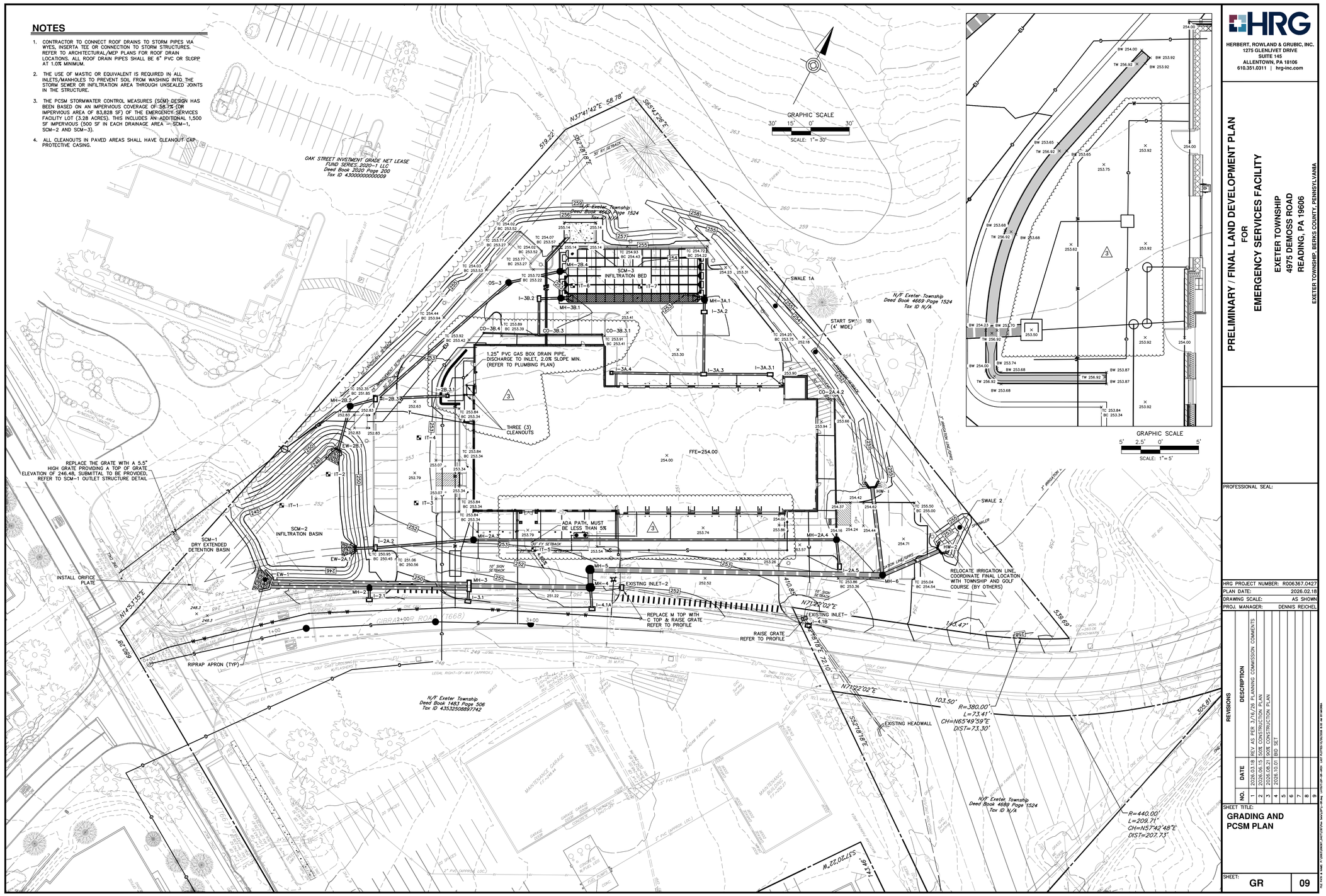
NOTES

1. CONTRACTOR TO CONNECT ROOF DRAINS TO STORM PIPES VIA WYES, INSERTA TEE OR CONNECTION TO STORM STRUCTURES. REFER TO ARCHITECTURAL/MEP PLANS FOR ROOF DRAIN LOCATIONS. ALL ROOF DRAIN PIPES SHALL BE 6" PVC OR SLCPP AT 1.0% MINIMUM.
2. THE USE OF MASTIC OR EQUIVALENT IS REQUIRED IN ALL INLETS/MANHOLES TO PREVENT SOIL FROM WASHING INTO THE STORM SEWER OR INFILTRATION AREA THROUGH UNSEALED JOINTS IN THE STRUCTURE.
3. THE PCSM STORMWATER CONTROL MEASURES (SCM) DESIGN HAS BEEN BASED ON AN IMPERVIOUS COVERAGE OF 58.7% (OR IMPERVIOUS AREA OF 83,828 SF) OF THE EMERGENCY SERVICES FACILITY LOT (3.28 ACRES). THIS INCLUDES AN ADDITIONAL 1,500 SF IMPERVIOUS (500 SF IN EACH DRAINAGE AREA – SCM-1, SCM-2 AND SCM-3).
4. ALL CLEANOUTS IN PAVED AREAS SHALL HAVE CLEANOUT CAP PROTECTIVE CASING.



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PRELIMINARY / FINAL LAND DEVELOPMENT PLAN
FOR
EMERGENCY SERVICES FACILITY

EXETER TOWNSHIP
4975 DEMOSS ROAD
READING, PA 19606
EXETER TOWNSHIP, BERKS COUNTY, PENNSYLVANIA

PROFESSIONAL SEAL:

HRG PROJECT NUMBER:	R006367.0427	
PLAN DATE:	2026.02.18	
DRAWING SCALE:	AS SHOWN	
PROJ. MANAGER:	DENNIS REICHEL	

REVISIONS

NO.	DATE	DESCRIPTION
1	2026.03.18	REV AS PER 3/16/26 PLANNING COMMISSION COMMENTS
2	2026.06.15	50% CONSTRUCTION PLAN
3	2026.08.21	90% CONSTRUCTION PLAN
4	2026.10.01	BID SET
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SHEET TITLE:
GRADING AND PCSM PLAN

SHEET: GR 09

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SEAL:

EXETER TOWNSHIP
EMERGENCY SERVICES FACILITY
70 GIBRALTAR ROAD
READING, PA 19606

PROJECT NUMBER:
25-049

SUBMISSION:
BID SET

ORIGINAL ISSUE DATE:
10/01/2026

SHEET REVISION SCHEDULE:
3 ADDENDUM 03 – 10/22/2026
4 ADDENDUM 04 – 10/29/2026

REFERENCE PLAN

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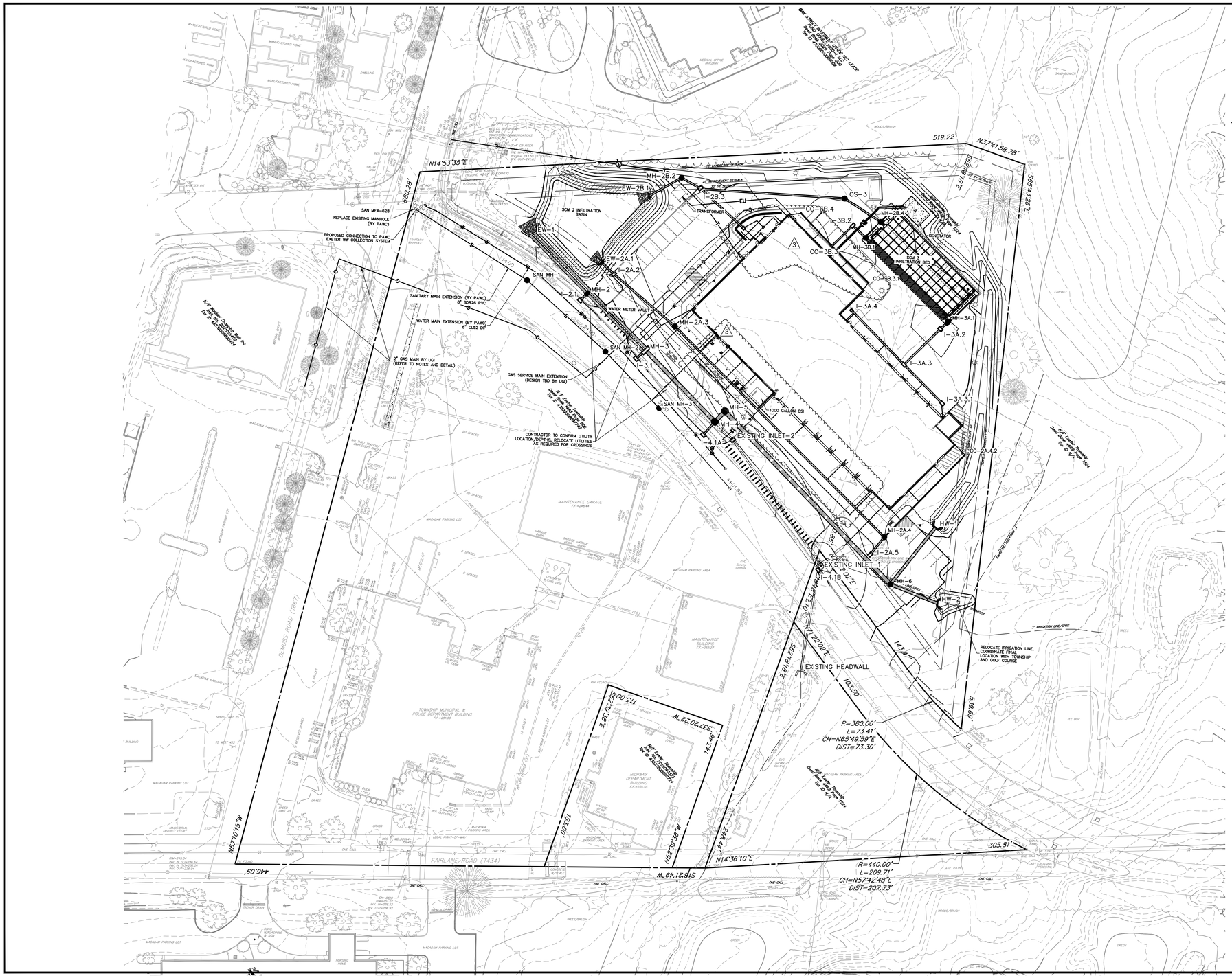

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PRELIMINARY / FINAL LAND DEVELOPMENT PLAN
FOR
EMERGENCY SERVICES FACILITY

EXETER TOWNSHIP
4975 DEMOSS ROAD
READING, PA 19606

EXETER TOWNSHIP, BERKS COUNTY, PENNSYLVANIA

PROFESSIONAL SEAL:

REVISIONS		
NO.	DATE	DESCRIPTION
1	2026.03.18	REV. AS PER 3/16/26 PLANNING COMMISSION COMMENTS
2	2026.04.15	ADDENDUM 01 - CIVIL CONSTRUCTION PLAN
3	2026.08.21	90% CONSTRUCTION PLAN
4	2026.10.01	BID SET
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HRG PROJECT NUMBER:	R006367.0427
PLAN DATE:	2026.02.18
DRAWING SCALE:	1"=40'
PROJ. MANAGER:	DENNIS REICHEL

SHEET TITLE:
OVERALL UTILITY PLAN

SHEET: **UT-OA** | **10**

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SEAL:

EXETER TOWNSHIP
EMERGENCY SERVICES FACILITY
70 GIBRALTAR ROAD
READING, PA 19606

PROJECT NUMBER:
25-049

SUBMISSION:
BID SET

ORIGINAL ISSUE DATE:
10/01/2026

SHEET REVISION SCHEDULE:
3 ADDENDUM 03 - 10/22/2026
4 ADDENDUM 04 - 10/29/2026

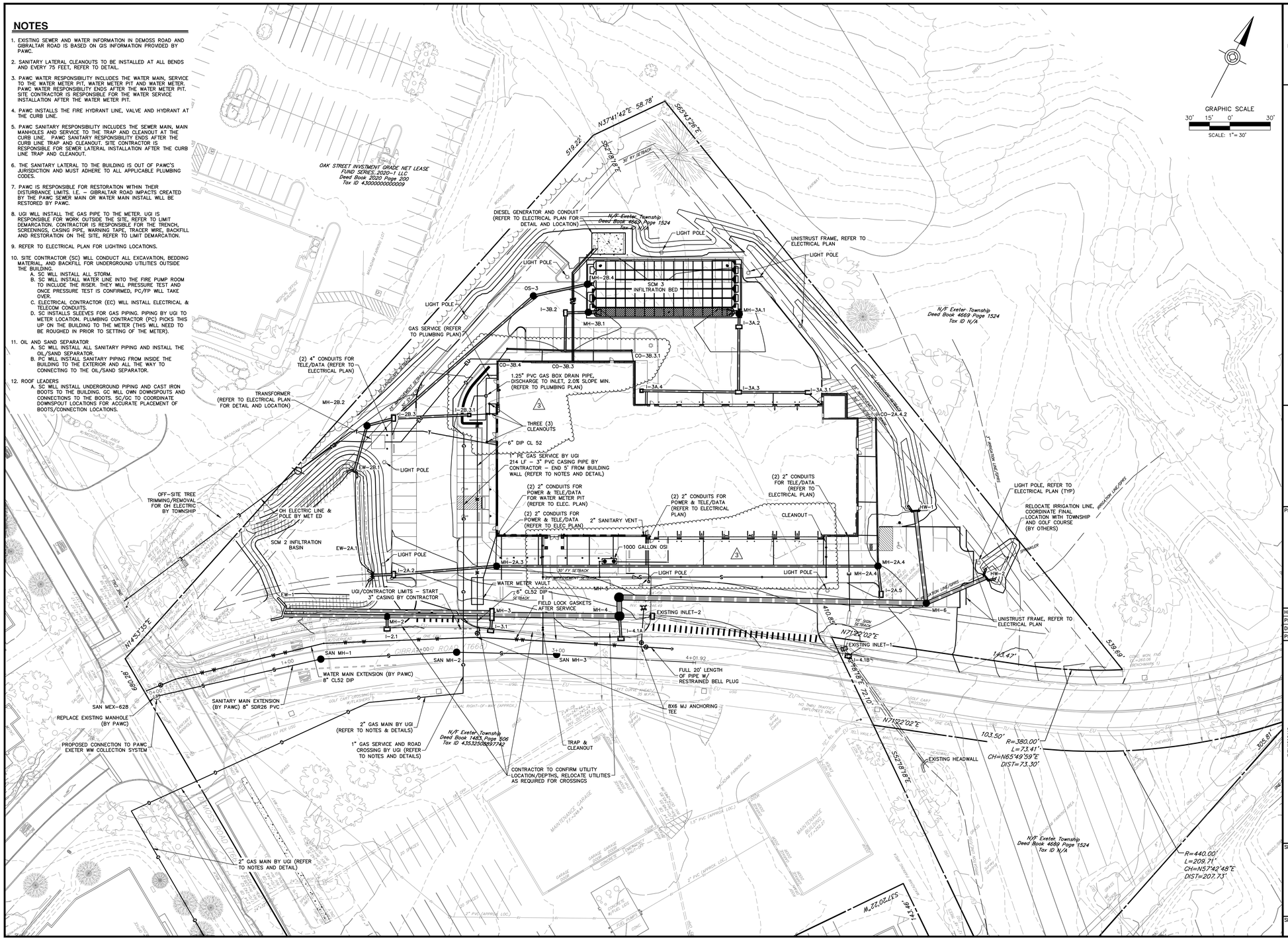
REFERENCE PLAN

SHEET NUMBER:

C10

NOTES

1. EXISTING SEWER AND WATER INFORMATION IN DEMOSS ROAD AND GIBRALTAR ROAD IS BASED ON GIS INFORMATION PROVIDED BY PAWC.
2. SANITARY LATERAL CLEANOUTS TO BE INSTALLED AT ALL BENDS AND EVERY 75 FEET, REFER TO DETAIL.
3. PAWC WATER RESPONSIBILITY INCLUDES THE WATER MAIN, SERVICE TO THE WATER METER PIT, WATER METER PIT AND WATER METER. PAWC WATER RESPONSIBILITY ENDS AFTER THE WATER METER PIT. SITE CONTRACTOR IS RESPONSIBLE FOR THE WATER SERVICE INSTALLATION AFTER THE WATER METER PIT.
4. PAWC INSTALLS THE FIRE HYDRANT LINE, VALVE AND HYDRANT AT THE CURB LINE.
5. PAWC SANITARY RESPONSIBILITY INCLUDES THE SEWER MAIN, MAIN MANHOLES AND SERVICE TO THE TRAP AND CLEANOUT AT THE CURB LINE. PAWC SANITARY RESPONSIBILITY ENDS AFTER THE CURB LINE TRAP AND CLEANOUT. SITE CONTRACTOR IS RESPONSIBLE FOR SEWER LATERAL INSTALLATION AFTER THE CURB LINE TRAP AND CLEANOUT.
6. THE SANITARY LATERAL TO THE BUILDING IS OUT OF PAWC'S JURISDICTION AND MUST ADHERE TO ALL APPLICABLE PLUMBING CODES.
7. PAWC IS RESPONSIBLE FOR RESTORATION WITHIN THEIR DISTURBANCE LIMITS. I.E. – GIBRALTAR ROAD IMPACTS CREATED BY THE PAWC SEWER MAIN OR WATER MAIN INSTALL WILL BE RESTORED BY PAWC.
8. UGI WILL INSTALL THE GAS PIPE TO THE METER. UGI IS RESPONSIBLE FOR WORK OUTSIDE THE SITE, REFER TO LIMIT DEMARCATION. CONTRACTOR IS RESPONSIBLE FOR THE TRENCH, SCREENINGS, CASING PIPE, WARNING TAPE, TRACER WIRE, BACKFILL AND RESTORATION ON THE SITE, REFER TO LIMIT DEMARCATION.
9. REFER TO ELECTRICAL PLAN FOR LIGHTING LOCATIONS.
10. SITE CONTRACTOR (SC) WILL CONDUCT ALL EXCAVATION, BEDDING MATERIAL, AND BACKFILL FOR UNDERGROUND UTILITIES OUTSIDE THE BUILDING.
    A. SC WILL INSTALL ALL STORM.
    B. SC WILL INSTALL WATER LINE INTO THE FIRE PUMP ROOM TO INCLUDE THE RISER. THEY WILL PRESSURE TEST AND ONCE PRESSURE TEST IS CONFIRMED, PC/FP WILL TAKE OVER.
    C. ELECTRICAL CONTRACTOR (EC) WILL INSTALL ELECTRICAL & TELECOM CONDUITS.
    D. SC INSTALLS SLEEVES FOR GAS PIPING. PIPING BY UGI TO METER LOCATION. PLUMBING CONTRACTOR (PC) PICKS THIS UP ON THE BUILDING TO THE METER (THIS WILL NEED TO BE ROUGHED IN PRIOR TO SETTING OF THE METER).
11. OIL AND SAND SEPARATOR
    A. SC WILL INSTALL ALL SANITARY PIPING AND INSTALL THE OIL/SAND SEPARATOR.
    B. PC WILL INSTALL SANITARY PIPING FROM INSIDE THE BUILDING TO THE EXTERIOR AND ALL THE WAY TO CONNECTING TO THE OIL/SAND SEPARATOR.
12. ROOF LEADERS
    A. SC WILL INSTALL UNDERGROUND PIPING AND CAST IRON BOOTS TO THE BUILDING. GC WILL OWN DOWNSPOUTS AND CONNECTIONS TO THE BOOTS. SC/GC TO COORDINATE DOWNSPOUT LOCATIONS FOR ACCURATE PLACEMENT OF BOOTS/CONNECTION LOCATIONS.



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PRELIMINARY / FINAL LAND DEVELOPMENT PLAN FOR EMERGENCY SERVICES FACILITY

EXETER TOWNSHIP
4975 DEMOSS ROAD
READING, PA 19606
EXETER TOWNSHIP, BERKS COUNTY, PENNSYLVANIA

NO.	DATE	DESCRIPTION
1	2026.03.18	REV AS PER 3/16/26 PLANNING COMMISSION COMMENTS
2	2026.08.15	SCM CONSTRUCTION PLAN
3	2026.08.21	90% CONSTRUCTION PLAN
4	2026.10.01	BID SET
5		
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PROFESSIONAL SEAL:

HRG PROJECT NUMBER: R006367.0427
PLAN DATE: 2026.02.18
DRAWING SCALE: AS SHOWN
PROJ. MANAGER: DENNIS REICHEL

SHEET TITLE: **UTILITY PLAN**

SHEET: UT 11

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SUITE 145
ALLENTOWN, PA 18106
610.351.0311 | hrg-inc.com

SEAL:

EXETER TOWNSHIP
EMERGENCY SERVICES FACILITY
70 GIBRALTAR ROAD
READING, PA 19606

PROJECT NUMBER:
25-049

SUBMISSION:
BID SET

ORIGINAL ISSUE DATE:
10/01/2026

SHEET REVISION SCHEDULE:
3 ADDENDUM 03 – 10/22/2026
4 ADDENDUM 04 – 10/29/2026

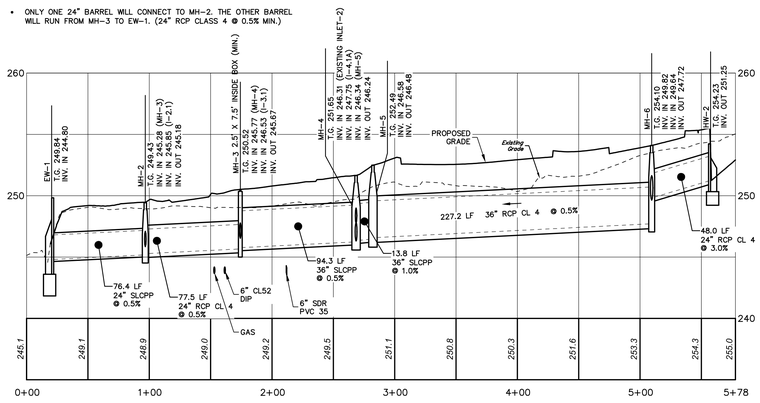
REFERENCE PLAN

SHEET NUMBER:

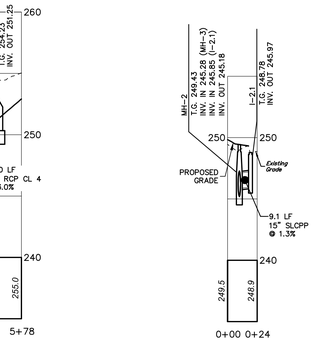
C11

DUAL STORM PIPE NOTE

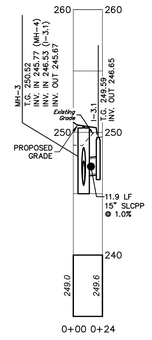
- ONLY ONE 24" BARREL WILL CONNECT TO MH-2. THE OTHER BARREL WILL RUN FROM MH-3 TO EW-1. (24" RCP CLASS 4 @ 0.5% MIN.)



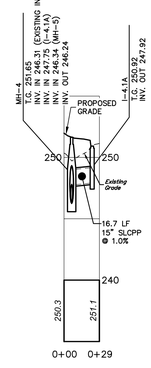
EW-1 TO HW-2



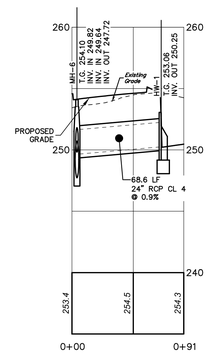
MH-2 TO I-2.1



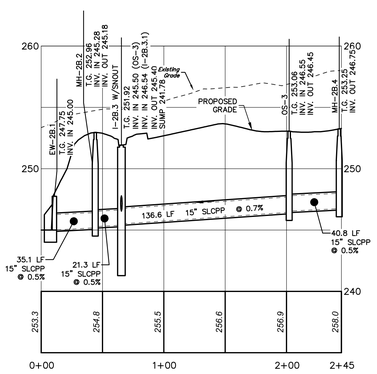
MH-3 TO I-3.1



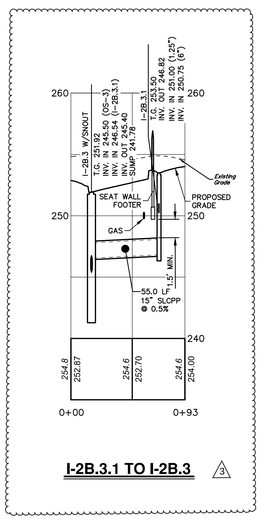
MH-4 TO I-4.1A



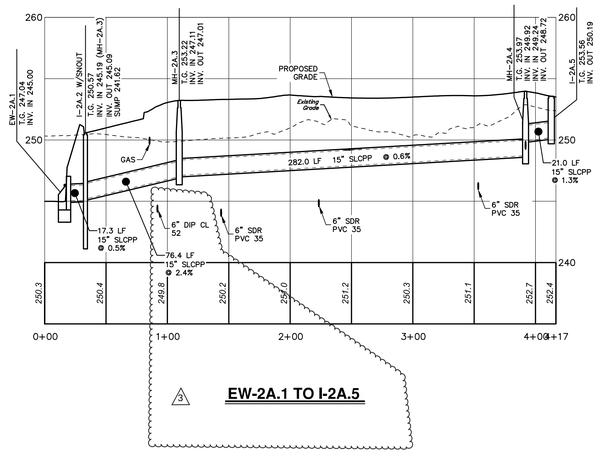
MH-6 TO HW-1



EW-2B.1 TO SCM-3

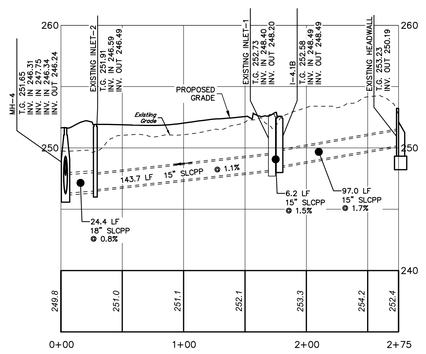


I-2B.3.1 TO I-2B.3 ⚠3



⚠3 **EW-2A.1 TO I-2A.5**

EXISTING RUN



HORIZ: 50' 25' 0' 50'
VERT: 5' 2.5' 0' 5'
SCALE IN FEET

HERBERT, ROWLAND & GRUBIC, INC.
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PRELIMINARY / FINAL LAND DEVELOPMENT PLAN
FOR
EMERGENCY SERVICES FACILITY

EXETER TOWNSHIP
4975 DEMOSS ROAD
READING, PA 19606

EXETER TOWNSHIP, BERKS COUNTY, PENNSYLVANIA

PROFESSIONAL SEAL:

HRG PROJECT NUMBER: R006367.0427
PLAN DATE: 2026.02.18
DRAWING SCALE: AS SHOWN
PROJ. MANAGER: DENNIS REICHEL

REVISIONS

NO.	DATE	DESCRIPTION
1	2026.03.18	REV AS PER 3/16/26 PLANNING COMMISSION COMMENTS
2	2026.04.15	ADDITIONAL INFORMATION ADDED
3	2026.08.21	95% CONSTRUCTION PLAN
4	2026.10.01	BID SET
5		
6		
7		
8		
9		

SHEET TITLE:
STORM PROFILES

SHEET: PR 12

MW STUDIOS
ARCHITECTURE + MASTER PLANNING
8098 SANDPIPER CIR, SUITE
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☎ 410-344-1460
✉ INFO@MWSARCH.COM
WWW.MWSARCH.COM

CONSULTANT:

HERBERT, ROWLAND & GRUBIC, INC.
1275 GLENLIVET DRIVE
SUITE 145
ALLENTOWN, PA 18106
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SEAL:

EXETER TOWNSHIP
EMERGENCY SERVICES FACILITY
70 GIBRALTAR ROAD
READING, PA 19606

PROJECT NUMBER:
25-049

SUBMISSION:
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10/01/2026

SHEET REVISION SCHEDULE:
⚠3 ADDENDUM 03 - 10/22/2026
⚠3 ADDENDUM 04 - 10/29/2026

REFERENCE PLAN

SHEET NUMBER:

C12

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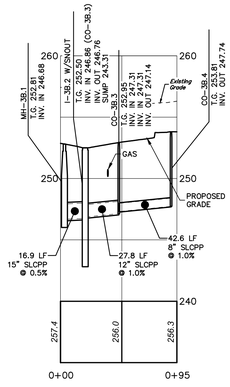
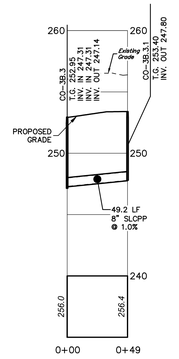
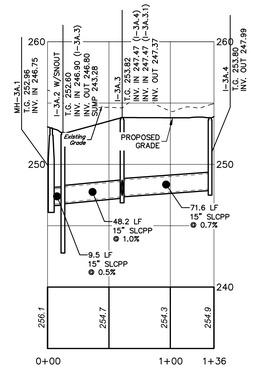


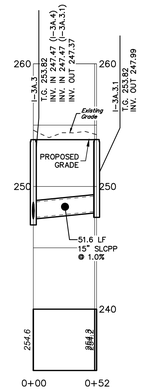
SCM-3 TO CO-3B.4



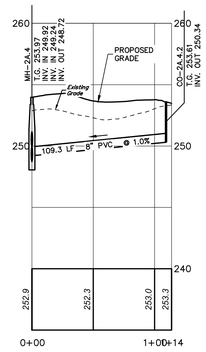
I-3B.3 TO CO-3B.3.1



SCM-3 TO I-3A.4

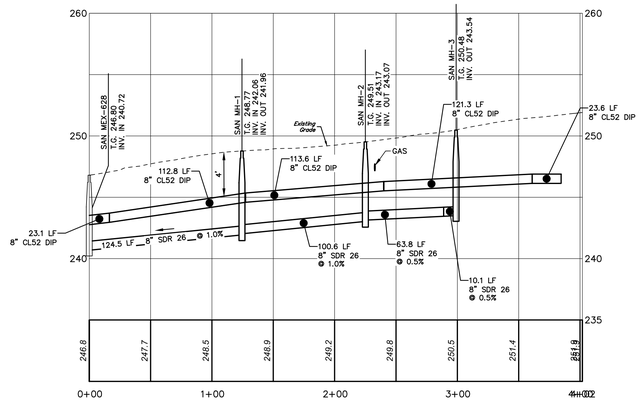


I-3A.3 TO I-3A.3.1

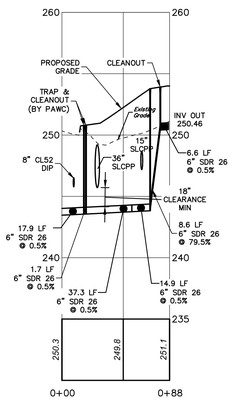


MH-2A.4 TO CO-2A.4.2

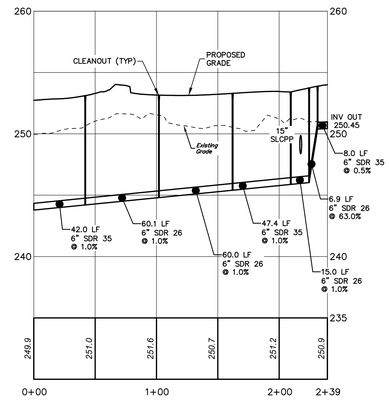
HORIZ: 50' 25' 0' 50'
VERT: 5' 2.5' 0' 5'
SCALE IN FEET



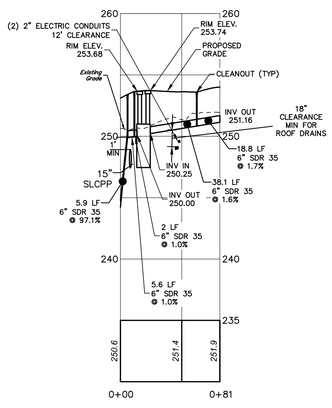
GIBRALTAR ROAD



LATERAL TO OFFICE



LATERAL TO EMS



LATERAL TO APPARATUS BAY

3

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PRELIMINARY / FINAL LAND DEVELOPMENT PLAN
FOR
EMERGENCY SERVICES FACILITY

EXETER TOWNSHIP
4975 DEMOSS ROAD
READING, PA 19606

EXETER TOWNSHIP, BERKS COUNTY, PENNSYLVANIA

PROFESSIONAL SEAL:

HRG PROJECT NUMBER:	R006367.0427
PLAN DATE:	2026.02.18
DRAWING SCALE:	AS SHOWN
PROJ. MANAGER:	DENNIS REICHEL

NO.	DATE	REVISIONS DESCRIPTION
1	2026.03.18	REV. AS PER 3/16/26 PLANNING COMMISSION COMMENTS
2	2026.04.15	SCM CONSTRUCTION PLAN
3	2026.08.21	90% CONSTRUCTION PLAN
4	2026.10.01	BID SET
5		
6		
7		
8		
9		

SHEET TITLE:
STORM AND SANITARY PROFILES

SHEET: **PR-2** **13**

MW STUDIOS
ARCHITECTURE + MASTER PLANNING
8098 SANDPIPER CIR, SUITE
NOTTINGHAM, MD 21236
☎ 410-344-1460
✉ INFO@MWSARCH.COM
WWW.MWSARCH.COM

CONSULTANT:

HERBERT, ROWLAND & GRUBIC, INC.
1275 GLENLIVET DRIVE
SUITE 145
ALLENTOWN, PA 18106
610.351.0311 | hrg-inc.com

SEAL:

EXETER TOWNSHIP
EMERGENCY SERVICES FACILITY
70 GIBRALTAR ROAD
READING, PA 19606

PROJECT NUMBER:
25-049

SUBMISSION:
BID SET

ORIGINAL ISSUE DATE:
10/01/2026

SHEET REVISION SCHEDULE:
2 ADDENDUM 03 - 10/22/2026
3 ADDENDUM 04 - 10/29/2026

REFERENCE PLAN

SHEET NUMBER:

C13

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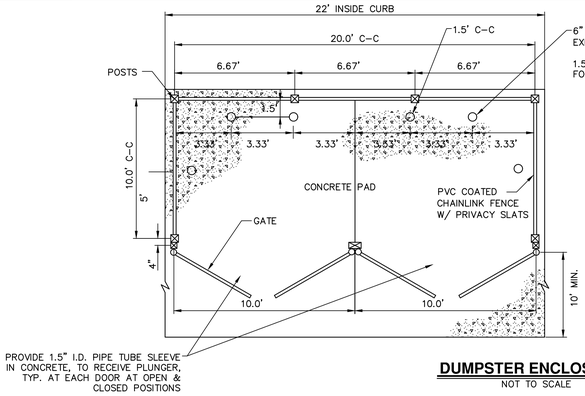
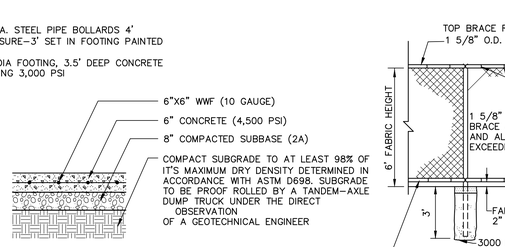
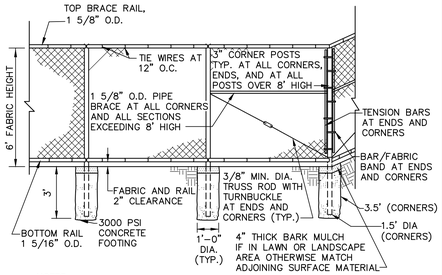


DUMPSTER ENCLOSURE
NOT TO SCALE



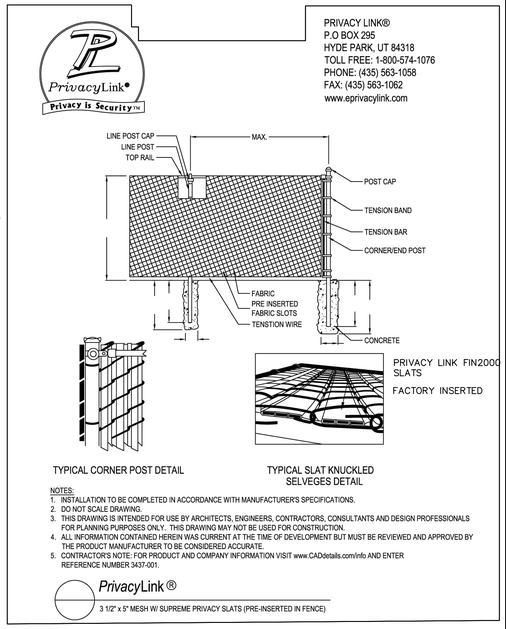
CONCRETE PAD DETAIL WITHIN ENCLOSURE FOOTPRINT

NOTE:
1. CONTRACTOR TO PROVIDE FENCE SUBMITTAL WITH PVC COLOR OPTIONS.
2. SEAL CONCRETE SLAB AGAINST GREASE ABSORPTION WITHIN ENCLOSURE FOOTPRINT.



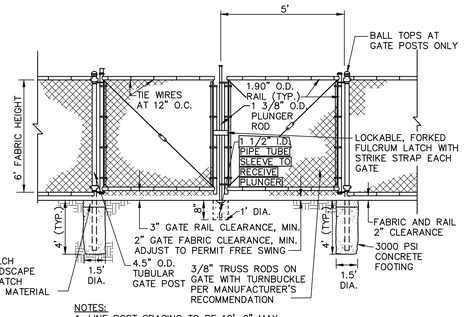
NOTES:
1. LINE POST SPACING TO BE 10'-0" MAX.
2. ADD ADDITIONAL BRACE AND TRUSS AND OTHER ACCESSORIES/ HARDWARE FOR CORNER AND END SECTIONS OF FENCE EXCEEDING 8' HEIGHT AS RECOMMENDED BY THE MANUFACTURER.
3. FABRIC TO BE ZINC/5% ALUMINUM/MISCHMETAL ALLOY - COATED STEEL CORE WIRE, 9 GAGE, HELICALLY WOVEN AS DIAMOND MESH KNUCKLED AT EDGES 3.5"X5" MESH, PVC COATED WITH PRIVACY SLATS
4. POSTS AND RAILS TO BE SCHEDULE 40 HOT-DIPPED GALVANIZED STEEL, ALL JOINTS WELDED.

DUMPSTER CHAINLINK FENCE DETAIL
NOT TO SCALE



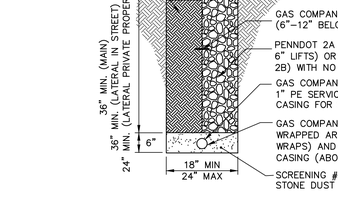
NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. DO NOT SCALE DRAWING.
3. THIS DRAWING IS INTENDED FOR USE BY ARCHITECTS, ENGINEERS, CONTRACTORS, CONSULTANTS AND DESIGN PROFESSIONALS FOR PLANNING PURPOSES ONLY. THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION.
4. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.
5. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info AND ENTER REFERENCE NUMBER 3437-001.

PrivacyLink®
3 1/2" x 5" MESH W/ SUPREME PRIVACY SLATS (PRE-INSERTED IN FENCE)



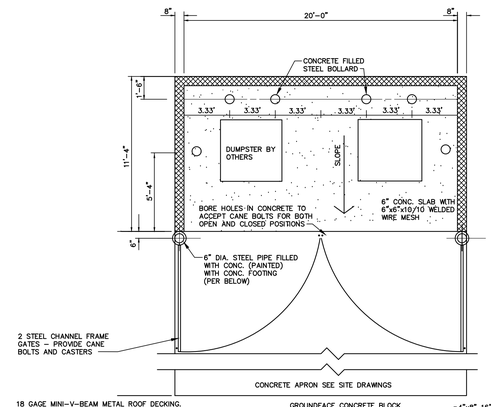
NOTES:
1. LINE POST SPACING TO BE 10'-0" MAX.
2. PROVIDE GATES AT LOCATIONS SHOWN ON THE PLAN.
3. PROVIDE GATE KEEPER FOR EACH GATE FOR SECURING GATE IN FULL OPEN POSITION.
4. PROVIDE PLUNGER KEEPER TO KEEP PLUNGER ROD IN UP POSITION DURING OPENING OF THE GATE.
5. FABRIC TO BE ZINC/5% ALUMINUM/MISCHMETAL ALLOY - COATED STEEL CORE WIRE, 9 GAGE, HELICALLY WOVEN AS DIAMOND MESH KNUCKLED AT EDGES 3.5"X5" MESH, PVC COATED WITH PRIVACY SLATS
6. POSTS AND RAILS TO BE SCHEDULE 40 HOT-DIPPED GALVANIZED STEEL, ALL JOINTS WELDED.

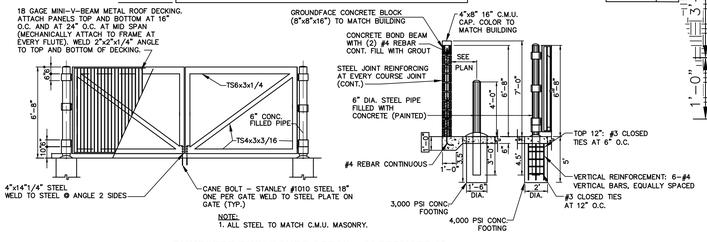
DUMPSTER CHAINLINK DOUBLE-LEAF SWING GATE DETAIL
NOT TO SCALE



NOTE:
1. MINIMUM VERTICAL CLEARANCE FROM OTHER UTILITIES IS 12 INCHES.
2. REFER TO UGI EXCAVATION HANDBOOK.

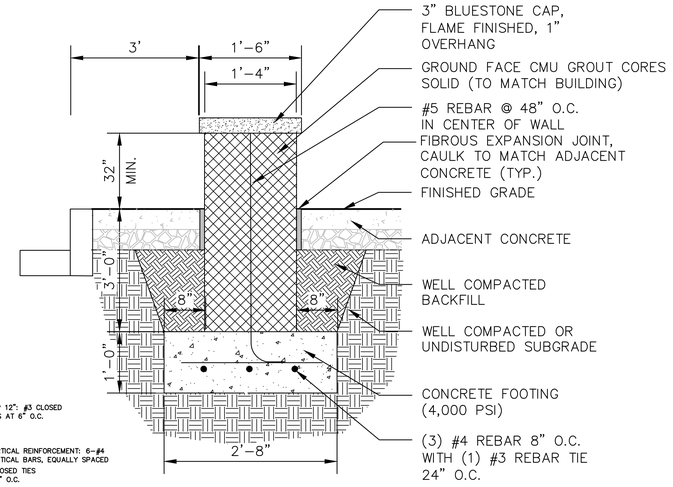
GAS LINE TRENCH DETAIL
NOT TO SCALE





NOTE:
1. ALL STEEL TO MATCH C.M.U. MASONRY.

DUMPSTER ENCLOSURE DETAIL - ALTERNATE 12
NOT TO SCALE



PATIO WALL
NOT TO SCALE

MW STUDIOS
ARCHITECTURE + MASTER PLANNING
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☎ 410-344-1460
✉ INFO@MWSARCH.COM
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CONSULTANT:
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SEAL:

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PRELIMINARY / FINAL LAND DEVELOPMENT PLAN
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PROFESSIONAL SEAL:

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1	2026.03.18	REV AS PER 3/16/26 PLANNING COMMISSION COMMENTS
2	2026.06.15	50% CONSTRUCTION PLAN
3	2026.08.21	90% CONSTRUCTION PLAN
4	2026.10.01	BID SET
5		
6		
7		
8		
9		

REVISIONS

SHEET TITLE:
SITE DETAILS

SHEET: DT-03 | 17

EXETER TOWNSHIP
EMERGENCY SERVICES FACILITY
70 GIBRALTAR ROAD
READING, PA 19606

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C17

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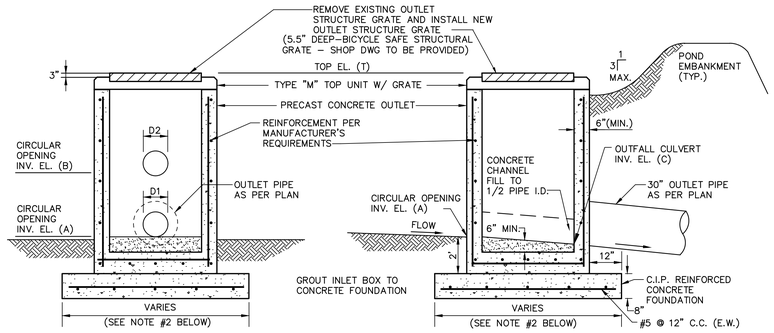


SIDE ELEVATION

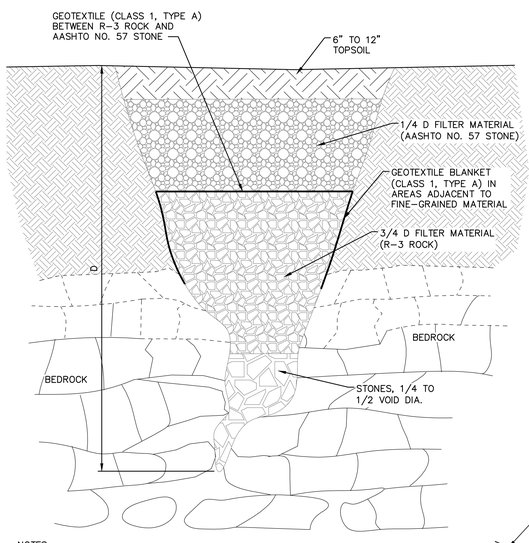
FRONT ELEVATION

NOTES:
1. PROVIDE FIELD PLACED CONCRETE FILL IN THE BOTTOM OF ALL OUTLET STRUCTURES TO A DEPTH OF 1/2 OF THE PIPE I.D. PROVIDE AN ADEQUATE FLOW CHANNEL FOR THE TRANSITION TO THE OUTLET PIPE. SHAPE BOX BOTTOM FOR POSITIVE DRAINAGE.
2. CONSTRUCT THE REINFORCED CONCRETE FOUNDATION TO A DIMENSION 24" LARGER THAN THE OUTSIDE DIMENSIONS OF THE OUTLET STRUCTURE.
3. CONSTRUCT OUTLET STRUCTURE IN ACCORDANCE WITH PENNDOT PUBLICATION 72, RC–34 FOR PRECAST CONCRETE INLET BOXES.

BASIN NO.	TOP ELEVATION T (FT)	INVERT A (FT)	DIAMETER D1 (IN)	INVERT B (FT)	DIAMETER D2 (IN)	INVERT C (FT)	2–YR WSE (FT)
SCM–1	246.48	243.50	6	244.43	12	241.63	246.57

EXISTING DRY EXTENDED DETENTION BASIN OUTLET STRUCTURE DETAIL (SCM-1)/GRATE REPLACEMENT

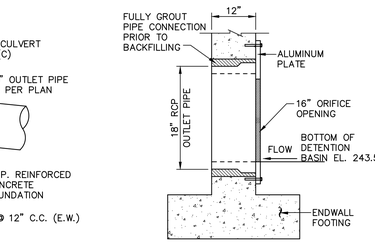
NOT TO SCALE



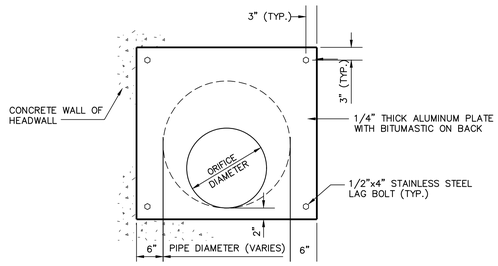
NOTES:
1. EXCAVATE LOOSE MATERIAL FROM THE SINKHOLE AND EXPOSE SOLUTION VOID(S) IF POSSIBLE. ENLARGE SINKHOLE IF NECESSARY TO ALLOW FOR INSTALLATION OF FILTER MATERIAL. OSHA REGULATIONS MUST BE FOLLOWED AT ALL TIMES DURING EXCAVATION.
2. STONES USED FOR THE "BRIDGE" AND FILTERS SHALL HAVE A MODERATELY HARD ROCK STRENGTH AND BE RESISTANT TO ABRASION AND DEGRADATION. SHALE AND SIMILAR SOFT AND/OR NON–DURABLE ROCK ARE NOT ACCEPTABLE.
3. DUE TO THE VARIABLE NATURE OF SINKHOLES, THEY SHOULD BE REPAIRED UNDER THE DIRECT OBSERVATION AND SUPERVISION OF A PROFESSIONAL GEOLOGIST OR LICENSED ENGINEER.

SINKHOLE REPAIR WITH A PERVIOUS COVER

NOT TO SCALE

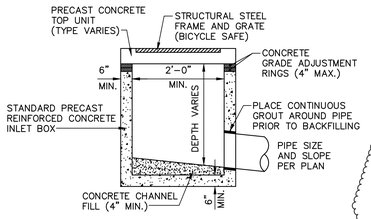


ORIFICE PLATE MOUNTING DETAIL



EXISTING HEADWALL ORIFICE PLATE DETAIL (SCM-1)

NOT TO SCALE

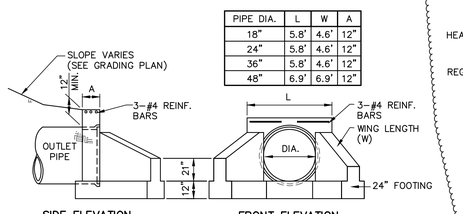


NOTES:
1. CONSTRUCT IN ACCORDANCE WITH PENNDOT PUBLICATION 408, CURRENT EDITION, AND ROADWAY CONSTRUCTION DRAWING (RC–34).
2. PROVIDE ALUMINUM STEPS IN INLETS OVER 5' DEEP.

INLET BOX DETAIL

NOT TO SCALE

PIPE DIA.	L	W	A
18"	5.8'	4.6'	12"
24"	5.8'	4.6'	12"
36"	5.8'	4.6'	12"
48"	6.9'	6.9'	12"



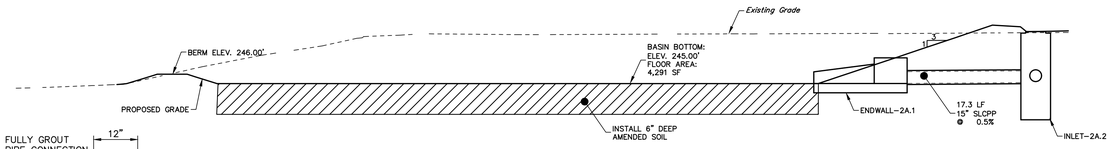
SIDE ELEVATION

FRONT ELEVATION

NOTES:
1. CONSTRUCT IN ACCORDANCE WITH PENNDOT PUBLICATION 72 RC–31
2. FOR PIPE SIZES LESS THAN 36" CONSTRUCT WING WALL TO DIMENSIONS FOR 36" PIPE DIAMETER AS LISTED IN PENNDOT RC–31.

TYPE D-W ENDWALL DETAIL

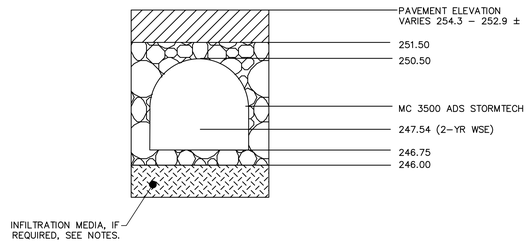
NOT TO SCALE



NOTES:
1. AMENDED SOIL SHALL HAVE A SANDY LOAM, LOAMY SAND OR LOAM TEXTURE PER USDA TEXTURAL TRIANGLE. MAXIMUM CLAY CONTENT <5%. SOIL MIXTURE SHALL BE 60% TOPSOIL, 20% SAND AND 20% COMPOST (MEETING U.S. COMPOSTING COUNCIL SEAL OF TESTING ASSURANCE (STA) PROGRAM OR APPROVED EQUAL).
2. IF BEDROCK OR PINNACLES ARE ENCOUNTERED DURING CONSTRUCTION OF THE BASIN, EXCAVATE ROCK TO A MINIMUM OF TWO FEET BELOW THE BASIN BOTTOM. INCREASE THE AMENDED SOIL TO THE BEDROCK OR PINNACLES.

INFILTRATION BASIN (SCM-2) CROSS SECTION

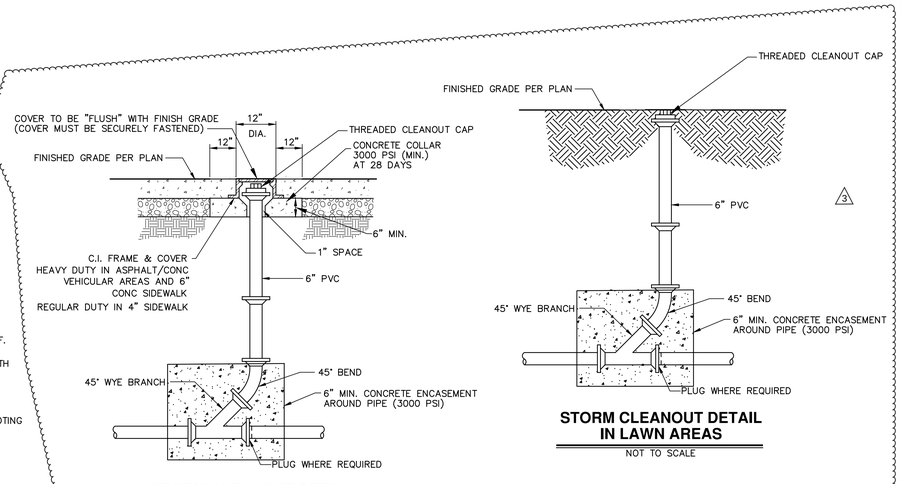
NOT TO SCALE



NOTES:
1. INFILTRATION MEDIA SHALL CONSIST OF GRANULAR BLENDED SOIL MIXTURES CONTAINING AT LEAST 70 PERCENT SAND AND LESS THAN 20 PERCENT SILT. ENGINEERED FILTER MEDIA SHOULD PROVIDE A MINIMUM INFILTRATION RATE OF 1.5 INCH/HOUR WITH A MAXIMUM INFILTRATION RATE ON THE ORDER OF SIX INCHES PER HOUR. ALL INFILTRATION/FILTER MEDIA SHALL BE WRAPPED WITH A SUITABLE FABRIC TO REDUCE CLOGGING.
2. IF BEDROCK IS ENCOUNTERED DURING EXCAVATION OF BED, EXCAVATE ROCK TO A MINIMUM OF TWO FEET BELOW THE BED BOTTOM. INCREASE INFILTRATION MEDIA DEPTH TO BED ROCK.
3. IF PERCHED WATER IS ENCOUNTERED DURING CONSTRUCTION OF THE BED, OVER EXCAVATION MAY BE REQUIRED TO ALLEVIATE THE CAUSE OF THE TRAPPED SURFACE WATER. INCREASE THE INFILTRATION MEDIA DEPTH TO THE BOTTOM OF THE EXCAVATION.

INFILTRATION BED (SCM-3) DETAIL

NOT TO SCALE



STORM CLEANOUT DETAIL IN PAVED AREAS

NOT TO SCALE

STORM CLEANOUT DETAIL IN LAWN AREAS

NOT TO SCALE

HRG
HERBERT, ROWLAND & GRUBIC, INC.
1275 GLENLIVET DRIVE
SUITE 145
ALLENTOWN, PA 18106
610.351.0311 | hrg-inc.com

PRELIMINARY / FINAL LAND DEVELOPMENT PLAN
FOR
EMERGENCY SERVICES FACILITY
EXETER TOWNSHIP
4975 DEMOSS ROAD
READING, PA 19606
EXETER TOWNSHIP, BERKS COUNTY, PENNSYLVANIA

PROFESSIONAL SEAL:

REVISIONS			
NO.	DATE	DESCRIPTION	
1	2026.03.18	REV AS PER 3/16/26 PLANNING COMMISSION COMMENTS	
2	2026.06.15	50% CONSTRUCTION PLAN	
3	2026.08.21	90% CONSTRUCTION PLAN	
4	2026.10.01	BID SET	
5			
6			
7			
8			
9			

HRG PROJECT NUMBER:	R006367.0427
PLAN DATE:	2026.02.18
DRAWING SCALE:	AS SHOWN
PROJ. MANAGER:	DENNIS REICHEL

SHEET TITLE: SITE DETAILS

SHEET: DT-11 | 25

PLOT DATE & TIME: F:\2026\2026367.0427\CAD\Plan Sets\DT-11.dwg, 1/29/2026 11:21:18 AM, AUTHOR: DENNIS REICHEL

MW STUDIOS
ARCHITECTURE + MASTER PLANNING
8098 SANDPIPER CIR, SUITE
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HERBERT, ROWLAND & GRUBIC, INC.
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SEAL:

EXETER TOWNSHIP
EMERGENCY SERVICES FACILITY
70 GIBRALTAR ROAD
READING, PA 19606

PROJECT NUMBER: 25–049

SUBMISSION: BID SET

ORIGINAL ISSUE DATE: 10/01/2026

SHEET REVISION SCHEDULE:
2 ADDENDUM 03 – 10/22/2026
3 ADDENDUM 04 – 10/29/2026

REFERENCE PLAN

SHEET NUMBER: C25

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MC-3500 STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH MC-3500.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
6. CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
7. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 500 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418, AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
8. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
   - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
   - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
   - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.
10. MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH NOTE #6.32 FOR MANIFOLD SIZING GUIDANCE. DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
11. ADS DOES NOT DESIGN OR PROVIDE MEMBRANE LINER SYSTEMS. TO MINIMIZE THE LEAKAGE POTENTIAL OF LINER SYSTEMS, THE MEMBRANE LINER SYSTEM SHOULD BE DESIGNED BY A KNOWLEDGEABLE GEOTEXTILE PROFESSIONAL AND INSTALLED BY A QUALIFIED CONTRACTOR.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-3500 CHAMBER SYSTEM

1. STORMTECH MC-3500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "MC-3500 & MC-4500 STORMTECH CHAMBER INSTALLATION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
8. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE; AASHTO M43 #3, 357, 4, 467, 5, 56, OR 57.
9. STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
10. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
11. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

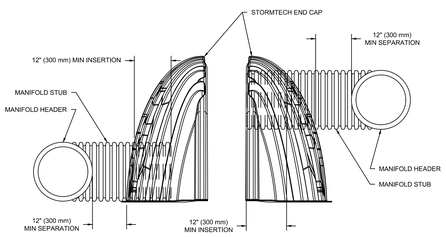
NOTES FOR CONSTRUCTION EQUIPMENT

1. STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "MC-3500 & MC-4500 STORMTECH CHAMBER INSTALLATION GUIDE".
2. THE USE OF EQUIPMENT OVER MC-3500 CHAMBERS IS LIMITED:
   - LIGHT CONSTRUCTION EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "MC-3500 & MC-4500 STORMTECH CHAMBER INSTALLATION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "MC-3500 & MC-4500 STORMTECH CHAMBER INSTALLATION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

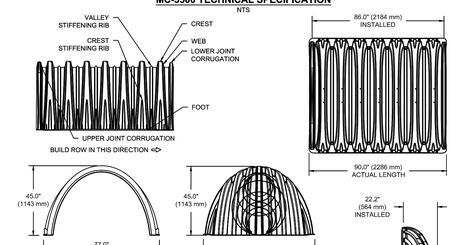
CONTACT ADS WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

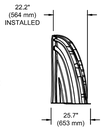
MC-SERIES END CAP INSERTION DETAIL
NTS



NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.

MC-3500 TECHNICAL SPECIFICATION
NTS





NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	77.0" X 45.0" X 86.0"	(1956 mm X 1143 mm X 2184 mm)
CHAMBER STORAGE	109.9 CUBIC FEET	(3.11 m³)
MINIMUM INSTALLED STORAGE*	175.0 CUBIC FEET	(4.96 m³)
WEIGHT	134 lbs.	(60.8 kg)

NOMINAL END CAP SPECIFICATIONS

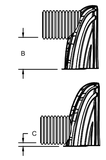
SIZE (W X H X INSTALLED LENGTH)	75.0" X 45.0" X 22.2"	(1905 mm X 1143 mm X 564 mm)
END CAP STORAGE	14.9 CUBIC FEET	(0.42 m³)
MINIMUM INSTALLED STORAGE*	45.1 CUBIC FEET	(1.28 m³)
WEIGHT	49 lbs.	(22.2 kg)

*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION, 6" SPACING BETWEEN CHAMBERS, 6" (152 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY

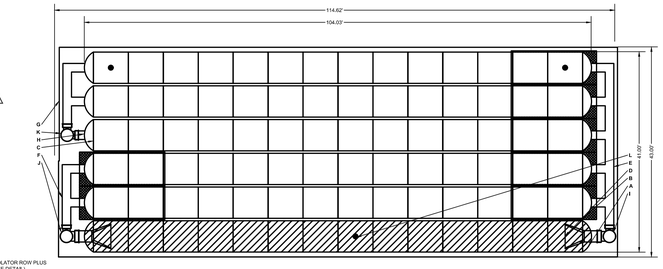
STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
END CAPS WITH A WELDED CROWN PLATE END WITH "C"
END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W"

PART #	STUB	B	C
MC3500IEPP06T	6" (150 mm)	33.21" (844 mm)	---
MC3500IEPP06B		---	0.66" (17 mm)
MC3500IEPP08T	8" (200 mm)	31.16" (791 mm)	---
MC3500IEPP08B		---	0.81" (21 mm)
MC3500IEPP10T	10" (250 mm)	29.04" (738 mm)	---
MC3500IEPP10B		---	0.93" (24 mm)
MC3500IEPP12T	12" (300 mm)	26.36" (670 mm)	---
MC3500IEPP12B		---	1.35" (34 mm)
MC3500IEPP15T	15" (375 mm)	23.39" (594 mm)	---
MC3500IEPP15B		---	1.50" (38 mm)
MC3500IEPP18TC	18" (450 mm)	20.03" (509 mm)	---
MC3500IEPP18TW			
MC3500IEPP18BC		---	1.77" (45 mm)
MC3500IEPP18BW			
MC3500IEPP24TC	24" (600 mm)	14.48" (368 mm)	---
MC3500IEPP24TW			
MC3500IEPP24BC		---	2.06" (52 mm)
MC3500IEPP24BW			
MC3500IEPP30BC	30" (750 mm)	---	2.75" (70 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL



CUSTOM PRECORED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-3500 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

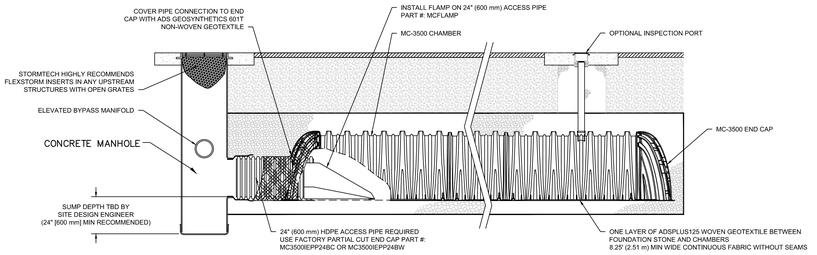


NOTES
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- **NOT FOR CONSTRUCTION:** THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT*	MAX FLOW
PREFABRICATED END CAP	A	24" BOTTOM PRE-CORED END CAP, PART#: MC3500IEPP24BC / TYP OF ALL 24" BOTTOM CONNECTIONS AND ISOLATOR PLUS ROWS		
PREFABRICATED END CAP	B	18" TOP PRE-CORED END CAP, PART#: MC3500IEPP18TC / TYP OF ALL 18" TOP CONNECTIONS		
PREFABRICATED END CAP	C	18" BOTTOM PRE-CORED END CAP, PART#: MC3500IEPP18BC / TYP OF ALL 18" BOTTOM CONNECTIONS		
FLAMP	D	INSTALL FLAMP ON 24" ACCESS PIPE / PART#: MCFLAMP (TYP 2 PLACES)		
MANIFOLD	E	18" x 18" TOP MANIFOLD, ADS N-12	20.03"	
MANIFOLD	F	18" x 18" TOP MANIFOLD, ADS N-12	20.03"	
MANIFOLD	G	18" x 18" BOTTOM MANIFOLD, ADS N-12	1.77"	
PIPE CONNECTION	H	18" BOTTOM CONNECTION	1.77"	
CONCRETE MANHOLE (INLET W/ ISO PLUS ROW)	I	4" DIAMETER (24.00" SUMP MIN)		16.2 CFS IN
CONCRETE MANHOLE (INLET W/ ISO PLUS ROW)	J	4" DIAMETER (24.00" SUMP MIN)		11.0 CFS IN
CONCRETE MANHOLE (OUTLET)	K	4" DIAMETER (DESIGN BY ENGINEER)		8.0 CFS OUT
INSPECTION PORT	L	4" SEE DETAIL (TYP 3 PLACES)		

PROPOSED ELEVATIONS	
MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	258.00
MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	252.50
MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	252.00
MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	252.00
MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	252.00
TOP OF STONE:	251.50
TOP OF MC-3500 CHAMBER:	250.50
18" x 18" TOP MANIFOLD INVERT:	248.47
24" ISOLATOR ROW PLUS INVERT:	248.90
18" x 18" BOTTOM MANIFOLD INVERT:	246.90
18" BOTTOM CONNECTION INVERT:	246.90
BOTTOM OF MC-3500 CHAMBER:	246.73
BOTTOM OF STONE:	246.00

PROPOSED LAYOUT	
84	STORMTECH MC-3500 CHAMBERS
12	STORMTECH MC-3500 END CAPS
12	STONE ABOVE (in)
9	STONE BELOW (in)
40	STONE VOID
16485	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED) (COVER STONE INCLUDED) (BASE STONE INCLUDED)
4925	SYSTEM AREA (SF)
318.2	SYSTEM PERIMETER (ft)



MC-3500 ISOLATOR ROW PLUS DETAIL
NTS

ACCEPTABLE FILL MATERIALS: STORMTECH MC-3500 CHAMBER SYSTEMS

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[4] A-1, A-2-4, A-3 OR AASHTO M43[4] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED, COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[4] 3, 357, 4, 467, 5, 56, 57	
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[4] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
5. WHERE RECYCLED CONCRETE AGGREGATE IS USED IN LAYERS 'A' OR 'B' THE MATERIAL SHOULD ALSO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 6.20 "RECYCLED CONCRETE STRUCTURAL BACKFILL".

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

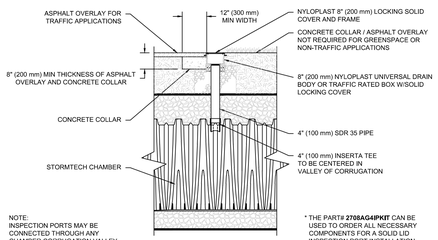
STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

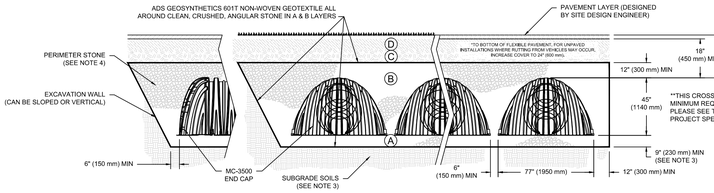
STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.



4" (100 mm) PVC INSPECTION PORT DETAIL (MC SERIES CHAMBER)
NTS



NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
2. MC-3500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS. REFERENCE STORMTECH DESIGN MANUAL FOR BEARING CAPACITY GUIDANCE.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 500 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418, AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

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PRELIMINARY / FINAL LAND DEVELOPMENT PLAN
FOR
EMERGENCY SERVICES FACILITY
EXETER TOWNSHIP
4975 DEMOSS ROAD
READING, PA 19606
EXETER TOWNSHIP, BERKS COUNTY, PENNSYLVANIA

REVISIONS

NO.	DATE	DESCRIPTION
1	2026.03.18	REV AS PER 3/16/26 PLANNING COMMISSION COMMENTS
2	2026.06.15	50% CONSTRUCTION PLAN
3	2026.08.21	90% CONSTRUCTION PLAN
4	2026.10.01	BID SET
5		
6		
7		
8		

PROFESSIONAL SEAL:

HRG PROJECT NUMBER: R006367.0427
PLAN DATE: 2026.02.18
DRAWING SCALE: AS SHOWN
PROJ. MANAGER: DENNIS REICHEL

SHEET TITLE:
SITE DETAILS

SHEET: DT-12 | 26

CONSULTANT:
HRG
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SEAL:

EXETER TOWNSHIP
EMERGENCY SERVICES FACILITY
70 GIBRALTAR ROAD
READING, PA 19606

PROJECT NUMBER:
25-049

SUBMISSION:
BID SET

ORIGINAL ISSUE DATE:
10/01/2026

SHEET REVISION SCHEDULE:
2 ADDENDUM 03 – 10/22/2026
3 ADDENDUM 04 – 10/29/2026

REFERENCE PLAN

SHEET NUMBER:
C26

MW STUDIOS
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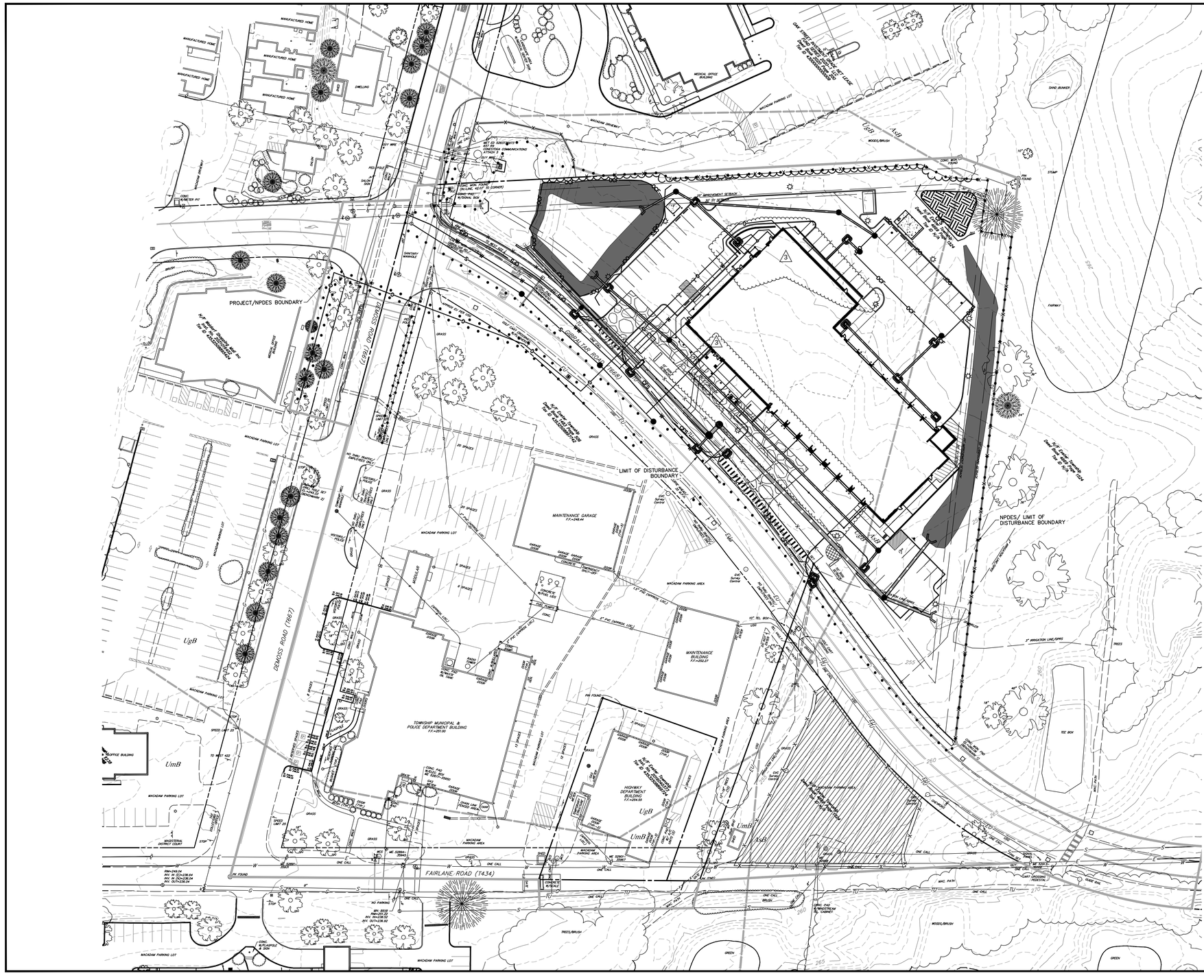

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EROSION & SEDIMENT CONTROL PLAN
FOR
EMERGENCY SERVICES CENTER

EXETER TOWNSHIP
4975 DEMOSS ROAD
READING, PA 19606

EXETER TOWNSHIP, BERKS COUNTY, PENNSYLVANIA

PROFESSIONAL SEAL:

HRG PROJECT NUMBER: R006367.0427
PLAN DATE: 04/01/2026
DRAWING SCALE: 1"=40'
PROJ. MANAGER: DENNIS REICHEL

REVISIONS

NO.	DATE	DESCRIPTION
1	2026.04.14	REV AS PER 04/09/2026 BCCD COMMENTS
2	2026.04.23	REV AS PER 04/17/2026 BCCD COMMENTS
3	2026.05.15	REV AS PER 5/11/2026 BCCD COMMENTS
4	2026.10.01	FIELD CHANGE/BID SET
5		
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9		

SHEET TITLE:
OVERALL EROSION & SEDIMENT CONTROL PLAN

SHEET: **ESC-OA** **05**

N:\Jobs & Data\R-Z\R006367.0427\CAD\Plan Sheets\ESC-OA.dwg, 4/1/2026 8:50:46 AM, MPURDY

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SEAL:

EXETER TOWNSHIP
EMERGENCY SERVICES FACILITY
70 GIBRALTER ROAD
READING, PA 19606

PROJECT NUMBER:
25-049

SUBMISSION:
BID SET

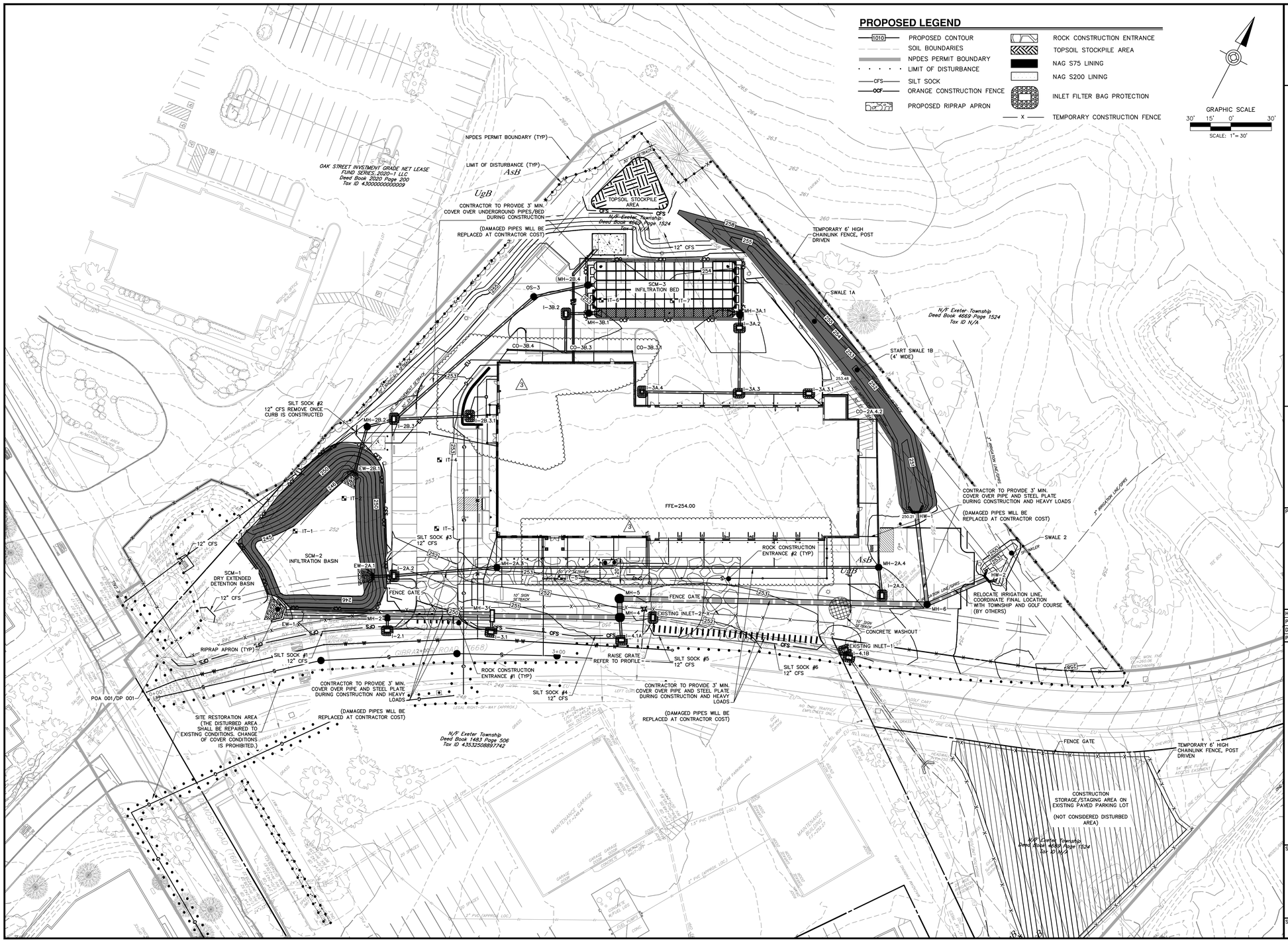
ORIGINAL ISSUE DATE:
10/01/2026

SHEET REVISION SCHEDULE:
△3 ADDENDUM 03 – 10/22/2026
△4 ADDENDUM 04 – 10/29/2026

REFERENCE PLAN

SHEET NUMBER:

C105



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SEAL:

EROSION & SEDIMENT CONTROL PLAN FOR EMERGENCY SERVICES CENTER

EXETER TOWNSHIP
4975 DEMOSS ROAD
READING, PA 19606
EXETER TOWNSHIP, BERKS COUNTY, PENNSYLVANIA

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PROFESSIONAL SEAL:

HRG PROJECT NUMBER: R006367.0427
PLAN DATE: 04/01/2026
DRAWING SCALE: AS SHOWN
PROJ. MANAGER: DENNIS REICHEL

REVISIONS

NO.	DATE	DESCRIPTION
1	2026.04.14	REV AS PER 04/09/2026 BCCD COMMENTS
2	2026.04.23	REV AS PER 04/17/2026 BCCD COMMENTS
3	2026.05.15	REV AS PER 5/11/2026 BCCD COMMENTS
4	2026.10.01	FIELD CHANGE/BID SET
5		
6		
7		
8		
9		

SHEET TITLE:
EROSION & SEDIMENT CONTROL PLAN

SHEET: ESC 06

EXETER TOWNSHIP
EMERGENCY SERVICES FACILITY
70 GIBRALTER ROAD
READING, PA 19606

PROJECT NUMBER:
25-049

SUBMISSION:
BID SET

ORIGINAL ISSUE DATE:
10/01/2026

SHEET REVISION SCHEDULE:
2 ADDENDUM 03 - 10/22/2026
3 ADDENDUM 04 - 10/29/2026

REFERENCE PLAN

SHEET NUMBER:
C106

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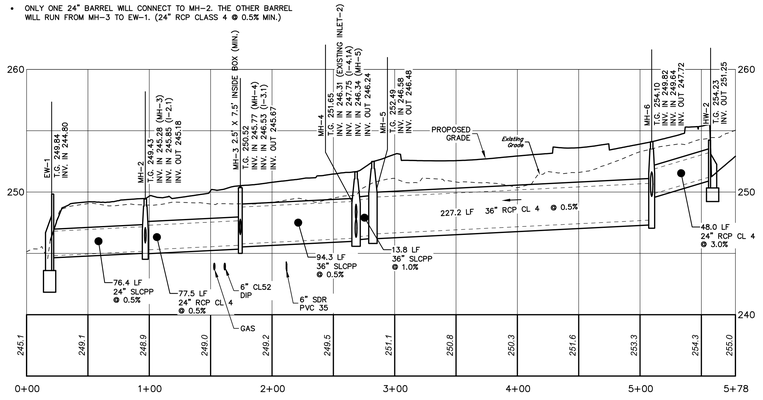
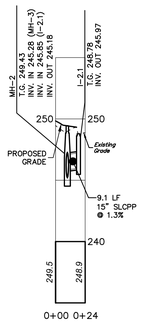
DUAL STORM PIPE NOTE

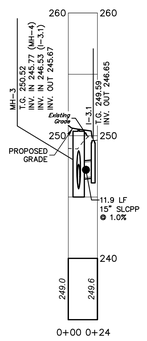
- ONLY ONE 24" BARREL WILL CONNECT TO MH-2. THE OTHER BARREL WILL RUN FROM MH-3 TO EW-1. (24" RCP CLASS 4 @ 0.5% MIN.)



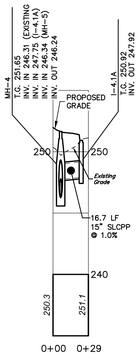
EW-1 TO HW-2



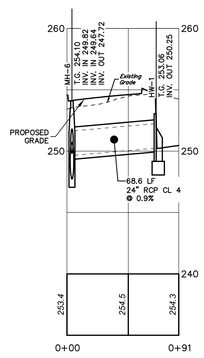
MH-2 TO I-2



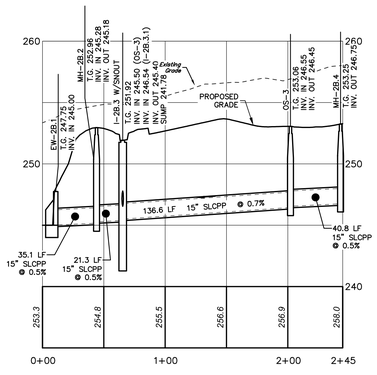
MH-3 TO I-3.1



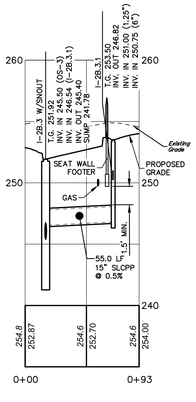
MH-4 TO I-4.1



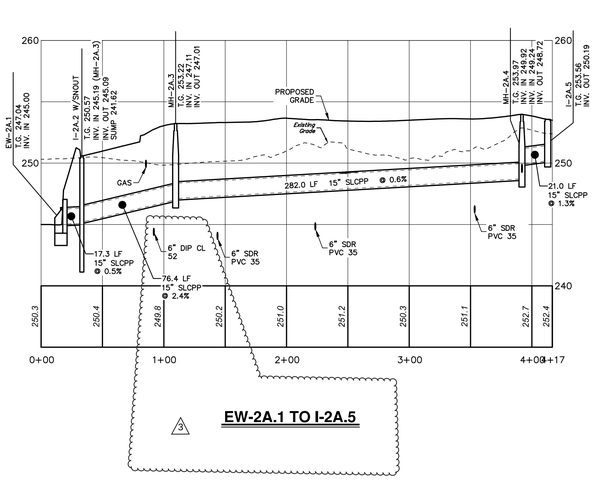
MH-6 TO HW-1



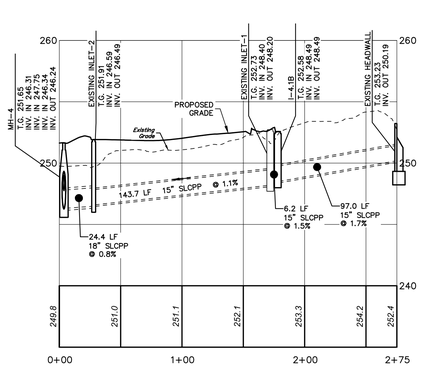
EW-2B.1 TO SCM-3



I-2B.3.1 TO I-2B.3 W/SNOUT



EW-2A.1 TO I-2A.5



EXISTING RUN

HORIZ: 50' 25' 0' 50'
VERT: 10' 5' 0' 10'
SCALE IN FEET

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EROSION & SEDIMENT CONTROL PLAN FOR EMERGENCY SERVICES CENTER

EXETER TOWNSHIP
4975 DEMOSS ROAD
READING, PA 19606

EXETER TOWNSHIP, BERKS COUNTY, PENNSYLVANIA

PROFESSIONAL SEAL:

HRG PROJECT NUMBER: R006367.0427
PLAN DATE: 04/01/2026
DRAWING SCALE: AS SHOWN
PROJ. MANAGER: DENNIS REICHEL

REVISIONS

NO.	DATE	DESCRIPTION
1	2026.04.14	REV AS PER 04/09/2026 BCCD COMMENTS
2	2026.04.22	REV AS PER 04/17/2026 BCCD COMMENTS
3	2026.05.15	REV AS PER 5/11/2026 BCCD COMMENTS
4	2026.10.01	FIELD CHANGE/BID SET
5		
6		
7		
8		
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SHEET TITLE:
STORM PROFILES

SHEET: PR-1 07

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CONSULTANT:

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SEAL:

EXETER TOWNSHIP
EMERGENCY SERVICES FACILITY
70 GIBRALTER ROAD
READING, PA 19606

PROJECT NUMBER:
25-049

SUBMISSION:
BID SET

ORIGINAL ISSUE DATE:
10/01/2026

SHEET REVISION SCHEDULE:
2 ADDENDUM 03 - 10/22/2026
3 ADDENDUM 04 - 10/29/2026

REFERENCE PLAN

SHEET NUMBER:
C107

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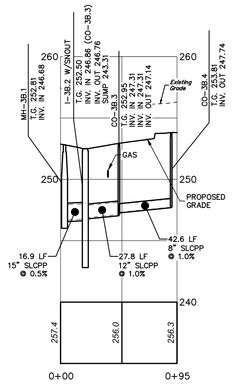
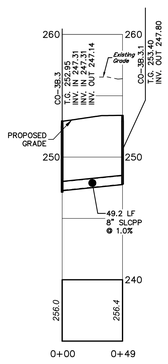
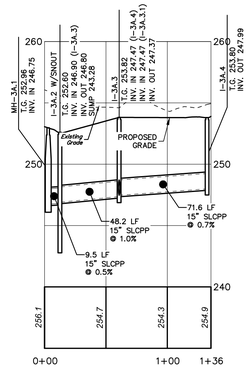


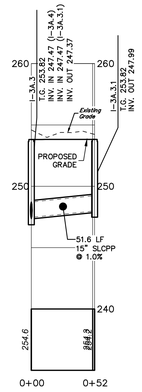
SCM-3 TO CO-3B.4



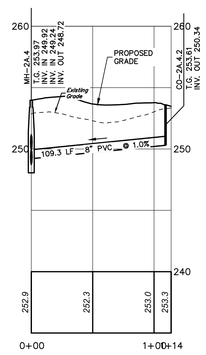
I-3B.3 TO CO-3B.3.1



SCM-3 TO I-3A.4

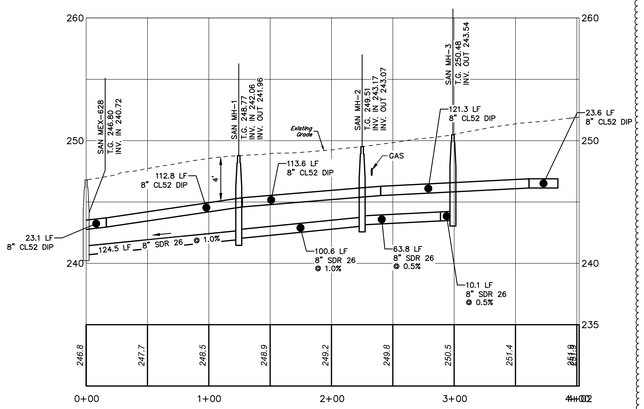


I-3A.3 TO I-3A.3.1

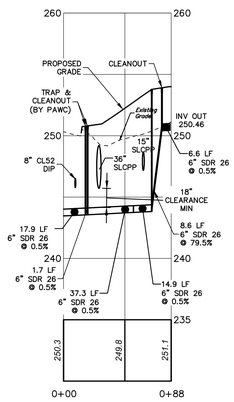


MH-2A.4 TO CO-2A-4.2

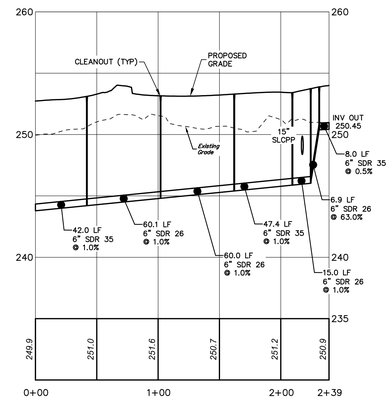
HORIZ: 50' 25' 0' 50'
VERT: 10' 5' 0' 10'
SCALE IN FEET



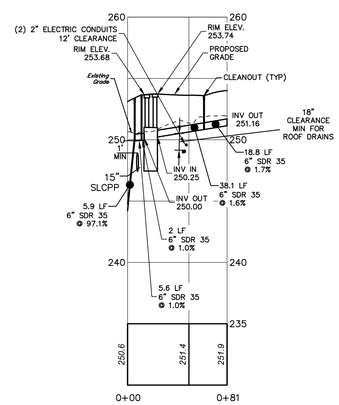
GIBRALTAR ROAD



LATERAL TO OFFICE



LATERAL TO EMS



LATERAL TO APPARATUS BAY

△3

MANNS WOODWARD STUDIOS
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NOTTINGHAM, MD 21236
☎ 410-344-1460
✉ INFO@MWSARCH.COM
WWW.MWSARCH.COM

CONSULTANT:
HERBERT, ROWLAND & GRUBIC, INC.
1275 GLENLIVET DRIVE
SUITE 145
ALLENTOWN, PA 18106
610.351.0311 | hrg-inc.com

SEAL:

HERBERT, ROWLAND & GRUBIC, INC.
1275 GLENLIVET DRIVE
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ALLENTOWN, PA 18106
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EROSION & SEDIMENT CONTROL PLAN
FOR
EMERGENCY SERVICES CENTER

EXETER TOWNSHIP
4975 DEMOSS ROAD
READING, PA 19606

EXETER TOWNSHIP, BERKS COUNTY, PENNSYLVANIA

PROFESSIONAL SEAL:

HRG PROJECT NUMBER: R006367.0427
PLAN DATE: 04/01/2026
DRAWING SCALE: AS SHOWN
PROJ. MANAGER: DENNIS REICHEL

REVISIONS

NO	DATE	DESCRIPTION
1	2026.04.14	REV AS PER 04/09/2026 BCCD COMMENTS
2	2026.04.23	ADD PHASING PLAN
3	2026.05.15	REV AS PER 5/11/2026 BCCD COMMENTS
4	2026.10.01	FIELD CHANGE/BID SET
5		
6		
7		
8		
9		

SHEET TITLE:
STORM AND SANITARY PROFILES

SHEET: **PR-2** **08**

EXETER TOWNSHIP
EMERGENCY SERVICES FACILITY
70 GIBRALTER ROAD
READING, PA 19606

PROJECT NUMBER:
25-049

SUBMISSION:
BID SET

ORIGINAL ISSUE DATE:
10/01/2026

SHEET REVISION SCHEDULE:
△2 ADDENDUM 03 - 10/22/2026
△3 ADDENDUM 04 - 10/29/2026

REFERENCE PLAN

SHEET NUMBER:
C108

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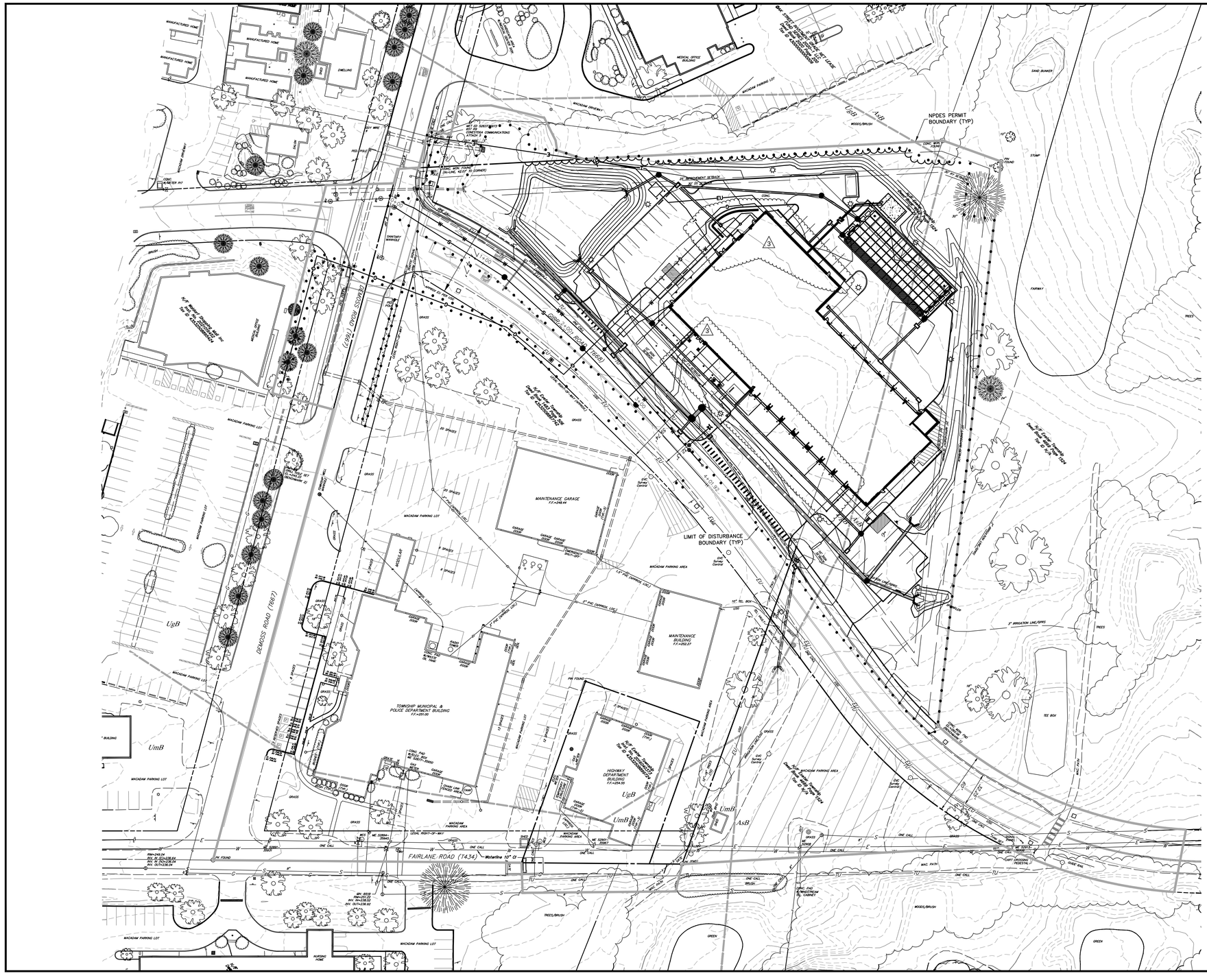

HRG

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POST CONSTRUCTION STORMWATER MANAGEMENT PLAN
FOR
EMERGENCY SERVICES CENTER

EXETER TOWNSHIP
4975 DEMOSS ROAD
READING, PA 19606

EXETER TOWNSHIP, BERKS COUNTY, PENNSYLVANIA

PROFESSIONAL SEAL:

HRG PROJECT NUMBER: R006367.0427
PLAN DATE: 04/01/2026
DRAWING SCALE: 1"=40'
PROJ. MANAGER: DENNIS REICHEL

REVISIONS

NO.	DATE	DESCRIPTION
1	2026.04.14	REV AS PER 04/09/2026 BCCD COMMENTS
2	2026.04.23	REV AS PER 04/17/2026 BCCD COMMENTS
3	2026.05.15	REV AS PER 05/11/2026 BCCD COMMENTS
4	2026.10.01	FIELD CHANGE/BID SET
5		
6		
7		
8		
9		

SHEET TITLE:
OVERALL GRADING & PCSM PLAN

SHEET: **GR-OA** **05**

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CONSULTANT:

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SEAL:

EXETER TOWNSHIP
EMERGENCY SERVICES FACILITY
70 GIBRALTER ROAD
READING, PA 19606

PROJECT NUMBER:
25-049

SUBMISSION:
BID SET

ORIGINAL ISSUE DATE:
10/01/2026

SHEET REVISION SCHEDULE:
3 ADDENDUM 03 - 10/22/2026
4 ADDENDUM 04 - 10/29/2026

REFERENCE PLAN

SHEET NUMBER:

C205

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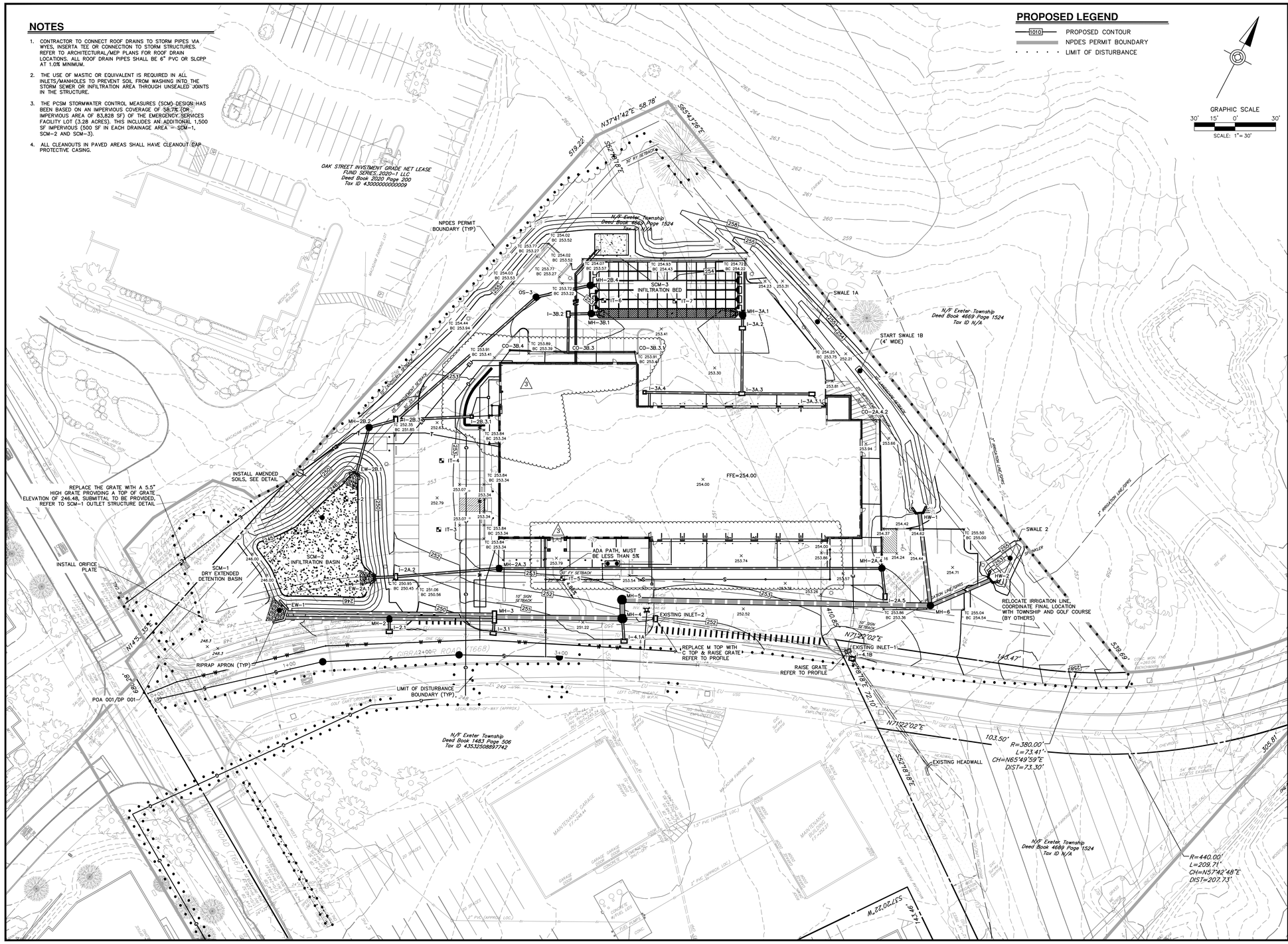
NOTES

1. CONTRACTOR TO CONNECT ROOF DRAINS TO STORM PIPES VIA WYES, INSERTA TEE OR CONNECTION TO STORM STRUCTURES. REFER TO ARCHITECTURAL/MEP PLANS FOR ROOF DRAIN LOCATIONS. ALL ROOF DRAIN PIPES SHALL BE 6" PVC OR SLCPP AT 1.0% MINIMUM.
2. THE USE OF MASTIC OR EQUIVALENT IS REQUIRED IN ALL INLETS/MANHOLES TO PREVENT SOIL FROM WASHING INTO THE STORM SEWER OR INFILTRATION AREA THROUGH UNSEALED JOINTS IN THE STRUCTURE.
3. THE PCSM STORMWATER CONTROL MEASURES (SCM) DESIGN HAS BEEN BASED ON AN IMPERVIOUS COVERAGE OF 58.7% (OR IMPERVIOUS AREA OF 83,828 SF) OF THE EMERGENCY SERVICES FACILITY LOT (3.28 ACRES). THIS INCLUDES AN ADDITIONAL 1,500 SF IMPERVIOUS (500 SF IN EACH DRAINAGE AREA – SCM-1, SCM-2 AND SCM-3).
4. ALL CLEANOUTS IN PAVED AREAS SHALL HAVE CLEANOUT CAP PROTECTIVE CASING.

PROPOSED LEGEND

- 1010 — PROPOSED CONTOUR
- NPDES PERMIT BOUNDARY
- LIMIT OF DISTURBANCE

GRAPHIC SCALE
30' 15' 0' 30'
SCALE: 1" = 30'



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POST CONSTRUCTION STORMWATER MANAGEMENT PLAN
FOR
EMERGENCY SERVICES CENTER
EXETER TOWNSHIP
4975 DEMOSS ROAD
READING, PA 19606
EXETER TOWNSHIP, BERKS COUNTY, PENNSYLVANIA

REVISIONS		
NO.	DATE	DESCRIPTION
1	2026.04.14	REV AS PER 04/09/2026 BCCD COMMENTS
2	2026.04.23	REV AS PER 04/17/2026 BCCD COMMENTS
3	2026.05.15	REV AS PER 05/11/2026 BCCD COMMENTS
4	2026.10.01	FIELD CHANGE/BID SET
5		
6		
7		
8		
9		

PROFESSIONAL SEAL:

HRG PROJECT NUMBER: R006367.0427
PLAN DATE: 04/01/2026
DRAWING SCALE: 1"=30'
PROJ. MANAGER: DENNIS REICHEL

SHEET TITLE:
GRADING & PCSM PLAN

SHEET: **GR-1** | **06**

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CONSULTANT:

HRG
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ALLENTOWN, PA 18106
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SEAL:

EXETER TOWNSHIP
EMERGENCY SERVICES FACILITY
70 GIBRALTER ROAD
READING, PA 19606

PROJECT NUMBER:
25-049

SUBMISSION:
BID SET

ORIGINAL ISSUE DATE:
10/01/2026

SHEET REVISION SCHEDULE:
2 ADDENDUM 03 – 10/22/2026
3 ADDENDUM 04 – 10/29/2026

REFERENCE PLAN

SHEET NUMBER:

C206

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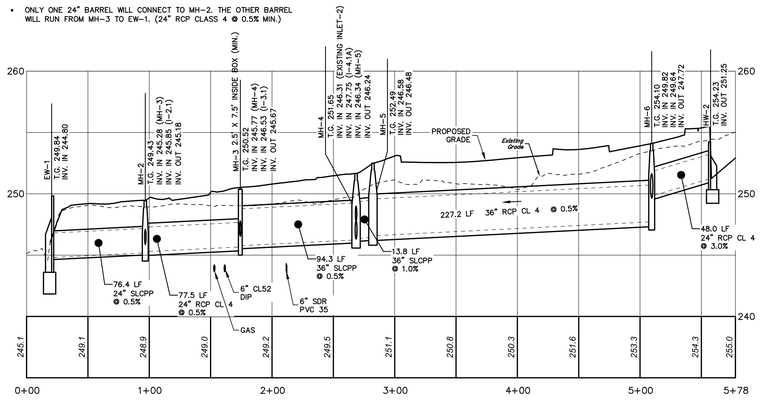
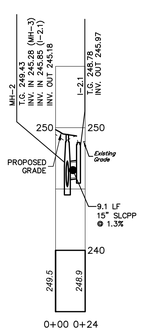
DUAL STORM PIPE NOTE

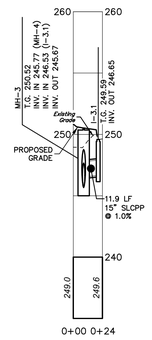
- ONLY ONE 24" BARREL WILL CONNECT TO MH-2. THE OTHER BARREL WILL RUN FROM MH-3 TO EW-1. (24" RCP CLASS 4 @ 0.5% MIN.)



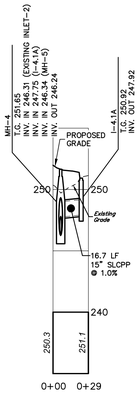
EW-1 TO HW-2



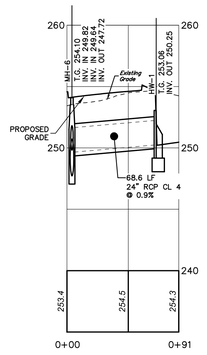
MH-2 TO I-2



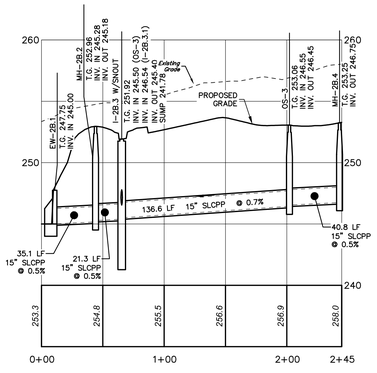
MH-3 TO I-3.1



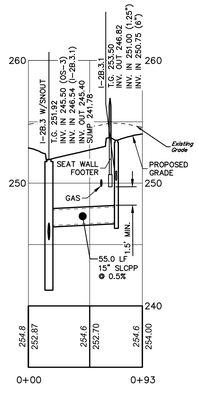
MH-4 TO I-4.1



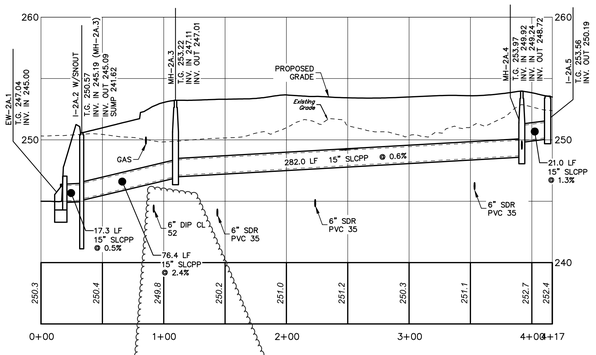
MH-6 TO HW-1



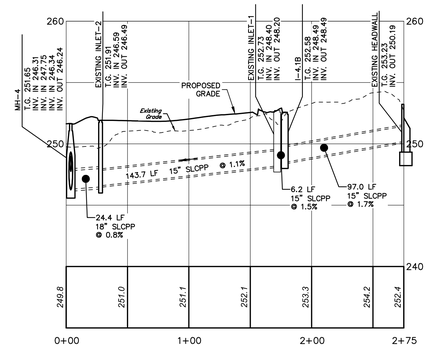
EW-2B.1 TO SCM-3



I-2B.3.1 TO I-2B.3 W/SNOUT



EW-2A.1 TO I-2A.5



EXISTING RUN

HORIZ: 50' 25' 0' 50'
VERT: 10' 5' 0' 10'
SCALE IN FEET

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ALLENTOWN, PA 18106
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POST CONSTRUCTION STORMWATER MANAGEMENT PLAN FOR EMERGENCY SERVICES CENTER

EXETER TOWNSHIP
4975 DEMOSS ROAD
READING, PA 19606

EXETER TOWNSHIP, BERKS COUNTY, PENNSYLVANIA

PROFESSIONAL SEAL:

HRG PROJECT NUMBER: R006367.0427
PLAN DATE: 04/01/2026
DRAWING SCALE: AS SHOWN
PROJ. MANAGER: DENNIS REICHEL

REVISIONS

NO.	DATE	DESCRIPTION
1	2026.04.14	REV AS PER 04/09/2026 BCCD COMMENTS
2	2026.04.23	REV AS PER 04/17/2026 BCCD COMMENTS
3	2026.05.15	REV AS PER 05/11/2026 BCCD COMMENTS
4	2026.10.01	FIELD CHANGE/BID SET
5		
6		
7		
8		
9		

SHEET TITLE:
STORM PROFILES

SHEET: PR-1 07

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CONSULTANT:

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SEAL:

EXETER TOWNSHIP EMERGENCY SERVICES FACILITY 70 GIBRALTER ROAD READING, PA 19606

PROJECT NUMBER:
25-049

SUBMISSION:
BID SET

ORIGINAL ISSUE DATE:
10/01/2026

SHEET REVISION SCHEDULE:
2 ADDENDUM 03 - 10/22/2026
3 ADDENDUM 04 - 10/29/2026

REFERENCE PLAN

SHEET NUMBER:
C207

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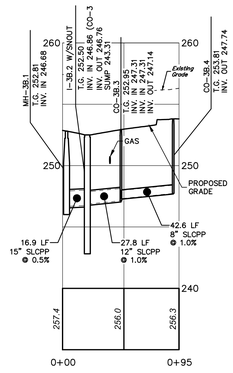
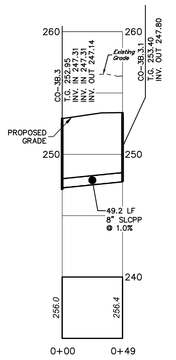
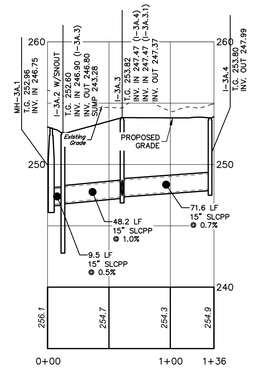


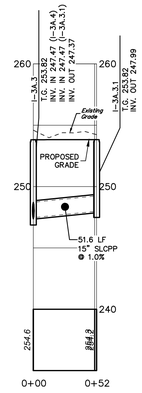
SCM-3 TO CO-3B.4



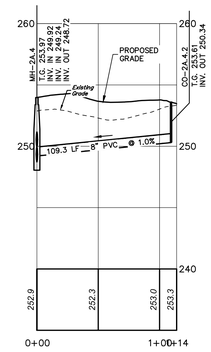
I-3B.3 TO CO-3B.3.1



SCM-3 TO I-3A.4

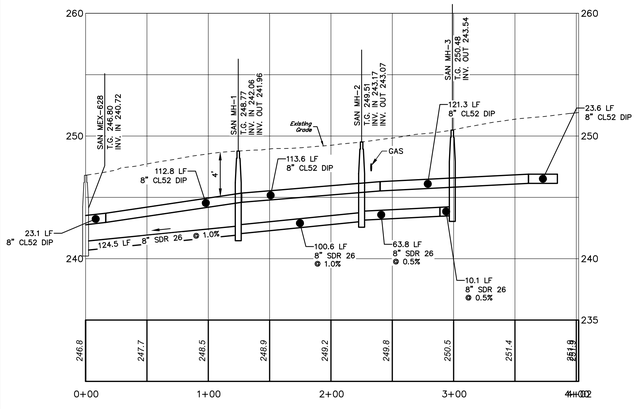


I-3A.3 TO I-3A.3.1

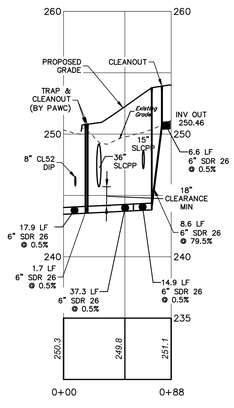


MH-2A.4 TO CO-2A.4.2

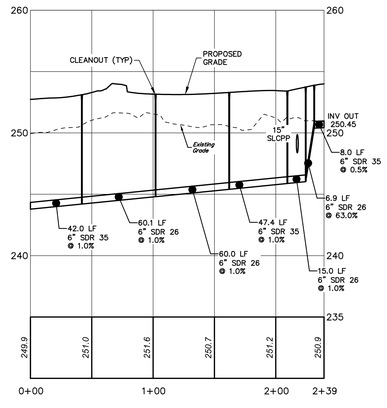
HORIZ: 50' 25' 0' 50'
VERT: 10' 5' 0' 10'
SCALE IN FEET



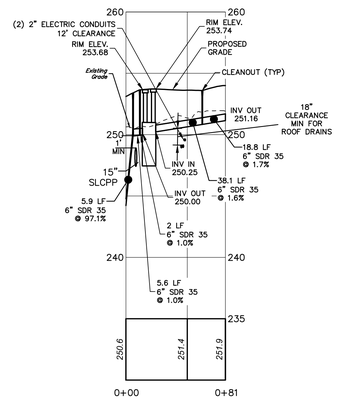
GIBRALTAR ROAD



LATERAL TO OFFICE



LATERAL TO EMS



LATERAL TO APPARATUS BAY

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ALLENTOWN, PA 18106
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POST CONSTRUCTION STORMWATER MANAGEMENT PLAN FOR EMERGENCY SERVICES CENTER

EXETER TOWNSHIP
4975 DEMOSS ROAD
READING, PA 19606

EXETER TOWNSHIP, BERKS COUNTY, PENNSYLVANIA

PROFESSIONAL SEAL:

HRG PROJECT NUMBER: R006367.0427
PLAN DATE: 04/01/2026
DRAWING SCALE: AS SHOWN
PROJ. MANAGER: DENNIS REICHEL

REVISIONS

NO.	DATE	DESCRIPTION
1	2026.04.14	REV. AS PER 04/09/2026 BCCD COMMENTS
2	2026.04.23	REV. AS PER 04/17/2026 BCCD COMMENTS
3	2026.05.15	REV. AS PER 05/11/2026 BCCD COMMENTS
4	2026.10.01	FIELD CHANGE/BID SET
5		
6		
7		
8		
9		

SHEET TITLE:
STORM AND SANITARY PROFILES

SHEET: **PR-2** | **08**

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CONSULTANT:

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ALLENTOWN, PA 18106
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SEAL:

EXETER TOWNSHIP EMERGENCY SERVICES FACILITY 70 GIBRALTER ROAD READING, PA 19606

PROJECT NUMBER:
25-049

SUBMISSION:
BID SET

ORIGINAL ISSUE DATE:
10/01/2026

SHEET REVISION SCHEDULE:
2 ADDENDUM 03 - 10/22/2026
3 ADDENDUM 04 - 10/29/2026

REFERENCE PLAN

SHEET NUMBER:

C208

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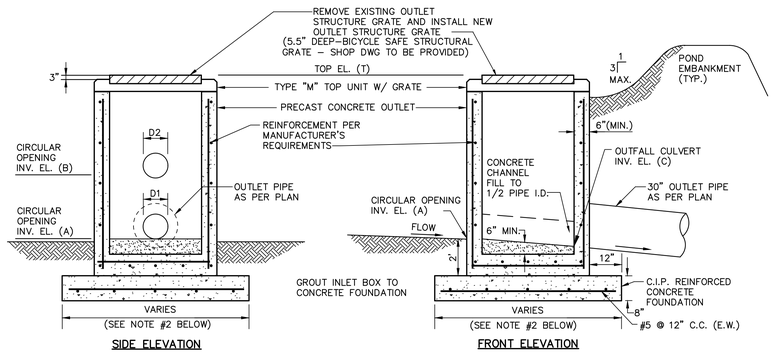
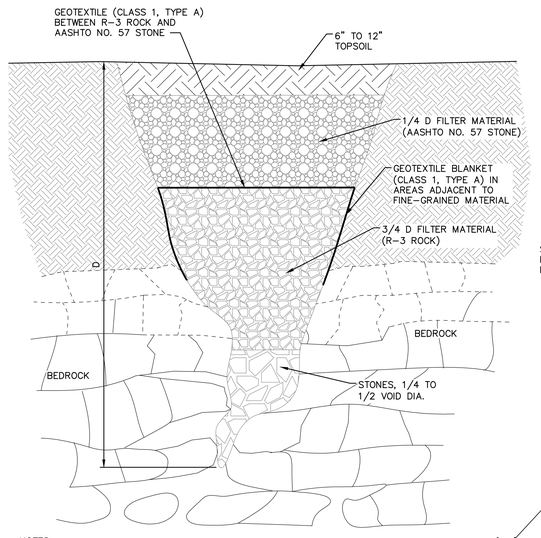


NOTES:
1. PROVIDE FIELD PLACED CONCRETE FILL IN THE BOTTOM OF ALL OUTLET STRUCTURES TO A DEPTH OF 1/2 OF THE PIPE I.D. PROVIDE AN ADEQUATE FLOW CHANNEL FOR THE TRANSITION TO THE OUTLET PIPE. SHAPE BOX BOTTOM FOR POSITIVE DRAINAGE.
2. CONSTRUCT THE REINFORCED CONCRETE FOUNDATION TO A DIMENSION 24" LARGER THAN THE OUTSIDE DIMENSIONS OF THE OUTLET STRUCTURE.
3. CONSTRUCT OUTLET STRUCTURE IN ACCORDANCE WITH PENNDOT PUBLICATION 72, RC-34 FOR PRECAST CONCRETE INLET BOXES.

BASIN NO.	TOP ELEVATION T (FT)	INVERT A (FT)	DIAMETER D1 (IN)	INVERT B (FT)	DIAMETER D2 (IN)	INVERT C (FT)	2-YR WSE (FT)
SCM-1	246.48	243.50	6	244.43	12	241.63	246.57

EXISTING DRY EXTENDED DETENTION BASIN OUTLET STRUCTURE DETAIL (SCM-1)/GRATE REPLACEMENT

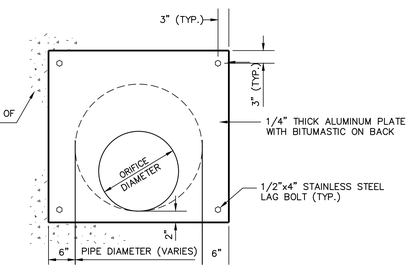
NOT TO SCALE



NOTES:
1. EXCAVATE LOOSE MATERIAL FROM THE SINKHOLE AND EXPOSE SOLUTION VOID(S) IF POSSIBLE. ENLARGE SINKHOLE IF NECESSARY TO ALLOW FOR INSTALLATION OF FILTER MATERIAL. OSHA REGULATIONS MUST BE FOLLOWED AT ALL TIMES DURING EXCAVATION.
2. STONES USED FOR THE 'BRIDGE' AND FILTERS SHALL HAVE A MODERATELY HARD ROCK STRENGTH AND BE RESISTANT TO ABRASION AND DEGRADATION. SHALE AND SIMILAR SOFT AND/OR NON-DURABLE ROCK ARE NOT ACCEPTABLE.
3. DUE TO THE VARIABLE NATURE OF SINKHOLES, THEY SHOULD BE REPAIRED UNDER THE DIRECT OBSERVATION AND SUPERVISION OF A PROFESSIONAL GEOLOGIST OR LICENSED ENGINEER.

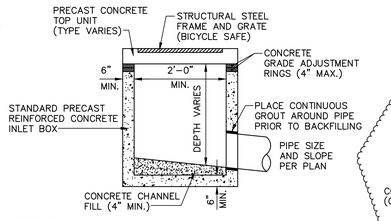
SINKHOLE REPAIR WITH A PERVIOUS COVER

NOT TO SCALE



EXISTING HEADWALL ORIFICE PLATE DETAIL (SCM-1)

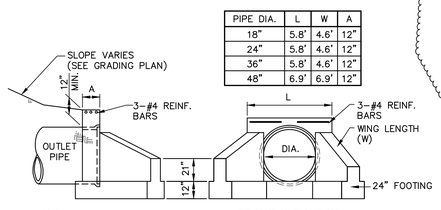
NOT TO SCALE



NOTES:
1. CONSTRUCT IN ACCORDANCE WITH PENNDOT PUBLICATION 408, CURRENT EDITION, AND ROADWAY CONSTRUCTION DRAWING (RC-34).
2. PROVIDE ALUMINUM STEPS IN INLETS OVER 5' DEEP.

INLET BOX DETAIL

NOT TO SCALE

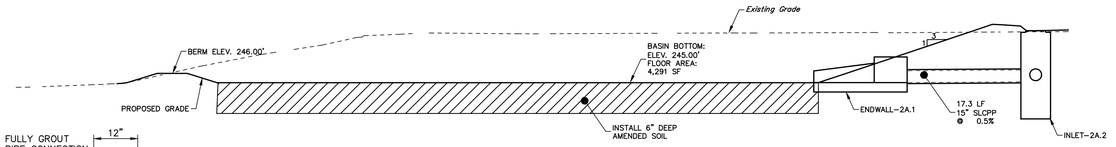


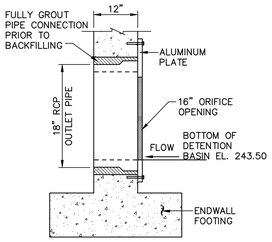
PIPE DIA.	L	W	A
18"	5.8'	4.6'	12"
24"	5.8'	4.6'	12"
36"	5.8'	4.6'	12"
48"	6.9'	6.9'	12"

NOTES:
1. CONSTRUCT IN ACCORDANCE WITH PENNDOT PUBLICATION 72 RC-31
2. FOR PIPE SIZES LESS THAN 36" CONSTRUCT WING WALL TO DIMENSIONS FOR 36" PIPE DIAMETER AS LISTED IN PENNDOT RC-31.

TYPE D-W ENDWALL DETAIL

NOT TO SCALE



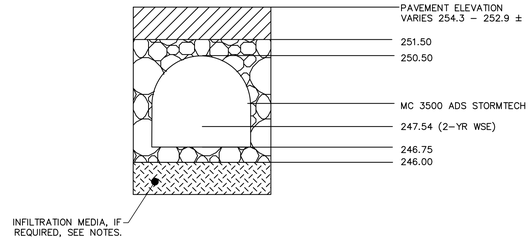


ORIFICE PLATE MOUNTING DETAIL

NOTES:
1. AMENDED SOIL SHALL HAVE A SANDY LOAM, LOAMY SAND OR LOAM TEXTURE PER USDA TEXTURAL TRIANGLE. MAXIMUM CLAY CONTENT <5%. SOIL MIXTURE SHALL BE 60% TOPSOIL, 20% SAND AND 20% COMPOST (MEETING U.S. COMPOSTING COUNCIL SEAL OF TESTING ASSURANCE (STA) PROGRAM OR APPROVED EQUAL).
2. IF BEDROCK OR PINNACLES ARE ENCOUNTERED DURING CONSTRUCTION OF THE BASIN, EXCAVATE ROCK TO A MINIMUM OF TWO FEET BELOW THE BASIN BOTTOM. INCREASE THE AMENDED SOIL TO THE BEDROCK OR PINNACLES.

INFILTRATION BASIN (SCM-2) CROSS SECTION

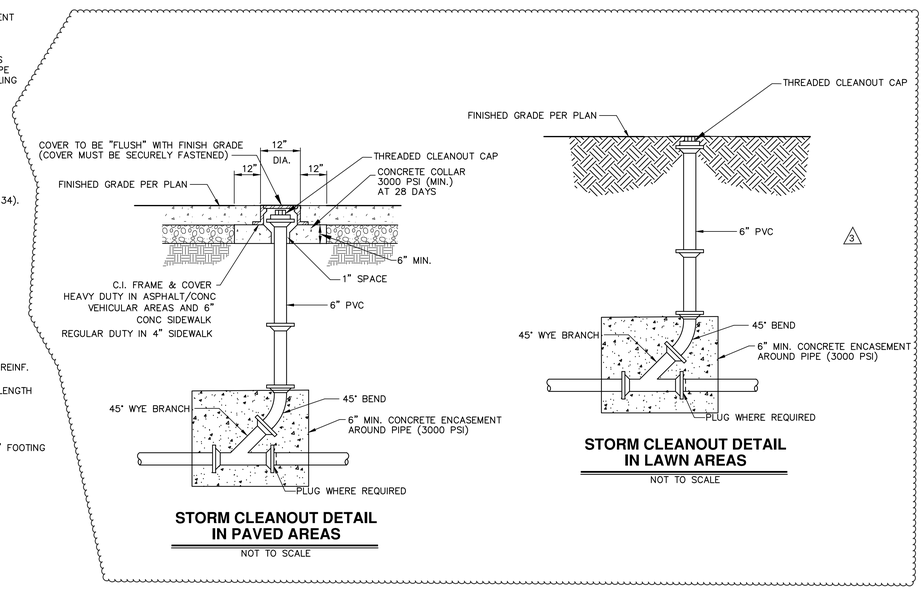
NOT TO SCALE



NOTES:
1. INFILTRATION MEDIA SHALL CONSIST OF GRANULAR BLENDED SOIL MIXTURES CONTAINING AT LEAST 70 PERCENT SAND AND LESS THAN 20 PERCENT SILT. ENGINEERED FILTER MEDIA SHOULD PROVIDE A MINIMUM INFILTRATION RATE OF 1.5 INCH/HOUR WITH A MAXIMUM INFILTRATION RATE ON THE ORDER OF SIX INCHES PER HOUR. ALL INFILTRATION/FILTER MEDIA SHALL BE WRAPPED WITH A SUITABLE FABRIC TO REDUCE CLOGGING.
2. IF BEDROCK IS ENCOUNTERED DURING EXCAVATION OF BED, EXCAVATE ROCK TO A MINIMUM OF TWO FEET BELOW THE BED BOTTOM. INCREASE INFILTRATION MEDIA DEPTH TO BED ROCK.
3. IF PERCHED WATER IS ENCOUNTERED DURING CONSTRUCTION OF THE BED, OVER EXCAVATION MAY BE REQUIRED TO ALLEVIATE THE CAUSE OF THE TRAPPED SURFACE WATER. INCREASE THE INFILTRATION MEDIA DEPTH TO THE BOTTOM OF THE EXCAVATION.

INFILTRATION BED (SCM-3) DETAIL

NOT TO SCALE



STORM CLEANOUT DETAIL IN PAVED AREAS

NOT TO SCALE

STORM CLEANOUT DETAIL IN LAWN AREAS

NOT TO SCALE

HERBERT, ROWLAND & GRUBIC, INC.
1275 GLENLIVET DRIVE
SUITE 145
ALLENTOWN, PA 18106
610.351.0311 | hrg-inc.com

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN
FOR
EMERGENCY SERVICES CENTER
EXETER TOWNSHIP
4975 DEMOSS ROAD
READING, PA 19606
EXETER TOWNSHIP, BERKS COUNTY, PENNSYLVANIA

PROFESSIONAL SEAL:

HRG PROJECT NUMBER:	R006367.0427
PLAN DATE:	04/01/2026
DRAWING SCALE:	AS SHOWN
PROJ. MANAGER:	DENNIS REICHEL

REVISIONS NO.	DATE	DESCRIPTION
1	2026.04.14	REV AS PER 04/09/2026 BCCD COMMENTS
2	2026.04.23	REV AS PER 04/17/2026 BCCD COMMENTS
3	2026.05.15	REV AS PER 05/11/2026 BCCD COMMENTS
4	2026.10.01	FIELD CHANGES/BID SET
5		
6		
7		
8		
9		

SHEET TITLE:
DETAILS SHEET

SHEET: DT-3 | 11

PLOTTED BY: MARK.WOODWARD | DATE/TIME PLOTTED: 10/29/2026 10:57:46 AM | PLOTSTYLE USED: ...\HRG-PLOTSTYLE.CTB | LAST PLOTTED BY: MARK.WOODWARD | DATE/TIME LAST PLOTTED: 10/29/2026 10:57:46 AM | XREFS: ...

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SEAL:

EXETER TOWNSHIP
EMERGENCY SERVICES FACILITY
70 GIBRALTER ROAD
READING, PA 19606

PROJECT NUMBER:
25-049

SUBMISSION:
BID SET

ORIGINAL ISSUE DATE:
10/01/2026

SHEET REVISION SCHEDULE:
3 ADDENDUM 03 - 10/22/2026
3 ADDENDUM 04 - 10/29/2026

REFERENCE PLAN

SHEET NUMBER:

C211

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MC-3500 STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH MC-3500.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
6. CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
7. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 500 LBS/FT/%, THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418, AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
8. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
   - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
   - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
   - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.
10. MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH NOTE #6.32 FOR MANIFOLD SIZING GUIDANCE. DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
11. ADS DOES NOT DESIGN OR PROVIDE MEMBRANE LINER SYSTEMS. TO MINIMIZE THE LEAKAGE POTENTIAL OF LINER SYSTEMS, THE MEMBRANE LINER SYSTEM SHOULD BE DESIGNED BY A KNOWLEDGEABLE GEOTEXTILE PROFESSIONAL AND INSTALLED BY A QUALIFIED CONTRACTOR.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-3500 CHAMBER SYSTEM

1. STORMTECH MC-3500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "MC-3500 & MC-4500 STORMTECH CHAMBER INSTALLATION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
8. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE; AASHTO M43 #3, 357, 4, 467, 5, 56, OR 57.
9. STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
10. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
11. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

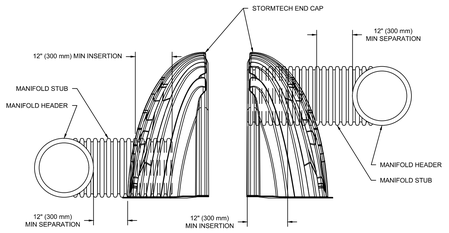
NOTES FOR CONSTRUCTION EQUIPMENT

1. STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "MC-3500 & MC-4500 STORMTECH CHAMBER INSTALLATION GUIDE".
2. THE USE OF EQUIPMENT OVER MC-3500 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "MC-3500 & MC-4500 STORMTECH CHAMBER INSTALLATION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "MC-3500 & MC-4500 STORMTECH CHAMBER INSTALLATION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

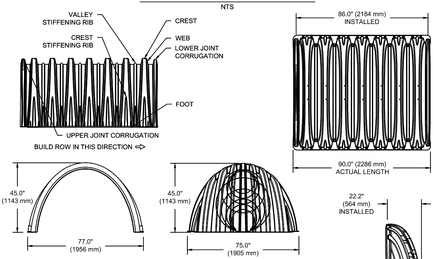
CONTACT ADS WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

MC-SERIES END CAP INSERTION DETAIL
NTS



NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.

MC-3500 TECHNICAL SPECIFICATION
NTS



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	77.0" X 45.0" X 86.0"	(1956 mm X 1143 mm X 2184 mm)
CHAMBER STORAGE	109.9 CUBIC FEET	(3.11 m³)
MINIMUM INSTALLED STORAGE*	175.0 CUBIC FEET	(4.96 m³)
WEIGHT	134 lbs.	(60.8 kg)

NOMINAL END CAP SPECIFICATIONS

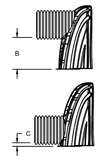
SIZE (W X H X INSTALLED LENGTH)	75.0" X 45.0" X 22.2"	(1905 mm X 1143 mm X 564 mm)
END CAP STORAGE	14.9 CUBIC FEET	(0.42 m³)
MINIMUM INSTALLED STORAGE*	45.1 CUBIC FEET	(1.28 m³)
WEIGHT	49 lbs.	(22.2 kg)

*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION, 6" SPACING BETWEEN CHAMBERS, 6" (152 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY

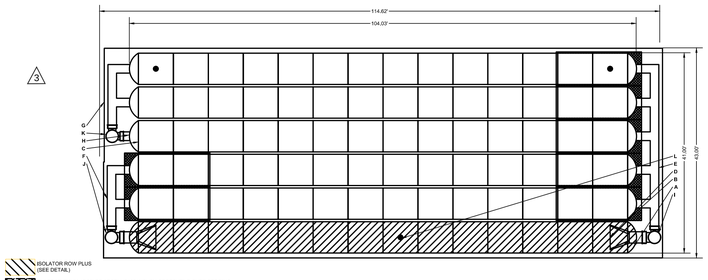
STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
END CAPS WITH A WELDED CROWN PLATE END WITH "C"
END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W"

PART #	STUB	B	C
MC3500IEPP06T	6" (150 mm)	33.21" (844 mm)	---
MC3500IEPP06B		---	0.66" (17 mm)
MC3500IEPP08T	8" (200 mm)	31.16" (791 mm)	---
MC3500IEPP08B		---	0.81" (21 mm)
MC3500IEPP10T	10" (250 mm)	29.04" (738 mm)	---
MC3500IEPP10B		---	0.93" (24 mm)
MC3500IEPP12T	12" (300 mm)	26.36" (670 mm)	---
MC3500IEPP12B		---	1.35" (34 mm)
MC3500IEPP15T	15" (375 mm)	23.39" (594 mm)	---
MC3500IEPP15B		---	1.50" (38 mm)
MC3500IEPP18TC	18" (450 mm)	20.03" (509 mm)	---
MC3500IEPP18TW		---	1.77" (45 mm)
MC3500IEPP18BC			
MC3500IEPP18BW			
MC3500IEPP24TC	24" (600 mm)	14.48" (368 mm)	---
MC3500IEPP24TW		---	2.06" (52 mm)
MC3500IEPP24BC			
MC3500IEPP24BW			
MC3500IEPP30BC	30" (750 mm)	---	2.75" (70 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL



CUSTOM PRECORED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-3500 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.



ISOLATOR ROW PLUS (SEE DETAIL)

PLACE MINIMUM 17.50' OF ADSPLUS125 WOVEN GEOTEXTILE OVER BEDDING STONE AND UNDERNEATH CHAMBER FEET FOR SCOUR PROTECTION AT ALL CHAMBER INLET ROWS

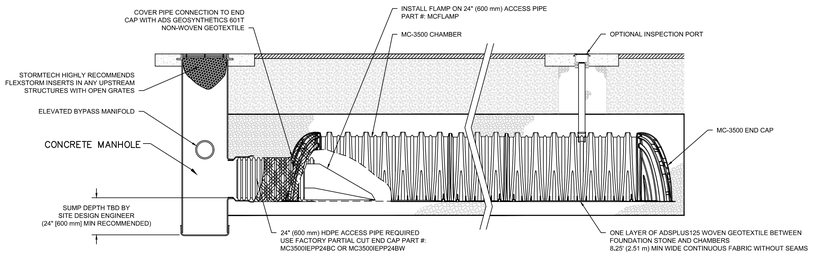
BED LIMITS

PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT	MAX FLOW
PREFABRICATED END CAP	A	24" BOTTOM PRE-CORED END CAP, PART#: MC3500IEPP24BC / TYP OF ALL 24" BOTTOM CONNECTIONS AND ISOLATOR PLUS ROWS		
PREFABRICATED END CAP	B	18" TOP PRE-CORED END CAP, PART#: MC3500IEPP18TC / TYP OF ALL 18" TOP CONNECTIONS		
PREFABRICATED END CAP	C	18" BOTTOM PRE-CORED END CAP, PART#: MC3500IEPP18BC / TYP OF ALL 18" BOTTOM CONNECTIONS		
FLAMP	D	INSTALL FLAMP ON 24" ACCESS PIPE, / PART#: MCFLAMP (TYP 2 PLACES)		
MANIFOLD	E	18" x 18" TOP MANIFOLD, ADS N-12	20.03"	
MANIFOLD	F	18" x 18" TOP MANIFOLD, ADS N-12	20.03"	
MANIFOLD	G	18" x 18" BOTTOM MANIFOLD, ADS N-12	1.77"	
PIPE CONNECTION	H	18" BOTTOM CONNECTION	1.77"	
CONCRETE MANHOLE (INLET W/ ISO PLUS ROW)	I	4" DIAMETER (24.00" SUMP MIN)		16.2 CFS IN
CONCRETE MANHOLE (INLET W/ ISO PLUS ROW)	J	4" DIAMETER (24.00" SUMP MIN)		11.0 CFS IN
CONCRETE MANHOLE (OUTLET)	K	4" DIAMETER (DESIGN BY ENGINEER)		8.0 CFS OUT
INSPECTION PORT	L	4" SEE DETAIL (TYP 3 PLACES)		

PROPOSED ELEVATIONS	
MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	254.50
MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	252.50
MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	252.00
MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	252.00
MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	252.00
TOP OF STONE:	251.50
TOP OF MC-3500 CHAMBER:	250.50
18" x 18" TOP MANIFOLD INVERT:	248.42
24" ISOLATOR ROW PLUS INVERT:	248.92
18" x 18" BOTTOM MANIFOLD INVERT:	246.90
18" BOTTOM CONNECTION INVERT:	246.90
BOTTOM OF MC-3500 CHAMBER:	246.75
BOTTOM OF STONE:	246.00

PROPOSED LAYOUT	
84	STORMTECH MC-3500 CHAMBERS
12	STORMTECH MC-3500 END CAPS
12	STONE ABOVE (in)
9	STONE BELOW (in)
40	STONE VOID
16485	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED) (COVER STONE INCLUDED) (BASE STONE INCLUDED)
4925	SYSTEM AREA (SF)
315.2	SYSTEM PERIMETER (ft)

NOTES
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- **NOT FOR CONSTRUCTION** THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.



MC-3500 ISOLATOR ROW PLUS DETAIL
NTS

ACCEPTABLE FILL MATERIALS: STORMTECH MC-3500 CHAMBER SYSTEMS

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE, MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[3]	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[3]	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
5. WHERE RECYCLED CONCRETE AGGREGATE IS USED IN LAYERS 'A' OR 'B' THE MATERIAL SHOULD ALSO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 6.20 "RECYCLED CONCRETE STRUCTURAL BACKFILL".

INSPECTION & MAINTENANCE

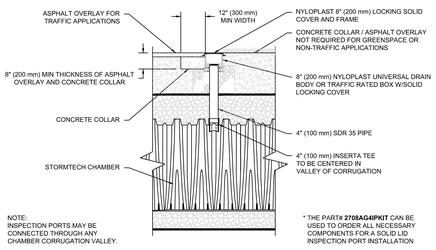
STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

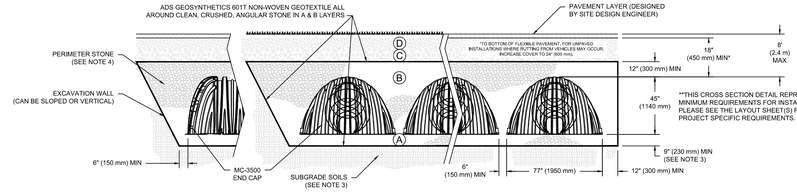
NOTES
1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.



NOTE:
INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION VALLEY.

* THE PART# **2708AG4IPKIT** CAN BE USED TO ORDER ALL NECESSARY COMPONENTS FOR A SOLID LID INSPECTION PORT INSTALLATION

4" (100 mm) PVC INSPECTION PORT DETAIL (MC SERIES CHAMBER)
NTS



NOTES:
1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
2. MC-3500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS. REFERENCE STORMTECH DESIGN MANUAL FOR BEARING CAPACITY GUIDANCE.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 500 LBS/FT/%, THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418, AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

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POST CONSTRUCTION STORMWATER MANAGEMENT PLAN
FOR
EMERGENCY SERVICES CENTER
EXETER TOWNSHIP
4975 DEMOSS ROAD
READING, PA 19606
EXETER TOWNSHIP, BERKS COUNTY, PENNSYLVANIA

PROFESSIONAL SEAL:

HRG PROJECT NUMBER: R006367.0427
PLAN DATE: 04/01/2026
DRAWING SCALE: AS SHOWN
PROJ. MANAGER: DENNIS REICHEL

REVISIONS		
NO.	DATE	DESCRIPTION
1	2026.04.14	REV AS PER 04/09/2026 BCOD COMMENTS
2	2026.04.23	REV AS PER 04/17/2026 BCOD COMMENTS
3	2026.05.15	REV AS PER 05/12/2026 BCOD COMMENTS
4	2026.10.01	FIELD CHANGES/BID SET
5		
6		
7		
8		
9		

SHEET TITLE:
DETAILS SHEET

SHEET: DT-4 | 12

EXETER TOWNSHIP
EMERGENCY SERVICES FACILITY
70 GIBRALTER ROAD
READING, PA 19606

PROJECT NUMBER:
25-049

SUBMISSION:
BID SET

ORIGINAL ISSUE DATE:
10/01/2026

SHEET REVISION SCHEDULE:
2 ADDENDUM 03 – 10/22/2026
3 ADDENDUM 04 – 10/29/2026

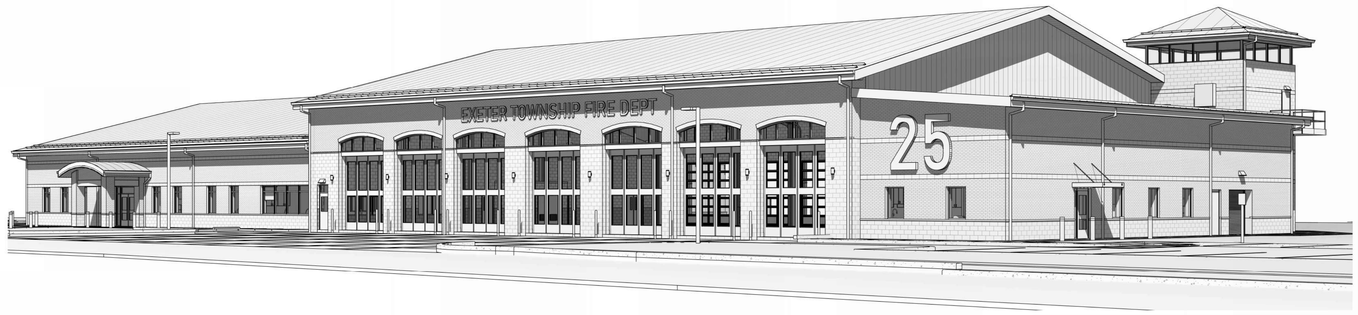
REFERENCE PLAN

SHEET NUMBER:
C212

THE TECH & MISC. 3 MC3500 CHAMBER DWG Date/Time: Sep 23, 2026 - 2:43:00pm Login: DWP Xref Path: C:\Users\dwp\Desktop\...

EXETER TOWNSHIP
EMERGENCY SERVICES FACILITY
70 GIBRALTAR ROAD
READING, PA 19606

BID SET **10/01/2026**



SYMBOLS & TAGS LEGEND

TAG	DESCRIPTION
100A	DOOR TAG
CASEWORK SERIES — NUMBER OF SHELVES — CABINET DEPTH — CABINET WIDTH — CABINET HEIGHT (30.00 / 24.00 / 84.00)	CASEWORK TAG *AS OUTLINED IN THE ARCHITECTURAL WOODWORK INSTITUTE (AWI) STANDARDS* *MININUM CLEAR CABINET DEPTH DIMINSION = DEPTH LESS 1"*
EQ-XX	SPECIALTY EQUIPMENT TAG
1 / A	COLUMN LINE DESIGNATION TAG
REFERENCE 0'-0"	LEVEL ELEVATION TAG
P / T	NORTH ARROW TAG T = TRUE NORTH P = PROJECT NORTH
ROOM 101	ROOM NAME & NUMBER TAG
1 / A101	SECTION TAG
1 / A101	CALLOUT / DETAIL
0'-0"	SPOT ELEVATION TAG
1 DRAWING TITLE / DRAWING SCALE	DETAIL / DRAWING TITLE TAG
CLG-T2 1'-0" TYPE / HEIGHT	CEILING TAG
92	PARTITION TAG
2	MATERIAL TAG
11	WINDOW TAG
12 / 6 / #"/12"	SLOPE ANNOTATION
1 / A101 — 0 / 0.00 / 0	ELEVATION TAG
9 — 9	SPECIFIC NOTE

KEY TO MATERIALS

SECTION PATTERN	DESCRIPTION
	BRICK
	CMU MASONRY
	CONCRETE
	POROUS FILL
	EARTH
	PLYWOOD
	GYPSUM BOARD
	RIGID INSULATION
	BATT INSULATION
	END GRAIN LUMBER
	WOOD BLOCK OR SHIM
	FINISH WOOD

COMMON ABBREVIATIONS

SYMBOLS
& - AND
@ - AT
∅ - DIAMETER
□ - SQUARE

A
AB - ANCHOR BOLT
ABV - ABOVE
ACOUST - ACOUSTICAL
ACT - ACOUSTIC CEILING TILE
AFF - ABOVE FINISH FLOOR
AHJ - AUTHORITY HAVING JURISDICTION
ALUM - ALUMINUM
AP - ACCESS PANEL
APPROX - APPROXIMATELY
ARCH - ARCHITECTURAL

B
B.C. - BOTTOM CHORD
BLK - BLOCK
BLDG - BUILDING
BLKG - BLOCKING
BLKHD - BULKHEAD
BM - BEAM
B.O. - BOTTOM OF
BOD - BASIS OF DESIGN
BOT - BOTTOM
B.R. - BULLET RESISTANT
BRNG - BEARING

C
℄ - CENTER LINE
CFCI - CONTRACTOR FURNISHED, CONTRACTOR INSTALLED
CFOI - CONTRACTOR FURNISHED, OWNER INSTALLED
CFLS - COUNTER FLASHING
CJ - CONTROL JOINT
CL - CLOSET
CLG - CEILING
CMU - CONCRETE MASONRY UNIT
CND - CONDUIT
COL. - COLUMN
COOR - COORDINATE
CONC - CONCRETE
CONSTR - CONSTRUCTION
CONT - CONTINUOUS
C.T. / CT - CERAMIC TILE
CPT - CARPET / CARPET TILE
CTSK - COUNTERSUNK
CU - CUBIC
CU FT - CUBIC FOOT
CU YD - CUBIC YARD

D
D - DEEP / DEPTH
DEG - DEGREE
DIA - DIAMETER
DIM - DIMENSION
DL - DEAD LOAD
DMPR - DAMPER
DN - DOWN
DR - DOOR
DS - DOWNSPOUT
DTL - DETAIL
DWG - DRAWING

E
EA - EACH
EC - ELECTRICAL PRIME CONTRACTOR
EIFS - EXTERIOR INSULATION AND FINISHING SYSTEM
ELEC - ELECTRICAL
EL - ELEVATION
ELEV - ELEVATION
ELMA - ELEVATOR MACHINE ROOM
EJ - EXPANSION JOINT
ENT - ENTRANCE, ENTRY
EQ - EQUAL
EST - ESTIMATE
ETR - EXISTING TO REMAIN
EW - EACH WAY
EXST - EXISTING
EXT - EXTERIOR
EXP - EXPOSED
EXP JT - EXPANSION JOINT

F
F - FAHRENHEIT
FD - FLOOR DRAIN
F.E. - FIRE EXTINGUISHER
F.E.C. - FIRE EXTINGUISHER CABINET
FF - FINISHED FLOOR
FF EL - FINISHED FLOOR ELEVATION
FG - FINISHED GRADE
FHY - FIRE HYDRANT
FDC - FIRE DEPARTMENT CONNECTION
FIN - FINISH
FIN FL - FINISHED FLOOR
FL - FLOOR
FLEX - FLEXIBLE
FLUOR - FLUORESCENT
FND - FOUNDATION
FPM - FEET PER MINUTE
FRT - FIRE RETARDANT TREATED
FSK - FOIL SCRIM KRAFT
FT - FEET, FOOT
FT - FLOOR TRANSITION
FTG - FOOTING

G
GC - GENERAL PRIME CONTRACTOR
GA - GAGE, GAUGE
GALV - GALVANIZED
GL - GLASS, GLAZING
GND - GROUND
GRTG - GRATING
GWB - GYPSUM WALL BOARD

H
H - HIGH / HEIGHT
HC - HANDICAPPED
HD - HEAD
HM - HOLLOW METAL
HORIZ - HORIZONTAL
HR - HOUR
HT - HEIGHT

I
ID - INSIDE DIAMETER
IN - INCH
INFO - INFORMATION
INSUL - INSULATION

J
JB - JUNCTION BOX
JM - JAMB
JST - JOIST
JT - JOINT

L
LG - LONG
LL - LIVE LOAD
LSC - LIFE SAFETY CODE
LTG - LIGHTING

M
MACH - MACHINE
MATL - MATERIAL
MAX - MAXIMUM
MC - MECHANICAL PRIME CONTRACTOR
MBT - MARBLE THRESHOLD
MECH - MECH
MEP - MECHANICAL / ELECTRICAL / PLUMBING
MFGR - MANUFACTURER
MH - MANHOLE
MIN - MINIMUM
MO - MASONRY OPENING
MSNRY - MASONRY
M.T. - METAL THRESHOLD
MTL - METAL
MTD - MOUNTED

N
NA - NOT APPLICABLE
NIC - NOT IN CONTRACT
NO - NUMBER
NTS - NOT TO SCALE

O
O/C - ON CENTER
OD - OUTSIDE DIAMETER
OFCI - OWNER FURNISHED, CONTRACTOR INSTALLED
OFOI - OWNER FURNISHED, OWNER INSTALLED
OPNG - OPENING
OPP - OPPOSITE
OPP HND - OPPOSITE HAND
OV - OVER
OVHD - OVERHEAD

P
P.LAM. - PLASTIC LAMINATE
PC - PLUMBING PRIME CONTRACTOR
PLY - PLYWOOD
PLYWD - PLYWOOD
PNLBD - PANELBOARD
PNT/ PT - PAINT
POLYISO - POLYISOCYANURATE
PRESS - PRESSURE
PROJ - PROJECT
PROP - PROPERTY
PSF - POUNDS PER SQUARE FOOT
PSI - POUNDS PER SQUARE INCH
PT - PRESSURE TREATED
PTD - PAINTED
PVC - POLYVINYL CHLORIDE
PVMT - PAVEMENT
PWT - PREFABRICATED WOOD TRUSS

R
R - RADIUS
RCP - REFLECTED CEILING PLAN
REINF - REINFORCING, REINFORCED
RES - RESINOUS
REQD - REQUIRED
REV - REVISION
RGD - RIGID
RM - ROOM
RO - ROUGH OPENING
RST - REINFORCING STEEL

S
SB - SMART BOARD
SC - SITE PRIME CONTRACTOR
SCHED - SCHEDULE
SD - STORM DRAIN
SECT - SECTION
SF - SQUARE FOOT
SI - SQUARE INCH
SIM - SIMILAR
SLP - SLOPE
SPCL - SPECIAL
SPEC - SPECIFICATIONS
SPLY - SUPPLY
SQ - SQUARE
SS - STAINLESS STEEL
ST - STREET
STD - STANDARD
STL - STEEL
STOR - STORAGE
STRUCT - STRUCTURAL
SURF - SURFACE
SUSP - SUSPENDED
SW - SWITCH
SYS - SYSTEM

T
T & B - TOP AND BOTTOM
T.B. - TACK BOARD
T.B.D. - TO BE DETERMINED
TEMP - TEMPERATURE
THK - THICK
THRES - THRESHOLD
T&G - TONGUE & GROOVE
T0 - TOP OF
TOB - TOP OF BEARING POINT
TOC - TOP OF CONCRETE
TOF - TOP OF FOOTING
TOM - TOP OF MASONRY
TOP - TOP OF PAVEMENT, PARAPET
TOS - TOP OF STEEL
TRTD - TREATED
T.S. - TRANSITION STRIP
TYP - TYPICAL

U
UGND - UNDERGROUND
UL - UNDERWRITERS LAB
UNO - UNLESS NOTED OTHERWISE
UON - UNLESS OTHERWISE NOTED

V
VB - VAPOR BARRIER
VCT - VINYL COMPOSITION TILE
VERT - VERTICAL
VIF - VERIFY IN FIELD
VOL - VOLUME

W
W - WIDE / WIDTH
W/ - WITH
W/0 - WITHOUT
W.B. - WHITEBOARD
WD - WOOD
WR - WATER RESISTANT
WTRPRF - WATERPROOF
WWF - WELDED WIRE FABRIC
WWM - WELDED WIRE MESH

THIS LIST OF ABBREVIATIONS IS A GUIDE TO ABBREVIATIONS WHICH MAY BE USED IN THESE DOCUMENTS. ABBREVIATIONS NOT LISTED MAY ALSO BE USED.

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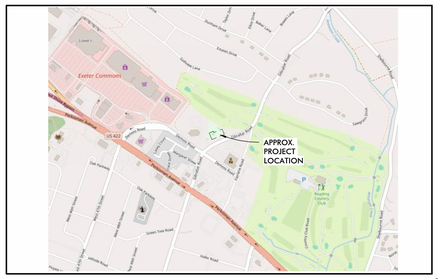
CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

THE INTENT OF THE CONSTRUCTION DRAWINGS AND THE CONSTRUCTION SPECIFICATIONS/PROJECT MANUAL IS TO INCLUDE ALL ITEMS NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK BY THE CONTRACTOR. THE CONSTRUCTION DRAWINGS AND THE CONSTRUCTION SPECIFICATIONS/PROJECT MANUAL ARE COMPLEMENTARY, AND WHAT IS REQUIRED BY ONE SHALL BE AS BINDING AS IF REQUIRED BY ALL; PERFORMANCE BY THE CONTRACTOR SHALL BE REQUIRED ONLY TO THE EXTENT CONSISTENT WITH THE CONSTRUCTION DRAWINGS AND THE CONSTRUCTION SPECIFICATIONS/PROJECT MANUAL AND REASONABLY INFERABLE FROM THEM AS BEING NECESSARY TO PRODUCE THE INDICATED/INTENDED RESULTS. IN THE CASE OF INCONSISTENCIES BETWEEN THE CONSTRUCTION DRAWINGS AND THE CONSTRUCTION SPECIFICATIONS/PROJECT MANUAL OR WITHIN EITHER DOCUMENT NOT CLARIFIED BY ADDENDUM, THE BETTER QUALITY OR GREATER QUANTITY OF WORK SHALL BE PROVIDED IN ACCORDANCE WITH THE ARCHITECT'S INTERPRETATION.



VICINITY MAP
NOT TO SCALE

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G003	CODE PLAN		
G004	TYPICAL ACCESSIBILITY GUIDELINES		
G005	TYPICAL ADA SIGNAGE DETAILS		
G006	UL ASSEMBLIES		
G007	PENETRATION DETAILS		
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C17	SITE DETAILS		
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C19	SITE DETAILS		
C20	SITE DETAILS		
C21	SITE DETAILS		
C22	SITE DETAILS		
C23	SITE DETAILS		
C24	SITE DETAILS		
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LICENSE NUMBER: #RA405311
EXPIRATION DATE: 6-30-2027

EXETER TOWNSHIP
EMERGENCY SERVICES FACILITY
70 GIBRALTAR ROAD
READING, PA 19606

PROJECT NUMBER: 25-049

SUBMISSION:
BID SET

ORIGINAL ISSUE DATE:
10/01/2026

SHEET REVISION SCHEDULE:
No. DATE
1 2026-10-15

LAST PROJECT REVISION: No 1 | 2026-10-15

COVER SHEET

SHEET NUMBER:

G000

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