



Central Falls High School

100% Construction Documents

Central Falls, RI

Ai3 Project #2202.02

Addendum #10

February 9, 2024

The attention of Bidders submitting proposals for Central Falls High School 100% Construction Documents is called to the following changes to the Bidding Contract Documents dated October 13, 2023 as prepared by Ai3 Architects, LLC. The items set forth therein below, whether of revision, omission, addition, substitution or clarification are all to be included as changes to Information to Bidders, the Conditions of the Contract, Specifications and Drawings of the Contract.

The number of this Addendum (Number 10) must be entered in the appropriate spaces provided on the Bid Form.

CLARIFICATIONS:

ADD 10-001

Bidder Question: 2 of the 3 acceptable manufacturers (Kawneer and Old Castle) for the specified "Operable Windows" 084313 are not able to provide glazing that meets the specified seismic design category C requirements and fits the specified dimensions. To meet specified design category C requirements their products have a sash height limitation of 72", a sash width limitation of 36", and a maximum sash square footage limitation of 15 sf, meeting these limitations would require changing the dimensions/aesthetic of the of the sash/frame as they are drawn. We are waiting to hear back from the remaining acceptable manufacturer but it seems likely they will also be unable to provide an operable window as specified. Please advise on how to proceed, or please provide an alternative operable window sized within above mentioned parameters to meet Design Category C glazing. **Response:** The operable window BOD shall be EFCO 325X which meets the size and specification requirements. Refer to attached

Central Falls High School
100% CONSTRUCTION DOCUMENTS
Central Falls, RI
ADD #10- PAGE 1

specifications. This response supersedes the operable window BOD response from Addendum #9.

- ADD 10-002** **Bidder Question:** ACT-9: Specification calls out 2" x 6" beam baffles – Detail 2/A10.02 – Is there a specific o.c. spacing for the baffles?. **Response:** ACT-9 baffles are 1'-0" apart centerline to centerline, typical. Refer to attached drawings.
- ADD 10-003** **Bidder Question:** ACT-7: Specification calls out 2' x 4' panels – Planostile Lay-in Reveal panels – Drawings on A10.62 show 2' x 2' panels – has a size been confirmed? **Response:** ACT-7 is 24in x 24in panels. Refer to attached specifications.
- ADD 10-004** **Bidder Question:** At the Auditorium, Elevations 1&2/A10.63 Indicate MDF Panels on the walls. Will these be factory or shop finished by others, or are we to carry field painting? If we are to carry field painting, is the intent to paint with 3 different colors? From the Section Detail of the panels, it appears they are screwed through the face into the blocking. Should we assume they are installed before painting and figure to cut in around each panel? **Response:** MDF panels in the Auditorium are to be factory primed and field painted after installation. The panels will be (3) different colors in a pattern to be determined in subsequent paint sketches.
- ADD 10-005** **Bidder Question:** Wall sections and window details show a wood apron below window sills. Detail 4/A7.41 does not show a wood apron. Detail 4/A7.41 would require wood window sills to be installed, and then trimmed out with L-Trim/taping. Please advise which is correct. **Response:** Refer to attached drawings for a revised typical interior window sill detail to be applicable for all interior window sills to include a hardwood trim apron.
- ADD 10-006** **Bidder Question:** Can existing asphalt be reclaimed and reused on-site as subbase gravel? **Response:** Specification Section 31 00 00 – Earthwork permits the use of the reclaimed material if meets the indicated requirements with the exception that crushed concrete is not allowed for use as Dense Graded Crushed Stone for subbase.
- ADD 10-007** **Bidder Question:** Previous Addenda clarified there will be no liquidated damages assessed by the city of Central Falls. Can you also confirm the City will not be assessing any actual or consequential damages as may be applicable? **Response:** Actual/consequential damages would be assessed/sought in the event of a breach by GC. The City will not make the confirmation as requested.

ADD 10-008 **Bidder Question:** Please confirm which detail is to be followed for asphalt paving at Lonsdale, Higginson, site drive and parking areas. BCP detail shown on C6.2 or Bit. Asphalt Paving detail 3/L3.01. Also, if C6.2 is to be followed, please confirm that the geotextile fabric is required. This fabric is not required to meet the site capping requirements. **Response:** Asphalt paving shall be in accordance with the Bituminous Concrete Pavement Sections detail on Sheet C6.2. The depth of standard duty top course has been revised, refer to attached drawings, to meet the minimum capping requirements. As stated in the detail, heavy duty is to be used for city/state roadways and standard duty is to be used for access roads and parking areas. Geotextile shall be provided in accordance with the detail on C6.2. The minimum capping requirements detail on C6.5 are intended to provide the minimum requirements for compliance with the RAWP. It is not intended to supersede details which requirement greater requirements. The minimum capping requirements detail has been revised in attached drawings to remove geotextile fabric from paved areas.

ADD 10-009 **Bidder Question:** Please confirm that the G.C. is only responsible for the restoration of the track surface after drainage lines are installed and not the synthetic turf field and associated drainage per note 7 on C2.0. PH0.02 & C1.0 call for Loam and Seed Restoration of both track and the synthetic turf field. Please confirm section 32 18 25 is to be used for the resurfacing of the track. Please also provide desired track line/lane layout. **Response:** The Contractor shall not be responsible for installation of synthetic turf or track surfaces. The areas disturbed during installation of drainage features through the existing track and turf field shall be graded and restored with loam and seed. Note 7 on Sheet C2.0 has been deleted in Addendum 10. Sheets C1.0 and PH0.02 identify the anticipated limits of turf/track removal and loam/seed restoration within the footprint of the existing turf field and track. These have been revised in attached drawings. No reconstruction of the track and synthetic field is included under the base bid of this project. Disturbed areas are to receive loam and seed per the Civil plans. Section 32 18 25 is included for the javelin runway and is not intended for any track restoration under this bid contract as such, no track lane layouts or linework will be submitted.

ADD 10-010 **Bidder Question:** Please provide more information on items indicated SWL on C5.1. Detail of structure or swale? **Response:** Revisions to the stormwater management system are provided in the attached drawings.

ADD 10-011 **Bidder Question:** There does not appear to be anywhere on the Landscape or LP drawings that indicates the extent of loam and seed for this project. Please provide more information on the extent of loam and seed for the base bid and any alternates that may be affected. **Response:** All areas disturbed during construction shall be restored with loam and seed unless noted otherwise on the plans (ie. Hardscape, structure, stone, mulch, plantings etc). Loam and seed is intended to be installed on any surface on site not designated as another surfacing type to the limits of work.

SPECIFICATIONS:

ADD 10-012 Document 00 01 10 "Table of Contents"; REMOVE in entirety and REPLACE with new Document 00 01 10, dated February 9, 2024, Addendum #10.

ADD 10-013 Section 08 43 13 "Aluminum-Framed Storefronts"; Article 2.13, Paragraph A, subparagraph 1, DELETE the series "WV-430" and REPLACE with the series "325X" as follows:

1. Specified Manufacturer/model: EFCO Series "325X", Thermally broken, Outswing casement window.

ADD 10-014 Section 09 51 00 "Acoustical Ceilings"; Article 2.4, Paragraph G, subparagraph 1, DELETE the size "24 by 48 inch" and REPLACE with the size "24 inches by 24 inches" as follows:

1. Panel size: 24 inches by 24 inches.

ADD 10-015 Section 33 40 00 "Storm Drainage Systems"; REMOVE in entirety and REPLACE with new Section 33 40 00, dated February 9, 2024, Addendum #10.

DRAWINGS:

ADD 10-016 DRAWING SHEET LIST VOLUME 1 OF 2

ADD 10-017 PH0.01 – PHASING DIAGRAM SITE, PHASE I PLAN

ADD 10-018 PH0.02 – PHASING DIAGRAM SITE, PHASE II PLAN

ADD 10-019 PH0.03 – PHASING DIAGRAM SITE, PHASE III PLAN

ADD 10-020 GD1.51 – CIVIL + LANDSCAPE NARRATIVES AND SUPPORTING DOCUMENTS

ADD 10-021	GD1.52 – CIVIL + LANDSCAPE NARRATIVES AND SUPPORTING DOCUMENTS
ADD 10-022	C1.0 EXISTING CONDITIONS AND DEMOLITION PLAN
ADD 10-023	C2.0 – SITE IMPROVEMENTS PLAN
ADD 10-024	C3.0 GRADING PLAN
ADD 10-025	C4.0 UTILITY PLAN
ADD 10-026	C5.1 – DRAINAGE PLAN
ADD 10-027	C5.2 – DRAINAGE PLAN: DRAINAGE STRUCTURES AND PIPE TABLES
ADD 10-028	C6.1 – SITE DETAILS
ADD 10-029	C6.2 – SITE DETAILS
ADD 10-030	C6.3– SITE DETAILS
ADD 10-031	C6.4 – SITE DETAILS
ADD 10-032	C6.5 – SITE DETAILS
ADD 10-033	C6.6 – SITE DETAILS
ADD 10-034	C6.7 – SITE DETAILS
ADD 10-035	A10.02 – STUDENT COMMONS ENLARGED RCP
ADD 10-036	A7.41 – TYPICAL INTERIOR DETAILS

ATTACHMENTS:




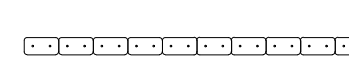
ADD 10-037	SECTION 00 01 00 - TABLE OF CONTENTS
ADD 10-038	SECTION 33 40 00 – STORM DRAINAGE SYSTEMS
ADD 10-039	DRAFT SESC Plan
ADD 10-040	Foundation Analysis Report

PHASING NOTES:

PHASE I: BASKETBALL COURTS AND ASSOCIATED PEDESTRIAN SHALL BE SUBSTANTIALLY COMPLETE PRIOR TO DEMOLITION OF EXISTING BASKETBALL COURTS.

1. BUILD NEW BASKETBALL COURTS, ADJACENT WALKWAYS, AND SITE ACCESS ROAD
2. PROVIDE TEMPORARY GRADING AND DRAINAGE IN AREAS ADJACENT TO THE WORK
3. PROVIDE TEMPORARY PEDESTRIAN ACCESS TO BASKETBALL COURTS AND ATHLETIC FIELD

LEGEND

-  ACTIVE PHASING CONSTRUCTION AREA
-  AREA OUTSIDE OF CONSTRUCTION PHASING
-  ASPHALT
-  EROSION CONTROL



526 Boston Post Rd Weyand, MA
508.358.0790 www.ai3architects.com



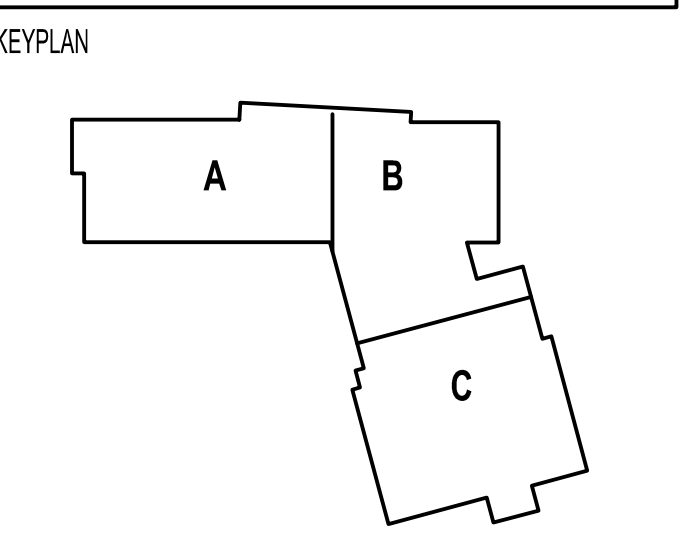
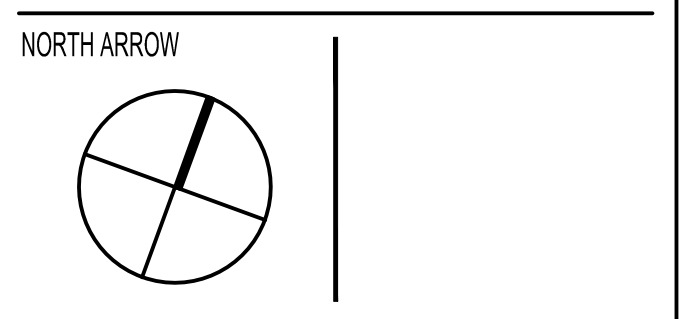
The Vertex Companies, LLC
400 Libbey Parkway
Weymouth, MA 02189
PHONE 781.952.6000
www.vertexeng.com



CENTRAL FALLS HIGH SCHOOL
10 HIGGINSON AVE, CENTRAL FALLS, RI
KEYNOTE LEGEND:

ADD-10 ADDENDUM #10 02.09.2024

100% CONSTRUCTION DOCUMENTS



DRAWING NAME:
**PHASING DIAGRAM
SITE, PHASE I PLAN**




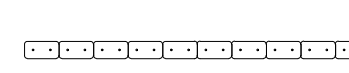
DRAWN BY: SMC
REVIEWED BY: GBD

SCALE: AS NOTED | DRAWING NUMBER:
JOB NO.: 77997 | **PH0.01**
DATE: OCTOBER 13, 2023

PHASING NOTES:

1. REMOVE AND DISPOSE TRACK AND SYNTHETIC TURF FIELD WITHIN LIMITS SHOWN.
2. INSTALL BOX CULVERT AND ASSOCIATED DRAINAGE STRUCTURES FROM THE SWALE TO THE STRUCTURE NORTH OF THE TRACK.
3. INSTALL DRAINAGE PIPES AND STRUCTURES FROM ORCHARD STREET DRAINAGE SYSTEM TO STRUCTURE NORTH OF THE TRACK.
4. RESTORE DISTURBED AREAS OF THE TRACK AND SYNTHETIC TURF FIELD WITH LOAM AND SEED.
5. MAINTAIN TEMPORARY PEDESTRIAN AND EMERGENCY VEHICLE ACCESS TO BASKETBALL COURTS.
6. AT THE END OF PHASE II DOWNSTREAM COMPONENTS OF THE DRAINAGE SYSTEM SHALL BE IN PLACE TO RECEIVE FLOW FROM UPSTREAM DRAINAGE FEATURES TO BE INSTALLED IN PHASE III.

LEGEND

-  ACTIVE PHASING CONSTRUCTION AREA
-  AREA OUTSIDE OF CONSTRUCTION PHASING
-  ASPHALT
-  EROSION CONTROL



526 Boston Post Rd Weymouth, MA
508.358.0790 www.ai3architects.com



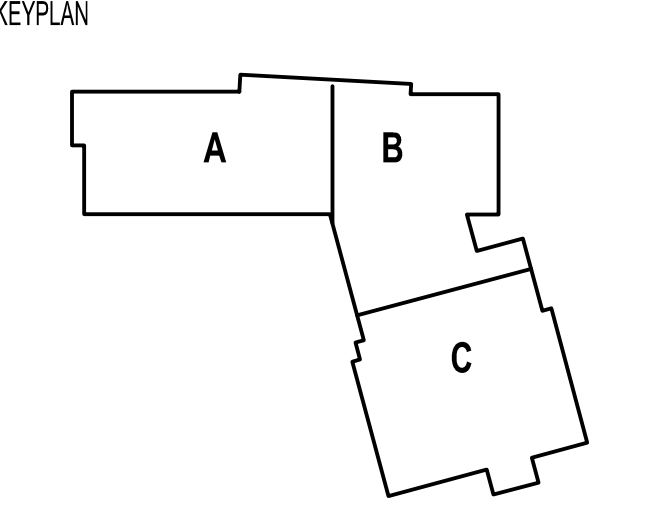
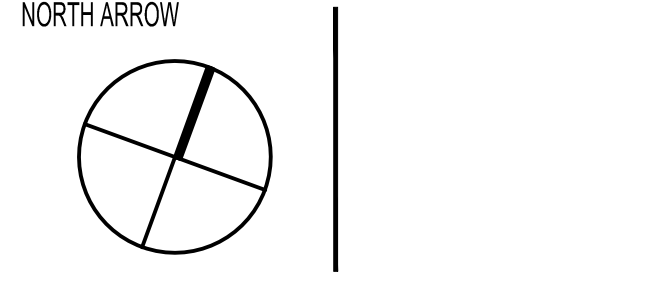
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KEYNOTE LEGEND:

ADD-10 ADDENDUM #10 02.09.2024

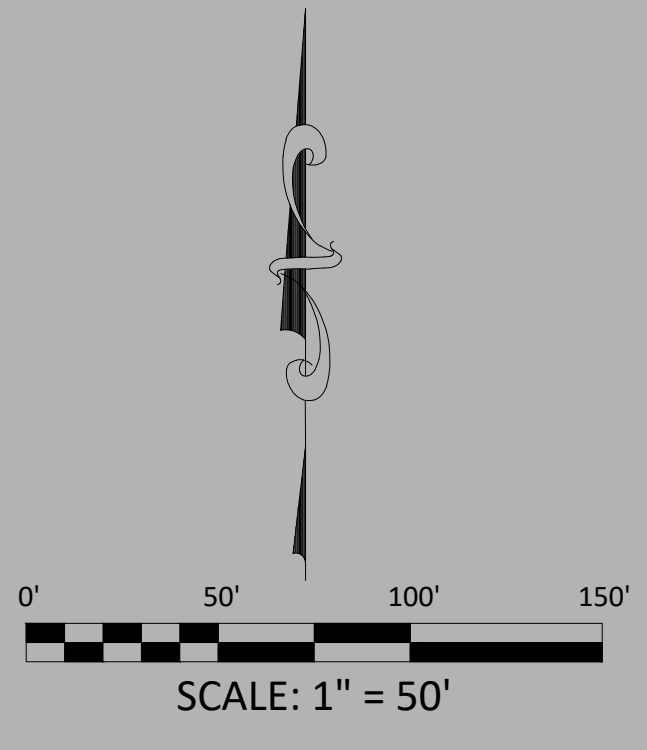
100% CONSTRUCTION DOCUMENTS



DRAWING NAME:
**PHASING DIAGRAM
SITE, PHASE II PLAN**

DRAWN BY: SMC
REVIEWED BY: GBD

SCALE: AS NOTED DRAWING NUMBER:
JOB NO.: 77997 PH0.02
DATE: OCTOBER 13, 2023



PHASING NOTES:




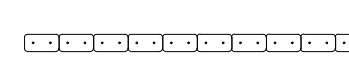
PHASE III: SUBSTANTIAL COMPLETION BY JUNE 30, 2025

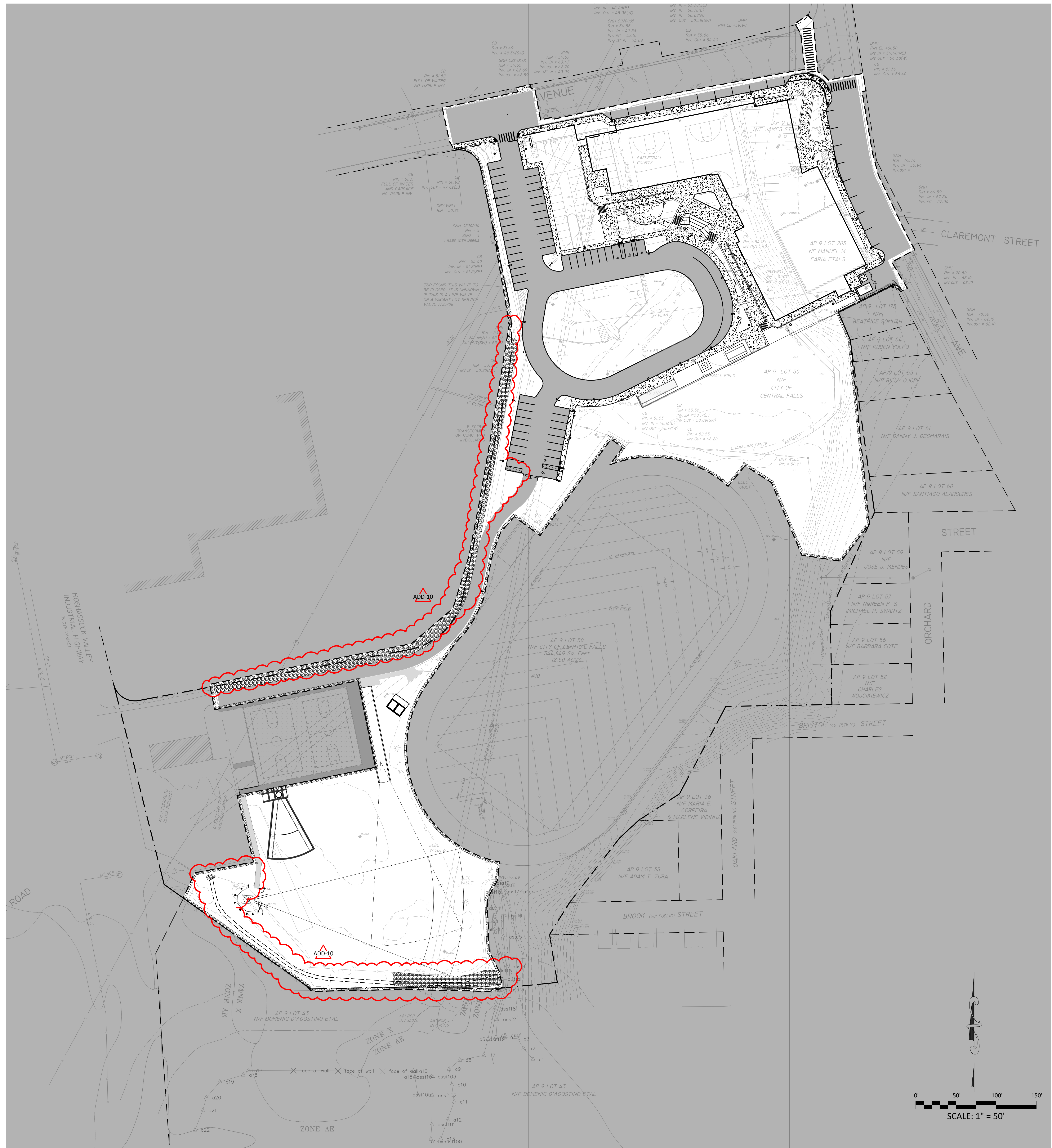
- DEMOLISH EXISTING STRUCTURES, BASKETBALL COURTS, AND SITE FEATURES.
- BUILD NEW HIGH SCHOOL, PARKING AREAS, WALKWAYS, DRAINAGE IMPROVEMENTS, AND ASSOCIATED SITE WORK.
- MAINTAIN TEMPORARY PEDESTRIAN AND EMERGENCY VEHICLE ACCESS TO BASKETBALL COURTS.

BID ALTERNATE NOTES:

ALTERNATE 6 - THROWING EVENTS: REFER TO CIVIL AND LANDSCAPE DRAWINGS REGARDING BASE BID VERSUS ALTERNATE.

LEGEND

-  ACTIVE PHASING CONSTRUCTION AREA
-  AREA OUTSIDE OF CONSTRUCTION PHASING
-  ASPHALT
-  EROSION CONTROL



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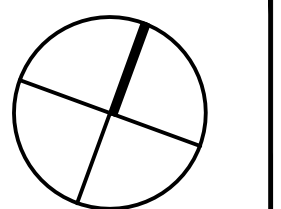


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10 HIGGINSON AVE, CENTRAL FALLS, RI
KEYNOTE LEGEND:

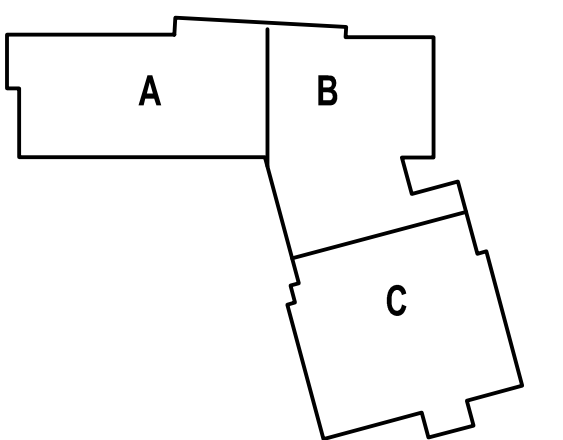
ADD-10 ADDENDUM #10 02.09.2024

100% CONSTRUCTION DOCUMENTS

NORTH ARROW



KEYPLAN



DRAWING NAME:

PHASING DIAGRAM
SITE, PHASE III PLAN

DRAWN BY: SMC

REVIEWED BY: GBD

SCALE: AS NOTED DRAWING NUMBER:

JOB NO.: 77977 PH0.03

DATE: OCTOBER 13, 2023

WE 3.0 : IRRIGATION & EXTERIOR WATER BUDGET/USE REDUCTION

- NARRATIVE: THERE WILL BE NO PERMANENT IRRIGATION ON THIS PROJECT.
- CONSTRUCTION REQUIREMENTS:
 - IF IRRIGATION SYSTEMS ARE INCLUDED IN THE PROJECT, PROVIDE PROOF OF PURCHASE, INSTALLATION, PICTURES, APPROVED SUBMITTALS, AND OTHER SUPPORTING DOCUMENTS THAT ALIGN WITH THE WATER REDUCTION REQUIREMENTS.
 - IF A PERMANENT IRRIGATION SYSTEM IS NOT INSTALLED, A LETTER WILL BE PROVIDED CONFIRMING COMPLIANCE WITH THE DESIGN DOCUMENTS AND EXPLAINING ANY CHANGES THAT OCCURRED DURING CONSTRUCTION.

WE 4.1 : REDUCE POTABLE WATER USE FOR NON-RECREATIONAL LANDSCAPE AREAS

- NARRATIVE: IRRIGATION SYSTEMS ARE NOT PROVIDED ON THIS PROJECT.
- PLEASE SEE THE NARRATIVE ABOVE FOR THE ACTION STEPS THAT WILL BE TAKEN SHOULD AN IRRIGATION SYSTEM BE ADDED IN THE VALUE ENGINEERING PROCESS.

WE 5.1 : REDUCE POTABLE WATER USE FOR RECREATIONAL LANDSCAPE AREAS

- NARRATIVE: IRRIGATION SYSTEMS ARE NOT PROVIDED ON THIS PROJECT.
- PLEASE SEE THE NARRATIVE ABOVE FOR THE ACTION STEPS THAT WILL BE TAKEN SHOULD AN IRRIGATION SYSTEM BE ADDED IN THE VALUE ENGINEERING PROCESS.

WE 6.0 : IRRIGATION SYSTEMS COMMISSIONING

- NARRATIVE: IRRIGATION SYSTEMS ARE NOT PROVIDED ON THIS PROJECT.
- SHOULD IRRIGATION SYSTEM BE IMPLEMENTED THROUGH A VALUE ENGINEERING PROCESS, THE IRRIGATION CONSULTANT WILL BE ENGAGED TO PROVIDE AN IRRIGATION COMMISSIONING PLAN WHICH INCLUDES ITEMS LISTED IN THE IMPLEMENTATION SECTION OF THE CREDIT AS WELL AS THE PARTIES WHO WILL BE RESPONSIBLE FOR THE COMMISSIONING, AND WHEN IT WILL OCCUR.

- CONSTRUCTION REQUIREMENTS: PROVIDE FINAL COMMISSIONING REPORT.

SS 1.0 : SITE SELECTION

- NARRATIVE: THE SITE INVESTIGATIONS DONE ON THE PROPERTY HAVE BEEN IN COMPLIANCE WITH THE RHODE ISLAND SCHOOL SITING REGULATIONS. A PHASE I ESA HAS BEEN COMPLETED FOR THE SITE. THE PHASE I ESA WAS PERFORMED IN ACCORDANCE WITH THE ASTM E1527-13 GUIDELINES AND THE U.S. EPA'S ALL APPROPRIATE INQUIRIES (AAI) RULE UNDER THE CERCLA, 40 CFR § 312 (2022). POTENTIAL CONCERNS ARE IDENTIFIED AND EVALUATED IN THAT REPORT. THE PHASE I ESA SCOPE INCLUDED A REVIEW OF HISTORICAL AND REGULATORY RECORDS READILY AVAILABLE FROM FEDERAL, STATE, AND LOCAL AGENCIES CONCERNING THE SITE AND NEARBY PROPERTIES, A SITE RECONNAISSANCE, A VAPOR ENCROACHMENT SCREEN VIA ASTM 32600-15, AN INTERVIEW WITH LOCAL OFFICIALS, AN INTERVIEW WITH THE CURRENT PROPERTY OWNER, SOIL BORING ADVANCEMENT AND MONITORING WELL INSTALLATIONS.
- THE REPORT CONCLUDED THAT THERE EXISTS A RECOGNIZED ENVIRONMENTAL CONDITION (REC) FOR SUSPECT FILLING ACTIVITIES IN CONNECTION TO THE SITE.

AS A RESULT OF THE FINDINGS OF THE PHASE I ESA, A LIMITED SUBSURFACE INVESTIGATION WAS PERFORMED TO EVALUATE SUBSURFACE CONDITIONS.

AS A PART OF THE LIMITED SUBSURFACE INVESTIGATION, BORINGS AND GROUNDWATER MONITORING WELLS WERE COMPLETED WITHIN THE PLANNED REDEVELOPMENT FOOTPRINT OF THE SITE. RESULTS OF SOIL SAMPLE ANALYSIS INDICATE THE PRESENCE OF SEVERAL SVOCs, METALS, AND TPH IN EXCESS OF THE APPLICABLE RIDEW METHOD 1 RESIDENTIAL DIRECT EXPOSURE CRITERIA (R-DEC). LABORATORY ANALYTICAL RESULTS FOR ALL GROUNDWATER SAMPLES ANALYZED DID NOT INDICATE THE PRESENCE OF ANY CONTAMINANTS OF CONCERN IN EXCESS OF LABORATORY DETECTION LIMITS.

SS 2.1 : ENVIRONMENTALLY SENSITIVE LAND

- NARRATIVE: THE NEW SCHOOL IS PROPOSED ON LAND THAT HAS BEEN PREVIOUSLY DEVELOPED.
- THE MAJORITY OF THE PROJECT SITE FALLS WITHIN THE FEMA ZONE X, AND THE SOUTHEASTERN AND SOUTHWESTERN CORNERS OF THE SITE FALL INTO THE FEMA ZONE AE. THE PROJECT SITE FALLS ENTIRELY OUTSIDE OF THE NATURAL HERITAGE AREA AS DEFINED BY RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL RESOURCE MAP.
- THE NEW SCHOOL AND ANY OF THE SUPPORTING BUILDINGS INCLUDED WITH THIS PROJECT ARE:
 - NOT LOCATED ON LAND THAT IS WITHIN 100 FEET OF ANY IDENTIFIED WETLAND AS DEFINED BY 40 CFR PARTS 230-233 AND PART 22.
 - NOT WITHIN THE 200 FOOT RIVERBANK ASSOCIATED WITH THE WETLAND AREAS LOCATED IN THE SOUTHERN PORTION OF THE SITE.
 - NOT LOCATED ON PREVIOUSLY UNDEVELOPED LAND THAT IS WITHIN 50 FEET OF A WATER BODY THAT SUPPORTS OR COULD SUPPORT AQUATIC LIFE, RECREATION, OR INDUSTRIAL USE CONSISTENT WITH THE TERMINOLOGY OF THE CLEAN WATER ACT.

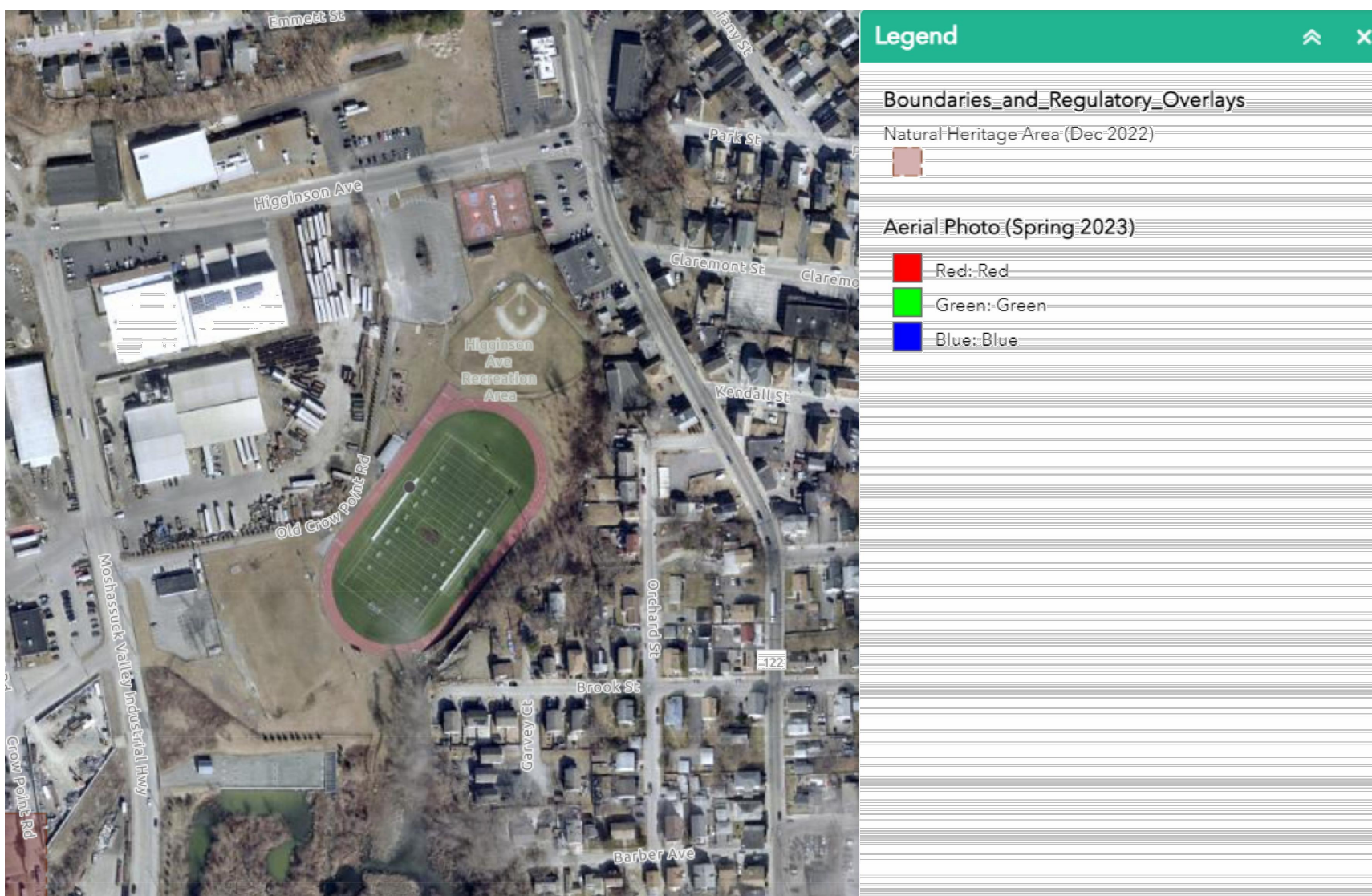
REFER TO CONSTRUCTION DOCUMENTS EXISTING CONDITIONS AND DEMOLITION PLANS C1.0 AND C1.0A FOR THE SITE SURVEY.

- DIAGRAM:

HISTORIC AERIAL

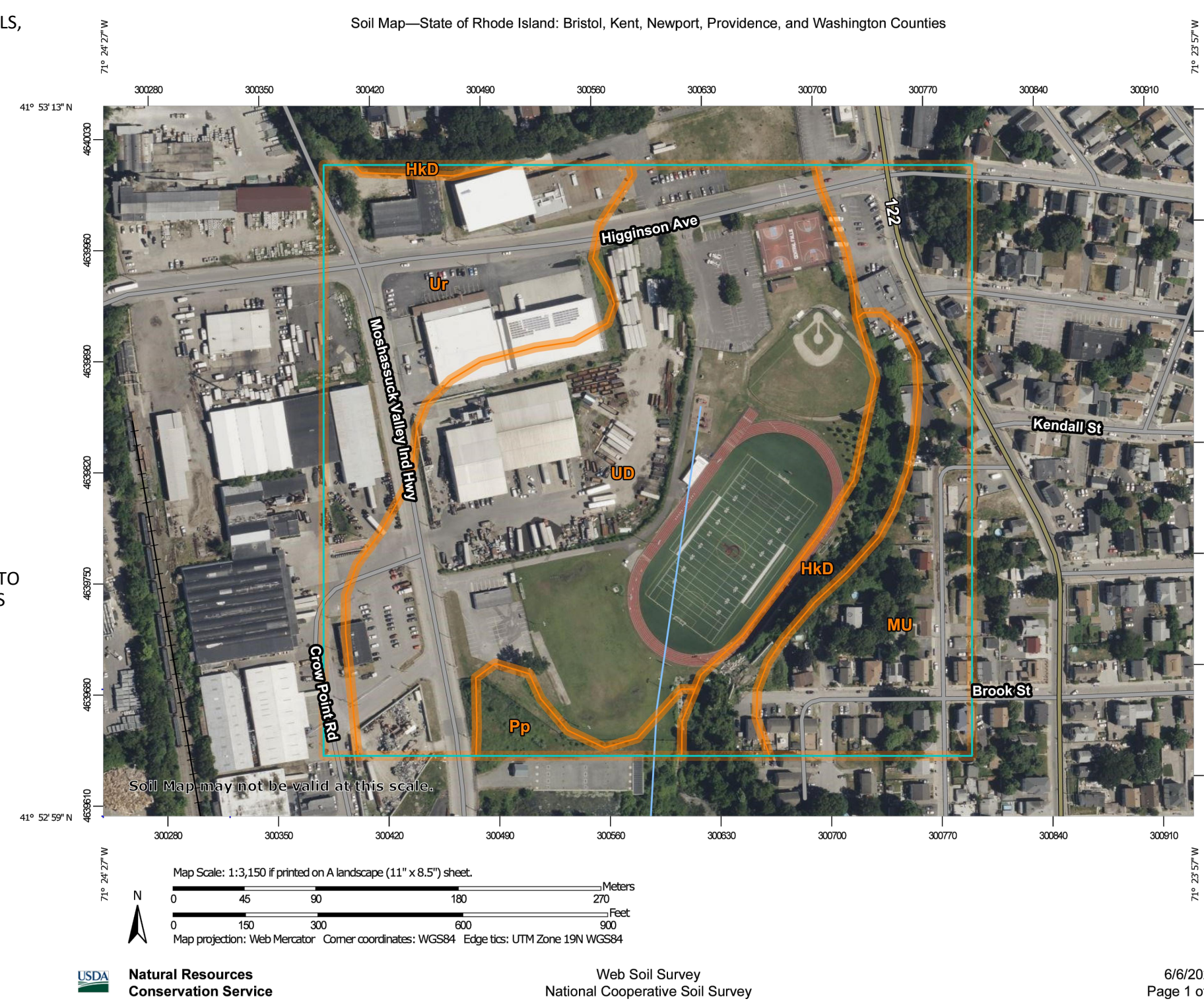


NATURAL HERITAGE AREA



SS 2.1 : ENVIRONMENTALLY SENSITIVE LAND (CONTINUED)

NRCS SOIL SURVEY



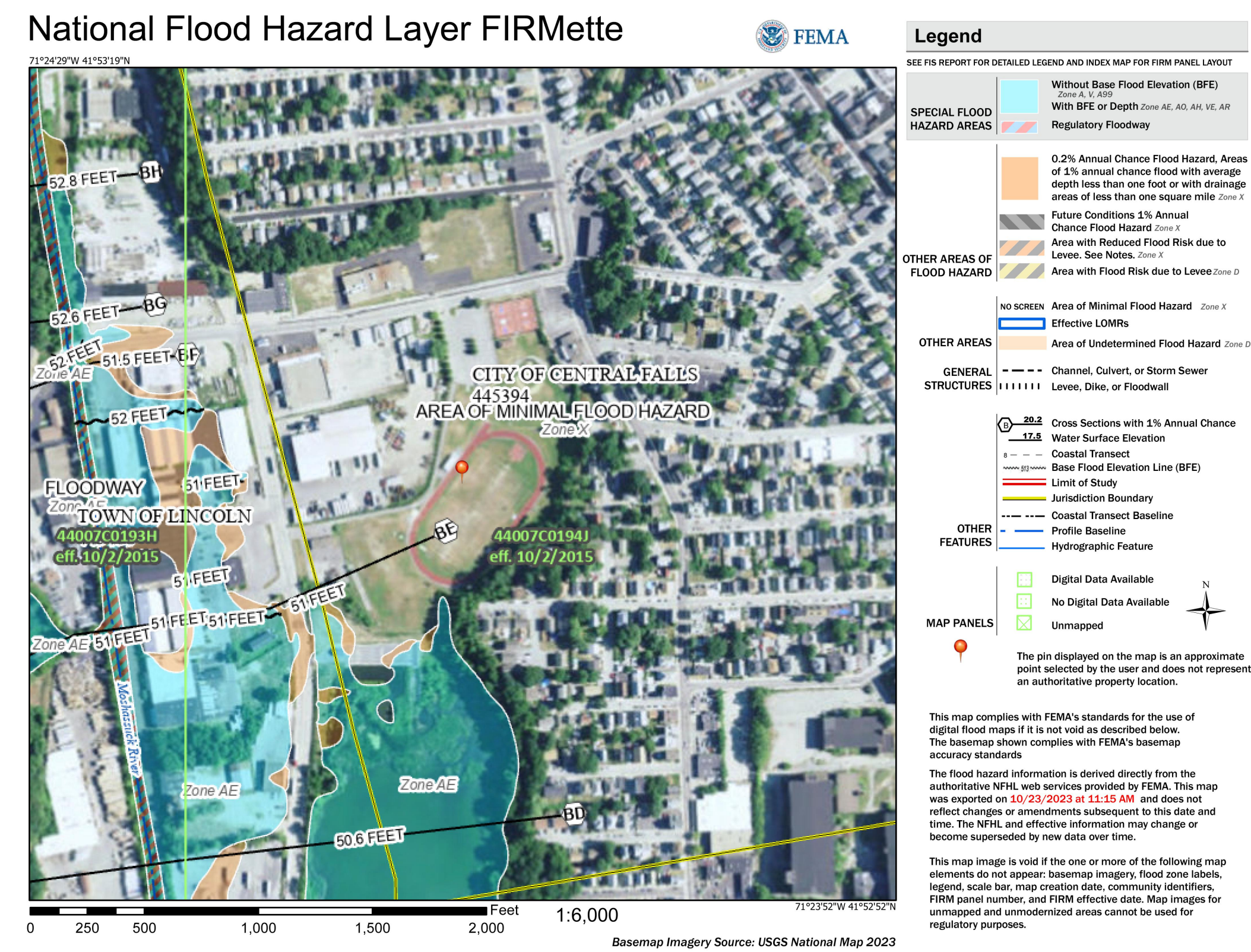
Soil Map—State of Rhode Island: Bristol, Kent, Newport, Providence, and Washington Counties

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
H&D	Heavy loamy sand, 15 to 25 percent slopes	2.5	6.0%
MJ	Marine-Urban land complex, 0 to 8 percent slopes	7.2	19.1%
Pp	Podoluck fine sandy loam	1.0	2.5%
UD	Udorthents-Urban land complex	19.7	52.1%
Ur	Urban land	7.5	19.7%
Totals for Area of Interest		37.9	100.0%

Natural Resources Conservation Service Web Soil Survey National Cooperative Soil Survey 6/9/2023 Page 1 of 3

FEMA FLOOD MAP



SS 3.1 : MINIMIZE SITE DISTURBANCE

- NARRATIVE: FLOOR AREA RATIO (FAR): PARKING QUANTITIES:

CALCULATIONS: FAR = TOTAL FLOOR AREA OF BUILDING/TOTAL FLOOR AREA OF THE BUILDING FOOTPRINT =

	REQUIRED	PROPOSED
STANDARD SPACES (9' X 18')	180*	54
ACCESSIBLE SPACES**	6	5
TOTAL SPACES	186	59

* REQUIRED NUMBER OF STANDARD SPACES BASED ON THE CENTRAL FALLS, RI CODE OF ORDINANCES, APPENDIX A - ZONING, ARTICLE VIII. - OFF-STREET PARKING AND LOADING, SECTION 801 - PARKING REQUIREMENTS AND AN ESTIMATED 900 STUDENTS.
 ** ADA REQUIREMENT FOR PARKING LOT 51 TO 75 TOTAL SPACES = 3 ACCESSIBLE PARKING SPACES; ADA REQUIREMENT FOR PARKING LOT 151 TO 200 TOTAL SPACES = 6 ACCESSIBLE PARKING SPACES

OPEN SPACE REQUIREMENT:

SS 4.1 : CONSTRUCTION SITE RUNOFF CONTROL AND SEDIMENTATION

- NARRATIVE: PROJECT DOCUMENTS WILL DEPICT EROSION AND SEDIMENT CONTROLS TO PREVENT THE MIGRATION OF SOIL DURING CONSTRUCTION. A SOIL EROSION AND SEDIMENT CONTROL (SESC) REPORT WILL BE PROVIDED TO THE CONTRACTOR AS AN ATTACHMENT TO THE SPECIFICATIONS WHICH IDENTIFIES SOIL EROSION AND SEDIMENT CONTROLS AND MAINTENANCE THROUGHOUT CONSTRUCTION AND UNTIL FINAL STABILIZATION HAS BEEN ACHIEVED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR UPDATING THE SESC, AS NEEDED.
- SPECIFICATIONS: REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL MEASURES ARE INCLUDED IN SPECIFICATION 31 25 00 - EROSION CONTROL AND THE SOIL EROSION AND SEDIMENT CONTROL (SESC) REPORT, WHICH IS PENDING PERMIT APPROVAL THROUGH RIDEW, WILL BE INCLUDED AS AN ATTACHMENT TO THE SPECIFICATIONS FOR USE BY THE CONTRACTOR.
- DRAWING REFERENCE: REFER TO CONSTRUCTION DOCUMENTS SHEET C0.1 FOR EROSION AND SEDIMENTATION CONTROL NOTES. REFER TO CONSTRUCTION DOCUMENTS SHEET C2.0 AND C2.0A FOR THE PROPOSED LOCATION OF EROSION AND SEDIMENT CONTROLS.
- CONSTRUCTION REQUIREMENTS: CONTRACTOR TO PROVIDE THE FOLLOWING ELEMENTS TO DOCUMENT COMPLIANCE WITH THIS CREDIT:
 - A COPY OF THE MARKED UP SESC (SOIL EROSION AND SEDIMENT CONTROL) PLAN UTILIZED IN THE FIELD IN PDF FORMAT.
 - A NARRATIVE ON COMPANY LETTERHEAD THAT DESCRIBES THE SESC ACTIVITIES IMPLEMENTED DURING CONSTRUCTION AND ANY CIRCUMSTANCES THAT OCCURRED.
 - A MINIMUM OF FIVE (5) PHOTOS WITH TIMESTAMP AND SHORT DESCRIPTION OF SESC MEASURES IMPLEMENTING THROUGHOUT THE DIFFERENT PHASES OF THE CONSTRUCTION PROCESS.

SS 5.1 : POST CONSTRUCTION STORMWATER MANAGEMENT

- NARRATIVE: A STORMWATER MANAGEMENT SYSTEM IS PROPOSED AT THE SITE AND WILL REDUCE OR MAINTAIN EXISTING PEAK RUNOFF DISCHARGE RATE FOR THE 1.2-INCH 10-YEAR AND 100-YEAR STORM EVENTS. BEST MANAGEMENT PRACTICES PROPOSED ON SITE ARE DESIGNED TO TREAT THE 1.2-INCH STORM PER RIDEW REQUIREMENTS. THE PEAK RUNOFF DISCHARGE RATE IS ALSO REDUCED FOR THE 1.2 INCH STORM EVENT.
- REFER TO CONSTRUCTION DOCUMENTS SHEET C3.0 FOR GRADING AROUND THE TRASH STORAGE AREAS. REFER TO CONSTRUCTION DOCUMENTS SHEET C6.4 FOR BMP DETAILS.
- SUMMARY CALCULATIONS: EXISTING IMPERVIOUSNESS = 28% PRE-DEVELOPMENT PEAK STORMWATER RUNOFF DISCHARGE RATE = NOT REQUIRED FOR REDEVELOPMENT PROJECT POST-DEVELOPMENT PEAK STORMWATER RUNOFF DISCHARGE RATE = NOT REQUIRED FOR REDEVELOPMENT PROJECT RESULTANT STORMWATER REDUCTION = NOT REQUIRED FOR REDEVELOPMENT PROJECT
- CONSTRUCTION REQUIREMENTS: CONTRACTOR TO PROVIDE PICTURES OF THE PRIMARY TRASH STORAGE AREAS SHOWING APPROPRIATE DRAINING FROM ADJOINING ROOFS, PAVEMENT DIVERTING STORMWATER RUNOFF, AND SCREEN OR WALL PREVENTING TRANSPORT OF TRASH. CONTRACTOR TO PROVIDE TIME STAMPED PICTURES WITH SHORT DESCRIPTION OF ALL IMPLEMENTED POST-CONSTRUCTION STORMWATER BEST MANAGEMENT PRACTICES (BMP'S).

DIAGRAM:

Table 1: Peak Flow Rate (CFS)

DESIGN POINTS	1.2-INCH	1-YEAR	10-YEAR	100-YEAR
DP-1 - Outfall to Moshassuck River:	0	1.42	9.26	27.37
Change	0	-1.42	-9.26	-27.37
DP-2 - Outfall to Moshassuck River:	2.78	8.23	16.50	36.41
Change	-1.00	-7.80	-21.11	-53.03
TOTAL NET DIFFERENCE	-1.78	-0.43	-4.61	-16.62

- CALCULATIONS:

Water Quality Volume Calculation Worksheet

This worksheet is designed to assist the project engineer with a determination of the required water quality treatment area. The worksheet leads the designer through redevelopment applicability first and then existing water requirements. This tool is intended to complement to the Redevelopment Criteria Guidance and the Water Quality Calculator and assist both the designer and the permit application reviewer towards successful results. Enter information into only the YELLOW Boxes.

Redevelopment Criteria Guidance
 Water Quality Goals "Stormwater Compensation Method"

Step 1 - Determine which office in OWR you are applying to: Application Guidance

Step 2 - Site Information

Value/Calculation	Units
Total Site Area (total area of project parcels)	12.49 acres
Total Jurisdictional Wetlands and/or floodplains within the above TSA	0.17 acres
Existing Impervious area within the Jurisdictional Wetlands	0.00 acres
Conservation Land within the TSA	0.00 acres
Site Size = (TSA - JW) - JW2 - CL	12.48 acres

Step 3 - Redevelopment Applicability

Value/Calculation	Units
Total Impervious Area (pre-construction)	0.04 acres
% Impervious (if < 80% - redevelopment standard 3.2.a applies)	0.48

REPEAT IF NECESSARY Steps 4, 5 and 6 for EACH Waterbody ID (RIVER-ID as found in the GIS Map Server)

Step 4 - Receiving waterbody information

Value/Calculation	Units
Watershed ID	PH000000000110
Watershed Name from GIS Map Server	
Name the sub-watershed (design point) contributing to this Waterbody ID	
Is this Waterbody Impaired/TMDL for any Phosphorus, Metals or Bacteria?	NO
Is this Waterbody Impaired for Nitrogen?	NO

Step 5 - Pre-Post Construction Conditions to the Waterbody

Value/Calculation	Units
Total Pre-Construction Impervious Surface to this Waterbody ID	5.28 acres
Total Disturbed Existing Impervious (DI)	3.33 acres
Total Post-Construction Impervious to this Waterbody ID	0.99 acres
Net Increased Impervious (NI)	1.71 acres

Step 6 - Infiltration and BMP information - Note: Increasing infiltration will help decrease stormwater treatment area for Metals, Bacteria and Phosphorus.

Value/Calculation	%	%
Let us propose to infiltrate this percentage WQ: to this WBD	0%	
Let us propose this number of BMP's	5	7

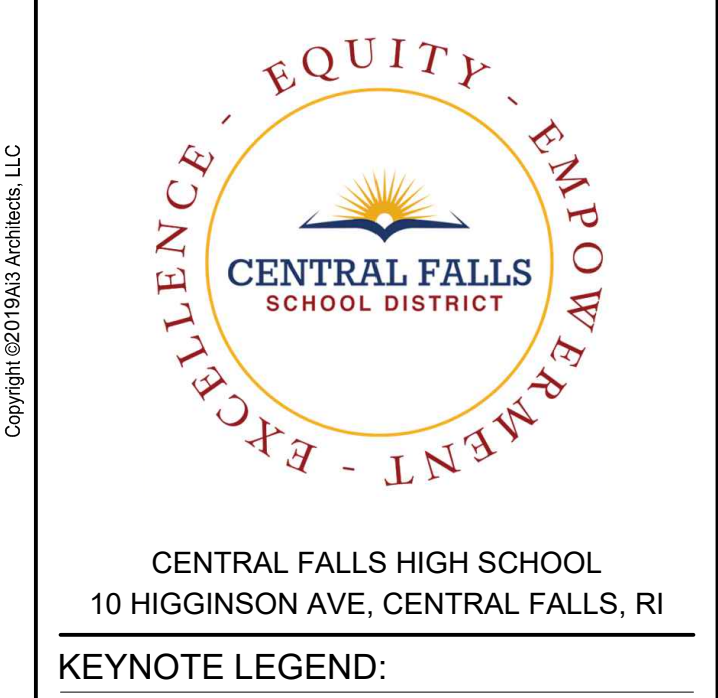
USCULES - Select the Large Number of the 2 numbers provided

Applicable Condition	Min Water Quality Treatment Area	Min Treatment w/ WQ considerations
No Impairment or TMDL - New Development		
No Impairment or TMDL - Redevelopment		
Only Phosphorus, Metals or Bacteria Impairment - New Development		
Only Phosphorus, Metals or Bacteria Impairment - Redevelopment	3.42	3.48
Nitrogen Impairment - New Development		
Nitrogen Impairment - Redevelopment		
REQUIRED STORMWATER TREATMENT AREA	3.5	acres

* Enter the name of the STP (both type and label) which has been designed to treat this particular Rev or Riv.



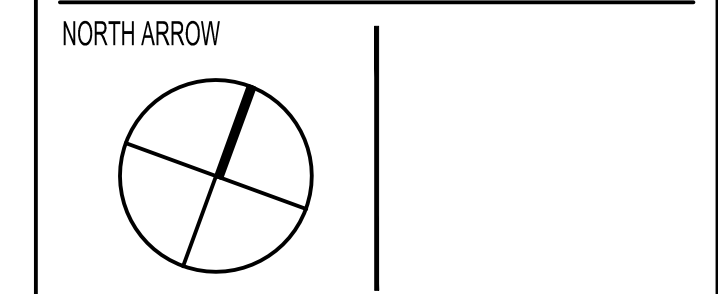
526 Boston Post Rd
 508.358.0790
 Weyland, MA
 www.a3architects.com



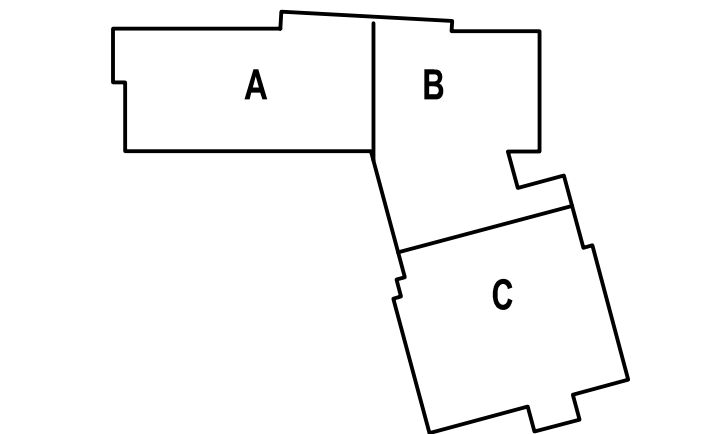
KEYNOTE LEGEND:

ADD-10 ADDENDUM #10 02.09.2024

100% CONSTRUCTION DOCUMENTS



KEYPLAN



DRAWING NAME:

CIVIL + LANDSCAPE NARRATIVES AND SUPPORTING DOCUMENTS

DRAWN BY: SMC

REVIEWED BY: GBD

SCALE: AS NOTED | DRAWING NUMBER:

JOB NO.: 77997

DATE: OCTOBER 13, 2023

GD1.51

SS 5.1 : POST CONSTRUCTION STORMWATER MANAGEMENT (CONTINUED)

• CALCULATIONS
NOTE: INFILTRATION REQUIREMENT IS WAIVED DUE TO THE PRESENCE OF FILL SOILS ON SITE.



Project: Central Falls High School
Project Number: 77997
Date: 2/9/2024
Computations By: SMC
Checked By: GBD

STORMWATER TREATMENT AREA

Moshassuck River:

Disturbed Impervious Area (DI)	153,767 SF
Net Increased Impervious (NI) (+ or -)	74,488 SF
Stormwater Treatment Area (STA) = Disturbed Impervious (DI) + New Impervious (NI) Net	STA = 153,767 SF + 74,488 SF
	STA = 228,255 SF
Proposed High School Roof: 41,103 SF	
Public Right-of-Way: 9,147 SF	
Adjusted STA = 178,005 SF	

Impervious Area Treated	Subcat
PDA-1A	PDA-1A
PDA-1B	PDA-1B
PDA-1C	PDA-1C
PDA-1D	PDA-1D
PDA-1E	PDA-1E
PDA-1F-E*	PDA-1F: TURF-E
PDA-1F-W*	PDA-1F: TURF-W
PDA-1G	PDA-1G
PDA-1H	PDA-1H
PDA-1I	PDA-1I
Total:	240,611 SF

ADD-10



Project: Central Falls High School
Project Number: 77997
Date: 12/13/2023
Computations By: SMC
Checked By: GBD

TMDL INFILTRATION REQUIREMENT

Moshassuck River:

Net Increased Impervious (NI) (+ or -)	0,626 SF
Water Quality Volume (WQV) of Nil	5,886 CF

Volumes Infiltrated

UIC-1	2,439 CF
UIC-2	825 CF
BIO-1	807 CF
BIO-2	1,914 CF
Total:	5,985 CF

Infiltration of 5,985 CF of any new or increased impervious surface is required per the RSDISM Appendix H.3: Water Quality Goals and Pollutant Loading Analysis Guidance for Discharges to Impaired Waters: "Stormwater Compensation Method."
<http://dem.nh.gov/sites/g/files/rlgbur861/files/programs/bemwin/water/permits/swcoord/pdf/swgoals.pdf>

ADD-10

REMOVED FROM GREEN DRAWINGS



Project: Central Falls High School
Project Number: 77997
Date: 2/9/2024
Computations By: SMC
Checked By: GBD

Existing Imperviousness

Surface Type	Runoff Coefficient	Area (SF)	Impervious Area
Synthetic Turf	0.2	110,806	22,161
Vegetation, Average	0.2	257,604	51,521
Pavement	0.75	140,612	105,459
Roof	0.95	11,812	11,221
Total:		520,834	190,362
Imperviousness:			38%

ADD-10

Proposed Imperviousness

Surface Type	Runoff Coefficient	Area (SF)	Impervious Area
Synthetic Turf	0.2	110,806	22,161
Vegetation, Average	0.2	211,414	42,283
Pavement	0.75	166,833	125,125
Roof	0.95	41,103	39,048
Total:		530,156	238,617
Imperviousness:			42%

SS 10.1 : REDUCE HEAT ISLANDS - LANDSCAPING/SITES

• NARRATIVE:
THE PROJECT TEAM HAS SPECIFIED THE HARDSCAPE SURFACES WITH AN SRI VALUE OF 0.29.

SPECIFICATIONS:
32 00 00 BITUMINOUS CONCRETE PAVEMENT
32 13 13 PEDESTRIAN WALKS AND PLAZAS: BROOM FINISH CONCRETE
32 18 24 COURT SURFACES: COLORED ACRYLIC PAINT
32 18 25 TRACK AND FIELD EVENTS: SYNTHETIC LATEX BASED TRACK SURFACING

• CONSTRUCTION REQUIREMENTS:
PROVIDE MANUFACTURER'S CUT SHEET FOR ALL ARTIFICIAL TURF AND SPORTS COURTS PRODUCTS THAT SHOW THE SRI VALUE.

SITE HARDSCAPE CALCULATIONS	SRI VALUE	AREA
PARKING AND ACCESS DRIVES	0	45,477 SQ.FT.
PEDESTRIAN WALKS AND PLAZAS	30	33,280 SQ.FT.
COURT SURFACES	62	12,793 SQ.FT.
TRACK AND FIELD EVENTS	36	7,635 SQ.FT.

SS 13.1 : SCHOOL GARDENS

• NARRATIVE:
SCHOOL GARDENS ARE NOT INCLUDED IN THE PROJECT WITH THE EXCEPTION OF 25 RAISED BEDS ON A ROOFTOP CLASSROOM AND OUTDOOR SPACE OUTSIDE OF A FREIGHT FARM. THESE ITEMS ARE INCLUDED AS ADD ALTERNATES TO THE PROJECT.

SS 14.1 : USE LOCALLY NATIVE PLANTS FOR LANDSCAPE

• NARRATIVE:
THE CURRENT LANDSCAPE PLAN EXCEEDS THE 80% REQUIREMENT FOR TREES SHRUBS AND GROUND COVERS. THE PLANT PALETTE WAS SPECIFICALLY SELECTED TO UTILIZE A MAJORITY OF PLANTS NATIVE TO RHODE ISLAND. PLANT LISTS CAN BE FOUND ON SHEET LP1.01 THROUGH LP1.23. INDIVIDUAL PLANTING PLANS INCLUDING EXISTING TREES TO REMAIN CAN BE FOUND ON SHEETS LP1.01 THROUGH LP1.23.

• CALCULATIONS:

TREES:	TOTAL = 203	NATIVE = 80	PERCENT NATIVE = 39.4%
SHRUBS:	TOTAL = 142	NATIVE = 95	PERCENT NATIVE = 66.9%
BIORETENTION:	TOTAL = 11,579 SF	NATIVE = 11,579 SF	PERCENT NATIVE = 100%

SS 15.0 : SITE AND BUILDING BEST PRACTICES TRAVERSE

• NARRATIVE:
SS 15.0.2: THE BUILDING CREATES A PROTECTIVE BARRIER FROM PREVAILING WINTER WINDS FOR A PORTION OF THE SITE. THE MAJORITY OF THE PARKING LOTS AND DRIVES ARE TO THE WEST ALLOWING FOR EXHAUST TO MOVE AWAY FROM THE BUILDING.

SS 15.0.3: THE SITE DESIGN UTILIZES THE EXISTING TOPOGRAPHY TO PROTECT FROM NOISE OF THE MAIN ROAD AND PROVIDE SHELTER FROM EXTREME WEATHER. WE ARE ALSO UTILIZING LANDFORM AND PLANTING TO PROVIDE PLACES OF REFUGE FROM EXTREME WEATHER.

SS 15.0.4: THERE ARE CURRENTLY HEDGE ROWS OF NATIVE EVERGREEN TREES ALONG THE WEST PROPERTY LINE TO PROTECT FROM WINTER WINDS. THERE ARE DECIDUOUS TREES THAT PROVIDE WARM WEATHER SHADING AND SOLAR GAIN IN THE COOLER SEASONS.

EQ 3.0 : OUTDOOR MOISTURE MANAGEMENT

• NARRATIVE:
THE SURFACES AROUND THE BUILDING HAVE BEEN GRADED TO SLOPE AWAY FROM THE BUILDING.

• DRAWING REFERENCE
REFER TO CONTRACT DOCUMENTS SHEET C3.0 FOR PROPOSED GRADING THROUGHOUT THE SITE.



526 Boston Post Rd Weymouth, MA 02189
508.358.0790 www.ai3architects.com



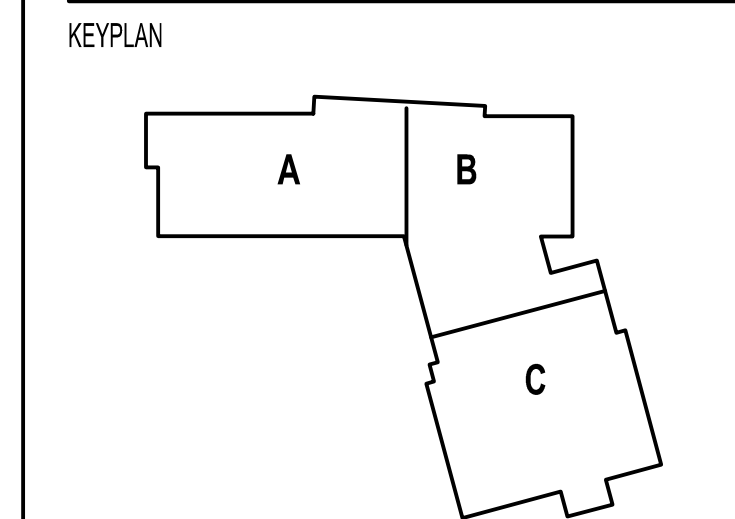
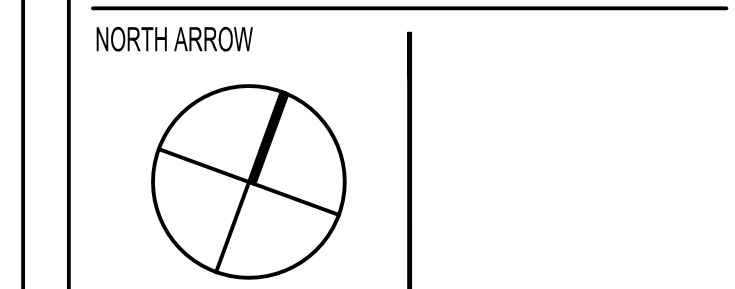
The Vertex Companies, LLC
400 Libbey Parkway
Weymouth, MA 02189
PHONE 781.952.6000
www.vertexeng.com



CENTRAL FALLS HIGH SCHOOL
10 HIGGINSON AVE, CENTRAL FALLS, RI
KEYNOTE LEGEND:

ADD-10 ADDENDUM #10 02.09.2024

100% CONSTRUCTION DOCUMENTS



DRAWING NAME:
CIVIL + LANDSCAPE NARRATIVES AND SUPPORTING DOCUMENTS

DRAWN BY: SMC
REVIEWED BY: GBD

SCALE: AS NOTED | DRAWING NUMBER:
JOB NO.: 77997 | **GD1.52**
DATE: OCTOBER 13, 2023

REFERENCE

- 1. EXISTING CONDITION AND PROPERTY INFORMATION FROM THE PLAN TITLED, "EXISTING CONDITIONS PLAN", PREPARED BY CANAVAN & ASSOCIATES, DATED DECEMBER 8, 2021 AND SITE SURVEY PREPARED BY INSITE IN DECEMBER 2023.

GENERAL NOTES

- 1. THE STATE OF RHODE ISLAND STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION 2022 EDITION, OR LATEST REVISION, AND THE RHODE ISLAND STANDARD DETAILS ARE MADE A PART HEREOF AS FULLY AND COMPLETELY AS IF ATTACHED HERETO. THE 2022 EDITION OF THE STANDARD SPECIFICATIONS MAY BE OBTAINED AT THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION.
2. THE CONTRACTOR SHALL MAKE ALL NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN ALL NECESSARY CONSTRUCTION PERMITS. PAY ALL FEES AND POST ALL BONDS ASSOCIATED WITH THE SAME, AND COORDINATE WITH THE OWNER AND THE ENGINEER. THE CONTRACTOR IS REQUIRED TO FILE ANY DOCUMENTS REQUIRED BY RIDGES PERMIT OR RIDOT PHYSICAL ALTERATION PERMIT APPLICABLE TO THE SITE.
3. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR JOB SITE SAFETY. THE CONTRACTOR SHALL PROVIDE TEMPORARY FENCING AND/OR BARRIERS AROUND ALL OPEN EXCAVATED AREAS, AND CONDUCT ALL WORK IN ACCORDANCE WITH OSHA STANDARDS AND CITY OF CENTRAL FALLS REQUIREMENTS.
4. IF ANY DEVIATION OR ALTERATION OF THE WORK PROPOSED ON THESE DRAWINGS IS REQUIRED, THE CONTRACTOR SHALL IMMEDIATELY CONTACT AND COORDINATE WITH THE ARCHITECT OR OWNER'S REPRESENTATIVE.
5. ANY AREA OUTSIDE OF THE LIMIT OF WORK THAT IS DISTURBED SHALL BE RESTORED TO ITS ORIGINAL CONDITION AT NO COST TO THE OWNER.
6. ALL EXISTING CONDITIONS SHOWN SHALL BE CONSIDERED APPROXIMATE AND ARE BASED ON THE BEST INFORMATION AVAILABLE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THAT THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS DO NOT CONFLICT WITH ANY KNOWN EXISTING OR OTHER PROPOSED IMPROVEMENTS. IF ANY CONFLICTS ARE DISCOVERED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT, ENGINEER, OR OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION OF ANY PORTION OF THE SITE WORK WHICH WOULD BE AFFECTED. NO FIELD ADJUSTMENTS IN THE LOCATION OF SITE ELEMENTS SHALL BE MADE WITHOUT THE ARCHITECT, ENGINEER, OR OWNER'S REPRESENTATIVE APPROVAL.
7. ALL UTILITIES (LOCATION AND ELEVATION) SHOWN SHALL BE CONSIDERED APPROXIMATE ONLY. THE CONTRACTOR MUST CONTACT THE APPROPRIATE PRIVATE UTILITY COMPANIES AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK BEING COMPLETED. THE CONTRACTOR IS HEREBY NOTIFIED THAT SOME PUBLIC AND PRIVATE UTILITY COMPANIES ARE NOT PART OF "DIGSAFE" AND MAY HAVE ADDITIONAL NOTIFICATION REQUIREMENTS.
8. ANY WORK AND MATERIAL TO BE PLACED WITHIN THE CITY RIGHT-OF-WAY SHALL CONFORM TO THE CITY OF CENTRAL FALLS REQUIREMENTS, AND RHODE ISLAND STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION 2022 EDITION, OR LATEST REVISION.
9. PAVEMENT MARKINGS ARE TO BE EPOXY RESIN AND CONFORM TO THE SPECIFICATIONS.
10. PRIOR TO THE PLACEMENT OF THE FINAL COAT OF PAVEMENT, ALL EXISTING PAVEMENT IS TO BE SWEEP CLEAN AND ASPHALT EMULSION TACK COAT IS TO BE APPLIED.
11. ALL CURB RAMPS SHALL HAVE DETECTABLE WARNING PANELS IN ACCORDANCE WITH RIDOT STATE STANDARD DETAILS AND SPECIFICATIONS. DETECTABLE WARNING PANELS SHALL BE CAST IRON, SEE SPECIFICATION SECTION 32 13 12.
12. SIDEWALK AND WALKWAY FINISH DETAILS ARE PROVIDED ON THE LANDSCAPE PLANS.
13. CONTRACTOR TO INSTALL A VISUAL BARRIER SCREENING COVERING THE CHAIN LINK FENCE WITH A MINIMUM 85% OPACITY. CONTRACTOR TO INSTALL THE SCREENING ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
14. IN ADDITION TO TYPICAL DESIGN STANDARDS, THE CONSTRUCTION GATE/FENCE SUPPORT SYSTEM (POSTS, UPRIGHTS, RODS, RAILS, TIES, FOUNDATIONS) SHALL BE DESIGNED FOR A LATERAL WIND PRESSURE WITH THE FENCE ASSUMED TO BE SOLID I.E., WITHOUT PENETRATIONS. CONTRACTOR SHALL SUBMIT CALCULATIONS STAMPED BY A RI REGISTERED PROFESSIONAL ENGINEER DEMONSTRATING THE DESIGN TO BE IN COMPLIANCE WITH ALL LOADS NOTED AND THE STATE BUILDING CODE.
15. WORK DEPICTED ON THE CIVIL AND LANDSCAPE PLANS (C-SERIES AND L-SERIES) SHALL BE FURNISHED AND INSTALLED BY THE SITE CONTRACTOR UNLESS OTHERWISE NOTED.
16. ANY DAMAGE IN THE CITY RIGHT-OF-WAY, AS A DIRECT OR INDIRECT RESULT OF THE CONTRACTOR'S OPERATIONS, SHALL BE REPAIRED BY THE CONTRACTOR AT NO EXPENSE TO THE CITY.
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING BYPASS PUMPING, PRIMARY AND BACKUP, TO ACCOMMODATE PEAK FLOW CONDITIONS OF ALL ACTIVE STORM AND COMBINED SEWERS WHEN TEMPORARILY DISRUPTED DURING CONSTRUCTION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE NECESSARY PUMPING AND STORAGE CAPACITIES.

DEMOLITION NOTES

- 1. ALL DEMOLITION SHALL BE COORDINATED WITH THE OWNER PRIOR TO START OF WORK.
2. PAVEMENT DEMOLITION SHALL BE SAW CUT AND DISPOSED OF PROPERLY. WHERE NEW PAVEMENT ABUTS EXISTING, CONTRACTOR SHALL PROVIDE CLEAN SAW CUT WITH A 2 FOOT OVERLAP OF NEW TOP COURSE OVER ADJACENT EXISTING BASE COURSE.
3. ALL UTILITIES REMOVED FROM THE SITE SHALL BE REMOVED ALL THE WAY TO THE MAIN LINE, UNLESS OTHERWISE NOTED ON THE PLANS, WITH ANY ASSOCIATED TEES AND FITTINGS REMOVED AND REPLACED WITH A NEW SECTION OF PIPE.
4. THE CONTRACTOR SHALL COORDINATE ALL DEMOLITION OF STRUCTURES, PAVEMENT AND CONCRETE MATERIALS, AND UTILITIES WITH APPROPRIATE PROPOSED SITE, GENERAL, AND UTILITY DRAWINGS.
5. THE CONTRACTOR SHALL REMOVE ALL UNSUITABLE SOILS IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT FOR PROPOSED CENTRAL FALLS HIGH SCHOOL.
6. REUSE OF ONSITE SOILS SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT AND APPROVED REMEDIAL ACTION WORK PLAN.
7. ALL DRAINAGE AND SEWER UTILITIES ARE TO BE PROTECTED UNTIL REPLACED.
8. CUT AND CAP EXISTING WATER AND SEWER SERVICES AT THE MAIN PRIOR TO ANY BUILDING DEMOLITION.

SURVEY NOTES

- 1. THE ELEVATIONS SHOWN ON THIS SURVEY ARE BASED ON NAVD 88 DATUM.
2. THE COORDINATES SHOWN ON THIS SURVEY ARE BASED ON THE RHODE ISLAND STATE PLANE COORDINATE SYSTEM AS REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (NAD 83).
3. CANAVAN AND ASSOCIATES MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. CANAVAN AND ASSOCIATES FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE LOCATED IN THE EXACT LOCATION INDICATED AND ARE SHOWN AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO BEGINNING OF CONSTRUCTION.
4. UNDERGROUND UTILITY LOCATIONS SHOWN HEREON ARE TAKEN FROM AVAILABLE RECORD AND FIELD INFORMATION AND ARE APPROXIMATE ONLY. CONTACT DIG-SAFE BEFORE PLANNING ANY CONSTRUCTION.
5. INVERTS, PIPE SIZES, AND PIPE CLASSIFICATIONS FOR SANITARY SEWER AND STORM DRAIN SYSTEMS, AS SHOWN HEREON, WERE DETERMINED BY INSPECTION AND MEASUREMENTS PERFORMED AT GROUND SURFACE LEVEL (STRUCTURES WERE NOT PHYSICALLY ENTERED). THE RESULTS OF THE INSPECTIONS AND MEASUREMENTS MAY VARY FROM ACTUAL CONDITIONS AND COULD BE DETERMINED BY EXCAVATION OR USE OF CONFINED SPACE ENTRY PERSONNEL AND/OR EQUIPMENT.

AS-BUILTS

- 1. UPON COMPLETION OF THE WORK, AS-BUILT DRAWINGS SHALL BE SUBMITTED BY THE CONTRACTOR IN BOTH PAPER AND ELECTRONIC FORMAT (BOTH PDF AND AUTOCAD 2023). THE DRAWINGS SHALL BE BASED UPON A FIELD SURVEY OF ACTUAL AS-BUILT LOCATIONS, AND SHALL BE STAMPED BY A PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF RHODE ISLAND. THE AS-BUILT DRAWING SHALL DEPICT ALL BUILDINGS, PAVED SURFACES, TOPOGRAPHY, AND MAJOR LANDSCAPE FEATURES, WATER, SEWER, AND DRAINAGE FEATURES, AS WELL AS OTHER UNDERGROUND UTILITIES INSTALLED BY OTHERS, SHALL BE LOCATED ON THE PLAN, INCLUDING SIZE, MATERIAL, AND ELEVATION. ALL STORMWATER MANAGEMENT CONTROLS, BOTH STRUCTURAL AND NON-STRUCTURAL, DESIGNED TO MANAGE THE STORMWATER ASSOCIATED WITH THE COMPLETED SITE SHALL ALSO BE INCLUDED.

EROSION AND SEDIMENTATION CONTROL NOTES

- 1. SOIL EROSION AND SEDIMENTATION CONTROLS SHALL BE PROVIDED IN ACCORDANCE WITH THE "RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK" THE NPDES GENERAL PERMIT FOR STORMWATER DISCHARGE FROM CONSTRUCTION ACTIVITY AND THE NOTES AND DETAILS SHOWN IN THIS PLAN SET.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR FILING THE STORMWATER POLLUTION PREVENTION PLAN AND ANY NECESSARY DOCUMENTS REQUIRED BY THE RIDGES GENERAL PERMIT.
3. DUST SHALL BE CONTROLLED BY WATERING OR OTHER APPROVED METHODS AS NECESSARY, OR AS DIRECTED BY THE OWNER OR ENGINEER.
4. THE CONTRACTOR SHALL SCHEDULE HIS/HER WORK TO ALLOW THE FINISHED SUB GRADE ELEVATIONS TO DRAIN PROPERLY WITHOUT PONDING. SPECIFICALLY, ALLOW WATER TO ESCAPE WHERE PROPOSED CURB MAY RETAIN RUNOFF PRIOR TO APPLICATION OF SURFACE PAVING. PROVIDE TEMPORARY POSITIVE DRAINAGE, TO STABILIZED DISCHARGE POINTS. THE CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY UTILITY CONNECTIONS.
5. THE CONTRACTOR SHALL KEEP ON SITE, AT ALL TIMES, ADDITIONAL SILTATION FENCING AND FILTER FABRIC FOR INSTALLATION AS DIRECTED BY THE CITY TO MITIGATE ANY EMERGENCY CONDITIONS.
6. ANY DEWATERING WASTE WATERS PUMPED FROM EXCAVATIONS SHALL BE CONVEYED BY HOSE TO AN UPLAND AREA AND DISCHARGED INTO HAYBALE ENCLOSURES OR SEDIMENTATION BAGS OUTSIDE ALL WETLAND AND WETLAND BUFFER AREAS.
7. CONSTRUCTION SITE WASTE MATERIALS SHALL BE PROPERLY CONTAINED ONSITE AND DISPOSED OFF SITE IN ACCORDANCE WITH ALL APPLICABLE LOCAL AND STATE REGULATIONS.
8. ALL DISTURBED OR EXPOSED SOIL SURFACES SHALL BE TEMPORARILY STABILIZED AFTER EACH WORK DAY WITH HAY, STRAW, MULCH OR ANY OTHER PROTECTIVE COVERING AND/OR METHOD APPROVED BY THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE.
9. UPON COMPLETION OF ALL SITE WORK, THE CONTRACTOR SHALL INSPECT ALL ON-SITE AND OFF-SITE CATCH BASINS (THAT RECEIVED CATCH BASIN PROTECTION) AND DRAINAGE MANHOLES AND REMOVE ALL SEDIMENT AND DEBRIS THAT HAS ACCUMULATED DURING THE COURSE OF CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER.
10. THE CONTRACTOR SHALL MAINTAIN SURFACE DRAINAGE DURING CONSTRUCTION. STORMWATER SHALL BE MAINTAINED AWAY FROM WORK SITES WHILE PREVENTING AREAS OF EROSION. IT IS ANTICIPATED THAT THIS MAY INCLUDE THE USE OF PUMPS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH SURFACE DRAINAGE DURING CONSTRUCTION, INCLUDING ALL COSTS ASSOCIATED WITH PUMPING.
11. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING AND MAINTAINING NECESSARY TEMPORARY EROSION CONTROL MEASURES.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING OR INSTALLING ALL TEMPORARY SEDIMENT AND EROSION CONTROLS AS SHOWN ON THESE PLANS AND SHALL MAINTAIN ALL EROSION CONTROL MEASURES AS NECESSARY DURING THE ENTIRE CONSTRUCTION PERIOD.
13. TEMPORARY DIVERSION SWALES SHALL BE PROVIDED AS NECESSARY TO DIRECT RUNOFF TO THE SEDIMENT BASINS DURING CONSTRUCTION.
14. ANTI-TRACKING PADS AND WHEEL WASH STATIONS SHALL BE PROVIDED AT ALL POINTS OF EGRESS OR INGRESS AND SHALL BE MAINTAINED TO LIMIT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADS AND INTO THE REST OF THE SITE.
15. ALL EROSION AND SEDIMENT CONTROLS SHALL BE INSTALLED PRIOR TO COMMENCEMENT OF ANY EARTH MOVING ACTIVITIES. CONTRACTOR SHALL NOTIFY IN WRITING CITY OF CENTRAL FALLS PUBLIC WORKS PRIOR TO THE START OF ANY WORK.
16. SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSPECTED AND MAINTAINED ON A WEEKLY BASIS AND AFTER EACH STORM EVENT OF 0.25 INCH OR GREATER DURING CONSTRUCTION TO ENSURE CHANNELS, DITCHES AND PIPES ARE CLEAR OF DEBRIS AND THAT THE EROSION CONTROL BARRIERS ARE INTACT. IDENTIFIED DEFICIENCIES SHALL BE CORRECTED IMMEDIATELY. THE CONTRACTOR SHALL MAINTAIN INSPECTION REPORTS AND SUBMIT TO RESPECTIVE AUTHORITIES HAVING JURISDICTION IN ACCORDANCE WITH PERMIT REQUIREMENTS.
17. THE CONTRACTOR SHALL CLEAN AND MAINTAIN EROSION CONTROL BARRIER WHEN SEDIMENT ACCUMULATES TO ONE HALF THE HEIGHT OF THE HAYBALES OR ONE THIRD THE HEIGHT OF SILT FENCE. MATERIAL COLLECTED FROM THE SILTATION BARRIERS SHALL BE REMOVED AS NECESSARY AND DISPOSED IN AN UPLAND AREA.
18. INSTALLATION OF THE EROSION CONTROL BARRIERS AS ILLUSTRATED IS INTENDED TO REPRESENT THE MINIMUM SEDIMENTATION CONTROL FACILITIES NECESSARY TO MEET ANTICIPATED SITE CONDITIONS. ADDITIONAL EROSION CONTROL MEASURES SHALL BE IMPLEMENTED AS CONDITIONS WARRANT OR AS DIRECTED BY THE OWNER OR OWNER'S REPRESENTATIVE.
19. REQUIRED SEDIMENTATION CONTROL FACILITIES MUST BE PROPERLY ESTABLISHED, CLEARLY VISIBLE AND IN OPERATION PRIOR TO INITIATING ANY LAND CLEARING ACTIVITY AND/OR OTHER CONSTRUCTION RELATED WORK. SUCH FACILITIES SHALL REPRESENT THE LIMIT OF WORK. WORKERS SHALL BE INFORMED THAT NO CONSTRUCTION ACTIVITY IS TO OCCUR BEYOND THE LIMIT OF WORK AT ANY TIME THROUGHOUT THE CONSTRUCTION PERIOD.
20. CATCH BASINS AND STORM DRAIN INLETS SHALL BE PROTECTED WITH INLET PROTECTION WITHIN AND IMMEDIATELY DOWNSTREAM OF THE LIMITS OF DISTURBANCE.
21. THE CONTRACTOR SHALL NOT REMOVE ANY HAYBALES, SILT FENCE OR OTHER EROSION CONTROLS UNTIL THE CONTRIBUTING DRAINAGE AREA HAS BEEN PERMANENTLY STABILIZED.
22. RIP-RAP OR OTHER ENERGY DISSIPATORS SHALL BE USED WHERE NECESSARY TO PREVENT SCOUR.
23. NO STORAGE OF MATERIAL INCLUDING BUT NOT LIMITED TO COMPOST OR GRASS CLIPPINGS WITHIN 100 FOOT WETLAND BUFFER.
24. SHOULD ANY EROSION OR SEDIMENTATION CONTROL MEASURES FAIL, IMMEDIATE ATTENTION SHALL BE GIVEN BY THE CONTRACTOR TO CORRECTING THE FAILURE AND TO RECTIFYING ANY ADVERSE IMPACT FROM THE FAILURE. RIDEM AND ENGINEER MUST BE NOTIFIED WITHIN 24 HOURS OF THE FAILURE.

GRADING AND UTILITY NOTES

- 1. ALL WORK PERFORMED AND ALL MATERIALS FURNISHED SHALL CONFORM WITH THE LINES AND GRADES ON THE PLANS AND SITE WORK SPECIFICATIONS, UNLESS OTHERWISE DIRECTED.
2. AT ALL LOCATIONS WHERE EXISTING CURBING OR PAVEMENT ABUT NEW CONSTRUCTION, THE EDGE OF THE EXISTING CURB OR PAVEMENT SHALL BE SAW CUT TO A CLEAN, SMOOTH EDGE. BLEND NEW PAVEMENT AND CURBS SMOOTHLY INTO EXISTING BY MATCHING LINES, GRADES AND JOINTS.
3. ALL EXISTING AND PROPOSED UTILITY COVERS AND GRATES SHALL BE ADJUSTED TO BE FLUSH WITH THE SURROUNDING SURFACE OR PAVEMENT FINISH GRADE OF THIS CONTRACT. RIM ELEVATIONS OF STRUCTURES AND MANHOLES ARE APPROXIMATE. FINAL ELEVATIONS ARE TO BE SET FLUSH AND CONSISTENT WITH THE PROPOSED FINAL GRADES.
4. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION OF PRIVATE UTILITIES BY THE UTILITY COMPANIES.
5. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR AND THE INFORMATION FURNISHED TO THE OWNER'S REPRESENTATIVE.
6. THE CONTRACTOR SHALL PROTECT ALL UNDERGROUND DRAINAGE, SEWER AND UTILITY FACILITIES FROM EXCESSIVE VEHICULAR LOADS DURING CONSTRUCTION. ANY DAMAGE TO THESE FACILITIES RESULTING FROM CONSTRUCTION LOADS SHALL BE RESTORED TO ORIGINAL CONDITION AT NO COST TO THE OWNER.
7. DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL PROTECT EXISTING UTILITIES BY PROVIDING TEMPORARY SUPPORTS OR SHEETING AT NO ADDITIONAL COST TO THE OWNER.
8. EXCAVATION REQUIRED WITHIN THE PROXIMITY OF EXISTING UTILITY LINES SHALL BE DONE BY HAND. THE CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING UTILITY LINES OR STRUCTURES INCURRED DURING CONSTRUCTION OPERATIONS AT NO COST TO THE OWNER.
9. PITCH EVENLY BETWEEN SPOT GRADES. ALL PAVED AREAS MUST PITCH TO DRAIN AT A MINIMUM OF 1/8" PER FOOT UNLESS SPECIFIED.
10. ALL WORK SHALL COMPLY WITH ADA AND RI GOVERNORS COMMISSION ON DISABILITIES REQUIREMENTS.
11. ALL TRANSITIONS BETWEEN GROUND COVERING MATERIALS SHALL BE SMOOTH.
12. ALL PLUMBING/MECHANICAL UTILITIES WITHIN 10 FEET OF THE BUILDING ARE SHOWN ON THE PLUMBING/MECHANICAL PLANS.
13. THE CONTRACTOR IS REQUIRED TO APPLY FOR, OBTAIN, AND PAY ALL FEES ASSOCIATED WITH CONSTRUCTION PHASE PERMITS.
14. WATER PIPES SHALL BE INSTALLED AT A MINIMUM DEPTH OF 5 FEET.
15. 10 FOOT OFFSET WATER (DOMESTIC AND FIRE) FROM SANITARY SEWER. ALL OTHER UTILITIES REQUIRE MINIMUM 5 FOOT SEPARATION FROM OTHER UTILITIES. WHERE 10 FOOT OFFSET CANNOT BE PROVIDED, WATER SHALL BE SLEEVED.
17. ALL GATE VALVES SHALL "OPEN RIGHT".
18. USE OF FIRE HYDRANTS FOR DEMOLITION OR CONSTRUCTION IS NOT PERMITTED UNLESS APPROVED BEFOREHAND BY THE PAWTUCKET WATER SUPPLY BOARD.

LAYOUT NOTES

- 1. ALL LINES ARE PERPENDICULAR OR PARALLEL TO THE LINES FROM WHICH THEY ARE MEASURED UNLESS OTHERWISE INDICATED.
2. DIMENSIONS OF PARKING SPACES AND DRIVEWAYS ARE FROM FACE OF CURB TO FACE OF CURB UNLESS OTHERWISE NOTED.
3. ACCESSIBLE RAMPS SHALL BE PER THE (ADA) ACCESSIBILITY GUIDELINES AND THE STATE STANDARDS AND INCLUDE DETECTABLE WARNING MATS. DETECTABLE WARNING PANELS SHALL BE CAST IRON, SEE SPECIFICATION SECTION 32 13 13.
4. AUTOCAD PLANS OR ADDITIONAL COORDINATES WILL BE PROVIDED AFTER THE AWARD OF THE BID.

EXISTING LEGEND

Table listing existing symbols and their descriptions: LOCUS PROPERTY LINE, INTERNAL PROPERTY LINE, ABUTTER PROPERTY LINE, EASEMENT LINE, ZONING, INDEX CONTOUR, INTERMEDIATE CONTOUR, SPOT GRADE, EDGE OF WOODS, EDGE OF SCRUB BRUSH, STONEWALL, FENCE, GUARDRAIL, UNDERGROUND SEWER LINE, UNDERGROUND DRAIN LINE, UNDERGROUND WATER LINE, UNDERGROUND GAS LINE, UNDERGROUND ELECTRIC LINE, OVER HEAD WIRE, WETLAND LINE, ROAD/PARKING STRIPES, CONCRETE, BUILDING, EDGE OF PAVEMENT, CURB LINE, ZONING LINE, FEMA LINE, 100 FT. WETLAND BUFFER, WETLAND EDGE, DRILL HOLE, CONCRETE BOUND WITH DRILL HOLE, STONE BOUND WITH DRILL HOLE, UNKNOWN MANHOLE, ELECTRIC MANHOLE, ELECTRIC CONDUIT, ELECTRIC HAND HOLE, UTILITY POLE, LIGHT POLE, GUY WIRE, TELEPHONE/CABLE MANHOLE, TELEPHONE/CABLE HAND HOLE, TELEPHONE/CABLE PEDESTAL, GAS VALVE, GAS METER, SEWER MANHOLE, DRAIN MANHOLE, CATCH BASIN, TOP OF HOOD, TOP OF WATER, INVERT, VENT, HYDRANT, WATER VALVE, WATER SHUT OFF, WELL, GEOTHERMAL WELL, IRRIGATION CONTROL VALVE, AIR CONDITIONER AND AG HEATING, SIGN, CONIFEROUS TREE, DECIDUOUS TREE, SHRUB, WETLAND FLAG, BOLLARD, TEST PIT, TEST BORING, FLAG POLE, ROCK, EDGE OF PAVEMENT, CAPE COD BERM, GRANITE CURB, GRANITE CURB WITH BEVELED EDGE, CROSS WALK, CONCRETE RETAINING WALL, CONCRETE HEADWAY, CONCRETE WALKWAY, WOOD FENCE, CHAIN LINK FENCE, POST & RAIL FENCE, METAL HANDRAIL, HANDI-CAP RAMP, CONCRETE PAD, METAL, WOOD GUARDRAIL, UPPER BONNET BOLT, AMERICANS WITH DISABILITIES ACT, BEST MANAGEMENT PRACTICES.

PROPOSED LEGEND

Table listing proposed symbols and their descriptions: CURBING(TYPE), EDGE OF PAVEMENT, RETAINING WALL, INTERMEDIATE CONTOUR, INDEX CONTOUR, SPOT ELEVATION, WATER LINE, SEWER LINE, DRAIN LINE, GAS LINE, DRAIN MANHOLE, CATCH BASIN, HYDRODYNAMIC SEPARATOR, AREA / YARD DRAIN, RAIN GARDEN OUTLET, SEWER MANHOLE, WATER VALVE, HYDRANT, SIGN, CHAIN LINK FENCE, GUARDRAIL, TREE LINE (LIMIT OF CLEARING), BITUMINOUS PAVEMENT, CONCRETE WALK (SEE LANDSCAPE PLANS FOR FINISHES), CONSTRUCTION ENTRANCE TRACKING CONTROL, EROSION CONTROL, LIMIT OF DISTURBANCE, INLET PROTECTION.

Table listing keynote symbols and their descriptions: AD-1 = AREA DRAIN (SEE DETAIL), ADJ = ADJUST TO GRADE, BB = BITUMINOUS BERM, BCP1 = BITUMINOUS CONCRETE PAVEMENT, BCW = BITUMINOUS CONCRETE WALK AND WIDTH, CB-1 = PROPOSED CATCH BASIN NUMBER, CM = SAWCUT AND MATCH EXISTING GRADES, CW = CEMENT CONCRETE SIDEWALK AND WIDTH, DAM = DIRECTIONAL ARROW MARKING, DMH-1 = PROPOSED DRAIN MANHOLE NUMBER AND DIAMETER, DW = 4" DASHED WHITE EPOXY RESIN PAVEMENT MARKING, FES = FLARED END SECTION, GC = GRANITE CURB (SEE DETAIL), GCF = GRANITE CURB FLUSH (SEE DETAIL), GTC = GRANITE TRANSITION CURB (SEE DETAIL), CC = CONCRETE CURB (SEE DETAIL), CTC = CONCRETE TRANSITION CURB (SEE DETAIL), CCF = CONCRETE CURB FLUSH (SEE DETAIL), HDS-X = HYDRODYNAMIC SEPARATOR NUMBER, ICS = INLET CONTROL STRUCTURE, INT-X = GREASE AND SAND INTERCEPTOR NUMBER, IP = INLET PROTECTION, LA = LANDSCAPED AREA (SEE LANDSCAPE PLANS), LS = LOAM AND SEED (SEE LANDSCAPE PLANS), OCS = OUTLET CONTROL STRUCTURE NUMBER, R&D = REMOVE AND DISPOSE, R&R = REMOVE AND RELOCATE, R&S = REMOVE AND STOCKPILE, SG = 4" SOLID GREEN EPOXY RESIN PAVEMENT MARKING - COORDINATE COLOR W/OWNER, SCH = STRIPED CROSS WALK (SEE DETAIL), SHP = HANDICAP EPOXY RESIN PAVEMENT MARKING, SMH-1 = PROPOSED SEWER MANHOLE NUMBER, SW = 4" SOLID WHITE EPOXY RESIN PAVEMENT MARKING, SW12 = 12" SOLID WHITE EPOXY RESIN PAVEMENT MARKING, WQS-1 = WATER QUALITY STRUCTURE NUMBER, YD-1 = YARD DRAIN (SEE DETAIL), 107.20 = WHEELCHAIR RAMPS, MASSDOT CONSTRUCTION STANDARDS DETAIL, 107.30 = WHEELCHAIR RAMPS, MASSDOT CONSTRUCTION STANDARDS DETAIL, 107.60 = WHEELCHAIR RAMPS, MASSDOT CONSTRUCTION STANDARDS DETAIL, 107.65 = DETECTABLE WARNING PANEL FOR WHEELCHAIR RAMPS, MASSDOT CONSTRUCTION STANDARDS DETAIL, 201.40 = PRECAST CONCRETE CATCH BASIN, MASSDOT CONSTRUCTION STANDARDS DETAIL.

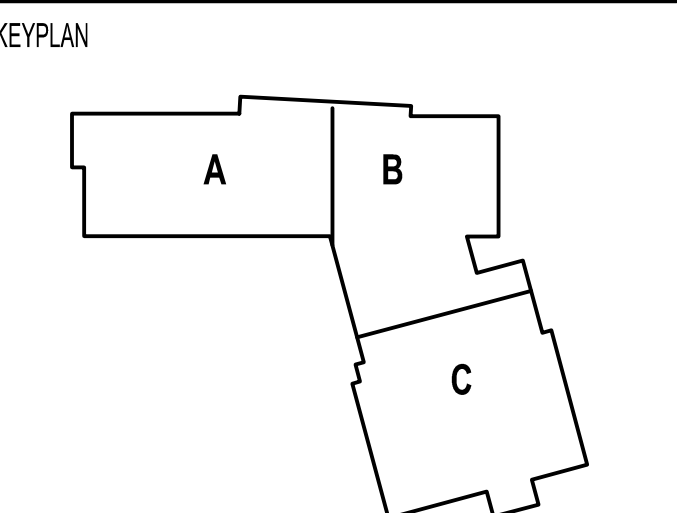
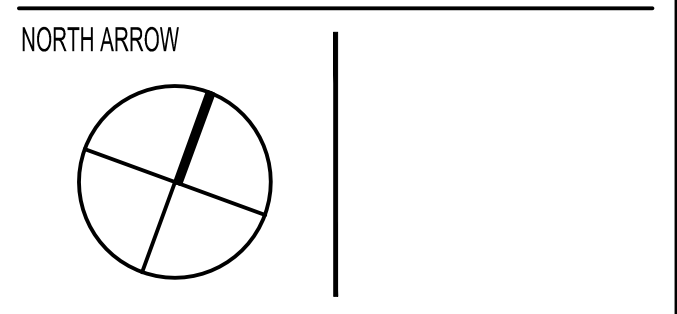


526 Boston Post Rd Weymouth, MA 02189
508.358.0790 www.ai3architects.com

VERTeX logo
The Vertex Companies, LLC
400 Libbey Parkway
Weymouth, MA 02189
PHONE 781.952.6000
www.vertexeng.com

CENTRAL FALLS HIGH SCHOOL
10 HIGGINSON AVE, CENTRAL FALLS, RI
KEYNOTE LEGEND:

100% CONSTRUCTION DOCUMENTS



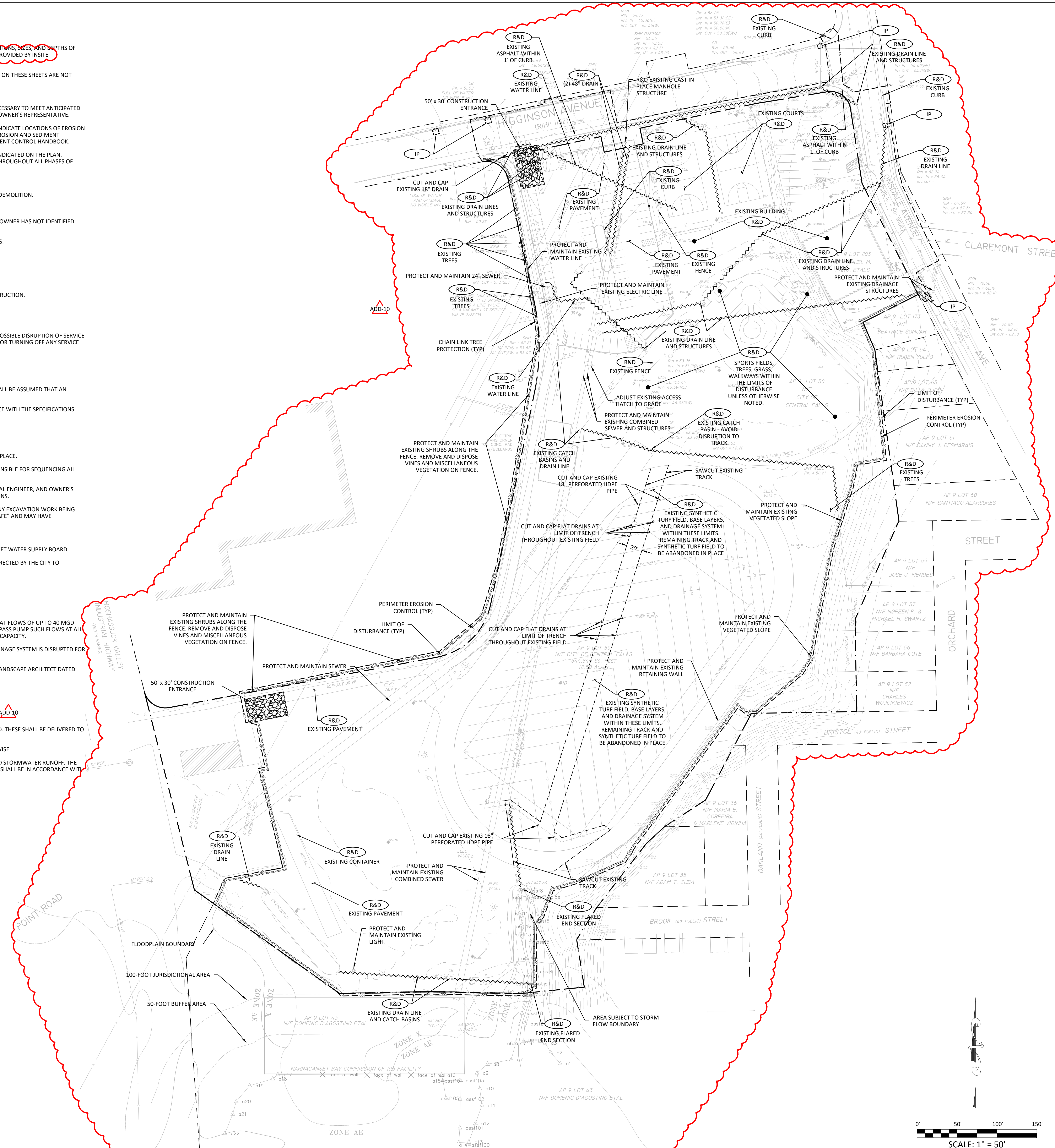
DRAWING NAME:
GENERAL NOTES AND LEGEND
DRAWN BY: SMC
REVIEWED BY: GBD
SCALE: AS NOTED | DRAWING NUMBER:
JOB NO.: 77997
DATE: OCTOBER 13, 2023
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NOTES:

- EXISTING UTILITY INFORMATION SHOWN HEREON IS BASED ON THE DESIGN DRAWINGS AND RECORD INFORMATION. CONDITIONS, DEEPS, AND BERTHS OF UTILITIES HAVE NOT BEEN SURVEYED IN THE FIELD. EXISTING SITE ELEVATION DATA UPDATED BASED ON SURVEY PLAN (CAD ONLY) PROVIDED BY INSITE ENGINEERING SERVICES ON DECEMBER 11, 2023.
- DEMOLITION OF EXISTING BUILDING AND SITE FEATURES ARE INCLUSIVE OF ALL PHASES. PROPOSED DEMOLITION ACTIVITIES SHOWN ON THESE SHEETS ARE NOT INTENDED TO INDICATE THE PHASE IN WHICH THEY OCCUR. SEE PHASING DRAWINGS FOR DEMOLITION SPECIFIC TO PHASING.
- ALL EROSION AND SEDIMENT CONTROLS SHALL BE INSTALLED PRIOR TO COMMENCEMENT OF ANY EARTH MOVING ACTIVITIES.
- THE EROSION AND SEDIMENTATION CONTROLS SHOWN ON THE PLANS ARE INTENDED TO REPRESENT THE MINIMUM CONTROLS NECESSARY TO MEET ANTICIPATED SITE CONDITIONS. ADDITIONAL MEASURES SHALL BE IMPLEMENTED AS CONDITIONS WARRANT OR AS DIRECTED BY THE OWNER OR OWNER'S REPRESENTATIVE.
- INSTALL EROSION CONTROLS DOWNSTREAM OF ANY DISTURBED AREAS TO REDUCE POTENTIAL FOR EROSION. CONTRACTOR SHALL INDICATE LOCATIONS OF EROSION CONTROLS FOR REVIEW WITH GENERAL CONTRACTOR AND OWNER'S PROJECT MANAGER PRIOR TO COMMENCING DISTURBANCE. EROSION AND SEDIMENT CONTROLS SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE LATEST REVISION OF THE RI SOIL EROSION AND SEDIMENT CONTROL HANDBOOK.
- INSTALL CHAIN LINK FENCE TREE PROTECTION AT THE LOCATIONS SHOWN ON THE PLAN TO PROTECT EXISTING TREES SPECIFICALLY INDICATED ON THE PLAN. LAYOUT OF FENCE SHALL BE REVIEWED AND APPROVED BY THE LANDSCAPE ARCHITECT. TREE PROTECTION SHALL BE MAINTAINED THROUGHOUT ALL PHASES OF CONSTRUCTION.
- ALL EXISTING DRAINAGE SHALL BE MAINTAINED OR REROUTED AS NECESSARY UNTIL PERMANENT PIPING IS INSTALLED.
- ELECTRICAL DEMOLITION IS SHOWN FOR INFORMATION ONLY. REFER TO ELECTRICAL PLANS FOR COMPLETE EXTENT OF ELECTRICAL DEMOLITION.
- PROVIDE INLET PROTECTION AT ALL EXISTING DRAINAGE INLETS.
- ALL ITEMS TO BE REMOVED AND STOCKPILED SHALL BE COORDINATED WITH OWNER FOR STOCKPILE LOCATIONS. AT THIS TIME, THE OWNER HAS NOT IDENTIFIED ITEMS FOR STOCKPILE.
- ALL ITEMS MARKED FOR RE-USE SHALL BE STOCKPILED ONSITE, PROTECTED AND RE-INSTALLED AS SHOWN ON THE LANDSCAPE PLANS.
- DRAINAGE FEATURES AND UTILITIES TO BE MAINTAINED UNLESS OTHERWISE NOTED.
- TOTAL AREA OF DISTURBANCE: 2.3 ACRES.
- CONTRACTOR TO REESTABLISH BENCHMARKS IN ALTERNATE LOCATION PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL COORDINATE CLEARING OF ALL ABUTTER ENCROACHMENTS WITH THE CITY OF CENTRAL FALLS PRIOR TO CONSTRUCTION.
- INSTALL CONSTRUCTION ENTRANCE AT ALL ENTRY/EXIT POINT FOR VEHICULAR TRAFFIC FOR EACH PHASE OF THE PROJECT.
- ALL EARTH DISTURBANCE SHALL BE CONDUCTED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
- ACTIVE UTILITY LINES (INCLUDING SEWER, WATER, AND DRAINAGE), CONTRACTOR SHALL PROVIDE 1 WEEK NOTIFICATION FOR ANY POSSIBLE DISRUPTION OF SERVICE TO OWNER, OWNER'S REPRESENTATIVE AND ARCHITECT; PROVIDE NOTIFICATION FOR CONNECTING, DISCONNECTING, TURNING ON OR TURNING OFF ANY SERVICE WHICH MAY AFFECT USERS OF THE RESPECTIVE UTILITY.
- CONTRACTOR SHALL PROVIDE 72 HOUR (3 WORKING DAYS) NOTICE TO LOCAL FIRE DEPARTMENT OF DISRUPTIONS.
- DISTURBANCE ON ACTIVE GAS LINES SHALL BE COORDINATED WITH UTILITY PROVIDER.
- THE CONTRACTOR SHALL CONFIRM LOCATION AND ELEVATION OF THE EXISTING DRAINAGE MANHOLES AND PIPES INDICATED. IT SHALL BE ASSUMED THAT AN ADDITIONAL 60 FEET OF PIPE WILL NEED TO BE REMOVED AND DISPOSED.
- ANY UNFORESEEN UNDERGROUND TRANSITE PIPE OR OTHER UNFORESEEN HAZARDOUS MATERIAL SHALL BE ABATED IN ACCORDANCE WITH THE SPECIFICATIONS AND ALL LOCAL, STATE AND FEDERAL REGULATIONS.
- CONTRACTOR SHALL COMPLY WITH ALL CHPS REQUIREMENTS FOR DEMOLITION.
- ALL EXISTING MANHOLES OR CATCH BASINS TO REMAIN SHALL BE ADJUSTED TO FINISHED GRADE ELEVATION.
- ALL EXISTING UTILITIES WITHIN TREE PROTECTION AREAS NOT SCHEDULED FOR RE-USE SHALL BE CUT, CAPPED, AND ABANDONED IN PLACE.
- DEMOLITION WORK SHOWN ON THIS SHEET IS INDEPENDENT OF PROJECT PHASING OR SEQUENCING. CONTRACTOR SHALL BE RESPONSIBLE FOR SEQUENCING ALL WORK AS OUTLINED IN THE PROJECT SPECIFICATIONS.
- CONTRACTOR SHALL SCHEDULE PRECONSTRUCTION MEETING WITH ARCHITECT, LANDSCAPE ARCHITECT, CIVIL ENGINEER, STRUCTURAL ENGINEER, AND OWNER'S PROJECT MANAGER PRIOR TO DEMOLITION OF EXISTING SERVICE AREA TO CONFIRM EXTENT OF DEMOLITION AND SAWCUT LOCATIONS.
- THE CONTRACTOR MUST CONTACT THE APPROPRIATE PRIVATE UTILITY COMPANIES AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK BEING COMPLETED. THE CONTRACTOR IS HEREBY NOTIFIED THAT SOME PUBLIC AND PRIVATE UTILITY COMPANIES ARE NOT PART OF "DIGSAFE" AND MAY HAVE ADDITIONAL NOTIFICATION REQUIREMENTS.
- CUT AND CAP EXISTING WATER AND SEWER SERVICES AT THE MAIN PRIOR TO ANY BUILDING DEMOLITION.
- USE OF FIRE HYDRANTS FOR DEMOLITION OR CONSTRUCTION IS NOT PERMITTED UNLESS APPROVED BEFOREHAND BY THE PAWTUCKET WATER SUPPLY BOARD.
- THE CONTRACTOR SHALL KEEP ON SITE, AT ALL TIMES, ADDITIONAL SILTATION FENCING AND FILTER FABRIC FOR INSTALLATION AS DIRECTED BY THE CITY TO MITIGATE ANY EMERGENCY CONDITIONS.
- CONTRACTOR TO CAMERA INSPECT AND LOCATE EXISTING SEWER AND DRAIN THROUGHOUT SITE.
- EXISTING SEWER AND DRAIN MUST REMAIN ACTIVE AT ALL TIMES.
- NO CONTRACTOR PARKING ON ROADWAYS.
- THE CONCRETE CULVERT AND TWIN 48" PIPES ARE PART OF AN ACTIVE COMBINED SEWER OVERFLOW SYSTEM. IT IS ANTICIPATED THAT FLOWS OF UP TO 40 MGD MAY OCCUR DURING SIGNIFICANT WET WEATHER EVENTS. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN THE CAPABILITY TO BYPASS PUMP SUCH FLOWS AT ALL TIMES WHEN THE PIPELINE IS DISRUPTED FOR RE-ROUTING. BYPASS PUMPING SYSTEM SHALL INCLUDE BOTH PRIMARY AND BACKUP CAPACITY.
- THE CONTRACTOR SHALL PROVIDE AND MAINTAIN THE CAPABILITY TO BYPASS PUMP FLOWS AT ALL TIMES WHEN THE EXISTING DRAINAGE SYSTEM IS DISRUPTED FOR RE-ROUTING. BYPASS PUMPING SYSTEM SHALL INCLUDE BOTH PRIMARY AND BACKUP CAPACITY.
- IRRIGATION SYSTEM INFORMATION HAS BEEN OBTAINED FROM THE "GRADING AND IRRIGATION PLAN" FROM WILFRID L. GATES JR LANDSCAPE ARCHITECT DATED DECEMBER 1975.
- BORING AND MONITORING WELL INFORMATION HAS BEEN OBTAINED FROM THE FOLLOWING:
 - PHASE I ENVIRONMENTAL SITE ASSESSMENT PREPARED BY SAGE ENVIRONMENTAL, INC. DATED NOVEMBER 8, 2021
 - SITE INVESTIGATION REPORT PREPARED BY SAGE ENVIRONMENTAL, INC. DATED MAY 2023
 - PRELIMINARY GEOTECHNICAL REPORT PREPARED BY LAHAF GEOTECHNICAL CONSULTING, INC. DATED AUGUST 4, 2023
- LIGHT POLES AND FIXTURES AT THE EXISTING BASKETBALL COURTS AND THE EXISTING FLAG POLE SHALL BE REMOVED AND SALVAGED. THESE SHALL BE DELIVERED TO THE CENTRAL FALLS DPW AT 1280 HIGH STREET, CENTRAL FALLS, RI 02863.
- THE CONTRACTOR SHALL CLEAR AND GRUB ALL EXISTING VEGETATION WITHIN THE LIMITS OF DISTURBANCE UNLESS NOTED OTHERWISE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS RELATED TO DEWATERING EXCAVATION, BOTH FROM GROUNDWATER AND STORMWATER RUNOFF. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR DETERMINING FLOW RATES AND VOLUMES. DISCHARGE OF DEWATERING EFFLUENT SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE RESPECTIVE AUTHORITY HAVING JURISDICTION.

BID ALTERNATE NOTES:

- ALTERNATE 2 - OUTDOOR FURNITURE: DEMOLITION WORK SHOWN ON THIS SHEET IS ANTICIPATED TO BE CONSISTENT WITH BOTH THE BASE BID AND ALTERNATE. REFER TO LANDSCAPE DRAWINGS FOR INFORMATION REGARDING THE BASE BID AND ALTERNATE.
- ALTERNATE 3 - OUTDOOR CLASSROOM: OUTDOOR CLASSROOM FEATURES ASSOCIATED WITH THE ALTERNATE ARE SHOWN AS BACKGROUND INFORMATION ON THIS SHEET. DEMOLITION WORK SHOWN ON THIS SHEET IS ANTICIPATED TO BE CONSISTENT WITH BOTH THE BASE BID AND ALTERNATE.
- ALTERNATE 5 - FREIGHT FARM UNIT: DEMOLITION WORK SHOWN ON THIS SHEET IS ANTICIPATED TO BE CONSISTENT WITH BOTH THE BASE BID AND ALTERNATE. REFER TO ARCHITECTURAL AND LANDSCAPE DRAWINGS FOR INFORMATION REGARDING THE BASE BID AND ALTERNATE.
- ALTERNATE 6 - THROWING EVENTS: DEMOLITION WORK SHOWN ON THIS SHEET IS ANTICIPATED TO BE CONSISTENT WITH BOTH THE BASE BID AND ALTERNATE.
- ALTERNATE 9 - SPORTS LIGHTING: ALL WORK SHOWN ON THE CIVIL DRAWING SHEETS ARE ANTICIPATED TO BE CONSISTENT WITH BOTH THE BASE BID AND ALTERNATE. REFER TO THE ELECTRICAL DRAWINGS FOR INFORMATION REGARDING SITE ELECTRIC.
- ALTERNATE 10 - TREES: DEMOLITION WORK SHOWN ON THIS SHEET IS ANTICIPATED TO BE CONSISTENT WITH BOTH THE BASE BID AND ALTERNATE. REFER TO LANDSCAPE DRAWINGS FOR INFORMATION REGARDING THE BASE BID AND ALTERNATE.



526 Boston Post Rd
Weyland, MA
508.358.0790
www.ai3architects.com



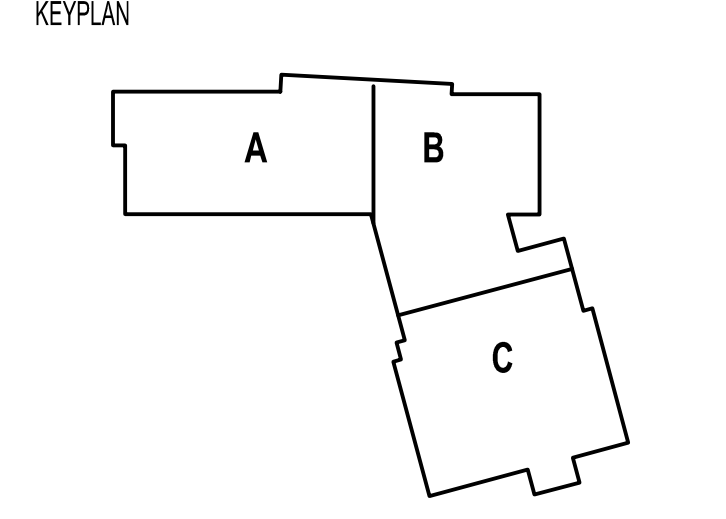
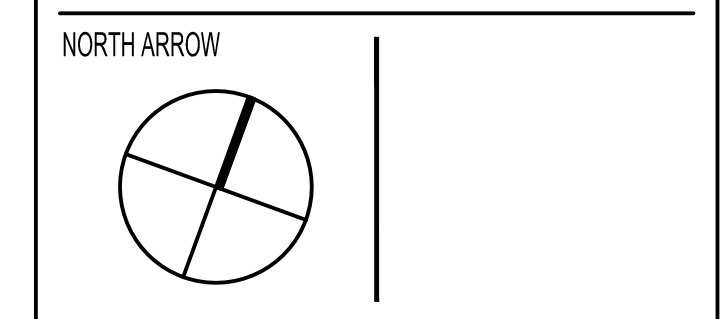
The Vertex Companies, LLC
400 Libbey Parkway
Weymouth, MA 02189
PHONE 781.952.6000
www.vertexeng.com



CENTRAL FALLS HIGH SCHOOL
10 HIGGINSON AVE, CENTRAL FALLS, RI
KEYNOTE LEGEND:

ADD-10 ADDENDUM #10 02.09.2024

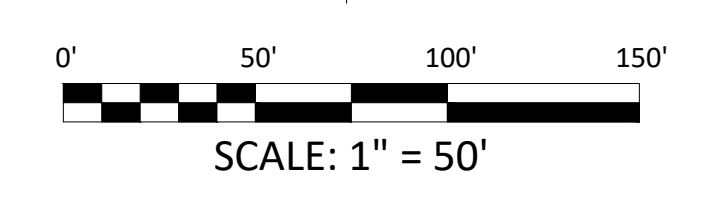
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DRAWING NAME:
EXISTING CONDITIONS AND DEMOLITION PLAN

DRAWN BY: SMC
REVIEWED BY: GBD

SCALE: AS NOTED DRAWING NUMBER:
JOB NO.: 77997
DATE: OCTOBER 13, 2023
C1.0



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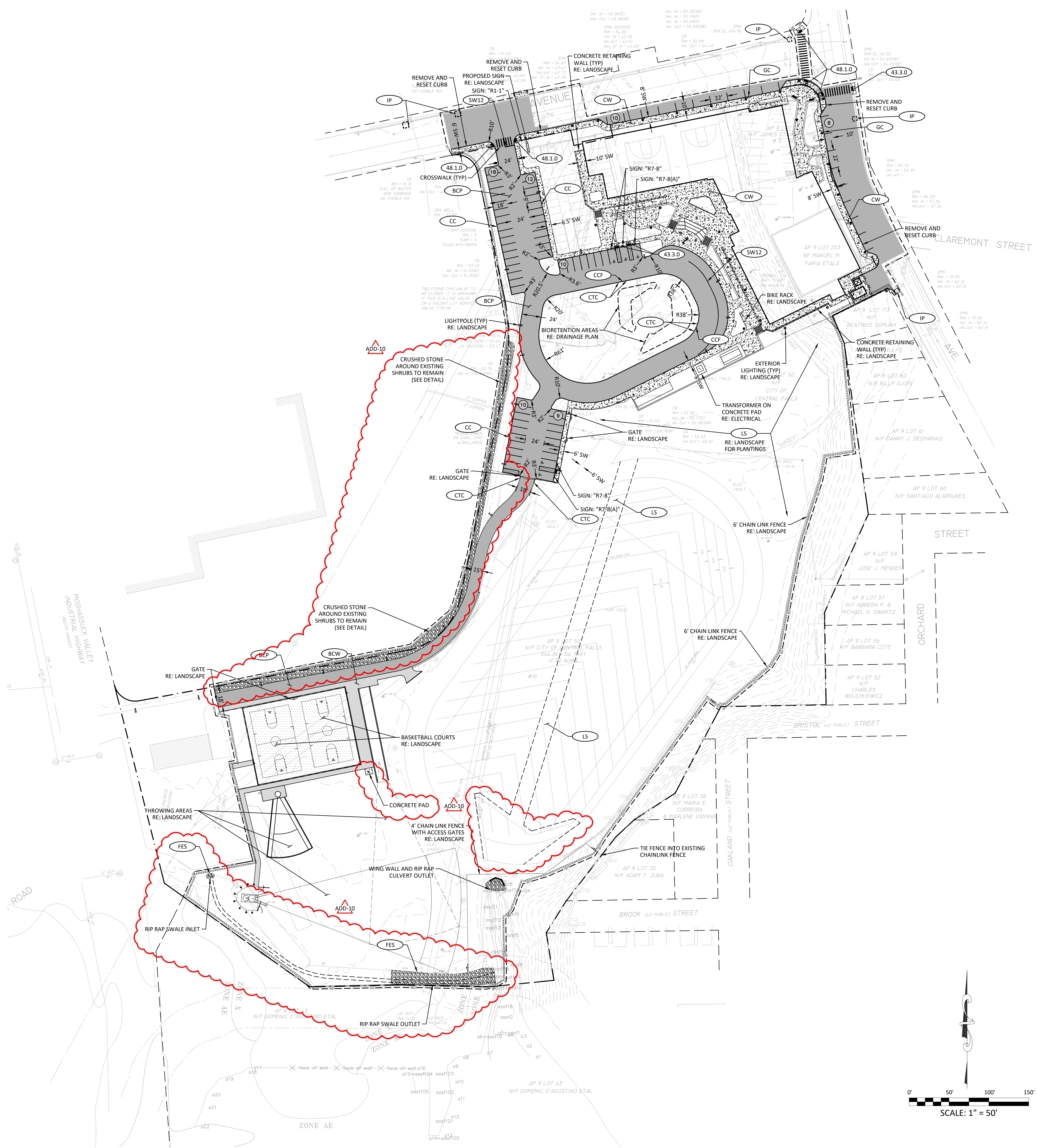
- EROSION CONTROL MEASURES SHALL BE IMPLEMENTED FOR THE DURATION OF CONSTRUCTION. AT A MINIMUM, PERIMETER HAY BALES, VEHICLE TRACKING CONTROL, INLET PROTECTION, CONCRETE WASHOUT AREAS AND TEMPORARY SEDIMENTATION BASINS SHOULD BE CONSIDERED.
- CURBING SHALL BE PROVIDED AS NOTED IN ALL PARKING AREAS AT THE EDGE OF THE PAVEMENT AND ADJACENT TO SIDEWALKS.
- WHERE SIDEWALKS INTERSECT CURB LINES, ADA COMPLIANT CURB RAMP WITH DETECTABLE WARNING MAT SHALL BE INSTALLED. DETECTABLE WARNING PANELS SHALL BE CAST IRON, SEE SPECIFICATIONS.
- CONCRETE WALKWAY MATERIALS SHOWN FOR CLARITY ONLY. REFER TO LANDSCAPE PLANS FOR ALL WALKWAY MATERIALS, FINISHES, AND SCORING.
- WHERE EXISTING UTILITIES ARE TO REMAIN, ALL RIMS, COVERS, GRATES AND HATCHES SHALL BE ADJUSTED TO FINISHED GRADE.
- THE SITE IS SUBJECT TO A REMEDIAL ACTION WORK PLAN (RAWP). THE CONTRACTOR SHALL CONDUCT ALL WORK IN ACCORDANCE WITH THE REQUIREMENTS SET FORTH IN THE RAWP. SITE WIDE CAPPING IS THE REMEDIAL ACTION IDENTIFIED IN THE PLAN. THE CONTRACTOR SHALL CAP ALL AREAS WITHIN THE LIMIT OF DISTURBANCE AS DESCRIBED BELOW UNLESS NOTED OTHERWISE. ALL FILL MATERIAL USED AS CLEAN FILL WITHIN 12 INCHES OF FINAL GRADE SHALL BE SAMPLED FOR COMPLIANCE PRIOR TO IMPORTATION.
 - BUILDING/HARDSCAPE: A MINIMUM OF 6 INCHES OF CLEAN SUBGRADE OVERLAIN BY 4 INCHES OF ASPHALT OR CONCRETE PAVEMENT. SURFACE SOIL IN THE PROPOSED HARDSCAPE AREAS CAN EITHER BE EXCAVATED OR REPLACED, OR THE ASPHALT/CONCRETE SURFACING AND/OR CLEAN FILL CAN BE PLACED DIRECTLY ON TOP OF THE SOIL WITHOUT EXCAVATION.
 - LANDSCAPE: A MINIMUM OF 12 INCHES OF CLEAN FILL PLACED OVER A NON-WOVEN GEOTEXTILE FABRIC ON TOP OF CONTAMINATED SOIL.

~~THE CONTRACTOR SHALL BE RESPONSIBLE FOR FULL DEPTH RESTORATION OF THE EXISTING ASPHALT SURFACE WHERE DISTURBED BY INSTALLATION OF DRAINAGE PIPES. ADD-10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESURFACING OF EXISTING TRACK. REFER TO THE LANDSCAPE PLANS FOR TRACK RESTORATION DETAILS.~~

REMOVED FROM BID DOCUMENTS

BID ALTERNATE NOTES:

- ALTERNATE 2 - OUTDOOR FURNITURE: DEMOLITION WORK SHOWN ON THIS SHEET IS ANTICIPATED TO BE CONSISTENT WITH BOTH THE BASE BID AND ALTERNATE. REFER TO LANDSCAPE DRAWINGS FOR INFORMATION REGARDING THE BASE BID AND ALTERNATE.
- ALTERNATE 3 - OUTDOOR CLASSROOM: OUTDOOR CLASSROOM FEATURES ASSOCIATED WITH THE ALTERNATE ARE SHOWN AS BACKGROUND INFORMATION ON THIS SHEET. DEMOLITION WORK SHOWN ON THIS SHEET IS ANTICIPATED TO BE CONSISTENT WITH BOTH THE BASE BID AND ALTERNATE.
- ALTERNATE 5 - FREIGHT FARM UNIT: DEMOLITION WORK SHOWN ON THIS SHEET IS ANTICIPATED TO BE CONSISTENT WITH BOTH THE BASE BID AND ALTERNATE. REFER TO ARCHITECTURAL AND LANDSCAPE DRAWINGS FOR INFORMATION REGARDING THE BASE BID AND ALTERNATE.
- ALTERNATE 6 - THROWING EVENTS: DEMOLITION WORK SHOWN ON THIS SHEET IS ANTICIPATED TO BE CONSISTENT WITH BOTH THE BASE BID AND ALTERNATE.
- ALTERNATE 9 - SPORTS LIGHTING: ALL WORK SHOWN ON THE CIVIL DRAWING SHEETS ARE ANTICIPATED TO BE CONSISTENT WITH BOTH THE BASE BID AND ALTERNATE. REFER TO THE ELECTRICAL DRAWINGS FOR INFORMATION REGARDING SITE ELECTRIC.
- ALTERNATE 10 - TREES: DEMOLITION WORK SHOWN ON THIS SHEET IS ANTICIPATED TO BE CONSISTENT WITH BOTH THE BASE BID AND ALTERNATE. REFER TO LANDSCAPE DRAWINGS FOR INFORMATION REGARDING THE BASE BID AND ALTERNATE.

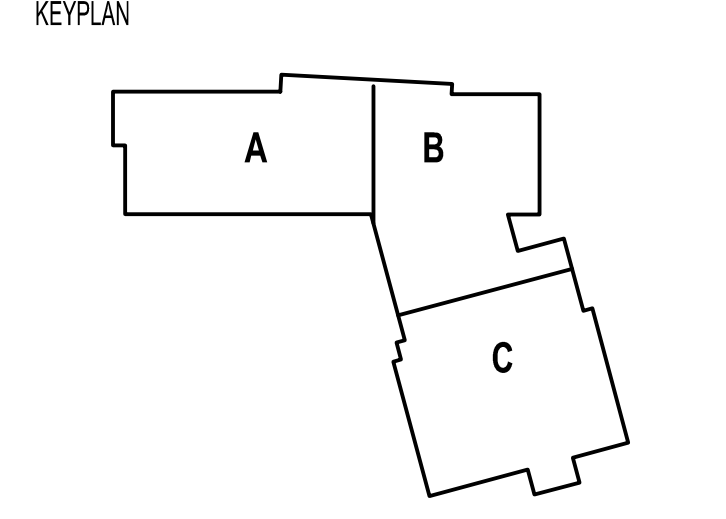


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 526 Boston Post Rd Weymouth, MA 01978
 508.358.0790 www.ai3architects.com

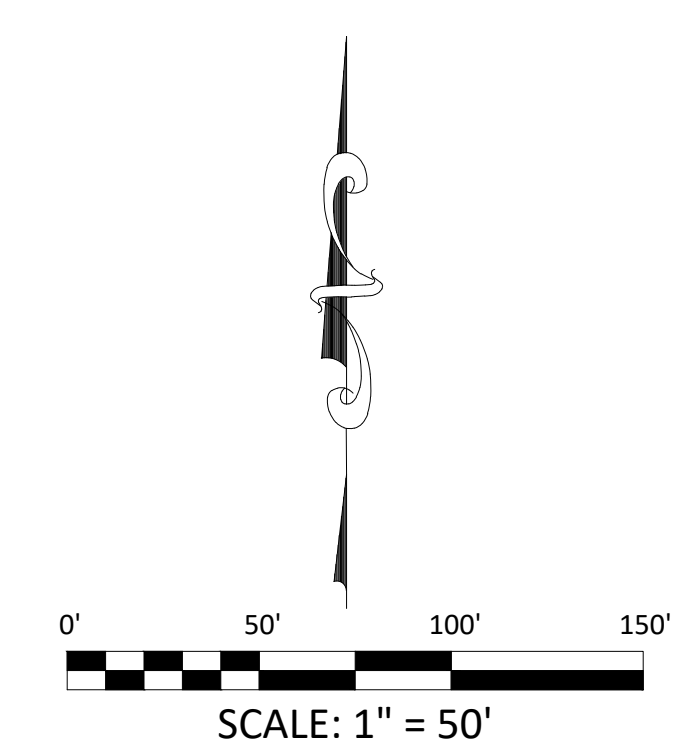
VERTEX
 The Vertex Companies, LLC
 400 Libbey Parkway Weymouth, MA 02189
 PHONE 781.952.6000
 www.vertexeng.com

CENTRAL FALLS SCHOOL DISTRICT
 EQUITY - EMPowerMENT - EXCELLENCE
 CENTRAL FALLS HIGH SCHOOL
 10 HIGGINSON AVE, CENTRAL FALLS, RI
 KEYNOTE LEGEND:

ADD-10 ADDENDUM #10 02.09.2024
100% CONSTRUCTION DOCUMENTS
 NORTH ARROW



DRAWING NAME:
SITE IMPROVEMENTS PLAN
 DRAWN BY: SMC
 REVIEWED BY: GBD
 SCALE: AS NOTED DRAWING NUMBER:
 JOB NO.: 77997
 DATE: OCTOBER 13, 2023 **C2.0**



GRADING NOTES:

1. PITCH EVENLY BETWEEN SPOT GRADES. ALL PAVED AREAS MUST PITCH TO DRAIN AT A MIN. OF 1/8" PER FOOT UNLESS SPECIFIED.
2. SITE GRADES SHALL CONFORM WITH ADA REQUIREMENTS. IN AREAS WHERE THESE REQUIREMENTS CANNOT BE MET, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING FOR RESOLUTION.
3. ALL TRANSITIONS BETWEEN GROUND COVERING MATERIALS SHALL BE SMOOTH.
4. CROSS SLOPES FOR ALL WALKWAYS SHALL NOT EXCEED 2% AND RUNNING SLOPES FOR ALL WALKWAYS SHALL NOT EXCEED 5%.
5. REFER TO DRAINAGE PLANS FOR ALL DRAINAGE STRUCTURE RIM ELEVATIONS.
6. TOP OF WALL (TOW) AND BOTTOM OF WALL (BOW) ELEVATIONS SHOWN ON THIS PLAN INDICATE THE GROUND ELEVATION IMMEDIATELY ADJACENT TO THE WALL. REFER TO THE LANDSCAPE DRAWINGS FOR THE REVEAL HEIGHT OF EACH SITE WALL.

COST ESTIMATING NOTES:

1. IT IS ANTICIPATED THAT APPROXIMATELY 5,800 CUBIC YARDS OF MATERIAL WILL BE EXCAVATED FROM THE NORTHERN PORTION OF THE SITE AND THIS MATERIAL WILL BE UNSUITABLE FOR USE BELOW PROPOSED PAVED SURFACES AND STRUCTURES.
2. FOR COST ESTIMATING PURPOSES THE FOLLOWING IS ASSUMED:
 - 2.1. APPROXIMATELY 2,500 CUBIC YARDS OF THE MATERIAL WILL BE SPREAD THROUGHOUT THE SOUTHERN PORTION OF THE SITE, IN LOCATIONS WHERE THE PROPOSED FINISHED SURFACE IS TO BE UNPAVED/PERVIOUS. THIS IS ANTICIPATED TO BE AN APPROXIMATE DEPTH OF 1.5 FEET. THIS DEPTH WILL BE TAPERED DOWN AT THE PERIMETER OF THE WORK TO MEET EXISTING SURFACE ELEVATIONS.
 - 2.2. ONE FOOT (12 INCHES) OF IMPORTED MATERIAL WILL BE SPREAD ABOVE THIS REUSED ON-SITE MATERIAL. GEOTEXTILE WILL BE UTILIZED TO SEPARATE ON-SITE AND IMPORTED MATERIAL. IT IS ANTICIPATED THAT THE FINAL GRADE WILL BE APPROXIMATELY 2.5 FEET ABOVE THE EXISTING GRADE THROUGHOUT THE UNPAVED/PERVIOUS SURFACES ON THE SOUTHERN PORTIONS OF THE SITE. THIS DEPTH WILL BE TAPERED DOWN AT THE PERIMETER OF THE WORK TO MEET EXISTING SURFACE ELEVATIONS.
 - 2.3. IT IS ANTICIPATED THAT APPROXIMATELY 3,300 CUBIC YARDS OF EXCAVATED ON-SITE SOILS WILL BE TAKEN OFF-SITE FOR DISPOSAL.

BID ALTERNATE NOTES:

- ALTERNATE 2 - OUTDOOR FURNITURE: GRADING WORK SHOWN ON THIS SHEET IS ANTICIPATED TO BE CONSISTENT WITH BOTH THE BASE BID AND ALTERNATE. REFER TO LANDSCAPE DRAWINGS FOR INFORMATION REGARDING THE BASE BID AND ALTERNATE.
- ALTERNATE 3 - OUTDOOR CLASSROOM: OUTDOOR CLASSROOM FEATURES ASSOCIATED WITH THE ALTERNATE ARE SHOWN AS BACKGROUND INFORMATION ON THIS SHEET. GRADING WORK SHOWN ON THIS SHEET IS ANTICIPATED TO BE CONSISTENT WITH BOTH THE BASE BID AND ALTERNATE.
- ALTERNATE 5 - FREIGHT FARM UNIT: GRADING WORK SHOWN ON THIS SHEET IS ANTICIPATED TO BE CONSISTENT WITH BOTH THE BASE BID AND ALTERNATE. REFER TO ARCHITECTURAL AND LANDSCAPE DRAWINGS FOR INFORMATION REGARDING THE BASE BID AND ALTERNATE.
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- ALTERNATE 9 - SPORTS LIGHTING: ALL WORK SHOWN ON THE CIVIL DRAWING SHEETS ARE ANTICIPATED TO BE CONSISTENT WITH BOTH THE BASE BID AND ALTERNATE. REFER TO THE ELECTRICAL DRAWINGS FOR INFORMATION REGARDING SITE ELECTRIC.
- ALTERNATE 10 - TREES: GRADING WORK SHOWN ON THIS SHEET IS ANTICIPATED TO BE CONSISTENT WITH BOTH THE BASE BID AND ALTERNATE. REFER TO LANDSCAPE DRAWINGS FOR INFORMATION REGARDING THE BASE BID AND ALTERNATE.

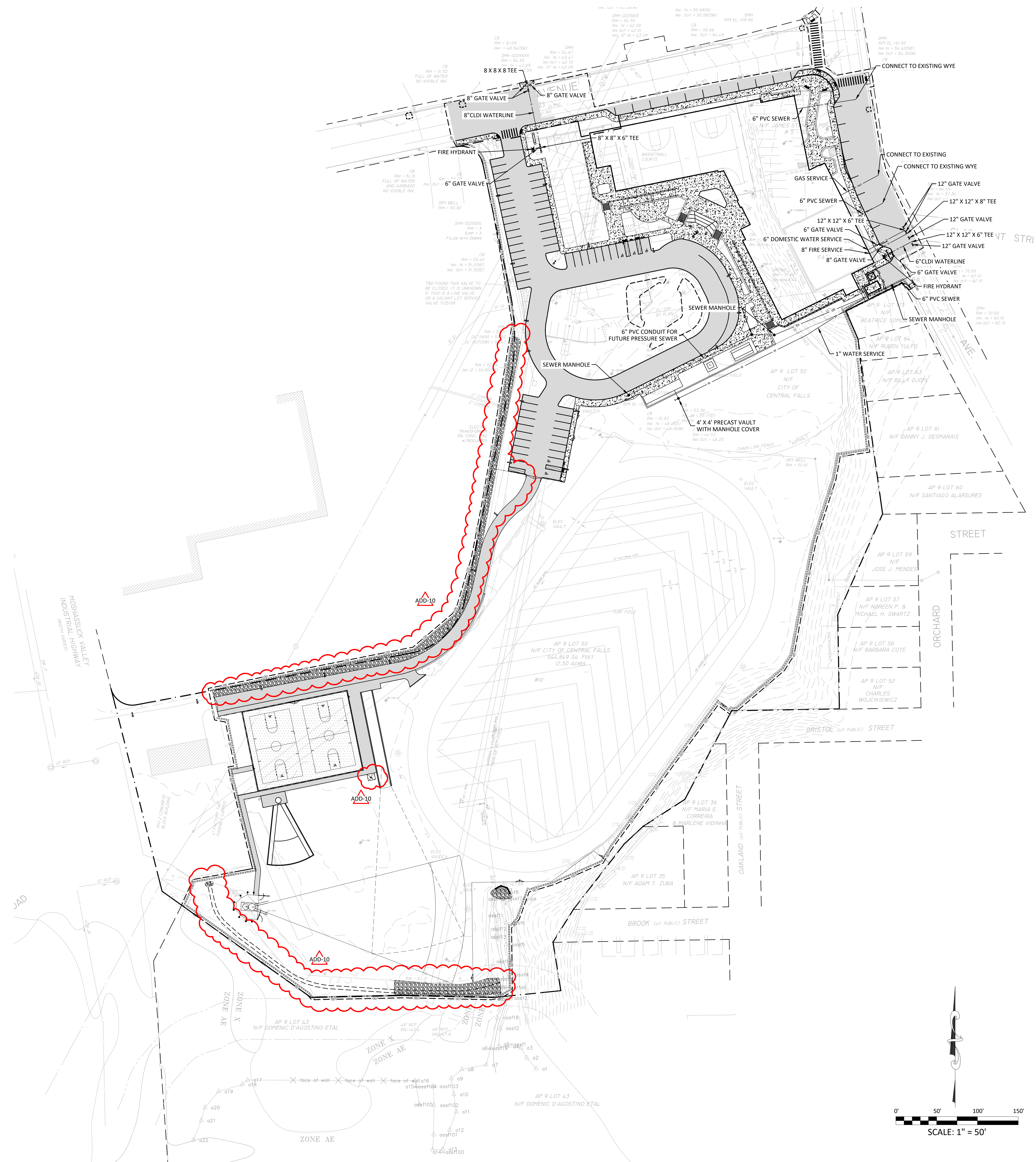


NOTES:

- WORK ON ACTIVE UTILITY LINES (INCLUDING SEWER, WATER, AND DRAINAGE) SHALL BE COORDINATED AND SCHEDULED WITH THE OWNER PRIOR TO EXECUTION OF THE WORK.
- THE CONTRACTOR SHALL MAINTAIN EXISTING PUBLIC SEWER AND DRAIN THROUGHOUT THE DURATION OF THE PROJECT. AT NO TIME SHALL THESE UTILITIES BE TAKEN OUT OF SERVICE WITHOUT WRITTEN AUTHORIZATION FROM THE UTILITY OWNER. IF TEMPORARY SHUTDOWN IS NECESSARY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH UTILITY BYPASSING.
- WORK ON EXISTING GAS LINES, INCLUDING CAPPING, SHALL BE COORDINATED WITH LOCAL GAS COMPANY.
- POLYVINYL CHLORIDE PIPE AND FITTINGS (PVC) SHALL BE MINIMUM SDR 35 WITH FULL DIAMETER DIMENSIONS CONFORMING TO THE SPECIFICATIONS FOR TYPE PSM POLYVINYL CHLORIDE (PVC) SEWER PIPE AND FITTINGS, ASTM DESIGNATION D3034 LATEST REVISION, FOR SIZES 18 INCHES TO 27 INCHES THE PIPE SHALL COMPLY WITH ASTM F679, LATEST RECORD.
- MANHOLE FRAMES AND COVERS SHALL BE MINIMUM CLASS 25 CONFORMING TO ASTM "STANDARD SPECIFICATION FOR GRAY IRON CASTINGS," DESIGNATION: A48.
- ALL WATER MAINS SHALL BE DUCTILE IRON CLASS 52 WITH PUSH ON JOINTS (UNLESS OTHERWISE SPECIFIED) MEETING THE REQUIREMENTS OF ANSI/AWWA C151/A21.51. ALL DUCTILE IRON WATER MAIN PIPE SHALL BE CEMENT LINED, WITH AN ASPHALTIC SEAL COAT MEETING THE REQUIREMENTS OF ANSI/AWWA C104/A21.4.
- CONCRETE THRUST BLOCKS SHALL BE PROVIDED AT ALL WATERLINE BENDS AND TEES IN ACCORDANCE WITH THE SPECIFICATIONS.
- ALL EXISTING STRUCTURES TO REMAIN WITHIN THE LIMITS OF WORK SHALL BE ADJUSTED TO FINISH GRADE. MINIMUM AND MAXIMUM NUMBER OF SEWER BRICK COURSES USED FOR GRADE ADJUSTMENT SHALL BE IN ACCORDANCE WITH UTILITY OWNERS STANDARDS. THIS SHALL INCLUDE THE NARRAGANSETT BAY COMMISSION TRANSITION CHAMBER WITH ALUMINUM HATCH ACCESS.
- ALL PRECAST CONCRETE MANHOLES FOR SANITARY AND DRAINAGE SHALL CONFORM TO THE ASTM "SPECIFICATIONS FOR PRECAST REINFORCED CONCRETE MANHOLE SECTIONS," DESIGNATION D478. THE BARREL SHALL BE 4-FOOT WITH A 1-FOOT COLLAR TO PREVENT FLOTATION.
- ALL DUCTILE IRON WATER PIPE SHALL BE PRESSURE TESTED FOR 2 HOURS.
- ALL WATERLINE CONNECTIONS SHALL REQUIRE A SHUTDOWN. CONTRACTOR IS RESPONSIBLE FOR COORDINATING SHUTDOWN WITH THE PAWTUCKET WATER SUPPLY BOARD TWO WEEKS IN ADVANCE OF WORK.
- ALL UTILITY AND DRAINAGE INSTALLATION SHALL BE INSPECTED BY THE PAWTUCKET WATER SUPPLY BOARD. CONTRACTOR SHALL PROVIDE 48 HOUR NOTICE TO PAWTUCKET WATER SUPPLY BOARD PRIOR TO INSTALLATION.
- ALL WATERLINE GATE VALVES SHALL OPEN RIGHT. ALL HYDRANTS SHALL OPEN LEFT.
- MINIMUM VERTICAL SEPARATION BETWEEN ALL UTILITY PIPES SHALL BE EIGHTEEN (18) INCHES. IF VERTICAL SEPARATIONS ARE LESS THAN EIGHTEEN (18) INCHES, THE UTILITY PIPES SHALL BE REINFORCED AND PROTECTED AS REQUIRED BY CURRENT CITY AND UTILITY AGENCY STANDARD SPECIFICATIONS.
- WATER AND SANITARY SEWER LINES SHALL HAVE A MINIMUM HORIZONTAL SEPARATION OF TEN (10) FEET. WHEN A TEN (10) FOOT SEPARATION IS NOT PROVIDED OR WHEN SEWER LINES CROSS WATER LINES WITH LESS THAN ONE AND ONE-HALF (1 1/2) FEET OF VERTICAL SEPARATION, SEWER JOINTS SHALL BE CONCRETE ENCASED. FOR PERPENDICULAR CROSSINGS, ENCASED JOINTS SHALL EXTEND TEN (10) FEET, PERPENDICULAR TO THE WATER LINE IN BOTH DIRECTIONS.
- THE LENGTH OF SANITARY SEWER LINE IS THE HORIZONTAL DISTANCE BETWEEN CENTER OF MANHOLE TO CENTER OF MANHOLE. THEREFORE, THE DISTANCES INDICATED ON THE PLANS ARE APPROXIMATE AND COULD VARY DUE TO VERTICAL ALIGNMENT AND MANHOLE DIMENSIONS.
- ALL PLUMBING/MECHANICAL UTILITIES WITHIN 10 FEET OF THE BUILDING ARE SHOWN ON THE PLUMBING/MECHANICAL PLANS.
- REFER TO ELECTRICAL PLANS FOR SITE ELECTRICAL ROUTING.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING THE LOCATION AND ELEVATION OF EXISTING WYES PRIOR TO INSTALLATION OF EXTERIOR SEWER PIPING.

BID ALTERNATE NOTES:

- ALTERNATE 2 - OUTDOOR FURNITURE: UTILITY WORK SHOWN ON THIS SHEET IS ANTICIPATED TO BE CONSISTENT WITH BOTH THE BASE BID AND ALTERNATE. REFER TO LANDSCAPE DRAWINGS FOR INFORMATION REGARDING THE BASE BID AND ALTERNATE.
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- ALTERNATE 10 - TREES: UTILITY WORK SHOWN ON THIS SHEET IS ANTICIPATED TO BE CONSISTENT WITH BOTH THE BASE BID AND ALTERNATE. REFER TO LANDSCAPE DRAWINGS FOR INFORMATION REGARDING THE BASE BID AND ALTERNATE.



Ai3 ARCHITECTS
 526 Boston Post Rd Weymouth, MA 01981
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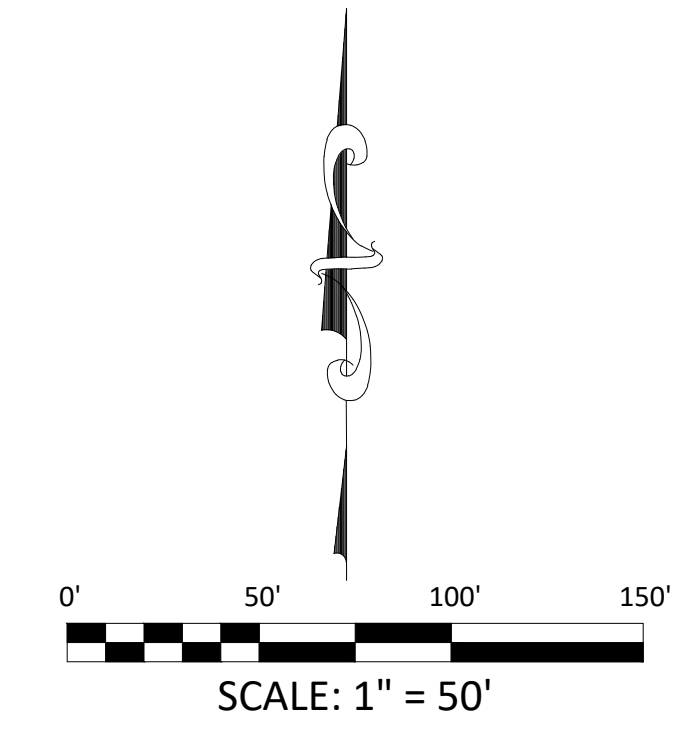
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ADD-10 ADDENDUM #10 02.09.2024
100% CONSTRUCTION DOCUMENTS
 NORTH ARROW

KEYPLAN

DRAWING NAME:
UTILITY PLAN
 DRAWN BY: SMC
 REVIEWED BY: GBD
 SCALE: AS NOTED | DRAWING NUMBER:
 JOB NO.: 77997
 DATE: OCTOBER 13, 2023
C4.0



NOTE:

1. EROSION CONTROL MEASURES SHALL BE IMPLEMENTED FOR THE DURATION OF CONSTRUCTION. AT A MINIMUM, PERIMETER HAY BALES, VEHICLE TRACKING CONTROL, INLET PROTECTION, AND TEMPORARY SEDIMENTATION BASINS SHOULD BE CONSIDERED.
2. ALL UTILITIES WITHIN THE FOOTPRINT OF PROPOSED BUILDING ADDITIONS SHOULD BE ANTICIPATED TO BE REMOVED AND RELOCATED. SERVICE SHALL BE MAINTAINED TO EXISTING BUILDINGS TO REMAIN FOR THE DURATION OF CONSTRUCTION.
3. ALL EXISTING STRUCTURES TO REMAIN WITHIN THE LIMITS OF WORK SHALL BE ADJUSTED TO FINISH GRADE. SERVICE SHALL BE MAINTAINED TO EXISTING BUILDINGS TO REMAIN FOR THE DURATION OF CONSTRUCTION.
4. ALL PRECAST CONCRETE MANHOLES FOR DRAINAGE SHALL CONFORM TO THE ASTM "SPECIFICATIONS FOR PRECAST REINFORCED CONCRETE MANHOLE SECTIONS," DESIGNATION D478. THE BARREL SHALL BE 4-FOOT WITH A 1-FOOT COLLAR TO PREVENT FLOTATION.
5. ALL DRAIN LINES SHALL BE 12" UNLESS OTHERWISE NOTED. ALL DRAIN LINES SHALL BE HDPE UNLESS OTHERWISE NOTED.
6. ALL CATCH BASINS TO BE 4' DIAMETER (UNLESS OTHERWISE NOTED) SHALL CONFORM TO MHD STANDARD DETAIL 201.4.0 AND ALL CATCH BASIN FRAMES AND GRATES SHALL CONFORM TO 201.6.0 UNLESS OTHERWISE NOTED.
7. ALL MANHOLES TO BE 4' DIAMETER (UNLESS OTHERWISE NOTED) AND SHALL CONFORM TO MHD STANDARD DETAIL 202.4.0 AND ALL MANHOLE FRAMES AND COVERS SHALL CONFORM TO 202.6.0 UNLESS OTHERWISE NOTED. CONCRETE ANTI-FLOTATION COLLARS SHALL BE PROVIDED AT ALL MANHOLES.
8. REINFORCED CONCRETE PIPE AND FLARED ENDS SHALL CONFORM TO THE AASHTO M170 FOR STANDARD STRENGTH REINFORCED CONCRETE CULVERT PIPE FOR CLASS III PIPE, WALL B, OR ASTM C76 FOR REINFORCED CONCRETE CULVERT AND STORM DRAIN PIPE UNLESS NOTED OTHERWISE. ALL PIPE 24 INCHES IN DIAMETER OR SMALLER SHALL BE OF THE BELL AND SPIGOT TYPE. PIPES LARGER THAN 24 INCHES IN DIAMETER SHALL BE TONGUE AND GROOVE OR BELL AND SPIGOT. ALL DRAINAGE PIPING SHALL BE GASKETED.
9. CONCRETE VAULT DETENTION SYSTEMS SHALL INCLUDE AN 8" EXTENDED CONCRETE SLAB WITH UNITS ANCHORED INTO SLAB, AND SHALL BE LINED WITH AN IMPERVIOUS LINER.
10. HIGH-DENSITY POLYETHYLENE PIPE AND FITTINGS SHALL BE ADS N-12 1/2" ST SMOOTH INTERIOR PIPE, ADS N-12 1/2" ST HIGH CAPACITY LARGE DIAMETER PIPE OR APPROVED EQUIVALENT. JOINTS SHALL BE SOIL-TIGHT AND INCLUDE A RUBBER GASKET ON THE SPIGOT END OF THE PIPE. WHEN INSTALLED INTO THE BELL END, THE JOINT SHALL BE SEALED.
11. MANHOLES OVER 12 FEET IN DEPTH SHALL HAVE MINIMUM OF 5 FEET INSIDE DIAMETER. ALL MANHOLES SHALL HAVE A SUMP OF AT LEAST 30 INCHES BELOW INVERT OF OUTLET PIPE. RISERS SHALL BE CLAY OR SHALE BRICK, AND SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 91, GRADE MM OR AS SPECIFIED IN MASSDOT M4.05.
12. ALL CATCH BASINS SHALL HAVE A SUMP OF AT LEAST 48 INCHES (4 FEET) BELOW THE INVERT OF THE OUTLET PIPE, OR OTHERWISE APPROVED BY THE TOWN, AND AN INSIDE DIAMETER OF 4 FEET MINIMUM.
13. LIVE LOAD DESIGN FOR CATCH BASINS SHALL BE HS-25 LOADING. CATCH BASINS WHICH ARE LIMITED BY HEIGHT SHALL BE INSTALLED WITH A FLAT TOP SLAB, CAST IN PLACE, DESIGNED FOR HS-25 LOADING AND CAST IRON FRAME CAST IN PLACE.
14. MANHOLE FRAMES AND COVERS SHALL BE AT LEAST CLASS 25 CONFORMING TO ASTM A48 "STANDARD SPECIFICATION FOR GRAY IRON CASTINGS".
15. CATCH BASIN HOODS SHALL BE USED TO MINIMIZE THE ENTRY OF OIL, GASOLINE, AND DEBRIS INTO DRAINAGE PIPES.
16. WHERE PROPOSED DRAIN LINES CROSS SANITARY OR WATER LINES WITH LESS THAN 1.5' CLEARANCE, ENCASE BOTH UTILITIES IN FLOWABLE FILL FOR A DISTANCE OF 10' ON EITHER SIDE OF CROSSING. CENTER PIPE LENGTH AT CROSSING. REFER TO CROSSING DETAIL ON SHEET CS-2 ON DETAIL SHEETS.

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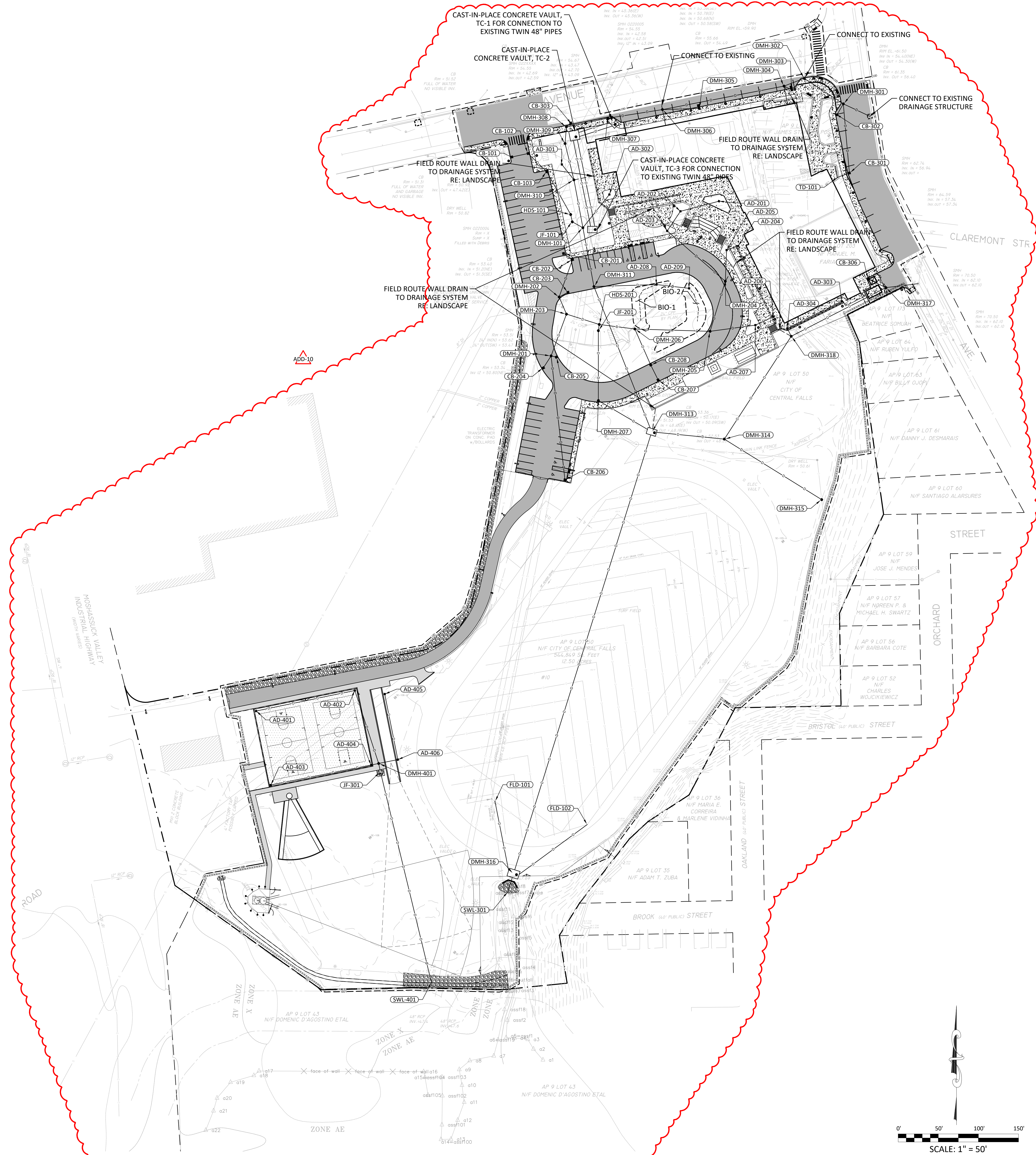
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526 Boston Post Rd Weyland, MA
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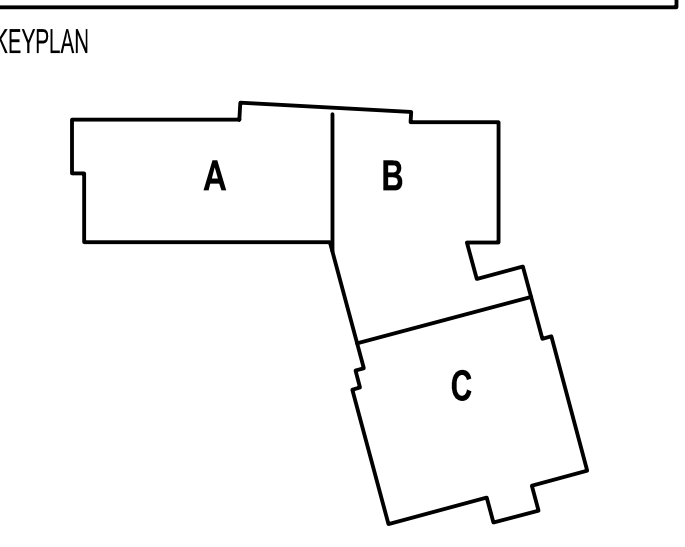
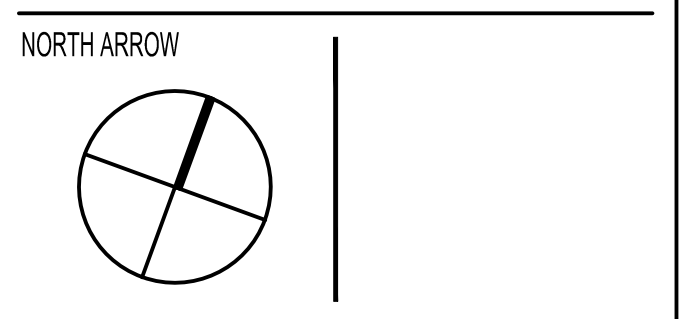
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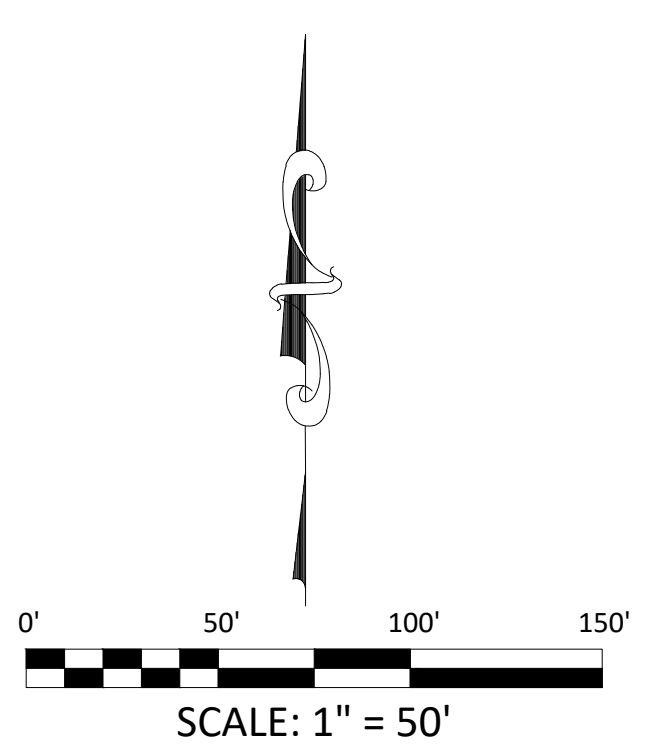
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DRAWING NAME:
DRAINAGE PLAN

DRAWN BY: SMC
REVIEWED BY: GBD

SCALE: AS NOTED | DRAWING NUMBER:
JOB NO.: 77997
DATE: OCTOBER 13, 2023
C5.1



Structure Table			
Structure Name	RIM	INVERT IN	INVERT OUT
AD-201	64.14		12" W 54.69
AD-202	59.39	12" E 54.45	12" SW 54.45
AD-203	59.16	12" NE 54.30	12" SE 54.30
AD-204	64.03		12" W 54.09
AD-205	58.98	12" E 54.01	12" S 54.01
AD-206	64.16		12" SW 53.80
AD-207	58.66	12" NE 53.68	12" W 53.68
AD-208	55.50	12" E 50.71	12" W 50.71
AD-209	55.50		12" W 50.91
AD-301	52.99		8" SE 51.25
AD-302	64.13		12" SW 51.92
AD-303	64.18		12" SW 59.06
AD-304	64.16	12" NE 58.68	12" SE 55.68
AD-401	55.85		12" E 53.05
AD-402	55.75	12" W 52.67	12" S 52.67
AD-403	55.75		12" E 53.07
AD-404	55.75	12" W 52.43	12" E 52.43
AD-405	55.36		12" S 52.92
AD-406	55.34	12" N 52.50	12" W 52.50
CB-101	53.38		12" E 51.29
CB-102	53.36	12" W 51.21	12" SE 51.21
CB-103	54.13	12" NW 51.08	12" SE 51.08
CB-201	56.13	12" SE 51.36	
CB-202	56.72		12" NW 51.43 12" S 51.68

Structure Table			
Structure Name	RIM	INVERT IN	INVERT OUT
CB-203	56.05		12" SW 51.49
CB-204	54.53		12" NE 51.52
CB-205	54.69		12" W 51.47
CB-206	55.84		12" N 51.96
CB-207	55.68		12" NW 53.17
CB-208	55.68	12" SE 53.07	12" NW 53.07
CB-301	63.03	12" W 54.41	12" N 54.41
CB-302	62.17		12" NE 53.70
CB-303	53.57		12" SW 51.35
CB-306	63.67		12" SE 60.21
DMH-101	56.97	18" N 50.66 15" NW 50.66 12" NE 51.66	18" S 50.66
DMH-201	54.81	12" S 51.34 12" SW 51.44 12" E 51.44	12" N 51.34
DMH-202	55.81	12" N 51.43 12" NE 51.43	12" SE 51.33
DMH-203	56.15	12" S 51.11 12" NW 51.21	15" E 51.11
DMH-204	58.08	12" N 53.82 12" NW 53.82	12" S 53.72
DMH-205	57.39	12" E 53.39 12" N 53.39	15" W 53.29
DMH-206	57.10	12" SE 52.82 15" E 52.82	15" W 52.72
DMH-207	54.56	18" N 49.91	18" SE 49.91
DMH-301	62.00	12" SW 53.54 12" S 53.54 12" SE 53.54	12" NW 53.54
DMH-302	61.56	12" SE 52.96 18" N 52.96 12" NE 52.96	18" W 52.96
DMH-303	60.67		12" NW 52.80
DMH-304	59.91	18" E 52.69 12" S 52.69 12" SE 52.69	18" W 52.69
DMH-305	57.35		12" W 53.47
DMH-306	55.69	18" N 51.92 12" S 51.92 12" E 52.55 18" E 51.92	18" W 51.92

DRAINAGE STRUCTURE TABLE

Structure Table			
Structure Name	RIM	INVERT IN	INVERT OUT
DMH-307	55.97	18" E 51.57	18" W 51.57
DMH-308	53.92	12" NE 51.31 18" E 51.31	18" S 51.31
DMH-309	54.09	18" N 51.22	18" S 51.22
DMH-310	55.31	8" NW 51.00 18" N 51.00	18" S 51.01
DMH-311	56.64	18" N 50.32 12" E 50.32	18" S 50.32
DMH-313	54.00	18" NW 49.44 24" E 49.59 18" N 49.44	24" S 49.44
DMH-314	54.14	12" SE 50.50 24" NE 50.50	24" W 50.50
DMH-315	54.85		12" NW 51.21
DMH-316	52.57	24" N 48.00 18" N 48.00 18" NE 48.00	24" S 48.00
DMH-317	64.92	30" E 59.97 12" NW 59.97	24" SW 53.35
DMH-318	58.83	24" NE 52.03 12" NW 55.63	24" SW 52.03
DMH-401	55.66	12" N 52.38 12" W 52.38 12" E 52.38	12" S 52.38
FLD-101			18" S 48.63
FLD-102			18" SW 48.63
HDS-101	56.37	12" NW 50.84	12" S 50.84
HDS-201	56.80	15" E 52.50 15" W 50.98	18" S 50.98
JF-101	56.60	12" N 50.80	15" SE 50.72
JF-201	56.73	18" N 50.93	18" S 50.43
JF-301	55.85	12" N 52.35	15" S 52.27
RD-101			12" N 52.12
RD-102			12" N 55.88
SWL-301		24" N 47.94	
SWL-401		15" N 51.04	
TD-101			12" E 54.71

Pipe Table				
Starting Structure	Ending Structure	Size	Length	Slope
CB-306	DMH-317	12	24.13	1.00%
EXISTING STRUCTURE	DMH-317	30	40.82	1.20%
DMH-317	DMH-318	24	132.76	1.00%
DMH-301	DMH-302	12	58.17	1.00%
CB-302	DMH-301	12	15.72	1.00%
CB-301	DMH-301	12	86.59	1.00%
TD-101	CB-301	12	15.39	2.00%
DMH-302	DMH-304	18	26.92	1.00%
RD-102	DMH-304	12	23.80	2.00%
CB-202	CB-201	12	13.52	0.50%
DMH-306	DMH-307	18	69.08	0.50%
EXISTING STRUCTURE	DMH-306	18	4.54	0.81%
RD-101	DMH-306	12	20.21	1.00%
DMH-305	DMH-306	12	45.83	2.00%
DMH-303	DMH-304	12	10.86	1.00%
DMH-304	DMH-306	18	154.40	0.50%
EXISTING STRUCTURE	DMH-301	12	36.63	1.00%
EXISTING STRUCTURE	DMH-302	18	52.33	1.00%
EXISTING STRUCTURE	DMH-302	12	61.14	1.00%
AD-205	DMH-204	12	38.96	0.50%
DMH-309	DMH-310	18	46.69	0.45%
DMH-308	DMH-309	18	20.79	0.45%

Pipe Table				
Starting Structure	Ending Structure	Size	Length	Slope
DMH-307	DMH-308	18	52.57	0.50%
DMH-314	DMH-313	24	90.97	1.00%
DMH-315	DMH-314	12	142.98	0.50%
DMH-318	DMH-314	24	152.96	1.00%
CB-207	CB-208	12	20.94	0.50%
AD-209	AD-208	12	40.81	0.50%
AD-208	DMH-311	12	78.03	0.50%
AD-202	AD-203	12	29.45	0.50%
AD-203	DMH-204	12	95.96	0.50%
CB-303	DMH-308	12	7.25	0.50%
CB-206	DMH-201	12	155.53	0.40%
CB-204	DMH-201	12	17.72	0.50%
CB-205	DMH-201	12	6.64	0.50%
AD-301	DMH-310	8	24.42	1.00%
CB-208	DMH-206	12	48.96	0.50%
DMH-311	DMH-313	18	194.99	0.45%
HDS-201	JF-201	18	7.79	0.60%
DMH-201	DMH-203	12	55.53	0.40%
CB-202	DMH-202	12	49.55	0.50%
DMH-202	DMH-203	12	23.20	0.50%
CB-203	DMH-202	12	12.50	0.50%
AD-207	DMH-205	12	57.00	0.50%
DMH-204	DMH-205	12	65.23	0.50%
DMH-101	DMH-311	18	74.63	0.45%
DMH-310	DMH-101	18	60.72	0.58%
HDS-101	JF-101	12	9.25	0.40%
CB-103	HDS-101	12	61.18	0.40%

DRAINAGE PIPE TABLE

Pipe Table				
Starting Structure	Ending Structure	Size	Length	Slope
CB-101	CB-102	12	20.75	0.40%
CB-102	CB-103	12	32.47	0.40%
JF-101	DMH-101	15	15.19	0.40%
JF-201	DMH-207	18	87.16	0.60%
DMH-207	DMH-313	18	77.11	0.60%
AD-405	AD-406	12	83.39	0.50%
DMH-316	SWL-301	24	23.80	0.25%
DMH-313	DMH-316	24	577.23	0.25%
FLD-101	DMH-316	18	93.21	0.68%
FLD-102	DMH-316	18	110.53	0.57%
AD-401	AD-402	12	125.78	0.30%
AD-402	DMH-401	12	95.73	0.30%
DMH-401	JF-301	12	10.78	0.30%
AD-403	AD-404	12	127.68	0.50%
AD-404	DMH-401	12	9.47	0.50%
AD-406	DMH-401	12	24.41	0.50%
DMH-203	HDS-201	15	42.87	0.32%
DMH-206	HDS-201	15	44.75	0.50%
DMH-205	DMH-206	15	93.87	0.50%
JF-301	SWL-401	15	270.45	0.45%
AD-302	DMH-101	12	52.96	0.50%
AD-201	AD-202	12	49.59	0.50%
AD-204	AD-205	12	15.23	0.50%
AD-206	AD-207	12	24.63	0.50%
AD-304	DMH-318	12	11.10	0.50%
AD-303	AD-304	12	75.99	0.50%



526 Boston Post Rd Weyland, MA
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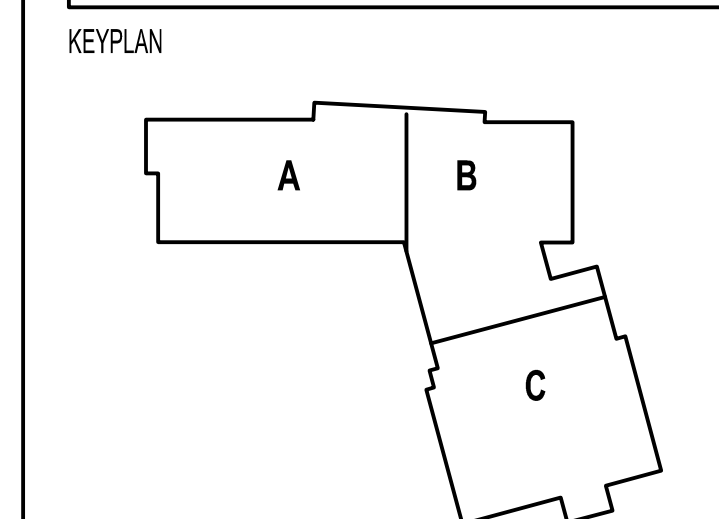
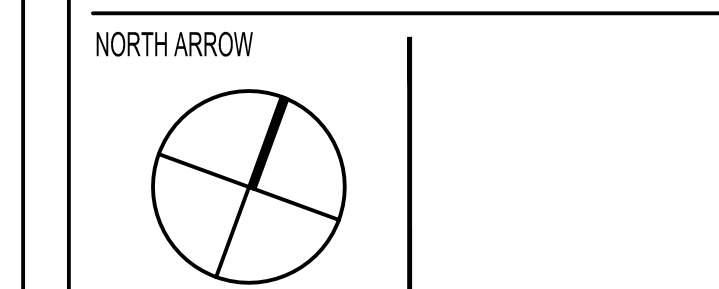
The Vertex Companies, LLC
400 Libbey Parkway
Weymouth, MA 02189
PHONE 781.952.6000
www.vertexeng.com



CENTRAL FALLS HIGH SCHOOL
10 HIGGINSON AVE, CENTRAL FALLS, RI
KEYNOTE LEGEND:

ADD-10 ADDENDUM #10 02.09.2024

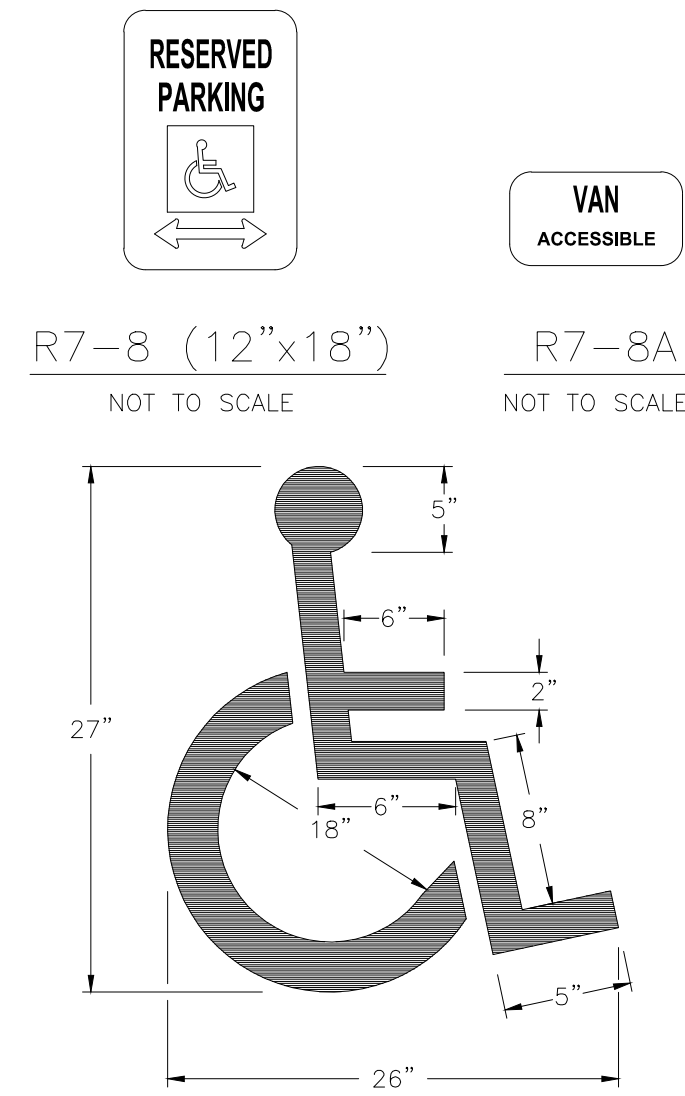
100% CONSTRUCTION DOCUMENTS



DRAWING NAME:
**DRAINAGE PLAN:
DRAINAGE STRUCTURE
AND PIPE TABLES**

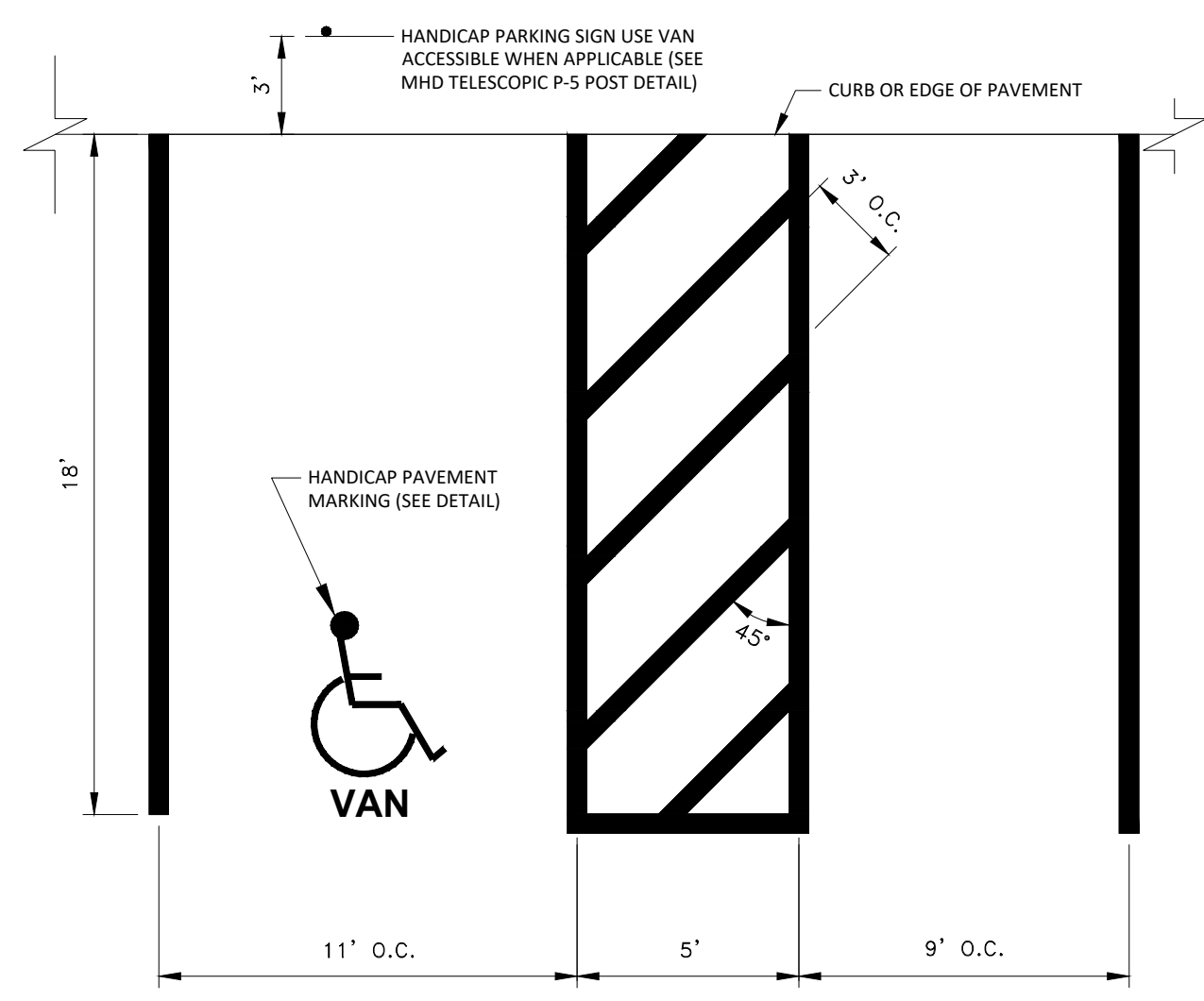
DRAWN BY: SMC
REVIEWED BY: GBD

SCALE: AS NOTED | DRAWING NUMBER:
JOB NO.: 77997
DATE: OCTOBER 13, 2023
C5.2



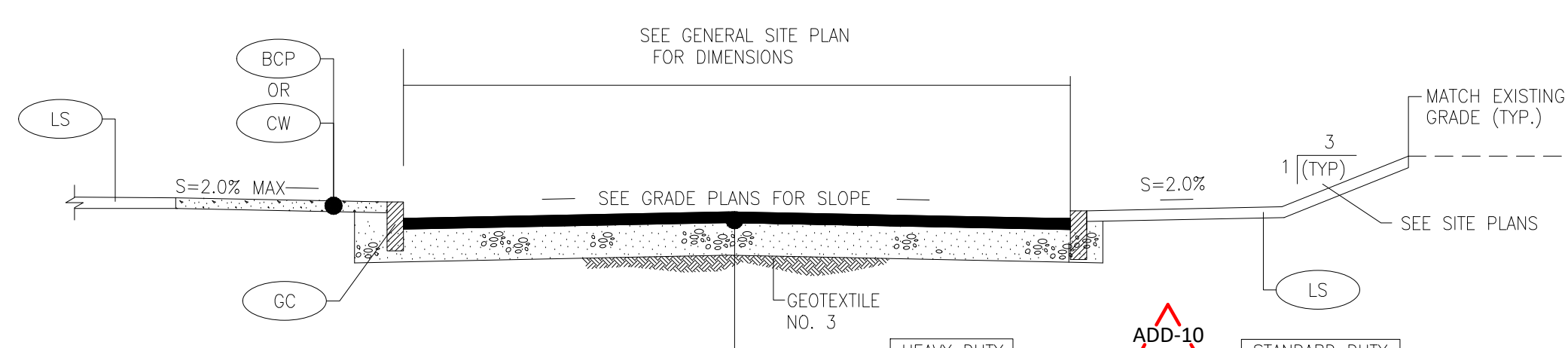
NOTE:
1. ALL HANDICAP PARKING AND SIGNAGE SHALL BE IN CONFORMANCE WITH THE 2010 ADAS AND RISBC-1.

SHP HANDICAP PAVEMENT MARKING
NOT TO SCALE



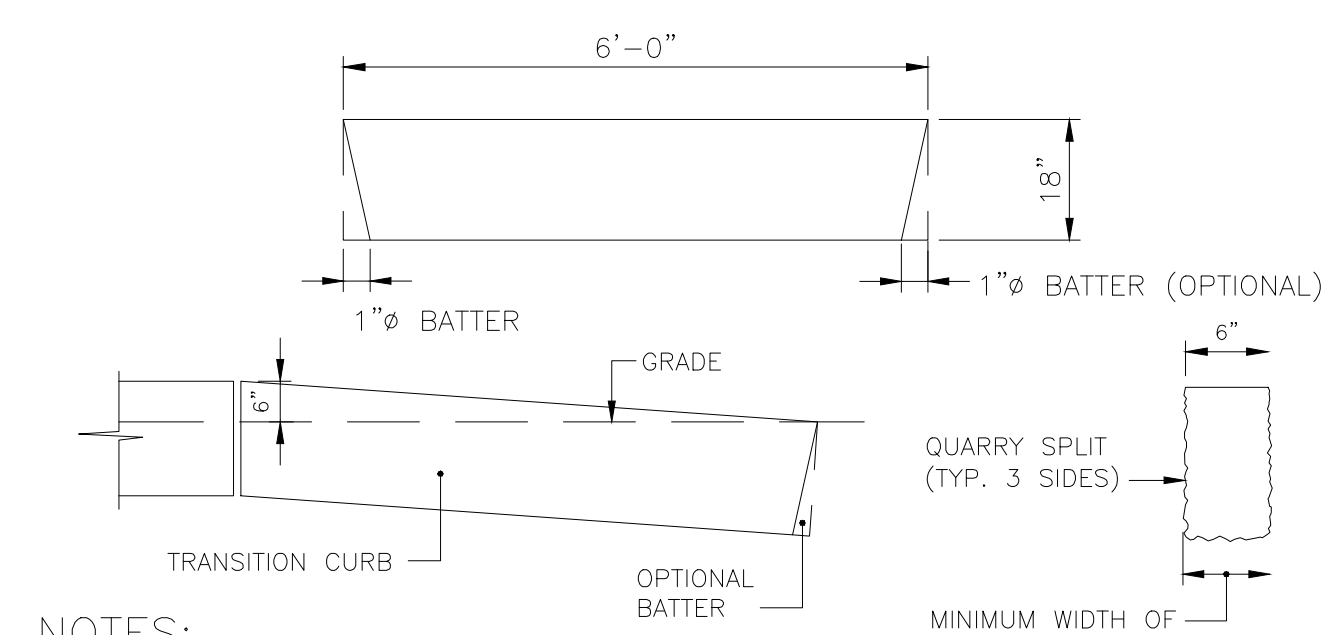
NOTE:
1. WHERE STALLS ABUT SIDEWALK, PARKING SIGNS SHOULD BE PLACED AT BACK EDGE OF SIDEWALK.
2. STRIPING SHOULD BE WHITE IN COLOR.

SHP VAN HANDICAP PARKING STALLS @ 90°
NOT TO SCALE



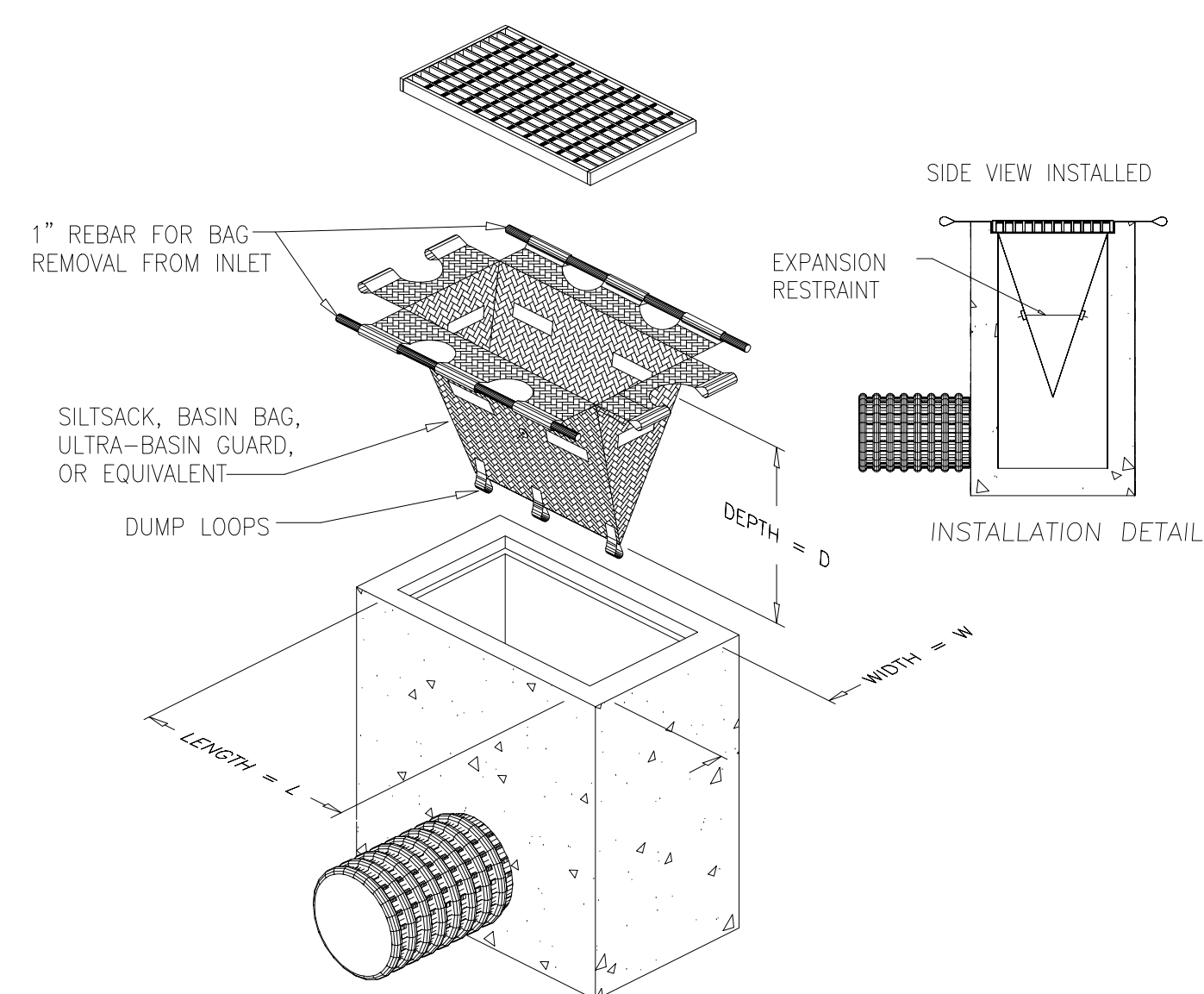
NOTE:
1. SEE GEOTECHNICAL REPORT FOR MATERIAL SPECIFICATIONS.
2. CAPE COD BERM UNLESS OTHERWISE NOTED ON PLANS.
3. HEAVY DUTY USED FOR CITY AND STATE OWNED ROADWAYS, RESTORED PAVEMENT THICKNESS SHALL MATCH THE EXISTING DEPTH OF THE ROADWAY, OR EQUAL FOUR (4) INCHES, WHICHEVER IS GREATER.
4. STANDARD DUTY USED FOR ON-SITE ACCESS ROADS AND PARKING AREAS.

BCP TYPICAL BITUMINOUS CONCRETE PAVEMENT SECTIONS
NOT TO SCALE



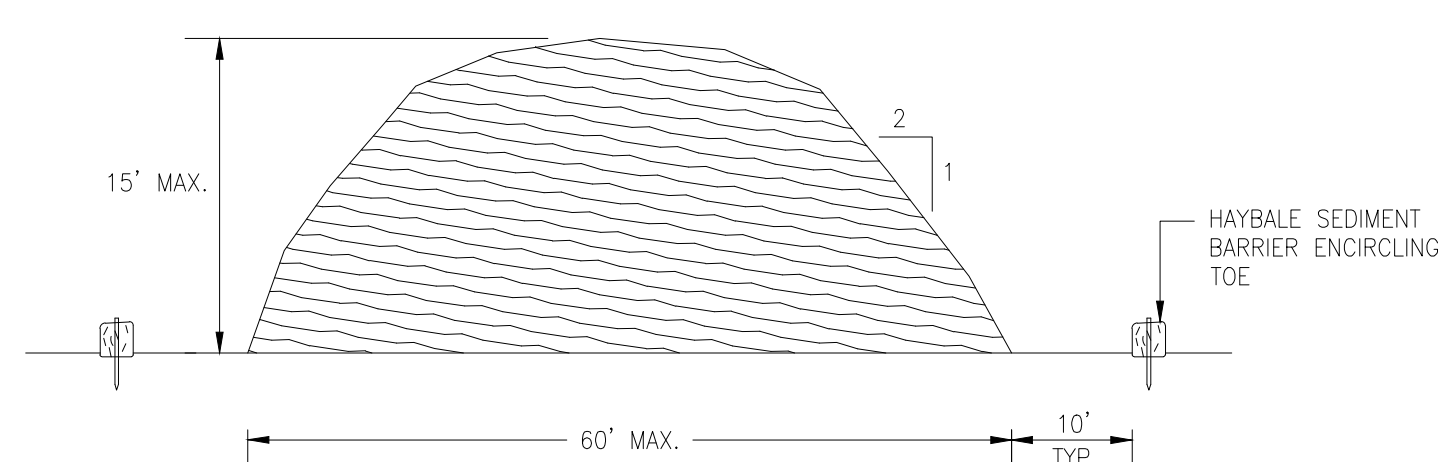
NOTES:
1. TOP SURFACE TO BE DRESSED BY SAW OR TOOL.
2. GRANITE CURB SHALL CONFORM TO M.H.D. STD. SPECIFICATION MATERIALS SECTION M9.04.1 GRANITE CURB, TYPE V4A.

6\"/>



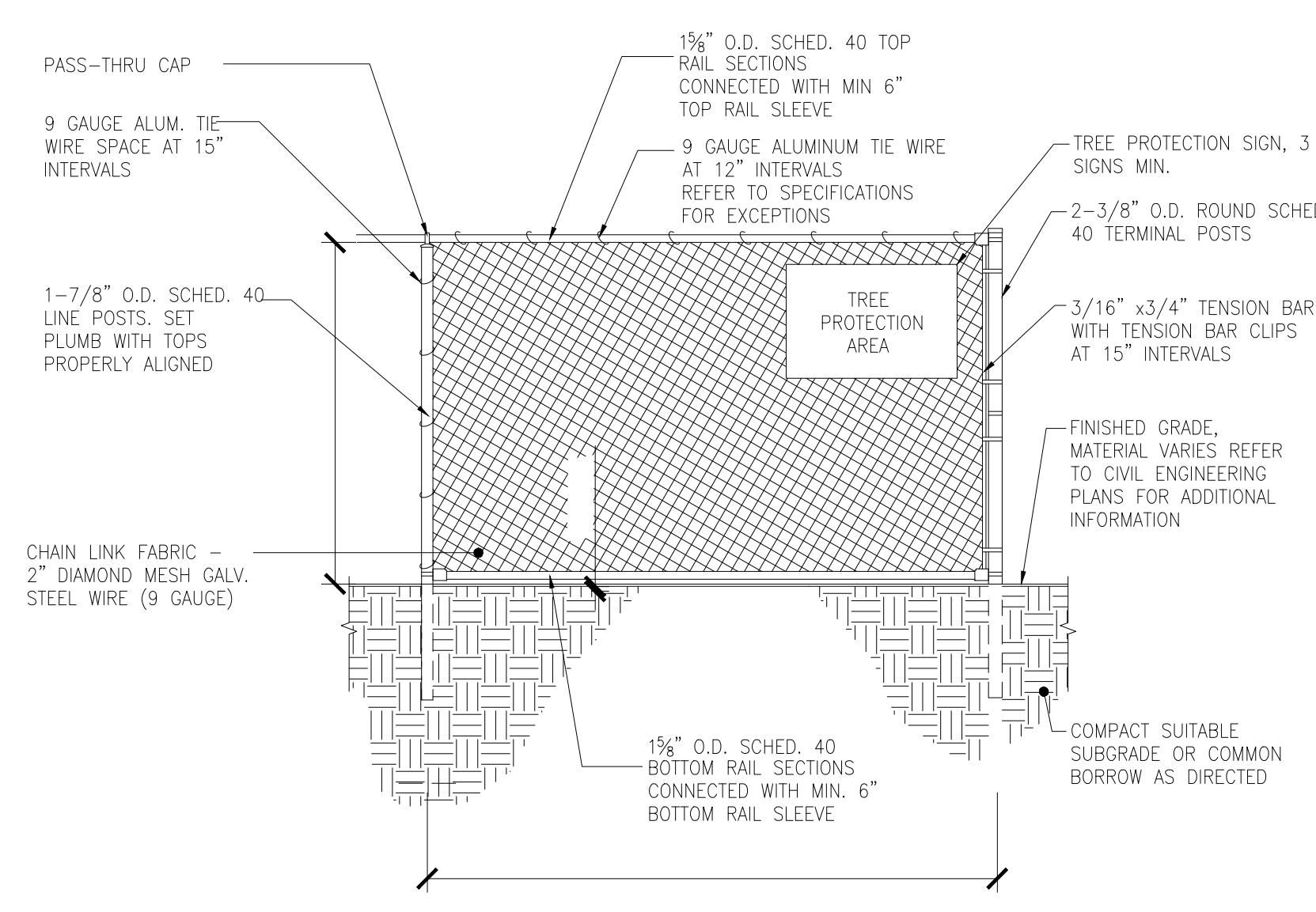
NOTES:
1. INLET PROTECTION SHALL BE CLEANED OF SILT AND DEBRIS ON A REGULAR BASIS AS REQUIRED BY PROJECT SPECIFIC SWPPP.
2. INSPECTIONS SHALL BE DONE AFTER EACH RAIN EVENT AND AT A MINIMUM EVERY TWO WEEKS AND AS REQUIRED BY PROJECT SPECIFIC SWPPP.

INLET PROTECTION
NOT TO SCALE



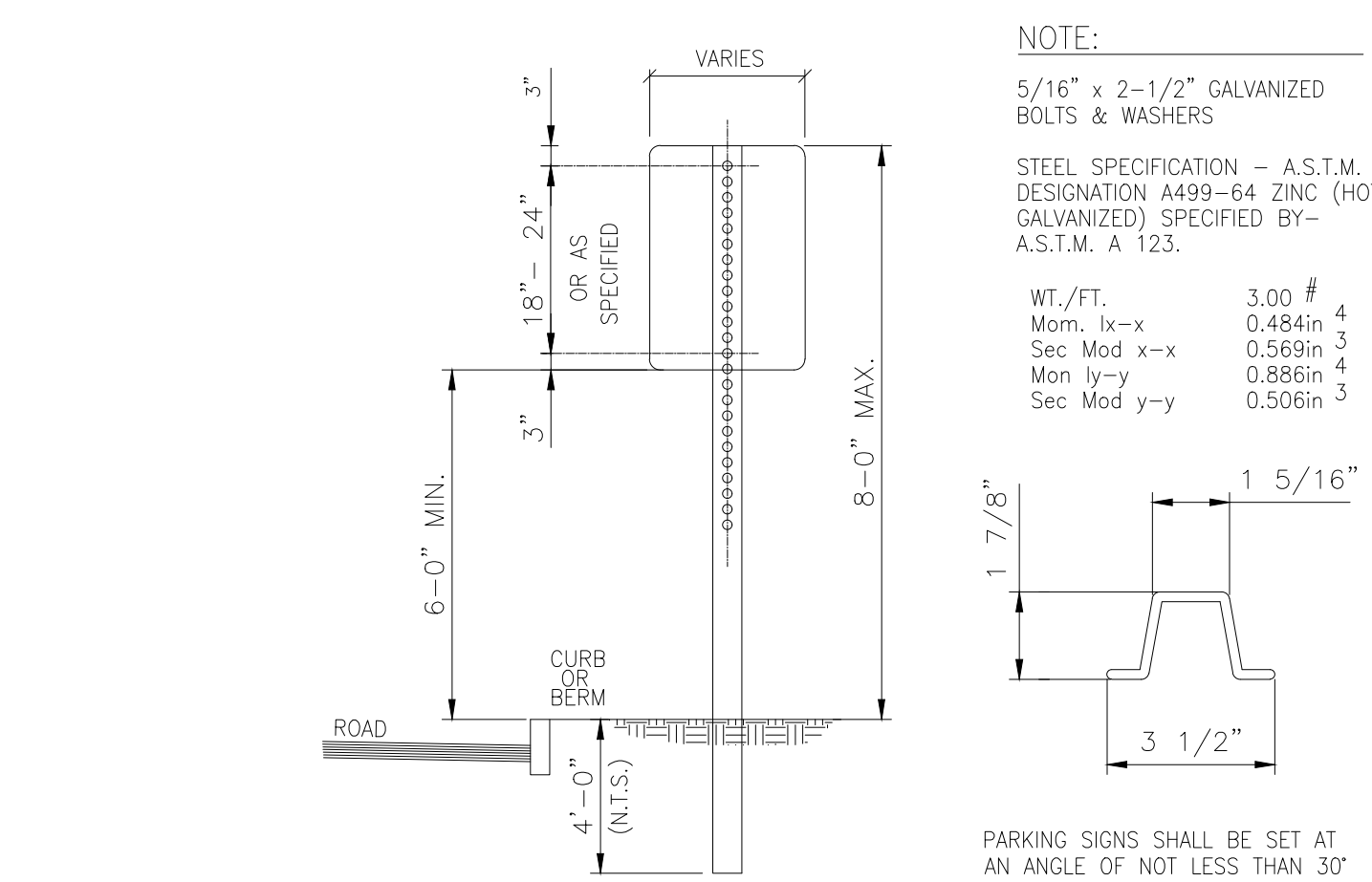
NOTES:
1. STOCKPILE AREA SHALL NOT EXCEED SPECIFIED DIMENSIONS WITHOUT APPROVAL FROM ENGINEER.
2. STOCKPILED ERODIBLE MATERIAL THAT WILL NOT BE USED FOR GREATER THAN 30 DAYS SHALL BE STABILIZED WITH TEMPORARY VEGETATION OR COVERED IMMEDIATELY FOLLOWING PLACEMENT.
3. NO STOCKPILE SHALL BE PLACED WITHIN THE 100 FOOT WETLAND BUFFER.

ERODIBLE MATERIAL STOCKPILE
NOT TO SCALE



NOTE:
1. FOR TREE PROTECTION ONLY, SEE CIVIL PLANS FOR LOCATION.
2. FENCE POST TO BE BURIED 2 FEET BELOW GRADE.
3. ADJUST POST LOCATIONS IN THE FIELD ACCORDING TO LOCATION OF TREE ROOTS.
4. PROTECTION FENCING LOCATED ON SIDEWALKS AS SHOWN ON THE PLANS SHALL HAVE CONCRETE BLOCKS.
5. INSTALLATION TO BE APPROVED BY TOWN TREE WARDEN AND LANDSCAPE ARCHITECT

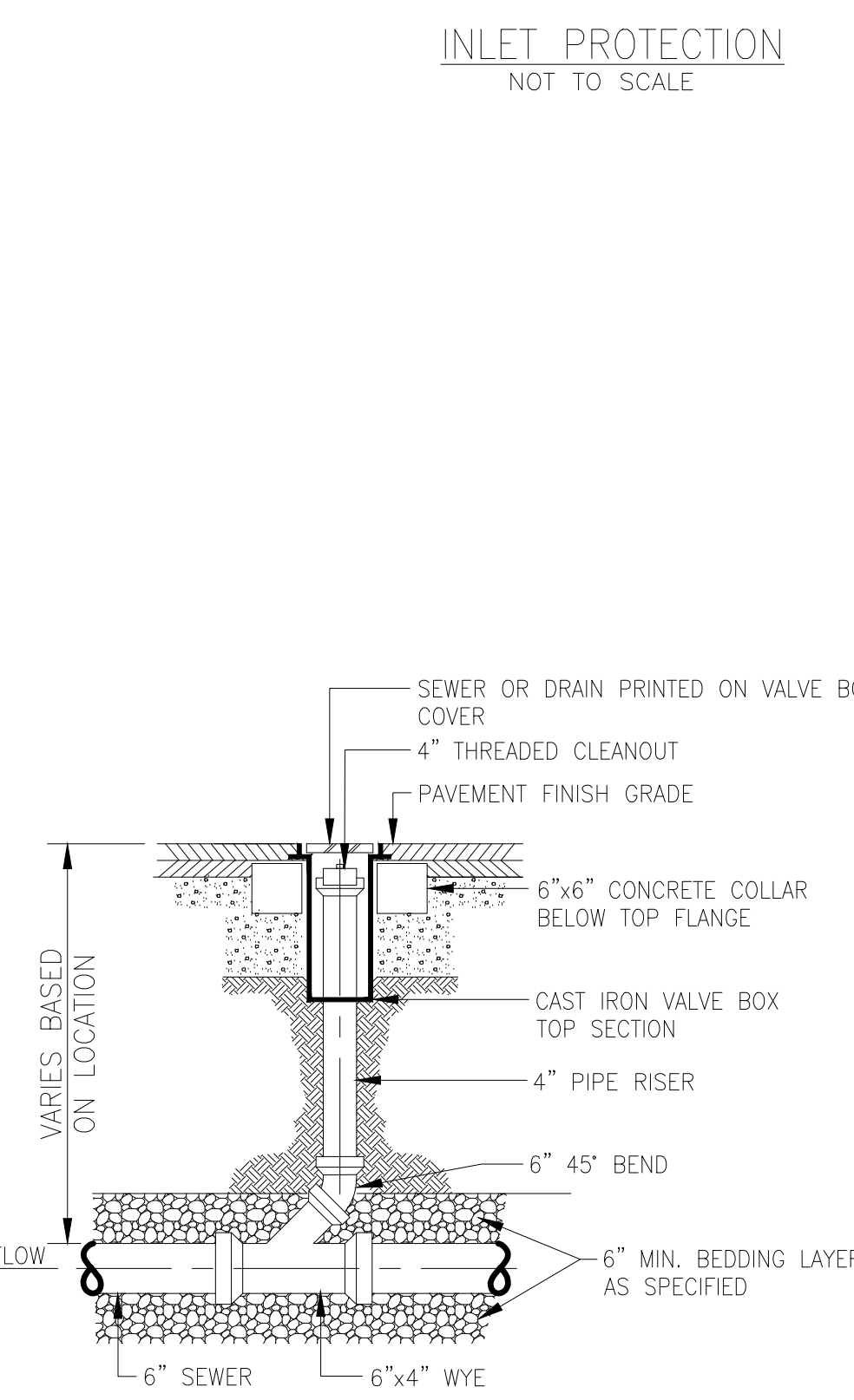
6 FOOT CHAIN LINK TREE PROTECTION FENCE
NOT TO SCALE



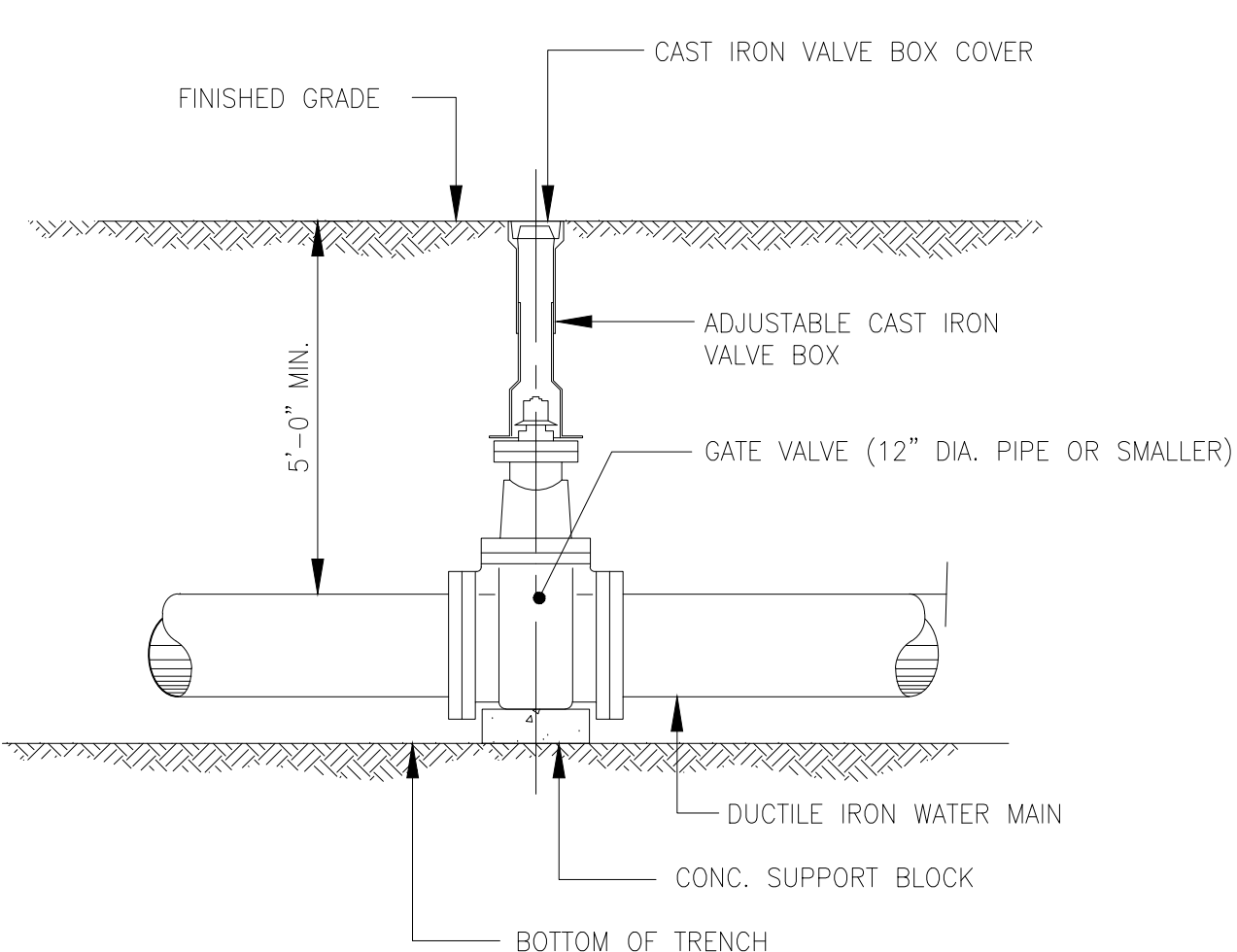
SIGN MOUNTING NOTES:
1. ALL LAG SCREWS, BOLTS AND WASHERS SHALL BE GALVANIZED 5/16\"/>

HANDICAP SIGN NOTES:
1. ALL HANDICAP PARKING AND SIGNAGE SHALL BE IN CONFORMANCE WITH THE RULES & REGULATIONS AS SPECIFIED BY THE AMERICAN DISABILITIES ACT (ADA)
2. SIGN(S) SHALL BE LOCATED SO THEY CANNOT BE OBTSCURED BY A VEHICLE PARKED IN THE SPACE.
3. FOR HANDICAPPED VAN SPACE, USE SIGN AS DETAILED.
4. FOR HANDICAPPED SPACE FOR AUTOMOBILES, USE ONLY HANDICAPPED PARKING SIGN. (WITHOUT ADDITIONAL 'VAN ACCESSIBLE' SIGN)

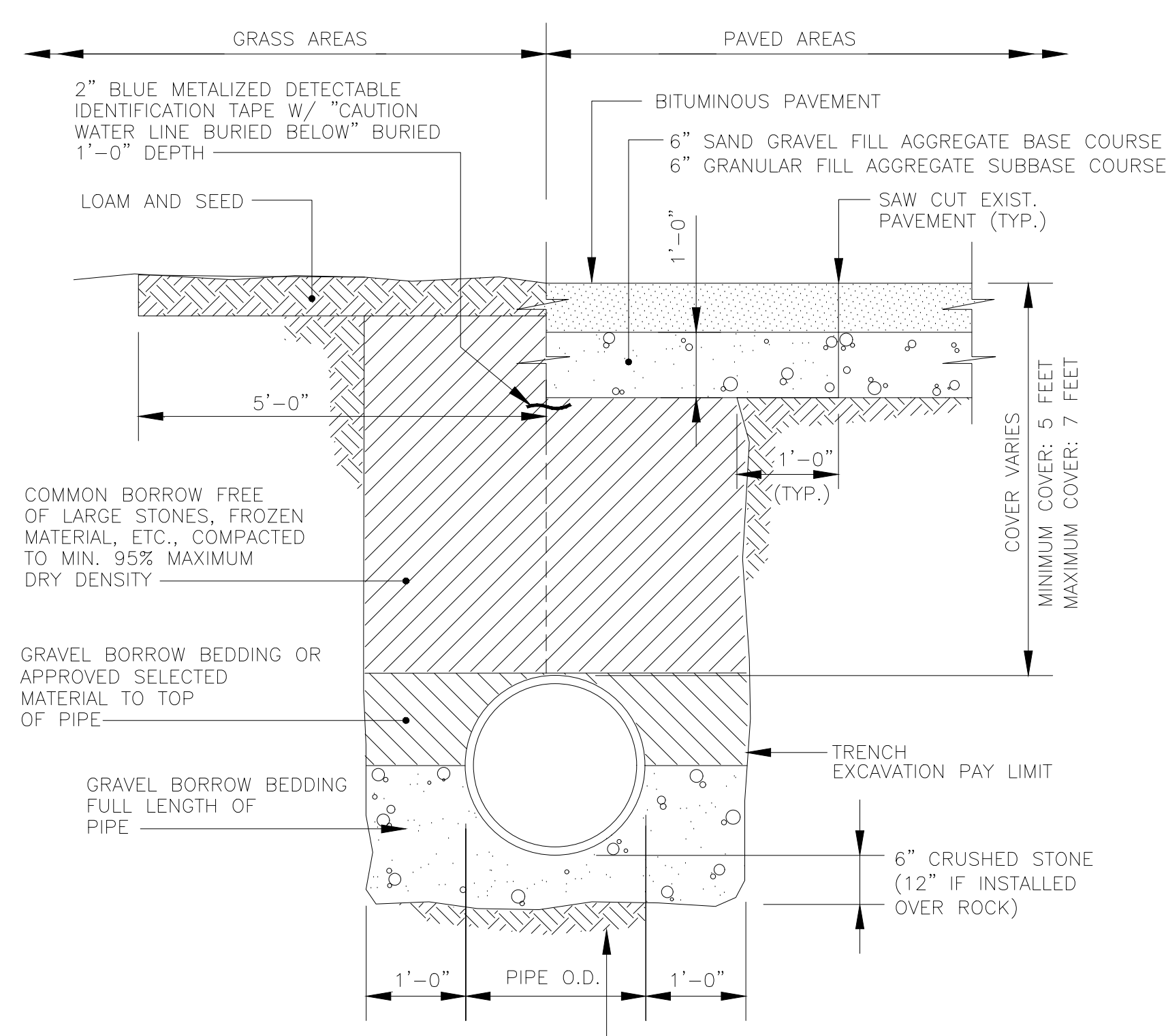
SIGN MOUNTING DETAIL



PIPE CLEANOUT DETAIL
NOT TO SCALE

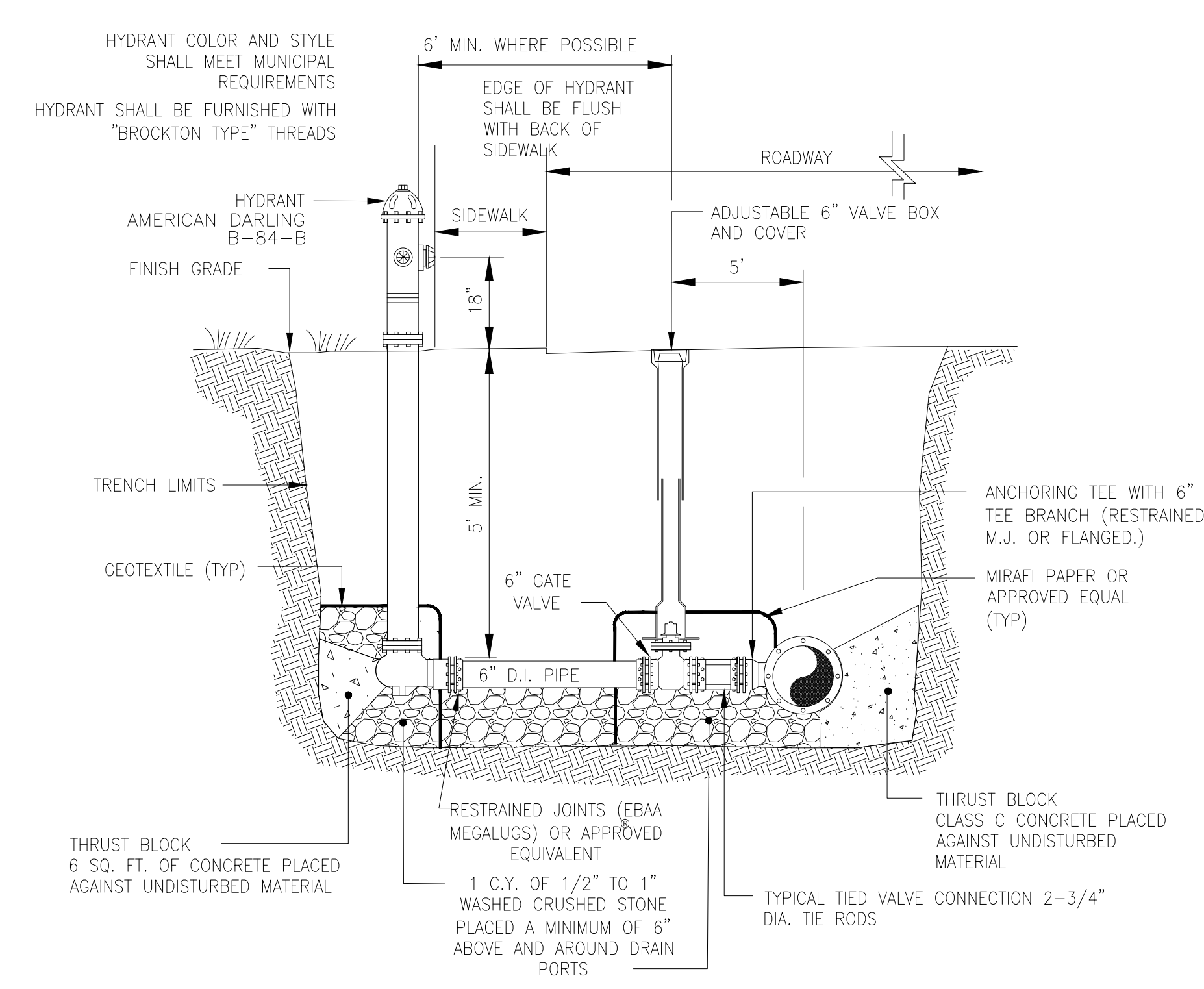


VALVE BOX
NOT TO SCALE



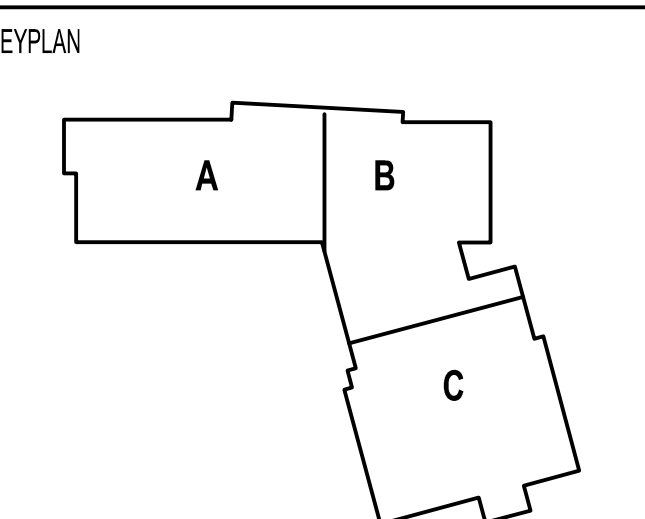
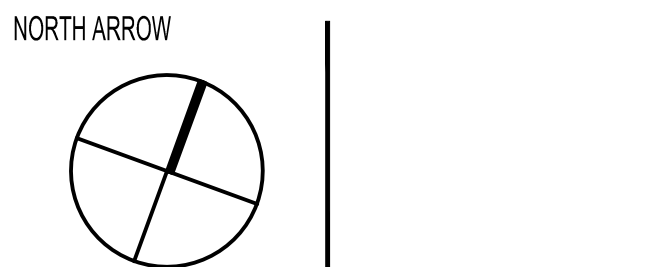
NOTES:
1. FOR PIPE INSTALLATION IN ROCK OR LEDGE MINIMUM TRENCH WIDTH SHOULD EQUAL THE DIAMETER OF THE PIPE PLUS 18 INCHES ON EACH SIDE.
2. MINIMUM WIDTH OF TRENCH SHOULD BE 3 FEET.
3. PLACE 6\"/>

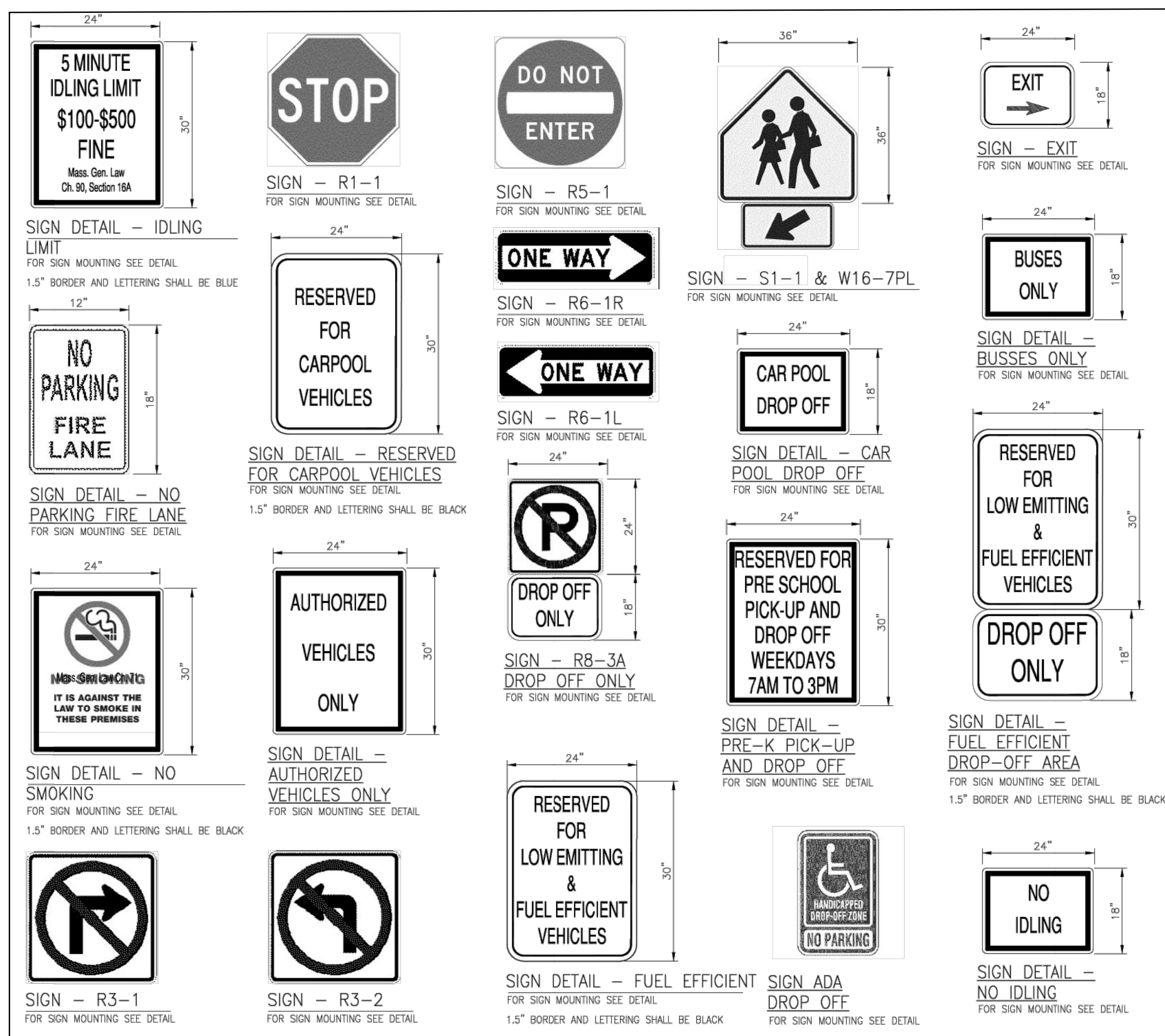
TYPICAL WATER MAIN TRENCH
NOT TO SCALE



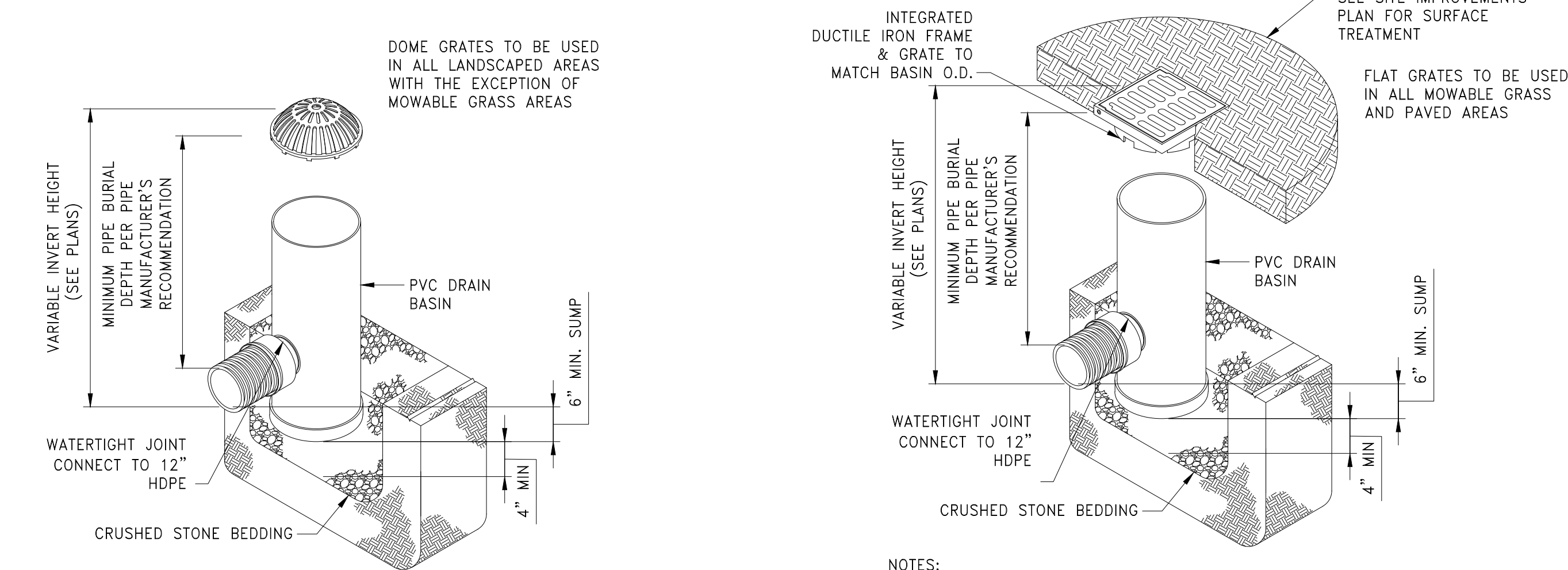
NOTE:
ANY MANUFACTURER'S NAMES AND/OR MODEL NUMBERS IDENTIFIED HEREIN ARE INTENDED TO ASSIST IN ESTABLISHING A GENERAL LEVEL OF QUALITY, CONFIGURATION, FUNCTIONALITY, AND APPEARANCE REQUIRED. THIS IS NOT A PROPRIETARY SPECIFICATION AND IT SHOULD BE NOTED THAT 'OR APPROVED EQUIVALENT' APPLIES TO ALL PRODUCTS DENOTED HEREIN. IT IS UNDERSTOOD THAT ALL MANUFACTURERS WILL HAVE MINOR VARIATIONS IN CONFIGURATION, APPEARANCE, AND PRODUCT SPECIFICATION TO ENCOURAGE OPEN AND COMPETITIVE INVOLVEMENT FROM MULTIPLE MANUFACTURERS THAT ARE ABLE TO SUPPLY SIMILAR PRODUCTS.

HYDRANT DETAIL
NOT TO SCALE





TYPICAL MISCELLANEOUS SIGNS
NOT TO SCALE

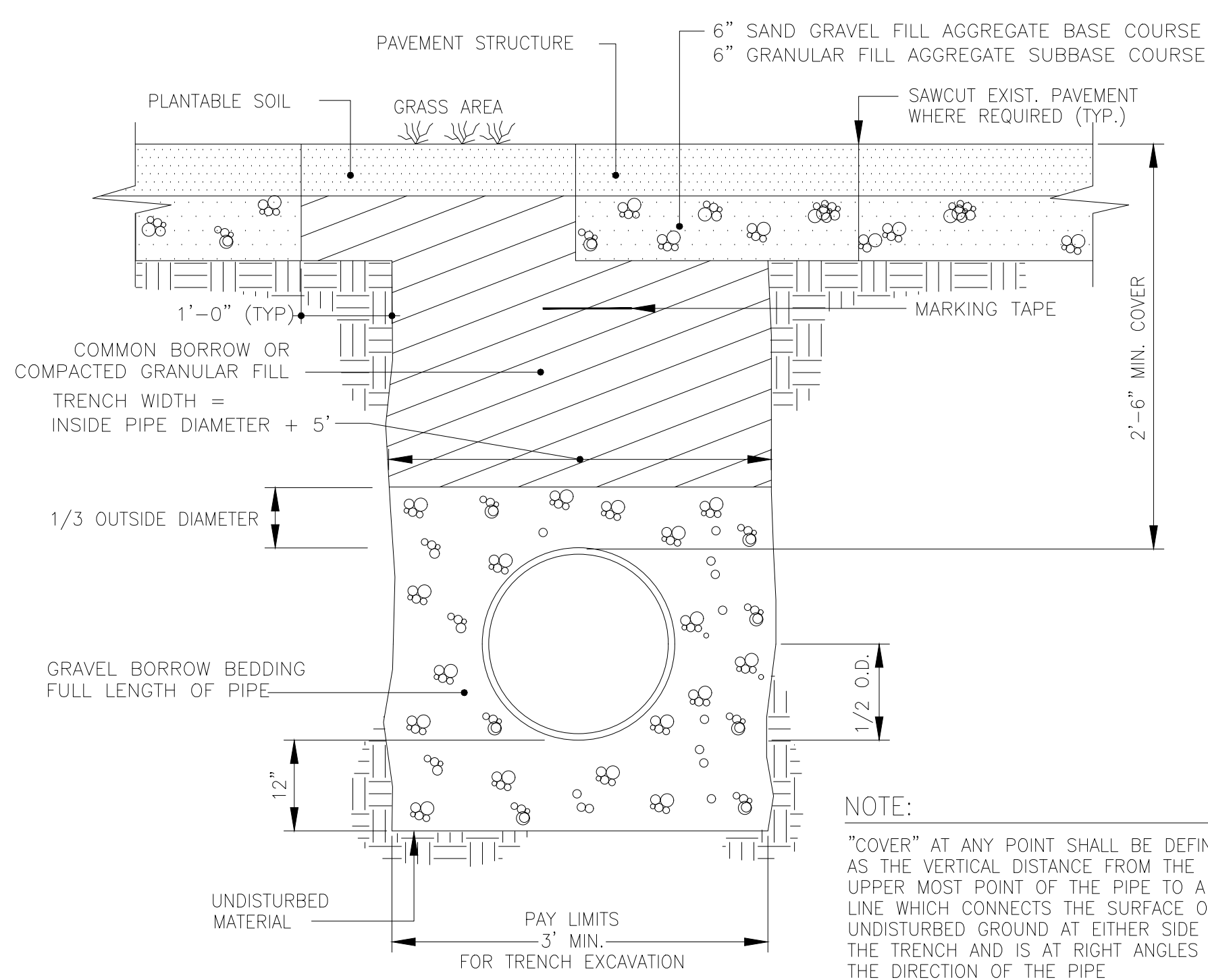


- NOTES:
1. DOME GRATES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
 2. FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
 3. DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE.

- NOTES:
1. GRATES/SOLID COVER SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05 AND ADA COMPLIANT.
 2. FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
 3. DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE.

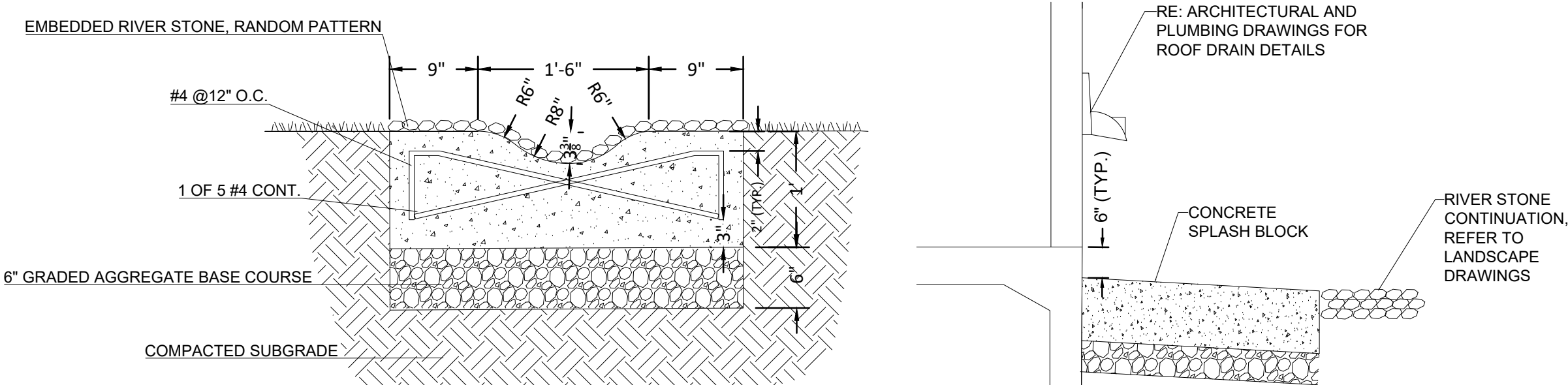
AD 12" AREA DRAIN BASIN WITH DOME GRATE
NOT TO SCALE

AD 12" AREA DRAIN BASIN
NOT TO SCALE



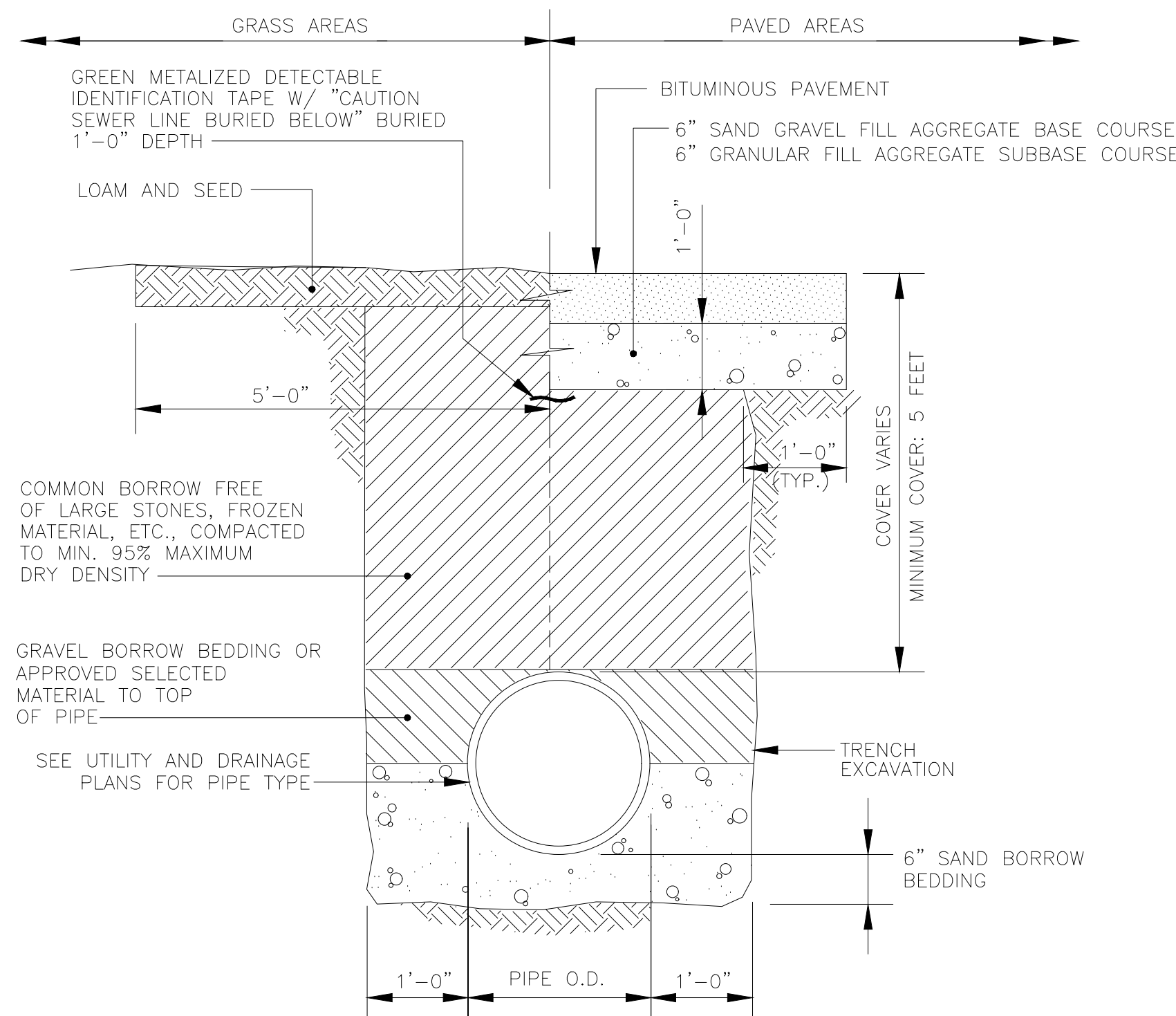
NOTE:
"COVER" AT ANY POINT SHALL BE DEFINED AS THE VERTICAL DISTANCE FROM THE UPPER MOST POINT OF THE PIPE TO A LINE WHICH CONNECTS THE SURFACE OF UNDISTURBED GROUND AT EITHER SIDE OF THE TRENCH AND IS AT RIGHT ANGLES TO THE DIRECTION OF THE PIPE.

TYPICAL TRENCH FOR DRAINAGE INSTALLATION
NOT TO SCALE



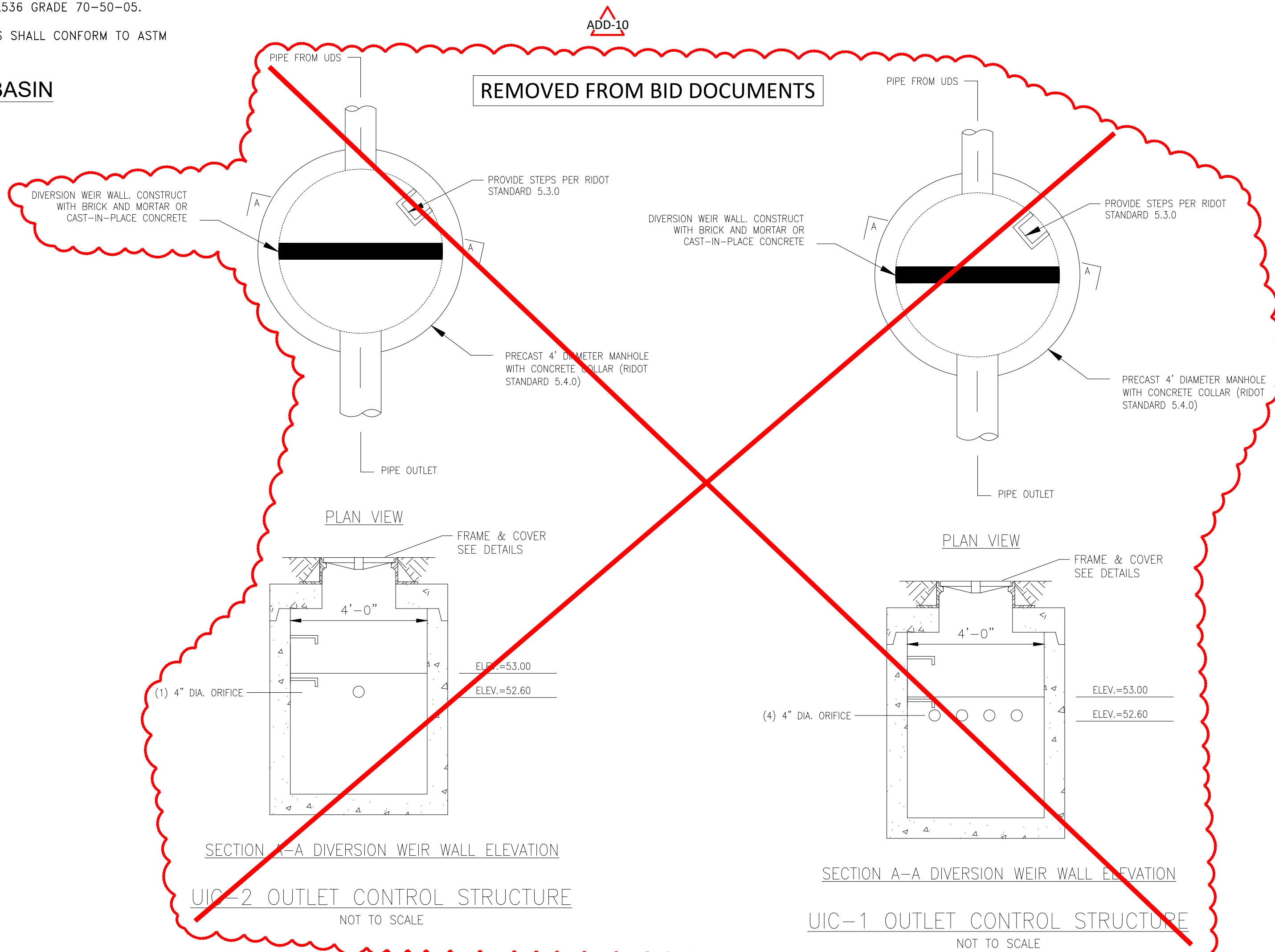
*NOTE: CONTRACTOR SHALL SUBMIT MOCKUP OF SPLASH BLOCK FOR APPROVAL BY THE LANDSCAPE ARCHITECT

CONCRETE SPLASH BLOCK
NOT TO SCALE



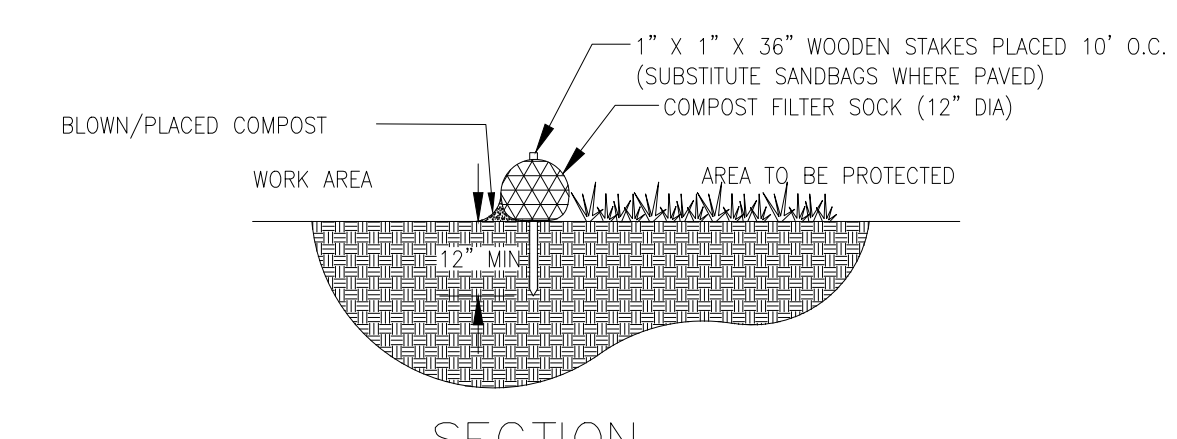
- NOTES:
1. FOR PIPE INSTALLATION IN ROCK OR LEDGE MINIMUM TRENCH WIDTH SHOULD EQUAL THE DIAMETER OF THE PIPE PLUS 18 INCHES ON EACH SIDE.
 2. MINIMUM WIDTH OF TRENCH SHOULD BE 3 FEET.
 3. PLACE 6" OF DRAINAGE STONE FROM BASE OF TRENCH TO TOP OF PIPE IF PIPE IS INSTALLED BELOW SEASONAL HIGH GROUND WATER TABLE.

TYPICAL ONSITE SEWER TRENCH
NOT TO SCALE

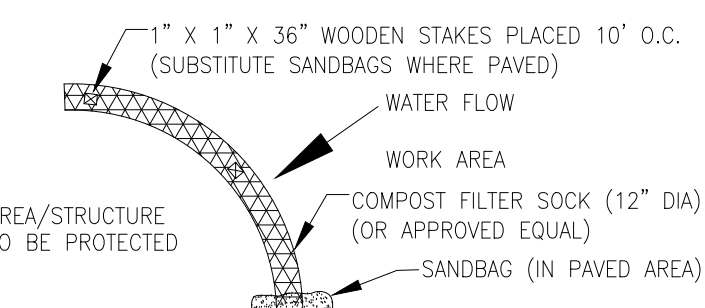


SECTION A-A DIVERSION WEIR WALL ELEVATION
UIC-2 OUTLET CONTROL STRUCTURE
NOT TO SCALE

SECTION A-A DIVERSION WEIR WALL ELEVATION
UIC-1 OUTLET CONTROL STRUCTURE
NOT TO SCALE



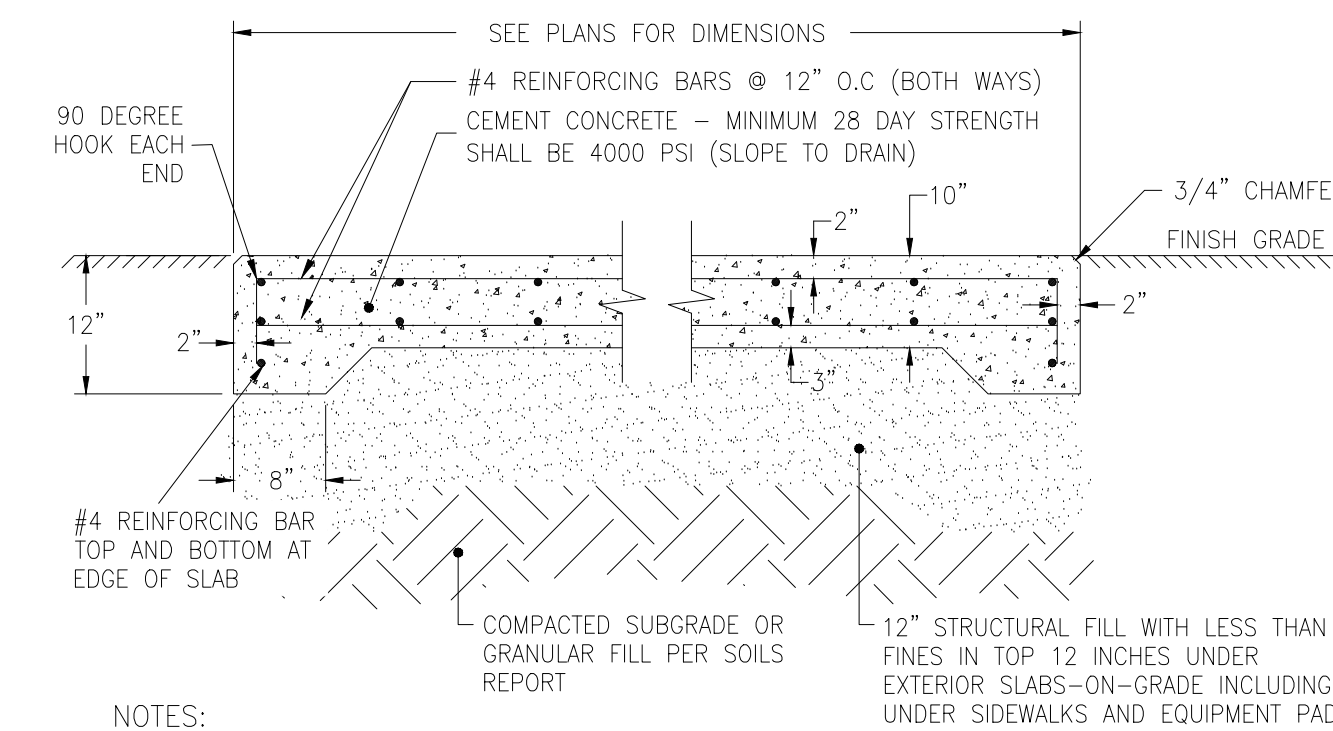
SECTION



PLAN

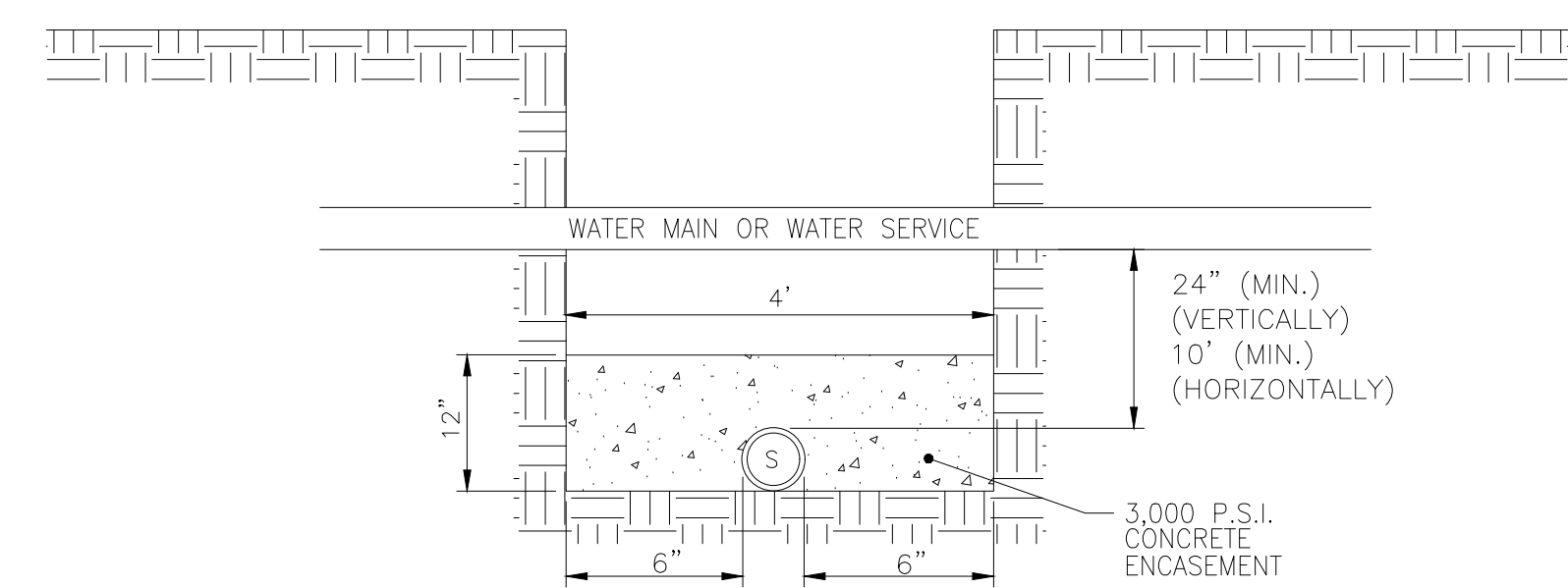
- NOTES:
1. INSPECT AND MAINTAIN THROUGHOUT CONSTRUCTION
 2. SOCK AND COMPOST MATERIAL TO BE REMOVED FROM SITE WHEN CONSTRUCTION COMPLETE.

SILTATION BARRIER
NOT TO SCALE

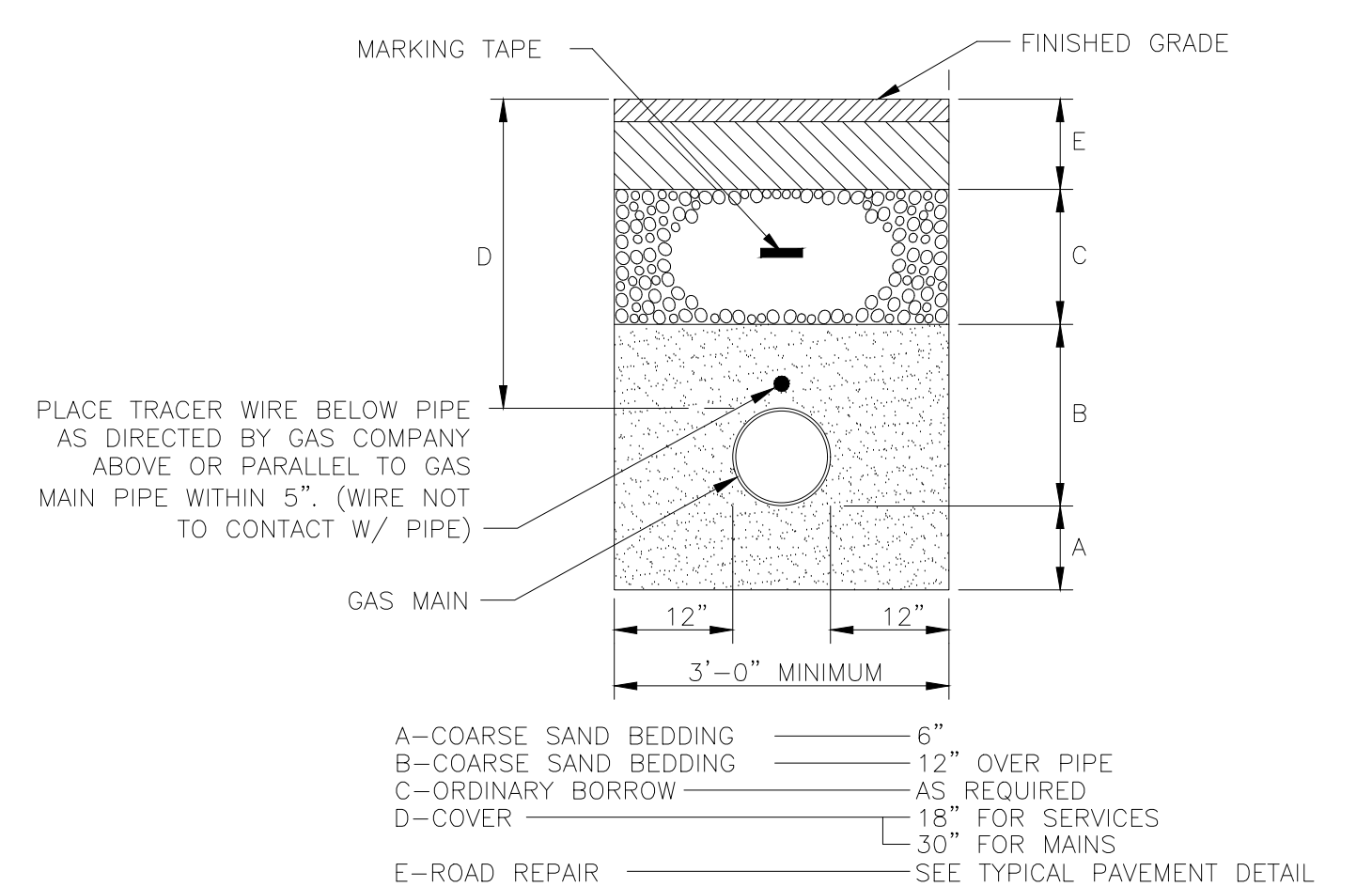


- NOTES:
1. FOR DUMPSTER PAD AND OTHER UTILITY LOCATIONS, SEE PLANS.
 2. REINFORCING TO BE #4 GRADE 60 BARS AND SHALL CONFORM TO ASTM STANDARD A-615 OF THE LATEST DATA.
 3. TO REDUCE THE POTENTIAL FOR HEAVE CAUSED BY SURFACE WATER PENETRATING UNDER THE CONCRETE PAD, THE CONCRETE SHOULD BE SEALED WITH A WATERPROOFING COMPOUND.

CEMENT CONCRETE PAD
NOT TO SCALE



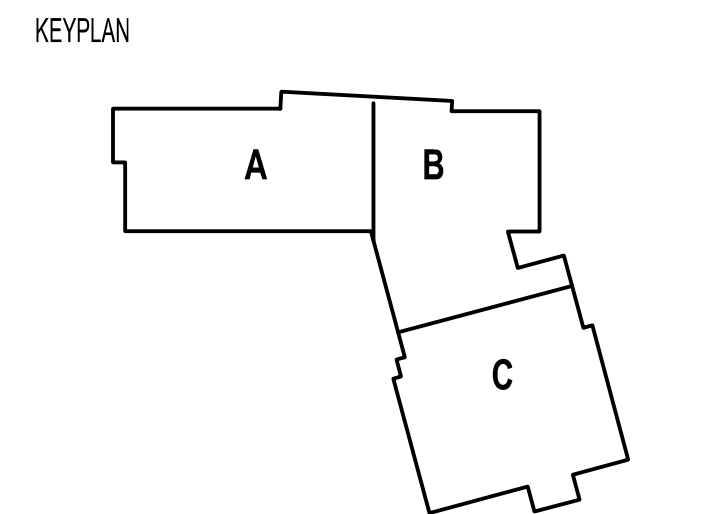
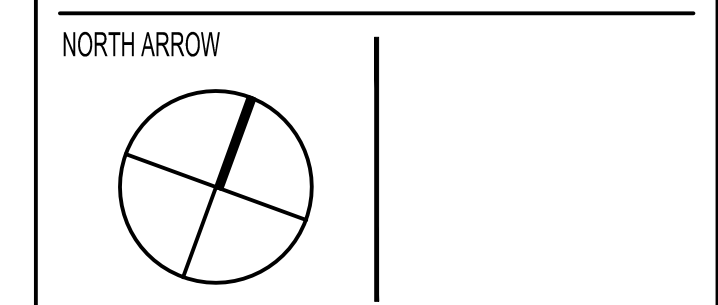
MINIMUM DISTANCES FOR SEWER AND WATER LINE CROSSINGS
NOT TO SCALE

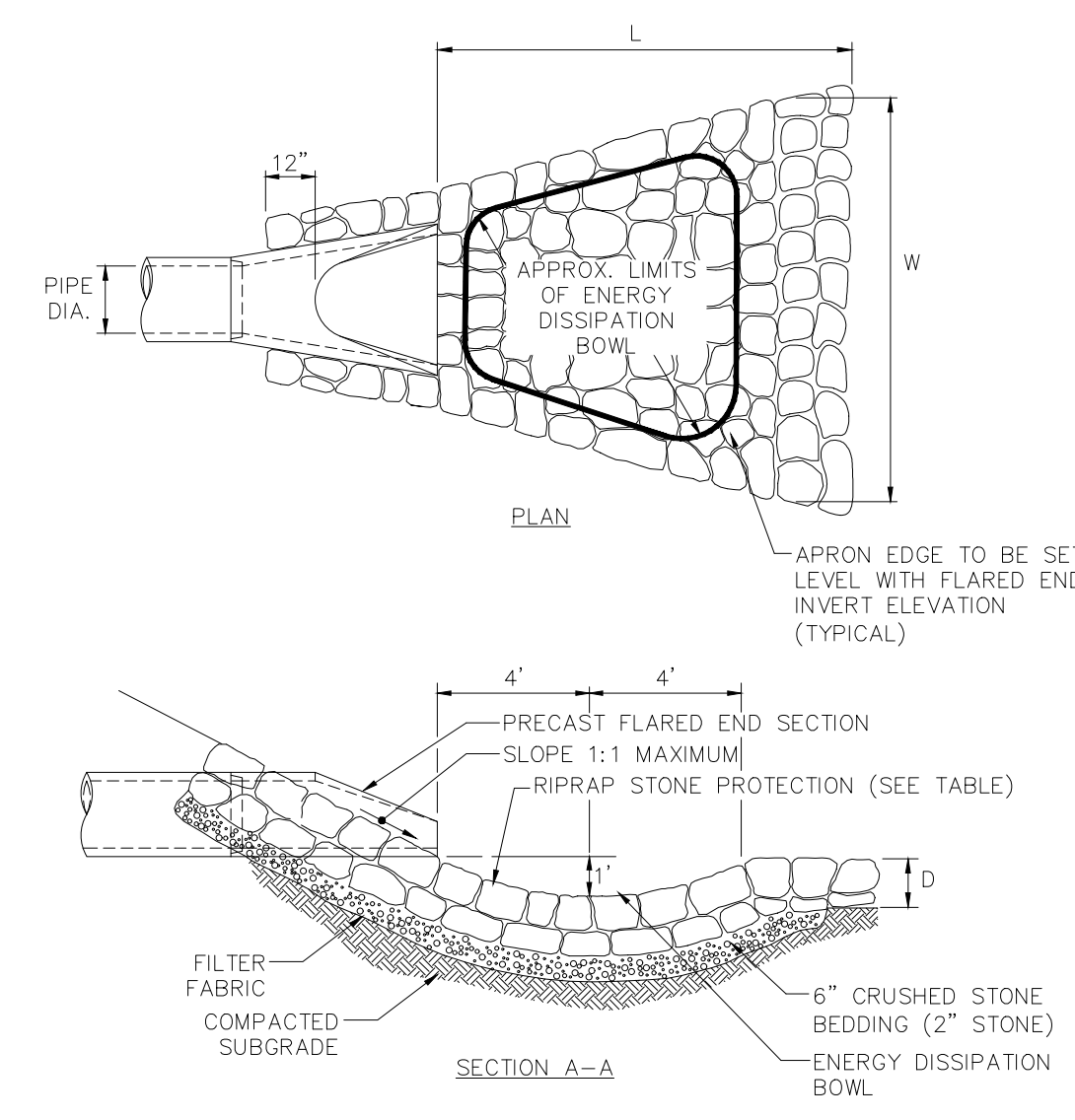


TYPICAL GAS MAIN TRENCH DETAIL
NOT TO SCALE

- NOTE:
1. THIS DETAIL REPRESENTS A TYPICAL GAS TRENCH DETAIL. FINAL TRENCH MATERIALS AND DIMENSIONS SHALL BE COORDINATED WITH THE GAS COMPANY.
 2. ALL LATERAL TRENCHES WITHIN THE RIGHT-OF-WAY OF PUBLIC WAYS, SHALL BE BACKFILLED WITH FLOWABLE FILL UP TO 4 INCHES BELOW BOTTOM OF PAVEMENT.

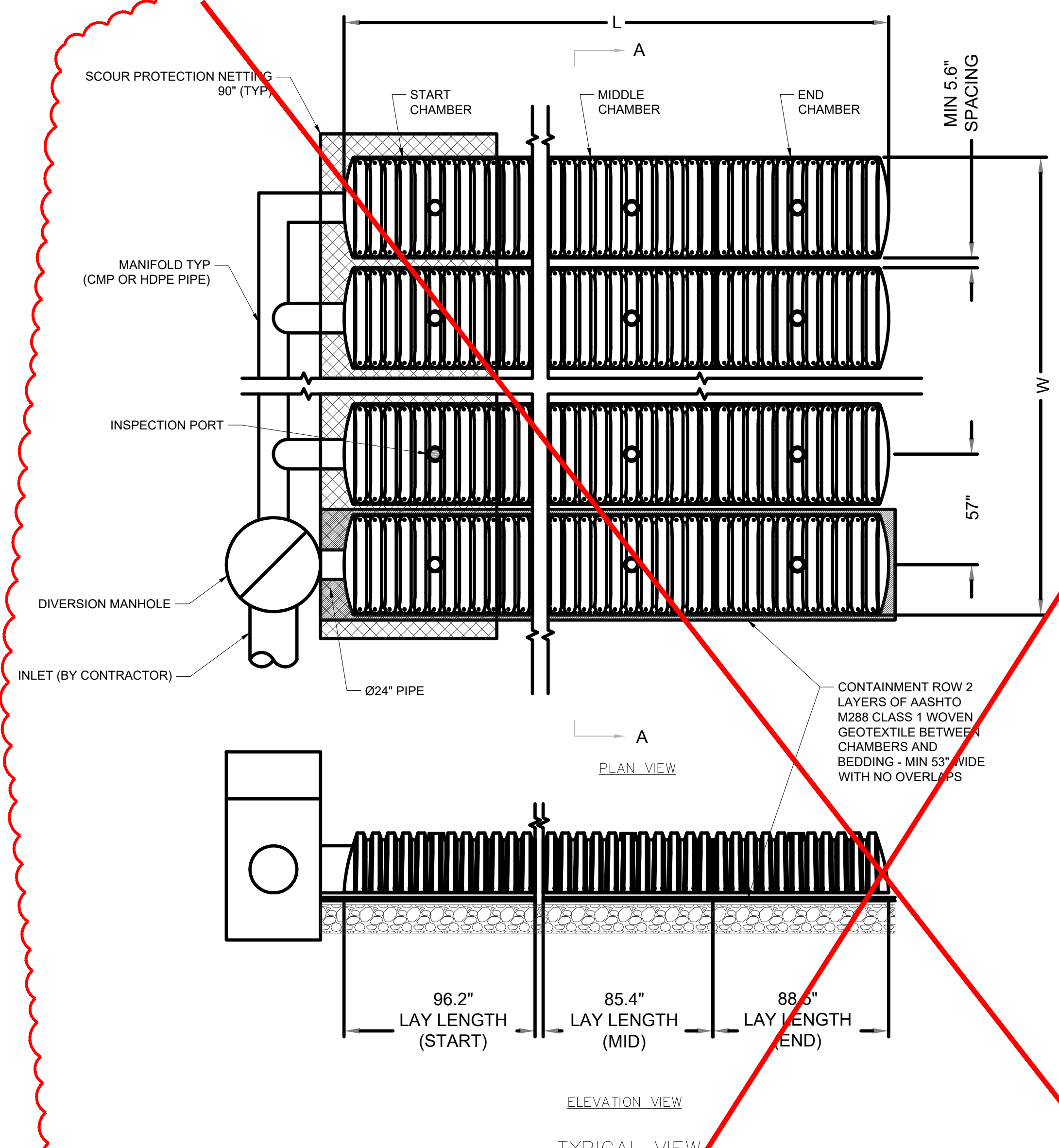
NOTE:
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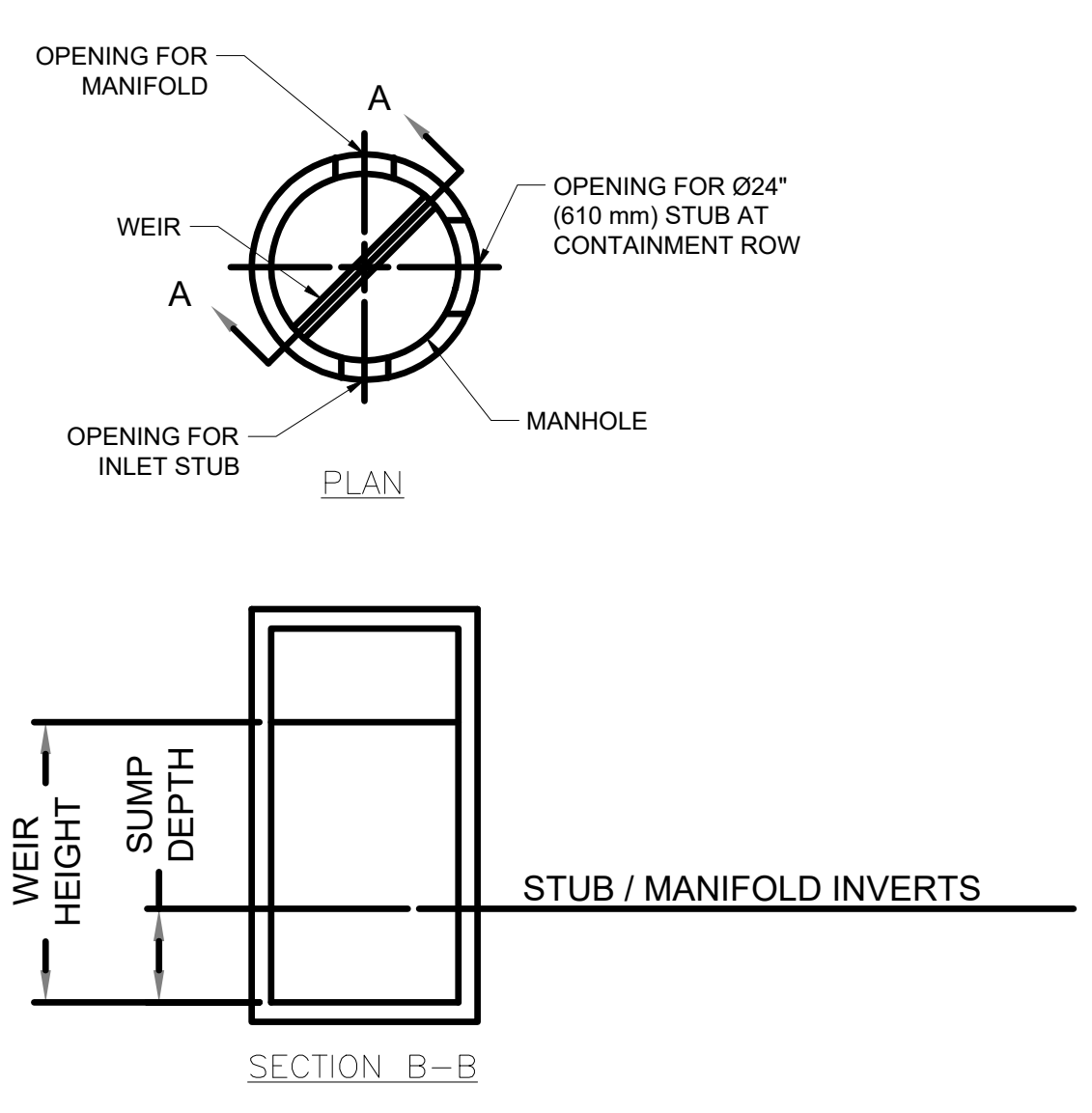
FLARED END SECTION WITH STONE PROTECTION
NOT TO SCALE

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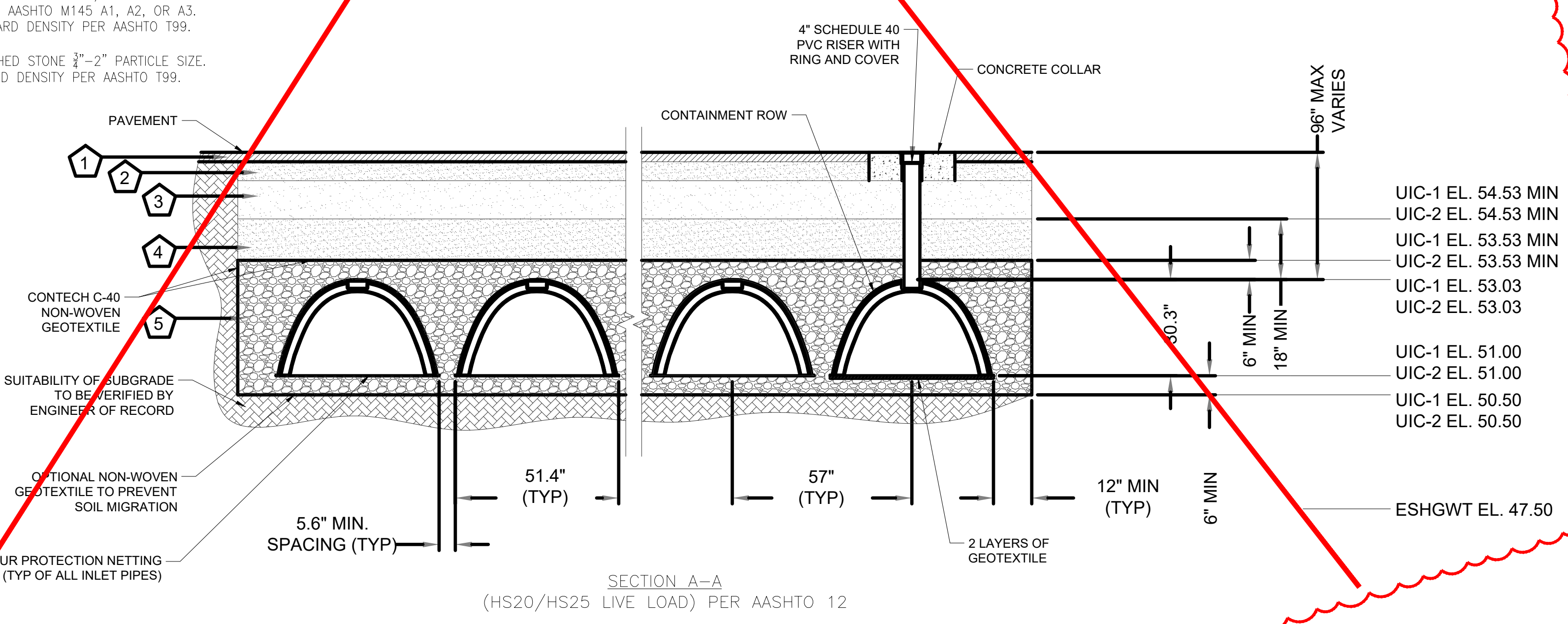


- KEY**
1. FLEXIBLE PAVEMENT
 2. GRANULAR ROAD BASE
 3. ANY SUITABLE NATIVE OR GENERAL BACKFILL, SEE PLANS.
 4. WELL GRADED GRANULAR FILL, AASHTO M145 A1, A2, OR A3. COMPACT TO MIN 90% STANDARD DENSITY PER AASHTO T99. MAY INCLUDE ROAD BASE.
 5. FREE DRAINING ANGULAR WASHED STONE 1/2\"-2\" PARTICLE SIZE. INSTALL TO MIN 95% STANDARD DENSITY PER AASHTO T99.

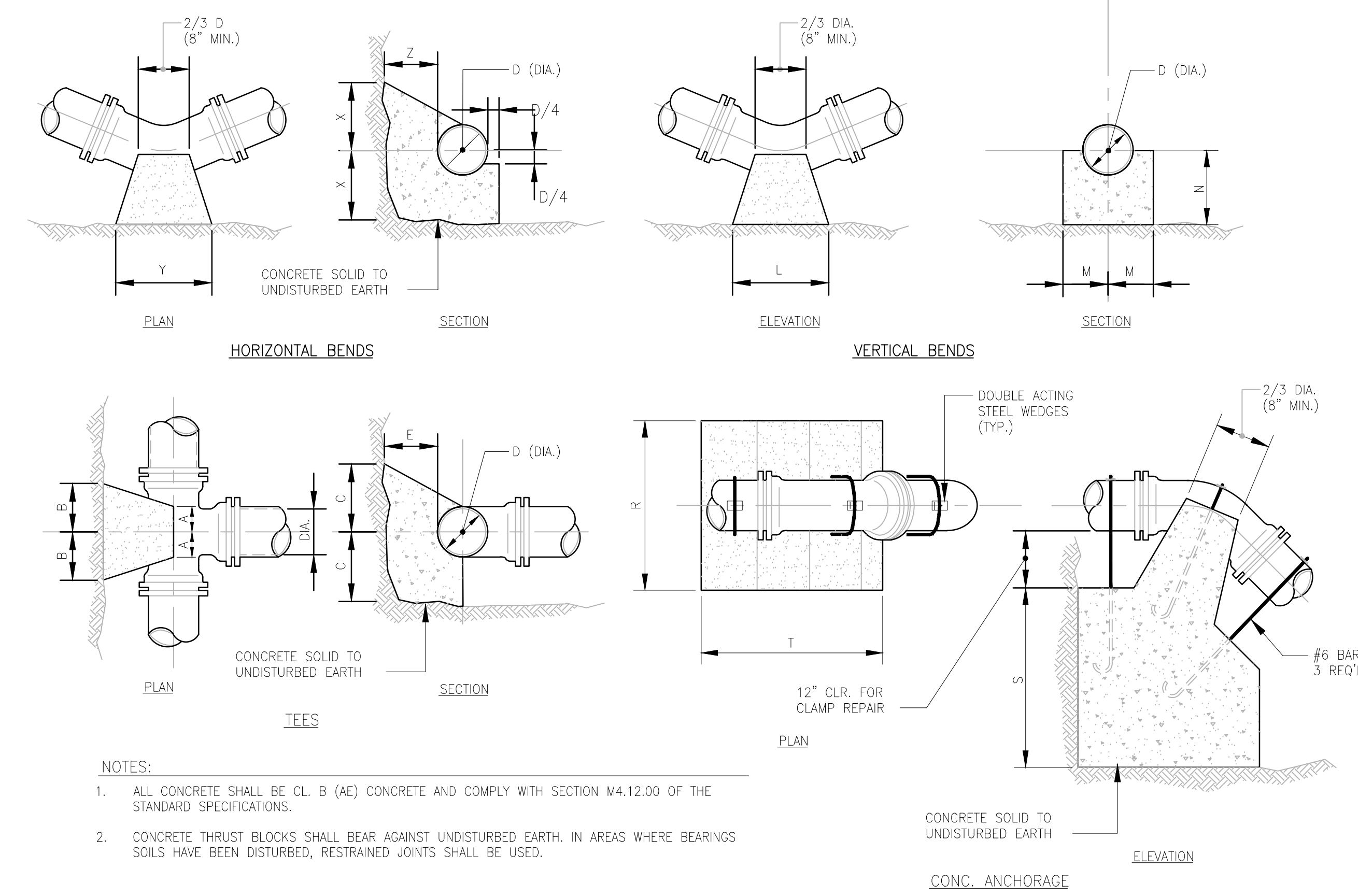
- GENERAL NOTES**
1. CONTECH CHAMBERMAXX OR APPROVED EQUAL.
 2. ACCESS COVERS TO MEET AASHTO HS20/HS25 LIVE LOADING.
 3. MINIMUM COVER IS 18 INCHES AND MAXIMUM COVER IS 96 INCHES TO BOTTOM OF FLEXIBLE PAVEMENT TO TOP OF RIGID PAVEMENT.
- INSTALLATION NOTES**
1. PRIOR TO PLACING BEDDING, THE FOUNDATION MUST BE CONSTRUCTED TO A UNIFORM AND STABLE GRADE. IN THE EVENT THAT UNSUITABLE FOUNDATION MATERIALS ARE ENCOUNTERED DURING EXCAVATION, A GEGRID SHALL BE UTILIZED OR SUITABLE MATERIAL SHALL BE REMOVED AND BROUGHT BACK TO GRADE WITH FILL MATERIAL AS APPROVED BY THE ENGINEER. ONCE THE FOUNDATION PREPARATION IS COMPLETE THE BEDDING MATERIAL CAN BE PLACED.
 2. THE SCOUR PROTECTION NETTING TO EXTEND 1'-0\" BEYOND OUTSIDE EDGE OF INLET CHAMBERS.
 3. COVER ANY OPEN VOID SPACES GREATER THAN 1/2\" ON CHAMBERS WITH A NON-WOVEN GEOTEXTILE TO PREVENT INFILTRATION OF BACKFILL MATERIAL.
- STONE EMBEDMENT MATERIAL SHALL BE INSTALLED TO 95% STANDARD PROCTOR DENSITY AND PLACED IN 6-INCH TO 8-INCH LIFTS SUCH THAT THERE IS NO MORE THAN A TWO LIFT DIFFERENTIAL BETWEEN ANY OF THE CHAMBERS AT ANY TIME. GRANULAR BACKFILL MATERIAL SHALL BE COMPACTED TO 90% STD. BACKFILLING SHALL BE ADVANCED ALONG THE LENGTH OF THE CHAMBER ROWS AT THE SAME RATE TO AVOID DIFFERENTIAL LOADING AND DISPLACEMENT OF THE CHAMBERS. THE MINIMUM CHAMBER SPACING MUST BE MAINTAINED.
5. GENERAL INSTALLATION METHODS AND MATERIALS TO BE IN ACCORDANCE WITH ASTM D2321.



DIVERSION MANHOLE DETAIL
NOT TO SCALE



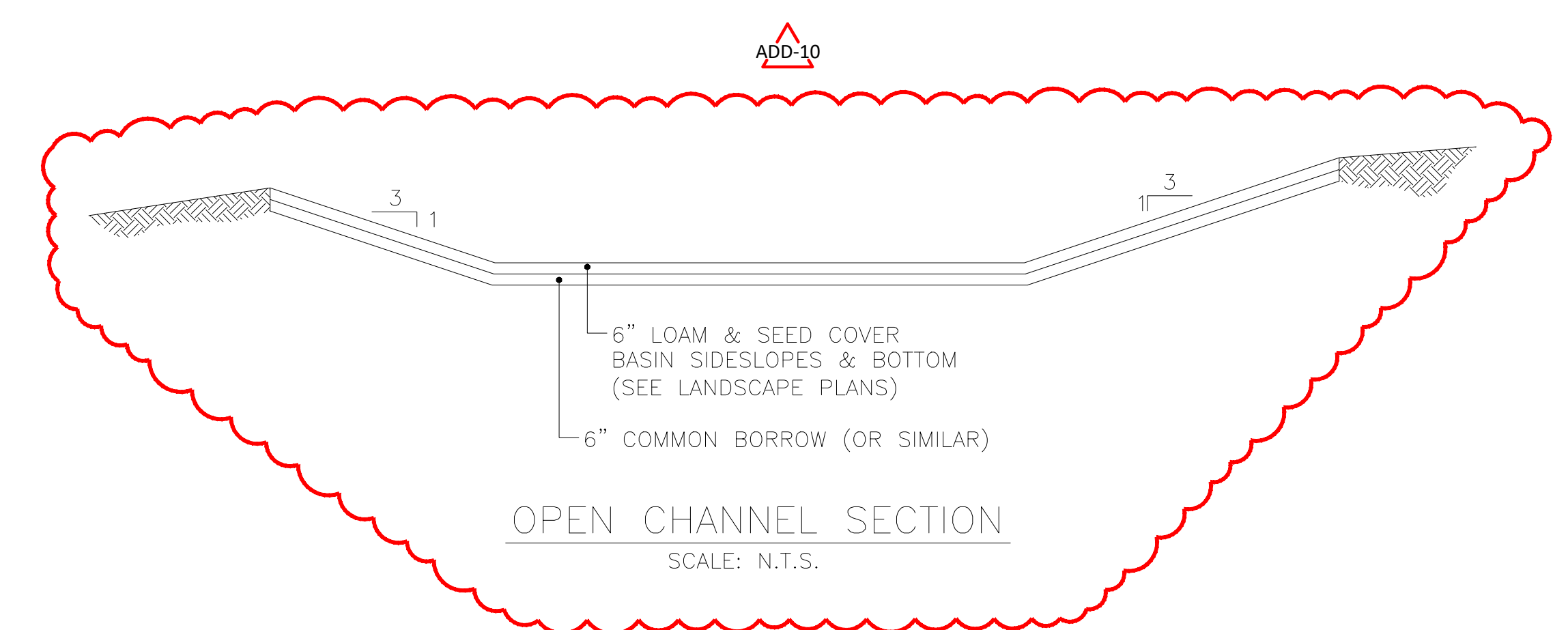
UNDERGROUND INFILTRATION CHAMBER DETAIL
NOT TO SCALE



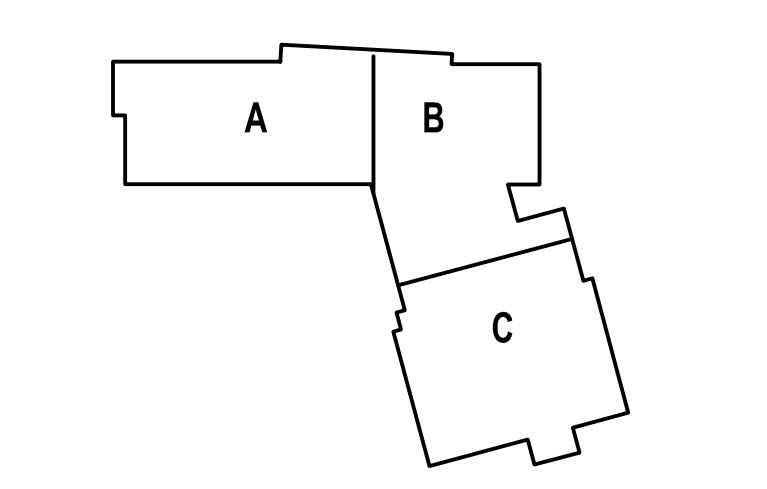
- NOTES:**
1. ALL CONCRETE SHALL BE CL. B (AE) CONCRETE AND COMPLY WITH SECTION M4.12.00 OF THE STANDARD SPECIFICATIONS.
 2. CONCRETE THRUST BLOCKS SHALL BEAR AGAINST UNDISTURBED EARTH. IN AREAS WHERE BEARINGS SOILS HAVE BEEN DISTURBED, RESTRAINED JOINTS SHALL BE USED.

TEES					HORIZONTAL BENDS					VERTICAL BENDS					ANCHORAGES								
PIPE SIZE-D (DIA.)					PIPE SIZE-D (DIA.)					PIPE SIZE-D (DIA.)					PIPE SIZE-D (DIA.)								
BEND	6"	8"	12"	16"	20"	BEND	6"	8"	12"	16"	20"	BEND	6"	8"	12"	16"	20"	BEND	6"	8"	12"	16"	20"
A	8"	10"	1'-0"	1'-3"	1'-6"	X	1'-0"	1'-0"	1'-0"	1'-3"	1'-6"	L	1'-3"	1'-8"	2'-6"	3'-6"	4'-8"	R	2'-6"	3'-0"	4'-6"	5'-4"	6'-0"
B	8"	10"	1'-2"	1'-4"	1'-6"	Y	1'-0"	1'-8"	2'-0"	2'-6"	3'-0"	M	7"	8"	11"	1'-4"	1'-8"	S	2'-6"	2'-9"	3'-6"	2'-6"	5'-6"
C	10"	1'-0"	1'-3"	1'-6"	1'-8"	Z	8"	10"	1'-2"	1'-4"	1'-6"	N	7"	8"	11"	1'-4"	1'-8"	T	3'-0"	4'-0"	4'-6"	2'-0"	9'-6"
E	8"	10"	1'-2"	1'-6"	1'-10"	X	1'-0"	1'-0"	1'-0"	1'-3"	1'-6"	L	9"	1'-0"	1'-9"	2'-6"	3'-0"	R	2'-0"	2'-8"	4'-0"	4'-6"	5'-0"
						Y	1'-0"	1'-4"	1'-8"	1'-9"	2'-6"	M	7"	7"	10"	1'-0"	1'-2"	S	1'-9"	2'-3"	2'-6"	3'-2"	3'-8"
						Z	8"	10"	1'-2"	1'-4"	1'-6"	N	7"	7"	8"	10"	1'-0"	T	2'-6"	3'-4"	4'-0"	6'-0"	8'-6"
						X	1'-0"	1'-0"	1'-0"	1'-2"	1'-4"	L	6"	8"	1'-0"	1'-4"	1'-9"	R	1'-6"	2'-0"	3'-0"	3'-8"	4'-3"
						Y	1'-0"	1'-0"	1'-2"	1'-4"	1'-6"	M	7"	7"	10"	1'-0"	1'-2"	S	1'-3"	1'-9"	2'-0"	2'-4"	2'-8"
						Z	8"	10"	1'-2"	1'-4"	1'-6"	N	7"	7"	8"	10"	1'-0"	T	2'-0"	2'-6"	3'-0"	4'-6"	5'-9"

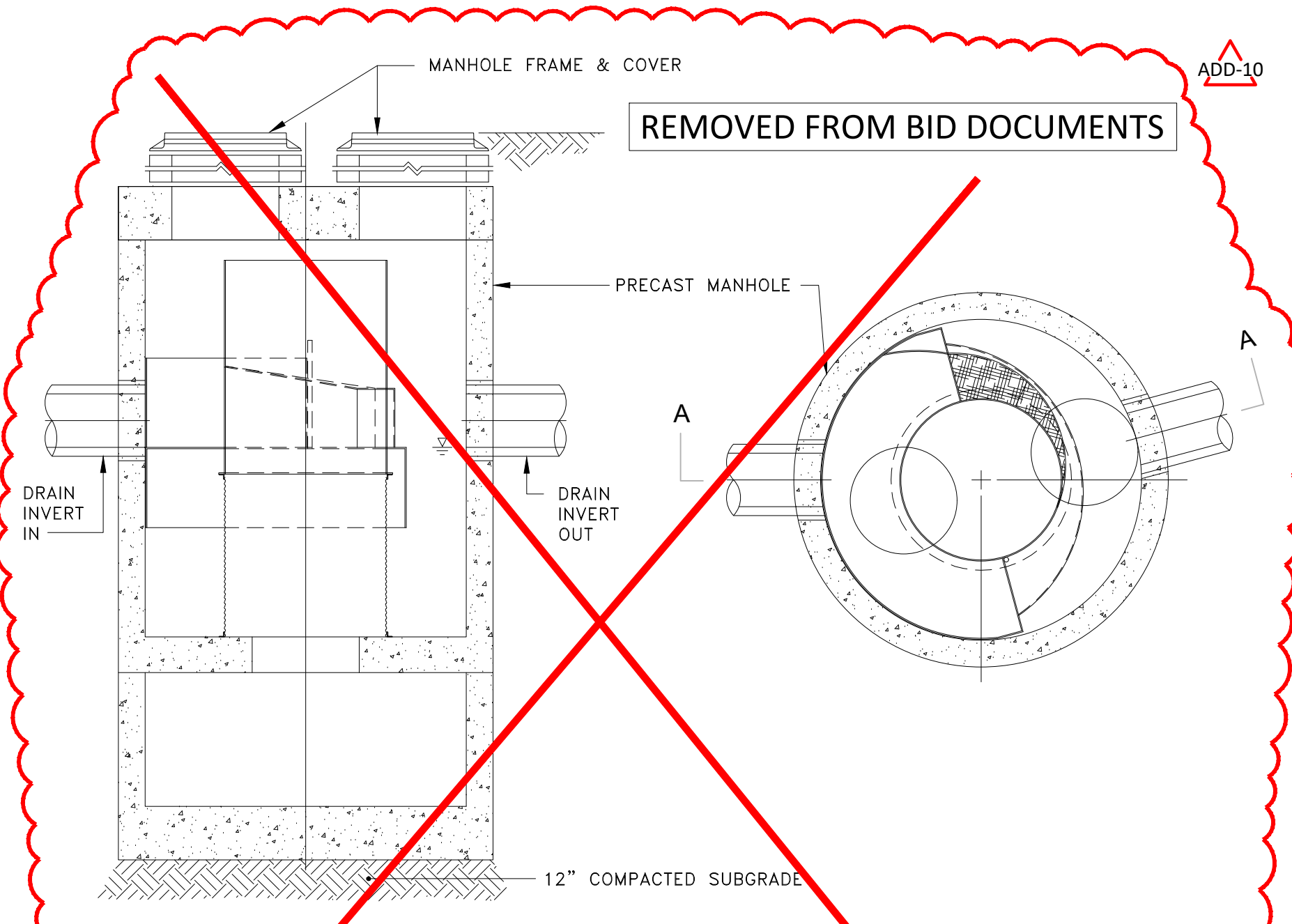
CONCRETE THRUST BLOCKS
NOT TO SCALE



OPEN CHANNEL SECTION
SCALE: N.T.S.



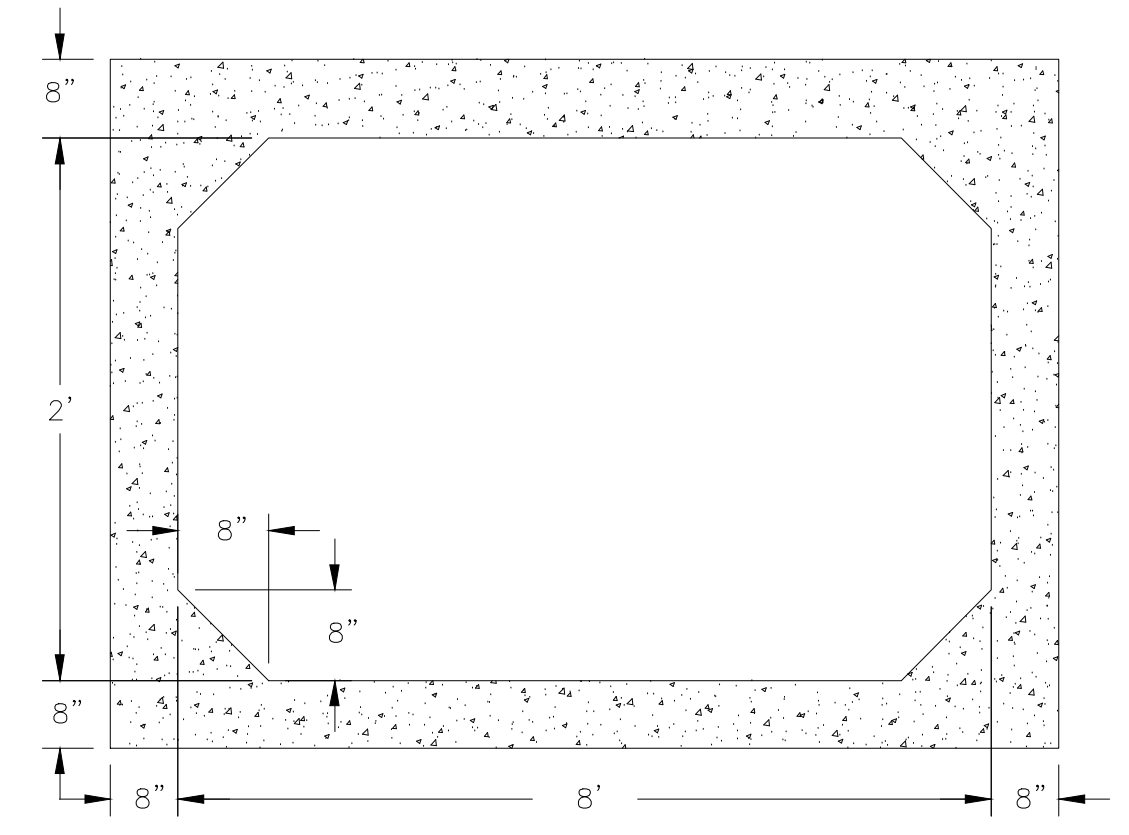
NOTE:
ANY MANUFACTURER'S NAMES AND/OR MODEL NUMBERS IDENTIFIED HEREIN ARE INTENDED TO ASSIST IN ESTABLISHING A GENERAL LEVEL OF QUALITY, CONFIGURATION, FUNCTIONALITY, AND APPEARANCE REQUIRED. THIS IS NOT A PROPRIETARY SPECIFICATION AND IT SHOULD BE NOTED THAT "OR APPROVED EQUIVALENT" APPLIES TO ALL PRODUCTS DENOTED HEREIN. IT IS UNDERSTOOD THAT ALL MANUFACTURERS WILL HAVE MINOR VARIATIONS IN CONFIGURATION, APPEARANCE, AND PRODUCT SPECIFICATION TO ENCOURAGE OPEN AND COMPETITIVE INVOLVEMENT FROM MULTIPLE MANUFACTURERS THAT ARE ABLE TO SUPPLY SIMILAR PRODUCTS.



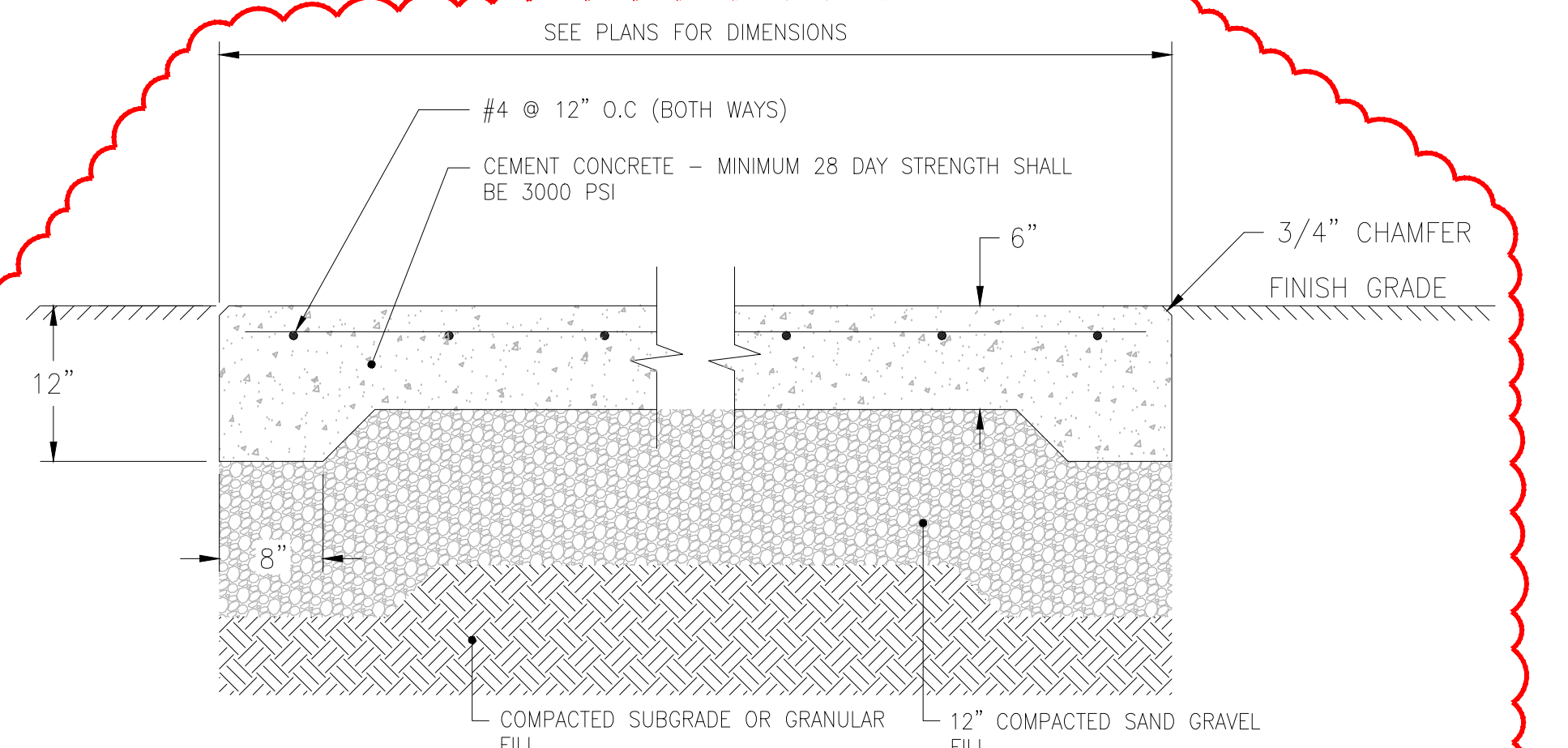
REMOVED FROM BID DOCUMENTS

GENERAL NOTES
 1. MANUFACTURER TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
 2. DIMENSIONS ARE SCHEMATIC DIMENSIONS. ACTUAL DIMENSIONS MAY VARY DEPENDING ON MANUFACTURER, DESIGN, AND STRUCTURE.
 3. CONTRACTOR TO PROVIDE SHOP DRAWING AND CALCULATIONS FROM MANUFACTURER OF EACH HS.
 4. WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL CODES, LAWS, AND REGULATIONS OF MASSDEP, CITY OF WATERTOWN, AND ALL OTHER GOVERNING AGENCIES.
 5. STRUCTURE AND CASTINGS SHALL MEET AASHTO M592 LOAD RATING.
 6. SEE TABLE FOR SIZING AND BASIS OF DESIGN DATA.

HDS-X HYDRODYNAMIC SEPARATOR DETAIL
 NOT TO SCALE

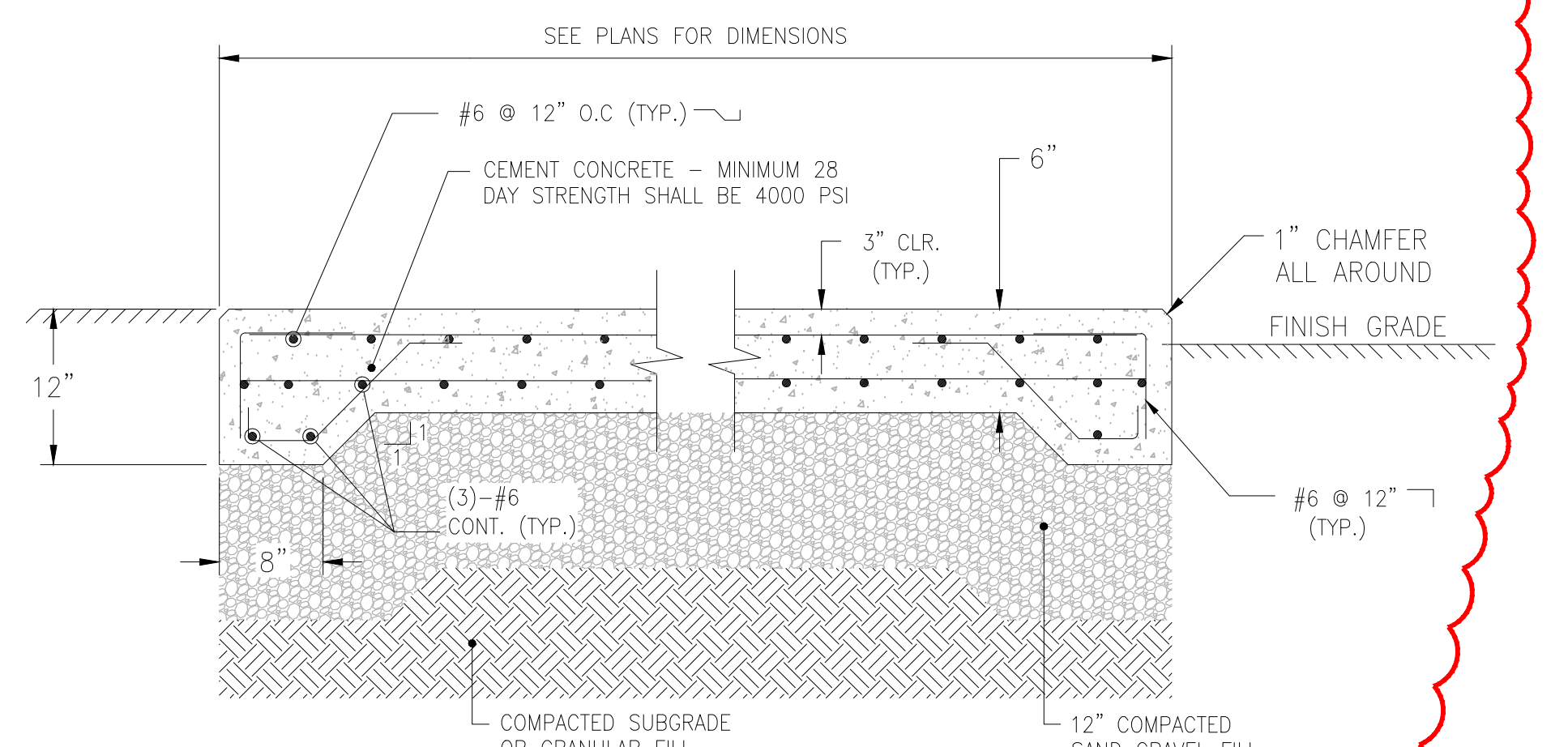


REINFORCED CONCRETE BOX CULVERT DETAIL
 NOT TO SCALE



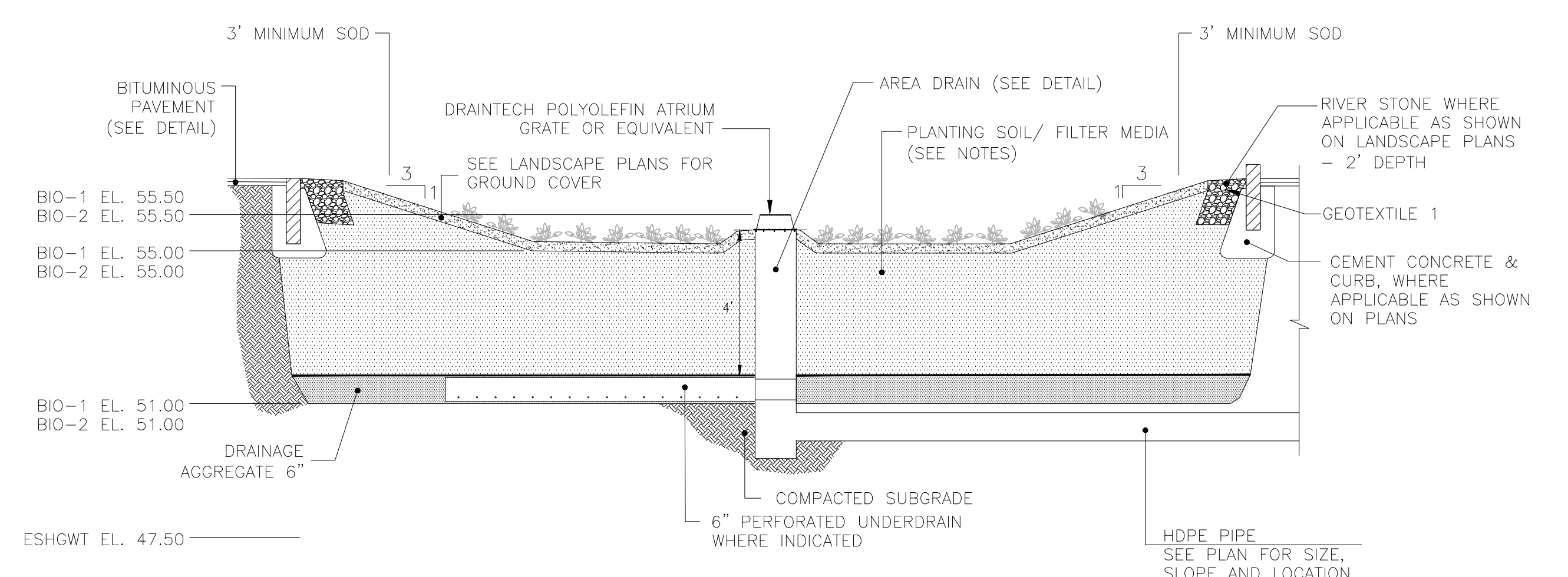
NOTES:
 1. FOR DUMPSTER PAD, SEE PLANS.
 2. REINFORCING TO BE #4 GRADE 60 BARS AND SHALL CONFORM TO ASTM STANDARD A-615 OF THE LATEST DATA. REINFORCING RODS TO BE LOCATED IN THE CENTER OF THE SLAB, WITH A MINIMUM OF 2" CLEARANCE FROM FACE OF CONCRETE.

CEMENT CONCRETE PAD: STORAGE CONTAINER
 NOT TO SCALE



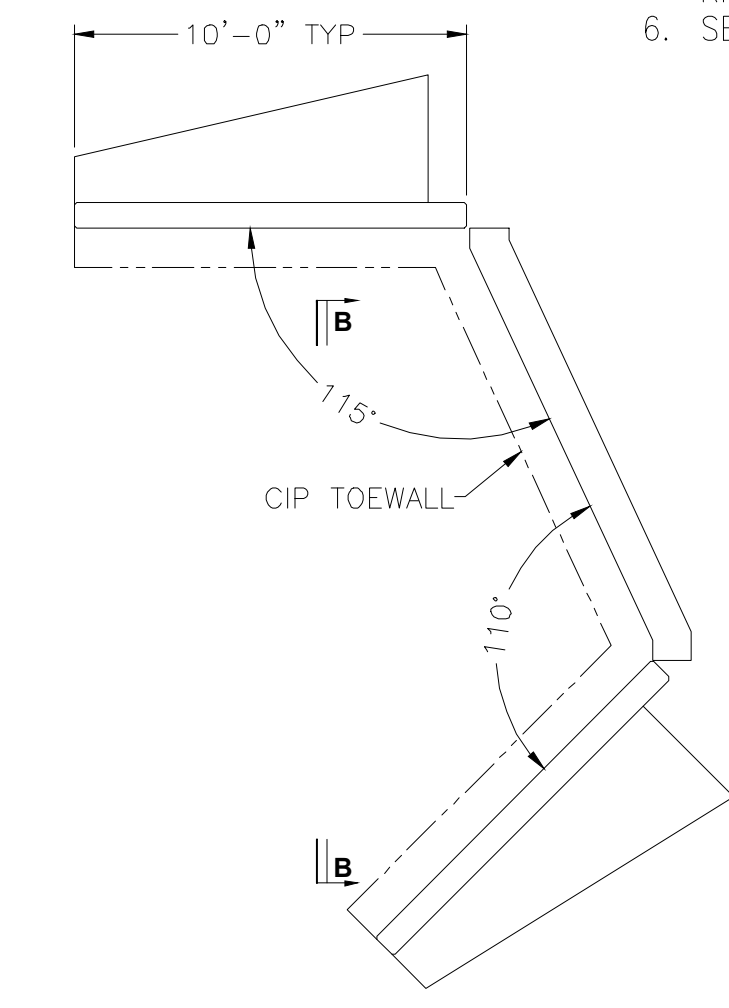
NOTES:
 1. FOR FREEZER AND FREIGHT FARM, SEE PLANS.
 2. REINFORCING TO BE #4 GRADE 60 BARS AND SHALL CONFORM TO ASTM STANDARD A-615 OF THE LATEST DATA. REINFORCING RODS TO BE LOCATED IN THE CENTER OF THE SLAB, WITH A MINIMUM OF 2" CLEARANCE FROM FACE OF CONCRETE.

CEMENT CONCRETE PAD: FREEZER AND FREIGHT FARM
 NOT TO SCALE

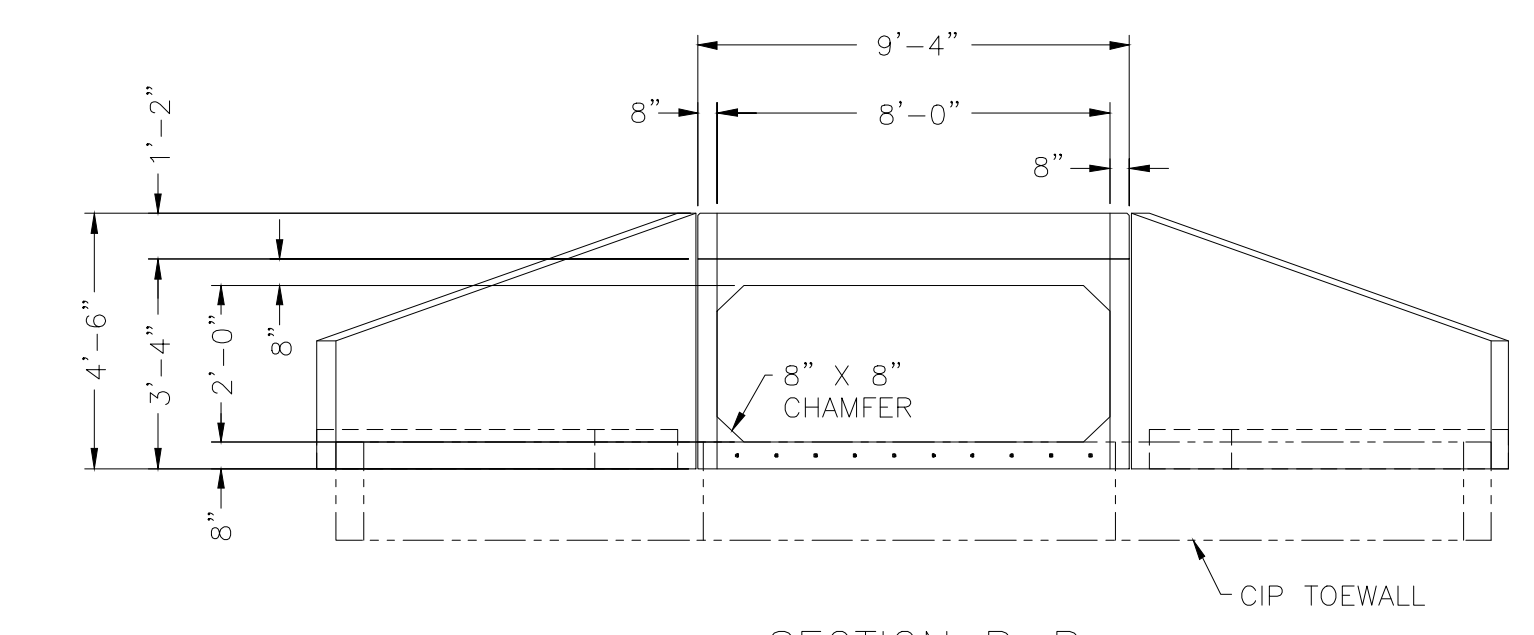


BIO-RETENTION AREA NOTES
 1. THE PLANTING SOIL/FILTER MEDIA SHOULD BE A MIXTURE OF SAND, COMPOST, AND SOIL:
 - 40% SAND *
 - 20-30% TOPSOIL *
 - 30-40% COMPOST *
 * PERCENTAGES BY VOLUMES
 2. THE SOIL MIX SHOULD BE UNIFORM, FREE OF STONES, STICKS, STUMPS, ROOTS, LARGER THAN 2 INCHES. CLAY CONTENT SHOULD NOT EXCEED 5%. SOIL PH SHOULD BE BETWEEN 5.5 AND 6.5 AND SHALL MEET ALL OTHER REQUIREMENTS OF SECTION 32.9320
 3. THE SAND COMPONENT SHOULD BE GRAVELLY SAND THAT MEETS ASTM D 422. SIEVE SIZE PERCENT PASSING:
 2 INCH 100
 3/4 INCH 70-100
 1/4 INCH 50-80
 No. 40 15-40
 No. 200 0-3
 4. THE TOPSOIL COMPONENT SHALL BE A SANDY LOAM, LOAMY SAND OR LOAM TEXTURE.
 5. THE COMPOST COMPONENT MUST BE PROCESSED FROM 60% COMPOST MEETING THE RISDISM RULES AND REGULATIONS FOR AGRICULTURAL COMPOSTING.
 6. SEE LANDSCAPE PLANS FOR PLANTING SCHEDULE.

BIORETENTION AREA DETAIL
 NOT TO SCALE

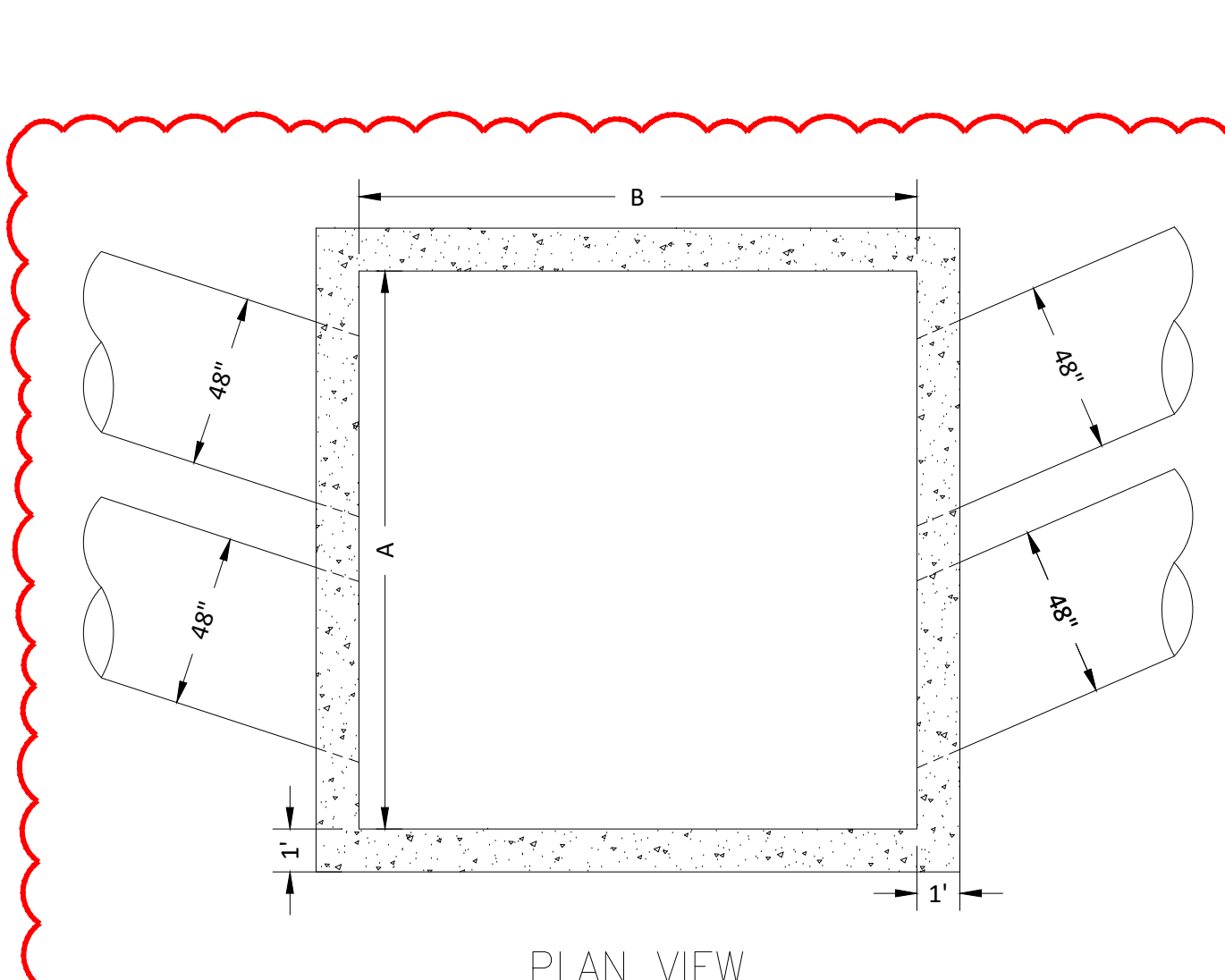


PLAN VIEW

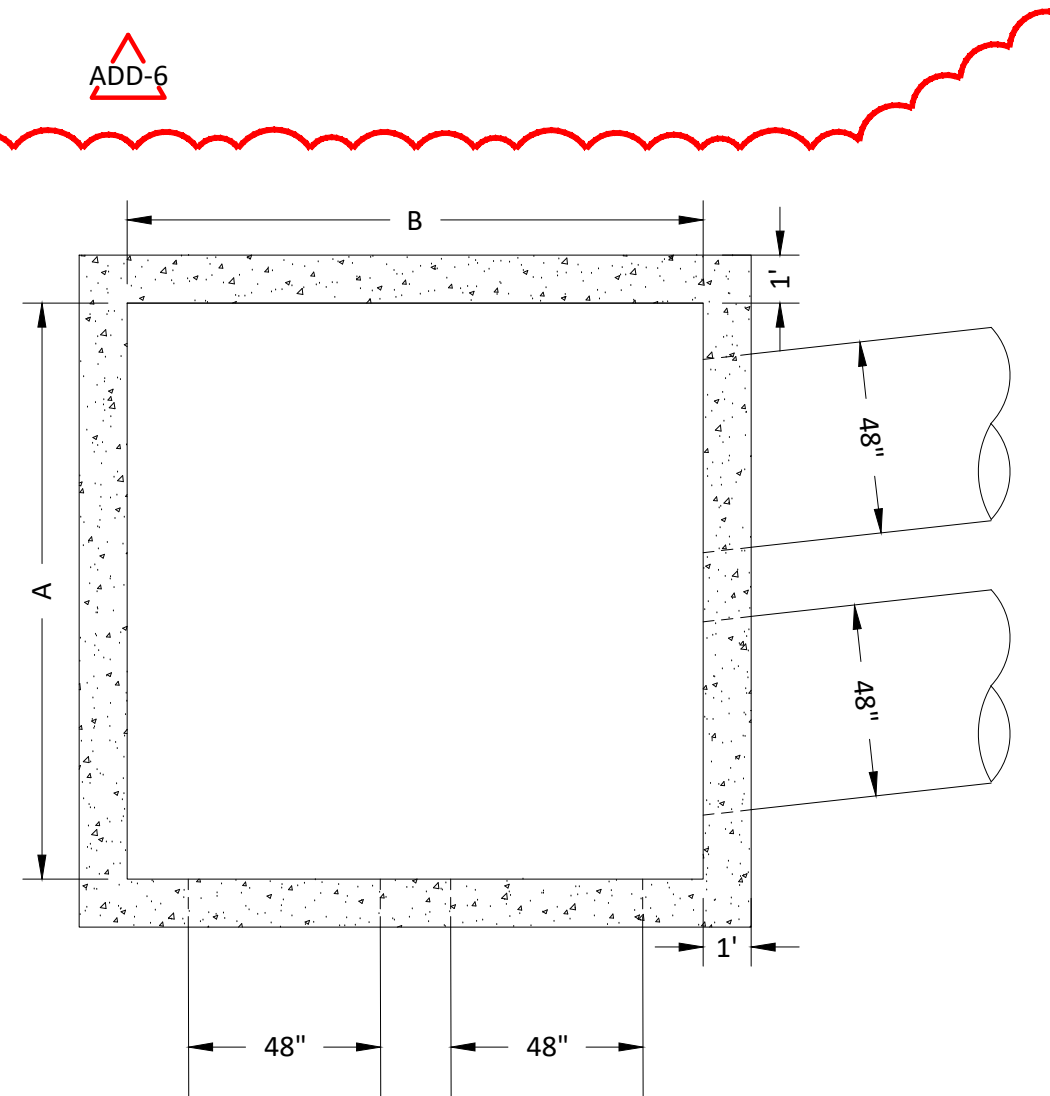


SECTION B-B

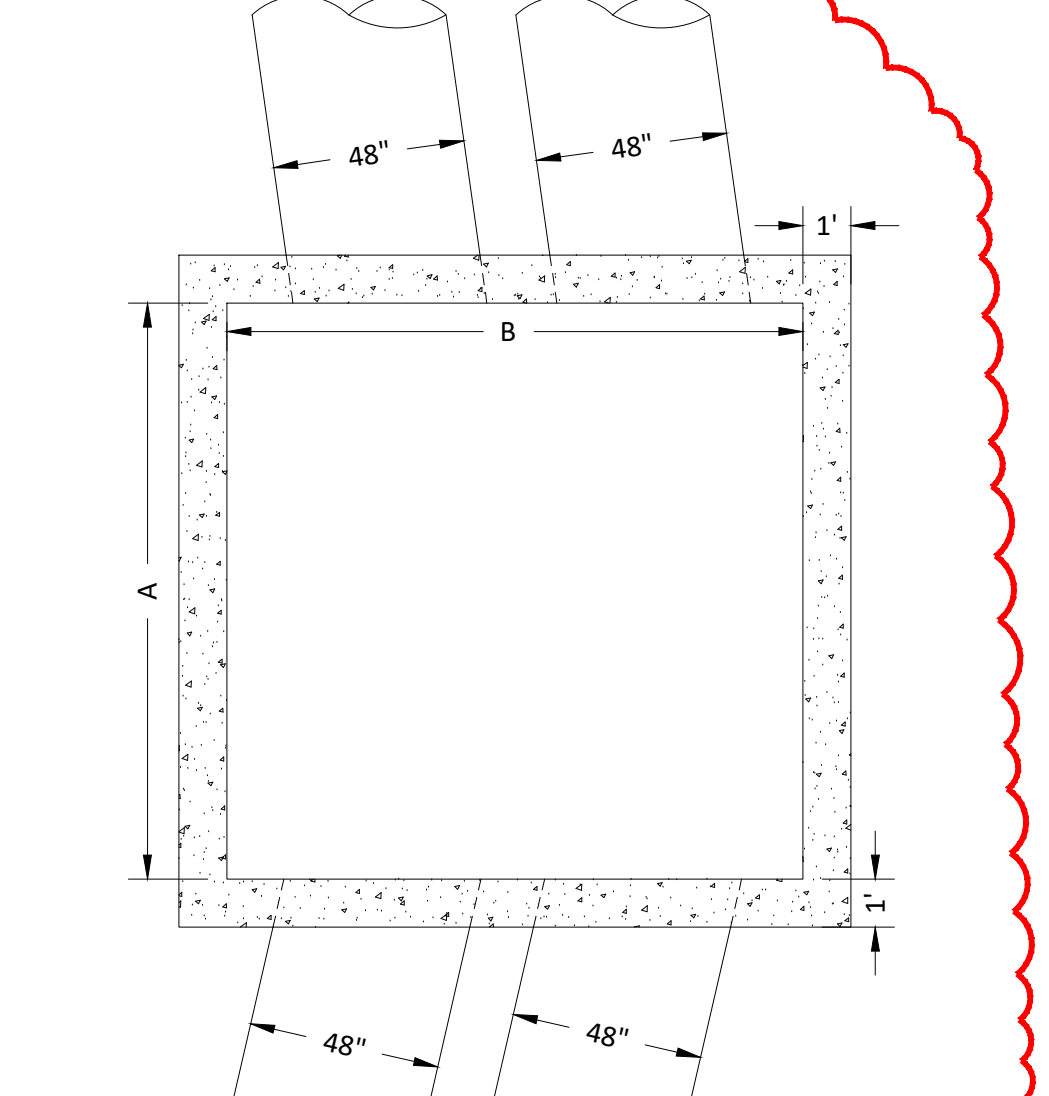
REINFORCED CONCRETE WINGWALL DETAIL
 NOT TO SCALE



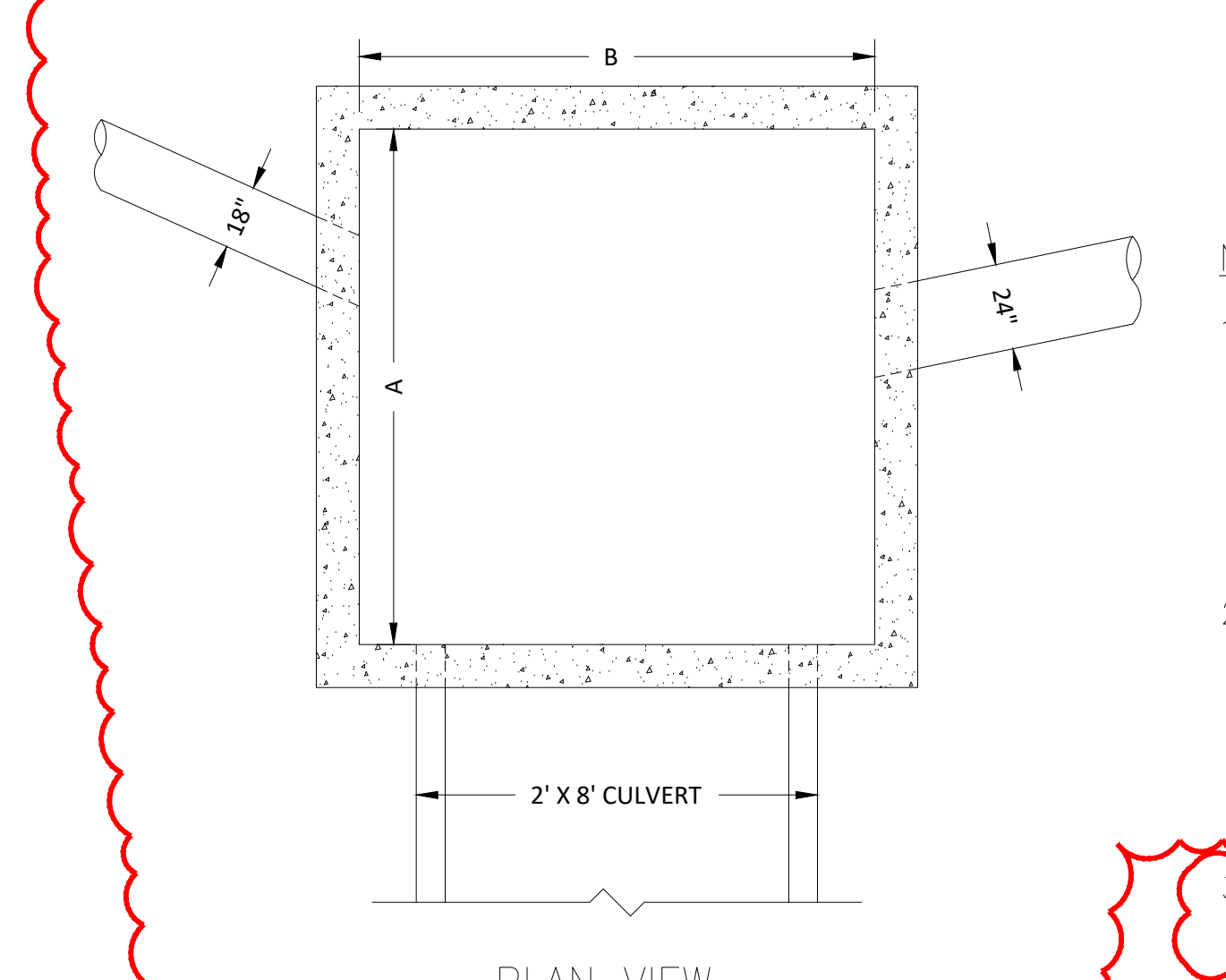
PLAN VIEW
 TRANSITION CHAMBER TC-1 DETAIL
 NOT TO SCALE



PLAN VIEW
 TRANSITION CHAMBER TC-2 DETAIL
 NOT TO SCALE

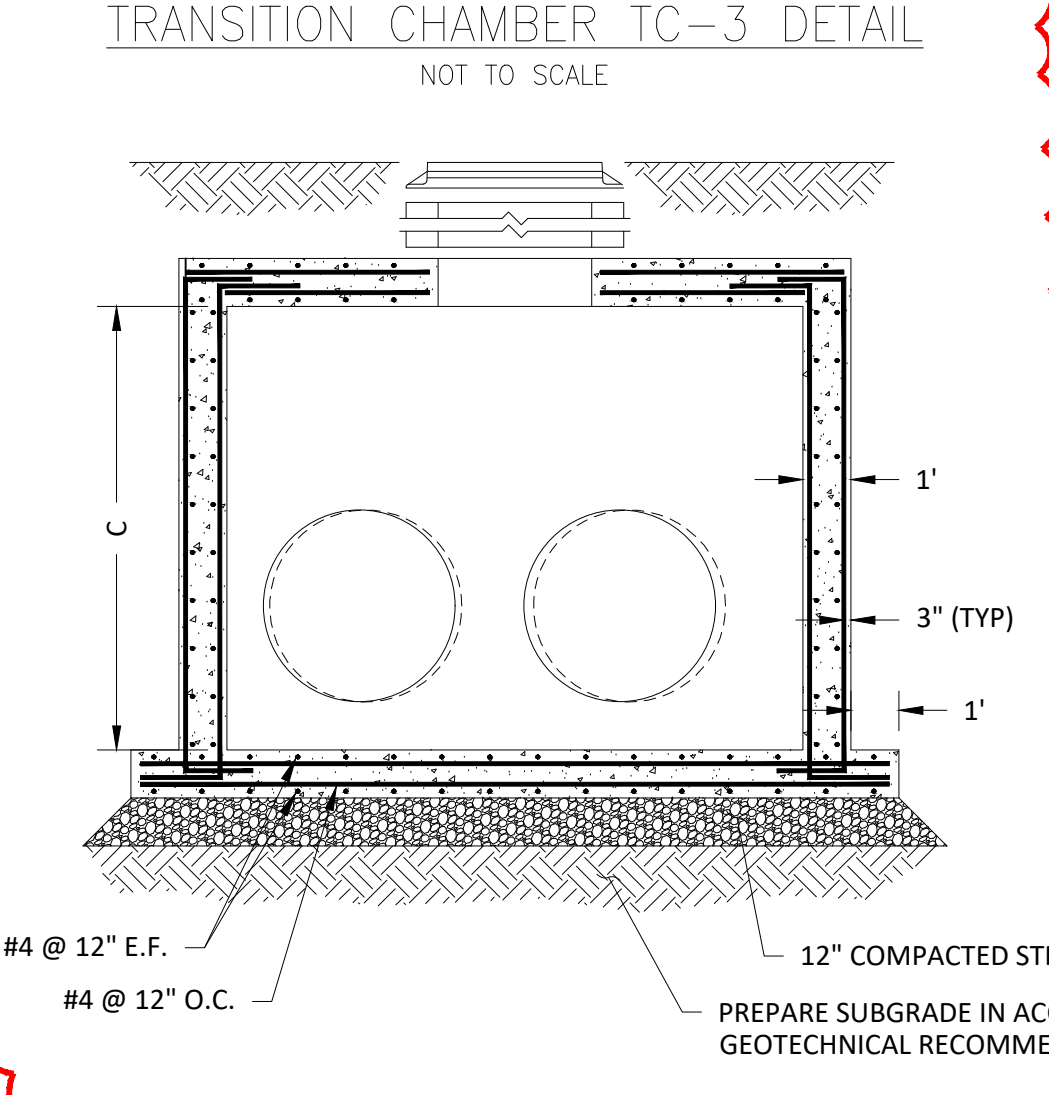


PLAN VIEW
 TRANSITION CHAMBER TC-3 DETAIL
 NOT TO SCALE

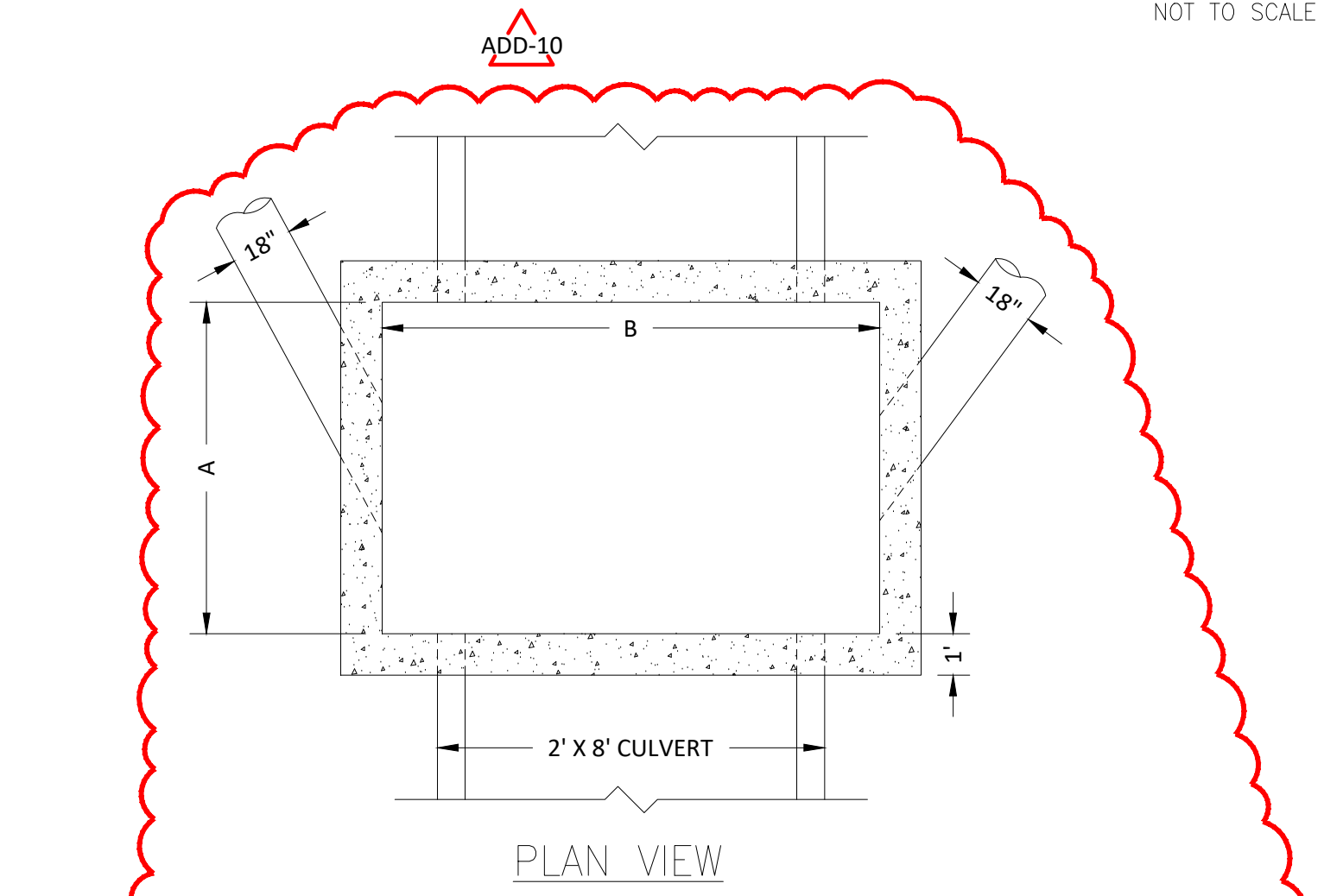


PLAN VIEW
 TRANSITION CHAMBER DMH-313 DETAIL
 NOT TO SCALE

NOTES:
 1. TC-1 AND TC-3 SHALL BE CONSTRUCTED FOR CONNECTION TO THE EXISTING 48" COMBINED SEWER PIPES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING ALL EXISTING DATA PRIOR TO INSTALLATION. THIS SHALL INCLUDE BUT IS NOT LIMITED TO, ELEVATIONS, DIMENSIONS, SPACING, AND PIPE ANGLE. THIS EXISTING INFORMATION SHALL BE INCLUDED IN SHOP DRAWINGS FOR TRANSITION CHAMBERS.
 2. PROPOSED INVERT ELEVATIONS OF THE TWIN 48" PIPES ARE BASED ON EXISTING CONDITIONS DATA OBTAINED DURING DESIGN. THE CONTRACTOR SHALL CONFIRM EXISTING PIPE ELEVATIONS AT POINTS OF CONNECTION. INVERT ELEVATIONS SHALL BE ADJUSTED BASED ON EXISTING PIPE ELEVATIONS DETERMINED DURING THIS FIELD CONFIRMATION AND SHALL BE PROVIDED IN SHOP DRAWINGS FOR TRANSITION CHAMBERS.
 3. TC-1, TC-2, AND TC-3 MANHOLE COVERS SHALL BE BOLTED/GASKETED STYLE.



TRANSITION CHAMBER SECTION VIEW

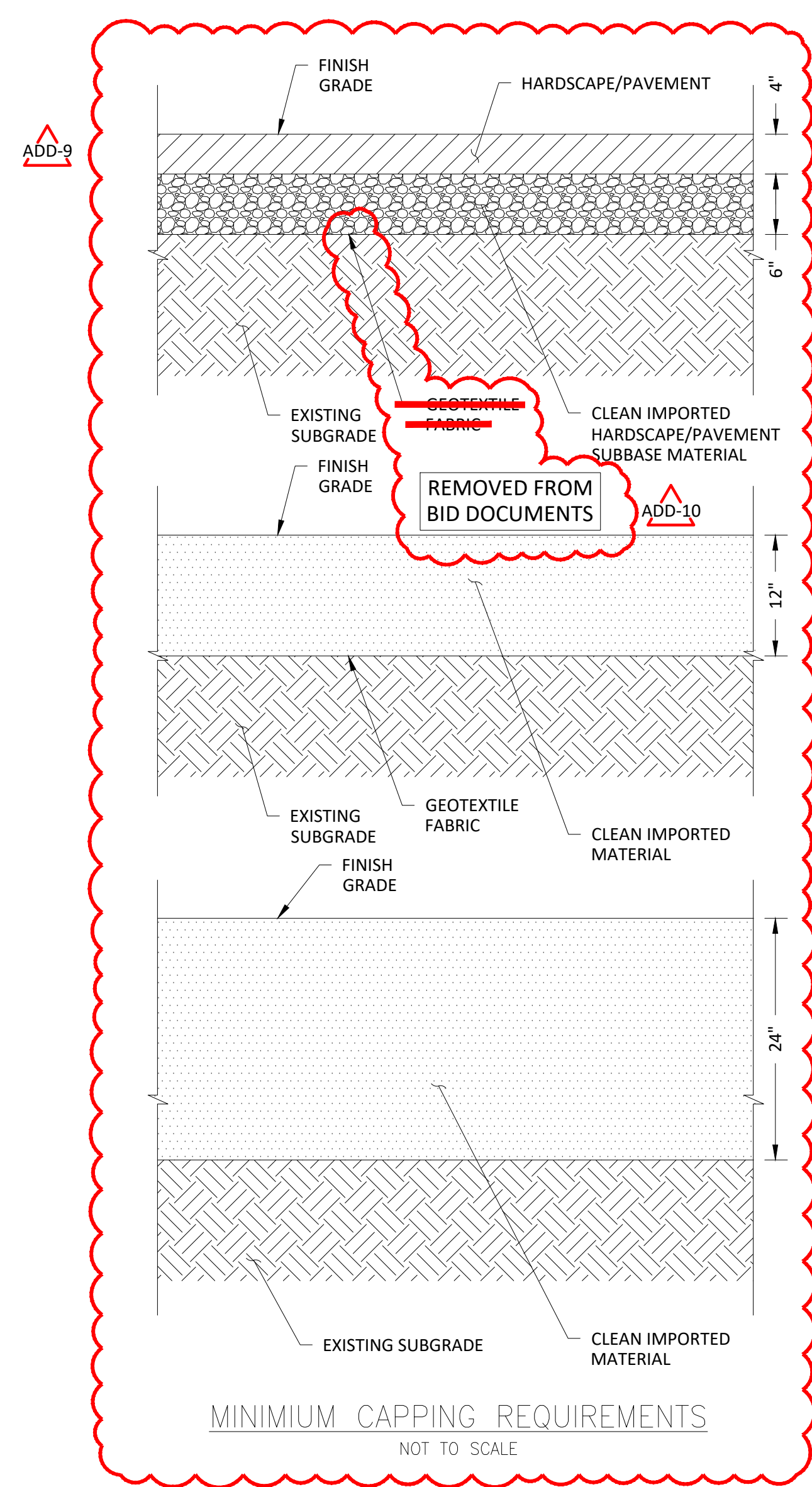


PLAN VIEW
 TRANSITION CHAMBER DMH-316 DETAIL
 NOT TO SCALE

STRUCTURE	INV IN*	INV OUT*	DIMENSION "A"	DIMENSION "B"	DIMENSION "C"
TC-1	44.96	44.96	13'	8'	8'-2"
TC-2	45.10	45.10	12'	12'	8'-0"
TC-3	45.95	45.95	8'	12'	9'-1"
DMH-313	SEE C5.2	SEE C5.2	8'	12'	3'-0"
DMH-316	SEE C5.2	SEE C5.2	8'	12'	3'-0"

*SEE DETAIL NOTES 1 AND 2

NOTE:
 ANY MANUFACTURER'S NAMES AND/OR MODEL NUMBERS IDENTIFIED HEREIN ARE INTENDED TO ASSIST IN ESTABLISHING A GENERAL LEVEL OF QUALITY, CONFIGURATION, FUNCTIONALITY, AND APPEARANCE REQUIRED. THIS IS NOT A PROPRIETARY SPECIFICATION AND IT SHOULD BE NOTED THAT "OR APPROVED EQUIVALENT" APPLIES TO ALL PRODUCTS DENOTED HEREIN. IT IS UNDERSTOOD THAT ALL MANUFACTURERS WILL HAVE MINOR VARIATIONS IN CONFIGURATION, APPEARANCE, AND PRODUCT SPECIFICATION TO ENCOURAGE OPEN AND COMPETITIVE INVOLVEMENT FROM MULTIPLE MANUFACTURERS THAT ARE ABLE TO SUPPLY SIMILAR PRODUCTS.



MINIMUM CAPPING REQUIREMENTS
 NOT TO SCALE



526 Boston Post Rd Weyland, MA 02189
 508.358.0790 www.ai3architects.com

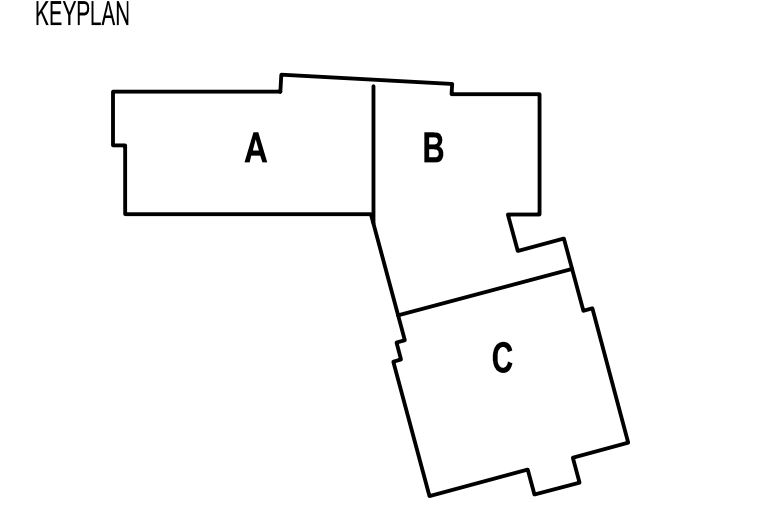
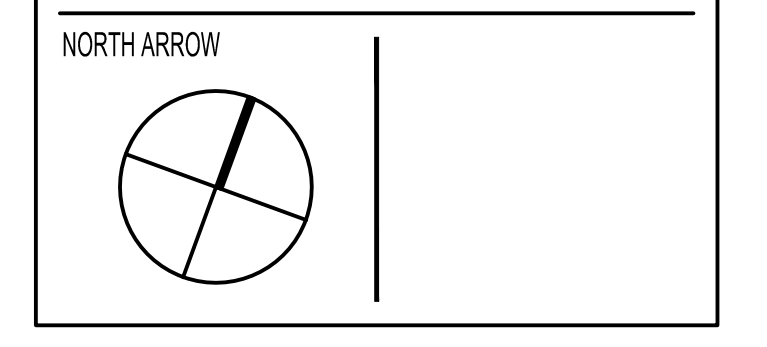
VERTEX
 The Vertex Companies, LLC
 400 Libbey Parkway
 Weymouth, MA 02189
 PHONE 781.952.6000
 www.vertexeng.com



CENTRAL FALLS HIGH SCHOOL
 10 HIGGINSON AVE, CENTRAL FALLS, RI
 KEYNOTE LEGEND:

ADD-10	ADDENDUM #10	02.09.2024
ADD-9	ADDENDUM #9	02.06.2024
ADD-6	ADDENDUM #6	01.23.2024

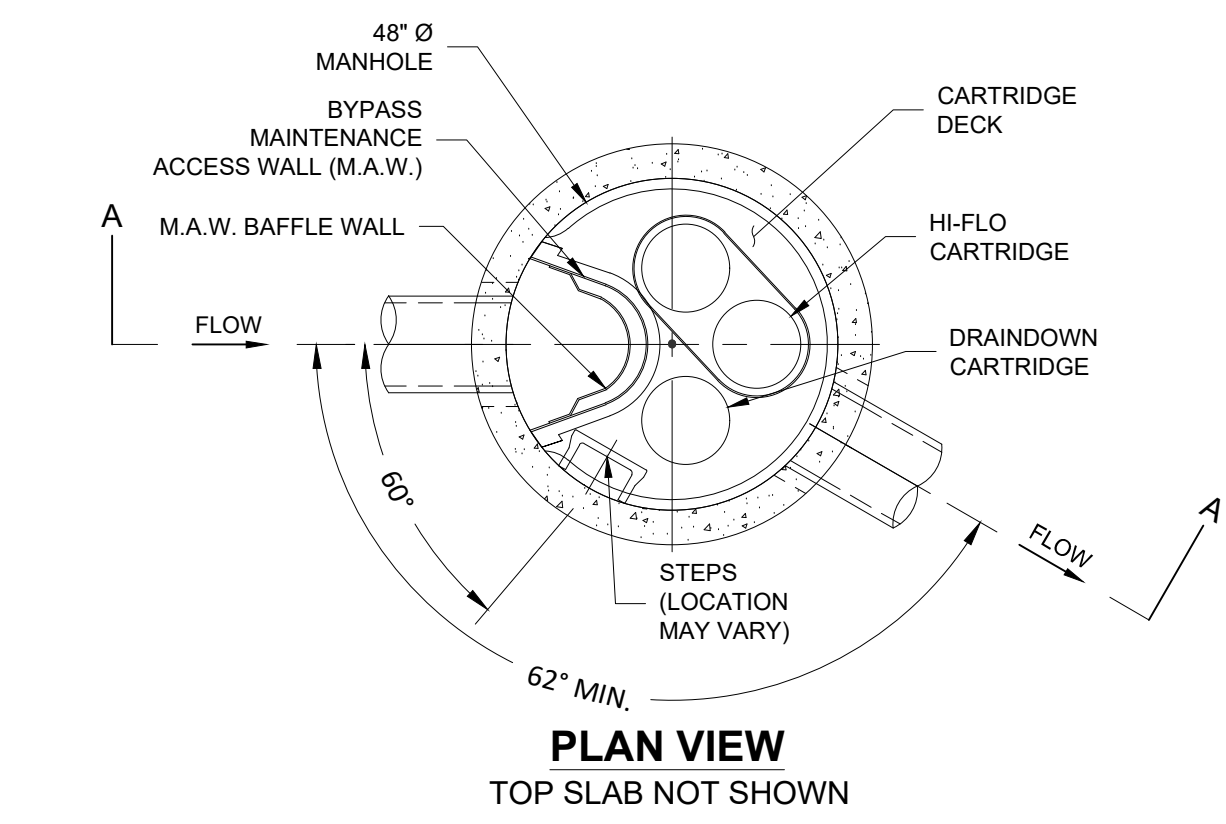
100% CONSTRUCTION DOCUMENTS



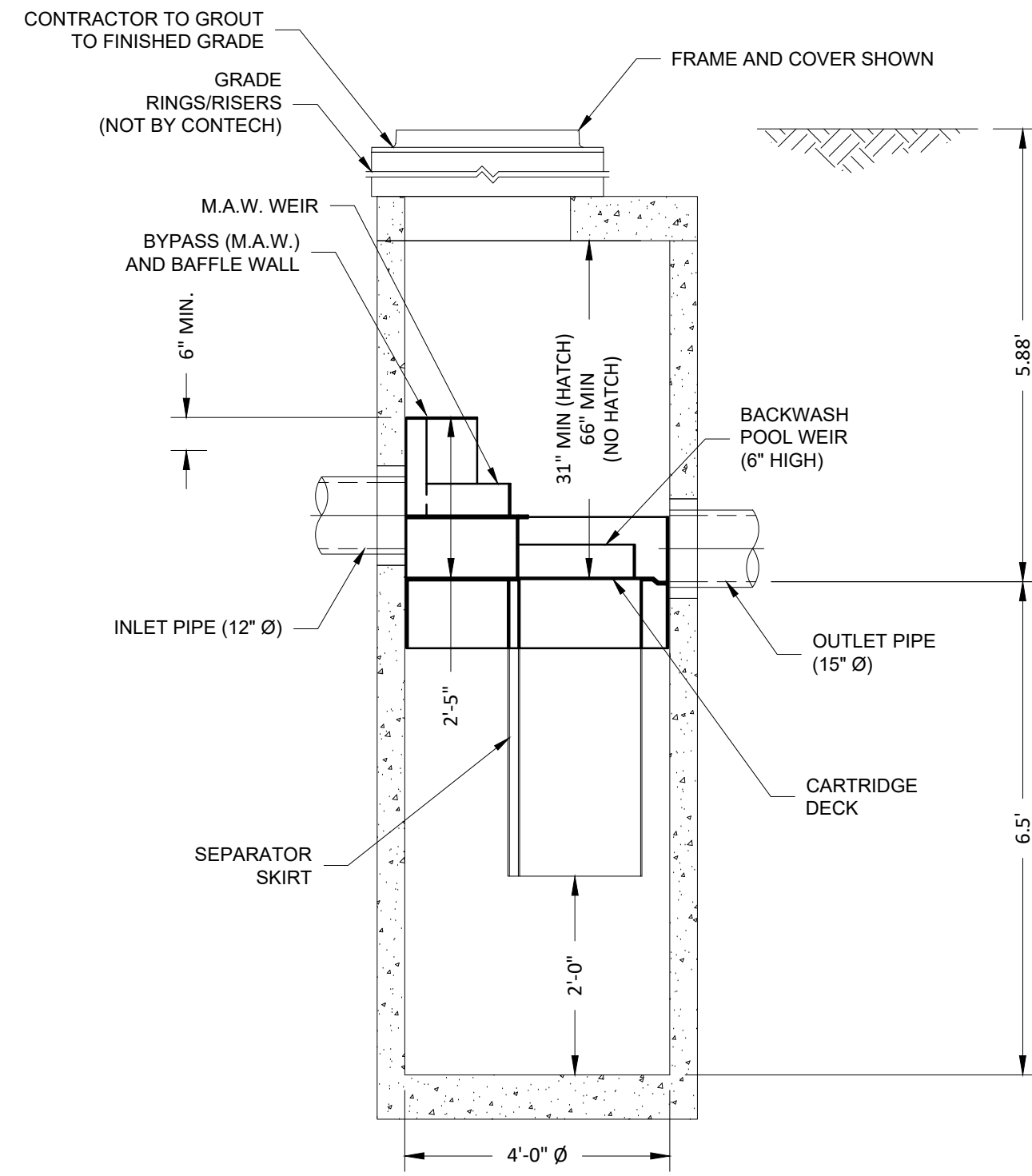
DRAWING NAME:
SITE DETAILS

DRAWN BY: SMC
 REVIEWED BY: GBD

SCALE: AS NOTED | DRAWING NUMBER:
 JOB NO: 77997 | **C6.5**
 DATE: OCTOBER 13, 2023



PLAN VIEW
TOP SLAB NOT SHOWN

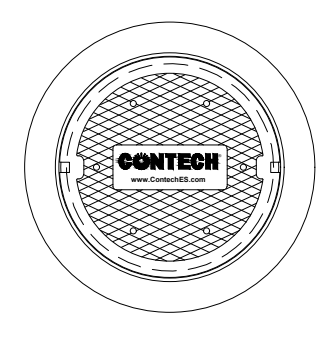


SECTION A-A

JELLYFISH FILTER JF4-2-1 (JF-101) DETAIL
NOT TO SCALE

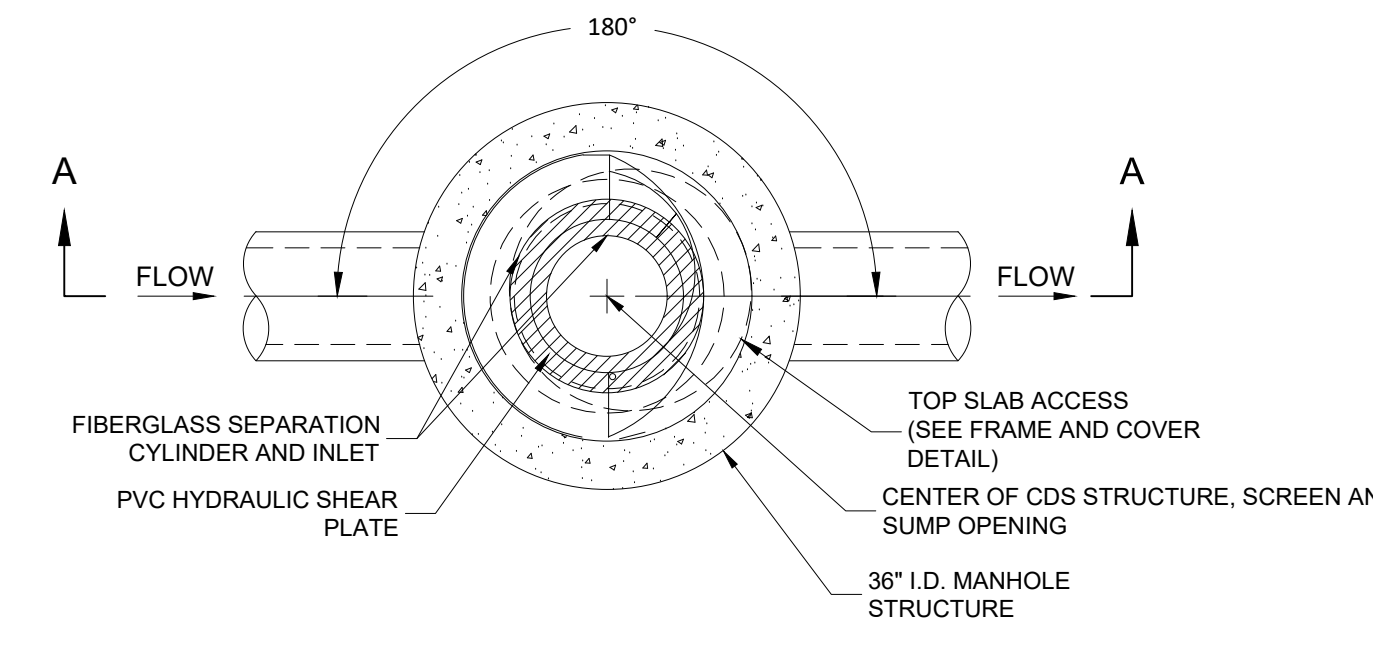
SITE SPECIFIC DATA REQUIREMENTS			
STRUCTURE ID	JF-101		
WATER QUALITY FLOW RATE (cfs)	0.28		
PEAK FLOW RATE (cfs)	2.33		
RETURN PERIOD OF PEAK FLOW (yrs)	100		
JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THE PLANS.	2.1		
NUMBER OF CARTRIDGES REQUIRED (HF / DD)	54		
CARTRIDGE SIZE (L x W x H)	54		
RIM ELEVATION	56.67		
PIPE DATA			
INVERT	MATERIAL	DIAMETER	
INLET PIPE 1	HDPE	12"	
INLET PIPE 2	HDPE	12"	
OUTLET PIPE	HDPE	15"	

NOTES/SPECIAL REQUIREMENTS:			
1.	CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE. MATERIALS AND LABOR NOT PROVIDED BY CONTECH SHALL BE PROVIDED BY THE CONTRACTOR.		
2.	FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT A CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE. www.contechES.com; MELISSA HALL, E. MELISSA.HALL@CONTECHES.COM; P. 207-885-4114		
3.	JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THE PLANS.		
4.	STRUCTURE SHALL MEET AASHTO H20-20 OR PER APPROVING JURISDICTION REQUIREMENTS, WHICHEVER IS MORE STRINGENT, ASSUMING EARTH COVER OF 0'-3" AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. CASTINGS SHALL MEET AASHTO M308 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.		
5.	STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C478 AND AASHTO LOAD FACTOR DESIGN METHOD.		
6.	OUTLET PIPE INVERT IS EQUAL TO THE CARTRIDGE DECK ELEVATION.		
7.	THE OUTLET PIPE DIAMETER FOR NEW INSTALLATIONS IS TO BE ONE PIPE SIZE LARGER THAN THE INLET PIPE AT EQUAL OR GREATER SLOPE.		
8.	MANUFACTURER SHALL PROVIDE ANTI-FLOTATION PROVISIONS FOR THE STRUCTURE.		
9.	CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE (LIFTING CLUTCHES PROVIDED).		
10.	CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH FLEXIBLE BOOT).		
11.	WHEN ACTIVATED PRIOR TO SITE STABILIZATION, CONTRACTOR TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.		
12.	CARTRIDGE INSTALLATION SHALL BE PERFORMED BY CONTECH. THE CONTRACTOR SHALL CONTACT CONTECH TO COORDINATE CARTRIDGE INSTALLATION WITH SITE STABILIZATION.		

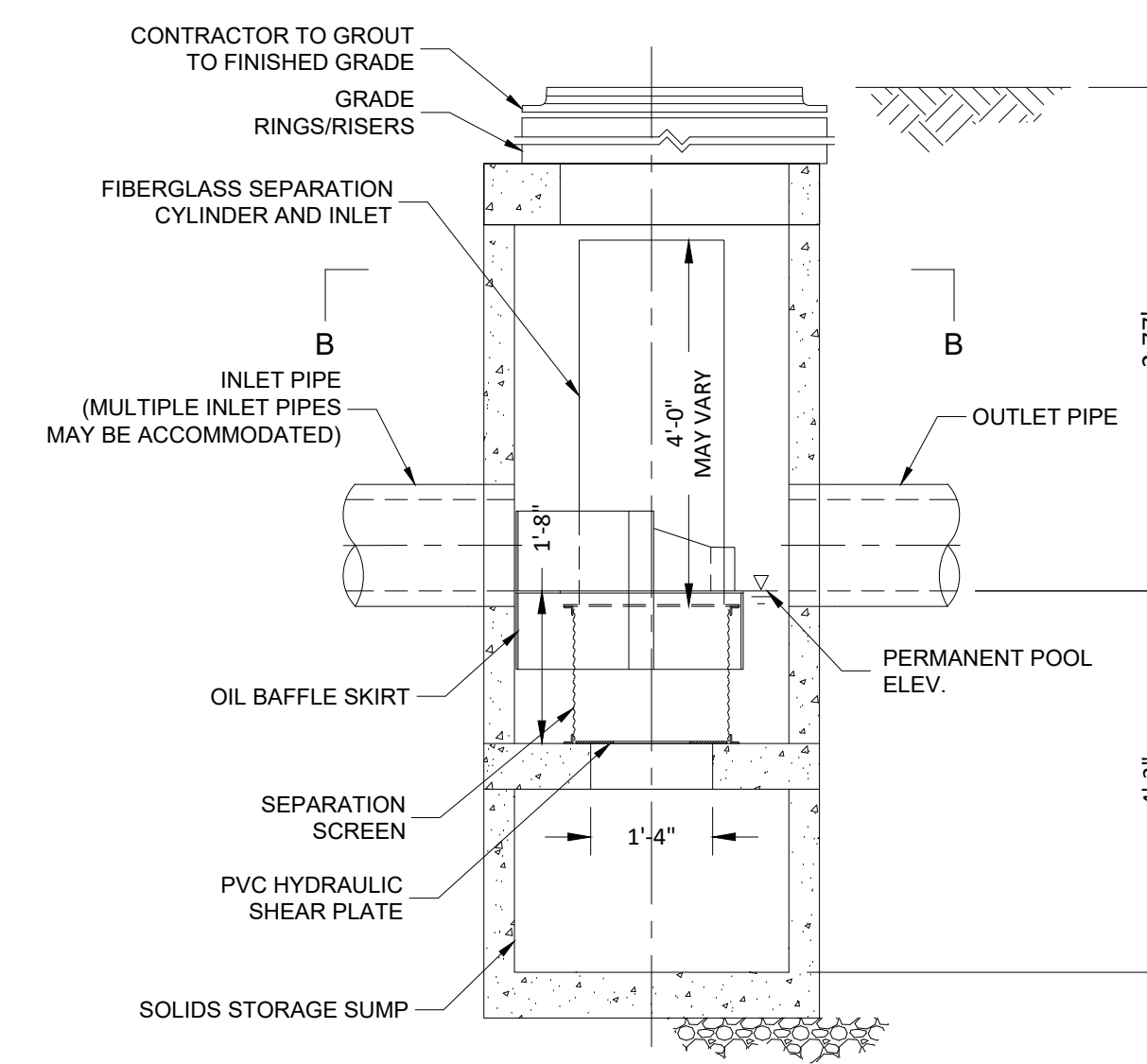


FRAME AND COVER
(30" Ø)
NOT TO SCALE

- GENERAL NOTES:
- CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE. MATERIALS AND LABOR NOT PROVIDED BY CONTECH SHALL BE PROVIDED BY THE CONTRACTOR.
 - FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT A CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE. www.contechES.com; MELISSA HALL, E. MELISSA.HALL@CONTECHES.COM; P. 207-885-4114
 - JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THE PLANS.
 - STRUCTURE SHALL MEET AASHTO H20-20 OR PER APPROVING JURISDICTION REQUIREMENTS, WHICHEVER IS MORE STRINGENT, ASSUMING EARTH COVER OF 0'-3" AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. CASTINGS SHALL MEET AASHTO M308 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
 - STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C478 AND AASHTO LOAD FACTOR DESIGN METHOD.
 - OUTLET PIPE INVERT IS EQUAL TO THE CARTRIDGE DECK ELEVATION.
 - THE OUTLET PIPE DIAMETER FOR NEW INSTALLATIONS IS TO BE ONE PIPE SIZE LARGER THAN THE INLET PIPE AT EQUAL OR GREATER SLOPE.
 - MANUFACTURER SHALL PROVIDE ANTI-FLOTATION PROVISIONS FOR THE STRUCTURE.
 - CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE (LIFTING CLUTCHES PROVIDED).
 - CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH FLEXIBLE BOOT).
 - WHEN ACTIVATED PRIOR TO SITE STABILIZATION, CONTRACTOR TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.
 - CARTRIDGE INSTALLATION SHALL BE PERFORMED BY CONTECH. THE CONTRACTOR SHALL CONTACT CONTECH TO COORDINATE CARTRIDGE INSTALLATION WITH SITE STABILIZATION.



PLAN VIEW B-B
NOT TO SCALE

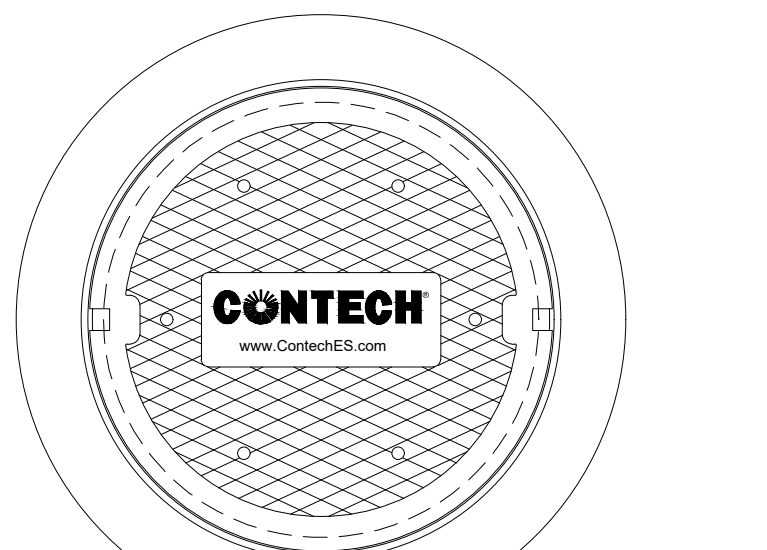


ELEVATION A-A
NOT TO SCALE

HYDRODYNAMIC SEPARATOR CDS-3-C (CDS1515) ONLINE
CDS (HDS-101) DETAIL
NOT TO SCALE

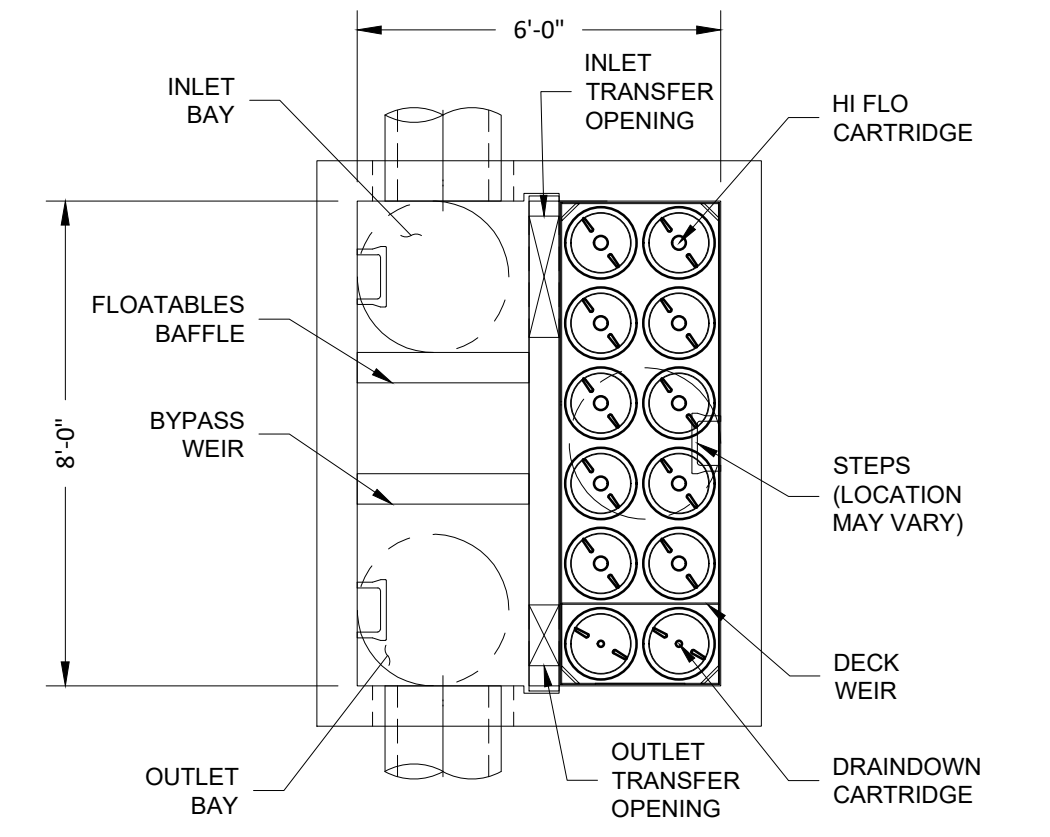
SITE SPECIFIC DATA REQUIREMENTS			
STRUCTURE ID	HDS-101		
WATER QUALITY FLOW RATE (cfs)	0.28		
PEAK FLOW RATE (cfs)	2.33		
RETURN PERIOD OF PEAK FLOW (yrs)	100		
SCREEN APERTURE (2400 OR 4700)			
PIPE DATA			
INVERT	MATERIAL	DIAMETER	
INLET PIPE 1	HDPE	12"	
INLET PIPE 2	HDPE	12"	
OUTLET PIPE	HDPE	12"	
RIM ELEVATION	56.37		
ANTI-FLOTATION BALLAST			
WIDTH	HEIGHT		

NOTES/SPECIAL REQUIREMENTS:

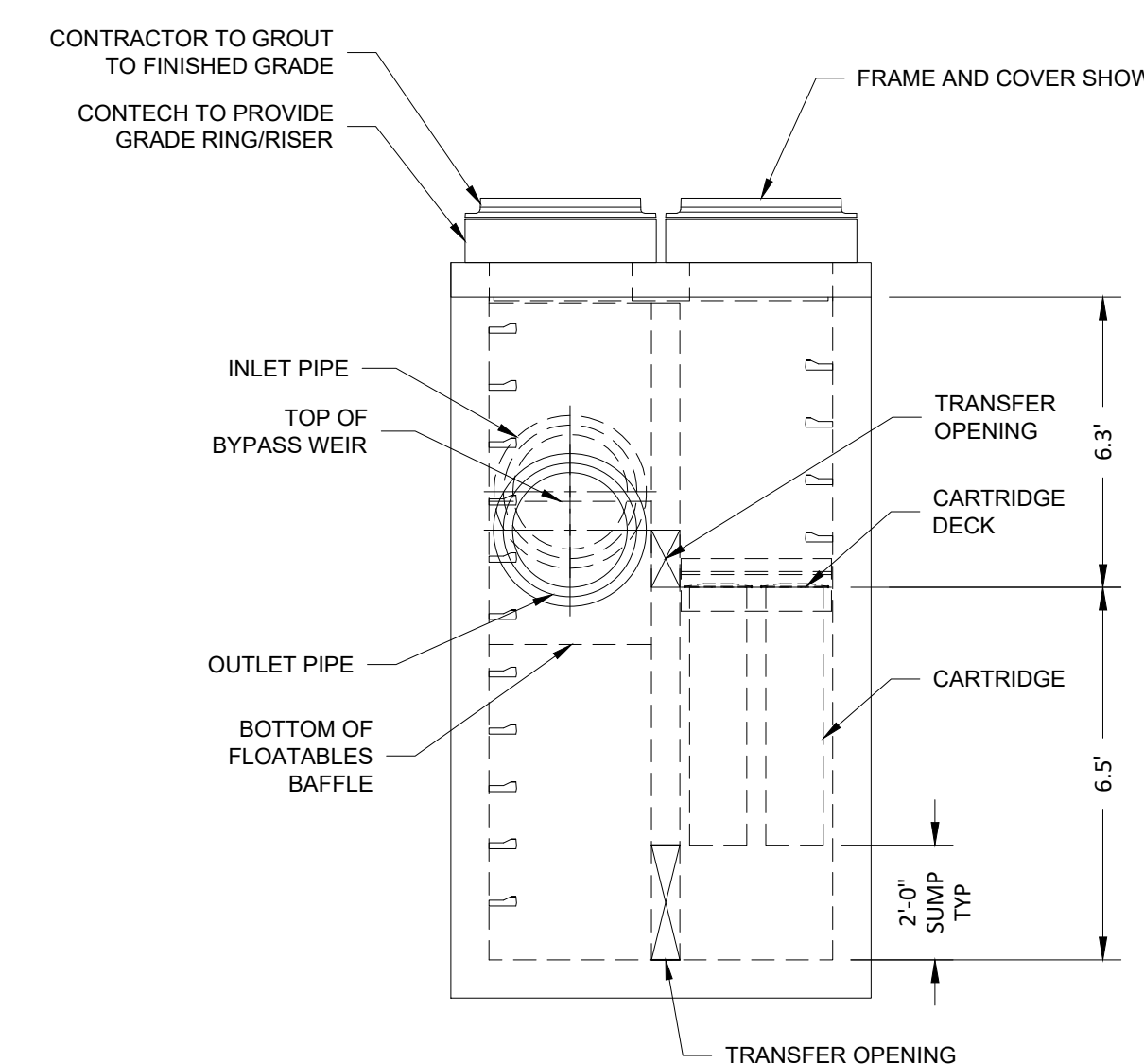


FRAME AND COVER
(DIAMETER VARIES)
NOT TO SCALE

- GENERAL NOTES:
- CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE. MATERIALS AND LABOR NOT PROVIDED BY CONTECH SHALL BE PROVIDED BY THE CONTRACTOR.
 - FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT A CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contechES.com; MELISSA HALL, E. MELISSA.HALL@CONTECHES.COM; P. 207-885-4114
 - CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THE PLANS.
 - STRUCTURE SHALL MEET AASHTO H20-20 LOAD RATING, ASSUMING EARTH COVER OF 0'-3" AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. CASTINGS SHALL MEET AASHTO M308 AND BE CAST WITH THE CONTECH LOGO.
 - IF REQUIRED, PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.
 - CDS STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C478 AND AASHTO LOAD FACTOR DESIGN METHOD.
 - MANUFACTURER SHALL PROVIDE ANTI-FLOTATION PROVISIONS FOR THE STRUCTURE.
 - CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE.
 - CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
 - CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET AND OUTLET PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
 - CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. ALL JOINTS BELOW PIPE INVERTS SHALL BE GROUTED.



PLAN VIEW
(TOP SLAB NOT SHOWN FOR CLARITY)



ELEVATION VIEW

JELLYFISH FILTER JFPD0806-5-2 (JF-201) DETAIL
NOT TO SCALE

SITE SPECIFIC DATA REQUIREMENTS			
STRUCTURE ID	JF-201		
WATER QUALITY FLOW RATE (cfs)	1.04		
PEAK FLOW RATE (cfs)	8.81		
RETURN PERIOD OF PEAK FLOW (yrs)	100		
JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THE PLANS.	52		
NUMBER OF CARTRIDGES REQUIRED (HF / DD)	54		
CARTRIDGE LENGTH	54		
PIPE DATA			
INVERT	MATL	DIAM	SLOPE %
INLET #1	HDPE	18"	
INLET #2	HDPE	18"	
OUTLET	HDPE	18"	

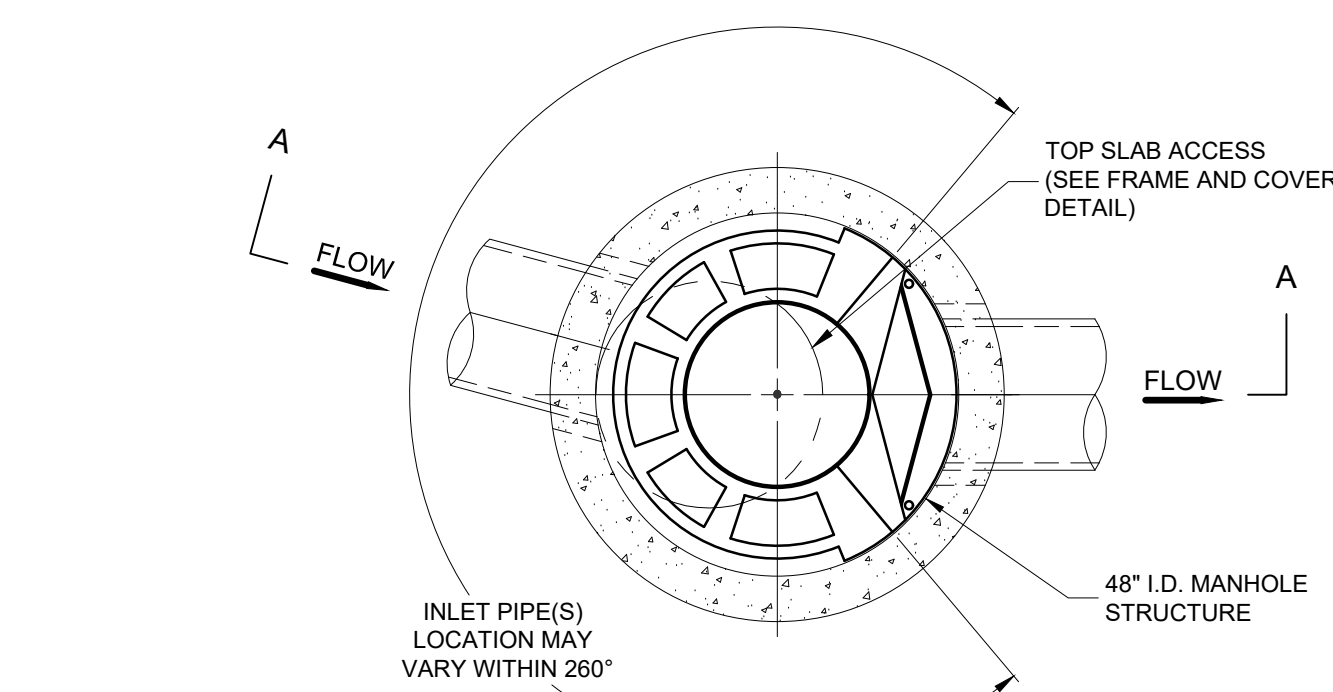
SEE GENERAL NOTES 6-7 FOR INLET AND OUTLET HYDRAULIC AND SIZING REQUIREMENTS.

RIM ELEVATION			
			55.75

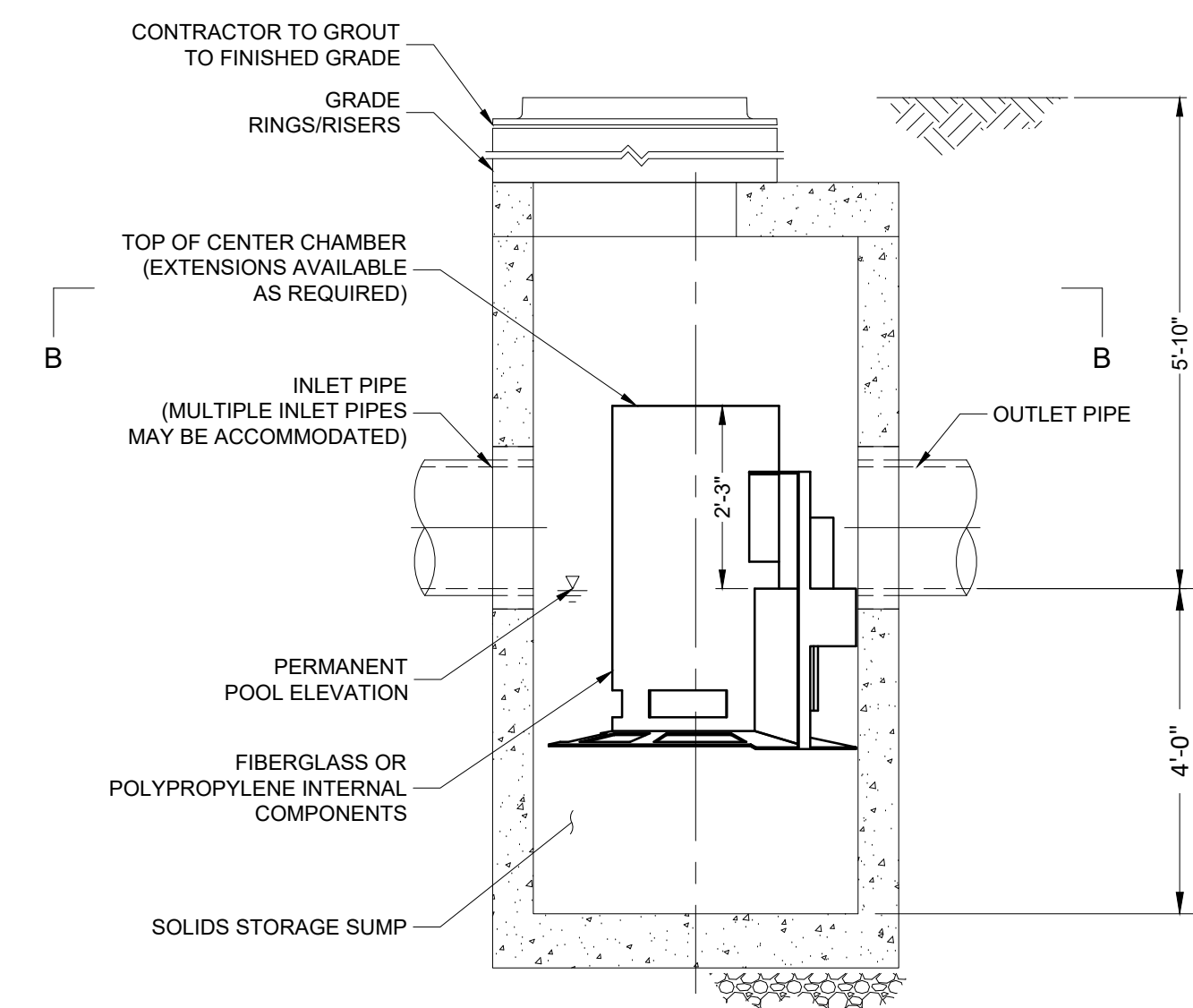
ANTI-FLOTATION BALLAST			
WIDTH	HEIGHT		
0	0		

NOTES/SPECIAL REQUIREMENTS:

- GENERAL NOTES:
- CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE. MATERIALS AND LABOR NOT PROVIDED BY CONTECH SHALL BE PROVIDED BY THE CONTRACTOR.
 - FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT A CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE. www.contechES.com; MELISSA HALL, E. MELISSA.HALL@CONTECHES.COM; P. 207-885-4114
 - JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THE PLANS.
 - STRUCTURE SHALL MEET AASHTO H20-20 OR PER APPROVING JURISDICTION REQUIREMENTS, WHICHEVER IS MORE STRINGENT, ASSUMING EARTH COVER OF 0'-10" AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. CASTINGS SHALL MEET AASHTO M308 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
 - STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C478, ASTM C918, AND AASHTO LOAD FACTOR DESIGN METHOD.
 - OUTLET PIPE INVERT IS EQUAL TO THE CARTRIDGE DECK ELEVATION.
 - THE OUTLET PIPE DIAMETER FOR NEW INSTALLATIONS IS RECOMMENDED TO BE ONE PIPE SIZE LARGER THAN THE INLET PIPE AT EQUAL OR GREATER SLOPE.
 - MANUFACTURER SHALL PROVIDE ANTI-FLOTATION PROVISIONS FOR THE STRUCTURE.
 - CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE.
 - CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH FLEXIBLE BOOT).
 - WHEN ACTIVATED PRIOR TO SITE STABILIZATION, CONTRACTOR TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.
 - CARTRIDGE INSTALLATION SHALL BE PERFORMED BY CONTECH. THE CONTRACTOR SHALL CONTACT CONTECH TO COORDINATE CARTRIDGE INSTALLATION WITH SITE STABILIZATION.



PLAN VIEW B-B
NOT TO SCALE

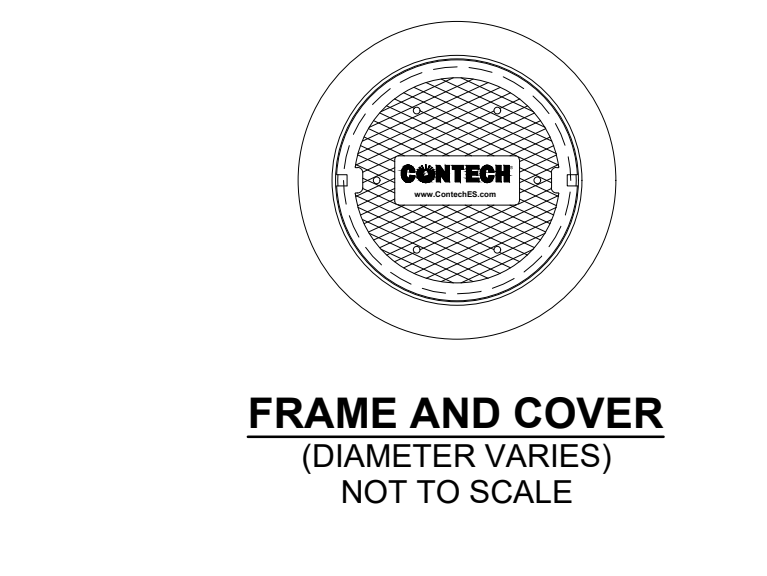


ELEVATION A-A
NOT TO SCALE

HYDRODYNAMIC SEPARATOR CS-4 CASCADE
SEPARATOR (HDS-201) DETAIL
NOT TO SCALE

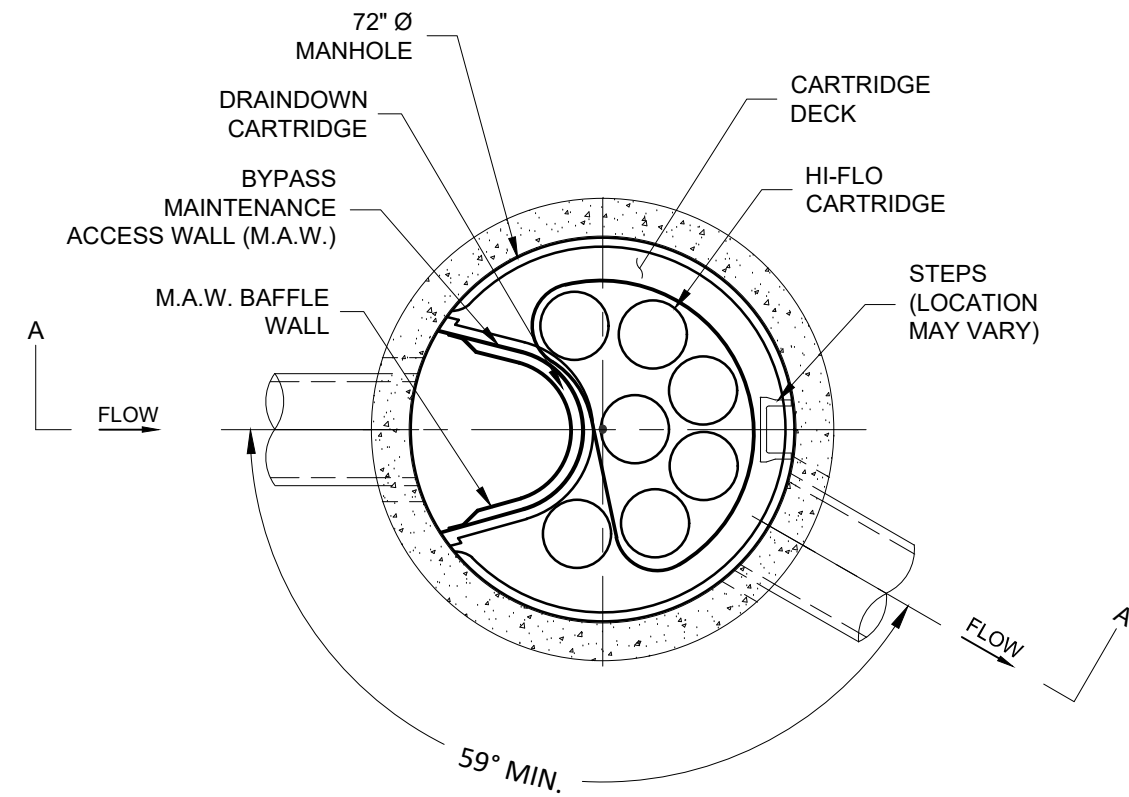
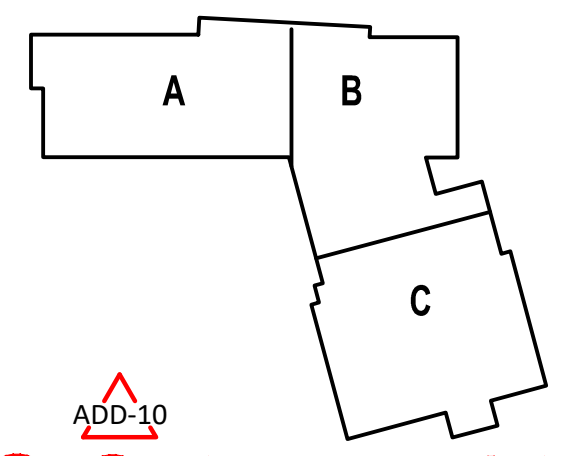
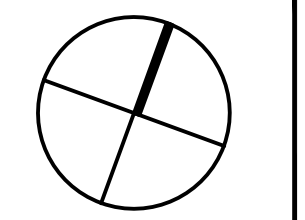
SITE SPECIFIC DATA REQUIREMENTS			
STRUCTURE ID	HDS-201		
WATER QUALITY FLOW RATE (cfs)	1.04		
PEAK FLOW RATE (cfs)	8.81		
RETURN PERIOD OF PEAK FLOW (yrs)	100		
RIM ELEVATION	56.65		
PIPE DATA			
INVERT	MATERIAL	DIAMETER	
INLET PIPE 1	HDPE	12"	
INLET PIPE 2	HDPE	12"	
OUTLET PIPE	HDPE	12"	

NOTES/SPECIAL REQUIREMENTS:

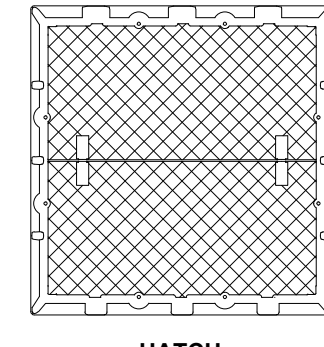


FRAME AND COVER
(DIAMETER VARIES)
NOT TO SCALE

- GENERAL NOTES:
- CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE. MATERIALS AND LABOR NOT PROVIDED BY CONTECH SHALL BE PROVIDED BY THE CONTRACTOR.
 - FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT A CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contechES.com; MELISSA HALL, E. MELISSA.HALL@CONTECHES.COM; P. 207-885-4114
 - CASCADE SEPARATOR WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THE PLANS.
 - CASCADE SEPARATOR STRUCTURE SHALL MEET AASHTO H20-20 LOAD RATING, ASSUMING EARTH COVER OF 0'-3" AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. CASTINGS SHALL MEET AASHTO M308 AND BE CAST WITH THE CONTECH LOGO.
 - CASCADE SEPARATOR STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C478 AND AASHTO LOAD FACTOR DESIGN METHOD.
 - MANUFACTURER SHALL PROVIDE ANTI-FLOTATION PROVISIONS FOR THE STRUCTURE.
 - CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CASCADE SEPARATOR MANHOLE STRUCTURE.
 - CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
 - CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET AND OUTLET PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
 - CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. ALL JOINTS BELOW PIPE INVERTS SHALL BE GROUTED.



PLAN VIEW
TOP SLAB NOT SHOWN



HATCH
(48" X 48" CAST INTO SLAB)
NOT TO SCALE

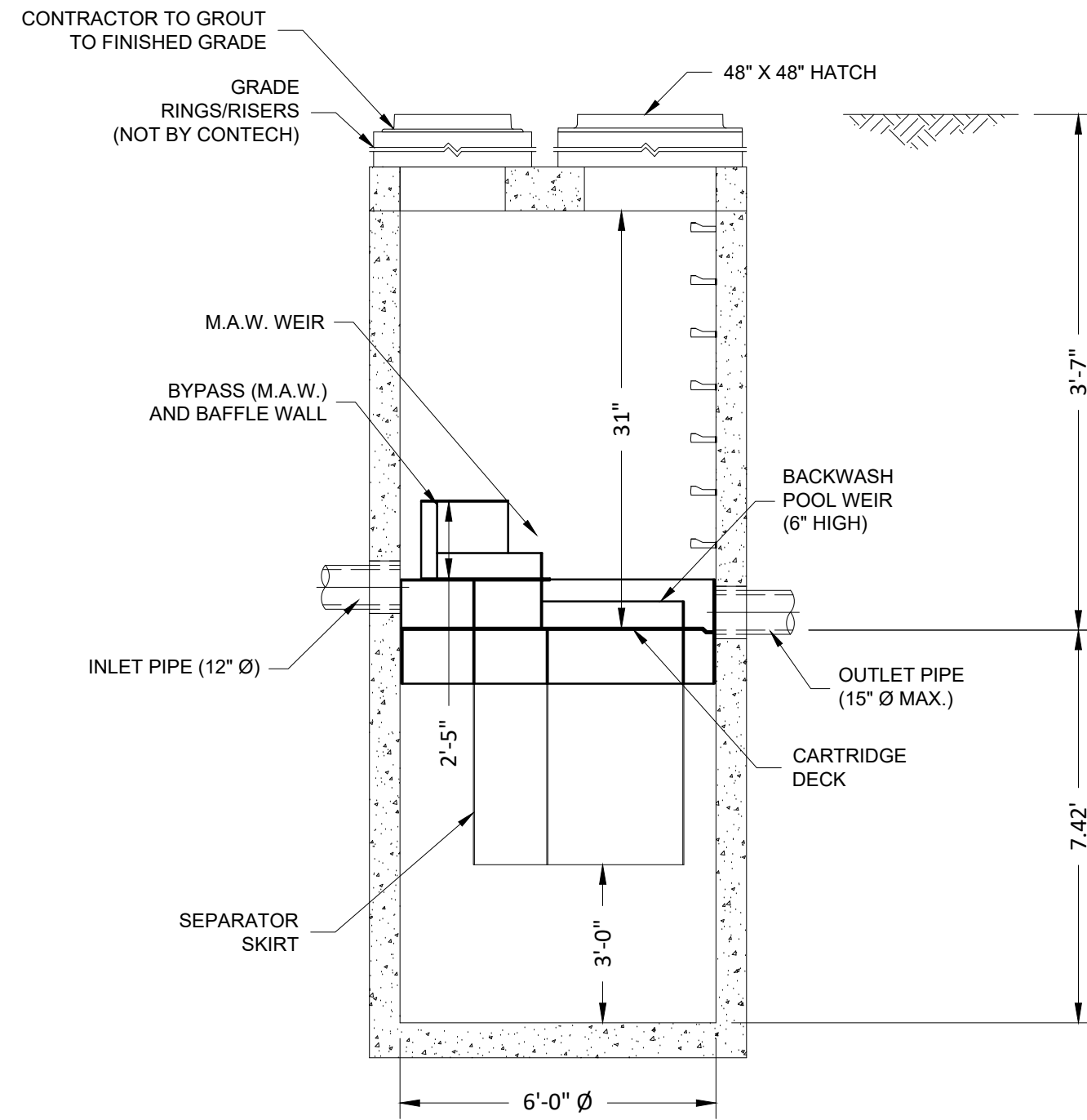
SITE SPECIFIC
DATA REQUIREMENTS

STRUCTURE ID	JF-301				
BYPASS FLOW RATE (cfs)	0				
TREATY QUALITY FLOW RATE (cfs)	0.65				
PEAK FLOW RATE (cfs)	3.00				
RETURN PERIOD OF PEAK FLOW (yrs)	25				
NUMBER OF CARTRIDGES REQUIRED (HF / DD)	54				
CARTRIDGE SIZE (54, 40, 27, 15)					
RIM ELEVATION	55.85				
PIPE DATA	INVERT	MATL	DIA	SLOPE %	HGS
INLET PIPE 1	52.25	HDPE	12"		
INLET PIPE 2					
OUTLET PIPE	52.27	HDPE	15"		

SEE GENERAL NOTES #10 FOR INLET AND OUTLET HYDRAULIC AND SIZING REQUIREMENTS.

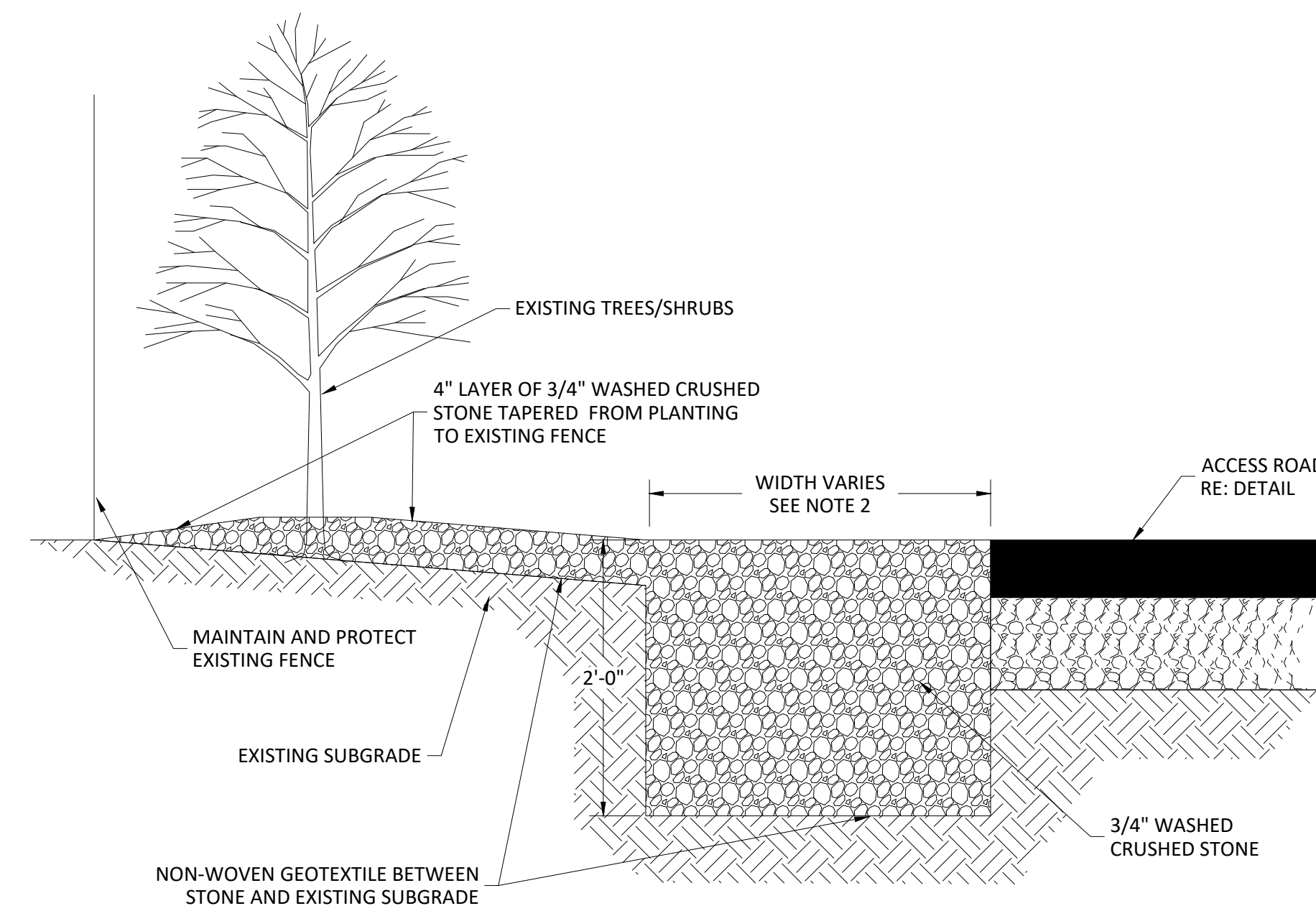
NOTES / SPECIAL REQUIREMENTS:

- GENERAL NOTES:
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 - FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT A CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE: www.contech.com, MELISSA HALL, E. MELISSA.HALL@CONTECH.COM, P. 207.885.4114.
 - JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THE PLANS.
 - STRUCTURE SHALL MEET AASHTO HS-20 OR PER APPROVING JURISDICTION REQUIREMENTS, WHICHEVER IS MORE STRINGENT, ASSUMING EARTH COVER OF 0', 3' AND GROUNDWATER ELEVATION 4' OR BELOW, THE OUTLET PIPE INVERT ELEVATION. CASTINGS SHALL MEET AASHTO M588 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
 - STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C478 AND AASHTO LOAD FACTOR DESIGN METHOD.
 - OUTLET PIPE INVERT IS EQUAL TO THE CARTRIDGE DECK ELEVATION.
 - THE OUTLET PIPE DIAMETER FOR NEW INSTALLATIONS IS TO BE ONE PIPE SIZE LARGER THAN THE INLET PIPE AT EQUAL OR GREATER SLOPE.
 - MANUFACTURER SHALL PROVIDE ANTI-FLOTATION PROVISIONS FOR THE STRUCTURE.
 - CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE (LIFTING CLUTCHES PROVIDED).
 - CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH APPROVED WATERSTOP OR FIBERLE BOOT).
 - WHEN ACTIVATED PRIOR TO SITE STABILIZATION, CONTRACTOR TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.
 - CARTRIDGE INSTALLATION SHALL BE PERFORMED BY CONTECH. THE CONTRACTOR SHALL CONTACT CONTECH TO COORDINATE CARTRIDGE INSTALLATION WITH SITE STABILIZATION.



SECTION A-A

JELLYFISH FILTER JF6 (JF-301) DETAIL
NOT TO SCALE



- NOTES:
- THE PROJECT'S RAWP ALLOWS FOR ALTERNATE CAPPING ALONG THE WESTERN PROPERTY BOUNDARY TO MAINTAIN EXISTING SHRUBS. THE ALTERNATE CAPPING REQUIREMENT FOR THIS AREA INCLUDES 4" OF CRUSHED STONE OVER NON-WOVEN GEOTEXTILE FABRIC, TAPERED BACK TO EXISTING FENCELINE.
 - WIDTH SHALL BE FROM EDGE OF ACCESS ROAD TO 1 FOOT OUTSIDE THE DRIP LINE OF EXISTING TREES/SHRUBS, WITH A MAXIMUM WIDTH OF 2 FEET.
 - GRADING OF STONE BETWEEN ACCESS ROAD AND EXISTING TREES/SHRUBS SHALL BE AS SHOWN ON THE PLANS.

CRUSHED STONE ALTERNATE CAPPING
NOT TO SCALE



CENTRAL FALLS HIGH SCHOOL

OCTOBER 13, 2023

GENERAL

- G0.01 GENERAL INFORMATION AND CODE ANALYSIS
- G0.02 FIRST FLOOR CODE APPROACH PLAN
- G0.03 SECOND FLOOR CODE APPROACH PLAN
- G0.04 THIRD FLOOR CODE APPROACH PLAN
- G0.05 FOURTH FLOOR CODE APPROACH PLAN

PHASING

- PH0.01 PHASING DIAGRAM - SITE PHASE I PLAN
- PH0.02 PHASING DIAGRAM - SITE PHASE II PLAN
- PH0.03 PHASING DIAGRAM - SITE PHASE III PLAN
- PH1.01 PHASING DIAGRAM - FIRST FLOOR PLAN
- PH1.02 PHASING DIAGRAM - SECOND FLOOR PLAN
- PH1.03 PHASING DIAGRAM - THIRD FLOOR PLAN
- PH1.04 PHASING DIAGRAM - FOURTH FLOOR PLAN

GREEN DESIGN

- G00.01 NE CHPS SCORECARD
- G01.00 GREEN DESIGN NE CHPS SITE PLAN
- G01.51 CIVIL + LANDSCAPE NARRATIVES AND SUPPORTING DOCUMENTS
- G01.52 CIVIL + LANDSCAPE NARRATIVES AND SUPPORTING DOCUMENTS
- G02.00 NE CHPS ARCHITECTURAL NARRATIVES
- G02.01 NE CHPS ARCHITECTURAL DAYLIGHTING
- G02.02 NE CHPS ARCHITECTURAL DAYLIGHTING
- G02.03 NE CHPS ARCHITECTURAL ACOUSTIC
- G02.04 NE CHPS ARCHITECTURAL ENERGY
- G02.05 NE CHPS ARCHITECTURAL ENERGY
- G02.10 NE CHPS FIRST, SECOND, AND THIRD FLOOR PLAN
- G02.11 NE CHPS FIRST, SECOND, AND THIRD FLOOR PLAN
- G02.12 NE CHPS FOURTH FLOOR AND ROOF PLAN
- G03.01 GREEN DESIGN
- G03.02 CHPS ELECTRICAL NARRATIVES AND CALCULATIONS
- G03.03 GREEN DESIGN
- G03.04 GREEN DESIGN

CIVIL

- C0.1 GENERAL NOTES AND LEGENDS
- C1.0 EXISTING CONDITIONS AND DEMOLITION PLAN
- C2.0 SITE IMPROVEMENTS PLAN
- C3.0 GRADING PLAN
- C4.0 UTILITY PLAN
- C5.0 DRAINAGE PLAN
- C5.1 DRAINAGE PLAN DRAINAGE STRUCTURE AND PIPE TABLES
- C6.1 SITE DETAILS
- C6.2 SITE DETAILS
- C6.3 SITE DETAILS
- C6.4 SITE DETAILS
- C6.5 SITE DETAILS
- C6.6 SITE DETAILS
- C6.7 SITE DETAILS
- C6.8 SITE DETAILS

LANDSCAPE

- L1.01 OVERALL SITE REFERENCE
- L1.21 HARDSCAPE PLAN BASE BID
- L1.21A HARDSCAPE PLAN ALTERNATE 2
- L1.21B HARDSCAPE PLAN ALTERNATE 3
- L1.21C HARDSCAPE PLAN ALTERNATE 5
- L1.22 HARDSCAPE PLAN BASE BID
- L1.22A HARDSCAPE PLAN ALTERNATE 6
- L1.23 HARDSCAPE PLAN BASE BID
- L1.41 HARDSCAPE ENLARGEMENT PLAN BASE BID
- L1.42 HARDSCAPE ENLARGEMENT PLAN BASE BID
- L3.01 DETAILS
- L3.02 DETAILS
- L3.03 DETAILS
- L3.04 DETAILS
- L3.05 DETAILS
- L3.06 DETAILS
- L3.07 DETAILS
- L3.08 DETAILS
- L3.09 DETAILS
- L3.10 DETAILS
- L3.11 DETAILS
- L3.12 DETAILS
- L3.13 DETAILS
- L3.14 DETAILS
- L3.15 DETAILS
- LP1.01 OVERALL PLANTING PLAN
- LP1.21 PLANTING PLAN
- LP1.22 PLANTING PLAN ALTERNATE 10
- LP1.23 PLANTING PLAN ALTERNATE 10
- LP1.24 PLANTING PLAN ALTERNATE 10
- LP3.0 PLANTING DETAILS

ARCHITECTURAL

- A0.01 ABBREVIATIONS, SYMBOLS, NOTES & LEGENDS
- A0.02 MASTER KEYNOTE LIST
- A0.03A PARTITION TYPES
- A0.03B PARTITION TYPES
- A0.11 FIRST FLOOR SLAB CONTROL PLAN - ZONE A
- A0.12 FIRST FLOOR SLAB CONTROL PLAN - ZONE B
- A0.13 FIRST FLOOR SLAB CONTROL PLAN - ZONE C
- A0.21 SECOND FLOOR SLAB CONTROL PLAN - ZONE A
- A0.22 SECOND FLOOR SLAB CONTROL PLAN - ZONE B
- A0.23 SECOND FLOOR SLAB CONTROL PLAN - ZONE C
- A0.31 THIRD FLOOR SLAB CONTROL PLAN - ZONE A
- A0.32 THIRD FLOOR SLAB CONTROL PLAN - ZONE B
- A0.33 THIRD FLOOR SLAB CONTROL PLAN - ZONE C
- A0.41 FOURTH FLOOR SLAB CONTROL PLAN - ZONE A
- A0.42 FOURTH FLOOR SLAB CONTROL PLAN - ZONE B
- A0.51 ROOF EDGE CONTROL PLAN - ZONE A
- A0.52 ROOF EDGE CONTROL PLAN - ZONE B
- A0.53 ROOF EDGE CONTROL PLAN - ZONE C
- A0.60 SUB-SLAB DEPRESSURIZATION (SSD) SYSTEM LAYOUT PLAN AND DETAILS
- A1.10 OVERALL FIRST FLOOR PLAN
- A1.11 FIRST FLOOR PLAN - ZONE A
- A1.12 FIRST FLOOR PLAN - ZONE B
- A1.13 FIRST FLOOR PLAN - ZONE C
- A1.20 OVERALL SECOND FLOOR PLAN
- A1.21 SECOND FLOOR PLAN - ZONE A
- A1.22 SECOND FLOOR PLAN - ZONE B
- A1.23 SECOND FLOOR PLAN - ZONE C
- A1.30 OVERALL THIRD FLOOR PLAN
- A1.31 THIRD FLOOR PLAN - ZONE A
- A1.32 THIRD FLOOR PLAN - ZONE B
- A1.33 THIRD FLOOR PLAN - ZONE C
- A1.40 OVERALL FOURTH FLOOR PLAN
- A1.41 FOURTH FLOOR PLAN - ZONE A
- A1.42 FOURTH FLOOR PLAN - ZONE B
- A1.43 FOURTH FLOOR PLAN - ZONE C
- A1.50 OVERALL ROOF PLAN
- A1.51 ROOF PLAN ZONE A
- A1.52 ROOF PLAN ZONE B
- A1.53 ROOF PLAN ZONE C
- A2.11 FIRST FLOOR REFLECTED CEILING PLAN - ZONE A
- A2.12 FIRST FLOOR REFLECTED CEILING PLAN - ZONE B
- A2.13 FIRST FLOOR REFLECTED CEILING PLAN - ZONE C
- A2.21 SECOND FLOOR REFLECTED CEILING PLAN - ZONE A
- A2.22 SECOND FLOOR REFLECTED CEILING PLAN - ZONE B
- A2.23 SECOND FLOOR REFLECTED CEILING PLAN - ZONE C
- A2.31 THIRD FLOOR REFLECTED CEILING PLAN - ZONE A
- A2.32 THIRD FLOOR REFLECTED CEILING PLAN - ZONE B
- A2.33 THIRD FLOOR REFLECTED CEILING PLAN - ZONE C
- A2.41 FOURTH FLOOR REFLECTED CEILING PLAN - ZONE A
- A2.42 FOURTH FLOOR REFLECTED CEILING PLAN - ZONE B
- A2.43 FOURTH FLOOR REFLECTED CEILING PLAN - ZONE C
- A2.51 ENLARGED REFLECTED CEILING PLANS
- A2.52 ENLARGED REFLECTED CEILING PLANS
- A2.53 ENLARGED REFLECTED CEILING PLANS
- A2.54 ENLARGED REFLECTED CEILING PLANS
- A2.55 ENLARGED REFLECTED CEILING PLANS
- A2.61 SOFFIT DETAILS
- A3.01 EXTERIOR ELEVATIONS
- A3.02 EXTERIOR ELEVATIONS
- A3.03 EXTERIOR ELEVATIONS
- A3.04 EXTERIOR ELEVATIONS
- A3.05 EXTERIOR ELEVATIONS
- A3.06 EXTERIOR ELEVATIONS
- A3.11A EAST ENTRY CANOPY PLAN & RCP
- A3.11B EAST ENTRY CANOPY SECTIONS
- A3.11C EAST ENTRY CANOPY DETAILS
- A3.12A WEST ENTRY CANOPY PLAN, RCP, & SECTIONS
- A3.12B WEST ENTRY CANOPY DETAILS
- A3.12A EXTERIOR CLADDING DETAILS
- A3.12B EXTERIOR CLADDING DETAILS
- A3.12C EXTERIOR CLADDING DETAILS
- A3.31C EXTERIOR CLADDING REVEAL LOCATIONS
- A3.32 EXTERIOR ELEVATIONS REVEAL LOCATIONS
- A3.33 EXTERIOR ELEVATIONS REVEAL LOCATIONS
- A3.34 EXTERIOR ELEVATIONS REVEAL LOCATIONS
- A3.35 EXTERIOR ELEVATIONS REVEAL LOCATIONS
- A3.36 EXTERIOR ELEVATIONS REVEAL LOCATIONS
- A3.37 EXTERIOR ELEVATIONS REVEAL LOCATIONS
- A4.01 BUILDING SECTIONS
- A4.02 BUILDING SECTIONS
- A4.03 BUILDING SECTIONS
- A4.04 BUILDING SECTIONS
- A4.05 BUILDING SECTIONS
- A4.11 WALL SECTIONS
- A4.12 WALL SECTIONS
- A4.13 WALL SECTIONS
- A4.14 WALL SECTIONS
- A4.15 WALL SECTIONS
- A4.16 WALL SECTIONS

- A4.17 WALL SECTIONS
- A4.18 WALL SECTIONS
- A4.19 WALL SECTIONS
- A4.20 WALL SECTIONS
- A4.21 WALL SECTIONS
- A4.22 WALL SECTIONS
- A4.23 WALL SECTIONS
- A4.24 WALL SECTIONS
- A4.25 WALL SECTIONS
- A4.26 WALL SECTIONS
- A4.27 WALL SECTIONS
- A4.28 WALL SECTIONS
- A4.29 WALL SECTIONS
- A4.30 WALL SECTIONS
- A4.31 WALL SECTIONS
- A4.32 WALL SECTIONS
- A4.33 WALL SECTIONS
- A4.34 WALL SECTIONS
- A4.35 WALL SECTIONS
- A4.36 WALL SECTIONS
- A4.37 WALL SECTIONS
- A4.38 WALL SECTIONS
- A5.01 VERTICAL BASE DETAILS
- A5.02 VERTICAL BASE DETAILS
- A5.03 VERTICAL BASE DETAILS
- A5.04 VERTICAL BASE DETAILS
- A5.11 VERTICAL WALL DETAILS
- A5.12 VERTICAL WALL DETAILS
- A5.13 VERTICAL WALL DETAILS
- A5.14 VERTICAL WALL DETAILS
- A5.15 VERTICAL WALL DETAILS
- A5.16 VERTICAL WALL DETAILS
- A5.17 VERTICAL WALL DETAILS
- A5.18 VERTICAL WALL DETAILS
- A5.19 VERTICAL WALL DETAILS
- A5.21 TYPICAL ROOF DETAILS
- A5.31 VERTICAL ROOF DETAILS
- A5.32 VERTICAL ROOF DETAILS
- A5.33 VERTICAL ROOF DETAILS
- A5.34 VERTICAL ROOF DETAILS
- A5.35 VERTICAL ROOF DETAILS
- A5.41 EXTERIOR PLAN DETAILS
- A5.42 EXTERIOR PLAN DETAILS
- A5.43 EXTERIOR PLAN DETAILS
- A5.44 EXTERIOR PLAN DETAILS
- A5.45 EXTERIOR PLAN DETAILS
- A5.46 EXTERIOR PLAN DETAILS
- A5.47 EXTERIOR PLAN DETAILS
- A5.48 EXTERIOR PLAN DETAILS
- A5.49 EXTERIOR PLAN DETAILS
- A5.51 EXPANSION JOINT DETAILS
- A6.00A DOOR SCHEDULE
- A6.00B DOOR SCHEDULE
- A6.00C WINDOW SCHEDULE
- A6.10A LOUVER SCHEDULE & TYPES OVERHEAD DOOR TYPES
- A6.11 LOUVER & OVERHEAD DOOR DETAILS
- A6.12 ACCORDIAN FOLDING DOOR DETAILS
- A6.20A EXTERIOR STOREFRONT TYPES
- A6.20B EXTERIOR STOREFRONT TYPES
- A6.20C EXTERIOR STOREFRONT TYPES
- A6.20D EXTERIOR STOREFRONT TYPES
- A6.21 EXTERIOR STOREFRONT DETAILS
- A6.22 EXTERIOR STOREFRONT DETAILS
- A6.23 EXTERIOR STOREFRONT DETAILS
- A6.24 EXTERIOR STOREFRONT DETAILS
- A6.30A CURTAINWALL TYPES
- A6.30B CURTAINWALL TYPES
- A6.30C CURTAINWALL TYPES
- A6.31 CURTAINWALL DETAILS
- A6.32 CURTAINWALL DETAILS
- A6.40A INTERIOR STOREFRONT TYPES - DOORS & WINDOWS
- A6.41 INTERIOR STOREFRONT DETAILS
- A6.42 INTERIOR STOREFRONT DETAILS
- A6.50A HOLLOW METAL FRAME TYPES
- A6.51 HOLLOW METAL FRAME DETAILS
- A6.52 HOLLOW METAL FRAME DETAILS
- A6.53 HOLLOW METAL FRAME DETAILS
- A6.54 HOLLOW METAL FRAME DETAILS
- A7.01 ROOM FINISH SCHEDULE
- A7.02A FLOOR TRANSITION DETAILS
- A7.02B FLOOR TRANSITION DETAILS
- A7.03A FINISH FLOOR PLAN OVERALL FIRST FLOOR
- A7.03B FINISH FLOOR PLAN OVERALL SECOND FLOOR
- A7.03C FINISH FLOOR PLAN OVERALL THIRD FLOOR
- A7.03D FINISH FLOOR PLAN OVERALL FOURTH FLOOR
- A7.04A SAMPLE FLOOR PLAN FIRST FLOOR ZONE A
- A7.04B SAMPLE FLOOR PLAN FIRST FLOOR ZONE B
- A7.04C SAMPLE FLOOR PLAN FIRST FLOOR ZONE C
- A7.05A SAMPLE FLOOR PLAN SECOND FLOOR ZONE A
- A7.05B SAMPLE FLOOR PLAN SECOND FLOOR ZONE B

- A7.05C SAMPLE FLOOR PLAN SECOND FLOOR ZONE C
- A7.06A SAMPLE FLOOR PLAN THIRD FLOOR ZONE A
- A7.06B SAMPLE FLOOR PLAN THIRD FLOOR ZONE B
- A7.06C SAMPLE FLOOR PLAN THIRD FLOOR ZONE C
- A7.07A SAMPLE FLOOR PLAN FOURTH FLOOR ZONE A
- A7.07B SAMPLE FLOOR PLAN FOURTH FLOOR ZONE B
- A7.08A SAMPLE FLOOR PLAN OFFICES
- A7.08B SAMPLE FLOOR PLAN ATHLETIC FITNESS CENTER
- A7.09C SAMPLE FLOOR PLAN AUDITORIUM
- A7.11 CASEWORK TYPES - STANDARD
- A7.12 CASEWORK TYPES - ART & SCIENCE
- A7.13 CASEWORK TYPICAL DETAILS
- A7.21 MARKERBOARD & TACKBOARD TYPES
- A7.31 FIRE EXTINGUISHER DETAILS
- A7.41 TYPICAL INTERIOR DETAILS
- A7.51 INTERIOR EXPANSION JOINT DETAILS
- A7.52 INTERIOR EXPANSION JOINT DETAILS
- A7.53 INTERIOR PLAN DETAILS
- A7.54 INTERIOR PLAN DETAILS
- A7.55 INTERIOR PLAN DETAILS
- A7.56 INTERIOR PLAN DETAILS
- A7.57 INTERIOR PLAN DETAILS
- A7.58 INTERIOR PLAN DETAILS
- A7.59 INTERIOR PLAN DETAILS
- A7.61 INTERIOR WALL SECTIONS
- A7.62 INTERIOR WALL SECTIONS
- A7.63 INTERIOR WALL SECTIONS
- A7.64 INTERIOR WALL SECTIONS
- A7.71 INTERIOR WALL SECTIONS
- A7.72 INTERIOR WALL SECTIONS
- A7.73 INTERIOR WALL SECTIONS
- A7.74 INTERIOR WALL SECTIONS
- A7.80 INTERIOR SECTION DETAILS
- A8.01 STAIR AND HANDRAIL DETAILS
- A8.02 STAIR AND HANDRAIL DETAILS
- A8.03 STAIR AND HANDRAIL DETAILS
- A8.11A STAIR 1 ENLARGED PLANS & SECTION
- A8.11B STAIR 1 ENLARGED PLANS & SECTION
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CENTRAL FALLS HIGH SCHOOL
10 HIGGINSON AVE, CENTRAL FALLS, RI

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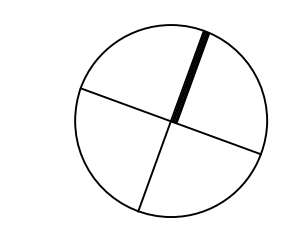
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- 05 50 00.41 STEEL PLATE - 1/4 INCH THICK - SIZE AS NOTED OR DRAWN
- 05 50 00.82 EXPANSION BOLT
- 06 10 00.99 WOOD BLOCKING - SIZE AS NOTED OR DRAWN
- 06 20 00.03 HARDWOOD TRIM - EASED EDGE 1/4 INCH RADIUS - TRANSPARENT FINISH
- 06 20 00.18 STAINLESS STEEL BOLTS - NUTS AND WASHERS - 1/2 INCH DIA.
- 06 20 00.21 STAINLESS STEEL BOLTS - NUTS AND WASHERS - SIZE AS NOTED
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- 06 20 00.87 COUNTERTOP EDGING
- 06 20 00.89 PLASTIC LAMINATE BACKSPLASH - HEIGHT AS NOTED
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- 06 40 00.18 STAINLESS STEEL BOLTS - NUTS AND WASHERS - 1/2 INCH DIA.
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GENERAL NOTES:
1. REFER TO SHEET(S) A010 FOR PARTITION TYPES.
2. REFERENCE FLOOR PLANS, INTERIOR ELEVATIONS, AND REFLECTED CEILING PLANS FOR ADDITIONAL INFORMATION.

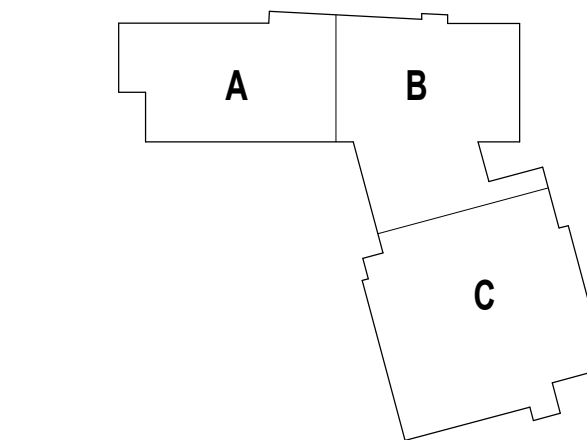
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KEY PLAN NORTH ARROW



KEYPLAN



DRAWING NAME:

TYPICAL INTERIOR DETAILS

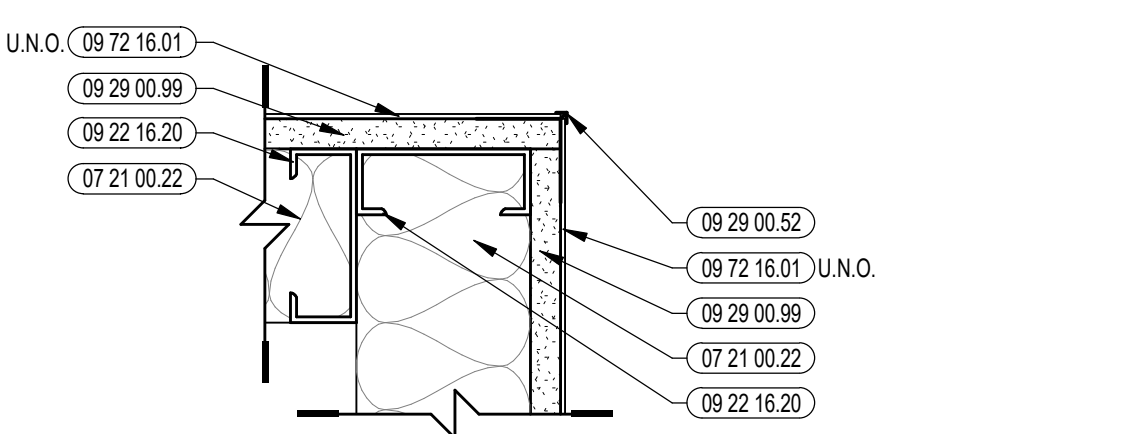
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REVIEWED BY: CHR / KK

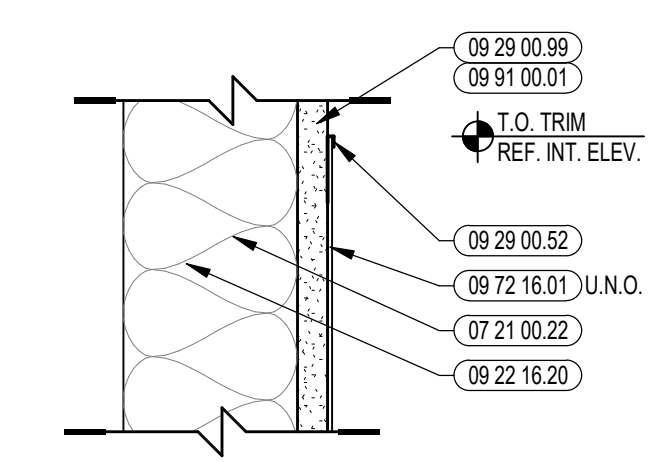
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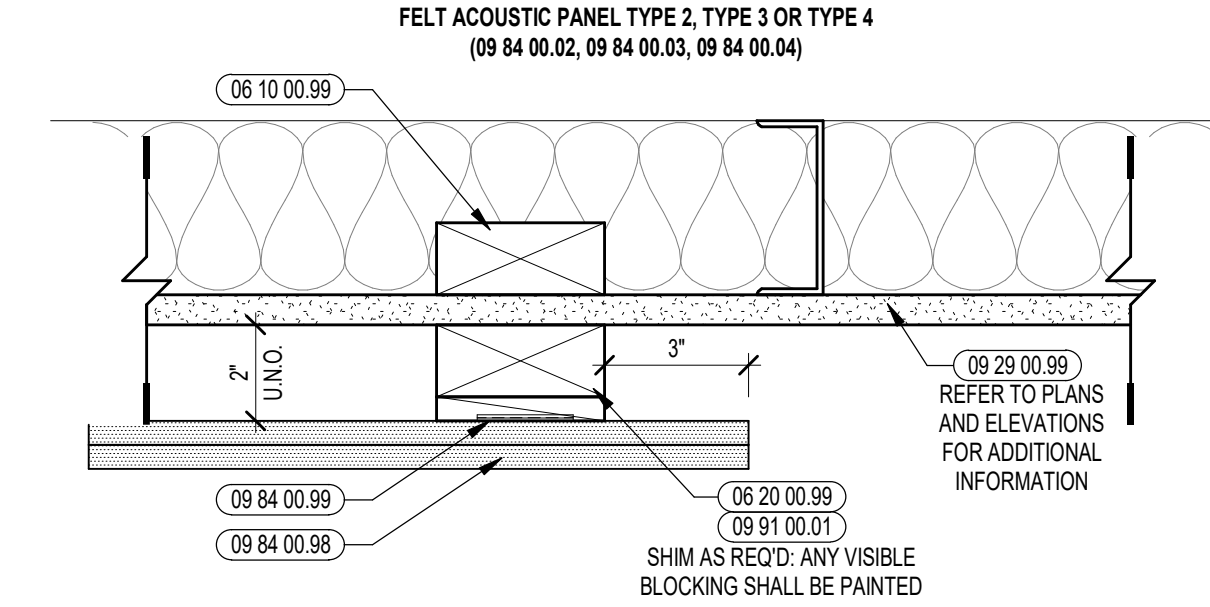
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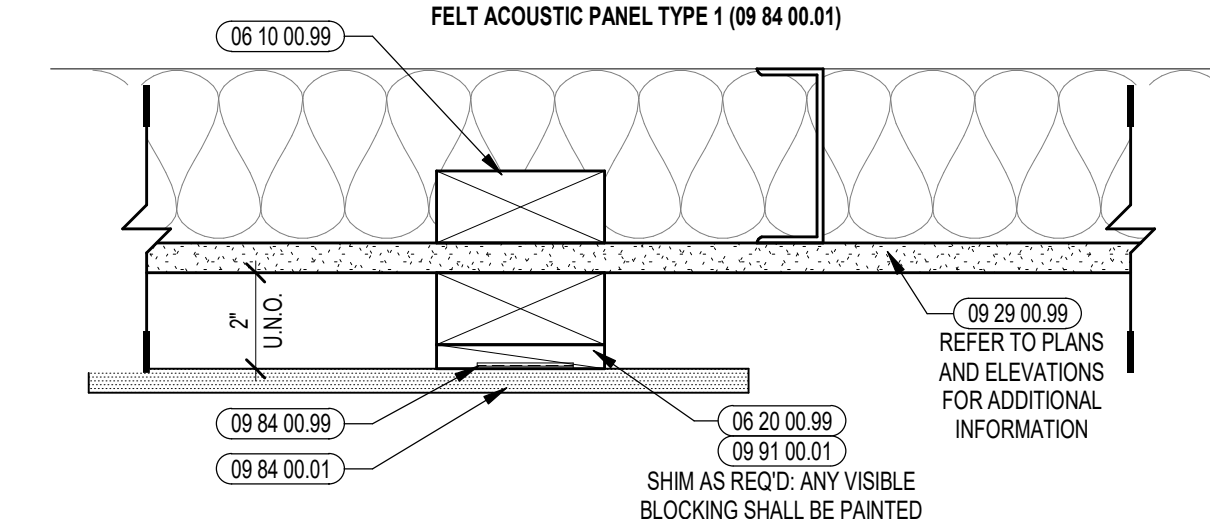
12B VINYL WALL CLADDING TRANSITION @ CORNER
3/8 = 1/4"



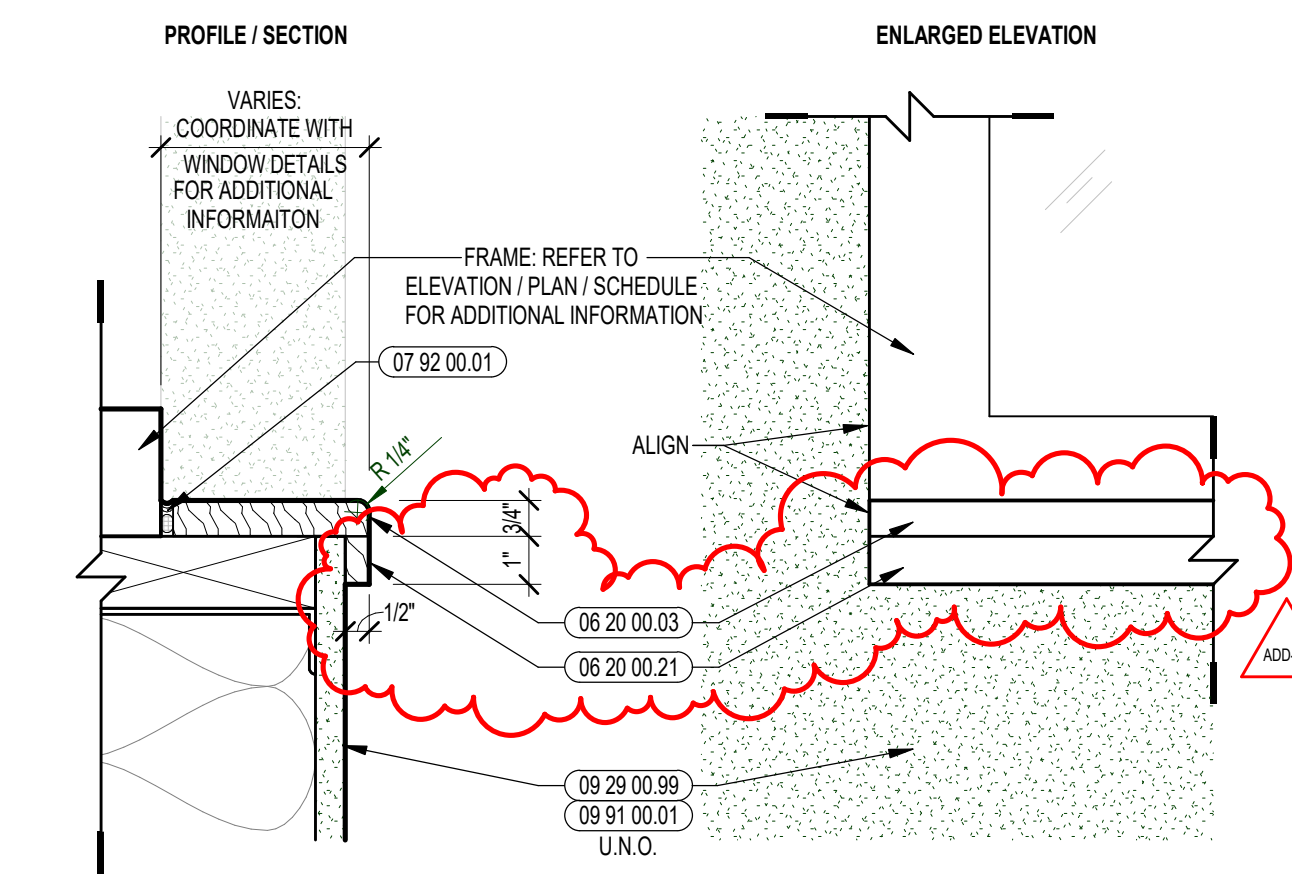
12A VINYL WALL CLADDING TRANSITION @ PANEL EDGE
3/8 = 1/4"



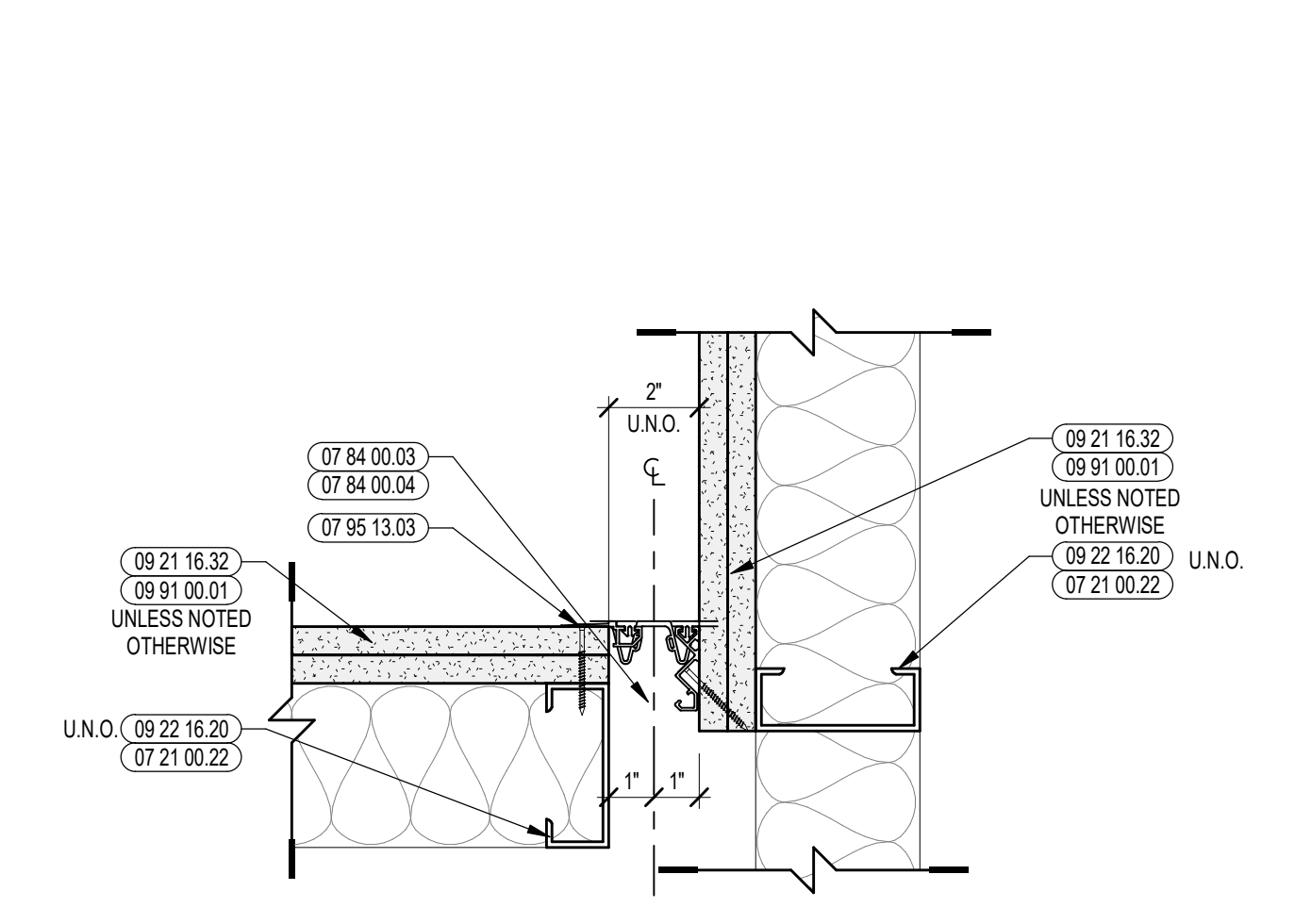
8 TYP FELT ACOUSTIC PANEL MOUNTING PLAN DETAIL
3/8 = 1/4"



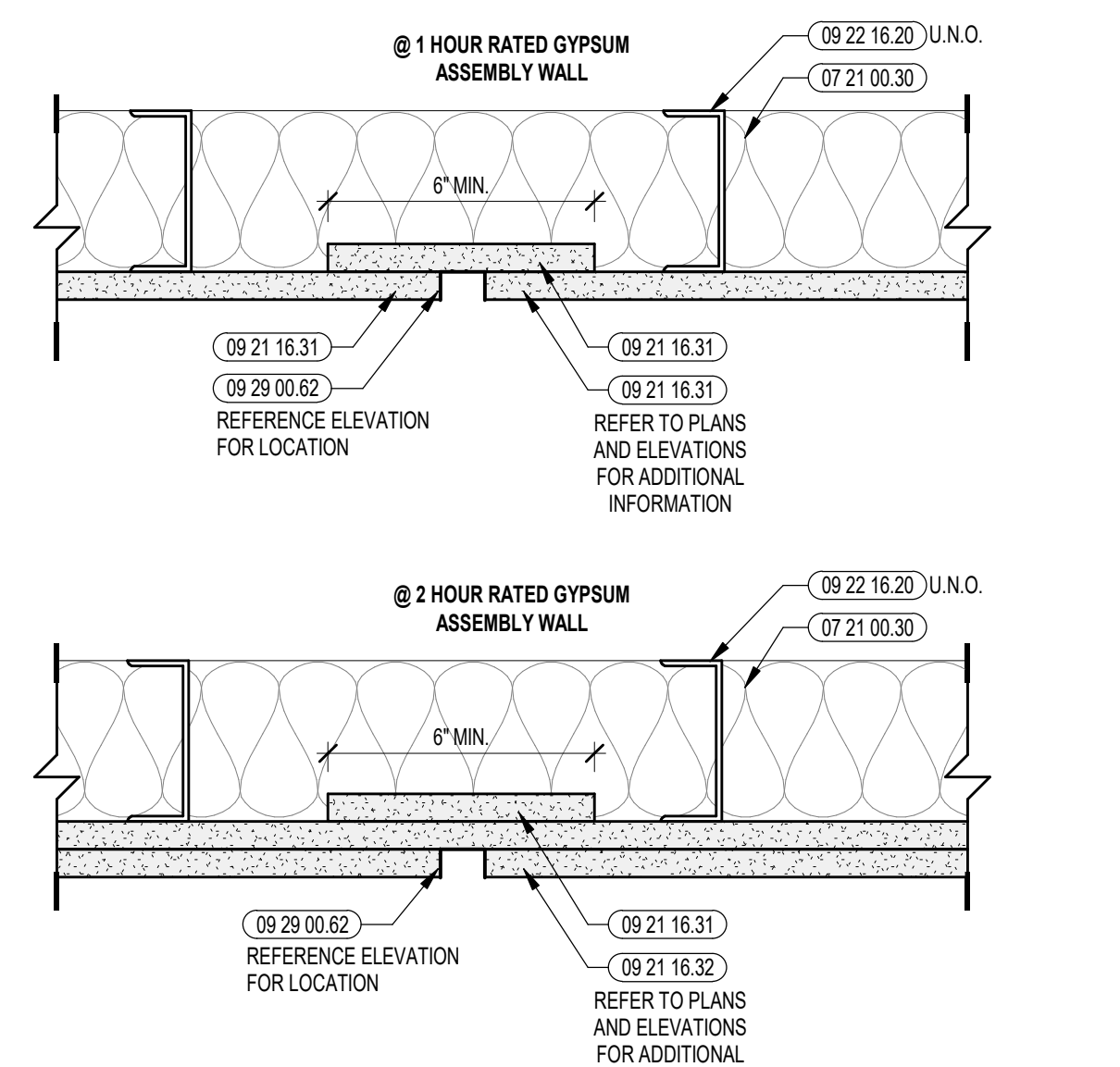
8 TYP FELT ACOUSTIC PANEL MOUNTING PLAN DETAIL
3/8 = 1/4"



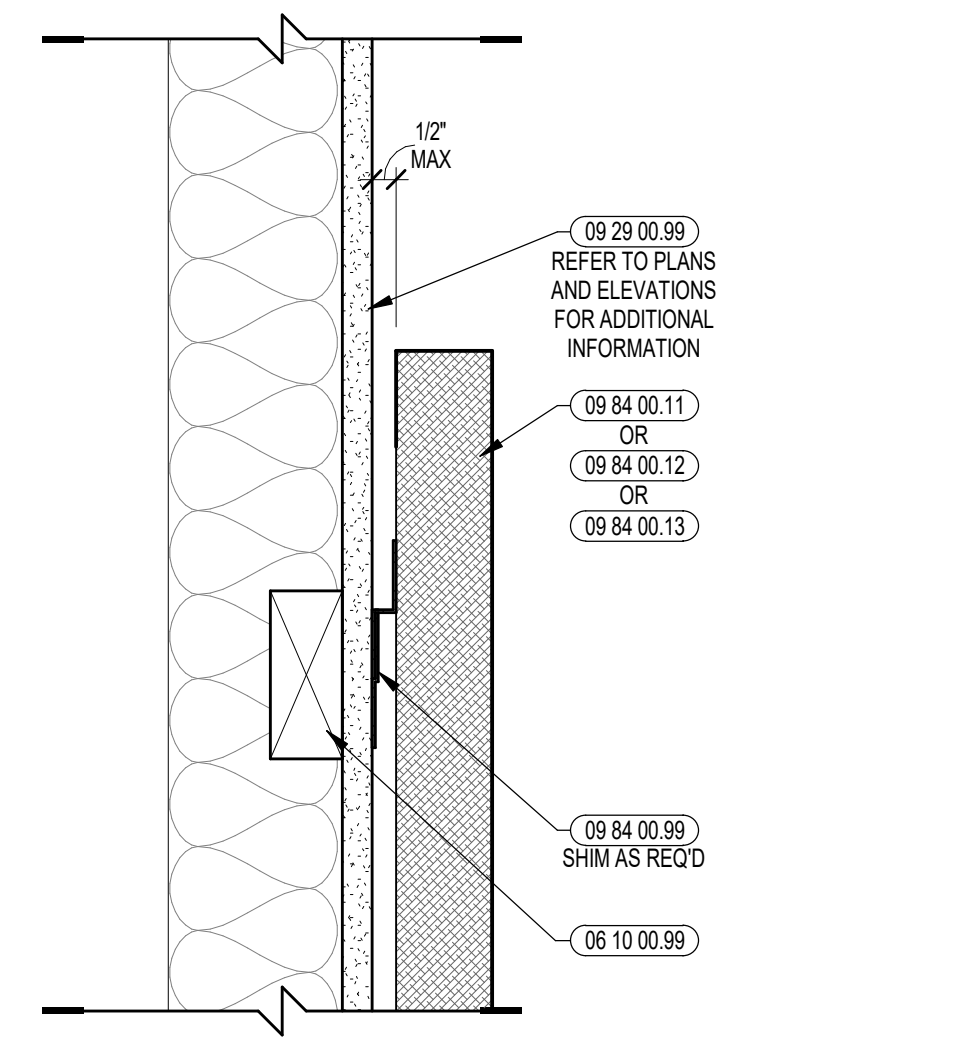
4 TYPICAL WOOD TRIM WINDOW SILL DETAIL
3/8 = 1/4"



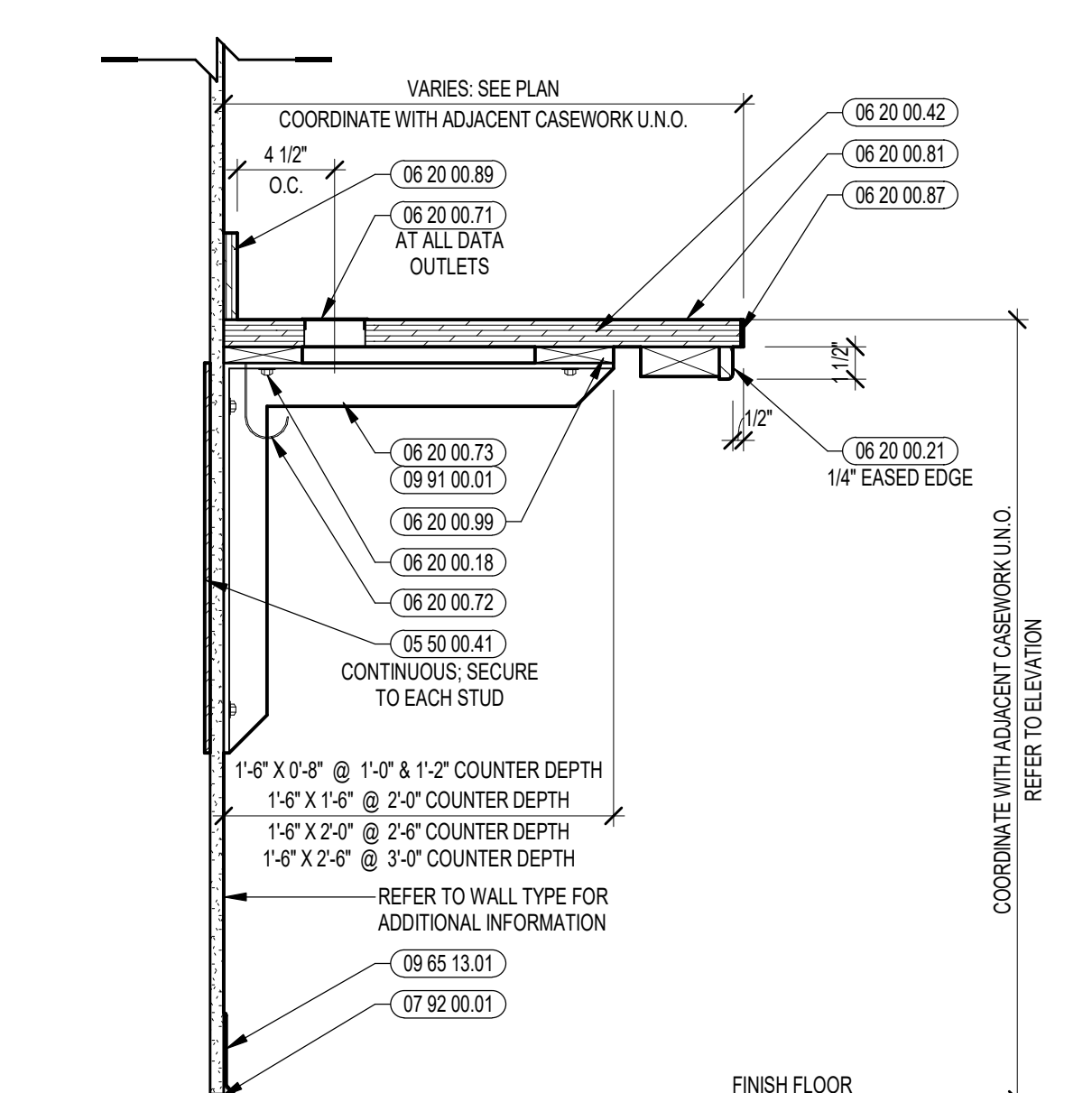
15 RATED INTERIOR EXPANSION JOINT PLAN DETAIL
3/8 = 1/4"



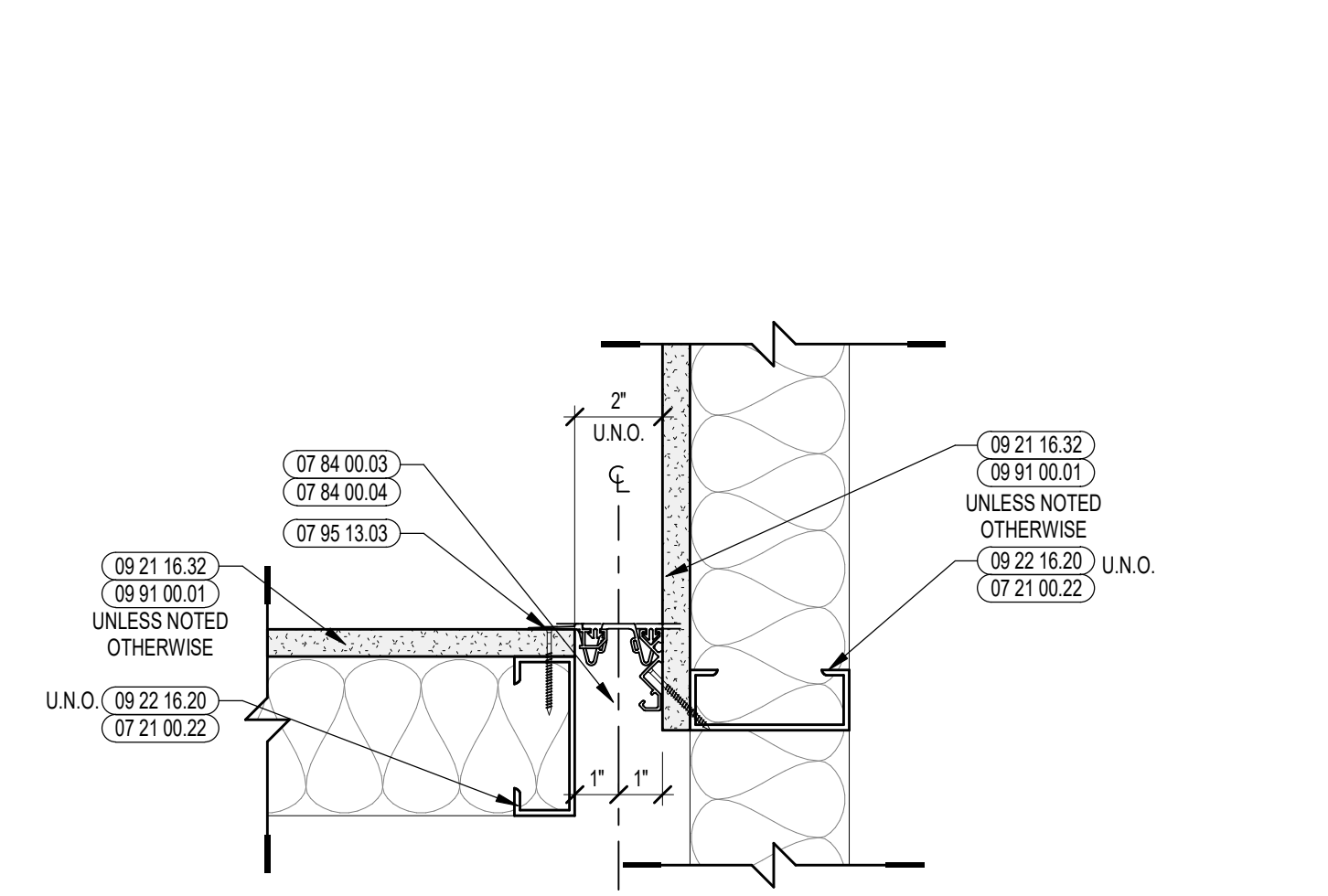
11 TYPICAL REVEAL @ RATED GYPSUM ASSEMBLY
3/8 = 1/4"



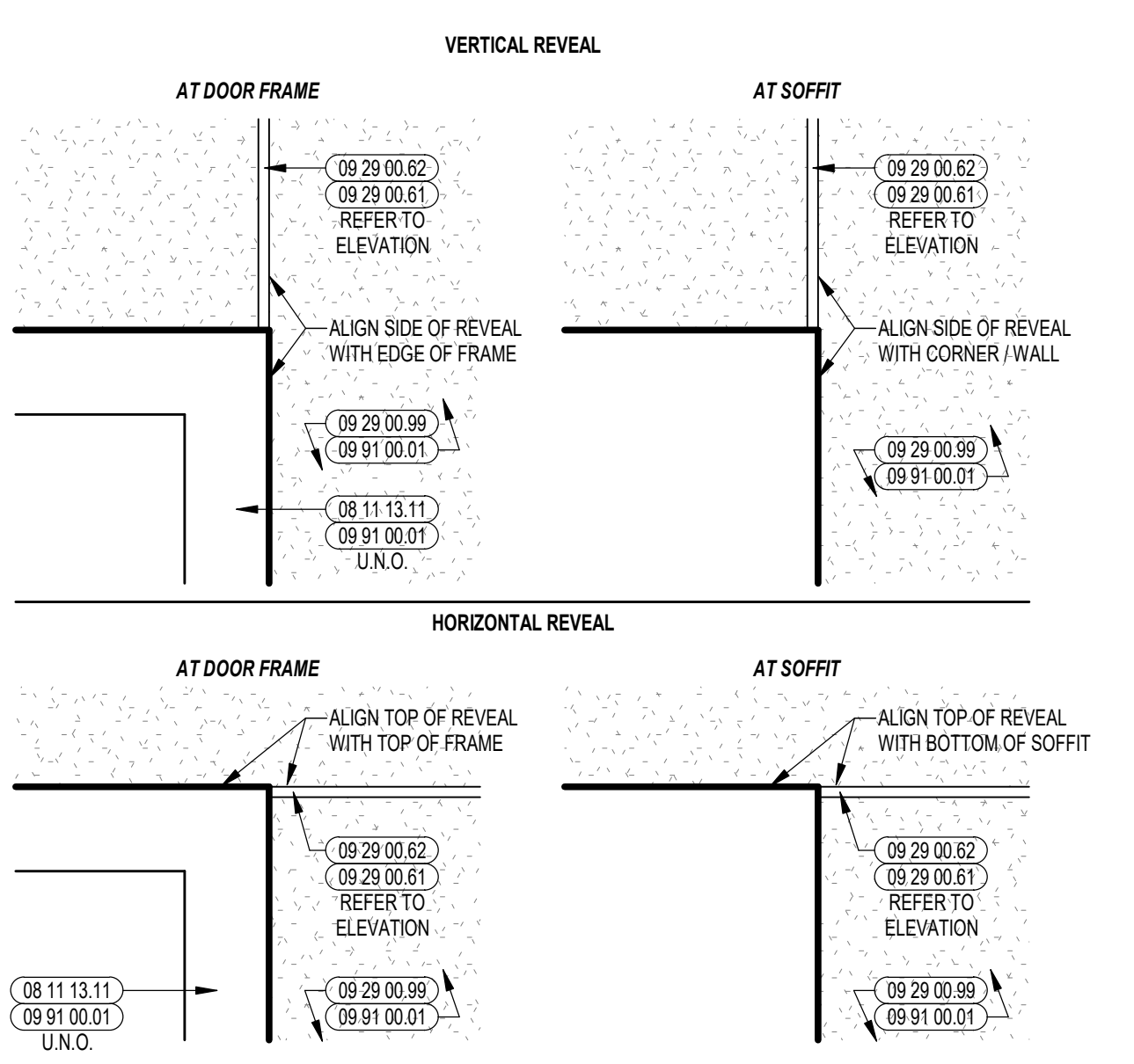
7 TYP FABRIC ACOUSTIC PANEL MOUNTING SECTION
3/8 = 1/4"



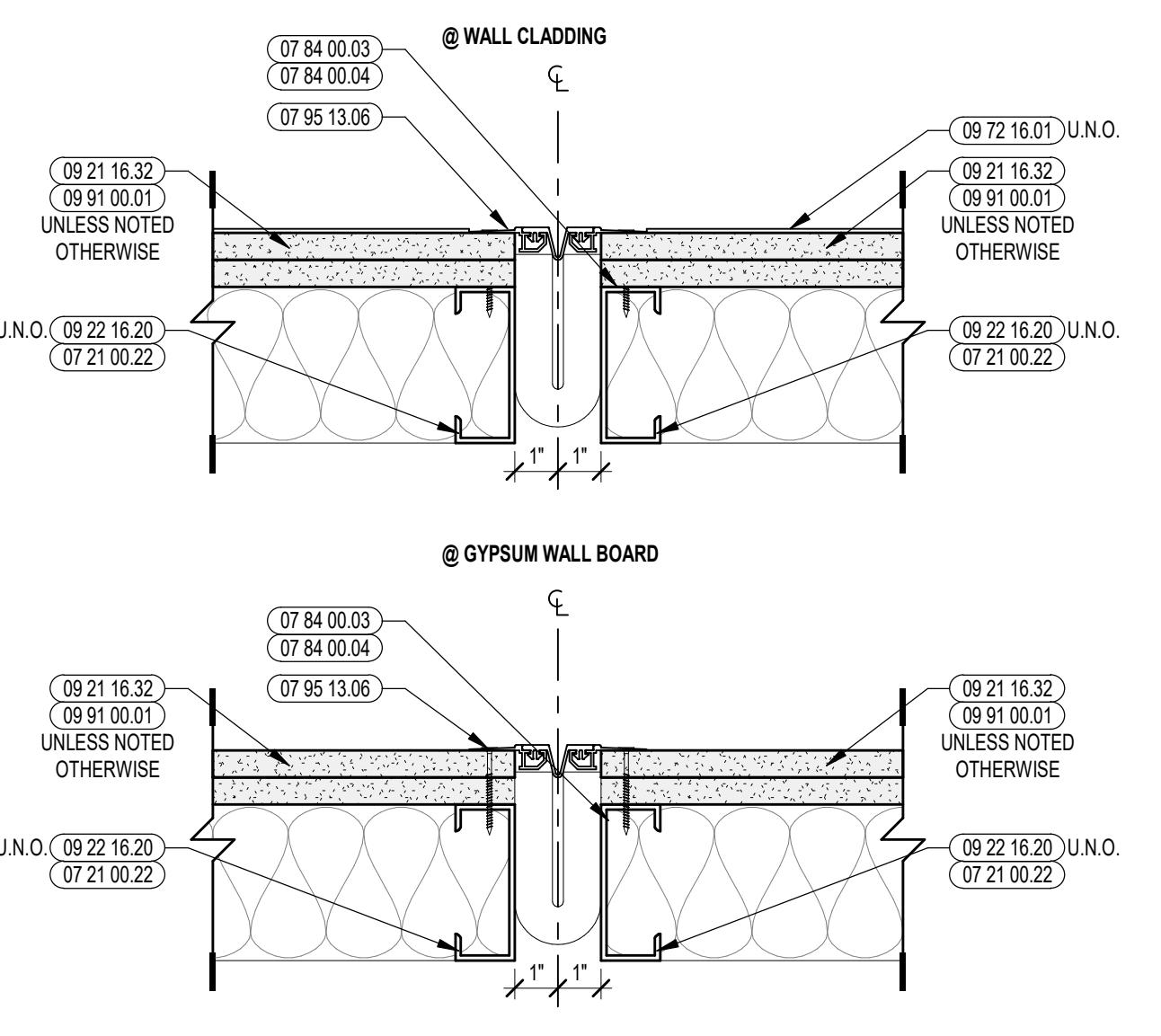
3 TYP. SECTION DETAIL: COUNTER WITH BRACKETS
1/12 = 1/4"



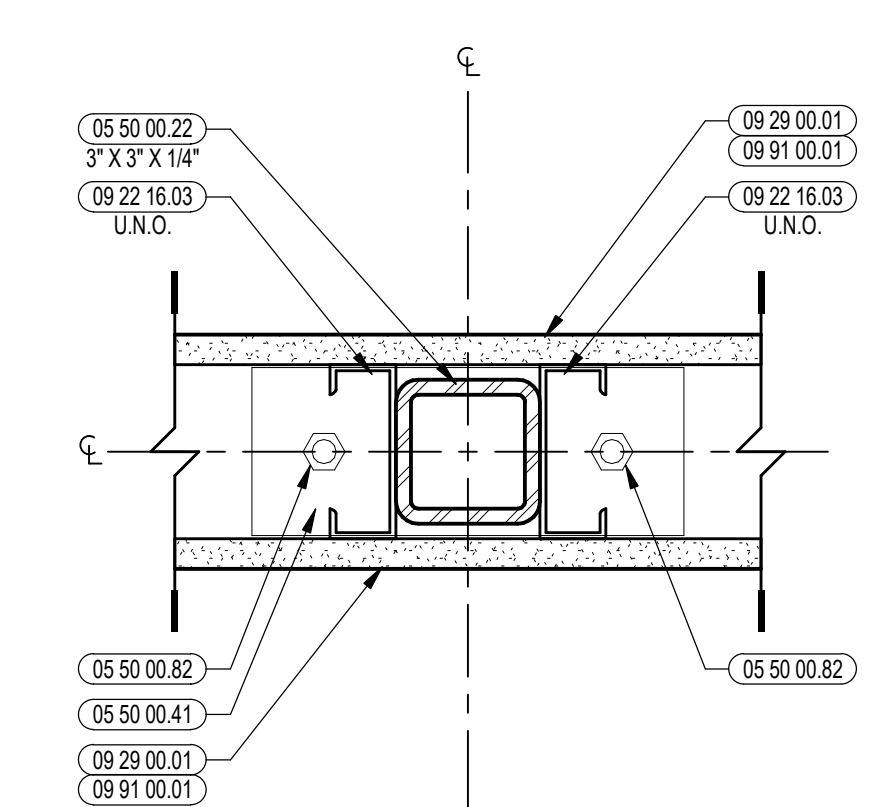
14 TYPICAL INTERIOR EXPANSION CORNER JOINT PLAN DETAIL
3/8 = 1/4"



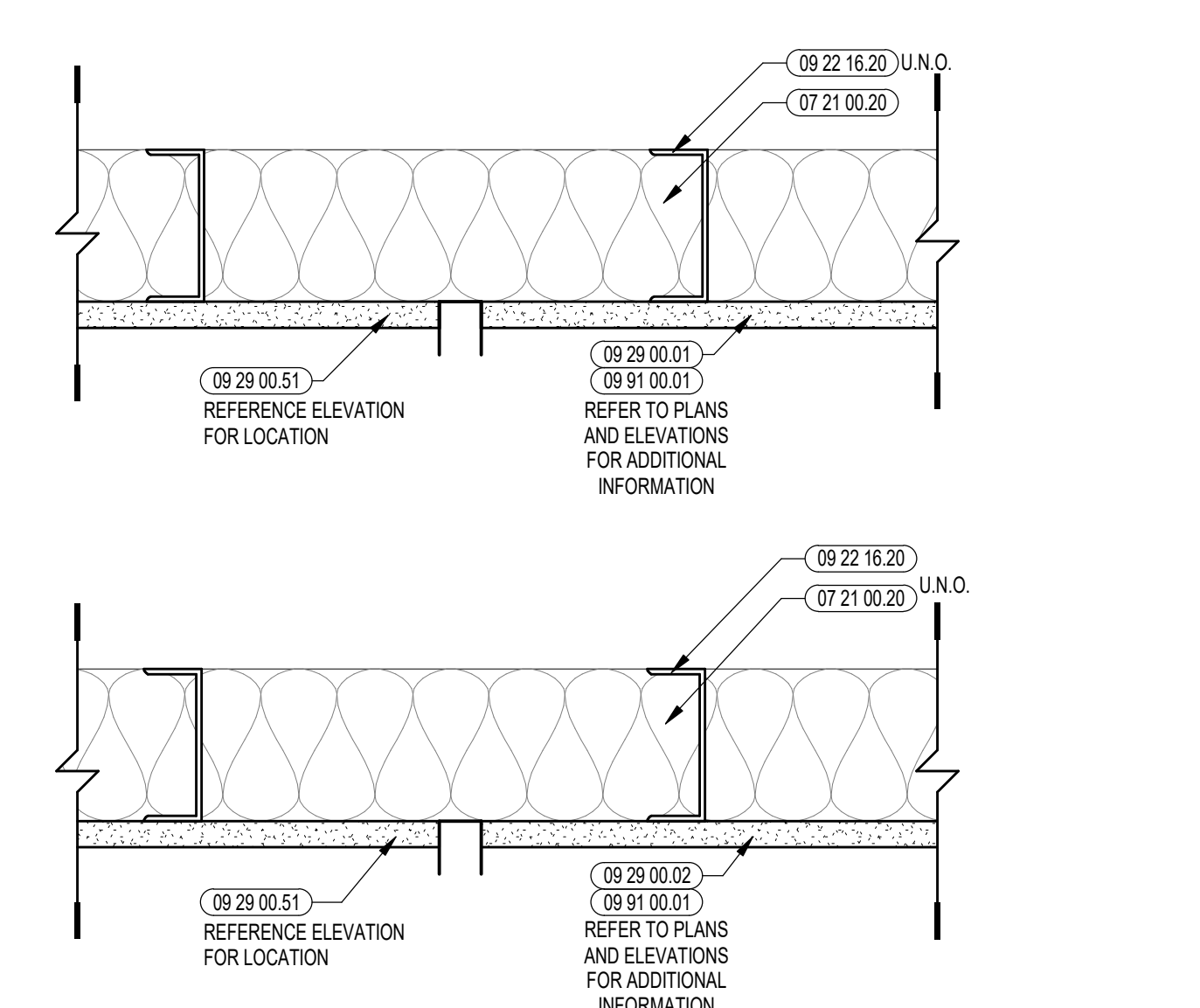
10 TYPICAL REVEAL ALIGNMENT ENLARGED ELEVATION
3/8 = 1/4"



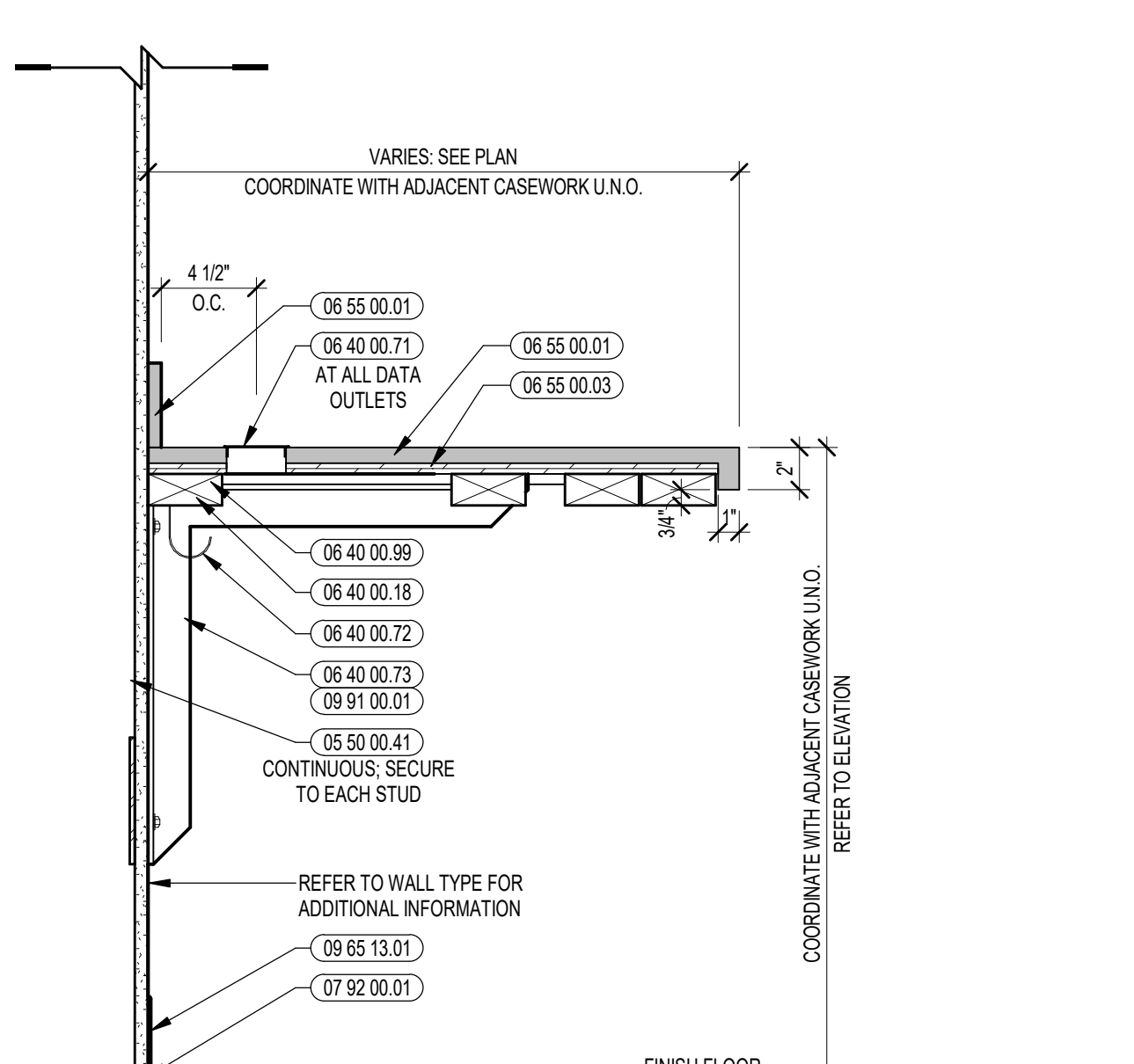
6 RATED INTERIOR EXPANSION JOINT PLAN DETAIL
3/8 = 1/4"



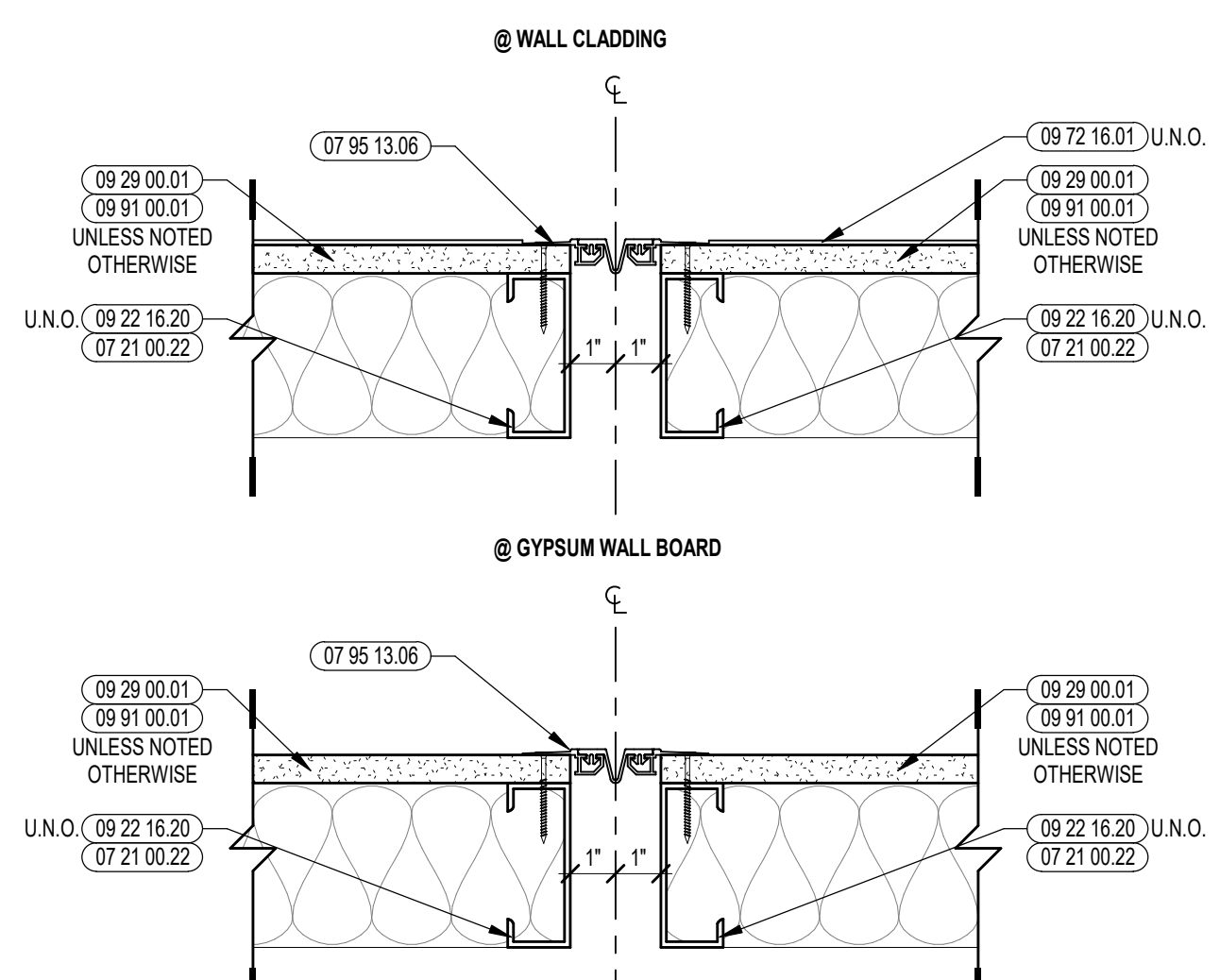
1B TYPICAL LOW WALL PLAN DETAIL
3/8 = 1/4"



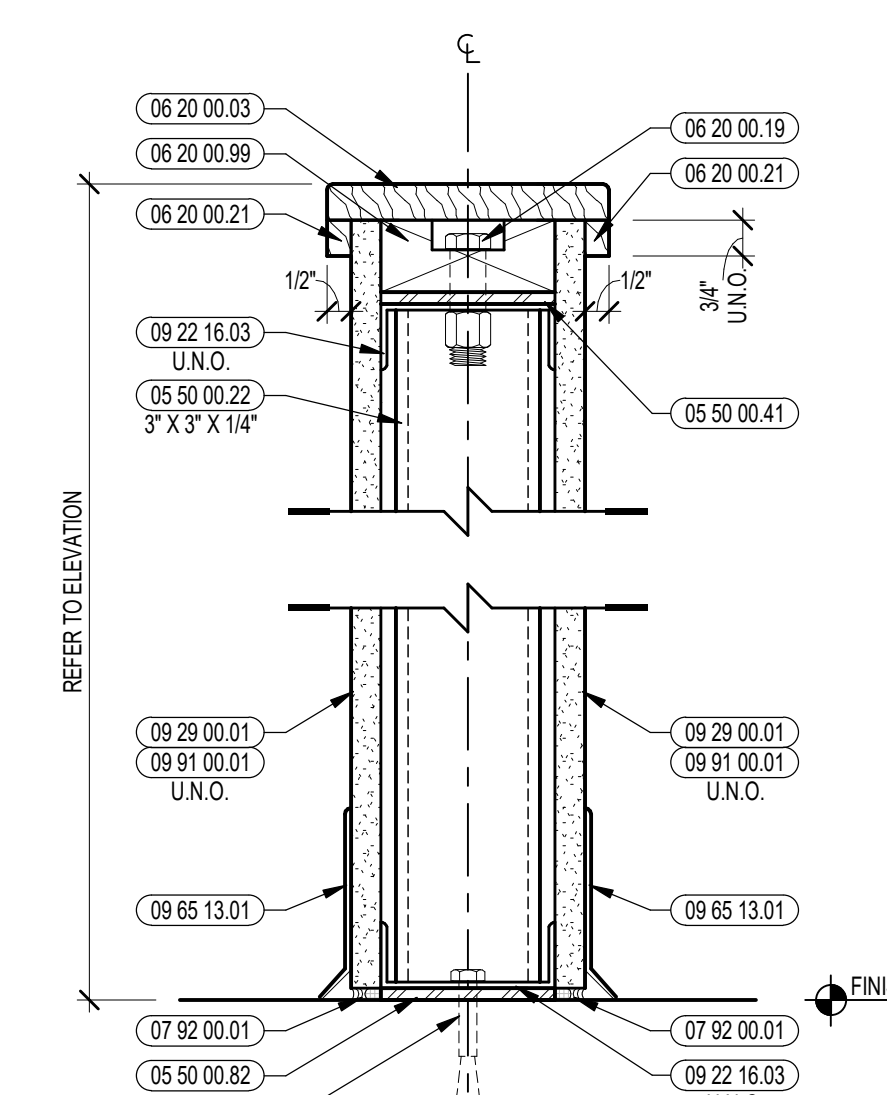
13 TYPICAL REVEAL @ GYPSUM ASSEMBLY
3/8 = 1/4"



9 SECTION DETAIL: ADMIN SOLID SURFACE COUNTER
1/12 = 1/4"



5 TYPICAL INTERIOR EXPANSION JOINT PLAN DETAIL
3/8 = 1/4"



1A TYPICAL LOW WALL SECTION DETAIL
3/8 = 1/4"



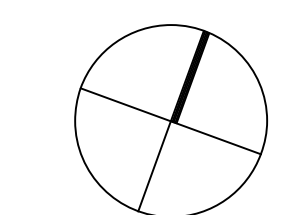
CENTRAL FALLS HIGH SCHOOL
10 HIGGINSON AVE, CENTRAL FALLS, RI

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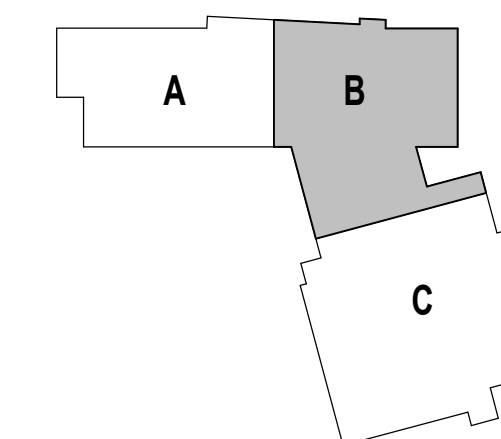
ADD-10 ADDENDUM #10 02.09.2024

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KEY PLAN NORTH ARROW



KEYPLAN



DRAWING NAME:

**STUDENT COMMONS
ENLARGED RCP**

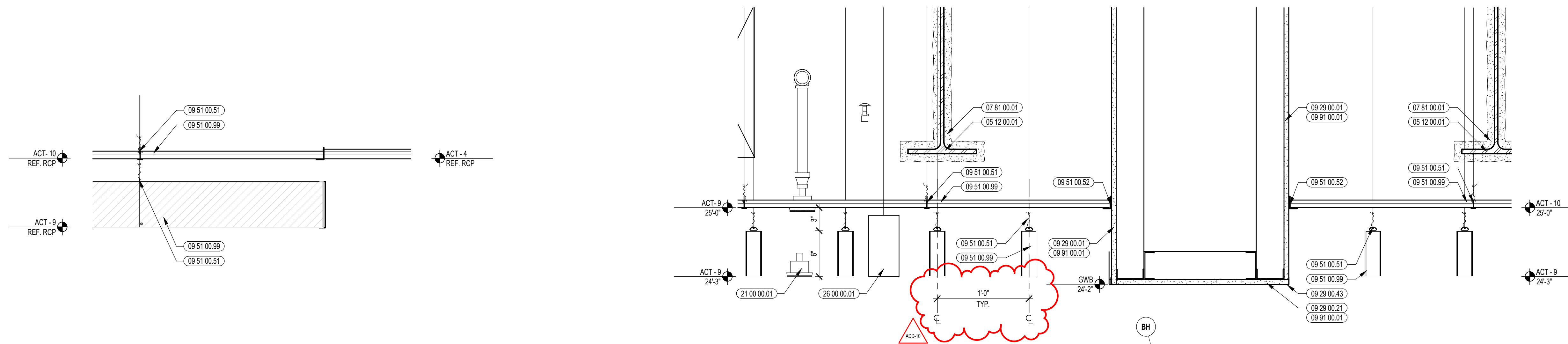
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REVIEWED BY: CHR / KK

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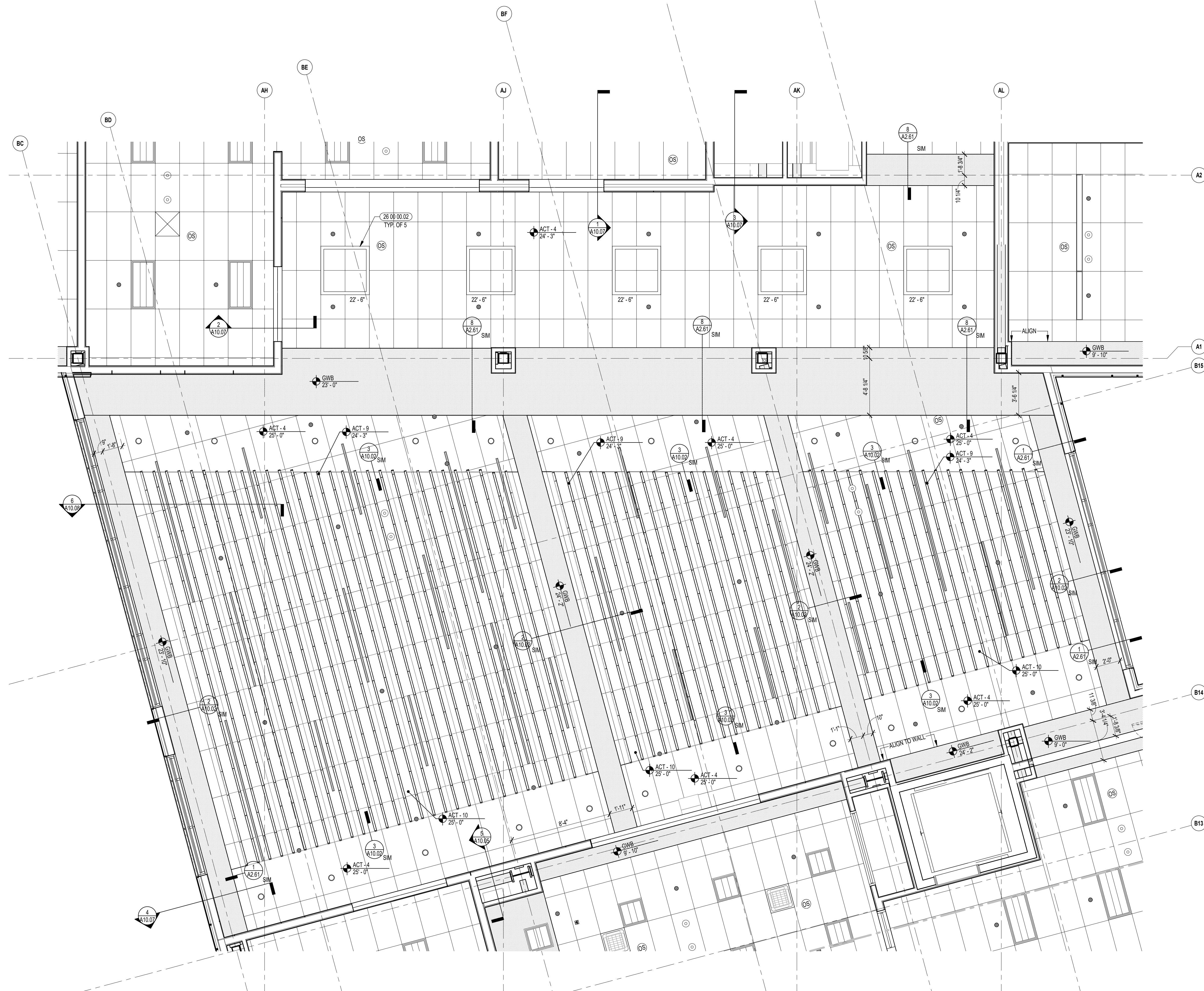
JOB NO.: 2202.02

DATE: OCTOBER 13, 2023 **A10.02**



3 STUDENT COMMONS PLAN DETAILS
1 1/2" = 1'-0"

2 TYPICAL SOFFIT DETAIL
1 1/2" = 1'-0"



1 STUDENT COMMONS REFLECTED CEILING PLAN
1/4" = 1'-0"

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Section 33 40 00
STORM DRAINAGE SYSTEMS**PART 1 - GENERAL**

1.1 WORK TO BE PERFORMED

- A. Work under this Section includes furnishing all plant labor, equipment, appliances and materials, and performing all operations in connection with the construction of stormwater collection systems at the locations and to the lines and grades indicated on contract drawings and/or directed.
- B. Any manufacturer's names and/or model numbers identified herein are intended to assist in establishing a general level of quality, configuration, functionality, and appearance required. This is NOT a proprietary specification and it should be noted that "Or equal" applies to all products denoted herein. It is understood that all manufactures will have minor variations in configuration, appearance, and product specifications and such minor variations shall not eliminate such manufacturers as an equal". It is the intent of this specification to encourage open and competitive involvement from multiple manufacturers that are able to supply similar products.
- C. Related Sections:
 - 1. Division 31 Section 31 00 00 – "Earthwork", for excavating, compacting, and grading the subgrade; for excavating and backfilling the anchor trench; for protecting the earthwork; for adding requirements for the earth cover; and for the filter fabric and other geotextiles.
 - 2. Division 31 Section 31 23 19 – "Dewatering and Drainage", for removing ground water from subgrade to the extent required by liner manufacturer.

1.2 DEFINITIONS

- A. Plastic Terminology: See ASTM D 1600 for definitions of abbreviated terms for plastics not otherwise defined in this section.
- B. EPDM: Ethylene-propylene-diene terpolymer

1.3 REFERENCES

- A. All work specified in this Section shall conform to the standard requirements of the Rhode Island Department of Transportation Standard Specifications for Road and Bridge Construction, hereinafter referred to as the Standard Specification, and dated December 2022 and the RI Stormwater Design and Installation Manual, latest revision.
- B. ASTM C891, Standard Practice for Installation of Underground Pre-cast Utility Structures.

1.4 SUBMITTALS

- A. Refer to SECTION 013300 – SUBMITTAL PROCEDURES for submittal provisions and procedures.

- B. The Contractor shall submit for approval, manufacturer's printed recommendations for the storage, protection, handling, installation and testing of storm water piping, fittings and appurtenances, which shall be strictly adhered to by the Contractor.
- C. Manufacturer testing results indicating compliance with the specifications herein.
- D. Licenses required by the municipality or state government to install storm drainage systems shall be submitted prior to the commencement of any work on the storm water collection system.
- E. It is required to have the Installer maintain an experienced full-time supervisor on Project site when earthwork is in progress.
- F. Submit shop drawings including plans, sections, and testing documentation for all products and calculations for ~~underground stormwater systems and hydrodynamic separator~~ **all underground stormwater treatment, filtration, storage, infiltration, and detention systems.**
- G. Geomembrane liners:
 - 1. Product Data: For each type of product indicated. Include the following:
 - a. Sheets for geomembrane liners.
 - b. Seaming adhesives, solvents, and extrusions.
 - c. Penetration assemblies.
 - 2. Shop Drawings: Show fabrication and installation details for geomembrane liners. Show panel layout, seams, penetrations, perimeter anchorage, and methods of attachment and sealing to other construction. Differentiate between factory and field seams and joints.
 - 3. Samples: For the following products, in sizes indicated:
 - a. Geomembrane Panels: For each type, not less than one 12-inch seam length for factory-bonded sheets and one 12-inch seam length for field-bonded sheets.
 - 4. Qualification Data: For qualified testing agency.
 - 5. Product Certificates: For each type of geomembrane liner, from manufacturer.
 - 6. Product Test Reports: For each geomembrane sheet, based on evaluation of comprehensive tests performed by a qualified testing agency.
 - 7. Source quality-control reports.
 - 8. Field quality-control reports.
 - 9. Maintenance Data: For geomembrane liner to include in maintenance manuals.
 - 10. Warranty: Special warranty specified in this Section.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Pipes shall be handled with care and in strict accordance with manufacturer's recommendations.
- B. Materials and equipment shall be progressively delivered at the site so that there will be neither delay in the progress of the work nor an accumulation of materials that is not to be used within a reasonable time. Materials shall be so stored as to assure the preservation of their quality and fitness for the work.

- C. Contractor will be responsible for unloading delivered treebox filter products.
- D. Stored materials, even though approved before storage, may again be inspected prior to their use in the work. Stored materials shall be located so as to facilitate their prompt inspection.
- E. Private property shall not be used for storage purposes without written permission of the owner or lessee, and if requested by the Architect copies of such written permission shall be furnished to him/her. All storage sites shall be restored to their original condition by the Contractor at his expense.
- F. Care shall be taken during transportation of the pipe such that it is not damaged.
- G. Pipes shall be stored on level ground, preferably turf or sand, free of sharp objects, which could damage the pipe.
- H. Prevent damage to the interior and exterior walls of the pipe. Raising pipes with hooks, dropping or placing large stones against pipe, rolling over stones or sharp objects/edges and dropping pipe are prohibited. All damaged pipe and fitting shall be removed from the project site and replaced at no additional expense to the Architect.

1.6 GUARANTEE / WARRANTY

- A. Material Guaranty: Before any contract is awarded, the Bidder may be required to furnish without expense to the owner complete statement of the origin, composition and manufacture of any or all materials proposed to be used in the construction of the work, together with samples, which may be subjected to the tests required by the owner to determine the quality and fitness of the material.

PART 2 - PRODUCTS

2.1 GENERAL

- A. All products as specified herein shall be new, unused and purchased specifically for this Contract.

2.2 HIGH DENSITY POLYETHYLENE PIPE (HDPE):

- A. High-Density Polyethylene Pipe and fittings shall be ADS N-12 IB ST Smooth Interior Pipe, ADS N-12 IB ST High Capacity Large Diameter Pipe or approved equivalent. Joints shall be soil-tight and include a rubber gasket on the spigot end of the pipe. When installed into the bell end, the joint shall be sealed.
- B. Pipe shall conform to AASHTO M294 (Type 'S') for the specified diameters and strength classes.
- C. Pipe shall be rated to withstand H-20-25 Loading Criteria with ~~48~~**12**" of cover.

2.3 REINFORCED CONCRETE PIPE AND FITTINGS

- A. Reinforced-Concrete Pipe and Fittings: ASTM C 76 (ASTM C 76M), with bell-and-spigot ends and sealant joints with ASTM C 990 (ASTM C 990M), bitumen or butyl-rubber sealant.

- B. Pipe shall conform to AASHTO M170 for the specified diameters and strength classes. The minimum cement content shall be 564 pounds per cubic yard.
- C. Strength class of reinforced concrete pipe shall be Class III unless specified otherwise on the drawings. Reinforced concrete pipe located less than six inches below vehicular pavement subgrade shall be Class V.
- D. Joint of reinforced concrete pipe shall be made with flexible watertight rubber gaskets and the remaining exterior void of the joint shall be sealed with Portland cement mortar.

2.4 PVC PIPE AND FITTINGS

- A. PVC Profile Gravity Sewer Pipe and Fittings: ASTM F 794 pipe, with bell-and-spigot ends; ASTM D 3034 fittings, with bell ends.
- B. The pipe and fittings shall be homogeneous throughout and free from visible cracks, holes, foreign inclusion or other injurious defects. The pipe shall be as uniform as commercially practical in color, capacity, density and other physical properties.
- C. Joints shall be bell and spigot. For SDR-35 PVC pipe, the bell shall consist of an integral wall section with a solid cross section rubber ring factory-assembled, securely locked in place to prevent displacement. Joints shall conform to ASTM Standard D 3212. For SCH 40 PVC piping, joints shall be glued with PVC cement approved by the manufacturer.
- D. All fittings and accessories shall have dimensions as recommended by the manufacturer and have bell and/or spigot configurations compatible with that of the pipe.
- E. Pipe shall pass impact resistance test in accordance with ASTM D 2444 and minimum pipe stiffness test at 5% deflection in accordance with ASTM D 2412.
- F. The normal length of 12-inch size and smaller pipe shall be 12.5 feet.
- G. Pipe and fittings shall be manufactured in the United States of America and shall be accompanied by the manufacturer's certificate of compliance, in addition to meeting the performance tests specified hereinafter.
- H. PVC pipe shall be SCH 40 where pipe has less than 2 feet of cover or as indicated on the plans.
- I. PVC perforated pipe shall conform to ASTM/ANSI D 2759 or ASTM F 810. Perforations shall be 5/8" holes on 5" centers.

2.5 MANHOLES, CATCH BASINS AND CASTINGS

- A. Precast concrete drainage manholes and catch basins, and castings for manhole covers, catch basin grates and frames shall be in accordance with Section 33 05 13, Manholes and Catch Basins.

2.6 CATCH BASIN HOODS

- A. All catch basin outlet pipes on new catch basins and all outlet pipes on existing catch basins shall be fitted with a catch basin hood.

~~2.7 — OUTLET CONTROL STRUCTURES~~

- ~~A. — Provide precast control structures, outlet structures shall conform to the dimensions shown on the plans and details and shall include a including galvanized steel bar grate fastened to the top of the unit. Outlet control structures shall be precast concrete units designed for AASHTO HS20-44 loading, with openings as shown on the detail drawings.~~

~~2.8 — STORMWATER HYDRODYNAMIC SEPERATOR~~

- ~~A. — Acceptable suppliers may be CDS/Stormceptor/Vortsenry by Contech Stormwater Solutions, BaySeperator/Barracuda by Bay Saver, Downstream Defender by Hydro International, or approved equivalent.~~

~~B. — Materials and Design~~

- ~~1. — Concrete for precast stormwater treatment systems shall conform to ASTM C857 and C478 and meet the following additional requirements:
 - ~~a. — In all cases the wall thickness shall be no less than the minimum thickness necessary to sustain HS20 loading requirements.~~
 - ~~b. — Sections shall have tongue and groove or ship-lap joints with a butyl mastic sealant conforming to ASTM C990.~~
 - ~~c. — Cement shall be Type I, II, or III Portland cement conforming to ASTM C150.~~
 - ~~d. — All sections shall be cured by an approved method. Sections shall not be shipped until the concrete has attained a compressive strength of 4,000 psi (28 MPa) or other designate suitable handling strength.~~
 - ~~e. — Pipe openings shall be sized to accept pipes of the specified size(s) and material(s), and shall be sealed by the Contractor with a hydraulic cement conforming to ASTM C595M.~~~~

~~C. — Performance~~

- ~~1. — Each stormwater treatment system shall have treatment, sediment storage, and oil storage capacities equal to or greater than that shown on the table below. For the purpose of determining equivalency, the treatment capacity shall be defined as the flow rate at which the stormwater treatment system removes 80% of an unground silica sample having an average particle size equal to or less than 240 microns. Treatment capacity shall be additionally defined as the maximum flow rate prior to which bypass of any flow occurs. Calculations must be provided to show the criteria shown on the plans are met with the shop drawing for the treatment system submitted.~~
- ~~2. — Each stormwater treatment system shall provide documented full-scale testing that corroborates the capacities listed on the plans. Said documentation shall include at a minimum testing for removal capabilities and sediment wash-out characteristics at the treatment capacities listed in table above.~~
- ~~3. — Each stormwater treatment system shall have the capability of bypassing high flow internally as well as controlling through the treatment chamber so as to avoid wash-out of previously captured pollutants under high flow conditions.~~
- ~~4. — Each stormwater treatment system shall include a circular chamber with a tangential inlet to induce a swirling flow pattern within the treatment chamber. The outlet from the treatment chamber shall be located in the center of the chamber so as to maximize the particle flow path within the treatment system.~~

5. ~~Each stormwater treatment system shall be of a hydraulic design that includes flow controls designed and certified by a professional engineer using accepted principles of fluid mechanics that raise the water surface inside the tank to a pre-determined level in order to prevent the re-entrainment of trapped floating contaminants.~~
6. ~~Each stormwater treatment system shall be designed to not allow surcharge of the upstream network during dry weather conditions.~~
7. ~~Each stormwater treatment system shall be contained within one concrete manhole structure.~~

2.9 ~~UNDERGROUND INFILTRATION & DETENTION SYSTEMS~~

- A. ~~Acceptable manufacturers include Recharger by Cultec, Stormtech by ADS, and ChamberMaxx by Contech, or approved equivalent.~~
- B. ~~The chamber shall be constructed of injection molded polypropylene impact copolymer formulated for high impact and stress cracking resistance and sustained structural performance during high temperatures. The chamber shall be in accordance with ASTM F2418-05 standards.~~
- C. ~~The chamber shall be designed to AASHTO LRFD Bridge Design Specifications (Section 12), as applied to material and performance requirements for buried thermoplastic pipes. Design live load shall be the AASHTO HS-25 or HS-20 truck and applies to chamber spacing of 5" (127 mm) or greater.~~
- D. ~~The chamber system shall be comprised of three chamber configurations. The MIDDLE chambers shall be open-ended to allow unobstructed hydraulic flow, inspection, and maintenance. The START and END chambers shall each have an integral end wall designed to resist loading at the start and end of the chamber rows. The chambers within a row shall be installed with overlapping and corrugations.~~
- E. ~~Refer to the project plans for typical dimensions and sizing criteria.~~
- F. ~~The chamber shall have a continuously curved, arch-shaped section profile.~~
- G. ~~The START and END chamber integral end wall shall be structurally suitable for cutting and inserting inlet pipes and shall provide a range of pipe diameter indicants up to 24" (610 mm) diameter as cutting templates.~~
- H. ~~The chamber shall be a corrugated, open-bottom design with 0.4" (10 mm) wide x 1.5" (38 mm) tall slotted side wall openings for lateral flow and top vent orifices for hydraulic pressure equalization. Corrugation valleys and crests shall be sub-corrugated to increase stiffness.~~
- I. ~~The chamber shall have a circular cut line for an optional reinforced inspection or cleanout port configured to accept a 4" (102 mm) Schedule 40 pipe.~~
- J. ~~The END chambers shall be capable of being cut to shorter lengths to accommodate site specific requirements.~~
- K. ~~The chamber shall be supported by integral structural footings comprised of load dispersing toe ribs and longitudinally aligned stiffening ribs.~~

~~2.10 CONCRETE VAULT SYSTEM~~

- ~~A. Manufacturer shall be StormTrap or approved equivalent.~~
- ~~B. Concrete chamber designed for AASHTO HS-20 Highway Loading Min Soil Pressure 3000 PSF.~~
- ~~C. The system shall be per the dimension shown on the plans.~~
- ~~D. The system shall be water tight.~~
- ~~E. Contractor shall submit calculations showing the system is not buoyant.~~

2.11 WATER QUALITY SWALES

- A. Water quality swales shall have a media bed depth as shown on the plans and with a media comprised of 50% sand and 50% loam and a 6" gravel depth. Sand, loam, and gravel shall conform to materials outlined in section 31 00 00.

2.12 AREA DRAINS

- A. PVC surface drainage inlets shall include the drain basin type as indicated on the contract drawing and referenced within the contract specifications.
- B. The ductile iron grates for each of these fittings are to be considered an integral part of the surface drainage inlet and shall be furnished by the same manufacturer.
- C. Drain basins grates in hardscaped areas shall be ADA compliant. Drain basin grates in landscaped areas shall be standard grates.
- D. The drain basins required for this contract shall be manufactured from PVC pipe stock, utilizing a thermoforming process to reform the pipe stock to the specified configuration. The drainage pipe connection stubs shall be manufactured from PVC pipe stock and formed to provide a watertight connection with the specified pipe system. This joint tightness shall conform to ASTM D3212 for joints for drain and sewer plastic pipe using flexible elastomeric seals. The flexible elastomeric seals shall conform to ASTM F477. The pipe bell spigot shall be joined to the main body of the drain basin or catch basin. The raw material used to manufacture the pipe stock that is used to manufacture the main body and pipe stubs of the surface drainage inlets shall conform to ASTM D1784 cell class 12454.
- E. The grates and frames furnished for all surface drainage inlets shall be ductile iron and shall be made specifically for each basin so as to provide a round bottom flange that closely matches the diameter of the surface drainage inlet. Grates for drain basins shall be capable of supporting various wheel loads as specified. Ductile iron used in the manufacture of the castings shall conform to ASTM A536 grade 70-50-05. Grates and covers shall be provided painted black.

2.13 TRENCH DRAINS

- A. Acceptable products for this application include Poly drain by ABT Inc., ACO, Duraslope by NDS, or approved equivalent.

2.14 EPDM SHEET MATERIALS

- A. EPDM Sheet: Formulated from EPDM, compounded for use in hydraulic structures and formed into uniform, flexible sheets.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Firestone Building Products.
 - b. Raven Industries, Inc.
 - c. Yunker Plastics, Inc.
 2. Reinforcing Scrim: One-ply polyester fabric totally encapsulated between two sheets.
 - a. Construction: 10 x 10 - 1000 d.
 3. Nominal Thickness: 45-mil- thick sheet per ASTM D 5199 or ASTM D 751, Optical Method.
 4. Breaking Strength: Not less than 190 lbf minimum average per ASTM D 882, ASTM D 7004, or ASTM D 751, Procedure A.
 5. Tear Resistance: Not less than 130 lb minimum average per ASTM D 1004.
 6. Puncture Strength: Not less than 60 lbf minimum average per ASTM D 4833.
- B. Fabrication:
1. Fabricate geomembrane liner panels from sheets in sizes as large as possible with factory-sealed seams, consistent with limitations of weight and installation procedures. Minimize field seaming.
- C. Source Quality Control:
1. Testing Agency: Engage a qualified testing agency to evaluate geomembrane seams.
 2. Destructive Testing: Test for bonded seam strength and peel adhesion every 3000 feet or once per panel, whichever is more frequent.
 3. EPDM Liner: Test and inspect factory seams, according to ASTM D 4545, for peel adhesion not less than 10 lbf/in. of seam width and for bonded seam strength not less than 160 lbf/in. of seam width for seams constructed from two scrim-reinforced sheets, each with nominal sheet thickness of not less than 45 mils.

2.15 MISCELLANEOUS MATERIALS

- A. Adhesives: Provide types of adhesive primers, compounds, solvents, and tapes recommended in writing by geomembrane liner manufacturer for bonding to structures (if required), for sealing of seams in geomembrane liner, and for sealing penetrations through geomembrane liner.
- B. Penetration assemblies in first paragraph below include pipes, ventilation assemblies, access hatches in cover, and structural members.
- C. Penetration Assemblies: Provide manufacturer's standard factory-fabricated assemblies for sealing penetrations. Include joint sealant recommended in writing by geomembrane liner manufacturer and compatible with geomembrane liner, containment conditions, and materials.
- D. Battens: Long-length strips of material indicated, size as shown on Drawings. Fabricate battens with sharp projections removed and edges eased and then predrilled or punched for anchors. Provide anchors, or other type of attachment, of type and spacing recommended in writing by geomembrane liner manufacturer for attaching geomembrane liner system to substrate and as indicated.
 - 1. Batten Material: Liner manufacturer's standard system.
 - 2. Batten Material: Aluminum; with stainless-steel anchors, complete with gasket and sealant compatible with geomembrane liner, containment conditions, and materials.
 - 3. Batten Material: Stainless steel; with stainless-steel anchors, complete with gasket and sealant compatible with geomembrane liner, containment conditions, and materials.
 - 4. Batten Material: Plastic compatible with geomembrane liner, cast in place or fastened with stainless-steel anchors, designed to continuously seal geomembrane liner to batten.

2.16 STORMWATER TREATMENT DEVICES

- A. **This item shall govern the furnishing and installation of the following proprietary devices named below by Contech Engineered Solutions LLC, complete and operable as shown and as specified herein, in accordance with the requirements of the plans and contract documents.**
 - 1. **Cascade Separator**
 - 2. **Continuous Deflective Separator (CDS)**
- B. **The Contractor shall furnish all labor, equipment and materials necessary to install the storm water treatment device(s) (SWTD) and appurtenances specified in the Drawings and these specifications.**
- C. **These products are on the list of "RIDEM Approved Proprietary Pre-Treatment and Retrofit Devices" and have been specified to meet permit requirements. In accordance with the Drawings, the SWTD(s) shall be manufactured by: Contech Engineered Solutions LLC, 9100 Centre Pointe Drive, West Chester, OH, 45069, Tel: 1 800 338 1122, www.ContechES.com. The SWTDs provided on the drawings was coordinated with a local Contech representative during design. His contact information is as follows: Melissa Hall; melissa.hall@conteches.com; 207-885-6114**

- D.** The manufacturer shall guarantee the SWTD components against all manufacturer originated defects in materials or workmanship for a period of twelve (12) months from the date the components are delivered for installation. The manufacturer shall upon its determination repair, correct or replace any manufacturer originated defects advised in writing to the manufacturer within the referenced warranty period. The use of SWTD components shall be limited to the application for which it was specifically designed.
- E.** The SWTD manufacturer shall submit a “Manufacturer’s Performance Certification” certifying that each SWTD is capable of achieving the specified removal efficiencies listed in the drawings and specifications as well as meeting the requirements set forth by RIDEM.
- F.** No product substitutions shall be accepted unless approved and permitted by RIDEM, in accordance with the project’s Freshwater Wetlands Permit. Submissions for substitutions require review and approval by RIDEM, for hydraulic performance, impact to project designs, equivalent treatment performance, and any required project plan and report (hydrology/hydraulic, water quality, stormwater pollution) modifications. The Contractor shall be responsible for all approval costs associated with product substitutions and shall not be provided with additional time to complete the project based on permit approvals for substitutions.
- G.** Housing unit of stormwater treatment device shall be constructed of pre-cast or cast-in-place concrete, no exceptions. Precast concrete components shall conform to applicable sections of ASTM C 478, ASTM C 857 and ASTM C 858 and the following:
1. Concrete shall achieve a minimum 28-day compressive strength of 4,000 pounds per square-inch (psi);
 2. Unless otherwise noted, the precast concrete sections shall be designed to withstand lateral earth and AASHTO H-20 traffic loads;
 3. Cement shall be Type III Portland Cement conforming to ASTM C 150;
 4. Aggregates shall conform to ASTM C 33;
 5. Reinforcing steel shall be deformed billet-steel bars, welded steel wire or deformed welded steel wire conforming to ASTM A 615, A 185, or A 497.
 6. Joints shall be sealed with preformed joint sealing compound conforming to ASTM C 990.
 7. Shipping of components shall not be initiated until a minimum compressive strength of 4,000 psi is attained or five (5) calendar days after fabrication has expired, whichever occurs first.
- H.** Internal Components and appurtenances shall conform to the following:
1. Screen and support structure shall be manufactured of Type 316 and 316L stainless steel conforming to ASTM F 1267-01.
 2. Hardware shall be manufactured of Type 316 stainless steel conforming to ASTM A 320.
 3. Fiberglass components shall conform to applicable sections of ASTM D-4097
 4. Access system(s) conform to the following:

- 5. Manhole castings shall be designed to withstand AASHTO H-20 loadings and manufactured of cast-iron conforming to ASTM A 48 Class 30.

I. Performance - Cascade Separator

- 1. The SWTD shall be sized to treat a flow rate designated in the project’s RIDEM Freshwater Wetlands Permit. The SWTD shown on the drawings is sized accordingly. Both methods should be sized using the OK-110 particle distribution having particles ranging from 53 microns to 212 microns with a d50 of around 110 microns.
- 2. The SWTD shall be designed with a sump chamber for the storage of captured sediments and other negatively buoyant pollutants in between maintenance cycles. The minimum storage capacity provided by the sump chamber shall be in accordance with the volume listed in Table 1. The boundaries of the sump chamber shall be limited to that which do not degrade the SWTD’s treatment efficiency as captured pollutants accumulate. In order to not restrict the Owner’s ability to maintain the SWTD, the minimum dimension providing access from the ground surface to the sump chamber shall be 16 inches in diameter.

TABLE 1:
Storm Water Treatment Device Storage Capacities
Cascade Separator

Cascade Model	Minimum Sump Storage Capacity (yd ³)	Minimum Oil Storage Capacity
CS-3	0.41	59.0
CS-4	0.70	141.0
CS-5	1.09	269.3
CS-6	1.57	475.9
CS-8	2.79	1128.0
CS-10	4.36	2203.2
CS-12	6.28	3807.1

- 3. The SWTD shall be designed to capture and retain Total Petroleum Hydrocarbons generated by wet-weather flow and dry-weather gross spills and have a capacity listed in Table 1 of the required unit.
- 4. The SWTD shall convey the flow from the peak storm event of the drainage network.

J. Performance - Continuous Deflective Separator

- 1. The SWTD shall be sized to treat a flow rate designated in the project’s RIDEM Freshwater Wetlands Permit. The SWTD shown on the drawings is sized accordingly. Both methods should be sized using a particle size distribution having a mean particle size (d50) of 125 microns unless otherwise stated.
- 2. The SWTD shall be capable of capturing and retaining 100 percent of pollutants greater than or equal to 2.4 millimeters (mm) regardless of the pollutant’s specific gravity (i.e.: floatable and neutrally buoyant

materials) for flows up to the device’s rated-treatment capacity. The SWTD shall be designed to retain all previously captured pollutants addressed by this subsection under all flow conditions. The SWTD shall be capable of capturing and retaining total petroleum hydrocarbons. The SWTD shall be capable of achieving a removal efficiency of 92 and 78 percent when the device is operating at 25 and 50 percent of its rated-treatment capacity. These removal efficiencies shall be based on independent third-party research for influent oil concentrations representative of storm water runoff (20 ± 5 mg/L). The SWTD shall be greater than 99 percent effective in controlling dry-weather accidental oil spills.

3. The SWTD shall be designed with a sump chamber for the storage of captured sediments and other negatively buoyant pollutants in between maintenance cycles. The minimum storage capacity provided by the sump chamber shall be in accordance with the volume listed in Table 2. The boundaries of the sump chamber shall be limited to that which do not degrade the SWTD’s treatment efficiency as captured pollutants accumulate. The sump chamber shall be separate from the treatment processing portion(s) of the SWTD to minimize the probability of fine particle re-suspension. In order to not restrict the Owner’s ability to maintain the SWTD, the minimum dimension providing access from the ground surface to the sump chamber shall be 16 inches in diameter.

TABLE 2
Storm Water Treatment Device Storage Capacities
Continuous Deflective Separator

CDS Model	Minimum Sump Storage Capacity (yd ³)/(m ³)	Minimum Oil Storage Capacity (gal)/(L)
CDS2015-4	0.9(0.7)	61(232)
CDS2015-5	1.5(1.1)	83(313)
CDS2020-5	1.5(1.1)	99(376)
CDS2025-5	1.5(1.1)	116(439)
CDS3020-6	2.1 (1.6)	184(696)
CDS3025-6	2.1(1.6)	210(795)
CDS3030-6	2.1 (1.6)	236(895)
CDS3035-6	2.1 (1.6)	263(994)
CDS3535-7	2.9(2.2)	377(1426)
CDS4030-8	5.6(4.3)	426(1612)
CDS4040-8	5.6 (4.3)	520(1970)
CDS4045-8	5.6 (4.3)	568(2149)
CDS5640-10	8.7(6.7)	758(2869)
CDS5653-10	8.7(6.7)	965(3652)
CDS5668-10	8.7(6.7)	1172(4435)
CDS5678-10	8.7(6.7)	1309(4956)
CDS10060-DV	5.0 (3.8)	792 (2997)

CDS10080-DV	5.0 (3.8)	1057 (4000)
CDS100100-DV	5.0 (3.8)	1320 (4996)

4. The SWTD shall be designed to capture and retain Total Petroleum Hydrocarbons generated by wet-weather flow and dry-weather gross spills and have a capacity listed in Table 2.
5. The SWTD shall convey the flow from the peak storm event of the drainage network.
6. The SWTD shall have completed field testing following TARP Tier II protocol requirements.

2.17 MEMBRANE FILTRATION SYSTEM

- A. The Contractor shall furnish and install the membrane filtration system, complete and operable as shown and as specified herein, in accordance with the requirements of the plans and contract documents. The membrane filtration system shown on the drawings is sized site-specific requirements, as well as RIDEM requirements. The membrane filtration system removes pollutants from stormwater runoff through the unit operations of sedimentation, floatation, and membrane filtration.
- B. This product is on the list of “RIDEM Approved Proprietary Water Quality BMPs” and has been specified to meet permit requirements. In accordance with the Drawings, the membrane filtration system shall be manufactured by: Contech Engineered Solutions LLC, 9100 Centre Pointe Drive, West Chester, OH, 45069, Tel: 1 800 338 1122, www.ContechES.com. The SWTDs provided on the drawings was coordinated with a local Contech representative during design. His contact information is as follows: Melissa Hall; melissa.hall@conteches.com; 207-885-6114.
- C. No product substitutions shall be accepted unless approved and permitted by RIDEM, in accordance with the project’s Freshwater Wetlands Permit. Submissions for substitutions require review and approval by RIDEM, for hydraulic performance, impact to project designs, equivalent treatment performance, and any required project plan and report (hydrology/hydraulic, water quality, stormwater pollution) modifications. The Contractor shall be responsible for all approval costs associated with product substitutions and shall not be provided with additional time to complete the project based on permit approvals for substitutions.
- D. American Society for Testing and Materials (ASTM) Reference Specifications:
 1. ASTM C891: Standard Specification for Installation of Underground Precast Concrete Utility Structures
 2. ASTM C478: Standard Specification for Precast Reinforced Concrete Manhole Sections
 3. ASTM C858: Standard Specification of Underground Precast Concrete Utility Structures
 4. ASTM C857: Standard Practice for Minimum Structural Design Loading for Underground Precast Concrete Utility Structures

5. **ASTM C990: Standard Specification for Joints for Concrete Manholes Using Preformed Flexible Joint Sealants**
6. **ASTM D4101: Standard Specification for Copolymer steps construction**
7. **ASTM D4097: Standard Specification for Contact-Molded Glass-Fiber-Reinforced Thermoset Resin Corrosion-Resistant**

E. Materials:

1. **Precast Concrete Structure:** The device shall be an all-concrete structure (including risers), constructed from precast concrete riser and slab components or monolithic precast structure(s). Precast concrete vault shall be provided according to ASTM C857 and C858 and manholes shall be provided according to ASTM C478. Both structure types shall be installed to conform to ASTM C891 and to any required state highway, municipal or local specifications; whichever is more stringent. All precast concrete components shall be manufactured to a minimum live load of HS-20 truck loading or greater based on local regulatory specifications, unless otherwise modified or specified by the design engineer.
2. **Gaskets:** Gaskets and/or sealants shall be used to seal between concrete joints. Joints shall be sealed with preformed joint sealing compound conforming to ASTM C990.
3. **Internal Components:**
 - a. **Cartridge Deck:** The deck insert shall be bolted and sealed inside the precast concrete chamber. The insert shall serve as: (a) a horizontal divider between the lower treatment zone and the upper treated effluent zone; (b) a deck for attachment of filter cartridges such that the membrane filter elements of each cartridge extend into the lower treatment zone; (c) a platform for maintenance workers to service the filter cartridges; (c) a conduit for conveyance of treated water to the effluent pipe.
 - 1) **Fiberglass:** In cylindrical configurations, the fiberglass portions of the filter device shall be constructed in accordance with the following standard: **ASTM D4097: Contact Molded Glass Fiber Reinforced Chemical Resistant Tanks.**
 - 2) **Aluminum:** In rectangular configurations, the aluminum cartridge deck shall be $\frac{1}{4}$ " thick, 5052-H32 Aluminum with all welds to be 100% continuous waterproof weld using 5356 filler.
 - b. **Membrane Filter Cartridges:** Filter cartridges shall be comprised of reusable cylindrical membrane filter elements connected to a perforated head plate. The number of membrane filter elements per cartridge shall be a minimum of eleven 2.75-inch or greater diameter elements. The length of each filter element shall be a minimum 15 inches. Each cartridge shall be fitted into the cartridge deck by insertion into a cartridge receptacle that is permanently mounted into the cartridge deck. Each cartridge shall be secured by a cartridge lid that is threaded onto the receptacle, or similar mechanism to secure the cartridge into the deck. The maximum treatment flow rate of a filter cartridge shall be controlled by an orifice in the cartridge lid, or on the individual cartridge itself, and based on a design flux rate (surface loading rate) determined by the

maximum treatment flow rate per unit of filtration membrane surface area. The maximum design flux rate shall be 0.21 gpm/ft².

- c. Each membrane filter cartridge shall allow for manual installation and removal. Each filter cartridge shall contain no less than 7 square feet of surface area per inch of length and have filtration membrane surface area and dry installation weight as follows (if length of filter cartridge is between those listed below, the surface area and weight shall be proportionate to the next length shorter and next length longer as shown below):

Table 3

Filter Cartridge Length (in)	Minimum Filtration Membrane Surface Area (ft ² / m ²)	Maximum Filter Cartridge Dry Weight (lbs / kg)
15 / 381	106 / 9.8	10.0 / 4.5
27 / 686	190 / 17.7	14.5 / 6.6
40 / 1016	282 / 26.2	19.5 / 8.9
54 / 1372	381 / 35.4	25.0 / 11.4

- d. **Backwashing Cartridges:** The filter device shall have a weir extending above the cartridge deck, or other mechanism, that encloses the high flow rate filter cartridges when placed in their respective cartridge receptacles within the cartridge deck. The weir, or other mechanism, shall collect a pool of filtered water during inflow events that backwashes the high flow rate cartridges when the inflow event subsides. The discharge orifice shall induce a pulsing/vibration effect during backwashing to assist in extending service life. All filter cartridges and membranes shall be reusable and allow for the use of filtration membrane rinsing procedures to restore flow capacity and sediment capacity, extending cartridge service life.
- e. **Maintenance Access to Captured Pollutants:** The filter device shall contain an opening(s) that provides maintenance access for removal of accumulated floatable pollutants and sediment, removal of and replacement of filter cartridges, cleaning of the sump, and rinsing of the deck. Access shall have a minimum clear height over all of the filter cartridges (length of cartridge + 6 inches) or be accessible by a hatch or other mechanism that provides vertical clear space over all of the filter cartridges such that the cartridges can be lifted straight vertically out of the receptacles and deck for the entire length of the cartridge.
- f. **Baffle:** The filter device shall provide a baffle that extends from the underside of the cartridge deck to a minimum length equal to the length of the membrane filter elements. The baffle shall serve to protect the membrane filter elements from contamination by floatables and coarse sediment. The baffle shall be flexible and

- continuous in cylindrical configurations and shall be a straight concrete or aluminum wall in rectangular configurations.
- g. **Sump:** The device shall include a minimum 24 inches of sump below the bottom of the cartridges for sediment accumulation, unless otherwise specified by the design engineer. Depths less than 24 inches may have an impact on the total performance and/or longevity between cartridge maintenance/replacement of the device.
 - h. **Steps:** Steps shall be constructed according to ASTM D4101 of copolymer polypropylene and be driven into preformed or pre-drilled holes after the concrete has cured, installed to conform to applicable sections of state, provincial and municipal building codes, highway, municipal or local specifications for the construction of such devices.
 - i. **Double-Wall Containment of Hydrocarbons:** The cylindrical precast concrete device shall provide double-wall containment for hydrocarbon spill capture by a combined means of an inner wall of fiberglass, to a minimum depth of 12 inches below the cartridge deck, and the precast vessel wall.
4. **Bend Structure:** The device shall be able to be used as a bend structure with minimum angles between inlet and outlet pipes of 90-degrees or less in the stormwater conveyance system.
 5. **Frame and Cover:** Frame and covers must be manufactured from cast-iron or other composite material tested to withstand H-20 or greater design loads, and as approved by the local regulatory body. Frames and covers must be embossed with the name of the device manufacturer or the device brand name.
 6. **Doors and Hatches:** If provided shall meet designated loading requirements or at a minimum for incidental vehicular traffic.
- F. **Performance:** The system details provided on the drawings are sized to meet the performance criteria below,
1. **Function:** The membrane filtration system shall function to remove pollutants by the following unit treatment processes; sedimentation, floatation, and membrane filtration
 2. **Pollutants:** The membrane filtration system shall remove oil, debris, trash, coarse and fine particulates, particulate-bound pollutants, metals and nutrients from stormwater during runoff events.
 3. **Bypass:** The membrane filtration system shall typically utilize an external bypass to divert excessive flows. Where an internal bypass is utilized, systems shall be equipped with a floatable baffle, and bypass water shall not pass through the treatment sump or cartridge filtration zone.
 4. **Treatment Flux Rate (Surface Loading Rate):** The membrane filtration system shall treat 100% of the required water quality treatment flow based on a maximum design flux rate (surface loading rate) across the membrane filter cartridges not to exceed 0.21 gpm/ft².
 5. **Field Testing:** At a minimum, the membrane filtration system shall have been field tested and verified with a minimum 25 qualifying storm events

and field monitoring conducted according to the TARP Tier II or TAPE field test protocol and have received NJCAT verification.

6. **Suspended Solids Removal:** The membrane filtration system shall have demonstrated a minimum median TSS removal efficiency of 85% and a minimum median SSC removal efficiency of 95%.
7. **Fine Particle Removal:** The membrane filtration system shall have demonstrated the ability to capture fine particles as indicated by a minimum median removal efficiency of 75% for the particle fraction less than 25 microns, an effluent d50 of 15 microns or lower for all monitored storm events, and an effluent turbidity of 15 NTUs or lower.
8. **Nutrient (Total Phosphorus & Total Nitrogen) Removal:** The membrane filtration system shall have demonstrated a minimum median Total Phosphorus removal of 55%, and a minimum median Total Nitrogen removal of 50%.
- 4-9. **Metals (Total Zinc & Total Copper) Removal:** The membrane filtration system shall have demonstrated a minimum median Total Zinc removal of 50%, and a minimum median Total Copper removal of 75%.

PART 3 - EXECUTION

3.1 GENERAL

- A. The installation of all pipes of various materials, structures, and connections to existing pipes/structures shall be made at the locations and elevations as shown on the drawings.
- B. All materials and each part of detail of the work shall be subject to inspection by the Architect. The Architect shall be allowed access to all parts of the work and shall be furnished with such information and assistance by the contractor as is required to make a complete and detailed inspection, (such assistance may include furnishing labor, tools and equipment at no expense to Architect.)
- C. If the Architect so requests, the Contractor, at any time before acceptance of the work, shall remove or uncover such portions of the finished work as may be directed. After examination, the Contractor shall restore said portions of the work to the standard required by the specifications. Should the work thus exposed or examined prove acceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be paid for as extra work; but should the work so exposed or examined prove unacceptable, the uncovering or the removing and the replacing of the covering or making good of the parts removed, will be at the Contractor's expense.
- D. Any work done or materials used without authorization by the Architect may be ordered removed and replaced at the Contractor's expense. The Contractor shall furnish written information to the Architect stating the original sources of supply of all materials manufactured away from the actual site of the work. In order to ensure a proper time sequence for required inspection and approval this information shall be furnished at least two weeks in advance of the incorporation in the work of any such materials.
- E. The Contractor shall give prior notice to the Architect when work on the various items is to be performed by him or his Subcontractors. If work is suspended on

any item, prior notice shall be given to the Architect before resumption of such work.

3.2 TRENCH EXCAVATION AND BACKFILL

- A. Excavation and backfill of piping shall be performed as specified in Section 31 00 00, EARTHWORK.
- B. Pipe bedding shall be placed as specified in Section 31 00 00, EARTHWORK.

3.3 PIPE INSTALLATION

- A. Use only nylon-protected slings to handle pipe. The use of hooks or bare cables will not be permitted.
- B. PVC Piping: No machinery shall directly contact the PVC pipe to push the pipe into place. The pipe shall be pushed into place by hand. The use of a hammer or mallet is permitted, with the use of a board to shield the end of the pipe being struck by the hammer. The pipe shall not be directly contacted with a hammer or mallet. Any pipe damaged while being pushed into place or while being laid in the trench shall be removed from the site and replaced at the expense of the Contractor.
- C. HDPE Piping: An elastomeric rubber gasket supplied by the manufacturer shall be installed at each HDPE pipe joint to ensure that each joint is silt tight.
- D. Pipe shall be inspected before any backfill is placed. Any pipe determined by the Engineer to be out of alignment, unduly settled, or damaged shall be taken up and re-laid or replaced at no additional cost to Owner.
- E. General Locations and Arrangements: Drawing plans and details indicate location and arrangement of underground storm drainage piping. Install piping as indicated, following piping manufacturer's written instructions.
- F. Install piping beginning at low point, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream. Install gaskets, seals, sleeves, and couplings according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements.
- G. If conflicts between utilities, the Contractor shall stop work on the utilities, contact the Architect, and await direction from the Architect.
- H. Install piping with 36-inch minimum cover unless otherwise specified on the Drawings.
- I. Install piping with a minimum slope as specified on Drawings.
- J. Install PVC piping according to ASTM D 2321, ASTM F 1668, and manufacturer's recommendations.

~~3.4 STORMWATER HYDRODYNAMIC SEPERATOR INSTALLATION~~

- ~~A. The stormwater treatment system shall be installed in strict accordance with the manufacturer's recommendations.~~
- ~~B. Excavation, bedding, backfill and compaction for the structure shall be as specified in Section 31 00 00, EARTHWORK.~~

~~C. The structure shall be watertight upon the completion of the installation.~~

~~3.5 CHAMBER INSTALLATION~~

~~A. Refer to Manufacturer's Installation Guide for proper procedure required to maintain structural integrity and functionality of the chamber system.~~

3.6 AREA DRAIN INSTALLATION

- A. Install Area Drain System according to manufacturer's requirements and specifications.
- B. Set tops of grating frames and grates flush with finished surface, unless otherwise indicated.
- C. The specified PVC surface drainage inlet shall be installed using conventional flexible pipe backfill materials and procedures.
- D. The backfill material shall be crushed stone or other granular material meeting the requirements of class 1 or class 2 material as defined in ASTM D2321. Bedding and backfill for surface drainage inlets shall be well placed and compacted uniformly in accordance with ASTM D2321.
- E. The drain basin body will be cut at the time of the final grade. No brick, stone or concrete block will be required to set the grate to the final grade height.
- F. For load rated installations, a concrete slab shall be poured under and around the grate and frame. The concrete slab must be designed taking into consideration local soil conditions, traffic loading, and other applicable design factors.

3.7 TRENCH DRAIN SYSTEM INSTALLATION

- A. Install Trench Drain System at elevations indicated.
- B. Install Trench Drain System according to manufacturer's requirements and specifications.
- C. Set tops of grating frames and grates flush with finished surface, unless otherwise indicated.

3.8 GEOMEMBRANE PREPARATION AND INSTALLATION

- A. Examination
 - 1. Examine substrates, with Installer present, for compliance with requirements for soil compaction and grading; for subgrade free from angular rocks, rubble, roots, vegetation, debris, voids, protrusions, and ground water; and for other conditions affecting performance of geomembrane liner.
 - 2. Examine anchor trench excavation, where geomembrane liner will be secured, for substrate conditions indicated above and for correct location and configuration.
 - 3. Proceed with installation only after unsatisfactory conditions have been corrected.

- B. Provide temporary ballast, until edges are permanently secured, that does not damage geomembrane liner or substrate, to prevent uplift of geomembrane liner in areas with prevailing winds.
- C. Prepare surfaces of construction penetrating through geomembrane liner according to geomembrane liner manufacturer's written instructions.
- D. General: Place geomembrane liner over prepared surfaces to ensure minimum handling. Install according to Shop Drawings and in compliance with geomembrane liner manufacturer's written instructions. Begin placing geomembrane liner at Project's upwind direction and proceed downwind. Install geomembrane liner in a relaxed condition, free from stress and with minimum wrinkles, and in full contact with subgrade. Do not bridge over voids or low areas in the subgrade. Fit closely and seal around inlets, outlets, and other projections through geomembrane liner. Permanently secure edges.
- E. Field Seams: Comply with geomembrane liner and floating cover manufacturer's written instructions. Form seams by lapping edges of panels 2 to 4 inches unless instructions require a larger overlap. Wipe contact surfaces clean and free of dirt, dust, moisture, and other foreign materials. Use solvent-cleaning methods and grind geomembrane seam surfaces if recommended by geomembrane liner manufacturer. Proceed with seaming at required temperatures for materials and ambient conditions. Continuously bond sheet to sheet to construct single or double seams of width recommended for method of seaming used. Seal or fuse free seam edges. Inspect seams and reseal voids.
 - 1. Adhesive Bonding: Apply bonding cement to both contact surfaces in seam area and press together immediately, or use other seaming methods as instructed by geomembrane liner manufacturer. Roll to press surfaces together, to distribute adhesive to leading edges of panels, and to remove wrinkles and fishmouths. Remove excess adhesive.
 - 2. Thermal Bonding: Use thermal-welding technique recommended by geomembrane liner manufacturer. Apply pressure to smoothly bond surfaces together. Examine for and patch wrinkles and fishmouths.
- F. Installation in Anchor Trench: Install geomembrane liner in trench according to manufacturer's written instructions. Backfill and compact to lock liner into trench.
- G. Liner Repairs: Repair tears, punctures, and other imperfections in geomembrane liner field and seams using patches of geomembrane liner material, liner-to-liner bonding materials, and bonding methods according to geomembrane liner manufacturer's written instructions. Apply bonding solvent or weld to contact surfaces of both patch and geomembrane liner, and press together immediately. Roll to remove wrinkles.
- H. Field Quality Control:
 - 1. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
 - 2. Nondestructive Testing: Visually inspect seams and patches. Comply with ASTM D 4437 for Air Lance Test, Vacuum Box Testing, or Ultrasonic (High Frequency) Pulse Echo Testing or with GRI Test Method GM6, as applicable to geomembrane liner and seam construction. Record locations of failed seams and patches. Individually number and date occurrences and details of leak and remedial action. Repair leaking seams and patches.

3. Prepare test and inspection reports.
- I. Disinfection:
 1. Disinfect the complete installation according to procedures in AWWA C652.
- J. Protection:
 1. Protect installed geomembrane liner according to manufacturer's written instructions. Repair or replace areas of geomembrane liner damaged by scuffing, punctures, traffic, rough subgrade, or other unacceptable conditions.
 2. Before initial filling of pond or placement of earth cover, inspect seams and patched areas to ensure tight, continuously bonded installation. Repair damaged geomembrane and seams and reinspect repaired work.

3.9 STORMWATER TREATMENT DEVICES

- A. **The contractor shall exercise care in the storage and handling of the SWTD components prior to and during installation. Any repair or replacement costs associated with events occurring after delivery is accepted and unloading has commenced shall be borne by the contractor.**
- B. **Excavation, bedding, backfill and compaction for the structure shall be as specified in Section 31 00 00, EARTHWORK.**
- C. **The structure shall be watertight upon the completion of the installation.**
- D. **The SWTD shall be installed in accordance with the manufacturer's recommendations and related sections of the contract documents. The manufacturer shall provide the contractor installation instructions and offer on-site guidance during the important stages of the installation as identified by the manufacturer at no additional expense. A minimum of 72 hours notice shall be provided to the manufacturer prior to their performance of the services included under this subsection.**
- E. **The contractor shall fill all voids associated with lifting provisions provided by the manufacturer. These voids shall be filled with non-shrinking grout providing a finished surface consistent with adjacent surfaces. The contractor shall trim all protruding lifting provisions flush with the adjacent concrete surface in a manner, which leaves no sharp points or edges.**
- F. **The contractor shall removal all loose material and pooling water from the SWTD prior to the transfer of operational responsibility to the Owner.**

3.10 MEMBRANE FILTRATION SYSTEM

- A. **Handling and Storage: Prevent damage to materials during storage and handling.**
- B. **Precast Concrete Structure: The installation of the precast concrete device should conform to ASTM C891 and to any state highway, municipal or local specification for the installation of underground precast concrete structures, whichever is more stringent. Selected sections of a general specification that are applicable are summarized below.**
 1. **The precast concrete device is installed in sections in the following sequence:**

- a. aggregate base
 - b. base slab
 - c. treatment chamber and cartridge deck riser section(s)
 - d. bypass section
 - e. connect inlet and outlet pipes
 - f. concrete riser section(s) and/or transition slab (if required)
 - g. maintenance riser section(s) (if required)
 - h. frame and access cover
2. The precast base should be placed level at the specified grade. The entire base should be in contact with the underlying compacted granular material. Subsequent sections, complete with joint seals, should be installed in accordance with the precast concrete manufacturer's recommendations.
 3. Adjustment of the membrane filtration system can be performed by lifting the upper sections free of the excavated area, re-leveling the base, and re-installing the sections. Damaged sections and gaskets should be repaired or replaced as necessary to restore original condition and seals. Once the membrane filtration system has been constructed, any/all lift holes must be plugged with mortar or non-shrink grout.
- C. **Inlet and Outlet Pipes:** Inlet and outlet pipes should be securely set into the device using approved pipe seals (flexible boot connections, where applicable), and such that any pipe intrusion into the device does not impact the device functionality.
- D. **Frame and Cover Installation:** Adjustment units (e.g. grade rings) should be installed to set the frame and cover at the required elevation. The adjustment units should be laid in a full bed of mortar with successive units being joined using sealant recommended by the manufacturer. Frames for the cover should be set in a full bed of mortar at the elevation specified.
- E. In some instances, the Maintenance Access Wall, if provided, shall require an extension attachment and sealing to the precast wall and cartridge deck at the job site, rather than at the precast facility. In this instance, installation of these components shall be performed according to instructions provided by the manufacturer.
- F. Filter cartridges shall be installed in the cartridge deck in accordance with the manufacturer's guidelines and recommendations. Contractor to contact the manufacturer to schedule cartridge delivery and review procedures/requirements to be completed to the device prior to installation of the cartridges and activation of the system.
- G. Manufacturer shall coordinate delivery of filter cartridges and other internal components with contractor. Filter cartridges shall be installed after site is stabilized and/or unit is isolated from construction influent and ready to accept cartridges. Unit is ready to accept cartridges after it has been cleaned out and any standing water, debris, and other materials have been removed. Contractor shall take appropriate action to protect the filter cartridge receptacles and filter cartridges from damage during construction, and in accordance with the manufacturer's recommendations and guidance. For

systems with cartridges installed prior to full site stabilization, the contractor shall plug inlet and outlet pipes to prevent stormwater and other influent from entering the device. Plugs are to be removed once the site is stabilized and unit is ready to receive stormwater runoff.

- H. Durability of membranes are subject to good handling practices during inspection and maintenance (removal, rinsing, and reinsertion) events, and site-specific conditions that may have heavier or lighter loading onto the cartridges, and pollutant variability that may impact the membrane structural integrity. Membrane maintenance and replacement shall be in accordance with manufacturer's recommendations.
- I. Inspection, which includes trash and floatables collection, sediment depth determination, and visible determination of backwash pool depth; shall be easily conducted from grade (outside the structure).
- J. Manual rinsing of the reusable filter cartridges shall promote restoration of the flow capacity and sediment capacity of the filter cartridges, extending cartridge service life.
- K. The filter device shall have a minimum 12 inches of sediment storage depth, and a minimum of 12 inches between the top of the sediment storage and bottom of the filter cartridge tentacles, unless otherwise specified. Variances may have an impact on the total performance and/or longevity between cartridge maintenance/replacement of the device.
- L. Sediment removal from the filter treatment device shall be able to be conducted using a standard maintenance truck and vacuum apparatus, and a minimum one point of entry to the sump that is unobstructed by filter cartridges.
- M. Maintenance access shall have a minimum clear height over all of the filter cartridges (length of cartridge + 6 inches) or be accessible by a hatch or other mechanism that provides vertical clear space over all of the filter cartridges such that the cartridges can be lifted straight vertically out of the receptacles and deck for the entire length of the cartridge.
- N. Filter cartridges shall be able to be maintained without the use of additional lifting equipment.
- ~~2-O.~~ The manufacturer shall provide a system specific Operation and Maintenance Plan for delivery to the Owner.

End of Section

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Soil Erosion and Sediment Control Plan

For:

Central Falls High School

10 Higginson Avenue

Central Falls, RI 02863

Plat 9, Lots 26, 50, & 203

Owner:

City of Central Falls

Jim Vandermillen

City Hall, 580 Broad Street

Central Falls RI 02863

(401) 727-4200

jvandermillen@centralfallsri.us

Operator:

*TO BE DETERMINED UPON
CONTRACT AWARD*

Company Name

Name

Address

City, State, Zip Code

Telephone Number

Email Address

Estimated Project Dates:

Start Date: April 2024

Completion Date: September 2025

SESC Plan Prepared By:

The Vertex Companies, LLC

Andrew Chagnon, PE #7858

100 N. Washington Street, Suite 302

Boston, MA 02114

(781) 952-6022

achagnon@vertexeng.com

SESC Plan Preparation Date:

December 8, 2023

SESC Plan Revision Date:

OPERATOR CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under the direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I am aware that it is the responsibility of the owner/operator to implement and amend the Soil Erosion and Sediment Control Plan as appropriate in accordance with the requirements of the RIPDES Construction General Permit.

Operator Signature:

Date

Contractor Representative: TBD

Contractor Title: Title

Contractor Company Name: Company Name (if applicable)

Address: Mailing Address

Phone Number: Phone Number

Email Address: Email

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INTRODUCTION

This Construction Site Soil Erosion and Sediment Control Plan (SESC Plan) has been prepared for the City of Central Falls for the Central Falls High School project. In accordance with the RIDEM Rhode Island Pollutant Discharge Elimination System (RIPDES) General Permit for Stormwater Discharge Associated with Construction Activity (RIPDES Construction General Permit (“CGP”)), projects that disturb one (1) or more acres require the preparation of a SESC Plan. This SESC Plan provides guidance for complying with the terms and conditions of the RIPDES Construction General Permit and Minimum Standard 10 of the RI Stormwater Design and Installation Standards Manual. In addition, this SESC Plan is also consistent with Part D of the *RI SESC Handbook* entitled “Soil Erosion and Sediment Control Plans”. This document does not negate or eliminate the need to understand and adhere to all applicable RIPDES regulations.

The purpose of erosion, runoff, and sedimentation control measures is to prevent pollutants from leaving the construction site and entering waterways or environmentally sensitive areas during and after construction. This SESC Plan has been prepared prior to the initiation of construction activities to address anticipated worksite conditions. The control measures depicted on the site plan and described in this narrative should be considered the minimum measures required to control erosion, sedimentation, and stormwater runoff at the site. Since construction is a dynamic process with changing site conditions, it is the operator’s responsibility to manage the site during each construction phase so as to prevent pollutants from leaving the site. This may require the operator to revise and amend the SESC Plan during construction to address varying site and/or weather conditions, such as by adding or realigning erosion or sediment controls to ensure the SESC Plan remains compliant with the RIPDES Construction General Permit. Records of these changes must be added to the amendment log attached to the SESC Plan, and to the site plans as “red-lined” drawings. Please Note: **Even if practices are correctly installed on a site according to the approved plan, the site is only in compliance when erosion, runoff, and sedimentation are effectively controlled throughout the entire site.**

It is the responsibility of the site owner and the site operator to maintain the SESC Plan at the site, including all attachments, amendments and inspection records, and to make all records available for inspection by RIDEM during and after construction. (RIPDES CGP - Part III.G)

The site owner, the site operator, and the designated site inspector are required to review the SESC Plan and sign the Party Certification pages (Section 8). The primary contractor (if different) and all subcontractors (if applicable) involved in earthwork or exterior construction activities are also required to review the SESC Plan and sign the certification pages before construction begins.

Any questions regarding the SESC Plan, control measures, inspection requirements, or any other facet of this document may be addressed to the RIDEM Office of Water Resources, at 401-222-4700 or via email: water@dem.ri.gov.

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ADDITIONAL RESOURCES

Rhode Island Department of Environmental Management
Office of Water Resources
235 Promenade Street
Providence, RI 02908-5767
phone: 401-222-4700
email: water@dem.ri.gov

RIDEM *RI Stormwater Design and Installation Standards Manual* (RISDISM) (as amended)
<http://www.dem.ri.gov/pubs/regs/regs/water/swmanual15.pdf>

RI Soil Erosion and Sediment Control Handbook <http://www.dem.ri.gov/soilerosion2014final.pdf>
RIDEM 2013 RIPDES Construction General Permit
<http://www.dem.ri.gov/pubs/regs/regs/water/ripdesca.pdf>
Rhode Island Department of Transportation
Standard Specifications for Road and Bridge Design and Other Specifications and *Standard Details*
<http://www.dot.ri.gov/business/bluebook.php>

RIDEM Office of Water Resources Coordinated Stormwater Permitting website
<http://www.dem.ri.gov/programs/water/permits/ripdes/stormwater/coordinated-stormwater-permitting.php>
RIDEM RIPDES Stormwater website
<http://www.dem.ri.gov/programs/water/permits/ripdes/stormwater/>
RIDEM Water Quality website (for 303(d) and TMDL listings)
<http://www.dem.ri.gov/programs/water/quality/>

RIDEM Rhode Island Natural Heritage Program <mailto:plan@dem.ri.gov>

RIDEM Geographic Data Viewer – Environmental Resource Map
<http://www.dem.ri.gov/maps/>

Natural Resources Conservation Service - Rhode Island Soil Survey Program
<http://www.ri.nrcs.usda.gov/technical/soils.html>

Note:

The *Soil Survey of Rhode Island*, issued in 1980 is no longer available or supported. More information on site-specific soil data and maps for Rhode Island is available from the Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture through the Web Soil Survey. This information is available online at: <http://websoilsurvey.nrcs.usda.gov>.

EPA NPDES – Stormwater Discharges from Construction Activities webpage:
<http://water.epa.gov/polwaste/npdes/stormwater/Stormwater-Discharges-From-Construction-Activities.cfm>

EPA Construction Site Stormwater Runoff Control BMP Menu
<http://water.epa.gov/polwaste/npdes/swbmp/Construction-Site-Stormwater-Run-Off-Control>.

SECTION 1: SITE DESCRIPTION

1.1 *Project/Site Information*

Project/Site Name:

- Central Falls High School
- The project involves the construction of a new high school, associated site improvements, and stormwater infrastructure improvements.

Project Street/Location:

- 10 Higginson Avenue, Central Falls, RI 02863
- See Appendix A for Locus Plan

The following are estimates of the construction site area:

- Total Project Area 12.65 acres
- Total Project Area to be Disturbed 11.95 acres

1.3 *Natural Heritage Area Information*

RIPDES CGP - Part III.H

Are there any Natural Heritage Areas being disturbed by the construction activity or will discharges be directed to the Natural Heritage Area as a result of the construction activity?

Yes No

If yes, describe or refer to documentation which determines the likelihood of an impact on this area and the steps that will be taken to address any impacts.

- Not applicable

1.4 *Historic Preservation/Cultural Resources*

Are there any historic properties, historic cemeteries or cultural resources on or near the construction site?

Yes No

Describe how this determination was made and summarize state or tribal review comments:

- Confirmation by the RI Historical Preservation and Heritage Commission

If yes, describe or refer to documentation which determines the likelihood of an impact on this historic property, historic cemetery or cultural resource and the steps taken to address that impact including any conditions or mitigation measures that were approved by other parties.

- Not applicable.

SECTION 2: EROSION, RUNOFF, AND SEDIMENT CONTROL

RIPDES Construction General Permit – Part III.J.1

The purpose of erosion controls is to prevent sediment from being detached and moved by wind or the action of raindrop, sheet, rill, gully, and channel erosion. Properly installed and maintained erosion controls are the primary defense against sediment pollution.

Runoff controls are used to slow the velocity of concentrated water flows. By intercepting and diverting stormwater runoff to a stabilized outlet or treatment practice or by converting concentrated flows to sheet flow erosion and sedimentation are reduced.

Sediment controls are the last line of defense against moving sediment. The purpose is to prevent sediment from leaving the construction site and entering environmentally sensitive areas.

This section describes the set of control measures that will be installed before and during the construction project to avoid, mitigate, and reduce impacts associated with construction activity. Specific control measures and their applicability are contained in Section Four: Erosion Control Measures, Section Five: Runoff Control Measures, and Section Six: Sediment Control Measures of the *RI SESC Handbook*. The *RI SESC Handbook* can be found at the following address:

<http://www.dem.ri.gov/soilerosion2014final.pdf>

2.1 Avoid and Protect Sensitive Areas and Natural Features

Areas of existing and remaining vegetation and areas that are to be protected as identified in the Section 1.6 of the SESC Plan must be clearly identified on the SESC Site Plans for each Phase of Construction. Prior to any land disturbance activities commencing on the site, the Contractor shall physically mark limits of disturbance (LOD) on the site and any areas to be protected within the site, so that workers can clearly identify the areas to be protected.

The site of the new Central Falls High School is located in an urban area and has been previously developed with several structures, athletic facilities, and associated paved parking facilities. Features requiring protection include existing vegetation along the eastern and western property boundaries (view barrier), steep slopes along the eastern property boundary, and the Jurisdictional Area associated with a pond/wetland system south of the site. The project proposes to maintain the vegetative view barriers along the western property boundary; install permanent fencing along the toe of the steep slope along the eastern property boundary; and restore the disturbed portion of the Jurisdictional Area in-kind with loam and seed. Areas of existing vegetation to be maintained are identified on the Site Plans. It should be noted that work around the existing western vegetation will be required to cap the site in accordance with its Remedial Action Work Plan.

Sensitive Areas and Natural Features are shown on the Site Plans.

- Existing vegetation along the western property boundary will be protected with mesh fence. This vegetation is comprised of evergreen shrubs, approximately 8 feet tall, which provide a visual barrier with the adjacent property. The exception to this protection will be for environmental capping purposes, where the mesh fence will be temporarily removed to install geotextile fabric and crushed stone in accordance with the capping requirements outlined in the property's Remedial Action Work Plan.
- Existing vegetation and steep slopes along the eastern property boundary will be protected with permanent chain link fence in accordance with the capping requirements outlined in the property's Remedial Action Work Plan.

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- The Jurisdictional Area associated with a pond/wetland system south of the property is currently comprised of a grassed athletic field. In the proposed condition, this area will be graded and restores in-kind with seed.
- Areas of proposed infiltration practices are currently paved. Upon the start of excavation for infiltration practice installation, the area shall be staked off and vehicular traffic shall be prohibited.

2.2 Minimize Area of Disturbance

Will >5 acres be disturbed in order to complete this project?

Yes No

Will <5 acres be disturbed or will disturbance activities be completed within a six (6) month window?

Yes No

The project will be constructed in phases.

Based on the answers to the above questions will phasing be required for this project?

Yes No

PHASING PLAN

The following are estimates of each phase of the construction project:

Phase No. or Identifier	Phase I: Basketball Court Installation
Total Area of Phase	0.53 acres
Area to be Disturbed	0.53 acres

Phase No. or Identifier	Phase II: Culvert Installation
Total Area of Phase	1.90 acres
Area to be Disturbed	1.90 acres

Phase No. or Identifier	Phase III: Remaining Site Work
Total Area of Phase	10.22 acres
Area to be Disturbed	9.52 acres

Description of Construction Phases:

- Phase I includes construction of new basketball courts as shown on SESC Site Plans
- Phase II includes construction of a new drainage culvert as shown on SESC Site Plans
- Phase III includes construction of the new school building and associated site improvements as shown on SESC Site Plans

Proper sequencing of construction activities is essential to maximize the effectiveness of erosion, runoff, and sediment control measures. Construction sequencing and timing of construction activities will include:

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1. Erosion, runoff, and sediment controls and temporary pollution prevention measures shall be installed prior to the start of earth disturbing activity. This shall be done in accordance with the RI SESC Handbook and/or the RI Department of Transportation Standard Specifications for Road and Bridge Construction (as amended). Upon acceptable completion of site preparation and installation of erosion, runoff, and sediment controls and temporary pollution prevention measures, site construction activities may commence.
2. Upon commencement of site construction activities, the operator shall initiate appropriate stabilization practices on all disturbed areas as soon as possible, but not more than fourteen (14) days after the construction activity in that area has temporarily or permanently ceased. Such temporary or permanent soil stabilization measures must be installed prior to initiating land disturbance in subsequent phases.
3. Upon commencement of site construction activities, the operator shall initiate appropriate stabilization practices on all disturbed areas as soon as possible, but not more than fourteen (14) days after the construction activity in that area has temporarily or permanently ceased. Such temporary or permanent soil stabilization measures must be installed prior to initiating land disturbance in subsequent phases.
4. Routine inspection and maintenance and/or modification of erosion, runoff, and sediment controls and temporary pollution prevention measures while earthwork is ongoing is required.
5. Final site stabilization of any disturbed areas after earthwork has been completed and removal of temporary erosion, runoff, and sediment controls and temporary pollution prevention measures.
6. Activation of post-construction stormwater treatment conveyances and practices.

BEFORE EARTHWORK

- Perimeter erosion controls (including silt fence and straw bales) to be installed in all areas downstream of the site
- Inlet protection measure to be installed in any existing catch basins receiving flow from the project site.
- A stone construction entrance and truck wash station will be provided for all traffic entering and exiting the project site.
- Qualified pervious areas will be protected from compaction during construction.

DURING EARTHWORK

- All perimeter erosion control and inlet protection devices shall be inspected and maintained throughout earthwork.
- Water shall be used for dust control
- Temporary stabilization will be provided for any unstable area prior to final stabilization.

FINAL STABILIZATION

- Upon final stabilization, perimeter erosion controls and any remaining inlet protection shall be removed.
- Prior to acceptance, all installed stormwater management systems will be cleaned of sediment.
- Temporary stabilization shall be removed and vegetation shall be established.

2.3 Minimize the Disturbance of Steep Slopes

Are steep slopes (>15%) present within the proposed project area?

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Yes No

Steep slope areas are identified on the SESC Site Plans. Only a small area of the vegetated steep slopes are proposed for disturbance. The Contractor shall implement land grading techniques such as reverse slope benches, diversions, stair steps, and terraced landform in this location. Once work is complete in this area, vegetation shall be used to stabilize slope. Seeding mixture for application should be chosen from Table 4-1 of the RI SESC Handbook. Soil should be loosened in areas that have been compacted to 2 inches before applying fertilizer and seed.

2.4 *Preserve Topsoil*

Site owners and operators must preserve existing topsoil on the construction site to the maximum extent feasible and as necessary to support healthy vegetation, promote soil stabilization, and increase stormwater infiltration rates in the post-construction phase of the project.

Will existing topsoil be preserved at the site?

Yes No

The property is subject to a Remedial Action Work Plan due to existing subsurface soil conditions. Development of the property requires that all existing soil remaining on site be capped or removed from access by the public in accordance with the Remedial Action Work Plan.

Soil compaction must be minimized by maintaining limits of disturbance throughout construction. In instances where site soils are compacted the site owner and operator must restore infiltration capacity of the compacted soils by tilling or scarifying compacted soils and amending soils as necessary to ensure a minimum depth of topsoil is available in these areas. In areas where infiltrating stormwater treatment practices are located compacted soils must be amended such that they will comply the design infiltration rates established in the *RI Stormwater Design and Installation Standards Manual*.

2.5 *Stabilize Soils*

Upon completion and acceptance of site preparation and initial installation of erosion, runoff, and sediment controls and temporary pollution prevention measures, the operator shall initiate appropriate temporary or permanent stabilization practices during all phases of construction on all disturbed areas as soon as possible, but not more than fourteen (14) days after the construction activity in that area has temporarily or permanently ceased.

Any disturbed areas that will not have active construction activity occurring within 14 days must be stabilized using the control measures depicted in the SESC Site Plans, in accordance with the *RI SESC Handbook*, and per manufacturer product specifications.

Only areas that can be reasonably expected to have active construction work being performed within 14 days of disturbance will be cleared/grubbed at any one time. It is NOT acceptable to clear and grub the entire construction site if portions will not be active within the 14-day time frame. Proper phasing of clearing and grubbing activities shall include temporary stabilization techniques for areas cleared and grubbed that will not be active within the 14-day time frame.

All disturbed soils exposed prior to October 15 of any calendar year shall be seeded by that date if vegetative measures are the intended soil stabilization method. Any such areas that do not have adequate vegetative stabilization, as determined by the site operator or designated inspector, by November 15, must be stabilized through the use of non-vegetative erosion control measures. If work continues within any of these areas during the period from October 15 through April 15, care must be taken to ensure that only the area required for that day's work is exposed, and all erodible soil must be restabilized within 5 working days. In limited circumstances, stabilization may not be required if the intended function of a specific area of the site necessitates that it remain disturbed (i.e. construction of a motocross track).

Clearing/Grubbing shall not take place during a rain event if erosion is likely to occur; nor shall it occur if a rain event is forecasted, and appropriate erosion controls cannot be installed prior to the storm.

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After clearing, and by the end of each day's grubbing operation, the site operator shall install erosion control measures that are indicated on the Plans or as directed by the Engineer. Such erosion control measures shall be in strict accordance with the RI Soil Erosion and Sediment Control Handbook (as amended).

Temporary Vegetative Control Measures

- Vegetation shall be used to stabilize mild slopes (<15%). Seeding mixture for application should be chosen from Table 4-1 of the RI SESC Handbook. Soil should be loosened in areas that have been compacted to 2 inches before applying fertilizer and seed.

Temporary Non-Vegetative Control Measures

- Riprap can be utilized to stabilize steep slopes (>15%). Riprap shall be installed at a thickness of 1.5 times the maximum stone diameter. For slope stabilization riprap shall be installed keyed as shown in figure 6H-1 of the RI SESC Handbook. It is anticipated that use of this technique will be limited to the small area of steep slope to be disturbed at the northeastern boundary of the property.

Permanent Vegetative Control Measures

- Permanent vegetative control measures include a combination of seeding, planting and mulching in landscaped and athletic areas.

Permanent Non-Vegetative Control Measures

- Permanent non-vegetative control measures include the following:
 - Riprap shall be installed at a thickness of 1.5 times the maximum stone diameter at drainage outlets to dissipate velocity. This technique will be utilized at the southern portion of the property.
 - Crushed stone shall be installed around existing vegetation along the western property boundary as an alternate capping measure in accordance with the Remedial Action Work Plan.

2.6 Protect Storm Drain Outlets

Temporary or permanent outlet protection must be used to prevent scour and erosion at discharge points through the protection of the soil surface, reduction in discharge velocities, and through the promotion of infiltration. Outlets often have high velocity, high volume flows, and require strong materials that will withstand the forces of stormwater. Storm drain outlet control measures also offer a last line of protection against sediment entering environmentally sensitive areas.

All stormwater outlets that may discharge sediment-laden stormwater flow from the construction site must be protected using the control practices depicted on the approved plan set and in accordance with the *RI SESC Handbook*.

Will temporary or permanent point source discharges be generated at the site as the result of construction of sediment traps or basins, diversions, and conveyance channels?

Yes No

Aprons shall be provided at outlets in order to prevent erosive flows from exiting the site. Riprap shall be installed at outlets to dissipate the velocity and promote sheet flow. Aprons shall be designed to meet specifications in the RI SESC Handbook. Aprons shall have a width of minimum 3 times as wide as the culvert width.

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2.7 Establish Temporary Controls for the Protection of Post-Construction Stormwater Treatment Practices

Temporary measures shall be installed to protect permanent or long-term stormwater control and treatment measures as they are installed and throughout the construction phase of the project so that they will function properly when they are brought online.

Will long-term stormwater treatment practices be installed at the site?

Yes No

- **Qualified Pervious Areas:** These areas shall be protected from compaction during construction. Materials shall not be stockpiled in these locations and temporary sedimentation basins shall not be installed in these areas. If these areas are compacted, the ground shall be scarified to a minimum depth of 6" prior to final stabilization of the area.
- **Underground Infiltration System:** The subsoils below underground infiltration systems (i.e. perimeter manifold system for field) will be protected from machinery loads and compaction. The bottom surface will be scarified to a depth of no less than 6" to improve hydraulic conductivity.

2.8 Divert or Manage Run-on from Up-gradient Areas

Is stormwater from off-site areas anticipated to flow onto the project area or onto areas where soils will be disturbed?

Yes No

Drainage Patterns:

- **Existing:** Stormwater sheet flows and enters the Site from the slope along the eastern property boundary and enters closed drainage conveyance system of catch basins and manholes that discharge the runoff to the on-site combined sewer. Additionally, stormwater flows to the municipal stormwater drainage systems on Higginson Avenue and Lonsdale Avenue and discharge to the on-site combined sewer.
- **Proposed:** Stormwater draining over the site and along the adjacent rights-of-way in the proposed conditions is collected via a closed drainage system which infiltrates into groundwater or discharges to the existing drainage swale at the southeast corner of the site.

Pre-Construction and Construction sub-watershed maps are included with the Stormwater Analysis and Design Report under separate cover.

Structural control measures will be used to limit stormwater flow from coming onto the project area, and to divert and slow on-site stormwater flow that is expected to impact exposed soils for the purpose of minimizing erosion, runoff, and the discharge of pollutants from the site.

- **Diversions** may be used during construction to manage stormwater runoff prior to final installation of the proposed system. If channels are utilized they should be designed in accordance with the RI Soil Erosion and Sediment Control Handbook. At a minimum they shall be designed for the 2 year storm, minimum depth of 1.9', and width of 12' (for 10cfs). The discharge point of diversions shall be stable and convey water to a disposal point where damage will not result.
- **Should temporary sediment traps** be required during construction these shall be designed, installed, inspected, maintained, and removed by the contractor in accordance with requirements

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for Sediment Traps as set forth in Section six of the current RISESCH. Temporary sediment traps shall not be installed in proposed Qualified Pervious Areas.

- The Contractor shall provide bypass pumping during relocation of existing municipal drainage and combined sewer connections. Bypass pumping systems shall be equipped with primary and backup capacity at all times. At a minimum they shall be designed for the 25-year storm.

2.9 Retain Sediment Onsite through Structural and Non-Structural Practices

SEDIMENT BARRIERS must be installed along the perimeter areas of the site that will receive stormwater from disturbed areas. This also may include the use of sediment barriers along the contour of disturbed slopes to maintain sheet flow and minimize rill and gully erosion during construction. Installation and maintenance of sediment barriers must be completed in accordance with the maintenance requirements specified by the product manufacturer or the *RI SESC Handbook*.

Will sediment barriers be utilized at the toe of slopes and other downgradient areas subject to stormwater impacts and erosion during construction?

Yes No

Will sediment barriers be utilized along the contour of slopes to maintain sheet flow and minimize rill and gully erosion during construction?

Yes No

- Perimeter control practices shall be installed downstream of all disturbed site areas. Perimeter controls include silt fence, straw bales and/or silt sock. All measures shall be installed in a 4'-6" excavated trench. Silt fence shall be installed with wooden stakes maximum 10' apart and synthetic filter fabric. Straw bales and silt sock shall be staked twice in each bale.

INLET PROTECTION will be utilized to prevent soil and debris from entering storm drain inlets. These measures are usually temporary and are implemented before a site is disturbed. ALL stormwater inlets &/or catch basins that are operational during construction and have the potential to receive sediment-laden stormwater flow from the construction site must be protected using control measures outlined in the *RI SESC Handbook*.

For more information on inlet protection refer to the *RI SESC Handbook*, Inlet Protection control measure.

Maintenance

The operator must clean, or remove and replace the inlet protection measures as sediment accumulates, the filter becomes clogged, and/or as performance is compromised. Accumulated sediment adjacent to the inlet protection measures should be removed by the end of the same work day in which it is found or by the end of the following work day if removal by the same work day is not feasible.

Do inlets exist adjacent to or within the project area that require temporary protection?

Yes No

- Storm Drain inlets in unpaved locations shall be protected using silt sock staked straw bales (or other perimeter sediment control barrier) surrounding the inlet, or silt sack inserts to the catch basin.
- Storm Drain inlets in paved areas shall be protected with catch basin inserts.

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CONSTRUCTION ENTRANCES will be used in conjunction with the stabilization of construction roads to reduce the amount of sediment tracking off the project. This project has avoided placing construction entrances on poorly drained soils where possible. Where poorly drained soils could not be eliminated, the detail includes subsurface drainage.

Any construction site access point must employ the control measures on the approved SESC site plans and in accordance with the *RI SESC Handbook*. Construction entrances shall be used in conjunction with the stabilization of construction roads to reduce the amount of mud picked up by construction vehicles. All construction access roads shall be constructed prior to any roadway accepting construction traffic.

The site owner and operator must:

1. Restrict vehicle use to properly designated exit points.
2. Use properly designed and constructed construction entrances at all points that exit onto paved roads so that sediment removal occurs prior to vehicle exit.
3. When and where necessary, use additional controls to remove sediment from vehicle tires prior to exit (i.e. wheel washing racks, rumble strips, and rattle plates).
4. Where sediment has been tracked out from the construction site onto the surface of off-site streets, other paved areas, and sidewalks, the deposited sediment must be removed by the end of the same work day in which the track out occurs. Track-out must be removed by sweeping, shoveling, or vacuuming these surfaces, or by using other similarly effective means of sediment removal.

Will construction entrances be utilized at the proposed construction site?

Yes No

- Stone construction entrances shall be installed at all access points for construction vehicles. The Contractor shall relocate stone construction entrances as necessary to facilitate construction. A stone stabilization pad shall be installed in the location not less than 4" thick, 24' wide, and 50' long. Wheel washing may need to occur prior to exiting of the project site if the gravel does not provide adequate removal of mud from vehicle tires.

STOCKPILE CONTAINMENT will be used onsite to minimize or eliminate the discharge of soil, topsoil, base material or rubble, from entering drainage systems or surface waters. All stockpiles must be located within the limit of disturbance, protected from run-on with the use of temporary sediment barriers and provided with cover or stabilization to avoid contact with precipitation and wind where and when practical.

Stock pile management consists of procedures and practices designed to minimize or eliminate the discharge of stockpiled material (soil, topsoil, base material, rubble) from entering drainage systems or surface waters.

For any stockpiles or land clearing debris composed, in whole or in part, of sediment or soil, you must comply with the following requirements:

1. Locate piles within the designated limits of disturbance.
2. Protect from contact with stormwater (including run-on) using a temporary perimeter sediment barrier.
3. Where practicable, provide cover or appropriate temporary vegetative or structural stabilization to avoid direct contact with precipitation or to minimize sediment discharge.

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4. **NEVER** hose down or sweep soil or sediment accumulated on pavement or other impervious surfaces into any stormwater conveyance, storm drain inlet, or surface water.
5. To the maximum extent practicable, contain and securely protect from wind.

- Materials expected to be stored on site: extra perimeter erosion controls, earthwork material (loam, gravel, etc.), drainage and utility pipe and structures, miscellaneous metals and other non-erodible building materials.
- Earthwork materials stockpiles will be protected with cover lining to prevent sediment from being carried downstream.

CONSTRUCTED SEDIMENT STRUCTURES

TEMPORARY SEDIMENT TRAPS will be utilized onsite. There will be no disturbed drainage areas greater than one acre that will be exposed for longer than six months. Design and sizing calculations in accordance with the *RI SESC Handbook*, Section Six are found in __Insert Text__ of this SESC Plan. A summary of the calculations are provided below:

Are temporary sediment traps required at the site?

- Yes No

SEDIMENT TRAPS			
Construction Phase #	Exposed Area (acres)	Trap #	Sheet #
III	1.93	1	SESC Site Plan
III	1.21	2	SESC Site Plan

Trap #	Wet Storage Volume (cu.ft)	Dry Storage Volume (cu.ft.)	Provide Reference to Location of Supporting Design and Sizing Calculations
1	3570 CF	3744	SESC Attachment H
2	2337 CF	2205 CF	SESC Attachment H

All traps will be functional and installed prior to disturbance in the contributing drainage area. Access for sediment removal is provided on the plans with cleanout depth requirements. The removed sediment will be utilized onsite or disposed of properly off-site.

TEMPORARY SEDIMENT BASIN(S) will be utilized onsite. Every effort must be made to prevent erosion and control it near the source.

Are temporary sediment basins required at the site?

- Yes No

- For Disturbed Areas of 1 to 5 Acres – Areas with a common drainage location that serves an area between one (1) and five (5) acres are not anticipated disturbed at one time for longer than six (6) months.
- For Disturbed Areas > 5 Acres – Areas with a common drainage location that serves an area with greater than five (5) acres are not anticipated to be disturbed at one time.

Soil Erosion and Sediment Control Plan
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2.10 Properly Design Constructed Stormwater Conveyance Channels

Are temporary stormwater conveyance practices required in order to properly manage runoff within the proposed construction project?

Yes No

The conveyance will be maintained as depicted on SESC Site Plans and in accordance with the *RI SESC Handbook* and if applicable.

Temporary sediment basins and conveyance practices are not anticipated on this project.

2.11 Erosion, Runoff, and Sediment Control Measure List

It is expected that this table and corresponding Inspection Reports will be amended as needed throughout the construction project as control measures are added or modified.

Location/Station	Control Measure Description/Reference	Maintenance Requirement	Phase
Perimeter	Compost Filter Sock. Chapter Five, Section F, <i>RI Soil Erosion and Sediment Control Handbook</i>.	Page 5-12 Inspection should be made after each storm event and repair or replacement should be made promptly as needed. Page 5-12 Cleanout of accumulated sediment behind the bales is necessary if ½ of the original height of the bales becomes filled in with sediment.	All Phases
Diversions	Chapter 6, Section B – Diversion (DV), <i>RI Soil Erosion and Sediment Control Handbook</i>.	Page 6-19 Before stabilization, the diversions should be inspected after every rainfall. Sediment shall be removed and repairs made as necessary. Seeded areas which fail to establish a vegetative cover shall be reseeded as necessary. Repair bare or eroded areas immediately, reseed and mulch. Exclude vehicular traffic except for maintenance.	All Phases
Inlet Protection	Chapter Five, Section I – Storm Drain Protection (SD), <i>RI Soil Erosion and</i>	Page 5-23 Sediment shall be removed and the trap restored to its	All Phases

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	<p><i>Sediment Control Handbook.</i></p>	<p>original dimensions when the sediment has accumulated to ½ the design depth of the trap. Removed Sediment shall be deposited in a suitable area and in such a manner that it will not erode.</p>	
<p>Outlet Protection</p>	<p>Chapter Six, Section F – Outlet Protection (OP), <i>RI Soil Erosion and Sediment Control Handbook.</i></p>	<p>Page 6-62 Inspect outlets for clogging. Any accumulated sediment shall be removed from the outlet prior to final stabilization.</p>	<p>All Phases</p>

SECTION 3: CONSTRUCTION ACTIVITY POLLUTION PREVENTION

The purpose of construction activity pollution prevention is to prevent day to day construction activities from causing pollution.

This section describes the key pollution prevention measures that must be implemented to avoid and reduce the discharge of pollutants in stormwater. Example control measures include the proper management of waste, material handling and storage, and equipment/vehicle fueling/washing/maintenance operations.

Where applicable, include *RI SESC Handbook* or the *RI Department of Transportation Standard Specifications for Road and Bridge Construction* (as amended) specifications.

3.1 Existing Data of Known Discharges from Site

Are there known discharges from the project area?

Yes No

Describe how this determination was made:

- Site visits, review of record drawings

Is there existing data on the quality of the known discharges?

Yes No

3.2 Prohibited Discharges

The following discharges are prohibited at the construction site:

- Contaminated groundwater, unless specifically authorized by the DEM. These types of discharges may only be authorized under a separate DEM RIPDES permit.
- Wastewater from washout of concrete, unless the discharge is contained and managed by appropriate control measures.
- Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials.
- Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance. Proper storage and spill prevention practices must be utilized at all construction sites.
- Soaps or solvents used in vehicle and equipment washing.
- Toxic or hazardous substances from a spill or other release.

All types of waste generated at the site shall be disposed of in a manner consistent with State Law and/or regulations.

Will any of the above listed prohibited discharges be generated at the site?

Yes No

None of the prohibited discharges described above are anticipated during construction. Spills shall be prevented as described in Section 3.6.

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3.3 Proper Waste Disposal

Building materials and other construction site wastes must be properly managed and disposed of in a manner consistent with State Law and/or regulations.

- A waste collection area shall be designated on the site that does not receive a substantial amount of runoff from upland areas and does not drain directly to a waterbody or storm drain.
- All waste containers shall be covered to avoid contact with wind and precipitation.
- Waste collection shall be scheduled frequently enough to prevent containers from overflowing.
- All construction site wastes shall be collected, removed, and disposed of in accordance with applicable regulatory requirements and only at authorized disposal sites.
- Equipment and containers shall be checked for leaks, corrosion, support or foundation failure, or other signs of deterioration. Those that are found to be defective shall be immediately repaired or replaced.

Is waste disposal a significant element of the proposed project?

Yes No

Materials to be disposed of include existing asphalt, onsite loam, miscellaneous metals (fences, grandstands, etc.), trash and debris, and existing drainage infrastructure. All materials should be handled in accordance with applicable regulatory requirements. Contractor shall submit a waste management plan for the work on the site.

3.4 Spill Prevention and Control

All chemicals and/or hazardous waste material must be stored properly and legally in covered areas, with containment systems constructed in or around the storage areas. Areas must be designated for materials delivery and storage. All areas where potential spills can occur and their accompanying drainage points must be described. The owner and operator must establish spill prevention and control measures to reduce the chance of spills, stop the source of spills, contain and clean-up spills, and dispose of materials contaminated by spills. The operator must establish and make highly visible location(s) for the storage of spill prevention and control equipment and provide training for personnel responsible for spill prevention and control on the construction site.

Are spill prevention and control measures required for this particular project?

Yes No

Spills related to construction vehicles and materials will be prevented by the following procedures:

1. No vehicles will be left unattended in project areas, which, in the event of a hazardous material spill, would flow into any portion of the drainage system.
2. Vehicles will be fueled in areas and using procedures that will not lead to a discharge of fuel into Waters of the State.
3. In the event of a release of hazardous material, the equipment operator will take all measures to stop and/or contain the leak and without exacerbating the release, and attempt to remove equipment from areas likely to cause a discharge of hazardous materials into Water of the State. Further, site supervisors, and the Owner and his Representative shall be contacted and, should it be determined that the spill is of a reportable quantity, the RIDEM shall be notified. A

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licensed hazardous waste remediation contractor shall be engaged to remediate any such spills in accordance with RIDEM Regulations and procedures.

Any hazardous materials used for construction will be stored away from the drainage system components and protected from precipitation. In the event of a release beyond the ability of construction staff to contain, emergency services of the City of Central Falls, and the State of Rhode Island, and a licensed hazardous waste remediation contractor will be contacted for assistance.

To prevent pollution of surface waters, the following construction procedures shall be prohibited:

1. Dumping of or discharging of spoil material or excessively turbid water into any stream corridor, any wetland, or any surface waters.
2. Indiscriminate, arbitrary or capricious operations of equipment in any stream corridors, any wetlands, or any surface waters.
3. Pumping of silt-laden water from trenches or other excavations into any surface waters, any stream corridors or any wetlands. All disposal of silt-laden water will be carried out within the use of approved filter basins.
4. Disposal of trees, brush, and other debris in any stream corridors, any wetlands, any surface waters, or at unspecified locations.
5. Disposal of excess or unsuitable excavation material in wetlands or floodplain areas, even with permission of the property owner.
6. Open burning of project debris.
7. Location of storage stockpiles in environmentally sensitive areas.

3.5 Control of Allowable Non-Stormwater Discharges

Are there allowable non-Stormwater discharges present on or near the project area?

Yes No

List of allowable non-stormwater discharge(s) and the associated control measure(s):

- Washdown of vehicles where no detergents are used, the use of water to control dust, pavement washwaters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled materials have been removed) and where detergents are not used.
- All allowable non-stormwater discharges will be controlled with temporary erosion controls including perimeter control, inlet control, temporary diversion and sedimentation basin structures.

Are there any known or proposed contaminated discharges, including anticipated contaminated dewatering operations, planned on or near the project area?

Yes No

While soil contamination has been identified on-site, all analytical testing of groundwater to date has been below the RIDEM Method 1 GB Groundwater Objectives.

3.6 Control Dewatering Practices

Site owners and operators are prohibited from discharging groundwater or accumulated stormwater that is removed from excavations, trenches, foundations, vaults, or other similar points of accumulation, unless such waters are first effectively managed by appropriate control measures.

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Examples of appropriate control measures include, but are not limited to, temporary sediment basins or sediment traps, sediment socks, dewatering tanks and bags, or filtration systems (e.g. bag or sand filters) that are designed to remove sediment. Uncontaminated, non-turbid dewatering water can be discharged without being routed to a control.

At a minimum the following discharge requirements must be met for dewatering activities:

1. Do not discharge visible floating solids or foam.
2. To the extent feasible, utilize vegetated, upland areas of the site to infiltrate dewatering water before discharge. In no case will surface waters be considered part of the treatment area.
3. At all points where dewatering water is discharged, utilize velocity dissipation devices.
4. With filter backwash water, either haul it away for disposal or return it to the beginning of the treatment process.
5. Replace and clean the filter media used in dewatering devices when the pressure differential equals or exceeds the manufacturer's specifications.
6. Dewatering practices must involve the implementation of appropriate control measures as applicable (i.e. containment areas for dewatering earth materials, portable sediment tanks and bags, pumping settling basins, and pump intake protection.)

Is it at all likely that the site operator will need to implement construction dewatering in order to complete the proposed project?

Yes No

Construction dewatering will be required during installation of the rerouted on-site combined sewer pipes and may be required during installation of trench excavations. The Contractor will choose between discharge dewatering fluids to the combined sewer system or to the drainage swale at the southeastern corner of the Site. If the Contractor proceeds with discharge to the combined sewer, a permit with Narragansett Bay Commission will be required. If dewatering fluids are discharged to the swale, the Contractor shall follow the discharge requirements identified above.

3.7 *Establish Proper Building Material Staging Areas*

All construction materials that have the potential to contaminate stormwater must be stored properly and legally in covered areas, with containment systems constructed in or around the storage areas. Areas must be designated for materials delivery and storage. Designated areas shall be approved by the site owner/engineer. Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in the discharge of pollutants, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use).

- Materials expected to be stored on site: extra perimeter erosion controls, earthwork material (loam, gravel, etc.), drainage pipe and structures, miscellaneous metals for outdoor use, and building materials.
- Earthwork materials stockpiles will be surrounded by erosion controls to prevent sediment from being carried downstream.

3.8 *Minimize Dust*

Dust control procedures and practices shall be used to suppress dust on a construction site during the construction process, as applicable. Precipitation, temperature, humidity, wind velocity and direction will determine amount and frequency of applications. However, the best method of controlling dust is to prevent dust production. This can best be accomplished by limiting the amount of bare soil exposed at one time.

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Dust Control measures outlined in the *RI SESC Handbook* shall be followed. Other dust control methods include watering, chemical application, surface roughening, wind barriers, walls, and covers.

Other Dust Control methods include surface roughening, wind barriers, walls, and covers.

- Water application shall be used to control dust when necessary.
- Work shall attempt to limit the amount of bare soil exposed at one time.

3.9 Designate Washout Areas

At no time shall any material (concrete, paint, chemicals) be washed into storm drains, open ditches, streets, streams, wetlands, or any environmentally sensitive area. The site operator must ensure that construction waste is properly disposed of, to avoid exposure to precipitation, at the end of each working day.

Will washout areas be required for the proposed project?

Yes No

- Washout shall be limited to the northern portion of the site, during dry weather conditions, away from drainage system inlets.

3.10 Establish Proper Equipment/Vehicle Fueling and Maintenance Practices

Vehicle fueling shall not take place within regulated wetlands or buffer zone areas, or within 50-feet of the storm drain system. Designated areas shall be depicted on the SESC Site Plans, or shall be approved by the site owner.

Vehicle maintenance and washing shall occur off-site, or in designated areas depicted on the SESC Site Plans or approved of by the site owner. Maintenance or washing areas shall not be within regulated wetlands or buffer zone areas, or within 50-feet of the storm drain system. Maintenance areas shall be clearly designated, and barriers shall be used around the perimeter of the maintenance area to prevent stormwater contamination.

Construction vehicles shall be inspected frequently for leaks. Repairs shall take place immediately. Disposal of all used oil, antifreeze, solvents and other automotive-related chemicals shall be according to applicable regulations; at no time shall any material be washed down the storm drain or in to any environmentally sensitive area.

- Fueling and maintenance of vehicles is not proposed to occur on site.

3.11 Chemical Treatment for Erosion and Sediment Control

Chemical stabilizers, polymers, and flocculants are readily available on the market and can be easily applied to construction sites for the purposes of enhancing the control of erosion, runoff, and sedimentation. The following guidelines should be adhered to for construction sites that plan to use treatment chemicals as part of their overall erosion, runoff, and sedimentation control strategy.

The U.S. Environmental Protection Agency has conducted research into the relative toxicity of chemicals commonly used for the treatment of construction stormwater discharges. The research conducted by the EPA focused on different formulations of chitosan, a cationic compound, and both cationic and anionic polyacrylamide (PAM). In summary, the studies found significant toxicity resulting from the use of chitosan and cationic PAM in laboratory conditions, and significantly less toxicity associated with using anionic PAM. EPA's research has led to the conclusion that the use of treatment chemicals for erosion, runoff, and sedimentation control requires proper operator training and appropriate usage to avoid risk to aquatic species. In the case of cationic treatment chemicals additional safeguards may be necessary.

Application/Installation Minimum Requirements

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If a site operator plans to use polymers, flocculants, or other treatment chemicals during construction the SESC plan must address the following:

1. Treatment chemicals shall not be applied directly to or within 100 feet of any surface water body, wetland, or storm drain inlet.
2. Use conventional erosion, runoff, and sedimentation controls prior to and after the application of treatment chemicals. Use conventional erosion, runoff, and sedimentation controls prior to chemical addition to ensure effective treatment. Chemicals may only be applied where treated stormwater is directed to a sediment control (e.g. temporary sediment basin, temporary sediment trap or sediment barrier) prior to discharge.
3. Sites shall be stabilized as soon as possible using conventional measures to minimize the need to use chemical treatment.
4. Select appropriate treatment chemicals. Chemicals must be selected that are appropriately suited to the types of soils likely to be exposed during construction and to the expected turbidity, pH, and flow rate of stormwater flowing into the chemical treatment system or treatment area. **Soil testing is essential. Using the wrong form of chemical treatment will result in some form of performance failure and unnecessary environmental risk.**
5. Minimize discharge risk from stored chemicals. Store all treatment chemicals in leak-proof containers that are kept under storm-resistant cover and surrounded by secondary containment structures (e.g., spill berms, decks, spill containment pallets), or provide equivalent measures, designed and maintained to minimize the potential discharge of treatment chemicals in stormwater or by any other means (e.g., storing chemicals in covered areas or having a spill kit available on site).
6. Use chemicals in accordance with good engineering practices and specifications of the chemical provider/supplier. You must also use treatment chemicals and chemical treatment systems in accordance with good engineering practices, and with dosing specifications and sediment removal design specifications provided by the supplier of the applicable chemicals, or document specific departures from these practices or specifications and how they reflect good engineering practice.

Will chemical stabilizers, polymers, flocculants or other treatment chemicals be utilized on the proposed construction project?

Yes No

- Chemicals are not anticipated to be utilized for enhancing the control of erosion, runoff, and sedimentation.
- If chemicals are utilized, contractor shall submit the following information regarding the chemicals: Material Safety Data Sheets (MSDS) or Safety Data Sheets (SDS), results of third party toxicity testing of the materials proposed, explanation why other structural or non-structural BMPs alone can sufficiently manage runoff, and a plan prepared in consultation with the chemical treatment manufacturer(s).

Treatment Chemical SESC Plan Weekly Inspection Report Documentation Requirements

1. Document the type and quantity of treatment chemicals applied.
2. List the date, duration of discharge, and estimated discharge rate.
3. Provide an estimate of the volume of water treated.

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4. Provide an estimate of the concentration of treatment chemicals in the discharge, with supporting calculations.

3.12 Construction Activity Pollution Prevention Control Measure List

It is expected that this table will be amended as needed throughout the construction project.

Location/Station	Control Measure Description/Reference	Maintenance Requirement	Phase
Perimeter	Compost Filter Sock. Chapter Five, Section F, RI Soil Erosion and Sediment Control Handbook.	Page 5-12 Inspection should be made after each storm event and repair or replacement should be made promptly as needed. Page 5-12 Cleanout of accumulated sediment behind the bales is necessary if ½ of the original height of the bales becomes filled in with sediment.	All Phases
Diversions	Chapter 6, Section B – Diversion (DV), RI Soil Erosion and Sediment Control Handbook.	Page 6-19 Before stabilization, the diversions should be inspected after every rainfall. Sediment shall be removed and repairs made as necessary. Seeded areas which fail to establish a vegetative cover shall be reseeded as necessary. Repair bare or eroded areas immediately, reseed and mulch. Exclude vehicular traffic except for maintenance.	All Phases
Inlet Protection	Chapter Five, Section I – Storm Drain Protection (SD), RI Soil Erosion and Sediment Control Handbook.	Page 5-23 Sediment shall be removed and the trap restored to its original dimensions when the sediment has accumulated to ½ the design depth of the trap. Removed Sediment shall be deposited in a suitable area and in such a manner that it will not erode.	All Phases

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Outlet Protection	Chapter Six, Section F – Outlet Protection (OP), RI Soil Erosion and Sediment Control Handbook.	Page 6-62 Inspect outlets for clogging. Any accumulated sediment shall be removed from the outlet prior to final stabilization.	All Phases
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SECTION 4: CONTROL MEASURE INSTALLATION, INSPECTION, and MAINTENANCE

4.1 Installation

Complete the installation of temporary erosion, runoff, sediment, and pollution prevention control measures by the time each phase of earth-disturbance has begun. All stormwater control measures must be installed in accordance with good judgment, including applicable design and manufacturer specifications. Installation techniques and maintenance requirements may be found in manufacturer specifications and/or the *RI SESC Handbook*.

4.2 Monitoring Weather Conditions

Anticipating Weather Events - Care will be taken to the best of the operator's ability to avoid disturbing large areas prior to anticipated precipitation events. Weather forecasts must be routinely checked, and in the case of an expected precipitation event of over 0.25-inches over a 24-hour period, it is highly recommended that all control measures should be evaluated and maintained as necessary, prior to the weather event. In the case of an extreme weather forecast (greater than one-inch of rain over a 24-hour period), additional erosion/sediment controls may need to be installed.

Storm Event Monitoring For Inspections - At a minimum, storm events must be monitored and tracked in order to determine when post-storm event inspections must be conducted. Inspections must be conducted and documented at least once every seven (7) calendar days and within twenty-four (24) hours after any storm event, which generates at least 0.25 inches of rainfall per twenty-four (24) hour period and/or after a significant amount of runoff or snowmelt.

The weather gauge station and website that will be utilized to monitor weather conditions on the construction site is as follows:

- Providence, Green State Airport (KPVD)
- Pawtucket Station: <https://www.wunderground.com/weather/us/ri/central-falls>

4.3 Inspections

Minimum Frequency - Each of the following areas must be inspected by or under the supervision of the owner and operator at least once every seven (7) calendar days and within twenty-four (24) hours after any storm event, which generates at least 0.25 inches of rainfall per twenty-four (24) hour period and/or after a significant amount of runoff or snowmelt:

- a. All areas that have been cleared, graded, or excavated and where permanent stabilization has not been achieved;
- b. All stormwater erosion, runoff, and sediment control measures (including pollution prevention control measures) installed at the site;
- c. Construction material, unstabilized soil stockpiles, waste, borrow, or equipment storage, and maintenance areas that are covered by this permit and are exposed to precipitation;
- d. All areas where stormwater typically flows within the site, including temporary drainage ways designed to divert, convey, and/or treat stormwater;
- e. All points of discharge from the site;
- f. All locations where temporary soil stabilization measures have been implemented;

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- g. All locations where vehicles enter or exit the site.

Reductions in Inspection Frequency - If earth disturbing activities are suspended due to frozen conditions, inspections may be reduced to a frequency of once per month. The owner and operator must document the beginning and ending dates of these periods in an inspection report.

Qualified Personnel – The site owner and operator are responsible for designating personnel to conduct inspections and for ensuring that the personnel who are responsible for conducting the inspections are “qualified” to do so. A “qualified person” is a person knowledgeable in the principles and practices of erosion, runoff, sediment, and pollution prevention controls, who possesses the skills to assess conditions at the construction site that could impact stormwater quality, and the skills to assess the effectiveness of any stormwater controls selected and installed to meet the requirements of the permit.

Recordkeeping Requirements - All records of inspections, including records of maintenance and corrective actions must be maintained with the SESC Plan. Inspection records must include the date and time of the inspection, and the inspector’s name, signature, and contact information.

General Notes

- A separate inspection report will be prepared for each inspection.
- The Inspection Reference Number shall be a combination of the RIPDES Construction General Permit No - consecutively numbered inspections. ex/ Inspection reference number for the 4th inspection of a project would be: RIR10####-4
- Each report will be signed and dated by the Inspector and must be kept onsite.
- Each report will be signed and dated by the Site Operator.
- The corrective action log contained in each inspection report must be completed, signed, and dated by the site operator once all necessary repairs have been completed.
- It is the responsibility of the site operator to maintain a copy of the SESC Plan, copies of all completed inspection reports, and amendments as part of the SESC Plan documentation at the site during construction.

Failure to make and provide documentation of inspections and corrective actions under this part constitutes a violation of your permit and enforcement actions under 46-12 of R.I. General Laws may result.

4.4 Maintenance

Maintenance procedures for erosion and sedimentation controls and stormwater management structures/facilities are described on the SESC Site Plans and in the *RI SESC Handbook*.

Construction shall not commence or continue until all specified erosion and pollution controls are in place and properly installed.

Site owners and operators must ensure that all erosion, runoff, sediment, and pollution prevention controls remain in effective operating condition and are protected from activities that would reduce their effectiveness. Erosion, runoff, sedimentation, and pollution prevention control measures must be maintained throughout the course of the project.

Erosion, runoff, sediment, and pollution prevention control measures shall remain in place until all disturbed earth has been securely stabilized and accepted by the site owner. Before final removal, all accumulated

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sediment on the upstream side shall be removed and legally disposed of. After removal of structures, disturbed areas shall be regraded and stabilized as necessary.

Note: It is recommended that the site operator designates a full-time, on-site contact person responsible for working with the site owner to resolve SESC Plan-related issues.

4.5 Corrective Actions

If, in the opinion of the designated site inspector, corrective action is required, the inspector shall note it on the inspection report and shall inform the site operator that corrective action is necessary. The site operator must make all necessary repairs whenever maintenance of any of the control measures instituted at the site is required.

In accordance with the *RI SESC Handbook*, the site operator shall initiate work to fix the problem immediately after its discovery, and complete such work by the close of the next work day, if the problem does not require significant repair or replacement, or if the problem can be corrected through routine maintenance.

When installation of a new control or a significant repair is needed, site owners and operators must ensure that the new or modified control measure is installed and made operational by no later than seven (7) calendar days from the time of discovery where feasible. If it is infeasible to complete the installation or repair within seven (7) calendar days, the reasons why it is infeasible must be documented in the SESC Plan along with the schedule for installing the control measures and making it operational as soon as practicable after the 7-day timeframe. Such documentation of these maintenance procedures and timeframes should be described in the inspection report in which the issue was first documented. If these actions result in changes to any of the control measures outlined in the SESC Plan, site owners and operators must also modify the SESC Plan accordingly within seven (7) calendar days of completing this work.

SECTION 5: AMENDMENTS

This SESC Plan is intended to be a working document. It is expected that amendments will be required throughout the active construction phase of the project. **Even if practices are installed on a site according to the approved plan, the site is only in compliance when erosion, runoff, and sedimentation are effectively controlled throughout the entire site for the entire duration of the project.**

The SESC Plan shall be amended within seven (7) days whenever there is a change in design, construction, operation, maintenance or other procedure which has a significant effect on the potential for the discharge of pollutants, or if the SESC Plan proves to be ineffective in achieving its objectives (i.e. the selected control measures are not effective in controlling erosion or sedimentation).

In addition, the SESC Plan shall be amended to identify any new operator that will implement a component of the SESC Plan.

All revisions must be recorded in the Record of Amendments Log Sheet, which is contained in Attachment G of this SESC Plan, and dated red-lined drawings and/or a detailed written description must be appended to the SESC Plan. Inspection Forms must be revised to reflect all amendments. Update the Revision Date and the Version # in the footer of the Report to reflect amendments made.

All SESC Plan Amendments, except minor non-technical revisions, must be approved by the site owner and operator. Any amendments to control measures that involve the practice of engineering must be reviewed, signed, and stamped by a Professional Engineer registered in the State of RI.

The amended SESC plan must be kept on file at the site while construction is ongoing and any modifications must be documented.

Attach a copy of the Amendment Log.

SECTION 6: RECORDKEEPING

RIPDES Construction General Permit – Parts III.D, III.G, III.J.3.b.iii, & V.O

It is the site owner and site operator's responsibility to have the following documents available at the construction site and immediately available for RIDEM review upon request:

- A copy of the fully signed and dated SESC Plan, which includes:
 - A copy of the General Location Map
INCLUDED AS ATTACHMENT A
 - A copy of all SESC Site Plans
INCLUDED AS ATTACHMENT B
 - A copy of the RIPDES Construction General Permit (*To save paper and file space, do not include in DEM/CRMC submittal, for operator copy only*)
INCLUDED AS ATTACHMENT C
 - A copy of any regulatory permits (RIDEM Freshwater Wetlands Permit, CRMC Assent, RIDEM Water Quality Certification, RIDEM Groundwater Discharge Permit, RIDEM RIPDES Construction General Permit authorization letter, etc.)
INCLUDED AS ATTACHMENT D
 - The signed and certified NOI form or permit application form (*if required as part of the application, see RIPDES Construction General Permit for applicability*)
INCLUDED AS ATTACHMENT E
 - Completed Inspection Reports w/Completed Corrective Action Logs
INCLUDED AS ATTACHMENT F
 - SESC Plan Amendment Log
INCLUDED AS ATTACHMENT G

SECTION 7: PARTY CERTIFICATIONS

RIPDES Construction General Permit – Part V.G

All parties working at the project site are required to comply with the Soil Erosion and Sediment Control Plan (SESC Plan including SESC Site Plans) for any work that is performed on-site. The site owner, site operator, contractors and sub-contractors are encouraged to advise all employees working on this project of the requirements of the SESC Plan. A copy of the SESC Plan is available for your review at the following location: Central Falls High School site at 10 Higginson Avenue, Central Falls, RI, or may be obtained by contacting the site owner or site operator.

The site owner and site operator and each subcontractor engaged in activities at the construction site that could impact stormwater must be identified and sign the following certification statement.

I acknowledge that I have read and understand the terms and conditions of the Soil Erosion and Sediment Control (SESC) Plan for the above designated project and agree to follow the control measures described in the SESC Plan and SESC Site Plans.

Site Owner:

Insert Company or Organization Name

Insert Name & Title

Insert Address

Insert City, State, Zip Code

Insert Telephone Number, Insert Fax/Email

signature/date

Site Operator:

Insert Company or Organization Name

Insert Name & Title

Insert Address

Insert City, State, Zip Code

Insert Telephone Number, Insert Fax/Email

signature/date

Designated Site Inspector:

Insert Company or Organization Name

Insert Name & Title

Insert Address

Insert City, State, Zip Code

Insert Telephone Number, Insert Fax/Email

signature/date

SubContractor SESC Plan Contact:

Insert Company or Organization Name

Insert Name & Title

Insert Address

Insert City, State, Zip Code

Insert Telephone Number, Insert Fax/Email

signature/date

LIST OF ATTACHMENTS

Attachment A - General Location Map

Attachment B - SESC Site Plans

Attachment C - Copy of RIPDES Construction General Permit and Authorization to Discharge *(To save paper and file space, do not include in DEM/CRMC submittal, for operator copy only)*

Attachment D - Copy of Other Regulatory Permits *(to be populated as approvals received)*

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Attachment F - Inspection Reports w/ Corrective Action Log

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Attachment H - Temporary Sedimentation Trap Calculations

Soil Erosion and Sediment Control Plan
CENTRAL FALLS HIGH SCHOOL

Attachment A - General Location Map

Soil Erosion and Sediment Control Plan
CENTRAL FALLS HIGH SCHOOL

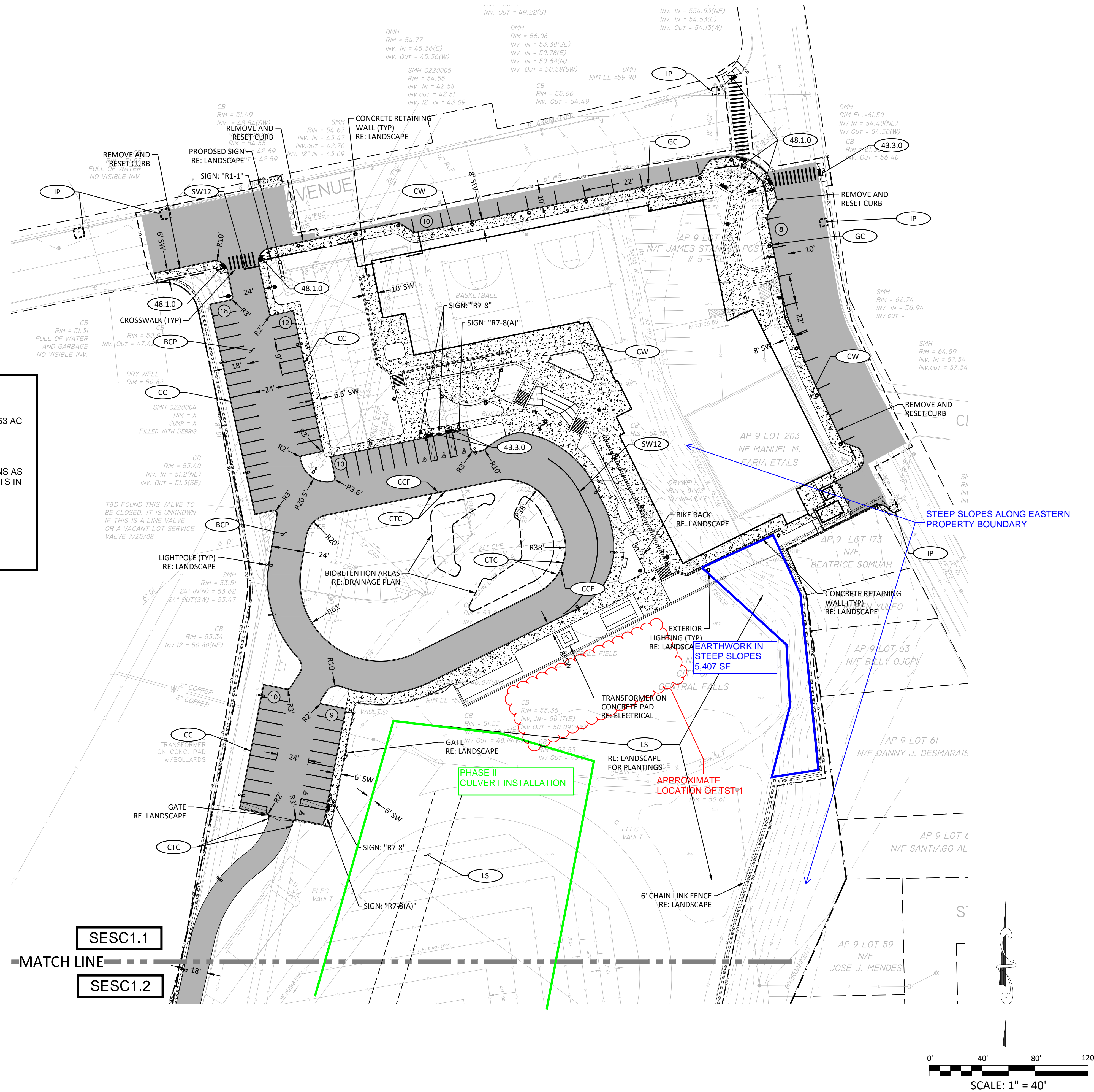
Attachment B - SESC Site Plans

NOTES:

1. EROSION CONTROL MEASURES SHALL BE IMPLEMENTED FOR THE DURATION OF CONSTRUCTION. AT A MINIMUM, PERIMETER HAY BALES, VEHICLE TRACKING CONTROL, INLET PROTECTION, CONCRETE WASHOUT AREAS AND TEMPORARY SEDIMENTATION BASINS SHOULD BE CONSIDERED.
2. CURBING SHALL BE PROVIDED AS NOTED IN ALL PARKING AREAS AT THE EDGE OF THE PAVEMENT AND ADJACENT TO SIDEWALKS.
3. WHERE SIDEWALKS INTERSECT CURB LINES, ADA COMPLIANT CURB RAMP WITH DETECTABLE WARNING MAT SHALL BE INSTALLED. DETECTABLE WARNING PANELS SHALL BE CAST IRON, SEE SPECIFICATIONS.
4. CONCRETE WALKWAY MATERIALS SHOWN FOR CLARITY ONLY. REFER TO LANDSCAPE PLANS FOR ALL WALKWAY MATERIALS, FINISHES, AND SCORING.
5. WHERE EXISTING UTILITIES ARE TO REMAIN, ALL RIMS, COVERS, GRATES AND HATCHES SHALL BE ADJUSTED TO FINISHED GRADE.
6. THE SITE IS SUBJECT TO A REMEDIAL ACTION WORK PLAN (RAWP). THE CONTRACTOR SHALL CONDUCT ALL WORK IN ACCORDANCE WITH THE REQUIREMENTS SET FORTH IN THE RAWP. SITE WIDE CAPPING IS THE REMEDIAL ACTION IDENTIFIED IN THE PLAN. THE CONTRACTOR SHALL CAP ALL AREAS WITHIN THE LIMIT OF DISTURBANCE AS DESCRIBED BELOW UNLESS NOTED OTHERWISE. ALL FILL MATERIAL USED AS CLEAN FILL WITHIN 12 INCHES OF FINAL GRADE SHALL BE SAMPLED FOR COMPLIANCE PRIOR TO IMPORTATION.
 - BUILDING/HARDSCAPE: A MINIMUM OF 6 INCHES OF CLEAN SUBGRADE OVERLAIN BY 4 INCHES OF ASPHALT OR CONCRETE PAVEMENT. SURFACE SOIL IN THE PROPOSED HARDSCAPE AREAS CAN EITHER BE EXCAVATED OR REPLACED, OR THE ASPHALT/CONCRETE SURFACING AND/OR CLEAN FILL CAN BE PLACED DIRECTLY ON TOP OF THE SOIL WITHOUT EXCAVATION.
 - LANDSCAPE: A MINIMUM OF 12 INCHES OF CLEAN FILL PLACED OVER A NON-WOVEN GEOTEXTILE FABRIC ON TOP OF CONTAMINATED SOIL.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FULL DEPTH RESTORATION OF THE EXISTING TRACK SURFACE WHERE DISTURBED FOR INSTALLATION OF DRAINAGE PIPES. ADDITIONALLY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESURFACING OF THE ENTIRE EXISTING TRACK. REFER TO THE LANDSCAPE PLANS FOR TRACK RESTORATION DETAILS.

SESC PLAN NOTES:

1. PHASING:
 - PHASE I: BASKETBALL COURT INSTALLATION - PHASE AREA: 0.53 AC; DISTURBED AREA: 0.53 AC
 - PHASE II: CULVERT INSTALLATION - PHASE AREA: 1.90 AC; DISTURBED AREA: 1.90 AC
 - PHASE III: REMAINING WORK - PHASE AREA: 10.22 AC; DISTURBED AREA: 9.52 AC
2. STEEP SLOPES: EARTHWORK WITHIN STEEP SLOPES AREAS, 5,407 SF. EXISTING STEEP SLOPES WITHIN THE PROPOSED BUILDING FOOTPRINT HAVE REDUCED EROSION CONCERNS AS THE CONTRACTOR WILL BE INSTALLING FOUNDATION WALLS AND GROUND IMPROVEMENTS IN THAT LOCATION.
3. TEMPORARY SEDIMENT TRAPS (TST): PHASE III ONLY
 - TST-1: SIZED FOR 1.93 AC
 - TST-2: SIZED FOR 1.21 AC



526 Boston Post Rd
Wayland, MA
508.358.0790 www.ai3architects.com



The Vertex Companies, LLC
400 Libbey Parkway
Weymouth, MA 02189
PHONE 781.952.6000
www.vertexeng.com



CENTRAL FALLS HIGH SCHOOL
10 HIGGINSON AVE, CENTRAL FALLS, RI

KEYNOTE LEGEND:

PERMIT DOCUMENTS

NORTH ARROW

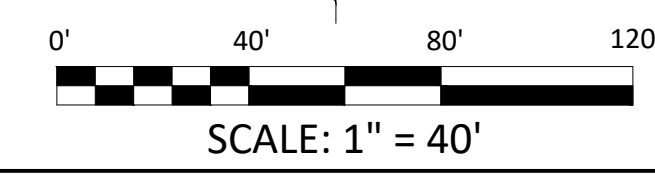
KEYPLAN

A B C

DRAWING NAME:

**SESC SITE PLAN
1 OF 2**

DRAWN BY: SMC
REVIEWED BY: GBD/AJC
SCALE: AS INDICATED DRAWING NUMBER:
JOB NO.: 77997
DATE: DECEMBER 11, 2023
SESC1.1

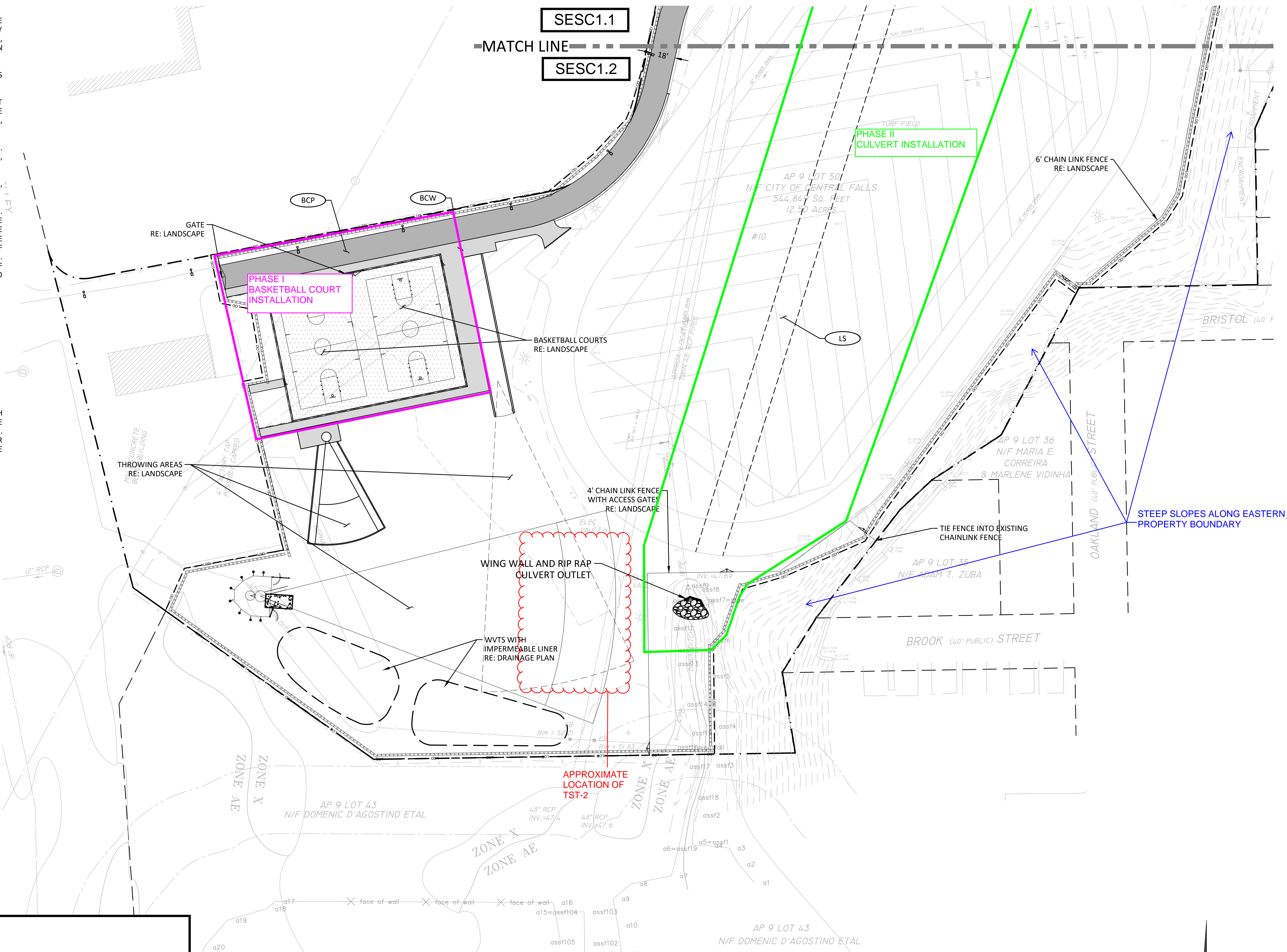


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KEYNOTE LEGEND:

PERMIT DOCUMENTS

NORTH ARROW

KEYPLAN

SESC SITE PLAN
2 OF 2

DRAWING NAME:

DRAWN BY: SMC
REVIEWED BY: GBD/AJC

SCALE: AS INDICATED
JOB NO.: 77997
DATE: DECEMBER 11, 2023

DRAWING NUMBER:
SESC1.2

Soil Erosion and Sediment Control Plan
CENTRAL FALLS HIGH SCHOOL

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Soil Erosion and Sediment Control Plan
CENTRAL FALLS HIGH SCHOOL

Attachment D - Copy of Other Regulatory Permits

Soil Erosion and Sediment Control Plan
CENTRAL FALLS HIGH SCHOOL

Attachment E - Copy of RIPDES NOI *(if required as part of application, see RIPDES Construction General Permit for applicability)*



NOTICE OF START OF CONSTRUCTION

INSTRUCTIONS: Use this form to notify RIDEM prior to commencement of any site alterations or construction activity on **Stormwater Construction** or **Freshwater Wetland** permitted sites.

Submit completed forms by email to: DEM.StwConstruction@dem.ri.gov or by mail to: Permit Application Center (PAC), RIDEM, 235 Promenade Street, Room 260, Providence, RI 02908.

Visit our [ONLINE PERMIT SEARCH](http://dem.ri.gov/waterpermits) to view permit history or download available documents at dem.ri.gov/waterpermits

PERMIT NUMBERS: Provide all file numbers associated with this site, as listed on the approved permit letter.

Freshwater Wetlands Permit:	
UIC/Groundwater Discharge File:	
WQC or Stormwater Construction Permit:	
RIPDES Permit Authorization:	RIR

OWNER: [Legal property owner.] Required only when ownership has changed since date of permit issuance.

Organization:	Phone:	
Owner's Name:	Email:	
Mailing Address:		
City:	State:	Zip:
Contact Name of Owner's Representative for Questions:		
Title:	Phone:	
	Email:	

OPERATOR: [Person who will be in charge of construction and site activities.] Operator and sub-contractor certifications must be signed and remain on site. See [Soil Erosion and Sediment Control \(SESC\) Plan Template](#).

Organization:	Phone:	
Owner's Name:	Email:	
Mailing Address:		
City:	State:	Zip:

CONSTRUCTION SITE and PROJECT:

Project Name:	Area to be Disturbed (acres):	
Site Street:	Town:	
Anticipated Date for Start of Construction:		

NOTE: RIDEM, at its discretion, may inspect any permitted construction site. Owners and operators can **avoid penalties by complying with all permit conditions**, including, but not limited to: maintaining all required signed Soil Erosion and Sediment Control Plans onsite; conducting required inspections and maintaining inspection records onsite; properly installing, monitoring and maintaining erosion and sediment controls; avoiding environmental impacts; and keeping all construction and disturbance activity within the approved limits of disturbance. Upon project completion, please submit a [Notice of Termination form](#).

Soil Erosion and Sediment Control Plan
CENTRAL FALLS HIGH SCHOOL

Attachment F - Inspection Reports w/ Corrective Action Log

SESC Plan Inspection Report

Project Information			
Name			
Location			
DEM Permit No.			
Site Owner	Name	Phone	Email
Site Operator	Name	Phone	Email
Inspection Information			
Inspector Name	Name	Phone	Email
Inspection Date		Start/End Time	
Inspection Type <input type="checkbox"/> Weekly <input type="checkbox"/> Pre-storm event <input type="checkbox"/> During storm event <input type="checkbox"/> Post-storm event <input type="checkbox"/> Other			
Weather Information			
Last Rain Event Date: Duration (hrs): Approximate Rainfall (in):			
Rain Gauge Location & Source:			
Weather at time of this inspection:			

Check statement that applies then sign and date below:

I, as the designated Inspector, certify that this site has been inspected as required by regulation and I have determined that maintenance and corrective actions are not required at this time.

I, as the designated Inspector, certify that this site has been inspected as required by regulation and I have made the determination that the site requires corrective actions. The required corrective actions are noted within this inspection report.

Inspector:	Print Name	Signature	Date
<p>The Site Operator acknowledges by his/her signature, the receipt of this SESC Plan inspection report and its findings. He/she acknowledges that all recommended corrective actions must be completed and documentation of all such corrective actions must be made in this inspection report per applicable regulations.</p>			
Operator:	Print Name	Signature	Date

Site-specific Control Measures

Number the structural and non-structural stormwater control measures identified in the SESC Plan and on the SESC Site Plans and list them below (add as necessary). Bring a copy of this inspection form and any applicable SESC Site Plans with you during your inspections. This list will assist you to inspect all control measures at your site.

FILL THIS TABLE USING THE SESC PLAN TABLES 2.11 & 3.12.

	Location/Station	Control Measure Description	Installed & Operating Properly?	Assoc. Photo/ Figure #	Corrective Action Needed (Yes or No; if 'Yes', please detail action required)
1	Perimeter	Compost Filter Sock. Chapter Five, Section F, <i>RI Soil Erosion and Sediment Control Handbook</i> .	<input type="checkbox"/> Yes <input type="checkbox"/> No		
2	Diversions	Chapter 6, Section B – Diversion (DV), <i>RI Soil Erosion and Sediment Control Handbook</i> .	<input type="checkbox"/> Yes <input type="checkbox"/> No		
3	Inlet Protection	Chapter Five, Section I – Storm Drain Protection (SD), <i>RI Soil Erosion and Sediment Control Handbook</i> .	<input type="checkbox"/> Yes <input type="checkbox"/> No		
4	Outlet Protection	Chapter Six, Section F – Outlet Protection (OP), <i>RI Soil Erosion and Sediment Control Handbook</i> .	<input type="checkbox"/> Yes <input type="checkbox"/> No		
5	INSERT TEXT	INSERT TEXT	<input type="checkbox"/> Yes <input type="checkbox"/> No		
6	Attention Operator:	You must modify this inspection form as the project progresses, control measure locations change, and amendments to the SESC Plan are instituted in the field.	<input type="checkbox"/> Yes <input type="checkbox"/> No		
7			<input type="checkbox"/> Yes <input type="checkbox"/> No		
8			<input type="checkbox"/> Yes <input type="checkbox"/> No		
9			<input type="checkbox"/> Yes <input type="checkbox"/> No		
10			<input type="checkbox"/> Yes <input type="checkbox"/> No		
11			<input type="checkbox"/> Yes <input type="checkbox"/> No		
12			<input type="checkbox"/> Yes <input type="checkbox"/> No		

	Location/Station	Control Measure Description	Installed & Operating Properly?	Assoc. Photo/ Figure #	Corrective Action Needed (Yes or No; if 'Yes', please detail action required)
13			<input type="checkbox"/> Yes <input type="checkbox"/> No		
14			<input type="checkbox"/> Yes <input type="checkbox"/> No		
15			<input type="checkbox"/> Yes <input type="checkbox"/> No		
16			<input type="checkbox"/> Yes <input type="checkbox"/> No		
17			<input type="checkbox"/> Yes <input type="checkbox"/> No		
18			<input type="checkbox"/> Yes <input type="checkbox"/> No		
19			<input type="checkbox"/> Yes <input type="checkbox"/> No		
20			<input type="checkbox"/> Yes <input type="checkbox"/> No		
21			<input type="checkbox"/> Yes <input type="checkbox"/> No		
22			<input type="checkbox"/> Yes <input type="checkbox"/> No		
23			<input type="checkbox"/> Yes <input type="checkbox"/> No		
24			<input type="checkbox"/> Yes <input type="checkbox"/> No		
25			<input type="checkbox"/> Yes <input type="checkbox"/> No		
26			<input type="checkbox"/> Yes <input type="checkbox"/> No		
27			<input type="checkbox"/> Yes <input type="checkbox"/> No		
28			<input type="checkbox"/> Yes <input type="checkbox"/> No		

	Location/Station	Control Measure Description	Installed & Operating Properly?	Assoc. Photo/ Figure #	Corrective Action Needed (Yes or No; if 'Yes', please detail action required)
29			<input type="checkbox"/> Yes <input type="checkbox"/> No		
30			<input type="checkbox"/> Yes <input type="checkbox"/> No		

(add more as necessary)

General Site Issues

*Below are some general site issues that should be assessed during inspections. Please **customize** this list as needed for conditions at the site.*

	Compliance Question		Assoc. Photo/ Figure #	Corrective Action Needed (If 'Yes', please detail action required and include location/station)
1	Have all control measures been installed as specified in the RISESC Handbook and prior to any earth disturbing activities?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
2	Are appropriate limits of disturbance (LOD) established?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
3	Are controls that limit runoff from exposed soils by diverting, retaining, or detaining flows (such as check dams, sediment basins, etc.) in place?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
4	Are all temporary conveyance practices installed correctly and functioning as designed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
5	Has maintenance been performed as required to ensure continued proper function of all temporary conveyances practices?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
6	Were all exposed soils seeded by October 15 th ?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
7	Have soils been stabilized where earth disturbance activities have permanently or temporarily ceased on any portion of the site and will not resume for more than 14 days?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
8	In instances where adequate vegetative stabilization was not established by November 15 th , have non-vegetative erosion control measures must be employed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
9	If work is to continue from October 15 th through April 15 th , are steps taken to ensure that only the day's work area will be exposed and all erodible soil is stabilized within 5 working days?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
10	Have inlet protection measures (such as fabric drop inlet protection, curb drop inlet protection, etc.) been properly installed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
11	Has the operator cleaned and maintained inlet protection measures when needed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
12	Has the operator removed accumulated sediment adjacent to inlet protection measures within 24 hours of detection?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		

	Compliance Question		Assoc. Photo/ Figure #	Corrective Action Needed (If 'Yes', please detail action required and include location/station)
13	Has the operator properly installed outlet protection (such as riprap, turf mats, etc.) at all temporary and permanent discharge points?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
14	Are all outlet protection measures functioning properly in order to reduce discharge velocity, promote infiltration, and eliminate scour?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
15	Have all discharge points been inspected to ensure the prevention of scouring and channel erosion?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
16	Have sediment controls been installed along perimeter areas that will receive stormwater from earth disturbing activities?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
17	Is the operator maintaining sediment controls in accordance with the requirements in the <i>RI SESC Handbook</i> ?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
18	Have temporary sediment barriers been installed around permanent infiltration areas (such as bioretention areas, infiltration basins, etc.)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
19	Have staging areas and equipment routing been implemented to avoid compaction where permanent infiltration areas will be located?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
20	Are surface outlet structures (such as skimmers, siphons, etc.) installed for each temporary sediment basin? [Exception: frozen conditions]	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
21	Have all temporary sediment basins or traps been inspected and maintained as required to ensure proper function?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
22	Does the project include the use of polymers, flocculants, or other chemicals to control erosion, sedimentation, or runoff from the site?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
23	Are all chemicals being managed in accordance with Appendix J of the <i>RI SESC Handbook</i> and current best management practices?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
24	Has the site operator taken steps to prohibit the following pollutant discharges on the site?			
a	Contaminated groundwater.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		

	Compliance Question		Assoc. Photo/ Figure #	Corrective Action Needed (If 'Yes', please detail action required and include location/station)
b	Wastewater from washout of concrete; unless properly contained, managed, and disposed of.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
c	Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction products.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
d	Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
e	Soaps or solvents used in vehicle and equipment washing.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
f	Toxic or hazardous substances from a spill or other release.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
25	Is the operator using properly constructed entrances/exits to the site so sediment removal occurs prior to vehicles exiting?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
26	If needed, are additional controls (such as rumble strips, rattle plates, etc.) in place to remove sediment from tires prior to exiting?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
27	Is sediment track-out being removed by the end of the same workday in which it occurs (via sweeping, shoveling, or vacuuming)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
28	Are all wastes generated at the site being managed and properly disposed of by the end of each workday?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
29	Are all chemicals and hazardous waste materials stored properly in covered areas and surrounded by containment control systems?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
30	Has the operator established highly visible locations for the storage of spill prevention and control equipment on the construction site?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
31	Are allowable non-stormwater discharges being managed properly with adequate controls?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
32	Is the site operator properly managing groundwater or stormwater that is removed from excavations, trenches, or similar points of accumulation?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
33	Are proper procedures and controls in place for the storage of materials that may discharge pollutants if	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		

	Compliance Question		Assoc. Photo/ Figure #	Corrective Action Needed (If 'Yes', please detail action required and include location/station)
	exposed to stormwater?			
	Are stockpiles located within the limits of disturbance?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
	Are stockpiles being protected from contact with stormwater using a temporary sediment barrier?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
	Where needed, has cover or appropriate temporary vegetative or structural stabilization been utilized for stockpiles?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
	Is the operator effectively managing the generation of dust through the use of water, chemicals, or minimization of exposed soil?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
	Are designated washout areas (such as wheel washing stations, washout for concrete, paint, stucco, etc.) clearly marked on the site?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
	Are vehicle fueling and maintenance areas properly located to prevent pollutants from impacting stormwater and sensitive receptors?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
	(Other)			

(add more as necessary)

General Field Comments:

Photos:

(Associated photos – each photo should be dated and have a unique identification # and written description indicating where it is located within the project area. If a close up photo is required, it should be preceded with a photo including both the detail area and some type of visible fixed reference point. Photos should be annotated with Station numbers and other identifying information where needed.)

Photo #: (insert Photo here)	Station:
	Description:

Photo #: (insert Photo here)	Station:
	Description:

Photo #: (insert Photo here)	Station:
	Description:

Photo #: (insert Photo here)	Station:
	Description:

Photo #: (insert Photo here)	Station:
	Description:

Photo #: (insert Photo here)	Station:
	Description:

(add more as necessary)

Soil Erosion and Sediment Control Plan
CENTRAL FALLS HIGH SCHOOL

Attachment G - SESC Plan Amendment Log

Amendment Log

TO BE FILLED OUT BY SITE OPERATOR

Describe amendment(s) to be made to the SESC Plan, the date, and the person/title making the amendment. ALL amendments must be approved by the Site Owner.

#	Date	Description of Amendment	Amended by: Person/Title	Site Owner Must Initial
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Add more lines/pages as necessary

Attachment H - Temporary Sedimentation Trap Calculations



PROJECT	Central Falls High School	PROJECT NUMBER	77997.00
SUBJECT	Temporary Sediment Trap - 1		
COMPUTATIONS BY	SC	DATE	12/11/2023
CHECK BY	GD/AC	DATE	12/11/2023

TEMPORARY SEDIMENTATION TRAP 1

REQUIRED TRAP VOLUME

Required Basin Volume taken from RI Soil Erosion and Sediment Control Handbook (RISESCH), revised August 2014 Section 6 Temporary Sediment Traps.

TEMPORARY SEDIMENT TRAP

MAXIMUM AREA CONTRIBUTING TO TST - 1 = 84,233 sf
1.93 acres

Required Trap storage volume is the greater of A, B, and C.

A. Initial Storage Volume of 134 cubic yards per acre of drainage area (Per RISESCH Temporary Sediment Trap- Trap Capacity)

**Required Volume A = 259 cy
6,996 cf**

Wet Storage Volume - Half of Initial Storage Volume

Required Volume = 130 cy
3,498 cf

Dry Storage Volume - Remaining portion of Initial Storage Volume

Required Volume = 130 cy
3,498 cf

Temporary sediment trapping measures must be sized to store 1 inch of runoff from the contributing area or per the sediment volume method, whichever is greater.

B.

V (1" of Rainfall) = 7019 cf

C.

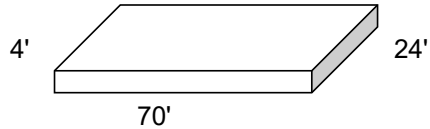
$V = (DA) (A) (DR) (TE) (1/Y) (2000\text{lbs/ton})$

$V = (1.93) (50) (.38) (.80) (1/85) (2000)$

V = 692 cf/year

Required total storage volume = 7019 cf

PROVIDED TRAP VOLUME



Dimensions

Length = 70 ft (at surface of flooded area or base of stone outlet)

Width = 24 ft (at surface of flooded area or base of stone outlet)

Aw = 1680 sf

Ad = 2496 sf

Dw = 2.5 ft (wet storage)

Dd = 1.5 ft (dry storage)

WET STORAGE VOLUME

$V = 0.85 \times Aw \times Dw$

V = 3570 cf > 3,510 cf required

DRY STORAGE VOLUME

$V = ((Aw + Ad)/2) \times Dd$

V = 3744 cf > 3,510 cf required

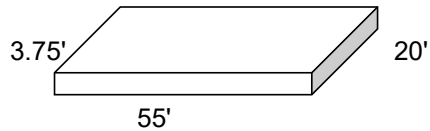
TOTAL STORAGE VOLUME

Total Storage Volume = Dry Storage Volume + Wet Storage Volume

Total Storage Volume = 7314 cf > 7019 cf required

-Contractor shall provide wet storage volume calculated below crushed stone outlet.

PROVIDED TRAP VOLUME



Dimensions

Length = 55 ft (at surface of flooded area or base of stone outlet)

Width = 20 ft (at surface of flooded area or base of stone outlet)

Aw = 1100 sf

Ad = 1764 sf (computed using 2:1 sideslopes)

Dw = 2.5 ft (wet storage)

Dd = 1.25 ft (dry storage)

WET STORAGE VOLUME

$$V = 0.85 \times Aw \times Dw$$

$$V = 2337.5 \text{ cf} > 2,203 \text{ cf required}$$

DRY STORAGE VOLUME

$$V = ((Aw + Ad)/2) \times Dd$$

$$V = 2205 \text{ cf} > 2,203 \text{ cf required}$$

TOTAL STORAGE VOLUME

Total Storage Volume = Dry Storage Volume + Wet Storage Volume

$$\text{Total Storage Volume} = 4543 \text{ cf} > 4406 \text{ cf required}$$

-Contractor shall provide wet storage volume calculated below crushed stone outlet.

22038.03 CFHS - Column Gravity Loads - Academics

Column	Dead Load (k)	Live Load (k)	Snow Load (k)
(A1-AB)	88.909	29.19774	7.221
(A1-AC)	140.154	44.911025	13.222
(A1-AD)	157.948	46.587424	15.267
(A1-AE)	161.091	42.544576	16.361
(A1-AF)	132.672	40.2974	14.994
(A1-AH)	15.301	15.497919	0
(A1-AJ)	145.314	57.27108	40.819
(A1-AL)	150.591	53.530792	30.387
(A1-AM)	122.68	43.676	36.653
(A1-BC)	151.198	55.83271	34.755
(A1-BG)	113.741	46.24145	30.179
(A2-AJ)	22.358	21.435037	0
(A2-AL)	24.155	21.765904	0
(A3-AA)	45.194	17.62102	4.173
(A3-AB)	132.565	49.31502	12.845
(A3-AC)	185.767	67.1116	20.482
(A3-AD)	198.663	66.1496	21.576
(A3-AE)	218.188	79.93	25.602
(A3-AF)	165.605	58.311914	19.229
(A3-AG)	172.334	64.790574	18.277
(A3-AJ)	211.207	85.6212	27.303
(A3-AK)	107.848	49.60316	16.166
(A3-AL)	133.582	61.276477	18.18
(A3-AM)	161.477	68.715	16.417
(A4-AA)	80.735	31.240068	15.736
(A4-AB)	116.604	51.652076	11.184
(A4-AC)	156.834	54.141536	17.204
(A4-AD)	167.597	55.89376	18.032
(A4-AE)	184.509	96.4796	21.642
(A4-AF)	137.544	57.464842	16.02
(A4-AG)	137.7	58.21712	15.602
(A4-AJ)	175.638	73.67	19.985
(A4-AK)	108.464	55.40232	13.022
(A4-AL)	86.866	51.858475	10.363
(A4-AM)	113.793	45.57	20.817
(A5-AL)	111.828	56.8618	12.43
(A5-AM)	145.892	78.255813	13.444
(A6-AA)	35.686	12.141494	5.867
(A6-AB)	77.023	26.877084	8.827
(A6-AC)	118.611	33.710022	10.767
(A6-AD)	121.073	34.02117	10.916
(A6-AE)	205.901	77.44212	18.26
(A6-AF)	163.047	69.200872	14.808

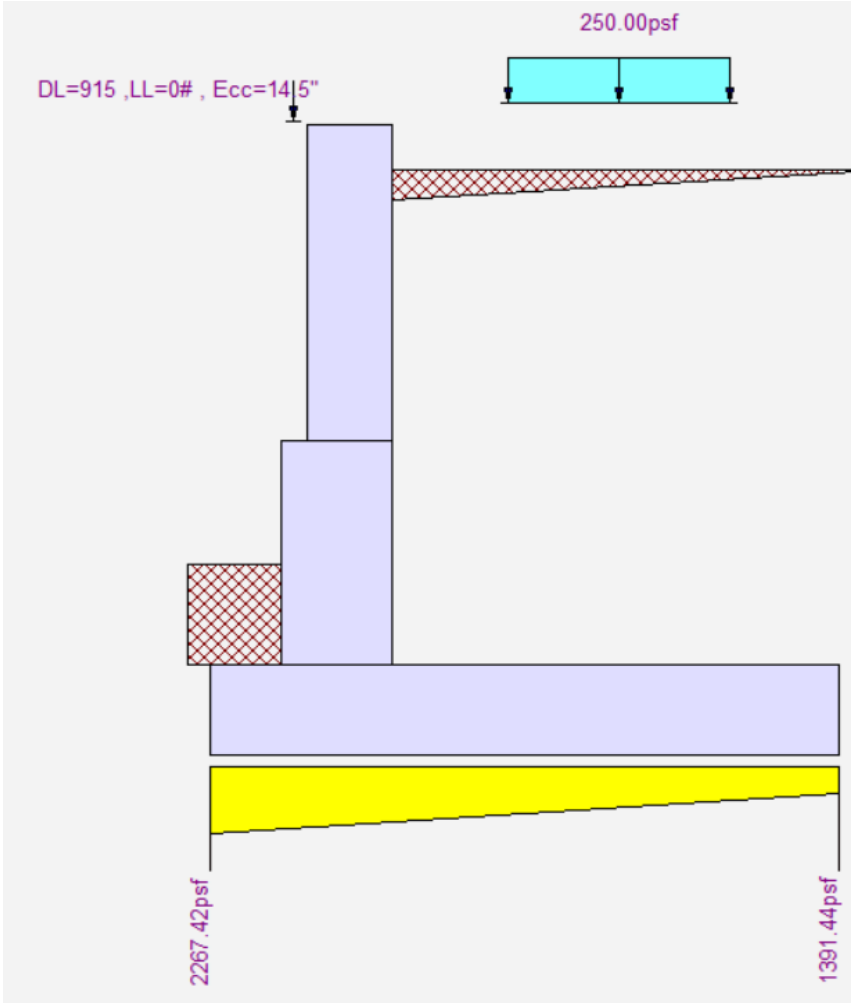
FOUNDATION ANALYSIS REPORT

(A6-AG)	156.095	65.202996	13.887
(A6-AJ)	188	76.105491	16.747
(A6-AK)	109.092	52.713837	9.626
(B10-BC)	27.257	37.372404	9.444
(B10-BE)	52.503	76.071864	21.699
(B10-BG)	56.322	48.04392	21.907
(B10-BH)	28.688	19.803724	0
(B10-BJ)	14.413	8.883182	2.339
(B12-BJ)	51.287	22.2868	10.819
(B12-BM)	22.515	15.973105	4.113
(B14-BC)	54.018	51.287116	22.107
(B14-BE)	91.17	97.719695	31.96
(B14-BG)	99.758	59.379747	39.28
(B14-BH)	52.244	27.43552	3.396
(B14-BJ)	59.997	17.93448	21.58
(B14-BL)	20.602	18.269	15.306
(B14-BL.7)	8.129	7.518	9.891
(B14-BM)	11.185	0	4.387
(B15-BC)	12.876	1.743	14.766

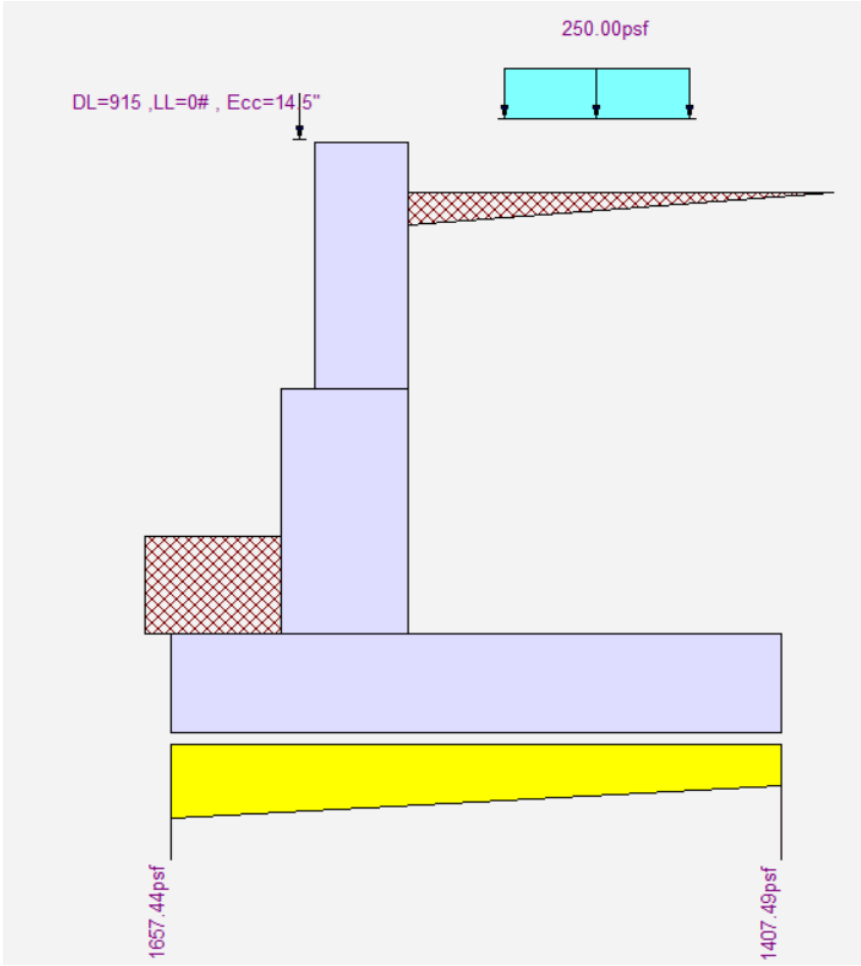
22038.03 CFHS - Column Gravity Loads - Performing Arts

Column	Dead Load (k)	Live Load (k)	Snow Load (k)
(B1-BH)	11.012	0	3.864
(B1-BJ3)	11.012	0	3.864
(B2-BA)	78.997	55.151728	10.072
(B2-BD)	33.257	15.184944	3.912
(B2-BF)	33.256	15.184944	4.004
(B2-BH)	85.925	64.89591	12.065
(B3-BJ3)	64.508	53.28314	6.369
(B3-BM)	105.692	77.532247	10.842
(B4-BA)	170.579	121.16508	23.115
(B4-BH)	208.194	144.111015	33.035
(B4-BJ3)	47.821	30.40612	10.925
(B5-BA)	167.285	87.48793	23.821
(B5-BH)	289.799	172.8106	49.074
(B5-BM)	228.859	217.531	32.553
(B6-BA)	168.107	81.064944	24.461
(B6-BH)	173.884	87.409548	26.83
(B7-BA)	205.823	103.927186	31.163
(B7-BH)	353.146	193.0716	63.567
(B7-BM)	239.751	200.871	32.703
(B8-BA)	96.37	50.255456	13.034
(B8-BB)	24.213	17.205465	7.453
(B8-BD)	41.855	24.619894	16.349
(B8-BE)	47.527	39.101204	29.068
(B8-BG)	45.86	40.39511	24.964
(B8-BH)	213.24	102.85163	38.443
(B8-BM)	185.689	97.364455	30.661
(B9-BB)	20.633	13.507	4.149
(B9-BD)	34.128	19.59926	6.656
(B9-BE)	29.833	31.509525	14.719
(B9-BG)	43.047	44.137488	17.65
(B9-BK)	40.247	20.08726	13.411
(B11-BK)	26.615	19.576076	2.298
(B11-BM)	46.045	23.664805	7.202

22038.03 CFHS - Retaining Wall Section 3



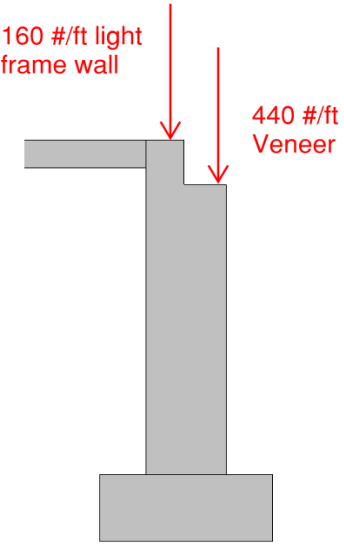
22038.03 CFHS - Retaining Wall Section 3A



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22038.03 CFHS - First Floor Wall Weights

Typical Wall



2-Story Wall @ Gym

