

PERMITTING PLAN SET
FOR
PROPOSED SMITHFIELD
FIRE STATION



PLAT MAP 48, LOT 51
ZONING DISTRICT: L1
LIGHT INDUSTRIAL DISTRICT
321 GEORGE WASHINGTON HIGHWAY
SMITHFIELD, RHODE ISLAND

OWNER/APPLICANT

SMITHFIELD FIRE DEPARTMENT
607 PUTNAM PIKE
GREENVILLE, RHODE ISLAND 02908

ENGINEERS



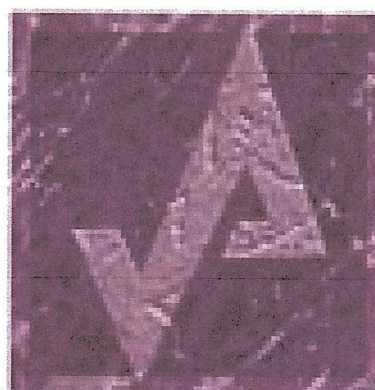
- Civil
- Transportation
- Environmental
- Site Planning
- Surveying
- Permitting
- Landscape Architecture

CROSSMAN ENGINEERING

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151 Centerville Road 103 Commonwealth Avenue
Warwick, RI 02886 North Attleboro, MA 02763
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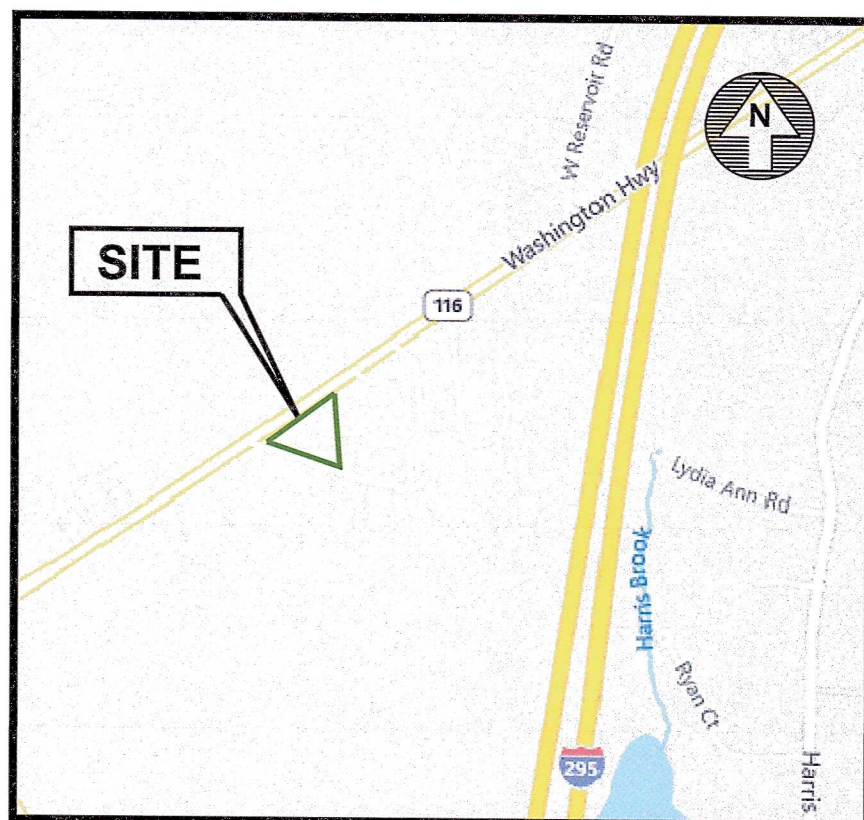
Email: cei@crossmaneng.com

ARCHITECT

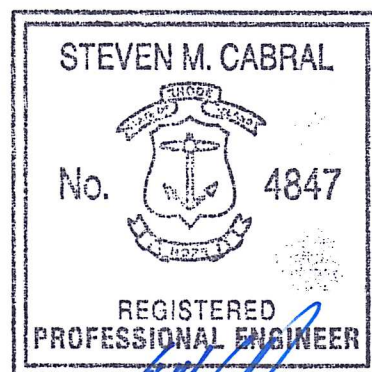


**AHARONIAN
& ASSOCIATES, INC.**
Architects
401-232-5010
www.arch-eng.com

310 GEORGE WASHINGTON HIGHWAY- SUITE 100
SMITHFIELD, RHODE ISLAND 02917



LOCATION MAP
NOT TO SCALE



INDEX OF DRAWINGS

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FP FLOODPLAIN COMPENSATION PLAN

REVISIONS

No.	DESCRIPTION	DATE
1	REVISED LAYOUT	08/27/21
2	REVISED LOD	09/10/21
3	R.I.D.E.M. COMMENTS	09/25/21
4	TOWN COMMENTS	01/28/22
5	TOWN COMMENTS	03/22/22
6	ADDENDUM 4	07/26/22
7	FOR CONSTRUCTION	10/31/22

OCTOBER 31, 2022
SHEET 1 of 16

GENERAL NOTES

1. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING DRAINAGE AND UTILITIES, BOTH UNDERGROUND AND OVERHEAD, BEFORE EXCAVATION BEGINS IN ACCORDANCE WITH "DIG SAFE PROGRAM LAW" ENACTED BY THE R.I. LEGISLATURE AND BY CONTACTING THE INDIVIDUAL UTILITY COMPANIES. EXCAVATION SHALL BE IN ACCORDANCE WITH ALL STATUTES, ORDINANCES, RULES AND REGULATIONS OF ANY MUNICIPALITY, STATE OR FEDERAL AGENCY THAT MAY APPLY. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
2. SPECIFICATIONS TO GOVERN THIS PROJECT ARE R.I.D.O.T. STANDARD SPECIFICATIONS AND DETAILS. FOR ALL EXCAVATION, PLACEMENT OF FILL, PIPE BITUMINOUS PAVEMENT, CUTTING INTO CATCHBASIN/MANHOLE, CONCRETE AND SAWCUTTING, THE CONTRACTOR SHALL PERFORM THE WORK IN FULL COMPLIANCE WITH THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, MARCH 2018 EDITION, WITH LATEST REVISIONS UNLESS OTHERWISE SHOWN ON PLANS. THE "METHOD OF MEASUREMENT" AND "BASIS OF PAYMENT" ARE NOT APPLICABLE. THESE SPECIFICATIONS CAN BE OBTAINED ON-LINE AT:

<http://www.dot.ri.gov/business/bluebook.php>

3. UNLESS SPECIFICALLY REFERENCED ON THE PLANS, ALL WORK ON SITE SHALL USE THE RHODE ISLAND STANDARD DETAILS, JUNE 21, 2019 WITH ALL REVISIONS AS PREPARED BY THE DEPARTMENT OF TRANSPORTATION.
4. THE CONTRACTOR MUST VERIFY PRIOR TO CONSTRUCTION THAT ALL REQUIRED AUTHORIZATION TO PERFORM WORK HAS BEEN OBTAINED. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION OPERATIONS INCLUDING ALL ACTIONS OR OMISSIONS OF ANY SUBCONTRACTORS, AGENTS OR EMPLOYEES. THE CONTRACTOR MUST ENSURE THAT THE CONDITIONS OF ALL PERMITS, SPECIFICATIONS AND FEDERAL, STATE AND LOCAL REGULATIONS ARE STRICTLY ENFORCED. THE CONTRACTOR IS ALSO RESPONSIBLE FOR ASPECTS OF ON-SITE SAFETY INCLUDING ANY DAMAGE TO EXISTING STRUCTURES.
5. WORK SHOWN ON THE PLANS FOR WHICH THERE ARE NO PARTICULAR DETAILS OR SPECIFICATIONS DOES NOT RELIEVE THE CONTRACTOR FROM FURNISHING AND INSTALLING THE WORK. THE CONTRACTOR SHALL THOROUGHLY EXAMINE THE CONTRACT DOCUMENTS AND PLANS AND INSPECT THE SITE, AND THE BID PRICE SHALL INCLUDE ALL SERVICES AND MATERIALS NECESSARY TO COMPLETE THE PROJECT. ANY CHANGES TO THE PROJECT OR THE INSTALLATION OF AN ITEM FOR WHICH NO PARTICULAR DETAIL OR SPECIFICATION WAS PROVIDED MUST BE REVIEWED BY AND MUST BE ACCEPTABLE TO THE ENGINEER.
6. CONTRACTOR IS RESPONSIBLE TO VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO ANY WORK. THE CONTRACTOR SHALL PERFORM TEST PITS TO LOCATE EXISTING UTILITY STUBS AT CONNECTION POINTS.
7. ALL DISTURBED AREAS SHALL BE REPLACED IN KIND UNLESS OTHERWISE SHOWN.
8. "APPROVED EQUAL" PRODUCTS MAY BE USED BY THE CONTRACTOR ONLY UPON APPROVAL BY THE DESIGN ENGINEER. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE SUBMITTALS TO THE DESIGN ENGINEER FOR REVIEW.
9. THIS PROPOSED USE DOES NOT MEET THE RIDEM DEFINITION OF A LAND USE WITH HIGHER POTENTIAL POLLUTANT LOAD.
10. THE DETECTABLE WARNING DEVICE FOR ADA RAMPS SHALL NOT BE USED FOR WHEELCHAIR RAMP AREAS.

11. ALL SEWER CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE TOWN OF SMITHFIELD SEWER AUTHORITY "STANDARD SPECIFICATIONS AND DETAILS FOR THE INSTALLATION OF SEWER AND APPURTENANCES BY PRIVATE DEVELOPERS".

LAYOUT NOTE

THE LAYOUT SHOWN REPRESENTS A GRAPHICAL DESIGN, AND PRIOR TO THE CONSTRUCTION, THE CONTRACTOR SHALL ENGAGE A PROFESSIONAL LAND SURVEYOR (PLS) REGISTERED IN THE STATE OF RHODE ISLAND TO SET AND VERIFY ALL LINES AND GRADES. ALL EXISTING UTILITY LOCATIONS AND ELEVATIONS ARE TO BE CONFIRMED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ANY ITEM FOUND WHICH DOES NOT MATCH THE PLANS MUST BE BROUGHT TO THE ENGINEER'S ATTENTION PRIOR TO CONSTRUCTION FOR REVIEW. NO WORK SHALL PROCEED UNTIL AUTHORIZED BY THE ENGINEER.

MAINTENANCE AND PROTECTION OF TRAFFIC NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MAINTENANCE AND PROTECTION OF PEDESTRIAN AND VEHICULAR TRAFFIC INCLUDING TRAFFIC PROTECTION. ALL TEMPORARY CONSTRUCTION SIGNS, BARRICADES AND LANE CLOSURES SHALL BE IN CONFORMANCE WITH THE LATEST REVISIONS OF MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.)
2. TEMPORARY CONSTRUCTION SIGNS AND ALL APPLICABLE TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF WORK IN ANY AREA OPEN TO TRAFFIC.
3. ALL MAINTENANCE AND PROTECTION OF TRAFFIC CONTROL SETUPS, SIGNS, CHANNELING DEVICES, ETC., SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2009 EDITION, LATEST REVISIONS.
4. SIGN MOUNTINGS SHALL BE IN ACCORDANCE WITH THE STATE D.O.T. SPECIFICATIONS FOR TEMPORARY CONSTRUCTION SIGNS.

CONSTRUCTION NOTES

1. THE CONTRACTOR IS REQUIRED TO OBTAIN AND REVIEW ALL ENGINEERING AND PERMIT DOCUMENTS COMPLETED FOR FINAL DESIGN.
2. THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO INSTALLATION OF UTILITIES ON SITE. THE COORDINATION IS NECESSARY FOR THE ENGINEER TO SCHEDULE SITE INSPECTIONS AS REQUIRED.
3. THE CONTRACTOR IS REQUIRED TO MAINTAIN DETAILED AS-BUILT INFORMATION FOR ALL UTILITY INSTALLATION. AS-BUILT INFORMATION INCLUDES MATERIAL LIST, PIPE DEPTH NOTATIONS AND SWING TIE LOCATIONS (2 MINIMUM) FROM NEW PIPE TO PERMANENT STRUCTURES. ALL PIPE BEND/ELBOW LOCATIONS SHALL BE DIMENSIONED.

FLOOD ZONE NOTE

THE SITE IS WITHIN FLOOD ZONE X, AREAS TO BE OUTSIDE THE 0.2% CHANCE FLOODPLAIN, AND FLOOD ZONE A, AREAS SUBJECT TO FLOODING BY THE 1% CHANCE ANNUAL FLOOD ACCORDING TO FLOOD INSURANCE RATE MAP, PROVIDENCE COUNTY, RHODE ISLAND, PANEL 167 OF 451, MAP NUMBER 44007C0167H, EFFECTIVE DATE OCTOBER 2, 2015.

DESIGN FLOOD ELEVATION OF 371.1 IS USED BASED UPON EXISTING OVERFLOW GRADE OF 371.1 ONTO GEORGE WASHINGTON HIGHWAY.

PERMITTING NOTES

1. A RIDEM WETLAND PERMIT IS REQUIRED.
2. LYDIA ANN ROAD IS NOT A RIDOT MAINTAINED ROADWAY. A RIDOT PAP IS NOT REQUIRED.
3. THE PROPOSED IMPROVEMENTS WILL RESULT IN MORE THAN 1 ACRE OF SOIL DISTURBANCE. A RIDEM RIDPES PERMIT IS REQUIRED.
4. A RIDEM PERMIT FOR THE PROPOSED UNDERGROUND STORMWATER INFILTRATION SYSTEM IS REQUIRED (GROUNDWATER DISCHARGE SYSTEM APPROVAL).
5. THE SITE IS NOT WITHIN A RIDEM NATURAL HERITAGE AREA.
6. A SEPARATE UTILITY PERMIT APPLICATION WILL BE REQUIRED FROM THE TOWN OF SMITHFIELD FOR PROPOSED WATER, SEWER AND ROAD OPENING PERMITS.
7. THE CONTRACTOR WILL BE RESPONSIBLE TO CONTACT AND COORDINATE WITH THE GAS, ELECTRIC, TELEPHONE/COMMUNICATIONS COMPANIES FOR THE NEW INSTALLATION AND SERVICE TO THE BUILDINGS.

PROPOSED PAVEMENT STRUCTURE

- 1 1/2" BITUMINOUS CONCRETE SURFACE COURSE, CLASS 12.5 HMA
- 2 1/2" BITUMINOUS CONCRETE BASE COURSE, CLASS 19.5 HMA
- 12" GRAVEL BORROW SUBBASE

NOTE: THE PAVEMENT THICKNESS WITHIN THE LYDIA ANN ROAD RIGHT OF WAY SHALL MATCH THE CURRENT PAVEMENT THICKNESS OF LYDIA ANN ROAD

STORMWATER MANAGEMENT SYSTEM - MAINTENANCE OPERATION

UPON PROJECT COMPLETION, THE SITE OWNER SHALL ADHERE TO THE FOLLOWING MAINTENANCE RECOMMENDATIONS.

1. CATCHBASINS, MANHOLES, AND CLEAN-OUTS:

INSPECTION SHALL OCCUR ON AN ANNUAL BASIS BY QUALIFIED PERSONNEL TO ENSURE PROPER OPERATION. THE INSPECTION SHOULD, AS A MINIMUM, CONCENTRATE ON THE FOLLOWING:

- DAMAGE TO GRATE/COVER
- EVIDENCE OF STANDING WATER
- DEBRIS REMOVAL
- STRUCTURAL ALIGNMENT/INTEGRITY

2. WATER QUALITY CHAMBER:

REGULAR INSPECTIONS AND MAINTENANCE OF THE STORMCEPTOR DEVICE IS REQUIRED TO MINIMIZE STORMWATER POLLUTION AND FLOODING. FOLLOWING CONSTRUCTION, INSPECTIONS FOR THE FIRST YEAR OF OPERATION SHALL OCCUR AFTER EVERY STORM EVENT WITH GREATER THAN ONE INCH OF RAINFALL, IMMEDIATELY AFTER OIL, FUEL OR OTHER CHEMICAL SPILLS, AND QUARTERLY (FOUR TIMES PER YEAR). INSPECTIONS SHALL OCCUR A MINIMUM OF TWO TIMES PER YEAR FOR THE FOLLOWING YEARS. THE STORMCEPTOR DEVICE IS REQUIRED TO BE CLEANED ANNUALLY AND WHENEVER SEDIMENT DEPTHS REACH 15% OF THE UNIT'S TOTAL STORAGE CAPACITY

3. SEDIMENT REMOVAL:

FOLLOWING CONSTRUCTION, SEDIMENT REMOVAL SHALL BE CONDUCTED AS DEEMED NECESSARY BY THE SYSTEM INSPECTIONS. ALL REMOVED SEDIMENT IS TO BE TESTED TO DETERMINE POLLUTANT CONTENT. THE SEDIMENT IS TO BE PROPERLY DISPOSED IN UPLAND AREAS BASED UPON THE TEST RESULTS AND LOCAL, STATE, AND FEDERAL REGULATIONS.

4. UNDERGROUND INFILTRATION/DETENTION SYSTEMS:

THE UNDERGROUND INFILTRATION/DETENTION SYSTEMS SHALL BE INSPECTED ANNUALLY AND AFTER STORMS EQUAL TO OR GREATER THAN THE 1-YEAR, 24-HOUR TYPE III STORM EVENT (2.7 INCHES IN 24 HOURS). INSPECT THE INLET PIPES AND OUTLET PIPES FOR CLOGGING. REMOVE ACCUMULATED SEDIMENT, TRASH AND DEBRIS. INSPECT SYSTEM AND OUTLET STRUCTURE FOR STRUCTURAL INTEGRITY AND STANDING WATER. INSPECT PAVEMENT AREA OVER SYSTEM FOR SETTLEMENT.

5. ANNUAL SWEEPING:

ANNUAL PARKING LOT AND DRIVEWAY SWEEPING SHALL BE CONDUCTED DURING THE SPRING OF EVERY YEAR.

6. NO MATERIALS CONTAINING FPAs SHALL BE USED IN AREAS ON-SITE THAT COULD DRAIN INTO PROPOSED DRAINAGE SYSTEM.

SOIL REMOVAL NOTE

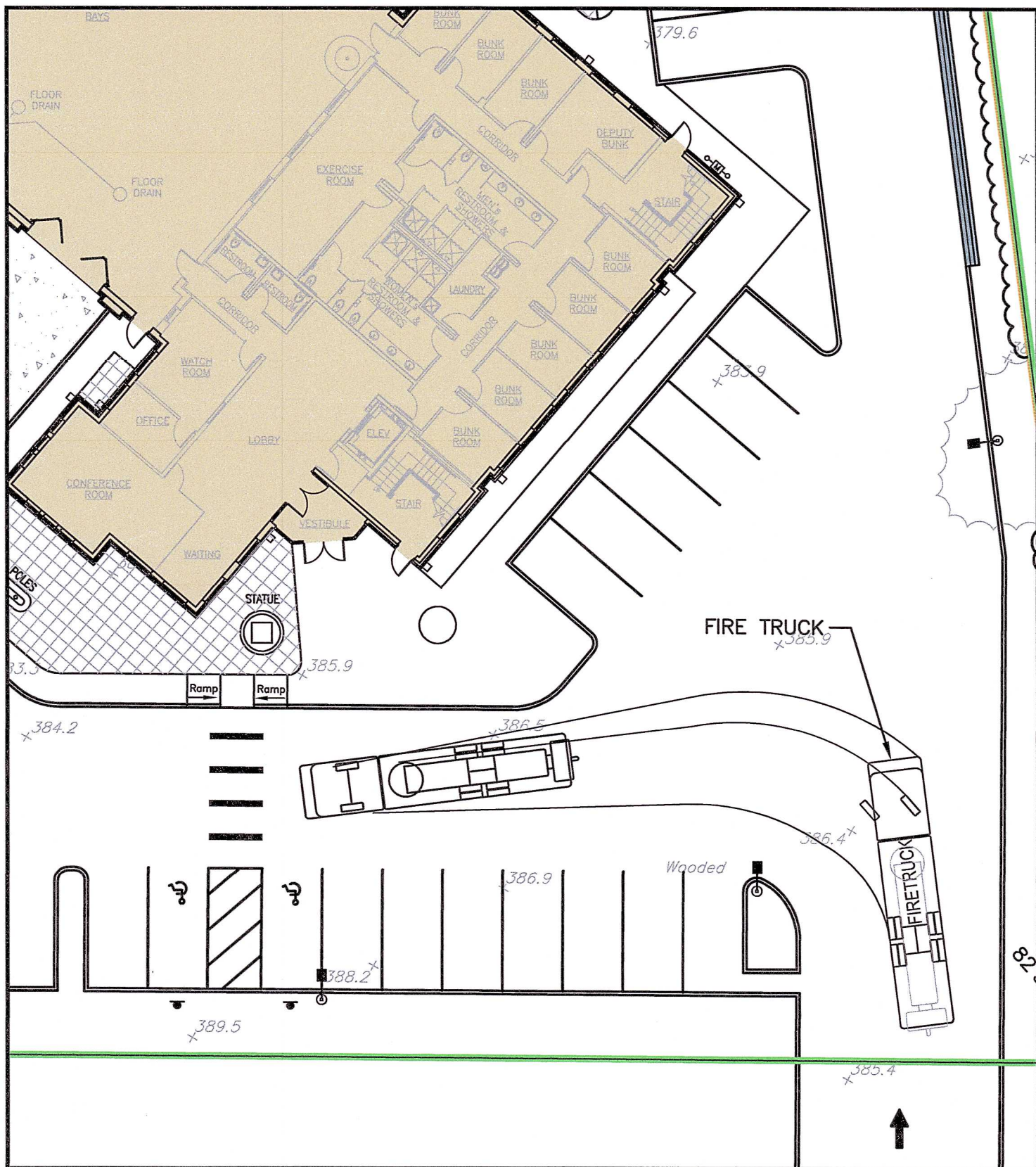
THE SOIL HORIZONS A AND B SHALL BE REMOVED WITHIN THE AREAS OF THE PROPOSED BUILDING, PAVEMENT AND UNDERGROUND INFILTRATION SYSTEM AREA. IF ADDITIONAL SOIL IS NEEDED UNDER THE PROPOSED PAVEMENT/GRAVEL BORROW SUBASE TO MATCH GRADES, USE GRAVEL BORROW OR APPROVED SOIL BACKFILL.

LEGEND

EXISTING	PROPOSED
	PROPERTY LINE
	CURB
	UTILITY POLE
	LIGHT POLE
	DRAIN LINE
	SANITARY SEWER
	GAS LINE
	DOMESTIC WATER LINE
	UNDERGROUND ELECTRIC/CABLE/TELEPHONE
	OVERHEAD WIRE
	DRAINAGE MANHOLE
	CATCH BASIN
	SEWER MANHOLE
	HYDRANT
	WATER GATE
	GAS GATE
	CLEAN-OUT TO GRADE
	SIGN
	SAWCUT PAVEMENT
	CONTOURS
	SPOT GRADES
	CHAIN LINK FENCE
	GUARDRAIL
	TREE
	TEST PIT
	BOLLARDS
	LIMIT OF DISTURBANCE
	FILTER SOXX
	SILT FENCE
	STATE HIGHWAY LINE
	WETLAND FLAG
	50' PERIMETER WETLAND
	FLOOD PLAIN

SOIL EVALUATION DATA

SOIL EVALUATIONS WERE CONDUCTED BY CROSSMAN ENGINEERING ON DECEMBER 9, 2020.



FIRE TRUCK TURNING DETAIL

SCALE: 1"=20'

TEST PIT 1

0"	GR.=386.5	
2"	Forest Litter	Oe
	Dark Brown Sandy Loam	A (Friable)
5"	Dark Yellowish Brown Stony Sandy Loam	Bw1 (Friable)
16"	Yellowish Brown Stony Sandy Loam	Bw2 (Friable)
24"	Light Yellowish Brown Stony, Cobby Gravelly Fine Sand/Loamy Sand	C1 (Friable)
66"	Light Yellowish Brown Stony, Cobby Gravelly Loamy Sand	C2 (Friable)
79"	72" REFUSAL NO WATER SEEPAGE NO REDOX FEATURES ESHW=72" DESIGN GWT=380.5	

TEST PIT 6

0"	GR.=371.50	
2"	Forest Litter	Oe
	Dark Brown Sandy Loam	A (Friable)
5"	Dark Yellowish Brown Stony Sandy Loam	Bw1 (Friable)
18"	Yellowish Brown Stony Sandy Loam	Bw2 (Friable)
30"	Light Yellowish Brown Stony, Cobby Gravelly Fine Sand/Loamy Sand	C1 (Friable)
50"	Light Yellowish Brown Stony, Cobby Gravelly Loamy Sand	C2 (Friable)
104"	NO REFUSAL 80" WATER SEEPAGE NO REDOX FEATURES ESHW=50" DESIGN GWT=367.33	

TEST PIT 2

0"	GR.=387.25	
2"	Forest Litter	Oe
	Dark Brown Sandy Loam	A (Friable)
4"	Dark Yellowish Brown Stony Sandy Loam	Bw1 (Friable)
15"	Yellowish Brown Stony Sandy Loam	Bw2 (Friable)
26"	Light Yellowish Brown Stony, Cobby Gravelly Fine Sand/Loamy Sand	C1 (Friable)
72"	Light Yellowish Brown Stony, Cobby Gravelly Loamy Sand	C2 (Friable)
88"	88" REFUSAL NO WATER SEEPAGE SOME REDOX FEATURES (<2%) ESHW=72" DESIGN GWT=381.25	

TEST PIT 7

0"	GR.=381.80	
1"	Forest Litter	Oe
	Dark Brown Sandy Loam	A (Friable)
3"	Dark Yellowish Brown Stony Sandy Loam	Bw1 (Friable)
8"	Yellowish Brown Stony Sandy Loam	Bw2 (Friable)
26"	Light Yellowish Brown Stony, Cobby Gravelly Fine Sand/Loamy Sand	C1 (Friable)
54"	Light Yellowish Brown Stony, Cobby Gravelly Loamy Sand	C2 (Friable)
72"	72" REFUSAL NO WATER SEEPAGE NO REDOX FEATURES ESHW=72" DESIGN GWT=375.8	

TEST PIT 3

0"	GR.=378.25	
3"	Forest Litter	Oe
	Dark Brown Sandy Loam	A (Friable)
5"	Dark Yellowish Brown Stony Sandy Loam	Bw1 (Friable)
16"	Light Yellowish Brown Stony Sandy Loam	Bw2 (Friable)
36"	Light Yellowish Brown Stony, Cobby Gravelly Fine Sand/Loamy Sand	C1 (Friable)
66"	Light Yellowish Brown Stony, Cobby Gravelly Loamy Sand	C2 (Friable)
114"	NO REFUSAL NO WATER SEEPAGE NO REDOX FEATURES ESHW=68" DESIGN GWT=372.25	

TEST PIT 4

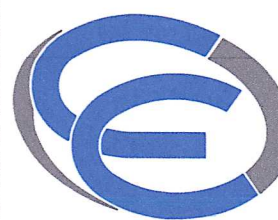
0"	GR.=384.75	
2"	Forest Litter	Oe
	Dark Brown Sandy Loam	A (Friable)
7"	Dark Yellowish Brown Stony Sandy Loam	Bw1 (Friable)
14"	Yellowish Brown Stony Sandy Loam	Bw2 (Friable)
33"	Light Yellowish Brown Stony, Cobby Gravelly Fine Sand/Loamy Sand	C1 (Friable)
56"	Light Yellowish Brown Stony, Cobby Gravelly Loamy Sand	C2 (Friable)
93"	93" REFUSAL NO WATER SEEPAGE 56" REDOX FEATURES ESHW=56" DESIGN GWT=380.1	

TEST PIT 5

0"	GR.=383.50	
2"	Forest Litter	Oe
	Dark Brown Sandy Loam	A (Friable)
5"	Dark Yellowish Brown Stony Sandy Loam	Bw1 (Friable)
17"	Yellowish Brown Stony Sandy Loam With Boulders	Bw2 (Friable)
36"	Stony Sandy Loam With Boulders And Interlocking Stones	C1
40"	36"-40" REFUSAL NO WATER SEEPAGE NO REDOX FEATURES	

TEST PIT 9

0"	GR.=377.75	
2"	Forest Litter	Oe
	Dark Brown Sandy Loam	A (Friable)
5"	Dark Yellowish Brown Stony Sandy Loam	Bw1 (Friable)
11"	Yellowish Brown Stony Sandy Loam	Bw2 (Friable)
24"	Light Yellowish Brown Stony, Cobby Gravelly Fine Sand/Loamy Sand	C1 (Friable)
64"	Light Yellowish Brown Stony, Cobby Gravelly Loamy Sand	C2 (Friable)
106"	NO REFUSAL NO WATER SEEPAGE NO REDOX FEATURES ESHW=72" DESIGN GWT=371.75	



- Civil
- Transportation
- Environmental
- Site Planning
- Surveying
- Permitting
- Landscape Architecture

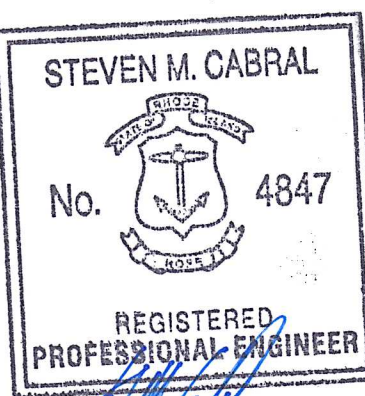
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KEY PLAN

PROJECT TITLE:

**SMITHFIELD
FIRE STATION**
PLAT MAP 48, LOT 51
ZONING DISTRICT LI
LIGHT INDUSTRIAL DISTRICT
321 GEORGE WASHINGTON HIGHWAY
SMITHFIELD, RI

PREPARED FOR:

**AHARONIAN
& ASSOCIATES, INC.**
Architects
310 George Washington Hwy
Suite 100
Smithfield, Rhode Island
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401-232-5010
www.arch-eng.com

DRAWING TITLE:

GENERAL NOTES and LEGEND

DATE: OCTOBER 31, 2022 SCALE: AS SHOWN

DWG. NAME: 2495-C01-NOTE-R7.dwg

REVISIONS

NUMBER	REMARKS	DATE
1	REVISED LAYOUT	08/27/21
2	REVISED LOD	09/10/21
3	R.I.D.E.M. COMMENTS	09/25/21
4	TOWN COMMENTS	01/28/22
5	TOWN COMMENTS	03/22/22
6	ADDENDUM 4	07/26/22
7	FOR CONSTRUCTION	10/31/22

DRAWING NUMBER

C1

SHEET: 2 OF 16





- Civil
- Transportation
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- Site Planning
- Surveying
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- Landscape Architecture

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STEVEN M. CABRAL

No. 4847


REGISTERED PROFESSIONAL ENGINEER



KEY PLAN

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PLAT MAP 48, LOT 51
ZONING DISTRICT LI
LIGHT INDUSTRIAL DISTRICT
321 GEORGE WASHINGTON HIGHWAY
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**AHARONIAN
& ASSOCIATES, INC.**
Architects
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Smithfield, Rhode Island
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401-232-5010
www.arch-eng.com

DRAWING TITLE:

AERIAL MAP

DATE: OCTOBER 31, 2022 SCALE: 1"=40'

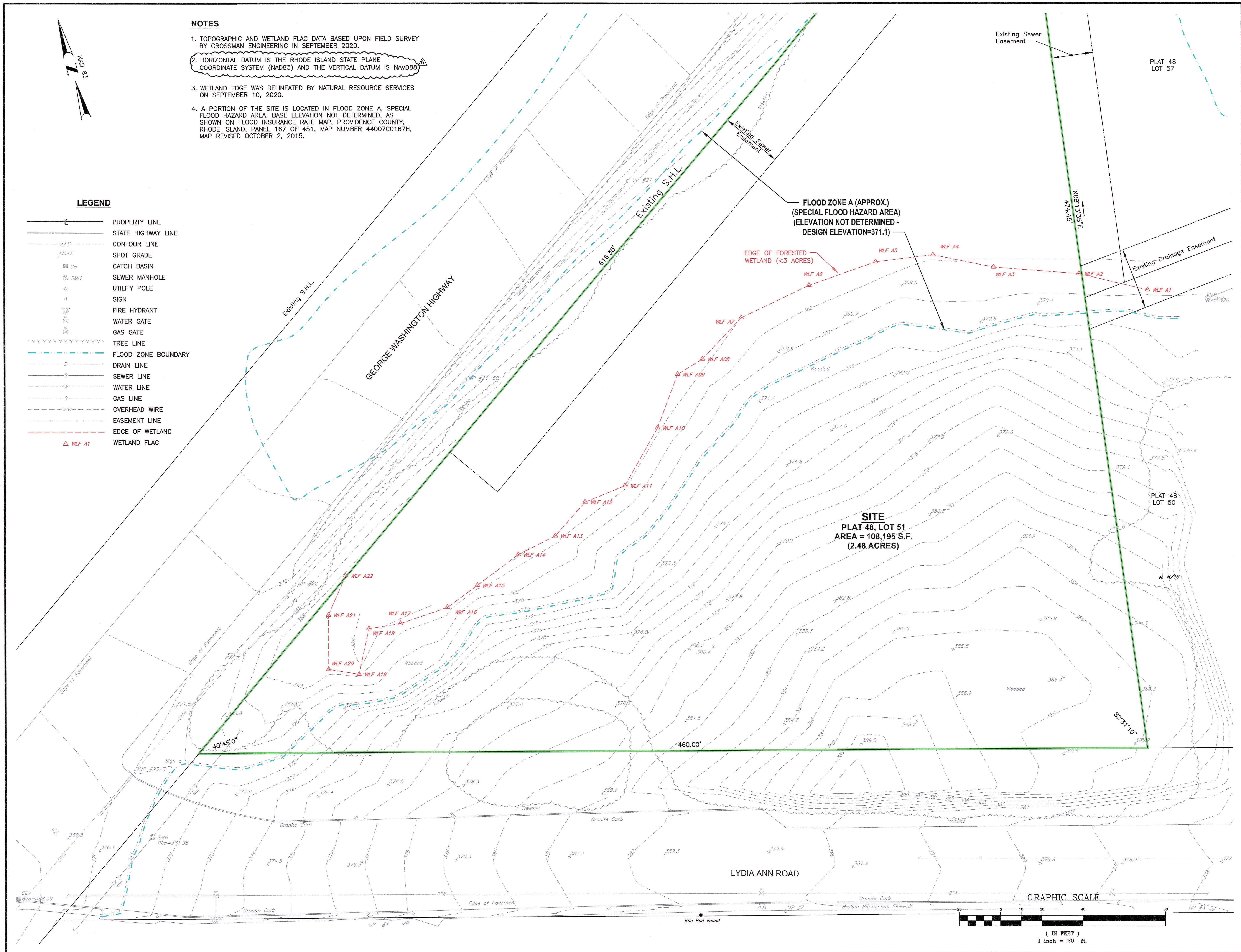
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REVISIONS		
NUMBER	REMARKS	DATE
1	REVISED LAYOUT	08/27/21
2	REVISED LOD	09/10/21
3	R.I.D.E.M. COMMENTS	09/25/21
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7	FOR CONSTRUCTION	10/31/22

DRAWING NUMBER

C2

SHEET: 3 OF 16



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DRAWING TITLE:

**EXISTING
CONDITIONS PLAN**

DATE: OCTOBER 31, 2022 SCALE: 1"=20'

DWG. NAME: 2495-C03-EXCN-R7.dwg

REVISIONS

NUMBER	REMARKS	DATE
1	REVISED LAYOUT	08/27/21
2	REVISED LOD	09/10/21
3	R.I.D.E.M. COMMENTS	09/25/21
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7	FOR CONSTRUCTION	10/31/22

DRAWING NUMBER

C3

SHEET: 4 OF 16

PARKING REQUIREMENTS

4,950 S.F. ADMINISTRATIVE OFFICE/CONFERENCE = (4 SPACES/1,000 S.F.)
4,950 S.F./1,000 S.F. x 4 = 20 SPACES REQUIRED

5,100 S.F. GARAGE/APPARTUS BAYS = (NO PARKING REQUIREMENT)
NO PARKING SPACES REQUIRED

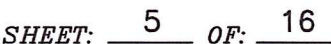
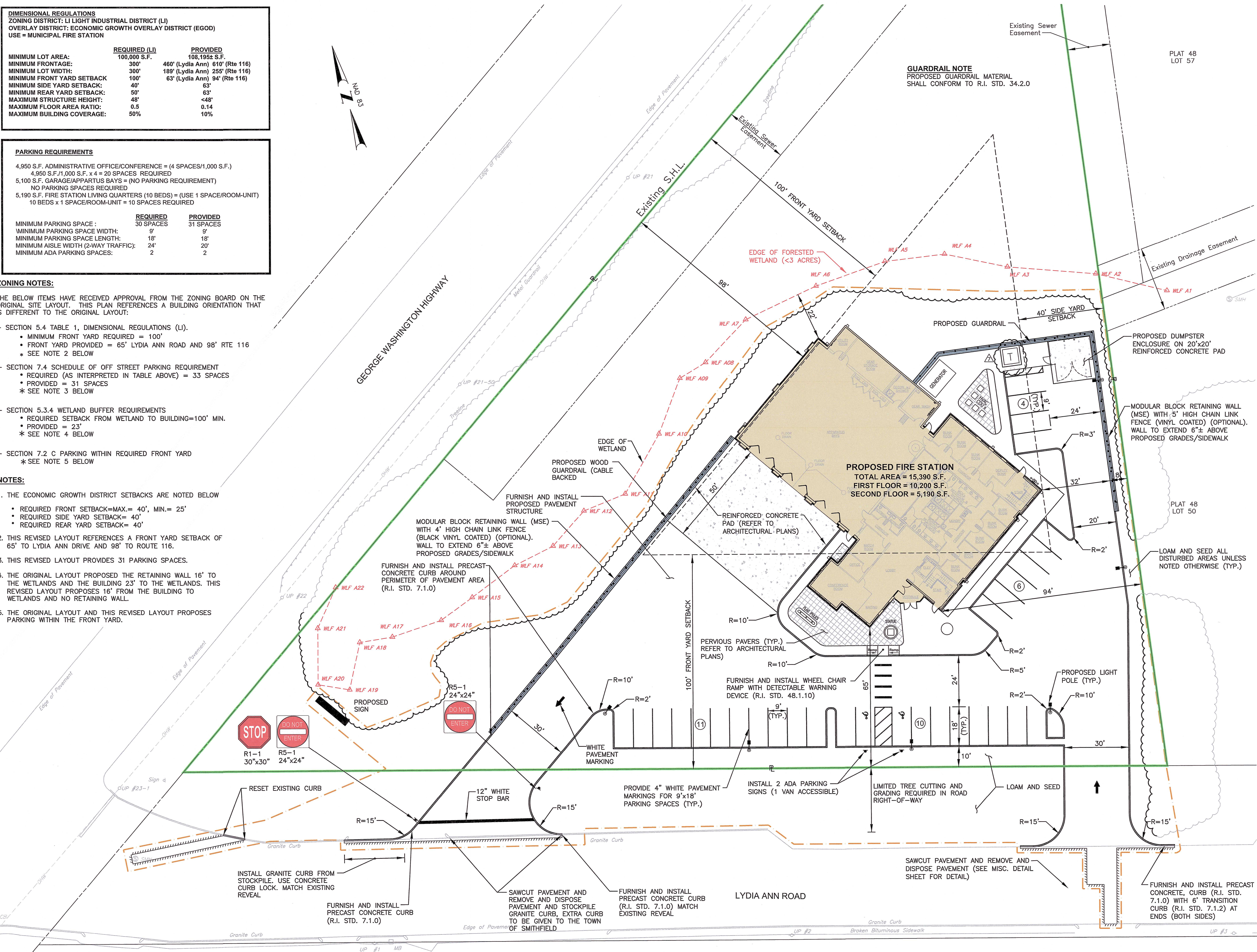
5,190 S.F. FIRE STATION LIVING QUARTERS (10 BEDS) = (USE 1 SPACE/ROOM-UNIT)
10 BEDS x 1 SPACE/ROOM-UNIT = 10 SPACES REQUIRED

	REQUIRED 30 SPACES	PROVIDED 31 SPACES
MINIMUM PARKING SPACE :		
MINIMUM PARKING SPACE WIDTH:	9'	9'
MINIMUM PARKING SPACE LENGTH:	18'	18'
MINIMUM AISLE WIDTH (2-WAY TRAFFIC):	24'	20'
MINIMUM ADA PARKING SPACES:	2	2

THE BELOW ITEMS HAVE RECEIVED APPROVAL FROM THE ZONING BOARD ON THE ORIGINAL SITE LAYOUT. THIS PLAN REFERENCES A BUILDING ORIENTATION THAT IS DIFFERENT TO THE ORIGINAL LAYOUT:

- SECTION 5.4 TABLE 1, DIMENSIONAL REGULATIONS (LU).
 - MINIMUM FRONT YARD REQUIRED = 100'
 - FRONT YARD PROVIDED = 65' LYDIA ANN ROAD AND 98' RTE 116
 - * SEE NOTE 2 BELOW
- SECTION 7.4 SCHEDULE OF OFF STREET PARKING REQUIREMENT
 - REQUIRED (AS INTERPRETED IN TABLE ABOVE) = 33 SPACES
 - PROVIDED = 31 SPACES
 - * SEE NOTE 3 BELOW
- SECTION 5.3.4 WETLAND BUFFER REQUIREMENTS
 - REQUIRED SETBACK FROM WETLAND TO BUILDING=100' MIN.
 - PROVIDED = 23'
 - * SEE NOTE 4 BELOW
- SECTION 7.2 C PARKING WITHIN REQUIRED FRONT YARD
 - * SEE NOTE 5 BELOW

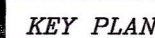
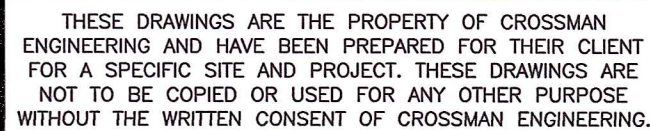
3. THE ECONOMIC GROWTH DISTRICT SETBACKS ARE NOTED BELOW
 - REQUIRED FRONT SETBACK=MAX.= 40', MIN.= 25'
 - REQUIRED SIDE YARD SETBACK= 40'
 - REQUIRED REAR YARD SETBACK= 40'
4. THIS REVISED LAYOUT REFERENCES A FRONT YARD SETBACK OF 65' TO LYDIA ANN DRIVE AND 98' TO ROUTE 116.
5. THIS REVISED LAYOUT PROVIDES 31 PARKING SPACES.
6. THE ORIGINAL LAYOUT PROPOSED THE RETAINING WALL 16' TO THE WETLANDS AND THE BUILDING 23' TO THE WETLANDS. THIS REVISED LAYOUT PROPOSES 16' FROM THE BUILDING TO WETLANDS AND NO RETAINING WALL.
7. THE ORIGINAL LAYOUT AND THIS REVISED LAYOUT PROPOSES PARKING WITHIN THE FRONT YARD.



* REFER TO SHEET C9

1. DMH2 AND DMH3 HAVE INTERIOR WEIR WALLS. REFER TO MISCELLANEOUS DETAIL SHEETS. STRUCTURES WILL HAVE 2 COVERS FOR ACCESS TO EACH SIDE OF WEIR WALL. CONTRACTOR TO COORDINATE WITH CONCRETE MANUFACTURER TO PROVIDE STRUCTURE CAPABLE TO WITHSTAND H-20 LOADING. PROVIDE SUBMITTALS TO ENGINEER FOR REVIEW.
2. DI 1 AND DI 2 ARE WITHIN THE RIGHT-OF-WAY AND SHALL BE MAINTAINED WITH THE SITE'S STORMWATER MANAGEMENT SYSTEM.

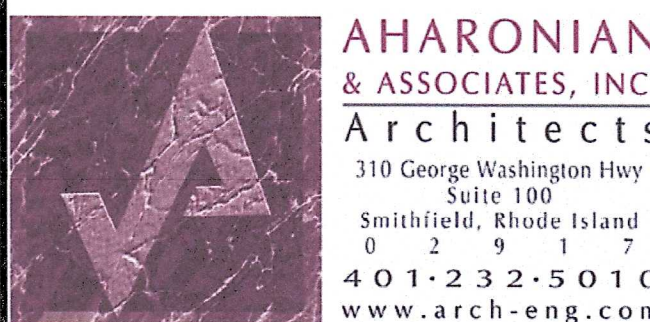
1. THE CONTRACTOR TO VERIFY THAT ALL STRUCTURES ARE COMPATIBLE WITH FRAME AND GRATE.
2. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE SHOP DRAWINGS AND SPECIFICATIONS FOR ALL DRAINAGE RELATED ITEMS FOR REVIEW AND APPROVAL BY THE ENGINEER. PRIOR TO ORDERING, CONCRETE MANUFACTURER SHALL REVIEW RIM TO TOP OF PIPE ELEVATIONS AND PROVIDE SPECIFIC DETAILS.
3. ALL STRUCTURES SHALL BE DESIGNED FOR H-20 LOADING.
4. ALL CATCH BASINS SHALL BE PRECAST CONCRETE WATER TIGHT STRUCTURES (NO WEEP HOLES) WITH A 3' DEEP SUMP. DROP INLETS WILL NOT HAVE SUMP.
5. UNLESS OTHERWISE NOTED, ALL SOLID DRAINAGE PIPE SHALL BE ADS N-12 HDPE OR APPROVED EQUAL. PIPE BEDDING SHALL BE IN CRUSHED STONE OR GRAVEL BORROW COMPACTED TO 95% DRY DENSITY (MODIFIED PROCTOR METHOD). ADS PIPE SHALL BE INSTALLED ACCORDING TO MANUFACTURERS' REQUIREMENTS.
6. THE PROPOSED BUILDING ROOF DRAINS SHALL FLOW INTO THE UNDERGROUND INFILTRATION OR DETENTION SYSTEMS AS NOTED ON THE PLAN. ROOF DRAINS SHALL BE INSTALLED WITH A 1.0% MINIMUM SLOPE. PROVIDE CLEAN OUTS AT BUILDING CORNERS.
7. THE CONTRACTOR SHALL PROVIDE AS-BUILT PLANS THAT INCLUDE DRAINAGE SYSTEM PIPE INVERTS, CATCH BASINS AND MANHOLES, DETENTION SYSTEM AND THE INFILTRATION SYSTEM (LOCATION AND GRADES).
8. STABILIZE ALL SLOPES GREATER THAN 3:1 WITH JUTE MESH (OR APPROVED EQUAL).
9. ALL SLOPES/GRADING SHOWN ON THIS PLAN WILL BE INSTALLED AT A 3:1 MAXIMUM SLOPE, UNLESS OTHERWISE SHOWN.
10. PROVIDE 1-6" DIA. PVC CONNECTING PIPE ON EACH ROW EVERY 25', TO CONNECT ROW TO ADJACENT ROW. THIS SHALL BE INSTALLED FOR EVERY ROW (25' SPACING) SEE INSERTA-TEE DETAILS PROVIDED ON MISC. DETAIL SHEET.
11. CLEAN OUTS TO GRADE SHALL BE PROVIDED AT ALL ENDS OF EACH CHAMBER TRENCH.
12. HORIZONTAL DATUM IS THE RHODE ISLAND STATE PLANE COORDINATE SYSTEM (NAD83) AND THE VERTICAL DATUM IS NAVD88.



PROJECT TITLE:

**SMITHFIELD
FIRE STATION
PLAT MAP 48, LOT 51
ZONING DISTRICT LI
LIGHT INDUSTRIAL DISTRICT
321 GEORGE WASHINGTON HIGHWAY
SMITHFIELD, RI**


PREPARED FOR



DRAWING TITLE

GRADING and DRAINAGE PLAN

DATE: OCTOBER 31, 2022	SCALE: 1"=20'
DWG. NAME: 2495-C05-GRADE-R7.dwg	

REVISIONS		
		
NUMBER	REMARKS	DATE
1	REVISED LAYOUT	08/27/21
2	REVISED LOD	09/10/21
3	R.I.D.E.M. COMMENTS	09/25/21
4	TOWN COMMENTS	01/28/22
5	TOWN COMMENTS	03/22/22
6	ADDENDUM 4	07/26/22
7	FOR CONSTRUCTION	10/31/22

DRAWING NUMBER

C5

SHEET: 6 OF: 16

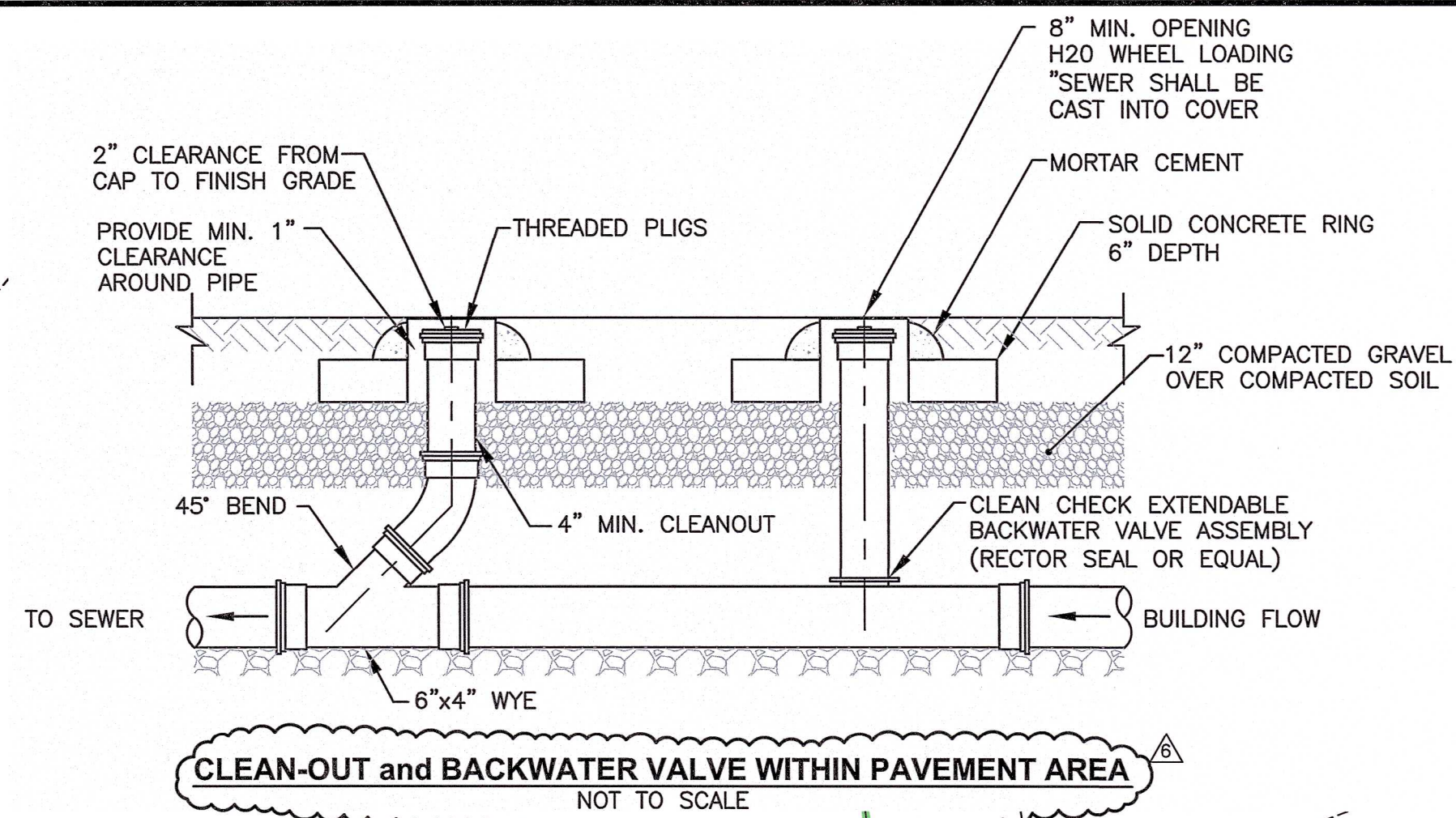
SEWER MANHOLE SCHEDULE

ALL SEWER MANHOLES SHALL BE 4' DIA. PRECAST CONCRETE WITH FRAME AND GRATE			
LOCATION	RIM	INV. (IN)	INV. (OUT)
SMH 1	381.80	374.00	373.90
SMH 2	379.80	370.10	370.00
SMH 3	374.00	366.00	365.90

NOTE:
SEWER MANHOLE FRAME AND COVER IS 26" DIAMETER
EJ PRODUCT No. 0021104C02 OR APPROVED EQUAL.

UTILITY NOTES

- CONTRACTOR SHALL COORDINATE NEW ELECTRIC AND COMMUNICATION SERVICE WITH UTILITY COMPANIES. THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF NEW CONDUITS, WIRES AND TRANSFORMERS, INCLUDING EXCAVATION, BACKFILL AND COMPACTION AS REQUIRED TO SERVICE THIS SITE.
- CONTRACTOR IS REQUIRED TO DIG TEST PITS AT ALL PROPOSED-EXISTING UTILITY TIE-IN AREAS. THIS WORK SHALL BE CONDUCTED PRIOR TO INSTALLATION. COORDINATION WITH OWNER AND ENGINEER IS REQUIRED.
- THE CONTRACTOR SHALL INSTALL NEW LIGHT POLES, HANDHOLE, AND ELECTRICAL CONDUITS FOR THIS SITE. REFER TO LIGHTING PLAN FOR LOCATIONS AND DETAILS. THIS CONTRACTOR IS RESPONSIBLE FOR THIS INSTALLATION. CONDUCT LOCATIONS SHALL BE CONFIRMED DURING CONSTRUCTION. COORDINATE WITH ENGINEER.
- ALL UTILITIES PENETRATING THE FOUNDATION WALL SHALL BE SLEEVED WITH WATER TIGHT FITTINGS.
- THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF UNDERGROUND CONDUIT, GAS, ELECTRIC AND COMMUNICATION SERVICE. BID PRICE SHALL INCLUDE PAVEMENT SAWCUT, REMOVAL AND DISPOSAL, EXCAVATION, PIPE/CONDUIT INSTALLATION AND BACKFILL.
- THE CONTRACTOR IS REQUIRED TO COORDINATE WITH THE ARCHITECT AND PLUMBING ENGINEER TO CONFIRM THE PROPOSED DOMESTIC WATER AND FIRE SERVICE SIZE. ANY MODIFICATIONS TO THE WATER SYSTEM REQUIRES ACCEPTANCE BY THE SMITHFIELD WATER DEPARTMENT. COORDINATION BY THE CONTRACTOR IS REQUIRED PRIOR TO CONSTRUCTION.
- PROPOSED GAS LINE SIZE SHALL BE VERIFIED BY THE ARCHITECT PRIOR TO CONSTRUCTION.
- UTILITY SERVICE LOCATIONS AT THE BUILDING AS SHOWN ON THIS PLAN MAY VARY DEPENDING ON FINAL ARCHITECTURAL DESIGN.
- CONTRACTOR SHALL VERIFY WATER, SEWER AND GAS LINE LOCATIONS AND ELEVATIONS PRIOR TO CONSTRUCTION.
- THE EXISTING SEWER, WATER, GAS, AND TELECOMM INFORMATION IS APPROXIMATE AND HAS BEEN TAKEN FROM PLANS PROVIDED BY OTHERS. THE CONTRACTOR SHALL VERIFY LOCATIONS AND ELEVATIONS PRIOR TO CONSTRUCTION.
- A WATER METER AND BACKFLOW PREVENTION SYSTEM SHALL BE PROVIDED WITHIN THE BUILDING. REFER TO ARCHITECTURAL PLANS.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL DIG A TEST PIT AT THE PROPOSED SEWER TIE-IN TO CONFIRM EXISTING PIPE INVERT AND PIPE SIZE. CONTRACTOR SHALL COORDINATE TEST PIT WITH TOWN ENGINEER.
- SEWER LINES SHALL BE PVC PIPE PER ASTM D3034, SDR-35.
- HORIZONTAL DATUM IS THE RHODE ISLAND STATE PLANE COORDINATE SYSTEM (NAD83) AND THE VERTICAL DATUM IS NAVD88.



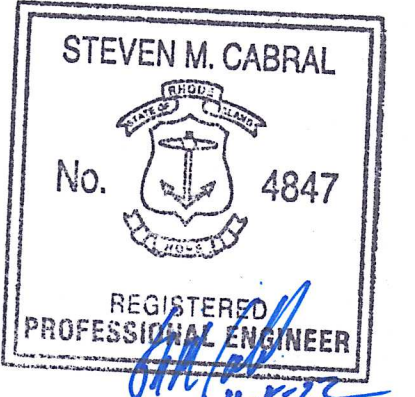
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KEY PLAN

PROJECT TITLE:

**SMITHFIELD
FIRE STATION**
PLAT MAP 48, LOT 51
ZONING DISTRICT LI
LIGHT INDUSTRIAL DISTRICT
321 GEORGE WASHINGTON HIGHWAY
SMITHFIELD, RI

PREPARED FOR:

**AHARONIAN
& ASSOCIATES, INC.**
Architects
310 George Washington Hwy
Suite 100
Smithfield, Rhode Island
02891
401-232-5010
www.arch-eng.com

DRAWING TITLE:

UTILITY PLAN

DATE: OCTOBER 31, 2022 SCALE: 1"=20'

DWG. NAME: 2495-C06-UTILITY-R7.dwg

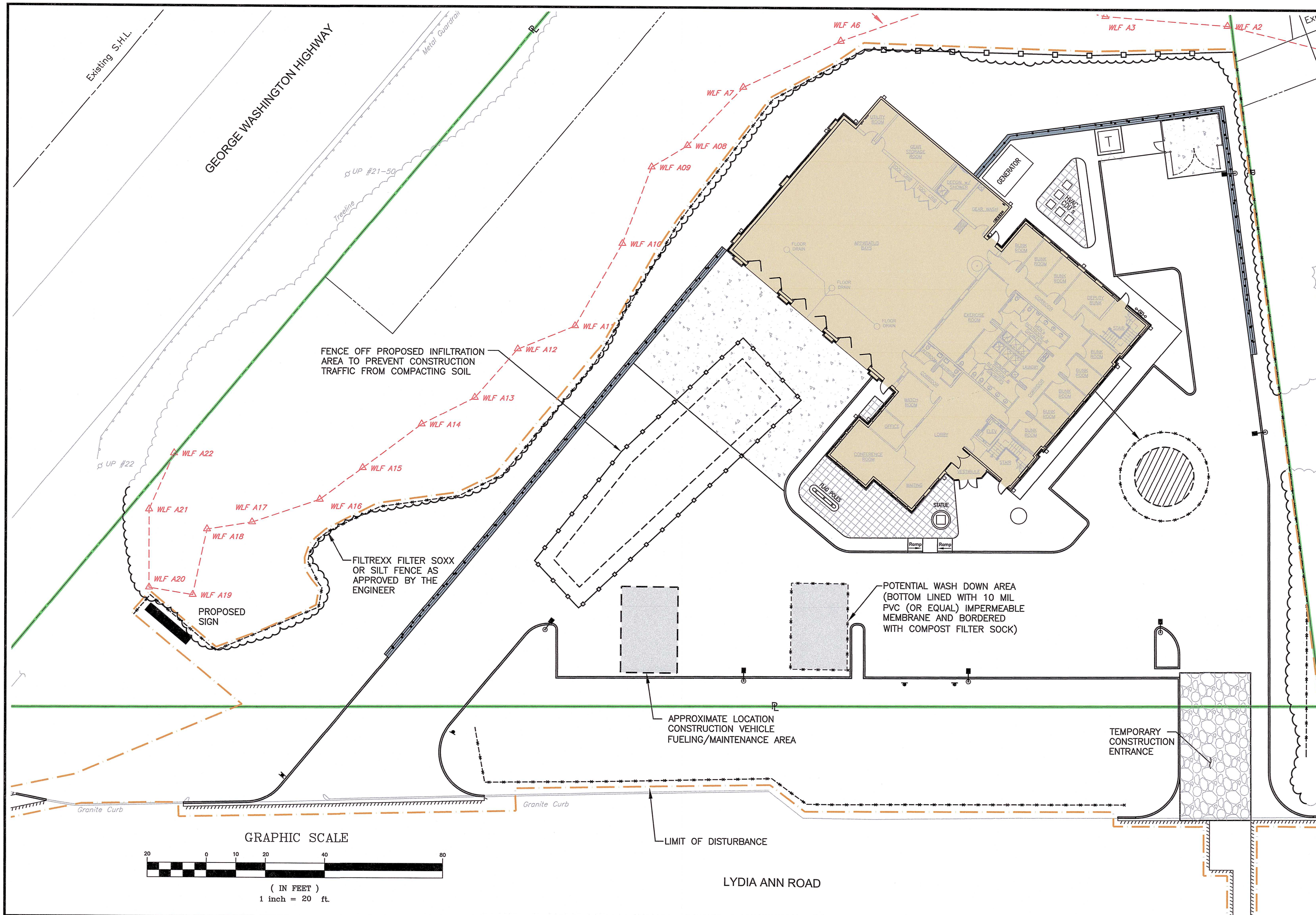
REVISIONS

NUMBER	REMARKS	DATE
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7	FOR CONSTRUCTION	10/31/22

DRAWING NUMBER

C6

SHEET: 7 OF 16



DUST CONTROL NOTES

ON AN AS-NEEDED BASIS OR AS DIRECTED BY THE TOWN, RIDEM OR OWNER, THE CONTRACTOR SHALL UTILIZE ONE OF THE FOLLOWING METHODS TO CONTROL DUST:

- A. THE EXPOSED SOIL SURFACE SHOULD BE MOISTENED PERIODICALLY WITH ADEQUATE WATER TO CONTROL DUST.
- B. CALCIUM CHLORIDE SHOULD BE EITHER LOOSE DRY GRANULES OR FLAKE FINE ENOUGH TO FEED THROUGH A SPREADER AT A RATE THAT WILL KEEP SURFACE MOIST BUT NOT CAUSE POLLUTION OR PLANT DAMAGE.

THE METHODS SHOULD BE REPEATED AS NEEDED, AND SPECIAL ATTENTION MUST BE GIVEN TO THE ACCESS DRIVES.

INSPECTION/MAINTENANCE NOTES

1. PRIOR TO COMMENCING GRUBBING OPERATIONS AND EARTHWORK, FILTERSOXX SHALL BE PLACED INSIDE SAWOUT EDGE AND ALONG THE DOWNGRADIENT LIMIT OF DISTURBANCE TO PREVENT SEDIMENT FROM ENTERING EXISTING ROADWAY DRAINAGE SYSTEM, AND ABUTTING PROPERTIES AND THE CONTRACTOR SHALL INSTALL DRIPLINE TREE PROTECTION DEVICES ALONG THE PROPOSED TREELINE/EXISTING TREES TO REMAIN.
2. EXTREME CARE SHALL BE EXERCISED SO AS TO PREVENT ANY UNSUITABLE MATERIAL FROM ENTERING THE DRAINAGE SYSTEM.
3. ALL DISTURBED AREAS WHICH BECOME SUBJECT TO EROSION TENDENCIES WHETHER THEY BE NEWLY FILLED OR EXCAVATED SHALL RECEIVE SLOPE PROTECTION - SUCH AS RIP-RAP.
4. DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING DRAINAGE AND RUNOFF FLOW DURING PERIODS OF RAINFALL.
5. DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EROSION CONTROL MAINTENANCE AND SHALL INSPECT / REPLACE DAILY DURING CONSTRUCTION, FOLLOWING RAINFALL AND WEEKLY DURING NON CONSTRUCTION PERIODS.
6. ADDITIONAL FILTERSOXX OR SANDBAGS SHALL BE LOCATED AS CONDITIONS WARRANT OR AS DIRECTED BY THE ENGINEER.
7. THE LATEST VERSION OF THE "RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK" PREPARED BY THE R.I. STATE CONSERVATION COMMITTEE, MUST BE UTILIZED BY THE CONTRACTOR AS A GUIDE.
8. THE CONTRACTOR IS RESPONSIBLE FOR ALL DUST CONTROL AND FOR THE ENTIRE PROJECT DURATION, INCLUDING TEMPORARY SHUT-DOWN PERIODS, MUST MONITOR AND REPAIR, AS NEEDED, ALL SLOPES TO ENSURE A STABLE PRODUCT.

GENERAL PROJECT WIDE NOTES

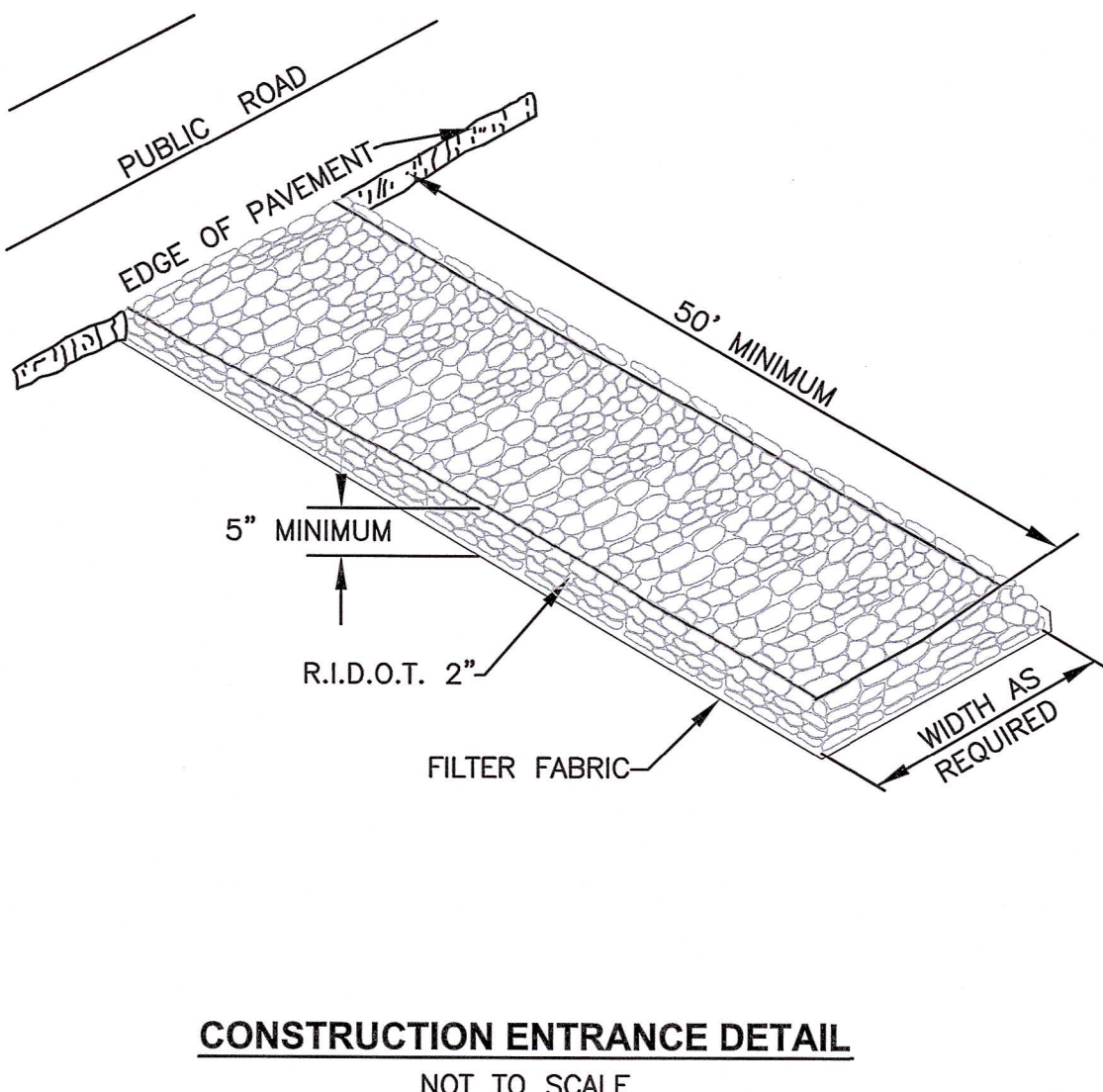
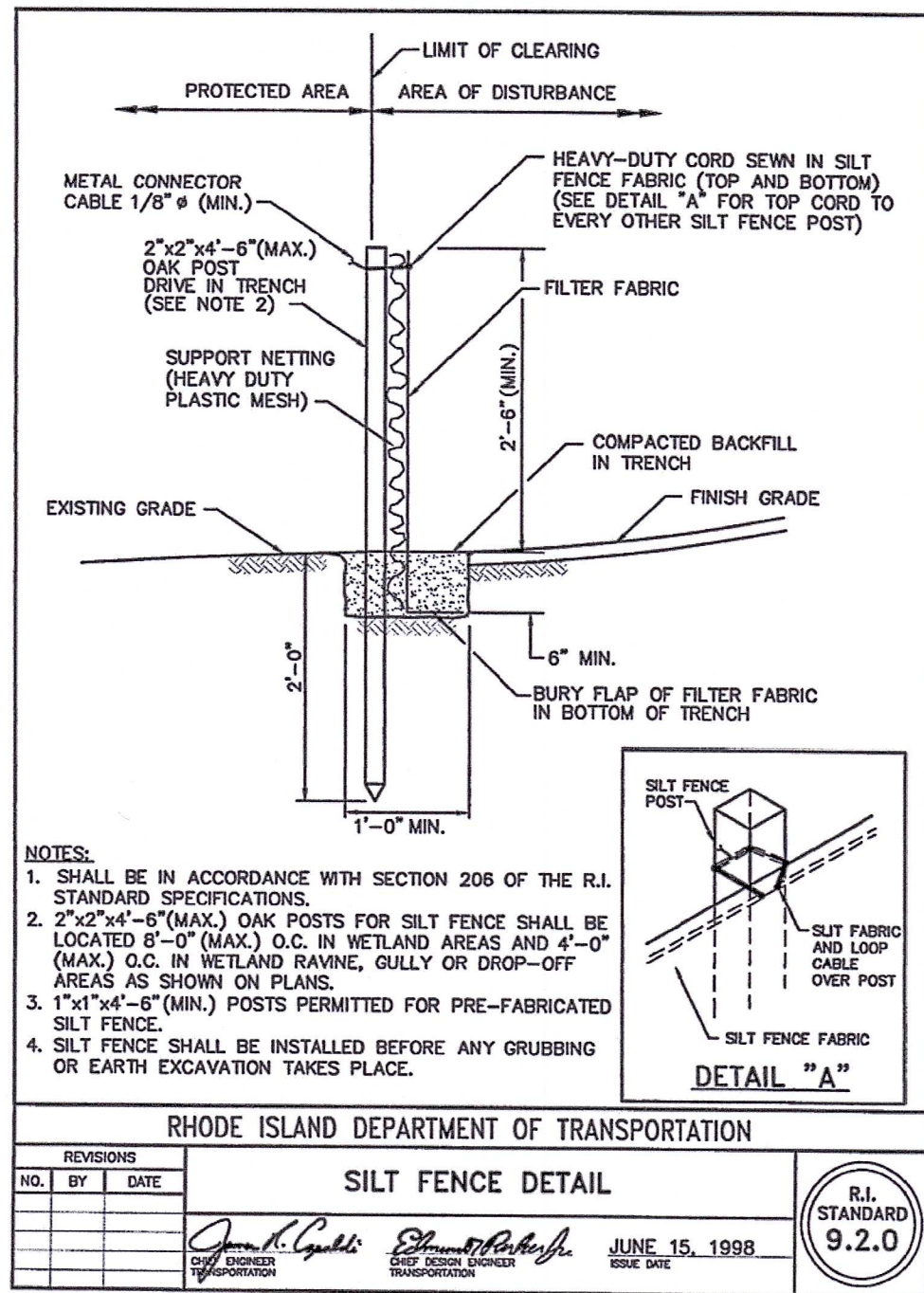
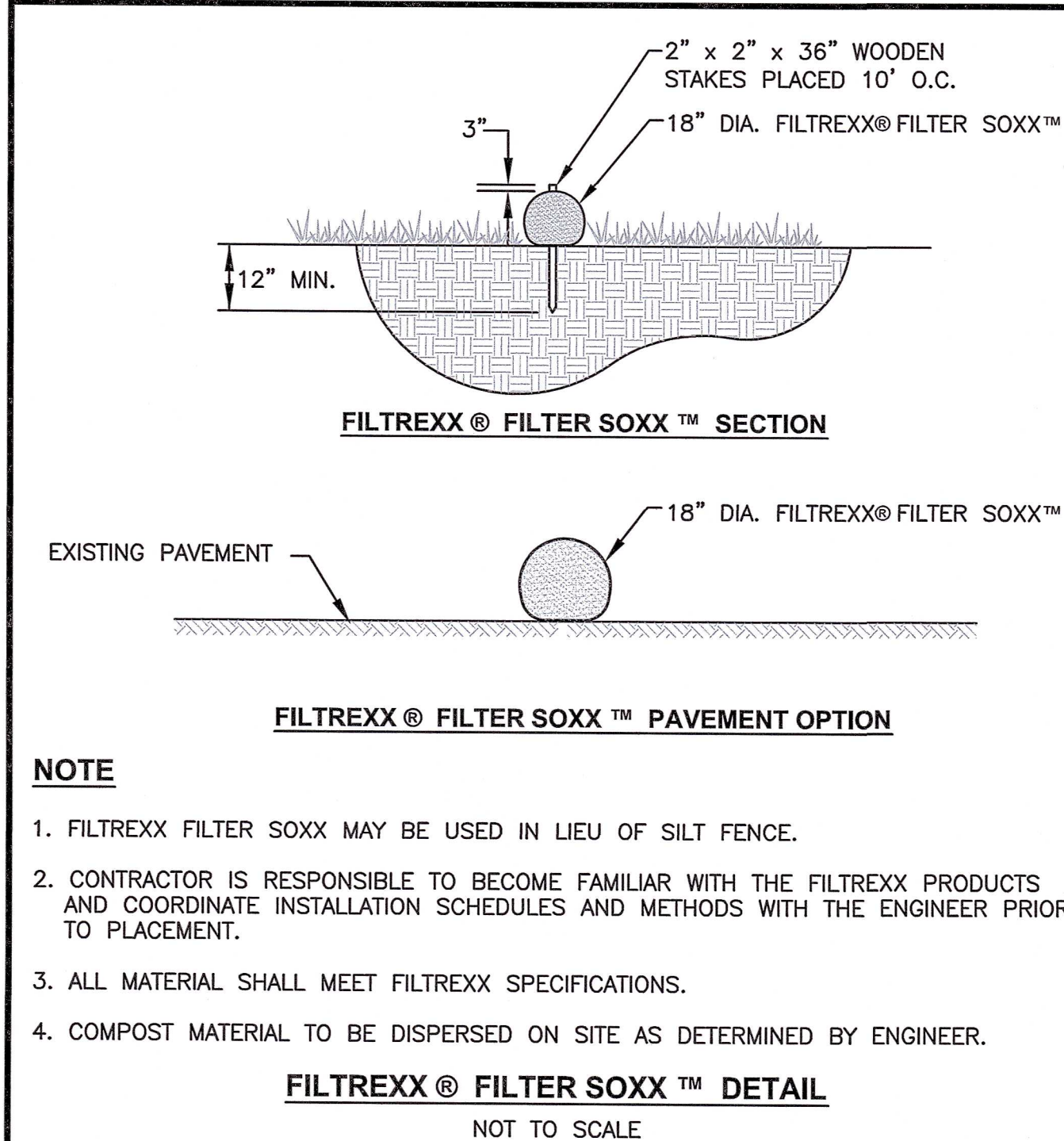
1. CONTRACTOR SHALL OBTAIN A SOIL EROSION AND SEDIMENT CONTROL PERMIT FROM THE DEPARTMENT OF PUBLIC WORKS PRIOR TO THE COMMENCEMENT OF ANY WORK ONSITE; SOIL EROSION AND SEDIMENT CONTROL MEASURES MUST BE PROPERLY MAINTAINED THROUGHOUT CONSTRUCTION.
2. CONTRACTOR SHALL INSTALL TEMPORARY MEASURES SUCH AS; FIBER MATTING, CRUSHED STONE, HAY OR STRAW IN AREAS WHERE SLOPES OR STABILIZATION HAS FAILED.
3. IF SEDIMENT IS TRACKED OR ERODED INTO THE ROADWAY, THE CONTRACTOR WILL BE REQUIRED TO SWEEP DAILY AND TO INSTALL SILT SACK OR APPROVED EQUAL UNDER ADJACENT EXISTING CATCH BASIN GRATES. REMOVE AFTER CONSTRUCTION.
4. FILTER SOXX (OR SILT FENCE OR STAKED HAYBALES) SHALL BE INSTALLED AROUND THE PERIMETER OF THE AREA TO BE DISTURBED BY CONSTRUCTION. ADDITIONAL APPLICATIONS OF THESE CONTROLS MEASURES MAY BE REQUIRED DURING THE CONSTRUCTION PROCESS. THE CONTRACTOR SHALL INSPECT THE SITE AT A MINIMUM OF ONCE PER WEEK OR WITHIN 24 HOURS AFTER A STORM EVENT.
5. IF EROSION OR EROSION TENDENCIES ARE APPARENT ON THE SITE, THE CONTRACTOR IS RESPONSIBLE TO INSTALL ADDITIONAL CONSTRUCTION BMP'S SUCH AS SAND BAGS AS DIRECTED BY THE TOWN OR ENGINEER DURING CONSTRUCTION.
6. IF SEDIMENT OR DEBRIS IS TRACKED ONTO EXISTING PAVED AREAS ADJACENT TO THE CONSTRUCTION AREA, THE CONTRACTOR IS REQUIRED TO SWEEP THE PAVEMENT ON A DAILY BASIS. THE AREA SHALL BE INSPECTED DAILY.
7. THE CONTRACTOR IS RESPONSIBLE TO KEEP THE SITE CLEAN OF TRASH. RECOMMENDED DAILY PATROL OF THE CONSTRUCTION SHOULD BE CONDUCTED TO PICK-UP TRASH. THE OPERATOR SHALL REQUIRE THE CONTRACTOR TO HAVE PORTABLE SANITARY FACILITIES ON SITE. ROUTINE CLEANING AND WASTE DISPOSAL OF THESE PORTABLE SANITARY FACILITIES IS REQUIRED.

FILTREXX SOXX NOTE

CONTRACTOR IS RESPONSIBLE TO BECOME FAMILIAR WITH THE FILTREXX PRODUCTS AND COORDINATE INSTALLATION SCHEDULES AND METHODS WITH THE ENGINEER PRIOR TO PLACEMENT.

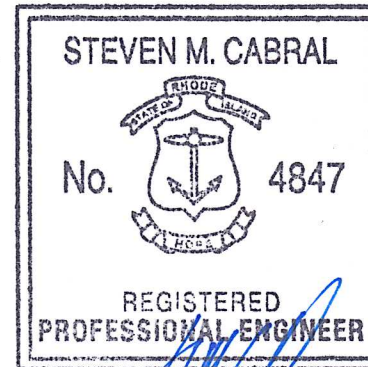
EROSION CONTROL AND SOIL STABILIZATION PROGRAM

1. EXTREME CARE SHALL BE EXERCISED SO AS TO PREVENT ANY UNSUITABLE MATERIAL FROM ENTERING THE DRAINAGE SYSTEM, ADJACENT PROPERTY, AND ROADWAYS.
2. TEMPORARY TREATMENTS SHALL CONSIST OF A HAY, STRAW, OR FIBER MULCH PROTECTIVE COVERS, SUCH AS A MAT OR FIBER LINING (BURLAP, JUTE, FIBERGLASS NETTING, EXCELSIOR BLANKETS). THEY SHALL BE INCORPORATED INTO THE WORK AS WARRANTED OR AS ORDERED BY THE OWNER.
3. HAY OR STRAW APPLICATIONS SHALL BE IN THE AMOUNT OF 3,000-4,000 LBS/ACRE.
4. STOCKPILES SHALL HAVE NO SLOPE STEEPER THAN 2:1 AND SHALL BE SURROUNDED BY FILTER SOXX, STAKED HAY BALES OR SILT FENCING.
5. STOCKPILES EXPOSED FOR EXCESSIVE PERIODS SHALL RECEIVE TEMPORARY TREATMENT CONSISTING OF HAY, STRAW OR FIBER MATTING.
6. DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EROSION CONTROL MAINTENANCE AND SHALL INSPECT/REPLACE AS NEEDED.
7. ADDITIONAL HAY BALES OR SANDBAGS SHALL BE LOCATED AS CONDITIONS WARRANT OR AS DIRECTED BY THE ENGINEER, OWNER, MUNICIPAL REPRESENTATIVES OR LOCAL D.O.T.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING DUST CONTROL AT NO ADDITIONAL COST TO THE OWNER.
9. ALL CATCH BASINS ADJACENT TO THE CONSTRUCTION AREA SHALL BE PROTECTED BY SILT SACKS.
10. ALL PROPOSED CATCH BASINS SHALL BE PROTECTED BY STAKED HAY BALES, SILT FENCING OR SILT SACKS.
11. THE FILTREXX FILTER SOXX MAY BE INSTALLED ON THE EXISTING PAVEMENT /IMPERVIOUS AREAS WITH OUT STAKES. CONTRACTOR SHALL INSPECT DAILY, IF SOIL EROSION OR SEDIMENT IS OBSERVED IN THESE AREAS, THE CONTRACTOR SHALL RELOCATE OR INSTALL ADDITIONAL FILTREXX FILTER SOXX IN LOCATIONS THAT CAN BE STAKED. THIS WORK IS INCLUDED IN THE PROJECT SCOPE.
12. SILT FENCE OR STAKED HAYBALES MAY BE USED IN LIEU OF FILTREXX FILTER SOXX.
13. AN ALTERNATE COMPOST SOCK OR STRAW WATTLE PRODUCT MAY BE USED IN LIEU OF FILTREXX FILTER SOCK UPON APPROVAL OF THE ENGINEER.



Crossman Engineering logo and contact information for Rhode Island and Massachusetts offices.

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KEY PLAN

PROJECT TITLE:

SMITHFIELD FIRE STATION
PLAT MAP 48, LOT 51
ZONING DISTRICT LI
LIGHT INDUSTRIAL DISTRICT
321 GEORGE WASHINGTON HIGHWAY
SMITHFIELD, RI

PREPARED FOR:

Aharonian & Associates, Inc. Architects logo and contact information.

DRAWING TITLE:

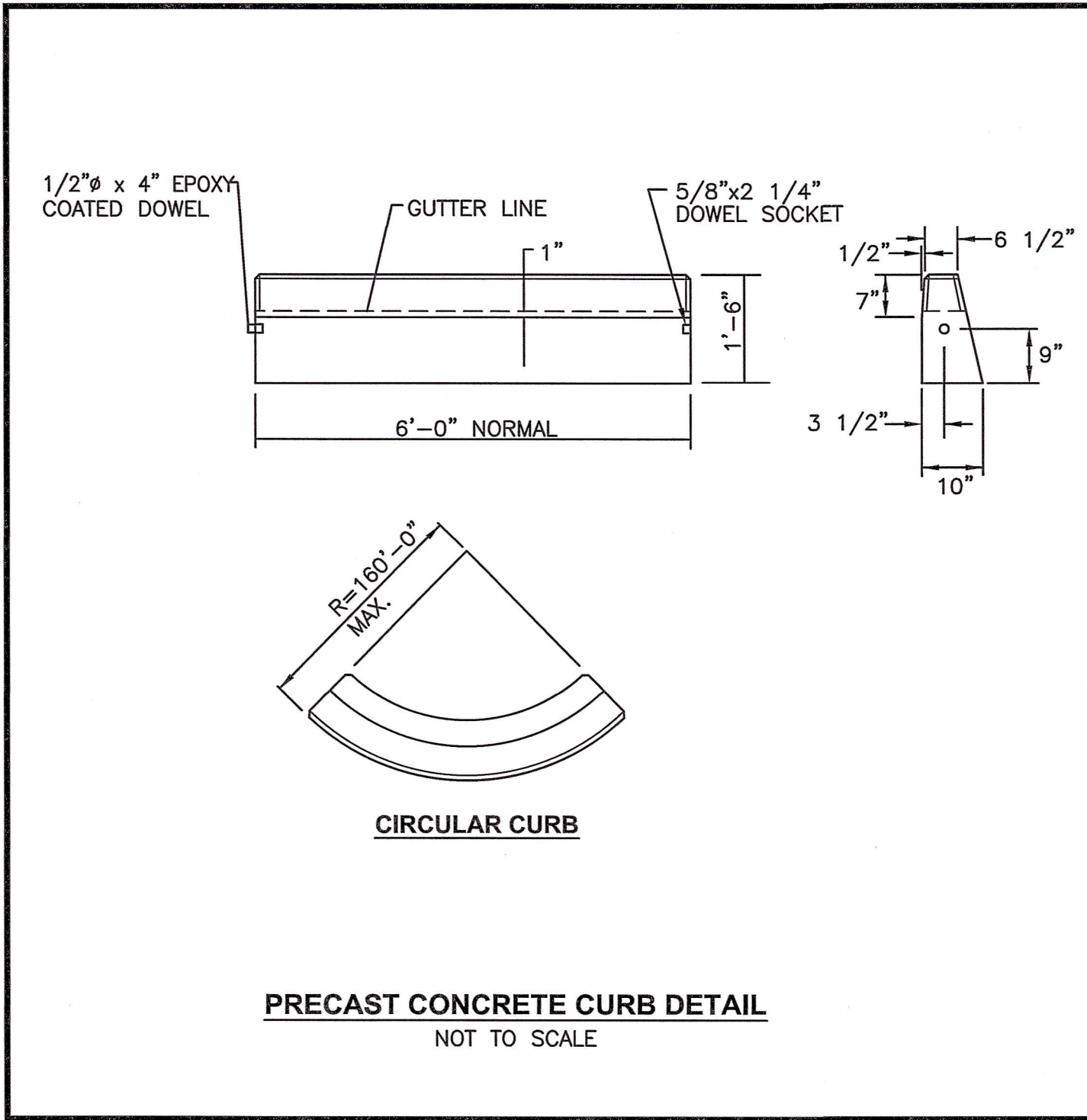
SOIL EROSION and
SEDIMENT CONTROL PLAN

DATE: OCTOBER 31, 2022 SCALE: 1"=20'

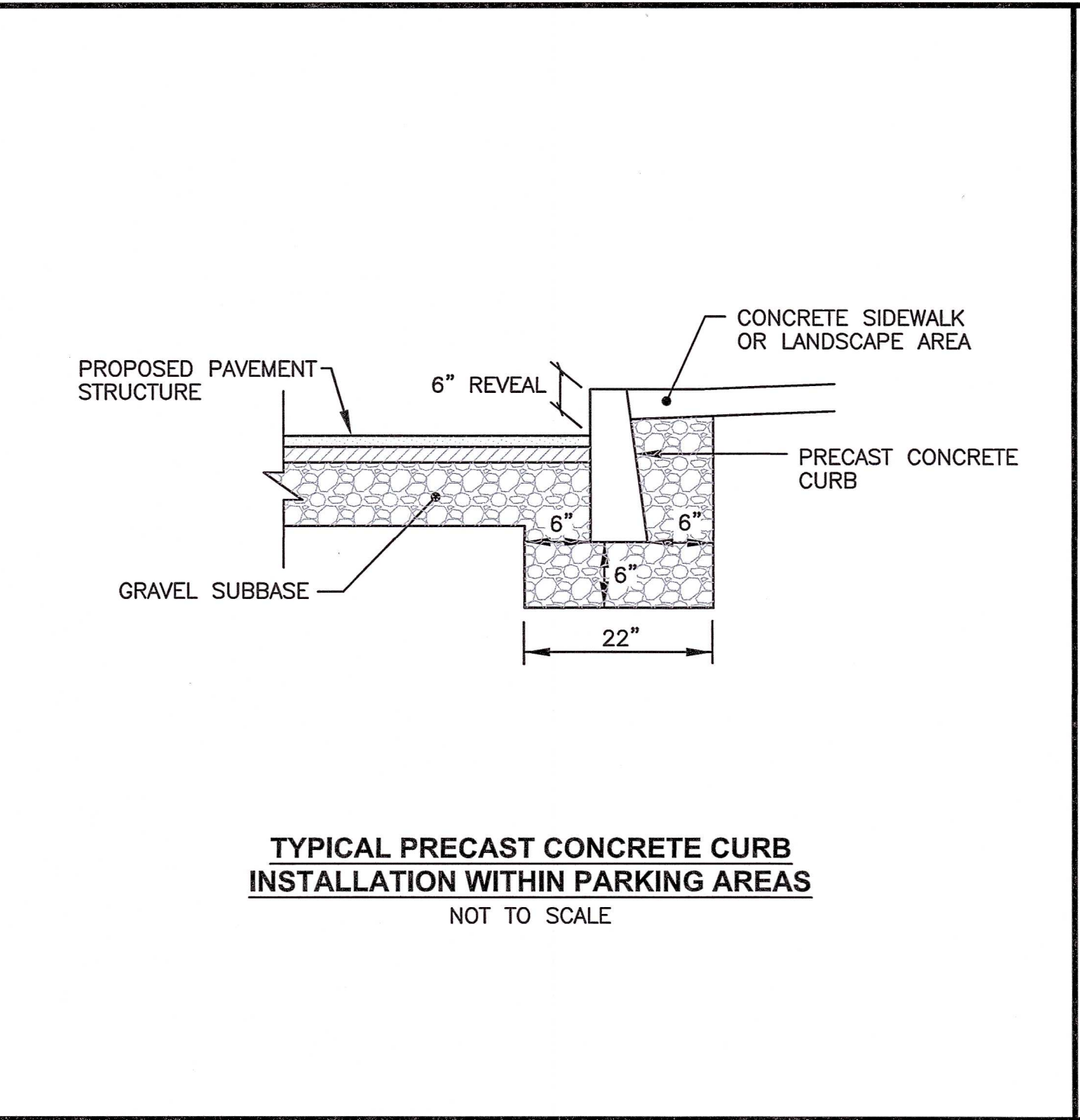
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REVISIONS		
NUMBER	REMARKS	DATE
1	REVISED LAYOUT	08/27/21
2	REVISED LOD	09/10/21
3	R.I.D.E.M. COMMENTS	09/25/21
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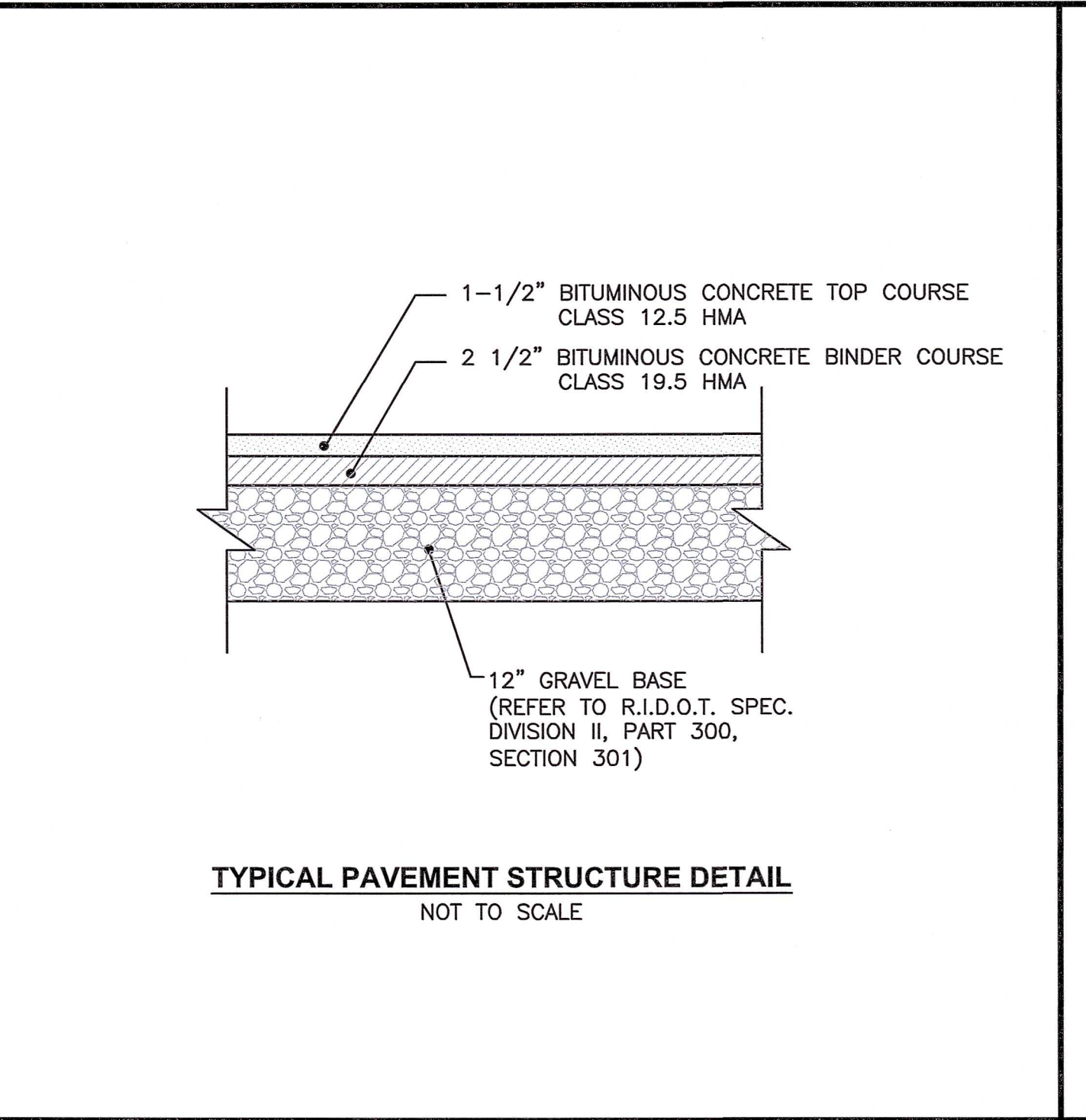
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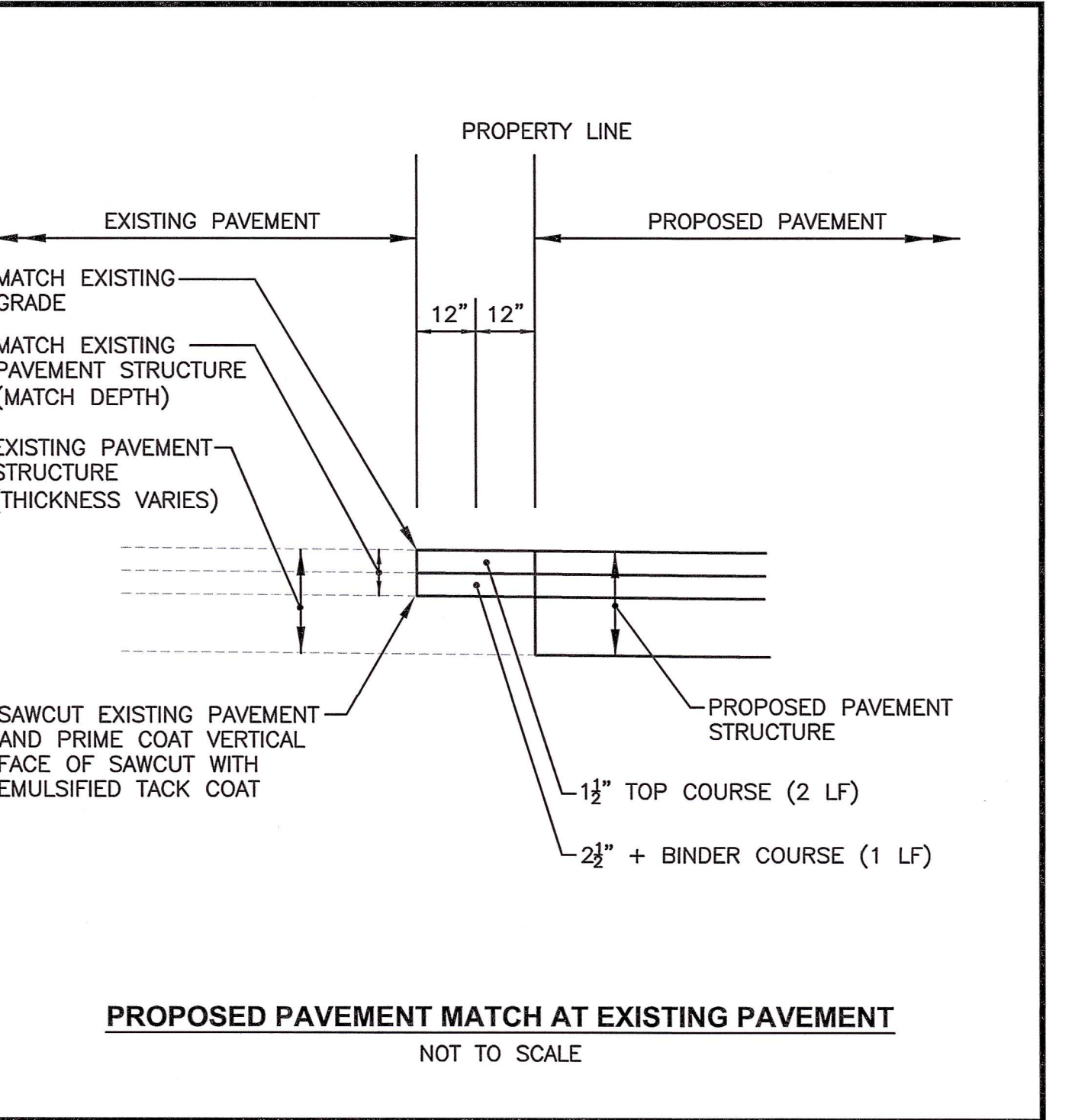
PRECAST CONCRETE CURB DETAIL
NOT TO SCALE



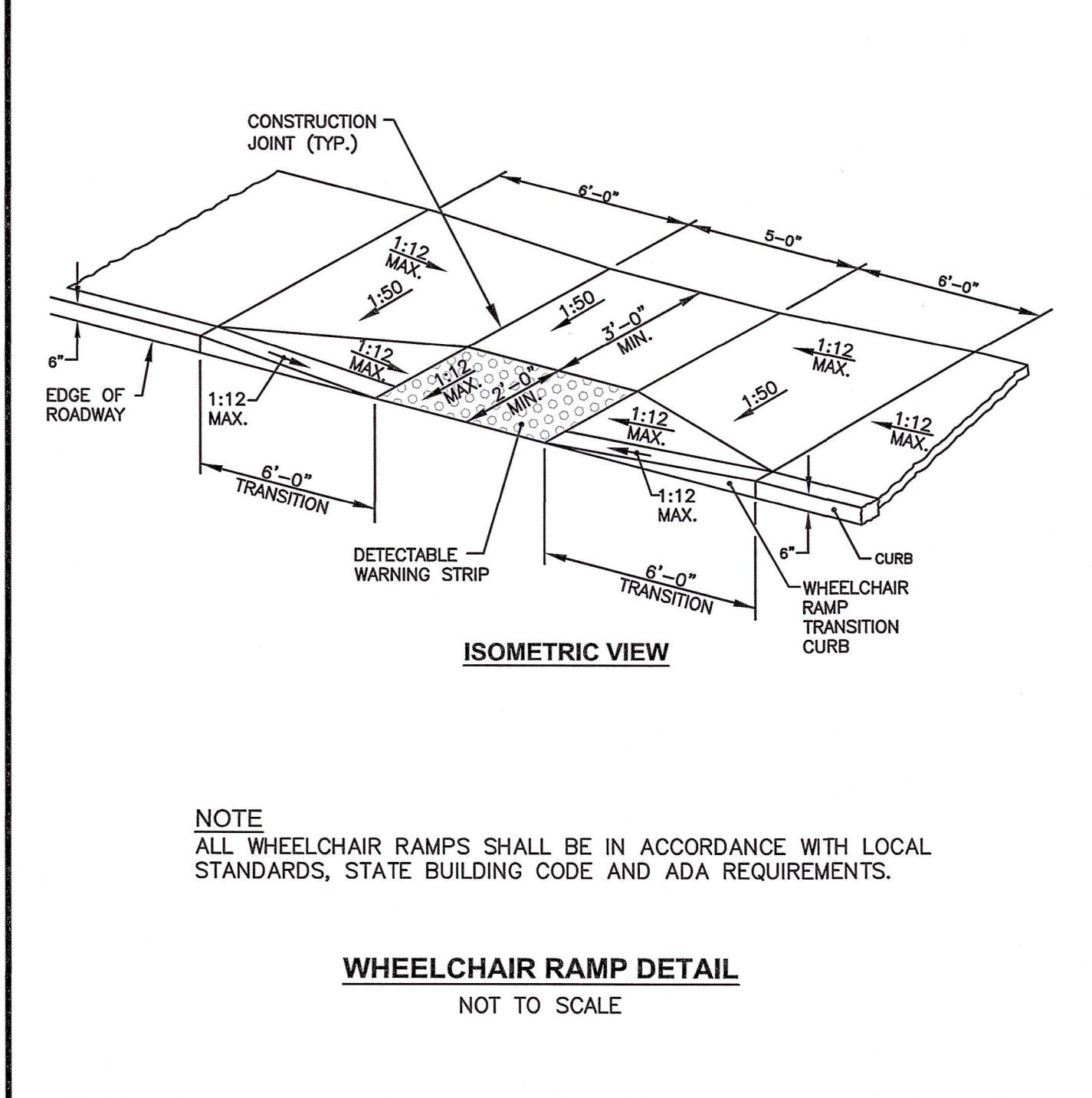
**TYPICAL PRECAST CONCRETE CURB
INSTALLATION WITHIN PARKING AREAS**
NOT TO SCALE



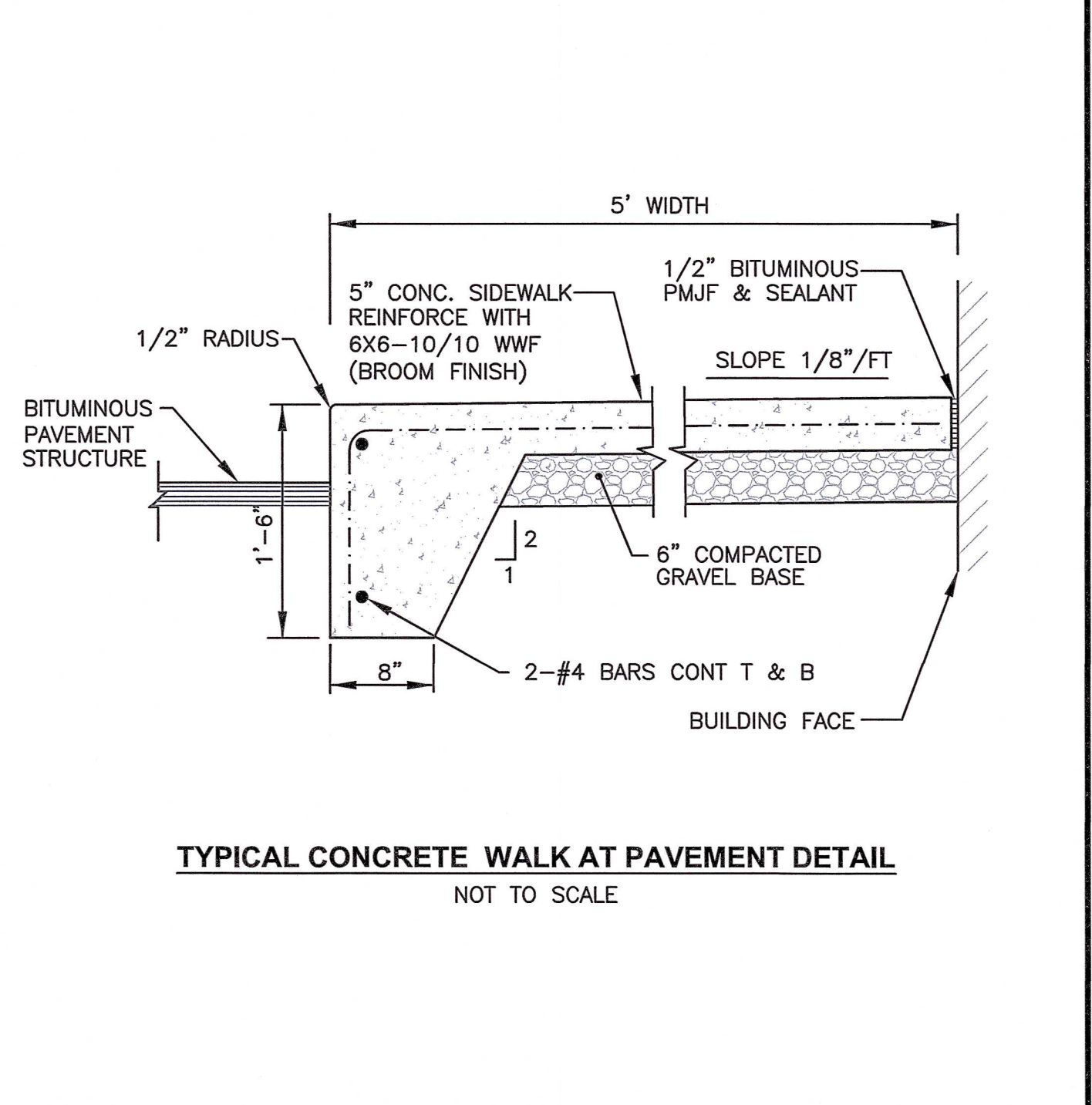
TYPICAL PAVEMENT STRUCTURE DETAIL
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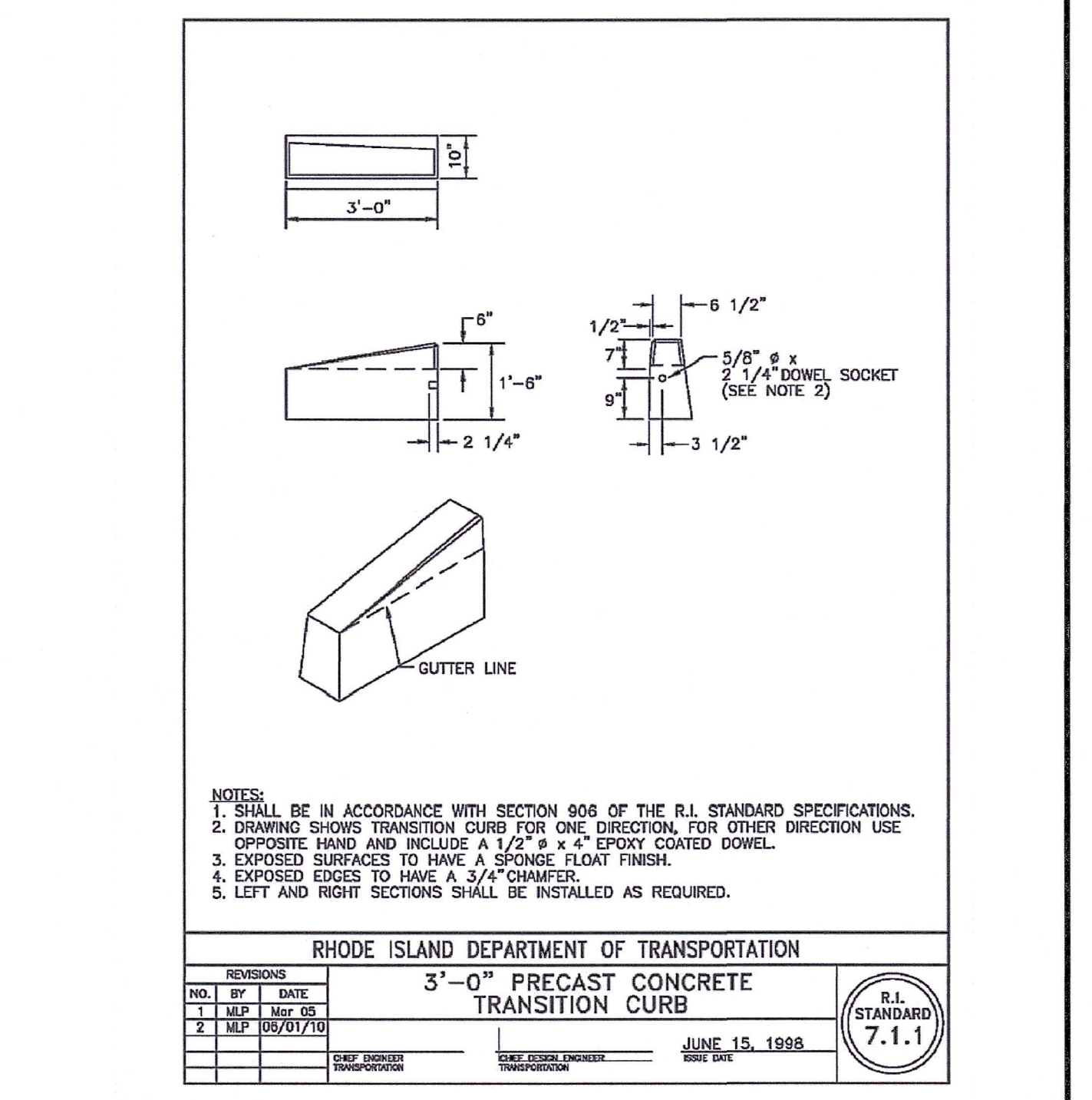
PROPOSED PAVEMENT MATCH AT EXISTING PAVEMENT
NOT TO SCALE



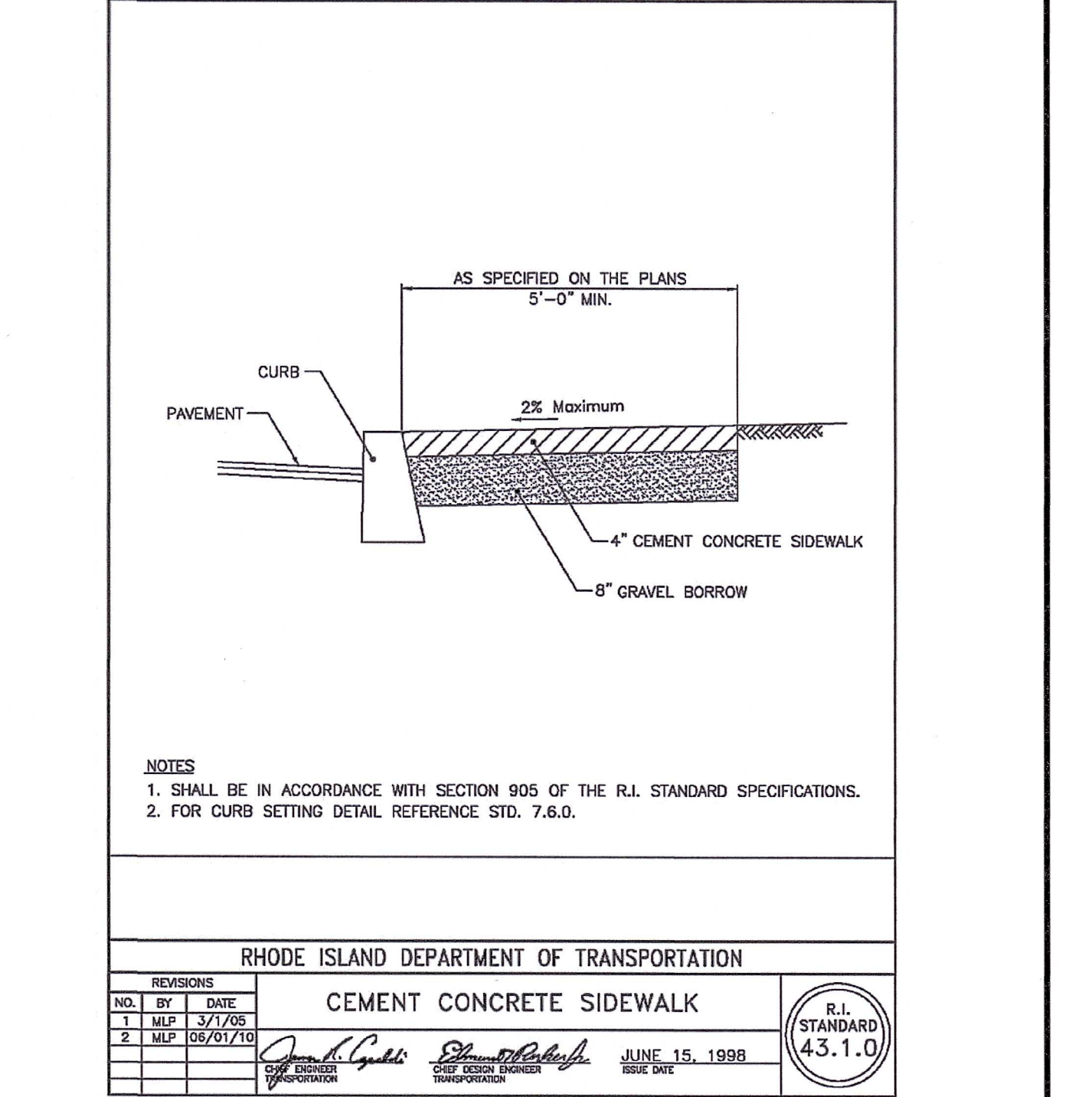
WHEELCHAIR RAMP DETAIL
NOT TO SCALE



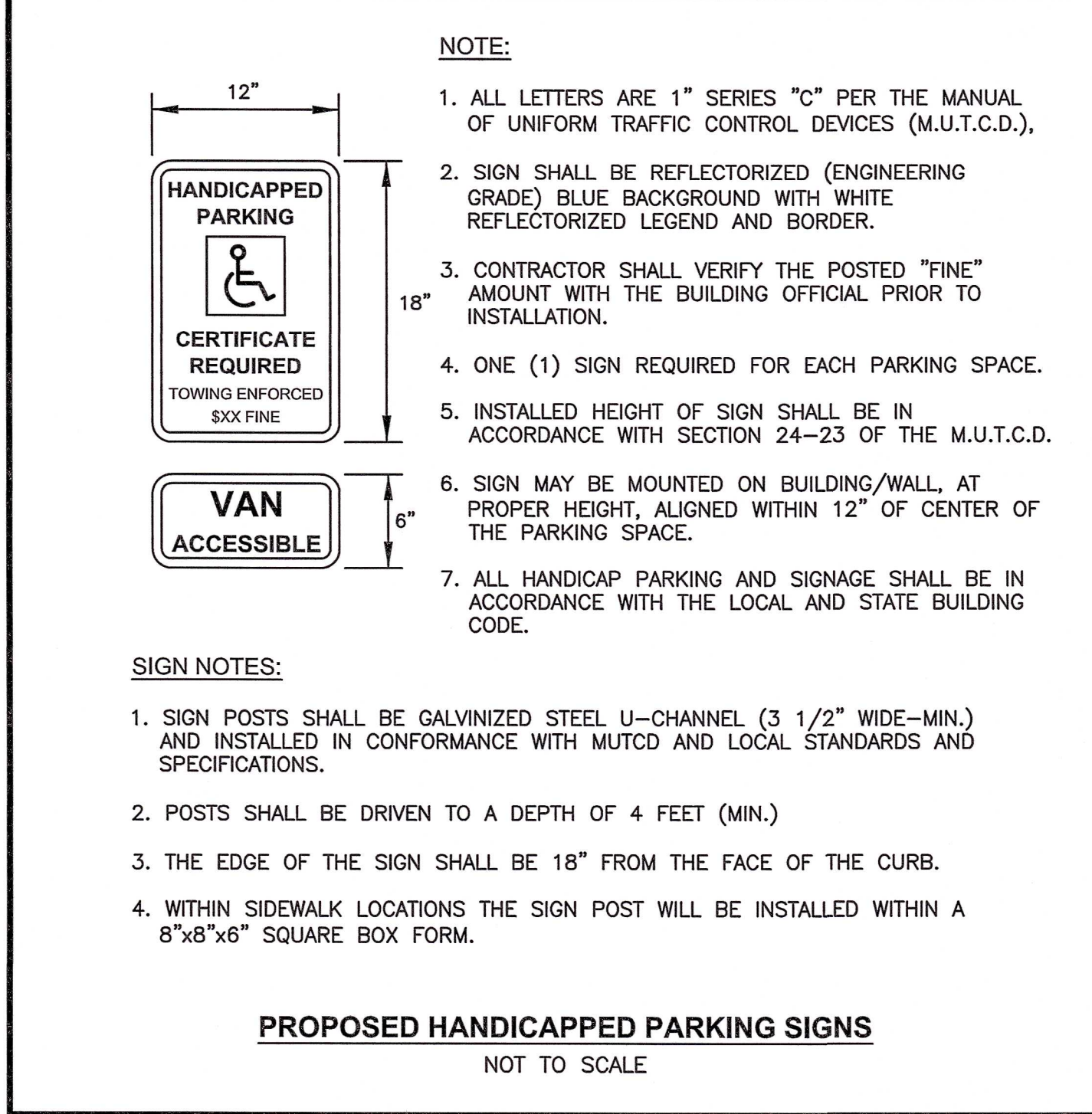
TYPICAL CONCRETE WALK AT PAVEMENT DETAIL
NOT TO SCALE



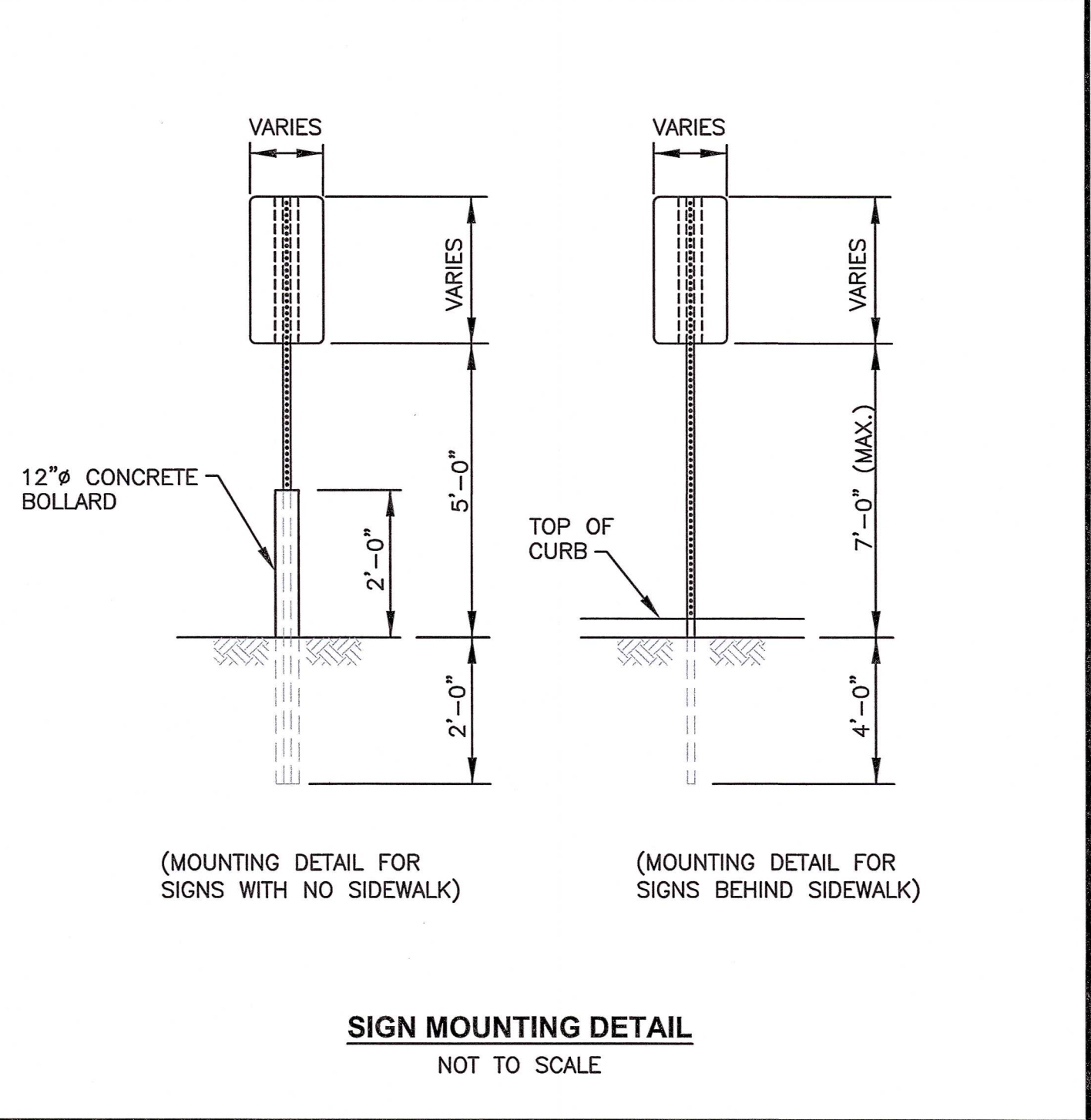
**3'-0" PRECAST CONCRETE
TRANSITION CURB**
NOT TO SCALE



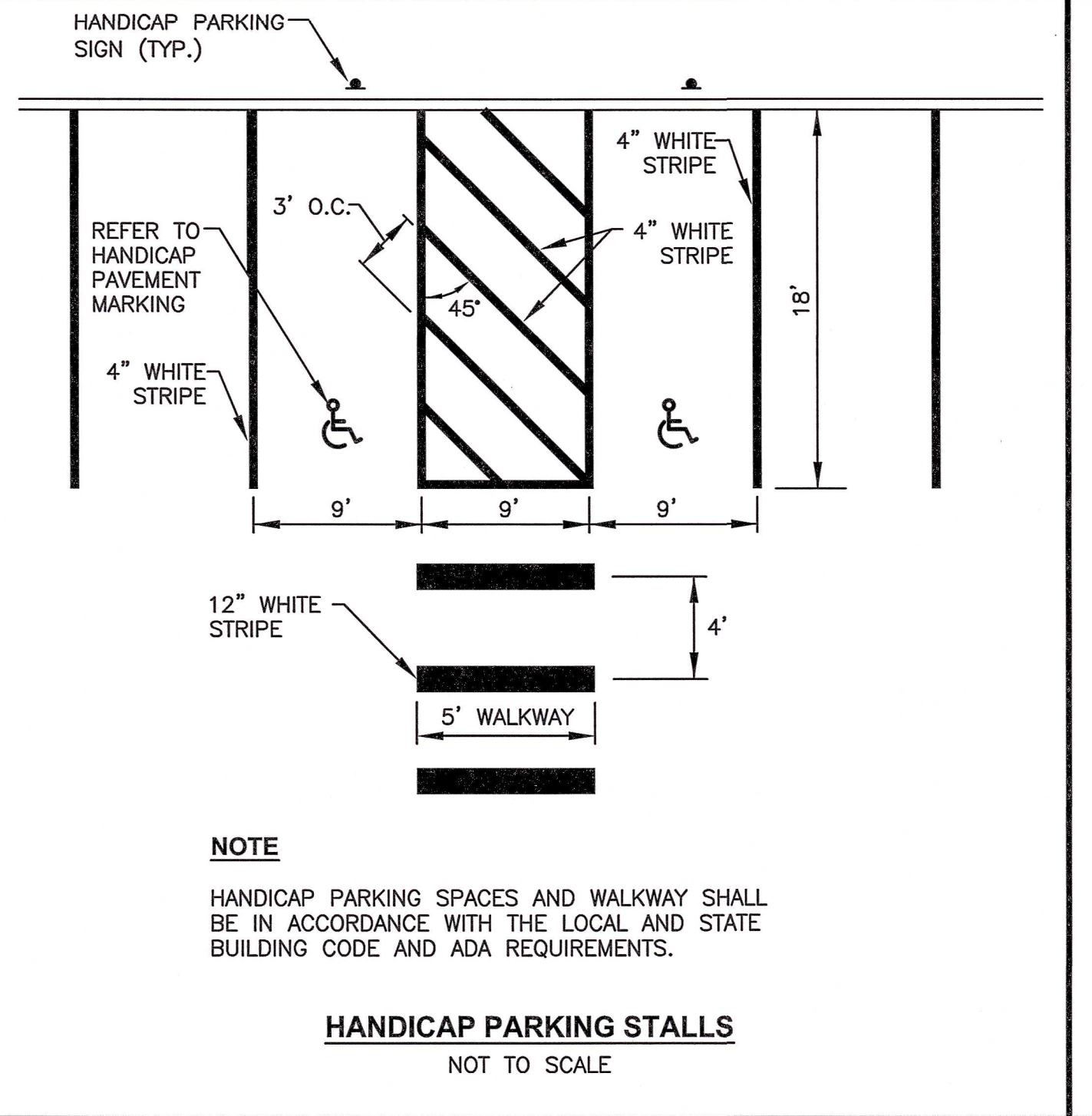
CEMENT CONCRETE SIDEWALK
NOT TO SCALE



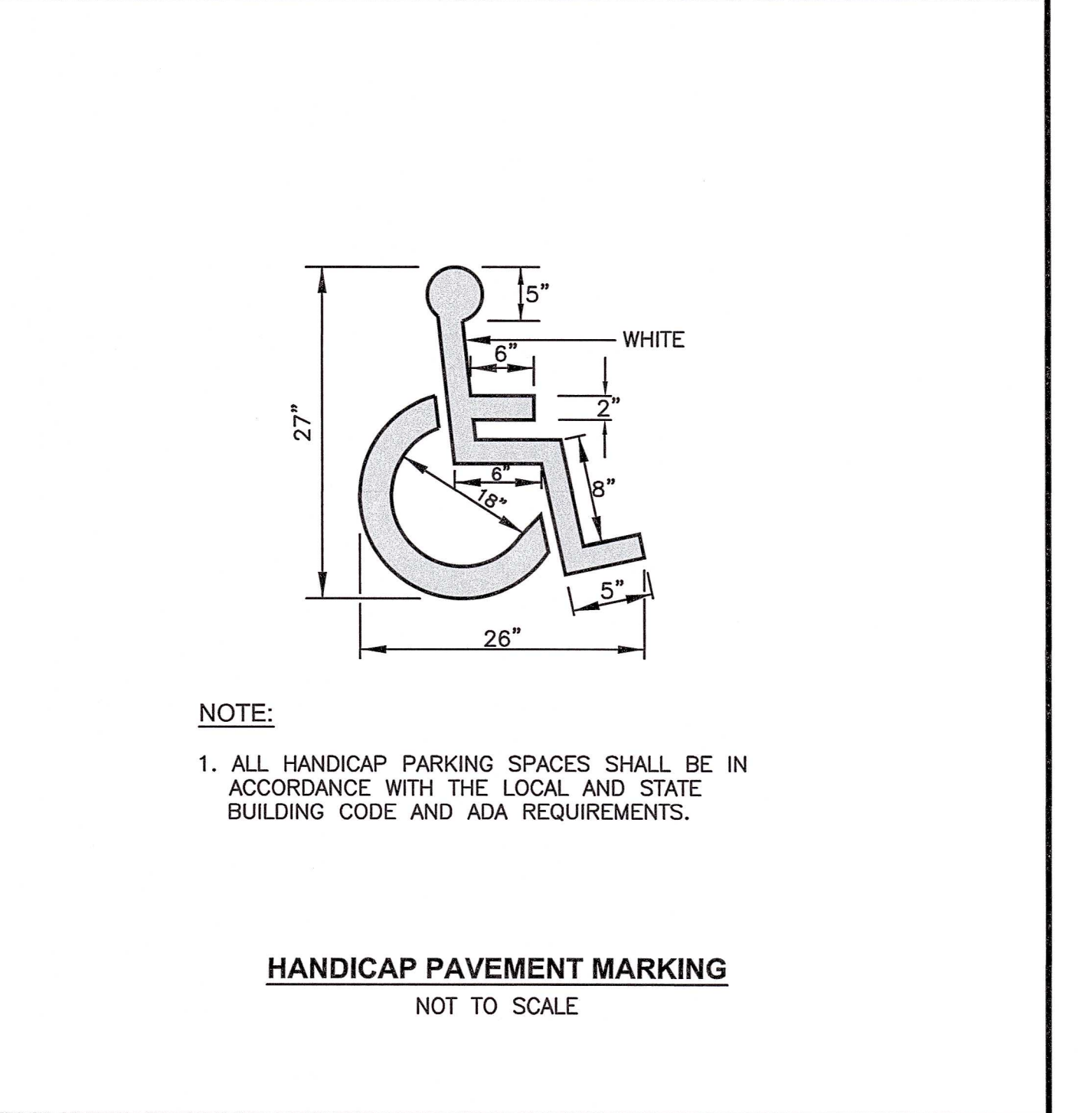
PROPOSED HANDICAPPED PARKING SIGNS
NOT TO SCALE



SIGN MOUNTING DETAIL
NOT TO SCALE



HANDICAPPED PARKING STALLS
NOT TO SCALE



HANDICAPPED PAVEMENT MARKING
NOT TO SCALE

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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER
6/15/2022

KEY PLAN

PROJECT TITLE:
**SMITHFIELD
FIRE STATION
PLAT MAP 48, LOT 51
ZONING DISTRICT LI
LIGHT INDUSTRIAL DISTRICT
321 GEORGE WASHINGTON HIGHWAY
SMITHFIELD, RI**

PREPARED FOR:
**AHARONIAN
& ASSOCIATES, INC.
Architects**
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02876
401-233-2501
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DRAWING TITLE:
**MISCELLANEOUS DETAIL
PLAN No. 1**

DATE:
OCTOBER 31, 2022

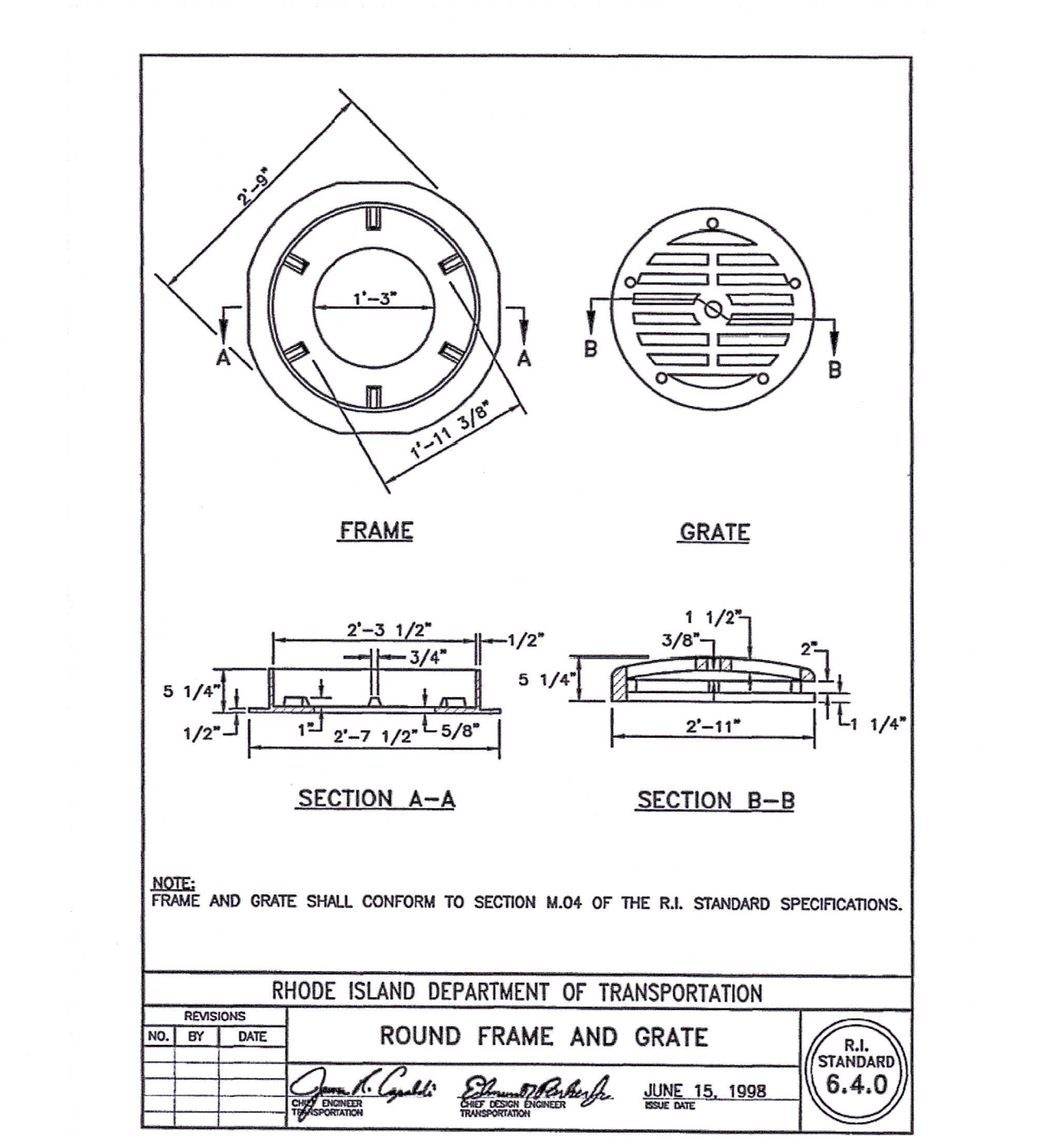
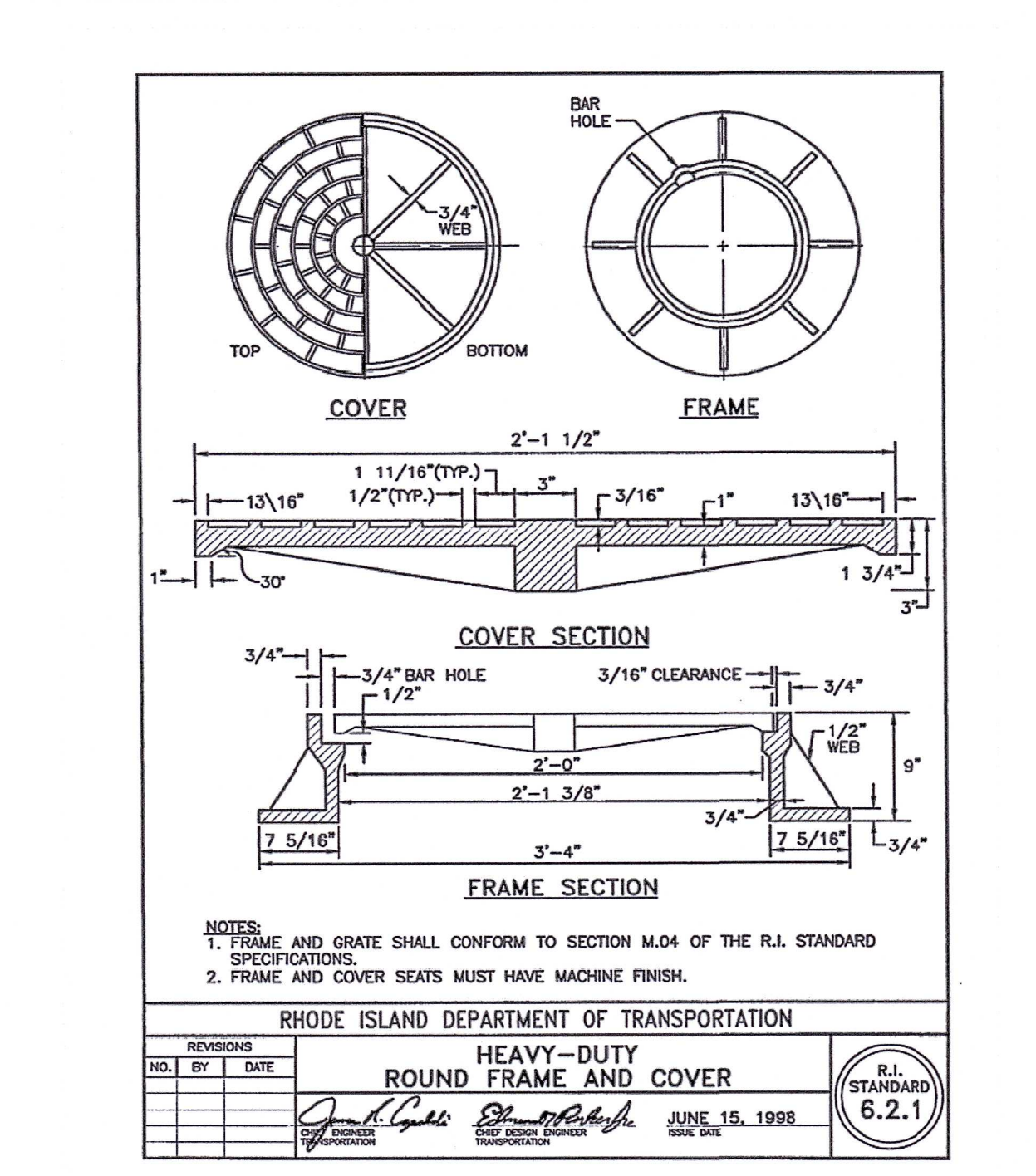
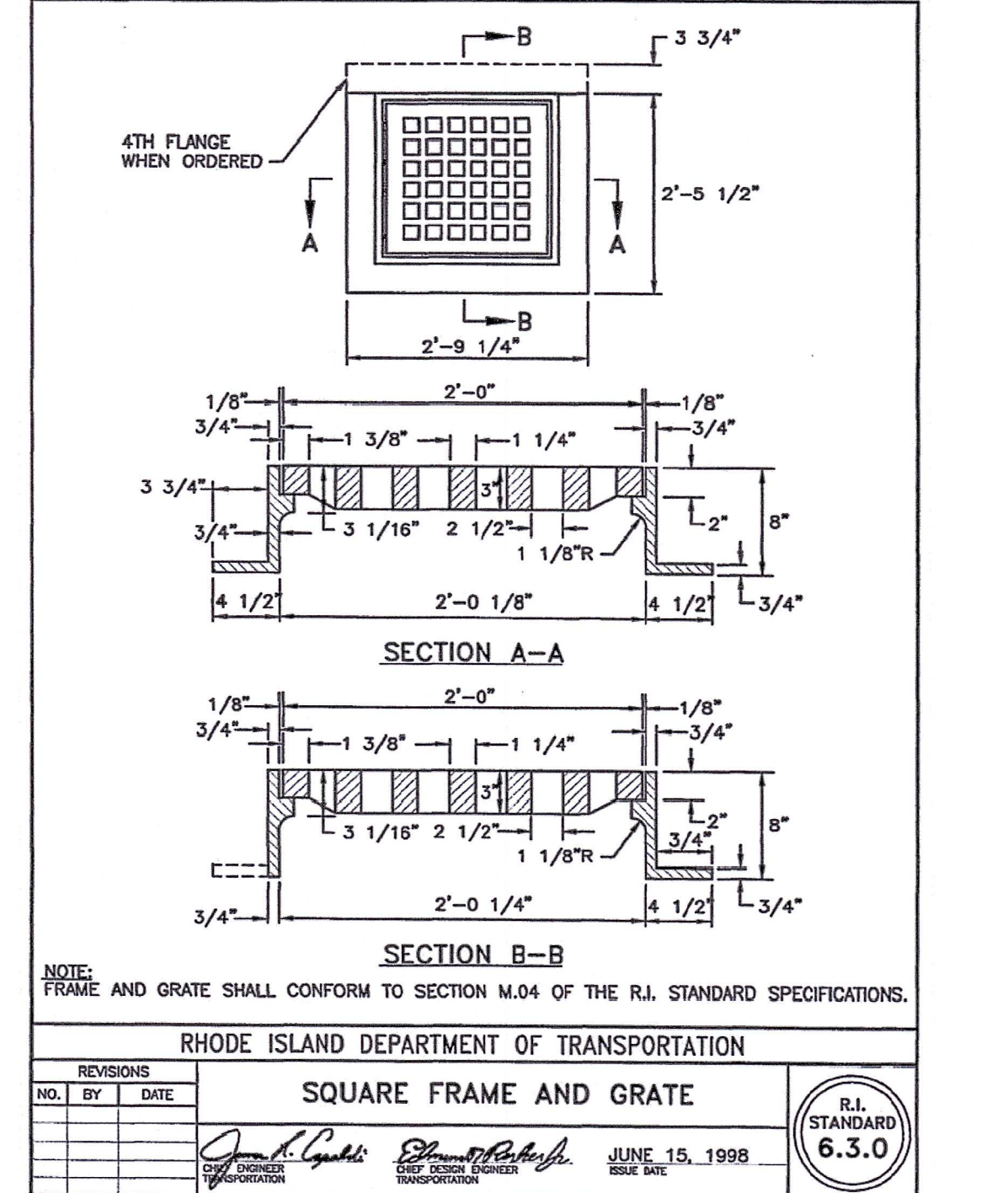
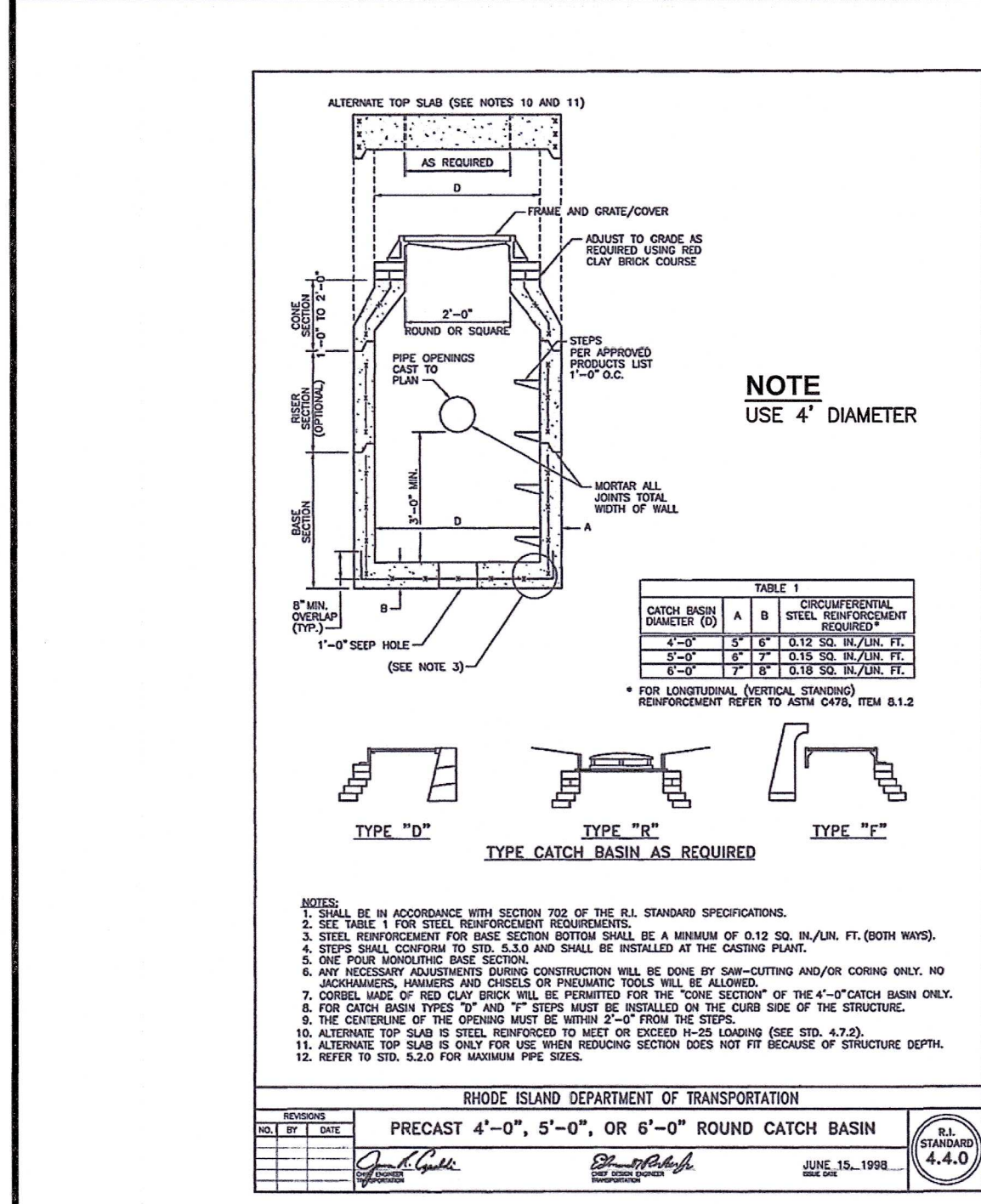
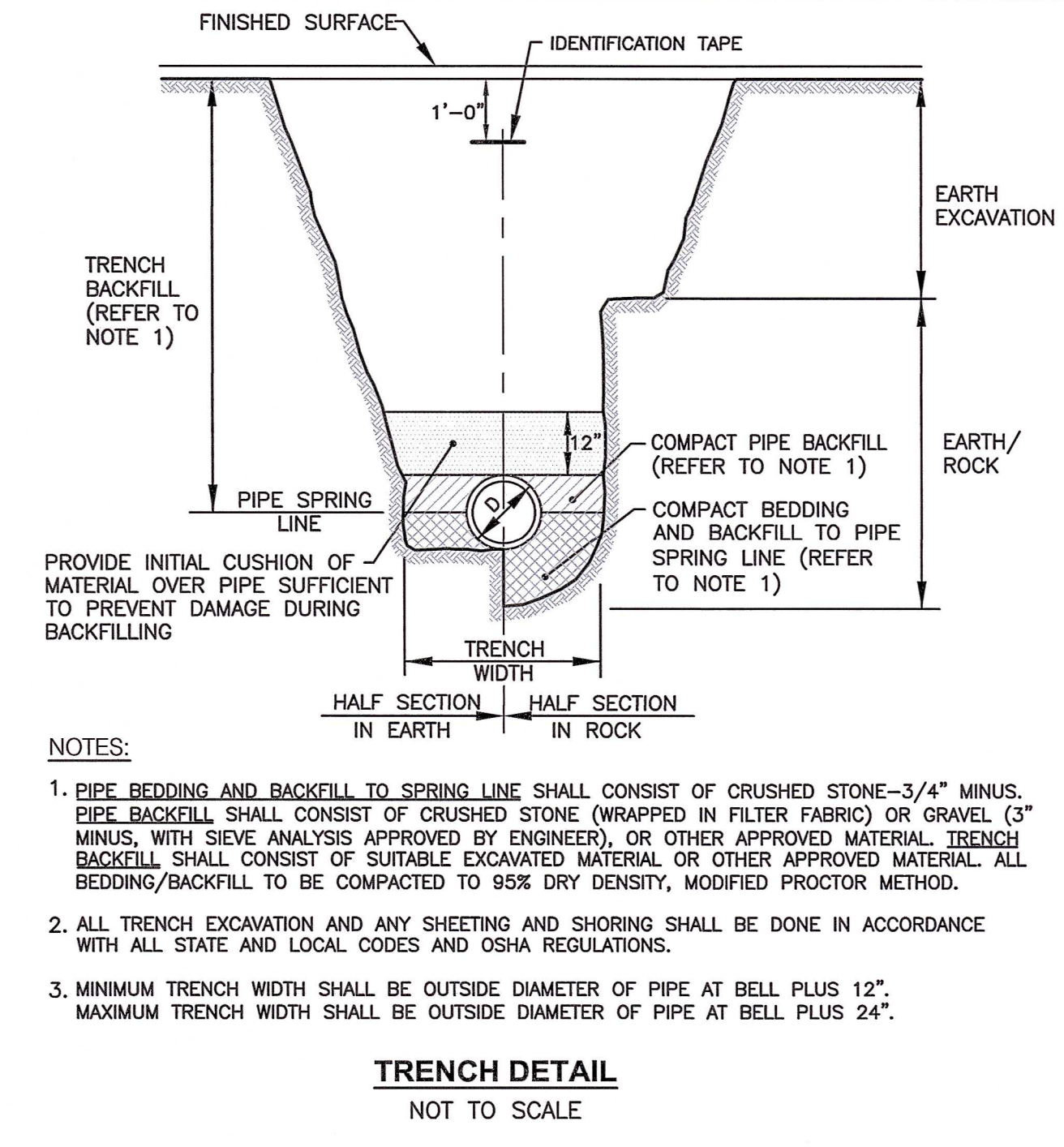
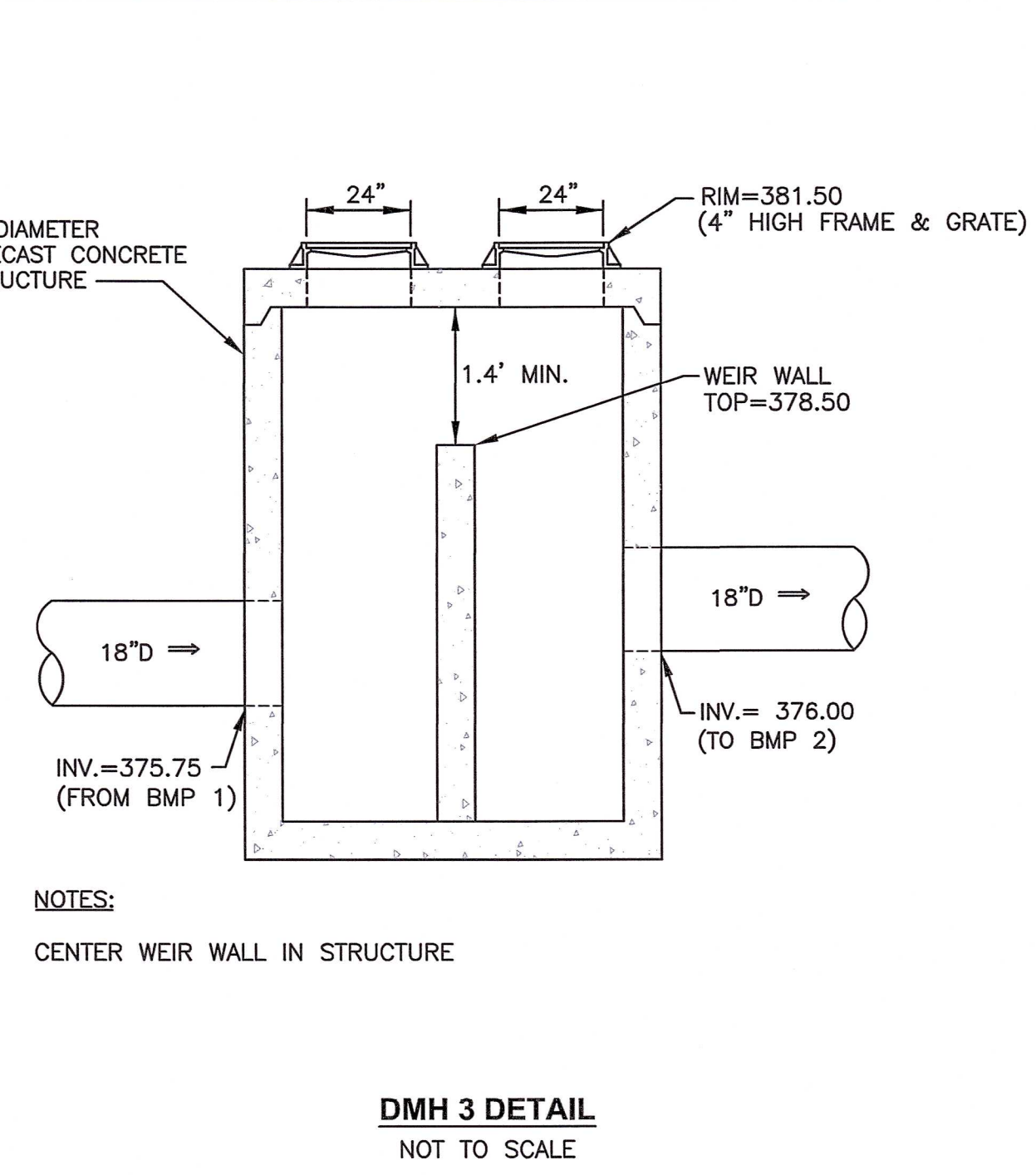
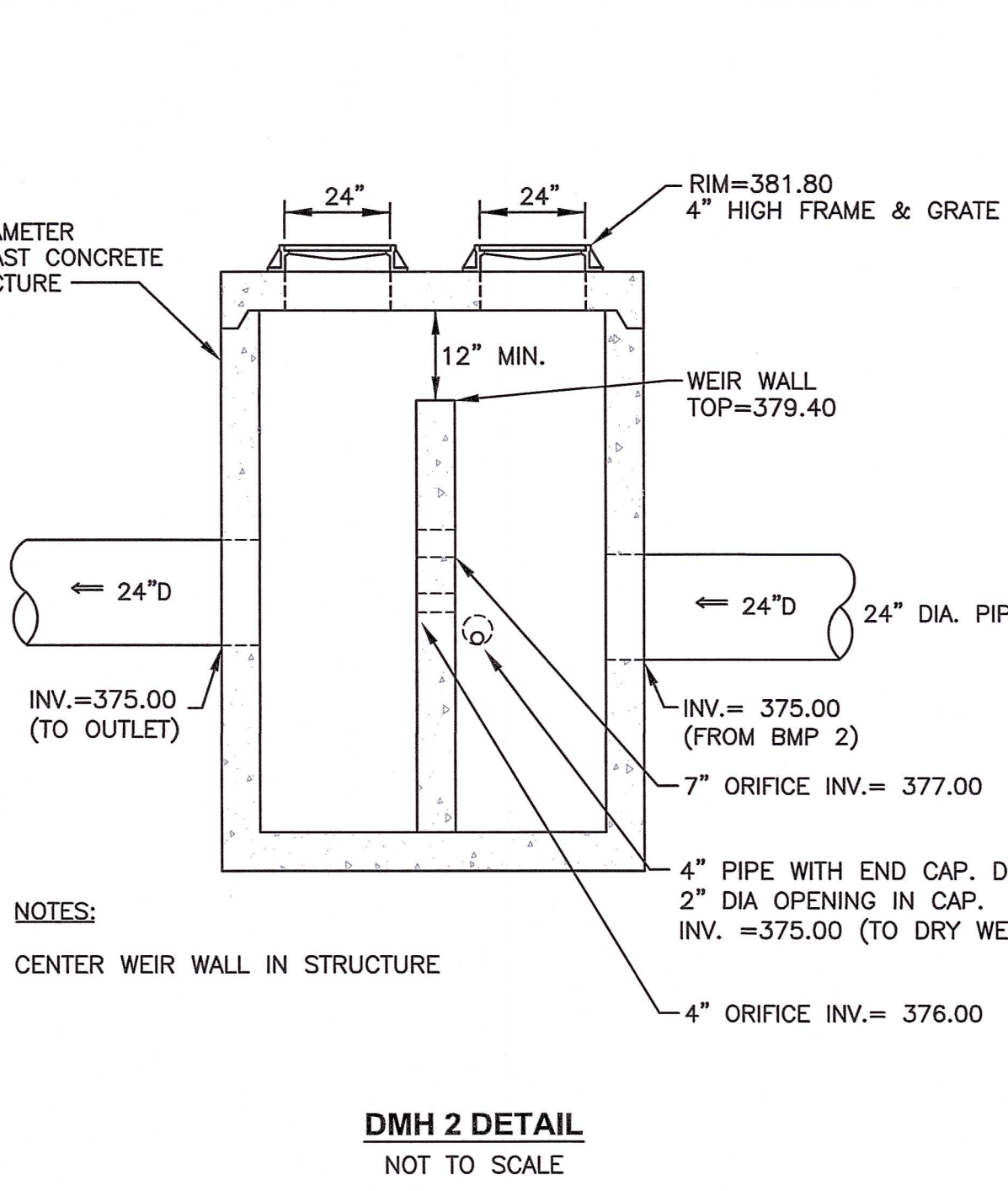
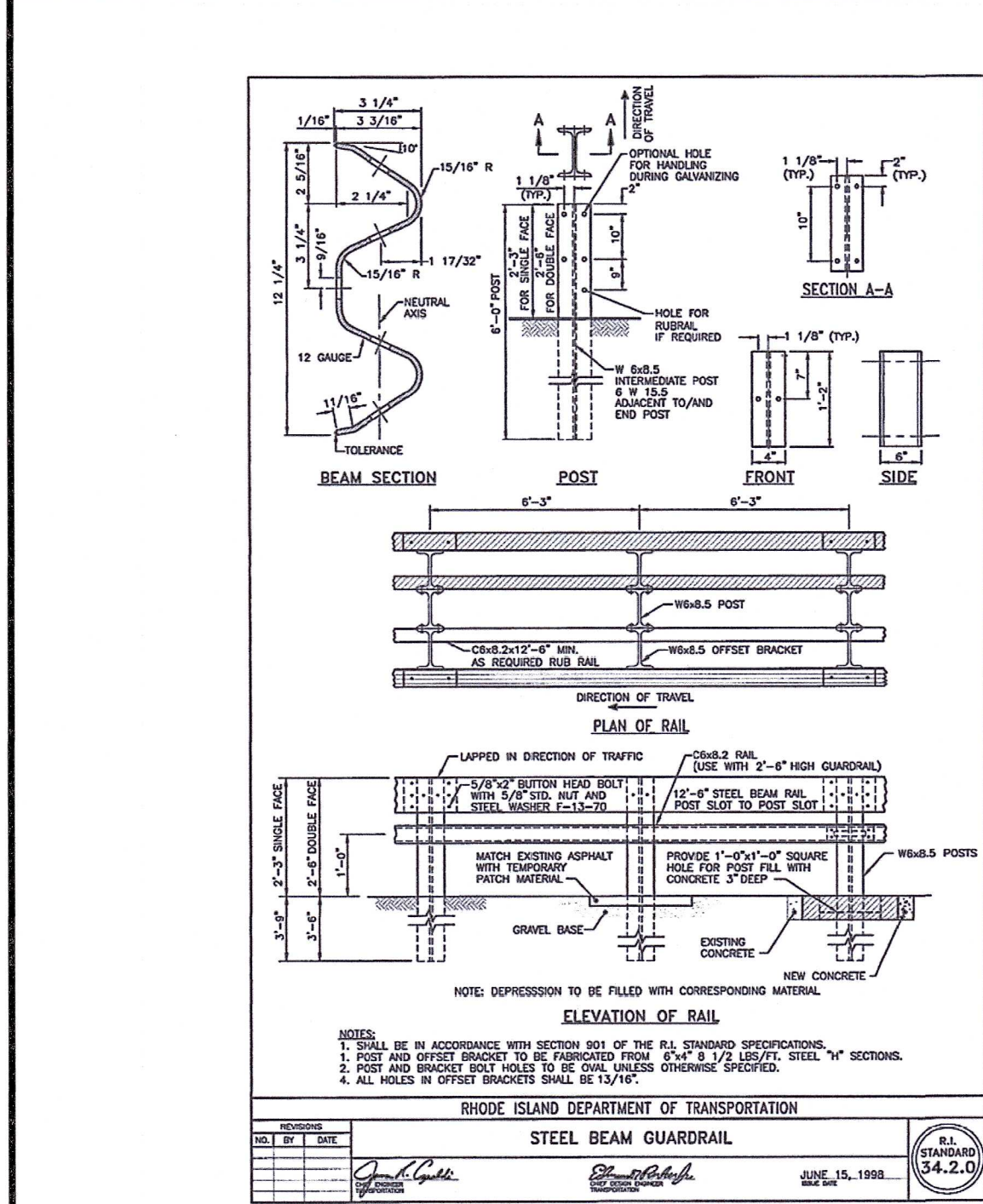
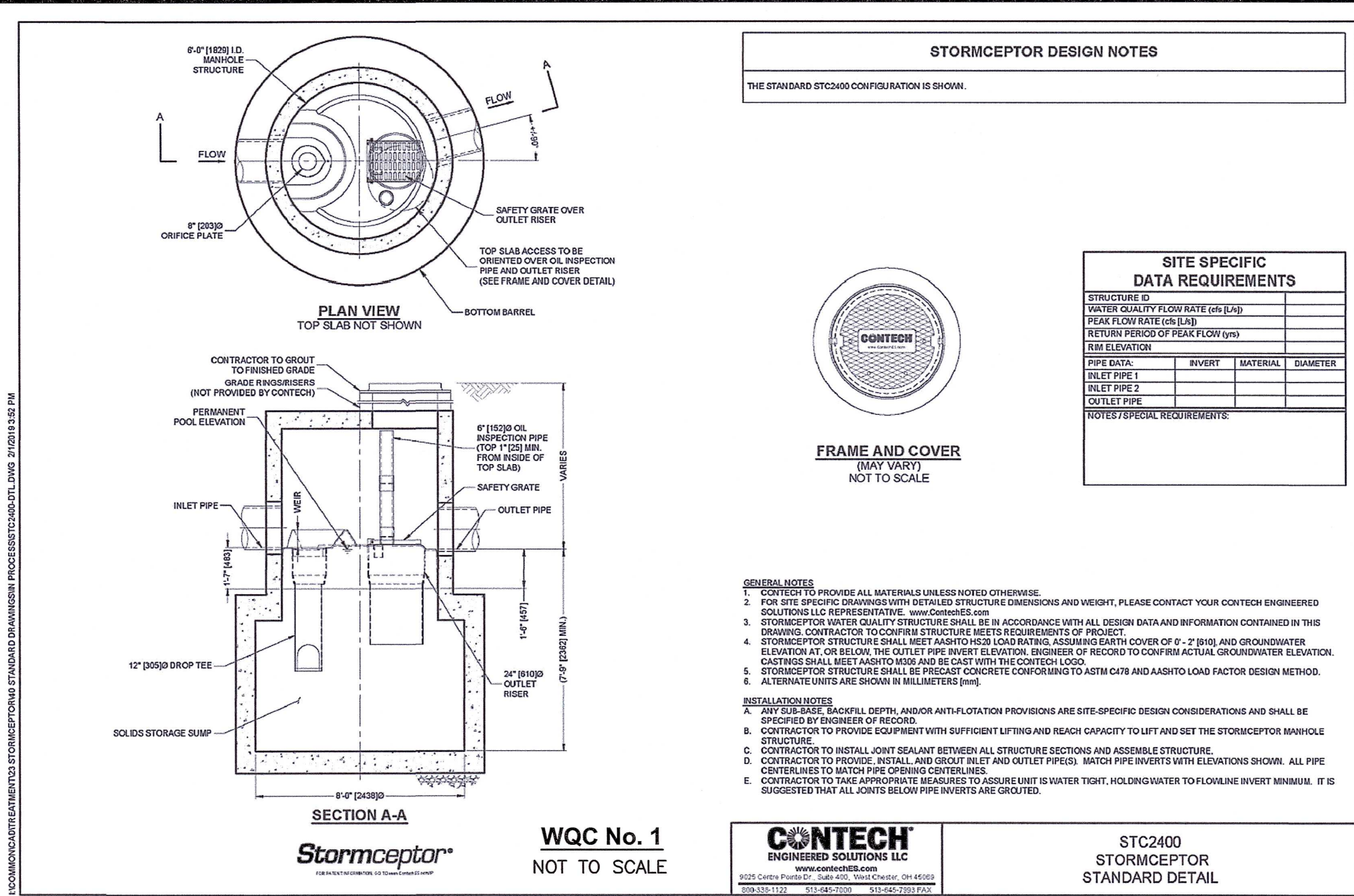
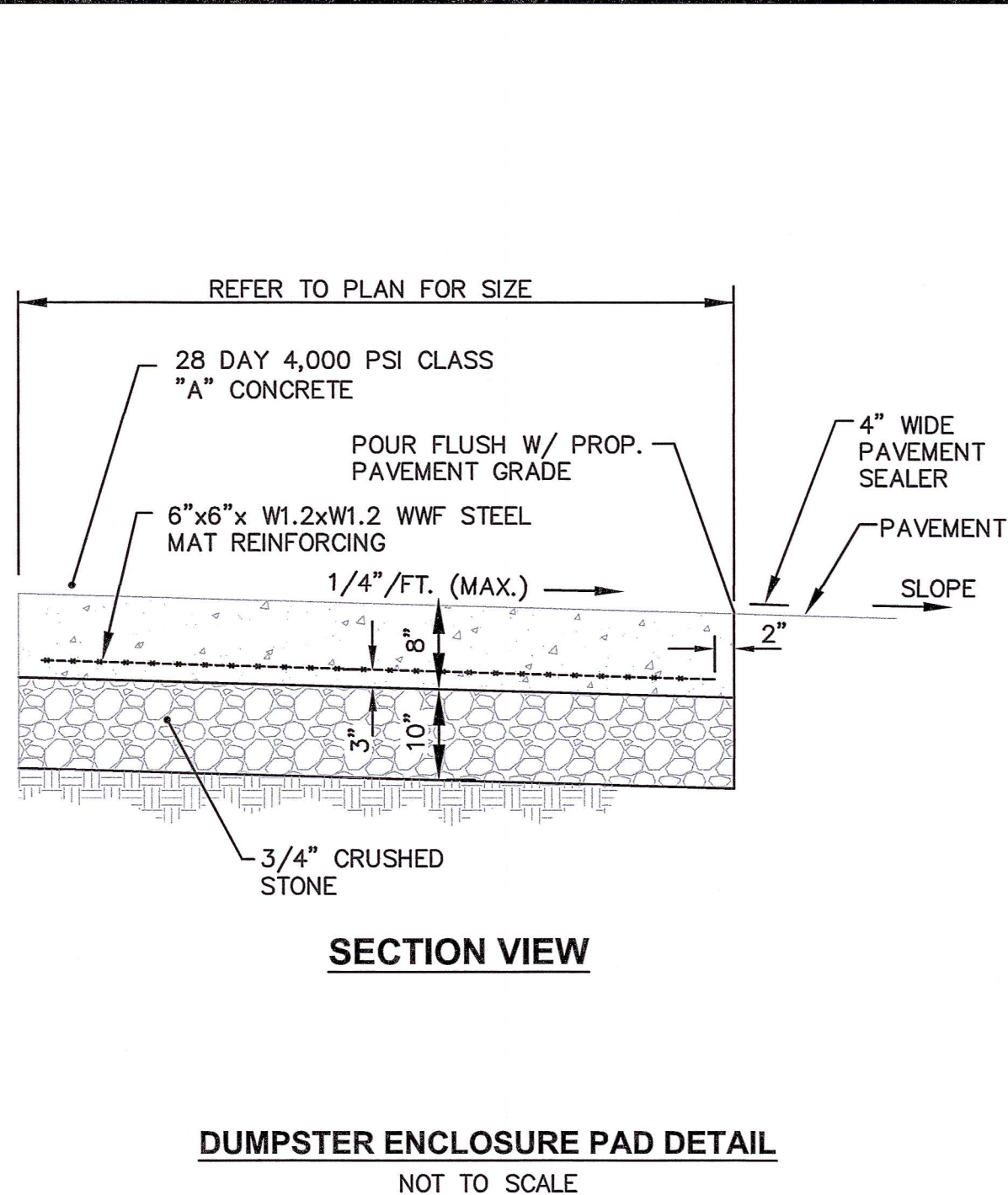
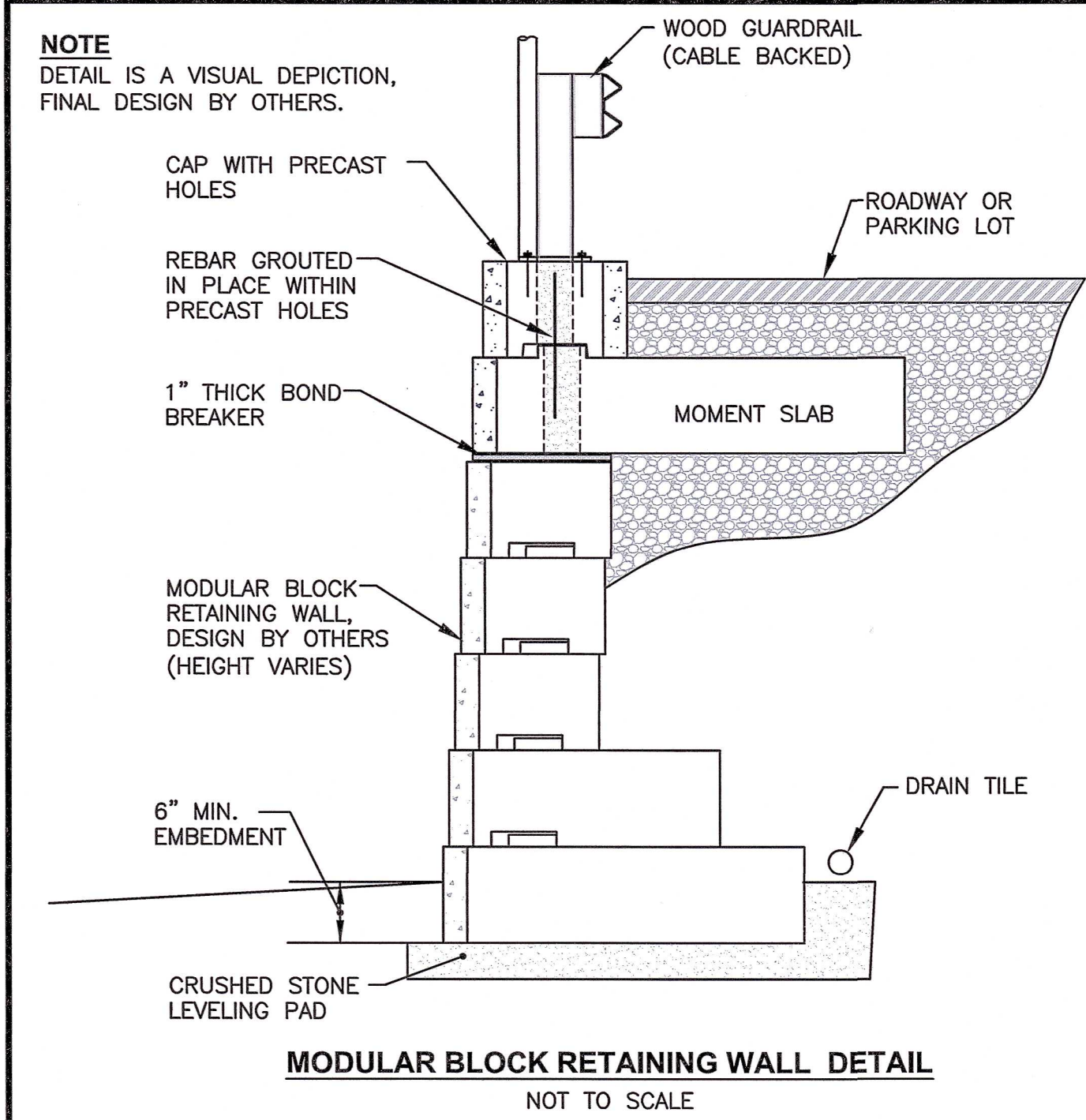
SCALE:
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REVISIONS	NUMBER	REMARKS	DATE
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2	2	REVISED LOD	09/10/21
3	3	R.I.D.E.M. COMMENTS	09/25/21
4	4	TOWN COMMENTS	01/28/22
5	5	TOWN COMMENTS	03/22/22
6	6	ADDENDUM 4	07/26/22
7	7	FOR CONSTRUCTION	10/31/22

DRAWING NUMBER
C8

SHEET: 9 OF 16



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KEY PLAN

PROJECT TITLE:

SMITHFIELD FIRE STATION

PLAT MAP 48, LOT 51

ZONING DISTRICT LI

LIGHT INDUSTRIAL DISTRICT

321 GEORGE WASHINGTON HIGHWAY

SMITHFIELD, RI

PREPARED FOR:

AHARONIAN & ASSOCIATES, INC.

Architects

310 George Washington Hwy
Suite 100
Smithfield, Rhode Island
02917
401-233-2501
www.arch-eng.com

DRAWING TITLE:

MISCELLANEOUS DETAIL

PLAN No. 2

DATE: OCTOBER 31, 2022

SCALE: AS SHOWN

DWG. NAME: 2495-C09-DETAIL2-R7.dwg

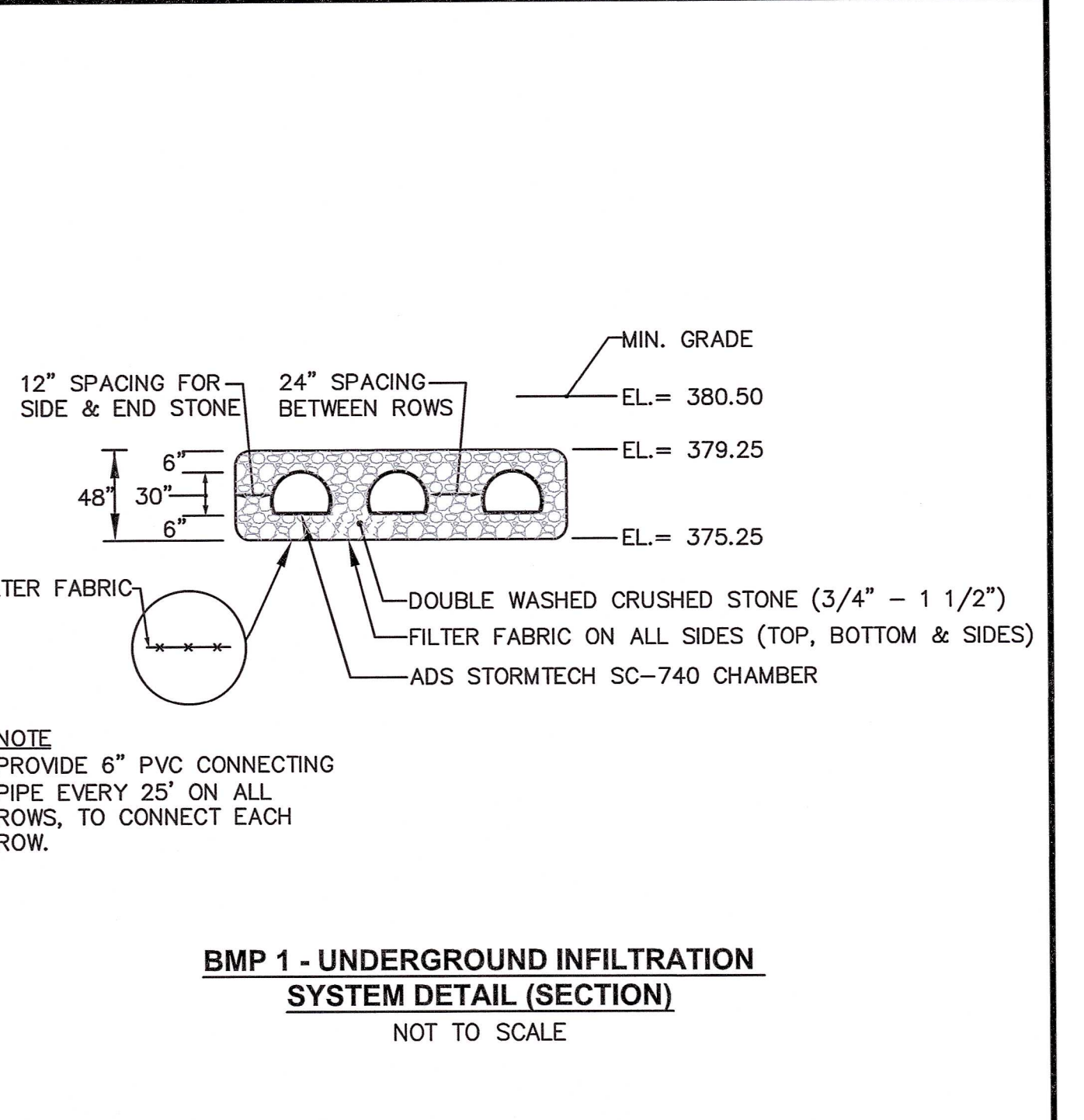
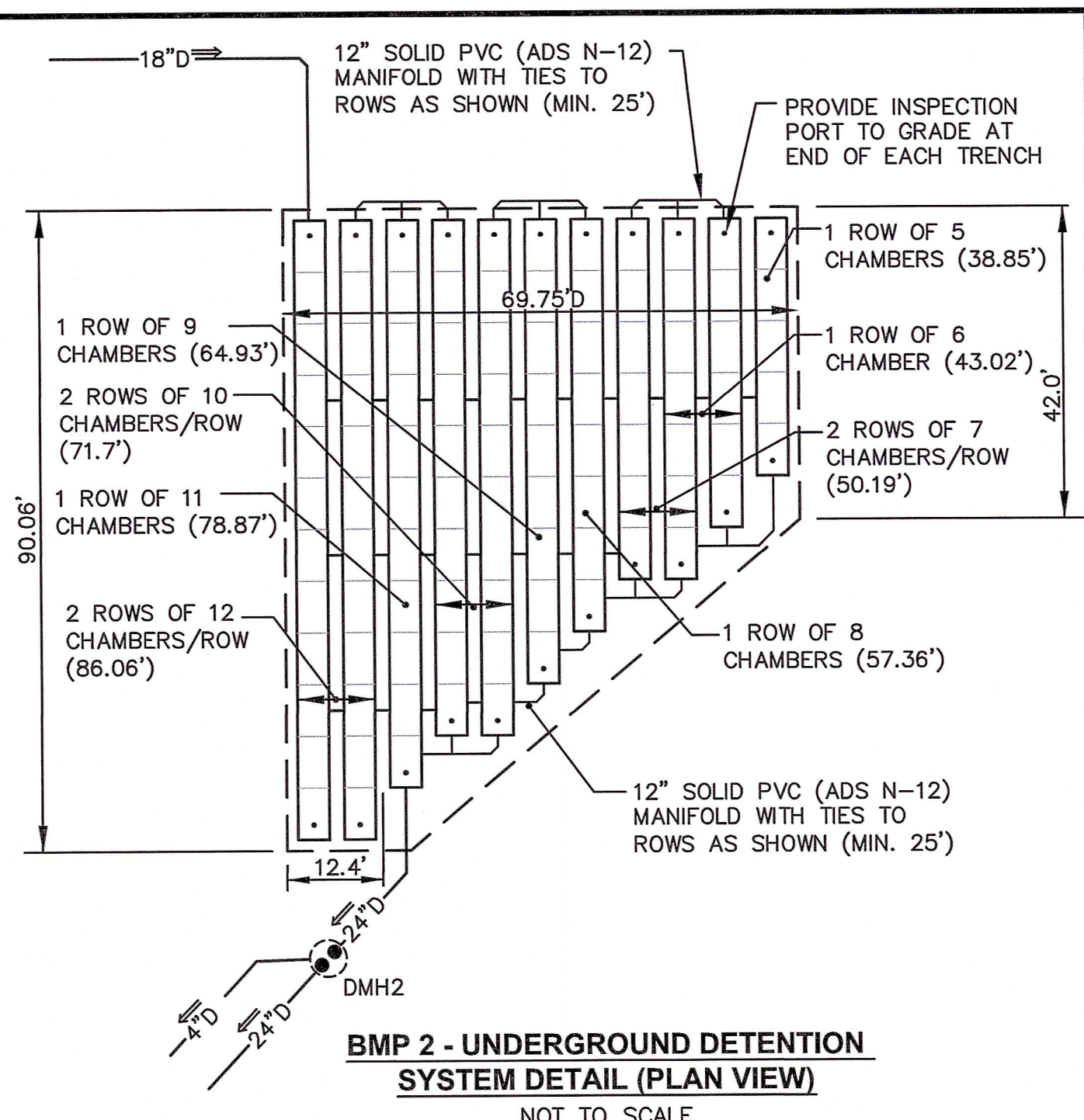
REVISIONS



NUMBER	REMARKS	DATE
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7	FOR CONSTRUCTION	10/31/22

DRAWING NUMBER

C9

SHEET: 10 OF 16



 <ul style="list-style-type: none">• Civil• Transportation• Environmental• Site Planning• Surveying• Permitting• Landscape Architecture	
<h1>CROSSMAN ENGINEERING</h1>	
<u>Rhode Island</u> 151 Centerville Road Warwick, RI 02886 Phone: (401) 738-5660	<u>Massachusetts</u> 103 Commonwealth Avenue North Attleboro, MA 02763 Phone: (508) 695-1700
Email: cel@crossmaneng.com	
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<div style="border: 1px solid black; padding: 10px; text-align: center;"><p>STEVEN M. CABRAL</p><p>No. 4847</p><p>REGISTERED PROFESSIONAL ENGINEER</p><p><i>Steven M. Cabral</i> P.E.</p></div>	
KEY PLAN	

Manifold, Scour Fabric and Chamber Assembly

Install manifold and lay out woven scour geotextile at inlet rows [min. 12.5 ft (3.8 m)] at each inlet end cap. Place a continuous piece (no seams, double layer) along entire length of Isolator® Rows).

Align the first chamber and end cap of each row with inlet pipes. Contractor may choose to postpone stone placement around end chambers and leave ends of rows open for easy inspection of chambers during the backfill process.

Continue installing chambers by overlapping chamber end corrugations. Chamber joints are labeled "Lower Joint" - "Overlap Here" and "Build this direction - Upper Joint". Be sure that the chamber placement does not exceed the reach of the construction equipment used to place the stone. Maintain minimum 6" (150 mm) spacing between rows.

Attaching the End Caps

Lift the end of the chamber a few inches off the ground. With the curved face of the end cap facing outward, place the end cap into the chamber's end corrugation.

Prefabricated End Caps

24" (600 mm) inlets are the maximum size that can fit into SC-740/DC-780 end cap and must be prefabricated with a 24" (600 mm) pipe stub. SC-310 chambers with a 12" (300 mm) inlet pipe must use a prefabricated end cap with a 12" (300 mm) pipe stub.

Isolator Row

Place two continuous layers of ADS Woven fabric between the foundation stone and the isolator row chambers, making sure the fabric lays flat and extends the entire width of the chamber feet. Drape a strip of ADS non-woven geotextile over the row of chambers (not required over DC-780). This is the same type of non-woven geotextile used as a separation layer around the angular stone of the StormTech system.

Table 1 - Acceptable Fill Materials

Material Location	Description	AASHTO M25 Designation	Connection/Quality Requirement
① Final Fill: Fill Material for layer "D" starts from the top of the "C" layer to the bottom of flexible pavement or unopened graded grade above. Note that the pavement surface may be part of the "D" layer.	Any soil/rock materials, native soils or per engineer's plans. Check plans for permitted subgrade requirements.	N/A	Prepare per the design engineer's plans. Placed installations may have different material and proportion requirements.
② Initial Fill: Fill Material for layer "C" starts from the top of the embankment stone "B" layer to 15" (400 mm) above the top of the chamber faces that require subgrade may be part of the "C" layer.	Granular well-graded soil/ aggregate materials, 100% fines or processed aggregate. Mass placement subgrade materials can be used in lieu of the layer.	AASHTO M55 A-1, A-2, A-3 AASHTO M43 3, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100	Reveal connection after min 12" (300 mm) of material over the chambers is reached. Compact additional layer at 15" (400 mm) min. This is the 100% fines layer. If well-graded material and 80% fines only, per processed aggregate materials. Refer to project specific notes for 12" (300 mm) to 15" (400 mm) fines layer. (100% fines layer is not required for DC-780).
③ Embankment Stone: Embankment stone starting from the foundation stone to the "C" layer above.	Clean, crushed, angular stone.	AASHTO M57 3, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100	No compaction required.
④ Foundation Stone: Foundation Stone from the chambers to the subgrade to the foot bottom of the embankment.	Clean, crushed, angular stone.	AASHTO M57 3, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100	Place and compact in 8" (150 mm) lifts using two full coverages with a vibratory compactor.

PLEASE NOTE:

- The listed AASHTO designations are for gradations only. The stone must also be clean, crushed, angular. For example, a specification for #4 stone would state: "clean, crushed, angular no. 4 (AASHTO #4) stone".
- StormTech compaction requirements are met for #4 location materials when placed and compacted in 8" (150 mm) (max) lifts using two full coverages with a vibratory compactor.
- Where infiltration surfaces may be compromised by compaction, for standard installations and standard design load conditions, a flat surface may be achieved by raking or dragging without compaction equipment. For special load designs, contact StormTech for compaction requirements.

Figure 2 - Fill Material Locations

Initial Anchoring of Chambers – Embedment Stone

Initial embedment shall be spotted along the centerline of the chamber evenly anchoring the lower portion of the chamber. This is best accomplished with a stone conveyor or excavator reaching along the row.

No equipment shall be operated on the bed at this stage of the installation. Excavators must be located off the bed. Dump trucks shall not dump stone directly on to the bed. Dozers or loaders are not allowed on the bed at this time.

Backfill of Chambers – Embedment Stone

Backfill chambers evenly. Stone column height should never differ by more than 12" (300 mm) between adjacent chamber rows or between chamber rows and perimeter.

Perimeter stone must be brought up evenly with chamber rows. Perimeter must be fully backfilled, with stone extended horizontally to the excavation wall.

NOTES:

- 36" (900 mm) of stabilized cover materials over the chambers is required for full dump truck travel and dumping.
- During paving operations, dump truck axle loads on 18" (450 mm) of cover may be necessary. Precautions should be taken to avoid rutting of the road base layer, to ensure that compaction requirements have been met, and that a minimum of 18" (450 mm) of cover exists over the chambers. Contact StormTech for additional guidance on allowable axle loads during paving.
- Ground pressure for track dozers is the vehicle operating weight divided by total ground contact area for both tracks. Excavators will exert higher ground pressures based on loaded bucket weight and boom extension.
- Max-averages (e.g. 8,000 lbs/3,628 kg) can be used with at least 12" (300 mm) of stone over the chambers and are limited by the maximum ground pressures in Table 2 based on a full bucket at maximum boom extension.
- Storage of materials such as construction materials, equipment, supplies, etc. should not be located over the StormTech system. The use of equipment over the StormTech system not covered in Table 2 (ex. soil mixing equipment, cranes, etc.) is limited. Please contact StormTech for more information.
- Allowable track loads based on vehicle travel only. Excavators shall not operate on chamber loads until the total backfill reaches 3 feet (300 mm) over the entire bed.

Table 2 – Maximum Allowable Construction Vehicle Loads^a

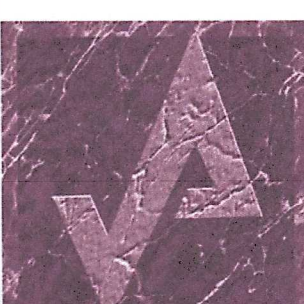
Material Location	Fill Depth over Chambers in (mm)	Max. Axle Load for Trucks (kN)	Max. Wheel Load for Trucks (kN)	Track Width (in. mm)	Max. Ground Pressure (psf kPa)	Max. Drum Weight or Dynamic Force (kN)
① Final Fill Material	36" [900]	32,000 [143]	16,000 [71]	12" [305] 18" [457] 24" [610] 36" [914]	8420 [164] 2280 [113] 1850 [90] 1510 [73]	38,000 [168]
	24" [610]	32,000 [143]	16,000 [71]	12" [305] 18" [457] 24" [610] 36" [914]	5480 [118] 1770 [85] 1440 [69] 1210 [58]	20,000 [90]
	18" [457]	32,000 [143]	16,000 [71]	12" [305] 18" [457] 24" [610] 36" [914]	2040 [107] 1820 [87] 1330 [64] 1110 [54]	Roller track vehicle weight not to exceed 12,000 lbs. [55 kN]
② Initial Fill Material	36" [900]	32,000 [143]	16,000 [71]	12" [305] 18" [457] 24" [610] 36" [914]	4480 [71] 3280 [161] 2740 [135] 2000 [97]	20,000 [90]
	24" [610]	32,000 [143]	16,000 [71]	12" [305] 18" [457] 24" [610] 36" [914]	2910 [58] 1440 [71] 1220 [61] 950 [42]	Roller track vehicle weight not to exceed 12,000 lbs. [55 kN]
	18" [457]	32,000 [143]	16,000 [71]	12" [305] 18" [457] 24" [610] 36" [914]	1070 [51] 800 [43] 670 [32] 540 [24]	Roller track vehicle weight not to exceed 12,000 lbs. [55 kN]
③ Embedment Stone	12" [305]	16,000 [71]	NOT ALLOWED	12" [305] 18" [457] 24" [610] 36" [914]	1190 [57] 910 [45] 710 [35] 540 [24]	Roller track vehicle weight not to exceed 12,000 lbs. [55 kN]
④ Foundation Stone	6" [153]	8,000 [35]	NOT ALLOWED	12" [305] 18" [457] 24" [610] 36" [914]	1070 [51] 800 [43] 670 [32] 540 [24]	NOT ALLOWED

Table 3 – Placement Methods and Descriptions

Material Location	Placement Method/Restrictions	Wheel Load Restrictions	Track Load Restrictions	Roller Load Restrictions
① Final Fill Material	A variety of placement methods may be used. All construction loads must not exceed the maximum limits in Table 2.	36" (900 mm) minimum cover required for dump trucks to dump over chambers.	Dozers to push parallel to rows until 36" (900 mm) compacted cover is reached. ^a	Roller travel parallel to rows only until 36" (900 mm) compacted cover is reached.
② Initial Fill Material	Excavator positioned off bed recommended. Small loader allowed over chambers. Small dozer allowed.	Animals can be dumped into piles when compacted pavement subgrade reaches 12" (450 mm) above top of chambers.	Small LTP track dozers & skid steers allowed to push cover stone with at least 6" (150 mm) of stone above top of stone. Excavator must push parallel to rows at all times.	Use dynamic force of roller only after compacted fill depth reaches 12" (450 mm) over chambers. Roller must parallel to chamber rows only to row at all times.
③ Embedment Stone	No equipment allowed on bare chambers. Use activity or stone conveyor. Position of bed or on foundation rows to evenly fill around all chambers to at least the top of chambers.	No wheel loads allowed. Material must be placed outside the limits of the chamber bed.	No tracked equipment is allowed on chambers until a min. 6" (150 mm) cover stone is in place.	No rollers allowed.
④ Foundation Stone	No StormTech restrictions. Contractor responsible for any conditions or requirements by others relative to subgrade bearing capacity, deviating or protection of subgrade.			

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<p>PROJECT TITLE:</p> <p>SMITHFIELD FIRE STATION PLAT MAP 48, LOT 51 ZONING DISTRICT LI LIGHT INDUSTRIAL DISTRICT 321 GEORGE WASHINGTON HIGHWAY SMITHFIELD, RI</p>																																									
<p>PREPARED FOR:</p> <div><p>AHARONIAN & ASSOCIATES, INC. Architects 310 George Washington Hwy Suite 100 Smithfield, Rhode Island 0 2 9 1 7 4 0 1 • 2 3 2 • 5 0 1 0 www.arch-eng.com</p></div>																																									
<p>DRAWING TITLE:</p> <p>MISCELLANEOUS DETAILS PLAN No. 3</p>																																									
<p>DATE: OCTOBER 31, 2022</p>		<p>SCALE: AS SHOWN</p>																																							
<p>DWG. NAME: 2495-C10-DETAIL3-R7.dwg</p>																																									
<p>REVISIONS</p> <table><thead><tr><th>NUMBER</th><th>REMARKS</th><th>DATE</th></tr></thead><tbody><tr><td>1</td><td>REVISED LAYOUT</td><td>08/27/21</td></tr><tr><td>2</td><td>REVISED LOD</td><td>09/10/21</td></tr><tr><td>3</td><td>R.I.D.E.M. COMMENTS</td><td>09/25/21</td></tr><tr><td>4</td><td>TOWN COMMENTS</td><td>01/28/22</td></tr><tr><td>5</td><td>TOWN COMMENTS</td><td>03/22/22</td></tr><tr><td>6</td><td>ADDENDUM 4</td><td>07/26/22</td></tr><tr><td>7</td><td>FOR CONSTRUCTION</td><td>10/31/22</td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr></tbody></table>			NUMBER	REMARKS	DATE	1	REVISED LAYOUT	08/27/21	2	REVISED LOD	09/10/21	3	R.I.D.E.M. COMMENTS	09/25/21	4	TOWN COMMENTS	01/28/22	5	TOWN COMMENTS	03/22/22	6	ADDENDUM 4	07/26/22	7	FOR CONSTRUCTION	10/31/22															
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<p>DRAWING NUMBER</p> <p>C10</p> <p>SHEET: 11 OF: 16</p>																																									

ALL INSTALLATION, JOINTS, CONSTRUCTION METHODS AND MATERIALS SHALL BE ACCORDING TO THE SMITHFIELD WATER DEPARTMENT REQUIREMENTS, AWWA STANDARDS AND GOVERNMENTAL REQUIREMENTS.

ALL FITTINGS SHALL BE DUCTILE IRON MECHANICAL JOINT CLASS 350 CEMENT MORTAR LINED COMPACT STYLE (BY AMERICAN MANUFACTURER ONLY). FITTINGS SHALL MEET THE REQUIREMENTS OF ANSI/AWWA C153/A21.53. MECHANICAL JOINTS SHALL MEET THE REQUIREMENTS OF ANSI/AWWA C111/A21.11.

WATER PIPE SHALL BE DOUBLE CEMENT MORTAR LINED DUCTILE IRON PIPE CL52 AND SHALL MEET THE REQUIREMENTS OF ANSI/AWWA C151/A21.51.

CONSTRUCTION SHALL INCLUDE ALL PIPE, JOINTS, BENDS, TEES, FITTINGS, "MEGA-LUG" RESTRAINED MECHANICAL JOINTS, SERVICE CONNECTIONS AND ALL MISCELLANEOUS ITEMS REQUIRED TO CONSTRUCT THE PROPOSED SYSTEM.

"MEGA-LUG" RESTRAINED MECHANICAL JOINTS SHALL BE INSTALLED IN LOCATIONS INDICATED AND AT ALL BENDS, FITTINGS, PLUGS, ETC.

PRESSURE AND LEAKAGE TESTS AND DISINFECTING PIPES SHALL BE PERFORMED BY THE CONTRACTOR IN CONFORMANCE TO AMERICAN WATER WORKS ASSOCIATION (AWWA) RECOMMENDATIONS, SMITHFIELD WATER DEPARTMENT REQUIREMENTS, AND GOVERNMENTAL AGENCIES HAVING JURISDICTION.

ALL FITTINGS, PIPE, JOINTS, ETC. SHALL BE DESIGNED FOR 1.5 TIMES WORKING PRESSURE BUT NOT LESS THAN 150 PSI.

WATER PIPE SHALL TYPICALLY BE LOCATED AT LEAST TEN (10) FEET HORIZONTALLY FROM SEWER PIPE, AND AT A MINIMUM DEPTH OF COVER EQUAL TO 5'. WHERE A NEW WATER MAIN IS LESS THAN 18 INCHES CLEAR DISTANCE ABOVE A SEWER OR WHERE A WATER MAIN PASSES BENEATH A SEWER OR STORM DRAIN, ENCASE THE SEWER OR WATER IN 6" OF CONCRETE FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE CROSSING WATER MAIN. THE USE OF DUCTILE IRON TIGHT JOINT SEWER PIPE IN LIEU OF CONCRETE ENCASEMENT WILL BE CONSIDERED UPON CONTRACTORS SUBMITTAL OF SPECIFICATIONS TO ENGINEERS FOR APPROVAL.

ALL SYSTEM COMPONENTS AND CONSTRUCTION METHODS, SUCH AS PIPE, RESTRAINED MECHANICAL JOINTS, FITTINGS, CASTINGS, ETC. SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO PURCHASE AND INSTALLATION. THIS SUBMISSION SHALL INCLUDE MANUFACTURER'S LITERATURE, SHOP DRAWINGS, PROPOSED CONSTRUCTION METHODS, ETC.

0. WATER LINE TRENCH TO BE AWWA TYPE 5. A METALIZED DETECTABLE IDENTIFICATION TAPE 2" IN WIDTH, BLUE IN COLOR AND PRINTED WITH "CAUTION WATER LINE BURIED" SHALL BE UTILIZED OVER ALL MAINS. TAPE SHALL BE SET AT APPROXIMATELY 1'-0" BELOW FINISHED GRADE.

1. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL COMPLETE AND SUBMIT THE "CONTRACTOR'S MATERIAL AND TEST CERTIFICATE" FOR UNDERGROUND PIPING TO THE SMITHFIELD WATER DEPARTMENT AND ENGINEER. IN ADDITION, THE CONTRACTOR IS REQUIRED TO SUBMIT THE FOLLOWING ITEMS TO THE ENGINEER FOR THEIR REVIEW AND APPROVAL:

- TYPE AND MANUFACTURER OF SERVICE BOXES
- TYPE AND MANUFACTURER OF CORPORATIONS AND CURB STOPS
- TYPE AND MANUFACTURER OF VALVE BOXES (OPEN RIGHT)
- TYPE AND MANUFACTURER OF D.I. MECHANICAL JOINTS AND FITTINGS
- TYPE AND MANUFACTURER OF TAPPING SLEEVES
- TYPE AND MANUFACTURER OF DI PIPING
- TYPE AND MANUFACTURER OF RESILIENT SEALED GATE VALVES (OPEN RIGHT)
- TYPE AND MANUFACTURER OF COPPER SERVICE LINE

2. WHEN THIS PROJECT IS COMPLETE, THE CONTRACTOR IS RESPONSIBLE TO PROVIDE THE WATER DEPARTMENT AND ENGINEER TWO SETS OF AS BUILT PLANS CERTIFIED BY A RHODE ISLAND PROFESSIONAL ENGINEER OR SURVEYOR. THE PLAN SHALL INCLUDE:

- a. ALL CURB STOPS WITH APPROPRIATE LOCATING MEASUREMENTS
MAIN-TO-CURB
AND MEASUREMENTS FROM PERMANENT STRUCTURES.
- b. A SCHEDULE OF MATERIALS WHICH INDICATES: AND MEASUREMENTS FROM PERMANENT STRUCTURES.
 - 1. ITEM QUANTITY
 - 2. MANUFACTURER
 - 3. DESCRIPTION & PIPE MATERIAL

3. THE CONTRACTOR SHALL VERIFY THE SERVICE PIPE SIZE REQUIREMENT WITH THE BUILDING ARCHITECT AND PLUMBING CONTRACTOR PRIOR TO ORDERING PIPE, METERS AND BACKFLOW PREVENTORS. COORDINATION WITH THE SMITHFIELD WATER DEPARTMENT IS REQUIRED TO DETERMINE THE EXISTING WATER PRESSURE AVAILABLE.

4. ALL VALVES TO BE RESILIENT WEDGE GATE VALVES.

5. ALL FITTINGS TO BE RESTRAINED WITH MECHANICAL JOINTS. RESTRAINTS TO BE MEGA-LUG OR EQUAL.

6. RESTRAIN ALL PUSH-ON BELL JOINTS WITHIN 20 FEET OF MECHANICAL JOINTS. RESTRAINTS TO BE SERIES 800 COVER-ALL BY EBAA IRON OR EQUAL.

7. DOMESTIC WATER SERVICE LINES SHALL BE DUCTILE IRON OR COPPER.

8. PRIOR TO BACKFILL, THE CONTRACTOR SHALL COORDINATE WITH THE WARWICK WATER DEPARTMENT FOR INSPECTIONS.

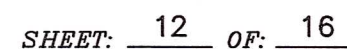
1. ALL CONCRETE TO BE CLASS B.
2. BUTTRESS DIMENSIONS SHOWN ARE MINIMUM. DIMENSIONS ARE BASED UPON SOIL BEARING PRESSURE OF 1500 P.S.F. LATERAL AND STATIC WATER PRESSURE OF 150 P.S.I. WHERE PRESSURE EXCEEDS 150 P.S.I. OR WHERE SOIL BEARING PRESSURE IS LESS THAN 1500 P.S.F. LATERAL; OR WHERE SOIL CONDITIONS OR LIMITATIONS ENCOUNTERED DURING CONSTRUCTION MAKE IT UNFEASIBLE TO PLACE THRUST BLOCKS AGAINST UNDISTURBED EARTH OF THE PROPER BEARING CAPACITY, THE CONTRACTOR SHALL DESIGN, GET APPROVAL OF, AND PLACE SPECIAL REACTION BLOCKS OF SUFFICIENT WEIGHT TO RESIST THE FULL THRUST OF THE LINE UNDER TEST AND OPERATING PRESSURES. THE DESIGN OF SUCH BLOCKS SHALL BE SUBJECT TO THE APPROVAL OF THE WARWICK WATER DEPARTMENT AND THE ENGINEERS AND SHALL BE SUBMITTED TO THE WATER DEPARTMENT BEFORE ACTUAL INSTALLATION TAKES PLACE.
3. ALL THRUST BLOCKS SHALL BE CONCRETE 3,000 P.S.I. @ 28 DAYS AND BEARING AGAINST UNDISTURBED EARTH.

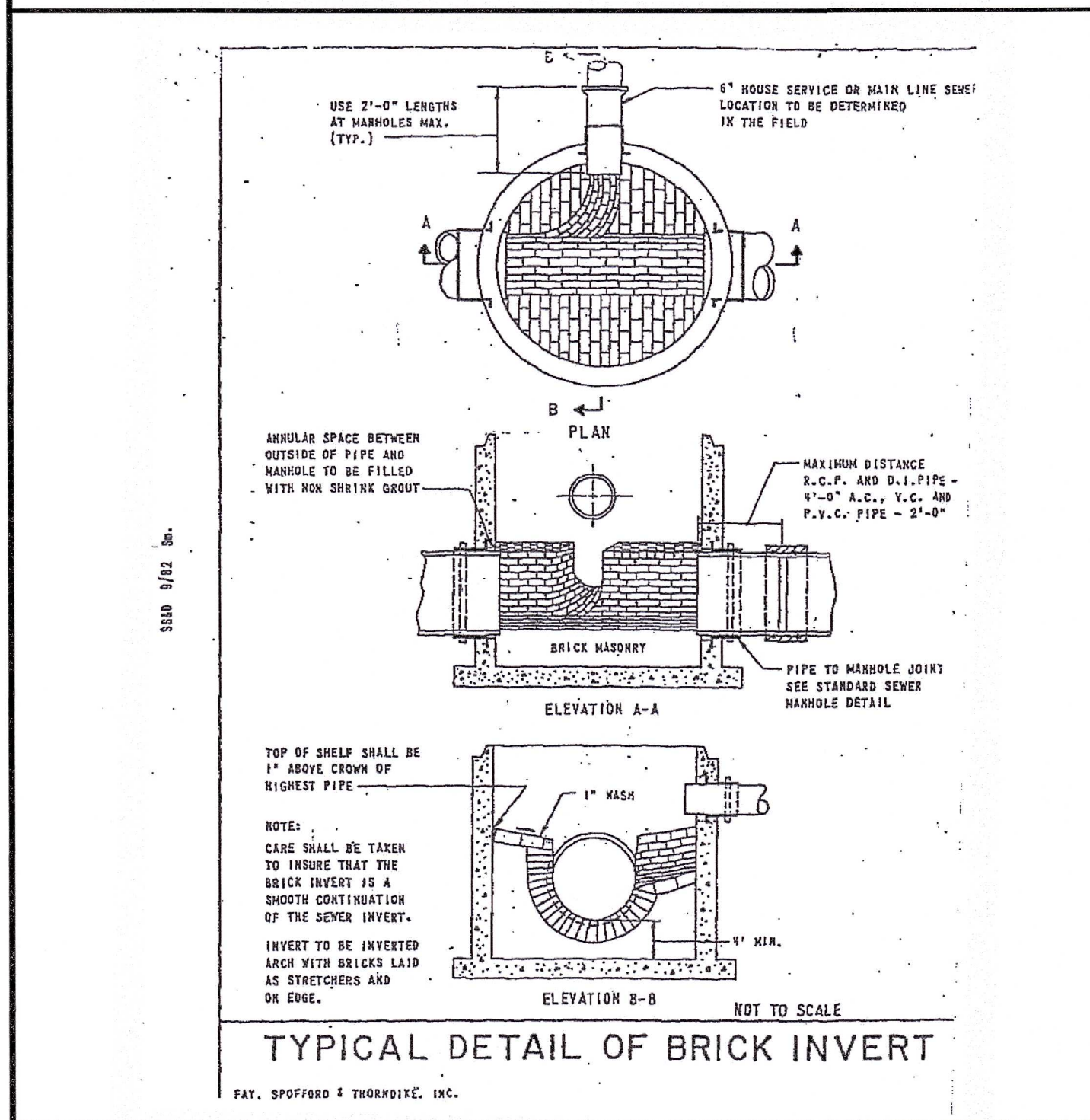
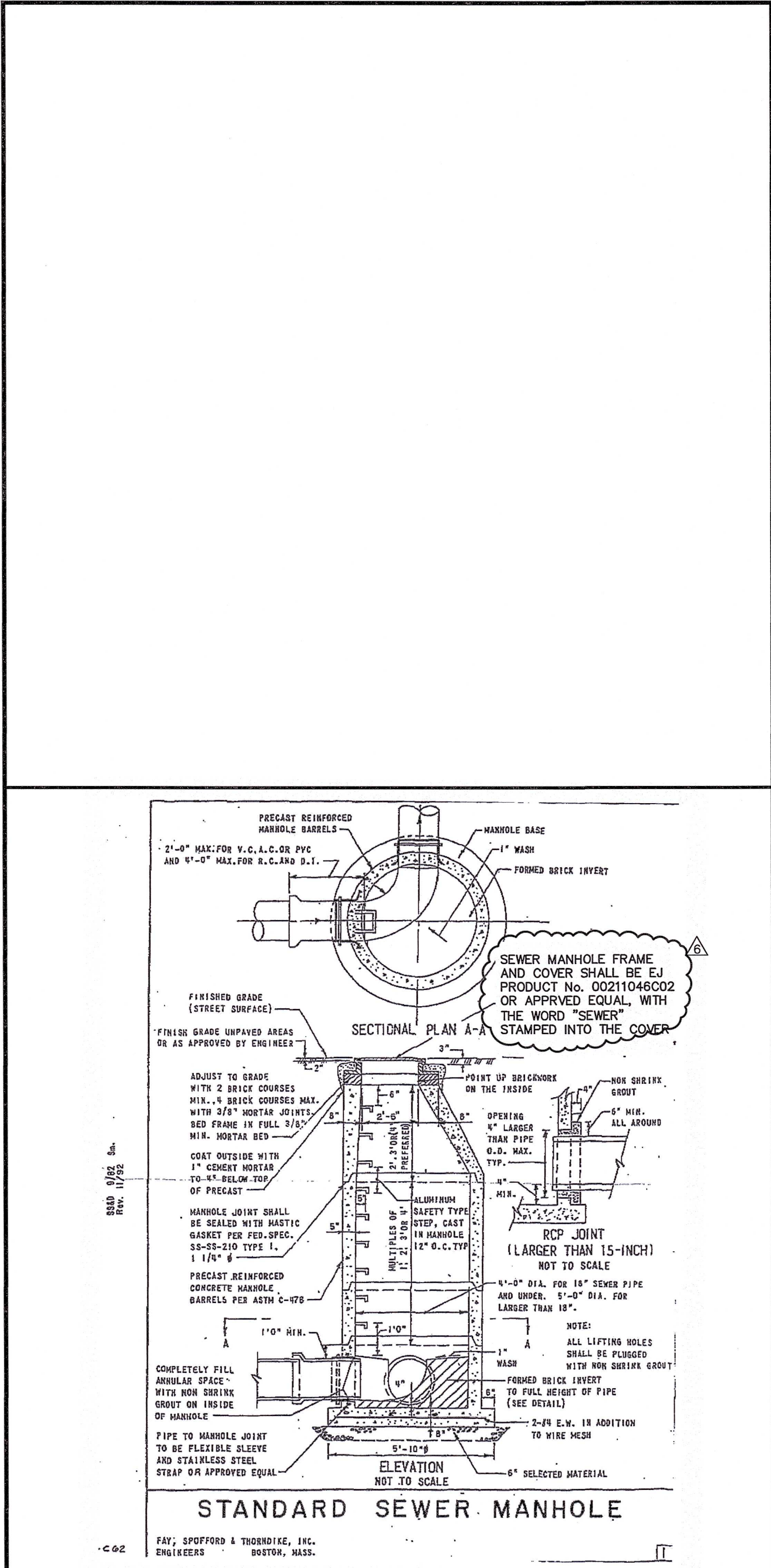


TYPICAL WATER GATE BOX INSTALLATION
NOT TO SCALE

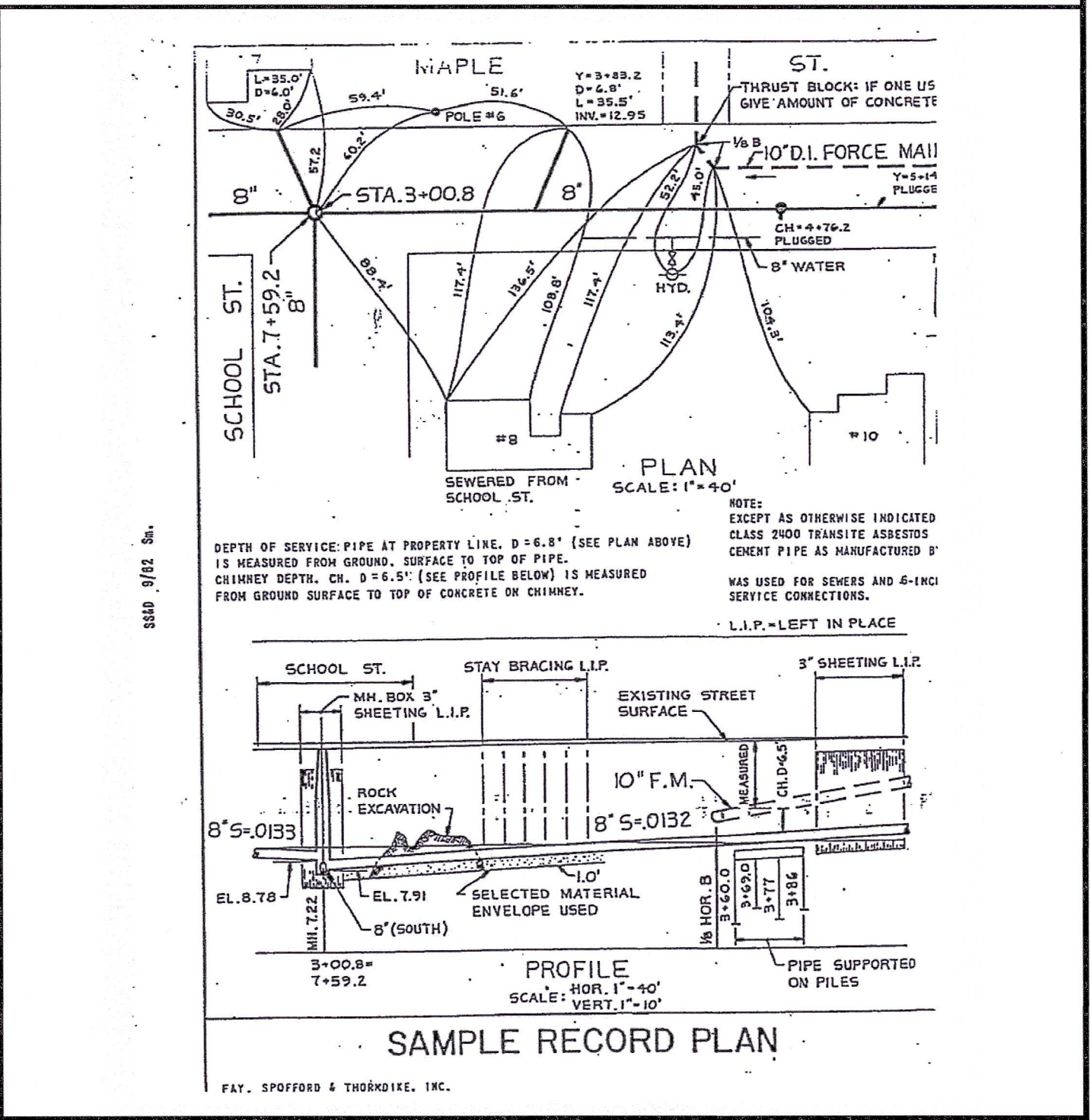
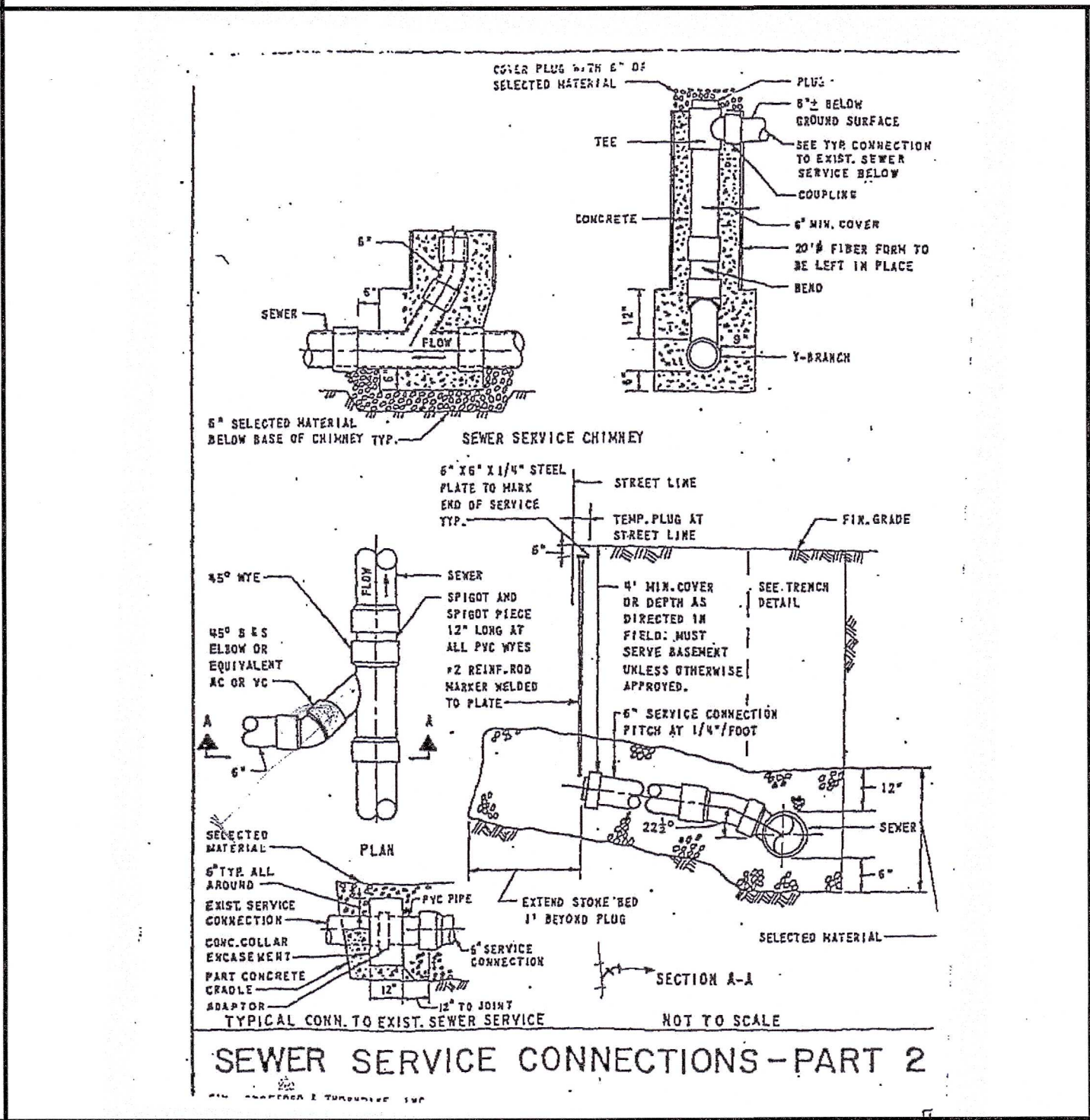
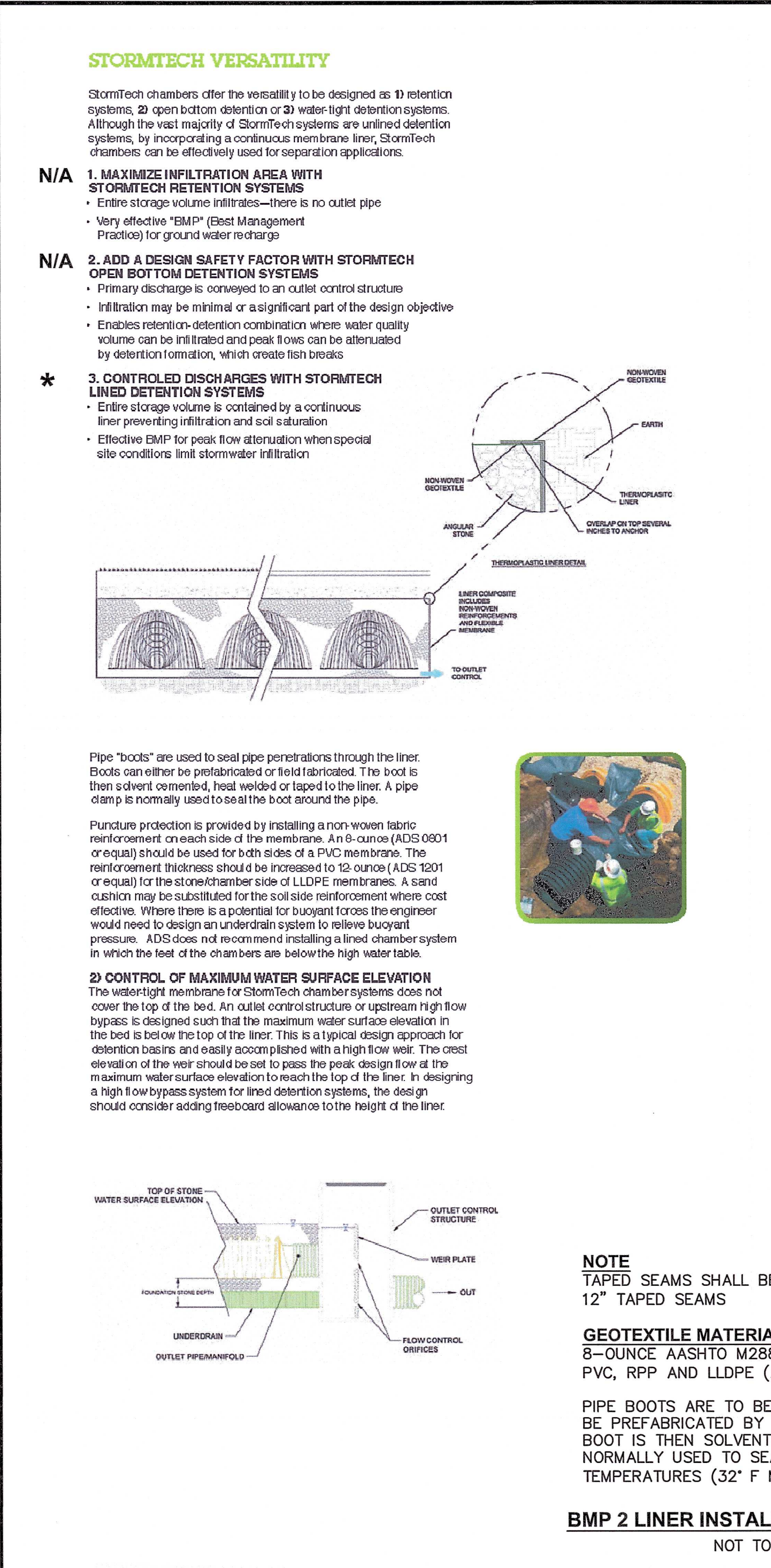
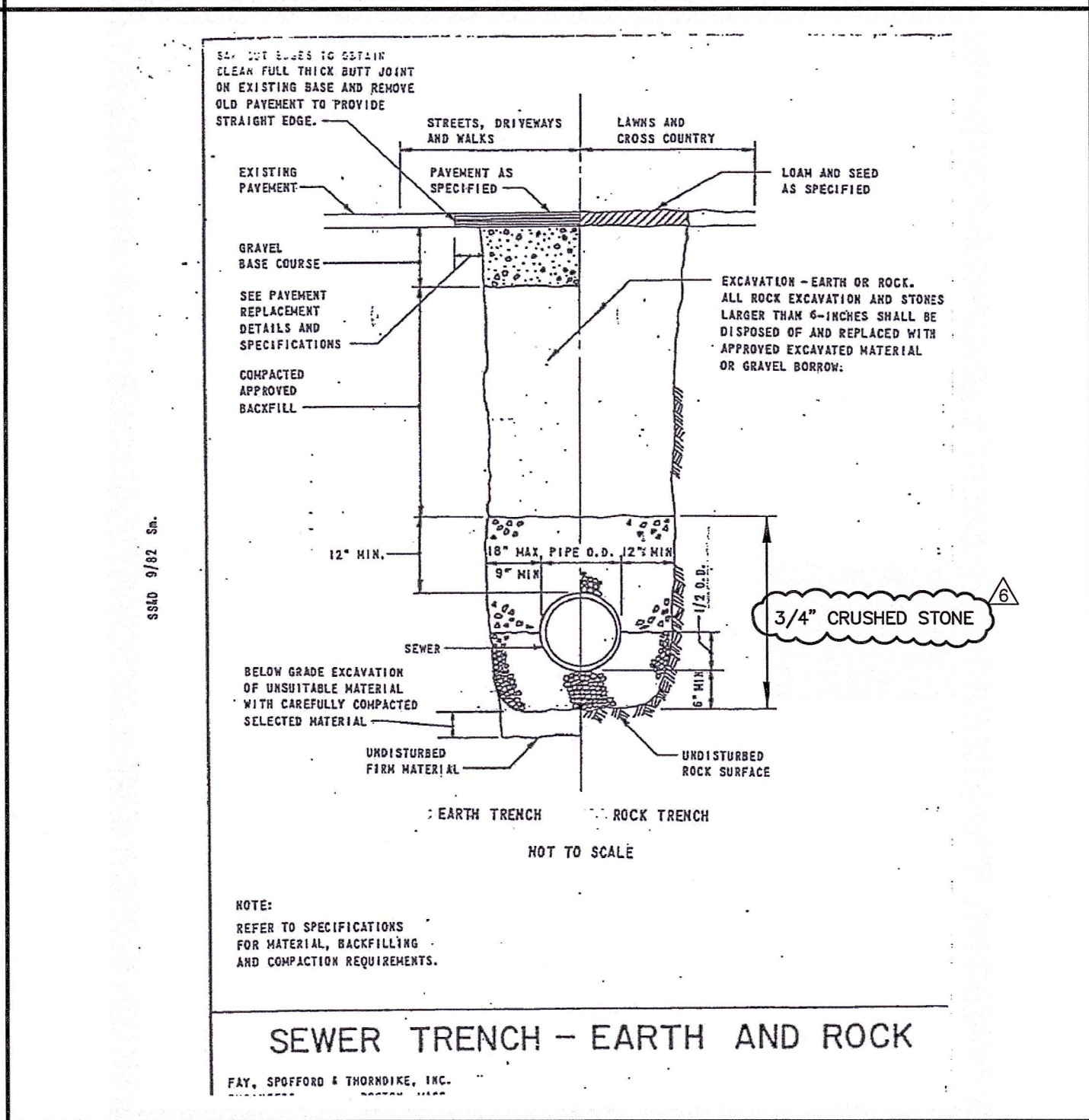


1. CONTRACTOR TO SUBMIT SHOP DRAWINGS/CATALOG CUTS OF ALL BACKFLOW COMPONENTS, INCLUDING BUT NOT LIMITED TO BACKFLOW PREVENTERS, METERS, FITTINGS, PIPES, ETC., TO VERIFY SIZES PRIOR TO ORDERING. ALL COMPONENT SHOP DRAWINGS ARE TO BE REVIEWED AND APPROVED BY THE ENGINEER.
2. ALL SYSTEM COMPONENTS MUST CONFORM TO THE REQUIREMENTS, SPECIFICATIONS, SMITHFIELD WATER DEPARTMENT REGULATIONS, THE NATIONAL FIRE PROTECTION ASSOCIATION STANDARDS, INCLUDING NFPA-20, AND STATE, LOCAL AND FEDERAL REGULATIONS AND CODES.
3. A MINIMUM CLEARANCE OF 12" SHALL BE MAINTAINED AROUND BACKFLOW PREVENTER.





- ### GENERAL SEWER NOTES
- INSTALLATION OF THE SEWERAGE FACILITIES SHALL BE IN ACCORDANCE WITH THE SMITHFIELD SEWER DEPARTMENT SPECIFICATIONS AND REQUIREMENTS.
 - PRIOR TO RECEIVING AUTHORIZATION TO CONSTRUCT, ALL MATERIALS SHALL MEET THE STANDARDS AND RECEIVE THE WRITTEN APPROVAL, BASED ON MANUFACTURER'S DRAWINGS AND OTHER DATA, OF THE SMITHFIELD SEWER DEPARTMENT.
 - ALL SEWERAGE FACILITIES SHALL MEET TESTING AND CLEANING REQUIREMENTS PRIOR TO ACCEPTANCE. GRAVITY SEWER PIPES SHALL BE REQUIRED TO PASS BOTH LOW PRESSURE AIR AND DEFLECTION (I.E. MANDREL) TESTING. SEWER MANHOLES SHALL BE REQUIRED TO PASS A VACUUM TEST.
 - THE CONTRACTOR IS RESPONSIBLE TO COORDINATE AS-BUILT LOCATIONS PRIOR TO PIPE BACKFILL. AS-BUILT DRAWINGS SHALL BE FURNISHED AS A CONDITION FOR ACCEPTANCE OF THE NEW SEWERAGE FACILITIES. PLANS SHALL INCLUDE LOCATION OF WYES.
 - NO FLOW WILL BE ACCEPTED UNTIL ALL ABOVE STEPS ARE COMPLETED AND COMPLETION CERTIFICATE IS ISSUED.
 - AFTER THE CONTRACTOR HAS "STAKED OUT" THE FACILITIES TO BE CONSTRUCTED AND HAS THE APPROVED MATERIALS ON THE JOB, THE SMITHFIELD SEWER DEPARTMENT SHALL BE NOTIFIED IN ADVANCE OF CONSTRUCTION IN ORDER FOR THEM TO ARRANGE FOR THEIR INSPECTOR. THE NOTIFICATION MUST MEET THE SMITHFIELD SEWER DEPARTMENT REQUIREMENTS.
 - ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE APPROVED PLANS AND MATERIALS, STANDARDS AND SPECIAL DETAILS, AND STANDARD SPECIFICATIONS, ANY WORK NOT MEETING THE APPROVED STANDARDS SHALL BE IMMEDIATELY REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
 - THE CONTRACTOR SHALL CONFINE HIS OPERATIONS AND ACTIVITIES FOR CONSTRUCTION WITHIN THE LIMITS OF WORK AS SHOWN ON THE DRAWINGS.
 - ALL AREAS DISTURBED BY THE CONTRACTOR SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT NO EXTRA COST TO THE OWNER. ALL GRASSED AREAS DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE LOAMED AND SEEDED.
 - LOCATION AND DEPTHS OF EXISTING UTILITIES ARE APPROXIMATE AND HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL VERIFY LOCATIONS OF ALL EXISTING UTILITIES AND NOTIFY THE APPROPRIATE UTILITY AUTHORITIES INCLUDING "DIG-SAFE" PRIOR TO STARTING WORK. ANY DAMAGE TO UTILITIES CAUSED BY THE CONTRACTOR'S OPERATIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND THE COST OF REPAIRS SHALL BE BORNE BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
 - RELATION TO WATER LINES:
 - HORIZONTAL SEPARATION: WHENEVER POSSIBLE, SEWERS SHOULD BE LAID AT A MINIMUM OF 10 FEET (3.0 m), HORIZONTALLY, FROM ANY EXISTING OR PROPOSED WATER LINE. SHOULD LOCAL CONDITIONS PREVENT A LATERAL SEPARATION OF 10 FEET, A SEWER MAY BE LAID CLOSER THAN 10 FEET TO A WATER LINE IF:
 - IT IS LAID IN A SEPARATE TRENCH, OR IF
 - IT IS LAID IN THE SAME TRENCH WITH THE WATER LINE LOCATED AT ONE SIDE ON A BENCH OF UNDISTURBED EARTH, AND IF
 - IN EITHER CASE THE ELEVATION OF THE TOP (CROWN) OF THE SEWER IS AT LEAST 18 INCHES (46 cm) BELOW THE BOTTOM (INVERT) OF THE WATER LINE.
 - VERTICAL SEPARATION: WHENEVER A SEWER MUST CROSS UNDER WATER LINES, THE SEWER SHALL BE LAID AT SUCH AN ELEVATION THAT THE TOP OF THE SEWER IS AT LEAST 18 INCHES (46 cm) BELOW THE BOTTOM OF THE WATER LINE. WHEN THE ELEVATION OF THE SEWER CANNOT BE VARIED TO MEET THE ABOVE REQUIREMENTS, THE WATER LINE SHALL BE RELOCATED TO PROVIDE THIS SEPARATION OR RECONSTRUCTED WITH MECHANICAL-JOINT PIPE FOR A DISTANCE OF 10 FEET (3.0 m) ON EACH SIDE OF THE SEWER. ONE FULL LENGTH OF WATER LINE SHOULD BE CENTERED OVER THE SEWER SO THAT BOTH JOINTS WILL BE AS FAR FROM THE SEWER AS POSSIBLE.
 - WHEN IT IS IMPOSSIBLE TO OBTAIN HORIZONTAL AND/OR VERTICAL SEPARATION AS STIPULATED ABOVE, BOTH THE WATER LINE AND SEWER SHALL BE CONSTRUCTED OF MECHANICAL-JOINT CEMENT LINED DUCTILE IRON PIPE OR OTHER EQUIVALENT BASED ON WATER TIGHTNESS AND STRUCTURAL SOUNDNESS. BOTH PIPES SHALL BE PRESSURE TESTED BY AN APPROVED METHOD TO ASSURE WATER TIGHTNESS.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DEWATERING REQUIRED IN THE SEWER INSTALLATION.
 - THE CONTRACTOR IS RESPONSIBLE TO VERIFY THE LOCATION AND ELEVATION OF EXISTING SEWER LINE PRIOR TO INSTALLATION. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL DIG TEST HOLES AND COORDINATE ALL INFORMATION WITH THE ENGINEER.
 - PRIOR TO BACKFILL, THE CONTRACTOR SHALL CONTACT THE SMITHFIELD SEWER DEPARTMENT TO COORDINATE INSPECTIONS.
 - ALL FILL AROUND NEW MANHOLES SHALL BE SCREENED WITH NO STONES LARGER THAN 2" DIAMETER



- Civil
- Transportation
- Environmental
- Site Planning
- Surveying
- Permitting
- Landscape Architecture

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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER

KEY PLAN

PROJECT TITLE:

SMITHFIELD FIRE STATION

PLAT MAP 48, LOT 51
ZONING DISTRICT LI
LIGHT INDUSTRIAL DISTRICT
321 GEORGE WASHINGTON HIGHWAY
SMITHFIELD, RI

PREPARED FOR:

AHARONIAN & ASSOCIATES, INC.
Architects
310 George Washington Hwy
Suite 100
Smithfield, Rhode Island
02891
401-232-5010
www.arch-eng.com

DRAWING TITLE:

MISCELLANEOUS DETAIL PLAN No. 5

DATE: OCTOBER 31, 2022 SCALE: AS SHOWN

DWG. NAME: 2495-C12-DETAIL5-R7.dwg

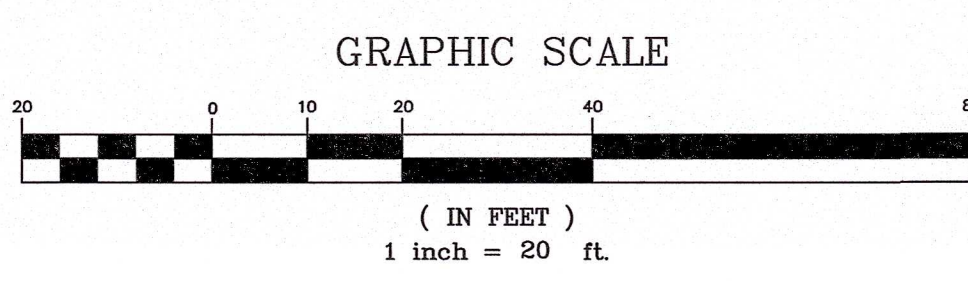
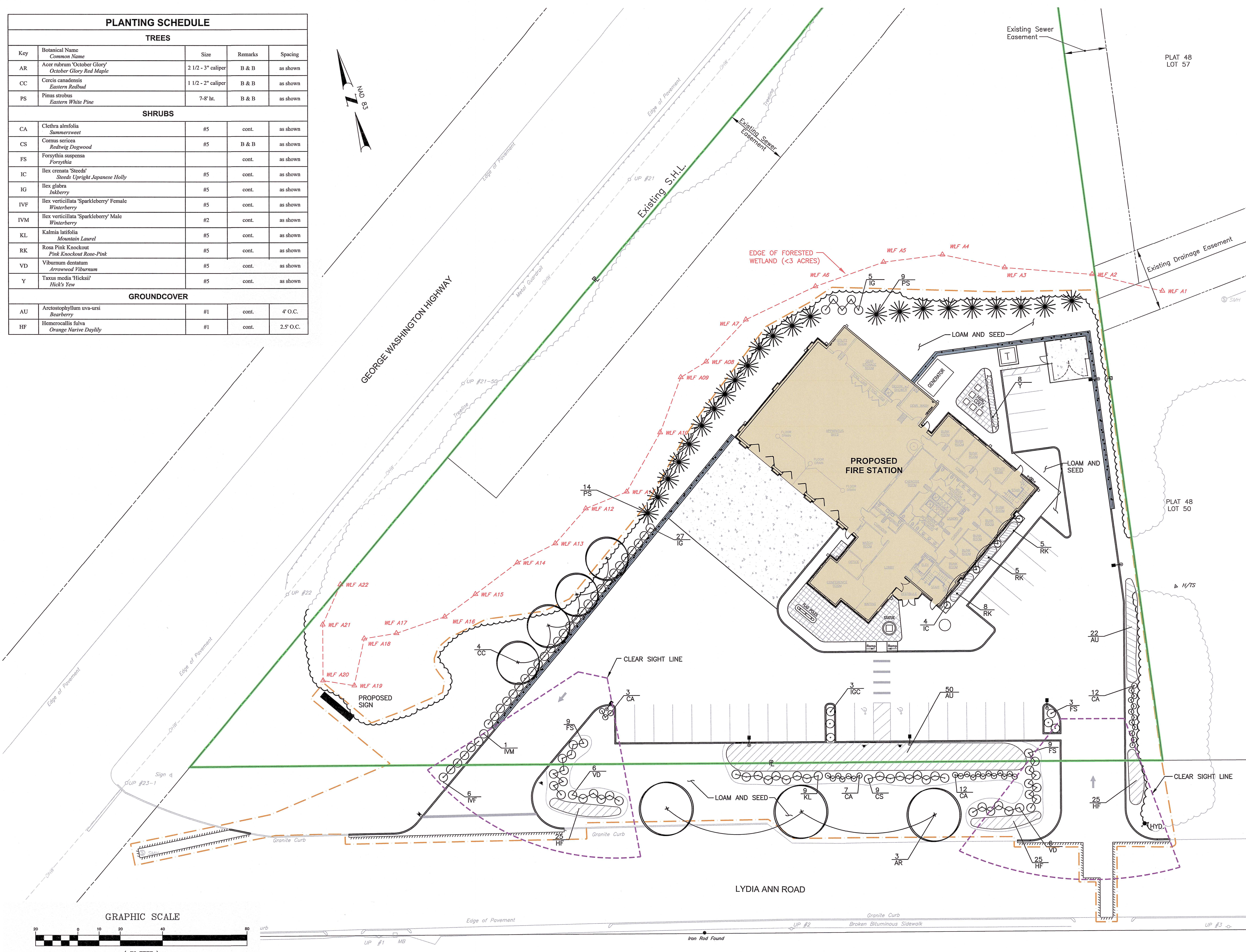
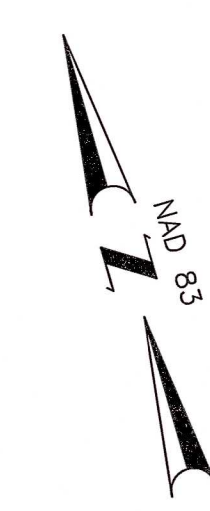
REVISIONS		
NUMBER	REMARKS	DATE
1	REVISED LAYOUT	08/27/21
2	REVISED LOD	09/10/21
3	R.I.D.E.M. COMMENTS	09/25/21
4	TOWN COMMENTS	01/28/22
5	TOWN COMMENTS	03/22/22
6	ADDENDUM A	07/26/22
7	FOR CONSTRUCTION	10/31/22

DRAWING NUMBER

C12

SHEET: 13 OF 16

PLANTING SCHEDULE				
TREES				
Key	Botanical Name Common Name	Size	Remarks	Spacing
AR	Acer rubrum 'October Glory' October Glory Red Maple	2 1/2 - 3" caliper	B & B	as shown
CC	Cercis canadensis Eastern Redbud	1 1/2 - 2" caliper	B & B	as shown
PS	Pinus strobus Eastern White Pine	7-8' ht.	B & B	as shown
SHRUBS				
CA	Clethra alnifolia Summersweet	#5	cont.	as shown
CS	Cornus sericea Redtwig Dogwood	#5	B & B	as shown
FS	Forsythia suspensa Forsythia		cont.	as shown
IC	Ilex crenata 'Steeds' Steeds Upright Japanese Holly	#5	cont.	as shown
IG	Ilex glabra Inkberry	#5	cont.	as shown
IVF	Ilex verticillata 'Sparkleberry' Female Winterberry	#5	cont.	as shown
IVM	Ilex verticillata 'Sparkleberry' Male Winterberry	#2	cont.	as shown
KL	Kalmia latifolia Mountain Laurel	#5	cont.	as shown
RK	Rosa Pink Knockout Pink Knockout Rose-Pink	#5	cont.	as shown
VD	Viburnum dentatum Arrowwood Viburnum	#5	cont.	as shown
Y	Taxus media 'Hicksii' Hicks Yew	#5	cont.	as shown
GROUND COVER				
AU	Arctostaphyllum uva-ursi Bearberry	#1	cont.	4' O.C.
HF	Hemerocallis fulva Orange Narive Daylily	#1	cont.	2.5' O.C.



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Architects
310 George Washington Hwy
Suite 100
Smithfield, Rhode Island
02917
401-232-5010
www.arch-eng.com

DRAWING TITLE:

LANDSCAPE PLAN

DATE:

OCTOBER 31, 2022

SCALE:

1"=20'

DWG. NAME:

2495-L01-LAND-R7.dwg

REVISIONS

NUMBER	REMARKS	DATE
1	REVISED LAYOUT	08/27/21
2	REVISED LOD	09/10/21
3	R.I.D.E.M. COMMENTS	09/25/21
4	TOWN COMMENTS	01/28/22
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6	ADDENDUM 4	07/26/22
7	FOR CONSTRUCTION	10/31/22

DRAWING NUMBER:

L1

SHEET: 15 OF 16

