

# Littleton Fire Department Headquarters Renovation and Addition

<u>Category:</u>	Fire and Police Stations	<u>Project ID #:</u>	1004177060
<u>Street Address:</u>	20 Foster St. Littleton MA 01460	<u>Confirmed Value</u>	\$3,030,893.00
<u>County:</u>	Middlesex	<u>Stage:</u>	Low Bids Announced
<u>Bid Date:</u>	10/18/2016 , 01:00PM		
<u>Architect:</u>	Carell Group, Inc.		
<u>Documents Available:</u>	Plans, Specs, Addenda available in Insight		Plans available from Carell Group, Inc.
<u>Last Update:</u>	10/22/2016		Specs were Added/Updated

## Personal Notes

User	Note	Update Date	Private?
Adam Sweet	DUPLICATE PROJECT	10/6/2016	False

## Notes

Scope Demolition, site work, renovation and addition to a fire / police facility in Littleton, Massachusetts. Completed plans call for the addition of a 18,000-square-foot fire / police facility. Sub Bid Category: Masonry; Misc. Metals; Waterproofing, Dampproofing & Caulking; Roofing & Flashing; Ceramic Tile; Acoustical Ceilings; Resilient Flooring; Painting; Fire Protection; Plumbing; HVAC; Electrical Sub Bid Deadline: 10/18/16 Time: 1:00 P.M. Contractor Qualification: DCAM Certificate Bid Results: 1. MASONRY : Cenedella Masonry Inc - : \$249,025 2. MISC. IRON AND STEEL : Larkin Ironworks - : \$149,450 3. WATERPROOFING, DAMPPROOFING, CAULKING, AND SEALANTS : Folan Waterproofing - : \$33,600 4. FULLY ADHERED MEMBRANE ROOFING, SHINGLE ROOFING AND METAL FLASHING : Belcour Corp - : \$103,400 5. CERAMIC TILE: Santangelo Flooring - : \$59,998 6. RESILIENT FLOORING : GVW Inc - : \$55,000 7. PAINTING: GVW Inc - : \$75,000 8. PAINTING, CONTINUED : GVW Inc - : \$91,200 9. FIRE PROTECTION: Xcel Fire Protection - : \$140,500 10. PLUMBING: P.J. Dionne Corp - : \$421,000 11. HVAC: Thomas E Snowden, Inc. - : \$583,000 12. ELECTRICAL WORK : Dagle Electric - : \$648,720

Notes Development include(s): Site Work, Demolition, Addition, Renovation Filed Sub-Bid: 10/18/2016 01:00PM At Town of Littleton Town Administrators Office 37 Shattuck Street, Room 306 Littleton, MA 01460 Site Walkthrough: 10/05/2016 11:00AM Non-mandatory at Littleton Fire Headquarters, 20 Foster Street, Littleton. All questions must be directed by email to the Carell Group at megcarell@carellgroup.com. Do not call the Town Administrator's Office with questions. Bid Date: 10/18/2016 01:00PM Bids received at Town of Littleton Town Administrators Office 37 Shattuck St. Room 306 Littleton, MA 01460

Details [Division 2]: Building Demolition, Hazardous Material Abatement, Dewatering, Earthwork, Grading, Slope Protection & Erosion Control, Paving & Surfacing, Unit Pavers, Water Systems, Sewerage & Drainage, Landscaping. [Division 3]: Architectural Concrete. [Division 4]: Clay Unit Masonry, Granite. [Division 5]: Structural Steel, Metal Joists, Metal Decking, Cold Formed Metal Framing, Metal Fabrications, Metal Stairs. [Division 6]: Rough Carpentry, Finish Carpentry, Architectural Woodwork. [Division 7]: Waterproofing, Dampproofing, Insulation, Firestopping, Shingles, Manufactured Roofing & Siding, Membrane Roofing, Skylights. [Division 8]: Metal Doors, Wood Doors, Sectional Overhead Doors, Entrances & Storefronts, Wood Windows, Hardware, Glass & Glazing, Curtain Walls. [Division 9]: Ceiling Suspension Systems, Lath & Plaster, Stucco, Drywall/Gypsum, Tile, Acoustical Ceilings, Acoustical Walls, Resilient Flooring, Carpet, Painting. [Division 10]: Fireplaces & Stoves, Interior Signs, Lockers, Partitions, Toilet & Bath Accessories. [Division 11]: Fluid Waste Treatment/Disposal Equipment. [Division 14]: Elevators, Material Handling Systems. [Division 15]: Mechanical Insulation, Fire Protection Systems, Plumbing Fixtures, Water Heaters, Air Handling, Ductwork. [Division 16]: Service/Distribution, Interior Lighting, Standby Power Generator Systems, Lightning Protection Systems, Alarm & Detection Systems.

## Additional Details

<u>Listed On:</u>	9/29/2016	<u>Floor Area:</u>	
<u>Contract Type:</u>		<u>Work Type:</u>	Addition/Alteration
<u>Stage Comments 1:</u>		<u>Floors Below Grade:</u>	
<u>Stage Comments 2:</u>		<u>Owner Type:</u>	City
<u>Bid Date:</u>	10/18/2016	<u>Mandatory Pre Bid Conference:</u>	
<u>Invitation #:</u>		<u>Commence Date:</u>	12/24/2016
<u>Structures:</u>	1	<u>Completion Date:</u>	12/24/2017
<u>Single Trade Project:</u>		<u>Site Area:</u>	

Floors:

Parent Project ID: 1002476876

Parking Spaces:

LEED Certification Intent:

Units:

## Project Participants

Company Role	Company Name	Contact Name	Address	Phone	Email	Fax
Owner	Town of Littleton		37 Shattuck St., Littleton, MA 01460	(978) 540- 2401	dcrory@littletonma.or g	(978) 952- 2321
Architect	Carell Group, Inc.	Meg Weslar	85 Main Street, Hopkinton, MA 01748	(508) 497- 0909	megweslar@carellgro up.com	(508) 497- 0999

## Bidders

Company Name	Added Date	Address	Phone	Email	Bidding Role	Bid Rank	Bid Value	Fax Number
G.V.W. Inc.	10/21/2016	1200 Bennington St., East Boston, MA 02228	(617) 567-6000		Subcontractor	2	\$221,200.00	(617) 567-3344
Larkin Iron Works	10/21/2016	9 B St., Hyde Park, MA 02136	(617) 333-9710		Structural Steel	1	\$149,450.00	(617) 333-9713
Folan Waterproofing & Construction Co.	10/21/2016	795 Washington St., South Easton, MA 02375	(508) 238-6550	office@folanwaterproofing.com	Subcontractor	1	\$33,600.00	(508) 238-9425
P.J. Dionne Company, Inc.	10/21/2016	72 Jonspin Road, Wilmington, MA 01887	(978) 657-3990	info@pjdionne.com	Plumbing Contractor	1	\$421,000.00	(978) 657-3992
Cenedella Masonry Inc.	10/21/2016	19 East Walnut Street, Milford, MA 01757	(508) 473-7836		Masonry	1	\$249,025.00	(508) 473-0380
Xcel Fire Protection	10/21/2016	11A Industrial Way Unit 1, Salem, NH 03079	(603) 890-3331	info@xcelfire.com	Fire Protection	1	\$140,500.00	(603) 898-9999
Dagle Electrical Construction Corp.	10/21/2016	68 Industrial Way, Wilmington, MA 01887	(800) 379-1459	dec@deccorp.com	Electrical Contractor	1	\$648,720.00	(781) 937-7678
Santangelo Flooring	10/21/2016	75 Christopher St, Dorchester, MA 02122	(617) 282-2223	santangeloflooring@gmail.co	Tile	1	\$59,998.00	(617) 282-2157
Thomas E Snowden, Inc	10/21/2016	189 Central St, Saugus, MA 01906	(781) 233-8810	rlavoie@tesnowden.com	HVAC Contractor	1	\$583,000.00	(781) 231-2151

## Planholders

Company Name	Address	Phone	Email	Fax
Chapman Waterproofing Company	395 Columbia Rd PO Box 255300, Boston, MA 02125	(617) 288-3000	info@chapmanwaterproofing.com	(617) 288-3005
Seaver Construction Inc.	215 Lexington St. 2nd Floor, Woburn, MA 01801	(781) 935-0130	info@seaverconstruction.com	(781) 935-0048
A.P. Whitaker & Sons	652 W. Center St., West Bridgewater, MA 02379	(508) 584-6611	bob@apwhitaker.com	(508) 587-0326
L.D. Russo	200 Ayer Road, Harvard, MA 01451	(978) 456-3500		(978) 456-3502
Brite-Lite Electrical Co	11 Front Street, Weymouth, MA 02188	(781) 340-9102		(781) 340-1674
Hutter Construction Corp.	810 Turnpike Road P.O. Box 257, New Ipswich, NH 03071	(603) 878-2300	ESTIMATING@HUTTERCONSTRUCTION.COM	(603) 878-3519
Rockwell Roofing Inc.	44 Pond St, Leominster, MA 01453	(978) 537-7825	jpocard@rockwellroofing.com	(978) 537-4132
Wayne J. Griffin Electric, Inc.	116 Hopping Brook Rd, Holliston, MA 01746	(508) 306-5278	imorton@wjgei.com	(508) 429-9251
Royal Steam Heater Co	499 Main Street PO Box 427, Gardner, MA 01440	(978) 632-0770		(978) 632-2468
Grasseschi Plumbing & Heating Inc.	1299 Grafton St, Worcester, MA 01604	(508) 753-3028	mdupre@grasseschi.com	(508) 799-4953
Central Ceilings	36 Norfolk Ave, South Easton, MA 02375	(508) 238-6985	bid_invites@centralceilings.com	(508) 238-2191
Enterprise Equipment Co. Inc.	276 Libbey Pkway, Weymouth, MA 02189	(781) 331-0900	info@enterpriseequip.com	(781) 337-2940

Capeway Roofing Systems	664 Sandford Road , Westport, MA 02790	(508) 674-0800	krybicki@capewayroofing.com	(508) 678-2670
PJ Spillane Company Inc	97 Tileston St , Everett, MA 02149	(617) 389-6200	arossetti@pjspillane.com	(617) 389-4138
Kneeland Plumbing & Heating, Inc.	63 Hammond St. PO Box 311, Rowley, MA 01969	(978) 948-2282	johnkneeland@comcast.net	(978) 948-5068
Cam HVAC & Construction Inc.	116 Lydia Ann Road , Smithfield, RI 02917	(401) 232-7230	info@camhvac.com	(401) 232-7290
Joseph Cohn & Son, Inc.	50 Devine Street , North Haven, CT 06473	(203) 772-2420		(203) 230-0340
Capital Carpet & Flooring Specialists Inc.	12 Walnut Hill Park P.O. Box 2633, Woburn, MA 01801	(781) 935-9430	maureenc@capitalcarpetonline.com	(781) 935-5737
V & G Iron Works	1500 Shawsheen St. , Tewksbury, MA 01876	(978) 851-9191	info@vgiron.com	(978) 851-9171
G & R Construction	415 S Richard Blvd. , Tipton, MO 65081	(660) 433-2087	grconstruction85@gmail.com	(660) 433-2518
Air Quality Experts, Inc	23 Hall Farm Road , Atkinson, NH 03811	(603) 894-6465		(603) 894-7044
Costa Brothers Masonry, Inc	2 Lambeth Park Dr. , Fairhaven, MA 02719	(508) 991-7634	cbm@costamasonrv.com	(508) 991-7635
Stutman Contracting Inc.	22 Sutton Avenue , Oxford, MA 01540	(508) 987-9472	sstutman@stutmancontracting.com	(508) 987-9856
King Painting, Inc.	50 High St., Suite 22, North Andover, MA 01845	(978) 683-7434	cking@kingpaintinginc.com	(978) 683-7198
Homer Contracting, Inc.	195 Broadway , Arlington, MA 02474	(781) 648-3372	info@homercontracting.com	(781) 648-4915
West Floor Covering, Inc.	42 Winter St. Suite 11, Pembroke, MA 02359	(781) 826-9022	info@westfloorcovering.com	(781) 826-7073
Acme Waterproofing Co., Inc	21 Nightingale Street , Quincy, MA 02169	(781) 982-2250	info@acmewp.com	(781) 982-2694
Air Cleaning Specialist of NE	1525 Hanover Street , Hanover, MA 02339	(781) 826-9755	info@aircleaningne.com	(781) 279-2910
MEF Controls & Electrical Services, Inc.	69 Ash St. , West Newbury, MA 01985	(978) 363-2421		(978) 363-5843
Greenwood Industries Inc.	P.O. Box 2800 , Worcester, MA 01613	(508) 865-4040	jdellia@greenwood-industries.com	(508) 865-1123
J.J. Cardosi, Inc.	28 Boston St. , East Providence, RI 02914	(401) 435-6101	brian@jjcardosi.com	(401) 435-6102
DMH Electrical Contractors	29 Legate Hill Road , Sterling, MA 01564	(978) 422-0400		(978) 422-3580
CJM Services, Inc	50 Kerry Pl P.O. Box 424, Norwood, MA 02062	(781) 440-0000	info@cjmservicesinc.com	(781) 440-0046
Araujo Bros Plumbing & Heating Inc.	224 Nyles Lane P.O. Box 50225, Acushnet, MA 02743	(508) 998-7006	info@araujobrosplumbing.com	(508) 998-1727
CSI-Contracting Specialists Inc.	453 South Main St , Attleboro, MA 02703	(508) 222-2377		(508) 222-2580
Armani Restoration	191 Franklin Avenue , Hartford, CT 06114	(860) 296-6811	estimating@armanirestoration.com	(860) 296-1867
Gibson Roofs Inc	369 Winter St. , Hanover, MA 02339	(781) 826-6344		(781) 826-8063
Systems Contracting, Inc	7 Scobee Circle , Plymouth, MA 02360	(508) 746-7000	kenbombard@systeminc.com	(508) 746-7717
Acoustek Inc	20 Ventura Dr. , North Dartmouth, MA 02747	(508) 995-9563		(508) 995-9582
Stanley Roofing Co Inc	42 Mitchell Rd , Ipswich, MA 01938	(978) 356-7958	jason@stanleyroof.com	(978) 356-1499
Ambient Temperature Corp.	14 Graf Road , Newburyport, MA 01950	(978) 646-0660	info@ambienttemperature.com	(978) 646-0661
Hall Sheet Metal Works	11 River St , Middleton, MA 01949	(978) 739-3800		(978) 739-3801
B.C. Construction Co., Inc.	3 Washington St. , North Reading, MA 01864	(978) 276-0121	info@bcconstructionco.com	(978) 276-0134
Brait Builders Corporation	506 Plain St. Suite 201, Marshfield, MA 02050	(781) 837-6400	info@braitbuilders.com	(781) 837-6022
Silktown Roofing, Inc.	134 Ferry Street , South Grafton, MA 01560	(508) 887-8908		(860) 646-0775
LaPan Mechanical Contractors	3 Bethany Street , Worcester, MA 01604	(508) 793-2164	business@lapanmechanical.com	(508) 793-2193
Bello Painting Co.	585 East St. , Weymouth, MA 02189	(781) 331-5600		(781) 331-5603

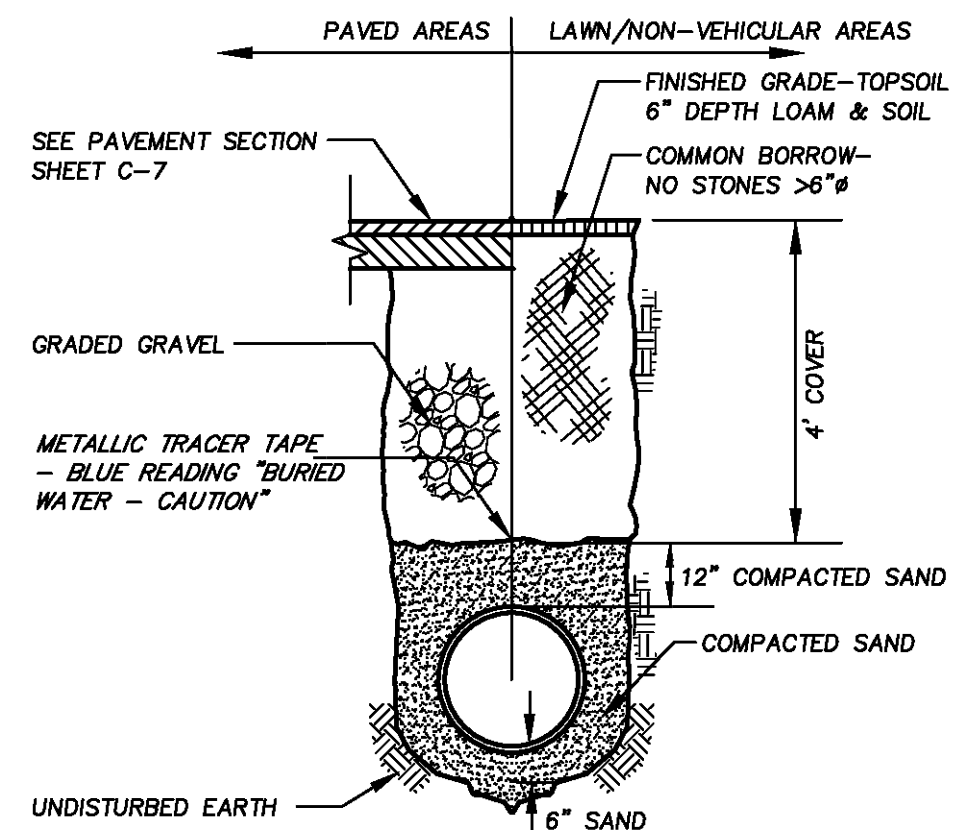
McDonald Electrical Corp.	72 Sharp Street, Unit C-8 , Hingham, MA 02043	(781) 340-0008		(781) 340-4949
Dandis Contracting Inc	1020 Turnpikr Street, Unit 12, Canton, MA 02021	(781) 828-9313	info@dandiscontracting.com	(781) 828-9314
The Cheviot Corporation	55 Fourth Avenue , Needham Hgts, MA 02494	(781) 449-1100	info@cheviotcorp.com	(781) 449-1109
Empire Masonry Corporation	231 Norfolk Street, , Walpole, MA 02081	(508) 660-1011	smccormick@empiremasonrycorp.com	(508) 660-1028
Energy Electric	740 Quaker Highway , Uxbridge, MA 01569	(800) 308-4886		(508) 278-3229
Cashman Plumbing & Heating Inc.	299 Westford Road , Tyngsboro, MA 01879	(978) 649-9569		
Viking Industrial Painting	17625 aaron hts nw , Evansville, MN 56326	(816) 210-8142		
Marmelo Bros Construction CO	13 Ventura Drive , North Dartmouth, MA 02747	(508) 995-6582		(508) 995-6926
Davison Co Inc	90 Clarendon Avenue , Somerville, MA 02144	(617) 666-3174		
Robert W Irvine & Sons	147 Blossom St , Lynn, MA 01902	(781) 581-0464		(781) 581-2860

## Contracts

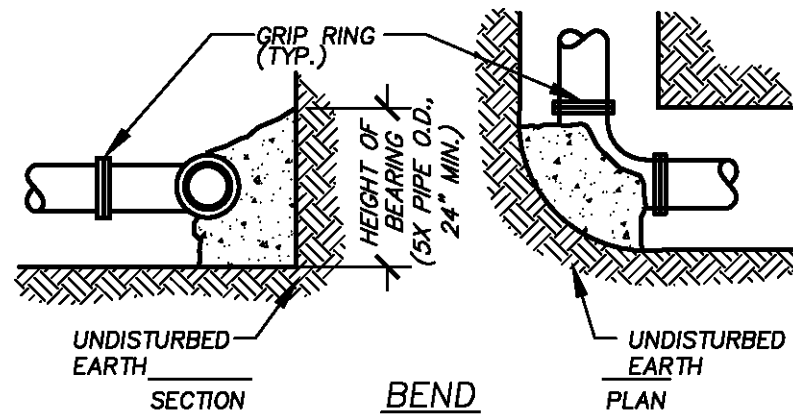
Classification	Conditions	Bonding	Bid Date	Bids To	Bid Type
General Contractor		Bid:5.00%,Perf:100.00%,Pay:100.00%	10/18/2016	Owner	Open Bidding

## History

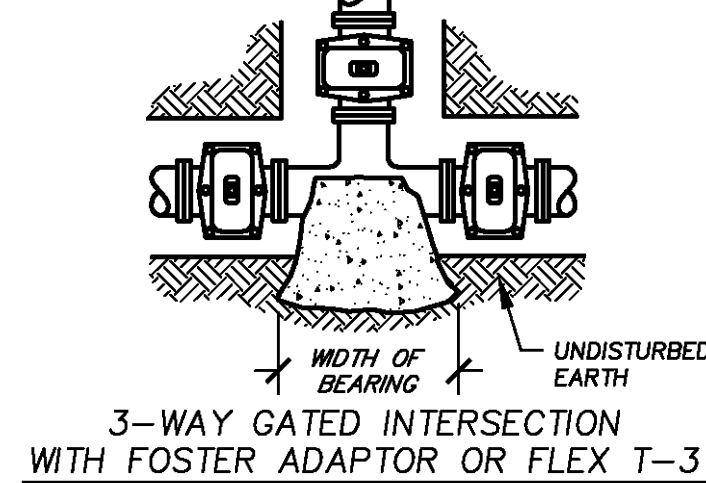
User	Viewed	First Viewed Date	Currently Tracked?	Date Tracked
Bill McIndoo	True	10/31/2016	False	
Ali Chmelar	True	10/11/2016	False	
Adam Sweet	True	10/3/2016	False	



**WATER MAIN INSTALLATION**  
NOT TO SCALE



**BEND**

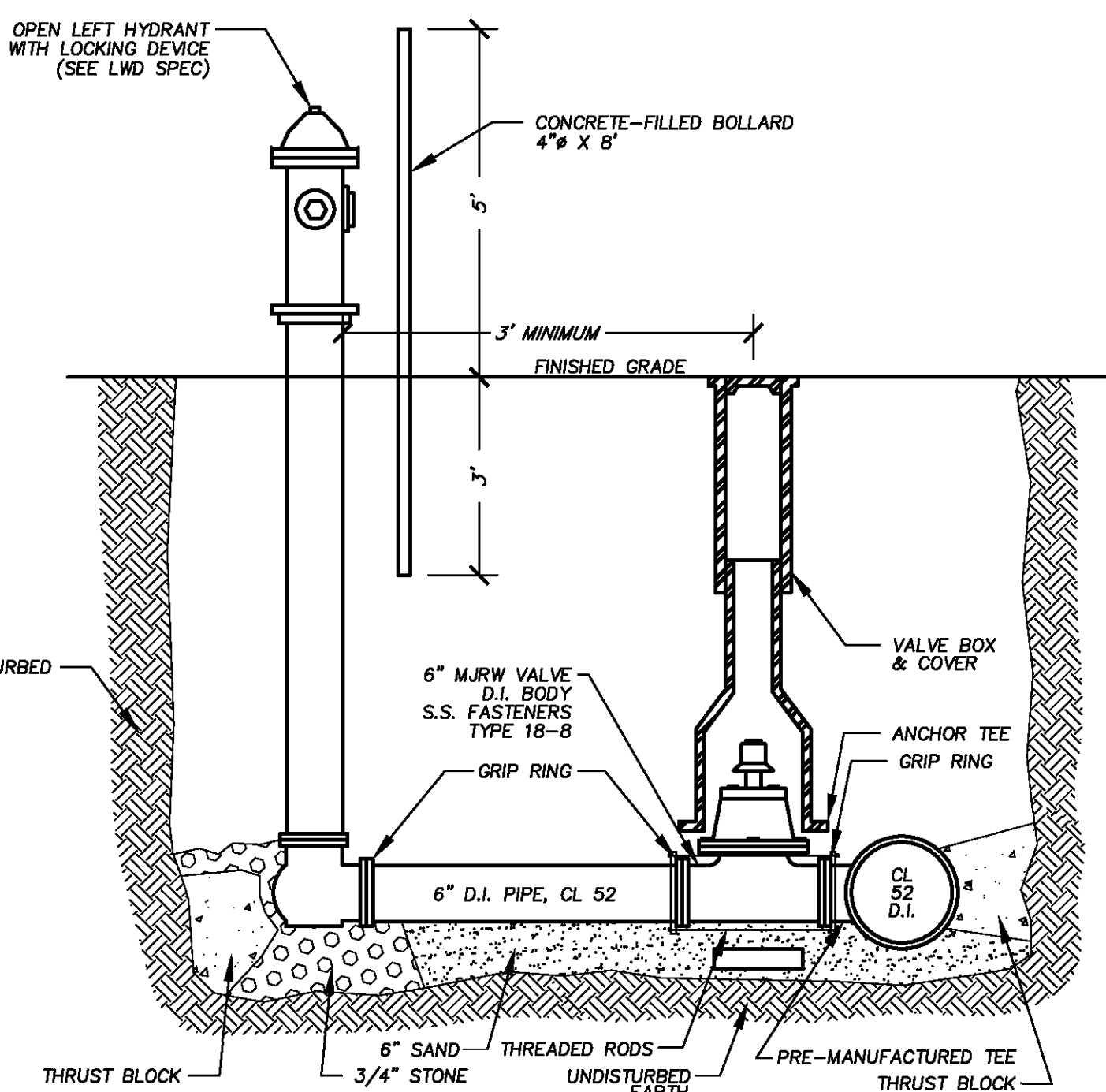


**NOTES**  
1. THRUST BLOCKS ARE TO BE MADE OF CAST-IN-PLACE CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI @ f=28 DAYS.  
2. THRUST BLOCKS ARE TO BEAR DIRECTLY ON PIPE OR FITTING AND EXISTING UNDISTURBED EARTH AT EXCAVATION SIDEWALL.  
3. BAGS OF CONCRETE OR OTHER UNFORMED CONCRETE OR MATERIALS MAY NOT BE USED AS THRUST BLOCKS.

**THRUST BLOCK DETAILS**  
NOT TO SCALE

**NOTES:**

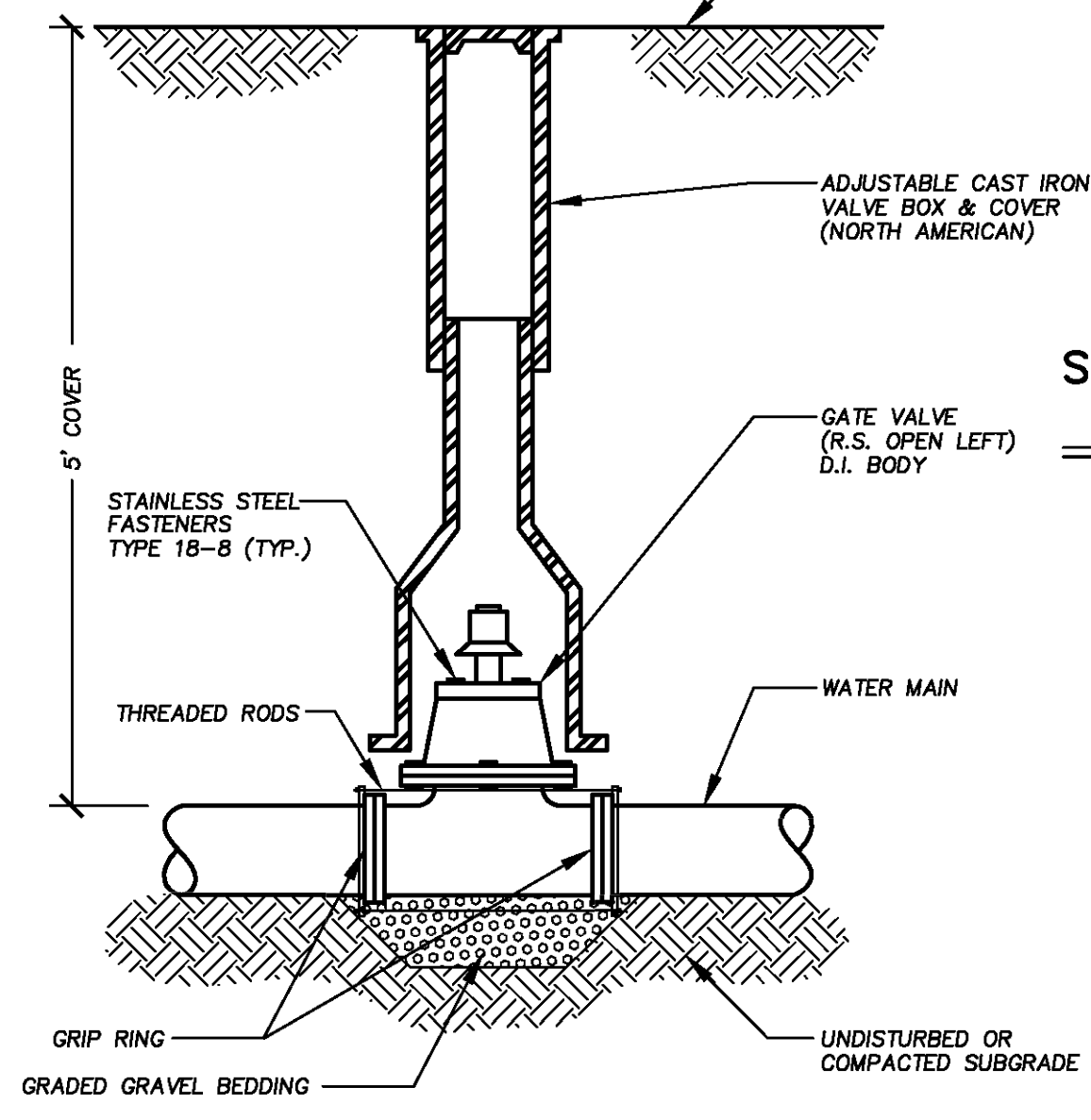
- FLOOR DRAIN HOLDING TANK, PIPING, ALARM AND FLOATS SUPPLIED BY GENERAL CONTRACTOR.
- TANK, PIPING AND VENTING, INSTALLATION AND TESTING BY PLUMBING.
- WIRING, CONDUIT AND ALARM BY ELECTRICAL.
- EXCAVATION, TRENCHING, REINFORCED BALLAST PAD, HOLD DOWNS AND BACKFILL BY GENERAL CONTRACTOR.



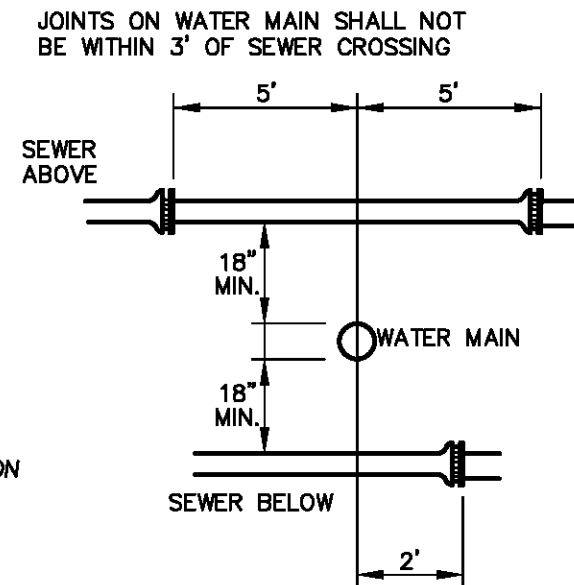
**HYDRANT ASSEMBLY THREE-WAY GATED ANCHOR TEE WITH FOSTER ADAPTER**  
NOT TO SCALE

**WATER SYSTEM NOTES:**

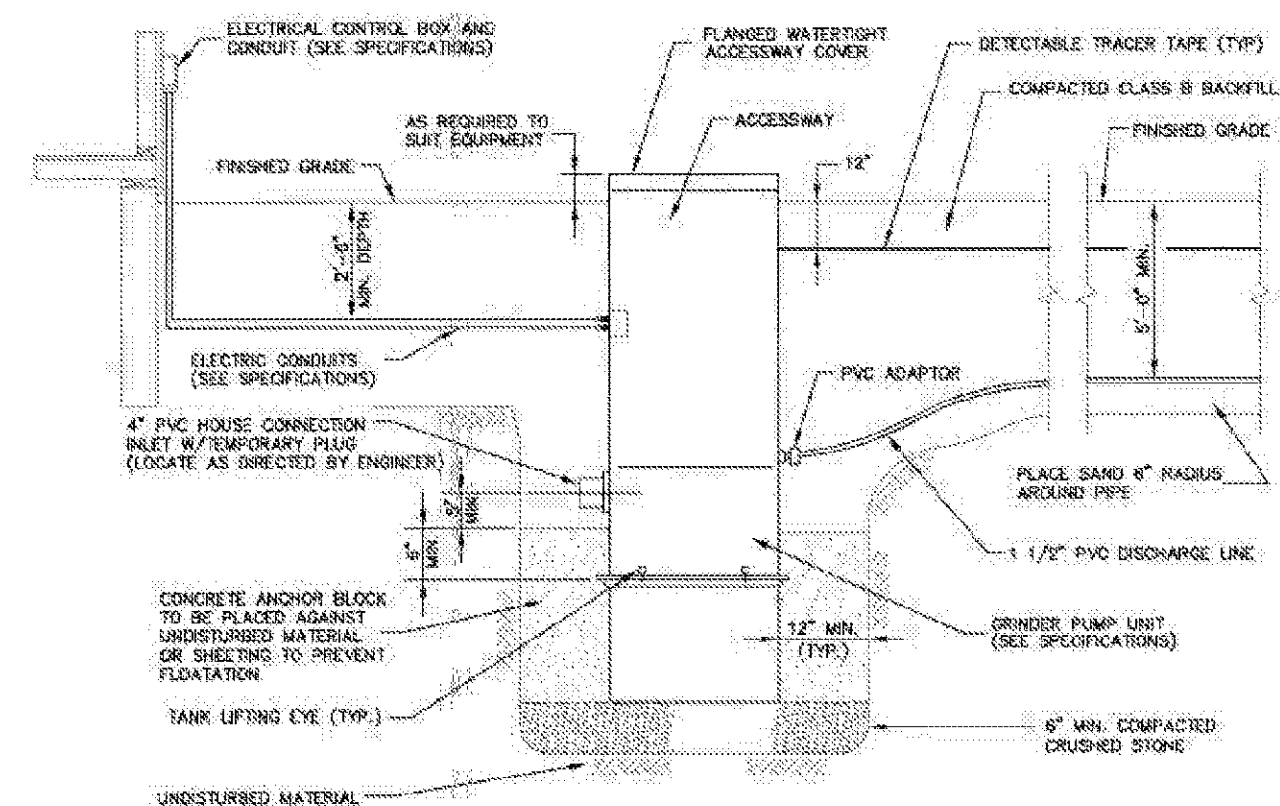
- ALL MATERIALS, METHODS, AND CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF THE LITTLETON WATER DISTRICT. TECHNICAL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE. CHECK WITH THE LITTLETON WATER DISTRICT PRIOR TO INSTALLATION OF ANY PIPE OR APPURTENANCES.
- ALL WATER LINES TO HAVE A MINIMUM COVER OF 5'-0" UNLESS OTHERWISE SPECIFIED.
- ALL WATER LINES TO HAVE METALLIC TRACER TAPE PLACED ON TOP OF PIPE BEDDING (12" ABOVE PIPE) WHICH SHALL READ "BURIED WATER LINE - CAUTION" WITH A BLUE BACKGROUND.



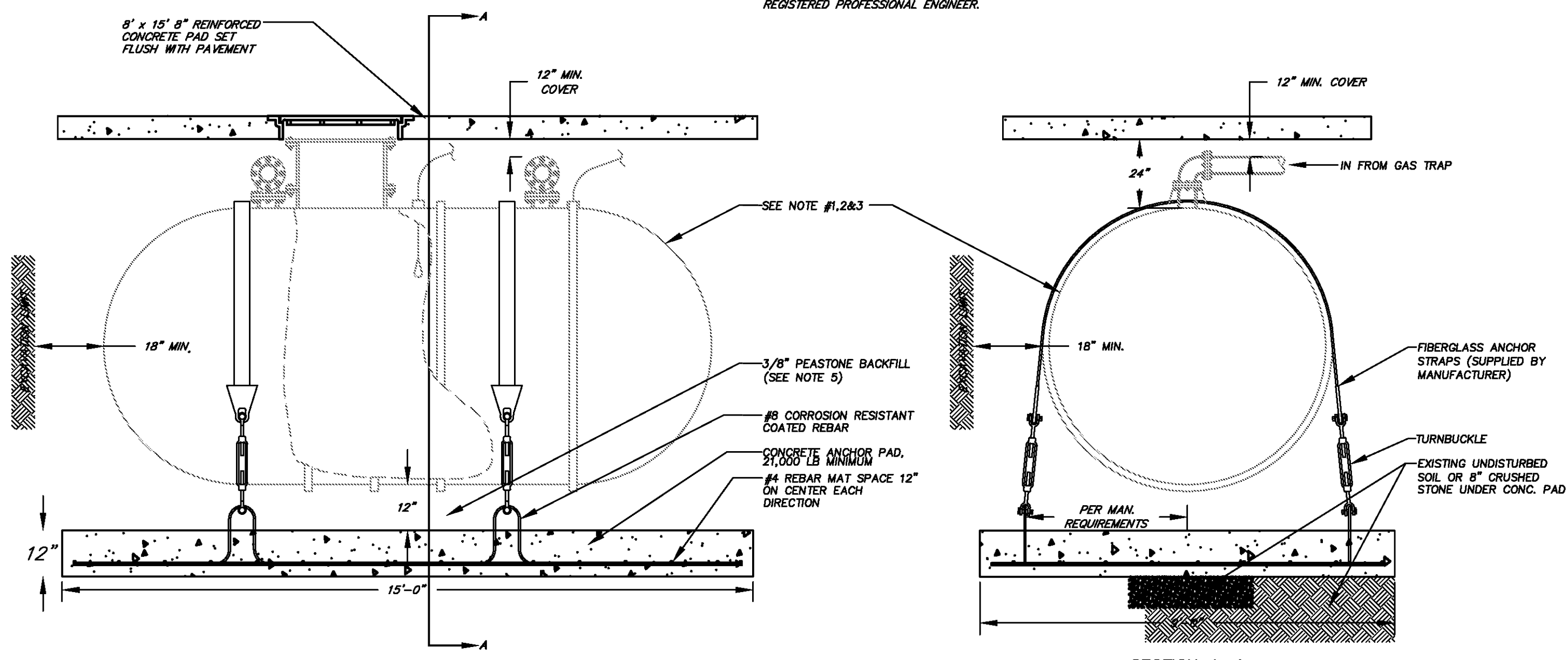
**GATE VALVE AND BOX**  
NOT TO SCALE



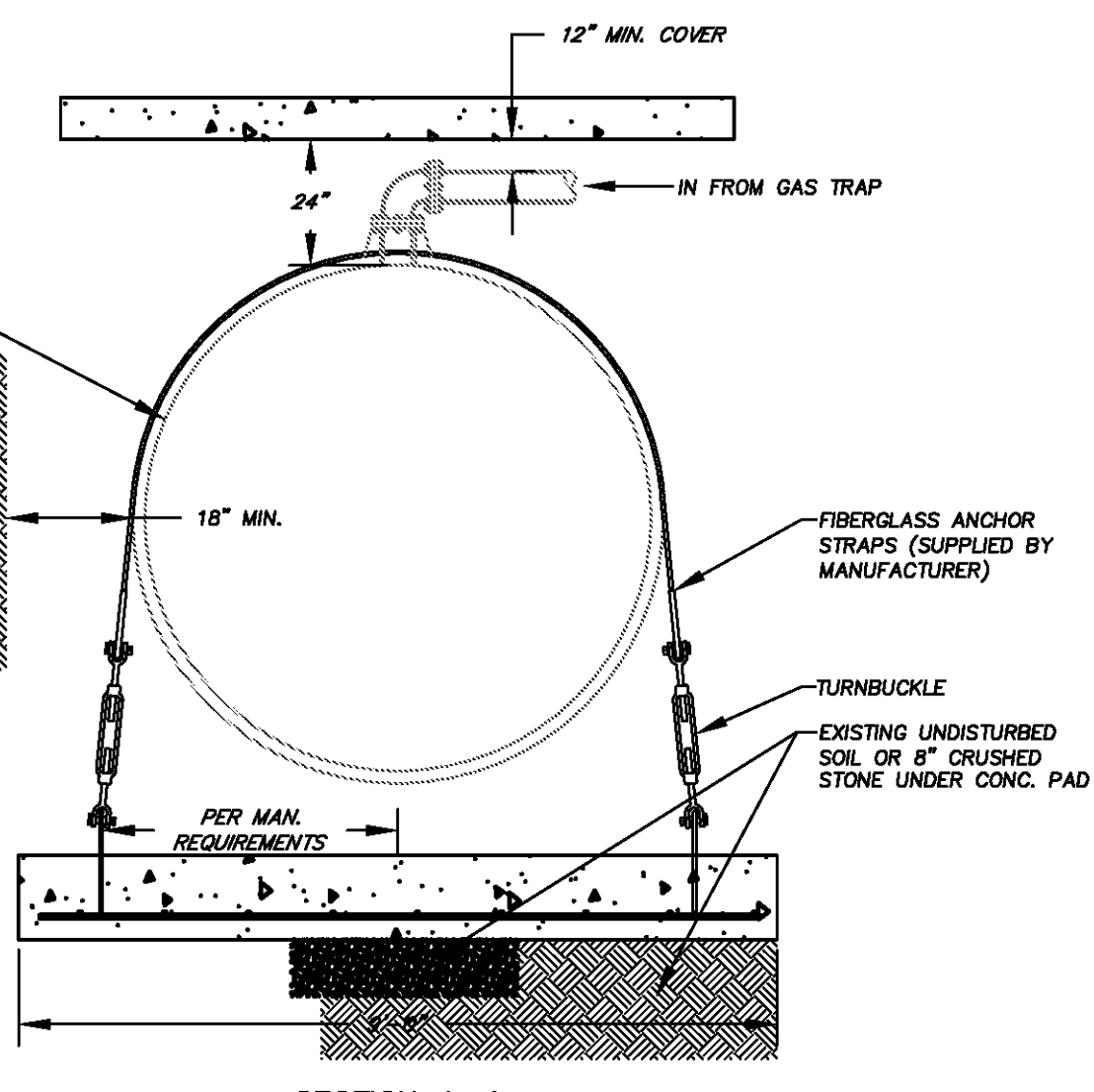
**SEWER LINE CROSSING-WATER LINE**  
NOT TO SCALE



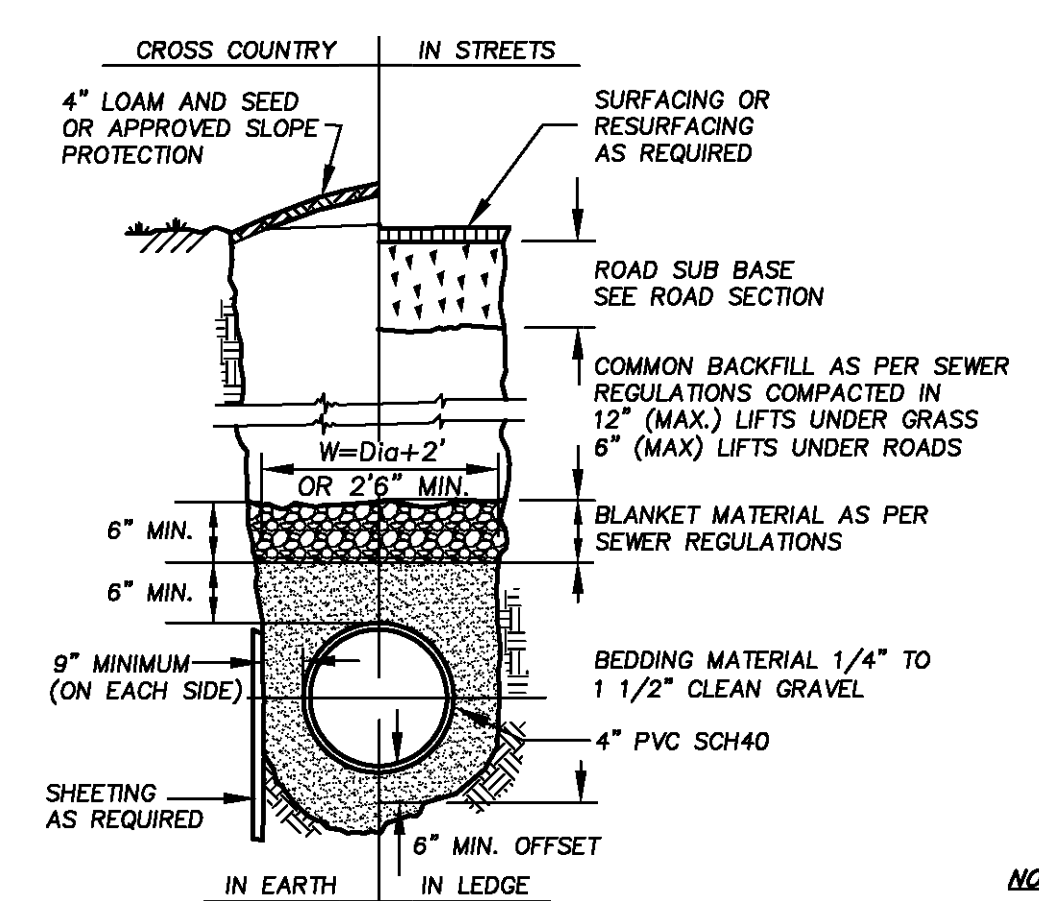
**TYPICAL GRINDER PUMP INSTALLATION**  
FROM WESTON AND SAMPSON



**FLOOR DRAIN HOLDING TANK CONC. PAD DETAIL**  
NOT TO SCALE

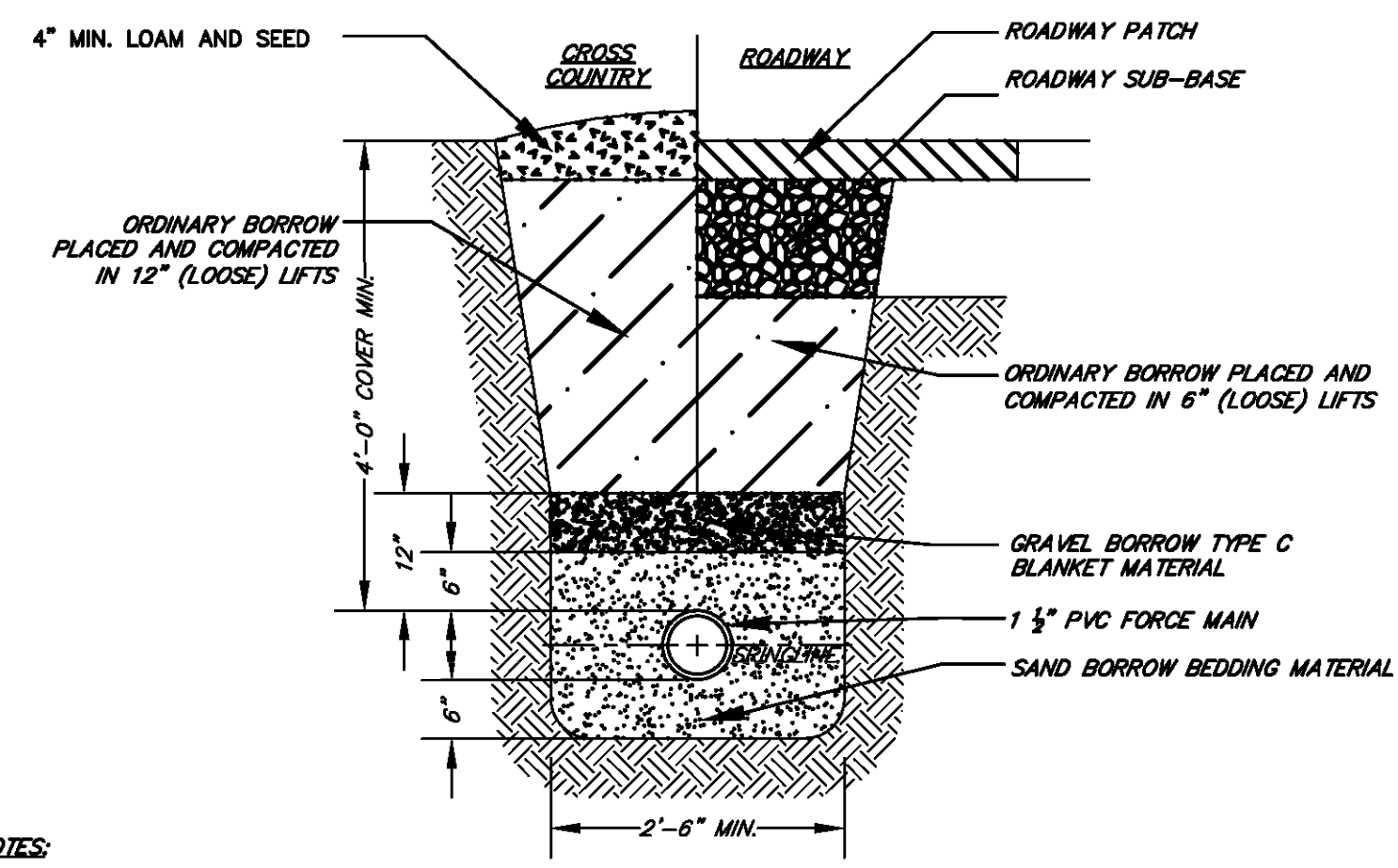


**SECTION A-A**



**NOTES:**  
1. BOTH THE BEDDING AND BLANKET MATERIAL SHALL BE COMPACTED IN 6" LOOSE LIFTS TO 90% MAXIMUM DRY DENSITY PER THE MODIFIED PROCTOR TEST.  
2. ALL UNSUITABLE MATERIAL SHALL BE REMOVED AND REPLACED WITH GRAVEL OR OTHER SUITABLE MATERIAL COMPACTED TO 90% MAXIMUM DENSITY (MODIFIED PROCTOR).

**TYPICAL SEWER TRENCH**  
NOT TO SCALE



**NOTES:**  
1. ROADWAY PATCH AND BASE/SUB-BASE SHALL BE INSTALLED AS DIRECTED BY THE HIGHWAY SUPERINTENDENT.  
2. BEDDING, BLANKET, & BACKFILL MATERIALS SHALL BE COMPACTED TO 90% MAXIMUM DENSITY (MODIFIED PROCTOR) AT OPTIMUM MOISTURE CONTENT FOR BOTH CROSS COUNTRY AND ROADWAY INSTALLATION.  
3. ALL MATERIALS, INSTALLATION TECHNIQUES, PROCEDURES, INSPECTIONS, AND TESTING SHALL BE IN COMPLIANCE WITH THE REQUIREMENTS OF THE SEWER RULES AND REGULATIONS UNLESS OTHERWISE APPROVED BY THE SEWER SUPERINTENDENT IN WRITING.

**FORCE MAIN TRENCH**  
NOT TO SCALE

**NOTES:**  
THE SEPARATION OF WATER MAINS AND SEWERS SHALL COMPLY WITH THE FOLLOWING GENERAL REQUIREMENTS.  
A. PARALLEL INSTALLATION:  
1. NORMAL CONDITIONS: THE INSIDE EDGE OF A WATER MAIN SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM THE INSIDE EDGE OF ANY SANITARY SEWER, STORM SEWER OR SEWER MANHOLE.  
2. WHEN LOCAL CONDITIONS PREVENT A HORIZONTAL SEPARATION OF 10 FEET, ONE OF TWO METHODS MAY BE EMPLOYED. IN BOTH CASES THE INVERT OF THE WATER LINE MUST BE AT LEAST 18" ABOVE THE CROWN OF THE SEWER LINE.  
(c) LAY WATER AND SEWER IN SEPARATE TRENCHES  
(d) LAY THE WATER AND SEWER IN THE SAME TRENCH WITH THE WATER MAIN AT ONE SIDE ON A BENCH OF UNDISTURBED EARTH WITH A MINIMUM HORIZONTAL SEPARATION FROM INSIDE PIPE TO INSIDE PIPE OF 36"  
B. CROSSINGS:  
1. WHEN SEWERS MUST CROSS UNDER WATER MAINS, THE SEWER LAID SUCH THAT THE INVERT OF THE WATER LINE IS AT LEAST 18 INCHES ABOVE THE CROWN OF THE SEWER LINE.  
2. WHEN THE SEWER ELEVATION CANNOT BE VARIED TO MEET THE REQUIREMENT, THE WATER LINE MUST BE RELOCATED OR RECONSTRUCTED WITH MECHANICAL JOINT CEMENT LINED DUCTILE IRON PIPE FOR A DISTANCE OF 10 FT ON EACH SIDE OF THE SEWER.  
3. WHEN IT IS IMPOSSIBLE TO OBTAIN EITHER OR BOTH OF THE ABOVE REQUIREMENTS, BOTH THE WATER AND SEWER LINES SHALL BE CONSTRUCTED OF MECHANICAL JOINT CEMENT LINED DUCTILE IRON PIPE OR OTHER EQUIVALENT MATERIAL. BOTH PIPES SHALL BE PRESSURE TESTED BY AN APPROVED METHOD TO ASSURE WATER TIGHTNESS OR BOTH PIPES SHALL BE ENCASED IN CONCRETE.

**the carell group**

85 main street  
hopkinton, massachusetts

**Places Associates, Inc.**  
Planning, Landscape Architecture,  
Civil Engineering, Surveying  
256 GREAT ROAD, SUITE 4 LITTLETON, MA 01460  
876 SALISBURY STREET HOLDEN, MA 01520  
978.486.0334 Ph. 508.829.0333  
978.486.0447 Fax  
places@placesassociates.com

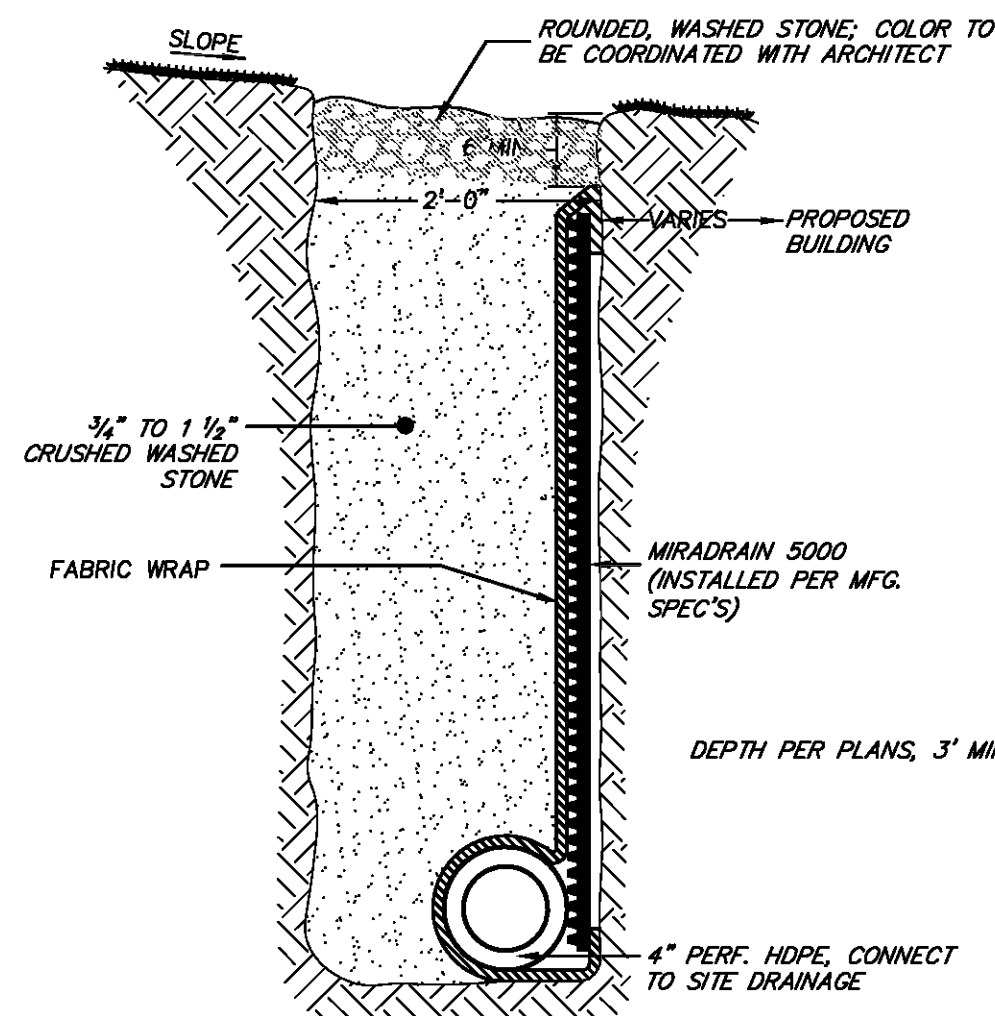
ISSUED FOR BID  
SEPT. 29, 2016

LITTLETON FIRE HEADQUARTERS

LITTLETON, MASSACHUSETTS  
CONSTRUCTION DETAILS

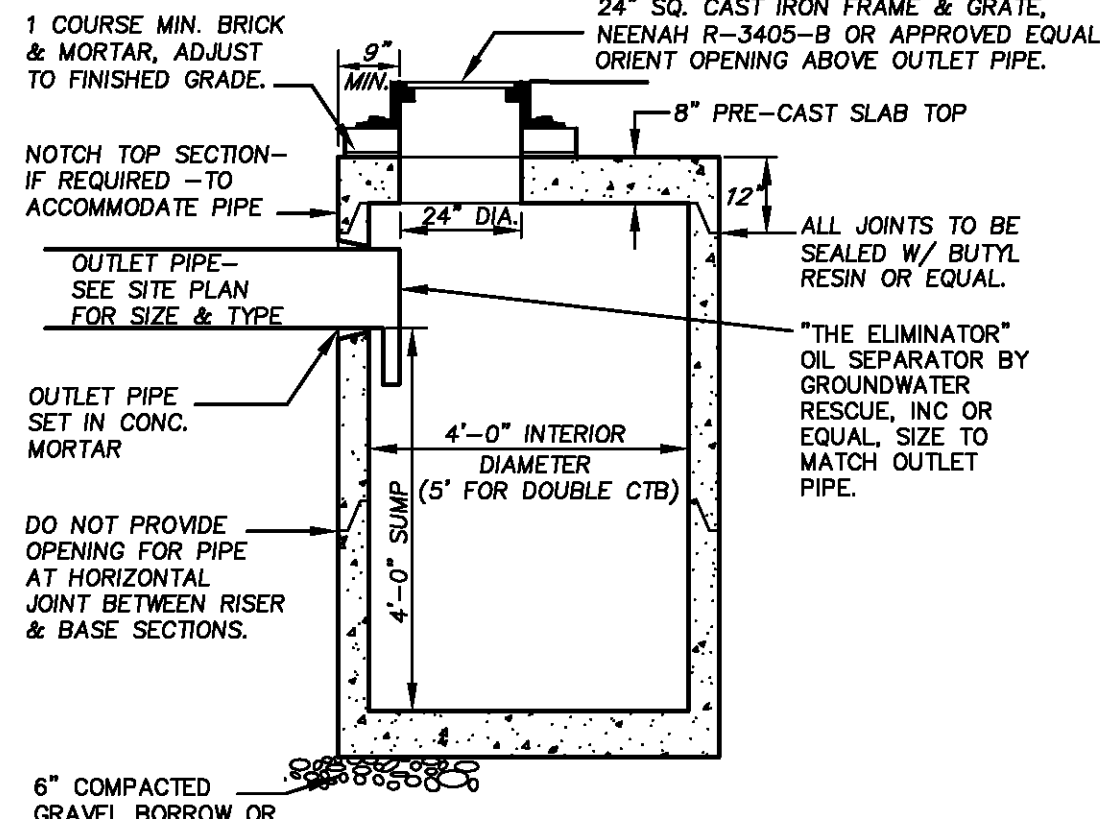
scale AS NOTED  
date SEPTEMBER 29, 2016  
drawn by MAA  
job no 16-7204  
sheet

**C-10**

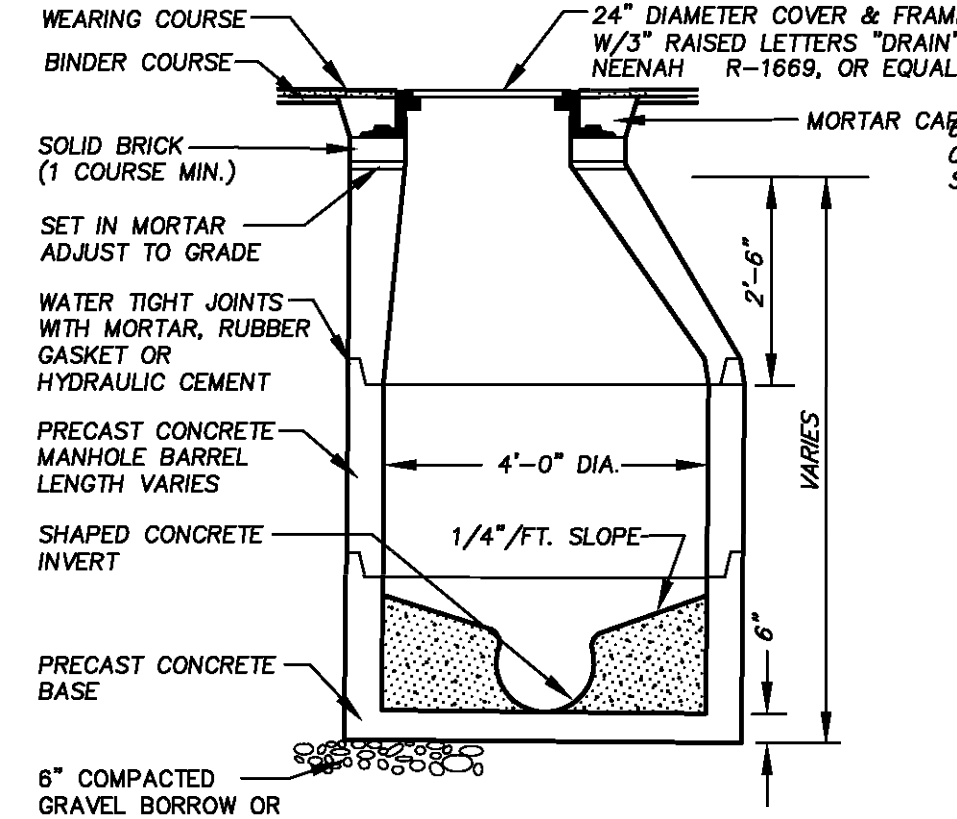


**CURTAIN DRAIN DETAIL**  
NOT TO SCALE

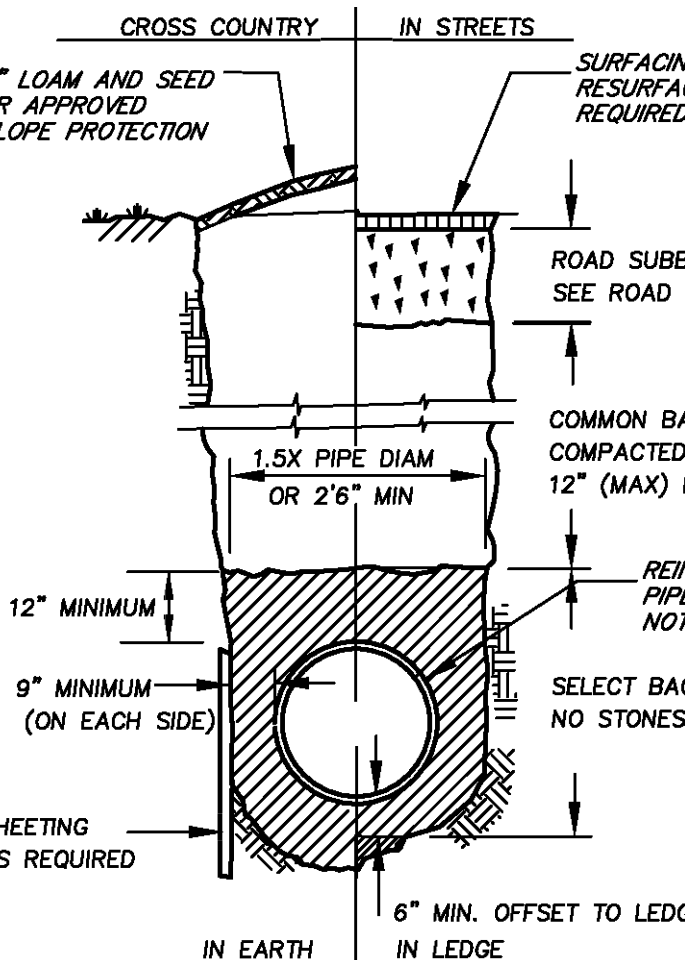
NOTE: FOR CATCHBASINS IN LANDSCAPED AREAS, CREATE 4" CONCRETE PAD 12" AROUND FRAME TO FACILITATE MOWING OPERATIONS



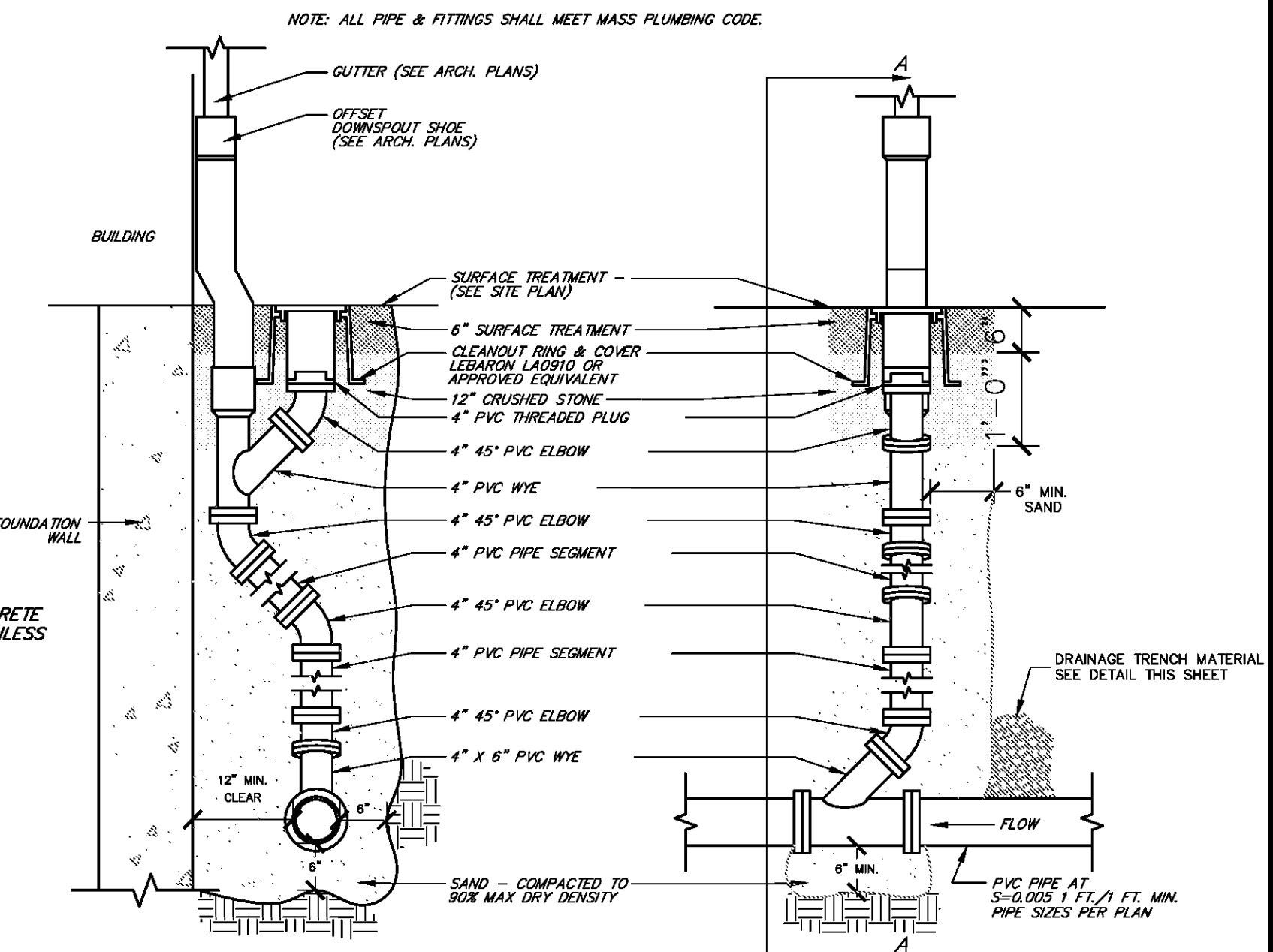
**PRECAST FLAT TOP CATCHBASIN**  
NOT TO SCALE



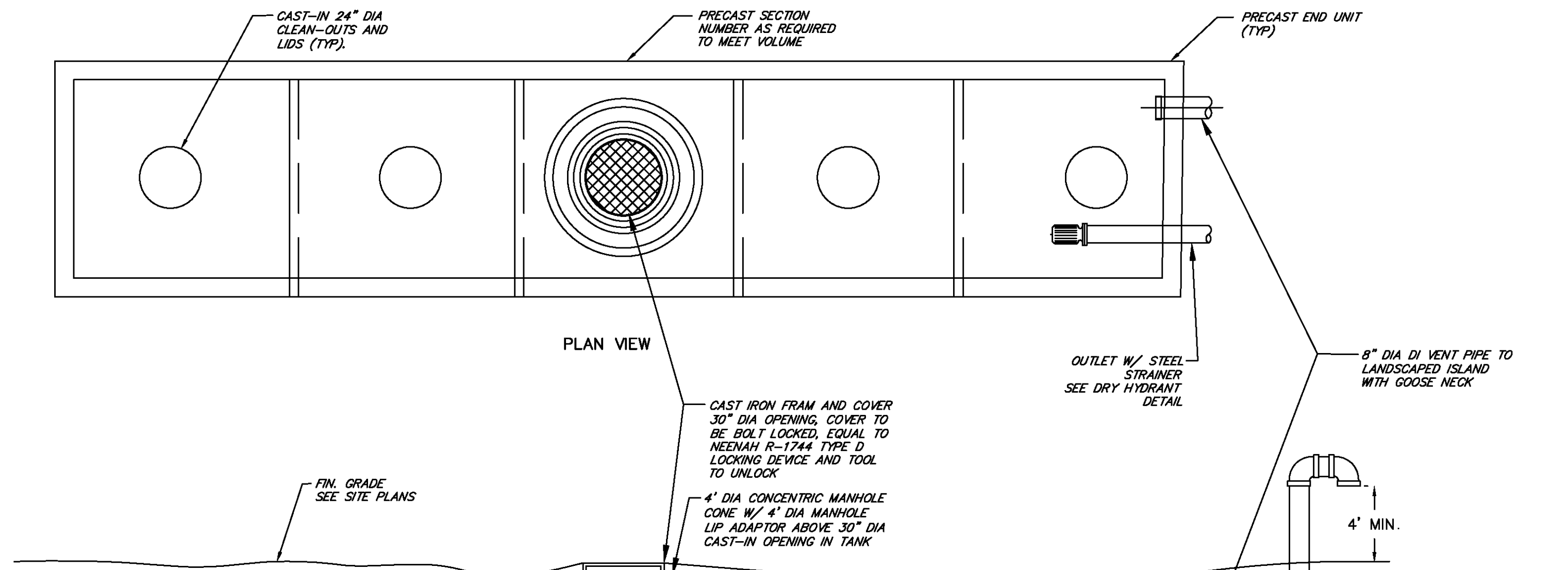
**DRAIN MANHOLE DETAIL**  
NOT TO SCALE



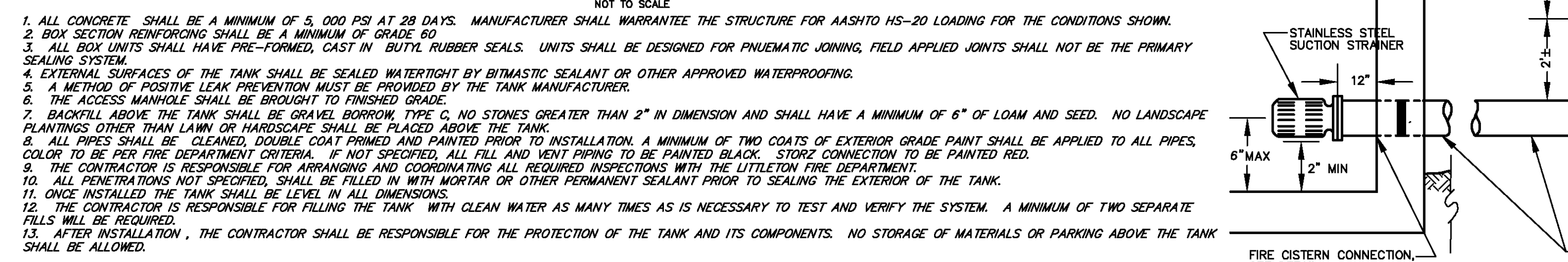
**DRAINAGE TRENCH**  
NOT TO SCALE



**ROOF DRAIN CONNECTION**  
NOT TO SCALE



**FIRE CISTERN (10K GALLONS)**  
NOT TO SCALE

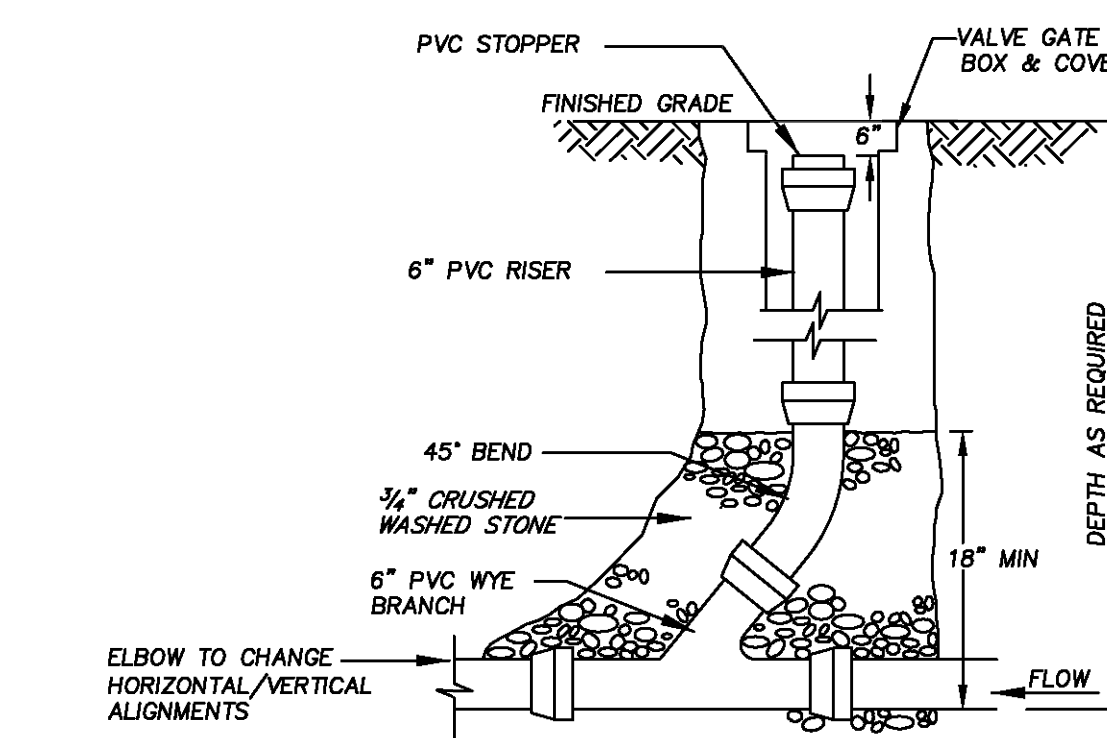


- ALL CONCRETE SHALL BE A MINIMUM OF 5,000 PSI AT 28 DAYS. MANUFACTURER SHALL WARRANT THE STRUCTURE FOR AASHTO HS-20 LOADING FOR THE CONDITIONS SHOWN.
- BOX SECTION REINFORCING SHALL BE A MINIMUM OF GRADE 60.
- ALL BOX UNITS SHALL HAVE PRE-FORMED, CAST IN BUTYL RUBBER SEALS. UNITS SHALL BE DESIGNED FOR PNEUMATIC JOINING, FIELD APPLIED JOINTS SHALL NOT BE THE PRIMARY SEALING SYSTEM.
- EXTERNAL SURFACES OF THE TANK SHALL BE SEALED WATERTIGHT BY BITUMASTIC SEALANT OR OTHER APPROVED WATERPROOFING.
- A METHOD OF POSITIVE LEAK PREVENTION MUST BE PROVIDED BY THE TANK MANUFACTURER.
- THE ACCESS MANHOLE SHALL BE BROUGHT TO FINISHED GRADE.
- BACKFILL ABOVE THE TANK SHALL BE GRAVEL BORROW, TYPE C, NO STONES GREATER THAN 2" IN DIMENSION AND SHALL HAVE A MINIMUM OF 6" OF LOAM AND SEED. NO LANDSCAPE PLANTINGS OTHER THAN LAWN OR HARDSCAPE SHALL BE PLACED ABOVE THE TANK.
- ALL PIPES SHALL BE CLEANED, DOUBLE COAT PRIMED AND PAINTED PRIOR TO INSTALLATION. A MINIMUM OF TWO COATS OF EXTERIOR GRADE PAINT SHALL BE APPLIED TO ALL PIPES, COLOR TO BE PER FIRE DEPARTMENT CRITERIA. IF NOT SPECIFIED, ALL FILL AND VENT PIPING TO BE PAINTED BLACK. STORM CONNECTION TO BE PAINTED RED.
- THE CONTRACTOR IS RESPONSIBLE FOR ARRANGING AND COORDINATING ALL REQUIRED INSPECTIONS WITH THE LITTLETON FIRE DEPARTMENT.
- ALL PENETRATIONS NOT SPECIFIED, SHALL BE FILLED IN WITH MORTAR OR OTHER PERMANENT SEALANT PRIOR TO SEALING THE EXTERIOR OF THE TANK.
- ONCE INSTALLED THE TANK SHALL BE LEVEL IN ALL DIMENSIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR FILLING THE TANK WITH CLEAN WATER AS MANY TIMES AS IS NECESSARY TO TEST AND VERIFY THE SYSTEM. A MINIMUM OF TWO SEPARATE FILLS WILL BE REQUIRED.
- AFTER INSTALLATION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE TANK AND ITS COMPONENTS. NO STORAGE OF MATERIALS OR PARKING ABOVE THE TANK SHALL BE ALLOWED.

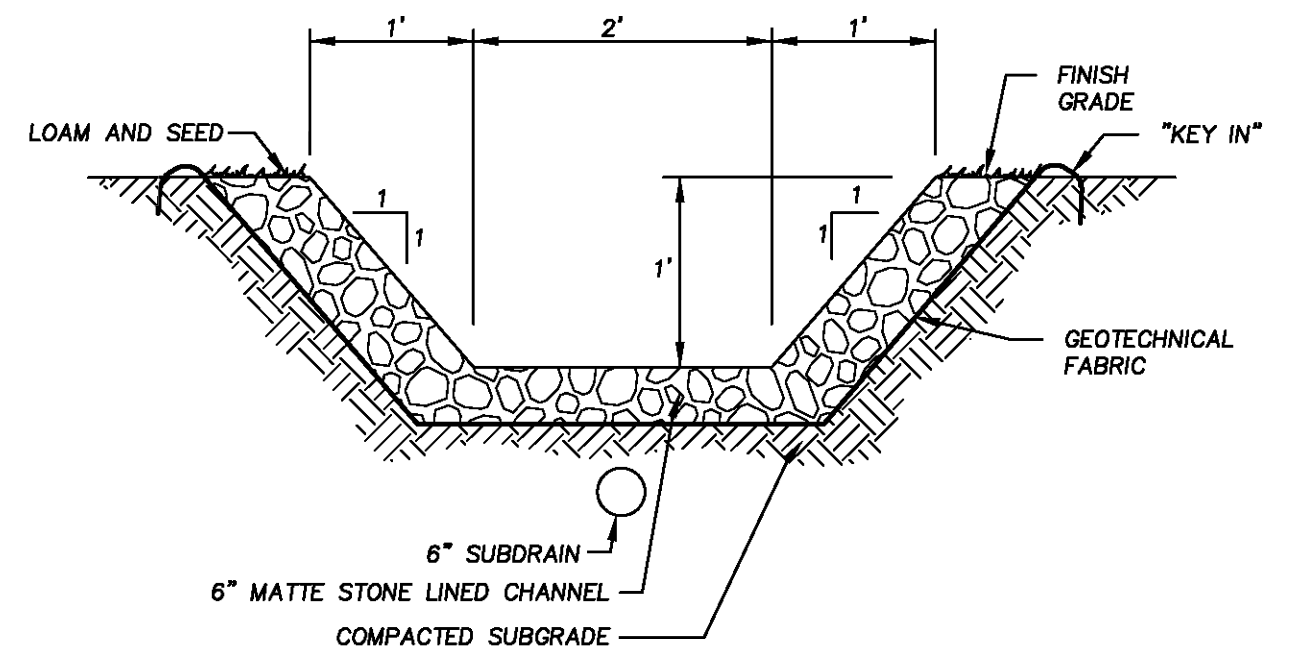
- BOUYANCY CALCULATIONS:**
- THE CONTRACTOR SHALL SUPPLY BOUYANCY CALCULATIONS FOR THE ACTUAL CONDITIONS ENCOUNTERED.
  - BOUYANCY CALCULATIONS SHALL ASSUME THE FOLLOWING CRITERIA:
    - THE TANK IS EMPTY.
    - GROUNDWATER IS AS MEASURED IN THE AREA OF TANK PLACEMENT BY SPRING WATER LEVEL OBSERVATION AND SOIL EVALUATION BY A DEP CERTIFIED SOIL EVALUATOR
    - OVERBURDEN SOIL SHALL BE CALCULATED AT 100 LBS/CF.
    - WEIGHT OF DISPLACED WATER SHALL BE CALCULATED AT 62.4 LBS/CF.
  - THE CONTRACTOR SHALL PROVIDE SUFFICIENT ANTI-BOUYANCY MEASURES AND DEVICES TO OBTAIN A FACTOR OF SAFETY OF TWO (2).

**DRY HYDRANT DETAIL (TO BE LOCATED IN LANDSCAPED ISLAND)**  
NOT TO SCALE

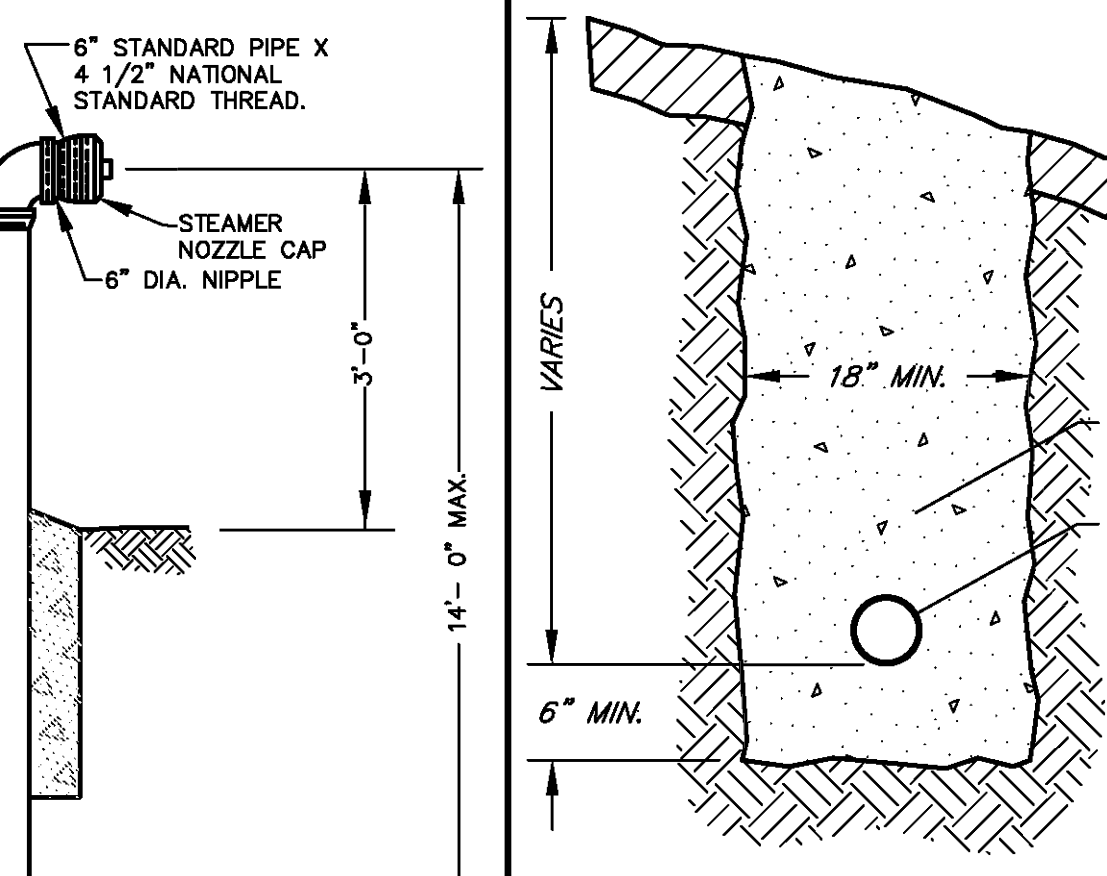
- NOTES:
- OUTLET PIPE TO BE CAPABLE OF 1,000 GPM FOR 1/2 OF TANK CAPACITY.
  - STEAMER CAP SHALL HAVE "T" HANDLES WITH CHAIN.
  - ALL CONNECTIONS AFTER CAP SHALL BE AIR-TIGHT.
  - TOTAL DEPTH OF STRAINER TO SUCTION CAP SHALL NOT EXCEED 14' - 0".
  - DRY HYDRANT ASSEMBLY MAY BE MADE INCORPORATED AS PART OF CISTERN SYSTEM.
  - ALL SUBSTITUTIONS TO BE APPROVED BY DESIGN ENGINEER AND LITTLETON FIRE CHIEF.
  - HYDRANT TO BE PROTECTED BY TWO (2) SIX INCH DIAMETER SCH. 40 STEEL BOLLARDS PAINTED YELLOW AND PLACED TO THE FRONT OF THE HYDRANT TO PROTECT IT FROM VEHICULAR TRAFFIC AND FLOWS.
  - ALL AREAS TO THE FRONT OF THE HYDRANT ARE TO BE POSTED AS "NO PARKING ANYTIME". TO ENSURE ACCESS TO THE HYDRANT AT ALL TIMES. SEE SITE PLANS FOR OTHER MARKING AND PROTECTIVE MEASURES.
  - PLACEMENT TO BE CONFIRMED BY FIRE CHIEF PRIOR TO ORDERING FABRICATION.



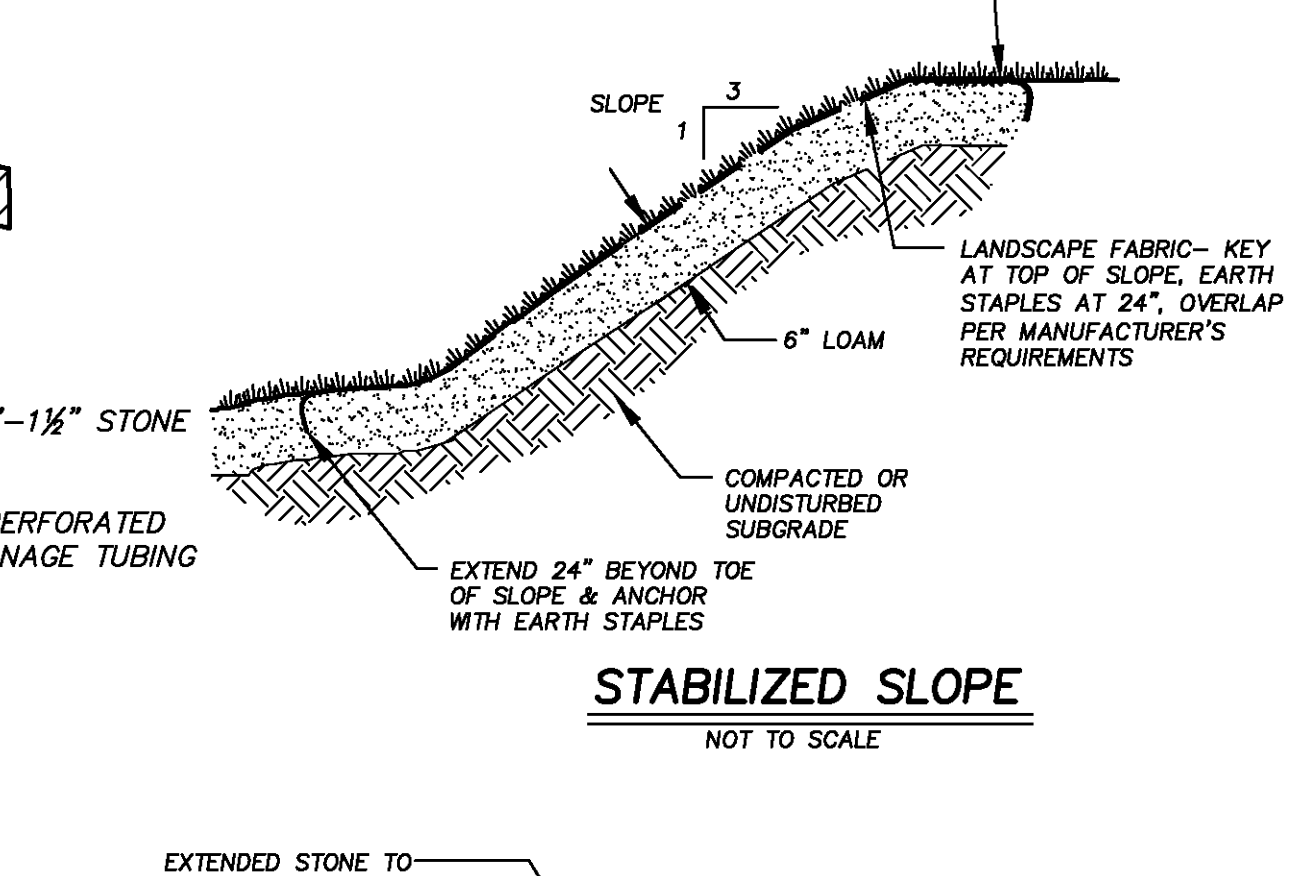
**ROOF DRAIN CLEANOUT**  
NOT TO SCALE



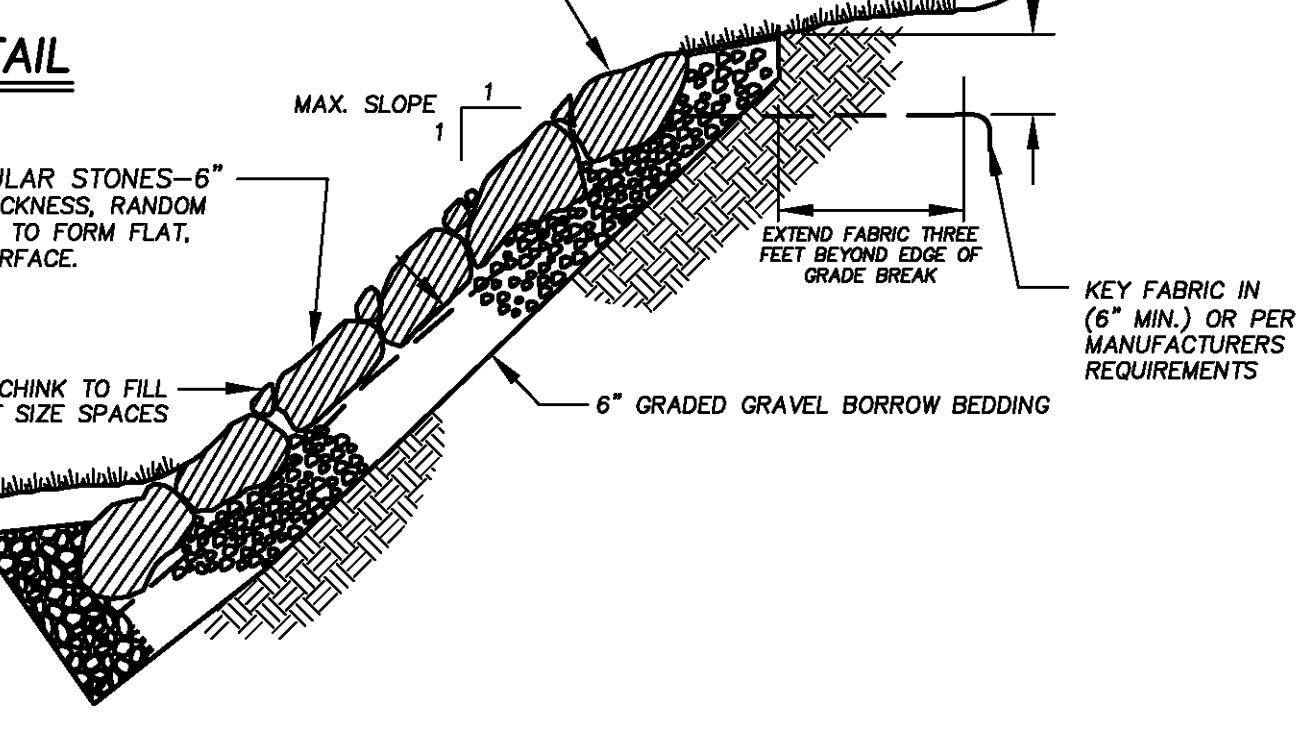
**REINFORCED SWALE**  
NOT TO SCALE



**INTERCEPTOR DRAIN DETAIL**  
NOT TO SCALE



**STABILIZED SLOPE**  
NOT TO SCALE



**RIP-RAPPED SLOPE STABILIZATION**  
NOT TO SCALE

**the carell group**

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Civil Engineering, Surveying

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ISSUED FOR BID  
SEPT. 29, 2016

LITTLETON FIRE  
HEADQUARTERS

LITTLETON, MASSACHUSETTS  
CONSTRUCTION  
DETAILS

scale	AS NOTED
date	SEPTEMBER 29, 2016
drawn by	MAA
job no	16-7204
sheet	

**C-11**

BID ALT NO. 3