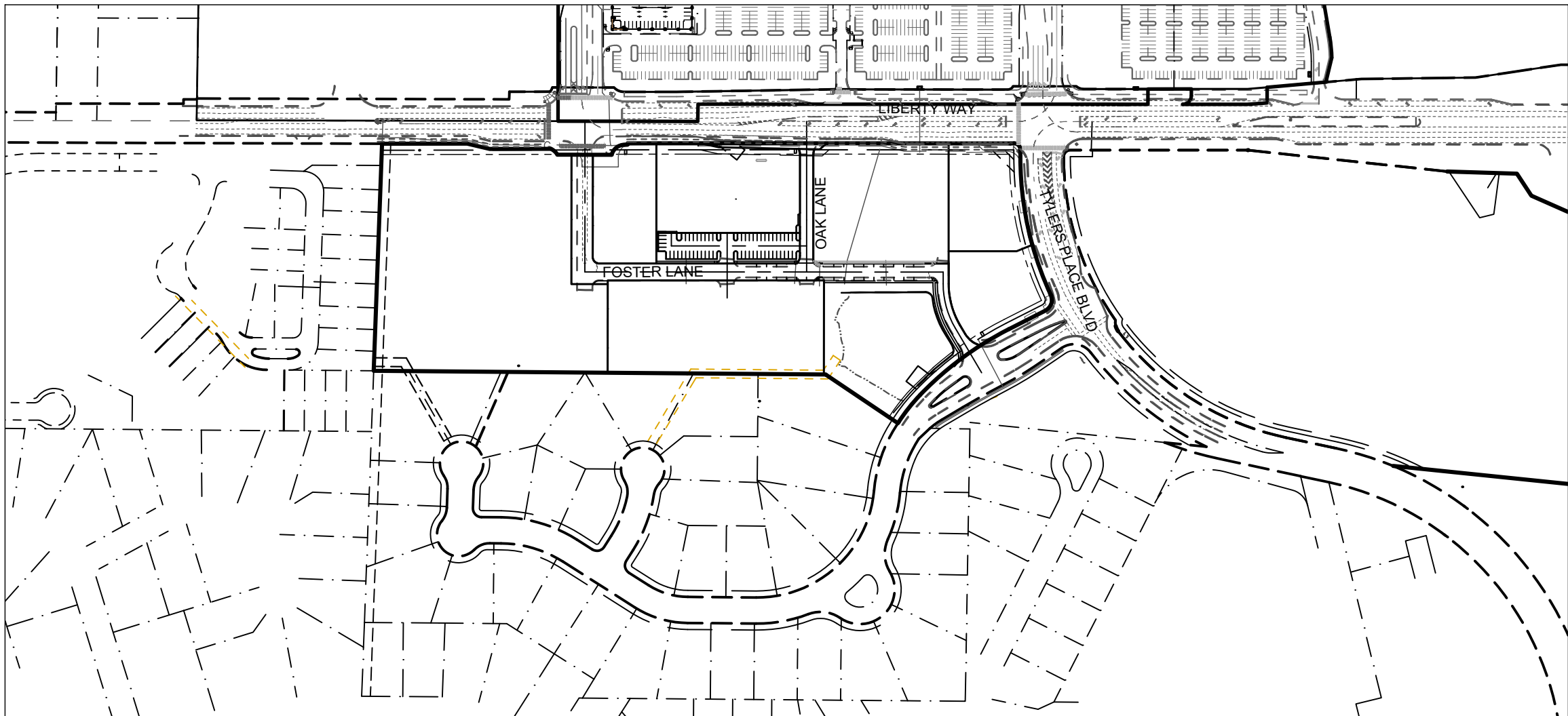
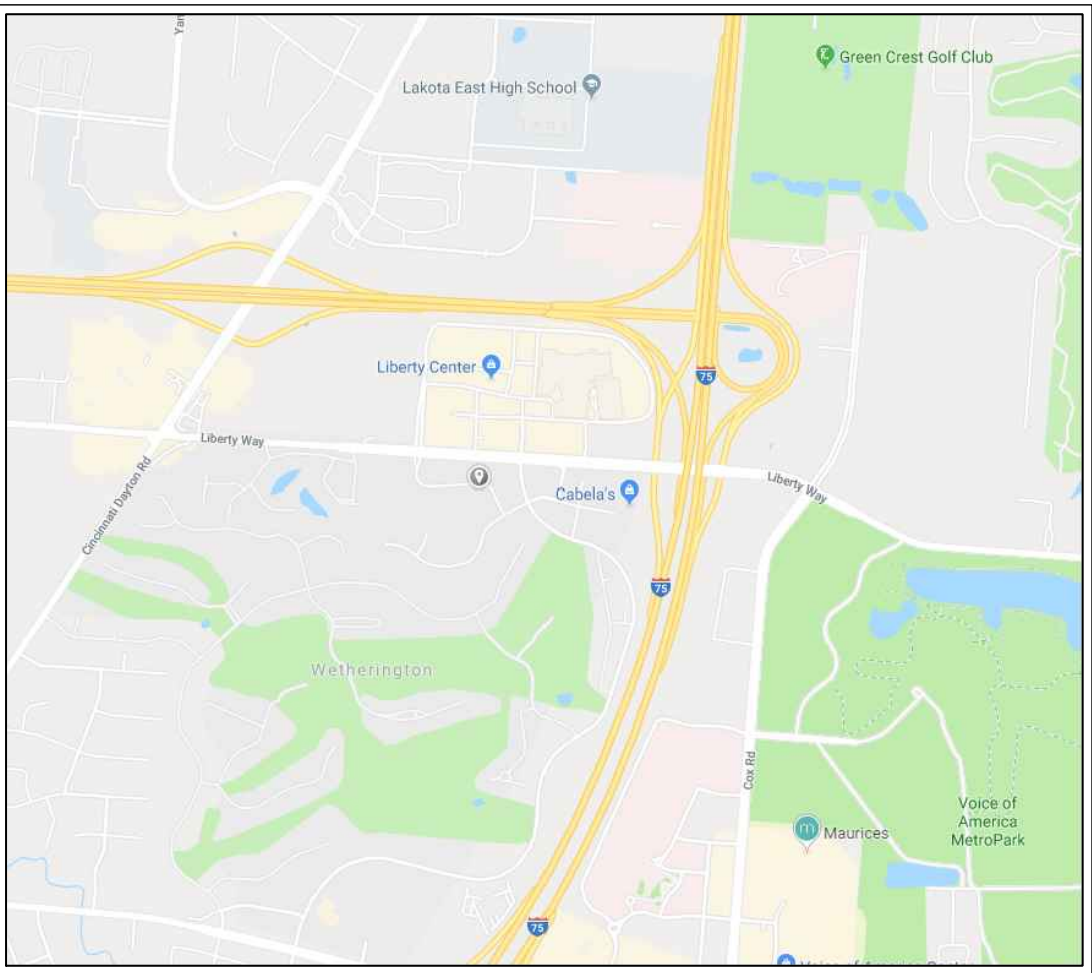


THE OAKS AT WETHERINGTON ROADWAY & SITE MISC. UPDATE

SECTION 18, TOWN 3, RANGE 2
WEST CHESTER TOWNSHIP
BUTLER COUNTY, OH



AREA MAP
1"=300'



VICINITY MAP
NO SCALE

DEVELOPER

LIBERTY WAY INVESTMENTS, LLC
4016 TOWNSFAIR WAY, SUITE 201
COLUMBUS, OH 43219
PH: (614) 414-7300

ENGINEER / SURVEYOR

BAYER BECKER
6900 TYLERSVILLE ROAD, SUITE A
MASON, OHIO 45040
PH: (513)336-6600

GENERAL NOTES

- EXISTING ZONING - SP-PUD, (RES. No. 04-2016)
- SANITARY SEWER SERVICE CONNECTED TO INTO BUTLER COUNTY SYSTEM.
- WATER SERVICE TO BE INSTALLED AND CONNECTED TO BUTLER COUNTY SYSTEM.
- ELECTRIC TO BE SUPPLIED BY DUKE ENERGY ELECTRIC COMPANY.
- EXISTING TOPOGRAPHY FROM BAYER BECKER FIELDWORK.
- THE SITEWORK WILL BEGIN SUMMER 2019.
- STORM WATER MANAGEMENT FACILITIES TO BE MAINTAINED BY PROPERTY OWNERS ASSOCIATION.
- EXISTING USE: VACANT
- OUTDOOR SEATING MAY ACCOMPANY RESTAURANT USES.

INDEX OF SHEETS

DRAWING NO.	DRAWING TITLE	ISSUE DATE	REVISION NO.	REVISION DATE
C1.0	TITLE SHEET	06-17-19		
C2.0	EXISTING CONDITIONS & DEMOLITION PLAN	06-17-19		
C3.0	LAYOUT PLAN	06-17-19		
C3.1	SITE DETAILS	06-17-19		
C4.0	UTILITY PLAN	06-17-19		
C4.1	UTILITY PROFILES & DETAILS	06-17-19		
C4.2	UTILITY NOTES	06-17-19		
C4.3	WATER & SEWER DETAILS	06-17-19		
C4.4	WATER & SEWER DETAILS	06-17-19		
C4.5	STORM DETAILS	06-17-19		
C4.6	UTILITY DETAILS	06-17-19		
C4.7	UTILITY DETAILS	06-17-19		
C4.8	UTILITY DETAILS	06-17-19		
C5.0	GRADING AND EROSION CONTROL PLAN	06-17-19		
C5.1	EROSION CONTROL DETAILS	06-17-19		
C5.2	EROSION CONTROL DETAILS	06-17-19		
L1.0	LANDSCAPE PLAN	06-17-19		

PROJECT SUMMARY

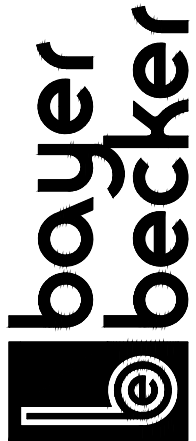
LOT	PROPOSED USE	ACREAGE	PROPOSED INTENSITY OF USE	15% MINIMUM OPEN SPACE REQUIRED	STREET EASEMENT AREA	NET SITE AREA
2	MIXED USE	12.45 Ac.	133,154 SF	1.87 Ac.	1.42 Ac.	11.03 Ac.
3	RESIDENTIAL	5.70 Ac.	94 UNITS	0.86 Ac.	N/A	5.70 Ac.
N/A	N/A	18.15 Ac.		2.73 Ac.	1.42 Ac.	16.73 Ac.

NOTES: *FOLLOWING USES ARE NOT PERMITTED PER RESOLUTION No. 16-2004: SECTION 21.023 OF B-1 DISTRICT, SECTION 22.023 (EXCEPT FOR AUTOMOBILE AND TRUCK SALES), 22.022, 22.024, 22.029, 22.0241, 22.028, 22.0210, 22.0211, & 22.0212 OF THE B-2 DISTRICT.

THE OAKS AT WETHERINGTON
ROADWAY & SITE MISC UPDATE

LIBERTY WAY & TYLERS PLACE BLVD
SECTION 18, TOWN 3, RANGE 2
WEST CHESTER TOWNSHIP
BUTLER COUNTY, OHIO

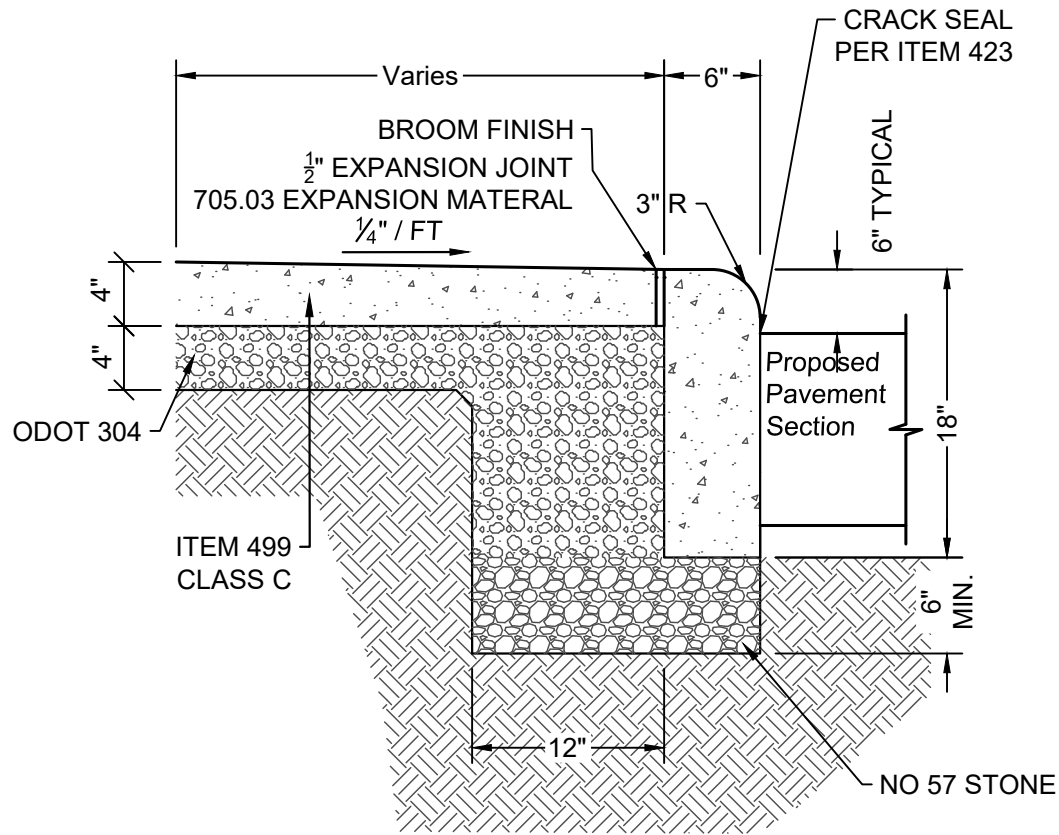
TITLE SHEET



www.bayerbecker.com
6900 Tylersville Road, Suite A
Mason, OH 45040 - 513.336.6600

Drawing: 15M053-000 LAYOUT
Drawn by: CJO
Checked By: AJW
Issue Date: 06-17-19
Sheet:

C1.0

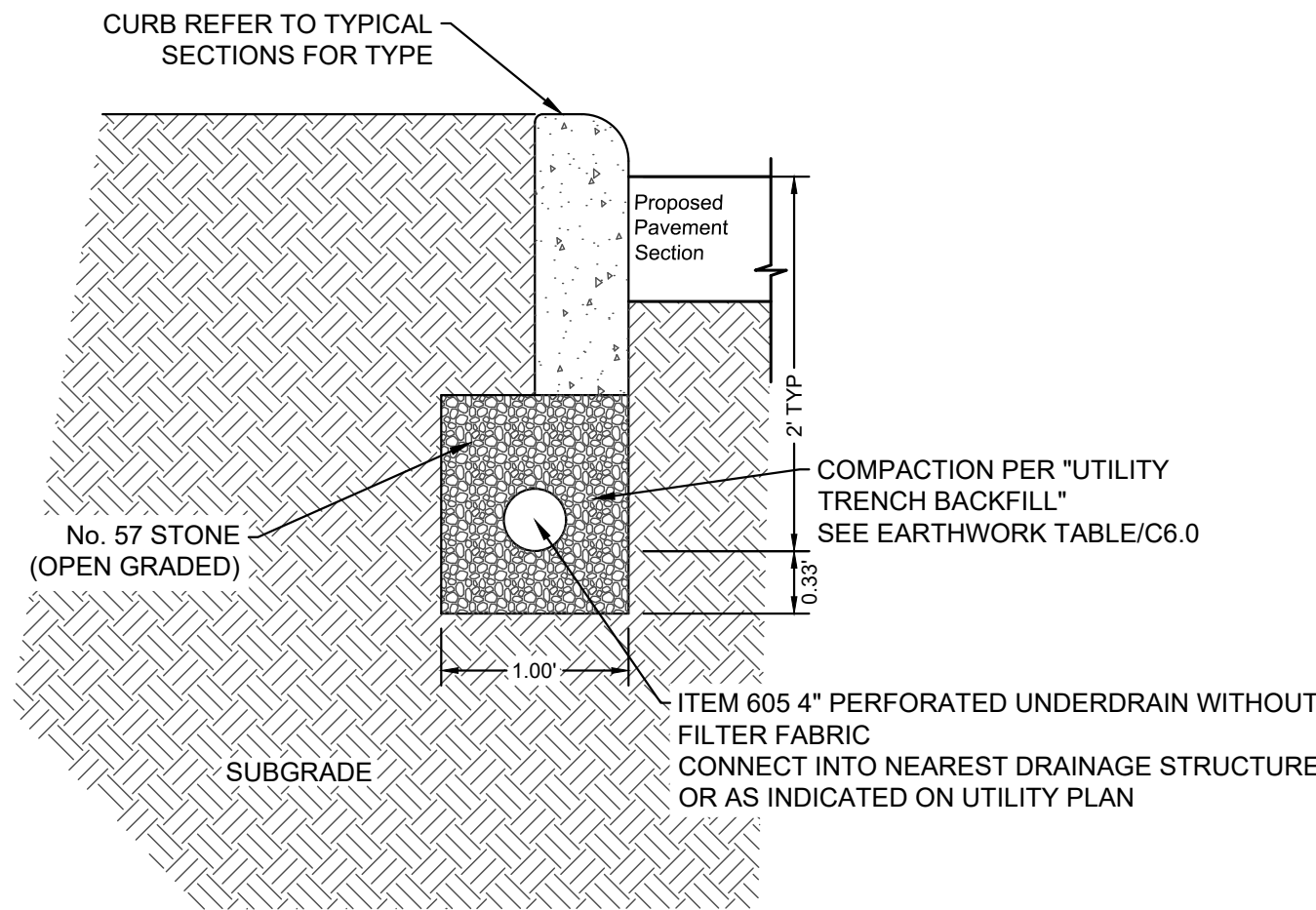


STANDARD CURB AND WALK

Not To Scale

1
C3.1

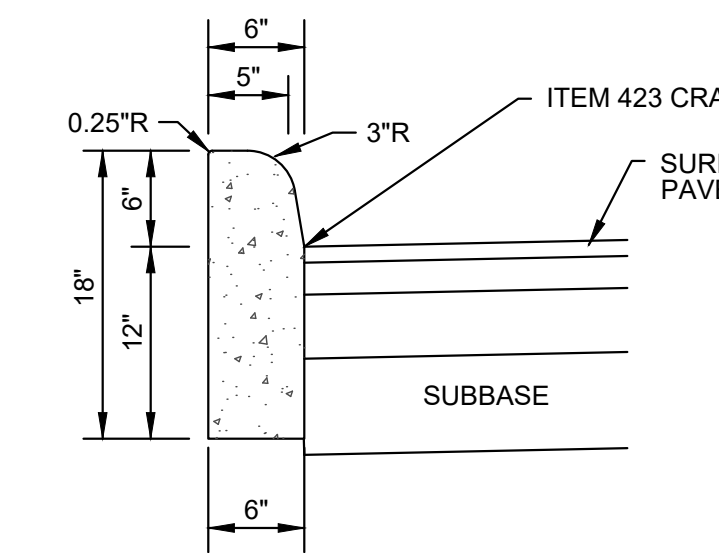
NOTE: SIDEWALK JOINTS SHALL BE IN ACCORDANCE WITH ODOT ITEM 608.03 UNLESS OTHERWISE DETAILED AS A PART OF THE BUILDING OR LANDSCAPE ARCHITECT PLANS



6
C3.1

STREET CURB UNDERDRAIN DETAIL

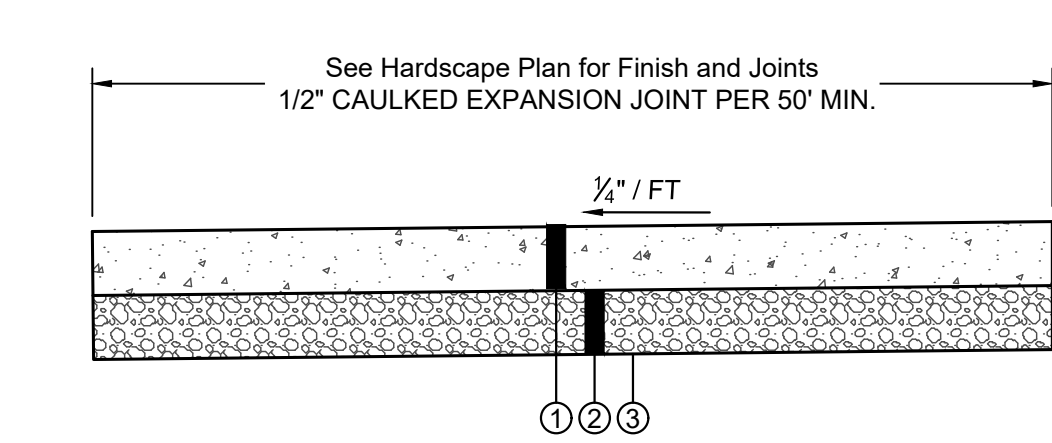
NOT TO SCALE



2
C3.1

ODOT TYPE 6 CURB DETAIL

NOT TO SCALE
SEE TYPICAL SECTIONS FOR PLAN LOCATIONS



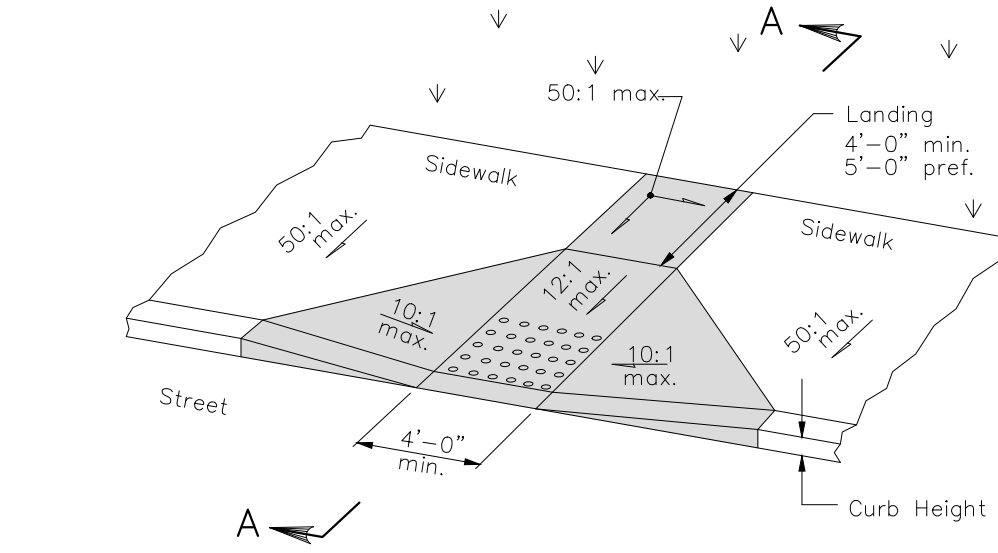
3
C3.1

TYPICAL SIDEWALK SECTION:

Not To Scale

NOTE: Sidewalk Joints Shall Be In Accordance With Item 608.03 Unless Otherwise Detailed as a Part of the Architectural Plans.

- ITEM 608 - 4" CLASS C
- ITEM 304 - 4" AGGREGATE BASE
- ITEM 204 - SUBGRADE COMPACTION

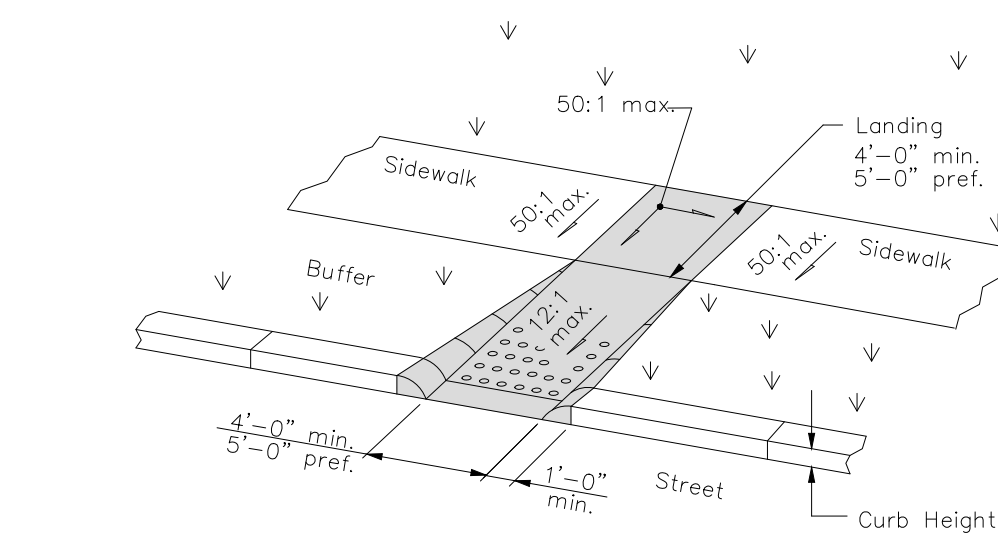


4
C3.1

Type A1 (Perpendicular with flared sides)

PERPENDICULAR CURB RAMP DETAILS

NOT TO SCALE
SEE C3.0 FOR PLAN LOCATIONS



5
C3.1

Type A2 (Perpendicular with returned curb)

PERPENDICULAR CURB RAMP DETAILS

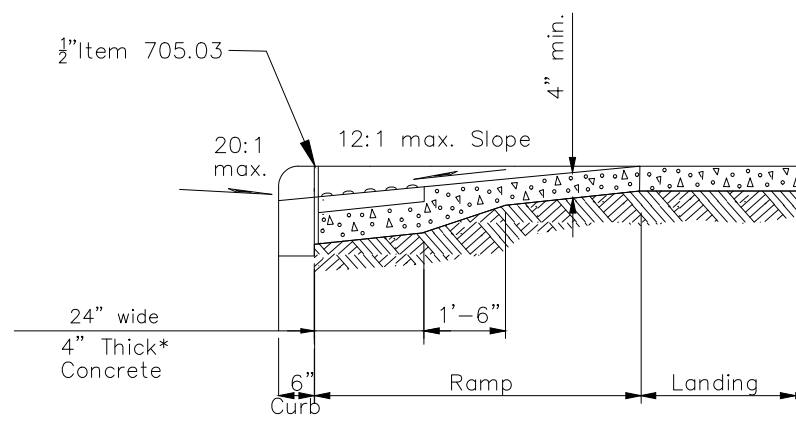
NOT TO SCALE
SEE C3.0 FOR PLAN LOCATIONS

CURB RAMP NOTES

DRAINAGE: Contractor is to ensure the base of each constructed curb ramp allows for proper drainage, without exceeding allowable cross slope or ramp slopes. Vertical change in level exceeding 8" between the 1) pavement and gutter, and 2) gutter and ramp, are not allowed. See C7.0-C7.4 for Intersection Details.

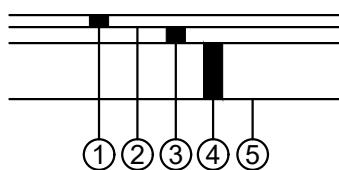
SURFACE TEXTURE: Texture concrete surfaces by coarse brooming transverse to the ramp slopes to be rougher than the adjacent walk.

The edge of the curb shall be flush with the edge of the adjacent pavement and gutter and surface slopes that meet grade breaks shall also be flush.



New gutter shown.

SECTION A-A NORMAL DETAIL



9
C3.1

LIGHT-DUTY PARKING PAVEMENT DETAIL

NOT TO SCALE

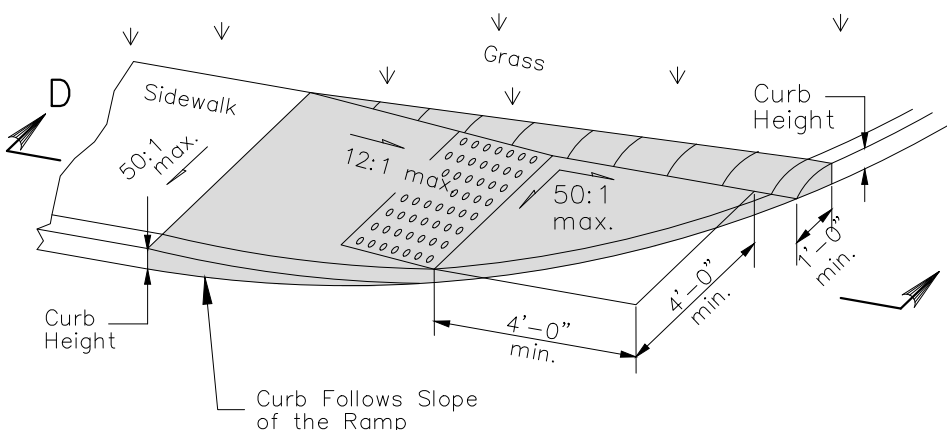
- ITEM 448 - 1-1/2" ASPHALT CONCRETE SURFACE COURSE
- ITEM 407 - TACK COAT @ 0.10 GAL/SY
- ITEM 301 - 2 1/2" BITUMINOUS AGG. BASE
- ITEM 304 - 8" AGGREGATE BASE
- ITEM 204 - SUBGRADE COMPACTION

HEAVY-DUTY PARKING PAVEMENT DETAIL

NOT TO SCALE

- ITEM 448 - 1-1/2" ASPHALT CONCRETE SURFACE COURSE
- ITEM 407 - TACK COAT @ 0.10 GAL/SY
- ITEM 301 - 4" BITUMINOUS AGG. BASE
- ITEM 304 - 8" AGGREGATE BASE
- ITEM 204 - SUBGRADE COMPACTION

10
C3.1

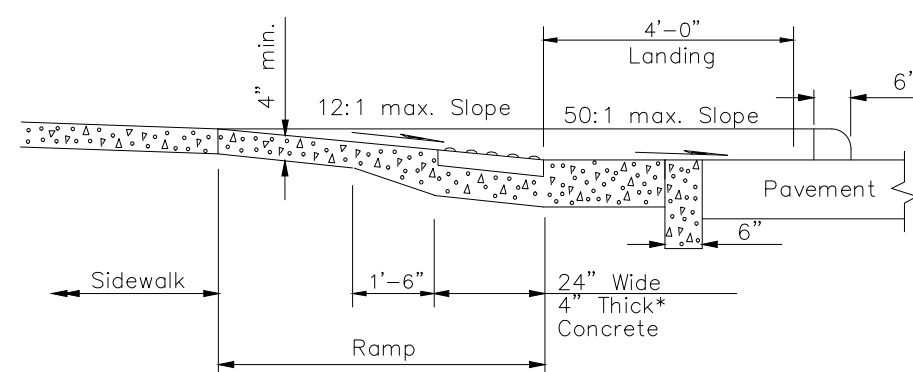


8
C3.1

Type B3 (Single sided Parallel)

PARALLEL CURB RAMP DETAILS

NOT TO SCALE
SEE C3.0 FOR PLAN LOCATIONS



SECTION D-D

*Where possible, pour ramp area integral with the curb, otherwise use 6\"/>

11
C3.1

NOTE: ALL PARKING STALLS SHALL BE SINGLE-STRIPED (WHITE) AS SHOWN IN TWO COATS.

STRIPING DETAIL

NOT TO SCALE

GENERAL

- ITEM NUMBERS REFER TO THE OHIO DEPARTMENT OF TRANSPORTATION (ODOT) CONSTRUCTION AND MATERIAL SPECIFICATIONS (2010) AND ALL CONSTRUCTION WORK SHALL BE DONE ACCORDING TO SAID SPECIFICATIONS AND IN ACCORDANCE WITH APPLICABLE STANDARDS OF THE GOVERNING AGENCIES. WHEN IN CONFLICT, THE MORE STRINGENT REQUIREMENTS SHALL GOVERN.
- THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND ELEVATIONS OF ALL EXISTING UTILITIES PRIOR TO THE BEGINNING OF CONSTRUCTION OR EARTH MOVING OPERATIONS.
- FORTY-EIGHT (48) HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTOR SHALL NOTIFY THE OHIO UTILITY PROTECTION SERVICE (OUPS) AND ALL OTHER AGENCIES WHICH MAY HAVE UNDERGROUND UTILITIES INVOLVED IN THIS PROJECT AND ARE NOT MEMBERS OF OHIO UNDERGROUND PROTECTION, INC.
- CONTRACTOR AND OWNER SHALL VERIFY AND ACCEPT ALL QUANTITIES PRIOR TO BEGINNING CONSTRUCTION.
- CONTRACTOR SHALL VERIFY THAT COORDINATES, IF USED, MATCH PLAN DIMENSIONS. WHEN IN CONFLICT, THE PLAN DIMENSIONS SHALL GOVERN OVER COORDINATES, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- UNLESS OTHERWISE NOTED, ALL CONSTRUCTION DETAILS SHALL CONFORM WITH THE "STANDARD CONSTRUCTION DRAWINGS OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION".
- EXISTING SITE SURVEY, TOPOGRAPHY, AND SUBSURFACE CONDITIONS: EXISTING CONDITIONS PRESENTED IN DRAWING, REPORT OR SPECIFICATION FORM ARE BELIEVED ACCURATE WITHIN NORMAL INDUSTRY TOLERANCES BUT ARE NOT GUARANTEED. INVESTIGATE, SURVEY, CONFIRM AND VERIFY ALL CONDITIONS BEARING ON THE WORK BY ANY MEANS NECESSARY BEFORE STARTING ANY WORK THAT CHANGES EXISTING CONDITIONS. REPORT ANY UNACCEPTABLE DISCREPANCIES TO THE ENGINEER IN WRITING BEFORE BEGINNING OPERATIONS.
 - WRITTEN CLAIMS OF DIFFERENCE SHALL BE ACCOMPANIED BY SUBSTANTIATING EVIDENCE. CLAIMS OF DIFFERENCE SHALL BE RESOLVED, INCLUDING DETERMINATION OF QUANTITIES AND COSTS AND METHODS OF CONTRACT MODIFICATION, BEFORE WORK THAT ALTERS SUCH EXISTING CONDITIONS IS STARTED.
 - INITIATION OF SITE-CLEARING, SOIL-MOVING OPERATIONS, DEMOLITION OR OTHER ACTIVITY THAT ALTERS EXISTING CONDITIONS SHALL BE EVIDENCE THAT CONTRACTOR HAS MADE ALL INVESTIGATIONS AND EVALUATIONS IT DEEMS NECESSARY AND HAS ACCEPTED ALL EXISTING CONDITIONS PRESENT WHETHER OR NOT THEY CONFORM EXACTLY TO THE DOCUMENTS.
 - WITHOUT ADVANCE WRITTEN NOTIFICATION OF UNACCEPTABLE DISCREPANCY, NO CLAIM FOR EXTRA WILL BE CONSIDERED FOR A CLAIM OF DIFFERENCE BETWEEN DOCUMENTS AND ACTUAL CONDITIONS AFTER THE CONTRACTOR HAS ALTERED EXISTING CONDITIONS.
- BACKFILL OF ALL UTILITY EXCAVATIONS IN STRUCTURAL AREAS INCLUDING UNDER PAVEMENTS OR WITHIN TEN (10) FEET OF ANY BUILDING AREAS SHOULD BE CONTINUALLY MONITORED BY A REPRESENTATIVE OF THE PROJECT GEOTECHNICAL ENGINEER TO VERIFY THAT PROPER LIFT THICKNESS, MOISTURE CONDITION, AND COMPACTIVE EFFORT ARE MAINTAINED.
- PARKING LOT STRIPING SHALL BE FOUR (4) INCHES WIDE WHITE HIGHWAY-TYPE STRIPING APPLIED IN ACCORDANCE WITH THE PLAN.
- ALL DIMENSIONS AND PROPOSED ELEVATIONS ARE TO THE TOP OF FINISHED PAVEMENT/FACE OF CURB UNLESS OTHERWISE NOTED.
- ALL RADII ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.

- ALL RADII ARE 4.5' UNLESS NOTED EXCEPT IN ROADWAY AND ROADWAY/DRIVEWAY INTERSECTIONS WHERE RADII ARE 15' UNLESS OTHERWISE NOTED.
- ALL PARKING LOT ISLANDS ARE 9' WIDE UNLESS OTHERWISE NOTED.
- CURB ALONG ROADWAYS SHALL BE TYPE 6 UNLESS OTHERWISE NOTED (SEE DETAIL 2/C3.1).
- CURB IN PARKING AREAS IS TYPE 6 UNLESS OTHERWISE NOTED (SEE DETAIL 2/C3.1).
- PARKING STALLS ARE 9X18' UNLESS OTHERWISE NOTED.
- ON STREET PARKING STALLS ARE 7'X23' UNLESS OTHERWISE NOTED.
- WHERE CONNECTING TO EXISTING ASPHALT PAVEMENT, THE CONTRACTOR SHALL SAW CUT THE EXISTING EDGE OF PAVEMENT TO PROVIDE A CLEAN AND SOUND EDGE. ITEM 407 TACK COAT SHALL BE APPLIED TO THE ENTIRE CUT FACE OF THE EXISTING PAVEMENT PRIOR TO THE PLACEMENT OF THE PROPOSED PAVEMENT.
- PARKING LOT PAVEMENT MARKINGS SHALL CONFORM TO ITEM 641 PAVEMENT MARKINGS AND THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAVEMENT MARKING MATERIAL SHALL BE PER ITEM 642 TRAFFIC PAINT UNLESS OTHERWISE NOTED.
- ALL CURB, UNLESS OTHERWISE NOTED, SHALL HAVE AN UNDERDRAIN PER ISLAND UNDERDRAIN DETAIL 3/C4.1. UNDERDRAINS SHALL OUTLET TO NEAREST DOWNSTREAM DRAINAGE STRUCTURE AND AS SHOWN ON THE UTILITY PLANS.
- PAVEMENT SHALL BE REPAIRED PER 4/C4.3 SETTLEMENT REPAIR DETAIL FOR ALL TRENCH FAILURES WITHIN PAVEMENT AREAS.
- ALL SITE CONCRETE SHALL BE PER ODOT ITEM 499 CLASS C UNLESS OTHER WISE NOTED ON THE PLANS.

THE OAKS AT WETHERINGTON
ROADWAY AND MISC SITE UPDATE
LIBERTY WAY & TYLERS PLACE BLVD
SECTION 18, TOWN 3, RANGE 2
WEST CHESTER TOWNSHIP
BUTLER COUNTY, OHIO

SITE DETAILS

bayer becker
www.bayerbecker.com
6900 Tylersville Road, Suite A
Mason, OH 45040 - 513.336.6600

Drawing: 15M053-000 LAYOUT

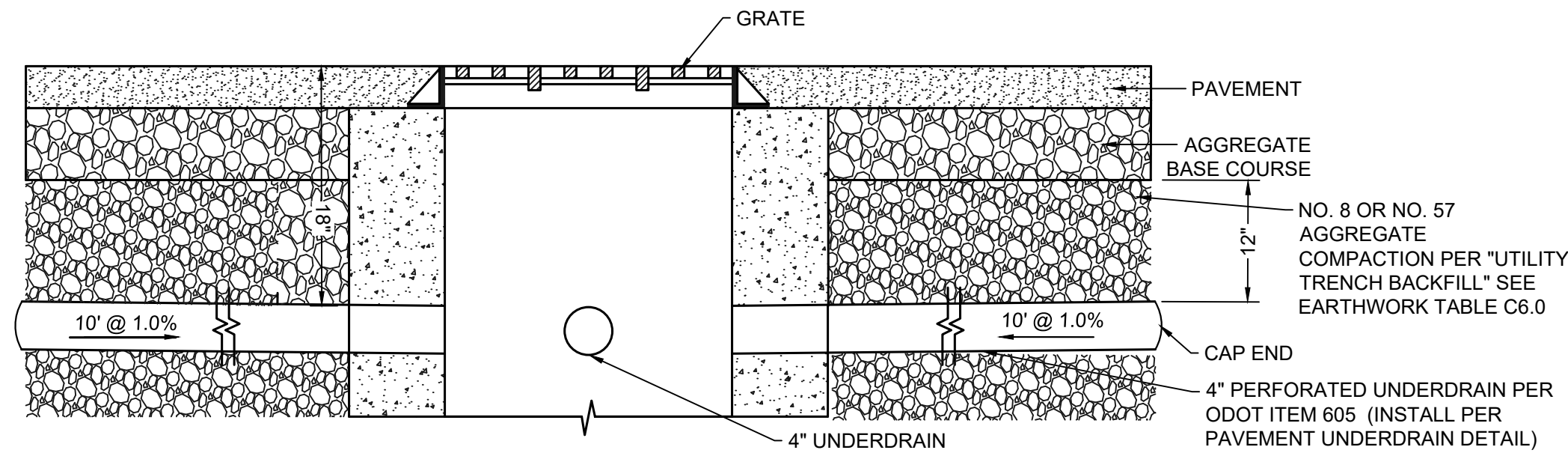
Drawn by: CJO

Checked by: AJW

Issue Date: 06-17-19

Sheet:

C3.1



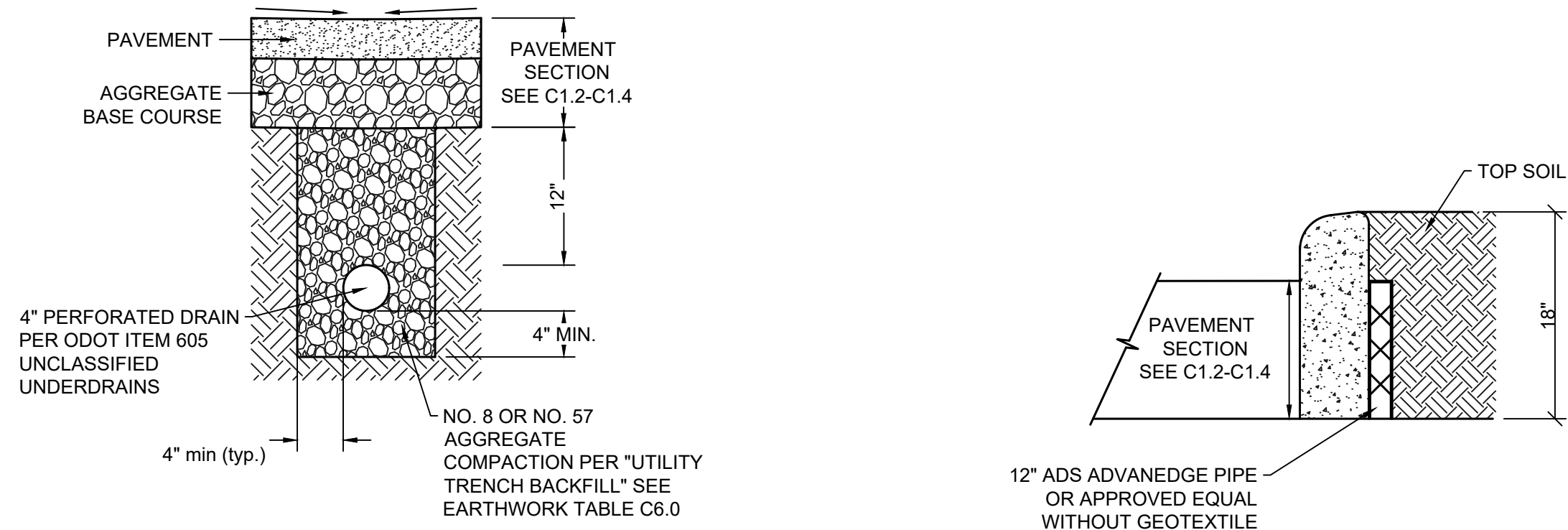
THE 4" PERFORATED UNDERDRAIN SHALL BE PROVIDED FOR EACH STRUCTURE IN ALL FOUR DIRECTIONS UNLESS OTHERWISE DIRECTED.

THE PERFORATED PIPE SHALL BE PROTECTED FROM HEAVY TRAFFIC AFTER INSTALLATION PRIOR TO PLACEMENT OF PROPOSED PAVEMENT.

THE CONTRACTOR SHALL INITIALLY SET THE TOP OF CASTING FOR AN INLET STRUCTURE WITHIN THE PAVED AREAS TO THE ELEVATION OF THE INTERMEDIATE PAVEMENT COURSE. PRIOR TO FINAL PAVING OF SURFACE COURSE, THE CONTRACTOR SHALL ADJUST THE TOP OF CASTING TO FINISH PAVEMENT GRADE. COST OF THE ABOVE SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS RELATED SEWER ITEMS.

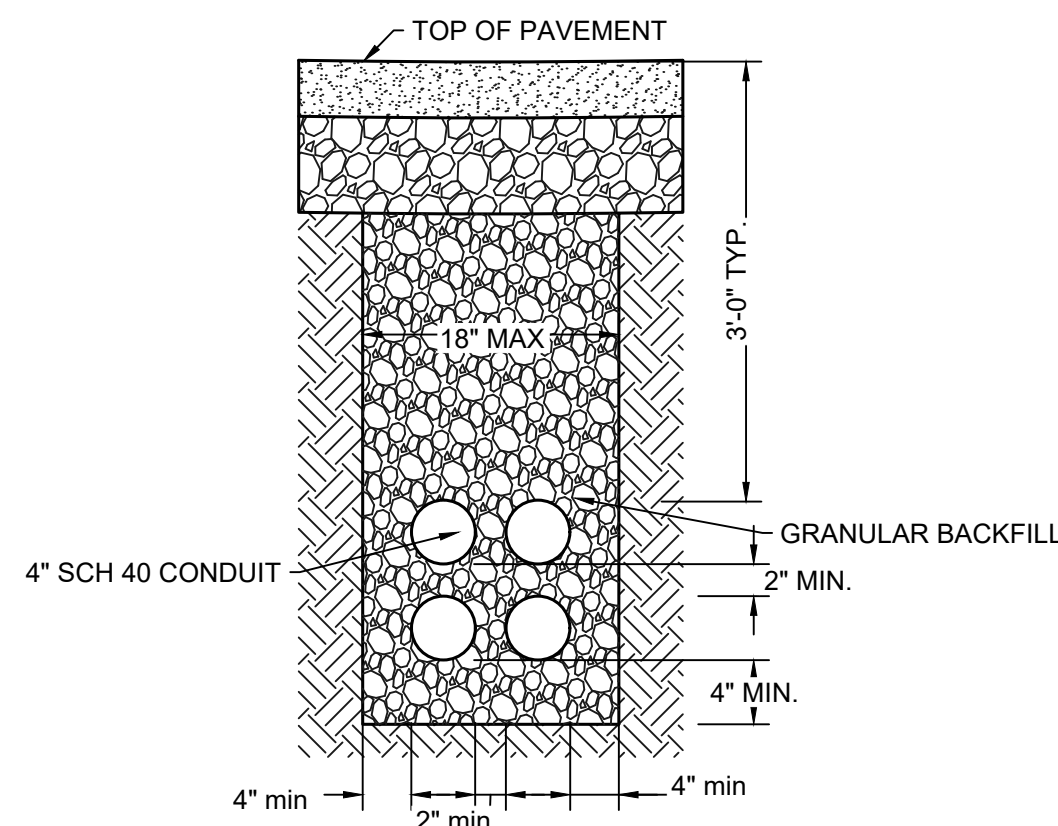
1 CATCH BASIN-FINGER DRAIN

NOT TO SCALE



3 C4.1 PARKING ISLAND UNDERDRAIN DETAIL

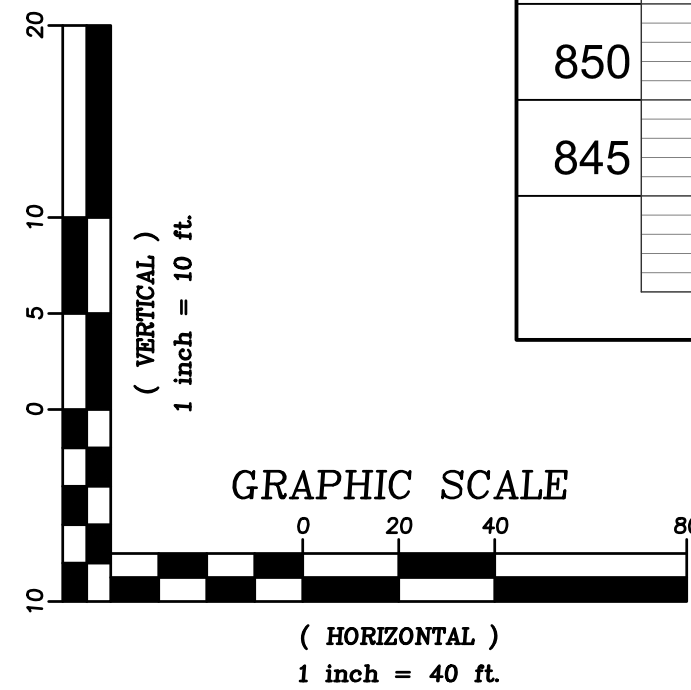
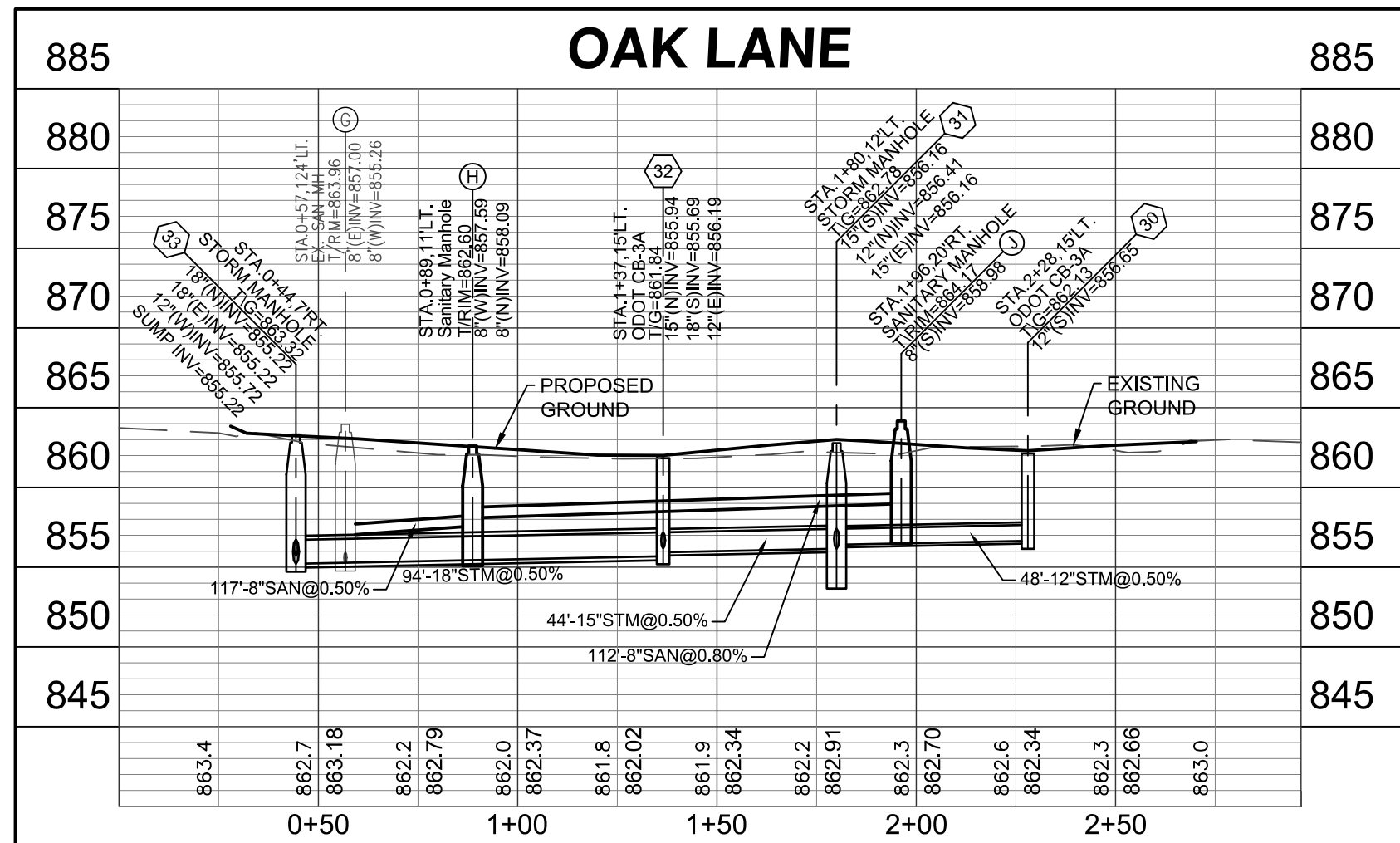
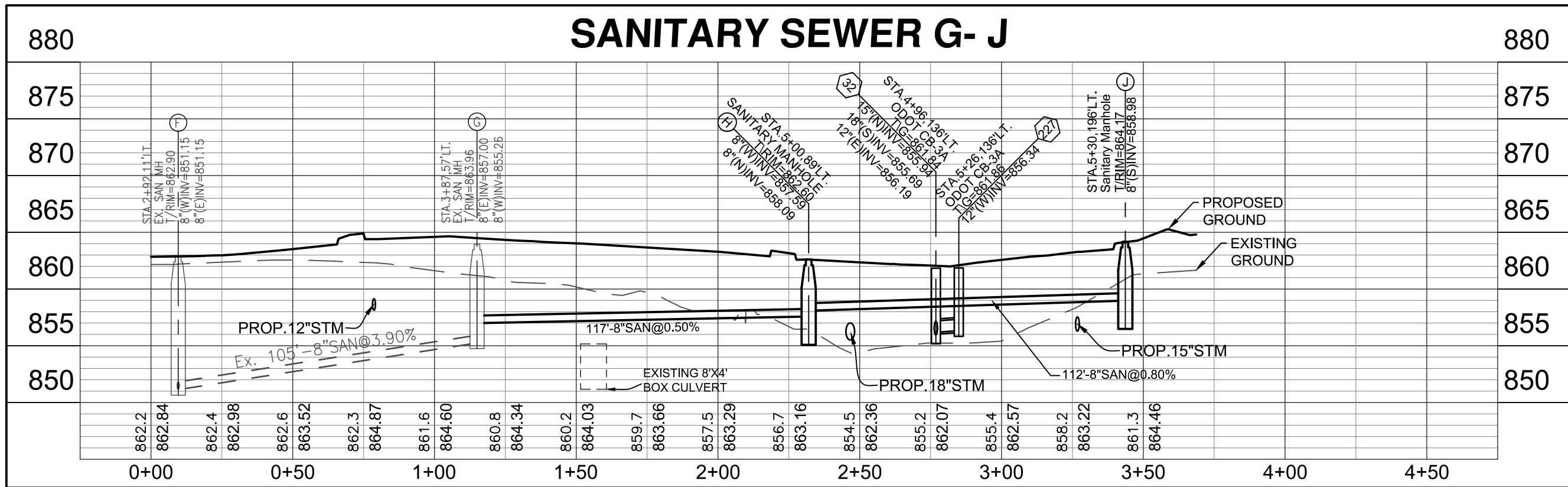
NOTE: CONTRACTOR SHALL OUTLET UNDERDRAIN TO NEAREST DOWN STREAM DRAINAGE STRUCTURE



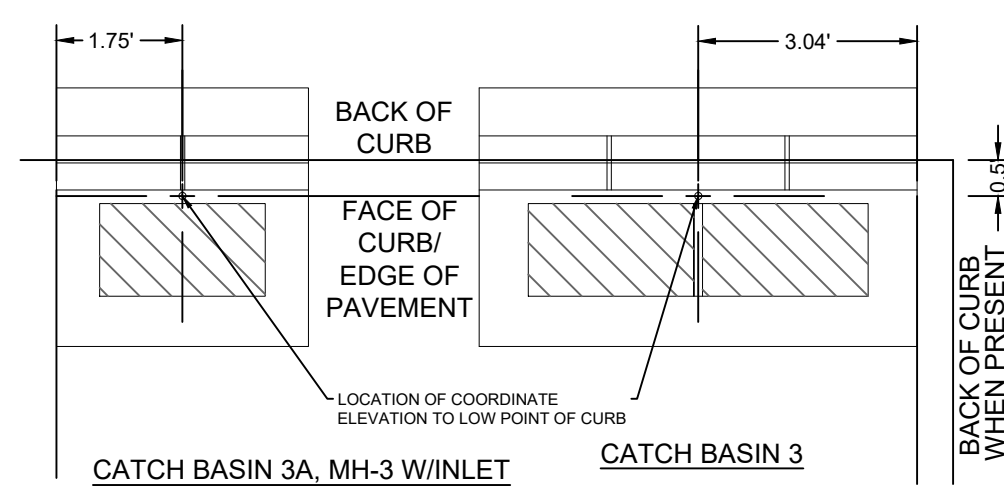
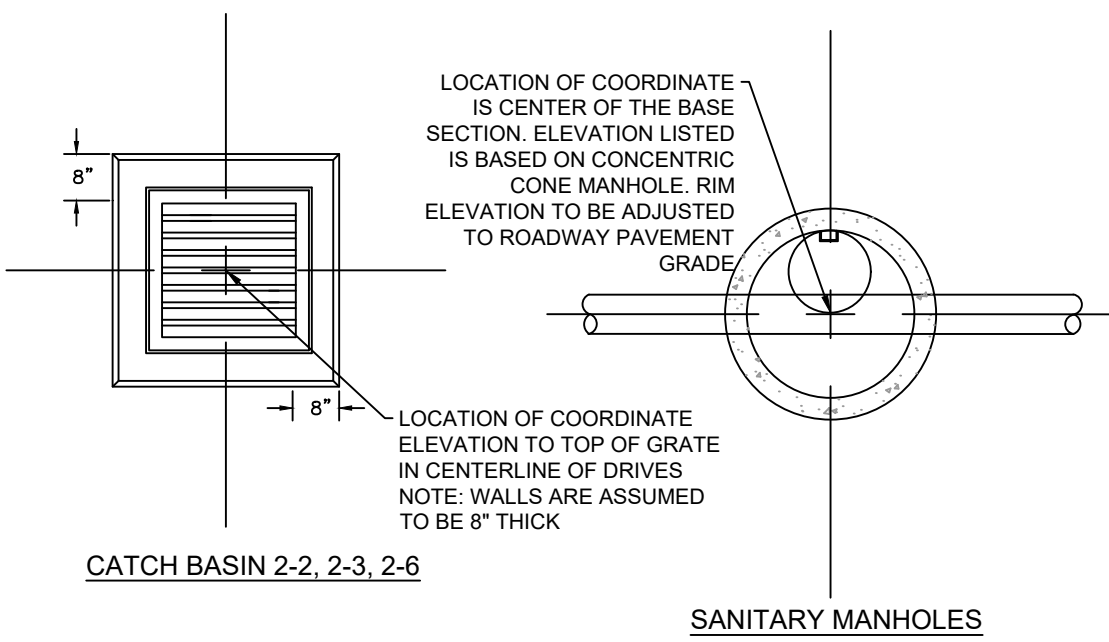
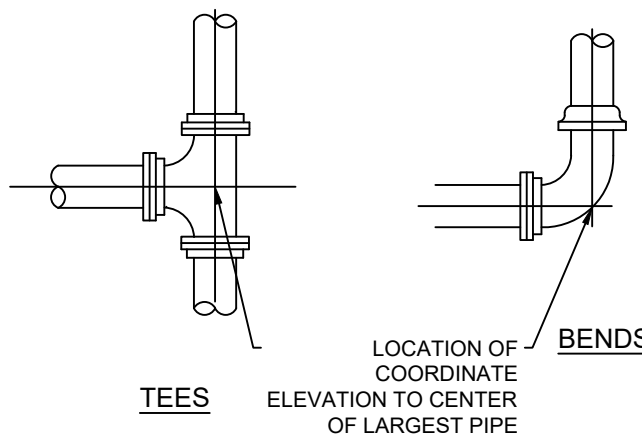
NOTE: EXTEND 3' SLEEVES BEYOND BACK OF CURB W/ MARKER BOARDS. MAINTAIN 6" CLEAR BETWEEN OTHER CONDUITS. ALL SLEEVES SHALL BE AS-BUILT @ BOTH ENDS WITH GPS COORDINATES PER UTILITY AS-BUILT REQUIREMENTS ON C4.6.

4 C4.1 PAVEMENT SLEEVES

NOT TO SCALE



COORDINATE LOCATION REFERENCE



THE OAKS AT WETHERINGTON
ROADWAY AND MISC SITE UPDATE
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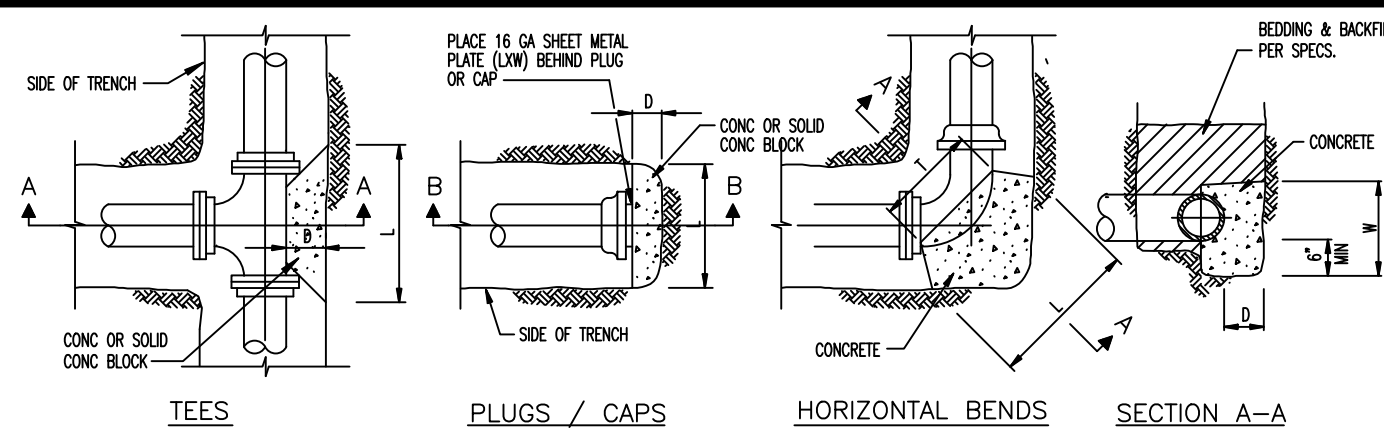
bayer
becker
www.bayerbecker.com
6900 Tyersville Road, Suite A
Mason, OH 45040 - 513.336.6600

Drawing: 15M053-000 UTILITY
Drawn by: AJW
Checked By: JSD
Issue Date: 06-17-19
Sheet:

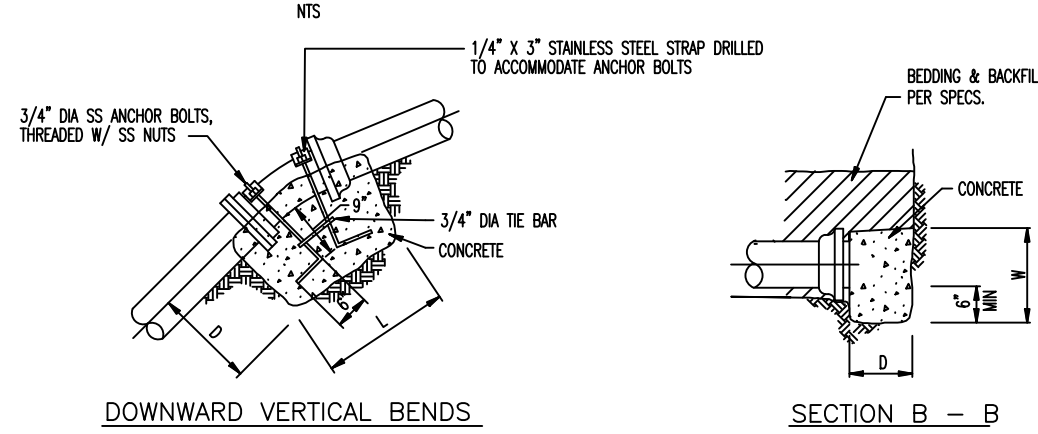
C4.1

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GENERAL UTILITY		WATER MAINS		GENERAL CONDUIT INSTALLATION NOTES		GAS FACILITIES AND SERVICES	
A. ITEM NUMBERS REFER TO THE OHIO DEPARTMENT OF TRANSPORTATION (ODOT) CONSTRUCTION AND MATERIAL SPECIFICATIONS (2010) AND ALL CONSTRUCTION WORK SHALL BE DONE ACCORDING TO SAID SPECIFICATIONS AND IN ACCORDANCE WITH APPLICABLE STANDARDS OF THE GOVERNING AGENCIES. WHEN IN CONFLICT, THE MORE STRINGENT REQUIREMENTS SHALL GOVERN.	B. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND ELEVATIONS OF ALL EXISTING UTILITIES PRIOR TO THE BEGINNING OF CONSTRUCTION OR EARTH MOVING OPERATIONS.	C. FORTY-EIGHT (48) HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTOR SHALL NOTIFY THE OHIO UTILITY PROTECTION SERVICE (OUPS) AND ALL OTHER AGENCIES WHICH MAY HAVE UNDERGROUND UTILITIES INVOLVED IN THIS PROJECT AND ARE NOT MEMBERS OF OHIO UNDERGROUND PROTECTION, INC.	D. CONTRACTOR AND OWNER SHALL VERIFY AND ACCEPT ALL QUANTITIES PRIOR TO BEGINNING CONSTRUCTION.	E. CONTRACTOR SHALL VERIFY THAT COORDINATES, IF USED, MATCH PLAN DIMENSIONS. WHEN IN CONFLICT, THE PLAN DIMENSIONS SHALL GOVERN OVER COORDINATES, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.	F. UNLESS OTHERWISE NOTED, ALL CONSTRUCTION DETAILS SHALL CONFORM WITH THE "STANDARD CONSTRUCTION DRAWINGS OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION".	G. EXISTING SITE SURVEY, TOPOGRAPHY, AND SUBSURFACE CONDITIONS: EXISTING CONDITIONS PRESENTED IN DRAWING, REPORT OR SPECIFICATION FORM ARE BELIEVED ACCURATE WITHIN NORMAL INDUSTRY TOLERANCES BUT ARE NOT GUARANTEED. INVESTIGATE, SURVEY, CONFIRM AND VERIFY ALL CONDITIONS BEARING ON THE WORK BY ANY MEANS NECESSARY BEFORE STARTING ANY WORK THAT CHANGES EXISTING CONDITIONS. REPORT ANY UNACCEPTABLE DISCREPANCIES TO THE ENGINEER IN WRITING BEFORE BEGINNING OPERATIONS.	H. BACKFILL OF ALL UTILITY EXCAVATIONS IN STRUCTURAL AREAS INCLUDING UNDER PAVEMENTS OR WITHIN TWENTY (20) FEET OF ANY BUILDING AREAS SHOULD BE CONTINUALLY MONITORED BY A REPRESENTATIVE OF THE PROJECT GEOTECHNICAL ENGINEER TO VERIFY & DOCUMENT THAT PROPER LIFT THICKNESS, MOISTURE CONDITION, AND COMPACTIVE EFFORT ARE MAINTAINED.
G.A. WRITTEN CLAIMS OF DIFFERENCE SHALL BE ACCOMPANIED BY SUBSTANTIATING EVIDENCE. CLAIMS OF DIFFERENCE SHALL BE RESOLVED, INCLUDING DETERMINATION OF QUANTITIES AND COSTS AND METHODS OF CONTRACT MODIFICATION, BEFORE WORK THAT ALTERS SUCH EXISTING CONDITIONS IS STARTED.	G.B. INITIATION OF SITE-CLEARING, SOIL-MOVING OPERATIONS, DEMOLITION OR OTHER ACTIVITY THAT ALTERS EXISTING CONDITIONS SHALL BE EVIDENCE THAT CONTRACTOR HAS MADE ALL INVESTIGATIONS AND EVALUATIONS IT DEEMS NECESSARY AND HAS ACCEPTED ALL EXISTING CONDITIONS PRESENT WHETHER OR NOT THEY CONFORM EXACTLY TO THE DOCUMENTS.	G.C. WITHOUT ADVANCE WRITTEN NOTIFICATION OF UNACCEPTABLE DISCREPANCY, NO CLAIM FOR EXTRA WILL BE CONSIDERED FOR A CLAIM OF DIFFERENCE BETWEEN DOCUMENTS AND ACTUAL CONDITIONS AFTER THE CONTRACTOR HAS ALTERED EXISTING CONDITIONS.	I. CONTRACTOR SHALL VERIFY ALL UTILITY AND CONDUIT SIZES AND LOCATIONS WITH THE ARCHITECTURAL, MECHANICAL, AND STRUCTURAL DRAWINGS PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES.	J. ALL BUILDING UTILITY SERVICES ARE TO BE STUBBED 5 FT. FROM THE BUILDING FOR CONNECTION BY INTERIOR CONTRACTOR.	K. ALL UTILITY TRENCHES PROPOSED WITHIN THE LIMITS OF EXISTING PAVEMENT AND WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE BACKFILLED TO SUBGRADE WITH CONTROL DENSITY FILL TO A DISTANCE OF 5 FT BEYOND THE BACK OF CURB.	L. BUTLER COUNTY WATER & SEWER DOES NOT ACCEPT ANY RESPONSIBILITY FOR THE RELOCATION, REPAIR, OR REPLACEMENT OF ANY OTHER UTILITY INSTALLED WITHIN 5 FT OF THE CENTERLINE OF ANY SANITARY SEWER MAIN OR WATER MAIN.	M. CONTRACTOR SHALL OBTAIN RIGHT OF WAY & UTILITY PERMIT FROM BUTLER COUNTY ENGINEERS OFFICE FOR ALL ROADWAY WORK PROPOSED WITHIN THE PUBLIC RIGHT OF WAY. (LIBERTY WAY, TAYLOR STREET, TYLERSPACE BLVD, & PRESERVE PLACE)
STORM SEWERS		SANITARY SEWERS		TELEPHONE INFRASTRUCTURE		UTILITY NOTES	
A. ALL WORK AND MATERIALS ARE TO CONFORM TO THE 2010 EDITION OF ODOT CONSTRUCTION AND MATERIALS SPECIFICATIONS AND BUTLER COUNTY ENGINEERS SPECIFICATIONS. WHEN IN CONFLICT, THE MORE STRINGENT REQUIREMENTS SHALL PREVAIL.	B. STORM SEWER PIPES DESIGNATED AS "STM" SHALL MEET THE MATERIAL & INSTALLATION REQUIREMENTS OF ODOT ITEM 603, TYPE B CONDUITS AND AS FOLLOWS:	1. NON-REINFORCED CONCRETE PIPE PER ODOT SPECIFICATION 706.01	2. REINFORCED CONCRETE CIRCULAR PIPE PER ODOT SPECIFICATION 706.02	3. PRECAST REINFORCED CONCRETE BOX SECTIONS PER ODOT SPECIFICATION 706.05	4. REINFORCED CONCRETE ELLIPTICAL CULVERT, STORM DRAIN, AND SEWER PIPE PER ODOT SPECIFICATION 706.04	5. ALUMINIZED TYPE 2 CORRUGATED STEEL PIPE AND PIPE ARCHES WITH PAVED INVERT PER ODOT SPECIFICATIONS 707.01 OR 707.02.	6. CORRUGATED STEEL SPIRAL RIB CONDUITS PER ODOT SPECIFICATIONS 707.12
C. ALL STORM STRUCTURES ARE ODOT TYPES UNLESS OTHERWISE INDICATED.	D. ALL CATCH BASINS SHALL BE EQUIPPED WITH HEAVY DUTY, BICYCLE SAFE GRATES CAPABLE OF CARRYING AN HS-25 LOADING, UNLESS OTHERWISE NOTED.	E. ANY EXISTING STORM SEWER CUT IN EXCAVATION WHICH DRAINS AN OFFSITE AREA MUST BE TIED INTO THE STORM SEWER SYSTEM.	F. ALL CATCH BASINS IN THE PAVEMENT OR CURB ARE TO HAVE A MINIMUM OF TWO FOUR (4) INCH PERFORATED UNDERDRAINS EXTENDING TEN (10) LINEAR FEET FROM THE CATCH BASIN. UNDERDRAINS SHALL BE PLACED ONE ON EACH SIDE OF THE STORM SEWER AND AS NEAR TO PERPENDICULAR TO THE STORM SEWER AS IS PRACTICAL WITHOUT INTERFERING WITH STORM PIPES SHOWN ON THE PLANS. SEE PAVEMENT UNDERDRAIN DETAILS.	G. AS THE INSTALLATION OF THE STORM SEWER PROGRESSES, EROSION CONTROL MEASURES SHALL BE PLACED AT INLET AND OUTLET OF SEWERS TO CONTROL THE SILT	H. SUMP LINE CONDUITS ARE TO BE SDR 35, ARMCO 2000, OR EQUIVALENT.	I. ALL JOINTS SHALL BE SOIL SEAL. JOINTS UNLESS SPECIFICALLY NOTED ON THE PLANS.	J. STORM WATER AND EXTRANEOUS FLOWS ARE PROHIBITED FROM ENTERING THE EXISTING SYSTEM DURING CONSTRUCTION. NO OPEN CUT TRENCHES WILL BE ALLOWED TO REMAIN OPEN OVERNIGHT. STORM DRAINS, DIVERSION DITCHES, PUMPS ETC., SHALL BE USED AS REQUIRED TO MAINTAIN THE INTEGRITY OF THE SYSTEM AT ALL TIMES.
K. ALL CATCH BASINS WITH A DEPTH GREATER THAN 4.0 FT SHALL BE PROVIDED WITH STEPS. STEPS SHALL MEET THE REQUIREMENTS OF ODOT STANDARD 604 AND SHALL CONFORM TO THE DETAILS SHOWN ON DETAIL 5/C4.4.	L. ALL STORM SEWER SHALL HAVE A MAXIMUM MANNING'S ROUGHNESS COEFFICIENT OF 0.015.	M. ROOF DRAINS ARE TO BE PER ODOT 707.33, 707.42, OR 707.45.	A. TELEPHONE CONDUITS SHALL BE PVC SCH. 40 PRIVATELY OWNED (PO) CONDUITS, FOR TELEPHONE COMPANY USE, FROM THE PROPOSED BACK BOARD LOCATION TO THE POINT OF CONNECTION BY THE UTILITY PROVIDER. CONDUITS SHALL MEET THE REQUIREMENTS OF TELEPHONE SERVICE PROVIDER.	B. WRAP THE END OF THE CONDUIT WITH A SUITABLE MATERIAL TO PREVENT CLOGGING UNTIL THE CABLE IS PLACED. TELEPHONE SERVICE PROVIDER WILL MAKE CONNECTION AT THIS POINT.	C. FLAG OR IDENTIFY THE END OF THE CONDUIT IN ORDER TO DESIGNATE THE POINT OF CONNECTION BETWEEN TELEPHONE SERVICE PROVIDER AND ENTRANCE CONDUIT.	D. POWER OR OTHER FOREIGN CONDUIT MUST BE SEPARATED FROM TELEPHONE CONDUIT BY A MINIMUM OF 12" OF EARTH OR 6" OF CONCRETE.	E. CONDUIT MUST BE PLACED AT A MINIMUM DEPTH OF 24" AND A MAXIMUM OF 36".
N. DEFLECTION TESTING FOR STORM SEWERS AND CULVERTS:		P. TELEPHONE SERVICE TO BUILDING		Q. SERVICE PIPING SMALLER THAN THREE (3) INCHES SHALL BE SEAMLESS COPPER FLEXIBLE WATER TUBING, ASTM B 88, TYPE K, PRESSURE CLASS 250.		O.A. FITTINGS SHALL BE COMPRESSION STYLE FOR CTS TUBING, CONSULT GOVERNING AGENCY FOR A LISTING OF ACCEPTABLE MANUFACTURERS AND PRODUCTS.	
N. 15% OF ALL STORM SEWERS SHALL BE TESTED FOR DEFLECTION WITHIN THIRTY DAYS AFTER THEY ARE COMPLETE. BUTLER COUNTY ENGINEER OR HIS DESIGNATED REPRESENTATIVE WILL DETERMINE WHAT 15% SHALL BE TESTED. IF ANY STORM SEWER IN THE ORIGINAL 15% IS FOUND OUT OF COMPLIANCE, DEFLECTION TESTS WILL BE REQUIRED ON 100% OF THE REMAINING STORM SEWER. A VERTICAL RING DEFLECTION GREATER THAN 5% WILL NOT BE ALLOWED. THIS DEFLECTION IS DEFINED AS 5% REDUCTION IN THE VERTICAL BASE OR AVERAGE INSIDE DIAMETER. THE METHOD OF TESTING SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER. IF RIGID BALLS OR MANDRELS ARE USED TO TEST PIPE DEFLECTION, NO MECHANICAL PULLING DEVICES SHALL BE USED. THE DEFLECTION TEST MAY BE CONDUCTED WITH A NINE PRONG MANDREL, A BALL OR A CYLINDER OR ANOTHER MANNER ACCEPTABLE TO THE BUTLER COUNTY ENGINEER OR HIS DESIGNATED REPRESENTATIVE. THE TESTING WILL BE ACCOMPLISHED FROM MANHOLE TO MANHOLE OR CATCH BASIN TO CATCH BASIN, FOLLOWING THE COMPLETE FLUSHING OF THE LINE. THE CONTRACTOR SHALL FURNISH ALL EQUIPMENT REQUIRED TO COMPLETE THE DEFLECTION TESTING. THE DEFLECTION TEST SHALL BE WITNESSED BY THE COUNTY ENGINEER OR HIS DESIGNATED REPRESENTATIVE. ANY SECTION OF PIPE THAT FAILS TO MEET THE AFOREMENTIONED REQUIREMENTS SHALL BE REROUNDED BY A PROCEDURE ACCEPTABLE TO THE COUNTY OR BE EXCAVATED AND EITHER BE RELAYED OR REPLACED, AND RE-TESTED UNTIL THE REQUIREMENTS ARE MET.	P. TELEPHONE SERVICE TO BUILDING	Q. SERVICE PIPING SMALLER THAN THREE (3) INCHES SHALL BE SEAMLESS COPPER FLEXIBLE WATER TUBING, ASTM B 88, TYPE K, PRESSURE CLASS 250.	O.A. FITTINGS SHALL BE COMPRESSION STYLE FOR CTS TUBING, CONSULT GOVERNING AGENCY FOR A LISTING OF ACCEPTABLE MANUFACTURERS AND PRODUCTS.	O.B. COUPLINGS WITH SET SCREWS OR GRIP RINGS WILL <u>NOT</u> BE ACCEPTABLE.	O.C. WATER SERVICE TUBING SHALL BE BEDDED SIX (6) INCHES ABOVE AND BELOW WITH SAND OR OTHER NON-COMPACTIBLE MATERIAL APPROVED BY THE GOVERNING AGENCY.	P. BUTLER COUNTY WATER AND SEWER DEPARTMENT SHALL ESTABLISH PROCEDURES FOR REPAIRS TO WATER MAIN OR WATER SERVICES DAMAGED.	Q. ALL WATER METER PITS SHALL CONFORM TO THE MATERIALS AND SPECIFICATIONS OF THE GOVERNING AGENCY.



CONCRETE THRUST BLOCKS



CONCRETE ANCHOR BLOCKS

PLUGS, CAPS & TEES																
SIZE	6"	8"	10"	12"	16"	18"	20"	24"	30"	36"						
D	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"						
L & W	20"	22"	24"	24"	32"	36"	40"	54"	76"	102"						

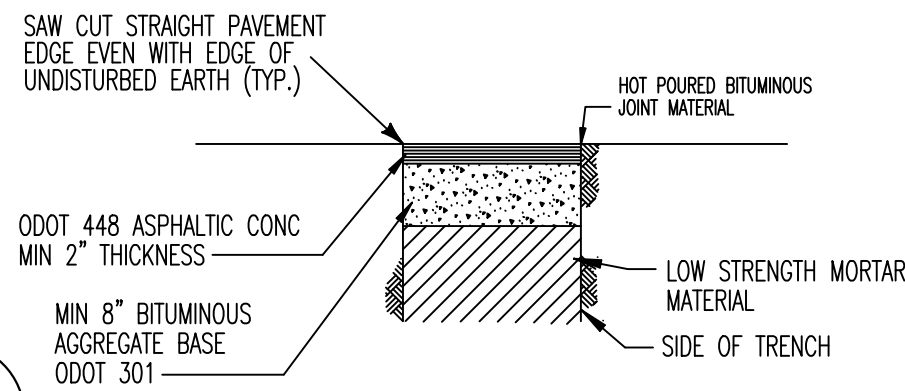
45° EIGHTH BENDS																
SIZE	6"	8"	10"	12"	16"	18"	20"	24"	30"	36"						
D	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"						
L	18"	20"	22"	24"	34"	40"	45"	58"	72"	98"						
T	16"	16"	16"	18"	28"	33"	37"	45"	52"	58"						
W	12"	14"	16"	18"	22"	25"	28"	36"	48"	76"						

90° QUARTER BENDS																
SIZE	6"	8"	10"	12"	16"	18"	20"	24"	30"	36"						
D	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"						
L	24"	27"	30"	34"	48"	51"	54"	78"	92"	144"						
T	16"	16"	20"	22"	36"	40"	44"	60"	56"	62"						
W	12"	16"	20"	24"	28"	34"	40"	50"	66"	96"						

VERTICAL BEND & STRAIGHT PIPE																
SIZE	6"	8"	10"	12"	16"	18"	20"	24"	30"	36"						
D	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"						
L	24"	24"	30"	30"	36"	36"	36"	42"	56"	68"						

NOTES:

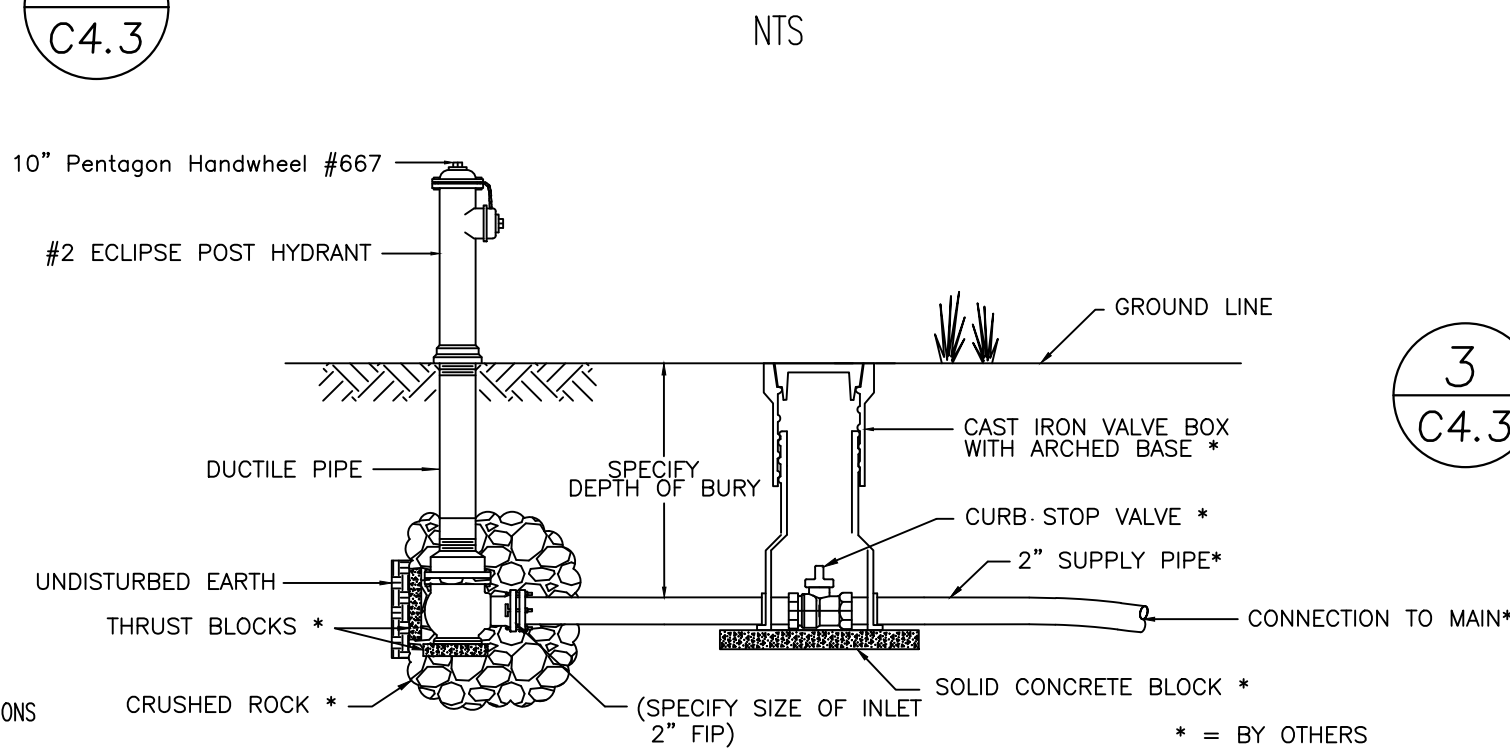
- ANCHORS TO BE FULL WIDTH OF TRENCH
- DEPTH "D" MAY BE GREATER THAN SPECIFIED TO ALLOW WORKING SPACE. CONC MUST BE PLACED AGAINST UNDISTURBED EARTH.
- THESE ARE REPRESENTATIVE BLOCKING DIMENSIONS. OTHER BENDS WILL ALSO NEED BLOCKING IF NOT UTILIZING RESTRAINED JOINTS.
- ENCASE ALL JOINTS, BOLTS, & NUTS WITH POLYETHYLENE BEFORE PLACING CONCRETE
- CONCRETE TYPE AND STRENGTH PER SPECS.
- ALL ANCHOR BOLTS, NUTS, AND STRAPS TO BE STAINLESS STEEL.
- UPWARD VERTICAL BENDS TO HAVE THRUST BLOCKS WITH SAME DIMENSIONS AS FOR HORIZONTAL BENDS.
- 11 1/4 DEGREE AND 22 1/2 DEGREE BENDS TO HAVE THRUST BLOCKS WITH SAME DIMENSIONS AS FOR 45 DEGREE BENDS.



PUBLIC R/W PAVEMENT RESTORATION ASPHALTIC CONCRETE ROADWAY

2
C4.3

SETTING FOR HYDRANT ADJACENT TO MAIN



Hydrants shall be self-draining, non-freezing, compression type with 2-3/16" main valve opening. Inlet connection shall be (2" MJ). Outlet shall be 1-1/4", 1-1/2" 2" or 2-1/2" IP or NST).

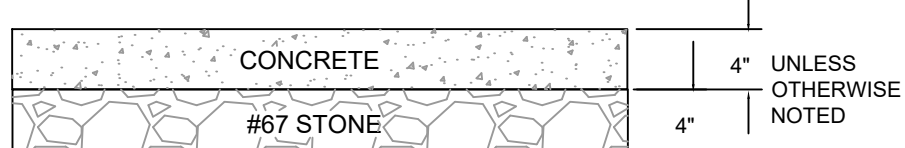
Hydrants shall have a 3" ductile iron pipe riser with a cast iron stock top, and non-turning operating rod. Principal interior operating parts shall be brass and removable from the hydrant for servicing without excavating the hydrant.

Hydrants shall be set in 4 cubic feet of crushed stone to allow for proper drainage of the hydrant. Recommendations of the AWWA should be followed when installing the hydrants.

Post hydrants shall be Eclipse No. 2 Post Hydrants as manufactured by John C. Kupferle Foundry Company, St. Louis, MO.

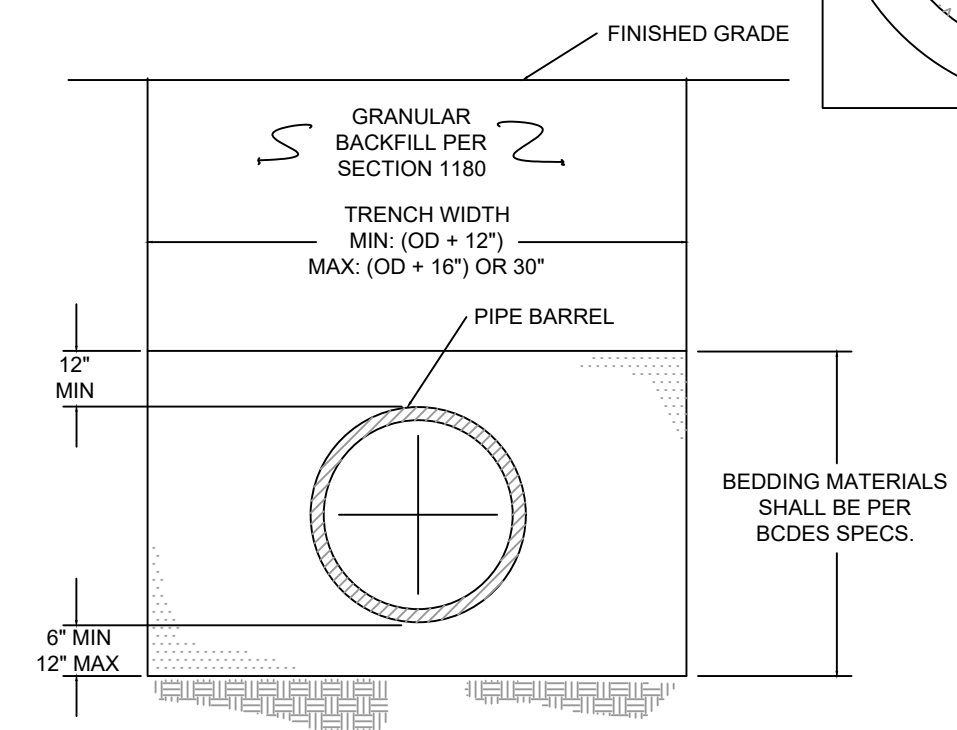
ECLIPSE NO. 2 POST HYDRANT

CONCRETE SIDEWALKS SHALL BE IN ACCORDANCE WITH OHIO D.O.T. SPECIFICATION 609



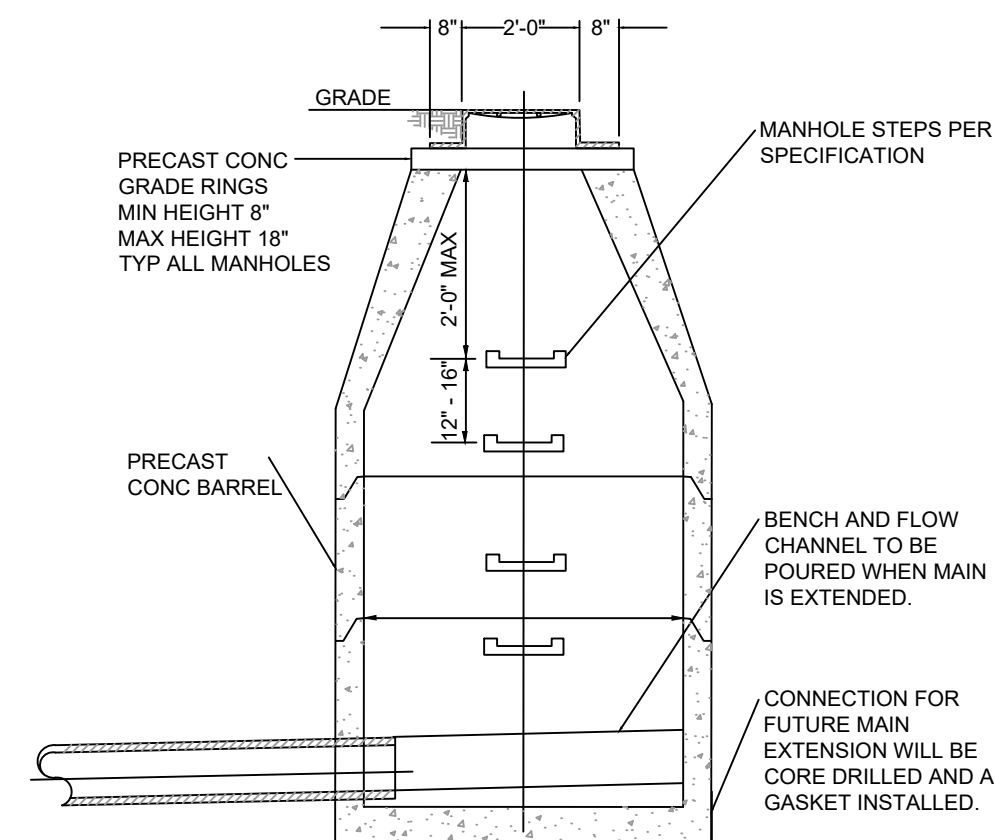
SIDE WALK RESTORATION DETAIL

9
C4.3



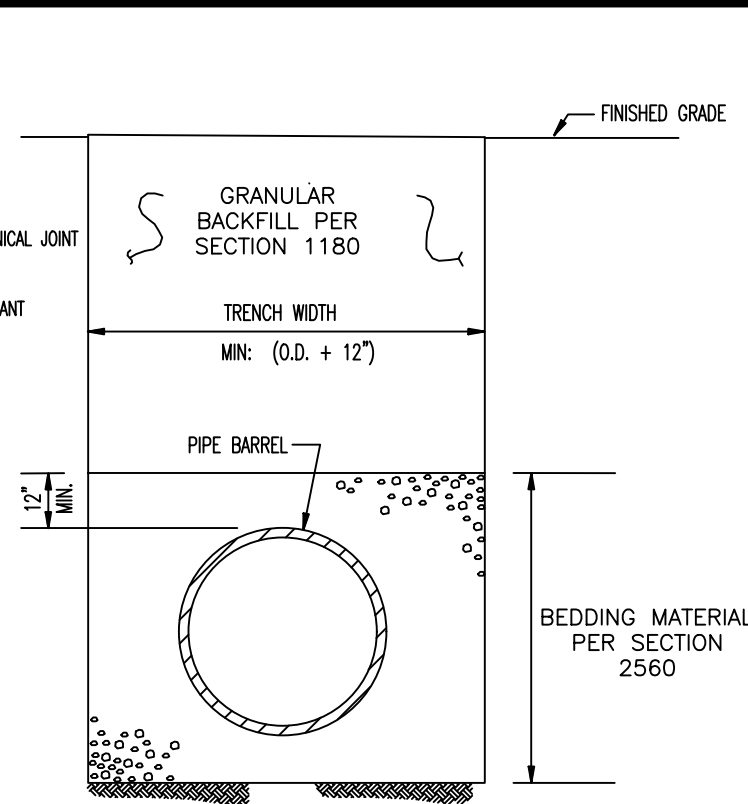
TYPICAL TRENCH DETAIL SEWER INSTALLATION

12
C4.3



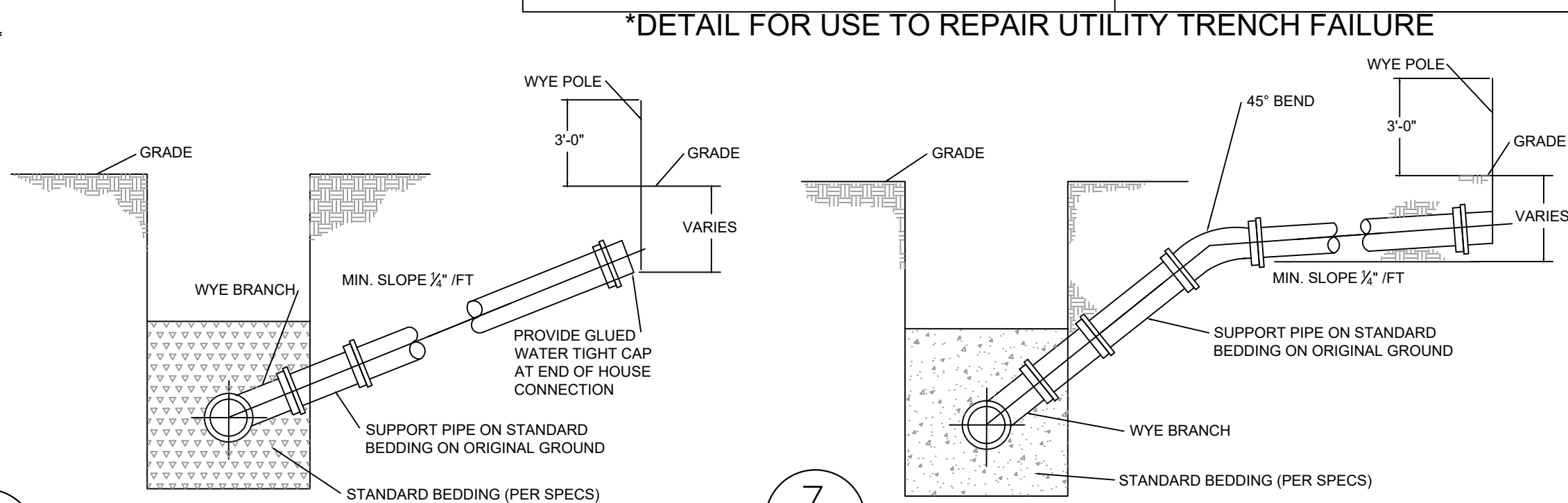
DEAD END MANHOLE DETAIL

13
C4.3



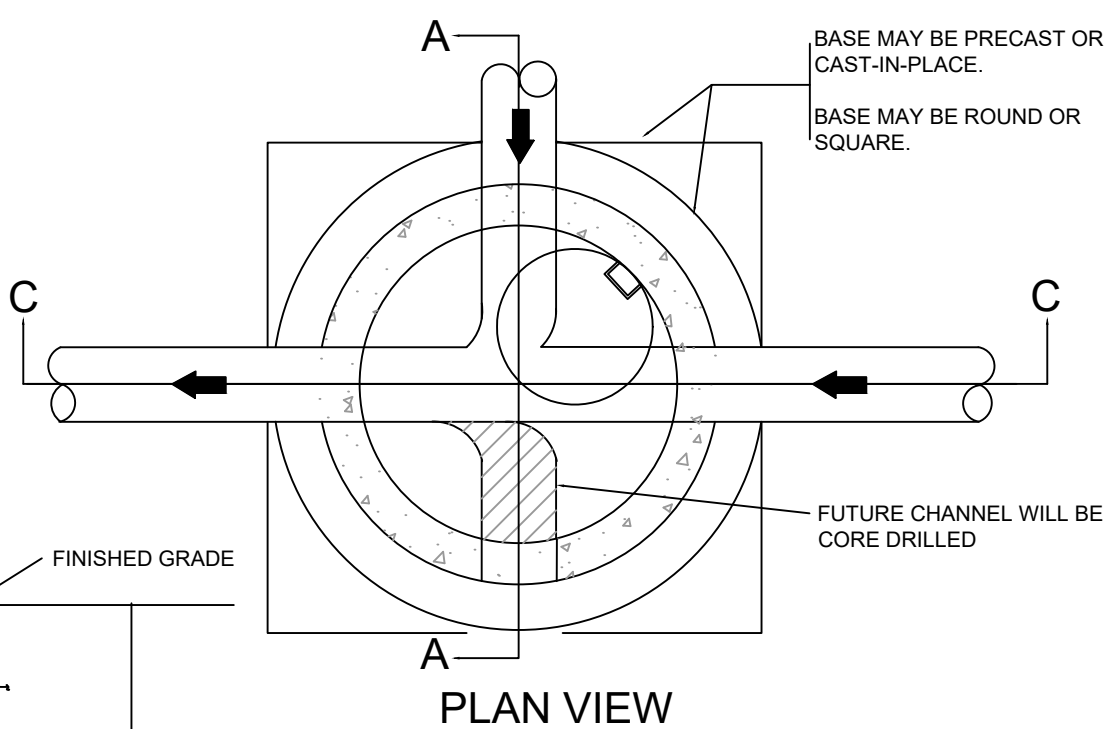
TYPICAL WATER TRENCH DETAIL

3
C4.3



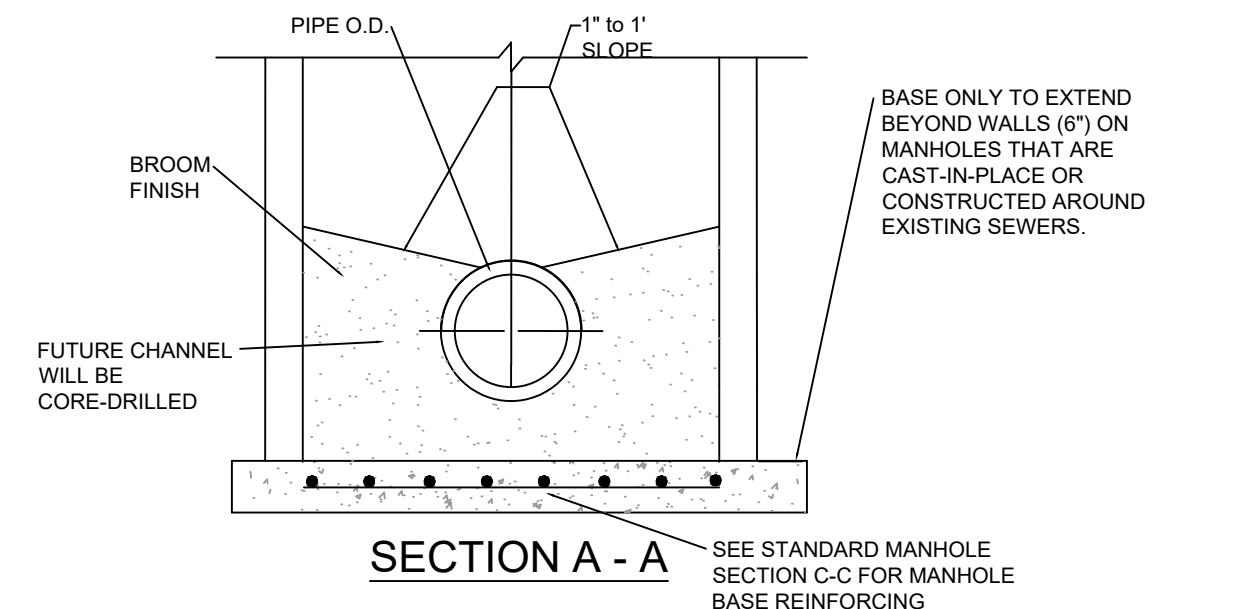
HOUSE CONNECTION FOR SHALLOW SEWER

6
C4.3



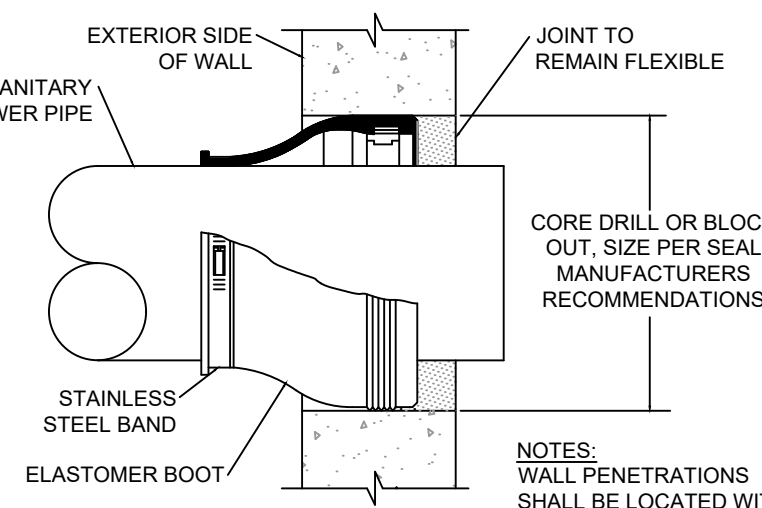
STANDARD CAST IN-PLACE MANHOLE

11
C4.3



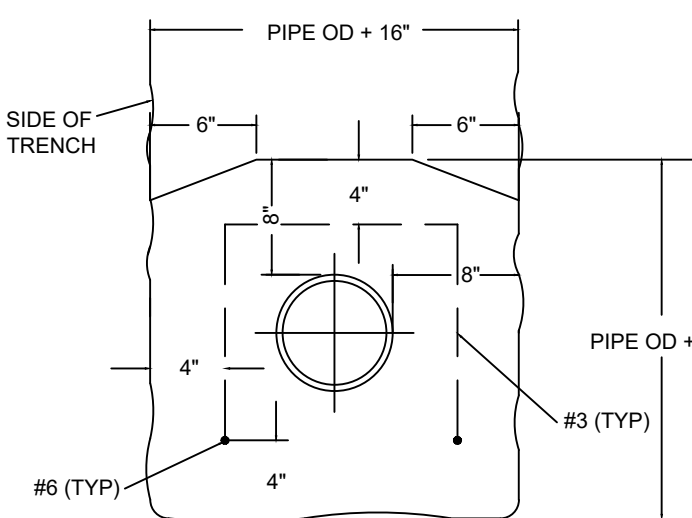
CONCRETE ENCASEMENT

15
C4.3



CONNECTION TO EXISTING MANHOLE

14
C4.3



CONCRETE ENCASEMENT

15
C4.3

PIPE SIZE	CY CONC PER LIN FT	LENGTH OF NO 3 BARS	SPACING (FT) BETWEEN NO 3 BARS
6"	0.121	3'-9"	1.64
8"	0.139	4'-3"	1.25
10"	0.157	4'-9"	1.12
12"	0.177	5'-3"	1.02
16"	0.200	6'-3"	0.85
18"	0.247	6'-10"	0.78
20"	0.270	7'-5"	0.72
24"	0.315	8'-6"	0.63
30"	0.540	10'-0"	0.57

SETTLEMENT REPAIR*

4
C4.3

ITEM SPECIAL - LOW STRENGTH MORTAR BACKFILL MATERIAL

DESCRIPTION: THIS WORK SHALL CONSIST OF THE PLACEMENT OF A FLOWABLE MIXTURE OF PORTLAND CEMENT, FLY ASH, AND SAND FOR BACK-FILLING CONDUIT OR AT OTHER LOCATIONS AS SHOWN ON THE PLANS OR AS SPECIFIED. THE WORK SHALL BE IN ACCORDANCE WITH ODOT ITEMS 603 AND 499 UNLESS OTHERWISE SPECIFIED HEREIN.

MATERIALS: MATERIALS SHALL BE:

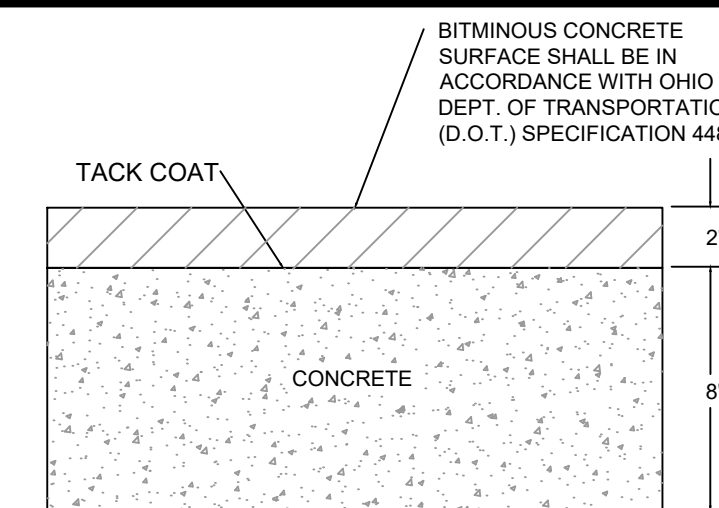
- CEMENT 701.01 OR 701.04
- FLY ASH SHALL MEET ASTM C-618
- FINE AGGREGATE SHALL BE NEUTRAL SAND OR SAND MANUFACTURED FROM STONE, GRAVEL, OR AIR-COOLED SLUG. THE GRADUATION OF THE SAND SHALL MEET THE REQUIREMENTS OF 703.05. THE SAND SHALL BE FINE ENOUGH TO STAY IN SUSPENSION IN THE MIXTURE TO THE EXTENT REQUIRED FOR PROPER FLOW. THE ENGINEER RESERVES THE RIGHT TO REJECT THE SAND IF THE FLOWABLE MIXTURE CANNOT BE PRODUCED.
- WATER USED FOR MORTAR BACKFILL SHALL BE FREE FROM OIL, ACID, STRONG ALKALIDES OR VEGETABLE MATTER.
- SUMPS MEASURED IN THE ORDINARY WAY WILL BE 8" OR HIGHER FOR PROPER PLACEMENT OF THE FLOWABLE MATERIAL.

MORTAR MIX PROPORTIONING: THE INITIAL TRIAL MIXTURE SHALL CONSIST OF THE FOLLOWING QUANTITIES OF MATERIALS PER CUBIC YARD:

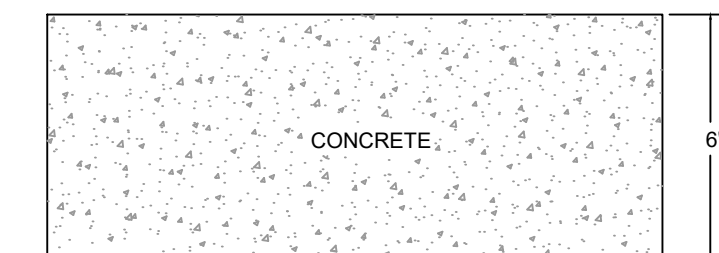
CLASS LSM - 50		
CEMENT	50	LBS.
FLY ASH	250	LBS.
SAND	2910	LBS.
WATER (TARGET)	500	LBS.

ADJUSTMENTS TO THE PROPORTIONS MAY BE MADE BY THE ENGINEER PROVIDING THE TOTAL ABSOLUTE VOLUME OF THE MATERIALS IS MAINTAINED. THIS ITEM WILL BE INCLUDED IN THE STANDARD 603 INSTALLATION. THIS WILL NOT BE AN ADDITIONAL PAY ITEM, BUT REPLACEMENT FOR THE NORMAL BACKFILL.

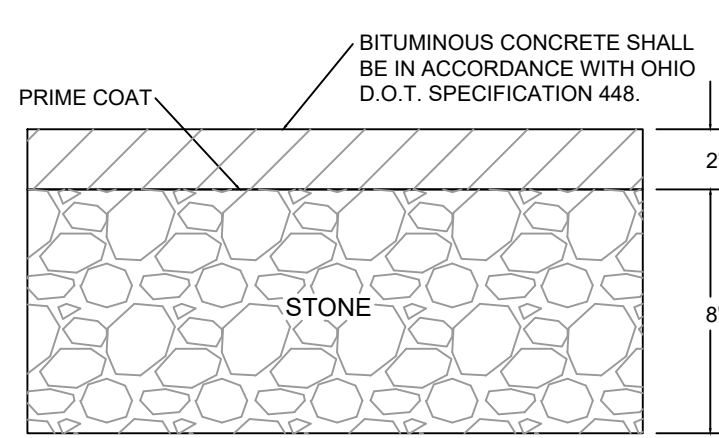
*DETAIL FOR USE TO REPAIR UTILITY TRENCH FAILURE



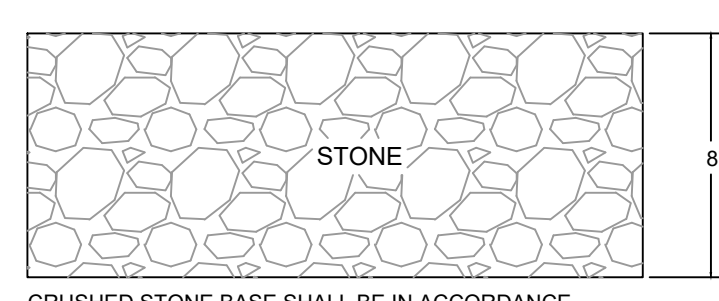
TYPE "A"



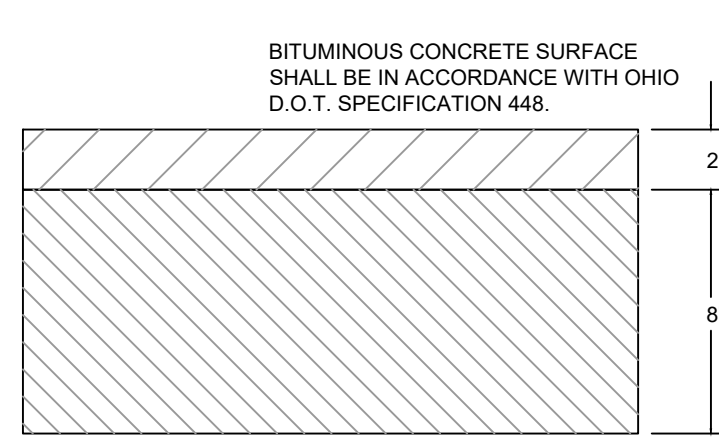
TYPE "B"



TYPE "C"



TYPE "D"



TYPE "E"

PAVEMENT REPLACEMENT DETAILS

10
C4.3

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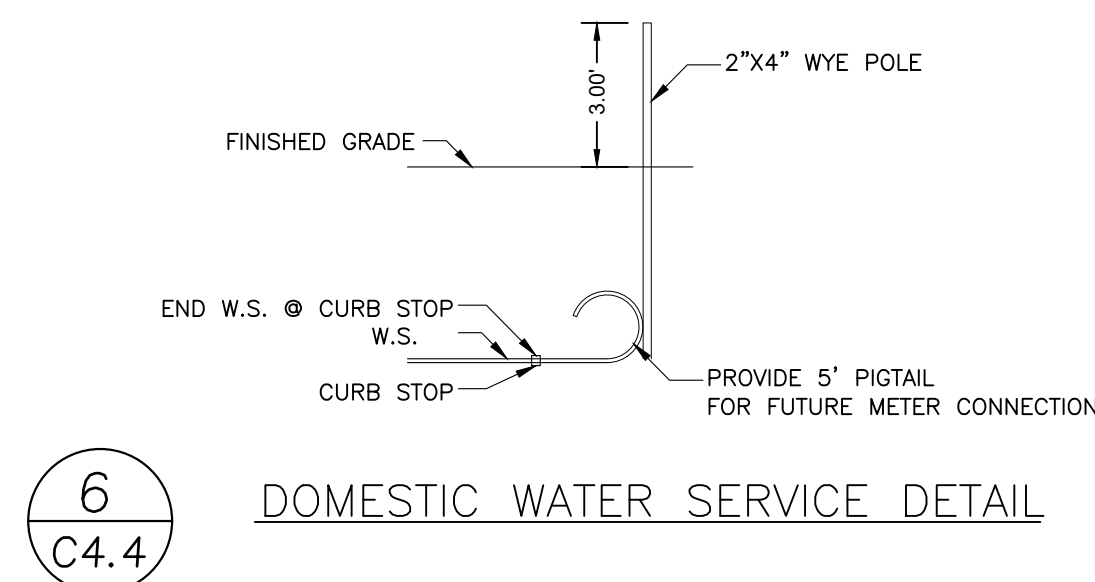
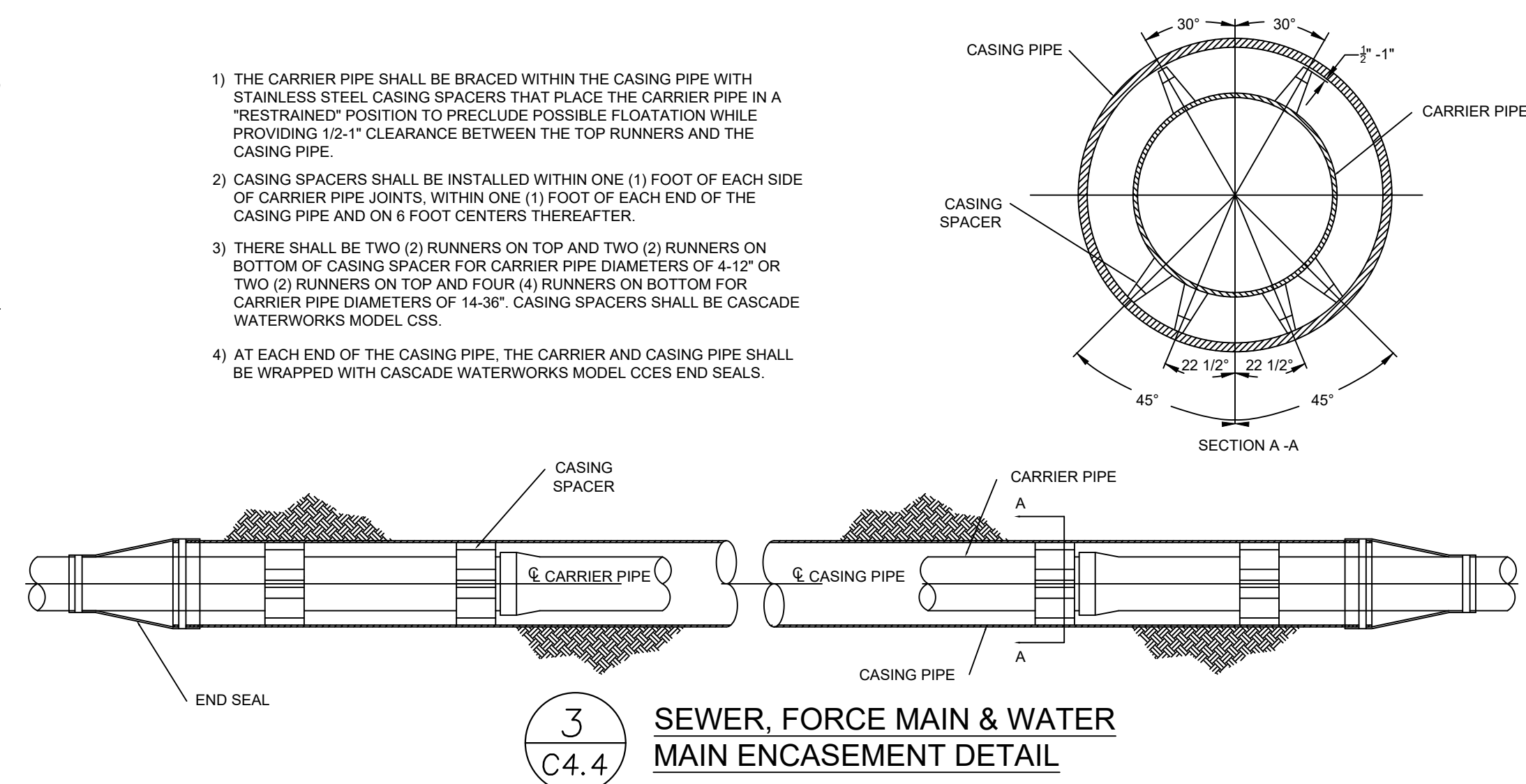
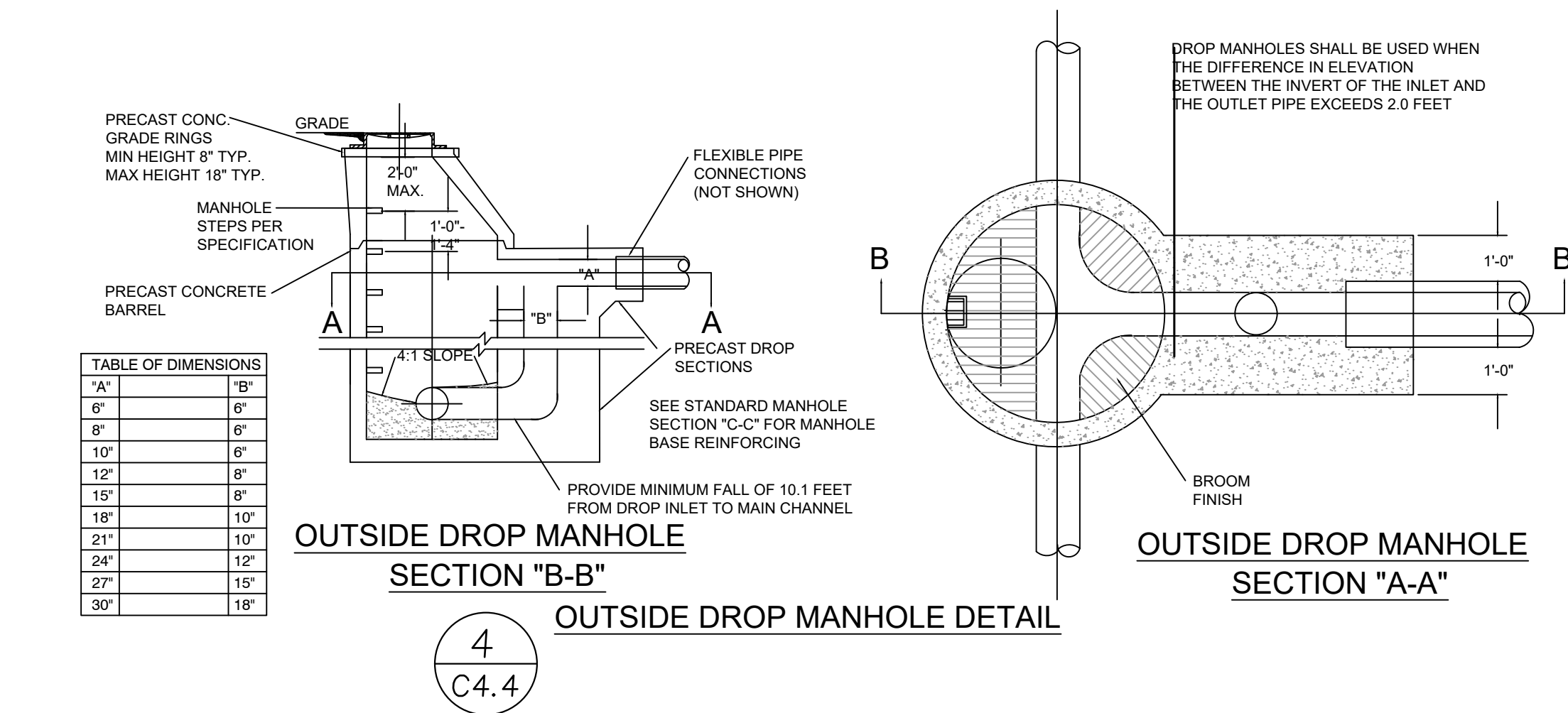
THE OAKS AT WETHERINGTON
ROADWAY AND MISC SITE UPDATE
LIBERTY WAY & TYLERS PLACE BLVD
SECTION 18, TOWN 3, RANGE 2
WEST CHESTER TOWNSHIP
BUTLER COUNTY, OHIO

WATER & SEWER DETAILS

bayer
becker
www.bayerbecker.com
6900 Tylersville Road, Suite A
Mason, OH 45040 - 513.336.6600

Drawing: 15M053-000 UTILITY
Drawn by: AJW
Checked by: JSD
Issue Date: 06-17-19
Sheet:

C4.3



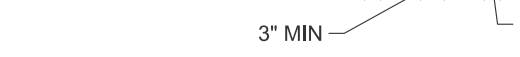
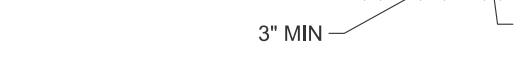
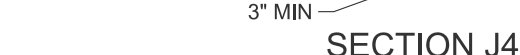
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② CONTRACTOR MAY PROVIDE LSM TRENCH BACKFILL AS AN ALTERNATE TO SAND BACKFILL. IF LSM IS USED AS THE TRENCH BACKFILL, THE MIN. SEPARATION BETWEEN COMMUNICATION & ELECTRIC CONDUITS MAY BE REDUCED FROM 1'-0" TO 6"



TRENCH EXCAVATION & BACKFILL TO BE PROVIDED BY SITE CONTRACTOR. UTILITY COMPANY TO PROVIDE GAS CONDUIT & INSTALL PIPE AND BEDDING WITHIN TRENCH. SITE CONTRACTOR TO

[illegible]

**THE OAKS AT WETHERINGTON
ROADWAY AND MISC SITE UPDATE**
LIBERTY WAY & TYLERS PLACE BLVD
SECTION 18, TOWN 3, RANGE 2
WEST CHESTER TOWNSHIP
BUTLER COUNTY, OHIO

UTILITY DETAILS

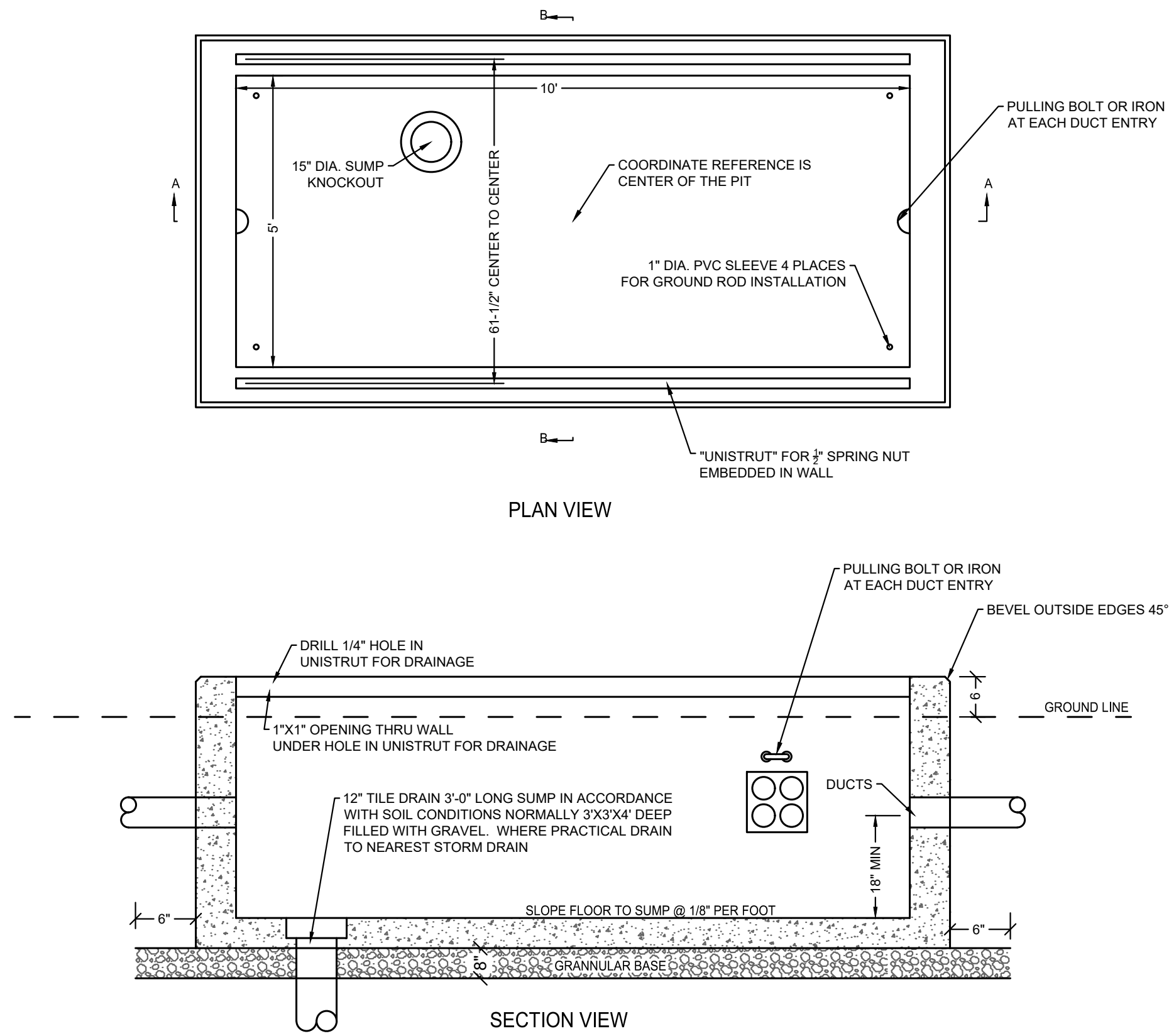
**bayer
becker**

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Mason, OH 45040 • 513.336.6600

Drawing:	15M053-000 UTILITY
Drawn by:	AJW
Checked By:	JSD
Issue Date:	06-17-19

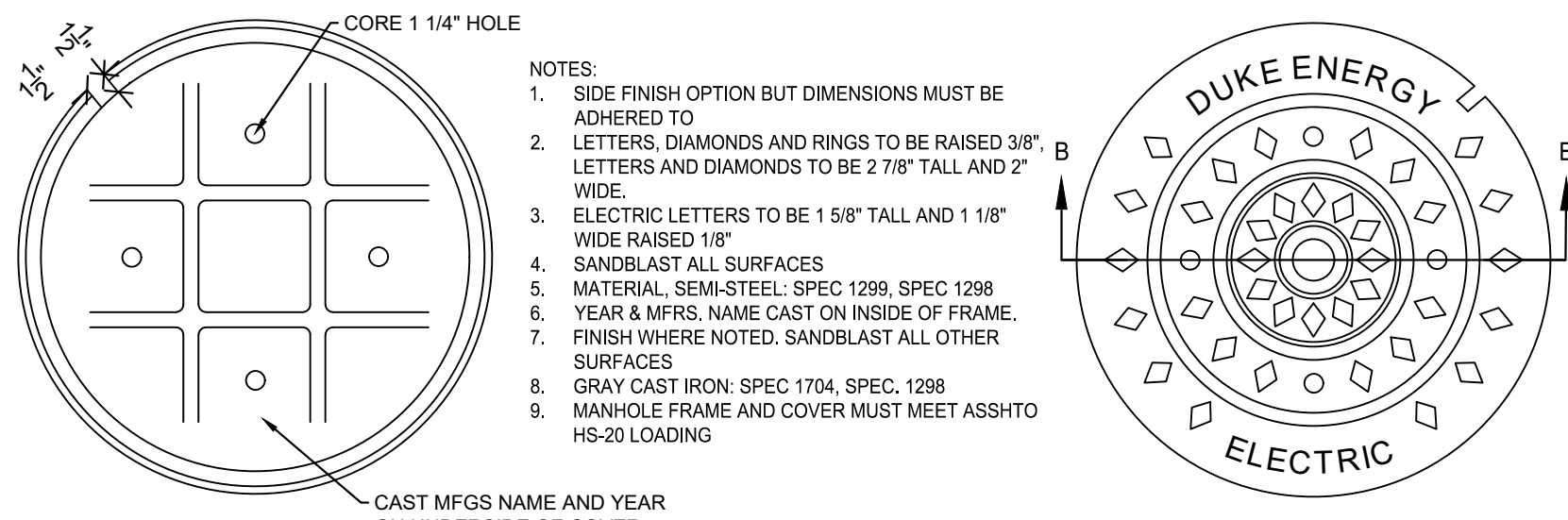
C4.6

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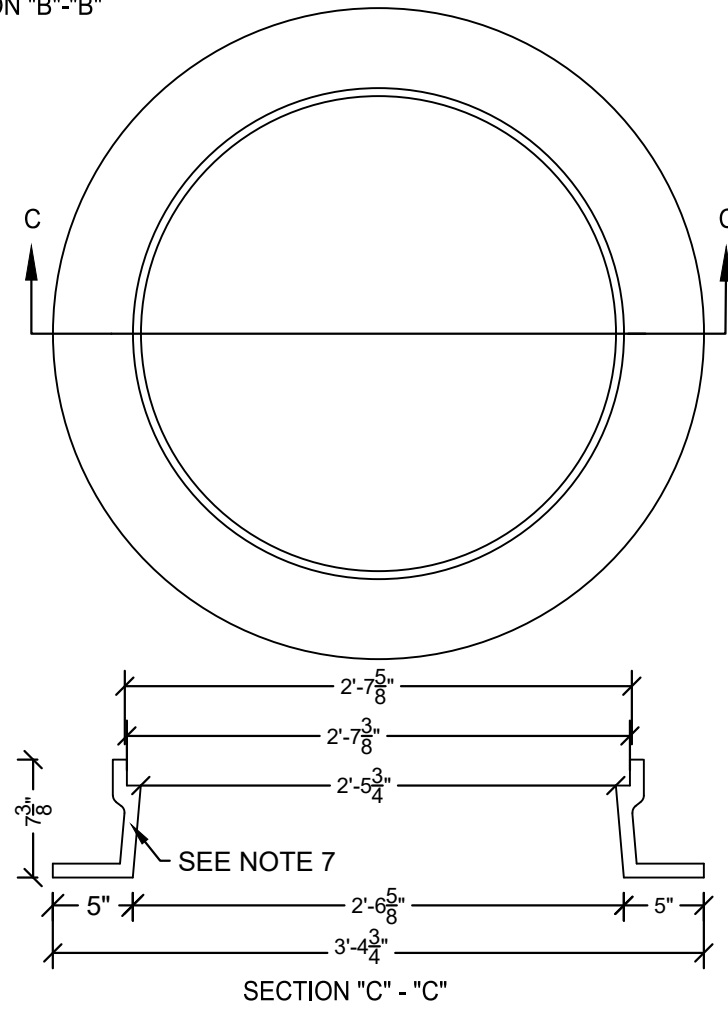
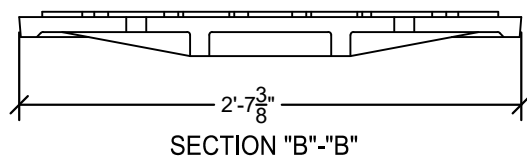


- NOTES:
- WALLS AND FLOORS MAY BE OF ANY THICKNESS AS LONG AS THE CABLE PIT IS STRUCTURALLY SOUND AND CAPABLE OF CARRYING THE WEIGHT OF THE SWITCHGEAR (2000 LBS MAX).
 - CONDUIT SHOULD ENTER THE CENTER OF THE END WALLS AND APPROXIMATELY 18" FROM THE ENDS OF THE LONG WALLS. KNOCKOUTS, SLEEVES OR "FORMEX" INSERTS SHOULD ACCOMMODATE 4-6" ID SCH. 40 PVC DUCTS AT EACH LOCATION WHERE CONDUIT WILL ENTER THE PIT.
 - THERE IS TO BE A PULLING BOLT OR IRON CAPABLE OF WITHSTANDING 25,000 POUNDS OF TENSION INSTALLED IMMEDIATELY ABOVE EACH CONDUIT ENTRY.
 - INDIVIDUAL CONDUIT SHOULD BE SEPARATED FROM EACH OTHER BY 4" (OUTSIDE TO OUTSIDE) WHEN THEY ENTER THE PIT. ENDS OF CONDUIT SHOULD BE TERMINATED IN A "BELL END" FITTING THAT IS FINISHED FLUSH WITH THE INSIDE WALL OF THE CABLE PIT.
 - REFER TO DUKE ENERGY STANDARD DRAWING FIG. 127 FOR ADDITIONAL DETAILS.

1 ELECTRIC CABLE PIT
C4.7 NOT TO SCALE

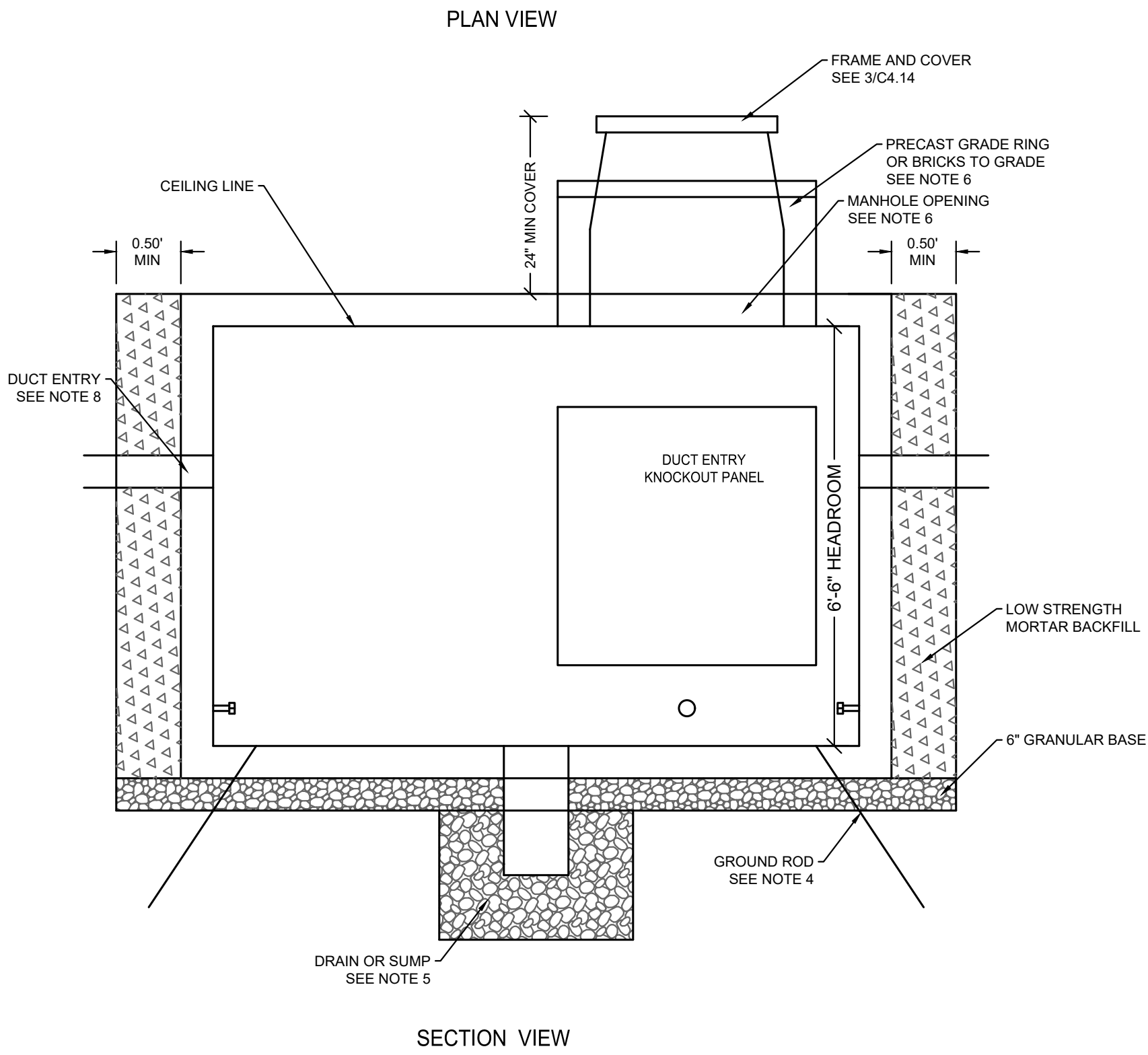
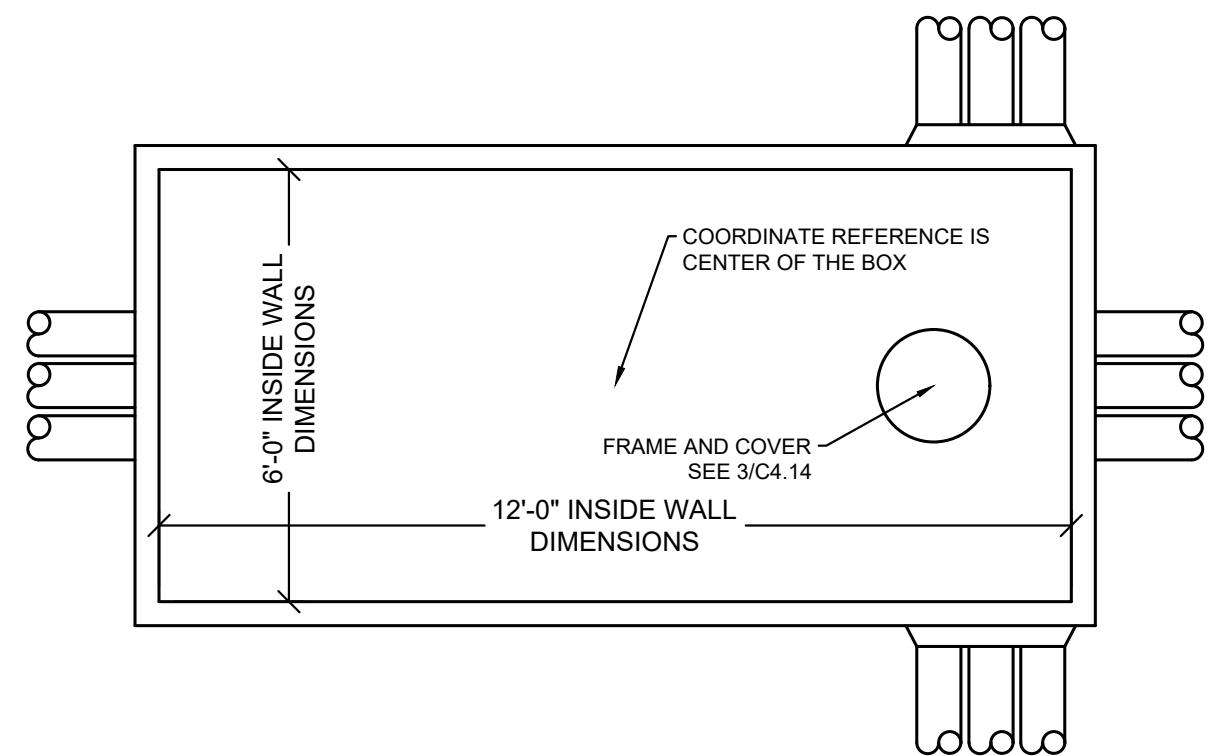


- NOTES:
- YEAR & MFRS. NAME CAST ON INSIDE OF FRAME.
 - FINISH WHERE NOTED. SANDBLAST ALL OTHER SURFACES.
 - GRAY CAST IRON: SPEC 1704, SPEC. 1298



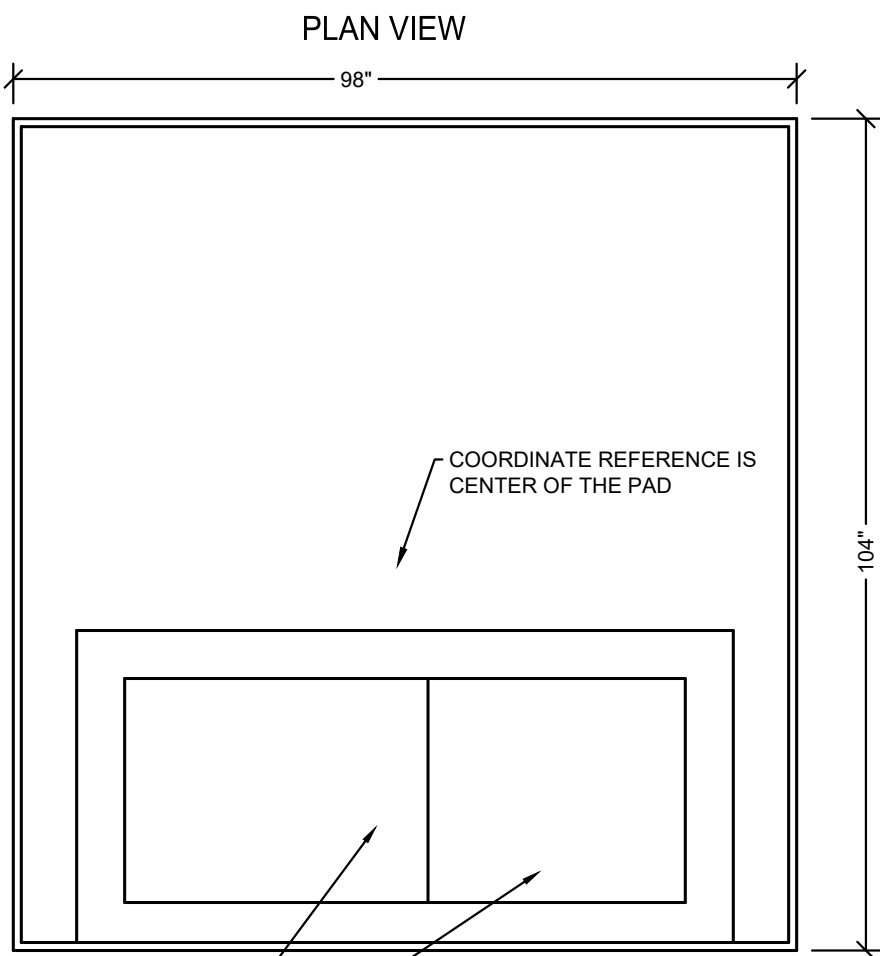
NOTE: CONTRACTOR SHALL ADJUST EXISTING AND PROPOSED MANHOLE GRATES WITHIN THE HIKER/BIKER PATH TO BE FLUSH WITH THE SURFACE OF THE PAVEMENT ON ALL SIDES. SKID RESISTANT MANHOLE COVERS SHALL BE PROVIDED FOR ALL MANHOLES PROPOSED WITHIN THE LIMITS OF THE PATH.

3 ELECTRIC MANHOLE COVER
C4.7 NOT TO SCALE



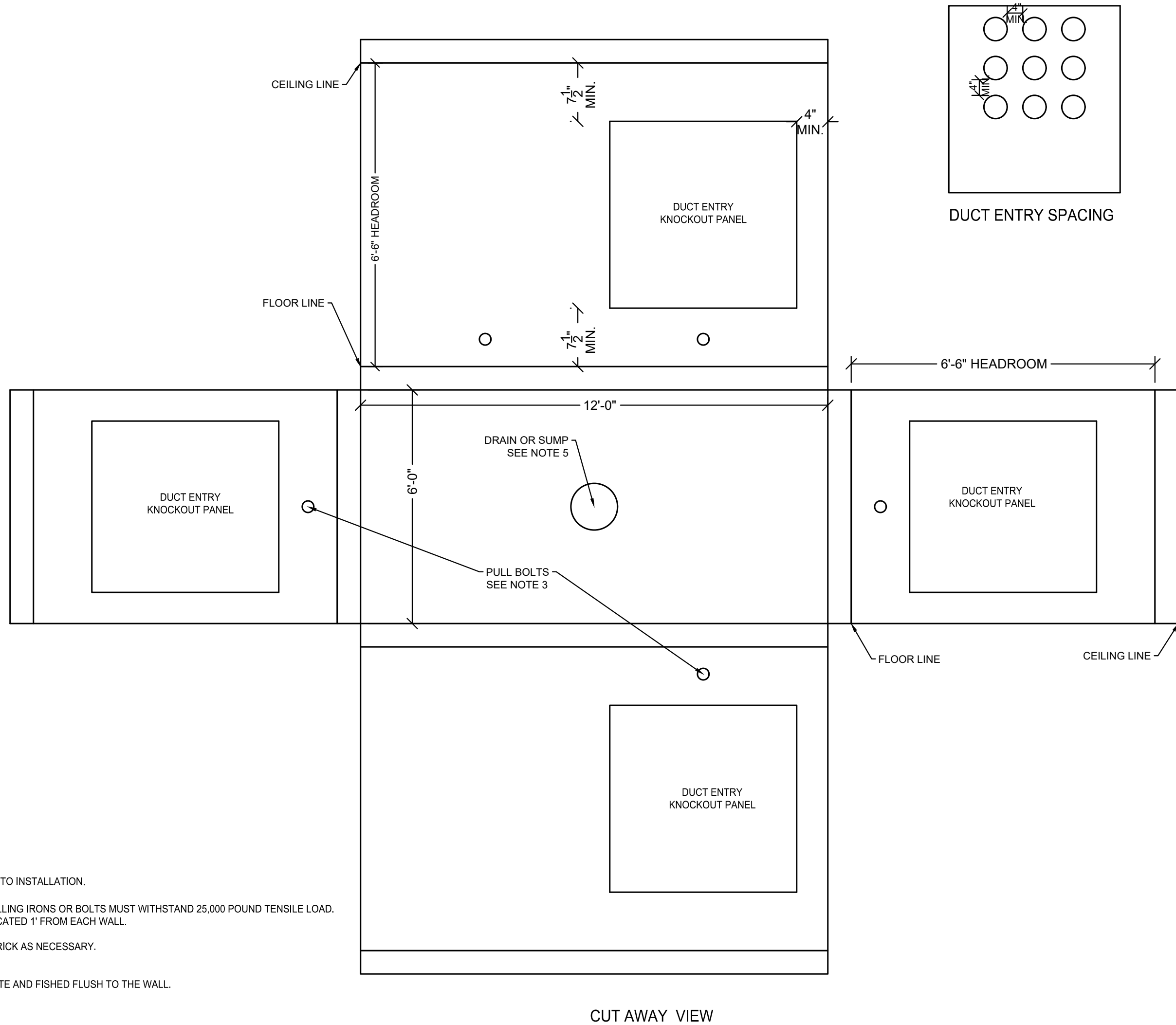
- NOTES:
- MANHOLES MUST BE DESIGNED TO AASHTO HS-20 LOADING CRITERIA. COPIES OF SUPPLIERS DESIGN CALCULATIONS ARE TO BE PROVIDED TO DUKE ENERGY PRIOR TO INSTALLATION.
 - A SUMP, 3' SQUARE AND 3' DEEP FILLED WITH GRAVEL SHOULD BE PLACED UNDER THE SUMP HOLE KNOCKOUT IN THE MANHOLE.
 - MANHOLES SHALL HAVE 3" X 8' LONG STAINLESS STEEL PULL BOLTS OR 3" PULLING IRONS INCORPORATED INTO WALLS BELOW EACH DUCT ENTRY. THE WALL AND PULLING IRONS OR BOLTS MUST WITHSTAND 25,000 POUND TENSILE LOAD.
 - MANHOLE FLOORS ARE TO HAVE A 1" ID PVC SLEEVE INSTALLED THROUGH THE FLOOR IN EACH CORNER FOR GROUND ROD INSTALLATIONS. SLEEVES ARE TO BE LOCATED 1' FROM EACH WALL.
 - MANHOLE FLOORS ARE TO HAVE A 12" DIAMETER RECESS LOCATED IN THE CENTER OF THE FLOOR FOR PUMPING OUT WATER.
 - MANHOLE OPENING TO BE 36" DIAMETER THROUGH THE CEILING. THE MANHOLE OPENING IS TO BE EXTENDED TO FINISH GRADE WITH PRECAST NECK SECTIONS OR BRICK AS NECESSARY.
 - DUCTS ENTERING MANHOLE ARE TO BE FINISHED OFF WITH BELL ENDS FITTED FLUSH TO THE INSIDE WALLS.
 - DUCTS SHOULD NETER MANHOLES AT LEAST 8" FROM SIDEWALLS AND AT LEAST 15" DOWN FROM THE CEILING OR UP FROM THE FLOOR.
 - DUCTS SHOULD BE SPREAD OUT AS THEY ENTER THE MANHOLES SEPARATED FROM EACH OTHER BY 4". THE AREA BETWEEN DUCTS SHALL BE FILLED WITH CONCRETE AND FISHED FLUSH TO THE WALL.
 - SEE DUKE ENERGY STANDARD DRAWING FIG. 125 FOR ADDITIONAL DETAILS

4 ELECTRIC MANHOLE
C4.7 NOT TO SCALE



2 TRANSFORMER PAD
C4.7 NOT TO SCALE

- NOTES:
- DUKE ENERGY SHALL BE RESPONSIBLE FOR DETERMINING THE FINAL LOCATION FOR THE TRANSFORMER PAD. THE CUSTOMER SHALL PROVIDE A LEVEL LOCATION FOR A PADMOUNTED TRANSFORMER INSTALLATION AS DIRECTED BY THE COMPANY. THE TRANSFORMER MUST BE LOCATED ADJACENT TO AND WITHIN 10 FEET OF A DRIVEWAY OR OTHER AREA ACCESSIBLE TO DUKE ENERGY CONSTRUCTION AND MAINTENANCE EQUIPMENT. NO PART OF THE TRANSFORMER PAD MAY BE WITHIN 10 FT FROM ANY COMBUSTIBLE WALL, WINDOW, OR VENTILATION OPENING AND 20 FEET FROM ANY DOORWAY IN A BUILDING. THERE MUST BE AT LEAST 3 FEET OF CLEARANCE BETWEEN CUSTOMER EQUIPMENT OR LANDSCAPING AND THE SIDE OF THE TRANSFORMER PAD AND 10 FEET OF CLEARANCE TO THE FRONT OF THE TRANSFORMER PAD.
 - CONCRETE SHALL BE REINFORCED WITH #4 BAR IN EACH DIRECTION AT 8" O.C.
 - THE SURFACE OF THE TRANSFORMER PAD SHALL BE FLAT, SMOOTH AND LEVEL WITHIN AN INCH IN ALL DIRECTIONS.
 - THE EDGE OF THE TRANSFORMER PAD SHALL HAVE A 1" BEVEL FORMED INTO THE TOP EDGE.
 - THE CUSTOMER SHALL PROVIDE ALL MATERIALS AND EXCAVATION LABOR NECESSARY TO INSTALL THE TRANSFORMER PAD.
 - THE CUSTOMER SHALL INSTALL, OWN AND MAINTAIN CONDUITS ENTERING THE TRANSFORMER PAD. IT SHALL BE INSTALLED IN ACCORD WITH DUKE ENERGY STANDARDS. THE CONDUIT SHALL BE MADE FROM POLYVINYL CHLORIDE AND SUITABLE FOR USE WITH UNDERGROUND ELECTRIC DISTRIBUTION CABLES RATED AT 90° C. ALL CONDUITS SHALL HAVE A UL LISTING AND SCHEDULE 40 RATINGS CLEARLY PRINTED ON THE EXTERIOR SURFACE. FOR PRIMARY JACKETED CONCENTRIC NEUTRAL PRIMARY CABLES, THE MINIMUM INSIDE DIAMETER OF THE CONDUIT SHALL BE 5". DUKE ENERGY MAY REQUIRE LARGER SIZED. ALL CONDUITS MUST HAVE A PULL STRING INSTALLED AND BE CAPPED TO PREVENT DEBRIS FROM GETTING INTO THE CONDUIT.
 - THE MAXIMUM NUMBER OF CONDUITS ENTERING INTO THE SECONDARY AREA OF THE PAD OPENING SHALL BE 12 (4" DIA) UNLESS SPECIFICALLY APPROVED BY A DUKE ENERGY CUSTOMER PROJECTS COORDINATOR.
 - REFER TO DUKE ENERGY STANDARD DRAWING 112, 113, 122A



THE OAKS AT WETHERINGTON
ROADWAY AND MISC SITE UPDATE
LIBERTY WAY & TYLERS PLACE BLVD
SECTION 18, TOWN 3, RANGE 2
WEST CHESTER TOWNSHIP
BUTLER COUNTY, OHIO

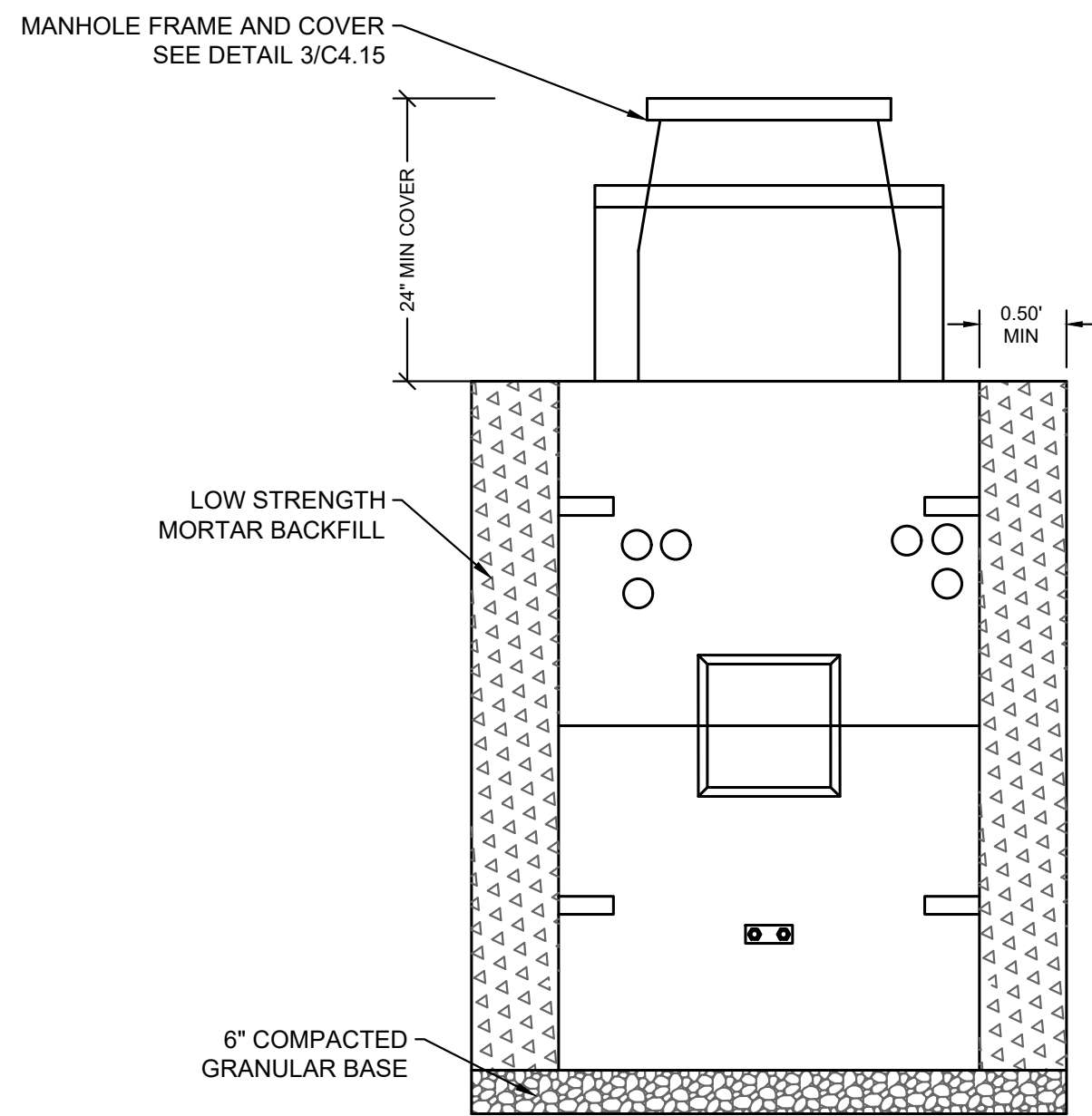
bayer becker
www.bayerbecker.com
6900 Tyersville Road, Suite A
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Drawing: 15M053-000 UTILITY
Drawn by: AJW
Checked By: JSD
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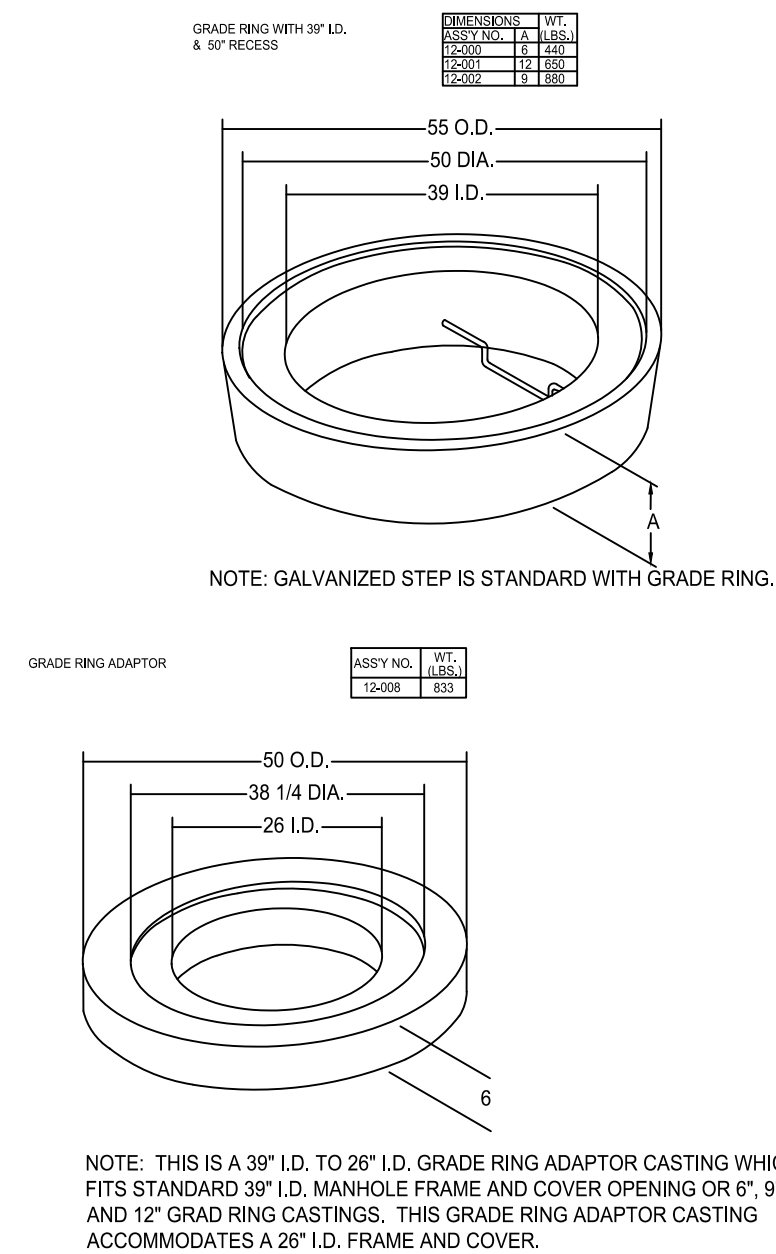
C4.7

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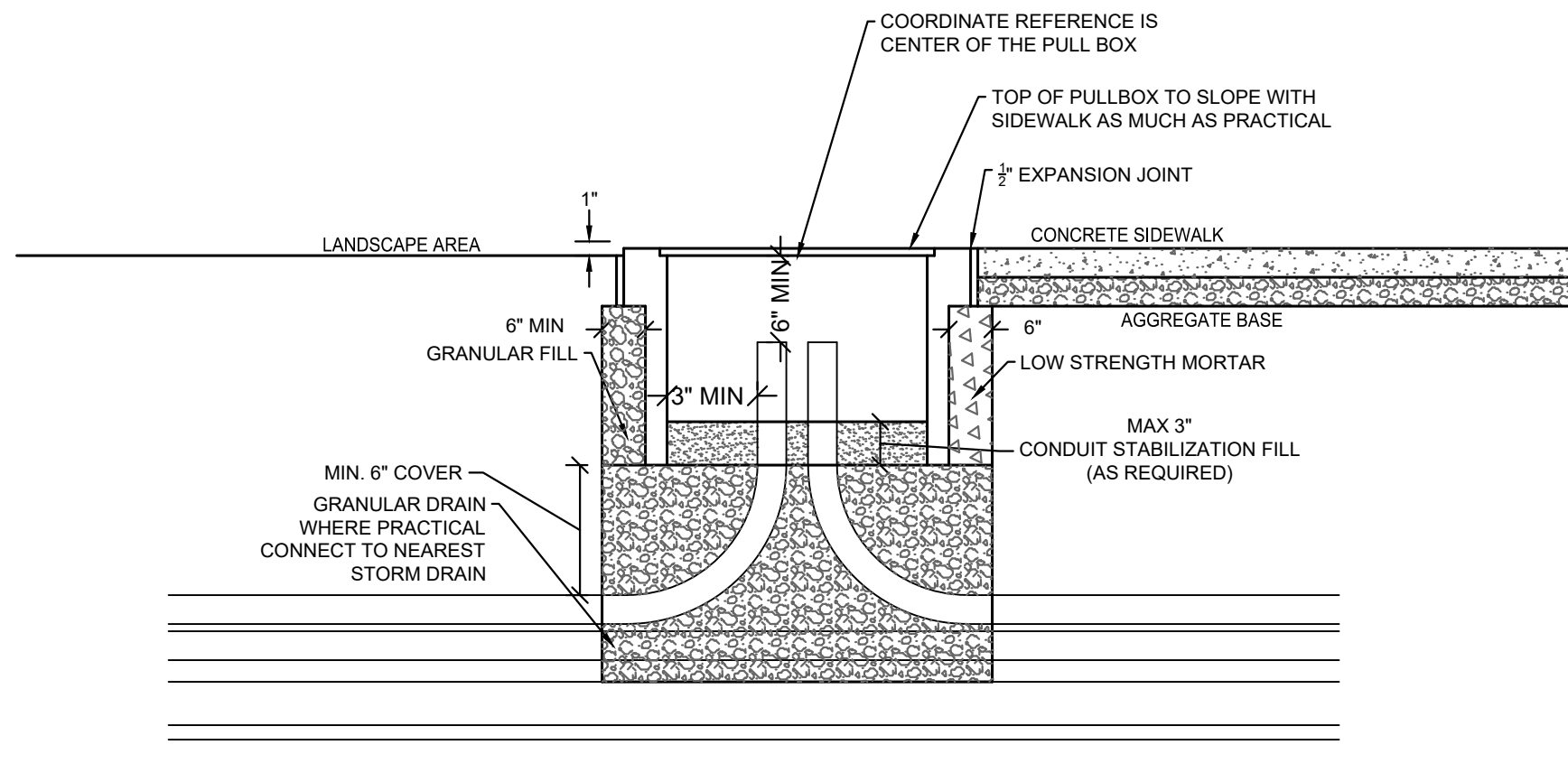
Item	Revision Description	Date	Drawn	Chk
1				
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9				



OPTION	A	B	C	LBS.
OPTION 1	27	5 5/8	46	550
OPTION 2	27	10	46	625
OPTION 3	30	5 5/8	46	600
OPTION 4	30	10	46	695
OPTION 5	30	5 5/8	49	685
OPTION 6	30	10	49	760
OPTION 7	36	10	49	865



3 TELEPHONE MANHOLE COVER
C4.8 NOT TO SCALE



- NOTES:
1. PRECAST POLYMER CONCRETE PULL BOX SHALL MEET THE REQUIREMENTS OF THE UTILITY COMPANY.
 2. PULL BOX & COVER SHALL BE WITHSTAND A MINIMUM DESIGN LOAD OF 22,500 LBS.
 3. DIMENSIONS SHOWN ARE NOMINAL AND CAN VARY FROM MANUFACTURER TO MANUFACTURER.
 4. ALL LOCK DOWN BOLTS AND HARDWARE SHALL BE STAINLESS STEEL, GASKETED AND VANDAL PROOF.
 5. PULL BOXES SHALL MATCH THE SLOPES AND GRADES OF THE ADJOINING CONCRETE WHERE APPLICABLE.
 6. COLOR OF TOP SHALL CLOSELY MATCH ADJOINING SURFACES WHERE APPLICABLE.
 7. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS, COLOR PALLET SAMPLE AND MANUFACTURERS CERTIFICATION FOR APPROVAL.

TYPE	A	B	C	IDENTIFICATION
CABLE	24"	48"	24" MIN	CABLE
TELEPHONE	48"	48"	24" MIN	TELEPHONE

1" PREFORMED EXPANSION MATERIAL REQUIRED WHEN ABUTTING CONCRETE

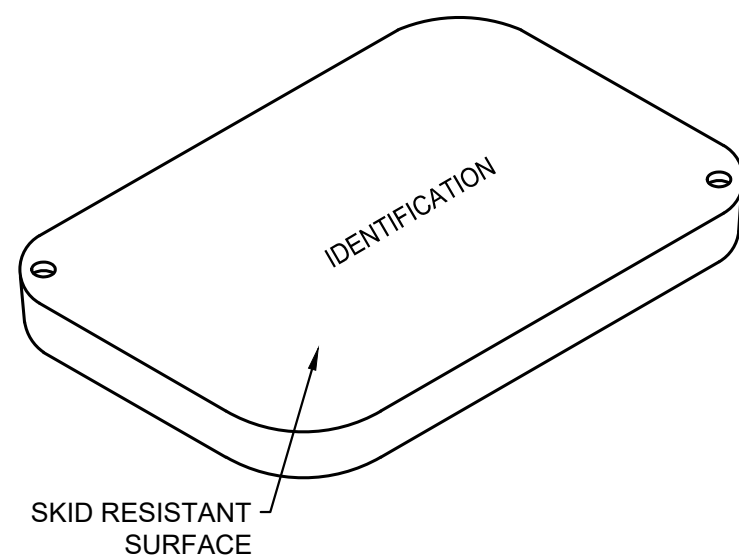
A

B

C

6" THICK ODOT 304 BASE

This diagram illustrates a precast concrete manhole assembly. The assembly consists of a rectangular manhole box with a flared top and a base. The base is shown resting on a 6" thick ODOT 304 base. The manhole box has a 1" preformed expansion material required when abutting concrete. The dimensions are labeled: A is the length of the manhole box, B is the width of the manhole box, and C is the height of the manhole box.



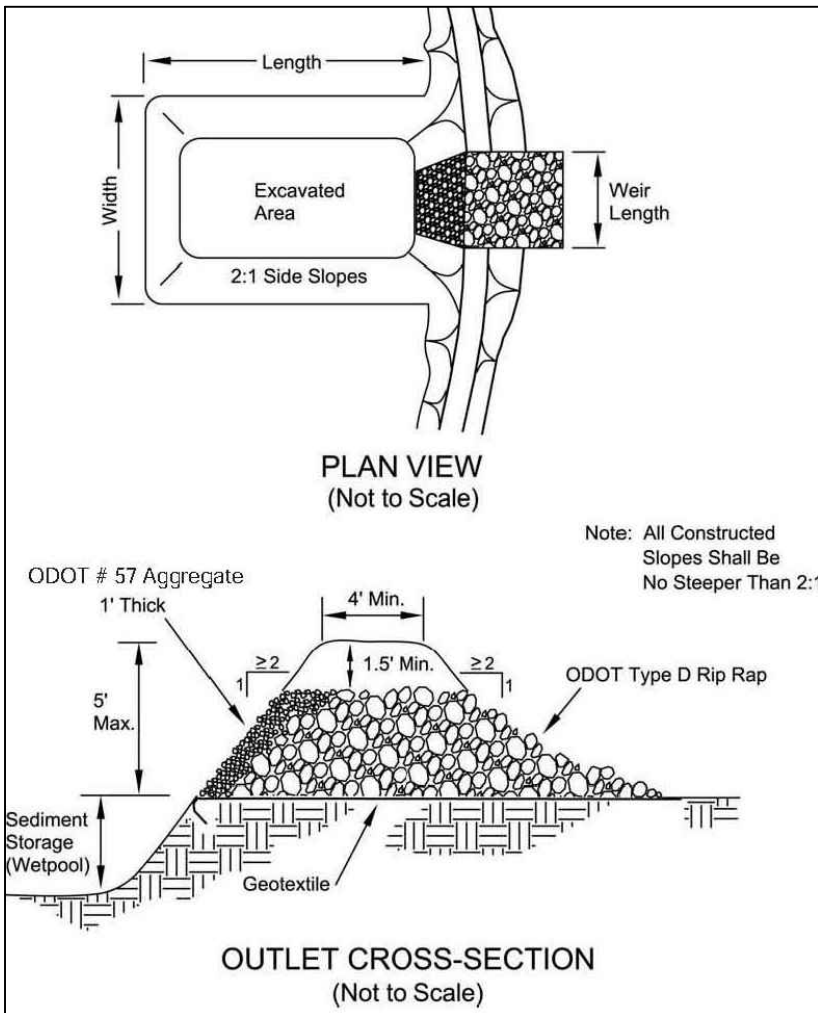
5 CONDUIT PULL BOX
C4.8 NOT TO SCALE

NOTE: TELEPHONE MANHOLE SHALL BE 8'X4'X7" TYPE "J" MANHOLE AS MANUFACTURED BY HARTFORD CONCRETE PRODUCTS, INC. OR APPROVED EQUAL. MANHOLES ARE TO BE PROVIDED FOR INSTALLATION BY CINCINNATI BELL, COORDINATE DELIVERY SCHEDULE WITH CINCINNATI BELL. SEE DETAIL 2/C4.15 FOR MANHOLE BEDDING & BACKFILL.

1 TELEPHONE MANHOLE TYPE J
C48 NOT TO SCALE

18 SEDIMENT TRAPS

1. WORK SHALL CONSIST OF THE INSTALLATION, MAINTENANCE AND REMOVAL OF ALL SEDIMENT TRAPS AT THE LOCATIONS DESIGNATED ON THE DRAWINGS.
2. SEDIMENT TRAPS SHALL BE CONSTRUCTED TO THE DIMENSIONS SPECIFIED ON THE DRAWINGS AND CRITICAL POINTS OF THE DRAINAGE AND DISCHARGE AREAS.
3. THE AREA BENEATH THE EMBANKMENT SHALL BE CLEARED, GRUBBED AND STRIPPED OF VEGETATION TO A MINIMUM DEPTH OF SIX (6) INCHES. THE POOL SHALL BE CLEARED AS NEEDED TO FACILITATE SEDIMENT CLEANSOUT.
4. FILL USED FOR THE EMBANKMENT SHALL BE EVALUATED TO ASSURE ITS STABILITY AND IT MUST BE FREE OF ROCKS AND OTHER WOODY VEGETATION. LARGE ROCKS OR BRANCHES OR OTHER OBJECTIONABLE MATERIALS. FILL MATERIAL SHALL BE PLACED IN SIX (6) INCH LIFTS AND SHALL BE COMPACTED BY TRAVERSING WITH A SHEEPSFOOT OR OTHER APPROVED COMPACTION EQUIPMENT. FILL HEIGHT SHALL BE INCREASED FIVE (5) PERCENT TO ALLOW FOR STRUCTURE/FOUNDATION SETTLEMENT. CONSTRUCTION SHALL NOT BE PERMITTED IF THE FILL IS UNDESIRABLE OR COMPACTION SURFACE IS FROZEN.
5. THE MAXIMUM HEIGHT OF EMBANKMENT SHALL BE FIVE (5) FEET. ALL CUT AND FILL SLOPES SHALL BE 2:1 (H:V) OR FLATTER.
6. A MINIMUM DRAINAGE VOLUME BEHIND THE CREST OF THE OUTLET OF 67 YD3. FOR EVERY ACRE OF CATCHMENT CONTRIBUTING DRAINAGE AREA SHALL BE ACHIEVED AT EACH LOCATION NOTED ON THE DRAWINGS WITH A MINIMUM OF 100 YD3 OF DRAINAGE VOLUME PROVIDED BELOW THIS ELEVATION.
7. TEMPORARY SEEDING SHALL BE ESTABLISHED AND MAINTAINED OVER THE USEFUL LIFE OF THE PRACTICE.
8. THE OUTLET FOR THE SEDIMENT TRAP STRUCTURE SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN ON THE DRAWINGS.
9. THE OUTLET SHALL BE CONSTRUCTED USING THE MATERIALS SPECIFIED ON THE DRAWINGS. WHERE GEOTEXTILE IS USED, ALL OVERLAPS SHALL BE A MINIMUM OF TWO (2) FEET OR AS SPECIFIED BY THE MANUFACTURER, WHICHEVER IS GREATER. ALL OVERLAPS SHALL BE MADE WITH THE UPPER MOST LAYER PLACED LAST. GEOTEXTILE SHALL BE KEPT AT LEAST 6" ON THE UPSTREAM SIDE OF THE OUTLET. GEOTEXTILE SHALL MEET THE MINIMUM REQUIREMENTS OF ODOT CONSTRUCTION AND MATERIAL SPECIFICATION 712.09, GEOTEXTILE FABRIC.
10. WARNING SIGNS AND SAFETY FENCE SHALL BE PLACED AROUND THE TRAPS AND MAINTAINED OVER THE LIFE OF THE PRACTICE.
11. AFTER ALL SEDIMENT-PRODUCING AREAS HAVE BEEN PERMANENTLY STABILIZED, THE STRUCTURE AND ALL DRAINAGE AREAS SHALL BE REVEGETATED. ALL PLANT MATERIALS SHALL BE PLACED IN THE SEDIMENT TRAP AREA AND COMPACTED. THE AREA SHALL BE GRADED TO BLEND WITH ADJOINING LAND SURFACES AND HAVE POSITIVE DRAINAGE. THE AREA SHALL BE IMMEDIATELY SEED.



19 **ROCK CHECK DAM**

CROSS SECTION

6" MIN.

POSITIVE SLOPE

POSITIVE SLOPE

3" MAX.

LOW CENTER SECTION- MUST CAUSE FLOW OVER, NOT AROUND, CHECK DAM

PROFILE

4"-8" ROCK

APRON

FLOW

The diagram illustrates the design of a rock check dam. The top view is a cross-section showing a U-shaped structure with a minimum width of 6 inches at the base and a maximum height of 3 inches. The structure is built on a positive slope, and the center section is designed to be low enough to force water over the top rather than flowing around it. The bottom view is a profile showing the dam's construction from a layer of 4 to 8 inch rocks on top of an apron. The flow direction is indicated by an arrow pointing to the right.

1. THE CHECK DAM SHALL BE CONSTRUCTED OF 4-8 INCH DIAMETER STONE, PLACED SO THAT IT COMPLETELY COVERS THE WIDTH OF THE CHANNEL. O.D.O.T. TYPE D STONE IS ACCEPTABLE, BUT SHOULD UNDERLAIN WITH A GRAVEL FILTER CONSISTING OF O.D.O.T. NO. 3 OR 4 OR SUITABLE FILTER FABRIC.
2. MAXIMUM HEIGHT OF CHECK DAM SHALL NOT EXCEED 3.0 FEET.
3. THE MIDPOINT OF THE ROCK DAM SHALL BE A MINIMUM OF 6 INCHES LOWER THAN THE SIDES IN ORDER TO DIRECT ACROSS THE CENTER AND AWAY FROM THE CHANNEL SIDES.
4. THE BASE OF THE CHECK DAM SHALL BE ENTRENCHED APPROXIMATELY 6 INCHES.
5. SPACING OF CHECK DAMS SHALL BE IN A MANNER SUCH THAT THE TOE OF THE UPSTREAM DAM IS AT THE SAME ELEVATION AS THE TOP OF THE DOWNSTREAM DAM.
6. A SPLASH APRON SHALL BE CONSTRUCTED WHERE CHECK DAMS ARE EXPECTED TO BE IN USE FOR AN EXTENDED PERIOD OF TIME, A STONE APRON SHALL BE CONSTRUCTED IMMEDIATELY DOWNSTREAM OF THE CHECK DAM TO PREVENT FLOWS FROM UNDERCUTTING THE STRUCTURE. THE APRON SHOULD BE 6 INCH THICK AND ITS LENGTH TWO TIMES THE HEIGHT OF THE DAM.
7. STONE PLACEMENT SHALL BE PERFORMED EITHER BY HAND OR MECHANICALLY AS LONG AS THE CENTER OF CHECK DAM IS LOWER THAN THE SIDES AND EXTENDS ACROSS ENTIRE CHANNEL.
8. SIDE SLOPES SHALL BE A MINIMUM OF 2:1.

CHECK DAM SPACING				
DAM HEIGHT (FT.)	CHANNEL SLOPE			
	< 5%	5-10%	10-15%	15-20%
1	65 FT.	30 FT.	20 FT.	15 FT.
2	130 FT.	65 FT.	40 FT.	30 FT.
3	200 FT.	100 FT.	65 FT.	50 FT.

DANDY BAG® INLET SEDIMENT FILTER

THE PATENTED DANDY BAG® IS DESIGNED FOR USE WITH FLAT GRATES (INCLUDING ROUND) AND MOUNTABLE CURBS TO DETAIN SEDIMENT-LADEN STORM WATER. THE SUSPENDED SOLIDS ARE ALLOWED TO SETTLE OUT OF THE SLOWED FLOW PRIOR TO ENTERING THE DANDY BAG.®

INSTALLATION

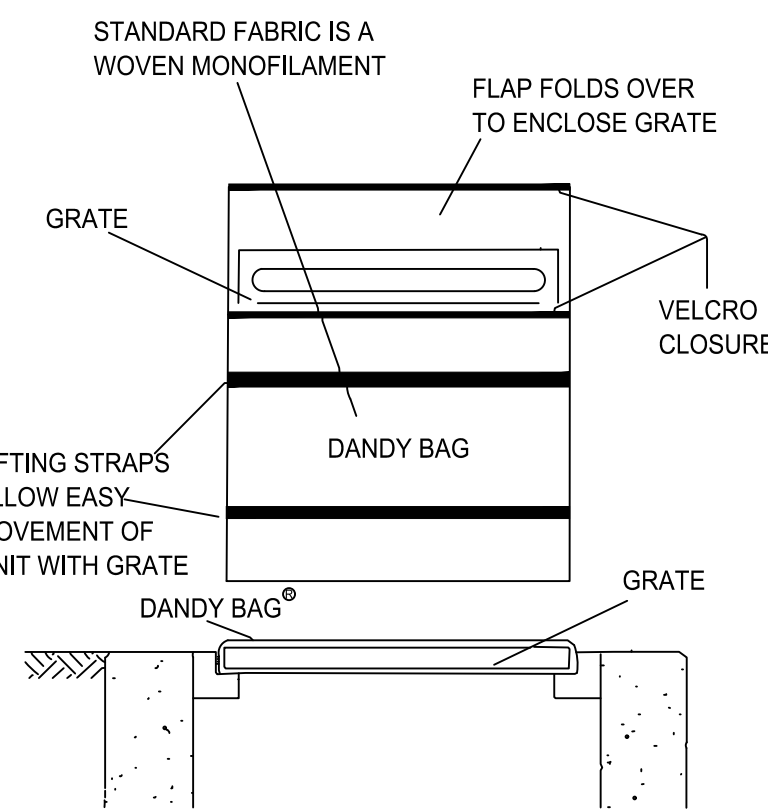
1. STAND THE GRATE ON END
2. PLACE THE DANDY BAG® OVER THE GRATE
3. ROLL THE GRATE OVER SO THAT THE OPEN END IS UP
4. PULL UP THE SLACK
5. TUCK THE FLAP IN
6. PRESS THE VELCRO STRIPS TOGETHER
7. BE SURE THAT THE END OF THE GRATE IS COMPLETELY COVERED BY THE FLAP OR THE DANDY BAG® WILL NOT WORK PROPERLY
8. HOLDING THE HANDLES, CAREFULLY PLACE THE DANDY BAG® WITH THE GRATE INSERTED INTO THE CATCH BASIN FRAME

MAINTENANCE

TO INSURE PROPER OPERATION REMOVE SILT, SEDIMENT, AND DEBRIS FROM THE SURFACE AND THE VICINITY OF THE UNIT WITH A SQUARE POINT SHOVEL OR STIFF BRISTLE BROOM AWAY FROM ENVIRONMENTALLY SENSITIVE AREAS AND WATERWAYS IN MANNER SATISFACTORY TO THE ENGINEER/INSPECTOR. REMOVE FINE MATERIAL FROM INSIDE DANDY BAG® AS NEEDED. DISPOSE OF DANDY BAG® NO LONGER IN USE AT AN APPROPRIATE RECYCLING OR SOLID WASTE FACILITY.

INLET INSPECTION

TO INSPECT INLET, REMOVE DANDY BAG® WITH GRATE INSIDE,
INSPECT CATCH BASIN AND REPLACE DANDY BAG® BACK INTO GRATE
FRAME.



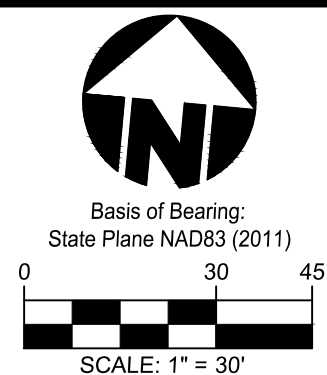
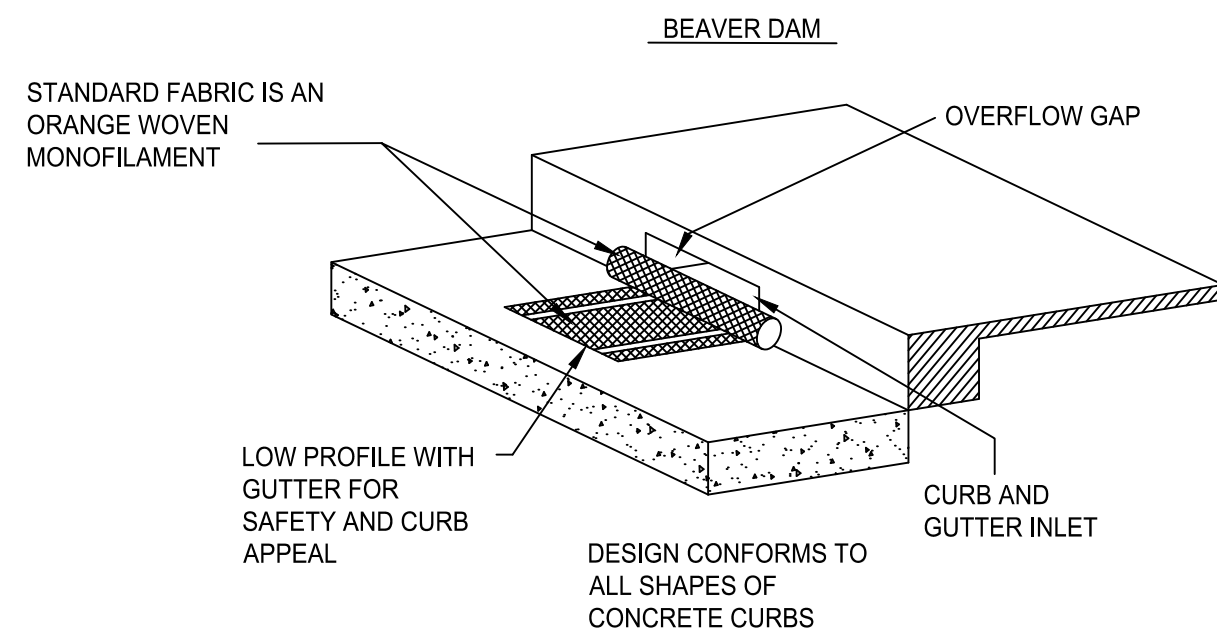
PONDING IS LIKELY IF SEDIMENT IS NOT REMOVED REGULARLY. THE DANDY BAG® MUST NEVER BE USED WHERE OVERFLOW MAY ENDANGER AN EXPOSED SLOPE. THE DANDY BAG® IS NOT INTENDED FOR ANY OTHER USE AND SHOULD NOT BE USED FOR ANY OTHER PURPOSE.

26 BEAVER DAM

Installation and Maintenance Guidelines

INSTALLATION: THE EMPTY BEAVER DAM SHOULD BE PLACED OVER THE GRATE AS THE GRATE STANDS ON END. IF USING OPTIONAL OIL ABSORBENTS, PLACE ABSORBENT PILLLOW ON POUCH, ON THE BOTTOM (BELOW-GRADE SIDE) OF THE UNIT. ATTACH ABSORBENT PILLLOW TO TETHER LOOP. TUCK THE ENCLOSURE FLAP INSIDE TO COMPLETELY ENCLOSE THE GRATE. HOLDING THE LIFTING DEVICES (DO NOT RELY ON LIFTING DEVICES TO SUPPORT THE ENTIRE WEIGHT OF THE GRATE), PLACE THE GRATE INTO ITS FRAME (STREET SIDE FIRST), THEN LOWER BACK EDGE WITH DAM INTO PLACE. THE BEAVER DAM SHOULD BE PARTIALLY BLOCKING THE CURB HOOD WHEN INSTALLED PROPERLY.

MAINTENANCE: REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS FROM SURFACE AND VICINITY OF UNIT AFTER EACH STORM EVENT. REMOVE SEDIMENT THAT HAS ACCUMULATED WITHIN THE CONTAINMENT AREA OF THE BEAVER DAM AS NEEDED. IF USING OPTIONAL OIL ABSORBENTS; REMOVE AND REPLACE ABSORBENT PILLOW WHEN NEAR SATURATION.

[illegible]

KEEFE PROPERTY SP-PUD TRACTS 2&3

ROADWAY AND MISC SITE FDP

Y WAY & TYLERS PLACE BLVD
SECTION 18, TOWN 3, RANGE 2
EAST CHESTER TOWNSHIP
BUTLER COUNTY, OHIO

EROSION CONTROL DETAILS



Drawing:
15M053-000 GRADING

Checked By:	AJW
	JS

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C5.2